

Hytera

SERVICE MANUAL

PORTABLE RADIO



Preface

This manual describes information related with product repair. To repair the product properly, please read this manual carefully.

This manual is applicable to the following model:

PD70X (X may indicate 2, 5, 6 or 8)

PD70XG (X may indicate 2, 5, 6 or 8)

PD78X (X may indicate 2, 5, 6 or 8)

PD78XG (X may indicate 2, 5, 6 or 8)

HD705

HD705G

HD785

HD785G

In this manual, the description related to GPS is applicable to PD70XG/ PD78XG/ HD705G/ HD785G only, while the description related to the LCD is applicable to PD78X/ PD78XG/ HD785/ HD785G.

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U.S. Patent Nos. #6,912,495 B2, #6,199,037 B1, #5,870,405, #5,826,222, #5,754,974, #5,701,390, #5,715,365, #5,649,050, #5,630,011, #5,581,656, #5,517,511, #5,491,772, #5,247,579, #5,226,084 and #5,195,166.

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Documentation Information

This section describes the conventions and revision history of this document.

Instructional Icons

Icon	Description
 Tip	Indicates information that can help you make better use of your product.
 Note	Indicates references that can further describe the related topics.
 Caution	Indicates situations that could cause data loss or equipment damage.
 Warning	Indicates situations that could cause minor injury.
 Danger	Indicates situations that could cause major injury or even death.

Revision History

Version	Release Date	Description
R2.0	September 1 st , 2010	Initial release
R3.5	October 31 st , 2011	Add descriptions on VHF, UHF2 and UHF3. Update the battery life. Update the template. Add appropriate trunking information.
R4.5	April 10 th , 2012	Add descriptions on UHF5. Update unclear diagrams. Add print No. for some parts lists.

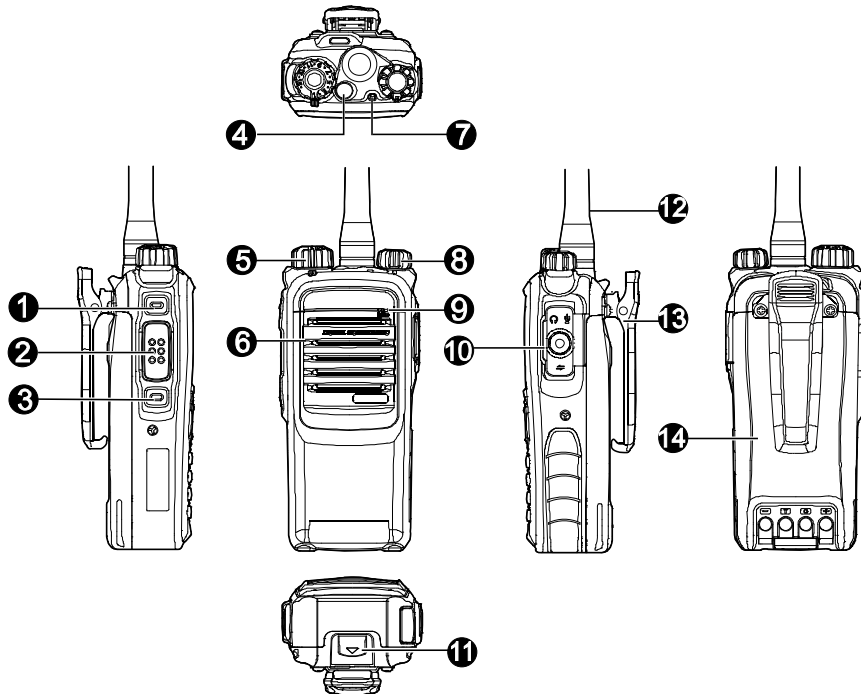
1. Introduction

Intended User

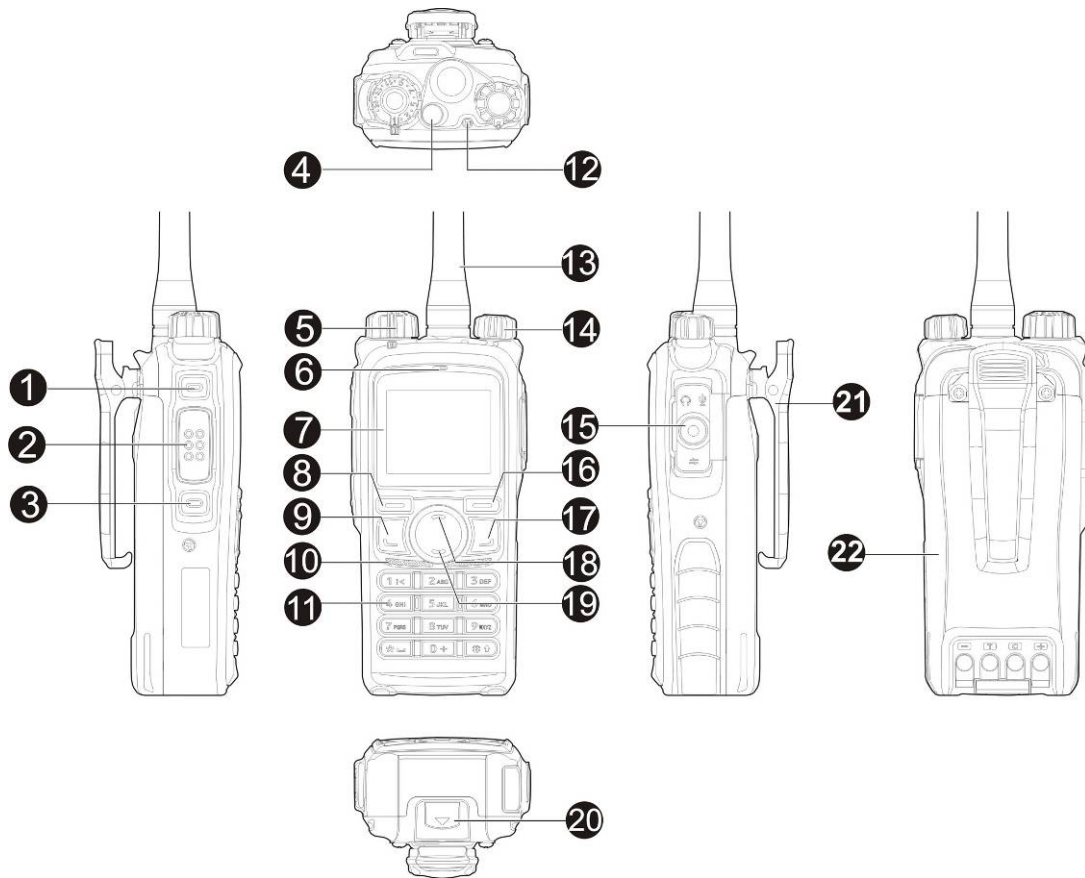
This manual is intended for use by qualified technicians only.

2. Product Controls

PD70X/ PD70XG/ HD705/ HD705G



No.	Part Name	No.	Part Name
1	SK1 (Side Key 1)	8	Radio On-Off/Volume Control Knob
2	PTT Key	9	Microphone
3	SK2 (Side Key 2)	10	Accessory Jack
4	TK (Top Key)	11	Battery Latch
5	Channel Selector Knob	12	Antenna
6	Speaker	13	Belt Clip
7	LED Indicator	14	Battery

PD78X/ PD78XG/ HD785/ HD785G

No.	Part Name	No.	Part Name
1	SK1 (Side Key 1)	12	LED Indicator
2	PTT Key	13	Antenna
3	SK2 (Side Key 2)	14	Radio On-Off/Volume Control Knob
4	TK (Top Key)	15	Accessory Jack
5	Group Call Selector Knob (trunking mode) Volume Control/Channel Selector Knob (conventional mode)	16	Back/Group Call Management Key

No.	Part Name	No.	Part Name
6	Microphone	17	Dial-back/End/Home Screen Key (trunking mode)
			Programmable Key (conventional mode)
7	LCD Display	18	Up Key
8	OK/Menu Key	19	Down Key
9	Answer/Redial/Call Key (trunking mode)	20	Battery Latch
	Programmable Key (conventional mode)		
10	Speaker	21	Belt Clip
11	Numeric Keypad	22	Battery

3. Baseband Section

3.1 Power Section

3.1.1 Diagram of Power Control

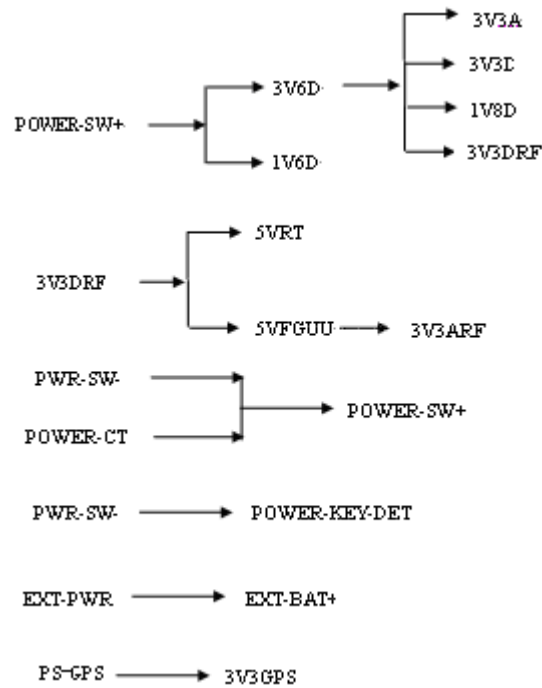


Figure 3-1 Diagram of Power Control

3.1.2 Radio On/Off

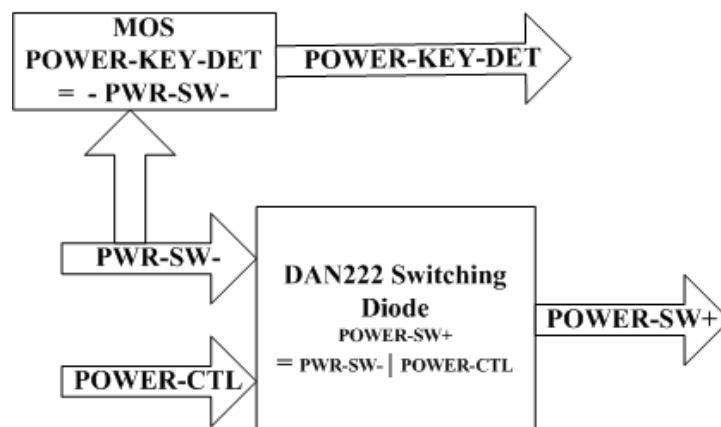


Figure 3-2 Diagram of Radio On/Off Control

The radio-on signal (POWER-SW+) satisfies the equation: $\text{POWER-SW+} = \text{PWR-SW-} \mid \text{POWER-CTL}$.

When the Volume Switch is on, PWR-SW- and POWER-SW+ are at high level, and the radio powers up. After power-on, POWER-CTL goes to high level, and POWER-KEY-DET goes to low level. During power-off, POWER-SW+ is at low level, while POWER-KEY-DET is at high level. The system detects power-off procedure via POWER-KEY-DET and implements the power-off procedure. Then POWER-KEY-DET and POWER-SW+ go to low level, and the power is cut off.

3.1.3 Power Protection

Power protection includes over-current, reverse-voltage and ESD protection.

3.1.4 Power Consumption Control

OMAP can control and configure the power supply and working mode of the peripheral modules (RF section and baseband section) via the I/O interface and serial bus, so as to reduce power consumption.

3.2 Control Section

3.2.1 OMAP5912 Dual-core Processor

The radio uses the dual-core processor OMAP5912, which is mainly composed of ARM926EJ-S and TMS320C55xx. ARM926EJ-S is the main controller, while TMS320C55xx is used for modulation/demodulation and voice encoding/decoding.

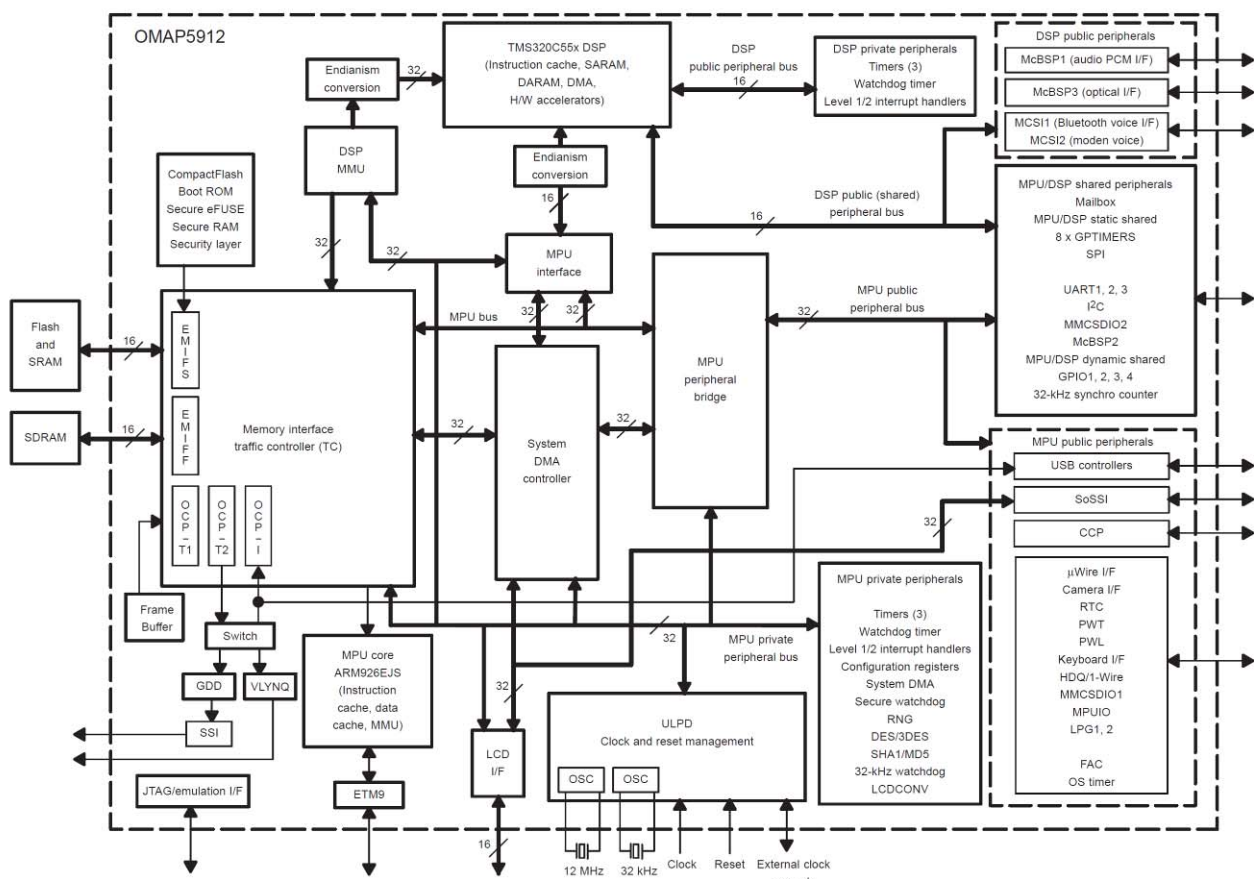


Figure 3-3 Diagram of OMAP5912

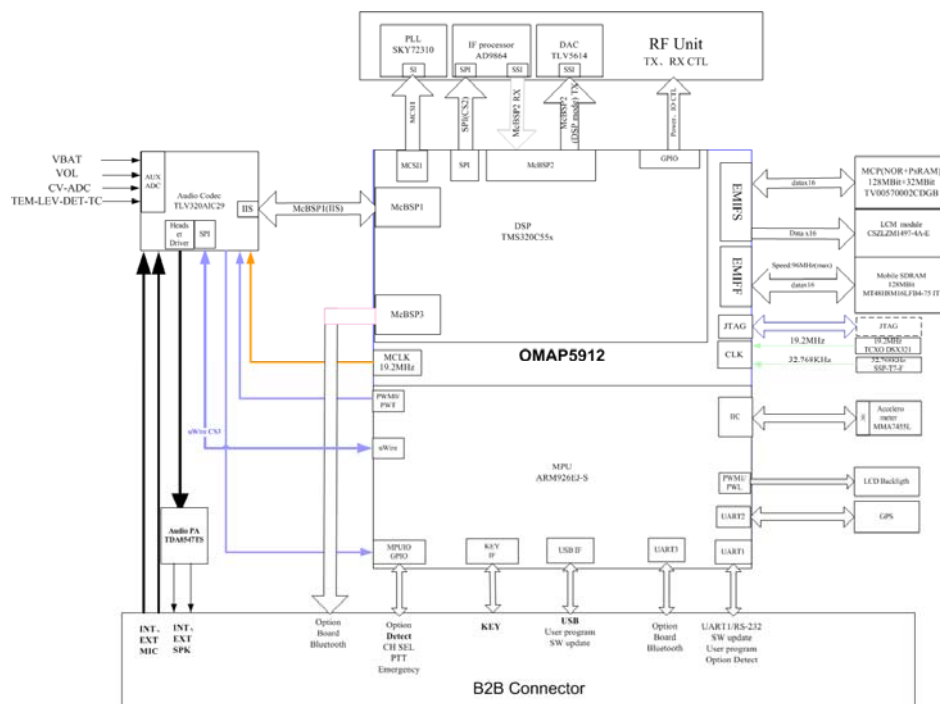


Figure 3-4 Diagram of Overall Scheme

3.2.2 External Memory

OMAP5912 provides two types of external memory interfaces: external memory interface slow (EMIFS) and external memory interface fast (EMIFF).

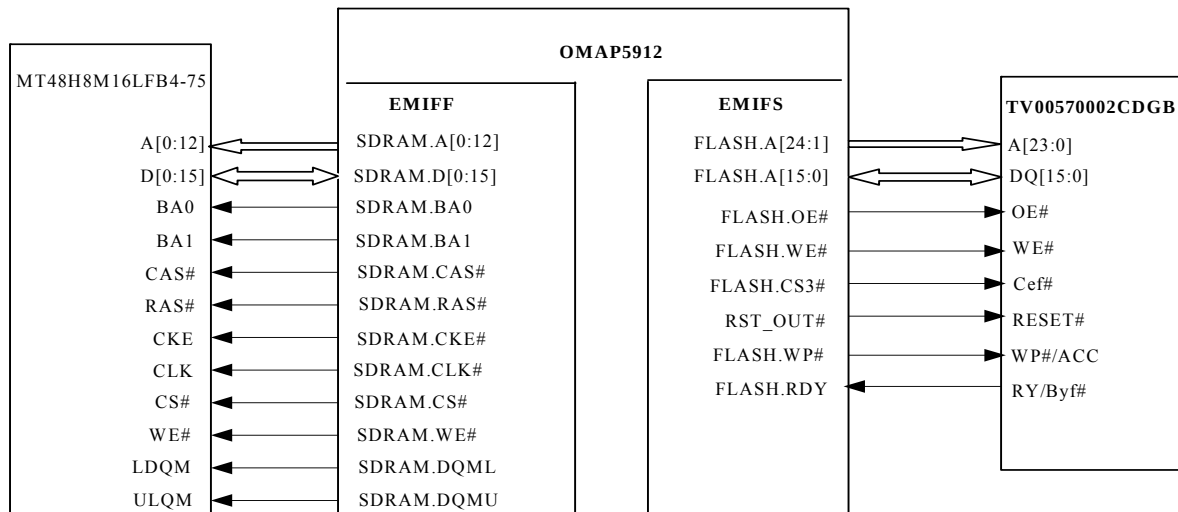


Figure 3-5 Diagram of External Memory

EMIFS

EMIFS is a 16-bit interface, and provides four 64MB chip selects (CS0~CS3). The interface supports memories such as NAND Flash, NOR Flash and SRAM.

EMIFF

EMIFF is a 16-bit interface, and supports SDRAM (up to 128MB), mobile SDRAM and mobile DDR.

3.2.3 Clock

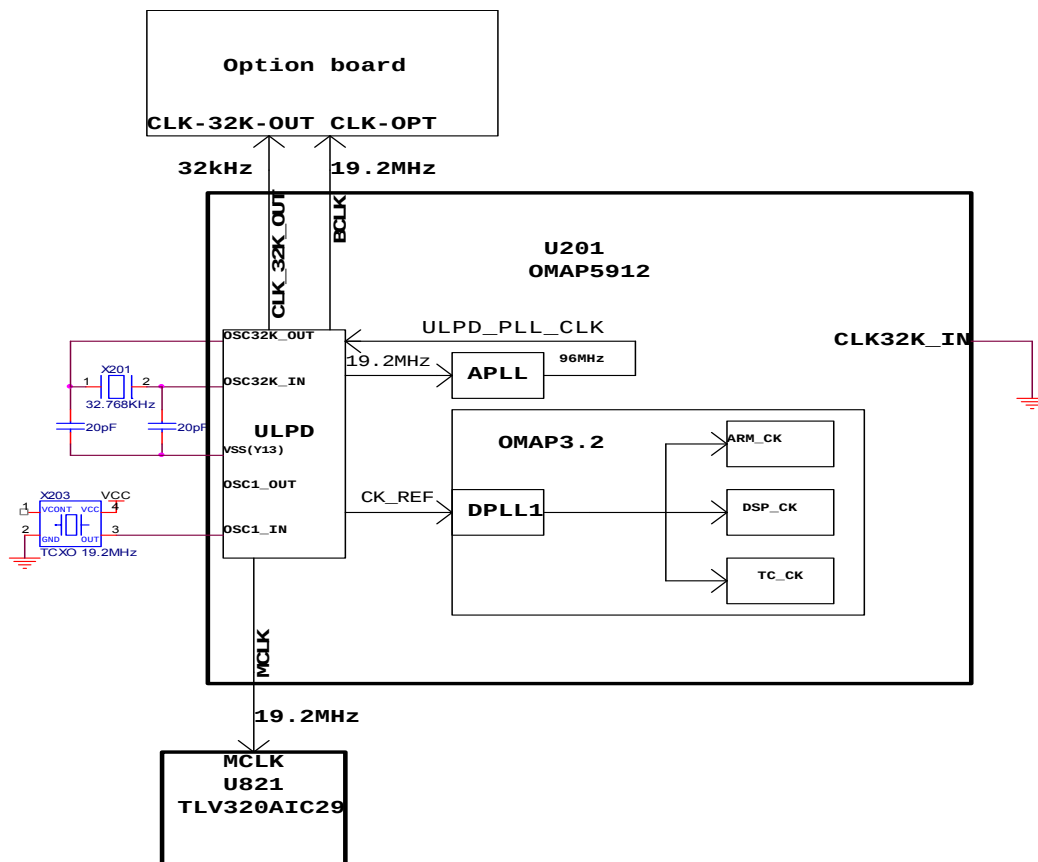


Figure 3-6 Diagram of Baseband Clock

Input Clock

- 32K Clock: It is also called “sleep clock” and is mainly used for timing and sleeping of the system.
- 19.2MHz Clock: It is mainly used to provide input clock for APLL and DPLL.

Output Clock

Three output clocks are provided: MCLK, BCLK and CLK32K_OUT. MCLK provides 19.2MHz clock to the audio codec; BCLK provides 19.2MHz clock to the option board; and CLK32K_OUT provides 32 KHz clock to the option board.

3.2.4 Reset signal

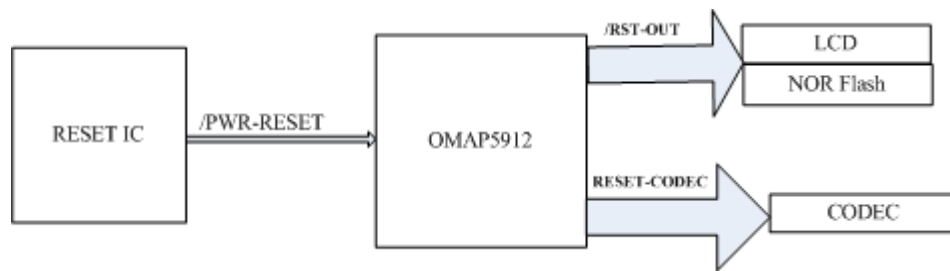


Figure 3-7 Diagram of Reset Signal

3.2.5 SPI

OMAP5912 has a SPI, which has four chip-selects for connecting four external SPI components. The SPI signals available are SPI.DOUT, SPI.DIN, SPI.CLK and SPI.CS. The system uses SPIF.CS2 to select the IF processor AD9864, to configure register of AD9864. The connection of SPI is shown below.

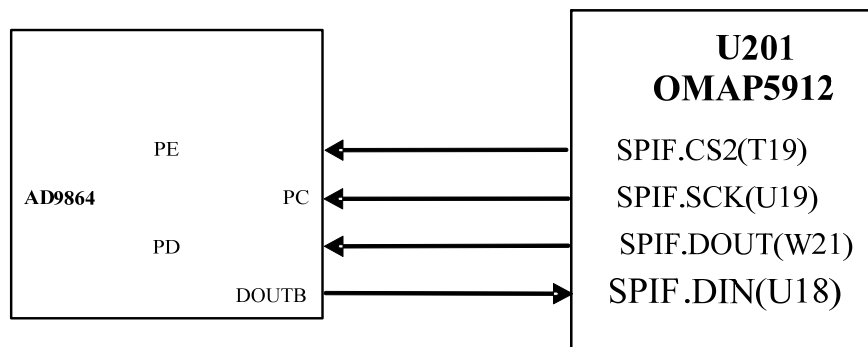


Figure 3-8 Diagram of SPI Connection

3.2.6 MCBSP

OMAP5912 provides 3 MCBSP interfaces: MCBSP1, MCBSP2 and MCBSP3. MCBSP1 is connected with the I2S interface of the audio codec, to realize two-way transmission of digital voice and data. MCBSP2 uses independent clock and frame synchronization for transmission and reception. AD9864 SSI is connected to the RX end of OMAP5912 MCBSP2. AD9864 works in master mode, while DSP works in slave mode. DAC is connected with the TX end of MCBSP2, and DSP works in master mode. MCBSP3 is connected to the option board. The connection of MCBSP is shown below.

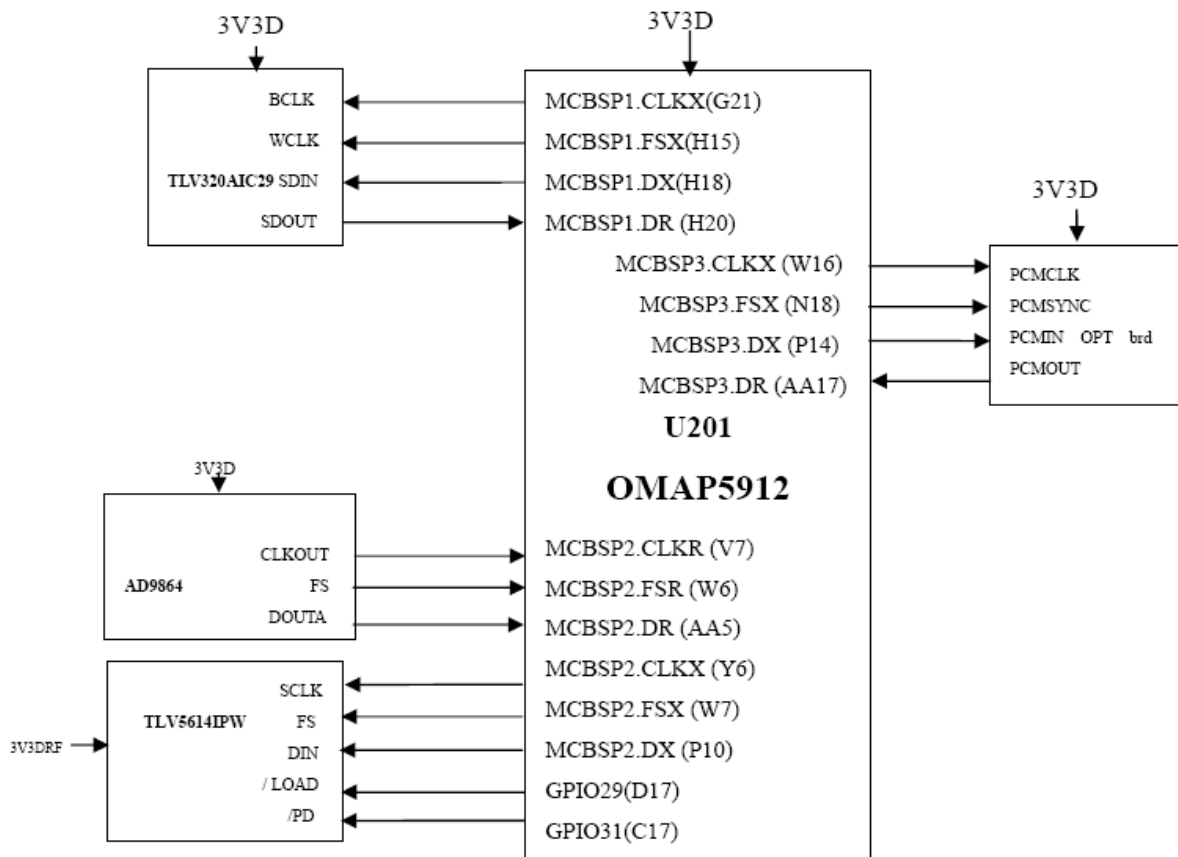


Figure 3-9 Diagram of MCBSP Connection

3.2.7 USB

OMAP5912 provides 3 USB interfaces. One interface integrates a USB transceiver, which is connected to the accessory jack and is used for program downloading and data application.

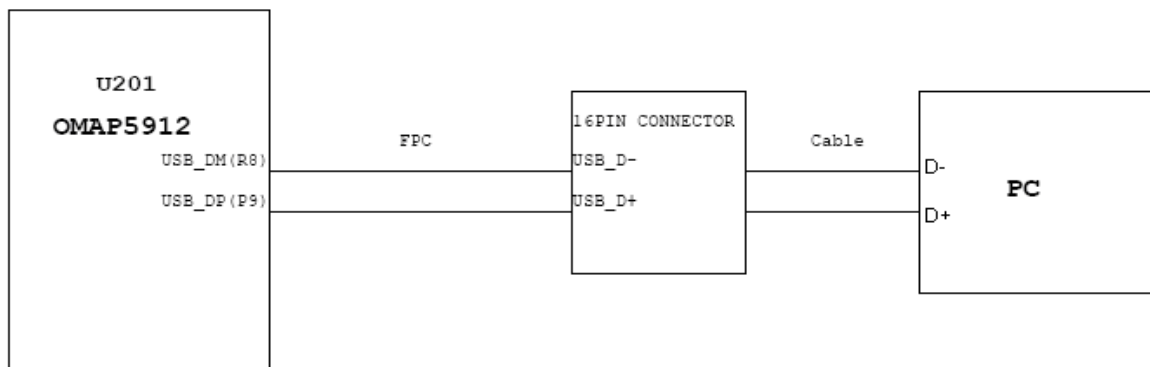


Figure 3-10 Diagram of USB Interface

3.2.8 UART

OMAP5912 has three UART interfaces (UART1, UART2 and UART3), and supports hardware flow control. The maximum communication rate is 1.5Mbps. The connection of UART is shown below.

UART1 is connected with the accessory jack, and is used for updating and programming. UART2 is for GPS, and UART3 is for the option board.

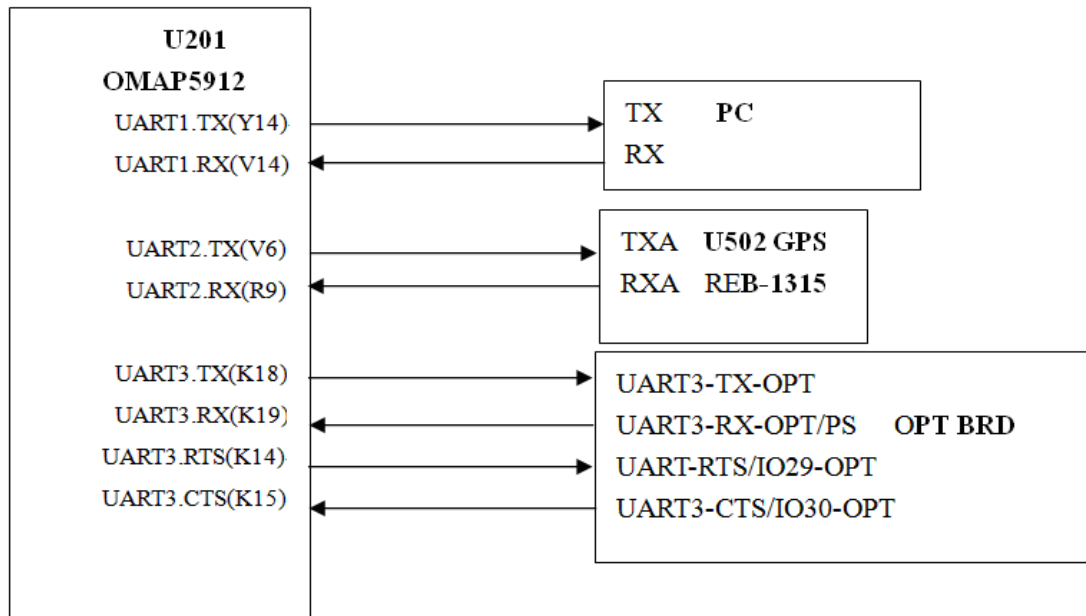


Figure 3-11 Diagram of UART Interface Connection

3.2.9 I2C

OMAP5912 provides one I2C interface, and supports communication rate of up to 400Kbps. The I2C interface is connected with the acceleration sensor, and works in slave mode. The connection of I2C is shown below.

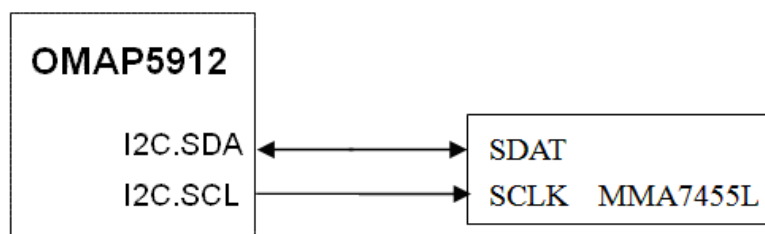


Figure 3-12 Diagram of I2C Connection

3.2.10 MICROWIRE

OMAP5912 provides a MICROWIRE. The four chip select signals can drive four external components. MICROWIRE is used to configure the audio codec and read the value of its register. It uses the chip select signal 3. The connection is shown below.

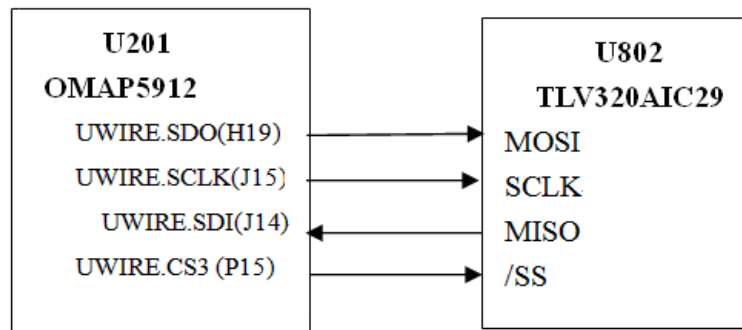


Figure 3-13 Diagram of MICROWIRE Connection

3.2.11 MCSI1

OMAP5912 has two MCSI interfaces. MCSI1 is used for PLL configuration and data transmission. The connection of MCSI1 is shown below.

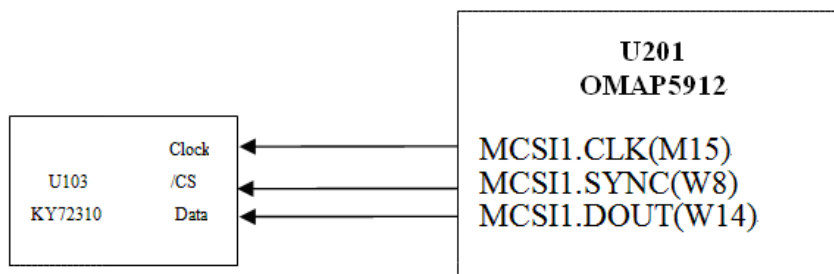


Figure 3-14 Diagram of MCSI1 Connection

3.3 Audio Section

3.3.1 Audio Diagram

The audio module is mainly for audio input and output. TLV320AIC29 is used as the audio codec to convert and process audio signal and digital signal. The audio amplifier TDA8547TS is used to amplify the analog audio signal.

DSP processes digital signal (audio signal encoding/decoding, digital I/Q signal decoding, digital audio

signal processing). AD9864 converts and processes the RF IF signal, and sends the undemodulated serial digital I/Q signal to the DSP for processing. Then DAC5614 converts the digital signal output by DSP to analog signal.

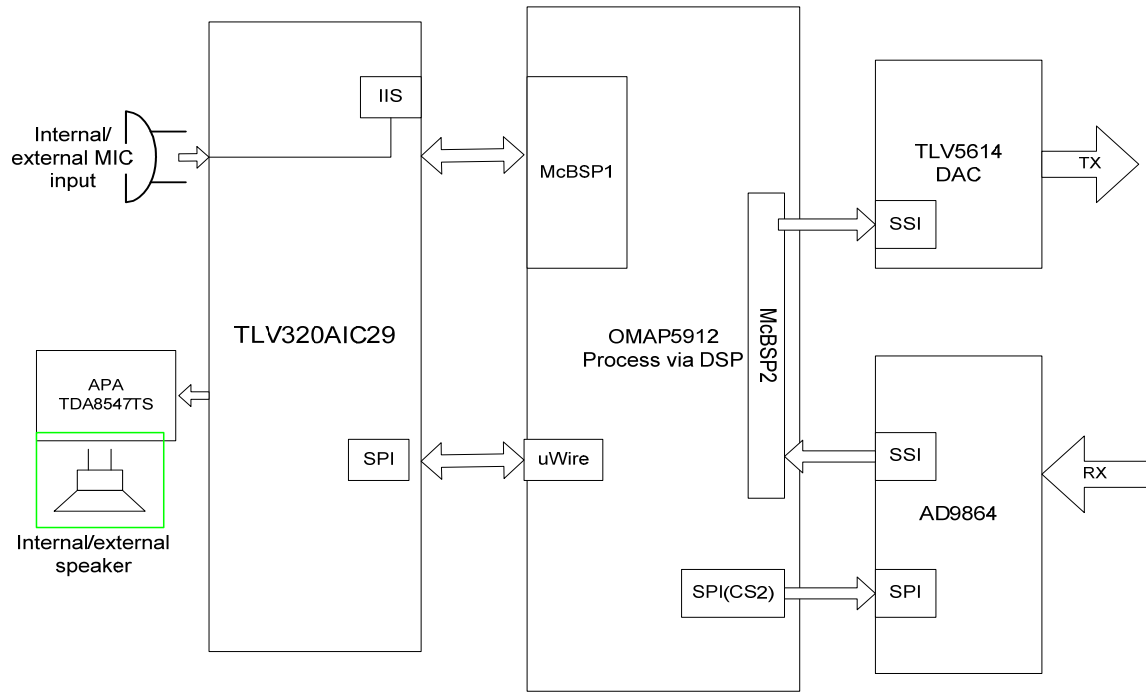


Figure 3-15 Diagram of Audio Section

3.3.2 Diagram of Signal Flow

The microphone converts the audio signal into electrical signal, which is amplified by PGA of the codec and then sent to ADC of the codec for sampling. After digital audio processing, the signal is output to DSP for processing. Then the signal is sent to DAC (TLV5614), which converts the signal to modulation signal. After modulated and amplified in the RF module, the signal is sent out from the antenna.

The RF signal received by the RF module is converted to digital signal by ADC (AD9864), and is then sent to DSP for modulating and processing. Then the digital signal is sent to the digital audio processor of the codec for digital audio processing, and is then converted into analog audio signal by DAC of the codec. Finally the signal is amplified by the external audio amplifier (TDA8547TS) to drive the speaker.

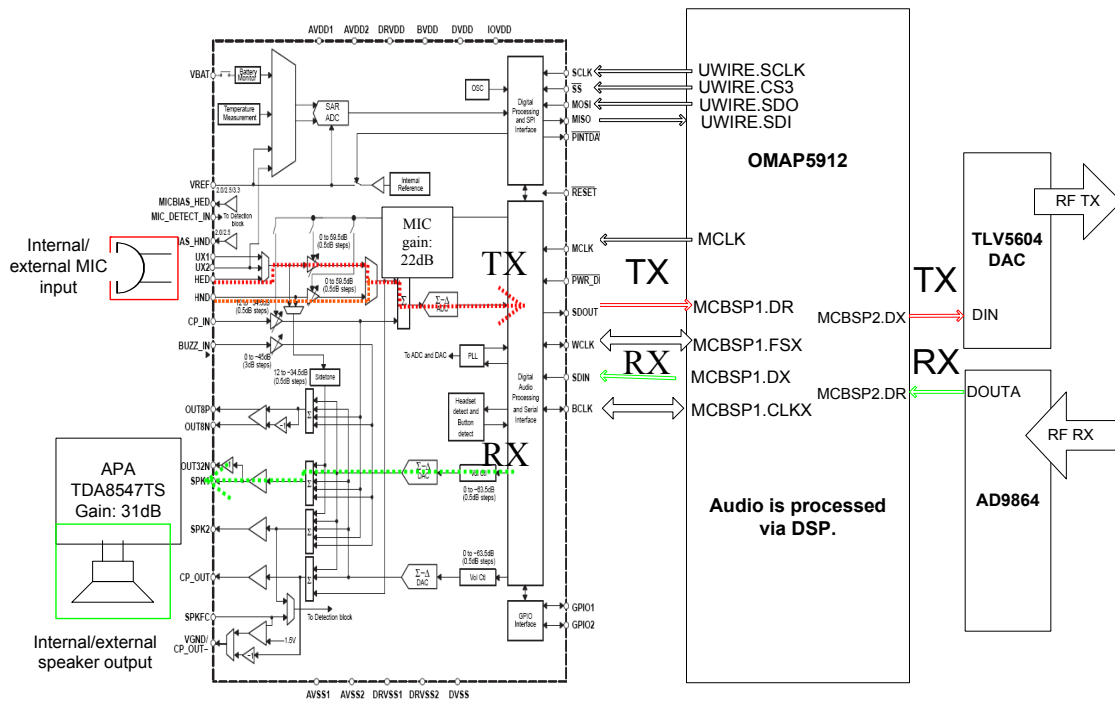


Figure 3-16 Diagram of Audio Signal Flow

3.3.3 Audio Amplifier

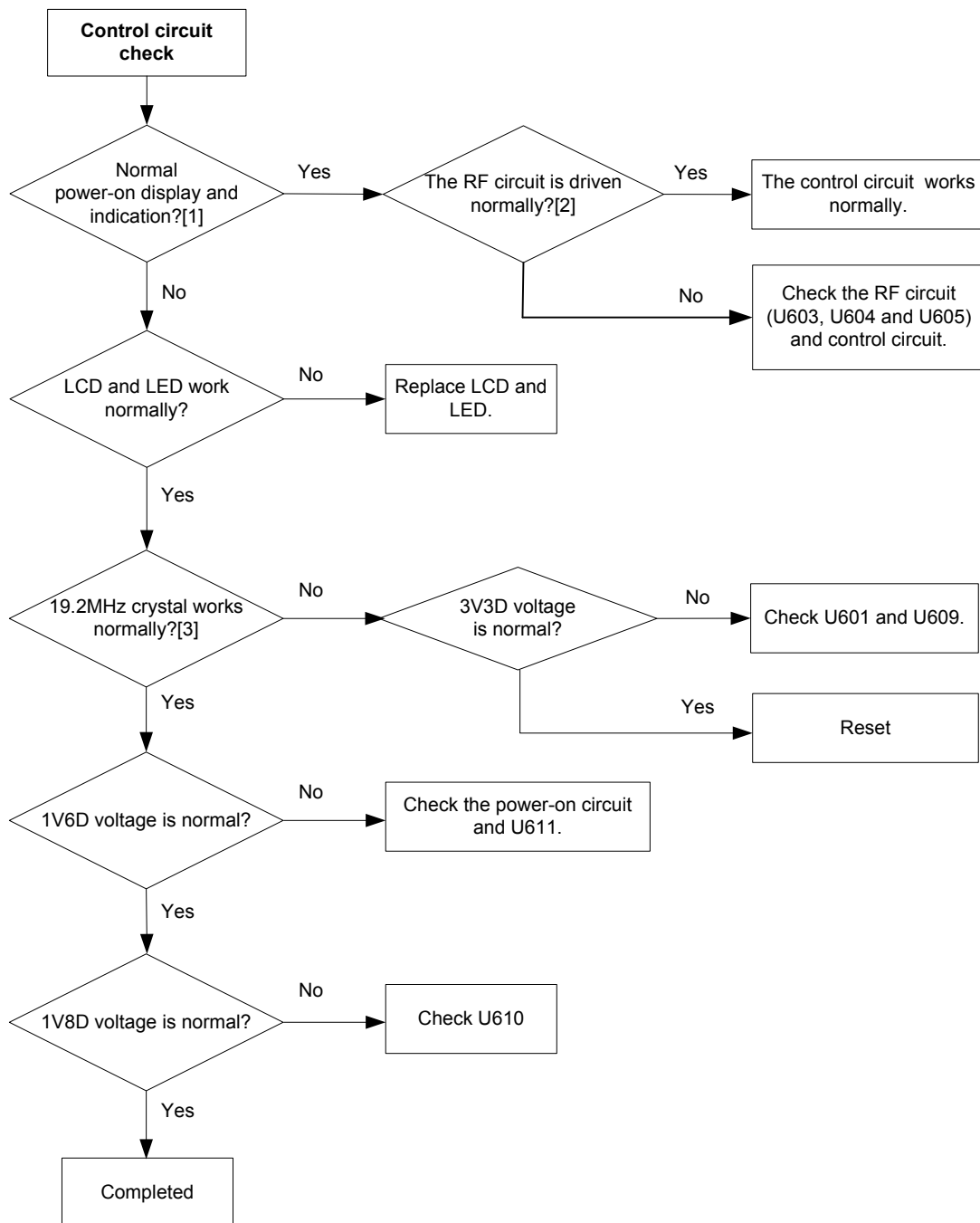
Main parameters of TDA8547TS are listed in the table below:

Rated Power (Po)	0.5W	$R_L = 16\Omega$
Maximum Power (Pmax)	1.2W	$R_L = 16\Omega$

The operation status of the audio amplifier is controlled via GPIO of OMAP. See the table below.

Mode-Amp	SEL-SPK	MODE	SELECT	OUT
1	1	0	0	OUT2
1	0	0	1	OUT1
0	1	1	1	Standby

3.4 Troubleshooting Flow Chart



Description of Normal Situations:

[1] The radio shows normal power-on screen, and the backlight is normal.

[2] The RF power supply outputs normally, and the RX channel is on.

[3] Vpp: 700mV~800mV, F: 19.2MHz.

3.5 PCB Difference

For UHF1 PCB, Version H and Version K are made on the basis of Version F.

- The following changes are made for Version H:
 - Remove the board border and the small board.
 - C802 is compatible with 1206 and 0805.
- The following changes are made for Version K:
 - Add test points (P609 and P610) for the GPS power supply.
 - Add capacitors C301, C302, C303, C304 and C305.
 - Add R208.
 - Remove the board border.
 - C802 is compatible with 1206 and 0805.

For VHF PCB, Version B is made on the basis of Version A. However, some changes are made for Version B:

- Add test points (P609 and P610) for the GPS power supply.
- Add R208.
- C802 is compatible with 1206 and 0805.

4. GPS Circuit

4.1 Circuit Description

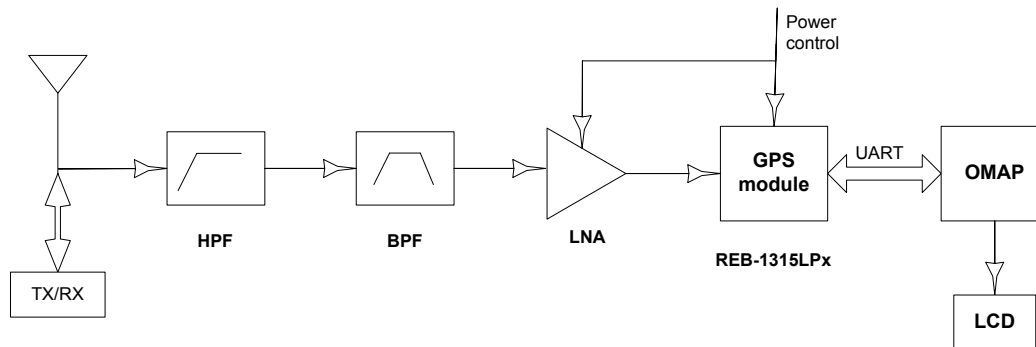


Figure 4-1 Diagram of GPS Circuit

The GPS function is realized via REB-1315LPx. The GPS circuit integrates a baseband processor, a LNA and a SAW. The GPS function is realized via the following steps:

- Step 1** The 1575.42MHz GPS signal is received by the antenna, and then goes to HPF to remove the in-band signals used for transmission and reception.
- Step 2** The signal goes to BPF to further remove in-band signals, as well as harmonic and spurious signals.
- Step 3** The weak GPS signal goes to a low-noise amplifier (LNA) for amplification.
- Step 4** After amplified, the signal goes to the GPS module for further amplification and filtering, and is then sent to the baseband section for calculation.
- Step 5** The calculated GPS positioning information is sent to OMAP via the UART interface. Meanwhile, OMPA can send appropriate command information to the GPS module via the UART interface.
- Step 6** Finally, the OMAP sends the processed data information to the LCD.

4.2 Schematic Diagram

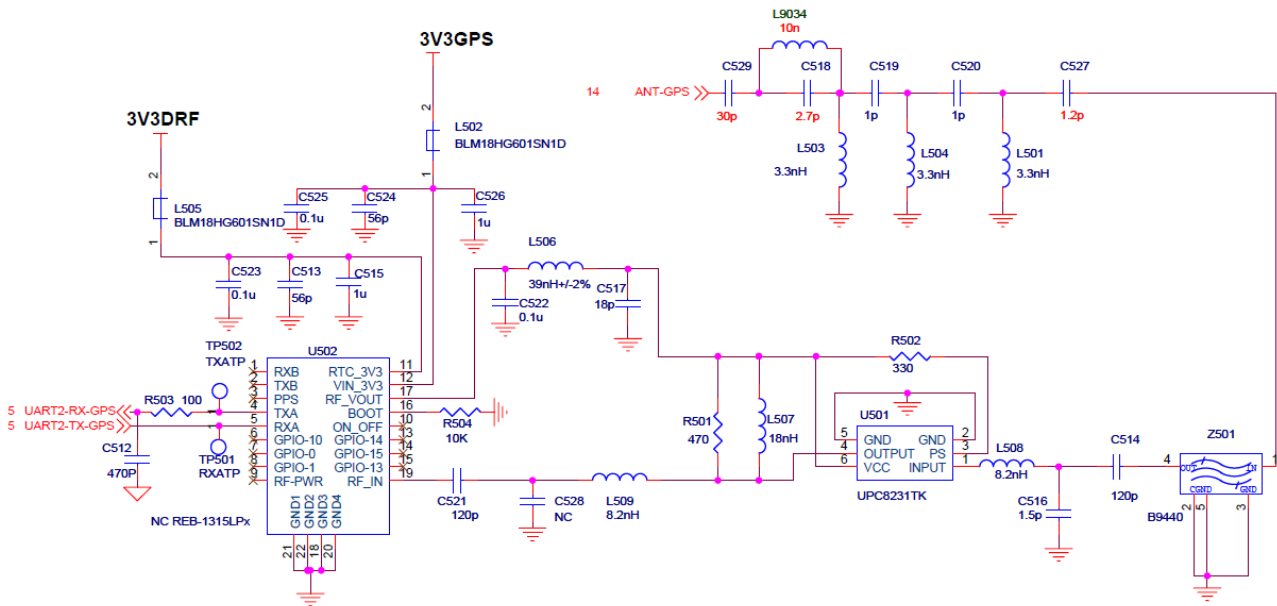


Figure 4-2 Schematic Diagram

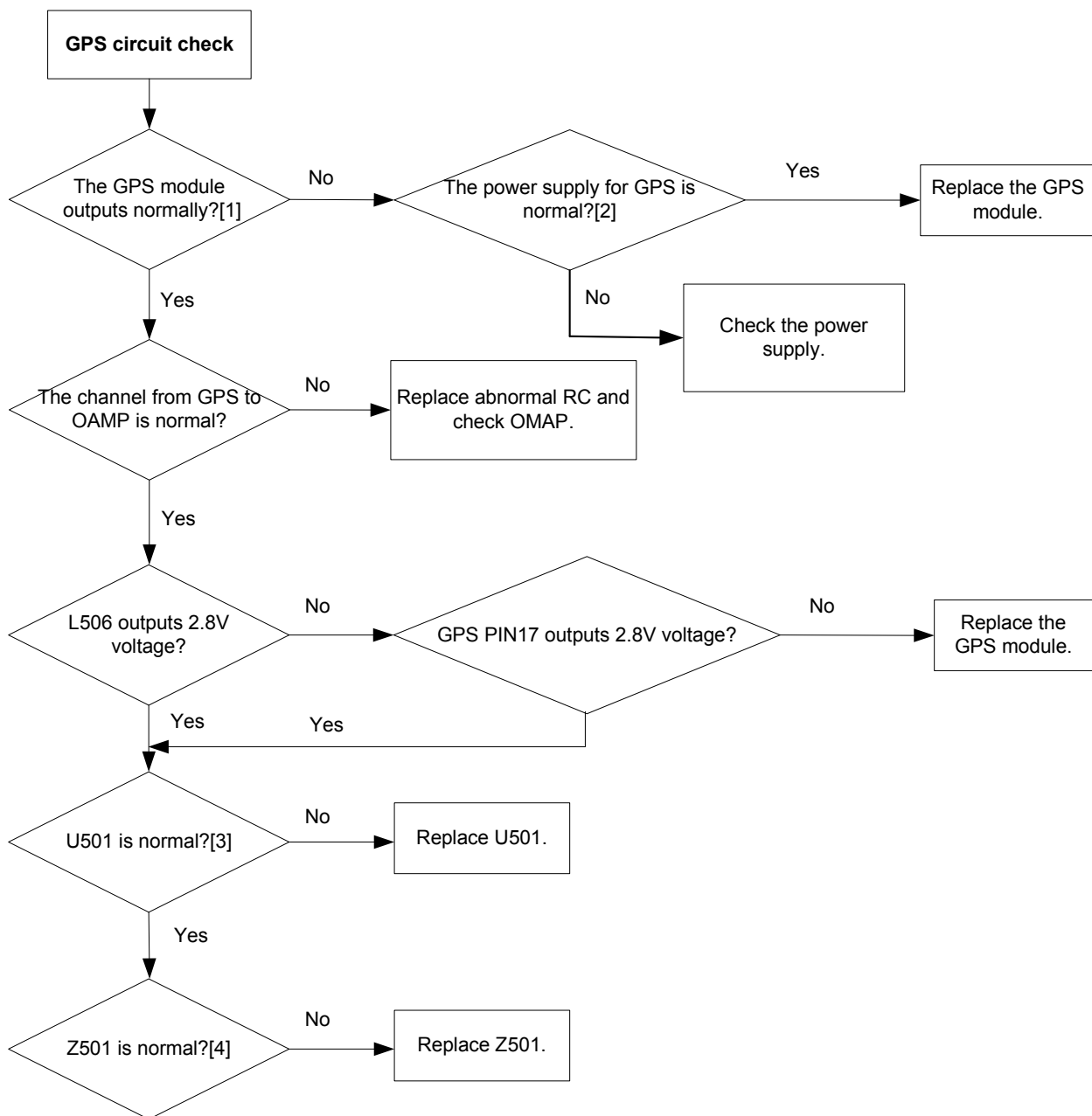
4.3 Parts List

No.	Ref. No.	Print No.	Part No.	Description
1	C512	B4E	3101054710010	470P
2	C513	B2C	3101055600000	56P
3	C514	B3C	3101051210000	120P
4	C515	B2C	3101051050000	1UF
5	C516	B3C	3101051590070	1.5P
6	C517	B3C	3101051800010	18P
7	C518	B2C	3101051590000	2.7P
8	C519	B2C	3199050758000	1P
9	C520	B2C	3101050100030	1P
10	C521	B3C	3101051210000	120P

No.	Ref. No.	Print No.	Part No.	Description
11	C522	B3C	3101051040060	0.1U
12	C523	B2C	3101051040060	0.1UF
13	C524	B2C	3101055600000	56P
14	C525	B2C	3101051040060	0.1UF
15	C526	B2C	3101051050000	1UF
16	C527	B2C	3101050200010	1.2P
17	C529	B2B	3101053000010	Chip capacitor 30P
18	L501	B2C	3297106339000	3.3nH
19	L502	B3C	322150660108	Bead
20	L503	B2C	3297106339000	3.3nH
21	L504	B2C	3297106339000	3.3nH
22	L505	B2C	322150660108	Bead
23	L506	B3C	3210106390000	39nH
24	L507	B3C	3210305180000	18nH
25	L508	B3C	3210305829000	8.2nH
26	L509	B3C	3210305829000	8.2nH
27	L9034	B2C	3210105100000	Multi-layer chip inductor 10nH
28	R501	B3C	3001054710000	470Ω
29	R502	B3C	3001053310000	330Ω
30	R503	B4D	3001051010000	100Ω
31	R504	B3C	3001051030050	10KΩ

No.	Ref. No.	Print No.	Part No.	Description
32	U501	B3C	3609999000300	GPS low-noise amplifier
33	U502	B3D	1615000001720	GPS module
34	Z501	B3C	3804157560000	GPS filter

4.4 Troubleshooting Flow Chart



Description of Normal Situations:

[1] Detect with a multimeter. The voltage of TP502 changes within the range 1.2V~2.8V.

[2] Voltage at L502 and L505: about 3.3V.

[3] Gain for U501 (@1.57542GHz) : >15dB.

[4] Insertion loss for Z501 (@1.57542GHz): <4dB.

5. Tuning Description

For details about tuning, please refer to the help file of the tuning software supplied by the Company.

6. Interface Definition

J1601: 50-Pin Interface

Pin No.	Name	Function	Valid Level
1	AF-CODEC-TO-50PIN	Analog audio signal output/input	/
2, 5, 49	GND	Power supply: ground (analog)	/
3	AF-50PIN-TO-CODEC	Analog audio signal output/input	/
4	EXT-MIC+	External MIC interface	/
6	EXT-MIC-		
8	IO5-OPT	GPIO pin of the option board	L/H
10	IO4-OPT		
12	IO3-OPT		
14	IO2-OPT		
16	IO1-OPT		
7	3V6D	Power supply: 3.6V	/
9	USB-D+	USB data cable	/
11	USB-D-		
13	EMERGENCY	Emergency key	L
32	DGND	Power supply: ground (digital)	/
43			
18	GPIO	GPIO	/
20	LED-K-KEY	LED indication for key operation	L
15	KB-R1	Keyboard row	L
17	KB-R2		
19	KB-R3		
21	KB-R4		
22	KB-C4	Keyboard column	/

Pin No.	Name	Function	Valid Level
24	KB-C3		
26	KB-C2		
28	KB-C1		
30	KB-C0		
23	EXT-PTT	External PTT detection	L
25	SEL1-Accessory	Accessory identifier	L
27	SEL2-Accessory		
29	SEL3-Accessory		
34	UART1-RX-OPT/PS	UART1	/
36	UART1-TX-OPT/PS		
38	UART3-TX-OPT	UART3	/
40	UART3-RX-OPT		
42	UART3-CTS/IO30-OPT		
44	UART3-RTS/IO29-OPT		
31	MCBSP3-FSX-OPT	MCBSP3	/
33	MCBSP3-DX-OPT		
35	MCBSP3-WCLK-OPT		
37	MCBSP3-DR-OPT		
39	IIC-SCL-Acce/CLK-32K-OUT	IIC-SDA-Acce for Version K of UHF1/UHF2/UHF3, Version F of UHF5 and Version B of VHF CLK-32K-OUT for Version F/H of UHF1	/
41	IIC-SDA-Acce/CLK-OPT	IIC-SCL-Acce for Version K of UHF1/UHF2/UHF3, Version F of UHF5 and Version B of VHF CLK-32K-OUT for Version F/H of UHF1	/

Pin No.	Name	Function	Valid Level
46	EXT-BAT+	Power supply for accessory or option board	/
48	IN-SPK-	Internal speaker	/
50	IN-SPK+		
45	EXT-SPK-	External speaker	./
47	EXT-SPK+		

Table 6-1 Definition of 50-Pin Interface

J311: 30-Pin LCD Interface

Pin No.	Name	Function	Valid Level
1, 26	/	Ground (digital)	/
2~17	M-D0----M-D15	LCD data	/
18	/CS-LCD	LCD chip select	L
19	/RST-OUT	Reset signal	/
20	M-A1	Data and command	/
21	/WE	Write signal	L
22	/OE	Read signal	L
23	IMO	16/8-bit LCD data selection	/
24	3V3D	Power supply: 3.3V	/
25	VFLASH	Power supply for IO	/
27	3V6D	Power supply for backlight	/
28	/	Backlight control	L
29			
30			

Table 6-2 Definition of 30-Pin LCD Interface

J821: Channel Board Interface

Pin No.	Name	Function	Valid Level
---------	------	----------	-------------

Pin No.	Name	Function	Valid Level
1	Emergency	Emergency	L
2	CH2	Channel select	/
3	CH8	Channel select	/
4	VOL	Volume adjust	/
5	CH4	Channel select	/
6	CH1	Channel select	/
7	LED1	Red LED enable	H
8	LED2	Green LED enable	H
9	GND	/	/
10	INT-MIC+780	Microphone+	/
11	INT-MIC-780	Microphone-	/
12	NC/GND	NC for Version K of UHF1/UHF2/UHF3, Version F of UHF5 and Version B of VHF GND for Version F/H of UHF1	/
13	PWR-SW-	Power-on enable input	/
14	PWR-SW+	Power-on enable output	/
15	3V3DRF	3.3V power supply	/
16	NC/GND	NC for Version K of UHF1/UHF2/UHF3, Version F of UHF5 and Version B of VHF GND (for Version F/H of UHF1)	/

Table 6-3 Definition of Channel Board Interface

J2: 20-Pin Option Board Interface

Pin No.	Name	Function	Valid Level
1	IO1-OPT	GPIO	L/H

Pin No.	Name	Function	Valid Level
3	IO2-OPT		
5	IO3-OPT		
7	IO4-OPT		
9	IO5-OPT		
11	UART3-TX-OPT	UART3	/
13	UART3-RX-OPT		
15	UART3-CTS/IO30-OPT		
17	UART3-CTS/IO30-OPT		
2	IIC-SDA-Acce/CLK-32K-OUT	IIC-SDA-Acce for Version K of UHF1/UHF2/UHF3, Version F of UHF5 and Version B of VHF CLK-32K-OUT for Version F/H of UHF1	/
4	IIC-SCL-Acce/CLK-OPT	IIC-SCL-Acce for Version K of UHF1/UHF2/UHF3, Version F of UHF5 and Version B of VHF CLK-32K-OUT for Version F/H of UHF1	/
6	MCBSP3-DR-OPT	MCBSP3	/
8	MCBSP3-WCLK-OPT		
10	MCBSP3-DX-OPT		
12	MCBSP3-FSX-OPT		
14	/	Ground (analog)	/
16	AF-50PIN-TO-CODEC	Analog audio signal	/
18	AF-CODEC-TO-50PIN	Analog audio signal	/
19	/	Ground (digital)	/
20	3V6D	Power supply for digital circuit	/

Table 6-4 Definition of 20-Pin Option Board Interface

16-Pin Accessory Interface

Pin No.	Name	Function	Valid Level
1	GND	Ground (analog & digital)	/
2	SPK-	External speaker-	/
3	SEL1-Accessory	Accessory identifier 1	L
4	SEL2-Accessory	Accessory identifier 2	L
5	Emergency	Emergency	L
6	SPK+	External speaker+	/
7	USB+ / RTS	USB+ / RTS	/
8	USB- / CTS	USB- / CTS	/
9	SWB+	Power supply for the interface	/
10	MIC-	External MIC-	/
11	GPIO	GPIO	/
12	MIC+	External MIC+	/
13	SEL3-Accessory	Accessory identifier 3 or 1-wire communication interface	L
14	TX	TX end of serial port communication	/
15	RX	RX end of serial port communication	/
16	PTT	TX control	L

Table 6-5 Definition of 16-Pin Accessory Interface

Definition of Accessory Identifiers

No.	OPT_SEL1	OPT_SEL2	OPT_SEL3	Definition
1	0	0	0	Reserved
2	0	0	1	Reserved
3	0	1	0	USB master mode for the radio
4	0	1	1	For connecting earpieces

No.	OPT_SEL1	OPT_SEL2	OPT_SEL3	Definition
5	1	0	0	For connecting MODEM
6	1	0	1	For connecting remote speaker microphones
7	1	1	0	Programming cable (serial port)/ USB slave mode for the radio
8	1	1	1	No accessory

Table 6-6 Definition of Accessory Identifiers

7. UHF1 (400-470MHz) Information

7.1 Transmitter Circuit

The transmitter circuit is mainly composed of:

- RF power amplifier circuit
- Low-pass filter circuit (for suppressing harmonics)
- Auto power control circuit (APC) (including temperature detection circuit)

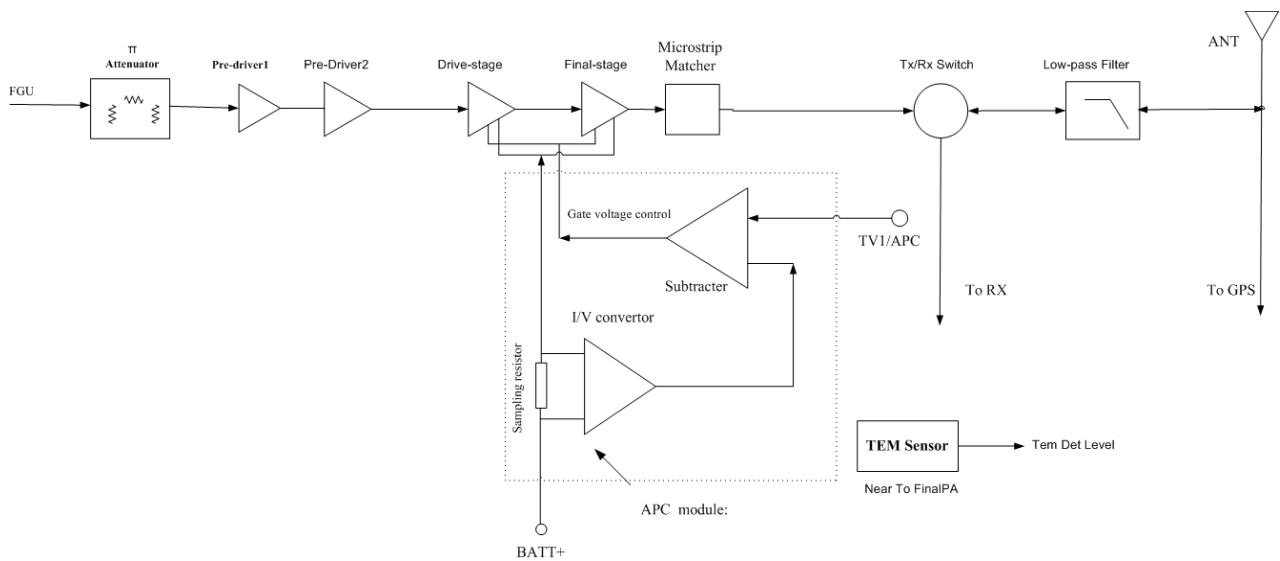


Figure 7-1 Diagram of Transmitter Circuit

7.1.1 RF Power Amplifier Circuit

The carrier signal generated by the TX VCO is modulated and amplified, and then feeds to the transmitter circuit via the following steps.

- Step 1** The signal passes through a π -type attenuator first, allowing interstage isolation between the RF power amplifier circuit and the TX VCO.
- Step 2** The signal goes to a pre-driver amplifier (2SC3356) for pre-amplification, providing further interstage isolation.
- Step 3** The signal goes to another pre-driver amplifier (2SC4988) and a driver amplifier (RD01) for adequate power amplification, so as to obtain further amplification in the final-stage amplifier (RD07).

Step 4 After processed by multiple amplifiers, the signal is processed by a microstrip matcher to complete output impedance matching, so as to reduce output power loss due to impedance mismatch.

Step 5 The signal passes through the TX/RX switch and goes to the low-pass filter.

7.1.2 Low-pass Filter Circuit

The low-pass filter is a high-order Chebyshev filter composed of lumped-parameter inductors and capacitors. Via this filter, the spurious signal within the stop band can be attenuated as much as possible while the in-band ripple is within the required range.

7.1.3 Auto Power Control Circuit

In the auto power control and temperature detection circuit, the drain current from the driver amplifier and final-stage amplifier is converted to voltage via the sampling resistor and subtraction circuit (composed of the first operational amplifier).

This voltage is compared with the APC control voltage (output by DAC) at the second operational amplifier. Then the error voltage, which is output by the second operational amplifier, controls TX power by controlling the bias voltage at the gates of the amplifiers (including the driver amplifier and the final-stage amplifier). The temperature sensor detects the surface temperature of the final-stage amplifier, and converts it to DC voltage. Then the DC voltage is compared with the voltage corresponding to the protection temperature (generally 80% of the extreme temperature) of the amplifier. If the surface temperature is too high, the bias voltage of the amplifier will be reduced until the surface temperature falls below the protection temperature.

7.2 Receiver Circuit

The receiver circuit mainly comprises the RF band-pass filter, low-noise amplifier, mixer, IF filter, IF amplifier and IF processor.

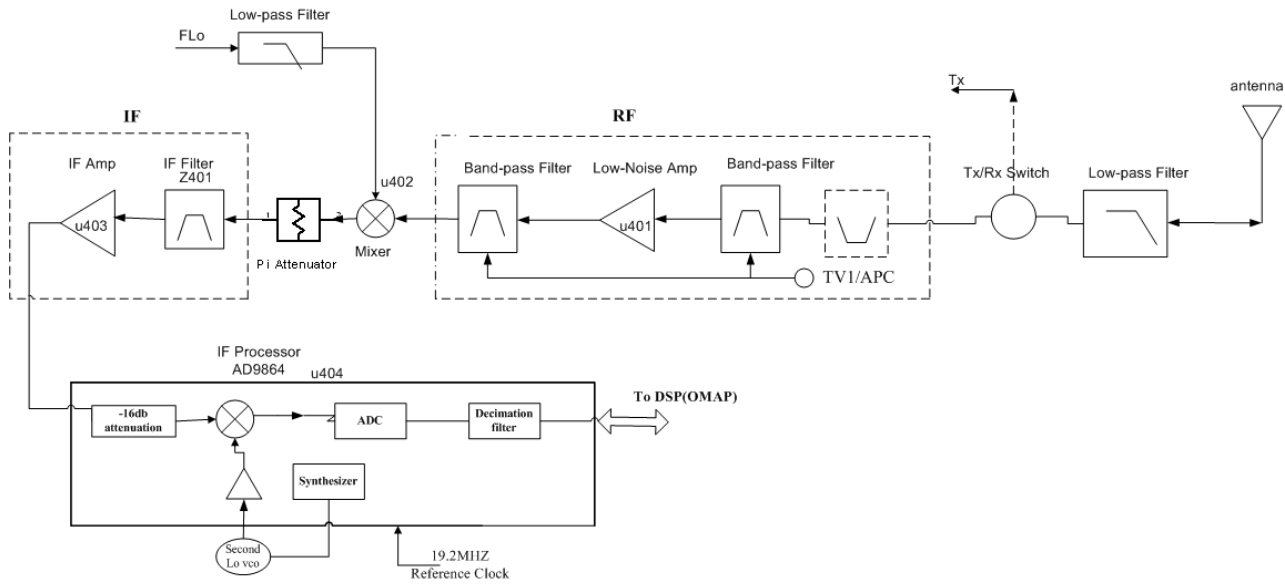


Figure 7-2 Diagram of Receiver Circuit

7.2.1 Receiver Front-end

The HF signal from the low-pass filter passes through the electrically tunable band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal and to send wanted band-pass signal to the low-noise amplifier (Q9001). The amplified signal goes to a band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal generated during amplification, and to send wanted HF signal to the mixer.

The wanted signal passes through the RF band-pass filter and low-noise amplifier and goes to the mixer (D9017). Meanwhile, the first local oscillator (LO) signal generated by VCO passes through the low-pass filter and also goes to the mixer (D9017). In the mixer, the wanted signal and the first LO signal are mixed to generate the first IF signal (73.35MHz). Then the signal passes through a π -type attenuator (2dB) and the LC, to suppress carrier other than the first IF signal, and to increase the isolation between the mixer and the IF filter. After that, the first IF signal is processed by the crystal filter (Z9001), and is sent to the two-stage IF amplifier circuit (composed of 2SC3356) for amplification. Then the amplified signal goes to the IF processor AD9864 (U401) for processing.

7.2.2 Receiver Back-end

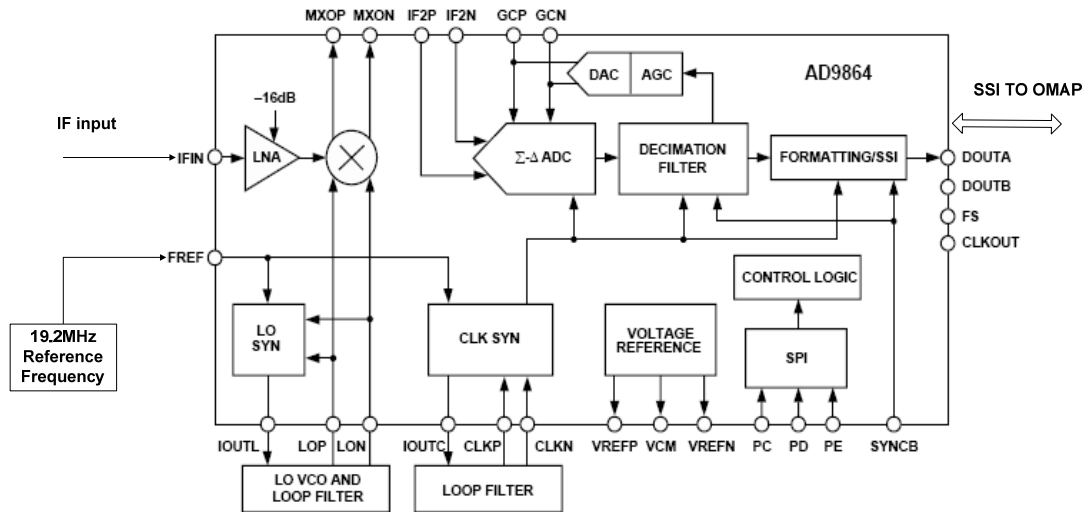


Figure 7-3 Diagram of IF Processor

The first IF signal (73.35MHz) output by the IF amplifier goes into AD9864 (U401) via Pin 47, where the signal is converted to the second IF signal (2.25MHz). Then the signal is converted to digital signal via ADC sampling, and output via the SSI interface. Finally, the digital signal is sent to DSP (OMAP5912) for demodulation.

AD9864 employs reference frequency of 19.2MHz and shares the crystal with the OMAP. The second LO VCO comprises an oscillator, a varactor and some other components, to provide the 71.1/75.6MHz LO signal. The 18MHz clock frequency is generated by the LC resonance loop.

7.3 Frequency Generation Unit (FGU)

The FGU is composed of VCO and PLL. It is the core module of the whole TX-RX system. This circuit provides accurate carrier frequency during transmission, and stable LO signal during reception. It has a direct influence on the performance of the system.

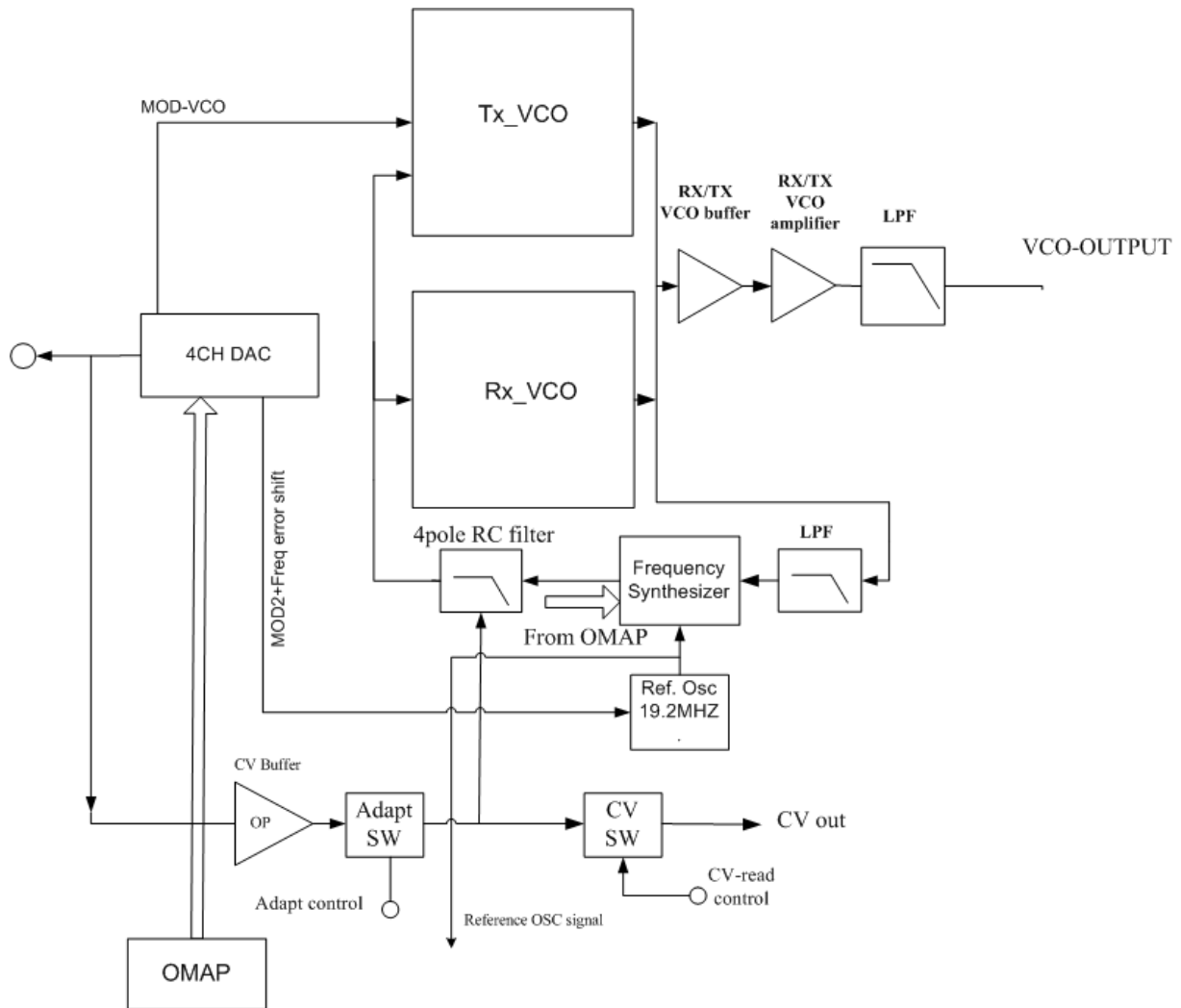


Figure 7-4 Diagram of FGU

7.3.1 Working Principle of PLL

The 19.2MHz frequency generated by the reference crystal oscillator goes to PLL for division, generating the reference frequency (i.e. step frequency f_1). Meanwhile, the frequency generated by VCO generates another frequency (f_2) through the frequency divider in PLL. Then frequencies f_1 and f_2 are compared in the phase detector (PD), to generate continuous pulse current. The current goes to the loop filter for RC integration, and is then converted to CV voltage. Then the CV voltage is sent to the varactor of VCO. It adjusts the output frequency of VCO directly until the CV voltage becomes constant. Then the PLL is locked, and the stable frequency output by VCO goes to the TX-RX channel after passing through two buffer amplifiers.

7.3.2 Working Principle of VCO

VCO employs Colpitts oscillator circuit (the RX oscillator circuit is composed of D102, D103, D106, D107 and L112; the TX oscillator circuit is composed of D108, D109, D110, D101 and L117). It obtains different output frequencies by changing the varactor's control voltage (i.e. CV voltage).

There are two types of VCO: TX VCO and RX VCO. Both types control EMD22 to switch operating status via OMAP. RX VCO is composed of the oscillator loop and Q104, to provide LO signal. TX VCO is composed of the oscillator loop and Q108, to provide carrier for TX signal.

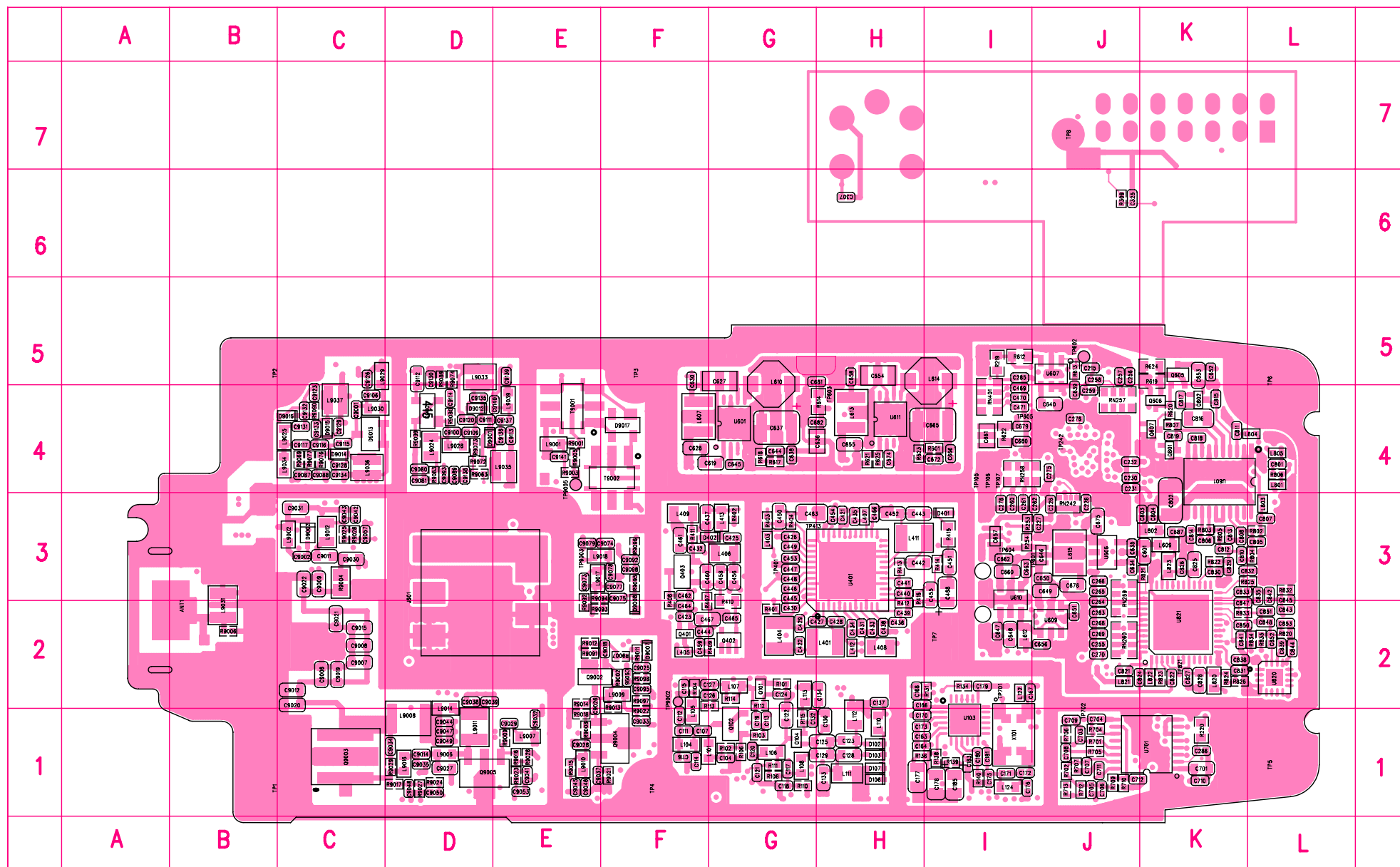
7.3.3 Two-point Modulation

In TX mode, the two-point modulation technology is employed, to obtain higher modulation accuracy and lower 4FSK bit error rate. MOD-VCO and MOD-XO send the modulation signal to the modulation end of VCO and the reference crystal oscillator of PLL respectively to modulate TX VCO and the reference crystal oscillator.

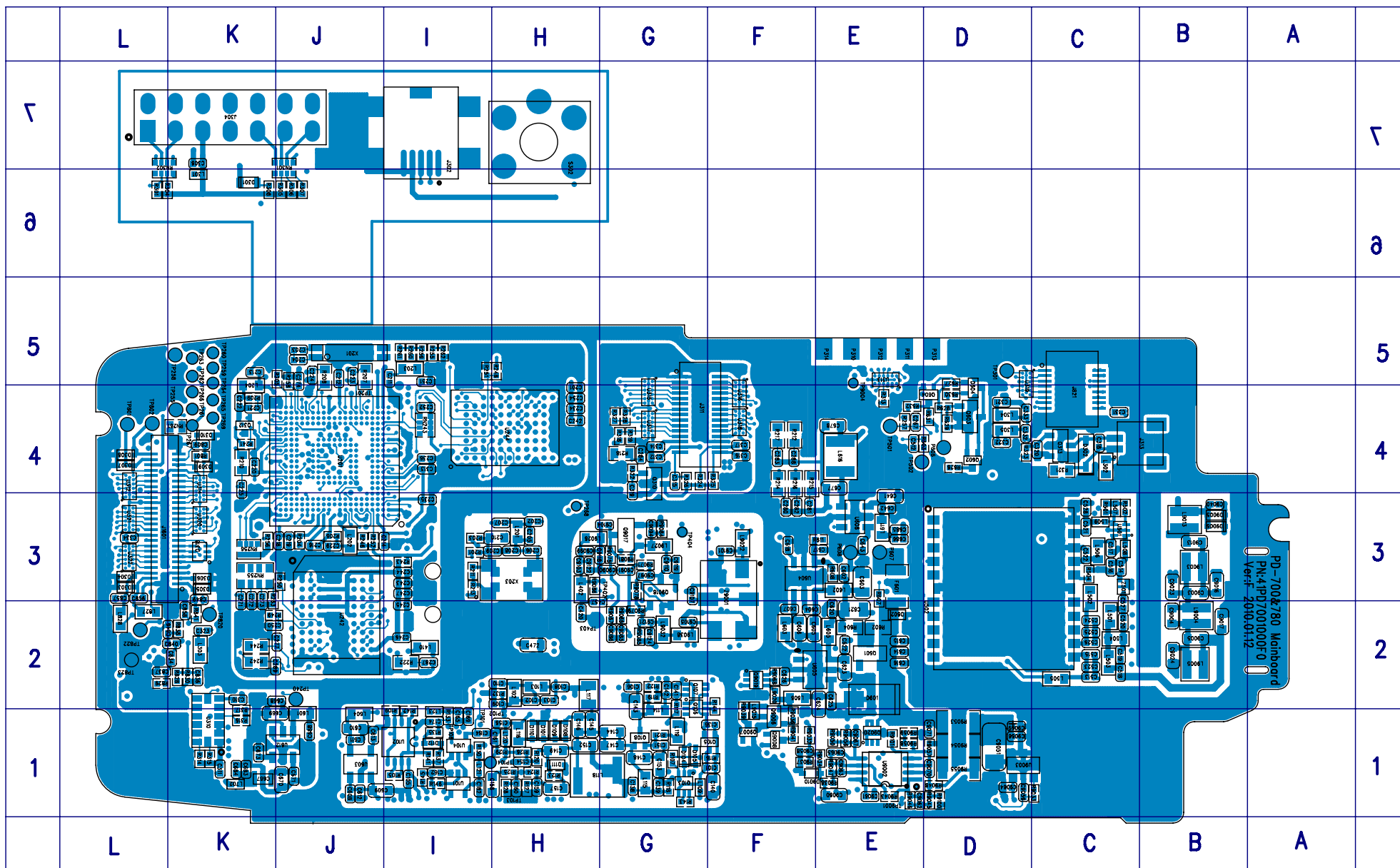
7.4 PCB View

PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board)

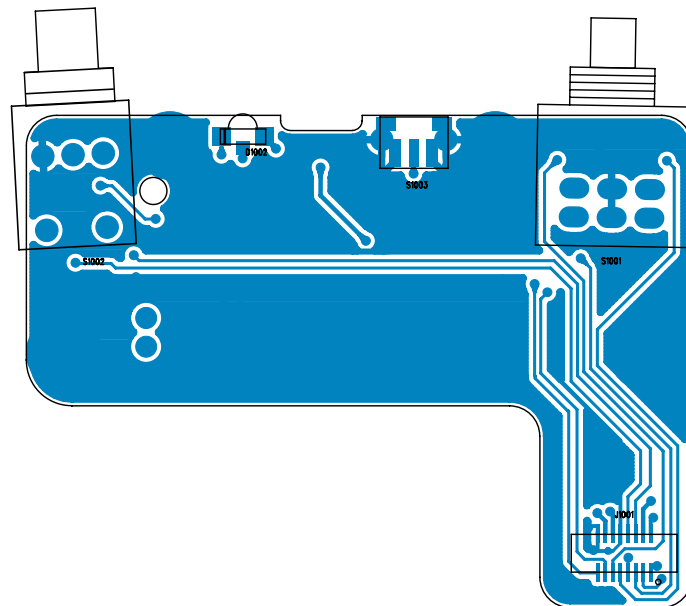
Top Layer



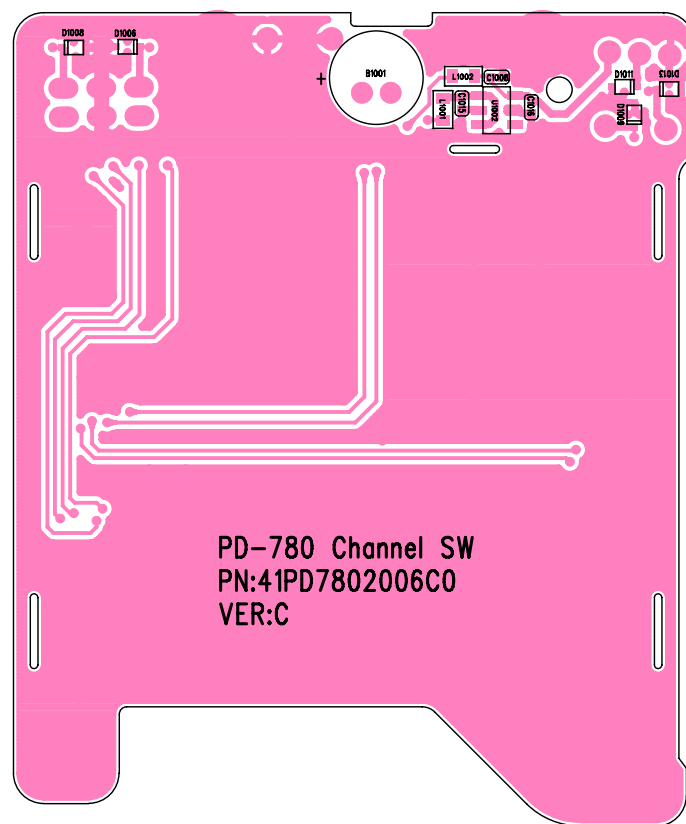
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board) Bottom Layer



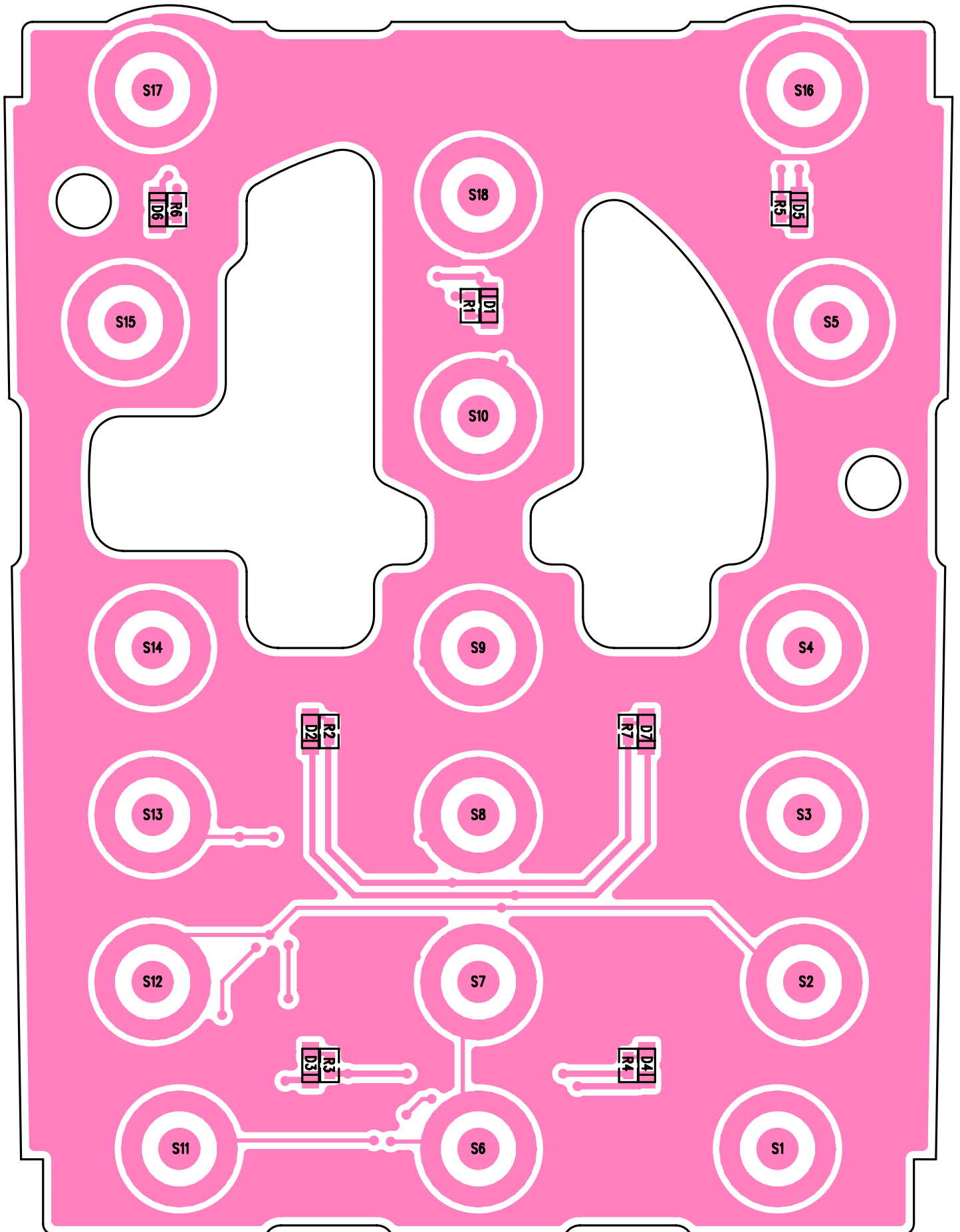
PD70X/PD70XG/HD705/HD705G PCB View (Channel Board) Bottom Layer



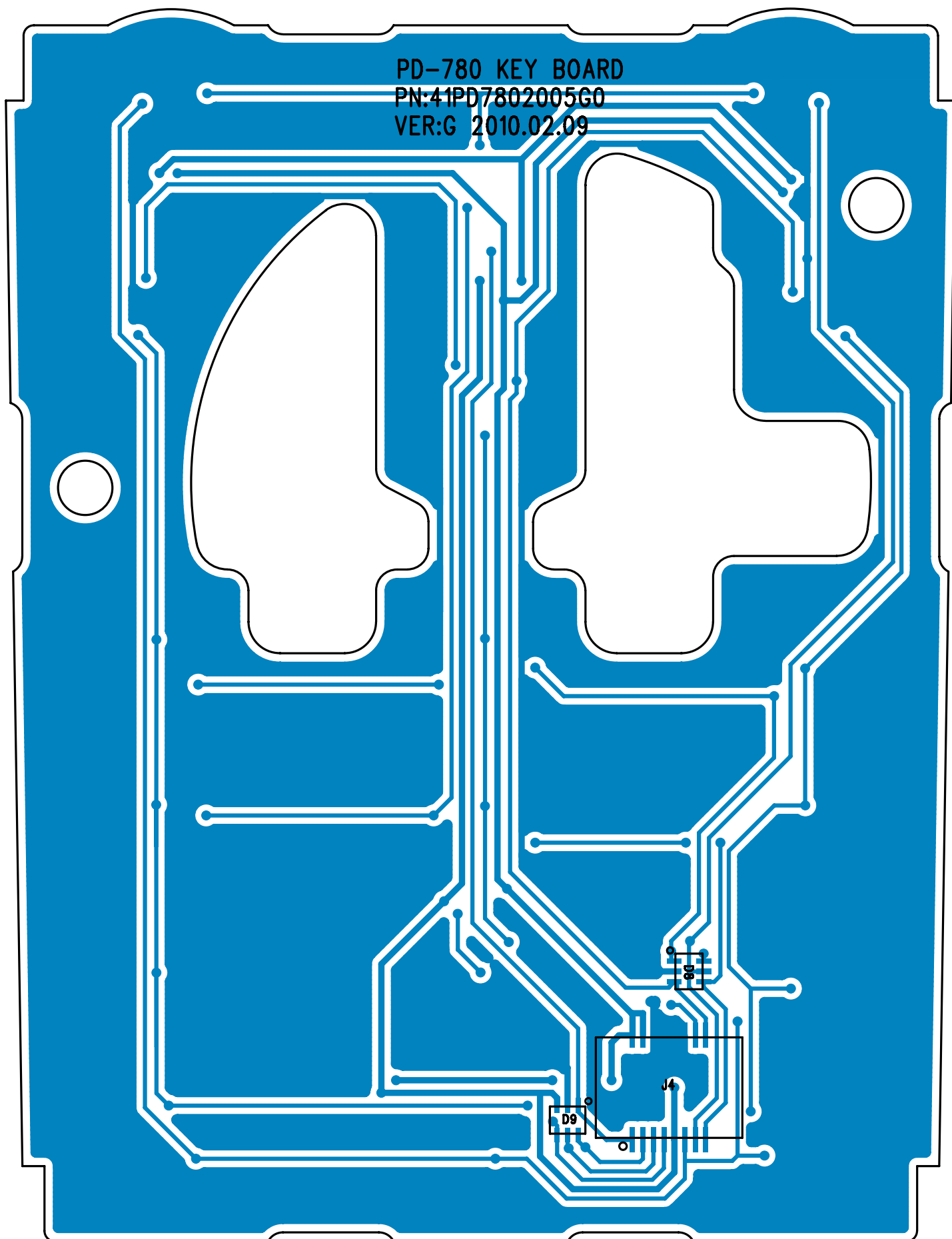
PD78X/PD78XG/HD785/HD785G PCB View (Channel Board) Top Layer



PD78X/PD78XG/HD785/HD785G PCB View (Keyboard) Top Layer

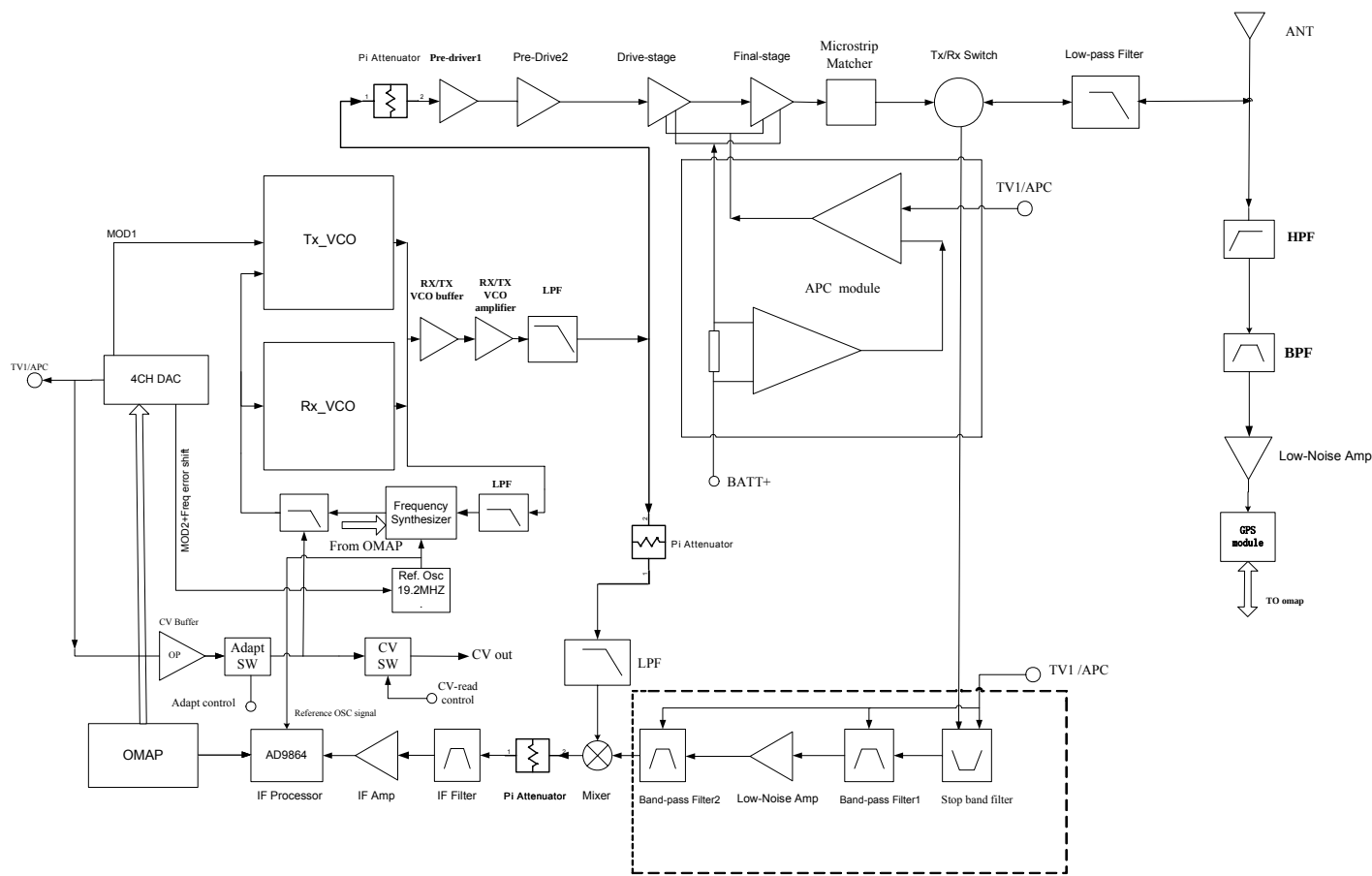


PD78X/PD78XG/HD785/HD785G PCB View (Keyboard)
Bottom Layer



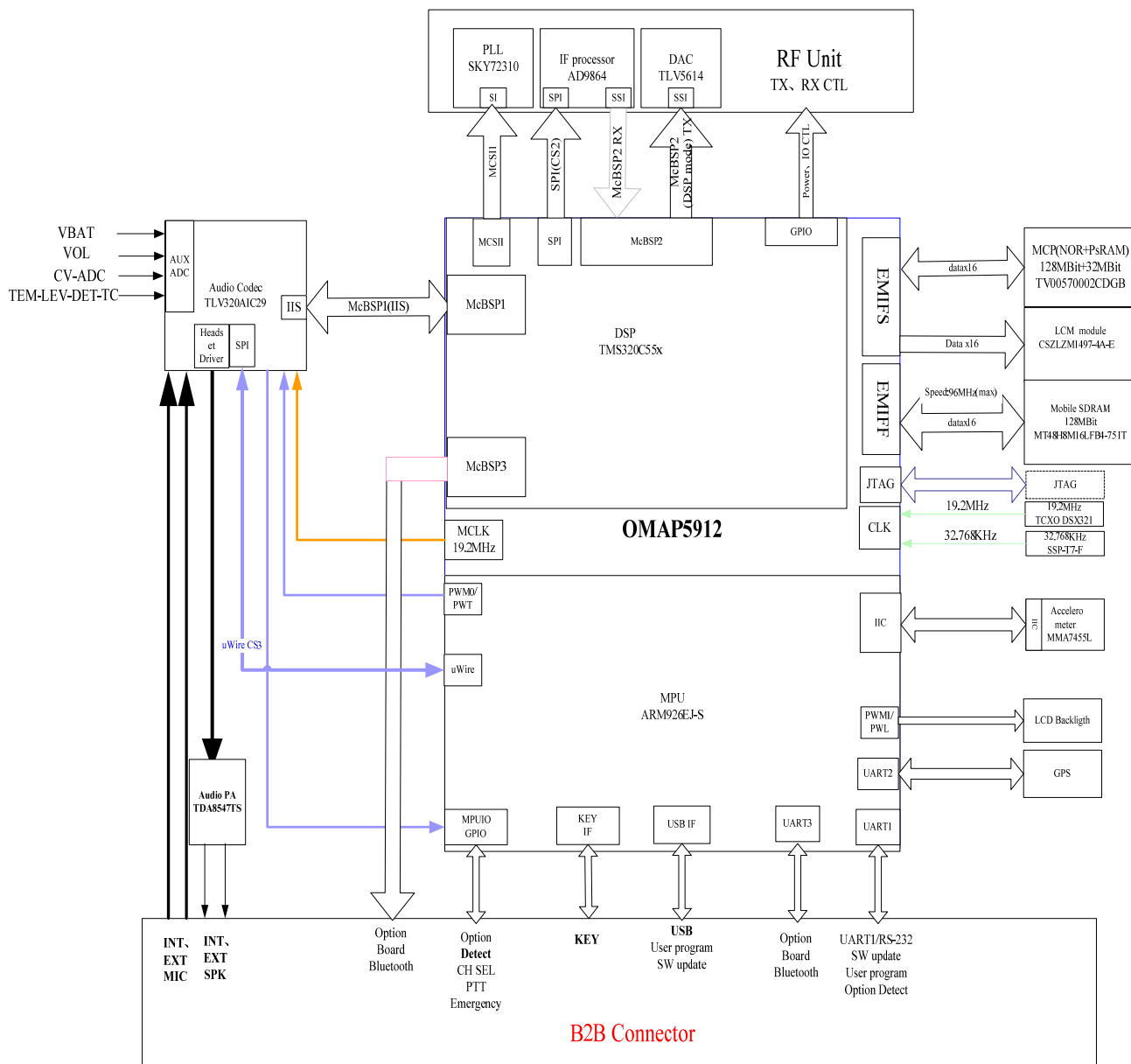
7.5 Block Diagram

PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G
Block Diagram (RF Section)



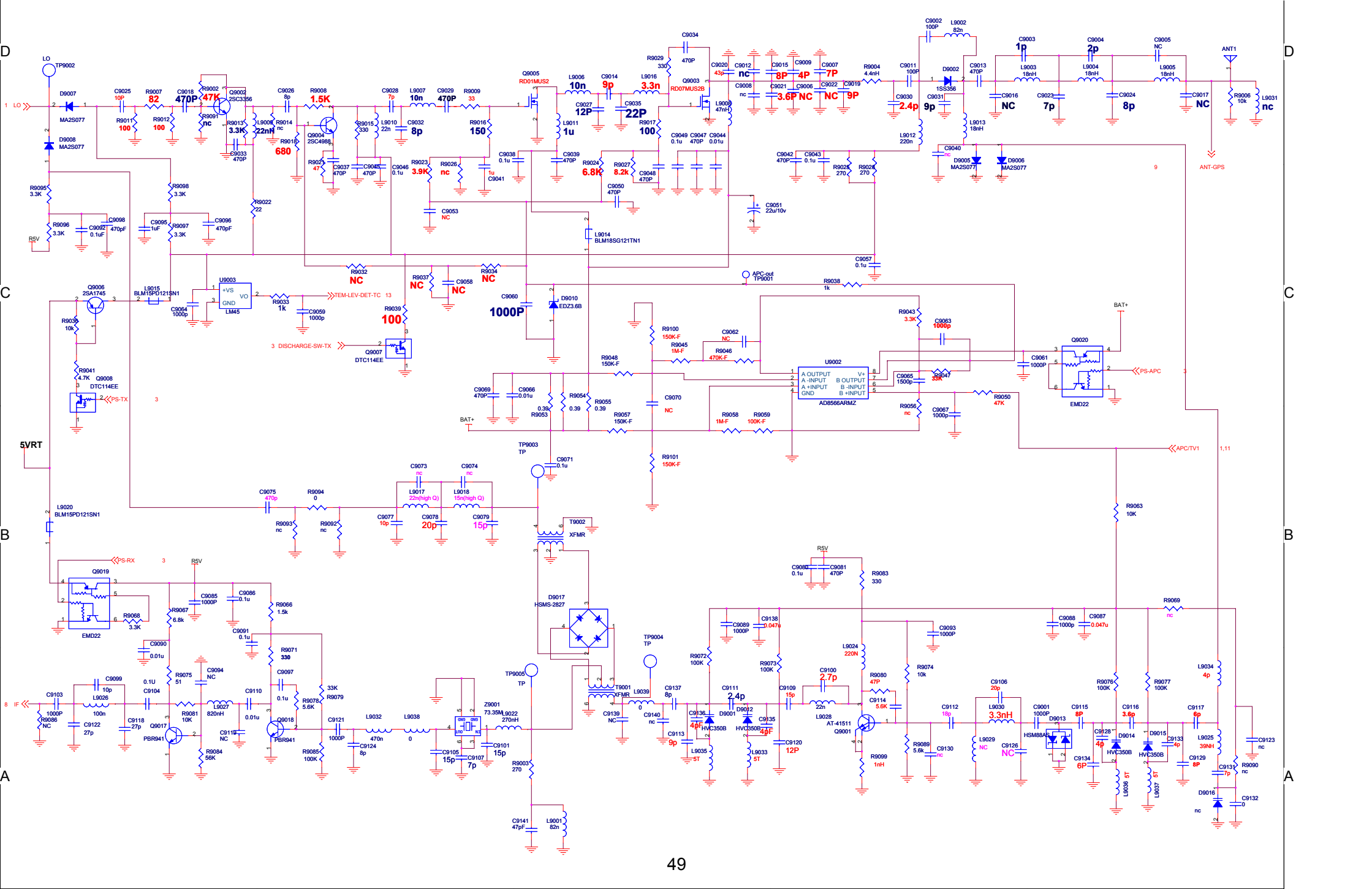
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G

Block Diagram (Baseband Section)

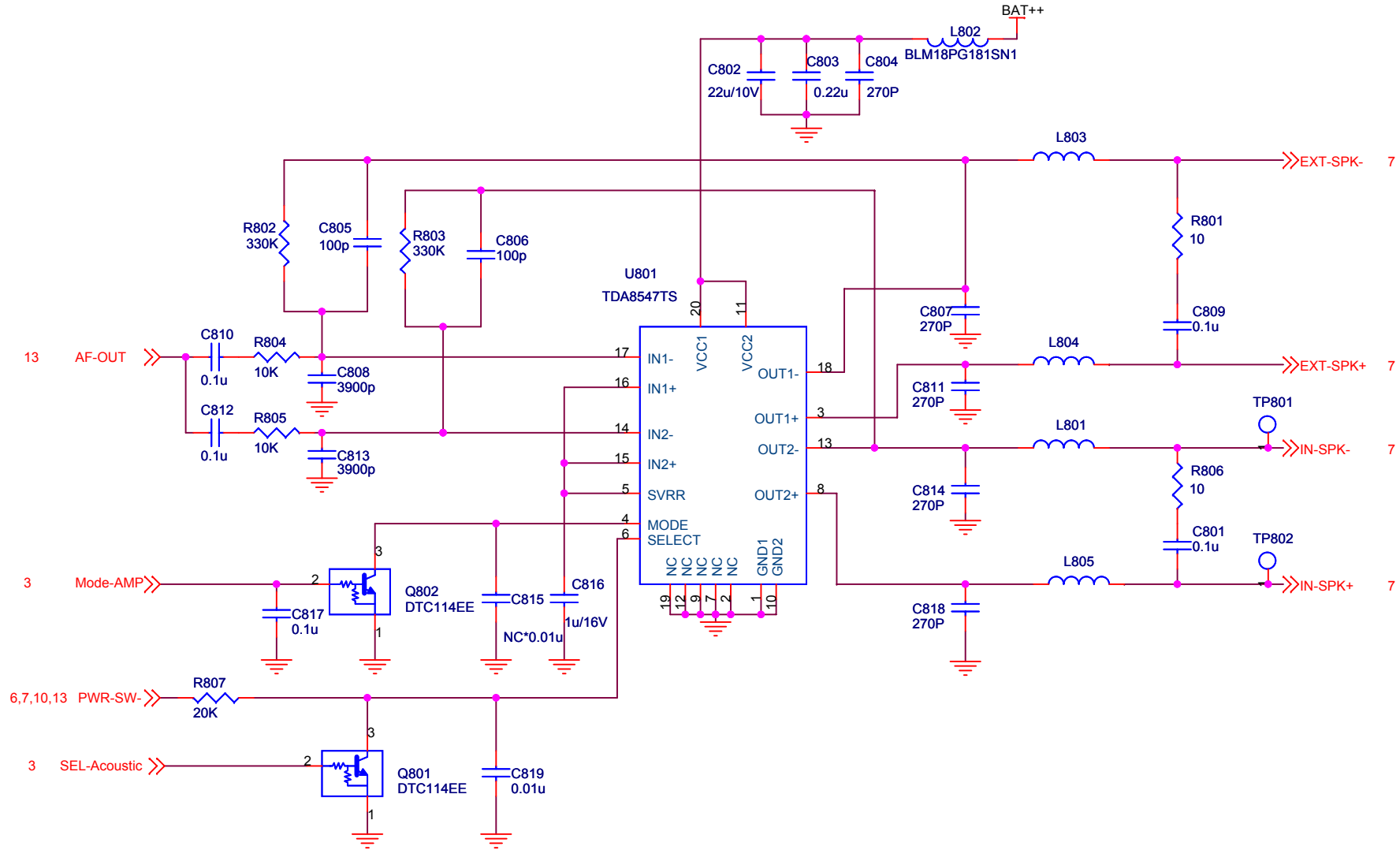


7.6 Schematic Diagram

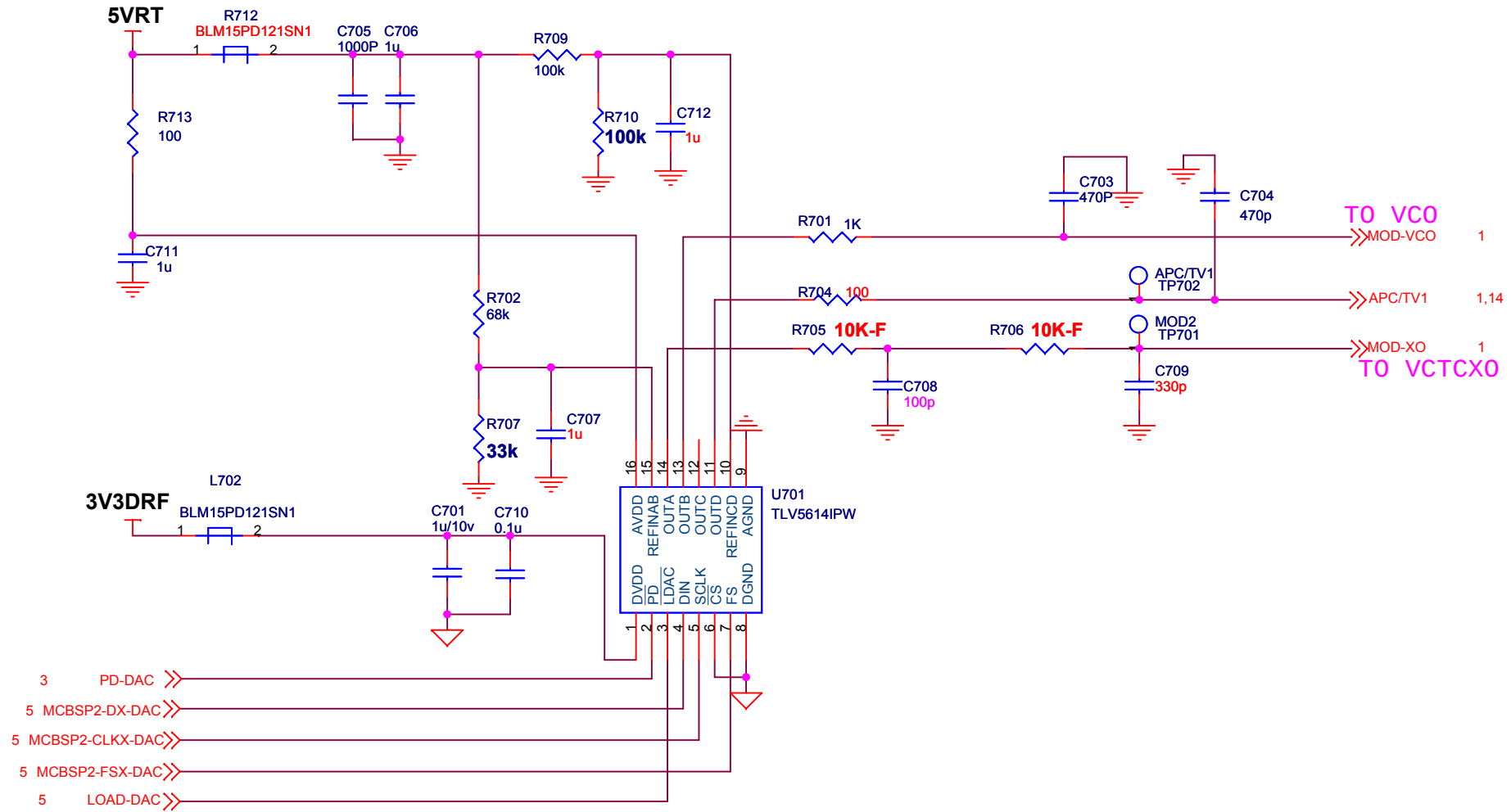
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Transmitter/Receiver)



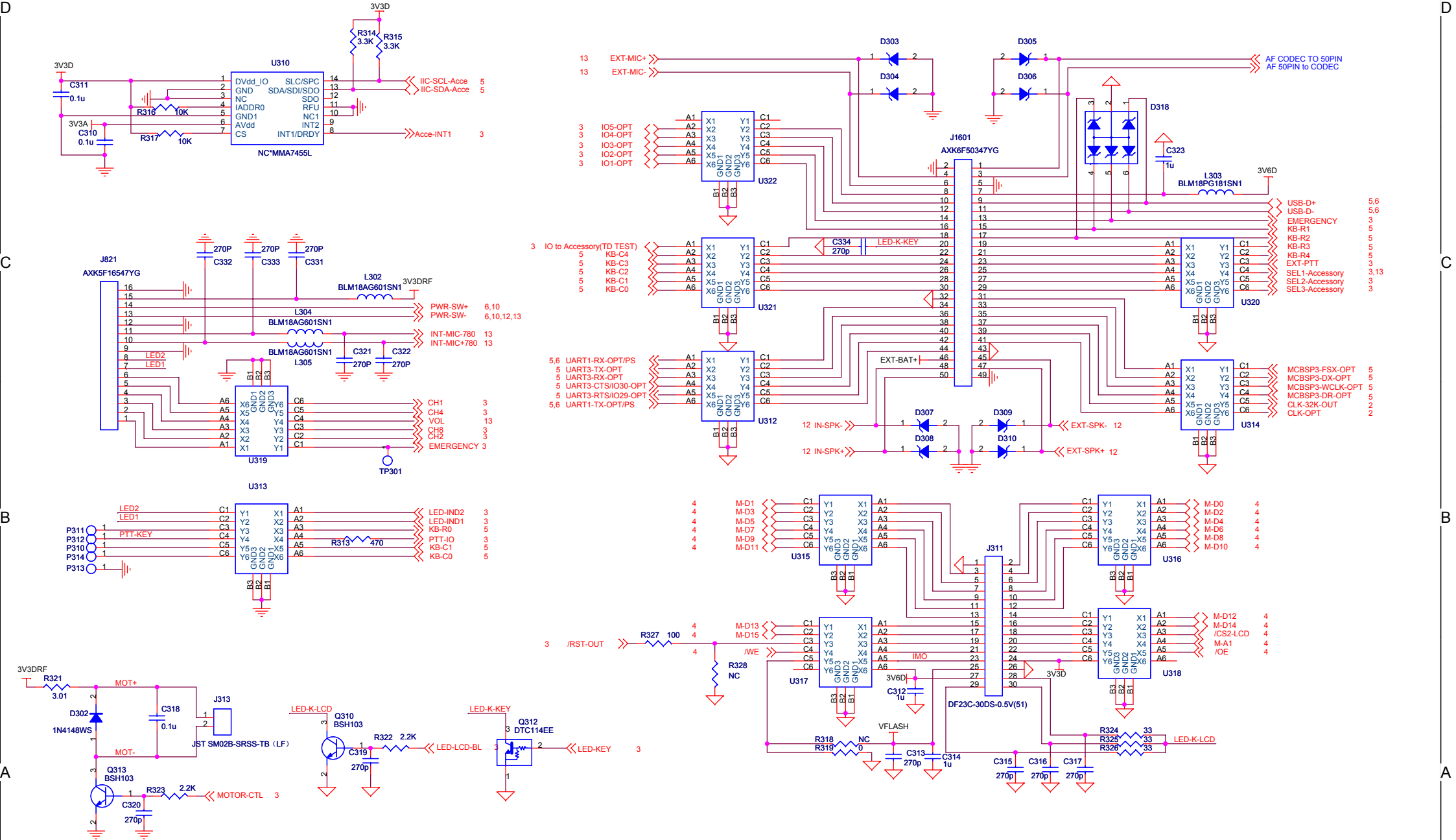
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Audio Amplifier)



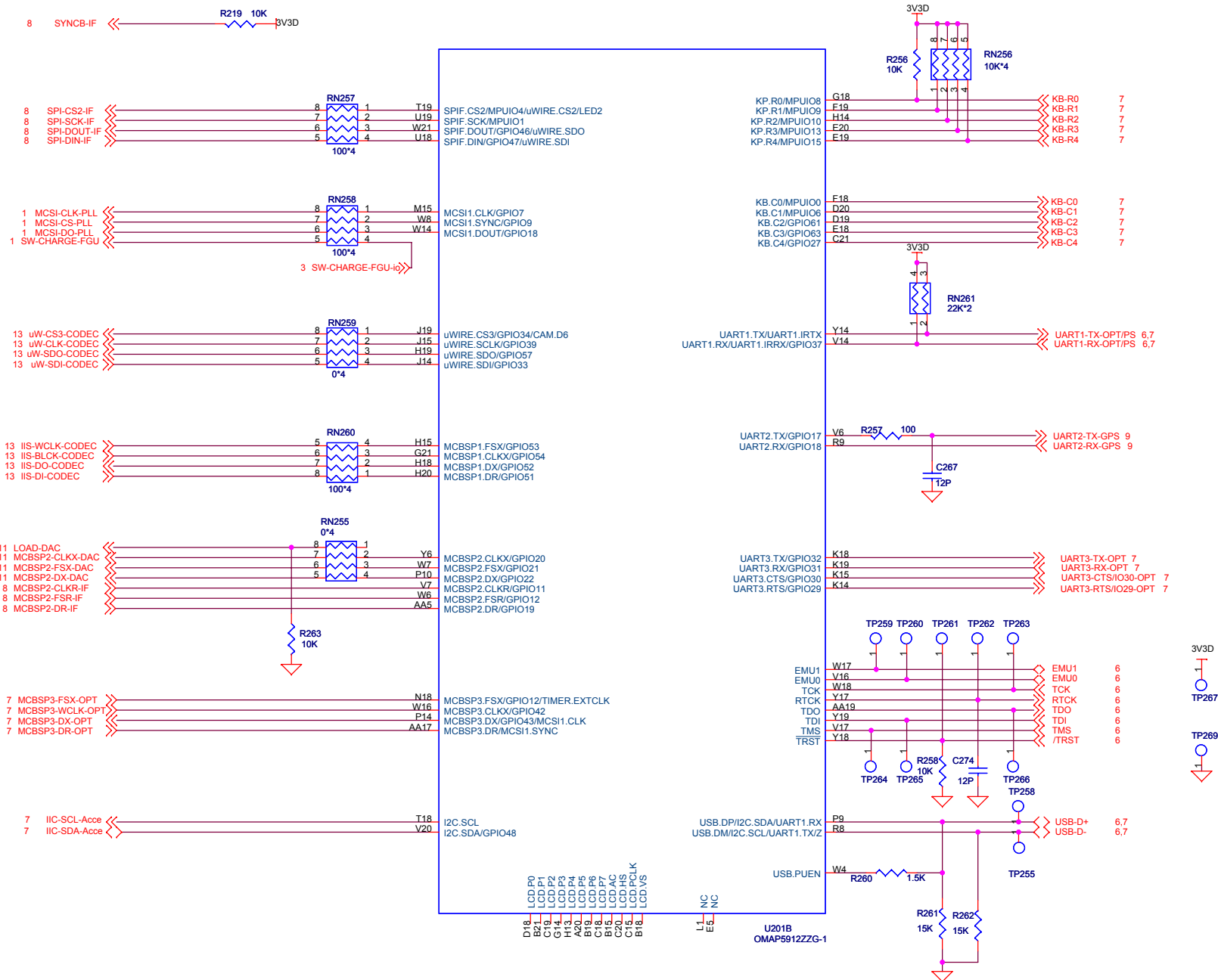
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (DAC)



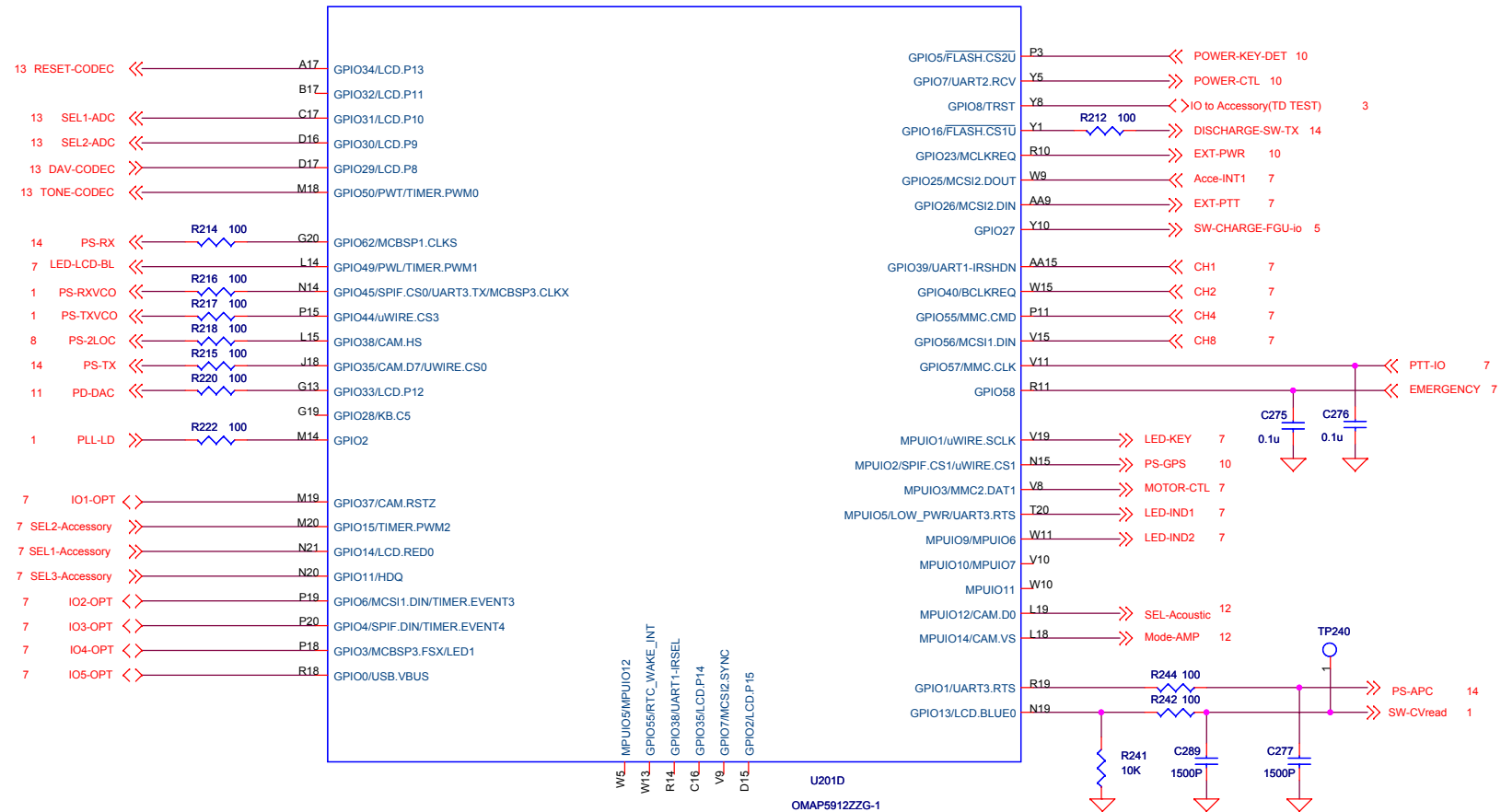
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Internal Interface)



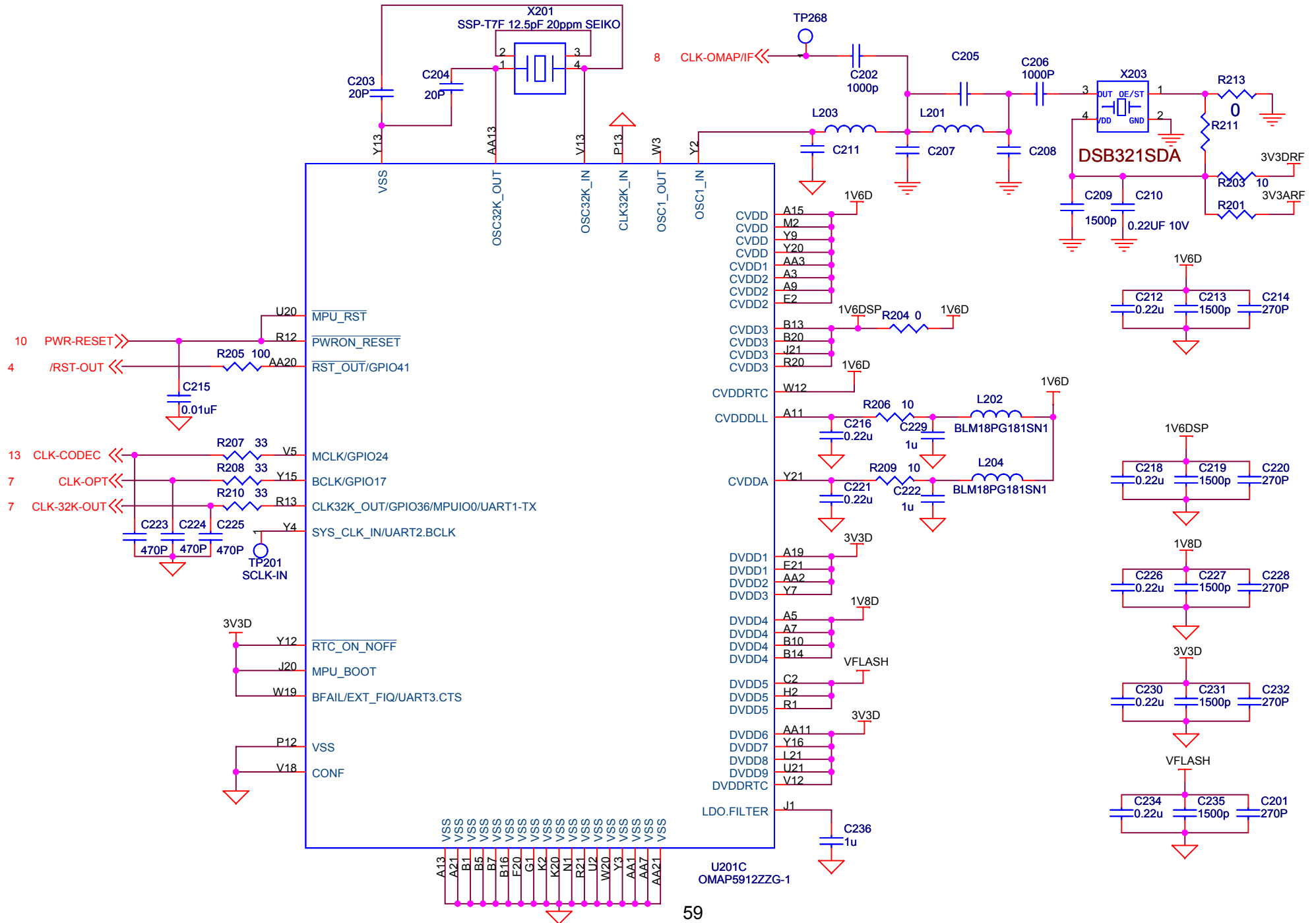
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP SI)



PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP IO)



PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP CORE)



PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (FGU)

D

C

B

A

D

C

B

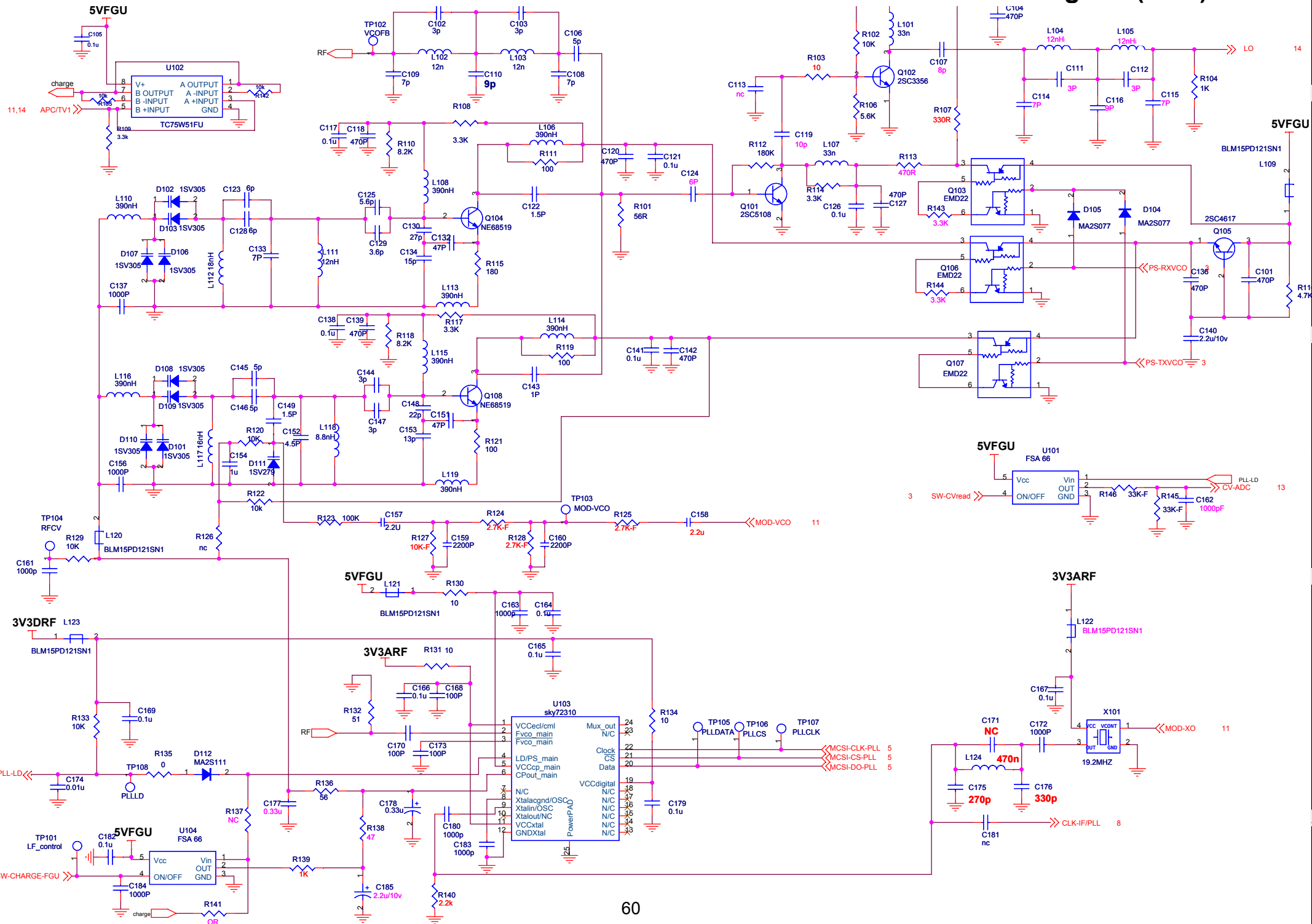
A

3

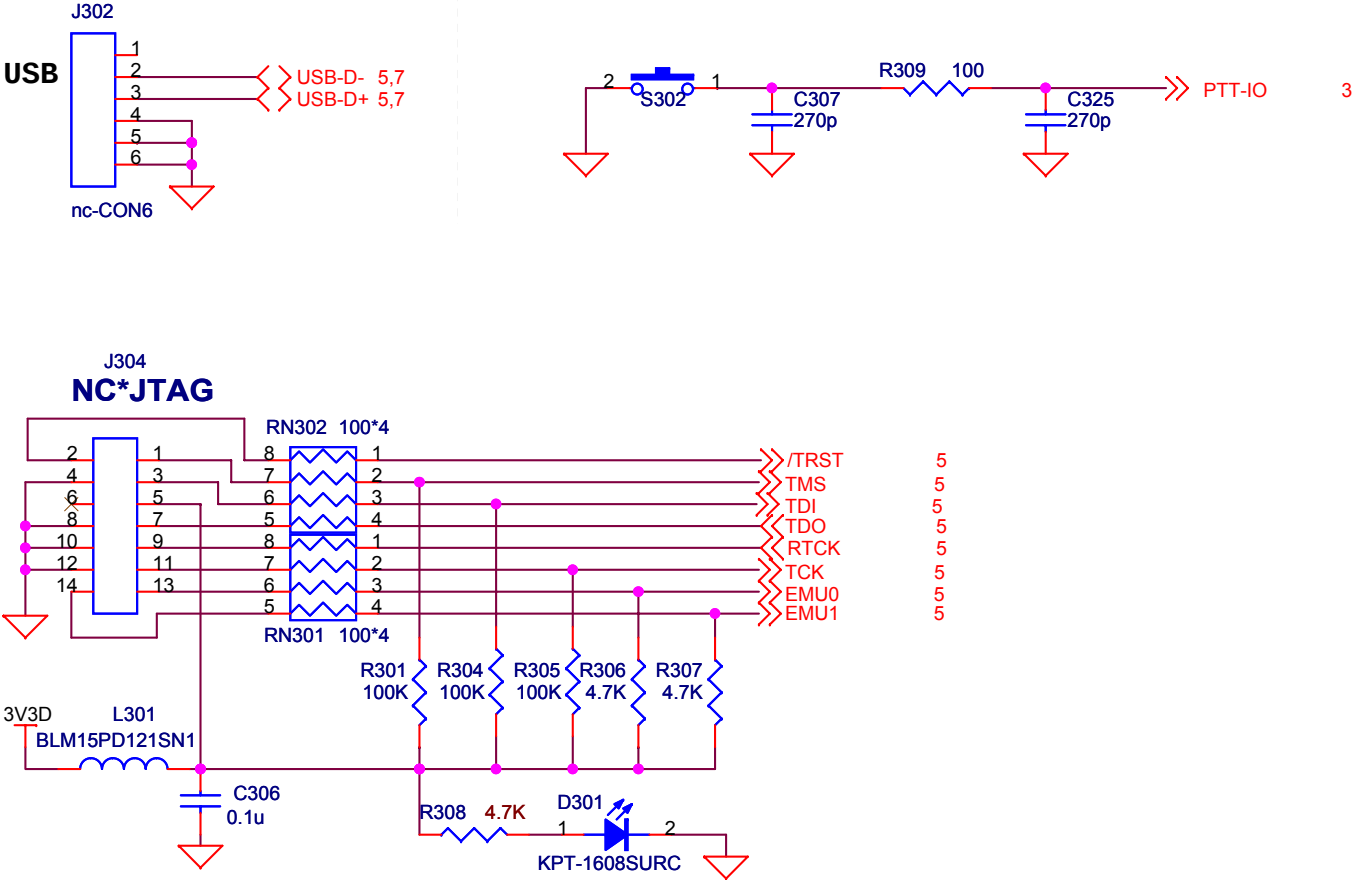
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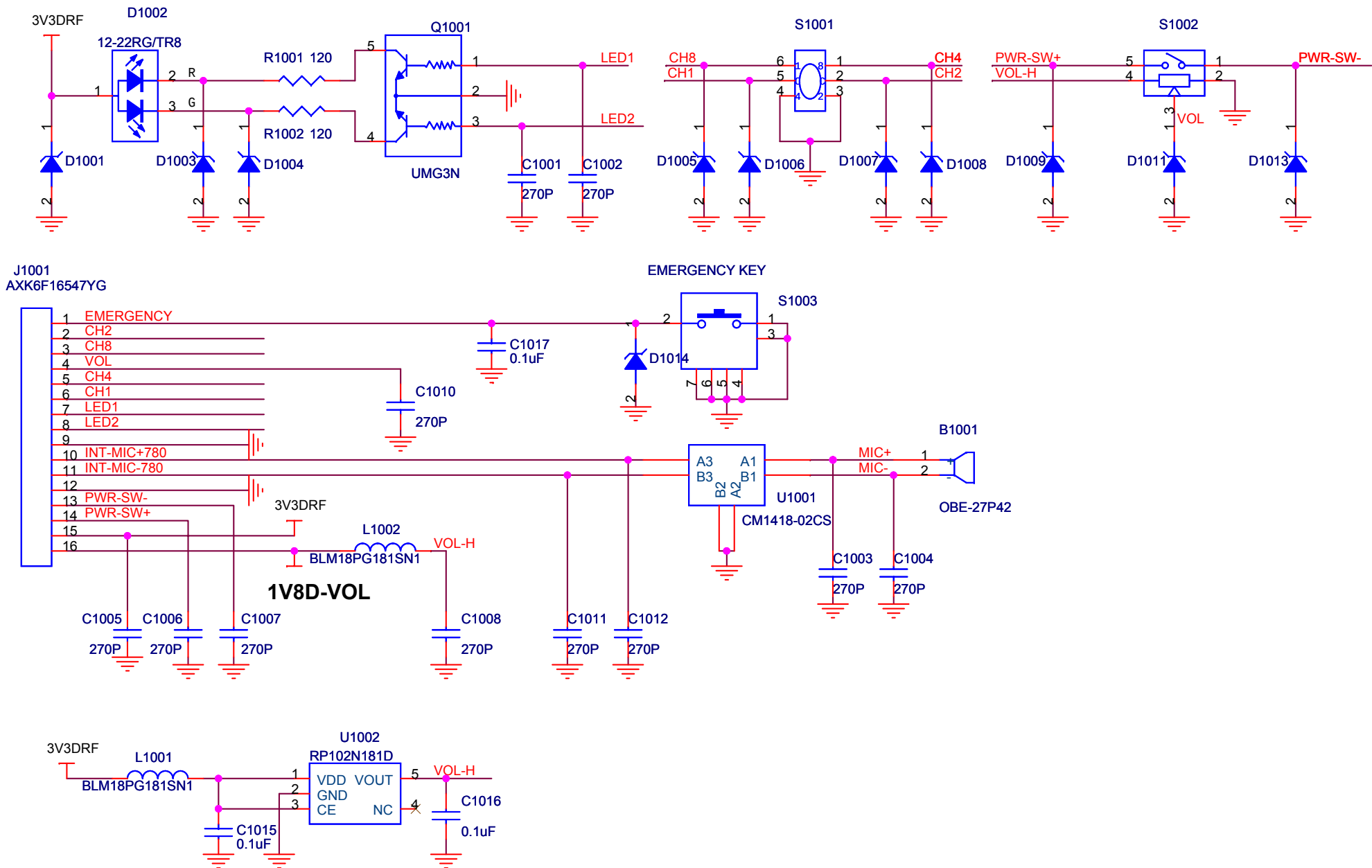
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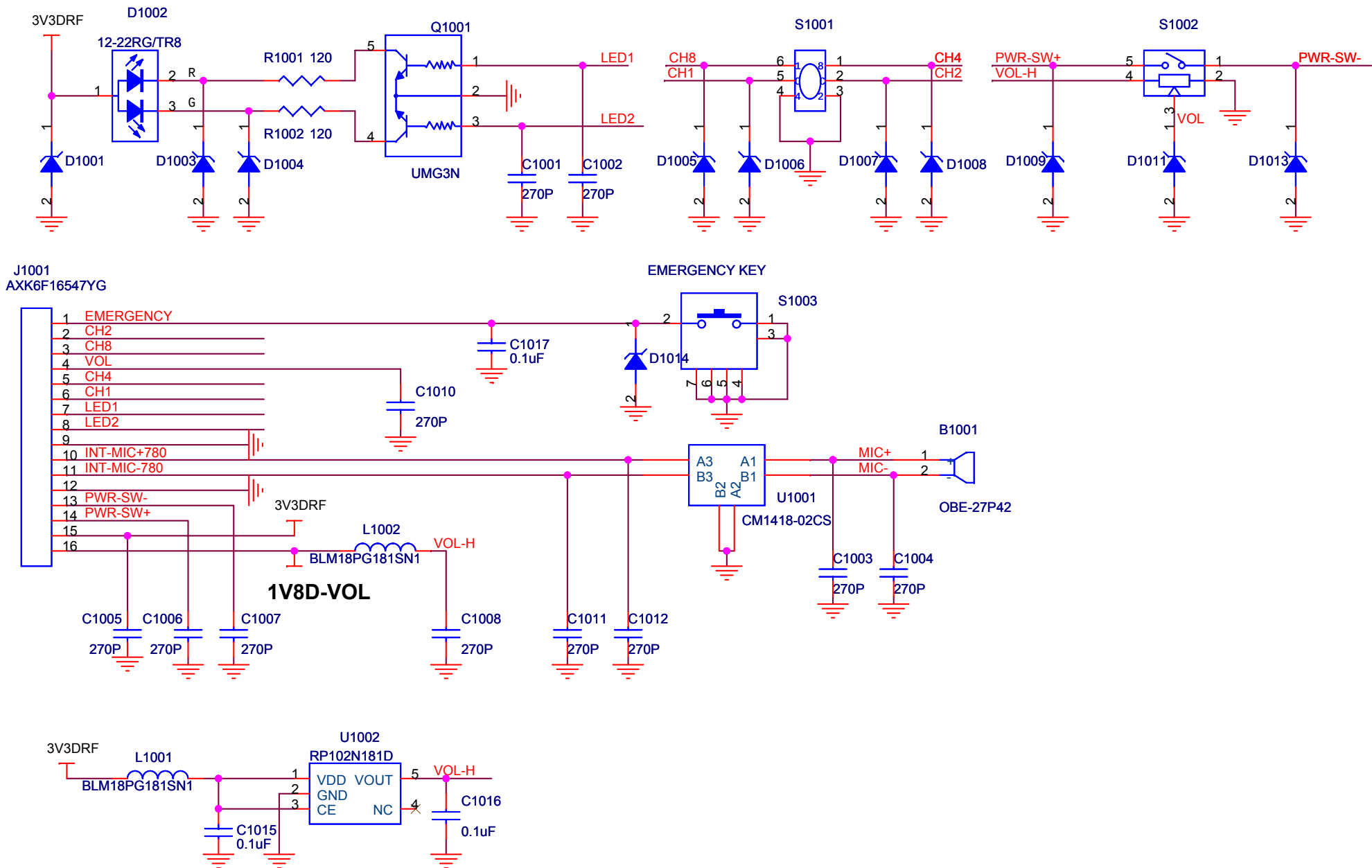
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (External Interface)



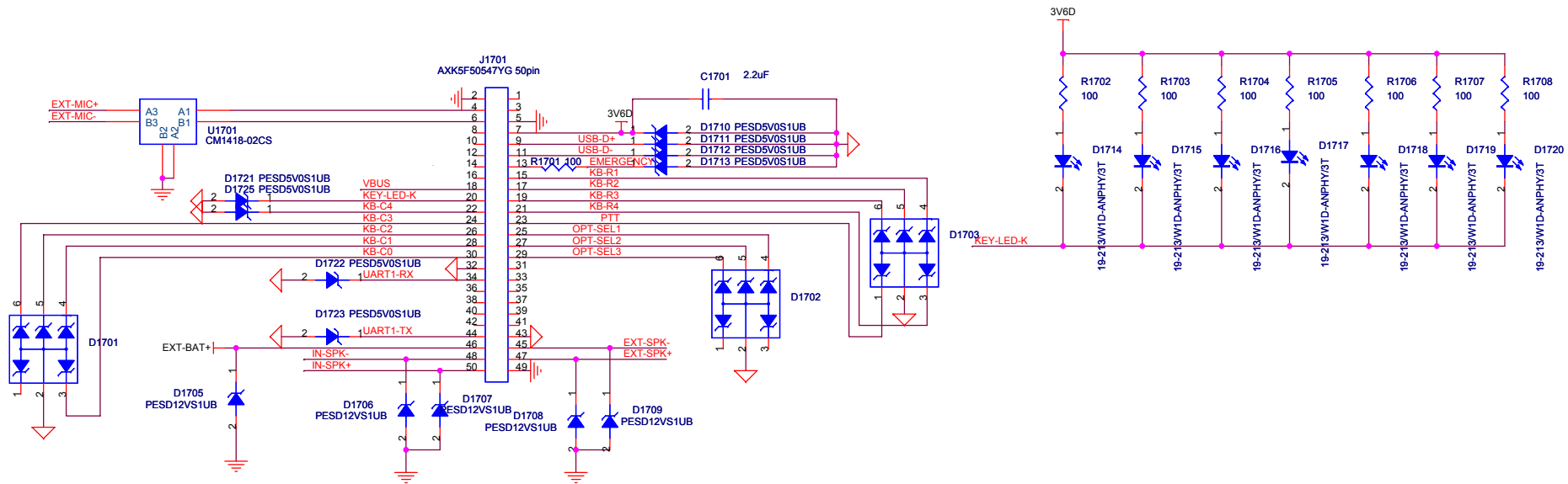
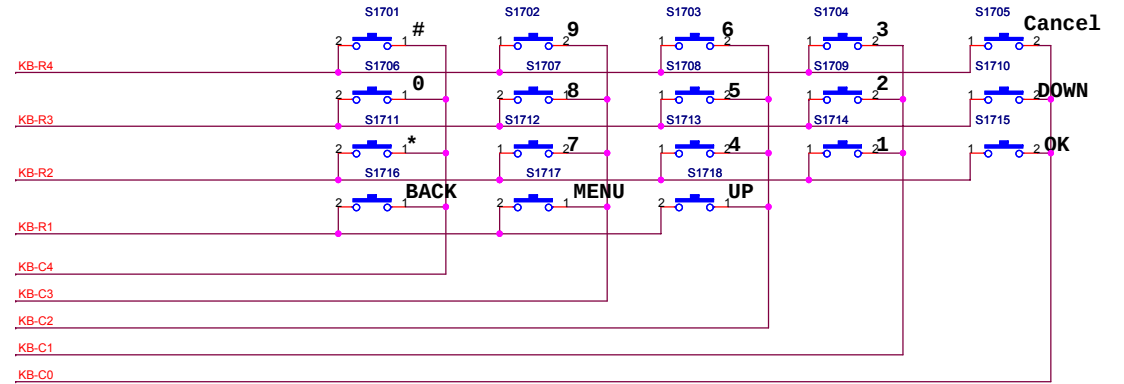
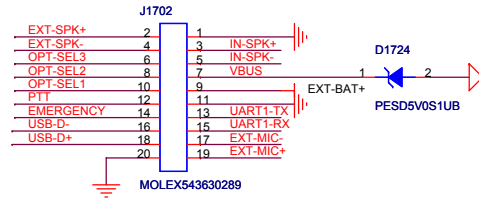
PD70X/PD70XG/HD705/HD705G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Keyboard)



7.7 Parts List

PD70X/ PD70XG/ PD78X/ PD78XG/ HD705/ HD705G/ HD785/ HD785G Main Board

No.	Ref. No.	Print No.	Part No.	Description
1	ANT1	T2B	6201847000000	Antenna spring plate
2	C101	B1F	3101054710010	470PF
3	C102	B2H	3101050300000	3PF
4	C103	B2H	3101050300000	3PF
5	C104	T1G	3101054710010	470PF
6	C105	B1I	3101051040060	0.1UF
7	C106	B2G	3101050500010	5PF
8	C107	T1F	3101050800000	8PF
9	C108	B2H	3101050700010	7PF
10	C109	B2H	3101050700010	7PF
11	C110	B2H	3101050900000	9PF
12	C111	T1F	3101050300000	3PF
13	C112	T1F	3101050300000	3PF
14	C114	T1F	3101050700010	7PF
15	C115	T2F	3101050700010	7PF
16	C116	T1F	3101050900000	9PF
17	C117	T1G	3101051040060	0.1UF
18	C118	T1G	3101054710010	470PF
19	C119	T1G	3101051000020	10PF

No.	Ref. No.	Print No.	Part No.	Description
20	C120	T1G	3101054710010	470PF
21	C121	T1G	3101051040060	0.1UF
22	C122	T1G	3101061590010	1.5PF
23	C123	T1H	3101060600010	6PF
24	C124	T2G	3101050600010	6PF
25	C125	T1H	3101065690000	5.6PF
26	C126	T2G	3101051040060	0.1UF
27	C127	T2G	3101054710010	470PF
28	C128	T1H	3101060600010	6PF
29	C129	T1H	3101063690000	3.6PF
30	C130	T1H	3101062700010	27PF
31	C132	T1G	3101054700010	47PF
32	C133	T1H	3101060700020	7PF
33	C134	T2H	3101061500010	15PF
34	C136	B1F	3101054710010	470PF
35	C137	T2H	3101051020010	1000PF
36	C138	B1G	3101051040060	0.1UF
37	C139	B1G	3101054710010	470PF
38	C140	B1F	3101062250000	2.2UF
39	C141	B2G	3101051040060	0.1UF
40	C142	B2G	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
41	C143	B2G	3101060100010	1PF
42	C144	B1G	3101060300010	3PF
43	C145	B1H	3101060500010	5PF
44	C146	B1H	3101060500010	5PF
45	C147	B1G	3101060300010	3PF
46	C148	B1G	3101062200010	22PF
47	C149	B1H	3101061590010	1.5PF
48	C151	B1G	3101054700010	47PF
49	C152	B1H	3101064590010	4.5PF
50	C153	B1G	3101061300000	13PF
51	C154	B1H	3101051050000	1UF
52	C156	B1H	3101051020010	1000PF
53	C157	B1H	3101062250000	2.2UF
54	C158	B1H	3101062250000	2.2UF
55	C159	B1H	3101052220010	2200PF
56	C160	B1H	3101052220010	2200PF
57	C161	B1H	3101051020010	1000PF
58	C162	B1I	3101051020010	1000PF
59	C163	T1H	3101051020010	1000PF
60	C164	T1H	3101051040060	0.1UF
61	C165	B1I	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
62	C166	T2H	3101051040060	0.1UF
63	C167	T2I	3101051040060	0.1UF
64	C168	T2H	3101051010030	100PF
65	C169	B1I	3101051040060	0.1UF
66	C170	T1H	3101051010030	100PF
67	C172	T1I	3101051020010	1000PF
68	C173	T1H	3101051010030	100PF
69	C174	B1I	3101051030020	0.01UF
70	C175	T1I	3101052710000	270PF
71	C176	T1I	3101053310030	330PF
72	C177	T1H	3101073340000	0.33UF
73	C178	T1I	3101073340010	0.33UF
74	C179	T2I	3101051040060	0.1UF
75	C180	T1I	3101051020010	1000PF
76	C182	B1I	3101051040060	0.1UF
77	C183	T1I	3101051020010	1000PF
78	C184	B1I	3101051020010	1000PF
79	C185	T1I	3104072250060	2.2UF
80	C201	B4H	3101052700000	27PF
81	C202	B3H	3101051020010	1000PF
82	C203	B5J	3101052000020	20PF

No.	Ref. No.	Print No.	Part No.	Description
83	C204	B5J	3101052000020	20PF
84	C206	B3H	3101051020010	1000PF
85	C207	B3H	3101052710000	270PF
86	C208	B3H	3101053310030	330PF
87	C209	B3H	3101051520000	1500PF
88	C210	B3H	3101062240000	0.22UF
89	C212	B5J	3101052240010	0.22UF
90	C213	B5K	3101051520000	1500PF
91	C214	B3I	3101052710000	270PF
92	C215	T5J	3101051030020	0.01UF
93	C216	B3J	3101052240010	0.22UF
94	C218	B3J	3101052240010	0.22UF
95	C219	B3J	3101051520000	1500PF
96	C220	B4K	3101052710000	270PF
97	C221	B4K	3101052240010	0.22UF
98	C222	B4K	3101051050000	1UF
99	C223	B5J	3101054710010	470PF
100	C224	B5J	3101054710010	470PF
101	C225	B4K	3101054710010	470PF
102	C226	T3J	3101052240010	0.22UF
103	C227	T3J	3101051520000	1500PF

No.	Ref. No.	Print No.	Part No.	Description
104	C228	T3J	3101052710000	270PF
105	C229	B3J	3101051050000	1UF
106	C230	T4J	3101052240010	0.22UF
107	C231	T4J	3101051520000	1500PF
108	C232	T4J	3101052710000	270PF
109	C234	B4H	3101052240010	0.22UF
110	C235	B3I	3101051520000	1500PF
111	C236	B4I	3101051050000	1UF
112	C242	B4H	3101052230000	0.022UF
113	C243	B3I	3101052710000	270PF
114	C244	B3I	3101051520000	1500PF
115	C245	B2I	3101052230000	0.022UF
116	C246	B2I	3101052240010	0.22UF
117	C247	B3I	3101051050000	1UF
118	C251	B5I	3101051030020	0.01UF
119	C252	B4I	3101051020010	1000PF
120	C254	B4H	3101051050000	1UF
121	C267	B4E	3101051200020	12PF
122	C274	B5J	3101051200020	12PF
123	C275	T4J	3101051520000	1500PF
124	C276	T4J	3101051520000	1500PF

No.	Ref. No.	Print No.	Part No.	Description
125	C277	B2J	3101051520000	1500PF
126	C280	B3F	3101051010030	100PF
127	C281	B3F	3101051010030	100PF
128	C282	B3F	3101052710000	270PF
129	C283	B4F	3101052710000	270PF
130	C284	B4G	3101051010030	100PF
131	C286	T1K	3101052710000	270PF
132	C287	B2I	3101052710000	270PF
133	C288	B4F	3101051010030	100PF
134	C289	B2J	3101051520000	1500PF
135	C310	B2K	3101051040060	0.1UF
136	C311	B1K	3101051040060	0.1UF
137	C312	B4G	3101051050000	1UF
138	C313	B4I	3101052710000	270PF
139	C314	B4G	3101051050000	1UF
140	C315	B4G	3101052710000	270PF
141	C316	B4F	3101052710000	270PF
142	C317	B4F	3101052710000	270PF
143	C318	B4C	3101051040060	0.1UF
144	C319	B4G	3101052710000	270PF
145	C320	B4C	3101052710000	270PF

No.	Ref. No.	Print No.	Part No.	Description
146	C321	B4D	3101052710000	270PF
147	C322	B4D	3101052710000	270PF
148	C323	B2K	3101051050000	1UF
149	C331	B4C	3101052710000	270PF
150	C332	B4D	3101052710000	270PF
151	C333	B4D	3101052710000	270PF
152	C334	B3L	3101052710000	270PF
153	C420	B2H	3101051200020	12PF
154	C422	T2G	3101051040060	0.1UF
155	C423	T2F	3101051050000	1UF
156	C425	T3G	3101051800010	18PF
157	C426	T3G	3101051030020	0.01UF
158	C427	T2H	3101052210010	220PF
159	C428	T2H	3101051010030	100PF
160	C429	T2G	3101051010030	100PF
161	C430	T2G	3101051040060	0.1UF
162	C431	T2H	3101052220010	2200PF
163	C432	T3F	3101052200010	22PF
164	C433	T2H	3101051040060	0.1UF
165	C434	T2H	3101051040060	0.1UF
166	C435	T3H	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
167	C436	T2H	3101051030020	0.01UF
168	C437	T3F	3101065620010	5600PF
169	C438	T2H	3101051010030	100PF
170	C439	T2H	3101051010030	100PF
171	C440	T3H	3101051030020	0.01UF
172	C441	T3H	3101051040060	0.1UF
173	C442	T3H	3101061030010	0.01UF
174	C443	T3H	3101063900000	39PF
175	C444	T2F	3101054710010	470PF
176	C445	T3G	3101051040060	0.1UF
177	C446	T3G	3101051040060	0.1UF
178	C447	T3G	3101051030020	0.01UF
179	C448	T3G	3101053300000	33PF
180	C449	T3G	3101051030020	0.01UF
181	C450	T3G	3101061230000	0.012UF
182	C452	T3H	3101060700020	7PF
183	C453	T3G	3101051030020	0.01UF
184	C454	T3H	3101051030020	0.01UF
185	C455	T3I	3101063320000	3300PF
186	C456	T3G	3101063690000	3.6PF
187	C457	B2H	3101051030020	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
188	C458	T3G	3101061800000	18PF
189	C459	T2F	3101054710010	470PF
190	C460	T3F	3101063000010	30PF
191	C461	T3F	3101063300000	33PF
192	C462	T3F	3101051040060	0.1UF
193	C463	T3G	3101072240000	0.22UF
194	C464	T2F	3101051040060	0.1UF
195	C465	T2G	3101051040060	0.1UF
196	C466	T3H	3101051040060	0.1UF
197	C467	T2F	3101062250000	2.2UF
198	C468	T3I	3104076840020	0.68UF
199	C469	T4I	3101052710000	270PF
200	C470	T4I	3101052710000	270PF
201	C471	T4I	3101052710000	270PF
202	C472	B2H	3101062250000	2.2UF
203	C512	B4E	3101054700010	47PF
204	C513	B2C	3101055600000	56PF
205	C514	B3C	3101051210000	120PF
206	C515	B2C	3101051050000	1UF
207	C516	B3C	3101051590070	1.5PF
208	C517	B3C	3101051800010	18PF

No.	Ref. No.	Print No.	Part No.	Description
209	C518	B2C	3101051590000	1.5PF
210	C519	B2C	3199050758000	0.75PF
211	C520	B2C	3101050100030	1PF
212	C521	B3C	3101051210000	120PF
213	C522	B3C	3101051040060	0.1UF
214	C523	B2C	3101051040060	0.1UF
215	C524	B2C	3101055600000	56PF
216	C525	B2C	3101051040060	0.1UF
217	C526	B2C	3101051050000	1UF
218	C527	B2C	3101050200010	2PF
219	C601	T3K	3101062250000	2.2UF
220	C602	B3E	3101051010030	100PF
221	C603	/	NC	NC
222	C604	B2F	3101051040060	0.1UF
223	C605	B2F	3101061050020	1UF
224	C606	B2F	3101062250000	2.2UF
225	C607	B2F	3101051040060	0.1UF
226	C608	B1J	3101051040060	0.1UF
227	C609	B1J	3101061050020	1UF
228	C610	B1J	3101062250000	2.2UF
229	C611	B1J	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
230	C612	B1J	3101051030020	0.01UF
231	C614	B2E	3101055690020	5.6PF
232	C615	B2E	3101051040060	0.1UF
233	C616	B2E	3101051010030	100PF
234	C617	B3E	3101051040060	0.1UF
235	C618	B3F	3101051040060	0.1UF
236	C619	T4G	3101061030010	0.01UF
237	C620	B2E	3101051010030	100PF
238	C621	/	NC	NC
239	C622	B2E	3101051040060	0.1UF
240	C623	B2E	3101061050020	1UF
241	C624	B2E	3101062250000	2.2UF
242	C625	B2E	3101051040060	0.1UF
243	C626	B2F	3101051040060	0.1UF
244	C627	T5G	3110081040000	Capacitor
245	C628	T4F	3101062240000	0.22UF
246	C630	T5F	3101051040060	0.1UF
247	C635	T3J	3101051040060	0.1UF
248	C636	T4H	3110071030000	Capacitor
249	C637	T4G	3110994760000	47uF
250	C638	T4G	3101051030020	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
251	C639	T4J	3101051040060	0.1UF
252	C640	T4J	3101062240000	0.22UF
253	C641	B3E	3101062250000	2.2UF
254	C642	B3E	3101051040060	0.1UF
255	C644	T4G	3101052000020	20PF
256	C645	T4G	3101052210010	220PF
257	C646	T3J	3110061050000	1uF
258	C647	T2I	3101051040060	0.1UF
259	C648	T2I	3101061050020	1UF
260	C649	T3J	3101062250000	2.2UF
261	C650	T3J	3101051040060	0.1UF
262	C652	T5K	3101052710000	270PF
263	C654	T5H	3110081040000	Capacitor
264	C655	T4H	3101062240000	0.22UF
265	C656	T2J	3101051040060	0.1UF
266	C657	T3I	3110061050000	1uF
267	C658	T5H	3101051040060	0.1UF
268	C660	T3I	3101062250000	2.2UF
269	C661	T4I	3110071030000	Capacitor
270	C662	T3I	3101051040060	0.1UF
271	C665	T4I	3110994760000	47uF

No.	Ref. No.	Print No.	Part No.	Description
272	C666	T4I	3101051030020	0.01UF
273	C667	B1K	3110061050000	1uF
274	C668	B2J	3101051040060	0.1UF
275	C669	B1K	3101061050020	1UF
276	C670	B1J	3101062250000	2.2UF
277	C671	B1J	3101051040060	0.1UF
278	C672	T4I	3101052000020	20PF
279	C674	T4H	3101052210010	220PF
280	C675	T3J	3101061050020	1UF
281	C676	T3J	3101062240000	0.22UF
282	C677	B4E	3101061050020	1UF
283	C678	B4E	3101062240000	0.22UF
284	C679	T4I	3101051040060	0.1UF
285	C680	T4I	3101052710000	270PF
286	C681	T5H	3101052710000	270PF
287	C682	T4H	3101051040060	0.1UF
288	C683	B1K	3101051030020	0.01UF
289	C684	B1K	3101051520000	1500PF
290	C685	B3E	3101052710000	270PF
291	C686	B3E	3101051520000	1500PF
292	C687	T3K	3101051030020	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
293	C688	B1J	3101051040060	0.1UF
294	C701	T1K	3101061050020	1UF
295	C703	T1J	3101054710010	470PF
296	C704	T1J	3101054710010	470PF
297	C705	T1J	3101051020010	1000PF
298	C706	T1J	3101051050000	1UF
299	C707	T1J	3101051050000	1UF
300	C708	T1J	3101051010030	100PF
301	C709	T1J	3101052710000	270PF
302	C710	T1K	3101051040060	0.1UF
303	C711	T1J	3101051050000	1UF
304	C712	T1J	3101051050000	1UF
305	C801	T4L	3101051040060	0.1UF
306	C802	T3K	3101082260020	22UF
307	C803	T3K	3101052240030	220nF
308	C804	T3K	3101052710000	270PF
309	C805	T3L	3101051010030	100PF
310	C806	T3K	3101051010030	100PF
311	C807	T3L	3101052710000	270PF
312	C808	T3K	3101053920000	3900PF
313	C809	B4K	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
314	C810	T3K	3101051040060	0.1UF
315	C811	T4K	3101052710000	270PF
316	C812	T3K	3101051040060	0.1UF
317	C813	T3K	3101053920000	3900PF
318	C814	T3K	3101052710000	270PF
319	C816	T4K	3101071050020	1UF
320	C817	T4K	3101051040060	0.1UF
321	C818	T4K	3101052710000	270PF
322	C819	T4K	3101051030020	0.01UF
323	C821	T2J	3101052240010	0.22UF
324	C822	T2K	3101051030020	0.01UF
325	C824	T2J	3101052240010	0.22UF
326	C825	T3K	3101062250000	2.2UF
327	C826	T3K	3101051030020	0.01UF
328	C827	T2K	3101051030020	0.01UF
329	C828	T2K	3101062250000	2.2UF
330	C829	T3K	3101052710000	270PF
331	C830	T3K	3101051010030	100PF
332	C831	T2K	3101051050000	1UF
333	C832	T3L	3101051050000	1UF
334	C833	T3K	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
335	C834	B2K	3101051050000	1UF
336	C835	T3L	3101052710000	270PF
337	C836	B2K	3101051040060	0.1UF
338	C837	B2L	3101051030020	0.01UF
339	C838	T2K	3101052710000	270PF
340	C839	T2L	3101051040060	0.1UF
341	C840	B2K	3101051050000	1UF
342	C841	T2K	3101051520000	1500PF
343	C842	T3L	3101051010030	100PF
344	C843	T2L	3101051040060	0.1UF
345	C845	T3L	3101052710000	270PF
346	C846	B2K	3101052710000	270PF
347	C847	T2K	3101051050000	1UF
348	C848	T2L	3101051010030	100PF
349	C849	B3K	3101052710000	270PF
350	C850	T2K	3101051040060	0.1UF
351	C851	T2L	3101052710000	270PF
352	C852	T2L	3101051040060	0.1UF
353	C853	T2L	3101052710000	270PF
354	C856	B3L	3101052710000	270PF
355	C857	B3L	3101052710000	270PF

No.	Ref. No.	Print No.	Part No.	Description
356	C858	B2K	3101051520000	1500PF
357	C9001	T4C	3101051020010	1000PF
358	C9002	T3C	3101051010030	100PF
359	C9003	B3B	3101060100010	1PF
360	C9004	B2B	3101060200010	2PF
361	C9007	T2C	3101060700020	7PF
362	C9009	T3C	3101060400010	4PF
363	C9011	T3C	3101061010010	100PF
364	C9013	B3B	3101064710000	470PF
365	C9014	T1D	3101050900000	9PF
366	C9015	T2C	3101060800010	8PF
367	C9018	T2F	3101054710010	470PF
368	C9019	T2C	3101060900010	9PF
369	C9020	T2C	3101064300000	43PF
370	C9021	T2C	3101063690000	3.6PF
371	C9023	B3B	3101060700020	7PF
372	C9024	B2B	3101060800010	8PF
373	C9025	T2F	3101051000020	10PF
374	C9026	T2E	3101050800000	8PF
375	C9027	T1D	3101061200000	12PF
376	C9028	T1E	3101050700010	7PF

No.	Ref. No.	Print No.	Part No.	Description
377	C9029	T1E	3101054710010	470PF
378	C9030	T3C	3101062490000	2.4PF
379	C9031	T3C	3101060900010	9PF
380	C9032	T1E	3101050800000	8PF
381	C9033	T1F	3101054710010	470PF
382	C9034	T1D	3101054710010	470PF
383	C9035	T1D	3101052200010	22PF
384	C9037	T1E	3101054710010	470PF
385	C9038	T2D	3101051040060	0.1UF
386	C9039	T2D	3101054710010	470PF
387	C9041	T1E	3101051050000	1UF
388	C9042	T3C	3101054710010	470PF
389	C9043	T3C	3101051040060	0.1UF
390	C9044	T1D	3101051030020	0.01UF
391	C9045	T1E	3101054710010	470PF
392	C9046	T1E	3101051040060	0.1UF
393	C9047	T1D	3101054710010	470PF
394	C9048	T1D	3101054710010	470PF
395	C9049	T1D	3101051040060	0.1UF
396	C9050	T1D	3101054710010	470PF
397	C9051	B1D	3104082260060	22UF

No.	Ref. No.	Print No.	Part No.	Description
398	C9057	T3C	3101051040060	0.1UF
399	C9059	B1D	3101051020010	1000PF
400	C9060	B1E	3101061020000	1000PF
401	C9061	B1E	3101051020010	1000PF
402	C9063	B1E	3101051020010	1000PF
403	C9064	B1D	3101051020010	1000PF
404	C9065	B1E	3101051520000	1500PF
405	C9066	B1D	3101051030020	0.01UF
406	C9067	B1E	3101051020010	1000PF
407	C9069	B1D	3101054710010	470PF
408	C9071	B1D	3101051040060	0.1UF
409	C9075	T3F	3101054710010	470PF
410	C9077	T3F	3101051000020	10PF
411	C9078	T3F	3101052000020	20PF
412	C9079	T3E	3101051500020	15PF
413	C9080	T4D	3101051040060	0.1UF
414	C9081	T4D	3101054710010	470PF
415	C9085	B2G	3101051020010	1000PF
416	C9086	B2G	3101051040060	0.1UF
417	C9087	T4C	3101054730000	0.047UF
418	C9088	T4C	3101051020010	1000PF

No.	Ref. No.	Print No.	Part No.	Description
419	C9089	T4D	3101051020010	1000PF
420	C9090	B3G	3101051030020	0.01UF
421	C9091	B3G	3101051040060	0.1UF
422	C9092	T3F	3101051040060	0.1UF
423	C9093	T4D	3101051020010	1000PF
424	C9095	T2F	3101051050000	1UF
425	C9096	T2F	3101054710010	470PF
426	C9097	B3G	3101051040060	0.1UF
427	C9098	T3F	3101054710010	470PF
428	C9099	B3H	3101051000020	10PF
429	C9100	T4D	3101052790000	2.7PF
430	C9101	B3F	3101051500020	15PF
431	C9103	B3H	3101051020010	1000PF
432	C9104	B3G	3101051040060	0.1UF
433	C9105	B2G	3101051500020	15PF
434	C9106	T4C	3101052000020	20PF
435	C9107	B3G	3101050700010	7PF
436	C9109	T4D	3101051500020	15PF
437	C9110	B3G	3101051030020	0.01UF
438	C9111	T4D	3101052490020	2.4PF
439	C9112	T5D	3101061800000	18PF

No.	Ref. No.	Print No.	Part No.	Description
440	C9113	T4E	3101050900000	9PF
441	C9114	T4D	3001055620000	5.6KΩ
442	C9115	T4C	3101050800000	8PF
443	C9116	T4C	3101053690000	3.6PF
444	C9117	T4C	3101050600010	6PF
445	C9118	B3G	3101052700000	27PF
446	C9120	T4D	3101051200020	12PF
447	C9121	B2G	3101051020010	1000PF
448	C9122	B3H	3101052700000	27PF
449	C9124	B2G	3101050800000	8PF
450	C9128	T4C	3101050400010	4PF
451	C9129	T4C	3101050800000	8PF
452	C9131	T4C	3101050700010	7PF
453	C9132	T4C	3001050000000	0Ω
454	C9133	T4C	3101050400010	4PF
455	C9134	T4C	3101050600010	6PF
456	C9135	T4D	3101050400010	4PF
457	C9136	T4E	3101050400010	4PF
458	C9137	T4E	3101050800000	8PF
459	C9138	T4D	3101054730000	0.047UF
460	C9141	T4E	3101054700010	47PF

No.	Ref. No.	Print No.	Part No.	Description
461	D101	B1H	3304010100220	Varactor
462	D102	T1H	3304010100220	Varactor
463	D103	T1H	3304010100220	Varactor
464	D104	B1G	3303020100080	Switching diode
465	D105	B1G	3303020100080	Switching diode
466	D106	T1H	3304010100220	Varactor
467	D107	T1H	3304010100220	Varactor
468	D108	B1H	3304010100220	Varactor
469	D109	B1H	3304010100220	Varactor
470	D110	B1H	3304010100220	Varactor
471	D111	B1H	3304010100890	Varactor
472	D112	B1I	3303020100020	Switching diode
473	D302	B4C	3303990000010	Switching diode
474	D303	B3L	3310040000000	ESD protection diode
475	D304	B3L	3310040000000	ESD protection diode
476	D305	B3K	3399040600000	ESD protection diode
477	D306	B3K	3399040600000	ESD protection diode
478	D307	B4L	3399040600020	ESD protection diode
479	D308	B4L	3399040600020	ESD protection diode
480	D309	B4K	3399040600020	ESD protection diode
481	D310	B4K	3399040600020	ESD protection diode

No.	Ref. No.	Print No.	Part No.	Description
482	D318	B3K	3399040600010	ESD protection diode
483	D401	T3I	3304060300050	Varactor
484	D402	T3G	3304010100220	Varactor
485	D601	B2E	3399990000110	Diode
486	D602	B2E	3399040600020	ESD protection diode
487	D604	B4D	3303030100010	Switching diode
488	D9001	T4D	3304060300050	Varactor
489	D9002	T3C	3303030800040	Switching diode
490	D9005	B3B	3303020100080	Switching diode
491	D9006	B3B	3303020100080	Switching diode
492	D9007	T2F	3303020100080	Switching diode
493	D9008	T2F	3303020100080	Switching diode
494	D9010	B1F	3399990000080	Zener diode
495	D9012	T4D	3304060300050	Varactor
496	D9013	T4C	3399990000260	Rectifier diode
497	D9014	T4C	3304060300050	Varactor
498	D9015	T4C	3304060300050	Varactor
499	D9017	T4F	3301250300000	Schottky barrier diode
500	F601	B3E	4099000000050	Fuse
501	J1601	B3L	5201050100030	Board-to-board connector
502	J311	B4G	5201030000040	Board-to-board connector

No.	Ref. No.	Print No.	Part No.	Description
503	J313	B4B	5202002100200	Board-to-wire connector
504	J601	T3D	5205003100020	Battery connector
505	J821	B4C	5201016000010	Board-to-board connector
506	L101	T1F	3210306330000	33nH
507	L102	B2H	3212106120000	12nH
508	L103	B2H	3212106120000	12nH
509	L104	T1F	3290106120000	12nH
510	L105	T1F	3290106120000	12nH
511	L106	T1G	3210106391000	390nH
512	L107	T2G	3210306330000	33nH
513	L108	T1G	3210106391000	390nH
514	L109	B1G	3221505121010	Bead
515	L110	T1H	3210106391000	390nH
516	L111	T1H	3217107120000	12nH
517	L112	T1H	3217107180010	18nH
518	L113	T2G	3210106391000	390nH
519	L114	B1G	3210106391000	390nH
520	L115	B1G	3210106391000	390nH
521	L116	B1H	3210106391000	390nH
522	L117	B2H	3217107160000	16nH
523	L118	B1H	3217138889000	8.8nH

No.	Ref. No.	Print No.	Part No.	Description
524	L119	B1G	3210106391000	390nH
525	L120	B1H	3221505121010	Bead
526	L121	B1I	3221505121010	Bead
527	L122	T2I	3221505121010	Bead
528	L123	B1I	3221505121010	Bead
529	L124	T1I	3210406471000	470nH
530	L201	B3H	3210406471000	470nH
531	L202	B3J	3221506181000	Bead
532	L203	B5I	3212206471000	470nH
533	L204	B4K	3221506181000	Bead
534	L302	B4C	3221506601000	Bead
535	L303	B2K	3221506181000	Bead
536	L304	B4D	3221506601000	Bead
537	L305	B4D	3221506601000	Bead
538	L401	T2H	3217107103010	10uH
539	L402	B3H	3210406271000	270nH
540	L403	T3G	3221505121010	Bead
541	L404	T2G	3217107103010	10uH
542	L405	T2F	3221505121010	Bead
543	L406	T3G	3217107221010	220nH
544	L407	T3H	3221505121010	Bead

No.	Ref. No.	Print No.	Part No.	Description
545	L408	T2H	3210407472000	4.7uH
546	L409	T3F	3210406471000	470nH
547	L410	B2I	3221506601000	Bead
548	L411	T3H	3213212332000	3.3uH
549	L412	T2H	3221505121010	Bead
550	L413	T3G	3213306682000	6.8uH
551	L501	B2C	3297106339000	3.3nH
552	L502	B3C	3221506601080	Bead
553	L503	B2C	3297106339000	3.3nH
554	L504	B2C	3297106339000	3.3nH
555	L505	B2C	3221506601080	Bead
556	L506	B3C	3210106390000	39nH
557	L507	B3C	3210305180000	18nH
558	L508	B3C	3210305829000	8.2nH
559	L509	B3C	3210305829000	8.2nH
560	L601	B1J	3221506181000	Bead
561	L602	B3E	3221506181000	Bead
562	L603	B2F	3221506181000	Bead
563	L604	B1J	3221506181000	Bead
564	L605	B2E	3221506181000	Bead
565	L606	B2F	3221506181000	Bead

No.	Ref. No.	Print No.	Part No.	Description
566	L607	T4F	3290299220000	Inductor
567	L609	T3K	3221506181000	Bead
568	L610	T5G	3217099153000	15uH
569	L611	B3E	3221506181000	Bead
570	L612	T2I	3221506181000	Bead
571	L613	T4H	3290299220000	Inductor
572	L614	T5I	3217099153000	15uH
573	L615	T3J	3290299220000	Inductor
574	L616	B4E	3290299220000	Inductor
575	L702	B1K	3221505121010	Bead
576	L801	T4L	3221505121010	Bead
577	L802	T3K	3221506181000	Bead
578	L803	T3L	3221505121010	Bead
579	L804	T4L	3221505121010	Bead
580	L805	T4L	3221505121010	Bead
581	L820	T2K	3221506601000	Bead
582	L821	T2J	3221505121010	Bead
583	L822	T2K	3221505121010	Bead
584	L823	T3K	3221506601000	Bead
585	L827	B2L	3221506601000	Bead
586	L828	B2L	3221506601000	Bead

No.	Ref. No.	Print No.	Part No.	Description
587	L9001	T4E	3210106820000	82nH
588	L9002	T3C	3210306820000	82nH
589	L9003	B3B	3233099185900	18.5nH
590	L9004	B2B	3233099185900	18.5nH
591	L9005	B2B	3233099185900	18.5nH
592	L9006	T1D	3215006100010	10nH
593	L9007	T1E	3215006100010	10nH
594	L9008	T1D	3233099470000	47nH
595	L9009	T2F	3210306220000	22nH
596	L9010	T1E	3210306220000	22nH
597	L9011	T1D	3210209102010	1uH
598	L9012	T3C	3210107221000	220nH
599	L9013	B3B	3233099185900	18.5nH
600	L9014	T2D	3221506121000	Bead
601	L9015	B1F	3221505121010	Bead
602	L9016	T1D	3210306339000	3.3nH
603	L9017	T3E	3210106220000	22nH
604	L9018	T3E	3210106150000	15nH
605	L9020	B2F	3221505121010	Bead
606	L9022	B3F	3210406271000	270nH
607	L9024	T4D	3217607221000	220nH

No.	Ref. No.	Print No.	Part No.	Description
608	L9025	T4C	3210106390000	39nH
609	L9026	B3H	3210106101000	100nH
610	L9027	B3G	3213306821000	0.82uH
611	L9028	T4D	3210306220000	22nH
612	L9030	T4C	3210306339000	3.3nH
613	L9032	B2G	3210406471000	470nH
614	L9033	T5D	3237199170000	17nH
615	L9034	T4C	3101060400010	4PF
616	L9035	T4E	3237199170000	17nH
617	L9036	T4C	3237199170000	17nH
618	L9037	T4C	3237199170000	17nH
619	L9038	B2G	3001060000000	0Ω
620	L9039	T4E	3001060000000	0Ω
621	Q101	T2G	3401002000990	NPN transistor
622	Q102	T1G	3408002000000	NPN transistor
623	Q103	B1G	3403999000000	Transistor
624	Q104	T1G	3408002000080	NPN transistor
625	Q105	B1F	3403003000060	NPN transistor
626	Q106	B2G	3403999000000	Transistor
627	Q107	B2G	3403999000000	Transistor
628	Q108	B1G	3408002000080	NPN transistor

No.	Ref. No.	Print No.	Part No.	Description
629	Q310	B4G	3511990000010	N-MOSFET
630	Q312	B4K	3403008000010	Transistor
631	Q313	B4C	3511990000010	N-MOSFET
632	Q401	T2F	3403003000060	NPN transistor
633	Q402	T2G	3499000000150	Transistor
634	Q403	T3F	3408002000000	NPN transistor
635	Q603	B4D	3414001000040	NPN transistor
636	Q604	B4D	3503020000030	N-MOSFET
637	Q605	T5K	3410001000020	PNP transistor
638	Q606	T4K	3401001000490	PNP transistor
639	Q607	T4K	3403008000010	Transistor
640	Q801	T4K	3403008000010	Transistor
641	Q802	T4K	3403008000010	Transistor
642	Q9001	T4D	3418001000010	NPN transistor
643	Q9002	T2E	3408002000000	NPN transistor
644	Q9003	T1C	3504990000040	MOSFET
645	Q9004	T1F	3406001000090	NPN transistor
646	Q9005	T1D	3504990000010	MOSFET
647	Q9006	B1F	3410001000020	PNP transistor
648	Q9007	B1F	3403008000010	Transistor
649	Q9008	B1F	3403008000010	Transistor

No.	Ref. No.	Print No.	Part No.	Description
650	Q9017	B3G	3404006000000	NPN transistor
651	Q9018	B3G	3404006000000	NPN transistor
652	Q9019	B2F	3403999000000	Transistor
653	Q9020	B1E	3403999000000	Transistor
654	R101	T2G	3001055600000	56Ω
655	R102	T1G	3001051030000	10KΩ
656	R103	T1G	3001051000000	10Ω
657	R104	T2F	3001051020010	1KΩ
658	R105	B1I	3001051030000	10KΩ
659	R106	T1G	3001055620000	5.6KΩ
660	R107	B1G	3001053310000	330Ω
661	R108	T1G	3001053320000	3.3KΩ
662	R109	B1I	3001053320000	3.3KΩ
663	R110	T1G	3001058220000	8.2KΩ
664	R111	T1G	3001051010000	100Ω
665	R112	T2G	3001051840000	180KΩ
666	R113	T2G	3001054710000	470Ω
667	R114	T2G	3001053320000	3.3KΩ
668	R115	T1G	3001051810010	180Ω
669	R116	B1F	3001054720000	4.7KΩ
670	R117	B2G	3001053320000	3.3KΩ

No.	Ref. No.	Print No.	Part No.	Description
671	R118	B1G	3001058220000	8.2K Ω
672	R119	B2G	3001051010000	100 Ω
673	R120	B1H	3001051030050	10K Ω
674	R121	B1G	3001051010000	100 Ω
675	R122	B2G	3001051030000	10K Ω
676	R123	B1H	3001051040000	100K Ω
677	R124	B1H	3001052720010	2.7K Ω
678	R125	B1H	3001052720010	2.7K Ω
679	R127	B1H	3001051030050	10K Ω
680	R128	B1H	3001052720010	2.7K Ω
681	R129	B1H	3001051030000	10K Ω
682	R130	B1I	3001051000000	10 Ω
683	R131	T2I	3001051000000	10 Ω
684	R132	B2H	3001055100020	51 Ω
685	R133	B1I	3001051030000	10K Ω
686	R134	T2I	3001051000000	10 Ω
687	R135	B1I	3001050000000	0 Ω
688	R136	T1H	3001055600000	56 Ω
689	R138	T1I	3001054700000	47 Ω
690	R139	T1I	3001051020000	1K Ω
691	R140	T1I	3001052220000	2.2K Ω

No.	Ref. No.	Print No.	Part No.	Description
692	R141	B1I	3001050000000	0Ω
693	R142	B1I	3001051030000	10KΩ
694	R143	B1G	3001053320000	3.3KΩ
695	R144	B2F	3001053320000	3.3KΩ
696	R145	B1I	3001053330000	33KΩ
697	R146	B1I	3001053330000	33KΩ
698	R203	B3I	3001051000000	10Ω
699	R204	B3J	3001050000000	0Ω
700	R205	B5J	3001051010000	100Ω
701	R206	B3J	3001051000000	10Ω
702	R207	B5J	3001063300000	33Ω
703	R208	B5J	3001063300000	33Ω
704	R209	B4K	3001051000000	10Ω
705	R210	B4K	3001063300000	33Ω
706	R212	B4F	3001061010000	100Ω
707	R213	B3I	3001050000000	0Ω
708	R214	B4F	3001061010000	100Ω
709	R215	B4F	3001061010000	100Ω
710	R216	B4F	3001061010000	100Ω
711	R217	B4F	3001061010000	100Ω
712	R218	B4G	3001061010000	100Ω

No.	Ref. No.	Print No.	Part No.	Description
713	R219	T5I	3001061030010	10K Ω
714	R220	T1K	3001061010000	100 Ω
715	R222	B2I	3001061010000	100 Ω
716	R241	B4K	3001051030000	10K Ω
717	R242	B2K	3001061010000	100 Ω
718	R243	B3I	3001050000000	0 Ω
719	R244	B2K	3001061010000	100 Ω
720	R246	B3J	3001051030000	10K Ω
721	R249	B2K	3001051000000	10 Ω
722	R250	B3J	3001051030000	10K Ω
723	R251	B5I	3001051040000	100K Ω
724	R252	B3J	3001051030000	10K Ω
725	R254	T3I	3001050000000	0 Ω
726	R256	B3K	3001051030000	10K Ω
727	R257	B4E	3001051010000	100 Ω
728	R258	B5J	3001051030000	10K Ω
729	R260	B5I	3001051520000	1.5K Ω
730	R261	B5I	3001051530000	15K Ω
731	R262	B5I	3001051530000	15K Ω
732	R263	B3K	3001051030000	10K Ω
733	R313	B4E	3001054710000	470 Ω

No.	Ref. No.	Print No.	Part No.	Description
734	R314	B1K	3001053320000	3.3K Ω
735	R315	B1K	3001053320000	3.3K Ω
736	R316	B1K	3001051030000	10K Ω
737	R317	B1K	3001051030000	10K Ω
738	R319	B4G	3001050000000	0 Ω
739	R321	B4C	3099063018000	3.01 Ω
740	R322	B4G	3001052220000	2.2K Ω
741	R323	B4D	3001052220000	2.2K Ω
742	R324	B4G	3001053300000	33 Ω
743	R325	B4F	3001053300000	33 Ω
744	R326	B4G	3001053300000	33 Ω
745	R327	B4G	3001051010000	100 Ω
746	R401	T2G	3001055100020	51 Ω
747	R402	T3G	3001051030000	10K Ω
748	R403	T3G	3001051020000	1K Ω
749	R404	T3G	3001056810000	680 Ω
750	R407	T2F	3001058220000	8.2K Ω
751	R408	T3F	3001051010000	100 Ω
752	R409	T2G	3001054720000	4.7K Ω
753	R410	T2G	3001061030010	10K Ω
754	R411	T3F	3001053910000	390 Ω

No.	Ref. No.	Print No.	Part No.	Description
755	R412	T2H	3001051040000	100K Ω
756	R413	T3H	3001051820000	1.8K Ω
757	R414	T3I	3001052720000	2.7K Ω
758	R415	T3I	3001061030010	10K Ω
759	R416	T3H	3001058210000	820 Ω
760	R501	B3C	3001054710000	470 Ω
761	R502	B3C	3001053310010	330 Ω
762	R503	B4D	3001051010000	100 Ω
763	R504	B3C	3001051030050	10K Ω
764	R601	T4I	3001051040000	100K Ω
765	R602	B2E	3001060000000	0 Ω
766	R604	B2E	3001060000000	0 Ω
767	R607	B3E	3001051010000	100 Ω
768	R611	B3E	3001051030000	10K Ω
769	R612	T5I	3001061020010	1K Ω
770	R613	T5J	3001051020000	1K Ω
771	R614	T4H	3221506181000	Bead
772	R617	T4G	3001054740010	470K Ω
773	R618	T4G	3001051340000	130K Ω
774	R619	T5K	3099063018000	3.01 Ω
775	R620	T4K	3001053320000	3.3K Ω

No.	Ref. No.	Print No.	Part No.	Description
776	R621	T4H	3001051040000	100K Ω
777	R622	T4I	3221506181000	Bead
778	R623	T4H	3001051540000	150K Ω
779	R624	T5K	3099063018000	3.01 Ω
780	R627	B5D	3001054730010	47K Ω
781	R628	B4D	3001054730010	47K Ω
782	R629	B4D	3001054720000	4.7K Ω
783	R630	B4D	3001054730010	47K Ω
784	R631	B4D	3001051530000	15K Ω
785	R632	B4E	3001051020010	1K Ω
786	R701	T1J	3001051020000	1K Ω
787	R702	T1J	3001056830000	68K Ω
788	R704	T1J	3001051010040	100 Ω
789	R705	T1J	3001051030050	10K Ω
790	R706	T1J	3001051030050	10K Ω
791	R707	T1J	3001053330000	33K Ω
792	R709	T1J	3001051040000	100K Ω
793	R710	T1J	3001051040000	100K Ω
794	R712	T1J	3221505121010	Bead
795	R713	T1J	3001051010000	100 Ω
796	R801	B4K	3001051000000	10 Ω

No.	Ref. No.	Print No.	Part No.	Description
797	R802	T3L	3001053340010	330K Ω
798	R803	T3K	3001053340010	330K Ω
799	R804	T3L	3001051030000	10K Ω
800	R805	T3K	3001051030000	10K Ω
801	R806	T4L	3001051000000	10 Ω
802	R807	T4K	3001052030000	20K Ω
803	R820	T2L	3001052020020	2K Ω
804	R821	T3K	3001051010000	100 Ω
805	R822	T3K	3001050000000	0 Ω
806	R823	T2K	3001051030050	10K Ω
807	R824	T2K	3001051530010	15K Ω
808	R825	T3L	3001052020020	2K Ω
809	R826	T2K	3001054730010	47K Ω
810	R828	B2K	3001051530010	15K Ω
811	R829	B2L	3001054740010	470K Ω
812	R830	B2K	3001053330000	33K Ω
813	R832	T3L	3001052020020	2K Ω
814	R833	T2K	3001052020020	2K Ω
815	R834	T2L	3001050000000	0 Ω
816	R835	T2L	3001050000000	0 Ω
817	R838	B2K	3001051030000	10K Ω

No.	Ref. No.	Print No.	Part No.	Description
818	R841	B2K	3001051030000	10K Ω
819	R9001	T4E	3001052710010	270 Ω
820	R9002	T2F	3001054730000	47K Ω
821	R9003	T4E	3001052710010	270 Ω
822	R9004	T3C	3233099449000	4.4nH
823	R9005	T4E	3001055690000	5.6 Ω
824	R9006	T2B	3001051030000	10K Ω
825	R9007	T2F	3001058200000	82 Ω
826	R9008	T1E	3001051520000	1.5K Ω
827	R9009	T1E	3001053300000	33 Ω
828	R9011	T2F	3001051010000	100 Ω
829	R9012	T2E	3001051010000	100 Ω
830	R9013	T2F	3001053320000	3.3K Ω
831	R9015	T1E	3001053310010	330 Ω
832	R9016	T1E	3001051510000	150 Ω
833	R9017	T1D	3001051010000	100 Ω
834	R9018	T1E	3001056810000	680 Ω
835	R9021	T1F	3001054700000	47 Ω
836	R9022	T1F	3001052200000	22 Ω
837	R9023	T1E	3001053920010	3.9K Ω
838	R9024	T1D	3001056820000	6.8K Ω

No.	Ref. No.	Print No.	Part No.	Description
839	R9025	T3C	3001052710010	270Ω
840	R9027	T1D	3001058220000	8.2KΩ
841	R9028	T3C	3001052710010	270Ω
842	R9029	T1D	3001053310000	330Ω
843	R9033	B1C	3001051020000	1KΩ
844	R9036	B1F	3001051030000	10KΩ
845	R9038	B1E	3001051020000	1KΩ
846	R9039	B1F	3001051010000	100Ω
847	R9041	B1F	3001054720000	4.7KΩ
848	R9043	B1E	3001053320000	3.3KΩ
849	R9045	B1D	3001051050000	1MΩ
850	R9046	B1E	3001054740010	470KΩ
851	R9047	B1E	3001053330000	33KΩ
852	R9048	B1D	3001051540000	150KΩ
853	R9050	B1E	3001054730000	47KΩ
854	R9053	B1D	3099080398010	0.39Ω
855	R9054	B1D	3099080398010	0.39Ω
856	R9055	B1D	3099080398010	0.39Ω
857	R9057	B1D	3001051540000	150KΩ
858	R9058	B1E	3001051050000	1MΩ
859	R9059	B1E	3001051040000	100KΩ

No.	Ref. No.	Print No.	Part No.	Description
860	R9063	T4D	3001051030000	10K Ω
861	R9066	B2G	3001051520000	1.5K Ω
862	R9067	B2G	3001056820000	6.8K Ω
863	R9068	B2F	3001053320000	3.3K Ω
864	R9071	B3G	3001053310010	330 Ω
865	R9072	T4D	3001051040000	100K Ω
866	R9073	T4D	3001051040000	100K Ω
867	R9074	T5D	3001051030000	10K Ω
868	R9075	B3G	3001055100020	51 Ω
869	R9076	T4C	3001051040000	100K Ω
870	R9077	T4C	3001051040000	100K Ω
871	R9078	B3G	3001055620000	5.6K Ω
872	R9079	B2G	3001053330000	33K Ω
873	R9080	T4D	3101054700010	47PF
874	R9081	B3G	3001051030000	10K Ω
875	R9083	T4D	3001053310010	330 Ω
876	R9084	B3G	3001055630000	56K Ω
877	R9085	B2G	3001051040000	100K Ω
878	R9089	T5D	3001055620000	5.6K Ω
879	R9094	T3E	3001050000000	0 Ω
880	R9095	T3F	3001053320000	3.3K Ω

No.	Ref. No.	Print No.	Part No.	Description
881	R9096	T3F	3001053320000	3.3K Ω
882	R9097	T2F	3001053320000	3.3K Ω
883	R9098	T2F	3001053320000	3.3K Ω
884	R9099	T4D	3217105010000	1nH
885	RN242	T3J	3005051030010	10K Ω
886	RN243	B4I	3005051030010	10K Ω
887	RN255	B3K	3005060000000	0 Ω
888	RN256	B3K	3005051030010	10K Ω
889	RN257	T4J	3005061010000	100 Ω
890	RN258	T4I	3005061010000	100 Ω
891	RN259	T3J	3005060000000	0 Ω
892	RN260	T2J	3005061010000	100 Ω
893	RN261	B4K	3001052230020	22K*2
894	RN401	T4I	3005060000000	0 Ω
895	T9001	T4E	5406000000200	Transformer
896	T9002	T4F	5406000000200	Transformer
897	U101	B1I	3616059000000	Switch IC
898	U102	B1I	3605002057290	Operational amplifier
899	U103	T1I	3604019000000	PLL IC
900	U104	B1I	3616059000000	Switch IC
901	U201	B3I	3610010000010	MCU OMAP5912ZZG

No.	Ref. No.	Print No.	Part No.	Description
902	U242	B2J	3612044000010	Mobile-SDRAM
903	U244	B4H	3612002000020	NOR-FLASH+PSRAM
904	U312	B4L	3805000000030	EMI filter
905	U313	B5E	3805000000030	EMI filter
906	U314	B4K	3805000000030	EMI filter
907	U315	B4G	3805000000030	EMI filter
908	U316	B4F	3805000000030	EMI filter
909	U317	B4G	3805000000030	EMI filter
910	U318	B4F	3805000000030	EMI filter
911	U319	B5D	3805000000030	EMI filter
912	U320	B3K	3805000000030	EMI filter
913	U321	B3L	3805000000030	EMI filter
914	U322	B3L	3805000000030	EMI filter
915	U401	T3H	3603999000000	IF processor
916	U501	B3C	3609999000300	GPS LNA
917	U502	B3D	1615000001650	GPS module
918	U601	T4G	3608011000050	Power management IC
919	U603	B1J	3608006000000	Power management IC
920	U604	B3F	3608020005750	Power management IC
921	U605	B2F	3608020005750	Power management IC
922	U606	T3J	3608006000000	Power management IC

No.	Ref. No.	Print No.	Part No.	Description
923	U607	T5J	3609010000170	Reset IC
924	U608	B3E	3608006000000	Power management IC
925	U609	T2J	3608006000000	Power management IC
926	U610	T3I	3608006000030	Power management IC
927	U611	T4H	3608011000050	Power management IC
928	U612	B1J	3608006000000	Power management IC
929	U701	T1K	3606010000010	D/A converter
930	U801	T4K	3602023005740	Audio amplifier
931	U820	T2L	3616037000020	Switch IC
932	U821	T2K	3613010000000	Baseband processor
933	U9002	B1E	3605025000020	Operational amplifier
934	U9003	B1D	5404000000060	Sensor
935	X101	T1I	3701019250030	TCXO 19.2MHZ
936	X201	B5J	3701327610060	Crystal 32.768KHz
937	X203	B3H	3701019250040	TCXO 19.2MHz
938	Z501	B3C	3804157560000	GPS filter
939	Z9001	B3F	3802733540020	Crystal filter
940	/	/	6201809000000	Shielding can for IF processor
941	/	/	6201810000000	Shielding can for baseband processor
942	/	/	6201859000000	Shielding frame for lowpass filter
943	/	/	6201860000000	Shielding frame for GPS

No.	Ref. No.	Print No.	Part No.	Description
944	/	/	6201862000000	Shielding can for TX VCO
945	/	/	6201865000000	Shielding can for crystal oscillator
946	/	/	6201915000000	Shielding can for antenna spring plate
947	/	/	6201935000000	Shielding can for switching power
948	/	/	/	Main board

PD70X/ PD70XG/ HD705/ HD705G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF
11	C1012	3101052710000	270PF
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode

No.	Ref. No.	Part No.	Description
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch
28	/	41PD7002002B0	PCB channel board
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	L1001	3221506181000	Bead
33	U1002	3608006000030	Power management IC

PD78X/ PD78XG/ HD785/ HD785G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF

No.	Ref. No.	Part No.	Description
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF
11	C1012	3101052710000	270PF
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch

No.	Ref. No.	Part No.	Description
28	/	41PD7802006C0	PCB channel board
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	L1001	3221506181000	Bead
33	U1002	3608006000030	Power management IC

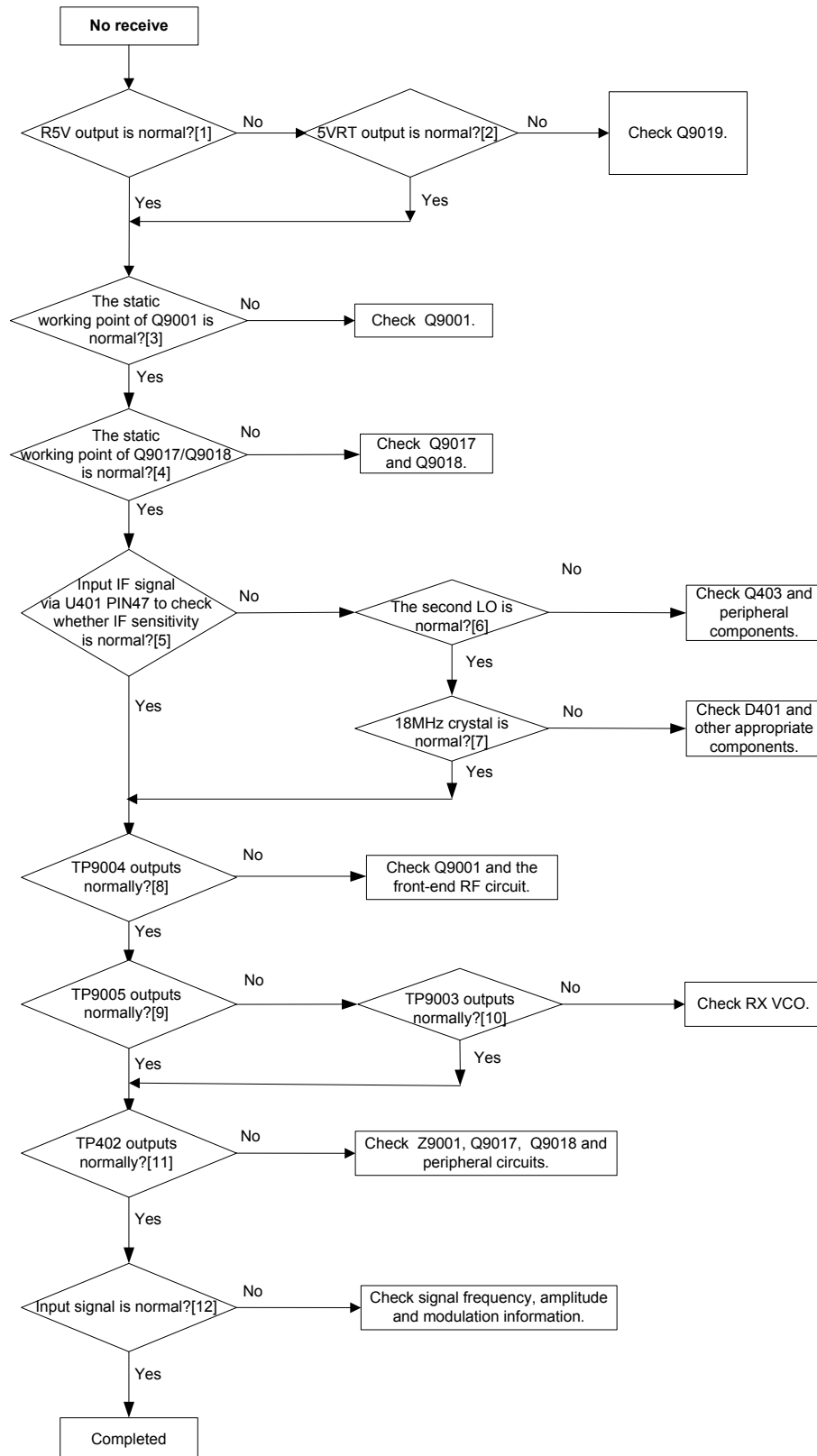
PD78X/ PD78XG/ HD785/ HD785G Keyboard

No.	Ref. No.	Part No.	Description
1	R1	3001051010000	100Ω
2	R2	3001051010000	100Ω
3	R3	3001051010000	100Ω
4	R4	3001051010000	100Ω
5	R5	3001051010000	100Ω
6	R6	3001051010000	100Ω
7	R7	3001051010000	100Ω
8	D1	3307990000260	LED
9	D2	3307990000260	LED
10	D3	3307990000260	LED
11	D4	3307990000260	LED
12	D5	3307990000260	LED
13	D6	3307990000260	LED

No.	Ref. No.	Part No.	Description
14	D7	3307990000260	LED
15	D8	3310040000010	ESD protection diode
16	D9	3310040000010	ESD protection diode
17	J4	5201016000010	Board-to-board connector

7.8 Troubleshooting Flow Chart

Receiver Circuit



Description of Normal Situations:

[1] Output voltage at Q9019 PIN3: about 4.95V.

[2] Output voltage at U605 PIN4 or input voltage at Q9019 PIN4: about 5V.

[3] Vbe: about 0.74V; Vce: about 2.5V (in the case of no signal reception).

[4] For Q9018, Vbe: about 0.76V; Vce: about 0.95V;

for Q9017, Vbe: about 0.7V; Vce: 0.85V (in the case of no signal reception).

[5] Cut off the front-end circuit, and input a 73.35MHz IF signal at TP402 to test IF sensitivity.

Normally, the IF sensitivity is -109dBm.

[6] Frequency of Q403: 71.1MHz.

[7] Frequency of L411: 18MHz.

[8] Input a -30dBm RF signal at the antenna connector and test at TP9004. Normally, gain>10dB, output signal>-20dBm.

[9] Input a -30dBm RF signal at the antenna connector and test at R9005 (do not cut off the back-end circuit). Normally, gain>1dB, output signal>-29dBm.

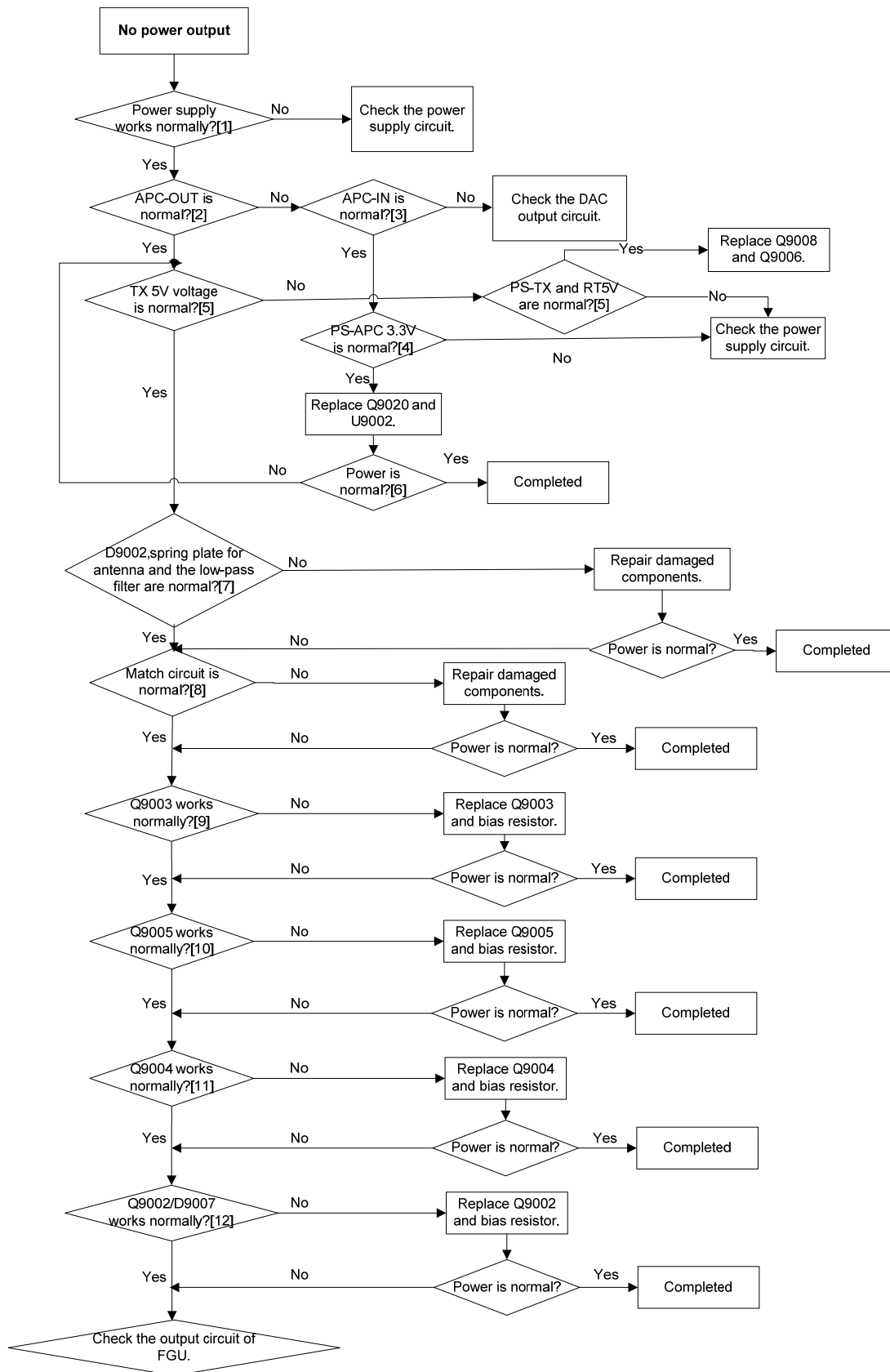
[10] Signal frequency: RF-IF, signal amplitude>2dBm.

[11] For input of -80dBm signal at L9022, gain>25dB, output signal>-55dBm;

for input of -30dBm signal, output signal<-20dBm.

[12] The input signal at the antenna connector, with standard tuning information (AF=1KHz, FM=3KHz), is -47dBm.

Transmitter Circuit



Description of Normal Situations:

- [1] Voltage of the power supply: about 7.4V.
- [2] For low power, APC-OUT: 1.8-2.1V; for high power, APC-OUT: 2.4-2.8V.
- [3] For low power, APC-IN: 1-1.3V; for high power, APC-IN: 1.8-2.1V.
- [4] PS-APC: about 3.3V.
- [5] TX5V: about 5V; RT5V: about 5V; PS-TX: about 3.3V.
- [6] High power: about 4.2W; low power: about 1.2W.
- [7] Start-up voltage of D9002: about 0.7V. The low-pass coil must be soldered appropriately and remain in good condition. The spring plate for the antenna must well fit the antenna connector.
- [8] The match components must not be soldered inappropriately or damaged.
- [9] Vdd: about 7.3V; for low power, Vgg: 1-1.2V; for high power, Vgg: 1.35-1.55V.
- [10] Vdd: about 7.3V; for low power, Vgg: 1.8-2.1V; for high power, Vgg: 2.4-2.8V.
- [11] Vc: about 4.8V; Vb: about 1.4V; Ve: about 1.1V.
- [12] Vc: about 4.7V; Vb: about 0.7V; Ve: 0V. Start-up voltage of D9007: about 0.7V.

**Note**

The above check operations should be made under 7.4V voltage.

FGU



Description of Normal Situations:

[1] During transmission, output voltage by Q107 PIN3: about 4V.

During reception, output voltage by Q106 PIN3: about 4V.

[2] During transmission, voltage at Q108 E: about 1.8V.

During reception, voltage at Q104 E: about 1.8V.

[3] The CV value varies with frequencies. Generally, it is within the range 0.5V-4.5V.

[4] L110/L116 is on.

[5] Voltage at Q101/Q102 B: about 0.7V.

[6] MCSI-CLK-PLL outputs 960 KHz clock.

8. UHF2 (450-520MHz) Information

8.1 Transmitter Circuit

The transmitter circuit is mainly composed of:

- RF power amplifier circuit
- Low-pass filter circuit (for suppressing harmonics)
- Auto power control circuit (APC) (including temperature detection circuit)

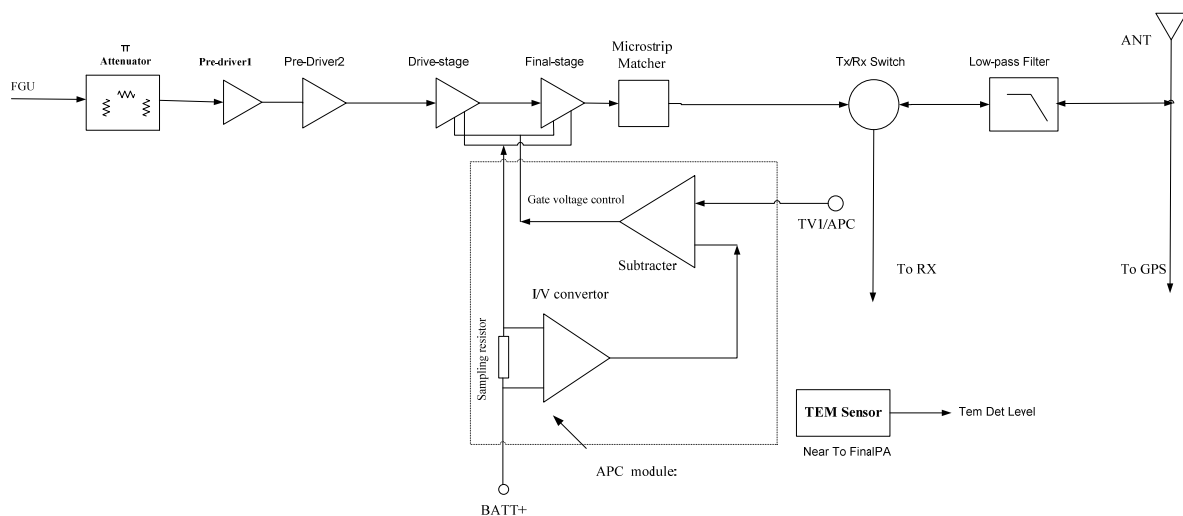


Figure 8-1 Diagram of Transmitter Circuit

8.1.1 RF Power Amplifier Circuit

The carrier signal generated by the TX VCO is modulated and amplified, and then feeds to the transmitter circuit via the following steps.

- Step 1** The signal passes through a π -type attenuator first, allowing interstage isolation between the RF power amplifier circuit and TX VCO.
- Step 2** The signal goes to a pre-driver amplifier (2SC3356) for pre-amplification, providing further interstage isolation.
- Step 3** The signal goes to another pre-driver amplifier (2SC4988) and a driver amplifier (RD01) for adequate power amplification, so as to obtain further amplification in the final-stage amplifier (RD07).

Step 4 After processed by multiple amplifiers, the signal is processed by a microstrip matcher to complete output impedance matching, so as to reduce output power loss due to impedance mismatch.

Step 5 The signal passes through the TX/RX switch and goes to the low-pass filter.

8.1.2 Low-pass Filter Circuit

The low-pass filter is a high-order Chebyshev filter composed of lumped-parameter inductors and capacitors. Via this filter, the spurious signal within the stop band can be attenuated as much as possible while the in-band ripple is within the required range.

8.1.3 Auto Power Control Circuit

In the auto power control and temperature detection circuit, the drain current from the driver amplifier and final-stage amplifier is converted to voltage via the sampling resistor and subtraction circuit (composed of the first operational amplifier).

This voltage is compared with the APC control voltage (output by DAC) at the second operational amplifier. Then the error voltage, which is output by the second operational amplifier, controls TX power by controlling the bias voltage at the gates of the amplifiers (including the driver amplifier and the final-stage amplifier). The temperature sensor detects the surface temperature of the final-stage amplifier, and converts it to DC voltage. Then the DC voltage is compared with the voltage corresponding to the protection temperature (generally 80% of the extreme temperature) of the amplifier. If the surface temperature is too high, the bias voltage of the amplifier will be reduced until the surface temperature falls below the protection temperature.

8.2 Receiver Circuit

The receiver circuit mainly comprises the RF band-pass filter, low-noise amplifier, mixer, IF filter, IF amplifier and IF processor.

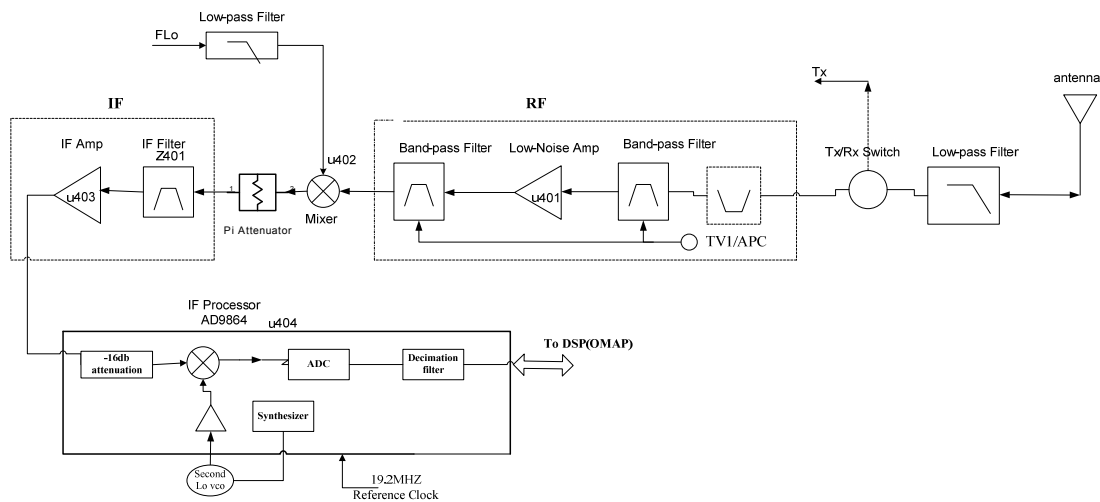


Figure 8-2 Diagram of Receiver Circuit

8.2.1 Receiver Front-end

The HF signal from the low-pass filter passes through the electrically tunable band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal and to send wanted band-pass signal to the low-noise amplifier (Q9001). The amplified signal goes to a band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal generated during amplification, and to send wanted HF signal to the mixer.

The wanted signal passes through the RF band-pass filter and low-noise amplifier and goes to the mixer (D9017). Meanwhile, the first local oscillator (LO) signal generated by VCO passes through the low-pass filter and also goes to the mixer (D9017). In the mixer, the wanted signal and the first LO signal are mixed to generate the first IF signal (73.35MHz). Then the signal passes through a π -type attenuator (2dB) and the LC, to suppress carrier other than the first IF signal, and to increase the isolation between the mixer and the IF filter. After that, the first IF signal is processed by the crystal filter (Z9001), and is sent to the two-stage IF amplifier circuit (composed of 2SC3356) for amplification. Then the amplified signal goes to the IF processor AD9864 (U401) for processing.

8.2.2 Receiver Back-end

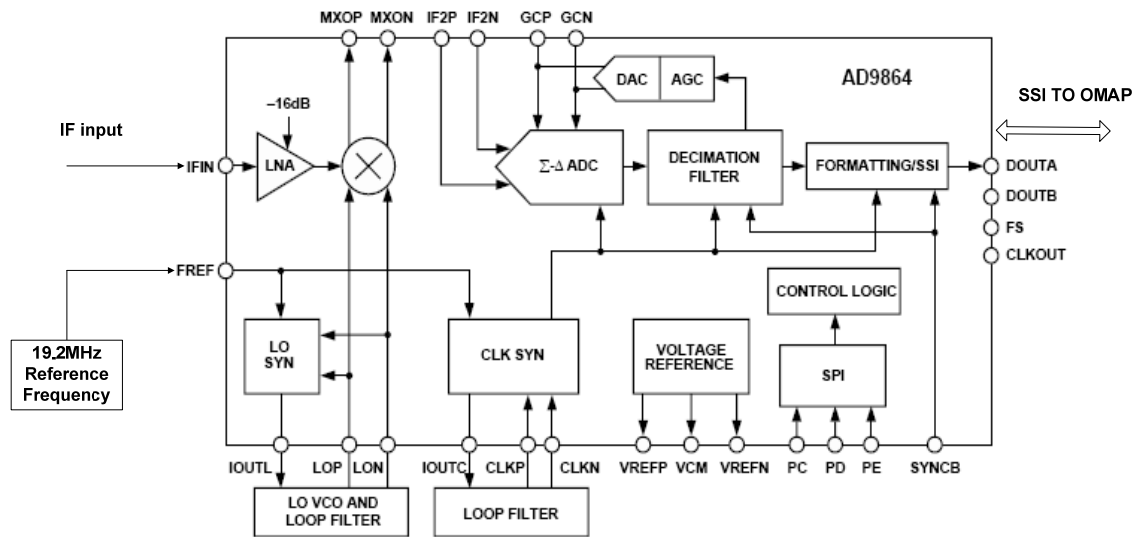


Figure 8-3 Diagram of IF Processor

The first IF signal (73.35MHz) output by the IF amplifier goes into AD9864 (U401) via Pin 47, where the signal is converted to the second IF signal (2.25MHz). Then the signal is converted to digital signal via ADC sampling, and output via the SSI interface. Finally, the digital signal is sent to DSP (OMAP5912) for demodulation.

AD9864 employs reference frequency of 19.2MHz and shares the crystal with the OMAP. The second LO VCO comprises an oscillator, a varactor and some other components, to provide the 71.1/75.6MHz LO signal. The 18MHz clock frequency is generated by the LC resonance loop.

8.3 Frequency Generation Unit (FGU)

The FGU is composed of VCO and PLL. It is the core module of the whole TX-RX system. This circuit provides accurate carrier frequency during transmission, and stable LO signal during reception. It has a direct influence on the performance of the system.

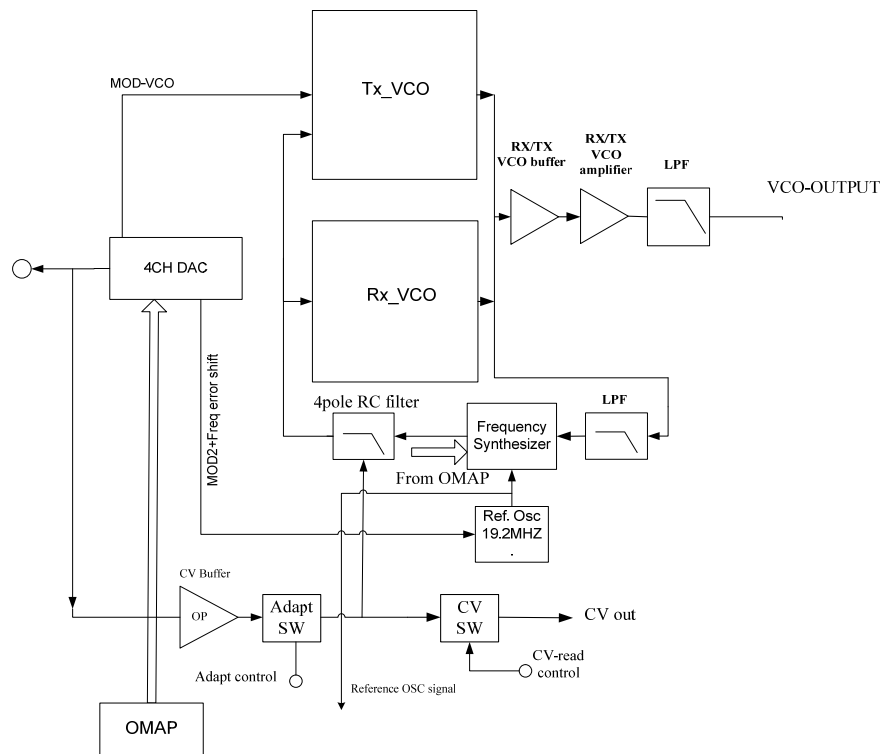


Figure 8-4 Diagram of FGU

8.3.1 Working Principle of PLL

The 19.2MHz frequency generated by the reference crystal oscillator goes to PLL for division, generating the reference frequency (i.e. step frequency f_1). Meanwhile, the frequency generated by VCO generates another frequency (f_2) through the frequency divider in PLL. Then frequencies f_1 and f_2 are compared in the phase detector (PD), to generate continuous pulse current. The current goes to the loop filter for RC integration, and is then converted to CV voltage. Then the CV voltage is sent to the varactor of VCO. It adjusts the output frequency of VCO directly until the CV voltage becomes constant. Then the PLL is locked, and the stable frequency output by VCO goes to the TX-RX channel after passing through two buffer amplifiers.

8.3.2 Working Principle of VCO

VCO employs Colpitts oscillator circuit (the RX oscillator circuit is composed of D102, D103, D106, D107 and L112; the TX oscillator circuit is composed of D108, D109, D110, D101 and L117). It obtains different output frequencies by changing the varactor's control voltage (i.e. CV voltage).

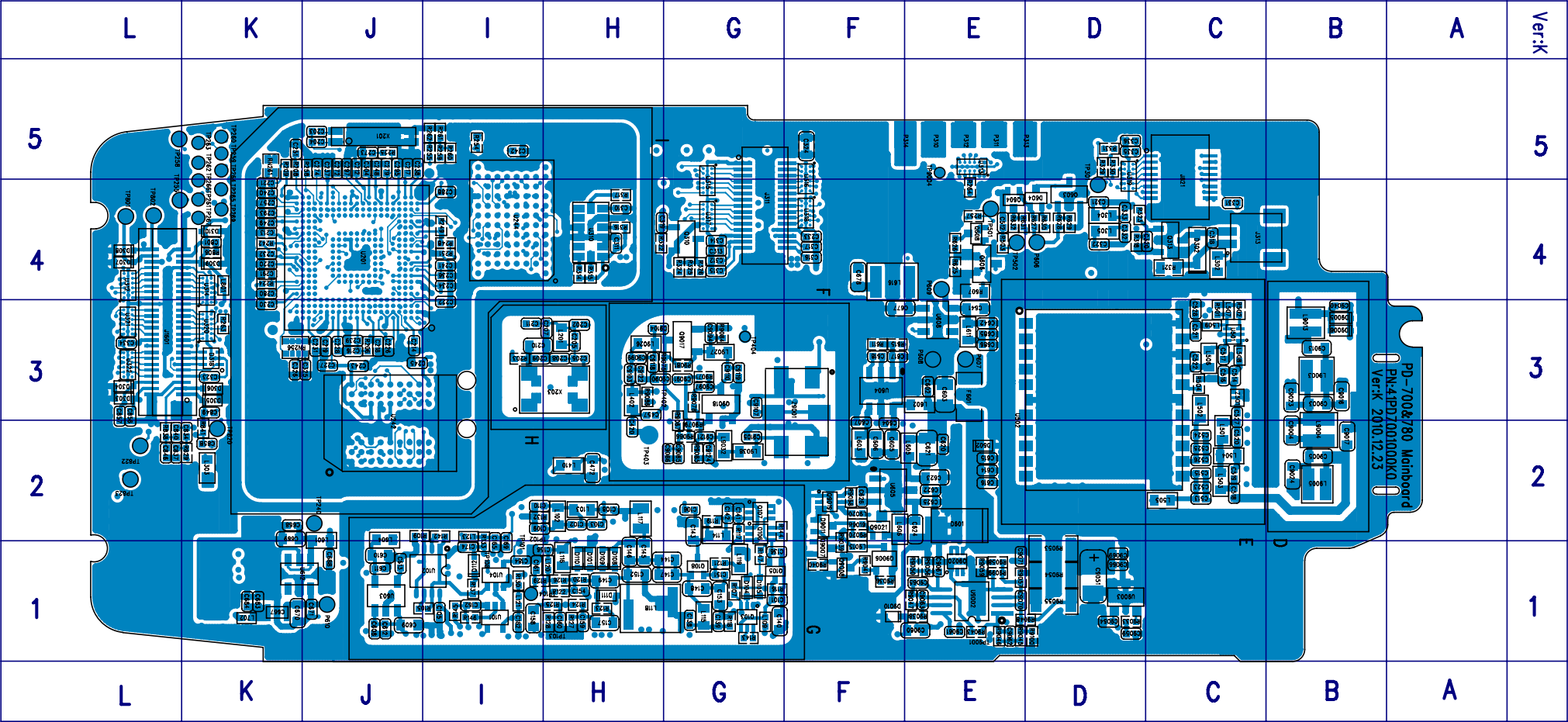
There are two types of VCO: TX VCO and RX VCO. Both types control EMD22 to switch operating status via OMAP. RX VCO is composed of the oscillator loop and Q104, to provide LO signal. TX VCO

is composed of the oscillator loop and Q108, to provide carrier for TX signal.

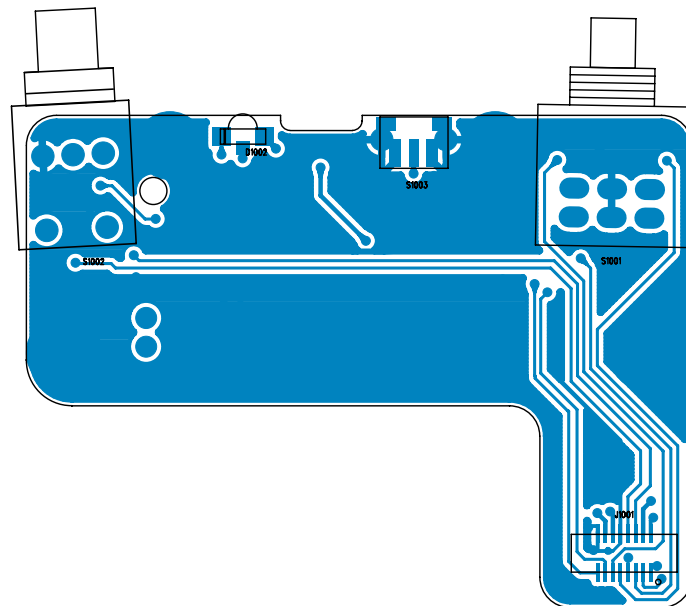
8.3.3 Two-point Modulation

In TX mode, the two-point modulation technology is employed, to obtain higher modulation accuracy and lower 4FSK bit error rate. MOD-VCO and MOD-XO send the modulation signal to the modulation end of VCO and the reference crystal oscillator of PLL respectively to modulate TX VCO and the reference crystal oscillator.

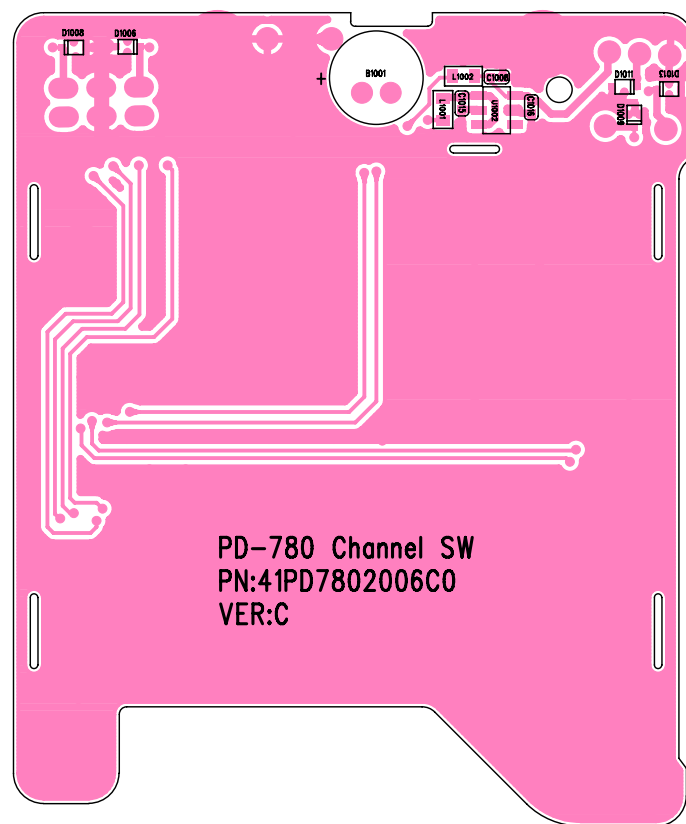
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board)
Bottom Layer



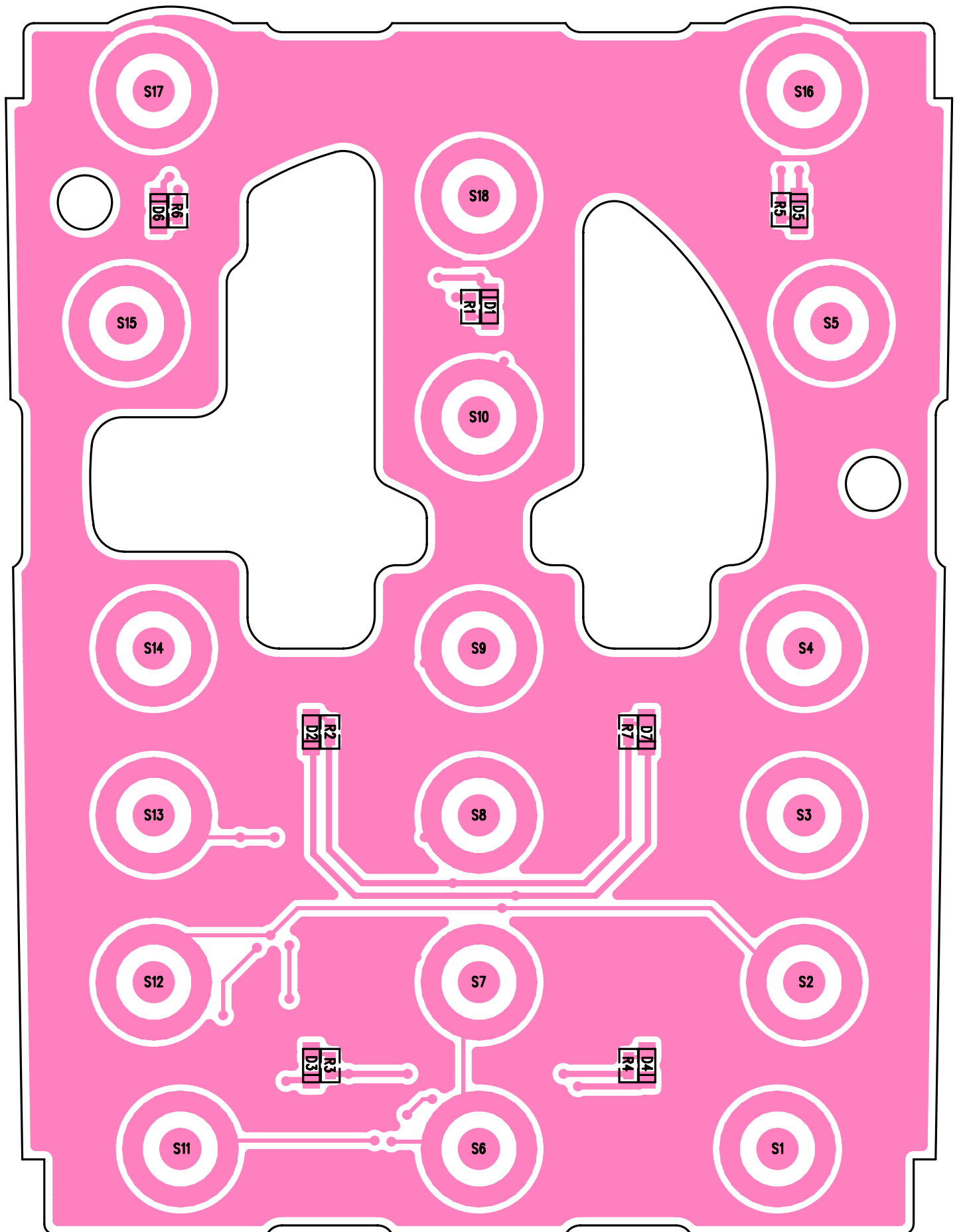
PD70X/PD70XG/HD705/HD705G PCB View (Channel Board) Bottom Layer



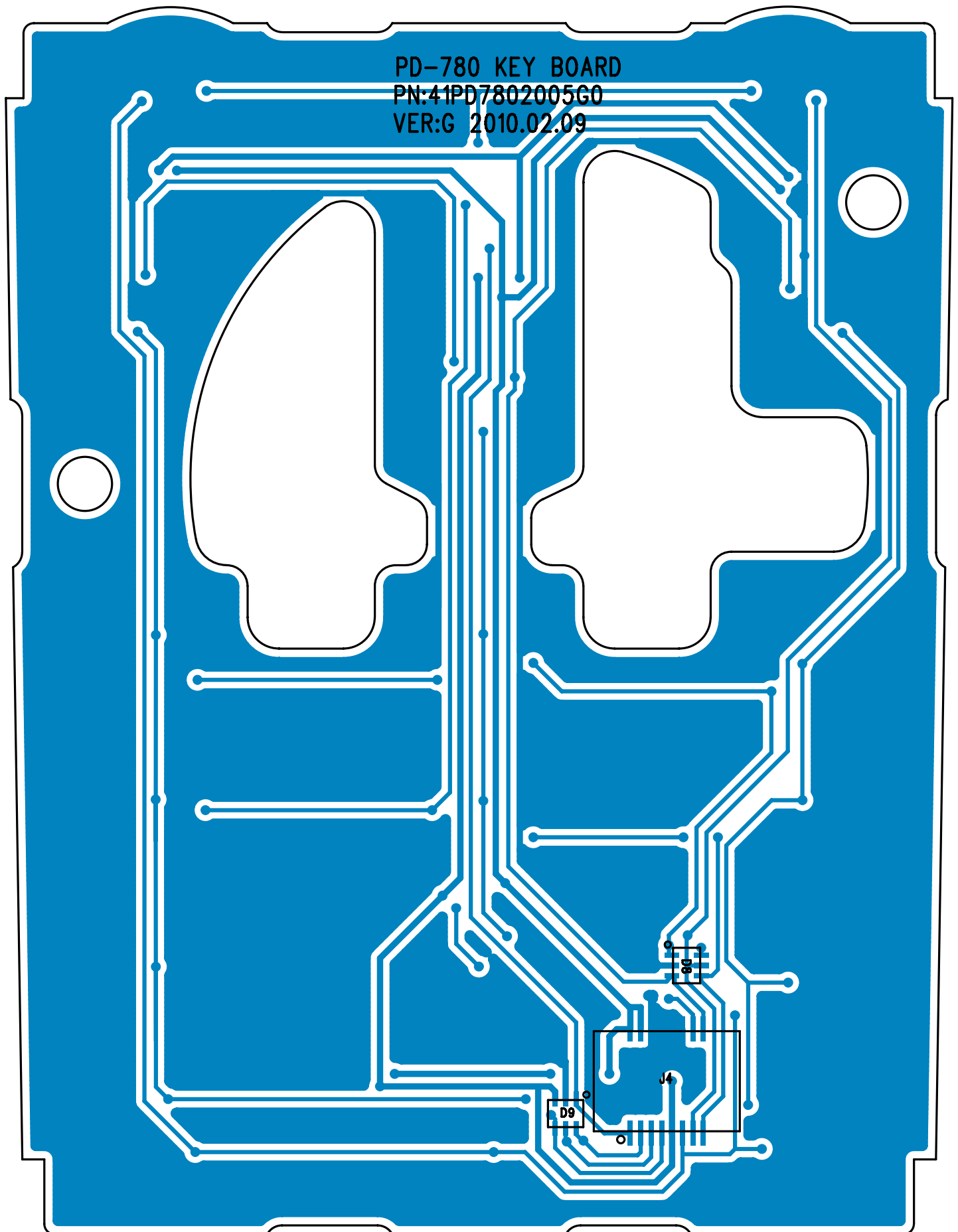
PD78X/PD78XG/HD785/HD785G PCB View (Channel Board) Top Layer



PD78X/PD78XG/HD785/HD785G PCB View (Keyboard) Top Layer

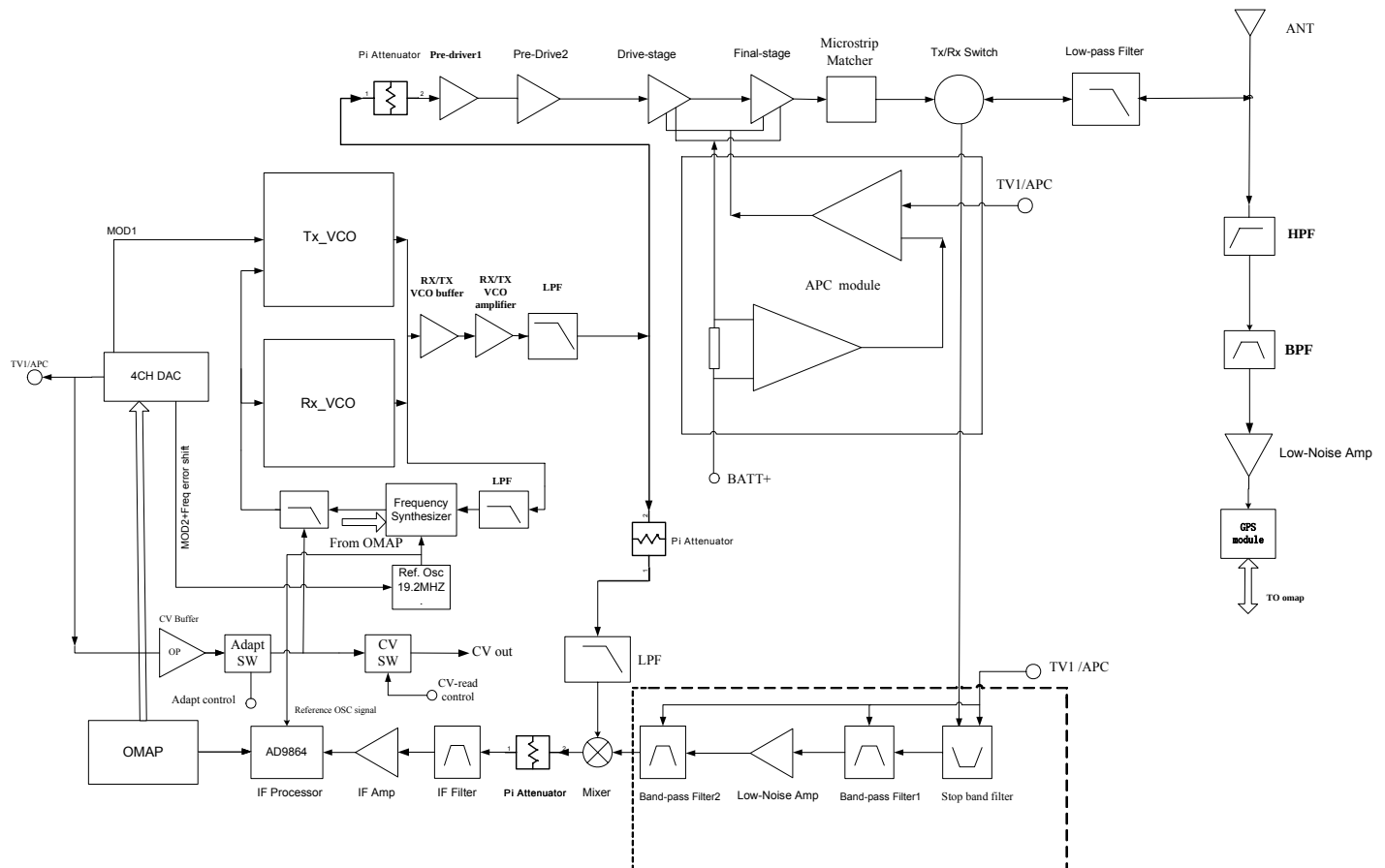


PD78X/PD78XG/HD785/HD785G PCB View (Keyboard)
Bottom Layer



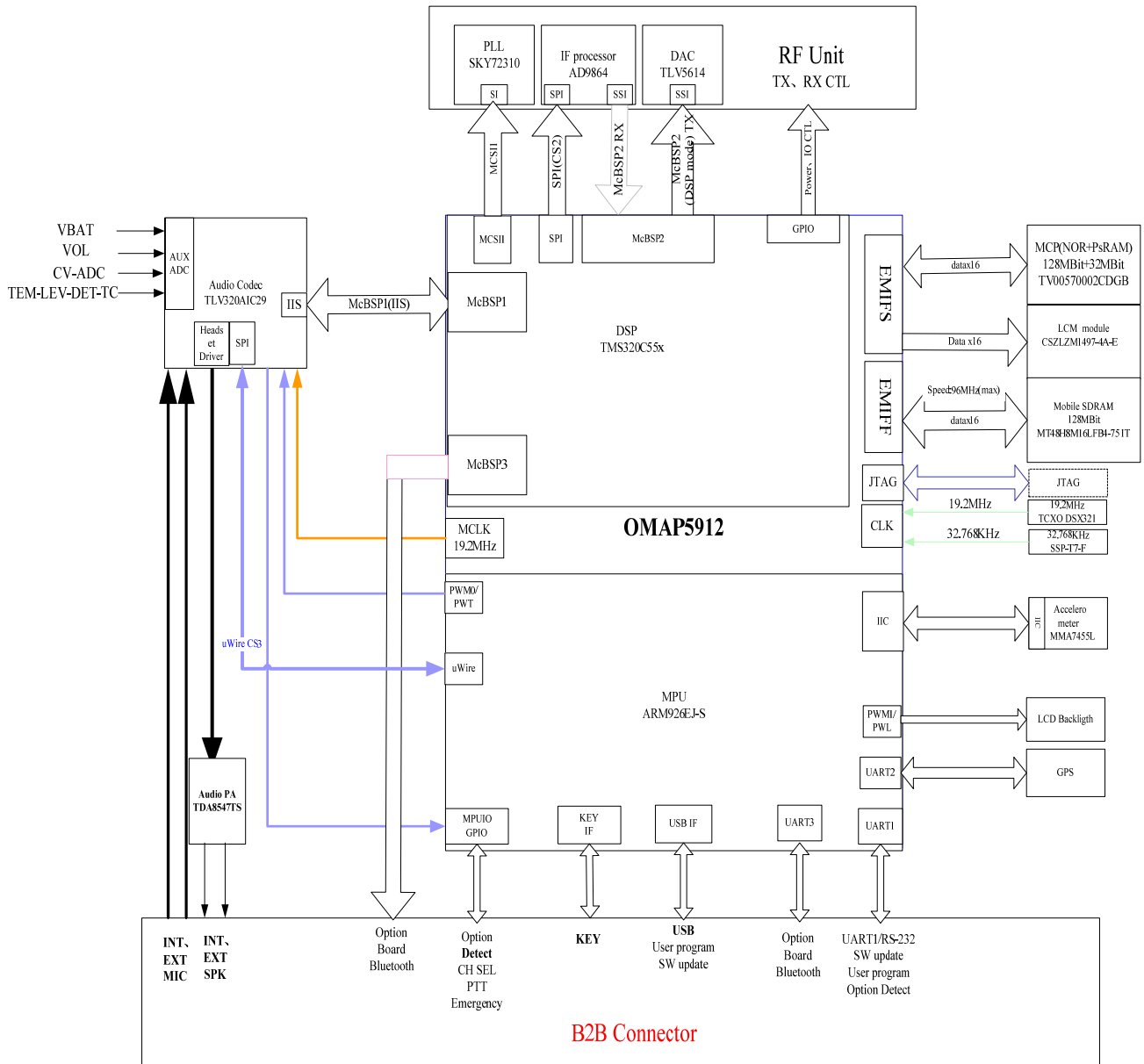
8.5 Block Diagram

PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Block Diagram (RF Section)



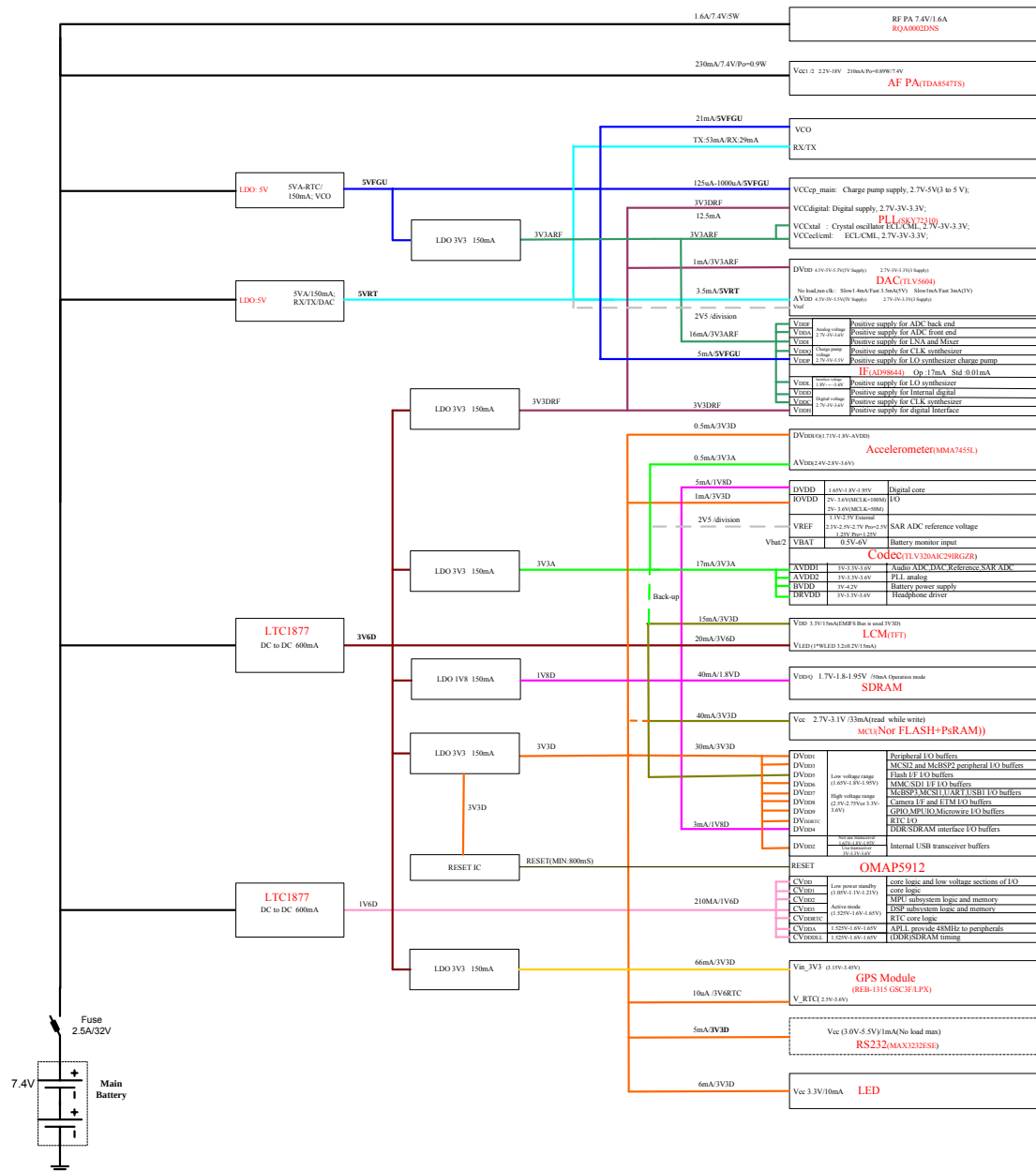
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G

Block Diagram (Baseband Section)



PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G

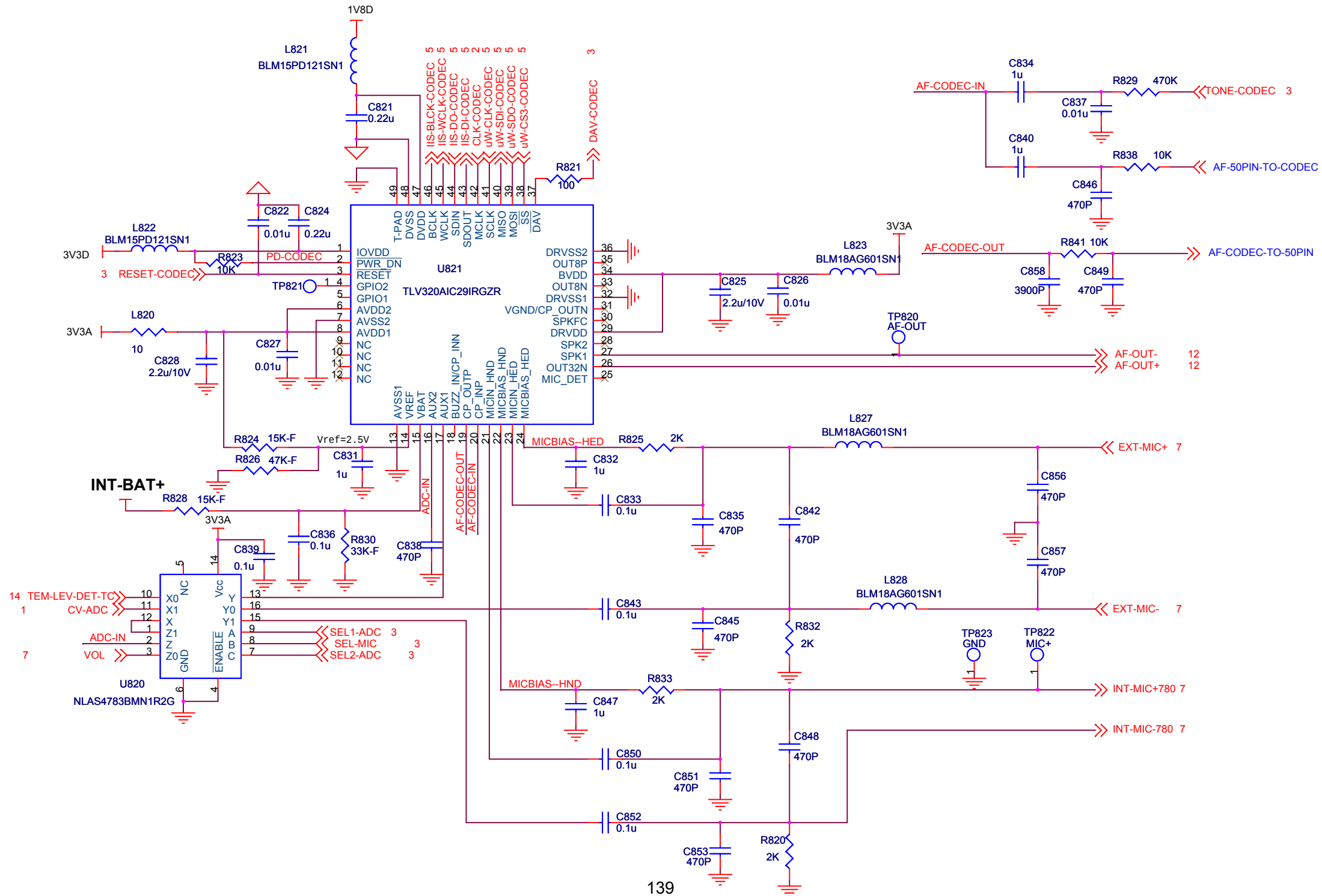
Block Diagram (Power Section)



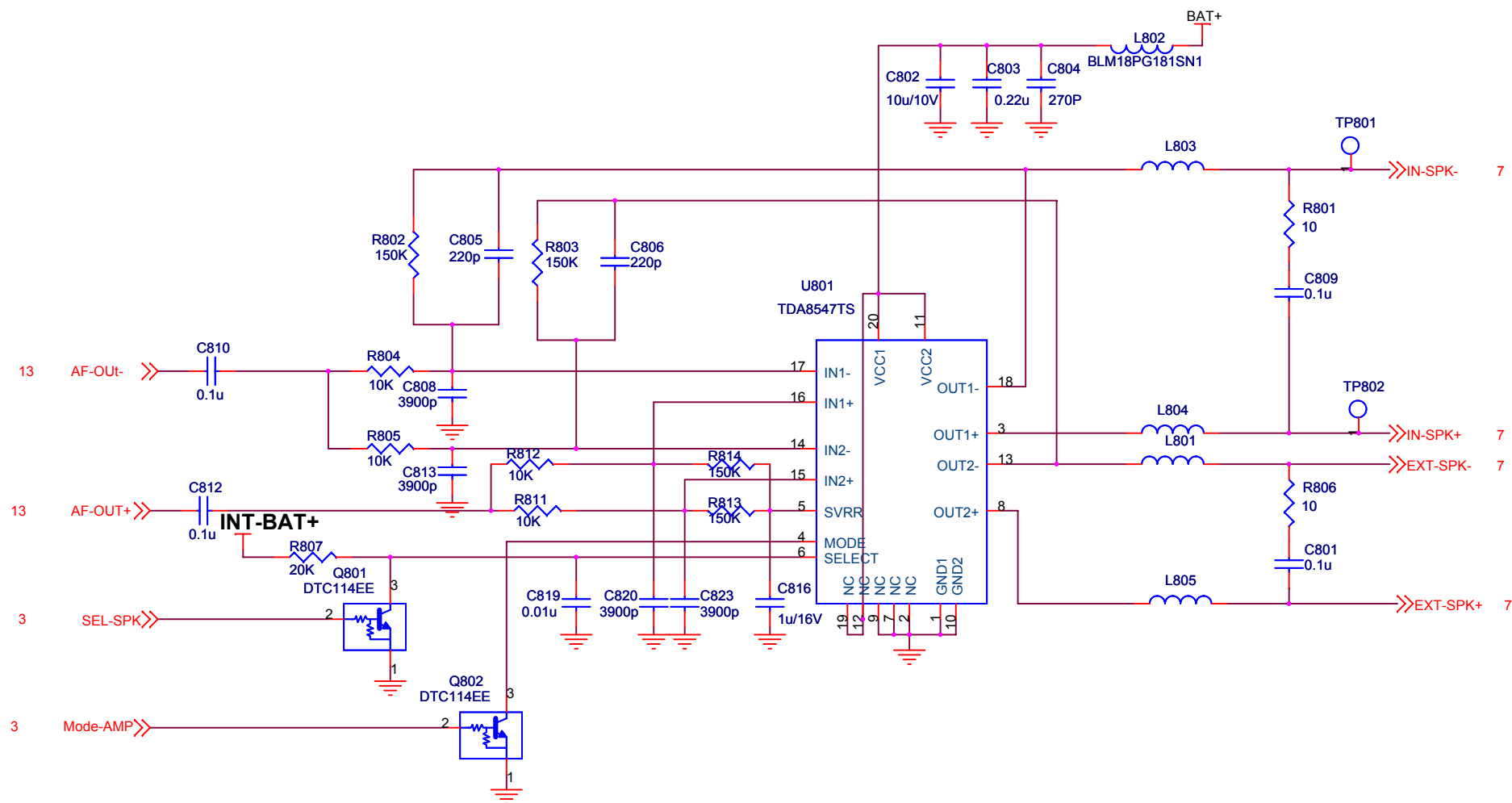
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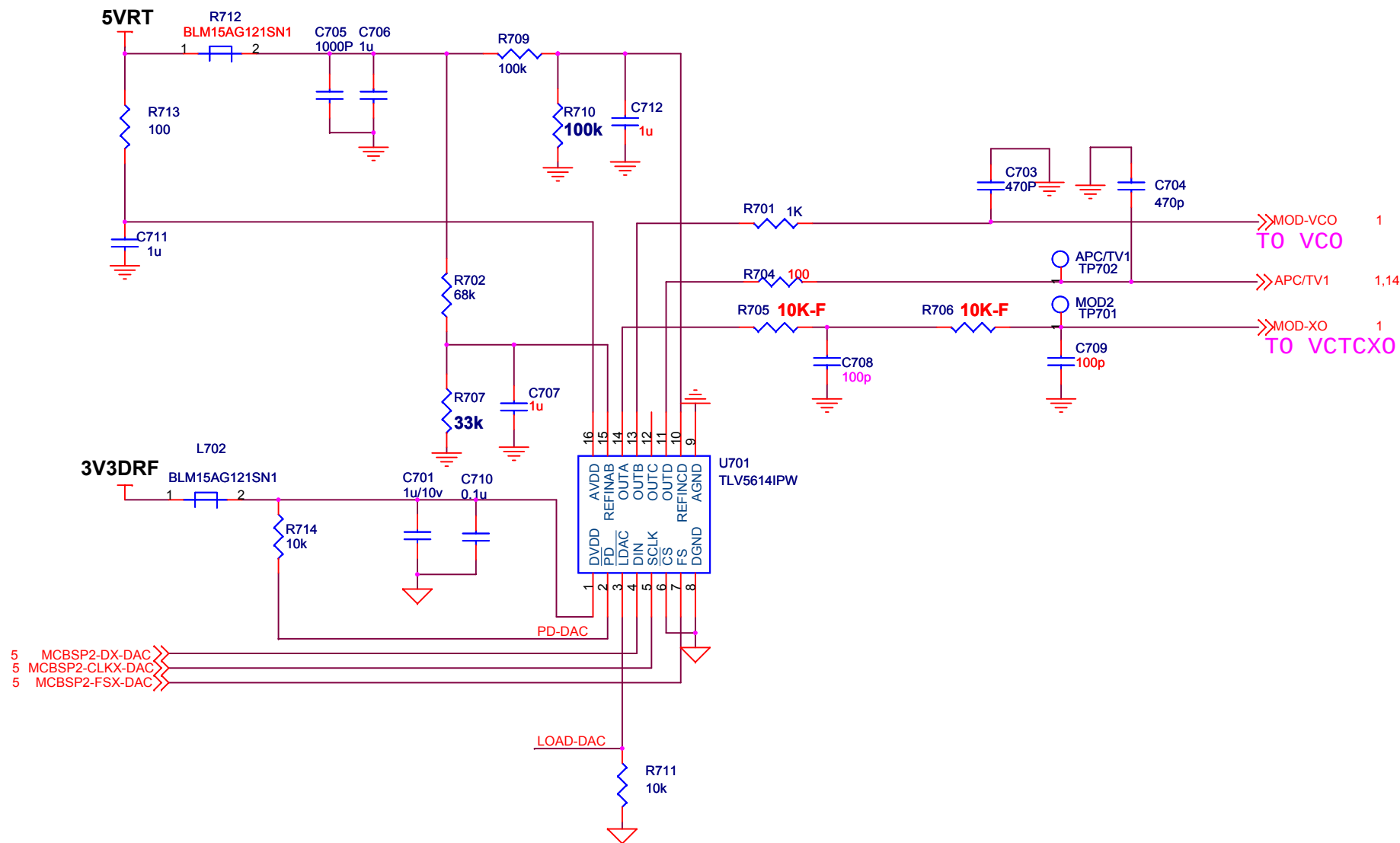
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (CODEC)



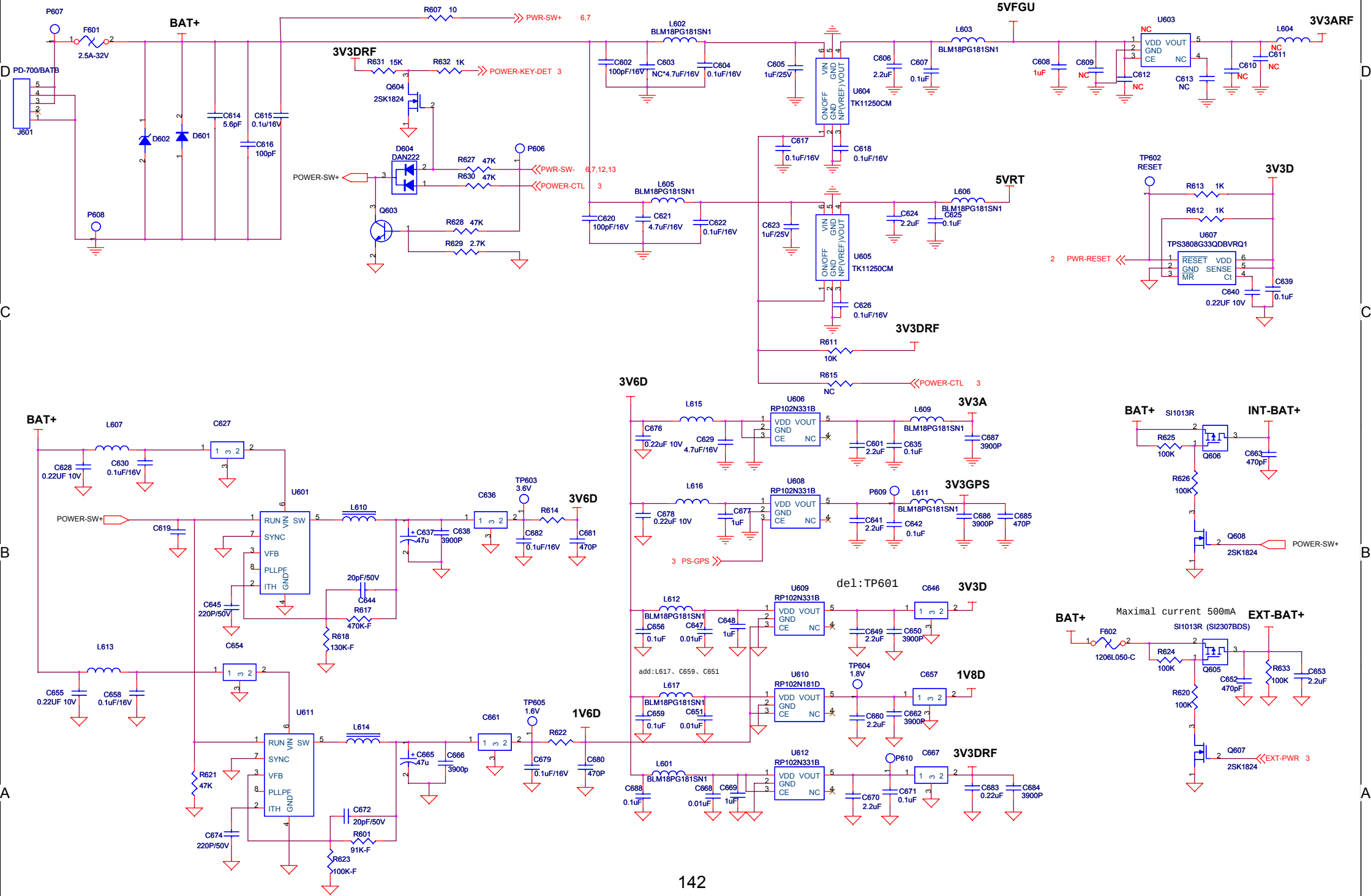
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Audio Amplifier)



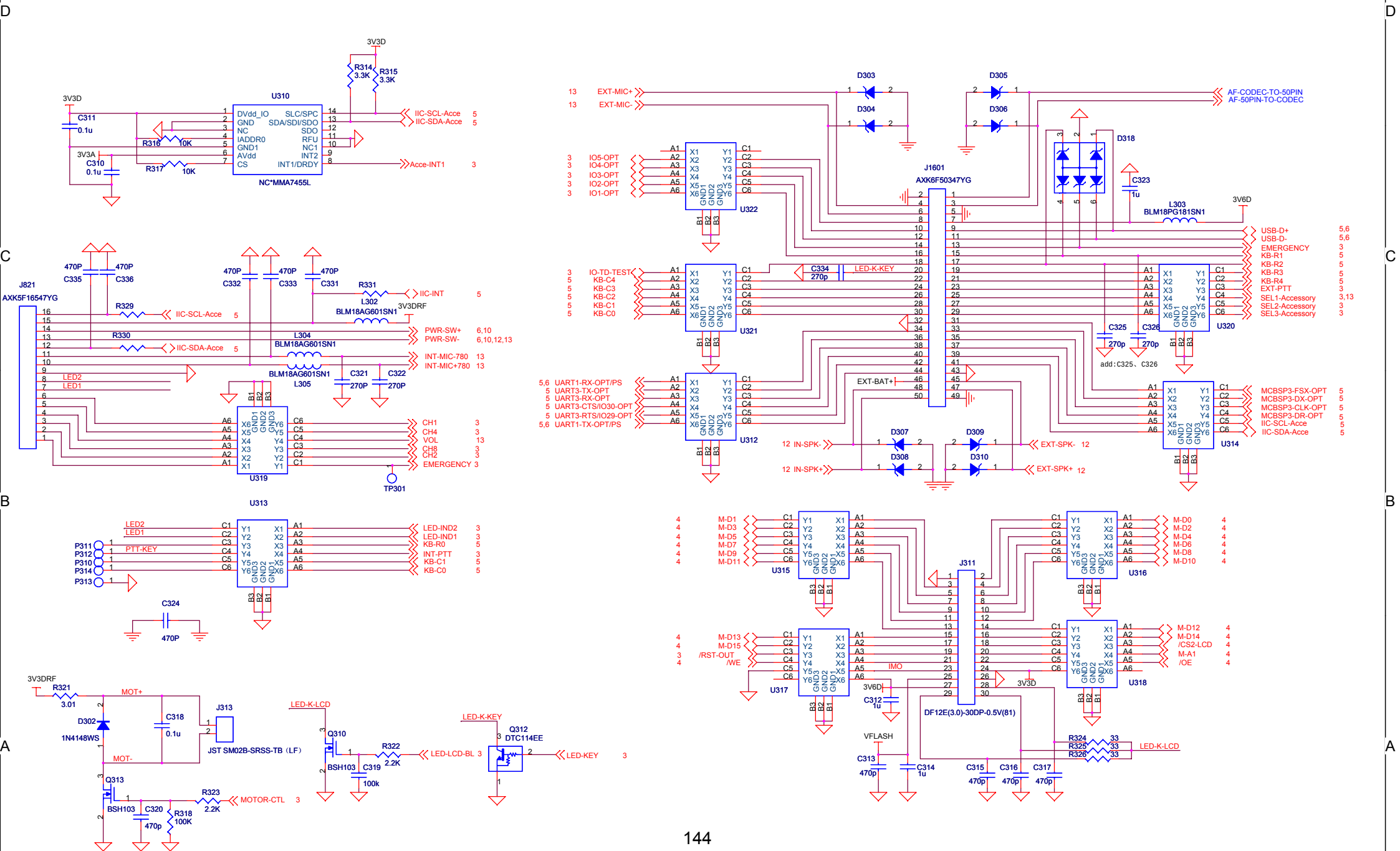
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (DAC)



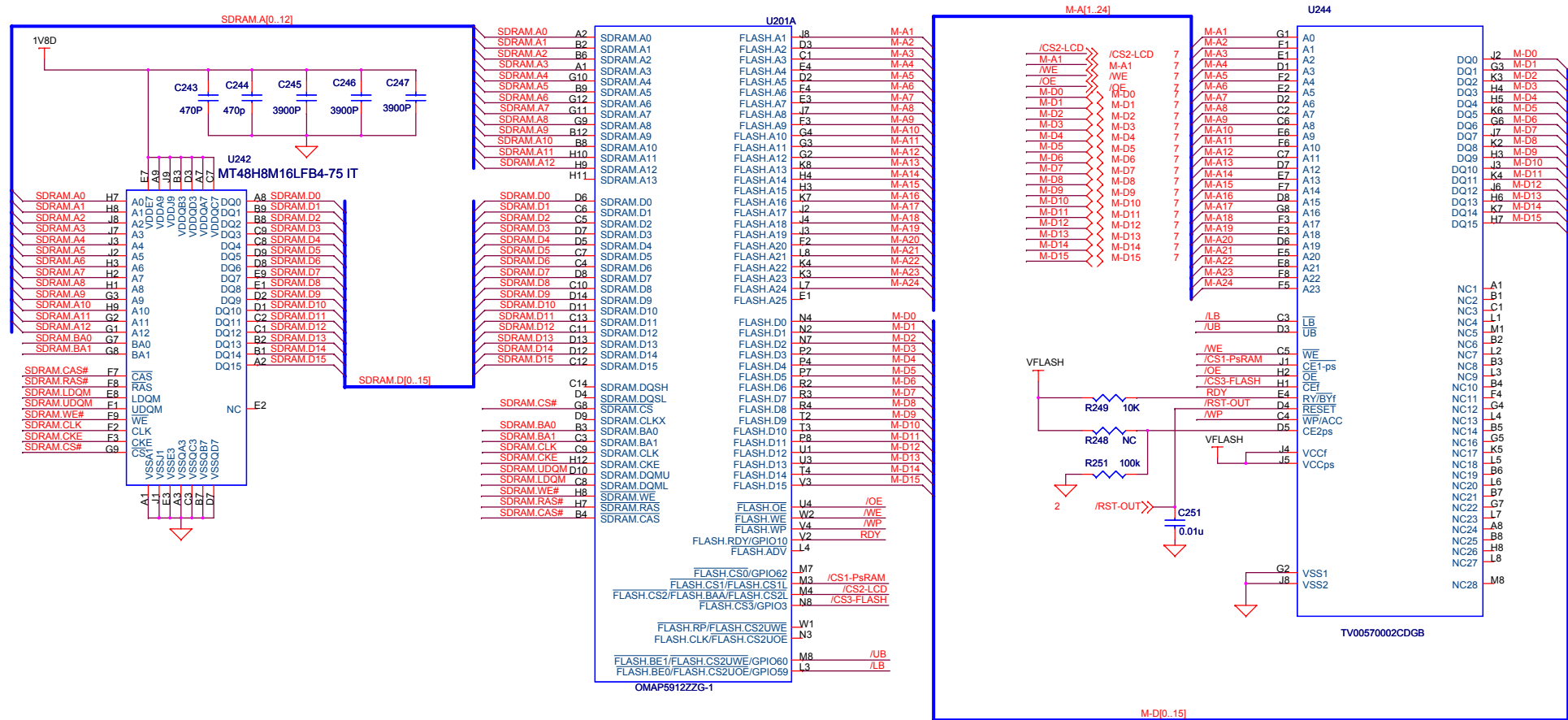
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Power)



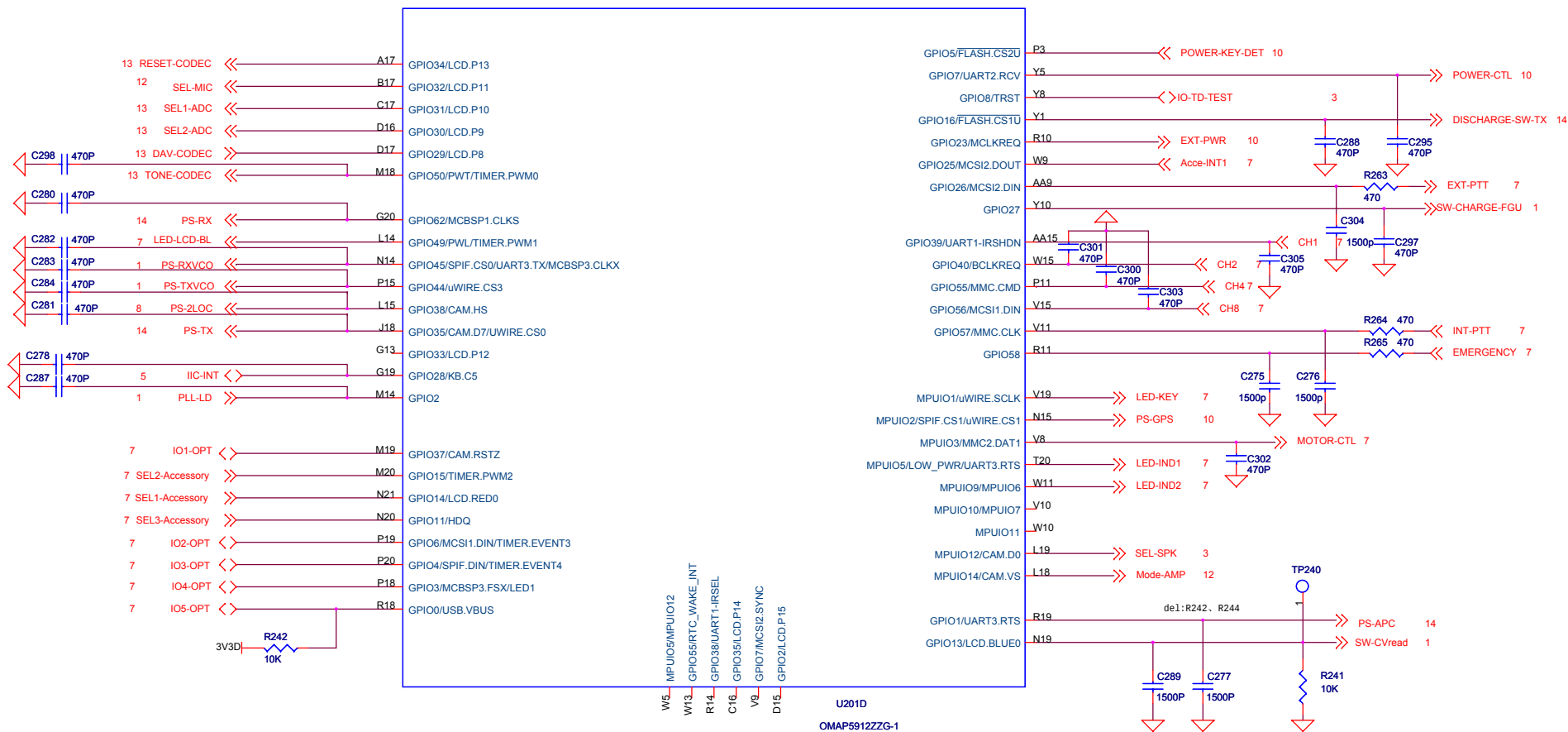
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Internal Interface)



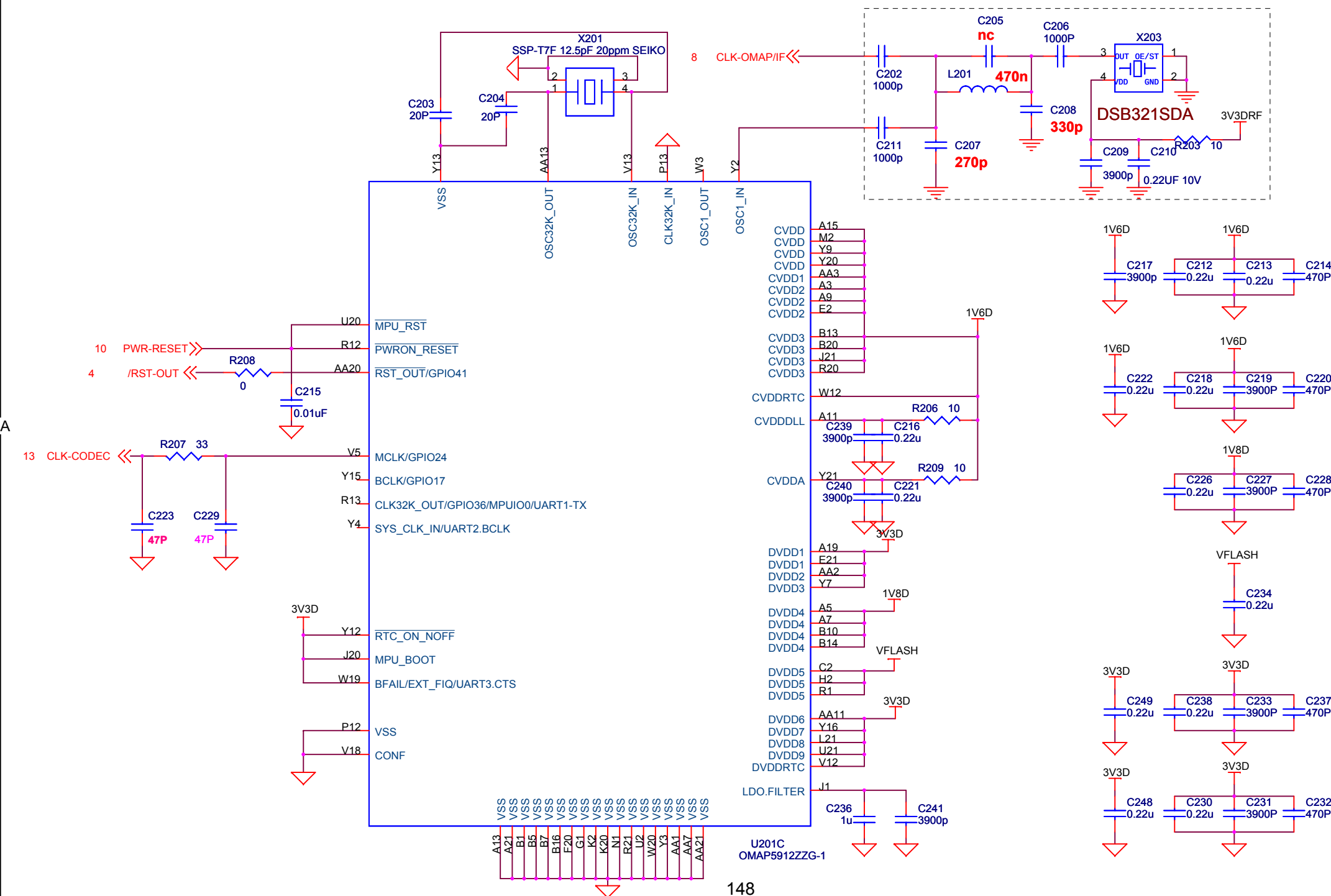
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP MEN)



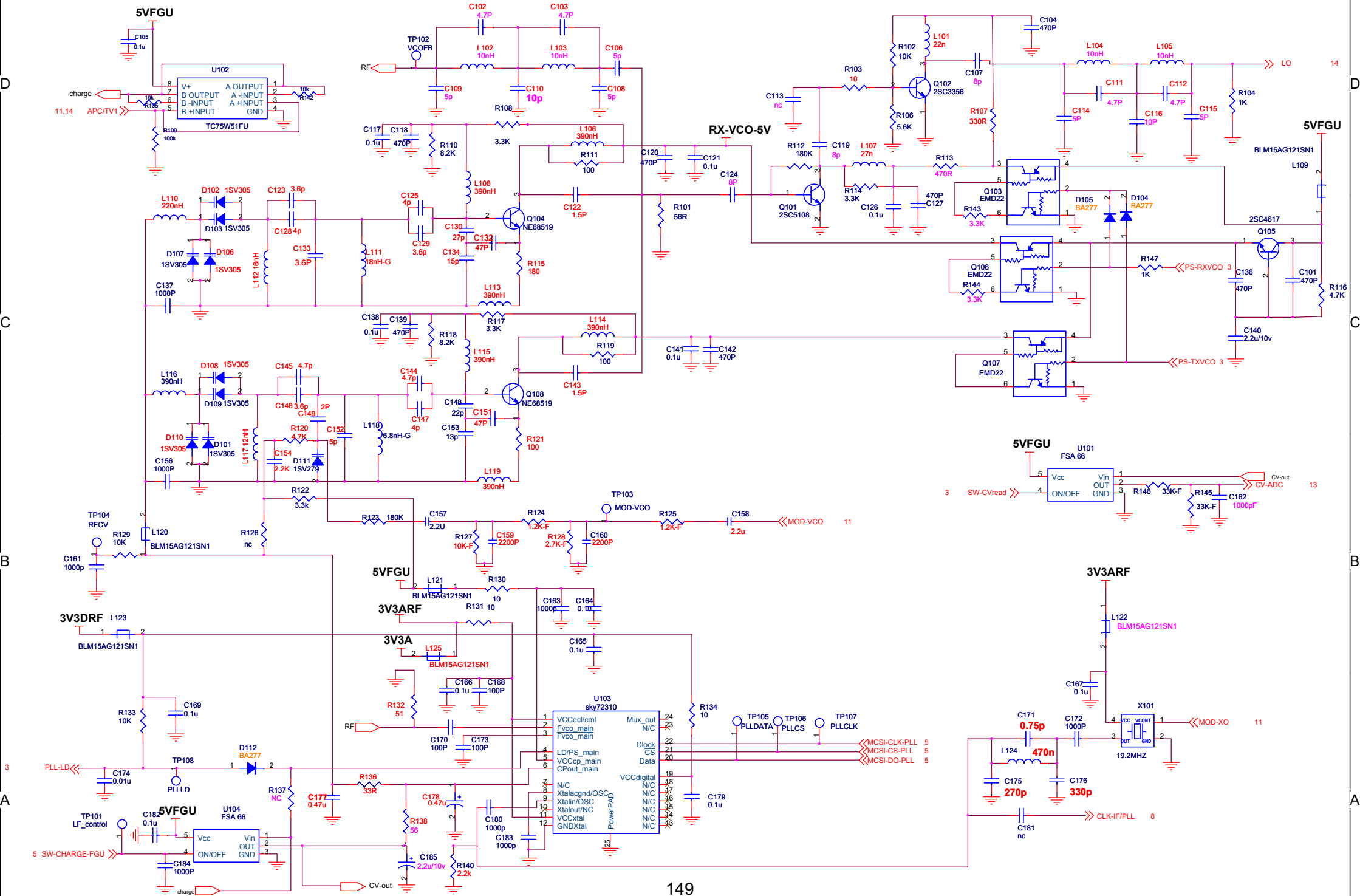
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP IO)



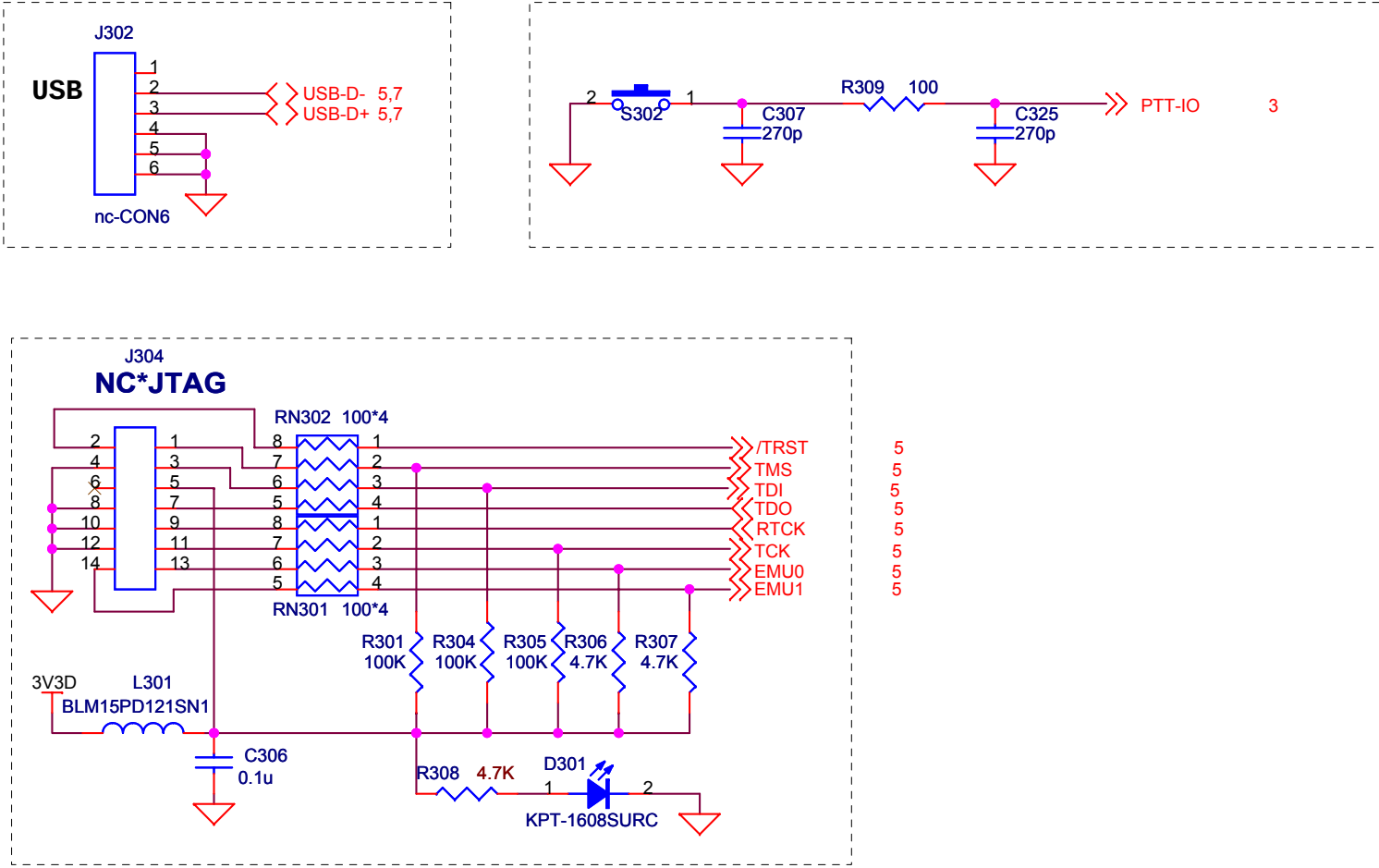
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP CORE)



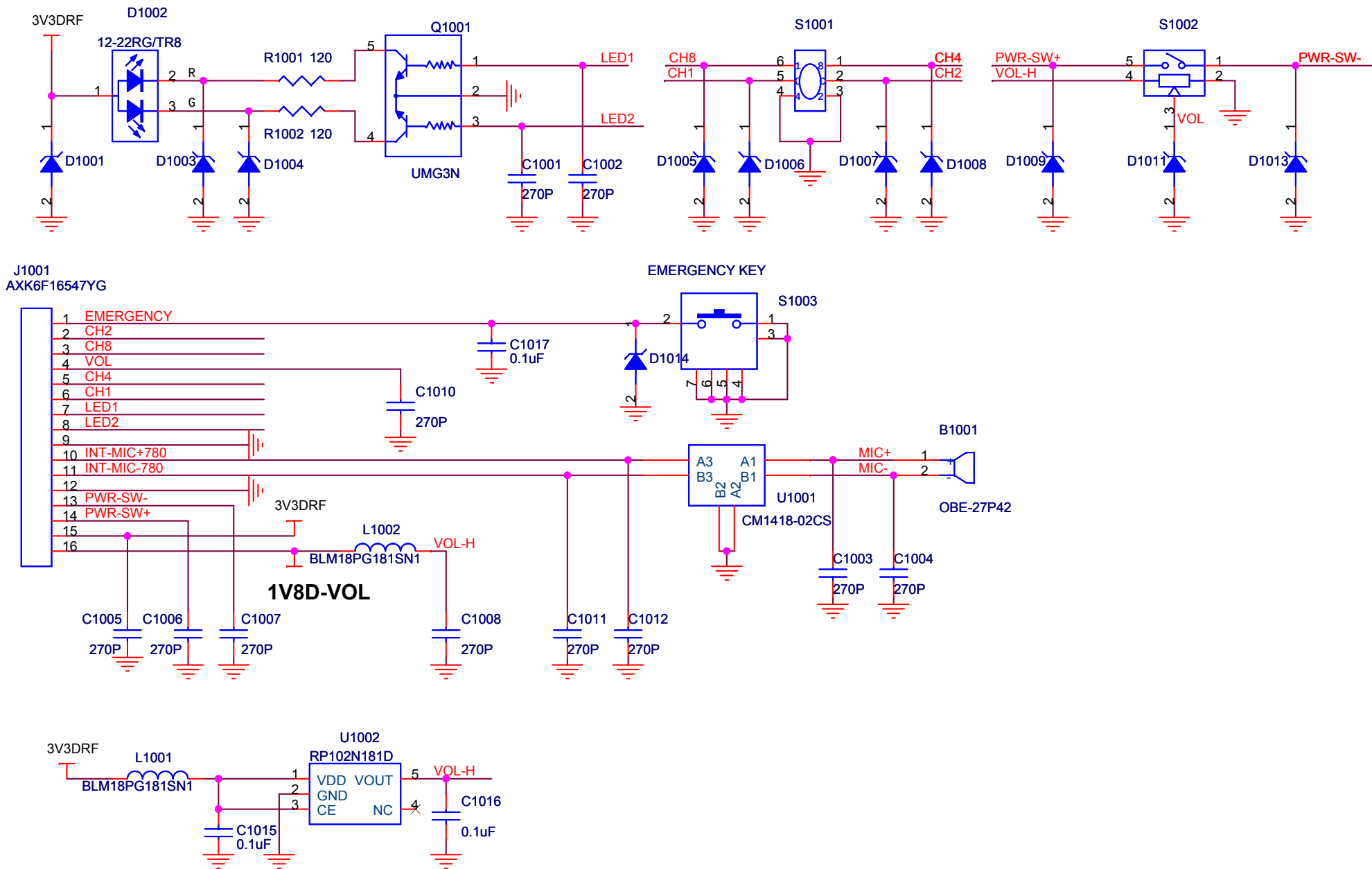
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (FGU)



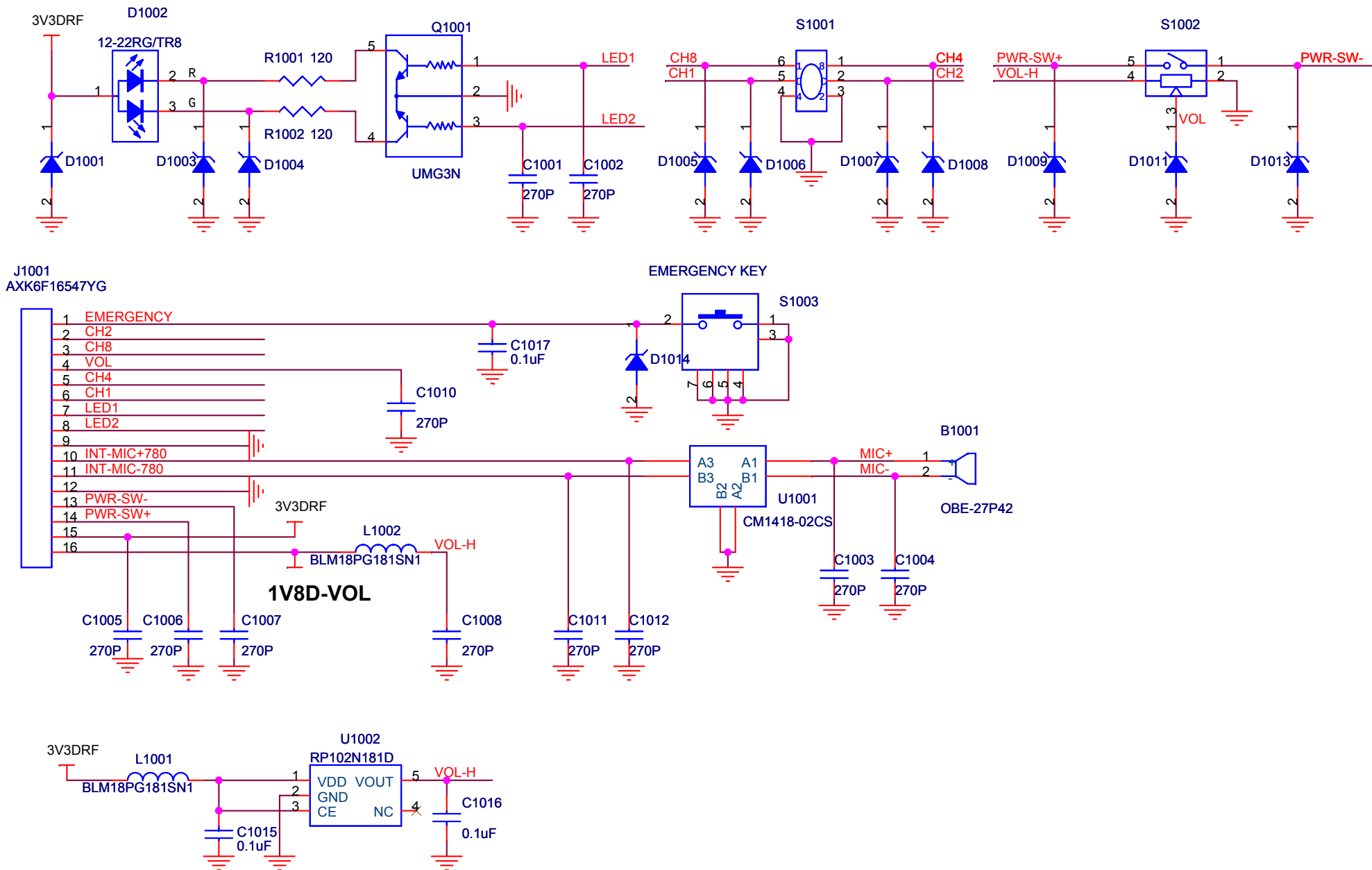
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (External Interface)



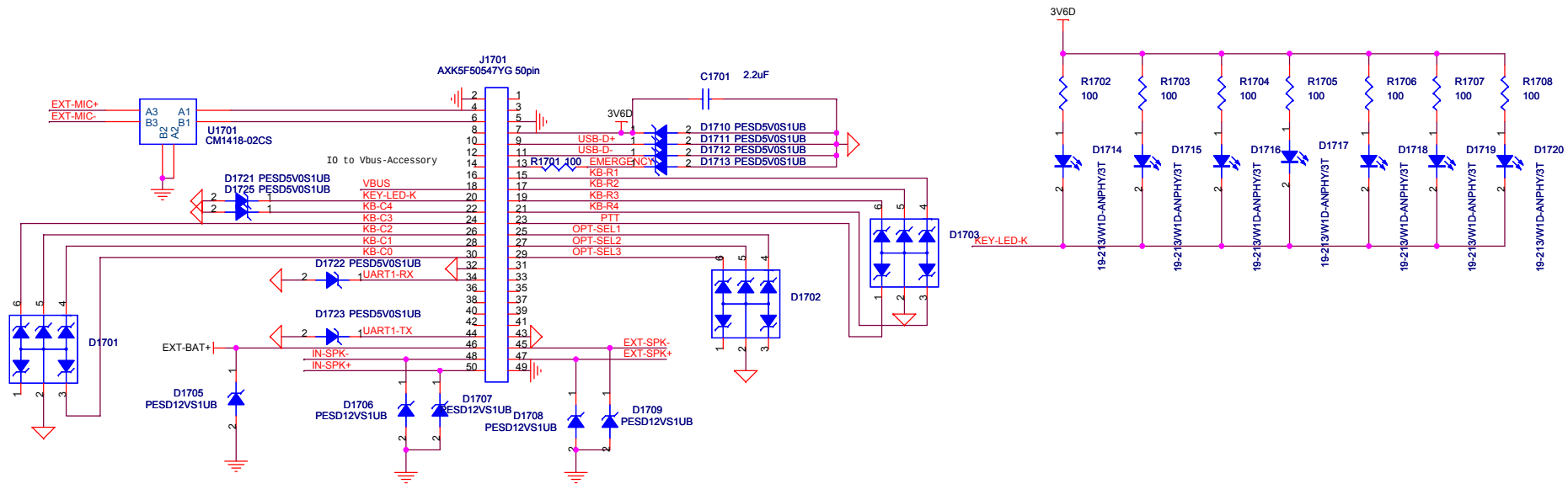
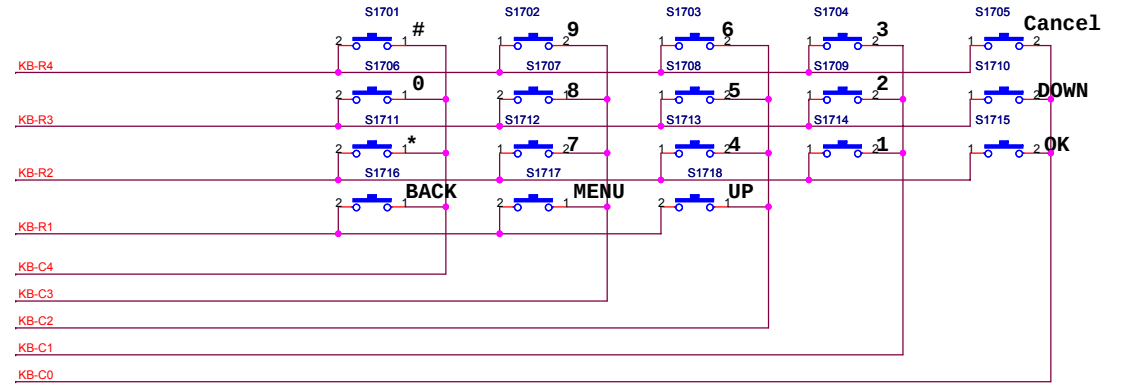
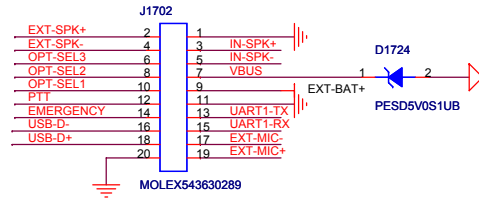
PD70X/PD70XG/HD705/HD705G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Keyboard)



8.7 Parts List

PD70X/ PD70XG/ PD78X/ PD78XG/ HD705/ HD705G/ HD785/ HD785G Main Board

No.	Ref. No.	Print No.	Part No.	Description
1	ANT1	T2B	6201847000000	Antenna spring plate
2	C101	B1F	3101054710010	470PF
3	C102	B2H	3101054790010	4.7PF
4	C103	B2H	3101054790010	4.7PF
5	C104	T1G	3101054710010	470PF
6	C105	B1I	3101051040060	0.1UF
7	C106	B2G	3101050500010	5PF
8	C107	T1F	3101050800000	8PF
9	C108	B2H	3101050500010	5PF
10	C109	B2H	3101050500010	5PF
11	C110	B2H	3101051000020	10PF
12	C111	T1F	3101054790010	4.7PF
13	C112	T1F	3101054790010	4.7PF
14	C114	T1F	3101050500010	5PF
15	C115	T2F	3101050500010	5PF
16	C116	T1F	3101051000020	10PF
17	C117	T1G	3101051040060	0.1UF
18	C118	T1G	3101054710010	470PF
19	C119	T1G	3101050800000	8PF

No.	Ref. No.	Print No.	Part No.	Description
20	C120	T1G	3101054710010	470PF
21	C121	T1G	3101051040060	0.1UF
22	C122	T1G	3101061590010	1.5PF
23	C123	T1H	3101063690000	3.6PF
24	C124	T2G	3101050800000	8PF
25	C125	T1H	3101060400010	4PF
26	C126	T2G	3101051040060	0.1UF
27	C127	T2G	3101054710010	470PF
28	C128	T1H	3101060400010	4PF
29	C129	T1H	3101063690000	3.6PF
30	C130	T1H	3101062700010	27PF
31	C132	T1G	3101054700010	47PF
32	C133	T1H	3101063690000	3.6PF
33	C134	T2H	3101061500010	15PF
34	C136	B1F	3101054710010	470PF
35	C137	T2H	3101051020010	1000PF
36	C138	B1G	3101051040060	0.1UF
37	C139	B1G	3101054710010	470PF
38	C140	B1F	3101062250000	2.2UF
39	C141	B2G	3101051040060	0.1UF
40	C142	B2G	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
41	C143	B2G	3101061590010	1.5PF
42	C144	B1G	3101064790010	4.7PF
43	C145	B1H	3101064790010	4.7PF
44	C146	B1H	3101063690000	3.6PF
45	C147	B1G	3101060400010	4PF
46	C148	B1G	3101062200010	22PF
47	C149	B1H	3101060200010	2PF
48	C151	B1G	3101054700010	47PF
49	C152	B1H	3101060500010	5PF
50	C153	B1G	3101061300000	13PF
51	C154	B1H	3001052220010	2.2KΩ
52	C156	B1H	3101051020010	1000PF
53	C157	B1H	3101062250000	2.2UF
54	C158	B1H	3101062250000	2.2UF
55	C159	B1H	3101052220010	2200pF
56	C160	B1H	3101052220010	2200pF
57	C161	B1H	3101051020010	1000PF
58	C162	B1I	3101051020010	1000PF
59	C163	T1H	3101051020010	1000PF
60	C164	T1H	3101051040060	0.1UF
61	C165	B1I	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
62	C166	T2H	3101051040060	0.1UF
63	C167	T2I	3101051040060	0.1UF
64	C168	T2H	3101051010030	100PF
65	C169	B1I	3101051040060	0.1UF
66	C170	T1H	3101051010030	100PF
67	C171	T1I	3199050758000	0.75PF
68	C172	T1I	3101051020010	1000PF
69	C173	T1H	3101051010030	100PF
70	C174	B1I	3101051030020	0.01UF
71	C175	T1I	3101052710000	270PF
72	C176	T1I	3101053310030	330PF
73	C177	T1H	3101074740000	0.47UF
74	C178	T1I	3101074740000	0.47UF
75	C179	T2I	3101051040060	0.1UF
76	C180	T1I	3101051020010	1000PF
77	C182	B1I	3101051040060	0.1UF
78	C183	T1I	3101051020010	1000PF
79	C184	B1I	3101051020010	1000PF
80	C185	T1I	3104072250060	2.2UF
81	C202	B3H	3101051020010	1000PF
82	C203	B5J	3101052000020	20PF

No.	Ref. No.	Print No.	Part No.	Description
83	C204	B5J	3101052000020	20PF
84	C206	B3H	3101051020010	1000PF
85	C207	B3H	3101052710000	270PF
86	C208	B3H	3101053310030	330PF
87	C209	B3H	3101053920000	3900PF
88	C210	B3H	3101062240000	0.22UF
89	C211	B3I	3101051020010	1000PF
90	C212	B5J	3101052240010	0.22UF
91	C213	B4K	3101052240010	0.22UF
92	C214	B3I	3101054710010	470PF
93	C215	T4J	3101051030020	0.01UF
94	C216	B3J	3101052240010	0.22UF
95	C217	B5J	3101053920000	3900PF
96	C218	B3J	3101052240010	0.22UF
97	C219	B3J	3101053920000	3900PF
98	C220	B4K	3101054710010	470PF
99	C221	B4K	3101052240010	0.22UF
100	C222	B3I	3101052240010	0.22UF
101	C223	T4J	3101054700010	47PF
102	C226	B3J	3101052240010	0.22UF
103	C227	B3J	3101053920000	3900PF

No.	Ref. No.	Print No.	Part No.	Description
104	C228	B3J	3101054710010	470PF
105	C229	T4J	3101054700010	47PF
106	C230	B3K	3101052240010	0.22UF
107	C231	B3J	3101053920000	3900PF
108	C232	B4K	3101054710010	470PF
109	C233	B4F	3101053920000	3900PF
110	C234	B4I	3101052240010	0.22UF
111	C236	B4I	3101051050000	1UF
112	C237	B5J	3101054710010	470PF
113	C238	B5I	3101052240010	0.22UF
114	C239	B3J	3101053920000	3900PF
115	C240	B4K	3101053920000	3900PF
116	C241	B4I	3101053920000	3900PF
117	C242	B5I	3101052240010	0.22UF
118	C243	B3J	3101054710010	470PF
119	C244	T2J	3101054710010	470PF
120	C245	B3I	3101053920000	3900PF
121	C246	T2J	3101053920000	3900PF
122	C247	T2J	3101053920000	3900PF
123	C248	B5J	3101052240010	0.22UF
124	C249	B4K	3101052240010	0.22UF

No.	Ref. No.	Print No.	Part No.	Description
125	C251	B5J	3101051030020	0.01UF
126	C255	T2J	3101054710010	470PF
127	C256	T4J	3101054710010	470PF
128	C257	B4K	3101054710010	470PF
129	C258	T4J	3101054710010	470PF
130	C259	T4J	3101054710010	470PF
131	C260	T4J	3101055610000	560PF
132	C261	T4J	3101055610000	560PF
133	C262	T4J	3101052710000	270PF
134	C263	T2J	3101054710010	470PF
135	C264	T3J	3101054710010	470PF
136	C265	T2J	3101051010030	100PF
137	C266	T3J	3101054710010	470PF
138	C268	T2J	3101054710010	470PF
139	C269	T2J	3101054710010	470PF
140	C270	T2J	3101052710000	270PF
141	C271	T4J	3101054700010	47PF
142	C272	B5J	3101054700010	47PF
143	C273	B5J	3101054700010	47PF
144	C274	B5J	3101051200020	12PF
145	C275	T4J	3101051520000	1500PF

No.	Ref. No.	Print No.	Part No.	Description
146	C276	T4J	3101051520000	1500PF
147	C277	T4J	3101051520000	1500PF
148	C278	T4J	3101054710010	470PF
149	C279	B5J	3101054700010	47PF
150	C280	B3K	3101054710010	470PF
151	C281	T4J	3101054710010	470PF
152	C282	T4J	3101054710010	470PF
153	C283	T4J	3101054710010	470PF
154	C284	T4J	3101054710010	470PF
155	C285	T4J	3101052710000	270PF
156	C286	T4J	3101054700010	47PF
157	C287	T4J	3101054710010	470PF
158	C288	B4I	3101054710010	470PF
159	C289	T4J	3101051520000	1500PF
160	C290	T4J	3101052710000	270PF
161	C291	B4K	3101052710000	270PF
162	C292	T4J	3101052710000	270PF
163	C293	B4K	3101054710010	470PF
164	C294	T4J	3101054710010	470PF
165	C295	B5J	3101054710010	470PF
166	C296	T4J	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
167	C297	B5J	3101054710010	470PF
168	C298	T4J	3101054710010	470PF
169	C299	T4J	3101054710010	470PF
170	C300	B4J	3101054710010	470PF
171	C301	B4J	3101054710010	470PF
172	C302	B4J	3101054710010	470PF
173	C303	B4J	3101054710010	470PF
174	C304	B5J	3101051520000	1500PF
175	C305	B4J	3101054710010	470PF
176	C310	B4H	3101051040060	0.1UF
177	C311	B4H	3101051040060	0.1UF
178	C312	B4G	3101051050000	1UF
179	C313	B4G	3101054710010	470PF
180	C314	B4G	3101051050000	1UF
181	C315	B4G	3101054710010	470PF
182	C316	B4F	3101054710010	470PF
183	C317	B4F	3101054710010	470PF
184	C318	B4C	3101051040060	0.1UF
185	C319	B4G	3001051040000	100KΩ
186	C320	B4C	3101054710010	470PF
187	C321	B4D	3101052710000	270PF

No.	Ref. No.	Print No.	Part No.	Description
188	C322	B4D	3101052710000	270PF
189	C323	B3K	3101051050000	1UF
190	C324	B5F	3101064710000	470PF
191	C325	B3J	3101052710000	270PF
192	C326	B3J	3101052710000	270PF
193	C331	B4C	3101054710010	470PF
194	C332	B4D	3101054710010	470PF
195	C333	B4D	3101054710010	470PF
196	C334	B3L	3101052710000	270PF
197	C335	B5D	3101054710010	470PF
198	C336	B5D	3101054710010	470PF
199	C420	B2H	3101051200020	12PF
200	C422	T2G	3101051040060	0.1UF
201	C423	T2F	3101051050000	1UF
202	C425	T3G	3101051800010	18PF
203	C426	T3G	3101051030020	0.01UF
204	C427	T2H	3101052210010	220PF
205	C428	T2H	3101051010030	100PF
206	C429	T2G	3101051010030	100PF
207	C430	T2G	3101051040060	0.1UF
208	C431	T2H	3101052220010	2200pF

No.	Ref. No.	Print No.	Part No.	Description
209	C432	T3F	3101052200010	22PF
210	C433	T2H	3101051040060	0.1UF
211	C434	T2H	3101051040060	0.1UF
212	C435	T3H	3101051040060	0.1UF
213	C436	T2H	3101051030020	0.01UF
214	C437	T3F	3101065620010	5600PF
215	C438	T2H	3101051010030	100PF
216	C439	T2H	3101051010030	100PF
217	C440	T3H	3101051030020	0.01UF
218	C441	T3H	3101051040060	0.1UF
219	C442	T3H	3101061030010	0.01UF
220	C443	T3H	3101063900000	39PF
221	C444	T2F	3101054710010	470PF
222	C445	T3G	3101051040060	0.1UF
223	C446	T3G	3101051040060	0.1UF
224	C447	T3G	3101051030020	0.01UF
225	C448	T3G	3101053300000	33PF
226	C449	T3G	3101051030020	0.01UF
227	C450	T3G	3101061230000	0.012UF
228	C452	T3H	3101060500010	5PF
229	C453	T3G	3101051030020	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
230	C454	T3G	3101051030020	0.01UF
231	C455	T3I	3101063320000	3300PF
232	C456	T3G	3101063690000	3.6PF
233	C457	B2H	3101051030020	0.01UF
234	C458	T3G	3101061800000	18PF
235	C459	T2F	3101054710010	470PF
236	C460	T3F	3101063000010	30PF
237	C461	T3F	3101063300000	33PF
238	C462	T3F	3101051040060	0.1UF
239	C463	T3G	3101072240000	0.22UF
240	C464	T2F	3101051040060	0.1UF
241	C465	T2G	3101051040060	0.1UF
242	C466	T3H	3101051040060	0.1UF
243	C467	T2F	3101062250000	2.2UF
244	C468	T3I	3104076840020	0.68UF
245	C469	T3H	3101052710000	270PF
246	C470	T3H	3101052710000	270PF
247	C471	T3H	3101052710000	270PF
248	C472	B2H	3101062250000	2.2UF
249	C512	B4E	3101054710010	470PF
250	C513	B2C	3101055600000	56PF

No.	Ref. No.	Print No.	Part No.	Description
251	C514	B3C	3101051210000	120PF
252	C515	B2C	3101051050000	1UF
253	C516	B3C	3101051590070	1.5PF
254	C517	B3C	3101051800010	18PF
255	C518	B2C	3101051590000	1.5PF
256	C519	B2C	3199050758000	0.75PF
257	C520	B2C	3101050100030	1PF
258	C521	B3C	3101051210000	120PF
259	C522	B3C	3101051040060	0.1UF
260	C523	B2C	3101051040060	0.1UF
261	C524	B2C	3101055600000	56PF
262	C525	B2C	3101051040060	0.1UF
263	C526	B2C	3101051050000	1UF
264	C527	B2C	3101050200010	2PF
265	C601	T3K	3101062250000	2.2UF
266	C602	B3E	3101051010030	100PF
267	C604	B2F	3101051040060	0.1UF
268	C605	B2F	3101061050020	1UF
269	C606	B2F	3101062250000	2.2UF
270	C607	B2F	3101051040060	0.1UF
271	C608	B1J	3101051050160	1uF

No.	Ref. No.	Print No.	Part No.	Description
272	C614	B2E	3101055690020	5.6PF
273	C615	B2E	3101051040060	0.1UF
274	C616	B2E	3101051010030	100PF
275	C617	B3E	3101051040060	0.1UF
276	C618	B3F	3101051040060	0.1UF
277	C619	T4G	3101061030010	0.01UF
278	C620	B2E	3101051010030	100PF
279	C621	B2E	3101074750000	4.7UF
280	C622	B2E	3101051040060	0.1UF
281	C623	B2E	3101061050020	1UF
282	C624	B2E	3101062250000	2.2UF
283	C625	B2E	3101051040060	0.1UF
284	C626	B2F	3101051040060	0.1UF
285	C627	T5G	3110081060000	10uF
286	C628	T4F	3101062240000	0.22UF
287	C629	T3J	3101074750000	4.7UF
288	C630	T5F	3101051040060	0.1UF
289	C635	T3K	3101051040060	0.1UF
290	C636	T4H	3110071060000	10uF
291	C637	T4G	3110994760000	47uF
292	C638	T4G	3101053920000	3900PF

No.	Ref. No.	Print No.	Part No.	Description
293	C639	T4J	3101051040060	0.1UF
294	C640	T5J	3101062240000	0.22UF
295	C641	B3E	3101062250000	2.2UF
296	C642	B3E	3101051040060	0.1UF
297	C644	T4G	3101052000020	20PF
298	C645	T4G	3101052210010	220PF
299	C646	T5I	3001060000000	0Ω
300	C647	T4I	3101051030020	0.01UF
301	C648	T4I	3101061050020	1UF
302	C649	T5I	3101062250000	2.2UF
303	C650	T5I	3101053920000	3900PF
304	C651	T3J	3101051030020	0.01UF
305	C652	T4K	3101054710010	470PF
306	C653	T5K	3101062250000	2.2UF
307	C654	T5H	3110081060000	10uF
308	C655	T4H	3101062240000	0.22UF
309	C656	T4I	3101051040060	0.1UF
310	C657	T2J	3001060000000	0Ω
311	C658	T5H	3101051040060	0.1UF
312	C659	T3J	3101051040060	0.1UF
313	C660	T2I	3101062250000	2.2UF

No.	Ref. No.	Print No.	Part No.	Description
314	C661	T4I	3110071060000	10uF
315	C662	T2J	3101053920000	3900PF
316	C663	T4K	3101054710010	470PF
317	C665	T4I	3110994760000	47uF
318	C666	T4I	3101053920000	3900PF
319	C667	B1K	3001060000000	0Ω
320	C668	B2J	3101051030020	0.01UF
321	C669	B1K	3101061050020	1UF
322	C670	B1J	3101062250000	2.2UF
323	C671	B1J	3101051040060	0.1UF
324	C672	T4I	3101052000020	20PF
325	C674	T4H	3101052210010	220PF
326	C676	T3I	3101062240000	0.22UF
327	C677	B3E	3101061050020	1UF
328	C678	B4F	3101062240000	0.22UF
329	C679	T4I	3101051040060	0.1UF
330	C680	T4I	3101054710010	470PF
331	C681	T5H	3101054710010	470PF
332	C682	T4H	3101051040060	0.1UF
333	C683	B1K	3101052240010	0.22UF
334	C684	B1K	3101053920000	3900PF

No.	Ref. No.	Print No.	Part No.	Description
335	C685	B3E	3101054710010	470PF
336	C686	B3E	3101053920000	3900PF
337	C687	T3K	3101053920000	3900PF
338	C688	B1J	3101051040060	0.1UF
339	C701	T1K	3101061050020	1UF
340	C703	T1J	3101054710010	470PF
341	C704	T1J	3101054710010	470PF
342	C705	T1J	3101051020010	1000PF
343	C706	T1J	3101051050000	1UF
344	C707	T1J	3101051050000	1UF
345	C708	T1J	3101051010030	100PF
346	C709	T1J	3101051010030	100PF
347	C710	T1K	3101051040060	0.1UF
348	C711	T1J	3101051050000	1UF
349	C712	T1J	3101051050000	1UF
350	C801	B4K	3101051040060	0.1UF
351	C802	T4K	3101071060010	10UF
352	C803	T3K	3101052240010	0.22UF
353	C804	T4K	3101052710000	270PF
354	C805	T3L	3101052210010	220PF
355	C806	T3K	3101052210010	220PF

No.	Ref. No.	Print No.	Part No.	Description
356	C808	T3K	3101053920000	3900PF
357	C809	T4L	3101051040060	0.1UF
358	C810	T3K	3101051040060	0.1UF
359	C812	T3K	3101051040060	0.1UF
360	C813	T3K	3101053920000	3900PF
361	C816	T4K	3101061050020	1UF
362	C819	T4K	3101051030020	0.01UF
363	C820	T3K	3101053920000	3900PF
364	C821	T2J	3101052240010	0.22UF
365	C822	T2K	3101051030020	0.01UF
366	C823	T3K	3101053920000	3900PF
367	C824	T2K	3101052240010	0.22UF
368	C825	T3K	3101062250000	2.2UF
369	C826	T3K	3101051030020	0.01UF
370	C827	T2K	3101051030020	0.01UF
371	C828	T2K	3101062250000	2.2UF
372	C831	T2K	3101051050000	1UF
373	C832	T3K	3101051050000	1UF
374	C833	T3K	3101051040060	0.1UF
375	C834	B2K	3101051050000	1UF
376	C835	T3L	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
377	C836	T2K	3101051040060	0.1UF
378	C837	B2K	3101051030020	0.01UF
379	C838	T2K	3101054710010	470PF
380	C839	T2L	3101051040060	0.1UF
381	C840	B2K	3101051050000	1UF
382	C842	T3L	3101054710010	470PF
383	C843	T2L	3101051040060	0.1UF
384	C845	T2L	3101054710010	470PF
385	C846	B2L	3101054710010	470PF
386	C847	T2K	3101051050000	1UF
387	C848	T2L	3101054710010	470PF
388	C849	B3K	3101054710010	470PF
389	C850	T2K	3101051040060	0.1UF
390	C851	T2L	3101054710010	470PF
391	C852	T2L	3101051040060	0.1UF
392	C853	T2L	3101054710010	470PF
393	C856	B2L	3101054710010	470PF
394	C857	B2L	3101054710010	470PF
395	C858	B2K	3101053920000	3900PF
396	C9001	T4C	3101051020010	1000PF
397	C9002	T3C	3101051010030	100PF

No.	Ref. No.	Print No.	Part No.	Description
398	C9003	B3B	3199060758000	0.75PF
399	C9004	B2B	3101061590010	1.5PF
400	C9007	T2C	3101060700020	7PF
401	C9009	T3C	3101060390010	3PF
402	C9011	T3C	3101061010010	100PF
403	C9013	B3B	3101064710000	470PF
404	C9014	T1D	3101051000020	10PF
405	C9015	T2C	3101060500010	5PF
406	C9018	T2F	3101054710010	470PF
407	C9019	T2C	3101060900010	9PF
408	C9020	T2C	3101064300000	43PF
409	C9021	T2C	3101062490000	2.4PF
410	C9023	B3B	3101060600010	6PF
411	C9024	B2B	3101060600010	6PF
412	C9025	T2F	3101051000020	10PF
413	C9026	T2E	3101050800000	8PF
414	C9027	T1D	3101061200000	12PF
415	C9028	T1E	3101050700010	7PF
416	C9029	T1E	3101054710010	470PF
417	C9030	T3C	3101060800010	8PF
418	C9031	T3C	3101064790010	4.7PF

No.	Ref. No.	Print No.	Part No.	Description
419	C9032	T1E	3101050800000	8PF
420	C9033	T1F	3101054710010	470PF
421	C9034	T1D	3101054710010	470PF
422	C9035	T1D	3101051500020	15PF
423	C9036	T2F	3101051020010	1000PF
424	C9037	T1E	3101054710010	470PF
425	C9038	T2D	3101051040060	0.1UF
426	C9039	T2D	3101054710010	470PF
427	C9041	T1E	3101051040060	0.1UF
428	C9042	T3C	3101054710010	470PF
429	C9043	T3C	3101051040060	0.1UF
430	C9044	T1D	3101051030020	0.01UF
431	C9045	T1E	3101054710010	470PF
432	C9046	T1E	3101051040060	0.1UF
433	C9047	T1D	3101054710010	470PF
434	C9048	T1D	3101054710010	470PF
435	C9049	T1D	3101051040060	0.1UF
436	C9051	B1D	3104082260060	22UF
437	C9052	T2F	3101051050000	1UF
438	C9057	T3C	3101051040060	0.1UF
439	C9059	B1D	3101051020010	1000PF

No.	Ref. No.	Print No.	Part No.	Description
440	C9060	B1E	3101061020000	1000PF
441	C9061	B1E	3101051020010	1000PF
442	C9063	B1E	3101054720000	4700PF
443	C9064	B1D	3101051020010	1000PF
444	C9065	B1E	3101051520000	1500PF
445	C9066	B1D	3101051030020	0.01UF
446	C9067	B1E	3101055610000	560PF
447	C9069	B1D	3101054710010	470PF
448	C9071	B1D	3101051040060	0.1UF
449	C9075	T3F	3101054710010	470PF
450	C9077	T3F	3101051000020	10PF
451	C9078	T3F	3101052000020	20PF
452	C9079	T3E	3101051200020	12PF
453	C9080	T4D	3101051040060	0.1UF
454	C9081	T4D	3101054710010	470PF
455	C9085	B2G	3101051020010	1000PF
456	C9086	B2G	3101051040060	0.1UF
457	C9087	T4C	3101051030020	0.01UF
458	C9088	T4C	3101051020010	1000PF
459	C9089	T4D	3101051020010	1000PF
460	C9090	B3G	3101051030020	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
461	C9091	B3G	3101051040060	0.1UF
462	C9092	T3F	3101051040060	0.1UF
463	C9093	T4D	3101051020010	1000PF
464	C9095	T2F	3101051050000	1UF
465	C9096	T2F	3101054710010	470PF
466	C9097	B3G	3101051040060	0.1UF
467	C9098	T3F	3101054710010	470PF
468	C9099	B3H	3101051000020	10PF
469	C9100	T4D	3101050200010	2PF
470	C9101	T4E	3101050600010	6PF
471	C9103	B3H	3101051020010	1000PF
472	C9104	B3G	3101051040060	0.1UF
473	C9105	B2G	3101051000020	10PF
474	C9106	T4C	3101051500080	15PF
475	C9107	B3G	3101050800000	8PF
476	C9109	T4D	3101050600010	6PF
477	C9110	B3G	3101051030020	0.01UF
478	C9111	T4D	3101050690050	6PF
479	C9112	T5D	3101062200010	22PF
480	C9113	T4E	3101050800000	8PF
481	C9114	T4D	3001055620000	5.6KΩ

No.	Ref. No.	Print No.	Part No.	Description
482	C9115	T4C	3101050500010	5PF
483	C9116	T4C	3101050300000	3PF
484	C9117	T4C	3101050500010	5PF
485	C9118	B3G	3101052700000	27PF
486	C9120	T4D	3101050800000	8PF
487	C9121	B2G	3101051020010	1000PF
488	C9122	B3H	3101052700000	27PF
489	C9123	T4C	3101051020010	1000PF
490	C9124	B2G	3101050600010	6PF
491	C9128	T4C	3101050500010	5PF
492	C9129	T4C	3101050800000	8PF
493	C9131	T4C	3101050600010	6PF
494	C9132	T4C	3101050400010	4PF
495	C9133	T4C	3101050500010	5PF
496	C9134	T4C	3101057590000	7.5PF
497	C9135	T4D	3101050500010	5PF
498	C9136	T4E	3101050500010	5PF
499	C9137	T4E	3101050600010	6PF
500	C9138	T4D	3101051030020	0.01UF
501	C9141	T4E	3101054700010	47PF
502	D101	B1H	3304010100220	Varactor

No.	Ref. No.	Print No.	Part No.	Description
503	D102	T1H	3304010100220	Varactor
504	D103	T1H	3304010100220	Varactor
505	D104	B1G	3303990000060	Switching diode
506	D105	B1G	3303990000060	Switching diode
507	D106	T1H	3304010100220	Varactor
508	D107	T1H	3304010100220	Varactor
509	D108	B1H	3304010100220	Varactor
510	D109	B1H	3304010100220	Varactor
511	D110	B1H	3304010100220	Varactor
512	D111	B1H	3304010100890	Varactor
513	D112	B1I	3303990000060	Switching diode
514	D302	B4C	3303990000010	Switching diode
515	D303	B3L	3399040600000	ESD protection diode
516	D304	B3L	3399040600000	ESD protection diode
517	D305	B3K	3399040600000	ESD protection diode
518	D306	B3K	3399040600000	ESD protection diode
519	D307	B4L	3399040600020	ESD protection diode
520	D308	B4L	3399040600020	ESD protection diode
521	D309	B4K	3399040600020	ESD protection diode
522	D310	B4K	3399040600020	ESD protection diode
523	D318	B3K	3399040600010	ESD protection diode

No.	Ref. No.	Print No.	Part No.	Description
524	D401	T3I	3304060300050	Varactor
525	D402	T3G	3304010100220	Varactor
526	D601	B2E	3399990000110	Diode
527	D602	B2E	3399040600020	ESD protection diode
528	D604	B4D	3303030100010	Switching diode
529	D9001	T4D	3304010100200	Varactor
530	D9002	T3C	3303030800040	Switching diode
531	D9005	B3B	3303990000060	Switching diode
532	D9006	B3B	3303990000060	Switching diode
533	D9007	T2F	3303990000060	Switching diode
534	D9008	T2F	3303060300010	Switching diode
535	D9010	B1F	3399990000080	Zener diode
536	D9011	B2F	3303030100010	Switching diode
537	D9012	T4D	3304010100200	Varactor
538	D9013	T4C	3399990000260	Rectifier diode
539	D9014	T4C	3304010100200	Varactor
540	D9015	T4C	3304010100200	Varactor
541	D9016	T4C	3304010100200	Varactor
542	D9017	T4F	3301250300000	Schottky barrier diode
543	F601	B3E	4099000000050	Fuse
544	F602	T5J	4010000000010	Resumable fuse

No.	Ref. No.	Print No.	Part No.	Description
545	J1601	B3L	5201050100030	Board-to-board connector
546	J311	B4G	5201030000040	Board-to-board connector
547	J313	B4B	5202002100200	Board-to-wire connector
548	J601	T3D	5205003100020	Battery connector
549	J821	B4C	5201016000010	Board-to-board connector
550	L101	T1G	3210306220000	22nH
551	L102	B2H	3212106100000	10nH
552	L103	B2H	3212106100000	10nH
553	L104	T1F	3210106100010	10nH
554	L105	T1F	3210106100010	10nH
555	L106	T1G	3210106391000	390nH
556	L107	T2G	3210306270000	27nH
557	L108	T1G	3210106391000	390nH
558	L109	B1G	3221505121000	Bead
559	L110	T1H	3210306221000	220nH
560	L111	T1H	3247107180000	18nH
561	L112	T1H	3217107160000	16nH
562	L113	T2G	3210106391000	390nH
563	L114	B1G	3210106391000	390nH
564	L115	B1G	3210106391000	390nH
565	L116	B1H	3210106391000	390nH

No.	Ref. No.	Print No.	Part No.	Description
566	L117	B2H	3217107120000	12nH
567	L118	B1H	3237138689000	6.8nH
568	L119	B1G	3210106391000	390nH
569	L120	B1H	3221505121000	Bead
570	L121	B1I	3221505121000	Bead
571	L122	T2I	3221505121000	Bead
572	L123	B1I	3221505121000	Bead
573	L124	T1I	3210406471000	470nH
574	L125	T2I	3221505121000	Bead
575	L201	B3H	3210406471000	470nH
576	L302	B4C	3221506601000	Bead
577	L303	B2K	3221506181000	Bead
578	L304	B4D	3221506601000	Bead
579	L305	B4D	3221506601000	Bead
580	L401	T2H	3215099103000	10uH
581	L402	B3H	3210406271000	270nH
582	L403	T3G	3221505121000	Bead
583	L404	T2G	3215099103000	10uH
584	L405	T2F	3221505121000	Bead
585	L406	T3G	3217107221020	220nH
586	L407	T3H	3221505121010	Bead

No.	Ref. No.	Print No.	Part No.	Description
587	L408	T2H	3210407472000	4.7uH
588	L409	T3F	3210406471000	470nH
589	L410	B2H	3221506601000	Bead
590	L411	T3H	3217107392000	3.9uH
591	L412	T2H	3221505121000	Bead
592	L413	T3G	3213306682000	6.8uH
593	L501	B2C	3297106339000	3.3nH
594	L502	B3C	3221506601080	Bead
595	L503	B2C	3297106339000	3.3nH
596	L504	B2C	3297106339000	3.3nH
597	L505	B2C	3221506601080	Bead
598	L506	B3C	3210106390000	39nH
599	L507	B3C	3210305180000	18nH
600	L508	B3C	3210305829000	8.2nH
601	L509	B3C	3210305829000	8.2nH
602	L601	B1J	3221506181000	Bead
603	L602	B3E	3221506181000	Bead
604	L603	B2F	3221506181000	Bead
605	L605	B2E	3221506181000	Bead
606	L606	B2F	3221506181000	Bead
607	L607	T4F	3290299222000	2.2uH

No.	Ref. No.	Print No.	Part No.	Description
608	L609	T3K	3221506181000	Bead
609	L610	T5G	3217099153000	15uH
610	L611	B3E	3221506181000	Bead
611	L612	T4I	3221506181000	Bead
612	L613	T4H	3290299222000	2.2uH
613	L614	T5I	3217099153000	15uH
614	L615	T3J	3290299222000	2.2uH
615	L616	B4F	3290299222000	2.2uH
616	L617	T3I	3221506181000	Bead
617	L702	B1K	3221505121000	Bead
618	L801	B4K	3221505121010	Bead
619	L802	T4K	3221506181000	Bead
620	L803	T4L	3221505121010	Bead
621	L804	T4K	3221505121010	Bead
622	L805	T4K	3221505121010	Bead
623	L820	T2K	3001061000000	10Ω
624	L821	T2J	3221505121010	Bead
625	L822	T2J	3221505121010	Bead
626	L823	T3K	3221506601000	Bead
627	L827	T3L	3221506601000	Bead
628	L828	T3L	3221506601000	Bead

No.	Ref. No.	Print No.	Part No.	Description
629	L9001	T4E	3210106820000	82nH
630	L9002	T3C	3210306560000	56nH
631	L9003	B3B	3233099185900	18.5nH
632	L9004	B2B	3233099185900	18.5nH
633	L9005	B2B	3233099185900	18.5nH
634	L9006	T1D	3212106829000	8.2nH
635	L9007	T1E	3212106829000	8.2nH
636	L9008	T1D	3233099470000	47nH
637	L9009	T2F	3210306150000	15nH
638	L9010	T1E	3210306150000	15nH
639	L9011	T1D	3210209102010	1uH
640	L9012	T3C	3210107221000	220nH
641	L9013	B3B	3233099185900	18.5nH
642	L9014	T2D	3221506121000	Bead
643	L9015	B2F	3221505121010	Bead
644	L9016	T1D	3210306339000	3.3nH
645	L9017	T3E	3217106180010	18nH
646	L9018	T3F	3210106150000	15nH
647	L9020	B2F	3221505121010	Bead
648	L9022	T4E	3210406271000	270nH
649	L9024	T4D	3217107331000	330nH

No.	Ref. No.	Print No.	Part No.	Description
650	L9025	T4C	3210306560000	56nH
651	L9026	B3H	3210106101000	100nH
652	L9027	B3G	3213306821000	0.82uH
653	L9028	T4D	3210106220000	22nH
654	L9030	T4C	3210306279000	2.7nH
655	L9032	B2G	3210306221000	220nH
656	L9033	T5D	3237199170000	17nH
657	L9034	T4C	3101060400010	4PF
658	L9035	T4E	3237199170000	17nH
659	L9036	T4C	3237199170000	17nH
660	L9037	T4C	3237199170000	17nH
661	L9038	B2G	3210406331000	330nH
662	L9039	T4E	3101061020000	1000PF
663	L9040	T4D	3217105010000	1nH
664	Q101	T2G	3401002000990	NPN transistor
665	Q102	T1G	3408002000000	NPN transistor
666	Q103	B1G	3403999000000	Compound transistor
667	Q104	T1G	3408002000080	NPN transistor
668	Q105	B1F	3403003000060	NPN transistor
669	Q106	B1G	3403999000000	Compound transistor
670	Q107	B2G	3403999000000	Compound transistor

No.	Ref. No.	Print No.	Part No.	Description
671	Q108	B1G	3408002000080	NPN transistor
672	Q310	B4G	3511990000010	N-MOSFET
673	Q312	T3L	3403008000010	BRT
674	Q313	B4C	3511990000010	N-MOSFET
675	Q401	T2F	3403003000060	NPN transistor
676	Q402	T2G	3499000000150	Compound transistor
677	Q403	T3F	3408002000000	NPN transistor
678	Q603	B4D	3414001000040	NPN transistor
679	Q604	B4E	3503020000030	N-MOSFET
680	Q605	T4K	3505010000210	P-MOSFET
681	Q606	B4E	3505010000210	P-MOSFET
682	Q607	T4K	3503020000030	N-MOSFET
683	Q608	B4E	3503020000030	N-MOSFET
684	Q801	T4K	3403008000010	BRT
685	Q802	T4K	3403008000010	BRT
686	Q9001	T4D	3418001000010	NPN transistor
687	Q9002	T2E	3408002000000	NPN transistor
688	Q9003	T1C	3504990000040	PA MOSFET
689	Q9004	T1F	3406001000090	NPN transistor
690	Q9005	T1D	3504990000010	PA MOSFET
691	Q9006	B1F	3410001000020	PNP transistor

No.	Ref. No.	Print No.	Part No.	Description
692	Q9007	B1F	3403008000010	BRT
693	Q9008	B1F	3403008000010	BRT
694	Q9017	B3G	3404006000000	NPN transistor
695	Q9018	B3G	3404006000000	NPN transistor
696	Q9019	B2F	3403999000000	Compound transistor
697	Q9020	B1E	3403999000000	Compound transistor
698	Q9021	B2F	3401001000490	PNP transistor
699	R101	T2G	3001055600000	56Ω
700	R102	T1G	3001051030000	10KΩ
701	R103	T1G	3001051000000	10Ω
702	R104	T2F	3001051020000	1KΩ
703	R105	B1I	3001051030000	10KΩ
704	R106	T1G	3001055620000	5.6KΩ
705	R107	B1G	3001053310000	330Ω
706	R108	T1G	3001053320000	3.3KΩ
707	R109	B1I	3001051040000	100KΩ
708	R110	T1G	3001058220000	8.2KΩ
709	R111	T1G	3001051010000	100Ω
710	R112	T2G	3001051840000	180KΩ
711	R113	T2G	3001054710000	470Ω
712	R114	T2G	3001053320000	3.3KΩ

No.	Ref. No.	Print No.	Part No.	Description
713	R115	T1G	3001051810010	180Ω
714	R116	B1F	3001054720000	4.7KΩ
715	R117	B1G	3001053320000	3.3KΩ
716	R118	B1G	3001058220000	8.2KΩ
717	R119	B2G	3001051010000	100Ω
718	R120	B1H	3001054790010	4.7KΩ
719	R121	B1G	3001051010000	100Ω
720	R122	B2G	3001053320010	3.3KΩ
721	R123	B1H	3001051840010	180KΩ
722	R124	B1H	3001051220090	1.2KΩ
723	R125	B1H	3001051220090	1.2KΩ
724	R127	B1H	3001051030050	10KΩ
725	R128	B1H	3001052720010	2.7KΩ
726	R129	B1H	3001051030000	10KΩ
727	R130	B1I	3001051000000	10Ω
728	R131	T2I	3001051000000	10Ω
729	R132	B2H	3001055100020	51Ω
730	R133	B1I	3001051030000	10KΩ
731	R134	T2I	3001051000000	10Ω
732	R136	T1H	3001054700000	47Ω
733	R138	T1I	3001055600000	56Ω

No.	Ref. No.	Print No.	Part No.	Description
734	R140	T1I	3001052220000	2.2K Ω
735	R142	B1I	3001051030000	10K Ω
736	R143	B1G	3001053320000	3.3K Ω
737	R144	B2F	3001053320000	3.3K Ω
738	R145	B1I	3001053330000	33K Ω
739	R146	B1I	3001053330000	33K Ω
740	R147	B1G	3001051020000	1K Ω
741	R203	B3I	3001051000000	10 Ω
742	R206	B3J	3001051000000	10 Ω
743	R207	T4J	3001053300000	33 Ω
744	R208	B5J	3001050000000	0 Ω
745	R209	B5K	3001051000000	10 Ω
746	R220	T4J	3001051010000	100 Ω
747	R221	T4J	3001051010000	100 Ω
748	R222	T4J	3001051010000	100 Ω
749	R223	T4J	3001053300000	33 Ω
750	R224	B4K	3001051010000	100 Ω
751	R225	B5J	3001051010000	100 Ω
752	R226	T4J	3001051010000	100 Ω
753	R241	T4J	3001051030000	10K Ω
754	R242	B4K	3001051030000	10K Ω

No.	Ref. No.	Print No.	Part No.	Description
755	R249	B4I	3001051030000	10K Ω
756	R251	B4I	3001051040000	100K Ω
757	R254	B5I	3001050000000	0 Ω
758	R255	B5I	3001053300000	33 Ω
759	R256	T3J	3001051030000	10K Ω
760	R257	B4E	3001051010000	100 Ω
761	R258	B5J	3001051030000	10K Ω
762	R259	B5I	3001053300000	33 Ω
763	R260	B5I	3001051520000	1.5K Ω
764	R261	B5I	3001051530010	15K Ω
765	R262	B5I	3001051530010	15K Ω
766	R263	B3K	3001054710000	470 Ω
767	R264	B4E	3001054710000	470 Ω
768	R265	T4J	3001054710000	470 Ω
769	R314	B4H	3001053320000	3.3K Ω
770	R315	B4H	3001053320000	3.3K Ω
771	R316	B4H	3001051030000	10K Ω
772	R317	B4H	3001051030000	10K Ω
773	R318	B4C	3001051040000	100K Ω
774	R321	B4C	3099063018000	3.01 Ω
775	R322	B4G	3001052220000	2.2K Ω

No.	Ref. No.	Print No.	Part No.	Description
776	R323	B4C	3001052220000	2.2K Ω
777	R324	B4G	3001053300000	33 Ω
778	R325	B4G	3001053300000	33 Ω
779	R326	B4G	3001053300000	33 Ω
780	R401	T2G	3001055100020	51 Ω
781	R402	T3G	3001051030000	10K Ω
782	R403	T3G	3001051510000	150 Ω
783	R404	T3G	3001051220000	1.2K Ω
784	R405	T3H	3001051030000	10K Ω
785	R406	T2G	3001051020000	1K Ω
786	R407	T3F	3001058220000	8.2K Ω
787	R408	T3F	3001051010000	100 Ω
788	R409	T2G	3001054720000	4.7K Ω
789	R410	T3G	3001061030010	10K Ω
790	R411	T3F	3001053910000	390 Ω
791	R412	T2H	3001051040000	100K Ω
792	R413	T3H	3001051820000	1.8K Ω
793	R414	T3I	3001052720010	2.7K Ω
794	R415	T3I	3001061030010	10K Ω
795	R416	T3H	3001058210000	820 Ω
796	R501	B3C	3001054710000	470 Ω

No.	Ref. No.	Print No.	Part No.	Description
797	R502	B3C	3001053310000	330Ω
798	R503	B4E	3001051010000	100Ω
799	R504	B3C	3001051030050	10KΩ
800	R601	T4I	3001059130000	91KΩ
801	R607	B4E	3001061000000	10Ω
802	R611	B3F	3001051030000	10KΩ
803	R612	T5J	3001061020010	1KΩ
804	R613	T4J	3001051020000	1KΩ
805	R614	T4H	3221506181000	Bead
806	R617	T4G	3001054740010	470KΩ
807	R618	T4G	3001051340000	130KΩ
808	R620	T4K	3001051040000	100KΩ
809	R621	T4H	3001054730010	47KΩ
810	R622	T4I	3221506181000	Bead
811	R623	T4H	3001051040000	100KΩ
812	R624	T4K	3001051040000	100KΩ
813	R625	B4E	3001051040000	100KΩ
814	R626	B4E	3001051040000	100KΩ
815	R627	B4D	3001054730010	47KΩ
816	R628	B4D	3001054730010	47KΩ
817	R629	B4D	3001052720010	2.7KΩ

No.	Ref. No.	Print No.	Part No.	Description
818	R630	B4D	3001054730010	47K Ω
819	R631	B4D	3001051530010	15K Ω
820	R632	B4E	3001051020000	1K Ω
821	R633	T5K	3001051040000	100K Ω
822	R701	T1J	3001051020000	1K Ω
823	R702	T1J	3001056830000	68K Ω
824	R704	T1J	3001051010000	100 Ω
825	R705	T1J	3001051030050	10K Ω
826	R706	T1J	3001051030050	10K Ω
827	R707	T1J	3001053330000	33K Ω
828	R709	T1J	3001051040000	100K Ω
829	R710	T1J	3001051040000	100K Ω
830	R711	T1K	3001051030000	10K Ω
831	R712	T1J	3221505121000	Bead
832	R713	T1J	3001051010000	100 Ω
833	R714	T1K	3001051030000	10K Ω
834	R801	T4L	3001051000000	10 Ω
835	R802	T3L	3001051540000	150K Ω
836	R803	T3K	3001051540000	150K Ω
837	R804	T3K	3001051030000	10K Ω
838	R805	T3K	3001051030000	10K Ω

No.	Ref. No.	Print No.	Part No.	Description
839	R806	B4K	3001051000000	10Ω
840	R807	T4K	3001052030000	20KΩ
841	R811	T3K	3001051030000	10KΩ
842	R812	T3K	3001051030000	10KΩ
843	R813	T3K	3001051540000	150KΩ
844	R814	T3K	3001051540000	150KΩ
845	R820	T2L	3001052020020	2KΩ
846	R821	T3J	3001051010000	100Ω
847	R823	T2K	3001051030050	10KΩ
848	R824	T2K	3001051530010	15KΩ
849	R825	T3K	3001052020020	2KΩ
850	R826	T2K	3001054730010	47KΩ
851	R828	T2K	3001051530010	15KΩ
852	R829	B2K	3001054740010	470KΩ
853	R830	T2K	3001053330000	33KΩ
854	R832	T2L	3001052020020	2KΩ
855	R833	T2K	3001052020020	2KΩ
856	R838	B2L	3001051030000	10KΩ
857	R841	B2K	3001051030000	10KΩ
858	R9001	T4E	3001052710010	270Ω
859	R9002	T2F	3001054730010	47KΩ

No.	Ref. No.	Print No.	Part No.	Description
860	R9003	T4E	3001052710010	270Ω
861	R9004	T3C	3233099449000	4.4nH
862	R9005	T4E	3001055690000	5.6Ω
863	R9006	T2B	3001051030000	10KΩ
864	R9007	T2F	3001058200000	82Ω
865	R9008	T1E	3001051520000	1.5KΩ
866	R9009	T1E	3001053300000	33Ω
867	R9011	T2F	3001051010000	100Ω
868	R9012	T2E	3001051010000	100Ω
869	R9013	T2F	3001053320000	3.3KΩ
870	R9015	T1E	3001053310000	330Ω
871	R9016	T1E	3001051510000	150Ω
872	R9017	T1D	3001051010000	100Ω
873	R9018	T1E	3001056810000	680Ω
874	R9019	B2F	3001054720000	4.7KΩ
875	R9020	B1F	3001051030010	10KΩ
876	R9021	T1F	3001054700000	47Ω
877	R9022	T1F	3001052200000	22Ω
878	R9023	T1E	3001053920010	3.9KΩ
879	R9024	T1D	3001056820000	6.8KΩ
880	R9025	T3C	3001052710010	270Ω

No.	Ref. No.	Print No.	Part No.	Description
881	R9027	T1D	3001058220000	8.2K Ω
882	R9028	T3C	3001052710010	270 Ω
883	R9029	T1D	3001053310000	330 Ω
884	R9030	T2E	3001053320000	3.3K Ω
885	R9033	B1D	3001051020000	1K Ω
886	R9036	B1F	3001051030000	10K Ω
887	R9038	B1E	3001051020000	1K Ω
888	R9039	B1F	3001051010000	100 Ω
889	R9040	B1F	3001051020000	1K Ω
890	R9041	B1F	3001054720000	4.7K Ω
891	R9043	B1E	3001053320000	3.3K Ω
892	R9045	B1D	3001051050000	1M Ω
893	R9046	B1E	3001054740010	470K Ω
894	R9047	B1E	3001053920010	3.9K Ω
895	R9048	B1D	3001051540000	150K Ω
896	R9050	B1E	3001054730010	47K Ω
897	R9053	B1D	3099080398010	0.39 Ω
898	R9054	B1D	3099080398010	0.39 Ω
899	R9055	B1D	3099080398010	0.39 Ω
900	R9056	B1E	3001051240010	120K Ω
901	R9057	B1D	3001051540000	150K Ω

No.	Ref. No.	Print No.	Part No.	Description
902	R9058	B1E	3001051050000	1M Ω
903	R9059	B1E	3001054740010	470K Ω
904	R9063	T4D	3001054730010	47K Ω
905	R9066	B2G	3001051520000	1.5K Ω
906	R9067	B2G	3001056820000	6.8K Ω
907	R9068	B2F	3001053320000	3.3K Ω
908	R9069	T4C	3001050000000	0 Ω
909	R9071	B3G	3001053310000	330 Ω
910	R9072	T4D	3001051030050	10K Ω
911	R9073	T4D	3001051030050	10K Ω
912	R9074	T5D	3001051030000	10K Ω
913	R9075	B3G	3001055100020	51 Ω
914	R9076	T4C	3001051030050	10K Ω
915	R9077	T4C	3001051030050	10K Ω
916	R9078	B3G	3001055620000	5.6K Ω
917	R9079	B2G	3001053330000	33K Ω
918	R9080	T4D	3101052000020	20PF
919	R9081	B3G	3001051030000	10K Ω
920	R9083	T4D	3001053310000	330 Ω
921	R9084	B3G	3001055630000	56K Ω
922	R9085	B2G	3001051040000	100K Ω

No.	Ref. No.	Print No.	Part No.	Description
923	R9089	T5D	3001055620000	5.6K Ω
924	R9090	T4C	3001051030050	10K Ω
925	R9095	T3F	3001053320000	3.3K Ω
926	R9096	T3F	3001053320000	3.3K Ω
927	R9097	T2F	3001053320000	3.3K Ω
928	R9098	T2F	3001053320000	3.3K Ω
929	R9099	B1E	3101051010030	100PF
930	R9100	B1D	3101051010030	100PF
931	RN256	B3J	3005051030010	10K Ω
932	RN261	B5K	3001052230020	22K*2
933	T9001	T4E	5406000000200	Transformer
934	T9002	/	5406000000200	Transformer
935	U101	B1I	3616059000000	Switch IC
936	U102	B1I	3605002057290	Operational amplifier
937	U103	T1I	3604019000000	PLL IC
938	U104	B1I	3616059000000	Switch IC
939	U201	B3I	3610010000010	MCU
940	U242	B2J	3612044000010	Memory
941	U244	B4I	3612002000020	Memory
942	U312	B4L	3805000000030	EMI filter
943	U313	B5E	3805000000030	EMI filter

No.	Ref. No.	Print No.	Part No.	Description
944	U314	B4K	3805000000030	EMI filter
945	U315	B4G	3805000000030	EMI filter
946	U316	B4F	3805000000030	EMI filter
947	U317	B4G	3805000000030	EMI filter
948	U318	B4F	3805000000030	EMI filter
949	U319	B4D	3805000000030	EMI filter
950	U320	B3K	3805000000030	EMI filter
951	U321	B3L	3805000000030	EMI filter
952	U322	B3L	3805000000030	EMI filter
953	U401	T3H	3603999000000	IF processor
954	U501	B3C	3609999000300	GPS LNA
955	U502	B3D	1615000001720	GPS module
956	U601	T4G	3608011000050	DC-DC
957	U604	B3F	3608020005750	Power management IC
958	U605	B2F	3608020005750	Power management IC
959	U606	T3J	3608006000000	Power management IC
960	U607	T5J	3609010000170	Reset IC
961	U608	B3E	3608006000000	Power management IC
962	U609	T5I	3608006000000	Power management IC
963	U610	T2I	3608006000030	Power management IC
964	U611	T4H	3608011000050	DC-DC

No.	Ref. No.	Print No.	Part No.	Description
965	U612	B1J	3608006000000	Power management IC
966	U701	T1K	3606010000010	D/A converter
967	U801	T4K	3602023005740	Audio amplifier
968	U820	T2L	3616037000020	Switch IC
969	U821	T2K	3613010000000	Baseband processor
970	U9002	B1E	3605025000020	Operational amplifier
971	U9003	B1D	5404000000060	Temperature sensor
972	X101	T1I	3701019250030	TCXO
973	X201	B5J	3701327610060	Crystal
974	X203	B3H	3701019250040	TCXO
975	Z501	B3C	3804157560000	GPS filter
976	Z9001	B3F	3802733540030	Crystal filter
977	/	/	6201810000000	Shielding can for baseband processor
978	/	/	6201860000000	Shielding frame for GPS
979	/	/	6201865000000	Shielding can for crystal oscillator
980	/	/	6201915000000	Shielding can for antenna spring plate
981	/	/	6201935000000	Shielding can for switching power
982	/	/	6201859000000	Shielding frame for lowpass filter
983	/	/	6201862000000	Shielding can for TX VCO
984	/	/	/	Main board

PD70X/ PD70XG/ HD705/ HD705G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF
11	C1012	3101052710000	270PF
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED

No.	Ref. No.	Part No.	Description
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch
28	/	41PD7002002B0	PCB
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	C1017	3101051040060	0.1UF
33	L1001	3221506181000	Bead
34	U1002	3608006000030	Power management IC

PD78X/ PD78XG/ HD785/ HD785G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF

No.	Ref. No.	Part No.	Description
11	C1012	3101052710000	270PF
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch
28	/	41PD7802006C0	PCB
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	C1017	3101051040060	0.1UF
33	L1001	3221506181000	Bead

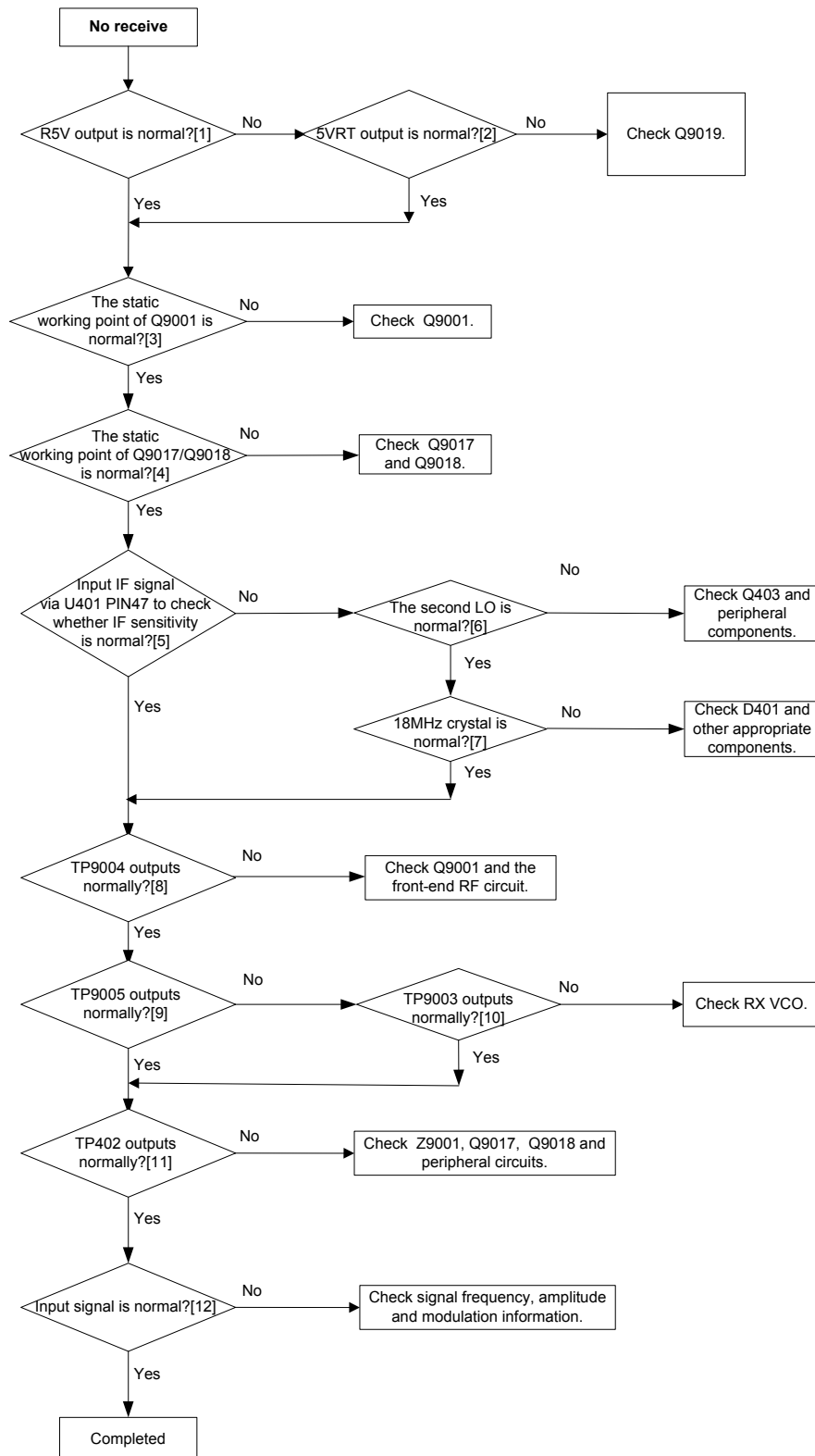
No.	Ref. No.	Part No.	Description
34	U1002	3608006000030	Power management IC

PD78X/ PD78XG/ HD785/ HD785G Keyboard

No.	Ref. No.	Part No.	Description
1	R1	3001051010000	100Ω
2	R2	3001051010000	100Ω
3	R3	3001051010000	100Ω
4	R4	3001051010000	100Ω
5	R5	3001051010000	100Ω
6	R6	3001051010000	100Ω
7	R7	3001051010000	100Ω
8	D1	3307990000260	LED
9	D2	3307990000260	LED
10	D3	3307990000260	LED
11	D4	3307990000260	LED
12	D5	3307990000260	LED
13	D6	3307990000260	LED
14	D7	3307990000260	LED
15	D8	3310040000010	ESD protection diode
16	D9	3310040000010	ESD protection diode
17	J4	5201016000010	Board-to-board connector

8.8 Troubleshooting Flow Chart

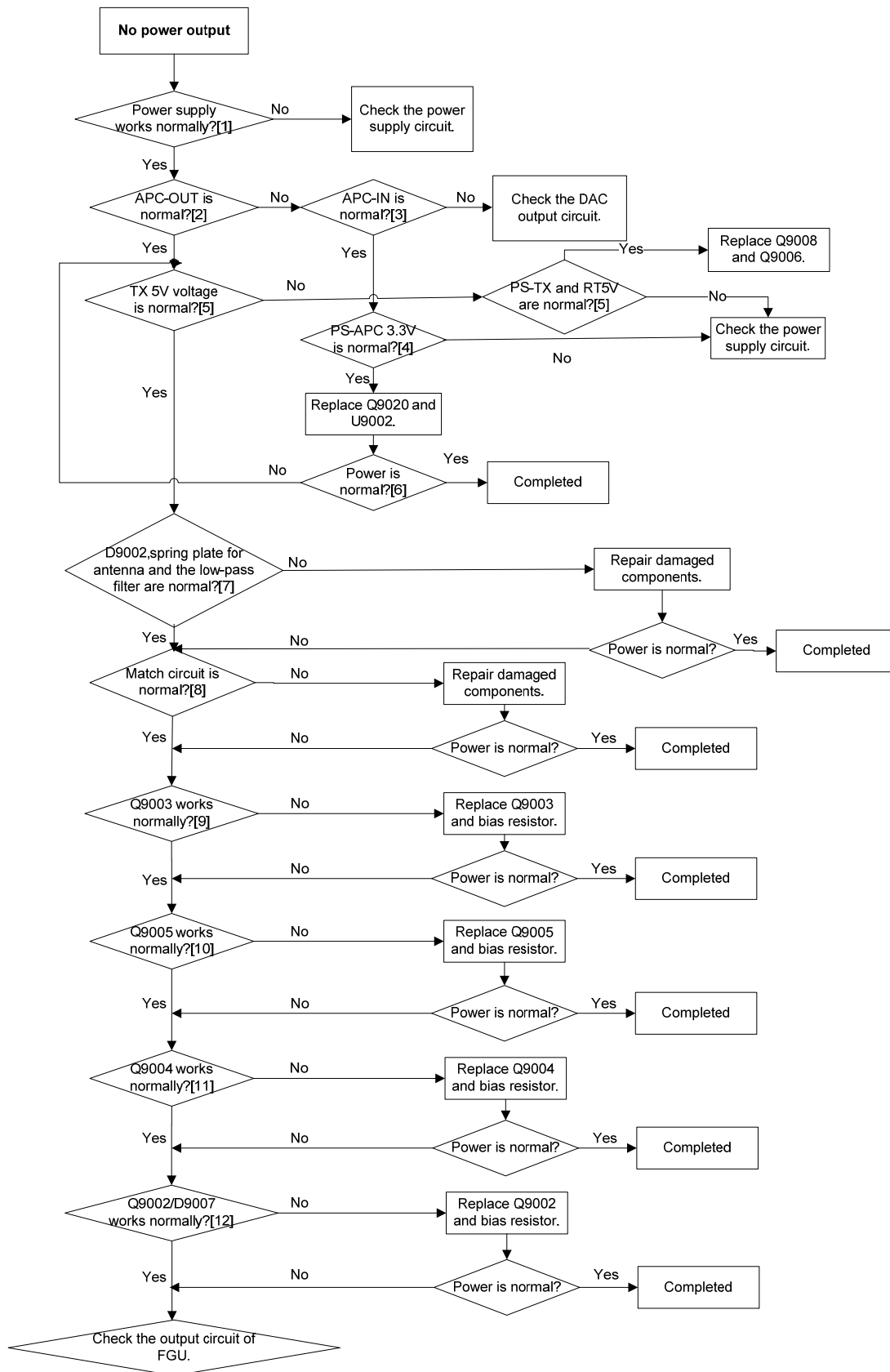
Receiver Circuit



Description of Normal Situations:

- [1] Output voltage at Q9019 PIN3: about 4.95V.
- [2] Output voltage at U605 PIN4 or input voltage at Q9019 PIN4: about 5V.
- [3] Vbe: about 0.74V; Vce: about 2.5V (in the case of no signal reception).
- [4] For Q9018, Vbe: about 0.76V; Vce: about 0.95V;
for Q9017, Vbe: about 0.7V; Vce: 0.85V (in the case of no signal reception).
- [5] Cut off the front-end circuit, and input a 73.35MHz IF signal at TP402 to test IF sensitivity.
Normally, the IF sensitivity is -109dBm.
- [6] Frequency of Q403: 71.1MHz.
- [7] Frequency of L411: 18MHz.
- [8] Input a -30dBm RF signal at the antenna connector and test at TP9004. Normally, gain>10dB, output signal>-20dBm.
- [9] Input a -30dBm RF signal at the antenna connector and test at R9005 (do not cut off the back-end circuit). Normally, gain>1dB, output signal>-29dBm.
- [10] Signal frequency: RF-IF, signal amplitude>2dBm.
- [11] For input of -80dBm signal at L9022, gain>25dB, output signal>-55dBm;
for input of -30dBm signal, output signal<-20dBm.
- [12] The input signal at the antenna connector, with standard tuning information (AF=1KHz, FM=3KHz), is -47dBm.

Transmitter Circuit



Description of Normal Situations:

- [1] Voltage of the power supply: about 7.4V.
- [2] For low power, APC-OUT: 1.8-2.1V; for high power, APC-OUT: 2.4-2.8V.
- [3] For low power, APC-IN: 1-1.3V; for high power, APC-IN: 1.8-2.1V.
- [4] PS-APC: about 3.3V.
- [5] TX5V: about 5V; RT5V: about 5V; PS-TX: about 3.3V.
- [6] High power: about 4.2W; low power: about 1.2W.
- [7] Start-up voltage of D9002: about 0.7V. The low-pass coil must be soldered appropriately and remain in good condition. The spring plate for the antenna must well fit the antenna connector.
- [8] The match components must not be soldered inappropriately or damaged.
- [9] Vdd: about 7.3V; for low power, Vgg: 1-1.2V; for high power, Vgg: 1.35-1.55V.
- [10] Vdd: about 7.3V; for low power, Vgg: 1.7-2.1V; for high power, Vgg: 2.4-2.8V.
- [11] Vc: about 4.8V; Vb: about 1.4V; Ve: about 1.1V.
- [12] Vc: about 4.7V; Vb: about 0.7V; Ve: 0V. Start-up voltage of D9007: about 0.7V.

**Note**

The above check operations should be made under 7.4V voltage.

FGU



Description of Normal Situations:

[1] During transmission, output voltage by Q107 PIN3: about 4V.

During reception, output voltage by Q106 PIN3: about 4V.

[2] During transmission, voltage at Q108 E: about 1.8V.

During reception, voltage at Q104 E: about 1.8V.

[3] The CV value varies with frequencies. Generally, it is within the range 0.5V-4.5V.

[4] L110/L116 is on.

[5] Voltage at Q101/Q102 B: about 0.7V.

[6] MCSI-CLK-PLL outputs 960 KHz clock.

9. UHF3 (350-400MHz) Information

9.1 Transmitter Circuit

The transmitter circuit is mainly composed of:

- RF power amplifier circuit
- Low-pass filter circuit (for suppressing harmonics)
- Auto power control circuit (APC) (including temperature detection circuit)

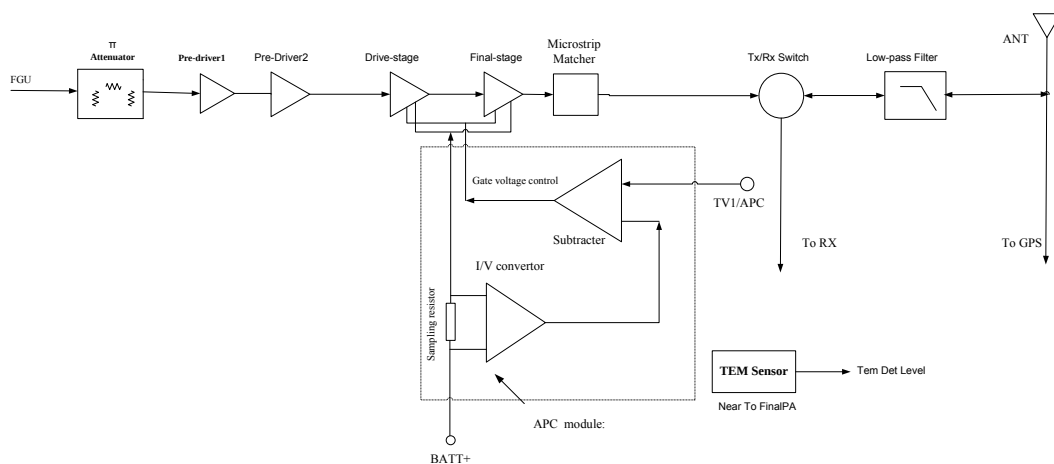


Figure 9-1 Diagram of Transmitter Circuit

9.1.1 RF Power Amplifier Circuit

The carrier signal generated by the TX VCO is modulated and amplified, and then feeds to the transmitter circuit via the following steps.

- Step 1** The signal passes through a π -type attenuator first, allowing interstage isolation between the RF power amplifier circuit and TX VCO.
- Step 2** The signal goes to a pre-driver amplifier (2SC3356) for pre-amplification, providing further interstage isolation.
- Step 3** The signal goes to another pre-driver amplifier (2SC4988) and a driver amplifier (RD01) for adequate power amplification, so as to obtain further amplification in the final-stage amplifier (RD07).

Step 4 After processed by multiple amplifiers, the signal is processed by a microstrip matcher to complete output impedance matching, so as to reduce output power loss due to impedance mismatch.

Step 5 The signal passes through the TX/RX switch and goes to the low-pass filter.

9.1.2 Low-pass Filter Circuit

The low-pass filter is a high-order Chebyshev filter composed of lumped-parameter inductors and capacitors. Via this filter, the spurious signal within the stop band can be attenuated as much as possible while the in-band ripple is within the required range.

9.1.3 Auto Power Control Circuit

In the auto power control and temperature detection circuit, the drain current from the driver amplifier and final-stage amplifier is converted to voltage via the sampling resistor and subtraction circuit (composed of the first operational amplifier).

This voltage is compared with the APC control voltage (output by DAC) at the second operational amplifier. Then the error voltage, which is output by the second operational amplifier, controls TX power by controlling the bias voltage at the gates of the amplifiers (including the driver amplifier and the final-stage amplifier). The temperature sensor detects the surface temperature of the final-stage amplifier, and converts it to DC voltage. Then the DC voltage is compared with the voltage corresponding to the protection temperature (generally 80% of the extreme temperature) of the amplifier. If the surface temperature is too high, the bias voltage of the amplifier will be reduced until the surface temperature falls below the protection temperature.

9.2 Receiver Circuit

The receiver circuit mainly comprises the RF band-pass filter, low-noise amplifier, mixer, IF filter, IF amplifier and IF processor.

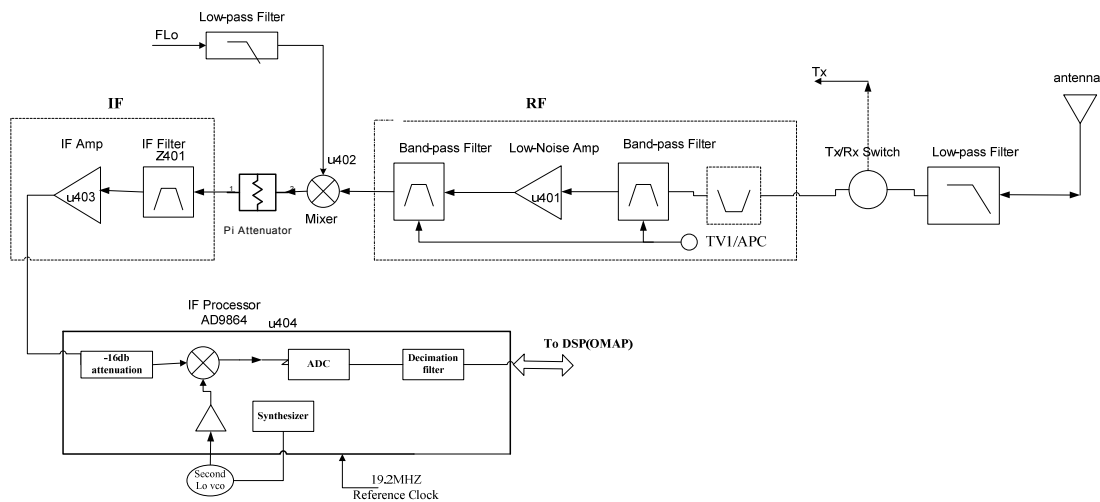


Figure 9-2 Diagram of Receiver Circuit

9.2.1 Receiver Front-end

The HF signal from the low-pass filter passes through the electrically tunable band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal and to send wanted band-pass signal to the low-noise amplifier (Q9001). The amplified signal goes to a band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal generated during amplification, and to send wanted HF signal to the mixer.

The wanted signal passes through the RF band-pass filter and low-noise amplifier and goes to the mixer (D9017). Meanwhile, the first local oscillator (LO) signal generated by VCO passes through the low-pass filter and also goes to the mixer (D9017). In the mixer, the wanted signal and the first LO signal are mixed to generate the first IF signal (73.35MHz). Then the signal passes through a π -type attenuator (2dB) and the LC, to suppress carrier other than the first IF signal, and to increase the isolation between the mixer and the IF filter. After that, the first IF signal is processed by the crystal filter (Z9001), and is sent to the two-stage IF amplifier circuit (composed of 2SC3356) for amplification. Then the amplified signal goes to the IF processor AD9864 (U401) for processing.

9.2.2 Receiver Back-end

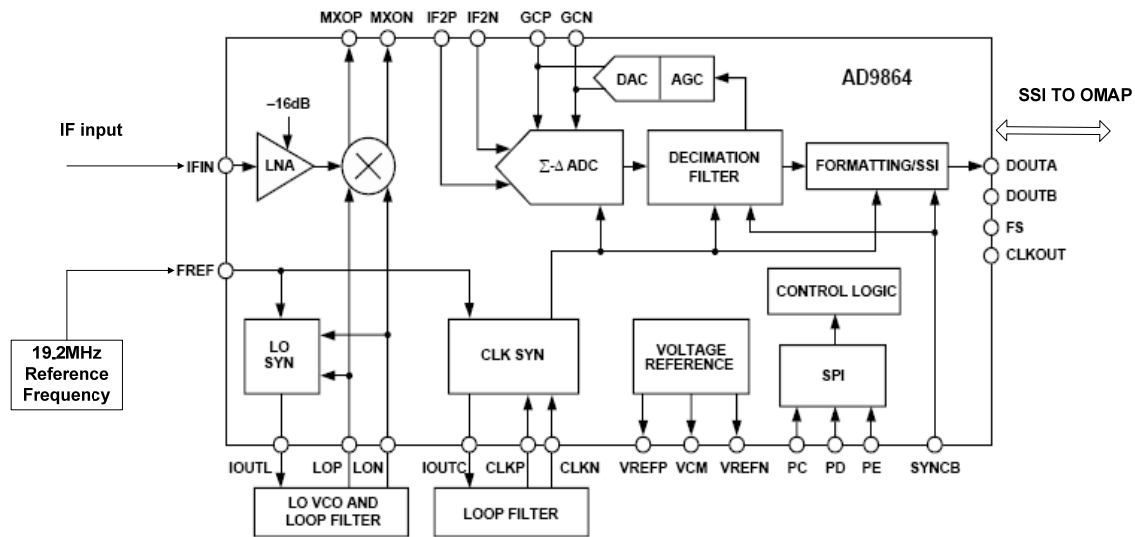


Figure 9-3 Diagram of IF Processor

The first IF signal (73.35MHz) output by the IF amplifier goes into AD9864 (U401) via Pin 47, where the signal is converted to the second IF signal (2.25MHz). Then the signal is converted to digital signal via ADC sampling, and output via the SSI interface. Finally, the digital signal is sent to DSP (OMAP5912) for demodulation.

AD9864 employs reference frequency of 19.2MHz and shares the crystal with the OMAP. The second LO VCO comprises an oscillator, a varactor and some other components, to provide the 71.1/75.6MHz LO signal. The 18MHz clock frequency is generated by the LC resonance loop.

9.3 Frequency Generation Unit (FGU)

The FGU is composed of VCO and PLL. It is the core module of the whole TX-RX system. This circuit provides accurate carrier frequency during transmission, and stable LO signal during reception. It has a direct influence on the performance of the system.

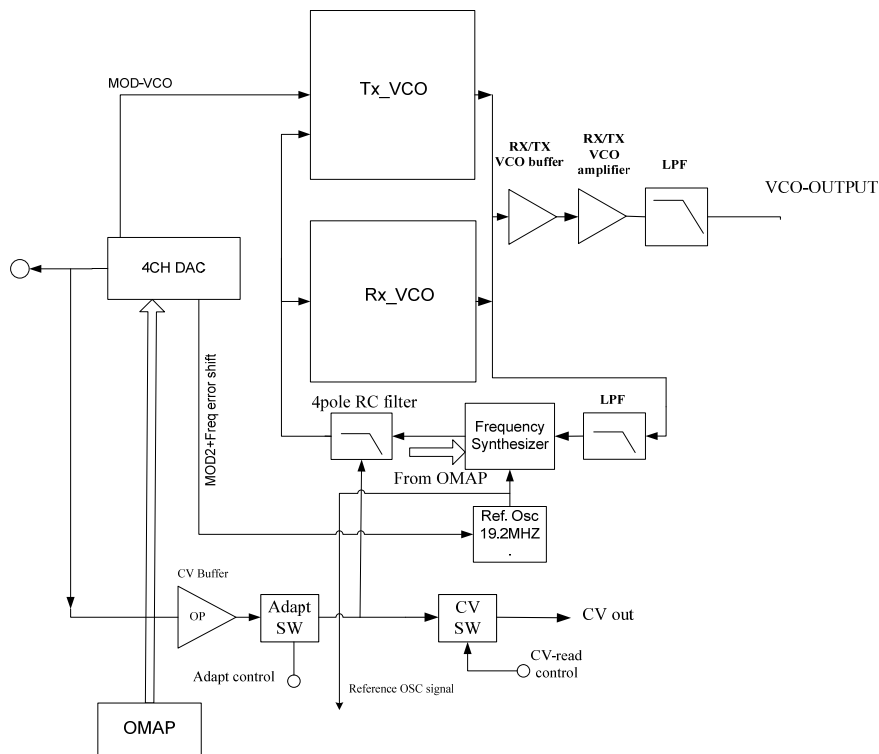


Figure 9-4 Diagram of FGU

9.3.1 Working Principle of PLL

The 19.2MHz frequency generated by the reference crystal oscillator goes to PLL for division, generating the reference frequency (i.e. step frequency f_1). Meanwhile, the frequency generated by VCO generates another frequency (f_2) through the frequency divider in PLL. Then frequencies f_1 and f_2 are compared in the phase detector (PD), to generate continuous pulse current. The current goes to the loop filter for RC integration, and is then converted to CV voltage. Then the CV voltage is sent to the varactor of VCO. It adjusts the output frequency of VCO directly until the CV voltage becomes constant. Then the PLL is locked, and the stable frequency output by VCO goes to the TX-RX channel after passing through two buffer amplifiers.

9.3.2 Working Principle of VCO

VCO employs Colpitts oscillator circuit (the RX oscillator circuit is composed of D102, D103, D106, D107 and L112; the TX oscillator circuit is composed of D108, D109, D110, D101 and L117). It obtains different output frequencies by changing the varactor's control voltage (i.e. CV voltage).

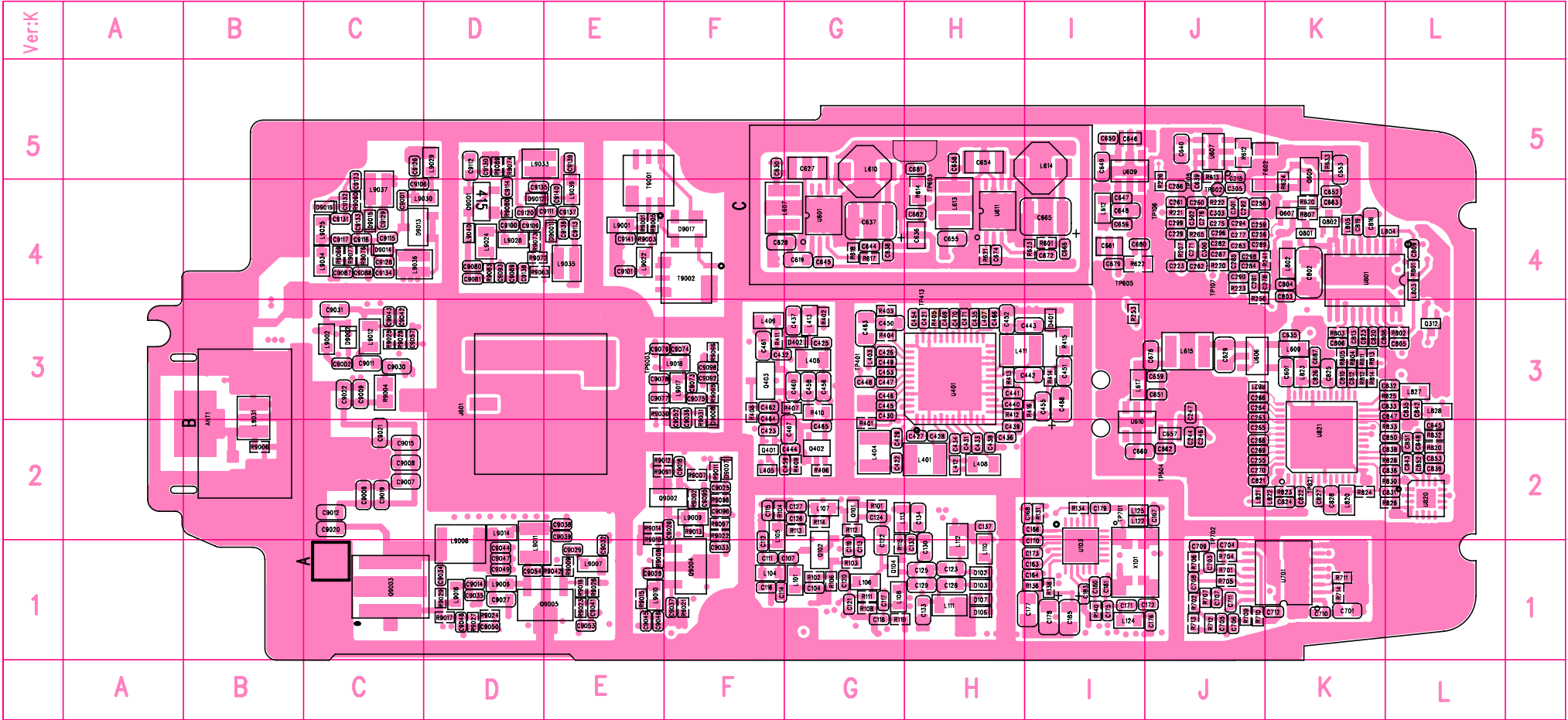
There are two types of VCO: TX VCO and RX VCO. Both types control EMD22 to switch operating status via OMAP. RX VCO is composed of the oscillator loop and Q104, to provide LO signal. TX VCO

is composed of the oscillator loop and Q108, to provide carrier for TX signal.

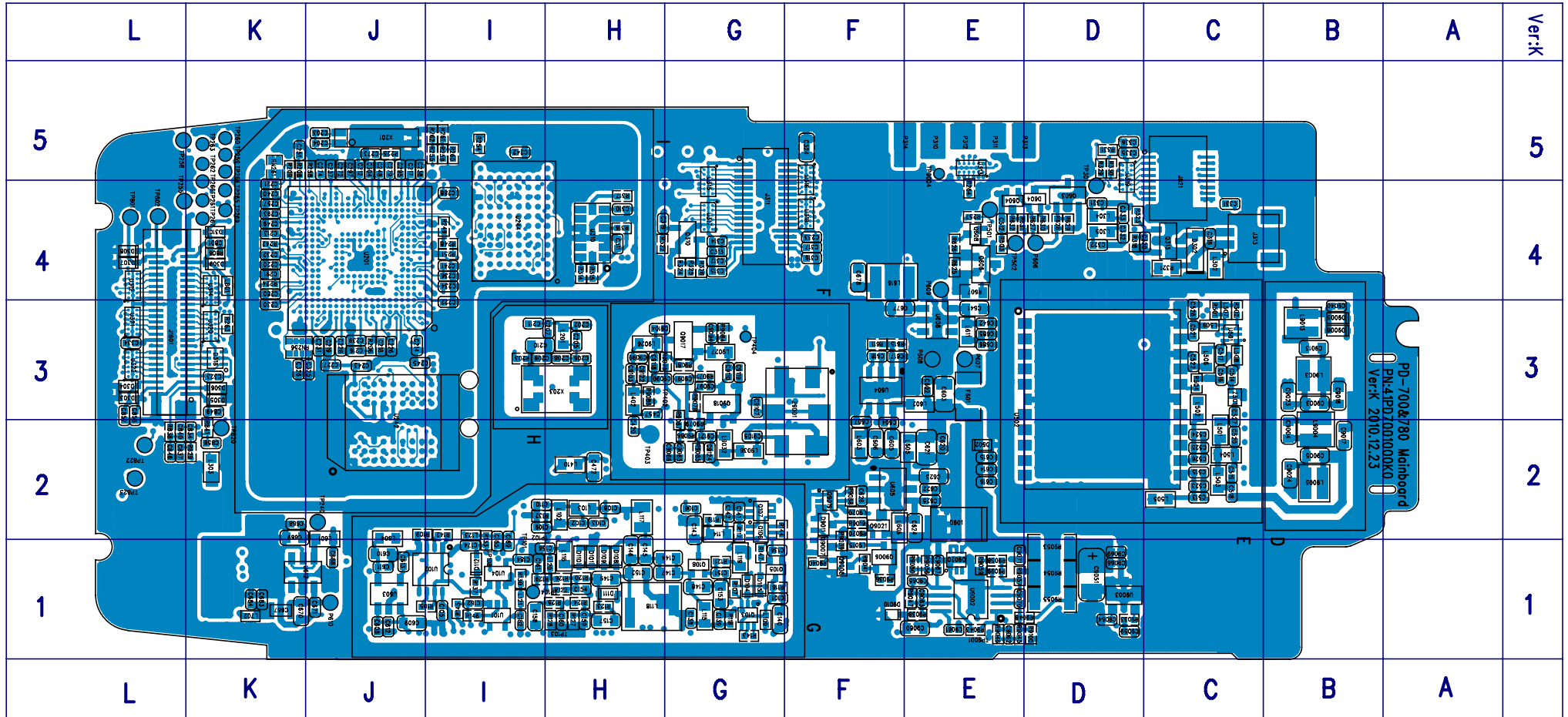
9.3.3 Two-point Modulation

In TX mode, the two-point modulation technology is employed, to obtain higher modulation accuracy and lower 4FSK bit error rate. MOD-VCO and MOD-XO send the modulation signal to the modulation end of VCO and the reference crystal oscillator of PLL respectively to modulate TX VCO and the reference crystal oscillator.

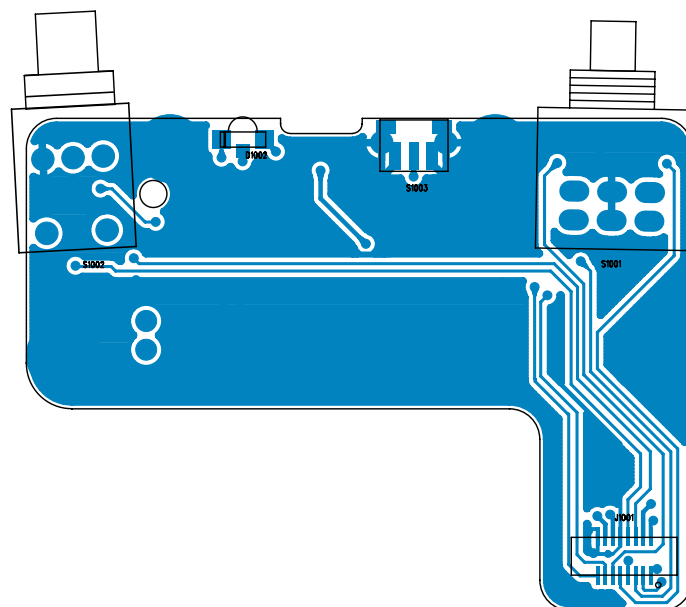
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board)
Top Layer



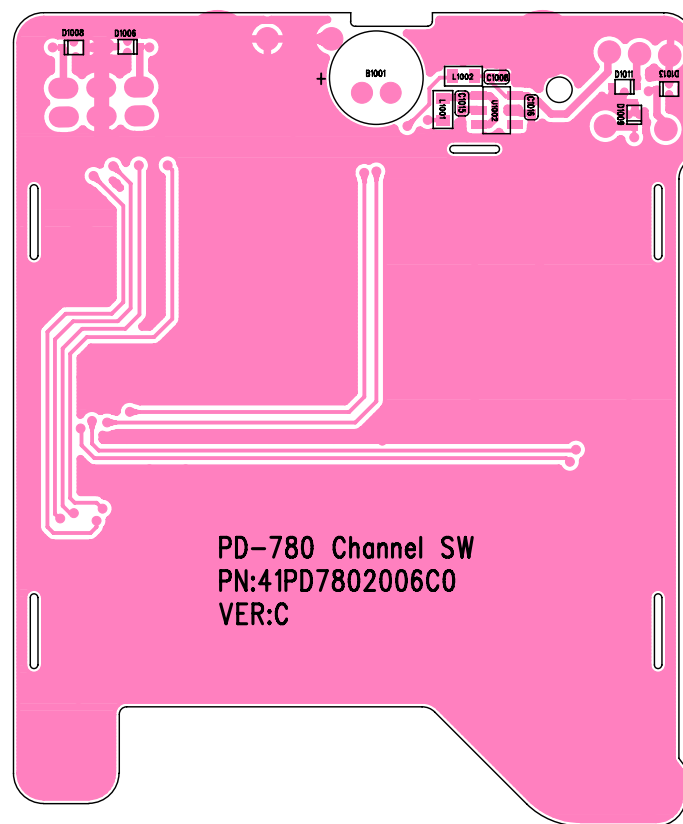
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board) Bottom Layer



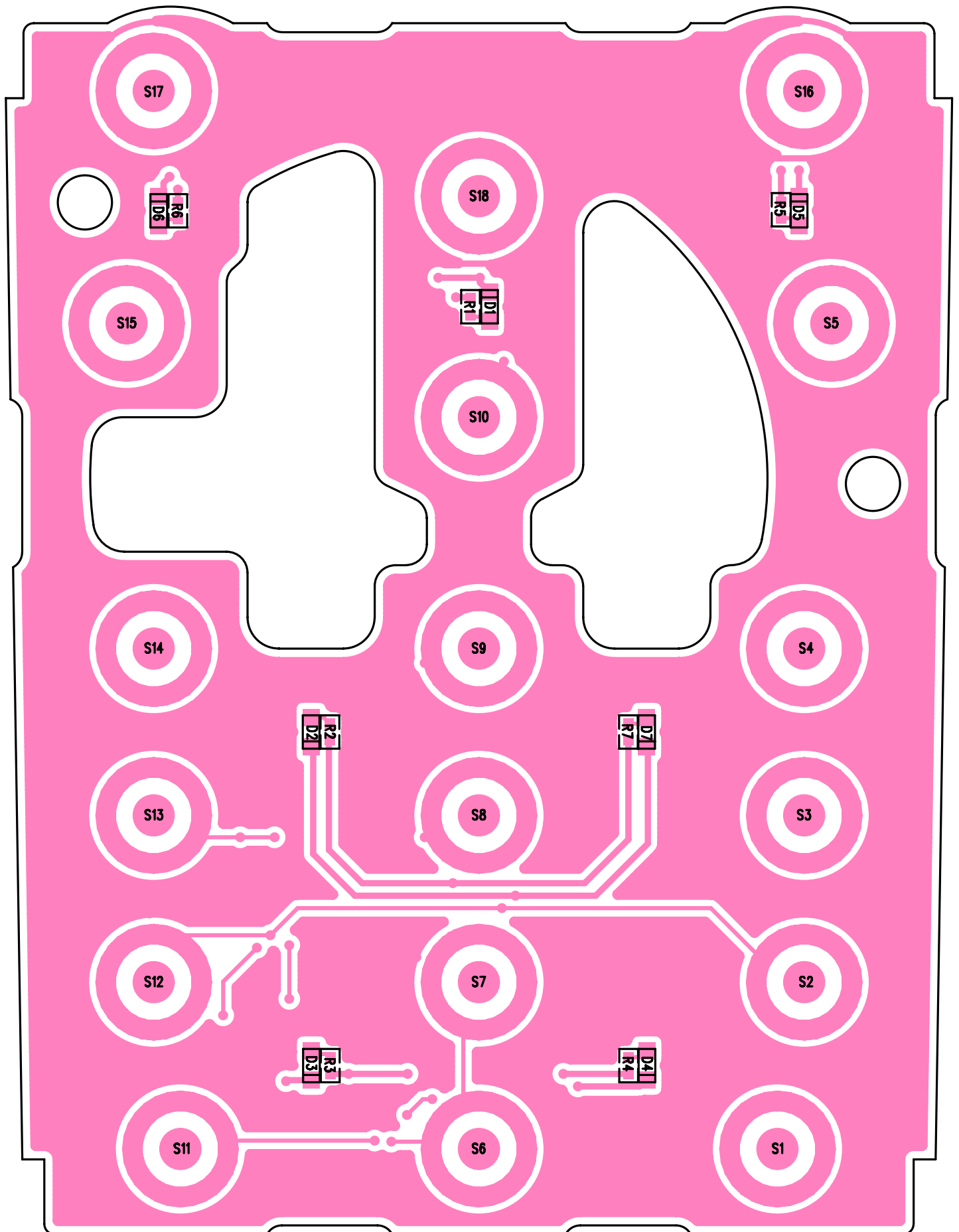
PD70X/PD70XG/HD705/HD705G PCB View (Channel Board) Bottom Layer



PD78X/PD78XG/HD785/HD785G PCB View (Channel Board) Top Layer

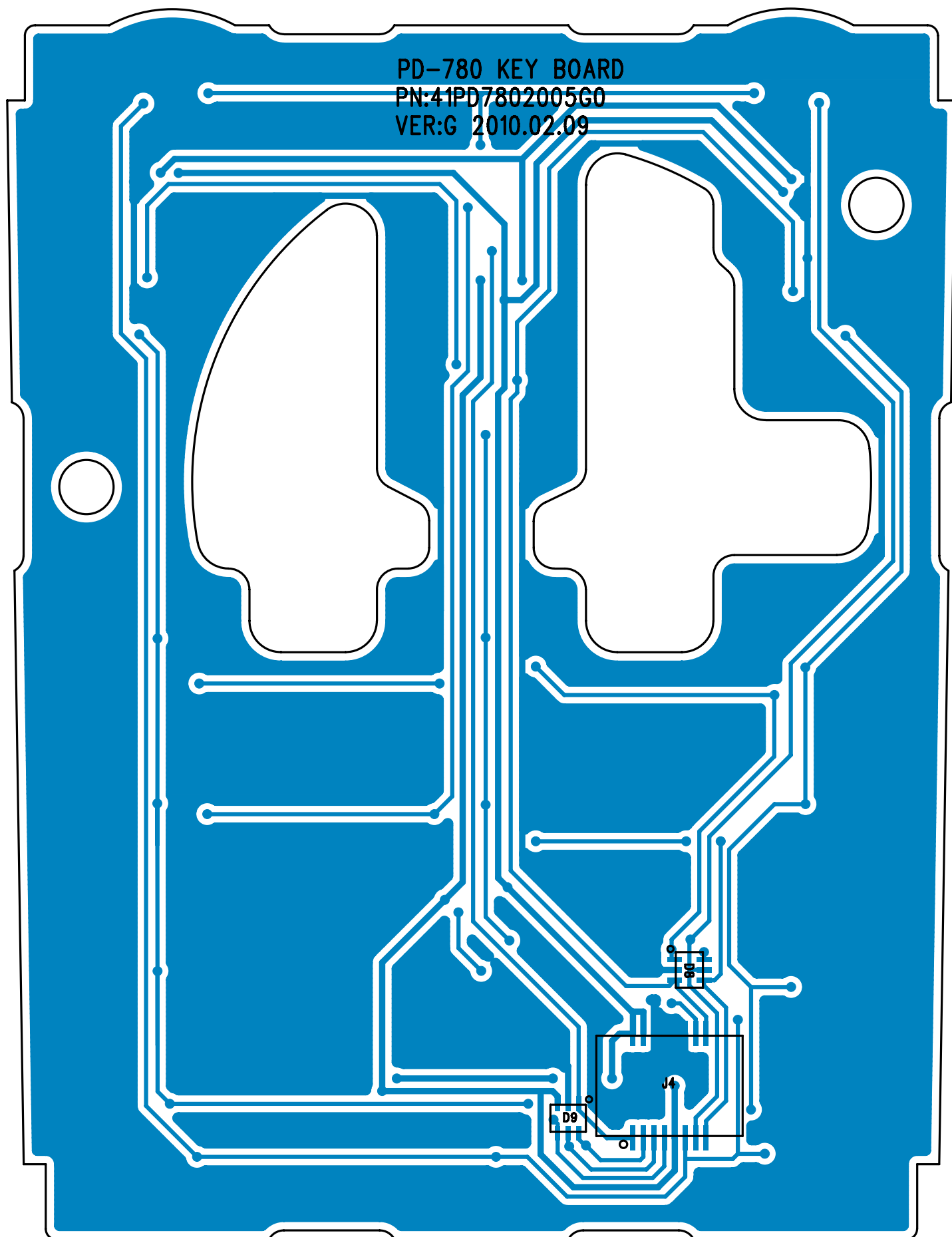


PD78X/PD78XG/HD785/HD785G PCB View (Keyboard) Top Layer



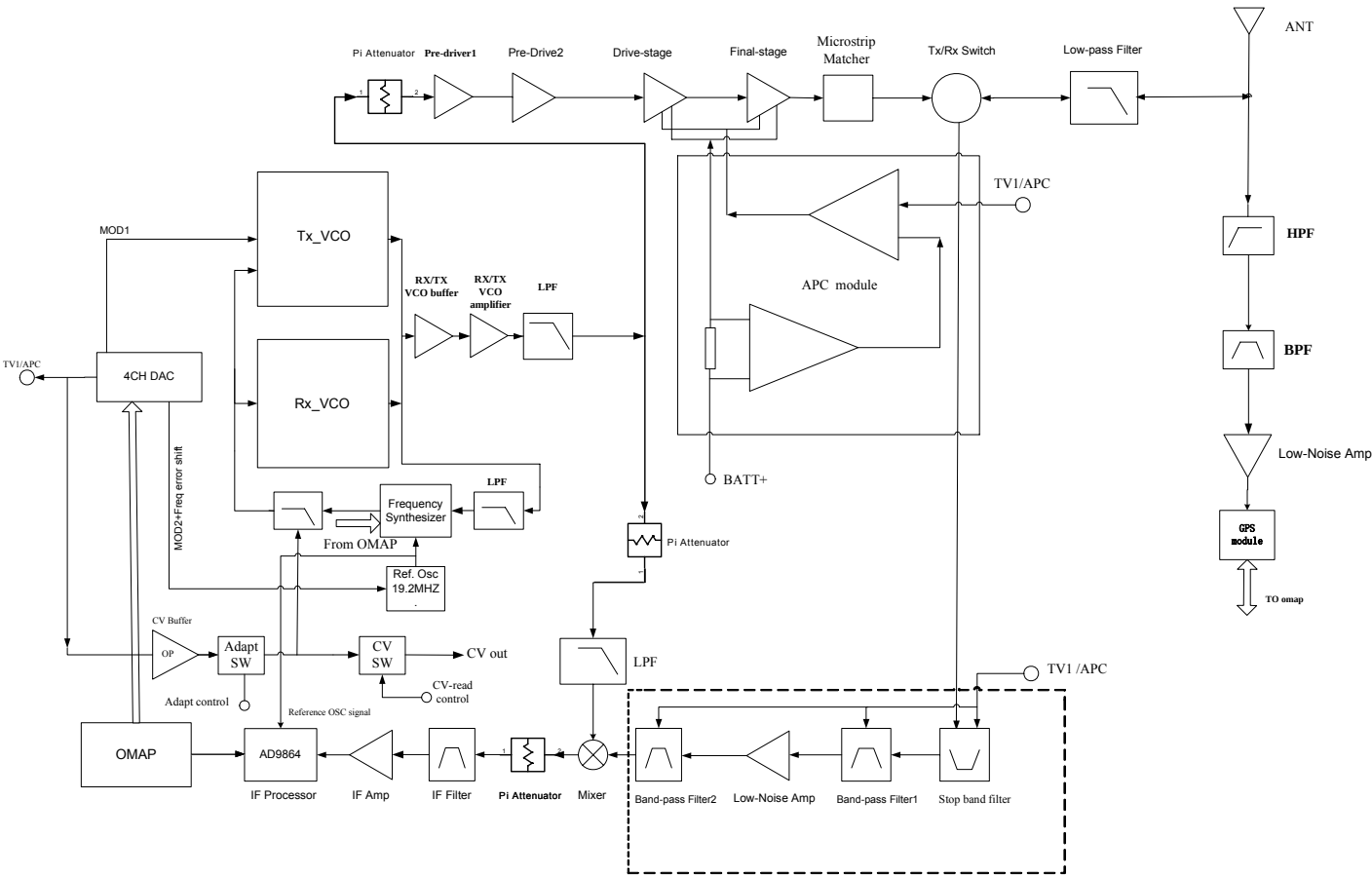
PD78X/PD78XG/HD785/HD785G PCB View (Keyboard)
Bottom Layer

PD-780 KEY BOARD
PN:41PD7802005G0
VER:G 2010.02.09

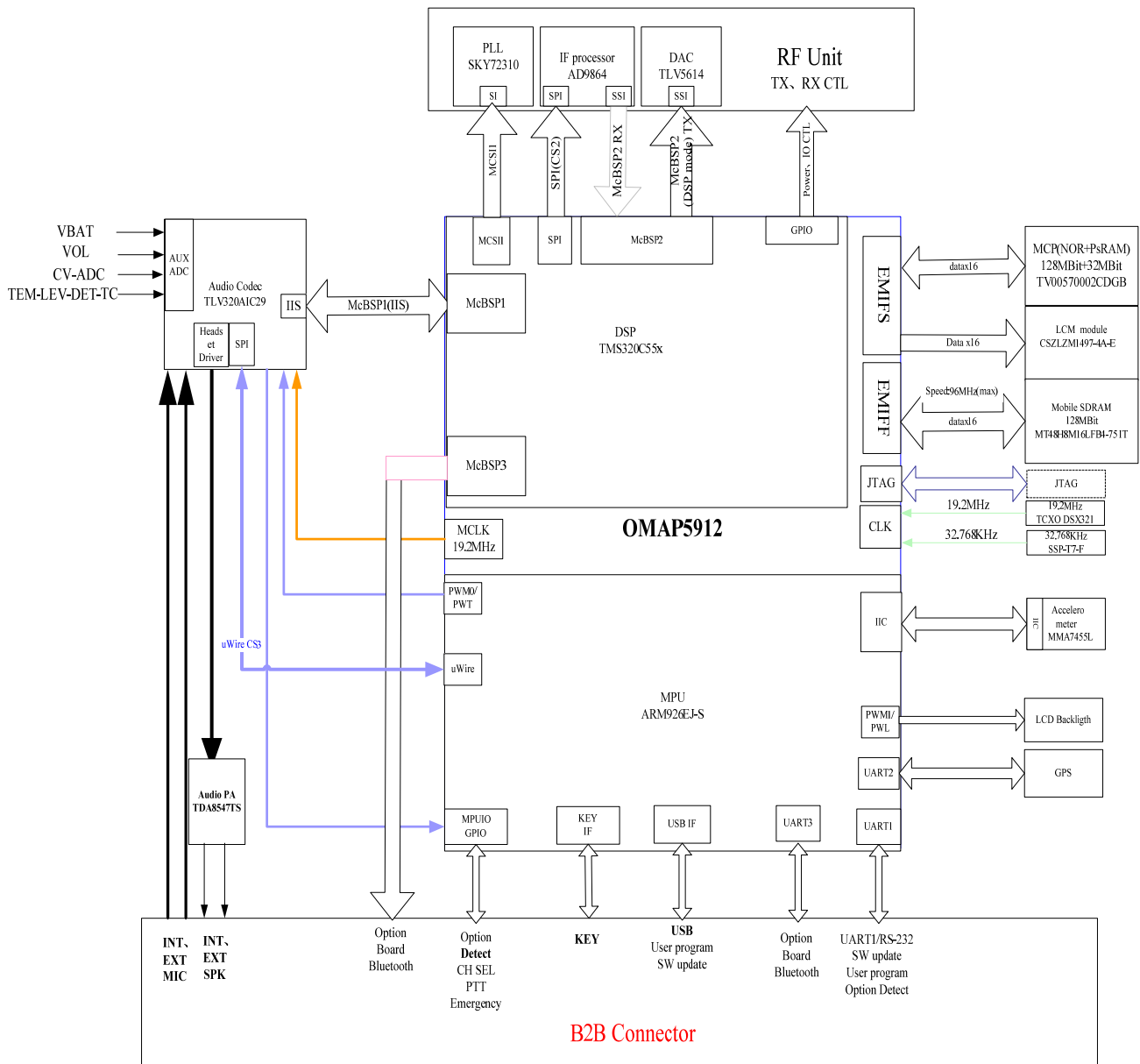


9.5 Block Diagram

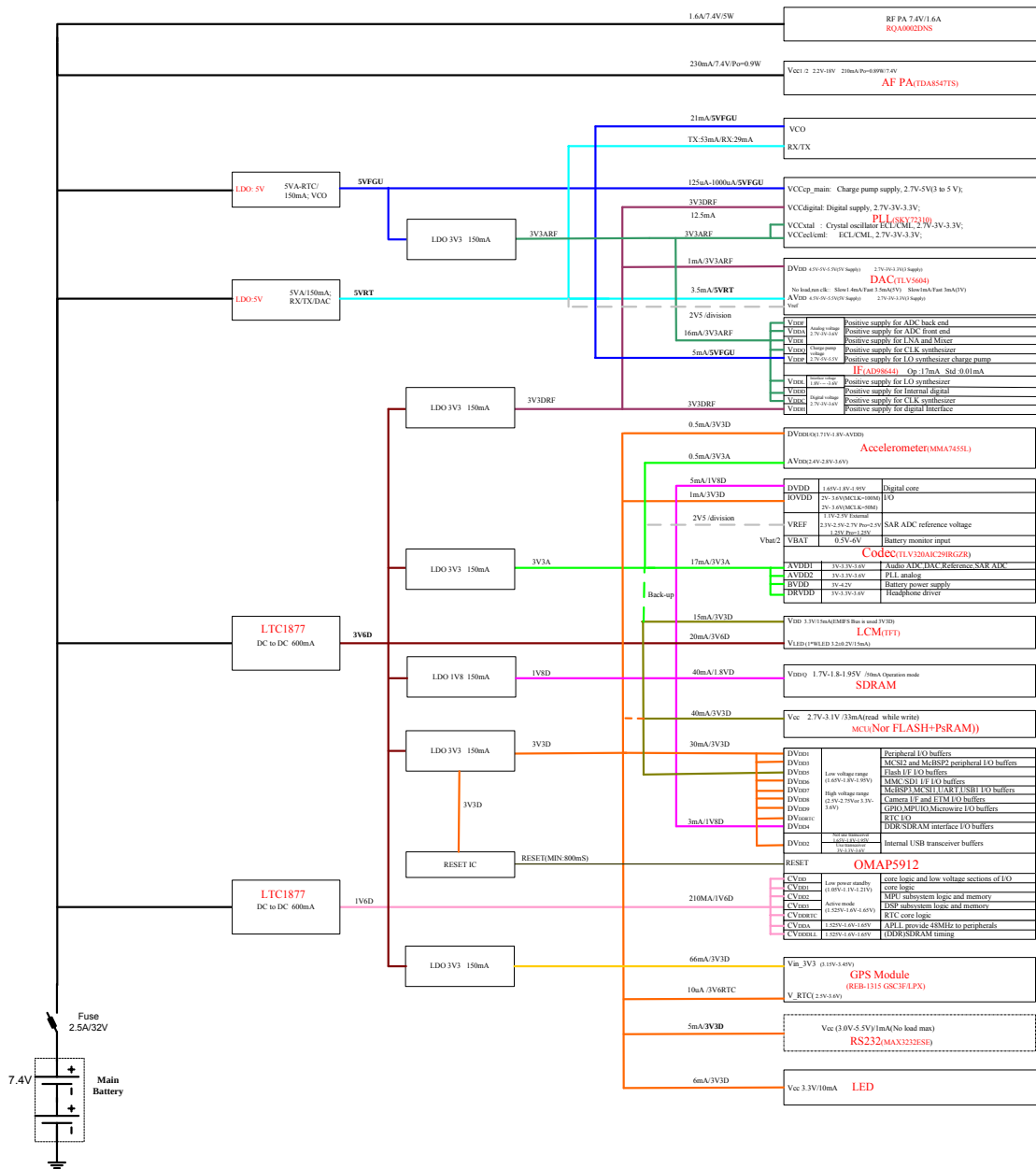
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G
Block Diagram (RF Section)



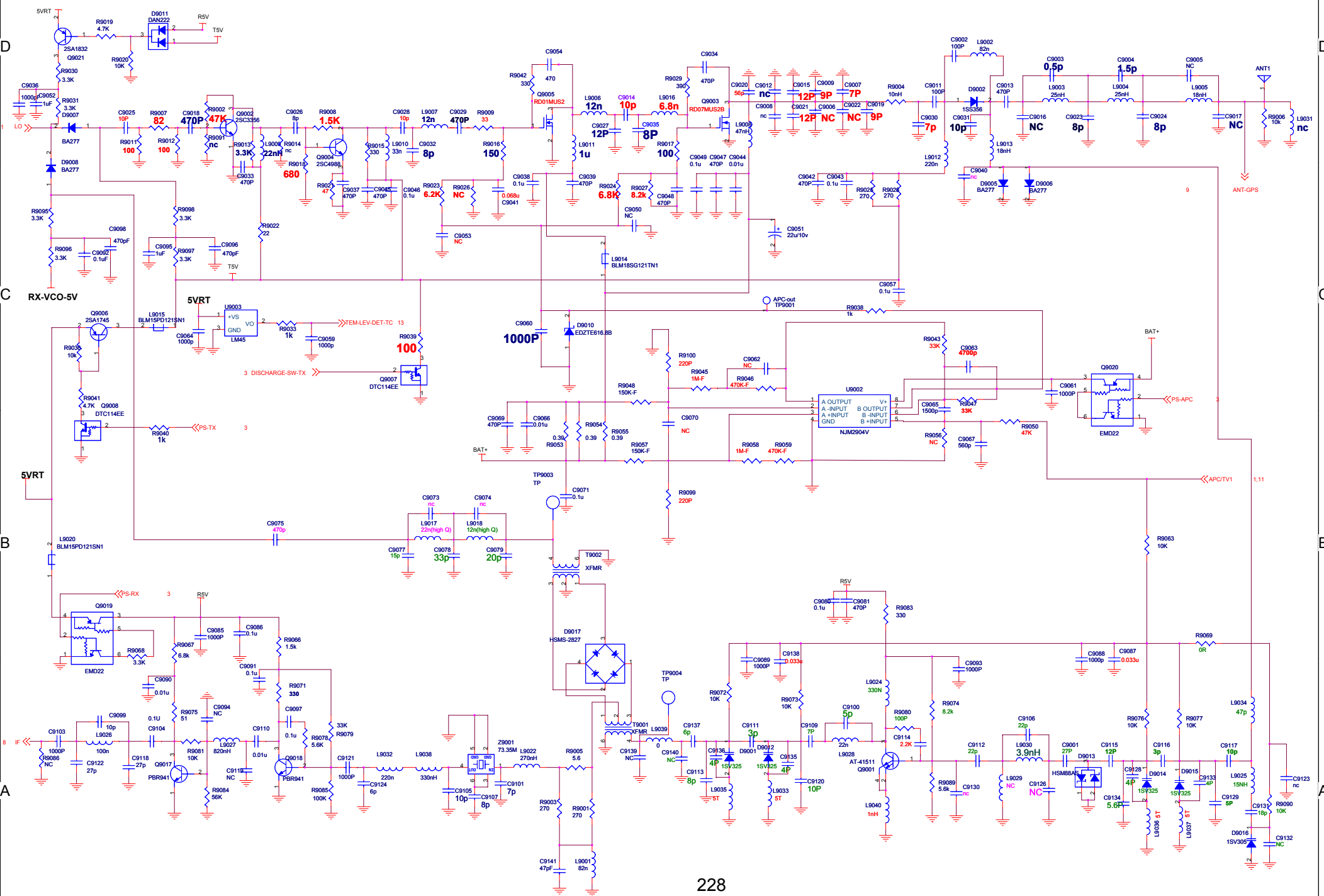
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G
Block Diagram (Baseband Section)



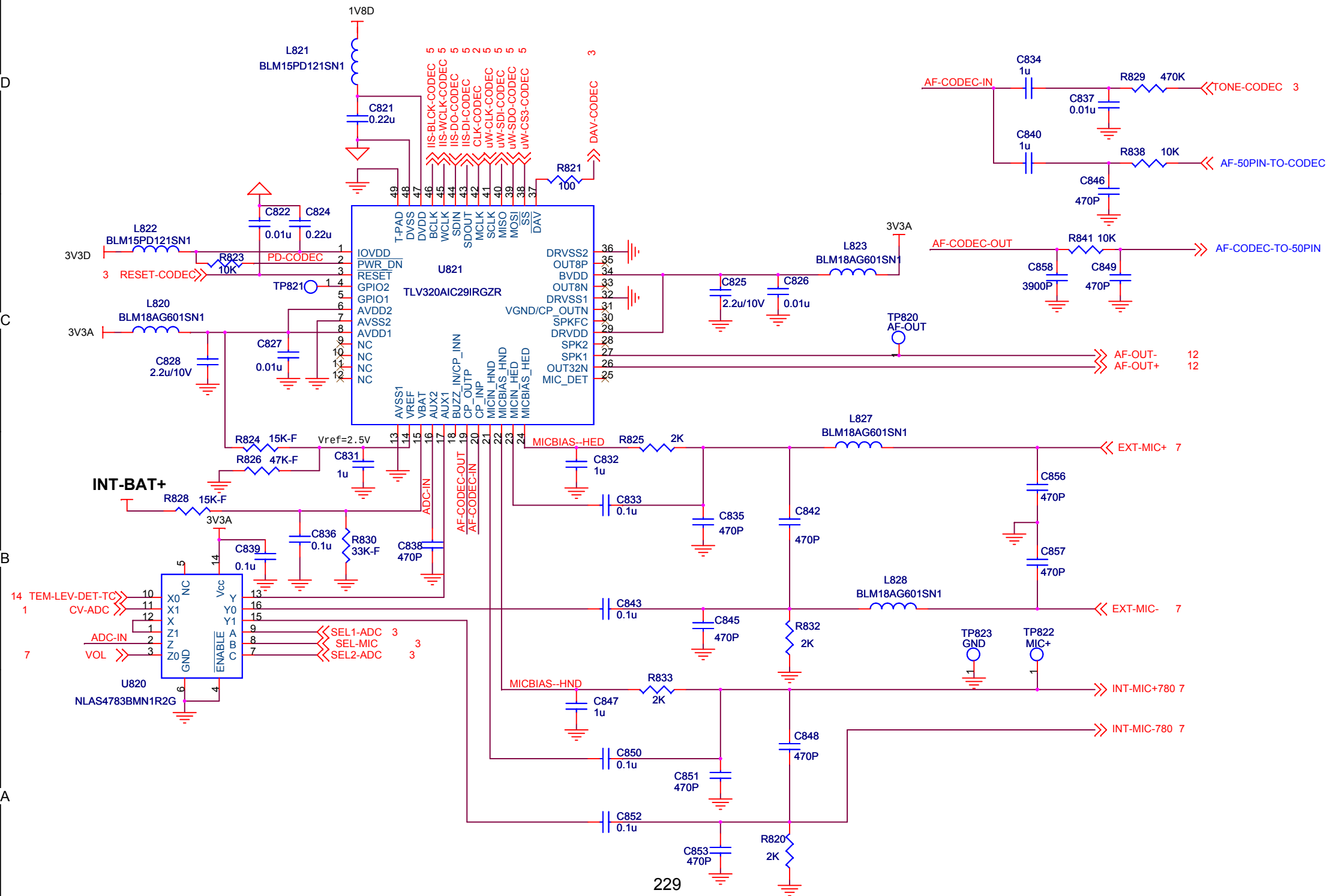
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G
Block Diagram (Power Section)



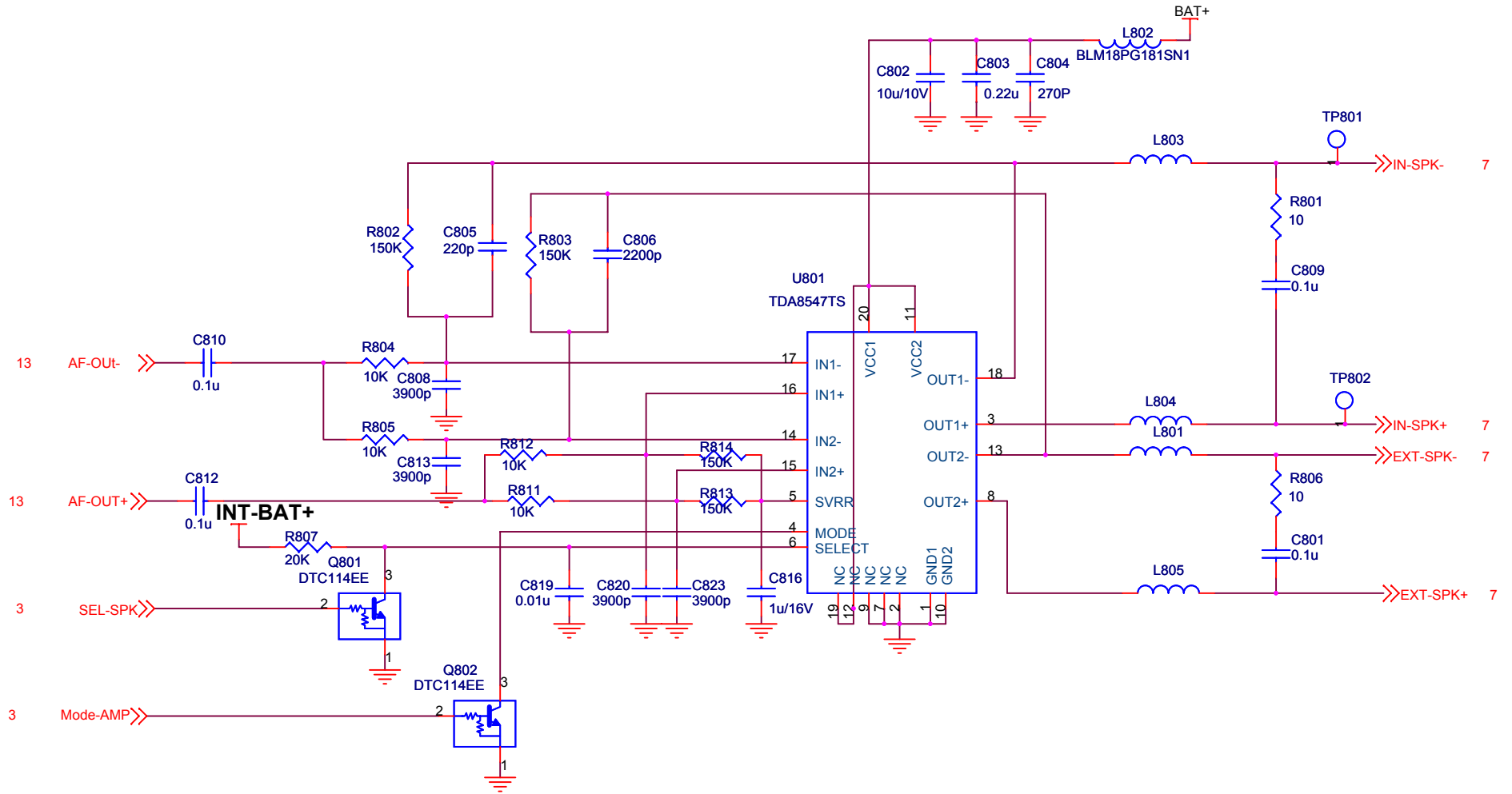
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Transmitter/Receiver)



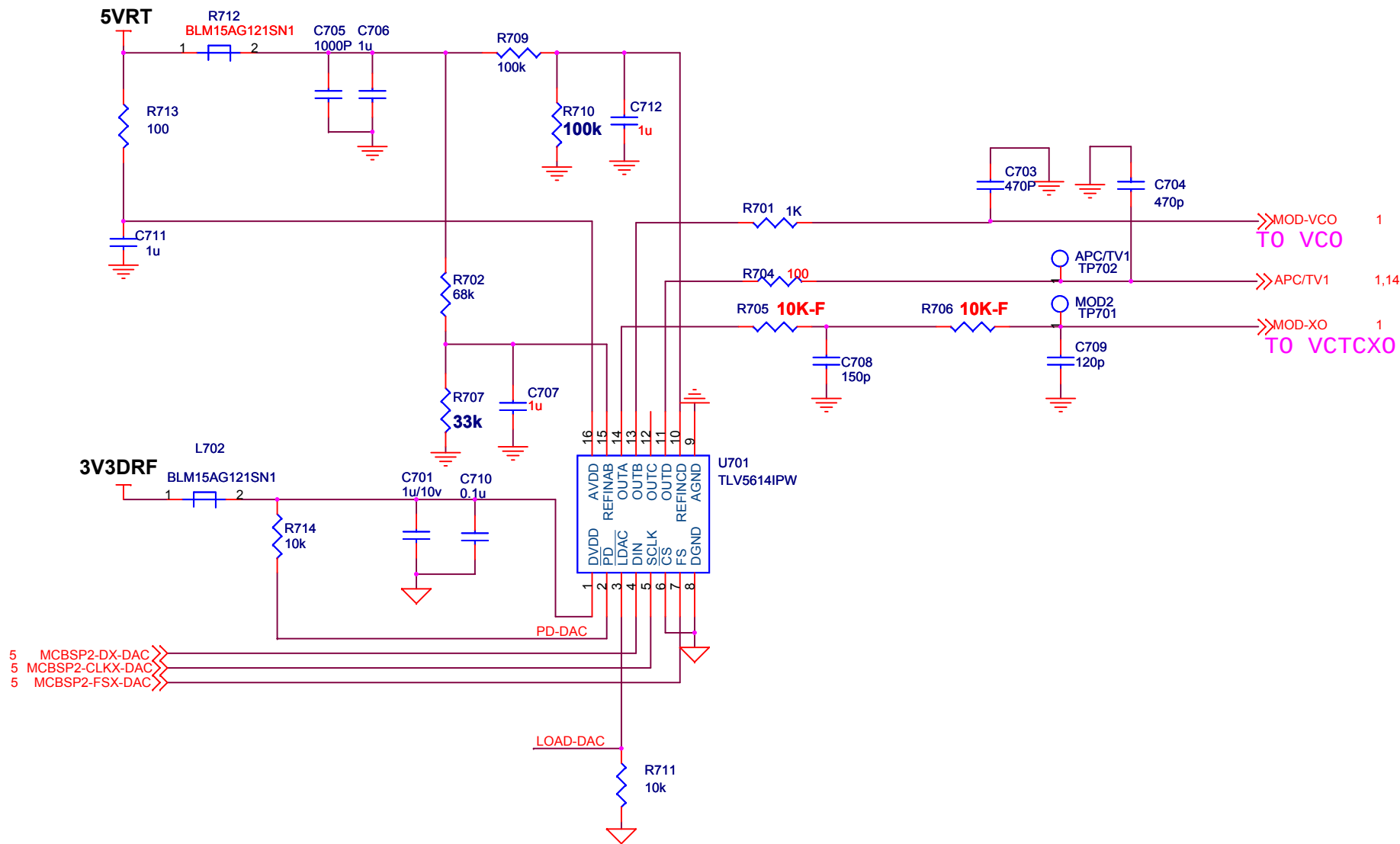
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (CODEC)



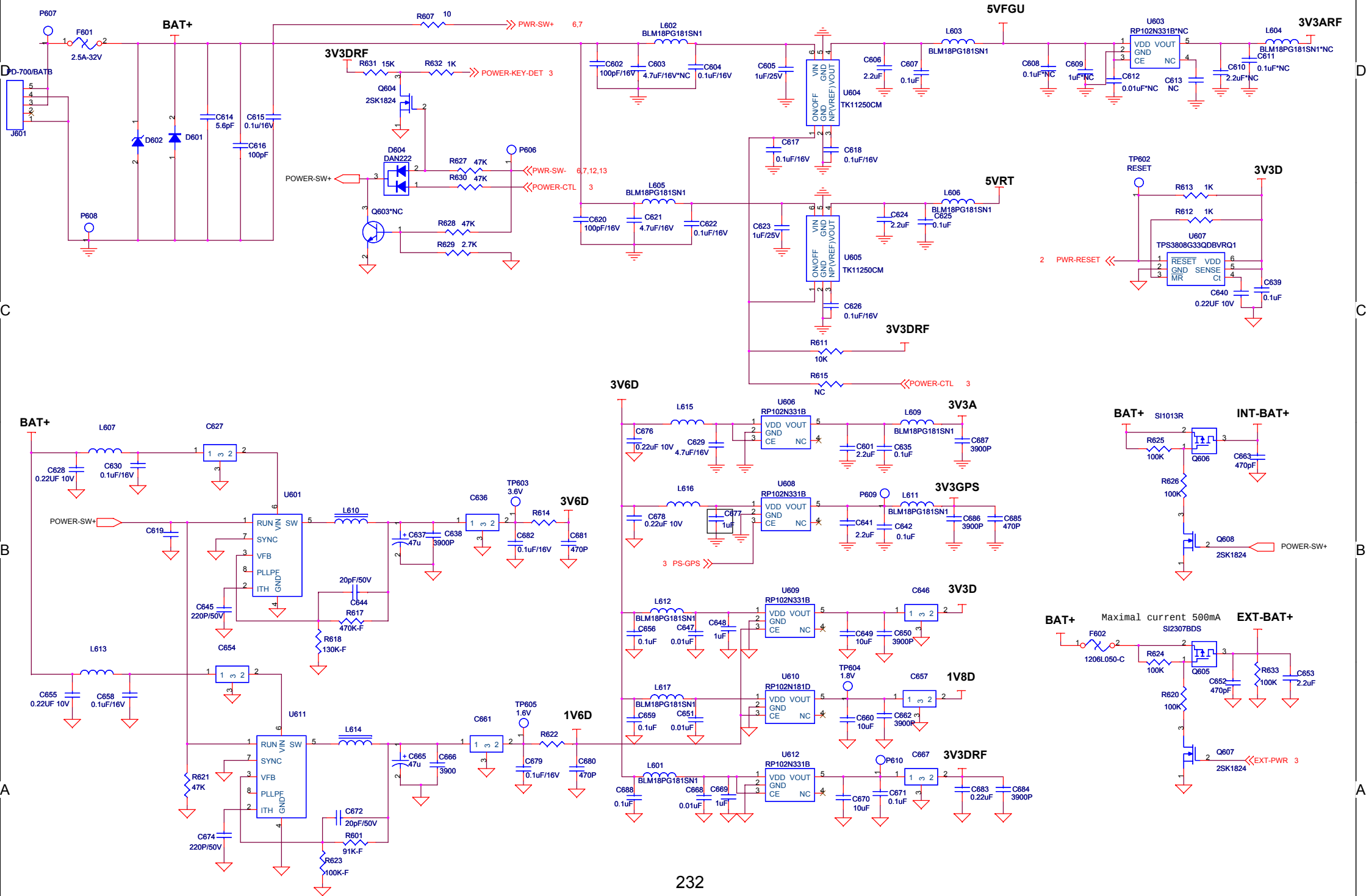
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Audio Amplifier)



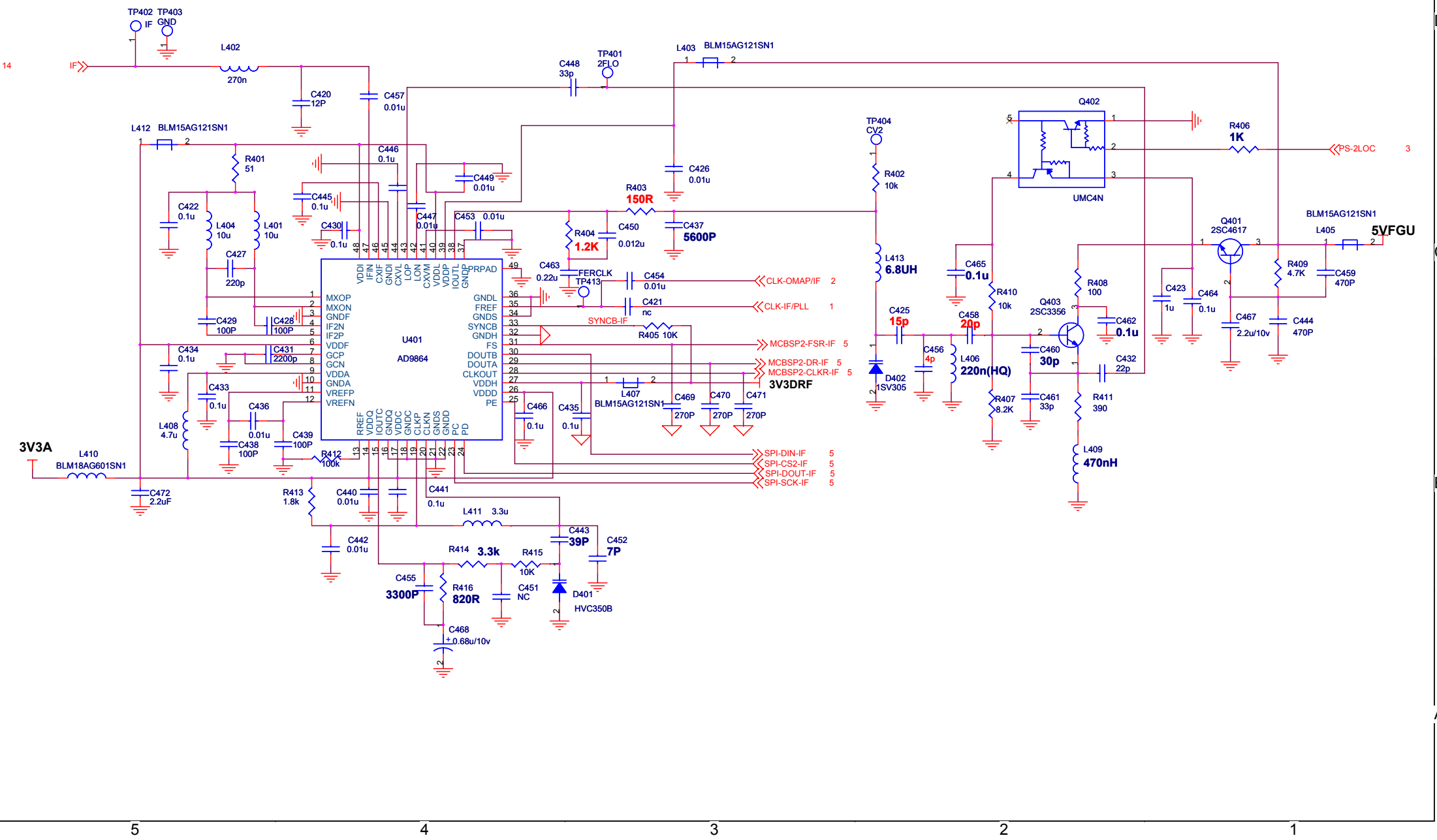
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (DAC)



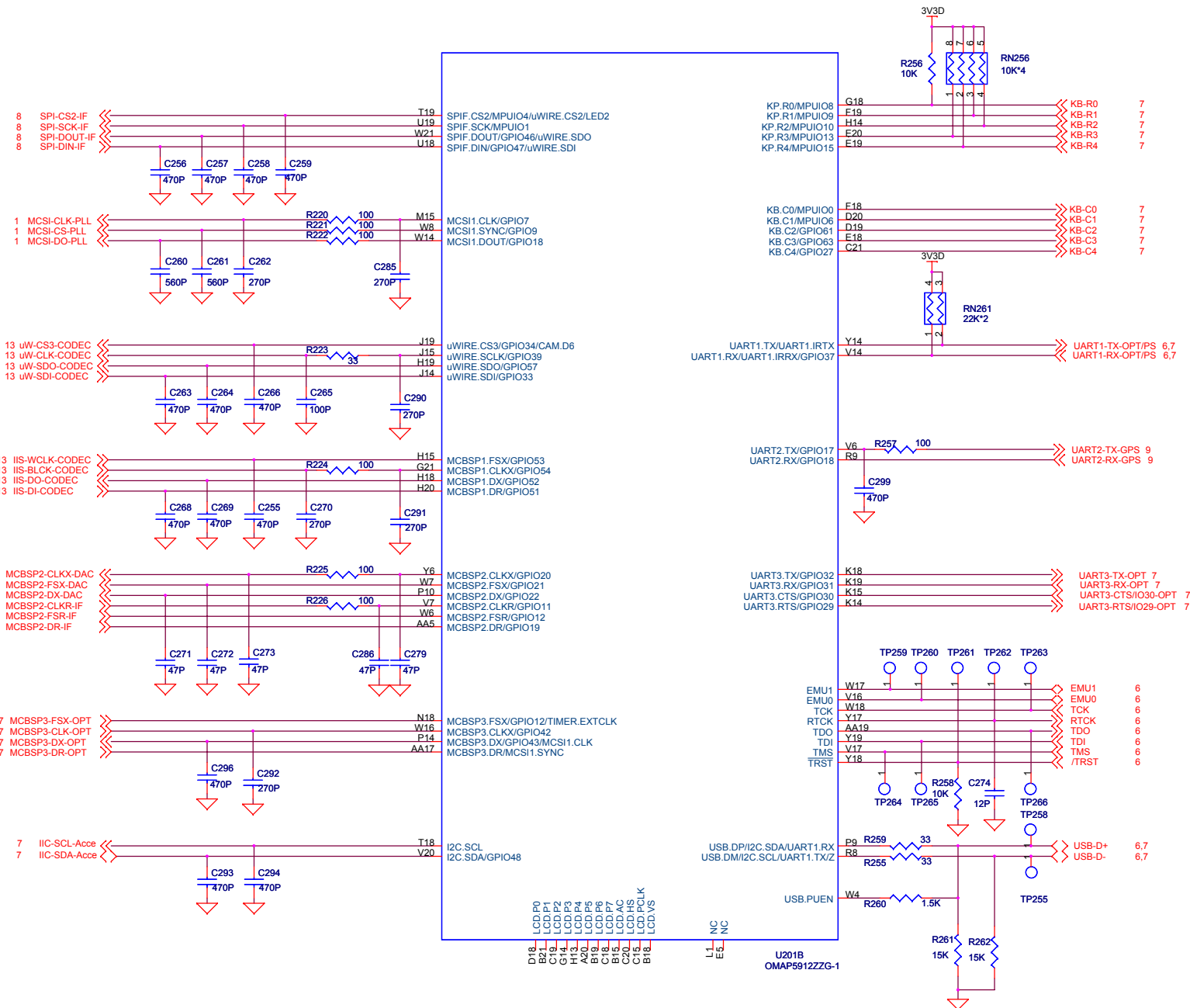
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Power)



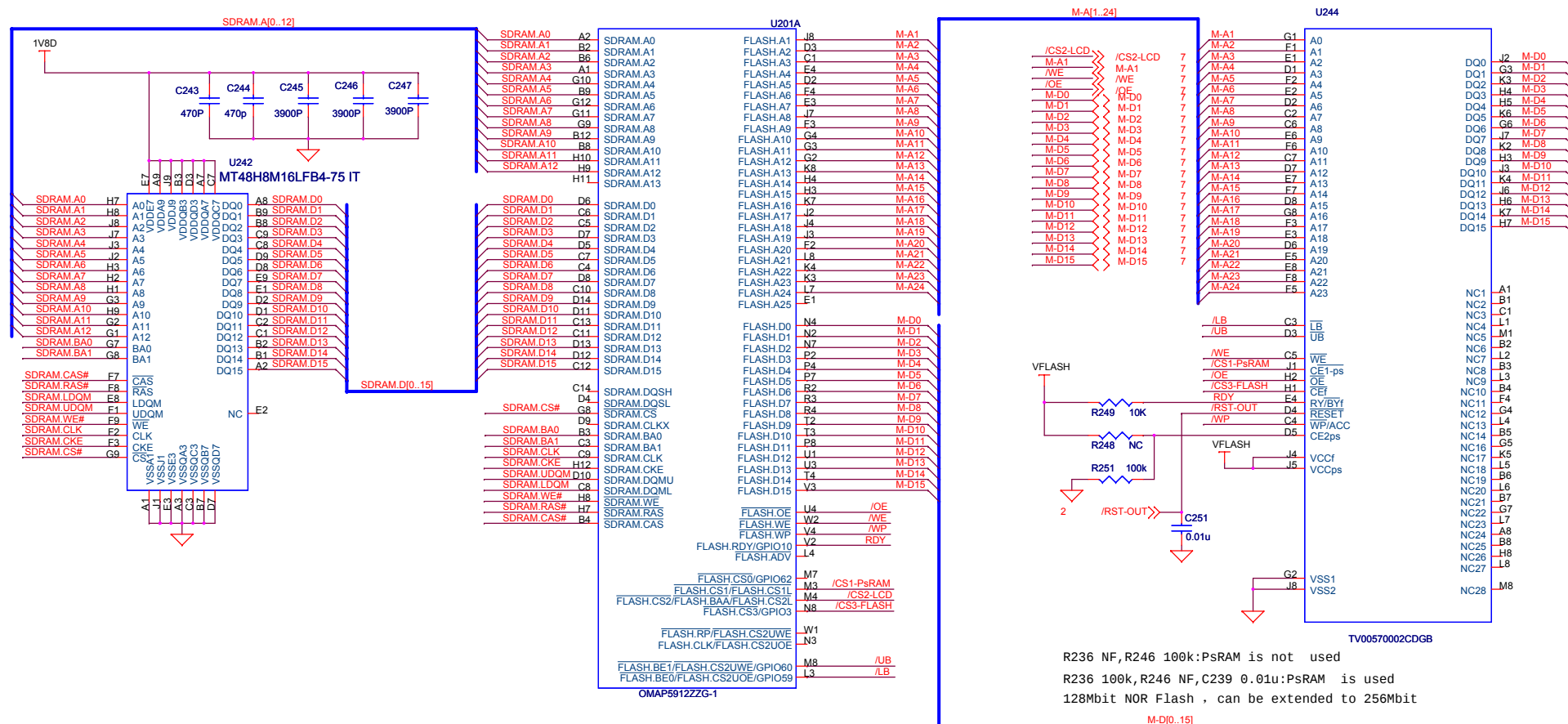
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (AD9864)



PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP SI)

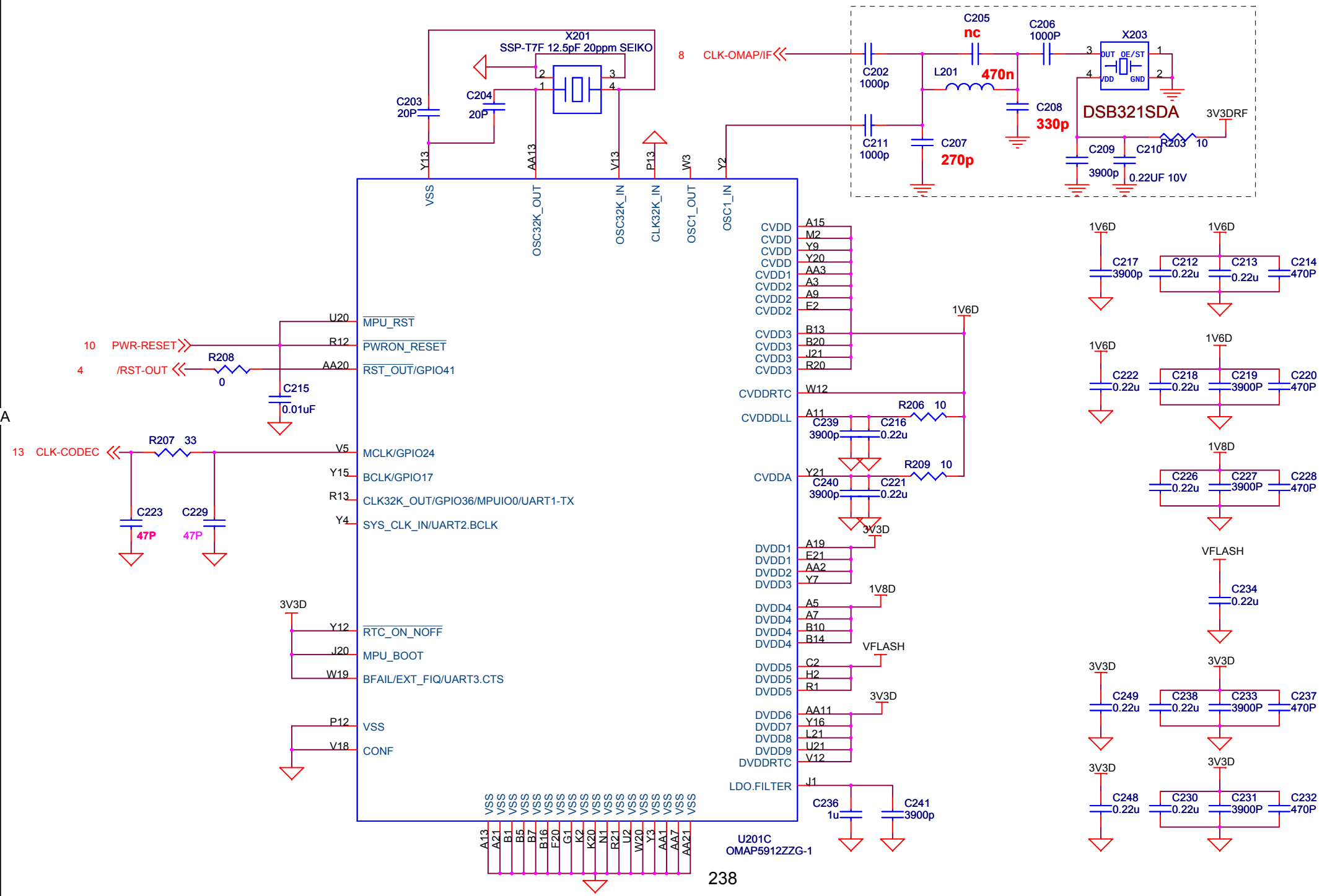


PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP MEN)

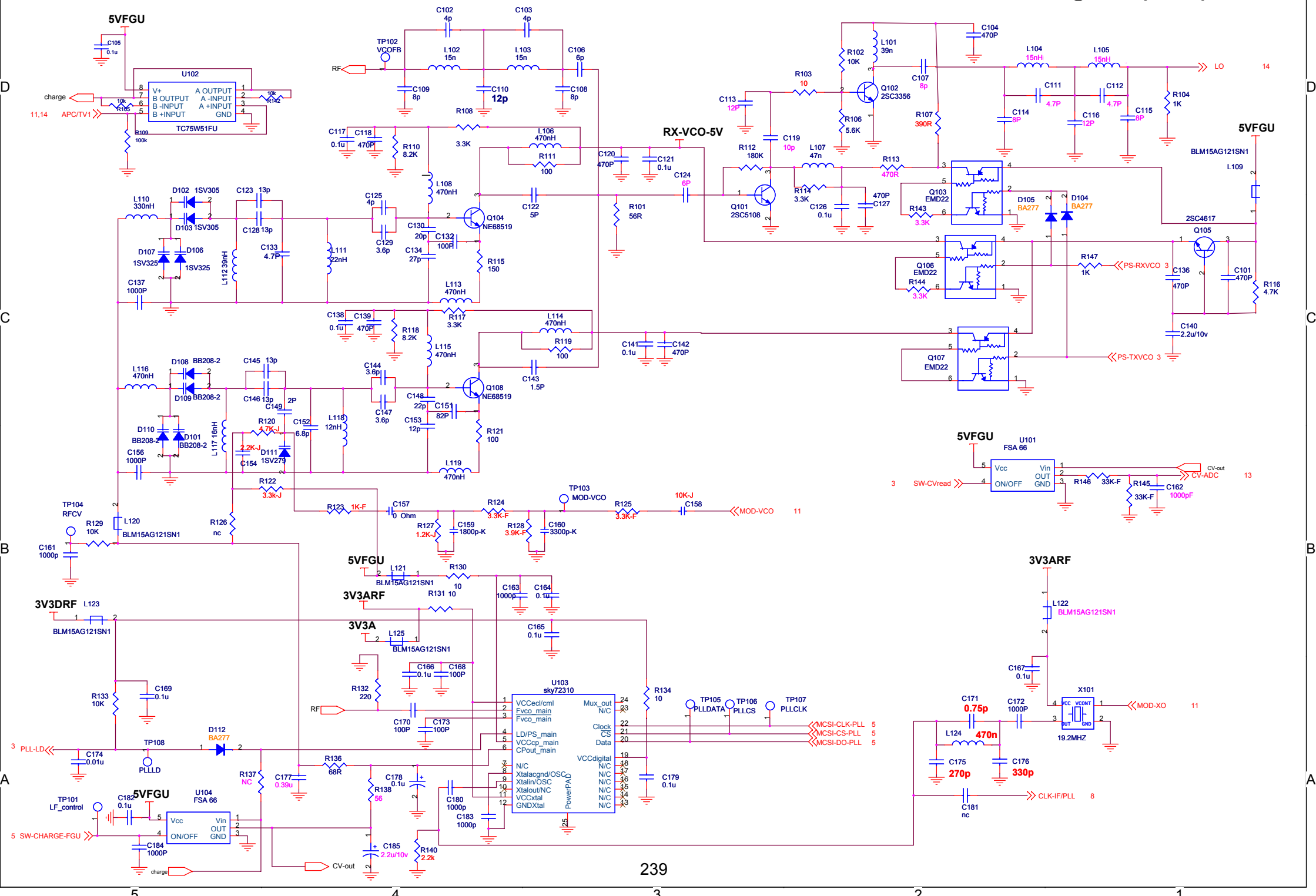


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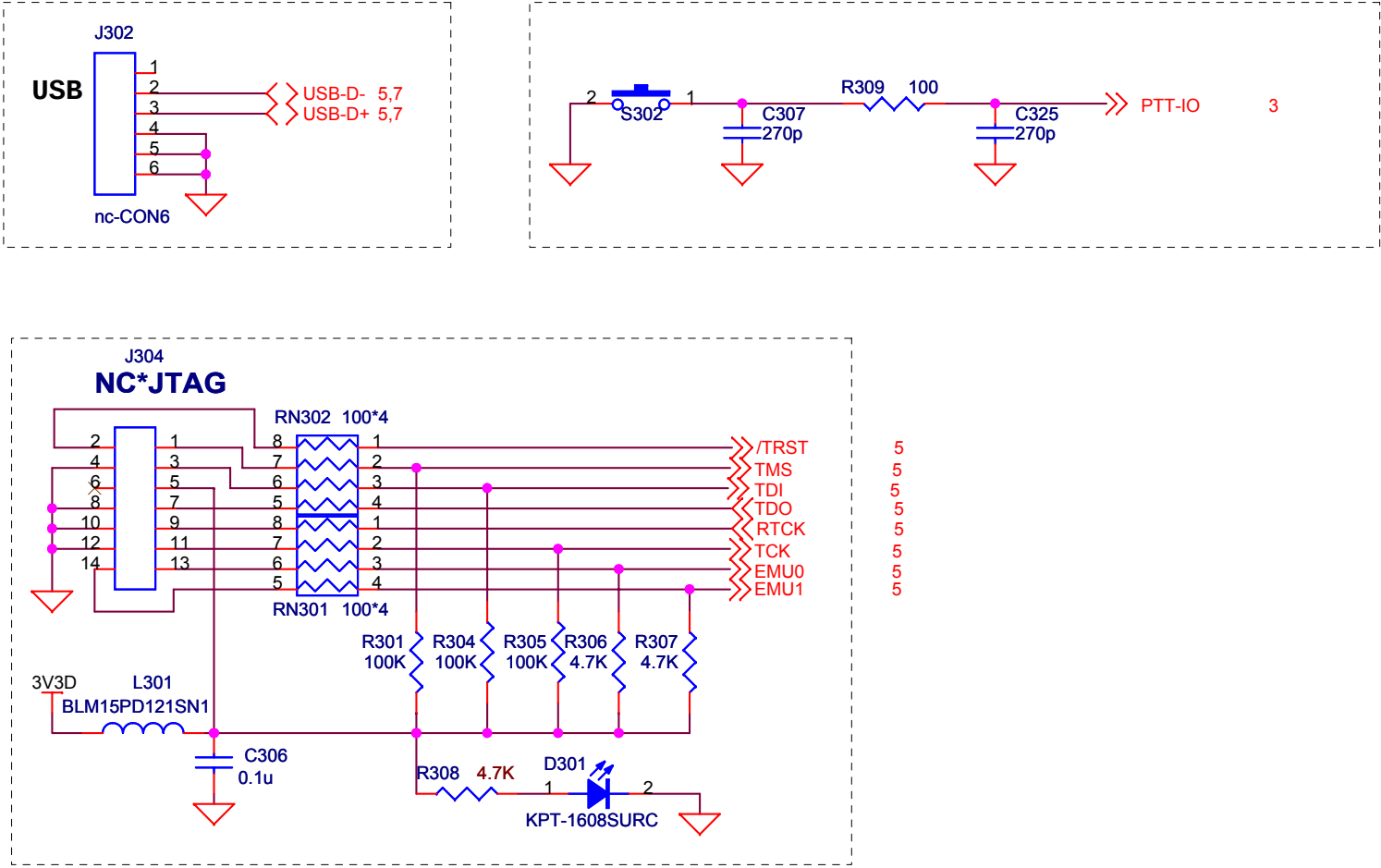
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP CORE)



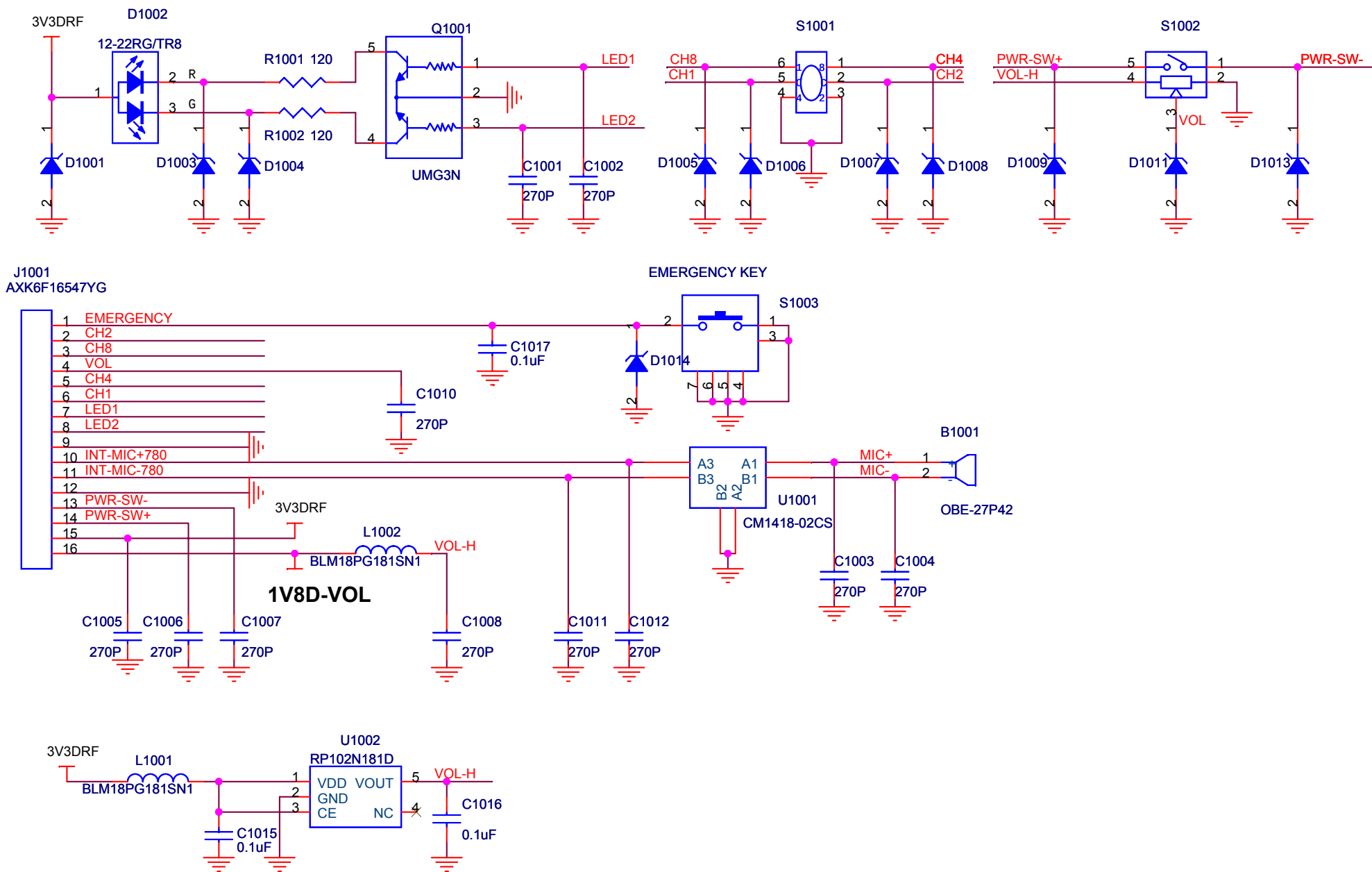
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (FGU)



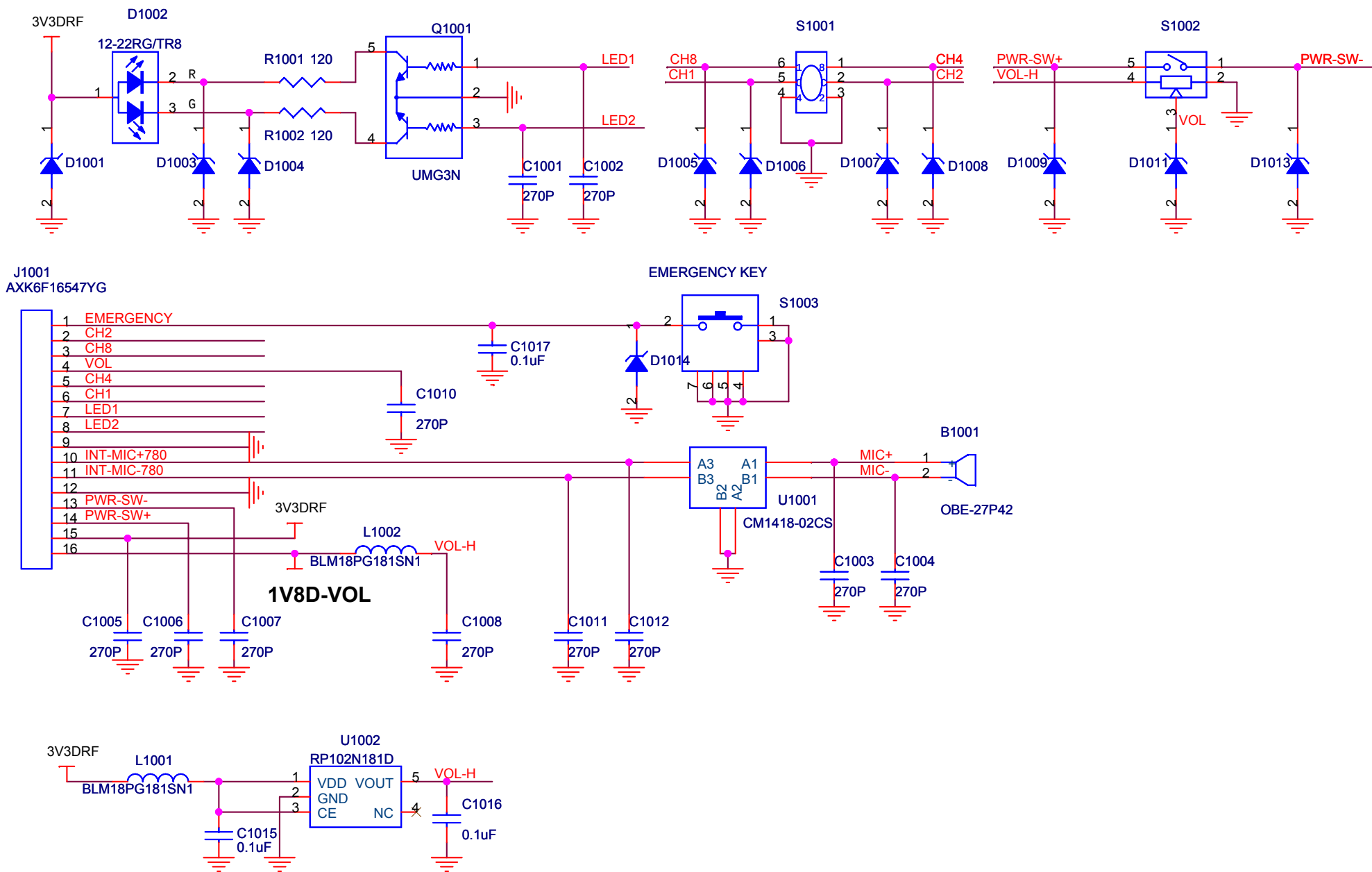
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (External Interface)



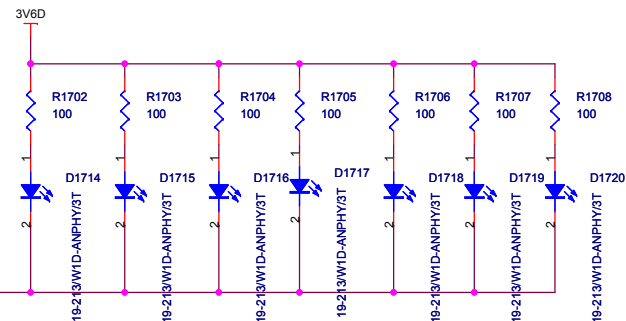
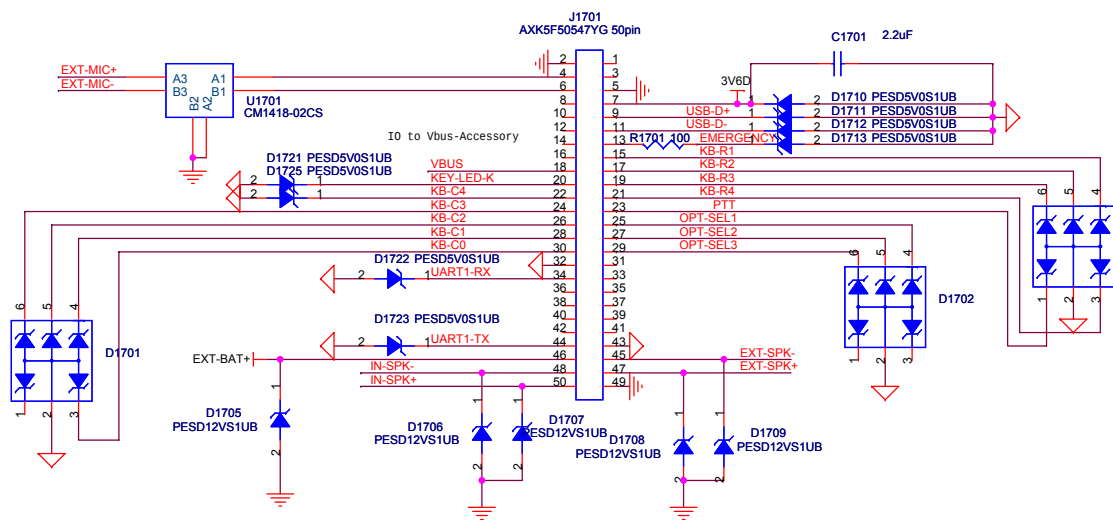
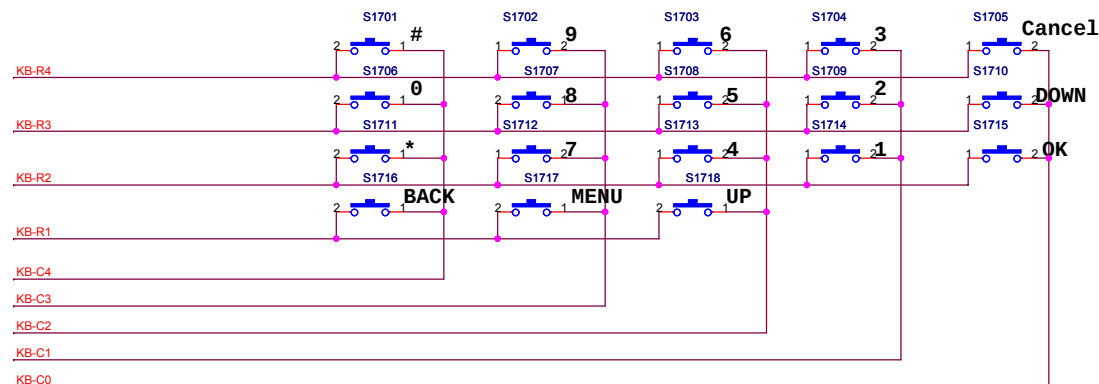
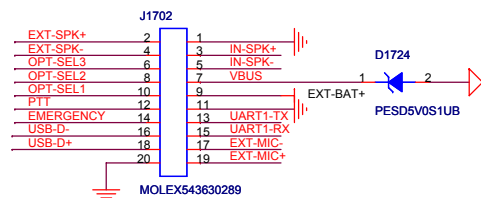
PD70X/PD70XG/HD705/HD705G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Keyboard)



9.7 Parts List

PD70X/ PD70XG/ PD78X/ PD78XG/ HD705/ HD705G/ HD785/ HD785G Main Board

No.	Ref. No.	Print No.	Part No.	Description
1	ANT1	T2B	6201847000000	Antenna spring plate
2	C101	B1F	3101054710010	470PF
3	C102	B2H	3101050400010	4PF
4	C103	B2H	3101050400010	4PF
5	C104	T1G	3101054710010	470PF
6	C105	B1I	3101051040060	0.1UF
7	C106	B2G	3101050600010	6PF
8	C107	T1F	3101050800000	8PF
9	C108	B2H	3101050800000	8PF
10	C109	B2H	3101050800000	8PF
11	C110	B2H	3101051200020	12PF
12	C111	T1F	3101054790040	4.7PF
13	C112	T1F	3101054790040	4.7PF
14	C113	T1G	3101051200020	12PF
15	C114	T1F	3101050800000	8PF
16	C115	T2F	3101050800000	8PF
17	C116	T1F	3101051200020	12PF
18	C117	T1G	3101051040060	0.1UF
19	C118	T1G	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
20	C119	T1G	3101051000020	10PF
21	C120	T1G	3101054710010	470PF
22	C121	T1G	3101051040060	0.1UF
23	C122	T1G	3101060500010	5PF
24	C123	T1H	3101061300000	13PF
25	C124	T2G	3101050600010	6PF
26	C125	T1H	3101060400010	4PF
27	C126	T2G	3101051040060	0.1UF
28	C127	T2G	3101054710010	470PF
29	C128	T1H	3101061300000	13PF
30	C129	T1H	3101063690000	3.6PF
31	C130	T1H	3101062000000	20PF
32	C132	T1G	3101051010030	100PF
33	C133	T1H	3101064790010	4.7PF
34	C134	T2H	3101062700010	27PF
35	C136	B1F	3101054710010	470PF
36	C137	T2H	3101051020010	1000PF
37	C138	B1G	3101051040060	0.1UF
38	C139	B1G	3101054710010	470PF
39	C140	B1F	3101062250000	2.2UF
40	C141	B2G	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
41	C142	B2G	3101054710010	470PF
42	C143	B2G	3101061590010	1.5PF
43	C144	B1G	3101063690000	3.6PF
44	C145	B1H	3101061300000	13PF
45	C146	B1H	3101061300000	13PF
46	C147	B1G	3101063690000	3.6PF
47	C148	B1G	3101062200010	22PF
48	C149	B1H	3101060200010	2PF
49	C151	B1G	3101058200000	82PF
50	C152	B1H	3101066890020	6.8PF
51	C153	B1G	3101061200000	12PF
52	C154	B1H	3001052220000	2.2KΩ
53	C156	B1H	3101051020010	1000PF
54	C157	B1H	3001060000000	0Ω
55	C158	B1H	3001061030010	10KΩ
56	C159	B1H	3101051820000	1800PF
57	C160	B1H	3101053320010	3300PF
58	C161	B1H	3101051020010	1000PF
59	C162	B1I	3101051020010	1000PF
60	C163	T1H	3101051020010	1000PF
61	C164	T1H	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
62	C165	B1I	3101051040060	0.1UF
63	C166	T2H	3101051040060	0.1UF
64	C167	T2I	3101051040060	0.1UF
65	C168	T2H	3101051010030	100PF
66	C169	B1I	3101051040060	0.1UF
67	C170	T1H	3101051010030	100PF
68	C171	T1I	3199050758000	0.75PF
69	C172	T1I	3101051020010	1000PF
70	C173	T1H	3101051010030	100PF
71	C174	B1I	3101051030020	0.01UF
72	C175	T1I	3101052710000	270PF
73	C176	T1I	3101053310030	330PF
74	C177	T1H	3101073940000	0.39UF
75	C178	T1I	3101071040030	0.1UF
76	C179	T2I	3101051040060	0.1UF
77	C180	T1I	3101051020010	1000PF
78	C182	B1I	3101051040060	0.1UF
79	C183	T1I	3101051020010	1000PF
80	C184	B1I	3101051020010	1000PF
81	C185	T1I	3104072250060	2.2UF
82	C202	B3H	3101051020010	1000PF

No.	Ref. No.	Print No.	Part No.	Description
83	C203	B5J	3101052000020	20PF
84	C204	B5J	3101052000020	20PF
85	C206	B3H	3101051020010	1000PF
86	C207	B3H	3101052710000	270PF
87	C208	B3H	3101053310030	330PF
88	C209	B3H	3101053920000	3900PF
89	C210	B3H	3101062240000	0.22UF
90	C211	B3I	3101051020010	1000PF
91	C212	B5J	3101052240010	0.22UF
92	C213	B4K	3101052240010	0.22UF
93	C214	B3I	3101054710010	470PF
94	C215	T4J	3101051030020	0.01UF
95	C216	B3J	3101052240010	0.22UF
96	C217	B5J	3101053920000	3900PF
97	C218	B3J	3101052240010	0.22UF
98	C219	B3J	3101053920000	3900PF
99	C220	B4K	3101054710010	470PF
100	C221	B4K	3101052240010	0.22UF
101	C222	B3I	3101052240010	0.22UF
102	C223	T4J	3101054700010	47PF
103	C226	B3J	3101052240010	0.22UF

No.	Ref. No.	Print No.	Part No.	Description
104	C227	B3J	3101053920000	3900PF
105	C228	B3J	3101054710010	470PF
106	C229	T4J	3101054700010	47PF
107	C230	B3K	3101052240010	0.22UF
108	C231	B3J	3101053920000	3900PF
109	C232	B4K	3101054710010	470PF
110	C233	B4F	3101053920000	3900PF
111	C234	B4I	3101052240010	0.22UF
112	C236	B4I	3101051050000	1UF
113	C237	B5J	3101054710010	470PF
114	C238	B5I	3101052240010	0.22UF
115	C239	B3J	3101053920000	3900PF
116	C240	B4K	3101053920000	3900PF
117	C241	B4I	3101053920000	3900PF
118	C242	B5I	3101052240010	0.22UF
119	C243	B3J	3101054710010	470PF
120	C244	T2J	3101054710010	470PF
121	C245	B3I	3101053920000	3900PF
122	C246	T2J	3101053920000	3900PF
123	C247	T2J	3101053920000	3900PF
124	C248	B5J	3101052240010	0.22UF

No.	Ref. No.	Print No.	Part No.	Description
125	C249	B4K	3101052240010	0.22UF
126	C251	B5J	3101051030020	0.01UF
127	C255	T2J	3101054710010	470PF
128	C256	T4J	3101054710010	470PF
129	C257	B4K	3101054710010	470PF
130	C258	T4J	3101054710010	470PF
131	C259	T4J	3101054710010	470PF
132	C260	T4J	3101055610000	560PF
133	C261	T4J	3101055610000	560PF
134	C262	T4J	3101052710000	270PF
135	C263	T2J	3101054710010	470PF
136	C264	T3J	3101054710010	470PF
137	C265	T2J	3101051010030	100PF
138	C266	T3J	3101054710010	470PF
139	C268	T2J	3101054710010	470PF
140	C269	T2J	3101054710010	470PF
141	C270	T2J	3101052710000	270PF
142	C271	T4J	3101054700010	47PF
143	C272	B5J	3101054700010	47PF
144	C273	B5J	3101054700010	47PF
145	C274	B5J	3101051200020	12PF

No.	Ref. No.	Print No.	Part No.	Description
146	C275	T4J	3101051520000	1500PF
147	C276	T4J	3101051520000	1500PF
148	C277	T4J	3101051520000	1500PF
149	C278	T4J	3101054710010	470PF
150	C279	B5J	3101054700010	47PF
151	C280	B3K	3101054710010	470PF
152	C281	T4J	3101054710010	470PF
153	C282	T4J	3101054710010	470PF
154	C283	T4J	3101054710010	470PF
155	C284	T4J	3101054710010	470PF
156	C285	T4J	3101052710000	270PF
157	C286	T4J	3101058210010	820PF
158	C287	T4J	3101054710010	470PF
159	C288	B4I	3101054710010	470PF
160	C289	T4J	3101051520000	1500PF
161	C290	T4J	3101052710000	270PF
162	C291	B4K	3101052710000	270PF
163	C292	T4J	3101052710000	270PF
164	C293	B4K	3101054710010	470PF
165	C294	T4J	3101054710010	470PF
166	C295	B5J	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
167	C296	T4J	3101054710010	470PF
168	C297	B5J	3101054710010	470PF
169	C298	T4J	3101054710010	470PF
170	C299	T4J	3101054710010	470PF
171	C300	B4J	3101054710010	470PF
172	C301	B4J	3101054710010	470PF
173	C302	B4J	3101054710010	470PF
174	C303	B4J	3101054710010	470PF
175	C304	B5J	3101051520000	1500PF
176	C305	B4J	3101054710010	470PF
177	C310	B4H	3101051040060	0.1UF
178	C311	B4H	3101051040060	0.1UF
179	C312	B4G	3101051050000	1UF
180	C313	B4G	3101054710010	470PF
181	C314	B4G	3101051050000	1UF
182	C315	B4G	3101054710010	470PF
183	C316	B4F	3101054710010	470PF
184	C317	B4F	3101054710010	470PF
185	C318	B4C	3101051040060	0.1UF
186	C319	B4G	3001051040000	100KΩ
187	C320	B4C	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
188	C321	B4D	3101052710000	270PF
189	C322	B4D	3101052710000	270PF
190	C323	B3K	3101051050000	1UF
191	C324	B5F	3101064710000	470PF
192	C325	B3J	3101052710000	270PF
193	C326	B3J	3101052710000	270PF
194	C331	B4C	3101054710010	470PF
195	C332	B4D	3101054710010	470PF
196	C333	B4D	3101054710010	470PF
197	C334	B3L	3101052710000	270PF
198	C335	B5D	3101054710010	470PF
199	C336	B5D	3101054710010	470PF
200	C420	B2H	3101051200020	12PF
201	C422	T2G	3101051040060	0.1UF
202	C423	T2F	3101051050000	1UF
203	C425	T3G	3101051500020	15PF
204	C426	T3G	3101051030020	0.01UF
205	C427	T2H	3101052210010	220PF
206	C428	T2H	3101051010030	100PF
207	C429	T2G	3101051010030	100PF
208	C430	T2G	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
209	C431	T2H	3101052220010	2200pF
210	C432	T3F	3101052200010	22PF
211	C433	T2H	3101051040060	0.1UF
212	C434	T2H	3101051040060	0.1UF
213	C435	T3H	3101051040060	0.1UF
214	C436	T2H	3101051030020	0.01UF
215	C437	T3F	3101065620010	5600PF
216	C438	T2H	3101051010030	100PF
217	C439	T2H	3101051010030	100PF
218	C440	T3H	3101051030020	0.01UF
219	C441	T3H	3101051040060	0.1UF
220	C442	T3H	3101061030010	0.01UF
221	C443	T3H	3101063900000	39PF
222	C444	T2F	3101054710010	470PF
223	C445	T3G	3101051040060	0.1UF
224	C446	T3G	3101051040060	0.1UF
225	C447	T3G	3101051030020	0.01UF
226	C448	T3G	3101053300000	33PF
227	C449	T3G	3101051030020	0.01UF
228	C450	T3G	3101061230000	0.012UF
229	C452	T3H	3101060700020	7PF

No.	Ref. No.	Print No.	Part No.	Description
230	C453	T3G	3101051030020	0.01UF
231	C454	T3G	3101051030020	0.01UF
232	C455	T3I	3101063320000	3300PF
233	C456	T3G	3101060400010	4PF
234	C457	B2H	3101051030020	0.01UF
235	C458	T3G	3101062000000	20PF
236	C459	T2F	3101054710010	470PF
237	C460	T3F	3101063000010	30PF
238	C461	T3F	3101063300000	33PF
239	C462	T3F	3101051040060	0.1UF
240	C463	T3G	3101072240000	0.22UF
241	C464	T2F	3101051040060	0.1UF
242	C465	T2G	3101051040060	0.1UF
243	C466	T3H	3101051040060	0.1UF
244	C467	T2F	3101062250000	2.2UF
245	C468	T3I	3104076840020	0.68UF
246	C469	T3H	3101052710000	270PF
247	C470	T3H	3101055610000	560PF
248	C472	B2H	3101062250000	2.2UF
249	C512	B4E	3101054710010	470PF
250	C513	B2C	3101055600000	56PF

No.	Ref. No.	Print No.	Part No.	Description
251	C514	B3C	3101051210000	120PF
252	C515	B2C	3101051050000	1UF
253	C516	B3C	3101051590070	1.5PF
254	C517	B3C	3101051800010	18PF
255	C518	B2C	3101051590000	1.5PF
256	C519	B2C	3199050758000	0.75PF
257	C520	B2C	3101050100030	1PF
258	C521	B3C	3101051210000	120PF
259	C522	B3C	3101051040060	0.1UF
260	C523	B2C	3101051040060	0.1UF
261	C524	B2C	3101055600000	56PF
262	C525	B2C	3101051040060	0.1UF
263	C526	B2C	3101051050000	1UF
264	C527	B2C	3101050200010	2PF
265	C601	T3K	3101062250000	2.2UF
266	C602	B3E	3101051010030	100PF
267	C604	B2F	3101051040060	0.1UF
268	C605	B2F	3101061050020	1UF
269	C606	B2F	3101062250000	2.2UF
270	C607	B2F	3101051040060	0.1UF
271	C614	B2E	3101055690020	5.6PF

No.	Ref. No.	Print No.	Part No.	Description
272	C615	B2E	3101051040060	0.1UF
273	C616	B2E	3101051010030	100PF
274	C617	B3E	3101051040060	0.1UF
275	C618	B3F	3101051040060	0.1UF
276	C619	T4G	3101061030010	0.01UF
277	C620	B2E	3101051010030	100PF
278	C621	B2E	3101074750000	4.7uF
279	C622	B2E	3101051040060	0.1UF
280	C623	B2E	3101061050020	1UF
281	C624	B2E	3101062250000	2.2UF
282	C625	B2E	3101051040060	0.1UF
283	C626	B2F	3101051040060	0.1UF
284	C627	T5G	3110081060000	10uF
285	C628	T4F	3101062240000	0.22UF
286	C629	T3J	3101074750000	4.7uF
287	C630	T5F	3101051040060	0.1UF
288	C635	T3K	3101051040060	0.1UF
289	C636	T4H	3110071060000	10uF
290	C637	T4G	3110994760000	47uF
291	C638	T4G	3101053920000	3900PF
292	C639	T4J	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
293	C640	T5J	3101062240000	0.22UF
294	C641	B3E	3101062250000	2.2UF
295	C642	B3E	3101051040060	0.1UF
296	C644	T4G	3101052000020	20PF
297	C645	T4G	3101052210010	220PF
298	C646	T5I	3001060000000	0Ω
299	C647	T4I	3101051030020	0.01UF
300	C648	T4I	3101061050020	1UF
301	C649	T5I	3101064750140	4.7uF
302	C650	T5I	3101053920000	3900PF
303	C651	T3J	3101051030020	0.01UF
304	C652	T4K	3101054710010	470PF
305	C653	T5K	3101062250000	2.2UF
306	C654	T5H	3110081060000	10uF
307	C655	T4H	3101062240000	0.22UF
308	C656	T4I	3101051040060	0.1UF
309	C657	T2J	3001060000000	0Ω
310	C658	T5H	3101051040060	0.1UF
311	C659	T3J	3101051040060	0.1UF
312	C660	T2I	3101064750140	4.7uF
313	C661	T4I	3110071060000	10uF

No.	Ref. No.	Print No.	Part No.	Description
314	C662	T2J	3101053920000	3900PF
315	C663	T4K	3101054710010	470PF
316	C665	T4I	3110994760000	47uF
317	C666	T4I	3101053920000	3900PF
318	C667	B1K	3001060000000	0Ω
319	C668	B2J	3101051030020	0.01UF
320	C669	B1K	3101061050020	1UF
321	C670	B1J	3101064750140	4.7uF
322	C671	B1J	3101051040060	0.1UF
323	C672	T4I	3101052000020	20PF
324	C674	T4H	3101052210010	220PF
325	C676	T3I	3101062240000	0.22UF
326	C677	B3E	3101061050020	1UF
327	C678	B4F	3101062240000	0.22UF
328	C679	T4I	3101051040060	0.1UF
329	C680	T4I	3101054710010	470PF
330	C681	T5H	3101054710010	470PF
331	C682	T4H	3101051040060	0.1UF
332	C683	B1K	3101052240010	0.22UF
333	C684	B1K	3101053920000	3900PF
334	C685	B3E	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
335	C686	B3E	3101053920000	3900PF
336	C687	T3K	3101053920000	3900PF
337	C688	B1J	3101051040060	0.1UF
338	C701	T1K	3101061050020	1UF
339	C703	T1J	3101054710010	470PF
340	C704	T1J	3101054710010	470PF
341	C705	T1J	3101051020010	1000PF
342	C706	T1J	3101051050000	1UF
343	C707	T1J	3101051050000	1UF
344	C708	T1J	3101051510000	150PF
345	C709	T1J	3101051210000	120PF
346	C710	T1K	3101051040060	0.1UF
347	C711	T1J	3101051050000	1UF
348	C712	T1J	3101051050000	1UF
349	C801	B4K	3101051040060	0.1UF
350	C802	T4K	3101071060010	10UF
351	C803	T3K	3101052240010	0.22UF
352	C804	T4K	3101052710000	270PF
353	C805	T3L	3101052210010	220PF
354	C806	T3K	3101052210010	220PF
355	C808	T3K	3101053920000	3900PF

No.	Ref. No.	Print No.	Part No.	Description
356	C809	T4L	3101051040060	0.1UF
357	C810	T3K	3101051040060	0.1UF
358	C812	T3K	3101051040060	0.1UF
359	C813	T3K	3101053920000	3900PF
360	C816	T4K	3101061050020	1UF
361	C819	T4K	3101051030020	0.01UF
362	C820	T3K	3101053920000	3900PF
363	C821	T2J	3101052240010	0.22UF
364	C822	T2K	3101051030020	0.01UF
365	C823	T3K	3101053920000	3900PF
366	C824	T2K	3101052240010	0.22UF
367	C825	T3K	3101062250000	2.2UF
368	C826	T3K	3101051030020	0.01UF
369	C827	T2K	3101051030020	0.01UF
370	C828	T2K	3101062250000	2.2UF
371	C831	T2K	3101051050000	1UF
372	C832	T3K	3101051050000	1UF
373	C833	T3K	3101051040060	0.1UF
374	C834	B2K	3101051050000	1UF
375	C835	T3L	3101054710010	470PF
376	C836	T2K	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
377	C837	B2K	3101051030020	0.01UF
378	C838	T2K	3101054710010	470PF
379	C839	T2L	3101051040060	0.1UF
380	C840	B2K	3101051050000	1UF
381	C842	T3L	3101054710010	470PF
382	C843	T2L	3101051040060	0.1UF
383	C845	T2L	3101054710010	470PF
384	C846	B2L	3101054710010	470PF
385	C847	T2K	3101051050000	1UF
386	C848	T2L	3101054710010	470PF
387	C849	B3K	3101054710010	470PF
388	C850	T2K	3101051040060	0.1UF
389	C851	T2L	3101054710010	470PF
390	C852	T2L	3101051040060	0.1UF
391	C853	T2L	3101054710010	470PF
392	C856	B2L	3101054710010	470PF
393	C857	B2L	3101054710010	470PF
394	C858	B2K	3101053920000	3900PF
395	C9001	T4C	3101052700000	27PF
396	C9002	T3C	3101051010030	100PF
397	C9003	B3B	3101060590010	0.5PF

No.	Ref. No.	Print No.	Part No.	Description
398	C9004	B2B	3101050300000	3PF
399	C9007	T2C	3101060700020	7PF
400	C9009	T3C	3101060900010	9PF
401	C9011	T3C	3101061010010	100PF
402	C9013	B3B	3101064710000	470PF
403	C9014	T1D	3101051000020	10PF
404	C9015	T2C	3101061200000	12PF
405	C9018	T2F	3101054710010	470PF
406	C9019	T2C	3101060900010	9PF
407	C9020	T2C	3101065600000	56PF
408	C9021	T2C	3101061200000	12PF
409	C9023	B3B	3101060800010	8PF
410	C9024	B2B	3101060800010	8PF
411	C9025	T2F	3101051000020	10PF
412	C9026	T2E	3101050800000	8PF
413	C9027	T1D	3101061200000	12PF
414	C9028	T1E	3101051000020	10PF
415	C9029	T1E	3101054710010	470PF
416	C9030	T3C	3101060700020	7PF
417	C9031	T3C	3101061000000	10PF
418	C9032	T1E	3101050800000	8PF

No.	Ref. No.	Print No.	Part No.	Description
419	C9033	T1F	3101054710010	470PF
420	C9034	T1D	3101054710010	470PF
421	C9035	T1D	3101050800000	8PF
422	C9036	T2F	3101051020010	1000PF
423	C9037	T1E	3101054710010	470PF
424	C9038	T2D	3101051040060	0.1UF
425	C9039	T2D	3101054710010	470PF
426	C9041	T1E	3101056830040	0.068uF
427	C9042	T3C	3101054710010	470PF
428	C9043	T3C	3101051040060	0.1UF
429	C9044	T1D	3101051030020	0.01UF
430	C9045	T1E	3101054710010	470PF
431	C9046	T1E	3101051040060	0.1UF
432	C9047	T1D	3101054710010	470PF
433	C9048	T1D	3101054710010	470PF
434	C9049	T1D	3101051040060	0.1UF
435	C9051	B1D	3104082260060	22UF
436	C9052	T2F	3101051050000	1UF
437	C9054	T1D	3101054710010	470PF
438	C9057	T3C	3101051040060	0.1UF
439	C9059	B1D	3101051020010	1000PF

No.	Ref. No.	Print No.	Part No.	Description
440	C9060	B1E	3101061020000	1000PF
441	C9061	B1E	3101051020010	1000PF
442	C9063	B1E	3101054720000	4700PF
443	C9064	B1D	3101051020010	1000PF
444	C9065	B1E	3101051520000	1500PF
445	C9066	B1D	3101051030020	0.01UF
446	C9067	B1E	3101055610000	560PF
447	C9069	B1D	3101054710010	470PF
448	C9071	B1D	3101051040060	0.1UF
449	C9075	T3F	3101054710010	470PF
450	C9077	T3F	3101051500020	15PF
451	C9078	T3F	3101053300000	33PF
452	C9079	T3E	3101052000020	20PF
453	C9080	T4D	3101051040060	0.1UF
454	C9081	T4D	3101054710010	470PF
455	C9085	B2G	3101051020010	1000PF
456	C9086	B2G	3101051040060	0.1UF
457	C9087	T4C	3101053330000	0.033UF
458	C9088	T4C	3101051020010	1000PF
459	C9089	T4D	3101051020010	1000PF
460	C9090	B3G	3101051030020	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
461	C9091	B3G	3101051040060	0.1UF
462	C9092	T3F	3101051040060	0.1UF
463	C9093	T4D	3101051020010	1000PF
464	C9095	T2F	3101051050000	1UF
465	C9096	T2F	3101054710010	470PF
466	C9097	B3G	3101051040060	0.1UF
467	C9098	T3F	3101054710010	470PF
468	C9099	B3H	3101051000020	10PF
469	C9100	T4D	3101050500010	5PF
470	C9101	T4E	3101050700010	7PF
471	C9103	B3H	3101051020010	1000PF
472	C9104	B3G	3101051040060	0.1UF
473	C9105	B2G	3101051000020	10PF
474	C9106	T4C	3101052200010	22PF
475	C9107	B3G	3101050800000	8PF
476	C9109	T4D	3101050700010	7PF
477	C9110	B3G	3101051030020	0.01UF
478	C9111	T4D	3101050300000	3PF
479	C9112	T5D	3101062200010	22PF
480	C9113	T4E	3101050800000	8PF
481	C9114	T4D	3001052220000	2.2KΩ

No.	Ref. No.	Print No.	Part No.	Description
482	C9115	T4C	3101051200020	12PF
483	C9116	T4C	3101050300000	3PF
484	C9117	T4C	3101051000020	10PF
485	C9118	B3G	3101052700000	27PF
486	C9120	T4D	3101051000020	10PF
487	C9121	B2G	3101051020010	1000PF
488	C9122	B3H	3101052700000	27PF
489	C9124	B2G	3101050600010	6PF
490	C9128	T4C	3101050400010	4PF
491	C9129	T4C	3101050500010	5PF
492	C9131	T4C	3101051800070	18PF
493	C9133	T4C	3101050400010	4PF
494	C9134	T4C	3101055690020	5.6PF
495	C9135	T4D	3101050400010	4PF
496	C9136	T4E	3101050400010	4PF
497	C9137	T4E	3101050600010	6PF
498	C9138	T4D	3101053330000	0.033UF
499	C9141	T4E	3101054700010	47PF
500	D101	B1H	3304990000030	Varactor
501	D102	T1H	3304010100220	Varactor
502	D103	T1H	3304010100220	Varactor

No.	Ref. No.	Print No.	Part No.	Description
503	D104	B1G	3303990000060	Switching diode
504	D105	B1G	3303990000060	Switching diode
505	D106	T1H	3304010100180	Varactor
506	D107	T1H	3304010100180	Varactor
507	D108	B1H	3304990000030	Varactor
508	D109	B1H	3304990000030	Varactor
509	D110	B1H	3304990000030	Varactor
510	D111	B1H	3304010100890	Varactor
511	D112	B1I	3303990000060	Switching diode
512	D302	B4C	3303990000010	Switching diode
513	D303	B3L	3399040600000	ESD protection diode
514	D304	B3L	3399040600000	ESD protection diode
515	D305	B3K	3399040600000	ESD protection diode
516	D306	B3K	3399040600000	ESD protection diode
517	D307	B4L	3399040600020	ESD protection diode
518	D308	B4L	3399040600020	ESD protection diode
519	D309	B4K	3399040600020	ESD protection diode
520	D310	B4K	3399040600020	ESD protection diode
521	D318	B3K	3399040600010	ESD protection diode
522	D401	T3I	3304060300050	Varactor
523	D402	T3G	3304010100220	Varactor

No.	Ref. No.	Print No.	Part No.	Description
524	D601	B2E	3399990000110	Switching diode
525	D602	B2E	3399040600020	ESD protection diode
526	D604	B4D	3303030100010	Switching diode
527	D9001	T4D	3304010100180	Varactor
528	D9002	T3C	3303030800040	Switching diode
529	D9005	B3B	3303990000060	Switching diode
530	D9006	B3B	3303990000060	Switching diode
531	D9007	T2F	3303990000060	Switching diode
532	D9008	T2F	3303990000060	Switching diode
533	D9010	B1F	3399990000080	Zener diode
534	D9011	B2F	3303030100010	Switching diode
535	D9012	T4D	3304010100180	Varactor
536	D9013	T4C	3399990000260	Rectifier diode
537	D9014	T4C	3304010100180	Varactor
538	D9015	T4C	3304010100180	Varactor
539	D9016	T4C	3304010100220	Varactor
540	D9017	T4F	3301250300000	Schottky barrier diode
541	F601	B3E	4099000000050	Fuse
542	F602	T5J	4010000000010	Resumable fuse
543	J1601	B3L	5201050100030	Board-to-board connector
544	J311	B4G	5201030000040	Board-to-board connector

No.	Ref. No.	Print No.	Part No.	Description
545	J313	B4B	5202002100200	Board-to-wire connector
546	J601	T3D	5205003100020	Battery connector
547	J821	B4C	5201016000010	Board-to-board connector
548	L101	T1G	3210106390000	39nH
549	L102	B2H	3210306150000	15nH
550	L103	B2H	3210306150000	15nH
551	L104	T1F	3210106150000	15nH
552	L105	T1F	3210106150000	15nH
553	L106	T1G	3217106471000	470nH
554	L107	T2G	3210106470000	47nH
555	L108	T1G	3217106471000	470nH
556	L109	B1G	3221505121000	Bead
557	L110	T1H	3217106331000	330nH
558	L111	T1H	3217107220000	22nH
559	L112	T1H	3217107390010	39nH
560	L113	T2G	3217106471000	470nH
561	L114	B1G	3217106471000	470nH
562	L115	B1G	3217106471000	470nH
563	L116	B1H	3217106471000	470nH
564	L117	B2H	3217107220000	22nH
565	L118	B1H	3237138129000	Air-core coil

No.	Ref. No.	Print No.	Part No.	Description
566	L119	B1G	3217106471000	470nH
567	L120	B1H	3221505121000	Bead
568	L121	B1I	3221505121000	Bead
569	L122	T2I	3221505121000	Bead
570	L123	B1I	3221505121000	Bead
571	L124	T1I	3210406471000	470nH
572	L125	T2I	3221505121000	Bead
573	L201	B3H	3210406471000	470nH
574	L302	B4C	3221506601000	Bead
575	L303	B2K	3221506181000	Bead
576	L304	B4D	3221506601000	Bead
577	L305	B4D	3221506601000	Bead
578	L401	T2H	3215099103000	10uH
579	L402	B3H	3210406271000	270nH
580	L403	T3G	3221505121000	Bead
581	L404	T2G	3215099103000	10uH
582	L405	T2F	3221505121000	Bead
583	L406	T3G	3217107221020	220nH
584	L407	T3H	3001051010000	100Ω
585	L408	T2H	3210407472000	4.7uH
586	L409	T3F	3210406471000	470nH

No.	Ref. No.	Print No.	Part No.	Description
587	L410	B2H	3221506601000	Bead
588	L411	T3H	3213212332000	3.3uH
589	L412	T2H	3221505121000	Bead
590	L413	T3G	3213306682000	6.8uH
591	L501	B2C	3297106339000	3.3nH
592	L502	B3C	3221506601080	Bead
593	L503	B2C	3297106339000	3.3nH
594	L504	B2C	3297106339000	3.3nH
595	L505	B2C	3221506601080	Bead
596	L506	B3C	3210106390000	39nH
597	L507	B3C	3210305180000	18nH
598	L508	B3C	3210305829000	8.2nH
599	L509	B3C	3210305829000	8.2nH
600	L601	B1J	3221506181000	Bead
601	L602	B3E	3221506181000	Bead
602	L603	B2F	3221506181000	Bead
603	L604	B1J	3221506181000	Bead
604	L605	B2E	3221506181000	Bead
605	L606	B2F	3221506181000	Bead
606	L607	T4F	3290299222000	2.2uH
607	L609	T3K	3221506181000	Bead

No.	Ref. No.	Print No.	Part No.	Description
608	L610	T5G	3217099153000	15uH
609	L611	B3E	3221506181000	Bead
610	L612	T4I	3221506181000	Bead
611	L613	T4H	3290299222000	2.2uH
612	L614	T5I	3217099153000	15uH
613	L615	T3J	3290299222000	2.2uH
614	L616	B4F	3290299222000	2.2uH
615	L617	T3I	3221506181000	Bead
616	L702	B1K	3221505121000	Bead
617	L801	B4K	3221505121010	Bead
618	L802	T4K	3221506181000	Bead
619	L803	T4L	3221505121010	Bead
620	L804	T4K	3221505121010	Bead
621	L805	T4K	3221505121010	Bead
622	L820	T2K	3221506601000	Bead
623	L821	T2J	3221505121010	Bead
624	L822	T2J	3221505121010	Bead
625	L823	T3K	3221506601000	Bead
626	L827	T3L	3221506601000	Bead
627	L828	T3L	3221506601000	Bead
628	L9001	T4E	3210106820000	82nH

No.	Ref. No.	Print No.	Part No.	Description
629	L9002	T3C	3210306820000	82nH
630	L9003	B3B	3239999250000	Air-core coil
631	L9004	B2B	3239999250000	Air-core coil
632	L9005	B2B	3233099185900	Air-core coil
633	L9006	T1D	3212106120000	12nH
634	L9007	T1E	3212106120000	12nH
635	L9008	T1D	3233099470000	47nH
636	L9009	T2F	3210306220000	22nH
637	L9010	T1E	3210306330000	33nH
638	L9011	T1D	3210209102010	1uH
639	L9012	T3C	3210107221000	220nH
640	L9013	B3B	3233099185900	Air-core coil
641	L9014	T2D	3221506121000	Bead
642	L9015	B2F	3221505121010	Bead
643	L9016	T1D	3212106689000	6.8nH
644	L9017	T3E	3210106220000	22nH
645	L9018	T3F	3290106120000	12nH
646	L9020	B2F	3221505121010	Bead
647	L9022	T4E	3210406271000	270nH
648	L9024	T4D	3217107331000	330nH
649	L9025	T4C	3210106150000	15nH

No.	Ref. No.	Print No.	Part No.	Description
650	L9026	B3H	3210106101000	100nH
651	L9027	B3G	3213306821000	0.82uH
652	L9028	T4D	3210106220000	22nH
653	L9030	T4C	3220106399000	3.9nH
654	L9032	B2G	3210306221000	220nH
655	L9033	T5D	3237199170000	Air-core coil
656	L9034	T4C	3101064700000	47PF
657	L9035	T4E	3237199170000	Air-core coil
658	L9036	T4C	3237199170000	Air-core coil
659	L9037	T4C	3237199170000	Air-core coil
660	L9038	B2G	3210406331000	330nH
661	L9039	T4E	3001060000000	0Ω
662	L9040	T4D	3217105010000	1nH
663	Q101	T2G	3401002000990	NPN transistor
664	Q102	T1G	3408002000000	NPN transistor
665	Q103	B1G	3403999000000	PNP+NPN
666	Q104	T1G	3408002000080	NPN transistor
667	Q105	B1F	3403003000060	NPN transistor
668	Q106	B1G	3403999000000	PNP+NPN
669	Q107	B2G	3403999000000	PNP+NPN
670	Q108	B1G	3408002000080	NPN transistor

No.	Ref. No.	Print No.	Part No.	Description
671	Q310	B4G	3511990000010	N-MOSFET
672	Q312	T3L	3403008000010	BRT
673	Q313	B4C	3511990000010	N-MOSFET
674	Q401	T2F	3403003000060	NPN transistor
675	Q402	T2G	3499000000150	PNP+NPN
676	Q403	T3F	3408002000000	NPN transistor
677	Q604	B4E	3503020000030	N-MOSFET
678	Q605	T4K	3505010000210	P-MOSFET
679	Q606	B4E	3505010000210	P-MOSFET
680	Q607	T4K	3503020000030	N-MOSFET
681	Q608	B4E	3503020000030	N-MOSFET
682	Q801	T4K	3403008000010	BRT
683	Q802	T4K	3403008000010	BRT
684	Q9001	T4D	3418001000010	NPN transistor
685	Q9002	T2E	3408002000000	NPN transistor
686	Q9003	T1C	3504990000040	PA MOSFET
687	Q9004	T1F	3406001000090	NPN transistor
688	Q9005	T1D	3504990000010	PA MOSFET
689	Q9006	B1F	3410001000020	PNP transistor
690	Q9007	B1F	3403008000010	BRT
691	Q9008	B1F	3403008000010	BRT

No.	Ref. No.	Print No.	Part No.	Description
692	Q9017	B3G	3404006000000	NPN transistor
693	Q9018	B3G	3404006000000	NPN transistor
694	Q9019	B2F	3403999000000	PNP+NPN
695	Q9020	B1E	3403999000000	PNP+NPN
696	Q9021	B2F	3401001000490	50V
697	R101	T2G	3001055600000	56Ω
698	R102	T1G	3001051030000	10KΩ
699	R103	T1G	3001051000000	10Ω
700	R104	T2F	3001051020000	1KΩ
701	R105	B1I	3001051030000	10KΩ
702	R106	T1G	3001055620000	5.6KΩ
703	R107	B1G	3001053910000	390Ω
704	R108	T1G	3001053320000	3.3KΩ
705	R109	B1I	3001051040000	100KΩ
706	R110	T1G	3001058220000	8.2KΩ
707	R111	T1G	3001051010000	100Ω
708	R112	T2G	3001051840000	180KΩ
709	R113	T2G	3001054710000	470Ω
710	R114	T2G	3001053320000	3.3KΩ
711	R115	T1G	3001051510000	150Ω
712	R116	B1F	3001054720000	4.7KΩ

No.	Ref. No.	Print No.	Part No.	Description
713	R117	B1G	3001053320000	3.3KΩ
714	R118	B1G	3001058220000	8.2KΩ
715	R119	B2G	3001051010000	100Ω
716	R120	B1H	3001054720000	4.7KΩ
717	R121	B1G	3001051010000	100Ω
718	R122	B2G	3001053320000	3.3KΩ
719	R123	B1H	3001051020000	1KΩ
720	R124	B1H	3001053320000	3.3KΩ
721	R125	B1H	3001053320000	3.3KΩ
722	R127	B1H	3001051220000	1.2KΩ
723	R128	B1H	3001053920000	3.9KΩ
724	R129	B1H	3001051030000	10KΩ
725	R130	B1I	3001051000000	10Ω
726	R131	T2I	3001051000000	10Ω
727	R132	B2H	3001052210000	220Ω
728	R133	B1I	3001051030000	10KΩ
729	R134	T2I	3001051000000	10Ω
730	R136	T1H	3001056800010	68Ω
731	R138	T1I	3001055600010	56Ω
732	R140	T1I	3001052220000	2.2KΩ
733	R142	B1I	3001051030000	10KΩ

No.	Ref. No.	Print No.	Part No.	Description
734	R143	B1G	3001053320000	3.3K Ω
735	R144	B2F	3001053320000	3.3K Ω
736	R145	B1I	3001053330000	33K Ω
737	R146	B1I	3001053330000	33K Ω
738	R147	B1G	3001051020000	1K Ω
739	R203	B3I	3001051000000	10 Ω
740	R206	B3J	3001051000000	10 Ω
741	R207	T4J	3001053300000	33 Ω
742	R208	B5J	3001050000000	0 Ω
743	R209	B5K	3001051000000	10 Ω
744	R220	T4J	3001051010000	100 Ω
745	R221	T4J	3001051010000	100 Ω
746	R222	T4J	3001051010000	100 Ω
747	R223	T4J	3001053300000	33 Ω
748	R224	B4K	3001051010000	100 Ω
749	R225	B5J	3001051010000	100 Ω
750	R226	T4J	3221505121010	Bead
751	R241	T4J	3001051030000	10K Ω
752	R242	B4K	3001051030000	10K Ω
753	R249	B4I	3001051030000	10K Ω
754	R251	B4I	3001051040000	100K Ω

No.	Ref. No.	Print No.	Part No.	Description
755	R254	B5I	3001050000000	0Ω
756	R255	B5I	3001053300000	33Ω
757	R256	T3J	3001051030000	10KΩ
758	R257	B4E	3001051010000	100Ω
759	R258	B5J	3001051030000	10KΩ
760	R259	B5I	3001053300000	33Ω
761	R260	B5I	3001051520000	1.5KΩ
762	R261	B5I	3001051530010	15KΩ
763	R262	B5I	3001051530010	15KΩ
764	R263	B3K	3001054710000	470Ω
765	R264	B4E	3001054710000	470Ω
766	R265	T4J	3001054710000	470Ω
767	R314	B4H	3001053320000	3.3KΩ
768	R315	B4H	3001053320000	3.3KΩ
769	R316	B4H	3001051030000	10KΩ
770	R317	B4H	3001051030000	10KΩ
771	R318	B4C	3001051040000	100KΩ
772	R321	B4C	3099063018000	3.01Ω
773	R322	B4G	3001052220000	2.2KΩ
774	R323	B4C	3001052220000	2.2KΩ
775	R324	B4G	3001053300000	33Ω

No.	Ref. No.	Print No.	Part No.	Description
776	R325	B4G	3001053300000	33Ω
777	R326	B4G	3001053300000	33Ω
778	R401	T2G	3001055100020	51Ω
779	R402	T3G	3001051030000	10KΩ
780	R403	T3G	3001051510000	150Ω
781	R404	T3G	3001051220000	1.2KΩ
782	R405	T3H	3001051030000	10KΩ
783	R406	T2G	3001051020000	1KΩ
784	R407	T3F	3001058220000	8.2KΩ
785	R408	T3F	3001051010000	100Ω
786	R409	T2G	3001054720000	4.7KΩ
787	R410	T3G	3001061030010	10KΩ
788	R411	T3F	3001053910000	390Ω
789	R412	T2H	3001051040000	100KΩ
790	R413	T3H	3001055620000	5.6KΩ
791	R414	T3I	3001053320000	3.3KΩ
792	R415	T3I	3001061030010	10KΩ
793	R416	T3H	3001058210000	820Ω
794	R501	B3C	3001054710000	470Ω
795	R502	B3C	3001053310000	330Ω
796	R503	B4E	3001051010000	100Ω

No.	Ref. No.	Print No.	Part No.	Description
797	R504	B3C	3001051030050	10K Ω
798	R601	T4I	3001059130000	91K Ω
799	R607	B4E	3001061000000	10 Ω
800	R611	B3F	3001051030000	10K Ω
801	R612	T5J	3001061020010	1K Ω
802	R613	T4J	3001051020000	1K Ω
803	R614	T4H	3221506181000	Bead
804	R617	T4G	3001054740010	470K Ω
805	R618	T4G	3001051340000	130K Ω
806	R620	T4K	3001051040000	100K Ω
807	R621	T4H	3001054730010	47K Ω
808	R622	T4I	3221506181000	Bead
809	R623	T4H	3001051040000	100K Ω
810	R624	T4K	3001051040000	100K Ω
811	R625	B4E	3001051040000	100K Ω
812	R626	B4E	3001051040000	100K Ω
813	R627	B4D	3001054730010	47K Ω
814	R628	B4D	3001054730010	47K Ω
815	R629	B4D	3001052720000	2.7K Ω
816	R630	B4D	3001054730010	47K Ω
817	R631	B4D	3001051530010	15K Ω

No.	Ref. No.	Print No.	Part No.	Description
818	R632	B4E	3001051020000	1K Ω
819	R633	T5K	3001051040000	100K Ω
820	R701	T1J	3001051020000	1K Ω
821	R702	T1J	3001056830000	68K Ω
822	R704	T1J	3001051010000	100 Ω
823	R705	T1J	3001051030050	10K Ω
824	R706	T1J	3001051030050	10K Ω
825	R707	T1J	3001053330000	33K Ω
826	R709	T1J	3001051040000	100K Ω
827	R710	T1J	3001051040000	100K Ω
828	R711	T1K	3001051030000	10K Ω
829	R712	T1J	3221505121000	Bead
830	R713	T1J	3001051010000	100 Ω
831	R714	T1K	3001051030000	10K Ω
832	R801	T4L	3001051000000	10 Ω
833	R802	T3L	3001051540000	150K Ω
834	R803	T3K	3001051540000	150K Ω
835	R804	T3K	3001051030000	10K Ω
836	R805	T3K	3001051030000	10K Ω
837	R806	B4K	3001051000000	10 Ω
838	R807	T4K	3001052030000	20K Ω

No.	Ref. No.	Print No.	Part No.	Description
839	R811	T3K	3001051030000	10K Ω
840	R812	T3K	3001051030000	10K Ω
841	R813	T3K	3001051540000	150K Ω
842	R814	T3K	3001051540000	150K Ω
843	R820	T2L	3001052020020	2K Ω
844	R821	T3J	3001051010000	100 Ω
845	R823	T2K	3001051030050	10K Ω
846	R824	T2K	3001051530010	15K Ω
847	R825	T3K	3001052020020	2K Ω
848	R826	T2K	3001054730010	47K Ω
849	R828	T2K	3001051530010	15K Ω
850	R829	B2K	3001054740010	470K Ω
851	R830	T2K	3001053330000	33K Ω
852	R832	T2L	3001052020020	2K Ω
853	R833	T2K	3001052020020	2K Ω
854	R838	B2L	3001051030000	10K Ω
855	R841	B2K	3001051030000	10K Ω
856	R9001	T4E	3001052710010	270 Ω
857	R9002	T2F	3001054730010	47K Ω
858	R9003	T4E	3001052710010	270 Ω
859	R9004	T3C	3233099100000	Air-core coil

No.	Ref. No.	Print No.	Part No.	Description
860	R9005	T4E	3001055690000	5.6Ω
861	R9006	T2B	3001051030000	10KΩ
862	R9007	T2F	3001058200000	82Ω
863	R9008	T1E	3001051520000	1.5KΩ
864	R9009	T1E	3001053300000	33Ω
865	R9011	T2F	3001051010000	100Ω
866	R9012	T2E	3001051010000	100Ω
867	R9013	T2F	3001053320000	3.3KΩ
868	R9015	T1E	3001053310000	330Ω
869	R9016	T1E	3001051510000	150Ω
870	R9017	T1D	3001051010000	100Ω
871	R9018	T1E	3001056810000	680Ω
872	R9019	B2F	3001054720000	4.7KΩ
873	R9020	B1F	3001051030010	10KΩ
874	R9021	T1F	3001054700000	47Ω
875	R9022	T1F	3001052200000	22Ω
876	R9023	T1E	3001056220000	6.2KΩ
877	R9024	T1D	3001056820000	6.8KΩ
878	R9025	T3C	3001052710010	270Ω
879	R9027	T1D	3001058220000	8.2KΩ
880	R9028	T3C	3001052710010	270Ω

No.	Ref. No.	Print No.	Part No.	Description
881	R9029	T1D	3001053910010	390Ω
882	R9030	T2E	3001053320000	3.3KΩ
883	R9031	T2F	3001053320000	3.3KΩ
884	R9033	B1D	3001051020000	1KΩ
885	R9036	B1F	3001051030000	10KΩ
886	R9038	B1E	3001051020000	1KΩ
887	R9039	B1F	3001051010000	100Ω
888	R9040	B1F	3001051020000	1KΩ
889	R9041	B1F	3001054720000	4.7KΩ
890	R9042	T1D	3001053310000	330Ω
891	R9043	B1E	3001053330000	33KΩ
892	R9045	B1D	3001051050000	1MΩ
893	R9046	B1E	3001054740010	470KΩ
894	R9047	B1E	3001053330000	33KΩ
895	R9048	B1D	3001051540000	150KΩ
896	R9050	B1E	3001054730010	47KΩ
897	R9053	B1D	3099080398010	0.39Ω
898	R9054	B1D	3099080398010	0.39Ω
899	R9055	B1D	3099080398010	0.39Ω
900	R9057	B1D	3001051540000	150KΩ
901	R9058	B1E	3001051050000	1MΩ

No.	Ref. No.	Print No.	Part No.	Description
902	R9059	B1E	3001054740010	470K Ω
903	R9063	T4D	3001051030050	10K Ω
904	R9066	B2G	3001051520000	1.5K Ω
905	R9067	B2G	3001056820000	6.8K Ω
906	R9068	B2F	3001053320000	3.3K Ω
907	R9069	T4C	3001050000000	0 Ω
908	R9071	B3G	3001053310000	330 Ω
909	R9072	T4D	3001051030050	10K Ω
910	R9073	T4D	3001051030050	10K Ω
911	R9074	T5D	3001051030000	10K Ω
912	R9075	B3G	3001055100020	51 Ω
913	R9076	T4C	3001051030050	10K Ω
914	R9077	T4C	3001051030050	10K Ω
915	R9078	B3G	3001055620000	5.6K Ω
916	R9079	B2G	3001053330000	33K Ω
917	R9080	T4D	3101051010030	100PF
918	R9081	B3G	3001051030000	10K Ω
919	R9083	T4D	3001053310000	330 Ω
920	R9084	B3G	3001055630000	56K Ω
921	R9085	B2G	3001051040000	100K Ω
922	R9089	T5D	3001055620000	5.6K Ω

No.	Ref. No.	Print No.	Part No.	Description
923	R9090	T4C	3001051030050	10K Ω
924	R9095	T3F	3001053320000	3.3K Ω
925	R9096	T3F	3001053320000	3.3K Ω
926	R9097	T2F	3001053320000	3.3K Ω
927	R9098	T2F	3001053320000	3.3K Ω
928	R9099	B1E	3101052210010	220PF
929	R9100	B1D	3101052210010	220PF
930	RN256	B3J	3005051030010	10K Ω
931	RN261	B5K	3001052230020	22K*2
932	T9001	T4E	5406000000200	Transformer
933	T9002	T4F	5406000000200	Transformer
934	U101	B1I	3616059000000	Switch IC
935	U102	B1I	3605002057290	Operational amplifier
936	U103	T1I	3604019000000	PLL IC
937	U104	B1I	3616059000000	Switch IC
938	U201	B3I	3610010000010	MCU
939	U242	B2J	3612044000010	Memory
940	U244	B4I	3612002000020	Memory
941	U310	/	3609042000000	Sensor
942	U312	B4L	3805000000030	EMI filter
943	U313	B5E	3805000000030	EMI filter

No.	Ref. No.	Print No.	Part No.	Description
944	U314	B4K	3805000000030	EMI filter
945	U315	B4G	3805000000030	EMI filter
946	U316	B4F	3805000000030	EMI filter
947	U317	B4G	3805000000030	EMI filter
948	U318	B4F	3805000000030	EMI filter
949	U319	B4D	3805000000030	EMI filter
950	U320	B3K	3805000000030	EMI filter
951	U321	B3L	3805000000030	EMI filter
952	U322	B3L	3805000000030	EMI filter
953	U401	T3H	3603999000000	IF processor
954	U501	B3C	3609999000300	LNA
955	U502	B3D	1615000001720	GPS module
956	U601	T4G	3608011000050	DC-DC
957	U604	B3F	3608020005750	Power management IC
958	U605	B2F	3608020005750	Power management IC
959	U606	T3J	3608006000000	Power management IC
960	U607	T5J	3609010000170	Reset IC
961	U608	B3E	3608006000000	Power management IC
962	U609	T5I	3608006000000	Power management IC
963	U610	T2I	3608006000030	Power management IC
964	U611	T4H	3608011000050	DC-DC

No.	Ref. No.	Print No.	Part No.	Description
965	U612	B1J	3608006000000	Power management IC
966	U701	T1K	3606010000010	D/A converter
967	U801	T4K	3602023005740	Audio amplifier
968	U820	T2L	3616037000020	Switch IC
969	U821	T2K	3613010000000	Baseband processor
970	U9002	B1E	3605025000020	Operational amplifier
971	U9003	B1D	5404000000060	Temperature sensor
972	X101	T1I	3701019250030	TCXO
973	X201	B5J	3701327610060	Crystal
974	X203	B3H	3701019250040	TCXO
975	Z501	B3C	3804157560000	GPS filter
976	Z9001	B3F	3802733540030	Crystal filter
977	/	/	6201810000000	Shielding can for baseband processor
978	/	/	6201859000000	Shielding frame for lowpass filter
979	/	/	6201860000000	Shielding frame for GPS
980	/	/	6201862000000	Shielding can for TX VCO
981	/	/	6201865000000	Shielding can for crystal oscillator
982	/	/	6201915000000	Shielding can for antenna spring plate
983	/	/	6201935000000	Shielding can for switching power
984	/	/	/	Main board

PD70X/ PD70XG/ HD705/ HD705G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF
11	C1012	3101052710000	270PF
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED

No.	Ref. No.	Part No.	Description
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch
28	/	41PD7002002B0	PCB
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	C1017	3101051040060	0.1UF
33	L1001	3221506181000	Bead
34	U1002	3608006000030	Power management IC

PD78X/ PD78XG/ HD785/ HD785G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF

No.	Ref. No.	Part No.	Description
11	C1012	3101052710000	270PF
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch
28	/	41PD7802006C0	PCB
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	C1017	3101051040060	0.1UF
33	L1001	3221506181000	Bead

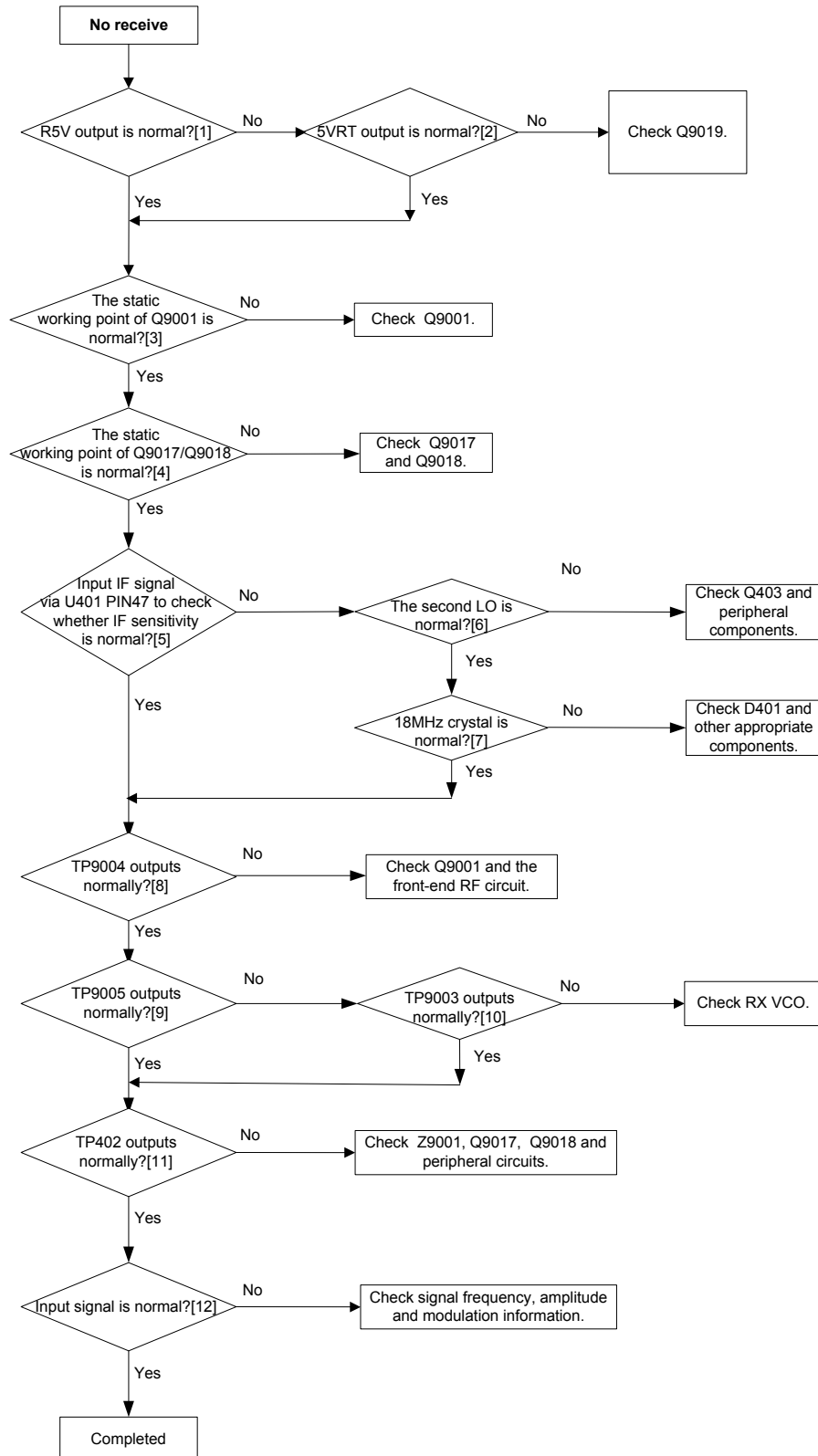
No.	Ref. No.	Part No.	Description
34	U1002	3608006000030	Power management IC

PD78X/ PD78XG/ HD785/ HD785G Keyboard

No.	Ref. No.	Part No.	Description
1	R1	3001051010000	100Ω
2	R2	3001051010000	100Ω
3	R3	3001051010000	100Ω
4	R4	3001051010000	100Ω
5	R5	3001051010000	100Ω
6	R6	3001051010000	100Ω
7	R7	3001051010000	100Ω
8	D1	3307990000260	LED
9	D2	3307990000260	LED
10	D3	3307990000260	LED
11	D4	3307990000260	LED
12	D5	3307990000260	LED
13	D6	3307990000260	LED
14	D7	3307990000260	LED
15	D8	3310040000010	ESD protection diode
16	D9	3310040000010	ESD protection diode
17	J4	5201016000010	Board-to-board connector

9.8 Troubleshooting Flow Chart

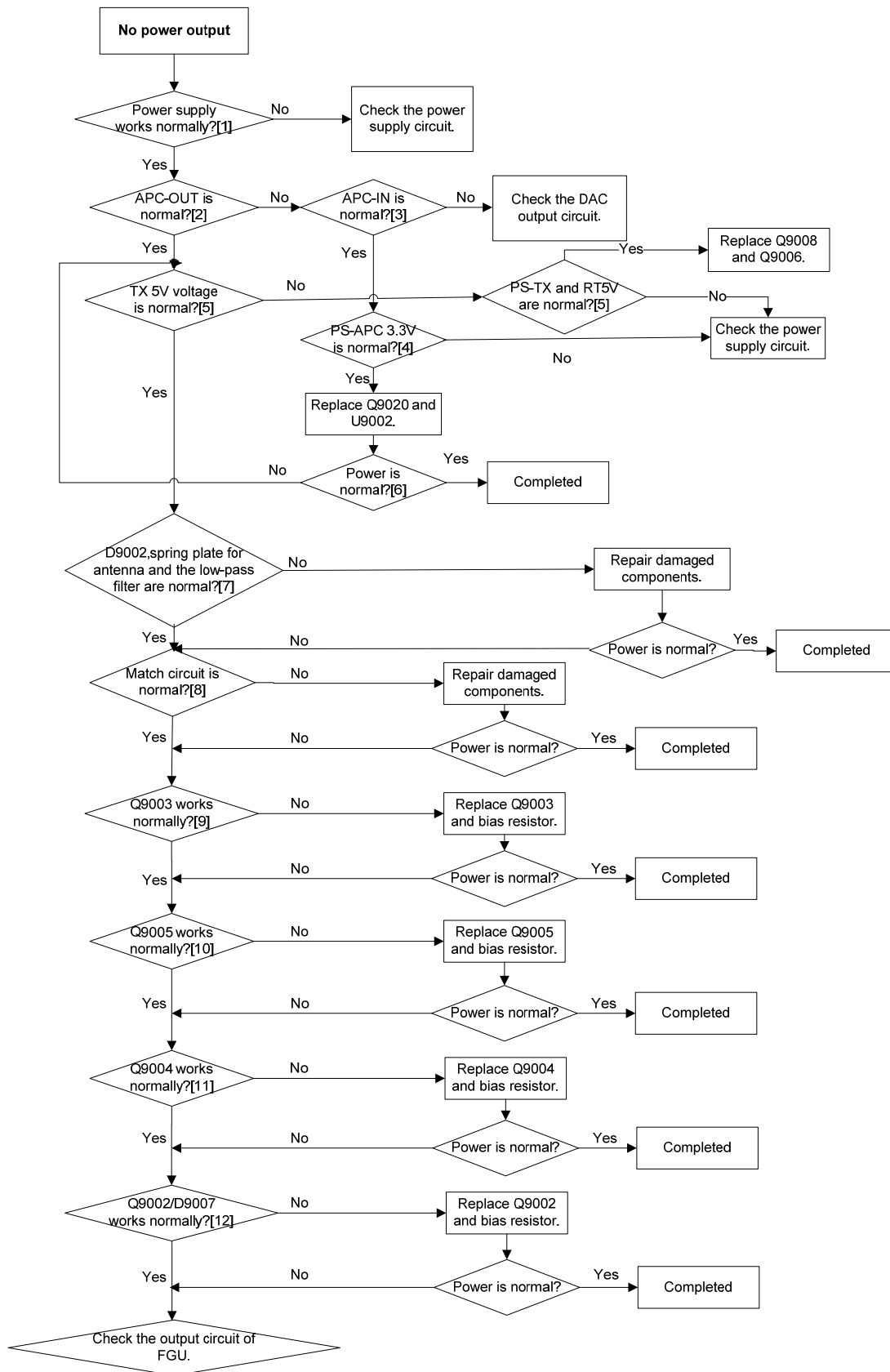
Receiver Circuit



Description of Normal Situations:

- [1] Output voltage at Q9019 PIN3: about 4.95V.
- [2] Output voltage at U605 PIN4 or input voltage at Q9019 PIN4: about 5V.
- [3] Vbe: about 0.74V; Vce: about 2.5V (in the case of no signal reception).
- [4] For Q9018, Vbe: about 0.76V; Vce: about 0.95V;
for Q9017, Vbe: about 0.7V; Vce: 0.85V (in the case of no signal reception).
- [5] Cut off the front-end circuit, and input a 73.35MHz IF signal at TP402 to test IF sensitivity.
Normally, the IF sensitivity is -109dBm.
- [6] Frequency of Q403: 71.1MHz.
- [7] Frequency of L411: 18MHz.
- [8] Input -30dBm RF signal at the antenna connector and test at TP9004. Normally, gain>10dB,
output signal>-20dBm.
- [9] Input -30dBm RF signal at the antenna connector and test at R9005 (do not cut off the back-end
circuit). Normally, gain>1dB, output signal>-29dBm.
- [10] Signal frequency: RF-IF, signal amplitude>2dBm.
- [11] For input of -80dBm signal at L9022, gain>25dB, output signal>-55dBm;
for input of -30dBm signal, output signal<-20dBm.
- [12] The input signal at the antenna connector, with standard tuning information (AF=1 KHz, FM=3
KHz), is -47dBm.

Transmitter Circuit



Description of Normal Situations:

- [1] Voltage of the power supply: about 7.4V.
- [2] For low power, APC-OUT: 1.8-2.1V; for high power, APC-OUT: 2.4-2.8V.
- [3] For low power, APC-IN: 1-1.3V; for high power, APC-IN: 1.8-2.1V.
- [4] PS-APC: about 3.3V.
- [5] TX5V: about 5V; RT5V: about 5V; PS-TX: about 3.3V.
- [6] High power: about 4.2W; low power: about 1.2W.
- [7] Start-up voltage of D9002: about 0.7V. The low-pass coil must be soldered appropriately and remain in good condition. The spring plate for the antenna must well fit the antenna connector.
- [8] The match components must not be soldered inappropriately or damaged.
- [9] Vdd: about 7.3V; for low power, Vgg: 1-1.2V; for high power, Vgg: 1.35-1.55V.
- [10] Vdd: about 7.3V; for low power, Vgg: 1.7-2.1V; for high power, Vgg: 2.4-2.8V.
- [11] Vc: about 4.8V; Vb: about 1.4V; Ve: about 1.1V.
- [12] Vc: about 4.7V; Vb: about 0.7V; Ve: 0V. Start-up voltage of D9007: about 0.7V.

**Note**

The above check operations should be made under 7.4V voltage.

FGU



Description of Normal Situations:

[1] During transmission, output voltage by Q107 PIN3: about 4V.

During reception, output voltage by Q106 PIN3: about 4V.

[2] During transmission, voltage at Q108 E: about 1.8V.

During reception, voltage at Q104 E: about 1.8V.

[3] The CV value varies with frequencies. Generally, it is within the range 0.5V-4.5V.

[4] L110/L116 is on.

[5] Voltage at Q101/Q102 B: about 0.7V.

[6] MCSI-CLK-PLL outputs 960 KHz clock.

10. UHF5 (806-941MHz) Information

10.1 Transmitter Circuit

The transmitter circuit is mainly composed of:

- RF power amplifier circuit
- Low-pass filter circuit (for suppressing harmonics)
- Auto power control circuit (APC) (including temperature detection circuit)

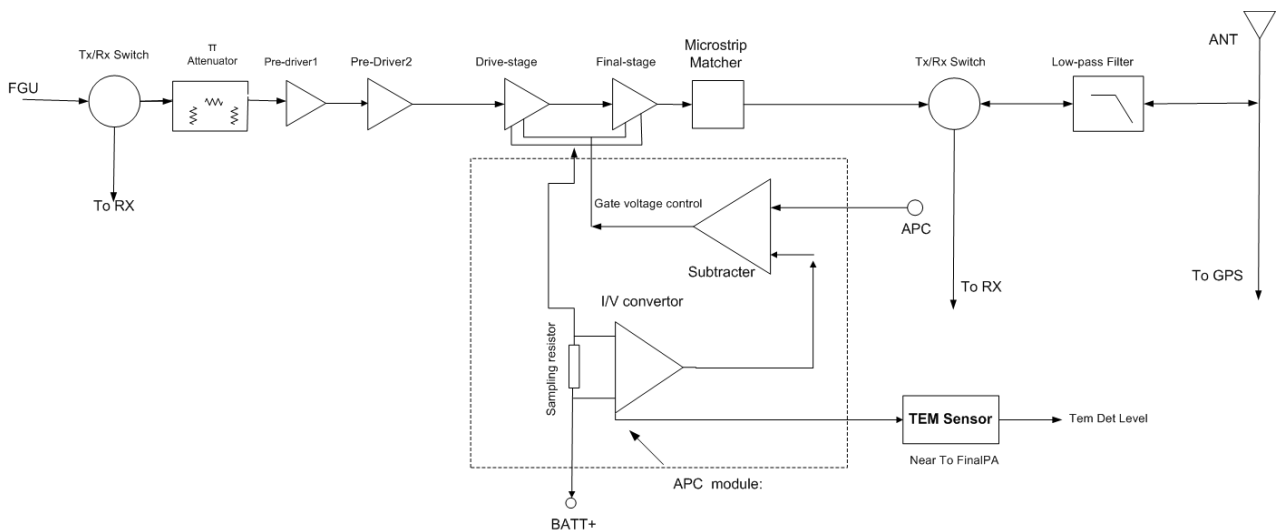


Figure 10-1 Diagram of Transmitter Circuit

10.1.1 RF Power Amplifier Circuit

The carrier signal generated by the high/low VCO is modulated and amplified, and then feeds to the transmitter circuit via the following steps.

- Step 1** The signal passes through a RX/TX switch (UPG2012TK), which switches the signal to the TX channel.
- Step 2** The signal passes through a π -type attenuator, allowing interstage isolation between the RF power amplifier circuit and the VCO.
- Step 3** The signal goes to a pre-driver amplifier (BFG425W) for pre-amplification, providing further interstage isolation.
- Step 4** The signal goes to another pre-driver amplifier (ADA4743) and a driver amplifier (RD01) for adequate power amplification, so as to obtain further amplification in the final-stage amplifier (RD07).

Step 5 After processed by multiple amplifiers, the signal passes through an impedance matching circuit, so as to reduce output power loss due to impedance mismatch.

Step 6 The signal passes through the TX/RX switch and goes to the low-pass filter.

10.1.2 Low-pass Filter Circuit

The low-pass filter is a high-order Chebyshev filter composed of microstrip and capacitor. Via this filter, the spurious signal within the stop band can be attenuated as much as possible while the in-band ripple is within the required range.

10.1.3 Auto Power Control Circuit

In the auto power control and temperature detection circuit, the drain current from the driver amplifier and final-stage amplifier is converted to voltage via the sampling resistor and subtraction circuit (composed of the first operational amplifier).

This voltage is compared with the APC control voltage (output by DAC) at the second operational amplifier. Then the error voltage, which is output by the second operational amplifier, controls TX power by controlling the bias voltage at the gates of the amplifiers (including the driver amplifier and the final-stage amplifier). The temperature sensor detects the surface temperature of the final-stage amplifier, and converts it to DC voltage. Then the DC voltage is compared with the voltage corresponding to the protection temperature (generally 80% of the extreme junction temperature) of the amplifier. If the surface temperature is too high, the bias voltage of the amplifier will be reduced until the surface temperature falls below the protection temperature.

10.2 Receiver Circuit

The receiver circuit mainly comprises the RF SAW filter, low-noise amplifier, mixer, IF filter, IF amplifier and IF processor.

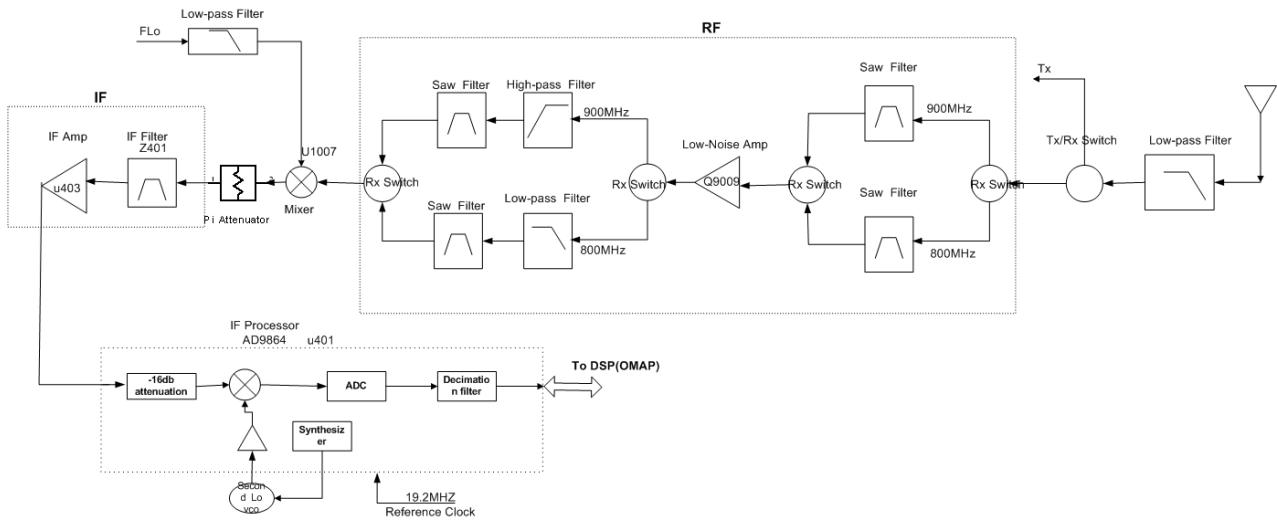


Figure 10-2 Diagram of Receiver Circuit

10.2.1 Receiver Front-end

The HF signal from the low-pass filter passes through the RX switch, which switches the signal to the 800MHz or 900MHz channel. Then the signal goes to the first SAW filter, to remove out-of-band interference signal and to send wanted band-pass signal to the low-noise amplifier (Q9009). The amplified signal goes to the second SAW filter, to remove out-of-band interference signal generated during amplification, and to send wanted HF signal to the mixer.

The wanted signal passes through the RF band-pass filter and low-noise amplifier and goes to the mixer (U1007). Meanwhile, the first local oscillator (LO) signal generated by VCO passes through the low-pass filter and also goes to the mixer (U1007). In the mixer, the wanted signal and the first LO signal are mixed to generate the first IF signal (73.35 MHz). Then the signal passes through a π -type attenuator (2dB) and the LC, to suppress carrier other than the first IF signal, and to increase the isolation between the mixer and the IF filter. After that, the first IF signal is processed by the crystal filter (Z9001), and is sent to the two-stage IF amplifier circuit (composed of PBR941) for amplification. Then the amplified signal goes to the IF processor AD9864(U401) for processing.

10.2.2 Receiver Back-end

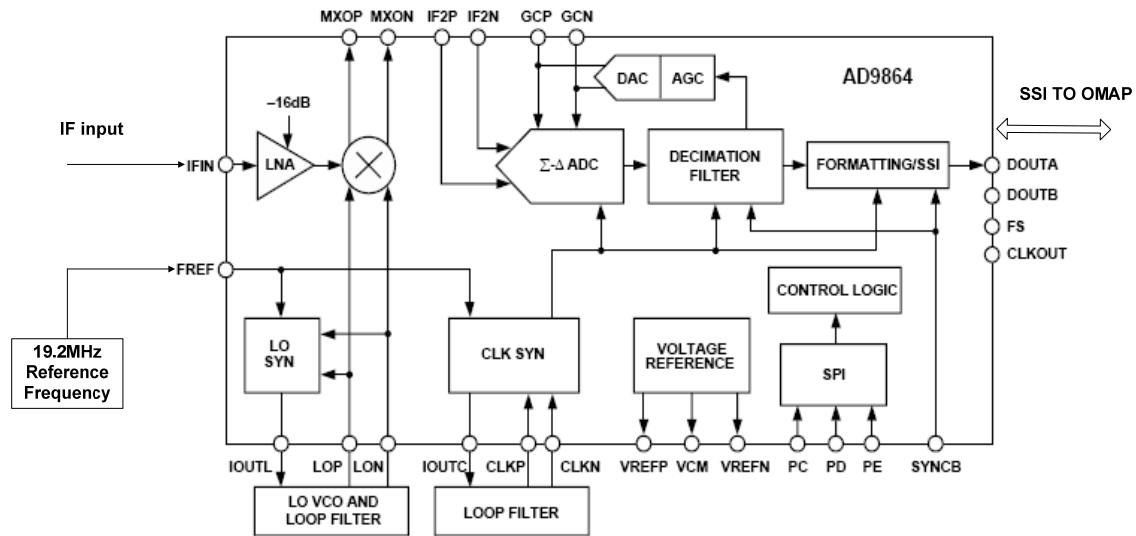


Figure 10-3 Diagram of IF Processor

The first IF signal (73.35 MHz) output by the IF amplifier goes into AD9864 (U401) via Pin 47, where the signal is converted to the second IF signal (2.25MHz). Then the signal is converted to digital signal via ADC sampling, and output via the SSI interface. Finally, the digital signal is sent to the DSP (OMAP5912) for demodulation.

AD9864 employs reference frequency of 19.2MHz and shares the crystal with OMAP. The second LO VCO comprises an oscillator, a varactor and some other components, to provide the 71.1/75.6MHz LO signal. The sampling frequency of AD9864 is 18MHz, and is generated by the LC resonance loop.

10.3 Frequency Generation Unit (FGU)

The FGU is composed of VCO and PLL. It is the core module of the whole TX-RX system. This circuit provides accurate carrier frequency during transmission, and stable LO signal during reception. It has a direct influence on the performance of the system.

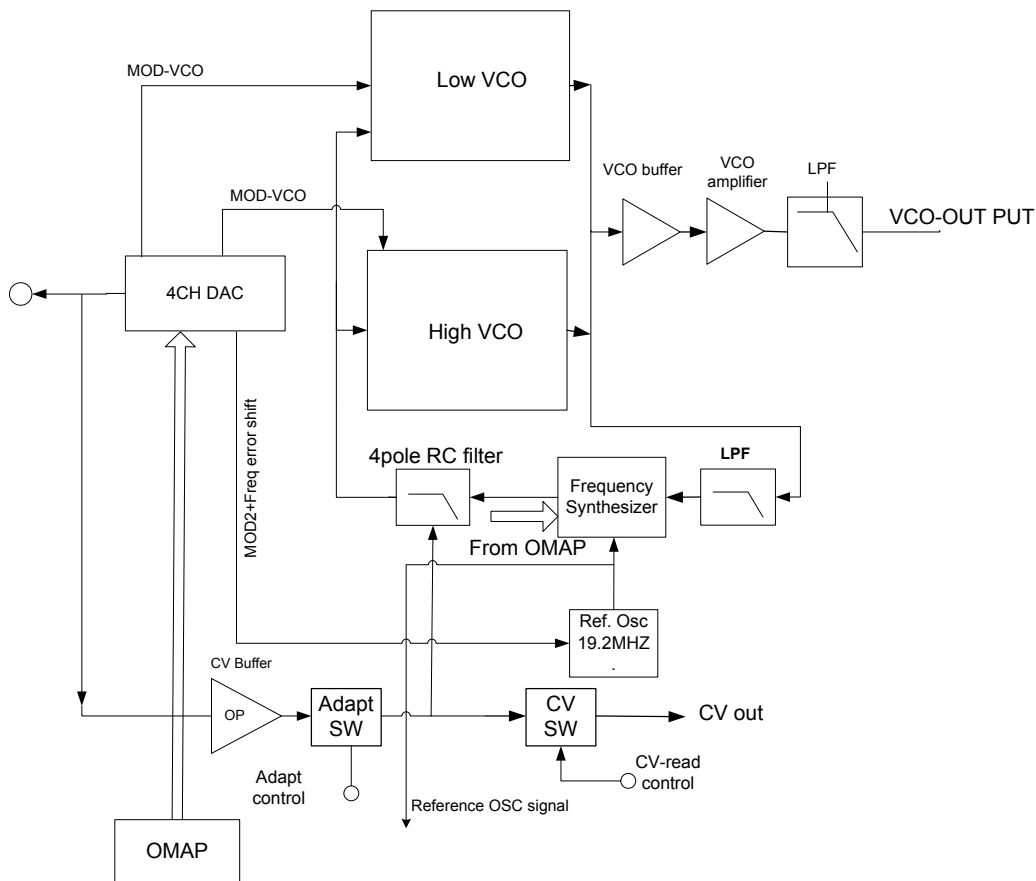


Figure 10-4 Diagram of FGU

10.3.1 Working Principle of PLL

The 19.2MHz frequency generated by the reference crystal oscillator goes to PLL for division, generating the reference frequency (i.e. step frequency f_1). Meanwhile, the frequency generated by the VCO generates another frequency (f_2) through the frequency divider in PLL. Then frequencies f_1 and f_2 are compared in the phase detector (PD), to generate continuous pulse current. The current goes to the loop filter for RC integration, and is then converted to CV voltage. Then the CV voltage is sent to the varactor of VCO. It adjusts the output frequency of VCO directly until the CV voltage becomes constant. Then the PLL is locked, and the stable frequency output by VCO goes to the TX-RX channel after passing through the buffer amplifier.

10.3.2 Working Principle of VCO

VCO employs Colpitts oscillator circuit (the high oscillator circuit is composed of D102, D103, D106, D107 and DR1; the low oscillator circuit is composed of D108, D109, D110, D101 and DR2). It obtains different output frequencies by changing the varactor's control voltage (i.e. CV voltage).

There are two types of VCO: high VCO and low VCO. Both types control EMD22 to switch operating

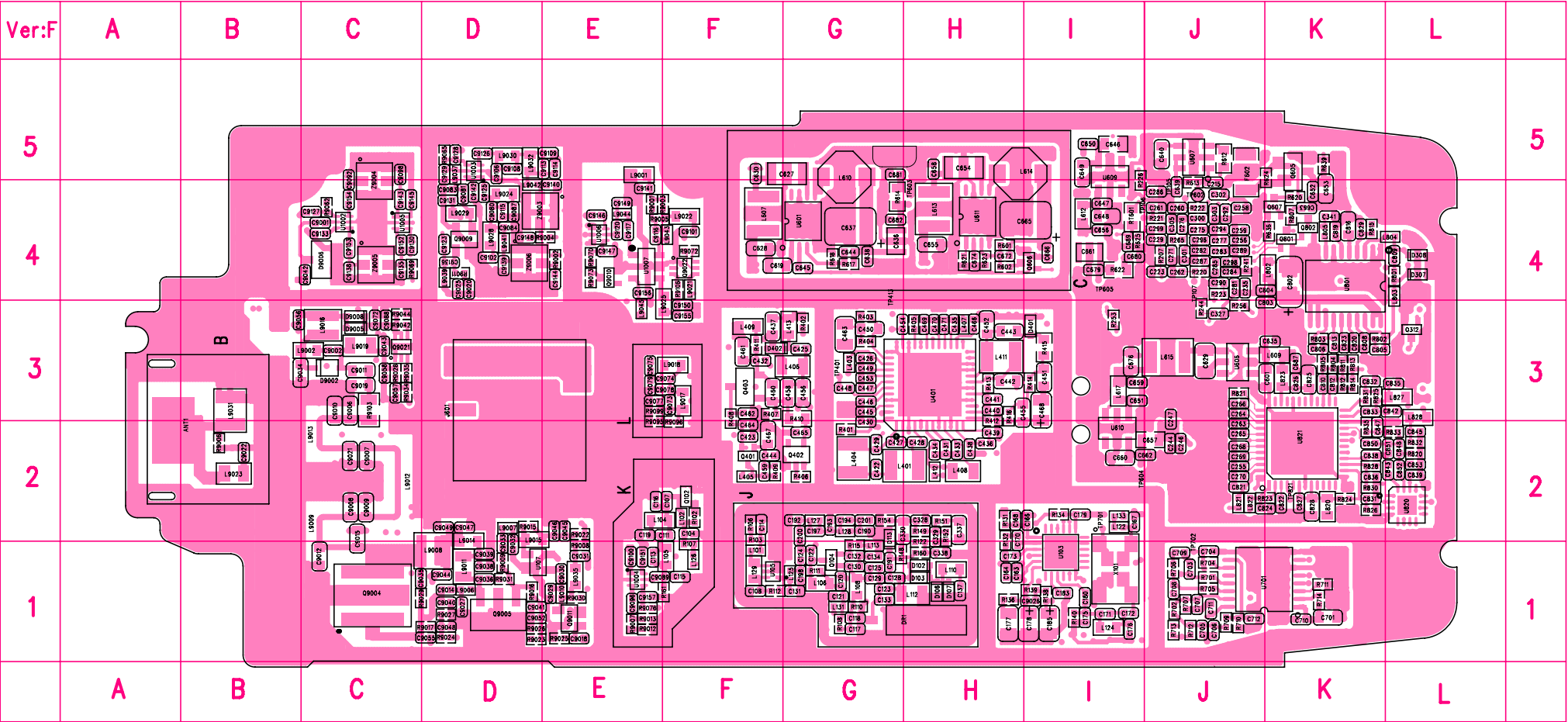
status via OMAP. The high VCO is composed of the oscillator loop and Q104, to provide carrier for the LO signal and TX signal. The low VCO is composed of the oscillator loop and Q108, to provide carrier for the LO signal and TX signal.

10.3.3 Two-point Modulation

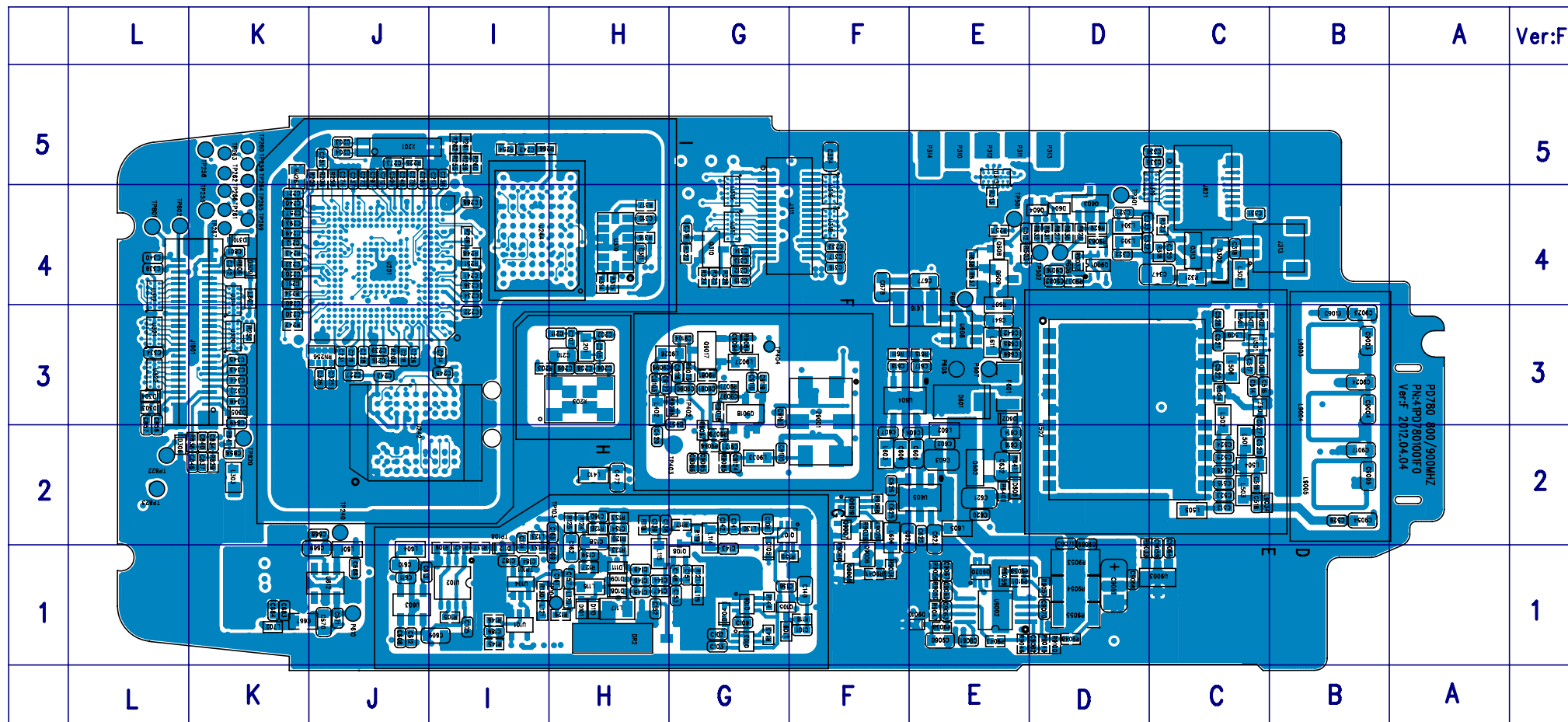
In TX mode, the two-point modulation technology is employed, to obtain higher modulation accuracy and lower 4FSK bit error rate. MOD-VCO and MOD-XO send the modulation signal to the modulation end of VCO and the reference crystal oscillator of PLL respectively to modulate TX VCO and the reference crystal oscillator.

10.4 PCB View

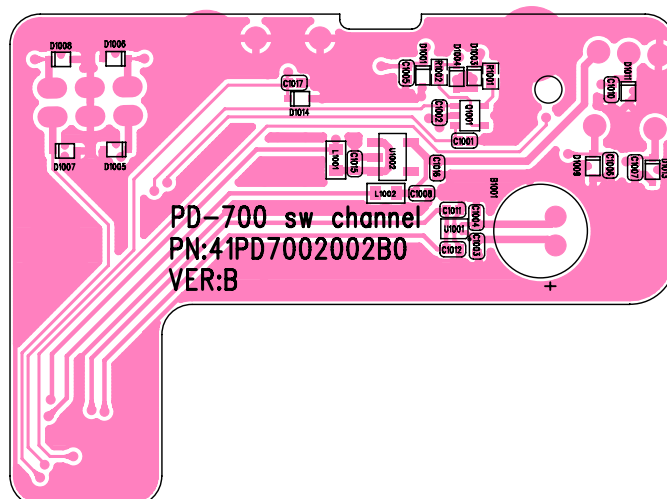
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board)
Top Layer



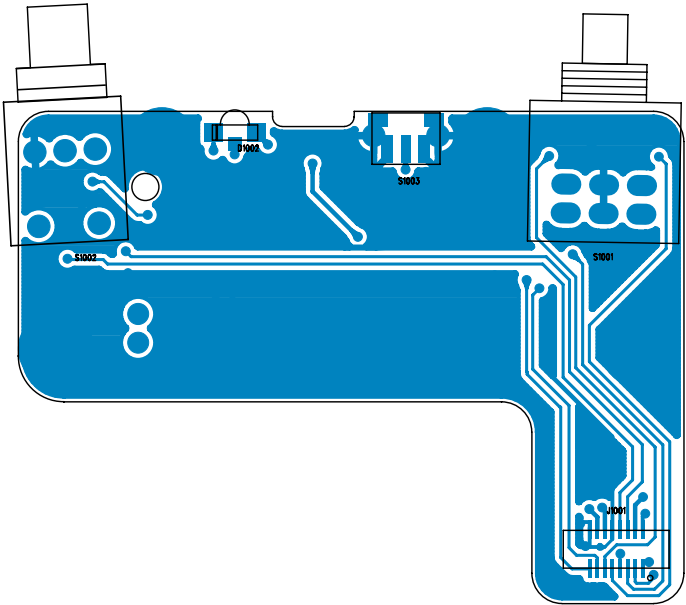
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board) Bottom Layer



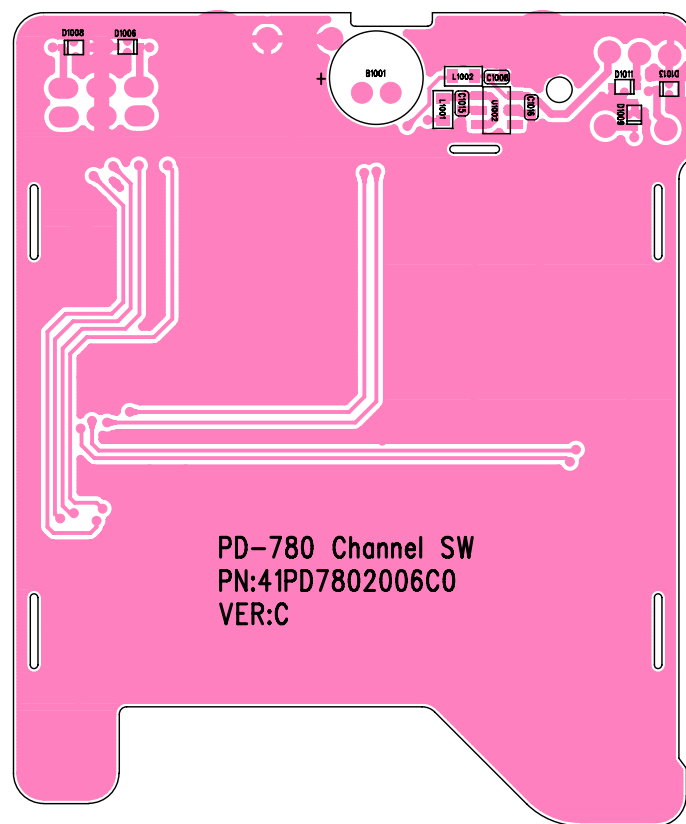
PD70X/PD70XG/HD705/HD705G PCB View (Channel Board)
Top Layer



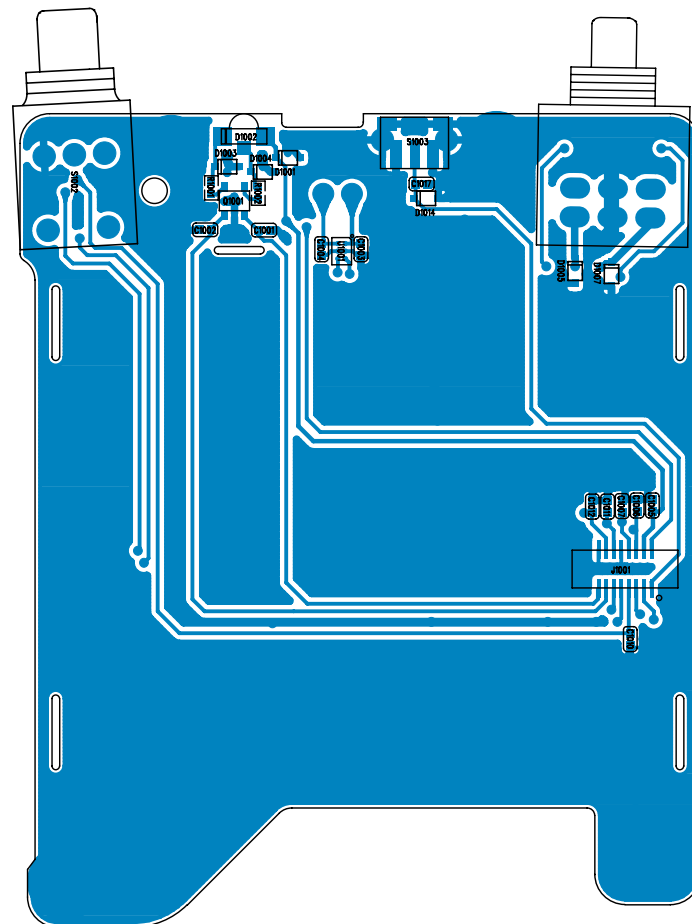
**PD70X/PD70XG/HD705/HD705G PCB View (Channel Board)
Bottom Layer**



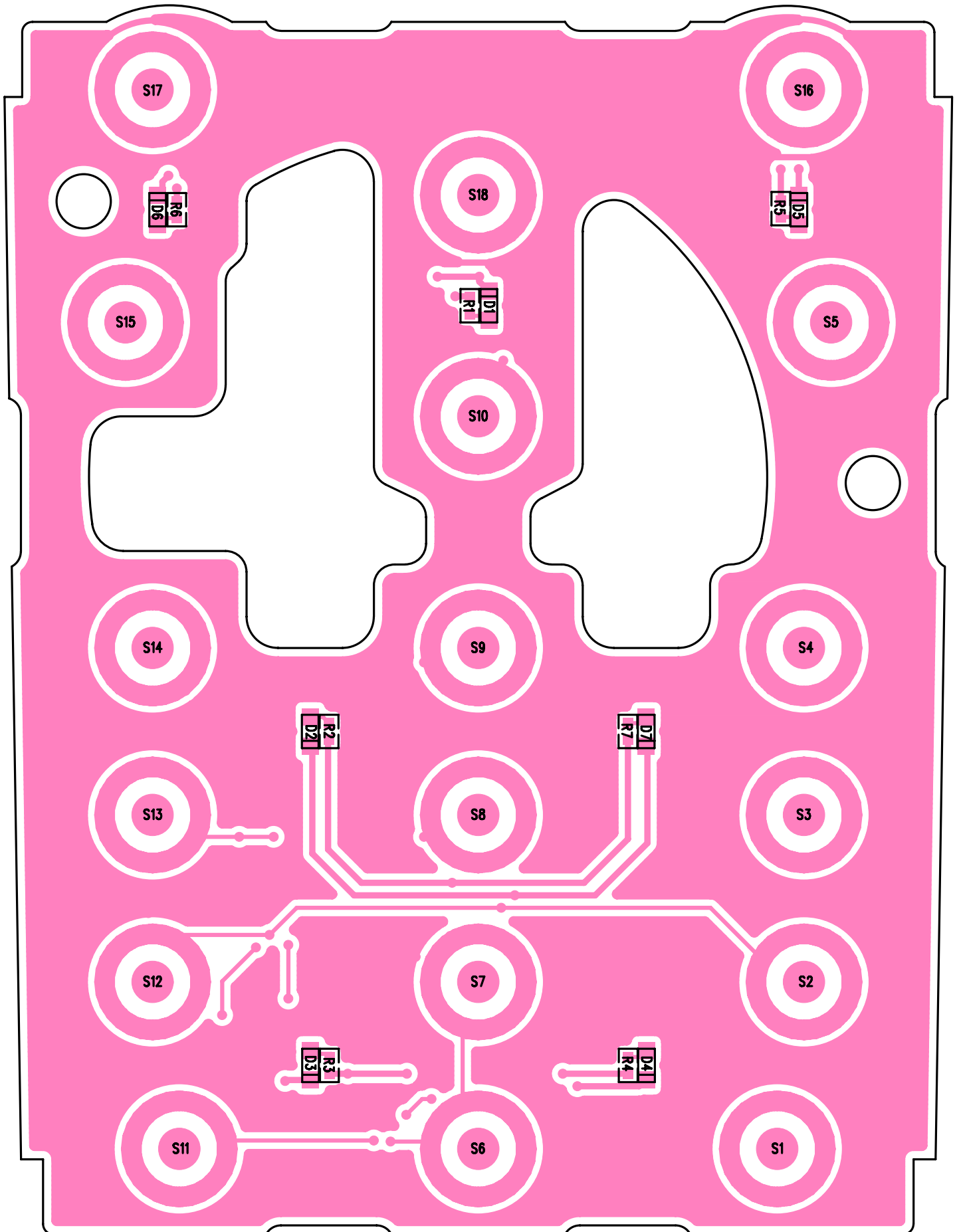
PD78X/PD78XG/HD785/HD785G PCB View (Channel Board) Top Layer



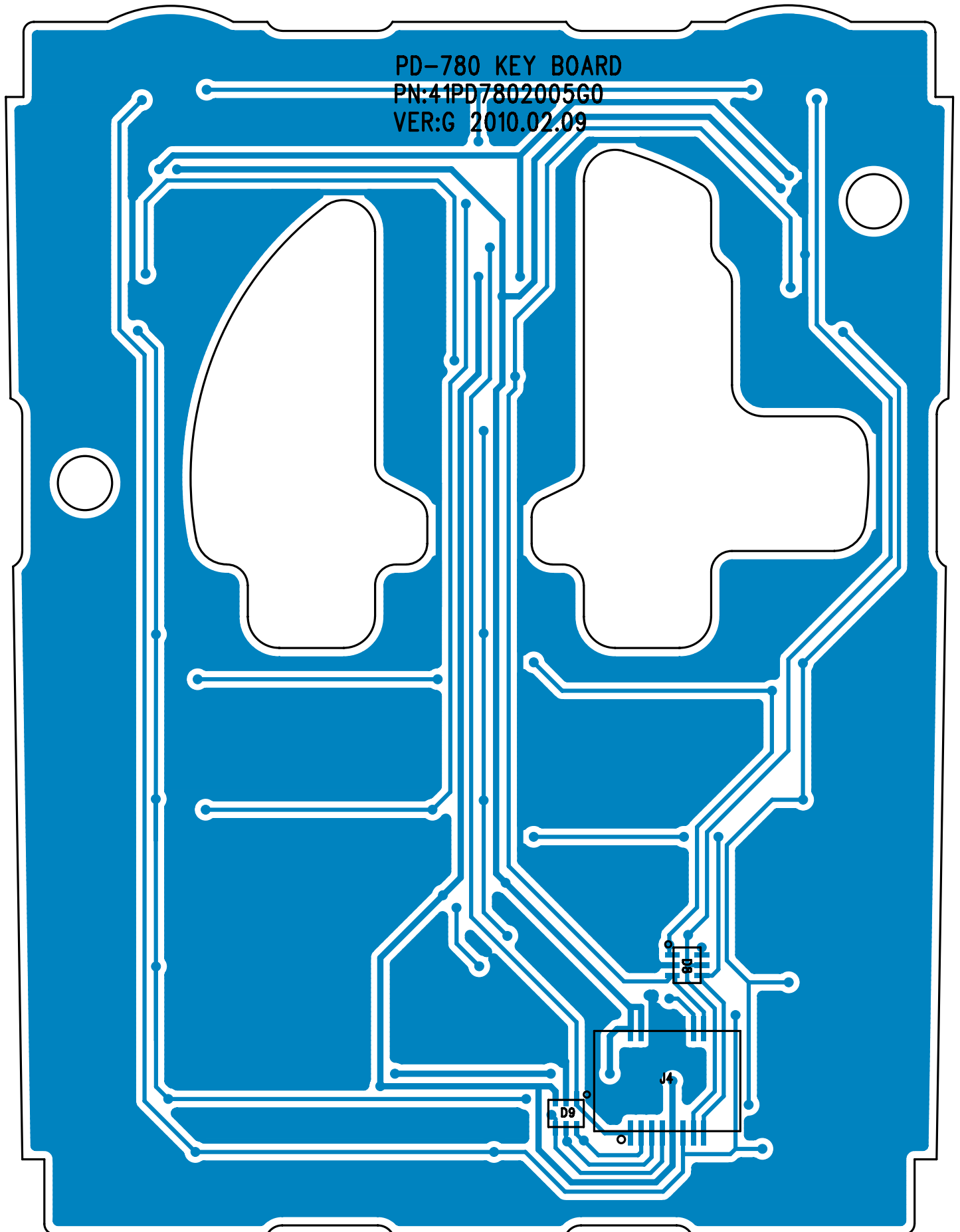
PD78X/PD78XG/HD785/HD785G PCB View (Channel Board)
Bottom Layer



PD78X/PD78XG/HD785/HD785G PCB View (Keyboard) Top Layer

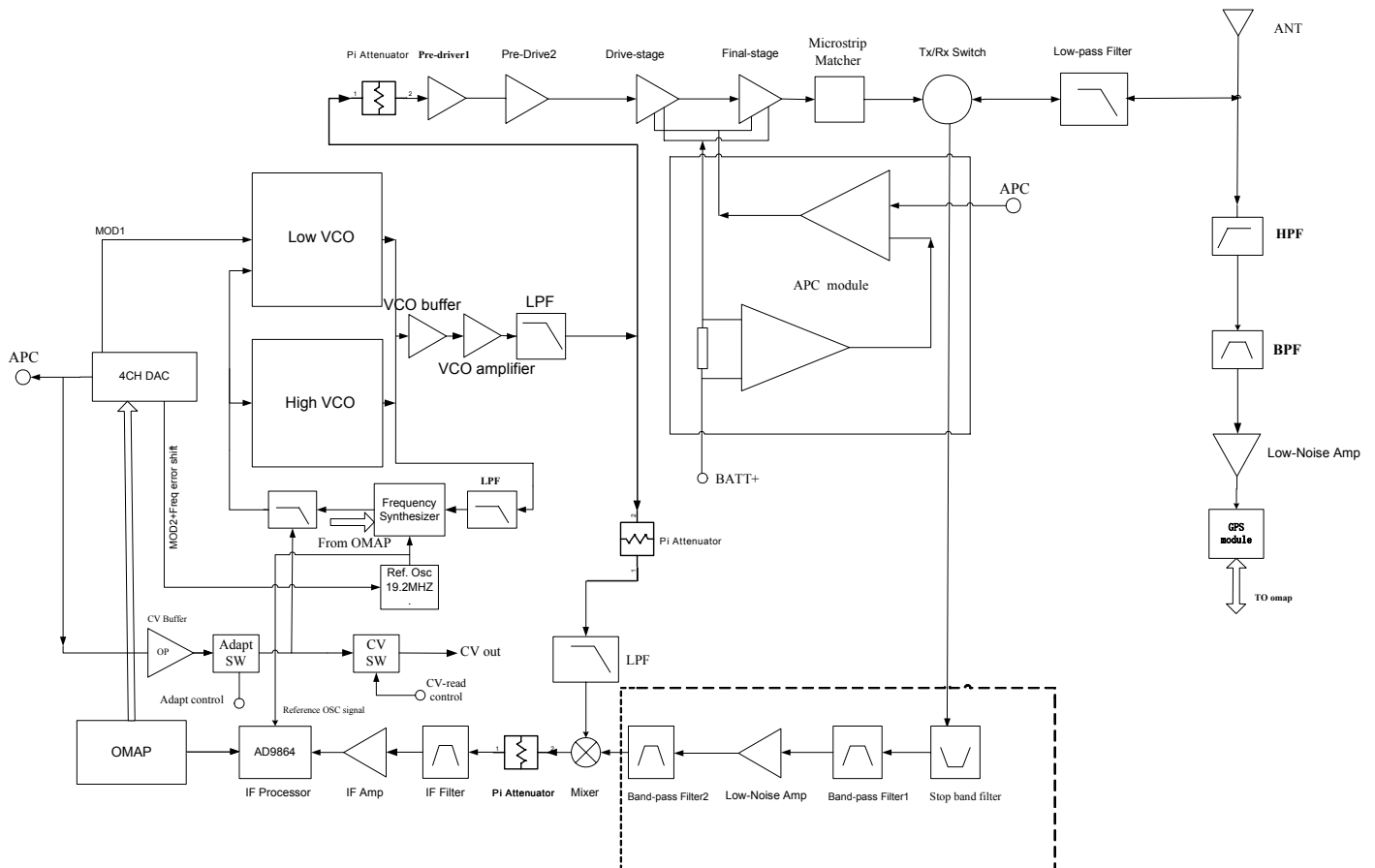


PD78X/PD78XG/HD785/HD785G PCB View (Keyboard)
Bottom Layer



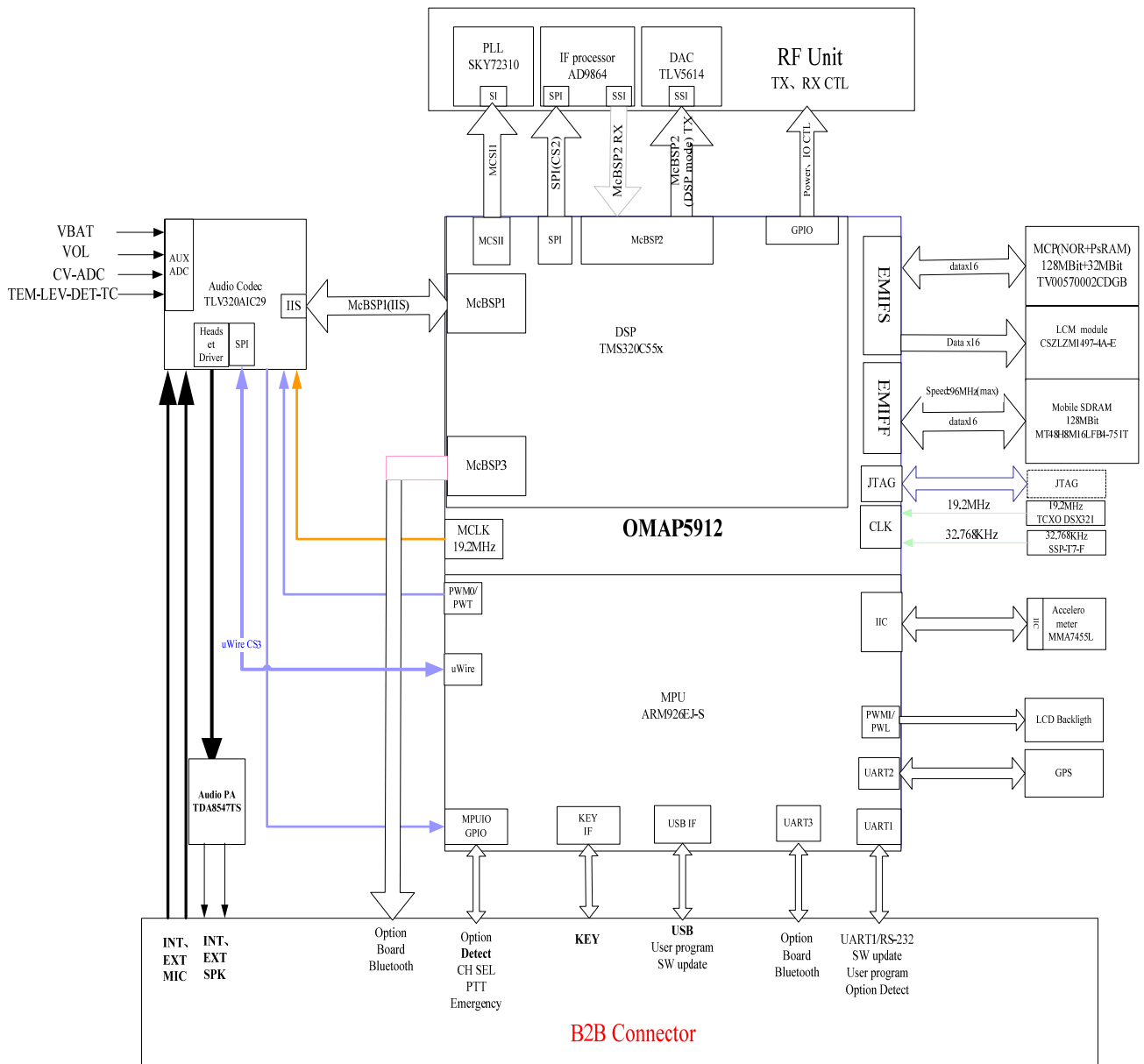
10.5 Block Diagram

PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Block Diagram (RF Section)

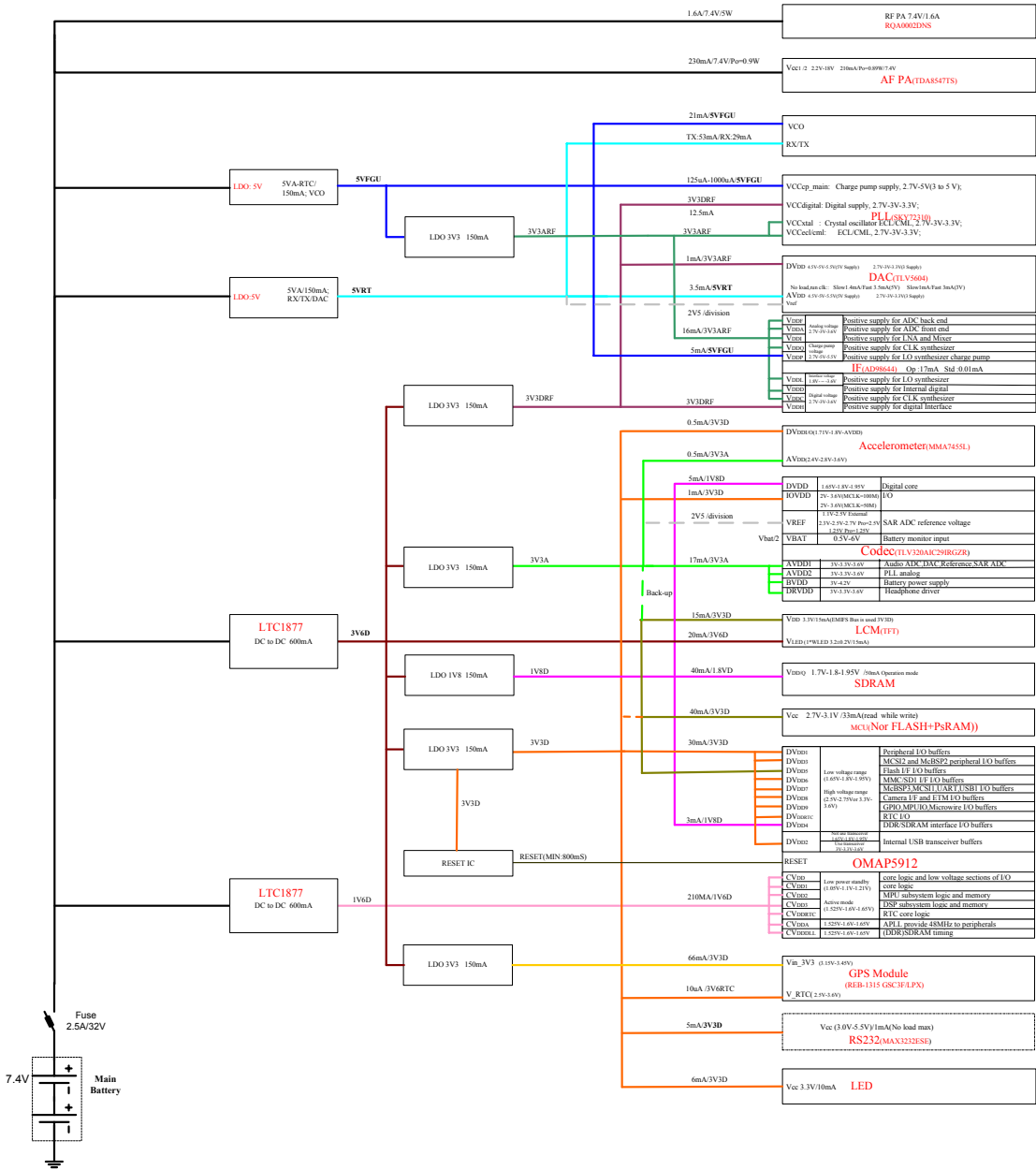


PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G

Block Diagram (Baseband Section)

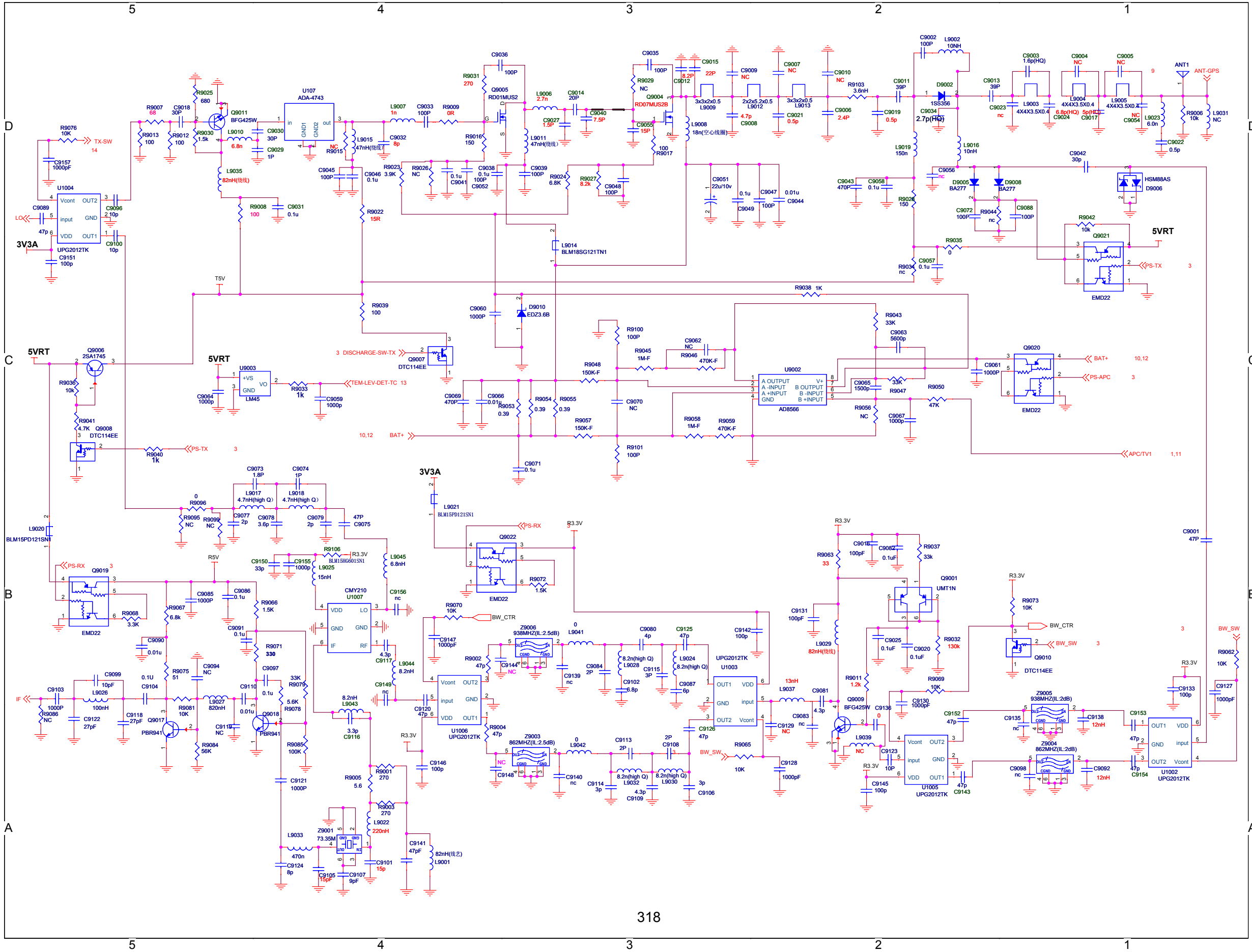


PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G
Block Diagram (Power Section)

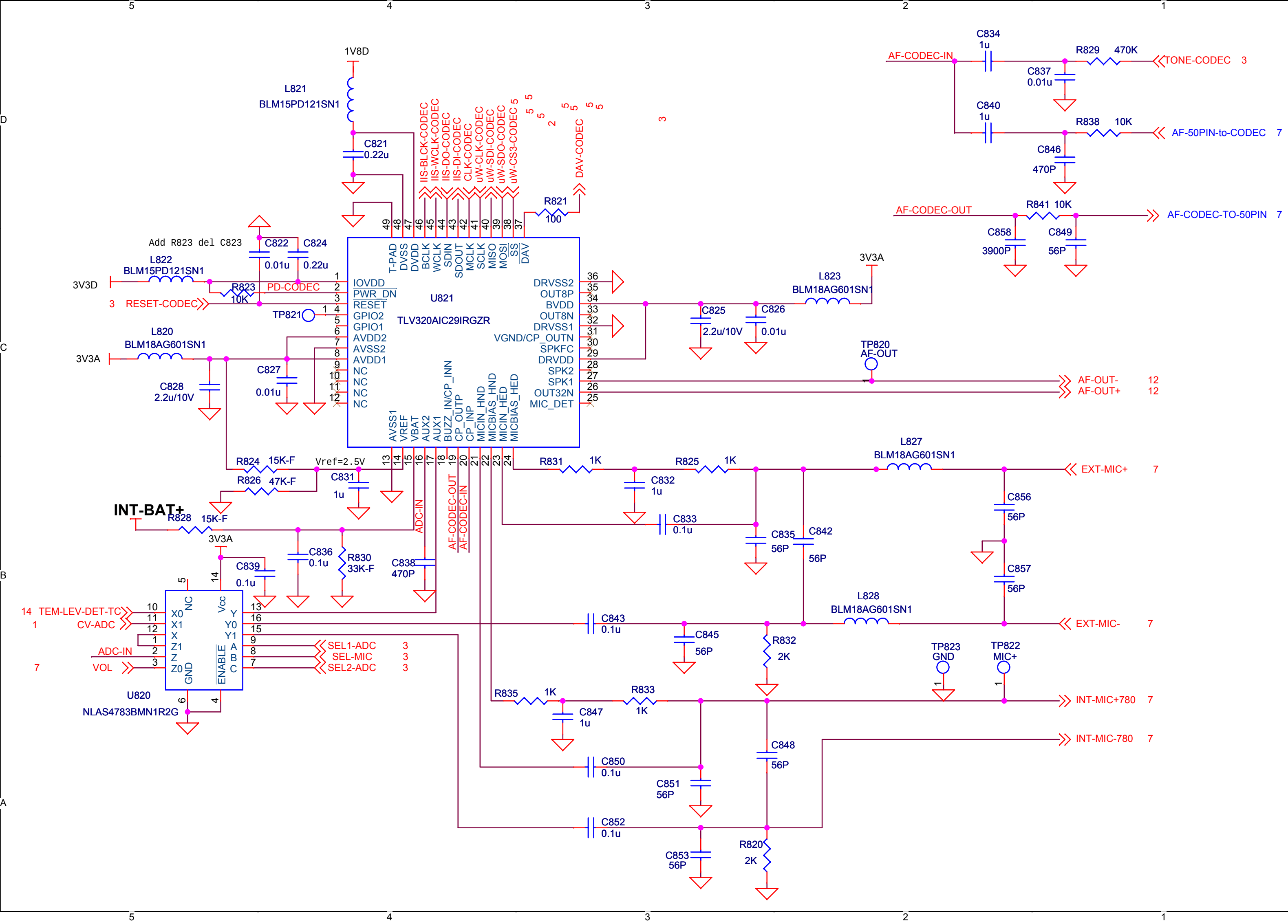


10.6 Schematic Diagram

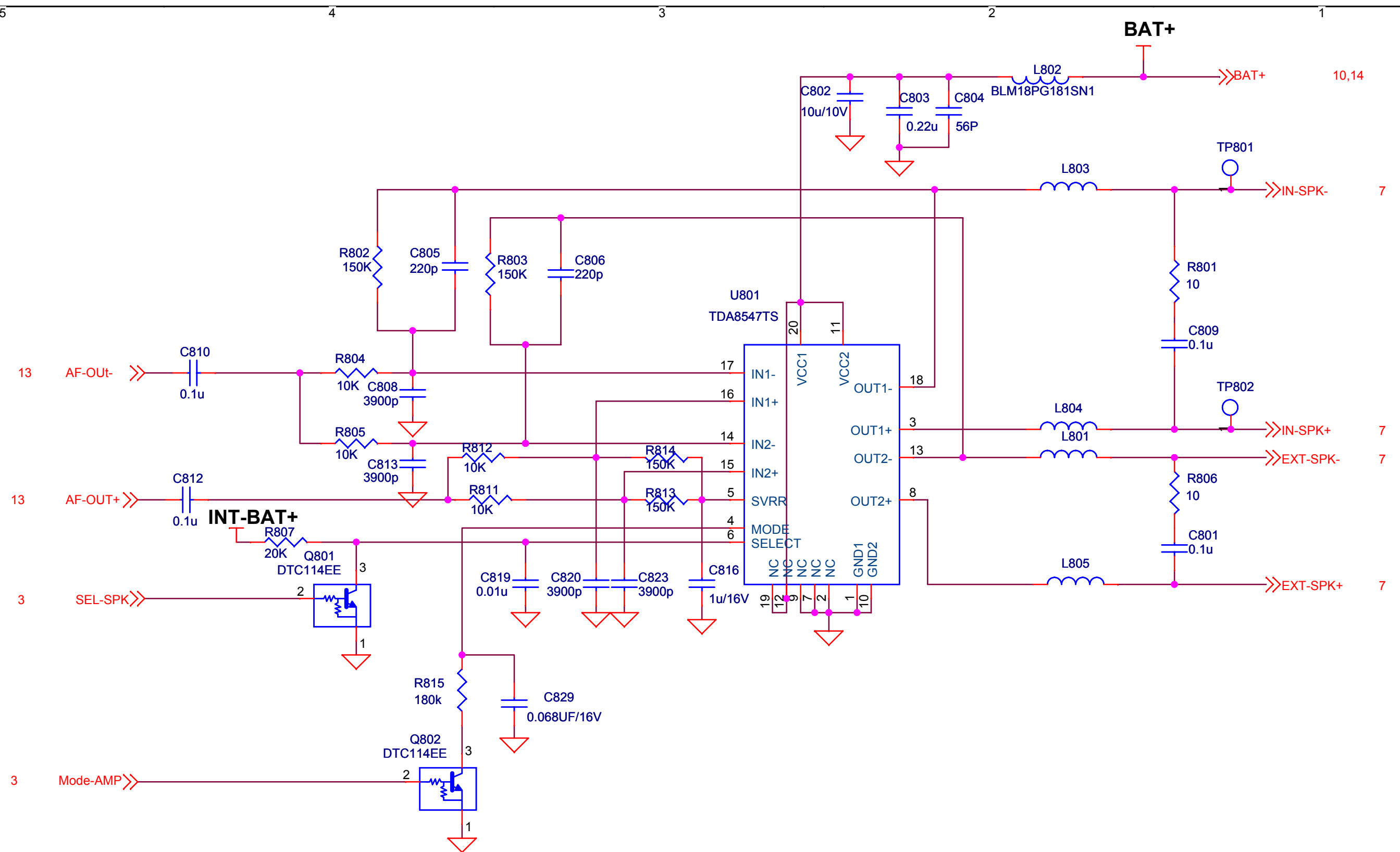
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Transmitter/Receiver)



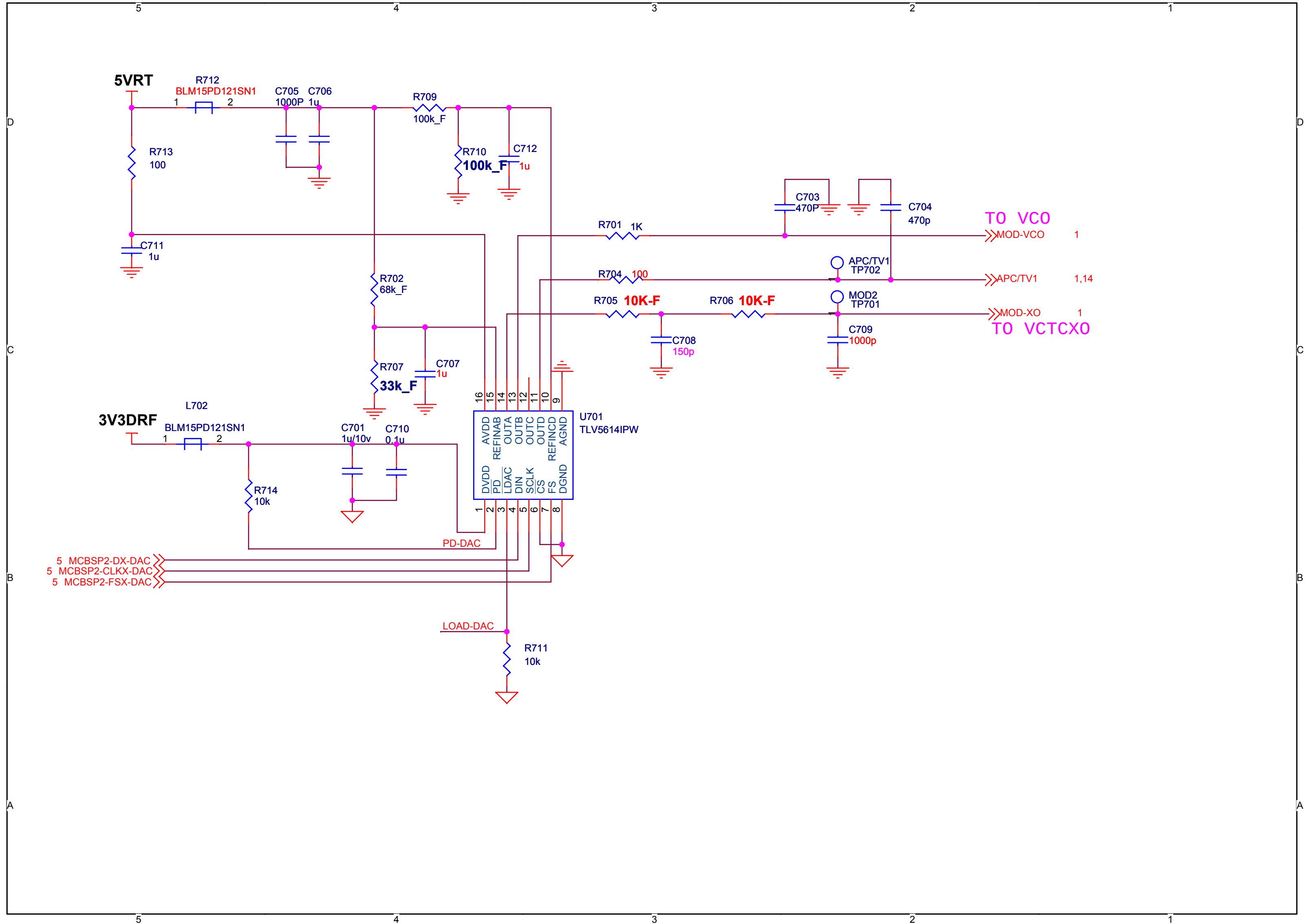
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (CODEC)



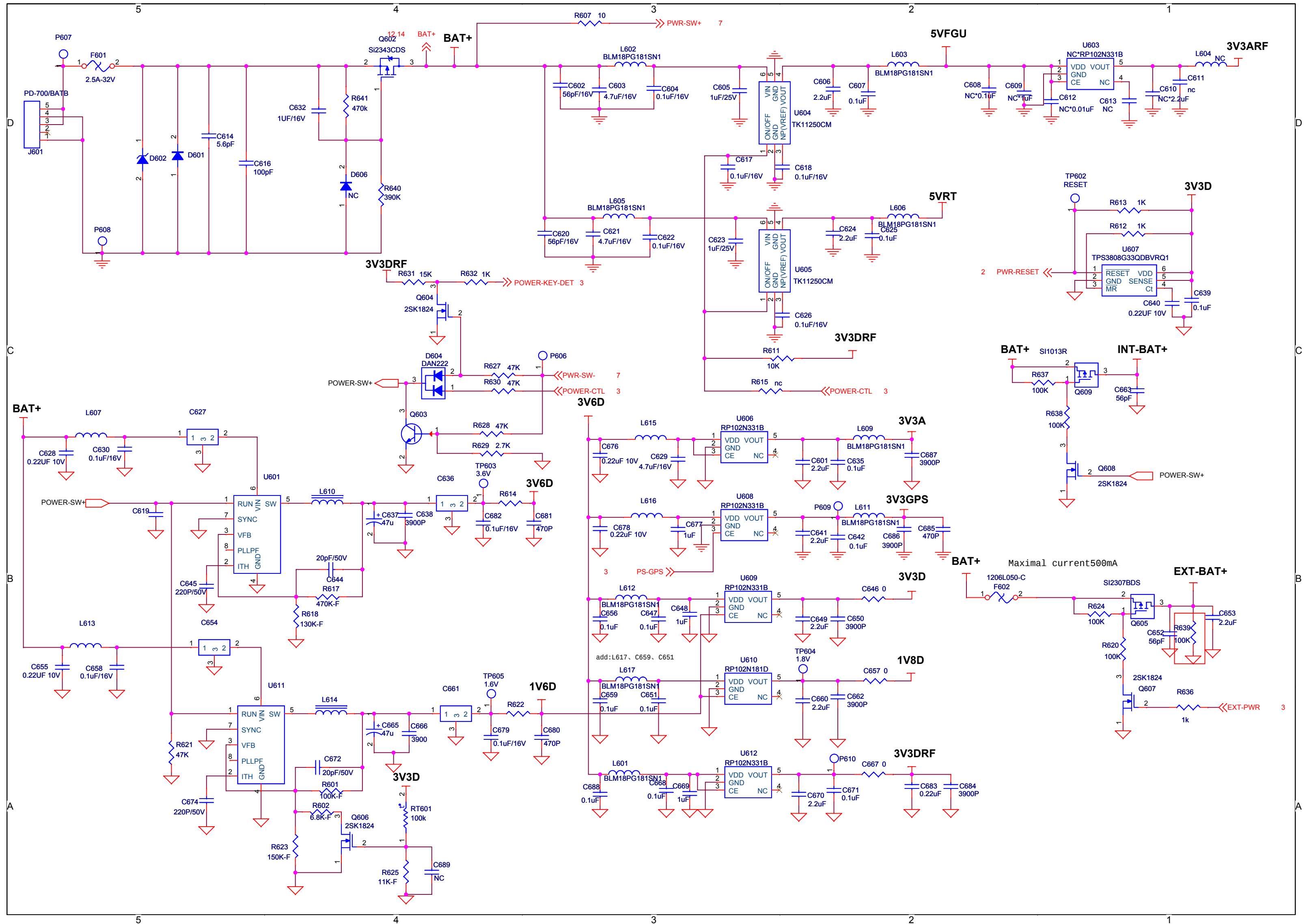
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Audio Amplifier)



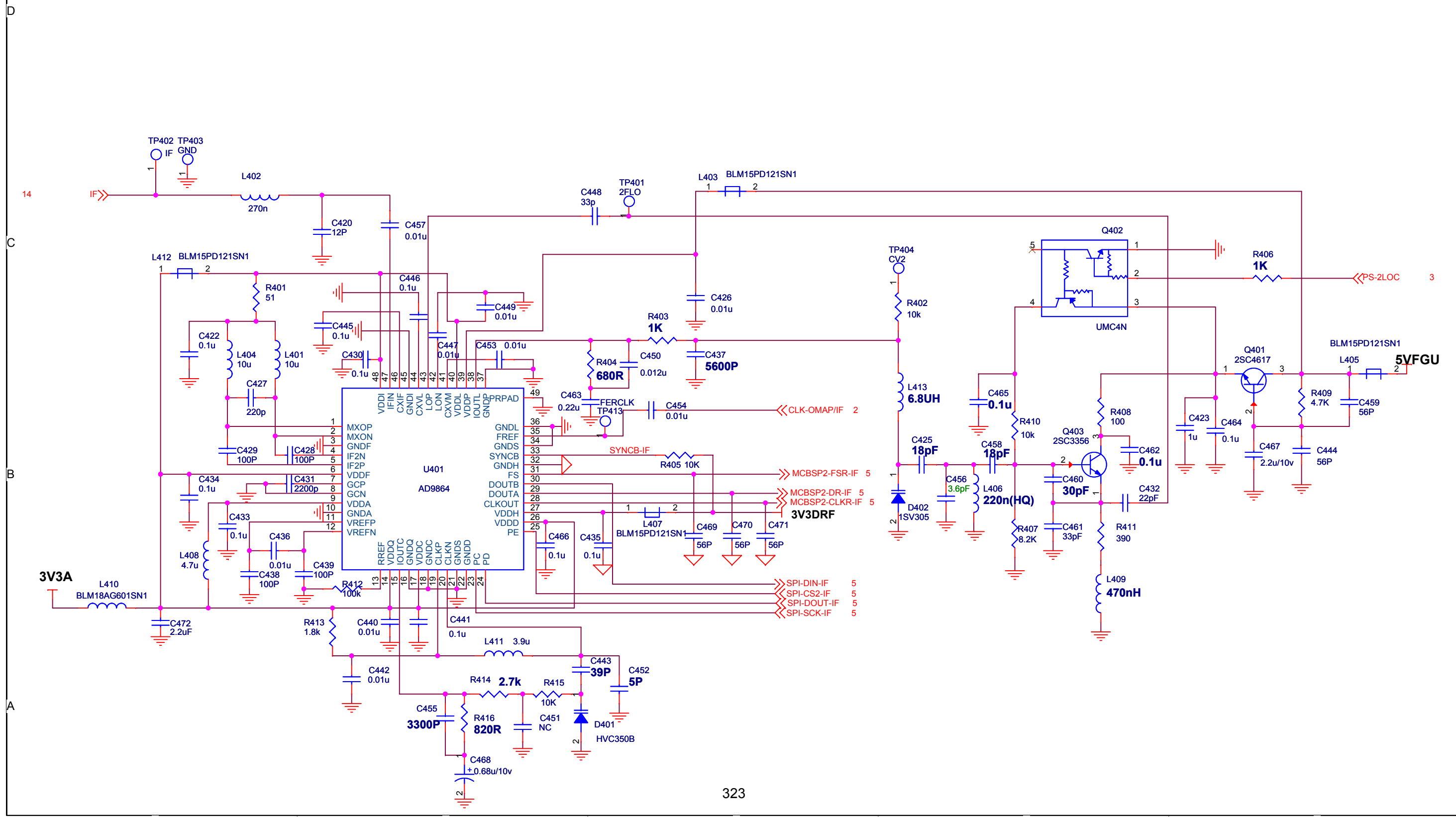
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (DAC)



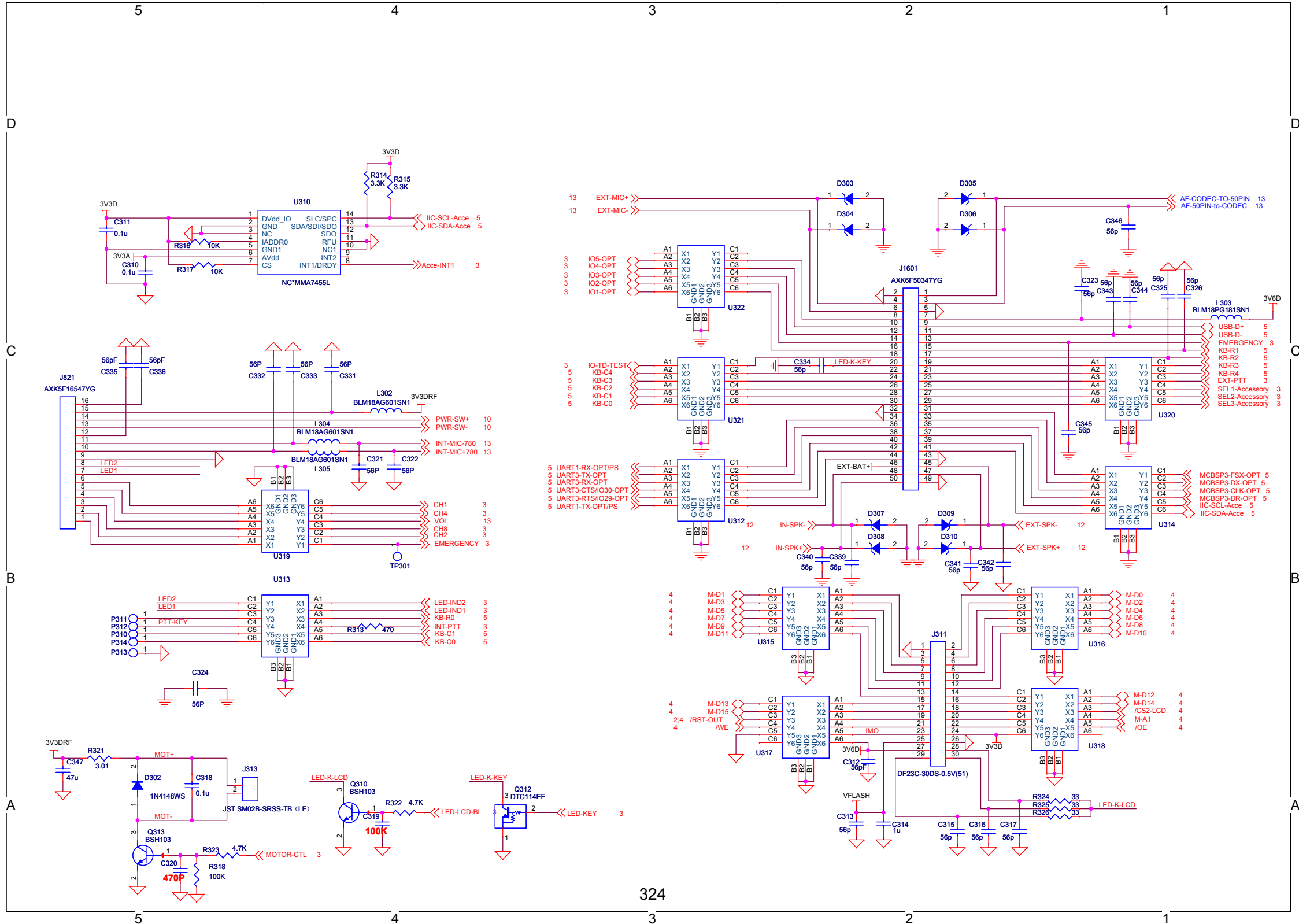
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Power)



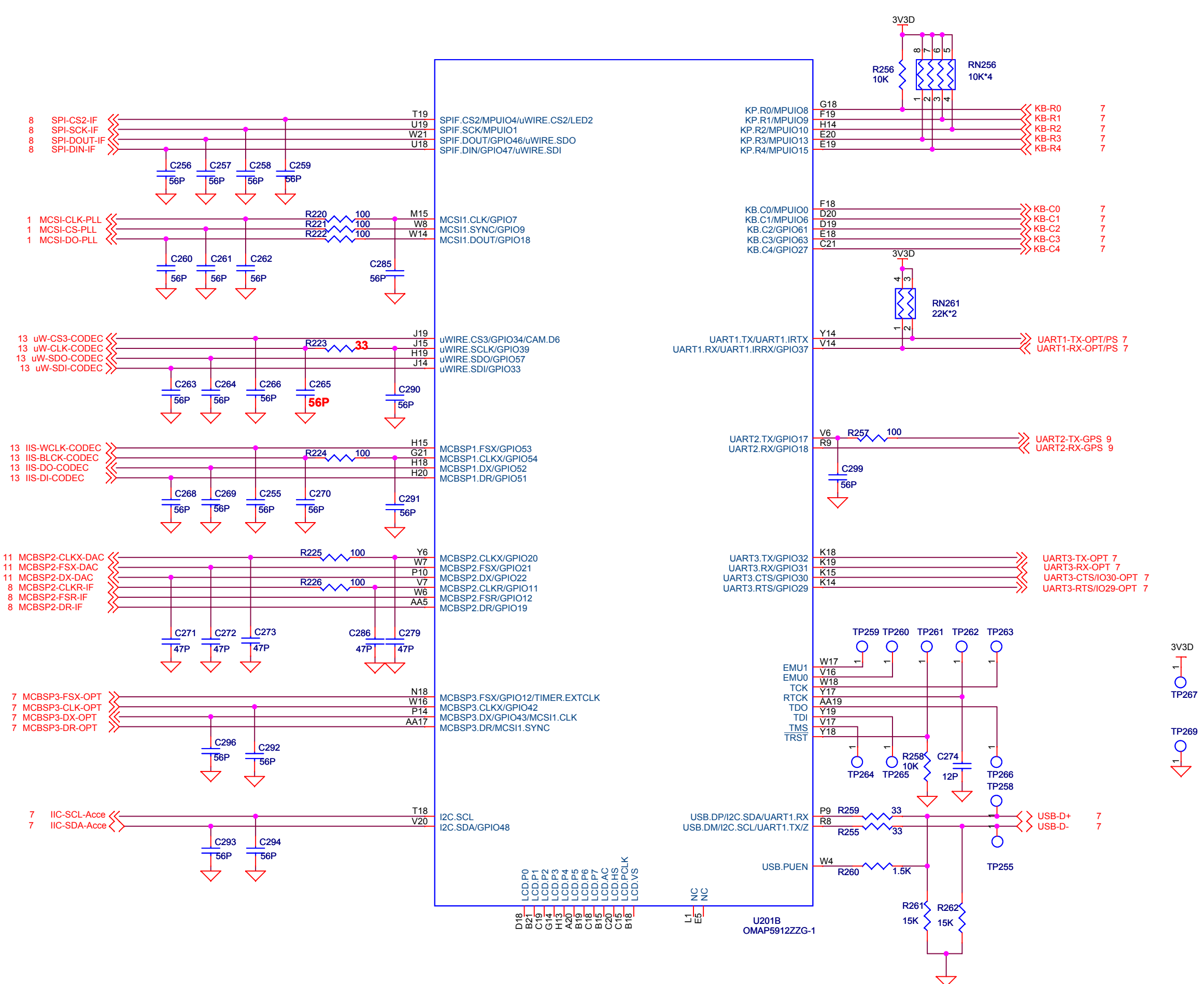
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (AD9864)



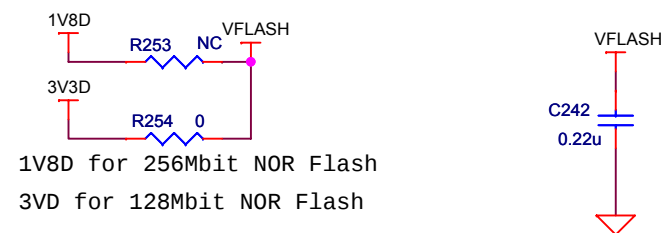
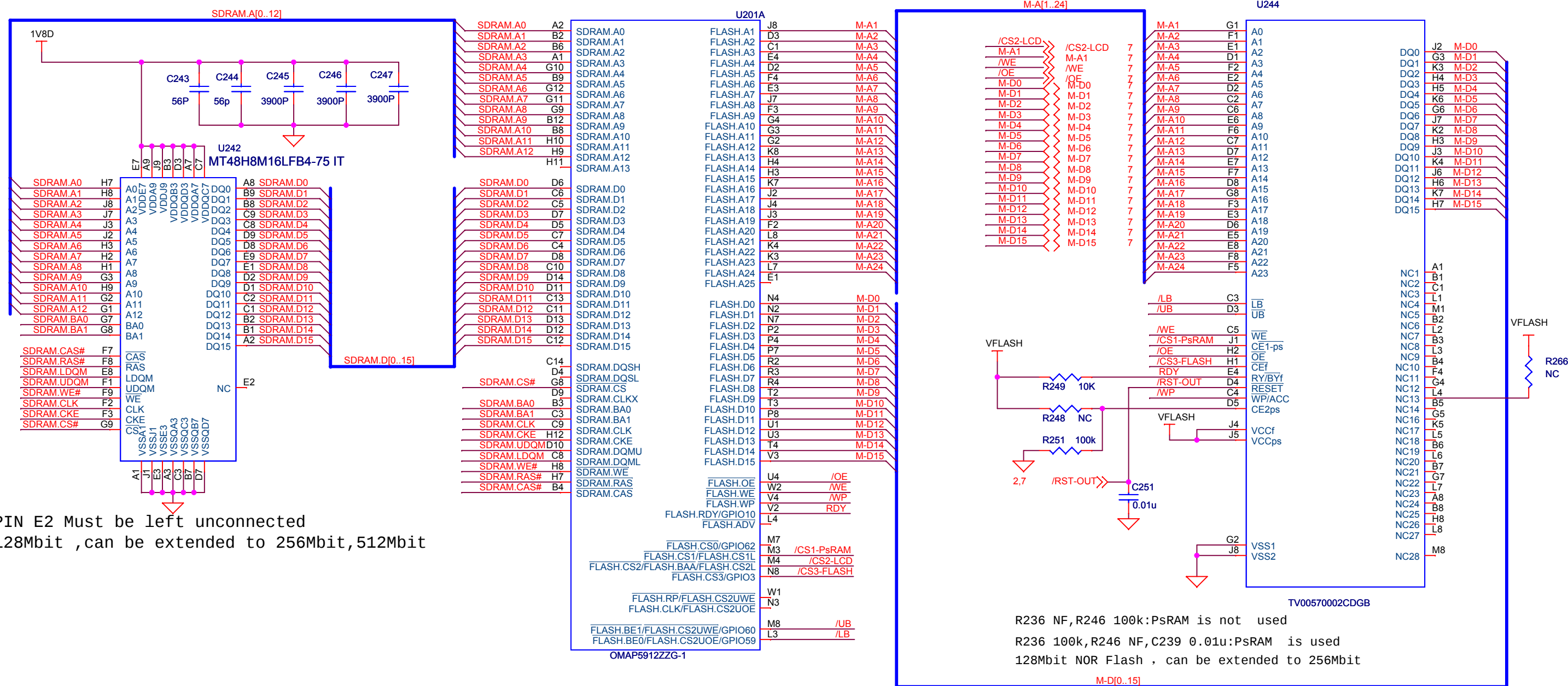
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Internal Interface)



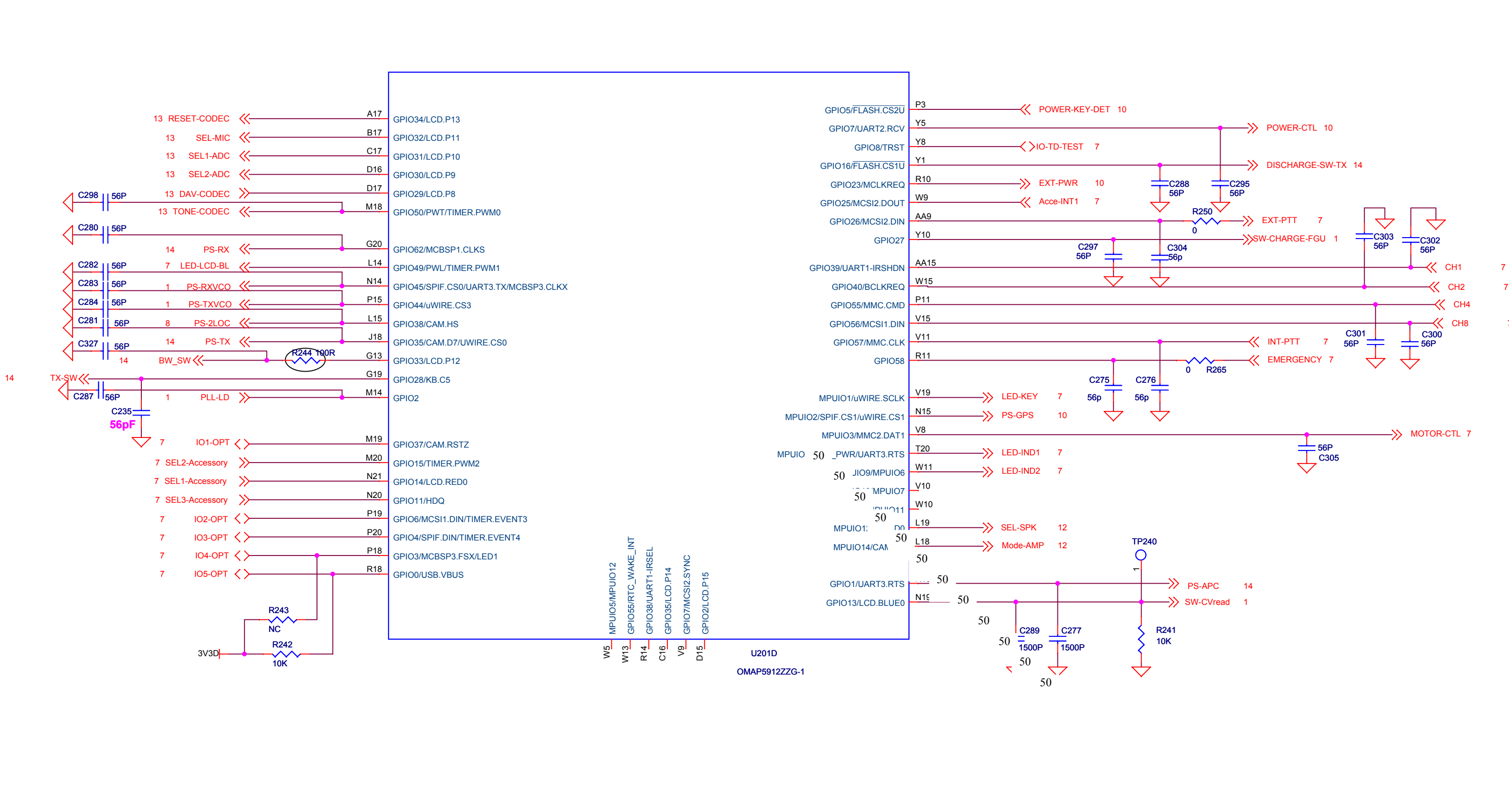
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP SI)



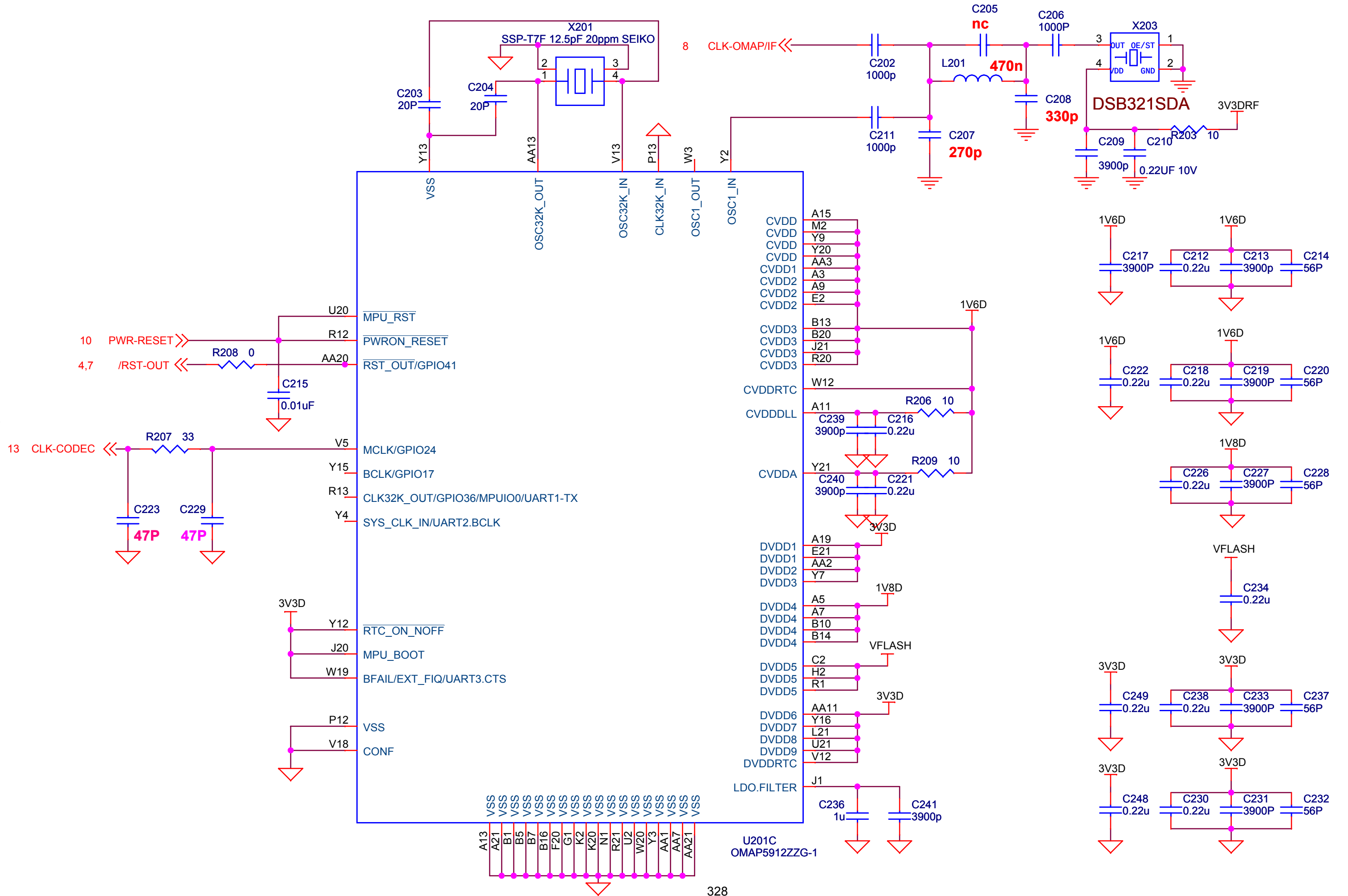
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP MEN)



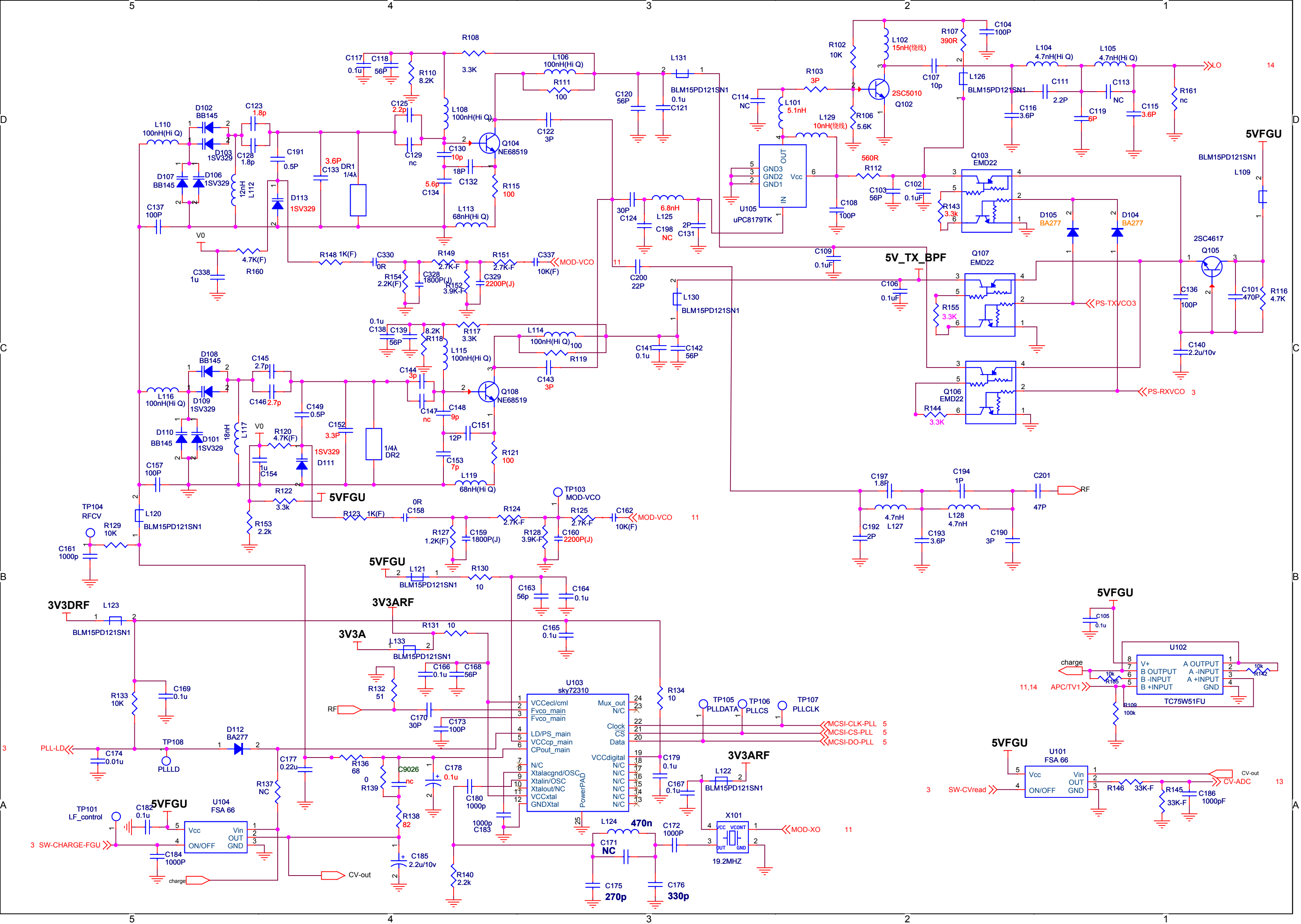
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP IO)



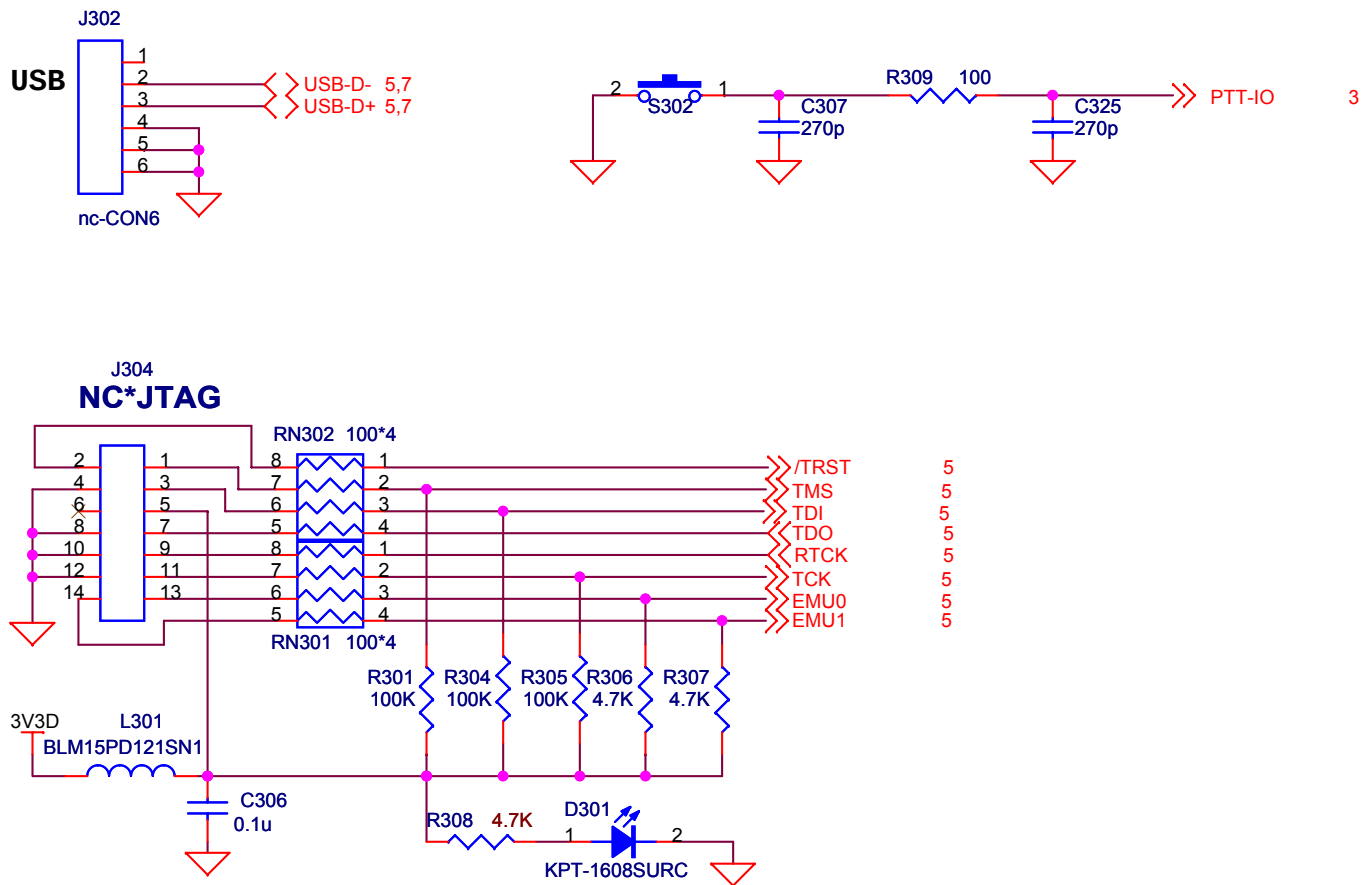
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP CORE)



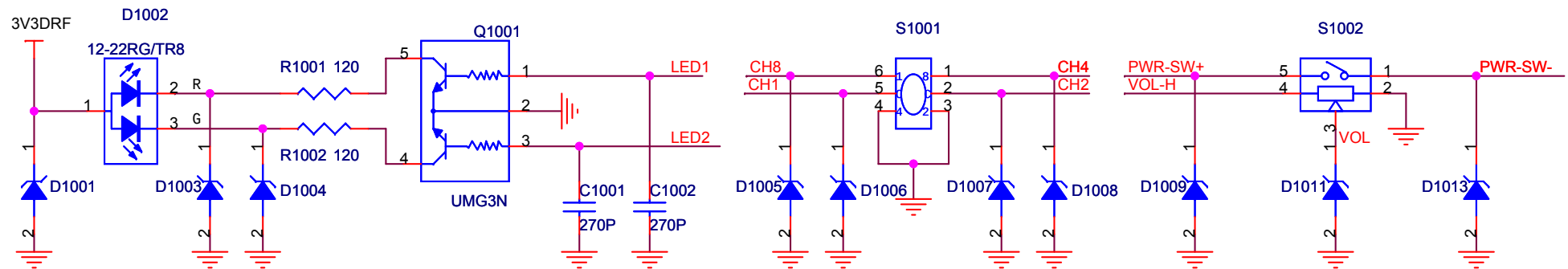
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (FGU)



PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (External Interface)

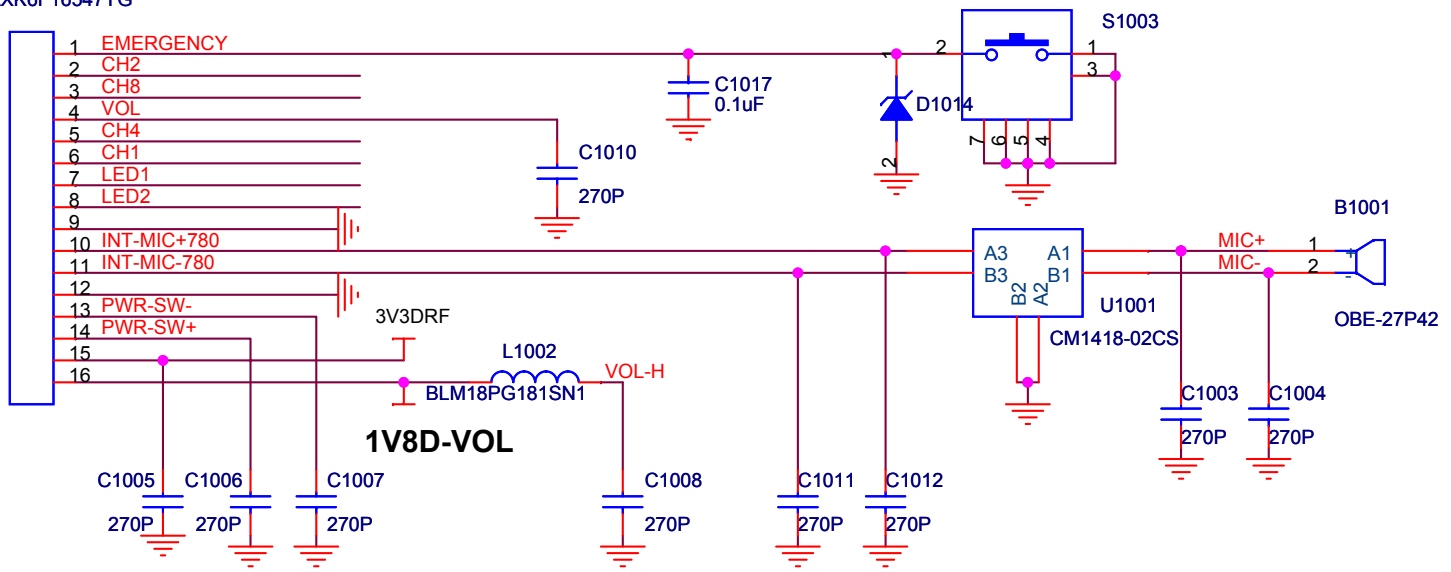


PD70X/PD70XG/HD705/HD705G Schematic Diagram (Channel Board)

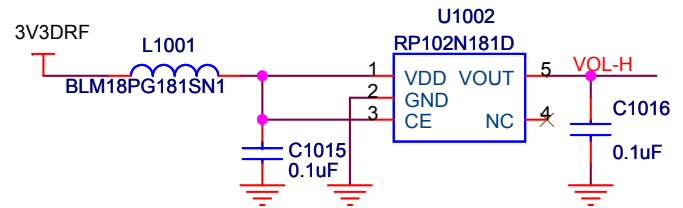


J1001
AXK6F16547YG

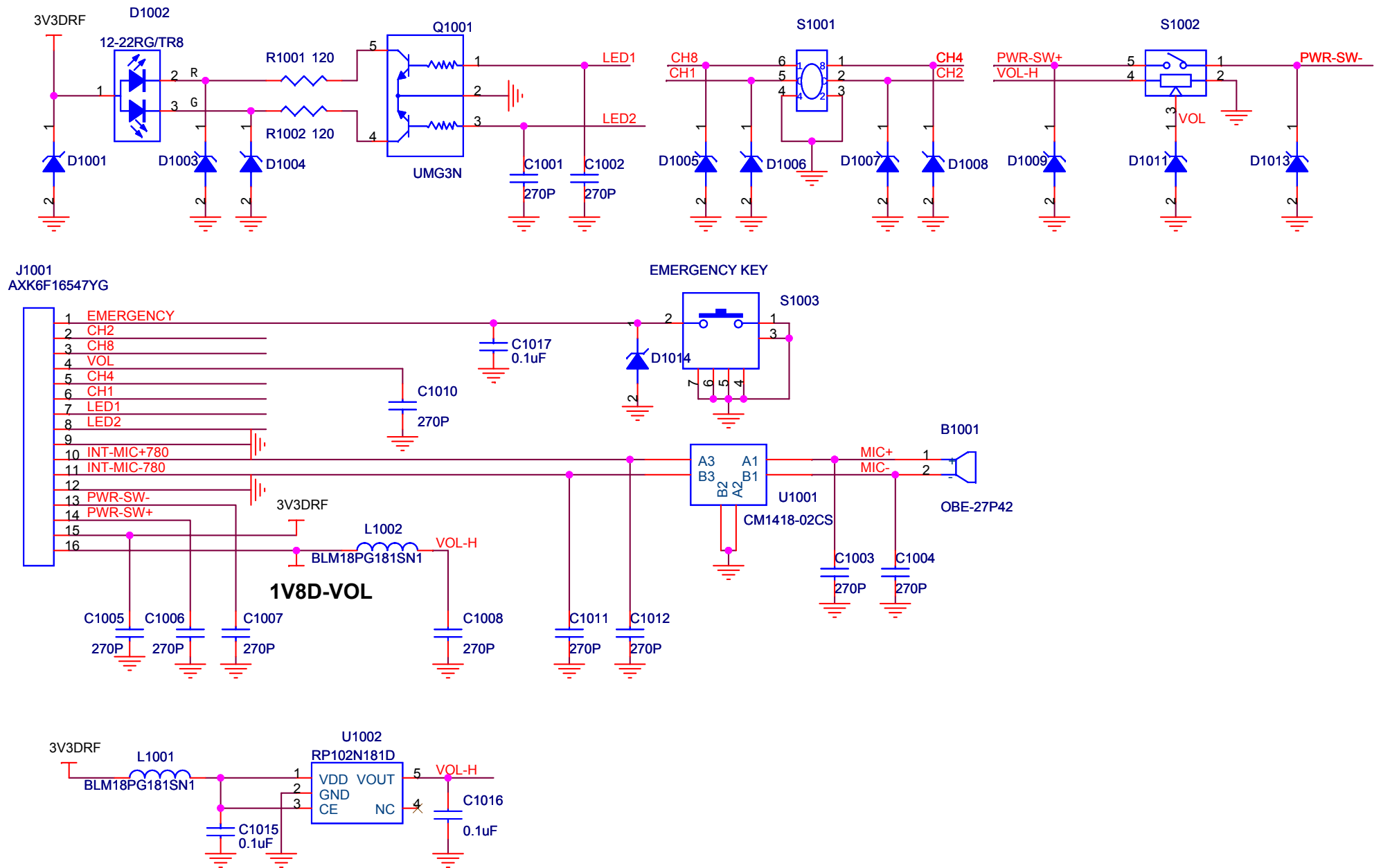
EMERGENCY KEY



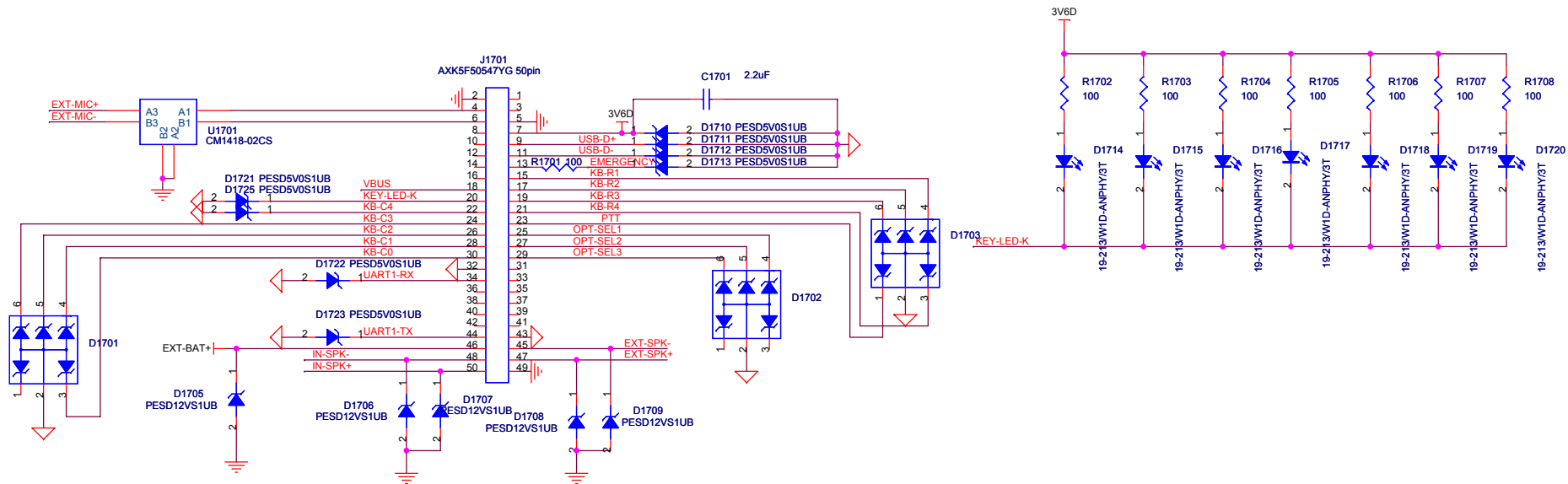
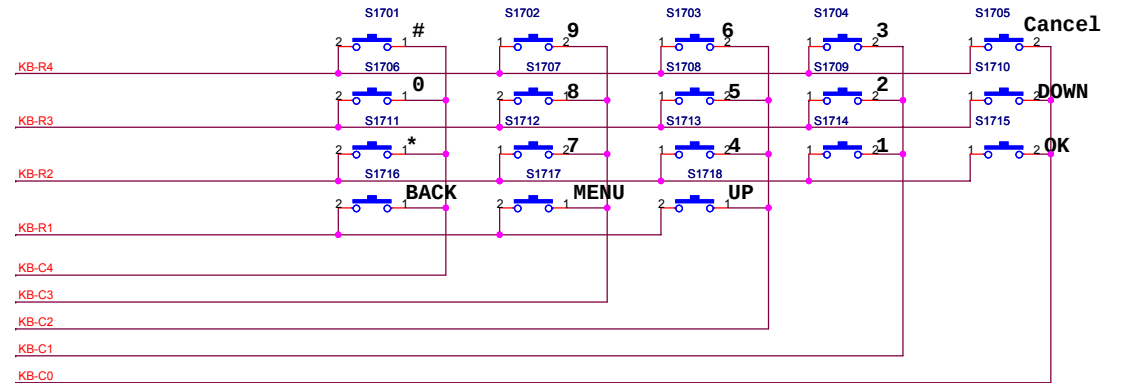
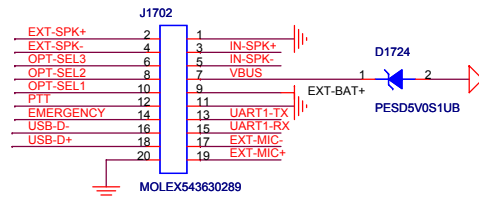
1V8D-VOL



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Keyboard)



10.7 Parts List

PD70X/ PD70XG/ PD78X/ PD78XG/ HD705/ HD705G/ HD785/ HD785G Main Board

No.	Ref. No.	Print No.	Part No.	Description
1	ANT1	T2A	6201847000000	Antenna spring plate
2	B	/	6201915000000	Shielding can for antenna spring plate
3	C	/	6201935000000	Shielding can for switching power
4	C101	B1F	3101054710010	470pF
5	C102	B1G	3101051040060	0.1uF
6	C103	B1G	3101055600000	56pF
7	C104	T2F	3101055600000	100pF
8	C105	B1I	3101051040060	0.1uF
9	C106	B2G	3101051040060	0.1uF
10	C107	T2F	3101051000020	10pF
11	C108	T1F	3101055600000	100pF
12	C109	B1G	3101051040060	0.1uF
13	C111	T2F	3101052290020	2.2pF
14	C115	T1F	3101053690000	3.6pF
15	C116	T2E	3101050300020	3pF
16	C117	T1G	3101051040060	0.1uF
17	C118	T1G	3101055600000	56pF
18	C119	T2E	3101050600010	6pF
19	C120	T1G	3101055600000	56pF

No.	Ref. No.	Print No.	Part No.	Description
20	C121	T1G	3101051040060	0.1uF
21	C122	T1G	3101050300000	3pF
22	C123	T1G	3101051890030	1.8pF
23	C124	T1G	3101053000010	30pF
24	C125	T1G	3101052290010	2.2pF
25	C128	T1G	3101051890030	1.8pF
26	C130	T1G	3101051000030	10pF
27	C131	T1G	3101050200010	20pF
28	C132	T1G	3101051800070	18pF
29	C133	T1G	3101053690010	3.6pF
30	C134	T1G	3101055690110	5.6pF
31	C136	B1G	3101055600000	100pF
32	C137	T1H	3101055600000	100pF
33	C138	B2H	3101051040060	0.1uF
34	C139	B2H	3101055600000	56pF
35	C140	B1F	3101062250000	2.2uF
36	C141	B2G	3101051040060	0.1uF
37	C142	B2G	3101055600000	56pF
38	C143	B1G	3101050300000	3pF
39	C144	B1H	3101050300020	3pF
40	C145	B1H	3101052790050	2.7pF

No.	Ref. No.	Print No.	Part No.	Description
41	C146	B1H	3101052790050	2.7pF
42	C148	B1G	3101050900000	9PF
43	C149	B1H	3101050590020	0.5pF
44	C151	B1G	3101051200050	12pF
45	C152	B1G	3101053690010	3.6pF
46	C153	B1G	3101050700010	7pF
47	C154	B2H	3101051050160	1uF
48	C157	B1H	3101055600000	100pF
49	C158	B2H	3001060000000	0Ω
50	C159	B1H	3101051820010	1800pF
51	C160	B2H	3101052220060	2200pF
52	C161	B1H	3101051020010	1000pF
53	C162	B1H	3001061030050	10KΩ
54	C163	T1H	3101055600000	56pF
55	C164	T1H	3101051040060	0.1uF
56	C165	B2H	3101051040060	0.1uF
57	C166	T2I	3101051040060	0.1uF
58	C167	T2I	3101051040060	0.1uF
59	C168	T2H	3101055600000	56pF
60	C169	B1H	3101051040060	0.1uF
61	C170	T2H	3101053000010	30pF

No.	Ref. No.	Print No.	Part No.	Description
62	C172	T1I	3101051020010	1000pF
63	C173	T1H	3101055600000	100pF
64	C174	B2I	3101051030020	0.01uF
65	C175	T1I	3101052710000	270pF
66	C176	T1I	3101053310030	330pF
67	C177	T1H	3101072240000	0.22uF
68	C178	T1I	3101071040000	0.1uF
69	C179	T2I	3101051040060	0.1uF
70	C180	T1I	3101051020010	1000pF
71	C182	B1I	3101051040060	0.1uF
72	C183	T1I	3101051020010	1000pF
73	C184	B1I	3101051020010	1000pF
74	C185	T1I	3101072250030	2.2uF
75	C186	B1I	3101051020010	1000pF
76	C190	T2G	3101050300000	3pF
77	C191	T1G	3101050590020	0.5pF
78	C192	T2G	3101050200010	20pF
79	C193	T2G	3101053690000	3.6pF
80	C194	T2G	3101050100030	1pF
81	C197	T2G	3101051890050	1.8pF
82	C200	T2G	3101052200010	22pF

No.	Ref. No.	Print No.	Part No.	Description
83	c201	T2G	3101054700010	47pF
84	C202	B3H	3101051020010	1000pF
85	C203	B5J	3101052000020	20pF
86	C204	B5J	3101052000020	20pF
87	C206	B3H	3101051020010	1000pF
88	C207	B3H	3101052710000	270pF
89	C208	B3H	3101053310030	330pF
90	C209	B3H	3101053920000	3900pF
91	C210	B3H	3101062240000	0.22uF
92	C211	B3H	3101051020010	1000pF
93	C212	B5J	3101052240010	0.22uF
94	C213	B4K	3101053920000	3900pF
95	C214	B3I	3101055600000	56pF
96	C215	T4J	3101051030020	0.01uF
97	C216	B3J	3101052240010	0.22uF
98	C217	B5I	3101053920000	3900pF
99	C218	B3J	3101052240010	0.22uF
100	C219	B3J	3101053920000	3900pF
101	C220	B4K	3101055600000	56pF
102	C221	B4K	3101052240010	0.22uF
103	C222	B3I	3101052240010	0.22uF

No.	Ref. No.	Print No.	Part No.	Description
104	C223	T4J	3101054700010	47pF
105	C226	B3J	3101052240010	0.22uF
106	C227	B3J	3101053920000	3900pF
107	C228	B3J	3101055600000	56pF
108	C229	T4J	3101054700010	47pF
109	C230	B3K	3101052240010	0.22uF
110	C231	B3J	3101053920000	3900pF
111	C232	B4K	3101055600000	56pF
112	C233	B4F	3101053920000	3900pF
113	C234	B4I	3101052240010	0.22uF
114	C235	T4J	3101055600000	56pF
115	C236	B4I	3101051050160	1uF
116	C237	B5J	3101055600000	56pF
117	C238	B5I	3101052240010	0.22uF
118	C239	B3J	3101053920000	3900pF
119	C240	B4K	3101053920000	3900pF
120	C241	B4I	3101053920000	3900pF
121	C242	B5I	3101052240010	0.22uF
122	C243	B3J	3101055600000	56pF
123	C244	T2J	3101055600000	56pF
124	C245	B3I	3101053920000	3900pF

No.	Ref. No.	Print No.	Part No.	Description
125	C246	T2J	3101053920000	3900pF
126	C247	T3J	3101053920000	3900pF
127	C248	B5J	3101052240010	0.22uF
128	C249	B4K	3101052240010	0.22uF
129	C251	B5J	3101051030020	0.01uF
130	C255	T2J	3101055600000	56pF
131	C256	T4J	3101055600000	56pF
132	C257	B4K	3101055600000	56pF
133	C258	T4J	3101055600000	56pF
134	C259	T4J	3101055600000	56pF
135	C260	T4J	3101055600000	56pF
136	C261	T4J	3101055600000	56pF
137	C262	T4J	3101055600000	56pF
138	C263	T2J	3101055600000	56pF
139	C264	T3J	3101055600000	56pF
140	C265	T2J	3101055600000	56pF
141	C266	T3J	3101055600000	56pF
142	C268	T2J	3101055600000	56pF
143	C269	T2J	3101055600000	56pF
144	C270	T2J	3101055600000	56pF
145	C271	T4J	3101054700010	47pF

No.	Ref. No.	Print No.	Part No.	Description
146	C272	B5J	3101054700010	47pF
147	C273	B5J	3101054700010	47pF
148	C274	B5J	3101051200020	12pF
149	C275	T4J	3101055600000	56pF
150	C276	T4J	3101055600000	56pF
151	C277	T4J	3101051520000	1500pF
152	C279	B5J	3101054700010	47pF
153	C280	B4K	3101055600000	56pF
154	C281	T4J	3101055600000	56pF
155	C282	T4J	3101055600000	56pF
156	C283	T4J	3101055600000	56pF
157	C284	T4J	3101055600000	56pF
158	C285	T4J	3101055600000	56pF
159	C286	T4J	3101054700010	47pF
160	C287	T4J	3101055600000	56pF
161	C288	B4I	3101055600000	56pF
162	C289	T4J	3101051520000	1500pF
163	C290	T4J	3101055600000	56pF
164	C291	B4K	3101055600000	56pF
165	C292	T4J	3101055600000	56pF
166	C293	B4K	3101055600000	56pF

No.	Ref. No.	Print No.	Part No.	Description
167	C294	T4J	3101055600000	56pF
168	C295	B5J	3101055600000	56pF
169	C296	T4J	3101055600000	56pF
170	C297	B5J	3101055600000	56pF
171	C298	T4J	3101055600000	56pF
172	C299	T4J	3101055600000	56pF
173	C300	T4J	3101055600000	56pF
174	C301	T4J	3101055600000	56pF
175	C302	T4J	3101055600000	56pF
176	C303	T4J	3101055600000	56pF
177	C304	B5J	3101055600000	56pF
178	C305	T4J	3101055600000	56pF
179	C310	B4H	3101051040060	0.1uF
180	C311	B4H	3101051040060	0.1uF
181	C312	B4G	3101055600000	56pF
182	C313	B4G	3101055600000	56pF
183	C314	B4G	3101051050160	1uF
184	C315	B4G	3101055600000	56pF
185	C316	B4F	3101055600000	56pF
186	C317	B4F	3101055600000	56pF
187	C318	B4C	3101051040060	0.1uF

No.	Ref. No.	Print No.	Part No.	Description
188	C319	B4G	3001051040000	100K Ω
189	C320	B4C	3101054710010	470pF
190	C321	B4D	3101055600000	56pF
191	C322	B4D	3101055600000	56pF
192	C323	B3K	3101055600000	56pF
193	C324	B5F	3101055600000	56pF
194	C325	B3J	3101055600000	56pF
195	C326	B3J	3101055600000	56pF
196	C327	T3J	3101055600000	56pF
197	C328	T2H	3101051820010	1800pF
198	C329	T2H	3101052220060	2200pF
199	C330	T2G	3001060000000	0 Ω
200	C331	B4C	3101055600000	56pF
201	C332	B4D	3101055600000	56pF
202	C333	B4D	3101055600000	56pF
203	C334	B3L	3101055600000	56pF
204	C335	B5C	3101055600000	56pF
205	C336	B5C	3101055600000	56pF
206	C337	T2H	3001061030050	10K Ω
207	C338	T1H	3101051050160	1 μ F
208	C339	B4L	3101055600000	56pF

No.	Ref. No.	Print No.	Part No.	Description
209	C340	B4L	3101055600000	56pF
210	C341	T4K	3101055600000	56pF
211	C342	B4K	3101055600000	56pF
212	C343	B3K	3101055600000	56pF
213	C344	B3K	3101055600000	56pF
214	C345	B3K	3101055600000	56pF
215	C346	B3K	3101055600000	56pF
216	C420	B2H	3101051200020	12pF
217	C422	T2G	3101051040060	0.1uF
218	C423	T2F	3101051050160	1uF
219	C425	T3G	3101051800010	18pF
220	C426	T3G	3101051030020	0.01uF
221	C427	T2G	3101052210020	220pF
222	C428	T2H	3101055600000	100pF
223	C429	T2G	3101055600000	100pF
224	C430	T2G	3101051040060	0.1uF
225	C431	T2H	3101052220010	2200pF
226	C432	T3F	3101052200010	22pF
227	C433	T2H	3101051040060	0.1uF
228	C434	T2H	3101051040060	0.1uF
229	C435	T3H	3101051040060	0.1uF

No.	Ref. No.	Print No.	Part No.	Description
230	C436	T2H	3101051030020	0.01uF
231	C437	T3F	3101065620010	5600pF
232	C438	T2H	3101055600000	100pF
233	C439	T2H	3101055600000	100pF
234	C440	T3H	3101051030020	0.01uF
235	C441	T3H	3101051040060	0.1uF
236	C442	T3H	3101061030010	0.01uF
237	C443	T3H	3101063900000	39pF
238	C444	T2F	3101055600000	56pF
239	C445	T3G	3101051040060	0.1uF
240	C446	T3G	3101051040060	0.1uF
241	C447	T3G	3101051030020	0.01uF
242	C448	T3G	3101053300000	33pF
243	C449	T3G	3101051030020	0.01uF
244	C450	T3G	3101061230000	0.012uF
245	C452	T3H	3101060500010	5PF
246	C453	T3G	3101051030020	0.01uF
247	C454	T3G	3101051030020	0.01uF
248	C455	T3H	3101063320000	3300pF
249	C456	T3G	3101063690000	3.6pF
250	C457	B3G	3101051030020	0.01uF

No.	Ref. No.	Print No.	Part No.	Description
251	C458	T3G	3101061800000	18pF
252	C459	T2F	3101055600000	56pF
253	C460	T3F	3101063000010	30pF
254	C461	T3F	3101063300000	33pF
255	C462	T3F	3101051040060	0.1uF
256	C463	T3G	3101072240000	0.22uF
257	C464	T2F	3101051040060	0.1uF
258	C465	T2G	3101051040060	0.1uF
259	C466	T3H	3101051040060	0.1uF
260	C467	T2F	3101062250000	2.2uF
261	C468	T3I	3104076840020	Tantalum capacitor
262	C469	T3H	3101055600000	56pF
263	C470	T3H	3101055600000	56pF
264	C471	T3H	3101055600000	56pF
265	C472	B2H	3101062250000	2.2uF
266	C512	B4E	3101054710010	470pF
267	C513	B2C	3101055600000	56pF
268	C514	B3C	3101051210000	120pF
269	C515	B2C	3101051050160	1uF
270	C516	B3C	3101051590000	2pF
271	C517	B3C	3101051800010	18pF

No.	Ref. No.	Print No.	Part No.	Description
272	C518	B2C	3101052790060	5pF
273	C519	B2C	3101050100030	1pF
274	C520	B2C	3101050100030	1pF
275	C521	B3C	3101051210000	120pF
276	C522	B3C	3101051040060	0.1uF
277	C523	B2C	3101051040060	0.1uF
278	C524	B2C	3101055600000	56pF
279	C525	B2C	3101051040060	0.1uF
280	C526	B2C	3101051050160	1uF
281	C527	B2C	3101051290040	1.2pF
282	C529	B2B	3101053000010	30pF
283	C601	T3K	3101062250000	2.2uF
284	C602	B2E	3101055600000	56pF
285	C603	B2E	3101074750000	4.7uF
286	C604	B2E	3101051040060	0.1uF
287	C605	B2E	3101061050000	1uF
288	C606	B2F	3101062250000	2.2uF
289	C607	B2F	3101051040060	0.1uF
290	C608	B1J	3101051040060	0.1uF
291	C609	B1I	3101061050020	1uF
292	C610	B1J	3101062250000	2.2uF

No.	Ref. No.	Print No.	Part No.	Description
293	C611	B1J	3101051040060	0.1uF
294	C612	B1J	3101051030020	0.01uF
295	C614	B2E	3101055690110	5.6pF
296	C616	B2E	3101055600000	100pF
297	C617	B3E	3101051040060	0.1uF
298	C618	B3F	3101051040060	0.1uF
299	C619	T4F	3101061030010	0.01uF
300	C620	B2E	3101055600000	56pF
301	C621	B2E	3101074750000	4.7uF
302	C622	B2E	3101051040060	0.1uF
303	C623	B2E	3101061050000	1uF
304	C624	B2F	3101062250000	2.2uF
305	C625	B2F	3101051040060	0.1uF
306	C626	B2F	3101051040060	0.1uF
307	C627	T5G	3110081060000	3-terminal capacitor
308	C628	T4F	3101062240000	0.22uF
309	C629	T3J	3101074750000	4.7uF
310	C630	T5F	3101051040060	0.1uF
311	C632	B2E	3101061050130	1uF
312	C635	T3K	3101051040060	0.1uF
313	C636	T4G	3110071060000	3-terminal capacitor

No.	Ref. No.	Print No.	Part No.	Description
314	C637	T4G	3110994760000	Capacitor
315	C638	T4G	3101053920000	3900pF
316	C639	T4J	3101051040060	0.1uF
317	C640	T5J	3101062240000	0.22uF
318	C641	B3E	3101062250000	2.2uF
319	C642	B3E	3101051040060	0.1uF
320	C644	T4G	3101052000020	20pF
321	C645	T4G	3101052210020	220pF
322	C646	T5I	3001060000000	0Ω
323	C647	T4I	3101051040060	0.1uF
324	C648	T4I	3101061050060	1uF
325	C649	T5I	3101062250000	2.2uF
326	C650	T5I	3101053920000	3900pF
327	C651	T3I	3101051040060	0.1uF
328	C652	T4K	3101055600000	56pF
329	C653	T4K	3101062250000	2.2uF
330	C654	T5H	3110081060000	3-terminal capacitor
331	C655	T4H	3101062240000	0.22uF
332	C656	T4I	3101051040060	0.1uF
333	C657	T2J	3001060000000	0Ω
334	C658	T5H	3101051040060	0.1uF

No.	Ref. No.	Print No.	Part No.	Description
335	C659	T3I	3101051040060	0.1uF
336	C660	T2I	3101062250000	2.2uF
337	C661	T4I	3110071060000	3-terminal capacitor
338	C662	T2J	3101053920000	3900pF
339	C663	T4K	3101055600000	56pF
340	C665	T4I	3110994760000	Capacitor
341	C666	T4I	3101053920000	3900pF
342	C667	B1K	3001060000000	0Ω
343	C668	B2J	3101051040060	0.1uF
344	C669	B1J	3101061050060	1uF
345	C670	B1J	3101062250000	2.2uF
346	C671	B1J	3101051040060	0.1uF
347	C672	T4H	3101052000020	20pF
348	C674	T4H	3101052210020	220pF
349	C676	T3I	3101062240000	0.22uF
350	C677	B4E	3101061050060	1uF
351	C678	B4F	3101062240000	0.22uF
352	C679	T4I	3101051040060	0.1uF
353	C680	T4I	3101054710010	470pF
354	C681	T5G	3101054710010	470pF
355	C682	T4G	3101051040060	0.1uF

No.	Ref. No.	Print No.	Part No.	Description
356	C683	B1K	3101052240010	0.22uF
357	C684	B1K	3101053920000	3900pF
358	C685	B3E	3101055600000	56pF
359	C686	B3E	3101053920000	3900pF
360	C687	T3K	3101055600000	56pF
361	C688	B1J	3101051040060	0.1uF
362	C701	T1K	3101061050060	1uF
363	C703	T1J	3101054710010	470pF
364	C704	T1J	3101054710010	470pF
365	C705	T1J	3101051020010	1000pF
366	C706	T1J	3101051050160	1uF
367	C707	T1J	3101051050160	1uF
368	C708	T1J	3101051510000	150pF
369	C709	T1J	3101051020010	1000pF
370	C710	T1K	3101051040060	0.1uF
371	C711	T1J	3101051050160	1uF
372	C712	T1J	3101051050160	1uF
373	C801	B4K	3101051040060	0.1uF
374	C802	T4K	3101071060010	10uF
375	C803	T3K	3101052240010	0.22uF
376	C804	T4K	3101055600000	56pF

No.	Ref. No.	Print No.	Part No.	Description
377	C805	T3K	3101052210020	220pF
378	C806	T3K	3101052210020	220pF
379	C808	T3K	3101053920000	3900pF
380	C809	T4L	3101051040060	0.1uF
381	C810	T3K	3101051040060	0.1uF
382	C812	T3K	3101051040060	0.1uF
383	C813	T3K	3101053920000	3900pF
384	C816	T4K	3101061050130	1uF
385	C819	T4K	3101051030020	0.01uF
386	C820	T3K	3101053920000	3900pF
387	C821	T2J	3101052240010	0.22uF
388	C822	T2K	3101051030020	0.01uF
389	C823	T3K	3101053920000	3900pF
390	C824	T2K	3101052240010	0.22uF
391	C825	T3K	3101062250000	2.2uF
392	C826	T3K	3101051030020	0.01uF
393	C827	T2K	3101051030020	0.01uF
394	C828	T2K	3101062250000	2.2uF
395	C829	T4K	3101056830040	0.068uF
396	C831	T2K	3101051050160	1uF
397	C832	T3K	3101051050160	1uF

No.	Ref. No.	Print No.	Part No.	Description
398	C833	T3K	3101051040060	0.1uF
399	C834	B2K	3101051050160	1uF
400	C835	T3L	3101055600000	56pF
401	C836	T2K	3101051040060	0.1uF
402	C837	B2K	3101051030020	0.01uF
403	C838	T2K	3101054710010	470pF
404	C839	T2L	3101051040060	0.1uF
405	C840	B2K	3101051050160	1uF
406	C842	T3L	3101055600000	56pF
407	C843	T2L	3101051040060	0.1uF
408	C845	T2L	3101055600000	56pF
409	C846	B2K	3101054710010	470pF
410	C847	T2K	3101051050160	1uF
411	C848	T2L	3101055600000	56pF
412	C849	B3K	3101055600000	56pF
413	C850	T2K	3101051040060	0.1uF
414	C851	T2L	3101055600000	56pF
415	C852	T2L	3101051040060	0.1uF
416	C853	T2L	3101055600000	56pF
417	C856	B2L	3101055600000	56pF
418	C857	B2L	3101055600000	56pF

No.	Ref. No.	Print No.	Part No.	Description
419	C858	B2K	3101053920000	3900pF
420	C9001	T4C	3101054700010	47pF
421	C9002	T3C	3101055600000	100pF
422	C9003	B3B	3101051690010	1.6pF
423	c9006	T3C	3101062490000	2.4pF
424	C9008	T2C	3101064790010	4.7pF
425	C9011	T3C	3101063900000	39pF
426	C9012	T1C	3101068290040	8.2pF
427	C9013	B3B	3101063900000	39pF
428	C9014	T1D	3101052200010	22pF
429	C9015	T2C	3101062200010	22pF
430	C9016	B4D	3101055600000	100pF
431	C9017	B2B	3101050500030	5pF
432	C9018	T1E	3101053000010	30pF
433	C9019	T3C	3101060590010	0.5pF
434	C9020	T4D	3101051040060	0.1uF
435	C9021	T2C	3101060590010	0.5pF
436	C9022	T2B	3101050590010	0.5pF
437	C9024	B3B	3101056890060	6.8pF
438	C9025	T4D	3101051040060	0.1uF
439	C9027	T1D	3101051590000	2pF

No.	Ref. No.	Print No.	Part No.	Description
440	C9029	T1E	3101050100030	1pF
441	C9030	T1E	3101053000010	30pF
442	C9031	T1E	3101051040060	0.1uF
443	C9032	T1D	3101050800000	8pF
444	C9033	T1D	3101055600000	100pF
445	C9034	T3B	3101052790060	5pF
446	C9035	T1C	3101055600000	100pF
447	C9036	T1D	3101055600000	100pF
448	C9038	T1D	3101051040060	0.1uF
449	C9039	T1D	3101055600000	100pF
450	C9040	T1D	3101057590000	7.5pF
451	C9041	T1D	3101051040060	0.1uF
452	C9042	T4C	3210305229000	2.2nH
453	C9043	T3C	3001054710000	470Ω
454	C9044	T1D	3101051030020	0.01uF
455	C9045	T2E	3101055600000	100pF
456	C9046	T2E	3101051040060	0.1uF
457	C9047	T2D	3101055600000	100pF
458	C9048	T1D	3101055600000	100pF
459	C9049	T2D	3101051040060	0.1uF
460	C9051	B1D	3104082260060	Tantalum capacitor

No.	Ref. No.	Print No.	Part No.	Description
461	C9052	T1D	3101055600000	100pF
462	C9055	T1D	3101051500020	15pF
463	C9057	T3C	3101051040060	0.1uF
464	C9058	T3C	3101051040060	0.1uF
465	C9059	B1C	3101051020010	1000pF
466	C9060	B1E	3101061020000	1000pF
467	C9061	B1E	3101051020010	1000pF
468	C9063	B1E	3101055620010	5600pF
469	C9064	B1C	3101051020010	1000pF
470	C9065	B1E	3101051520000	1500pF
471	C9066	B1D	3101051030020	0.01uF
472	C9067	B1E	3101051020010	1000pF
473	C9069	B2D	3101054710010	470pF
474	C9071	B2D	3101051040060	0.1uF
475	C9072	T3C	3101055600000	100pF
476	C9073	T3F	3101051890050	1.8pF
477	C9074	T3F	3101050100030	1pF
478	C9075	T3E	3101054700010	47pF
479	C9077	T3E	3101050200010	20pF
480	C9078	T3F	3101053690000	3.6pF
481	C9079	T3E	3101050200010	20pF

No.	Ref. No.	Print No.	Part No.	Description
482	C9080	T4D	3101050400010	4pF
483	C9081	T4D	3101054390010	4.3pF
484	C9082	B4D	3101051040060	0.1uF
485	C9084	T4D	3101050200010	20pF
486	C9085	B2G	3101051020010	1000pF
487	C9086	B2G	3101051040060	0.1uF
488	C9087	T4D	3101050600010	6pF
489	C9088	T3C	3101055600000	100pF
490	C9089	T1E	3101054700010	47pF
491	C9090	B3G	3101051030020	0.01uF
492	C9091	B3G	3101051040060	0.1uF
493	C9092	T5C	3217105110000	Chip inductor
494	C9096	T1E	3101051000020	10pF
495	C9097	B3G	3101051040060	0.1uF
496	C9099	B3H	3101051000020	10pF
497	C9100	T1E	3101051000020	10pF
498	C9101	T4F	3101051500020	15pF
499	C9102	T4D	3101056890000	6.8pF
500	C9103	B3H	3101051020010	1000pF
501	C9104	B3G	3101051040060	0.1uF
502	C9105	B2G	3101051500020	15pF

No.	Ref. No.	Print No.	Part No.	Description
503	C9106	T5D	3101050300000	3pF
504	C9107	B3G	3101050900000	9PF
505	C9108	T5D	3101050200010	20pF
506	C9109	T5E	3101054390010	4.3pF
507	C9110	B3G	3101051030020	0.01uF
508	C9113	T5E	3101050200010	20pF
509	C9114	T5E	3101050300000	3pF
510	C9115	T4D	3101050300000	3pF
511	C9116	T4E	3101053390010	3.3pF
512	C9117	T4E	3101053390010	3.3pF
513	C9118	B3G	3101052700000	27pF
514	C9120	T4E	3101054700010	47pF
515	C9121	B2G	3101051020010	1000pF
516	C9122	B3H	3101052700000	27pF
517	C9123	T4D	3101051000020	10pF
518	C9124	B2G	3101050800000	8pF
519	C9125	T4D	3101054700010	47pF
520	C9126	T5D	3101054700010	47pF
521	C9127	T4C	3101051020010	1000pF
522	C9128	T5D	3101051020010	1000pF
523	C9130	T4C	3101051020010	1000pF

No.	Ref. No.	Print No.	Part No.	Description
524	C9131	T4D	3101055600000	100pF
525	C9133	T4C	3101055600000	100pF
526	C9136	T4D	3001050000000	0Ω
527	C9138	T4C	3217105110000	Chip inductor
528	C9141	T4E	3101054700010	47pF
529	C9142	T4D	3101055600000	100pF
530	C9143	T4C	3101054700010	47pF
531	c9145	T4C	3101055600000	100pF
532	c9146	T4E	3101055600000	100pF
533	C9147	T4E	3101051020010	1000pF
534	C9150	T3F	3101053300000	33pF
535	C9151	T1E	3101055600000	100pF
536	C9152	T4C	3101054700010	47pF
537	C9153	T4C	3101054700010	47pF
538	C9154	T4C	3101054700010	47pF
539	C9155	T3F	3101051020010	1000pF
540	C9157	T1E	3101051020010	1000pF
541	D	/	6201859000010	Shielding frame for low-pass filter
542	D101	B1H	3304010100200	Varactor
543	D102	T1H	3304990000040	Varactor
544	D103	T1H	3304010100200	Varactor

No.	Ref. No.	Print No.	Part No.	Description
545	D104	B1G	3303990000060	Switching diode
546	D105	B1G	3303990000060	Switching diode
547	D106	T1H	3304010100200	Varactor
548	D107	T1H	3304990000040	Varactor
549	D108	B1H	3304990000040	Varactor
550	D109	B1H	3304010100200	Varactor
551	D110	B1H	3304990000040	Varactor
552	D111	B1H	3304010100200	Varactor
553	D112	B1I	3303990000060	Switching diode
554	D113	T2G	3304010100200	Varactor
555	D302	B4C	3303990000010	Switching diode
556	D303	B3L	3310040000000	ESD protection diode
557	D304	B3L	3310040000000	ESD protection diode
558	D305	B3K	3399040600000	ESD protection diode
559	D306	B2L	3399040600000	ESD protection diode
560	D307	T4L	3399040600020	ESD protection diode
561	D308	T4L	3399040600020	ESD protection diode
562	D309	B4K	3399040600020	ESD protection diode
563	D310	B4K	3399040600020	ESD protection diode
564	D401	T3I	3304060300050	Varactor
565	D402	T3F	3304010100220	Varactor

No.	Ref. No.	Print No.	Part No.	Description
566	D601	B3E	3399990000110	Diode
567	D602	B3E	3399040600020	ESD protection diode
568	D604	B4D	3303030100010	Switching diode
569	D9002	T3C	3303030800040	Switching diode
570	D9005	T3C	3303990000060	Switching diode
571	D9006	T4C	3399990000260	Rectifier diode
572	D9008	T3C	3303990000060	Switching diode
573	D9010	B1E	3302031100010	Zener diode
574	E	/	6201860000010	Shielding frame for GPS
575	F601	B3E	4099000000050	Fuse
576	F602	T5J	4010000000010	Resumable fuse
577	G	/	6202784000000	Shielding frame for low VCO
578	H	/	6201865000000	Shielding can for crystal oscillator
579	I	/	6201810000000	Shielding can for baseband processor
580	J1601	B3K	5201050100030	Board-to-board connector
581	J311	B4F	5201030200010	Board-to-board connector
582	J313	B4B	5202002100200	Board-to-wire connector
583	J601	T3D	5205003100020	Battery connector
584	J821	B4C	5201016000010	Board-to-board connector
585	K	/	6202783000000	Shielding frame for buffer
586	L101	T1F	3217105569010	5.6nH

No.	Ref. No.	Print No.	Part No.	Description
587	L102	T2F	3210305150010	15nH
588	L104	T2E	3210306479000	4.7nH
589	L105	T1F	3210306479000	4.7nH
590	L106	T1G	3217106101020	Wire-wound inductor
591	L108	T1G	3217106101020	Wire-wound inductor
592	L109	B1G	3221505121010	Bead
593	L110	T1H	3217106101020	Wire-wound inductor
594	L112	T1H	3247107120000	Wire-wound inductor
595	L113	T1G	3210105680000	68nH
596	L114	B2G	3217106101020	Wire-wound inductor
597	L115	B1H	3217106101020	Wire-wound inductor
598	L116	B1H	3217106101020	Wire-wound inductor
599	L117	B1H	3217107180010	18nH
600	L119	B1G	3210105680000	68nH
601	L120	B1H	3221505121010	Bead
602	L121	B1I	3221505121010	Bead
603	L122	T2I	3221505121010	Bead
604	L123	B2I	3221505121010	Bead
605	L124	T1I	3210406471000	470nH
606	L125	T1G	3217105689000	6.8nH
607	L126	T1F	3221505601000	Bead

No.	Ref. No.	Print No.	Part No.	Description
608	L127	T2G	3210105479000	4.7nH
609	L128	T2G	3210105479000	4.7nH
610	L129	T1F	3217106100000	Wire-wound inductor
611	L130	B2G	3221505601000	Bead
612	L131	T1G	3221505601000	Bead
613	L201	B3H	3210406471000	470nH
614	L302	B4C	3221506601000	Bead
615	L303	B2K	3221506181000	Bead
616	L304	B4D	3221506601000	Bead
617	L305	B4D	3221506601000	Bead
618	L401	T2H	3215099103000	10uH
619	L402	B3H	3210406271000	270nH
620	L403	T3G	3221505121010	Bead
621	L404	T2G	3215099103000	10uH
622	L405	T2F	3221505121010	Bead
623	L406	T3G	3217107221010	220nH
624	L407	T3H	3221505121010	Bead
625	L408	T2H	3210407472000	4.7uH
626	L409	T3F	3210406471000	470nH
627	L410	B2H	3221506601000	Bead
628	L411	T3H	3217107392000	3.9uH

No.	Ref. No.	Print No.	Part No.	Description
629	L412	T2H	3221505121010	Bead
630	L413	T3G	3213306682000	6.8uH
631	L501	B2C	3297106339000	Wire-wound inductor
632	L502	B3C	3221506601080	Bead
633	L503	B2C	3297106339000	Wire-wound inductor
634	L504	B2C	3297106339000	Wire-wound inductor
635	L505	B2C	3221506601080	Bead
636	L506	B3C	3210106390000	39nH
637	L507	B3C	3210305180000	18nH
638	L508	B3C	3210305829000	8.2nH
639	L509	B3C	3210305829000	8.2nH
640	L601	B1J	3221506181000	Bead
641	L602	B2E	3221506181000	Bead
642	L603	B2F	3221506181000	Bead
643	L604	B1J	3221506181000	Bead
644	L605	B2E	3221506181000	Bead
645	L606	B2F	3221506181000	Bead
646	L607	T4F	3290299222000	2.2uH
647	L609	T3K	3221506181000	Bead
648	L610	T5G	3217099153000	15uH
649	L611	B3E	3221506181000	Bead

No.	Ref. No.	Print No.	Part No.	Description
650	L612	T4I	3221506181000	Bead
651	L613	T4H	3290299222000	2.2uH
652	L614	T5H	3217099153000	15uH
653	L615	T3J	3290299222000	2.2uH
654	L616	B3E	3290299222000	2.2uH
655	L617	T3I	3221506181000	Bead
656	L702	B1K	3221505121010	Bead
657	L801	B4K	3221505121010	Bead
658	L802	T4K	3221506181000	Bead
659	L803	T4L	3221505121010	Bead
660	L804	T4L	3221505121010	Bead
661	L805	T4K	3221505121010	Bead
662	L820	T2K	3221506601000	Bead
663	L821	T2J	3221505121010	Bead
664	L822	T2J	3221505121010	Bead
665	L823	T3K	3221506601000	Bead
666	L827	T3L	3221506601000	Bead
667	L828	T3L	3221506601000	Bead
668	L9001	T5E	3217106820010	82nH
669	L9002	T3C	3215006100010	10nH
670	L9006	T1D	3212105279000	2.7nH

No.	Ref. No.	Print No.	Part No.	Description
671	L9007	T2D	3217105010000	Wire-wound inductor
672	L9008	T1D	3239999250000	Air-core coil
673	L9010	T1E	3217105689000	6.8nH
674	L9011	T1D	3217107470010	47nH
675	L9014	T1D	3221506121000	Bead
676	L9015	T2D	3210106470000	47nH
677	L9016	T3C	3233099100000	Air-core coil
678	L9017	T3F	3210306479000	4.7nH
679	L9018	T3F	3210306479000	4.7nH
680	L9019	T3C	3214307151000	150nH
681	L9020	B2F	3221505121010	Bead
682	L9021	T4F	3221505121010	Bead
683	L9022	T4F	3210306221000	220nH
684	L9023	T2B	3237199609000	Air-core coil
685	L9024	T4D	3219906829010	8.2nH
686	L9025	T3F	3210306150000	15nH
687	L9026	B3G	3210306101000	100nH
688	L9027	B3G	3213306821000	0.82uH
689	L9028	T4D	3219906829010	8.2nH
690	L9029	T4D	3217106820010	82nH
691	L9030	T5D	3219906829010	8.2nH

No.	Ref. No.	Print No.	Part No.	Description
692	L9032	T5D	3219906829010	8.2nH
693	L9033	B2G	3210406471000	470nH
694	L9034	B2C	3210105100000	10nH
695	L9035	T1E	3210106820000	82nH
696	L9037	T5D	3217105130000	13nH
697	L9041	T4D	3001050000000	0Ω
698	L9042	T4D	3001050000000	0Ω
699	L9043	T4F	3210305829000	8.2nH
700	L9044	T4E	3210305829000	8.2nH
701	L9045	T3E	3210305689000	6.8nH
702	Q102	T2F	3408002000080	NPN transistor
703	Q103	B1G	3403999000000	Compound transistor
704	Q104	T1G	3408002000080	NPN transistor
705	Q105	B1G	3403003000060	NPN transistor
706	Q106	B1G	3403999000000	Compound transistor
707	Q107	B2G	3403999000000	Compound transistor
708	Q108	B1G	3408002000080	NPN transistor
709	Q310	B4G	3511990000010	N-MOSFET
710	Q312	T3L	3403008000010	BRT
711	Q313	B4C	3511990000010	N-MOSFET
712	Q401	T2F	3403003000060	NPN transistor

No.	Ref. No.	Print No.	Part No.	Description
713	Q402	T2G	3499000000150	Compound transistor
714	Q403	T3F	3408002000000	NPN transistor
715	Q603	B4D	3414001000040	NPN transistor
716	Q604	B4D	3503020000030	N-MOSFET
717	Q605	T5K	3505010000210	P-MOSFET
718	Q607	T4K	3503020000030	N-MOSFET
719	Q608	B4E	3503020000030	N-MOSFET
720	Q609	B4E	3505010000210	P-MOSFET
721	Q801	T4K	3403008000010	BRT
722	Q802	T4K	3403008000010	BRT
723	Q9001	B4D	3403014000020	Compound transistor
724	Q9004	T1C	3504990000040	PA MOSFET
725	Q9005	T1D	3504990000010	Power amplifier
726	Q9006	B1F	3410001000020	PNP transistor
727	Q9007	B2F	3403008000010	BRT
728	Q9008	B1F	3403008000010	BRT
729	Q9009	T4D	3499999000060	NPN transistor
730	Q9010	T4E	3403008000010	BRT
731	Q9011	T1E	3499999000060	8.2nH
732	Q9017	B3G	3404006000000	NPN transistor
733	Q9018	B3G	3404006000000	NPN transistor

No.	Ref. No.	Print No.	Part No.	Description
734	Q9019	B2F	3403999000000	Compound transistor
735	Q9020	B1E	3403999000000	Compound transistor
736	Q9021	T3C	3403999000000	Compound transistor
737	Q9022	T4F	3403999000000	Compound transistor
738	R102	T2F	3001051030000	10K Ω
739	R103	T2F	3101050300000	3pF
740	R105	B1I	3001051030000	10K Ω
741	R106	T2F	3001055620000	5.6K Ω
742	R107	T1F	3001053910010	390 Ω
743	R108	T1G	3001053320000	3.3K Ω
744	R109	B1I	3001051040000	100K Ω
745	R110	T1G	3001058220000	8.2K Ω
746	R111	T1G	3001051010000	100 Ω
747	R112	T1F	3001055610010	560 Ω
748	R115	T1G	3001051010000	100 Ω
749	R116	B1F	3001054720000	4.7K Ω
750	R117	B2G	3001053320000	3.3K Ω
751	R118	B2H	3001058220000	8.2K Ω
752	R119	B2G	3001051010000	100 Ω
753	R121	B1G	3001051010000	100 Ω
754	R122	T1H	3001053320000	3.3K Ω

No.	Ref. No.	Print No.	Part No.	Description
755	R123	B1H	3001051020000	1K Ω
756	R124	B2H	3001052720010	2.7K Ω
757	R125	B2H	3001052720010	2.7K Ω
758	R127	B1H	3001051220090	1.2K Ω
759	R128	B2H	3001053920000	3.9K Ω
760	R129	B1H	3001051030000	10K Ω
761	R130	B1I	3001051000000	10 Ω
762	R131	T2H	3001051000000	10 Ω
763	R132	T2H	3001055100020	51 Ω
764	R133	B1I	3001051030000	10K Ω
765	R134	T2I	3001051000000	10 Ω
766	R136	T1H	3001056800010	68 Ω
767	R138	T1I	3001058200000	82 Ω
768	R139	T1I	3001050000000	0 Ω
769	R140	T1I	3001052220000	2.2K Ω
770	R142	B1I	3001051030000	10K Ω
771	R143	B1G	3001053320000	3.3K Ω
772	R144	B1G	3001053320000	3.3K Ω
773	R145	B1I	3001053330000	33K Ω
774	R146	B1I	3001053330000	33K Ω
775	R148	T1G	3001051020000	1K Ω

No.	Ref. No.	Print No.	Part No.	Description
776	R149	T2H	3001052720010	2.7K Ω
777	R151	T2H	3001052720010	2.7K Ω
778	R152	T2H	3001053920000	3.9K Ω
779	R153	B2H	3001052220000	2.2K Ω
780	R154	T2G	3001052220010	2.2K Ω
781	R155	B1G	3001053320000	3.3K Ω
782	R203	B3I	3001051000000	10 Ω
783	R206	B3J	3001051000000	10 Ω
784	R207	T4J	3001053300000	33 Ω
785	R208	B5J	3001050000000	0 Ω
786	R209	B5J	3001051000000	10 Ω
787	R220	T4J	3001051010000	100 Ω
788	R221	T4J	3001051010000	100 Ω
789	R222	T4J	3001051010000	100 Ω
790	R223	T4J	3001053300000	33 Ω
791	R224	B4K	3001051010000	100 Ω
792	R225	B5J	3001051010000	100 Ω
793	R226	T4I	3001051010000	100 Ω
794	R241	T4J	3001051030000	10K Ω
795	R242	B3K	3001051030000	10K Ω
796	R244	T3J	3001051010000	100 Ω

No.	Ref. No.	Print No.	Part No.	Description
797	R249	B4I	3001051030000	10K Ω
798	R250	B3K	3001050000000	0 Ω
799	R251	B4I	3001051040000	100K Ω
800	R254	B5I	3001050000000	0 Ω
801	R255	B5I	3001053300000	33 Ω
802	R256	T3J	3001051030000	10K Ω
803	R257	B4E	3001051010000	100 Ω
804	R258	B5J	3001051030000	10K Ω
805	R259	B5I	3001053300000	33 Ω
806	R260	B5I	3001051520000	1.5K Ω
807	R261	B5I	3001051530010	15K Ω
808	R262	B5I	3001051530010	15K Ω
809	R265	T4J	3001050000000	0 Ω
810	R313	B4E	3001054710000	470 Ω
811	R314	B4H	3001053320000	3.3K Ω
812	R315	B4H	3001053320000	3.3K Ω
813	R316	B4H	3001051030000	10K Ω
814	R317	B4H	3001051030000	10K Ω
815	R318	B4C	3001051040000	100K Ω
816	R321	B4C	3099063018000	3.01 Ω
817	R322	B4G	3001054720000	4.7K Ω

No.	Ref. No.	Print No.	Part No.	Description
818	R323	B4C	3001054720000	4.7K Ω
819	R324	B4G	3001053300000	33 Ω
820	R325	B4G	3001053300000	33 Ω
821	R326	B4G	3001053300000	33 Ω
822	R401	T2G	3001055100020	51 Ω
823	R402	T3G	3001051030000	10K Ω
824	R403	T3G	3001051020000	1K Ω
825	R404	T3G	3001056810000	680 Ω
826	R405	T3H	3001051030000	10K Ω
827	R406	T2G	3001051020000	1K Ω
828	R407	T3F	3001058220000	8.2K Ω
829	R408	T3F	3001051010000	100 Ω
830	R409	T2F	3001054720000	4.7K Ω
831	R411	T3F	3001053910000	390 Ω
832	R412	T3H	3001051040000	100K Ω
833	R413	T3H	3001051820000	1.8K Ω
834	R414	T3I	3001052720010	2.7K Ω
835	R416	T3H	3001058210000	820 Ω
836	R501	B3C	3001054710000	470 Ω
837	R502	B3C	3001053310000	330 Ω
838	R503	B4E	3001051010000	100 Ω

No.	Ref. No.	Print No.	Part No.	Description
839	R504	B3C	3001051030000	10K Ω
840	R601	T4H	3001059130000	91K Ω
841	R607	B3E	3001061000000	10 Ω
842	R611	B3F	3001051030000	10K Ω
843	R613	T4J	3001051020000	1K Ω
844	R614	T4G	3221506181000	Bead
845	R617	T4G	3001054740010	470K Ω
846	R618	T4G	3001051340000	130K Ω
847	R620	T4K	3001051040000	100K Ω
848	R621	T4H	3001054730010	47K Ω
849	R622	T4I	3221506181000	Bead
850	R623	T4H	3001051040000	100K Ω
851	R624	T5K	3001051040000	100K Ω
852	R627	B4D	3001054730010	47K Ω
853	R628	B4D	3001054730010	47K Ω
854	R629	B4D	3001052720010	2.7K Ω
855	R630	B4D	3001054730010	47K Ω
856	R631	B4D	3001051530010	15K Ω
857	R632	B4D	3001051020000	1K Ω
858	R636	T4K	3001051020000	1K Ω
859	R637	B4E	3001051040000	100K Ω

No.	Ref. No.	Print No.	Part No.	Description
860	R638	B4E	3001051040000	100K Ω
861	R639	T5K	3001051040000	100K Ω
862	R640	B2E	3001053940000	390K Ω
863	R641	B2E	3001054740000	470K Ω
864	R701	T1J	3001051020000	1K Ω
865	R702	T1J	3001056830000	68K Ω
866	R704	T1J	3001051010000	100 Ω
867	R705	T1J	3001051030050	10K Ω
868	R706	T1J	3001051030050	10K Ω
869	R707	T1J	3001053330000	33K Ω
870	R709	T1J	3001051040000	100K Ω
871	R710	T1J	3001051040000	100K Ω
872	R711	T1K	3001051030000	10K Ω
873	R712	T1J	3221505121010	Bead
874	R713	T1J	3001051010000	100 Ω
875	R714	T1K	3001051030000	10K Ω
876	R801	T4L	3001051000000	10 Ω
877	R802	T3K	3001051540000	150K Ω
878	R803	T3K	3001051540000	150K Ω
879	R804	T3K	3001051030000	10K Ω
880	R805	T3K	3001051030000	10K Ω

No.	Ref. No.	Print No.	Part No.	Description
881	R806	B4K	3001051000000	10Ω
882	R807	T4K	3001052030000	20KΩ
883	R811	T3K	3001051030000	10KΩ
884	R812	T3K	3001051030000	10KΩ
885	R813	T3K	3001051540000	150KΩ
886	R814	T3K	3001051540000	150KΩ
887	R815	T4K	3001051840010	180KΩ
888	R820	T2L	3001052020020	2KΩ
889	R821	T3J	3001051010000	100Ω
890	R823	T2K	3001051030000	10KΩ
891	R824	T2K	3001051530010	15KΩ
892	R825	T3K	3001051020000	1KΩ
893	R826	T2K	3001054730010	47KΩ
894	R828	T2K	3001051530010	15KΩ
895	R829	B2K	3001054740010	470KΩ
896	R830	T2K	3001053330000	33KΩ
897	R831	T3K	3001051020000	1KΩ
898	R832	T2L	3001052020020	2KΩ
899	R833	T2L	3001051020000	1KΩ
900	R835	T2K	3001051020000	1KΩ
901	R838	B2K	3001051030000	10KΩ

No.	Ref. No.	Print No.	Part No.	Description
902	R841	B2K	3001051030000	10K Ω
903	R9001	T4E	3001050000000	0 Ω
904	R9002	T4E	3101054700010	47pF
905	R9003	T4F	3001050000000	0 Ω
906	R9004	T4E	3101054700010	47pF
907	R9005	T4E	3001050000000	0 Ω
908	R9006	T2B	3001051030000	10K Ω
909	R9007	T1E	3001056800010	68 Ω
910	R9008	T1E	3001051010000	100 Ω
911	R9009	T1D	3001050000000	0 Ω
912	R9011	T4D	3001051220090	1.2K Ω
913	R9012	T1E	3001051010000	100 Ω
914	R9013	T1E	3001051010000	100 Ω
915	R9016	T1D	3001051510000	150 Ω
916	R9017	T1D	3001051010000	100 Ω
917	R9022	T2E	3001051500010	15 Ω
918	R9023	T1D	3001053920000	3.9K Ω
919	R9024	T1D	3001056820000	6.8K Ω
920	R9025	T1E	3001056810000	680 Ω
921	R9027	T1D	3001058220000	8.2K Ω
922	R9028	T3C	3001051510000	150 Ω

No.	Ref. No.	Print No.	Part No.	Description
923	R9030	T1E	3001051520000	1.5K Ω
924	R9031	T1D	3001052710000	270 Ω
925	R9032	B4D	3001051340000	130K Ω
926	R9033	B1D	3001051020000	1K Ω
927	R9035	T3C	3001050000000	0 Ω
928	R9036	B1F	3001051030000	10K Ω
929	R9037	B4D	3001053330000	33K Ω
930	R9038	B1E	3001051020000	1K Ω
931	R9039	B2F	3001051010000	100 Ω
932	R9040	B1F	3001051020000	1K Ω
933	R9041	B1F	3001054720000	4.7K Ω
934	R9042	T3C	3001051030050	10K Ω
935	R9043	B1E	3001053330000	33K Ω
936	R9045	B1D	3001051050000	1M Ω
937	R9046	B1E	3001054740010	470K Ω
938	R9047	B1E	3001053330000	33K Ω
939	R9048	B1D	3001051540000	150K Ω
940	R9050	B1E	3001054730010	47K Ω
941	R9053	B1D	3099080398010	0.39 Ω
942	R9054	B1D	3099080398010	0.39 Ω
943	R9055	B1D	3099080398010	0.39 Ω

No.	Ref. No.	Print No.	Part No.	Description
944	R9057	B1D	3001051540000	150K Ω
945	R9058	B1E	3001051050000	1M Ω
946	R9059	B1E	3001054740010	470K Ω
947	R9062	T4C	3001051030000	10K Ω
948	R9063	B4D	3001053300000	33 Ω
949	R9065	T5D	3001051030000	10K Ω
950	R9066	B2G	3001051520000	1.5K Ω
951	R9067	B2G	3001056820000	6.8K Ω
952	R9068	B2F	3001053320000	3.3K Ω
953	R9069	T4C	3001051030050	10K Ω
954	R9070	T4E	3001051030050	10K Ω
955	R9071	B3G	3001053310000	330 Ω
956	R9072	T4F	3001051520000	1.5K Ω
957	R9073	T4E	3001051030050	10K Ω
958	R9075	B3G	3001055100020	51 Ω
959	R9076	T1E	3001051030050	10K Ω
960	R9078	B3G	3001055620000	5.6K Ω
961	R9079	B2G	3001053330000	33K Ω
962	R9081	B3G	3001051030000	10K Ω
963	R9084	B3G	3001055630000	56K Ω
964	R9085	B2G	3001051040000	100K Ω

No.	Ref. No.	Print No.	Part No.	Description
965	R9096	T2F	3001050000000	0Ω
966	R9100	B1D	3101055600000	100pF
967	R9101	B1E	3101055600000	100pF
968	R9103	T3C	3233033900000	Air-core coil
969	R9106	T4F	3221505601000	Bead
970	RN256	B3J	3005051030010	10KΩ
971	U1002	T4C	3616003000000	Switch IC
972	U1007	T4E	3911500600000	Mixer
973	U101	B1I	3616059000000	Switch IC
974	U102	B1I	3605002057290	Operational amplifier
975	U103	T1I	3604019000000	PLL IC
976	U104	B1I	3616059000000	Switch IC
977	U105	T1F	3609003999000	MMIC amplifier
978	U201	B3I	3610010000010	CPU
979	U242	B2J	3612044000010	Memory
980	U244	B4I	3612999000290	Memory
981	U310	B4H	3609042000000	Sensor
982	U312	B4L	3805000000030	EMI filter
983	U313	B5E	3805000000030	EMI filter
984	U314	B4K	3805000000030	EMI filter
985	U315	B4G	3805000000030	EMI filter

No.	Ref. No.	Print No.	Part No.	Description
986	U316	B4F	3805000000030	EMI filter
987	U317	B4G	3805000000030	EMI filter
988	U318	B4F	3805000000030	EMI filter
989	U319	B4C	3805000000030	EMI filter
990	U320	B3K	3805000000030	EMI filter
991	U321	B3L	3805000000030	EMI filter
992	U322	B3L	3805000000030	EMI filter
993	U401	T3H	3603999000000	IF processor
994	U501	B3C	3609999000300	GPS LNA
995	U502	B3D	1615000001720	GPS module
996	U601	T4G	3608011000050	Power management IC
997	U603	B1J	3608006000000	Power management IC
998	U604	B3F	3608020005750	Power management IC
999	U605	B2E	3608020005750	Power management IC
1000	U606	T3J	3608006000000	Power management IC
1001	U607	T5J	3609010000170	Reset IC
1002	U608	B3E	3608006000000	Power management IC
1003	U609	T5I	3608006000000	Power management IC
1004	U610	T2I	3608006000030	Power management IC
1005	U611	T4H	3608011000050	Power management IC
1006	U612	B1J	3608006000000	Power management IC

No.	Ref. No.	Print No.	Part No.	Description
1007	U701	T1J	3606010000010	D/A converter
1008	U801	T4K	3602023005740	Audio amplifier
1009	U820	T2L	3616037000020	Switch IC
1010	U821	T2K	3613010000000	Baseband processor
1011	U9002	B1E	3605025000020	Operational amplifier
1012	U9003	B1C	5404000000060	Sensor
1013	X101	T1I	3701019250030	Crystal oscillator
1014	X201	B5J	3701327610060	Crystal
1015	X203	B3H	3701019250040	TCXO
1016	Z501	B3C	3804157560000	GPS filter
1017	Z9001	B3F	3802733540030	Crystal filter
1018	/	/	/	Main board

PD70X/ PD70XG/ HD705/ HD705G Channel Board

No.	Ref. No.	Part No.	Description
1	C1001	3101052710000	270PF
2	C1002	3101052710000	270PF
3	C1003	3101052710000	270PF
4	C1004	3101052710000	270PF
5	C1005	3101052710000	270PF
6	C1006	3101052710000	270PF

No.	Ref. No.	Part No.	Description
7	C1007	3101052710000	270PF
8	C1010	3101052710000	270PF
9	C1011	3101052710000	270PF
10	C1012	3101052710000	270PF
11	C1015	3101051040060	0.1UF
12	C1016	3101051040060	0.1UF
13	C1017	3101051040060	0.1UF
14	D1001	3310040000000	ESD protection diode
15	D1002	3307120100050	LED
16	D1003	3310040000000	ESD protection diode
17	D1004	3310040000000	ESD protection diode
18	D1005	3310040000000	ESD protection diode
19	D1006	3310040000000	ESD protection diode
20	D1007	3310040000000	ESD protection diode
21	D1008	3310040000000	ESD protection diode
22	D1009	3399040600020	ESD protection diode
23	D1011	3310040000000	ESD protection diode
24	D1013	3399040600020	ESD protection diode
25	D1014	3310040000000	ESD protection diode
26	J1001	5201016100040	Board-to-board connector
27	L1001	3221506181000	Bead

No.	Ref. No.	Part No.	Description
28	Q1001	3403009000010	Compound transistor
29	R1001	3001056810000	680Ω
30	R1002	3001051210010	120Ω
31	S1003	4301080000020	Momentary contact switch
32	U1001	3805000000040	EMI filter
33	U1002	3608006000030	Power management IC
34	/	41PD7002002B0	PCB

PD78X/ PD78XG/ HD785/ HD785G Channel Board

No.	Ref. No.	Part No.	Description
1	C1001	3101052710000	270PF
2	C1002	3101052710000	270PF
3	C1003	3101052710000	270PF
4	C1004	3101052710000	270PF
5	C1005	3101052710000	270PF
6	C1006	3101052710000	270PF
7	C1007	3101052710000	270PF
8	C1010	3101052710000	270PF
9	C1011	3101052710000	270PF
10	C1012	3101052710000	270PF
11	C1015	3101051040060	0.1UF

No.	Ref. No.	Part No.	Description
12	C1016	3101051040060	0.1UF
13	C1017	3101051040060	0.1UF
14	D1001	3310040000000	ESD protection diode
15	D1002	3307120100050	LED
16	D1003	3310040000000	ESD protection diode
17	D1004	3310040000000	ESD protection diode
18	D1005	3310040000000	ESD protection diode
19	D1006	3310040000000	ESD protection diode
20	D1007	3310040000000	ESD protection diode
21	D1008	3310040000000	ESD protection diode
22	D1009	3399040600020	ESD protection diode
23	D1011	3310040000000	ESD protection diode
24	D1013	3399040600020	ESD protection diode
25	D1014	3310040000000	ESD protection diode
26	J1001	5201016100040	Board-to-board connector
27	L1001	3221506181000	Bead
28	Q1001	3403009000010	Compound transistor
29	R1001	3001056810000	680Ω
30	R1002	3001051210010	120Ω
31	S1003	4301080000020	Momentary contact switch
32	U1001	3805000000040	EMI filter

No.	Ref. No.	Part No.	Description
33	U1002	3608006000030	Power management IC
34	/	41PD7802006C0	PCB

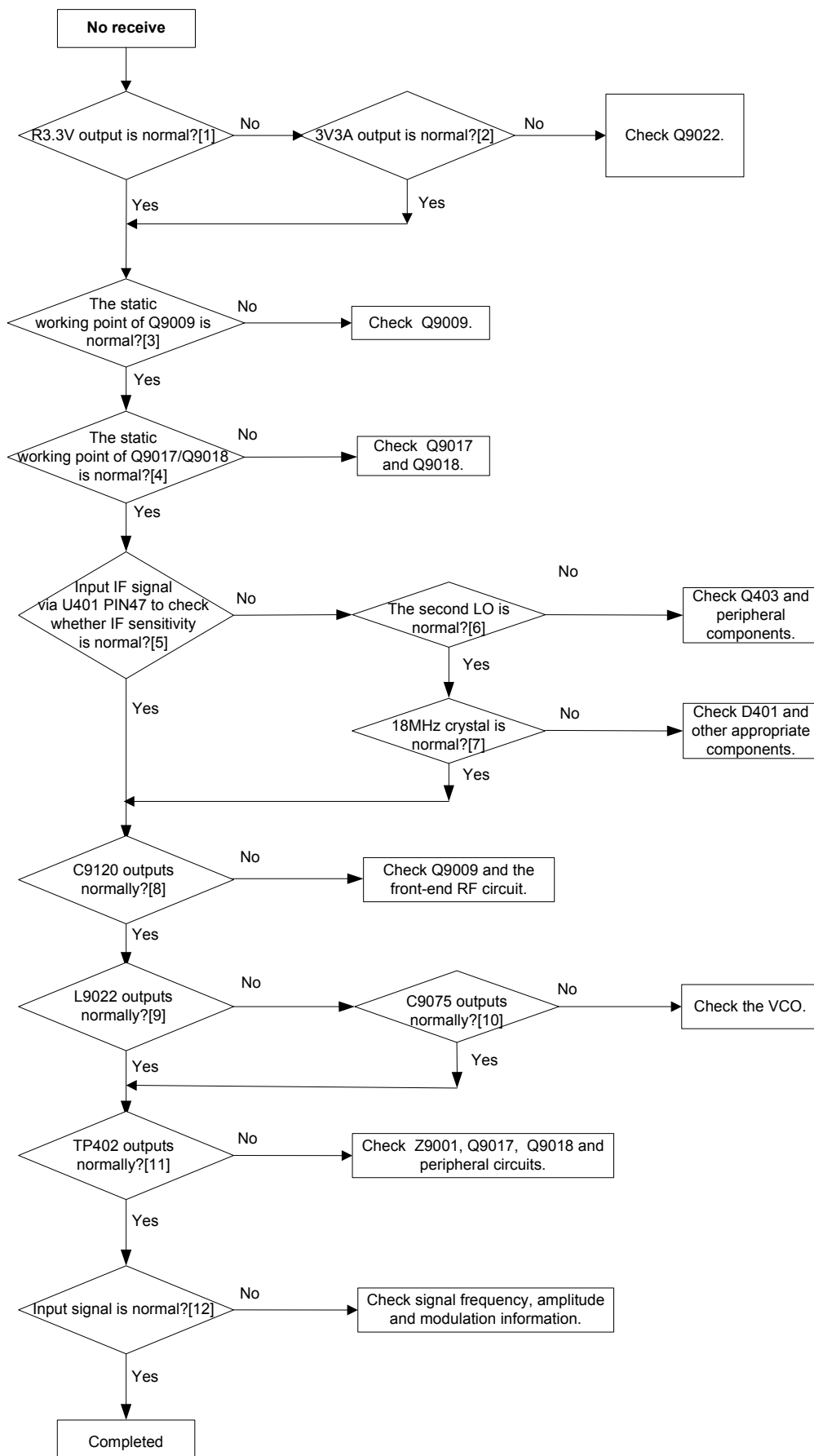
PD78X/ PD78XG/ HD785/ HD785G Keyboard

No.	Ref. No.	Part No.	Description
1	D1	3307990000260	LED
2	D2	3307990000260	LED
3	D3	3307990000260	LED
4	D4	3307990000260	LED
5	D5	3307990000260	LED
6	D6	3307990000260	LED
7	D7	3307990000260	LED
8	D8	3310040000010	ESD protection diode
9	D9	3310040000010	ESD protection diode
10	J4	5201016000010	Board-to-board connector
11	R1	3001051010000	100Ω
12	R2	3001051010000	100Ω
13	R3	3001051010000	100Ω
14	R4	3001051010000	100Ω
15	R5	3001051010000	100Ω
16	R6	3001051010000	100Ω

No.	Ref. No.	Part No.	Description
17	R7	3001051010000	100Ω

10.8 Troubleshooting Flow Chart

Receiver Circuit



Description of Normal Situations:

[1] Output voltage at Q9022 PIN 3: about 3.25V.

[2] Output voltage at U606 PIN5 or input voltage at Q9022 PIN4: about 3.3V.

[3] Vbe: about 0.84V; Vce: about 2.65V (in the case of no signal reception).

[4] For Q9018, Vbe: about 0.76V; Vce: about 0.95V;

for Q9017, Vbe: about 0.7V; Vce: 0.85V (in the case of no signal reception).

[5] Cut off the front-end circuit, and input a 73.35MHz IF signal at TP402 to test IF sensitivity. Normally, the IF sensitivity is -109dBm.

[6] Frequency of Q403: 71.1/75.6MHz.

[7] Frequency of L411: 18MHz.

[8] Input a -30dBm RF signal at the antenna connector and test at C9120. Normally, gain>13dB, output signal>-17dBm.

[9] Input a -30dBm RF signal at the antenna connector and test at R9005 (do not cut off the back-end circuit). Normally, gain>1dB, output signal>-29dBm.

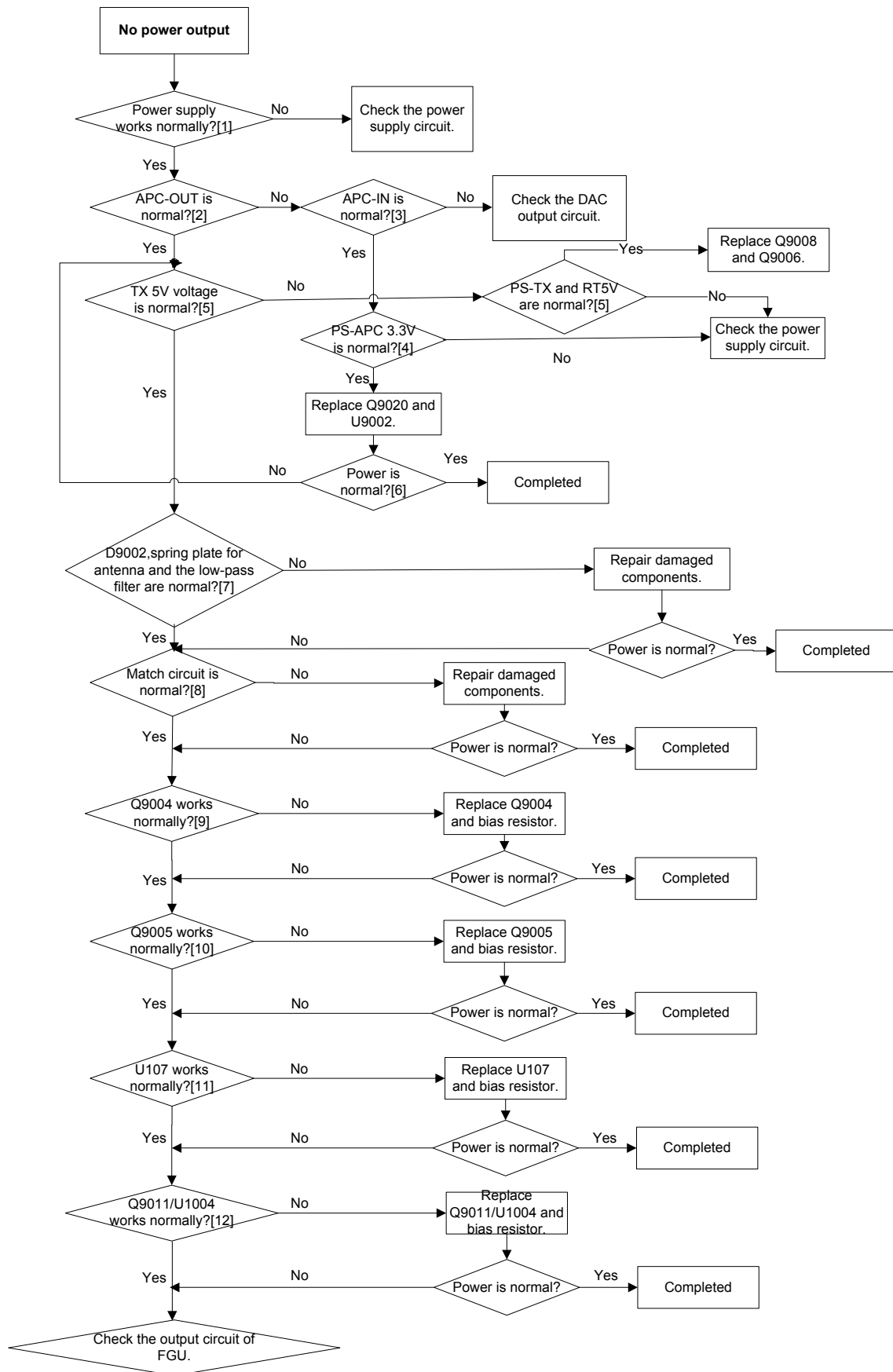
[10] Signal frequency: $RF \pm IF$, signal amplitude>0dBm.

[11] For input of -80dBm signal at L9022, gain>25dB, output signal>-55dBm;

for input of -30dBm signal, output signal<-20dBm.

[12] The input signal at the antenna connector, with standard tuning information (AF=1KHz, FM=3KHz), is -47dBm.

Transmitter Circuit



Description of Normal Situations:

- [1] Voltage of the power supply: about 7.4V.
- [2] For low power, APC-OUT: 1.3-1.4V; for high power, APC-OUT: 1.5-1.8V.
- [3] For low power, APC-IN: 1.2-1.3V; for high power, APC-IN: 1.5-1.7V.
- [4] PS-APC: about 3.3V.
- [5] TX5V: about 5V; RT5V: about 5V; PS-TX: about 3.3V.
- [6] High power: about 2.5W; low power: about 1.2W.
- [7] Start-up voltage of D9002: about 0.7V. The low-pass coil must be soldered appropriately and remain in good condition. The spring plate for the antenna must well fit the antenna connector.
- [8] The match components must not be soldered inappropriately or damaged.
- [9] Vdd: about 7.3V; for low power, Vgg: 0.7-0.8V; for high power, Vgg: 0.85-1V.
- [10] Vdd: about 7.3V; for low power, Vgg: 1.3-1.4V; for high power, Vgg: 1.5-1.7V.
- [11] U107 PIN1: about 1.7V; U107 PIN3: about 3.3V.
- [12] For Q9011, Vb: about 0.8V, Vc: about 2.7V; for U1004, Vdd: about 3.3V, Vcont: 0V (during transmission).



Note

The above check operations should be made under 7.4V voltage.

FGU



Description of Normal Situations:

[1] During transmission (806-825/851-870) or reception (935-941), output voltage by Q107 PIN3: about 4V.

During transmission (896-902/935-941) or reception (851-870), output voltage by Q106 PIN3: about 4V.

[2] During transmission (806-825/851-870) or reception (935-941), voltage at Q108 E: about 2.1V.

[2] During transmission (896-902/935-941) or reception (851-870), voltage at Q104 E: about 2.1V.

[3] The CV value varies with frequencies. Generally, it is within the range 0.5V-4.5V.

[4] L110/L116 is on.

[5] Voltage at Q102 B: about 0.7V.

[6] MCSI-CLK-PLL outputs 960KHz clock.

11. VHF (136-174MHz) Information

11.1 Transmitter Circuit

The transmitter circuit is mainly composed of:

- RF power amplifier circuit
- Low-pass filter circuit (for suppressing harmonics)
- Auto power control circuit (APC) (including temperature detection circuit)

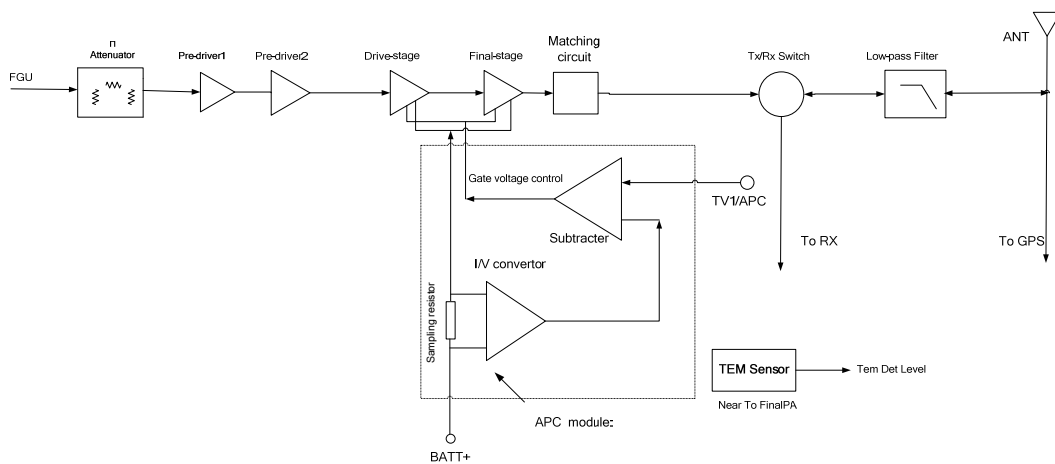


Figure 11-1 Diagram of Transmitter Circuit

11.1.1 RF Power Amplifier Circuit

The carrier signal generated by the TX VCO is modulated and amplified, and then feeds to the transmitter circuit via the following steps.

- Step 1** The signal passes through a π -type attenuator first, allowing interstage isolation between the RF power amplifier circuit and TX VCO.
- Step 2** The signal goes to a pre-driver amplifier (2SC3356) for pre-amplification, providing further interstage isolation.
- Step 3** The signal goes to another pre-driver amplifier (2SC4988) and a driver amplifier (RD01) for further power amplification, to provide appropriate signal to the final-stage amplifier (RD07) for final power amplification.

Step 4 After processed by multiple amplifiers, the signal passes through an impedance matching circuit, so as to reduce output power loss due to impedance mismatch.

Step 5 The signal passes through the TX/RX switch and goes to the low-pass filter.

11.1.2 Low-pass Filter Circuit

The low-pass filter is a high-order Chebyshev filter composed of lumped-parameter inductors and capacitors. Via this filter, the spurious signal within the stop band can be attenuated as much as possible while the in-band ripple is within the required range.

11.1.3 Auto Power Control Circuit

In the auto power control and temperature detection circuit, the drain current from the driver amplifier and final-stage amplifier is converted to voltage via the sampling resistor and subtraction circuit (composed of the first operational amplifier).

This voltage is compared with the APC control voltage (output by DAC) at the second operational amplifier. Then the error voltage, which is output by the second operational amplifier, controls TX power by controlling the bias voltage at the gates of the amplifiers (including the driver amplifier and the final-stage amplifier). The temperature sensor detects the surface temperature of the final-stage amplifier, and converts it to DC voltage. Then the DC voltage is compared with the voltage corresponding to the protection temperature (generally 80% of the extreme junction temperature) of the amplifier. If the surface temperature is too high, the bias voltage of the amplifier will be reduced until the surface temperature falls below the protection temperature.

11.2 Receiver Circuit

The receiver circuit mainly comprises the RF band-pass filter, low-noise amplifier, mixer, IF filter, IF amplifier and IF processor.

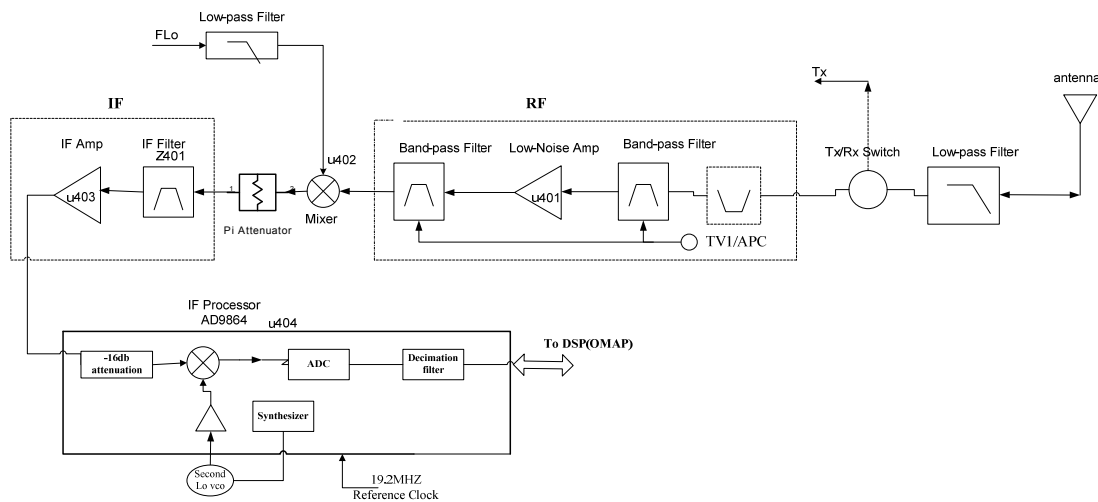


Figure 11-2 Diagram of Receiver Circuit

11.2.1 Receiver Front-end

The HF signal from the low-pass filter passes through the electrically tunable band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal and to send wanted band-pass signal to the low-noise amplifier (Q9009). The amplified signal goes to a band-pass filter controlled via APC/TV1 level, to remove out-of-band interference signal generated during amplification, and to send wanted HF signal to the mixer.

The wanted signal passes through the RF band-pass filter and low-noise amplifier and goes to the mixer (D9017). Meanwhile, the first local oscillator (LO) signal generated by VCO passes through the low-pass filter and also goes to the mixer (D9017). In the mixer, the wanted signal and the first LO signal are mixed to generate the first IF signal (44.85 MHz). Then the signal passes through a π -type attenuator (2dB) and the LC, to suppress carrier other than the first IF signal, and to increase the isolation between the mixer and the IF filter. After that, the first IF signal is processed by the crystal filter (Z9001), and is sent to the two-stage IF amplifier circuit (composed of PBR941) for amplification. Then the amplified signal goes to the IF processor AD9864 (U401) for processing.

11.2.2 Receiver Back-end

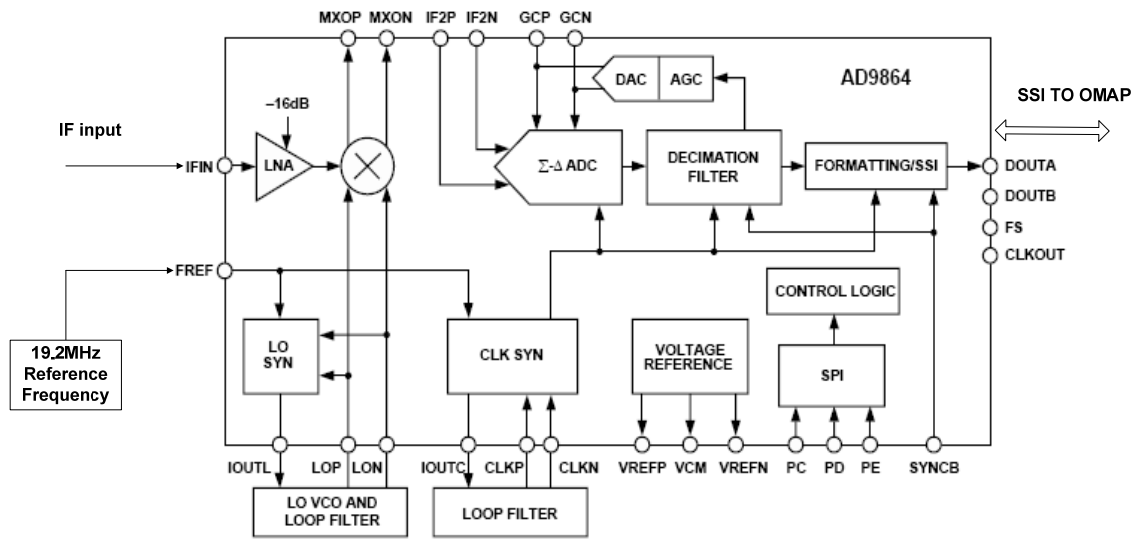


Figure 11-3 Diagram of IF Processor

The first IF signal (44.85MHz) output by the IF amplifier goes into AD9864 (U401) via Pin 47, where the signal is converted to the second IF signal (2.25MHz). Then the signal is converted to digital signal via ADC sampling, and output via the SSI interface. Finally, the digital signal is sent to DSP (OMAP5912) for demodulation.

AD9864 employs reference frequency of 19.2MHz and shares the crystal with the OMAP. The second LO VCO comprises an oscillator, a varactor and some other components, to provide the 47.1/42.6MHz LO signal. The sampling frequency of AD9864 is 18MHz, and is generated by the LC resonance loop.

11.3 Frequency Generation Unit (FGU)

The FGU is composed of VCO and PLL. It is the core module of the whole TX-RX system. This circuit provides accurate carrier frequency during transmission, and stable LO signal during reception. It has a direct influence on the performance of the system.

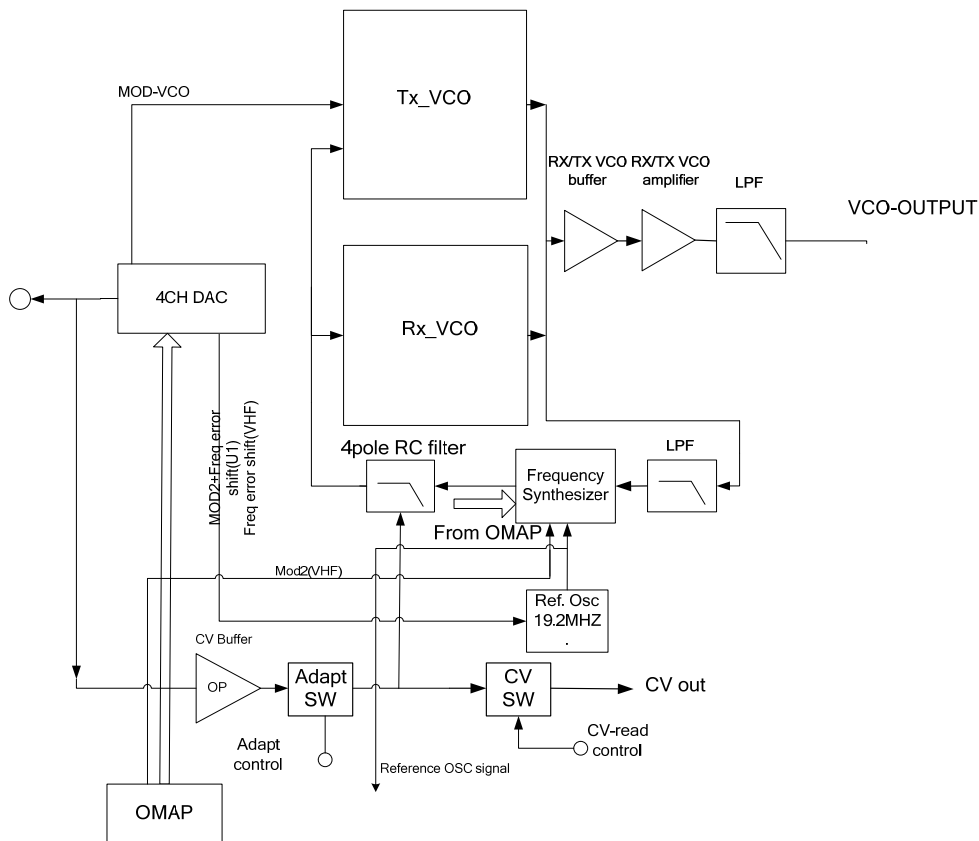


Figure 11-4 Diagram of FGU

11.3.1 Working Principle of PLL

The 19.2MHz frequency generated by the reference crystal oscillator goes to PLL for division, generating the reference frequency (i.e. step frequency f_1). Meanwhile, the frequency generated by VCO passes through the band-pass filter, and the second harmonic goes into the PLL, where frequency f_2 is generated through frequency division. Then frequencies f_1 and f_2 are compared in the phase detector (PD), to generate continuous pulse current. The current goes to the loop filter for RC integration, and is then converted to CV voltage. Then the CV voltage is sent to the varactor of VCO. It adjusts the output frequency of VCO directly until the CV voltage becomes constant. Then PLL is locked, and the fundamental frequency output by VCO goes to the TX-RX channel after passing through two buffer amplifiers.

11.3.2 Working Principle of VCO

VCO employs Colpitts oscillator circuit (the RX oscillator circuit is composed of D102, D103, D106, D107 and L112; the TX oscillator circuit is composed of D108, D109, D110, D101 and L117). It obtains different output frequencies by changing the varactor's control voltage (i.e. CV voltage).

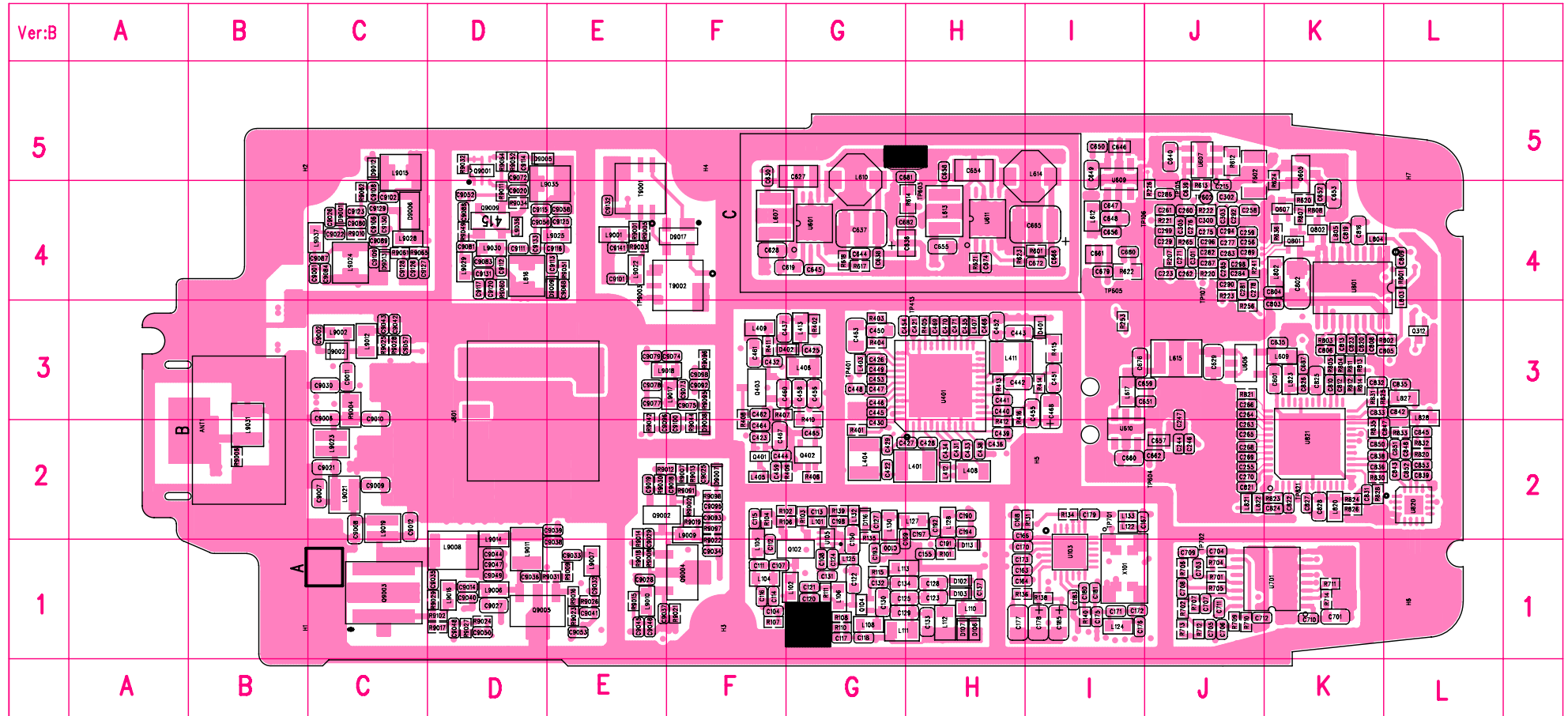
There are two types of VCO: TX VCO and RX VCO. Both types control EMD22 to switch operating status via OMAP. RX VCO is composed of the oscillator loop and Q104, to provide LO signal. TX VCO is composed of the oscillator loop and Q108, to provide carrier for TX signal.

11.3.3 Direct Modulation

In TX mode, direct modulation will be applied because of low VHF frequency. MOD-VCO and MOD-XO send modulation signal to VCO and PLL respectively to modulate TX VCO and PLL.

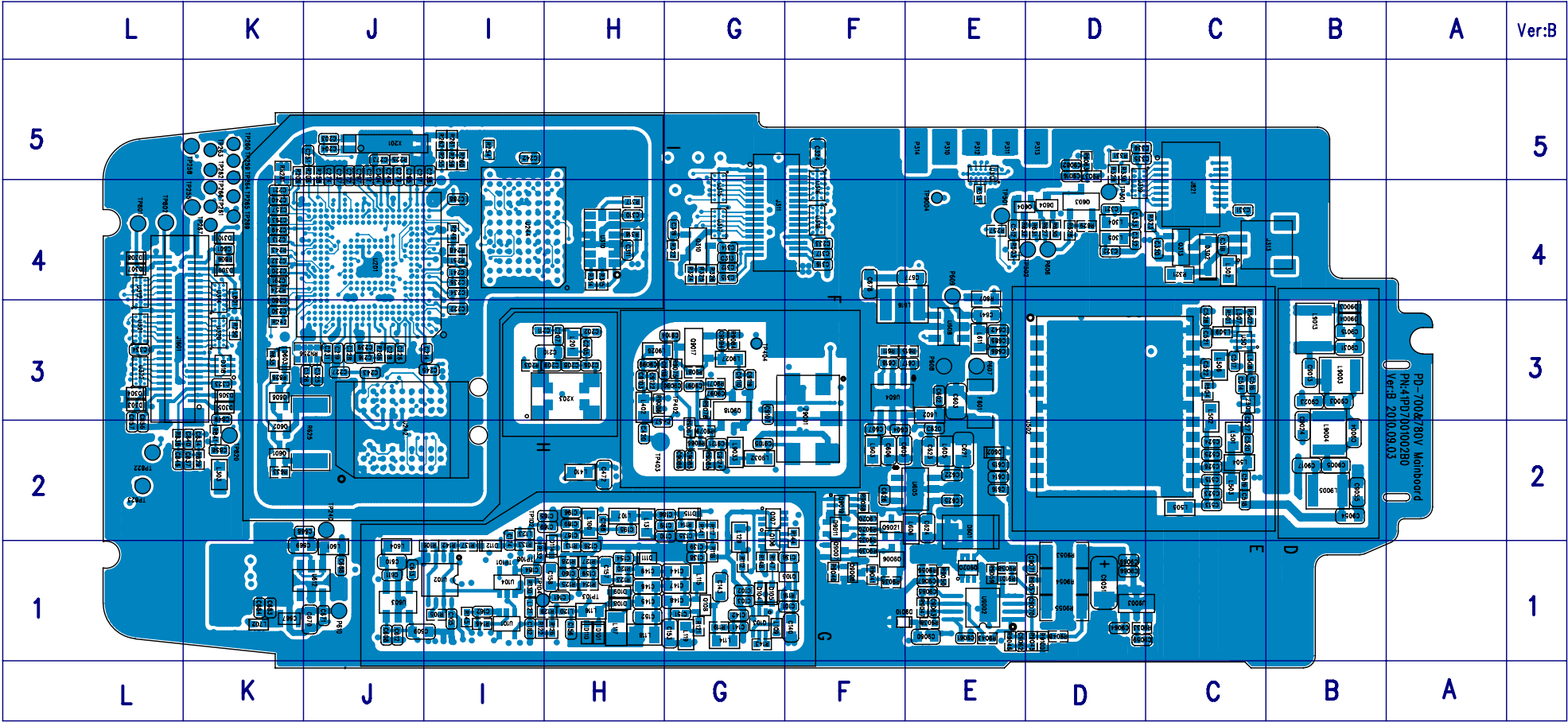
11.4 PCB View

PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board) Top Layer

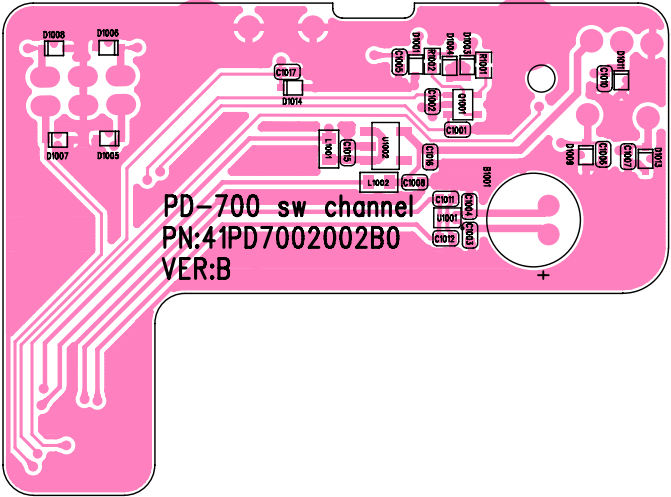


PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G PCB View (Main Board)

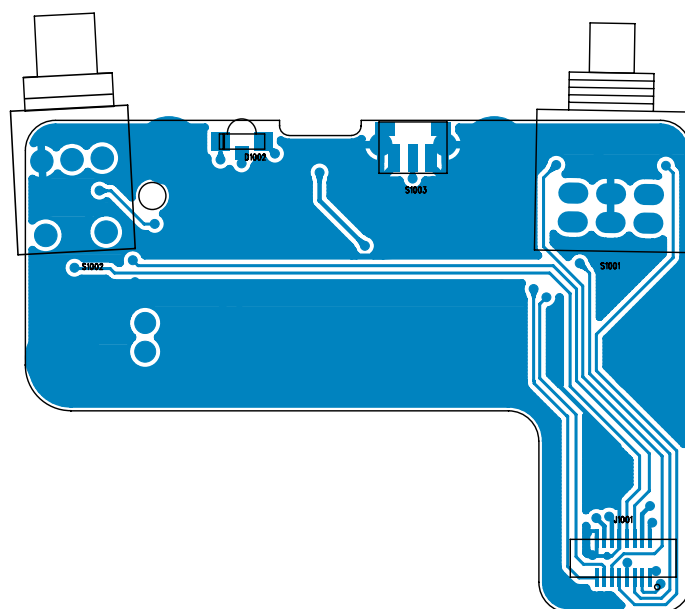
Bottom Layer



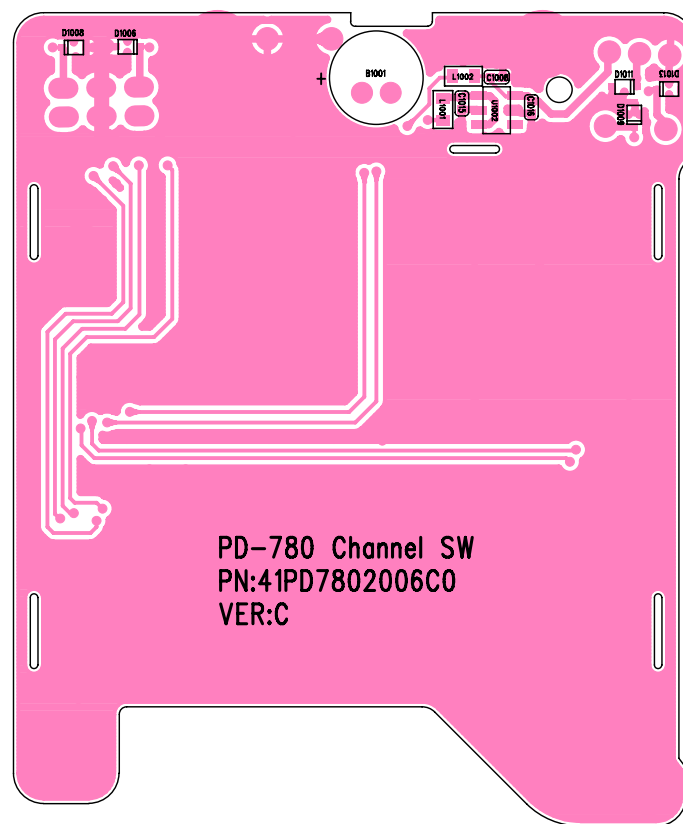
**PD70X/PD70XG/HD705/HD705G PCB View (Channel Board)
Top Layer**



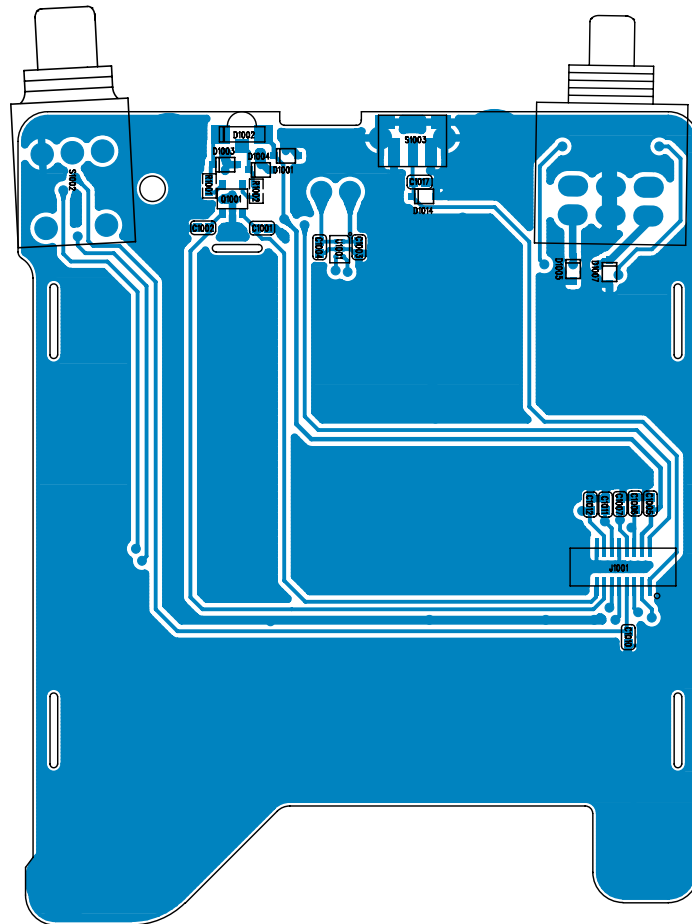
PD70X/PD70XG/HD705/HD705G PCB View (Channel Board) Bottom Layer



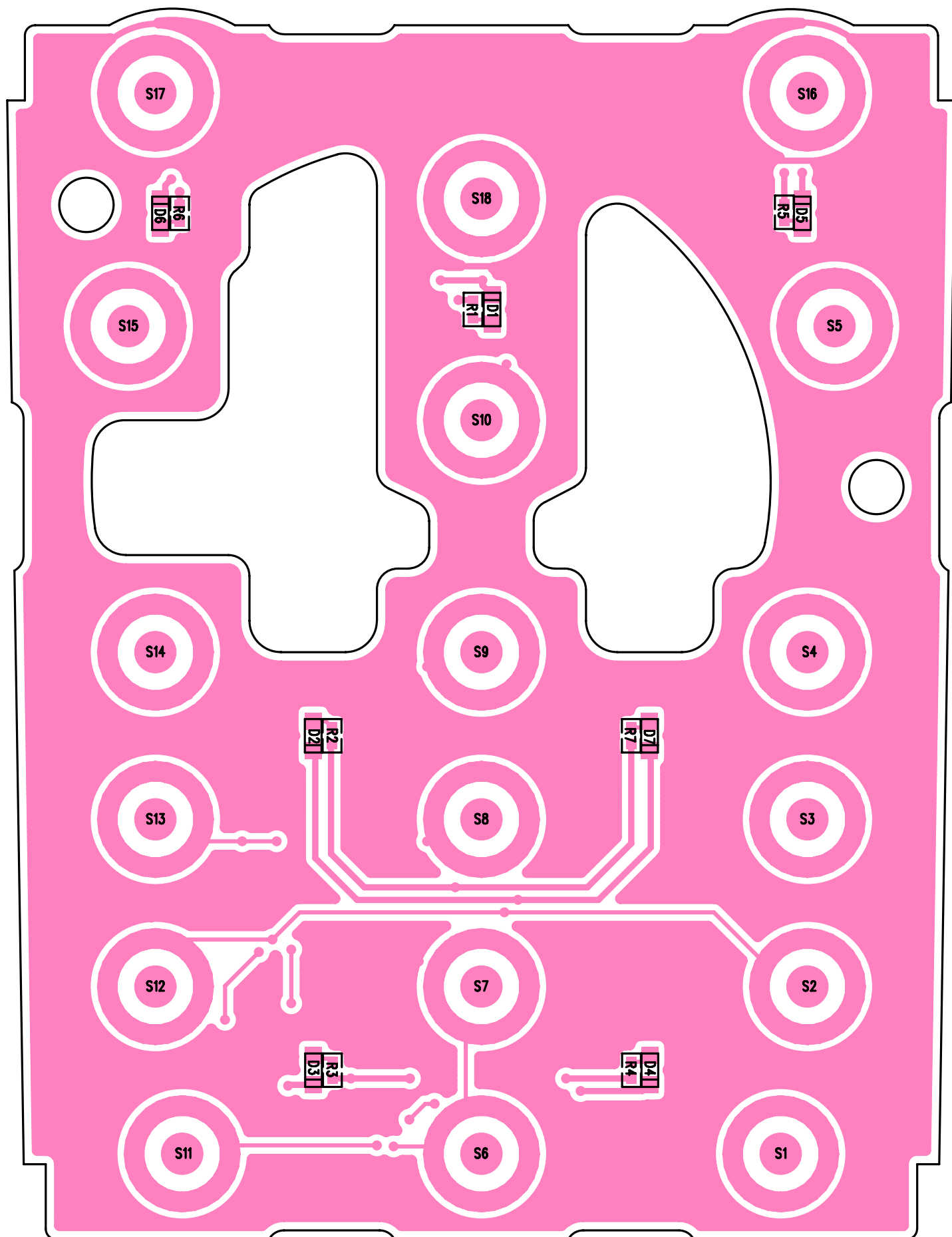
PD78X/PD78XG/HD785/HD785G PCB View (Channel Board) Top Layer



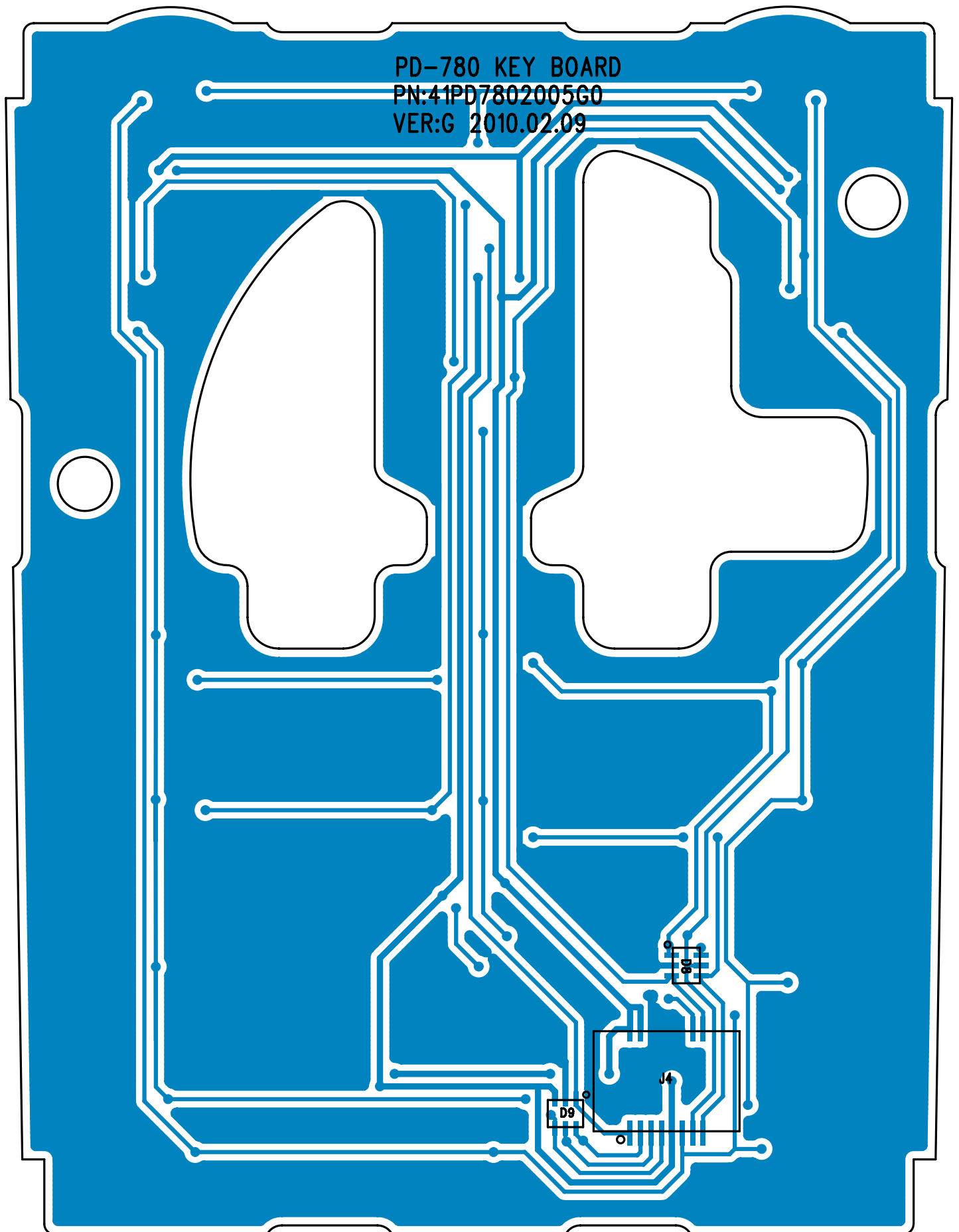
PD78X/PD78XG/HD785/HD785G PCB View (Channel Board)
Bottom Layer



PD78X/PD78XG/HD785/HD785G PCB View (Keyboard) Top Layer

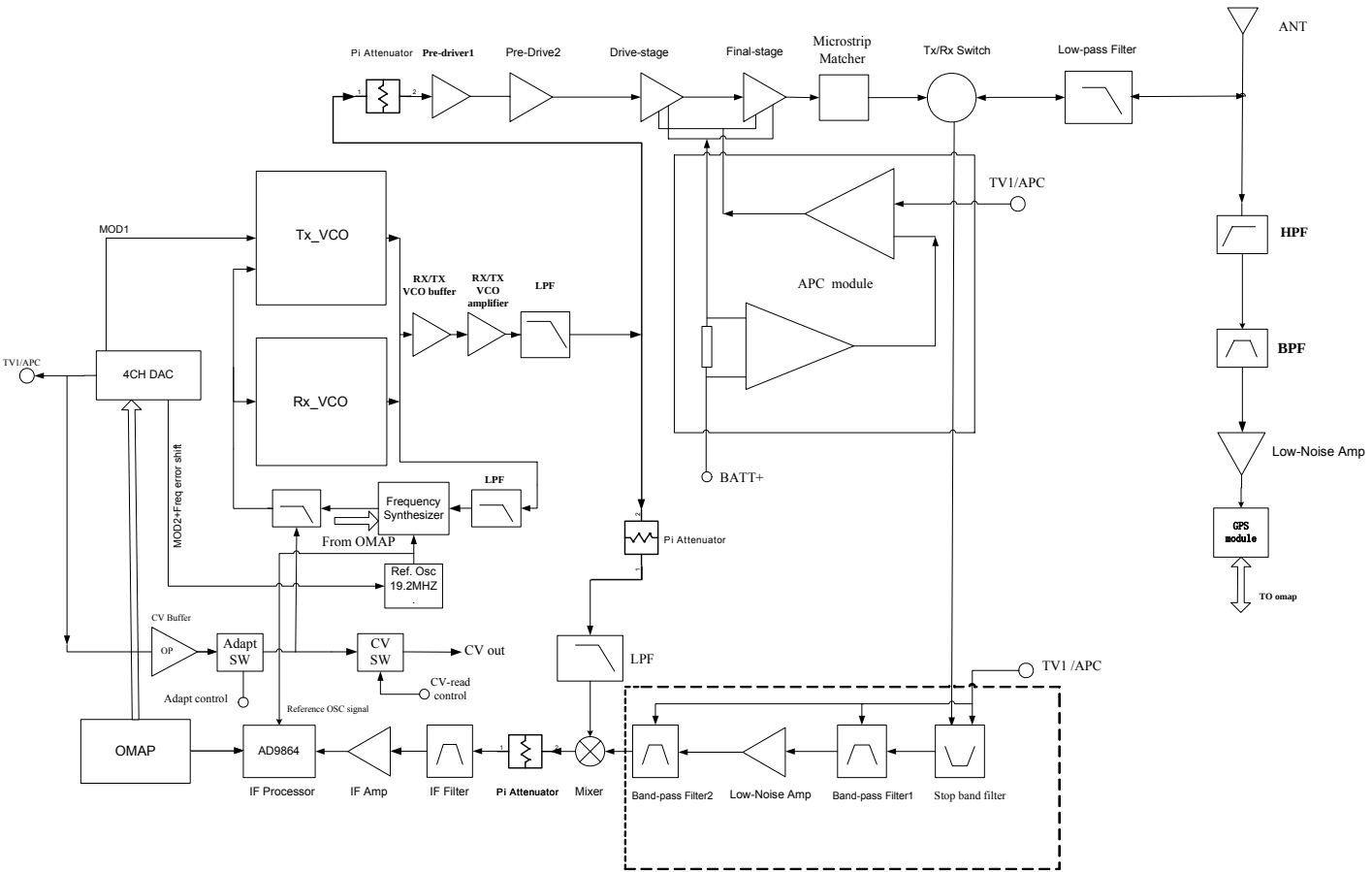


PD78X/PD78XG/HD785/HD785G PCB View (Keyboard)
Bottom Layer



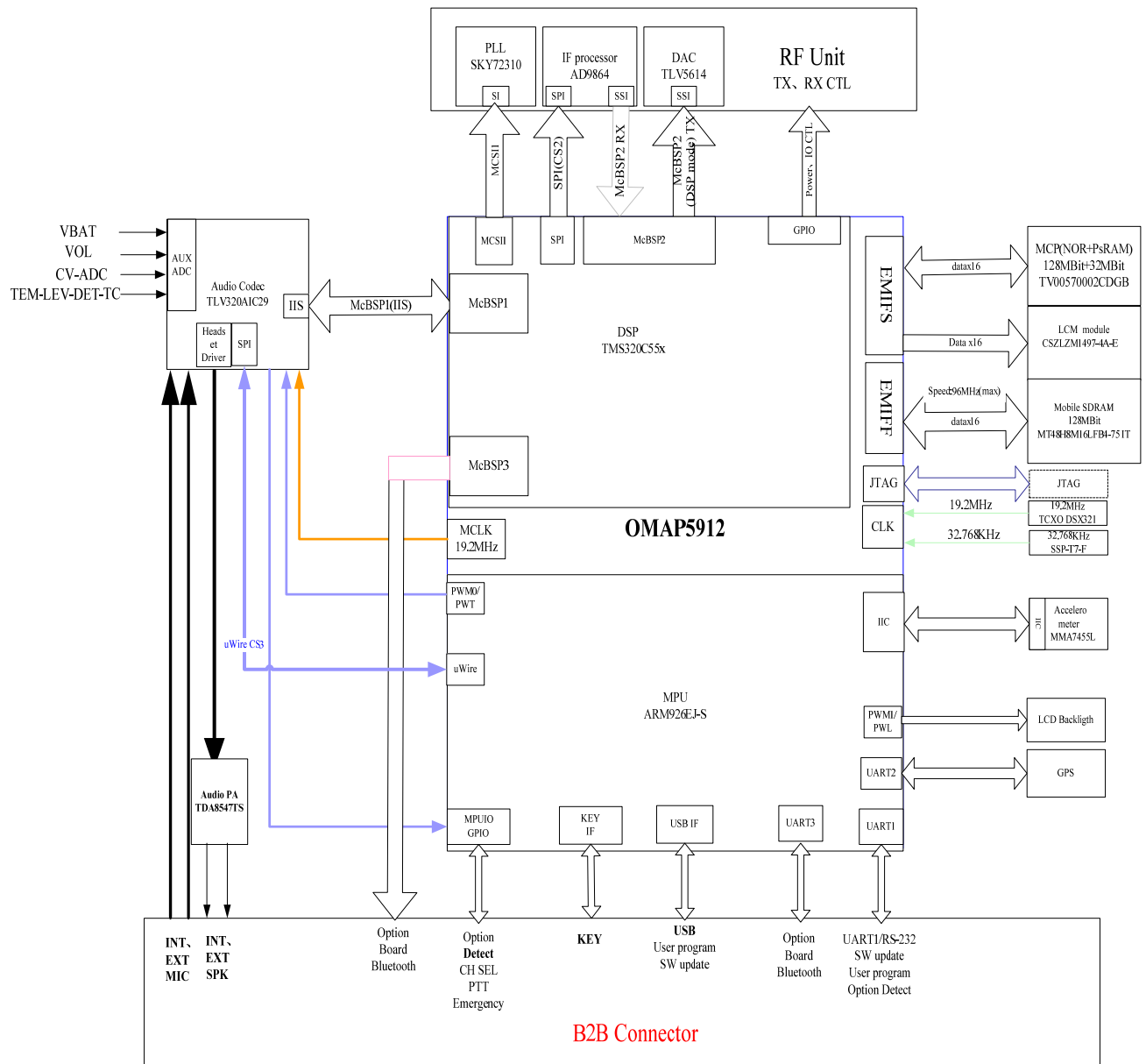
11.5 Block Diagram

PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G
Block Diagram (RF Section)

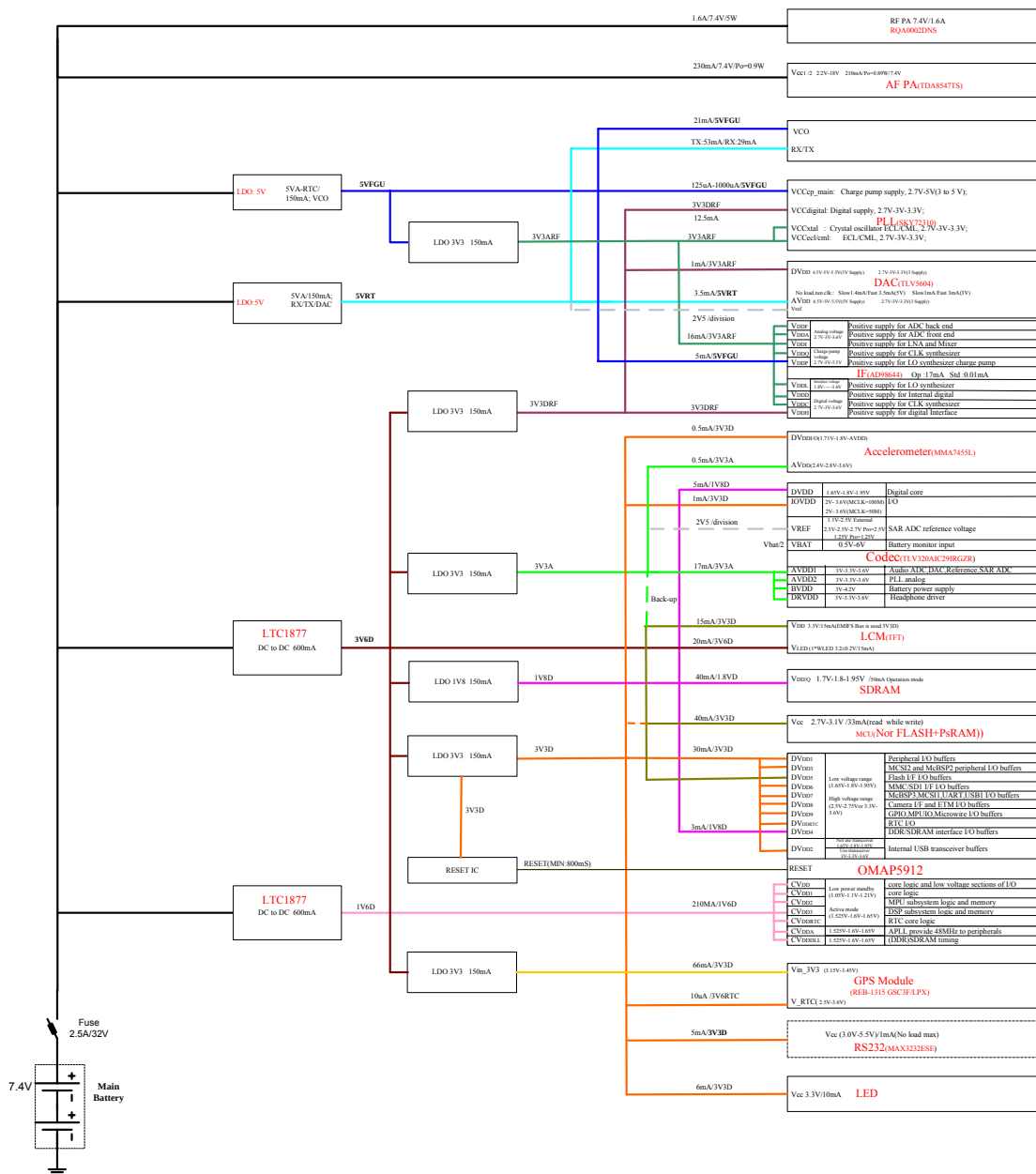


PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G

Block Diagram (Baseband Section)

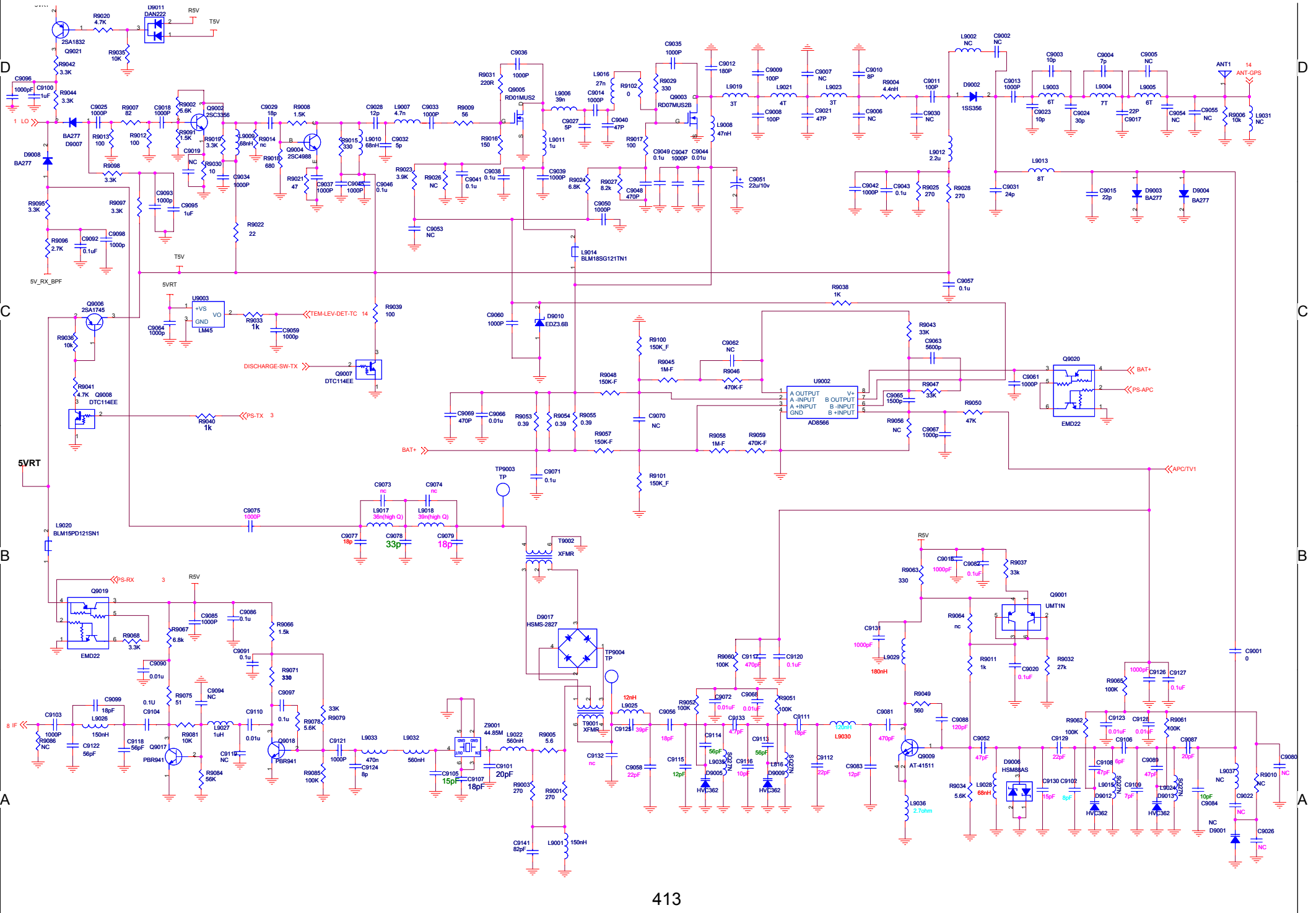


PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G
Block Diagram (Power Section)

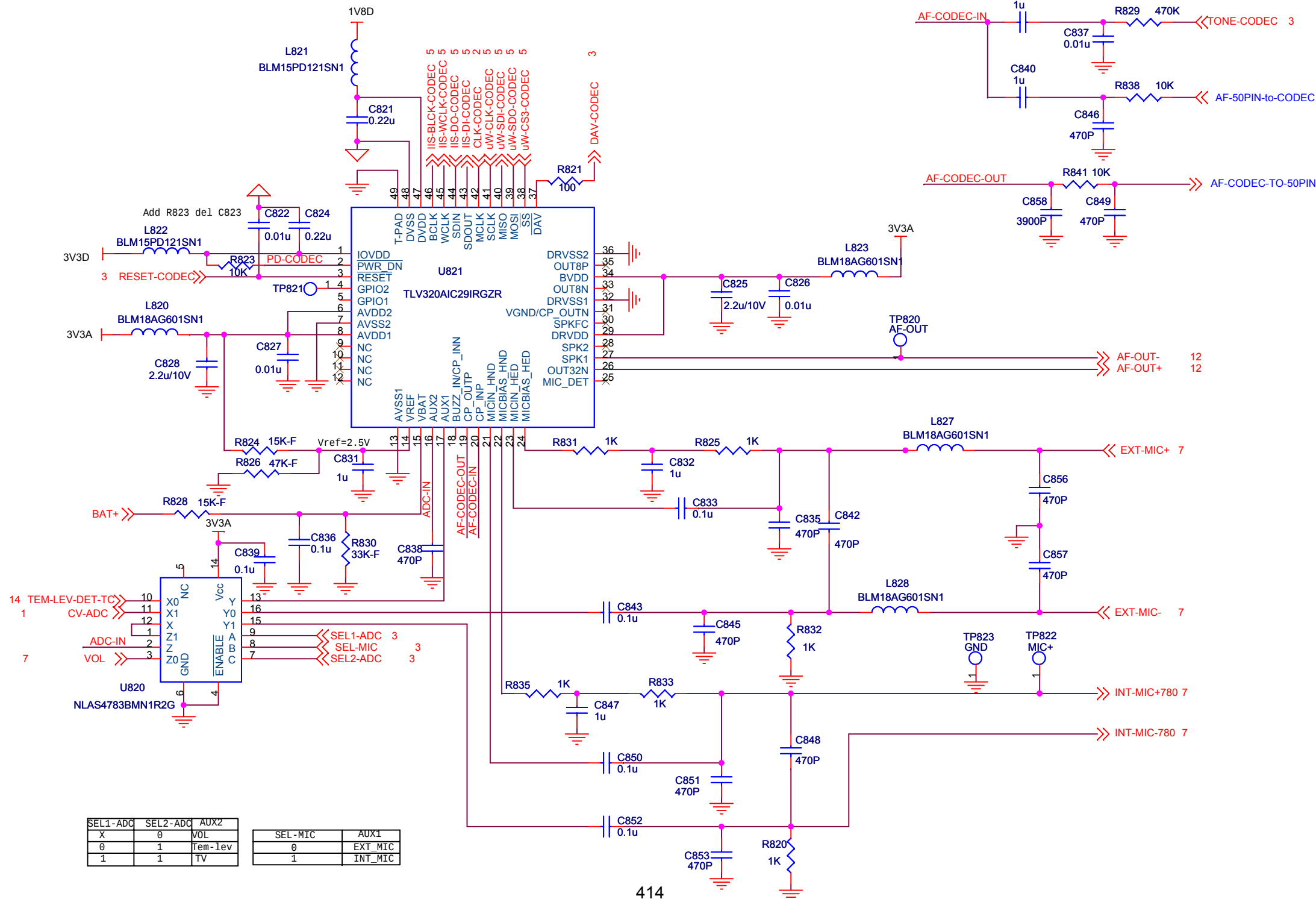


11.6 Schematic Diagram

'D78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Transmitter/Receiver)



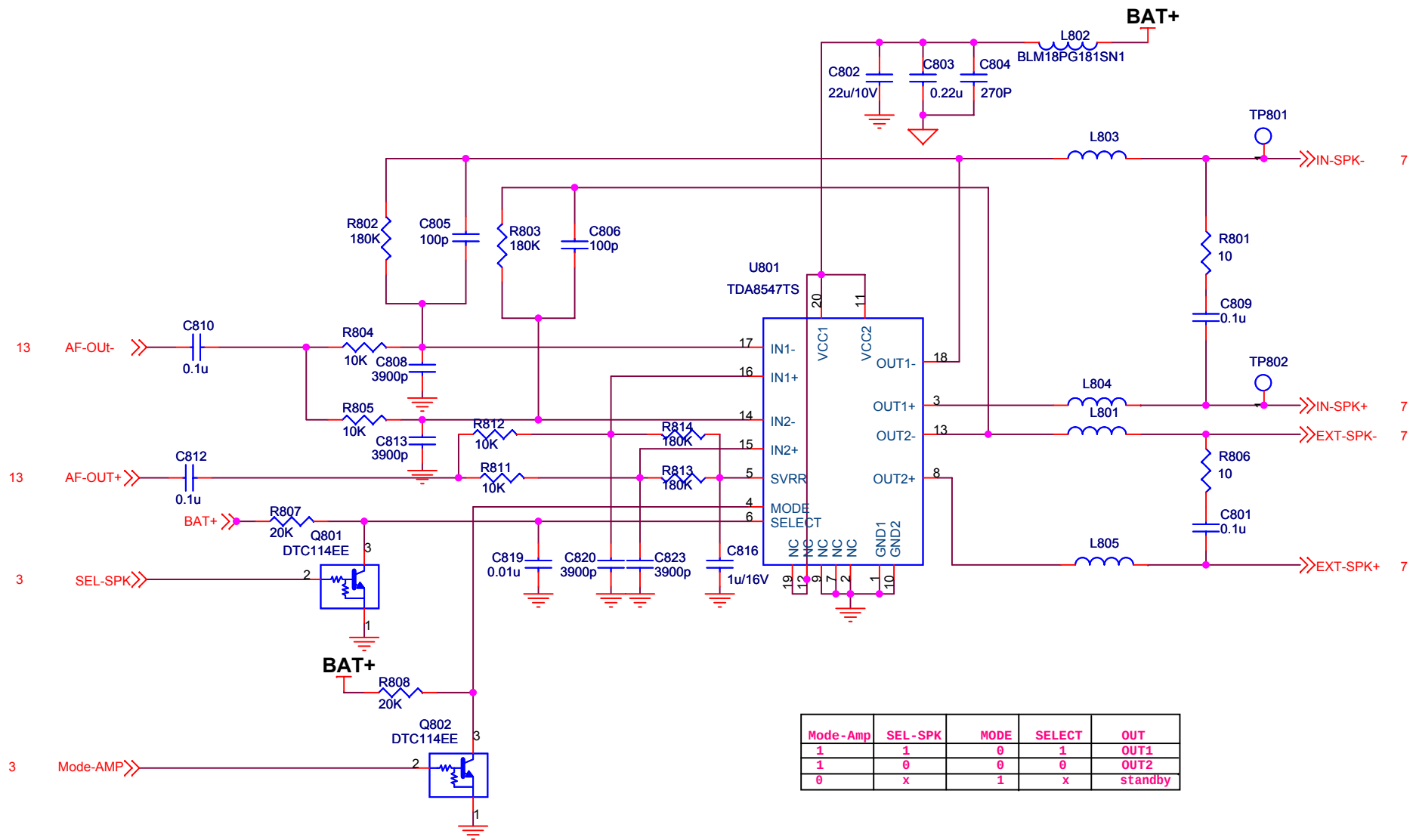
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram(CODEC)



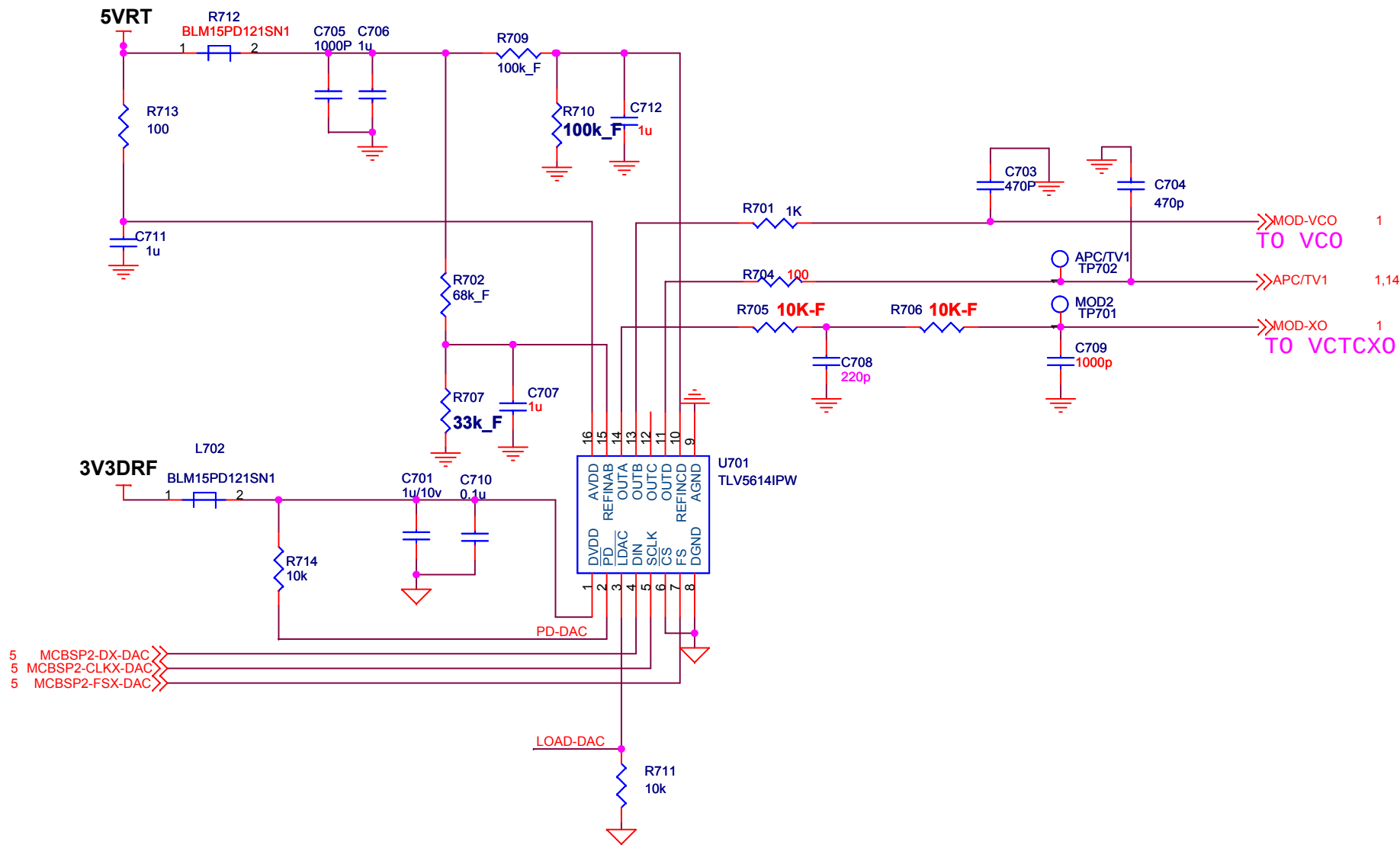
SEL1-ADC	SEL2-ADC	AUX2
X	0	VOL
0	1	Tem-Lev
1	1	TV

SEL-MIC	AUX1
0	EXT_MIC
1	INT_MIC

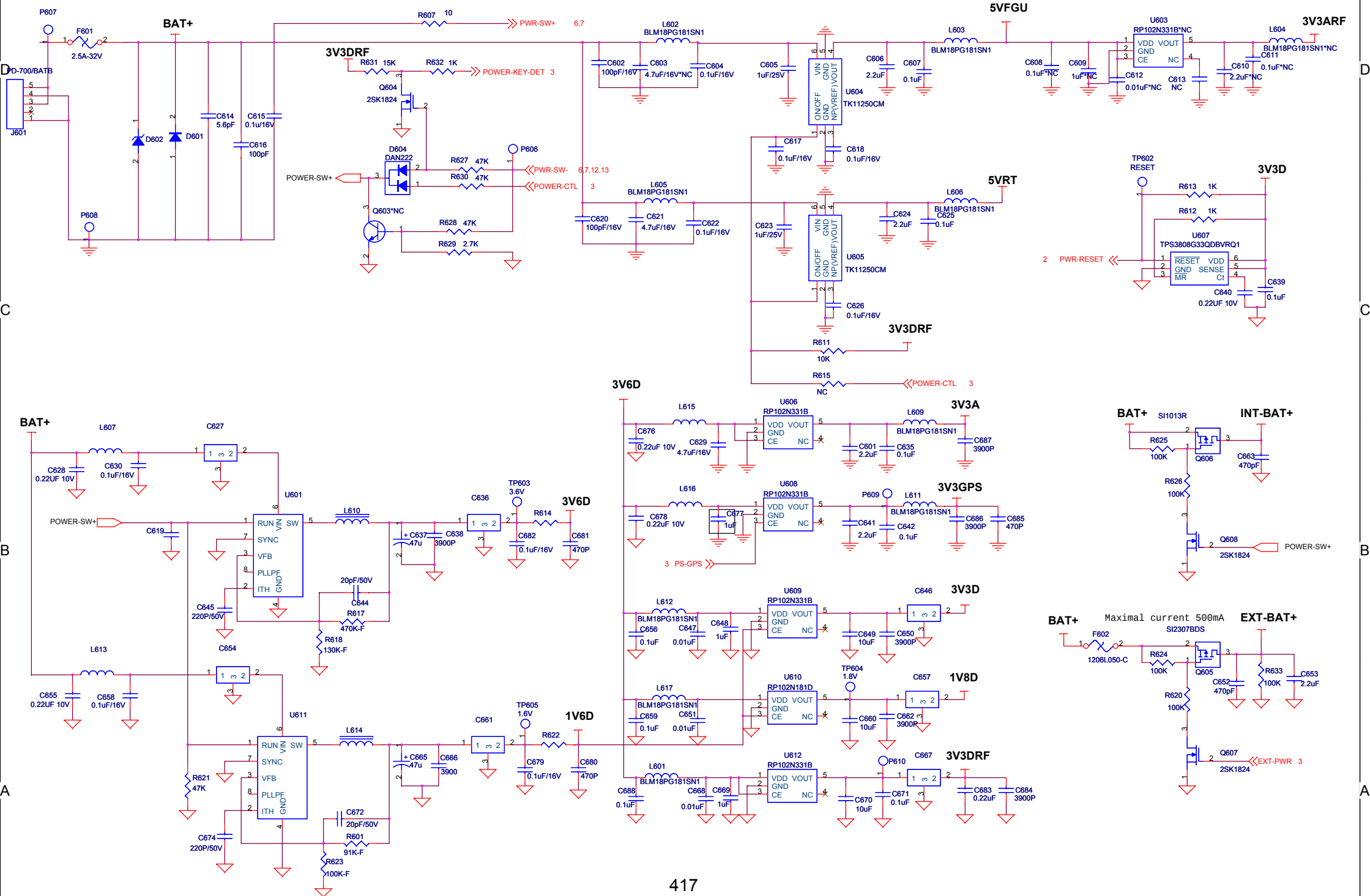
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Audio Amplifier)



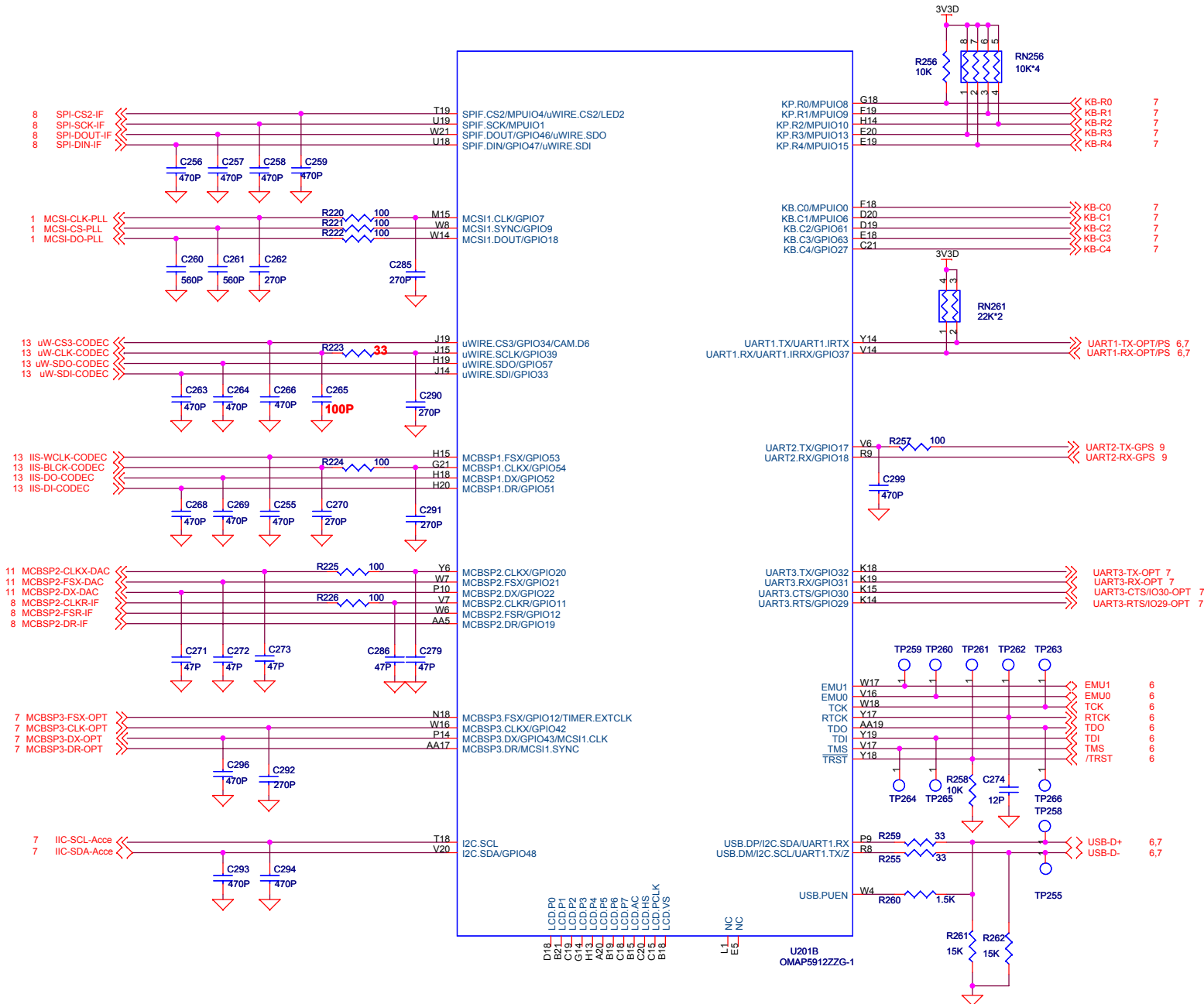
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (DAC)



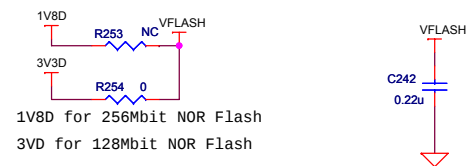
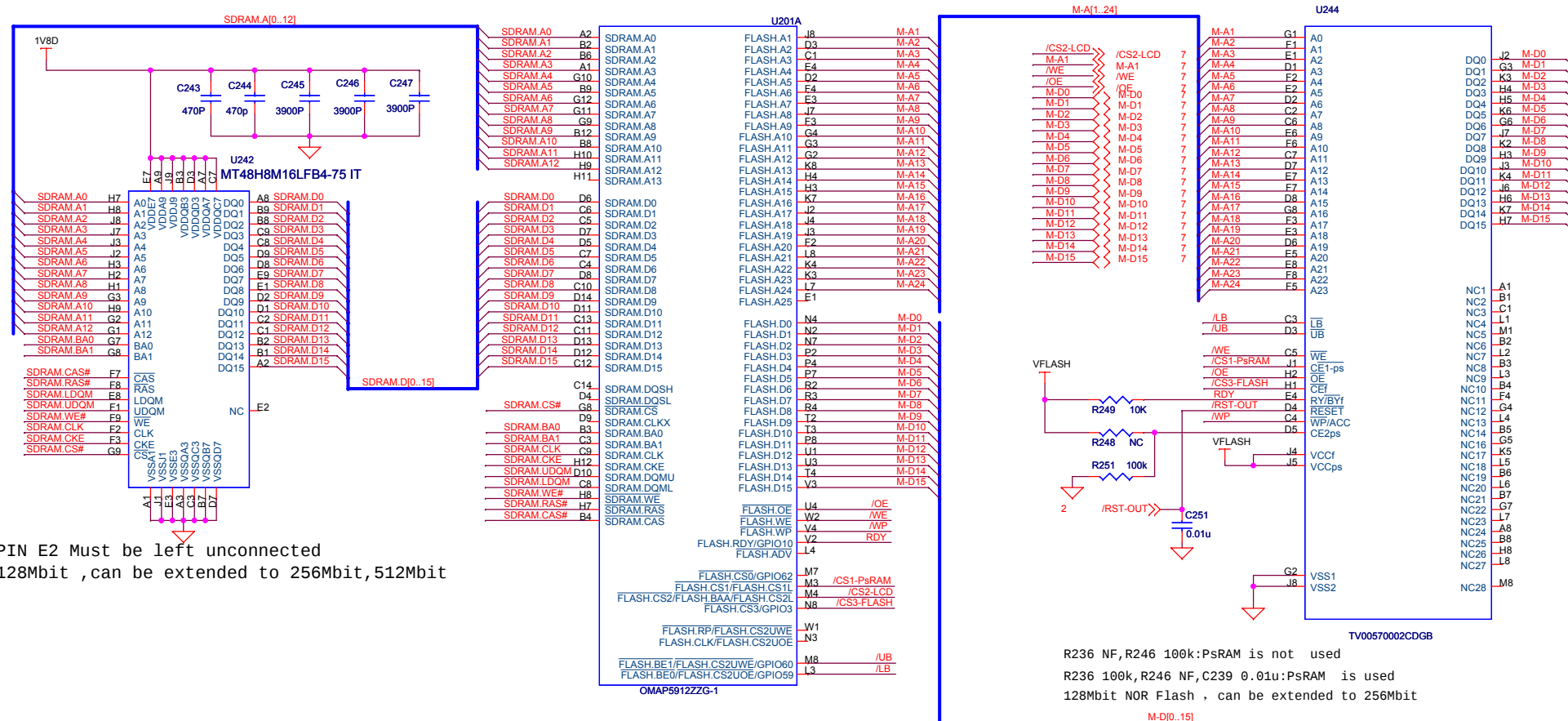
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (Power)



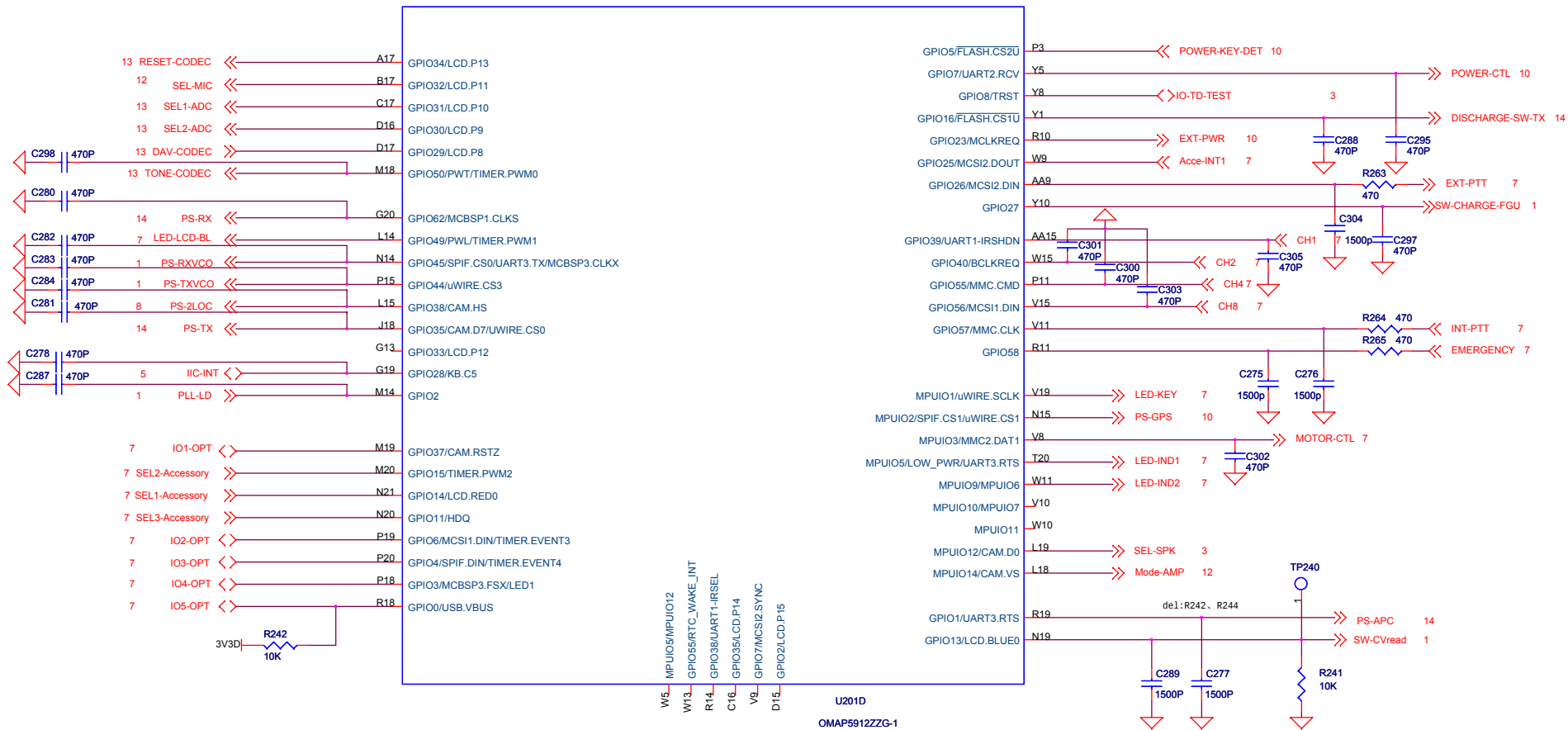
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP SI)



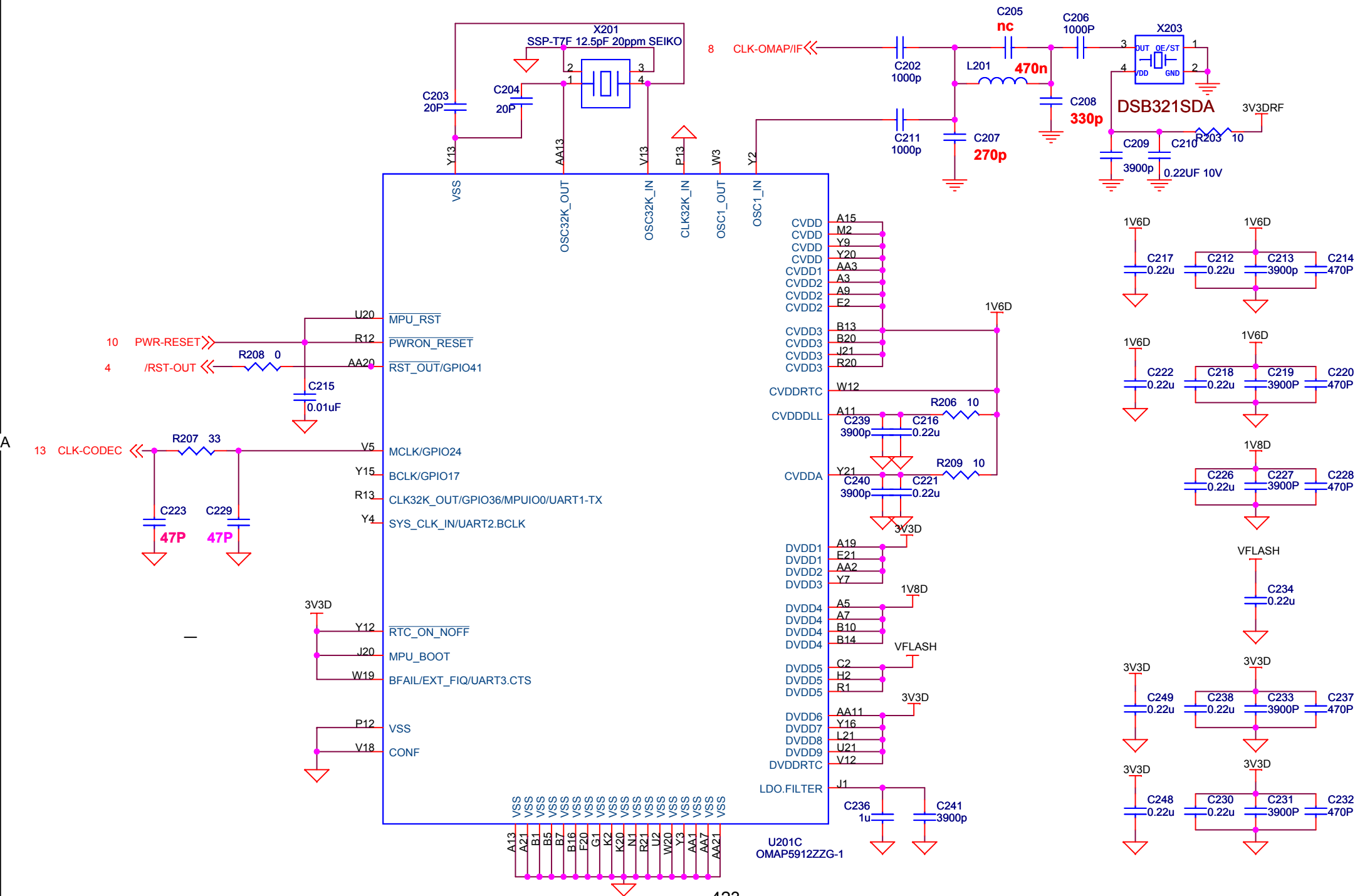
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP MEN)



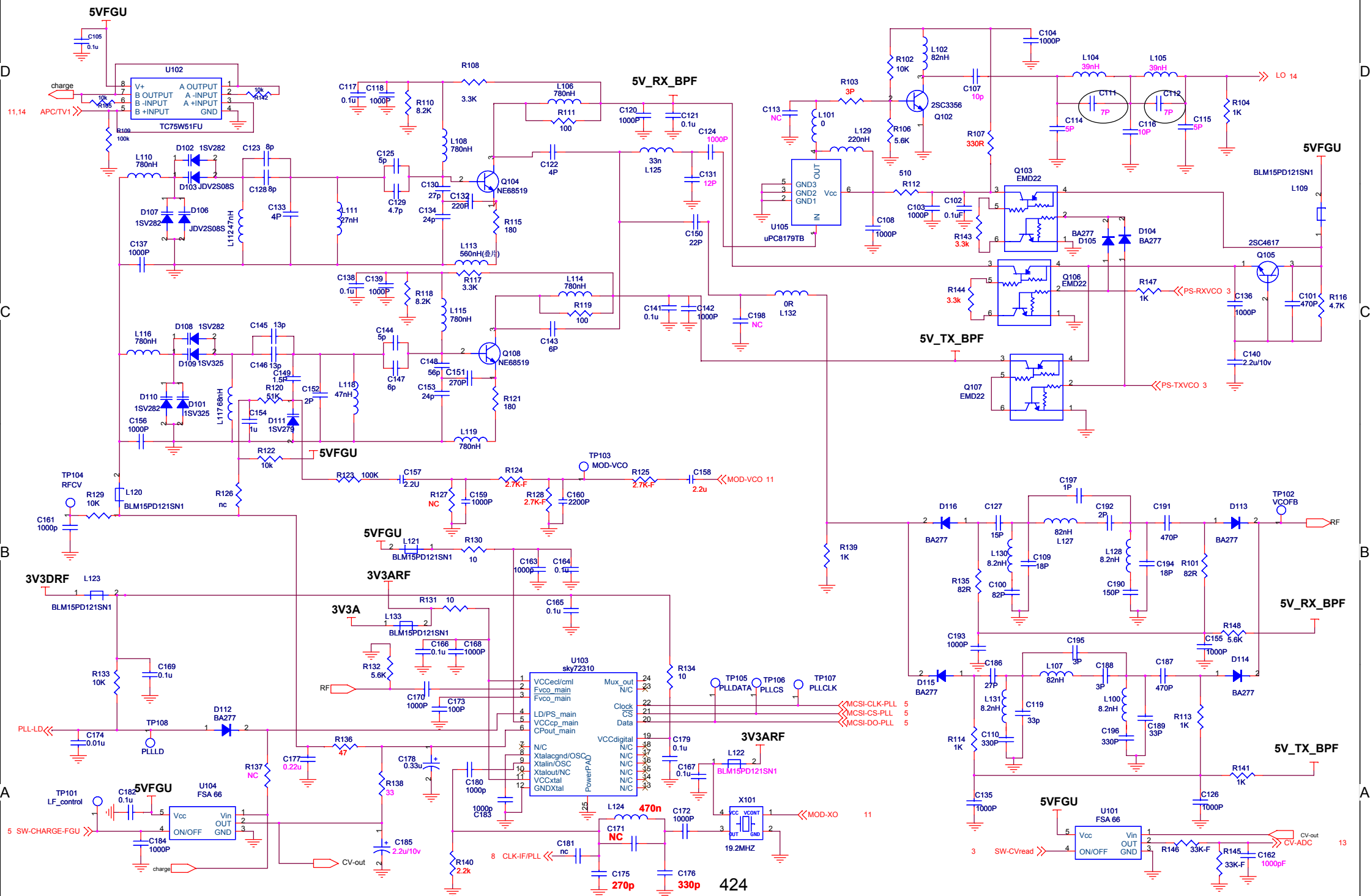
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP IO)



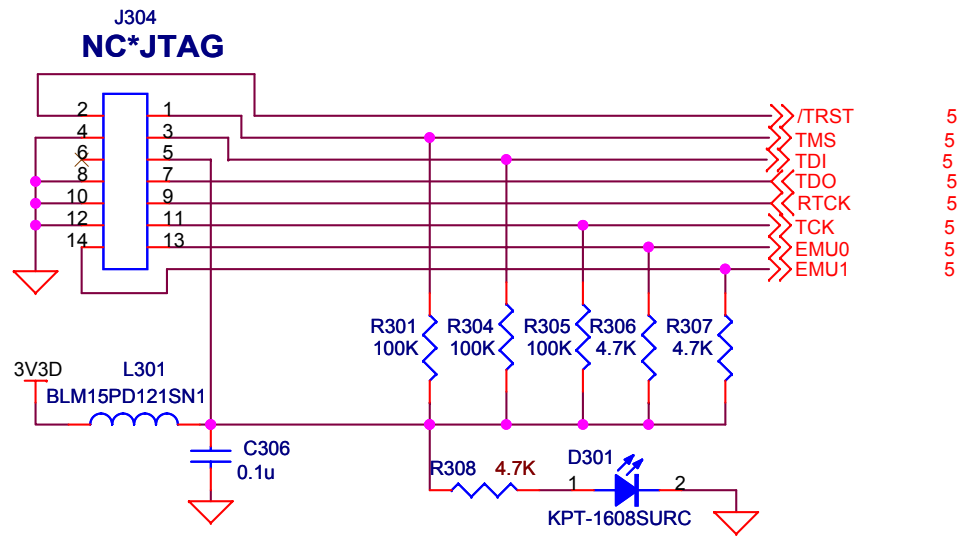
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (OMAP CORE)



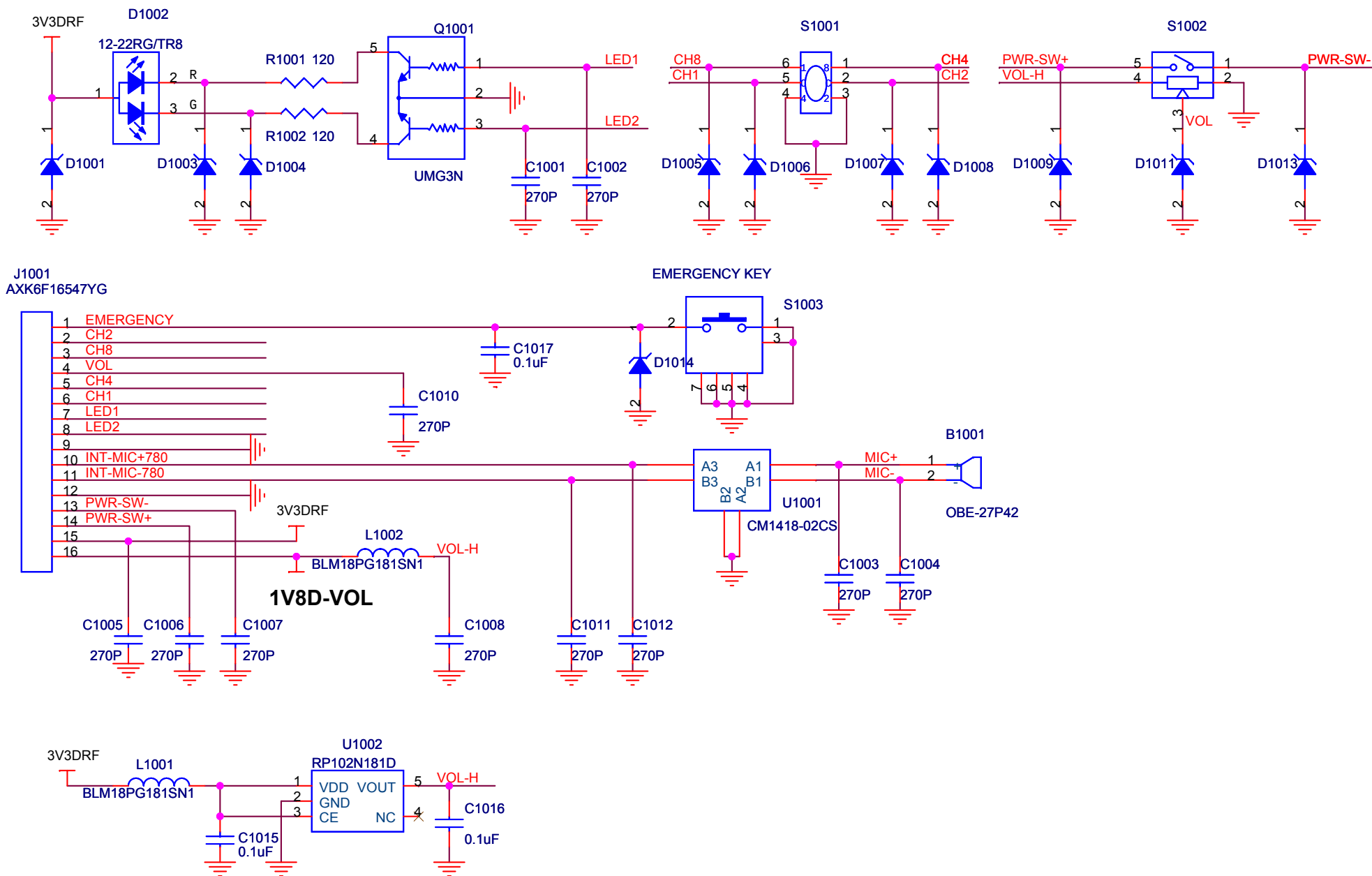
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (FGU)



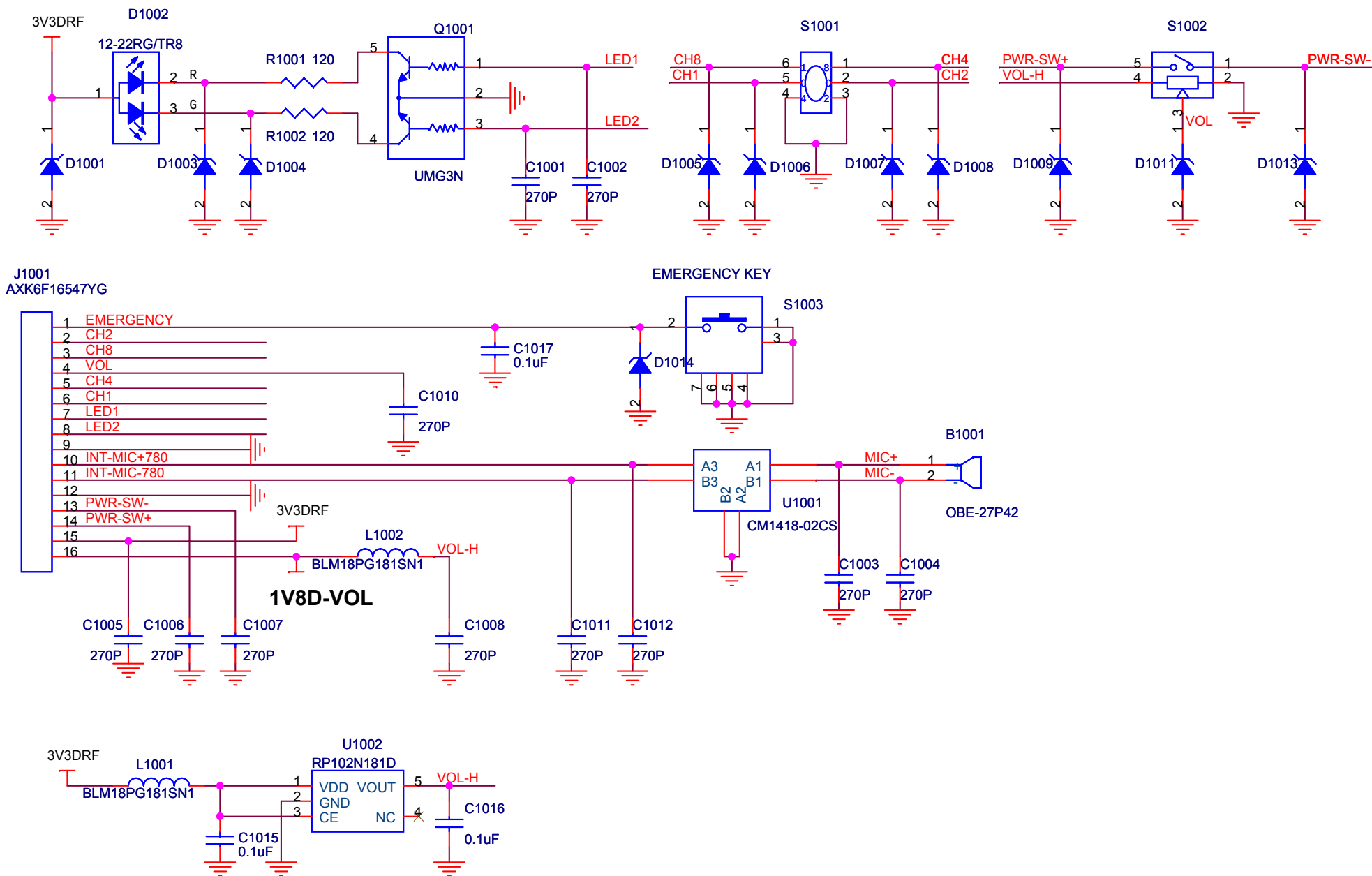
PD70X/PD70XG/PD78X/PD78XG/HD705/HD705G/HD785/HD785G Schematic Diagram (External Interface)



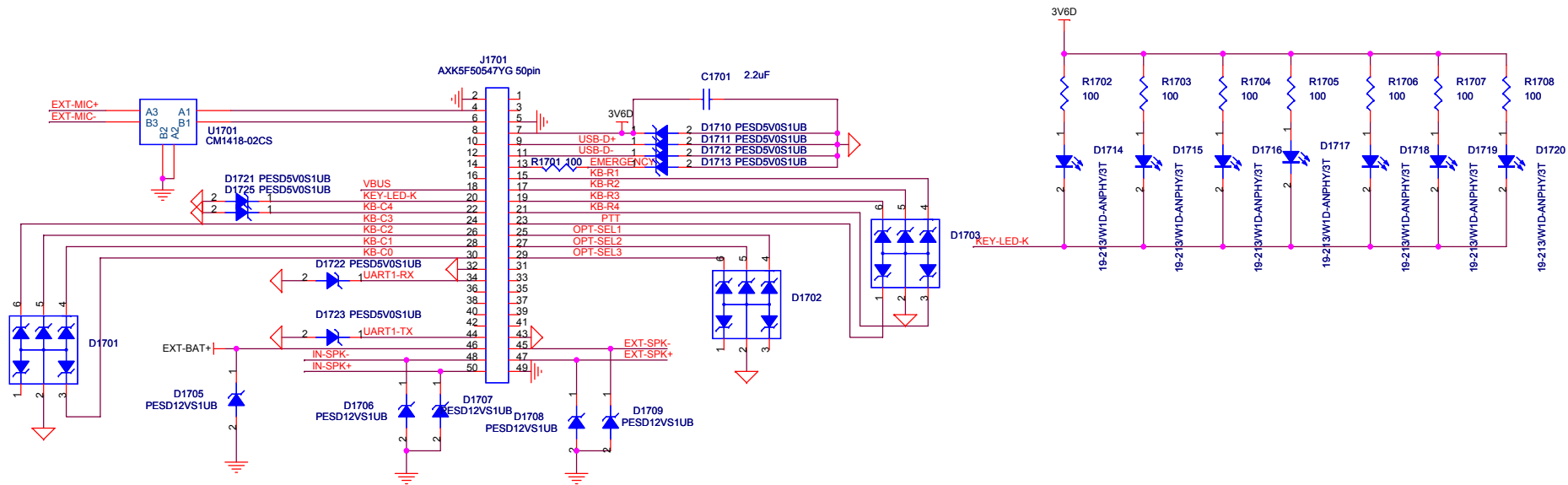
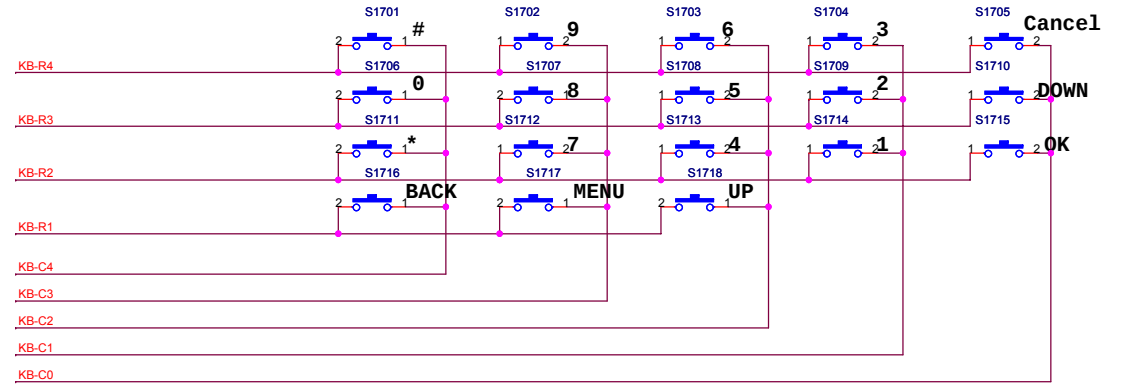
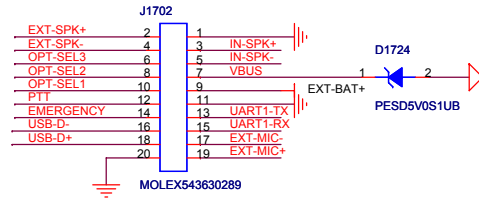
PD70X/PD70XG/HD705/HD705G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Channel Board)



PD78X/PD78XG/HD785/HD785G Schematic Diagram (Keyboard)



11.7 Parts List

PD70X/ PD70XG/ PD78X/ PD78XG/ HD705/ HD705G/ HD785/ HD785G Main Board

No.	Ref. No.	Print No.	Part No.	Description
1	ANT1	T2B	6201847000000	Antenna spring plate
2	C100	T1G	3101058200000	82PF
3	C101	B1F	3101054710010	470PF
4	C102	B1G	3101051040060	0.1UF
5	C103	B1G	3101051020010	1000PF
6	C104	T1F	3101051020010	1000PF
7	C105	B1I	3101051040060	0.1UF
8	C107	T1F	3101051000020	10PF
9	C108	T1G	3101051020010	1000PF
10	C109	T2G	3101051800010	18PF
11	C110	B2G	3101053310030	330PF
12	C111	T1F	3101050700010	7PF
13	C112	T1F	3101050700010	7PF
14	C114	T1F	3101050500010	5PF
15	C115	T2F	3101050500010	5PF
16	C116	T1F	3101051000020	10PF
17	C117	T1G	3101051040060	0.1UF
18	C118	T1G	3101051020010	1000PF
19	C119	B2G	3101053300000	33PF

No.	Ref. No.	Print No.	Part No.	Description
20	C120	T1G	3101051020010	1000PF
21	C121	T1G	3101051040060	0.1UF
22	C122	T1G	3101060400010	4PF
23	C123	T1H	3101060800010	8PF
24	C124	T1G	3101051020010	1000PF
25	C125	T1G	3101060500010	5PF
26	C126	B1H	3101051020010	1000PF
27	C127	T2G	3101051500020	15PF
28	C128	T1H	3101060800010	8PF
29	C129	T1G	3101064790010	4.7PF
30	C130	T1G	3101062700010	27PF
31	C131	T1G	3101051200020	12PF
32	C132	T1G	3101052210010	220PF
33	C133	T1H	3101060400010	4PF
34	C134	T1G	3101062400010	24PF
35	C135	B2G	3101051020010	1000PF
36	C136	B1F	3101051020010	1000PF
37	C137	T1H	3101051020010	1000PF
38	C138	B1G	3101051040060	0.1UF
39	C139	B1G	3101051020010	1000PF
40	C140	B1F	3101062250000	2.2UF

No.	Ref. No.	Print No.	Part No.	Description
41	C141	B1G	3101051040060	0.1UF
42	C142	B1G	3101051020010	1000PF
43	C143	B1G	3101060600010	6PF
44	C144	B1G	3101060500010	5PF
45	C145	B1H	3101061300000	13PF
46	C146	B1H	3101061300000	13PF
47	C147	B1G	3101060600010	6PF
48	C148	B1G	3101065600000	56PF
49	C149	B1H	3101061590010	1.5PF
50	C150	T1G	3101062200010	22PF
51	C151	B1G	3101052710000	270PF
52	C152	B1H	3101060200010	2PF
53	C153	B1G	3101062400010	24PF
54	C154	B1H	3101051050160	1uF
55	C155	T1H	3101051020010	1000PF
56	C156	B1H	3101051020010	1000PF
57	C157	B1H	3101062250000	2.2UF
58	C158	B1H	3101062250000	2.2UF
59	C159	B1H	3101051020010	1000PF
60	C160	B1H	3101052220010	2200pF
61	C161	B1H	3101051020010	1000PF

No.	Ref. No.	Print No.	Part No.	Description
62	C162	B1I	3101051020010	1000PF
63	C163	T1H	3101051020010	1000PF
64	C164	T1H	3101051040060	0.1UF
65	C165	B2H	3101051040060	0.1UF
66	C166	T2H	3101051040060	0.1UF
67	C167	T2I	3101051040060	0.1UF
68	C168	T2H	3101051020010	1000PF
69	C169	B2H	3101051040060	0.1UF
70	C170	T1H	3101051020010	1000PF
71	C172	T1I	3101051020010	1000PF
72	C173	T1H	3101051010030	100PF
73	C174	B2I	3101051030020	0.01UF
74	C175	T1I	3101052710000	270PF
75	C176	T1I	3101053310030	330PF
76	C177	T1H	3101072240000	0.22UF
77	C178	T1I	3101073340000	0.33UF
78	C179	T2I	3101051040060	0.1UF
79	C180	T1I	3101051020010	1000PF
80	C182	B1I	3101051040060	0.1UF
81	C183	T1I	3101051020010	1000PF
82	C184	B1I	3101051020010	1000PF

No.	Ref. No.	Print No.	Part No.	Description
83	C185	T1I	3104072250060	2.2UF
84	C186	B2G	3101052700000	27PF
85	C187	B2H	3101054710010	470PF
86	C188	B2H	3101050300000	3PF
87	C189	B2H	3101053300000	33PF
88	C190	T2H	3101051510000	150PF
89	C191	T1H	3101054710010	470PF
90	C192	T2H	3101050200010	2PF
91	C193	T1G	3101051020010	1000PF
92	C194	T2H	3101051800010	18PF
93	C195	B2H	3101050300000	3PF
94	C196	B2H	3101053310030	330PF
95	C197	T2H	3101050100030	1PF
96	C202	B3H	3101051020010	1000PF
97	C203	B5J	3101052000020	20PF
98	C204	B5J	3101052000020	20PF
99	C206	B3H	3101051020010	1000PF
100	C207	B3H	3101052710000	270PF
101	C208	B3H	3101053310030	330PF
102	C209	B3H	3101053920000	3900PF
103	C210	B3H	3101062240000	0.22UF

No.	Ref. No.	Print No.	Part No.	Description
104	C211	B3I	3101051020010	1000PF
105	C212	B5J	3101052240010	0.22UF
106	C213	B4K	3101053920000	3900PF
107	C214	B3I	3101054710010	470PF
108	C215	T4J	3101051030020	0.01UF
109	C216	B3J	3101052240010	0.22UF
110	C217	B5J	3101052240010	0.22UF
111	C218	B3J	3101052240010	0.22UF
112	C219	B3J	3101053920000	3900PF
113	C220	B4K	3101054710010	470PF
114	C221	B4K	3101052240010	0.22UF
115	C222	B3I	3101052240010	0.22UF
116	C223	T4J	3101054700010	47PF
117	C226	B3J	3101052240010	0.22UF
118	C227	B3J	3101053920000	3900PF
119	C228	B3J	3101054710010	470PF
120	C229	T4J	3101054700010	47PF
121	C230	B3K	3101052240010	0.22UF
122	C231	B3J	3101053920000	3900PF
123	C232	B4K	3101054710010	470PF
124	C233	B4F	3101053920000	3900PF

No.	Ref. No.	Print No.	Part No.	Description
125	C234	B4I	3101052240010	0.22UF
126	C236	B4I	3101051050160	1uF
127	C237	B5J	3101054710010	470PF
128	C238	B5I	3101052240010	0.22UF
129	C239	B3J	3101053920000	3900PF
130	C240	B4K	3101053920000	3900PF
131	C241	B4I	3101053920000	3900PF
132	C242	B5I	3101052240010	0.22UF
133	C243	B3J	3101054710010	470PF
134	C244	T2J	3101054710010	470PF
135	C245	B3I	3101053920000	3900PF
136	C246	T2J	3101053920000	3900PF
137	C247	T2J	3101053920000	3900PF
138	C248	B5J	3101052240010	0.22UF
139	C249	B4K	3101052240010	0.22UF
140	C251	B5J	3101051030020	0.01UF
141	C255	T2J	3101054710010	470PF
142	C256	T4J	3101054710010	470PF
143	C257	B4K	3101054710010	470PF
144	C258	T4J	3101054710010	470PF
145	C259	T4J	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
146	C260	T4J	3101055610000	560PF
147	C261	T4J	3101055610000	560PF
148	C262	T4J	3101052710000	270PF
149	C263	T2J	3101054710010	470PF
150	C264	T3J	3101054710010	470PF
151	C265	T2J	3101051010030	100PF
152	C266	T3J	3101054710010	470PF
153	C268	T2J	3101054710010	470PF
154	C269	T2J	3101054710010	470PF
155	C270	T2J	3101052710000	270PF
156	C271	T4J	3101054700010	47PF
157	C272	B5J	3101054700010	47PF
158	C273	B5J	3101054700010	47PF
159	C274	B5J	3101051200020	12PF
160	C275	T4J	3101051520000	1500PF
161	C276	T4J	3101051520000	1500PF
162	C277	T4J	3101051520000	1500PF
163	C278	T4J	3101054710010	470PF
164	C279	B5J	3101054700010	47PF
165	C280	B3K	3101054710010	470PF
166	C281	T4J	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
167	C282	T4J	3101054710010	470PF
168	C283	T4J	3101054710010	470PF
169	C284	T4J	3101054710010	470PF
170	C285	T4J	3101052710000	270PF
171	C286	T4J	3101054700010	47PF
172	C287	T4J	3101054710010	470PF
173	C288	B4I	3101054710010	470PF
174	C289	T4J	3101051520000	1500PF
175	C290	T4J	3101052710000	270PF
176	C291	B4K	3101052710000	270PF
177	C292	T4J	3101052710000	270PF
178	C293	B4K	3101054710010	470PF
179	C294	T4J	3101054710010	470PF
180	C295	B5J	3101054710010	470PF
181	C296	T4J	3101054710010	470PF
182	C297	B5J	3101054710010	470PF
183	C298	T4J	3101054710010	470PF
184	C299	T4J	3101054710010	470PF
185	C300	T4J	3101054710010	470PF
186	C301	T4J	3101054710010	470PF
187	C302	T4J	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
188	C303	T4J	3101054710010	470PF
189	C304	B5J	3101051520000	1500PF
190	C305	T4J	3101054710010	470PF
191	C310	B4H	3101051040060	0.1UF
192	C311	B4H	3101051040060	0.1UF
193	C312	B4G	3101051050160	1uF
194	C313	B4G	3101052710000	270PF
195	C314	B4G	3101051050160	1uF
196	C315	B4G	3101052710000	270PF
197	C316	B4F	3101052710000	270PF
198	C317	B4F	3101052710000	270PF
199	C318	B4C	3101051040060	0.1UF
200	C319	B4G	3001051040000	100KΩ
201	C320	B4C	3001051040000	100KΩ
202	C321	B4D	3101052710000	270PF
203	C322	B4D	3101052710000	270PF
204	C323	B3K	3101051050160	1uF
205	C324	B5F	3101064710000	470PF
206	C325	B3J	3101052710000	270PF
207	C326	B3J	3101052710000	270PF
208	C331	B4C	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
209	C332	B4D	3101054710010	470PF
210	C333	B4D	3101054710010	470PF
211	C334	B3L	3101052710000	270PF
212	C335	B5D	3101054710010	470PF
213	C336	B5D	3101054710010	470PF
214	C420	B2H	3101051200020	12PF
215	C422	T2G	3101051040060	0.1UF
216	C423	T2F	3101051050160	1uF
217	C425	T3G	3101054700010	47PF
218	C426	T3G	3101051030020	0.01UF
219	C427	T2H	3101052210010	220PF
220	C428	T2H	3101051010030	100PF
221	C429	T2G	3101051010030	100PF
222	C430	T2G	3101051040060	0.1UF
223	C431	T2H	3101052220010	2200pF
224	C432	T3F	3101052000020	20PF
225	C433	T2H	3101051040060	0.1UF
226	C434	T2H	3101051040060	0.1UF
227	C435	T3H	3101051040060	0.1UF
228	C436	T2H	3101051030020	0.01UF
229	C437	T3F	3101065620010	5600PF

No.	Ref. No.	Print No.	Part No.	Description
230	C438	T2H	3101051010030	100PF
231	C439	T2H	3101051010030	100PF
232	C440	T3H	3101051030020	0.01UF
233	C441	T3H	3101051040060	0.1UF
234	C442	T3H	3101061030010	0.01UF
235	C443	T3H	3101063900000	39PF
236	C444	T2F	3101054710010	470PF
237	C445	T3G	3101051040060	0.1UF
238	C446	T3G	3101051040060	0.1UF
239	C447	T3G	3101051030020	0.01UF
240	C448	T3G	3101053300000	33PF
241	C449	T3G	3101051030020	0.01UF
242	C450	T3G	3101061230000	0.012UF
243	C452	T3H	3101060700020	7PF
244	C453	T3G	3101051030020	0.01UF
245	C454	T3G	3101051030020	0.01UF
246	C455	T3I	3101063320000	3300PF
247	C456	T3G	3101063690000	3.6PF
248	C457	B2H	3101051030020	0.01UF
249	C458	T3G	3101063900000	39PF
250	C459	T2F	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
251	C460	T3F	3101064700000	47PF
252	C461	T3F	3101068200000	82PF
253	C462	T3F	3101051040060	0.1UF
254	C463	T3G	3101072240000	0.22UF
255	C464	T2F	3101051040060	0.1UF
256	C465	T2G	3101051040060	0.1UF
257	C466	T3H	3101051040060	0.1UF
258	C467	T2F	3101062250000	2.2UF
259	C468	T3I	3104076840020	0.68UF
260	C469	T3H	3101052710000	270PF
261	C470	T3H	3101052710000	270PF
262	C471	T3H	3101052710000	270PF
263	C472	B2H	3101062250000	2.2UF
264	C512	B4E	3101054710010	470PF
265	C513	B2C	3101055600000	56PF
266	C514	B3C	3101051210000	120PF
267	C515	B2C	3101051050160	1uF
268	C516	B3C	3101051590000	1.5PF
269	C517	B3C	3101051800010	18PF
270	C518	B2C	3101051590000	1.5PF
271	C519	B2C	3199050758000	0.75PF

No.	Ref. No.	Print No.	Part No.	Description
272	C520	B2C	3101050100030	1PF
273	C521	B3C	3101051210000	120PF
274	C522	B3C	3101051040060	0.1UF
275	C523	B2C	3101051040060	0.1UF
276	C524	B2C	3101055600000	56PF
277	C525	B2C	3101051040060	0.1UF
278	C526	B2C	3101051050160	1uF
279	C527	B2C	3101050200010	2PF
280	C601	T3K	3101062250000	2.2UF
281	C602	B3E	3101051010030	100PF
282	C603	B3E	3101074750000	4.7UF
283	C604	B2F	3101051040060	0.1UF
284	C605	B2F	3101061050060	1UF
285	C606	B2F	3101062250000	2.2UF
286	C607	B2F	3101051040060	0.1UF
287	C614	B2E	3101055690110	5.6PF
288	C615	B2E	3101051040060	0.1UF
289	C616	B2E	3101051010030	100PF
290	C617	B3E	3101051040060	0.1UF
291	C618	B3F	3101051040060	0.1UF
292	C619	T4G	3101061030010	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
293	C620	B2E	3101051010030	100PF
294	C621	B2E	3101074750000	4.7UF
295	C622	B2E	3101051040060	0.1UF
296	C623	B2E	3101061050060	1UF
297	C624	B2E	3101062250000	2.2UF
298	C625	B2E	3101051040060	0.1UF
299	C626	B2F	3101051040060	0.1UF
300	C627	T5G	3110081060000	10uF
301	C628	T4F	3101062240000	0.22UF
302	C629	T3J	3101074750000	4.7UF
303	C630	T5F	3101051040060	0.1UF
304	C635	T3K	3101051040060	0.1UF
305	C636	T4H	3110071060000	10uF
306	C637	T4G	3110994760000	47uF
307	C638	T4G	3101053920000	3900PF
308	C639	T4J	3101051040060	0.1UF
309	C640	T5J	3101062240000	0.22UF
310	C641	B3E	3101062250000	2.2UF
311	C642	B3E	3101051040060	0.1UF
312	C644	T4G	3101052000020	20PF
313	C645	T4G	3101052210010	220PF

No.	Ref. No.	Print No.	Part No.	Description
314	C646	T5I	3110061050000	1uF
315	C647	T4I	3101051040060	0.1UF
316	C648	T4I	3101061050060	1UF
317	C649	T5I	3101062250000	2.2UF
318	C650	T5I	3101053920000	3900PF
319	C651	T3J	3101051040060	0.1UF
320	C652	T4K	3101054710010	470PF
321	C653	T4K	3101062250000	2.2UF
322	C654	T5H	3110081060000	10uF
323	C655	T4H	3101062240000	0.22UF
324	C656	T4I	3101051040060	0.1UF
325	C657	T2J	3110061050000	1uF
326	C658	T5H	3101051040060	0.1UF
327	C659	T3J	3101051040060	0.1UF
328	C660	T2I	3101062250000	2.2UF
329	C661	T4I	3110071060000	10uF
330	C662	T2J	3101053920000	3900PF
331	C665	T4I	3110994760000	47uF
332	C666	T4I	3101053920000	3900PF
333	C667	B1K	3110061050000	1uF
334	C668	B2J	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
335	C669	B1K	3101061050060	1UF
336	C670	B1J	3101062250000	2.2UF
337	C671	B1J	3101051040060	0.1UF
338	C672	T4I	3101052000020	20PF
339	C674	T4H	3101052210010	220PF
340	C676	T3I	3101062240000	0.22UF
341	C677	B4E	3101061050060	1UF
342	C678	B4F	3101062240000	0.22UF
343	C679	T4I	3101051040060	0.1UF
344	C680	T4I	3101054710010	470PF
345	C681	T5H	3101054710010	470PF
346	C682	T4H	3101051040060	0.1UF
347	C683	B1K	3101052240010	0.22UF
348	C684	B1K	3101053920000	3900PF
349	C685	B3E	3101054710010	470PF
350	C686	B3E	3101053920000	3900PF
351	C687	T3K	3101053920000	3900PF
352	C688	B1J	3101051040060	0.1UF
353	C701	T1K	3101061050060	1UF
354	C703	T1J	3101054710010	470PF
355	C704	T1J	3101054710010	470PF

No.	Ref. No.	Print No.	Part No.	Description
356	C705	T1J	3101051020010	1000PF
357	C706	T1J	3101051050160	1uF
358	C707	T1J	3101051050160	1uF
359	C708	T1J	3101052210020	220PF
360	C709	T1J	3101051020010	1000PF
361	C710	T1K	3101051040060	0.1UF
362	C711	T1J	3101051050160	1uF
363	C712	T1J	3101051050160	1uF
364	C801	B4K	3101051040060	0.1UF
365	C802	T4K	3101071060010	10UF
366	C803	T3K	3101052240010	0.22UF
367	C804	T4K	3101052710000	270PF
368	C805	T3L	3101051010030	100PF
369	C806	T3K	3101051010030	100PF
370	C808	T3K	3101053920000	3900PF
371	C809	T4L	3101051040060	0.1UF
372	C810	T3K	3101051040060	0.1UF
373	C812	T3K	3101051040060	0.1UF
374	C813	T3K	3101053920000	3900PF
375	C816	T4K	3101061050060	1UF
376	C819	T4K	3101051030020	0.01UF

No.	Ref. No.	Print No.	Part No.	Description
377	C820	T3K	3101053920000	3900PF
378	C821	T2J	3101052240010	0.22UF
379	C822	T2K	3101051030020	0.01UF
380	C823	T3K	3101053920000	3900PF
381	C824	T2K	3101052240010	0.22UF
382	C825	T3K	3101062250000	2.2UF
383	C826	T3K	3101051030020	0.01UF
384	C827	T2K	3101051030020	0.01UF
385	C828	T2K	3101062250000	2.2UF
386	C831	T2K	3101051050160	1uF
387	C832	T3K	3101051050160	1uF
388	C833	T3K	3101051040060	0.1UF
389	C834	B2K	3101051050160	1uF
390	C835	T3L	3101054710010	470PF
391	C836	T2K	3101051040060	0.1UF
392	C837	B2K	3101051030020	0.01UF
393	C838	T2K	3101054710010	470PF
394	C839	T2L	3101051040060	0.1UF
395	C840	B2K	3101051050160	1uF
396	C842	T3L	3101054710010	470PF
397	C843	T2L	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
398	C845	T2L	3101054710010	470PF
399	C846	B2L	3101054710010	470PF
400	C847	T2L	3101051050160	1uF
401	C848	T2L	3101054710010	470PF
402	C849	B3K	3101054710010	470PF
403	C850	T2K	3101051040060	0.1UF
404	C851	T2L	3101054710010	470PF
405	C852	T2L	3101051040060	0.1UF
406	C853	T2L	3101054710010	470PF
407	C856	B2L	3101054710010	470PF
408	C857	B2L	3101054710010	470PF
409	C858	B2K	3101053920000	3900PF
410	C9001	T4C	3001050000000	0Ω
411	C9003	B3B	3101061000000	10PF
412	C9004	B2B	3101060700020	7PF
413	C9008	T2C	3101061010010	100PF
414	C9009	T2C	3101061010010	100PF
415	C9010	T3C	3101060800010	8PF
416	C9011	T3C	3101061010010	100PF
417	C9012	T2C	3101061810010	180PF
418	C9013	B3B	3101061020000	1000PF

No.	Ref. No.	Print No.	Part No.	Description
419	C9014	T1D	3101051020010	1000PF
420	C9015	B3B	3101062200010	22PF
421	C9016	B5D	3101051020010	1000PF
422	C9017	B2B	3101062200010	22PF
423	C9018	T2F	3101051020010	1000PF
424	C9020	T4D	3101051040060	0.1UF
425	C9021	T2C	3101064700000	47PF
426	C9023	B3B	3101061000000	10PF
427	C9024	B2B	3101063000010	30PF
428	C9025	T2F	3101051020010	1000PF
429	C9027	T1D	3101060500010	5PF
430	C9028	T1E	3101051200020	12PF
431	C9029	T2E	3101051800010	18PF
432	C9031	B3B	3101062400010	24PF
433	C9032	T1E	3101050500010	5PF
434	C9033	T1E	3101051020010	1000PF
435	C9034	T1F	3101051020010	1000PF
436	C9035	T1D	3101051020010	1000PF
437	C9036	T1D	3101051020010	1000PF
438	C9037	T1E	3101051020010	1000PF
439	C9038	T1E	3101051040060	0.1UF

No.	Ref. No.	Print No.	Part No.	Description
440	C9039	T2E	3101051020010	1000PF
441	C9040	T1D	3101054700010	47PF
442	C9041	T1E	3101051040060	0.1UF
443	C9042	T3C	3101051020010	1000PF
444	C9043	T3C	3101051040060	0.1UF
445	C9044	T1D	3101051030020	0.01UF
446	C9045	T1E	3101051020010	1000PF
447	C9046	T1E	3101051040060	0.1UF
448	C9047	T1D	3101051020010	1000PF
449	C9048	T1D	3101054710010	470PF
450	C9049	T1D	3101051040060	0.1UF
451	C9050	T1D	3101051020010	1000PF
452	C9051	B1D	3104082260060	22UF
453	C9052	T4D	3101054700010	47PF
454	C9056	T4D	3101051800010	18PF
455	C9057	T3C	3101051040060	0.1UF
456	C9058	T4E	3101052200010	22PF
457	C9059	B1D	3101051020010	1000PF
458	C9060	B1E	3101061020000	1000PF
459	C9061	B1E	3101051020010	1000PF
460	C9063	B1E	3101054720000	4700PF

No.	Ref. No.	Print No.	Part No.	Description
461	C9064	B1D	3101051020010	1000PF
462	C9065	B1E	3101051520000	1500PF
463	C9066	B1D	3101051030020	0.01UF
464	C9067	B1E	3101051020010	1000PF
465	C9068	T4E	3101051030020	0.01UF
466	C9069	B1D	3101054710010	470PF
467	C9071	B1D	3101051040060	0.1UF
468	C9072	T5D	3101051030020	0.01UF
469	C9075	T3F	3101051020010	1000PF
470	C9077	T3E	3101051800010	18PF
471	C9078	T3E	3101053300000	33PF
472	C9079	T3E	3101051800010	18PF
473	C9081	T4D	3101054710010	470PF
474	C9082	B5D	3101051040060	0.1UF
475	C9083	T4D	3101051200020	12PF
476	C9084	T2G	3101051000020	10PF
477	C9085	B2G	3101051020010	1000PF
478	C9086	B2G	3101051040060	0.1UF
479	C9087	T4C	3101052000020	20PF
480	C9088	T4D	3101051210000	120PF
481	C9089	T4C	3101054700010	47PF

No.	Ref. No.	Print No.	Part No.	Description
482	C9090	B3G	3101051030020	0.01UF
483	C9091	B3G	3101051040060	0.1UF
484	C9092	T3F	3101051040060	0.1UF
485	C9093	T2F	3101051020010	1000PF
486	C9095	T2F	3101051050160	1uF
487	C9096	T2E	3101051020010	1000PF
488	C9097	B3G	3101051040060	0.1UF
489	C9098	T3F	3101051020010	1000PF
490	C9099	B3H	3101051800010	18PF
491	C9100	T2F	3101051050160	1uF
492	C9101	T4E	3101052000020	20PF
493	C9102	T4C	3101050800000	8PF
494	C9103	B3H	3101051020010	1000PF
495	C9104	B3G	3101051040060	0.1UF
496	C9105	B2G	3101051500020	15PF
497	C9106	T4C	3101050600010	6PF
498	C9107	B3G	3101051800010	18PF
499	C9108	T4C	3101054700010	47PF
500	C9109	T4C	3101050700010	7PF
501	C9110	B3G	3101051030020	0.01UF
502	C9111	T4D	3101051800010	18PF

No.	Ref. No.	Print No.	Part No.	Description
503	C9112	T4D	3101052200010	22PF
504	C9113	T4E	3101055600000	56PF
505	C9114	T5D	3101055600000	56PF
506	C9115	T4D	3101051200020	12PF
507	C9116	T4E	3101051000020	10PF
508	C9117	T4D	3101054710010	470PF
509	C9118	B3G	3101055600000	56PF
510	C9120	T4D	3101051040060	0.1UF
511	C9121	B2G	3101051020010	1000PF
512	C9122	B3H	3101055600000	56PF
513	C9123	T4C	3101051030020	0.01UF
514	C9124	B2G	3101050800000	8PF
515	C9125	T4E	3101053900000	39PF
516	C9126	T4C	3101051020010	1000PF
517	C9127	T4C	3101051040060	0.1UF
518	C9128	T4C	3101051030020	0.01UF
519	C9129	T4C	3101052200010	22PF
520	C9130	T4C	3101051500020	15PF
521	C9131	T4D	3101051020010	1000PF
522	C9133	T4D	3101054790040	4.7PF
523	C9141	T4E	3101058200000	82PF

No.	Ref. No.	Print No.	Part No.	Description
524	D101	B1H	3304010100180	Varactor
525	D102	T1H	3304010100990	Varactor
526	D103	T1H	3304010400000	Varactor
527	D104	B1G	3303990000060	Switching diode
528	D105	B1G	3303990000060	Switching diode
529	D106	T1H	3304010400000	Varactor
530	D107	T1H	3304010100990	Varactor
531	D108	B1H	3304010100990	Varactor
532	D109	B1H	3304010100180	Varactor
533	D110	B1H	3304010100990	Varactor
534	D111	B1H	3304010100890	Varactor
535	D112	B1I	3303990000060	Switching diode
536	D113	T1H	3303990000060	Switching diode
537	D114	B1H	3303990000060	Switching diode
538	D115	B2G	3303990000060	Switching diode
539	D116	T2G	3303990000060	Switching diode
540	D302	B4C	3303990000010	Switching diode
541	D303	B3L	3310040000000	LED
542	D304	B3L	3310040000000	ESD protection diode
543	D305	B3K	3310040000000	ESD protection diode
544	D306	B3K	3310040000000	ESD protection diode

No.	Ref. No.	Print No.	Part No.	Description
545	D307	B4L	3399040600020	ESD protection diode
546	D308	B4L	3399040600020	ESD protection diode
547	D309	B4K	3399040600020	ESD protection diode
548	D310	B4K	3399040600020	ESD protection diode
549	D318	B3K	3399040600010	ESD protection diode
550	D401	T3I	3304060300050	Varactor
551	D402	T3G	3304010100220	Varactor
552	D601	B2E	3399990000110	Diode
553	D602	B2E	3399040600020	ESD protection diode
554	D604	B4D	3303030100010	Switching diode
555	D9002	T3C	3303030800040	Switching diode
556	D9003	B3B	3303990000060	Switching diode
557	D9004	B3B	3303990000060	Switching diode
558	D9005	T5D	3304060300040	Varactor
559	D9006	T4C	3399990000260	Switching diode
560	D9007	T2F	3303990000060	Switching diode
561	D9008	T2F	3303990000060	Switching diode
562	D9009	T4E	3304060300040	Varactor
563	D9010	B1F	3399990000080	ESD protection diode
564	D9011	B2F	3303030100010	Switching diode
565	D9012	T5C	3304060300040	Varactor

No.	Ref. No.	Print No.	Part No.	Description
566	D9013	T4C	3304060300040	Varactor
567	D9017	T4F	3301250300000	Schottky barrier diode
568	F601	B3E	4099000000050	Fuse
569	F602	T5J	4010000000010	Resumable fuse
570	J1601	B3L	5201050100030	Board-to-board connector
571	J311	B4G	5201030000040	Board-to-board connector
572	J313	B4B	5202002100200	Board-to-board connector
573	J601	T3D	5205003100020	Battery connector
574	J821	B4C	5201016000010	Board-to-board connector
575	L100	B2H	3217106829010	8.2nH
576	L101	T2G	3001050000000	0Ω
577	L102	T1G	3217106820010	82nH
578	L104	T1F	3217106390010	39nH
579	L105	T1F	3217106390010	39nH
580	L106	T1G	3217106781000	780nH
581	L107	B2H	3217106820010	82nH
582	L108	T1G	3217106781000	780nH
583	L109	B1G	3221505121010	Bead
584	L110	T1H	3217106781000	780nH
585	L111	T1G	3217107270000	27nH
586	L112	T1H	3217107470000	47nH

No.	Ref. No.	Print No.	Part No.	Description
587	L113	T1G	3217106781000	780nH
588	L114	B1G	3217106781000	780nH
589	L115	B1G	3217106781000	780nH
590	L116	B1H	3217106781000	780nH
591	L117	B1H	3217107680010	68nH
592	L118	B1H	3217107470000	47nH
593	L119	B1G	3217106781000	780nH
594	L120	B1H	3221505121010	Bead
595	L121	B1I	3221505121010	Bead
596	L122	T2I	3221505121010	Bead
597	L123	B2I	3221505121010	Bead
598	L124	T1I	3210406471000	470nH
599	L125	T1G	3210305330000	33nH
600	L127	T2H	3210106820000	82nH
601	L128	T2H	3217106829010	8.2nH
602	L129	B2G	3210306221000	220nH
603	L130	T2G	3217106829010	8.2nH
604	L131	B2H	3217106829010	8.2nH
605	L132	T2G	3001050000000	0Ω
606	L133	T2I	3221505121010	Bead
607	L201	B3H	3210406471000	470nH

No.	Ref. No.	Print No.	Part No.	Description
608	L302	B4C	3221506601000	Bead
609	L303	B2K	3221506181000	Bead
610	L304	B4D	3221506601000	Bead
611	L305	B4D	3221506601000	Bead
612	L401	T2H	3215099103000	10uH
613	L402	B3H	3210406271000	270nH
614	L403	T3G	3221505121010	Bead
615	L404	T2G	3215099103000	10uH
616	L405	T2F	3221505121010	Bead
617	L406	T3G	3297107391000	390nH
618	L407	T3H	3221505121010	Bead
619	L408	T2H	3210407472000	4.7uH
620	L409	T3F	3213306222000	2.2uH
621	L410	B2H	3221506601000	Bead
622	L411	T3H	3213212332000	3.3uH
623	L412	T2H	3221505121010	Bead
624	L413	T3G	3213306682000	6.8uH
625	L501	B2C	3297106339000	3.3nH
626	L502	B3C	3221506601080	Bead
627	L503	B2C	3297106339000	3.3nH
628	L504	B2C	3297106339000	3.3nH

No.	Ref. No.	Print No.	Part No.	Description
629	L505	B2C	3221506601080	Bead
630	L506	B3C	3210106390000	39nH
631	L507	B3C	3210305180000	18nH
632	L508	B3C	3210305829000	8.2nH
633	L509	B3C	3210305829000	8.2nH
634	L601	B1J	3221506181000	Bead
635	L602	B3E	3221506181000	Bead
636	L603	B2F	3221506181000	Bead
637	L605	B2E	3221506181000	Bead
638	L606	B2E	3221506181000	Bead
639	L607	T4F	3290299222000	2.2uH
640	L609	T3K	3221506181000	Bead
641	L610	T5G	3217099153000	15uH
642	L611	B3E	3221506181000	Bead
643	L612	T4I	3221506181000	Bead
644	L613	T4H	3290299222000	2.2uH
645	L614	T5I	3217099153000	15uH
646	L615	T3J	3290299222000	2.2uH
647	L616	B3F	3290299222000	2.2uH
648	L617	T3I	3221506181000	Bead
649	L702	B1K	3221505121010	Bead

No.	Ref. No.	Print No.	Part No.	Description
650	L801	B4K	3221505121010	Bead
651	L802	T4K	3221506181000	Bead
652	L803	T4L	3221505121010	Bead
653	L804	T4K	3221505121010	Bead
654	L805	T4K	3221505121010	Bead
655	L816	T4D	3237199270000	Air-core coil
656	L820	T2K	3221506601000	Bead
657	L821	T2J	3221505121010	Bead
658	L822	T2J	3221505121010	Bead
659	L823	T3K	3221506601000	Bead
660	L827	T3L	3221506601000	Bead
661	L828	T3L	3221506601000	Bead
662	L9001	T4E	3217106151000	150nH
663	L9003	B3B	3233099330000	Air-core coil
664	L9004	B2B	3233099400000	Air-core coil
665	L9005	B2B	3233099330000	Air-core coil
666	L9006	T1D	3210306390000	39nH
667	L9007	T1E	3210306479000	4.7nH
668	L9008	T1D	3233099470000	Air-core coil
669	L9009	T2F	3210306680000	68nH
670	L9010	T1E	3210306680000	68nH

No.	Ref. No.	Print No.	Part No.	Description
671	L9011	T1D	3210209102010	1uH
672	L9012	T3C	3212107222000	2.2uH
673	L9013	B3B	3233099470000	Air-core coil
674	L9014	T2D	3221506121000	Bead
675	L9015	T5C	3237199270000	Air-core coil
676	L9016	T1D	3210306270000	27nH
677	L9017	T3F	3210106360000	36nH
678	L9018	T3F	3217106390010	39nH
679	L9019	T2C	3231301030000	Air-core coil
680	L9020	B2F	3221505121010	Bead
681	L9021	T2C	3233099185900	Air-core coil
682	L9022	T4E	3210306561010	560nH
683	L9023	T2C	3233099100000	Air-core coil
684	L9024	T4C	3237199270000	Air-core coil
685	L9025	T4E	3217106120010	12nH
686	L9026	B3H	3210306151000	150nH
687	L9027	B3G	3213306102000	1uH
688	L9028	T4C	3210306680000	68nH
689	L9029	T4D	3217106181010	180nH
690	L9030	T4D	3210106121000	120nH
691	L9032	B2G	3210306561010	560nH

No.	Ref. No.	Print No.	Part No.	Description
692	L9033	B2G	3210406471000	470nH
693	L9035	T4E	3237199270000	Air-core coil
694	L9036	T4D	3001052790000	2.7Ω
695	Q102	T1G	3408002000000	NPN transistor
696	Q103	B1G	3403999000000	Compound transistor
697	Q104	T1G	3408002000080	NPN transistor
698	Q105	B1F	3403003000060	NPN transistor
699	Q106	B2G	3403999000000	Compound transistor
700	Q107	B2G	3403999000000	Compound transistor
701	Q108	B1G	3408002000080	NPN transistor
702	Q310	B4G	3511990000010	N-MOSFET
703	Q312	T3L	3403008000010	BRT
704	Q313	B4C	3511990000010	N-MOSFET
705	Q401	T2F	3403003000060	NPN transistor
706	Q402	T2G	3499000000150	Compound transistor
707	Q403	T3F	3408002000000	NPN transistor
708	Q603	B4D	3414001000040	NPN transistor
709	Q604	B4E	3503020000030	N-MOSFET
710	Q605	T5K	3505010000059	P-MOSFET
711	Q607	T4K	3503020000030	N-MOSFET
712	Q801	T4K	3403008000010	BRT

No.	Ref. No.	Print No.	Part No.	Description
713	Q802	T4K	3403008000010	BRT
714	Q9001	T5D	3403014000020	Compound transistor
715	Q9002	T2E	3408002000000	NPN transistor
716	Q9003	T1C	3504990000040	MOSFET
717	Q9004	T1F	3406001000090	NPN transistor
718	Q9005	T1D	3504990000010	MOSFET
719	Q9006	B1F	3410001000020	PNP transistor
720	Q9007	B1F	3403008000010	BRT
721	Q9008	B1F	3403008000010	BRT
722	Q9009	T4D	3418001000010	NPN transistor
723	Q9017	B3G	3404006000000	NPN transistor
724	Q9018	B3G	3404006000000	NPN transistor
725	Q9019	B2F	3403999000000	Compound transistor
726	Q9020	B1E	3403999000000	Compound transistor
727	Q9021	B2F	3401001000490	PNP transistor
728	R101	T1H	3001051020000	1K Ω
729	R102	T2G	3001051030050	10K Ω
730	R103	T2G	3101050300000	3PF
731	R104	T2F	3001051020000	1K Ω
732	R105	B1I	3001051030050	10K Ω
733	R106	T2G	3001055620000	5.6K Ω

No.	Ref. No.	Print No.	Part No.	Description
734	R107	T1F	3001053310000	330Ω
735	R108	T1G	3001053320000	3.3KΩ
736	R109	B1I	3001051040000	100KΩ
737	R110	T1G	3001058220000	8.2KΩ
738	R111	T1G	3001051010000	100Ω
739	R112	B1G	3001055110000	510Ω
740	R113	B1H	3001051020000	1KΩ
741	R114	B2G	3001051020000	1KΩ
742	R115	T1G	3001051810010	180Ω
743	R116	B1F	3001054720000	4.7KΩ
744	R117	B2G	3001053320000	3.3KΩ
745	R118	B1G	3001058220000	8.2KΩ
746	R119	B1G	3001051010000	100Ω
747	R120	B1H	3001055130000	51KΩ
748	R121	B1G	3001051810010	180Ω
749	R122	B1I	3001051030050	10KΩ
750	R123	B1H	3001051040000	100KΩ
751	R124	B1H	3001052720010	2.7KΩ
752	R125	B1H	3001052720010	2.7KΩ
753	R128	B1H	3001052720010	2.7KΩ
754	R129	B1H	3001051030050	10KΩ

No.	Ref. No.	Print No.	Part No.	Description
755	R130	B1I	3001051000000	10Ω
756	R131	T2I	3001051000000	10Ω
757	R132	B1I	3001055620000	5.6KΩ
758	R133	B1I	3001051030050	10KΩ
759	R134	T2I	3001051000000	10Ω
760	R135	T2G	3001051020000	1KΩ
761	R136	T1H	3001057500000	75Ω
762	R138	T1I	3001053300000	33Ω
763	R139	T2G	3001051020000	1KΩ
764	R140	T1I	3001052220000	2.2KΩ
765	R141	B2G	3001051020000	1KΩ
766	R142	B1I	3001051030050	10KΩ
767	R143	B1G	3001053320000	3.3KΩ
768	R144	B2F	3001053320000	3.3KΩ
769	R145	B1I	3001053330000	33KΩ
770	R146	B1I	3001053330000	33KΩ
771	R147	B1G	3001051020000	1KΩ
772	R148	B1G	3001055620000	5.6KΩ
773	R203	B3I	3001051000000	10Ω
774	R206	B3J	3001051000000	10Ω
775	R207	T4J	3001053300000	33Ω

No.	Ref. No.	Print No.	Part No.	Description
776	R209	B5K	3001051000000	10Ω
777	R220	T4J	3001051010000	100Ω
778	R221	T4J	3001051010000	100Ω
779	R222	T4J	3001051010000	100Ω
780	R223	T4J	3001053300000	33Ω
781	R224	B4K	3001051010000	100Ω
782	R225	B5J	3001051010000	100Ω
783	R226	T4J	3001051010000	100Ω
784	R241	T4J	3001051030050	10KΩ
785	R242	B3K	3001051030050	10KΩ
786	R243	B4K	3001051030050	10KΩ
787	R249	B4I	3001051030050	10KΩ
788	R250	B3K	3001054710000	470Ω
789	R251	B4I	3001051040000	100KΩ
790	R254	B5I	3001050000000	0Ω
791	R255	B5I	3001053300000	33Ω
792	R256	T3J	3001051030050	10KΩ
793	R257	B4E	3001051010000	100Ω
794	R258	B5J	3001051030050	10KΩ
795	R259	B5I	3001053300000	33Ω
796	R260	B5I	3001051520000	1.5KΩ

No.	Ref. No.	Print No.	Part No.	Description
797	R261	B5I	3001051530010	15K Ω
798	R262	B5I	3001051530010	15K Ω
799	R265	T4J	3001054710000	470 Ω
800	R313	B4E	3001054710000	470 Ω
801	R314	B4H	3001053320000	3.3K Ω
802	R315	B4H	3001053320000	3.3K Ω
803	R316	B4H	3001051030050	10K Ω
804	R317	B4H	3001051030050	10K Ω
805	R321	B4C	3099063018000	3.01 Ω
806	R322	B4G	3001054720000	4.7K Ω
807	R323	B4C	3001054720000	4.7K Ω
808	R324	B4G	3001053300000	33 Ω
809	R325	B4G	3001053300000	33 Ω
810	R326	B4G	3001053300000	33 Ω
811	R401	T2G	3001055100020	51 Ω
812	R402	T3G	3001051030050	10K Ω
813	R403	T3G	3001051510000	150 Ω
814	R404	T3G	3001051220000	1.2K Ω
815	R405	T3H	3001051030050	10K Ω
816	R406	T2G	3001051020000	1K Ω
817	R407	T3F	3001058220000	8.2K Ω

No.	Ref. No.	Print No.	Part No.	Description
818	R408	T3F	3001053910000	390Ω
819	R409	T2G	3001054720000	4.7KΩ
820	R410	T3G	3001061030010	10KΩ
821	R411	T3F	3001053910000	390Ω
822	R412	T2H	3001051040000	100KΩ
823	R413	T3H	3001051820000	1.8KΩ
824	R414	T3I	3001052720010	2.7KΩ
825	R415	T3I	3001061030010	10KΩ
826	R416	T3H	3001058210000	820Ω
827	R501	B3C	3001054710000	470Ω
828	R502	B3C	3001053310000	330Ω
829	R503	B4E	3001051010000	100Ω
830	R504	B3C	3001051030050	10KΩ
831	R601	T4I	3001059130000	91KΩ
832	R607	B4E	3001061000000	10Ω
833	R611	B3F	3001051030050	10KΩ
834	R612	T5J	3001061020010	1KΩ
835	R613	T4J	3001051020000	1KΩ
836	R614	T4H	3221506181000	Bead
837	R617	T4G	3001054740010	470KΩ
838	R618	T4G	3001051340000	130KΩ

No.	Ref. No.	Print No.	Part No.	Description
839	R620	T4K	3001051040000	100K Ω
840	R621	T4H	3001054730010	47K Ω
841	R622	T4I	3221506181000	Bead
842	R623	T4H	3001051040000	100K Ω
843	R624	T5K	3001051040000	100K Ω
844	R627	B4D	3001054730010	47K Ω
845	R628	B4D	3001054730010	47K Ω
846	R629	B4D	3001052720010	2.7K Ω
847	R630	B4D	3001054730010	47K Ω
848	R631	B4D	3001051530010	15K Ω
849	R632	B4E	3001051020000	1K Ω
850	R635	B3K	3001053330000	33K Ω
851	R636	T4K	3001053320000	3.3K Ω
852	R701	T1J	3001051020000	1K Ω
853	R702	T1J	3001056830000	68K Ω
854	R704	T1J	3001051010000	100 Ω
855	R705	T1J	3001051030010	10K Ω
856	R706	T1J	3001051030010	10K Ω
857	R707	T1J	3001053330000	33K Ω
858	R709	T1J	3001051040000	100K Ω
859	R710	T1J	3001051040000	100K Ω

No.	Ref. No.	Print No.	Part No.	Description
860	R711	T1K	3001051030050	10K Ω
861	R712	T1J	3221505121010	Bead
862	R713	T1J	3001051010000	100 Ω
863	R714	T1K	3001051030050	10K Ω
864	R801	T4L	3001051000000	10 Ω
865	R802	T3L	3001051840000	180K Ω
866	R803	T3K	3001051840000	180K Ω
867	R804	T3K	3001051030050	10K Ω
868	R805	T3K	3001051030050	10K Ω
869	R806	B4K	3001051000000	10 Ω
870	R807	T4K	3001052030000	20K Ω
871	R811	T3K	3001051030050	10K Ω
872	R812	T3K	3001051030050	10K Ω
873	R813	T3K	3001051840000	180K Ω
874	R814	T3K	3001051840000	180K Ω
875	R820	T2L	3001051020000	1K Ω
876	R821	T3J	3001051010000	100 Ω
877	R823	T2K	3001051030050	10K Ω
878	R824	T2K	3001051530010	15K Ω
879	R825	T3K	3001051020000	1K Ω
880	R826	T2K	3001054730010	47K Ω

No.	Ref. No.	Print No.	Part No.	Description
881	R828	T2K	3001051530010	15K Ω
882	R829	B2K	3001054740010	470K Ω
883	R830	T2K	3001053330000	33K Ω
884	R831	T3K	3001051020000	1K Ω
885	R832	T2L	3001051020000	1K Ω
886	R833	T2L	3001051020000	1K Ω
887	R835	T2K	3001051020000	1K Ω
888	R838	B2L	3001051030050	10K Ω
889	R841	B2K	3001051030050	10K Ω
890	R9001	T4E	3001052710010	270 Ω
891	R9002	T2F	3001055620000	5.6K Ω
892	R9003	T4E	3001052710010	270 Ω
893	R9004	T3C	3233099449000	Air-core coil
894	R9005	T4E	3001055690000	5.6 Ω
895	R9006	T2B	3001051030050	10K Ω
896	R9007	T2F	3001058200000	82 Ω
897	R9008	T1E	3001051520000	1.5K Ω
898	R9009	T1E	3001055600000	56 Ω
899	R9011	T4D	3001051020000	1K Ω
900	R9012	T2E	3001051010000	100 Ω
901	R9013	T2F	3001051010000	100 Ω

No.	Ref. No.	Print No.	Part No.	Description
902	R9015	T1E	3001053310000	330Ω
903	R9016	T1E	3001051510000	150Ω
904	R9017	T1D	3001051010000	100Ω
905	R9018	T1E	3001056810000	680Ω
906	R9019	T2F	3001053320000	3.3KΩ
907	R9020	B2F	3001054720000	4.7KΩ
908	R9021	T1F	3001054700000	47Ω
909	R9022	T1F	3001052200000	22Ω
910	R9023	T1E	3001053920000	3.9KΩ
911	R9024	T1D	3001056820000	6.8KΩ
912	R9025	T3C	3001052710010	270Ω
913	R9027	T1D	3001058220000	8.2KΩ
914	R9028	T3C	3001052710010	270Ω
915	R9029	T1D	3001053310000	330Ω
916	R9030	T2E	3001051000000	10Ω
917	R9031	T1E	3001052210000	220Ω
918	R9032	T5D	3001052730000	27KΩ
919	R9033	B1D	3001051020000	1KΩ
920	R9034	T4D	3001055620000	5.6KΩ
921	R9035	B2F	3001051030050	10KΩ
922	R9036	B1F	3001051030050	10KΩ

No.	Ref. No.	Print No.	Part No.	Description
923	R9037	B5D	3001053330000	33K Ω
924	R9038	B1E	3001051020000	1K Ω
925	R9039	B1F	3001051010000	100 Ω
926	R9040	B1F	3001051020000	1K Ω
927	R9041	B1F	3001054720000	4.7K Ω
928	R9042	T2E	3001053320000	3.3K Ω
929	R9043	B1E	3001053330000	33K Ω
930	R9044	T2F	3001053320000	3.3K Ω
931	R9045	B1D	3001051050000	1M Ω
932	R9046	B1E	3001054740010	470K Ω
933	R9047	B1E	3001053330000	33K Ω
934	R9048	B1D	3001051540000	150K Ω
935	R9049	T4D	3001055610000	560 Ω
936	R9050	B1E	3001054730010	47K Ω
937	R9051	T4E	3001051040000	100K Ω
938	R9052	T5D	3001051040000	100K Ω
939	R9053	B1D	3099080398010	0.39 Ω
940	R9054	B1D	3099080398010	0.39 Ω
941	R9055	B1D	3099080398010	0.39 Ω
942	R9057	B1D	3001051540000	150K Ω
943	R9058	B1E	3001051050000	1M Ω

No.	Ref. No.	Print No.	Part No.	Description
944	R9059	B1E	3001054740010	470K Ω
945	R9060	T4D	3001051040000	100K Ω
946	R9061	T4C	3001051040000	100K Ω
947	R9062	T4C	3001051040000	100K Ω
948	R9063	B5D	3001053310000	330 Ω
949	R9065	T4C	3001051040000	100K Ω
950	R9066	B2G	3001051520000	1.5K Ω
951	R9067	B2G	3001056820000	6.8K Ω
952	R9068	B2F	3001053320000	3.3K Ω
953	R9071	B3G	3001053310000	330 Ω
954	R9075	B3G	3001055100020	51 Ω
955	R9078	B3G	3001055620000	5.6K Ω
956	R9079	B2G	3001053330000	33K Ω
957	R9081	B3G	3001051030050	10K Ω
958	R9084	B3G	3001055630000	56K Ω
959	R9085	B2G	3001051040000	100K Ω
960	R9091	T2F	3001051520000	1.5K Ω
961	R9095	T3F	3001053320000	3.3K Ω
962	R9096	T3F	3001052720010	2.7K Ω
963	R9097	T2F	3001053320000	3.3K Ω
964	R9098	T2F	3001053320000	3.3K Ω

No.	Ref. No.	Print No.	Part No.	Description
965	R9100	B1D	3001051540000	150K Ω
966	R9101	B1E	3001051540000	150K Ω
967	R9102	T1D	3001050000000	0 Ω
968	RN256	B3J	3005051030010	10K Ω
969	RN261	B5K	3001052230020	22K*2
970	T9001	T4E	5406000000200	Transformer
971	T9002	T4F	5406000000200	Transformer
972	U101	B1I	3616059000000	Switch IC
973	U102	B1I	3605002057290	Operational amplifier
974	U103	T1I	3604019000000	PLL IC
975	U104	B1I	3616059000000	Switch IC
976	U105	T2G	3609003999000	Mini IC
977	U201	B3I	3610010000010	MCU
978	U242	B2J	3612044000010	Memory
979	U244	B4I	3612002000020	Memory
980	U312	B4L	3805000000030	EMI filter
981	U313	B5E	3805000000030	EMI filter
982	U314	B4K	3805000000030	EMI filter
983	U315	B4G	3805000000030	EMI filter
984	U316	B4F	3805000000030	EMI filter
985	U317	B4G	3805000000030	EMI filter

No.	Ref. No.	Print No.	Part No.	Description
986	U318	B4F	3805000000030	EMI filter
987	U319	B4D	3805000000030	EMI filter
988	U320	B3K	3805000000030	EMI filter
989	U321	B3L	3805000000030	EMI filter
990	U322	B3L	3805000000030	EMI filter
991	U401	T3H	3603999000000	IF processor
992	U501	B3C	3609999000300	GPS LNA
993	U502	B3D	1615000001650	GPS module
994	U601	T4G	3608011000050	Power management IC
995	U604	B3F	3608020005750	Power management IC
996	U605	B2E	3608020005750	Power management IC
997	U606	T3J	3608006000000	Power management IC
998	U607	T5J	3609010000170	Reset IC
999	U608	B3E	3608006000000	Power management IC
1000	U609	T5I	3608006000000	Power management IC
1001	U610	T2I	3608006000030	Power management IC
1002	U611	T4H	3608011000050	Power management IC
1003	U612	B1J	3608006000000	Power management IC
1004	U701	T1K	3606010000010	D/A converter
1005	U801	T4K	3602023005740	Audio amplifier
1006	U820	T2L	3616037000020	Switch IC

No.	Ref. No.	Print No.	Part No.	Description
1007	U821	T2K	3613010000000	Baseband processor
1008	U9002	B1E	3605025000020	Operational amplifier
1009	U9003	B1D	5404000000060	Temperature sensor
1010	X101	T1I	3701019250030	VC-TCXO
1011	X201	B5J	3701327610060	Crystal
1012	X203	B3H	3701019250040	TCXO
1013	Z501	B3C	3804157560000	GPS filter
1014	Z9001	B3F	3802448540040	Crystal filter
1015	/	/	6201809000000	Shielding can for IF processor
1016	/	/	6201810000000	Shielding can for baseband processor
1017	/	/	6201859000000	Shielding can for low-pass filter
1018	/	/	6201860000000	Shielding can for GPS
1019	/	/	6201862000000	Shielding can for TX VCO
1020	/	/	6201865000000	Shielding can for crystal oscillator
1021	/	/	6201915000000	Shielding can for antenna spring plate
1022	/	/	6201935000000	Shielding can for switching power
1023	/	/	/	Main board

PD70X/ PD70XG/ HD705/ HD705G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω

No.	Ref. No.	Part No.	Description
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF
11	C1012	3101052710000	270PF
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter

No.	Ref. No.	Part No.	Description
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch
28	/	41PD7002002B0	PCB
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	C1017	3101051040060	0.1UF
33	L1001	3221506181000	Bead
34	U1002	3608006000030	Power management IC

PD78X/ PD78XG/ HD785/ HD785G Channel Board

No.	Ref. No.	Part No.	Description
1	R1002	3001051210010	120Ω
2	C1001	3101052710000	270PF
3	C1002	3101052710000	270PF
4	C1003	3101052710000	270PF
5	C1004	3101052710000	270PF
6	C1005	3101052710000	270PF
7	C1006	3101052710000	270PF
8	C1007	3101052710000	270PF
9	C1010	3101052710000	270PF
10	C1011	3101052710000	270PF
11	C1012	3101052710000	270PF

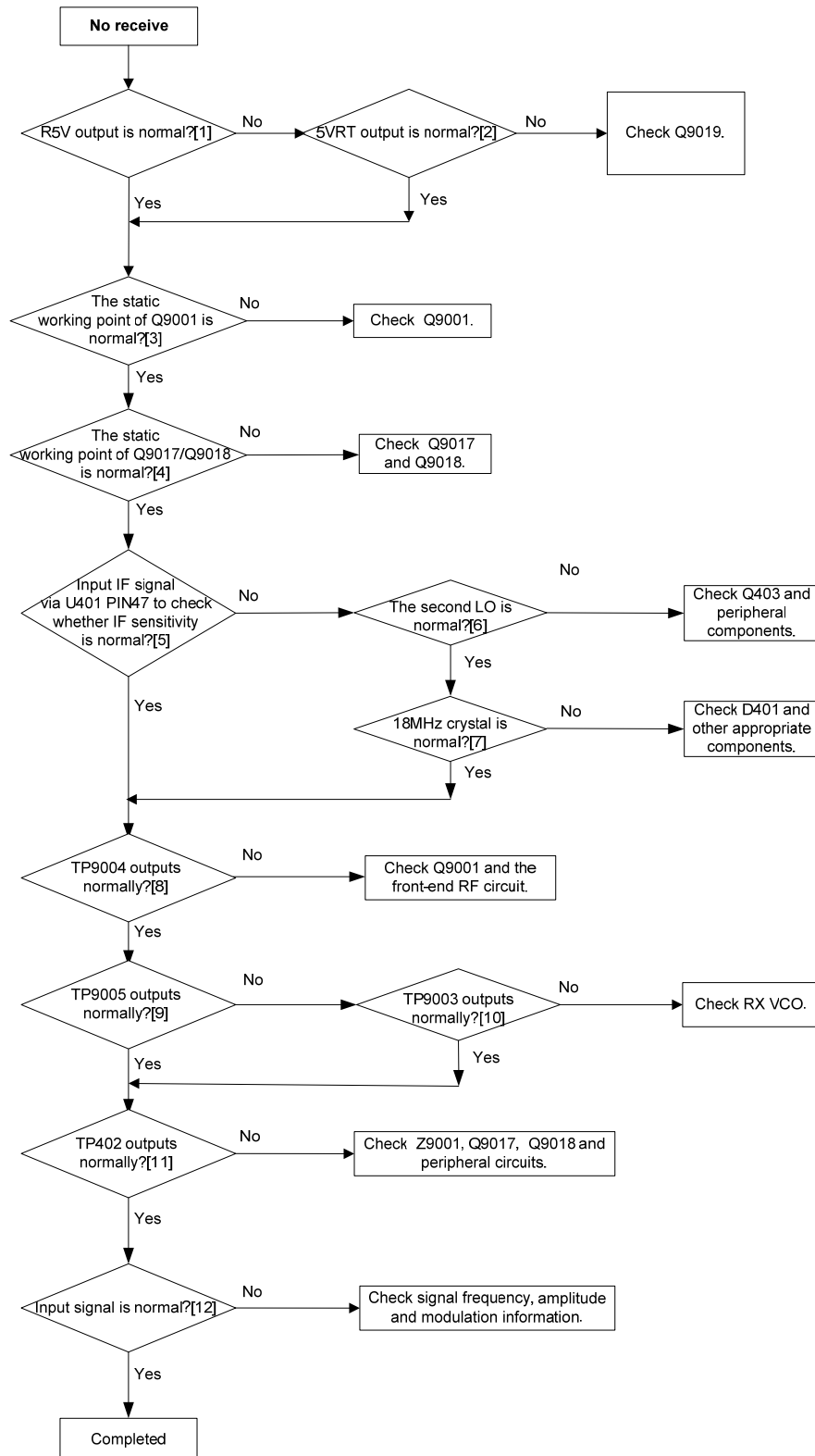
No.	Ref. No.	Part No.	Description
12	D1001	3310040000000	ESD protection diode
13	D1003	3310040000000	ESD protection diode
14	D1004	3310040000000	ESD protection diode
15	D1005	3310040000000	ESD protection diode
16	D1006	3310040000000	ESD protection diode
17	D1007	3310040000000	ESD protection diode
18	D1008	3310040000000	ESD protection diode
19	D1011	3310040000000	ESD protection diode
20	D1014	3310040000000	ESD protection diode
21	D1009	3399040600020	ESD protection diode
22	D1013	3399040600020	ESD protection diode
23	D1002	3307120100050	LED
24	Q1001	3403009000010	Compound transistor
25	U1001	3805000000040	EMI filter
26	J1001	5201016100040	Board-to-board connector
27	S1003	4301080000020	Momentary contact switch
28	/	41PD7802006C0	PCB
29	R1001	3001056810000	680Ω
30	C1015	3101051040060	0.1UF
31	C1016	3101051040060	0.1UF
32	C1017	3101051040060	0.1UF
33	L1001	3221506181000	Bead
34	U1002	3608006000030	Power management IC

PD78X/ PD78XG/ HD785/ HD785G Keyboard

No.	Ref. No.	Part No.	Description
1	R1	3001051010000	100Ω
2	R2	3001051010000	100Ω
3	R3	3001051010000	100Ω
4	R4	3001051010000	100Ω
5	R5	3001051010000	100Ω
6	R6	3001051010000	100Ω
7	R7	3001051010000	100Ω
8	D1	3307990000260	LED
9	D2	3307990000260	LED
10	D3	3307990000260	LED
11	D4	3307990000260	LED
12	D5	3307990000260	LED
13	D6	3307990000260	LED
14	D7	3307990000260	LED
15	D8	3310040000010	ESD protection diode
16	D9	3310040000010	ESD protection diode
17	J4	5201016000010	Board-to-board connector

11.8 Troubleshooting Flow Chart

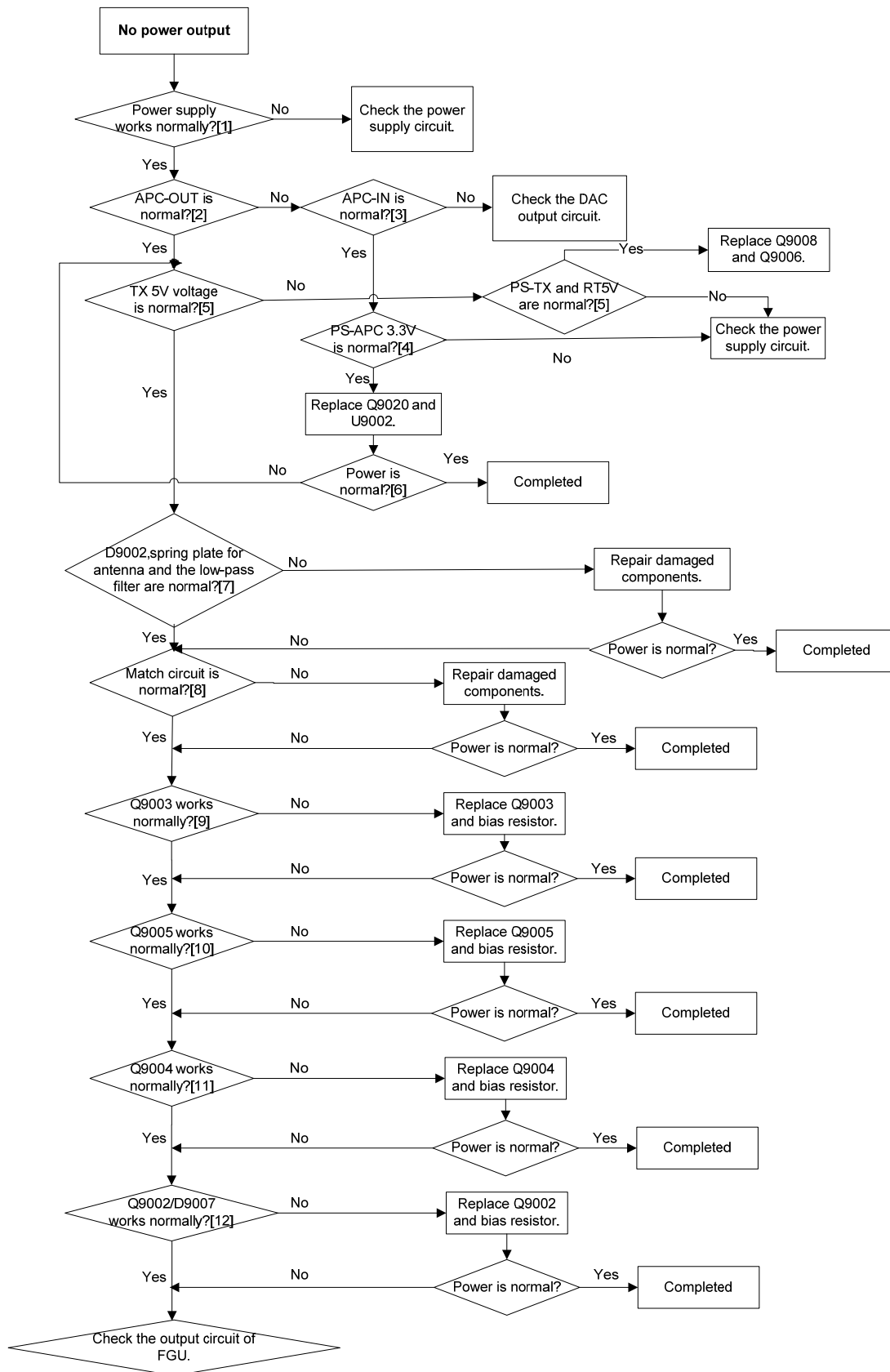
Receiver Circuit



Description of Normal Situations:

- [1] Output voltage at Q9019 PIN3: about 4.95V.
- [2] Output voltage at U605 PIN4 or input voltage at Q9019 PIN4: about 5V.
- [3] Vbe: about 0.74V; Vce: about 2.5V (in the case of no signal reception).
- [4] For Q9018, Vbe: about 0.76V; Vce: about 0.95V;
for Q9017, Vbe: about 0.7V; Vce: 0.85V (in the case of no signal reception).
- [5] Cut off the front-end circuit, and input a 44.85MHz IF signal at TP402 to test IF sensitivity.
Normally, the IF sensitivity is -109dBm.
- [6] Frequency of Q403: 47.1/42.6MHz.
- [7] Frequency of L411: 18MHz.
- [8] Input a -30dBm RF signal at the antenna connector and test at TP9004. Normally, gain>10dB, output signal>-20dBm.
- [9] Input a -30dBm RF signal at the antenna connector and test at R9005 (do not cut off the back-end circuit). Normally, gain>1dB, output signal>-29dBm.
- [10] Signal frequency: RF-IF, signal amplitude>2dBm.
- [11] For input of -80dBm signal at L9022, gain>25dB, output signal>-55dBm;
for input of -30dBm signal, output signal<-20dBm.
- [12] The input signal at the antenna connector, with standard tuning information (AF=1 KHz, FM=3 KHz), is -47dBm.

Transmitter Circuit



Description of Normal Situations:

- [1] Voltage of the power supply: about 7.4V.
- [2] For low power, APC-OUT: 1.8-2.1V; for high power, APC-OUT: 2.4-2.8V.
- [3] For low power, APC-IN: 1-1.3V; for high power, APC-IN: 1.8-2.1V.
- [4] PS-APC: about 3.3V.
- [5] TX5V: about 5V; RT5V: about 5V; PS-TX: about 3.3V.
- [6] High power: about 4.7W; low power: about 1.2W.
- [7] Start-up voltage of D9002: about 0.7V. The low-pass coil must be soldered appropriately and remain in good condition. The spring plate for the antenna must well fit the antenna connector.
- [8] The match components must not be soldered inappropriately or damaged.
- [9] Vdd: about 7.3V; for low power, Vgg: 1-1.2V; for high power, Vgg: 1.35-1.55V.
- [10] Vdd: about 7.3V; for low power, Vgg: 1.8-2.1V; for high power, Vgg: 2.4-2.8V.
- [11] Vc: about 4.8V; Vb: about 1.4V; Ve: about 1.1V.
- [12] Vc: about 4.7V; Vb: about 0.7V; Ve: 0V. Start-up voltage of D9007: about 0.7V.

**Note**

The above check operations should be made under 7.4V voltage.

FGU



Description of Normal Situations:

[1] During transmission, output voltage by Q107 PIN3: about 4V.

During reception, output voltage by Q106 PIN3: about 4V.

[2] During transmission, voltage at Q108 E: about 1.8V.

During reception, voltage at Q104 E: about 1.8V.

[3] The CV value varies with frequencies. Generally, it is within the range 0.5V-4.5V.

[4] L110/L116 is on.

[5] Voltage at Q101/Q102 B: about 0.7V.

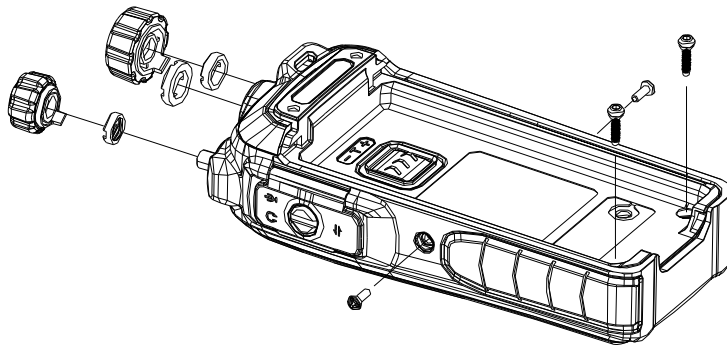
[6] MCSI-CLK-PLL outputs 960 KHz clock.

12. Disassembly and Assembly

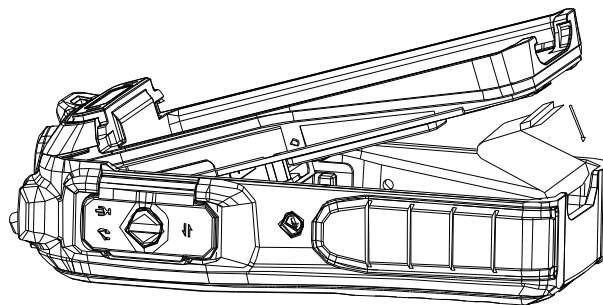
The disassembly and assembly operations for PD70X/ PD70XG/ HD705/ HD705G and PD78X/ PD78XG/ HD785/ HD785G are similar. This section illustrates based on PD78X/ PD78XG/ HD785/ HD785G.

12.1 Disassembling the Chassis

- Step 1** Turn off the radio, and remove the two screws on the sides of the radio.
- Step 2** Remove the two screws on the bottom of the chassis.
- Step 3** Remove the Radio On-Off/Volume Control knob and Channel Selector knob.



- Step 4** Push the chassis upwards, and take the 50-pin connector down (see the arrow in the figure below). Then you can take the chassis out.



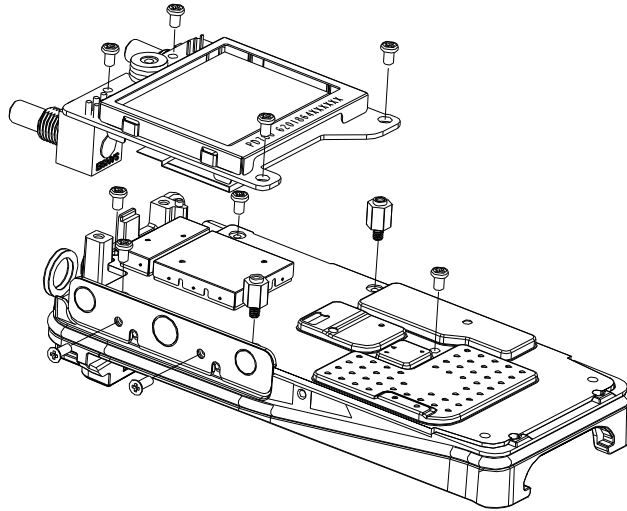
12.2 Disassembling the TX and RX Units

- Step 1** Remove the screws on the PTT board.

Step 2 Remove the screws on the LCD board (for PD70X/ PD70XG/ HD705/ HD705G, please remove the screws on the small board).

Step 3 Remove the screws on the main board.

Step 4 Take the main board down the chassis.



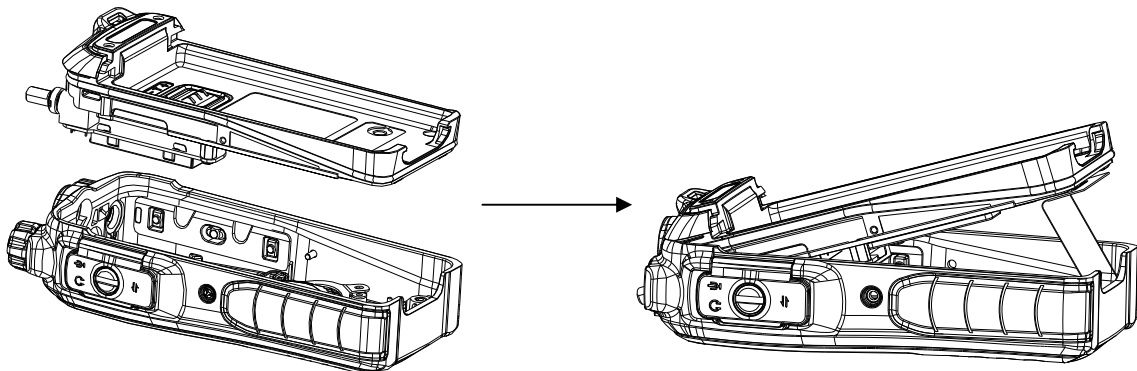
12.3 Assembly

Step 1 Make sure the waterproof ring surrounding the chassis is well fitted into the slot.

Step 2 Insert the chassis into the radio case.

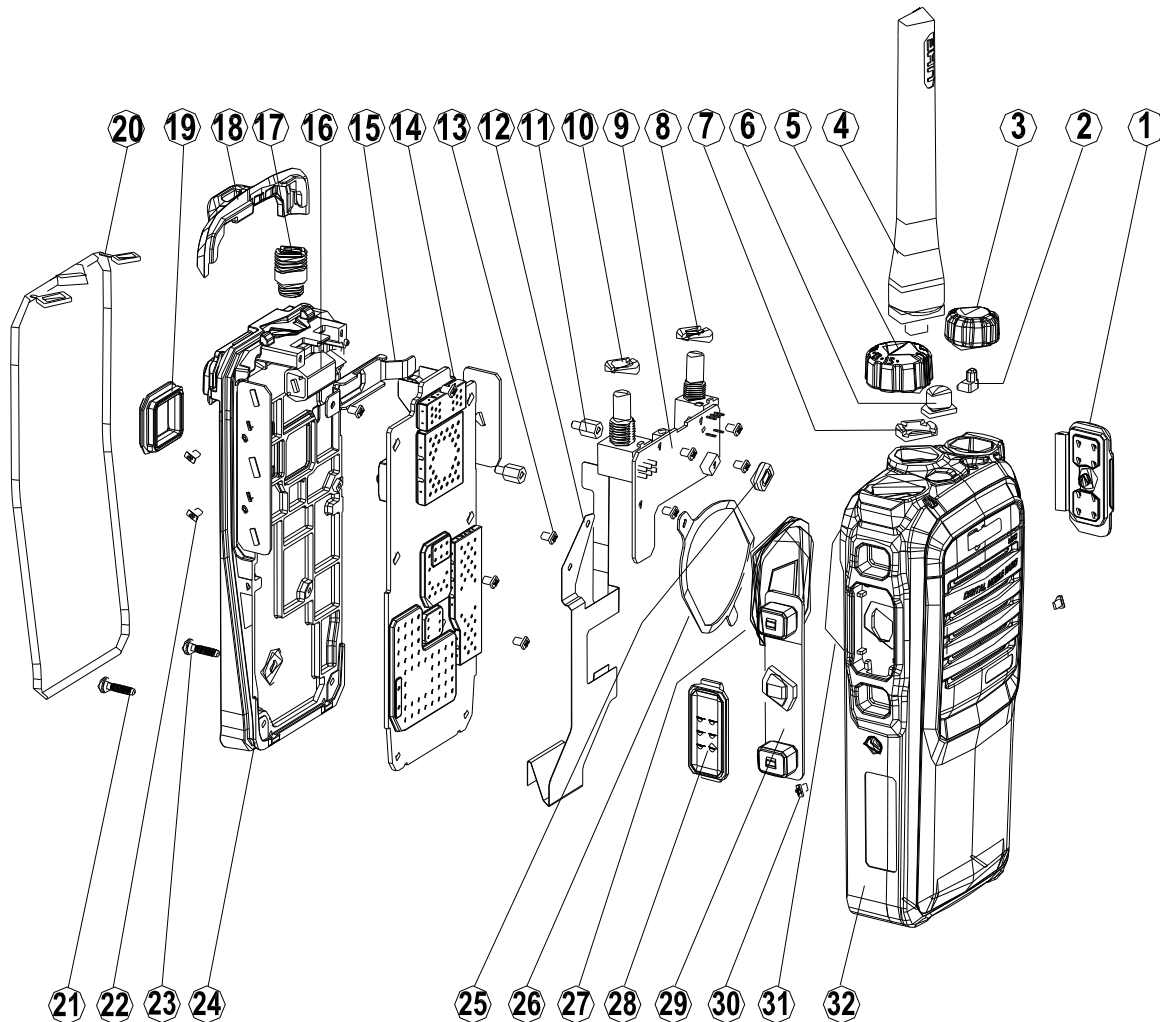
Step 3 Attach the 50-pin board-to-board connector.

Step 4 Press the bottom of the chassis downwards to fit the chassis into the radio case.



13. Exploded View

PD70X/ PD70XG/ HD705/ HD705G



No.	Part Number	Description	Qty.
1	6001277000000	Accessory jack cover	1
2	6001073000000	Light guide	1
3	6001069000010	Volume control knob	1
4	16010435H0010	Stubby Antenna	1

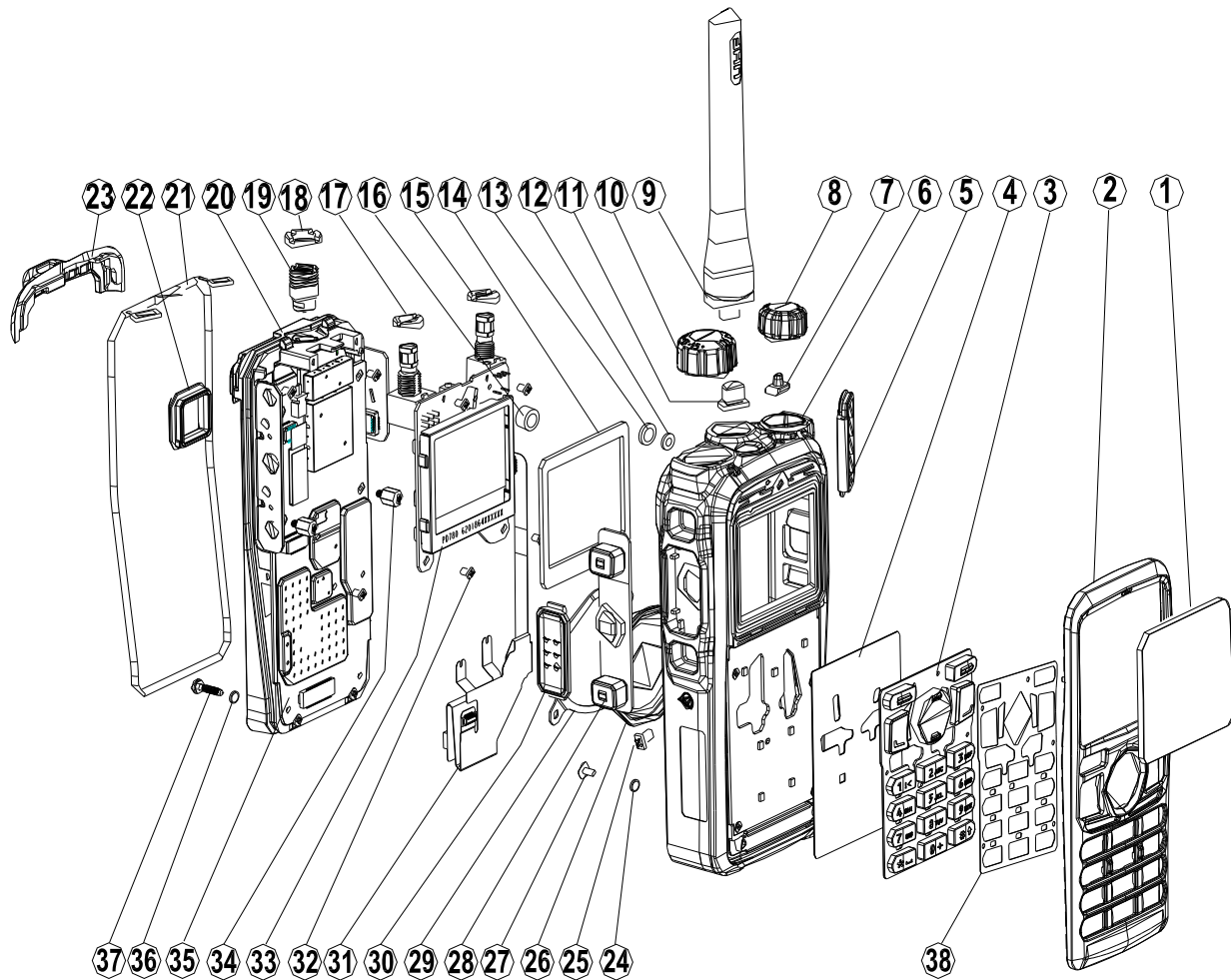
No.	Part Number	Description	Qty.
5	6001068000010	Channel selector knob	1
6	6100502000000	Emergency key	1
7	7209002501000	Nut for antenna	1
8	7206002500200	Nut for volume switch	1
9	/	Channel board	1
10	7207002201000	Nut for encoder switch	1
11	7000218000000	Stud	2
12	1300PD7000090	FPC	1
13	7102003500210	Machine screw	11
14	/	Semi-finished main board	1
15	6201848000000	Motor fixing sheet	1
16	5402000000060	Motor connector	1
17	4400000048000	SMA RF connector	1
18	6001070000000	Rear cover	1
19	6100505000000	Waterproof ring for battery connector	1
20	6100503000000	Waterproof ring for radio	1
21	6100527100000	Waterproof ring for machine screw	4
22	7102009000020	Machine screw	2
23	7101904020300	Self-tapping screw	2
24	6300116001000	Aluminum chassis	1
25	6100111000010	Silicone rubber MIC cover	1
26	6201870000000	Speaker fixing sheet	1
27	5001210000400	Speaker	1
28	6000787000000	PTT key cover	1

No.	Part Number	Description	Qty.
29	6100442000000	Silicone rubber PTT key	1
30	7102004000400	Machine screw	2
31	7400264000000	Speaker felt	1
32	6001063000010	Front case	1

**Note**

Parts that are not marked with Part No. may vary with the radio frequency band.

PD78X/ PD78XG/ HD785/ HD785G



No.	Part Number	Description	Qty.
1	7400320000020	LCD lens	1
2	6001071000000	Front cover	1
3	6100441000000	Numeric keypad	1
4	7300044000010	Metal dome for function key	1
5	6001277000000	Accessory jack cover	1
6	6001065000010	Front case	1

No.	Part Number	Description	Qty.
7	6001073000000	Light guide	1
8	6001069000010	Volume control knob	1
9	16010435H0010	Stubby antenna	1
10	6001068000010	Channel selector knob	1
11	6100502000000	Emergency key	1
12	7400184000000	Waterproof MIC net	1
13	7400329000000	MIC pad	1
14	7500346000000	PORON	1
15	7206002500200	Nut for volume switch	1
16	6100111000010	Silicone rubber MIC cover	1
17	7207002201000	Nut for encoder switch	1
18	7209002501000	Nut for antenna	1
19	4400000048000	SMA RF connector	1
20	6300116001000	Aluminum chassis	1
21	6100503000000	Waterproof ring for radio	1
22	6100505000000	Waterproof ring for battery connector	1
23	6001070000000	Rear cover	1
24	7000238000000	Pad	1
25	7102004000400	Machine screw	2
26	5001210000400	Speaker	1
27	7101904020300	Self-tapping screw	2
28	6100442000000	Silicone rubber PTT key	1
29	6201870000000	Speaker fixing sheet	1
30	6000787000000	PTT key cover	1

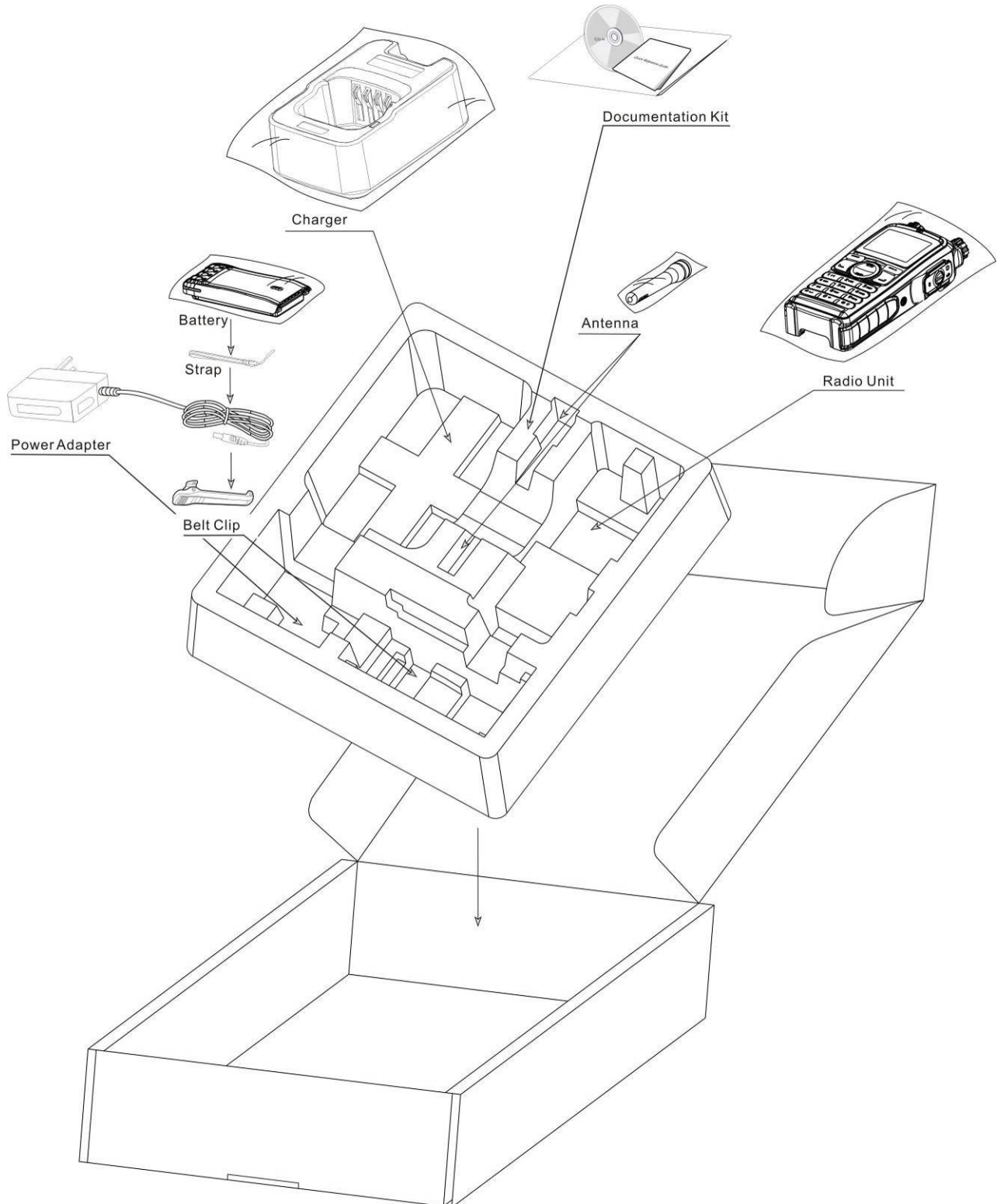
No.	Part Number	Description	Qty.
31	1300PD7800000	50PIN B2B connector	1
32	7102003500210	Machine screw	11
33	/	Semi-finished channel board	1
34	7000218000000	Stud	2
35	/	Semi-finished main board	1
36	6100527100000	Waterproof ring for machine screw	4
37	7102009000020	Machine screw	2
38	7400296000010	Speaker felt	1

**Note**

Parts that are not marked with Part No. may vary with the radio frequency band.

14. Packing Guide

This section takes PD78X/ PD78XG/ HD785/ HD785G for example.



15. Specifications

General	
Frequency Range	• UHF1: 400-470MHz • UHF2: 450-520MHz • UHF3: 350-400MHz • UHF5: ➢ RX: 851-870MHz, 935-941MHz ➢ TX: 806-825MHz, 851-870MHz, 896-902MHz, 935-941MHz • VHF: 136-174MHz
Channel Capacity	• PD70X/ PD70XG/ HD705/ HD705G: 32 • PD78X/ PD78XG/ HD785/ HD785G: 1024
Channel Spacing	25/20/12.5KHz
Operating Voltage	7.4V (rated)
Battery	2000mAh Li-Ion battery
Battery Life (5-5-90 Duty Cycle, High TX Power) High-capacity 2000mAh Li-Ion Battery	• PD70X/ HD705/ PD78X/ HD785: • Analog: 12.5 hours (UHF); 11 hours (VHF) • Digital: 14.5 hours (UHF); 13.5 hours (VHF) • PD70XG/ HD705G/ PD78XG/ HD785G: • Analog: 11 hours (UHF); 10 hours (VHF) • Digital: 12.5 hours (UHF); 12 hours (VHF)
Operating Temperature	-30℃ ~ +60℃
Dimensions (H×W×D) (with standard battery, without antenna)	• PD70X/ PD70XG/ HD705/ HD705G: 125×55×35 mm/ 4.921×2.165×1.378 inch • PD78X/ PD78XG/ HD785/ HD785G: 125×55×37 mm/ 4.921×2.165×1.458 inch

Weight (with antenna & standard battery)	● PD70X/ PD70XG/ HD705/ HD705G: 335g/ 0.74lb (UHF); 340g/ 0.75lb (VHF) ● PD78X/ PD78XG/ HD785/ HD785G: 355g/ 0.78lb (UHF); 360g/ 0.79lb (VHF)
Frequency Stability	±1.5ppm
Receiver	
Sensitivity	● Analog ● 0.3μV (12dB SINAD) ● 0.22μV (Typical) (12dB SINAD) ● 0.4μV (20dB SINAD) ● Digital: 0.3μV /BER5%
Adjacent Channel Selectivity	● TIA-603: 60dB@12.5kHz/70dB@20&25kHz ● ETSI: 60dB@12.5kHz/70dB@20&25kHz
Intermodulation	● TIA-603: 70dB@12.5/20/25kHz ● ETSI: 65dB@12.5/20/25kHz
Spurious Response Rejection	● TIA-603: 70dB@12.5/20/25kHz ● ETSI: 70dB@12.5/20/25kHz
Blocking	84dB
Rated Audio Power Output	0.5W (16Ω load)
Rated Audio Distortion	≤3%
Transmitter	
RF Power Output	● UHF1/ UHF2/ UHF3: 4W/1W ● UHF5: 2.5W/1W ● VHF: 5W/1W
Conducted/Radiated Emission	● -36dBm<1GHz ● -30dBm>1GHz
Modulation Limiting	● ±2.5kHz@12.5kHz

	• $\pm 4.0\text{kHz}@20\text{kHz}$ • $\pm 5.0\text{kHz}@25\text{kHz}$
FM Noise	• $40\text{dB}@12.5\text{kHz}$ • $43\text{dB}@20\text{kHz}$ • $45\text{dB}@25\text{kHz}$
Audio Distortion	$\leq 3\%$
GPS (open area)	
TTFF (Time To First Fix) Cold Start	<1 minute
TTFF (Time To First Fix) Hot Start	<10 seconds
Horizontal Accuracy	<10 meters

All Specifications are tested according to applicable standards, and subject to change without notice due to continuous development.

16. Appendix

UHF1 Blind Spot

No.	UHF1 (400-470MHz) Blind Spot (MHz)
1	403.2
2	422.4
3	441.6
4	460.8
5	414
6	432
7	450
8	468
9	434.7
10	463.275
11	407.4625
12	407.475
13	411.725
14	411.7375
15	416
16	424.5375
17	426.6625
18	428.8
19	430.9375
20	435.2
21	439.4625
22	439.475

No.	UHF1 (400-470MHz) Blind Spot (MHz)
23	443.7375
24	448
25	452.2625
26	452.275
27	456.525
28	456.5375
29	458.6625
30	465.0625
31	465.075

Table 16-1 UHF1 Blind Spot

**Note**

Blind spots 11-31 are for R1.0 radios.

UHF2 Blind Spot

No.	UHF2 (450-520MHz) Blind Spot (MHz)
1	450
2	468
3	486
4	504
5	480
6	460.8
7	518.4
8	499.2

Table 16-2 UHF2 Blind Spot

UHF3 Blind Spot

No.	UHF3 (350-400MHz) Blind Spot (MHz)
-----	------------------------------------

No.	UHF3 (350-400MHz) Blind Spot (MHz)
1	384
2	366.6
3	353.8
4	369.8
5	385.8
6	393.675

Table 16-3 UHF3 Blind Spot

UHF5 Blind Spot

No.	UHF5 (806-941MHz) Blind Spot (MHz)
1	864
2	867.3
3	869.7
4	936

Table 16-4 UHF5 Blind Spot

VHF Blind Spot

No.	VHF (136-174MHz) Blind Spot (MHz)
1	144
2	140.7
3	162
4	153.6

Table 16-4 VHF Blind Spot

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