

KT-8250

CONTEC KT-8250

I N D E X

	PAGE/S
INTRODUCTION	39
ASSEMBLY AND ADJUSTMENT	40-43
GENERAL INSTRUCTION	44
MODIFICATION	44
SAFETY REQUIREMENTS	45
TUBE BASE PCB LAYOUT	46
WIRING DIAGRAMS	47-48
CIRCUIT DIAGRAM	49
CONTROL UNIT PCB'S	50-51
WIRING DIAGRAM OF CONTROL UNIT	52
POWER SUPPLY PCB LAYOUT	53
PHOTO-DETECTOR	54
HAND SET	54
CIRCUIT WAVEFORMS	55
REMOTE CONTROL RECEIVER PCB LAYOUT	56
TRANSMITTER UNIT - TOP AND BOTTOM VIEWS	57
MAIN PCB LAYOUTS	58-59
CIRCUIT DIAGRAM	61
COMPONENT IDENTIFICATION AND PIN-OUTS	63
I F ALIGNMENT PROCEDURE	64-65

INTRODUCTION

This is a fully solid-state colour TV receiver, composed of 9 IC's, 34 transistors, 82 diodes and 1 51cm picture tube.

The picture tube adopts in-line electron gun technique. Colour purity and convergence can be adjusted with ease. With main circuits laid out three PCB's which are connected by wire connectors, the set is highly reliable and convenient for servicing.

Circuit Features

1. A newly-developed surface acoustic wave filter is used to improve picture quality and selectivity and to reduce the number of components and adjustment points.
2. The PIF amplifier circuit is contained in a single chip of 16-pin IC (TA607 or TA7611 AP) that simplifies circuit construction and greatly reduces the number of parts used.
3. The audio output circuit is also contained in a 16-pin IC to facilitate simplification of the circuit and improvement of the tone quality.
4. The video circuit used a DC pedestal clamp circuit that assures of clear image with stable colour reproducing.
5. The chroma and video circuit is made up of a single chip of 30-pin IC which has stable performance and greatly reduces the parts used in preset points.
6. The sync. separator, AFC and horizontal and vertical oscillator circuit is made up of a single chip of 16-pin IC (TA7609).
7. The high voltage circuit uses a newly-designed integrated triple transformer that provides clear and stable colour picture and improves convergence.
8. The mini-necked picture tube used is a 20" 90° utilized in line type, that does not require dynamic convergence adjustment, with less power consumption. The colour temp. of the set is 6500°K.

ASSEMBLY AND ADJUSTMENT

1. General Information

All adjustments are thoroughly done before shipping. Therefore the receiver should operate normally and produce proper colour upon good installation.

The receiver is packed in cardboard carton. Take care in transportation and drawing out.

Insert the power plug into a 240 volt 50Hz AC power outlet. Never connect to DC supply or other power outlet or frequency. Switch on the TV receiver and set AFC switch at 'OFF' position. Adjust the controls for optimum picture and then set AFC switch at 'ON' position.

For testing and adjustment the luminance and chrominance controls should be preset at normal positions while the volume control a one third position of maximum output. While operating the remote controlled transmitter, make sure the infra-red ray transmitter and the infra-red ray receiver are in alignment.

2. Automatic Degaussing

An automatic degaussing coil is attached around the picture tube, degaussing the tube properly in about one second after the set is switched on. If the receiver is moved or faced in a different direction, the power must be switched off at least 15 minutes in order that the automatic degaussing circuit operates properly. External degaussing is necessary if the automatic degaussing proves ineffective after the set is moved. External degaussing is done by moving a degaussing coil circlewise in front of the face plate and then moving it away step by step until it is about two meters from the screen, when the power is switched off. If residual colour spots are still found on the screen, adjust the colour purity and convergence.

3. B+ Voltage Adjustment

Note: To avoid X-ray hazards, B+ voltage must be set correctly at 110v position.

- a. Switch on the TV receiver, tune in an active channel with contrast and luminance controls at normal positions.
- b. Make sure the AC power supply is 240v 50Hz.
- c. Connect test point TP11 on the PCB 60-18250-01 to a reliable DC voltmeter.

CONTEC KT-8250

- d. Adjust VR501 (PCB 60-18250-07) for B+ 110v voltage reading.

4. High Voltage Check

- a. Connect an accurate and reliable high voltage meter to the second cap of the picture tube.
- b. Turn on the receiver, set luminance, contrast and chrominance controls to minimum.
- c. Make sure the high voltage does not exceed 28KV.
- d. No matter whether the luminance, contrast and chrominance controls are set to maximum or minimum, the high voltage must be kept under 28KV.

5. Horizontal Sync. Adjustment

If the picture shows an unstable sync. in horizontal, adjust the VR303 10Kohm semi variable resistor, setting it at the centre of holding range.

6. Vertical Sync. Adjustment

If the picture moves up or down on the screen, adjust the VR301 until there is a single image without vertical movement.

7. Vertical Height Adjustment

Vertical height control (VR-302) can change the size of the picture. Make fine adjustment until the picture overscans the mask 2mm.

8. Focusing

Receive a TV test pattern signal, adjust controls for optimum picture. Adjust focus control for a well-defined, sharpest display in the centre area of the screen.

9. Delay AGC Adjustment

- a. Tune the set to a strong TV signal (about 60 dB).
- b. Adjust delay AGC control (VR-101) to fully counter clockwise position.
- c. Adjust delay AGC control clockwise until noise (snow) just disappears from the screen.

10. AFC Adjustment

- a. Open the programme preset compartment door and switch off the AFC switch (SW004). Tune to an active channel and adjust for optimum picture.

- b. Switch on the AFC switch. Adjust L106 so that the picture quality is the same as obtained by step "a".
- c. Check the AFC function by turning the tuning switch clockwise and counter clockwise, with the AFC switch at both "ON" and "OFF" positions.

11. Colour Sync. Adjustment

- a. Turn on the TV receiver and tune to blank channel for five minutes.
- b. Shortcircuit the L201.
- c. Connect a frequency counter to TP8 and ground. With the oscillation frequency within 4433, 619KHZ + 500HZ, the colour signal, when applied, will be synchronistical.

12. PAL Matrix Adjustment

- a. Tune in colour bar signal.
- b. Set in chrominance control at normal position.
- c. If the PAL matrix adjustment is incorrect, the venetian blind would appear in the colour bar area. The adjustments should be made as follows:
 - i) Adjust L201 for minimum TP9 output.
 - ii) Adjust L206 for minimum venetian blind.
- d. Repeat i and ii step until the ventian blind disappears.

13. SIF Coil Adjustment

- a. Tune in a monotone video signal (400Hz to 1KHz).
- b. Connect a speaker to an audio frequency oscilloscope in parallel.
- c. Adjust L107 for a maximum amplitude signal output with minimum distortion.

14. Sub. Luminance and Contrast Controls Adjustment

- a. Receive moderately strong Philips pattern (about 70 dB).
- b. Connect the positive side of a 1v high impedance voltmeter to TP7, negative side TP8.
- c. Set the sub. brightness control VR202 and sub. contrast control VR201 at mid position.
- d. Turn the brightness control and contrast control VR011 to maximum, and chrominance control to minimum.

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- e. Adjust the sub. brightness control VR202 to change the 75% black colour into dark grey.
- f. Adjust the sub. contrast control for the reading of 0.52v.

15. White Balance Adjustment

- a. Receive a monochrome pattern signal and warm up the set for 15 minutes.
- b. Set the R,G,B cut off controls VR403, VR404, VR405 and the G,B drive controls at centre position.
- c. Rotate the screen control fully counter clockwise.
- d. Disconnect the luminance output terminal connector (Socket-H) and connect TP13 to ground with a jumper wire.
- e. Rotate the screen control gradually clockwise until the first horizontal appears on the screen.
- f. If the first horizontal is in blue, adjust VR403, VR404 to increase the red and green component level to get a white horizontal line.
- g. Remove the jumper wire and connect back the luminance output connector (socket-H). Set the luminance and contrast controls at normal positions. Adjust VR401, VR402 to maintain a good white balance at the brightest part of the screen.
- h. Turn the brightness and contrast controls to maximum and minimum. Observe the screen white balance, if it is not proper in high brightness or low brightness condition, adjust R,G,B cut off controls or G,B drive controls respectively, in order to maintain a good white balance in both low and high luminance conditions.

16. SIF and AF Adjustment

- a. FM/AM signal from a signal generator which is set at SIF frequency, with AF 400Hz, 30% modulation is applied to TP2 through a 1Kohm resistor and a .001uF capacitor.
- b. An oscilloscope, in parallel with 8 ohm load resistor and VTVM, is connected to socket G.
- c. DC supply of 12v connects across C137.
- d. Fine adjust L107 to obtain a maximum amplitude signal output, output power being over 1.8W.

Be noticed that the waveform has minimum distortion.

CONTEC KT-8250

General Instruction

Components used in the receiver are of general type, unless otherwise specified. Those parts marked with ! or with their characteristics specified in the Service Data or in the Schematic Diagram must be replaced with the same type if ruined. Any misconduct may cause hazards or intensify the X-ray radiation. As many mechanical and electrical parts are essential for the normal operation of the set, it is desirable to carefully study the manual before servicing.

MODIFICATION

MODEL : KT-8250 (I SYSTEM)

(1)	R615	Change	10 ohm	to	56 ohm
(2)	C104	Change	0.47 uF	to	0.02 uF
(3)	C109	Change	3 PF	to	7 PF
(4)	R107	Change	470 ohm	to	1 Kohm
(5)	R201	Change	150 Kohm	to	270 Kohm

Reason: Item (3), (4) and (5) "improve video band width and resolution"

Item (2) "Reduces channel switching noise"

Item (1) "Stabilizes remote traction"

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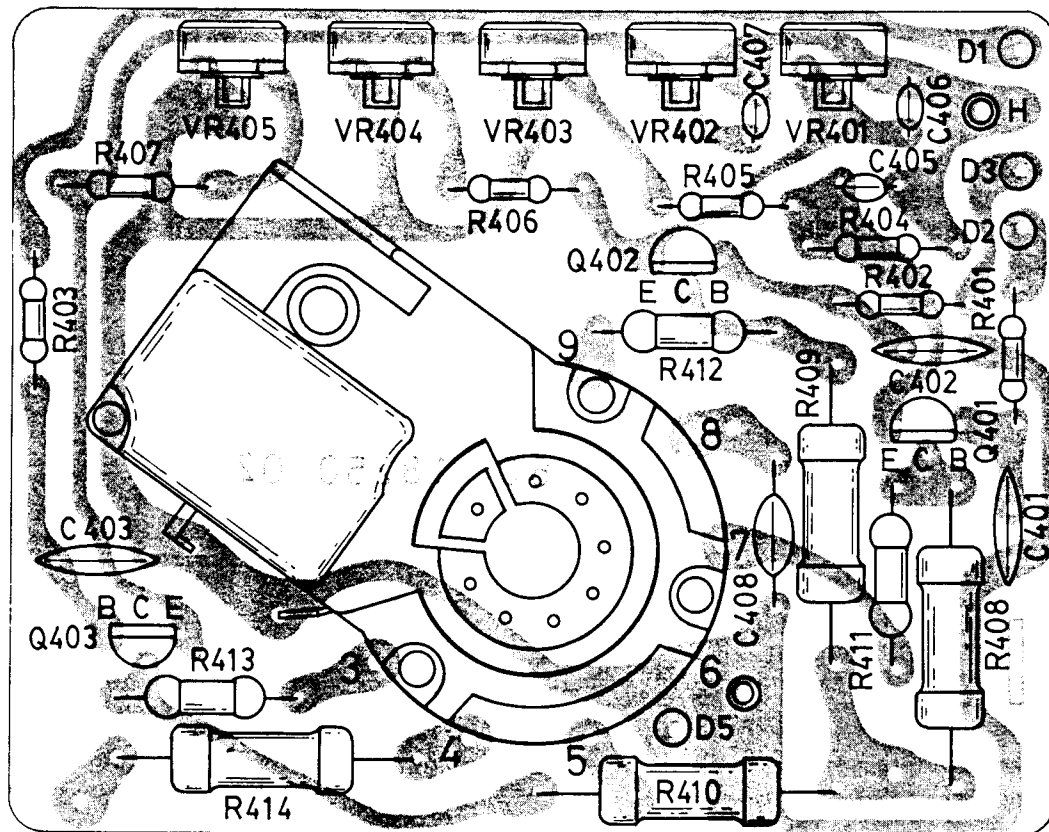
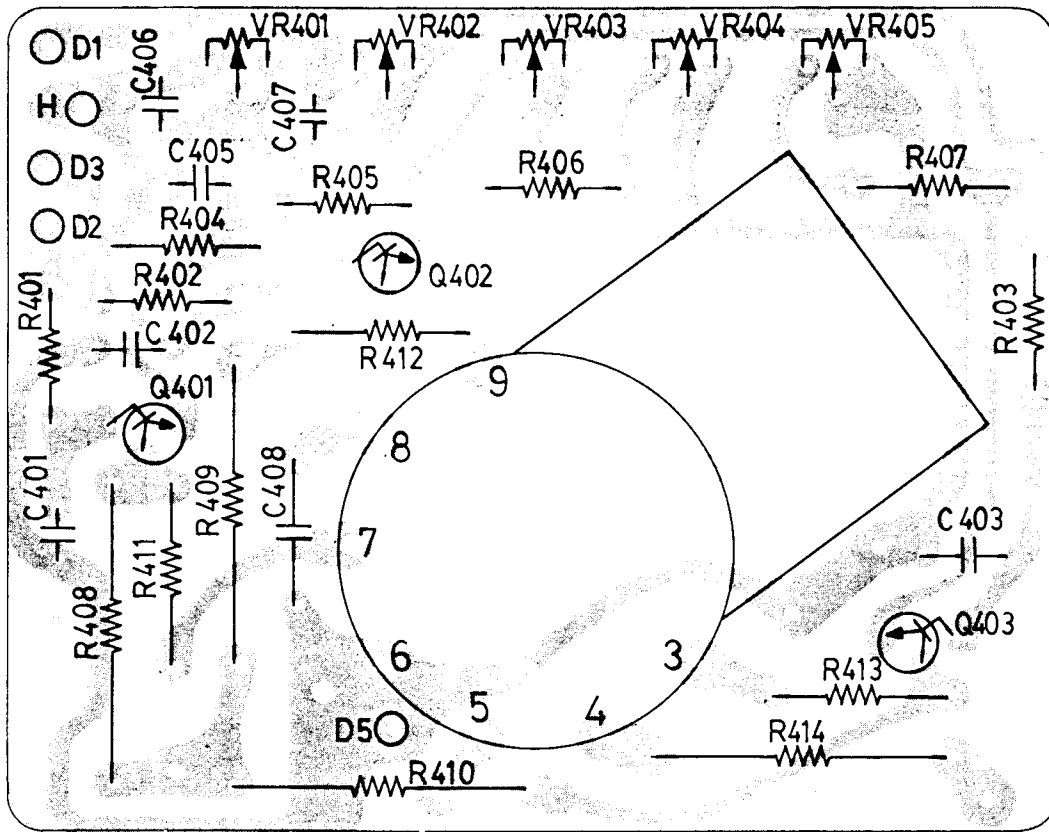
SAFETY REQUIREMENTS

Prevention of X-Ray Radiation

1. Abnormal excessive high voltage may cause dangerous X-ray radiation. To avoid such hazards, the high tension must be restricted to specified limit. The normal high voltage for the receiver is 24.5K, and must not, under any conditions, exceed 28KV. It is important to check the high voltage of the receiver after servicing, the testing meter must be accurate and reliable.
2. In colour TV receiver, picture tube is the main source of X-ray radiation. For safety purpose, it is necessary to replace the damaged tube with the same type, or as specified in the parts list.
3. There are components which are directly or indirectly related to X-ray radiation, parts replacement should be conducted in compliance with required specifications.

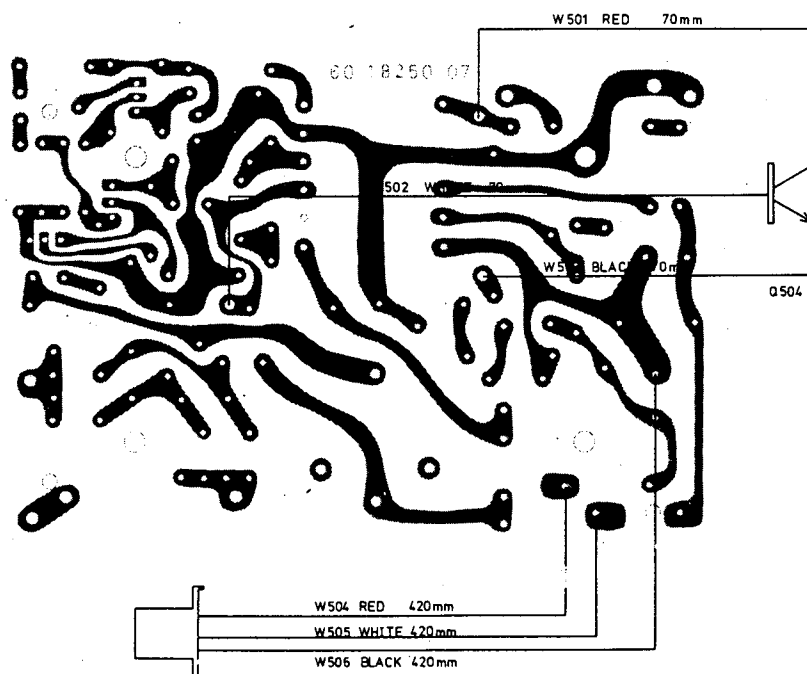
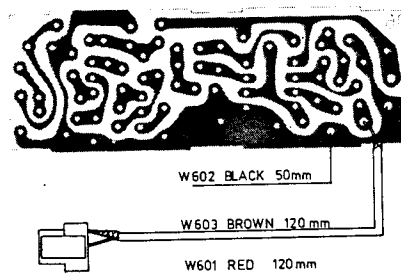
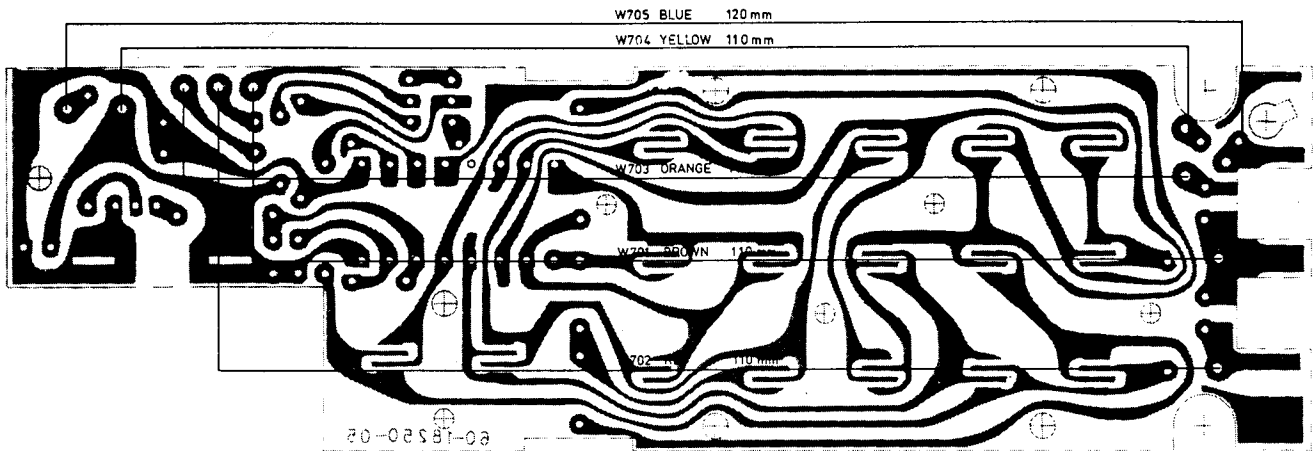
Safety Precautions

1. Potentials as high as 24.5KV are present during normal operation of the receiver. Great care must be taken in servicing.
 - a. Servicing should not be attempted by anyone who is not thoroughly familiar with the precautions necessary for working on high-voltage circuit.
 - b. Discharge the picture tube anode to chassis ground before removing the anode cap.
 - c. Perfectly discharge the picture tube before disassembly. The picture tube is a high vacuum device, care should be taken in handling it.
2. The receiver is designed to operate with 240v 50Hz AC mains.
3. Replace only with same type of fuse if burnt out.
4. All high wattage resistors (metal oxide film resistors) must be kept 10mm away from PCB while replacing.
5. Connection wires must be kept away from components with high voltage or high temperature.

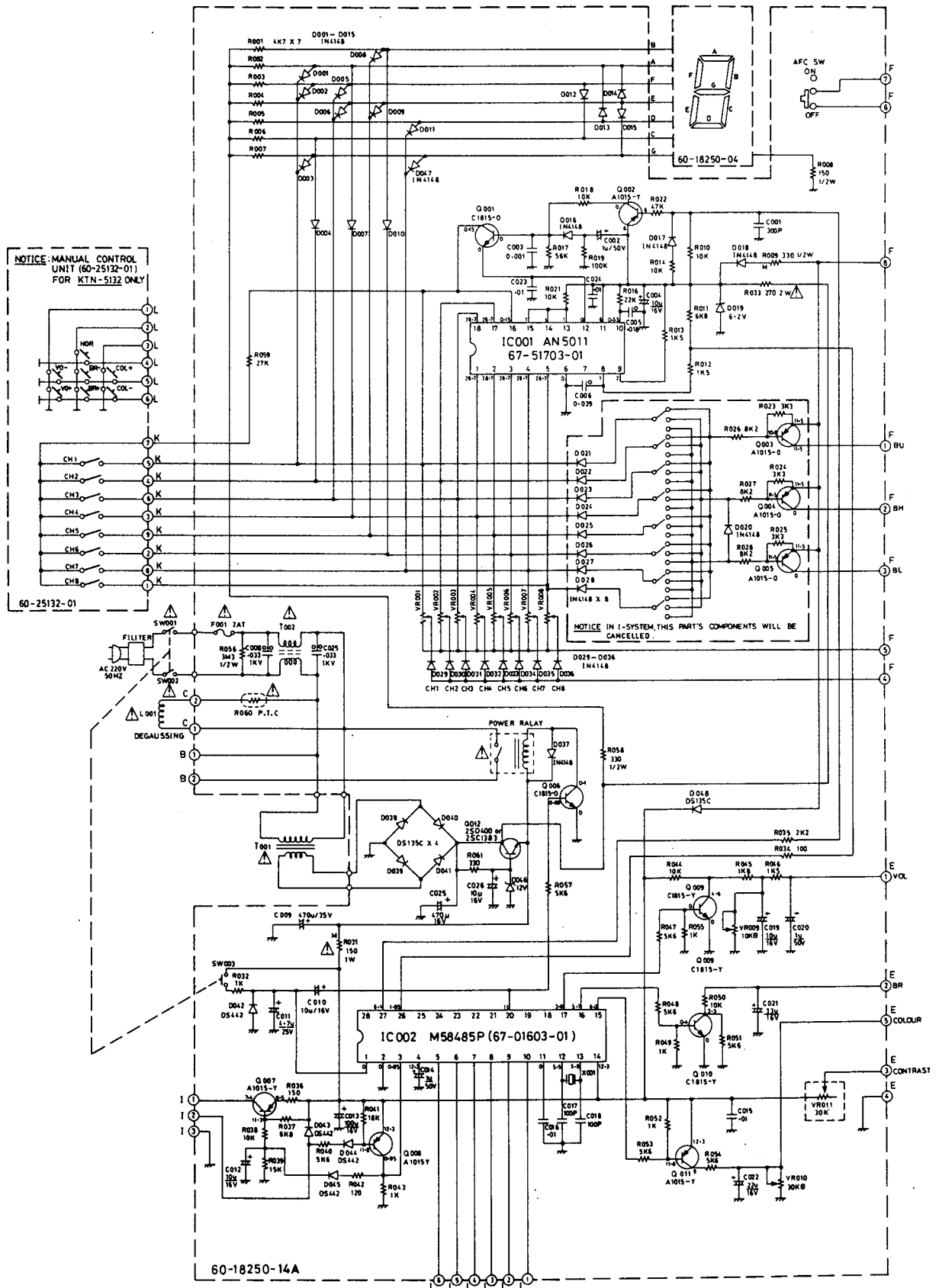


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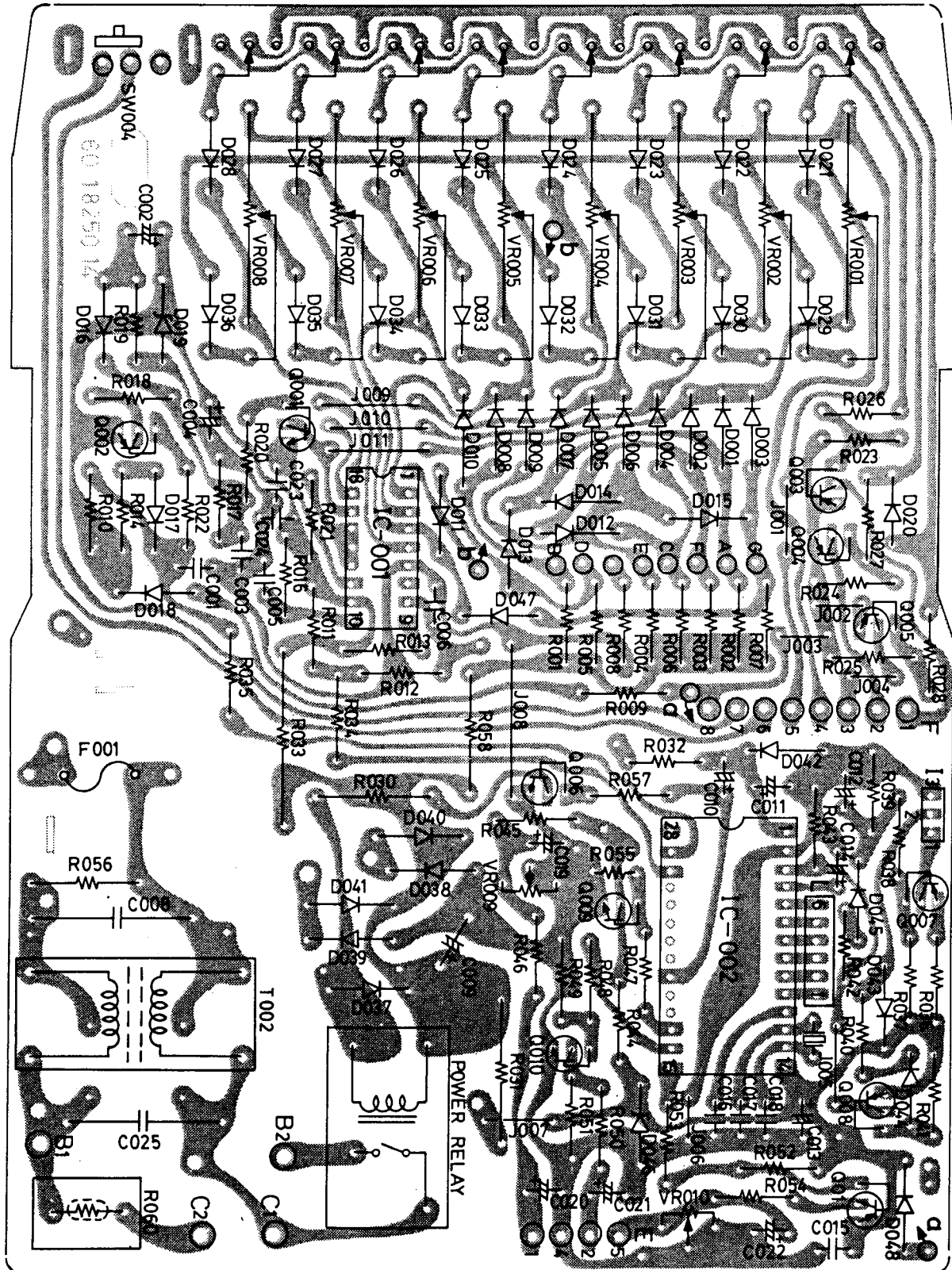
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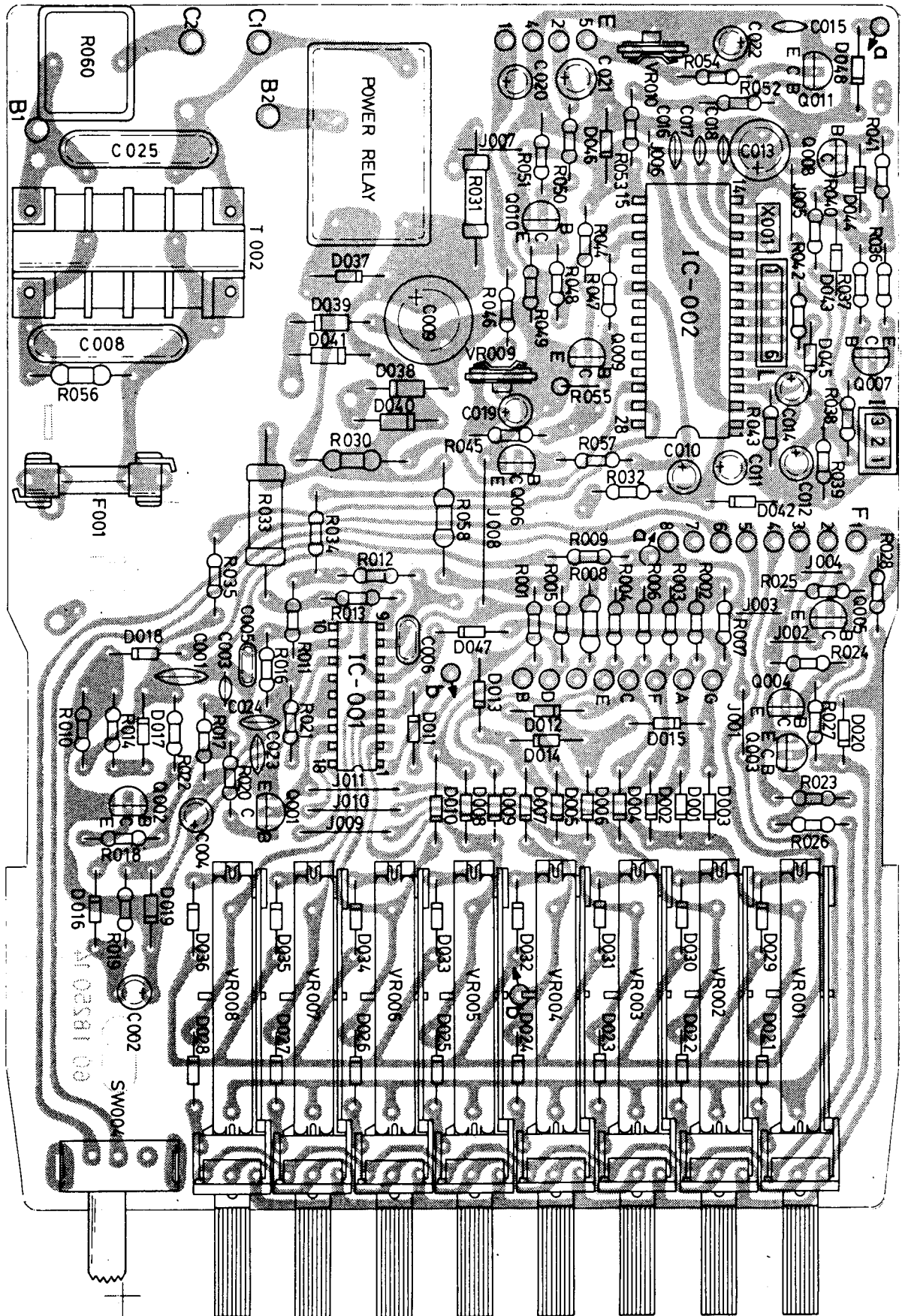
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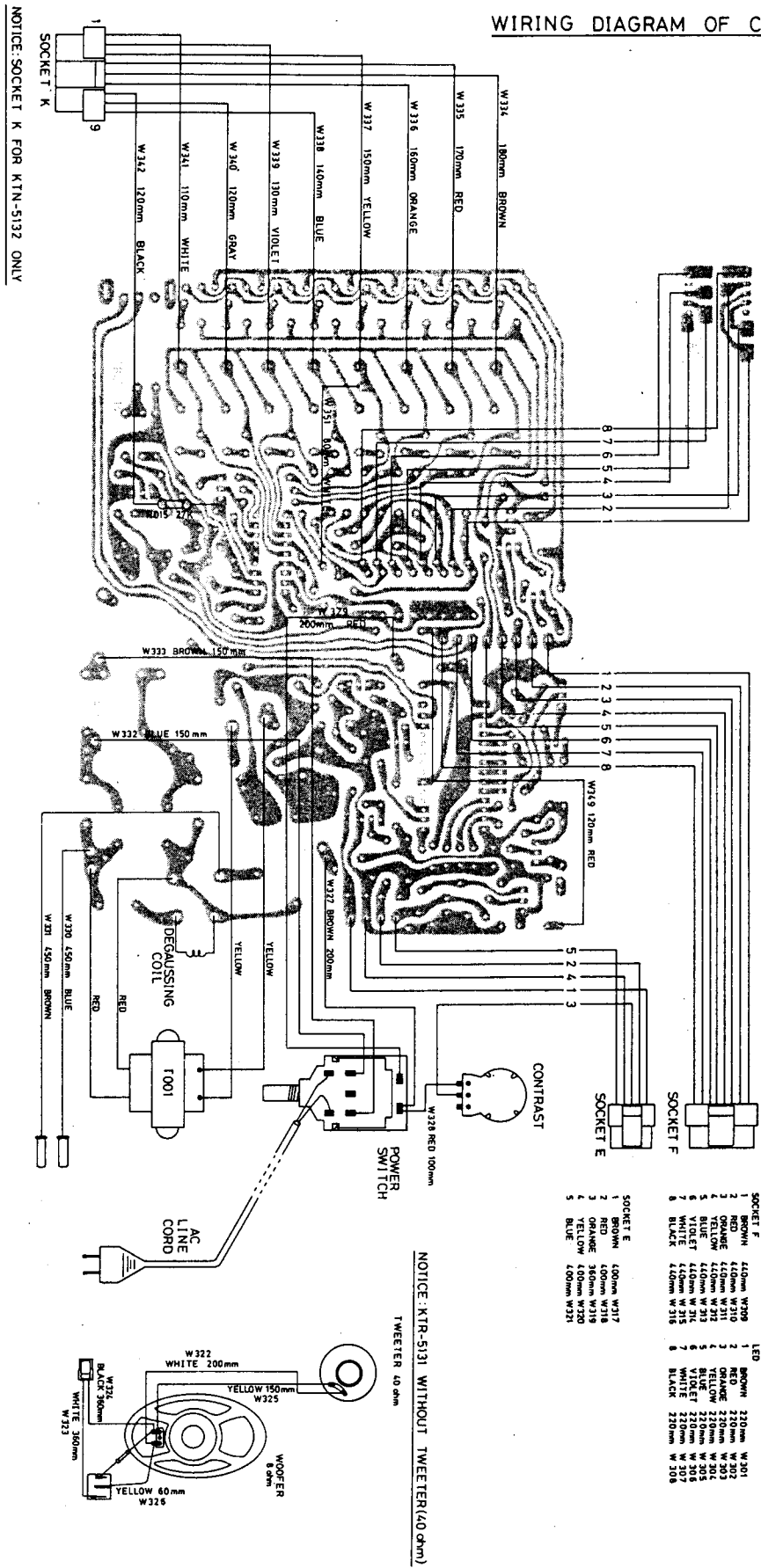
BOTTOM VIEW OF CONTROL UNIT



TOP VIEW OF CONTROL UNIT



WIRING DIAGRAM OF CONTROL UNIT



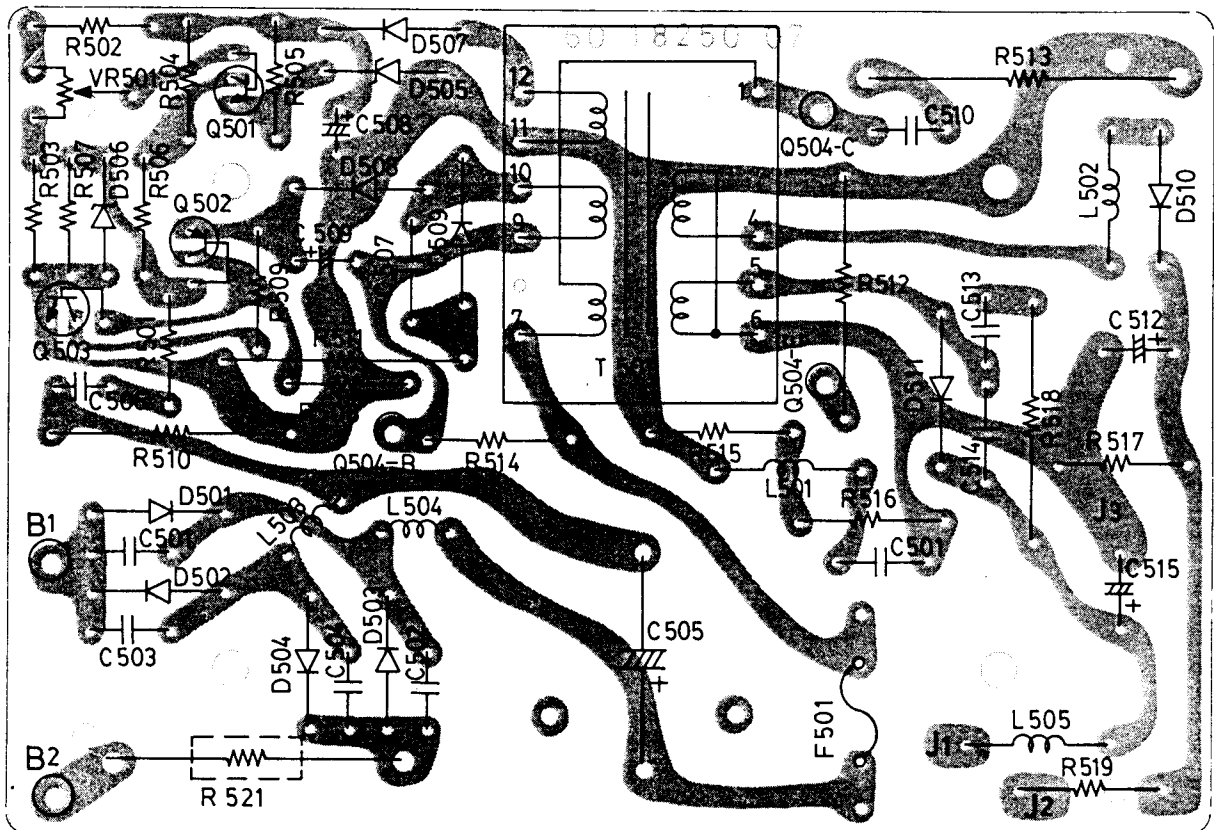
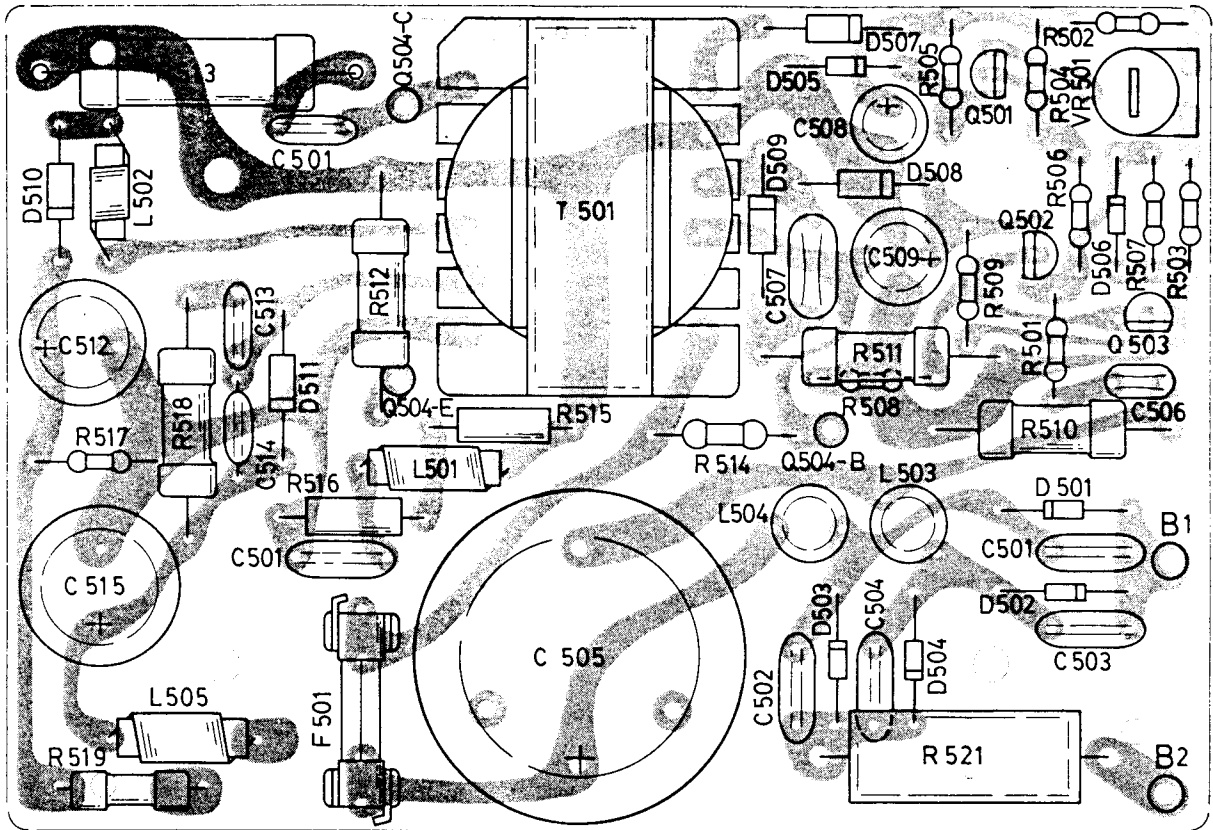
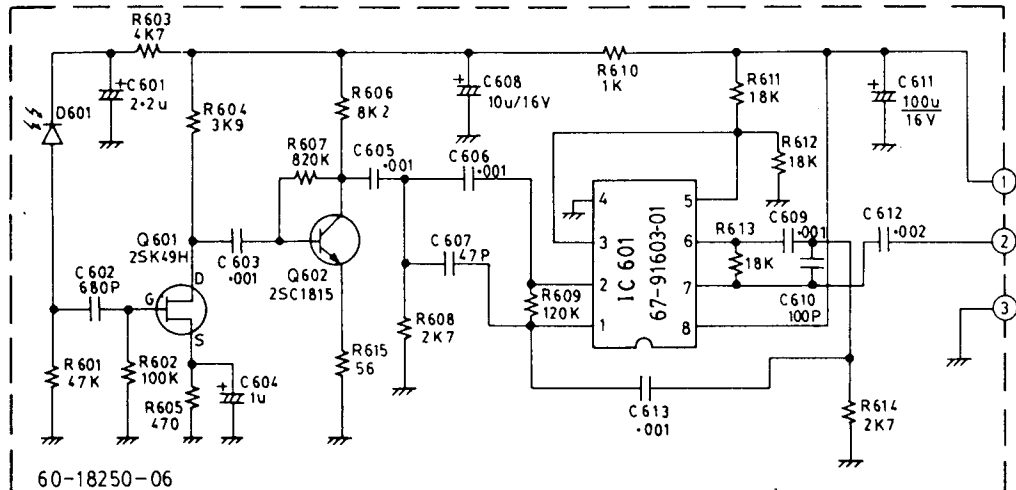
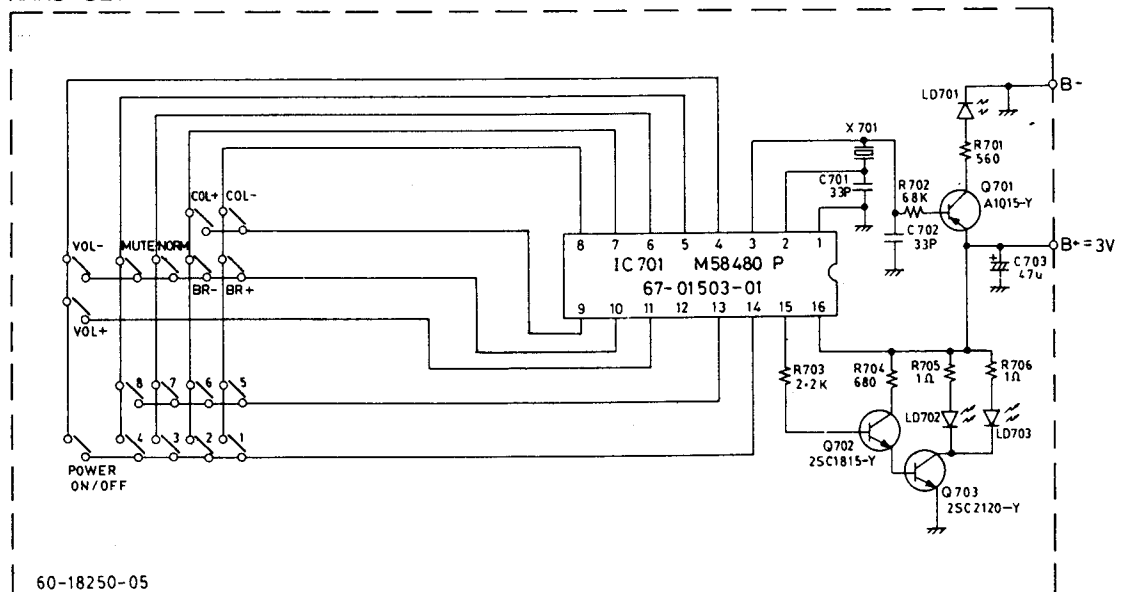


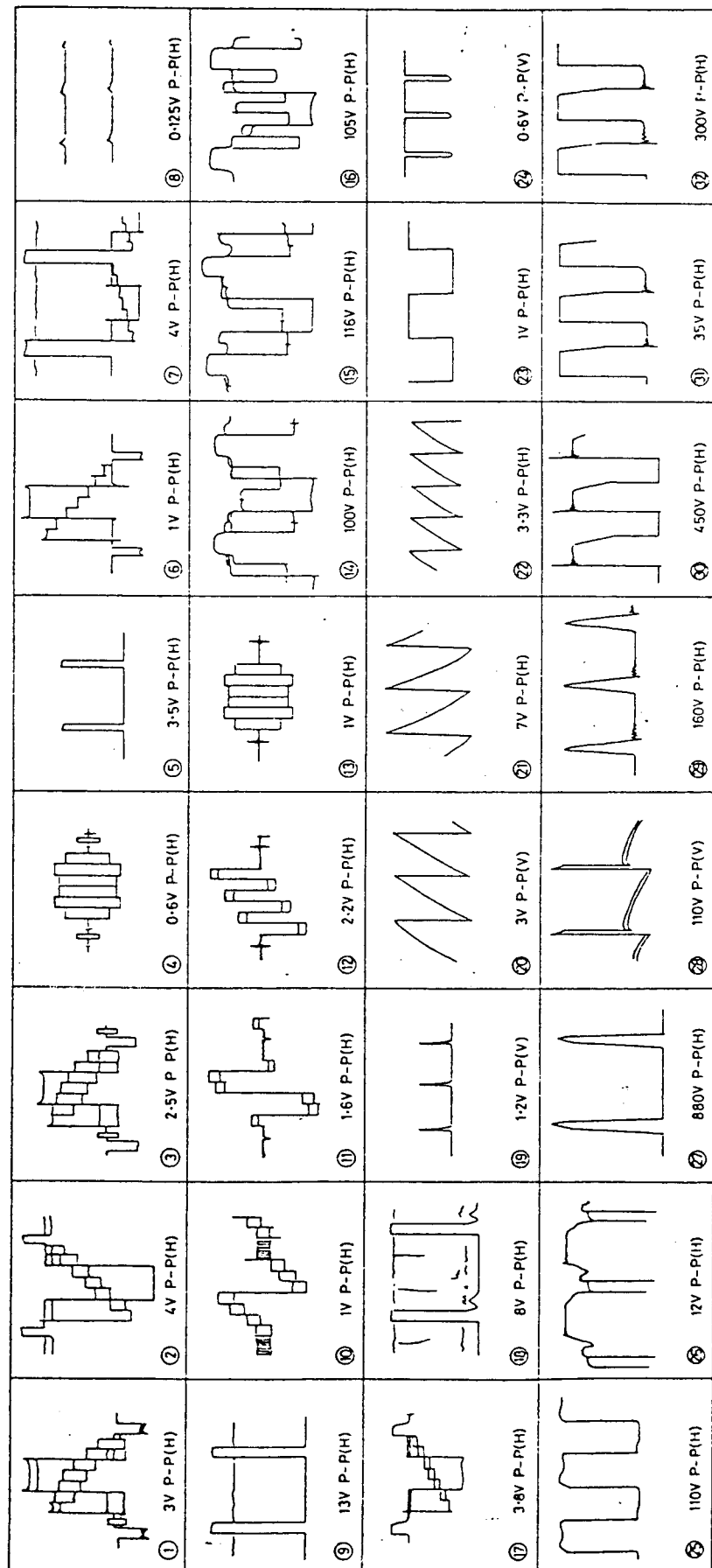
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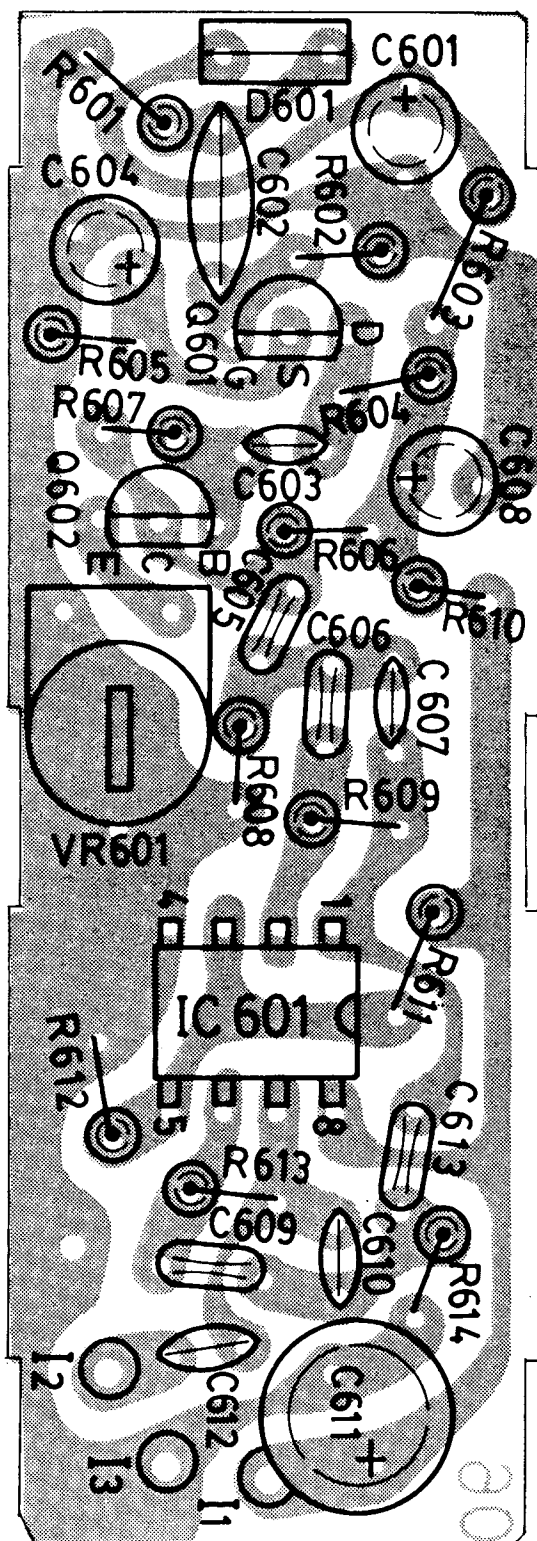
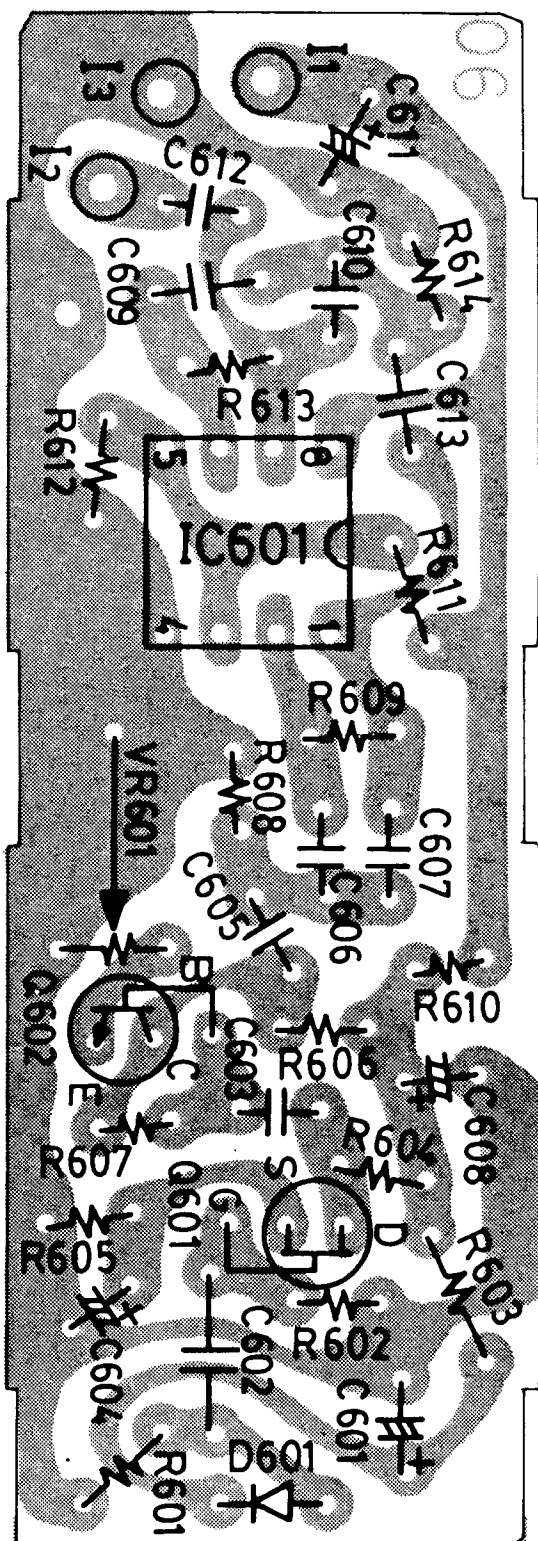


HAND SET

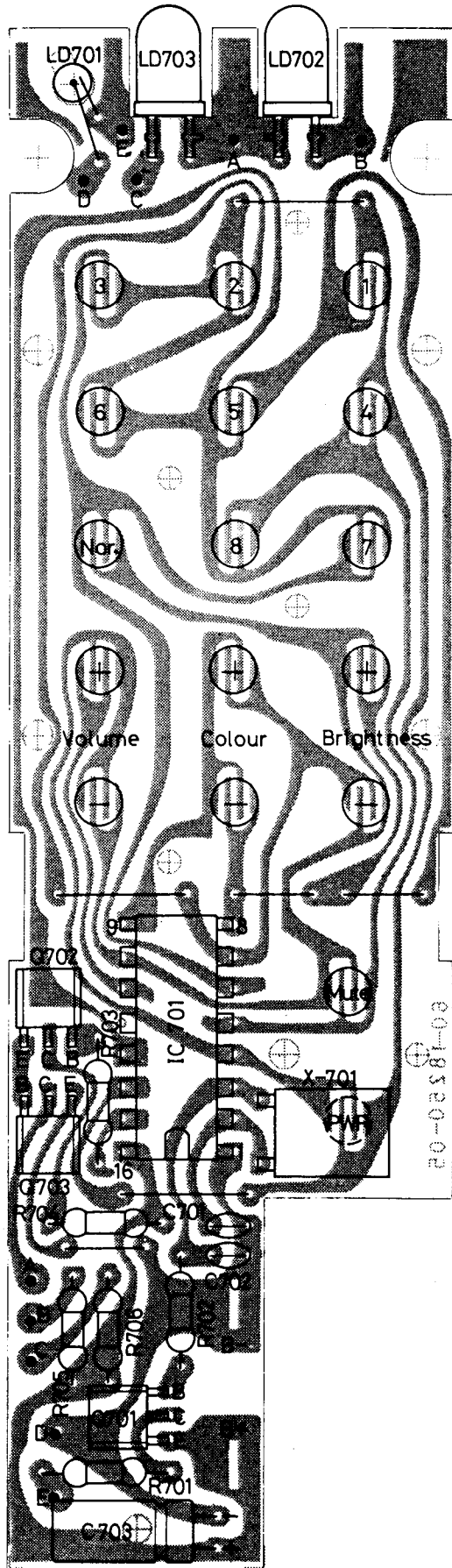


STANDARD CURVE CHART

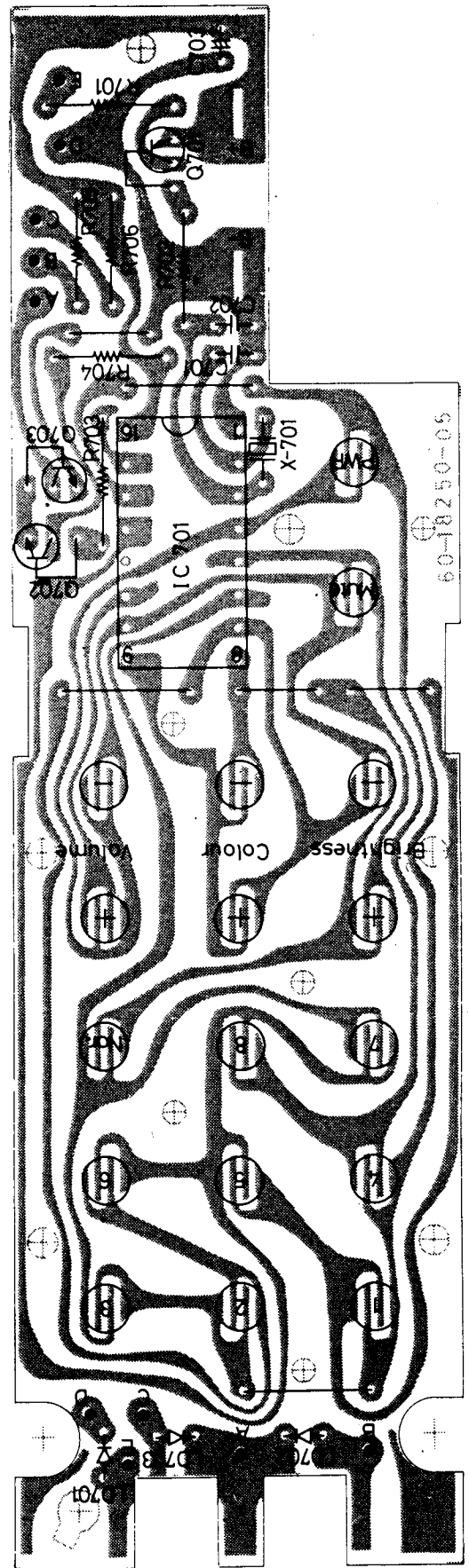




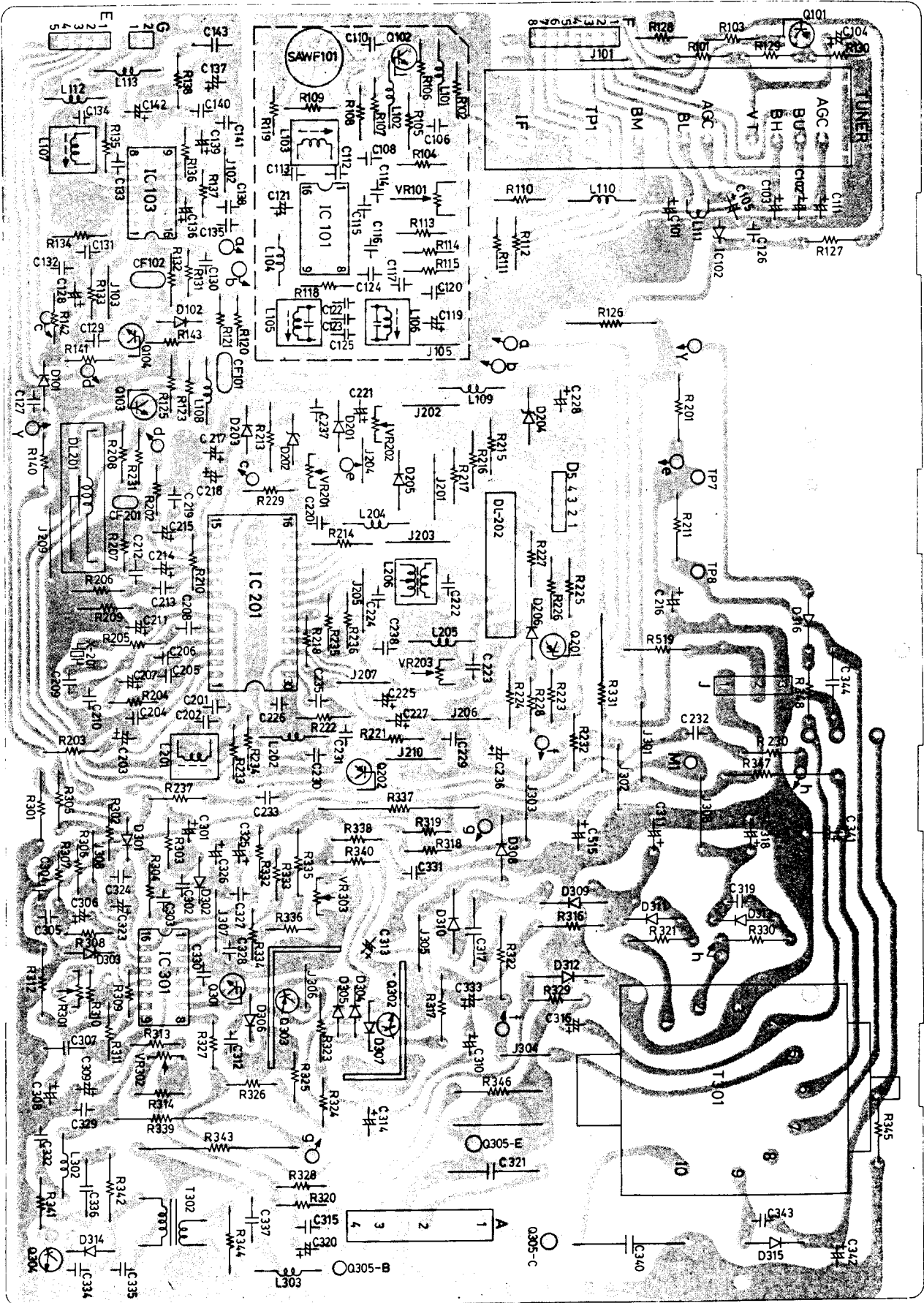
TOP VIEW OF TRANSMITTER UNIT



BOTTOM VIEW OF TRANSMITTER UNIT



BOTTOM VIEW OF MAIN PCB



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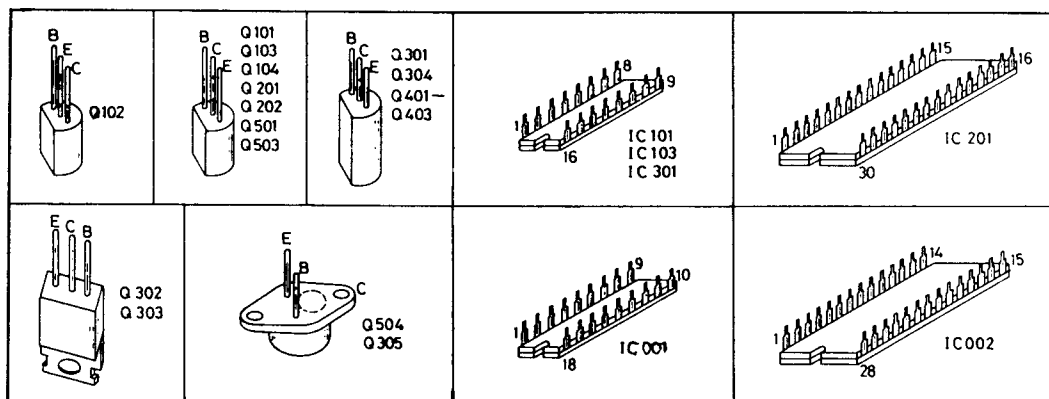
WARNING: The area enclosed by this line(---) is directly connected with AC mains voltage. When servicing this area, connect an isolating transformer between TV receiver and AC line to eliminate hazard of electric shock.

CAUTION: The mark Δ in the schematic diagram designate components which have special characteristic important for safety and should be replaced only with types identical to those in the original circuit or specified in the part list. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of the manual. Do not degrade the safety of the receiver through improper.

NOTE: 1. All DC voltages are measured under no signal input condition with a voltmeter having an impedance of at least 100k Ω /V.

2. Waveforms are taken by referring to a standard color bar signal applied at the antenna input.

3. The circuit is subject to change without prior notice.



EXPRESSION:

1. Resistor — All resistors are 1/4W(±5%) carbon film resistor unless otherwise noted the following marks.

Unit resistance is in (K=10³, M=10⁶) ohm(Ω).

Carbon Film	
Metal Oxide	
Fusible	
Non-Inflammable	
PTC Thermistor	
Carbon Composite	
Variable	

2. Capacitor — All capacitors are 50V ceramic capacitor unless otherwise noted the following marks.

Unit capacitance is in (u=10⁻⁶, p=10⁻¹²) Farad(F).

Ceramic	
AC Ceramic	
Polyester	
Metal Polyester	
Polypropylene	
Electrolytic	

CONTEC KT-8250

- Supply 8.8v DC voltage to pin 14 of IC 101.
- A sweep signal is applied to TP1 thru 1K+0.001uF.
- Vertical input terminal of an oscilloscope in series with 100Kohm resistor connects to TP3.
- 16.5v DC supply connects across C318.
- Adjust L105 and L103 to obtain a waveform as shown in Fig.3.
- Connect 100K resistor to pin 6 of IC101. Adjust L106 for the response shown as Fig.4.

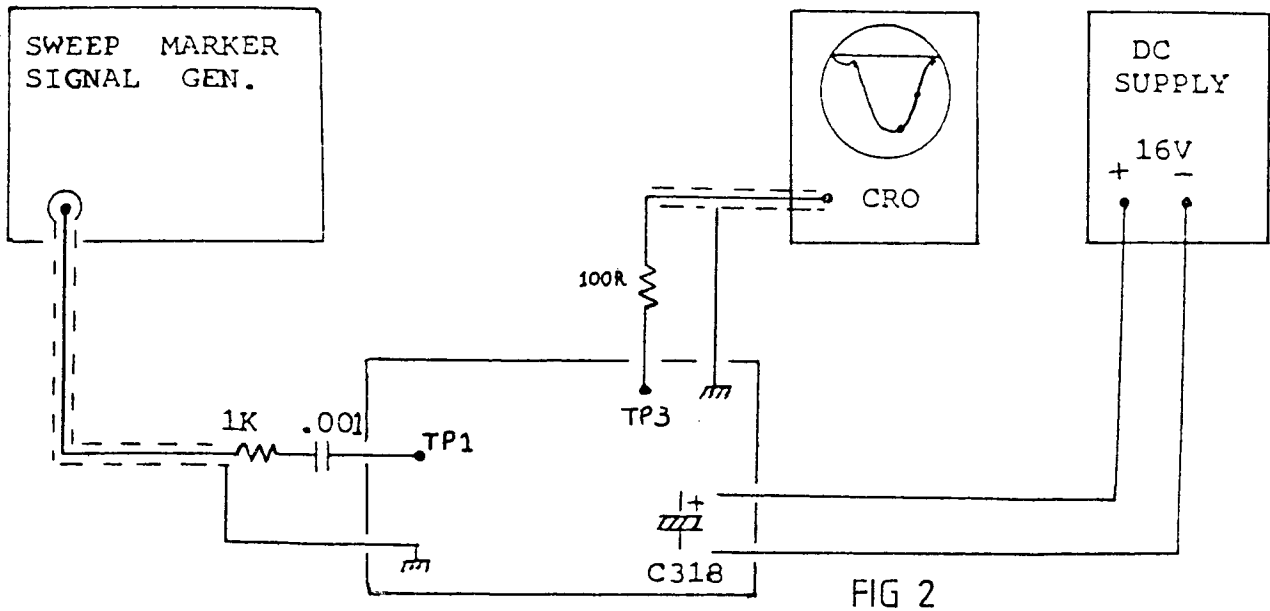
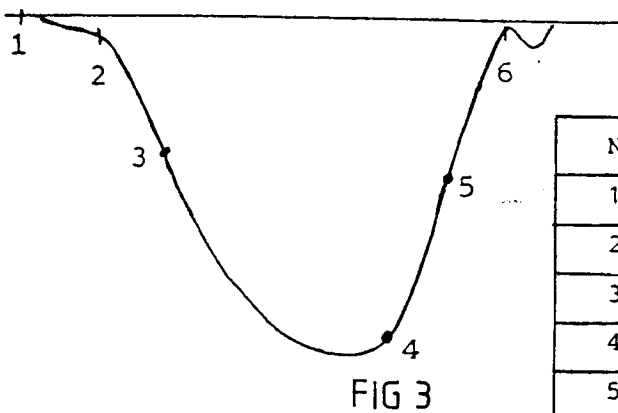
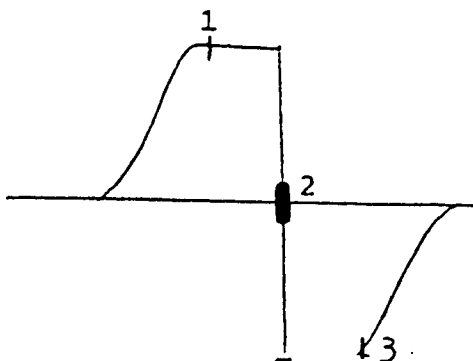


FIG 2



No.	B/G	I	dB
1.	31.9MHz	32 MHz	> -40
2.	33.4MHz	33.5MHz	-20 to -26
3.	34.47MHz	35.07MHz	-7 $\pm$ 1
4.	37.9 MHz	38.5MHz	0
5.	38.9 MHz	39.5MHz	-6 $\pm$ 1
6.	40.4MHz	41.5MHz	> -40

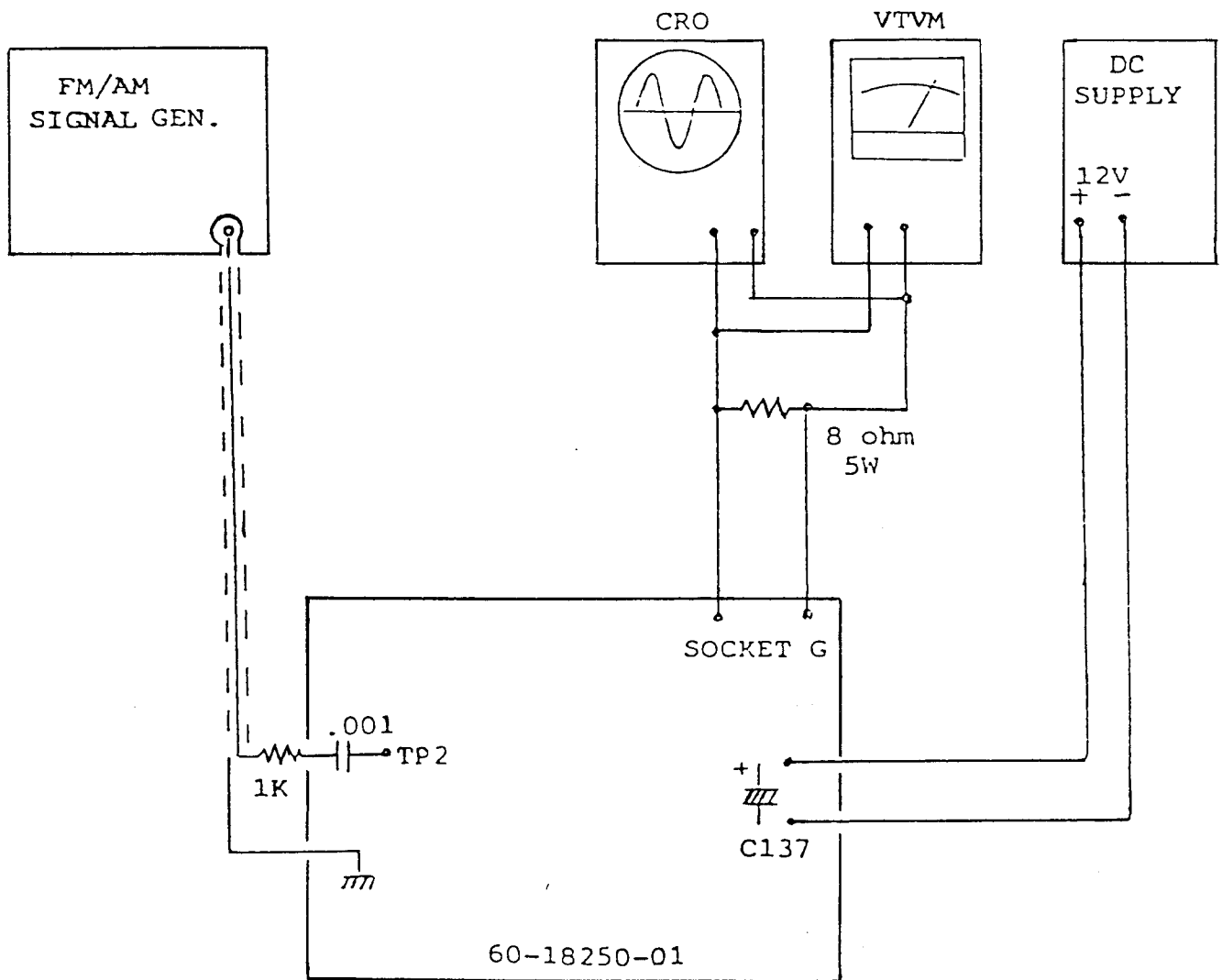


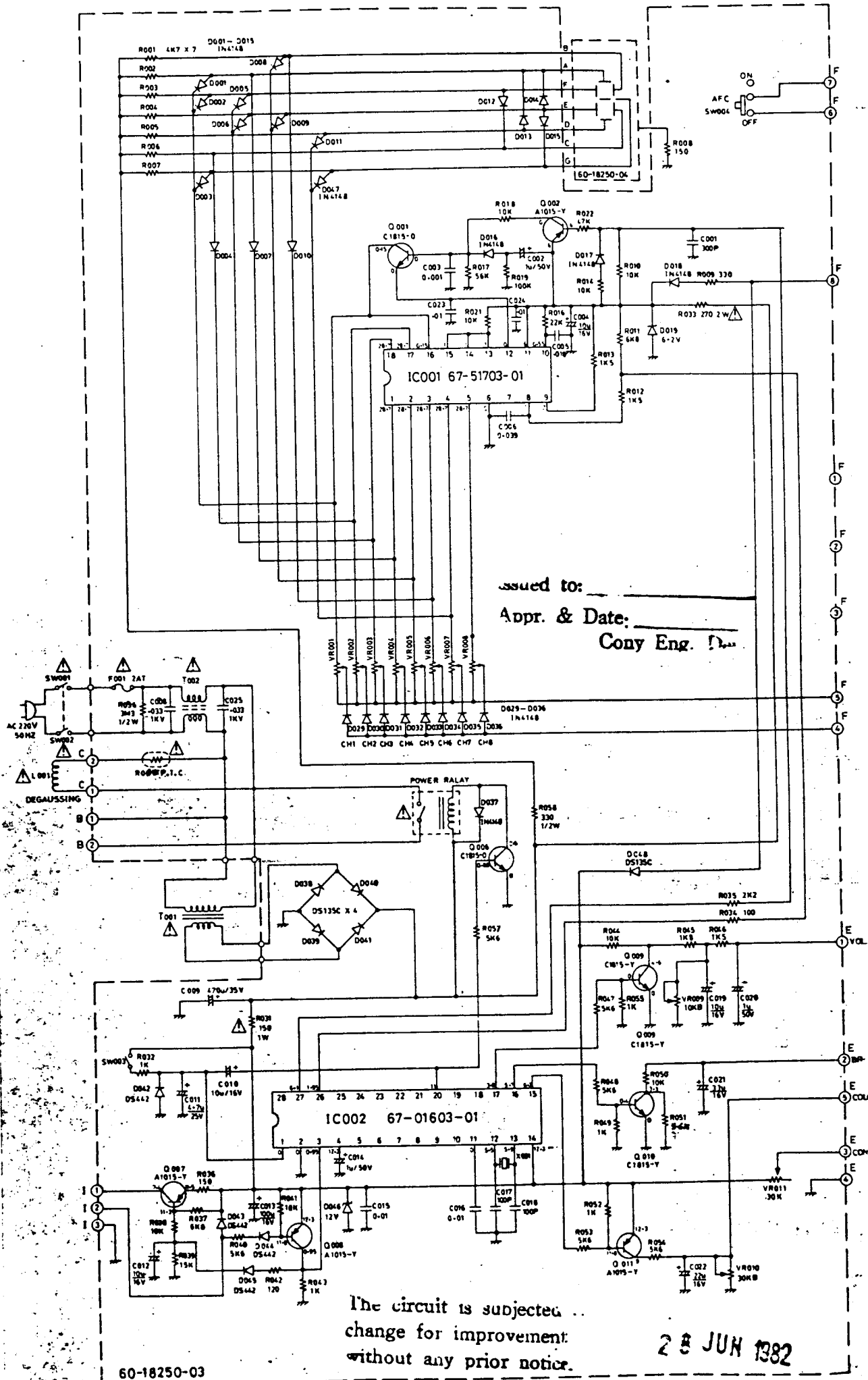
No.	B/G	I
1.	37.9 MHz	38.5MHz
2.	38.9 MHz	39.5MHz
3.	40.4 MHz	41.5MHz

FIG 4

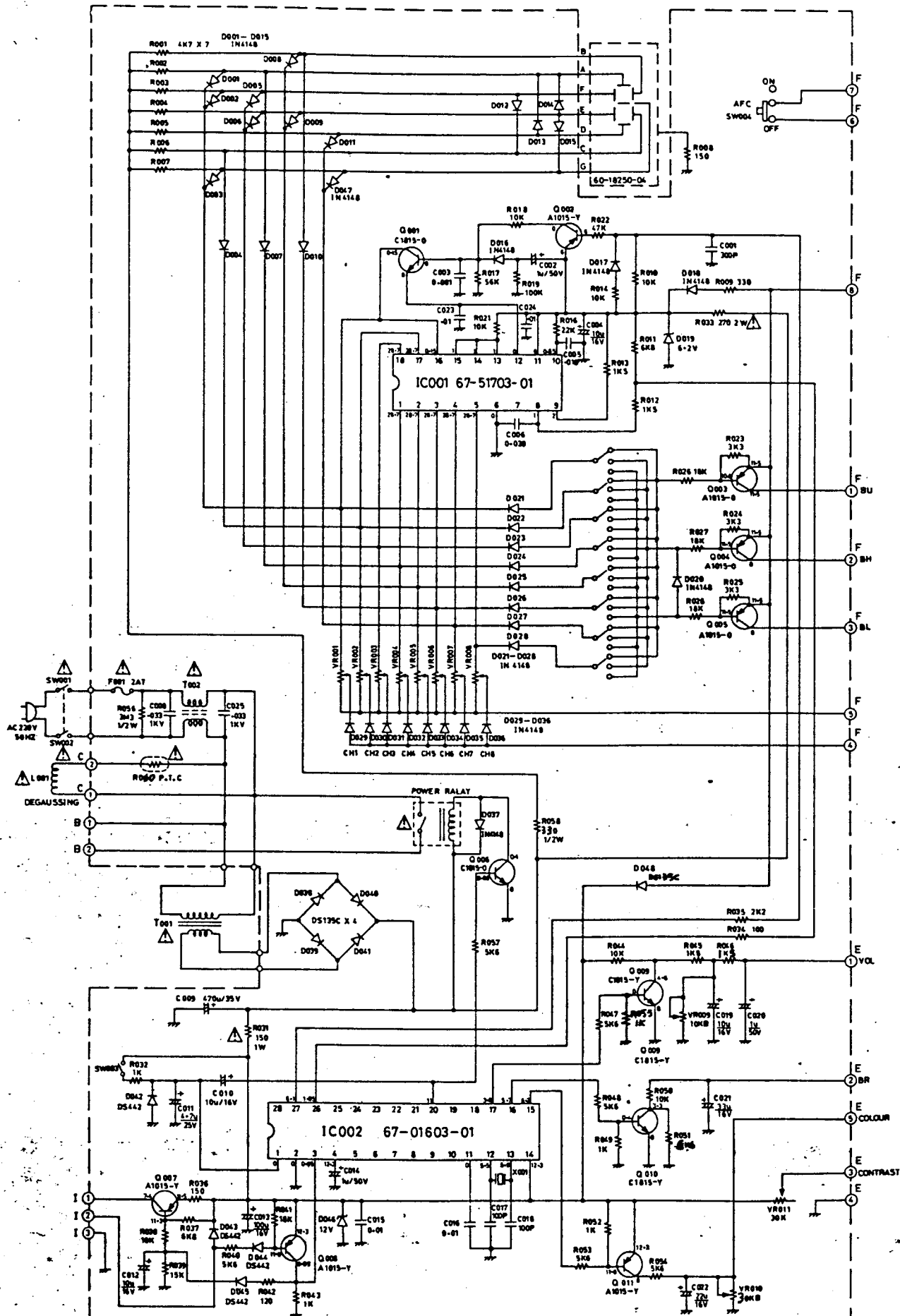
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ALIGNMENT SET-UP





MODEL:KT-8250

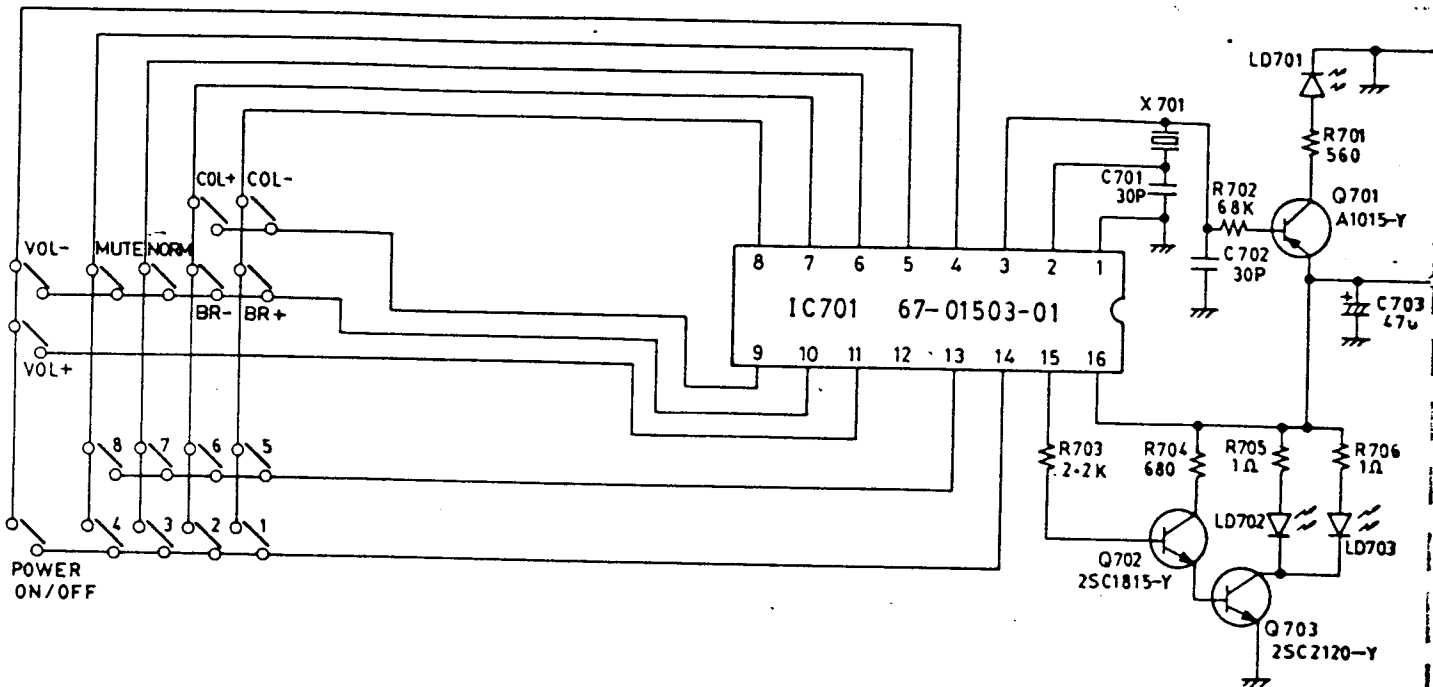


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TRANSMITTER UNIT : KT-8250

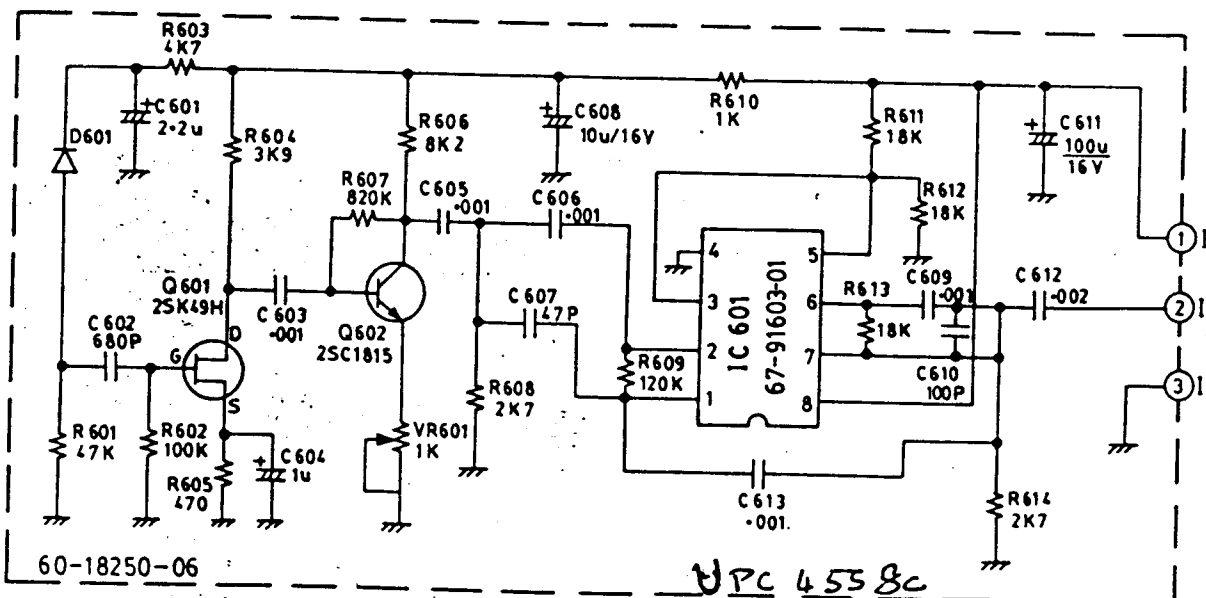


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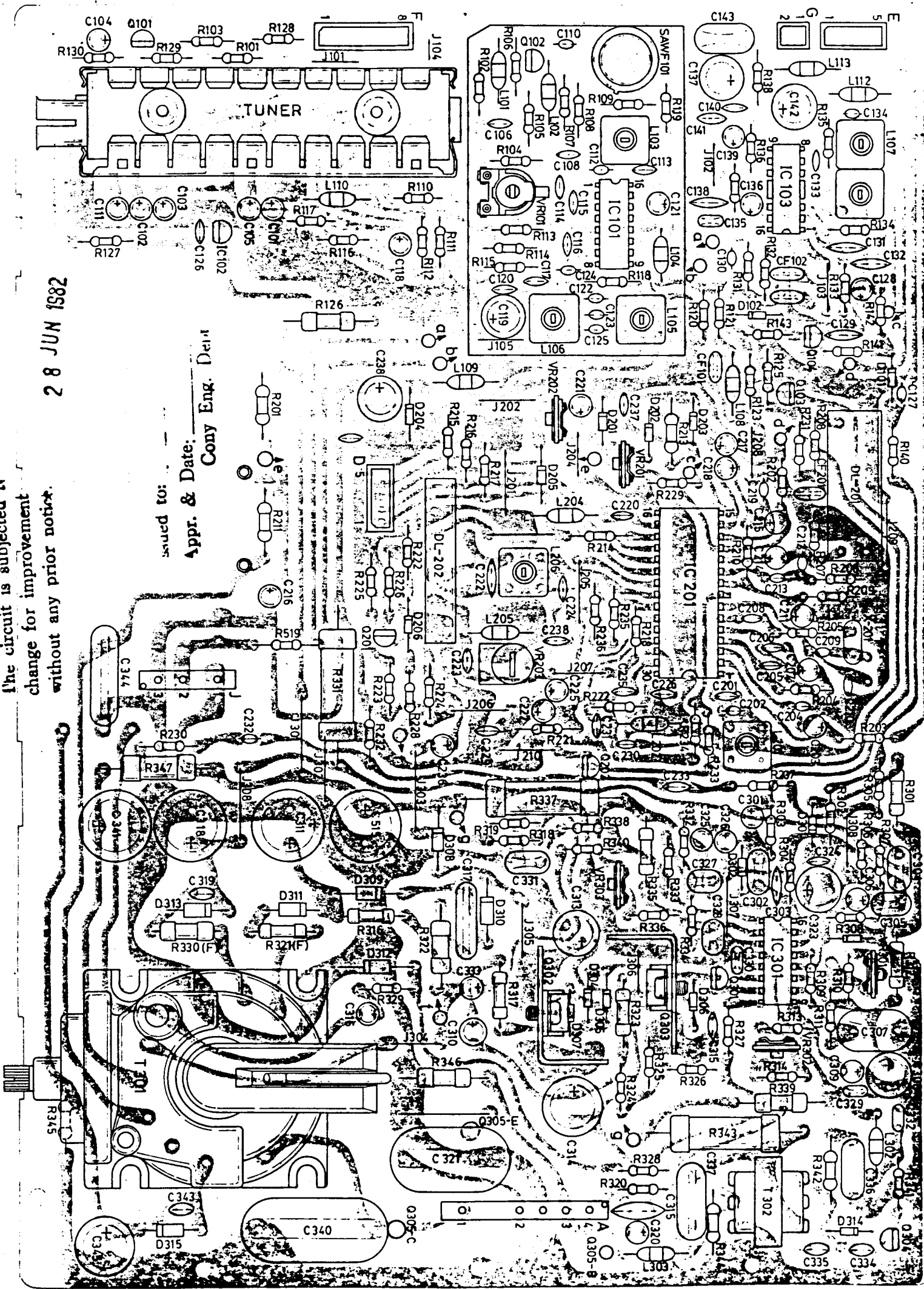
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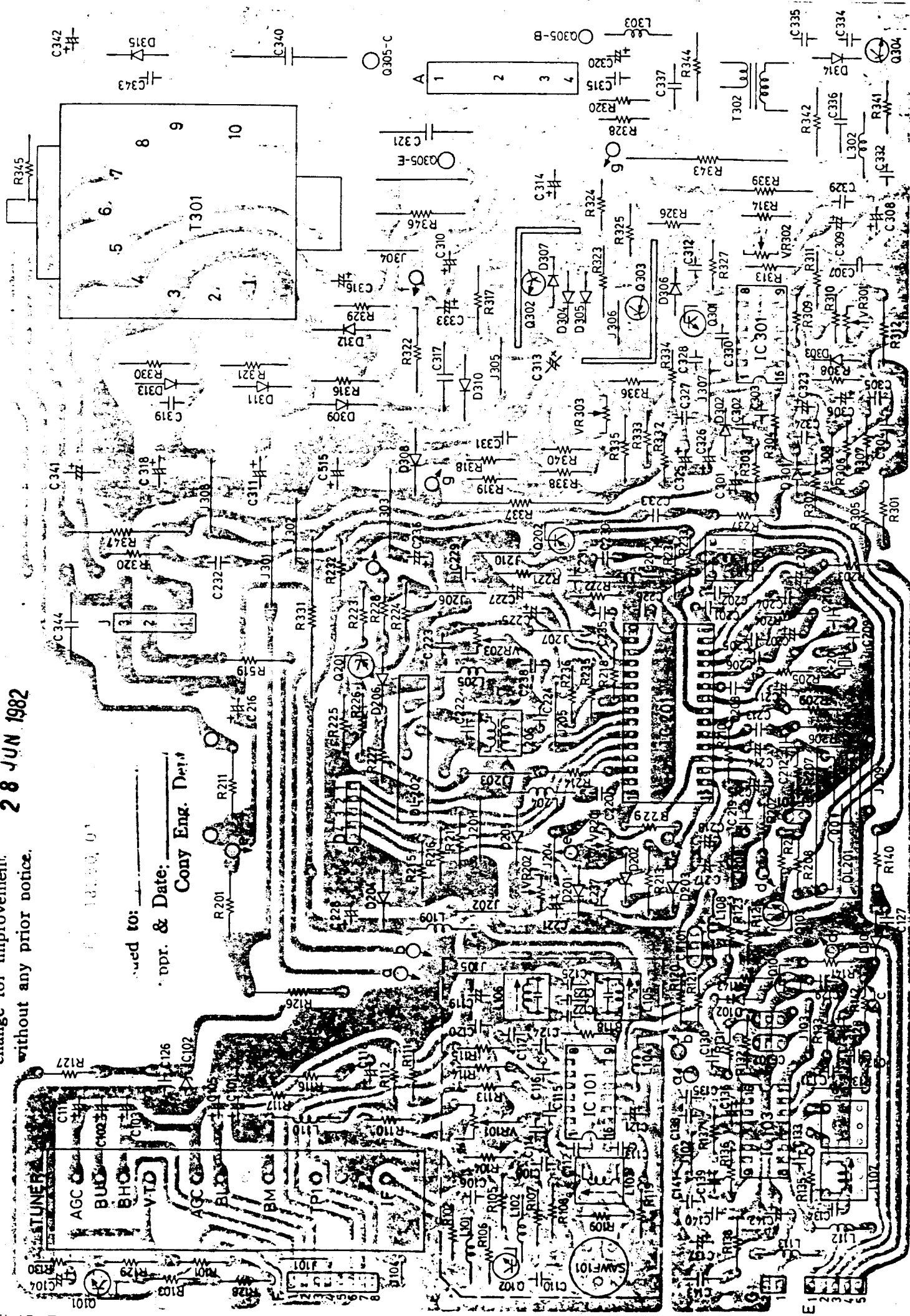
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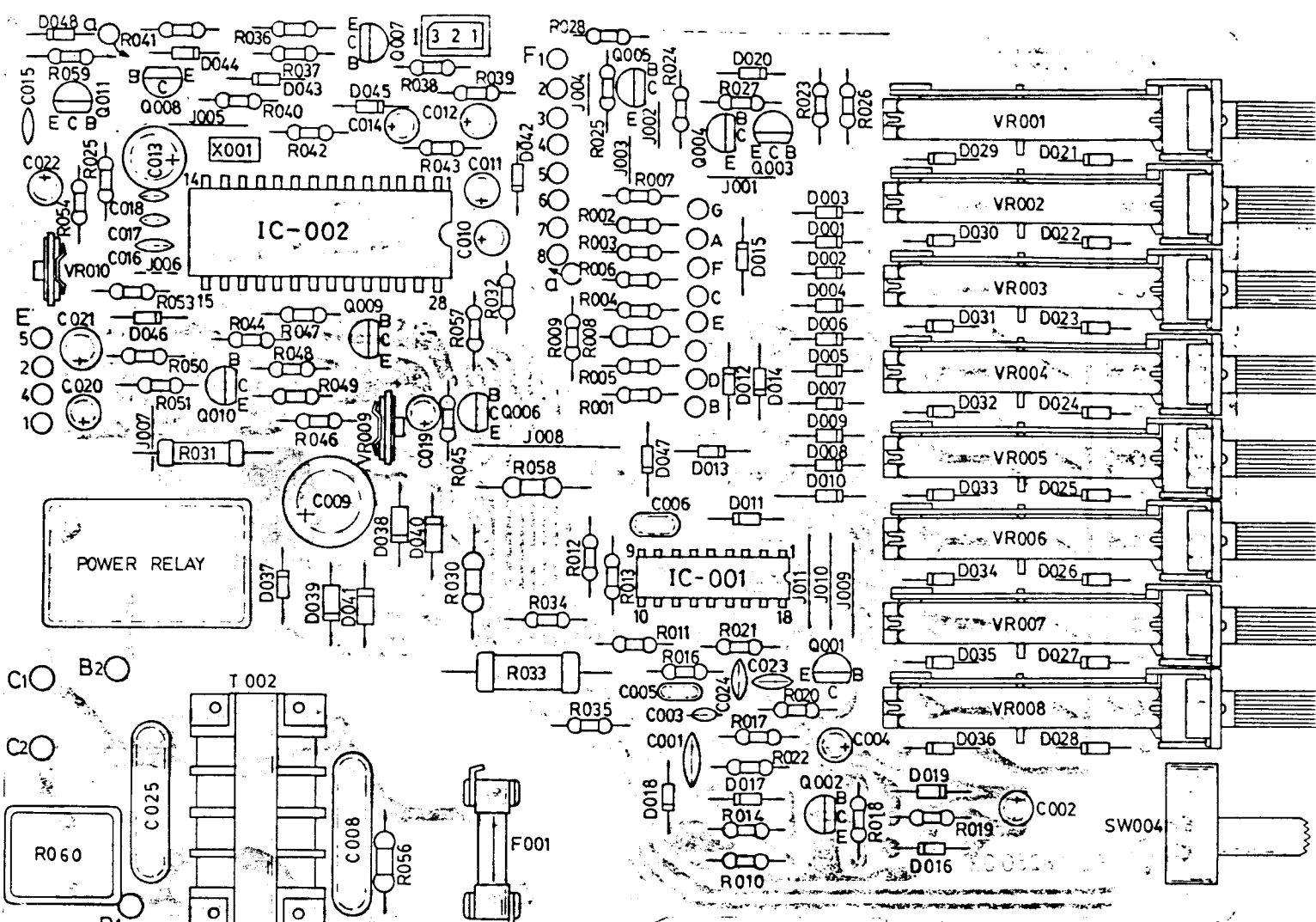
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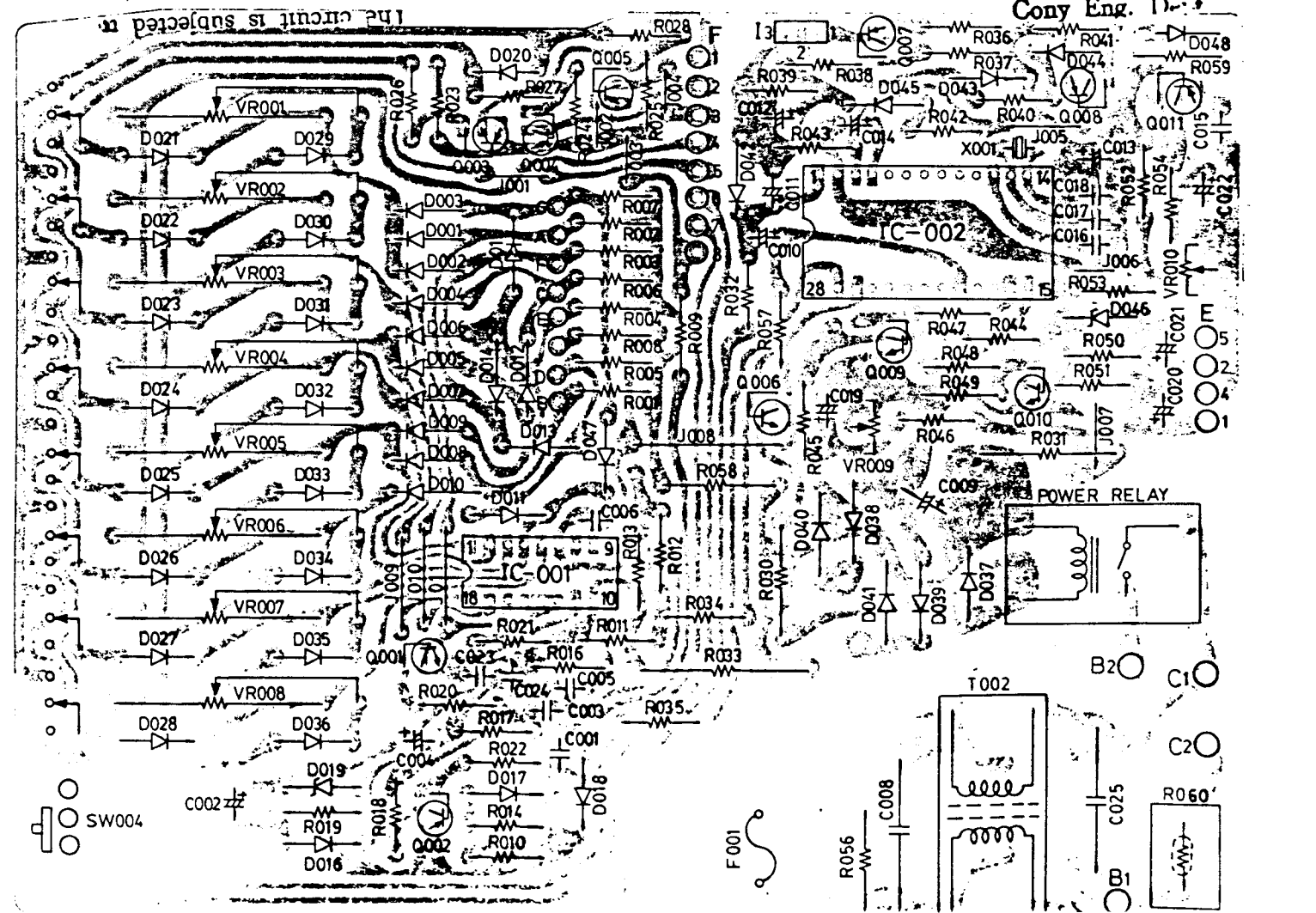


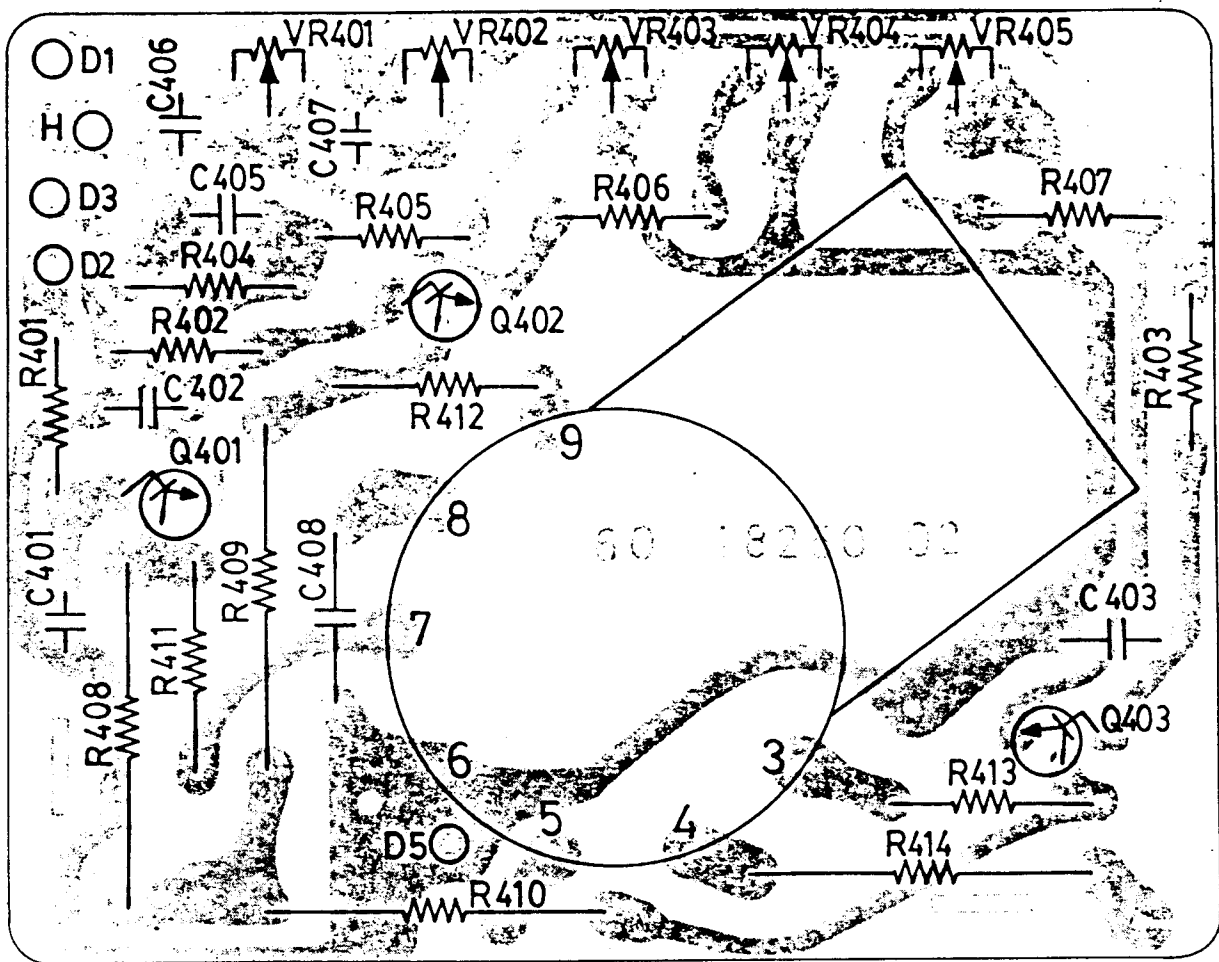
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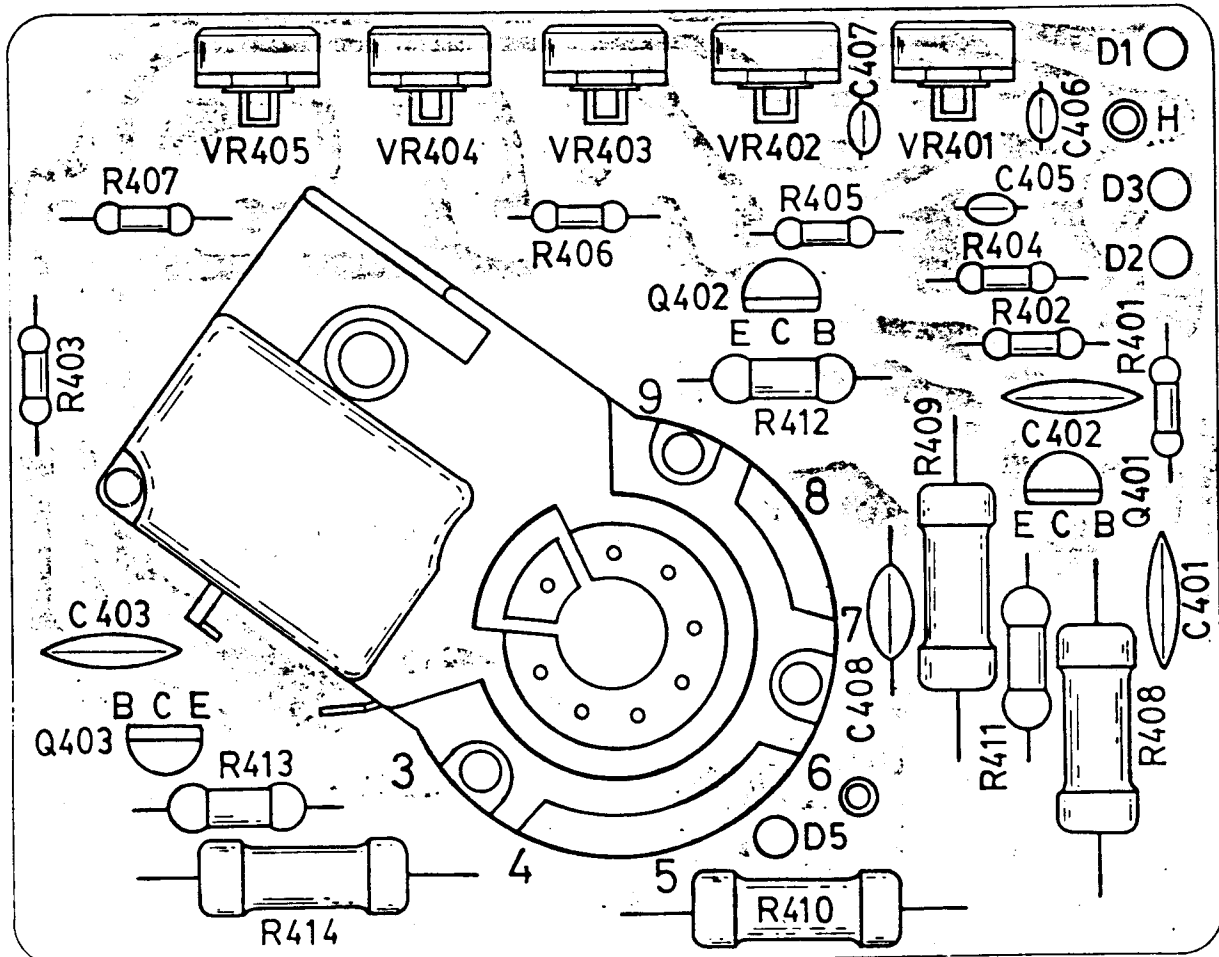


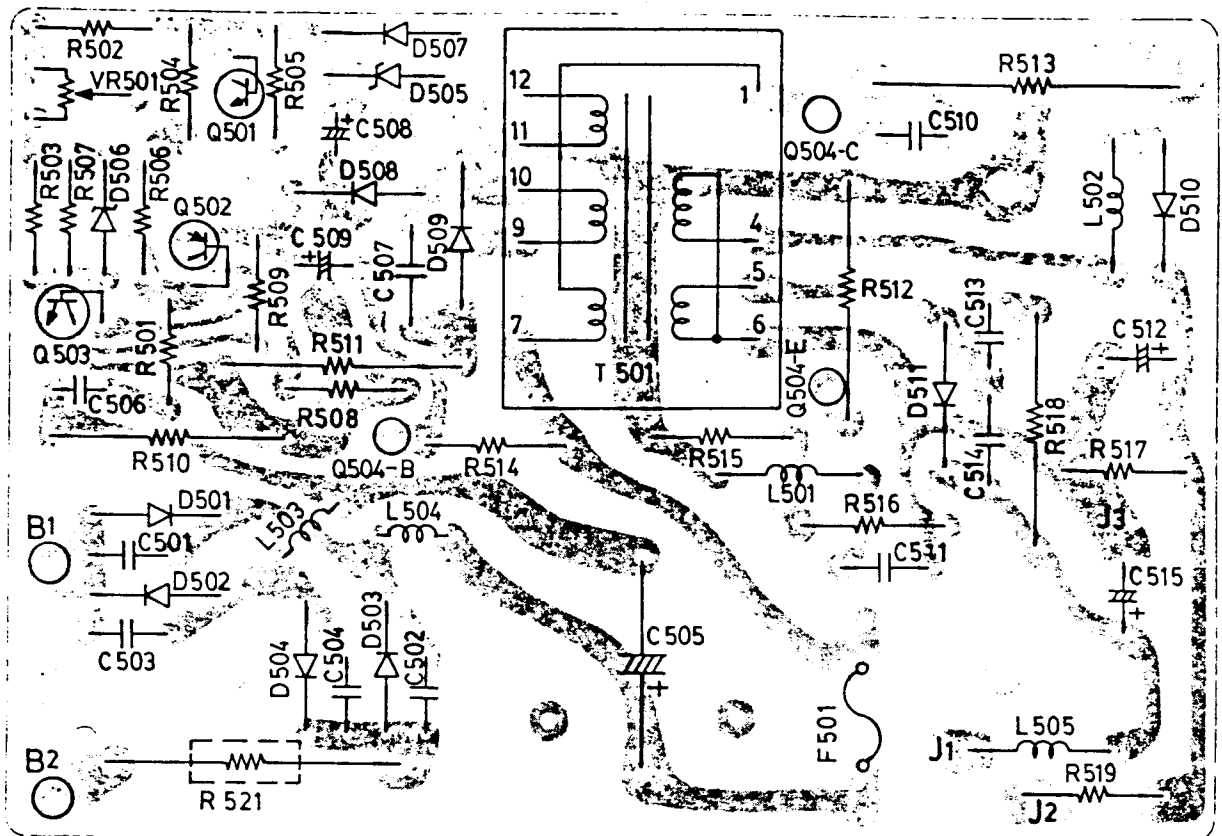


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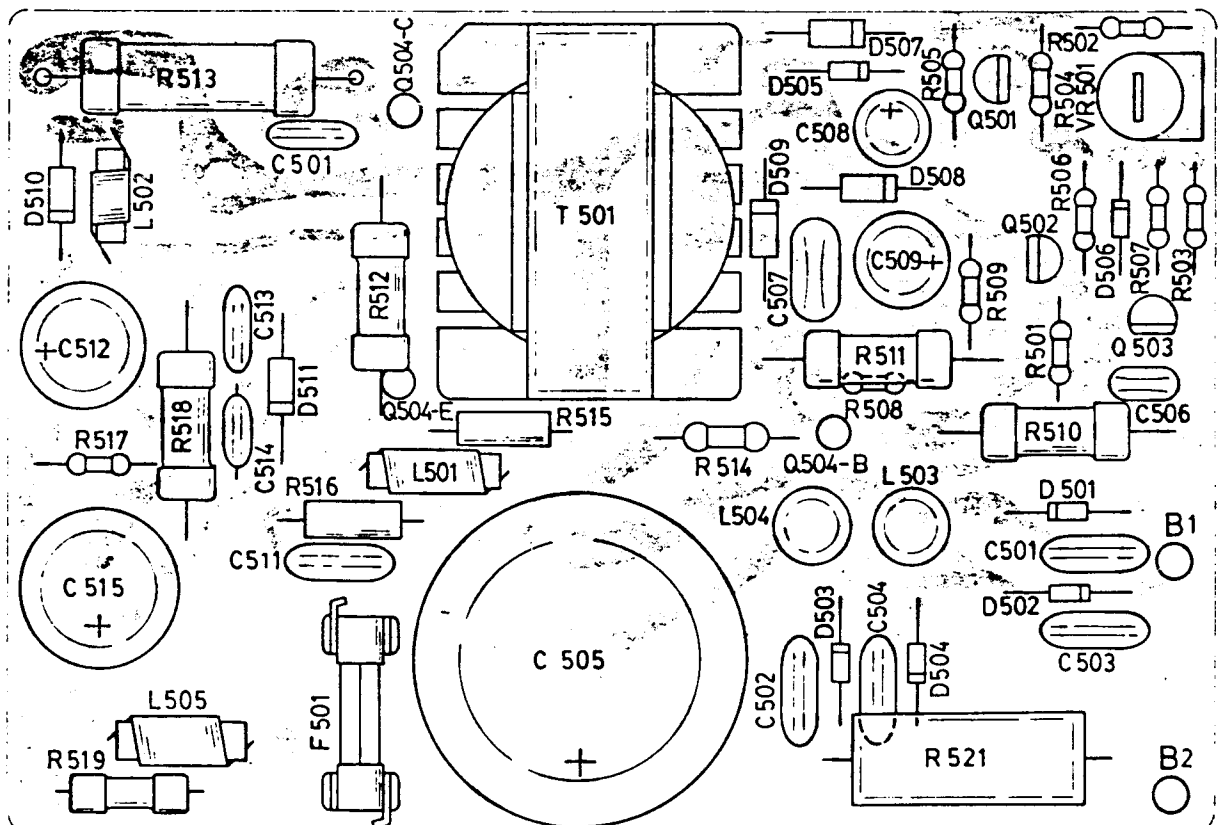


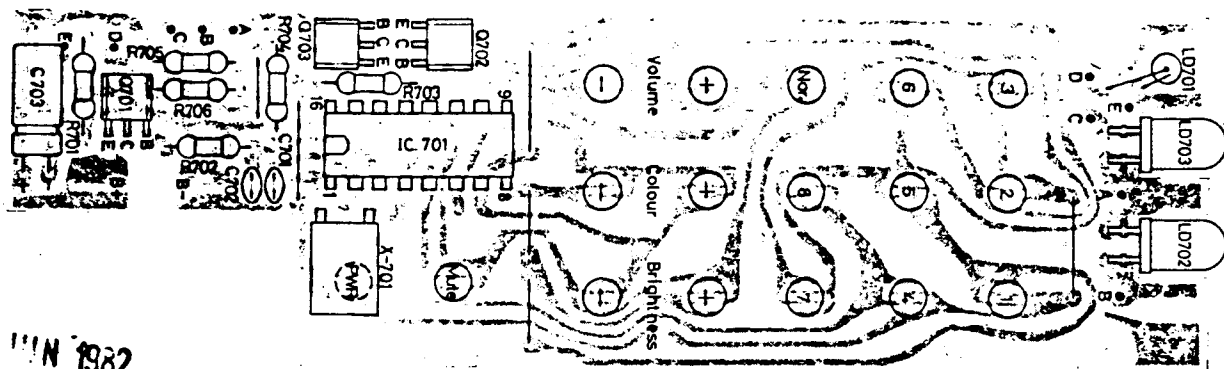


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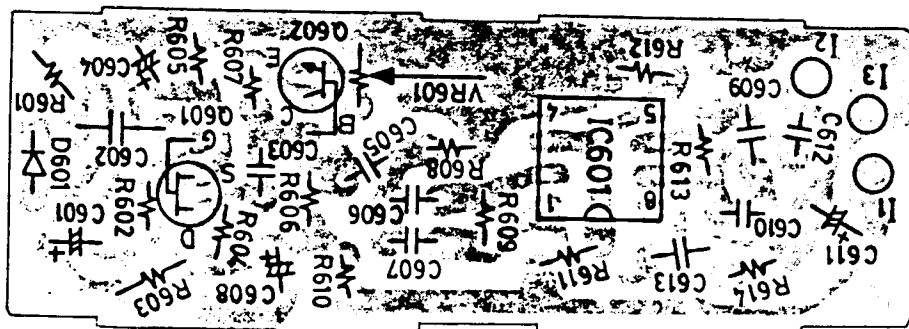
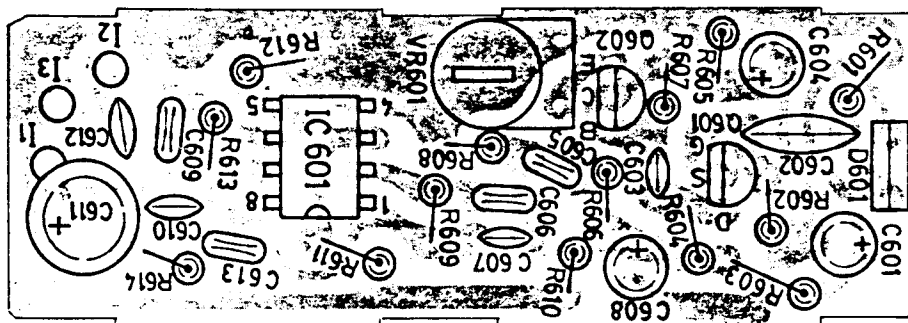
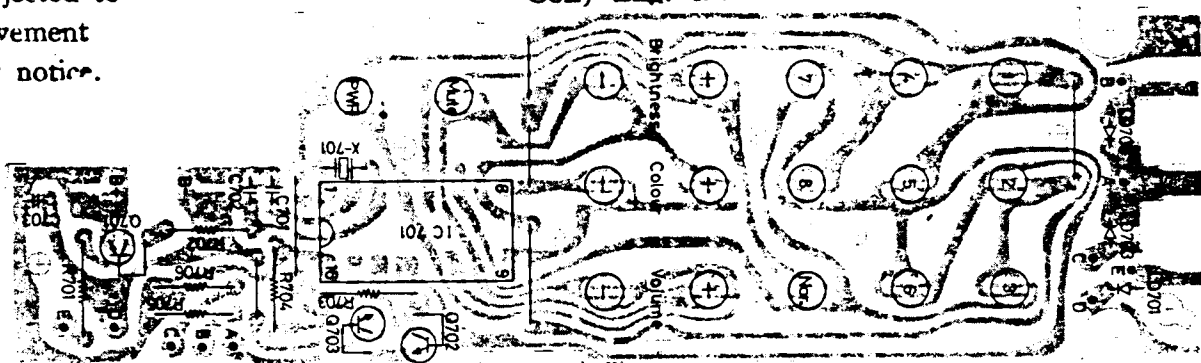


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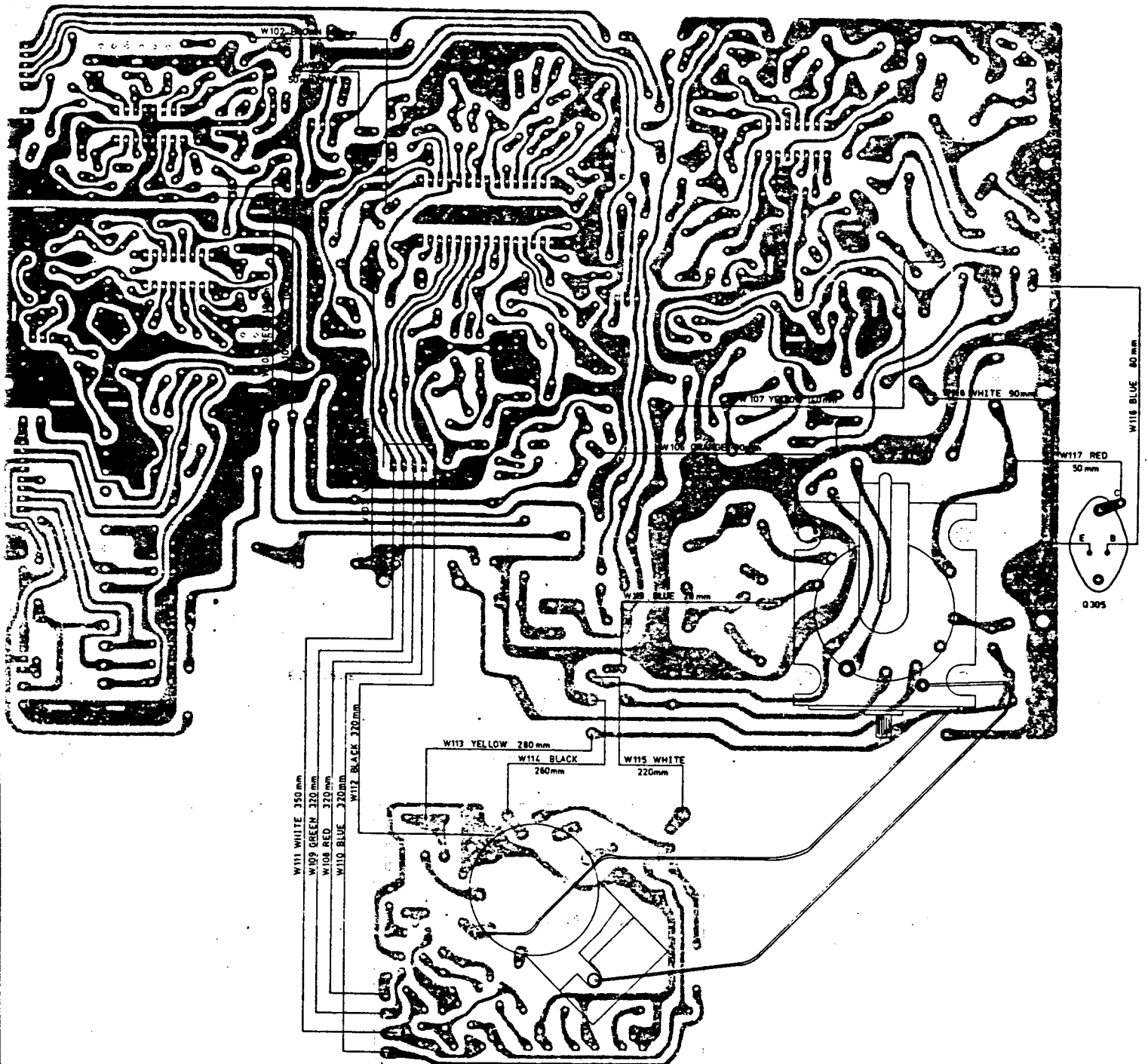
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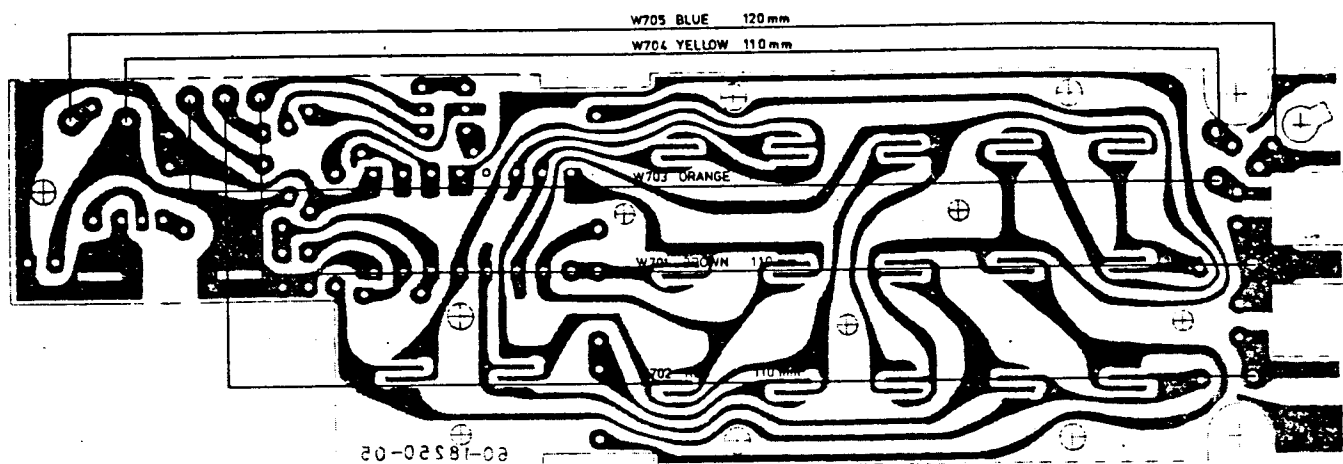


WIRING DIAGRAM FOR MODEL : KT-8250

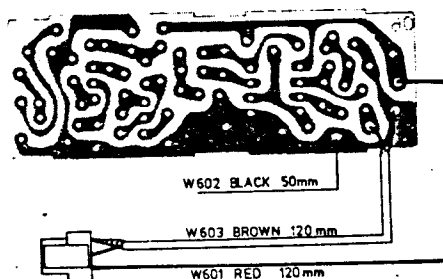


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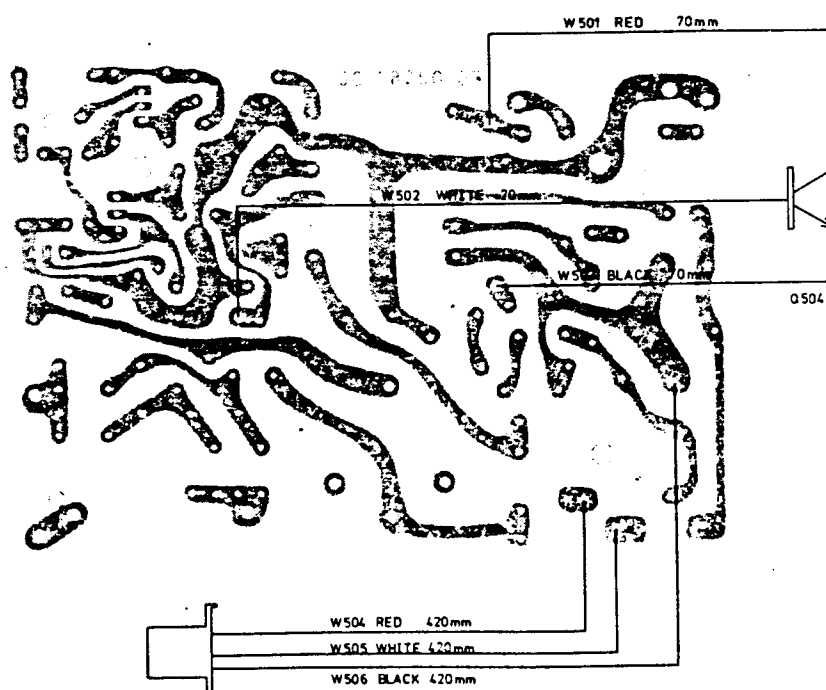


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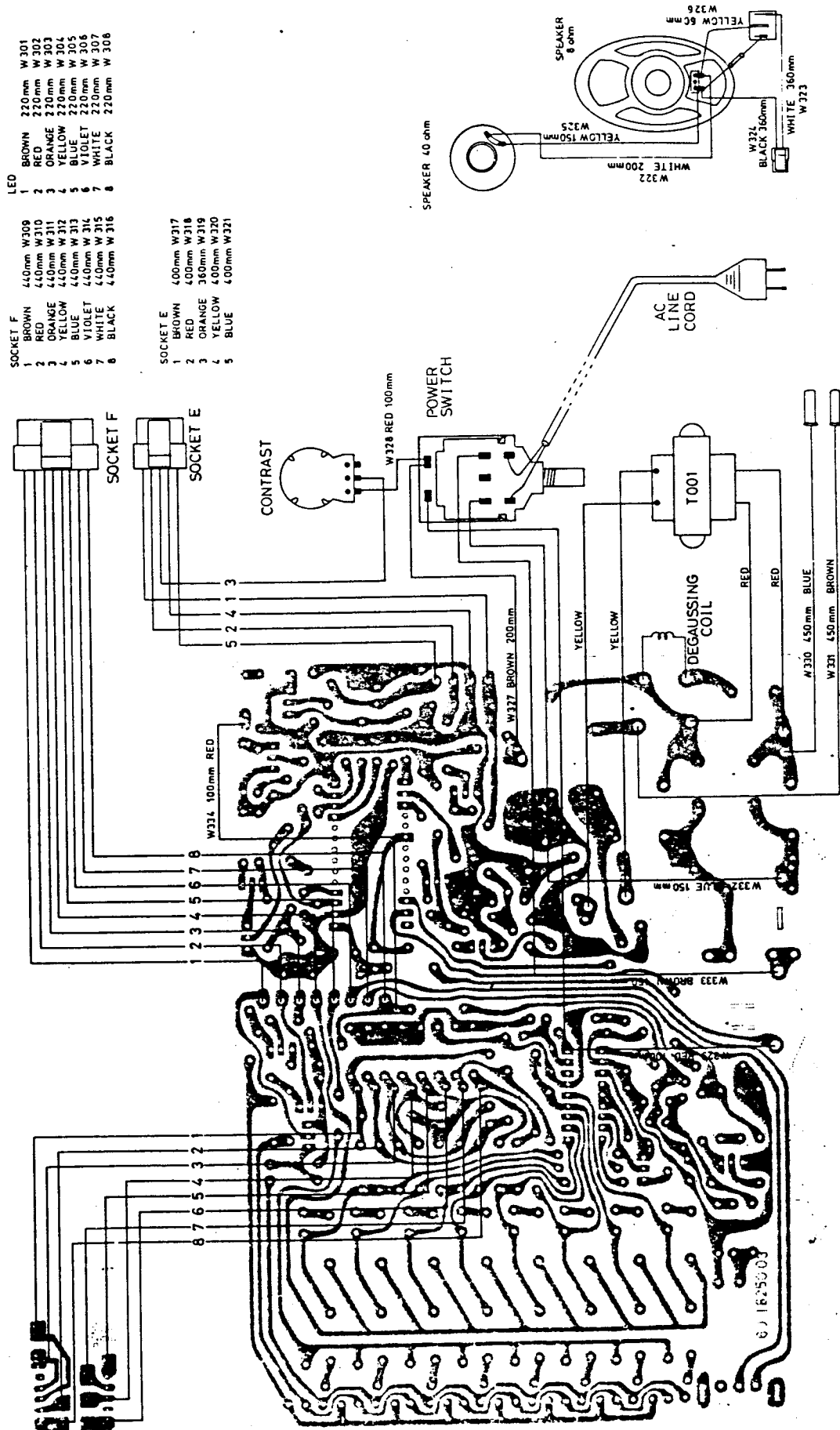


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The circuit is subjected to
change for improvement
without any prior notice



WIRING DIAGRAM OF CONTROL UNIT FOR MODEL:KT-8250

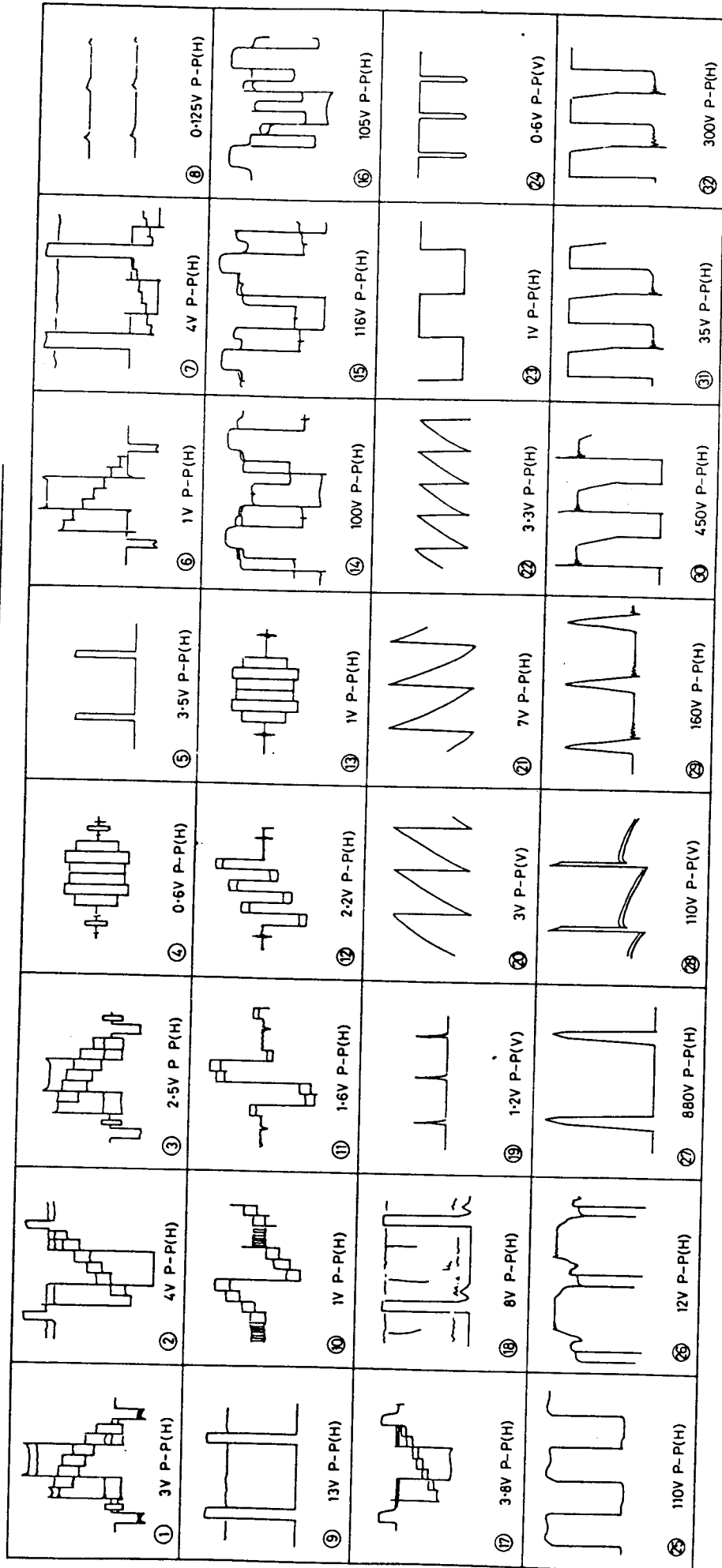


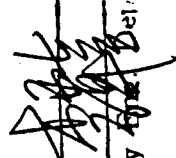
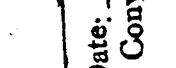
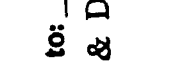
The circuit is subjected to change for improvement without any prior notice.

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 Cony Eng. Del.

28 JUN 1982

STANDARD CURVE CHART FOR MODEL:KT-8250



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The circuit is subjected to
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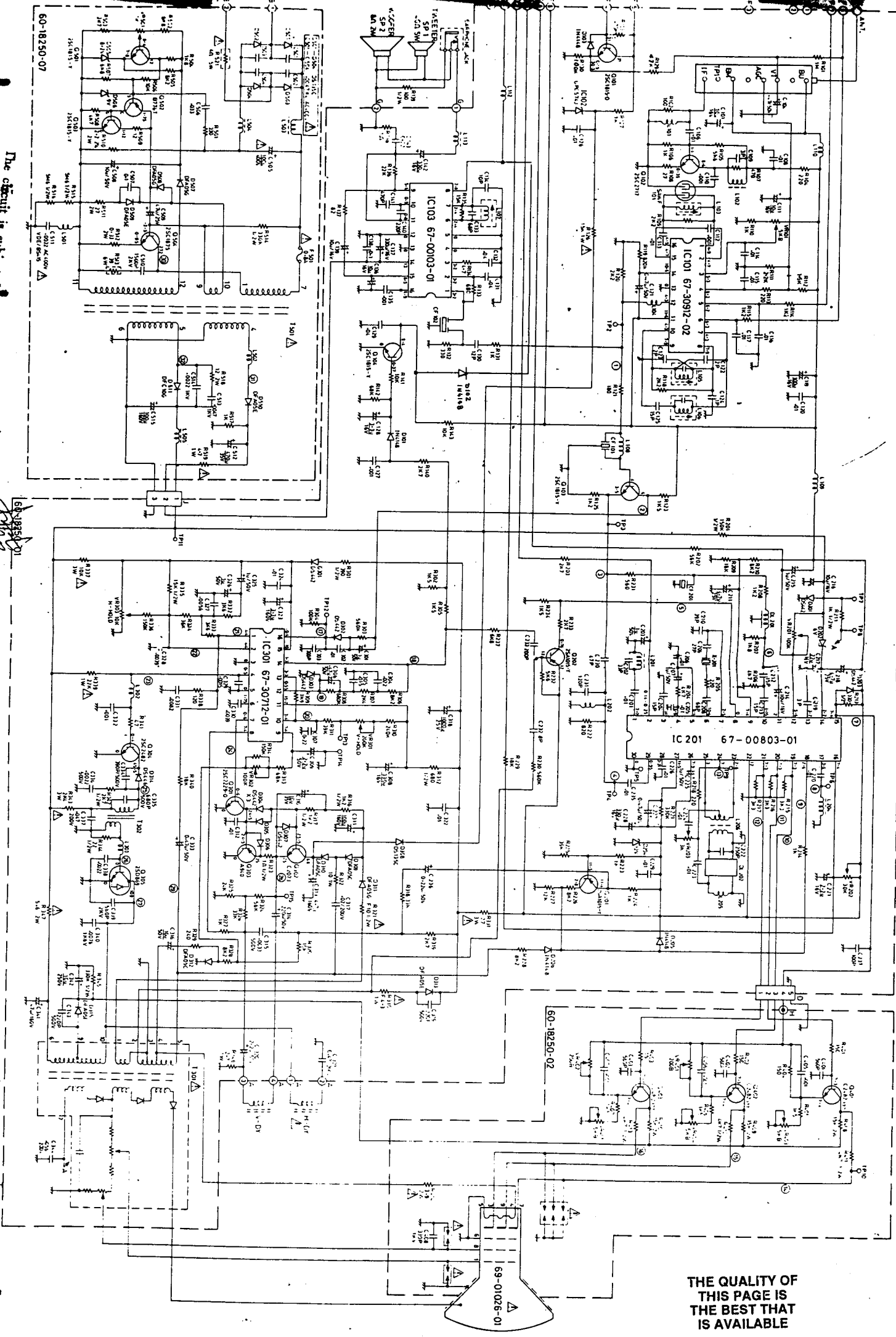
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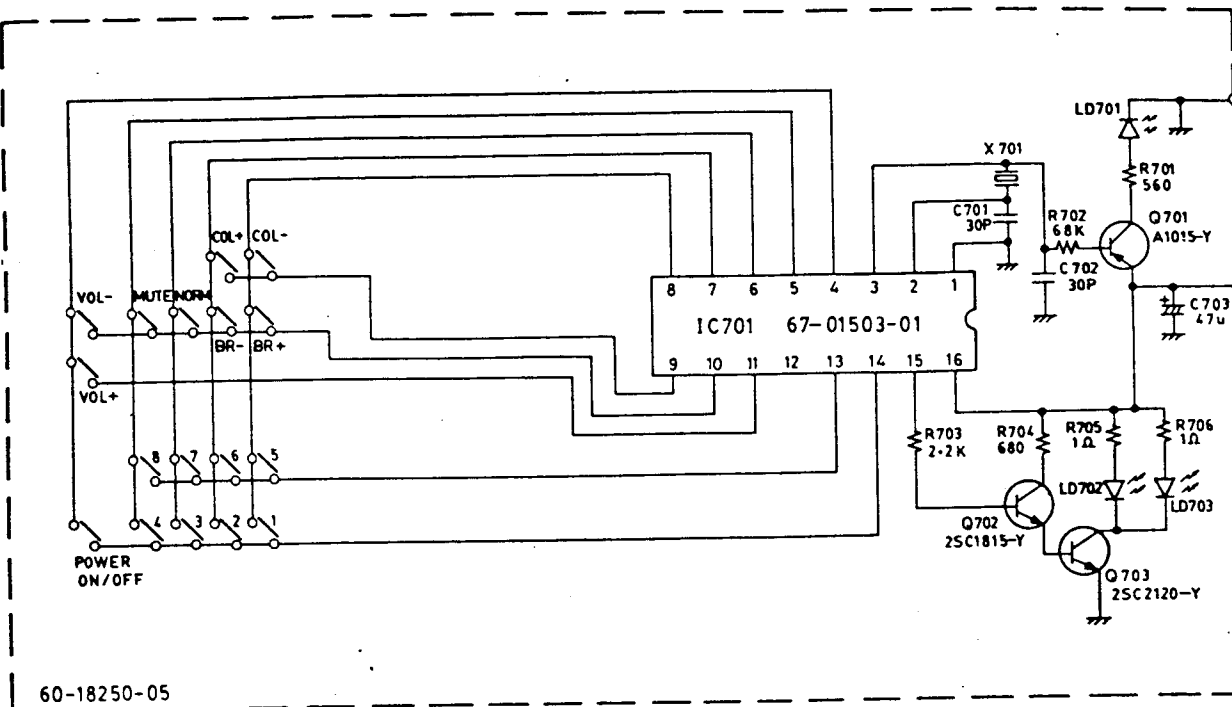
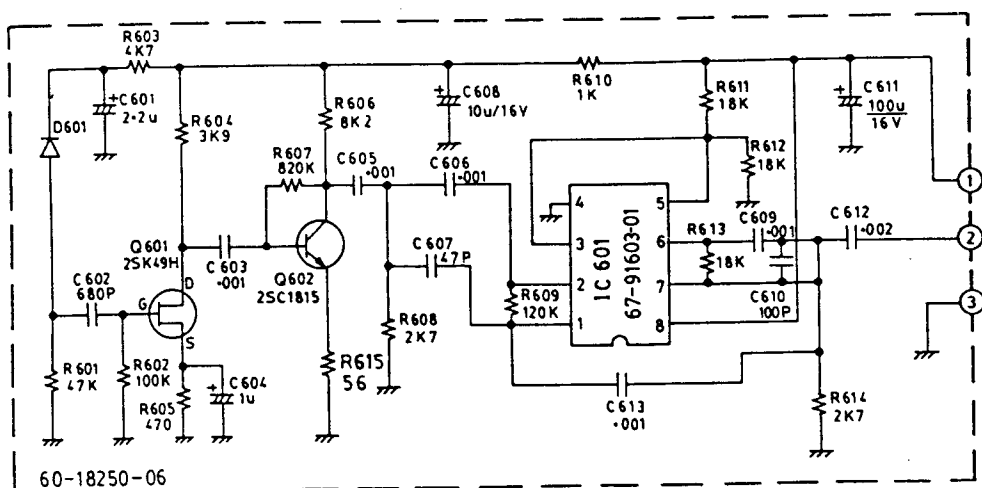
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FFR #63

Revised Diagram

217 02

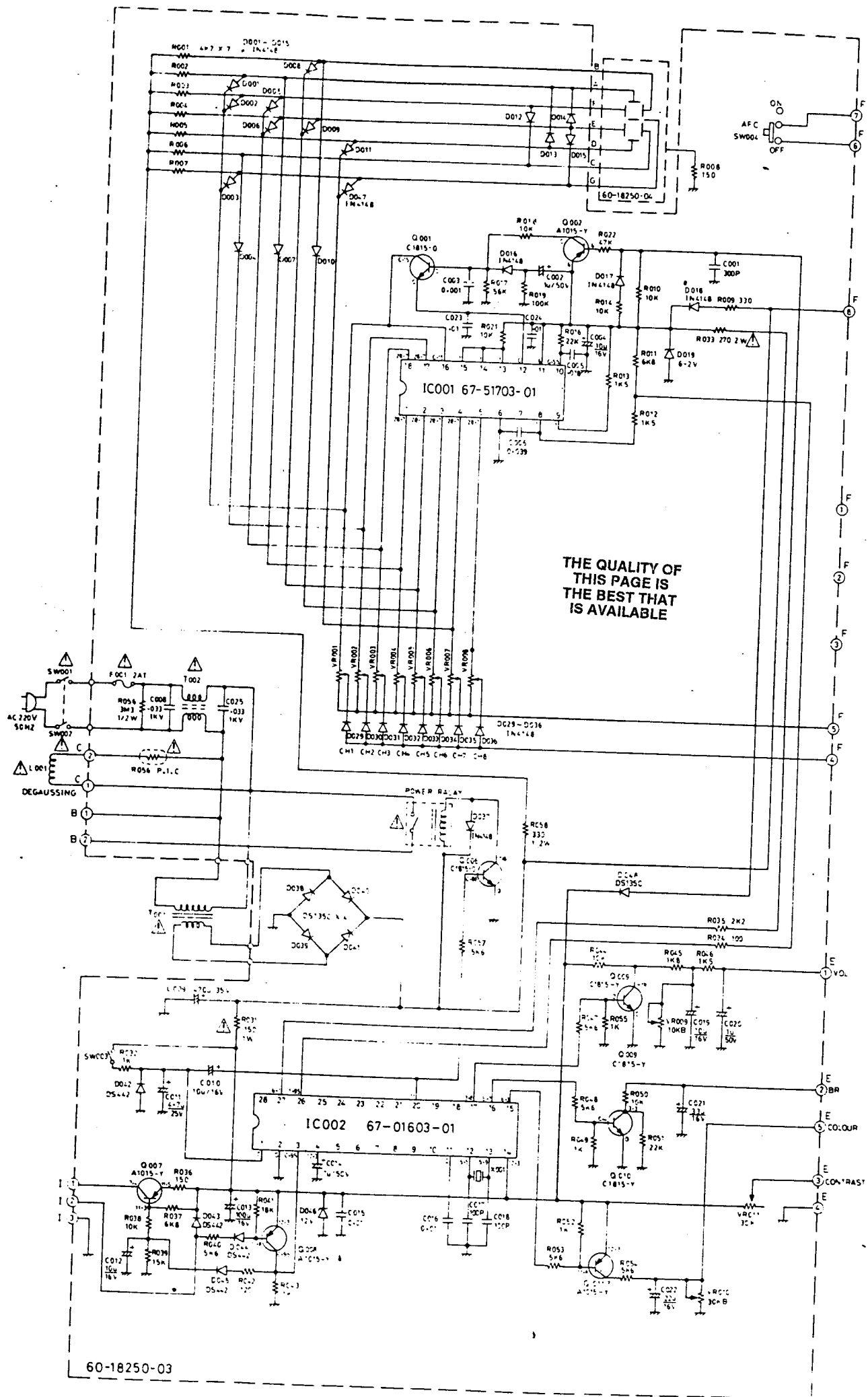


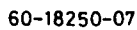
TRANSMITTER UNIT : KT-8250PHOTO-DETECTOR UNIT:KT-8250

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 pr. & Date: _____
 Cony Epr. D/S

The circuit is subjected to
 change for improvement
 without any prior notice

MODEL:KT-8250-I





60-18250-13A

60-18250-13A

