

# Service Manual



Цветной Телевизор  
**TC-21E1R**  
Шасси MX-1A

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## Specifications

Power Source : (AC) Auto110–240V. 50/60Hz

Power consumption : : 103 W  
9.6 W (Stand-by condition)

Aerial Impedance : : 75  $\Omega$  unbalanced .  
Coaxial type

Receiving System : Multi 17 systems

Receiving Channel :  
VHF 2 – 12 PAL/SECAM B. G  
1 – 12 PAL/SECAM D  
1 – 11 PAL B ( New zealand)  
1 – 12 NTSC M Japan  
2 – 13 NTSC M U.S.A  
UHF 21 – 69 PAL B. G I/SECAM B. G. K1  
28 – 69 PAL G (Australia)  
13 – 56 PAL D  
13 – 62 NTSC M Japan  
14 – 69 NTSC M U.S.A  
CATV S1 – S20

Intermediate Frequency : :

Video 38.00 MHz  
Sound 31.50 MHz ( D. K. K1 )  
32.00 MHz ( I )  
32.50 MHz ( B. G )  
33.50 MHz ( M )  
Colour 33.57 MHz ( PAL )  
33.60 MHz ( SECAM )  
33.75 MHz ( SECAM )  
34.42 MHz ( NTSC )

Video / Audio Terminals :

AV In : Video In 1 Vp–p. 75 $\Omega$   
Audio In Approx. 400mV  
TV Out : Video In 1 Vp–p. 75 $\Omega$   
Audio In Approx. 400mV

High Voltage : 28.5kV( +1.2, –1.5 )  
at zero beam current

Picture tube : A51JXS95X 54cm( 21" ) measured  
diagonally, 90° deflection.

Audio output : 4.0 W (Max)

Speaker : 9.65 X 5cm, 16 $\Omega$

Dimensions : Height : 469.0 mm  
Width : 509.0 mm  
Depth : 492.0 mm

Mass : 21.50 kg ( Net )

Remote Controller : 33 Functions Infrared controller

Specifications are subject to change without notice.  
Mass and dimensions shown are approximate.

## Технические характеристики

Источник питания: (Перемен. ток) Авто., 110–240 В.  
50/60 Гц.

Расход мощности: 103 Вт.,  
9,6Вт. (в режиме снаготове)

Полное сопротивление антенны: 75 Ом, несбалансированное.  
Коаксиального типа.

Приёмная система: 17 многосистемный.

Принимаемые каналы:  
Полоса ВВЧ 2–12 ПАЛ/СЕКАМ В.Г  
1–12ПАЛ/СЕКАМ D  
1–11ПАЛ В(Новая  
Зиландия)  
1–12НТСЦ М ЯПОНИЯ  
2–13НТСЦ М США  
Полоса СВЧ 21–69ПАЛ В.Г./СЕКАМ В.Г.К1  
28–69ПАЛ G (Австралия)  
13–57ПАЛ D  
13–62НТСЦ М ЯПОНИЯ  
11–69НТСЦ М США  
S1-S20

Кабельное ТВ

Промежуточная частота:

Видео 38,0 МГц.  
Звук 31,5 МГц. (D, K, K1)  
32,0 МГц. (I)  
32,5 МГц. (B, G)  
33,5 МГц. (M)  
Цвет 33,57 МГц. (ПАЛ)  
33,6 МГц. (СЕКАМ)  
33,75 МГц. (СЕКАМ)  
34,42 МГц. (НТСЦ)

Разъёмы соединения Аудио/Видео:

Ау./ Ви. входы: Видео вход 1 В размерах, 75 ом.  
Звуковой вход Приб. 400мВ.

ТВ выход: Видео вход 1 В размерах, 75 ом.  
Звуковой вход Приб. 400мВ.

Высокое напряжение: 28,5 кВ. (+1,2 –1,5)  
при нулевом токе

Кинескоп: A51JXS95X54см. (21") по  
диагонали, 90° отклонение.

Выходная звуковая мощность: 4.0Вт.(Макс.)

Громкоговоритель: 9,65х5см, 16ом

Размеры: Высота: 502,5 мм  
Ширина: 520,0 мм  
Глубина: 485,5 мм

Вес: 22,96 кг.(Нетто)

Передатчик дистанционного  
управления: Инфракрасный с 33  
клавишами.

Спецификации могут быть изменены без предварительного  
извещения. Вес и размеры приведены приблизительно.

## Shut Down Circuit Test

This test must be made as a final check before the set is returned to the customer.

1. Operates the TV set.
2. Set Controls:  
Screen (on FBT) .....minimum  
Contrast .....minimum  
Colour .....minimum
3. Connect a DC voltmeter to cathode of D523, and confirm that the voltage reading is 26.8V. or less.
4. Supply 28.1 V DC to cathode of D523 and confirm that the shut down circuit dose not operate.
5. Supply 31.3 V DC to cathode of D523 and confirm that the shut down circuit operates.
6. Switch the set off and disconnect the DC supply. Switch the set on and Normalize the contrast and colour.

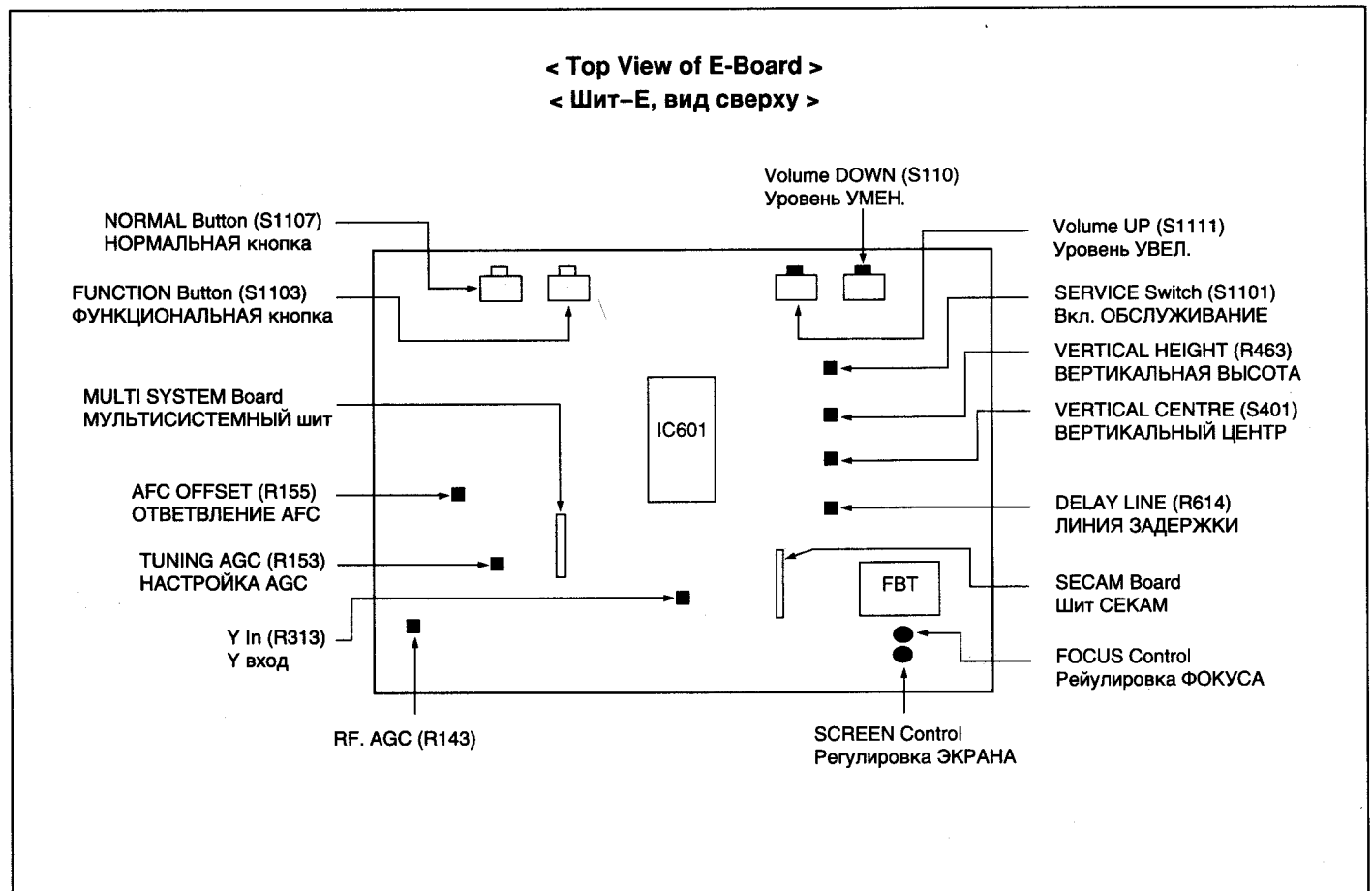
## Проверка отключающей схемы

Это испытание необходимо провести как окончательную проверку перед возвращением телевизора покупателю.

1. Включить установку ТВ.
2. Установить регуляторы:  
Экран ( на FBT) .....мин.  
Контраст .....мин.  
Цвет .....мин.
3. Подсоединить вольтметр пост. тока к катоду D523 и убедиться, что показание напряжения 26.8 В или меньше.
4. Подать 28,1 В. постоянного тока к катоду D523 и убедиться, что отключающая цепь не сработает.
5. Подать 31,3 В. постоянного тока к катоду D523 и убедиться, что отключающая цепь сработает.
6. Выключите аппарат и отсоедините питание пост. тока. Включите аппарат и Нормализуйте контраст и цвет.

## Location of Controls

## Расположение регуляторов



# MX-1A Chassis Block Diagram

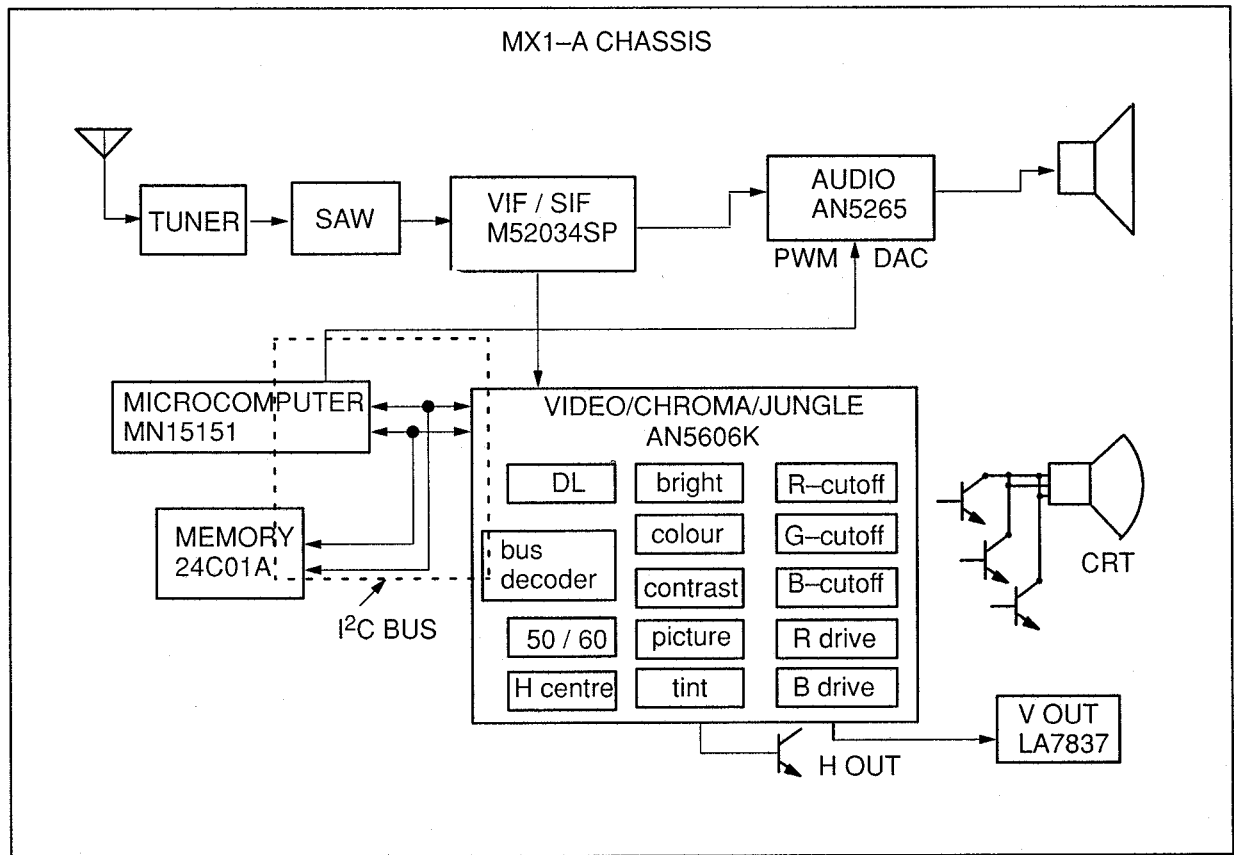


Fig. 2

## The I<sup>2</sup>C Bus Concept :

### A. Features

1. The I<sup>2</sup>C bus is a 2 – wire serial bus consisting of a clock line (SCL) and a data line (SDA).
  2. It allows bi – directional data transfer, between IC's.
  3. It consists of a master and one or more slave IC's.
- The master initiates transfer and generates clock signals.
  - The slave is the IC addressed by a master.

## B. Basic Format of the I<sup>2</sup>C Data transmission from the microcomputer (1102) to the IC601.

### 1. Transfer Timing

During transmission from the microcomputer to IC601, 12 bytes of each of the following types of information is transferred one at a time:

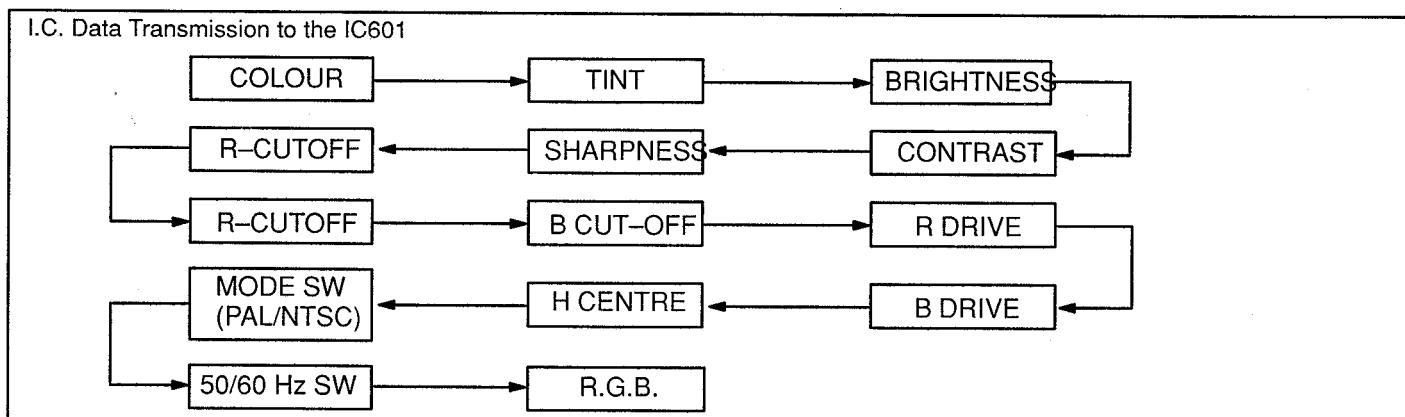


Fig. 4

### 2. Format

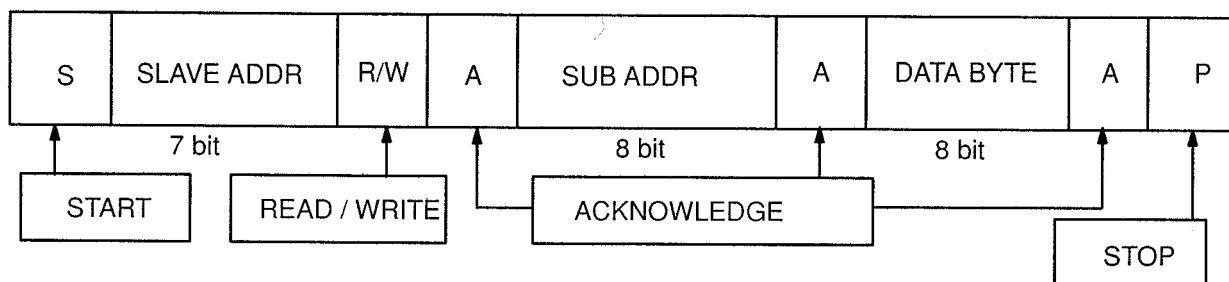


Fig. 5

## C. I<sup>2</sup>C Application in the MX-1A Chassis.

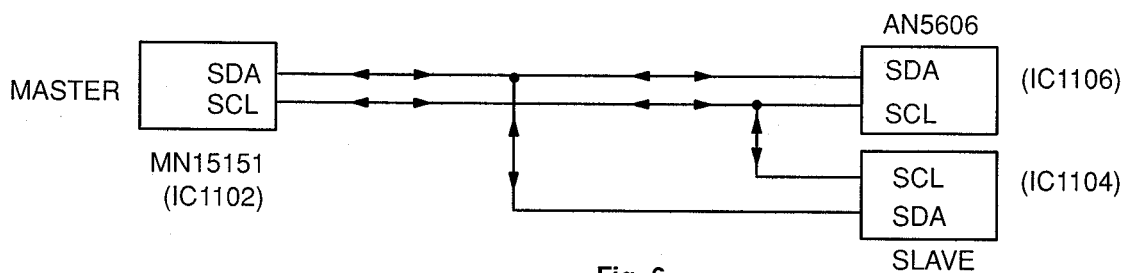


Fig. 6

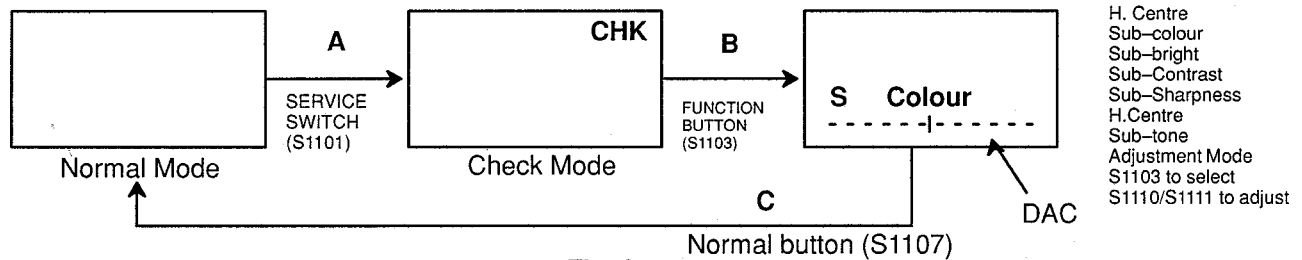
During transfer the microcomputer IC1102 in the TV set is always the master device. IC601 and IC1104 are slave addressed by IC1102.

1. Various control functions are possible via the I<sup>2</sup>C bus from the microcomputer IC1102 to VCJ IC601, as shown in Fig. 4.
2. Data like position, BT voltage, band, AFC, skip, volume, recall, power and off timer setting, service mode setting, colour setting, function etc, are stored and read out from the EEPROM IC1104 via the I<sup>2</sup>C bus.

## 2. How to set the Factory Mode for adjustment.

Follow the Steps shown in the block diagram below to set the Factory Mode for sub-colour; sub-bright; sub-contrast; RGB low-light and RGB high-light adjustments and return to Normal mode after adjustment. When the IC601(VCJ) or IC1104 are replaced, these adjustment must be done as below.

### The Sub Adjustment mode.



A: Press the Service Switch (S1101).

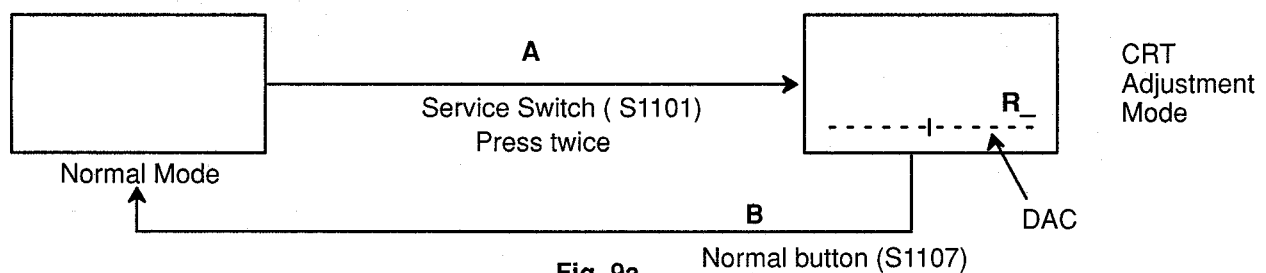
The TV in the Normal mode changes to check mode. "CHK" will appear on the screen as shown in Fig. 9.

B: Press the Function button (S1103) to select the required adjustment to be adjusted as shown in Fig. 9.

Press the Volume "up" or "down" button (S1110 & S1111) to change the DAC level.

C: Press the Normal button (S1107, after the DAC indication disappears ) to return to Normal mode.

### The CRT Adjustment mode.



A: Press the Service Switch (S1101) twice. The TV in the Normal mode changes to the CRT Adjustment mode.

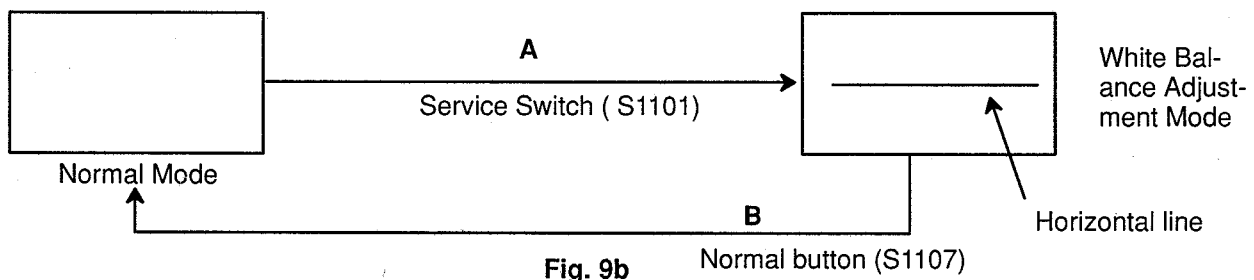
Press the Function button (S1103) to select the required adjustment to be adjusted as shown in Fig. 9a.

( Please refer to procedure on page 12 ).

Press the Volume "up" or "down" button (S1110 & S1111) to change the DAC level.

B: Press the Normal button ( S1107 ) to return to Normal mode.

### The White Balance Adjustment mode.



A: Press the Service Switch (S1101) twice. The TV in the Normal mode changes to the CRT Adjustment mode.

Then press the Service Switch once more to enter White Balance Adjustment mode.

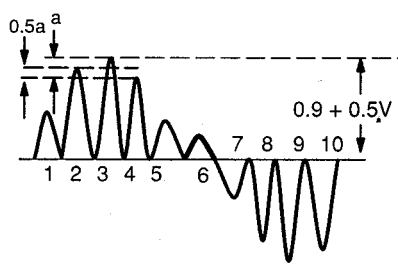
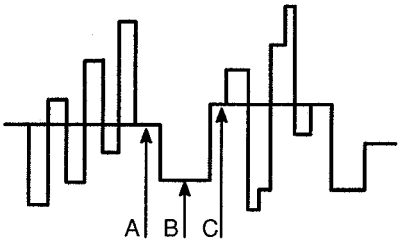
( Please refer to procedure on page 12 ).

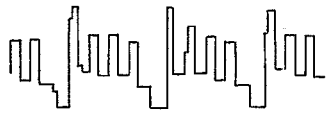
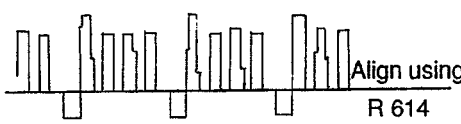
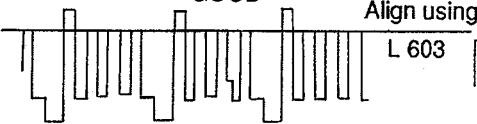
Press the Volume "up" or "down" button (S1110 & S1111) to change the DAC level.

B: Press the Normal button ( S1107 ) to return to Normal mode.

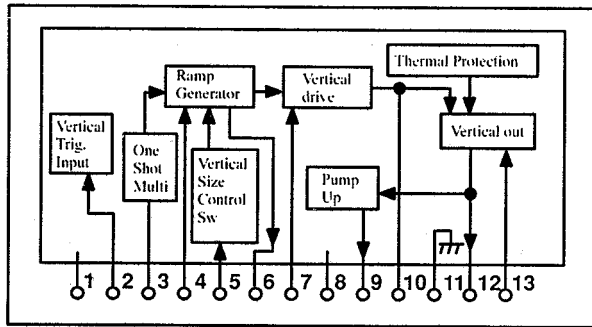
# Adjustment Procedure

| Item / Preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Adjustment Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |                        |                         |                                   |                       |                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|------------------------|-------------------------|-----------------------------------|-----------------------|------------------------|
| <b><u>B Voltage</u></b> <ol style="list-style-type: none"> <li>1. Operate the TV set.</li> <li>2. Set control as follow:<br/> Brightness ..... minimum<br/> Contrast ..... minimum</li> </ol>                                                                                                                                                                                                                                                                                                                                  | <p>Confirm the DC voltages at the indicated test points, as follow:</p> <table> <tr> <td>D807 : <math>142.0 \pm 2.0</math> V</td><td>TP8 : <math>12.0 \pm 1.0</math> V</td></tr> <tr> <td>TPE4 : <math>26.0 \pm 1.5</math> V</td><td>Pin-1 of E33 : <math>200.0 \pm 15.0</math> V</td></tr> <tr> <td>TP6 : <math>5.0 \pm 0.5</math> V</td><td>TP 9 : <math>9.0 \pm 1.0</math> V</td></tr> </table>                                                                                                                                                          | D807 : $142.0 \pm 2.0$ V | TP8 : $12.0 \pm 1.0$ V | TPE4 : $26.0 \pm 1.5$ V | Pin-1 of E33 : $200.0 \pm 15.0$ V | TP6 : $5.0 \pm 0.5$ V | TP 9 : $9.0 \pm 1.0$ V |
| D807 : $142.0 \pm 2.0$ V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | TP8 : $12.0 \pm 1.0$ V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                        |                         |                                   |                       |                        |
| TPE4 : $26.0 \pm 1.5$ V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Pin-1 of E33 : $200.0 \pm 15.0$ V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                          |                        |                         |                                   |                       |                        |
| TP6 : $5.0 \pm 0.5$ V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | TP 9 : $9.0 \pm 1.0$ V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                        |                         |                                   |                       |                        |
| <b><u>Tuning AFC and AFC offset</u></b> <ol style="list-style-type: none"> <li>1. Operate the TV set and disconnect on aerial.</li> <li>2. Connect a jumper lead between TPE10 and TP 8 to mute the normal tuning AFC. Connect a DC voltmeter to TPE 13 and earth.</li> <li>3. Connect a DC voltmeter to TP 1.</li> </ol>                                                                                                                                                                                                      | <ol style="list-style-type: none"> <li>1. Adjust tuning AFC Control ( R153 ) for <math>2.7 (+ 0.1, -0.5)</math> V.</li> <li>2. Connect the DC voltmeter to TPE 11.</li> <li>3. Adjust AFC offset control (R155) for <math>5.5V \pm 0.2</math> at TPE 11.</li> </ol>                                                                                                                                                                                                                                                                                         |                          |                        |                         |                                   |                       |                        |
| <b><u>RF AGC</u></b><br><b><u>A. Workshop</u></b> <ol style="list-style-type: none"> <li>1. Receive a colour bar signal at an RF level of <math>55 \pm 2\text{dB}\mu</math> (<math>+ 289.9\mu\text{V}</math>, <math>- 230.8\mu\text{V}</math>) with <math>75\Omega</math> loaded.</li> <li>2. Connect an oscilloscope to TPE 12, set to DC mode.</li> </ol> <b><u>B. Field</u></b> <ol style="list-style-type: none"> <li>1. Receive the television broadcast channel known to have the weakest RF signal strength.</li> </ol> | <ol style="list-style-type: none"> <li>1. Turn RF AGC control ( R143 ) fully clockwise.</li> <li>2. Slowly turn RF Control counterclockwise to set it at the point just before voltage at TPE 12 begins to drops.</li> </ol><br><ol style="list-style-type: none"> <li>1. Turn RF AGC control ( R143 ) such as to produce a snowy picture.</li> <li>2. Slowly turn back R143 off until the snow ( picture noise ) disappears.</li> <li>3. Check the remaining broadcast channels for either snow or AGC overload and readjust R143 if necessary.</li> </ol> |                          |                        |                         |                                   |                       |                        |
| <b><u>High Voltage</u></b> <ol style="list-style-type: none"> <li>1. Operate the TV set.</li> <li>2. Set controls as follow:<br/> Brightness ..... minimum<br/> Contrast ..... minimum</li> </ol>                                                                                                                                                                                                                                                                                                                              | <ol style="list-style-type: none"> <li>1. Connect a DC voltage meter to D807(c) and confirm the voltage is <math>142.0 \pm 2.0</math> V.</li> <li>2. Connect a high voltage meter to anode of the picture tube.</li> <li>3. Confirm that the high voltage is within the range of <math>28.5 (+ 1.2, -1.5)</math> kV.</li> <li>4. Normalize the brightness and contrast.</li> </ol>                                                                                                                                                                          |                          |                        |                         |                                   |                       |                        |
| <b><u>Delay Line</u></b> <ol style="list-style-type: none"> <li>1. Receive a PAL colour bar signal.</li> <li>2. Connect an oscilloscope to TP 18.</li> <li>3. Normalize Colour and Contrast settings.</li> </ol>                                                                                                                                                                                                                                                                                                               | <ol style="list-style-type: none"> <li>1. Adjust R614 to align the lower portion of the waveform shown in Fig. 12.</li> <li>2. Adjust L603 to minimize the difference in levels between the higher portions of the waveform as shown in Fig. 12a.</li> </ol> <p>Hint : At the correct R614/L603 alignment the waveform seem on the oscilloscope becomes "stable". See Fig. 12 &amp; 12a.</p>                                                                                                                                                                |                          |                        |                         |                                   |                       |                        |

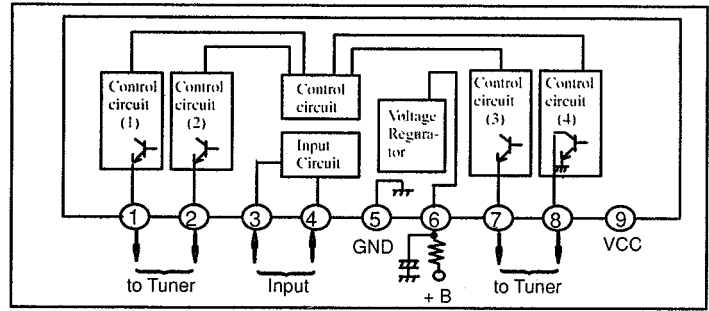
| Item / Preparation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Adjustment Procedure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Waveform                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|
| <p><b><u>M-NTSC Sub-Tint Adjustment</u></b></p> <p>Apply NTSC rainbow pattern.<br/>           Connect a oscilloscope to TP17.<br/>           Connect a short jumper between TPE and TP10.<br/>           Press S1104 colour system SW to NTSC 4.43 .<br/>           Colour ..... NORMAL or CENTRE<br/>           Bright ..... NORMAL or CENTRE<br/>           Contrast ..... NORMAL or MAX.<br/>           Tint ..... NORMAL or CENTRE</p> <p>Press SERVICE SW (S1101), then press S1103 (FUNC.) to Sub-Tint .<br/>           Confirm CHK display on screen.</p> | <p>Confirm the amplitude of waveform:<br/> <math>0.9 \pm 0.5V</math>.</p> <ol style="list-style-type: none"> <li>1. Set Colour to control to maximum and confirm that the colour level is saturated enough.</li> <li>2. Adjust Sub-Tint so that the peak level of waveform is similar to Fig. 10.</li> <li>3. Press NORMAL (S1107), CHK should diss-appear from screen.</li> <li>4. Confirm Colour max level at colour Max condition by colour control.</li> </ol> <p>Note : Use Remote control only when adjusting User Control .</p> |  <p><b>Fig.10</b></p> |
| <p><b><u>Adjustment Of SECAM Discrimination</u></b></p> <ol style="list-style-type: none"> <li>1. Receive SECAM colour bar pattern.</li> <li>2. Set the tuning to the best point</li> <li>3. Set system SW to SECAM .</li> <li>4. Connect Oscilloscope to TP19 which is located on the SECAM board.</li> </ol>                                                                                                                                                                                                                                                   | <ol style="list-style-type: none"> <li>1. Adjust L653/R653, so that A,B,C level is flat as shown in Fig. 11</li> <li>2. Connect the oscilloscope to TPE9.</li> <li>3. Adjust R653, so that waveform D falls on E as shown in Fig. 11a.</li> <li>4. Connect oscilloscope to TP19 and confirm that A,C is flat.</li> </ol> <p>Note : Important point is that the level D must fall on level E.</p>                                                                                                                                       |  <p><b>Fig.11</b></p> |

|                                                                                                     |                                                                                                  |                                                                                                       |
|-----------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <p>Not Good</p>  | <p>GOOD</p>  | <p>Not Good</p>  |
| <b>Fig.12</b>                                                                                       |                                                                                                  |                                                                                                       |
| <p>Not Good</p>  | <p>GOOD</p>  | <p>Not Good</p>  |
| <b>Fig.12a.</b>                                                                                     |                                                                                                  |                                                                                                       |

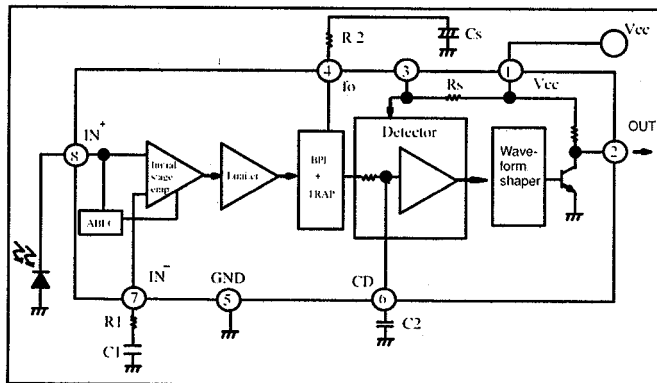
# Block Diagram for Integrated Circuits



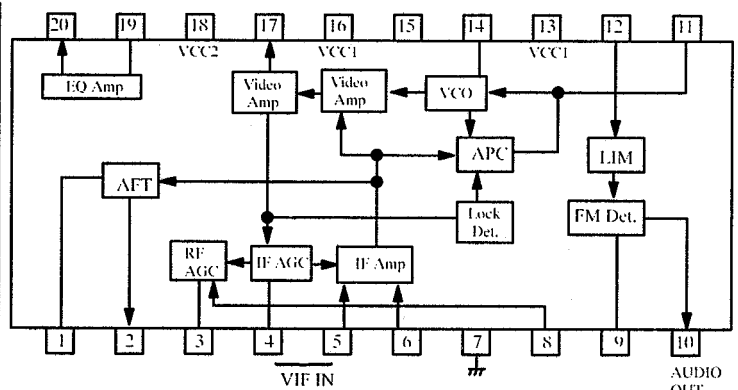
IC401 ( LA7837 )



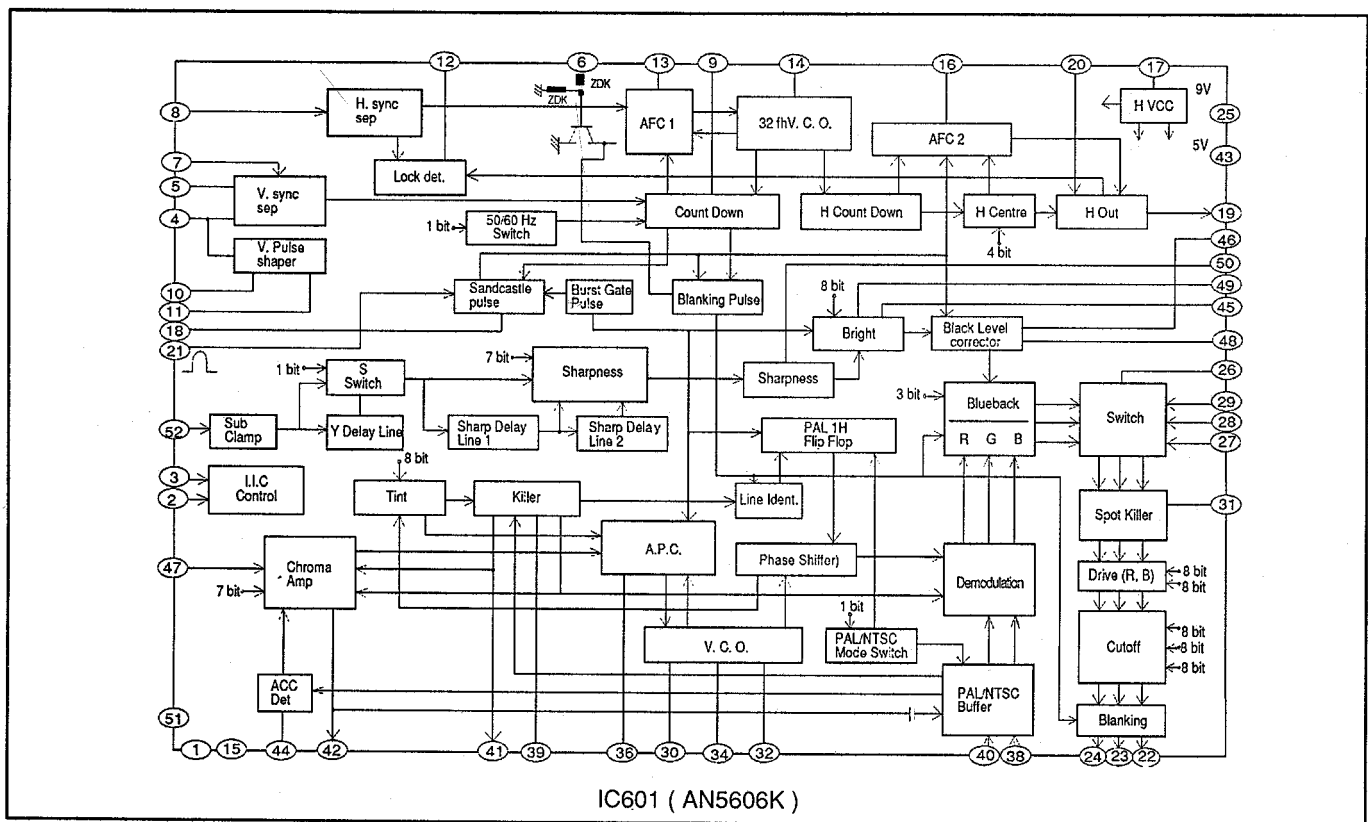
IC1103 ( AN5071 )



IC1201 ( UPC2801AHA )



IC101 ( M52034SP )

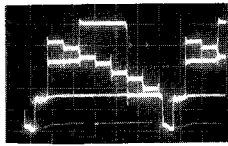


IC601 ( AN5606K )

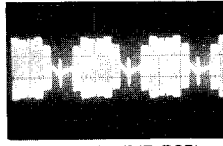
## TEST POINT WAVEFORMS



1. IC101 Pin 20 (E-PCB)  
Composite Video Signal  
1.67V, 20 $\mu$ s / Div



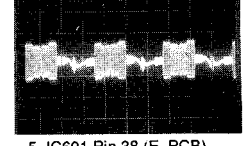
2. IC601 Pin 52 (E-PCB)  
Y In  
0.63V, 20 $\mu$ s / Div



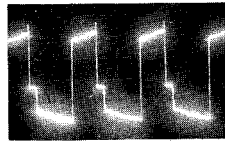
3. IC601 Pin 47 (E-PCB)  
Chroma In  
0.30V, 20 $\mu$ s / Div



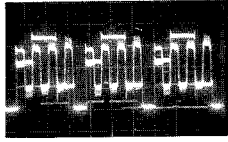
4. IC601 Pin 40 (E-PCB)  
B-Y In  
0.14V, 20 $\mu$ s / Div



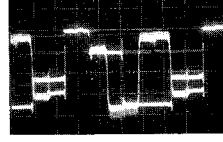
5. IC601 Pin 38 (E-PCB)  
R-Y In  
0.16V, 20 $\mu$ s / Div



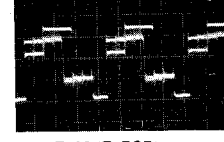
6. IC601 Pin 19 (E-PCB)  
Horizontal Out  
2.4V, 20 $\mu$ s / Div



7. TP 18 (IC601 PIN 22)  
(E-PCB)  
3.8V, 20 $\mu$ s / Div



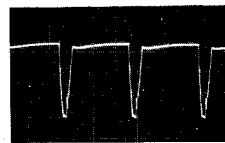
8. TP 17 (IC601 PIN 24)  
(E-PCB)  
3.7V, 10 $\mu$ s / Div



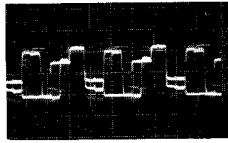
9. E-32 (E-PCB)  
Green Output From IC601 Pin 3.  
3.9V, 20 $\mu$ s / Div



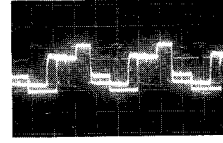
10. FBT Pin 4 (E-PCB)  
229V, 20 $\mu$ s / Div



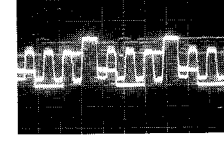
11. FBT Pin 6 (E-PCB)  
225V, 20 $\mu$ s / Div



12. Q351 Collector  
(Y-PCB)  
131.5V, 20 $\mu$ s / Div



13. Q352 Collector  
(Y-PCB)  
131.5V, 20 $\mu$ s / Div



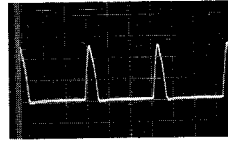
14. Q354 Collector  
(Y-PCB)  
127.5V, 20 $\mu$ s / Div



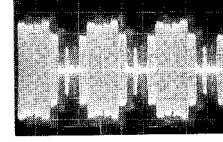
15. IC401 PIN 12 (E-PCB)  
Vertical Out  
51.2V, 5 $\mu$ s / Div



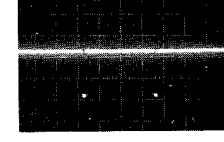
16. Q501 Base (E-PCB)  
Horizontal Out  
13.7V, 20 $\mu$ s / Div



17. Q501 Collector (E-PCB)  
Horizontal Out  
1300V, 20 $\mu$ s / Div



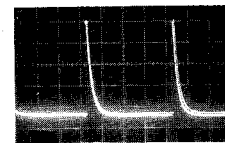
18. IC601 Pin 42 (E-PCB)  
Chroma Out  
1.1V, 20 $\mu$ s / Div



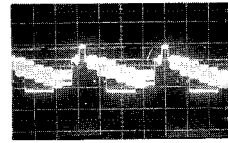
19. IC601 Pin 9 (E-PCB)  
Vertical Out  
4.2V, 10 $\mu$ s / Div



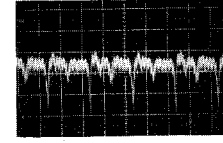
20. TPH 10 (E-PCB)  
Video Output Terminal  
1.8V, 20 $\mu$ s / Div



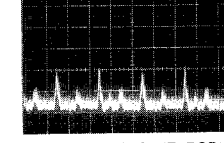
21. IC601 Pin 11 (E-PCB)  
V Shaper  
8.9V, 5 $\mu$ s / Div



22. IC601 Pin 7 (E-PCB)  
Vertical  
1.9V, 20 $\mu$ s / Div



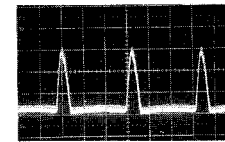
23. IC1102 Pin 31 (E-PCB)  
Band 1  
0.1V, 1 $\mu$ s / Div



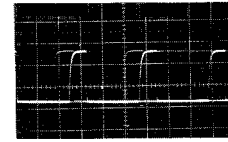
24. IC1102 Pin 24 (E-PCB)  
Band 2  
0.15V, 1 $\mu$ s / Div



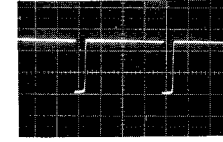
25. IC401 Pin 2 (E-PCB)  
Vertical Trigger Input  
4.2V, 5 $\mu$ s / Div



26. IC601 Pin 21 (E-PCB)  
5.1V, 20 $\mu$ s / Div



27. IC601 Pin 2 (E-PCB)  
Serial Clock Line  
4.8V, 20 $\mu$ s / Div



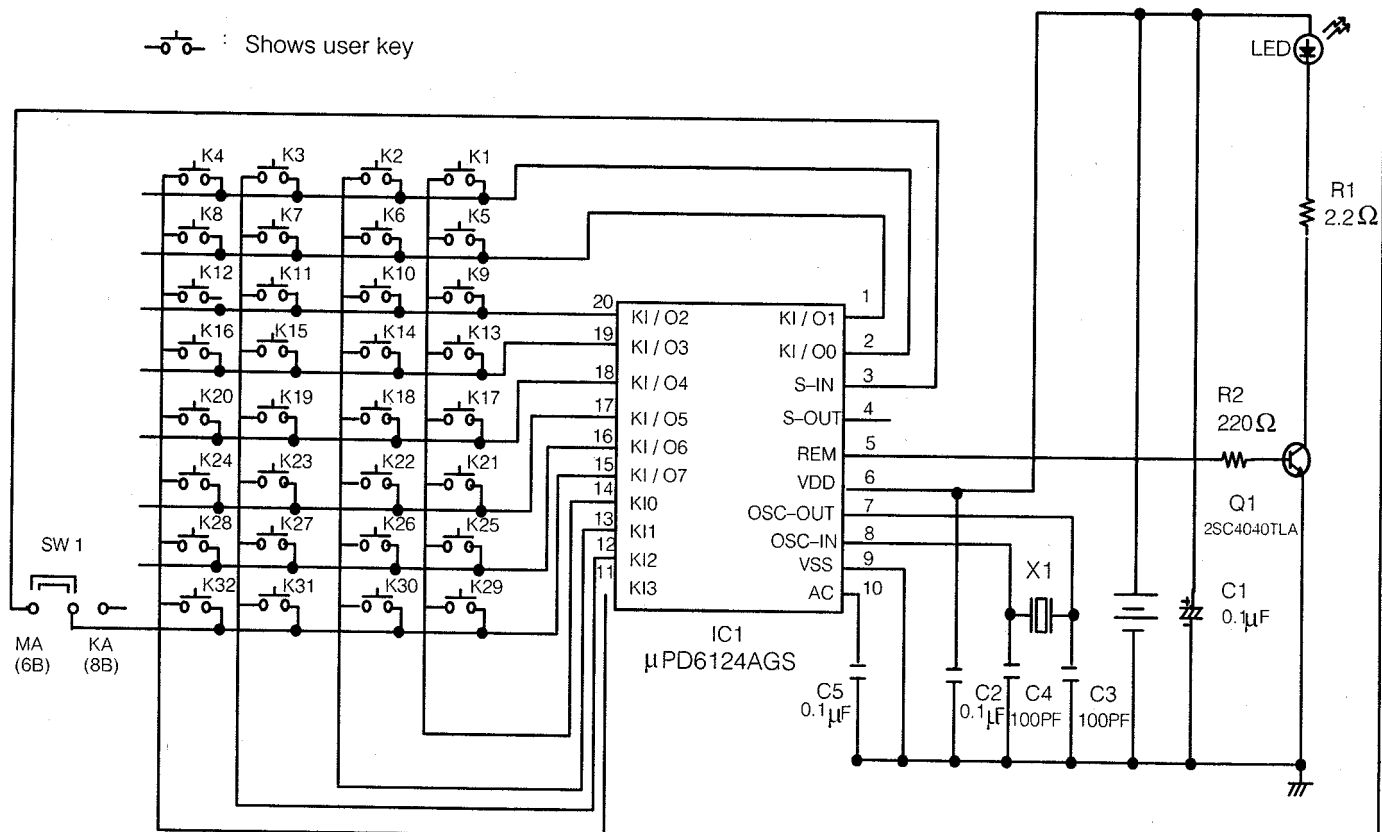
28. IC601 Pin 10 (E-PCB)  
50Hz / 60Hz  
4.8V, 5 $\mu$ s / Div

## TEST POINT VOLTAGES

| PART   | PIN | VOLTAGES | COMMENTS               | PART   | PIN | VOLTAGES | COMMENTS               |
|--------|-----|----------|------------------------|--------|-----|----------|------------------------|
| IC1102 | 4   | 6.5V     | AUTO, AV IN, NTSC 4.43 | IC1102 | 19  | 4.5V     | AUTO, AV IN, PAL       |
| IC1102 | 4   | -0.5V    | AUTO, AV IN, SECAM     | IC1102 | 19  | 4.5V     | B/W                    |
| IC1102 | 4   | -0.5V    | AUTO, AV IN, PAL       | IC1102 | 23  | 4.5V     | AUTO, AV IN, NTSC 4.43 |
| IC1102 | 4   | 1.5V     | B/W                    | IC1102 | 23  | 4.5V     | AUTO, AV IN, SECAM     |
| IC1102 | 17  | 1.5V     | AUTO, AV IN, NTSC 4.43 | IC1102 | 23  | 4.5V     | AUTO, AV IN, PAL       |
| IC1102 | 17  | 1.5V     | AUTO, AV IN, SECAM     | IC1102 | 23  | 4.5V     | B/W                    |
| IC1102 | 17  | 1.5V     | AUTO, AV IN, PAL       | IC1102 | 51  | 4.5V     | AUTO, AV IN, NTSC 4.43 |
| IC1102 | 17  | 1.5V     | B/W                    | IC1102 | 51  | 4.5V     | AUTO, AV IN, SECAM     |
| IC1102 | 19  | 4.5V     | AUTO, AV IN, NTSC 4.43 | IC1102 | 51  | 4.5V     | AUTO, AV IN, PAL       |
| IC1102 | 19  | 4.5V     | AUTO, AV IN, SECAM     | IC1102 | 51  | 4.5V     | B/W                    |

## Remote Control SBAR20026A

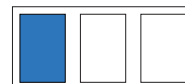
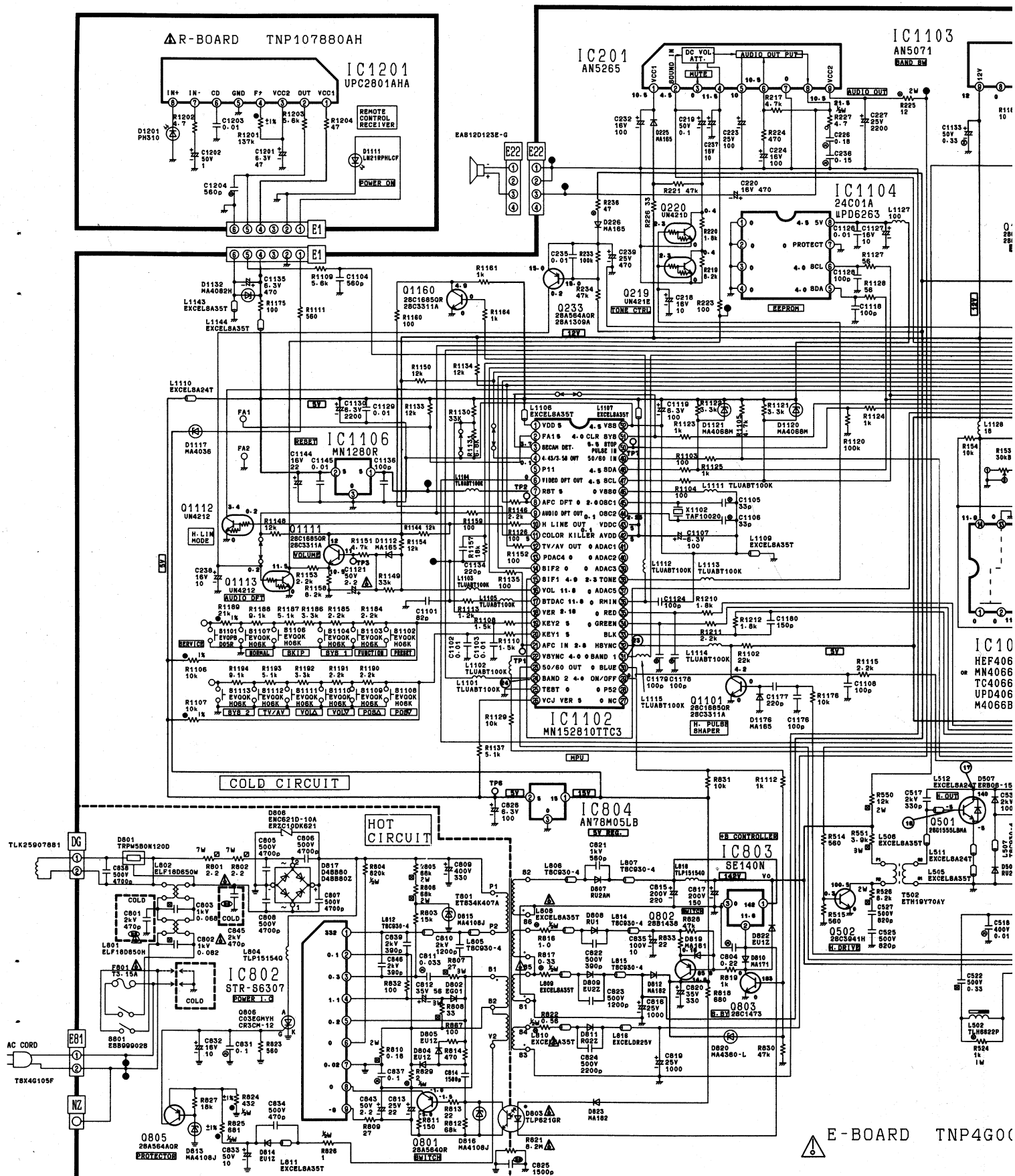
 : Shows user key

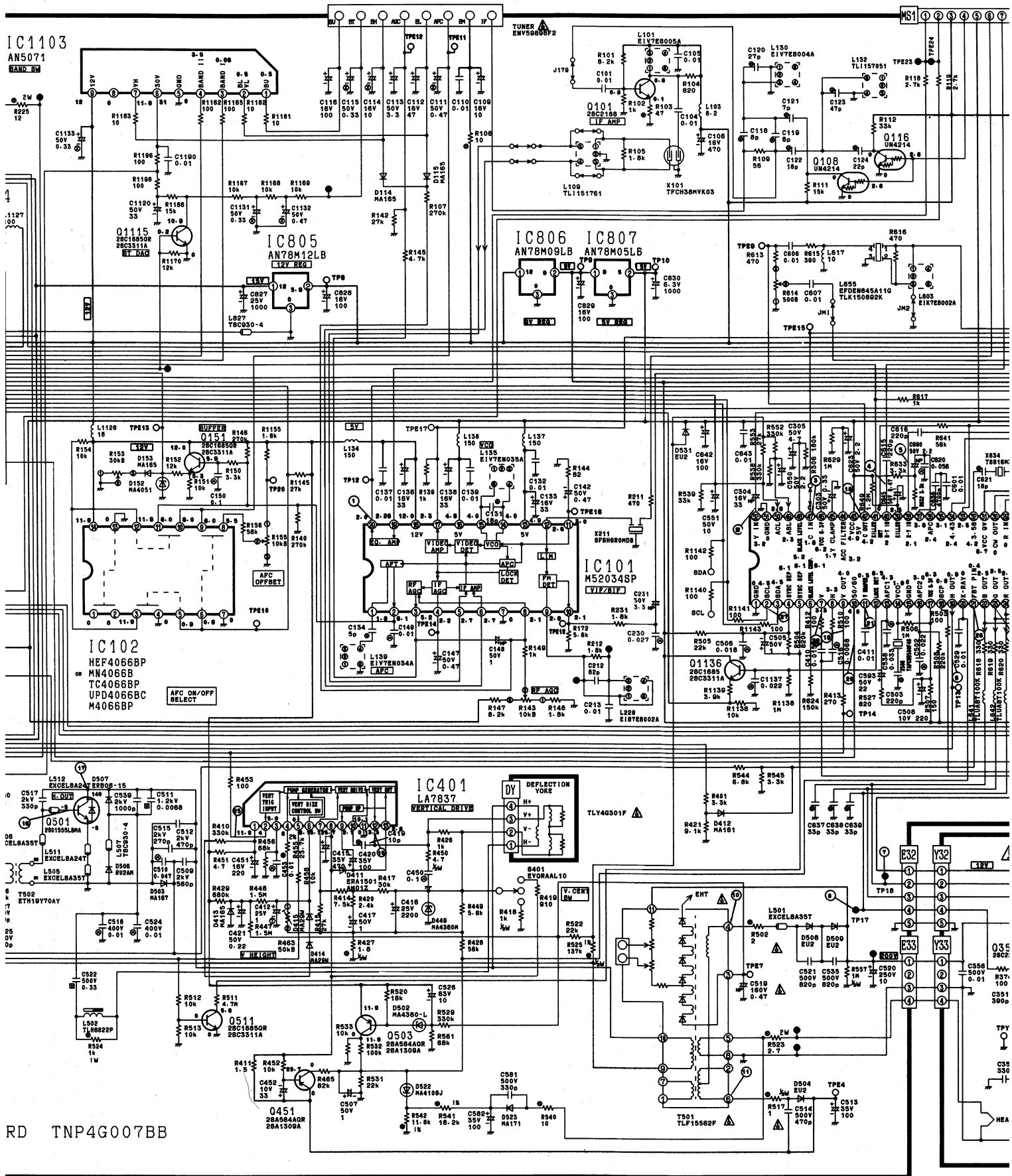


\* Parts listed here are not supplyable.

Fig.26

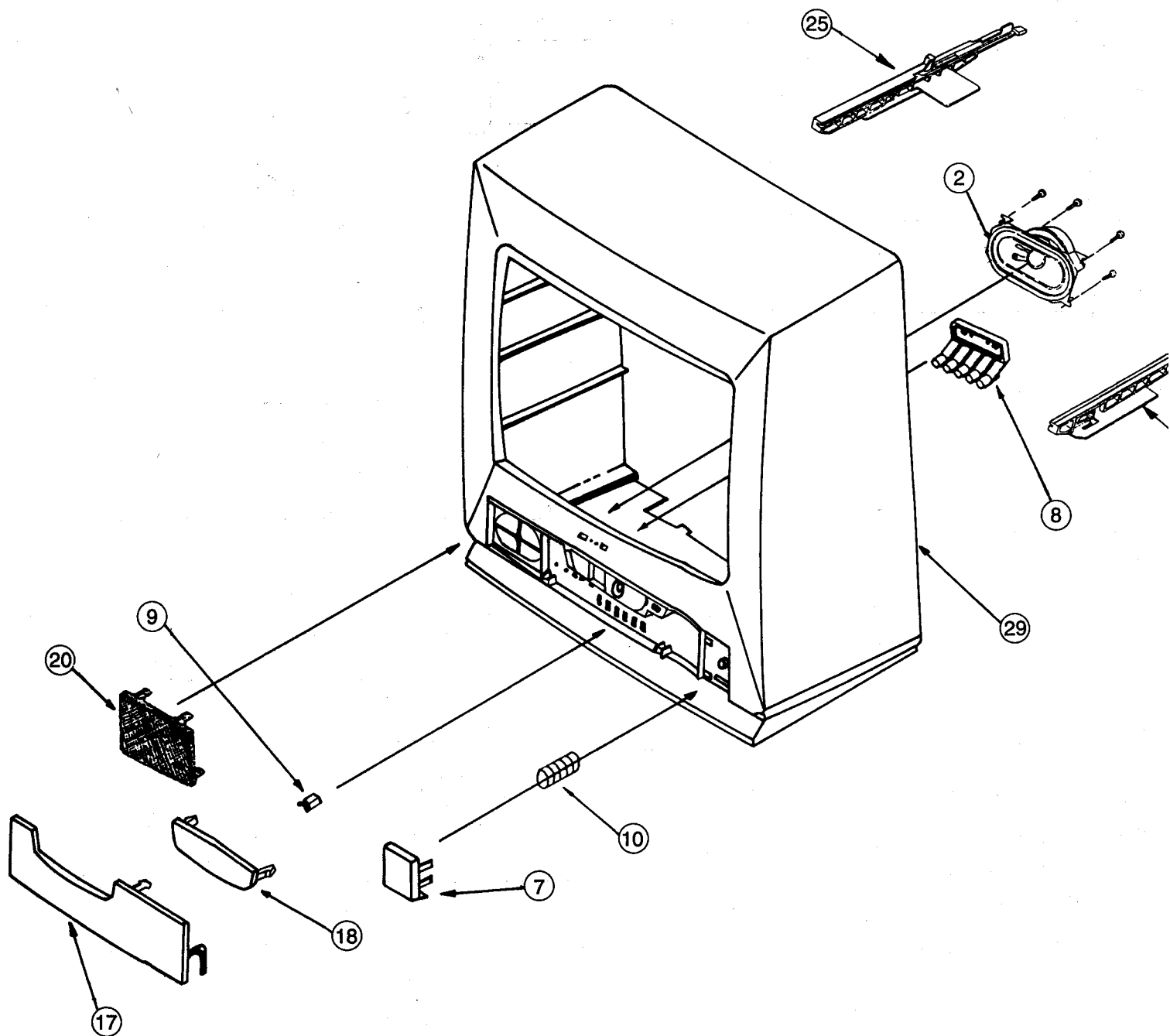
| KEY NO. | FUNCTION                                                                                   | DATA CODE | KEY NO. | FUNCTION                                                                                       | DATA CODE |
|---------|--------------------------------------------------------------------------------------------|-----------|---------|------------------------------------------------------------------------------------------------|-----------|
| 1       | TV/AV                                                                                      | 05        | 17      | —/—                                                                                            | 3B        |
| 2       | POWER                                                                                      | 3D        | 18      | CH 0                                                                                           | 19        |
| 3       | CH 1                                                                                       | 10        | 19      | NORMAL                                                                                         | 0C        |
| 4       | CH $\Delta$                                                                                | 34        | 20      | FUNCTION                                                                                       | 06        |
| 5       | CH 3                                                                                       | 12        | 21      |  OFFTIMER | 0F        |
| 6       | CH 2                                                                                       | 11        | 22      |  MUTE     | 32        |
| 7       | CH 4                                                                                       | 13        | 23      |  REC      | 08        |
| 8       | CH V                                                                                       | 35        | 24      |  VCR      | 3D        |
| 9       | CH 6                                                                                       | 15        | 25      | CH $\Delta$                                                                                    | 34        |
| 10      | CH 5                                                                                       | 14        | 26      |  F.F      | 03        |
| 11      | CH 7                                                                                       | 16        | 27      |  PLAY     | 0A        |
| 12      |  RECALL | 39        | 28      |  REW      | 02        |
| 13      | CH 9                                                                                       | 18        | 29      | CH V                                                                                           | 35        |
| 14      | CH 8                                                                                       | 17        | 30      |  F.ADV    | 0C        |
| 15      | VOL +                                                                                      | 20        | 31      |  STOP     | 00        |
| 16      | VOL -                                                                                      | 21        | 32      |  PAUSE    | 06        |





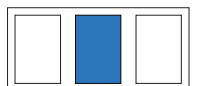
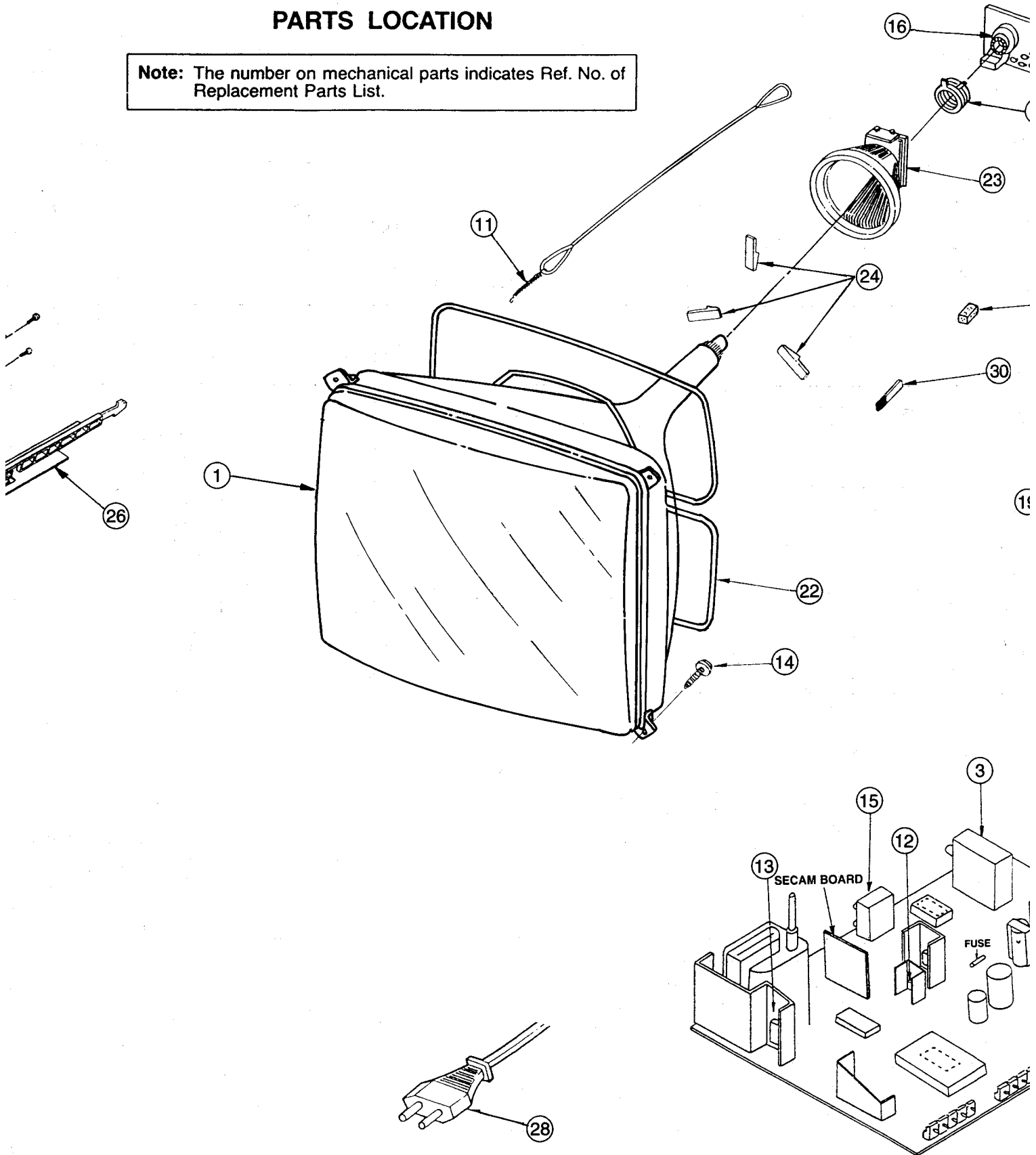
RD TNP4G007BB

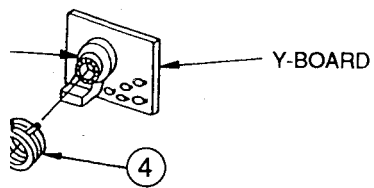




## PARTS LOCATION

**Note:** The number on mechanical parts indicates Ref. No. of Replacement Parts List.



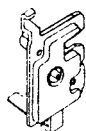


23

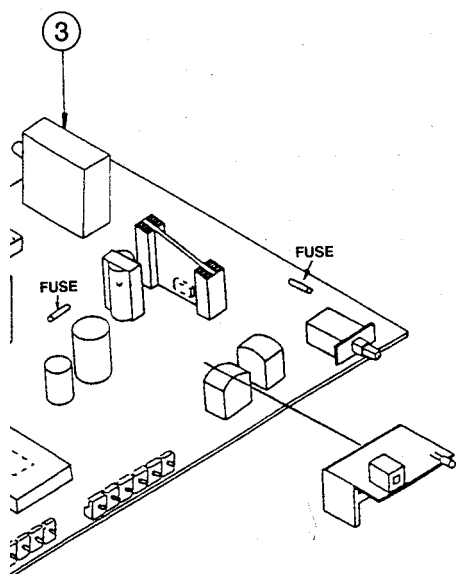
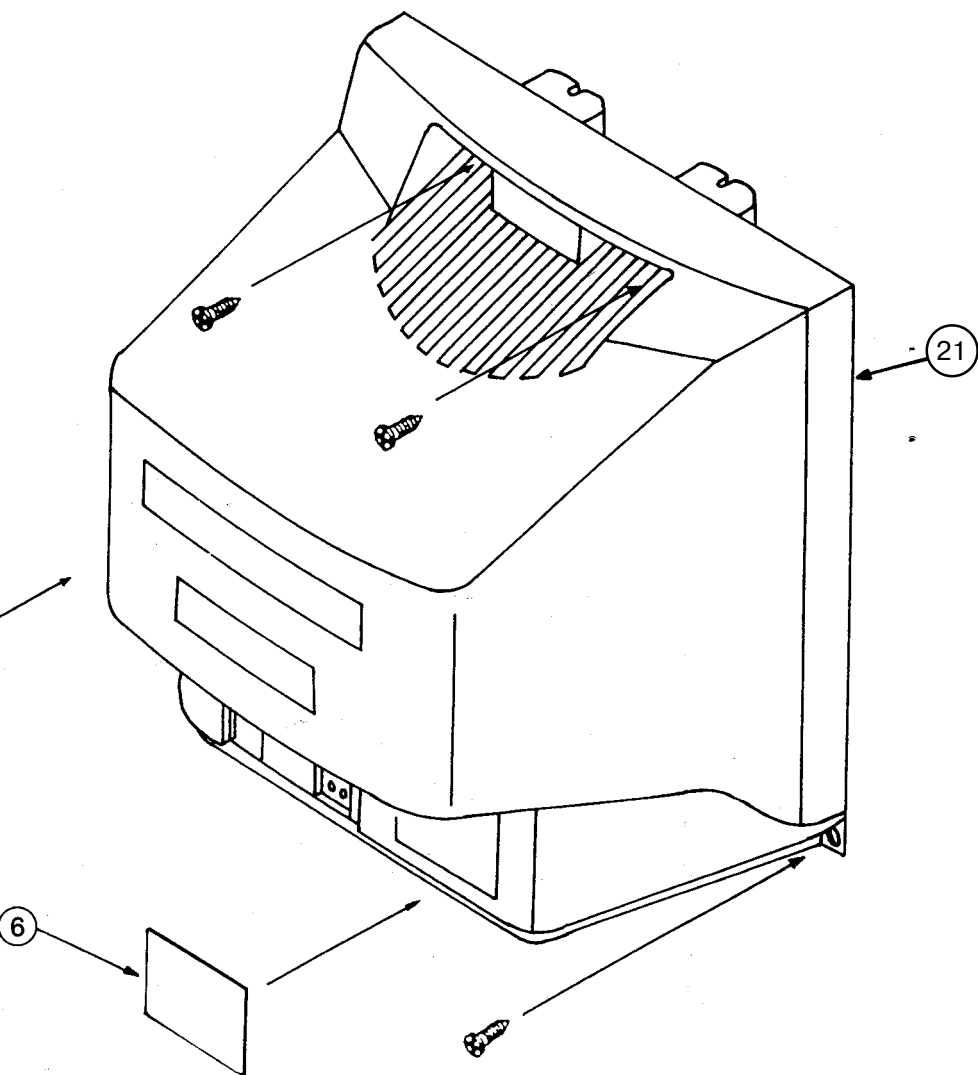


30

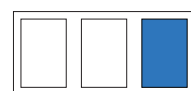
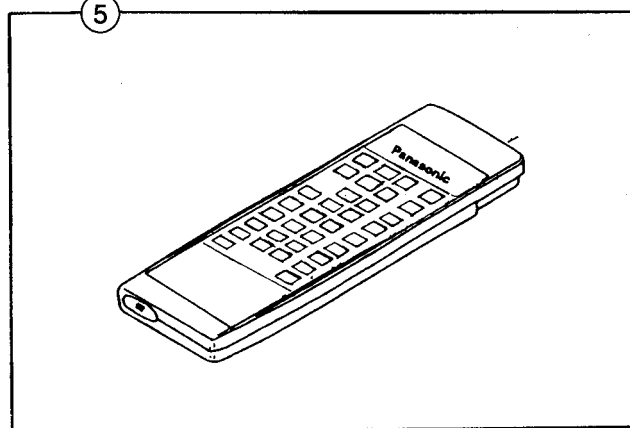
19



6



5



# Replacement Parts List

| Ref.No.                 | Part No.     | Description                   | Ref.No. | Part No.     | Description              |
|-------------------------|--------------|-------------------------------|---------|--------------|--------------------------|
| <b>MECHANICAL PARTS</b> |              |                               | R101    | ERDS2TJ822   | C 8.2KOHM, J,1/4W        |
| 1                       | A51JXS95X    | PICTURE TUBE $\Delta$         | R102    | ERDS2TJ102   | C 1KOHM, J,1/4W          |
| 2                       | EAS12D123E-G | SPEAKER MTV                   | R103    | ERQ14AJ470P  | F 470HM, J,1/4W $\Delta$ |
| 3                       | ENV59896F2   | TUNER MTV $\Delta$            | R104    | ERDS2TJ821   | C 820OHM, J,1/4W         |
| 4                       | ETC-33X8NA   | CONVERGENCE YOKE MTV          | R105    | ERDS2TJ182   | C 1.8KOHM, J,1/4W        |
| 5                       | SBAR20026A   | REMOTE CTRL.TRA MTV           | R106    | ERQ14AJ100P  | F 10OHM, J,1/4W $\Delta$ |
| 6                       | TBM4G0113    | MODEL NAME PLATE MTV $\Delta$ | R107    | ERDS2TJ274   | C 270KOHM, J,1/4W        |
| 7                       | TBX4G80501   | POWER BUTTON MTV              | R109    | ERDS2TJ560   | C 56OHM, J,1/4W          |
| 8                       | TBX4G80601   | KEY BUTTON MTV                | R110    | ERJ6GEYJ101  | M 100OHM, J,1/10W        |
| 9                       | TEK6935      | DOOR SWITCH                   | R111    | ERDS2TJ153   | C 15KOHM, J,1/4W         |
| 10                      | TES4G203     | SPRING (PW. BUTT) MTV         | R112    | ERDS2TJ333   | C 33KOHM, J,1/4W         |
| 11                      | TES4223      | SPRING                        | R113    | ERJ6GEYJ331  | M 330OHM, J,1/10W        |
| 12                      | TES4537      | SPRING                        | R114    | ERJ6GEYJ331  | M 330OHM, J,1/10W        |
| 13                      | TES6583      | SPRING FOR TR                 | R115    | ERJ6GEYJ221  | M 220OHM, J,1/10W        |
| 14                      | THT1060      | SCREW (CRT) MTV               | R116    | ERJ6GEYJ562  | M 5.6KOHM, J,1/10W       |
| 15                      | TJB4G602-1   | AV TERMINAL MTV               | R117    | ERJ6GEYJ391  | M 390OHM, J,1/10W        |
| 16                      | TJS1A5050    | CRT SOCKET $\Delta$           | R118    | ERDS2TJ272   | C 2.7KOHM, J,1/4W        |
| 17                      | TKP4G10081   | DOOR MTV                      | R119    | ERDS2TJ272   | C 2.7KOHM, J,1/4W        |
| 18                      | TKP4G10091   | SMOKED PANEL MTV              | R139    | ERDS2TJ102   | C 1KOHM, J,1/4W          |
| 19                      | TKP4G10101   | AC CORD BRACKET MTV           | R140    | ERDS2TJ274   | C 270KOHM, J,1/4W        |
| 20                      | TKP4G50041   | SP PUNCH. PANEL MTV           | R142    | ERDS2TJ273   | C 27KOHM, J,1/4W         |
| 21                      | TKU4G0800-1  | BACK COVER ASSY MTV           | R143    | EVND4AA00B14 | CONTROL 10KOHMB          |
| 22                      | TLK259078-1  | DEGAUSSING COIL $\Delta$      | R144    | ERDS2TJ331   | C 330OHM, J,1/4W         |
| 23                      | TLY4G301F    | DEFLECTION YOKE MTV $\Delta$  | R145    | ERDS2TJ472   | C 4.7KOHM, J,1/4W        |
| 24                      | TMM27523     | DY WEDGE                      | R146    | ERDS2TJ274   | C 270KOHM, J,1/4W        |
| 25                      | TMZ189822-1  | CHASSIS RAIL (L)              | R147    | ERDS2TJ822   | C 8.2KOHM, J,1/4W        |
| 26                      | TMZ189823    | CHASSIS RAIL (R)              | R148    | ERDS2TJ182   | C 1.8KOHM, J,1/4W        |
| NLA                     | TNP107880AH  | R BOARD MTV $\Delta$          | R149    | ERDS2TJ102   | C 1KOHM, J,1/4W          |
| NLA                     | TNP107884AM  | Y BOARD MTV $\Delta$          | R150    | ERDS2TJ332   | C 3.3KOHM, J,1/4W        |
| NLA                     | TNP4G007BB   | E BOARD MTV $\Delta$          | R151    | ERDS2TJ103   | C 10KOHM, J,1/4W         |
| NLA                     | TNP4G008     | MS BOARD MTV $\Delta$         | R152    | ERDS2TJ123   | C 12KOHM, J,1/4W         |
| NLA                     | TNP4G010     | SE BOARD MTV $\Delta$         | R153    | EVND4AA00B34 | CONTROL 30KOHMB          |
|                         | TPC4G40713   | CARTON MTV                    | R154    | ERDS2TJ103   | C 10KOHM, J,1/4W         |
|                         | TPE4G14002   | SET COVER MTV                 | R155    | EVND4AA00B14 | CONTROL 10KOHMB          |
|                         | TQB4G1108    | FAN BAG MTV                   | R156    | ERDS2TJ563   | C 56KOHM, J,1/4W         |
| 27                      | TSN63115-4   | PURITY MAGNET MTV             | R157    | ERJ6GEYJ271  | M 270OHM, J,1/10W        |
| 28                      | TSX4G105F    | AC POWER CORD MTV $\Delta$    | R172    | ERDS2TJ562   | C 5.6KOHM, J,1/4W        |
| 29                      | TXFKY01YB2S  | CABINET ASSY MTV              | R180    | ERJ6GEYJ123  | M 12KOHM, J,1/10W        |
| 30                      | TXFMK01H55   | MAGNET                        | R181    | ERJ6GEYJ123  | M 12KOHM, J,1/10W        |
|                         | TXFPD10YH2S  | CUSHION (TOP) MTV             | R184    | ERJ6GEYJ472  | M 4.7KOHM, J,1/10W       |
|                         | TXFPD20YH2S  | CUSHION (BOTTOM) MTV          | R185    | ERJ6GEYJ101  | M 100OHM, J,1/10W        |
| <b>RESISTORS</b>        |              |                               | R186    | ERJ6GEYJ101  | M 100OHM, J,1/10W        |

| Ref.No. | Part No.     | Description                                                                                      | Ref.No. | Part No.     | Description                                                                                             |
|---------|--------------|--------------------------------------------------------------------------------------------------|---------|--------------|---------------------------------------------------------------------------------------------------------|
| R207    | ERJ6GEYJ471  | M 470OHM, J, 1/10W                                                                               | R375    | ERDS1TJ272   | C 2.7KOHM, J, 1/2W                                                                                      |
| R208    | ERJ6GEYJ471  | M 470OHM, J, 1/10W                                                                               | R376    | ERG2ANJ123   | M 12KOHM, J, 2W                                                                                         |
| R209    | ERJ6GEYJ471  | M 470OHM, J, 1/10W                                                                               | R386    | ERDS1TJ272   | C 2.7KOHM, J, 1/2W                                                                                      |
| R210    | ERJ6GEYJ471  | M 470OHM, J, 1/10W                                                                               | R387    | ERDS1TJ272   | C 2.7KOHM, J, 1/2W                                                                                      |
| R211    | ERDS2TJ221   | C 220OHM, J, 1/4W                                                                                | R401    | ERD25TJ332   | C 3.3KOHM, J, 1/4W                                                                                      |
| R212    | ERDS2TJ182   | C 1.8KOHM, J, 1/4W                                                                               | R410    | ERDS2TJ334   | C 330KOHM, J, 1/4W                                                                                      |
| R213    | ERDS2TJ682   | C 6.8KOHM, J, 1/4W                                                                               | R411    | ERD2FAVJ1R5T | C 1.5OHM, J, 1/4W MTV                                                                                   |
| R214    | ERDS2TJ122   | C 1.2KOHM, J, 1/4W                                                                               | R412    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                       |
| R215    | ERDS2TJ273   | C 27KOHM, J, 1/4W                                                                                | R413    | ERD25TJ271   | C 270OHM, J, 1/4W                                                                                       |
| R216    | ERDS2TJ154   | C 150KOHM, J, 1/4W                                                                               | R414    | ERDS2TJ752   | C 7.5KOHM, J, 1/4W                                                                                      |
| R217    | ERDS2TJ472   | C 4.7KOHM, J, 1/4W                                                                               | R415    | ERD25TJ273   | C 27KOHM, J, 1/4W                                                                                       |
| R219    | ERDS2TJ822   | C 8.2KOHM, J, 1/4W                                                                               | R417    | ERDS2TJ303   | C 30KOHM, J, 1/4W                                                                                       |
| R220    | ERDS2TJ182   | C 1.8KOHM, J, 1/4W                                                                               | R418    | ERDS1TJ102   | C 1KOHM, J, 1/2W                                                                                        |
| R221    | ERDS2TJ473   | C 47KOHM, J, 1/4W                                                                                | R419    | ERDS2TJ911   | C 910OHM, J, 1/4W                                                                                       |
| R223    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                | R420    | ERDS2TJ242   | C 2.4KOHM, J, 1/4W                                                                                      |
| R224    | ERDS2TJ471   | C 470OHM, J, 1/4W                                                                                | R421    | ERDS2TJ912   | C 9.1KOHM, J, 1/4W                                                                                      |
| R225    | ERQ2CJ120    | F 12OHM, J, 2W  | R426    | ERDS2TJ102   | C 1KOHM, J, 1/4W                                                                                        |
| R226    | ERDS2TJ330   | C 330OHM, J, 1/4W                                                                                | R427    | ERDS1FJ1R8   | C 1.8OHM, J, 1/2W                                                                                       |
| R227    | ERDS1FJ4R7   | C 4.7OHM, J, 1/2W                                                                                | R428    | ERDS2TJ563   | C 56KOHM, J, 1/4W                                                                                       |
| R231    | ERDS2TJ182   | C 1.8KOHM, J, 1/4W                                                                               | R429    | ERDS2TJ684   | C 680KOHM, J, 1/4W                                                                                      |
| R233    | ERDS2TJ104   | C 100KOHM, J, 1/4W                                                                               | R447    | ERDS2TJ155   | C 1.5MOHM, J, 1/4W                                                                                      |
| R234    | ERDS2TJ473   | C 47KOHM, J, 1/4W                                                                                | R448    | ERDS2TJ155   | C 1.5MOHM, J, 1/4W                                                                                      |
| R236    | ERDS2TJ470   | C 470OHM, J, 1/4W                                                                                | R449    | ERDS2TJ562   | C 5.6KOHM, J, 1/4W                                                                                      |
| R238    | ERJ6GEYJ102  | M 1KOHM, J, 1/10W                                                                                | R450    | ERDS1FJ4R7   | C 4.7OHM, J, 1/2W                                                                                       |
| R302    | ERDS2TJ102   | C 1KOHM, J, 1/4W                                                                                 | R451    | ERDS2TJ4R7   | C 4.7OHM, J, 1/4W                                                                                       |
| R305    | ERDS2TJ563   | C 56KOHM, J, 1/4W                                                                                | R452    | ERDS2TJ103   | C 10KOHM, J, 1/4W                                                                                       |
| R306    | ERDS2TJ184   | C 180KOHM, J, 1/4W                                                                               | R453    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                       |
| R307    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W                                                                               | R455    | ER0S2CKF2372 | M23.7KOHM, F, 1/4W                                                                                      |
| R313    | EVND4AA00B33 | CONTROL 3KOHMB                                                                                   | R456    | ERDS2TJ683   | C 68KOHM, J, 1/4W                                                                                       |
| R315    | ERDS2TJ102   | C 1KOHM, J, 1/4W                                                                                 | R458    | ERDS2TJ103   | C 10KOHM, J, 1/4W                                                                                       |
| R317    | ERDS2TJ272   | C 2.7KOHM, J, 1/4W                                                                               | R463    | EVND4AA00B54 | CONTROL 50KOHMB                                                                                         |
| R319    | ERDS2TJ273   | C 27KOHM, J, 1/4W                                                                                | R465    | ERDS2TJ823   | C 82KOHM, J, 1/4W                                                                                       |
| R351    | ERG2ANJ123   | M 12KOHM, J, 2W                                                                                  | R502    | ERQ14AJ2R0P  | F 2.0OHM, J, 1/4W  |
| R352    | ERG2ANJ123   | M 12KOHM, J, 2W                                                                                  | R503    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                       |
| R366    | ERDS2TJ331   | C 330OHM, J, 1/4W                                                                                | R504    | ERDS2TJ824   | C 820KOHM, J, 1/4W                                                                                      |
| R367    | ERDS2TJ331   | C 330OHM, J, 1/4W                                                                                | R505    | ERDS2TJ223   | C 22KOHM, J, 1/4W                                                                                       |
| R368    | ERDS2TJ331   | C 330OHM, J, 1/4W                                                                                | R506    | ERDS2TJ105   | C 1MOHM, J, 1/4W                                                                                        |
| R369    | ERDS2TJ103   | C 10KOHM, J, 1/4W                                                                                | R507    | ERDS2TJ151   | C 150OHM, J, 1/4W                                                                                       |
| R370    | ERDS2TJ103   | C 10KOHM, J, 1/4W                                                                                | R508    | ERDS2TJ224   | C 220KOHM, J, 1/4W                                                                                      |
| R371    | ERDS2TJ103   | C 10KOHM, J, 1/4W                                                                                | R510    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                       |
| R372    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                | R511    | ERD25TJ475   | C 4.7MOHM, J, 1/4W                                                                                      |
| R373    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                | R512    | ERDS2TJ103   | C 10KOHM, J, 1/4W                                                                                       |
| R374    | ERDS2TJ101   | C 100OHM, J, 1/4W                                                                                | R513    | ERDS2TJ103   | C 10KOHM, J, 1/4W                                                                                       |

| Ref.No. | Part No.     | Description               | Ref.No. | Part No.     | Description            |
|---------|--------------|---------------------------|---------|--------------|------------------------|
| R514    | ERDS2TJ561   | C 560OHM, J, 1/4W         | R623    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W     |
| R515    | ERDS2TJ561   | C 560OHM, J, 1/4W         | R624    | ERDS2TJ154   | C 150KOHM, J, 1/4W     |
| R517    | ERQ12HJ1R0   | F 10HM, J, 1/2W $\Delta$  | R625    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W     |
| R520    | ERDS2TJ183   | C 18KOHM, J, 1/4W         | R626    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W     |
| R522    | ERD25TJ223   | C 22KOHM, J, 1/4W         | R627    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W     |
| R523    | ERQ2CJ2R7    | F 2.7OHM, J, 2W $\Delta$  | R628    | ER0S2CKF5362 | M53.6KOHM, F, 1/4W MTV |
| R524    | ERQ1CJ102    | F 1KOHM, J, 1W $\Delta$   | R629    | ERDS2TJ105   | C 1MOHM, J, 1/4W       |
| R525    | ER0S2CKF1373 | M 137KOHM, F, 1/4W MTV    | R630    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W     |
| R526    | ERG2ANJ822   | M 8.2KOHM, J, 2W          | R632    | ERDS2TJ332   | C 3.3KOHM, J, 1/4W     |
| R527    | ERDS2TJ821   | C 820OHM, J, 1/4W         | R633    | ERDS2TJ332   | C 3.3KOHM, J, 1/4W     |
| R529    | ERDS2TJ334   | C 330KOHM, J, 1/4W        | R641    | ERDS2TJ563   | C 56KOHM, J, 1/4W      |
| R531    | ERDS2TJ223   | C 22KOHM, J, 1/4W         | R647    | ERJ6GEY0R00  | M 0OHM, J, 1/10W       |
| R532    | ERDS2TJ104   | C 100KOHM, J, 1/4W        | R648    | ERDS2TJ820   | C 82OHM, J, 1/4W       |
| R533    | ERDS2TJ103   | C 10KOHM, J, 1/4W         | R649    | ERDS2TJ125   | C 1.2MOHM, J, 1/4W     |
| R538    | ERDS2TJ334   | C 330KOHM, J, 1/4W        | R651    | ERJ6GEYJ222  | M 2.2KOHM, J, 1/10W    |
| R539    | ERDS2TJ333   | C 33KOHM, J, 1/4W         | R652    | ERJ6GEYJ472  | M 4.7KOHM, J, 1/10W    |
| R540    | ERQ14AJ100P  | F 10OHM, J, 1/4W $\Delta$ | R653    | EVND1AA00B53 | CONTROL 5KOHMB         |
| R541    | ER0S2CKF1822 | M18.2KOHM, F, 1/4W        | R654    | ERJ6GEYJ222  | M 2.2KOHM, J, 1/10W    |
| R542    | ER0S2CKF1182 | M11.8KOHM, F, 1/4W        | R655    | ERJ6GEYJ102  | M 1KOHM, J, 1/10W      |
| R544    | ERD25TJ682   | C 6.8KOHM, J, 1/4W        | R656    | ER0S2CKF2201 | M 2200OHM, F, 1/4W     |
| R545    | ERD25TJ332   | C 3.3KOHM, J, 1/4W        | R657    | ER0S2CKF2201 | M 2200OHM, F, 1/4W     |
| R550    | ERG2ANJ123   | M 12KOHM, J, 2W           | R659    | ERDS2TJ103   | C 10KOHM, J, 1/4W      |
| R551    | ERG3ANJ392   | M 3.9KOHM, J, 3W          | R660    | ERJ6GEYJ471  | M 470OHM, J, 1/10W     |
| R552    | ERDS2TJ334   | C 330KOHM, J, 1/4W        | R661    | ERDS2TJ102   | C 1KOHM, J, 1/4W       |
| R553    | ERDS2TJ273   | C 27KOHM, J, 1/4W         | R662    | ERDS2TJ103   | C 10KOHM, J, 1/4W      |
| R557    | ERDS1TJ105   | C 1MOHM, J, 1/2W          | R665    | ERJ6GEYJ152  | M 1.5KOHM, J, 1/10W    |
| R561    | ERDS2TJ683   | C 68KOHM, J, 1/4W         | R666    | ERJ6GEYJ102  | M 1KOHM, J, 1/10W      |
| R601    | ERJ6GEYJ823  | M 82KOHM, J, 1/10W        | R670    | ERDS2TJ221   | C 220OHM, J, 1/4W      |
| R602    | ERJ6GEYJ474  | M 470KOHM, J, 1/10W       | R672    | ER0S2CKF1001 | M 1KOHM, F, 1/4W       |
| R603    | ER0S2CKF3572 | M35.7KOHM, F, 1/4W        | R674    | ERDS2TJ332   | C 3.3KOHM, J, 1/4W     |
| R604    | ER0S2CKF1001 | M 1KOHM, F, 1/4W          | R801    | ERF7ZK2R2    | W 2.2OHM, 7W MTV       |
| R609    | ERDS2TJ222   | C 2.2KOHM, J, 1/4W        | R802    | ERF7ZK2R2    | W 2.2OHM, 7W MTV       |
| R612    | ERDS2TJ560   | C 56OHM, J, 1/4W          | R803    | ERDS2TJ153   | C 15KOHM, J, 1/4W      |
| R613    | ERDS2TJ471   | C 470OHM, J, 1/4W         | R805    | ERG2ANJ683   | M 68KOHM, J, 2W MTV    |
| R614    | EVND4AA00B52 | CONTROL 500OHMB           | R806    | ERG2ANJ683   | M 68KOHM, J, 2W MTV    |
| R615    | ERDS2TJ391   | C 390OHM, J, 1/4W         | R807    | ERG3ANJ270H  | M 27OHM, J, 3W         |
| R616    | ERDS2TJ471   | C 470OHM, J, 1/4W         | R808    | ERG3ANJ330H  | M 33OHM, 3W            |
| R617    | ERDS2TJ102   | C 1KOHM, J, 1/4W          | R809    | ERDS2TJ270   | C 27OHM, J, 1/4W       |
| R618    | ERDS2TJ331   | C 330OHM, J, 1/4W         | R810    | ERW2PKR18C   | W 0.18OHM, K, 2W MTV   |
| R619    | ERDS2TJ331   | C 330OHM, J, 1/4W         | R811    | ERDS2TJ151   | C 150OHM, J, 1/4W      |
| R620    | ERDS2TJ331   | C 330OHM, J, 1/4W         | R812    | ERDS2TJ683   | C 68KOHM, J, 1/4W      |
| R621    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W        | R813    | ERDS2TJ220   | C 22OHM, J, 1/4W       |
| R622    | ERDS2TJ152   | C 1.5KOHM, J, 1/4W        | R814    | ERDS2TJ471   | C 470OHM, J, 1/4W      |

| Ref.No. | Part No.     | Description                 | Ref.No. | Part No.   | Description       |
|---------|--------------|-----------------------------|---------|------------|-------------------|
| R816    | ERQ12HJ1R0   | F 10HM, J,1/2W $\Delta$     | R1135   | ERD25TJ101 | C 100OHM, J,1/4W  |
| R817    | ERQ12HJR33   | F 0.33OHM, K,1/2W $\Delta$  | R1136   | ERDS2TJ103 | C 10KOHM, J,1/4W  |
| R818    | ERD25TJ681   | C 680OHM, J,1/4W            | R1137   | ERDS2TJ512 | C 5.1KOHM, J,1/4W |
| R819    | ERDS2TJ102   | C 1KOHM, J,1/4W             | R1138   | ERDS2TJ105 | C 1MOHM, J,1/4W   |
| R821    | ERD75TAJ825  | C 8.2MOHM, J,3/4W           | R1139   | ERDS2TJ392 | C 3.9KOHM, J,1/4W |
| R822    | ERQ12HJR56   | F 0.56OHM, K,1/2W $\Delta$  | R1140   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R823    | ERDS2TJ561   | C 560OHM, J,1/4W            | R1141   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R824    | ER050CKF4320 | M43.2KOHM, F,1/2W MTV       | R1142   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R825    | ER050CKF6810 | M68.1KOHM, F,1/2W MTV       | R1143   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R826    | ERDS1TJ1R0   | C 10HM, J,1/2W              | R1144   | ERDS2TJ123 | C 12KOHM, J,1/4W  |
| R827    | ERDS2TJ183   | C 18KOHM, J,1/4W            | R1145   | ERD25TJ273 | C 27KOHM, J,1/4W  |
| R828    | ERDS2TJ473   | C 47KOHM, J,1/4W            | R1146   | ERDS2TJ222 | C 2.2KOHM, J,1/4W |
| R829    | ERQ12AJ2R0   | F 20HM, J,1/2W MTV $\Delta$ | R1148   | ERDS2TJ123 | C 12KOHM, J,1/4W  |
| R830    | ERDS2TJ473   | C 47KOHM, J,1/4W            | R1149   | ERDS2TJ333 | C 33KOHM, J,1/4W  |
| R831    | ERDS2TJ103   | C 10KOHM, J,1/4W            | R1150   | ERDS2TJ123 | C 12KOHM, J,1/4W  |
| R832    | ERDS2TJ101   | C 100OHM, J,1/4W            | R1151   | ERDS2TJ472 | C 4.7KOHM, J,1/4W |
| R833    | ERDS1TJ220   | C 22OHM, J,1/2W             | R1152   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R867    | ERDS2TJ101   | C 100OHM, J,1/4W            | R1153   | ERDS2TJ222 | C 2.2KOHM, J,1/4W |
| R1102   | ERDS2TJ223   | C 22KOHM, J,1/4W            | R1154   | ERDS2TJ123 | C 12KOHM, J,1/4W  |
| R1103   | ERDS2TJ101   | C 100OHM, J,1/4W            | R1155   | ERDS2TJ182 | C 1.8KOHM, J,1/4W |
| R1104   | ERDS2TJ101   | C 100OHM, J,1/4W            | R1157   | ERDS2TJ183 | C 18KOHM, J,1/4W  |
| R1105   | ERDS2TJ472   | C 4.7KOHM, J,1/4W           | R1158   | ERDS2TJ822 | C 8.2KOHM, J,1/4W |
| R1106   | ER0S2CKF1002 | M 10KOHM, F,1/4W            | R1159   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R1107   | ER0S2CKF1002 | M 10KOHM, F,1/4W            | R1160   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R1108   | ERDS2TJ152   | C 1.5KOHM, J,1/4W           | R1161   | ERDS2TJ102 | C 1KOHM, J,1/4W   |
| R1109   | ERDS2TJ562   | C 5.6KOHM, J,1/4W           | R1162   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R1110   | ERDS2TJ152   | C 1.5KOHM, J,1/4W           | R1164   | ERDS2TJ102 | C 1KOHM, J,1/4W   |
| R1111   | ERDS2TJ561   | C 560OHM, J,1/4W            | R1165   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R1112   | ERDS2TJ102   | C 1KOHM, J,1/4W             | R1166   | ERDS2TJ153 | C 15KOHM, J,1/4W  |
| R1113   | ERDS2TJ122   | C 1.2KOHM, J,1/4W           | R1167   | ERDS2TJ103 | C 10KOHM, J,1/4W  |
| R1115   | ERD25TJ222   | C 2.2KOHM, J,1/4W           | R1168   | ERDS2TJ103 | C 10KOHM, J,1/4W  |
| R1120   | ERDS2TJ104   | C 100KOHM, J,1/4W           | R1169   | ERDS2TJ103 | C 10KOHM, J,1/4W  |
| R1121   | ERDS2TJ332   | C 3.3KOHM, J,1/4W           | R1170   | ERDS2TJ123 | C 12KOHM, J,1/4W  |
| R1122   | ERDS2TJ332   | C 3.3KOHM, J,1/4W           | R1175   | ERDS2TJ101 | C 100OHM, J,1/4W  |
| R1123   | ERDS2TJ102   | C 1KOHM, J,1/4W             | R1176   | ERDS2TJ103 | C 10KOHM, J,1/4W  |
| R1124   | ERDS2TJ102   | C 1KOHM, J,1/4W             | R1181   | ERDS2TJ100 | C 10OHM, J,1/4W   |
| R1125   | ERDS2TJ102   | C 1KOHM, J,1/4W             | R1182   | ERD25TJ100 | C 10OHM, J,1/4W   |
| R1126   | ERDS2TJ101   | C 100OHM, J,1/4W            | R1183   | ERDS2TJ100 | C 10OHM, J,1/4W   |
| R1127   | ERDS2TJ560   | C 56OHM, J,1/4W             | R1184   | ERDS2TJ222 | C 2.2KOHM, J,1/4W |
| R1128   | ERDS2TJ560   | C 56OHM, J,1/4W             | R1185   | ERDS2TJ222 | C 2.2KOHM, J,1/4W |
| R1129   | ERDS2TJ103   | C 10KOHM, J,1/4W            | R1186   | ERDS2TJ332 | C 3.3KOHM, J,1/4W |
| R1133   | ERDS2TJ123   | C 12KOHM, J,1/4W            | R1187   | ERDS2TJ512 | C 5.1KOHM, J,1/4W |
| R1134   | ERDS2TJ123   | C 12KOHM, J,1/4W            | R1188   | ERDS2TJ912 | C 9.1KOHM, J,1/4W |

| Ref.No.           | Part No.     | Description                                                                                         | Ref.No. | Part No.     | Description          |
|-------------------|--------------|-----------------------------------------------------------------------------------------------------|---------|--------------|----------------------|
| R1189             | ER025CKF2102 | M 21KOHM, F,1/4W                                                                                    | C115    | ECEA50ZR33   | E 0.33UF, 50V        |
| R1190             | ERDS2TJ222   | C 2.2KOHM, J,1/4W                                                                                   | C116    | ECEA1CU101   | E 100UF, 16V         |
| R1191             | ERDS2TJ222   | C 2.2KOHM, J,1/4W                                                                                   | C118    | ECCF1H080DC  | C 8PF, D, 50V        |
| R1192             | ERDS2TJ332   | C 3.3KOHM, J,1/4W                                                                                   | C119    | ECCF1H080DC  | C 8PF, D, 50V        |
| R1193             | ERDS2TJ512   | C 5.1KOHM, J,1/4W                                                                                   | C120    | ECCF1H270JC  | C 27PF, J, 50V       |
| R1194             | ERDS2TJ912   | C 9.1KOHM, J,1/4W                                                                                   | C121    | ECCF1H100DC  | C 10PF, D, 50V       |
| R1196             | ERDS2TJ101   | C 100OHM, J,1/4W                                                                                    | C122    | ECCF1H180JC  | C 18PF, J, 50V       |
| R1198             | ERDS2TJ101   | C 100OHM, J,1/4W                                                                                    | C123    | ECCF1H470JC  | C 47PF, J, 50V       |
| R1201             | ER0S2CKF1373 | M 137KOHM, F,1/4W MTV                                                                               | C124    | ECCF1H220JC  | C 22PF, J, 50V       |
| R1202             | ERDS2TJ4R7   | C 4.7OHM, J,1/4W                                                                                    | C125    | ECUX1H103ZFX | C 0.01UF, Z, 50V MTV |
| R1203             | ERDS2TJ562   | C 5.6KOHM, J,1/4W                                                                                   | C131    | ECCF1H180JC  | C 18PF, J, 50V       |
| R1204             | ERDS2TJ470   | C 47OHM, J,1/4W                                                                                     | C132    | ECKF1H103ZF  | C 0.01UF, Z, 50V     |
| R1210             | ERDS2TJ182   | C 1.8KOHM, J,1/4W                                                                                   | C133    | ECEA1CU330   | E 33UF, 16V          |
| R1211             | ERDS2TJ222   | C 2.2KOHM, J,1/4W                                                                                   | C134    | ECCF1H050CC  | C 5PF, C, 50V        |
| R1212             | ERDS2TJ182   | C 1.8KOHM, J,1/4W                                                                                   | C136    | ECEA1CU330   | E 33UF, 16V          |
| R3101             | ERD25TJ750   | C 75OHM, J,1/4W                                                                                     | C137    | ECKF1H103ZF  | C 0.01UF, Z, 50V     |
| R3102             | ERDS2TJ102   | C 1KOHM, J,1/4W                                                                                     | C138    | ECEA1CU330   | E 33UF, 16V          |
| R3103             | ERDS2TJ222   | C 2.2KOHM, J,1/4W                                                                                   | C139    | ECKF1H103ZF  | C 0.01UF, Z, 50V     |
| R3104             | ERDS2TJ821   | C 820OHM, J,1/4W                                                                                    | C141    | ECUX1H151JX  | C 150PF, J, 50V MTV  |
| R3105             | ERDS2TJ103   | C 10KOHM, J,1/4W                                                                                    | C142    | ECEA1HUR47   | E 0.47UF, 50V        |
| R3106             | ERDS2TJ104   | C 100KOHM, J,1/4W                                                                                   | C147    | ECEA1HUR47   | E 0.47UF, 50V        |
| R3107             | ERDS2TJ331   | C 330OHM, J,1/4W                                                                                    | C148    | ECEA1HN010S  | E 1UF, 50V           |
| R3108             | ERD25TJ182   | C 1.8KOHM, J,1/4W                                                                                   | C149    | ECQB1H103JF  | P 0.01UF, 50V        |
| R3109             | ERDS2TJ391   | C 390OHM, J,1/4W                                                                                    | C150    | ECQV1H104JZ  | P 0.1UF, J, 50V      |
| R3110             | ERDS2TJ560   | C 56OHM, J,1/4W                                                                                     | C151    | ECKF1H103ZF  | C 0.01UF, Z, 50V     |
| R3111             | ERQ14AJ270P  | F 27OHM, J,1/4W  | C160    | ECUX1H103ZFX | C 0.01UF, Z, 50V MTV |
| R3112             | ERDS2TJ332   | C 3.3KOHM, J,1/4W                                                                                   | C163    | ECUX1H103ZFX | C 0.01UF, Z, 50V MTV |
| R3114             | ERDS2TJ123   | C 12KOHM, J,1/4W                                                                                    | C212    | ECCF1H121JP  | C 120PF, J, 50V      |
| R3117             | ERDS2TJ101   | C 100OHM, J,1/4W                                                                                    | C213    | ECKF1H103ZF  | C 0.01UF, Z, 50V     |
| R3118             | ERDS2TJ182   | C 1.8KOHM, J,1/4W                                                                                   | C214    | ECCF1H180JC  | C 18PF, J, 50V       |
| R3119             | ERDS2TJ152   | C 1.5KOHM, J,1/4W                                                                                   | C218    | ECEA1CU100   | E 10UF, 16V          |
| R3120             | ERDS2TJ101   | C 100OHM, J,1/4W                                                                                    | C219    | ECEA1HGE0R1  | E 0.1UF, 50V MTV     |
| <b>CAPACITORS</b> |              |                                                                                                     | C220    | ECEA1CU471   | E 470UF, 16V         |
| C101              | ECKF1H103ZF  | C 0.01UF, Z, 50V                                                                                    | C223    | ECEA1EGE101  | E 100UF, 25V         |
| C104              | ECKF1H103ZF  | C 0.01UF, Z, 50V                                                                                    | C224    | ECEA1CU101   | E 100UF, 16V         |
| C105              | ECKF1H103ZF  | C 0.01UF, Z, 50V                                                                                    | C226    | ECQV1H184JZ  | P 0.18UF, J, 50V     |
| C106              | ECEA1CU471   | E 470UF, 16V                                                                                        | C227    | ECEA1EU222   | E 2200UF, 25V        |
| C109              | ECEA1CU100   | E 10UF, 16V                                                                                         | C230    | ECQB1H273JF  | P 0.027UF, J, 50V    |
| C110              | ECKF1H103ZF  | C 0.01UF, Z, 50V                                                                                    | C231    | ECEA1HN3R3S  | E 3.3UF, 50V         |
| C111              | ECEA50ZR47   | E 0.47UF, 50V                                                                                       | C232    | ECEA1CU101   | E 100UF, 16V         |
| C112              | ECEA1CU470   | E 47UF, 16V                                                                                         | C234    | ECEA1HN3R3S  | E 3.3UF, 50V         |
| C113              | ECEA1HU3R3   | E 3.3UF, 50V                                                                                        | C235    | ECKF1H103ZF  | C 0.01UF, Z, 50V     |
| C114              | ECEA16Z10    | E 10UF, 16V                                                                                         | C236    | ECQV1H154JZ  | P 0.15UF, J, 50V     |

| Ref.No. | Part No.     | Description            | Ref.No. | Part No.     | Description           |
|---------|--------------|------------------------|---------|--------------|-----------------------|
| C237    | ECEA1CU100   | E 10UF, 16V            | C520    | ECEA2EU100   | E 10UF, 250V          |
| C238    | ECEA1CU100   | E 10UF, 16V            | C521    | ECKD2H821KB2 | C 820PF, K, 500V      |
| C239    | ECEA1EU471   | E 470UF, 25V           | C522    | ECWF2H334JNY | P 0.33UF, J, 200V     |
| C302    | ECKF1H103ZF  | C 0.01UF, Z, 50V       | C524    | ECQM4103JZ   | P 0.01UF, J, 400V MTV |
| C303    | ECEA1HUR33   | E 0.33UF, 50V          | C525    | ECKD2H821KB2 | C 820PF, K, 500V      |
| C304    | ECEA1CN330S  | E 33UF, 16V            | C526    | ECEA1JU100   | E 10UF, 63V           |
| C305    | ECEA1HU4R7   | E 4.7UF, 50V           | C527    | ECKD2H821KB2 | C 820PF, K, 500V      |
| C350    | ECCF1H331J   | C 330PF, J, 50V        | C529    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C351    | ECCF1H391J   | C 390PF, J, 50V        | C535    | ECKD2H821KB2 | C 820PF, K, 500V      |
| C352    | ECCF1H391J   | C 390PF, J, 50V        | C538    | ECQB1H333KF  | P 0.033UF, K, 50V     |
| C353    | ECCF1H391J   | C 390PF, J, 50V        | C539    | ECKD3D102JBN | C 1000PF, J, 2KV      |
| C354    | ECKD3D821KBN | C 820PF, K, 2KV        | C550    | ECEA1HU2R2   | E 2.2UF, 50V          |
| C356    | ECKD2H103PU  | C 0.01UF, P, 500V      | C551    | ECEA1HU100   | E 10UF, 50V           |
| C410    | ECQB1H153KF  | P 0.015UF, K, 50V      | C581    | ECKD2H331KB2 | C 330PF, K, 500V      |
| C411    | ECKF1H103ZF  | C 0.01UF, Z, 50V       | C582    | ECEA1VU101   | E 100UF, 35V          |
| C412    | ECSF1EE105V  | T 1UF, 25V MTV         | C593    | ECEA1HU220   | E 22UF, 50V           |
| C415    | ECEA1VGE471  | E 470UF, 35V           | C602    | ECUX1H103ZFX | C 0.01UF, Z, 50V MTV  |
| C416    | ECEA1EU222   | E 2200UF, 25V          | C603    | ECEA1AU220   | E 22UF, 10V           |
| C417    | ECEA1HU010   | E 1UF, 50V             | C604    | ECCF1H471J   | C 470PF, J, 50V       |
| C419    | ECCF1H100FC  | C 10PF, F, 50V MTV     | C606    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C420    | ECEA1VGE101  | E 100UF, 35V           | C607    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C421    | ECEA1HUR22   | E 0.22UF, 50V          | C608    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C450    | ECQV1H104JZ  | P 0.1UF, J, 50V        | C610    | ECEA0JN330S  | E 33UF, 6.3V          |
| C451    | ECEA1CU221   | E 220UF, 16V           | C615    | ECKF1H221KB  | C 220PF, K, 50V       |
| C452    | ECEA1AU330   | E 33UF, 10V            | C616    | ECKF1H221KB  | C 220PF, K, 50V       |
| C453    | ECQB1H103KF  | P 0.01UF, K, 50V       | C619    | ECCF1H100DC  | C 10PF, D, 50V        |
| C502    | ECQB1H223JF  | P 0.022UF, J, 50V      | C620    | ECQB1H563JF  | P 0.056UF, J, 50V     |
| C503    | ECCF1H221JU  | C 220PF, J, 50V        | C621    | ECCF1H180JC  | C 18PF, J, 50V        |
| C505    | ECEA1HU010   | E 1UF, 50V             | C622    | ECEA1HU3R3   | E 3.3UF, 50V          |
| C506    | ECQB1H183KF  | P 0.018UF, K, 50V      | C623    | ECEA1HU2R2   | E 2.2UF, 50V          |
| C507    | ECEA1HU010   | E 1UF, 50V             | C624    | ECEA1CU101   | E 100UF, 16V          |
| C508    | ECEA1AU221   | E 220UF, 10V           | C625    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C509    | ECKD3D561JBN | C 560PF, J, 2KV        | C627    | ECEA0JN330S  | E 33UF, 6.3V          |
| C510    | ECQB1H473JF  | P 0.047UF, J, 50V      | C636    | ECKF1H472KB  | C 4700PF, K, 50V      |
| C511    | ECWH12H682JY | P 6800PF, J, 1.2KV MTV | C637    | ECCF1H330J   | C 33PF, J, 50V        |
| C512    | ECKD3D471JBN | C 470PF, J, 2KV        | C638    | ECCF1H330J   | C 33PF, J, 50V        |
| C513    | ECEA1VU101   | E 100UF, 35V           | C639    | ECCF1H330J   | C 33PF, J, 50V        |
| C514    | ECKD2H471KB2 | C 470PF, K, 500V       | C640    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C515    | ECKD3D561JBN | C 560PF, J, 2KV        | C641    | ECQV1H104JZ  | P 0.1UF, J, 50V       |
| C516    | ECQB1H682KF  | P 6800PF, K, 50V       | C642    | ECEA1CU101   | E 100UF, 16V          |
| C517    | ECKD3D331KBN | C 330PF, K, 2KV        | C643    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C518    | ECQM4103JZ   | P 0.01UF, J, 400V MTV  | C644    | ECKF1H103ZF  | C 0.01UF, Z, 50V      |
| C519    | ECEA2CNR47S  | E 0.47UF, 160V         | C645    | ECEA1HUR47   | E 0.47UF, 50V         |

| Ref.No. | Part No.     | Description          | Ref.No. | Part No.     | Description       |
|---------|--------------|----------------------|---------|--------------|-------------------|
| C646    | ECEA1CU101   | E 100UF, 16V         | C824    | ECKD2H122KB2 | C 1200PF, K, 500V |
| C647    | ECUX1H102JX  | C 1000PF, J, 50V MTV | C825    | ECKCNS152MEJ | C 1500PF, M, MTV  |
| C648    | ECUX1H103ZFX | C 0.01UF, Z, 50V MTV | C826    | ECEA0JU101   | E 100UF, 6.3V     |
| C649    | ECEA1HU010   | E 1UF, 50V           | C827    | ECEA1EGE102  | E 1000UF, 25V     |
| C651    | ECUX1H103ZFX | C 0.01UF, Z, 50V MTV | C828    | ECEA1CGE102  | E 1000UF, 16V     |
| C653    | ECUX1H560JTX | C 56PF, J, 50V MTV   | C829    | ECEA1CU101   | E 100UF, 16V      |
| C654    | ECQV1H104JZ  | P 0.1UF, J, 50V      | C830    | ECEA0JU102   | E 1000UF, 6.3V    |
| C655    | ECQV1H104JZ  | P 0.1UF, J, 50V      | C831    | ECQV1H104JZ  | P 0.1UF, J, 50V   |
| C656    | ECUX1H271JCX | C 270PF, J, 50V MTV  | C832    | ECEA1CU100   | E 10UF, 16V       |
| C657    | ECEA1HUR33   | E 0.33UF, 50V        | C833    | ECEA1HGE100  | E 10UF, 50V       |
| C658    | ECUX1H330JCX | C 33PF, J, 50V MTV   | C834    | ECKD2H471KB2 | C 470PF, K, 500V  |
| C659    | ECUX1H561JX  | C 560PF, J, 50V MTV  | C835    | ECEA2AU100   | E 10UF, 100V      |
| C665    | ECUX1H220JCX | C 22PF, J, 50V MTV   | C837    | ECQV1H104JZ  | P 0.1UF, J, 50V   |
| C667    | ECUX1H331JPX | C 330PF, J, 50V MTV  | C838    | ECKD2H472PU  | C 4700PF, P, 500V |
| C668    | ECEA0JU101   | E 100UF, 6.3V        | C839    | ECKD3D391JBN | C 390PF, J, 2KV   |
| C669    | ECUX1H103ZFX | C 0.01UF, Z, 50V MTV | C843    | ECEA1HU2R2   | E 2.2UF, 50V      |
| C670    | ECKF1H103ZF  | C 0.01UF, Z, 50V     | C845    | ECKDNS471MBJ | C 470PF, M,       |
| C673    | ECUX1H151JCX | C 150PF, J, 50V MTV  | C851    | ECKD2H122KB2 | C 1200PF, K, 500V |
| C674    | ECUX1H221JCX | C 220PF, J, 50V MTV  | C852    | ECKD2H391KB2 | C 390PF, K, 500V  |
| C690    | ECEA1HN2R2S  | E 2.2UF, 50V         | C1101   | ECCF1H820J   | C 82PF, J, 50V    |
| C801    | ECKDNS471MBJ | C 470PF, M,          | C1102   | ECKF1H103ZF  | C 0.01UF, Z, 50V  |
| C802    | ECQE10823MU  | P 0.082UF, M, 1KV    | C1103   | ECKF1H103ZF  | C 0.01UF, Z, 50V  |
| C803    | ECQE10683MU  | P 0.068UF, M, 1KV    | C1104   | ECKF1H561KB  | C 560PF, K, 50V   |
| C804    | ECQV1H224JZ  | P 0.22UF, J, 50V     | C1105   | ECCF1H330JP  | C 33PF, J, 50V    |
| C805    | ECKD2H472PU  | C 4700PF, P, 500V    | C1106   | ECCF1H330JP  | C 33PF, J, 50V    |
| C806    | ECKD2H472PU  | C 4700PF, P, 500V    | C1107   | ECEA0JU101   | E 100UF, 6.3V     |
| C807    | ECKD2H472PU  | C 4700PF, P, 500V    | C1108   | ECCF1H101J   | C 100PF, J, 50V   |
| C808    | ECKD2H472PU  | C 4700PF, P, 500V    | C1118   | ECKF1H101KB  | C 100PF, K, 50V   |
| C809    | EC0S2GP331DA | E 330UF, 400V MTV    | C1119   | ECEA0JU101   | E 100UF, 6.3V     |
| C810    | ECKD3D122JBN | C 1200PF, J, 2KV     | C1120   | ECEA1HU330   | E 33UF, 50V       |
| C811    | ECQB1H333JF  | P 0.033UF, J, 50V    | C1121   | ECEA1HU2R2   | E 2.2UF, 50V      |
| C812    | ECA1VFQ560   | E 56UF, 16V MTV      | C1124   | ECKF1H101KB  | C 100PF, K, 50V   |
| C813    | ECEA1EU220   | E 22UF, 25V          | C1126   | ECKF1H103ZF  | C 0.01UF, Z, 50V  |
| C814    | ECKF1H152KB  | C 1500PF, K, 50V     | C1127   | ECEA1CU100   | E 10UF, 16V       |
| C815    | ECES2DU221E  | E 220UF, 200V        | C1128   | ECKF1H101KB  | C 100PF, K, 50V   |
| C816    | ECEA1EGE102  | E 1000UF, 25V        | C1129   | ECKF1H103ZF  | C 0.01UF, Z, 50V  |
| C817    | ECES2DU151D  | E 150UF, 200V MTV    | C1130   | ECEA0JU222   | E 2200UF, 6.3V    |
| C818    | ECKD3A821KBN | C 820PF, K, 1KV      | C1131   | ECEA50ZR33   | E 0.33UF, 50V     |
| C819    | ECEA1EU102   | E 1000UF, 25V        | C1132   | ECEA50ZR47   | E 0.47UF, 50V     |
| C820    | ECEA1VU331   | E 330UF, 35V         | C1133   | ECEA50ZR33   | E 0.33UF, 50V     |
| C821    | ECKD3A122KBP | C 1200PF, K, 1KV MTV | C1134   | ECKF1H221KB  | C 220PF, K, 50V   |
| C822    | ECKD2H391KB2 | C 390PF, K, 500V     | C1135   | ECEA0JU471   | E 470UF, 6.3V     |
| C823    | ECKD2H122KB2 | C 1200PF, K, 500V    | C1136   | ECCF1H101J   | C 100PF, J, 50V   |

| Ref.No.      | Part No.    | Description       | Ref.No. | Part No.     | Description          |
|--------------|-------------|-------------------|---------|--------------|----------------------|
| C1137        | ECQB1H223KF | P 0.022UF, K, 50V | L145    | TLTACC100K   | PEAKING COIL 10U     |
| C1144        | ECEA1CU220  | E 22UF, 16V       | L147    | TLTACC150K   | PEAKUNG COIL 15U     |
| C1145        | ECKF1H103ZF | C 0.01UF, Z, 50V  | L228    | EIS7ES002B   | COIL                 |
| C1176        | ECKF1H101KB | C 100PF, K, 50V   | L501    | EXCELSA35T   | BEADS CORE MTV       |
| C1177        | ECKF1H221KB | C 220PF, K, 50V   | L502    | TLH6622P     | LINEARITY COIL       |
| C1178        | ECCF1H101JC | C 100PF, J, 50V   | L505    | EXCELSA35T   | BEADS CORE MTV       |
| C1179        | ECCF1H101J  | C 100PF, J, 50V   | L506    | EXCELSA35T   | BEADS CORE MTV       |
| C1180        | ECKF1H151KB | C 150PF, K, 50V   | L507    | TSC930-4     | CHOKE COIL           |
| C1190        | ECKF1H103ZF | C 0.01UF, Z, 50V  | L511    | TSK1002      | COIL                 |
| C1201        | ECEA0JKS470 | E 47UF, 6.3V      | L512    | TSK1002      | COIL                 |
| C1202        | ECEA1HKS010 | E 1UF, 50V        | L603    | EIK7ES002B   | COIL                 |
| C1203        | ECKF1H103ZF | C 0.01UF, Z, 50V  | L617    | TLTACC100K   | PEAKING COIL 10U     |
| C1204        | ECCF1H561J  | C 560PF, J, 50V   | L634    | EIK7ES007B   | COIL                 |
| C3101        | ECEA1HN3R3S | E 3.3UF, 50V      | L635    | EIK7ES014B   | I.F. TRANSFORMER MTV |
| C3102        | ECQB1H222KF | P 2200PF, K, 50V  | L641    | ELEXH100KA   | PEAKING COIL         |
| C3103        | ECEA1CU221  | E 220UF, 16V      | L642    | ELEXH100KA   | PEAKING COIL         |
| C3105        | ECQV1H104JZ | P 0.1UF, J, 50V   | L643    | ELEXH100KA   | PEAKING COIL         |
| C3106        | ECEA1CN470S | E 47UF, 16V       | L655    | EFDEN645A11G | DELAY LINE           |
| C3107        | ECEA1CU471  | E 470UF, 16V      | L658    | TLTACC100K   | PEAKING COIL 10U     |
| C3108        | ECKF1H471KB | C 470PF, K, 50V   | L667    | TLTACC121K   | PEAKING COIL         |
| C3109        | ECKF1H103ZF | C 0.01UF, Z, 50V  | L801    | ELF18D850H   | LINE FILTER MTV      |
| C3113        | ECKF1H103ZF | C 0.01UF, Z, 50V  | L802    | ELF18D650W   | LINE FILTER MTV      |
| C3117        | ECEA1CN470S | E 47UF, 16V       | L804    | TLP15154Q    | COIL MTV             |
| C3118        | ECEA1CU470  | E 47UF, 16V       | L805    | TSC930-4     | CHOKE COIL           |
| C3120        | ECKF1H103ZF | C 0.01UF, Z, 50V  | L806    | TSC930-4     | CHOKE COIL           |
| C3122        | ECEA1HN3R3S | E 3.3UF, 50V      | L807    | TSC930-4     | CHOKE COIL           |
| C3123        | ECEA1CN330S | E 33UF, 16V       | L808    | EXCELSA35T   | BEADS CORE MTV       |
| C3124        | ECEA1CU100  | E 10UF, 16V       | L809    | EXCELSA35T   | BEADS CORE MTV       |
| <b>COILS</b> |             |                   | L810    | EXCELSA35T   | BEADS CORE MTV       |
| L101         | EIV7ES005B  | TUNING COIL       | L811    | EXCELSA35T   | BEADS CORE MTV       |
| L103         | TLTACC8R2K  | PEAKING COIL 8.2U | L812    | TSC930-4     | CHOKE COIL           |
| L109         | TLI151761   | COIL              | L814    | TSC930-4     | CHOKE COIL           |
| L125         | TLTACC151K  | PEAKING COIL      | L815    | TSC930-4     | CHOKE COIL           |
| L130         | EIV7ES004B  | IF TRANS          | L816    | EXCELD25V    | CORE                 |
| L132         | TLI157051   | FILTER            | L818    | TLP15154Q    | COIL MTV             |
| L134         | TLTACC151K  | PEAKING COIL      | L827    | TSC930-4     | CHOKE COIL           |
| L135         | EIV7EN035B  | COIL              | L1101   | ELEXH100KA   | PEAKING COIL         |
| L137         | TLTACC151K  | PEAKING COIL      | L1102   | ELEXH100KA   | PEAKING COIL         |
| L138         | TLTACC151K  | PEAKING COIL      | L1103   | ELEXH100KA   | PEAKING COIL         |
| L139         | EIV7EN034B  | COIL              | L1104   | ELEXH100KA   | PEAKING COIL         |
| L140         | TLTACC180K  | PEAKING COIL 18U  | L1105   | ELEXH100KA   | PEAKING COIL         |
| L142         | TLTACC180K  | PEAKING COIL 18U  | L1106   | EXCELSA35T   | BEADS CORE           |
| L143         | TLTACC180K  | PEAKING COIL 18U  | L1107   | EXCELSA35T   | BEADS CORE           |

| Ref.No.             | Part No.   | Description         | Ref.No.                    | Part No.     | Description           |
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| L1109               | EXCELSA35T | BEADS CORE          | D634                       | MA165        | DIODE                 |
| L1110               | TSK1002    | COIL                | D635                       | MA1062M      | DIODE                 |
| L1111               | ELEXH100KA | PEAKING COIL        | D801                       | TRPW5B0N120D | POSISTOR MTV          |
| L1112               | ELEXH100KA | PEAKING COIL        | D802                       | TVSEG01A     | DIODE                 |
| L1113               | ELEXH100KA | PEAKING COIL        | D803                       | TLP621GR-LF2 | PHOTO COUPLER         |
| L1114               | ELEXH100KA | PEAKING COIL        | D804                       | TVSEU1Z      | DIODE                 |
| L1115               | ELEXH100KA | PEAKING COIL        | D805                       | TVSEU1Z      | DIODE                 |
| L1127               | TLTACC101K | PEAKING COIL 100U   | D806                       | ENC621D-10A  | RESISTOR MODULAT. MTV |
| L1128               | TLTACC180K | PEAKING COIL 18U    | D807                       | TVSRU2AM     | DIODE                 |
| L1143               | EXCELSA35T | BEADS CORE MTV      | D808                       | TVSRU1       | DIODE                 |
| L1144               | EXCELSA35T | BEADS CORE MTV      | D809                       | TVSEU2Z      | DIODE MTV             |
| LC302               | TLK156060E | L-C COMBINATION MTV | D810                       | MA171        | DIODE                 |
| LC310               | ELB4L152B  | COIL MTV            | D811                       | TVSRG2Z      | DIODE                 |
| LC602               | TAXSAB4250 | FILTER MTV          | D812                       | MA182        | DIODE                 |
| LC670               | ELB4K133B  | COIL MTV            | D813                       | MA4108J      | DIODE                 |
| LC671               | TLK160887E | L-C FILTER          | D814                       | TVSEU1Z      | DIODE                 |
| <b>TRANSFORMERS</b> |            |                     | D815                       | MA4108J      | DIODE                 |
| T501                | TLF15562F  | FLYBACK TRANS. MTV△ | D816                       | MA4108J      | DIODE                 |
| T502                | ETH19Y70AY | H DRIVE TRANS △     | D817                       | D4SB80Z      | DIODE                 |
| T801                | ETS34K407A | CHOPPER TRANS. MTV  | D819                       | MA162        | DIODE                 |
| <b>DIODES</b>       |            |                     | D820                       | MA4360L      | DIODE                 |
| D114                | MA165      | DIODE               | D822                       | TVSEU1Z      | DIODE                 |
| D115                | MA165      | DIODE               | D823                       | MA182        | DIODE                 |
| D152                | MA4051M    | DIODE               | D1111                      | LN21RPHCF2   | LED MTV               |
| D153                | MA165      | DIODE               | D1112                      | MA165        | DIODE                 |
| D225                | MA165      | DIODE               | D1117                      | MA4036H      | DIODE                 |
| D226                | MA165      | DIODE               | D1120                      | MA4068M      | DIODE                 |
| D411                | ERA15-01   | DIODE               | D1121                      | MA4068M      | DIODE                 |
| D412                | MA162      | DIODE               | D1132                      | MA4082H      | DIODE                 |
| D413                | MA165      | DIODE               | D1176                      | MA165        | DIODE                 |
| D414                | MA29WA     | DIODE               | D1201                      | PH310        | DIODE MTV             |
| D415                | MA29WA     | DIODE               | <b>INTEGRATED CIRCUITS</b> |              |                       |
| D449                | MA4360M    | DIODE               | IC101                      | M52034SP     | IC MTV                |
| D502                | MA4360L    | DIODE               | IC102                      | TVSUPD4066BC | C-MOS LOGIC IC        |
| D503                | MA167      | DIODE               | IC201                      | AN5265       | LINEAR IC             |
| D504                | TVSEU2     | DIODE               | IC203                      | M52317SP     | LINEAR IC MTV         |
| D506                | TVSRU2AM   | DIODE               | IC401                      | LA7837       | LINEAR IC MTV         |
| D507                | ERB06-15   | DIODE               | IC601                      | AN5606K      | LINEAR IC MTV         |
| D508                | TVSEU2     | DIODE               | IC602                      | AN5636K      | LINEAR IC MTV         |
| D509                | TVSEU2     | DIODE               | IC802                      | STR-S6307    | LINEAR IC MTV         |
| D522                | MA4108J    | DIODE               | IC803                      | SE140N       | IC                    |
| D523                | MA171      | DIODE               | IC804                      | AN78M05LB    | LINEAR IC             |
| D531                | TVSEU2     | DIODE               | IC805                      | AN78M12LB    | LINEAR IC             |

| Ref.No.            | Part No.     | Description    | Ref.No.       | Part No.    | Description                                                                                         |
|--------------------|--------------|----------------|---------------|-------------|-----------------------------------------------------------------------------------------------------|
| IC806              | AN78M09LB    | LINEAR IC      | Q1136         | 2SC1685-R   | TRANSISTOR                                                                                          |
| IC807              | AN78M05LB    | LINEAR IC      | Q1160         | 2SC1685-R   | TRANSISTOR                                                                                          |
| IC1102             | MN152810TTC3 | MOS IC MTV     | Q3110         | 2SC1685-R   | TRANSISTOR                                                                                          |
| IC1103             | AN5071       | LINEAR IC      | <b>OTHERS</b> |             |                                                                                                     |
| IC1104             | 24C01AIPB21  | IC MTV         | E1            | TJS5A9900   | 6P CONNECTOR                                                                                        |
| IC1106             | MN1280R      | IC (MOS IC)    | E.22          | TJS118610   | 4P CONNECTOR                                                                                        |
| IC1201             | UPC2801AHA   | IC MTV         | E.32          | TJS118620   | 5P CONNECTOR                                                                                        |
| IC3110             | M51320P      | LINEAR IC      | E.33          | TJS118610   | 4P CONNECTOR                                                                                        |
| <b>TRANSISTORS</b> |              |                | F801          | XBA2C31TR0  | FUSE 250V 3.15A  |
| Q101               | 2SC2188      | TRANSISTOR     | JA.1          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q108               | UN4214       | TRANSISTOR     | JA.2          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q115               | 2SB709ATX    | TRANSISTOR MTV | JA.3          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q116               | UN4214       | TRANSISTOR     | JA.4          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q117               | 2SD601ATX    | TRANSISTOR MTV | JA.5          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q151               | 2SC1685-R    | TRANSISTOR     | JA.6          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q218               | 2SC1685-R    | TRANSISTOR     | JA.7          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q219               | UN421E       | TRANSISTOR MTV | JA.8          | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q220               | UN421D       | TRANSISTOR     | JSE.1         | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q233               | 2SA564AR     | TRANSISTOR     | JSE.2         | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q301               | 2SC1685-R    | TRANSISTOR     | JSE.3         | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q302               | 2SC1685-R    | TRANSISTOR     | JSE.4         | ERJ6GEY0R00 | M 00HM, J, 1/10W                                                                                    |
| Q303               | 2SA564AR     | TRANSISTOR     | S401          | EVQRAAL10   | SWITCH                                                                                              |
| Q351               | 2SC2258      | TRANSISTOR     | S801          | ESB99902S   | SWITCH                                                                                              |
| Q352               | 2SC2258      | TRANSISTOR     | S1101         | EVQ-PBD05   | SWITCH MTV                                                                                          |
| Q354               | 2SC2258      | TRANSISTOR     | S1102         | EVQQKH06K   | SWITCH                                                                                              |
| Q451               | 2SA564AR     | TRANSISTOR     | S1103         | EVQQKH06K   | SWITCH                                                                                              |
| Q501               | 2SD1555      | TRANSISTOR MTV | S1104         | EVQQKH06K   | SWITCH                                                                                              |
| Q502               | 2SC3941H     | TRANSISTOR MTV | S1106         | EVQQKH06K   | SWITCH                                                                                              |
| Q503               | 2SA564AR     | TRANSISTOR     | S1107         | EVQQKH06K   | SWITCH                                                                                              |
| Q511               | 2SC1685-R    | TRANSISTOR     | S1108         | EVQQKH06K   | SWITCH                                                                                              |
| Q655               | 2SD601ATX    | TRANSISTOR MTV | S1109         | EVQQKH06K   | SWITCH                                                                                              |
| Q670               | 2SA564AR     | TRANSISTOR     | S1110         | EVQQKH06K   | SWITCH                                                                                              |
| Q691               | 2SD601ATX    | TRANSISTOR MTV | S1111         | EVQQKH06K   | SWITCH                                                                                              |
| Q801               | 2SA564AR     | TRANSISTOR     | S1112         | EVQQKH06K   | SWITCH                                                                                              |
| Q802               | 2SB1438      | TRANSISTOR MTV | S1113         | EVQQKH06K   | SWITCH                                                                                              |
| Q803               | 2SC1473      | TRANSISTOR     | SE.1          | TJS1A9640   | CONNECTOR                                                                                           |
| Q805               | 2SA564AR     | TRANSISTOR     | SE.2          | TJS1A9640   | CONNECTOR                                                                                           |
| Q806               | TVSAC03EGMYH | THYRISTOR      | SE.3          | TJS1A9640   | CONNECTOR                                                                                           |
| Q1101              | 2SC1685-R    | TRANSISTOR     | X101          | TFCH38MVK03 | SAW FILTER     |
| Q1111              | 2SC1685-R    | TRANSISTOR     | X103          | EFCS6R0MW5  | CERAMIC FILTER                                                                                      |
| Q1112              | UN4212       | TRANSISTOR     | X105          | EFCS4R5MW5  |                                                                                                     |
| Q1113              | UN4212       | TRANSISTOR     | X120          | EFCS6R5MW5  | CERAMIC FILTER                                                                                      |
| Q1115              | 2SC1685-R    | TRANSISTOR     | X136          | EFCS5R5MW3  | CERAMIC TRAP                                                                                        |

| Ref.No. | Part No.    | Description        |
|---------|-------------|--------------------|
| X208    | EFCS5R5MS5  | CERAMIC FILTER     |
| X209    | EFCS4R5MS5  | FILTER             |
| X210    | EFCS6R5MS5  | CERAMIC FILTER     |
| X211    | SFSH6R0MDB  | CERAMIC FILTER MTV |
| X212    | CSB1000J527 | CRYSTAL OSC MTV    |
| X506    | CSB500F48   | CRYSTAL OSC MTV    |
| X632    | TS116M20    | CRYSTAL OSC MTV    |
| X634    | TS816M32    | CRYSTAL OSC MTV    |
| X1102   | TAF10020    | CERAMIC FILTER MTV |