HITACHI

PA | No. 0099

36UX58B/CZ87
36FX48B/CZ85
32UX58B/CY87
32FX48B/CY85

SERVICE MANUAL

NTSC | M7LXU2 CHASSIS

R/C: CLU-612MP
CLU-431UI

CAUTION: Before servicing this chassis, it is important that the service technician read the "Safety Precaution" and "Product Safety Notices" in this Service Manual.

This television receiver will display television Closed Captioning (CC or ▭) in accordance with paragraph 15.119 of the FCC rules.

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SPECIFICATIONS AND PARTS ARE SUBJECT TO CHANGE FOR IMPROVEMENT

SOLID STATE COLOR TELEVISION

MAY 1998 **HHEA-MANUFACTURING DIVISION**

SAFETY PRECAUTIONS

NOTICE: Comply with all cautions and safety related notes located on or inside the cabinet and on the chassis or picture tube.

WARNING: Since the chassis of this receiver is connected to one side of the AC power supply during operation, whenever the receiver is plugged in, service should not be attempted by anyone unfamiliar with the precautions necessary when working on this type of receiver.

The following precautions should be observed:

1. Do not install, remove, or handle the picture tube in any manner unless shatterproof goggles are worn. People not so equipped should be kept away from the picture tube while handling.

2. When service is required, an isolation transformer should be inserted between power line and the receiver before any service is performed on a "HOT" chassis receiver.

3. When replacing a chassis in the receiver, all the protective devices must be put back in place, such as barriers, nonmetallic knobs, adjustment and compartment cover-shields, isolation resistors, capacitors, etc.

4. When service is required, observe the original lead dress in the high voltage circuitry area.

5. Always use the manufacturer's replacement components. Critical components as indicated on the circuit diagram should not be replaced by another manufacturer's. Furthermore, where a short circuit has occurred, replace those components that indicate evidence of overheating.

6. Before returning a serviced receiver to the customer, the service technician must thoroughly test the unit to be certain that it is completely safe to operate without danger of electrical shock, and be sure that no protective device built into the receiver by the manufacturer has become defective, or inadvertently defeated during servicing.

Therefore, the following checks should be performed for the continued protection of the customer and service technician.

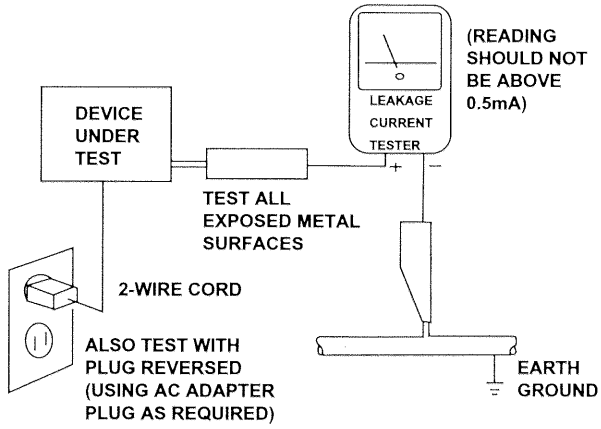
Leakage Current Cold Check

With the AC plug removed from the 120V AC 60Hz source, place a jumper across the two plug prongs. Turn the AC power switch ON using an insulation tester (DC500V), connect one lead to the jumpered AC plug and touch the other lead to each exposed metal part (antennas, screwheads, metal overlays, control shafts, etc.), particularly any exposed metal part having a return path to the chassis should have a minimum resistor reading of 0.24MΩ and a maximum resistor reading of 5.2MΩ . Any resistance value below or above this range indicates an abnormality which requires corrective action. Exposed metal part not having a return path to the chassis will indicate an open circuit.

Leakage Current Hot Check

Plug the AC line cord directly into an AC 120V 60Hz outlet (do not use an isolation transformer for this check). Turn the AC power ON. Using a "leakage Current Tester (Simpson's Model 229 or equivalent)", measure for current from all exposed metal parts of the cabinet (antennas, screwheads, overlays, control shafts, etc.) particularly any exposed metal part having a return path to the chassis or to a known earth ground (water pipe, conduit, etc.). Any current measured must not exceed 0.5mA.

AC LEAKAGE TEST



ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE RECEIVER TO THE CUSTOMER.

High Voltage

This receiver is provided with a hold down circuit for clearly indicating that voltage has increased in excess of a predetermined value. Comply with all notes described in this Service Manual regarding this hold down circuit when servicing, so that this hold down circuit is operated correctly.

Serviceman Warning

With minimum BRIGHTNESS and CONTRAST, the operating high voltage in this receiver is lower than 35.2 kV(36V), 34.7k(32V). In case any component having influence on the high voltage is replaced, confirm that high voltage with minimum BRIGHTNESS and CONTRAST is lower than 35.2 kV(36V), 34.7k(32V). To measure high voltage use a high impedance High Voltage Meter. Connect (-) to chassis earth and (+) to the CPT Anode button (See the following connection diagram).

NOTE: Turn the power switch OFF without fail before the connection to the Anode button is made.

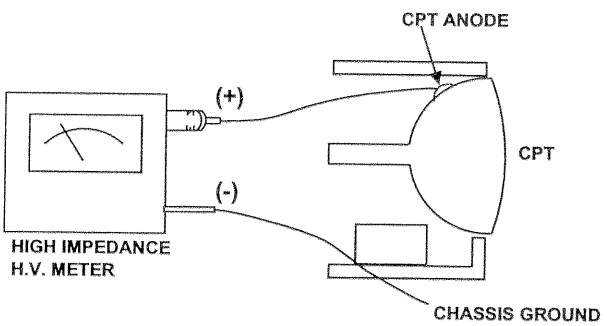
PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in HITACHI television receivers have special safety related characteristics. These are often not evident from visual inspection nor can the protection afforded by them necessarily be obtained by using replacement components rated for higher voltage, wattage, etc. Replacements parts which have these special safety characteristics are identified in this Model Service Manual.

Electrical components having such features are identified with an ⚠ mark in the schematics and parts list in this Model Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the HITACHI recommended replacement one, shown in the parts list in this Model Service Manual, may create shock, fire, X-Radiation, or other hazards.

Production Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current HITACHI Service Manual. A subscription to, or additional copies of HITACHI Service Manual may be obtained at a nominal charge from HITACHI SALES CORPORATION.



X-Radiation

TUBE: The primary source of X-Radiation in this receiver is the picture tube. The tube utilized in this chassis is specially constructed to limit X-Radiation emission. For continued X-Radiation protection, the replacement tube must be the same type as the original HITACHI approved type.

When troubleshooting and making test measurements in a receiver with an excessive high voltage problem, avoid coming unnecessarily close to the picture tube and the high voltage component.

Do not operate the chassis longer than is necessary to locate the cause of the excessive voltage.

This Service Manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual. Improperly performed repairs can adversely affect the product and its safety. Consumers should not risk trying to do the necessary repairs and should instead refer to a qualified service technician.

WARNING

Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm
(California Health and Safety Code, Section 25249.5).

When servicing or handling circuit boards and other components with lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.

SAFETY NOTICE
USE ISOLATION TRANSFORMER
WHEN SERVICING

Components having special safety characteristics are identified by ⚠ on the parts list in this Model Service Manual and its supplements and bulletins. Before servicing this, it is important that the service technician read and follow the "Safety Precautions" and the "Product Safety Notices" in this Service Manual.

For continued X-Radiation protection, replace picture tube with original type or Hitachi equivalent type.

POWER SOURCE

This television receiver is designed to operate on 120 Volts/ 60Hz, AC house current. Insert the power cord into a 120 Volts/60Hz outlet.

NEVER CONNECT THE TV TO OTHER THAN THE SPECIFIED VOLTAGE OR TO DIRECT CURRENT.

POWER RATINGS

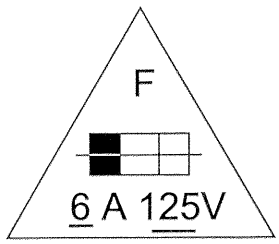
36FX48B/CZ85 . . . . . .190 Max. Watts
32FX48B/CY85 . . . . . .176 Max. Watts
36UX58B/CZ87 . . . . . .193 Max. Watts
32UX58B/CY87 . . . . . .177 Max. Watts

COLOR PICTURE TUBE

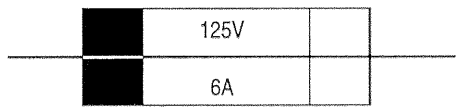
36FX48B/CZ85 . . . . . .A90AEJ15X01
32FX48B/CY85 . . . . . .A80LJF30X(W)
36UX58B/CZ87 . . . . . .A90AHH50X01(V)
32UX58B/CY87 . . . . . .A80LJF30X(W)

CAUTION: Below is an EXAMPLE only. See Replacement Parts List for details. The following symbol near the fuse indicates fast operating fuse (to be replaced). Fuse ratings appear within the symbol.

Example:



"RISK OF FIRE - REPLACE FUSE AS MARKED"



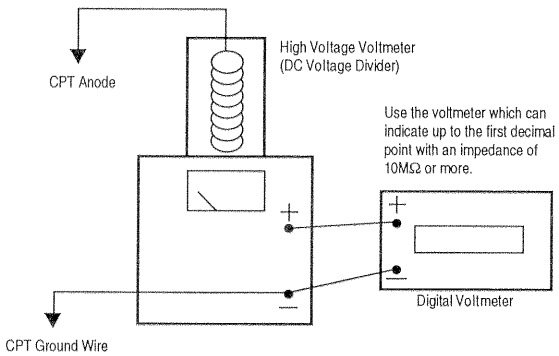
F901

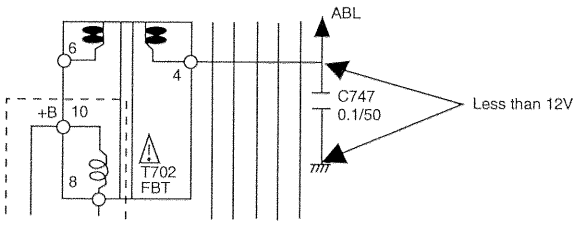
The rating of fuse F901 is 6.0A-125V.
Replace with the same type fuse for continued protection against fire.

High Voltage Limiter Circuit Operation Check and Overvoltage Protection Circuit Operation Check

Adjustment Preparation

1. Connect a High Voltage Voltmeter between CPT Anode terminal (Anode capside) and Ground.
2. Set the AC input voltage to 120±3V.
3. Receive Circle Pattern or Broadcast Signal and set "BRIGHTNESS" and "CONTRAST" to maximum. Adjust the SCREEN VR so that Beam Current is IB±0.1mA. (The voltage at ABL terminal (C747) should be 12V or less.)

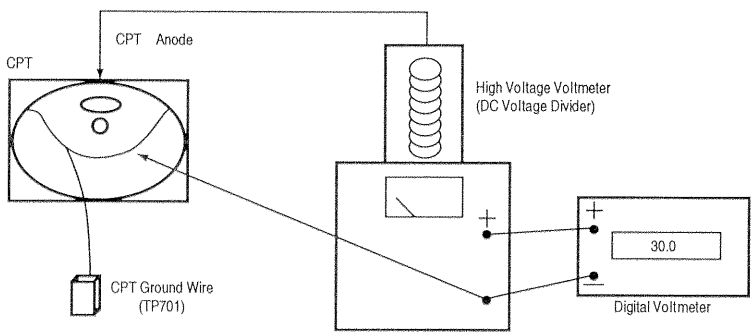




Adjustment Procedure

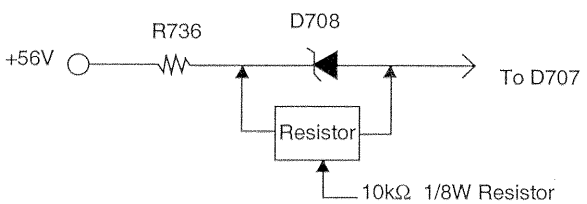
1. Check that the normal High Voltage and +B Voltage as below.

CHASSIS	EHT±1KV	IB±0.1mA	+B
CZ87/CZ85	30.0KV	1.80mA	130±.3V
CY85/CY87	30.0KV	1.50mA	130±.3V



Use the voltmeter impedance 10MΩ or more with indication to the first decimal place.

2. Connect a 10KΩ 1/8W resistor to both ends of D708 and check that power is turned off.



3. Disconnect the AC plug and remove the 10kΩ resistor.

M7LXU2 CHASSIS

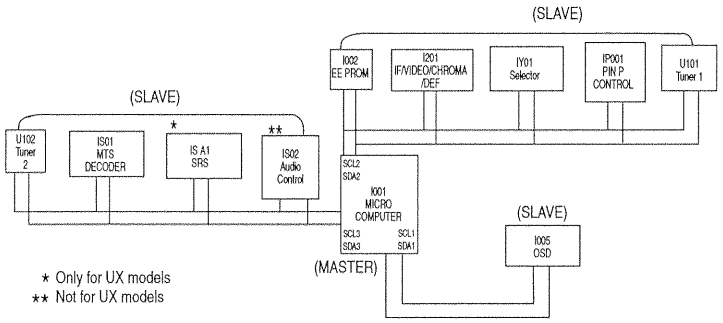
Note:

1. MAIN CHASSIS ADJUSTMENT is done with precision equipment. Readjustment is only recommended if the service technician replaced a defective component related to the circuit.
2. COMMON SERVICE ADJUSTMENT is recommended for the service technician after final troubleshooting and repair is done. Quick check and fine tuning is advisable to verify that the problem is eliminated.

I. MAIN CHASSIS ADJUSTMENT

1. Multi Master I²C Bus System

M7LXU2 Chassis uses I²C Bus control system. Fig. 1 shows this control system.

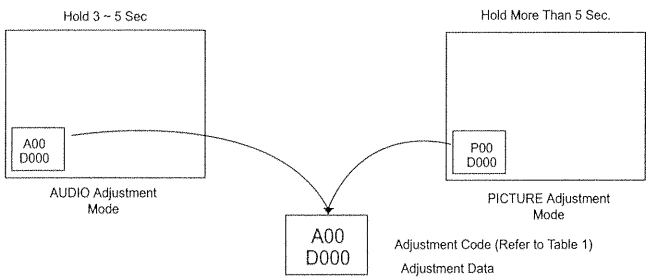


I001 (Master) controls other ICs (Slave). Adjustment data is memorized in I002 (EEPROM). I001 reads this data and controls other ICs.
Adjustment items applied in this chassis are shown in Table 1.

2. ADJUSTMENT PROCEDURE-START UP

2-1 How to Get to Adjustment Mode

Chassis adjustment can be done by using the front control panel buttons with CTV set turned off. Press "POWER" and "MENU" or "INPUT" keys at the same time, and hold more than 3 seconds. The CTV set turns on in adjustment mode with OSD as follows.



"To Escape from Adjustment Mode"
Press "POWER" button of remo-con or front panel once at anytime. Then set returns to normal state.

TABLE 1
Adjustment Code

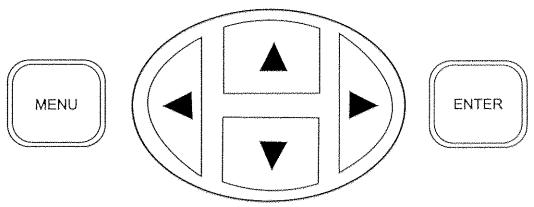
Code Name	Adjustment Mode	Adjustment Data	Item Remark	Service # Mode Data
A00	Audio Adj. Key Code	-	-	-
A01	Stereo VCO adjustment	63~0	5-5	026
A02	SAP VCO adjustment	63~0	4-8	034
A03	FILTER adjustment	63~0	4-6	026
A04	Input level adjustment	63~0	4-4-1	018
A05	Low pass separation adjustment	63~0	4-7	031
A06	High pass separation adjustment	63~0	4-7	027
P00	Picture Adj. Key Code	-	-	-
P01	PIF VCO adjustment	127~0	4-2-1	057
P02	RF ACG adjustment	63~0	4-13	044
P03	Horizontal Phase adjustment	15~0	4-10-1	018
P04	Vertical Phase adjustment	255~0	4-10-2	000
P05	Vertical Size adjustment	63~0	4-10-2	033
P06	Red cut off adjustment	255~0	4-9	154
P07	Green cut off adjustment	255~0	4-9	190
P08	Blue cut off adjustment	255~0	4-9	180
P09	Green Gain adjustment	255~0	4-11	068
P010	Blue Gain adjustment	255~0	4-11	104
P11	Sub Bright (Center value)	-31~*31	4-12	000
-	Vertical O.S.C. stop	-	-	-
P12	Sub Color (Center value)	-15~*15	4-16	008
P13	Sub Tint (012 value)	-15~*15	4-14	-08
P14	Sub Sharpness (Center value)	-7~*7	4-15	000
P15	PinP Position	135~0	4-17	000
P16	PinP Tint	63~0	4-18	063
P17	PinP Contrast	127~0	4-3-2	032
P18	PinP Color-Sat	127~0	4-3-1	043
P19	PinP Sharp	3~0	4-19	000

* This data is an approximate service code data. Fine adjustment must be done using the specified test procedure and adjustment tools.

2-2 Changing Data and Adjustment Code

When the CTV set is in adjustment mode, the cursor ▲,▼,◀,▶ and ENTER keys of the customers remo-con will be the adjustment keys.

A. Use any Hitachi remote control with ENTER button as shown when making an adjustment.



▲,▼ keys are used for changing adjustment code.
◀,▶ keys are used for changing data.
ENTER key is used for changing "Cut Off Mode"/"Normal mode." (Refer to cut off adjustment)

3. ADJUSTMENT MODE

If below display appears

A00 D000	P00 D000

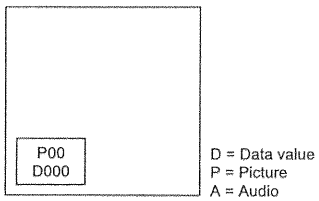
Adjustment code can not be changed by cursor ▲,▼ keys.
Set data "D020" at "A00" or "D030" at "P00" by ◀,▶ keys.
Then adjustment code can be changed by ▲,▼ keys.

A00 D020	P00 D030

B. By Front Control Panel-Another Method

1. Before turning ON the set, press and hold the POWER button and INPUT button for about 3 seconds.

2. After 3 seconds, a small square will appear in the left lower corner. There are two different displays, depending upon how long the INPUT button is pressed and held. One shows A and D for audio adjustment, and the other shows P and D for the picture adjustment.



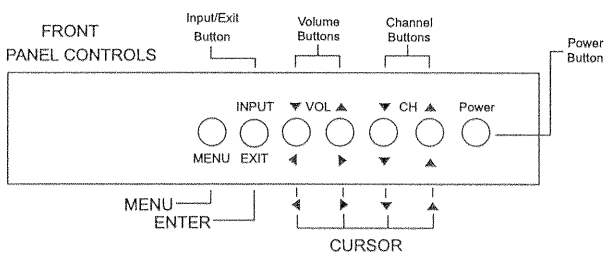
3. To activate the adjustment mode, input a data value of 30 (D030), using the front panel cursor ◀,▶ before any of the picture adjustments can be adjusted.

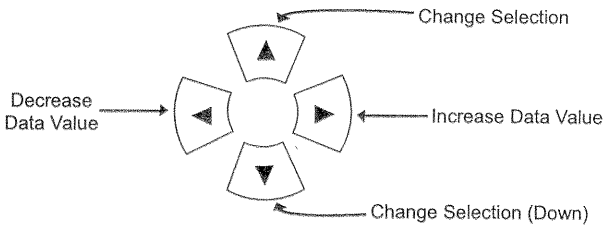
P00 D000

The same for the audio adjustment. To activate the adjustment, you need an input data value of 20 before any of the audio adjustments can be adjusted.

A00 D000

4. To make a selection, you have to use the arrow keys on front control panel.





Match front panel control cursor to remote control cursor.

4. ADJUSTMENT PROCEDURE

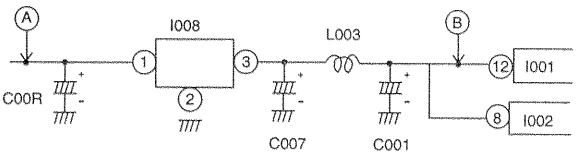
4-1 Adjusting Mi-con clock

Adjustment Preparation

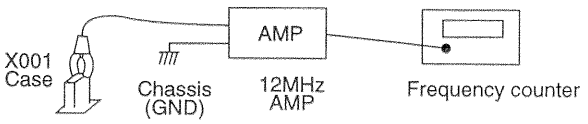
(1)Initial setting of EEPROM (1002)

Add +12V to Ⓐ point and check Ⓑ point is 5V±0.3V

Note: Keep adding +12V more than 5 seconds.



(2)Connect a frequency counter and a 12MHz amplifier as follows.



Adjustment Procedure

(1)This adjustment should be done at stand-by mode.

(2)Adjust CT01 so that the frequency is 12,000,000± 100Hz.

(Other method)

(1)Add +12V A point. (Same as 4-1 (1))

(2)Connect frequency counter to 1001 ㉖.

(3)Short 1001 ㊷ pin to GND.

(4)Adjust CT01 so that the clock outputted from I001 ㉖ pin is 166.666KHz±2Hz.

(5)This adjustment should be done at power on mode.

4-2 IF ADJUSTMENT

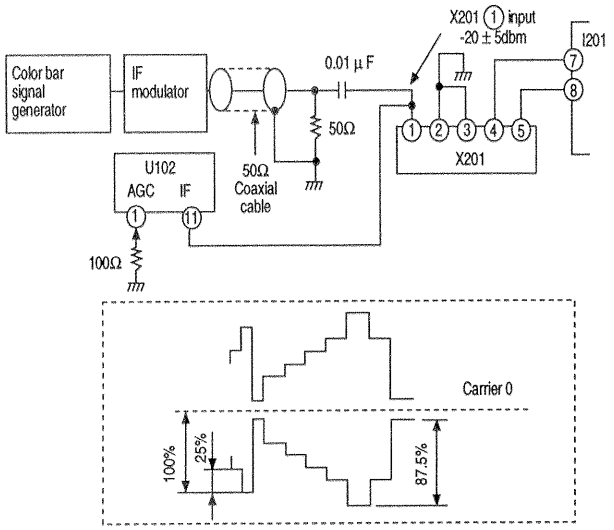
4-2-1 PIF/AFC Adjustment

Adjustment Preparation

(1)Add +9V to pin ① and + 12V to pin ④, ⑤ of PNH2 connector.

(2)Add 100Ω resistor between GND and U102 pin ① .

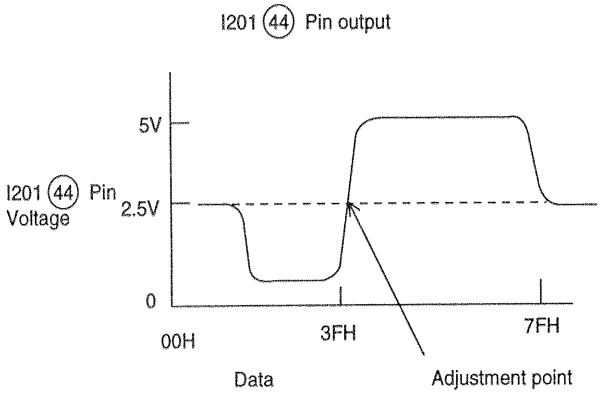
(3)Input signal to X201 pin ① as shown below.



(4)Connect DC voltmeter (input impedance 1M ohm or more) to I201 pin ㊹.

Adjustment Procedure

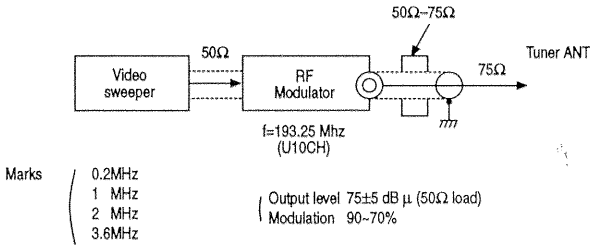
(1) Set adjustment code "P01."
Change data so that the voltmeter is 2.5±0.5V at I201 pin ㊹.



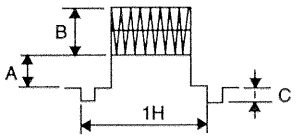
4-2-2 Adjustment of IF waveform

Adjustment Preparation

(1)Connect signal as follows.

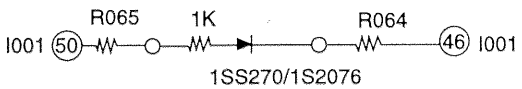


(2) Connect the oscilloscope to Q201Ⓔ.
Check the signal at Q201 Ⓔ as follows.



A : Set up level 0.15V
B : Sweep Signal Level 0.5V
C : Sync. level 0.29V

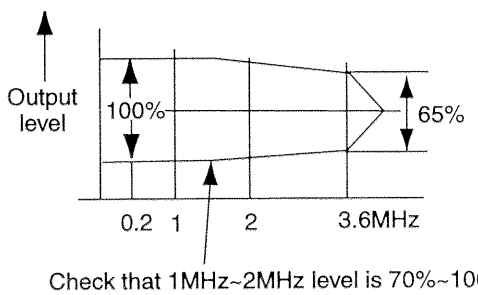
(3) Add the following voltage.
(a) +9V to pin ① of PNH2 connector base.
(b) +12V to pin ④ and pin ⑤ of PNH2 connector base.
(c) +56V to pin ③ of PNS1 connector base.
(d) Connect a 1KΩ resistor and a diode as below.



(e) Receive a color bar signal.

Adjustment Procedure

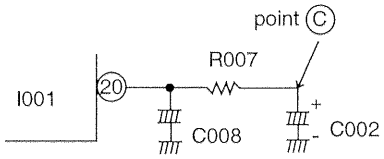
(1) Adjust IF coil (U102) so that the output level of 0.2MHz is reference level (100%) and 3.6MHz level is 60%. (At that time, do not turn tuner IFT coil more than 1 turn.)



4-2-3 VCO for OSD adjustment

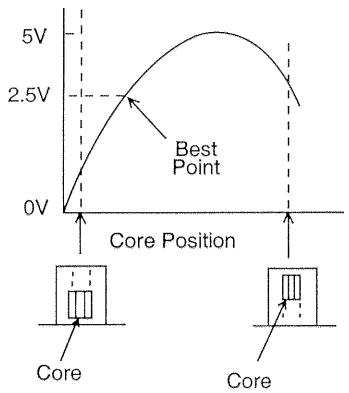
Adjustment Preparation

(1) Receive color bar or circle pattern signal.
(2) Connect a DC voltmeter to point Ⓒ.



Adjustment Procedure

(1) Adjust L001 so that the voltmeter is 2.5±0.2V.

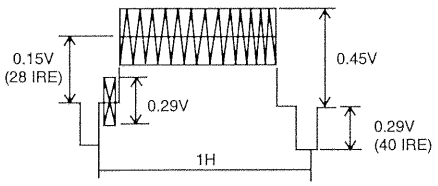


4-3 PinP ADJUSTMENT

4-3-1 Color amplitude

Adjustment Preparation

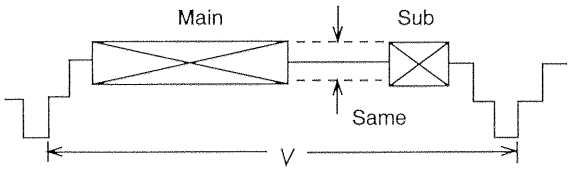
(1) Input red pattern signal to VIDEO1.



(2) Turn CTV set ON.
(3) Select PinP adjustment code, "P18."
(4) Connect oscilloscope to pin ⑤ of PIPA connector base.

Adjustment Procedure

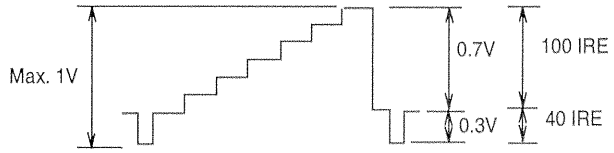
(1) Change data of "P18" so that the amplitude of main and sub signal level are the same.



4-3-2 Y amplitude

Adjustment Preparation

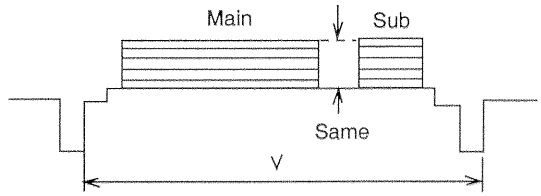
(1) Input 5 step signal to Video 1.



(2) After adjustment of color amplitude, connect oscilloscope to pin ⑮ of PIPA connector base.
(3) Select PinP adjustment code "P17."

Adjustment Procedure

(1) Change data so that the amplitude of main and sub signal white peak level are the same.

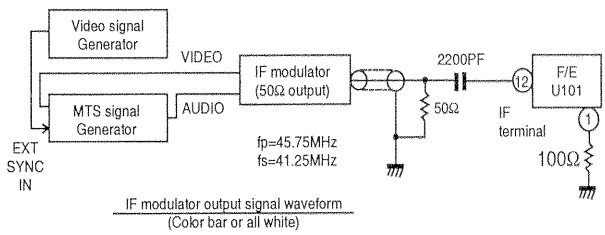


4-4 MTS ADJUSTMENT

4-4-1 Input Level Adjustment

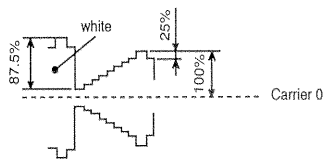
Adjustment Preparation

(1) Apply a signal to F/E U101. IF output terminals of Main PWB using the circuit shown below. And connect the AGC terminal ① of U101 to GND with a 100Ω resistor.



IF modulator output signal waveform
(Color bar or all white)

Note : Video signal and Audio Signal should be synchronized.



IF modulator output level and P/S
P=105dBu (50Ω termination)
S level; -3dB to P level
At this time, S/N ratio of F/E video output is 45dB or less.

Sound modulation condition
Noise reduction encoder: ON
Stereo signal
1. R=0 (L only), 300Hz, 30% modulation (see note)
2. R=0 (L only), 3kHz, 30% modulation (see note)

Monaural signal
3. Monaural, 400Hz, 100% modulation (PRE-EN Off)

SAP signal
4. SAP, 300Hz, 30% modulation (see note)

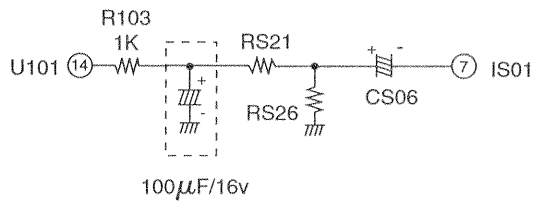
(2) Connect AC voltmeter Vo to IS01 pin ㉖. Use the AC voltmeter of Matsushita made, model VP-950C or equivalent.
(3) Apply +9V to I201, IS01 (Refer to item 4-2-1(1))
(4) Same as item 4-1 (1)
(5) Select adjustment code "A04"

Adjustment Procedure
(1) Select sound input ③ and adjust the data "A04" to Vo=sig 450mVrms±10mVrms at IS01 pin ㉖.

4-5 Stereo VCO adjustment

Adjustment Preparation
(1) Same as items 4-2-1(1) and 4-1(1).
(2) Connect a frequency counter to IS01 pin ㉖. Use the probe of 1:1. (Probe standard Ri≥1MΩ, Ci ≤ 15pF)
(3) No signal input of pin ⑦ (IS01).
(4) Select adjustment code "A01."
(5) Connect capacitor (100μF/16v) as follows.

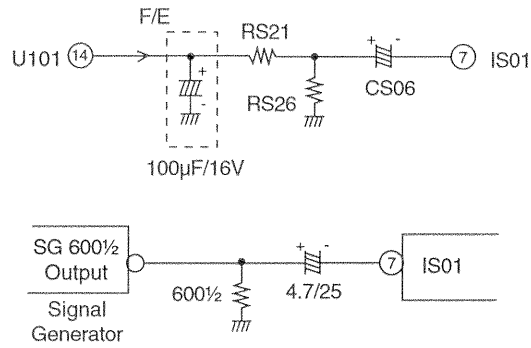
Adjustment Procedure



(1) Adjust the data "A01" to set 15.73±0.1KHz by ◀,▶ keys.
(2) Delete capacitor (100,μF/16v)

4-6 Filter Adjustment

Adjustment Preparation
(1) Set capacitor 100 μF/16V as shown as follows.
(2) Apply the signal to IS01 pin ⑦ with the circuit shown as follows.



ⓐ SG output signal spec.
① Frequency
f=15.73kHz (Sine wave)
② Signal Level

(3) Connect an AC voltmeter or oscilloscope to IS01 pin ㉖.
(4) Select adjustment code "A03."

Adjustment Procedure
(1) Adjust the data "A03" so that the voltage of IS01 ㉖ pin is minimum by ◀,▶ keys.

4-7 Separation Adjustment

(The adjustment of items 4-4-1 and 4-6 must be completed first)

Adjustment Preparation
(1) Use the same circuit as input level adjustment (4-4-1).
(2) Connect an AC voltmeter to AUDIO AMP to IS01 pin ㉖ or connect an oscilloscope.
(3) Select adjustment code "A06" and set data "D032."

Adjustment Procedure
(1) Select sound input signal ① and select adjustment code "A05." Adjust by ◀,▶ keys so that 300Hz level is minimum (L separation adjustment)
(2) Select sound input signal ② and select adjustment code "A06." Adjust by ◀,▶ keys so that 3KHz level is minimum (H separation adjustment).
(3) Repeat (1) and (2). Adjustment precision: within +1dB from minimum point.

SAP VCO Adjustment

Adjustment Preparation

(1) Connect a frequency counter to IS01 pin ㉖.
(2) Select adjustment Code "A02."
(3) Connect same circuit as in item 4-5.

Adjustment Procedure

(1) Adjust the data "A02" by ◀,▶ keys so that the frequency is 78.67+0.5KHz.

4-9 Cut-Off Adjustment (Picture Adjustment)

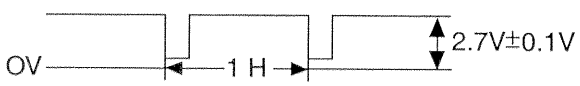
Adjustment Preparation

(1) Connect an oscilloscope at R, G, B output.
(2) Receive circle pattern signal.

	I201
R output	pin ⑲
G output	pin ⑳
B output	pin ㉑

Adjustment Procedure

(1) Select adjustment code "P06" and press "ENTER" button.
(2) Use the cursor key ◀,▶ to adjust the red cut-off until the amplitude of the red output waveform is 2.7V±0.1V as shown below. Adjustment for G and B are the same procedure as R cut-off adjustment. The only difference is the data for G cut-off is "P07" and B cut-off is "P08."



4-10 Deflection Circuit Picture Adjustment

4-10-1 Horizontal Center Adjustment

Adjustment Preparation

(1) Apply heat-run 5 minutes or more after the power is turned on.
(2) Receive circle pattern signal.
(3) Set CONTRAST to maximum and others to center.
(4) Select adjustment code "P03."

Adjustment Procedure

(1) Adjust horizontal center so that difference of right and left size marker is within 0.5 by adjustment code "P03," using ◀,▶ keys.

4-10-2 Vertical Size Adjustment

Adjustment Preparation

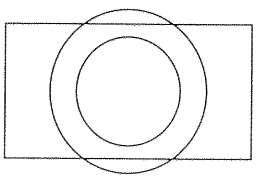
(1) Apply heat-run 5 minutes or more after the power is turned on.
(2) Receive circle pattern signal, and set CONTRAST to maximum and others to center.
(3) The set should face the north or south direction.

Adjustment Procedure

(1) Adjust vertical center and size so that the outer circle of the circle pattern is like the figure below by using ▲,▼,◀,▶ keys.

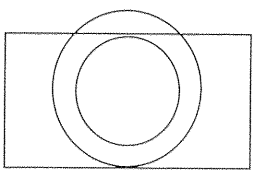
	Adjustment Code
V Center	"P04"
V Size	"P05"

i) Standard Condition



1/2 of the width of outer circle comes to the screen.

ii) When the picture center is above CPT center at V center is minimum.



When the picture center is above CPT center, adjust so that the bottom of the inner circle comes in contact with the TOP of the screen.

4-10-3 Side pin distortion adjustment (R777)

Adjustment Preparation

(1) Receive crosshatch signal and set CONTRAST to maximum and BRIGHTNESS to the point where the background is set.

Adjustment Procedure

(1) Adjust R777 so that the line of the right and left is straight.
spec. DL, DR ≤ 5mm (for 32V)
spec. DL, DR ≤ 7mm (for 36V)

4-10-4 Horizontal size adjustment (R755)

Adjustment Preparation

(1) Receive Circle Pattern signal.
(2) Set CONTRAST to maximum and BRIGHTNESS to center.

Adjustment Procedure

(1) For 32V model, vary R755 so that the horizontal size markers at the right and left ends are within 1.5. (Except model 36UX58B/CZ87).
(1a) For 36V model, vary R755 so that the horizontal size marker is 2.0 at the left and right.

4-11 White Balance Adjustment

Adjustment Preparation

(1) Apply heat-run 10 minutes or more after the power is turned on.
(2) Check that the purity adjustment has been completed.
(3) Set the vertical incident illumination on the CPT surface to 20 lux or less.
(4) Receive white raster signal.
(5) Set the color temperature control (white control) to cool.
(6) Set data of P09 and P10 to D128.
(7) Turn the screen adjusting VR fully counter clockwise.
(8) Set cut-off mode (see item 4-9).

Adjustment Procedure

(1) Turn the screen adjusting VR clockwise and set it to the position where the bright colored line starts appearing on CPT screen.
(2) Do not change the cut-off data (this data is named "CODE-A") corresponding to the color first appearing.
(3) Turn the screen fully clockwise adjusting VR when a bright color line does not appear.
(4) Adjust the cut-off data except Code-A so that the red, green and blue bright colored line appear on the screen equally by using ▲,▼,◀,▶ keys.
(5) Set to normal mode by pressing "ENTER" key.
(6) Change G and B data ("P09 and P10") by using ◀,▶ keys and adjust the high-brightness white balance.
(7) Adjust picture control to minimum and check that the low-brightness white balance is obtained by directly observing the low-brightness without using a mirror.
(8) When the low brightness white balance is not obtained, adjust other low-brightness white balance code except Code-A and return to item (6). White balance color temperature setting 9,300°K
(9) Set white control (color temperature control) to warm, and check that color temperature is approx. 7,200°K

	Adjustment Code
R cut off	P06
G cut off	P07
B cut off	P08
G drive	P09
B drive	P10

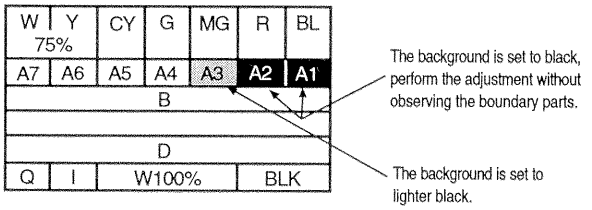
4-12 SUB-BLACK LEVEL ADJUSTMENT

Adjustment Preparation

(1) Apply heat-run for 10 min. or more after the power is turned on.
(2) Receive color bar signal.
(3) Set CONTRAST and color controls to min.
(4) Set the vertical incident illumination on the CPT surface to 20 lux or less.
(5) Set BRIGHTNESS control to the center position.
(6) Set white control to WARM.
(7) Select adjustment code "P11.

Adjustment Procedure

(1) Adjust "P11" data by using ◀,▶ keys. The backgrounds of A1, A2 are set to black and A3 is set to lighter black.



(2) Check by directly observing the CPT surface, without using a mirror.

4-13 AGC ADJUSTMENT FOR SUB-VIDEO

Adjustment Preparation

(1) After all the adjustments are finished, heat-run 5 minutes or more in signal receiving condition.
(2) Receive circle pattern signal (for sub-VIDE0).
(3) Set CONTRAST to maximum, and BRIGHTNESS to on-screen display center.
(4) Antenna Input power: -53dBm (-53dBm~-53dBm)
(5) Connect DC voltmeter of internal resistance 1 MΩ or more to R114, (U102 Pin ①)
(6) Set adjustment code "P02."

Adjustment Procedure

(1) Adjust "P02" data until the indication of DC voltmeter does not change any more at the maximum point. The reading of DC voltmeter is named V1. Adjust "P02" data so that the indication of DC voltmeter is {V1-(0.5±O.2)}V.

4-14 SUB TINT ADJUSTMENT

Set adjustment code "P13."
Set data "-08" by ◀,▶keys.

4-15 SUB SHARPNESS ADJUSTMENT
Set adjustment code "P14."
Set data "000" by ◀,▶ keys.

4-16 SUB COLOR ADJUSTMENT
Set adjustment code "P12."
Set data "008" by ◀,▶ keys.

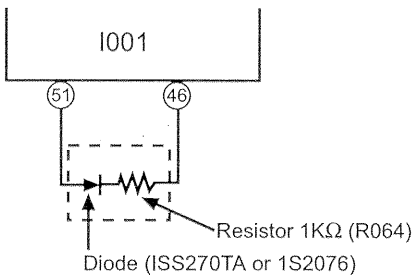
4-17 PINP POSITION ADJUSTMENT
Set adjustment code "P15."
Set data "000" by ◀,▶ keys.

4-18 PINP TINT ADJUSTMENT
Set adjustment code "P16."
Set data "063" by ◀,▶ keys.

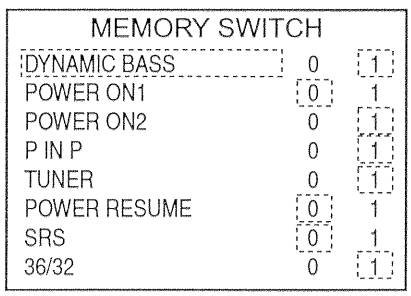
4-19 PINP SHARP ADJUSTMENT
Set adjustment code "P19."
Set data "000" by ◀,▶ keys.

II. FUNCTION SETTING
M7LXU2 Chassis has the data for setting variety functions in EEPROM (I002).
Microcomputer (I001) set the functions needed for each model according to EEPROM data (memory switch data).

1. HOW TO SET MEMORY SWITCH SETTING MODE
(1) Connect a diode as follows at power on.



An OSD will appear on the screen as follows.



Function name (Yellow background shows cursor position)
Data (Yellow background shows selected data)

Cursor and data are changed by ▲,▼,◀,▶ button. After setting data, press "ENTER" button. Then MEMORY INITIALIZE operation start. After complete MEMORY INITIALIZATION, TIMER SOUND is outputed from left speaker.
Note: Press "MENU" to escape from setting mode.
(2) Remove diode after the operation is completed.

2. EXPLANATION OF FUNCTIONS
(1) Dynamic Bass
Select dynamic bass or not.
Data "1" - Apply dynamic bass
Data "0" - Do not apply dynamic bass

(2) Power 1, Power 2
Initial settings at plug in

POWER 1	POWER 2	
0	0	...Power off mode (normal)
1	0	...Power on at last state
0	1	...Power on at video mode
1	1	...Power on at TV (4CH) mode

(3) P in P
Select P in P function
Data "1" - Apply on PinP model
Data "0" - Apply on non-PinP model

(4) Tuner
Select tuners, one tuner or two tuners.
Data "1" - Selects one tuner
Data "0" - Selects two tuners

(5) Power Resume
Select power resume capability
Data "1" - Apply power resume
Data "0" - Do not apply power resume

(6) SRS
Select SRS capability
Data "1" - No SRS capability
Data "0" - SRS capability

(7) 36/32
Select 36 or 32
Data "1" - 32V model
Data "0" - 36V model

TABLE 2 MODEL AND DATA TABLE

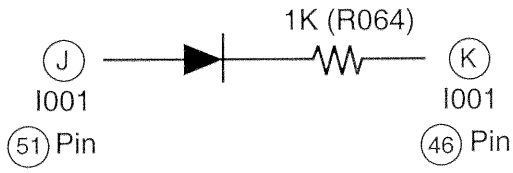
	MODEL	NAME
DATA NAME	36UX58B 32UX58B	36FX48B 32FX48B
Dynamic Bass	1	0
Power ON1	0	0
Power ON2	0	0
PinP	1	1
Tuner	0	0
Power Resume	1	1
SRS	0	1
36/32	0	1/0

III. MEMORY INITIALIZE

1. TIMER SOUND OPERATION CHECK

Adjustment Procedure

(1) Connect diode (ISS270TA or IS2076) to Ⓙ~Ⓚ.



(2) Confirm OSD-memory switch appears (see Function Setting, Item II).

(3) Remove diode. After this operation, each setting should become to delivery setting automatically.

(4) When the above operation is being performed check that a beeping sound is made from the left speaker.
Note: Press "MENU" to escape from setting mode.

IV. OPERATION CHECK

1. AFC OPERATION CHECK

Adjustment Preparation

(1) Connect the circuit as shown below to the ANT terminal.

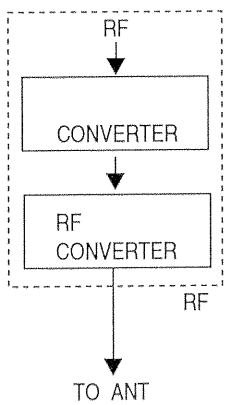
Adjustment Procedure

(1) Receive a standard carrier (not offset) with the channel up/down or direct selection buttons.

(2) Receive an offset signal of +1.5MHZ. Check that it is pulled into the standard tuning point.

(3) Receive an offset signal of -1.5MHZ. Check that it is pulled into the standard tuning point. (Perform the channel selection operation again.)
Note: Modulation signal should be used at the circle pattern and the color bar signal.

Checking circuit
(All channel converter can be used)



2. CHANNEL SELECTION CIRCUIT OPERATION CHECK

2-1 Channel Up/Down Selection

Adjustment Preparation

(1) Set the TV set so that VHF (11, 13CH), UHF (14, 46, 63CH) and CATV (A, E, P, W, CH) can be received.

(2) Set Signal Source mode to Antenna on the set up menu. (Press the Menu key, and select Setup, then select Signal Source mode, See next page.)

Adjustment Procedure

(1) Check that VHF are received correctly by pressing CH Up (▲) or Down (▼) button.

Adjustment Preparation

(3) Set Signal Source mode to CATV 1.

Adjustment Procedure

(2) Perform the same operation as in Item (1), and check that VHF and CATV are received correctly.

Adjustment Preparation

(4) Set Signal Source mode to CATV 2.

Adjustment Procedure

(3) Perform the same operation as in Item (1), and check that VHF and CATV are received correctly.

Note: This check should be done both ANT A and B.

2-2 CH Up/Down

Adjustment Preparation

(1) Set the TV set so that VHF (11, 13CH), UHF (14, 46, 63CH) and CATV (A, E, P, W CH) can be received.

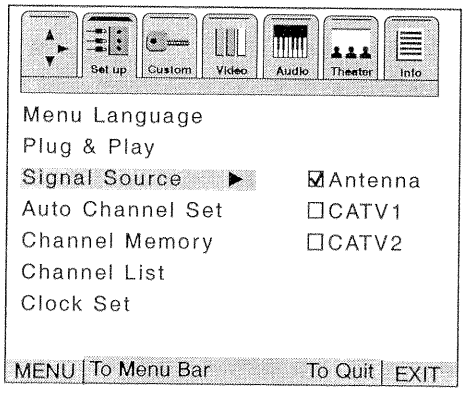
Adjustment Procedure

(1) Set Signal Source mode to Antenna on the set up menu.

(2) Select Auto CH set mode and press (▶) key on the set up menu. After Auto CH set, operation is completed. By pressing the channel Up (▲) or Down (▼) button, check that the channels having broadcast signal (s) can be received.

(3) Set Signal Source mode to CATV 1.

(4) Perform the same operation as in Item (2) and check that CATV can be received correctly.



SET UP MENU

Adjustment Preparation

(2) Set the channel list mode (in set up menu).
Note: CATV channels, actual input channels numbers and indicated channel numbers shown in Table 3 below.

Adjustment Procedure

(5) Check that the item of SCAN of channels which can be selected as above is ON.

Note 1: CATV channels, actual input channel numbers and indicated channel numbers.

A.....14
E.....18
P.....29
W.....36
A-2.....98
GG (W+7).....43
OO (W+15).....51
WW (W+23).....59

Note 2: This check should be done both ANT A and B.

TABLE 3

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
MID BAND								SUPER BAND														

W+1	W+2	W+3	W+4	W+5	W+6	W+7	W+8	W+9	W+10	W+11	W+12	W+13	W+14	W+15	W+16	W+17	W+18	W+19	W+20	W+21	W+22	W+23
37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59
HYPER BAND																						

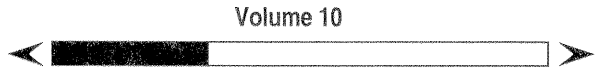
W+24	W+25	W+26	W+27	W+28	W+29	W+30	W+31	W+32	W+33	W+34	W+35	W+36	W+37	W+38	W+39	W+40	W+41	W+42	W+43	W+44	W+45	W+46
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82
HYPER BAND					ULTRA BAND																	

W+47	W+48	W+49	W+50	W+51	W+52	W+53	W+54	W+55	W+56	W+57	W+58	A-5	A-4	A-3	A-2	A-1	W+59	W+60	W+61	W+62	W+63	W+64
83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105
ULTRA BAND												MID BAND					ULTRA BAND					

W+65	W+66	W+67	W+68	W+69	W+70	W+71	W+72	W+73	W+74	W+75	W+76	W+77	W+78	W+79	W+80	W+81	W+82	W+83	W+84
106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125
ULTRA BAND																			

Adjustment Procedure

(1) Check that the volume level and volume indication is going up or down simultaneously by pressing volume Up (▲) or Down (▼) button.



2-4 POWER ON/OFF

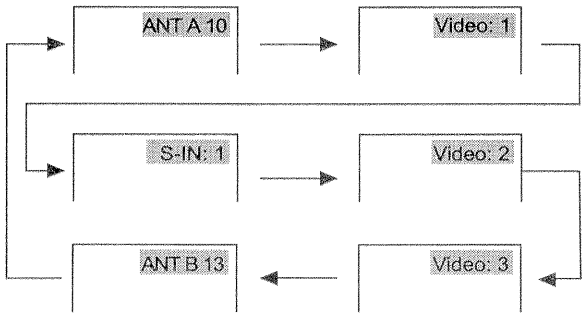
Adjustment Procedure

(1) Check that the power alternates between On and Off with each press of the Power button.

2-5 INPUT

Adjustment Procedure

(1) Check the O.S.D. with every press of the Input button, such as below.

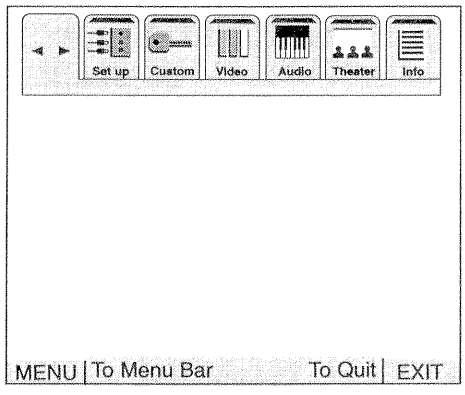


Note: The selected input appears on a cyan background

2-6 MENU

(1) Check that the Menu O.S.D. displays by pressing Menu button.
Note: Menu O.S.D. is displayed as below.

MENU OSD



(2) After Menu O.S.D. is displayed,

Menu	→	MENU
CH Up	→	▲ key
CH Down	→	▼ key
Volume Up	→	▶ key
Volume Down	→	◀ key

2-7 MENU MODE (using Remo)

2-7-1 Set Up Mode

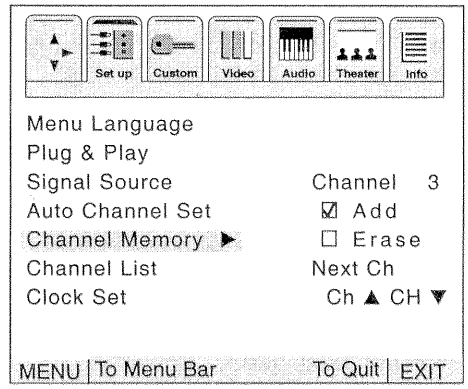
Adjustment Preparation

(1) Set to Channel Memory mode (Set up Menu).

Adjustment Procedure

(1) Check the selection of Add, Erase by pressing the ▲(▼) button.

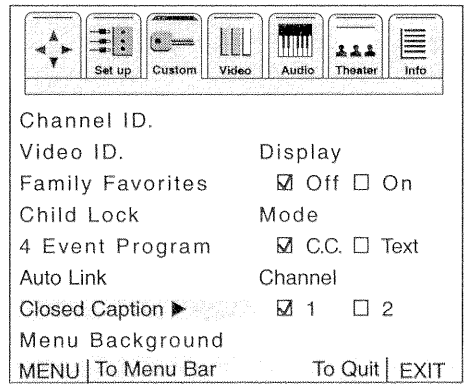
SET UP MENU



Adjustment Preparation

(2) a. Set the mode to Closed Caption (Custom Menu)
b. Receive signal having Closed Caption signal.

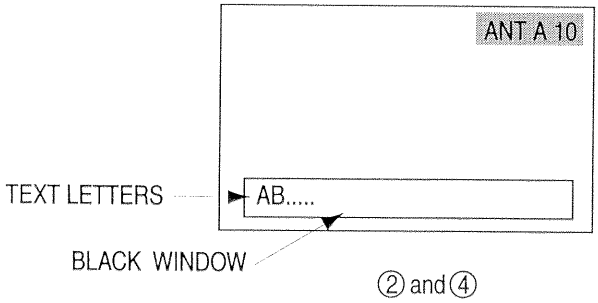
CUSTOM MENU



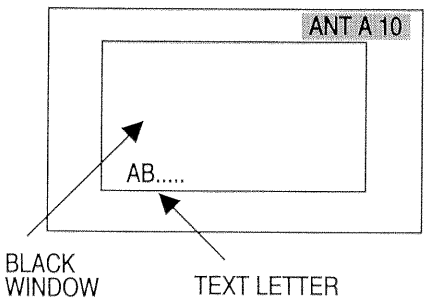
Adjustment Procedure

(1) Set Display setting to On with ▶ button.
At this time, set the other settings as follows.
1. Display : On
2. Mode : C.C.
3. Channel : 1

(2) Check that the Caption corresponding to the above setting is displayed on the screen.
(3) Set Channel to 2.
(4) Check that the Caption of Channel 2 is displayed on the screen.
(5) Set Channel to 1.
(6) Check that the Caption of Channel 1 (Field 2) is displayed on the screen.
(7) Set the mode to Text.



(8) Check that a black window appears and text letters are displayed at the center of the screen.
(9) Repeat adjustment procedure from (3) to (6), and check that text letters are displayed corresponding to each mode.
(10) Set the mode to Caption.
(11) The black window should disappear returning to the state of (2).
(12) Set On/Off to Off.
(13) Check that the Caption letters disappear.

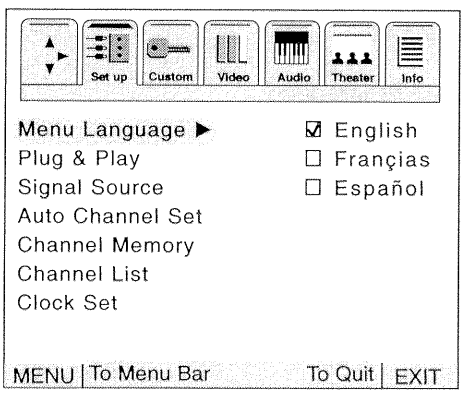


Adjustment Preparation
(3) Set to Menu Language mode (Set up Menu).

Adjustment Procedure
(14) Check the language selection (English, French, Spanish) by pressing the ▲ (▼) button.

SET UP MENU

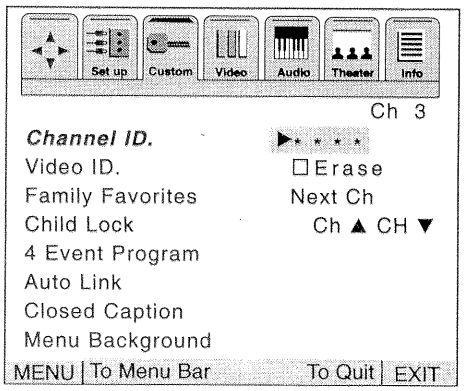
2-7-2 Program Mode



Adjustment Preparation
(1) Set to Channel ID mode (Custom Menu).

Adjustment Procedure
(1) Select the "A" by pressing the ▲,▼ button, and select the input position by pressing the ▶,◀ button.
(2) After pressing the Enter button, check that the indication of "AAAA" is the same as CH No. indication.
(3) Select the Channel ID mode again. Select the "Erase" by pressing the ▲,▼ button and press the ▶ button.
(4) Check that the delete of "AAAA" when indicate the CH No., after press the "Recall" button.

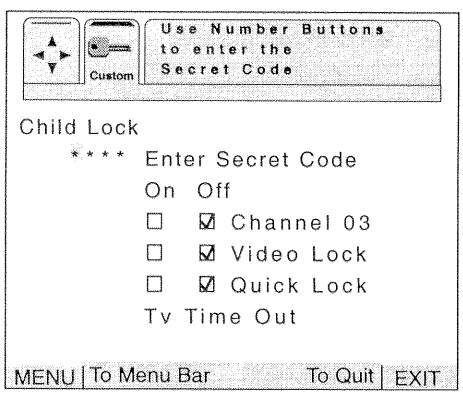
CUSTOM MENU



Adjustment Preparation
(2) Set to Child Lock mode.

Adjustment Procedure
(1) Select Child Lock by ▶ button.
(2) Press "0" button 4 times. ("0000" is input.)
(3) Select channel mode, and set to on by ▶ button, check that the picture becomes pitch-dark, and sound does not come out.
(4) Set to Child Lock mode again.
(5) Select channel mode and set to off by ▶ button.
(6) Check that the picture and sound return to the previous condition.

CUSTOM MENU



Adjustment Preparation

(3) Set Volume Correction mode (Audio Menu).

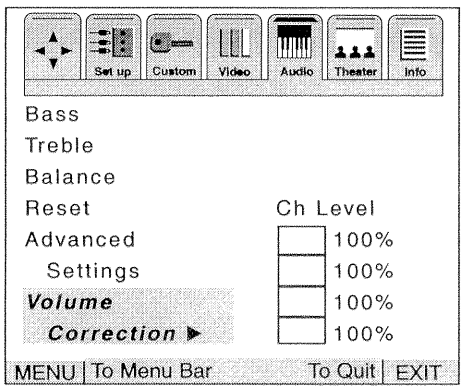
Adjustment Procedure

(1) Select the registration point using ▲,▼ button and received channel no. is memorized by pressing number buttons.

Note: By key-in "0", "4," then 4CH can be memorized.

(2) Check that Volume level changes and sets 100%~50% (5% step) using ▲,▼ button.

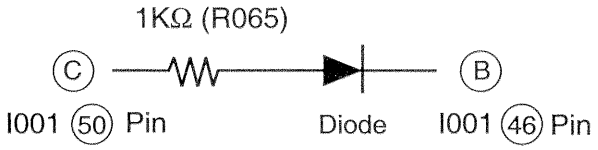
AUDIO MENU



2-7-3 Clock Mode (Clock Operation Check)

Adjustment Preparation

(1) Connect diode (1S2076, 1SS270TA equivalent) between Ⓑ and Ⓒ.

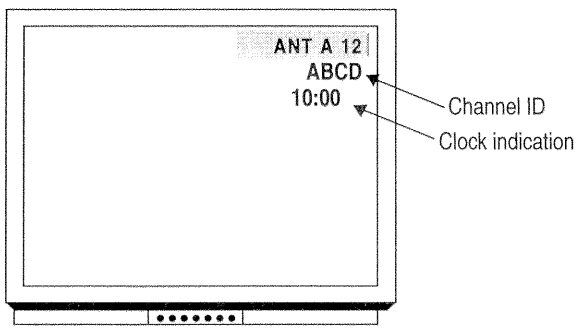


Remarks: The addition of the above diode intends to check the operation with clock counting operation as 60 times mode.

(2) Set to Clock Set Mode (set up mode).

Adjustment Procedure

(1) After clock setting is done and the indication disappears, perform CH indication. Check that clock indication is displayed in addition to the CH indication, and that the clock indication is going by 1 second per minute.



2-7 4 Picture Mode

Adjustment Preparation

(1) Receive color bar signal.
(2) Press MENU key, and select VIDEO menu
(3) Set to Contrast mode.

Adjustment Procedure

(2) Check that Contrast is changed by pressing control ◀,▶ buttons.

Adjustment Preparation

(3) Set to Brightness mode.

Adjustment Procedure

(3) Check that Brightness is changed by pressing control ◀,▶ buttons.

Adjustment Preparation

(4) Set to Color mode.

Adjustment Procedure

(4) Check that Color is changed by pressing control ◀,▶ buttons.

Adjustment Preparation

(5) Set to Tint mode.

Adjustment Procedure

(5) Check that Tint is changed by pressing control ◀,▶ buttons.

Adjustment Preparation

(6) Set to Sharpness mode.

Adjustment Procedure

(6) Check that Sharpness is changed by pressing control ◀,▶ buttons.

Adjustment Preparation

(7) Set to Color temp. mode.

Adjustment Procedure

(7) Check that White control is changed by pressing ▶ button.

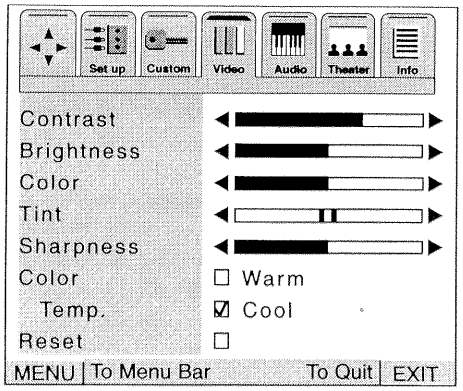
Adjustment Preparation

(8) Set to Reset mode.

Adjustment Procedure

(8) Check that all picture setting modes return to delivery settings by pressing ▶ button.

VIDEO MENU



2-7-5 Sound Mode

Adjustment Preparation

(1) Press MENU key, and select AUDIO menu.
(2) Set to Bass mode.

Adjustment Procedure

(1) Check that Bass is changed by pressing control ◀,▶ buttons.

Adjustment Preparation

(2) Set to Treble mode.

Adjustment Procedure

(2) Check that Treble is changed by pressing control ◀,▶ buttons.

Adjustment Preparation

(3) Set to Balance mode.

Adjustment Procedure

(3) Check that Balance is changed by pressing control ◀,▶ buttons.

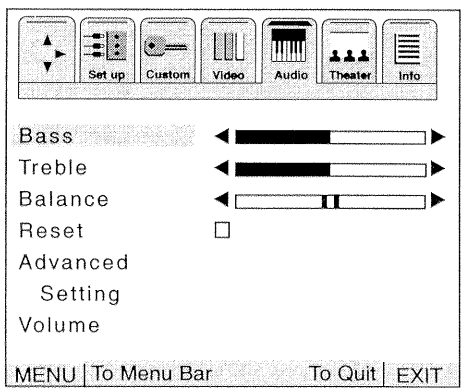
Adjustment Preparation

(4) Set to Reset mode.

Adjustment Procedure

(4) Check that all sound setting modes return to delivery settings by pressing ▶ button.

AUDIO MENU



Adjustment Preparation

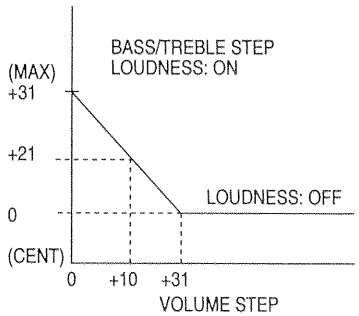
(5) a. Set to "Volume" step at *10 set to "Bass" and "Treble" at center when "Loudness" is turned off. Set to "Loudness" mode. (Audio menu, Advanced Settings)
b. Set Loudness to off, and Bass/Treble to center.
c. Set to Loudness mode.

Adjustment Procedure

(5) Check that "Bass" and "Treble" are changed as below table when set to "Loudness" turned on by pressing ◀,▶ button Loudness off after checked.

LOUDNESS	BASS	TREBLE
OFF	CENTER	
ON	+21 STEP	

(When volume set to 10)
After checking, set Loudness to Off.



*Note
According to Volume setting level, this function works as shown left figure

Adjustment Preparation

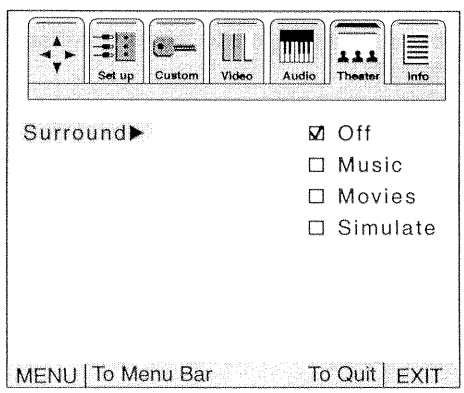
(6) a. Input stereo sound signal to Video: 1 terminals, and set "Video: 1" by Input button.
b. Set to Surround mode (theater mode): 36FX48B/CZ85 and 32FX48B/CY85. Set to SRS mode (theater mode): 36UX58B/CZ87 and 32UX58B/CY87.

Adjustment Procedure

(Not for 36UX58B/CZ87 and 32UX58B/CY87)

(6) Check that sound becomes louder when set Music or Movie mode by ▲,▼ and ▶ button.

THEATER MENU



Adjustment Preparation

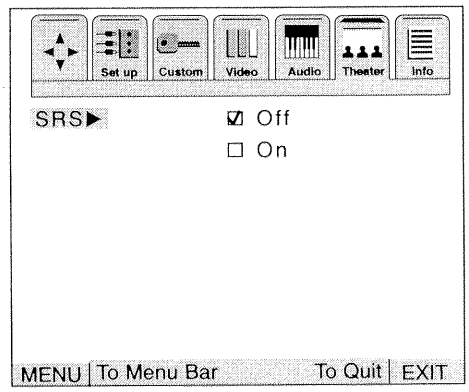
(Only for 36UX58B/CZ87 and 32UX58B/CY87)

(7) a. Input stereo sound signal to Video: 1 terminals, and set "Video: 1" by Input button.
b. Set to SRS mode.

Adjustment Procedure

(7) Check that sound becomes louder when set Off to On mode by ▲,▼ and ▶ button.

THEATER MENU



2-7-6 Auto Link Mode

Adjustment Preparation (Auto mode)

(1) Set Auto Link mode (Custom mode) to Auto mode (set V1, V2, V3, all).
(2) Turn off set.

Adjustment Procedure

(1) Input Video Signal to Video: 1 Input.
(2) Check that set turns on with Video: 1 mode.
(3) Turn off set.
(4) Input Video Signal to S-in Input.
(5) Check that set turns on with S-in mode.
(6) Turn off set.
(7) Check same as above to Video: 2 and Video: 3.

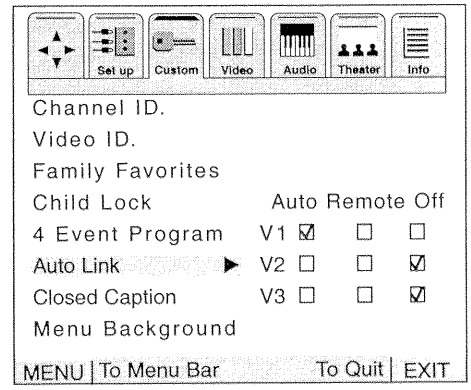
Adjustment Preparation (Remote mode)

(1) Set Auto Link mode to Remote mode (V1, V2, V3 all).
(2) Turn off set.

Adjustment Procedure

(1) Transfer Remo-con code to the set (except Power key).
(2) Input Video Signal to Video: 1 within 5 seconds from (1).
(3) Check that set turns on with Video: 1 mode.
(4) Turn off the set.
(5) Apply same check as (1) ~ (4) to S-in ~ Video: 3.

CUSTOM MENU



V. DEFLECTION CIRCUIT PICTURE ADJUSTMENT OPERATION CHECK

1. HIGH VOLTAGE LIMITER CIRCUIT OPERATION CHECK AND OVER VOLTAGE PROTECTION CIRCUIT OPERATION CHECK.

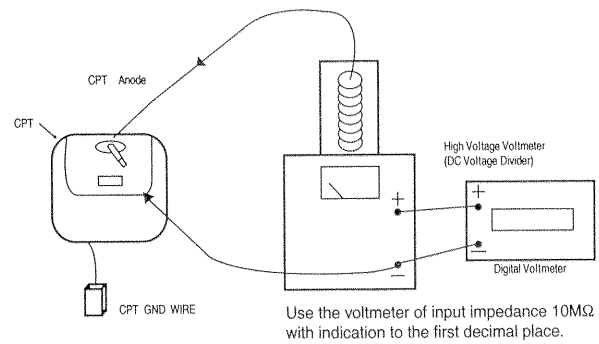
Adjustment Preparation

(1) Connect a high voltage voltmeter between CPT anode terminal (Anode cap side) and the ground as below.
(2) Set AC input voltage to 120±3V.
(3) Receive Hitachi circle pattern and set "Bright" and "Contrast" to max.
Adjust Screen VR so that beam current is I_B±0.1mA. (The voltage of ABL terminal-C747 both ends should by 12V or less.)

Adjustment Procedure

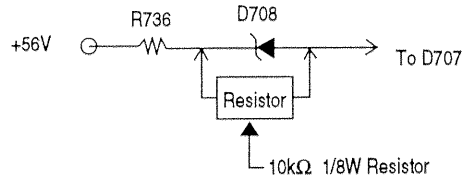
(1) Check that the normal high voltage and +B voltage as below.

CHASSIS	EHT±1KV	I_B±0.1mA	+B
CZ87/CZ85	30.0KV	1.80mA	130±.3V
CY85/CY87	30.0KV	1.50mA	130±.3V



Use the voltmeter of input impedance 10MΩ or more with indication to the first decimal place.

(2) Connect a 10kΩ 1/8W Resistor to both ends of D708 and check that power is turned off.



(3) Disconnect the AC plug and remove 10kΩ 1/8W Resistor.

2. FBT PROTECTION CIRCUIT OPERATION CHECK

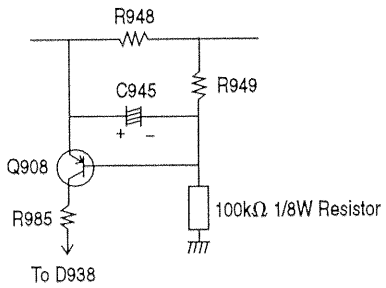
Adjustment Preparation

(1) Set "Contrast" to maximum, "Brightness" to center.

Adjustment Procedure

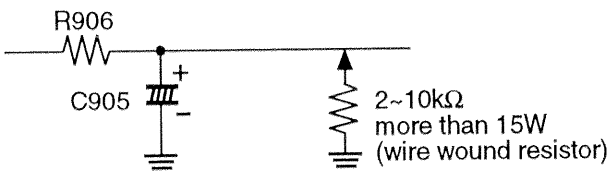
(1) Connect a 100Ω 1/8 Resistor between Q908 base and ground, check that picture disappears. See figure A.

Figure A



(2) Immediately after checking, disconnect the power cord of the set.

(3) Discharge C905 as follows.



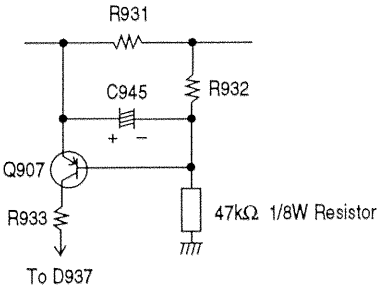
3. CHECK +18V SHORT PROTECTION CIRCUIT

Adjustment Preparation

(1) Set "Contrast" to maximum, "Bright" to center.

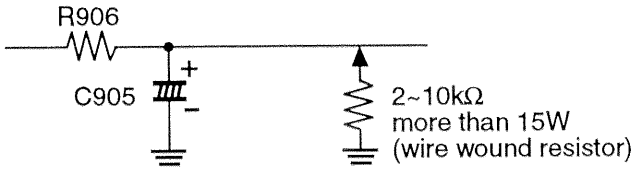
Adjustment Procedure

(1) Connect a 47kΩ 1/8 W Resistor between Q907 base and ground, check that picture disappears.



(2) Immediately disconnect the power cord.

(3) Discharge C905 as follows.



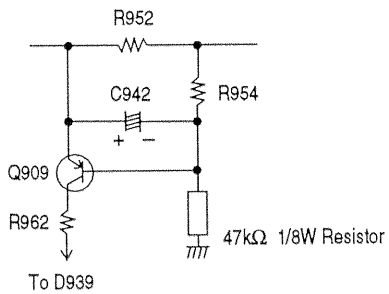
4. CHECK + 14V SHORT PROTECTION CIRCUIT.

Adjustment Preparation

(1) Set "Contrast" to maximum, "Brightness" to center.

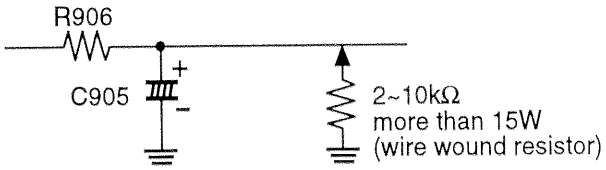
Adjustment Procedure

(1) Connect a 47kΩ 1/8W Resistor between Q909 base and ground, check that picture disappears.



(2) Immediately disconnect the power cord.

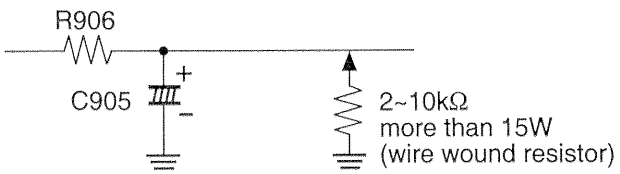
(3) Discharge C905 as follows.



5. LOAD SHORT PROTECTION CIRCUIT OPERATION CHECK.

Adjustment Procedure

(1) Receive circle pattern signal.
(2) Set "Contrast" to maximum, "Brightness" to center.
(3) After turning on the CTV set, confirm the DC voltage of D019, DOOF, D753 and D952, each cathode side. These voltages should be 6V+1.0V.
(4) Short-circuit both ends of R961 and check that the picture disappears within 2~3 sec.
(5) Disconnect short-circuit of R961 and the power cord.
(6) Discharge C905 as follows.



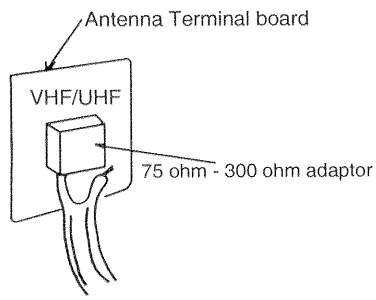
6. WEAK ELECTRIC FIELD CHECK

Adjustment Preparation

(1) Connect one side of the 300 ohm feeder to 75 ohm ~ 300 ohm antenna adapter. Connect the antenna adapter to the VHF antenna terminal board as shown below.
(2) Turn to no signal condition.

Adjustment Procedure

(1) Check that the phenomena such as oscillation and abnormal beat, etc. do not occur in all the channel.



VI. REMO-CON OPERATION CHECK

1. DIRECT CHANNEL SELECTION

Adjustment Procedure

(1) Input 2 or 3 digits of channel number with the buttons of the Remo-con "0-9." Check that the input number and the on-screen display number are the same. (At 100CH selection, press "1" and after 2 seconds, press "0" two times.

1 — → 1 — →
After
2 seconds

2. LST-CH (LAST CHANNEL RECALL)

Adjustment Procedure

(1) Check that the set receiver alternates between the channel which is being received and the channel which was previously received with each press of the "LST-CH" button of the Remo-con.

3. MUTE

Adjustment Procedure

(1) Check that the sound alternates between mute and mute free with each press of the "Mute" button of the Remo-con. At this time, check that the indication color alternates between yellow (letters: green) and magenta.

4. RECALL

Adjustment Procedure

(1) Check that on-screen channel no. indication alternates between On and Off with each press of the "Recall" button of the Remo-con.

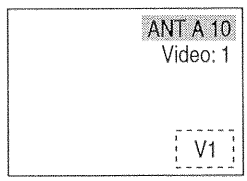
5. P IN P

Adjustment Preparation

(1) Connect signal to ANT A and receive it.
(2) Connect signal to Video: 1 Input.

Adjustment Procedure

(1) Check that with each press of the "PinP" button of Remo-con, sub-picture alternates between On and Off. When sub-picture is On, check that the channel numbers are displayed as below.



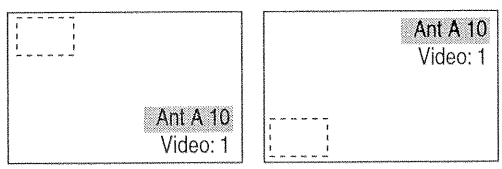
6. MOVE

Adjustment Preparation

(1) Press "PinP" button to set to PinP mode.

Adjustment Procedure

(1) Check that with each press of the Move button of Remo-con, sub-picture moves counterclockwise.
Note: When sub-picture is in the upper left of the screen, the channel number of main picture comes to the lower right, as shown below.



7. SWAP

Adjustment Preparation

(1) Press "PinP" button to set to PinP mode.

Adjustment Procedure

(1) Check that with each press of the "SWAP" button, the contents of main picture and sub-picture are exchanged.

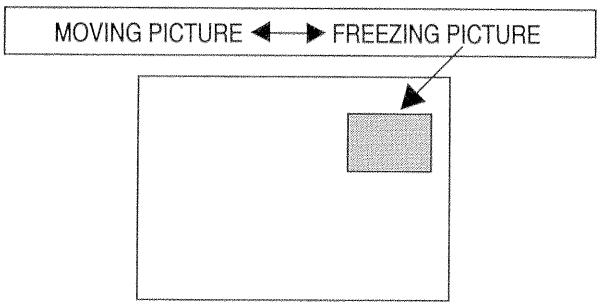
8. FREEZE

Adjustment Preparation

(1) Connect the signal to ANT A and video. (One or both of the pictures should be moving picture.)
(2) Press "PinP" button to set to PinP mode.
(3) Sub-picture should be moving picture.

Adjustment Procedure

(1) Check that with each press of the "Freeze" button, sub-picture alternates between moving picture and freezing picture.



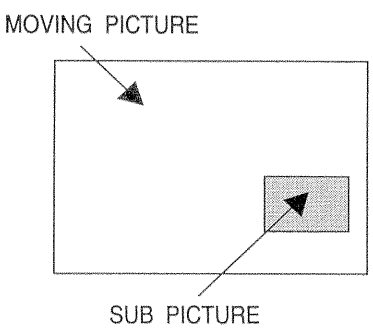
(2) Press "PinP" button to make sub-picture disappear.

Adjustment Preparation

(1) Connect signals to ANT A and Video Input. Both signals should be moving picture.
(2) Set PinP to off.

Adjustment Procedure

(1) Check that freezing picture of main screen appears by pressing Freeze button of the Remo-con.
(2) Check it also in the TV and Video modes.
(3) Check that sub-picture disappears by pressing Freeze button at picture freezing.
(4) Check that it turns to normal PinP sub-picture by pressing PinP button at picture freezing.



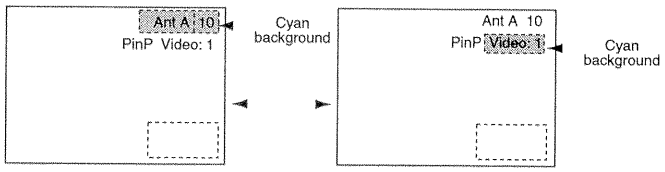
9. PINP CH

Adjustment Preparation

(1) Connect the signal to ANT A and Video: 1.
(2) Press "PinP" button to set to PinP mode.

Adjustment Procedure

(1) Check that OSD changes as follows by pressing "PIP CH" button.



(Main mode) (PinP mode)

(2) Set PIP CH to PinP mode.
(3) Check that PinP sub-picture changes by channel ▲,▼, and "Input" key and receives normal picture.

VII. MEMORY INITIALIZE (2)

After all of the adjustments of main chassis are finished, perform memory initialize. (Operation in Item III)

VIII. FINAL ASSEMBLY ADJUSTMENT/ COMMON SERVICE ADJUSTMENT

1. PURITY CONVERGENCE ADJUSTMENT

Note: For ITC type A9OAHH50X01 and A9OAFX15X01 only, apply item 1.2 (8) (Purity check). For A80LJF30X(W), apply item 1.1-1.2 (8).

1-1 Adjustment Preparation

(1) Keep DY slicked to CPT funnel.
(2) Turn ON the set and receive cross-hatch signal (or circle pattern signal). Adjust the static convergence coarsely according to item (VI11, 1-4).
(3) Receive circle pattern signal and adjust the white balance according to item 4-11.
(4) Set BRIGHTNESS control and CONTRAST control to maximum and apply heat-run to the set with circle pattern signal received for 40 min. or more.

1-2 Purity Adjustment

THIS ADJUSTMENT METHOD APPLIES TO THE PURITY ADJUSTMENT BY USING MICROSCOPE.

(1) Adjust coarsely White balance, Static convergence (center) and Focus.
(2) Receive circle pattern and heat-run more than T minutes with CONTRAST and BRIGHTNESS to maximum. Do not delete the raster nor vary the current before fixing the position of DY. Heat-run should be done with perfect raster. (DY and tilt

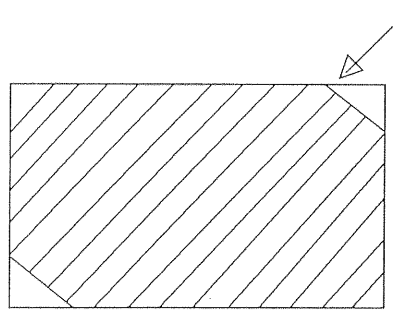


TABLE 1

CPT	T
A80LJF30X(W)	40 Min.
A90AHH50X01(V)	40 Min.
A90AEJ15X01	40 Min.

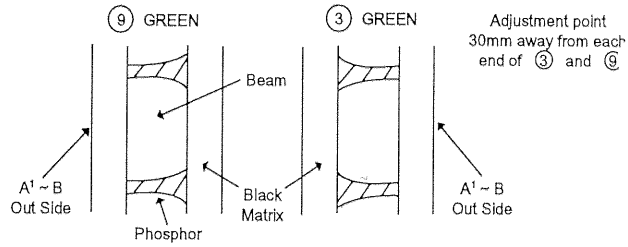
(3) The magnetic field in artificial magnetic field should follow the table below and the set should face as in Table 2. Degauss it from outside.

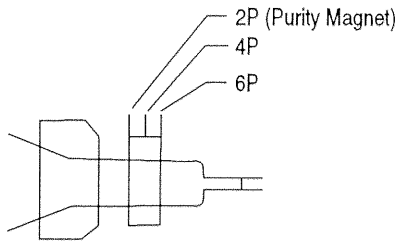
DESTINATION	VERTICAL FIELD	HORIZONTAL FIELD
USA	0.45 G	0.3 G
CANADA	0.54 G	0.15 G
UNIVERSAL	0.35 G	0.3 G
PANAMA, HAWAII	0.2 G	0.3 G

TABLE 2
Directions for adjustment

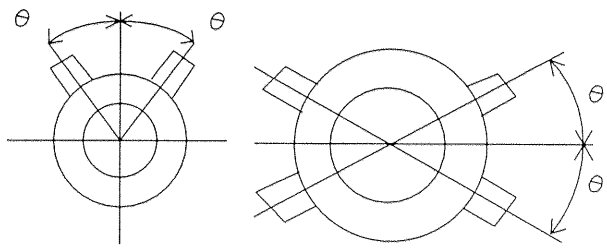
A80LJF30X(W)	North

(4) Adjust the position of purity magnet and DY. Keep the landing balance of ③ and ⑨, and adjust so that the landing of ③ and ⑨ is as follows while observing with a microscope.





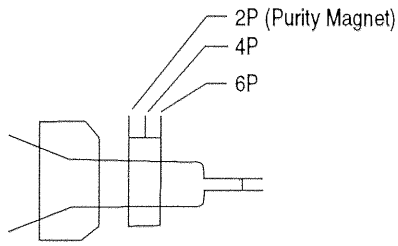
(a) Open the purity magnet as follows in order to move the raster only in the right-left direction.



C-F MAGNET
P#2773671

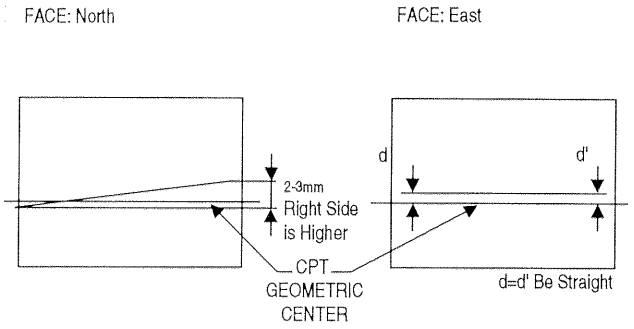
C-F MAGNET
P#2773672

Keep the balance of ③/⑨ DY landing



(b) YPB (Yoke pull-back) should be as follows. (Distance between the bumped position of DY toward the funnel and the just-landing position of ③ and ⑨.)

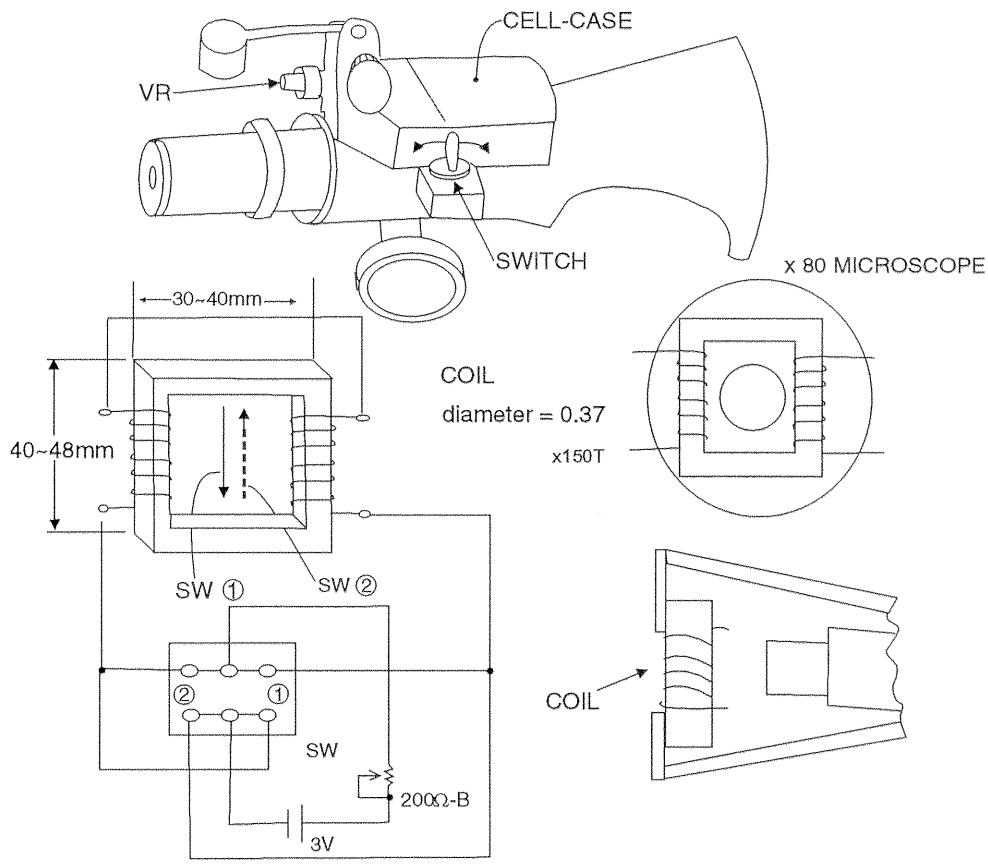
(c) DY tilt should be as follows.



(5) Fix DY with fixing torque of 14kg.cm.
Control the torque by an electric driver.
(6) If any miss landing occurs, correct with magnets.
If any want of 10μ or so, judge by white unevenness. At this time, if the white unevenness is all right, any magnet is not needed.
(7) After peripheral convergence is adjusted, check the position of DY and tighten the DY again. (14kg.cm)
(8) Purity check
The magnetic field in artificial magnetic field should follow the magnetic field according to the destination, and the set should face as follows.
After degaussing in each direction, check these items visually and with a microscope.
(a) No problem in white unevenness.
(b) Each single color must not hit any other colors.
(c) If white or each single color is defective, apply a magnet(s) on CPT for correction.
If any magnet is applied, check it after degaussing.

Reference

THE MICROSCOPE



Fix coil to CRT side of microscope. Set it upside down and measure it. Check that beam moves to the right and left equally in quantity. Be careful at assembly that core does not tilt because upward (downward) magnetic field by coil moves the beam to the right (left) or type MS-50X microscope of KANSAI DENKI.

1-3 Purity Adjustment
(This adjustment method applies to purity adjustment by hand operation.)

(1) Use an artificial magnetic field and set the field strength as follows.
*Magnetic field in CPT axis direction: 0 Gauss
*Magnetic field which is vertical to CPT axis:
U.S.A., Hawaii, Panama, Guam
Bolivia, Peru, Universal.....0.3 Gauss
Canada.....0.15 Gauss
Taiwan.....0.37 Gauss
(The direction of the magnetic field should be from the left side to the right side of the CPT screen as you face it.)

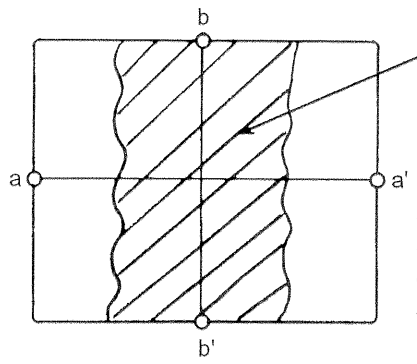
(2) Adjust Focus coarsely according to item 2.

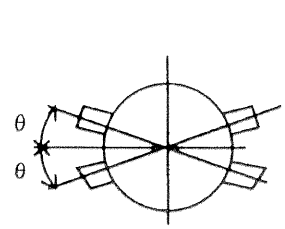
(3) Adjust Convergence coarsely according to item 1-4 and 1-5.

(4) Receive Circle Pattern signal and check that Contrast and Brightness are maximum.

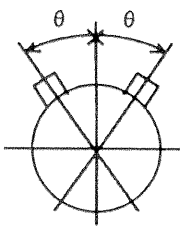
(5) Receive magenta signal. When the magenta signal is not available, short-circuit between the base and emitter of Q855 and set to magenta.

(6) Press DY fully against CPT funnel and turn the purity magnet so that the vertical magenta band comes to the center of the picture (Fig. 1-3-1). Check that color unevenness of both sides are approximately equal at this time. The openings of the purity magnet should be symmetric (Fig. 1-3-2).





C-F MAG P#2773672



C-F MAGNET
P#2773671

The openings of the purity magnet should be symmetric: on the right and left sides (P#2773671) on the upper and lower sides (P#2773672)

FIGURE 1-3-2

(7) Receive the single red signal. When the single red signal is not available, short circuit between the base and emitter of Q845, and between the base and emitter of Q857 and set to single red.

(8) Pull back DY gradually and when the color unevenness of both sides of the picture disappear, mark the rear edge position of DY on the tape wound around CPT neck as shown in Figure 1-3-3. Pull back DY further and just before the color unevenness of both sides of the picture disappear, mark the rear edge position of DY on the tape in the same way. At this time, pull back DY so that the center axis of DY and CPT axis match.

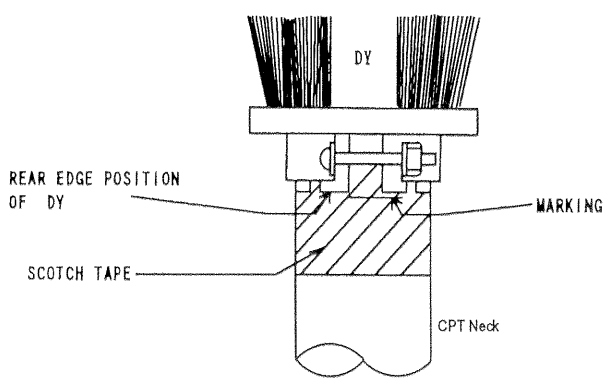
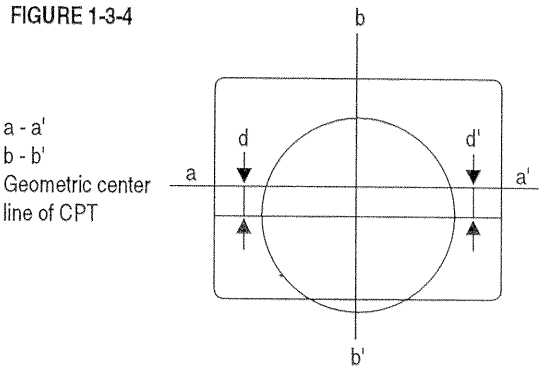


FIGURE 1-3-3

(9) Move DY so that the rear edge position of DY comes to the center of the two marked lines and fasten DY as d=d' (Figure 1-3-4). Further insert the rubber wedge between DY and CPT funnel from the top and raise DY backwards.

FIGURE 1-3-4



(10) Set CPT axis direction magnetic field of the artificial magnetic field according to the artificial magnetic field setting list classified by destination. (The direction of the magnetic field should be from the CPT screen side to the neck side.)

(11) After degaussing it from outside, check the purity in each color to R, G and B visually. Then, turn the screen to white and check the landing at the screen position shown in Fig. 1-3-5 with a microscope.

Criteria with microscope

There should be no miss landing at positions 2, 4, 8 and 10. Green beam should be at center of the green phosphor at position C. (Refer to the miss landing criteria.)

(12) Turn over the direction of CPT axis direction magnetic field of the next artificial magnetic field and check it by the same way as item (11). The positions of miss landing criteria with a microscope should be 2, 4, 8 and 10 (Figure 1-3-5).

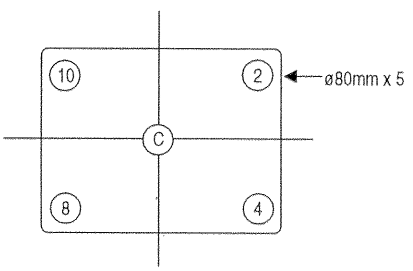


FIGURE 1-3-5

Miss landing criteria

The following conditions are defined as miss landing. Each color beams shines on the phosphor of the applied color and there are phosphor parts which are not luminous (shaded parts in

the right figure) between the luminous parts and black matrix. Or, each color beam shines on the phosphor of not applied color.

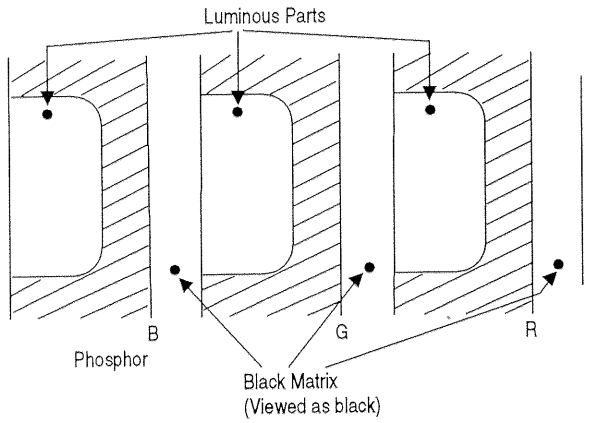


FIGURE 1-3-6 Enlarged view of screen with microscope

(13) To improve the miss landing mentioned above, it's acceptable to stick the permanent magnet to CPT funnel (Figures 1-3-7 and 1-3-8).

Usage

Apply a silicone rubber KE-40 WRTV to the permanent magnet shown in the Figure, adhere it to the CPT funnel and then fix it with permaseal tape P212.

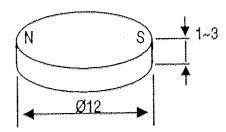
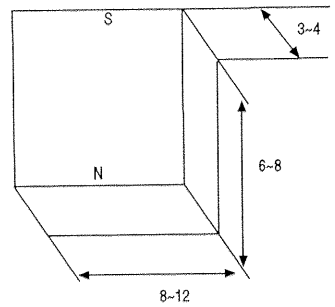
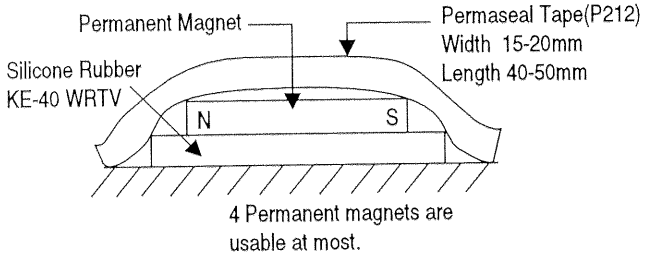


FIGURE 1-3-7





(14) Final purity criteria should satisfy the miss landing criteria.

(15) When delivering the sets, set CPT axis direction magnetic field to 0 Gauss and degauss it from outside.

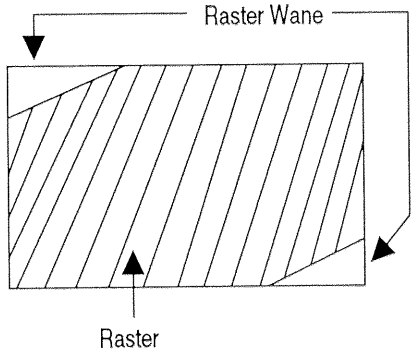
Table 3

Artificial magnetic field setting list classified by destination.

DESTINATION	Vertical Field	Horizontal Field
USA	0.45 G	0.3 G
CANADA	0.54 G	0.15 G
UNIVERSAL	0.35 G	0.3 G
PANAMA, HAWAII	0.2 G	0.3 G
TAIWAN	0.22 G	0.37 G

Notes for pre-heat

Before pre-heating, stick DY to CPT funnel and fix it so that the raster is perfect.



If the raster is imperfect like the left figure, CPT neck is in danger of cracking because the beam may hit it.

1-4 Static Convergence Adjustment (Screen center part) (Except ITC CPT)

(1) Receive a cross-hatch signal and set Brightness to the center and Contrast to minimum.

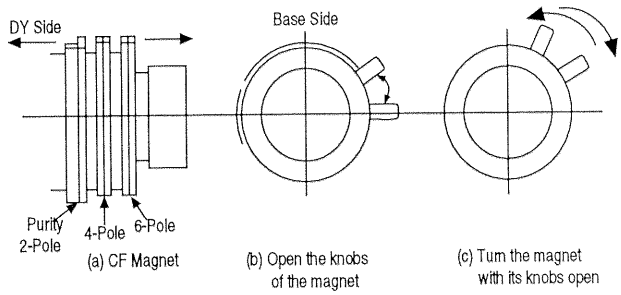


FIGURE 1-4-1

(2) Open the knobs of 4-pole magnet (2 sheets) (Figure 1-4-1(b)) and match the blue/red vertical lines at the center of the screen as shown in Figure 1-4-2(a).

(3) Turn the 4-pole magnet with its knobs open (Figure 1-4-1(c)) and match the blue/red horizontal lines as shown in Figure 1-4-2(b).

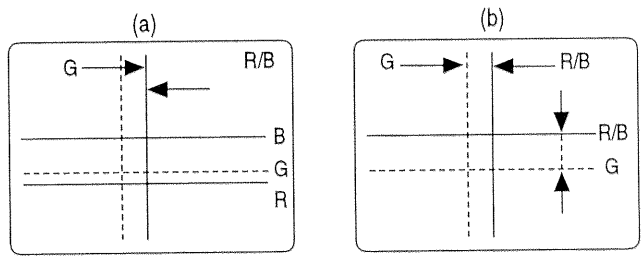


FIGURE 1-4-2

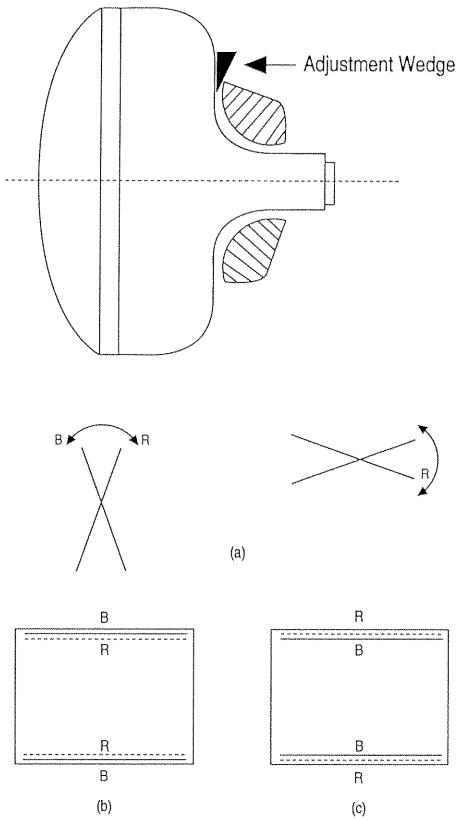
1-5 Dynamic Convergence adjustment (Except ITC CPT type)

(1) Insert an adjustment wedge (temporary) between the top of DY opening and CPT funnel as shown in Figure 1-5-1. By inserting the wedge gradually, match the red and blue vertical lines at the top and bottom of the screen and also match the red and blue horizontal lines of both sides of the screen as shown in Fig. 1-5-2(a).

(2) Adjust by swinging in the right/left directions of DY while observing 6 and 12 horizontal lines of the screen and match the red and blue horizontal lines. As shown in Fig. 1-5-2(b), when the blue is outside from the red on CPT screen, insert the DY fixing wedge between the right-side DY viewed from the rear of CPT and CPT funnel.

(3) As shown in Fig. 1-5-2(c), when the blue is inside from the red on CPT screen, insert the wedge between the left-side DY and CPT funnel.

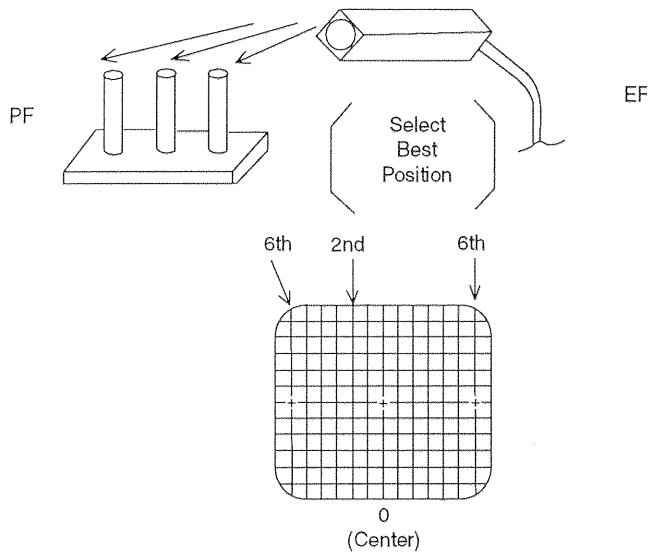
(4) Insert two DY fixing wedge with approximately 120 to the fixing wedge inserted in item (2) or (3) and remove the adjustment wedge (temporary). Use the DY fixing wedge after peeling off the tape. After proper location, press and adhere it to the funnel.



2. FOCUS ADJUSTMENT

NO.	MODEL	CPT	CONDITION	Focus VR setting position
1	32FX48B 32UX58B	A80LJF30X (W) (HED-US)	• Receive a cross-hatch signal • Contrast control: Maximum • Sharpness control: Center • Brightness control: Where the background is set	Turn the Focus VR gradually clockwise from the full counterclockwise. Then set it to the point where the focus of center vertical line from the screen center becomes best.
2	36UX58B	A90AHH50X01(V)	• Same as above	Turn the Focus VR gradually clockwise from the full counterclockwise. Then set it to the point where the focus of 2nd horizontal line from the screen center becomes best.
3	36FX48B	A90AEJ15X01	• Same as above	Turn the Focus VR gradually clockwise from the full counterclockwise. Then set it to the point where the focus of the 5th vertical line from the screen center becomes best.

CAUTION: Insert the connector PF/EF on CPT PWB to minimize width of horizontal lines as follows (only for A90AHH50X01(v) 36V CPT).



IX. MATCHING CHECK WITH OTHER INSTRUMENTS

1. VIDEO:1 INPUT TERMINAL MATCHING CHECK

Adjustment Preparation

(1) Input the video signal to VIDEO 1 IN terminal. The video signal level should be within 1±0.2 Vp-p (75 ohm termination) with 100% white signal at this time.
(2) Input the audio signal to the AUDIO 1 IN terminal. The audio signal should be 400m±20m Vrms at this time. (Connect VCR or TV tuner.)
(3) Connect a monitor TV to the VIDEO OUT terminals and connect an audio AMP to the AUDIO OUT terminals. (Or connect VIDEO IN and AUDIO IN terminals of a standard monitor instead.)

Adjustment Procedure

(1) Check that the set receives signal then select the Input mode by pressing the Input (FUNCTION) button of front side of set or remote control.
(2) When external input is performed, the video and audio should not be abnormal.
The 100% white signal that RF input receives should be as bright as the video signal 1Vp-p (75 ohm termination).
As for the sound, when the 100% modulation that RF input receives is 25KHZ, DIV., the sound level should be as much as external audio signal (400 Vrms) level.
(3) Refer to the next item (IV, 2-2).

2. VIDEO 2 INPUT TERMINAL MATCHING CHECK

Adjustment Preparation

(1) Same as 1 (1).

Adjustment Procedure

(1) Check that the set receives signal at Input 2 mode.

3. VIDEO:3 INPUT TERMINAL MATCHING CHECK

Adjustment Preparation

(1) Same as1 (1)

Adjustment Procedure

(1) Check that the set receives signal at Input 3 mode.

4. S-IN INPUT TERMINAL MATCHING CHECK

Adjustment Preparation

(1) Connect the video/chroma signal to S-IN terminal.
(2) Connect the sound signal to AUDIO input terminals.

Adjustment Procedure

(1) Check that the set receives signal at S-IN mode.

5. AUDIO OUT LEVEL CHECK

Adjustment Preparation

(1) Input the same audio signal at item 1(2) to AUDIO IN terminal (L). At this time, connect nothing to R terminal.
(2) Input the same audio signal as item 1(2) to AUDIO IN terminal (R). At this time, connect nothing to L terminal.
(3) Check that the normal sound is output from both sides of the speakers when signal in item (1) is input.
(4) Check that the normal sound is output from only the right (R) speaker when signal in item (2) is input.

Adjustment Procedure

(1) Check that the audio output of AUDIO AMP connected to AUDIO HiFi OUT terminal or monitor changes according to "VOLUME" of the set.
(2) Confirm that the output level of item (1) should be 1 Vrms (2.8 Vp-p)±20%. (Above level is equivalent to VOL. MAX. 100% modulated signal input.)

X. SAFETY CHECK

1. POLARITY CHECK

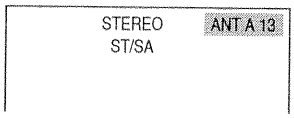
This check is performed according to UL standard requirement. There should be electricity between AC Power Cord and Chassis Earth.

XI. MTS OPERATION CHECK

1. STEREO/SA BROADCAST RECEIVING CHECK

Adjustment Preparation

(1) Set the TV set so that a MTS broadcast (STEREO/SAP) can be received.



(2) Set MTS mode to STEREO or SAP mode.
Note: To select between "STEREO/SAP," display sound setting of MTS mode and Select AUDIO MENU (Advanced settings).

(3) Set BALANCE to the center.

Adjustment Procedure

(1) When one of the MTS broadcast stereo SAP is received, check that "ST" or "SA" is displayed on the screen.

(2) Stereo broadcast receiving check
- (a) Select MTS mode and press cursor ▶ button to display "STEREO" on the screen.
- (b) When only Lch signal is received, Lch sound comes out from the left speaker.
- (c) When only Rch signal is received, Rch sound comes out from the right speaker.
- (d) When monaural signal is received, monaural sound comes out from both the right and left speakers.

(3) SAP broadcast receiving check
- (a) Select MTS mode. Press sound button to display "SAP" on screen.
- (b) SAP signal comes out from both of the right and left speakers.
- (c) When to SAP signal, the sound on "MAIN" side (refer to (3)) comes out.

Note: When the channel selection is performed or RECALL button is operated, "ST" or "SA" is shown below the channel no. (approx. for 8 sec.)

2. MTS MODE CHECK

Adjustment Preparation

(1) Set the TV set so that a MTS broadcast (STEREO/SAP) can be received.

(2) Set BALANCE to the center.

Adjustment Procedure

(1) When "MTS MODE" is set to "MONO" mode, check that STEREO and MONO indication which have been ON are turned OFF and that monaural sound comes out from the right and left speakers.

(2) When "MTS MODE" is set to "STEREO" side, check that STEREO and MONO indication which have been OFF are turned ON and that STEREO and SA sound can be received.

3. STEREO SEPARATION CHECK

Adjustment Preparation

(1) Set the set so that a MTS broadcast (STEREO/SA) can be received.

(2) Make surround "OFF" or SRS, depending on the TV model.

(3) Set MTS MODE to "STEREO."

(4) Connect AUDIO OUT terminals L and R to an oscilloscope.

Adjustment Procedure

(1) When stereo L only signal (or R only signal) is received, check that the output level ratio of Lch and Rch is 15dB or more.

(Example)
When L only is received (100% modulation)

CH	Output Level
L	1.2 Vpp
R	0.21 Vpp or less

XII. SETTING FOR DELIVERY

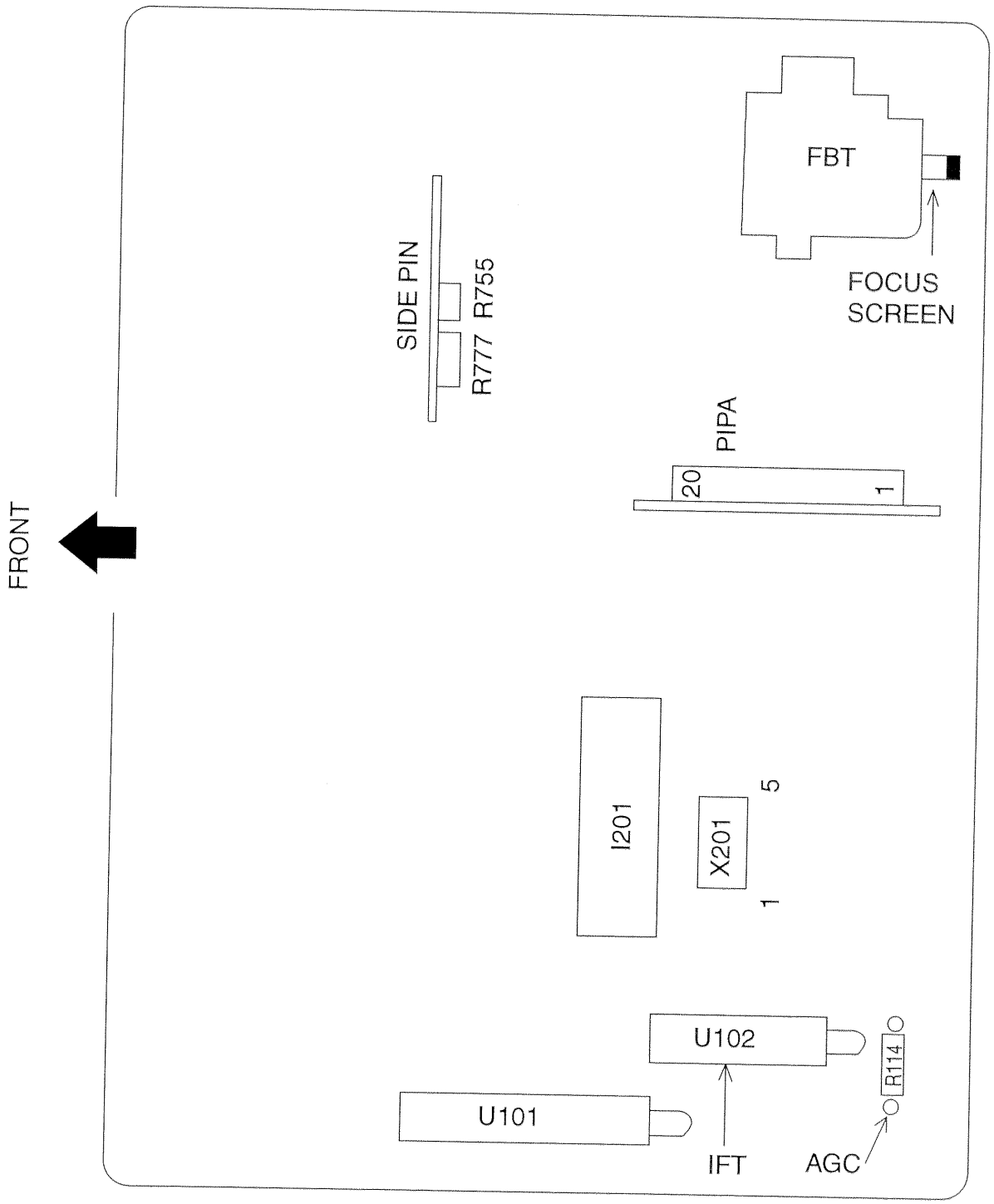
NAME	SPECIFICATION
SIGNAL SOURCE	ANTENNA ANT A / ANT B
RECEPTION CHANNEL	03 CH
SOUND VOLUME (VOL.)	"10" ON-SCREEN DISPLAY
INPUT SELECT	TV MODE (ANT A)
CONTRAST	MAX
COLOR	CENTER VALUE
TINT	SAME AS ABOVE
BRIGHT	SAME AS ABOVE
SHARPNESS	SAME AS ABOVE
COLOR TEMP.	COOL
BALANCE	CENTER VALUE
BASS	SAME AS ABOVE
TREBLE	SAME AS ABOVE
MTS MODE	STEREO
SRS (●) *	OFF
SURROUND ***	OFF
LOUDNESS	OFF
DYNAMIC BASS *	OFF
VOLUME CORRECTION	NO SETTING
AUTO NOISE CANCEL	OFF
INT. SP	ON
P in P CH	TV (03) OFF
CLOSED CAPTION	OFF
CLOSED CAPTION MODE	C.C.
CLOSED CAPTION CHANNEL	1
P in P POSITION	RIGHT BOTTOM
MENU LANGUAGE	ENGLISH
CHANNEL ID	NO SETTING
FAMILY FAVORITES	NO SETTING
CHILD LOCK	NO INSTALL (KEY No.:0000)
CLOCK SET	NO INSTALL (00:00 AM JAN 01 1998)
4 EVENT PROGRAM	NO SETTING
CHANNEL MEMORY	03~13CH
SP EVENT REMINDER	NO SETTING
AUTO LINK	OFF (ALL MODE)
VIDEO ID	NO SETTING
PLUG & PLAY	(ALL PAGE)

* Only for 36UX58B/CZ87 and 32UX58B/CY87

*** Not for 36UX58B/CZ87 and 32UX58B/CY87

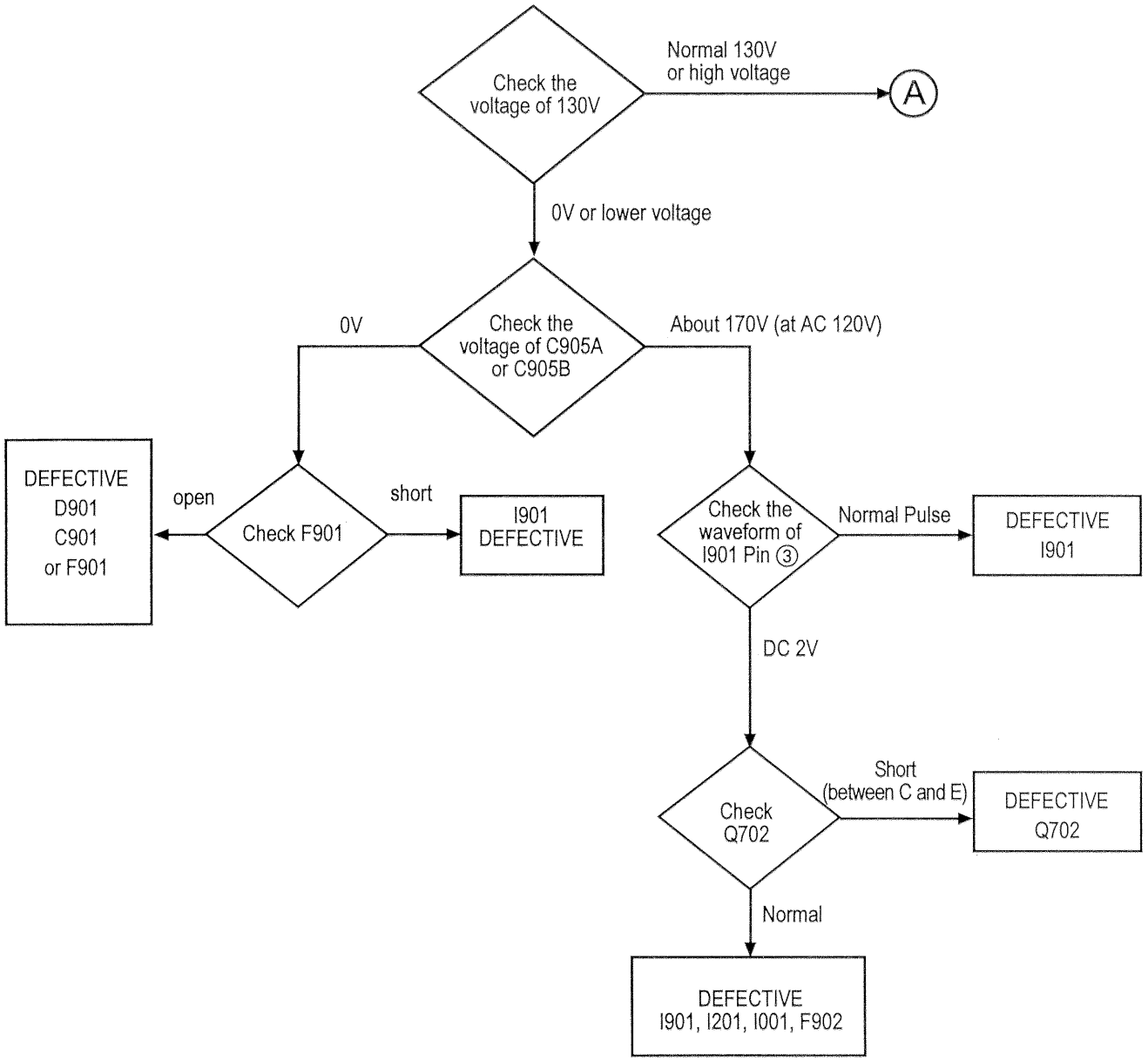
XIII. ADJUSTMENT POSITION LIST

1. M7LXU2 CHASSIS

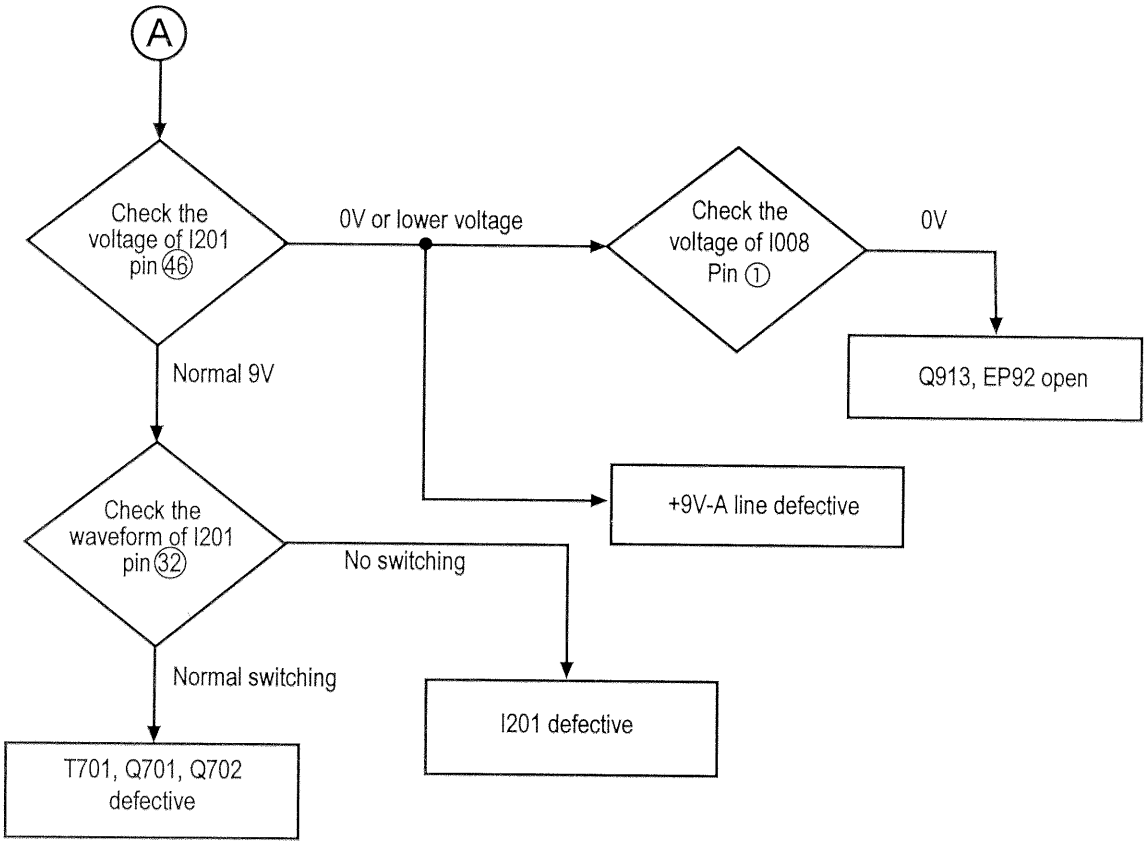


TROUBLESHOOTING

① NO RASTER AND SOUND

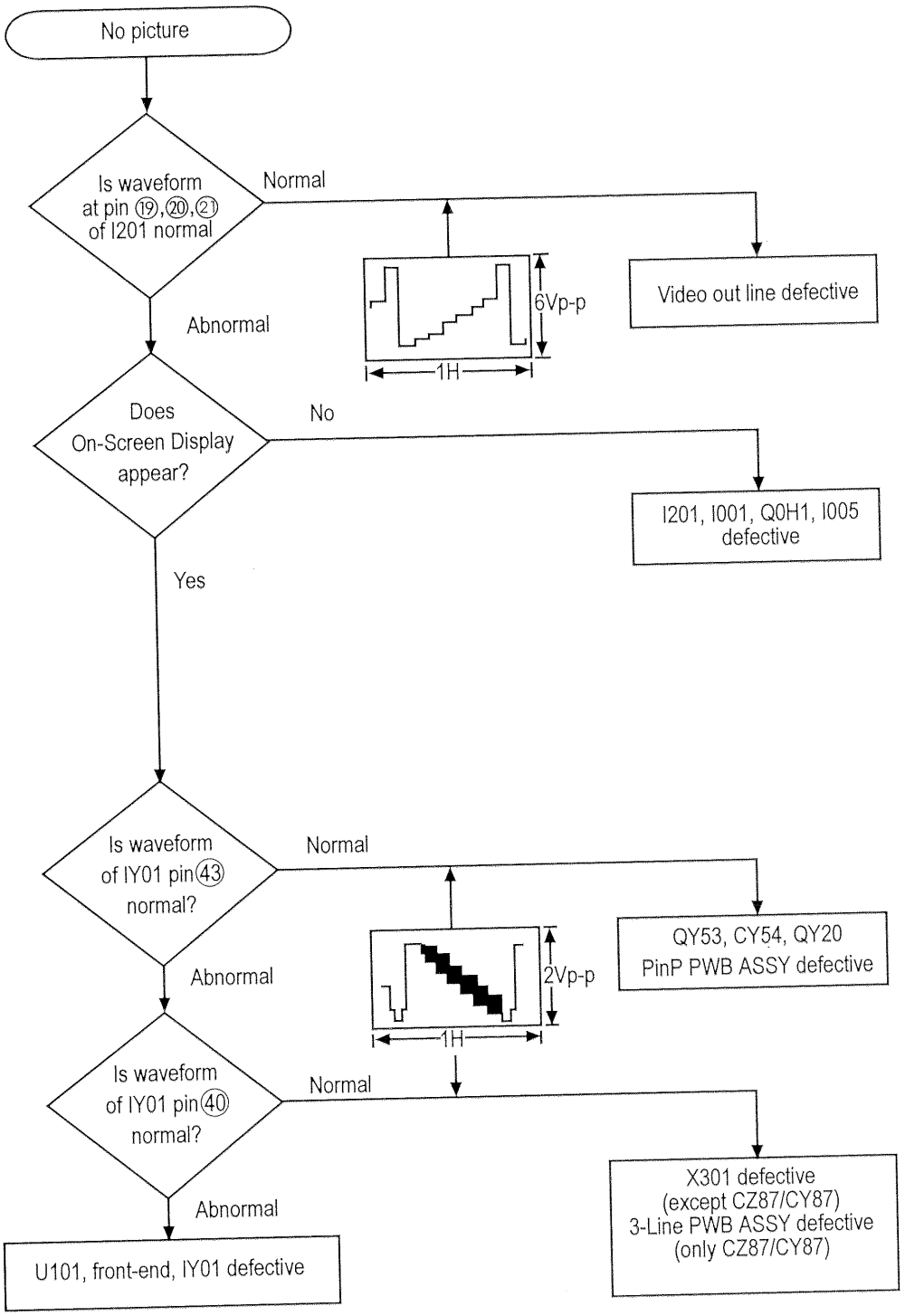


TROUBLESHOOTING



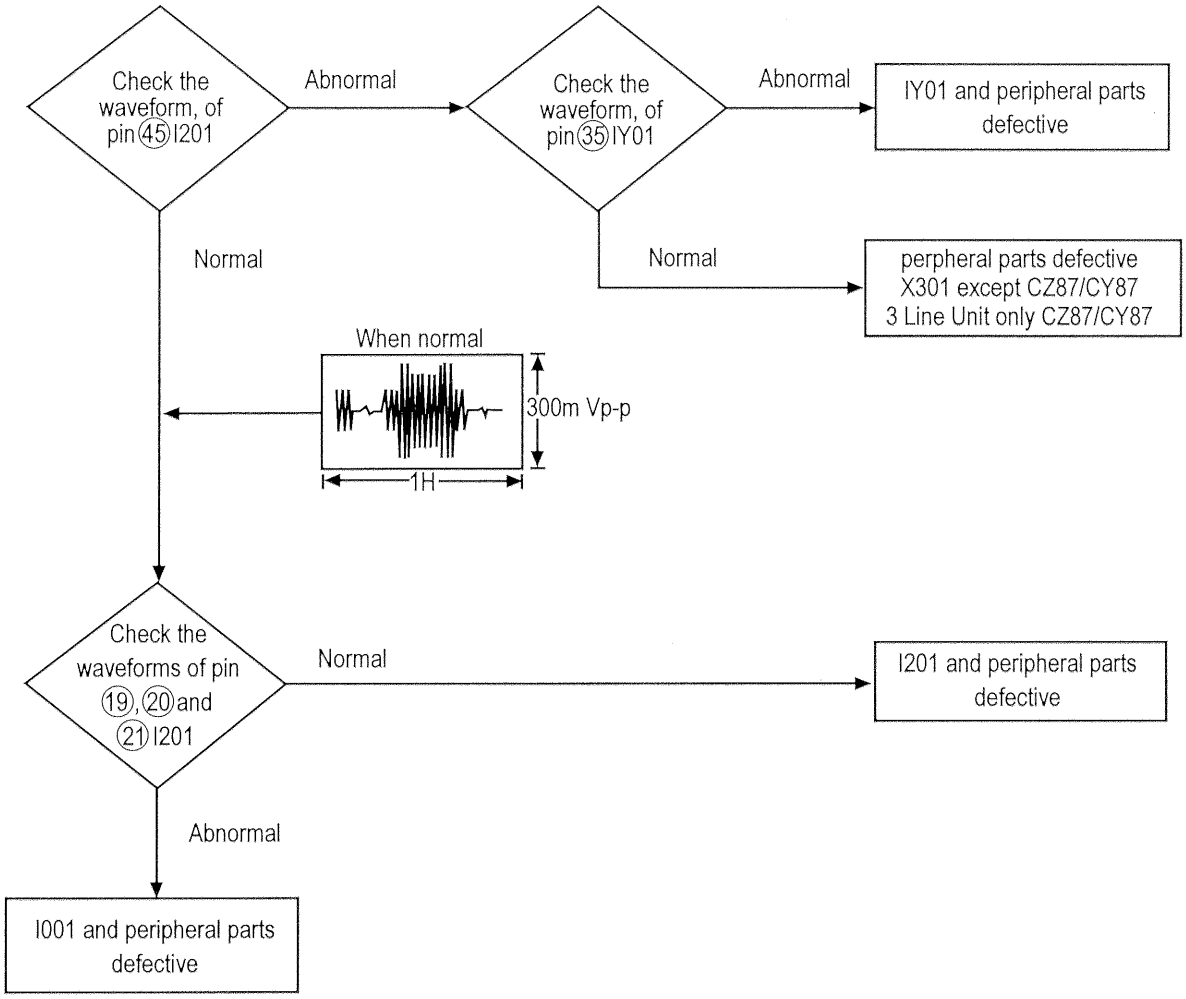
TROUBLESHOOTING

② NO PICTURE



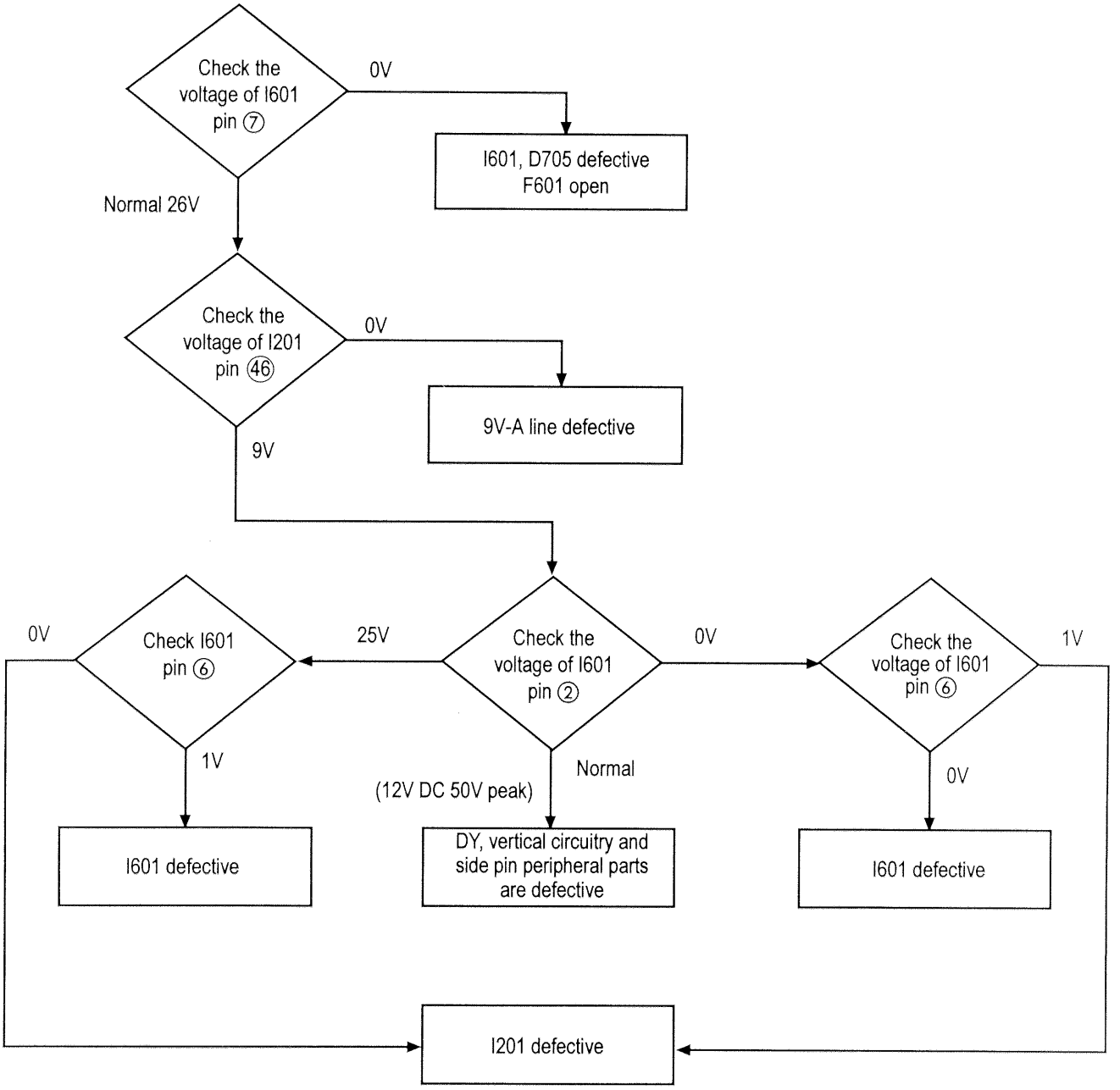
TROUBLESHOOTING

③ NO COLOR



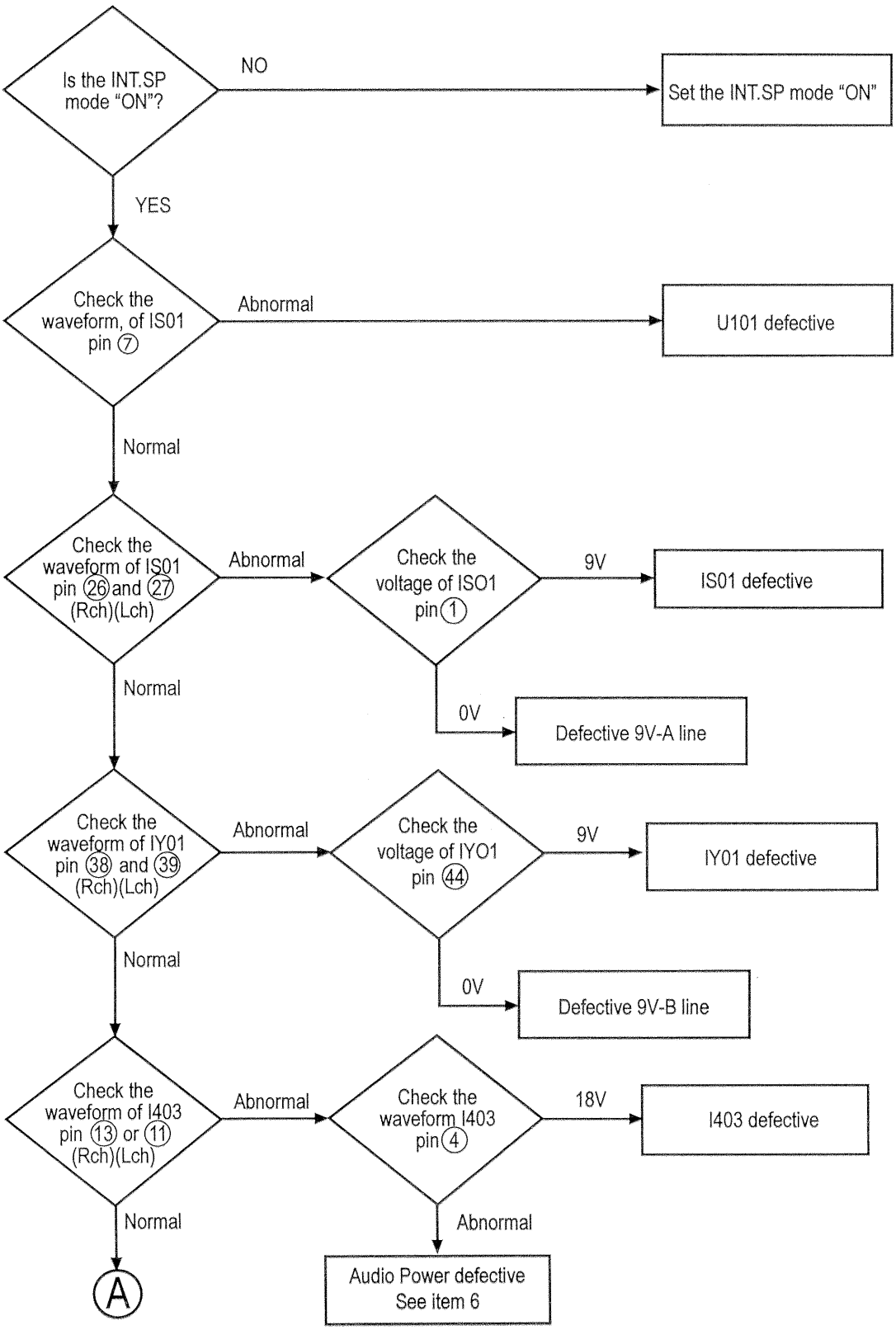
TROUBLESHOOTING

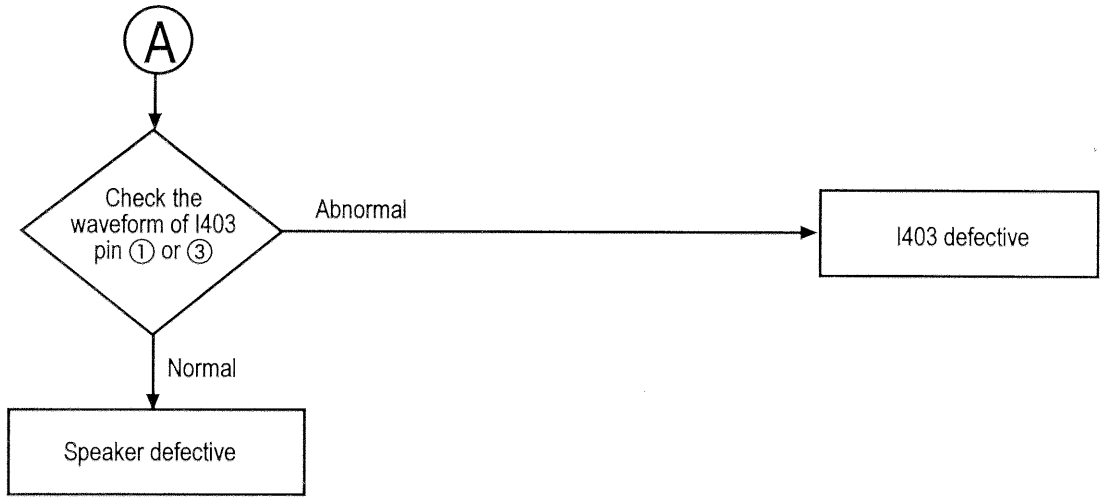
④ NO VERTICAL DEFECTION OR V. SIZE IS DISTORTED



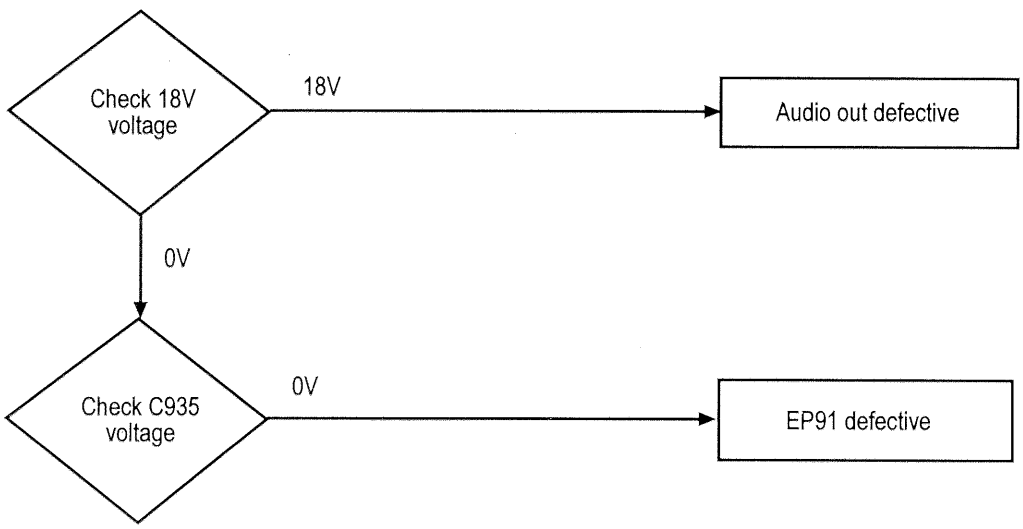
TROUBLESHOOTING

⑤ NO SOUND

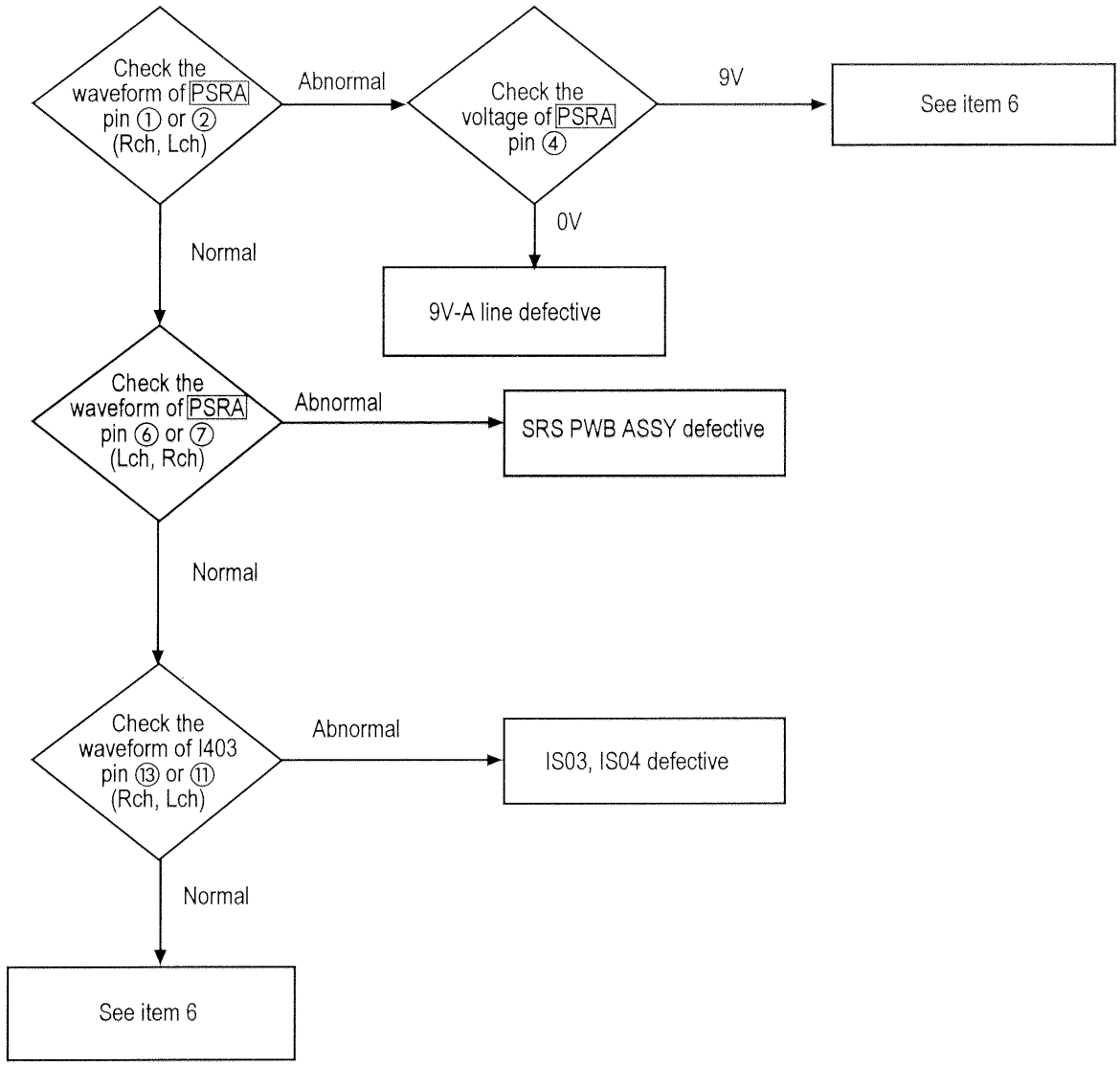




⑥ NO SOUND (NO AUDIO POWER)

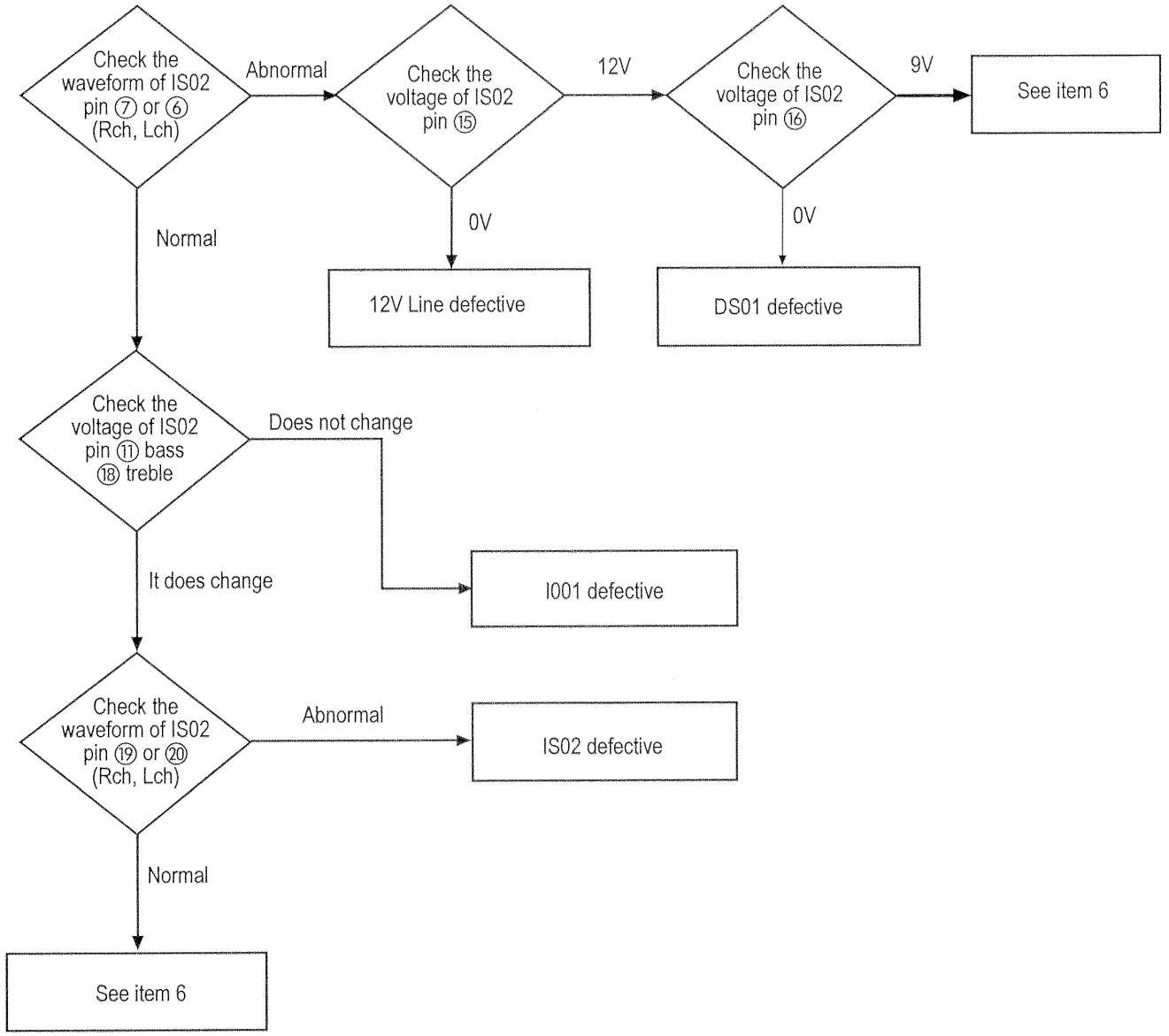


⑦ NO SOUND OR NOT VARIABLE (BASS, TREBLE)
CZ87/CY87 only



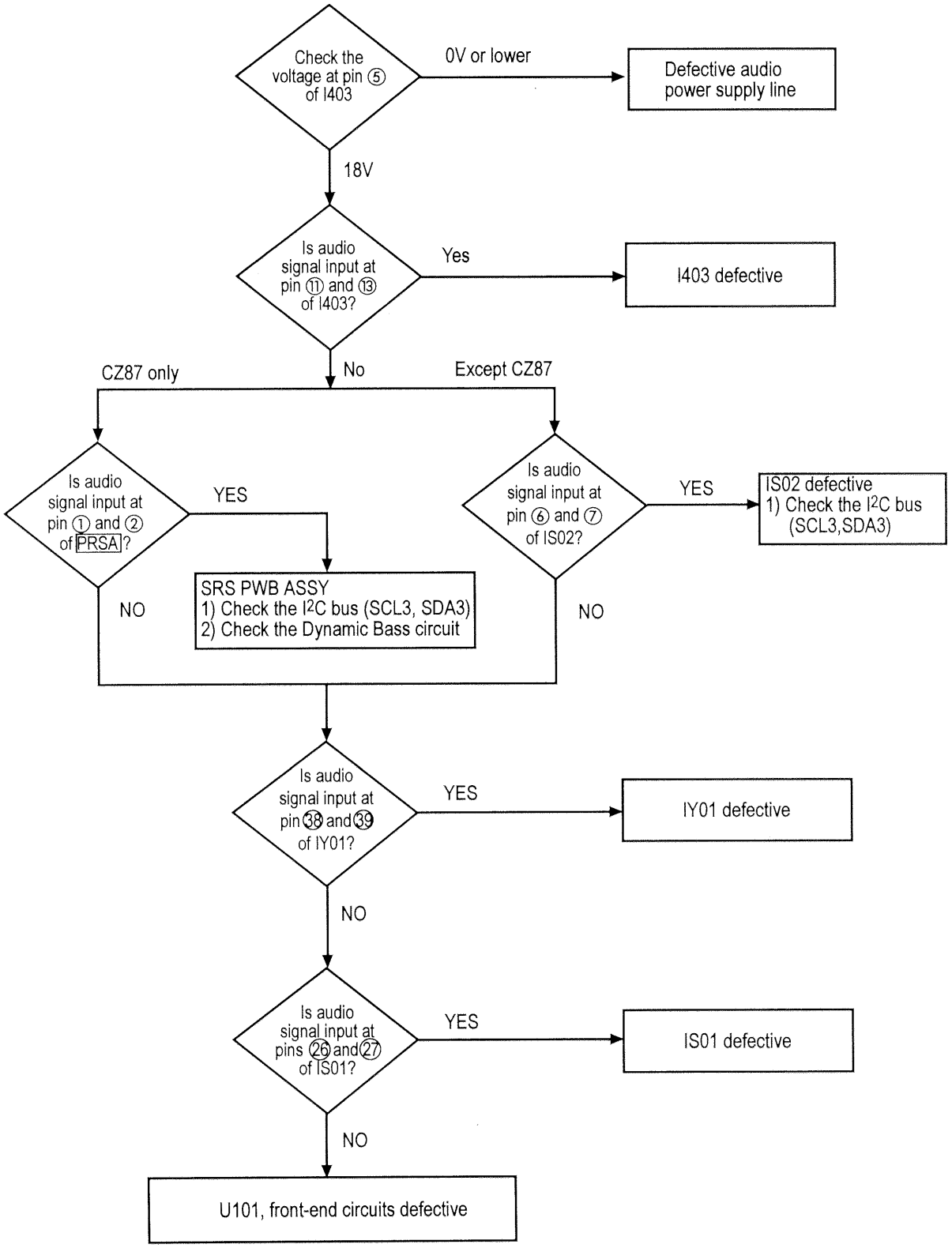
TROUBLESHOOTING

(7A) NO SOUND OR NOT VARIABLE (BASS, TREBLE) EXCEPT CZ87



TROUBLESHOOTING

⑧ NO SOUND (WHEN SURROUND OFF)



REPLACEMENT PARTS LIST

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ABBREVIATIONS

Capacitors:		Resistor:		Semiconductors:	
CD:	Ceramic Disc	CF:	Carbon Film	TR:	Transistor
PF:	Polyester Film	CC:	Carbon Composition	DI:	Diode
EL:	Electrolytic	MF:	Metal Oxide Film	ZD:	Zener Diode
PP:	Polypropylene	VR:	Variable Resistor	VA:	Varistor
PR:	Paper	WW:	Wire Wound	TH:	Thermistor
TA:	Tantalum	FR:	Fuse Resistor	IC:	Integrated Circuit
TM:	Trimmer	MG:	Metal Glaze		
MC:	Mylar				

SYMBOL NO.	PART NO.	PART DESCRIPTION		SYMBOL NO.	PART NO.	PART DESCRIPTION	
				CS13	0800279R	EL. 1.0UF-M 50V	
		MAIN P.W.B CAPACITORS		CS14	0292712F	TA. 3.3UF-K 16V	
				CS15	0292714F	TA. 10UF-K 16V	
CA01	0800279R	EL. 1.0UF-M 50V		CS16	0800279R	EL. 1.0UF-M 50V	
CA02	0800279R	EL. 1.0UF-M 50V		CS17	0800279R	EL. 1.0UF-M 50V	
CA03	0800279R	EL. 1.0UF-M 50V		CS21	0880052R	PF. 0.039UF-KEB 50V	(NOT CZ87)
CA04	0800279R	EL. 1.0UF-M 50V		CS22	0880009R	PF. 0.01UF-K 50V	(NOT CZ87)
CA05	0800279R	EL. 1.0UF-M 50V		CS23	0880052R	PF. 0.039UF-KEB 50V	(NOT CZ87)
CA06	0800279R	EL. 1.0UF-M 50V		CS24	0880052R	PF. 0.039UF-KEB 50V	(NOT CZ87)
CA07	0800279R	EL. 1.0UF-M 50V		CS25	0800279R	EL. 1.0UF-M 50V	(NOT CZ87)
CA08	0800279R	EL. 1.0UF-M 50V		CS26	0800279R	EL. 1.0UF-M 50V	(NOT CZ87)
CA34	0800291R	EL. 10UF-M 16V		CS27	0800291R	EL. 10UF-M 16V	(NOT CZ87)
CA37	0800291R	EL. 10UF-M 16V		CS28	0800291R	EL. 10UF-M 16V	(NOT CZ87)
CA40	0800291R	EL. 10UF-M 16V		CS29	0800291R	EL. 10UF-M 16V	(NOT CZ87)
CA41	0800291R	EL. 10UF-M 16V		CS30	0800335R	EL. 220UF-M 16V	(NOT CZ87)
CC01	0880009R	PF. 0.01UF-K 50V		CS31	0800366N	EL. 2200UF-10V SMG	(NOT CZ87)
CC02	0244141R	CD. 0.01UF-KB B 50V		CS32	0800291R	EL. 10UF-M 16V	(NOT CZ87)
CC03	0890077R	CD. 180PF-K 50V		CS33	0880041R	PF. 0.0056UF-KEB 50V	(NOT CZ87)
CC04	0880009R	PF. 0.01UF-K 50V		CS34	0800291R	EL. 10UF-M 16V	(NOT CZ87)
CC05	0890071R	CD. 56PF-J 50V		CS35	0800284R	EL. 3.3UF-M 50V	(NOT CZ87)
CC06	0880009R	PF. 0.01UF-K 50V	(NOT CZ87)	CS40	0890074R	CD. 100PF-J 50V	(NOT CZ87)
CC10	0880016R	PF. 0.1UF 50V		CS50	0800291R	EL. 10UF-M 16V	
CK268	0284638R	EL. 10UF-SME(BP) 16V		CS51	0890074R	CD. 100PF-J 50V	(NOT CZ87)
COM5	0800047R	EL. 100UF-M 6.3V		CS52	0800015R	EL. 10UF-M 16V	(CZ87)
CS01	0800326R	EL. 100UF-M 16V		CS53	0800015R	EL. 10UF-M 16V	(CZ87)
CS02	0800299R	EL. 22UF-M 16V		CS54	0284623R	EL. 1UF-SME(BP) 50V	(CZ87)
CS03	0800279R	EL. 1.0UF-M 50V		CS55	0880016R	PF. 0.1UF 50V	(CZ87)
CS04	0800288R	EL. 4.7UF-M 25V		CS56	0284623R	EL. 1UF-SME(BP) 50V	(CZ87)
CS05	0800279R	EL. 1.0UF-M 50V		CS57	0800009R	EL. 4.7UF-M 25V	(CZ87)
CS06	0800291R	EL. 10UF-M 16V		CS58	0800009R	EL. 4.7UF-M 25V	(CZ87)
CS07	0880016R	PF. 0.1UF 50V		CS59	0880016R	PF. 0.1UF 50V	(CZ87)
CS08	0880014R	MC. 0.047U		CS60	0800015R	EL. 10UF-M 16V	(CZ87)
CS09	0880016R	PF. 0.1UF 50V		CS61	0800015R	EL. 10UF-M 16V	(CZ87)
CS10	0880016R	PF. 0.1UF 50V		CS62	0800049R	EL. 100UF-M 16V	(CZ87)
CS11	0800279R	EL. 1.0UF-M 50V		CS63	0800049R	EL. 100UF-M 16V	(CZ87)
CS12	0800279R	EL. 1.0UF-M 50V		CS64	0800041R	EL. 47UF-M 16V	(CZ87)

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
CS66	0800015R	EL. 10UF-M 16V	C00R	0800326R	EL. 100UF-M 16V
CT01	0283127	TM. (RED)	C00T	0800039R	EL. 47UF-M 10V (NOT CZ87)
CY01	0284647R	EL. 22UF-SME(BP) 16V	C00T	0800047R	EL. 100UF-M 6.3V (CZ87)
CY04	0800299R	EL. 22UF-M 16V	C00X	0800288R	EL. 4.7UF-M 25V
CY05	0800299R	EL. 22UF-M 16V	C001	0800047R	EL. 100UF-M 6.3V
CY06	0800299R	EL. 22UF-M 16V	C002	0800282R	EL. 2.2UF-M 50V
CY07	0800299R	EL. 22UF-M 16V	C003	0880016R	PF. 0.1UF 50V
CY08	0800326R	EL. 100UF-M 16V	C004	0800039R	EL. 47UF-M 10V (NOT CZ87)
CY09	0880016R	PF. 0.1UF 50V	C004	0800047R	EL. 100UF-M 6.3V (CZ87)
CY14	0800353R	EL. 470UF-M 16V	C005	0880012R	MC. 0.022UF 0204249C
CY17	0800317R	EL. 47UF-M 16V	C007	0890089R	CD. 1500PF-K 50V
CY21	0284638R	EL. 10UF-SME(BP) 16V (NOT CZ87)	C008	0890089R	CD. 1500PF-K 50V
CY22	0880016R	PF. 0.1UF 50V	C009	0880016R	PF 0.1UF 50V
CY30	0800041R	EL. 47UF-M 16V (CZ87)	C010	0800279R	EL. 1.0UF-M 50V
CY31	0880009R	PF. 0.01UF-K 50V (CZ87)	C011	0890121R	CD. 33PF-J CH 50V
CY32	0880009R	PF. 0.01UF-K 50V	C012	0890121R	CD. 33PF-J CH 50V
CY33	0800326R	EL. 100UF-M 16V	C013	0890118R	CD. 22PF-J CH 50V
CY34	0800326R	EL. 100UF-M 16V	C014	0890114R	CD. 10PF-D CH 50V
CY35	0880009R	PF. 0.01UF-K 50V	C015	0890087R	CD. 1000PF-K 50V
CY36	0880009R	PF. 0.01UF-K 50V	C022	0880012R	MC. 0.022U 020
CY37	0800317R	EL. 47UF-M 16V	C023	0880009R	PF. 0.01UF-K 50V
CY51	0880016R	PF. 0.1UF 50V	C027	0284638R	EL. 10UF-SME(BP) 16V
CY52	0800291R	EL. 10UF-M 16V	C028	0800291R	EL. 10UF-M 16V
CY53	0890067R	CD. 39PF-J 50V	C030	0800288R	EL. 4.7UF-M 25V
CY55	0890077R	CD. 180PF-K 50V (CZ87)	C032	0890087R	CD. 1000PF-K 50V
CY55	0890078R	CD. 220PF-K 50V (CY85)	C033	0800009R	EL. 4.7UF-M 25V (CZ87)
CY55	0890079R	CD. 270PF-K 50V (CZ85)	C034	0880015R	PF. 0.068UF-K 50V
CY75	0800299R	EL. 22UF-M 16V	C035	0284638R	EL. 10UF-SME(BP) 16V
CY76	0880009R	PF. 0.01UF-K 50V	C040	0880009R	PF. 0.01UF-K 50V
CY80	0880009R	PF. 0.01UF-K 50V	C05A	0284623R	EL. 1UF-SME(BP) 50V
C0AH	0890074R	CD. 100PF-J 50V	C05C	0800291R	EL. 10UF-M 16V
C0A1	0248700R	CD. 680PF-J SL 50V	C050	0800288R	EL. 4.7UF-M 25V
C0A2	0800279R	EL. 1.0UF-M 50V	C052	0890087R	CD. 1000PF-K 50V
C0A3	0880057R	PF. 0.1UF-KEB 50V	C053	0800324R	EL. 100UF-M 6.3V (CY85)
C0A4	0890123R	CD. 47PF-J CH 50V	C054	0800324R	EL. 100UF-M 6.3V
C0A5	0890065R	CD. 22F-J 50V	C1O8	0800326R	EL. 100UF-M 16V
C0A6	0800279R	EL. 1.0UF-M 50V	C101	0800291R	EL. 10UF-M 16V
C0A7	0890078R	CD. 220PF-K 50V	C102	0244141R	CD. 0.01UF-KB B 50V
C0A8	0800317R	EL. 47UF-M 16V	C104	0800324R	EL. 100UF-M 6.3V
C0C1	0800351R	EL. 470UF-M 6.3V	C105	0244105R	CD. 2200PF-K 50V TAPE
C0C2	0244141R	CD. 0.01UF-KB B 50V	C106	0244141R	CD. 0.01UF-KB B 50V
C0C3	0800324R	EL. 100UF-M 6.3V	C107	0800361R	EL. 1000UF-M 16V
C0C4	0244141R	EL. 0.01UF-KB B 50V	C110	0244141R	CD. 0.01UF-KB B 50V
C0M1	0800324R	EL. 100UF-M 6.3V	C111	0244141R	CD. 0.01UF-KB B 50V
C00A	0800288R	EL. 4.7UF-M 25V	C112	0800361R	EL. 1000UF-M 16V
C00G	0800291R	EL. 10UF-M 16V	C113	0800324R	EL. 100UF-M 6.3V
C00H	0800291R	EL. 10UF-M 16V	C114	0244105R	CD. 2200PF-K 50V TAPE
C00K	0800291R	EL. 10UF-M 16V (NOT CY85)	C115	0244141R	CD. 0.01UF-KB B 50V

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
C116	0800291R	EL. 10UF-M 16V	C443	0800317R	EL. 47UF-M 16V
C117	0800326R	EL. 100UF-M 16V	C444	0800318R	EL. 47UF-M 25V
C118	0880009R	0.01UF-K 50V	C445	0800318R	EL. 47UF-M 25V
C119	0800324R	EL. 100UF-M 6.3V	C450	0800291R	EL. 10UF-M 16V
C201	0244105R	CD. 2200PF-K 50V TAPE	C485	0284623R	PF. 0.15UF-M 50V
C202	0800353R	EL. 470UF-M 16V	C486	0284623R	PF. 0.15UF-M 50V
C203	0244105R	CD. 2200PF-K 50V TAPE	C501	0244105R	CD. 2200PF-K 50V TAPE
C204	0800277R	EL. 0.47UF-M 50V (SME)	C502	0800361R	EL. 1000UF-M 16V
C205	0890089R	CD. 1500PF-K 50V	C503	0800291R	EL. 10UF-M 16V
C206	0890089R	CD. 1500PF-K 50V	C504	0800003R	EL. 1.0UF-M 50V
C207	0800277R	EL. 0.47UF-M 50V (SME)	C505	0800279R	EL. 1.0UF-M 50V
C208	0244105R	CD. 2200PF-K 50V TAPE	C506	0800288R	EL. 4.7UF-M 25V
C209	0800353R	EL. 470UF-M 16V	C508	0800288R	EL. 4.7UF-M 25V
C210	0880014R	MC. 0.047U	C509	0800282R	EL. 2.2UF-M 50V
C211	0890089R	CD. 1500PF-K 50V	C510	0890061R	CD. 10PF- 50V
C212	0800317R	EL. 47UF-M 16V	C511	0880012R	MC. 0.022UF
C299	0890085R	CD. 680UF-K 50V	C512	0800277R	EL. 0.47UF-M 50V (SME)
C3F0	0800291R	EL. 10UF-M 16V	C513	0800326R	EL. 100UF-M 16V
C3F1	0800326R	EL. 100UF-M 16V	C514	0244105R	CD. 2200PF-K 50V TAPE
C3F2	0800291R	EL. 10UF-M 16V	C515	0800279R	EL. 1.0UF-M 50V
C301	0880009R	PF. 0.01UF-K 50V	C550	0800326R	EL. 100UF-M 16V
C302	0890083R	CD. 470PF-K 50V	C551	0880016R	PF. 0.1UF 50V
C303	0880016R	PF. 0.1UF 50V	C552	0880016R	PF. 0.1UF 50V
C304	0890076R	CD. 150PF-K 50V	C553	0880016R	PF. 0.1UF 50V
C305	0800291R	EL. 10UF-M 16V	C554	0890074R	CD. 100PF-J 50V
C306	0890083R	CD. 470PF-K 50V	C555	0890074R	CD. 100PF-J 50V
C309	0880009R	PF. 0.01UF-K 50V	C60A	0880044R	PF. 0.01UF-KEB 50V
C310	0800326R	EL. 100UF-M 16V	C60C	0292718R	TA. 2.2UF 20V
C312	0284634R	EL. 4.7UF-M 50V	C60E	0800282R	EL. 2.2UF-M 50V
C4F0	0800288R	EL. 4.7UF-M 25V	C603	0800326R	EL. 100UF-M 16V
C4F1	0800288R	EL. 4.7UF-M 25V	C604	0890071R	CD. 56PF-J 50V
C401	0800326R	EL. 100UF-M 16V	C606	0800328R	EL. 100UF-M 35V (NOT CY85)
C402	0800291R	EL. 10UF-M 16V	C606	0800076F	EL. 470UF-M 35V (CY85)
C403	0800015R	EL. 10UF-M 16V	C609	0800367R	EL. 2200UF-M 16V
C404	0800049R	EL. 100UF-M 16V (CZ87)	C610	0880012R	MC. 0.022U 020
C410	0800291R	EL. 10UF-M 16V	C611	0279693R	PF. 0.1UF
C411	0800291R	EL. 10UF-M 16V	C612	0880062R	PF. 0.22UF-KEB 50V
C430	0880203R	PF. 0.47UF-J 50V	C613	0292712F	TA. 3.3UF-K 16V (CY85)
C431	0880203R	PF. 0.47UF-J 50V	C613	0292718F	TA. 2.2UF-K 20V (CZ87CZ85)
C432	0800292R	EL. 10UF-M 25V	C7H9	0890084R	CD. 560PF-K 50V
C434	0890087R	CD. 1000PF-K 50V	C71A	AJ00138	CD. 2200PF-DC 2KV (CY85)
C435	0890087R	CD. 1000PF-K 50V	C71C	0244105R	CD. 2200PF-K 50V TAPE
C437	0800326R	EL. 100UF-M 16V	C71F	0243506R	CD. 270PF-K 500V
C438	0800362R	EL. 1000UF-M 25V	C71H	0244715F	CD. 180FP 2KV (NOT CY85)
C441	0800362R	EL. 1000UF-M 25V (NOT CZ87)	C714	0880009R	PF. 0.01UF-K 50V
C441	0800368N	EL. 2200UF-M 25V (CZ87)	C715	0247842R	CD. 33PF-SL 500V
C442	0800362R	EL. 1000UF-M 25V (NOT CZ87)	C716	0880019R	PF. 0.33UF-KB 50V
C442	0800368N	EL. 2200UF-M 25V (CZ87)	⚠ C718	0244215	CD. 2200PF-DC 2KV

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SYMBOL NO.	PART NO.	PART DESCRIPTION		SYMBOL NO.	PART NO.	PART DESCRIPTION	
C719	AJ00137	CD. 1800PF-K 2KV	(CY85)			**SUB PWB CAPACITORS**	
C719	AJ00138	CD. 2200PF-DC 2KV	(NOT CY85)				
C72A	0244501R	CD. 1000PF-K 500V		CA70	0800041R	EL. *47UF-M 16V*	(NOT CY85)
C72C	0800352R	EL. 470UF-M 10V		CA71	0800015R	EL. 10UF-M 16V	(NOT CY85)
C720	0244501R	CD. 1000PF-K 500V		CA72	0800015R	EL. 10UF-M 16V	(NOT CY85)
C721	0262429F	PP. 12000PF-J 1800	(CY85)	CM02	0880009R	PF. 0.01UF-K 50V	(NOT CY85)
C721	0262432F	PP. 15000PF-J 1800V	(NOT CY85)	CM04	0880009R	PF. 0.01UF-K 50V	(NOT CY85)
⚠ C722	0299707F	PP. 0.015UF-K 630V	(CY85)	CV01	0800001R	EL. 0.47UF-M 50V (SME)	(Only CZ87)
⚠ C722	0299708F	PP. 0.018UF-K 630V	(NOT CY85)	CV04	0890081R	CD. 330PF 50V	(Only CZ87)
C723	0263001	EL. 3.3UF-M 100V		CV05	0800049R	EL. 100UF-M 16V	(Only CZ87)
⚠ C724	0299931F	PP. 0.27UF-K 200V		CV06	0880009R	PF. 0.01UF-K 50V	(Only CZ87)
⚠ C725	0800279R	EL. 1.0UF-M 50V		CV09	0890074R	CD. 100PF-J 50V	(Only CZ87)
C726	0299931F	PP. 0.27UF-K 200V	(CY85)	CV10	0244541F	CD. 0.01MF-K B 500V	(Only CZ87)
C726	0299932F	PP. 0.33UF-K 200V	(NOT CY85)	CV11	0890074R	CD. 100PF-J 50V	(Only CZ87)
⚠ C728	0800064R	EL. 330UF-M 6.3V		CV12	0244509R	CD. 4700PF-KB B 500V	(Only CZ87)
C73A	0800317R	EL. 47UF-M 16V		CV13	0253959F	EL. 47UF-M 160V	(Only CZ87)
C73H	0244503R	CD. 1500PF-K 500V TAPE		CV14	0253959F	EL. 47UF-M 160V	(Only CZ87)
C73J	0880003R	MC. 0.001U		CV15	0253957F	EL. 22UF-M 160V	(Only CZ87)
C730	0800363R	EL. 1000UF-M 35V		CV16	0247848R	CD. 56PF-J SL 500V	(Only CZ87)
C732	0800361R	EL. 1000UF-M 16V		CV17	0800074N	EL. 470UF-M 16V	(Only CZ87)
C735	0243508R	CD. 390PF-K 500V		CV18	0800042R	EL. 47UF-M 25V	(Only CZ87)
C736	0244501R	CD. 1000PF-K 500V		CV19	0253959F	EL. 47UF-M 160V	(Only CZ87)
⚠ C737	0800019R	CD. 10UF-M 63V		CV20	0244541F	CD. 0.01MF-K B 500V	(Only CZ87)
C738	AL00031F	EL. 33UF-M 250V		CV21	0244171R	CD. 0.01UF-Z F 50V TAPE	(Only CZ87)
C74A	0800354R	EL. 470UF-M 25V		CV22	0880016R	PF. 0.1UF 50V)	(Only CZ87)
C74H	0243508R	CD. 390PF-K 500V		CV23	0800015R	EL. 10UF-M 16V	(Only CZ87)
C742	0254823G	EL. 100UF-M 160V		CV24	0800041R	EL. 47UF-M 16V	(Only CZ87)
C747	0880016R	PF. 0.1UF 50V		CV28	0890076R	CD. 150PF-K 50V	(Only CZ87)
C748	0800291R	EL. 10UF-M 16V		CV54	0890077R	CD. 180PF-K 50V	(Only CZ87)
C749	0800326R	EL. 100UF-M 16V		CY70	0800015R	EL. 10UF-M 16V	(NOT CY85)
C75C	0800279R	EL. 1.0UF-M 50V		C630	0880054R	PF. 0.056UF-KEB 50V	(NOTCZ87CZ85)
C75E	0880013R	MC. 0.033UF-K 50V		C630	0880056R	PF. 0.082UF-KEB 50V	(CZ87CZ85)
C75K	0800344R	EL. 330UF-M 16V		C630	0880014R	MC. 0.047U	(CZ83)
C750	0800317R	EL. 47UF-M 16V		C631	0800041R	EL. 47UF-M 16V	
C751	0800291R	EL. 10UF-M 16V		C632	0880004R	MC. 0.0015U	
C752	0244501R	CD. 1000PF-K 500V		C632	0880015R	EL. 10UF-M 16V	(NOT CZ87CZ85)
C753	0800291R	EL. 10UF-M 16V		C633	0800005R	EL. 2.2UF-M 50V	
C754	0880016R	PF. 0.1UF 50V		C634	0800003R	EL. 1.0UF-M 50V	
C755	0880005R	MC. 0.0022U		C637	0800294R	EL. 10UF-M 50V	
C757	0880009R	PF. 0.01UF-K 50V		C638	0800282R	EL. 2.2UF-M 50V	
C76A	0243508R	CD. 390PF-K 500V		C735	0243508R	EL. 0.1UF 50V	
C76D	0890089R	CD. 1500PF-K 50V		C750	0800282R	EL. 2.2UF-M 50V	
C76E	0890085R	CD. 680PF-K 50V		C751	0800291R	EL. 47UF-M 50V	
C76F	0890086R	CD. 820PF-K 50V		C752	0244501R	EL. 1UF-SME(BP) 50V	
C781	0880016R	PF. 0.1UF 50V		C851	0800326R	EL. 100UF-M 16V	
C793	0800041R	EL. 47UF-M 16V		C859	0255524F	EL. 4.7MF-M 250V (KME)	
				C860	AJ00560	CD. 2200PF-K B 2KV	
				C866	0880009R	PF. 0.01UF-K 50V	

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
C874	0890087R	CD. 1000PF-K 50V			**MAIN PWB DIODES**
C875	0890087R	CD. 1000PF-K 50V			
C876	0890087R	CD. 1000PF-K 50V	DC01	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C877	0890074R	CD. 100PF-J 50V	DC02	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C878	0890074R	CD. 100PF-J 50V	DS01	2339868M	ZD HZS9C2 TAPE (NOT CZ87)
C879	0890074R	CD. 100PF-J 50V	D0A1	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C880	0890083R	CD. 470PF-K 50V (CZ85CY85)	D0H1	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C880	0890083R	CD. 470PF-K 50V (CY85)	DOM1	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C880	0890085R	CD. 680PF-K 50V (NOT CY85)	DOM2	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C881	0890083R	CD. 470PF-K 50V	DOM3	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C882	0890084R	CD. 560PF-K 50V	D00A	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
C884	0880009R	PF. 0.01UF-K 50V			(NOT CY85)
⚠C901	AN00144S	PF. (0.1UF250V)	D00C	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
⚠C902	AN00144S	PF. (0.1UF250V)			(NOT CY85)
⚠C903	0248593F	CD. 4700PF-Z 250V	D00E	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
⚠C904	0248593F	CD. 4700PF-Z 250V			(NOT CY85)
C905A	0253891	EL. 470UF 200V	D00F	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C905B	0253891	EL. 470UF 200V	D00G	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C906	0800291R	EL. 10UF-M 16V	D00H	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
C908	0800345R	EL. 330UF-M 25V (SME)			(NOT CY85)
C909	0890087R	CD. 1000PF-K 50V	D00J	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C911	AJ00559	CD. 2200PF 2KV	D00K	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C913	0890083R	CD. 470PF-K 50V			(NOT CZ87)
⚠C915	0890089R	CD. 1500PF-K 50V	D00T	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
⚠C920	0253974F	EL. 33UF 250V	D00X	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
⚠C930	0249392F	CD. 2200PF 125V	D001	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
⚠C930	0800368F	EL. 2200UF-M 25V	D002	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C936	0253862	EL. 220UF-M 160V	D003	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C937	0800295R	EL. 10UF-M 63V	D004	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C938	0284408F	EL. 1000UF 16V	D005	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C939	0800333R	EL. 220UF-M 6.3V	D006	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C940	0880016R	PF. 0.1UF 50V	D007	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C941	0800279R	EL. 1.0UF-M 50V	D008	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C942	0800333R	EL. 220UF-M 6.3V	D009	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C945	0800333R	EL. 220UF-M 6.3V	D010	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C946	0800059R	EL. 220UF-M 25V	D011	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C947	0800324R	EL. 100UF-M 6.3V	D019	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C948	0800326R	EL. 100UF-M 16V	D020	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C953	0800326R	EL. 100UF-M 16V	D021	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C954	0880009R	PF. 0.01UF-K 50V	D022	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C956	AJ00139	CD. 2700PF-K 2KV	D05A	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C957	0243507R	CD. 330PF-K 500V TAPE	D09A	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
C959	0800299R	EL. 22UF-M 16V	D09C	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
C960	0800336R	EL. 220UF-M 25V	D09D	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
C961	0243507R	CD. 330PF-K 500V TAPE	D09E	2339867M	ZD HZS-9-C1 TAPE (SI.200MA)
C992	0243507R	CD. 330PF-K 500V TAPE	D099	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
C993	0243507R	CD. 330PF-K 500V TAPE	D101	2339837M	ZD HZS-5C1 TAPE
			D102	2339971M	ZD HZS33-1 TA

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION		SYMBOL NO.	PART NO.	PART DESCRIPTION	
D103	2339837M	ZD HZS-5C1 TAPE		D72H	2339851M	ZD HZS7A1 TAPE	(SI.200MA)
D104	2339971M	ZD HZS33-1 TA		D726	2398611M	DI SI 4NSEC	SI 4NSEC
D153	2339837M	ZD HZS-5C1 TAPE		D73A	2339846M	ZD HZS6B3	TA
D154	2339868M	ZD HZS9C2 TAPE		D73C	2339481M	DI AS01Z (200 TAPE)	SI 0.6A
D155	2339868M	ZD HZS9C2 TAPE		D73H	CH00031M	DI AU02V1(280V)	
D299	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC	D741	2339491M	DI AM01Z (200 TAPE)	1A
D393	2339889M	ZD HZS12 (C3) 0.005A		D743	2339834M	ZD HZS5(B1) TAPE	
D394	2339889M	ZD HZS12 (C3) 0.005A		D745	2339491M	DI AM01Z (200 TAPE)	1A
D4F0	2339868M	ZD HZS9C2 TAPE	(NOT CY85)	D75A	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D4F1	2339868M	ZD HZS9C2 TAPE	(NOT CY85)	D750	2339868M	ZD HZS9C2 TAPE	
D401	2339812M	ZD HZS3A2 TA	(SI.200MA)	D751	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D402	2339812M	ZD HZS3A2 TA	(SI.200MA)	⚠D752	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D403	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC	D753	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D406	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC	D754	2339868M	ZD HZS9C2 TAPE	
D410A	2339812M	ZD HZS3A2 TA	(SI.200MA)	D755	2339868M	ZD HZS9C2 TAPE	
D411	2339812M	ZD HZS3A2 TA	(SI.200MA)	D756	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D412	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC	D760	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D441	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D5A1	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D5A2	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D5A3	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D501	2339819M	ZD HZS3C3 TA					
D502	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D552	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D553	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D554	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC				
D555	2339842M	ZD HZS6A2 TA					
D556	2339868M	ZD HZS9C2 TAPE					
D557	2339868M	ZD HZS9C2 TAPE					
D558	2339868M	ZD HZS9C2 TAPE					
D560	2339868M	ZD HZS9C2 TAPE					
D604	2339491M	DI AM01Z (200 TAPE)	1A			**SUB PWB DIODES**	
D605	2339222M	ZD HZS27-2L					
D606	2339222M	ZD HZS27-2L		DA70	2339885M	ZD HZS12B2 TA	(NOT CY85)
D702	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC	DA71	2339885M	ZD HZS12B2 TA	(NOT CY85)
D705	CH00031M	DI AU02V1(280V)		DV01	2339491M	DI AM01Z (200 TAPE) 1A	(Only CZ87)
D707	2339242M	ZD HZS33L2 TAPE		DV02	2339491M	DI AM01Z (200 TAPE) 1A	(Only CZ87)
⚠D708	2339223M	ZD HZS27 (3L)		DV03	2339491M	DI AM01Z (200 TAPE) 1A	(Only CZ87)
D709	2339242M	ZD HZS33L2 TAPE		DV04	2339491M	DI AM01Z (200 TAPE) 1A	(Only CZ87)
D710	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC	DV05	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D71A	2339481M	DI AS01Z (200 TAPE)	SI 0.6A			(Only CZ87)	
D713	2339491M	DI AM01Z (200 TAPE)	1A	DV06	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D715	2338944	DI FML-G12S(F)(200V)	SI 0.04US			(Only CZ87)	
⚠D716	2348511	DI RS3FS		D626	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
⚠D717	2348511	DI RS3FS	(NOT CY85)			(CZ87CZ85)	
⚠D718	2336612M	DI RU3AM TA		D627	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D72A	2339849M	ZD HZS6C3 TA		D628	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC
D72H	2339851M	ZD HZS7A1 TAPE	(SI.200MA)	D719	2398611M	DI 1SS254 TAPE (35V)	SI 4NSEC

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SYMBOL NO.	PART NO.	PART DESCRIPTION
D720	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D721	2339971M	ZD HZS33-1 TA
D722	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D8O5	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D804	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D806	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D807	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D808	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D809	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D810	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D820	2339601M	ZD HZS-2 TAPE (ALL) SI 400MW
D821	2339601M	ZD HZS-2 TAPE (ALL) SI 400MW
D822	2339601M	ZD HZS-2 TAPE (ALL) SI 400MW
D823	2339868M	ZD HZS9C2 TAPE
D825	2339868M	ZD HZS9C2 TAPE
D826	2339868M	ZD HZS9C2 TAPE
D827	2339868M	ZD HZS9C2 TAPE
D828	2339868M	ZD HZS9C2 TAPE
D829	2339868M	ZD HZS9C2 TAPE
D830	2339868M	ZD HZS9C2 TAPE
⚠ D901	2342062	DI D3SBA60-4103
D902	2339481M	DI AS01Z (200 TAPE) SI 0.6A
D903	2339981M	ZD HZS36-1 TA
D905	2339481M	DI AS01Z (200 TAPE) SI 0.6A
D906	2339481M	DI AS01Z (200 TAPE) SI 0.6A
D909	2339481M	DI AS01Z SI 0.6A
D910	2339481M	DI AS01Z SI 0.6A
D920	CH00031M	DIODE AU02V1 (280V)
D921	CH00031M	DIODE AU02V1 (280V)
D923	2339868M	ZD HZS9C2 TAPE
D924	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D930	2339481M	DI AS01Z (200 TAPE) SI 0.6A
D931	2339491M	DI AM01Z (200 TAPE) 1A
D932	2338944	DI FML-G12S (F) (200V) SI 0.04US
D934	2349861	DI FMU-G16S DI FMU-G16S
D936	2338944	DI FML-G12S (F) (200V) SI 0.04US
D937	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D938	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D939	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D940	2339223M	ZD HZS27 (3L)
D941	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D942	2339882M	ZD HZS-12(A2) TAPE
D943	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D946	2339868M	ZD HZS9C2 TAPE
D947	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D948	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
D951	2339491M	DI (200 TAPE) 1A
D952	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC

SYMBOL NO.	PART NO.	PART DESCRIPTION
D955	2398611M	DI 1SS254 TAPE (35V) SI 4NSEC
		MAIN PWB PLUGS AND CONN.
EAN	29740895	4J CONNECTOR L=220
EGND	2956487	CONNECTOR CO-01C-A0R0-551 (NOT CY85)
EGND	2956488	1J MINI-AMPIN CONNECTOR (CY85)
EVM1	EF06141	7J BOARD-IN CONNECTOR (430) (Only CZ87)
EY1	2974162S	6J CONNECTOR L=620
EY2	2976675	2P PLUG PIN WITH BASE
		SUB PWB FUSE HOLDERS, CONN.
EF	2956484	CONN. W/WIRE MINI 1J(L80)W/AMP IN (CZ87CZ85)
EF901	2720641	FUSE HOLDER
EF902	2720641	FUSE HOLDER
E851	EY00302	CPT-SOCKET(S) (NOTCZ87CZ85)
E851	2698675	SOCKET CPT SOCKET(15.24) (CZ87CZ85)
⚠ E901	2972841	AC POWER CORD (FILTER IN)
		MAIN PWB FUSES
⚠ F601	2722382	FUS-DC0.75A-J/UL(L)
		SUB PWB FUSES
⚠ F901	2722359	FUSE AC06A
⚠ F902	2722357	FUSE AC04A
		SUB PWB SURGE PROTECTOR
⚠ G901	2340741	SURGE PROTECTOR DSP-301N-S00B
		SUB PWB SPARK GAP
G801	2340037	SPARK GAP
		MAIN PWB CONDENSERS WITH 3 TERMINALS
H001	2791754R	CONDENSER WITH 3 TERMINAL 100PF
H002	2791754R	CONDENSER WITH 3 TERMINAL 100PF
H003	2791754R	CONDENSER WITH 3 TERMINAL 100PF

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H004	2791754R	CONDENSER WITH 3 TERMINAL 100PF	J30F	2673602	US13 (CY85)
H006	2791754R	CONDENSER WITH 3 TERMINAL 100PF			
H007	2791754R	CONDENSER WITH 3 TERMINAL 100PF			**SUB PWB JACKS**
H008	2791754R	CONDENSER WITH 3 TERMINAL 100PF			
H009	2791754R	CONDENSER WITH 3 TERMINAL 100PF	J31F	ES00023	JACK (NOT CY85)
		SUB PWB ANALOG IC, FILTER			**MAIN PWB INDUCTORS/COILS**
HM01	CZ00501U	ANALOG MONOLITHIC IC (PIC-21043SR) (NOT CY85)	LC01	2122945M	COIL-AXIAL 15UHKM BELTING
⚠H901	2793313	CP-EXN-G131P365L	LS01	BH00697R	COIL 100UH
			LS03	BH00697R	COIL 100UH (CZ87)
			LS04	BH00697R	COIL 100UH (CZ87)
		MAIN PWB INTEGRATED CIRCUITS	LY01	BH00697R	COIL 100UH
			LY04	2122956M	COIL-AXIAL 100UHKM BELTING
IS01	CP04041	UPC1854CT	LY08	2122253M	COIL-AXIAL 100UH-K (CZ87)
IS02	2004901	IC TA8776N (NOT CZ87)	LY09	2122253M	COIL-AXIAL 100UH-K
IS03	2362602	IC UPC4558 (CZ87)	LY10	2122253M	COIL-AXIAL 100UH-K
IS04	2362602	IC UPC4558 (CZ87)	LY11	2122253M	COIL-AXIAL 100UH-K
IY01	2020452	ANALOG MONOLITHIC IC (CXA1545AS)	L0A1	2122253M	COIL-AXIAL 100UH-K
I001	CP04244	DIGITAL MONOLITHIC IC (LC864148B)	L0A2	2122253M	COIL-AXIAL 100UH-K
I002	CP04021U	ST24C08	L001	BH00101	OSC COIL
I003	2003522R	IC PST572D-2 (ANALOG IC)	L003	2122253M	COIL-AXIAL 100UH-K
I004	2362651	IC HD14053B	L005	BH00697R	COIL 100UH (NOTCY85)
I005	CP04111	Z89313	L010	2122956M	COIL-AXIAL 100UHKM BELTING
I008	2366361	IC.AN7805	L012	2122253M	COIL-AXIAL 100UH-K
I009	CZ00461R	RESET IC BMR-4201FT TAPE	L05A	BH00697R	COIL 100UH
I201	CP04301	TA1268N	L101	2122253M	COIL-AXIAL 100UH-K
I301	2381211	IC M51494L	L102	2122253M	COIL-AXIAL 100UH-K
⚠I403	CP04061	ANALOG MONOLITHIC IC (LA4603)	L103	2122253M	COIL-AXIAL 100UH-K
I601	2913981	IC AN5521	L104	BH00697R	COIL 100UH
			L202	2122253M	COIL-AXIAL 100UH-K
			L204	BJ00131	VCO TANK COIL 52.37MHZ
		SUB PWB INTEGRATED CIRCUITS	L205	2122945M	COIL-AXIAL 15UHKM BELTING
			L3F1	BH00697R	COIL 100UH 100UH
I621	2362601	IC HA17458PS	L302	BH00697R	COIL 100UH 100UH
⚠I901	CT00004	STR-F6516	L501	2122253M	COIL-AXIAL 100UH-K
⚠I902	2000465	IC PS2501-1 (KC/LC)	L550	2122956M	COIL-AXIAL 100UHKM BELTING
⚠I904	2000465	IC PS2501-1 (KC/LC)	L601	BH00204R	FILTER COIL
I931	2381344	IC SE130N	L701	2122652M	FERRITE CORE
			L702	2124513	COIL-H. LINEARITY M1LXU1
		MAIN PWB JACKS ECT.	L703	2771893	FERITE BEADS CORE (005)
			⚠L704	2275381	COIL-CHOKING 1000UH
JS01	2693851	TERMINAL JXT1043	L705	2123781R	FILTER COIL 101K
JY01	ES00141	8P A/V JACK	L709	BH00206R	FILTER COIL 27UH (NOT CZ87)
JY01	2693886	TERMINAL (TERMINAL BO (Only CZ87)	L709	BH00207R	FILTER COIL 33UH (ONLY CZ87)
JY02	ES00131	(Only CZ87)	L71A	2122652M	FERRITE CORE

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION
L710	BH00688R	COIL 22UH
L711	2122652M	FERRITE CORE
L751	2122938M	COIL-AXIAL 4.7UHKM BELTING
		SUB PWB INDUCTORS/COILS
LV01	BH00684R	COIL (Only CZ87)
LV02	2123468M	FERRITE BEADS CORE LEAD 0.8MH (Only CZ87)
LV03	2123468M	FERRITE BEADS CORE LEAD 0.8MH (Only CZ87)
LV04	2123468M	FERRITE BEADS CORE LEAD 0.8MH (Only CZ87)
LV07	BH00695R	COIL 68UH (Only CZ87)
LV07	BH00697R	COIL 100UH (ONLY CY85)
L851	BH00689R	COIL 27UH
L852	BH00689R	COIL 27UH
L853	BH00689R	COIL 27UH
L854	2122253M	COIL-AXIAL 100UH-K
L855	2122253M	COIL-AXIAL 100UH-K
L856	2122253M	COIL-AXIAL 100UH-K
L857	2123468M	FERRITE BEADS CORE LEAD 0.8MH
L858	2123468M	FERRITE BEADS CORE LEAD 0.8MH
L859	2123468M	FERRITE BEADS CORE LEAD 0.8MH
L860	2123468M	FERRITE BEADS CORE LEAD 0.8MH
L861	2123468M	FERRITE BEADS CORE LEAD 0.8MH
L862	2123468M	FERRITE BEADS CORE LEAD 0.8MH
L863	2123468M	FERRITE BEADS CORE LEAD 0.8MH
⚠ L901	2169462	LINE FILTER COIL FX--7355-60
⚠ L902	2169462	LINE FILTER COIL FX--7355-60
L904	2124365	DC NOISE FILTER
L905	2122652M	FERRITE CORE
L906	2122652M	FERRITE CORE
L907	2122652M	FERRITE CORE
L908	2122652M	FERRITE CORE
L909	2122652M	FERRITE CORE
L910	2122652M	FERRITE CORE
L930	2122652M	FERRITE CORE
L932	2122652M	FERRITE CORE
L933	2122652M	FERRITE CORE
L934	2122652M	FERRITE CORE
L935	2122652M	FERRITE CORE
L936	2122652M	FERRITE CORE
L941	2122652M	FERRITE CORE
L942	2122652M	FERRITE CORE
L950	BZ01932	DC NOISE FILTER

SYMBOL NO.	PART NO.	PART DESCRIPTION
		MAIN PWB TRANSISTORS
QC01	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QC02	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QC03	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QC04	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QC05	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QS01	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (CZ87)
QS02	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (CZ87)
QS03	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (CZ87)
QS04	2320591M	TRS. 2SC458 SI 230MHZ (CZ87)
QY07	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QY08	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QY20	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
QY50	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QY51	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QY52	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QY53	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QY54	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
QY55	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q0H1	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q0H2	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q00A	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q00B	2320631M	TRS. 2SA673 (B 26TZ/C 26TZ) SI 80MHZ
Q001	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q002	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q004	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q005	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q006	2320631M	TRS. 2SA673 (B 26TZ/C 26TZ) SI 80MHZ
Q007	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q008	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q009	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q010	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q011	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q012	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q013	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q014	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q015	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION
Q016	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q020	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q021	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q101	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q151	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q152	2320637M	TRS. 2SA673 (C 26TZ/D 26 SI 80MHZ
Q153	2320637M	TRS. 2SA673 (C 26TZ/D 26 SI 80MHZ
Q201	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q3F0	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q301	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q401	2320637M	TRS. 2SA673 (C 26TZ/D 26 SI 80MHZ
Q402	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q403	2320637M	TRS. 2SA673 (C 26TZ/D 26 SI 80MHZ
Q404	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q405	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q406	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q410	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q411	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q412	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q501	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q551	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q70A	2320647M	TRS. 2SC1213 (C 21 TZ/D ; SI 80MHZ4
Q70H	2320647M	TRS. 2SC1213 (C 21 TZ/D ; SI 80MHZ4 (NOT CZ87)
Q70H	2323523M	TRS. 2SD789 D TAPE
Q701	2323523M	TRS. 2SD789 D TAPE
⚠ Q702	2315275F	TRS. 2SC4589-06 (1500V)
Q703	2320637M	TRS. 2SA673 (C 26TZ/D 26 SI 80MHZ
Q708	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q710	2320637M	TRS. 2SA673 (C 26TZ/D 26 SI 80MHZ
Q717	2323523M	TRS. 2SD789 D TAPE
Q718	2320637M	TRS. 2SA673 (C 26TZ/D 26 SI 80MHZ
Q719	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q752	2323434	TRS. 2SC1983 (O/Y)
Q753	2320631M	TRS. 2SA673 (B 26TZ/C 26 SI 80MHZ
Q754	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
		SUB PWB TRANSISTORS
QA70	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (NOT CY85)
QA71	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (NOT CY85)

SYMBOL NO.	PART NO.	PART DESCRIPTION
QV01	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ (Only CZ87)
QV02	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (Only CZ87)
QV03	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (Only CZ87)
QV04	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (Only CZ87)
QV05	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ (Only CZ87)
QV06	2327772M	TRS.2SC3413 TAPE (B/C) SI 200MHZ (Only CZ87)
QV07	2320647M	TRS. 2SC1213 (C 21 TZ/D 21 TSI 80MHZ (Only CZ87)
QV08	2321351M	TRS.2SA836/844D/E 100MA200MW 200MHZSI (Only CZ87)
QV09	2315381	TRS. 2SA1837 (Only CZ87)
QV10	2315391	TRS. 2SC4793 (Only CZ87)
QV11	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ (Only CZ87)
QV12	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ (Only CZ87)
Q650	2320598M	TRS. 2SC458 (B TZ/C TZ/D TZ)
Q651	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q750	2320596M	TRS. 2SC458 (C TZ/D TZ) SI 230MHZ
Q751	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ
Q851	2315491	TRS. 2SC4544
Q852	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q854	2315491	TRS. 2SC4544 TRS. 2SC4544
Q855	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q857	2315491	TRS. 2SC4544 TRS. 2SC4544
Q858	2320591M	TRS. 2SC458 (B TZ/C TZ) SI 230MHZ
Q859	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ
Q901	2323782	THYRISTOR 03P2M
Q905	2323782	THYRISTOR 03P2M
Q907	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ
Q908	2327883M	TRS. 2SA1207 (S/T) SI 150MHZ
Q909	2320637M	TRS. 2SA673 (C 26TZ/D 26TZ) SI 80MHZ
Q913	2323431	TRS. 2SC1983
Q914	2323431	TRS. 2SC1983
Q915	2321321M	SI 200MHZ SI 200MHZ
Q916	2320596M	SI 230MHZ SI 230MHZ
Q921	2320596M	SI 230MHZ SI 230MHZ
Q922	2324322M	TRS. 2SC2610-05 TZ TAPE

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
			RS04	0100123M	CF. 1/8W 270K-JB
		MAIN PWB RESISTORS	RS05	0700027M	CF. 1/16W 100-JB
			RS06	0700027M	CF. 1/16W 100-JB
RA01	0700051M	CF. 1/16W 5.6K-JB	RS07	0187076M	CF. 1/16W 3.0K-JB
RA02	0700051M	CF. 1/16W 5.6K-JB	RS08	0187082M	CF. 1/16W 5.1K-JB
RA03	0700051M	CF. 1/16W 5.6K-JB	RS09	0187094M	CF. 1/16W 16K-JB
RA04	0700051M	CF. 1/16W 5.6K-JB	RS10	0700037M	CF. 1/16W 560-JB
RA05	0700051M	CF. 1/16W 5.6K-JB	RS11	0100127M	CF. 1/8W 390K-JB (NOT CZ87)
RA06	0700051M	CF. 1/16W 5.6K-JB	RS12	0110211S	MF. (NOT CZ87)
RA07	0700051M	CF. 1/16W 5.6K-JB	RS21	0700054M	CF. 1/16W 10K-JB
RA08	0700051M	CF. 1/16W 5.6K-JB	RS22	0700054M	CF. 1/16W 10K-JB (CZ85CY85)
RA11	0700041M	CF. 1/16W 1.0K-JB	RS23	0700054M	CF. 1/16W 10K-JB (CZ85CY85)
RA12	0700041M	CF. 1/16W 1.0K-JB	RS24	0700054M	CF. 1/16W 10K-JB (CZ85CY85)
RA50	0100065M	CF. 1/8W 1K-JB	RS25	0700027M	CF. 1/16W 100-JB (NOT CZ87)
RA51	0100113M	CF. 1/8W 100K-JB	RS26	0700051M	CF. 1/16W 5.6K-JB
RA52	0100065M	CF. 1/8W 1K-JB	RS27	0700027M	CF. 1/16W 100-JB (NOT CZ87)
RA53	0100113M	CF. 1/8W 100K-JB	RS50	0700045M	CF. 1/16W 2.2K-JB (CZ87)
RA58	0100065M	CF. 1/8W 1K-JB	RS51	0700045M	CF. 1/16W 2.2K-JB (CZ87)
RA59	0100113M	CF. 1/8W 100K-JB	RS52	0700045M	CF. 1/16W 2.2K-JB (CZ87)
RA60	0100065M	CF. 1/8W 1K-JB	RS53	0700045M	CF. 1/16W 2.2K-JB (CZ87)
RA61	0100113M	CF. 1/8W 100K-JB	RS54	0700063M	CF. 1/16W 47K-JB
RA64	0100123M	CF. 1/8W 270K-JB	RS55	0700063M	CF. 1/16W 47K-JB (CZ87)
RA65	0100123M	CF. 1/8W 270K-JB	RS56	0700051M	CF. 1/16W 5.6K-JB (CZ87)
RA66	0100123M	CF. 1/8W 270K-JB	RS57	0700043M	CF. 1/16W 1.5K-JB (CZ87)
RA67	0100123M	CF. 1/8W 270K-JB	RS58	0700051M	CF. 1/16W 5.6K-JB (CZ87)
RC02	0700027M	CF. 1/16W 100-JB	RS59	0700051M	CF. 1/16W 5.6K-JB (CZ87)
RC04	0700027M	CF. 1/16W 100-JB	RS60	0700043M	CF. 1/16W 1.5K-JB (CZ87)
RC05	0700032M	CF. 1/16W 220-JB	RS61	0700051M	CF. 1/16W 5.6K-JB (CZ87)
RC06	0700036M	CF. 1/16W 470-JB	RS62	0700045M	CF. 1/16W 2.2K-JB (CZ87)
RC07	0700038M	CF. 1/16W 680-JB	RS63	0700054M	CF. 1/16W 10K-JB (CZ87)
RC08	0700044M	CF. 1/16W 1.8K-JB	RS64	0700045M	CF. 1/16W 2.2K-JB (CZ87)
RC09	0700056M	CF. 1/16W 15K-JB	RS65	0700054M	CF. 1/16W 10K-JB (CZ87)
RC10	0700055M	CF. 1/16W 12K-JB	RS66	0700067M	CF. 1/16W 100K-JB (CZ87)
RC11	0700041M	CF. 1/16W 1.0K-JB	RS67	0700037M	CF. 1/16W 560-JB (CZ87)
RC12	0700053M	CF. 1/16W 8.2K-JB	RS68	0700067M	CF. 1/16W 100K-JB (CZ87)
RC13	0700027M	CF. 1/16W 100-JB	RS69	0700054M	CF. 1/16W 10K-JB (CZ87)
RC14	0700027M	CF. 1/16W 100-JB	RS70	0700067M	CF. 1/16W 100K-JB (CZ87)
RC15	0700039M	CF. 1/16W 820-JB	RS71	0700037M	CF. 1/16W 560-JB (CZ87)
RC16	0100038M	CF. 1/8W 75-JB	RS72	0700054M	CF. 1/16W 10K-JB (CZ87)
RC18	0700057M	CF. 1/16W 18K-JB	RS73	0700067M	CF. 1/16W 100K-JB (CZ87)
RC19	0700035M	CF. 1/16W 390-JB	RS74	0700032M	CF. 1/16W 220-JB (CZ87)
RC20	0700027M	CF. 1/16W 100-JB	RS75	0700032M	CF. 1/16W 220-JB (CZ87)
RC21	0700058M	CF. 1/16W 22K-JB	RS76	0700049M	CF. 1/16W 4.7K-JB (CZ87)
RC22	0700058M	CF. 1/16W 22K-JB	RS77	0700049M	CF. 1/16W 4.7K-JB (CZ87)
RK314	0100057M	CF. 1/8W 470-JB	RY01	0700027M	CF. 1/16W 100-JB
RS01	0100121M	CF. 1/8W 220K-JB	RY02	0700027M	CF. 1/16W 100-JB
RS02	0700041M	CF. 1/16W 1.0K-JB	RY05	0700027M	CF. 1/16W 100-JB
RS03	0100133M	CF. 1/8W 680K-JB	RY06	0700027M	CF. 1/16W 100-JB

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
RY07	0700027M	CF. 1/16W 100-JB	R0A9	0700036M	CF. 1/16W 470-JB
RY09	0700041M	CF. 1/16W 1.0K-JB	R0C1	0700047M	CF. 1/16W 3.3K-JB
RY10	0700041M	CF. 1/16W 1.0K-JB	R0C2	0700054M	CF. 1/16W 10K-JB
RY11	0700041M	CF. 1/16W 1.0K-JB	R0C3	0700036M	CF. 1/16W 470-JB
RY12	0700027M	CF. 1/16W 100-JB	R0C4	0700041M	CF. 1/16W 1.0K-JB
RY14	0700027M	CF. 1/16W 100-JB	R0C5	0700041M	CF. 1/16W 1.0K-JB
RY15	0700027M	CF. 1/16W 100-JB	R0C6	0700043M	CF. 1/16W 1.5K-JB
RY20	0700027M	CF. 1/16W 100-JB	R0C7	0700043M	CF. 1/16W 1.5K-JB
RY21	0100061M	CF. 1/8W 680-JB	R0C8	0700051M	CF. 1/16W 5.6K-JB
RY31	0100038M	CF. 1/8W 75-JB	R0C9	0700043M	CF. 1/16W 1.5K-JB
RY32	0100038M	CF. 1/8W 75-JB	R0E1	0700043M	CF. 1/16W 1.5K-JB
RY35	0100038M	CF. 1/8W 75-JB	R0E2	0700051M	CF. 1/16W 5.6K-JB
RY39	0700034M	CF. 1/16W 330-JB	R0E3	0700051M	CF. 1/16W 5.6K-JB
RY40	0114137M	CF. 1/4W 180-JB	R0E4	0700037M	CF. 1/16W 560-JB
RY41	0100037M	CF. 1/8W 68-JB	R0E5	0700037M	CF. 1/16W 560-JB
RY42	0100113M	CF. 1/8W 100K-JB	R0E6	0700037M	CF. 1/16W 560-JB
RY44	0700054M	CF. 1/16W 10K-JB	R0E8	0700027M	CF. 1/16W 100-JB
RY45	0700039M	CF. 1/16W 820-JB	R0E9	0700027M	CF. 1/16W 100-JB
RY47	0700054M	CF. 1/16W 10K-JB	R0FA	0700041M	CF. 1/16W 1.0K-JB
RY49	0700039M	CF. 1/16W 820-JB	R0FC	0700066M	CF. 1/16W 82K-JB
RY50	0700027M	CF. 1/16W 100-JB	R0F2	0700054M	CF. 1/16W 10K-JB
RY52	0700027M	CF. 1/16W 100-JB	R0F3	0700055M	CF. 1/16W 12K-JB
RY53	0700039M	CF. 1/16W 820-JB	R0F8	0700054M	CF. 1/16W 10K-JB
RY54	0700027M	CF. 1/16W 100-JB	R0F9	0700054M	CF. 1/16W 10K-JB
RY55	0700039M	CF. 1/16W 820-JB	R0HA	0700054M	CF. 1/16W 10K-JB
RY56	0700027M	CF. 1/16W 100-JB	R0HC	0700043M	CF. 1/16W 1.5K-JB
RY57	0700036M	CF. 1/16W 470-JB	R0HD	0700048M	CF. 1/16W 3.9K-JB
RY58	0700037M	CF. 1/16W 560-JB	R0HF	0700041M	CF. 1/16W 1.0K-JB
RY59	0700061M	CF. 1/16W 33K-JB	R0H1	0700065M	CF. 1/16W 68K-JB
RY60	0700027M	CF. 1/16W 100-JB	R0H2	0700041M	CF. 1/16W 1.0K-JB
RY61	0700042M	CF. 1/16W 1.2K-JB	R0H3	0700054M	CF. 1/16W 10K-JB
RY64	0100047M	CF. 1/8W 180-JB	R0H4	0700054M	CF. 1/16W 10K-JB
RY70	0100049M	CF. 1/8W 220-JB	R0H5	0700048M	CF. 1/16W 3.9K-JB
RY71	0700063M	CF. 1/16W 47K-JB	R0H6	0700041M	CF. 1/16W 1.0K-JB
RY72	0100063M	CF. 1/8W 820-JB	R0H7	0700041M	CF. 1/16W 1.0K-JB
RY73	0700027M	CF. 1/16W 100-JB	R0H9	0179600M	MG. 10M-J TAPE
RY74	0700036M	CF. 1/16W 470-JB	R0K1	0700063M	CF. 1/16W 47K-JB
RY75	0700036M	CF. 1/16W 470-JB	R0K2	0700059M	CF. 1/16W 27K-JB
R0AA	0187058M	CF. 1/16W 510-JB	R0K3	0700059M	CF. 1/16W 27K-JB
R0A1	0700027M	CF. 1/16W 100-JB	R0K4	0700055M	CF. 1/16W 12K-JB
R0A2	0100059M	CF. 1/8W 560-JB	R0K5	0700055M	CF. 1/16W 12K-JB
R0A2A	0700036M	CF. 1/16W 470-JB	R0K6	0700049M	CF. 1/16W 4.7K-JB
R0A3	0700027M	CF. 1/16W 100-JB	ROM1	0700041M	CF. 1/16W 1.0K-JB
R0A4	0700054M	CF. 1/16W 10K-JB	ROM2	0700041M	CF. 1/16W 1.0K-JB
R0A5	0700054M	CF. 1/16W 10K-JB	ROM3	0700041M	CF. 1/16W 1.0K-JB
R0A6	0700048M	CF. 1/16W 3.9K-JB	ROM4	0700048M	CF. 1/16W 3.9K-JB
R0A7	0700036M	CF. 1/16W 470-JB	ROM5	0700042M	CF. 1/16W 1.2K-JB
R0A8	0700036M	CF. 1/16W 470-JB	ROM7	0700051M	CF. 1/16W 5.6K-JB (NOT CZ87)

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION		SYMBOL NO.	PART NO.	PART DESCRIPTION	
ROM8	0700048M	CF. 1/16W 3.9K-JB	(NOT CZ87)	R044	0700041M	CF. 1/16W 1.0K-JB	
R00A	0700047M	CF. 1/16W 3.3K-JB		R045	0700041M	CF. 1/16W 1.0K-JB	
R00C	0700052M	CF. 1/16W 6.8K-JB		R046	0700027M	CF. 1/16W 100-JB	
R00R	0700063M	CF. 1/16W 47K-JB		R047	0700051M	CF. 1/16W 5.6K-JB	
R00S	0700041M	CF. 1/16W 1.0K-JB		R048	0700058M	CF. 1/16W 22K-JB	
R00W	0700054M	CF. 1/16W 10K-JB		R049	0700054M	CF. 1/16W 10K-JB	
R001	0700042M	CF. 1/16W 1.2K-JB	(CY85)	R05A	0700044M	CF. 1/16W 1.8K-JB	
R002	0700041M	CF. 1/16W 1.0K-JB	(CY85)	R05C	0700044M	CF. 1/16W 1.8K-JB	
R003	0700043M	CF. 1/16W 1.5K-JB	(CY85)	R051	0700041M	CF. 1/16W 1.0K-JB	
R004	0700046M	CF. 1/16W 2.7K-JB	(CY85)	R052	0700054M	CF. 1/16W 10K-JB	
R005	0700049M	CF. 1/16W 4.7K-JB	(CY85)	R053	0700054M	CF. 1/16W 10K-JB	
R006	0700054M	CF. 1/16W 10K-JB	(CY85)	R054	0700041M	CF. 1/16W 1.0K-JB	
R007	0700058M	CF. 1/16W 22K-JB		R055	0700037M	CF. 1/16W 560-JB	
R008	0700058M	CF. 1/16W 22K-JB		R056	0700051M	CF. 1/16W 5.6K-JB	
R010	0700054M	CF. 1/16W 10K-JB		R057	0700047M	CF. 1/16W 3.3K-JB	
R011	0700064M	CF. 1/16W 56K-JB		R058	0700067M	CF. 1/16W 100K-JB	
R012	0700049M	CF. 1/16W 4.7K-JB		R059	0700054M	CF. 1/16W 10K-JB	
R013	0700027M	CF. 1/16W 100-JB		R06C	0700051M	CF. 1/16W 5.6K-JB	
R014	0700027M	CF. 1/16W 100-JB		R06K	0700066M	CF. 1/16W 82K-JB	
R015	0700051M	CF. 1/16W 5.6K-JB		R060	0700041M	CF. 1/16W 1.0K-JB	
R016	0700051M	CF. 1/16W 5.6K-JB		R061	0700049M	CF. 1/16W 4.7K-JB	
R017	0700027M	CF. 1/16W 100-JB		R062	0700041M	CF. 1/16W 1.0K-JB	
R018	0700027M	CF. 1/16W 100-JB		R063	0700041M	CF. 1/16W 1.0K-JB	
R019	0700041M	CF. 1/16W 1.0K-JB		R064	0700041M	CF. 1/16W 1.0K-JB	
R020	0700041M	CF. 1/16W 1.0K-JB		R065	0700041M	CF. 1/16W 1.0K-JB	
R021	0700041M	CF. 1/16W 1.0K-JB		R066	0700054M	CF. 1/16W 10K-JB	(CZ87)
R022	0700041M	CF. 1/16W 1.0K-JB		R067	0700054M	CF. 1/16W 10K-JB	
R023	0700041M	CF. 1/16W 1.0K-JB		R069	0700027M	CF. 1/16W 100-JB	
R024	0700041M	CF. 1/16W 1.0K-JB		R07A	0700051M	CF. 1/16W 5.6K-JB	
R025	0700041M	CF. 1/16W 1.0K-JB		R07C	0700051M	CF. 1/16W 5.6K-JB	
R026	0700054M	CF. 1/16W 10K-JB		R07E	0700051M	CF. 1/16W 5.6K-JB	
R027	0100065M	CF. 1/8W 1K-JB	(NOT CY85)	R07H	0700041M	CF. 1/16W 1.0K-JB	
R028	0100065M	CF. 1/8W 1K-JB	(NOT CY85)	R070	0700041M	CF. 1/16W 1.0K-JB	
R029	0700041M	CF. 1/16W 1.0K-JB		R078	0700054M	CF. 1/16W 10K-JB	
R030	0700041M	CF. 1/16W 1.0K-JB		R079	0700054M	CF. 1/16W 10K-JB	
R031	0700054M	CF. 1/16W 10K-JB		R08A	0700041M	CF. 1/16W 1.0K-JB	
R032	0100065M	CF. 1/8W 1K-JB	(NOT CY85)	R08T	0700041M	CF. 1/16W 1.0K-JB	
R033	0100067M	CF. 1/8W 1.2K-JB	(NOT CY85)	R081	0700054M	CF. 1/16W 10K-JB	
R035	0700045M	CF. 1/16W 2.2K-JB	(CZ87)	R082	0700057M	CF. 1/16W 18K-JB	
R036	0700041M	CF. 1/16W 1.0K-JB		R083	0700041M	CF. 1/16W 1.0K-JB	
R037	0700067M	CF. 1/16W 100K-JB		R084	0700042M	CF. 1/16W 1.2K-JB	
R038	0700051M	CF. 1/16W 5.6K-JB		R085	0700063M	CF. 1/16W 47K-JB	
R039	0100123M	CF. 1/8W 270K-JB		R086	0700054M	CF. 1/16W 10K-JB	
R04A	0700063M	CF. 1/16W 47K-JB		R087	0700054M	CF. 1/16W 10K-JB	
R040	0700041M	CF. 1/16W 1.0K-JB		R088	0700054M	CF. 1/16W 10K-JB	(CZ87)
R041	0700049M	CF. 1/16W 4.7K-JB		R09A	0700041M	CF. 1/16W 1.0K-JB	
R042	0700041M	CF. 1/16W 1.0K-JB		R09C	0100123M	CF. 1/8W 270K-JB	
R043	0700041M	CF. 1/16W 1.0K-JB		R09F	0700063M	CF. 1/16W 47K-JB	

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R09M	0700042M	CF. 1/16W 1.2K-JB (CZ85CY85)	R298	0100041M	CF. 1/8W 100-JB
R09M	0700044M	CF. 1/16W 1.8K-JB (CZ83)	R3F0	0100038M	CF. 1/8W 75-JB (CY85)
R09M	0700046M	CF. 1/16W 2.7K-JB (CZ87)	R3F1	0100041M	CF. 1/8W 100-JB
R09R	0700058M	CF. 1/16W 22K-JB	R3F2	0700063M	CF. 1/16W 47K-JB
R09Y	0700041M	CF. 1/16W 1.0K-JB (CZ87)	R3F3	0100041M	CF. 1/8W 100-JB
R090	0700054M	CF. 1/16W 10K-JB	R3F4	0700059M	CF. 1/16W 27K-JB
R091	0700041M	CF. 1/16W 1.0K-JB	R3F5	0700038M	CF. 1/16W 680-JB
R092	0700054M	CF. 1/16W 10K-JB (CZ87)	R301	0700036M	CF. 1/16W 470-JB
R093	0700027M	CF. 1/16W 100-JB	R302	0700057M	CF. 1/16W 18K-JB
R094	0700027M	CF. 1/16W 100-JB	R303	0700047M	CF. 1/16W 3.3K-JB
R095	0700041M	CF. 1/16W 1.0K-JB	R304	0700055M	CF. 1/16W 12K-JB
R096	0700041M	CF. 1/16W 1.0K-JB	R305	0700058M	CF. 1/16W 22K-JB
R097	0700027M	CF. 1/16W 100-JB	R306	0700036M	CF. 1/16W 470-JB
R098	0700048M	CF. 1/16W 3.9K-JB	R307	0100057M	CF. 1/8W 470-JB
R099	0700061M	CF. 1/16W 33K-JB	R308	0700027M	CF. 1/16W 100-JB
R101	0700032M	CF. 1/16W 220-JB	R309	0700058M	CF. 1/16W 22K-JB
R102	0700032M	CF. 1/16W 220-JB	R310	0700062M	CF. 1/16W 39K-JB
R103A	0700041M	CF. 1/16W 1.0K-JB	R4F0	0100113M	CF. 1/8W 100K-JB (CY85)
R104	0700041M	CF. 1/16W 1.0K-JB	R4F1	0100065M	CF. 1/8W 1K-JB
R105	0114133M	CF. SRD 1/4 P 120-J	R4F2	0100065M	CF. 1/8W 1K-JB
R106	0100065M	CF. 1/8W 1K-JB	R4F3	0100113M	CF. 1/8W 100K-JB (CY85)
R107	0700041M	CF. 1/16W 1.0K-JB	R40A	0700041M	CF. 1/16W 1.0K-JB
R109	0100061M	CF. 1/8W 680-JB	R40C	0700054M	CF. 1/16W 10K-JB
R110	0700041M	CF. 1/16W 1.0K-JB	R40H	0700062M	CF. 1/16W 39K-JB
R111	0700041M	CF. 1/16W 1.0K-JB	R401	0700041M	CF. 1/16W 1.0K-JB
R112	0114133M	CF. 1/4 P 120-J	R402	0700033M	CF. 1/16W 270-JB (NOT CZ87)
R113	0100065M	CF. 1/8W 1K-JB	R402	0700041M	CF. 1/16W 1.0K-JB (CZ87)
R114	0700063M	CF. 1/16W 47K-JB	R403	0700041M	CF. 1/16W 1.0K-JB
R115	0700054M	CF. 1/16W 10K-JB	R404	0700062M	CF. 1/16W 39K-JB
R151	0700063M	CF. 1/16W 47K-JB	R405	0700041M	CF. 1/16W 1.0K-JB
R152	0700058M	CF. 1/16W 22K-JB	R406	0700054M	CF. 1/16W 10K-JB
R153	0700058M	CF. 1/16W 22K-JB	R407	0700041M	CF. 1/16W 1.0K-JB
R154	0700058M	CF. 1/16W 22K-JB	R408	0700041M	CF. 1/16W 1.0K-JB
R156	0700058M	CF. 1/16W 22K-JB	R409	0700033M	CF. 1/16W 270-JB (NOT CZ87)
R157	0700058M	CF. 1/16W 22K-JB	R409	0700041M	CF. 1/16W 1.0K-JB (CZ87)
R159	0700058M	CF. 1/16W 22K-JB	R41A	0700036M	CF. 1/16W 470-JB
R162	0114133M	CF. 1/4 P 120-J	R419	0700036M	CF. 1/16W 470-JB
R163	0700054M	CF. 1/16W 10K-JB	R420	0700032M	CF. 1/16W 220-JB
R2A1	0700047M	CF. 1/16W 3.3K-JB	R421	0700032M	CF. 1/16W 220-JB
R202	0700027M	CF. 1/16W 100-JB	R423	0100113M	CF. 1/8W 100K-JB
R203	0700045M	CF. 1/16W 2.2K-JB	R424	0100113M	CF. 1/8W 100K-JB
R204	0700034M	CF. 1/16W 330-JB	R425	0700041M	CF. 1/16W 1.0K-JB
R205	0700034M	CF. 1/16W 330-JB	R426	0700041M	CF. 1/16W 1.0K-JB
R206	0100057M	CF. 1/8W 470-JB	R430	0700041M	CF. 1/16W 1.0K-JB
R207	0100121M	CF. 1/8W 220K-JB			
R208	0100131M	CF. 1/8W 560K-JB			
R209	0700051M	CF. 1/16W 5.6K-JB			
R297	0100041M	CF. 1/8W 100-JB			

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
R431	0700041M	CF. 1/16W 1.0K-JB	R567	0114141M	CF. 1/4W 270-JB
R440	0700053M	CF. 1/16W 8.2K-JB	R570	0700027M	CF. 1/16W 100-JB
R441	0700053M	CF. 1/16W 8.2K-JB	R60A	0187098M	CF. 1/16W 24K-JB
R442	0700042M	CF. 1/16W 1.2-JB (NOT CZ87)	R60C	0700027M	CF. 1/16W 100-JB
R442	0700046M	CF. 1/16W 2.7K-JB (CZ87)	R60H	0700027M	CF. 1/16W 100-JB
R443	0700042M	CF. 1/16W 1.2-JB (NOT CZ87)	R605	0100117M	CF. 1/16W 150K-JB
R443	0700046M	CF. 1/16W 2.7K-JB (CZ87)	R608	0113750M	CF. 1/2W 1.0K-JB (CY85)
R444	0700041M	CF. 1/16W 1.0K-JB	R609	0119722M	MF. 1.0-JB/W (NOT CZ87)
R445	0100053M	CF. 1/8W 330-JB	R609	0119840M	MF. 1W 0.75-JB (CZ87)
R446	0700041M	CF. 1/16W 1.0K-JB	R610	0700032M	CF. 1/16W 220-JB (CZ87CY85)
R447	0700052M	CF. 1/16W 6.8K-JB	R610	0700038M	CF. 1/16W 680-JB
R45A	0700049M	CF. 1/16W 4.7K-JB	R611	0700056M	CF. 1/16W 15K-JB
R45H	0700049M	CF. 1/16W 4.7K-JB	R611	0700055M	CF. 1/16W 12K-JB
R450	0100077M	CF. 1/8W 3.3K-JB	R612	0700041M	CF. 1/16W 1.0K-JB
R451	0100077M	CF. 1/8W 3.3K-JB	R614	0700061M	CF. 1/16W 33K-JB
R453	0700045M	CF. 1/16W 2.2K-JB	R615	0700041M	CF. 1/16W 1.0K-JB
R457	0700054M	CF. 1/16W 10K-JB	R616	0700054M	CF. 1/16W 10K-JB
R461	0700054M	CF. 1/16W 10K-JB	R617	0113733M	CF. 1/2P-B 220-JB
R462	0700058M	CF. 1/16W 22K-JB	R618	0700059M	CF. 1/16W 27K-JB
R463	0700054M	CF. 1/16W 10K-JB	R637	0110115S	MF. 56-JS
R5FF	0700041M	CF. 1/16W 1.0K-JB	R699	0113748M	CF. 1/2 P-B 820-JB (CY85)
R501	0700066M	CF. 1/16W 82K-JB	R716	0113729M	CF. 1/2W 150-JB
R502	0700066M	CF. 1/16W 82K-JB	R718	0100037M	CF. 1/8W 68-JB
R503	0100111M	CF. 1/8W 82K-JB	R720	0114143M	CF. 1/4W 330-JB
R504	0700038M	CF. 1/16W 680-JB	⚠ R721	0119838S	MF. 1/4-S 0.5-J
R505	0700038M	CF. 1/16W 680-JB	R722	0700045M	CF. 1/16W 2.2K-JB
R506	0700041M	CF. 1/16W 1.0K-JB	R723	0100099M	CF. 1/8W 27K-JB
R507	0700041M	CF. 1/16W 1.0K-JB	R724	0700043M	CF. 1/16W 1.5K-JB
R509	0700051M	CF. 1/16W 5.6K-JB	⚠ R725	0119505S	MF. 1/4W 2.2-J
R510	0700047M	CF. 1/16W 3.3K-JB	⚠ R726	0119505S	MF. 1/4W 2.2-J
R510A	0700037M	CF. 1/16W 560-JB	R729	0700048M	CF. 1/16W 3.9K-JB
R511	0700031M	CF. 1/16W 180-JB	R73A	0114049M	CF. 1/4W 22-JB
R512	0700061M	CF. 1/16W 33K-JB	R73E	0119838S	MF. 1/4-S 0.5-J
R551	0700044M	CF. 1/16W 1.8K-JB	R73H	0113750M	CF. 1/2W 1K-JB
R552	0700044M	CF. 1/16W 1.8K-JB	R730	0700049M	CF. 1/16W 4.7K-JB
R553	0700044M	CF. 1/16W 1.8K-JB	R731	0700052M	CF. 1/16W 6.8K-JB
R554	0700032M	CF. 1/16W 220-JB	R732	0100077M	CF. 1/8W 3.3K-JB
R555	0700032M	CF. 1/16W 220-JB	⚠ R736	0700032M	CF. 1/16W 220-JB
R556	0700032M	CF. 1/16W 220-JB	R739	0700041M	CF. 1/16W 1.0K-JB
R557	0700043M	CF. 1/16W 1.5K-JB	R74C	0100107M	CF. 1/8W 56K-JB
R558	0700043M	CF. 1/16W 1.5K-JB	R74E	0100075M	CF. 1/8W 2.7K-JB (CY85)
R559	0700043M	CF. 1/16W 1.5K-JB	R74H	0100107M	CF. 1/8W 56K-JB (NOT CY85)
R560	0700041M	CF. 1/16W 1.0K-JB	R74H	0100109M	CF. 1/8W 68K-JB (CY85)
R561	0700034M	CF. 1/16W 330-JB	R740	0110121S	MF. 100-JS
R562	0700034M	CF. 1/16W 330-JB	R745	0100091M	CF. 1/8W 12K-JB
R563	0700034M	CF. 1/16W 330-JB	R746	0700041M	CF. 1/16W 1.0K-JB (NOT CZ87CY85)
R565	0700041M	CF. 1/16W 1.0K-JB	R746	0700053M	CF. 1/16W 8.2K-JB (CY85)
R566	0700041M	CF. 1/16W 1.0K-JB			

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SYMBOL NO.	PART NO.	PART DESCRIPTION		SYMBOL NO.	PART NO.	PART DESCRIPTION	
R749	0700045M	CF. 1/16W 2.2K-JB		RA80	0700041M	CF. 1/16W 1.0K-JB	(NOT CY85)
R75A	0700034M	CF. 1/16W 330-JB		RA81	0700041M	CF. 1/16W 1.0K-JB	(NOT CY85)
R75C	0700063M	CF. 1/16W 47K-JB		RA82	0100041M	CF. 1/8W 100-JB	(NOT CY85)
R75E	0700045M	CF. 1/16W 2.2K-JB		RM04	0100065M	CF. 1/8W 1K-JB	(NOT CY85)
R75G	0100029M	CF. 1/8W 33-JB		RM05	0100065M	CF. 1/8W 1K-JB	(NOT CY85)
R75K	0700034M	CF. 1/16W 330-JB		RM06	0700041M	CF. 1/16W 1.0K-JB	(NOT CY85)
R750	0700061M	CF. 1/16W 33K-JB		RM07	0700043M	CF. 1/16W 1.5K-JB	(NOT CY85)
R751	0100059M	CF. 1/8W 560-JB		RM08	0700046M	CF. 1/16W 2.7K-JB	(NOT CY85)
R752	0100089M	CF. 1/8W 10K-JB		RM09	0700049M	CF. 1/16W 4.7K-JB	(NOT CY85)
R755	0700029M	CF. 1/16W 150-JB		RM15	0700054M	CF. 1/16W 10K-JB	(NOT CY85)
R756	0700034M	CF. 1/16W 330-JB		RV01	0700067M	CF. 1/16W 100K-JB	(Only CZ87)
R757	0100029M	CF. 1/8W 33-JB	(CZ87)	RV02	0700059M	CF. 1/16W 27K-JB	(Only CZ87)
R76C	0700041M	CF. 1/16W 1.0K-JB		RV04	0700035M	CF. 1/16W 390-JB	(Only CZ87)
R76D	0700041M	CF. 1/16W 1.0K-JB		RV06	0700034M	CF. 1/16W 330-JB	(Only CZ87)
R76F	0114147M	CF. 1/4W 470-JB		RV07	0700057M	CF. 1/16W 18K-JB	(Only CZ87)
R76G	0700054M	CF. 1/16W 10K-JB		RV08	0700067M	CF. 1/16W 100K-JB	(Only CZ87)
R76H	0700041M	CF. 1/16W 1.0K-JB		RV09	0700033M	CF. 1/16W 270-JB	(Only CZ87)
R763	0110259S	MF. 3.9K-JS		RV10	0700033M	CF. 1/16W 270-JB	(Only CZ87)
R764	0114049M	CF. 1/4W 22-JB		RV11	0700042M	CF. 1/16W 1.2K-JB	(Only CZ87)
R765	0100071M	CF. 1/8W 1.8K-JB		RV12	0700045M	CF. 1/16W 2.2K-JB	(Only CZ87)
R766	0100101M	CF. 1/8W 33K-JB		RV13	0700058M	CF. 1/16W 22K-JB	(Only CZ87)
R767	0700053M	CF. 1/16W 8.2K-JB		RV16	0700036M	CF. 1/16W 470-JB	(Only CZ87)
R768	0700053M	CF. 1/16W 8.2K-JB		RV17	0700046M	CF. 1/16W 2.7K-JB	(Only CZ87)
R769	0700058M	CF. 1/16W 22K-JB		RV19	0700028M	CF. 1/16W 120-JB	(Only CZ87)
R770	0700058M	CF. 1/16W 22K-JB		RV20	0700041M	CF. 1/16W 1.0K-JB	(Only CZ87)
R773	0110123S	MF. 120-JS		RV21	0113701M	CF. SRD1/2P-B 10-J	(Only CZ87)
R781	0100073M	CF. 1/8W 2.2K-JB		RV22	0100039M	CF. 1/8W 82-JB	(Only CZ87)
R786	0110241S	MF. 680-JS		RV23	0100039M	CF. 1/8W 82-JB87)	(Only CZ87)
R787	0110219S	MF. 82-JS		RV24	0700043M	CF. 1/16W 1.5K-JB	(Only CZ87)
R794	0110257S	MF. 3.3K-JS		RV25	0100069M	CF. 1/8W 1.5K-JB	(Only CZ87)
R795	0114049M	CF. 1/4W 22-JB		RV26	0114143M	CF. 1/4W 330-JB	(Only CZ87)
R798	0113760M	CF. 1/2W 2.7K-JB		RV27	0114221M	CF. 1/4 PB 68K-J	(Only CZ87)
R932	0700051M	CF. 1/16W 5.6K-JB		RV28	0114221M	CF. 1/4 PB 68K-J	(Only CZ87)
R932A	0700051M	CF. 1/16W 5.6K-JB		RV29	0100053M	CF. 1/8W 330-JB	(Only CZ87)
R942	0110221S	MF. 100-JS		RV30	0700055M	CF. 1/16W 12K-JB	(Only CZ87)
R942A	0110221S	MF. 100-JS		RV31	0113716M	CF. SRD1/2P-B 43-J	(Only CZ87)
				RV32	0113716M	CF. SRD1/2P-B 43-J	(Only CZ87)
		SUB PWB RESISTORS		RV33	0113686M	CF. 1/2W 2.7-J	(Only CZ87)
				RV34	0113686M	CF. 1/2W 2.7-J	(Only CZ87)
RA71	0100041M	CF. 1/8W 100-JB	(NOT CY85)	RV35	0110229S	MF. 220-JS	(Only CZ87)
RA72	0700041M	CF. 1/16W 1.0K-JB	(NOT CY85)	RV36	0110135S	MF. 390-JS	(Only CZ87)
RA73	0700041M	CF. 1/16W 1.0K-JB	(NOT CY85)	RV37	0110132S	MF. 300-JS	(Only CZ87)
RA74	0700064M	CF. 1/16W 56K-JB	(NOT CY85)	RV38	0700049M	CF. 1/16W 4.7K-JB	(Only CZ87)
RA75	0700045M	CF. 1/16W 2.2K-JB	(NOT CY85)	RV39	0700051M	CF. 1/16W 5.6K-JB	(Only CZ87)
RA76	0100123M	CF. 1/8W 270K-JB	(NOT CY85)	RV40	0700061M	CF. 1/16W 33K-JB	(Only CZ87)
RA77	0700047M	CF. 1/16W 3.3K-JB	(NOT CY85)	RV41	0700036M	CF. 1/16W 470-JB	(Only CZ87)
RA78	0700064M	CF. 1/16W 56K-JB	(NOT CY85)	RV42	0700043M	CF. 1/16W 1.5K-JB	(Only CZ87)
RA79	0100123M	CF. 1/8W 270K-JB	(NOT CY85)	RV43	0700035M	CF. 1/16W 390-JB	(Only CZ87)

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION		SYMBOL NO.	PART NO.	PART DESCRIPTION	
RV44	0700043M	CF. 1/16W 1.5K-JB	(Only CZ87)	R759	0700054M	CF. 1/16W 10K-JB	
RV45	0700067M	CF. 1/16W 100K-JB	(Only CZ87)	R760	0700066M	CF. 1/16W 82K-JB	
RV46	0700067M	CF. 1/16W 100K-JB	(Only CZ87)	R767	0700044M	CF. 1/16W 1.8K-JB	
RV47	0700039M	CF. 1/16W 820-JB	(Only CZ87)	R777	0150279	RV. 100K-B(V)	
RV48	0700041M	CF. 1/16W 1.0K-JB	(Only CZ87)	R777	0161361	CF. 100K	
RV50	0700035M	CF. 1/16W 390-JB	(Only CZ87)	R778	0700038M	CF. 1/16W 680-JB	
RV51	0700056M	CF. 1/16W 15K-JB	(Only CZ87)	R779	0700027M	CF. 1/16W 100-JB	
RV53	0700027M	CF. 1/16W 100-JB	(Only CZ87)	R780	0700051M	CF. 1/16W 5.6K-JB	
RV54	0100063M	CF. 1/8W 820-JB	(Only CZ87)	R801	0100053M	CF. 1/8W 330-JB	
RY70	0187038M	CF. 1/16W 75-J	(CY85)	R802	0110257S	MF. 3.3K-JS	
R644	0700041M	CF. 1/16W 1.0K-JB		R803	0110257S	MF. 3.3K-JS	
R645	0700041M	CF. 1/16W 1.0K-JB		R804	0110257S	MF. 3.3K-JS	
R646	0700041M	CF. 1/16W 1.0K-JB		R805	0179600M	MF. 10M-J TAPE	(CZ87CZ85)
R647	0700044M	CF. 1/16W 1.8K-JB		R806	0179600M	MF. 10M-J TAPE	(CZ87CZ85)
R648	0114143M	CF. 1/4W 330-JB		R851	0110257S	MF. 3.3K-JS	
R649	0100056M	CF. 1/8W 430-JB		R852	0110257S	MF. 3.3K-JS	
R651	0700065M	CF. 1/16W 68K-JB	(CZ87CZ85)	R853	0110257S	MF. 3.3K-JS	
R652	0700057M	CF. 1/16W 18K-JB	(CZ87CZ85)	R854	0113750M	CF. 1/2W 1K-JB	
R653	0700059M	CF. 1/16W 27K-JB		R855	0113750M	CF. 1/2W 1K-JB	
R654	0700057M	CF. 1/16W 18K-JB		R856	0113750M	CF. 1/2W 1K-JB	
R655	0700059M	CF. 1/16W 27K-JB	(CZ87CZ85)	R857	0100053M	CF. 1/8W 330-JB	
R655	0700063M	CF. 1/16W 47K-JB	(NOTCZ87CZ85)	R858	0100053M	CF. 1/8W 330-JB	
R656	0700059M	CF. 1/16W 27K-JB	(CZ87CZ85)	R861	0700031M	CF. 1/16W 180-JB	
R656	0700061M	CF. 1/16W 33K-JB	(NOT CZ87CZ85)	R869	0700031M	CF. 1/16W 180-JB	
R657	0100117M	CF. 1/8W 150K-JB		R871	0700031M	CF. 1/16W 180-JB	
R658	0700055M	CF. 1/16W 12K-JB	(CZ87CZ85)	R889	0114131M	CF. 1/4W 100-JB	
R658	0700058M	CF. 1/16W 22K-JB	(NOT CZ87CZ85)	R890	0114131M	CF. 1/4W 100-JB	
R659	0100117M	CF. 1/8W 150K-JB		R891	0114131M	CF. 1/4W 100-JB	
R664	0700063M	CF. 1/16W 47K-JB		R893	0100073M	CF. 1/8W 2.2K-JB	
R665	0700064M	CF. 1/16W 56K-JB		R896	0700041M	CF. 1/16W 1.0K-JB	
R668	2340371	TH. 112301-9+D937		R897	0700041M	CF. 1/16W 1.0K-JB	
R669	0700067M	CF. 1/16W 100K-JB		R898	0700041M	CF. 1/16W 1.0K-JB	
R670	0700046M	CF. 1/16W 2.7K-JB		R899	0700027M	CF. 1/16W 100-JB	
R671	0700065M	CF. 1/16W 68K-JB		R9A1	0113774M	CF. SRD1/2P-B 10K-J	
R672	0700064M	CF. 1/16W 56K-JB		R9A2	0113774M	CF. SRD1/2P-B 10K-J	
R673	0100133M	CF. 1/8W 680K-JB		R9A3	0100073M	CF. 1/8W 2.2K-JB	
R674	0700045M	CF. 1/16W 2.2K-JB	(CZ87CZ85)	R9A4	0110281S	MF. 33K-JS	
R674	0700049M	CF. 1/16W 4.7K-JB	(NOT CZ87CZ85)	R9A5	0700054M	CF. 1/16W 10K-JB	
R743	0700056M	CF. 1/16W 15K-JB		⚠ R902	0144151	WW. 33-J	
R750	0100073M	CF. 1/8W 2.2K-JB		⚠ R902	2341281	TH 3R0Q	
R751	0700065M	CF. 1/16W 68K-JB		R904	0147060	WW. 2W 33-K	
R752	0700058M	CF. 1/16W 22K-JB		R905A	0113774M	CF. SRD1/2P-B 10K-J	
R754	0100075M	CF. 1/8W 2.7K-JB		R905B	0113774M	CF. SRD1/2P-B 10K-J	
R755	AW00097	TRIMMER RESISTOR		R906	0147809	WW. 1.2-J 15W	
R756	0700057M	CF. 1/16W 18K-JB		R907	0700054M	CF. 1/16W 10K-JB	
R757	0700064M	CF. 1/16W 56K-JB		R910	0114049M	CF. 1/4W 22-JB	
R758	0700041M	CF. 1/16W 1.0K-JB		R916A	0119688	MF. 0.22-J	
R758	0700051M	CF. 1/16W 5.6K-JB		R916B	0119688	MF. 0.22-J	

REPLACEMENT PARTS LIST

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SYMBOL NO.	PART NO.	PART DESCRIPTION
R924	0114179M	CF. SRD 1/4 PF 5.6K-J
R925	0114165M	CF. SRD 1/4 PF 1.5K-J
R926	0114165M	CF. SRD 1/4 PF 1.5K-J
R927	0114173M	CF. SRD1/4PB 3300-J
R928	0114151M	CF. SRD 1/4 P 680-J
R930	0100113M	CF. 1/8W 100K-JB
R931	0119688	MF. 0.22-J
R932	0700043M	CF. 1/16W 1.5K-JB
R933	0700046M	CF. 1/16W 2.7K-JB
R94A	0113793M	CF. SRD1/2P-B 56K-J
R945	0700041M	CF. 1/16W 1.0K-JB
R946	0100091M	CF. 1/8W 12K-JB
R947	0700027M	CF. 1/16W 100-JB
R948	0119690	MF. 0.27-J
R949	0700043M	CF. 1/16W 1.5K-JB
R952	0119690	MF. 0.27-J
R953	0113758M	CF. 1/2W 2.2K-JB
R954	0700043M	CF. 1/16W 1.5K-JB
R955	0114143M	CF. 1/4W 330-JB
R956	0114049M	CF. 1/4W 22-JB
R957	0700045M	CF. 1/16W 2.2K-JB
R958	0113744M	CF. SRD1/2P-B 560-J
R959	0700054M	CF. 1/16W 10K-JB
R960	0700052M	CF. 1/16W 6.8K-JB
R961	0700049M	CF. 1/16W 4.7K-JB
R962	0700046M	CF. 1/16W 2.7K-JB
⚠R970	0119505S	MF. 1/4W 2.2-J
R976	0700054M	CF. 1/16W 10K-JB
R977	0700027M	CF. 1/16W 100-JB
R978	0700027M	CF. 1/16W 100-JB
R979	0700041M	CF. 1/16W 1.0K-JB
R982	0700045M	CF. 1/16W 2.2K-JB
R984	0100071M	CF. 1/8W 1.8K-JB
R985	0113770M	CF. 1/2P-B 6.8K-J
R986	0110269S	MF. 10K-JS
R987	0700054M	CF. 1/16W 10K-JB
R988	0700054M	CF. 1/16W 10K-JB
		MAIN PWB SWITCHES
S001	2632851	5KEY TACT SWITCH (CY85)
S002	2634621	SWITCH BLOCK VR (CY85)
S003	2634621	SWITCH BLOCK VR (CY85)

SYMBOL NO.	PART NO.	PART DESCRIPTION
		SUB PWB SWITCHES/RELAYS
SM01	2634621	SWITCH BLOCK VR (NOT CY85)
SM02	2632851	5KEY TACT SWITCH (NOT CY85)
SM03	2634621	SWITCH BLOCK VR (NOT CY85)
⚠S901	FJ00071	AC POWER RELAY ALK3213
S902	FJ00071	AC POWER RELAY ALK3213
		MAIN PWB TRANSFORMERS
⚠T701	BW00661	H-DRIVE TRANS.
⚠T702	2437094	FBT-C87LUI
		SUB PWB TRANSFORMERS
⚠T901	BT00741	POWER TRANSFORMER
		MAIN PWB MODULES
U001	CZ00501U	ANALOG MONOLITHIC IC (PIC-21043SR) (CY85)
U101	HC00321	ENG26509G
⚠U102	HJ00291	ENV56D24G3
		MAIN PWB CRYSTAL/OSC.
X0A1	BP00771	OSXR032X121TA252E00
X001	2168931	CRYSTAL HC-49/U-120MHZ
X201	BP00791	F072ASL-B
X202	2143451	CERAMIC TRAP 4.5MHZ
X301	CW00022	COMB FILTER (337KNT) (NOT CZ87)
X301	CW00172	HYBRID IC HCF0213) (NOT CZ87)
X501	2791505	CRYSTAL HC-491U 3.58MHZ
X751	2168771	X'TAL CSB503F30
		MAIN PWB MISCELLANEOUS PARTS
NO01	3443231	SHIELD PLATE M1C TC-30
N403	3446862	VERTICAL HEAT SINK M1LXU
N403A	4520881	M3*8 SCREW WITH WASHER
N403B	8821234	NUT-3
N601	3446864	V. HEAT SINK M3LXU
N601A	4520881	M3*8 SCREW WITH WASHER

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SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
N601B	8821234	NUT-3	NQV10	3446473	HEATSINK H30 P10 (Only CZ87)
N701	8821114	NUT,3	NQV10A	4520883	3*12 SCREW WITH WASHER
N701A	4243445	G51 INSULATION WASHER PL-11T			(Only CZ87)
N701B	8711412	SCREW-3X12 PAN HEAD	NQ851	4348493	CPT HEAT SINK A2LXU AL
N702	3445542	H.HEAT SINK HY09 A11DOP-H2	NQ854	4348493	CPT HEAT SINK A2LXU AL
N702A	4514061	SCREW FLANGED 3*12	NQ857	4348493	CPT HEAT SINK A2LXU AL
N702B	8821234	NUT-3	NQ913	MA00891	VERTICAL HEAT SINK
N702C	8813124	SPRING WASHER-3	NQ913A	4520881	M3*8 SCREW WITH WASHER
N702D	4284311	2000 EARTH PIN	NQ914	3445563	HEAT SINK A3LXU
N702E	4159411	SCREW 3*8 KNURLED TAPPING SWRM	NQ914A	4520881	M3*8 SCREW WITH WASHER
N752	3445563	HEAT SINK A3LXU	NX901	2784342	CONDENSER COVER
N752A	4520881	M3*8 SCREW WITH WASHER	N936	3446473	HEATSINK H30 P10
N910	4107502	PWB METAL R (A1) TC-30	N936A	4520883	3*12 SCREW WITH WASHER
N912	4107512	A1LXU1 PWB METAL L TC-30	PAC1	2723091	PLUG CP-02BP5R0V-SD-53415
PCXA	2675593	15P PLUG PIN (CZ87)	PAC2	2723091	PLUG CP-02BP5R0V-SD-53415
PFV	2902265	PLUG PIN SUB MINI 6P (CY85)	PF	2665271	3P PLUG PIN WITH BASE (CZ87CZ85)
PF1A	2902263	PLUG PIN SUB MINI 4P (NOT CY85)	PFVB	2902265	PLUG PIN SUB MINI 6P (NOT CY85)
PF1A	2902266	PLUG PIN SUB MINI 7P (CY85)	PF1B	2902266	PLUG PIN SUB MINI 7P (NOT CY85)
PF2A	2902263	PLUG PIN SUB MINI 4P (NOT CY85)	PF2B	2902263	PLUG PIN SUB MINI 4P (NOT CY85)
PIPA	ED00576	CP-TAC-L20X-A1	PM	2665272	4P PLUG PIN WITH BASE
PM	2665272	4P PLUG PIN WITH BASE	PMH2 1	2902264	PLUG PIN SUB MINI 5P
PMH2	2902264	PLUG PIN SUB MINI 5P	PMH4	2902267	PLUG PIN SUB MINI 8P
PMH3	2902267	PLUG PIN SUB MINI 8P	PM	2665272	4P PLUG PIN WITH BASE
PMS1	2661754	5P PLUG PIN WITH BASE	PMH2 1	2902264	PLUG PIN SUB MINI 5P
PSL	2902261	PLUGPIN SUB MINI 2P	PMH4	2902267	PLUG PIN SUB MINI 8P
PSR	2902262	PLUG PIN SUB MINI 3P	PMS2	2661754	5P PLUG PIN WITH BASE
PSRA	ED00566	CP-TAC-L10X-A1 (CZ87)	PNS1	2661754	5P PLUG PIN WITH BASE
P65A	ED00562	CP-TAC-L05X-A1	PVMC	2902261	PLUGPIN SUB MINI 2P (Only CZ87)
P66A	ED00561	CP-TAC-L04X-A1	PVM1	2902266	PLUG PIN SUB MINI 7P (Only CZ87)
Z054	9485158	HOT MELT (AX-1503C)	PW	2661753	4P PLUG PIN WITH BASE
Z403	9414017	SILICONE COMPOUND (G-746)	PY1	2902265	PLUG PIN SUB MINI 6P
Z601	9414017	SILICONE COMPOUND (G-746)	PY2	2902263	PLUG PIN SUB MINI 4P
Z703	9413926	SILICON RUBBER	P2	2661751	2P PLUG PIN WITH BASE
Z706	9414017	SILICONE COMPOUND (G-746)	P31	2661751	2P PLUG PIN WITH BASE
Z752	9414017	SILICONE COMPOUND (G-746)	P55B	ED00502	CP-TAC-L05P-A1
			P56B	ED00501	CP-TAC-L04P-A1
		SUB PWB MISCELLANEOUS PARTS	P901	2782611	CENTER PIN
			P902	2782611	CENTER PIN
ND901	3446852	HEAT SINK D TYPE BLACK	X901	AJ00332	ENC221D-14A
ND934	4348493	CPT HEAT SINK A2LXU AL	ZB1	9414017	SILICONE COMPOUND (G-746)
NE901	3772201	AC CORD HOLDER NYLON	ZB2	9414017	SILICONE COMPOUND (G-746)
NI901	MD03121	POW. HEAT SINK M7LXU2	ZN901	9451115	UL CSA TUBE NO.0
NI901A	4520883	3*12 SCREW WITH WASHER	ZX901	9449567	TAPE-ADHESIVE W9 NITTO#223S(B) PVC
NI901B	4159411	SCREW 3*8 KNURLED TAPPING SWRM	Z901	9414017	SILICONE COMPOUND (G-746)
NI901C	4284311	2000 EARTH PIN	Z902	9485158	HOT MELT (AX-1503C)
NQV09	3446473	HEATSINK H30 P10 (Only CZ87)			
NQV09A	4520883	3*12 SCREW WITH WASHI (Only CZ87)			

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SYMBOL NO.	PART NO.	PART DESCRIPTION
		FINAL/CABINET ASSEMBLY PARTS (36 INCH)
#100	QD04565	36UX FRAME SUBASSEMBLY
#101	QD04564	36FX/CX FRAME SUBASSEMBLY
#110	QD03491	FRAME 36V
#115	3760031	SMALL PIECE (S-2) FOR CABINET PS
#120	PH02512	DOOR
#125	3875771	LATCH 4T02 NYLON
#130	PC01191	BUTTON 36UX52B
#135	8781642	SCREW 4*12 TAPPING
#140	PH02542	R/C LENS
#145	8781642	SCREW 4*12 TAPPING
#150	PH02532	INDOOR PLATE
#160	3487425	HITACHI BADGE
#200	4286588	PVC WASHER 20 T2.0 PVC
#205	4518378	6X35 TAP. SCREW WITH WASHER .STEEL
#220	8781642	SCREW 4*12 TAPPING
#250	4515482	SCREW-4X16 TAP. WITH WASHER STEEL
#251	4515482	SCREW-4X16 TAP. WITH WASHER STEEL
#300	QD01571	BACK COVER
#305	8781646	SCREW 4 X 16 TAPPING
#310	3727972	POWER CORD HANGER
#315	4778201	LABEL BASE PVC (USA MODELS)
#320	4778202	LABEL BASE PVC (CANADA MODELS)
EAC	2976985	CONNECTOR CO-02C-C7R5-102LOCK
EFV	2973797S	6J CONNECTOR L=430
EF1A	EF01502	7J EH CONNECTOR 301
EF2A	EF06131	(ONLY 36 INCHS MODELS)
EMH2	2973768S	5J CONNECTOR L=470
EMH3	2973867S	8J CONNECTOR L=1000
EMS1	EF04012	CO-05C-C5R0-541
N101	3705232	ANODE CLAMPER 94V0 (101)
		(NOT 36FX USA MODEL)
N102	3763751	SK BINDER (NOT 36FX USA)
N103	3763751	SK BINDER (NOT 36FX USA)
N104	3785502	V LOCK 11.5 (NOT 36FX USA)
N105	3785502	V LOCK 11.5 (NOT 36FX USA)
N106	3785502	V LOCK 11.5 (NOT 36FX USA)
N107	3785502	V LOCK 11.5 (NOT 36FX USA)
N108	3785511	V LOCK 16 (NOT 36FX USA)
N109	3785511	V LOCK 16 (NOT 36FX USA)
N110	3785511	V LOCK 16 (NOT 36FX USA)
N111	3785511	V LOCK 16 (NOT 36FX USA)
N112	3785502	V LOCK 11.5 (NOT 36FX USA)
N113	3785502	V LOCK 11.5 (NOT 36FX USA)
N114	3785502	V LOCK 11.5 (NOT 36FX USA)
N115	3785511	V LOCK 16 (NOT 36FX USA)
N117	3785511	V LOCK 16 (NOT 36FX USA)
		FINAL/CABINET ASSEMBLY PARTS (32 INCH)
#100	QD03059	FRAME SUBASSEMBLY 32UX
#110	QD00265	FRAME
#115	3760031	SMALL PIECE (S-2) FOR CABINET PS
#120	PH03841	DOOR
#125	3875771	LATCH 4T02 NYLON
#130	PC00345	BUTTONS
#135	8781642	SCREW 4*12 TAPPING
#140	H310885	R/C LENS
#145	8781642	SCREW 4*12 TAPPING
#150	PH00911	INDOOR PLATE
#160	3487425	HITACHI BADGE
#170	H311174	CPT BRACKET (R)
#171	H311173	CPT BRACKET (L)
#175	4520771	HEXAGON HEAD TAPPING SCREW 4*18
#200	4286581	PVC WASHER 2.0T
#205	4518378	6X35 TAP. SCREW WITH WASHER .STEEL
#220	8781642	SCREW 4*12 TAPPING
#255	8781646	SCREW 4 X 16 TAPPING
#300	3164049	BACKCOVER 32V
#305	4520771	HEXAGON HEAD TAPPING SCREW 4*18
#310	3727972	POWER CORD HANGER
#315	4520771	HEXAGON HEAD TAPPING SCREW 4*18
#700	H461171	PATENT AND TELESONICS LABEL
#710	4693491	CANADA COVER LABEL CCT
		(CANADA MODELS)
#900	H920182	VELCRO
#905	H390047	HIMERON SHEET
#910	8441429	HIMERON SHEET(I) HIMERON
#915	8441428	HIMERON SHEET(H) HIMERON
#920	8440444	SP HIMERON C29-BV20
EAC	2976985	CONNECTOR CO-02C-C7R5-102LOCK
EMH2	2973768S	5J CONNECTOR L=470
EMH3	2973864S	CON-SEH08C-C1007A751
EMS1	EF04012	CO-05C-C5R0-541
N101	3705232	ANODE CLAMPER 94V0 (101)
N102	3763751	SK BINDER (NOT 32FX USA)
N103	3763751	SK BINDER (NOT 32FX USA)
N104	3785502	V LOCK 11.5 (NOT 32FX USA)
N105	3785502	V LOCK 11.5 (NOT 32FX USA)
N106	3785502	V LOCK 11.5 (NOT 32FX USA)
N107	3785502	V LOCK 11.5 (NOT 32FX USA)

REPLACEMENT PARTS LIST

PRODUCT SAFETY NOTE: Components marked with a ⚠ have special characters important to safety.
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SYMBOL NO.	PART NO.	PART DESCRIPTION	
N108	3785511	V LOCK 16	(NOT 32FX USA)
N109	3785511	V LOCK 16	(NOT 32FX USA)
N110	3785511	V LOCK 16	(NOT 32FX USA)
N113	3785502	V LOCK 11.5	(NOT 32FX USA)
N114	3785502	V LOCK 11.5	(NOT 32FX USA)
N115	3785511	V LOCK 16	(NOT 32FX USA)
N117	3785511	V LOCK 16	(NOT 32FX USA)
N401A	H462121	LABEL BLANK 160-162	
N401B	HW91575	PRINT SPEC- WARNING LABEL	
		PACKING ASSEMBLY PARTS (36 INCH MODELS)	
#10	H361091	CARTON BOX	
#20	SP01792	TOP CUSHION	
#30	SP01803	BOTTOM CUSHION (36UX MODEL)	
#50	H360762	LAMINATED POLY FOAM BAG	
#60A	H462242	LABEL BLANK MODEL NAME	
#70	H461791	TAG AND BAR CODE	
#70A	HW91519	PRINT SPEC-SHIP TAG	
		PACKING ASSEMBLY PARTS (32 INCH MODELS)	
#10	H361006	CARTON BOX	
#20	H361021	TOP CUSHION	
#30	H361033	BOTTOM CUSHION	
#40	H360834	BOTTOM PAD	
#41	H360843	BOTTOM PAD BLANK	
#50	H360761	POLY BAG FOAM LAMINATED	
#60A	H462241	LABEL BLANK MODEL NAME	
#70	H461791	TAG AND BAR CODE	
#70A	HW91519	PRINT SPEC-SHIP TAG	

SYMBOL NO.	PART NO.	PART DESCRIPTION	
		OWNER'S ASSEMBLY PARTS	
E203	2784243	DRY BATTERY SUM-3 (G)	
E301	HL00721	RML-CLU-431UI	(UX,FX MODELS)
E301	HL00722	RML-CLU-432U	(CX MODEL)
N201	QR20841	USA MODELS INST. BOOK	
N201	QR20851	CANADA MODELS INST. BOOK	
N205	3611879	POLYETHYLENE BAG	
N209	H461901	HITACHI EXT. SVC CARD (USA MODELS)	
N302	4712247	CUSTOMER REGISTRATION CARD (USA MODELS)	
		CPT ASSEMBLY PARTS (36 INCH)	
EG	2663328	2J MINI-CONNECTOR WITH WIRE	
EVM3	2976645	CONNECTOR CO-02C-N2R5-241 (ONLY 36UX58B)	
E602	2908402	CRT EARTH WIRE	
E603	GX00131	CHEVRON FUNNEL MAGNET	
L970	BZ01752	DEGAUSSING COIL AL	
LMFC	BZ00411	MG FIELD COIL	(Only 36FX48B)
N606	3330944	EARTH SPRING	
N607A	3763751	SK BINDER	
N613	4621186	CUSHION 2908	CR
V1	DE01421	PICTURE TUBE	(NOT 36FX48B)
V1	DE01453	A90AEJ15X01 NON VM (ONLY 36FX48B)	
Z606	9436111	TAPE-ADHESIVE W50 NITTO#223S	
Z608	9449506	SCOTCH TAPE N0.29 19mm	
Z609	9449503	ADHESIVE TAPE	(SCOTH N0.3 W=9)
Z611	9449503	ADHESIVE TAPE	(SCOTH N0.3 W=9)
		CPT ASSEMBLY PARTS (32 INCH)	
EVM	2979222	CONNECTOR	
E601	BY00821	DY-32V 110 SVC	
E602	2994511	CRT EARTH WIRE	
E603	2771461	EDGE MAGNET	
E604	2776541	VM MAGNET (C-C)	
L905	BZ01751	DEGAUSSING COIL AL	
N601	4615641	WEDGE	

REPLACEMENT PARTS LIST

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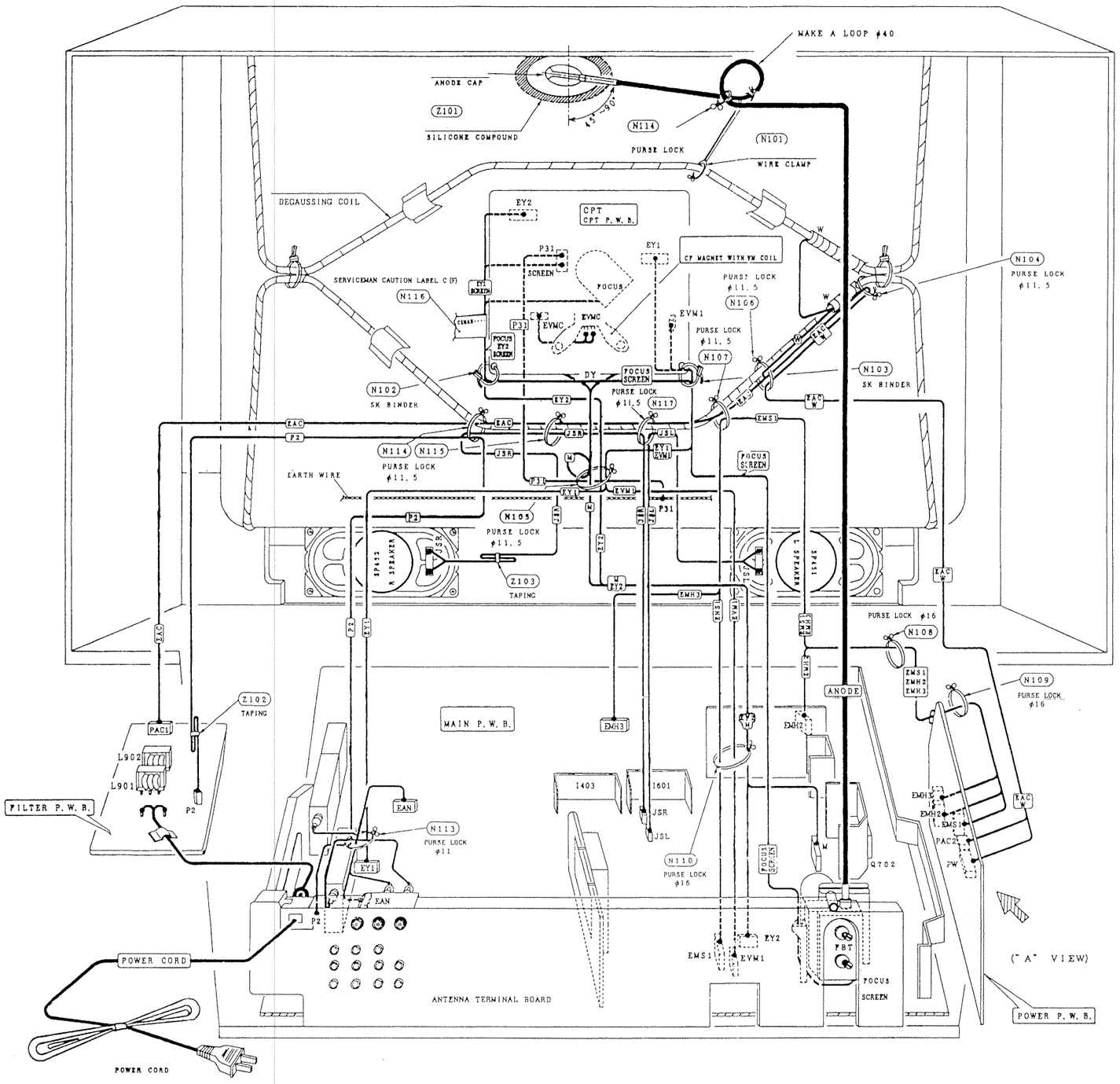
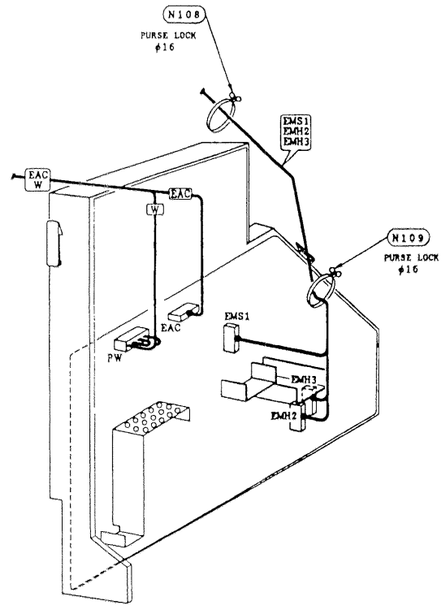
SYMBOL NO.	PART NO.	PART DESCRIPTION	SYMBOL NO.	PART NO.	PART DESCRIPTION
N606	3330941	EARTH SPRING			
N607A	3763751	SK BINDER			
N608	3763752	SK BINDER 200 NYLON 66			
N611	2772211	MAG. PIECE			
N612	2956801	EARTH RING			
V1	DE01371	A80LJF30X(W)			
Z601	9449506	SCOTCH TAPE NO.29 19MM			
Z603	9473101	WHITE PAINT			
Z604	9553945	ADHESIVE TAPE PERMACEL P212			
Z606A	9436111	TAPE-ADHESIVE W50 NITTO#223S			
Z608	9449506	SCOTCH TAPE NO.29 19MM			
Z609	9449503	ADHESIVE TAPE (SCOTCH N0.3 W=9)			
		SPEAKERS ASSEMBLY PARTS			
JSL	2976647	2J EH CONNECTOR 701			
JSR	2976656	3J EH CONNECTOR (32 INCH)			
JSR	2976657	3I EH CONNECTOR 861 (36")			
SP451	GK00262	SPEAKER 6X12D			
SP452	GK00262	SPEAKER 6X12D			
Z101	9449603	NITTOOH TAPE #747			
		ACCESSORIES ASSEMBLY			
#101	H461541	LABEL SHEET (A) (36 INCH)			
#101A	H462101	LABEL BLANK 102-64 (32 INCH)			
#101B	HW91583	PRINT SPEC CTV INST LABEL (32 INCH)			

32UX58B/32FX48B

WIRING DIAGRAM OF 32UX58B/32FX48B FINAL ASSEMBLY

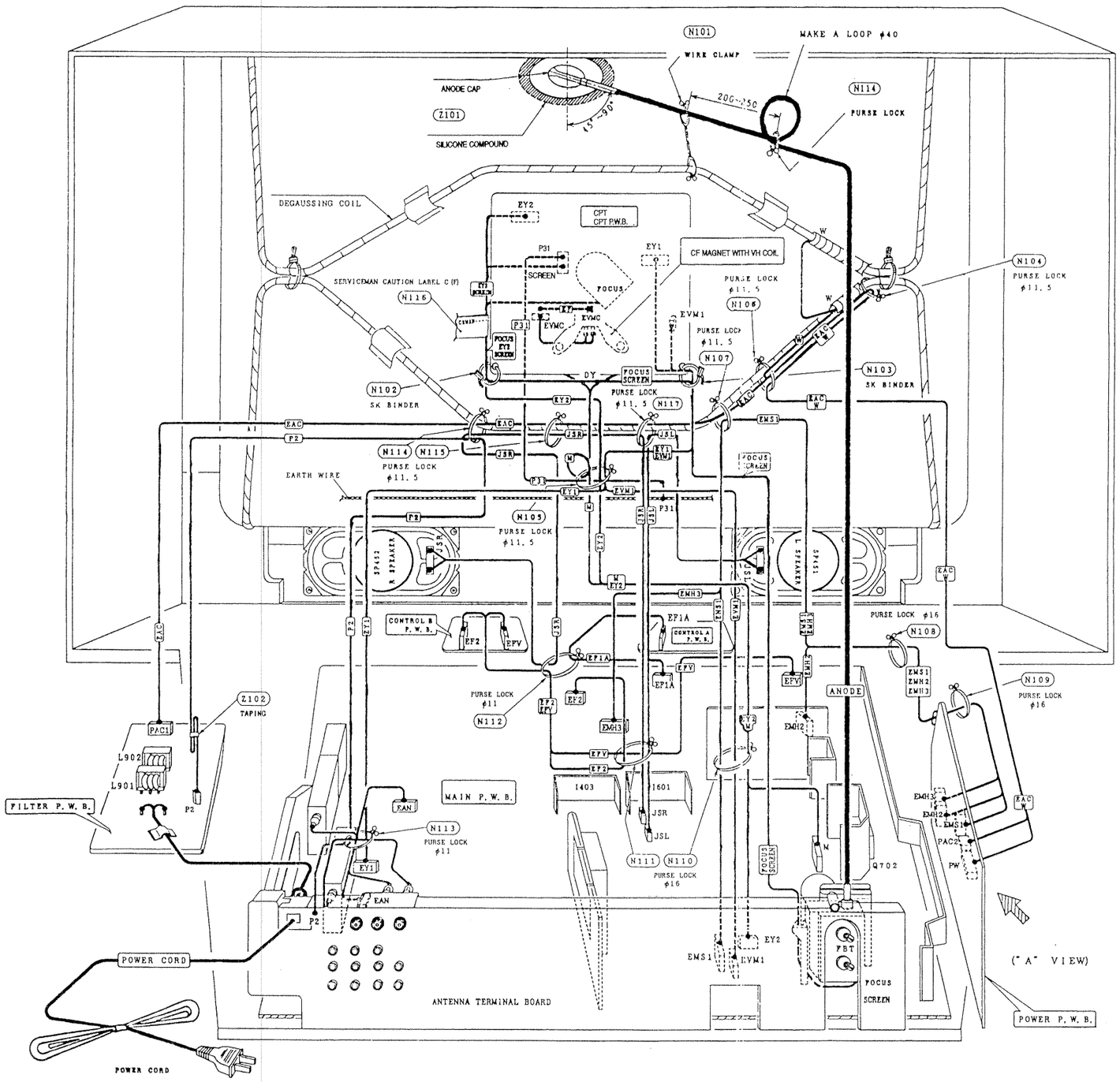


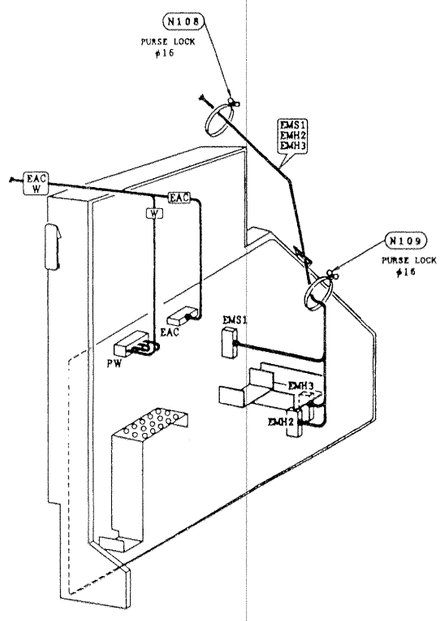


"A" VIEW

36UX58B

WIRING DIAGRAM OF 36UX58B FINAL ASSEMBLY

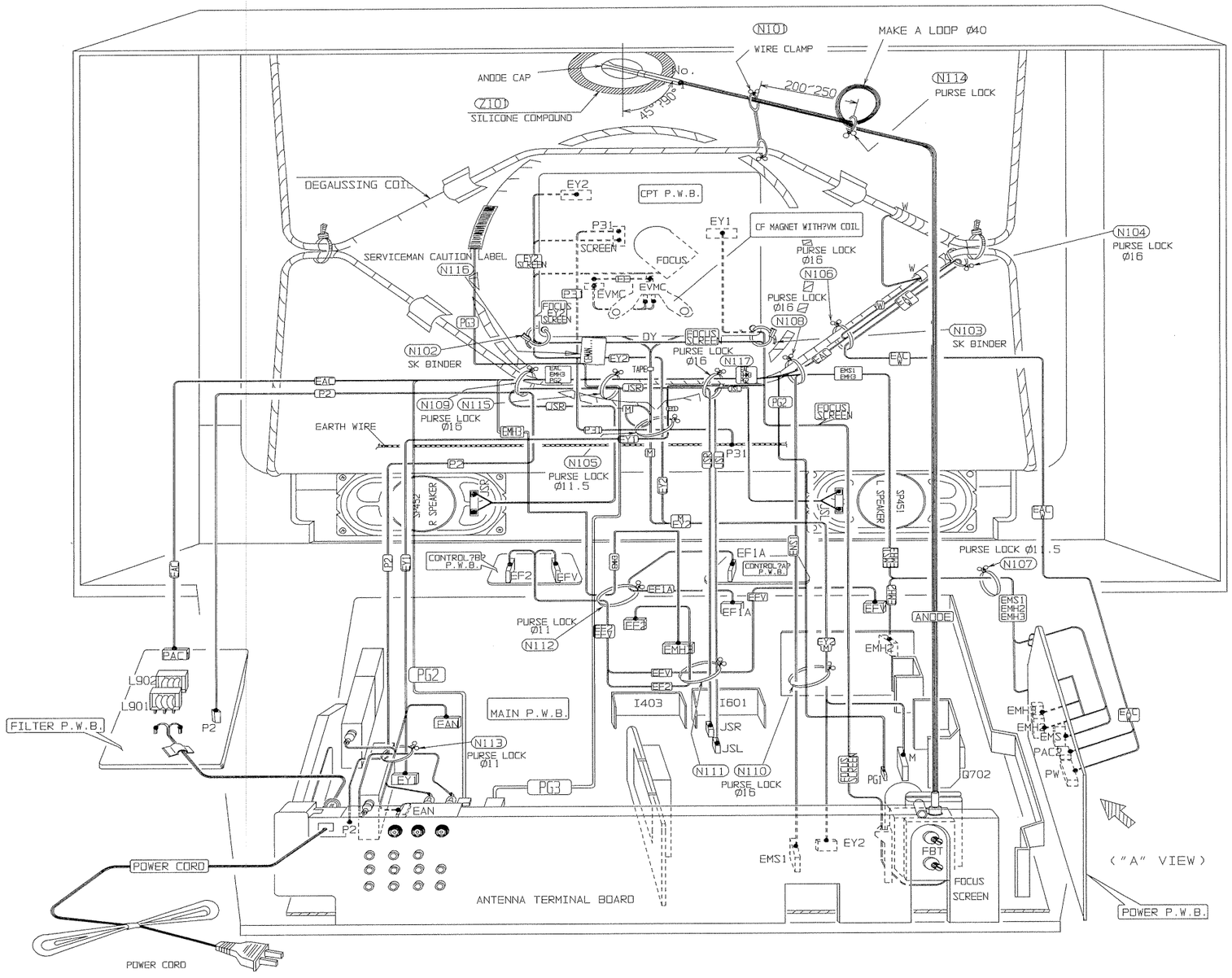


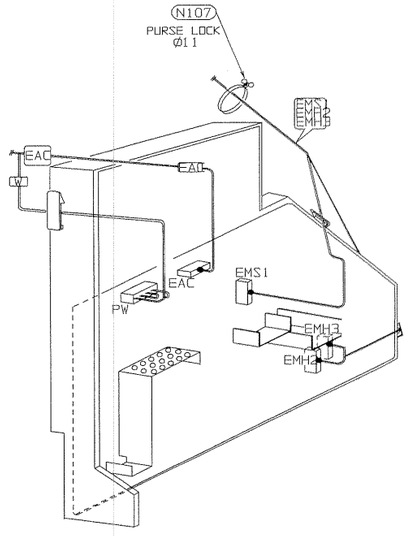


"A" VIEW

36FX48B

WIRING DIAGRAM OF 36FX48B FINAL ASSEMBLY

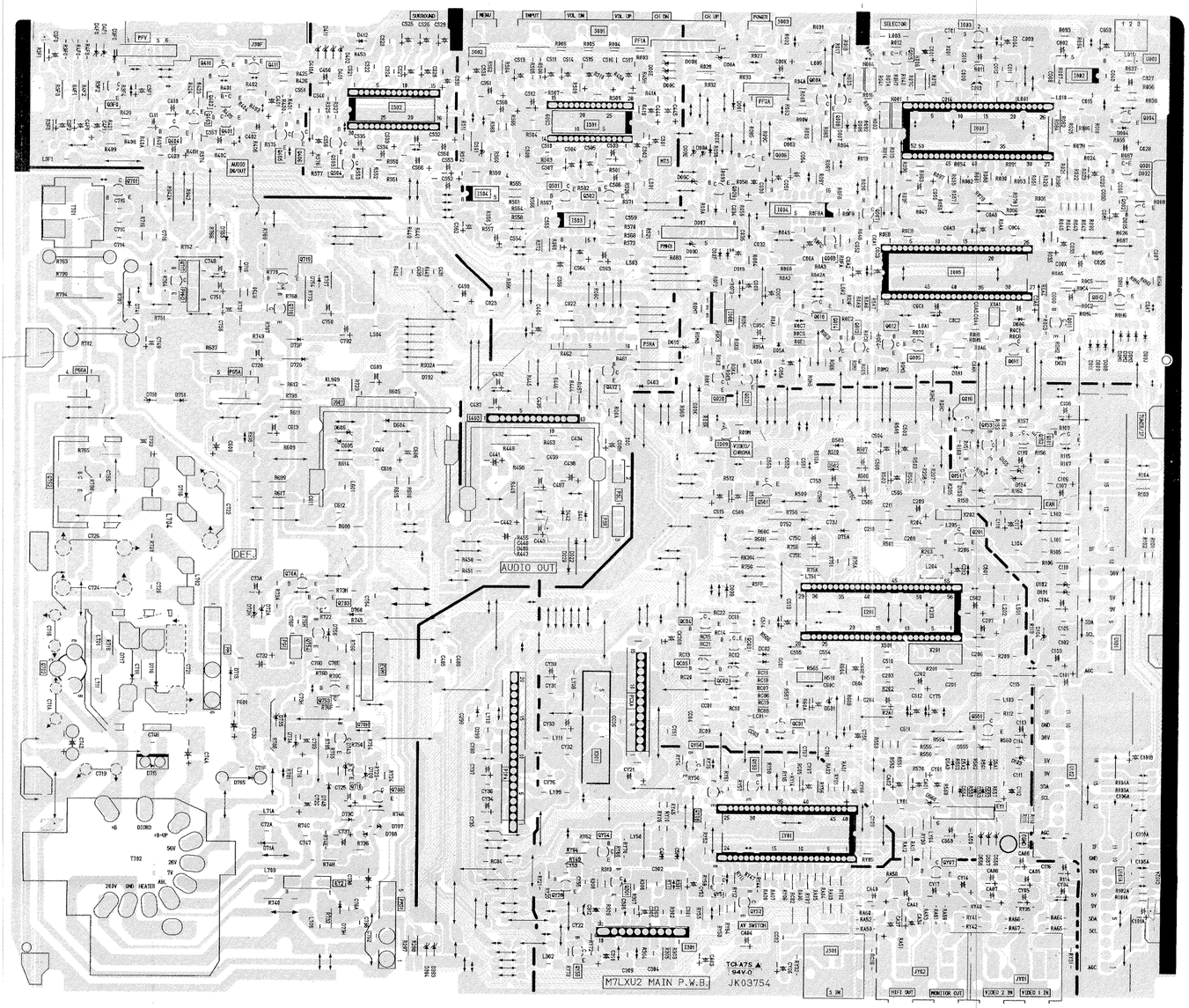




"A" VIEW

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

PRINTED WIRING BOARD (P.W.B) FOIL PATTERN
M7LXU2 MAIN P.W.B.



- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

M7LXU2 MAIN P.W.B.

PRINTED WIRING BOARD (P.W.B.) FOIL PATTERN
M7LXU2 SUB AND POWER P.W.B.

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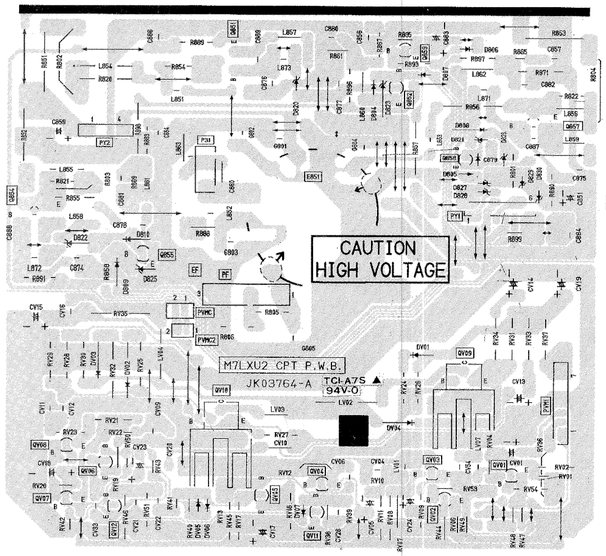
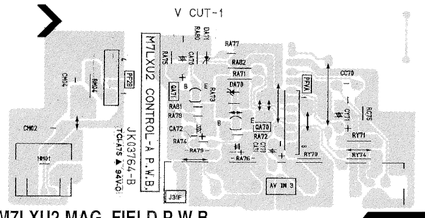
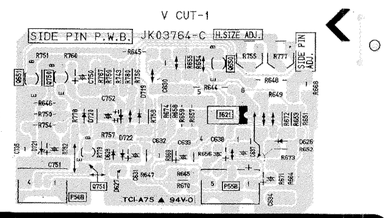
M7LXU2 CPT P.W.B.



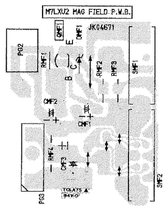
M7LXU2 CONTROL-A P.W.B.



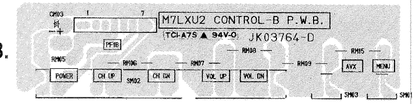
M7LXU2 SIDE PIN P.W.B.



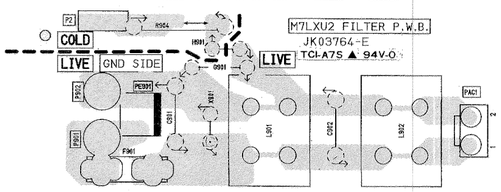
M7LXU2 MAG. FIELD P.W.B.



M7LXU2 CONTROL-B P.W.B.



M7LXU2 FILTER P.W.B.



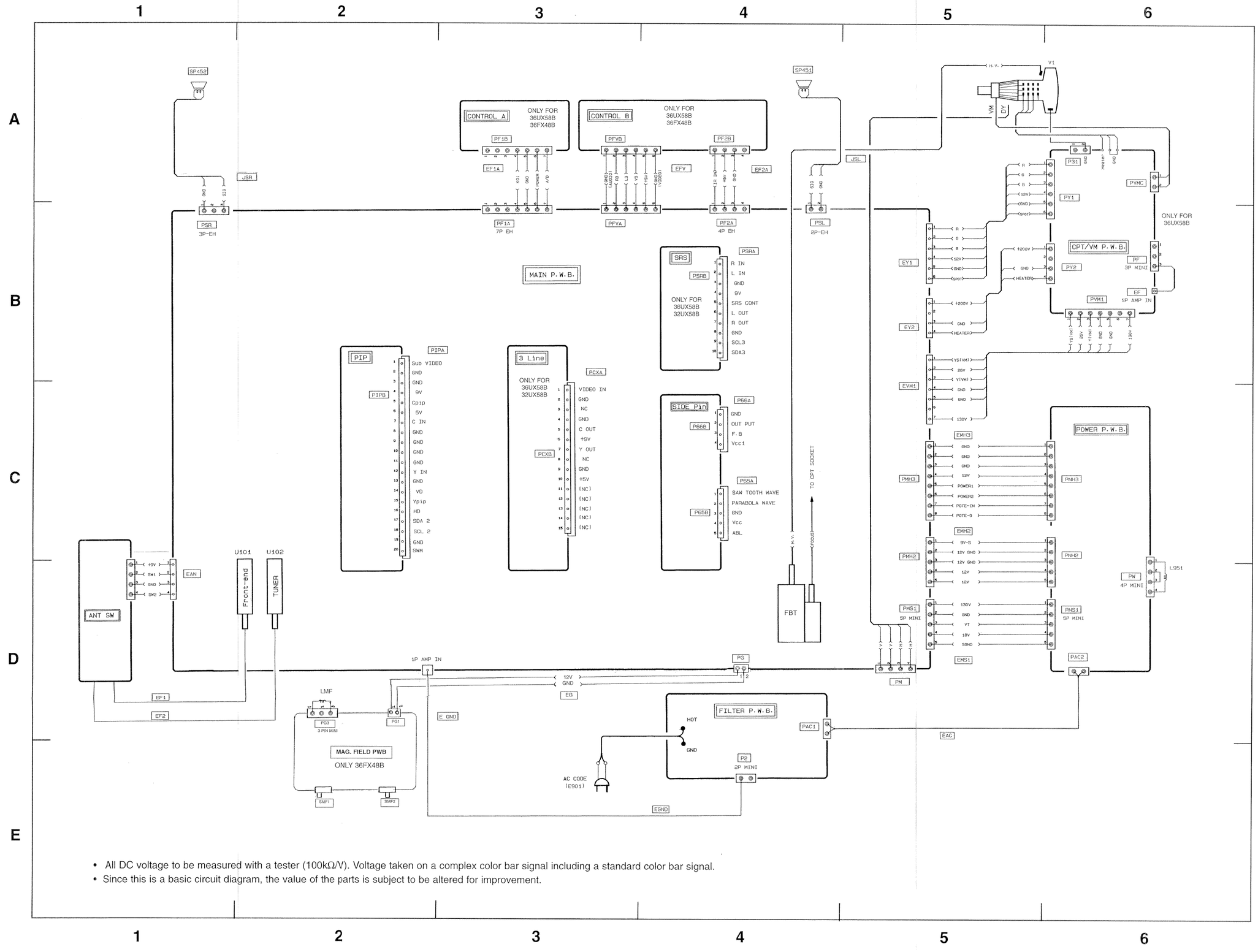
M7LXU2 POWER P.W.B.

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

M7LXU2 SUB AND POWER P.W.B.

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

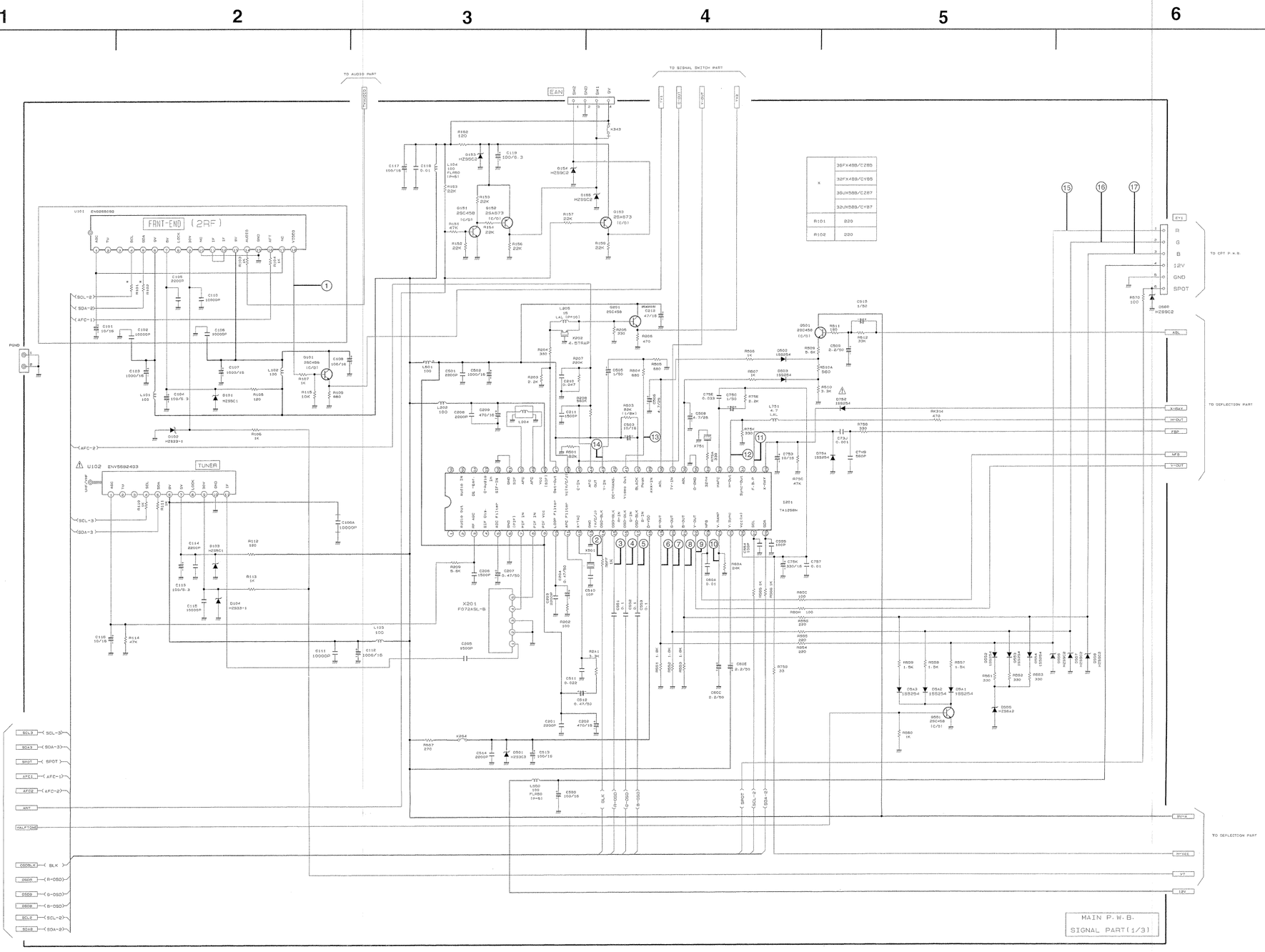
CIRCUIT SCHEMATIC DIAGRAM OF M7LXU2 CHASSIS



- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



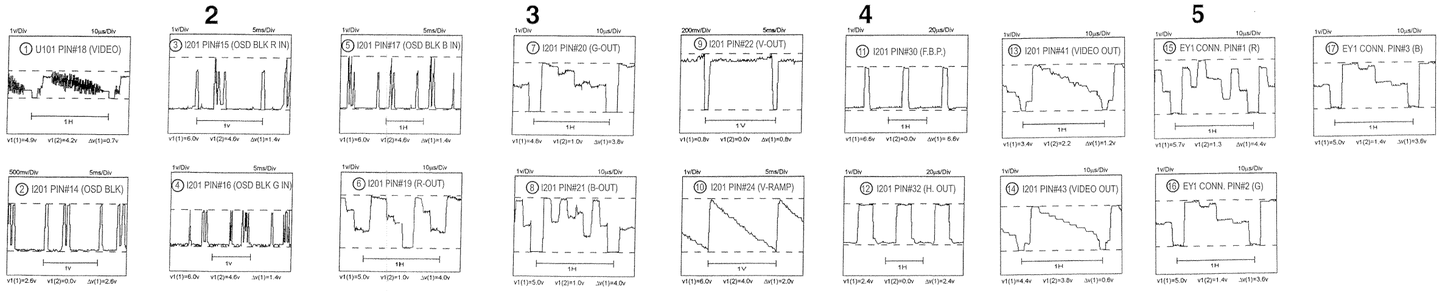
K	
	36FX48B/CZ85
	32FX48B/CY85
	36UX58B/CZ87
	32UX58B/CY87
R101	220
R102	220

Circuit No.	Pin No.	DC Voltage (Vdc)
I201	1	0.0
	2	4.0
	3	8.0
	4	3.0
	5	8.0
	6	0.0
	7	2.0
	8	0.0
	9	9.0
	10	4.5
	11	6.0
	12	5.0
	13	0.0
	14	0.0
	15	5.0
	16	5.0
	17	5.0
	18	3.5
	19	3.0
	20	3.0
	21	3.5
	22	0.4
	23	5.0
	24	5.0
	25	5.0
	26	7.5
	27	4.5
	28	4.5
	29	0.0
	30	1.0
	31	0.0
	32	1.0
	33	6.0
	34	4.5
	35	0.0
	36	3.0
	37	3.0
	38	4.0
	39	1.5
	40	5.0
	41	3.0
	42	4.5
	43	4.5
	44	2.5
	45	2.5
	46	9.0
	47	5.0
	48	9.0
	49	8.0
	50	8.0
	51	0.0
	52	0.0
	53	3.0
	54	7.5
	55	3.0
	56	0.0

Circuit No.	Pin Name	DC Voltage (Vdc)
Q101	B	4.0
	C	9.0
	E	3.5
Q151	B	0.6
	C	0.0
	E	0.0
Q152	B	4.5
	C	5.0
	E	5.0
Q153	B	8.0
	C	0.0
	E	5.0
Q201	B	3.0
	C	9.0
	E	2.0
Q501	B	9.5
	C	9.0
	E	8.0
Q551	B	0.0
	C	5.0
	E	0.0

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

MAIN P.W.B. SIGNAL PART (1/3)



PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

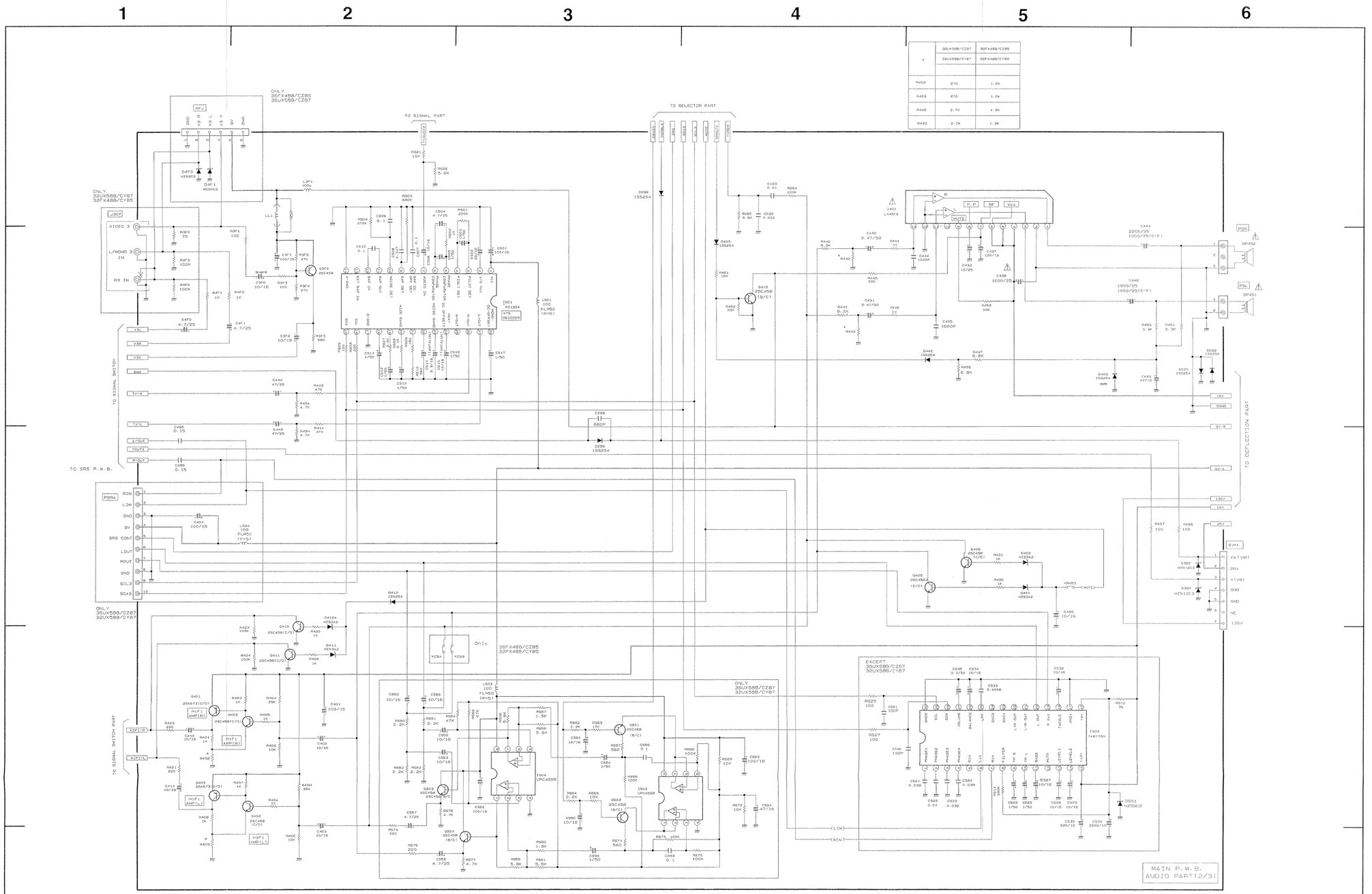
Circuit No.	Pin No.	DC Voltage (Vdc)
IS01	1	9.0
	2	4.5
	3	4.5
	4	4.5
	5	4.5
	6	4.5
	7	4.5
	8	4.5
	9	6.0
	10	0.5
	11	3.0
	12	4.5
	13	4.5
	14	0.0
	15	5.0
	16	4.0
	17	0.0
	18	4.5
	19	4.5
	20	4.5
	21	1.0
	22	5.0
	23	5.0
	24	4.5
	25	4.5
	26	4.5
	27	4.5
	28	4.5

Circuit No.	Pin Name	DC Voltage (Vdc)
Q3F0	B	3.0
	C	8.0
	E	2.0
Q401	B	11.0
	C	7.5
	E	12.0
Q402	B	2.5
	C	11.0
	E	2.0
Q403	B	11.0
	C	7.5
	E	12.0
Q404	B	2.5
	C	11.0
	E	2.0
Q405	B	0.0
	C	0.0
	E	0.0
Q406	B	0.0
	C	0.0
	E	0.0
Q410	B	0.0
	C	0.0
	E	0.0
Q411	B	0.0
	C	0.0
	E	0.0
Q412	B	0.0
	C	9.0
	E	0.0
QS01	B	0.0
	C	4.5
	E	4.5
QS02	B	0.0
	C	4.5
	E	4.5
QS03	B	4.5
	C	9.0
	E	4.0
QS04	B	4.5
	C	9.0
	E	4.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I403	1	9.0
	2	0.0
	3	9.0
	4	18.0
	5	18.0
	6	18.0
	7	9.0
	8	12.0
	9	2.0
	10	0.0
	11	1.5
	12	0.0
	13	1.5

Circuit No.	Pin No.	DC Voltage (Vdc)
IS03	1	4.5
	2	4.5
	3	4.5
	4	0.0
	5	4.4
	6	4.5
	7	4.5
	8	9.0

Circuit No.	Pin No.	DC Voltage (Vdc)
IS04	1	4.5
	2	4.5
	3	4.5
	4	0.0
	5	4.5
	6	4.5
	7	4.5
	8	9.0



*	36UX58B/CZ87 32UX58B/CY87	36FX48B/CZ85 32FX48B/CY85
R402	270	1.0K
R403	270	1.0K
R442	2.7K	3.9K
R443	2.7K	1.2K

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

MAIN P.W.B. AUDIO PART (2/3)

CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

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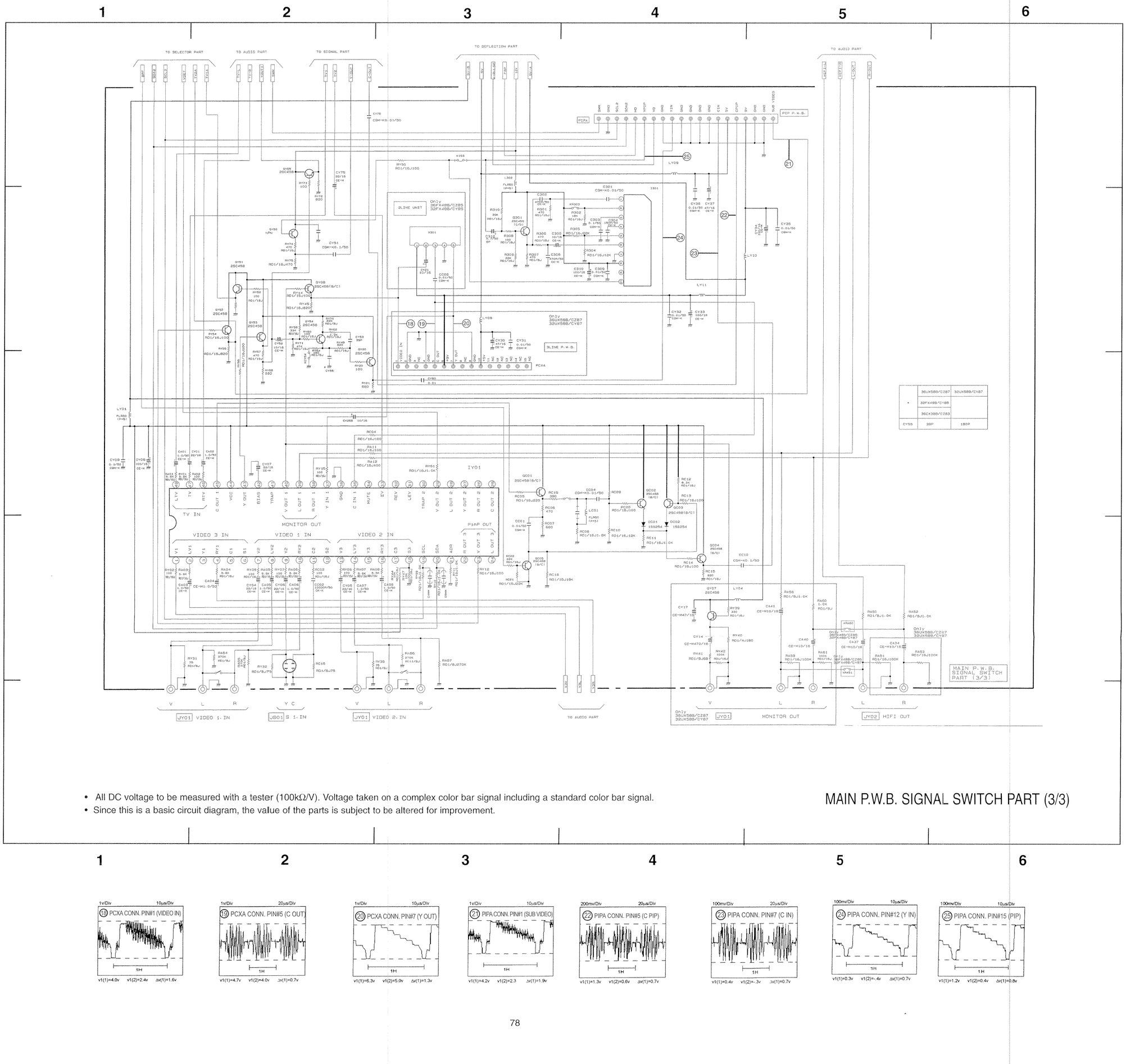


	36UX58B/CZ87	32UX58B/CY87
*	32FX48B/CY85	
	36CX38B/CZ83	
CY55	3SP	1SP

Circuit No.	Pin No.	DC Voltage (Vdc)
IY01	1	4.0
	2	4.0
	3	4.0
	4	4.0
	5	4.0
	6	0.2
	7	4.0
	8	4.0
	9	4.0
	10	4.0
	11	4.0
	12	0.2
	13	4.0
	14	4.0
	15	4.0
	16	4.0
	17	4.0
	18	4.0
	19	4.5
	20	4.5
	21	0.0
	22	4.0
	23	4.0
	24	4.0
	25	4.0
	26	4.0
	27	4.0
	28	4.0
	29	4.0
	30	4.0
	31	4.0
	32	4.0
	33	4.0
	34	0.0
	35	4.0
	36	0.0
	37	4.0
	38	4.0
	39	4.0
	40	4.0
	41	4.0
	42	4.0
	43	4.0
	44	8.0
	45	4.0
	46	4.0
	47	4.0
	48	4.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I301	1	5.0
	2	10.0
	3	6.0
	4	5.0
	5	4.0
	6	5.0
	7	0.0
	8	12.0
	9	9.0
	10	9.0

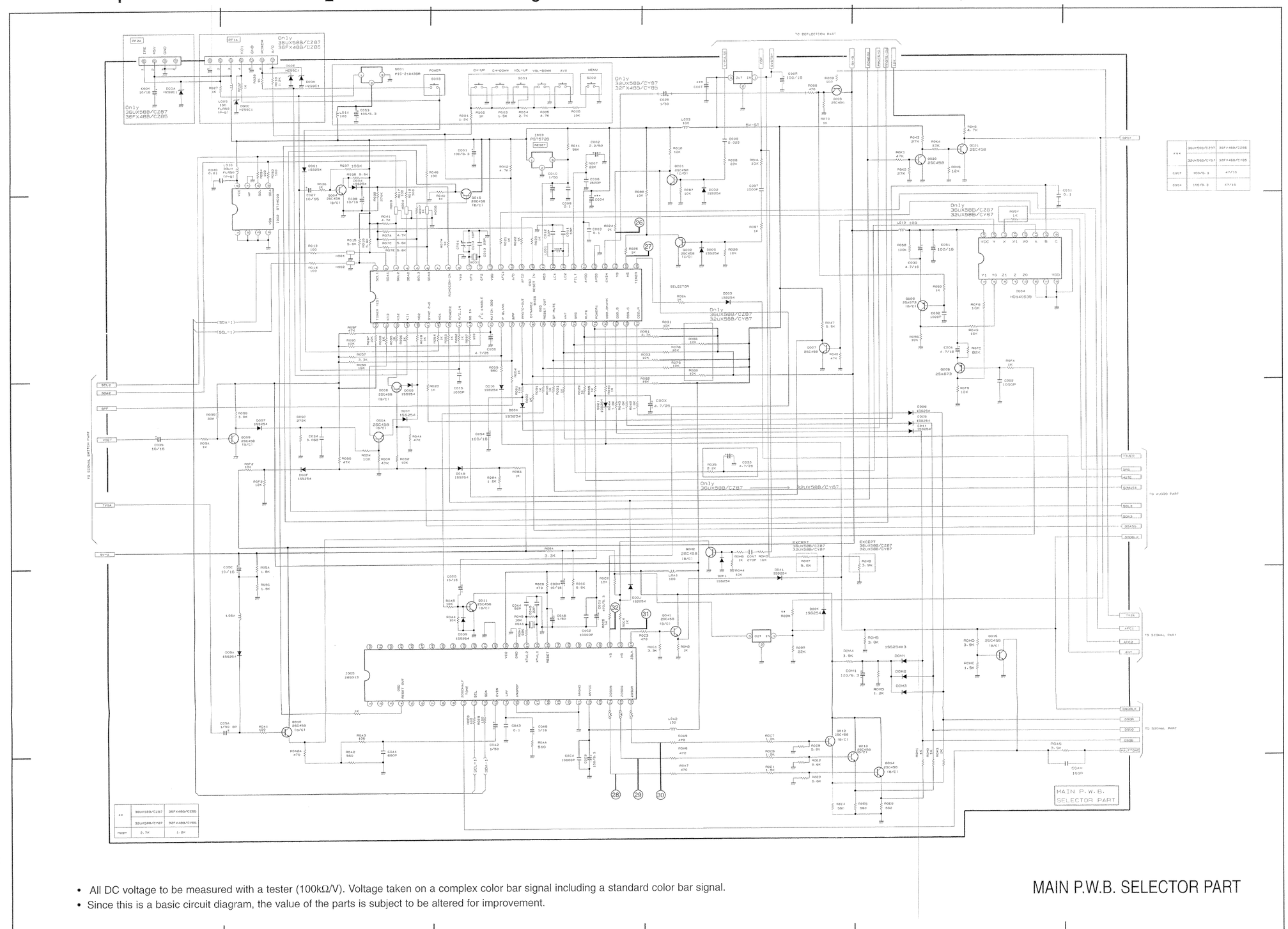
Circuit No.	Pin Name	DC Voltage (Vdc)
QY07	B	4.0
	C	8.0
	E	3.5
QY08	B	4.0
	C	8.0
	E	3.5
QY20	B	2.5
	C	8.0
	E	2.0
QY50	B	9.0
	C	12.0
	E	8.0
QY51	B	3.5
	C	8.0
	E	3.0
QY52	B	4.0
	C	8.0
	E	3.5
QY53	B	4.0
	C	8.0
	E	3.5
QY54	B	3.5
	C	5.0
	E	2.5
QY55	B	2.0
	C	12.0
	E	1.5
QC01	B	4.0
	C	8.0
	E	3.5
QC02	B	3.5
	C	8.0
	E	3.0
QC03	B	0.0
	C	8.0
	E	0.0
QC04	B	2.0
	C	8.0
	E	1.5
QC05	B	0.6
	C	0.0
	E	0.0
Q301	B	4.0
	C	12.0
	E	3.0

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

MAIN P.W.B. SIGNAL SWITCH PART (3/3)

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.

CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85



Circuit No.	Pin No.	DC Voltage (Vdc)
I001	1	5.0
	2	5.0
	3	5.0
	4	4.0
	5	5.0
	6	5.0
	7	0.0
	8	0.0
	9	0.0
	10	2.0
	11	2.5
	12	5.0
	13	3.0
	14	5.0
	15	3.0
	16	0.0
	17	5.0
	18	2.0
	19	2.0
	20	0.0
	21	5.0
	22	0.0
	23	2.5
	24	4.5
	25	4.0
	26	0.0
	27	0.0
	28	0.0
	29	0.0
	30	0.0
	31	4.0
	32	4.0
	33	5.0
	34	8.0
	35	0.0
	36	0.0
	37	7.0
	38	0.0
	39	4.0
	40	0.0
	41	1.0
	42	5.0
	43	4.5
	44	5.0
	45	5.0
	46	5.0
	47	2.5
	48	5.0
	49	5.0
	50	0.0
	51	5.0
	52	5.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I002	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	4.5
	6	4.5
	7	0.0
	8	5.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I003	1	5.0
	2	0.0
	3	5.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I004	1	0.2
	2	0.2
	3	0.2
	4	0.2
	5	0.2
	6	0.0
	7	0.0
	8	0.0
	9	3.0
	10	2.5
	11	5.0
	12	0.0
	13	2.5
	14	2.5
	15	0.0
	16	6.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I005	1	0.0
	2	0.0
	3	0.0
	4	0.0
	5	0.0
	6	0.0
	7	0.0
	8	0.0
	9	0.0
	10	0.0
	11	5.0
	12	5.0
	13	2.0
	14	1.0
	15	0.0
	16	1.5
	17	0.0
	18	0.0
	19	0.0
	20	0.0
	21	0.0
	22	5.0
	23	0.0
	24	0.0
	25	0.0
	26	0.0
	27	0.0
	28	4.0
	29	4.5
	30	0.0
	31	0.0
	32	0.0
	33	0.0
	34	0.0
	35	5.0
	36	1.5
	37	2.0
	38	0.0
	39	5.0
	40	0.0
	41	0.0
	42	0.0
	43	0.0
	44	0.0
	45	0.0
	46	0.0
	47	0.0
	48	0.0
	49	0.0
	50	0.0
	51	0.0
	52	0.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I008	1	12.0
	2	0.0
	3	5.0

Circuit No.	Pin Name	DC Voltage (Vdc)
Q001	B	0.0
	C	4.5
	E	0.0
Q002	B	0.0
	C	4.0
	E	0.0

Circuit No.	Pin Name	DC Voltage (Vdc)
Q004	B	0.6
	C	0.0
	E	0.0
Q005	B	3.5
	C	8.0
	E	3.0
Q006	B	3.0
	C	0.5
	E	3.0
Q007	B	0.0
	C	4.0
	E	0.0
Q008	B	2.0
	C	5.0
	E	2.0
Q009	B	0.6
	C	0.0
	E	0.0
Q010	B	4.5
	C	8.0
	E	3.5
Q011	B	0.0
	C	5.0
	E	0.0
Q012	B	0.0
	C	5.0
	E	0.0
Q013	B	0.0
	C	5.0
	E	0.0
Q014	B	0.0
	C	5.0
	E	0.0
Q015	B	4.5
	C	5.0
	E	4.0
Q016	B	0.0
	C	0.0
	E	0.0
Q020	B	0.6
	C	0.0
	E	0.0
Q021	B	0.0
	C	9.0
	E	0.0
Q00A	B	0.0
	C	5.0
	E	0.0
Q00B	B	3.5
	C	0.2
	E	3.5
Q0H1	B	0.0
	C	5.0
	E	0.0
Q0H2	B	0.0
	C	4.0
	E	0.0

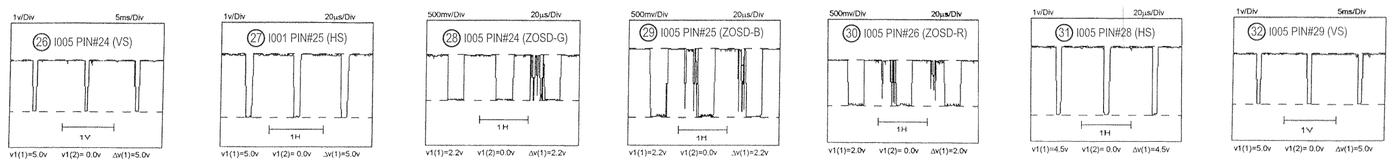
Circuit No.	Pin No.	DC Voltage (Vdc)
U001	1	0.0
	2	5.0
	3	0.0

**	36UX58B/CZ87	36FX48B/CZ85
	32UX58B/CY87	32FX48B/CY85
R059	2.7K	1.2K

**	36UX58B/CZ87	36FX48B/CZ85
	32UX58B/CY87	32FX48B/CY85
C057	100/6.3	47/10
C054	100/6.3	47/10

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

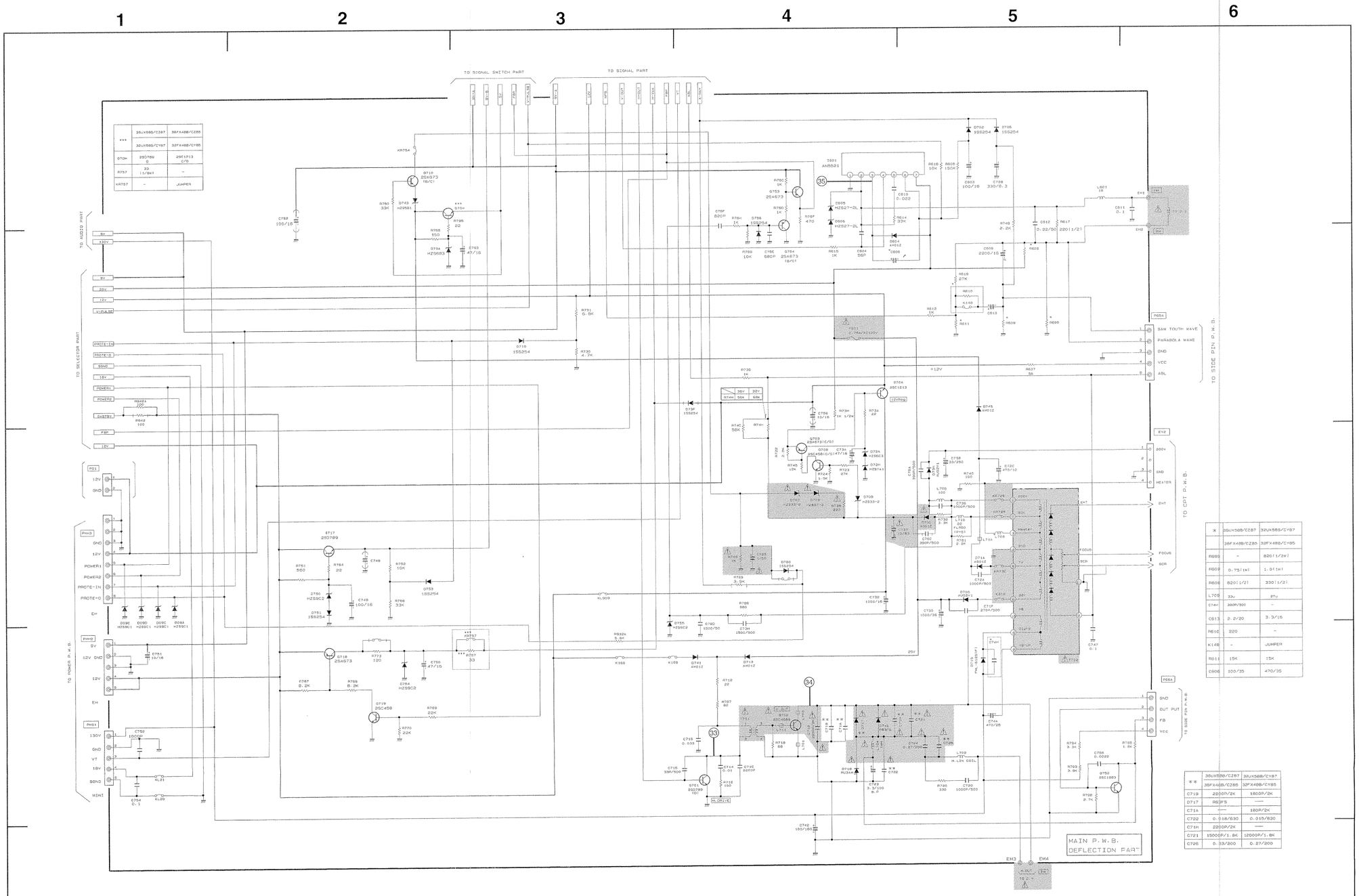
MAIN P.W.B. SELECTOR PART



MAIN P.W.B.
DEFLECTION PART

CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



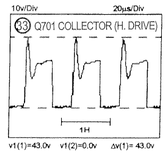
Circuit No.	Pin No.	DC Voltage (Vdc)
I601	1	0.0
	2	13.5
	3	26.0
	4	0.7
	5	0.0
	6	2.0
	7	25.0

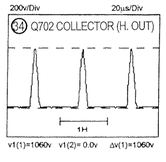
Circuit No.	Pin Name	DC Voltage (Vdc)
Q701	B	0.0
	C	15.0
	E	0.0
Q702	B	0.0
	C	129.0
	E	0.0
Q703	B	12.0
	C	12.5
	E	13.0
Q708	B	0.6
	C	0.0
	E	0.0
Q710	B	4.5
	C	0.0
	E	4.5
Q717	B	9.0
	C	12.0
	E	8.0
Q718	B	11.0
	C	12.0
	E	12.0
Q719	B	0.6
	C	0.0
	E	0.0
Q752	B	0.0
	C	22.0
	E	0.0
Q753	B	9.0
	C	1.5
	E	9.0
Q754	B	0.0
	C	8.0
	E	0.0
Q70A	B	12.5
	C	12.0
	E	12.0
Q70H	B	5.0
	C	6.0
	E	4.5

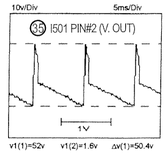
*	36UX58B/CZ87	32UX58B/CY87
	36FX48B/CZ85	32FX48B/CY85
R699	-	820(1/2W)
R809	0.75(1W)	1.0(1W)
R806	820(1/2)	330(1/2)
L709	33u	27u
C74*	390P/500	-
C613	2.2/20	3.3/15
R610	220	-
K148	-	JUMPER
R611	15K	15K
C606	100/35	470/35

**	36UX58B/CZ87	32UX58B/CY87
	36FX48B/CZ85	32FX48B/CY85
C719	2200P/2K	1800P/2K
D717	RGP5	-----
C71A	-----	180P/2K
C722	0.018/630	0.015/630
C71H	2200P/2K	-----
C721	15000P/1.6K	12000P/1.6K
C726	0.33/200	0.27/200

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.







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CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

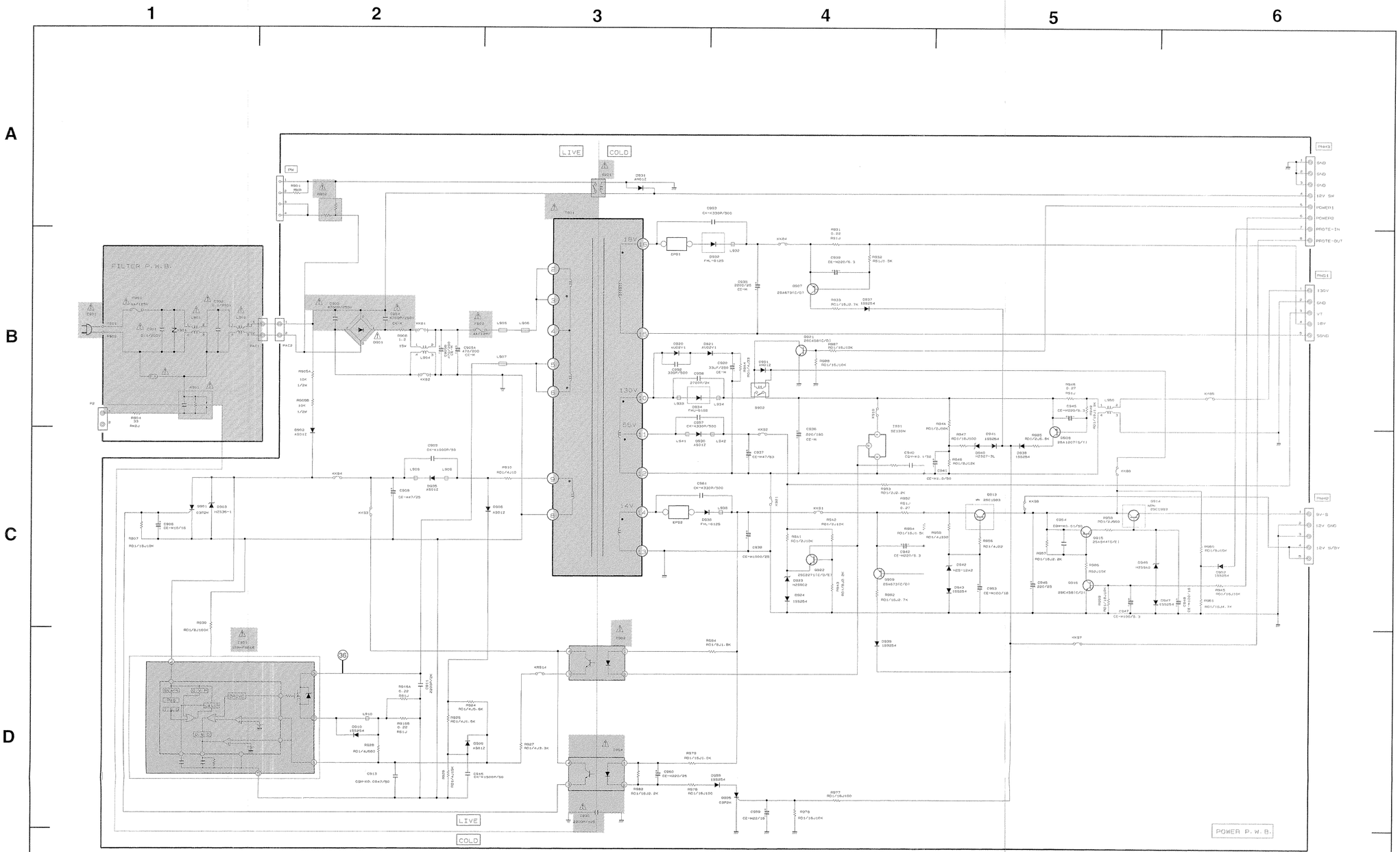
Circuit No.	Pin No.	DC Voltage (Vdc)
I901	1	1.5
	2	0.0
	3	156.0
	4	17.0
	5	0.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I902	1	13.0
	2	12.0
	3	3.0
	4	17.0

Circuit No.	Pin No.	DC Voltage (Vdc)
I904	1	13.5
	2	13.5
	3	0.0
	4	17.0

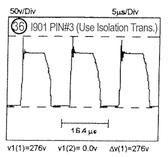
Circuit No.	Pin No.	DC Voltage (Vdc)
I931	1	130.0
	2	12.0
	3	0.0

Circuit No.	Pin Name	DC Voltage (Vdc)
Q901	K	0.0
	A	17.0
	G	0.0
Q905	A	13.5
	K	0.0
	G	0.0
Q907	B	18.0
	C	0.0
	E	18.0
Q908	B	130.0
	C	0.0
	E	130.0
Q909	B	13.0
	C	0.0
	E	13.0
Q913	B	12.5
	C	13.0
	E	12.0
Q914	B	9.0
	C	12.0
	E	9.0
Q915	B	11.0
	C	12.0
	E	12.0
Q916	B	0.6
	C	0.0
	E	0.0
Q921	B	0.7
	C	0.0
	E	0.0
Q922	B	9.0
	C	12.0
	E	10.0



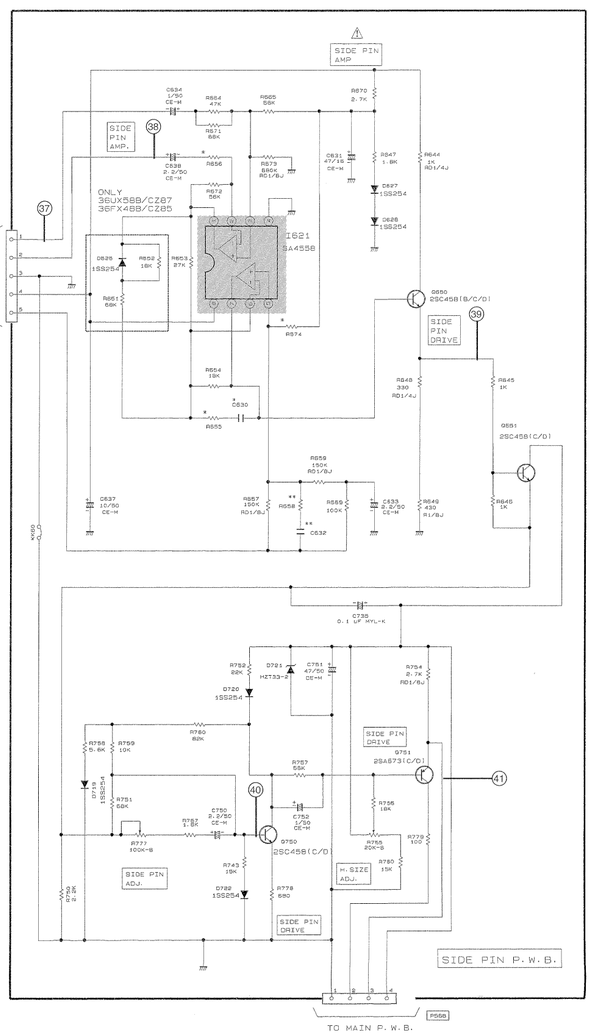
- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

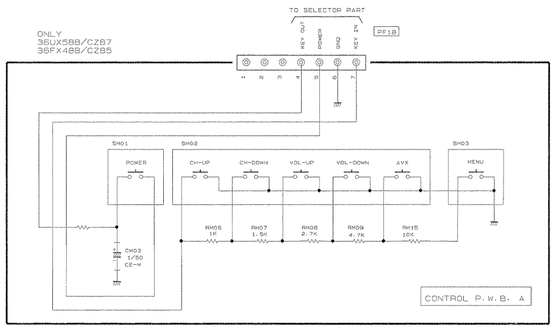
POWER P.W.B.



CIRCUIT SCHEMATIC DIAGRAM OF 36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

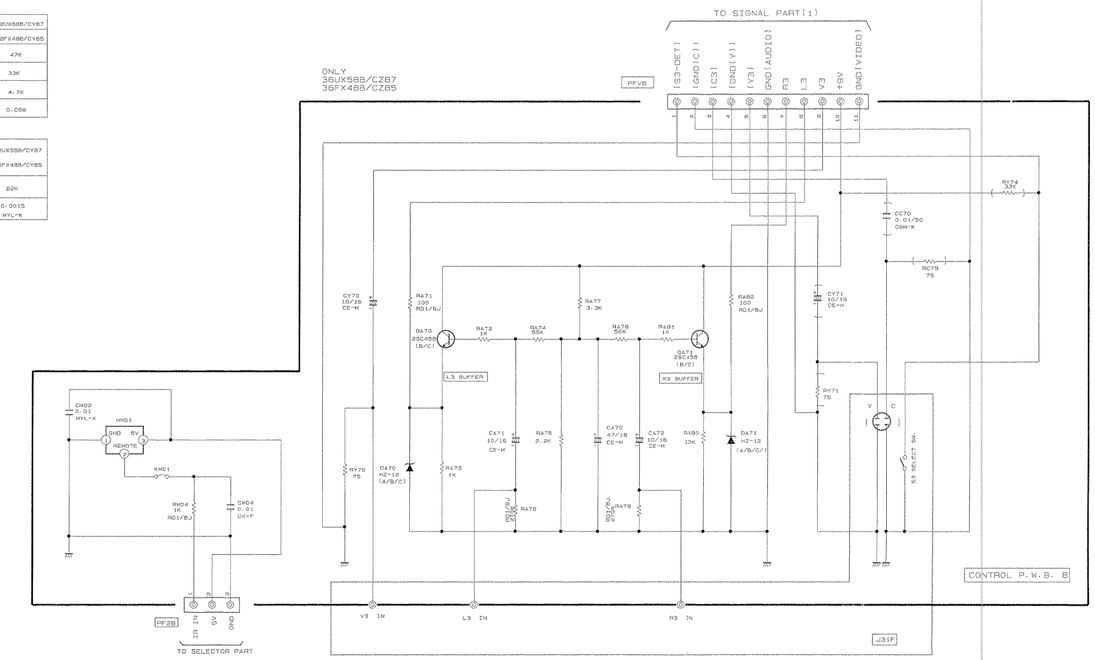
PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.





*	36UX58B/CZ87 36FX48B/CZ75	32UX58B/CY87 32FX48B/CY85
R655	27K	47K
R656	27K	33K
R674	2.2K	4.7K
C630	0.082	0.068

**	36UX58B/CZ87 36FX48B/CZ75	32UX58B/CY87 32FX48B/CY85
R658	12K	22K
C632	0.068	0.0015 MYL-K



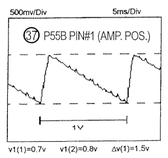
Circuit No.	Pin No.	DC Voltage (Vdc)
I621	1	5.0
	2	5.0
	3	5.0
	4	0.0
	5	5.0
	6	5.0
	7	6.0
	8	11.0

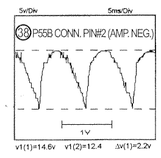
Circuit No.	Pin Name	DC Voltage (Vdc)
Q650	B	6.0
	C	5.0
	E	5.0
Q651	B	4.5
	C	33.0
	E	4.0
Q750	B	1.0
	C	13.5
	E	0.5
Q751	B	25.5
	C	0.5
	E	26.0
QA70	B	4.0
	C	12.0
	E	3.0
QA71	B	3.5
	C	12.0
	E	3.0

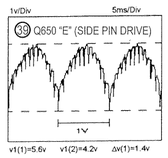
Circuit No.	Pin Name	DC Voltage (Vdc)
HM01	1	0.0
	2	0.0
	3	5.0

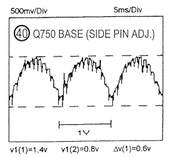
- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

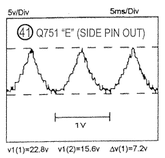
SIDE PIN P.W.B. AND CONTROL A & B P.W.B.











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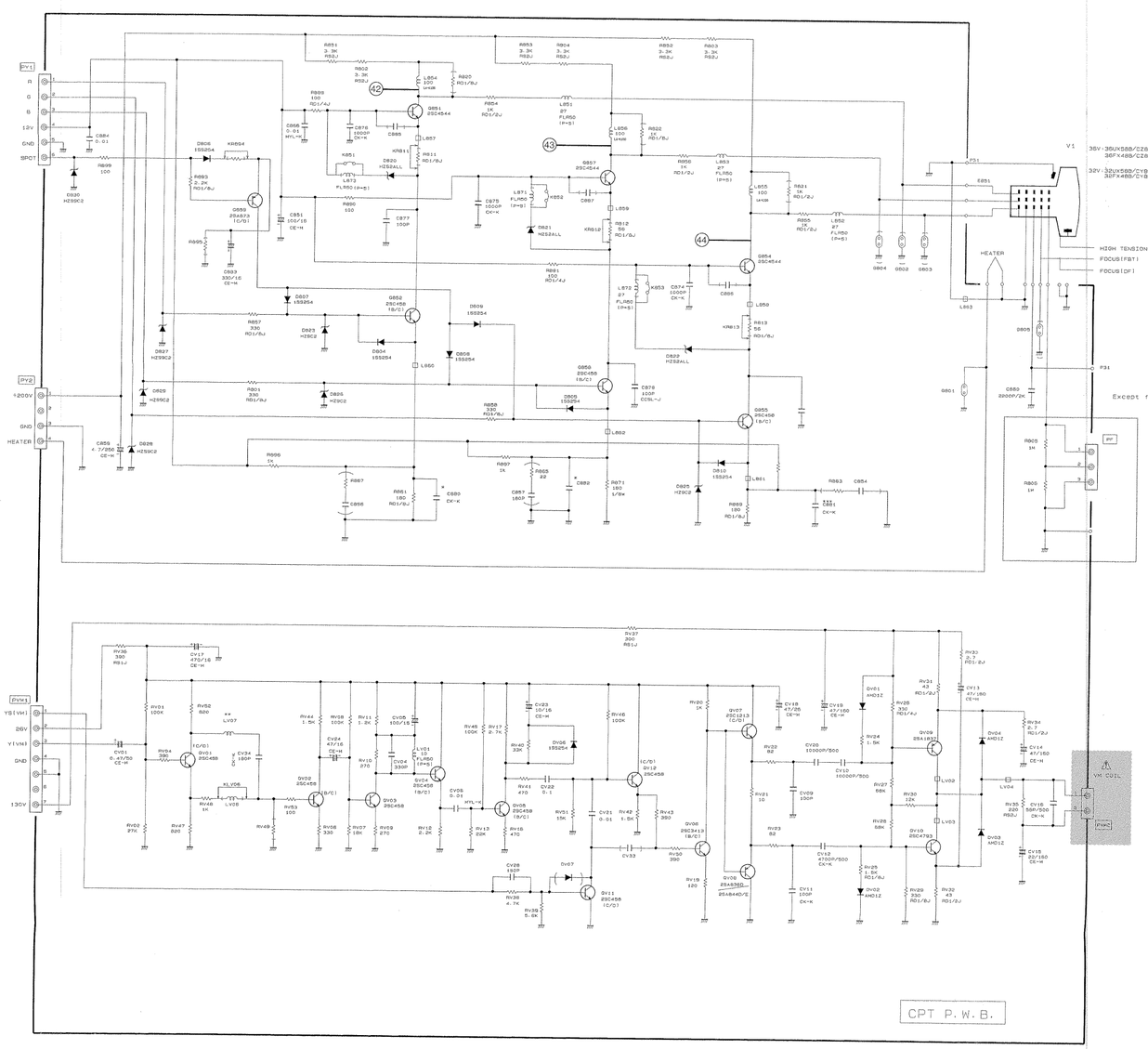
CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

C.P.T. P.W.B.



	36UX58B/CZ87	32FX48B/CY85
*	32UX58B/CY87	
	36FX48B/CZ85	
C880	680P	470P
C882	560P	470P

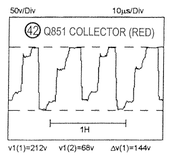
	36UX58B/CZ87	32UX58B/CY87
***	36FX48B/CZ85	
	32FX48B/CY85	
C881	470P	560P

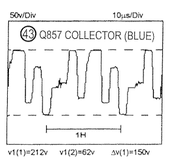
	36UX58B/CZ87	32FX48B/CY85
**	32UX58B/CY87	
	36FX48B/CZ85	
LV07	68μH	150μH

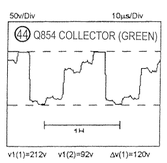
( ) MEANS PART NOT NEEDED FOR THE TIME BEING.

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

C.P.T. P.W.B.

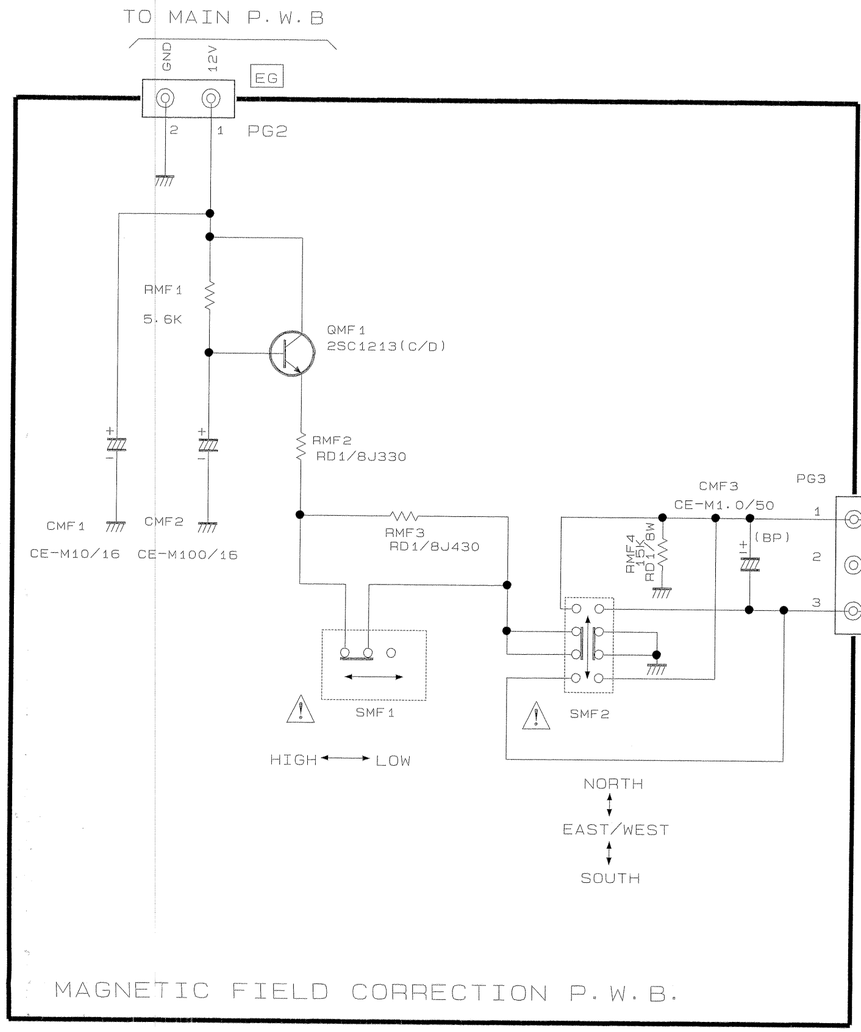






CIRCUIT SCHEMATIC DIAGRAM OF 36FX48B/CZ85
MAGNETIC FIELD CORRECTION P.W.B.

PRODUCT SAFETY NOTE: Components marked with a ⚠ and shaded have special characteristics important to safety. Before replacing any of these components, read carefully the PRODUCT SAFETY NOTICE of this Service Manual. Don't degrade the safety of the receiver through improper servicing.



FOR 36FX48B ONLY

- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

MAGNETIC FIELD CORRECTION P.W.B.

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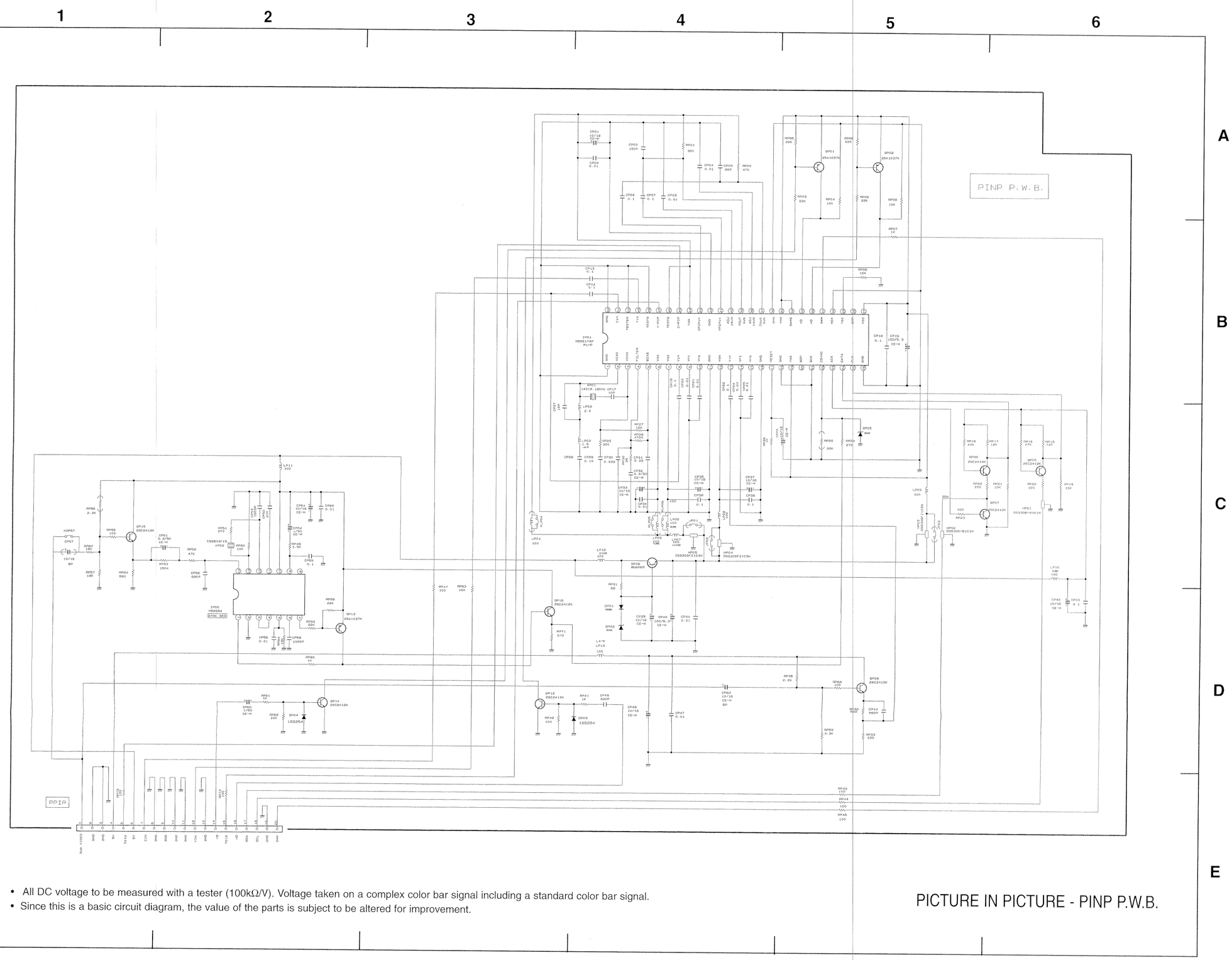
CIRCUIT SCHEMATIC DIAGRAM OF
36UX58B/CZ87, 32UX58B/CY87, 36FX48B/CZ85, 32FX48B/CY85

Circuit No.	Pin No.	DC Voltage (Vdc)
IP01	1	0.0
	2	1.5
	3	1.5
	4	1.5
	5	1.5
	6	3.5
	7	3.5
	8	1.0
	9	1.5
	10	0.5
	11	0.0
	12	3.5
	13	1.0
	14	1.5
	15	0.5
	16	0.0
	17	3.5
	18	0.0
	19	3.5
	20	0.0
	21	0.0
	22	0.5
	23	0.0
	24	3.0
	25	3.0
	26	0.0
	27	3.5
	28	3.5
	29	0.0
	30	0.0
	31	0.0
	32	0.5
	33	0.0
	34	3.0
	35	3.0
	36	0.0
	37	3.0
	38	1.0
	39	2.2
	40	1.5
	41	0.5
	42	0.0
	43	1.0
	44	3.0
	45	1.0
	46	3.0
	47	1.0
	48	0.0
	49	1.0
	50	0.0
	51	1.0
	52	0.0

Circuit No.	Pin No.	DC Voltage (Vdc)
IP02	1	1.0
	2	0.0
	3	1.0
	4	1.0
	5	1.0
	6	0.5
	7	3.5
	8	3.5
	9	2.5
	10	4.5
	11	2.0
	12	2.0
	13	2.0
	14	2.5

Circuit No.	Pin Name	DC Voltage (Vdc)
QP01	B	3.0
	C	0.0
	E	3.0
QP02	B	3.0
	C	0.5
	E	3.0
QP05	B	3.5
	C	3.0
	E	3.0
QP06	B	3.5
	C	3.0
	E	3.0
QP07	B	0.0
	C	4.0
	E	0.0
QP08	B	4.0
	C	4.5
	E	3.5
QP09	B	5.0
	C	9.0
	E	5.0
QP12	B	0.0
	C	3.0
	E	0.0
QP13	B	4.0
	C	1.0
	E	4.5
QP14	B	0.0
	C	3.0
	E	0.0
QP15	B	1.5
	C	4.0
	E	1.0
QP16	B	1.0
	C	4.5
	E	0.5



- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

PICTURE IN PICTURE - PINP P.W.B.

CIRCUIT SCHEMATIC DIAGRAM OF 36UX58B/CZ87, 32UX58B/CY87

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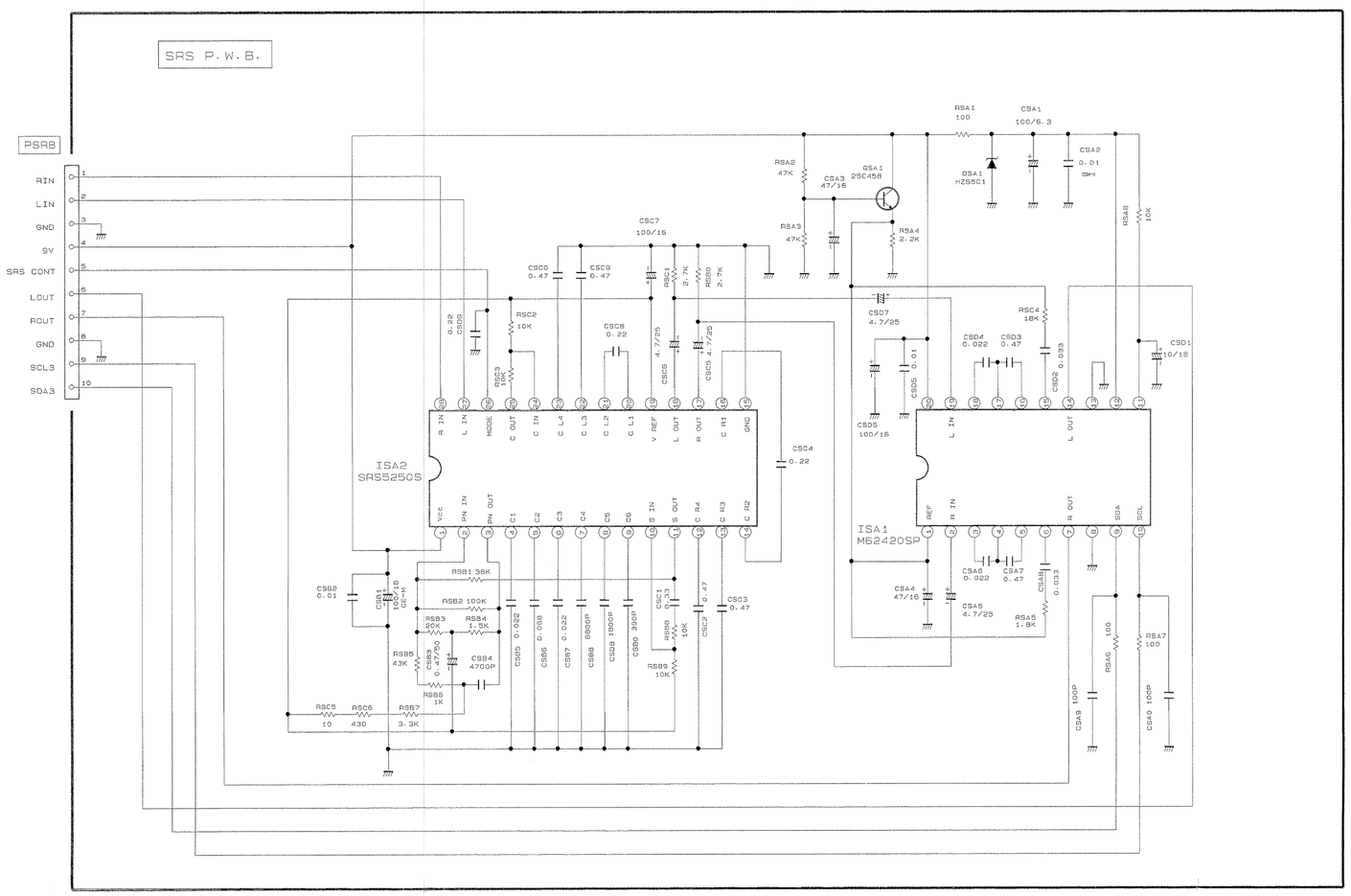

Circuit No.	Pin Name	DC Voltage (Vdc)
ISA2	1	9.0
	2	4.5
	3	4.5
	4	4.5
	5	4.5
	6	4.5
	7	4.5
	8	4.5
	9	4.5
	10	4.5
	11	4.5
	12	4.5
	13	4.5
	14	4.5
	15	0.0
	16	4.5
	17	4.5
	18	4.5
	19	4.5
	20	4.5
	21	4.5
	22	4.5
	23	4.5
	24	4.5
	25	4.5
	26	1.5
	27	1.5
	28	1.5

Circuit No.	Pin Name	DC Voltage (Vdc)
ISA1	1	3.5
	2	3.5
	3	3.5
	4	3.5
	5	3.5
	6	3.5
	7	3.5
	8	0.0
	9	5.0
	10	4.0
	11	5.0
	12	5.0
	13	0.0
	14	3.5
	15	3.5
	16	3.5
	17	3.5
	18	3.5
	19	3.5
	20	3.5

Circuit No.	Pin Name	DC Voltage (Vdc)
QSA1	B	4.5
	C	9.0
	E	3.5

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- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

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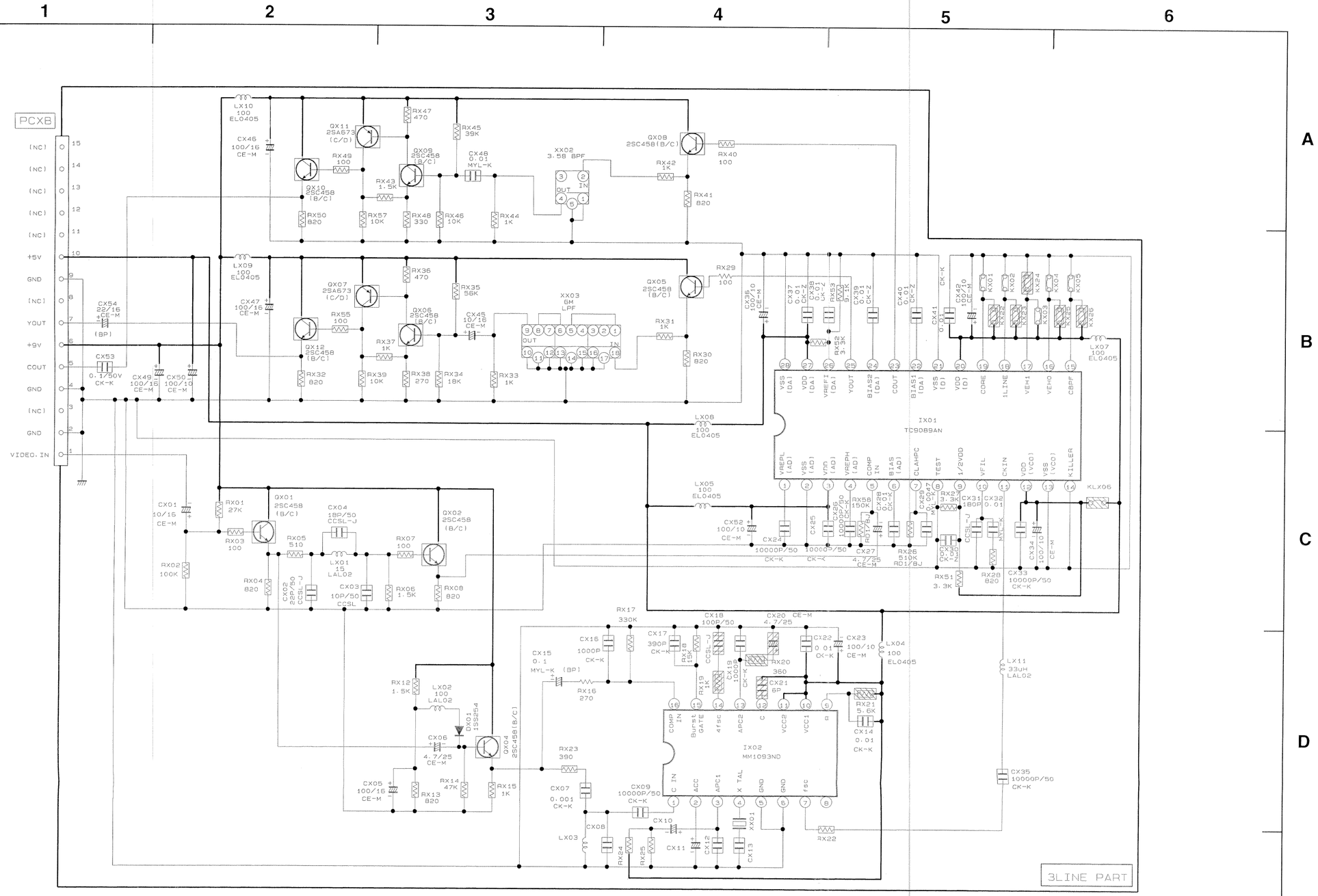
CIRCUIT SCHEMATIC DIAGRAM OF 36UX58B/CZ87, 32UX58B/CY87

3 LINE COMB FILTER P.W.B.

Circuit No.	Pin No.	DC Voltage (Vdc)
IX01	1	1.5
	2	0.0
	3	4.5
	4	3.0
	5	2.0
	6	1.0
	7	3.0
	8	0.0
	9	2.5
	10	1.5
	11	2.0
	12	4.5
	13	0.0
	14	0.0
	15	0.0
	16	0.0
	17	4.5
	18	0.0
	19	0.0
	20	4.5
	21	0.0
	22	3.0
	23	4.0
	24	1.5
	25	4.0
	26	3.5
	27	4.5
	28	0.0

Circuit No.	Pin No.	DC Voltage (Vdc)
IX02	1	3.0
	2	1.0
	3	2.0
	4	3.0
	5	0.0
	6	0.0
	7	2.0
	8	0.0
	9	0.0
	10	4.5
	11	4.5
	12	1.5
	13	2.0
	14	3.0
	15	0.5
	16	2.5

Circuit No.	Pin Name	DC Voltage (Vdc)
QX01	B	6.0
	C	9.0
	E	5.5
QX02	B	4.0
	C	9.0
	E	3.5
QX04	B	6.0
	C	9.0
	E	5.0
QX05	B	4.0
	C	9.0
	E	3.0
QX06	B	2.0
	C	8.0
	E	1.5
QX07	B	9.0
	C	5.0
	E	8.0
QX08	B	4.0
	C	9.0
	E	3.5
QX09	B	2.0
	C	8.0
	E	1.0
QX10	B	4.5
	C	9.0
	E	4.0
QX11	B	9.0
	C	4.5
	E	8.0
QX12	B	5.0
	C	9.0
	E	4



- All DC voltage to be measured with a tester (100kΩ/V). Voltage taken on a complex color bar signal including a standard color bar signal.
- Since this is a basic circuit diagram, the value of the parts is subject to be altered for improvement.

3 LINE COMB FILTER P.W.B.

HITACHI