14" VGA COLOR MONITOR

SAMTRON

SAMSUNG ELECTRON DEVICES

SERVICE MANUAL

SC-431VII

SPECIFICATION

Picture tube	3709 B22 14 Inches diagonal 90 degree deflection, 0.31mm dot pitch, black matrix
Input signal	Video : 0.7Vp-p Analog level positive Sync : TTL level
Display -colors	Any Colors
Synchro -nization	Horizontal : 31.5KHz Vertical : 60~70Hz
Resolution	640 dots(H)×350 lines(V) : 70Hz 640 dots(H)×400 lines(V) : 70Hz 640 dots(H)×480 lines(V) : 60Hz
Video band -width	30MHz
Display area	Horizontal : 245±3mm Vertical : 175±3mm
Ac input -voltage	AC90V to 264V (50/60Hz)
Power -consumption	70W (MAX.)
Dimension	400 (W) × 444 (D) × 400 (H) mm
Weight	13.0kg

2981

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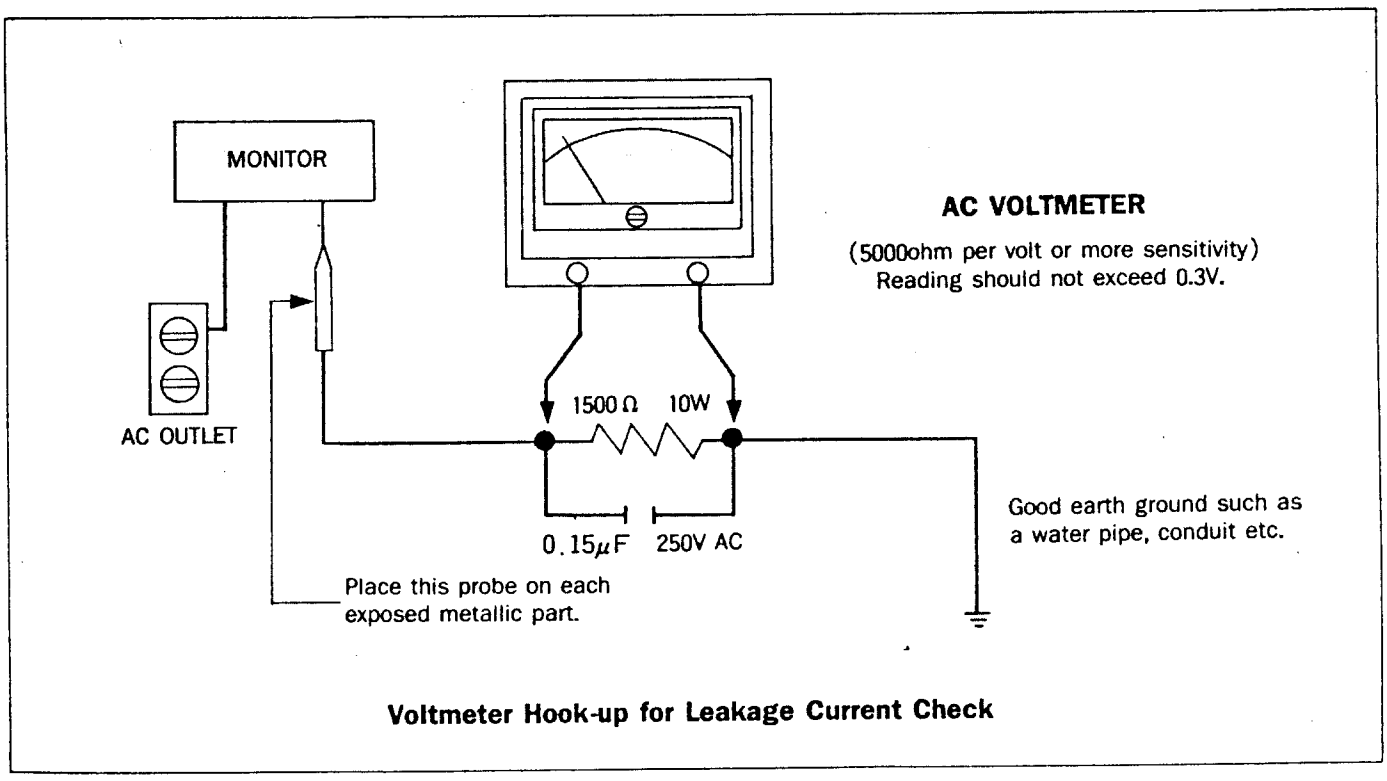
1. GENERAL INFORMATION

(1) SAFETY PRECAUTION

WARNING: Service should not be attempted anyone unfamiliar with the necessary precautions on this unit. The following precautions are necessary during servicing.

1. Some parts such as a picture tube in this unit have special safety-related charaeristics for X-RAY RADIATION protection.
   For continued safety, the parts replacement should be undertaken referring to item 2 below.
2. Many electical mechanical parts in this unit have special safety-related characteristics for protection against shock hazard and others.
   These characteristics are often passed unnoticed by a visual inspection and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltage wattage, etc.
   Replacement parts which have these special characteristics are identified in the manual and supplements by shading on the schematic diagram and the parts list.
   Before replacing of these components read the parts list in this manual, carefully.
3. When replacing chassis in the cabinet, always be certain that all the protective devices are installed properly, such as insulating covers, strain relief, etc.
4. Before replacing the back cover of the set, thoroughly inspect inside the cabinet to see that no stray parts or tools have been left inside.
5. Before returning the set to the customer always perform an Ac leakage current check on the exposed metallic parts of the cabinet, such as terminal, screwheads, metal overlays, control shafts, etc. To be sure the set is safe to operate without danger of electrical shock. Plug the AC line cord directly into a 115V AC outlet (do not use a line isolation transformer during this check). Use an AC voltmeter having 5000 ohms per volt or more sensitivity in the following manner.
   Connect a 1500 ohm, 10 watt resistor, paralleled by a 0.15mfd(μF), 250V AC capacitor, between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts, one at a time.
   Measure the Ac voltage across the combination of 1500 ohm resistor and 0.15 mfd(μF) capacitor. Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metailic part. Voltage measured must not exceed 0.3V RMS. This corresponds to 0.2mA AC any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.



Voltmeter Hook-up for Leakage Current Check

〔2〕 DOCUMENT DESCRIPTION

This is technical specification for a SC-431VII Color display monitor.
This docuent contrains information on all technical details of the monitor.

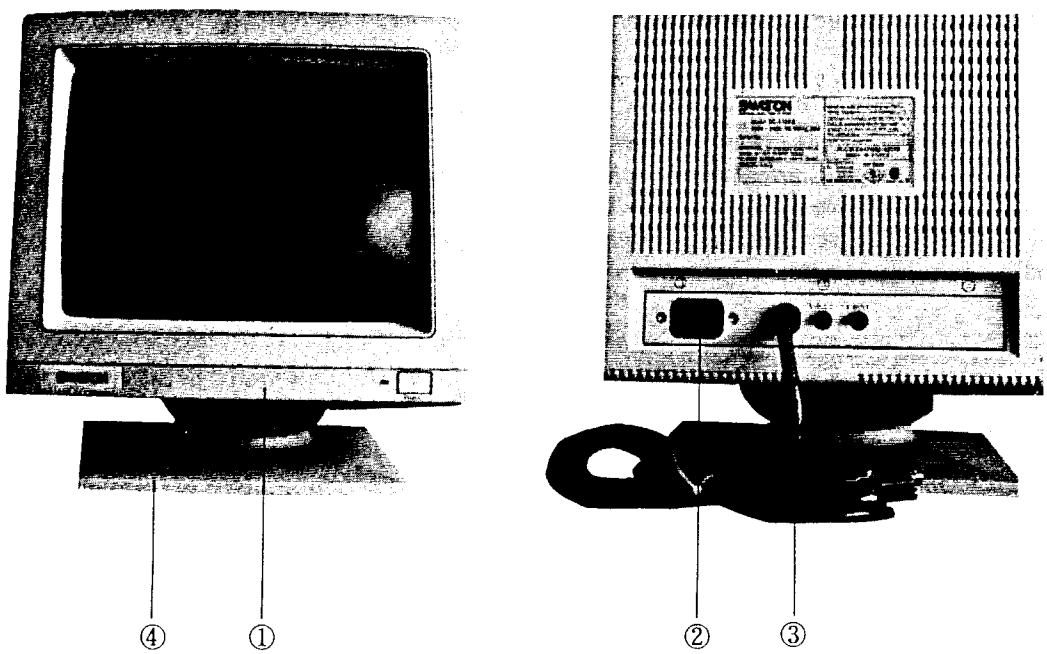
〔3〕 PRODUCT DESCRIPTION

This SC-431VII Color display monitor to be operated in Analog Drive mode in put a highlight of these is provided below.

- Resolution : 640 Dots×350 lines : 70Hz
  640 Dots×400 lines : 70Hz
  640 Dots×480 lines : 60Hz
- Display capability : 2400 Characters(80×30)
- Active display area : Horizontal~245±3mm
  Vertical 170±4mm
- Horizontal frequency : 31.5KHz
- Vertical frequency : 60Hz / 70Hz

USING COLOR DISPLAY MONITOR

Meting SC-431VII Color display monitor.
Refer to the diagram below to be sure that your SC-431VII package includes all the items in this picture.
Save the original box and packing materials in case you have to ship or transport



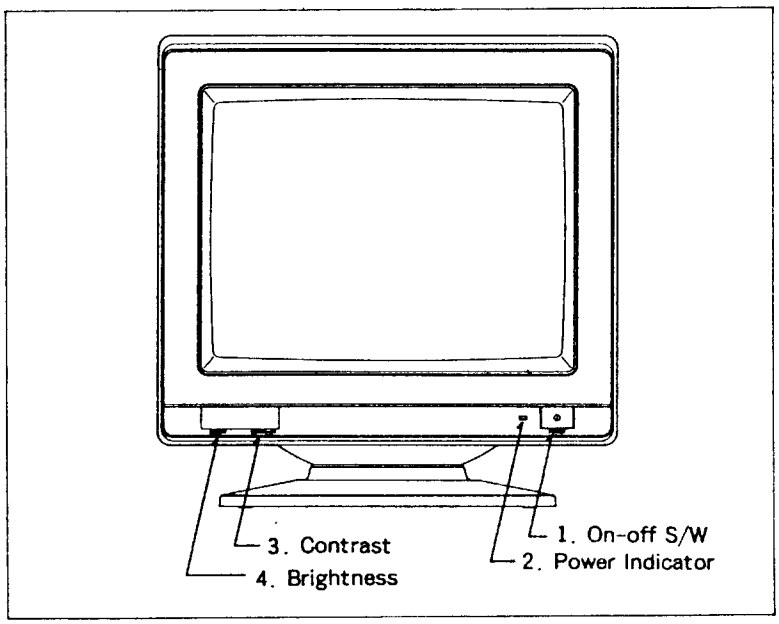
① Color display monitor(SC-431VII)
② Power Input
③ Signal cable : Connects IBM PC or Compatibles
④ Swivel / Tilt stand

〔4〕 ADJUSTMENT

Apply power and Analog video signal to the data display

1. ADJUSTING THE FRONT CONTROLS

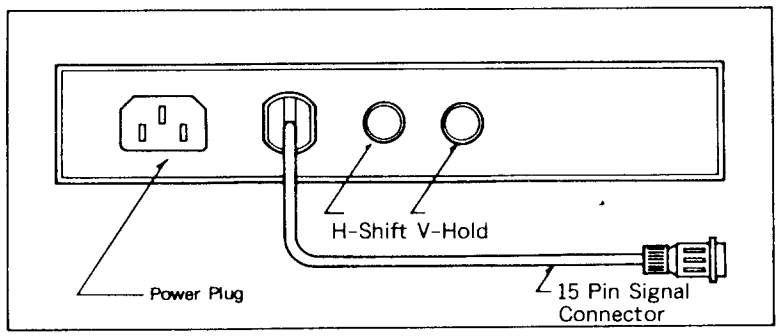
FRONT VIEW



1. The On-Off Switch : The push-button on-off switch of Monitor is in the lower right-hand corner. To turn the Monitor on push the button forward. You will see the light of the power indicator. To-turn the Monitor off press the switch again. The power indicator will go out.
2. The Power Indicator : Green light.
3. The Contrast Control : Rotating it increases or decreases the degree of difference between the lightest and darkest sections on the screen.
4. Brighteness Control : Intensifies screen illumination.

2. ADJUSTING THE REAR CONTROLS

REAR VIEW



2. CHARACTERISTICS

〔1〕 GENERAL CHARACTERISTICS

NO	Description	Nominal	Remark
1	CDT(Color Display Tube)	3709B22(ST)-TC06: 0.31P	Ref.CDT Spec.
2	CDT Phosphor	P 22 Dark Phosphor	
3	D.Y Deflection Angle	90°	Ref. CDT Spec.
4	Resolution	640×350, 640×400, 640×480	Graphic Mode
5	Horizontal Frequency	31.5KHz	Ref. Timing Chart Fig.1
6	Vertical Frequency	60 / 70Hz	
7	Input Signal	R.G.B Analog	
8	Power Consumption	Normal:60W, Max:70W	
9	Display Color	256 Colors	
10	Display Zone	245±3mm × 175 ±3mm	Ref. Fig.2
11	Display Character	2400 Character(80×30)	
12	Pitch	0.31mm Dot Pitch	
13	Weight	Approx. 13Kg	

〔2〕 Electrical Characteristics

2-1. Input Power

The display device shall maintain the specified performances in the range described below.

NO	Description	Nominal	Remark
1	Power Source	AC 90V~265V	Universal Power
2	Frequency	47~63Hz	
3	power Consumption	MAX.70W	

2-2. Input Signal

The input signals shall be applied to the display devices through a signal cable which must be intended as part of the monitor. (Ref. Fig 1 Timing chart)

Section	Description	Nominal	Remark
Video Signal Red Green Blue	Video Input	0.0 to 0.7V_{p-p} Analog	
	Polarity	Positive	
	Pixel Rate	25.175MHz to 28.322MHz	
	Rise / Fall Time	Less than 8 nsec	
	Input impedance	75 ohms	
H-Sync.	Sync Input	0.4≦Level≦5	
	Pulse Width	3.8usec	
	Polarity	Positive or Negative	
	Frequency	31.5KHz	
	Front Porth	0.7usec	
	Back Porch	1.9usec	
V-Sync.	Sync Input	0.4≦Level≦5	
	Pulse Width	0.064msec	
	Polarity	Positive or Negative	
	Frequency	60 / 70Hz	
	Front Porch	0.064~0.985 msec	
	Back Porch	0.793~1.716 msec	

〔2〕 **CRT Electrode voltage**

2-3. CRT Electrode voltage

NO	Description	Nominal	Remark
1	Heater	6.3V±0.5V, 630mA±30mA	
2	Cathode(R.G.B)	90V±20V	
3	Gride #1	−10V~−40V	
4	Gride #2	500V±50V	Screen
5	Gride #3	6.5KV± 0.5KV	Focus
6	Anode Voltage	24KV± 1KV @0uA	

2-4. Timing Charactristic

The monitor shall be capable of displaying 3 different vertical resolution (350, 400, 480 lines) within the scan freguency range from 60 to 70 Hz.
The one horizontal timing applies to all resolution and Vertical Frequencies as well as the scanning mode. (non interaced)

NO	Description		480Lines	400Lines	350Lines	Remark
1	Horizontal	Frequency	31.5KHz	31.5KHz	31.5KHz	
		Line Time	31.8usec	31.8usec	31.8usec	
		Active Time	25.4usec	25.4usec	25.4usec	
		Blanking Time	6.4usec	6.4usec	6.4usec	
		Front Porch	0.7usec	0.7usec	0.7usec	
		Back Porch	1.9usec	1.9usec	1.9usec	
2	Vertical	Frequency	60Hz	70Hz	70Hz	
		Line Time	16.683msec	14.268msec	14.286msec	
		Active Time	15.762msec	13.156msec	11.504msec	
		Blanking Time	0.921msec	1.112msec	2.764msec	
		Front Porch	0.064msec	0.159msec	0.985msec	
		Sync Pulse Width	0.064msec	0.064msec	0.064msec	
		Back Porch	0.793msec	0.890msec	1.716msec	

[3] MECHANICAL CHARACTERISTICS

3-1. Weight

The total weight shall be less than approximate 13.0Kg.

3-2. External Dimensions(mm)

	Without Stand	With Stand
Width	354	354
Height	315	365
Length	372	372

3-3. Tilt/Swivel

The inclination of the surface of the screen shall be adjustable at least −5deg. and +14deg. With a min. 19deg. from the vertical. The swivel must be min. 180deg.

3-4. Tool Resin

Tool	Resin	Color
Front	Noryl, ABS	Beige
Rear	"	"
Stand	"	"

3. DISPLAY ADJUSTMENT.

1. +B VOLTAGE ADJUSTMENT.

* Receive a white pattern signal.
* Set contrast and brightness control at maximum position.
* Make sure the AC power supply voltage is at the specifide value.
* Adjust +B-ADJ.volume(VR101) on the display PCB for a 85V.

2. HORIZONTAL DEFLECTION CIRCUIT ADJUSTMENT.

2-1. Horizontal oscillation circuit adjustment. (H-HOLD)

* Receive a white pattern signal.
* Turn the H-HOLD volume(VR501) slowly until the picture almost becomes still.

2-2. Horizontal position adjustment. (H-CENTER.H-SHIFT)

* Receive a cross-hatch pattern signal.
* Turn the H-CENTER volume(VR504) so that the raster is positioned at almost the center of the CDT screen.
* H-SHIFT(VR502) controls the picture position of the CDT screen.
  Users set this knob so that the picture is positioned at almost center of the CDT screen.

2-3. Horizontal width adjustment(H-WIDTH)

* Receive a cross-hatch pattern signal.
* Set contrast and brightness controls at there maximum positions.
* Adjust H-WIDTH control(L504) so that a width becomes 245±3mm

3. VERTICAL DEFLECTION CIRCUIT.

3-1 Vertical oscillation circuit alignment. (V-HOLD)

* Receive a white patterm signal.
* Turn the V-HOLD volume (VR601) slowly so that the pattern becomes still.

3-2. Vertical Linearty adjustment. (V-LIN).

* Receive a cross hatch pattern signal.
* Adjust the size volume so that the height becomes 80% of the display area of CDT.
* Adjust V-LIN volume(VR402) to get optimum linearity.

3-3. Size adjustment.

* Receive a cross hatch pattern signal. (MODE 1)
* Adjust size volume(VR604) so that the height of the pattern becomes 175 ±3mm.
  ※ MODE 2, MODE 3 size control is also same process.
  MODE 1 (640*480)·····VR604
  MODE 2 (640*400)·····VR401
  MODE 3 (640*350)·····VR402

3-4. Vertical position adjustment. (V-SHIFT)

* Receive a cross hatch pattern signal.
* Set the V-SHIFT volume(VR602) at the appropriate position so that the raster is positioned at almost the center of the CDT screen.

4. VIDEO CIRCUIT ADJUSTMENT

4-1. Controls function.

* Brightness volume. (VR801)
  This knob control mainly intended as a raster luminance adjusted.
* Sub-Brightness volume. (VR802)
  This control adjust the cut off point of the raster.
* R.G.B gain volume. (VR202, VR203, VR204)
  This volume adjust the gain of RED, GREEN BLUE video pre amplifier.
* R.G.B.bias volume. (VR301R, VR301G, VR301B)
  This volume controls the bias voltage of RED, GREEN, BLUE cathode of CDT.

* Cotrast volume. (VR201)
  This knob shall vary the gain of the video amplifier thus adjusting the contrast of the displayed image, and not effect on the raster luminance.
* Screen volume. (On the FBT)
  This volume controls the G2 voltage.
* Focus volume. (On the FBT)
  This volume controls the focus of the picture.

4-2. White balance adjustment.

* Before the power switch on, all control volume set menhantcal center.
* Operate the set for 15 minutes to warm up.
* Degauss the CDT face fully with the degaussing tool.
* Adjust brightness volume at maximum position, sub-brightness volume at maximum position and screen volume at minimum position.
* Adjust bias volume of appearing R.G.B untill the raster begines to cut off.
* Increase the screen volume slowly to shine the raster.
  And then adjust last two bias volume so that a white raster shines.
* Now adjust the sub-brightness volume so that the raster begines to cut off.
* Receive a white pattern signal.
* Adjust R.G.B gain volume for specified white color.
  Use the color analyzer, if necessary.
  ※ Standard color coordinate.
    X=0.281±0.02
    Y=0.311±0.02
  ※ Maximum brightness.
    22~30F/L

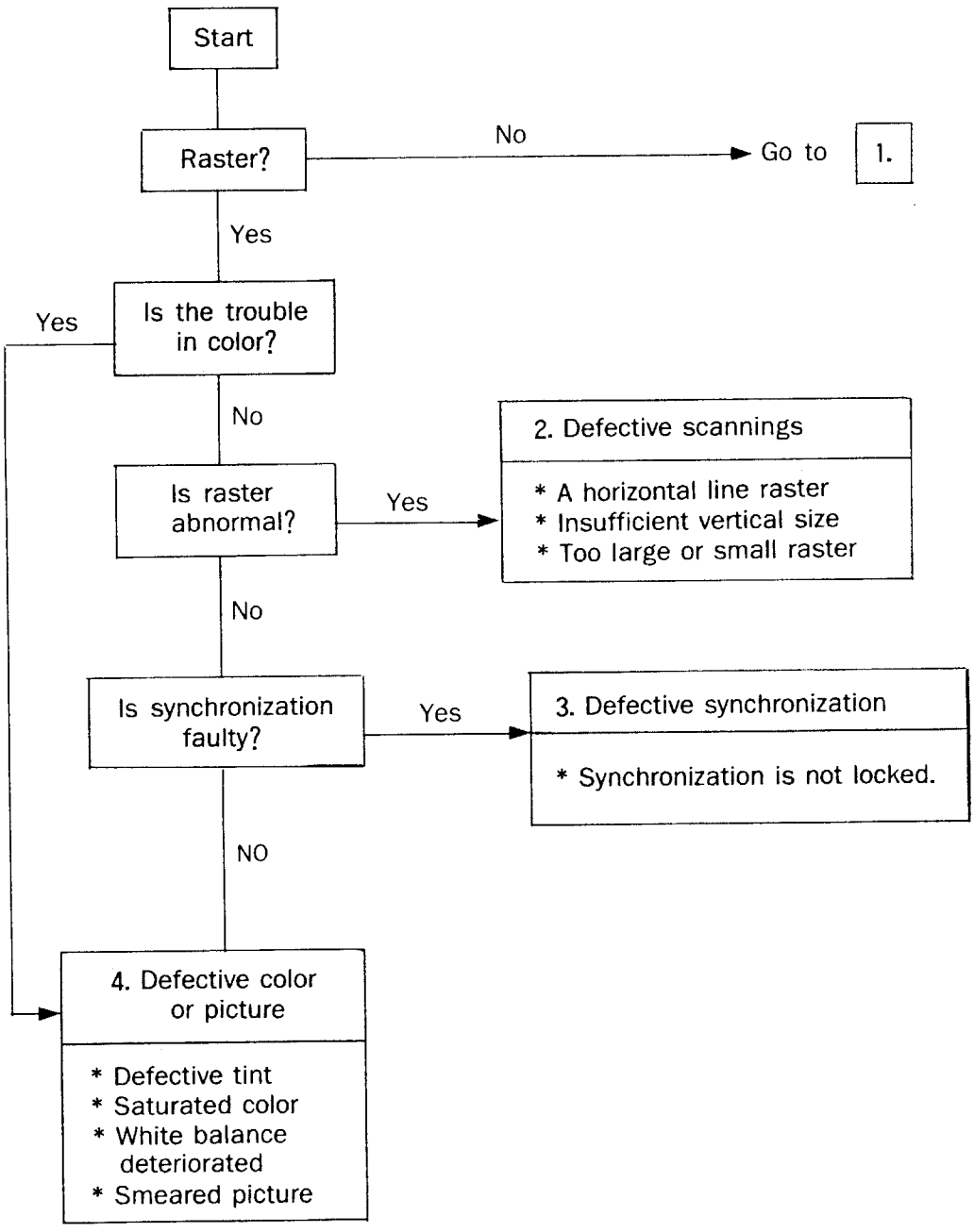
5. FLASHOVER PROTECTION.

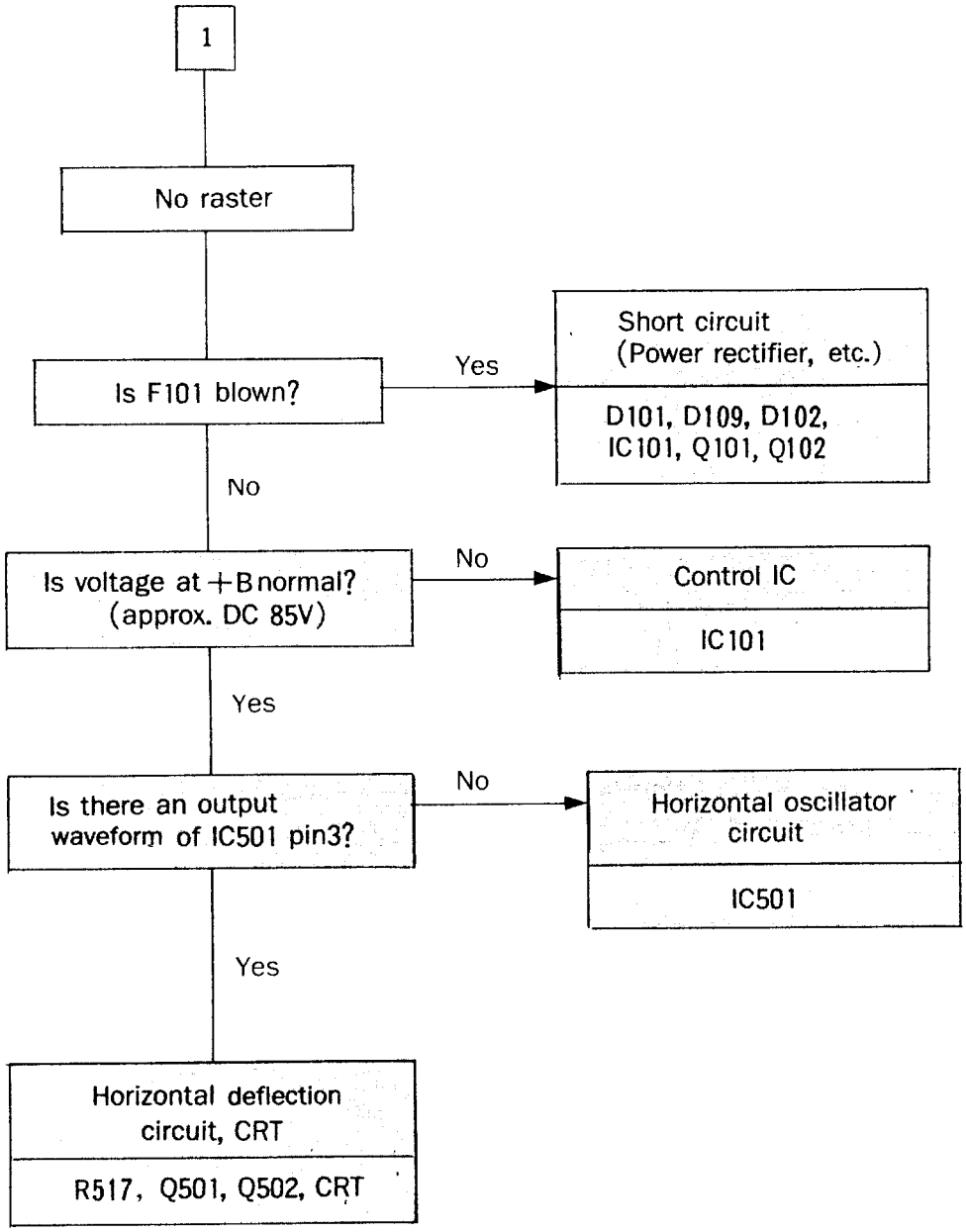
Due to high voltage within this tube, internal flashover occur.
Protection must be provided using spark gap to prevent flashover from destroying the cathode or other internal circuit.
These spark gaps shall be connected with each electrode in socket assembly.

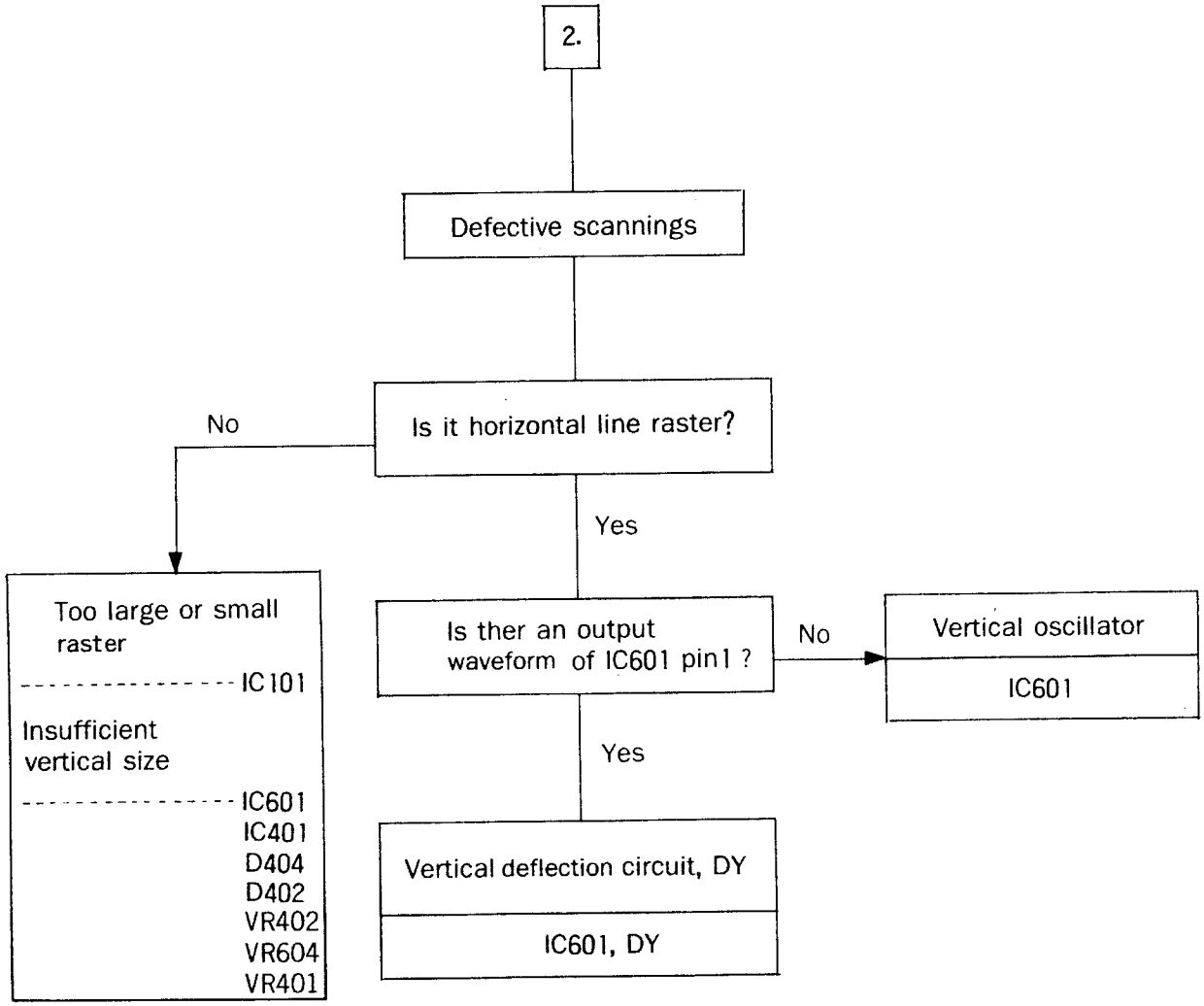
6. X-RADIATION CHARACTERISTIC.

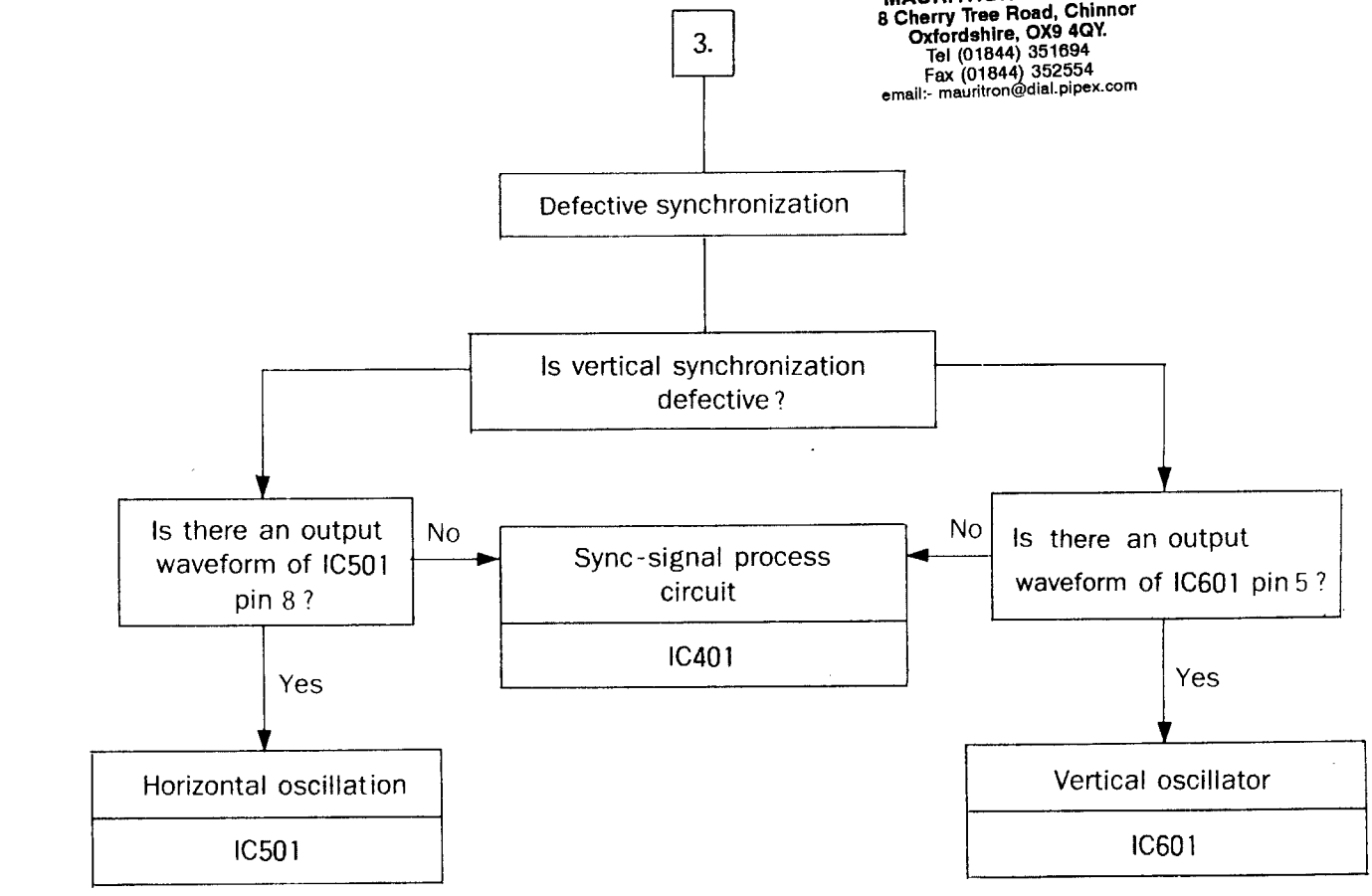
The X-radiation emitted from this pictlure tube will not exceed 0.5mR/h for anode current combination.
X-radiation at a constant anode voltage varies lineary wiht anode current.

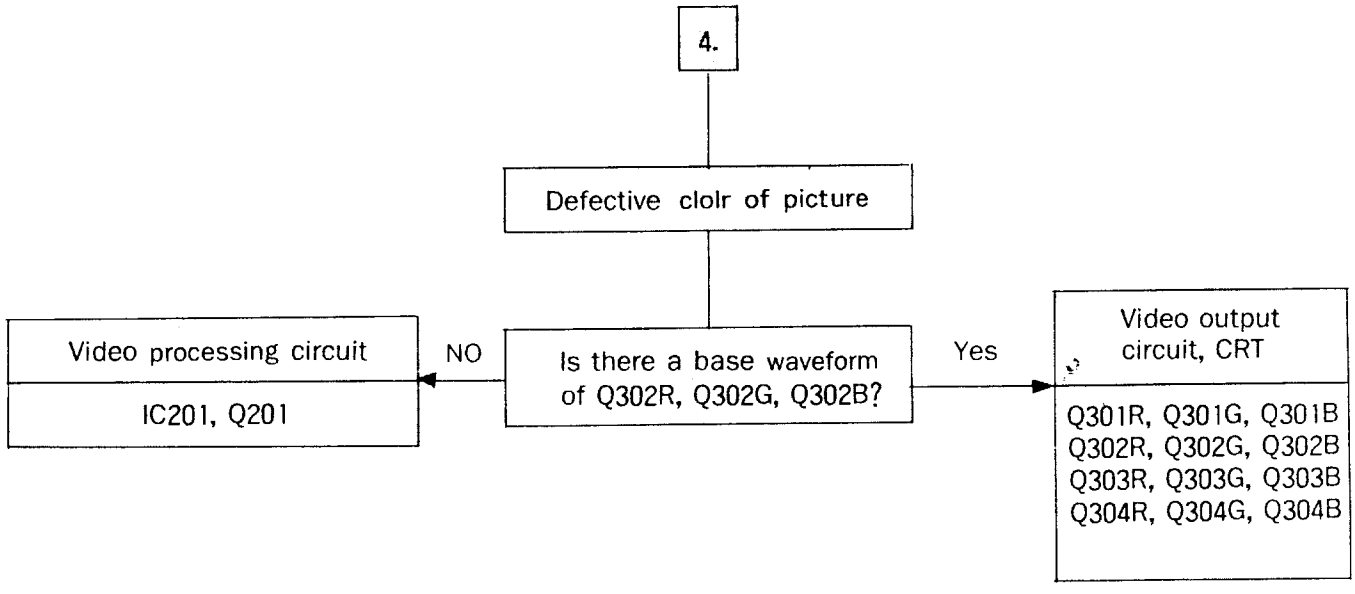
4. TROUBLE SHOOTING




1
No raster
Is F101 blown?
Yes
Short circuit
(Power rectifier, etc.)
D101, D109, D102,
IC101, Q101, Q102
No
Is voltage at +B normal?
(approx. DC 85V)
No
Control IC
IC101
Yes
Is there an output
waveform of IC501 pin3?
No
Horizontal oscillator
circuit
IC501
Yes
Horizontal deflection
circuit, CRT
R517, Q501, Q502, CRT


2.
Defective scannings
Is it horizontal line raster?
No
Yes
Too large or small raster
IC101
Insufficient vertical size
IC601
IC401
D404
D402
VR402
VR604
VR401
Is ther an output waveform of IC601 pin1 ?
No
Vertical oscillator
IC601
Yes
Vertical deflection circuit, DY
IC601, DY





5. THEORY OF OPERATION.

(1) GENERAL

This monitor contains three independent circuit.
One of them is power supply section, and the other is a sweep video, CDT drive section.

(2) POWER SUPPLY CIRCUIT.

This power supply is switching regulator and universal power supply.
The chassis(secondary side) is insulated from the power source(primary side) by the transformer T101 for switching power source.
By the winding of the transformer T101 connected to the collector circuit of IC101 and the other winding connectde to the control circuit, the IC101 is submitted to negative feed back and operate as blocking oscillator.
Change in the power source voltage and load current are detected by the winding and the voltage is applide to pin2 of IC101.
When the voltage applied to pin2 changes, the conducting time of IC101 changes to compensate for the change in the secondary output voltage of T101 and to stabilize the output voltage.
The operating frequency is determined in around 22 KHz~70 KHz.

(3) VIDEO DRIVE CIRCUIT.

The R, G, B input sighal with analog level is applied to the pre-amplifier LM1203.
This section amplifies the output signal of a generator to the level high enought to drive a video output circuit.
Video gain is controllde by DC voltage of pin12 and DC bias is controllde by feed back level of output circuit.
Clamping pulse is applide to the pin14 through transistor Q201.

(4) VIDEO OUTPUT CIRCUIT.

The R, G, B signal is applied to the base of cascode amplifier transistor Q302R, Q302G, Q302B.
The R, G, B signal is amplifide by output trasistor Q301R, Q301G, Q301B.
Then the drived signals are applied to CDT cathode through an output complementary cicuit.
Correct white balance is obtained by adjusting bias volumes VR301R, VR301G, VR301B.

(5) VERICAL DERLECTION CIRCUIT.

We use vertical deflection monolitic IC.
This contains the function of oscillator, ramp generator and power amplifier.
The vertical sync.signal with positive polarity is applied to pin5 of IC601.
Pin6 is connected to the vertical oscillator cifcuit and the frequency of the oscillator can be controlled by the voltage of pin4 which and be varied V-HOLD volme(VR601).
The vertical size controllde by voltage at pin7.

* VR604·····MODE1, VR401·····MODE2, VR402·····MODE3.

Linearity adjustment is done by intergating the saw-tooth voltage.
Vertical position is determined by the amount of DC component flowing through the vertical defledtion coil.
The amount can be varide by changing the position of V-SHIFT volume(VR602).

(6) HORIZONTAL DEFLECTION CIRCUIT.

The horzontal sync. signal wiht positive polarity is applied to pin8 of IC501 through IC401.
The saw-tooth wave of horizontal frequency is produced by intergrating the horizontal pulse from FBT(T801), and is fed to pin6 of IC401 for AFC.
The phase of horizontal saw-tooth wave is compared with that of fly back pulse and horizontal sync.signal from pin5 at AFC circuit inside the IC501.
H-PHASE control(VR502) determines the relative position of raster and pictre.
The horizontal oscillation frequency can be conterolled by H-HOLD Volume(VR501) connected pin 15.
The horizontal frequency oscillation is obtatinde from pin3 of IC501 and is fed to the next horizontal drive circuit.
The pulse switching mode of the driver and output stage is of reverse polarity type, that is, when the driver transistor is on, the output transistor is off.
In the horizontal output circuit, deflection current is supplied to the horizontal deflection coil and, at the same time, pulse for blanking, is generatde in FBT.

The output transistor used for switching should be able to withstand this pulse voltage. H-WIDTH control is varied inductance of L504 which enables anjustment of horizontal raster size.
Horizontal position of the raster can be adjusted by changing the position of H-CENTER(VR504).
Which can switch the direction of DC current flow in the deflection yoke.

(7) SIDE PINCUSHION CORRECTOR.

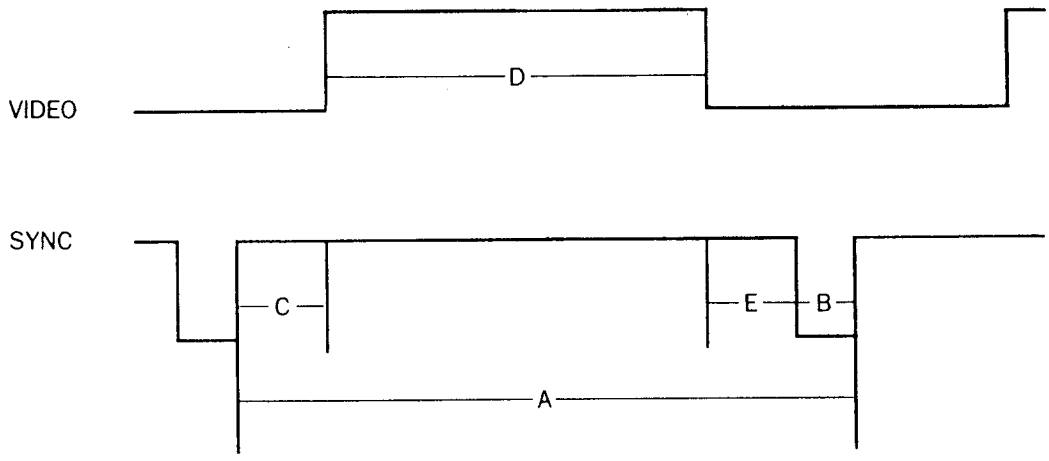
This circuit comensated the pincushion distortion.
The small signal amplifier Q701 is driven by a vertical frequency parabolar signal which is produced via an external RC network.
The output signal of Q701 is applide to the Q702.
Q702 amplified the current and drived SPT(T801).
This correction signal is effedted to the horizontal deflection.

(8) HIGH VOLTAGE HOLE DOWN CIRCUIT

If the failure occurs which causes an increase in high voltage(such as opende sweep capacitor or failed power regulator), then the base voltage of Q503 will increase through FBT.(T801)
When this happens, the oscillator signal coming from IC501 through R517 can no longer driver Q501, turning off high voltage.
Therefore to restart the oscillator and the high voltage, the monitor must be turned off and then turned on again.

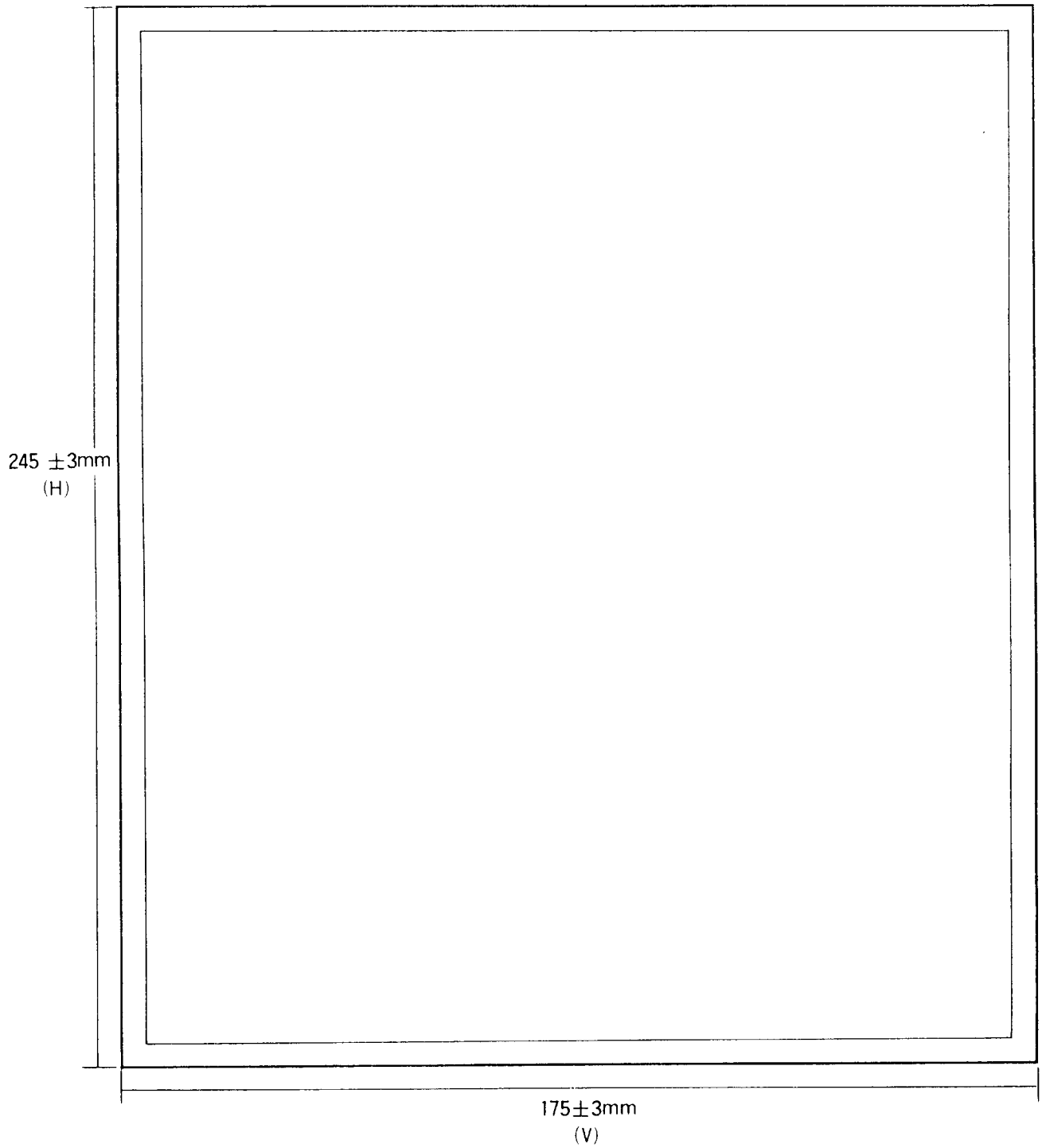
6. FIGURES

(1) Timing chart

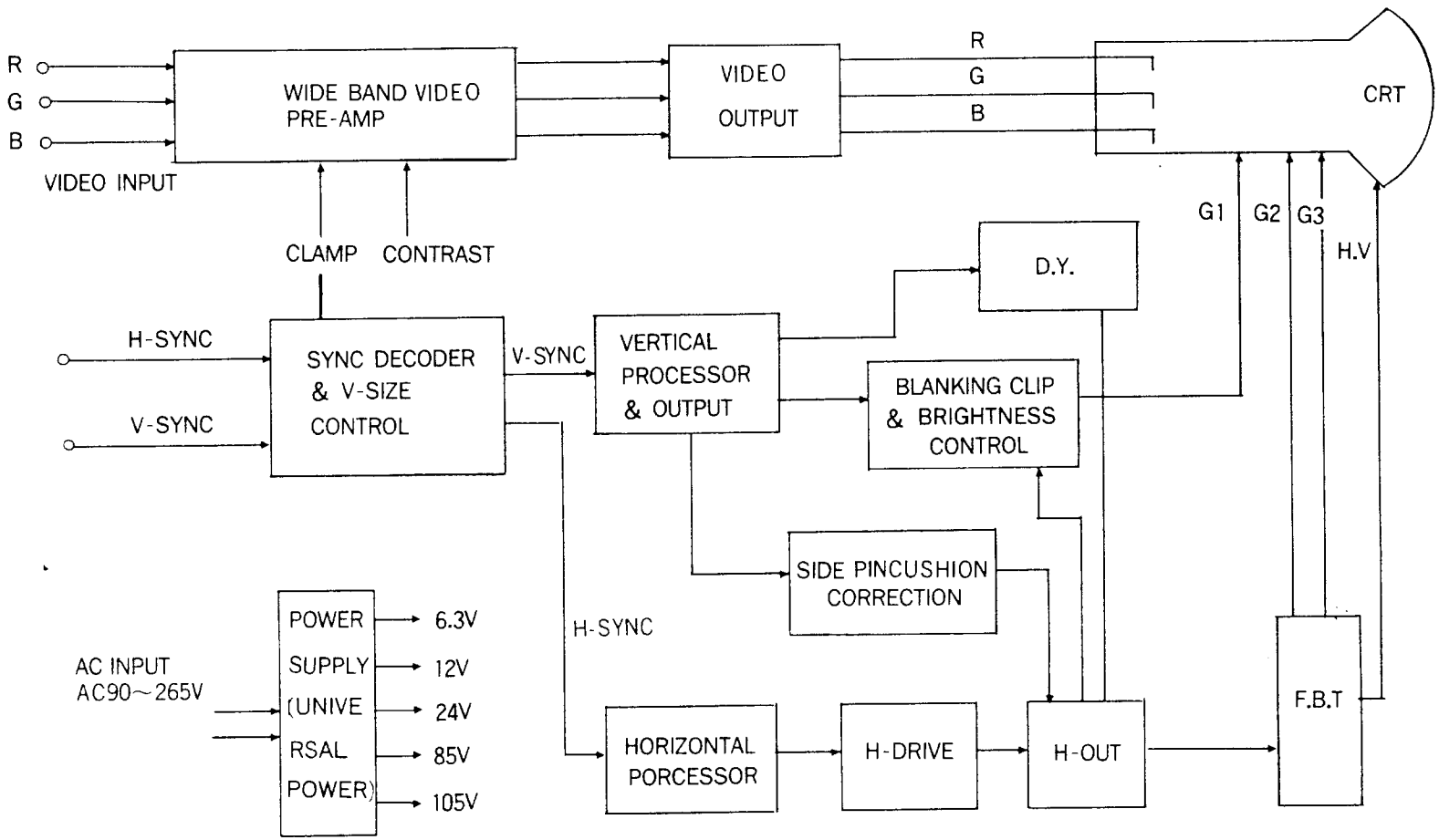


		MODE-1(480 LINES)	MODE-2(400 LINES)	MODE-3(350 LINES)
H	A	31.8uSEC	31.8uSEC	31.8uSEC
	B	3.8uSEC	3.8uSEC	3.8uSEC
	C	1.9uSEC	1.9uSEC	1.9uSEC
	D	25.4uSEC	25.4uSEC	25.4uSEC
	E	0.7uSEC	0.7uSEC	0.7uSEC
	SYNC.P	NEGATIVE	NEGATIVE	POSITIVE
V	A	16.683mSEC	14.268mSEC	14.286mSEC
	B	0.064mSEC	0.064mSEC	0,064mSEC
	C	0.793mSEC	0.890mSEC	1.716mSEC
	D	15.762mSEC	13.156mSEC	11.504mSEC
	E	0.064mSEC	0.159mSEC	0.985mSEC
	SYNC.P	NEGATIVE	POSITIVE	NEGATIVE
VIDEO		ANALOG	ANALOG	ANALOG

〔2〕 **Display zone**

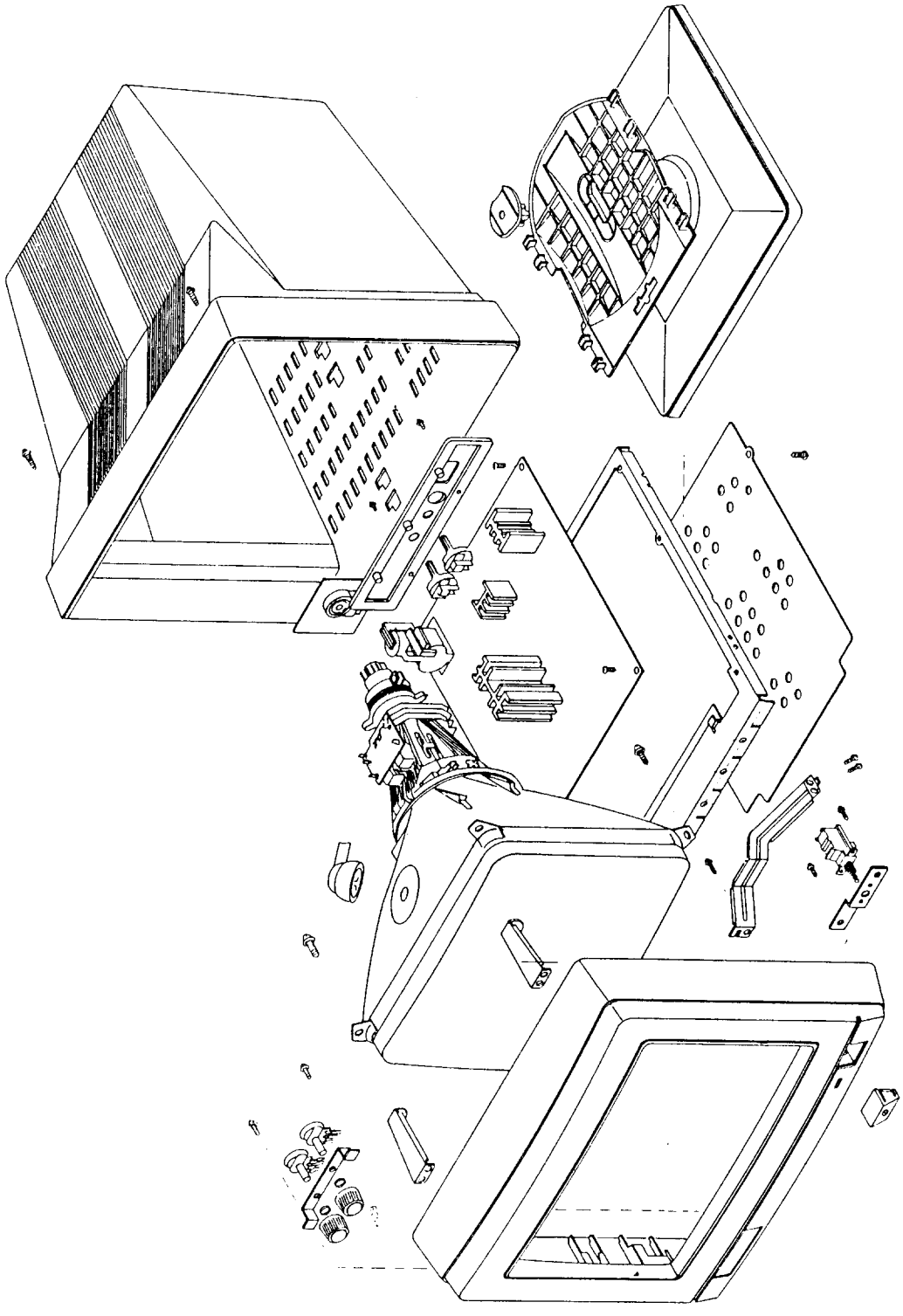


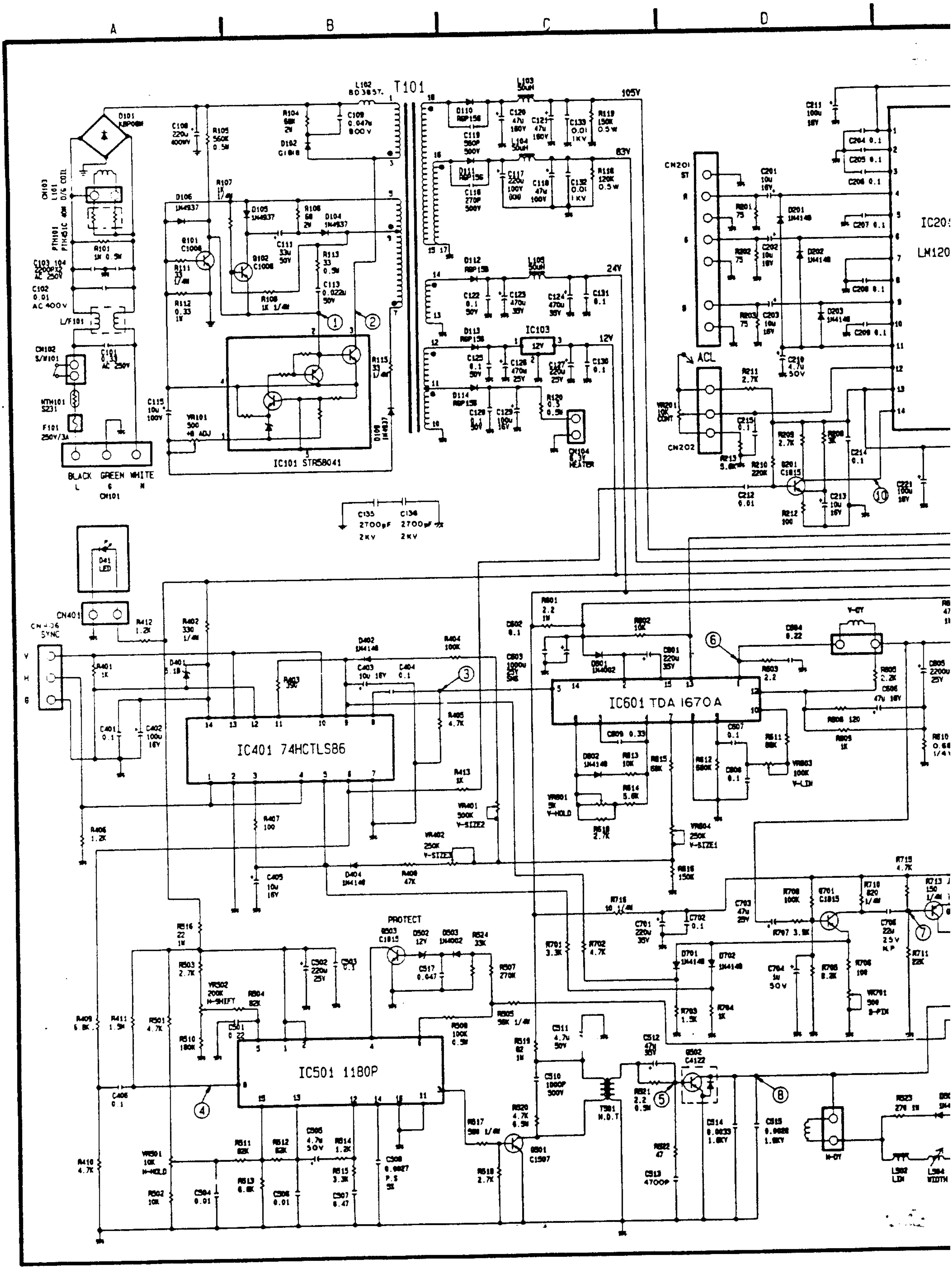
SC-431V II BLOCK DIGRAM

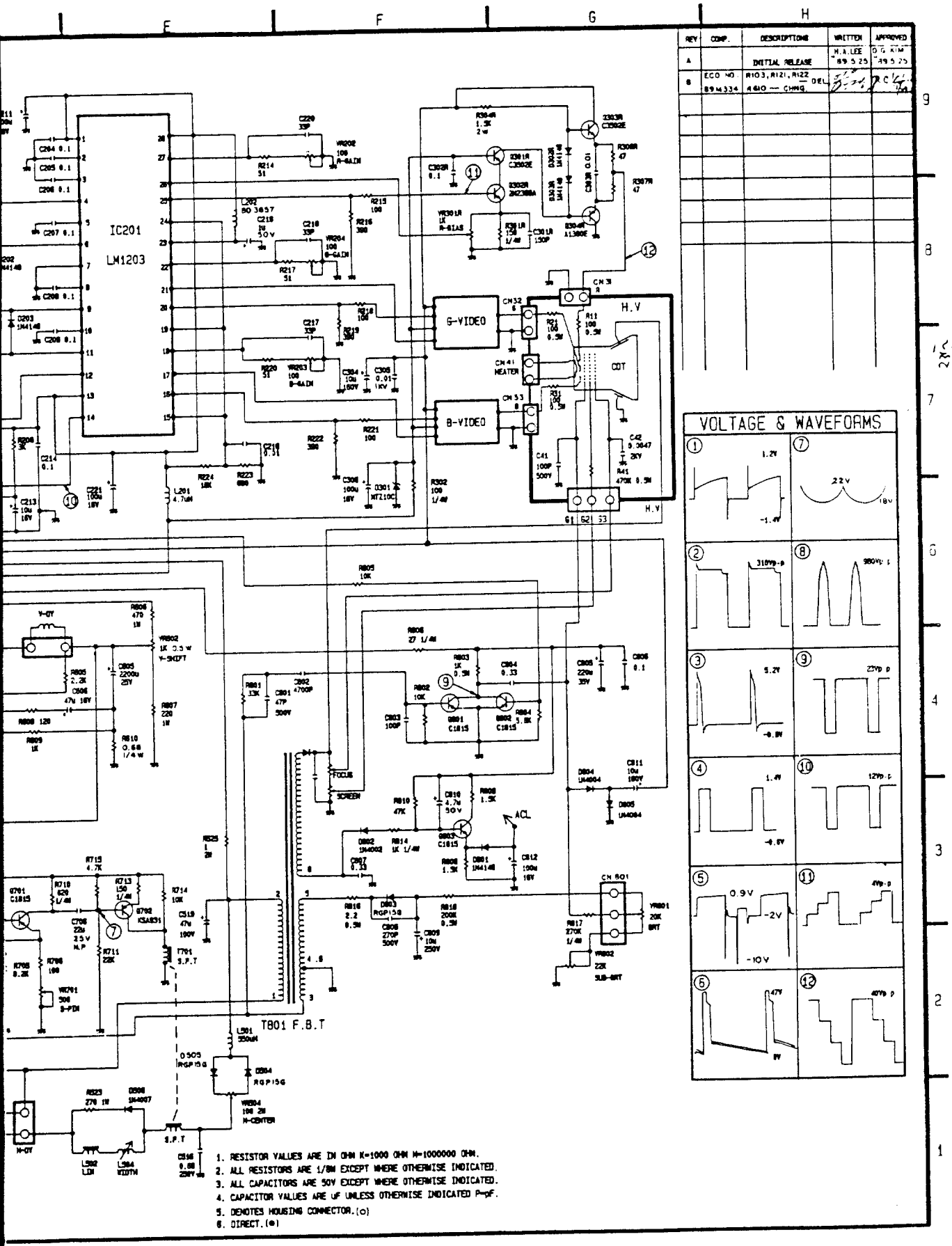


7. DRAWINGS

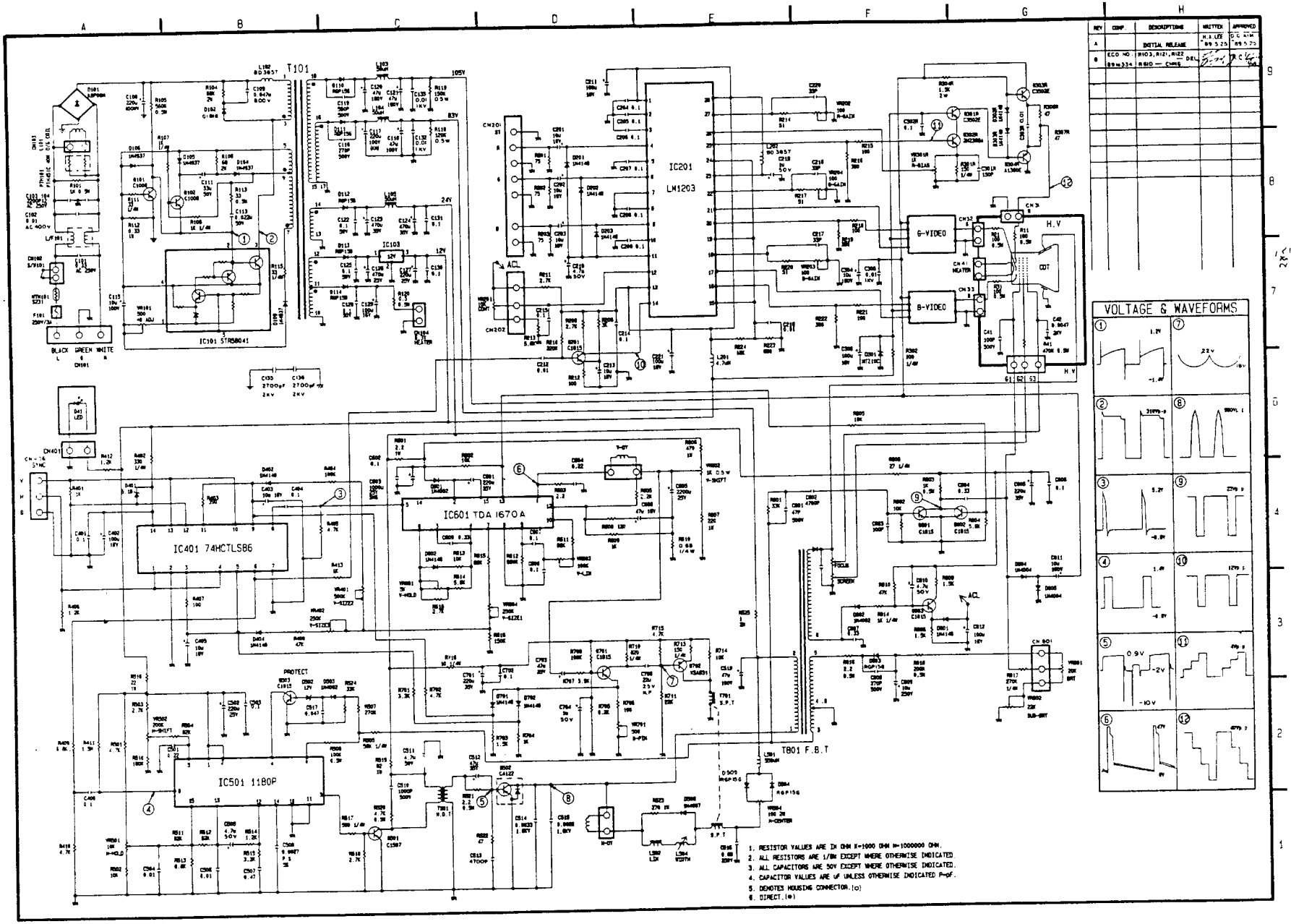
(1) Mecanical assembly drawings




A
B
C
D
T101
IC101 STR58041
IC103
105V
83V
24V
12V
CN201
CN202
ACL
IC201
LM120
CN401
CN406
SYNC
IC401 74HCTLS86
IC601 TDA 1670A
V-DY
PROTECT
IC501 1180P
T501
H.D.T
H-DY
BLACK GREEN WHITE
CN101
CN104
HEATER
C135 2700pF 2KV
C136 2700pF 2KV

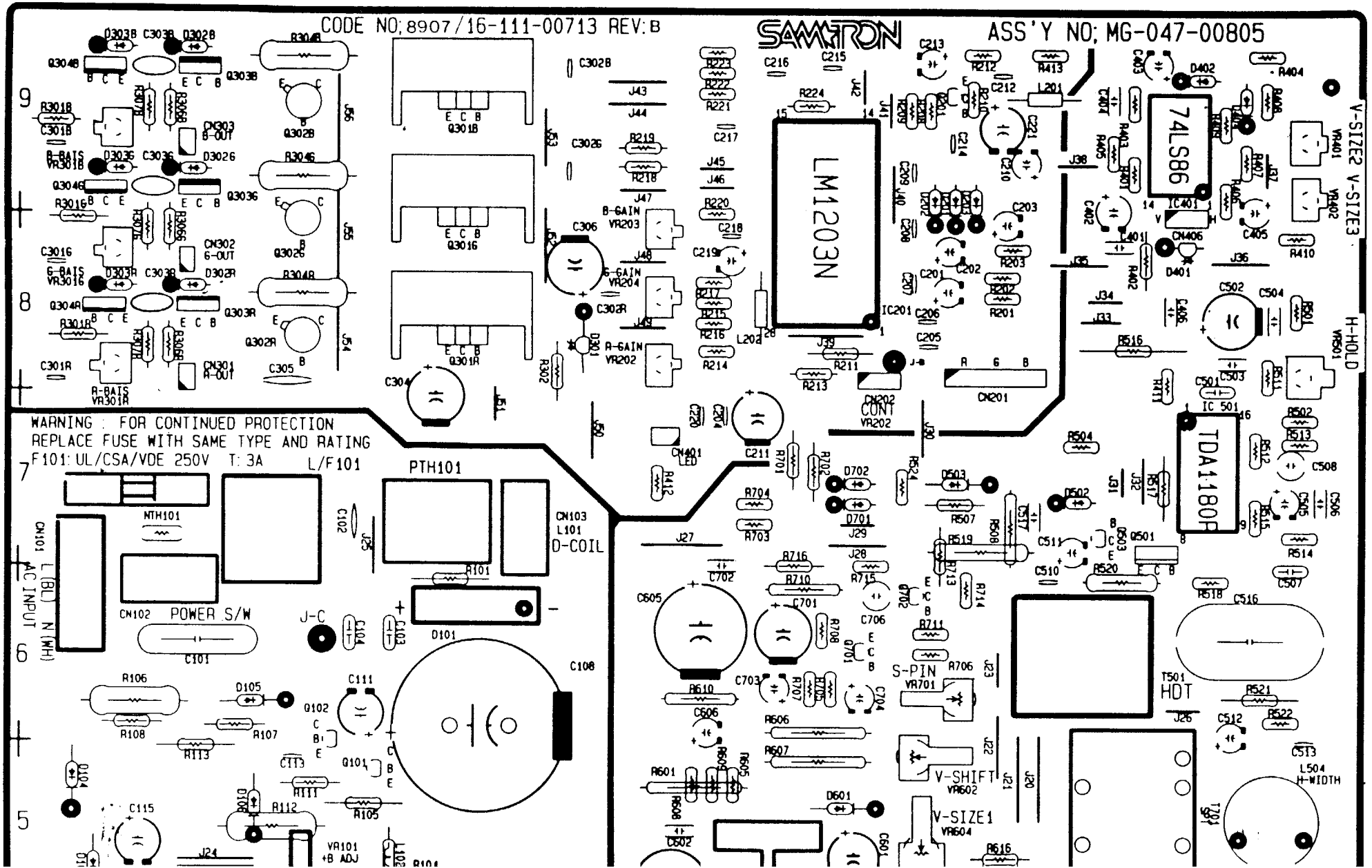


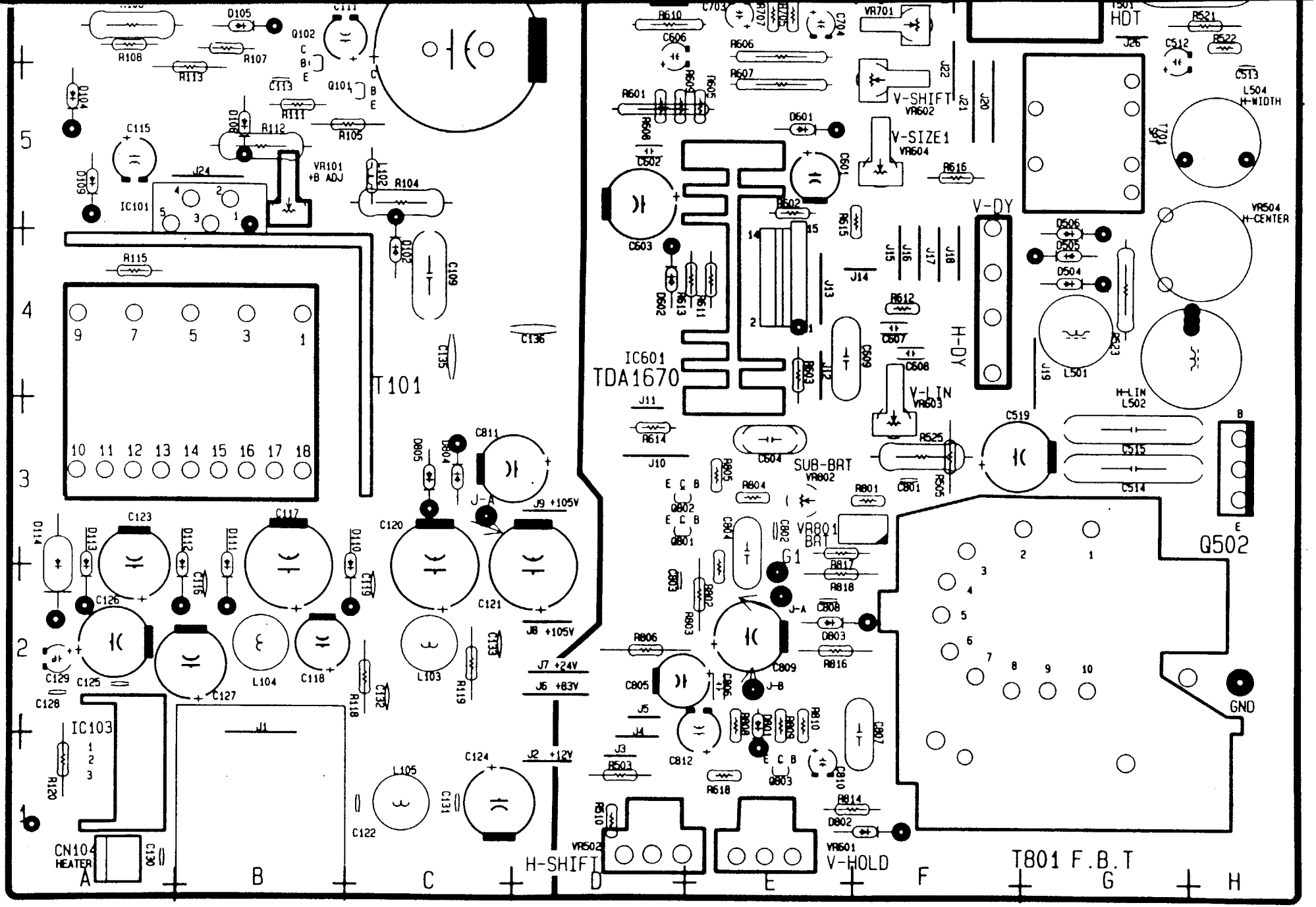
REV	COMP.	DESCRIPTIONS	WRITTEN	APPROVED
A		INITIAL RELEASE	H.A.LEE '89.5.25	D.G.KIM '89.5.25
B	ECO NO. 89M334	R103, R121, R122 — DEL 4610 — CHNG		


T101
IC201
LM1203
IC101 STR58041
IC601 TDA 1670A
IC401 74HCTLS86
IC501 1180P
T801 F.B.T
G-VIDEO
B-VIDEO
H.V
CRT
VOLTAGE & WAVEFORMS
1. RESISTOR VALUES ARE IN OHM K=1000 OHM M=1000000 OHM.
2. ALL RESISTORS ARE 1/8W EXCEPT WHERE OTHERWISE INDICATED.
3. ALL CAPACITORS ARE 50V EXCEPT WHERE OTHERWISE INDICATED.
4. CAPACITOR VALUES ARE uF UNLESS OTHERWISE INDICATED P=pF.
5. DENOTES HOUSING CONNECTOR.(o)
6. DIRECT.(●)

〔3〕 PCB artwork drawings

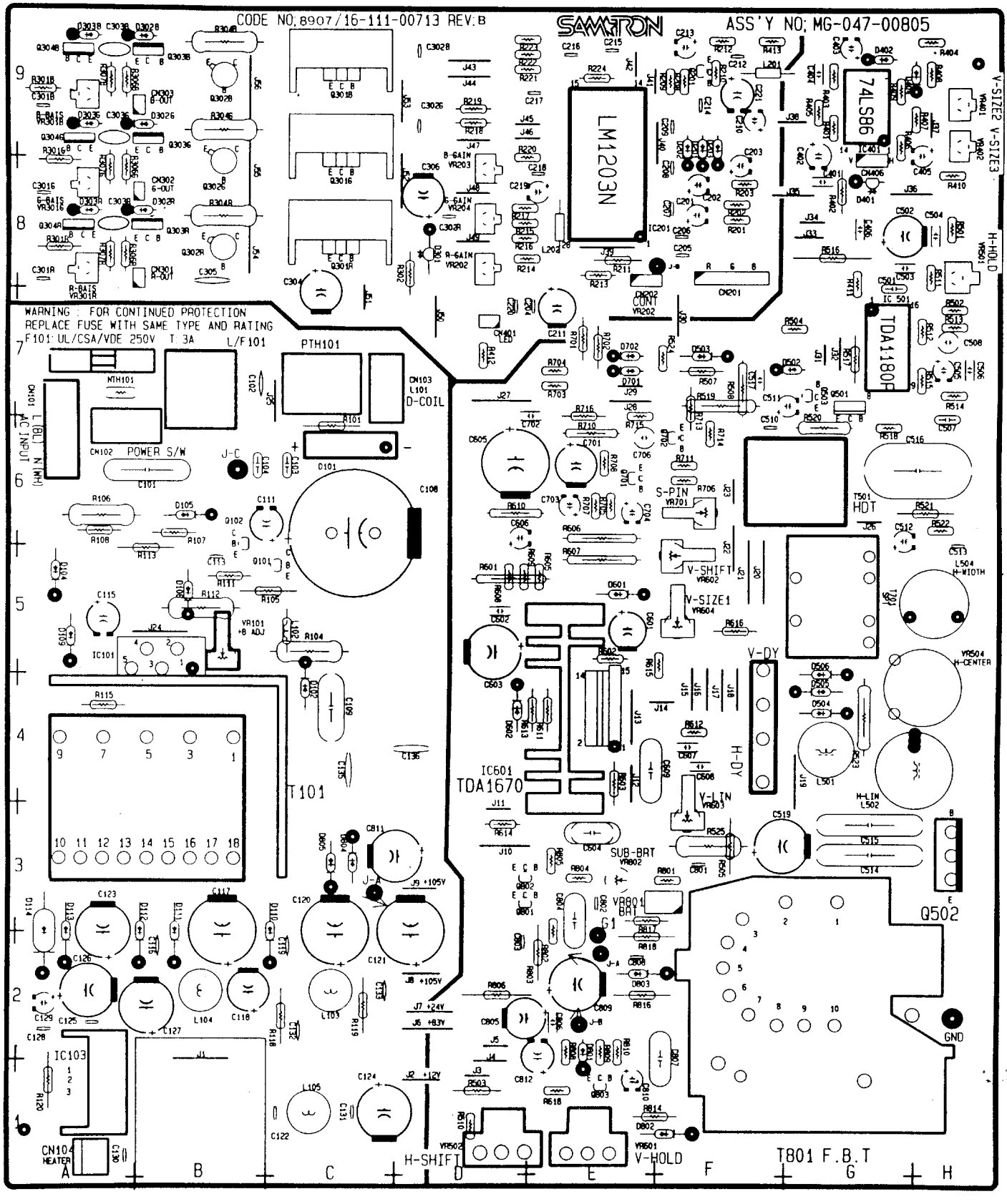
3-1. Main PCB front marking



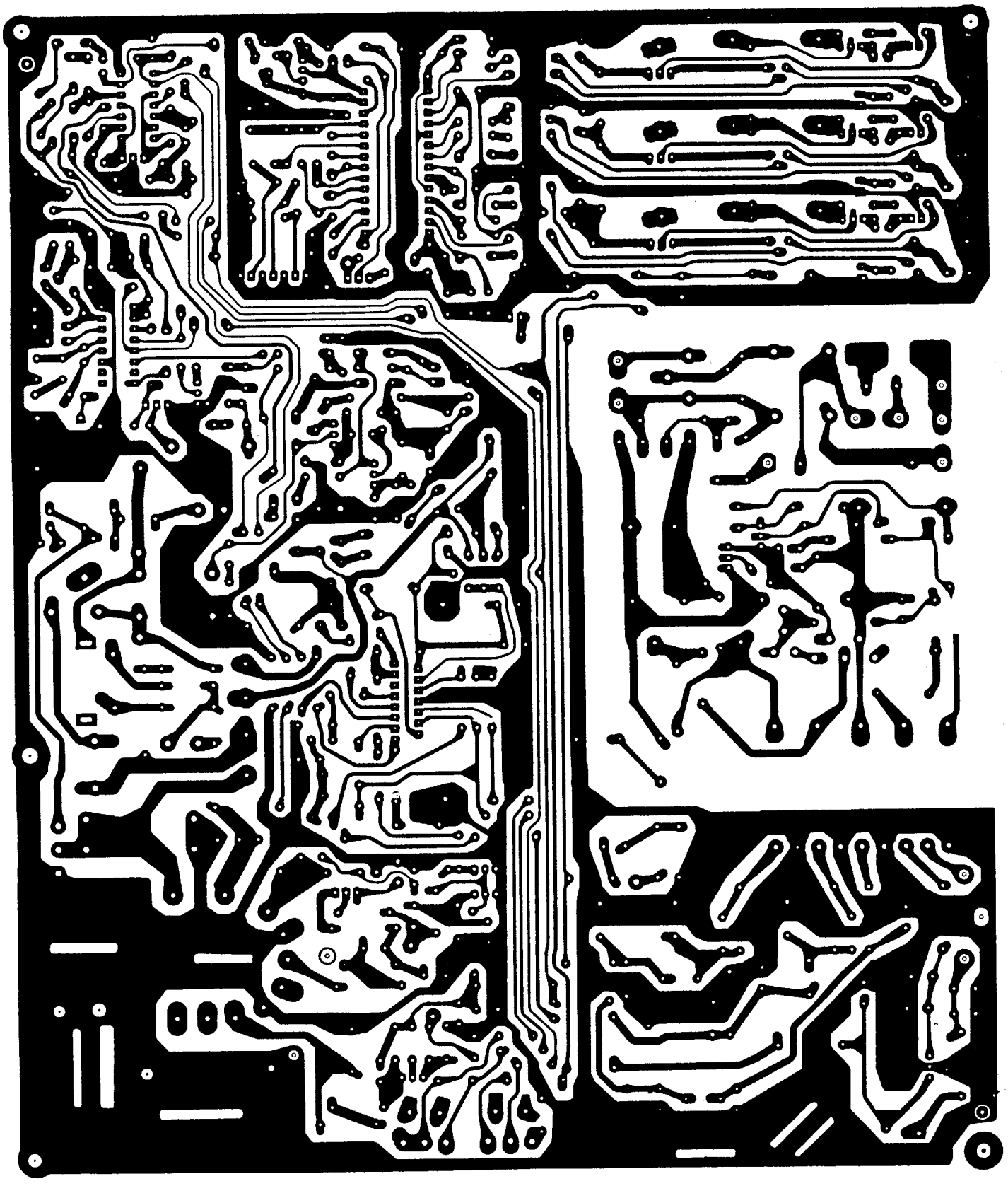

IC601
TDA1670
T101
IC101
IC103
Q102
Q101
Q502
T801 F.B.T
VR101
+B ADJ
VR602
V-SHIFT
VR604
V-SIZE1
VR603
V-LIN
VR802
SUB-BRT
VR801
BRT
VR504
H-CENTER
VR502
H-SHIFT
VR601
V-HOLD
V-DY
H-DY
HDT
L504
H-WIDTH
L501
H-LIN
L502
CN104
HEATER
J-A
J-B
J1
J2 +12V
J3
J4
J5
J6 +83V
J7 +24V
J8 +105V
J9 +105V
GND

(3) PCB artwork drawings

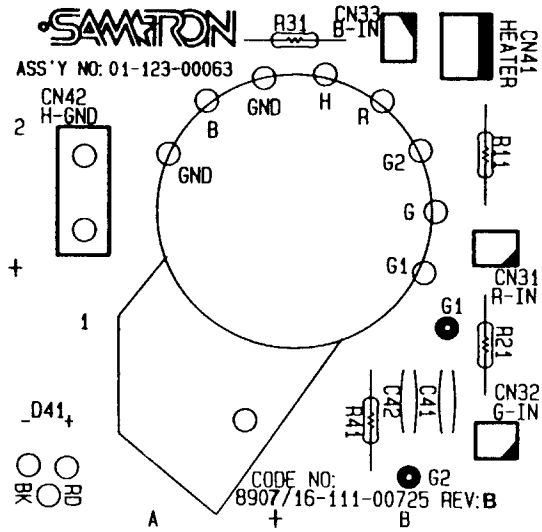
3-1. Main PCB front marking



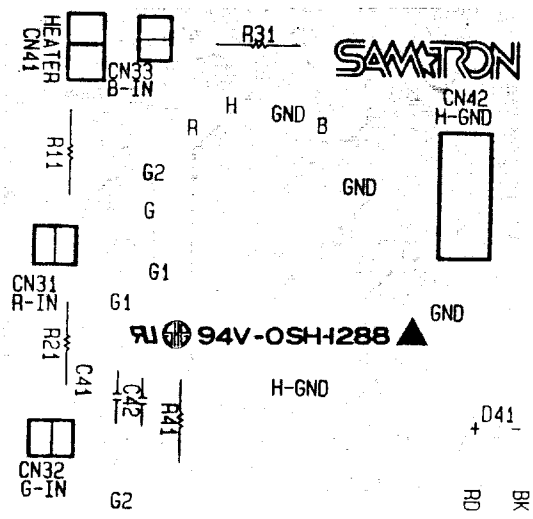
3-2. Main PCB pattren



3-3. Socket PCB front marking



3-4. Sooket PCB Pattern



8. APPENDIX

(1) Part List

ASS'Y NO	MA-047-00713, A/S ASS'Y (SC-431VII, MAIN)		MODEL NO.		M6-047-XXXX	
1611100713	PCB FR-1, 1.GT	MAIN, SC-431VII	P	1		Remark
144102R22	RES, METAL FILM, AT	2.2 OHM, 1/8W 5%	〃	1	R603	
1441204707	RES, METAL FILM, AT	47 0HM, 1/8W 5%	〃	7	R306R, R306G R306G, R207R R307B, R307B R522	
1441205107	RES, METAL FILM, AT	51 OHM, 1/8W 5%	〃	3	R214, R217, R220	
1441207508	RES, METAL FILM, AT	75 0HM, 1/8W 5%	〃	3	R201, R202, R203	
1441201018	RES, METAL FILM, AT	100 OHM, 1/8W 5%	〃	6	R212, R215, R218 R221, R407, R706	
1441201217	RES, UETAL FILM, AT	120 OHM, 1/8W 5%	〃	1	R608	
1441203912	RES, METAL FILM, AT	390 OHM, 1/8W 5%	〃	4	R216, R210, R222 R403	
141206817	RES, METAL FILM, AT	680 OHM, 1/8W 5%	〃	1	R223	
1441201021	RES, METAL FILM, AT	1K OHM, 1/8W 5%	〃	4	R401, R413. R609 R704	
1441201229	RES, METAL FILM, AT	1.2K OHM, 1/8W 5%	〃	3	R406, R412, R514	
1441201523	RES, METAL FILM, AT	1.5K OHM, 1/8W 5%	〃	3	R703, R808, R809	
1441202226	RES, METAL FILM, AT	2.2K OHM, 1/8W 5%	〃	1	R605	
1441202728	RES, METAL FILM, AT	2.7K OHM, 1/8W 5%	〃	5	R209, R211, R503 R518, R618	
1441203024	RES, METAL FILM, AT	3K OHM, 1/8W 5%	〃	1	R203	
1441203327	RES, METAL FILM, AT	3.3K OHM, 1/8W 5%	〃	2	R515, R701	
1441203924	RES, METAL, AT	3.9K OHM, 1/8W 5%	〃	1	R707	
1441204722	RES, METAL FILM, AT	4.7K OHM, 1/8W 5%	〃	5	R405, R410, R501 R705, R715	
1441205624	RES, METAL FILM, AT	5.6K OHM, 1/8W 5%	〃	3	R213, R614, R804	
1441206829	RES, METAL FILM, AT	6.8K OHM, 1/82 5%	〃	2	R409, R513	
1441208226	RES, METAL FILM, AT	8.2K OHM, 1/8W 5%	〃	1	R705	
1441201033	RES, METAL FILM, AT	10K OHM, 1/8W 5%	〃	6	R502, R602, R613 R802, R805, R714	
1441201838	RES, METAL FILM, AT	18K OHM, 1/8W 5%	〃	1	224	
1441202238	RES, METAL FILM, AT	22K OHM, 1/8W 5%	〃	1	R711	
1441204734	RES, METAL FILM, AT	33K OHM, 1/8W 5%	〃	2	R524, R801	

P / N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1441206832	RES, METAL FILM, AT	47K OHM, 1/8W 5%	"	2	R810, R408	
1441206832	RES, METAL FILM, AT	68K OHM, 1/8W 5%	"	2	R611, R615	
1441208238	RES, METAL FILM, AT	82K OHM, 1/8W 5%	"	3	R504, R511, R512	
1441201045	RES, METAL FILM, AT	100K OHM, 1/8W 5%	"	2	R404, R708	
1441201547	RES, METAL FILM, AT	150K OHM, 1/8W 5%	"	1	R616	
1441202241	RES, METAL FILM, AT	220K OHM, 1/8W 5%	"	1	R510	
1441201841	RES, METAL FILM, AT	180K OHM, 1/8W 5%	"	1	R210	
1441202743	RES, METAL RILM, AT	220K OHM, 1/8W 5%	"	1	R507	
1441206844	RES, METAL FILM, AT	680K OHM, 1/8W, 5%	"	1	R612	
1441201550	RES, METAL FILM, AT	1.5M OHM, 1/8W, 5%	"	1	R411	
141340R681	RES, CARBON, AT	0.68 OHM, 1/4W, 5%	"	1	R610	
1413401006	RES, CARBON, AT	10 OHM, 1/4W, 5%	"	1	R716	
1413402704	RES, CARBON, AT	27 OHM, 1/4W, 5%	"	1	R806	
1413403303	RES, CARBON, AT	33 OHM, 1/4W, 5%	"	2	R111, R115	
1413401018	RES, CARBON, AT	100 OHM, 1/4W, 5%	"	1	R302	
1413401511	RES, CARBON, AT	150 OHM, 1/4W, 5%	"	4	R301R, R301G R301B, R713	
1413403315	RES, CARBON, AT	330 OHM, 1/4, 5%	"	1	R402	
1413405612	RES, CARBON, AT	560 OHM, 1/4W, 5%	"	1	R402	
1413408214	RES, CARBON, AT	820 OHM, 1/42, 5%	"	1	R710	
1413401021	RES, CARBON, AT	1K OHM, 1/4W, 5%	"	3	R107, 4108, R814	
1413405636	RES, CARBON, AT	56K OHM, 1/4W, 5%	"	1	R505	
1413402743	RES, CARBON, AT	270K OHM, 1/4W, 5%	"	1	R817	
141420R508	RES, CARBON, AT	0.5 OHM, 1/2W, 5%	"	1	R120	
1414202R22	RES, CARBON, AT	2.2 OHM, 1/2W, 5%	"	2	R521, R816	
1414203303	RES, CARBON, AT	33 OHM, 1/2W, 5%	"	1	R113	
1414201021	RES, CARBON, AT	1K OHM, 1/2W, 5%	"	1	R803	
1414204722	RES, CARBON, AT	4.7K OHM, 1/2W, 5%	"	1	R520	
1414210045	RES, CARBON, AT	100K OHM, 1/2W, 5%	"	1	R508	
141420124	RES, CARBON, AT	120K OHM, 1/2W, 5%	"	1	R118	
1414201547	RES, CARBON, AT	150K OHM, 1/2W, 5%	"	1	R119	
1414202042	RES, CARBON, AT	200K OHM, 1/2W, 5%	"	1	R818	
1414205648	RES, CARBON, AT	560K OHM, 1/2W, 5%	"	1	R105	
1414201057	RES, CARBON, AT	1M OHM, 1/2W, 5%	"	1	R101	
119201069	CAP, AL ELECT, GP	10uF, 20%, 16V, 40/85'C, RT, SM	"	6	C201, C202, C203 C213, C403, C405	
1119204761	CAP, AL-ELECT, GP	47 uF, 20%, 16V, -40/85'C, RT, SM	"	1	C606	
1119201072	CAP, AL-ELECT, GP	100uF, 20%, 16V, -40/85'C, RT, SM	"	6	C129, C211, C221 C306, C402, C812	
1119304761	CAP, AL-3LECT, GP	47uF, 20%, 25V, -40/85'C, RT, SM	"	1	C703	

P / N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1119404761	CAP, AL-ELECT, GP	47uF, 20%, 35V, -40/85'C, RT, SM	"	1	C512	
1119501057	CAP, AL-ELECT, GP	1uF, 20%, 50 V, -40/85'C, RT, SM	"	2	C219, C704	
1119504758	CAP, AL-ELECT, GP	4.7 uF, 20%, 50V, -40/85'C, RT, SM	"	4	C210, C505, C511 C810	
1119503366	CAP, AL-ELECT, GP	33 uF, 20%, 50V, -40/85'C, RT, SM	"	1	C111	
1119601069	CAP, AL-ELECT, GP	10uF, 20%, 50 V, -40/85'C, RT, SM	"	1	C115	
11556302265	CAP, BP-ELECT, REV	22uF, 20%, 25V, -40/85', RT, SM(D)	"	1	C706	
1218203303	CAP, DISC-CERAMIC, CC-45	33 PF, 5%, 50V, -25/85', RT, TC	"	3	C217, C218, C220	
1211504707	CAP, CISC-CERAMIC, CC-45	47PF, 5%, 500V, -25/85', RB.	"	1	C801	
1218201033	CAP, CISC-CERAMIC, CC-45	0.01uF, 5%, 50V, -25/85'C, RT	"	5	C212, C216 C303R, C303G 303B	
1219101018	CAP, CISC-CERAMIC, CC-45	100PF, 10%, 50V, -25/85'C, RT, TC	"	1	C803	
1231201511	CAP, DISC-CERAMIC, CK-45	150PF, 5%, 50V, -25/85', RT, HDC	"	3	C301R, C301G C301B	
1237102238	CAP, DISC-CERAMIC, CK-45	0.022uF, -20/80%, 50V, -25/85'C, RT, HDC	"	1	C113	
1237101045	CAP, DISC-CERAMIC, CK-45	0.1uF, -20/80%, 50V, -25/85'C, RT,	"	16	C122, C128C130, C131, C204 205, C206, C207 C208, C208, C209, C214 C125, C302R C302G, C302B	
1233402716	CAP, DISC-CERAMIC, CK-45	270 PF, 10%, 500V, -25/85'C, RT.	"	2	C116, C808	
1233405612	CAP, DISC-CERAMIC, CK-45	560PF, 10%, 500V, -25/85'C, RT.	"	1	C119	
1233401021	CAP, DISC-CERAMIC, C9-45	1000PF, 10%, 500V, -25/85'C, RT, HDC	"	1	C510	
1233104722	CAP, DISC-CERAMIC, CK-45	4700PF, 10%, 50V, -25/85'C, RT.	"	2	C513, C802	
131604734	CAP, 1ND, POLYESTER	0.047uF, 10%, 100V, RT	"	1	C517	
1312601033	CAP, IND, POLYESTER	0.01uF, 10%, 100V, RT	"	2	C504, C506	
1312601045	CAP, IND, POLYESTER	0.1uF, 10%, 100V, RT	"	9	C401, C404, C406 C503, C602, C607 C608, C702, C806	
2211290024	RECTIFIER, DIODE, GP	1A, 100V, 1N4002	"	3	D503, D601, D802	
2211290048	RECTIFIER, DIOKE, GP	1A, 400V, 1N4004	"	2	D804, D805	
2211290063	RECTIFIER, DI0DE, GP	1A, A1000V, 1N4007	"	1	D506	

P / N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
2213200048	SWITCHING, DiODE.	100MA, 75V, 1N4143	P	15	D201, D202, D203 D302R, D302G D302B, D303R303G, D303B D402, D404, D602 D701, D702, D801	
2211190155	RECTIFIER, DIODE, FR RECTIFIER, DIODE, FR	1.5A, 100V, RGP158 1.5A, 400V, FF1504	〃	2	D112, D113	or eqv
2211190167	RECTIFIER, DiODE, FR	RECTIFIER, DIODE, FR		5	1.5A 400V RGP 15G 1.5A 400V FF 1054	D110. D111. D504 D505. D803
2211190012	RECTIFIER, KIODE, FR	1A, 1000V, MR818/G1818		1	D102	
2212190381 2212100051	ZENER, DIODE.	0.5W 5.1V, UZ5.18 RD5.18			D401	
2212100366	ZENER, DIODE.	0.5W, 10V, Mq7ZIOC		1	D301	
2212100116	ZENER, DIODE.	0.5W, UZ12B		1	D502	
1722300104	COIL, INDUCTOR	4.7ull, AT		1	L201	
2111400026	TR, NPN, TO-92.	0.7A, 80V 800MW, AMP.KSC1008		2	Q101. 102	
2111400048	TR, NPN, TO-92.	150MA, 60V, 400MW, LF, AMP.KSC1815		6	Q201, Q503, Q701 Q801, Q802, Q803	
361810012	WIRE, BARE	CU+SU+PB, 1ST, 1×0.6, SAD		56	J1~J56	
3113100012	BEAD PIN	D2.36		15		
MA04700713	A/S, ASS'Y	M, V, S, ANALG, SC-431VII	A	1		
146410R336	RES, WIRE-WOUND, AB	0.33 OHM, 1W, 5%	P	1	R112	
1433202R22	RES, METAL, OXIDE, AB	2.2 OHM, 1W, 5%	〃	1	R601	
1433202202	RES, METAL OXIDE, AB	22 OHM, 1W, 5%	〃	1	R516	
1433208202	RES, METAL OXIDE, AB	82 OHM, 1W 5%	〃	1	R519	
1433202214	RES, METAL OXIDE, AB	220 OHM, 1W 5%	〃	1	R607	
1433202716	RES, METAL OXIDE, AB	270 OHM, 1W, 5%	〃	1	R523	
1433204719	RES, METAL OXIDE, AB	470 OHM, 1W, 5%	〃	1	R606	
1434201R01	RES, METAL OXIDE, AB	1 OHM, 2W, 5%	〃	1	R525	
1434201523	RES, METAL OXIDE, AB	1.5K OHM, 2W, 5%	〃	3	R304R, R304G R304B	
1434206832	RES, METAL OXIDE, AB	68K OHM, 2W, 5%	〃	1	R104	

P / N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1471106805 1434206805	RES, CEMENT, AB RES, METAL OXIDE, AB	G8 OHM, 2W, 5% G8 OHM, 2W, 5%	,,	1	R106	or eqv
1111402277	CAP, AL-ELECT, GP	220uF, 20%, 25V, -40/85'C, RB, SM	,,	2	C127, C502	
1111404773	CAP, AL-ELECT, GP	470uF, 20%, 25V, -40/85'C, RB, SM	,,	1	C126	
1111401084	CAP, AL-ELECT, GP	1000uF, 20%, 25V, -55/105'C, RB, SMS	,,	1	C603	
1111402289	CAP, AL-ELECT, GP	2200 uF, 20%, 25V, -40/85'C, RB, SM	,,	1	605	
1111502277	CAP, AL-ELECT, GP	220uF, 20%, 35 V, -40/85'C, RB, SM	,,	3	C601, C701, C805	
1111504773	CAP, AL-ELECT, GP	470uF, 20%, 35V, -40/85'C, RB, SM	,,	2	C123, C124	
1111804761	CAP, AL-ELECT, GP	47uF, 20%, 100V, -40/85'C, RB, SM	,,	2	C118, C519	
1111001069	CAP, AL-ELECT, GP	10uF, 20%, 160V, -40]/85'C, RB, SM	,,	2	C304, C811	
1111304761	CAP, AL-ELECT, GP	47uF, 20%, 160V, -40/85'C, RB, SM	,,	2	C120, C121	
11112201069	CAP, AL-ELECT, GP	10uF, 20%, 250V, -40/85'C, RB, SM	,,	1	C809	
1123302277	CAP, AL-ELECT, GP	220uF, 20%, 400V, -40/85'C, RB, PT	,,	1	C108	
1125302377	CAP, AL-ELECT, GP	220uF, 20%, 100V, 55/105'C, RB, KM	,,	1	C117	
122462728	CAP, DISC-CERAMIC, CK-45	2700PF, 10%, 2KV, 25/85'C, RB	,,	1	C135, C136	
1228501033	CAP, DISC-CERAMIC, CK-45	10000PF, -20/80%, 1KV, -25/85'C, RB	,,	3	C132, C133C305	
1228601033	CAP, DISC-CERAMIC, CK-45	0.01uF, -20/80%, 400VAC, -25/85'C, RB	,,	1	C102	
1311602241	CAP, IND-POLYERSTER	0.22uF, 10%, 100V, RB	,,	2	C501, C604	
1311603342	CAP, IND-POLYESTER	0.33uF, 10%, 100V, RB	,,	2	C804, C807	
1311604746	CAP, IND-POLYESTER	0.47uF, 10%, 100V, RB	,,	1	C507	
1321102728	CAP, PS, GP	2700PF, 5%, 50V, RB	,,	1	C508	
1313303342	CAP, NI-MATALZ, POLYESTER	0.33uF, 5%, 100V, RB	,,	1	C609	
1335406844	CAP, MATELZPP, GP	0, 68uF, 5%250V, RB(MPP)	,,	1	C516	
1335302823	CAP, MATELZ-PPM, GP	2800PF, 5%, 1.6KV, RB	,,	1	C515	
1335303327	CAP, MATELZ-PP, GP	3300PF, 5%, 1.6KV, RB	,,	1	C514	
1335504734	CAP, MATELZ-PP, GP	0.047uF, 5%, 800V, RB	,,	1	C109	
1315492226	CAP, NI-METALZ, POLYESTER	2200PF, 10%, 250VAC, RB, (MEY-TYPE)	,,	2	C103, C104	
1315493342	CAP, NI-METALZ, POLYESTER	0.33uF, 10%, 250VAC, RB, (MEX-TYPE)	,,	1	C101	
2211390012	RECTIFIER, DIODE, BRIDGE RECTIFIER, DIODE, BRIDGE	1.5A, 800V, K8PO8 1.5A, 800V, F8PO8	,,	1	D101	or eqv.
2211190155	RECTIFIER, DIODE RECTIFIER, DIODE	1.5A, 100V, RGP158 1.5A, 400V, FF1504	,,	1	D114	or eqv.
1731300063	FILTER, CORE	2.4ull, 5.5MM, BEAD, SC-431C	,,	2	L102, L202	
1562190036	THERMISTOR, PTC	PT1145C-40BG	,,	1	PTHO1	
1562290024	THERMISTOR, NTC	4.7OHM, M, S231	,,	1	NNTH101	
1711600104	TRANS, POWER, SWITCHING	SC-431V II, 115V/230V	,,	1	T101	
1731100223	FILTER, LINE	20MH, SC-43IEII/VII	,,	1	LF101	
1713200155	COIL, TRANS, H-DRIVE	10MM/70uLL, 15%, SC-43IV	,,	1	T501	
1713300051	COIL, TRANS, SIDE-PINCII	600MII/40ull, 20%, EII/VII	,,	1	T701	
1712290063	F.B.T COLOR	Y261741/VGA2, EGA2 KJF8816C	,,	1	T801	or eqv.
1722200087	COIL, CIIOKE	50ull, SC-43IE	,,	3	L103, L104, L105	
1722200208	COIL, CIIOKE	550ull, 10%, SC-431V	,,	1	L501	
1722600104	COIL, II-LIN, FIX	12ull, 15%, VII	,,	1	L502	

P / N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
1721100143	COIL, II-WIDTII	10~30uII, VII/VII	〃	1	L504	
2332190208	IC, LINEAR, DIP	LM1203N, RGB VIDED AMP, 28	〃	1	IC201	
2332190048	IC, LINEAR, DIP	TDA1180P, TV 110RIZONTAL, 16	〃	1	IC501	
2316200868	IC, IICTLS, DIP	74IICTLS86, 14	〃	1	IC401	
211700131	TR, NPN, TO-220	0.2A, 300V, 15W(TC), CR C/P, KSC1507Y	〃	1	Q501	
2111290024	200MA, 40V, 360MW, SW, 2N2369A				Q302R Q302G Q302B	
2111500024	TR, NPN, TO-126	0.1A, 200V, 5W(TC), VD O/P, 2SC3502E	〃	3	Q303R, Q303G Q303B	
2121500024	TR, PNP, TO-126	100MA 200V, 5W(TC), VD O/P, 2SA1380E	〃	3	Q304R, Q304G Q304B	
211240015	TR, PNP, TO-92	0.7A, 80V, 1W, LF AMP, KSA931.0	〃	1	Q702	
1522100104	VAR, SEMA-FIX, CAP, H-TYPE	100 OHM, B, 0, 2 W, R(CET118A)	〃	1	VR202	
1522100116	VAR, SEMI-FIX, CAP, H-TYPE	100 OHM, B, 0.2 W(CET118A)	〃	1	VR204	
1522100128	VAR, SEMI-FIX, CAP, H-TYPE	100 OHM, B, 0.2 W, B(CET118A)	〃	1	VR203	
1522100131	VAR, SEMI-FIX, CAP, H-TYPE	1K OHM, B, O.S WR(CET118A)	〃	1	VR301R	
1522100143	VAR, SEMI-FIX, CAP, H-TYPE	1K OHM, B, 0.2 W, G(CET118A)	〃	1	VR301G	
1522100155	VAR, SEMI-FIX, CAP, H-TYPE	1K OHM, B, 0.2 W, B(CET118A)	〃	1	VR301B	
1522100182	VAR, SEMI-FIX, CAP, H-TYPE	10K OHM, B, 0.2 W, (CET118A)	〃	1	VR501	
1522100208	VAR, SEMI-FIX, CAP, H-TYPE	250K OHM, B, O.2 W. (CET118A)	〃	1	VR402	
1522100211	VAR, SEMI-FIX, CAP, H-TYPE	500K OHM, B, 0.2 W. (CET118A)	〃	1	VR401	
1522290099	VAR, SEMI-FIX, CAP, V-TYPE	500 OHM, B, 0.2 W. (CET92A)	〃	2	VR101, VR701	
1522200051	VAR, SEMI-FIX, CAP, V-TYPE	100K OHM, B, 0.2 W(CET92A)	〃	1	VR603	
1522200104	VAR, SEMI-FIX, CAP, V-TYPE	250K OHM, B, 0.2 W. (CET92A)	〃	1	VR604	
152100012	VAR, SEMI-FIX, CAP, V-TYPE	22K OHM, B, 0.15W. (SR-20R)	〃	1	VR802	
1524200063	VAR, SEMI-FIX, CAP, V-TYPE	1K OHM, B, 0.5 W. (H1022A)	〃	1	VR602	
1563390012	VAR, WIRE, WOUND, V-TYPE	100 OHM, 2 W. (V18KW)	〃	1	VR503	
1544100104	VAR, SEMI-FIX, W/SHAAFT H-TYPE	5K OHM, B, 0.2 W(VO16L12-IPIN35KS)	P	1	VR601	
1532100012	VAR, SEMI-FIX, W/HANDEL, H-TYPE	200K OHM, B, O.2 W(V016L12PIN)	〃	1	VR502	
3661500012	CONNECTOR, SHROUDED, HEADER	2.5, ST, 2P. 5267-02A	〃	4	CN301, CN302 CN303, CN401	
3661500024	CONNECTOR, SHROUDED, HEADER	2.5, ST, 3P. 5267-03A	〃	3	CN202, CN406 CN801	
3661500051	CONNCETOR, SHROUDED, HEADER	2.5, ST, 7P. 5267-07A	〃	1	CN201	
3661400012	CONNECTOR, LOCK, HEADER	3.96, ST, 2P. 5273-02A	〃	1	CN104	
1910300063	FUSE TIME LAG WITHOUT LEAD	3A, 250V, 5.20×20	〃	1	F101	
1011300012	FUSE CLIP	5.20 ×2.8	〃	2	F101	
3643100339	WIRE, RINE TER, SINGLE	G/Y, D4, 110M/M, INSUL, PIN	〃	1	J-C	
3621100458	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, R, 100mm, WT.2	〃	1	J-A	
3621100354	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, R, 100mmWT.2	〃	1	G1	
3621100419	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, BK, 230 mm WT. 2	〃	1		
3621100419	WIREFORM, UL1007-AWG22	TCST, 1ST, 17×0.16, PVC, BK, 230 mm, WT.2	〃	1		
3641300672	WIRE, CONN/HOUSING	280MM, 2P, W.W, 2.5, BKR-TUBE	〃	1		

P / N	Descridtion	S P E C	UNIT	Q'TY	CKT NO.	
3641400262	WIRE, CONN/HOUSING	340MM, 2P, W.W, 2.5, BK, B-TUBE	〃	1		
3641200419	WIRE, CONN/HOUSING	100MM, 2P, W.W, 2.5, BKBN, 1007	〃	1		
	BAR SOLDER					
3344500012	TS+, RND, 2, W/F, ZPW, BT	M3×8, SM20C	〃	1		
3361200235	PS+PAN, ZPW	M4×7, SM20C	〃	1		
0116100684	SUB ASS'Y, HEAT SINK	SC-431V H/E II, STR58041, 90×57×60	A	1	IC101	
0116100788	SUB ASS'Y, HEAT SINK	MC7812CT, 23.5×15×30, SC-431V II/E II	〃	1	IC103	
011600776	SUB ASS'Y, HEAT SINK	SC-431V II/E II, TDA1670, 50×18×50	〃	1	IC601	
0116100725	SUB ASS'Y, HEAT SINK	SC-431V II, C4122, 97×62×100	〃	1	Q502	
0116100737	SUB ASS'Y, HEAT SINK	SC-431V II, 2SC3502E, 23.5×15×15	〃	3	Q301R, Q301G Q301B	
0112300063	SUB ASS'Y, CPT SOCKET	SC-431V II/E II	〃	1		

ASS'Y NO	01-161-00684, HEAT SINK ASS'Y (STR58041, SC-431V II)	MODEL NO	M6-047-XXXXX

P/N	Description	S P E E	UNIT	Q'TY	CKT NO.	
2332200104	IC, LINDAR, SIP	STP58041	P	1		
〃	IC W/MICA	MICA	〃	1		
3311200051	MS+, PAN, ZPW	M3×12, MSWR	〃	1		
3371200012	WHIR, PLN, ZPW	3.2×7.0×0.5, SCP1	〃	1		
3111400327	HEAT SINK-N, SC-431V/E II	90×62×57, AL 2.OT	〃	1		
3385200012	HUT, HEX, 2, ZPW	M3×0.5P, SM-20C	〃	1		

ASS'Y NO.	01-161-00684, HEAT SINK ASS'Y (STR58041, SC-431V II)	MODEL NO.	M6-047-XXXXX

2332290104	IC, LINDAR, SIP	STR58041	P	1		
〃	IC W/MICA	MICA	〃	1		
3311200051	MS+, PAN, ZPW	M3×12, MSWR3	〃	1		
3371200012	WHR, PLN, ZPW	3.2×7.0×0.5, SCP1	〃	1		
3111400327	HEAT SIMK-N, SC-431V II/E II	90×62×57, AL 2.0T	〃	1		
3385200012	NUT, HEX, 2, ZPW	M3×0.5P, SM-20C	〃	1		

ASS'Y NO.	01-161-00788, HEATSINK ASS'Y (MC7812CT, SC-431VII) MODEL NO.	M6-047-XXXXX				

P/N	Description	S P E C	UNIT	Q'TY	CKT NO.	
233121200327	IC, REGULATOR, TO-220	MC7812CT	P	1		
3111400381	HEAT SINK-K, SC-431V II/E II	23.5×30×15.AL, W/SOLDER PIN	〃	1		
3311200036	MS+, PAN, ZPW	M3×8, MSWR3	〃	1		
4312100036	COMP-SILICON	KS612				

ASS'Y NO.	01-161-00776, HEAT SINK ASS'Y(TDA1670A, SC-431II)		MODEL NO.	M6-047-XXXXX		
2111790259	TR, NPN, TO-220	6A, 1500V, 60W(TC), HOR DEF, 2SC4122	P	1		
3311200048	MS+, PAN, ZPW	M3×10, MSWR3	"	1		
3371200012	WIR, RLN, ZPW	3.2×7.0×0.5, SCP1	"	1		
3111400315	400315	HEAT SINK-N, SC-431V/E II97×62×100.2, AL2.07	"	1		
3385200012	NUT, HEX, 2, ZPW	M3×0.5P , SM-20C	"	1		
4312100036	COMP-SISICON	KSC12	"			

ASS'Y NO.	01-161-00737, HEAT SINK ASS'Y(2SC3502ESC-431VII)		MODEL NO.	M6-047XXXXX		
2111500024	TR, NPN, TO-125	0.1A, 200V, 5W(TC), VD O/P, 2C3502E	P	1		
3311200036	MS+, PAN, ZPW	M3×8.MSWR3	"	1		
3111400339	HEAT SINK-N, 1V, SC-431VII	35×15×15, AL	"	1		
4312100036	COMP-SILICON	KS612	"			

ASS'Y NO.)	01-123-00063.SUB ASS'Y CPT SOCKET (SC-431-VII)		MODEL NO	M-6-047-XXXXX		
P/N	Description	S P E C	UNIT	Q'TY	CKT NO	
1611100725	CLBLE, SIGNAL, NON-DET	10P, 1500M/M, SC-431VII	P	1		
3663390099	CRT SOCKET	29, 12P, CVT3240-1221	"	1		
1224604722	CAP, CISC, CERAMIC, CK-45	4700 PF, 20%, 2KV, -25/85'C, RB	"	1		
1233401018	CAP, DISC, CERAMIC, CK-45	100 PF, 10%, 500V, -25/85'C, RB	"	1	C42	
1414201018	CAP, DISC, CERAMIC, CK-45	100 PF, 10%, 500V, -25/85'C, RB	"	1	C41	
1414204746	RES, CARBON, AT	100 OHM, 1/2W, 5%	"	3	R11, R21R, 31	
1414204746	RES, CARBON, AT	470K OHM, 1/2W, 5%	"	1	R41	
3113100012	BEAD PIN	D2, 36	"	2	CN42	
3661500012	CONNCETOR SUROUDED HEADER	2.5, ST, 2P, 5267-02A	"	3	CN31, CN32, CN33	
3661400024	CONNECTOR LOCK HEADER	3.96, ST, 2P, 5273-02A	"	1	CN41	
3643700116	BRAIN WIRE, RING TER	D5, 55MM	"	1		

ASS'Y NO.	01-173-00286. SUB ASS'Y BACK PLATE W/CABL. (SC-431II)		MODEL NO.	M6-047-XXXXX		
P/N	Description	S P E C	UNIT	Q'TY	CKT NO.	
3654100167	CABLE, SIGAL, NON-DET	10P, 1500M/M, SC-431VII	P	1		
3221100458	PLA, DEX-P, BACK PLATE, SC-431VII	210×50×13.2×P1005-51438	"	1		
3231500024	CABLE BUSE	D15.9 ☆14.68, 1210(SR -6P-4)	"	1		
3317200012	MS+C/S, ZPW	M3×8	"	2		
1731400048	EMA, FILTER, SOCKET	250/3A, 473PF, 222PF, 2MI(IB3-S32)	"	1		
3385200012	NUT, HEX, 2, ZPW	M3×0.5	"	2		
3942200024	TUBE-SHRINK, WHT	D4, POLY-OLEFIN (20mm)	"	2		
3643100208	WIRE, RING TER, SINGLE	G/Y, D5, 150M/M, INSUL, 1015	"	1		
3641300645	WIRE, CONN/HOUSING	240MM, 3P, GY, 10/8, BK, W, 1672	"	1		
3643700143	BRAID WIRE, RING TER	D4, 70 MM	"	1		
	SOLKER, WIRE		"			

ASS'Y NO.	01-151-00235.SUB ASS'Y VOLUME (SC-431VII)		MODEL NO.	M6-047-XXXXX	
P/N	Description	S P E C	UNIT	Q'TY	CKT NO.
3121101375	CONTRAST BAKT	79×6×17	P	1	
1544100075	VAR, ROTARY, W/SHAFT, H-TYPE	10K OHM, B, 0.2W(V16L4N25F)	〃	1	VR201
154400012	VAR, ROTARY, W/SHAFT, H-TYPE	20K OHM, B, 0.2W, (V16L4N25F, C.C)	〃	1	VR801
3641400259	WIRE, CONN/HOUSING	320MM, 3P, W, 2.5, Y, OW, 1007	〃	1	
364200422	WIRE, CONN/HOUSING	130MM, 3P, W, 2.5, BK, Y, R 1007	〃	1	
3942200024	TUBE-SHRINK, WHT	D4, POLY-OLEFIN (20MM)	〃	1	
	WIRE SOLDER				

ASS'Y NO.	01-114-00208 SUB ASS'Y PUSH SW (SC-431VII)		MODEL NO.	M6-047-XXXXX	
	P/N Description	S P E C UNIT	Q'TY	C K T NO.	REMARK
3121100342	MET-1, PRS, PWR S/W BRKT, SC-431E	17×79×6, FG1	P	1	
1913190048	PUSH, SWITCH	SPST, 4A/32A, 250V, 2P, 1-U3065#A		1	S/W101
3315200012	MS+/RND, W/F, ZPW	M3×5		2	
3942200024	TUBE-SHRINK, WHT	04, POLY-OLEFIN (20MM)		1	
3641200407	WIRE, CONN/HOUSING	100MM, 2P, GY, 10, R, R, 1672		1	
	WIRE SOLDER				

ASS'Y NO.	01-114-00208. SUB ASS'Y PUSH SW (SC-431VII)		MODEL NO.	M6-047-XXXXX	
2215200048	LED, GREEN	25MA, 75MW, SLB25MG3, RECT	P	1	D41
1611100725	PCB, FR-1 1.6T	SOCKET, PCB, W/LED, PCB		1	
3641300657	WIRE, CONN/HOUSING	SN60%, D1.2, FUX1.9%			
4111300012	SOLDER, WIRE	SN60%, D1.2, FUX1.9%			

ASS'Y NO.	MJ-047-00684. SET CHASSIS ASS'Y (SC-431VII)		MODEL NO.	M6-047-XXXXX	
P/N	Description	S P E C		UNIT	
MG04700805	PCB ASS'Y CDT 3709922	M, V, S, ANALG, VGA-II 0.31		P A	1 1
0117300286	SUB ASS'Y, BACK TPLTE W/CABLE	SC-431VII, INLET, SIGNAL, 1500mm			1
0015100235	SUB ASS'Y, VOLUME	SC-431VII, CONT/BRT 10K/20K			1
0114100203	SUB ASS'Y, PUSH SW	SC-431VII/EII, POWER, 2P, 190MM			1
0118300099	SUB ASS'Y, LED	SC-431II/EII, GREEN, SLB25MG3, 230mm			1
1722400087	COIL, DEGUSSING	75±, 11.13, 1060mm, PVC, EII/VII, DUAL		P	
3643700128	BRAID WIRE, RING/SPADE TER	D5, 110MM			1
3643700131	BRAID WIRE, RING TER	D5, D5, 100MM			1
3643700104	BRAID WIRE, TER/CONN	SHIELD, 710MM, BK, 245MM			1
3231100012	CABLE TIE	L93 W25 T1, 3500			5
	BAR SOLDER				

ASS'Y NO.	MJ-047-00684. SET CHASSIS ASS'Y (SC-431VII)		MODEL NO. M6-047-XXXXX_.			
P/N	Description	S P C E	UNIT	Q'TY	CKT NO.	REMAR
3121101312	MET-1, PRS, MAIN CHASSIS, SC-431VII/EII	310×240×17, SBMGI 1T	P	1		
3344500012	TS+, RND, 2, W/F, ZPW, BT	M3×8.SM-20C		1	16	
3121101363	BRACE(R) MET-1, PRS, BRACER/H, SC 431VII/EII	150×54×76.5, EG1.2T		1		
3121101351	BRACE(L) MET-1, PRS, BRACER/H, SC -431VII/EII	150×54×76.5, EG1 1.2T		1		
3317200012	MS+, CS ZPW	M3×8.MSWR3		2		
3371200012	WHR, OUT, ZPW	3.2×7.0×0.5		1		
3312500012	MS+PAN, WFC, ZPW	M4×8, WSWR3		1		
3385200036	NUT, HEX, 2, ZPW	M4×0.7, SM-20C		1		
3373200048	WHR, OWT, ZPW	4.8×9.5×0.5×, SCP1		2		
321110701	FRONT BZZEL	NORYL P×10005-51438		1		
3261101399	S/W KNOB	NORYL P×10005-51438		1		
3121101348	TOP BRKT (R)	54.5×12×24		1		
3121101336	TOP BRKT (R)	54.5×12×24		1		
3349100012	TS+, SPL, ZPW	M5×23		4		
3361200143	PS+, PAN, ZPW	#8×15		6		
3361200048	PS+PAN, ZPW	#6×3		3		
3112100043	SPRING(COMPRESSION)	17×11×0.6		1		
336120028	PS+PAN, ZPW	#8×10		2		
3261101719	BRIGITS KNOB	D28×15		2		
391100063	RUBBER, WASHER	D22×3.5, BLK		4		
3121101324	BOTTOM CHASSIS	285×238×8		2		

ASS'Y NO.	M6-047-XXXXX. (SC 431VII)		MODEL NO. M6-047-XXXXX			
P/N	Description	S P E C	UNIT	Q'TY	CKT NO.	REMAR
MJ04600696	COLOR SET CHASSIS ASS'Y	FREE, TTL, 0.31"	A	1		
3211100713	REAR HOUSING	NORYL P×1005	P	1		
3319100012	MS+SPL, PCN, ZPW	MA×13.5		4		
3346500012	TS+, C/S, 2, ZPW, 8T	M3×12, SM20C		3		
3261101375	STAND NORYL, P×1005-51438	258×32×258		1		
3261101363	NECK NORYL, P×1005-51438	203×35×170		1		
3261101387	SPINDLE NORYL, P×1005-51438	44×19.2×54		1		
3361200143	PST, PAN, ZPW	#8×15		1		
3911100155	RUBBER FOOT	D20.8×9.0		4		
3371200099	WHR, PLN, ZPW	5.3×16×1.2, SCP1		1		
3421100274	CSHION-EPS	428×251×95		1		
3521100502	LOGO-SAMTRON	60.3×17.5×0.3		1		
351104006	PRODUCT LABEL	115V~230V		1		
3431100223	VINYL BAG-MONITOR	740×820×0.05		1		
3431100051	VINYL BAG-POWER CORE	400×100×0.1		1		
3431101033	CARTON BOX-SAMTRON	400×444×440		1		
0214100381	MANUAL	SC-431E II	픽61			
3652190048	CORD, POWER, NPRMAL, DETACH	H05VV-F, 250V, BK, 6FT		1	M6-047-00895(230 V)	
3652100179	CORD, POWER, NORMAL, KETACH	SVT, 125V, 7A, BE, 6FT		1	M6-047-00592(115 V)	

[2] Reliabilities

2-1. Long life. (MTBF)

The monitor shall have a 20, 000hr MTBF when operated under any combination of conditions as detailed spedification.

2-2. Environmental Testing.

operating environment is the environment in which the monitor must operate without degradation or damage.

These are test that SED will perform on the monitor prior to its release.

The monitor is required to satisfactorily pass these tests prior to mass production.

These tests are detailed in SED environment specification.

The monitor in the case shall operate within specification when subjected to the following environmental conditions.

2-3. Temperature.

* Operating : 5℃ To 40℃
* Storage : 10℃ To +55℃

2-4. Mumidity

* Operating : 5% To 50% (Non condensing)
* Storage : Maximum 95%

2-5. Vibration

The level specified for vibration apply to three mutally perpendicular difections(principle monitor axis) with packing and non operation,

* Frequency : 5~200 Hz
* Amplitude : 0~4 mm
* Sweep Time : 30Min.
* Waveform : Sinewave
* Direction : Up/Down
* Time : 1 Hour

2-6. Altitude

* Operating : 12000 ft at+20
  7000 ft at +40
* Non Operating : 4000 ft

2-7. Safety and approvals

2-7-1. Electromagnetic interference.

The system will be certified according to following international radiation standards.

1) Radiated emission.
   - FCC rules : Part 15, Class B.
   - CISPR rules : VDE 0871B/DPB1115(Class B)
2) Conducted emission.
   The monitor electronics shall not be customer accesable.

2-7-2. Safety regulations.

The system will be certified according to following international safety standards.

- UL 1950
- CSA C22.2 NO.220
- TUV-EN60950

2-7-3. Ergonomics.

The complete assembly shall be certified as complying with the rule and regulations of the German Ergonomics Standards(formerly GS)

2-7-4. Ionogenic Radiation.

The display device must be·certifide as complying with the U.S
Department of Health and human Service(D.H.H.S), rule 21 CFR, subchapter J and ANSI C95-1.

(3) Signal cable pin connection

* SIGNAL CABLE PIN · CONNECTION(15IN D-SUB SIGNAL CONNECTOR WITH CABLE)

NO	RGB/ANALOG SIGNAL	SIGNAL	WIRE COLOR	REMARKS
1	RED	PIN # 1	RED	
2	GREEN	PIN # 2	GREEN	
3	BLUE	PIN # 3	BLUE	
4	N.C	PIN # 4		
5	SELF TEST	PIN # 5	BLACK	
6	RED GROUND	PIN # 6	SHIELD	
7	GREEN GROUND	PIN # 7	SHIELD	
8	GLUE GROUND	PIN # 8	SHIELD	
9	N.C	PIN # 9		
10	N.C	PIN # 10		
11	SYNC GROUND	PIN # 11	BLACK	
12	N.C	PIN # 12		
13	H-SYNC	PIN # 13	WHITH	
14	V-SYNC	PIN # 14	YELLOW	
15	N.C	PIN # 15		