AM 501
Service Guide
15-inch CRT Monitor

REGULATION COMPLIANCE

This monitor comply to the most current revisions of following regulations:

UL 1950	Standard for safety of Information Technology Equipment including Electrical Business Equipment.
CSA C22.2 No. 950	Safety of Information Technology Equipment including Electrical Business Equipment.
EN 60 950	Safety of Information Technology Equipment including Electrical Business Equipment.
ZH 1/618	Safety regulation for display work places in the office sector.
ISO 9241-3	Ergonomic requirements for office work with visual display terminals (VDTz)-Part3 : visual display requirements.
ISO 9241-8	Ergonomic requirements for office work with visual display terminals (VDTS)-part 8: requirements for displayed colors.
21 CFR 1002.10 and 1002.12	Guide for compliance with television receiver reporting and testing program requirements.
47 CFR, Chapter 1, Subpart A, part 15, Subpart B	A digital device that is marketed for use in a residential environment not withstanding use in commercial, business and industrial environments
EN 55 022	Specification for limits and methods of measurement of radio interference characteristics of information technology equipment.
MPR 1990:8	Test methods for visual display units.
MPR 1990:10	User's handbook for evaluating visual display units.
EMC Directive (89/336/EEC)	Council directive of 3 May 1989 on the approximation of the laws of Member States relating to electromagnetic Compatibility.
LVD Directive (73/ 23/ EEC)	Council directive of 19 February 1973 on the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits.

2.2 Connecting the Monitor and Stand

- Align the stand's four tabs with the slots on the bottom of the monitor.
- Insert the tabs into the slots.
- Slide the stand towards the front of the monitor.

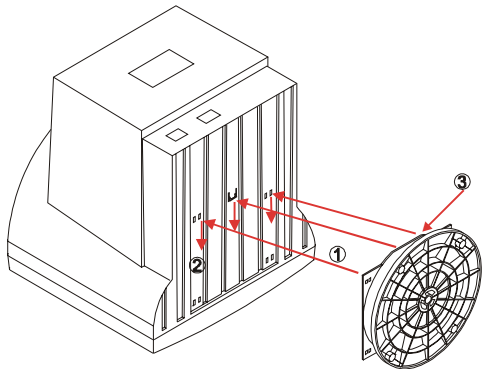


Figure 1: Monitor and Stand Connection

NOTE: *Special protection on control knobs and LED indicator needs to be taken care while you place the CRT side of side of monitor downwards. Such concern will escape the permanent damage occurred on encoder and LED lens from excessive pressure.*

2.3 Choosing A Workstation

When choosing an appropriate workspace, keep these few things in mind:

- A sturdy, level surface.
- An electrical wall outlet and a telephone wall jack near the computer.
- At least 3-inch clearance at the back of the computer to allow for the required airflow.
- Do not place near a window. Exposing the Monitor to direct sunlight for extended periods may damage the unit.
- You may want to use a desk lamp to adjust the ambient lighting for your viewing comfort.

A viewing filter is recommended to reduce eye stress and fatigue.

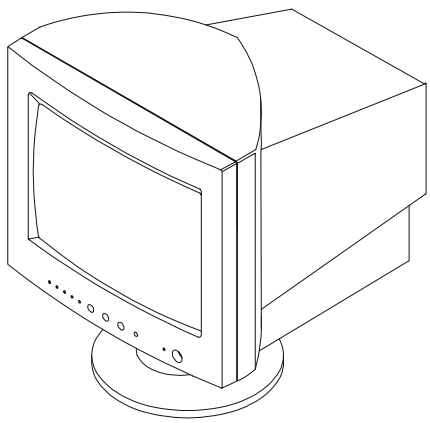


Figure 2: The Workstation (This bevel is representative)

2.4 The AC Connection

- Locate the AC port on the rear of the monitor.
- Plug the female end of the AC cord into the AC port.
- Plug the male end into the power supply.

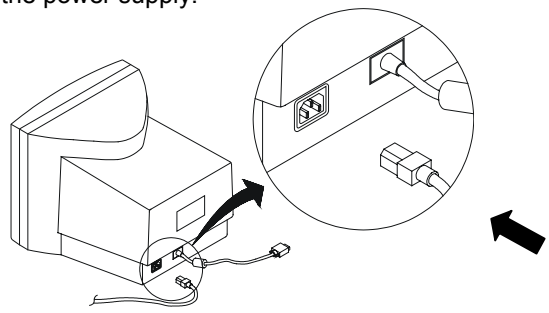


Figure 3: Connecting the Power Cord

2.5 The Signal Cable Connection

- Locate the ON/OFF power switch. See Figure 4.
- Make sure that the Monitor power switch is in the OFF position. The OFF position is indicated with a circular icon.

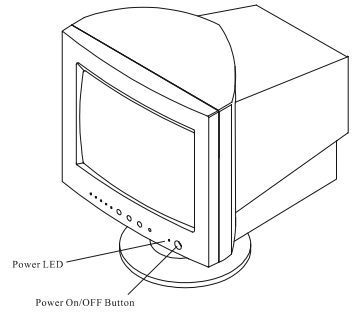


Figure 4: ON/OFF Power Switch

- Locate the VGA port on the rear of the PC. The signal cable has a standard 15-pin mini D-sub (VGA) connector. If you are having trouble locating the VGA port, please refer to the documentation, which came with your PC.
- Connect the Signal cable to the PC's VGA port.

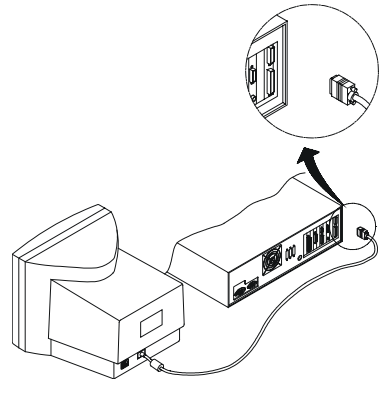


Figure 5: Connecting the Signal Cable

2.6 Monitor Tilt and swivel Adjustments

The monitor is capable of both tilt and swivel adjustments.

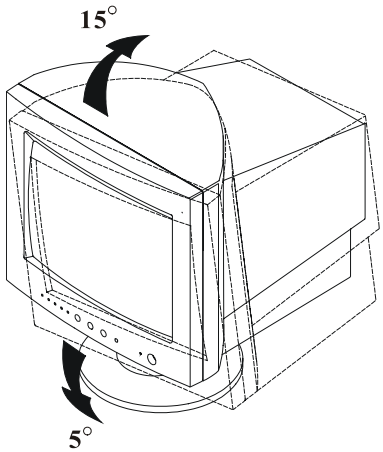


Figure 6: Tilt Adjustment

- With the tilt feature, the monitor is capable of vertical adjustments of +15° to -5°.
- The swivel feature allows for horizontal monitor adjustments of +45° to -45°.

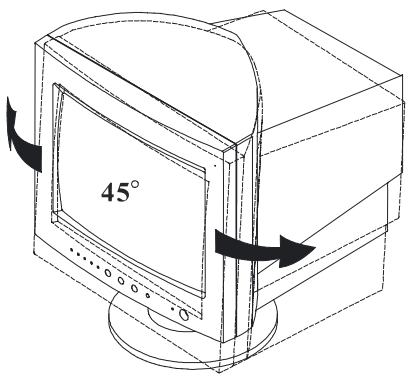


Figure 7: Swivel Adjustment

3.0 FRONT CONTROLS

3.1 USER CONTROLS

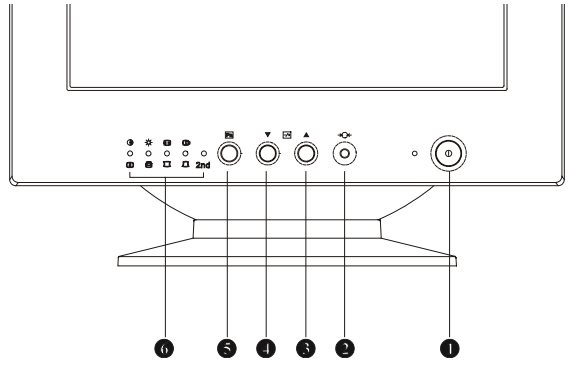


Figure 8: User Controls (This begel is representative)

1 Power Switch

Turns the monitor on and off

2 Power LED Indicator

Green States	Status
Light	ON
Light	Standby
Light	Suspend
Flash	Sleep

3 Reset

Resets default values.

4 Adjustments

For adjusting the display in the selected function.

5 Select button

For selecting functions.

6 Function LED Indicator

2nd

1) When the highest or lowest possible setting for a particular display control has been reached, its corresponding LED will flash.

2) When the 2nd LED's light is on, follow the 2nd function's indication.

3) When the input timing is not the preset timing, the recall function will not function.

3.2 OSD Icon Summary

Icon	Function	Function Description
	Brightness	Adjusts display brightness
	Contrast	Adjusts display contrast
	H. Size	Increases and decreases screen width
	H. Position	Shifts display image right or left
	V. Size	Increase and decrease screen height
	V. Position	Shifts display image up or down
	Pincushion	Adjusts concave and convex portion of pincushion effect
	Trapezoid	Adjusts the top and bottom display widths

4.0 SPECIFICATION

4.1 CRT Description

This display unit shall employ a CRT complying with the following specification:

Size:	15 inches diagonal
Deflection angle:	90 degrees diagonal
Electron gun:	In-line type
Focusing method:	Electrostatic
Focus lens:	Bipotential
Convergence method:	Magnetic
Surround type:	Black matrix
Array:	Dot trios
Trio spacing:	0.28 mm dot pitch
Phosphor type:	P22 or equivalent
Phosphor persistence:	Medium-short
Light transmission:	57% approx.
Anti reflection:	Anti-glare treatment (45÷65 gloss)

4.2 Interface Signals

This color display shall have an analog video interface and shall be capable to operate with multiple horizontal and vertical frequencies. Moreover it shall be capable to support compatible DDC1and DDC2B signals.

4.2.1 Sync Input

Separate, composite	TTL compatible
Polarity	Positive or negative

4.2.2 Interface Frequency

Table 1:Interface Frequency

Horizontal line frequency (KHZ)±500HZ	Vertical frame frequency (HZ) ±3HZ
31.649	59.94
46.875	75
48.363	60
53.674	85.061

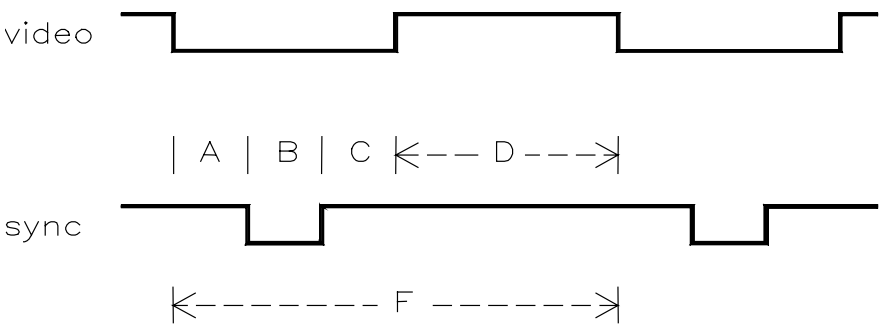
4.2.3 Input Timing Limits

The monitor will accept all timings within the limits of table 2

Table 2: Input Timings Limits

Parameter	Horizontal	Vertical
Frequency	(30 to 54) KHz	(50 to 120)Hz
Blanking	≧2.5μs	≧0.4ms
Back Porch	≧1.0μs	≧0.1ms
Front Porch	≦back Porch	≦Back Porch
Sync Pulse	≧0.7μs	<0.3ms >0.03ms

4.3 Preset Timing



M454 U-P Default Timing

Table 3

				sweep	**F**	**D**	**C**	**B**	**A**
	MODE	H Pixes V Lines	Fd(MHz) Polar(H/V)	Fh(KHz) Fv(Hz)	Th(us) Tv(ms)	Td(us) Td(ms)	Tb(us) Tb(ms)	Tp(us) Tp(ms)	Tf(us) Tf(ms)
			d: dot			d: display	b: backporch	p: pulse	f: front
1	VGA60	640 480	25.175 N/N	31.469 59.94	31.777 16.683	25.422 15.253	1.907 1.049	3.813 0.064	0.635 0.317
2	VESA75	800 600	49.5 P/P	46.875 75	21.333 13.333	16.162 12.8	3.232 0.448	1.616 0.064	0.323 0.021
3	VESA60	1024 768	65 N/N	48.363 60	20.677 16.667	15.754 15.88	2.462 0.6	2.092 0.124	0.369 0.063
4	VESA85	800 600	56.25 P/P	53.674 85.061	18.631 11.756	14.222 11.179	2.702 0.503	1.138 0.056	0.569 0.018

4.4 Brightness and Contrast

Definitions:

Active area This zone can be lighted when the background color is changed from black to any other color. Its dimensions, in terms of timing correspond to the "active area "times described in table 3

Raster area Under certain conditions (see table 4) this zone must be visible when no video input is applied. Width and height of the raster area must be larger than the corresponding dimensions of the active area.

Border Comprising any area of the screen outside the raster area.

Brightness This control is mainly intended as a raster luminance adjustment.

Contrast This control shall vary the gain of the video amplifier, thus adjusting the contrast of the displayed images, and shall not have any visible effect on the raster luminance.

Both controls shall not affect the border. Inside this zone the raster shall be always under the minimum perceptible level and no evidence of retracing(images or distortion)shall be visible on the screen at any setting of the luminance controls. The user controls shall operate as described on table 4. This check must be performed under a diffused illumination of 10 lux and on 48k mode (Horizontal frequency).

Table 4

Patterns	Setting of user Controls		Luminance Limits	
	Brightness	Contrast	Raster Area	White Area
A	Min	Any	Not Visible	*
A	Max	Min	0.3 ~ 3.0 FL	*
B	Max	Max	*	60 FL<=
C	Max	Max	*	>29FL
B	Min	Max	Not Visible	Visible
B	Min	Min	Not Visible	Not Visible

Legend:

*Don't Care

A Black screen @0 mV video level.

B 2? x 2 ?white box, @700mV video level.

C Full white screen, 100% of the data area @700mV video level.

4.5 Power inlet

Power shall be applied to the display device through a standard three wire receptacle NEMA A/5261 or equivalent.

4.6 Power cord

The power cord supplied with the monitor must conform to the International Standards described on part 8.0 and shall have physical and electrical characteristics such that to comply with any other specification item. The power cord shall be of removable type.

4.7 Signal cable

Signals shall be applied to the display device through a shielded cable, which must be intended as part of monitor. This cable shall be of a suitable type in order to comply with any specific item, and shall be terminated in a 15 pin D-Shell male connector type AMP 211350-1 or equivalent, with pin assignment as follows:

15 pin mini D-sub

1 Red video input
2 Green video input
3 Blue video input
4 Identify output
5 Ground
6 Red video ground
7 Green video input
8 Blue video ground
9 Not connected
10 Logic ground
11 Identify output
12 SDA (DDC1 or DDC2B)
13 Horizontal sync.
14 Vertical sync. (VCLK)
15 SCL (DDC2B)

4.8 Internal connectors

All internal connectors for the interconnection of sub assemblies must be distinct in their physical characteristics or polarization so as to prevent any misconnection which may cause permanent damage to the display.

4.9 Power Requirements

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

Frequency: 50/60Hz± 3Hz

Voltage: 90 to 264 Vac RMS

The following consumption requirements shall be met:

Power consumption: 75W for MPRII & VLMF Yoke

70W for NORMAL Yoke

Current consumption: 1.2 Aac RMS

Note: *Current and power consumption are the maximum values allowed in the voltage ranges describe above.*

4.9.1 Power Management

Table 5: Power Management

NO	STATE	STATE			POWER SAVING
		HORIZONTAL	VERTICA	VIDEO	
1	ON	PLUSES	PLUSES	ACTIVE	NONE
2	STAND-BY	NO PLUSES	PLUSES	BLANKED	<15W@90～240VAC
3	SUSPEND	PLUSES	NO PLUSES	BLANKED	<15W@90～240VAC
4	OFF	NO PLUSES	NO PLUSES	BLANKED	<5W@90～240VAC

The states of power saving function shall be display by LED indication.

4.10 Visual Characteristics

All factory preset resolutions must guarantee the right display dimension and centering. Other resolutions can be adjusted correctly with the external controls as per section 2.5.
In all resolution must be possible to adjust the monitor in full screen (overscan mode) by external controls. The viewing eye angle while performing any dimensional measurement is parallel to the axis of the picture tube.

4.10.1 Test Conditions

Resolution:	any of preset modes
Input level:	700 mV
Pattern:	crosshatch after setting full white pattern with
	20FL luminance.(Except otherwise indicated)
Brightness control:	cutoff position
Contrast control:	position after setting full white pattern with 20FL luminance.

Unless otherwise specified, the display shall meet the requirements of this section under any combination of the following operating ranges:

Image duty cycle:	10% to 90%
Input power:	As per section 3.1
Operating	temperature: As per section 6.2
Humidity:	As per section 6.2
Magnetic field:	Horizontal=0 Gauss
	Vertical=0.4 Gauss

4.10.2 Display Dimensions

The dimensions of the data area for all presetting mode listed in part 2.3.1,measured along the horizontal and vertical axes of the screen, shall be as follows:

Horizontal=260± 2.5mm

Vertical=195± 2mm

The external control ranges of the data area, shall be as follows:

Maximum horizontal size:	overscan the screen
Minimum horizontal size:	≦250mm
Maximum vertical size:	overscan the screen
Minimum vertical size:	175.5mm

4.10.3 Picture Size Variation

The change in display size shall be less than 3mm in width or 2mm in height at full white pattern.(250x188mm^2)
Brightness change from 5FL to 25FL
Temperature change in 25°C±10°C

4.10.4 Display Centering

Figure 9. Describes the pattern for this test. Basically a single pixel white line around the perimeter of the data area composes it, with marks for the horizontal ad vertical axes. The background is black.
The maximum variation of the display centering shall be such that the following relationship shall be met:

$$a \mid L - R \mid \leqq 2.5mm \mid U - D \mid \leqq 2mm$$

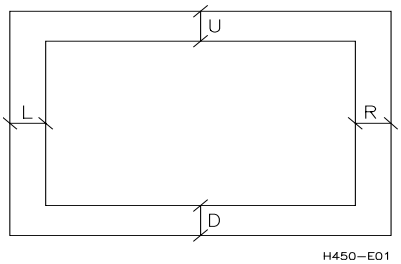


Figure 9: Display Centering

The external control ranges of display position for all modes listed in part 2.3.1 shall be as follows:

Horizontal position:	total control range≧ 40mm
Vertical position:	total control range≧ 25mm

4.10.5 Tilt

The maximum variation of the display rotation (tilt) shall be such that the following relationship shall be met:

$$\theta \leqq 0.5 \text{ degree}$$

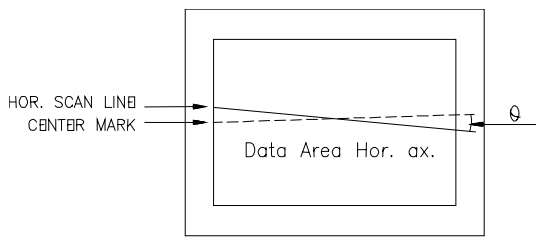


Figure 10: Tilt

4.10.6 Geometric Distortions

1. Pincushion

Pincushion(top)	d1≦1.5mm
Pincushion(bottom)	d2≦1.5mm
Pincushion(leftside)	a1≦1.5mm
Pincushion(rightside)	a2≦1.5mm
"S" distortion	≦0.5mm

2. Barrel

barrel(top)	c1≦1.5mm
barrel(bottom)	c2≦1.5mm
barrel(leftside)	b1≦1.0mm
barrel(rightside)	b2≦1.0mm

3. Trapezoid & Parallelogram distortion

a≦2.0mm

b≦2.5mm

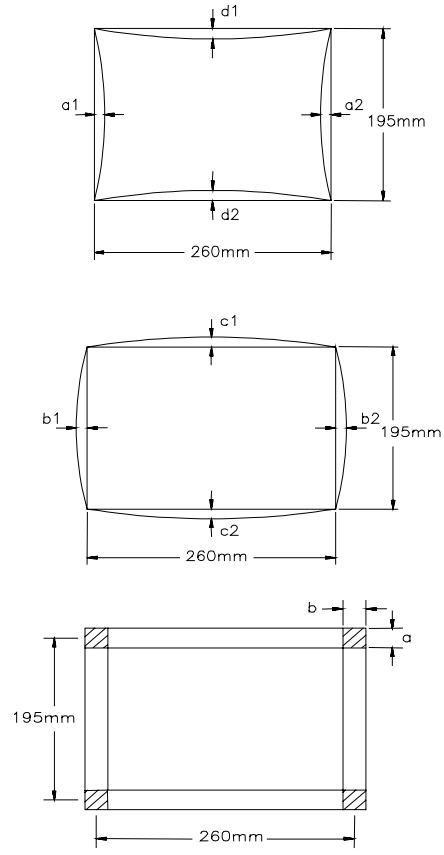


Figure 11

4.10.7 Geometric Distortion By Luminance

The test pattern is composed of two white areas and a black area, the three areas are equivalents. The input signal level is 700 mV with brightness control at cut-off and contrast control at maximum(see Figure 12).
The distortion introduced by dynamic High Voltage variation, due to different brightness level on the screen, are admitted with following limits:

$$|AC - BD| \text{ or } |A'C'-B'D'| \leqq 2.0mm$$

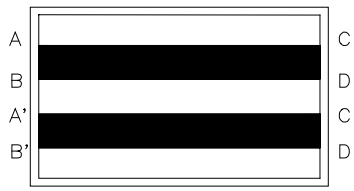


Figure 12

4.10.8 Linearity

The linearity of an image displayed on the CRT must meet the following requirements, with reference to figure 13 for both X and Y axis.
The measured value of linearity shall be less than 6% when calculated using all lattices and shall be less than 4% when calculated using adjacent lattices.

	X1	X2	X3	X4	X5	X6	X7	X8
Y1								
Y2								
Y3								
Y4								
Y5								
Y6								
Y7								
Y8								

Figure 13:Linearity

$$\frac{X\max - X\min}{X\max + X\min} OR \frac{Y\max - Y\min}{Y\max + Y\min}$$

Where: X max and X min are belong to the set Xi,i=1.....8

X max, X min, be Calculated Same Line

Y max, Y min, be Calculated Same Row

Y max and Y min are belong to the set Yi,i=1....8

4.10.9 Misconvergence

The display must conform to all the following requirements:
Maximum convergence error.

Area	Horizental Direction	Vert. Direction
A Center field of 195mm diameter	0.30mm	0.30mm
B Square field of 260 x 195 mm	0.40mm	0.40mm

Table 6 : Misconvergence

The maximum convergence error shall be measured for a white spot or line, and represents the maximum distance between the energy centers of any two primary colors. The central area is defined as the area within a circle centered on the CRT faceplate having a diameter equal to the display vertical dimension.

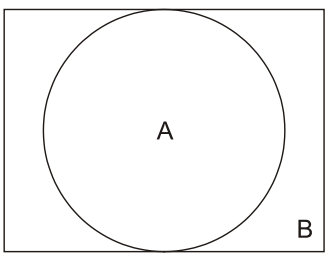


Figure 14

4.10.10 Image Stability (Jitter)

Not perceivable Jitter will be present on the display, when displaying a cross-hatch pattern, at a distance of 500 mm from the screen. In any case it is not admitted a measured Jitter value greater than one dot (both on X axis or on Y axis).

4.10.11White Color Adjustment

The chromaticity coordinates of the white color shall be verified with standard full white screen @700 mV input level with brightness control at cut-off and contrast control adjusted to 25FL nits of luminance on the center of the screen. The 1931 CIE chromaticity diagram (x, y) coordinates for the screen center shall be:

$x = 0.281 \pm 0.030$

$y = 0.311 \pm 0.030$

4.10.12 White Color Uniformity

With a standard full white screen as described in section 4.11, the color coordinates measured at any point of the screen shall be:

$x = Xref \pm 0.030$

$y = Yref \pm 0.030$

4.10.13 White Color Tracking

Contrast Control Tracking Error

After performing the standard setting as described in section 4.11, the contrast control shall be moved within 30FL (max) and 7FL (min) of screen luminance or to the mechanical stop if the lower limit cannot be reached. The white color coordinates in the center of the CRT when displaying the standard pattern at all the allowed setting of the contrast control shall be:

$x = Xref \pm 0.035$

$y = Yref \pm 0.035$

Brightness Control Tracking Error

The initial setting shall be as follows:

Pattern:	white raster
Input level:	700mV
Brightness control:	maximum
Contrast control:	adjust to 100 nit of screen luminance in the center of the CRT

The brightness control shall be moved within 30FL (max) and 7FL (min) of screen luminance or to the mechanical stop if the these limits cannot be reached. The white color coordinates in the center of the CRT at all the allowed settings of the brightness control shall be:

$x = Xref \pm 0.035$

$y = Yref \pm 0.035$

4.10.14 Luminance Uniformity

The variation in average display luminance between any area(with dimension approximate 2 cm of diameter)on standard flat white screen, must be less than 35% of the luminance of the brightest area with brightness control at cut-off and contrast control adjusted to 80 nits of luminance on the center of screen.

4.10.15 Focus

When external contrast control is adjusted for 20?1FL light output with a flat white field pattern, then switch to a character pattern filled with "H" characters, the characters shall be readable and distinguishable.

4.10.16Moire

While displaying a white raster, no Moire effect shall be visible at any luminance setting 15FL.

4.10.17 Purity

Conspicuous miss-landing shall not be visible within display area. at distance of 60cm from CRT surface at 20FL white luminance.

4.11 Functional Performance

4.11.1 Acoustical noise:

The acoustical noise shall be less than 50dB when operating in normal condition, mode change or power on/off.

4.11.2 Turn off:

Set unit at 20FL of full white screen, then turn off unit, image should disappear smoothly, no persistent spot and flash.

4.11.3 High voltage discharge:

The arcing due to monitor high voltage discharge shall not cause any damage to devices connected to the monitor.

4.11.4 Tapping test:

No objectionable intermittence or noise occur while tapping top, left right, rear side of enclosure by a rubber hammer.

4.12 Environment Requirements

4.12.1 Non-adjusting operation

25℃ ± 10℃

4.12.2 Operating

Temperature	0°C to +40°C
Relative Humidity	10% to 90%
Altitude	Sea level to 8,000ft

4.12.3 Storage of shipment

Temperature	-20°C to + 60°C
Relative Humidity	10% to 90%
Altitude	Sea level to 40,000ft

TEST PROCEDURUE:

- Put in temperature chamber under 60°C Time: 24 hours
- Back to room temperature Time: 4 hours
- Put in temperature chamber under -20°C Time: 24 hours
- Back to room temperature Time: 4 hours
- The process repeat 2 times.

4.13 Reliability Requirements

4.13.1 Mean Time Before Failure (MTBF)

30,000 hours with 90% confidence level.(CRT less)

4.13.2 Reference Document

MIL-STD-105D
MIL-HDBK-217E

4.13.3 Electro-Static Discharge (ESD)

Contact discharge:

Apply 6KV,the set must be auto-recovery
Apply 4KV,the display pattern doesn't appear noise

Air discharge:

Apply 8KV,be disallow components damage or EEPROM data loss
Apply 6KV,the display pattern does not appear noise.

4.14 White Balance

Set the external BRIGHTNESS at the point that raster just cut off, adjust CONTRAST over the range from 5F-L to 20F-L, or reversed, with full-intensity reverse pattern, the color coordinate, measured by MINOLTA TV-COLOR ANALYZER-II (TV-2130), shall be within the limitation listed below:

x=0.281 ⌖ 0.03
y=0.311 ⌖ 0.03 (At 5 F-L and 20 F-L)

4.15 Luminance Uniformity

The variation in average display luminance between any area(with dimension approximate 2 cm of diameter)on standard flat white screen, must be less than 35% of the luminance of the brightest area with brightness control at cut-off and contrast control adjusted to 80 nits of luminance on the center of screen.

4.16 Focus

When external contrast control is adjusted for 15+/-1FL light output with a flat white field pattern, then switch to a character pattern filled with "H" characters, the characters shall be readable and disting uishable.

4.17 Image Stability (Jitter)

Not perceivable Jitter will be present on the display, when displaying a cross-hatch pattern, at a distance of 500 mm from the screen. In any case it is not admitted a measured Jitter value greater than one dot (both on X axis or on Y axis).

4.18 Warm-Up Time

The warm-up time shall be 20 minutes maximum. At the end of the warm-up period, no adjustment or service shall be necessary to cause the display to meet the requirements contained herein. After a warm-up time of 1 minute, the display shall produce a usable image. Repetitive power ON/OFF cycles must be possible with a minimum switch-off time of about 4s.

5.0 ALIGNMENT PROCEDURE

- Warm up the monitor for at least 30 minutes before adjustment.
- Set the front of CRT to the east.
- Turn all VR set to center position.

5.1 B+ Voltage, G1, H. Position Adjustment

Use front control key adjust the display size about 260mm, adjust VR501 let the voltage of FBT PIN3 cathode is 139±0.3V. (Timing is 48k 1024x768.Pattern is full white.)

5.2 White Balance Adjustment

- **EXT. BRIGHTNESS and EXT. CONTRAST set MAX.**

1. Input timing 48k 1024x768 without pattern adjust G2 VR (mounting on F.B.T) so that the brightness of back raster to become 0.5? 0.1 FL and adjust VR301 VR33 VR361,let the x-coordinate, Y-coordinate be inside spec range.
2. Adjust Brightness to cut-off (Raster), then adjust VR801 let the brightness is 45 ± 1FL (2" pattern).
3. Adjust Bri & Cont. to max, then adjust VR802 let the brightness is 32 ± 1FL (Full white), and adjust VR201, VR231, let the X-coordinate, Y-coordinate be inside spec range.
4. All the value must be check repeatedly.

5.3 Focus Adjustment

1. EXT. BRIGHTNESS move to cut off point. Use EXT.CONTRAST set the brightness to 25FL.
2. Adjust Focus VR (mounting on F.B.T), to get best focus.

5.4 Preset Timing Adjustment (Short P102 or press recall key when power on)

1. Input each PRESET MODE timing, and use front control key adjust the display to the normal position and size, and wait for 2 seconds.
2. Switch to next timing repeat 1 process. Unitl every PRESET MODE timing have been adjusted.

6.0 OPERATION THEOREM

6.1 H & V sync. processor

The key component of this block is U2, it's function is separate horizontal sync, and vertical sync. To get the polarity fixed V-out, H-out.

6.2 Vertical deflection

The vertical deflection circuit including synchronizer, vertical oscillator, vertical driver, vertical output amplifier.

6.2.1 Vertical synchronizer

The vertica1 sync. signal comes from U2 then enter at pin 2 of U401 (TDA9111), to synchronize the vertical oscillator.

6.2.2 Vertical oscillator and driver circuit

The vertical oscillator is at pin 20,21,22 of U401 and the peripheral component, the vertical linearity can be set by IIC.
U401 TDA9111 also build-in a vertical driver, a saw-tooth signal output from pin 23.

6.2.3 Vertical output amplifier and vertical centering circuit

U601 TDA8172 is the output amplifier, drive a saw-tooth current to vertical deflection yoke. To move display up or down. It can be set by IIC.

6.3 Horizontal deflection circuit

The horizontal deflection circuit is made up of HOR. synchronizer, HOR. oscillator, HOR. DRIVER, HOR. OUTPUT and HIGHT VOLTAGE GENERATOR.

6.3.1 Horizontal synchronizer and oscillator

The horizontal sync. signal input to pin 1 of U401, to synchronize the horizontal oscillator, pin 5, 6, set FH min oscillator frequency.
HOR. PHASE control by IIC.

6.3.2 Horizontal driver and output circuit

The driver waveform come out at pin 26 of U401, to the driver transistor (Q506), the driver transformer (T501) supply the drive current, turn on and turn off the HOR. output transistor (Q801) alternately, a saw-tooth current then be generated in the horizontal deflection coil.
P801, it supply a positive or negative current to move the raster to left or right side.

6.3.3 High voltage generator

(1) Anode voltage

The high voltage applied to CRT anode is obtained by boosting and rectifying the pulse voltage generated during the horizontal fly-back period with fly-back transformer (F.B.T.)

(3) Screen voltage

The screen voltage is obtained by dividing the anode voltage with screen VR.

6.4 X-RAY protection circuit

The circuit prevents the X-RAY radiation from exceeding the allowable value when the Anode voltage of CRT rises abnormally. The voltage to be detected is obtained by rectifying the pulse from FBT pin8, when the voltage is overhigh, the transistor Q507 will turn on, then the horizontal driver signal will be disable, the horizontal deflection circuit and high voltage generator immediate shout off. X-RAY protection circuit will be reset when turn the power off, then turn on again.

6.5 Geometric distortion correction circuit

The geometric distortion correction circuit including:

6.5.1 Side pincushion compensation circuit

The parabola waveform comes from Pin 24 of U401, come to the base of Q501. Via C516, the IIC of U401 control the gain of parabola waveform, the parabola waveform connected to the diode modulator amplifier (Q501, Q510, Q503), the side pincushion distortion will be compensated.

6.6 Video amplifier circuit

The video signal input via the coaxial cable, and AC couple to the video PRE. AMPLIFIER U301MM1375. The signal output from pin 14, pin 17, pin 20, connect to the video output amplifier, the video signal will be amplify about 50 times (contrast MAX.) and coupling to the cathode of CRT, to light up the screen.

6.7 Digital Controllor

The digital controller including micro processor U2 NT6861, eeprom U3 24C04, peripheral component, this controller control, horizontal phase, horizontal size, vertical size, vertical position, pincushion, contrast, brightness and trapezoid.
The micro processors generate a "MUTE" signal while the input timing changed. And send one signal (PS1) to power control for power saving function.

MICRO-PROCESSOR also generated one SW signal:

H.SYNC frequency	SW	SW1
f <41k	High	0
f >41k	Low	1

There are 4 preset mode and 12 user's mode can be memorized.

6.8 Power Supply

6.8.1 Degaussing CKT:

Under conditions of power on Q950 will turn on for a period of time decided by C950 and R952, during that time period the degaussing current will flow through the degaussing coil.

6.8.2 Flyback Mode Power Conversion CKT

The flyback power conversion CKT consists of a high frequency transformer (T901), output rectifiers and filters, and IC3842 control CKT (U901), and it uses the primary side feedback to regulate the output voltages.

a. When Q901 turns on, the energy stores in T901, and after Q901 turns off, the energy stored in T901 will feed to secondary windings and supply to all outputs.
b. The output diodes rectify the AC voltages to DC ones and then filtered by the output capacitors to generate DC voltages. The second LC stages attenuate the high frequency noises to get reasonable output ripples.
c. The 3842 (U901) pin 2 senses the feedback signal comes from plus end of C909 to regulate the output voltages.

6.8.3 Power Saving Control Switch

Q940 is an ON/OFF switch of 13VS, when received a suspend signal (PS1 from high to low) which comes fromų-p, Q940 will turn off making the monitor to go to suspend mode.
U900 be control by H-Sync. And V-Sync. detective CKT. When H-Sync. and V-Sync. disappear , U900 provides Vref to U901 PIN2, the power supply slut - down and unlatch to enter OFF mode. The power LED will flash naturally in this time.

6.8.4 Boost Mode Power Conversion CKT (The B+ Generator)

It consists of boost power stage, output rectifier and filter, driver CKT and PWM signal comes from U401.

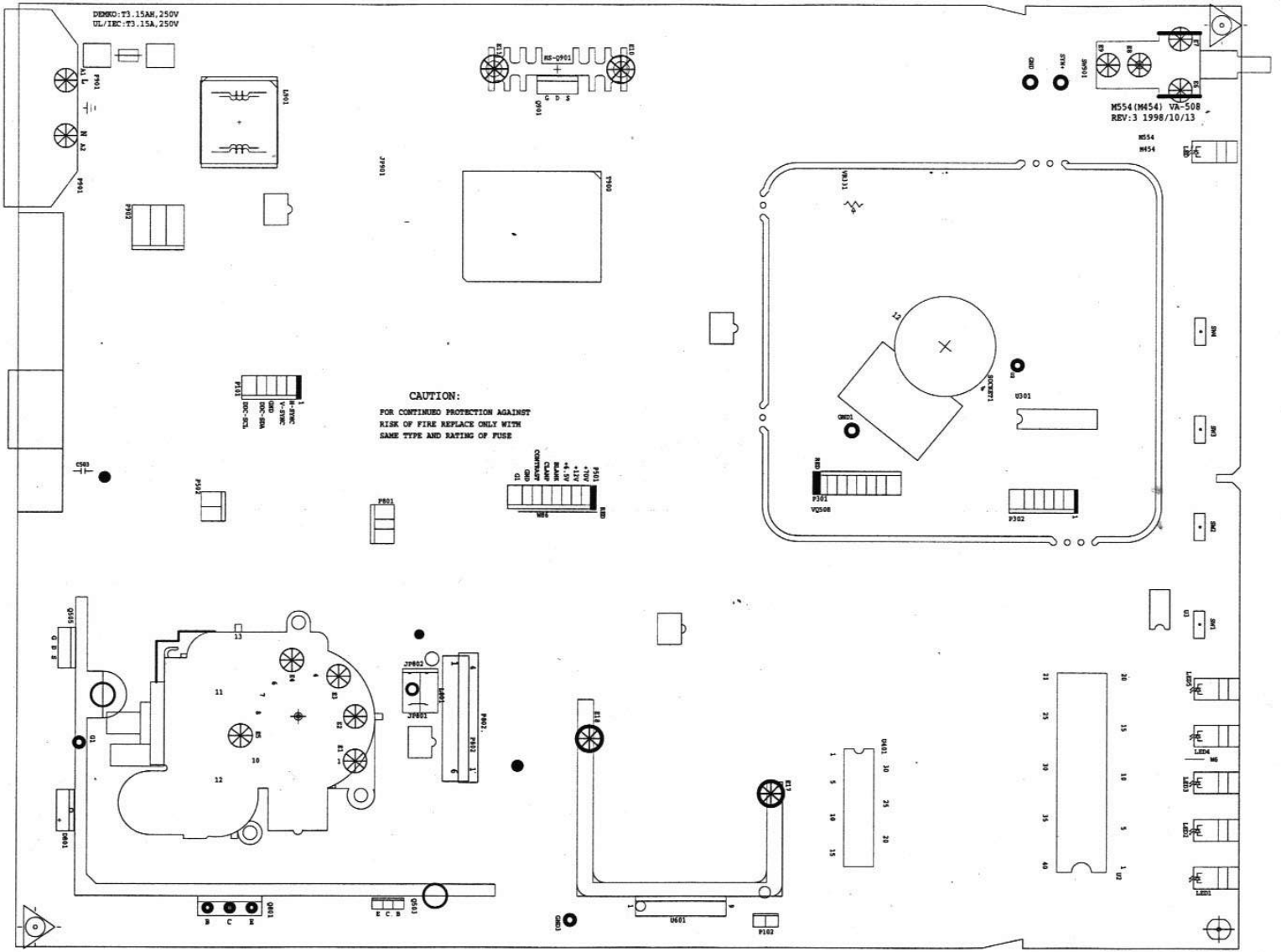
a. Q505 acting as a power transistor controls the energy flow through L501and D508 combining with the output capacitor C513 to generate a voltage higher than the input to supply the B+ voltage to monitor.
b. There is a close loop to control the B+ voltage so as to regulate HV of the CRT. The feedback signal comes from the H.V. bleeder of the FBT then sends to U401 to regulate the HV output.

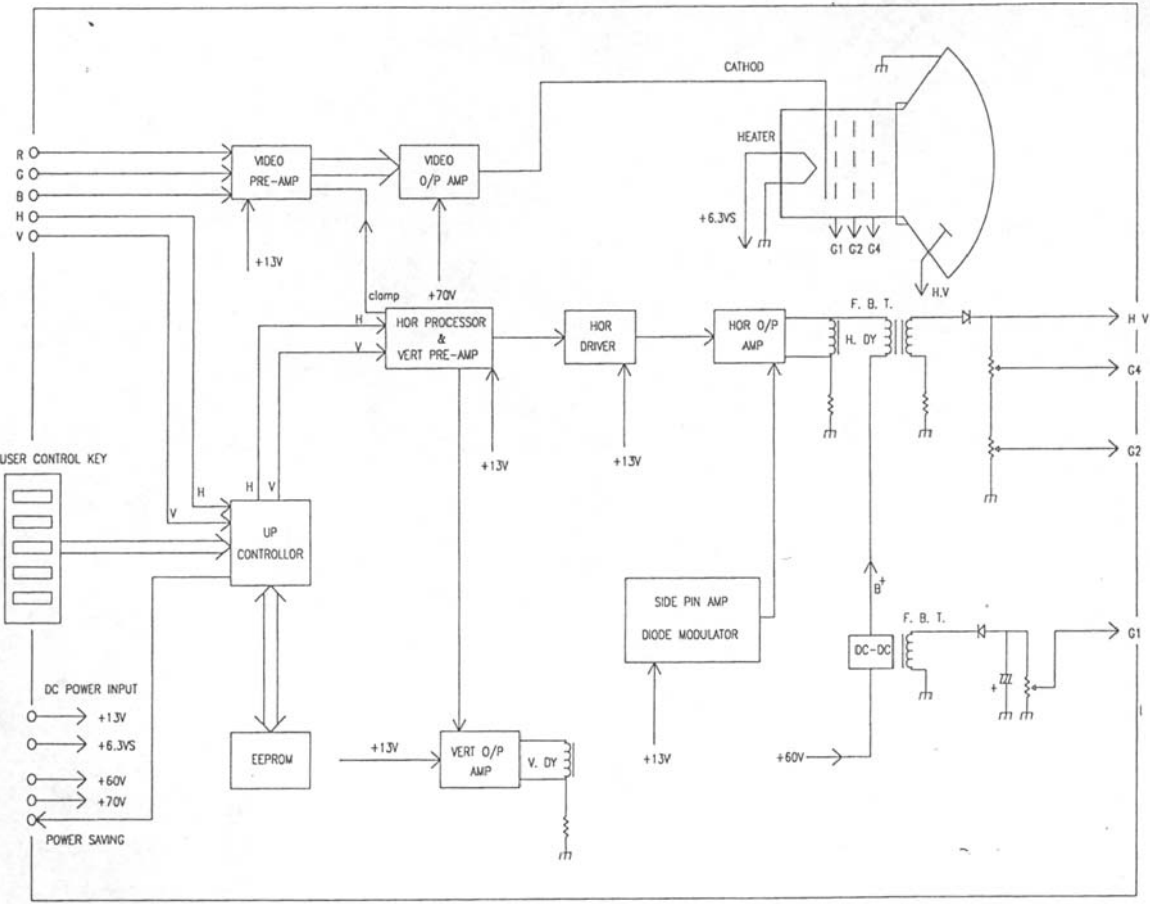
6.8.5 Synchronizing CKT:

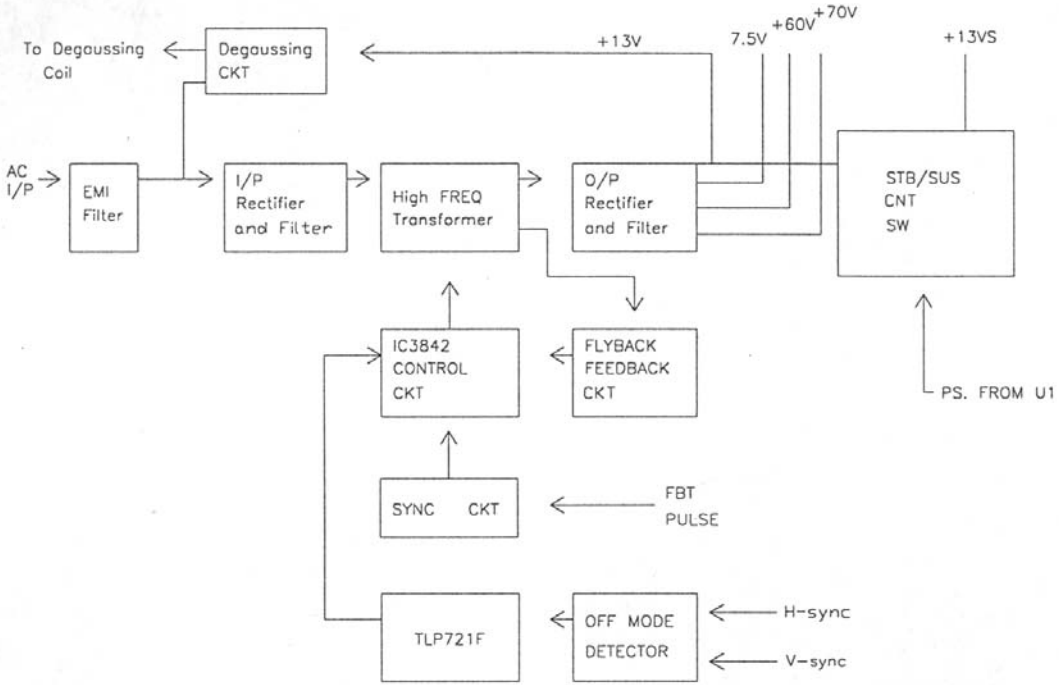
There is one sync signal comes from FBT pulse to synchronize the working frequency of U901.

6.8.6 Protection CKT

Under short CKT condition for each output, the Vcc of U901 will be removed and turn off all the outputs. When short CRT condition is released, Power will restart automatically.


DEMKO:T3.15AH,250V
UL/IEC:T3.15A,250V
M554(M454) VA-508
REV:3 1998/10/13
M554
M454
CAUTION:
FOR CONTINUED PROTECTION AGAINST
RISK OF FIRE REPLACE ONLY WITH
SAME TYPE AND RATING OF FUSE

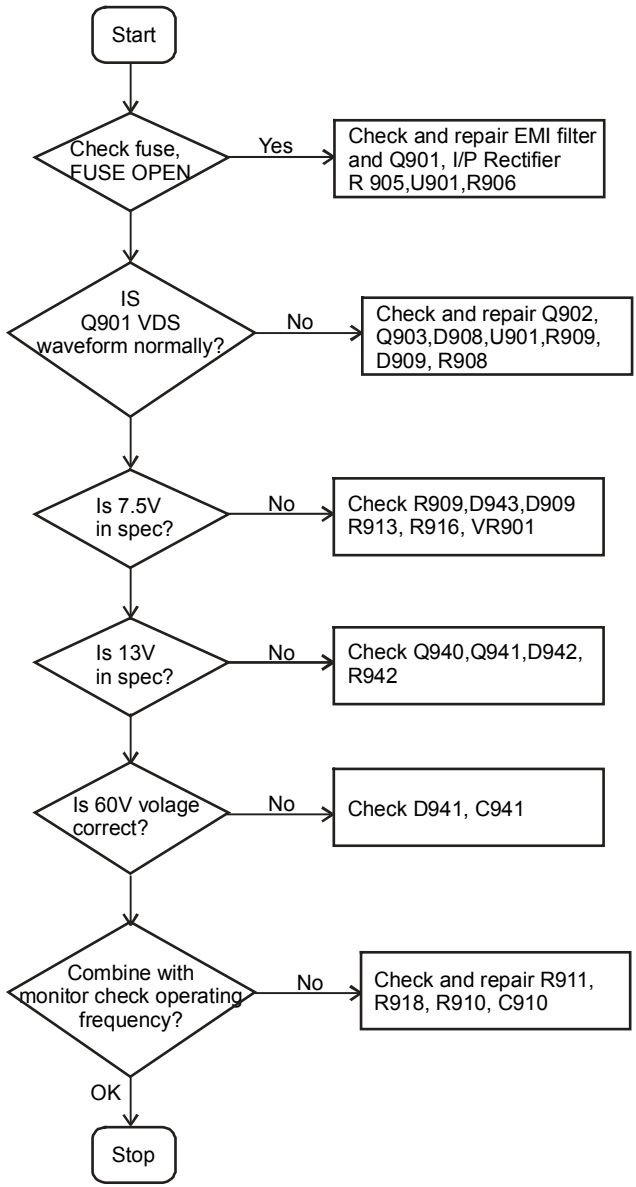

CATHOD
HEATER
+6.3VS
G1 G2 G4
H.V
R
G
B
H
V
VIDEO PRE-AMP
VIDEO O/P AMP
+13V
clamp
+70V
HOR PROCESSOR & VERT PRE-AMP
HOR DRIVER
HOR O/P AMP
F. B. T.
H. DY
H V
G4
G2
G1
USER CONTROL KEY
UP CONTROLLOR
SIDE PIN AMP
DIODE MODULATOR
B+
DC-DC
DC POWER INPUT
+13V
+6.3VS
+60V
+70V
POWER SAVING
EEPROM
VERT O/P AMP
V. DY


To Degaussing Coil
Degaussing CKT
+13V
7.5V
+60V
+70V
+13VS
AC I/P
EMI Filter
I/P Rectifier and Filter
High FREQ Transformer
O/P Rectifier and Filter
STB/SUS CNT SW
IC3842 CONTROL CKT
FLYBACK FEEDBACK CKT
PS. FROM U1
SYNC CKT
FBT PULSE
TLP721F
OFF MODE DETECTOR
H-sync
V-sync

M554-E05

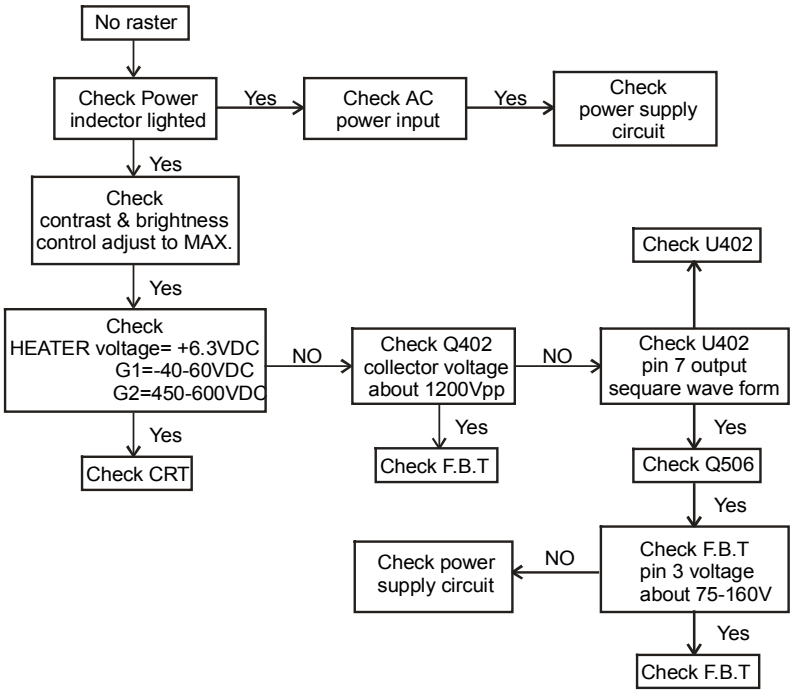
8.1 Trouble Shooting

8.1.1 Power Supply Check

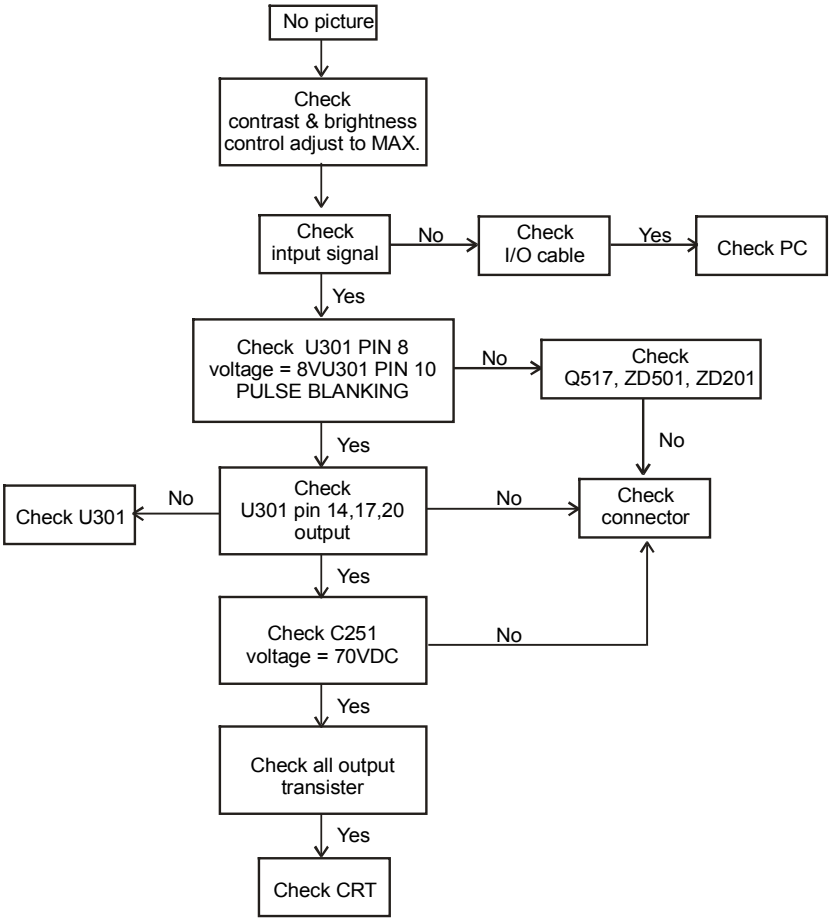


8.2 Monitor Check Flow Chart

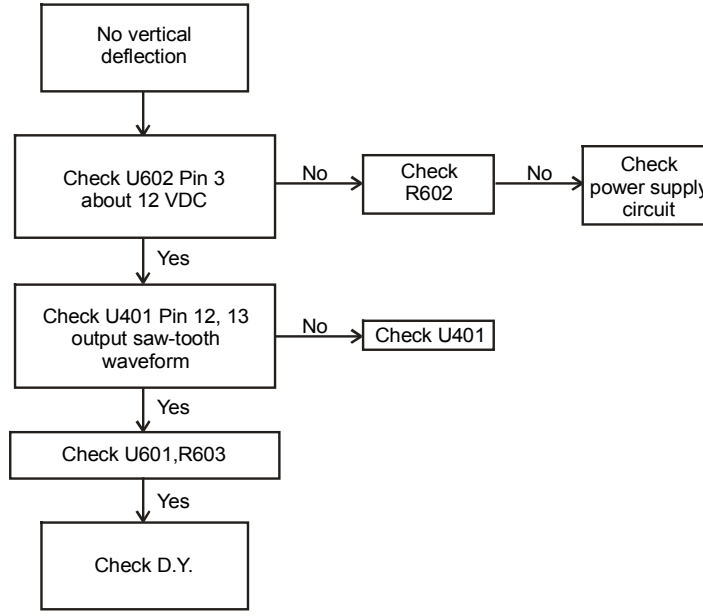
8.2.1 No Raster

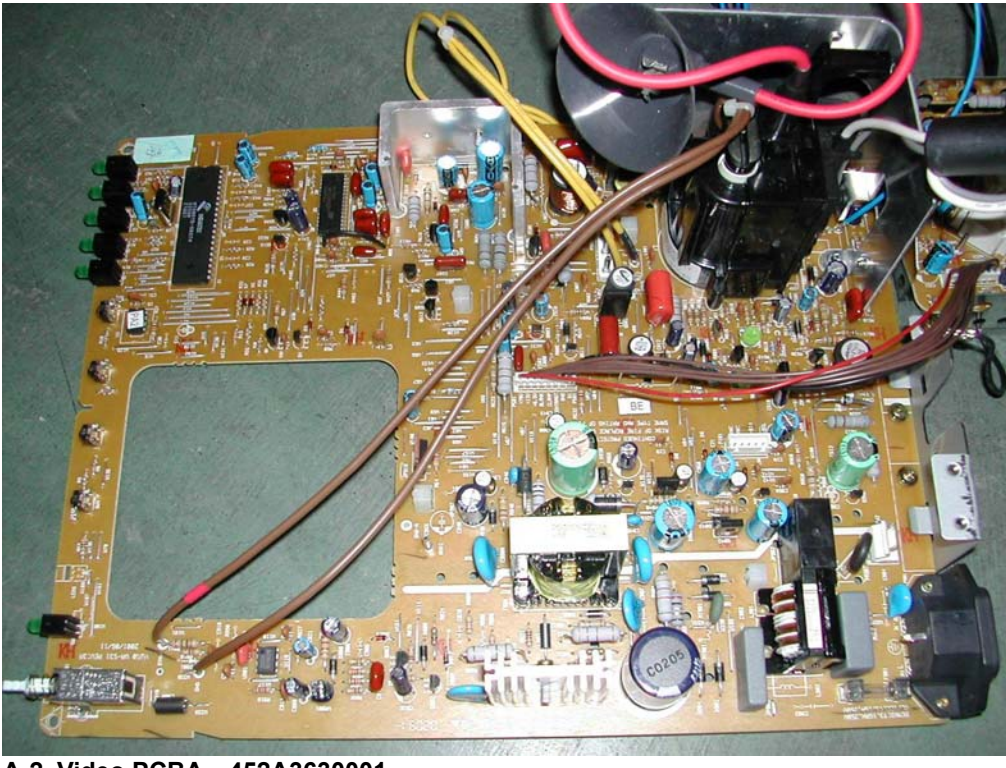


8.2.2 No picture

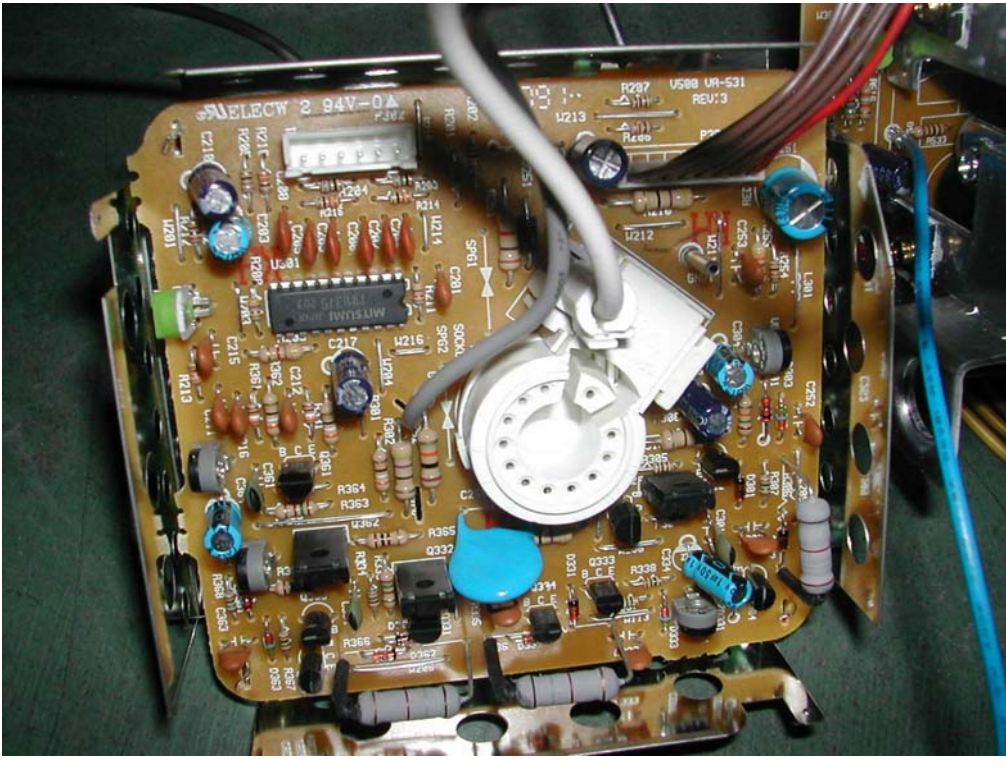


8.2.3 No Vertical Deflection (Raster Become A Horizontal Line)





A-2 Video PCBA—452A3630001



Line	Level	Part	Model	Unit Price USD	Usage	Description	Spec
1	1	52338430035	MM500A02010	97.09	1	DIS ABO	MM500A UR+MPRII WG
2	2	51A07630001		65.14	1	CRT & YOKE ASSY	MV500A UR+MPRII 15
3	3	AC500021802		46.00	1	COLOR CRT WITH YOKE	M36QAW351X115 (LP/
4	3	CLA5M000000		1.87	1	DEGAUSSING COIL	M571 CRT AROUND .4
5	3	DC020124610		0.99	1	H-CON SET	V500 CRT-GND AROUN
6	2	51A07730012		27.65	1	VIDEO ASSY	MM500C UR+MPRII
7	3	452A3630001		5.12	1	PCBA CRT/B	VQ-531 MV500A
8	4	442A3630001		1.89	1	AIS CRT/B	VQ-531 MV500A
9	5	BB1042100T3		0.14	3	TRANSISTOR	BFV421 PNP TO-92
10	5	BB3042000T1		0.14	3	TRANSISTOR	BFV420 NPN TO-92
11	5	BB30945P1T5		0.06	3	TRANSISTOR	2SC945-P
12	5	BC101SS82T2		0.10	3	DIODE	1SS82
13	5	BC11N4148T8		0.02	6	DIODE	1N4148
14	5	BC1FR1040T0		0.04	1	DIODE	FR104 DO-41
15	5	BC40HZ9A2T6		0.05	1	ZENER DIODE	HZ9A-2
16	5	BC4HZ2720T5		0.05	3	ZENER DIODE	HZ27-2
17	5	CA001A6M0T0		0.04	6	CERAMIC CAP.	.1U 50V M Y5V P5
18	5	CA001B631T8		0.01	11	CERAMIC CAP.	.01U 50V -20 +80%
19	5	CA001CEM0T6		0.04	1	CERAMIC CAP.	1000P 1KV M Z5U P5
20	5	CA068F6J0T1		0.02	1	CERAMIC CAP.	68P 50V J NPO P5
21	5	CA075F600T7		0.02	2	CERAMIC CAP.	75P 50V +-5% NPO P
22	5	CB0010642T9		0.03	4	CAPACITOR	1U 50V +-20% 85C P
23	5	CB0100642T8		0.03	3	CAPACITOR	10U 50V M A P5
24	5	CB0220A42T5		0.07	1	CAPACITOR	22U 100V +-20% 85C
25	5	CB10003M0TH		0.04	1	CAPACITOR	100U 16V M A P5
26	5	CC0100211T9		0.01	3	RESISTOR	1/8W 10 +-5%
27	5	CC0150211T7		0.01	6	RESISTOR	1/8W 15 +-5%
28	5	CC0330211T5		0.01	3	RESISTOR	1/8W 33 +-5%
29	5	CC0390111T1		0.01	3	RESISTOR	1/4W 39 +-5%
30	5	CC0470011T1		0.01	4	RESISTOR	1/2W 47 +-5%
31	5	CC0750211T3		0.01	3	RESISTOR	1/8W 75 +-5%
32	5	CC1000111T2		0.01	2	RESISTOR	1/4W 100 +-5%
33	5	CC1000211T8		0.01	3	RESISTOR	1/8W 100 +-5%
34	5	CC1001011T1		0.01	1	RESISTOR	1/2W 1K +-5%
35	5	CC1001211T2		0.01	3	RESISTOR	1/8W 1K +-5%
36	5	CC1002011T6		0.01	1	RESISTOR	1/2W 10K +-5%
37	5	CC1500111T6		0.01	3	RESISTOR	1/4W 150 +-5%

38	5	CC1502111T5		0.01	3	RESISTOR	1/4W 15K +-5%
39	5	CC3301211T4		0.01	1	RESISTOR	1/8W 3.3K +-5%
40	5	CC3900211T6		0.01	3	RESISTOR	1/8W 390 +-5%
41	5	CC4300111T6		0.01	1	RESISTOR	1/4W 430 +-5%
42	5	CC4701111T1		0.01	1	RESISTOR	1/4W 4.7K +-5%
43	5	CC4701211T7		0.01	3	RESISTOR	1/8W 4.7K +-5%
44	4	AB013750001		1.72	1	IC	MM1375XD SDIP-22 V
45	4	BB316090000		0.30	3	TR	HSD1609-C NPN TO-1
46	4	CA001BU3101		0.23	1	CERAMIC CAP.	.01U 2KV +80 -20%
47	4	CC1801591M2		0.04	3	RESISTOR (MOF)	2W 1.8K +-5%
48	4	CF250010041		0.10	2	TRIMMER RES.	V6EK-PH-1S-B5K
49	4	CF250020208		0.10	3	TRIMMER RES.	V6EK-PH-1S-B50K
50	4	DC030008805		0.03	1	WAFER CONN.	JST B6B-XH-A 2.5
51	4	DC040044405		0.49	1	SOCKET	CRT SOCKET B10-277
52	4	DC090001301		0.01	1	TERMINAL CHASSIS GND	CS-11-029
53	4	EEM55426000		0.55	1	SVB SHIELD	M55426(NEW GROUND)
54	4	NA100900909		0.06	2	WIRE SET	4.3DX90X6T 1007#18
55	4	NA100901400		0.24	2	WIRE SET	D3.96X90X5T 1007#1
56	3	456A3630012		24.92	1	PCBA DEF&POW/B	VA-531 MM500C MPRI
57	4	446A3630012		8.50	1	AIS DEF&POW/B	VA-531 MM500C MPRI
58	5	BB1073302T4		0.06	6	TRANSISTOR	2SA733-P
59	5	BB3033700T1		0.11	1	TRANSISTOR	JC337-25 NPN TO-92
60	5	BB30945P1T5		0.06	5	TRANSISTOR	2SC945-P
61	5	BB5094100T8		0.62	1	TRANSISTOR	2SK941 1N TO-92 W/
62	5	BBX042300T5		0.10	1	TRANSISTOR	BF423
63	5	BBX120300T1		0.08	4	TRANSISTOR	RN1203 (TE4,M)
64	5	BC11N4148T8		0.02	14	DIODE	1N4148
65	5	BC1FR1040T0		0.04	7	DIODE	FR104 DO-41
66	5	BC40HZ9A2T6		0.05	1	ZENER DIODE	HZ9A-2
67	5	BC4HZ12B1T5		0.05	1	ZENER DIODE	HZ12B1
68	5	BC4HZ5C10T8		0.05	2	ZENER DIODE	HZ5C1
69	5	BCSSR1020T0		0.30	1	SCHOTTKY DIODE	SR102L DO-41 EVERW
70	5	CA001B631T8		0.01	11	CERAMIC CAP.	.01U 50V -20 +80%
71	5	CA001CCK0T4		0.02	1	CERAMIC CAP.	1000P 500V K Y5P P
72	5	CA010D6K0T8		0.01	2	CERAMIC CAP.	1000P 50V K Y5P P5
73	5	CA010E6K0T3		0.01	7	CERAMIC CAP.	100P 50V K Y5P P5
74	5	CA015E602T0		0.02	1	CERAMIC CAP.	150P 50V +-5% NPO
75	5	CA022C6Z0T0		0.02	1	CER CAP	.022U 50V Z Y5V P5

76	5	CA033F601T6		0.01	2	CERAMIC CAP.	33P 50V +-5% NPO P
77	5	CA047E6K0T7		0.01	3	CERAMIC CAP.	470P 50V K Y5P P5
78	5	CA056EC10T7		0.02	1	CERAMIC CAP.	560P 500V +-10% Y5
79	5	CB0010642T9		0.03	4	CAPACITOR	1U 50V +-20% 85C P
80	5	CB0100442T7		0.06	1	CAPACITOR (N.P.)	10U 25V +-20% 85C
81	5	CB0100642T8		0.03	8	CAPACITOR	10U 50V M A P5
82	5	CB0220A42T5		0.07	1	CAPACITOR	22U 100V +-20% 85C
83	5	CB022APM0T1		0.05	1	CAPACITOR.	2.2U 200V M A P5
84	5	CB04703M0TH		0.03	6	CAPACITOR	47U 16V M A P5
85	5	CB0470641T4		0.05	1	CAPACITOR	47U 50V +-20% 85C
86	5	CB047A6M0TH		0.03	2	CAPACITOR	4.7U 50V M A P5
87	5	CB10003M0TH		0.04	1	CAPACITOR	100U 16V M A P5
88	5	CB22005M0T8		0.09	1	CAPACITOR	220U 35V M A P5
89	5	CC0010491T1		0.02	1	RESISTOR (MOF)	1W 1 +-5%
90	5	CC0100111T3		0.01	4	RESISTOR	1/4W 10 +-5%
91	5	CC0100211T9		0.01	1	RESISTOR	1/8W 10 +-5%
92	5	CC0220111T3		0.01	1	RESISTOR	1/4W 22 +-5%
93	5	CC027A111T0		0.01	1	RES CF	1/4W 2.7 +-5%
94	5	CC1000111T2		0.01	2	RESISTOR	1/4W 100 +-5%
95	5	CC1000211T8		0.01	9	RESISTOR	1/8W 100 +-5%
96	5	CC1001111T7		0.01	2	RESISTOR	1/4W 1K +-5%
97	5	CC1001211T2		0.01	6	RESISTOR	1/8W 1K +-5%
98	5	CC1002111T1		0.01	5	RESISTOR	1/4W 10K +-5%
99	5	CC1002211T7		0.01	10	RESISTOR	1/8W 10K +-5%
100	5	CC1003111T6		0.01	1	RESISTOR	1/4W 100K +-5%
101	5	CC1003211T1		0.01	2	RESISTOR	1/8W 100K +-5%
102	5	CC1004111T1		0.01	1	RESISTOR	1/4W 1M +-5%
103	5	CC1004211T6		0.01	1	RESISTOR	1/8W 1M +-5%
104	5	CC1201211T8		0.01	2	RESISTOR	1/8W 1.2K +-5%
105	5	CC1203111T1		0.01	1	RESISTOR	1/4W 120K +-5%
106	5	CC1322225T8		0.01	1	RESISTOR (M.F.)	1/8W 13.2K +-1%
107	5	CC1500111T6		0.01	1	RESISTOR	1/4W 150 +-5%
108	5	CC1501111T1		0.01	2	RESISTOR	1/4W 1.5K +-5%
109	5	CC1501211T6		0.01	1	RESISTOR	1/8W 1.5K +-5%
110	5	CC1502211T1		0.01	1	RESISTOR	1/8W 15K +-5%
111	5	CC1503011T4		0.01	1	RESISTOR	1/2W 150K +-5%
112	5	CC1504111T4		0.01	1	RESISTOR	1/4W 1.5M +-5%
113	5	CC1602111T8		0.01	1	RESISTOR	1/4W 16K +-5%

114	5	CC1800011T9		0.01	1	RESISTOR	1/2W 180 +-5%
115	5	CC1801211T4		0.01	1	RESISTOR	1/8W 1.8K +-5%
116	5	CC1802211T9		0.01	1	RESISTOR	1/8W 18K +-5%
117	5	CC1821225T7		0.01	1	RESISTOR (M.F.)	1/8W 1.82K +-1%
118	5	CC2002211T9		0.01	2	RESISTOR	1/8W 20K +-5%
119	5	CC2201111T4		0.01	1	RESISTOR	1/4W 2.2K +-5%
120	5	CC2201211T0		0.01	5	RESISTOR	1/8W 2.2K +-5%
121	5	CC2701211T3		0.01	2	RESISTOR	1/8W 2.7K +-5%
122	5	CC2703111T7		0.01	1	RESISTOR	1/4W 270K +-5%
123	5	CC2872125T6		0.01	1	RESISTOR (M.F.)	1/4W 28.7K +-1%
124	5	CC3000011T1		0.01	1	RESISTOR	1/2W 300 +-5%
125	5	CC3000111T6		0.01	3	RESISTOR	1/4W 300 +-5%
126	5	CC3000211T1		0.01	3	RESISTOR	1/8W 300 +-5%
127	5	CC3002211T1		0.01	1	RESISTOR	1/8W 30K +-5%
128	5	CC3300491T1		0.03	1	RESISTOR (MOF)	1W 330 +-5%
129	5	CC3302211T9		0.01	1	RESISTOR	1/8W 33K +-5%
130	5	CC3602211T7		0.01	1	RESISTOR	1/8W 36K +-5%
131	5	CC3901211T1		0.01	1	RESISTOR	1/8W 3.9K +-5%
132	5	CC3902111T0		0.01	1	RESISTOR	1/4W 39K +-5%
133	5	CC3902211T5		0.01	1	RESISTOR	1/8W 39K +-5%
134	5	CC4300211T1		0.01	1	RESISTOR	1/8W 430 +-5%
135	5	CC4701111T1		0.01	2	RESISTOR	1/4W 4.7K +-5%
136	5	CC4701211T7		0.01	9	RESISTOR	1/8W 4.7K +-5%
137	5	CC4702211T1		0.01	3	RESISTOR	1/8W 47K +-5%
138	5	CC4991225T0		0.01	1	RESISTOR (M.F.)	1/8W 4.99K +-1%
139	5	CC5101111T7		0.01	1	RESISTOR	1/4W 5.1K +-5%
140	5	CC5111225T0		0.01	1	RESISTOR (M.F.)	1/8W 5.11K +-1%
141	5	CC5601111T1		0.01	2	RESISTOR	1/4W 5.6K +-5%
142	5	CC5601211T6		0.01	1	RESISTOR	1/8W 5.6K +-5%
143	5	CC6202011T1		0.01	1	RESISTOR	1/2W 62K +-5%
144	5	CC6800211T9		0.01	1	RESISTOR	1/8W 680 +-5%
145	5	CC6982225T0		0.01	1	RES MF	1/8W 69.8K +-1%
146	5	CC7500211T2		0.01	1	RESISTOR	1/8W 750 +-5%
147	5	CC7501211T7		0.01	1	RESISTOR	1/8W 7.5K +-5%
148	5	CC8201211T1		0.01	1	RESISTOR	1/8W 8.2K +-5%
149	5	CJ001A600T1		0.09	2	MYLAR CAP	.1U 50V +-5% MEF P
150	5	CJ001B600T2		0.09	2	MYLAR CAP.	.01U 50V +-5% MEF
151	5	CJ001BAJ2T1		0.09	1	MYLAR CAP.	.01U 100V J MEF P5

152	5	CJ001C600T8		0.09	1	MYLAR CAP.	.001U 50V +-5% PPN
153	5	CJ015B6J0T6		0.12	1	MYLAR CAP.	.15U 50V J MEF P5
154	5	CJ033D600T9		0.09	1	MYLAR CAP	.0033U 50V J PEE P
155	5	CJ047B6J0T1		0.23	1	MYLAR CAP.	.47U 50V J MEF P5
156	5	CJ047C6J0T7		0.09	3	MYLAR CAP.	.047U 50V J MEF P5
157	5	DA1V500V030		2.83	1	PCB	V500 VA-531 REV3A
158	5	DC1510002T5		0.02	1	BEAD	NWE C8B RH3.5X9X1.
159	5	DC382000002		0.01	25	EYELET	SL 4X2.5X3
160	5	DC382000200		0.01	8	EYELET	LY 4X3X3.5
161	5	X61A3630011		2.06	1	AIS POW/B	VA-531 MM500C
162	6	BB3004401T5		0.10	1	TRANSISTOR	KSP44 NPN TO-92
163	6	BB30945P1T5		0.06	1	TRANSISTOR	2SC945-P
164	6	BBX120300T1		0.08	2	TRANSISTOR	RN1203 (TE4,M)
165	6	BBX120600T8		0.08	1	TRANSISTOR	RN1206 (TE4,M)
166	6	BC11N4148T8		0.02	3	DIODE	1N4148
167	6	BC12A06G0T7		0.15	4	DIODE	2A06G DO-15 DIA.=0
168	6	BC1F202G0T0		0.24	2	DIODE	UF202G DO-41 PANJI
169	6	BC1F40071T0		0.21	1	DIO	UF4007 DO-41 PANJI
170	6	BC1FR1040T0		0.04	3	DIODE	FR104 DO-41
171	6	BC1FR1071T0		0.04	1	DIODE	FR107 DO-41
172	6	CA001A601T8		0.03	1	CERAMIC CAP.	.1U 50V Z Y5V P5
173	6	CA001B631T8		0.01	1	CERAMIC CAP.	.01U 50V -20 +80%
174	6	CA010D6K0T8		0.01	1	CERAMIC CAP.	1000P 50V K Y5P P5
175	6	CA033D6K1T1		0.02	1	CERAMIC CAP.	3300P 50V K Y5P P5
176	6	CA033E6K0T0		0.01	1	CERAMIC CAP.	330P 50V K Y5P P5
177	6	CA033EEK0T0		0.04	2	CERAMIC CAP.	330P 1KV K Y5P P5
178	6	CB0100642T8		0.03	1	CAPACITOR	10U 50V M A P5
179	6	CB02204M1T3		0.03	1	CAPACITOR	22U 25V M A P5
180	6	CB0470AM0T8		0.13	1	CAPACITOR	47U 100V M A P5
181	6	CB047A6M0TH		0.03	1	CAPACITOR	4.7U 50V M A P5
182	6	CB10004M1TH		0.04	1	CAPACITOR	100U 25V M A P5
183	6	CB22003M0TH		0.05	1	CAPACITOR	220U 16V M A P5
184	6	CC002A471T2		0.07	1	RESISTOR (FUSE)	1W .2 +-5%
185	6	CC0100491T1		0.03	2	RESISTOR (MOF)	1W 10 +-5%
186	6	CC0180011T7		0.01	1	RESISTOR	1/2W 18 +-5%
187	6	CC0470111T7		0.01	2	RESISTOR	1/4W 47 +-5%
188	6	CC047A111T7		0.01	1	RESISTOR	1/4W 4.7 +-5%
189	6	CC1000011T7		0.01	1	RESISTOR	1/2W 100 +-5%

190	6	CC1001011T1		0.01	2	RESISTOR	1/2W 1K +-5%
191	6	CC1001111T7		0.01	1	RESISTOR	1/4W 1K +-5%
192	6	CC1002111T1		0.01	1	RESISTOR	1/4W 10K +-5%
193	6	CC1003011T1		0.01	1	RESISTOR	1/2W 100K +-5%
194	6	CC1003111T6		0.01	1	RESISTOR	1/4W 100K +-5%
195	6	CC1004011T5		0.01	1	RESISTOR	1/2W 1M +-5%
196	6	CC1004111T1		0.01	1	RESISTOR	1/4W 1M +-5%
197	6	CC1004I11T6		0.01	2	RESISTOR	1/2W 1M +-5% S
198	6	CC1804011T7		0.01	1	RESISTOR	1/2W 1.8M +-5%
199	6	CC2201011T9		0.01	1	RESISTOR	1/2W 2.2K +-5%
200	6	CC2202111T9		0.01	2	RESISTOR	1/4W 22K +-5%
201	6	CC3300111T4		0.01	1	RESISTOR	1/4W 330 +-5%
202	6	CC4701111T1		0.01	3	RESISTOR	1/4W 4.7K +-5%
203	6	CC4701211T7		0.01	4	RESISTOR	1/8W 4.7K +-5%
204	6	CJ001B600T2		0.09	1	MYLAR CAP.	.01U 50V +-5% MEF
205	6	CJ022B600T1		0.13	1	MYLAR CAP.	.22U 50V +-5% MEF
206	6	DC1510003T2		0.02	2	BEAD	FER RI TE RH3.5X8.
207	6	XX0900T2119		0.01	1	JUMPER WIRE	D=0.6MM P5.0
208	6	XX0900T2135		0.01	1	JUMPER WIRE	D=0.6MM P10
209	5	XX0900T2101		0.14	1	JUMPER WIRE	D=0.6MM P22.5
210	5	XX0900T2119		0.01	54	JUMPER WIRE	D=0.6MM P5.0
211	5	XX0900T2127		0.01	22	JUMPER WIRE	D=0.6MM P7.5
212	5	XX0900T2135		0.01	37	JUMPER WIRE	D=0.6MM P10
213	5	XX0900T2143		0.01	19	JUMPER WIRE	D=0.6MM P12.5
214	5	XX0900T2151		0.01	24	JUMPER WIRE	D=0.6MM P15
215	5	XX0900T2160		0.01	7	JUMPER WIRE	D=0.6MM P17.5
216	5	XX0900T2178		0.01	21	JUMPER WIRE	D=0.6MM P20
217	5	XX0900T2186		0.01	9	JUMPER WIRE	D=0.6MM P25
218	5	XX0900T2194		0.01	8	JUMPER WIRE	D=0.6MM P30
219	5	XX0900T2460		0.01	1	JUMPER WIRE	D=0.6MM P=12
220	4	AB024040100		0.56	1	IC	EE 512X8 DP A
221	4	AB068611400		2.80	1	IC	NT6861B-8074 V500
222	4	AB078050209		0.43	1	IC	KIA7805P TO-220AB
223	4	AB081720007		1.44	1	IC	TDA8172
224	4	AB091110000		3.60	1	IC	TDA9111 SDIP-32 II
225	4	BB306690002		0.35	1	TRANSISTOR	HSD669A-C NPN TO-1
226	4	BB345070000		1.86	1	TRANSISTOR	BU4507AX NPN SOT-3
227	4	BB506300305		0.64	2	TRANSISTOR	IRFS630A 1N TO-220

228	4	BC103290000		0.62	1	DIODE	BY329X-1500S TO-22
229	4	BC1F5406000		0.49	1	DIODE	UF5406G DO-201 AD
230	4	BC1YM36C000		0.44	1	DIO	BYM36C SOD-64
231	4	BC5G3330009		0.07	6	LED	LG3330/E1 GRN
232	4	BD18P00M105		0.46	1	CRYSTAL	8MHZ (HC-49/U)
233	4	CB0470P4105		0.40	1	CAPACITOR	47U 200V M B P5 (T
234	4	CB10013M00H		0.18	2	CAPACITOR	1000U 16V M A P5
235	4	CC010A591N0		0.04	1	RES MOF	2W 1 +-5%
236	4	CC018AL91M0		0.05	1	RESISTOR (MOF)	3W 1.8 +-5% S
237	4	CC051A591M1		0.04	1	RESISTOR (MOF)	2W 5.1 +-5%
238	4	CC0560591M0		0.04	1	RESISTOR (MOF)	2W 56 +-5%
239	4	CC068A591N0		0.04	1	RES MOF	2W 6.8 +-5%
240	4	CC082A591M3		0.04	1	RESISTOR (MOF)	2W 8.2 +-5%
241	4	CC082B591N0		0.04	1	RES MOF	2W .82 +-5%
242	4	CC2000591M8		0.04	1	RESISTOR (MOF)	2W 200 +-5%
243	4	CC6800591N0		0.04	1	RESISTOR (MOF)	2W 680 +-5%
244	4	CF220010409		0.10	1	TRIMMER RES.	1/10W 2KB VZ068TL1
245	4	CF250020607		0.10	2	TRIMMER RES.	1/10W 50KB VZ068TL
246	4	CJ001AB0209		0.11	1	MYLAR CAP.	.1U 250V +-5% MEF
247	4	CJ022A7J017		0.41	1	MYLAR CAP.	2.2U 63V J MEF P15
248	4	CJ033CB0006		0.13	1	MYLAR CAP.	.033U 250V +-5% ME
249	4	CJ036BBJ500		0.49	1	FILM CAP	.36U 250V J MPA P1
250	4	CJ043BBJ107		0.60	1	MYLAR CAP.	.43U 250V J MPA P1
251	4	CJ047DWJ107		0.44	1	MYLAR CAP.	.0047U 1.6KV J MPM
252	4	CJ068DDJF00		0.10	1	MYLAR CAP.	.0068U 630V J PPN
253	4	CL220005900		0.39	1	COIL(L)	V500 7.38uH L 9X12
254	4	CL310002909		0.13	1	CHOKE COIL	2.2MH +-10%
255	4	CL320002707		0.38	1	CHOKE COIL	M554 280uH L 14X15
256	4	CL370000503		0.42	1	CHOKE COIL	M554 180uH A 14X19
257	4	DC020122508		0.55	1	HOUSING CONN. SET	M554 MB-CRT P501,P
258	4	DC020124403		0.48	1	HOUSING CONN. SET	M454 MB-YOKE M-CAN
259	4	DC030015607		0.04	1	WAFER CONN.	JST B5B-XH-A 2.5
260	4	DC030018509		0.13	1	WAFER CONN.	YUEAN-YUH 1081-04
261	4	DC030020503		0.01	1	WAFER CONN.	YUEAN-YUH 2540-02
262	4	DC030091109		0.01	1	WAFER CONN.	YUEAN-YUH 2540-03
263	4	DC090001301		0.01	2	TERMINAL CHASSIS GND	CS-11-029
264	4	DEB11000009		0.08	4	TACT SWITCH	PM564 KSM0632B
265	4	DG200004305		0.46	1	TRANSFORMER	H567 HDT EI-19

266	4	DG300013000		8.85	1	X'FORMER	V500 LCE-CF1812
267	4	EEV79834000		0.40	1	REAR BRACKET	V79834 (FOR ATB)
268	4	FCM55440005		0.04	6	LED HOLDER	M55440
269	4	FCM57045006		0.14	4	PCB SPACER (M570)	M57045
270	4	LC040058805		0.51	1	HEAT SINK	GS-1166-30 52X3X35
271	4	LCM55424000		0.87	1	FBT HEAT SINK	M55424
272	4	MAA20096402		0.02	1	SCREW	M3X0.5+12P-MC (ADD
273	4	MAA70064400		0.02	1	SCREW	M4X0.7+8CF-MC(EX.L
274	4	MAB2T001206		0.01	2	SCREW	TPP-3.5+8C-UC
275	4	MAB50003409		0.03	4	SCREW	TPB-3+10R-MC (ADD
276	4	MAB70081400		0.02	2	SCREW	TPB-3+8CF-MC(EX.LO
277	4	NA100401500		0.03	1	WIRE SET	3TX40X3T 1007#18 B
278	4	NA110001001		0.11	1	WIRE	1M 1007 #22 BLK (T
279	4	NA115100000		0.39	1	WIRE SET	1.8DX1510XTUBE 100
280	4	X62A3630011		8.65	1	PCBA POW/B	VA-531 MM500C
281	5	AB038420404		0.58	1	IC	KA3842A DIP-8 PWM
282	5	BB207720001		0.38	2	TRANSISTOR	2SB772-P PNP TO-12
283	5	BB507600001		1.44	1	TRANSISTOR	SSS7N60A 1N TO-220
284	5	BC1ER3020N1		0.44	1	DIODE	ER302-F17 DO-201AD
285	5	BC1ER3060N6		0.60	1	DIODE	ER306-F17 DO-201AD
286	5	CA001BE1101		0.11	2	CERAMIC CAP.	.01U 1KV +-20% Z5U
287	5	CA022DBMY07		0.12	1	CERAMIC CAP.	2200P 250VAC M Y5V
288	5	CA047DBMY27		0.27	2	CERAMIC CAP. (Y1)	4700P 250VAC M 2E3
289	5	CB10013M00H		0.18	2	CAPACITOR	1000U 16V M A P5
290	5	CB10014M00H		0.25	1	CAPACITOR	1000U 25V M A P5
291	5	CB1500FM019		1.72	1	CAPACITOR	150U 400V M A P10
292	5	CB4700AM004		0.57	1	CAPACITOR	470U 100V M B P7.5
293	5	CC0090884U0		0.65	1	RESISTOR (POSISTOR)	5W 9 +-30% DISK KI
294	5	CC0100X6X08		0.12	1	RESISTOR(THERMISTOR)	3A 10 SCK-103 (KIN
295	5	CC025B591M9		0.04	1	RESISTOR (MOF)	2W 0.25 +-5%
296	5	CC4702591M0		0.04	2	RESISTOR (MOF)	2W 47K +-5%
297	5	CF210010201		0.10	1	TRIMMER RES.	1/10W 1KB VZ068TL1
298	5	CJ022BXMX03		0.20	1	MYLAR CAP. (X)	.22U 275VAC M MKP
299	5	CJ033BXMX00		0.27	1	MYLAR CAP. (X)	.33U 275VAC M MKP
300	5	CL310004715		0.08	4	CHOKE COIL	TX14M 5uH +-10%
301	5	CL900006503		0.70	1	LINE FILTER	H554 20mH MIN @1.5
302	5	DC030039200		0.05	1	WAFER CONN.	LEOCO 3941-3 (W/O

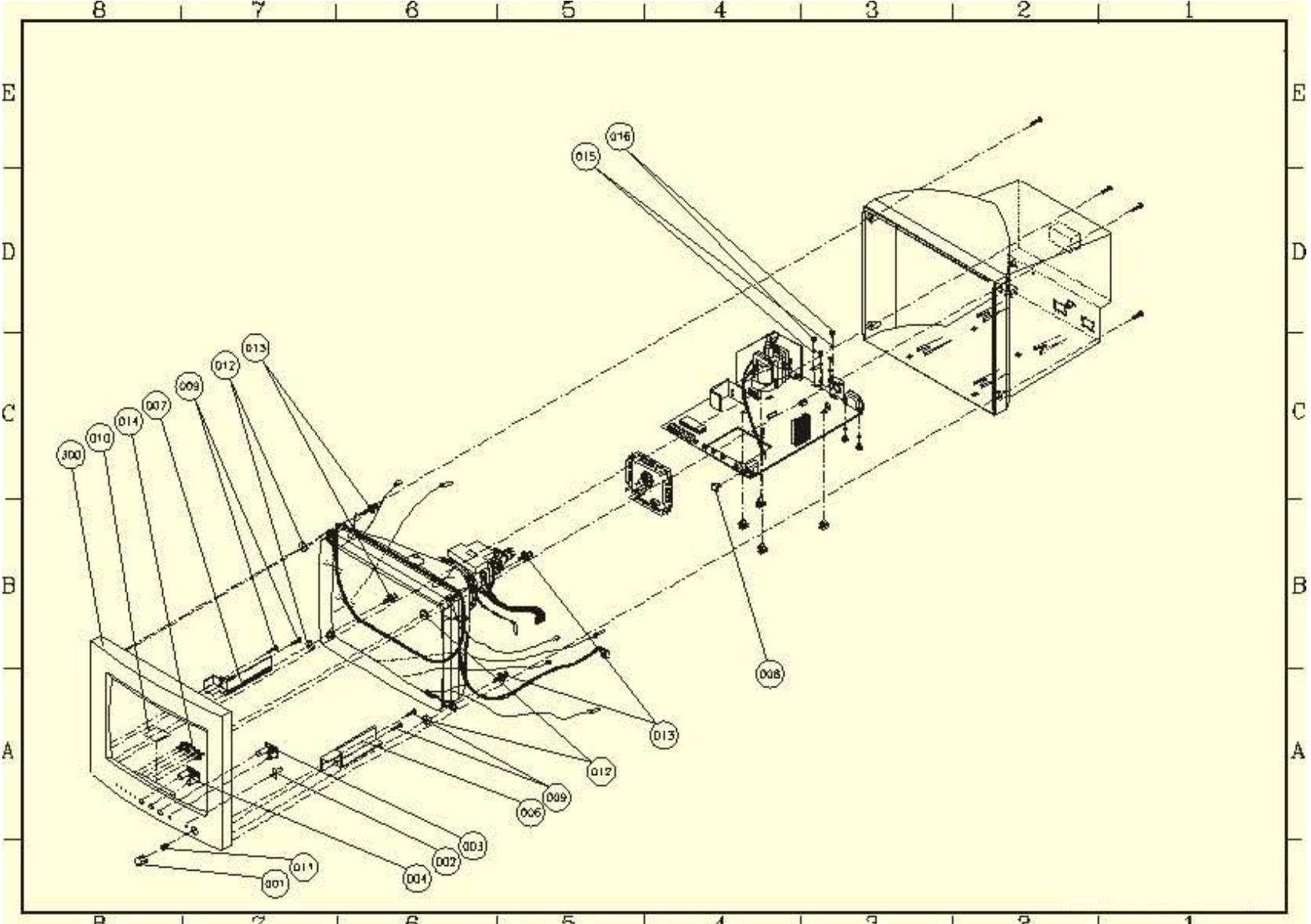
303	5	DC040005001		0.41	1	POWER SOCKET	POWER 0714 (INALWA
304	5	DC100001502		0.05	2	FUSE HOLDER	CQ-203LR
305	5	DC150007504		0.10	1	BEAD	FER. F5R6H6X10-0.5
306	5	DC240003600		1.10	1	RELAY	DC12V OSA-SS-212DM
307	5	DEA110005P0		0.45	1	PUSH BUTTON SWITCH	M554 SS-160-7B 10A
308	5	DG100013100		1.96	1	TRANSFORMER	V553 ERL-35 POWER
309	5	DX23P152109		0.13	1	FUSE	3.15A 250V S SEMKO
310	5	LC040056608		0.41	1	HEAT SINK	MK-503 36X11.2X55
311	5	MAA20096402		0.02	1	SCREW	M3X0.5+12P-MC (ADD
312	5	MAB70080400		0.03	2	SCREW	TPB-4+8CF-MC(EX.LO
313	2	DC190014360		3.27	1	CB ASY	V500 20276/CORE 1.
314	2	FAM55411GA0		3.37	1	BEZEL(ABO)	M55411(ABS,WG017)(
315	2	KA000001ZZ4		0.02	15	LOCKING CABLE TIE	142MM
316	2	X66AA930001		2.05	1	MEC PARTS	MM500C
317	3	ELH5664D007		0.27	1	MYLAR	H5664D (35X50X3)
318	3	EX03T001802		0.04	1	RETURN SPRING	4-CD15-M004
319	3	FBM55421001		0.19	1	PUSH KNOB (SMALL)	M55421 (WG017)
320	3	FBM55422008		0.19	1	PUSH KNOB	M55422 (WG017)
321	3	FBM55431007		0.14	1	POWER KNOB	M55431 (WG017)
322	3	FCM55423003		0.17	1	LED LENS	M55423
323	3	FCM57021000		0.39	1	PCB HOLDER-L (M570)	M57021
324	3	FCM57022006		0.44	1	PCB HOLDER-R (M570)	M57022
325	3	FCM57042007		0.08	1	LED LENS (M570)	M57042
326	3	FCM99042102		0.17	1	EXPAND POWER SW	M99042
327	3	LC10T000002		0.10	4	RUBBER WASHER	4-S35-009 SHORE:70
328	3	MAA70064400		0.02	1	SCREW	M4X0.7+8CF-MC(EX.L
329	3	MAB60001409		0.02	4	TAPPING SCREW	TPB 4+20N-MC
330	3	MAB70073402		0.09	4	SCREW	TPB-5+27P-MC & WAS
331	1	62004530020		3.43	1	PACKING ABO	MM500A UR+MPRII (W
332	2	EJ4M5001400		0.23	1	RATING NP	N-M500-ABO UFGC MP
333	2	HB4P5570710		2.59	1	CARTON	C-P557-ABO W/W CHN
334	2	HDABOM50000		0.42	1	USER'S MANUAL	U-M500-ABO FOR CS
335	2	HGTMM6A0104		0.03	2	LABEL	LOW RADIATION MPR
336	2	HGTMPRII118		0.05	1	STATIC LABEL	MPRII+ENERGY STAR
337	2	HK3T1020014		0.33	1	PE BAG (MONITOR)	PE-5 12z REV3
338	1	FAM5701B008		1.90	1	SWIVEL BASE&BALL ASS	M5701B(WG017)
339	1	FJM57017000		0.90	1	EPS FOAM(L)	M57017

C NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED A01	DWG.NO. MM500A REMARKS	REV. 0A
#	MM500A01	FG 030	UR SAM (MBK01)			
1	FAM5701B105	SWIVEL BASE&BALL ASSY	M5701B(MBK01)	1 - - - - 301		
2	FJM57015003	EPS FOAM (L)	M57015	1 - - - - 302		
3	FJM57017000	EPS FOAM(L)	M57017	1 - - - - 302		
4	FJM57016000	EPS FOAM (R)	M57016	1 - - - - 303		
5	FJM57018000	EPS FOAM(R)	M57018	1 - - - - 303		
6	GA020000308	POWER CORD SET	IS-011X3.1FTX1S-014 H05 BLK	1 - - - - 304		
7	GA020000316	POWER CORD SET	IS11X3.1FTXIS14 H05 BLK NDC	1 - - - - 304		
8	GA020080212	POWER CORD SET	SP023X1.83MXIS14 H05 CT-012	1 - - - - 304		
9	GA020150008	POWER CORD SET (EU)	SP023X1.8MXIS14 05VA5V-F BLK	1 - - - - 304		
10	GA040040003	POWER CORD SET	SP60X1.8MXIS14B H05VV-F BLK	1 - - - - 304		
11	GA0400800C0	POWER CORD SET	SP60X2.5MXIS14 H05VV-F OPL	1 - - - - 304		
12	GA050000400	POWER CORD SET	SP305X1.8MXIS14 SVT BLK	1 - - - - 304		
13	GA050061704	POWER CORD SET (US)	LP31X1.8MXLS13 SVTAL BLK	1 - - - - 304		
14	GA060000104	POWER CORD SET	LP-23X6FTXLS-13 GFC-3R BLK	1 - - - - 304		
15	GA060000201	POWER CORD SET	SP502BX1.8MXIS14 3ASL-3 IVO	1 - - - - 304		
16	GA100010000	POWER CORD SET	SP81AX1.8MXIS14 H05VV-F IVO	1 - - - - 304		
17	52238430002	DIS ANT	MM500A UR AS+CAN	1 - - - - 351		
18	62004530002	PACKING ANT	MM500A UR (MBK01)	1 - - - - 352		
19	X66AA030011	MEC PARTS	MM500A PACKING(MBK01)	1 - - - - 353		

C NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED C01 C02	DWG.NO. MM500A REV. 0A REMARKS
#	MM500C01	FG 030	UR CPT (WG017)		
#	MM500C02	FG 030	UR+MPRII CPT (WG017)		
1	FAM5701B008	SWIVEL BASE&BALL ASSY	M5701B(WG017)	1 1 - - -	301
2	FJM57015003	EPS FOAM (L)	M57015	1 1 - - -	302
3	FJM57017000	EPS FOAM(L)	M57017	1 1 - - -	302
4	FJM57016000	EPS FOAM (R)	M57016	1 1 - - -	303
5	FJM57018000	EPS FOAM(R)	M57018	1 1 - - -	303
6	GA020000308	POWER CORD SET	IS-011X3.1FTX1S-014 H05 BLK	1 1 - - -	304
7	GA020000316	POWER CORD SET	IS11X3.1FTXIS14 H05 BLK NDC	1 1 - - -	304
8	GA020080212	POWER CORD SET	SP023X1.83MXIS14 H05 CT-012	1 1 - - -	304
9	GA020150008	POWER CORD SET (EU)	SP023X1.8MXIS14 05VA5V-F BLK	1 1 - - -	304
10	GA040040003	POWER CORD SET	SP60X1.8MXIS14B H05VV-F BLK	1 1 - - -	304
11	GA0400800C0	POWER CORD SET	SP60X2.5MXIS14 H05VV-F OPL	1 1 - - -	304
12	GA050000400	POWER CORD SET	SP305X1.8MXIS14 SVT BLK	1 - - - -	304
13	GA050061704	POWER CORD SET (US)	LP31X1.8MXLS13 SVTAL BLK	1 1 - - -	304
14	GA060000104	POWER CORD SET	LP-23X6FTXLS-13 GFC-3R BLK	1 1 - - -	304
15	GA060000201	POWER CORD SET	SP502BX1.8MXIS14 3ASL-3 IVO	1 1 - - -	304
16	GA100010000	POWER CORD SET	SP81AX1.8MXIS14 H05VV-F IVO	1 1 - - -	304
17	52238430001	DIS CCE	MM500C UR+MPRII AS+CAN	- 1 - - -	351
18	52238430003	DIS LNK	MM500C UR AS+CAN	1 - - - -	351
19	62004530001	PACKING CCE	MM500C UR+MPRII (WG017)	- 1 - - -	352
20	62004530003	PACKING LNK	MM500C UR (WG017)	1 - - - -	352
21	X66AA030001	MEC PARTS	MV500A PACKING	1 1 - - -	353

C NO.	PART NO.	DESCRIPTION	PECIFICATION	QUANTITY REQUIRED 30 30 001 011	DWG.NO. X66AA0 REMARKS	REV. 0B
#	X66AA030001	MEC PARTS	MV500A PACKING			
#	X66AA030011	MEC PARTS	MM500A PACKING(MBK01)			
1	FAM57012A03	BACK COVER(NONE USB)	M57012(WG017)	1 -	- - - 201	
2	FAM57012C01	BACK COVER(NONE USB)	M57012(MBK01)(ABS)	- 1	- - - 201	
3	FHC46141003	SPONGE	C46141	1 1	- - - 202	
4	MAB60001409	TAPPING SCREW	TPB 4+20N-MC	4 4	- - - 203 203 203 203	

C	NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 30 30 001 002 003	DWG.NO. 620045 REV. 0A REMARKS
#		62004530001	PACKING CCE	MM500C UR+MPRII (WG017)		
#		62004530002	PACKING ANT	MM500A UR (MBK01)		
#		62004530003	PACKING LNK	MM500C UR (WG017)		
	1	EJ4M5000100	RATING-MN1500	N-M500-ANT U0FGC EX	- 1 - - - 001	
	2	EJ4M5000200	RATING NP	N-M500-CE UOFGC EX MPRII	1 - - - - 001	
	3	EJ4V5000000	RATING	N-V500-PRI U0FGC EX	- - 1 - - 001	
	4	HB4M5540010	CARTON	C-M554-LNK CHN R1	- - 1 - - 002	
	5	HB4M5540310	CARTON	C-M554-ANT CHN R1	- 1 - - - 002	
	6	HB4P4540010	CARTON	C-P454-CC CHN R1	1 - - - - 002	
	7	HDCEM500000	USER'S MANUAL	U-M500-CE F US	- 1 - - - 003	
	8	HDCEM500100	USER'S MANUAL	U-M500-CE F U+F+G+S+I	1 - - - - 003	
	9	HDLNKM50000	USER'S MANUAL	U-M500-LNK F US-D50X	- - 1 - - 003	
	10	HGTMPRII118	STATIC LABEL	MPRII+ENERGY STAR FOR CRT R1	1 - - - - 005	
	11	HGM50000000	MODEL LABEL	M500-L001 FOR CARTON	2 - - - - 006	006
	12	HK3T1020014	PE BAG (MONITOR)	PE-5 12" REV3	1 1 1 - - 007	
	13	HGTMM6A0104	LABEL	LOW RADIATION MPR II	2 - - - - 011	011
	14	XX0900T1040	BAR CODE LABEL	40MMX28MM 1RL/3000 15" 17" MON	- 1 1 - - 012	
	15	HF6TM770001	WARRANTY CARD	F-TM770-LNK FOR "M" STYSTEM	- - 1 - - 013	
	16	HGTM7700103	LABEL (FIVE YEAR)	FIVE YEAR FOR LNK CARTON	- - 2 - - 014	014
	17	HK3M447U006	PE BAG	TM447AU-K001 NO.8 L240XW170MM	- - 1 - - 015	
	18	HGTE447U105	ENERGY STAR LABEL	FOR EPA CRT	- 1 - - - 016	
	19	HGTE447U300	ENERGY STAR LABEL	FOR EPA IFS CARTON	- - 1 - - 017	


016
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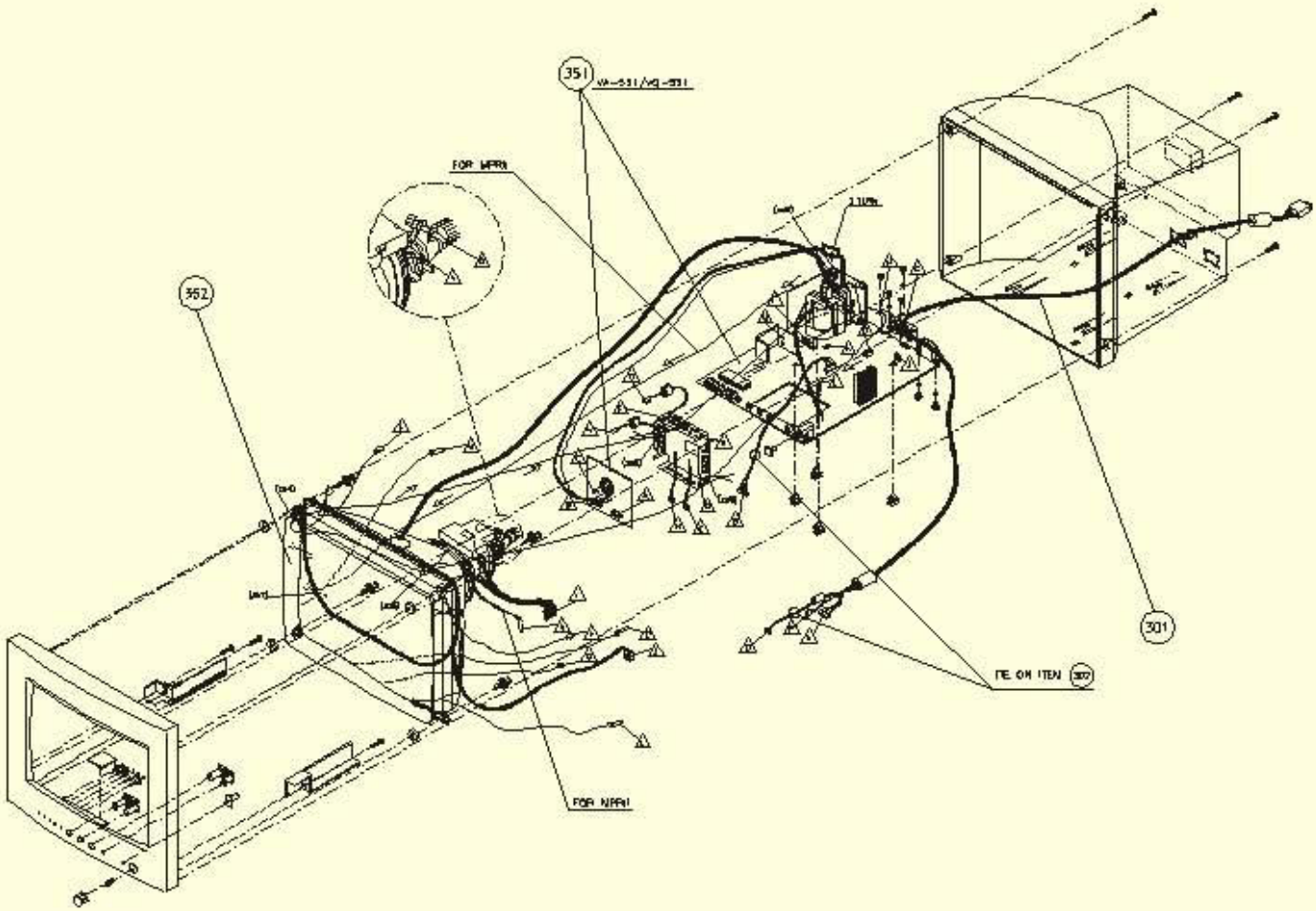
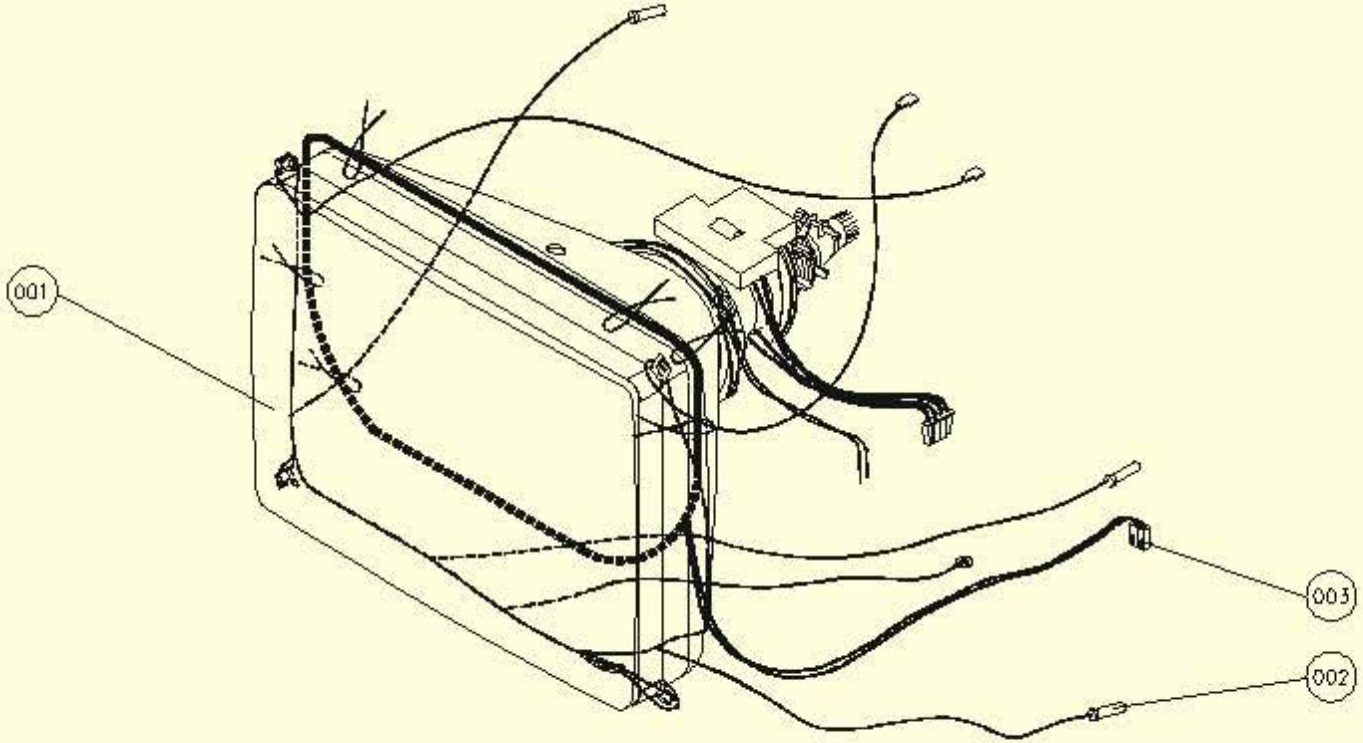
011
001

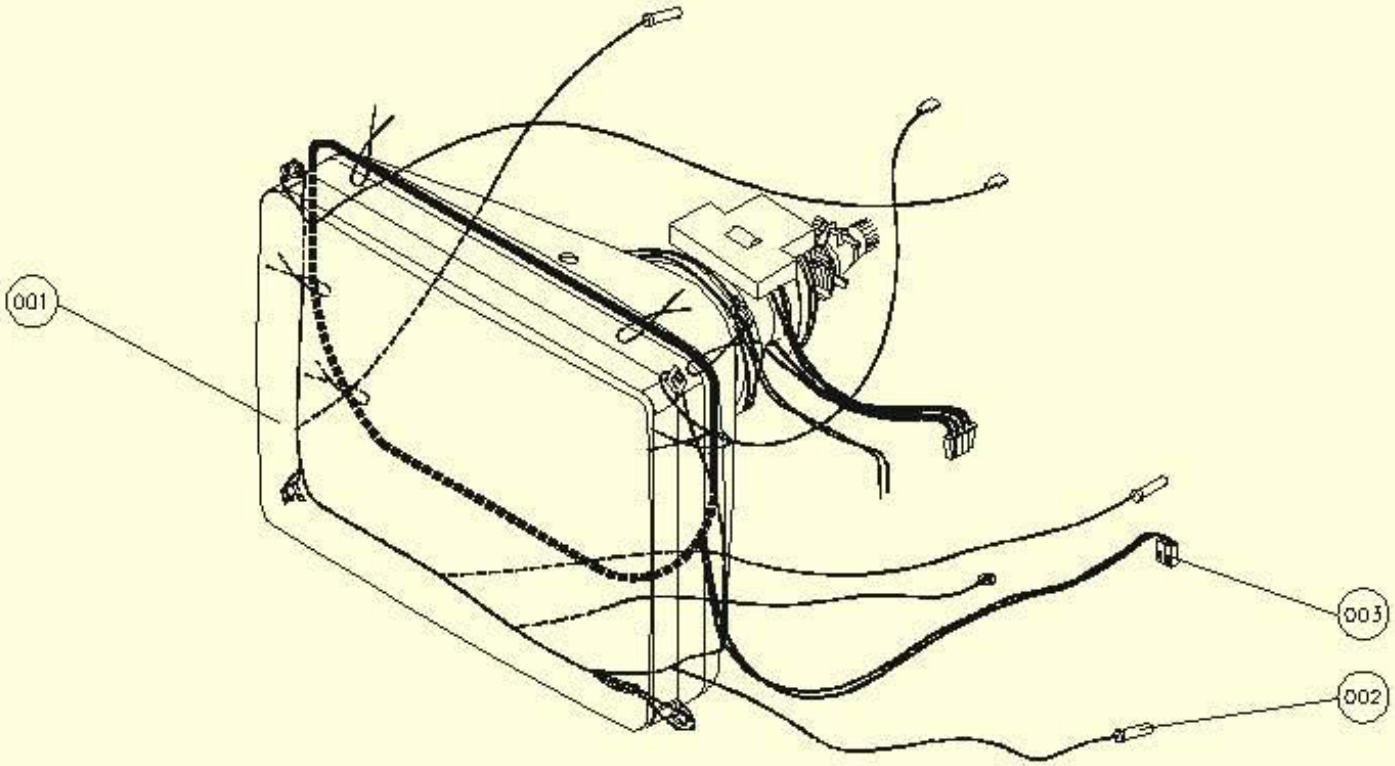

351
VA-331/VQ-331
FOR MPPH
352
301
FOR MPPH

C	NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 30 30 001 002 003	DWG.NO. 522384 REV. 0B REMARKS
	#	52238430001	DIS CCE	MM500C UR+MPRII AS+CAN		
	#	52238430002	DIS ANT	MM500A UR		
	#	52238430003	DIS LNK	MM500C UR		
	1	FAM55411008	BEZEL	M55411 (WG017)	1 - - - - 300	
	2	FAM55411105	BEZEL(LNK)(WG017)	M55411(ABS,SCEPTRE,DRAGON EYE)	- - 1 - - 300	
	3	FAM55411X00	BEZEL(ANT)	M55411(ABS)(MBK01)(ANTEC)	- 1 - - - 300	
*	4	DC190014340	CABLE ASSY	M553 20276/CORE 1.5M BLK-BLU	1 1 1 - - 301	
	5	KA000001ZZ4	LOCKING CABLE TIE	142MM	17 17 17 - 302	302 302 302 302 302 302 302 302 302 302 302 302 302 302 302 302 302
	6	51A07730011	VIDEO ASSY	MM500C UR	- 1 1 - - 351	
	7	51A07730012	VIDEO ASSY	MM500C UR+MPRII	1 - - - - 351	
*	8	51A07630002	CRT & YOKE ASSY	MV500A UR 15C	- 1 - - - 352	
	9	51A08430001	CRT & YOKE ASSY	MM500C UR+MPRII 15C	1 - 1 - - 352	
	10	X66AA930001	MEC PARTS	MM500C	1 - 1 - - 353	
	11	X66AA930002	MEC PARTS	MM500A (MBK01)	- 1 - - - 353	

C NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 30 001 002	DWG.NO. X66AA9 REMARKS	REV. 0A
#	X66AA930001	MEC PARTS	MM500C			
#	X66AA930002	MEC PARTS	MM500A (MBK01)			
1	FBM55431007	POWER KNOB	M55431 (WG017)	1 - - - - 001		
2	FBM55431201	POWER KNOB	M55431(ABS)(MBK01)	- 1 - - - 001		
3	FCM57042007	LED LENS (M570)	M57042	1 1 - - - 002		
4	FBM55421001	PUSH KNOB (SMALL)	M55421 (WG017)	1 - - - - 003		
5	FBM55421206	PUSH KNOB(SMALL)	M55421(ABS)(MBK01)	- 1 - - - 003		
6	FBM55422008	PUSH KNOB	M55422 (WG017)	1 - - - - 004		
7	FBM55422202	PUSH KNOB	M55422(ABS)(MBK01)	- 1 - - - 004		
8	FCM57021000	PCB HOLDER-L (M570)	M57021	1 1 - - - 006		
9	FCM57022006	PCB HOLDER-R (M570)	M57022	1 1 - - - 007		
10	FCM99042102	EXPAND POWER SW	M99042	1 1 - - - 008		
11	MAB60001409	TAPPING SCREW	TPB 4+20N-MC	4 4 - - - 009 009 009 009		
12	ELH5664D007	MYLAR	H5664D (35X50X3)	1 1 - - - 010		
13	EX03T001802	RETURN SPRING	4-CD15-M004	1 1 - - - 011		
14	LC10T000002	RUBBER WASHER	4-S35-009 SHORE:70	4 4 - - - 012 012 012 012		
15	MAB70073402	SCREW	TPB-5+27P-MC & WASHER DIM 16.3	4 4 - - - 013 013 013 013		
16	FCM55423003	LED LENS	M55423	1 1 - - - 014		
17	MC300000607	WASHER (EX LOCK)	ETW 4.3X8.5X0.45-MC	2 2 - - - 015 015		
18	MAA20085605	SCREW	M4X0.7+8C-MC	2 2 - - - 016 016		

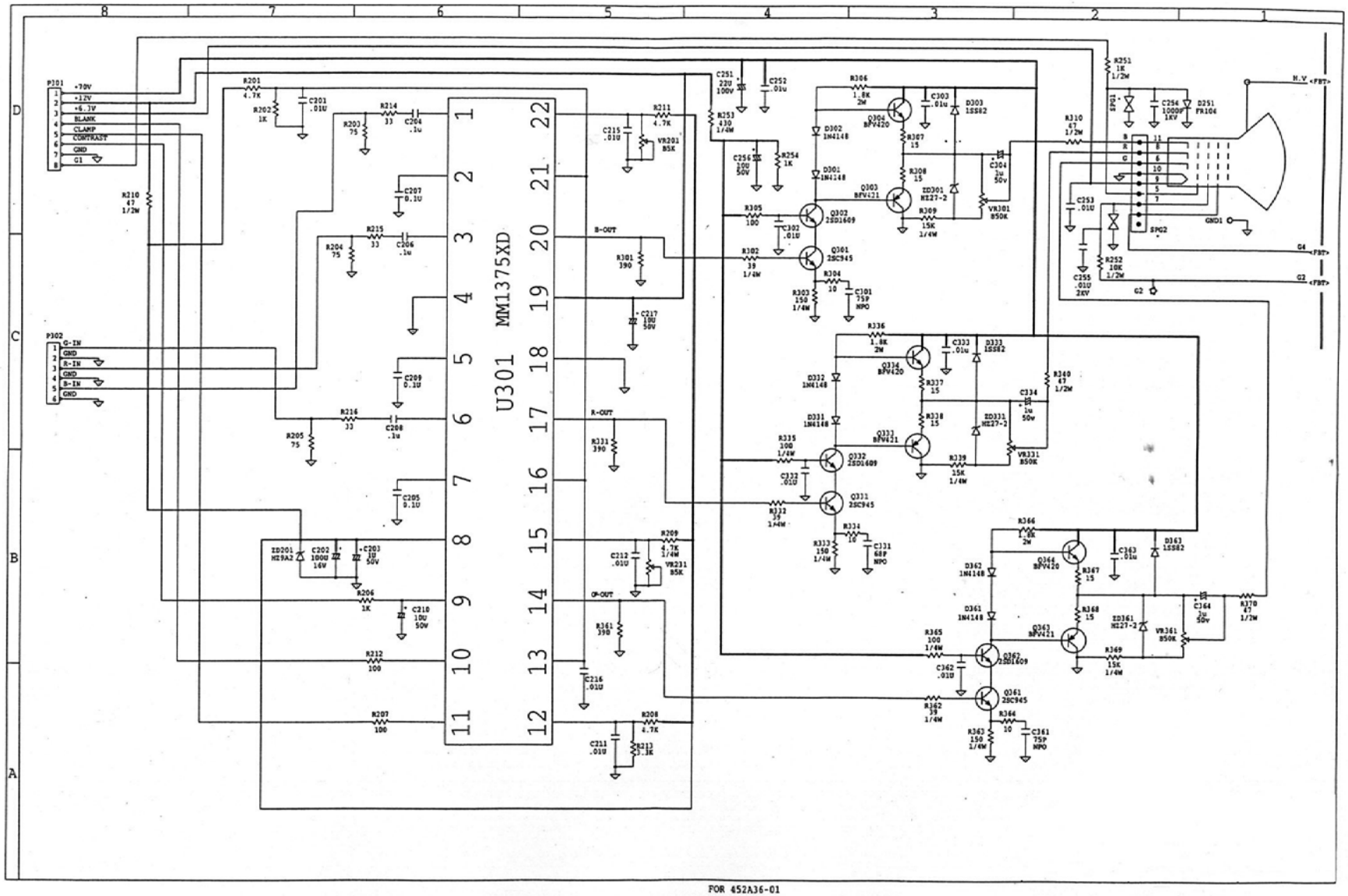

001
003
002

C	NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 30 001 002	DWG.NO. 51A076 REV. 0C REMARKS
	#	51A07630001	CRT & YOKE ASSY	MV500A UR+MPRII 15C		
	#	51A07630002	CRT & YOKE ASSY	MV500A UR 15C		
*	1	AC500021802	COLOR CRT WITH YOKE	M36QAW351X115 (LP/E) AS-K SAM	1 - - - - 001	
	2	AC500021811	COLOR CRT WITH YOKE	M36QAW351X115 (LP/S) K SAM	- 1 - - - 001	
	3	DC020124608	HOUSING CONN. SET	M554 CRT-GND AROUND	1 1 - - - 002	
	4	CLA5M000000	DEGAUSSING COIL	M571 CRT AROUND .45X80	1 1 - - - 003	


001
003
002

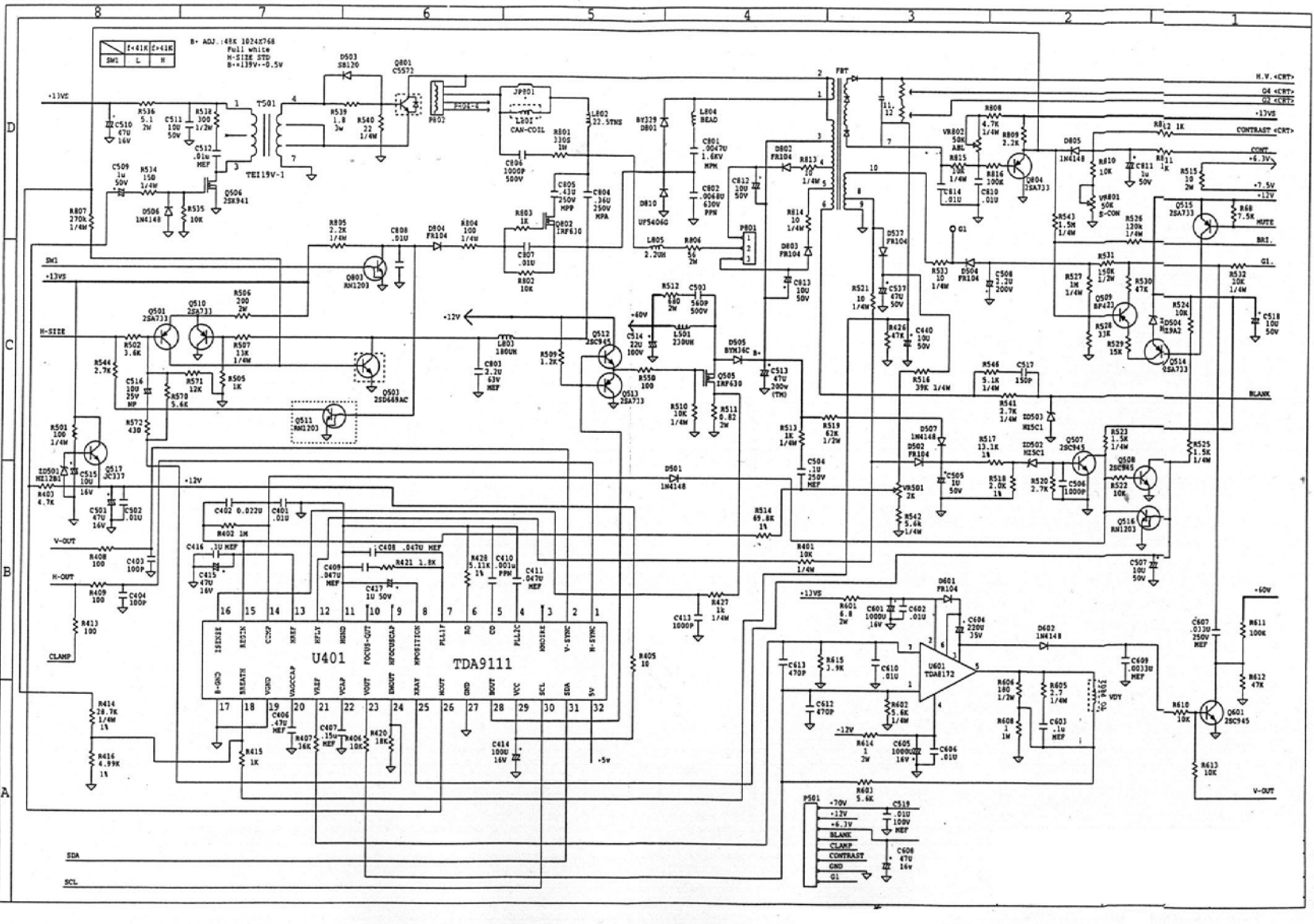
C NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 001	DWG.NO. 51A084 REMARKS	REV. 0A
#	51A08430001	CRT & YOKE ASSY	MM500C UR+MPRII 15C			
1	AC500020113	COLOR CRT WITH YOKE	M36AES83X01 AS K CHWA	1 - - - - 001		
2	DC020124608	HOUSING CONN. SET	M554 CRT-GND AROUND	1 - - - - 002		
3	CLA5M000000	DEGAUSSING COIL	M571 CRT AROUND .45X80	1 - - - - 003		

C NO.	PART NO.	DESCRIPTION	PECIFICATION	QUANTITY REQUIRED 30 30 30 30 001 002 011 012	DWG.NO. 51A077 REMARKS	REV. 0C
#	51A07730001	VIDEO ASSY	MV500A UR+MPRII			
#	51A07730002	VIDEO ASSY	MV500A UR			
#	51A07730011	VIDEO ASSY	MM500C UR			
#	51A07730012	VIDEO ASSY	MM500C UR+MPRII			
1	452A3630001	PCBA CRT/B	VQ-531 MV500A	1 1 1 1 - 001		
2	456A3630001	PCBA DEF&POW/B	VA-531 MV500A	1 - - - - 002		
3	456A3630002	PCBA DEF&POW/B	VA-531 MV500A UR	- 1 - - - 002		
4	456A3630011	PCBA DEF&POW/B	VA-531 MM500C UR	- - 1 - - 002		
5	456A3630012	PCBA DEF&POW/B	VA-531 MM500C MPRII	- - - 1 - 002		



FOR 452A36-01
442A36-01

C NO.	PART NO.	DESCRIPTION	SPECIFICATION		QUANTITY REQUIRED 30 001	REMARKS	DWG.NO. 452A36 REV. 1C
#	442A3630001	AIS CRT/B	VQ-531 MV500A				
1	BB1042100T3	TRANSISTOR	BFV421 PNP TO-92		3	Q303 Q333 Q363	
2	BB3042000T1	TRANSISTOR	BFV420 NPN TO-92		3	Q304 Q334 Q364	
3	BB30945P1T5	TRANSISTOR	2SC945-P		3	Q301 Q331 Q361	
4	BC101SS82T2	DIODE	1SS82		3	D303 D333 D363	
5	BC11N4148T8	DIODE	1N4148		6	D301 D302 D331 D332 D361 D362	
6	BC1FR1040T0	DIODE	FR104 DO-41		1	D251	
7	BC40HZ9A2T6	ZENER DIODE	HZ9A-2		1	ZD201	
8	BC4HZ2720T5	ZENER DIODE	HZ27-2		3	ZD301 ZD331 ZD361	
9	CA001A6M0T0	CERAMIC CAP.	.1U 50V M Y5V P5		6	C204 C205 C206 C207 C208 C209	
10	CA001B631T8	CERAMIC CAP.	.01U 50V -20 +80% Z5V P5		11	C201 C211 C212 C215 C216 C252 C253 C303 C332 C333 C363	
11	CA001CEM0T6	CERAMIC CAP.	1000P 1KV M Z5U P5		1	C254	
12	CA068F6J0T1	CERAMIC CAP.	8P 50V J NPO P5		1	C331	
13	CA075F600T7	CERAMIC CAP.	75P 50V +-5% NPO P5		2	C301 C361	
14	CB0010642T9	CAPACITOR	1U 50V +-20% 85C P5		4	C203 C304 C334 C364	
15	CB0100642T8	CAPACITOR	10U 50V M A P5		3	C210 C217 C256	
16	CB0220A42T5	CAPACITOR	22U 100V +-20% 85C P5		1	C251	
17	CB10003M0TH	CAPACITOR	100U 16V M A P5		1	C202	
18	CC0100211T9	RESISTOR	1/8W 10 +-5%	S1	3	R304 R334 R364	
19	CC0150211T7	RESISTOR	1/8W 15 +-5%	S1	6	R307 R308 R337 R338 R367 R368	
20	CC0330211T5	RESISTOR	1/8W 33 +-5%	S1	3	R214 R215 R216	
21	CC0390111T1	RESISTOR	1/4W 39 +-5%	S1	3	R302 R332 R362	
22	CC0470011T1	RESISTOR	1/2W 47 +-5%	S1	4	R210 R310 R340 R370	
23	CC0750211T3	RESISTOR	1/8W 75 +-5%	S1	3	R203 R204 R205	
24	CC1000111T2	RESISTOR	1/4W 100 +-5%	S1	2	R335 R365	
25	CC1000211T8	RESISTOR	1/8W 100 +-5%	S1	3	R207 R212 R305	
26	CC1001011T1	RESISTOR	1/2W 1K +-5%	S1	1	R251	
27	CC1001211T2	RESISTOR	1/8W 1K +-5%	S1	3	R202 R206 R254	
28	CC1002011T6	RESISTOR	1/2W 10K +-5%	S1	1	R252	
29	CC1500111T6	RESISTOR	1/4W 150 +-5%	S1	3	R303 R333 R363	
30	CC1502111T5	RESISTOR	1/4W 15K +-5%	S1	3	R309 R339 R369	
31	CC3301211T4	RESISTOR	1/8W 3.3K +-5%	S1	1	R213	
32	CC3900211T6	RESISTOR	1/8W 390 +-5%	S1	3	R301 R331 R361	
33	CC4300111T6	RESISTOR	1/4W 430 +-5%	S1	1	R253	
34	CC4701111T1	RESISTOR	1/4W 4.7K +-5%	S1	1	R209	
35	CC4701211T7	RESISTOR	1/8W 4.7K +-5%	S1	3	R201 R208 R211	
36	DC1510003T2	BEAD	FER RI TE RH3.5X8.3X0.8		1	L209	


U401
TDA9111
U601
TDA8172
T501
TEI19V-1
FBT
SW1
H-SIZE
V-OUT
H-OUT
CLAMP
SDA
SCL
BLANK
CONTRAST
BRI.
HUTE
+13VS
+12V
+60V
-12V
-5V
+7.5V
+6.3V
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G4 <CRT>
G2 <CRT>
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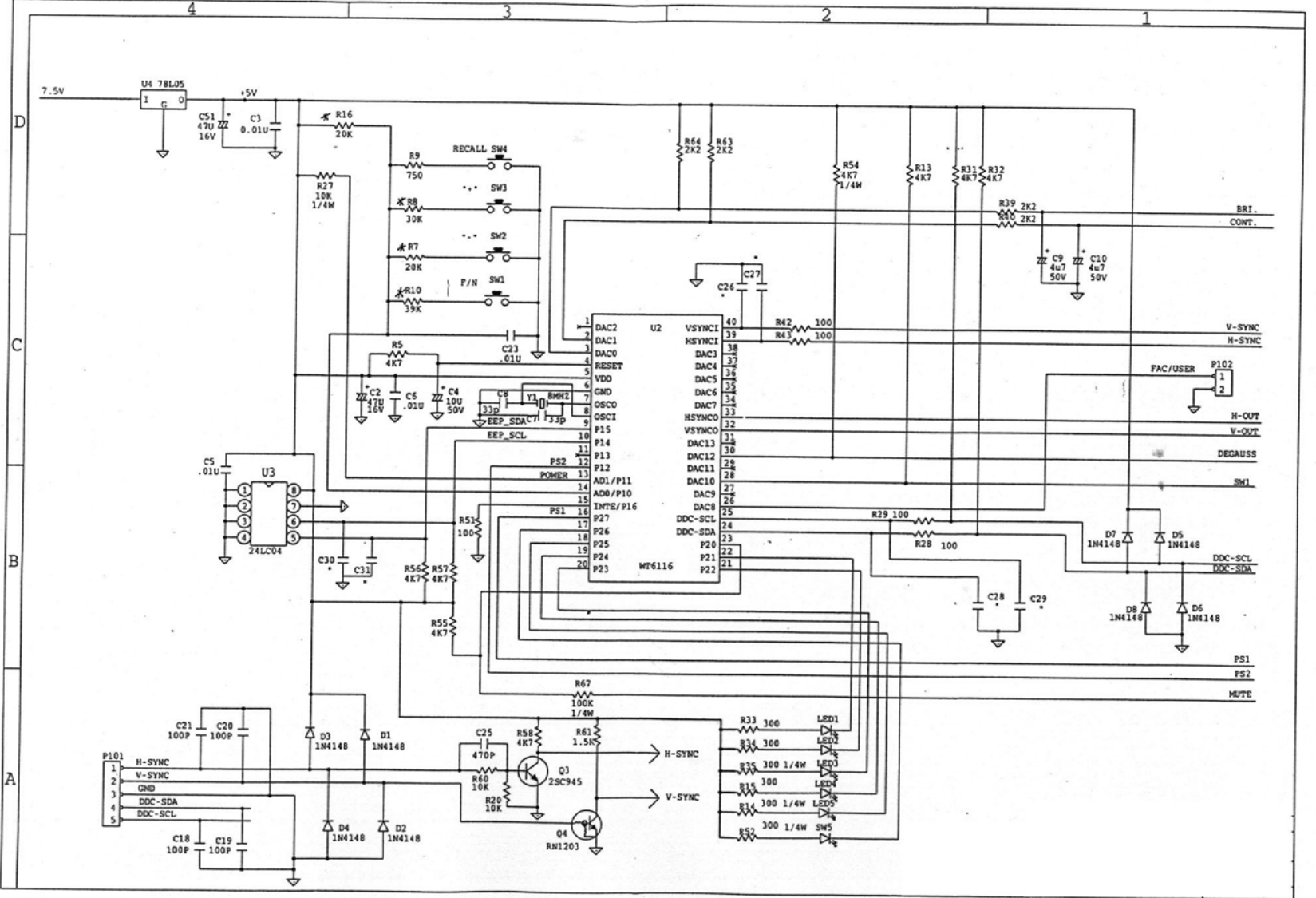
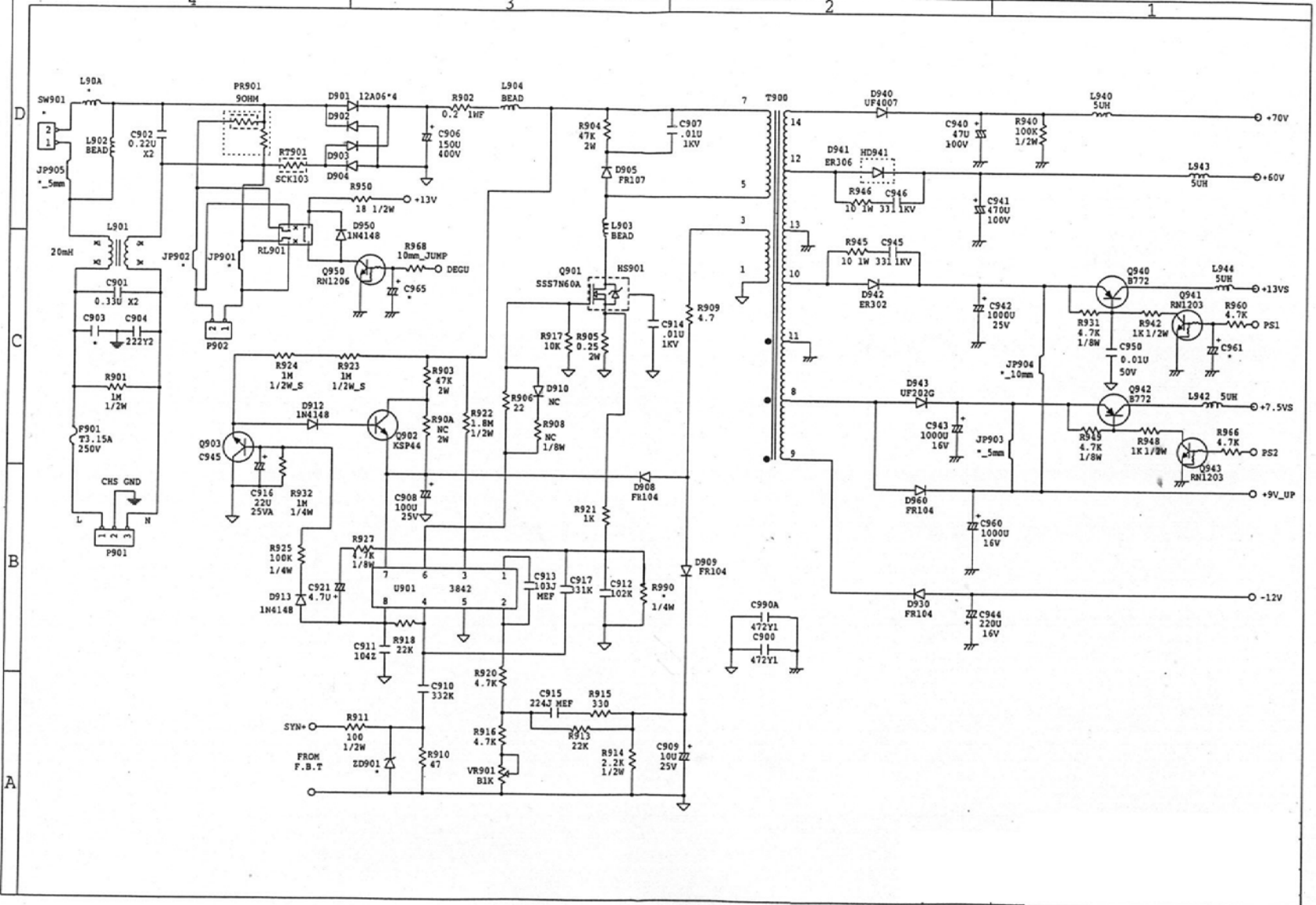
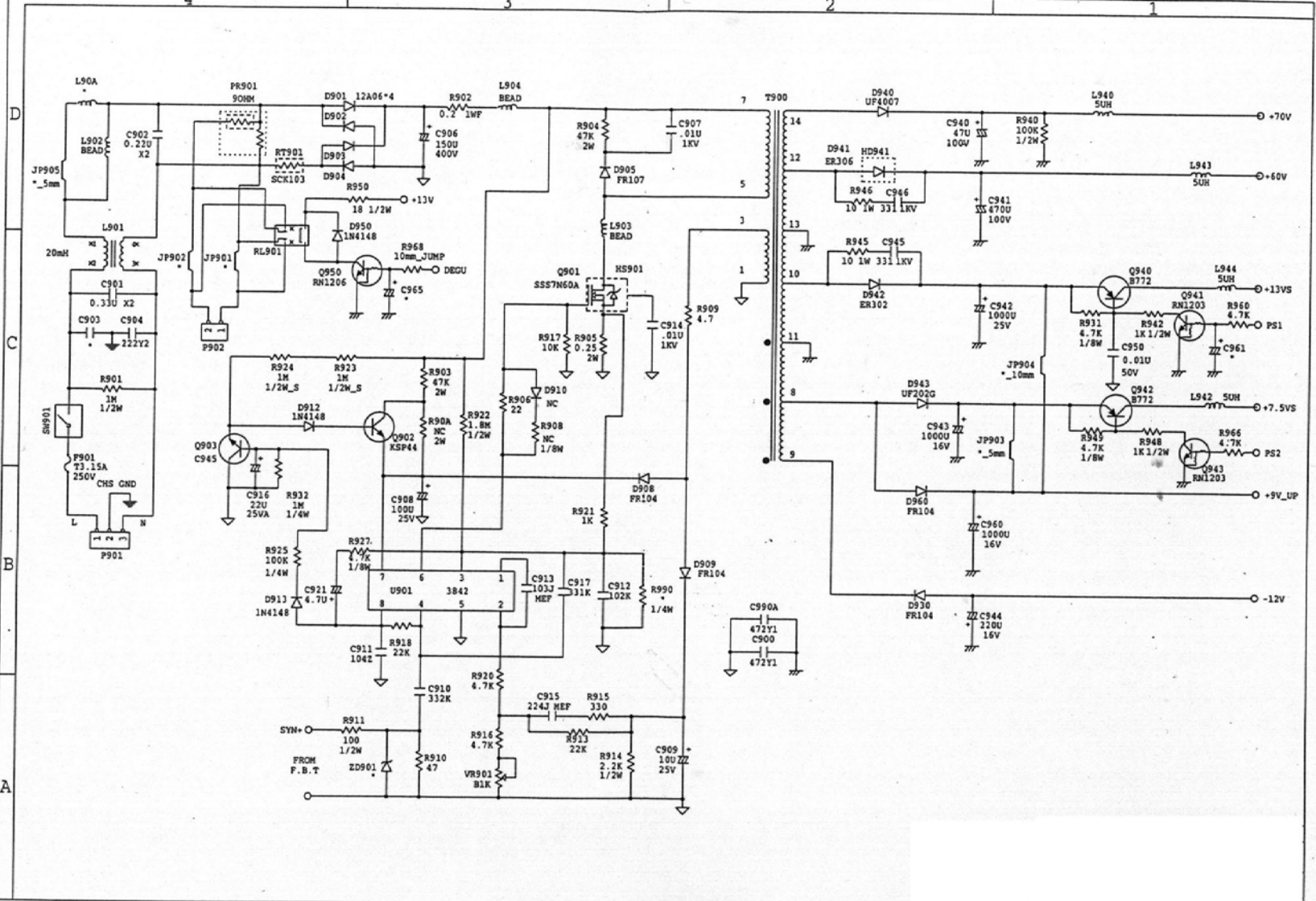
+12V
+6.3V
BLANK
CLAMP
CONTRAST
GND
G1


4
3
2
1
D
C
B
A
7.5V
U4 78L05
+5V
C51 47U 16V
C3 0.01U
R16 20K
R27 10K 1/4W
R9 750
R8 30K
R7 20K
R10 39K
RECALL SW4
SW3
SW2
F/N SW1
R64 2K2
R63 2K2
R54 4K7 1/4W
R13 4K7
R31 4K7
R32 4K7
R39 2K2
R40 2K2
BRI.
CONT.
C9 4u7 50V
C10 4u7 50V
C26
C27
R42 100
R43 100
V-SYNC
H-SYNC
FAC/USER
P102
R5 4K7
C23 .01U
C2 47U 16V
C6 .01U
C4 10U 50V
C8 33p
Y1 8MHZ
C7 33p
EEP_SDA
EEP_SCL
U2
WT6116
DAC2
DAC1
DAC0
RESET
VDD
GND
OSCO
OSCI
P15
P14
P13
P12
AD1/P11
AD0/P10
INTE/P16
P27
P26
P25
P24
P23
VSYNCI
HSYNCI
DAC3
DAC4
DAC5
DAC6
DAC7
HSYNCO
VSYNCO
DAC13
DAC12
DAC11
DAC10
DAC9
DAC8
DDC-SCL
DDC-SDA
P20
P21
P22
H-OUT
V-OUT
DEGAUSS
SW1
DDC-SCL
DDC-SDA
PS1
PS2
MUTE
C5 .01U
U3
24LC04
PS2
POWER
PS1
R53 100
C30
C31
R56 4K7
R57 4K7
R55 4K7
R29 100
R28 100
D7 1N4148
D5 1N4148
D8 1N4148
D6 1N4148
C28
C29
R67 100K 1/4W
C21 100P
C20 100P
D3 1N4148
D1 1N4148
C25 470P
R58 4K7
R61 1.5K
R60 10K
R20 10K
Q3 2SC945
Q4 RN1203
H-SYNC
V-SYNC
R33 300
R34 300
R35 300 1/4W
R15 300
R14 300 1/4W
R52 300 1/4W
LED1
LED2
LED3
LED4
LED5
SW5
P101
H-SYNC
V-SYNC
GND
DDC-SDA
DDC-SCL
C18 100P
C19 100P
D4 1N4148
D2 1N4148


SW901
L90A
L902 BEAD
C902 0.22U X2
JP905 *_5mm
L901 20mH
C901 0.33U X2
C903
C904 222Y2
R901 1M 1/2W
F901 T3.15A 250V
CHS GND
L
N
P901
PR901 90HM
D901 12A06*4
D902
D903
D904
R7901 SCK103
R902 0.2 1WF
L904 BEAD
C906 150U 400V
R950 18 1/2W
+13V
D950 1N4148
R968 10mm_JUMP
DEGU
Q950 RN1206
C965
JP902
JP901
RL901
P902
R924 1M 1/2W_S
R923 1M 1/2W_S
R903 47K 2W
D912 1N4148
Q902 KSP44
R90A NC 2W
R922 1.8M 1/2W
Q903 C945
C916 22U 25VA
R932 1M 1/4W
C908 100U 25V
R904 47K 2W
C907 .01U 1KV
D905 FR107
L903 BEAD
Q901 SSS7N60A
HS901
R917 10K
R905 0.25 2W
C914 .01U 1KV
R909 4.7
D910 NC
R906 22
R908 NC 1/8W
D908 FR104
R921 1K
D909 FR104
R927 4.7K 1/8W
U901 3842
C913 103J MEF
C917 31K
C912 102K
R990 1/4W
R925 100K 1/4W
C921 4.7U
D913 1N4148
C911 1042
R918 22K
C910 332K
R920 4.7K
C915 224J MEF
R915 330
R913 22K
R914 2.2K 1/2W
C909 10U 25V
SYN+
R911 100 1/2W
FROM F.B.T
ZD901
R910 47
VR901 B1K
C990A 472Y1
C990 472Y1
T900
D940 UF4007
L940 5UH
+70V
C940 47U 100V
R940 100K 1/2W
D941 ER306
HD941
L943 5UH
+60V
R946 10 1W
C946 331 1KV
C941 470U 100V
R945 10 1W
C945 331 1KV
D942 ER302
C942 1000U 25V
Q940 B772
L944 5UH
+13VS
Q941 RN1203
R931 4.7K 1/8W
R942 1K 1/2W
R960 4.7K
PS1
C950 0.01U 50V
C961
JP904 *_10mm
D943 UF202G
Q942 B772
L942 5UH
+7.5VS
C943 1000U 16V
JP903 *_5mm
R949 4.7K 1/8W
R948 1K 1/2W
R966 4.7K
PS2
Q943 RN1203
+9V_UP
D960 FR104
C960 1000U 16V
D930 FR104
C944 220U 16V
-12V


L90A
PR901 90HM
D901 12A06*4
D902
D903
D904
R902 0.2 1WF
L904 BEAD
T900
D940 UF4007
L940 5UH
+70V
C940 47U 100V
R940 100K 1/2W
D941 ER306
HD941
L943 5UH
+60V
R946 10 1W 331 1KV
C966
C941 470U 100V
L902 BEAD
C902 0.22U X2
JP905 *_5mm
RT901 SCK103
R950 18 1/2W
+13V
D950 1N4148
R968 10mm_JUMP
DEGU
Q950 RN1206
C965
L901
20mH
C901 0.33U X2
C903
C904 222Y2
R901 1M 1/2W
SW901
P901 T3.15A 250V
CHS GND
L
N
P902
JP902
JP901
RL901
R904 47K 2W
C907 .01U 1KV
D905 FR107
L903 BEAD
Q901 SSS7N60A
HS901
C914 .01U 1KV
R909 4.7
R945 10 1W 331 1KV
C945
D942 ER302
C942 1000U 25V
Q940 B772
L944 5UH
+13VS
Q941 RN1203
R931 4.7K 1/8W
R942 1K 1/2W
R960 4.7K
PS1
C950 0.01U 50V
C961
JP904 *_10mm
D943 UF202G
Q942 B772
L942 5UH
+7.5VS
C943 1000U 16V
JP903 *_5mm
R949 4.7K 1/8W
R948 1K 1/2W
R966 4.7K
PS2
Q943 RN1203
+9V_UP
D960 FR104
C960 1000U 16V
D930 FR104
C944 220U 16V
-12V
R924 1M 1/2W_S
R923 1M 1/2W_S
R903 47K 2W
D912 1N4148
Q902 KSP44
R90A NC 2W
R922 1.8M 1/2W
R906 22
D910 NC
R908 NC 1/8W
R917 10K
R905 0.25 2W
Q903 C945
C916 22U 25VA
R932 1M 1/4W
C908 100U 25V
D908 FR104
R921 1K
D909 FR104
R925 100K 1/4W
R927 4.7K 1/8W
U901 3842
C913 103J MEF
C917 31K
C912 102K
R990 1/4W
C921 4.7U
D913 1N4148
C911 104Z
R918 22K
C910 332K
C990A 472Y1 C900 472Y1
R920 4.7K
C915 224J MEF
R915 330
R913 22K
R914 2.2K 1/2W
C909 10U 25V
SYN+
R911 100 1/2W
FROM F.B.T
ZD901
R910 47
VR901 B1K

QUANTITY REQUIRED DWG.NO. 456A36 REV. 2A

C NO.	PART NO.	DESCRIPTION	SPECIFICATION		30 30 30 30 001 002 011 012	REMARKS
#	456A3630001	PCBA DEF&POW/B	VA-531 MV500A		2A	
#	456A3630002	PCBA DEF&POW/B	VA-531 MV500A UR		2A	
#	456A3630011	PCBA DEF&POW/B	VA-531 MM500C UR		2A	
#	456A3630012	PCBA DEF&POW/B	VA-531 MM500C MPRII		2A	
1	446A3630001	AIS DEF&POW/B	VA-531 MV500A		1 - - - -	ZZZ
2	446A3630002	AIS DEF&POW/B	VA-531 MV500A UR		- 1 - - -	ZZZ
3	446A3630011	AIS DEF&POW/B	VA-531 MM500C UR		- - 1 - -	ZZZ
4	446A3630012	AIS DEF&POW/B	VA-531 MM500C MPRII		- - - 1 -	ZZZ
5	AB024040100	IC	EE 512X8 DP A		1 1 1 1 -	U3
6	AB068610309	IC	NT6861 DIP-40L MICRO-P OTP		1 1 1 1 -	U2
7	AB081720007	IC	TDA8172		1 1 1 1 -	U601
8	AB091110000	IC	TDA9111 SDIP-32 IIC DEF. PRO		1 1 1 1 -	U401
9	BB306690002	TRANSISTOR	HSD669A-C NPN TO-126		1 1 1 1 -	Q503
10	BB355720000	TRANSISTOR	2SC5572 NPN TO-3P		1 1 1 1 -	Q801
11	BB506300305	TRANSISTOR	IRFS630A 1N TO-220F		2 2 2 2 -	Q505 Q802
12	BC103290000	DIODE	BY329X-1500S TO-220		1 1 1 1 -	D801
13	BC1F5406000	DIODE	UF5406G DO-201 AD PANJIT		1 1 1 1 -	D810
14	BC1YM36C000	DIO	BYM36C SOD-64		1 1 1 1 -	D505
15	BC5G3330009	LED	LG3330/E1 GRN		5 5 5 5 -	LED1 LED2 LED3 LED4 LED5
					1 1 - - -	LED6
					- - 1 1 -	SW5
16	BD18P00M105	CRYSTAL	8MHZ (HC-49/U)		1 1 1 1 -	Y1
17	CB0470P4105	CAPACITOR	47U 200V M B P5 (TM)		1 1 1 1 -	C513
18	CB10013M00H	CAPACITOR	1000U 16V M A P5		2 2 2 2 -	C601 C605
19	CC0010591M8	RESISTOR (MOF)	2W 1 +-5%	S3	1 1 1 1 -	R614
20	CC0100591M7	RESISTOR (MOF)	2W 10 +-5%	S3	1 1 1 1 -	R515
21	CC018AL91M0	RESISTOR (MOF)	3W 1.8 +-5% S	S3	1 1 1 1 -	R539
22	CC051A591M1	RESISTOR (MOF)	2W 5.1 +-5%	S3	1 1 1 1 -	R536
23	CC0560591M0	RESISTOR (MOF)	2W 56 +-5%	S3	1 1 1 1 -	R806
24	CC068A591M0	RESISTOR (MOF)	2W 6.8 +-5%	S3	1 1 1 1 -	R601
25	CC082B591M0	RES MOF	2W .82 +-5%		1 1 1 1 -	R511
26	CC2000591M8	RESISTOR (MOF)	2W 200 +-5%	S3	1 1 1 1 -	R506
27	CC6800591M7	RESISTOR (MOF)	2W 680 +-5%	S3	1 1 1 1 -	R512
28	CF220010409	TRIMMER RES.	1/10W 2KB VZ068TL1-B2K (HDK)		1 1 1 1 -	VR501
29	CF250020607	TRIMMER RES.	1/10W 50KB VZ068TL1-B50K		2 2 2 2 -	VR801 VR802 ⚠
30	CJ001AB0209	MYLAR CAP.	.1U 250V +-5% MEF P10		1 1 1 1 -	C504
31	CJ022A7J017	MYLAR CAP.	2.2U 63V J MEF P15 TSC		1 1 1 1 -	C803
32	CJ033CB0006	MYLAR CAP.	.033U 250V +-5% MEF P10		1 1 1 1 -	C607
33	CJ036BBJ500	FILM CAP	.36U 250V J MPA P15 TSC		1 1 1 1 -	C804
34	CJ043BBJ000	MYLAR CAP.	.43U 250V J MPS P20		1 1 1 1 -	C805
35	CJ047DWJ107	MYLAR CAP.	.0047U 1.6KV J MPM P17.5		1 1 1 1 -	C801 ⚠
36	CJ068DDJF00	MYLAR CAP.	.0068U 630V J PPN P10		1 1 1 1 -	C802
37	CL220005900	COIL(L)	V500 7.38uH L 9X12X3.8 22.5TS		1 1 1 1 -	L802
38	CL310002909	CHOKE COIL	2.2MH +-10%		1 1 1 1 -	L805

C NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 30 30 30 001 002 011 012	REMARKS
39	CL320002900	CHOKE COIL	M555 230uH L 14X15X7 65.5TS	1 1 1 1 -	L501
40	CL370000503	CHOKE COIL	M554 180uH A 14X19X8 59.5T	1 1 1 1 -	L803
41	DC020122508	HOUSING CONN. SET	M554 MB-CRT P501,P301	1 1 1 1 -	P501
42	DC020124403	HOUSING CONN. SET	M454 MB-YOKE M-CAN. CPT	1 - - 1 -	L801
43	DC030015607	WAFER CONN.	JST B5B-XH-A 2.5	1 1 1 1 -	P101
44	DC030018509	WAFER CONN.	YUEAN-YUH 1081-04	1 1 1 1 -	P802
45	DC030020503	WAFER CONN.	YUEAN-YUH 2540-02	1 1 1 1 -	P102
46	DC030091109	WAFER CONN.	YUEAN-YUH 2540-03	1 1 1 1 -	P801
47	DC090001301	TERMINAL CHASSIS GND	CS-11-029	2 2 2 2 -	GND2 GND3
48	DEB11000009	TACT SWITCH	PM564 KSM0632B	4 4 4 4 -	SW1 SW2 SW3 SW4
				1 1 - - -	SW5
49	DG200004305	TRANSFORMER	H567 HDT EI-19	1 1 1 1 -	T501
50	DG300012600	X'FORMER	V500 FCM0038	1 1 1 1 -	FBT
51	EEV79834000	REAR BRACKET	V79834 (FOR ATB)	1 1 1 1 -	ZZZ
52	FCM55440005	LED HOLDER	M55440	5 5 5 5 -	&LED1 &LED2 &LED3 &LED4 &LED5
				1 1 - - -	&LED6
				- - 1 1 -	&SW5
53	FCM57045006	PCB SPACER (M570)	M57045	4 4 4 4 -	ZZZ ZZZ ZZZ ZZZ
54	LC040058805	HEAT SINK	GS-1166-30 52X3X35mm	1 1 1 1 -	&U601
55	LCM55424000	FBT HEAT SINK	M55424	1 1 1 1 -	&Q801
56	MAA20096402	SCREW	M3X0.5+12P-MC (ADD WASHER)	1 1 1 1 -	&U601
57	MAB2T001206	SCREW	TPP-3.5+8C-UC	2 2 2 2 -	ZZZ ZZZ
58	MAB50003409	SCREW	TPB-3+10R-MC (ADD WASHER)	4 4 4 4 -	&D801 &Q503 &Q505 &Q801
59	MAB70008406	SCREW	TPB-3+8C-MC	2 2 2 2 -	&BRK &BRK
60	MAB7T000203	SCREW	TPP-3+6C-MC	1 1 - - -	ZZZ
61	MAB7T002401	SCREW	TPB-4+8C-MC	2 2 2 2 -	ZZZ ZZZ
62	MC300000101	WASHER (EX.LOCK)	ETW 3.2X6.5X0.45-MC	2 2 2 2 -	ZZZ ZZZ
63	NA114500000	WIRE SET	1.8DX1450XTUBE 1007#18 BLU	1 - - 1 -	G1
64	X62A3630001	PCBA POW/B	VA-531 MV500A MPRII	1 1 - - -	ZZZ
65	X62A3630011	PCBA POW/B	VA-531 MM500C	- - 1 1 -	ZZZ

C NO.	PART NO.	DESCRIPTION	SPECIFICATION		QUANTITY REQUIRED 30 30 30 30 001 002 011 012	REMARKS
#	446A3630001	AIS DEF&POW/B	VA-531 MV500A			
#	446A3630002	AIS DEF&POW/B	VA-531 MV500A UR			
#	446A3630011	AIS DEF&POW/B	VA-531 MM500C UR			
#	446A3630012	AIS DEF&POW/B	VA-531 MM500C MPRII			
1	AB0780500T8	IC	78L05 TO-92 REGULATOR		1 1 1 1 -	U4
2	BB1073302T4	TRANSISTOR	2SA733-P		6 6 6 6 -	Q501 Q510 Q513 Q514 Q515 Q804
3	BB3033700T1	TRANSISTOR	JC337-25 NPN TO-92		1 1 1 1 -	Q517
4	BB30945P1T5	TRANSISTOR	2SC945-P		5 5 5 5 -	Q3 Q507 Q508 Q512 Q601
5	BB5094100T8	TRANSISTOR	2SK941 1N TO-92 W/D		1 1 1 1 -	Q506
6	BBX042300T5	TRANSISTOR	BF423		1 1 1 1 -	Q509
7	BBX120300T1	TRANSISTOR	RN1203 (TE4,M)		4 4 4 4 -	Q4 Q511 Q516 Q803
8	BC11N4148T8	DIODE	1N4148		13 13 13 13 -	D1 D2 D3 D4 D5 D501 D506 D507 D6 D602 D7 D8 D805
9	BC1FR1040T0	DIODE	FR104 DO-41		7 7 7 7 -	D502 D504 D537 D601 D802 D803 D804
10	BC1SB1200T3	DIODE	SB120 DO-41 DIA.=0.71-0.86MM		1 1 1 1 -	D503
11	BC40HZ9A2T6	ZENER DIODE	HZ9A-2		1 1 1 1 -	ZD504
12	BC4HZ12B1T5	ZENER DIODE	HZ12B1		1 1 1 1 -	ZD501
13	BC4HZ5C10T8	ZENER DIODE	HZ5C1		2 2 2 2 -	ZD502 ZD503
14	CA001B631T8	CERAMIC CAP.	.01U 50V -20 +80% Z5V P5		12 12 12 12 -	C3 C401 C5 C502 C6 C602 C606 C610 C807 C808 C810 C814
15	CA001CCK0T4	CERAMIC CAP.	1000P 500V K Y5P P5		1 1 1 1 -	C806
16	CA010D6K0T8	CERAMIC CAP.	1000P 50V K Y5P P5		2 2 2 2 -	C413 C506
17	CA010E6K0T3	CERAMIC CAP.	100P 50V K Y5P P5		6 6 6 6 -	C18 C19 C20 C21 C403 C404
18	CA015E602T0	CERAMIC CAP.	150P 50V +-5% NPO P5		1 1 1 1 -	C517
19	CA022C6Z0T0	CER CAP	.022U 50V Z Y5V P5		1 1 1 1 -	C402
20	CA033F601T6	CERAMIC CAP.	33P 50V +-5% NPO P5		2 2 2 2 -	C7 C8
21	CA047E6K0T7	CERAMIC CAP.	470P 50V K Y5P P5		3 3 3 3 -	C25 C612 C613
22	CA056EC10T7	CERAMIC CAP.	560P 500V +-10% Y5P P5		1 1 1 1 -	C503
23	CB0010642T9	CAPACITOR	1U 50V +-20% 85C P5		4 4 4 4 -	C417 C505 C509 C811 ⚠
24	CB0100442T7	CAPACITOR (N.P.)	10U 25V +-20% 85C P5		1 1 1 1 -	C516
25	CB0100642T8	CAPACITOR	10U 50V M A P5		8 8 8 8 -	C4 C440 C507 C511 C515 C518 C812 C813 ⚠
26	CB0220A42T5	CAPACITOR	22U 100V +-20% 85C P5		1 1 1 1 -	C514
27	CB022APM0T1	CAPACITOR.	2.2U 200V M A P5		1 1 1 1 -	C508
28	CB04703M0TH	CAPACITOR	47U 16V M A P5		6 6 6 6 -	C2 C415 C501 C51 C510 C608
29	CB0470641T4	CAPACITOR	47U 50V +-20% 85C P5		1 1 1 1 -	C537
30	CB047A6M0TH	CAPACITOR	4.7U 50V M A P5		2 2 2 2 -	C10 C9
31	CB10003M0TH	CAPACITOR	100U 16V M A P5		1 1 1 1 -	C414
32	CB22005M0T8	CAPACITOR	220U 35V M A P5		1 1 1 1 -	C604
33	CC0010491T1	RESISTOR (MOF)	1W 1 +-5%	S3	1 1 1 1 -	R608
34	CC0100111T3	RESISTOR	1/4W 10 +-5%	S1	4 4 4 4 -	R521 R533 R813 R814
35	CC0100211T9	RESISTOR	1/8W 10 +-5%	S1	1 1 1 1 -	R405

C NO.	PART NO.	DESCRIPTION	SPECIFICATION		30 30 30 30 001 002 011 012	REMARKS
36	CC0220111T3	RESISTOR	1/4W 22 +-5%	S1	1 1 1 1 -	R540
37	CC027A111T0	RES CF	1/4W 2.7 +-5%		1 1 1 1 -	R605
38	CC1000111T2	RESISTOR	1/4W 100 +-5%	S1	2 2 2 2 -	R501 R804
* 39	CC1000211T8	ESISTOR	1/8W 100 +-5%	S1	8 8 8 8 -	R28 R29 R408 R409 R413 R42 R43 R550
					- - 1 1 -	R51
40	CC1001111T7	RESISTOR	1/4W 1K +-5%	S1	2 2 2 2 -	R427 R513
41	CC1001211T2	RESISTOR	1/8W 1K +-5%	S1	5 5 5 5 -	R415 R505 R803 R811 R812
42	CC1002111T1	RESISTOR	1/4W 10K +-5%	S1	5 5 5 5 -	R27 R401 R510 R532 R815
* 43	CC1002211T7	RESISTOR	1/8W 10K +-5%	S1	10 10 10 10 -	R20 R406 R522 R524 R535 R60 R610 R613 R802 R810
44	CC1003111T6	RESISTOR	1/4W 100K +-5%	S1	1 1 1 1 -	R67
45	CC1003211T1	RESISTOR	1/8W 100K +-5%	S1	2 2 2 2 -	R611 R816
46	CC1004111T1	RESISTOR	1/4W 1M +-5%	S1	1 1 1 1 -	R527
47	CC1004211T6	RESISTOR	1/8W 1M +-5%	S1	1 1 1 1 -	R402
48	CC1201211T8	RESISTOR	1/8W 1.2K +-5%	S1	1 1 1 1 -	R509
49	CC1202211T2	RESISTOR	1/8W 12K +-5%	S1	1 1 1 1 -	R571
50	CC1203111T1	RESISTOR	1/4W 120K +-5%		1 1 1 1 -	R526
51	CC1302111T0	RESISTOR	1/4W 13K	S1	1 1 1 1 -	R507
52	CC1322225T8	RESISTOR (M.F.)	1/8W 13.2K +-1%	S2	1 1 1 1 -	R517
53	CC1500111T6	RESISTOR	1/4W 150 +-5%	S1	1 1 1 1 -	R534
54	CC1501111T1	RESISTOR	1/4W 1.5K +-5%	S1	2 2 2 2 -	R523 R525
55	CC1501211T6	RESISTOR	1/8W 1.5K +-5%	S1	1 1 1 1 -	R61
56	CC1502211T1	RESISTOR	1/8W 15K +-5%	S1	1 1 1 1 -	R529
57	CC1503011T4	RESISTOR	1/2W 150K +-5%	S1	1 1 1 1 -	R531
58	CC1504111T4	RESISTOR	1/4W 1.5M +-5%		1 1 1 1 -	R543
59	CC1800011T9	RESISTOR	1/2W 180 +-5%	S1	1 1 1 1 -	R606
60	CC1801211T4	RESISTOR	1/8W 1.8K +-5%	S1	1 1 1 1 -	R421
61	CC1802211T9	RESISTOR	1/8W 18K +-5%	S1	1 1 1 1 -	R420
62	CC2001225T0	RESISTOR (M.F.)	1/8W 2K +-1%	S2	1 1 1 1 -	R518
* 63	CC2002211T9	RESISTOR	1/8W 20K +-5%	S1	2 2 2 2 -	R16 R7
64	CC2201111T4	RESISTOR	1/4W 2.2K +-5%	S1	1 1 1 1 -	R805
65	CC2201211T0	RESISTOR	1/8W 2.2K +-5%	S1	5 5 5 5 -	R39 R40 R63 R64 R809
66	CC2701211T3	RESISTOR	1/8W 2.7K +-5%	S1	3 3 3 3 -	R520 R541 R544 ⚠
67	CC2703111T7	RESISTOR	1/4W 270K +-5%	S1	1 1 1 1 -	R807
68	CC2872125T6	RESISTOR (M.F.)	1/4W 28.7K +-1%		1 1 1 1 -	R414
69	CC3000011T1	RESISTOR	1/2W 300 +-5%	S1	1 1 1 1 -	R538
70	CC3000111T6	RESISTOR	1/4W 300 +-5%		3 3 3 3 -	R14 R35 R52
71	CC3000211T1	RESISTOR	1/8W 300 +-5%		3 3 3 3 -	R15 R33 R34
* 72	CC3002211T1	RESISTOR	1/8W 30K +-5%	S1	1 1 1 1 -	R8
73	CC3300491T1	RESISTOR (MOF)	1W 330 +-5%		1 1 1 1 -	R801
74	CC3302211T9	RESISTOR	1/8W 33K +-5%	S1	1 1 1 1 -	R528
75	CC3601211T2	RESISTOR	1/8W 3.6K +-5%		1 1 1 1 -	R502
76	CC3602211T7	RESISTOR	1/8W 36K +-5%	S1	1 1 1 1 -	R407
77	CC3901211T1	RESISTOR	1/8W 3.9K +-5%	S1	1 1 1 1 -	R615
78	CC3902111T0	RESISTOR	1/4W 39K +-5%	S1	1 1 1 1 -	R516

*	79	CC3902211T5	RESISTOR	1/8W 39K +-5%	S1	1	1	1	1	-	R10						

QUANTITY REQUIRED DWG.NO. 456A36 REV. 2A

C NO.	PART NO.	DESCRIPTION	SPECIFICATION		30 001	30 002	30 011	30 012	REMARKS
	80	CC4300211T1	RESISTOR	1/8W 430 +-5%	S1 1	1	1	1 -	R572
	81	CC4701111T1	RESISTOR	1/4W 4.7K +-5%	S1 2	2	2	2 -	R54 R808
	82	CC4701211T7	RESISTOR	1/8W 4.7K +-5%	S1 9	9	9	9 -	R13 R31 R32 R403 R5 R55 R56 R57 R58
	83	CC4702211T1	RESISTOR	1/8W 47K +-5%	S1 3	3	3	3 -	R426 R530 R612
	84	CC4991225T0	RESISTOR (M.F.)	1/8W 4.99K +-1%	1	1	1	1 -	R416
	85	CC5101111T7	RESISTOR	1/4W 5.1K +-5%	S1 1	1	1	1 -	R546
	86	CC5101225T8	RESISTOR (M.F.)	1/8W 5.11K +-1%	S2 1	1	1	1 -	R428
	87	CC5601111T1	RESISTOR	1/4W 5.6K +-5%	S1 2	2	2	2 -	R542 R602 ⚠
*	88	CC5601211T6	RESISTOR	1/8W 5.6K +-5%	S1 2	2	2	2 -	R570 R603
	89	CC6202011T1	RESISTOR	1/2W 62K +-5%	S1 1	1	1	1 -	R519
	90	CC6982225T0	RES MF	1/8W 69.8K +-1%	1	1	1	1 -	R514
	91	CC7500211T2	RESISTOR	1/8W 750 +-5%	1	1	1	1 -	R9
	92	CC7501211T7	RESISTOR	1/8W 7.5K +-5%	S1 1	1	1	1 -	R68
	93	CJ001A600T1	MYLAR CAP	.1U 50V +-5% MEF P5	2	2	2	2 -	C416 C603
	94	CJ001B600T2	MYLAR CAP.	.01U 50V +-5% MEF P5	1	1	1	1 -	C512
	95	CJ001BAJ2T1	MYLAR CAP.	01U 100V J MEF P5 TSC	1	1	1	1 -	C519
	96	CJ001C600T8	MYLAR CAP.	.001U 50V +-5% PPN P5	1	1	1	1 -	C410
	97	CJ015B6J0T6	MYLAR CAP.	.15U 50V J MEF P5	1	1	1	1 -	C407
	98	CJ033D600T9	MYLAR CAP	.0033U 50V J PEE P5	1	1	1	1 -	C609
	99	CJ047B6J0T1	MYLAR CAP.	.47U 50V J MEF P5	1	1	1	1 -	C406
	100	CJ047C6J0T7	MYLAR CAP.	.047U 50V J MEF P5	3	3	3	3 -	C408 C409 C411
*	101	DA1V500V020	PCB	V500 VA-531 REV2	1	1	1	1 -	ZZZ
	102	DC1510002T5	BEAD	NWE C8B RH3.5X9X1.0	1	1	1	1 -	L804
	103	DC382000002	EYELET	SL 4X2.5X3	21	21	21	21 -	A1 A2 E1 E12 E13 E14 E15 E16 E2 E23 E24 E25 E26 E27 E28 E29 E3 E30 E4 E5 E6
	104	DC382000200	EYELET	LY 4X3X3.5	8	8	8	8 -	E10 E11 E17 E18 E31 E32 E33 E34
	105	X61A3630001	AIS POW/B	VA-531 MV500A MPRII	1	1	-	- -	ZZZ
	106	X61A3630011	AIS POW/B	VA-531 MM500C	-	-	1	1 -	ZZZ
	107	XX0900T2101	JUMPER WIRE	D=0.6MM P22.5	1	1	1	1 -	W88
	108	XX0900T2119	UMPER WIRE	D=0.6MM P5.0	-	2	2	- -	JP801 JP802
					51	51	51	51 -	W106 W131 W214 W216 W28 W300 W301 W302 W303 W304 W305 306 W307 W308 W309 W310 W311 312 W313 W314 W315 W316 W317 318 W319 W320 W321 W322 W323 W324 W325 W326 W327 W328 W329 W330 W331 W332 W333 W334 W335 W336 W337 W338 W339 W340 W341 W342 W343 W344 W345
					-	-	1	1 -	W108
	109	XX0900T2127	JUMPER WIRE	D=0.6MM P7.5	22	22	22	22 -	W102 W116 W118 W128 W130 W15 W160 W201 W202 W203 W204 W210

W4 W45 W46 W47 W49 W61
W73 W85 W91 W99

QUANTITY REQUIRED DWG.NO. 456A36 REV. 2A

C	NO.	PART NO.	DESCRIPTION	SPECIFICATION	30 30 30 30 001 002 011 012	REMARKS
					1 1 - - -	W107
*	110	XX0900T2135	JUMPER WIRE	D=0.6MM P10	36 36 36 36 -	W11 W113 W117 W120 W125 W135 W136 W139 W141 W142 W145 180 W181 W182 W2 W208 W212 W215 W250 W27 W3 W32 W38 W50 W54 W55 W58 W59 W60 W64 W70 W74 W77 W84 W97 W98
*	111	XX0900T2143	JUMPER WIRE	D=0.6MM P12.5	19 19 19 19 -	L301 W12 W124 W140 W151 W156 W17 W21 W211 W213 W23 W36 W37 W48 W75 W8 W89 W9 W95
	112	XX0900T2151	JUMPER WIRE	D=0.6MM P15	25 25 25 25 -	W104 W114 W121 W122 W126 W150 W155 W157 W16 W206 W24 W43 W51 W53 W56 W57 W6 W62 W65 W66 W72 W76 W81 W83 W87
	113	XX0900T2160	JUMPER WIRE	D=0.6MM P17.5	6 6 6 6 -	W101 W110 W115 W123 W129 W35
*	114	XX0900T2178	JUMPER WIRE	D=0.6MM P20	21 21 21 21 -	W1 W10 W100 W105 W109 W149 W205 W26 W29 W30 W34 W40 W41 W42 W68 W69 W71 W80 W86 W90 W96
					- - 1 1 -	W161
	115	XX0900T2186	JUMPER WIRE	D=0.6MM P25	9 9 9 9 -	W13 W132 W147 W39 W44 W5 W63 W92 W93
	116	XX0900T2194	JUMPER WIRE	D=0.6MM P30	8 8 8 8 -	W14 W146 W31 W67 W78 W79 W82 W94

C NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 30 001 011	REMARKS
				DWG.NO. 456A36	REV. 2A
#	X62A3630001	PCBA POW/B	VA-531 MV500A MPRII		
#	X62A3630011	PCBA POW/B	VA-531 MM500C		
1	AB038420404	IC	KA3842A DIP-8 PWM	1 1 - - -	U901
2	BB207720001	TRANSISTOR	2SB772-P PNP TO-126	2 2 - - -	Q940 Q942
3	BB507600001	TRANSISTOR	SSS7N60A 1N TO-220F	1 1 - - -	Q901
4	BC1ER3020N1	DIODE	ER302-F17 DO-201AD P20	1 1 - - -	D942
5	BC1ER3060N6	DIODE	ER306-F17 DO-201AD P20	1 1 - - -	D941
6	CA001BE1101	CERAMIC CAP.	.01U 1KV +-20% Z5U P10	2 2 - - -	C907 C914
7	CA022DBMY07	CERAMIC CAP.	2200P 250VAC M Y5V P10	1 1 - - -	C904
8	CA047DBMY27	CERAMIC CAP. (Y1)	4700P 250VAC M 2E3 P10	2 2 - - -	C900 C990A
9	CB10013M00H	CAPACITOR	1000U 16V M A P5	2 2 - - -	C943 C960
10	CB10014M00H	CAPACITOR	1000U 25V M A P5	1 1 - - -	C942
11	CB1500FM019	CAPACITOR	150U 400V M A P10 22X35	1 1 - - -	C906
12	CB4700AM004	CAPACITOR	470U 100V M B P7.5	1 1 - - -	C941
13	CC0090884U0	RESISTOR (POSISTOR)	5W 9 +-30% DISK KINK P7.5	1 1 - - -	PR901
14	CC0100X6X08	RESISTOR(THERMISTOR)	3A 10 SCK-103 (KINK)	1 1 - - -	RT901
15	CC025B591M9	RESISTOR (MOF)	2W 0.25 +-5% S3	1 1 - - -	R905
16	CC4702591M0	RESISTOR (MOF)	2W 47K +-5% S3	2 2 - - -	R903 R904
17	CF210010201	TRIMMER RES.	1/10W 1KB VZ068TL1-B1K (HDK)	1 1 - - -	VR901 ⚠
18	CJ022BXMX03	MYLAR CAP. (X)	.22U 275VAC M MKP P22.5	1 1 - - -	C902
19	CJ033BXMX00	MYLAR CAP. (X)	.33U 275VAC M MKP P22.5	1 1 - - -	C901
20	CL310004715	CHOKE COIL	TX14M 5UH +-10% @1A	4 4 - - -	L940 L942 L943 L944
21	CL900006503	LINE FILTER	H554 20mH MIN @1.5A	1 1 - - -	L901
22	DC030039200	WAFER CONN.	LEOCO 3941-3 (W/O PIN2)	1 1 - - -	P902
23	DC040005001	POWER SOCKET	POWER 0714 (INALWAYS)	1 1 - - -	P901
24	DC100001502	FUSE HOLDER	CQ-203LR	2 2 - - -	&F901 &F901
25	DC1510003T2	BEAD	FER RI TE RH3.5X8.3X0.8	1 1 - - -	L902
26	DC240003600	RELAY	DC12V OSA-SS-212DM5 DPST	1 1 - - -	RL901
27	DEA110005P0	PUSH BUTTON SWITCH	M554 SS-160-7B 10A 250V SPST	- 1 - - -	SW901
28	DG100013100	TRANSFORMER	V553 ERL-35 POWER	1 1 - - -	T900 ⚠
29	DX23P152109	FUSE	3.15A 250V S SEMKO SLOW	1 1 - - -	F901
30	LC040056608	HEAT SINK	MK-503 36X11.2X55	1 1 - - -	HS901
31	MAA20085605	SCREW	M4X0.7+8C-MC	2 2 - - -	&P901 &P901
32	MAA20096402	SCREW	M3X0.5+12P-MC (ADD WASHER)	1 1 - - -	&Q901
33	MC300000607	WASHER (EX LOCK)	ETW 4.3X8.5X0.45-MC	2 2 - - -	&P901 &P901

C NO.	PART NO.	DESCRIPTION	SPECIFICATION	QUANTITY REQUIRED 30 30 001 011	DWG.NO. 456A36 REV. 2A REMARKS
#	X61A3630001	AIS POW/B	VA-531 MV500A MPRII		
#	X61A3630011	AIS POW/B	VA-531 MM500C		
1	BB3004401T5	TRANSISTOR	KSP44 NPN TO-92	1 1	Q902
2	BB30945P1T5	TRANSISTOR	2SC945-P	1 1	Q903
3	BBX120300T1	TRANSISTOR	RN1203 (TE4,M)	2 2	Q941 Q943
4	BBX120600T8	TRANSISTOR	RN1206 (TE4,M)	1 1	Q950
5	BC11N4148T8	DIODE	1N4148	3 3	D912 D913 D950
6	BC12A06G0T7	DIODE	2A06G DO-15 DIA.=0.7-0.9mm	4 4	D901 D902 D903 D904
7	BC1F202G0T0	DIODE	UF202G DO-41 PANJIT	1 1	D943
8	BC1F40071T0	DIO	UF4007 DO-41 PANJIT	1 1	D940
9	BC1FR1040T0	DIODE	FR104 DO-41	4 4	D908 D909 D930 D960
10	BC1FR1071T0	DIODE	FR107 DO-41	1 1	D905
11	CA001A601T8	CERAMIC CAP.	1U 50V Z Y5V P5	1 1	C911
12	CA001B631T8	CERAMIC CAP.	.01U 50V -20 +80% Z5V P5	1 1	C950
13	CA010D6K0T8	CERAMIC CAP.	1000P 50V K Y5P P5	1 1	C912
14	CA033D6K1T1	CERAMIC CAP.	3300P 50V K Y5P P5	1 1	C910
15	CA033E6K0T0	CERAMIC CAP.	330P 50V K Y5P P5	1 1	C917
16	CA033EEK0T0	CERAMIC CAP.	330P 1KV K Y5P P5	2 2	C945 C946
17	CB0100642T8	CAPACITOR	10U 50V M A P5	1 1	C909
18	CB02204M1T3	CAPACITOR	22U 25V M A P5	1 1	C916
19	CB0470AM0T8	CAPACITOR	47U 100V M A P5	1 1	C940
20	CB047A6M0TH	CAPACITOR	4.7U 50V M A P5	1 1	C921
21	CB10004M1TH	CAPACITOR	100U 25V M A P5	1 1	C908
22	CB22003M0TH	CAPACITOR	220U 16V M A P5	1 1	C944
23	CC002A471T2	RESISTOR (FUSE)	1W .2 +-5%	1 1	R902
24	CC0100491T1	RESISTOR (MOF)	1W 10 +-5%	S3 2 2	R945 R946
25	CC0180011T7	RESISTOR	1/2W 18 +-5%	S1 1 1	R950
26	CC0220111T3	RESISTOR	1/4W 22 +-5%	S1 1 1	R906
27	CC0470111T7	RESISTOR	1/4W 47 +-5%	S1 1 1	R910
28	CC047A111T7	RESISTOR	1/4W 4.7 +-5%	S1 1 1	R909
29	CC1000011T7	RESISTOR	1/2W 100 +-5%	S1 1 1	R911
30	CC1001011T1	RESISTOR	1/2W 1K +-5%	S1 2 2	R942 R948
31	CC1001111T7	RESISTOR	1/4W 1K +-5%	S1 1 1	R921
32	CC1002111T1	RESISTOR	1/4W 10K +-5%	S1 1 1	R917
33	CC1003011T1	RESISTOR	1/2W 100K +-5%	S1 1 1	R940
34	CC1003111T6	RESISTOR	1/4W 100K +-5%	S1 1 1	R925
35	CC1004011T5	RESISTOR	1/2W 1M +-5%	S1 1 1	R901
36	CC1004111T1	RESISTOR	1/4W 1M +-5%	S1 1 1	R932
37	CC1004I11T6	RESISTOR	1/2W 1M +-5% S	S1 2 2	R923 R924
38	CC1804011T7	RESISTOR	1/2W 1.8M +-5%	S1 1 1	R922
39	CC2201011T9	RESISTOR	1/2W 2.2K +-5%	S1 1 1	R914
40	CC2202111T9	RESISTOR	1/4W 22K +-5%	S1 2 2	R913 R918

C NO.	PART NO.	DESCRIPTION	SPECIFICATION		QUANTITY REQUIRED 30 30 001 011				REMARKS	DWG.NO. 456A36 REV. 2A
41	CC3300111T4	RESISTOR	1/4W 330 +-5%	S1	1	1	-	-	R915	
42	CC4701111T1	RESISTOR	1/4W 4.7K +-5%	S1	3	3	-	-	R916 R920 R960	⚠
43	CC4701211T7	RESISTOR	1/8W 4.7K +-5%	S1	4	4	-	-	R927 R931 R949 R966	
44	CJ001B600T2	MYLAR CAP.	.01U 50V +-5% MEF P5		1	1	-	-	C913	
45	CJ022B600T1	MYLAR CAP.	.22U 50V +-5% MEF P5		1	1	-	-	C915	
46	DC150007504	BEAD	FER. F5R6H6X10-0.5DX2.5TS L8		-	1	-	-	L90A	
47	DC1510003T2	BEAD	FER RI TE RH3.5X8.3X0.8		2	2	-	-	L903 L904	
48	XX0900T2119	JUMPER WIRE	D=0.6MM P5.0		-	1	-	-	JP905	
49	XX0900T2135	JUMPER WIRE	D=0.6MM P10		1	1	-	-	R968	