

Service Manual

ViewSonic E70f Model No. VCDTS21756-1

17" Digital Controlled Color Monitor E² Series



(E70f_SM_114 - Rev. 1.0 – September 2000)

Copyright

Copyright © 2000 by ViewSonic Corporation. All rights reserved. No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission of ViewSonic Corporation.

Disclaimer

ViewSonic makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranty of merchantability or fitness for any particular purpose. Further, ViewSonic reserves the right to revise this publication and to make changes from time to time in the contents hereof without obligation of ViewSonic to notify any person of such revision or changes.

Trademarks

ViewSonic is a registered trademark of ViewSonic Corporation.
All other trademarks used within this document are the property of their respective owners.

Revision History

Revision	Date	Description Of Changes	Approval
1.0	9/18/00	Initial Issue – DCN691	T. Sears

TABLE OF CONTENTS

1. PRECAUTIONS AND SAFETY NOTICES	1~2
2. SERVICE TOOLS & EQUIPMENT REQUIRED	3
3. SPECIFICATIONS	3~5
4. EXPLODED VIEW & PARTS LIST	6~7
5. BLOCK DIAGRAM	8
6. SCHEMATIC DIAGRAM	9~12
7. WIRING DIAGRAM	13
8. GENERAL DESCRIPTION	14~16
9. PCB LAYOUTS	17~18
10. TROUBLESHOOTING FLOW CHART	19~27
11. ADJUSTMENTS	28~29
12. ELECTRICAL PARTS LIST	30~42

E70f Service Manual

1. PRECAUTION AND NOTICES

1.1. SAFETY PRECAUTIONS

1. Observe all caution and safety related notes located inside the display cabinet.
2. Operation of the display with the cover removed, may cause a serious, shock hazard from the display power supply. Work on the display should not be attempted by anyone who is not thoroughly familiar with the necessary precautions when working on high voltage equipment.
3. Do not install, remove or handle the picture tube in any manner unless shatter-proof goggles are worn. people who are not so equipped should be kept away while handling picture tube. Keep picture tube away from the body while handling.
4. The picture tube is constructed to limit X-RAY radiation to 0.5 mR/HR. For continued protection, use the designated replacement tube only, and adjust the voltages so that the designated maximum rating at the anode will not be exceeded.
5. Before returning a serviced display to the customer, a thorough safety test must be performed to verify that the display is safe to operate without danger or shock. Always perform an AC leakage current check on the exposed metallic parts of the cabinet, such as screw heads. Test method for current leakage is described as follow.
 - (a) Plug the AC line cord directly into rated AC outlet (do not use a line isolation transformer during this check).
 - (b) Use an AC voltmeter having 5000 ohms per volt or with more sensitivity in the following manner: Connect a 1500 ohms 10 Watt resistor, paralleled by a 0.15mfd, AC type capacitor between a known good earth ground (water pipe, conduit, etc.) and the exposed metallic parts simultaneously. Measure the AC voltage across the combination of 1500 ohms resistor and 0.15mfd capacitor.
 - (c) Reverse the AC plug at the AC outlet and repeat AC voltage measurements for each exposed metallic part.
 - (d) Voltage measured must not exceed 2.8 volts RMS. This corresponds to 2 milliamp AC. Any value exceeding this limit constitutes a potential shock hazard and must be corrected immediately.

1.2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in this chassis have special safety visual inspections and the protection afforded by them cannot necessarily be obtained by using replacement components rated for higher voltages, wattage, etc. Before replacing any of these components read the parts list in this manual carefully. The use of substitute replacement parts which do not have the same safety characteristics as specified in the parts list may create shock, fire, X-RAY radiation or other hazards.

E70f Service Manual

1.3. SERVICE NOTES

1. When replacing parts or circuit boards, clamp the lead wires around terminals before soldering.
2. When replacing a high wattage resistor (more than 1W of metal oxide film resistor) in circuit board, keep the resistor about 5mm away from circuit board.
3. Keep wires away from high voltage, high temperature components and sharp edges.
4. Keep wires in their original position so as to reduce interference.
5. Usage of this product please refer to also user's manual.

1.4. HIGH VOLTAGE WARNING

Operation of monitor outside of cabinet or with back removed may cause a serious shock hazard. Work on these models should only be performed by those who are thoroughly familiar with precautions necessary when working on high voltage equipment.

Exercise care when servicing this chassis with power applied. Many B plus and high voltage terminals are exposed which, if carelessly contacted, can cause serious shock or result in damage to the chassis. Maintain interconnection ground lead connections between chassis and picture tube dag when operating chassis.

Certain HV failures can increase X-ray radiation. Monitor should not be operated with HV levels exceeding the specified rating for the chassis type.

The maximum operating HV specified for the chassis used in this monitor is

25.5KV \pm 1KV

with a line voltage of 120/240V AC. Higher voltage may also increase possibility of failure in HV Supply.

It is important to maintain specified values of all components in the horizontal and high voltage circuits and anywhere else in the monitor that could cause a rise in high voltage or operating supply voltages. No changes should be made to the original design of the monitor. Components shown in the shaded areas on the schematic should be replaced with exact factory replacement parts. The use of unauthorized substitute parts may create a shock, fire or other hazard.

To determine the presence of high voltage, use an accurate, high impedance, HV meter connected between second anode lead and CRT dag grounding device.

When servicing the High Voltage System, remove static charge from it by connecting a 10K ohm resistor in series with an insulated wire(such as a test probe) between picture tube dag and 2nd anode lead. (AC line cord disconnected from AC power outlet).

The picture tube used in this monitor employs integral implosion protection. Replace with tube of the same type number for continued safety. Do not lift picture tube by the neck. Handle the picture tube only after discharging the high voltage completely.

E70f Service Manual

2. SERVICE TOOL & EQUIPMENT REQUIRED

1. MULTIMETER
2. OSCILLOSCOPE
3. SCREW DRIVER
4. IRON
5. ABSORBER
6. SOLDER

3. SPECIFICATIONS

3.1. PRODUCT SPECIFICATIONS

CRT:	Size:	17 inch Real Flat Type
	Viewable Size:	16 inch (Diagonal)
	Dot Pitch:	0.25mm
	Deflection:	90° Degree
DISPLAY:	Size:	310mm x 230mm
	Diagonal Size:	406.5mm
	Color:	Unlimited Colors
	Resolution:	Up to 1280 x 1024
	Pixel Rate:	110MHz
INPUT SIGNAL:	Video Signal:	RGB Analogue 0.7Vpp 75 Ohms
	Sync. Signal:	H/V. Separated, TTL. Level Positive or Negative.
	Scanning Freq.:	30 KHz to 70 KHz for Horizontal
		50 Hz to 120 Hz for Vertical
POWER SOURCE:	Power Supply:	90 to 264 VAC, 48 to 62 Hertz.
	Power Consumption:	130W Max.

POWER MANAGEMENT

The Power Management states are controlled by the presence and/or absence of horizontal and vertical sync signals according to the following:

STATE	H. Sync	V. Sync	Power (normal)	LED
ON	ON	ON	130WATTS	GREEN
STANDBY	OFF	ON	15WATTS	ORANGE
SUSPEND	ON	OFF	15WATTS	ORANGE
OFF	OFF	OFF	3WATTS	ORANGE

E70f Service Manual

3.2. FACTORY PRESET MODE TIMING CHART

MODE NO	1	2	3	4	5	UNIT
	VESA	VGA	VESA	VESA	VESA	
Resolution	1024x768	640x400	640x480	640x480	640x480	
Pixel	78.750	25.175	25.175	31.500	36.000	MHz
H. Sync Polarity	+	-	-	-	-	
V. Sync. Polarity	+	+	-	-	-	
Horizontal Frequency	60.023	31.469	31.469	37.500	43.269	KHz
Horizontal Period	16.660	31.778	31.778	26.667	23.111	usec
Horizontal Sync Width	1.219	3.813	3.813	2.032	1.556	usec
Horizontal Back Porch	2.235	1.907	1.589	3.810	2.222	usec
Horizontal Active Video	13.003	25.422	25.740	20.317	17.778	usec
Horizontal Front Porch	0.203	0.636	0.318	0.508	1.556	usec
Vertical Frequency	75.029	70.087	59.940	75.000	85.008	Hz
Vertical Period	13.328	14.268	16.683	13.333	11.764	msec
Vertical Sync Width	0.050	0.064	0.064	0.080	0.069	msec
Vertical Back Porch	0.466	1.112	0.794	0.427	0.578	msec
Vertical Active Video	12.795	12.711	15.507	12.800	11.093	msec
Vertical Front Porch	0.017	0.381	0.064	0.027	0.023	msec
Interlaced	NO	NO	NO	NO	NO	

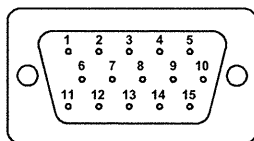
MODE NO	6	7	8	9	10	UNIT
	VESA	VESA	VESA	VESA	MAC	
Resolution	800x600	800x600	1024x768	1280x1024	640x480	
Pixel	49.500	56.250	94.500	108.0	30.240	MHz
H. Sync Polarity	+	+	+	+	-	
V. Sync. Polarity	+	+	+	+	-	
Horizontal Frequency	46.875	53.674	68.677	63.981	35.00	KHz
Horizontal Period	21.333	18.631	14.561	15.630	28.571	usec
Horizontal Sync Width	1.616	1.138	1.016	1.037	2.116	usec
Horizontal Back Porch	3.232	2.702	2.201	2.296	3.174	usec
Horizontal Active Video	16.162	14.222	10.836	11.852	21.164	usec
Horizontal Front Porch	0.323	0.569	0.508	0.444	2.116	usec
Vertical Frequency	75.000	85.061	84.996	60.020	66.667	Hz
Vertical Period	13.333	11.756	11.765	16.661	14.999	msec
Vertical Sync Width	0.064	0.056	0.044	0.047	0.085	msec
Vertical Back Porch	0.448	0.503	0.524	0.594	1.114	msec
Vertical Active Video	12.800	11.179	11.183	16.005	13.714	msec
Vertical Front Porch	0.021	0.019	0.015	0.016	0.085	msec
Interlaced	NO	NO	NO	NO	NO	

E70f Service Manual

MODE NO	11	12				UNIT
	MAC	MAC				
Resolution	832x624	1024x768				
Pixel	57.283	80.000				MHz
H. Sync Polarity	—	—				
V. Sync. Polarity	—	—				
Horizontal Frequency	49.725	60.241				KHz
Horizontal Period	20.111	16.6				usec
Horizontal Sync Width	1.117	1.2				usec
Horizontal Back Porch	3.910	2.2				usec
Horizontal Active Video	14.525	12.8				usec
Horizontal Front Porch	0.559	0.4				usec
Vertical Frequency	74.534	74.927				Hz
Vertical Period	13.414	13.346				msec
Vertical Sync Width	0.060	0.05				msec
Vertical Back Porch	0.784	0.498				msec
Vertical Active Video	12.549	12.749				msec
Vertical Front Porch	0.02	0.05				msec
Interlaced	NO	NO				

3.3. D-SUB CONNECTOR

D-SUB 15 PIN CONNECTOR

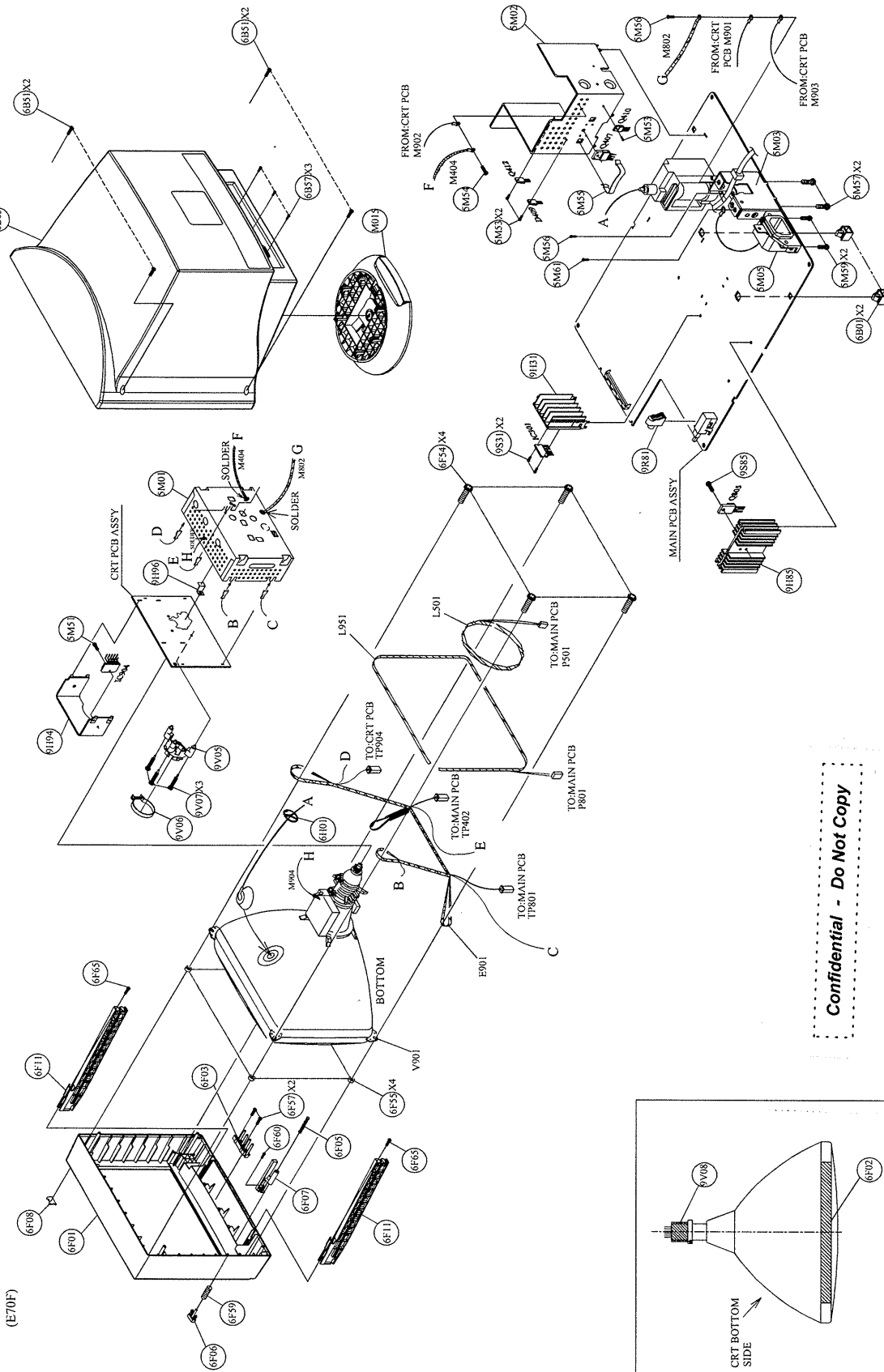


1.R	6.GND	11.GND
2.G	7.GND	12.SDA
3.B	8.GND	13.H.SYNC
4.GND	9. +5V	14.V.SYNC
5.NC	10.GND	15.SCL

SIGNAL LEVEL

CONNECTOR	SIGNAL	DESCRIPTION
R	RED	0.7vp-p
G	GREEN	0.7vp-p(VIDEO)
B	BLUE	0.7vp-p
H	H/SYNC	TTL positive or negative
V	V/SYNC	TTL positive or negative
SDA	DDC1/2B	TTL negative
SCL	DDC1/2B	TTL negative

4.1. EXPLODED VIEW (E70F)



Confidential - Do Not Copy

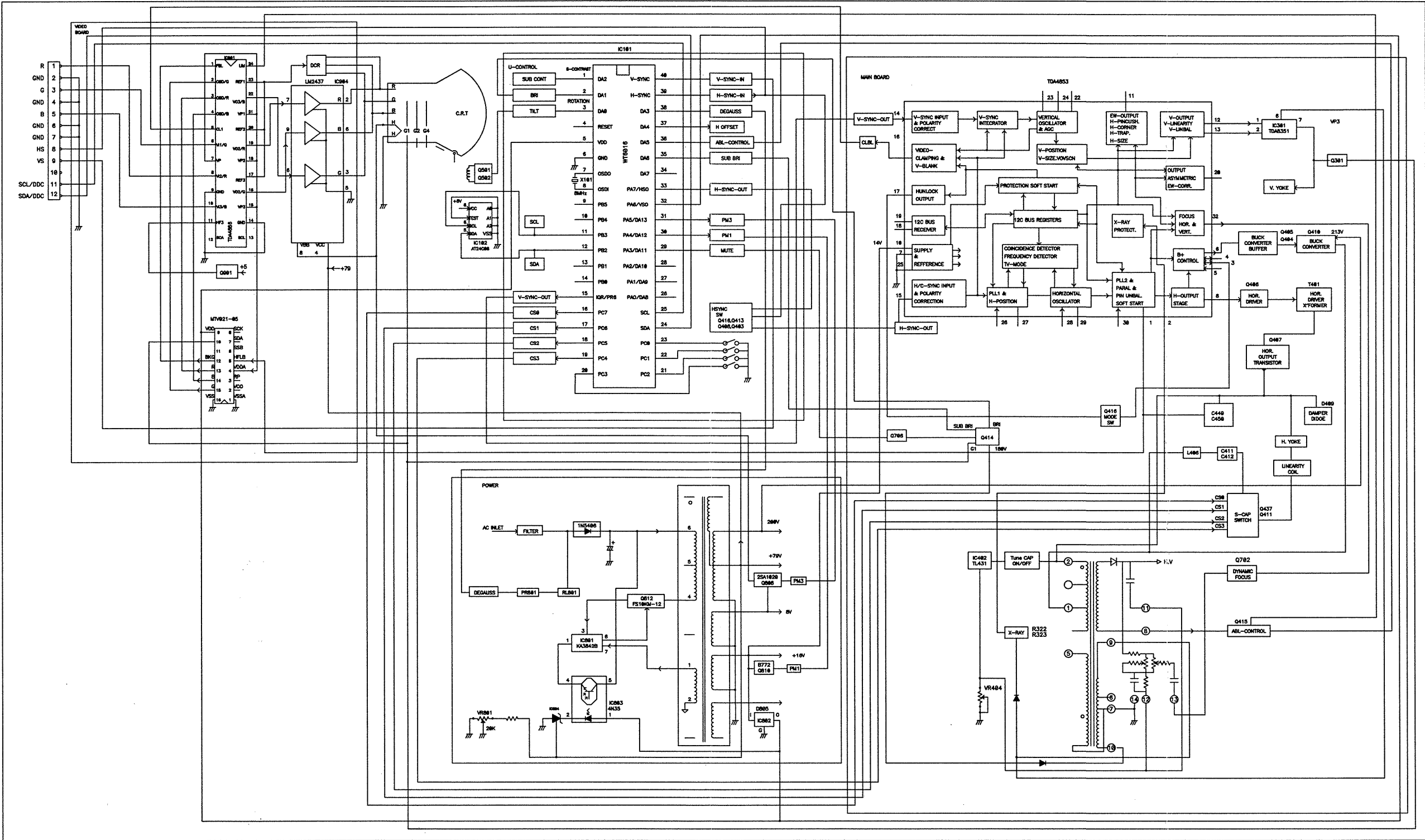
7/20/2000

E70f Service Manual

4.2. EXPLODED VIEW PARTS LIST

Ref. No.	Source	Part No.	DESCRIPTION	SPECIFICATION	Q'TY	REMARK
5M01		2071650700	SHIELD PLATE	SPTE T=0.3	1	
5M02		2072252002	HEAT SINK	A1100P+SPTE	1	
5M03		2071952200	METAL FITTG	JD177G SECC 1mm	1	
5M05		2071952900	METAL FITTG	JD199A SECC t=1.0mm	1	
5M51		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
5M53		2084730102	SCREW,BND T+	M3X10(BND T+)	3	
5M54		2080000200	SCREW,SPE	JD156H 2082640102+2092440200	1	
5M55		2105250100	SPRING PLATE	SUS301 0.35t	1	
5M56		2080000200	SCREW,SPE	JD156H 2082640102+2092440200	2	
5M57		2087230102	SCREW,B SPW+	3X10(T+) SWRM-3 ZMC2-C	2	
5M59		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
5M61		2080000200	SCREW,SPE	JD156H 2082640102+2092440200	1	
6B01		2074157300	HOLDER	JD177S SPACER HOLDER NYLON	2	
6B03		2022256001	CABI BACK	E71-2 ABS 94V0 GY7521	1	
M015		2603200082	STAND ASSY	JE70 HIPS 94HB GY7521	1	
6B51		2084740202	SCREW,BND T+	M4X20(BND T+)	4	
6B57		2084730102	SCREW,BND T+	M3X10(BND T+)	3	
6F01		2024259601	PANEL	E70F/ABS 94V0 GY7521	1	
6F02		2031150900	PLATE	250IX15wX1t/pvc ADHERE	1	
6F03		2044257801	FUNCTION KEY	GF70/ABS 94V0 GY7521	1	
6F05		2106150201	LINK	E771/ABS 94HB	1	
6F06		2046256401	PUSH BUTTON	GF70/ABS 94V0 GY7521	1	
6F07		2053750800	LED INDIC.-PWR	GF70/PMMA	1	
6F08		2051350500	NAME PLATE	M70/M90 VIEWSONIC 3bird LOGO	1	
6F11		2074450100	HOLDER-PCB	M70 JE70 ABS 94V0	2	
6F54		2080205600	SCREW,SPE T+	M5X20 WASHER D=18	4	
6F55		2061450300	BUSHING	φ 20X φ 6.0X φ 3.0t	4	
6F57		2081240102	SCREW,FPT+	M4*10	2	
6F59		2105150200	SPRING	φ 0.5	1	
6F60		2084740102	SCREW,BND T+	M4X10(BND T+)	1	
6F65		2084740142	SCREW,BND T+	M4X14(BND T+)	2	
6H01		2074153400	HOLDER	NYLON 66(UL)	1	
9H31		2072255700	HEAT SINK	JD211A AL6063S-T5	1	
9H85		2072214600	HEAT SINK	JD176B ALUMINUM	1	
9H94		2072252500	HEAT SINK	A1100P t=2m/m	1	
9H96		2071657200	SHIELD PLATE	JD178F3 SPTE t=0.3mm	1	
9R81		2074150900	HOLDER	NYLON 66	1	
9S31		2084730102	SCREW,BND T+	M3X10(BND T+)	2	
9S85		2084730102	SCREW,BND T+	M3X10(BND T+)	1	
9V05		2074154800	HOLDER	CRT SOCKET HOLDER φ 30.2	1	
9V06		2105250200	SPRING PLATE	CRT SOCKET HOLDER SPRING	1	
9V07		2063250800	SPACER SUPPORT	CRT SOCKET HOLDER SUPPORT	3	
9V08		2504200200	ADHESI TAPE	NITTO NO.188UL	1	

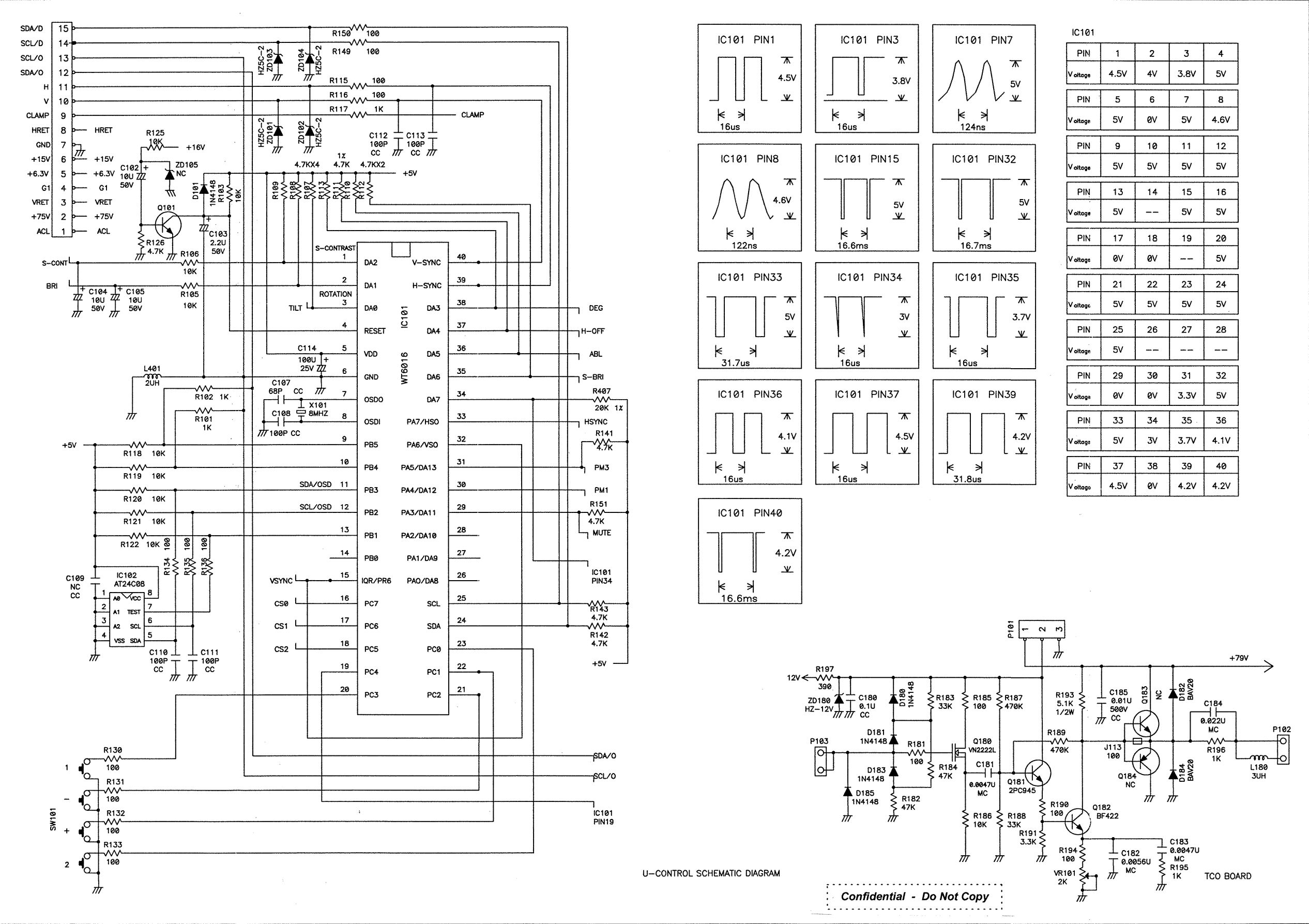
5. BLOCK DIAGRAM



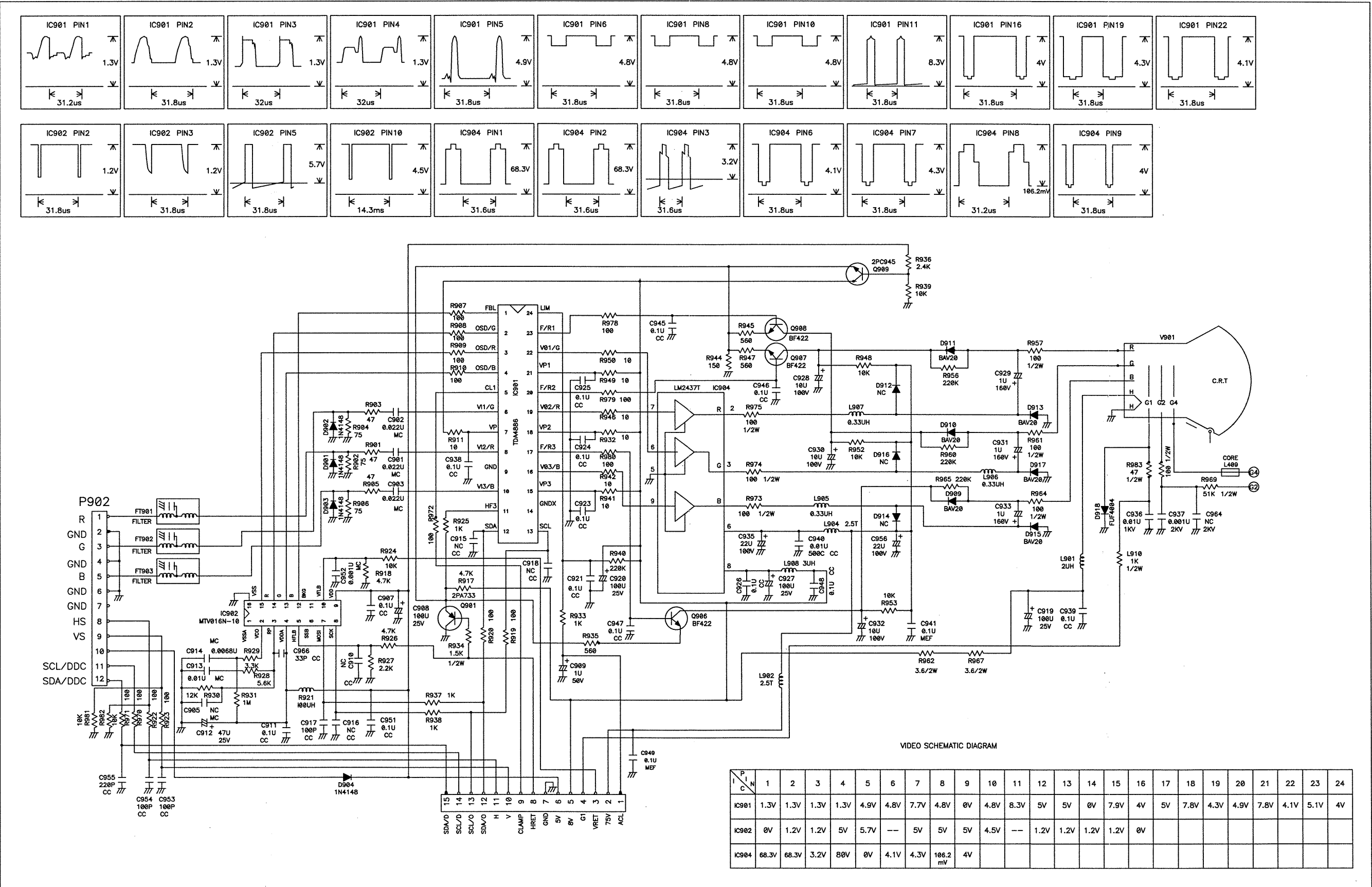
Confidential - Do Not Copy

E70f 7/20/2000

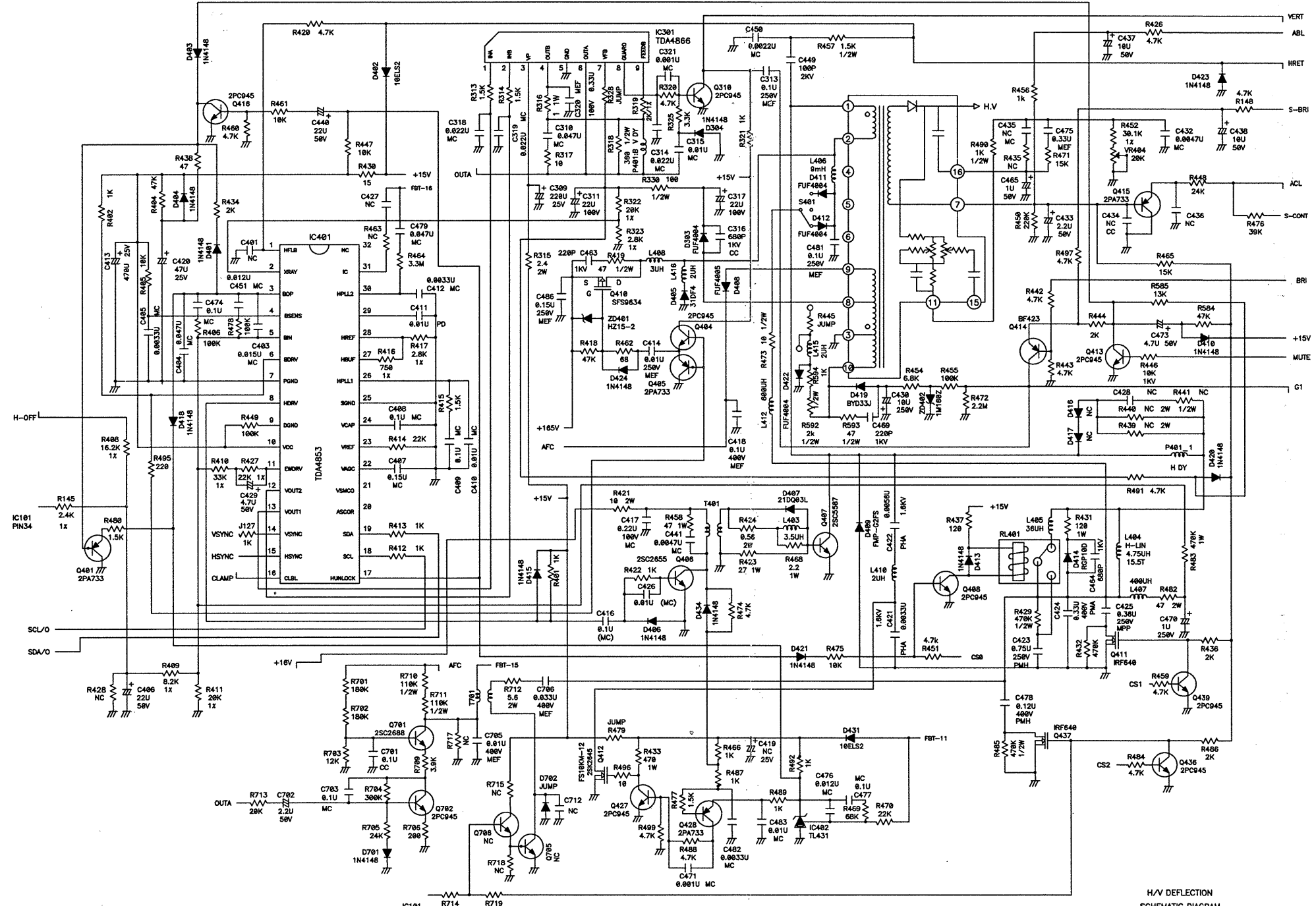
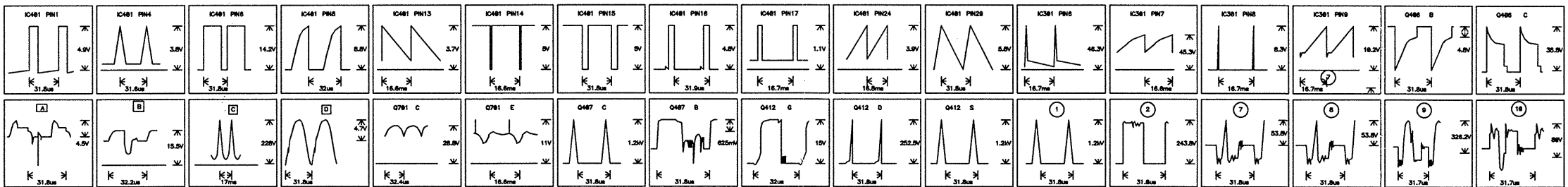
6.1. U-CONTROL SCHEMATIC DIAGRAM



6.2. VIDEO SCHEMATIC DIAGRAM



6.3. H/V DEFLECTION SCHEMATIC DIAGRAM



PIN	IC401	IC301	T403
1	4.9V	3V	1.2kV
2	5.3V	3V	243.8V
3	3.8V	8V	---
4	3.8V	6.3V	---
5	2.6V	0V	---
6	14.2V	46.3V	---
7	0V	45.3V	53.8V
8	8.8V	8.3V	53.8V
9	1.3V	10.2V	326.2V
10	1.2V	---	80V
11	2.3V	---	---
12	3.5V	---	---
13	3.7V	---	---
14	5V	---	---
15	5V	---	---
16	4.8V	---	---
17	1.1V	---	---
18	5V	---	---
19	5V	---	---
20	---	---	---
21	---	---	---
22	3.2V	---	---
23	3V	---	---
24	3.9V	---	---
25	0V	---	---
26	3.8V	---	---
27	2.5V	---	---
28	2.6V	---	---
29	5.8V	---	---
30	5V	---	---
31	5V	---	---
32	---	---	---

PIN	Q406	Q407	Q701
B	1.4V	625mV	9.5V
C	35.5V	1.2kV	28.8V
E	0V	---	11V

PIN	G	D	S
Q412	15V	252.5V	1.2kV

PIN	A	B	C	D
Vol	4.5V	15.5V	228V	4.7V

Confidential - Do Not Copy

KA3842B
PIN3

KA3842B
PIN4

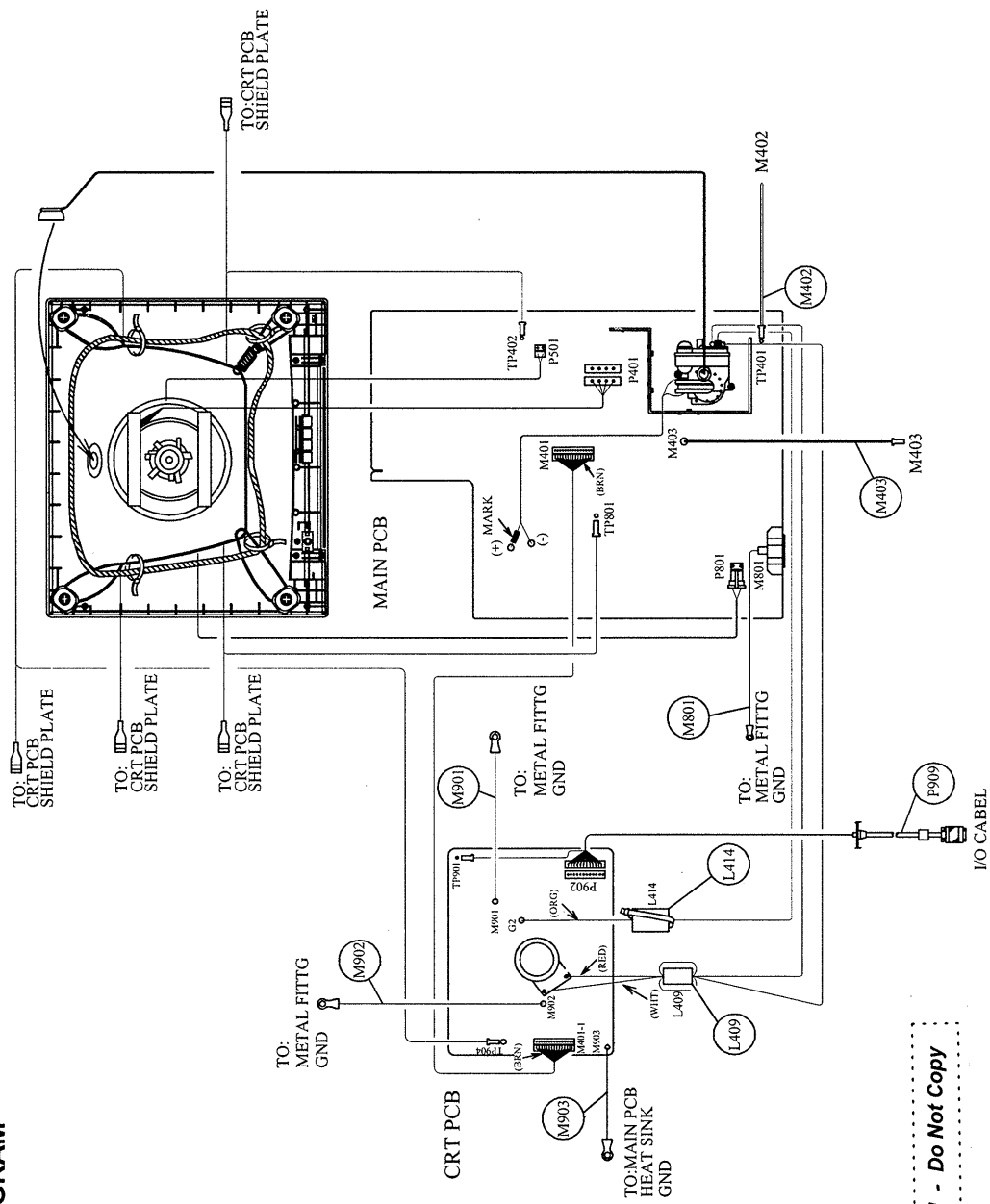
KA3842B
PIN6

POWER SUPPLY / TITL
SCHEMATIC DIAGRAM

Confidential - Do Not Copy

7. WIRING DIAGRAM

(E70f)



Confidential - Do Not Copy

E70f Service Manual

8. GENERAL DESCRIPTION (17")

8.1. Video pre-amplifier:

The TDA4886 (IC901) is a monolithic integrated RGB pre-amplifier for colour monitor system with I2C bus control and OSD mixer. In addition to bus control beam current limiting. The signal are amplified in order to drive output driver LM2437T (IC904). Individual 3 DAC outputs (pin 23/20/17) for external cut-off control.

The RGB input signals with nominal signal amplitude of 0.7 Vb-w are capacitively coupled into TDA4886 from a 75 source and actively clamped to an internal DC voltage during signal black level by CLBL (pin 5) signal from deflection controller. A fast signal blanking is driven by CLBL signal and control bit DISV=1.

The input signal related to the internal reference black level can be simultaneous adjusted by contrast control via I2C bus with 6 bits DAC. For white point adjustment the individual for three channels gain control are driven by I2C bus with 6bit DAC too.

In the output stage the nominal input signal will be amplified to 2.8Vb-w output color signal at nominal contrast and maximum gain. Individual output clamping is to set the reference black level of the signal output to a value which corresponds to the extend cut-off voltage of the CRT cathodes, all feedback reference are driven by I2C bus.

The output signal from pre-amplifier R(pin19), G(pin22) and B(pin16) are sent to LM2437T to have around 40Vp-p amplitude, which are AC coupled to the CRT and need to be clamped to cut-off level. These are achieved by the black level clamp circuits C929, D911, R956, C928, Q907 Red channel, the rest channel are identical to it and all of three channels are control by TDA4886(R: pin 20, G: pin23, B: pin17).

The OSD signal are inserted during fast blanking active period, the OSD and fast blanking signal are generated by OSD IC MTV021N.

8.2. Micro controller:

The micro controller WT6016 is monitor micro controller with DDC (DDC1, DDC2B, DDC2B+ and DDC2AB) interface to the PC host. The internal built in hardware can detect sync. Presence for the VESA DPMS standard of various display mode with separated (pin 39:H 40:V) . The digital/analog voltage output can be used to control the video and deflection function of the monitor.

Besides to control two bus driven IC TDA4853 and TDA4886 via I2C bus, micro controller output still handle the rest function as V-DC shift, rotation, brightness, volume, stand-by , off mode, degaussing, LED color, H-unlock detector, ABL, s-cap switch, H-DC shift, and H-linearity. After alignment the data are stored at EEPROM 24C08.

8.3. Deflection controller:

The TDA4853 is a high performance and efficient solution for autosync monitors. All functions are controllable by I2C bus. TDA4853 provides synchronization processing, horizontal and vertical with full autosync capability, it provides extended function e.g. as a flexible B+ control., and extensive set of geometry control facilities.

The HSYNC (pin 15) is the input for horizontal synchronization signal which can be TTL

E70f Service Manual

separate or composite sync with positive or negative polarity. The horizontal oscillator capacitor at HCAP (pin 29) for optimum jitter performance the value of 10nF must not be changed. The given value is widely synchronised from 30KHz to 72KHz.

PLL1 phase detector compares the middle of horizontal sync with a fixed point on the oscillator sawtooth voltage. The PLL1 loop filter is connected to HPLL1(pin 26). Via register HPOS the I2C bus allows a linear adjustment of the relative phase between horizontal sync and oscillator sawtooth (in PLL1 loop). Via registers HPRAL and HPINBAL correction of pin unbalance and parallelogram is done by modulating the phase between oscillator sawtooth and horizontal flyback(in loop PLL2).

The PLL2 phase detector is similar to PLL1 detector and compares the line flyback pulse at HFLB(pin 1) with the oscillator sawtooth voltage. The control currents are independent of horizontal frequency. The PLL2 detector thus compensates for the delay in the external horizontal deflection circuit by adjusting the phase of HDRV (pin 8) output pulse.

EWDRV (pin 11) provides a complete EW drive waveform. The components horizontal pincushion, size, corner correction , and trapezium correction are controlled by the registers HPIN, HSIZE, HCOR and HTRAP.

The VSYNC (pin 14) is the input for vertical synchronization signal it can be TLL separate or extract from composite sync. With positive or negative polarity. The widely synchronization range from 50 to 120Hz.

The amplitude of the differential output currents at VOUT1 and VOUT2 can be adjusted via register VSIZE. Register VPOS provides a DC shift at the sawtooth output VOUT1 and VOUT2 (pin 13 and pin 12) and the EW drive output EWDRV (pin 11) in such a way, that the whole picture moves vertically while maintaining the correct geometry.

The horizontal moiré (also known as video moiré) can be cancelled by controlling register HMOIRE and cancelled vertical moiré (scan moiré) by controlling register VMOIRE.

The B+ function block can be used for buck converter in feed forward mode. It provides a frequency independent pulse width to control the deflection circuit.

8.4. Horizontal deflection:

The horizontal output signal IC401 pin 8 (limited at very low amplitude around 1.4Vp-p) directly fed to driver stage Q406, after boost to about 15Vp-p and amplifies current drive capability it drives output transistor Q407 to reach expected deflection current. The horizontal linearity correction circuits is composed by 3 segment S-cap. Switch (C423, C424, C425) and one controllable linearity coil L405 to get optimised linearity.

The B+ control output signal is modulated with geometry control and size control signal together, it directly fed to buck converter T404 via buffer stage Q404, Q405 to supply an adequate deflection voltage to output stage. The horizontal raster position control circuits is composed by D411, D412, L406, C481, R473 and L412 to reach right center position. To correct the tilt symptom while monitor facing the different direction or operating at various place, the rotation coil (plus control ckt. Q501, Q502, Q503, Q504...) is need to against the magnetic field changing.

8.5. EHT generator and Vertical output stage:

The EHT generator supplies 25.5KV anode voltage to picture tube. The generator is fully composited of the horizontal deflection but it is synchronized with the input horizontal sync.

E70f Service Manual

signal, this will prevent interference in the picture.

The output voltage is stabilised at 25.5KV. Feed back is taken from the anode via focus pack and C465, R435, C435, C475, R471 fed to IC402 TL431 to get very stable EHT so there is no need to compensate the deflection for EHT variation. The out voltage is kept constant by regulating the supply voltage of the EHT output stage. This regulation is done by means of a duty cycle controlled series regulator.

The generator is protected against over voltage (x-ray). It is activated if EHT exceed 27.5-29.5KV, the generator, will be switched off immediately by IC401

EHT generator also supply tertiary voltage for concern circuits like:

+50Vdc	: for vertical output stage
-190Vdc	: for spot killer
300Vdc	: for vertical dynamic focus

Under this configuration, stand-by mode just switching off IC801 output (pull pin 6 to ground) to achieve less than 15 Watt consumption .

TDA 4853 vertical differential output pin 12/13 fed to IC301 TDA4866 input pin 2/3 and boost to expected deflection current around 1.5Ap-p.

8.6. Power supply:

The power supply works. At a synchronized frequency about 30~72KHz in flyback mode and suitable for universal line input 90-264Vac. The proper PTC for the degaussing part, it working automatically at switch on for about 6 seconds or pushing an external button via OSD under PTC cold condition.

The mains voltage rectified D801~D804 (1N5406) and filtered C810 (220uF / 400V), is applied to the power transformer T803 while switching the power transistor Q805, transfer the energy to secondary side. Besides, an auxiliary voltage is obtained from primary side to supply the power controller KA3842B.

The power transformer secondary side rectified and filtered out defined voltage : +200V, +75V, -6.3V, +15V, +24V (+8V, +5V are drop out from +15V). +24V is sensed and subtracted to a stabilized reference voltage; the error signal is amplified and send to PWM circuits IC801, where it is compare with ramp waveform to keep constant voltage output by modulating duty cycle.

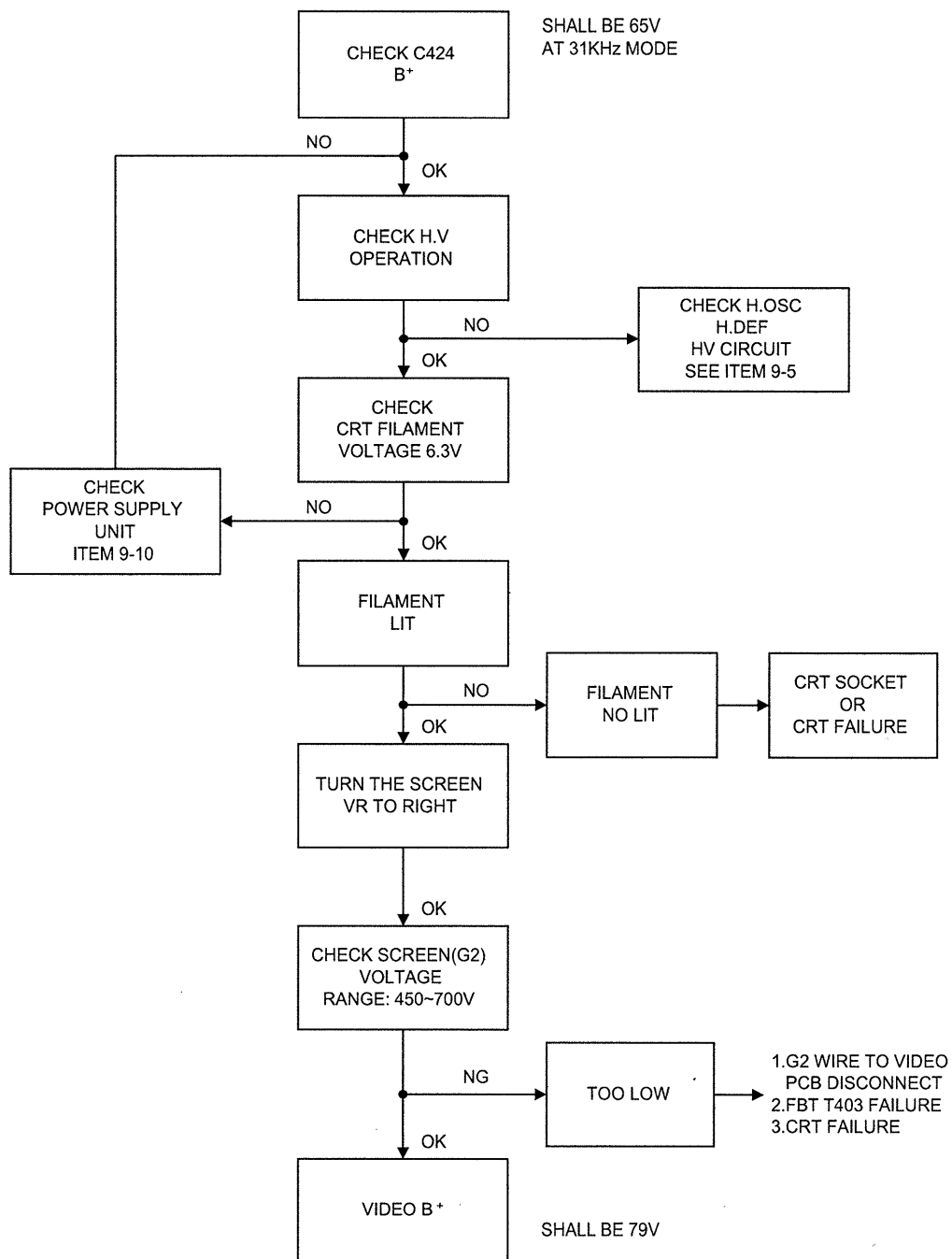
The primary current is sensed by the resistor R829, R817, when current increase to over current threshold point then power shut down immediately. When a short circuits occurs on the outputs at high voltage (+200V, +78V), the primary current increase in such a way that the power supply turns off. As regards to low voltage (+12V, -6.3V, +8V, +5V) output short circuits because of low power consumption increase and primary current does not reach the turn off threshold.

Power management off mode is directly switched off 6.3V and 15V and let power supply enter burst mode, it delivery out very low power (less than 5 watt).

E70f Service Manual

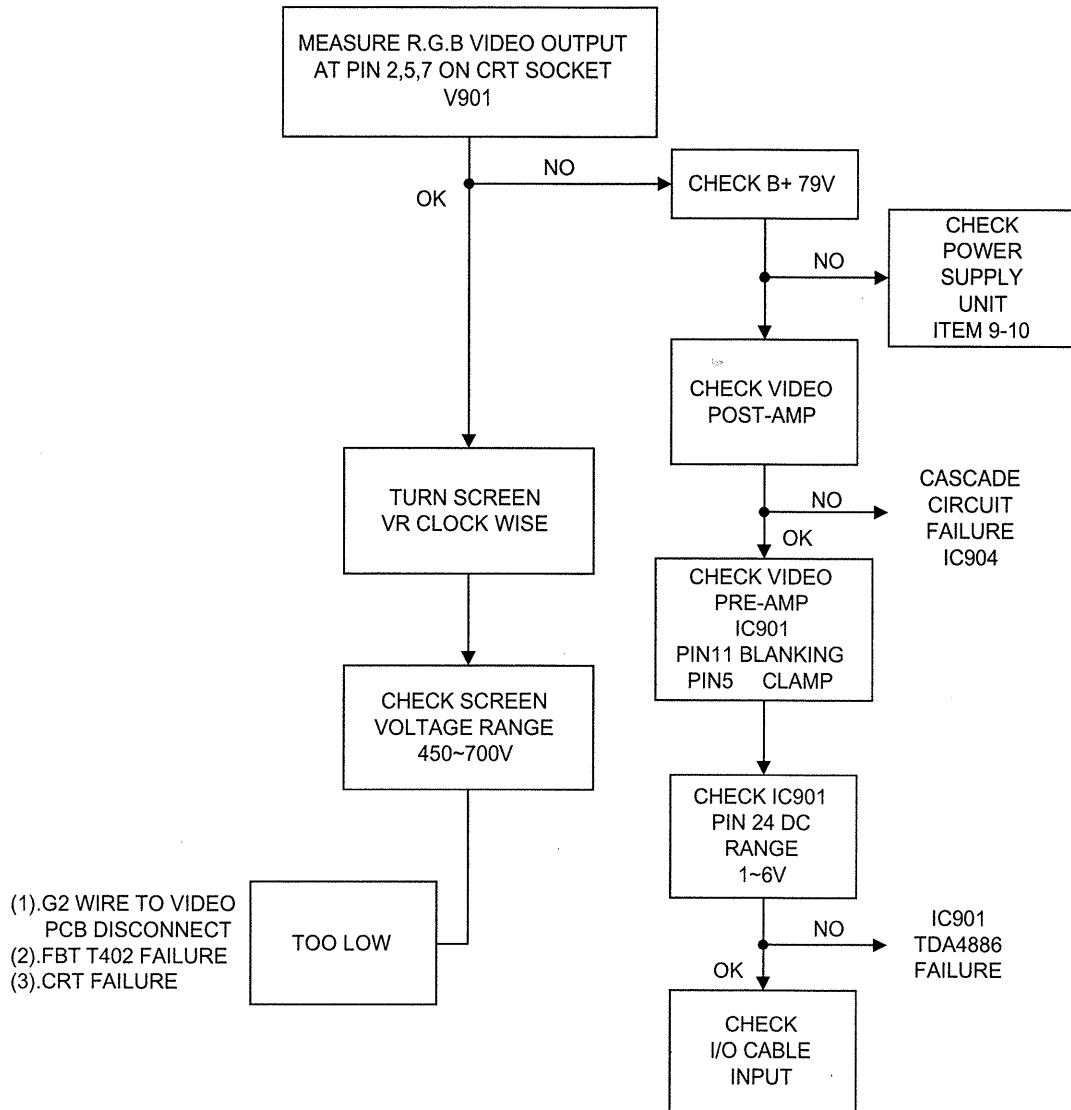
10. TROUBLE SHOOTING FLOW CHART

10.1. NO RASTER



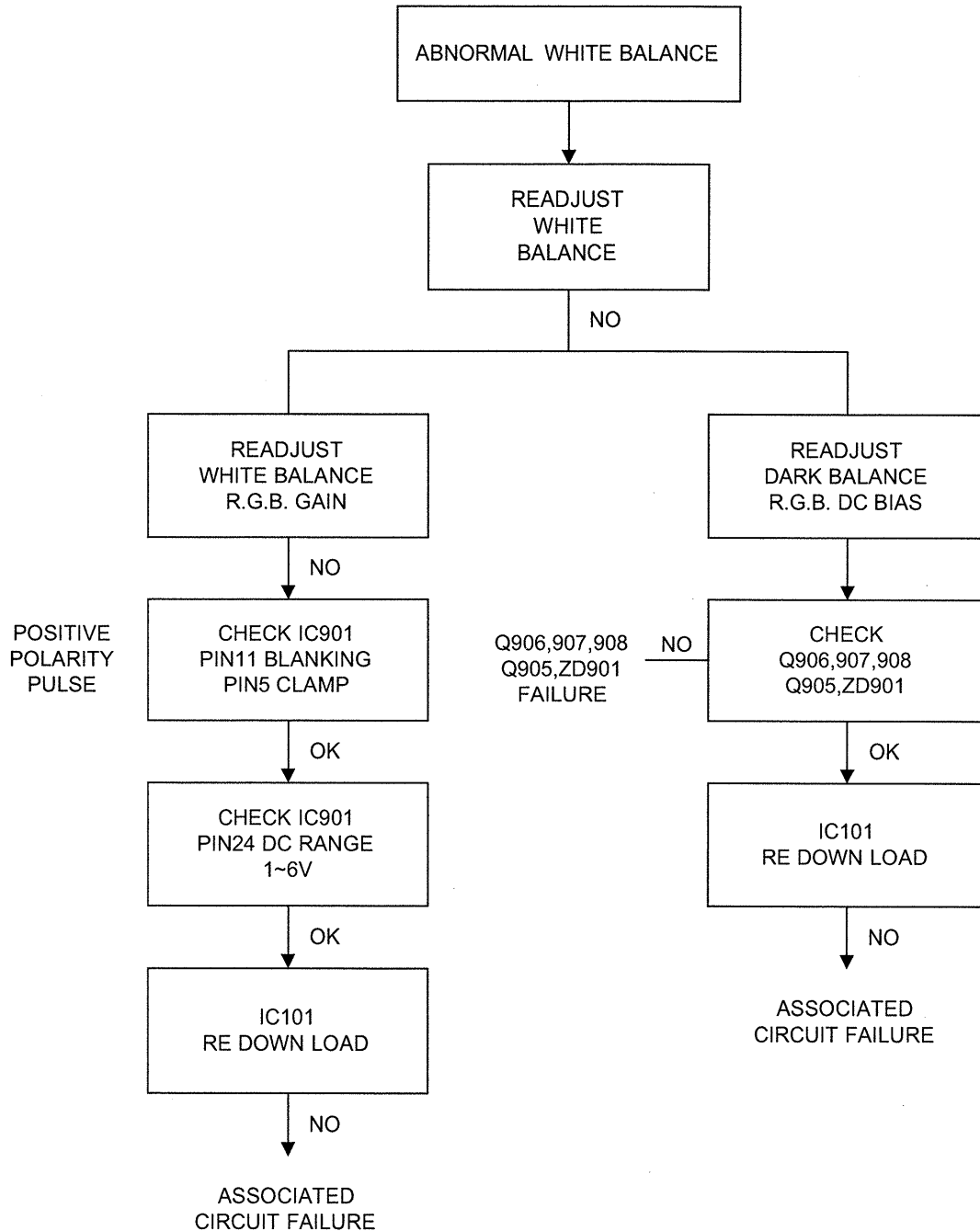
E70f Service Manual

10.2. ABNORMAL VIDEO CRT SCREEN



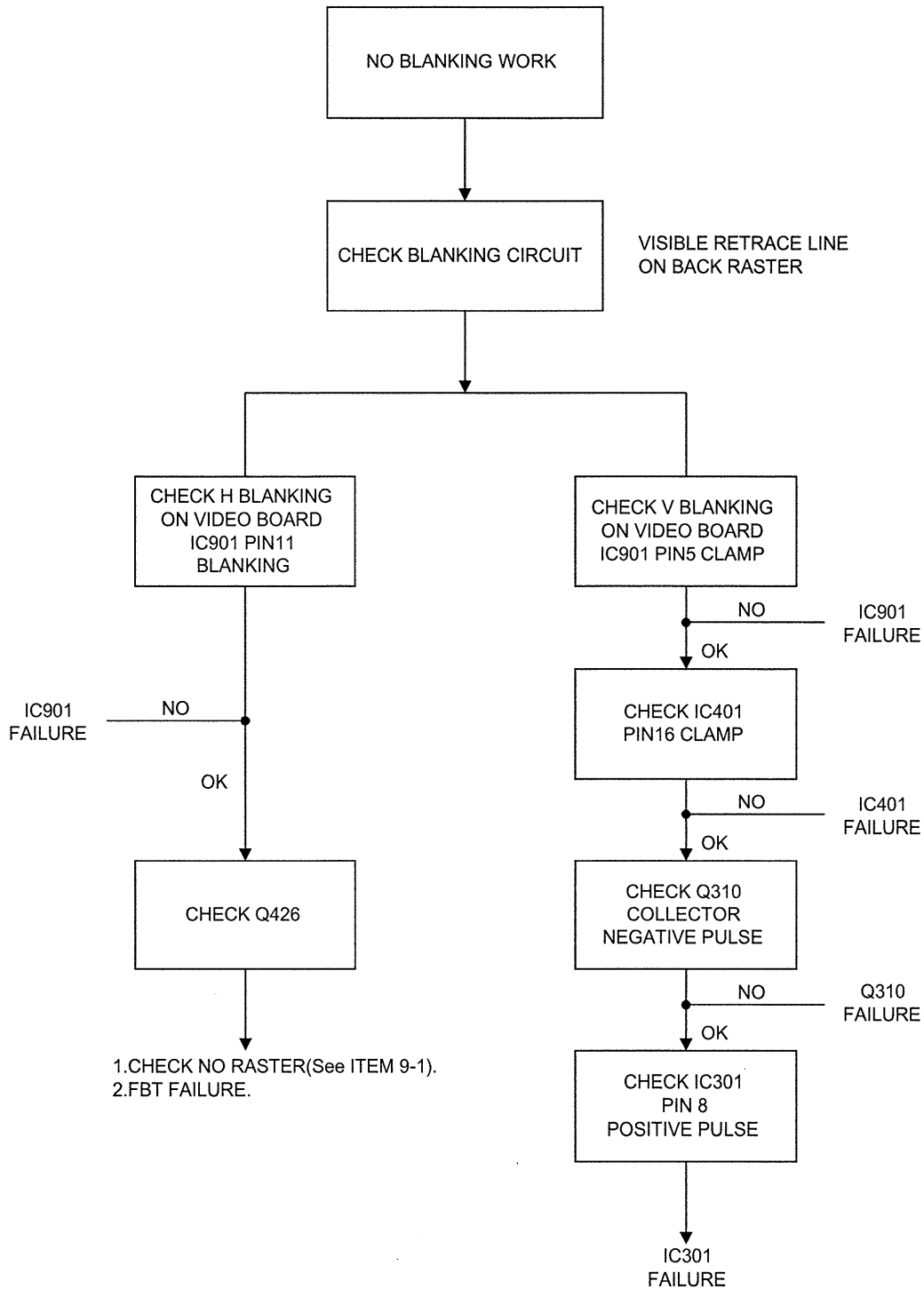
E70f Service Manual

10.3. ABNORMAL WHITE BALANCE



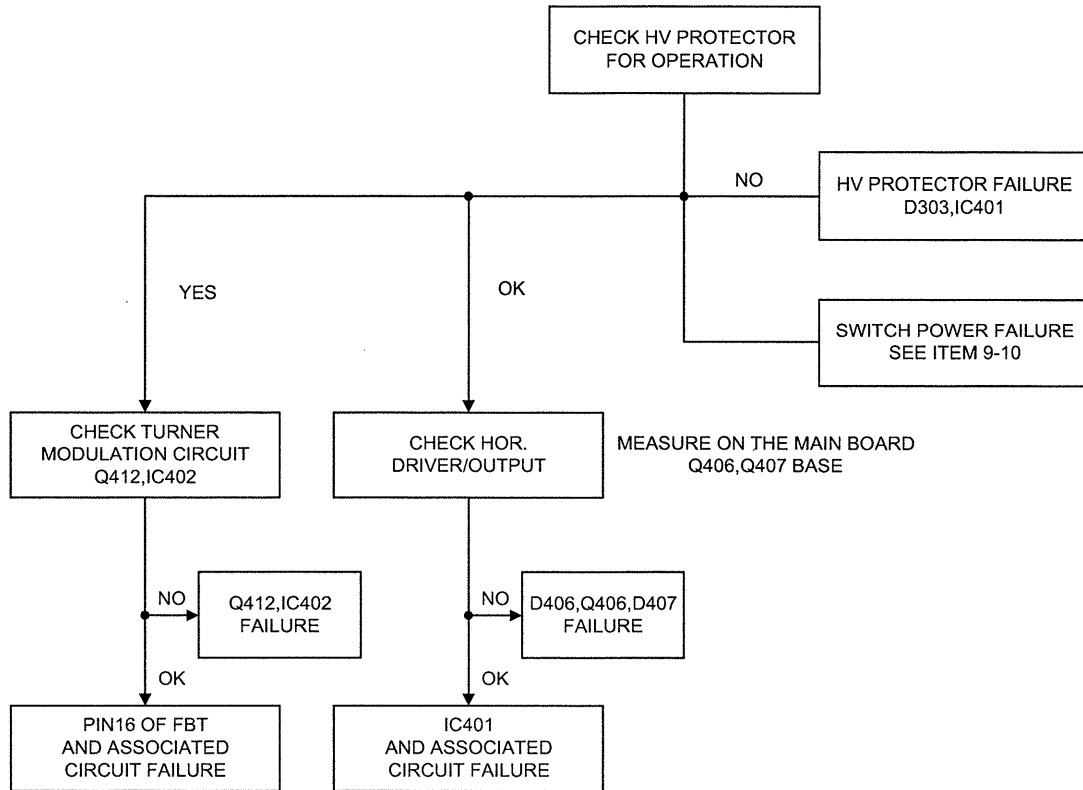
E70f Service Manual

10.4. NO BLANKING WORK



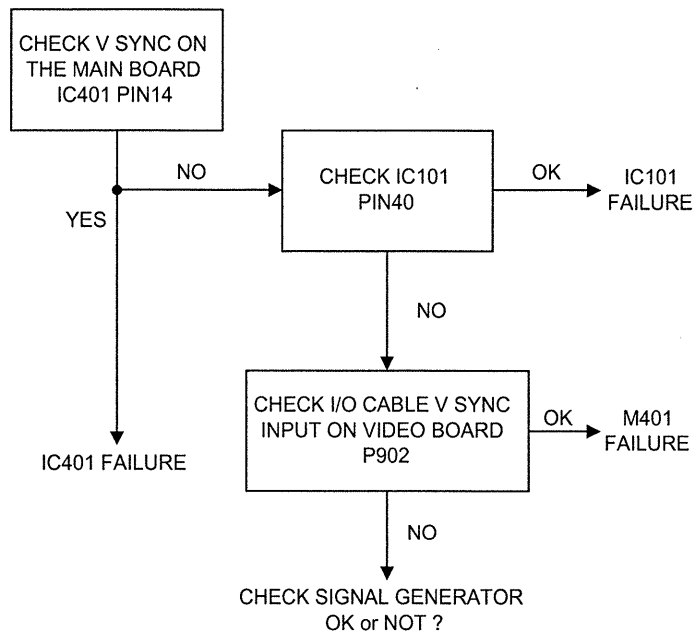
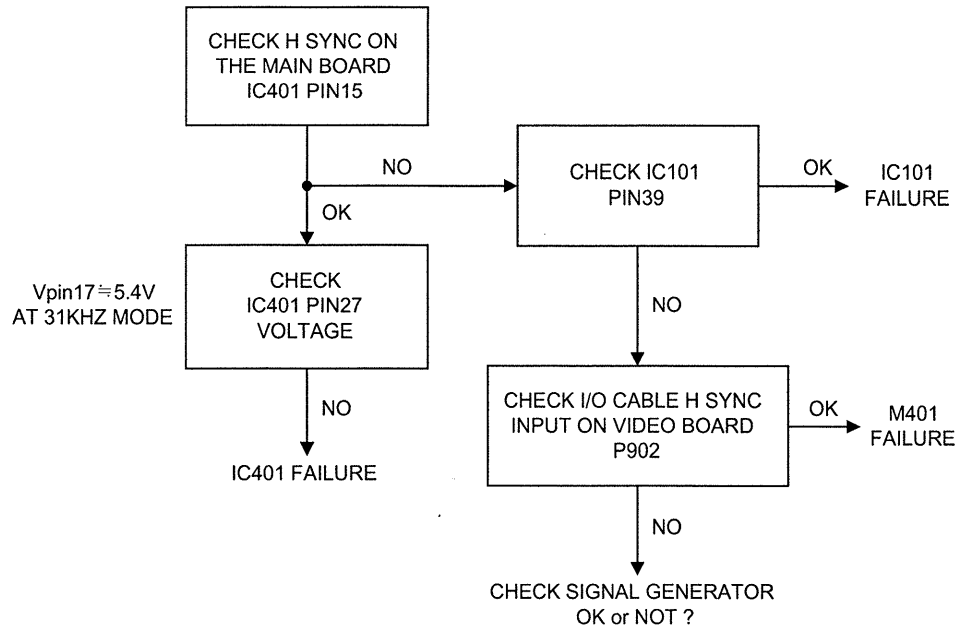
E70f Service Manual

10.5. H.OSC/DEF/HV CIRCUIT FAULT



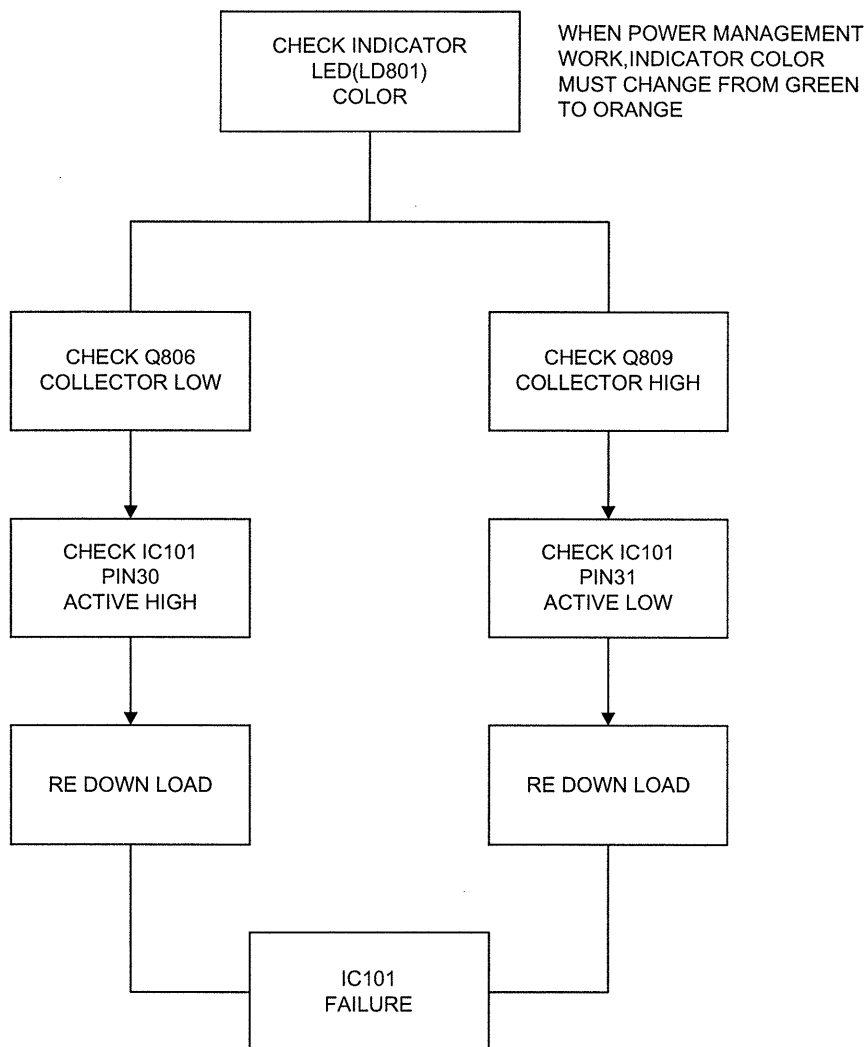
E70f Service Manual

10.6. FIV CONVERTER AND UNSTABLE SYNCHRONIZATION



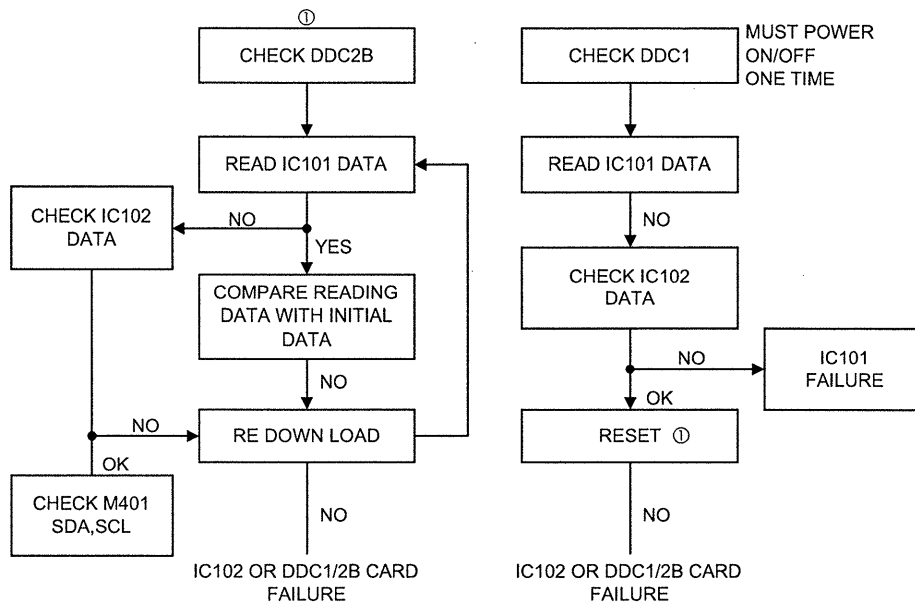
E70f Service Manual

10.7. NO POWER MANAGEMENT FUNCTION

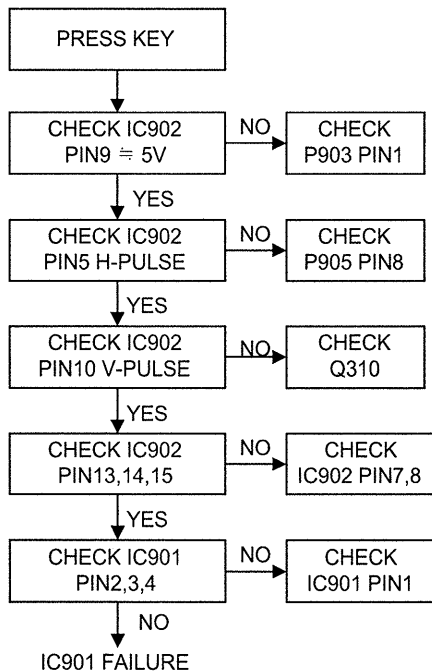


E70f Service Manual

10.8. NO DDC1/DDC2B



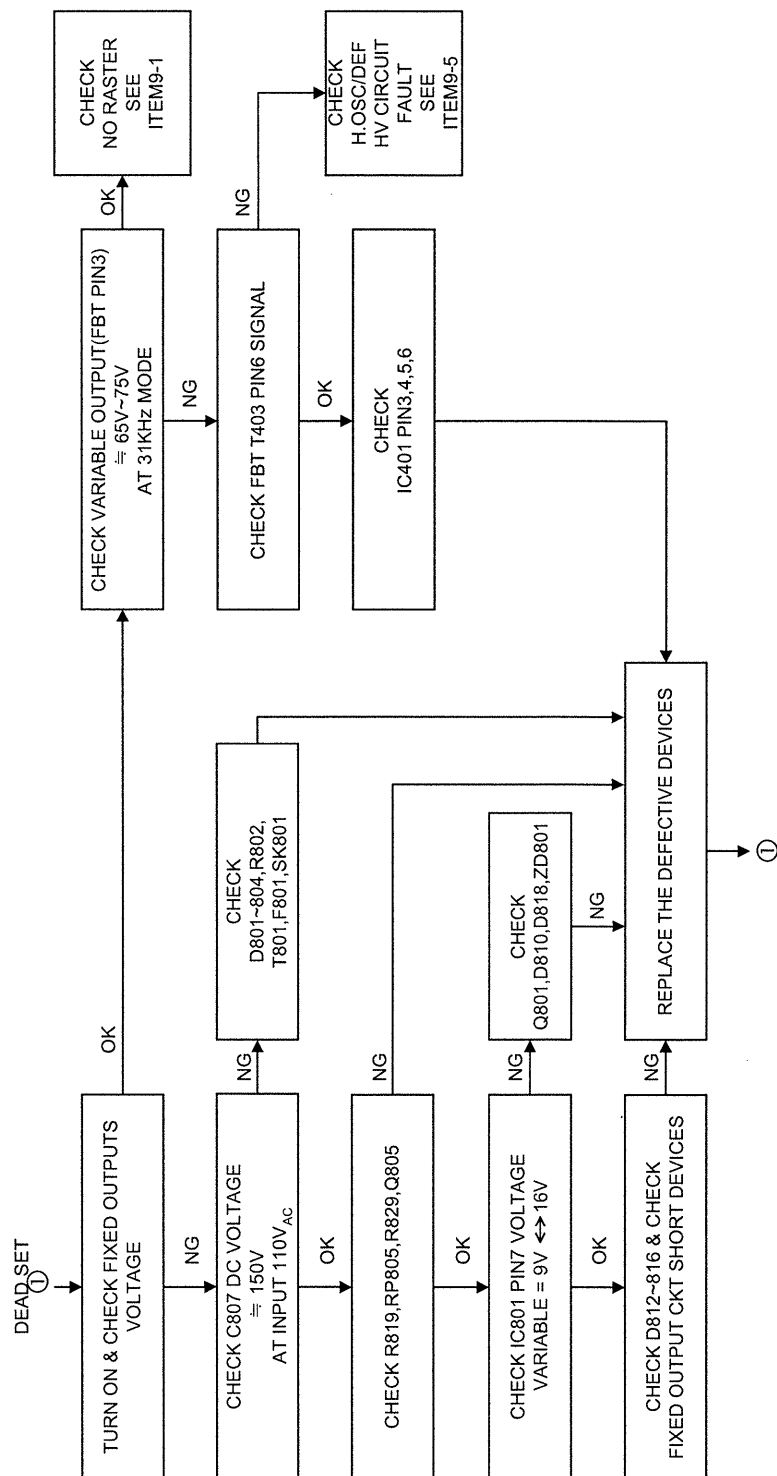
10.9. NO OSD FUNCTION



E70f Service Manual

10.10. POWER SUPPLY

POWER SUPPLY OUTPUT (A) VARIABLE OUTPUT : 65~150V(DEPENDING UPON H-SYNC FREQUENCY)
(B) FIXED OUTPUT : 8V,15V,79V,200V



E70f Service Manual

11. ADJUSTMENT

11.1. ADJUSTMENT CONDITIONS AND PRECAUTIONS

1. Approximately 30 minutes should be allowed for warm up before proceeding.
2. Adjustments should be undertaken only on those necessary elements since most of them have been carefully preset at the factory.

11.2. MAIN ADJUSTMENTS

NO.	FUNCTION	DESIGNATION
1.	B+ 79V ADJ.	VR801
2.	Raster Centering ADJ.(56K)	S401
3.	Focus ADJ.	FOCUS VR. (On flyback transformer)
4.	Raster Light Output	SCREEN VR. (On flyback transformer)
5.	HV ADJ.	VR404

11.3. ALIGNMENT PROCEDURES

Adjustment Conditions and Precautions:

- (1) Power supply voltage: AC 100~240V; 50/60 Hz.
- (2) Warm up time:
The display must be power ON for at least 20 minutes before starting alignments. This is especially critical in color temperature and white balance adjustments.
- (3) Signals: reference the front detail specifications and timing table.
Video : reference the front detail specifications.

1. Switching Regulator Unit:

Conditions: (a) Set timing 60KHZ 1024x768
(b) USE cross-hatch pattern, BRI./CONT. be set to max.
adjust VR801 to get $79 \pm 0.5V$ voltage at the cathode of D814.

2. Anode Voltage Unit:

Conditions: the same as ITEM 1.
adjust VR404 to get H.V $25.5 \pm 0.1KV$ for all tube.

3. RASTER CENTERING:

Conditions: the same as ITEM 1.
Switch S401 till the raster in the spec.

4. Adjustment of White Balance

- Conditions: (a) Warm up time must be over 30 minute.
(b) Set 48KHZ 1024x768 2" square & raster pattern.
(c) Degaussing one time.
(d) Adjust H-SIZE $310 \pm 4mm$, V-SIZE $250 \pm 4mm$.

(A) Enter color alignment system.

E70f Service Manual









- (B) 1. Set 9300 mode and then adjust SCREEN VR (G2) to 1.0FL.
2. Enter full white pattern and start alignment system to adjust dark balance to $X=283 \pm 5$
 $Y=298 \pm 5$.
3. disable R.G.B input and set BRI - DAC value equal to 50 and adjust SUB- BRI DAC value to get light output about $0.08 \pm 0.1FL$ (if impossible repeat ITEM B).
4. Enter 2" square pattern and adjust SUB-CONT DAC value equal to $50 \pm 2.0FL$.
5. Enter full white pattern and adjust ABL DAC value equal to $32 \pm 0.5FL$.
(C) Set 6300 mode and repeat ITEM B then get $X=313 \pm 5$, $Y=329 \pm 5$, $Y=50 \pm 2.0FL$.
(D) Set 5000 mode and repeat ITEM B then get $X=346 \pm 5$, $Y=359 \pm 5$, $Y=50 \pm 2.0FL$.

5. Focus Verification Condition:

- Conditions: (a) Set 60KHZ 1024x768 and EXT. BRIT. VR at detent , EXT. CONT. VR at max.
(b) Use text mode pattern especially "@" character.
(c) Let whole picture look clearly by adjusting static and dynamic focus VR.

6. Display performance and geometric adjustment:

- Conditions:
(1) equipment: a. 80486 PC. with printer port.
b. I²C cable.
(2) File : MAS.EXE (Main program).
product file
system file
(3) Main menu: Press F12 Adjust geometry

KEY			select item
			Increase, Decrease DAC value by one step
			Big step INC, DEC DAC value
			Abort
			OK

E70f Service Manual

12. ELECTRICAL PARTS LIST

When you place a parts order, be sure to indicate the following data on the order:

- Location No.
- Parts No.
- Description

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION			REMARK
MAIN P.C.BOARD							
C102		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C103		2333622591	CAP,MINI ELE 105'C	CE04W	2.200UF	50V	M
C104		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C105		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C107		2272168091	CAP,CER	CC45CH	68.000PF	50V	J
C108		2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C110		2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C111		2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C112		2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C113		2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C114		2333410791	CAP,MINI ELE 105'C	CE04W	100.000UF	25V	M
C309		2333422791	CAP,MINI ELE 105'C	CE04W	220.000UF	25V	M
C310		2291547391	CAP,MYL	CQ92M	0.047UF	100V	K
C311		2333822691	CAP,MINI ELE 105'C	CE04W	22.000UF	100V	M
C313		2303210412	CAP,MTL	CF93M	0.100UF	250V	K
C314		2291522391	CAP,MYL	CQ92M	0.022UF	100V	K
C315		2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C316		2285168191	CAP,CER	CK45B	680.000PF	1KV	K
C317		2333822691	CAP,MINI ELE 105'C	CE04W	22.000UF	100V	M
C318		2291522391	CAP,MYL	CQ92M	0.022UF	100V	K
C319		2291522391	CAP,MYL	CQ92M	0.022UF	100V	K
C320		2302133491	CAP,MTL	CF93M	0.330UF	100V	J
C321		2291510291	CAP,MYL	CQ92M	1000.000PF	100V	K
C403		2291515391	CAP,MYL	CQ92M	0.015UF	100V	K
C404		2291547391	CAP,MYL	CQ92M	0.047UF	100V	K
C405		2291533291	CAP,MYL	CQ92M	3300.000PF	100V	K
C406		2333622691	CAP,MINI ELE 105'C	CE04W	22.000UF	50V	M
C407		2291515491	CAP,MYL	CQ92M	0.150UF	100V	K
C408		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C409		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C410		2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C411		2295210391	CAP,PPP	CQ93T	0.010UF	100V	G
C412		2291533291	CAP,MYL	CQ92M	3300.000PF	100V	K
C413		2333447712	CAP,MINI ELE 105'C	CE04W	470.000UF	25V	M
C414		2303210312	CAP,MTL	CF93M	0.010UF	250V	K
C416		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C417		2291522491	CAP,MYL	CQ92M	0.220UF	100V	K
C418		2304210412	CAP,MTL	CF93M	0.100UF	400V	K
C420		2333447691	CAP,MINI ELE 105'C	CE04W	47.000UF	25V	M
C421	RA	2310333212	CAP,MTL PHA	CF93T	3300.000PF	2000V	J
C421	RB	2310133212	CAP,MTL	CF93T	3300.000PF	2000V	J
C421	RC	2298833212	CAP,PPP	CQ93T	3300.000PF	2000V	J
C422	RA	2310156212	CAP,MTL	CF93T	5600.000PF	2000V	J
C422	RB	2310356212	CAP,MTL PHA	CF93T	5600.000PF	2000V	J
C423		2309375412	CAP,MTL	CF93T	0.750UF	250V	J
C424		2311533412	CAP,MTL	CF93T	0.330UF	400V	J
C425		2309436412	CAP,MTL	CF93T	0.360UF	400V	J
C426		2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C429		2333647591	CAP,MINI ELE 105'C	CE04W	4.700UF	50V	M
C430		2334110612	CAP,MINI ELE 105'C	CE04W	10.000UF	250V	M
C432		2291547291	CAP,MYL	CQ92M	4700.000PF	100V	K
C433		2333622591	CAP,MINI ELE 105'C	CE04W	2.200UF	50V	M
C437		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M
C438		2333610691	CAP,MINI ELE 105'C	CE04W	10.000UF	50V	M

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION			REMARK
C440		2333622691	CAP,MINI ELE 105°C	CE04W	22.000UF	50V	M
C441		2291547291	CAP,MYL	CQ92M	4700.000PF	100V	K
C449		2286110112	CAP,CER	CK45BN	100.000PF	2KV	K
C450		2291522291	CAP,MYL	CQ92M	2200.000PF	100V	K
C451		2291512391	CAP,MYL	CQ92M	0.012UF	100V	K
C463		2285122191	CAP,CER	CK45B	220.000PF	1KV	K
C464		2285168191	CAP,CER	CK45B	680.000PF	1KV	K
C465		2333610591	CAP,MINI ELE 105°C	CE04W	1.000UF	50V	M
C469		2285122191	CAP,CER	CK45B	220.000PF	1KV	K
C470		2335910591	CAP,MINI ELE 105°C	CE04	1.000UF	250V	M
C471		2291510291	CAP,MYL	CQ92M	1000.000PF	100V	K
C473		2333647591	CAP,MINI ELE 105°C	CE04W	4.700UF	50V	M
C474		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C475		2302133491	CAP,MTL	CF93M	0.330UF	100V	J
C476		2291512391	CAP,MYL	CQ92M	0.012UF	100V	K
C477		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C478		2309412412	CAP,MTL	CF93T	0.120UF	400V	J
C479		2291547391	CAP,MYL	CQ92M	0.047UF	100V	K
C481		2303210412	CAP,MTL	CF93M	0.100UF	250V	K
C482		2291533291	CAP,MYL	CQ92M	3300.000PF	100V	K
C483		2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C486		2303215412	CAP,MTL	CF93M	0.150UF	250V	K
C501		2333610691	CAP,MINI ELE 105°C	CE04W	10.000UF	50V	M
C503		2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C701		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C702		2320622591	CAP,ELE NP 105°C	CE04W	2.200UF	50V	M
C703		2291510491	CAP,MYL	CQ92M	0.100UF	100V	K
C705		2304210312	CAP,MTL	CF93M	0.010UF	400V	K
C706		2304233312	CAP,MTL	CF93M	0.033UF	400V	K
C801		2287210312	CAP,CER	CK45F	0.010UF	250VA	M
C802		2300822401	CAP,MTL		0.220UF	275V	M
C804		2287247212	CAP,CER	CK45F	4700.000PF	250VAC	M
C807		2352522714	CAP,ELE 85°C	CE69W	220.000UF	400V	M
C808		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C809		2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C810		2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C811		2333647591	CAP,MINI ELE 105°C	CE04W	4.700UF	50V	M
C812		2291522391	CAP,MYL	CQ92M	0.022UF	100V	K
C813		2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C814		2281410291	CAP,CER	CK45F	1000.000PF	50V	Z
C815		2285110191	CAP,CER	CK45B	100.000PF	1KV	K
C816		2303210312	CAP,MTL	CF93M	0.010UF	250V	K
C817		2333410812	CAP,MINI ELE 105°C	CE04W	1000.000UF	25V	M
C818		2333410812	CAP,MINI ELE 105°C	CE04W	1000.000UF	25V	M
C819		2333810712	CAP,MINI ELE 105°C	CE04W	100.000UF	100V	M
C820		2334110712	CAP,MINI ELE 105°C	CE04W	100.000UF	250V	M
C821		2333647491	CAP,MINI ELE 105°C	CE04W	0.470UF	50V	M
C822		2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C823		2291547291	CAP,MYL	CQ92M	4700.000PF	100V	K
C824		2333422791	CAP,MINI ELE 105°C	CE04W	220.000UF	25V	M
C825		2333422791	CAP,MINI ELE 105°C	CE04W	220.000UF	25V	M
C827		2303210412	CAP,MTL	CF93M	0.100UF	250V	K
C828		2333622691	CAP,MINI ELE 105°C	CE04W	22.000UF	50V	M
C829		2333610691	CAP,MINI ELE 105°C	CE04W	10.000UF	50V	M
C831		2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C832		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C833		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C835		2309315412	CAP,MTL	CF93T	0.150UF	250V	J
D101		2363600195	DIODE,SWITCH	1N4148			
D303	RA	2363219895	DIODE,RECT	FUF4004		FAGOR	
D303	RB	2363219795	DIODE,RECT	10ELS 4		IR(NI)	
D303	RC	2363220395	DIODE,RECT	UF4004G T/B		PEC	
D304		2363600195	DIODE,SWITCH	1N4148			
D401		2363600195	DIODE,SWITCH	1N4148			

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
D402	RA	2363219695	DIODE,RECT	10ELS 2	IR(NI)
D402	RB	2363221995	DIODE,RECT	PG102R	PEC
D403		2363600195	DIODE,SWITCH	1N4148	
D404		2363600195	DIODE,SWITCH	1N4148	
D405		2363212012	DIODE,RECT	31DF4 3.0A 400V	
D406		2363600195	DIODE,SWITCH	1N4148	
D407		2363224495	DIODE,RECT	21DQ03L	NI
D408	RA	2363219995	DIODE,RECT	FUF4005	FAGOR
D408	RB	2363221495	DIODE,RECT	UF4005G	PEC.
D409	RA	2363214300	DIODE,RECT	FMP-G2FS	SANKEN
D409	RB	2363213800	DIODE,RECT	5TUZ47C TR 1US 15A	TOSHIBA
D409	RC	2363223400	DIODE,RECT	BY329X-1500	PHILIPS
D410		2363600195	DIODE,SWITCH	1N4148	
D411	RA	2363219895	DIODE,RECT	FUF4004	FAGOR
D411	RB	2363219795	DIODE,RECT	10ELS 4	IR(NI)
D411	RC	2363220395	DIODE,RECT	UF4004G T/B	PEC
D411	RD	2363217395	DIODE,RECT	1N4937	CTC
D412	RA	2363219895	DIODE,RECT	FUF4004	FAGOR
D412	RB	2363219795	DIODE,RECT	10ELS 4	IR(NI)
D412	RC	2363220395	DIODE,RECT	UF4004G T/B	PEC
D412	RD	2363217395	DIODE,RECT	1N4937	CTC
D413		2363600195	DIODE,SWITCH	1N4148	
D414	RA	2363206495	DIODE,RECT	RGP10D	FAGOR
D414	RB	2363221995	DIODE,RECT	PG102R	PEC
D415		2363600195	DIODE,SWITCH	1N4148	
D418		2363600195	DIODE,SWITCH	1N4148	
D419	RA	2363218495	DIODE,RECT	BYD33J	PHILIPS
D419	RB	2363219995	DIODE,RECT	FUF4005	FAGOR
D419	RC	2363221495	DIODE,RECT	UF4005G	PEC.
D420		2363600195	DIODE,SWITCH	1N4148	
D421		2363600195	DIODE,SWITCH	1N4148	
D422	RA	2363219895	DIODE,RECT	FUF4004	FAGOR
D422	RB	2363219795	DIODE,RECT	10ELS 4	IR(NI)
D422	RC	2363220395	DIODE,RECT	UF4004G T/B	PEC
D423		2363600195	DIODE,SWITCH	1N4148	
D424		2363600195	DIODE,SWITCH	1N4148	
D431	RA	2363219695	DIODE,RECT	10ELS 2	IR(NI)
D431	RB	2363221995	DIODE,RECT	PG102R	PEC
D434		2363600195	DIODE,SWITCH	1N4148	
D701		2363600195	DIODE,SWITCH	1N4148	
D801	RA	2363216812	DIODE,RECT	1N5406	TSC
D801	RB	2363224295	DIODE,RECT	20E6	NI(IR)
D801	RC	2363222012	DIODE,RECT	PG5406	PEC
D801	RD	2363221195	DIODE,RECT	PG208	PEC
D802	RA	2363216812	DIODE,RECT	1N5406	TSC
D802	RB	2363224295	DIODE,RECT	20E6	NI(IR)
D802	RC	2363222012	DIODE,RECT	PG5406	PEC
D802	RD	2363221195	DIODE,RECT	PG208	PEC
D803	RA	2363216812	DIODE,RECT	1N5406	TSC
D803	RB	2363224295	DIODE,RECT	20E6	NI(IR)
D803	RC	2363222012	DIODE,RECT	PG5406	PEC
D803	RD	2363221195	DIODE,RECT	PG208	PEC
D804	RA	2363216812	DIODE,RECT	1N5406	TSC
D804	RB	2363224295	DIODE,RECT	20E6	NI(IR)
D804	RC	2363222012	DIODE,RECT	PG5406	PEC
D804	RD	2363221195	DIODE,RECT	PG208	PEC
D805		2363600195	DIODE,SWITCH	1N4148	
D806		2363600195	DIODE,SWITCH	1N4148	
D808		2363600195	DIODE,SWITCH	1N4148	
D809	RA	2363215495	DIODE,RECT	BYV26C	PHILIPS
D809	RB	2363201195	DIODE,RECT	BA159	FAGOR
D810	RA	2363215495	DIODE,RECT	BYV26C	PHILIPS
D810	RB	2363221995	DIODE,RECT	PG102R	PEC
D811		2363600195	DIODE,SWITCH	1N4148	

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
D812	RA	2363214712	DIODE,RECT	30DF2	IR
D812	RB	2363212312	DIODE,RECT	FUF5402 3.0A 200V	FAGOR
D812	RC	2363220512	DIODE,RECT	UF5402GF2	PEC
D813		2363231612	DIODE,RECT	31DF2	IR(NI)
D814		2363214812	DIODE RECT	31DF6	IR
D815		2363223995	DIODE,RECT	ER206	PEC
D816		2363223995	DIODE,RECT	ER206	PEC
D818		2363600195	DIODE,SWITCH	1N4148	
D819		2363600195	DIODE,SWITCH	1N4148	
D821		2363600195	DIODE,SWITCH	1N4148	
D828		2363224695	DIODE,RECT	1N4007	G.W
F801		2213125207	FUSE	LITTEL 21502.5 2.5A 250V SB	
F851		2407200791	HOLDER,FUSE	FC-05C	
I101		2365412500	IC,DIGITAL	WT60P	WELTREND
I102	RA	2365411100	IC,DIGITAL	AT24C08	ATMEL
I102	RB	2365411600	IC,DIGITAL	M24C08-BN6	SGS
I102	RC	2365415700	IC,DIGITAL	CAT24WC08P	CATALYST
I102	RD	2365416300	IC,DIGITAL	KS24C081C	SAMSUNG
I301		2365316900	IC,LINEAR	TDA4866	PHILIPS
I401		2365321000	IC,LINEAR	TDA4853	PHILIPS
I402	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA
I402	RB	2365319391	IC,LINEAR	TL431CLP	TI
I801	RA	2365311500	IC,LINEAR	KA3842B	FAIRCHILD
I801	RB	2365313600	IC,LINEAR	UC3842N	SGS-THOM
I802	RA	2365313800	IC,LINEAR	KA7805	FAIRCHILD
I802	RB	2365313810	IC,LINEAR	MC7805B	MOTOROLA
I803		2365308200	IC,LINEAR	4N35	TELEFUNK
I804	RA	2365307391	IC,LINEAR	TL431CLP	MOTOROLA
I804	RB	2365319391	IC,LINEAR	TL431CLP	TI
J127		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
LD81		2363703600	LED	LTL-30EDJ	LITEON
L401		2379101595	FERRITE CORE	3.5X4.5X0.8	
L403		2371132800	COIL,CHOKE	0.5*10.5T 3.52uH	
L404		2385505500	COIL,H LNR	EF70-2 18.5T	
L405		2371133000	COIL,CHOKE	JD178Q3 36uH 0.45*29.5T	
L406		2371131500	COIL,CHOKE	JD156H 9mH/2UEW0.2 ϕ 440.5T	
L407		2371132700	COIL,CHOKE	JD177P3 0.2 ϕ *110.5T 400uH	
L408		2379101495	FERRITE CORE	3.5X9X0.8	
L409	RA	2379103200	FERRITE CORE	CORE 17.5*9.5*28.5L	
L409	RB	2379103700	FERRITE CORE	CORE 17.5*9.5*28.5L URITE	
L410		2379101595	FERRITE CORE	3.5X4.5X0.8	
L412		2371132900	COIL,CHOKE	JD177P3 0.3*121.5 600uH	
L414		2379102000	FERRITE CORE	TR-11.8X7.3X15(J70)	MAGNET
L415		2379101595	FERRITE CORE	3.5X4.5X0.8	
L416		2379101595	FERRITE CORE	3.5X4.5X0.8	
L801		2371110400	COIL,CHOKE	HUA HJC-	B
L802		2371110400	COIL,CHOKE	HUA HJC-	B
L804		2379101495	FERRITE CORE	3.5X9X0.8	
L805		2379101495	FERRITE CORE	3.5X9X0.8	
L806		2379101495	FERRITE CORE	3.5X9X0.8	
L807		2379101495	FERRITE CORE	3.5X9X0.8	
L809		2379101595	FERRITE CORE	3.5X4.5X0.8	
L810		2379101495	FERRITE CORE	3.5X9X0.8	
L814		2379101595	FERRITE CORE	3.5X4.5X0.8	
M401		2427412450	WIRE HARNESS	JD157P 15P B-IN 1007#26 340L	
M402		2427309006	LUG W/WIRE	9193TCB W 1007#22 450L	
M403		2427309024	LUG W/WIRE	1015#22 7MM(T) W/2.36 1P 500L	
M404		2427303002	LUG W/WIRE	64/0.12 W 4.3 ϕ T 100L	
M801		2427300008	LUG W/WIRE	UL1015 #18 GRN/YEL 110L	
M802		2427303002	LUG W/WIRE	64/0.12 W 4.3 ϕ T 100L	
P401		2404340003	CONNECTOR	LEOCO 1086 4PIN P=8.0	
P501		2404338001	CONNECTOR	LEOCO 2521 2PIN P=2.5	
P801		2404340001	CONNECTOR	LEOCO 1086 2PIN P=10	
Q101	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
Q101	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q101	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q310	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q310	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q310	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q401	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q401	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q401	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q404	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q404	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q404	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q405	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q405	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q405	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q406		2361303291	XISTOR,NPN R	2SC2655(Y)	TOSHIBA
Q407		2361318100	XISTOR,NPN R	2SC5587	TOSHIBA
Q408	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q408	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q408	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q410		2361500100	FET,P-CH	SFS9634	FAIRCHILD
Q411	RA	2361603300	FET,N-CH	IRF640	FAIRCHILD
Q411	RB	2361603400	FET,N-CH	BUK455-200B	PHILIPS
Q411	RC	2361606400	FET,N-CH	IRF640A	FAIRCHILD
Q412	RA	2361605000	FET,N-CH	2SK2645-01M	FUJI
Q412	RB	2361604500	FET,N-CH	FS10KM-12	MITSUBIS
Q412	RC	2361607400	FET,N-CH	SSS10N60A	FAIRCHILD
Q413	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q413	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q413	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q414	RA	2361211291	XISTOR,PNP A	BF423	TOSHIBA
Q414	RB	2361211891	XISTOR,PNP A	BF423	PHILIPS
Q415	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q415	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q415	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q416	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q416	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q416	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q427	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q427	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q427	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q428	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q428	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q428	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q436	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q436	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q436	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q437	RA	2361603300	FET,N-CH	IRF640	FAIRCHILD
Q437	RB	2361603400	FET,N-CH	BUK455-200B	PHILIPS
Q437	RC	2361606400	FET,N-CH	IRF640A	FAIRCHILD
Q439	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q439	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q439	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q501	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q501	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q501	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q502	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q502	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q502	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q503	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q503	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q503	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q504	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q504	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q504	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
Q701		2361305500	XISTOR,NPN R	2SC2688L	NEC
Q702	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q702	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q702	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q801		2366200591	SCR	MCR100-6	MOTOROLA
Q802	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q802	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q802	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q803	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q803	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q803	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q804	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q804	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q804	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q805	RA	2361605000	FET,N-CH	2SK2645-01M	FUJII
Q805	RB	2361601200	FET,N-CH	2SK1507	FUJITSU
Q805	RC	2361604500	FET,N-CH	FS10KM-12	MITSUBIS
Q805	RD	2361607400	FET,N-CH	SSS10N60A	FAIRCHILD
Q806	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q806	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q806	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q807	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q807	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q807	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q808	RA	2361111191	XISTOR,PNP R	2SA1020(Y)	TOSHIBA
Q808	RB	2361110991	XISTOR,PNP R	KSA928A-Y	FAIRCHILD
Q809	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q809	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q809	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
Q810		2361211700	XISTOR,PNP A	KSB772	SAMSUNG
Q811	RA	2361301291	XISTOR,NPN R	2SC2120(Y)	TOSHIBA
Q811	RB	2361315391	XISTOR,NPN R	2SC2001(L)	NEC
Q838	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q838	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q838	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
RL41	RA	2413101600	RELAY,DC	JS1F-12V	NAIS
RL41	RB	2413102300	RELAY,DC	SRUDH-SS-112D1	DEG
RL41	RC	2413102400	RELAY,DC	PUDH-SH-112D	GOOD SKY
RL81	RA	2413102200	RELAY,DC	AC240V/DC12V 5A OMI-SS-212DM	
RL81	RB	2413101400	RELAY,DC	AC240V/DC12V 5A OMI-SS-212L	
RL81	RC	2413102100	RELAY,DC	JW2aHN-DC12V/AJW5511 NAIS	
RL81	RD	2413102600	RELAY,DC	OSA-SS-212DM5	OEG
RL81	RE	2413102500	RELAY,DC	MI-SH-212DM	GOOD SKY
R101		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R102		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R103		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R105		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R106		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R107		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R108		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R109		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R110		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R111		2239247015	RES,PRE 1/4 S	RN 1/4WS 4.70K	F
R112		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R113		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R115		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R116		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R117		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R118		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R119		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R120		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R121		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R122		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R125		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R126		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R130		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R131		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R132		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R133		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R134		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R135		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R136		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R141		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R142		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R143		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R145		2239224015	RES,PRE 1/4 S	RN 1/4WS 2.40K	F
R148		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R149		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R150		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R151		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R313		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K	J
R314		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K	J
R315		2235524903	RES,MTL 2	RS 2W 2.40	J
R316		2235410995	RES,MTL 1	RS 1W 1.00	J
R317		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R318		2232636195	RES,CBN 1/2	RD 1/2W 360.00	J
R319		22392220015	RES,PRE 1/4 S	RN 1/4WS 2.00K	F
R320		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R321		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R322		22392220025	RES,PRE 1/4 S	RN 1/4WS 20.00K	F
R323		22392228015	RES,PRE 1/4 S	RN 1/4WS 2.80K	F
R325		2233433295	RES,CBN 1/4 S	RD 1/4WS 3.30K	J
R330		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R401		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R402		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R404		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R405		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R406		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R407		22392220025	RES,PRE 1/4 S	RN 1/4WS 20.00K	F
R408		2239216225	RES,PRE 1/4 S	RN 1/4WS 16.20K	F
R409		2239282015	RES,PRE 1/4 S	RN 1/4WS 8.20K	F
R410		2239233025	RES,PRE 1/4 S	RN 1/4WS 33.00K	F
R411		22392220025	RES,PRE 1/4 S	RN 1/4WS 20.00K	F
R412		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R413		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R414		2233422395	RES,CBN 1/4 S	RD 1/4WS 22.00K	J
R415		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K	J
R416		2239275005	RES,PRE 1/4 S	RN 1/4WS 750.00	F
R417		22392228015	RES,PRE 1/4 S	RN 1/4WS 2.80K	F
R418		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R419		2232647095	RES,CBN 1/2	RD 1/2W 47.00	J
R420		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R421		2235510003	RES,MTL 2	RS 2W 10.00	J
R422		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R423		2235427095	RES,MTL 1	RS 1W 27.00	J
R424		2235556803	RES,MTL 2	RS 2W 0.56	J
R426		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R427		2239222025	RES,PRE 1/4 S	RN 1/4WS 22.00K	F
R429		2232647495	RES,CBN 1/2	RD 1/2W 470.00K	J
R430		2233415095	RES,CBN 1/4 S	RD 1/4WS 15.00	J
R431		2235412195	RES,MTL 1	RS 1W 120.00	J
R432		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J
R433		2235447195	RES,MTL 1	RS 1W 470.00	J
R434		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R436		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R437		2233412195	RES,CBN 1/4 S	RD 1/4WS 120.00	J
R438		2233447095	RES,CBN 1/4 S	RD 1/4WS 47.00	J
R442		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R443		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R444		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R446		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R447		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R448		2233424395	RES,CBN 1/4 S	RD 1/4WS 24.00K	J
R449		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R450		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R451		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R452		2239230125	RES,PRE 1/4 S	RN 1/4WS 30.10K	F
R454		2233468295	RES,CBN 1/4 S	RD 1/4WS 6.80K	J
R455		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R456		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R457		2232615295	RES,CBN 1/2	RD 1/2W 1.50K	J
R458		2235447003	RES,MTL 1	RS 1W 47.00	J
R459		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R460		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R461		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R462		2233468095	RES,CBN 1/4 S	RD 1/4WS 68.00	J
R464		2233433595	RES,CBN 1/4 S	RD 1/4WS 3.30M	J
R465		2233415395	RES,CBN 1/4 S	RD 1/4WS 15.00K	J
R466		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R468		2235422903	RES,MTL 1	RS 1W 2.20	J
R469		2233468395	RES,CBN 1/4 S	RD 1/4WS 68.00K	J
R470		2233422395	RES,CBN 1/4 S	RD 1/4WS 22.00K	J
R471		2233415395	RES,CBN 1/4 S	RD 1/4WS 15.00K	J
R472		2233422595	RES,CBN 1/4 S	RD 1/4WS 2.20M	J
R473		2232610095	RES,CBN 1/2	RD 1/2W 10.00	J
R474		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R475		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R476		2233439395	RES,CBN 1/4 S	RD 1/4WS 39.00K	J
R477		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K	J
R478		2233410495	RES,CBN 1/4 S	RD 1/4WS 100.00K	J
R480		2233415295	RES,CBN 1/4 S	RD 1/4WS 1.50K	J
R482		2235547003	RES,MTL 2	RS 2W 47.00	J
R483		2235447495	RES,MTL 1	RS 1W 470.00K	J
R484		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R485		2232647495	RES,CBN 1/2	RD 1/2W 470.00K	J
R486		2233420295	RES,CBN 1/4 S	RD 1/4WS 2.00K	J
R487		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R488		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R489		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R490		2232610295	RES,CBN 1/2	RD 1/2W 1.00K	J
R491		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R492		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R495		2233422195	RES,CBN 1/4 S	RD 1/4WS 220.00	J
R496		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R497		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R499		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R501		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R502		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R503		2233443295	RES,CBN 1/4 S	RD 1/4WS 4.30K	J
R505		2232668995	RES,CBN 1/2	RD 1/2W 6.80	J
R506		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R507		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R584		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R585		2233413395	RES,CBN 1/4 S	RD 1/4WS 13.00K	J
R592		2232620295	RES,CBN 1/2	RD 1/2W 2.00K	J
R593		2232647095	RES,CBN 1/2	RD 1/2W 47.00	J
R594		2232610295	RES,CBN 1/2	RD 1/2W 1.00K	J
R701		2233418495	RES,CBN 1/4 S	RD 1/4WS 180.00K	J
R702		2233418495	RES,CBN 1/4 S	RD 1/4WS 180.00K	J
R703		2233412395	RES,CBN 1/4 S	RD 1/4WS 12.00K	J
R704		2233430495	RES,CBN 1/4 S	RD 1/4WS 300.00K	J
R705		2233424395	RES,CBN 1/4 S	RD 1/4WS 24.00K	J

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R706		2233420195	RES,CBN 1/4 S	RD 1/4WS 200.00	J
R709		2233439295	RES,CBN 1/4 S	RD 1/4WS 3.90K	J
R710		2232611495	RES,CBN 1/2	RD 1/2W 110.00K	J
R711		2232611495	RES,CBN 1/2	RD 1/2W 110.00K	J
R712		2235556903	RES,MTL 2	RS 2W 5.60	J
R713		2233420395	RES,CBN 1/4 S	RD 1/4WS 20.00K	J
R801		2235447495	RES,MTL 1	RS 1W 470.00K	J
R802		2229400600	THERMISTOR,NTC	NTC UPPERMOST N10SP010***-K2	
R803		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R804		2233420195	RES,CBN 1/4 S	RD 1/4WS 200.00	J
R805		2233475295	RES,CBN 1/4 S	RD 1/4WS 7.50K	J
R806		2233433095	RES,CBN 1/4 S	RD 1/4WS 33.00	J
R807		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R808		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R809		2233447495	RES,CBN 1/4 S	RD 1/4WS 470.00K	J
R810		2235439395	RES,MTL 1	RS 1W 39.00K	J
R811		2235439395	RES,MTL 1	RS 1W 39.00K	J
R812		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R814		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R815		2233433395	RES,CBN 1/4 S	RD 1/4WS 33.00K	J
R816		2233468295	RES,CBN 1/4 S	RD 1/4WS 6.80K	J
R817		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R818		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R819		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R820		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R821		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R824		2233468495	RES,CBN 1/4 S	RD 1/4WS 680.00K	J
R826		2235482395	RES,MTL 1	RS 1W 82.00K	J
R827		2235522103	RES,MTL 2	RS 2W 220.00	J
R829		2235533803	RES,MTL 2	RS 2W 0.33	J
R830		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R831		2233433295	RES,CBN 1/4 S	RD 1/4WS 3.30K	J
R832		2235422195	RES,MTL 1	RS 1W 220.00	J
R833		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R834		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R835		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R836		2232620195	RES,CBN 1/2	RD 1/2W 200.00	J
R837		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R840		2233433495	RES,CBN 1/4 S	RD 1/4WS 330.00K	J
R842		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R847		2232622095	RES,CBN 1/2	RD 1/2W 22.00	J
R849		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R850		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R851		2233475395	RES,CBN 1/4 S	RD 1/4WS 75.00K	J
R852		2233482295	RES,CBN 1/4 S	RD 1/4WS 8.20K	J
R853		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R854		2233422195	RES,CBN 1/4 S	RD 1/4WS 220.00	J
R855		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R856		2233447395	RES,CBN 1/4 S	RD 1/4WS 47.00K	J
R857		2233447195	RES,CBN 1/4 S	RD 1/4WS 470.00	J
R858		2233424295	RES,CBN 1/4 S	RD 1/4WS 2.40K	J
R881		2229202001	THERMISTOR,PTH	PDGS69ROMS-KB5 UPPERMOST	
SK81	RA	2407412100	SOCKET	POWER SOCKET SC-9R SUPERCON	
SK81	RB	2407412200	SOCKET	POWER SOCKET 0714CR7 INALWAYS	
SK81	RC	2407412300	SOCKET	POWER SOCKET 7014 I-SHENG	
SW11		2403700800	SWITCH,PU-TC	P4.5*4P(REF SKHH43A520-SV FW)	
SW81	RA	2403104100	SWITCH,PUSH	FORWARD SPPJ22NE01-SV 30V 0.2A	
SW81	RB	2403104200	SWITCH,PUSH	RONG FONG WPM-2PLM 30V 0.3A	
S401	RA	2406200500	SWITCH,LEVER	EVQ-ROB	PANASONIC
S401	RB	2406200700	SWITCH,LEVER	TLF1X3	HORNG CHIN
S401	RC	2406200600	SWITCH,LEVER	BGL-0131	HUA-JIE
TP41		2404200100	PIN PLUG	UZ-006P(1P-A)	
TP42		2404200100	PIN PLUG	UZ-006P(1P-A)	
TP81		2404200100	PIN PLUG	UZ-006P(1P-A)	

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
T401		2374204800	XFORMER,POWR	JD176 1.5MH/60UH	80T/16T REF
T403	RA	2385210200	FBT	39L3029AZ	MATSUSHITA
T403	RB	2385210100	FBT	FEA913	
T403	RC	2385210000	FBT	CJ28716-00A	JVC
T403	RD	2385210300	FBT	9602-26A	DARFON
T701		2374204900	XFORMER,POWR	JD176 1.5MH/0.5H 27T/48ST(REF	
T801	RA	2371155100	COIL,CHOKE	HF2835-163Y1R5-T01A	TDK
T801	RB	2371155200	COIL,CHOKE	SR28X28V 16 mH MIN	MYLEE
T801	RC	2371155300	COIL,CHOKE	FET28S-V21603-956130	HUA JUNG
T803		2374207400	XFORMER,POWR	JD198P2 0.27*3*2*18T	220uH
U001		2202113003	PC BOARD	JD178 MAIN 94V0 245X260	V5.08
VR44		2225120390	RES,SEMI FIX	0.1W B 20K N	
VR81		2225120390	RES,SEMI FIX	0.1W B 20K N	
X101		2369102701	XTAL,OSC	XTAL 8.0MHZ 30P/0.1mW	
ZD11	RA	2363500995	DIODE,ZENER	HZ5C-2 5.0-5.2V 0.5W	HITACHI
ZD11	RB	2363506295	DIODE,ZENER	MTZJ5.1C	ROHM
ZD11	RC	2363515695	DIODE,ZENER	BZX79C5V1	PHILIPS
ZD12	RA	2363500995	DIODE,ZENER	HZ5C-2 5.0-5.2V 0.5W	HITACHI
ZD12	RB	2363506295	DIODE,ZENER	MTZJ5.1C	ROHM
ZD12	RC	2363515695	DIODE,ZENER	BZX79C5V1	PHILIPS
ZD13	RA	2363500995	DIODE,ZENER	HZ5C-2 5.0-5.2V 0.5W	HITACHI
ZD13	RB	2363506295	DIODE,ZENER	MTZJ5.1C	ROHM
ZD13	RC	2363515695	DIODE,ZENER	BZX79C5V1	PHILIPS
ZD14	RA	2363500995	DIODE,ZENER	HZ5C-2 5.0-5.2V 0.5W	HITACHI
ZD14	RB	2363506295	DIODE,ZENER	MTZJ5.1C	ROHM
ZD14	RC	2363515695	DIODE,ZENER	BZX79C5V1	PHILIPS
ZD41	RA	2363506395	DIODE,ZENER	HZ15-2 14.5-15.1V 0.5W	HITACHI
ZD41	RB	2363506495	DIODE,ZENER	MTZJ15C	ROHM
ZD41	RC	2363515795	DIODE,ZENER	BZX79C15	PHILIPS
ZD42		2363508395	DIODE,ZENER	1M160Z	PEC
ZD81	RA	2363507195	DIODE,ZENER	HZ24-2 23.6-24.7V 0.5W	HITACHI
ZD81	RB	2363515495	DIODE,ZENER	MTZJ24C	ROHM
ZD81	RC	2363515895	DIODE,ZENER	BZX79C24	PHILIPS
9R82		2404200100	PIN PLUG	UZ-006P(1P-A)	
9S43		2097400301	EYELET	BSS3-1/2H T=0.25	SN 3 μ m
9S81		2097400301	EYELET	BSS3-1/2H T=0.25	SN 3 μ m
9S82		2097400301	EYELET	BSS3-1/2H T=0.25	SN 3 μ m
9S83		2097400301	EYELET	BSS3-1/2H T=0.25	SN 3 μ m
9S87		2097400302	EYELET	BSS3-1/2H T=0.25	SN 3 μ m

CRT P.C.BOARD

C901	2291522391	CAP,MYL	CQ92M	0.022UF	100V	K
C902	2291522391	CAP,MYL	CQ92M	0.022UF	100V	K
C903	2291522391	CAP,MYL	CQ92M	0.022UF	100V	K
C907	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C908	2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C909	2333610591	CAP,MINI ELE 105°C	CE04W	1.000UF	50V	M
C911	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C912	2333447691	CAP,MINI ELE 105°C	CE04W	47.000UF	25V	M
C913	2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C914	2291510391	CAP,MYL	CQ92M	0.010UF	100V	K
C917	2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C919	2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C920	2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C921	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C923	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C924	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C925	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C926	2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C927	2333410791	CAP,MINI ELE 105°C	CE04W	100.000UF	25V	M
C928	2333810691	CAP,MINI ELE 105°C	CE04W	10.000UF	100V	M
C929	2333910591	CAP,MINI ELE 105°C	CE04W	1.000UF	160V	M
C930	2333810691	CAP,MINI ELE 105°C	CE04W	10.000UF	100V	M

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION			REMARK
C931		2333910591	CAP,MINI ELE 105°C	CE04W	1.000UF	160V	M
C932		2333810691	CAP,MINI ELE 105°C	CE04W	10.000UF	100V	M
C933		2333910591	CAP,MINI ELE 105°C	CE04W	1.000UF	160V	M
C935		2333822691	CAP,MINI ELE 105°C	CE04W	22.000UF	100V	M
C936		2285710312	CAP,CER	CK45E	0.010UF	1KV	M
C937		2285210291	CAP,CER	CK45B	1000.000PF	2KV	K
C938		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C939		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C940		2283610391	CAP,CER	CK45E	0.010UF	500V	M
C941		2302210491	CAP,MTL	CF93M	0.100UF	100V	K
C945		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C946		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C947		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C948		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C949		2302210491	CAP,MTL	CF93M	0.100UF	100V	K
C951		2281410491	CAP,CER	CK45F	0.100UF	50V	Z
C952		2291510291	CAP,MYL	CQ92M	1000.000PF	100V	K
C953		2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C954		2272110191	CAP,CER	CC45CH	100.000PF	50V	J
C955		2272122191	CAP,CER	CC45CH	220.000PF	50V	J
C956		2333822691	CAP,MINI ELE 105°C	CE04W	22.000UF	100V	M
C966		2272168091	CAP,CER	CC45CH	68.000PF	50V	J
D901		2363600195	DIODE,SWITCH	1N4148			
D902		2363600195	DIODE,SWITCH	1N4148			
D903		2363600195	DIODE,SWITCH	1N4148			
D904		2363600195	DIODE,SWITCH	1N4148			
D909	RA	2363600795	DIODE,SWITCH	BAV20(150V)		PHILIPS	
D909	RB	2363600895	DIODE,SWITCH	BAV21 VR200V		PHILIPS	
D910	RA	2363600795	DIODE,SWITCH	BAV20(150V)		PHILIPS	
D910	RB	2363600895	DIODE,SWITCH	BAV21 VR200V		PHILIPS	
D911	RA	2363600795	DIODE,SWITCH	BAV20(150V)		PHILIPS	
D911	RB	2363600895	DIODE,SWITCH	BAV21 VR200V		PHILIPS	
D913	RA	2363600795	DIODE,SWITCH	BAV20(150V)		PHILIPS	
D913	RB	2363600895	DIODE,SWITCH	BAV21 VR200V		PHILIPS	
D915	RA	2363600795	DIODE,SWITCH	BAV20(150V)		PHILIPS	
D915	RB	2363600895	DIODE,SWITCH	BAV21 VR200V		PHILIPS	
D917	RA	2363600795	DIODE,SWITCH	BAV20(150V)		PHILIPS	
D917	RB	2363600895	DIODE,SWITCH	BAV21 VR200V		PHILIPS	
D918	RA	2363219895	DIODE,RECT	FUF4004		FAGOR	
D918	RB	2363217395	DIODE,RECT	1N4937		CTC	
FT91		2367101400	FILTER,CER S	DNF-330TA			
FT92		2367101400	FILTER,CER S	DNF-330TA			
FT93		2367101400	FILTER,CER S	DNF-330TA			
I901		2365320700	IC,LINEAR	TDA4886		PHILIPS	
I902		2365322900	IC,LINEAR	MTV021N-05		MYSON	
I904		2365323300	IC,LINEAR	LM2437T		NS	
K901		2434350001	SHIELDING TAPE	W50*L100			
L901		2379101595	FERRITE CORE	3.5X4.5X0.8			
L902		2379103800	FERRITE CORE	6*14*2.5T Z=700 OHM MIN 100MHZ			
L904		2379103800	FERRITE CORE	6*14*2.5T Z=700 OHM MIN 100MHZ			
L905		2372233895	COIL,PEAKING	0.33UH K R<0.095 I 1100mA			
L906		2372233895	COIL,PEAKING	0.33UH K R<0.095 I 1100mA			
L907		2372233895	COIL,PEAKING	0.33UH K R<0.095 I 1100mA			
L908		2379101495	FERRITE CORE	3.5X9X0.8			
L910		2232610295	RES,CBN 1/2	RD 1/2W 1.00K		J	
M901		2427300030	LUG W/WIRE	1441BS-2/B IN 1015#18 190L			
M902		2427307006	LUG W/WIRE	B-IN/4 φ RING 1007#18 150L BK			
M903		2427307006	LUG W/WIRE	B-IN/4 φ RING 1007#18 150L BK			
M904		2427307015	LUG W/WIRE	0.12*144 W/B-IN PIN 60L			
P902	RA	2404390211	CONNECTOR	JWT A2501WV2-12P 12PIN P=2.5mm			
P902	RB	2404338011	CONNECTOR	LEOCO 2521 12 PIN P=2.5			
P907	RA	2407402800	SOCKET	CRT SOCKET HPS0720-011100			
P907	RB	2407402900	SOCKET	CRT SOCKET CVT3280-2202 SMK			
P907	RC	2407403300	SOCKET	ISDW03S-L		INCHANG	

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
Q901	RA	2361111491	XISTOR,PNP R	2PA733P	PHILIPS
Q901	RB	2361110791	XISTOR,PNP R	KSA733C-G TA	FAIRCHILD
Q901	RC	2361100491	XISTOR,PNP R	2SA733(P)	NEC
Q906	RA	2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q906	RB	2361318391	XISTOR,NPN R	BF422	PHILIPS
Q907	RA	2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q907	RB	2361318391	XISTOR,NPN R	BF422	PHILIPS
Q908	RA	2361314791	XISTOR,NPN R	BF422	TOSHIBA
Q908	RB	2361318391	XISTOR,NPN R	BF422	PHILIPS
Q909	RA	2361316191	XISTOR,NPN R	2PC945P	PHILIPS
Q909	RB	2361313691	XISTOR,NPN R	KSC945C-G	FAIRCHILD
Q909	RC	2361302591	XISTOR,NPN R	2SC945(P)	NEC
R901		2233447095	RES,CBN 1/4 S	RD 1/4WS 47.00	J
R902		2239207505	RES,PRE 1/4 S	RN 1/4WS 75.00	F
R903		2233447095	RES,CBN 1/4 S	RD 1/4WS 47.00	J
R904		2239207505	RES,PRE 1/4 S	RN 1/4WS 75.00	F
R905		2233447095	RES,CBN 1/4 S	RD 1/4WS 47.00	J
R906		2239207505	RES,PRE 1/4 S	RN 1/4WS 75.00	F
R907		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R908		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R909		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R910		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R911		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R917		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R918		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R919		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R920		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R921		2372210195	COIL,PEAKING	100.00UH K R<4.10	I 165mA
R922		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R923		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R924		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R925		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R926		2233447295	RES,CBN 1/4 S	RD 1/4WS 4.70K	J
R927		2233422295	RES,CBN 1/4 S	RD 1/4WS 2.20K	J
R928		2233456295	RES,CBN 1/4 S	RD 1/4WS 5.60K	J
R929		2233433295	RES,CBN 1/4 S	RD 1/4WS 3.30K	J
R930		2233412395	RES,CBN 1/4 S	RD 1/4WS 12.00K	J
R931		2233410595	RES,CBN 1/4 S	RD 1/4WS 1.00M	J
R932		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R933		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R934		2232615295	RES,CBN 1/2	RD 1/2W 1.50K	J
R935		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00	J
R936		2233424295	RES,CBN 1/4 S	RD 1/4WS 2.40K	J
R937		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R938		2233410295	RES,CBN 1/4 S	RD 1/4WS 1.00K	J
R939		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R940		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R941		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R942		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R944		2233415195	RES,CBN 1/4 S	RD 1/4WS 150.00	J
R945		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00	J
R946		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R947		2233456195	RES,CBN 1/4 S	RD 1/4WS 560.00	J
R948		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R949		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R950		2233410095	RES,CBN 1/4 S	RD 1/4WS 10.00	J
R952		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R953		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R956		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R957		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R960		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R961		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R962		2235536903	RES,MTL 2	RS 2W 3.60	J
R964		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J

E70f Service Manual

LOC NO.	SOURCE	PART NO.	DESCRIPTION	SPECIFICATION	REMARK
R965		2233422495	RES,CBN 1/4 S	RD 1/4WS 220.00K	J
R967		2235536903	RES,MTL 2	RS 2W 3.60	J
R969		2232651395	RES,CBN 1/2	RD 1/2W 51.00K	J
R970		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R971		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R972		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R973		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R974		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R975		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
R976		2232647095	RES,CBN 1/2	RD 1/2W 47.00	J
R978		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R979		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R980		2233410195	RES,CBN 1/4 S	RD 1/4WS 100.00	J
R981		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R982		2233410395	RES,CBN 1/4 S	RD 1/4WS 10.00K	J
R983		2232610195	RES,CBN 1/2	RD 1/2W 100.00	J
TP91		2404200100	PIN PLUG	UZ-006P(1P-A)	
TP94		2404200100	PIN PLUG	UZ-006P(1P-A)	
U002		2202113100	PC BOARD	JD178 CRT 94V0 140*103	

OTHERS

L501	2385700100	COIL,ROTATION	0.2 ϕ 300T DCR100OHM MAX	
L811	2385404600	COIL,ERASE	JD177 NORMAL 0.5 ϕ X80T 1183L	
P901	2420102700	CRT WIRE	JD177D 0.12/80C 820L	
P909	2427501103	I/O CABLE	D-15M/JWT12(01081) GE96750PC99	
P999	2427130034	POWER CORD	H05VV-F3G0.75 EWALL 1.8M 96750	(EU WALL)
P999	2427130035	POWER CORD	SVT 18/3 1.8M USA WALL KDS	(USA WALL)
P999	2427130063	POWER CORD	AUSTRALIA WALL 1.83M GE96750	(AUS WALL)
P999	2427130065	POWER CORD	PC 1.83M GE96750	(PC)
P999	2427130066	POWER CORD	T MARK WALL 1.83M GE96750	(JAPAN WALL)
V901	2211020000	CRT ASSY	M41AJR53X76 CPT	