

SAFETY PRECAUTIONS

SERVICE WARNING

Only qualified service technicians who are familiar with safety checks and guidelines should perform service work. Before replacing parts, disconnect power source to protect electrostatically sensitive parts. Do not attempt to modify any circuit unless so recommended by the manufacturer. When servicing the receiver, use an isolation transformer between the line cord and power receptacle.

SERVICING THE HIGH VOLTAGE AND CRT

Use EXTREME CAUTION when servicing the high voltage circuits. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver ground and CRT anode lead. DO NOT lift the CRT by the neck. Always wear shatterproof goggles when handling the CRT to protect eyes in case of implosion.

X-RAY RADIATION AND HIGH VOLTAGE LIMITS

Be aware of the instructions and procedures covering X-ray radiation. In solid-state receivers and monitors, the CRT is the only potential source of X-rays. Keep an accurate high voltage meter available at all times. Check meter calibration periodically. Whenever servicing a receiver, check the high voltage at various brightness levels to be sure it is regulating properly. Keep high voltage at rated value, NO HIGHER. Excessive high voltage may cause X-ray radiation or failure of associated components. DO NOT depend on protection circuits to keep voltage at rated value. When troubleshooting a receiver with excessive high voltage, avoid close contact with the CRT. DO NOT operate the receiver longer than necessary. To locate the cause of excessive high voltage, use a variable AC transformer to regulate voltage. In present receivers, many electrical and mechanical components have safety related characteristics which are not detectable by visual inspection. Such components are identified by a # on both the schematic and the parts list. For SAFETY, use only equivalent replacement parts when replacing these components.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning receiver to customer. Check repaired area for poorly soldered connections, and check entire circuit board for solder splashes. Check board wiring for pinched wires or wires contacting any high wattage resistors. Check that all control knobs, shields, covers, grounds, and mounting hardware have been replaced. Be sure to replace all insulators and restore proper lead dress.

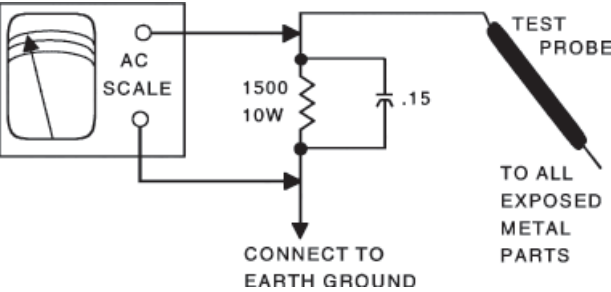
SAFETY CHECKS — FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with a return path should measure between 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

Hot Leakage Current Check

Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer. Use a 1500 ohms, 10W resistor in parallel with a .15µF capacitor to connect between any exposed metal parts on the receiver and a good earth ground. (See figure below.) Use an AC voltmeter with at least 5000 ohms per volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected. If the AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.



The listing of any available replacement part herein in no case constitutes a recommendation, warranty, or guarantee by SAMS Technical Publishing, LLC as to the quality and suitability of such replacement part. The numbers of the listed parts have been compiled from information furnished to SAMS Technical Publishing, LLC by the manufacturers of the specific type of replacement part listed.

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Printed in the United States of America 5 4 3 2 1

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MODEL 26MF231D/37

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Representative Model

Essential Coverage For Servicing This LCD Receiver...

- Power Supply Schematic
- Miscellaneous adjustments
- Placement chart
- Parts list



APRIL 2009 SET 5455

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5455

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MISCELLANEOUS ADJUSTMENTS

Service Default Mode (SDM)

To Enter: With the standard remote control key in code “062596” directly followed by pressing the “Menu” button.

The set will automatically tune to Channel 3 analog where the picture settings for brightness, color, and contrast will be 50%. Sound settings will be 50% except volume at 25%. All service-unfriendly modes (if present) are disabled, like: Sleep Timer, Child/parental lock, picture mute, auto volume level, auto switch off (no video for 10 minutes), skip/blank of non-favorite pre-sets, smart modes, auto store of personal presets, and auto user menu time-out. Letters “SDM” will be shown in the upper right area of the screen along with the customer menu display. Customer menu can be toggled on and off with the “Menu” button. The SDM will still be running in the background when customer menu is off.

To Exit SDM: With the remote control key in “00” or switch the set to Stand-By.

Service Alignment Mode (SAM)

To Enter: Select a desired channel for viewing then with the remote control key in code “062596” directly followed by pressing the “Info” button. After activating SAM a service warning will appear on the screen, continue by pressing the red button on the remote control. (Channels can not be changed while in SAM mode) While in the SAM mode, perform software alignments, change option settings, identify the software version, view operation hours, display or clear the error code buffer. Navigate using the remote control “Cursor up/down” buttons for menu items, and the “Cursor left/right” buttons to activate or deactivate menu items and submenu items.

To Exit SAM: With the remote control press “Menu” or switch the set to Stand-by.

Customer Service Mode (CSM)

Note: the menu screen must be off.

To Enter: With the remote key in code “123654”.

The CSM is a read only mode, no modifications are possible. Therefore the contents are useful to the Technician or Helpdesk while determining the severity of a customer complaint. Thirty-one parameters can be viewed, see list below:

- SW Version:** built in main software version.
- SBY Processor Version:** built in stand-by processor software version.
- Set Type:** view information with out looking at the back cover.
- Production Code:** displays production serial number.
- Code 1:** list the latest five errors of the error buffer.
- Code 2:** gives the first five errors of the error buffer.
- Headphone Volume:** status level set by customer.
- Dolby:** indicates if Dolby sound received on or off.
- Sound Mode:** customer sound selected mode.
- Tuner Frequency:** not applicable for US sets.
- Digital Processing:** indicated the selected digital mode.
- TV System:** type of TV signal received.
- Center Mode:** not applicable.
- DNR:** selected dynamic noise reduction setting.
- Noise Figure:** noise ratio of the selected transmitter.
- Source:** indicates which source is used and video/audio signal quality.
- Audio System:** information about the audible audio system.
- Tuned Bit:** not applicable for US sets.
- Preset Lock:** indicates selected preset has a child lock, locked or unlocked.
- Lock After:** time of channel lock activation.
- Movie Ratings Lock:** indicates movie ratings lock as set by customer.
- V-Chip TV Status:** indicates setting of the V-Chip channels selected.
- V-Chip Movie Status:** indicates setting of the V-Chip channels selected.
- Options 1:** indicates option codes group 1 as set in Service Alignment Mode.
- Options 2:** indicates option codes group 2 as set in Service Alignment Mode.
- AVL:** indicates on or off of the automatic volume level.
- Delta Volume:** indicates status of delta volume preset by customer.
- HDMI key validity:** indicates the key’s validity.
- IEEE key validity:** indicates the key’s validity. (NA)
- POD key validity:** indicates the key’s validity.
- Digital Signal Quality:** quality of the received digital signal (0=low).

To Exit CSM mode: Press any key on the remote control except “channel +/-“, “volume”, “mute” or digit (0-9) keys.

PARTS LIST

SCHEMATIC COMPONENT LOCATION GUIDE									
C2051	A1	C2092	C7	FB5058	A4	R3052	A3	R3085	D5
C2052	A2	C2100	E4	FB5059	B3	R3053	A3	R3086	C7
C2053	A2	C2101	B7	FB5060	A3	R3054	A3	R3087	B7
C2054	A2	D6051	A3	FB5072	C5	R3055	B3	R3088	B7
C2055	A4	D6052	A4	FB5073	C7	R3056	B1	R3089	C7
C2056	C2	D6053	B3	IC7056	B2	R3057	C2	R3090	E7
C2057	B2	D6055	A6	IC7061	C4	R3058	B3	R3091	E7
C2058	B1	D6056	A6	IC7072	E4	R3059	C4	R3092	D8
C2059	D2	D6061	C5	IC7073	E6	R3060	A4	R3093	D4
C2060	A5	D6062	B5	IC7074	E6	R3061	B3	R3094	D7
C2061	A6	D6063	B5	L5000	B1	R3062	B3	R3095	E7
C2065	D3	D6064	D6	L5061	E4	R3063	D6	R3096	E6
C2066	B5	D6065	E4	L5074	C8	R3064	A4	R3098	E5
C2067	E4	D6066	D5	L5076	A7	R3065	B4	R3100	D5
C2068	D6	D6067	E5	L5077	A7	R3066	A4	R3101	B7
C2071	C5	D6071	C7	L5078	A7	R3067	C2	R3102	C7
C2072	C7	D6072	B7	L5079	B8	R3068	C2	R3103	B8
C2073	C7	D6073	C7	L5080	A8	R3070	B6	SG2062	A2
C2074	C7	D6074	B7	P1	A1	R3074	C7	SG2063	B2
C2076	B7	D6075	D8	Q7057	B4	R3075	D3	SG2064	A3
C2078	A7	D6076	A7	Q7062	B5	R3076	D4	SG2069	B3
C2079	A7	D6077	B7	Q7063	D5	R3077	D4	T5051	A2
C2080	A8	D6078	B8	Q7071	B7	R3078	D5	T5055	A4
C2081	B8	D6081	E6	Q7075	E7	R3079	C4	T5062	A2
C2085	E7	F1052	A1	Q7076	E5	R3080	B5	T5071	A6
C2086	D7	FB5052	A2	Q7077	B7	R3081	B6	TH3071	B1
C2087	E6	FB5053	A2	Q7078	B7	R3082	B5	TH3072	A1
C2088	E5	FB5056	B1	R2097	E6	R3083	B5		
C2091	E8	FB5057	A1	R3051	A3	R3084	D6		

Important Parts Information

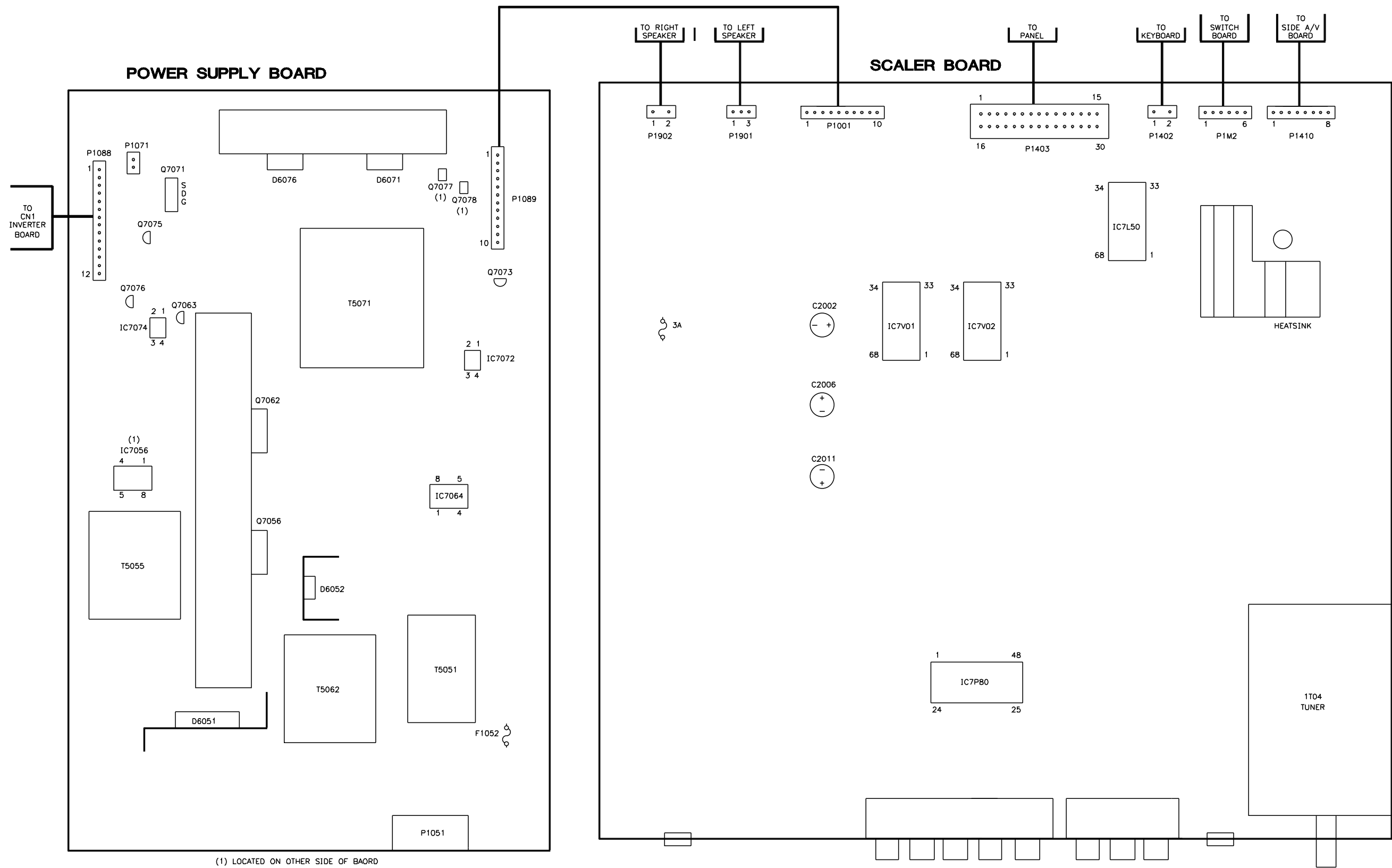
- Parts not listed in the parts list are commonly available at your local electronics parts retailer.
- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- On the parts lists, safety items are marked with a # to remind you that only exact replacements are recommended for these items.
- When ordering parts, state the model number, part number, and description.

Item No.	Type No.	Mfr. Part No.	Notes
D6051	GBU6J-E3	931900263671	-
D6052	STTH5L06FP	932220958687	-
D6053	BAV103	933952580685	-
D6055	P6KE250A	932214069673	-
D6056	STTH110	932222860673	-
D6061	BAV103	9339-2580685	-
D6062	RGP10D-E3	933751660673	-
D6063	BAV103	933952580685	-
D6064	RGP10D-E3	933751660673	-
D6065	BAV103	933952580685	-
D6066	RGP10D-E3	933751660673	-
D6067	P4KE16A	932222228673	-
D6071	MBRF10H100CT-E3	932219930687	-
D6072, 73	BAV103	933952580685	-
D6074, 75	BZX79-C12	933117810133	-
D6076	STPS20H100CFP	932219203687	-
D6077	BAV103	933952580685	-
D6078	BZX79-C5V1	933117720133	-
D6081	BZX79-B18	933166930133	-
IC7056	L6562D, PFC	823827717551	-
IC7061	TEA1507P	935267356112	-
# IC7072	TCET1103 (G)	932214014667	-
IC7073	TL431ACZ	932208697676	-
# IC7074	TCET1103 (G)	932214014667	-
Q7057	STP20NM60	932217923687	-
Q7062	STP10NK80ZFP	932219657687	-
Q7063	TBC328-40	933979570126	-
Q7071	STP45NF3LL	932222181687	-
Q7075	BF422	9332593-50126	-
Q7076	TBC547C	933737040676	-
Q7077	BC858C	933628680215	-
Q7078	BC847C	933589600215	-
Item No.	Function Rating	Mfr. Part No.	Notes
# C2051, 54	.47µF 275V	202233000078	-
# C2071	.0022µF 250V	202255490158	-
# F5102	Fuse	242208600208	4A 250V
FB5052, 53	Ferrite Bead	313816872621	-
FB5056, 57	Ferrite Bead	313816874511	-
FB5058	Ferrite Bead	313816872621	-
FB5059, 60	Ferrite Bead	313816874511	-
FB5072, 73	Ferrite Bead	313816872621	-
FB5076, 77, 78	Ferrite Bead	313816872621	-
L5000	-	-	-
L5061	Fixed	242253601152	-
L5074	10µH	242253601105	-
L5079	10µH	242253601105	-
L5080	15µH	242253601187	-
P1	AC Power	313818870491	Polarized
R3059	.15 1% 1W	212010500027	-
R3064, 65, 66	330K 1%	232273463304	-
R3067	620 1%	232273466201	-
R3068	5600 1%	232273465602	-
R3081	.15 1% 1W	212010500027	-
R3090	1000 1%	232273461002	-
R3091	18K 1%	232273461803	-
R3095	2200 1%	232273462202	-
SP1, 2	Speaker	823827717541	8 Ohm, 5W
# T5051	Filter	823827732048	Line
T5055	PFC, 430µH	242254900791	LS-PH04D
# T5062	Filter, 10mH	242254900804	S50860 Y
# T5071	Power, LS-PH04P	242254900503	HJC-S4143
T1811	Tuner	311229714221	TD136O/FGHP
TH3071	1.5 NTC	823827736025	-
TH3072	VDR	823827718171	-
#	Panel	823827718991	LCD, QD26HL02 Rev .02
	PC Board	313815864951	Scaler, (FL2 26")
	PC Board	313815864901	Power supply
	PC Board	313815864921	IR
	PC Board	313815864971	Key
	PC Board	313815864911	Side A/V
	PC Board	-	Inverter
	PC Board	313815866211	USB
	Transmitter	313923812851	Remote, RC1113125/01B

For SAFETY use only equivalent replacement part.

PLACEMENT CHART

See Connector Voltage and Resistance Charts Page 4.



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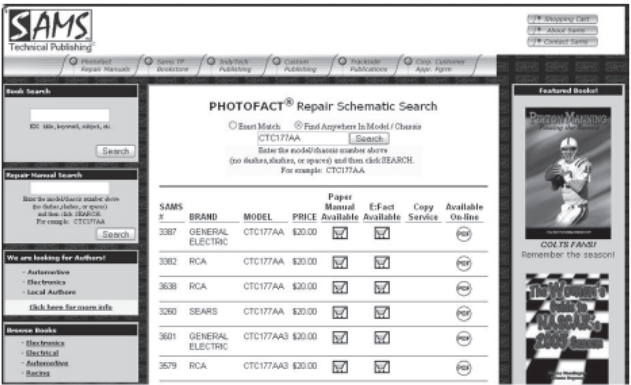


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CONNECTOR VOLTAGE and RESISTANCE CHARTS

See placement chart page 3 for connector location.

Note: Resistances taken with board disconnected.

SCALER BOARD

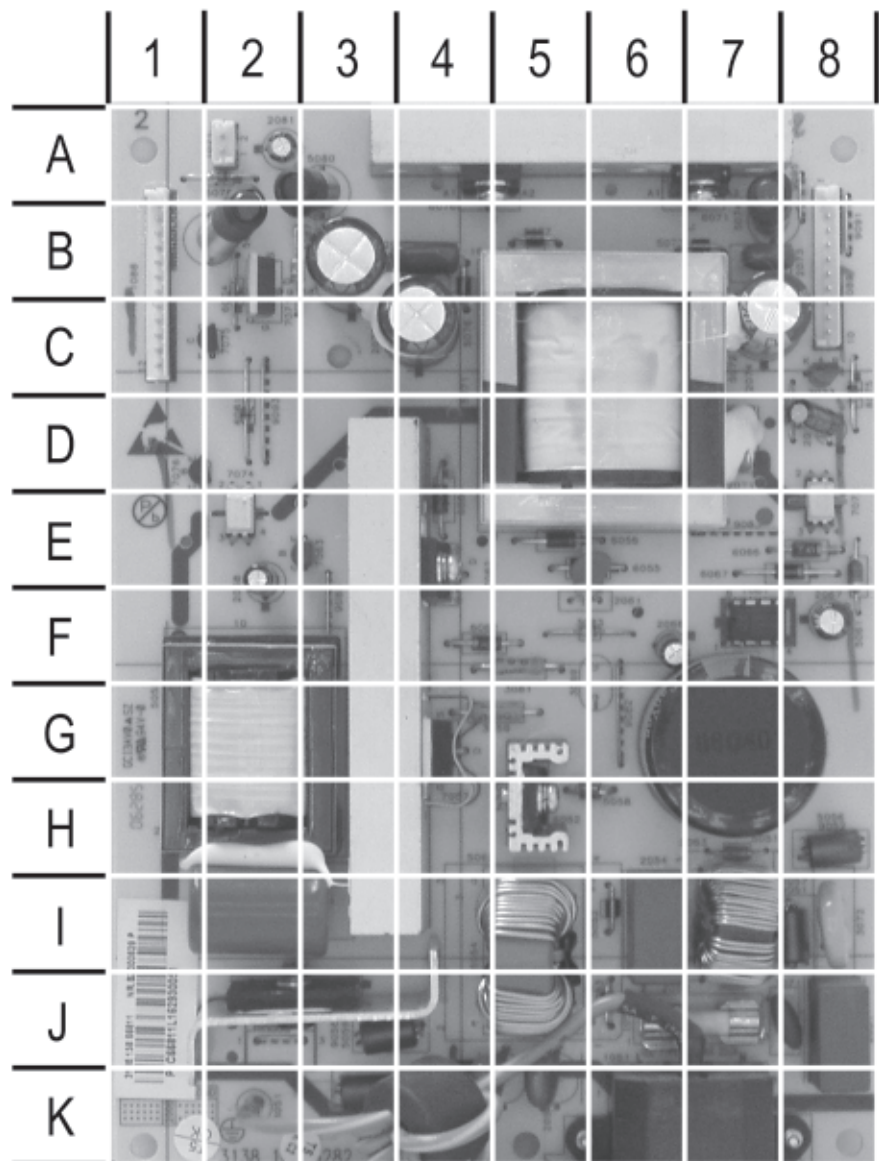
P1001			P1403			P1402		
Pin	VOLTAGE	RES	Pin	VOLTAGE	RES	Pin	VOLTAGE	RES
1	16.0V	15M	1	GND	GND	1	GND	GND
2	16.0V	15M	2	NC	GND	2	2.4V	1.4K
3	24.0V	70K	3	NC	~			
4	5V	9.7K	4	NC	GND			
5	4.2V	7.6K	5	GND	GND			
6	GND	GND	6	NC	GND			
7	GND	GND	7	NC	GND			
8	GND	GND	8	GND	GND			
9	1.4V	3K	9	NC	GND			
10	GND	GND	10	GND	GND			
			11	11.9V	1.2M			
			12	11.9V	1.2M			
			13	NC	1.2M			
			14	NC	1.2M			
			15	NC	8.7K			
P1410			P1901			P1902		
Pin	VOLTAGE	RES	Pin	VOLTAGE	RES	Pin	VOLTAGE	RES
1	GND	GND	1	8V	51.6K	1	8V	51.5K
2	.03V	6M	2	8V	51.3K	2	8V	51.3K
3	.18V	6M	3	NC	~			
4	0V	~						
5	0V	~						
6	GND	GND						
7	0V	~						
8	0V	~						

POWER SUPPLY

P1088			P1089		
PIN	Voltage	RES	PIN	Voltage	RES
1	24.0V	2.6M	1	16.0V	4.2M
2	24.0V	2.6M	2	16.0V	4.2M
3	24.0V	2.6M	3	24.0V	1M
4	24.0V	2.6M	4	5.1V	~
5	24.0V	2.6M	5	4.1V	2.7M
6	5.1V	~	6	GND	GND
7	4.1V	4.7K	7	GND	GND
8	GND	GND	8	GND	GND
9	GND	GND	9	3.3V	4.9M
10	GND	GND	10	GND	GND
11	GND	GND			
12	GND	GND			

Note: ~ = infinite

POWER SUPPLY TOP



POWER SUPPLY – TOP VIEW, GRIDTRACE			
C2051	J8	FB5073	B7
C2052	I6	FB5076	B4
C2053	K5	FB5077	B5
C2055	I2	FB5078	B5
C2060	G7	IC7061	F7
C2061	F5	IC7072	E8
C2066	F6	IC7073	C8
C2067	F8	IC7074	E2
C2068	E2	L5000	K4
C2071	D7	L5061	E8
C2073	B7	L5074	A7
C2074	C7	L5079	B2
C2078	B4	L5080	A3
C2079	C4	P1051	K6
C2080	B3	P1071	A2
C2081	A2	P1088	B1
C2086	D8	P1089	B8
D6051	J2	Q7057	G4
D6052	H5	Q7062	E4
D6055	E5	Q7063	E2
D6056	E5	Q7071	B2
D6062	F4	Q7076	D1
D6064	E4	R3058	G2
D6066	E8	R3059	G5
D6067	E8	R3061	G2
D6071	A7	R3081	F5
D6074	B2	R3083	F6
D6075	C8	R3087	B2
D6076	A5	R3093	D8
D6078	A2	SG2062	J7
D6081	D2	SG2063	H7
F1052	J7	SG2064	J5
FB5052	I6	SG2069	I5
FB5053	J6	T5051	I7
FB5056	H8	T5055	G2
FB5057	I8	T5062	I5
FB5058	H6	T5071	C6
FB5059	J3	TH3071	J8
FB5060	K3	TH3072	I8
FB5072	C7		

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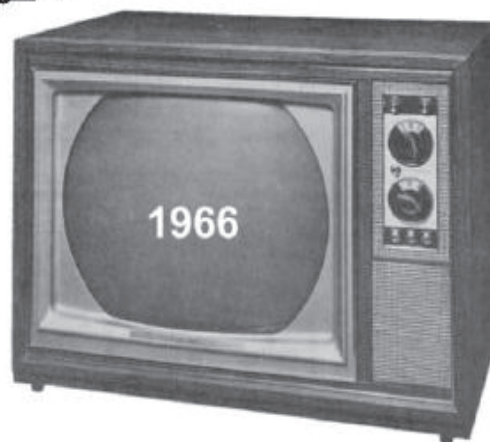
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POWER SUPPLY BOTTOM

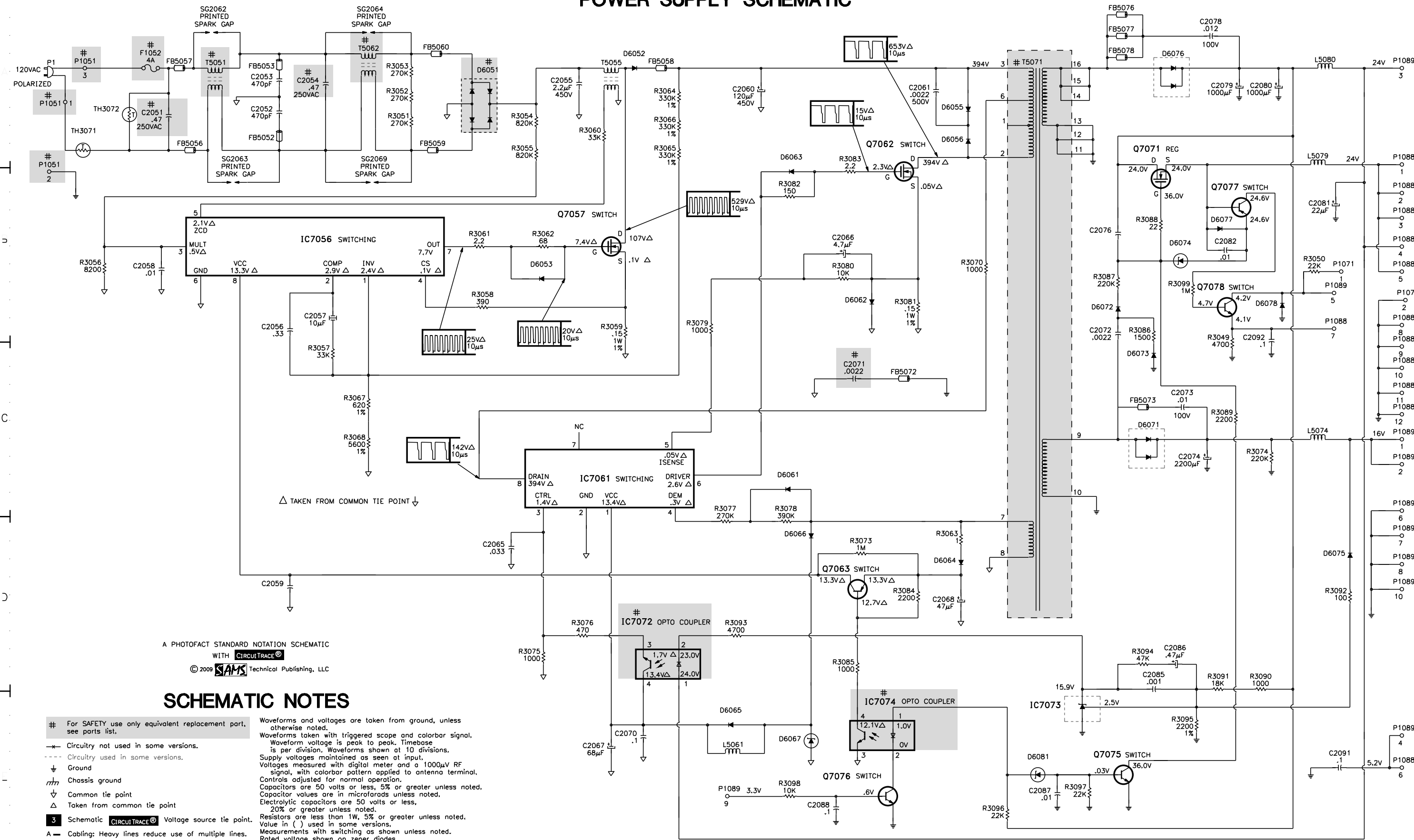
	1	2	3	4	5	6	7	8
A								
B								
C								
D								
E								
F								
G								
H								
I								
J								
K								

**POWER SUPPLY – BOTTOM
VIEW, GRIDTRACE**

C2056	G7	R3063	D3
C2057	G7	R3064	G4
C2058	G7	R3065	G4
C2059	G7	R3066	G4
C2065	F2	R3067	G6
C2072	B3	R3068	G6
C2076	C7	R3070	E3
C2085	D1	R3074	C1
C2087	C7	R3075	F2
C2088	D8	R3076	F1
C2091	A7	R3077	F1
C2092	C8	R3078	F1
C2100	F2	R3079	F2
C2101	B7	R3080	F3
D6053	G5	R3082	F2
D6061	F1	R3084	E7
D6063	F2	R3085	E7
D6065	E1	R3086	B3
D6072	A7	R3088	C7
D6073	B3	R3089	D8
D6077	B7	R3090	D1
IC7056	G7	R3091	D1
Q7077	B7	R3092	D1
Q7078	B7	R3094	D1
R3051	14	R3095	C1
R3052	14	R3096	D7
R3053	14	R3097	C7
R3054	H8	R3098	C7
R3055	G7	R3100	E6
R3056	G7	R3101	A7
R3057	G7	R3102	C8
R3060	F7	R3103	B8
R3062	G5		

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POWER SUPPLY SCHEMATIC



A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE®
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SCHEMATIC NOTES

- # For SAFETY use only equivalent replacement part, see parts list.
- Circuitry not used in some versions.
- Circuitry used in some versions.
- ⏏ Ground
- ⏏ Chassis ground
- ⏏ Common tie point
- ⏏ Taken from common tie point
- 3 Schematic CIRCUITRACE® Voltage source tie point.
- A Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless otherwise noted.
Waveforms taken with triggered scope and colorbar signal. Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
Supply voltages maintained as seen at input.
Voltages measured with digital meter and a 1000μV RF signal, with colorbar pattern applied to antenna terminal. Controls adjusted for normal operation.
Capacitors are 50 volts or less, 5% or greater unless noted. Capacitor values are in microfarads unless noted. Electrolytic capacitors are 50 volts or less, 20% or greater unless noted.
Resistors are less than 1W, 5% or greater unless noted. Value in () used in some versions.
Measurements with switching as shown unless noted. Rated voltage shown on zener diodes.