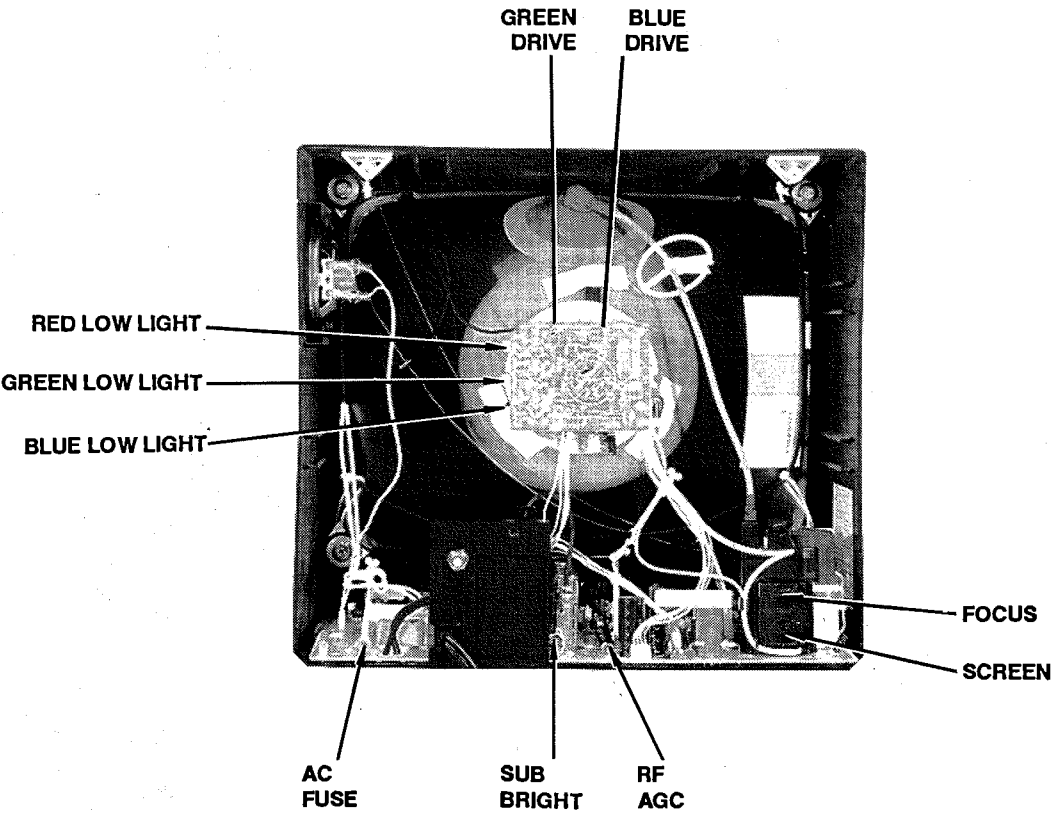


CABINET - REAR VIEW



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

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Indianapolis, IN 46214-2012

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



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PHOTOFACT® Technical Service Data

SET 2923

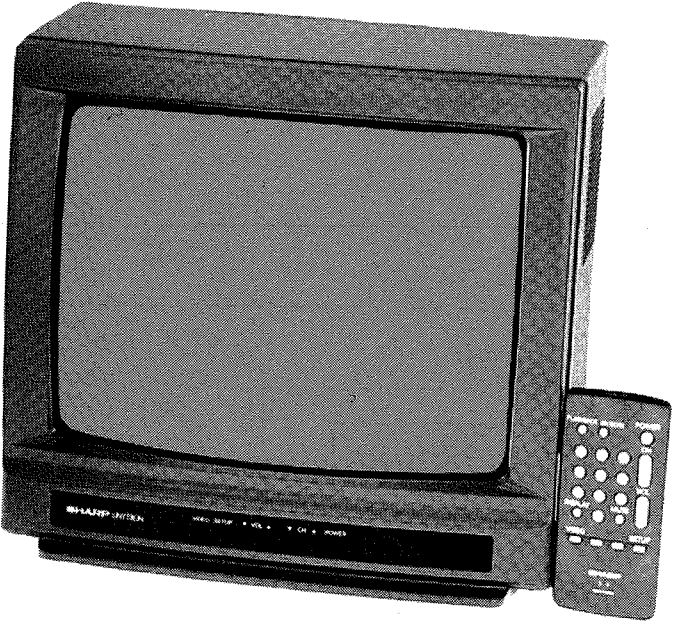
MODELS 13A-M100, 13A-M150, 19A-M100, 19A-M150, 20A-M100, 20A-M120

SHARP

Lined area for technical service data.

For Supplier Address,
See PHOTOFACT Annual Index

SHARP
Model 13A-M100



Essential coverage
for servicing a television receiver...

- Schematics
- Component locations
- Parts lists

Coverage includes these additional models

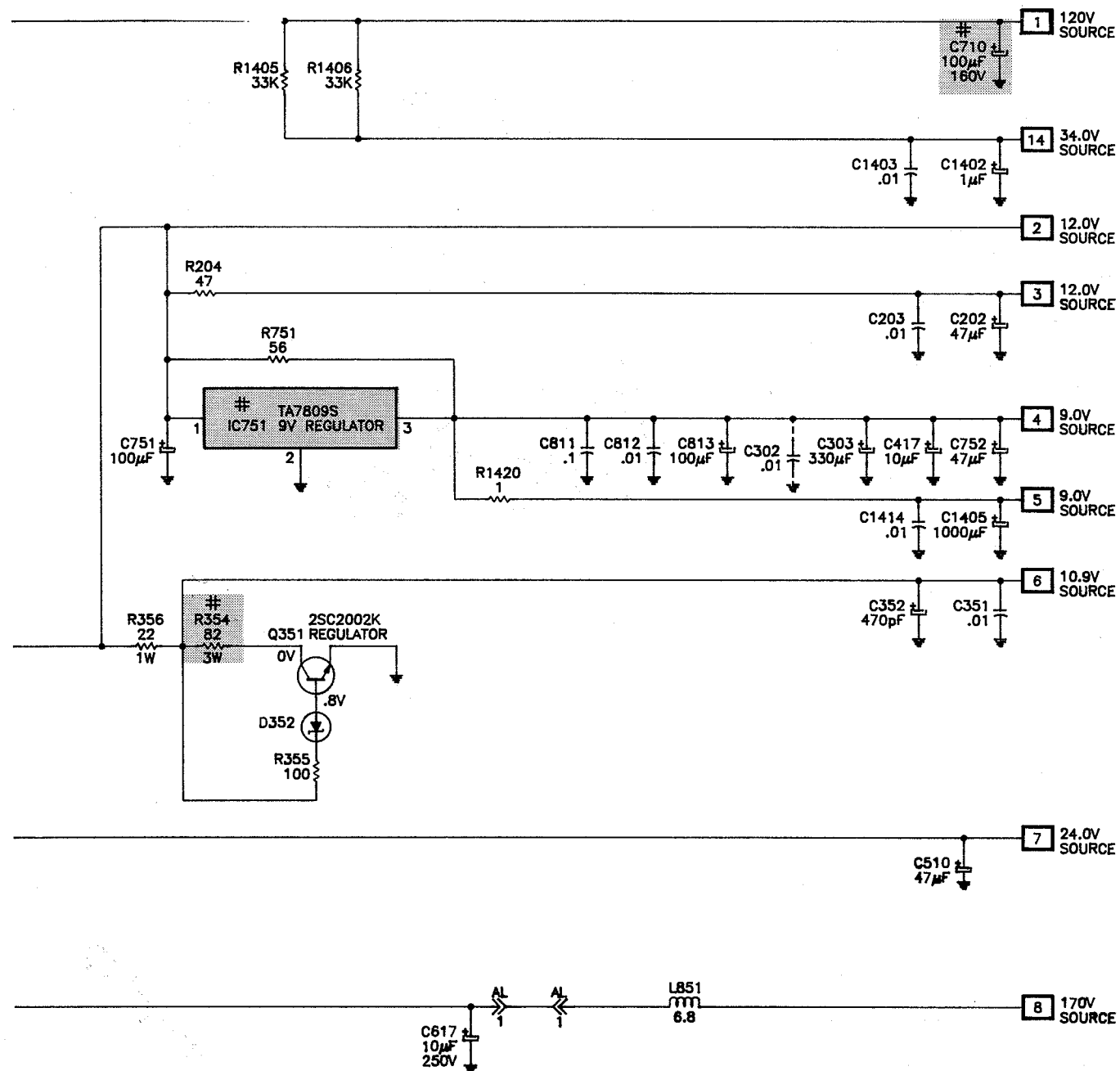
Model
13A-M150
19A-M100
19A-M150
20A-M100
20A-M120



HOWARD W. SAMS & COMPANY

JANUARY 1992 SET 2923

POWER SUPPLY SCHEMATIC continued

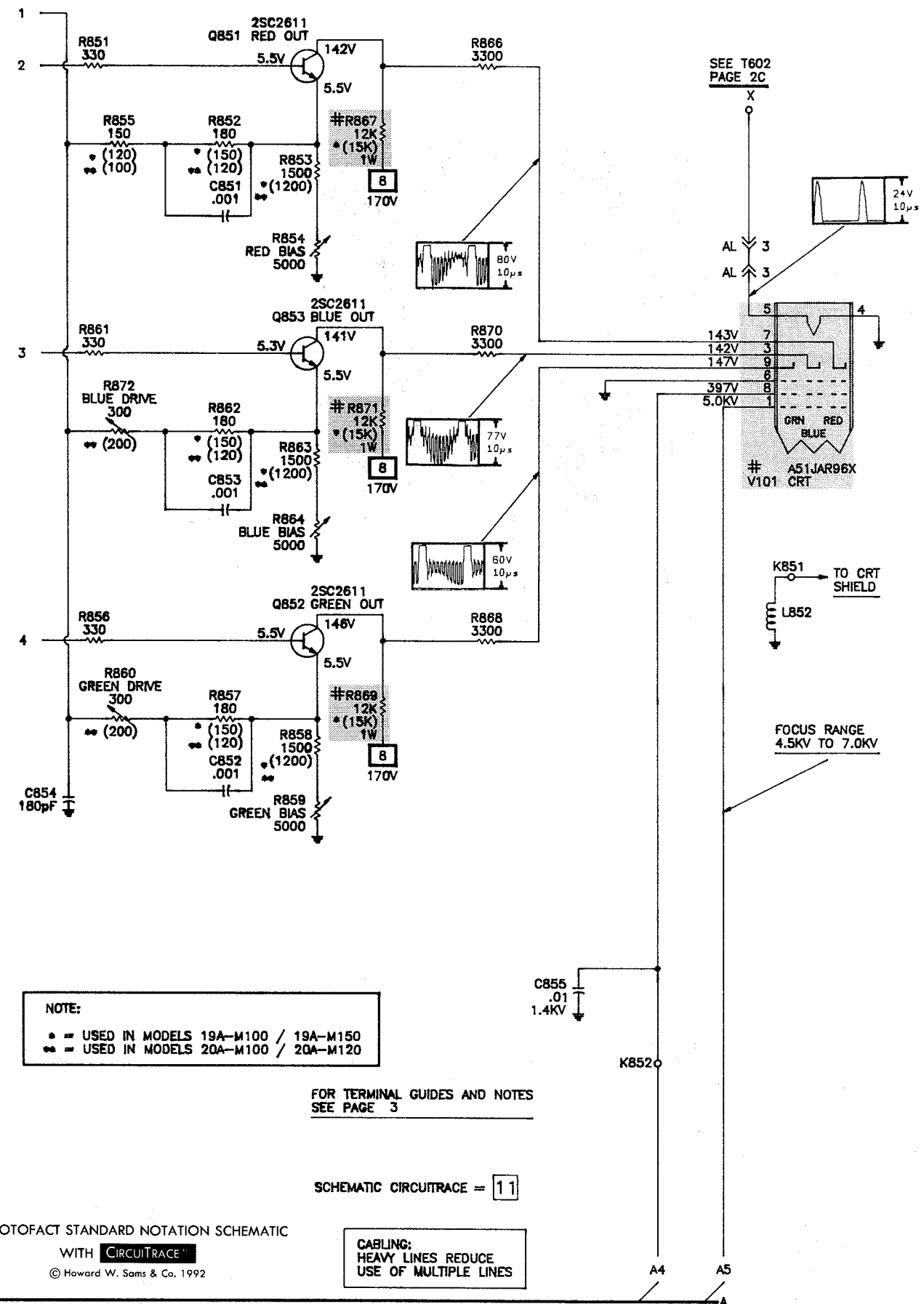


SCHEMATIC CIRCUITTRACE = 11

FOR TERMINAL GUIDES AND NOTES
SEE PAGE 3

G

CRT SCHEMATIC



A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH CIRCUITRACE
© Howard W. Sams & Co. 1992

CABLING:
HEAVY LINES REDUCE
USE OF MULTIPLE LINES

H

PARTS LIST continued

SEMICONDUCTORS continued

(Select replacement for best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D1005	-	RH-EX0138CEZZ	NTE5014A	ECG5014A	SK6A8
D1006, 7	1SS119	VHD1SS119//-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1015	1SS119	VHD1SS119//-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1017 - D1019	1SS119	VHD1SS119//-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1021, 2	1SS119	VHD1SS119//-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1301, 3	1SS119	VHD1SS119//-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1401	1SS119	VHD1SS119//-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1402	-	RH-EX0102CEZZ	-	-	-
D1403	-	RH-EX0161CEZZ	NTE5015A	ECG5015A	SK7A5
D1404	-	RH-EX0138CEZZ	NTE5014A	ECG5014A	SK6A8
D1405	-	RH-EX0131CEZZ	NTE5010A	ECG5010A	SK5A1
D1901	-	RH-EX0043TAZZ	NTE5010A	ECG5010A	SK5A1
# IC201	TA8680AN	RH-IX1712CEZZ	-	-	-
IC351	TDA7052	VHITDA7052/-1	-	-	-
# IC501	UPC1378H	RH-IX0238CEZZ	NTE1676	ECG1676	SK7653
# IC701	T2508	RH-IX0137CEZZ	NTE1751	ECG1751	-
# IC751	TA7809S	VHITA7809S/-1	-	-	-
IC1001	M50442-671SP	RH-IX1709CEZZ	-	-	-
IC1401	UPC1486C	VHIUPC1486C-1	NTE15042	ECG7019	-
Q201	2SC1906	VS2SC1906//1E	NTE107	ECG107	SK3293
Q351	2SC2002K	-	NTE85	ECG85	SK3449
	2SC2002	VS2SC2002-K1A	NTE85	ECG85	SK3449
Q401 - Q404	2SC945Q	-	NTE85	ECG85	SK3124A
	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
	2SC1815(Y)	VS2SC1815YW-1	NTE85	ECG85	SK3124A
Q405	2SA562-O	-	NTE290A	ECG290A	SK3114A
	2SA562T(O)	VS2SA562TO/-1	NTE290A	ECG290A	SK3114A
	2SA854(Q)	VS2SA854-Q/1E	NTE290A	ECG290A	SK3841
Q406	2SC945Q	-	NTE85	ECG85	SK3124A
	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
	2SC1815(Y)	VS2SC1815YW-1	NTE85	ECG85	SK3124A
Q601	2SC2482	VS2SC2482//-1	NTE399	ECG399	SK9352
	2SC2610	VS2SC2610/-1E	NTE399	ECG399	SK9352
# Q602	2SD1554	VS2SD1554//1E	NTE2302	ECG2302	SK9422
Q851 - Q853	2SC2229-O	-	NTE399	ECG399	SK3244
	2SC2229(O)	VS2SC2229O/-1	NTE399	ECG399	SK3244
Q1201, 2	2SC945Q	-	NTE85	ECG85	SK3124A
	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
	2SC1815(Y)	VS2SC1815YW-1	NTE85	ECG85	SK3124A
Q1401	2SA1015Y	-	NTE290A	ECG290A	SK9132
	2SA1015(Y)	VS2SA1015Y/1E	NTE290A	ECG290A	SK9132

For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

(Select replacement for best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q1403	2SC945Q	-	NTE85	ECG85	SK3124A
	2SC945A(Q)	VS2SC945AQ/-1	NTE85	ECG85	SK3124A
Q1701	2SC945P	-	NTE85	ECG85	SK3124A
	2SC945A(P)	VS2SC945AP/-1	NTE85	ECG85	SK3124A
	2SC1815(GR)	VS2SC1815GW-1	NTE85	ECG85	SK3124A

CONTROLS

(All wattages 1/2 watt or less, unless otherwise listed.)

Item No.	Function	Resistance	Mfr. Part No.
R213	RF-AGC	10K	RVR-B5328CEZZ
R431	Sub-Bright	10K	RVR-B4539CEZZ
R509	Vert-Size	20K	RVR-B5266CEZZ
# R707	120V Adj	1000	RVR-B5261CEZZ
R854	Red Bias	5000	RVR-B5411CEZZ
R859	Green Bias	5000	RVR-B5411CEZZ
R860	Green Drive	300	RVR-B5197CEZZ
R864	Blue Bias	5000	RVR-B5411CEZZ
R872	Blue Drive	300	RVR-B5197CEZZ
R1202	Sub Color	100K	RVR-B5369CEZZ
R1227	Sub Tint	100K	RVR-B5269CEZZ

For SAFETY use only equivalent replacement part.

SHARP

MODELS 13A-M100, 13A-M150, 19A-M100, 19A-M150, 20A-M100, 20A-M120

SAFETY PRECAUTIONS

SERVICE WARNING

ONLY qualified service technicians who are familiar with safety checks and guidelines should perform service work. For continued SAFETY:

- 1. Before replacing parts, disconnect power source to protect electrostatically sensitive parts.
- 2. Do not attempt to modify any circuit unless so recommended by the manufacturer.
- 3. When servicing chassis, use an isolation transformer between the line cord and power receptacle.

SERVICING HIGH VOLTAGE AND PICTURE TUBE

Use EXTREME CAUTION when servicing the High Voltage circuits.

- 1. To discharge static High Voltage, connect a 10-kilohm resistor in series with a test lead between chassis and picture tube anode lead.
- 2. DO NOT lift picture tube by the neck.
- 3. ALWAYS wear shatterproof goggles when handling picture tube 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 picture tube is the only potential source of x-rays.

- 1. Keep an accurate High Voltage meter available at all times. Check meter calibration periodically.
- 2. Whenever servicing a chassis, check High Voltage at various brightness levels to be sure it is regulating properly.
- 3. 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.
- 4. When troubleshooting a set with excessive High Voltage, avoid close contact with picture tube. DO NOT operate set longer than necessary. To locate the cause of excessive High Voltage, use a variable AC transformer to regulate voltage.
- 5. In present chassis, 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.

SAFETY CHECKS -- FIRE AND SHOCK HAZARD

Cold Leakage Checks for Sets with Isolated Ground

- 1. Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch ON.
- 2. Use an ohmmeter to measure the resistance between the jumpered 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 200 kilohms and 5 megohms. Parts without a return path must register infinity.

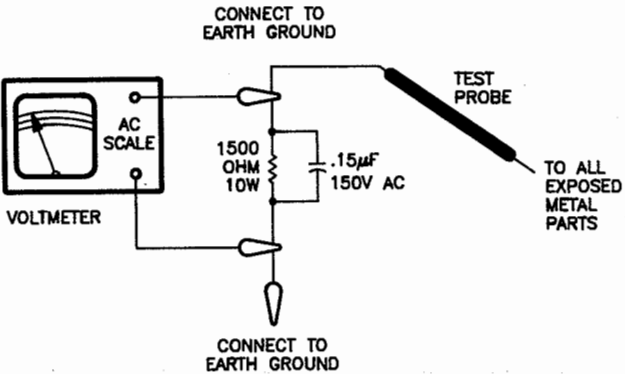
Hot Leakage Current Check

- 1. Plug the AC cord directly into AC outlet. DO NOT use an isolation transformer.
- 2. Use a 1500-ohm, 10-watt resistor in parallel with a .15-microfarad 150-volt AC capacitor to connect between any exposed metal parts on the set and a good earth ground. (See figure below.)
- 3. Use an AC voltmeter with at least 1000 ohms-per-volt sensitivity to measure the voltage across the resistor. Check all exposed metal parts and measure voltage at each point.
- 4. Voltage readings should not exceed .75 volts RMS (5 milliamps AC). Any value exceeding this limit constitutes a potential shock hazard and must be corrected.
- 5. If AC plug is not polarized, reverse the AC plug and repeat exposed metal part voltage measurement at each point.

GENERAL GUIDELINES

Perform a final SAFETY CHECK before returning set to customer.

- 1. Check repaired area for poorly soldered or de-soldered connections, and check entire circuit board for solder splashes.
- 2. Check inner board wiring for pinched wires or wires contacting any high-wattage resistors.
- 3. 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.



TEST EQUIPMENT

Test equipment listed by participating manufacturers illustrates typical or equivalent equipment used by Sams engineers to obtain measurements. This equipment is compatible with most types used by field service technicians.

Equipment	B&K Precision No.	Sencore No.
Oscilloscope	1541A, 2120, 2125, 2160, 2190, 2522	SC61
Generators		
RGB	1249A, 1260	RG67
Multiburst Signal	1251, 1260	VA62A
Color Bar	1211A, 1249A, 1251, 1260	VA62A, CG25, NT64
TV Stereo	2009	ST65, ST66
Analog VOM	114, 117, 177, 214	-
Digital VOM	377, 388HD, 2700 Series, 2831A, 2860, 2900 Series	DVM37, DVM56A, SC61
Frequency Meter	1803A, 1804A, 1805, 1822, 1851, 1855	FC71, SC61
Hi-Voltage Probe	HV-44	HP200
VOM/DMM	-	TP212
Accessory Probes	PR-28(HV)	-
Isolation Transformer	TR110, 1604, 1653, 1655	PR57
Capacitance Analyzer	810A, 815, 820, 830	LC76, LC101, LC102
CRT Analyzer	480, 490	CR70
Temperature Probe	TP-28, TP-30	-
AC Leakage Tester	1655	PR57
Logic Probe	DP21, DP51	-
Logic Pulser	DP31, DP101	-
Inductance Analyzer	875A	LC76, LC101, LC102
Flyback Yoke Tester	875A	VA62A, LC76, LC101, LC102
TV Stereo Power Monitor	-	SR68
Field Strength Meter	-	FS73, FS74
Transistor Tester	510, 520B, 530	TF46
Video Analyzer	-	VA62A
Modulator/Converter	1201	-

PARTS LIST

Important Parts Information

- The parts listed here are those not usually available from a well-stocked supply cabinet or bin.
- Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.
- 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.

Obtaining Parts

Many of these parts are available from your local Sams authorized distributor or the manufacturer of the equipment. Call Sams for the name of your nearest distributor:

800-428-7267

Or consult the Sams *Annual Index* for the address of the original equipment manufacturer.

Participating Vendors

Information on test equipment and replacement parts is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- | | |
|--|--|
| ▪ B&K Precision | ▪ PTS Electronics Corporation (PTS) |
| ▪ Custom Components Corporation (Chek-A-Color) | ▪ Quam-Nichols Co. (Quam) |
| ▪ EVG / Russell Industries, Inc. | ▪ Sencore, Inc. |
| ▪ NTE Electronics, Inc. (NTE) | ▪ Thomson Consumer Electronics, Inc. (SK, TCE) |
| ▪ Philips ECG Company (ECG) | |

SEMICONDUCTORS

(Select replacement for best results.)

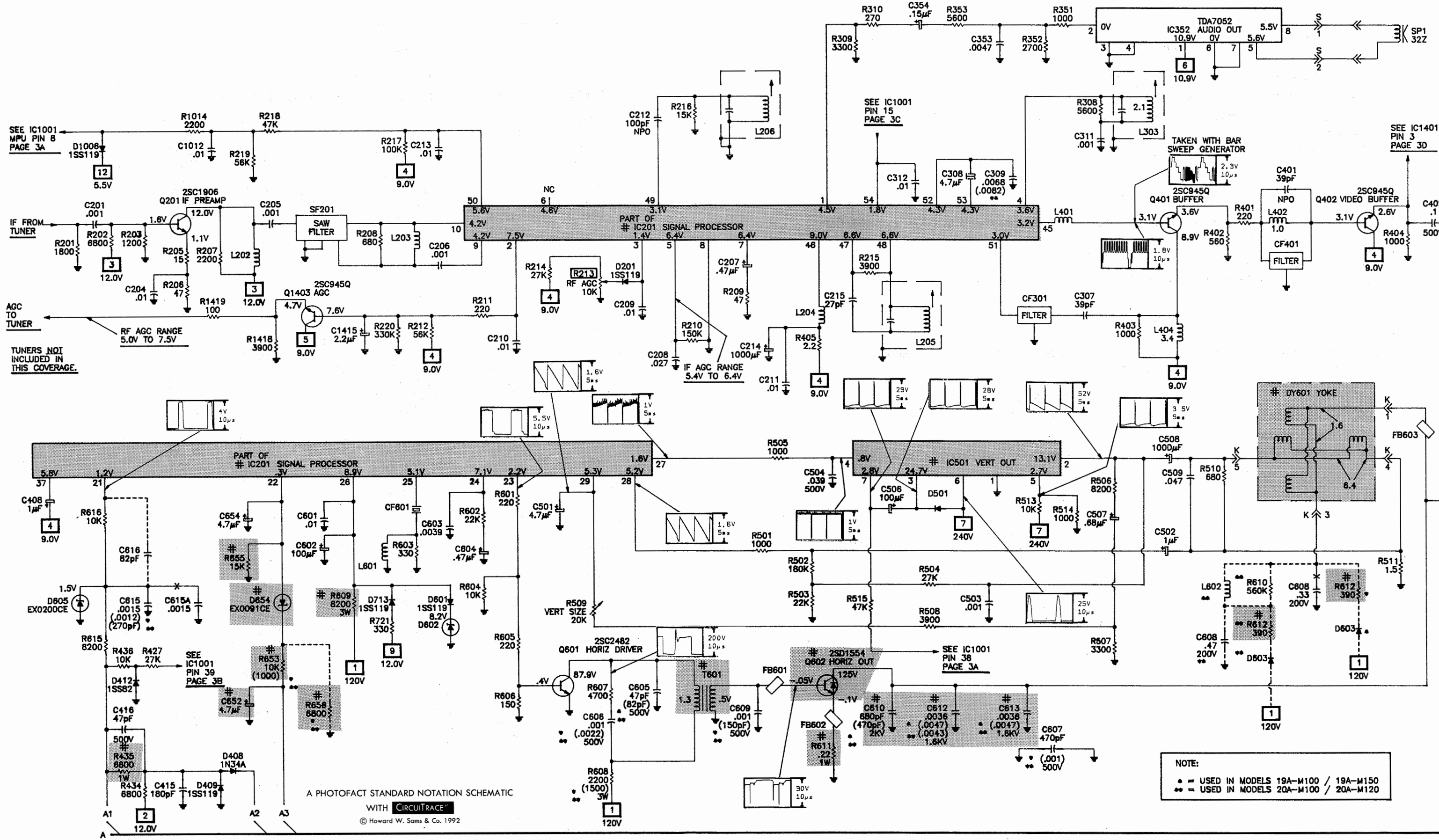
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D201	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D352	-	RH-EX0041TAZZ	NTE5014A	ECG5014A	SK6A8
D401 - D403	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D404	-	RH-EX0024CEZZ	NTE5013A	ECG5013A	SK6A2
D405	-	RH-EX0131CEZZ	NTE5010A	ECG5010A	SK5A1
D406	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D408	1N34A	VHD1N34A///-1	NTE110MP	ECG110MP	SK3709
D409	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D412	1SS82	VHD1SS82///1A	NTE552	ECG552	SK9000
D415	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-EX0041TAZZ	NTE519	ECG519	SK3100
D501	S5277G	RH-DX0110CEZZ	NTE116	ECG116	SK3312
	DS135C-AT	RH-DX0155CEZZ	NTE552	ECG552	SK9000
# D502	EU-1	RH-DX0131CEZZ	NTE552	ECG552	SK9000
	TVR1G	RH-DX0126CEZZ	NTE552	ECG552	SK9000
D601	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D602	-	RH-EX0089CEZZ	NTE5016A	ECG5016A	SK8A2
# D604	EU-1	RH-DX0131CEZZ	NTE552	ECG552	SK9000
	TVR1G	RH-DX0126CEZZ	NTE552	ECG552	SK9000
	RH1S	RH-DX0086TAZZ	NTE552	ECG552	SK9000
D605	-	RH-EX0200CEZZ	NTE5021A	ECG5021A	SK12A
# D651	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
# D654	-	RH-EX0130CEZZ	NTE5029A	ECG5029A	SK20A
# D701 - D704	S5277G	RH-DX0110CEZZ	NTE116	ECG116	SK3312
	DS135C-AT	RH-DX0155CEZZ	NTE552	ECG552	SK9000
# D705	-	RH-EX0084CEZZ	NTE5093A	ECG5093A	SK75V
# D706	S6785G	VHSS6785GLB2E	-	-	-
# D707	-	RH-DX0181CEZZ	NTE580	ECG580	SK5036
# D708	S5277G	RH-DX0110CEZZ	NTE116	ECG116	SK3312
	DS135C-AT	RH-DX0155CEZZ	NTE552	ECG552	SK9000
D711	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D712	-	RH-EX0022TAZZ	NTE5020A	ECG5020A	SK11A
D713	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D714	-	RH-EX0217CEZZ	NTE5023A	ECG5023A	SK14A
D715	-	RH-EX0592CEZZ	-	-	-
D716	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1001, 2	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100
D1003	-	RH-EX0103CEZZ	NTE5011A	ECG5011A	SK5A6
D1004	1SS119	VHD1SS119/-1	NTE519	ECG519	SK3100
	1N4148	RH-DX0045GEZZ	NTE519	ECG519	SK3100

For SAFETY use only equivalent replacement part.

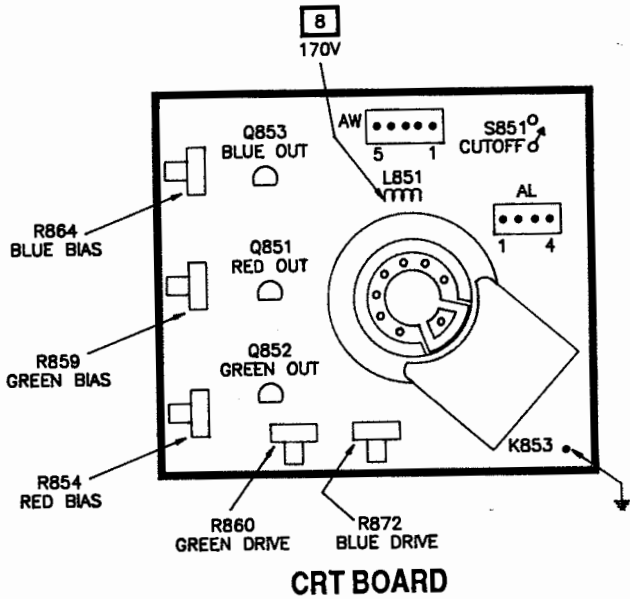
A

TELEVISION SCHEMATIC

B



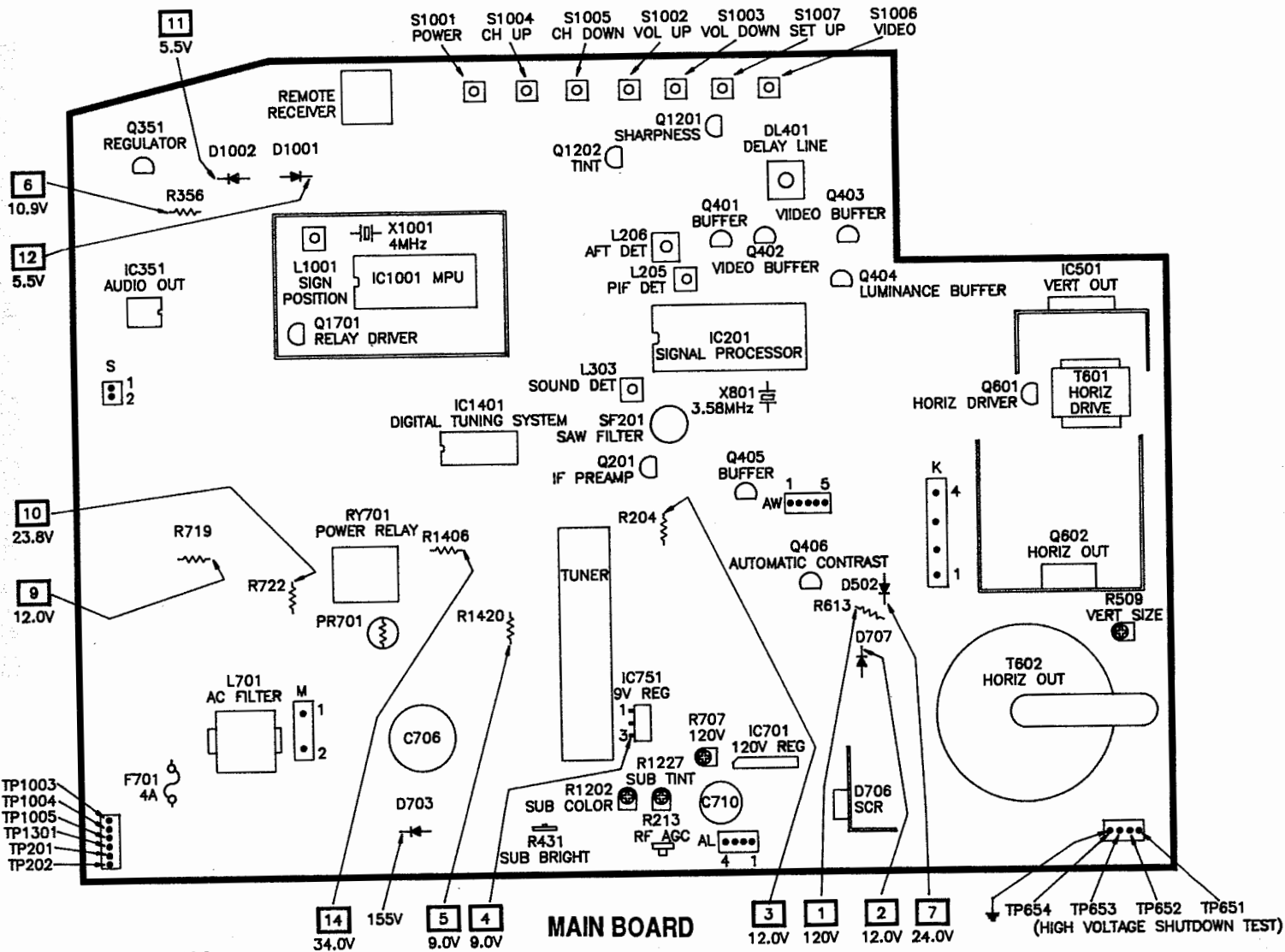
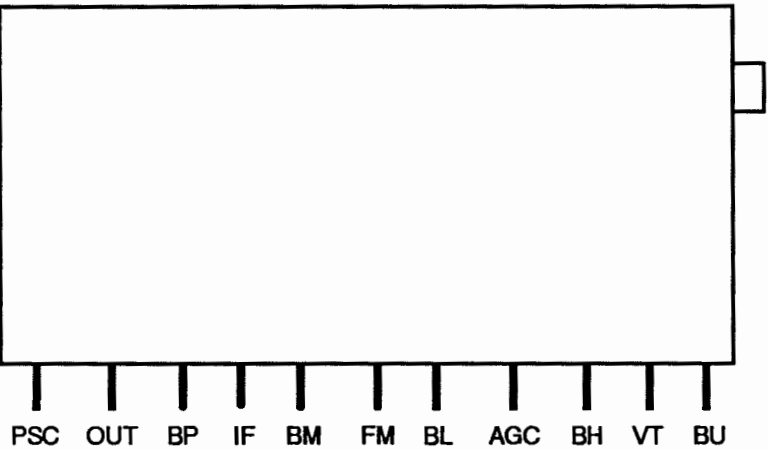
PLACEMENT CHART



CRT BOARD

TUNER INFORMATION

TUNER TERMINAL GUIDE



MAIN BOARD

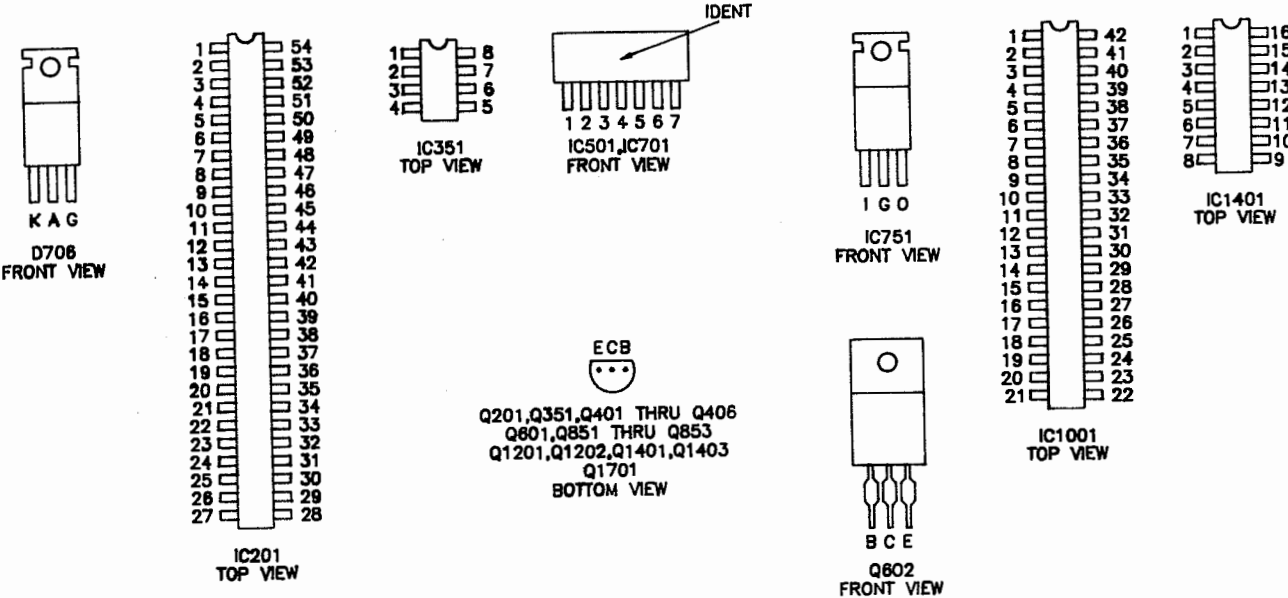
TUNER VOLTAGE CHART

	VHF Low Band	VHF High Band	UHF Band
BU	0V	.1V	9.0V
VT	1.8V	4.5V	6.6V
BH	0V	9.0V	1.0V
AGC	6.9V	6.9V	6.9V
BL	9.0V	8.2V	.4V
FM	1.5V	1.4V	0V
BM	9.0V	9.0V	9.0V
BP	5.2V	5.2V	5.2V
PSC	1.1V	.3V	.2V

Note: VHF Low Band voltages taken on channel 2.
VHF High Band voltages taken on channel 7.
UHF Band voltages taken on channel 14.

NOTES

TERMINAL GUIDES AND NOTES



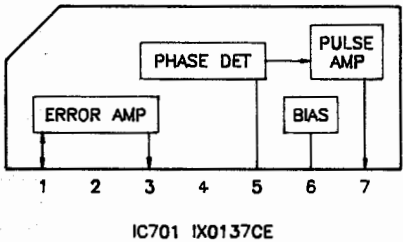
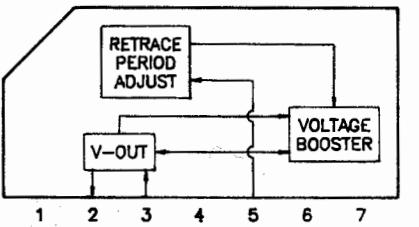
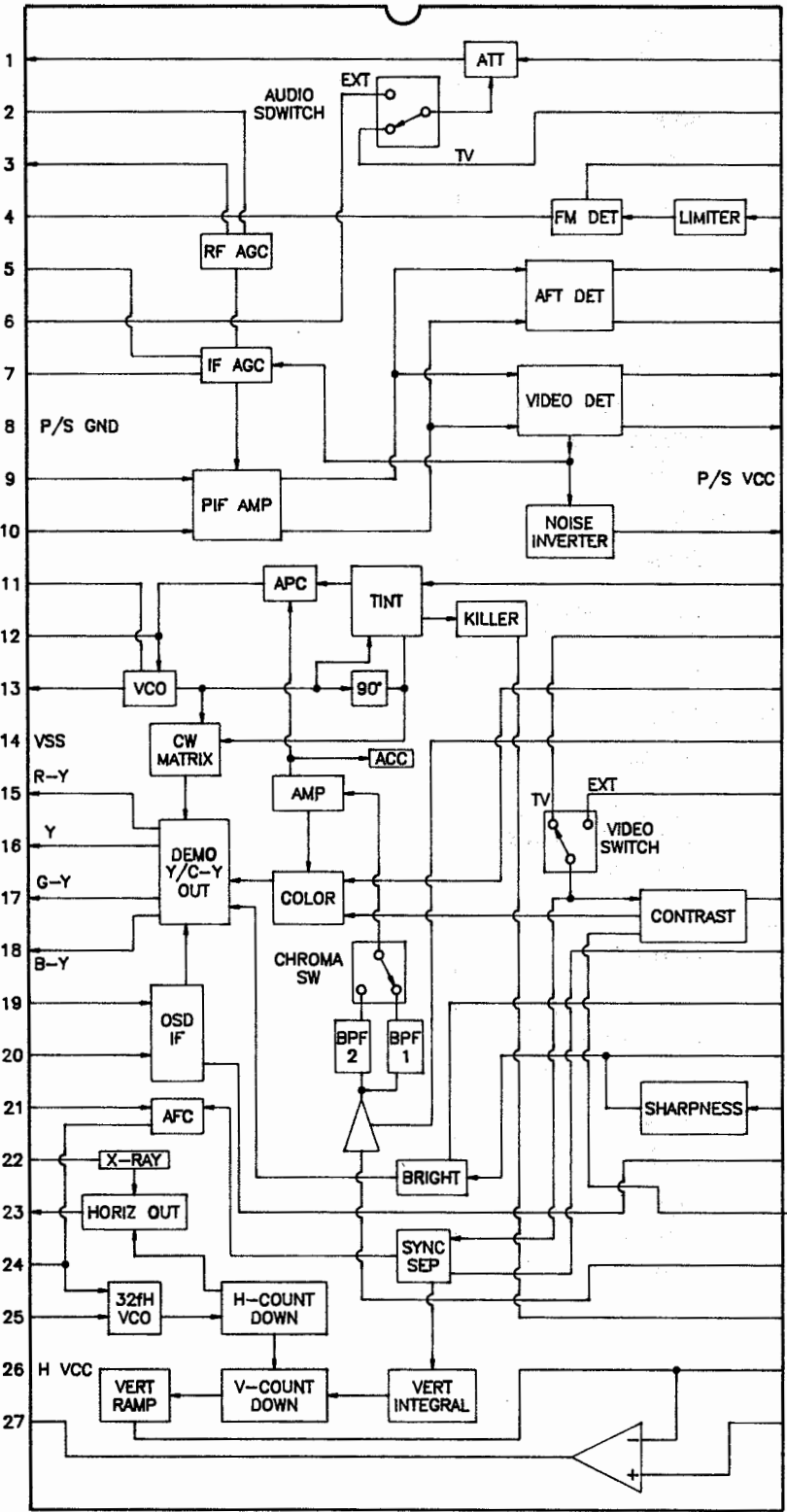
For SAFETY use only equivalent replacement part, see parts list.

— Circuitry not used in some versions
--- Circuitry used in some versions

Nominal value
Ground
Chassis
Common tie point

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms: triggered scope, keyed rainbow generator.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured with digital meter, no signal.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Capacitors are 50 volts or less.
5% or greater unless noted.
Electrolytic capacitors are 50 volts or less.
20% or greater unless noted.
Resistors are 1/2W or less.
5% or greater unless noted.
Value in () used in some versions.
Measurements with switching as shown, unless noted.

IC FUNCTIONS



SHARP MODELS 13A-M100, 13A-M150, 19A-M100, 19A-M150, 20A-M100, 20A-M120

PARTS LIST continued

NOTES

CABINET PARTS

MODEL 13A-M100

Item	Part No.
Cabinet Assembly	CCABA2119WEV0
Cabinet Rear	GCABB2120PEKA
Pushbuttons	JBTN-0070PEKA

MODEL 13A-M150

Item	Part No.
Cabinet Assembly	CCABA2119WEV2
Cabinet Rear	GCABB2120PEKB
Pushbuttons	JBTN-0070PEKA

MODEL 19A-M100

Item	Part No.
Cabinet Assembly	CCABA1108MES0
Cabinet Rear	GCABB1072MEKA
Pushbuttons	JBTN-1018MEKA

MODEL 19A-M150

Item	Part No.
Cabinet Assembly	CCABA1108MES1
Cabinet Rear	GCABB1072MEKB
Pushbuttons	JBTN-1018MEKA

MODEL 20A-M100

Item	Part No.
Cabinet Assembly	CCABA1107MES0
Cabinet Rear	GCABB1070MEKA
Pushbuttons	JBTN-1020MEKA

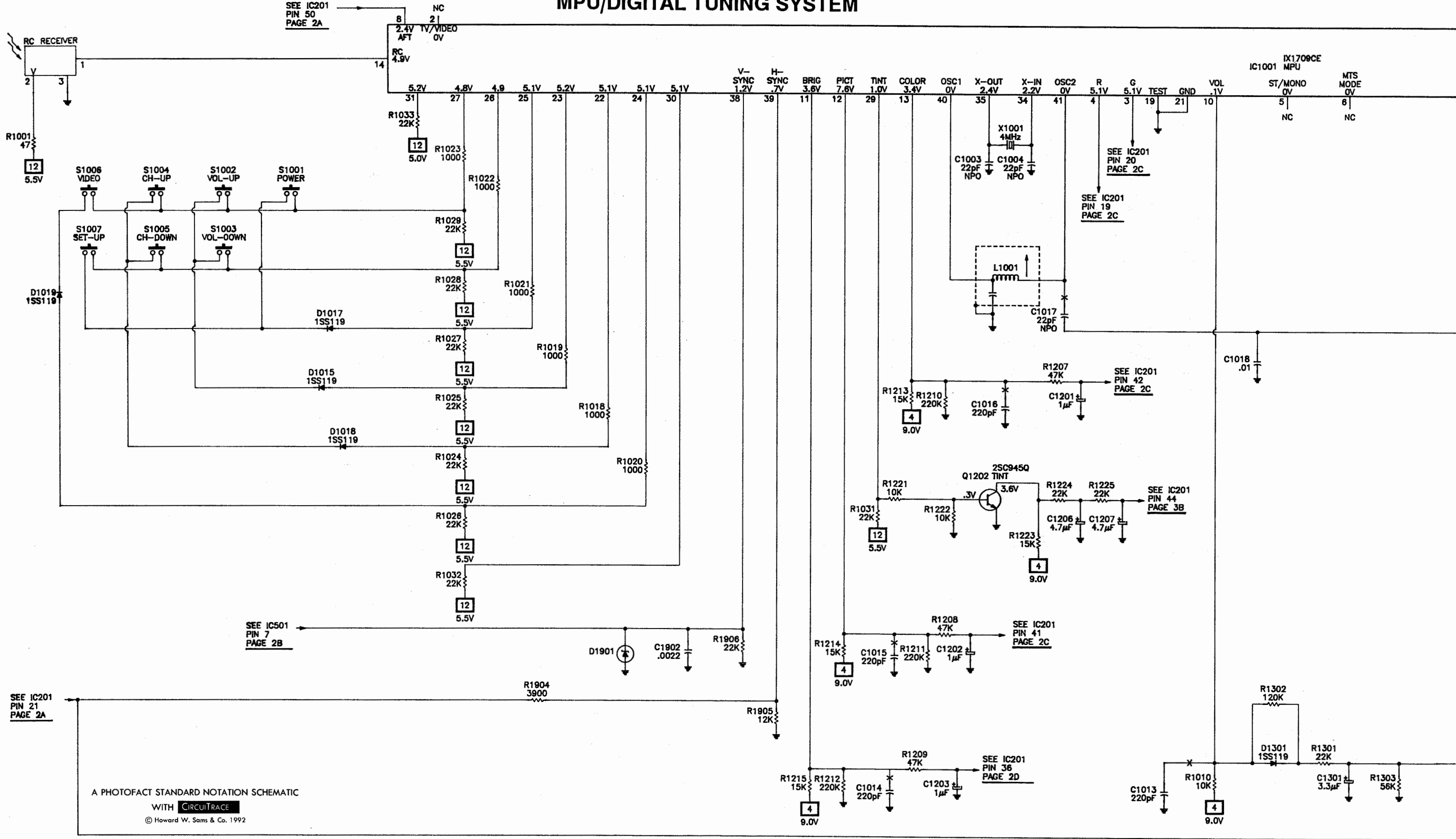
MODEL 20A-M120

Item	Part No.
Cabinet Assembly	CCABA1118MES0
Cabinet Rear	GCABB1070MEKA
Pushbuttons	JBTN-1018MEKA

A

B

MPU/DIGITAL TUNING SYSTEM



PARTS LIST continued

MISCELLANEOUS

Item No.	Description	Mfr. Part No.	Notes
CF301	Sound Take-off	RFILC0029TAZZ	-
CF401	Trap	RFILC0013CEZZ	4.5MHz Trap
CF601	Crystal	RFILA0034CEZZ	503kHz
DL401	Delay Line	RCILZ0547CEZZ	-
# F701	Fuse	QFS-B4023CEZZ	-
	4Amp 125V AC	QFS-B4021GEZZ	-
FB601	Ferrite Bead	RBLN-0010CEZZ	-
FB602	Ferrite Bead	RBLN-0010CEZZ	-
FB603	Ferrite Bead	RBLN-0010CEZZ	-
FB701	Ferrite Bead	RBLN-0010CEZZ	-
# L701	Line Filter	RCILF0003PEZZ	-
# L702	Degaussing	RCILG0029PEZZ	-
# P701	Cord	QACCD3014CESA	-
# RY701	Relay	RRLYU0024CEZZ	-
S851	Switch	QSW-B0015CEZZ	-
S1001	Switch	QSW-K0068CEZZ	Power
S1002	Switch	QSW-K0068CEZZ	Volume Up
S1003	Switch	QSW-K0068CEZZ	Volume Down
S1004	Switch	QSW-K0068CEZZ	Channel Up
S1005	Switch	QSW-K0068CEZZ	Channel Down
S1006	Switch	QSW-K0068CEZZ	Video
S1007	Switch	QSW-K0068CEZZ	Set-Up
SF201	Filter	RFILC0137CEZZ	Surface Acoustic
# V101	CRT	A51JAR96X	-
X801	Crystal	RCRSB0001PEZZ	-
X1001	Crystal	RCRSB0004PEZZ	4MHz
	Board	QTANZ0122CEZZ(1)	Antenna Terminal
	Board	DUNTK7048WEV1(1)	Mother
	Board	DUNTK7049WEV1(1)	CRT
#	U/V Tuner	VTUVTSG6USZP(1)	-

For SAFETY use only equivalent replacement part.
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.

COILS & TRANSFORMERS

Item No.	Function	Mfr. Part No.	On-Unit No.	Russell Part No.
# DY601	Yoke 90° Horiz 3.28mh Vert 31.1mh	RCILH0014PEZZ(1)	H0014PE	-
		RCILH0016PEZZ(2)	-	-
		RCILH0008PEZZ(3)	-	-
		RCILH1606CEN5(4)	-	-
		RCILH0053MEZZ(5)	-	-
		RCILH0052MEZZ(6)	-	-
T601	Horizontal Driver	RTRNZ0367CEZZ	Z0367CE	-
# T602	Horizontal Output	RTRNF0057PEZZ	F0057PE-M	FBT-245
		RTRNF0058PEZZ(5)	-	-
		RTRNF0060PEZZ(6)	-	-

For SAFETY use only equivalent replacement part.
(1) Used in models 13A-M100, 13A-M150 (CRT's VBA34JLN60X, VB34KFC02X, VB37GDA86X) only.
(2) Used in models 13A-M100, 13A-M150 (CRT VBA34EAE01X) only.
(3) Used in models 13A-M100, 13A-M150 (CRT VB370BVBK1UTE) only.
(4) Used in models 13A-M100, 13A-M150 (CRT VB370BV1BK1) only.
(5) Used in models 19A-M100, 19A-M150 only.
(6) Used in models 20A-M100, 20A-M120 only.

COILS (RF-IF)

Item No.	Rating	Mfr. Part No.
L202	Coil .82uH	VP-MKR82K0000
L203	Coil .68uH	VP-MKR68K0000
L204	Coil .27uH	VP-XFR27K0000
L205	Pif Det	RCILIO448CEZZ
L206	AFT	RCILIO547CEZZ
L303	Sound Det	RCILIO374CEZZ
L401	Coil 180MHz	RCILP0094CEZZ
L402	Coil 10uH	VP-MK100K0000
L403	Coil 27uH	VP-OF270K0000
L404	Coil 10uH	VP-XF100K0000
L601	Coil 82uH	VP-MK820K0000
L851	Coil 220uH	VP-MK221K0000
L852	Coil 4.7uH	VP-CF4R7K0000
L1001	Sign Position	RCILB0035CEZZ

SPEAKER

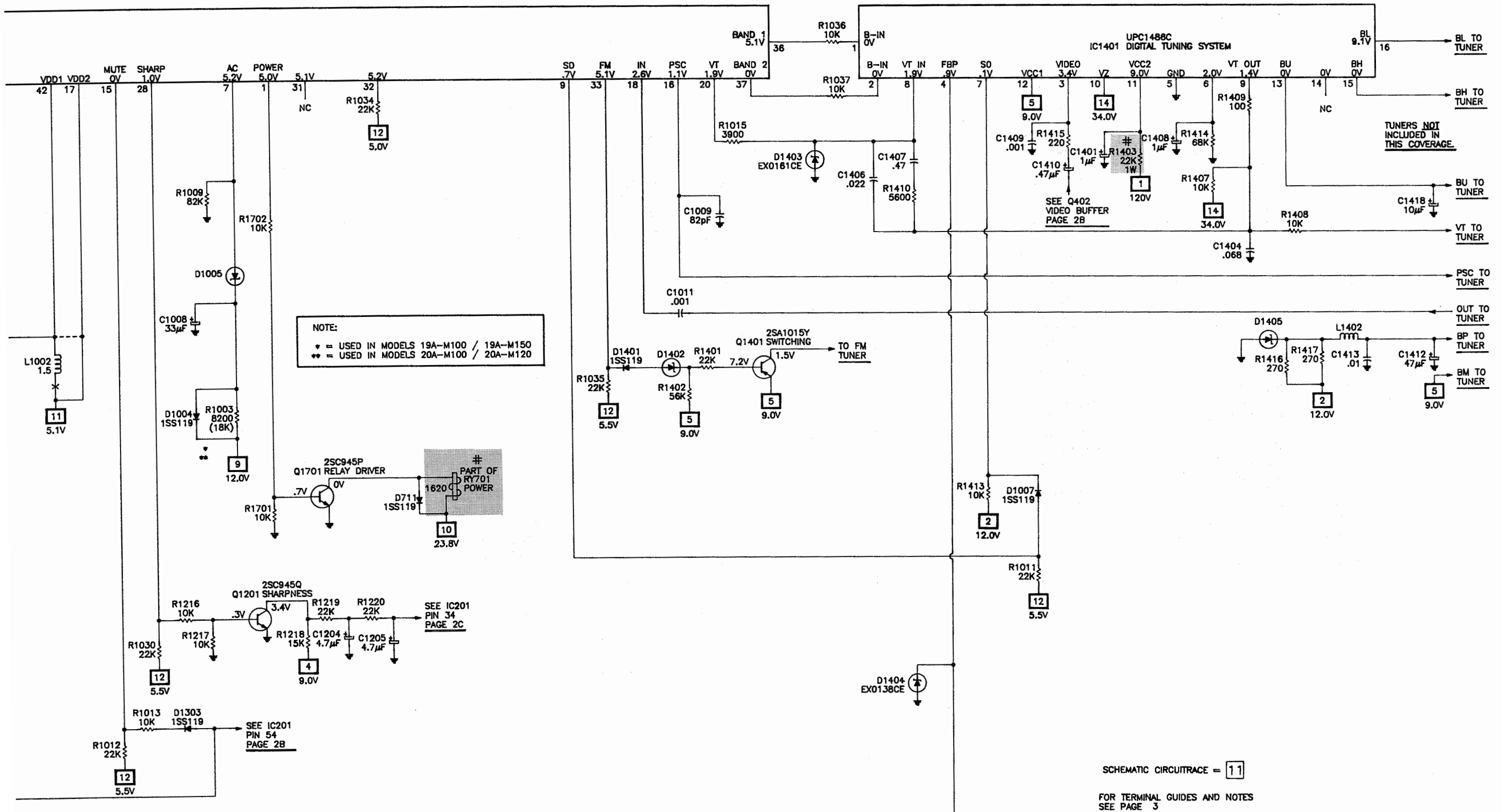
Item No.	Description	Mfr. Part No.	Quam Part No.
SP1	3" Round 32 Ohm 2W PM	VSP0080P-G5YB	-
		VSP0080P-G3YB(1)	-

(1) Used in models 19A-M100, 19A-M150, 20A-M100, 20A-M120 only.



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M. Herkless, M. McDonald,
J. Watson, B. Smith



PARTS LIST continued

RESISTORS			
Item No.	Rating	Mfr. Part No.	NTE Replacement
# PR701	11.3 Cold PTC	RMPTP0026CEZZ	-
R354	82 5% 3W Oxide Flm	VRS-SV3LB820J	3W082
# R435	6800 5% 1W Oxide Flm	VRS-VV3AB682J	1W268
# R512	1 5% 1W Mtl Flm	VRN-VV3AB1R0J	1W1D0
R608	2200 5% 3W Oxide Flm	VRS-SV3LB222J	3W222
# R609	8200 5% 3W Oxide Flm	VRS-SV3LB822J	3W282
# R611	.22 5% 1W Mtl Flm	VRN-VV3ABR22J	1WD22
# R613	6.8 10% 10W WW	VRW-KQ4AC6R8K	10W6D8
# R614	10 5% 1/2W Oxide Flm	VRS-SV2HC100J	HW010
# R617	5600 10% 1/2W Cbn Flm	VRC-MA2HG562K	HW256
# R618	10K 5% 1/2W Oxide Flm	VRS-SV2HC103J	HW103
# R619	1.8 5% 1W Mtl Flm	VRN-VV3AB1R8J	1W1D8
# R651	68 5% 1/4W Cbn Flm	VRD-RA2EE680J	QW068
# R652	10K 5% 1/8W Cbn Chp	VRD-MN2BE103	-
# R653	10K 5% 1/8W Cbn Chp	VRD-MN2BE103	-
# R655	15K 5% 1/8W Cbn Chp	VRD-MN2BE153J	-
# R701	2.7 10% 7W WW	VRW-KV3NC2R7K	-
# R702	820K 5% 1/2W Cbn Flm	VRD-RM2HD824J	HW482
# R703	330 5% 3W Oxide Flm	VRS-SV3LB331J	3W133
# R704	150 5% 1/2W Oxide Flm	VRS-SV2HC151J	HW151
# R708	100K 2% 1/4W Cbn Flm	VRD-RA2EE104G	QW410
# R709	5600 2% 1/4W Cbn Flm	VRD-RA2EE562G	QW256
# R710	68K 5% 1/8W Cbn Chp	VRD-MN2BE683J	-
# R715	2.2 5% 2W Mtl Flm	VRN-VV3DB2R2J	2W2D2
# R717	330 5% 5W WW	RR-WZ0116CEZZ	5W133
# R718	330 5% 5W WW	RR-WZ0116CEZZ	5W133
# R719	560 5% 3W Oxide Flm	VRS-SV3LB561J	3W156
# R867	12K 5% 1W Oxide Flm	VRS-VV3AB123J	1W312
# R869	12K 5% 1W Oxide Flm	VRS-VV3AB123J	1W312
# R871	12K 5% 1W Oxide Flm	VRS-VV3AB123J	1W312
# R1403	22K 5% 1W Oxide Flm	VRS-VV3AB223J	1W322
# For SAFETY use only equivalent replacement part.			

CAPACITORS		
Item	Rating	Mfr. Part No.
C401	39 NPO 50V 5%	-
# C610	680 2KV	RC-KZ0039CEZZ
# C612	.0036 1.6KV 5%	VCFP3CA362J
# C613	.0036 1.6KV 5%	VCFP3CA362J
# C701	.22 125V AC	RC-QZ022DCEZZ
		RC-QZ030DCEZZ
C709	.047 200V	VCQPSB2DA473K
# C712	.01 50V	VCQYSH1HM103K
C716	.0015 500V	VCKYPA2HB152K
C1003	22 NPO 50V 5%	-
C1004	22 NPO 50V 5%	-
C1017	22 NPO 50V 5%	-
# For SAFETY use only equivalent replacement part.		

ELECTROLYTIC CAPACITORS		
Item	Rating	Mfr. Part No.
C308	4.7 50V NP	VCE9AA1HW475M
C407	1 50V NP	VCE9AA1HW105M
C417	10 16V	VCSATA1CE106K
C501	4.7 16V	VCSATA1CE475K
C507	.68 35V	VCSATA1VE684K
# C706	620 200V	RC-EZ0183CEZZ
# C710	100 160V	RC-EZ0183CEZZ
C717	10 100V	VCEAGA2AW106M
C809	2.2 50V NP	VCE9AA1HW225M
C1410	.47 50V NP	VCE9AA1HW474M
# For SAFETY use only equivalent replacement part.		