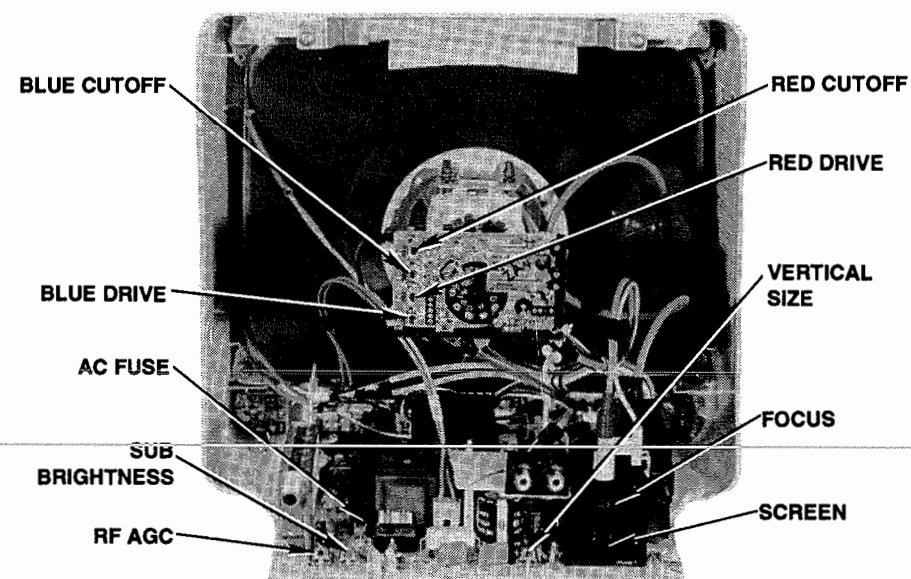


CABINET - REAR VIEW



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



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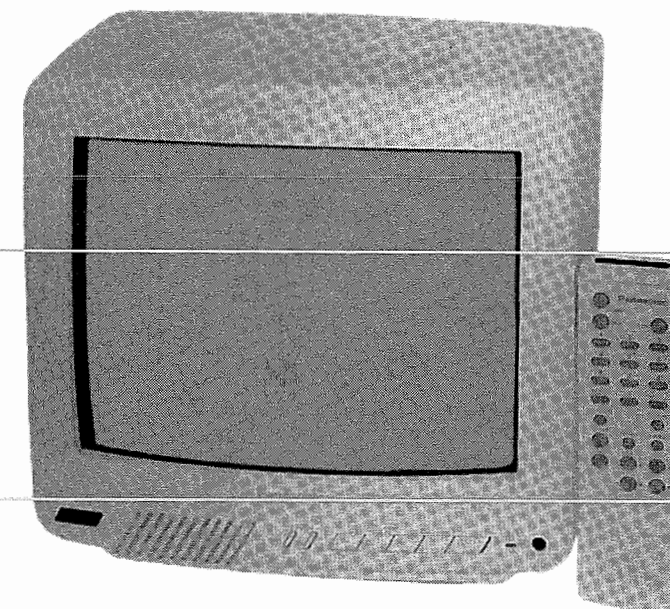
MODEL CT-10R11S (CHASSIS ASDP215)

PANASONIC

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PANASONIC Model CT-10R11S (Chassis ASDP215)



Representative Model

**Essential coverage
for servicing a television receiver...**

- Schematics
- Component locations
- Parts list

Coverage includes this additional model and chassis:

MODEL	CHASSIS
CT-10R11CS	YASDP215

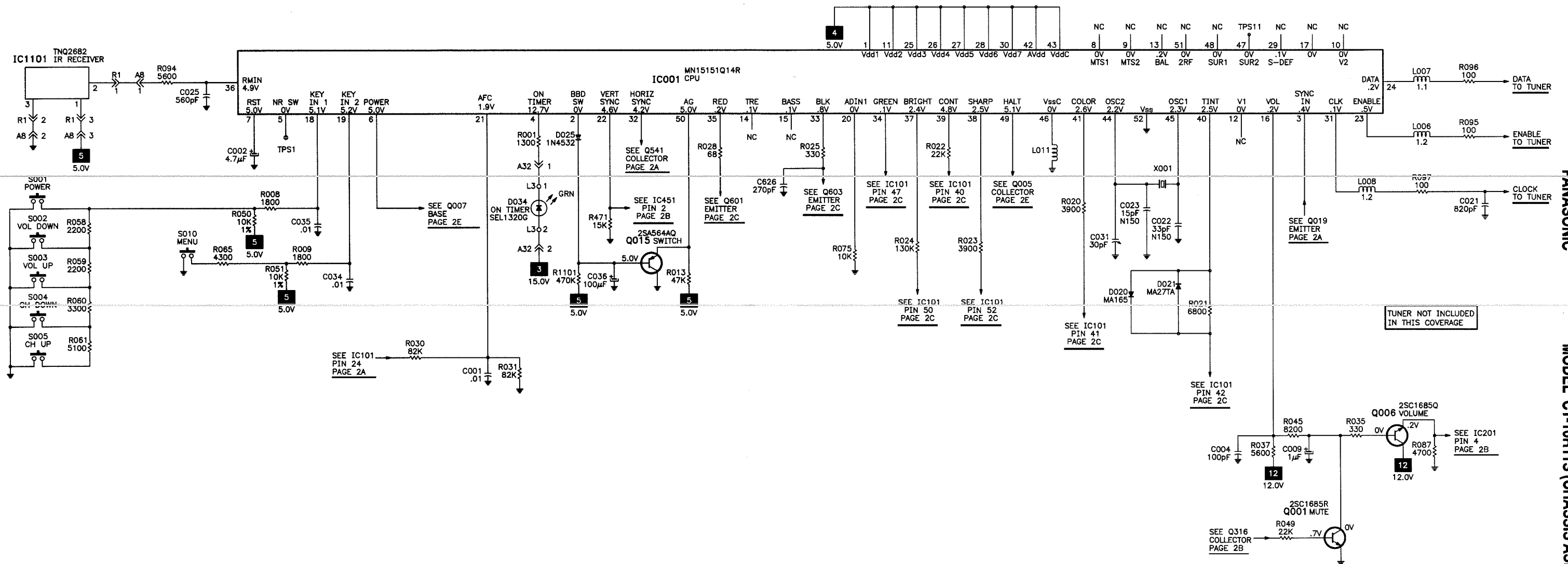


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JULY 1994 SET 3351

For Supplier Address,
See PHOTOFACT Annual Index

SYSTEM CONTROL SCHEMATIC



FANASONIC

MODEL CT-10R11S (CHASSIS ASDP215)

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 4

A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE®**
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PARTS LIST continued

MISCELLANEOUS			
Item No.	Description	Mfr. Part No.	Notes
# F001	Fuse	0BA1C40NU100	4 Amp, 125V
J1	Jack	XCJT1A7010	Earphone
# P001	Cord	OSX110903	AC Line
# RL001	Relay	TSE1864	Power
S001	Switch	EVQQBH12T	Power
S002	Switch	EVQQBH12T	Volume Down
S003	Switch	EVQQBH12T	Volume Up
S004	Switch	EVQQBH12T	Channel Down
S005	Switch	EVQQBH12T	Channel Up
S010	Switch	EVQQBH12T	Menu
SP1	Speaker	EAS7D11KC-G	1 1/2" x 2 3/4", 16 Ohms, 1.5W
# V1	CRT	A26JGZ91X	-
X001	Crystal	TSS2077MX	Oscillator
X101	Filter	EFCH45MVK12N	SAW
X102	Trap	EFCS4R5MW3BA	4.5MHz
X201	Filter	EFCS4R5MS4	4.5MHz
X501	Crystal	EF0A503KS41	Oscillator
X601	Crystal	TSS816MX	3.58MHz
#	PC Board (1)(2)	ONP190011HC	A
	PC Board (1)(3)	ONP190011JC	A
	PC Board (1)	ONP15001ZA	C
	PC Board (1)	ONP14016AA	L
	PC Board (1)	ONP19070ZA	R
	PC Board (1)	ONP19069	Y
	Socket	TJS1A5150	CRT
	Transmitter	EUR641231	Remote
	U/V Tuner (1)(2)	ENV568C4G3	-
	U/V Tuner (1)(3)	ENV568C5G3	-
# For SAFETY use only equivalent replacement part.			
(1) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.			
(2) Used in model CT-10R11S only.			
(3) Used in model CT-10R11CS only.			

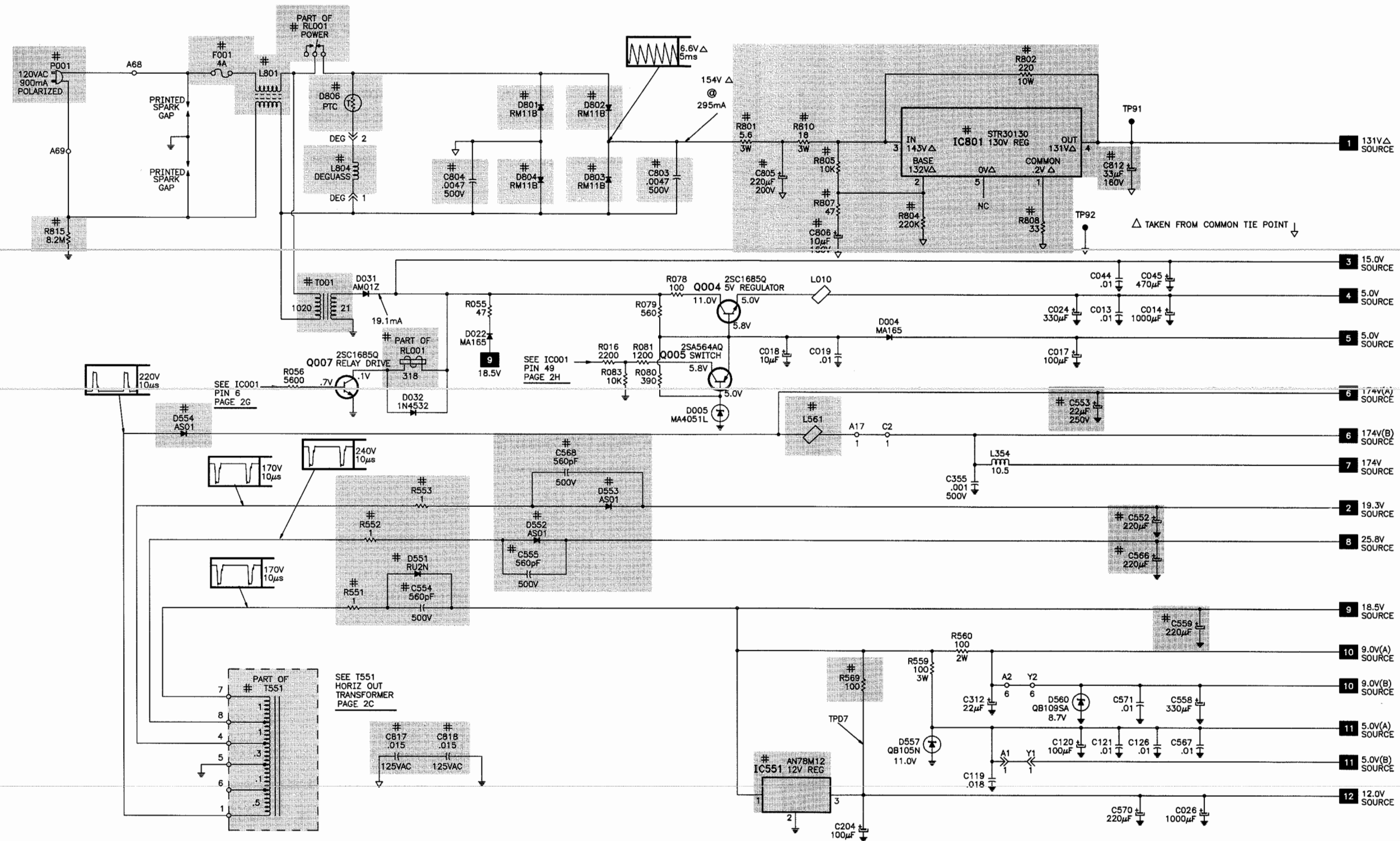
Important Parts Information	
<ul style="list-style-type: none">The parts listed here are those not usually available from a well-stocked supply cabinet or bin.Where items may be replaced with equivalent parts, several alternates are shown from participating vendors.On the parts lists, safety items are 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 <i>Annual Index</i> for the address of the original equipment manufacturer.	
Participating Vendors	
<ul style="list-style-type: none">Custom Components Corporation (Chek-A-Color)NTE Electronics, Inc. (NTE)Philips ECG Company (ECG)PTS Electronics Corporation (PTS)Sencore, Inc.Thomson Consumer Electronics, Inc. (SK, TCE)	

CABINET PARTS	
Item	Mfr. Part No.
MODEL CT-10R11S	
Cabinet Back	TXFKU1693SER
Cabinet Front	TXFKY890SER
7 Button Assembly	TXFBX021SER
MODEL CT-10R11CS	
Cabinet Back	TXFKU510SER
Cabinet Front	TXFKY890SER
7 Button Assembly	TXFBX021SER

PANASONIC

MODEL CT-10R11S (CHASSIS ASDP215)

POWER SUPPLY SCHEMATIC



ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 4


A PHOTOFACIT STANDARD NOTATION SCHEMATIC

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PARTS LIST

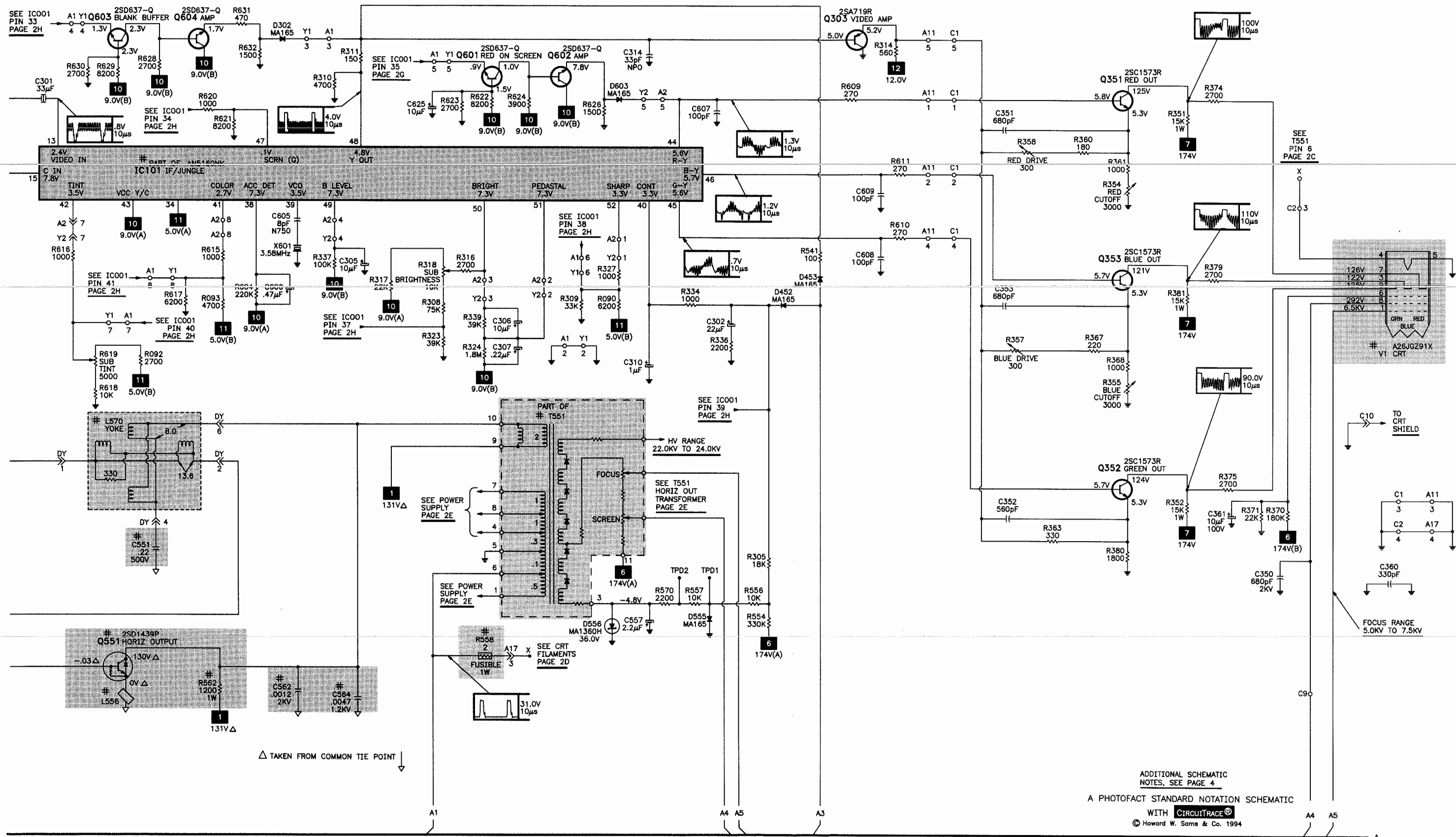
SEMICONDUCTORS					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D004	MA165	-	NTE519	ECG519	SK3100
D005	MA4051L	-	-	-	-
D020	MA165	-	NTE519	ECG519	SK3100
D021	MA27	-	NTE605A	ECG605A	SK7952
D022	MA165	-	NTE519	ECG519	SK3100
D025	1N4532	-	NTE177	ECG177	SK9091
	MA150	-	NTE177	ECG177	SK9091
D031	AM01Z	-	NTE116	ECG116	SK3313
	ERA1501	-	NTE552	ECG552	SK9000
D032	1N4532	-	NTE177	ECG177	SK9091
D034	SEL1320G	-	NTE3167	ECG3167	SK2167
D302	MA165	-	NTE519	ECG519	SK3100
D451	ERA15-01	-	NTE552	ECG552	SK9000
D452, 53	MA165	-	NTE519	ECG519	SK3100
D456	MA4120M	-	NTE5021T1	ECG5021T1	SK9971
D457	MA4110	-	NTE5020A	ECG5020A	SK11A
D502	MA4082	-	NTE5016A	ECG5016A	SK8A2
D503	MA165	-	NTE519	ECG519	SK3100
D506	MA4062	-	NTE5013A	ECG5013A	SK6A2
# D531	AS01	-	NTE552	ECG552	SK9000
	AU01	-	NTE552	ECG552	SK9000
	ERA2204	-	NTE552	ECG552	SK9000
D532	MA4110	-	NTE5020A	ECG5020A	SK11A
# D533	TVSQA208G	-	NTE5016A	ECG5016A	SK8A2
D541	MA4051M	-	NTE5010A	ECG5010A	SK5A1
# D551	RU2N	-	NTE552	ECG552	SK9000
# D552 Thru					
# D554	AS01	-	NTE552	ECG552	SK9000
	AU01	-	NTE552	ECG552	SK9000
	ERA2204	-	NTE552	ECG552	SK9000
D555	MA165	-	NTE519	ECG519	SK3100
D556	MA1360H	-	NTE5037A	ECG5037A	-
D557	QB105N	TVSQB105N	NTE135A	ECG135A	SK5V1
D560	QB109SA	TVSQB109SA	NTE5073A	ECG5073A	SK8V7
D603	MA165	-	NTE519	ECG519	SK3100
# D801 Thru					
# D804	RM11B	-	NTE125	ECG125	SK3081
	EM02BMV	-	NTE125	ECG125	SK3081
	ERC13-08	-	NTE125	ECG125	SK3081
	ERC1208	-	NTE125	ECG125	SK3081
IC001	MN15151Q14R	-	-	-	-
# IC101	AN5160NK-N	-	NTE7060	ECG7060	-
IC201	AN5265	-	NTE1789	ECG1789	SK9876
IC451	LA7835-TV	-	NTE1855	ECG1855	SK10085
# IC551	AN78M12	-	NTE966	ECG966	SK3592
	AN78M12LB	-	NTE966	ECG966	SK3592
# IC801	STR30130	TVSSTR30130	NTE1777	ECG1777	SK9870
IC1101	TNQ2682B	-	-	-	-
Q001, 04	2SC1685TAQR	-	NTE85	ECG85	SK9229
# For SAFETY use only equivalent replacement part.					

SEMICONDUCTORS continued					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q005	2SA564ATAQR	-	NTE290A	ECG290A	SK3932
Q006, 07	2SC1685TAQR	-	NTE85	ECG85	SK9229
Q015	2SA564ATAQR	-	NTE290A	ECG290A	SK3932
Q019	2SC1685TAQR	-	NTE85	ECG85	SK9229
Q102	2SC1685TAQR	-	NTE85	ECG85	SK9229
Q301	2SC1685TAQR	-	NTE85	ECG85	SK9229
Q303	2SA719TAQR	-	NTE290A	ECG290A	SK3114A
Q316	2SC1685TAQR	-	NTE85	ECG85	SK9229
Q351 Thru					
Q353	2SC1573R	-	NTE399	ECG399	SK9352
	2SC1573NC	-	NTE399	ECG399	SK9352
	2SC1573AQH	-	NTE399	ECG399	SK9352
Q451	2SC1685TAQR	-	NTE85	ECG85	SK9229
# Q501	2SC1573AH	-	NTE399	ECG399	SK9352
# Q533	2SC1685TAQR	-	NTE85	ECG85	SK9229
Q541	2SC1685TAQR	-	NTE85	ECG85	SK9229
# Q551	2SD1439PB	-	-	-	-
Q601 Thru					
Q604	2SD637QR	-	NTE16	ECG16	SK9664
# For SAFETY use only equivalent replacement part.					



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employees of Howard W. Sams
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D. Cobb, G. Farrell, B. Fink,
M. Herkless, J. Kocha,
J. Limp, F. Malek, B. Medaris,
R. Raus, B. Skinner, J. Young*



PARTS LIST continued

CONTROLS & RESISTORS			
Item No.	Rating	Mfr. Part No.	NTE Part No.
# D806	Thermistor PTC	0PRF5B0M080N	-
R050, 51	10K 1% 1/4W	ER0S2CKF1002	-
R106	5000 RF AGC	EVN60AA00B53	-
R206	22 5% 1W Fusible	ERQ1CJP220	F1W022
R304	2000 Sub Contrast	EVND4AA00B23	-
R318	10K Sub Brightness	EVN60AA00B14	-
R354	3000 Red Cutoff	EVN49AA00B33	-
R355	3000 Blue Cutoff	EVN49AA00B33	-
R357	300 Blue Drive	EVN49AA00B32	-
R358	300 Red Drive	EVN49AA00B32	-
R453	50K Vertical Size	EVN60AA00B54	-
# R509	5600 5% 2W	ERG2SJS562	2W256
# R510	3300 5% 2W	ERG2ANJ332	2W233
# R531	47 5% 1/4W	ERD25FJ470	QW047
# R532	6340 1% 1/4W	ER0S2CKF6341	-
# R533	4640 1% 1/4W	ER0S2CKF4641	-
# R534	10K 5% 1/4W	ERDS2TJ103	QW310
# R551 Thru			
# R553	1 5% 1/2W	ERDS1FJ1R0	HW1D0
# R558	2 5% 1W Fusible	ERQ1CJP2R0	F1W2D0
R559	100 5% 3W	ERG3ANJ101	3W110
# R562	1200 5% 1W	ERG1SJ122	1W212
# R569	100 5% 1/2W	ERDS1FJ101	HW110
R619	5000 Sub Tint	EVN60AA00B53	-
# R801	5.6 10% 3W Wirewound	ERF3AK5R6	-
# R802	220 5% 10W Wirewound	ERF10ZJ221	10W122
# R804	220K 5% 1/4W	ERDS2TJ224	QW422
# R805	10K 5% 1/2W	ERDS1TJ103	HW310
# R807	47 5% 1/4W	ERD25FJ470	QW047
# R808	33 5% 1/4W	ERD25FJ330	QW033
# R810	18 5% 3W Wirewound	ERF3AJ180	-
# R815	8.2M 20% 1/2W	ERC12ZGM825	HW582
# For SAFETY use only equivalent replacement part.			

CAPACITORS & ELECTROLYTICS			
Item No.	Rating	Mfr. Part No.	
C022	33pF 5% 50V N150	ECCCF1H330JP	
C023	15pF 5% 50V N150	ECCCF1H150JP	
C031	30pF Trimmer	ECRHA030E81	
C103, 04	2pF ±25pF 50V NPO	ECCCF1H020CC	
C112	18pF 5% 50V NPO	ECCCF1H180JC	
C151	68pF 5% 50V NPO	ECCCF1H680JC	
C152	15pF 5% 50V NPO	ECCCF1H150JC	
C155	2pF ±25pF 50V NPO	ECCCF1H020CC	
C207	68pF 10% 50V N150	ECCCF1H680KP	
C301	33µF 16V NP	ECEA1CN330S	
C314	33pF 5% 50V NPO	ECCCF1H330JC	
C350	680pF 10% 2KV	ECKD3D681KB	
C452	1µF 25V Tantalum	ECSF1EE105VB	
C503	220pF 5% 50V N750	ECCCF1H221JU	
# C513	10pF 1% 500V	ECCD2H100F	
# C514, 15	820pF 10% 500V	ECKD2H821KB	
# C531	33µF 25V	ECEA1EU330	
# C551	22 5% 200V	ECQF2H224JS	
# C552	220µF 25V	ECEA1EU221	
# C553	22µF 250V	ECEA2EU220	
# C554, 55	560pF 10% 500V	ECKD2H561KB	
# C559	220µF 25V	ECEA1EGE221	
# C562	.0012 5% 2KV	ECKD3D122JB	
# C564	.0047 5% 1.2KV	ECWH12H472JS	
# C566	220µF 35V	ECEA1VGE221	
# C568	560pF 10% 500V	ECKD2H561KB	
C605	8pF ±.5pF 50V N750	ECCCF1H080DU	
C611, 12	100pF 5% 50V NPO	ECCCF1H101JC	
# C803, 04	.0047 500V	ECKD2H472PU	
# C805	220µF 200V	ECES2DU221E4	
# C806	10µF 160V	ECEA2CGE100	
# C812	33µF 160V	ECEA160V33Z	
# C817, 18	.015 10% 125VAC	ECQU1A153KH	
# For SAFETY use only equivalent replacement part.			

COILS & TRANSFORMERS			
Item No.	Function	Mfr. Part No.	On-Unit No.
L006	5.6µH	TLUABTA5R6K	-
L007	5.6µH	TLUABTA5R6K	-
L008	5.6µH	TLUABTA5R6K	-
L010	Ferrite Bead	EXCELSA24	-
L011	1.0µH	TLUABTA1R0K	-
L103	AFT	TLI67394-1	-
L104	1.2µH	TLQ012K205C	-
L105	VCO	TLI58755	-
L106	15µH	TLUABTA150K	-
L108	1.2µH	TLQ012K205C	-
L109	Ferrite Bead	EXCELSA35	-
L201	Quadrature	TLS63318-2	-
L301	Trap 3.58MHz	ELB5A082	-
L354	150µH	TLUABTA151K	-
# L556	Ferrite Bead	EXCELSA24	-
# L561	Ferrite Bead	EXCELSA24	-
# L570	Yoke 90° Horiz 4.85mH Vert 22.2mH	OLY15306F	-
L601	10µH	TLUABTA100K	-
# L801	Line Choke	ELF18D217	-
# L804	Degaussing	OLK19030M	-
# T001	Power	TLP16297	-
# T501	Horizontal Driver	TLH15412	-
# T502	Horizontal Coupler	ETE19Z30AY	E1930
# T551 (1)	Horizontal Output	OLF04701F(1)	-
# For SAFETY use only equivalent replacement part. (1) Screen and focus controls are part of T551.			

SEE IC001
PIN 21
PAGE 2G

BL TO TUNER

BH TO TUNER

BU TO TUNER

IF TO TUNER

TUNER NOT INCLUDED
IN THIS COVERAGE

AGC TO TUNER

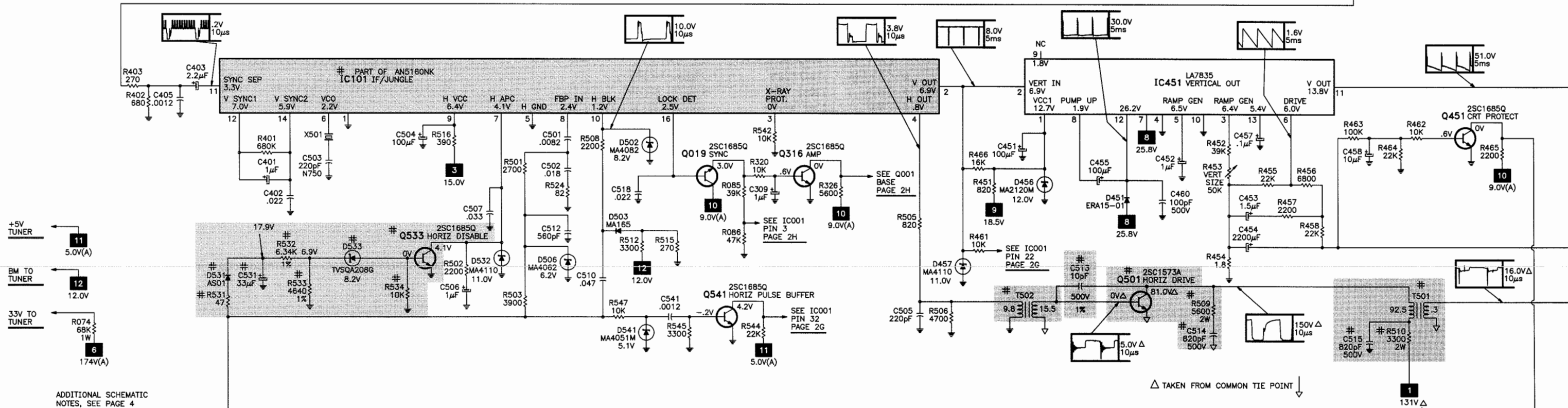
IC101 IF/JUNGLE

IC201 AUDIO OUT

Q102 VIDEO AMP

Q301 2SC1685QR Y AMP

WAVEFORMS:
2.0V 10μs
2.5V 10μs
TAKEN WITH BAR SWEEP GENERATOR



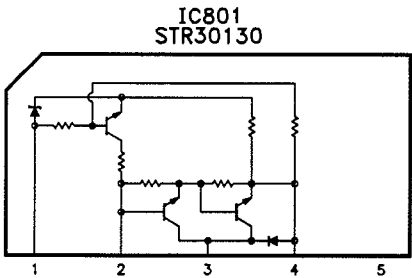
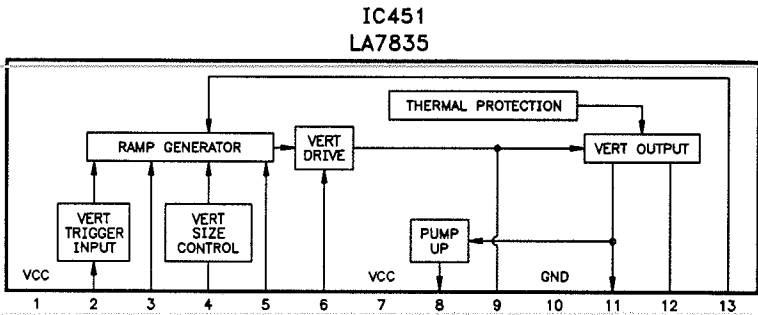
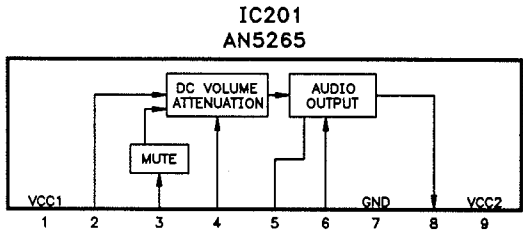
ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 4

A PHOTOFACIT STANDARD NOTATION SCHEMATIC

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IC FUNCTIONS



TEST EQUIPMENT

Test equipment listed by participating manufacturer 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	Sencore No.	Equipment	Sencore No.
Oscilloscope	SC3080	Isolation Transformer	PR57
Generators		Capacitance Analyzer	LC101, LC102
RGB	CM2000	CRT Analyzer	CR70
Multiburst Signal	VG91	AC Leakage Tester	PR57
Color Bar	VG91	Inductance Analyzer	LC101, LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3080	TV Stereo Power Monitor	SR68, PA81
Frequency Meter	SC3080	Field Strength Meter	SL750
Hi-Voltage Probe	HP200	Transistor Tester	TF46
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

HORIZONTAL OSCILLATOR DISABLE TEST

Tune in a monoscope pattern. Connect voltmeter to TPD1 and TPD2. On remote, push video button and then norm button. Set brightness to 0 and adjust picture for .9V. Turn receiver off and connect a high voltage probe to CRT anode. Place a jumper between the cathode of D802 and pin 4 of IC801. Use a variable AC power supply. Start at 90VAC and increase slowly while verifying that set goes into shutdown before high voltage exceeds 29.0KV. If the set fails to go into shutdown before high voltage exceeds 29.0KV, the horizontal oscillator disable circuit requires repair.

PANASONIC

MODEL CT-10R11S (CHASSIS ASDP215)

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 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.

- 1. To discharge static high voltage, connect a 10K ohms resistor in series with a test lead between the receiver and CRT anode lead.
- 2. DO NOT lift the CRT by the neck.
- 3. 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.

- 1. Keep an accurate high voltage meter available at all times. Check meter calibration periodically.
- 2. Whenever servicing a receiver, check the 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 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.
- 5. 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.

SAFETY CHECKS -- FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

- 1. Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable).
- 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 1M ohms and 5.2M ohms. Parts without a return path must measure infinity.

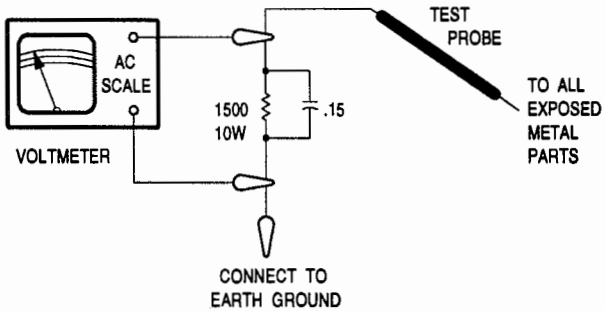
Hot Leakage Current Check

- 1. Plug the AC cord directly into an AC outlet. DO NOT use an isolation transformer.
- 2. 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.)
- 3. 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.
- 4. Voltage measurements should not exceed .75VAC, 500µA. Any value exceeding this limit constitutes a potential shock hazard and must be corrected.
- 5. If the 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 receiver to customer.

- 1. Check repaired area for poorly soldered or unsoldered 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.



SCHEMATIC NOTES

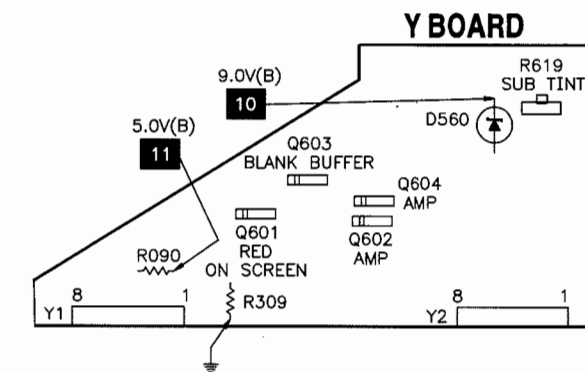
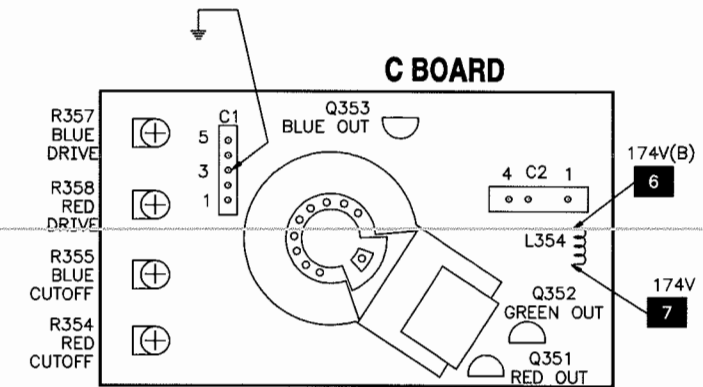
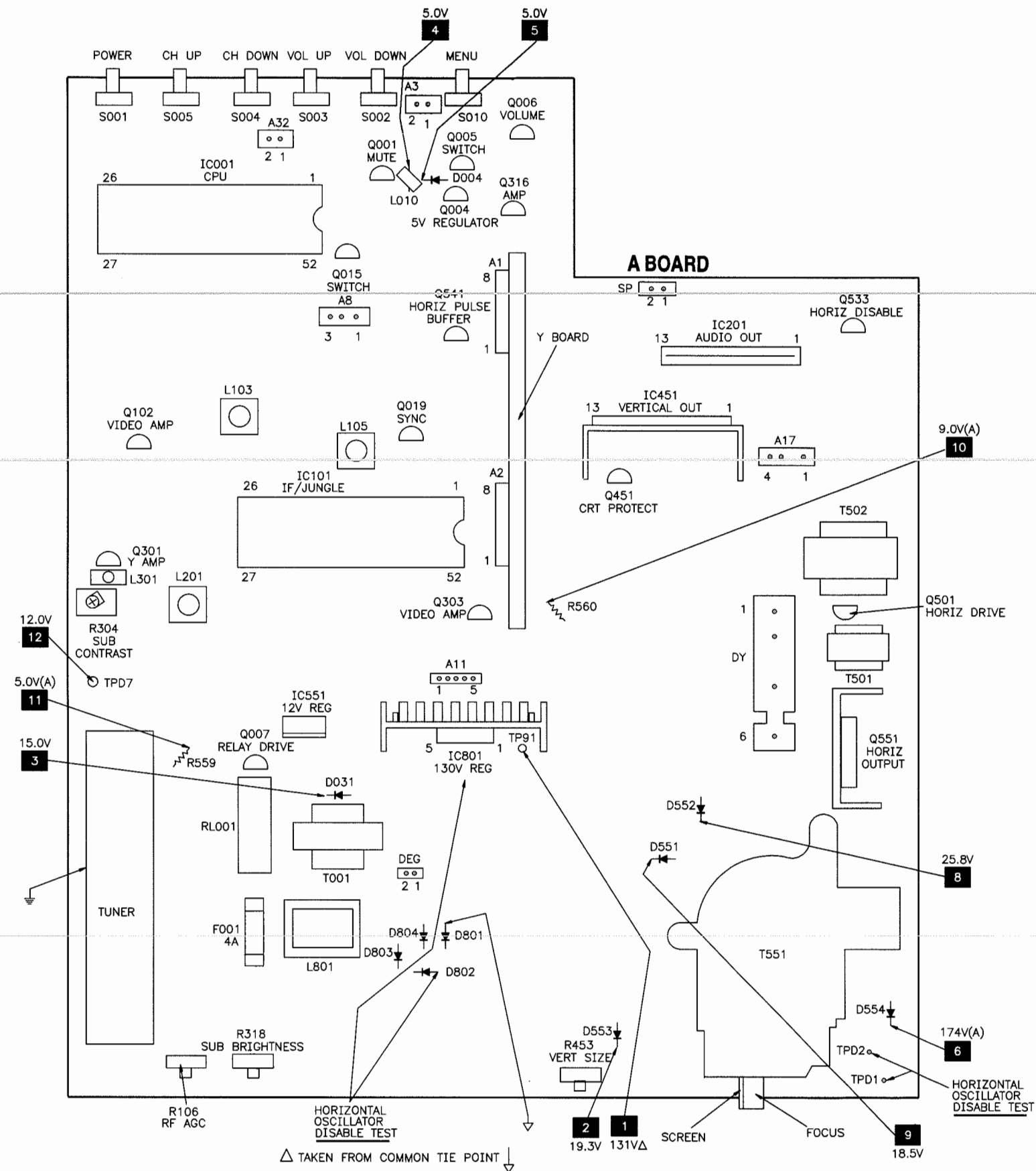
- # For SAFETY use only equivalent replacement part, see parts list.
- * Circuitry not used in some versions.
- Circuitry used in some versions.
- ⊕ Ground
- ≡ Chassis ground
- ▽ Common tie point
- △ Taken from common tie point
- 3 Schematic CIRCUITRACE®: Voltage source tie point.
- A Cabling: Heavy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

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms taken with triggered scope and keyed rainbow generator. 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 no signal.
Controls adjusted for normal operation.
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.
Rated voltage shown on zener diodes.

PANASONIC

MODEL CT-10R11S (CHASSIS ASDP215)

PLACEMENT CHART



TUNER INFORMATION

TUNER VOLTAGE CHART			
Pin	VHF Low Band	VHF High Band	UHF Band
33V	4.4V	6.6V	7.4V
+5V	5.0V	5.0V	5.0V
CLOCK	.1V	.1V	.1V
DATA	.1V	.2V	.1V
ENABLE	.6V	.6V	.6V
BM	12.0V	12.0V	12.0V
BL	12.0V	4.0V	.1V
AGC	7.8V	7.8V	8.7V
BH	0V	11.8V	0V
NC	1.9V	4.0V	5.0V
BU	.1V	.1V	12.0V
NOTE: Voltages taken with signal. VHF Low Band voltages taken on channel 2. VHF High Band voltages taken on channel 7. UHF Band voltages taken on channel 14.			

