

2853



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AUGUST 1991 SET 2853

**For Supplier Address,
See PHOTOFACT Annual Index**

MODEL C1M-10001



PARTS LIST continued

SPEAKER

Item No.	Function	Mfr. Part No.	QUAM Part No.
SP1	16 Ohms 3 Round with mounting ears	EAS65P34DG	

COILS (RF-IF)

Item No.	Rating	Mfr. Part No.
L001	RF Choke (100uH)	ELEPE101KA
L002	Peaking (15uH)	TLT150K126R
L003	Peaking (15uH)	TLT150K126R
L004	RF Choke (.27uH)	ELEPER27KA
L101	RF Choke (.56uH)	ELEQER56JA
L102	RF Choke (.68uH)	ELEQER68KA
L103	Peaking (15uH)	ELEPE150KA
L201	Peaking (15uH)	ELEPE150KA
L351	RF Choke (470uH)	TLT471K991R
L601	RF Choke (18uH)	ELEPE180KA

For SAFETY use only equivalent replacement part.

CABINET PARTS

Item	Part No.
Cabinet Front Assembly	TXFKY490SER
Complete Assembly	TKU2A21904
Cabinet Rear	TKP2A91261
Overlay Trim, Cab Top	TKP2A81251-1
Lens, Infra Red	TKP2A51203
6 Pushbutton Assemby	TBX2A51203



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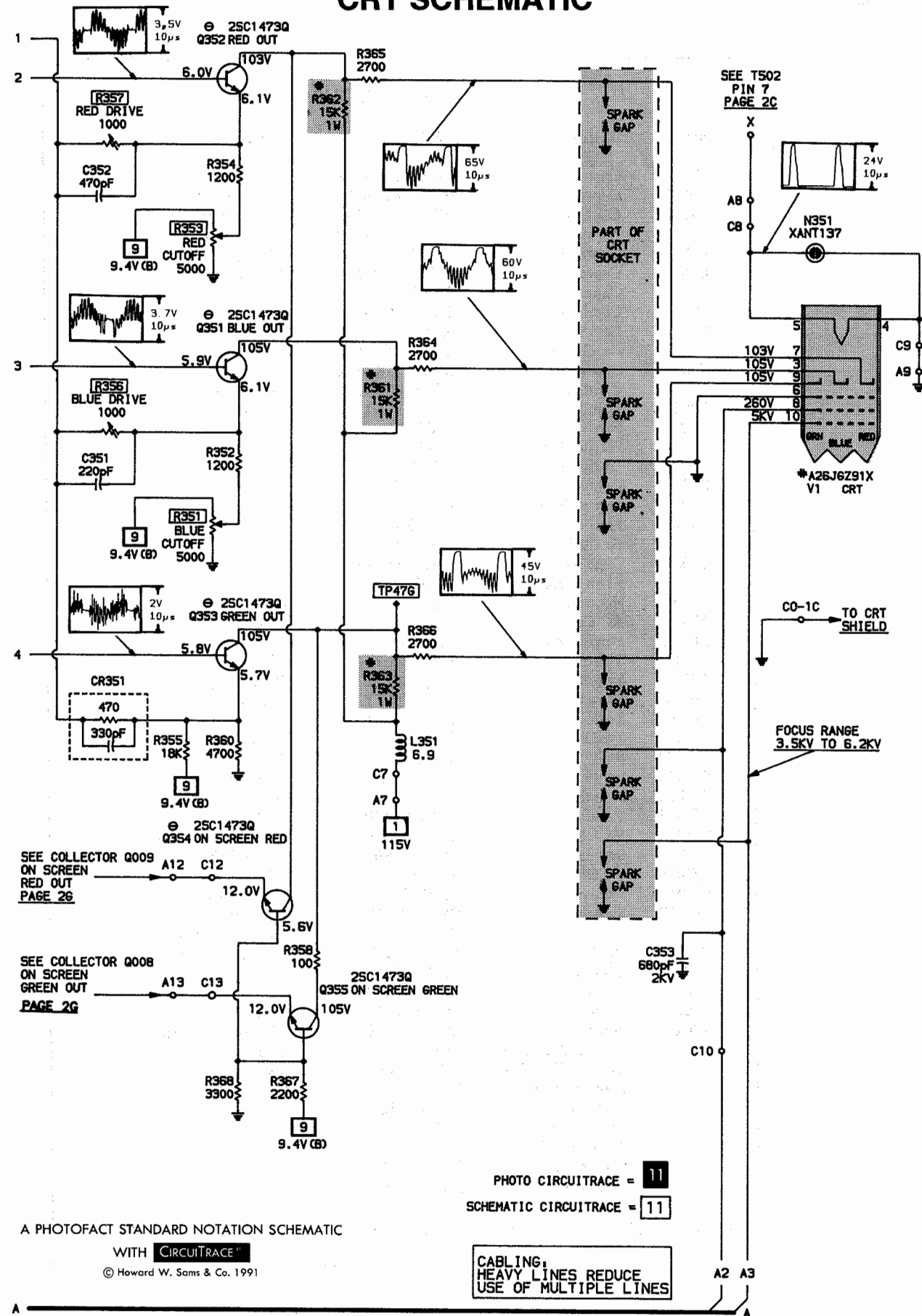
J. Kocha J. Young

MISCELLANEOUS

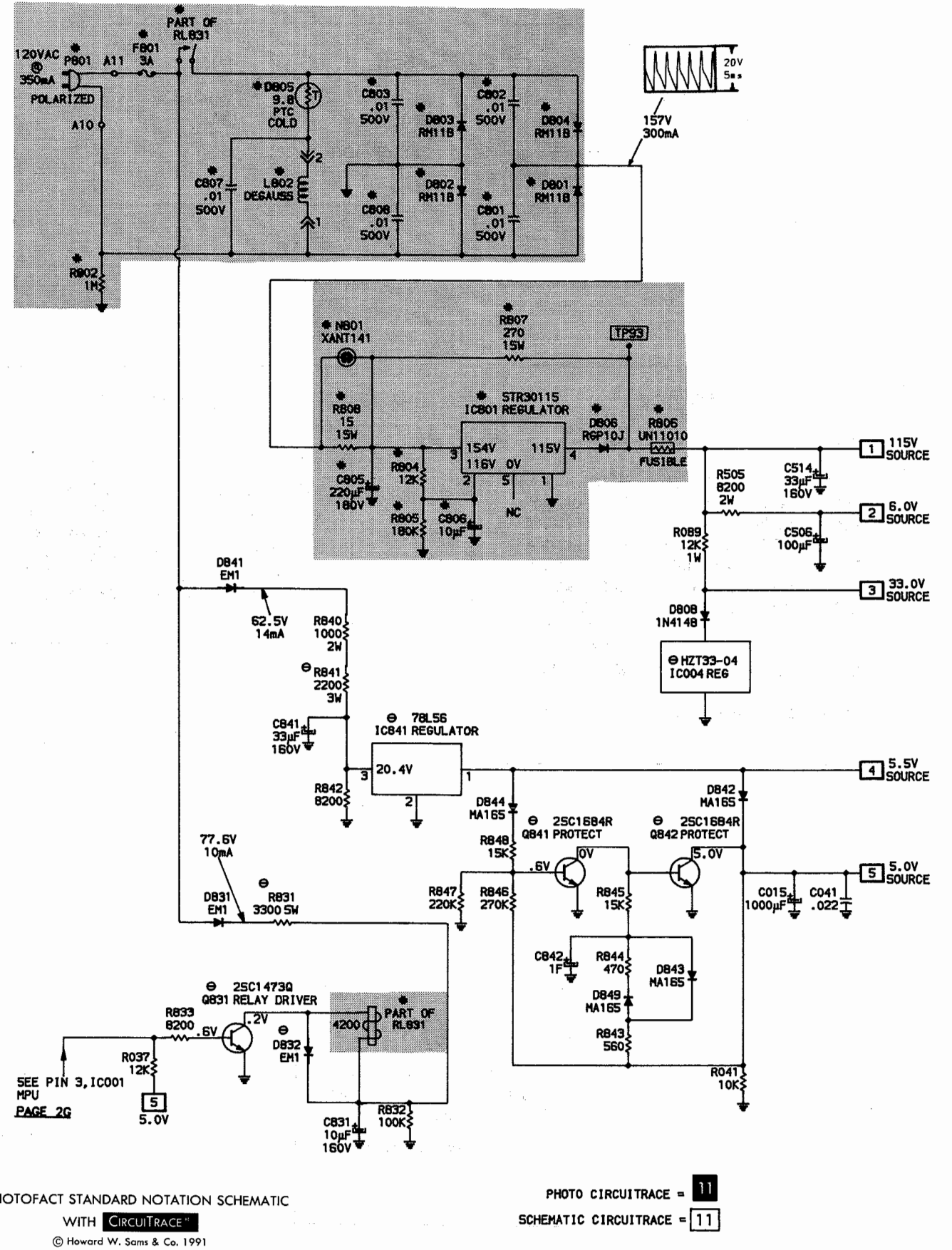
Item No.	Description	Mfr. Part No.	Notes
CR001	Capristor	EXRP391K123S	390pF, 12K
CR002	Capristor	EXRP181K822S	180pF, 8200
CR003	Capristor	EXRP122K682S	.0012, 6800
CR004	Capristor	EXRP471K222S	470pF, 2200
CR005	Capristor	EXRP101K223S	100pF, 22K
CR091	Capristor	EXNG102Z155	.001, 1.5M
CR092	Capristor	EXNG102Z155	.001, 1.5M
CRX091	Capristor	EXNG102Z155	.001, 1.5M
CRX092	Capristor	EXNG102Z155	.001, 1.5M
CR201	Capristop	EXPP820K333S	82pF, 33K
CR351	Capristor	EXRP331K471T	330pF, 470
CR601	Capristor	EXRP180K332S	18pF, 3300
# F801	Fuse	XBA1F30NU100	3Amp @ 125V
L005	Ferrite Bead	TSK1008	-
L006	Ferrite Bead	TSK1008	-
L007	Ferrite Bead	TSK1008	-
L301	Delay Line	EI7EN002Q	-
L501	Ferrite Bead	TSK1008	-
L502	Ferrite Bead	TSK1008	-
L504	Ferrite Bead	TSK1008	-
# L802	Deguassing Coil	TLK159025M	-
N351	Neon Lamp	XANT137	-
# N801	Neon Lamp	XANT141	-
# P801	AC Cord	TSX3136	Polarized
RL831	Power Relay	TSE1868	-
SW001	Switch	EVQQS607T	Power
SW003	Switch	EVQQS607T	Channel Up
SW004	Switch	EVQQS607T	Channel Down
SW005	Switch	EVQQS607T	Volume Up
SW006	Switch	EVQQS607T	Volume Down
SW009	Switch	EVQQS607T	UHF/VHF
SW010	Switch	EVND48A00	VL Width
SW011	Switch	ESD142126	Fast/Slow
SW012	Switch	EVND48A00	VH Width
SW013	Switch	EVND48A00	VH Position
SW014	Switch	EVND48A00	UHF Width
SW015	Switch	EVND48A00	UHF Position
SW016	Switch	ESD142126	Service/Normal
SW017	Switch	EVND48A00	VL Position
SW091	Switch	ESD1512217	Int/Ext Antenna
# V1	CRT	A26JGZ91X	10" Picture Tube
X001	Crystal	EF0FC4194A4	-
X101	Saw Filter	EFCH45MVK11T	-
X102	Filter	EFCS4R5MW3	4.5MHz Trap
X201	Filter	EFCS4R5MS4E	4.5MHz Bandpass
X601	Crystal Oscillator	TSS846MX	3.59MHz
	Antenna Terminal	TJB172330M	Assembly
	Convergence Rings	TLC2042	Purity/Static
	CRT Socket	TJS1A5150	-
	Fuse Holder	TJC6319	Two Used
	RC Transmitter	EUR5017	-
	VHF Antenna	TSA120022	-
	UHF/VHF Tuner	ENV76808F2	-

For SAFETY use only equivalent replacement part.

CRT SCHEMATIC



POWER SUPPLY SCHEMATIC



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.

Information is listed in these pages for the following participating vendors. Consult the Sams *Annual Index* for their current address.

- B&K Precision
- Custom Components Corporation (Chek-A-Color)
- GC-THORSEN
- NTE Electronics, Inc. (NTE)
- Philips ECG Company (ECG)
- Quam-Nichols Co. (Quam)
- Sencore, Inc.
- Thomson Consumer Electronics, Inc. (SK, TCE)

SEMICONDUCTORS

(Select replacement for best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D001 - D009	MA165	-	NTE519	ECG519	SK3100
D010 - D019	MA165	-	NTE519	ECG519	SK3100
D101	MA27T-A	-	NTE605A	ECG605A	SK7952
	MA27TA	-	NTE605A	ECG605A	SK7952
D220 (1)	-	-	-	-	-
D301	MA150	-	NTE177	ECG177	SK9091
D302,3	MA165	-	NTE519	ECG519	SK3100
D401	RGP10J	-	NTE552	ECG552	SK9000
	TVSRGP10J	-	NTE552	ECG552	SK9000
D403	ERB12-02	-	NTE552	ECG552	SK9000
	TVSB1202	-	NTE116	ECG116	SK3311
D501	MA4047M	-	NTE5009A	ECG5009A	SK4A7
D504	RGP-10J	-	NTE552	ECG552	SK9000
	TVSRGP10J	-	NTE552	ECG552	SK9000
# D505	TVSRD12EB1Z	-	NTE5021A	ECG5021A	SK12A
	TVSRD12EB1	-	NTE5021A	ECG5021A	SK12A
D506,7	RGP10J	-	NTE552	ECG552	SK9000
	TVSRGP10J	-	NTE552	ECG552	SK9000
D508	MA4030M	-	NTE5004A	ECG5004A	SK3A0
# D801 - D804	RM11B	-	NTE125	ECG125	SK3081
# D806	RGP10J	-	NTE552	ECG552	SK9000
	TVSRGP10J	-	NTE552	ECG552	SK9000
D808	MA27TB	-	NTE605A	ECG605A	SK7952
D831,2	EM1	-	NTE116	ECG116	SK3313
	TVSEM1	-	NTE116	ECG116	SK3313
D841	EM1	-	NTE116	ECG116	SK3313
	TVSEM1	-	NTE116	ECG116	SK3313
D842,3,4,9	MA165	-	NTE519	ECG519	SK3100
IC001	M50436-594SP	-	-	-	-
IC002	MN1280-R	-	NTE15044	-	SK9854
	MN1280R	-	NTE15044	-	SK9854
IC003	MN4066B	-	NTE4066B	ECG4066B	SK4066B
	MN4066BP	-	NTE4066B	ECG4066B	SK4066B
IC004	HZT33-04	-	NTE615P	ECG615A	SK9976
# IC101	AN5156K	-	-	-	-
	AN5156K-N	-	-	-	-
	AN5156KN	-	-	-	-
IC201	AN5265	-	NTE1789	ECG1789	-
# IC402	AN5531	-	-	-	-
IC501	AN78M12	-	NTE966	ECG966	SK3592
	AN78M12LB	-	NTE966	ECG966	SK3592
# IC801	STR30115	-	-	ECG1896	-
IC841	78L56	-	-	-	-
	M5278L56	-	-	-	-
Q001	2SC1684R	-	NTE289A	ECG289A	SK3124A
	2SC1684QR	-	NTE289A	ECG289A	SK3124A
Q002,3,4	UN4111	-	NTE2356	ECG2356	SK9958
Q006	2SA564Q	-	NTE290A	ECG290A	SK3932
	2SA564QR	-	NTE290A	ECG290A	SK3932
Q007,8,9	2SC1684R	-	NTE289A	ECG289A	SK3124A
	2SC1684QR	-	NTE289A	ECG289A	SK3124A

SEMICONDUCTORS continued

(Select replacement for best results.)

Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
Q010,11	UN4213	-	NTE2359	ECG2359	SK9959
Q101	2SC3315C	-	-	-	-
Q301	2SC1684R	-	NTE289A	ECG289A	SK3124A
	2SC1684QR	-	NTE289A	ECG289A	SK3124A
Q302	2SA564Q	-	NTE290A	ECG290A	SK3932
	2SA564QR	-	NTE290A	ECG290A	SK3932
	2SB641QR	-	NTE19	ECG19	SK9667
Q303	2SC1684R	-	NTE289A	ECG289A	SK3124A
	2SC1684QR	-	NTE289A	ECG289A	SK3124A
Q351 - Q355	2SC1473Q	-	NTE399	ECG399	SK9352
	2SC1473NCQR	-	NTE399	ECG399	SK9352
Q501	2SC1473AH	-	NTE399	ECG399	SK9352
# Q502	2SD1439Q	-	NTE2302	ECG2302	SK9422
	2SD1439-QLB	-	NTE2302	ECG2302	SK9422
Q831	2SC1473Q	-	NTE399	ECG399	SK9352
	2SC1473NCQR	-	NTE399	ECG399	SK9352
Q841,2	2SC1684R	-	NTE289A	ECG289A	SK3124A
	2SC1684QR	-	NTE289A	ECG289A	SK3124A

For SAFETY use only equivalent replacement part.
(1) Used in some versions.

COILS & TRANSFORMERS

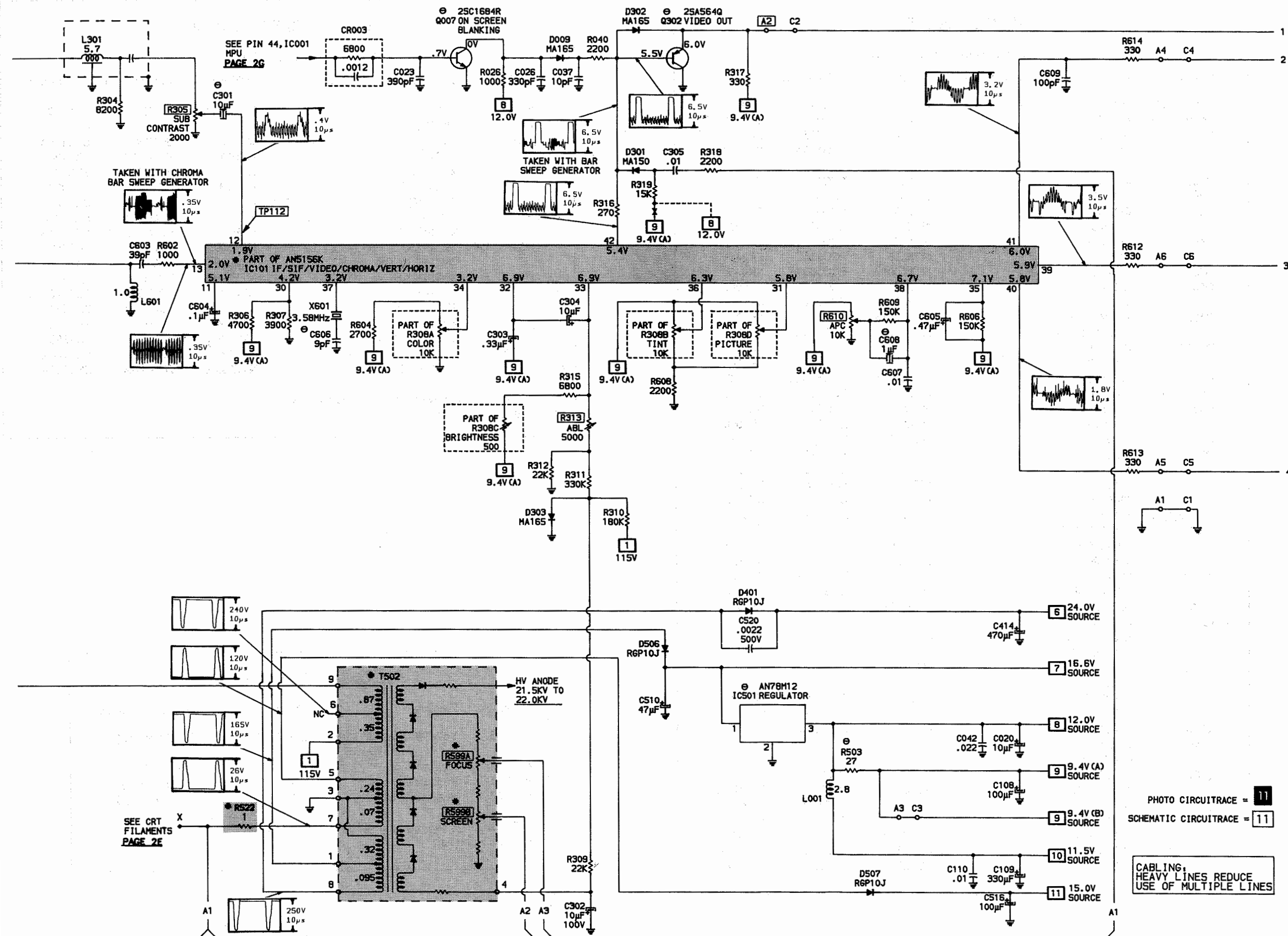
Item No.	Function	Mfr. Part No.	Other Identification
# T503	Yoke 90° Horiz 3.75mH Vert 21.9mH	TLY15395F1M	TLY153951L (1)
# T203	Earphone	ETA16Z17AY	A1617 (1)
# T501	Horizontal Drive	TLH15412	TLH15412 (1)
# T502	Horizontal Output	TLF14743F	TLF14743F (1)

For SAFETY use only equivalent replacement part.
(1) Number on unit.

C

D

TELEVISION SCHEMATIC continued



PARTS LIST continued

ELECTROLYTIC CAPACITORS		
Item	Rating	Mfr. Part No.
C301	10 NP 16 V	ECEA1CN100S
C403	22 NP 16V	ECEA1CN220S
C404	1 35V	ECSF1VE105K
C608	1 NP 50V	ECEA1HN010S
# C805	220 180V	ECES2PV221
# C806	10 160V	ECEA2CS100
C842	1 Farad 5.5V	EECF5R5U105
# For SAFETY use only equivalent replacement part.		

CAPACITORS		
Item	Rating	Mfr. Part No.
C030	Capacitor Array (.01 X 7) 50V	EXFP8102ZF
C031	Capacitor Array (.01 X 7)	EXFP4102ZF
C037	10pF 50V ±.5pF	ECCF1H100D
C106	1pF NPO 50V ±.25pF	ECCF1H010CC
C151	3pF NPO 50V ±.25pF	ECCF1H030CC
C221	3pF NPO 50V ±.25pF	ECCF1H030CC
C502	100pF NPO 50V 5%	ECCF1H101JC
# C507	.0039 1.2KV 5%	ECWH12H392JS
# C511	.3 200V 5%	ECQF2H304JZ
# C518	.0015 2KV 5%	ECKD3D152JB
# C519	.0015 2KV 5%	ECKD3D152JB
C606	9pF NPO 50V ±.5pF	ECCF1H090DC
# C801	.01 125VAC .01 500V	ECKD2H103PU
# C802	.01 125VAC .01 500V	ECKD2H103PU
# C801	.01 125VAC .01 500V	ECKD2H103PU
# C807	.01 125VAC .01 500V	ECKD2H103PU
# C808	.01 125VAC .01 500V	ECKD2H103PU
# For SAFETY use only equivalent replacement part.		

CONTROLS			
(All wattages 1/2 watt or less, unless otherwise listed.)			
Item No.	Function	Resistance	Mfr. Part No.
R030	On Screen Display	20K	EVND4AA00B24
R110	RF AGC	2000	EVN59UA00B23
R305	Sub Contrast	2000	EVND4AA00823
R308A	Color	10K	(1)
R308B	Tint	10K	(1)
R308C	Brightness	500	(1)
R308D	Picture	10K	(1)
R308E	Vertical Hold	30K	(1)
R313	ABL	5000	EVND4AA00B53
R351	Blue Cutoff	5000	EVN49AA00B53
R353	Red Cutoff	5000	EVN49AA00B53
R356	Blue Drive	1000	EVN49AA00B13
R357	Red Drive	1000	EVN49AA00B13
R407	Vertical Size	200K	EVN59UA00B25
R504	Horizontal Hold	10K	EVND4AA00B14
R610	APC	10K	EVND4AA00B14
# For SAFETY use only equivalent replacement part.			
(1) Part of Control Assembly Part No. EVUG5ACA0007			

RESISTORS			
Item No.	Rating	Mfr. Part No.	NTE Replacement
# D805	9.8 PTC Cold	ERPZ4B0M080B-	
R009	Resistor Array (47K X 4)	EXBP84473J	-
# R512	3.92K 1% 1/4W Metal Oxide Leadless	ER025LKF3941	-
# R513	2.94K 1% 1/4W Metal Oxide Leadless	ER025LKF2941	-
# R518	3300 5% 2W Metal Oxide	ERG2ANJ332	2W233
# R519	3300 5% 2W Metal Oxide	ERG2ANJ332	2W233
# R520	470 5% 2W Metal Oxide	ERG2ANJ471	2W147
# R522	1 5% 1/2W Fusible	ERQ12AJ1R0	-
# R802	1M 10% 1/2W Carbon Comp	ERC12ZGK105	HW510
# R804	12K 5% 1/2W Carbon	ERDS1TJ123	HW312
# R805	180K 5% 1/4W Carbon	ERDS2TJ184	QW418
# R806	Fusible	UN11010	-
# R807	270 5% 15W Wirewound	ERF15ZYJ271	-
# R808	15 5% 15W Wirewound	ERF15ZYJ150	-
R831	3300 5% 5W Metal Oxide	ERG5SJ332	-
R841	2200 5% 3W Metal Oxide	ERG3ANJ222	3W222
# For SAFETY use only equivalent replacement part.			

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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.

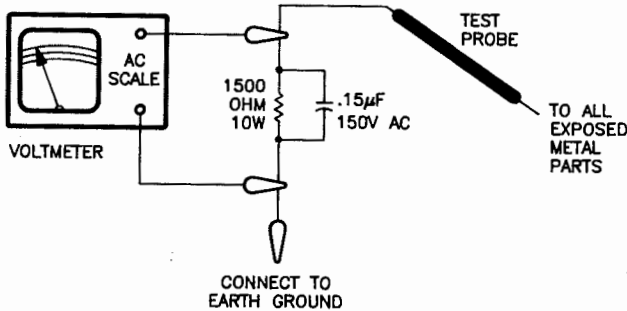
Hot Leakage Current Check

- 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 Volts 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	-

PANASONIC

MODEL CTM-1033R

NOTES

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1. The first step in the process is to identify the problem.

2. The second step is to analyze the problem.

3. The third step is to develop a plan of action. This involves identifying the resources needed and the steps to be taken.

4. The fourth step is to implement the plan. This involves putting the plan into action and monitoring progress.

5. The fifth step is to evaluate the results.

6. The sixth step is to report the results.

7. The seventh step is to review the process. This involves identifying areas for improvement and making changes as needed.

8. The eighth step is to document the process. This involves creating a record of the process for future reference.

9. The ninth step is to communicate the results. This involves sharing the results with the relevant stakeholders.

10. The tenth step is to follow up. This involves checking back on the results and making any necessary adjustments.

11. The eleventh step is to conclude the process. This involves finalizing the report and closing the project.

12. The twelfth step is to reflect on the process. This involves thinking about what was learned and how it can be applied in the future.

13. The thirteenth step is to share the results. This involves presenting the results to the relevant stakeholders.

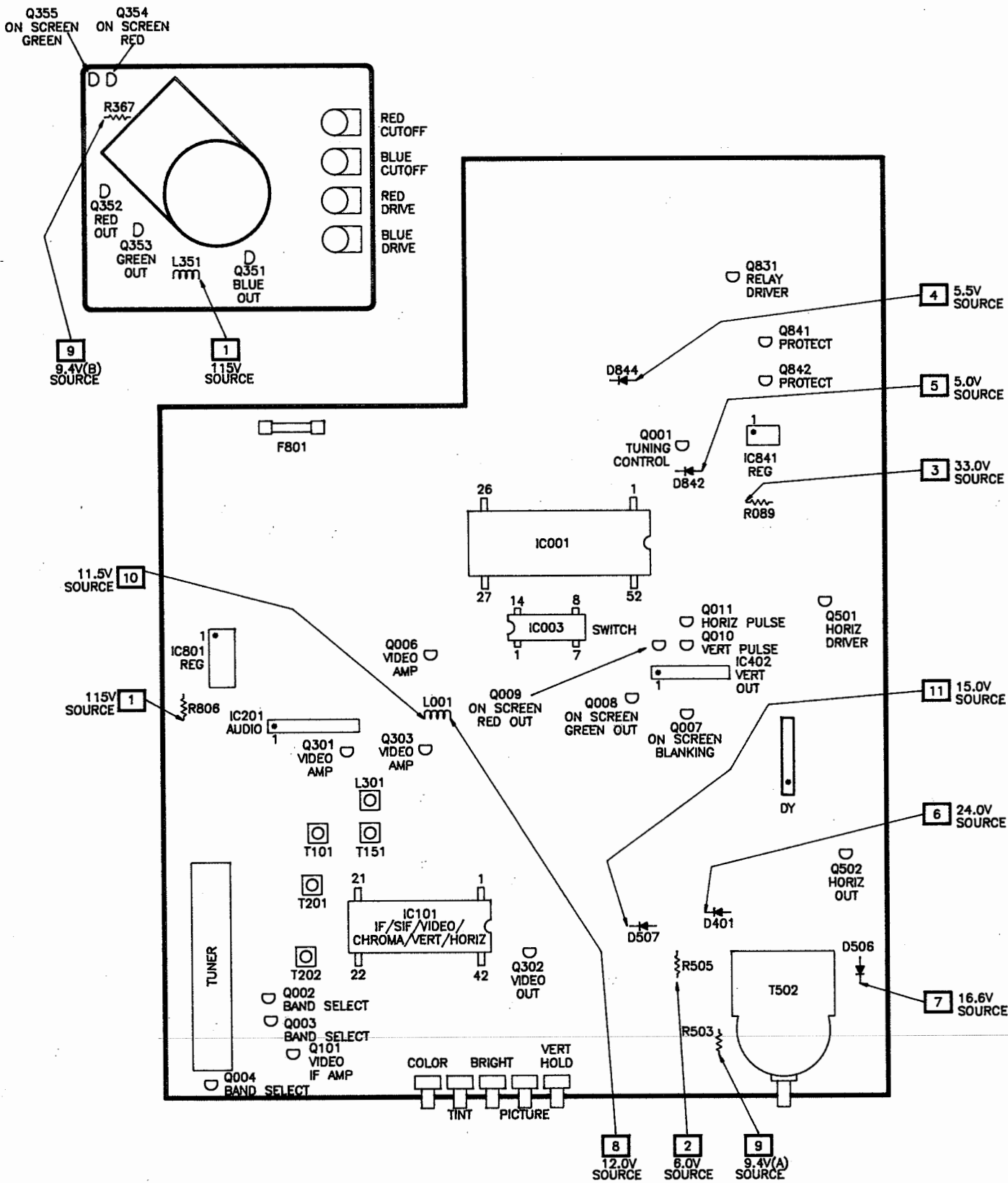
14. The fourteenth step is to celebrate the success. This involves acknowledging the achievements of the team.

15. The fifteenth step is to end the process. This involves finalizing all documents and closing the project.

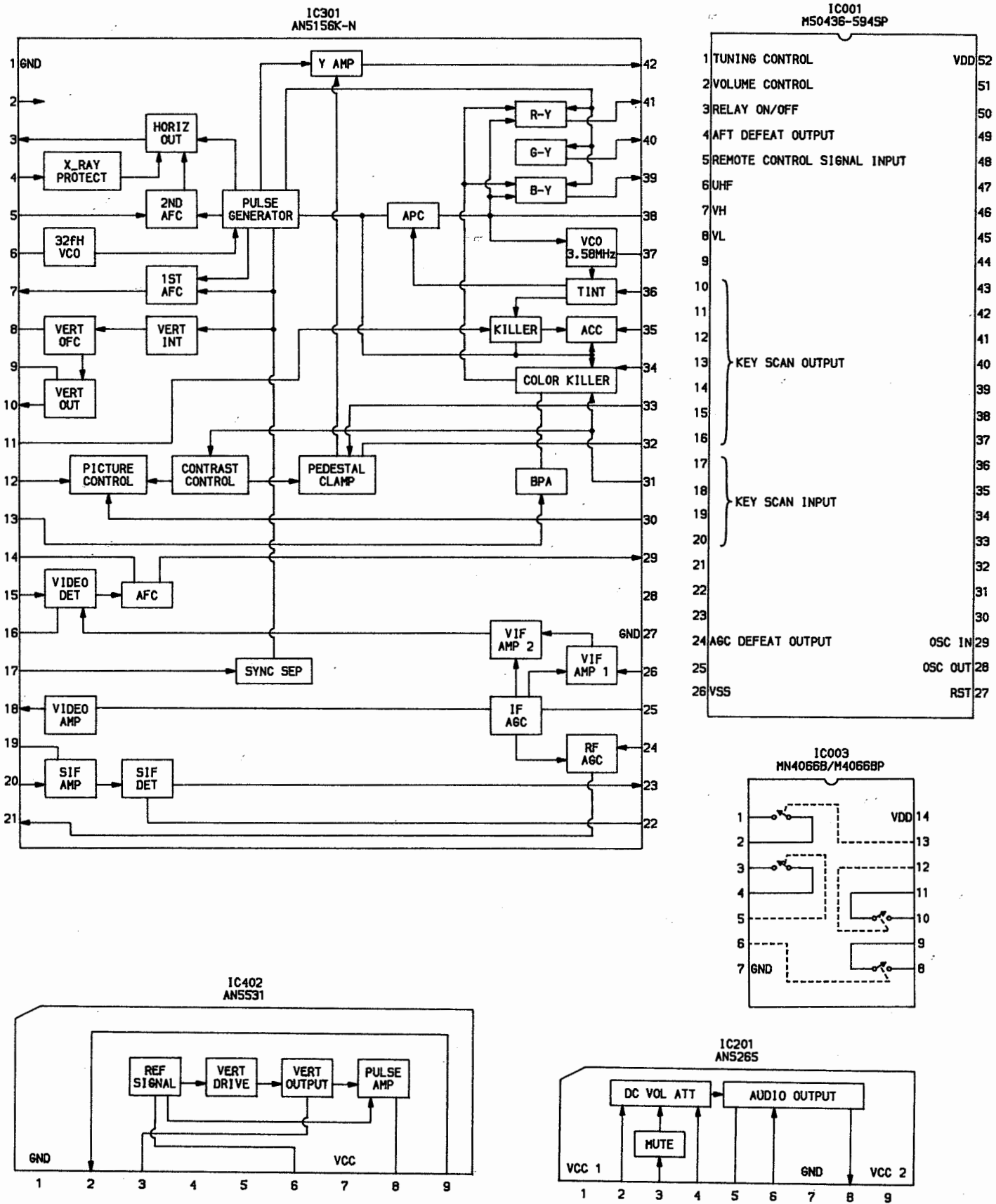
PANASONIC

MODEL CTM-1033R

PLACEMENT CHART



IC FUNCTIONS



NOTES