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 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 inner 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.

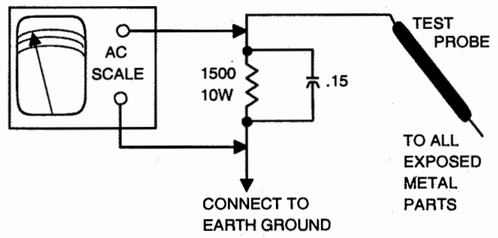
SAFETY CHECKS -- FIRE AND SHOCK HAZARD

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.



TEST JIG HOOKUP

Function	Chek-A-Color Adapter No.	PC Board Plug No.	Pin	Color
CRT	B239	HV	1	Blue
Yoke	D4137		2	Red
Yoke Setting	YP2A		3	Green
Comments	Focus Tap		4	Yellow

HIGH VOLTAGE SHUTDOWN TEST

Apply 120VAC to the receiver. Depress the power button. Momentarily place a 10K ohms resistor across pins 1 and 3 of plug X. The receiver should lose raster and sound and remain in that state. If the receiver does not lose raster and sound, the high voltage shutdown circuit should be repaired. To resume normal operation, remove AC power, wait 15 seconds and test the receiver for normal operation.

CRT PROTECTOR TEST

Remove AC power from the receiver. Disconnect one side of R771. Restore AC power and press the power button. The receiver should power-up, picture will last about 30 milliseconds. Then the receiver will shut down and the on timer LED on the receiver front panel will blink once each second. If the receiver does not shut down, the CRT protector circuit should be repaired. To resume normal operation, remove AC power and reconnect R771.

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SET 4144

MODELS C-20810, C-20811

JVC

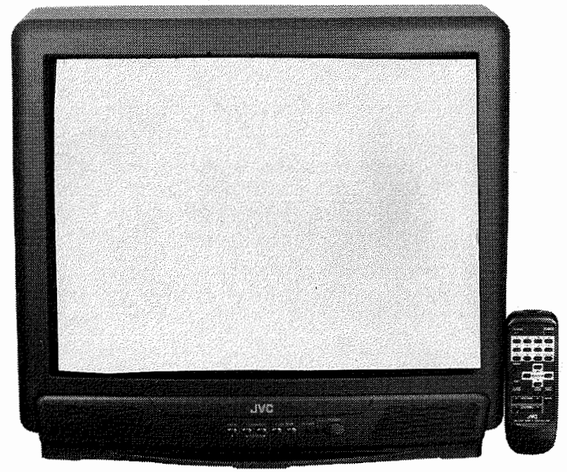
PHOTOFACT® Technical Service Data

INDEX

CRT Protector Test 1
GridTrace Location
Main Board 3
High Voltage Shutdown Test 1
IC Functions 1
Important Parts Information 4
Miscellaneous Adjustments 1
Parts List 4
Placement Chart 1
Safety Precautions 1
Schematic Component Location 2
Schematic Notes 1
Schematics
Power Supply 2
System Control 2
Television 2
Test Equipment 1
Test Jig Hookup 1
Tuner Information 1

For Supplier Address,
See PHOTOFACT Annual Index

JVC
Models C-20810, C-20811



Representative Model

Essential coverage for servicing a television receiver...

- Schematics
- Component locations
- Parts list

HOWARD W. SAMS & COMPANY

JUNE 1999 SET 4144

4144

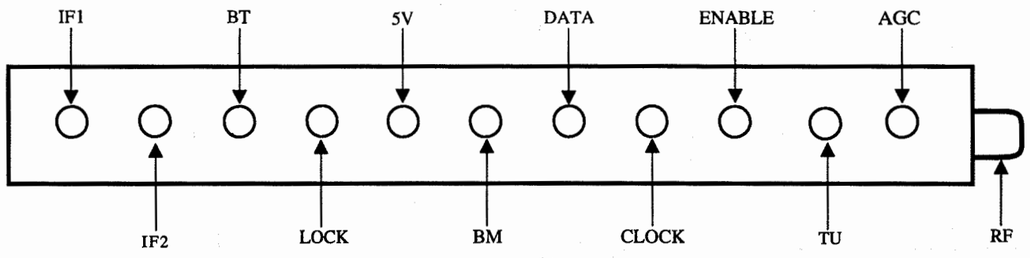
TUNER INFORMATION

TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band
AGC	3.3V	3.9V	1.9V
TU	1.0V	4.6V	5.2V
ENABLE	.4V	.4V	.4V
CLOCK	.1V	.1V	.1V
DATA	.1V	.2V	.1V
BM	8.6V	8.6V	8.6V
5V	5.0V	5.0V	5.0V
LOCK	0V	0V	0V
BT	34.4V	34.4V	34.4V
IF2	0V	0V	0V
IF1	0V	0V	0V

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

TUNER TERMINAL GUIDE



SCHEMATIC NOTES

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

-x- 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.

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	SC3100	Isolation Transformer	PR570
Generators		Capacitance Analyzer	LC102
RGB	CM2125	CRT Analyzer	CR7000
Multiburst Signal	VG91	AC Leakage Tester	PR570
Color Bar	VG91	Inductance Analyzer	LC102
TV Stereo	VG91	Flyback Yoke Tester	TVA92
Digital VOM	SC3100	Field Strength Meter	SL753
Frequency Meter	SC3100	Transistor Tester	TF46
Hi-Voltage Probe	HP200	Horizontal Analyzer	HA-2500
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

MISCELLANEOUS ADJUSTMENTS

NOTE: This receiver employs digital customer controls. Unless otherwise indicated all adjustments were performed with the customer controls at center.

B+ CHECK

Tune in a picture. Connect a digital DC voltmeter to pin 3 of IC921. With AC line set to 120VAC, voltage should read 151V* ±1.0V*.

* Taken from common tie point.

HIGH VOLTAGE CHECK

Tune in a picture. Connect a high voltage probe to the CRT anode, low side to ground. High voltage should read 24kV to 26kV.

COLOR PURITY

Operate the receiver for 15 minutes. Use a degaussing coil to demagnetize the CRT and mounting hardware. Tune in a green raster. Loosen the locking ring and slide the deflection yoke backward to obtain a vertical green band. Rotate and spread the tabs of the purity magnets until the green band is centered on the screen. Move the deflection yoke forward until a uniform green screen is obtained. Check red and blue purity.

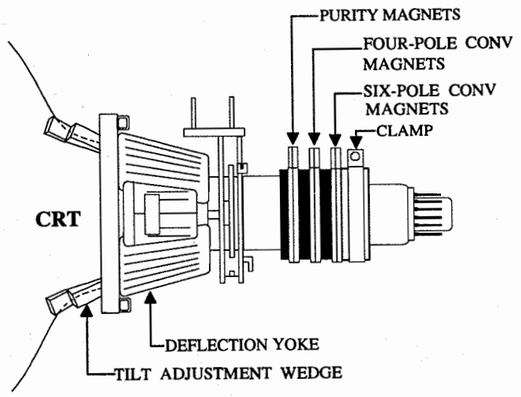
CONVERGENCE

Operate the receiver for 15 minutes. Connect a color bar generator to antenna terminals and tune in a dot pattern. Loosen clamp. Adjust 4-pole magnets to converge the red and blue dots at the center of the screen. Adjust the 6-pole magnets to converge the red/blue dots over the green dots at the center of the screen.

NOTE: Rotate the two tabs of each set of magnets equally and opposite to converge vertically and rotate both tabs in the same direction to converge horizontally. The 4 and 6 pole magnets interact, repeat adjustment until center convergence is correct. Tighten clamp.

Tune in a crosshatch pattern. remove rubber wedges between the deflection yoke and the CRT. Tilt deflection yoke up or down to converge the vertical lines at the top and bottom of the screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke right and left to converge the horizontal lines at the top and bottom of the screen and the vertical lines at the right and left sides of the screen. Repeat convergence procedure, if necessary, to obtain the best overall convergence. Replace the rubber wedges.

CRT NECK ASSEMBLY



SERVICE MENU

To enter the service menu, simultaneously press and hold the display and video status buttons on the remote transmitter. The service menu is displayed as shown on the service menu chart. While in the service menu, use the menu up and down buttons to select and use the menu left and right buttons to adjust. To exit the service menu, press the exit button on the remote transmitter.

Service Menu Chart

PICTURE	GAME
SOUND	
LOW LIGHT	HIGH LIGHT
RF AFC CHK	I²C BUS CTRL

PICTURE MODE

Select Picture Mode from the Service Menu.

Picture Mode Menu Chart

Number	Adjustment	Range	Initial Value	On-set Value
1	BRIGHT	000 ~ 127	064	061
2	PICTURE	000 ~ 127	090	095
3	WPS (1)	000, 001	001	001
4	TV DTL (1)	000 ~ 063	021	026
5	TV BPF (1)	000, 001	000	000
6	TINT	000 ~ 127	066	057
7	COLOR	000 ~ 127	068	047
8	EXT BRI (1)	±025	±000	±000
9	EXT PIC (1)	±025	±000	±000
10	EXT DTL (1)	000 ~ 063	025	026
11	EXT BPF (1)	000, 001	000	000
12	EXT TINT (1)	±025	±000	+010
13	EXT COL (1)	±025	±000	+030
14	V SIZE	000 ~ 063	035	030
15	V CENT	000 ~ 007	004	001
16	H POS	000 ~ 031	020	022
17	OSD POS	000 ~ 031	009	026
18	H AFC (1)	000, 001	000	000
19	BLANKING (1)	000, 001	000	000
20	VIDEO SW	000, 001	000	000
21	Y TRAP (1)	000, 001	000	000
22	RF AFC	000 ~ 063	040	040
23	PIF VCO (1)	000 ~ 127	064	064

(1) Do not adjust.

RF AGC

Tune in a picture. Decrease the value of RF AGC (22) until snow appears in the picture. Increase the value of RF AGC (22) until snow disappears from the picture. Check all channels for proper picture and readjust if necessary.

Vertical Size / Vertical Center

Tune in a picture. Adjust V Size (14) for a slightly underscanned picture. Adjust V Center (15) to center the picture. Adjust V Size (14) for a slightly overscanned picture.

Horizontal Position

Tune in a crosshatch pattern. Adjust H Pos (16) to center the picture.

Sub Bright / Sub Picture / Sub Color / Sub Tint

Tune in a picture. Adjust Bright (1) for best brightness. Adjust Picture (2) for best contrast. Adjust Color (7) for best color. Adjust Tint (6) for best tint.

OSD Position

Adjust OSD POS (17) to vertically center the display. Adjust H POS (16) for the best horizontal display position.

GAME MODE

Select Game Mode from the Service Menu

Game Mode Menu Chart

Adjustment	Range	Initial Value
TINT	± 020	000
COLOR	± 020	000
PICTURE	± 020	-010
BRIGHT	± 020	-005
DETAIL	± 015	+005
G DRIVE	-080 ~ +050	000
B DRIVE	-080 ~ +050	000

SOUND MODE

Select Sound Mode from the Service Menu.

Sound Mode Menu Chart

Adjustment	Range	Initial Value	On-set Value
ATT (1)	000 ~ 063	050	050
BALANCE (1)	000 ~ 063	032	032

(1) Do not adjust.

LOW LIGHT MODE

Select Low Light Mode from the Service Menu.

Low Light Mode Menu Chart

Adjustment	Range	Initial Value	On-set Value
BRIGHT	000 ~ 127	064	061
R CUTOFF	000 ~ 255	020	075
G CUTOFF	000 ~ 255	020	077
B CUTOFF	000 ~ 255	020	022

NOTE: While in the Low Light Mode, adjustments are performed using the following buttons on the remote transmitter:

1 - Display horizontal Line.
2 - Restores full picture.
3 - Exit
4 - Increase red cutoff.
5 - Increase green cutoff.
6 - Increase blue cutoff.
7 - Decrease red cutoff.
8 - Decrease green cutoff.
9 - Decrease blue cutoff.

White Balance (Low Light Mode Adjustment)

Tune in a monoscope signal and set Bright, R Cutoff, G Cutoff, and B Cutoff to initial value. Set screen to minimum and display horizontal line. Increase screen until line of one color becomes visible. Adjust the other two cutoffs for a white line. Restore full picture.

HIGH LIGHT MODE

Select High Light Mode from the Service Menu.

High Light Menu Chart

Adjustment	Range	Initial Value	On-set Value
G DRIVE	000 ~ 255	128	075
B DRIVE	000 ~ 255	128	134

NOTE: While in the High Light Mode, adjustments are performed using the following buttons on the remote transmitter:

1 - Display horizontal line.
2 - Restores full picture.
3 - Exit
5 - Increase green drive.
6 - Increase blue drive.
8 - Decrease green drive.
9 - Decrease blue drive.

White Balance (High Light Mode Adjustment)

Tune in a monoscope signal. Set G Drive and B Drive to initial value. Adjust G Drive and B Drive for best white screen.

RF AFC CHK MODE

Select RF AFC CHK Mode from the Service Menu.

RF AFC CHK Mode Menu Chart

Adjustment	Range	Initial Value	On-set Value
RF AFC (1)	On / Off	On	On
Fine (1)	-077 ~ +077	+000	-001

(1) Do not adjust.

I²C BUS CTRL MODE

Select I²C BUS CTRL Mode from the Service Menu.

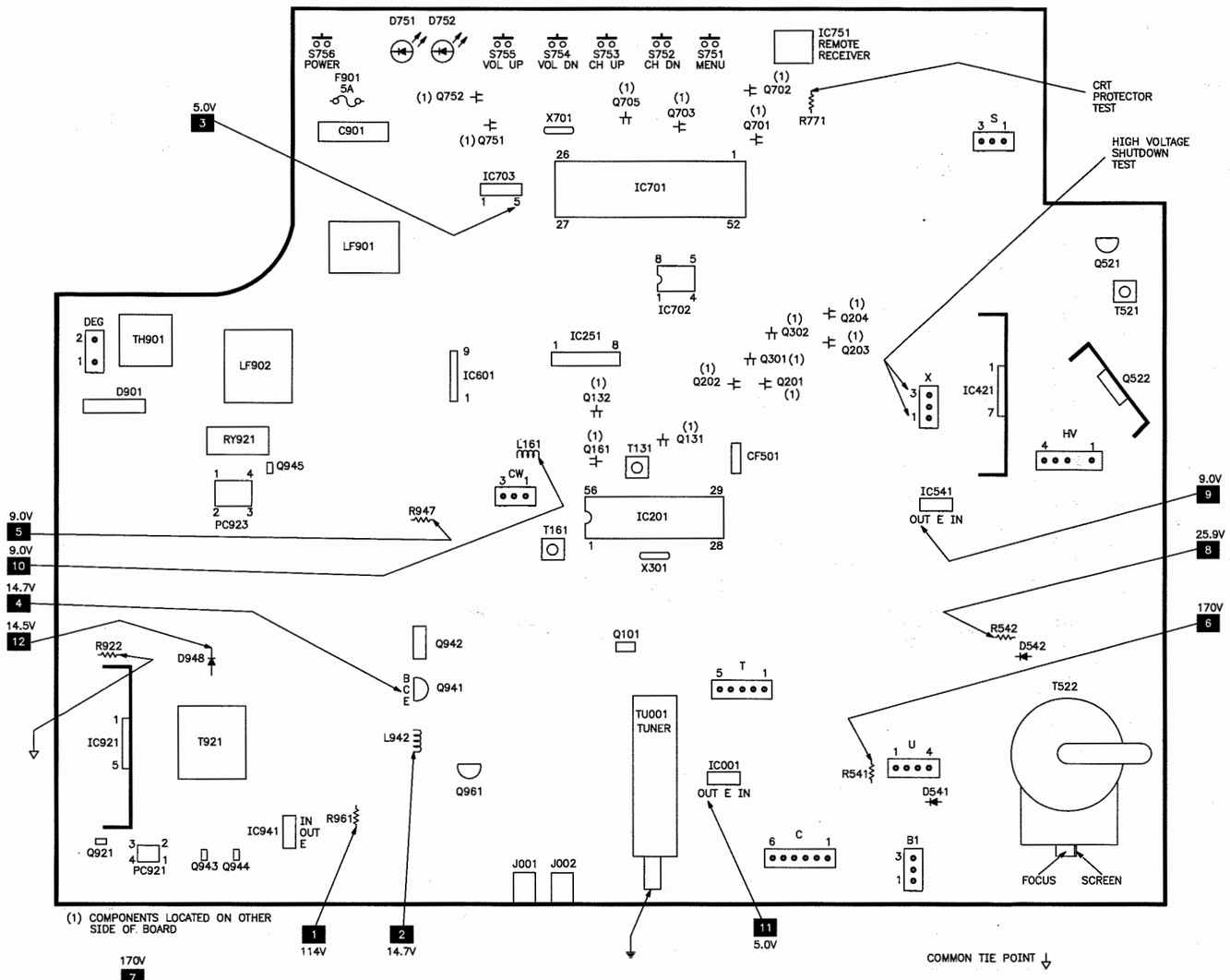
I²C BUS CTRL Mode Menu Chart

Adjustment	Range	Initial Value	On-set Value
I²C BUS (1)	On / Off	On	On

(1) Fixed On.

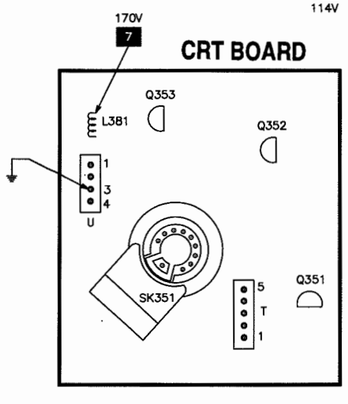
PLACEMENT CHART

MAIN BOARD



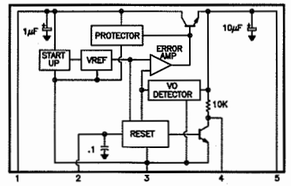
(1) COMPONENTS LOCATED ON OTHER SIDE OF BOARD

CRT BOARD

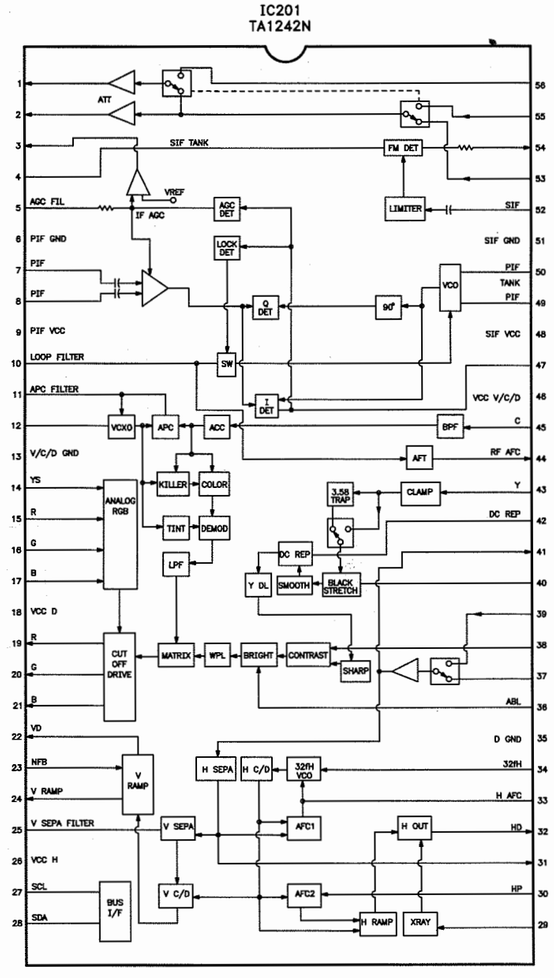


IC FUNCTIONS

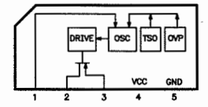
IC703
78LR05



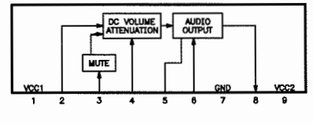
IC201
TA1242N



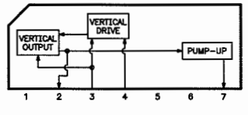
IC921
STR-F6514



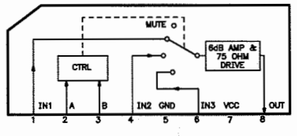
IC601
AN5265



IC421
LA7830



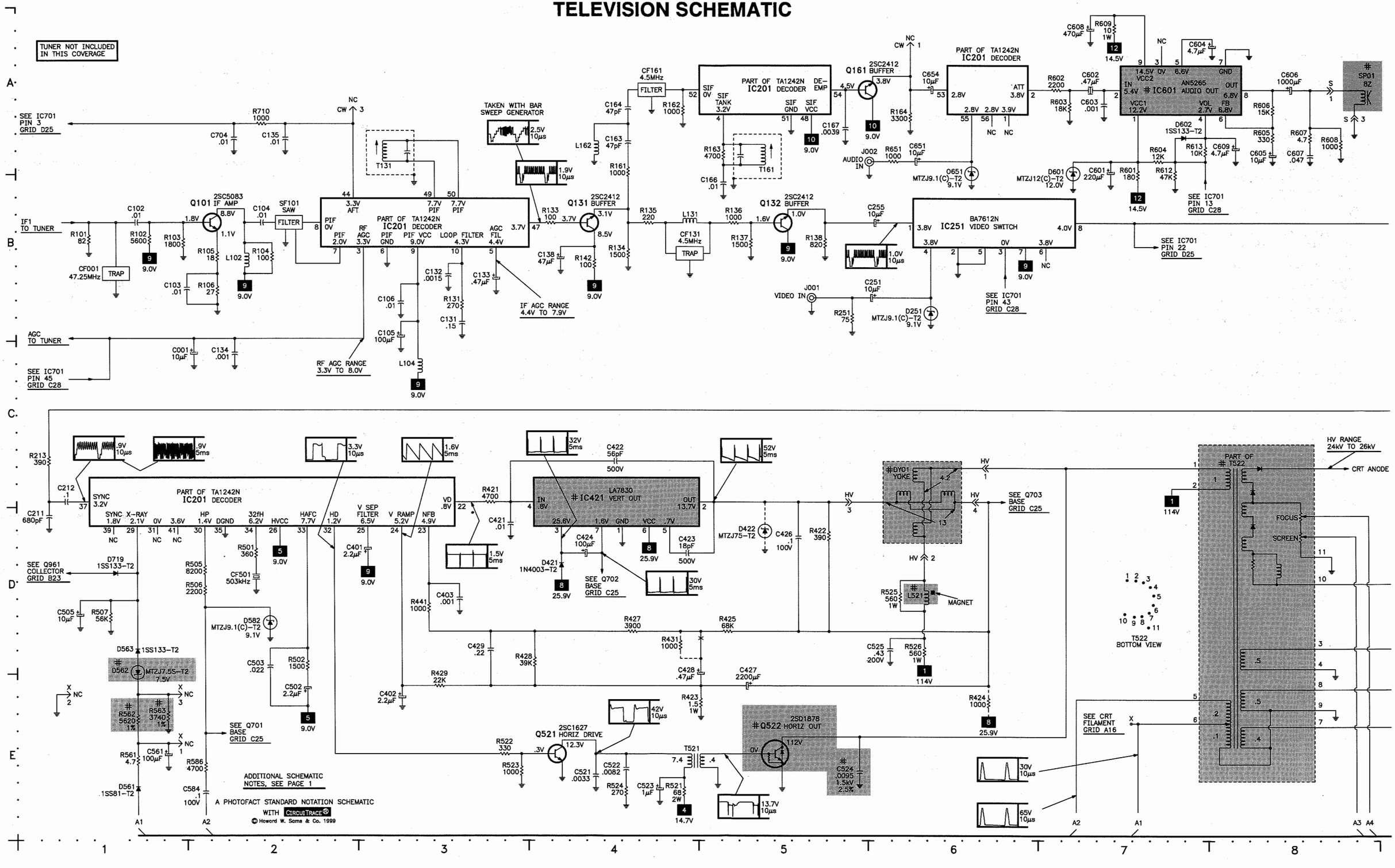
IC251
BA7612N



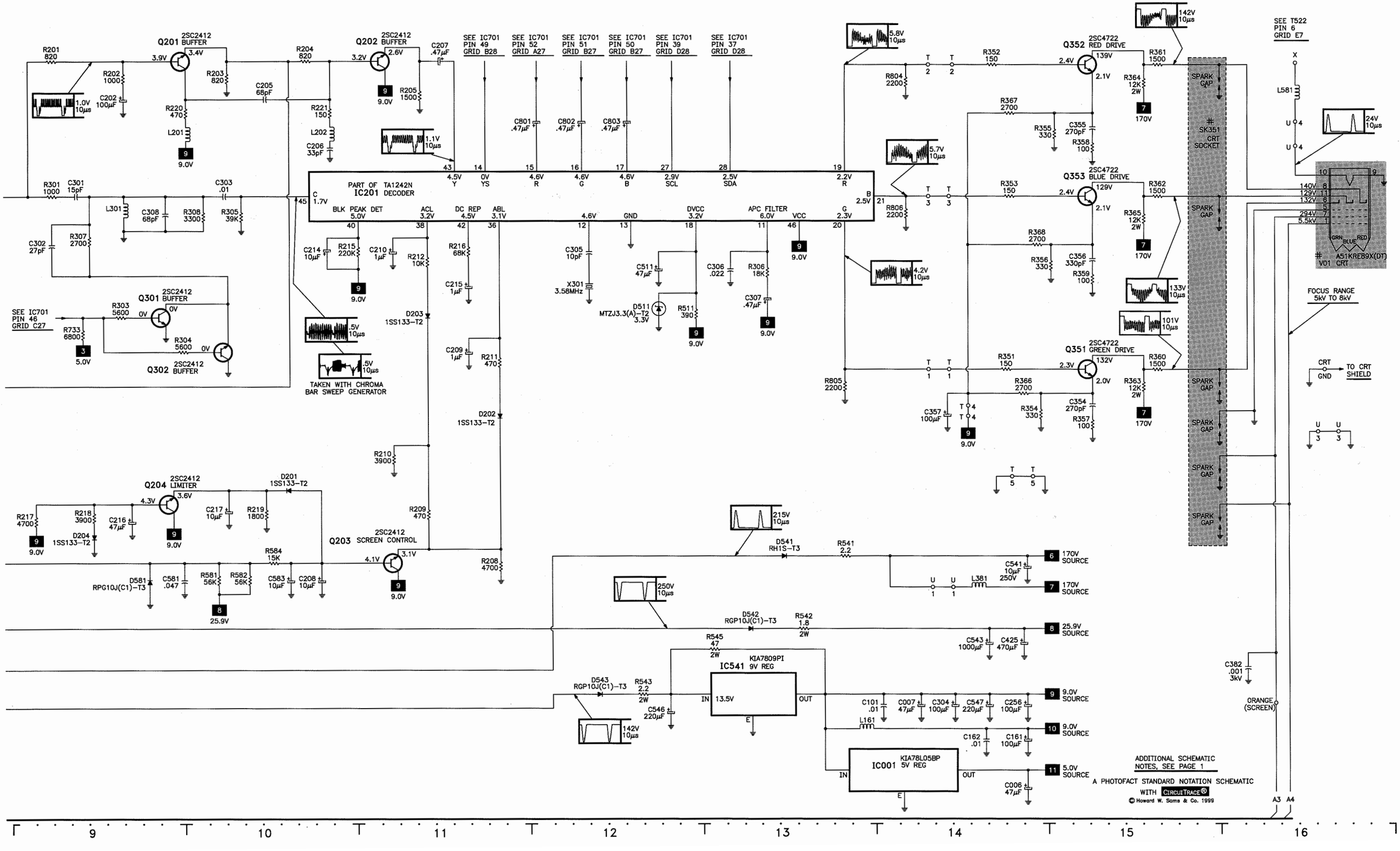
MODELS C-20810, C-20811

JVC

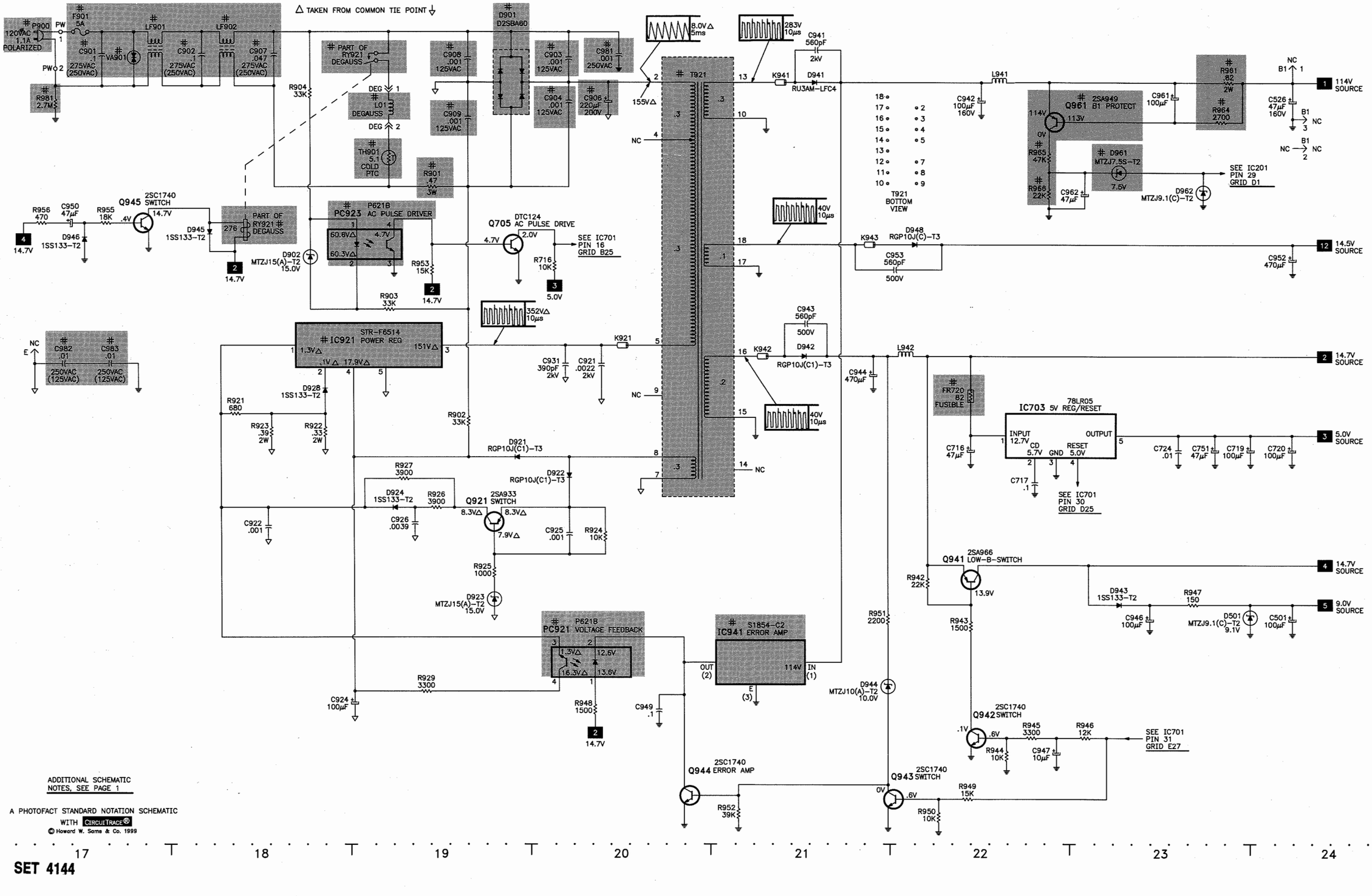
TELEVISION SCHEMATIC



TELEVISION SCHEMATIC continued



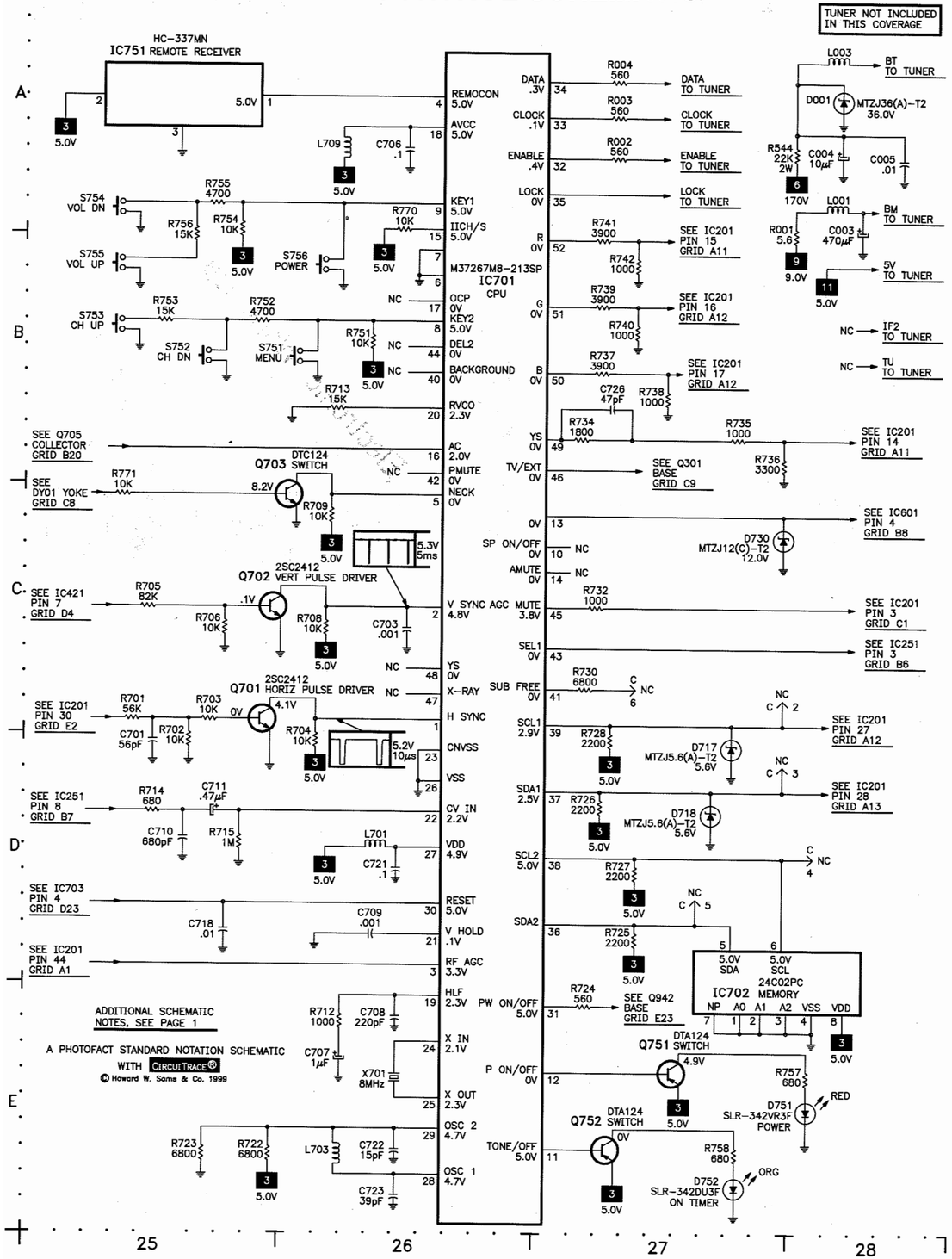
POWER SUPPLY SCHEMATIC



ADDITIONAL SCHEMATIC NOTES, SEE PAGE 1

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE®

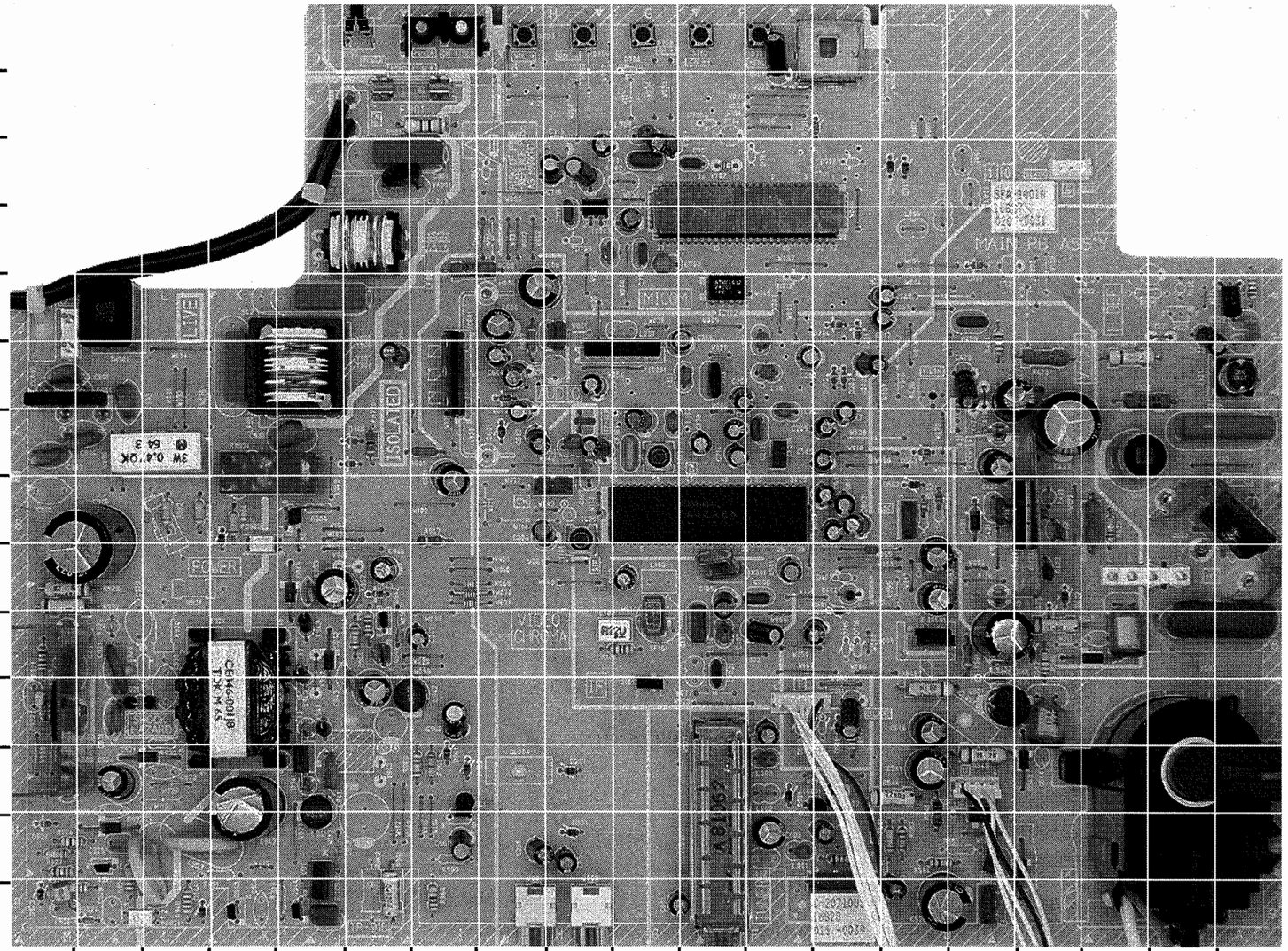
SYSTEM CONTROL SCHEMATIC



SCHEMATIC COMPONENT LOCATION GUIDE

C001	C2	C511	B12	C949	E20	IC702	E27	R103	B1	R441	D3	R742	B27
C003	B28	C521	E4	C950	B17	IC703	C22	R104	B2	R501	D2	R751	B26
C004	A28	C522	E4	C952	B24	IC751	A25	R105	B2	R502	D2	R752	B25
C005	A28	C523	E4	C953	B21	IC921	C19	R106	B2	R505	D2	R753	B25
C006	E14	C524	E5	C961	A23	IC941	E21	R131	B3	R506	D2	R754	B25
C007	E14	C525	D6	C962	B23	J001	B5	R133	B4	R507	D1	R755	B25
C101	E14	C526	A24	C981	A20	J002	B5	R134	B4	R511	C12	R756	B25
C102	B1	C541	D14	C982	C17	K921	C20	R135	B4	R521	E4	R757	E28
C103	B1	C543	D14	C983	C17	K941	A21	R136	B5	R522	E3	R758	E27
C104	B2	C546	E12	CF001	B1	K942	C21	R137	B5	R523	E3	R770	B26
C105	C3	C547	E14	CF131	B4	K943	B21	R138	B5	R524	E4	R771	C25
C106	B3	C561	E1	CF161	A4	L001	B28	R142	B4	R525	D6	R804	A14
C131	B3	C581	D10	CF501	D2	L003	A28	R161	B4	R526	D6	R805	C13
C132	B3	C583	D10	D001	A28	L01	A19	R162	A4	R541	D13	R806	B14
C133	B3	C584	E2	D201	D10	L102	B2	R163	A5	R542	D13	R901	B19
C134	C2	C601	B7	D202	C11	L104	C3	R164	A6	R543	E12	R902	C19
C135	A2	C602	A7	D203	C11	L131	B4	R201	A9	R544	A27	R903	C19
C138	B4	C603	A7	D204	D9	L161	E13	R202	A9	R545	E13	R904	A18
C161	E14	C604	A7	D251	B6	L162	A4	R203	A10	R561	E1	R921	C18
C162	E14	C605	A8	D421	D4	L201	B10	R204	A10	R562	E1	R922	C18
C163	A4	C606	A8	D422	D5	L202	B10	R205	A11	R563	E1	R923	C18
C164	A4	C607	A8	D501	D23	L301	B9	R208	D11	R581	D10	R924	D20
C166	B5	C608	A7	D511	C12	L381	D14	R209	D11	R582	D10	R925	D19
C167	A5	C609	A8	D541	D13	L521	D6	R210	C11	R584	D10	R926	D19
C202	A9	C651	B6	D542	D13	L581	A16	R211	C11	R586	E2	R927	D19
C205	A10	C654	A6	D543	E12	L701	D26	R212	B11	R601	B7	R929	E19
C206	B10	C701	D25	D561	E1	L703	E26	R213	C1	R602	A7	R942	D22
C207	A11	C703	C26	D562	E1	L709	A26	R215	B11	R603	A7	R943	D22
C208	D10	C704	A2	D563	D1	L941	A22	R216	B11	R604	B7	R944	E22
C209	C11	C706	A26	D581	D9	L942	C21	R217	D9	R605	A8	R945	E22
C210	B11	C707	E26	D582	D2	LF901	A17	R218	D9	R606	A8	R946	E22
C211	D1	C708	E26	D601	B7	LF902	A18	R219	D10	R607	A8	R947	D23
C212	D1	C709	D26	D602	A7	P900	A17	R220	A10	R608	A8	R948	E20
C214	B10	C710	D25	D651	B6	PC921	D20	R221	A10	R609	A7	R949	E22
C215	B11	C711	D25	D717	D27	PC923	B19	R251	B5	R612	B7	R950	E22
C216	D9	C716	C22	D718	D27	Q101	B2	R301	B9	R613	A7	R951	D21
C217	D10	C717	C22	D719	D1	Q131	B4	R303	C9	R651	B6	R952	E21
C251	B5	C718	D25	D730	C27	Q132	B5	R304	C9	R701	D25	R953	B19
C255	B5	C719	C23	D751	E28	Q161	A5	R305	B10	R702	D25	R955	B17
C256	E14	C720	C24	D752	E27	Q201	A9	R306	B13	R703	D25	R956	B17
C301	B9	C721	D26	D901	A19	Q202	A11	R307	B9	R704	D26	R961	A23
C302	B9	C722	E26	D902	B18	Q203	D11	R308	B10	R705	C25	R964	B23
C303	B10	C723	E26	D921	C19	Q204	D9	R351	C14	R706	C25	R965	B22
C304	E14	C724	C23	D922	C20	Q301	C9	R352	A14	R708	C26	R966	B22
C305	B12	C726	B27	D923	D19	Q302	C10	R353	B14	R709	C26	R981	A17
C306	B13	C751	C23	D924	D19	Q351	C15	R354	C14	R710	A2	RY921	A19
C307	B13	C801	A12	D928	C18	Q352	A15	R355	B15	R712	E26	RY921	B18
C308	B9	C802	A12	D941	A21	Q353	B15	R356	B14	R713	B26	S751	B26
C354	C15	C803	A12	D942	C21	Q521	E4	R357	C15	R714	D25	S752	B25
C355	A15	C901	A17	D943	D23	Q522	E5	R358	B15	R715	D25	S753	B25
C356	B15	C902	A18	D944	E21	Q701	D25	R359	B15	R716	B20	S754	B25
C357	C14	C903	A20	D945	B18	Q702	C25	R360	C15	R722	E25	S755	B25
C382	E16	C904	A20	D946	B17	Q703	C25	R361	A15	R723	E25	S756	B26
C401	D3	C906	A20	D948	B22	Q705	B19	R362	B15	R724	E27	SF101	B2
C402	E3	C907	A18	D961	B23	Q751	E27	R363	C15	R725	D27	SK351	B16
C403	D3	C908	A19	D962	B23	Q752	E27	R364	A15	R726	D27	SP01	A8
C421	D3	C909	A19	F901	A17	Q921	D19	R365	B15	R727	D27	T131	A3
C422	C4	C921	C20	FR720	C22	Q941	D22	R366	C14	R728	D27	T161	A5
C423	D4	C922	D18	IC001	E14	Q942	E22	R367	A14	R730	C27	T521	E4
C424	D4	C924	E18	IC201	A5	Q943	E22	R368	B14	R732	C27	T522	C8
C425	D14	C925	D20	IC201	A6	Q944	E20	R421	D3	R733	C9	T921	A20
C426	D5	C926	D19	IC201	B11	Q945	B17	R422	D5	R734	B27	TH901	B19
C427	E5	C931	C20	IC201	B3	Q961	B22	R423	E4	R735	B27	V01	B16
C428	E4	C941	A21	IC201	D2	R001	B27	R424	E6	R736	C27	VA901	A17
C429	D3	C942	A22	IC251	B6	R002	A27	R425	D5	R737	B27	X301	B12
C501	D24	C943	C21	IC421	D4	R003	A27	R427	D4	R738	B27	X701	E26
C502	E2	C944	C21	IC541	E13	R004	A27	R428	D3	R739	B27		
C503	D2	C946	D23	IC601	A7	R101	B1	R429	E3	R740	B27		
C505	D1	C947	E22	IC701	B26	R102	B1	R431	D4	R741	B27		

MAIN BOARD - TOP VIEW



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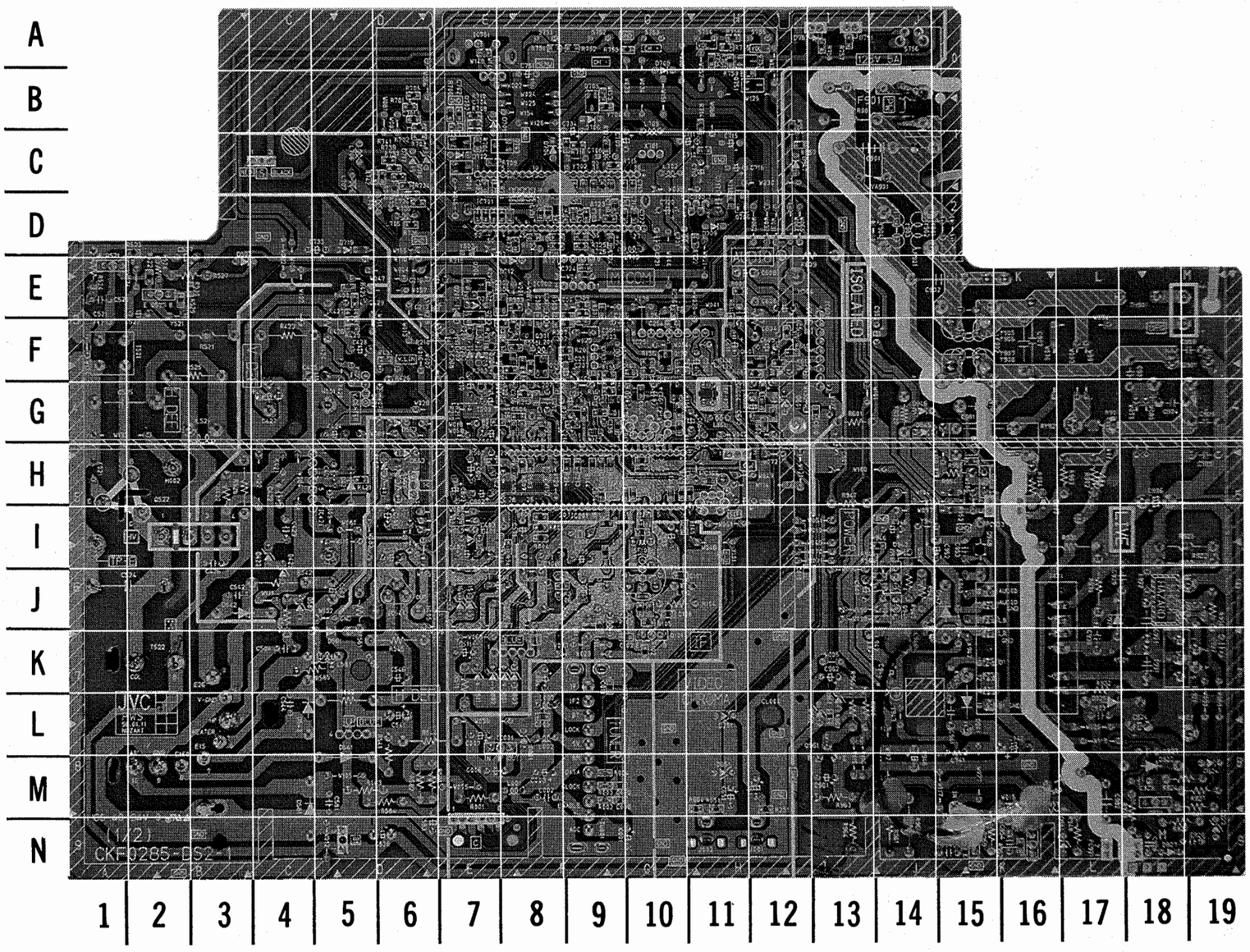
MAIN BOARD - TOP VIEW, GRIDTRACE LOCATION GUIDE

B1	N-15	C654	G-9	D602	F-8	Q101	K-10	S753	A-10
C	N-13	C706	C-11	D651	M-9	Q521	E-19	S754	A-9
C001	N-10	C707	C-10	D717	C-14	Q522	H-19	S755	A-8
C003	M-12	C711	C-9	D718	C-14	Q921	M-2	S756	A-6
C004	K-12	C716	C-9	D730	C-8	Q941	J-6	SF101	J-10
C006	M-13	C717	D-9	D751	A-7	Q942	J-6	T	K-13
C007	L-13	C719	C-9	D752	A-7	Q943	N-4	T131	G-10
C105	I-11	C720	D-10	D901	F-1	Q944	N-5	T161	H-9
C131	J-11	C721	D-10	D902	H-4	Q945	H-5	T521	F-19
C133	I-10	C751	A-12	D921	L-3	Q961	L-7	T522	L-18
C138	G-11	C801	H-13	D922	M-2	R001	M-13	T921	K-4
C161	G-10	C802	H-13	D923	N-1	R002	J-7	TH901	E-2
C167	G-9	C803	H-13	D924	M-1	R003	J-7	TU001	L-11
C202	F-12	C901	C-6	D928	J-1	R004	J-7	U	L-15
C207	F-11	C902	E-5	D941	L-5	R104	J-10	VA901	C-6
C208	F-13	C903	F-2	D942	J-5	R422	H-17	X	H-14
C209	G-13	C904	G-2	D943	I-6	R423	F-16	X301	I-11
C210	G-13	C906	I-2	D944	N-3	R424	F-15	X701	C-10
C212	G-12	C907	F-4	D945	G-6	R441	I-13		
C214	G-11	C908	F-1	D946	G-6	R511	K-13		
C215	G-11	C909	G-1	D948	I-5	R521	F-17		
C216	E-14	C921	J-2	D961	L-7	R524	E-19		
C217	E-14	C922	K-1	D962	L-7	R526	H-17		
C251	M-8	C924	L-2	DEG	F-1	R541	M-14		
C255	F-9	C925	M-2	F901	B-7	R542	J-16		
C256	E-11	C926	N-1	FR720	G-6	R543	L-15		
C304	H-8	C931	K-2	HV	I-18	R544	L-14		
C306	I-12	C941	L-5	IC001	L-13	R545	K-14		
C307	J-12	C942	M-4	IC201	H-10	R561	J-15		
C401	J-13	C943	J-6	IC251	F-9	R562	H-14		
C402	I-13	C944	K-6	IC421	H-16	R563	H-14		
C421	H-15	C946	I-6	IC541	J-14	R581	M-14		
C422	H-16	C947	J-7	IC601	F-7	R582	M-14		
C423	I-16	C949	N-5	IC701	C-13	R584	M-14		
C424	G-15	C950	F-6	IC702	E-11	R586	J-16		
C425	F-16	C952	I-5	IC703	D-9	R601	G-7		
C426	J-17	C953	I-5	IC751	A-13	R607	E-8		
C427	G-16	C961	M-7	IC921	J-1	R609	D-7		
C428	F-15	C962	K-7	IC941	N-5	R715	C-9		
C429	E-15	C981	G-5	J001	N-8	R770	C-11		
C501	I-12	C982	M-2	J002	N-9	R771	B-13		
C502	H-13	C983	M-3	K921	K-2	R901	G-3		
C505	G-13	CF001	J-11	K922	J-2	R902	H-3		
C511	K-13	CF131	F-11	K941	K-5	R903	H-3		
C521	E-19	CF161	G-10	K942	J-5	R904	H-4		
C522	E-19	CF501	G-12	K943	J-5	R921	J-1		
C523	E-18	CW	H-9	L001	M-12	R922	I-1		
C524	J-19	D001	L-12	L003	L-12	R923	I-1		
C525	G-19	D201	E-13	L102	J-10	R924	M-1		
C526	N-14	D202	F-13	L104	J-11	R925	M-1		
C541	L-14	D203	F-13	L131	F-11	R926	N-2		
C543	J-15	D204	E-13	L161	G-9	R927	M-1		
C546	K-14	D251	L-9	L162	G-10	R929	N-2		
C547	I-14	D421	H-15	L201	F-12	R942	J-6		
C561	I-14	D422	I-16	L202	G-12	R943	J-6		
C581	M-15	D501	I-13	L301	E-12	R947	H-7		
C583	N-14	D511	K-13	L581	K-15	R948	N-3		
C584	K-16	D541	M-15	L701	D-9	R961	N-6		
C601	H-7	D542	J-17	L703	D-10	R964	M-7		
C602	G-8	D543	L-16	L709	B-10	R965	L-7		
C604	F-8	D561	K-15	L941	M-5	R966	L-7		
C605	F-8	D562	H-14	L942	K-7	R981	B-7		
C606	E-8	D563	G-14	LF901	D-6	RY921	G-4		
C607	E-9	D581	M-16	LF902	F-5	S	C-17		
C608	E-8	D582	J-16	PC921	N-3	S751	A-12		
C609	G-8	D601	G-8	PC923	H-4	S752	A-11		

MAIN BOARD - BOTTOM VIEW



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MAIN BOARD - BOTTOM VIEW, GRIDTRACE LOCATION GUIDE

C005	L-8	R162	G-10	R723	D-9
C101	J-10	R163	H-10	R724	D-9
C102	K-10	R164	G-10	R725	D-9
C103	J-10	R201	F-9	R726	D-9
C104	J-10	R202	F-8	R727	D-8
C106	H-10	R203	F-7	R728	D-8
C132	H-10	R204	M-8	R730	D-8
C134	H-10	R205	G-8	R732	D-8
C135	H-9	R208	F-7	R733	D-8
C162	H-10	R209	F-7	R734	C-6
C163	F-10	R210	F-7	R735	D-6
C164	G-10	R211	G-7	R736	D-6
C166	H-11	R212	G-7	R737	C-6
C205	F-8	R213	G-8	R738	C-6
C206	G-8	R215	G-9	R739	C-6
C211	G-8	R216	G-9	R740	C-6
C301	E-9	R217	E-7	R741	C-6
C302	F-9	R218	E-7	R742	C-6
C303	F-9	R219	E-6	R751	A-8
C305	I-9	R220	F-8	R752	A-9
C308	F-8	R221	F-8	R753	A-10
C403	I-7	R251	M-12	R754	A-11
C503	H-8	R301	E-9	R755	A-11
C603	G-12	R303	E-8	R756	A-11
C701	B-6	R304	F-8	R757	A-13
C703	C-7	R305	H-9	R758	A-13
C704	B-7	R306	J-9	R804	I-8
C708	C-9	R307	E-9	R805	I-8
C709	C-9	R308	F-8	R806	I-8
C710	C-11	R421	H-5	R944	J-14
C718	D-9	R425	E-5	R945	J-14
C722	D-10	R427	E-5	R946	I-14
C723	D-10	R428	F-5	R949	N-16
C724	E-9	R429	F-5	R950	N-16
C726	C-6	R501	G-8	R951	N-16
Q131	G-9	R502	H-7	R952	N-16
Q132	F-10	R505	G-8	R953	H-15
Q161	G-10	R506	G-7	R955	H-15
Q201	F-8	R507	H-8	R956	B-12
Q202	F-8	R522	E-2		
Q203	E-7	R523	D-2		
Q204	E-7	R602	G-12		
Q301	F-8	R603	G-12		
Q302	E-8	R604	G-12		
Q701	C-7	R605	F-12		
Q702	C-7	R606	F-12		
Q703	C-8	R608	E-11		
Q705	B-9	R612	F-12		
Q751	B-12	R613	F-12		
Q752	A-12	R651	M-11		
R101	J-9	R701	B-6		
R102	K-10	R702	B-6		
R103	J-10	R703	C-6		
R105	J-10	R704	C-7		
R106	J-10	R705	B-6		
R131	I-9	R706	B-7		
R133	G-9	R708	B-7		
R134	G-9	R709	C-7		
R135	F-9	R710	B-7		
R136	F-10	R712	C-9		
R137	F-10	R713	C-9		
R138	F-10	R714	B-11		
R142	G-9	R716	C-9		
R161	G-9	R722	D-11		

PARTS LIST

SEMICONDUCTORS

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.	NTE Part No.	TCE Part No.
D001	-	MTZJ36(A)-T2	-	-	-
D201 Thru					
D204	-	1SS133-T2	ECG177	NTE177	SK9091
D251	-	MTZJ9.1(C)-T2	-	-	-
D421	-	1N4003-T2	ECG116	NTE116	SK3313
D422	-	MTZJ75-T2	-	-	-
D501	-	MTZJ9.1(C)-T2	-	-	-
D511	-	MTZJ3.3(A)-T2	-	-	-
D541	-	RH1S-T3	ECG552	NTE552	SK9000
D542, 43	-	RGP10J(C1)-T3	ECG552	NTE552	SK9000
D561	-	1SS81-T2	ECG177	NTE177	SK9091
# **D562**	-	MTZJ7.5S-T2	-	-	-
D563	-	1SS133-T2	ECG177	NTE177	SK9091
D581	-	RPG10J(C1)-T3	-	-	-
D582	-	MTZJ9.1(C)-T2	-	-	-
D601	-	MTZJ12(C)-T2	-	-	-
D602	-	1SS133-T2	ECG177	NTE177	SK9091
D651	-	MTZJ9.1(C)-T2	-	-	-
D717, 18	-	MTZJ5.6(A)-T2	-	-	-
D619	-	1SS133-T2	ECG177	NTE177	SK9091
D730	-	MTZJ12(C)-T2	-	-	-
D751	-	SLR-342VR3F	-	-	-
D752	-	SLR-342DU3F	-	-	-
# **D901**	-	D2SBA60	ECG169	-	-
D902	-	MTZJ15(A)-T2	-	-	-
D921, 22	-	RGP10J(C1)-T3	ECG552	NTE552	SK9000
D923	-	MTZJ15(A)-T2	-	-	-
D924, 28	-	1SS133-T2	ECG177	NTE177	SK9091
D941	-	RU3AM-LFC4	ECG580	NTE580	SK3318A
D942	-	RGP10J(C1)-T3	ECG552	NTE552	SK9000
D943	-	1SS133-T2	ECG177	NTE177	SK9091
D944	-	MTZJ10(A)-T2	-	-	-
D945, 46	-	1SS133-T2	ECG177	NTE177	SK9091
D948	-	RGP10J(C1)-T3	ECG552	NTE552	SK9000
# **D961**	-	MTZJ7.5S-T2	-	-	-
D962	-	MTZJ9.1(C)-T2	-	-	-
IC001	KIA78L05BP	KIA78L05BP-Y	-	-	-
IC201	-	TA1242N	-	-	-
IC251	-	BA7612N	-	-	-
# **IC421**	-	LA7830	ECG1773	NTE1773	SK9752
IC541	-	KIA7809PI	ECG1966	NTE1966	-
# **IC601**	-	AN5265	ECG1789	NTE1789	SK9876
IC701	-	M37267M8-213SP	-	-	-
IC702	24C02PC	AT24C02-13810	-	-	-
IC703	78LR05	L78LR05E-MA	-	-	-
# **IC921**	-	STR-F6514	-	-	-
# **IC941**	-	S1854-C2	-	-	-
# **PC921, 23**	P621B	TLP621(B)	-	-	SK10178
Q101	2SC5083	2SC5083(L-P)-T	-	-	-
Q131, 32	2SC2412	2SC2412K(QR)-X	ECG2408	NTE2408	SK10099
Q161	2SC2412	2SC2412K(QR)-X	ECG2408	NTE2408	SK10099

 # For SAFETY use only equivalent replacement part.

SEMICONDUCTORS continued

(Select the replacement that gives the best results.)

Item No.	Type No.	Mfr. Part No.	ECG Part No.	NTE Part No.	TCE Part No.
Q201 Thru					
Q204	2SC2412	2SC2412K(QR)-X	ECG2408	NTE2408	SK10099
Q301, 02	2SC2412	2SC2412K(QR)-X	ECG2408	NTE2408	SK10099
Q351, 52, 53	2SC4722	2SC4722(NP)	-	-	-
Q521	2SC1627	2SC1627A(OY)-T	ECG289A	NTE289A	SK3449
# **Q522**	2SD1878	2SD1878-YD	ECG2331	NTE2331	SK10088
Q701, 02	2SC2412	2SC2412K(QR)-X	ECG2408	NTE2408	SK10099
Q703, 05	DTC124	DTC124EKA-X	ECG2357	NTE2357	SK10124
Q751, 52	DTA124	DTA124EKA-X	-	-	SK9741
Q921	2SA933S	2SA933AS(QR)-T	ECG290A	NTE290A	SK9132
Q941	2SA966Y	2SA966(OY)-T	ECG294	NTE294	SK3841
Q942 Thru					
Q945	2SC1740S	2SC1740S(QR)-T	ECG85	NTE85	SK3122
# **Q961**	2SA949Y1	2SA949(Y)C1-T	ECG383	NTE383	SK9138

 # For SAFETY use only equivalent replacement part.

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.

- Custom Components Corporation (Chek-A-Color)
- NTE Electronics, Inc. (NTE)
- Philips ECG Company (ECG)
- Terrell & Nobis (TNI Electronics)
- Sencore, Inc.
- Thomson Consumer Electronics, Inc. (SK, TCE)

CAPACITORS & ELECTROLYTICS

	Item No.	Rating	Mfr. Part No.
	C382	.001 +80% -20% 3kV	QCZ0121-102A
	C402	2.2µF 10% 16V Tantalum	QEE61CK-225BZ
#	**C524**	.0095 2.5% 1.5kV	QFZ0117-9501L
	C602	.47µF 20% 50V NP	QEN61HM-474Z
#	**C901, 02**	.1 275VAC	-
		.1 250VAC	QFZ9040-104N
#	**C903, 04**	.001 20% 125VAC	QCZ9031-102U
#	**C906**	220µF 20% 200V	QETB2DM-227
#	**C907**	.047 20% 275VAC	-
		.047 250VAC	QFZ9040-473N
#	**C908, 09**	.001 20% 150VAC	QCZ9031-102U
	C921	.0022 10% 2kV	QCZ0122-222U
	C931	390pF 10% 2kV	QCZ0122-391U
	C941	560pF 10% 2kV	QCZ0122-561U
#	**C981**	.001 20% 250VAC	QCZ9052-102A
#	**C982, 83**	.01 20% 250VAC	-
		.01 20% 125VAC	QCZ9030-103U

 # For SAFETY use only equivalent replacement part.

CABINET PARTS

Item	Mfr. Part No.
Model C-20810	
# Cabinet Front	CM12842-00E-MA
# Cabinet Rear	CM12741-E01-MA
Knob Assembly	CM36300-A01-A
Power Knob	CM36299-B01-A
Power Knob Spring	CM36481-001-A
Window Remote	CM48123-001-A
Model C-20811	
# Cabinet Front	CM12842-00H-MA
# Cabinet Rear	CM12741-004-MA
Knob Assembly	CM36300-002-A
Power Knob	CM36299-002-A
Power Knob Spring	CM36481-001-A
Window Remote	CM48123-001-A
Remote Transmitter	
Battery Cover (1)	UR64EC1822A
Battery Cover (2)	UR64EC1822B

 # For SAFETY use only equivalent replacement part.
(1) Used in model C-20810.
(2) Used in model C-20811.

CONTROLS & RESISTORS

	Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
#	**FR720**	82 5% 1/4W Fusible	QRZ0054-820M	-
#	**R562**	5620 1% 1/4W	QRV141F-5621AY	-
#	**R563**	3740 1% 1/4W	QRV141F-3741AY	-
#	**R901**	.47 10% 3W Wirewound	QRZ0122-R47	-
#	**R961**	.82 5% 2W	QRX029J-R82A	2WD82
#	**R964**	2700 5% 1/2W	QRD121J-272SY	HW227
#	**R965**	47K 5% 1/2W	QRD121J-473SY	HW347
#	**R966**	22K 5% 1/2W	QRD121J-223SY	HW322
#	**R981**	2.7M 5% 1/2W	QRZ0111-275U	HW527
#	**TH901**	5.1 Cold PTC	CEKP007-001	-
#	**VA901**	Varistor	ERZV10V361CS	-

 # For SAFETY use only equivalent replacement part.

COILS & TRANSFORMERS

	Item No.	Function/Rating	Mfr. Part No.
#	**DY01**	Yoke Horiz 2.8mH Vert 17.0mH	CE20311-00A
	K921	Ferrite Bead	QQR0621-001Z
	K941, 42, 43	Ferrite Bead	QQR0582-001Z
	L001	15µH	CELP059-150Z
	L003	5.6µH	CELP059-5R6Z
#	**L01**	Degaussing	CELD041-006J3
	L102	.22µH	CELP041-R22
	L104	68µH	CELP059-680Z
	L131	22µH	CELP059-220Z
	L161	68µH	CELP059-680Z
	L162	22µH	CELP059-220Z
	L201	15µH	CELP059-150Z
	L202	56µH	CELP059-560Z
	L301	15µH	CELP059-150Z
	L381	39µH	CELP059-390Z
#	**L521**	Horizontal Linearity	CE41210-00B
	L581	Heater Choke	CELC901-036J6
	L701	4.7µH	CELP059-4R7Z
	L703	8.2µH	CELP055-8R2Z
	L709	10µH	CELP059-100Z
	L941, 42	Choke Coil	CELC048-820Z
#	**LF901**	Line Filter	CE42335-001J1
#	**LF902**	Line Filter	CELF011-001J6
	T131	PIF	CELT001-209J3
	T161	SIF	CELT003-109J3
	T521	Horizontal Drive	CE40203-00CJ1
#	**T522** (1)	Horizontal Output	CE42586-001J1
#	**T921**	Switching	CETS046-001J8

 # For SAFETY use only equivalent replacement part.
(1) Focus and screen controls are part of T522.

MISCELLANEOUS

	Item No.	Description	Mfr. Part No.	Notes
	CF001	Trap	FTP47.25MF	47.25MHz
	CF131	Trap	CE41505-001	4.5MHz
	CF161	Filter	SFSH4.5MCB	4.5MHz
	CF501	Resonator	CSB503F30-T2	503kHz
#	**F901**	Fuse	QMF0007-5R0J1	5Amp, Fast Acting
	IC751	Receiver	HC-337MN	Remote
	J001	Jack	CEMN065-001	Video Input
	J002	Jack	CEMN065-002	Audio Input
#	**P900** (1)	Line Cord	QMPD070-200-JC	AC, Polarized
#	**P900** (2)	Line Cord	QMPD089-200-K2	AC, Polarized
#	**RY921**	Relay	CESK028-001	Degaussing
	S751	Switch	QSP1A11-C18Z	Menu
	S752	Switch	QSP1A11-C18Z	Channel Down
	S753	Switch	QSP1A11-C18Z	Channel Up
	S754	Switch	QSP1A11-C18Z	Volume Down
	S755	Switch	QSP1A11-C18Z	Volume Up
	S756	Switch	QSP1A11-C18Z	Power
	SF101	Filter	CE42589-201	SAW
#	**SK351**	Socket	CE42535-001J1	CRT
#	**SP01**	Speaker	CEBSS09D-03KJ2	2" X 3 1/2", 8 Ohms, 5W
#	**TU001** (3)	Tuner	CEEM270-B01	UHF/VHF, ENV56D06G3
#	**V01**	CRT	A51KRE89X(DT)	-
	X301	Crystal	CE40668-001Z	3.58MHz
	X701	Resonator	CST8.00MTW	8MHz
		Magnet	CE42378-00B	Purity/Convergence
		Transmitter (1)	RM-C540-1H	Remote
		Transmitter (2)	RM-C540W-1H	Remote
		Wedge	CE42153-00AJ1	Yoke Positioning (3 Used)

 # For SAFETY use only equivalent replacement part.
(1) Used in model C-13810.
(2) Used in model C-13811.
(3) Contact TNI Electronics for replacement; order by part number on tuner.

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SET 4144 Page 4