

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.

TEST JIG HOOKUP				
Function	Chek-A-Color Adapter No.	PC Board Plug No.	Pin	Color
CRT	B239	P401	1	Red
Yoke	D4137		2	Blue
Yoke Setting	YP1		3	Yellow
Comments	Focus Tap		4	Green

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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SAFETY CHECKS – FIRE AND SHOCK HAZARD

Cold Leakage Checks for Receivers with Isolated Ground

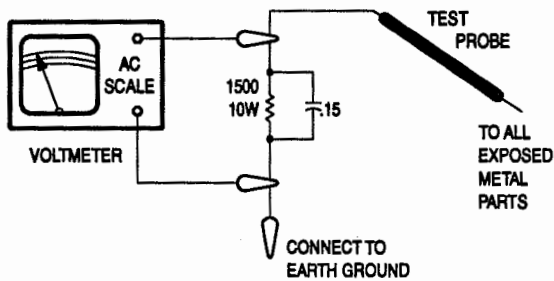
Unplug the AC cord, connect a jumper across the plug prongs, and turn the power switch on (if applicable). Use an ohmmeter to measure the resistance between the jumped AC plug and any exposed metal cabinet parts such as antenna screw heads, control shafts, or handle brackets. Exposed metal parts with 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.

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.



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PHOTOFACT® Technical Service Data

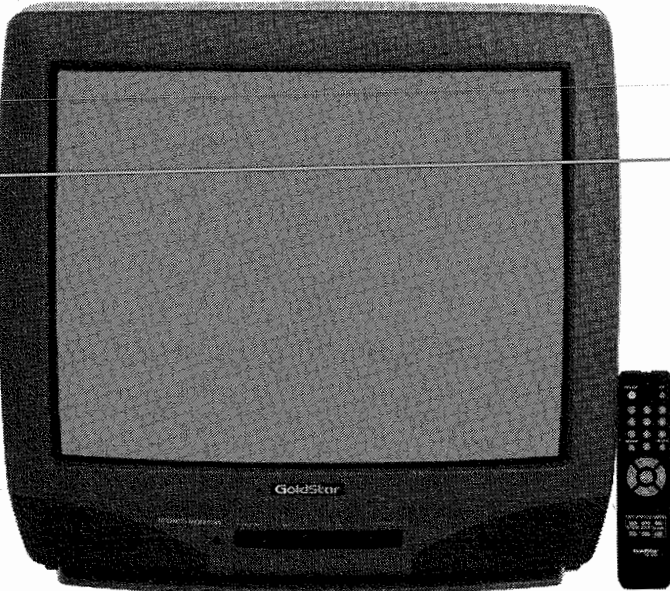
SET 3528

MODEL GCT2005S (CHASSIS NC-44A)

GOLDSTAR

INDEX	
GridTrace Location	
Main Board	1
IC Functions	3
Important Parts Information	3
Miscellaneous Adjustments	1
Parts List	4
Placement Chart	1
Safety Precautions	1
Schematics	
Audio	2
Power Supply	2
System Control	3
Television	2
Schematic Notes	1
Test Equipment	3
Test Jig Hookup	1
Troubleshooting	1
Tuner Information	1

GOLDSTAR
Model GCT2005S (Chassis NC-44A)



Complete coverage
for servicing a television receiver...

- Schematics
- Parts list
- Component locations
- Troubleshooting guide

Coverage includes these additional models and chassis:

MODEL	CHASSIS
GCT2054SN	NC-44A
GCT2064SN	NC-44A

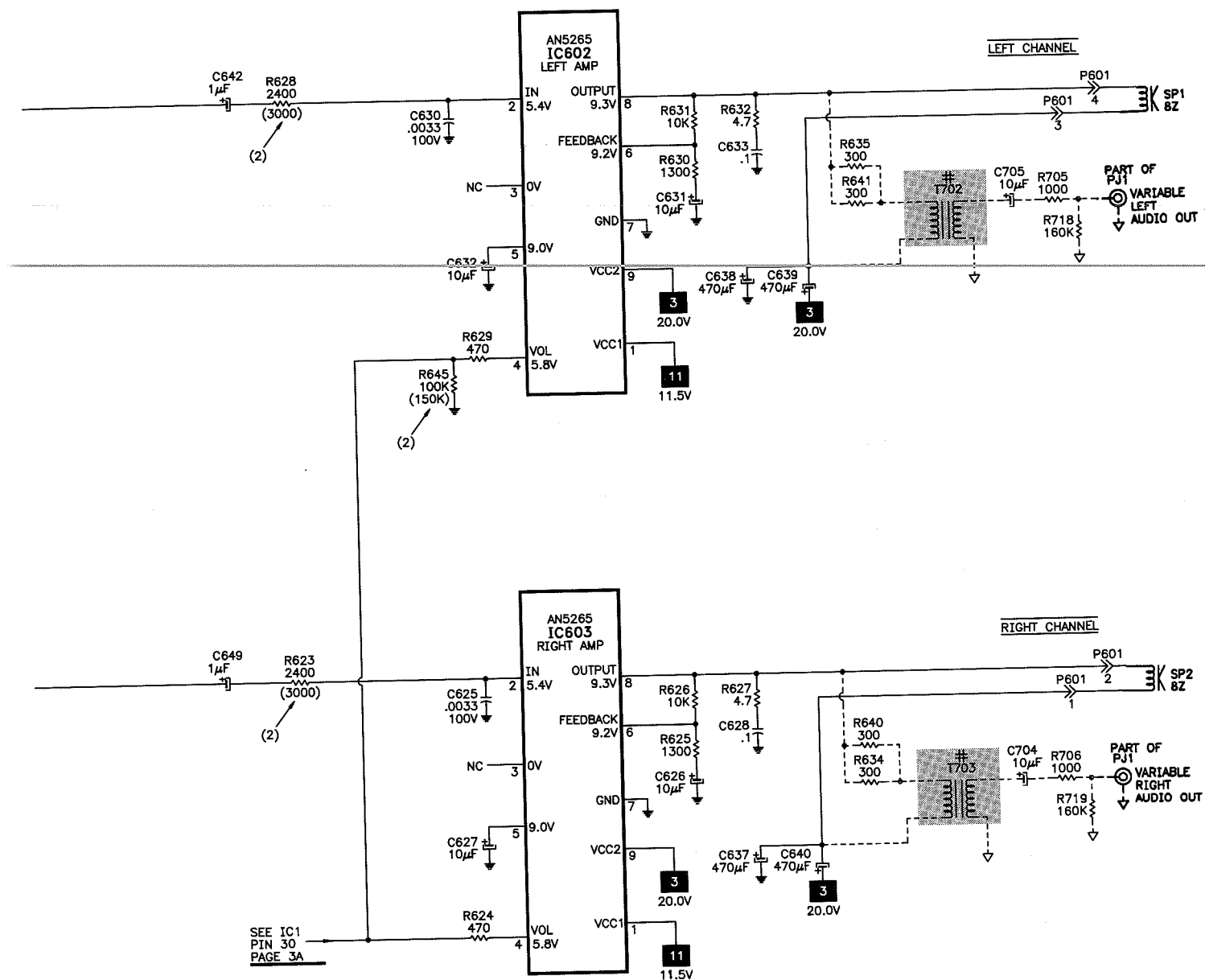


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AUGUST 1995 SET 3528

For Supplier Address,
See PHOTOFACT Annual Index

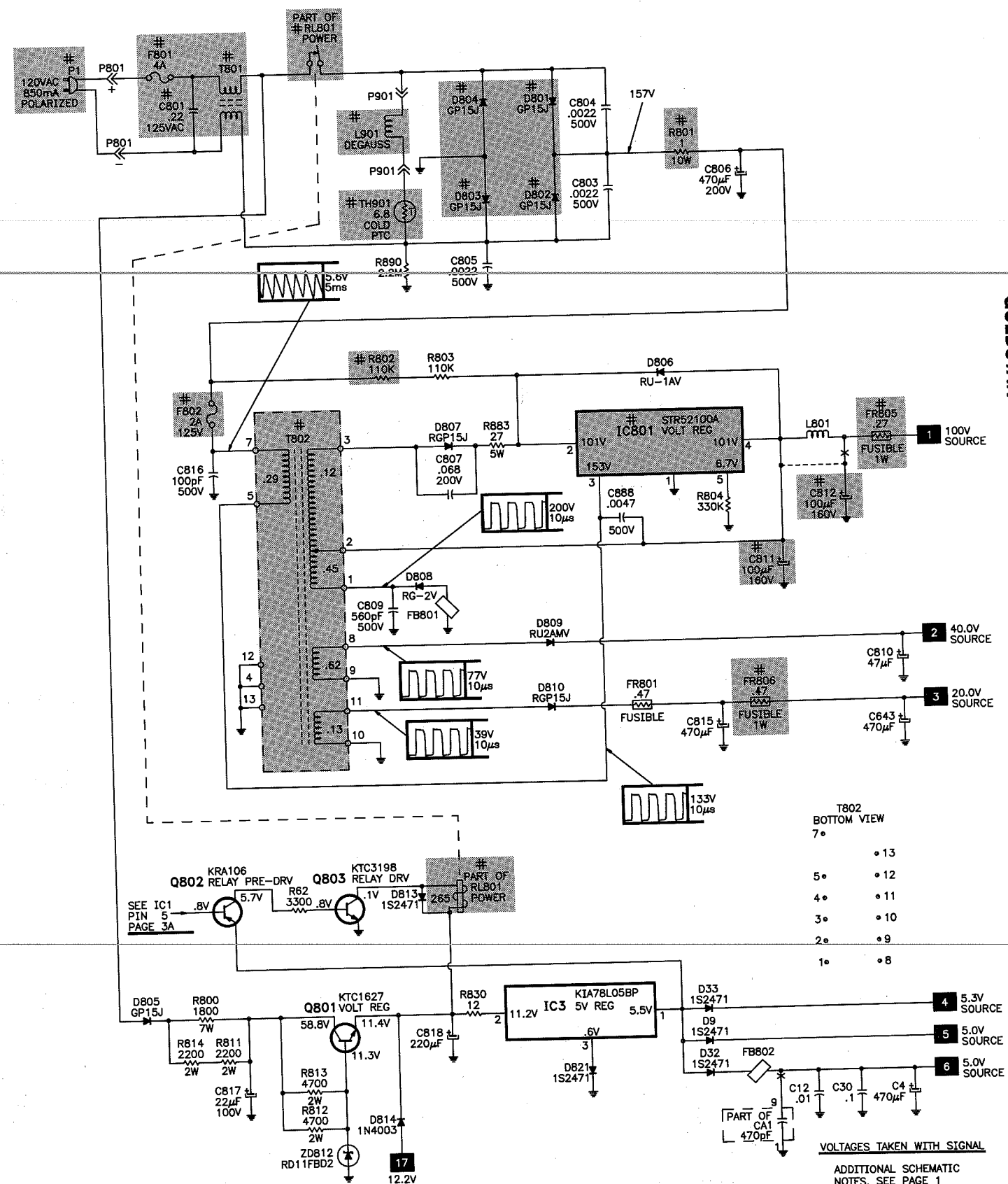
AUDIO SCHEMATIC continued



NOTE: ALTERNATE CIRCUITRY
USED IN MODELS
GCT2054SN & GCT2064SN

NOTE: (1) USED IN MODEL GCT2005S
(2) USED IN MODELS GCT2054SN
& GCT2064SN

POWER SUPPLY SCHEMATIC



VOLTAGES TAKEN WITH SIGNAL

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 1

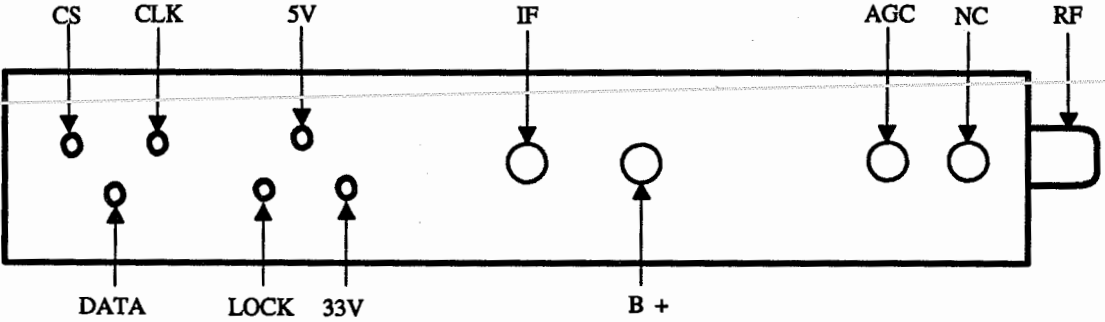
A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH **CIRCUITRACE®**
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TUNER INFORMATION

TUNER VOLTAGE CHART

Pin	VHF Low Band	VHF High Band	UHF Band	Pin	VHF Low Band	VHF High Band	UHF Band
CS	.1V	.1V	.1V	B+	12.1V	12.1V	12.1V
DATA	5.0V	5.0V	5.0V	AGC	4.3V	4.9V	4.3V
CLK	.1V	.1V	.1V	NC	2.2V	4.5V	6.3V
LOCK	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.			
5V	5.2V	5.2V	5.2V				
33V	29.8V	29.9V	29.9V				
IF	0V	0V	0V				

TUNER TERMINAL GUIDE



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

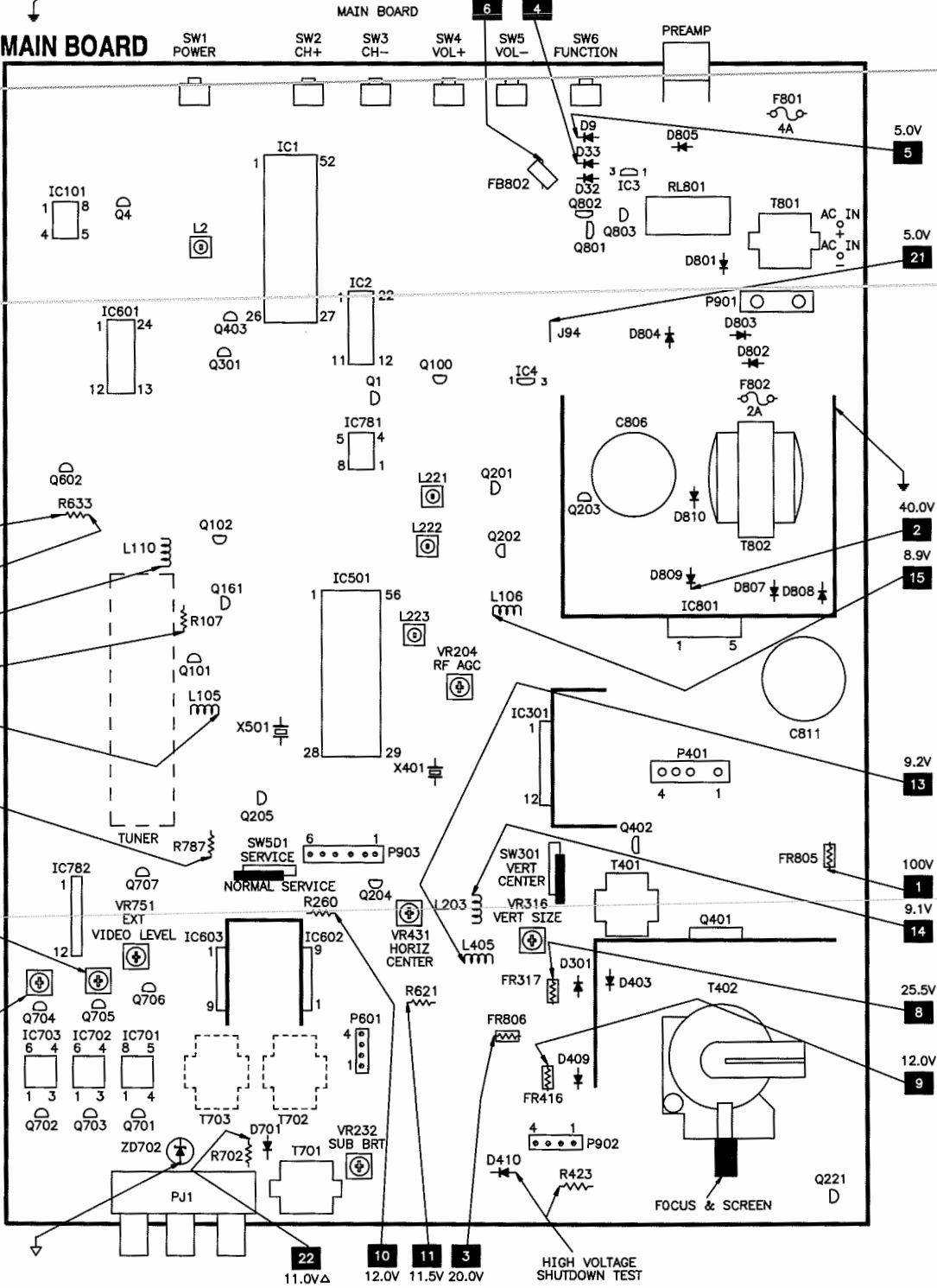
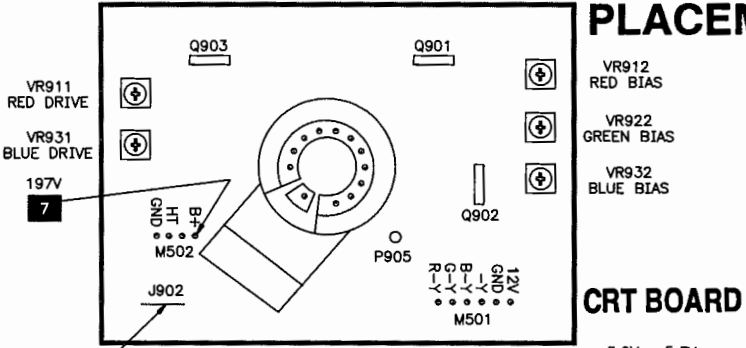
△ Taken from common tie point

3 Schematic CIRCUITRACE®: Voltage source tie point.

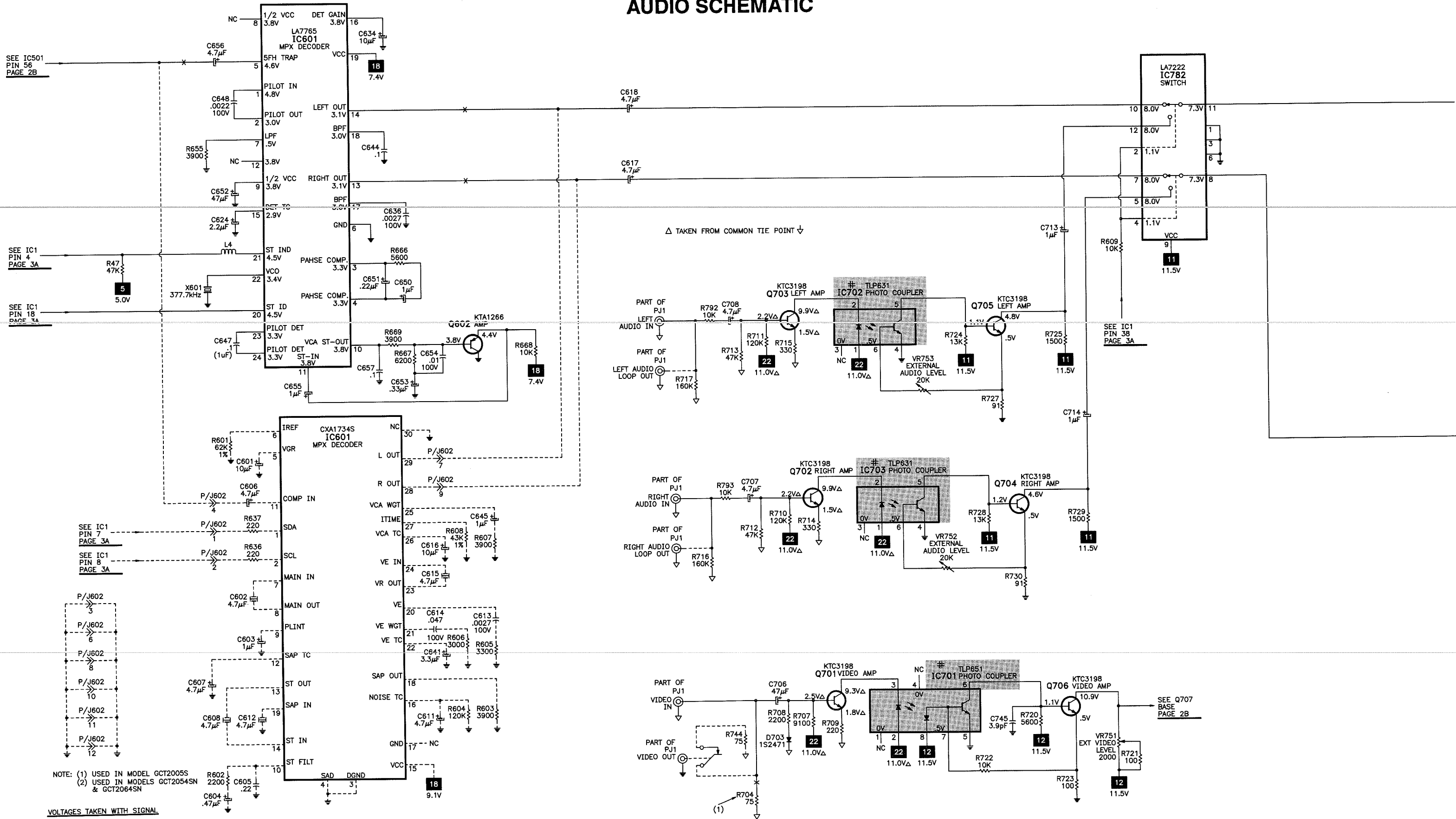
A Cabling: Heavy lines reduce use of multiple lines.

Waveforms and voltages are taken from ground, unless noted otherwise.
Waveforms taken with triggered scope and colorbar signal.
Waveform voltage is peak to peak. Timebase is per division. Waveforms shown at 10 divisions.
Supply voltages maintained as seen at input.
Voltages measured with digital meter and a 1000μV RF signal, with colorbar pattern, applied to antenna terminal.
Controls adjusted for normal operation.
Capacitors are 50 volts or less, 5% or greater unless noted.
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.

PLACEMENT CHART



AUDIO SCHEMATIC



VOLTAGES TAKEN WITH SIGNAL

ADDITIONAL SCHEMATIC
NOTES, SEE PAGE 1

A PHOTOFACT STANDARD NOTATION SCHEMATIC

WITH **CIRCUITRACE®**
Howard W. Sams & Co. 1995

NOTE: ALTERNATE CIRCUITRY
USED IN MODELS
GCT2054SN & GCT2064SN

TROUBLESHOOTING

POWER SUPPLY

Check F801, if open, check D801 thru D804, C801, and C803 thru C806. Apply 120VAC and check for 11.4V at the emitter of Q801 and 5.5V at pin 1 of IC3. If the standby voltages are missing, check Q801, IC3, D805, and ZD812. Turn the set on and check for 157V at the cathode of D802. If the voltage is incorrect or missing, check RL801, pin 5 of IC1, Q802, and Q803. Check for 101V at pin 4 of IC801. If voltage is missing, check IC801, F802, and T802. If voltage is present, refer to the "Horizontal" section of this Troubleshooting guide.

HORIZONTAL

To determine if the receiver is in shutdown, refer to "High Voltage Shutdown" section of this Troubleshooting guide. If the receiver is not in shutdown, check for the proper waveform at pin 33 of IC501. If the waveform is missing, check pins 27 thru 33 of IC501. Check for a horizontal output signal at the base of Q401. If the horizontal signal is missing, check Q402 and T401. If the horizontal signal is present, check Q401, T402, D403, D301, D409, and D701. Width or foldover problems may be caused by C416 thru C419.

HIGH VOLTAGE SHUTDOWN TEST

Momentarily short between the unconnected end of R423 and the anode of D410. The receiver should lose sound and raster. If receiver does not lose sound and raster, the shutdown circuit should be repaired. To restore operation, remove AC power for at least 30 seconds, then apply power and turn the receiver on.

HIGH VOLTAGE SHUTDOWN

NOTE: Care should be taken in defeating the high voltage shutdown circuit as this may cause excessive X-ray radiation and damage to the CRT and T402. Monitor the high voltage and troubleshoot.

The high voltage from T402 is monitored and rectified by D407. Should the high voltage increase, the voltage at the cathode of D410 also increases and triggers ZD402. This causes the deflection portion of IC501 to shut down the horizontal drive signal, causing the receiver to lose audio and raster. To troubleshoot, remove D410 from the circuit, use a variable power supply for AC voltage. Start at 70VAC and troubleshoot to locate the defect.

VIDEO

Inject a video waveform at the base of Q201. If video is present on the CRT, refer to the "IF AGC" section of this Troubleshooting guide. Check for a video waveform at pin 41 of IC501. If the waveform is missing, check IC781, Q201, and Q202. Check for the proper waveform at pin 26 of IC501. If waveform is missing, check

IC501. If waveform is present, check Q205. If the brightness is inadequate or cannot be controlled, check Q221, pin 37 of IC501, and pin 7 of the CRT.

IF AGC

Inject a video IF signal at the base of Q101 and check for video on the CRT. If video is present, check the tuner and tuner control circuits. Check for a video waveform at the base of Q201. If video is present, refer to the "Video" section of this Troubleshooting guide. Apply AGC bias to pin 2 of IC501. If video appears on the CRT, check pins 3, 4, 10, 51, and 47 of IC501. If video is missing, check Q101, Q161, and IC501.

VERTICAL

Inject a vertical signal at pin 2 of IC301. If vertical deflection is present, check pin 31 of IC501. If vertical deflection is missing, check IC301 and the deflection yoke. Vertical linearity or foldover problems may be caused by sweep shaping and bias circuits, check C305 and C306.

RASTER

Check the CRT and CRT voltages. If red is missing, check pin 23 of IC501 and Q901. If green is missing, check pin 25 of IC501 and Q902. If blue is missing, check pin 24 of IC501 and Q903. If the raster has a keystone shape, check the deflection yoke. If the raster has height or width problems, refer to the "Vertical," "Horizontal," or "Power Supply" sections of this Troubleshooting guide.

CHROMA

Check for a chroma waveform at pin 43 of IC501. If the waveform is missing, refer to the "Video" section of this Troubleshooting guide. Check for the proper waveforms at pins 23, 25, and 24 of IC501. If these waveforms are missing, check IC501. Check the 3.58MHz oscillator at pin 15 of IC501. If the proper waveforms are present, refer to the "Raster" section of this Troubleshooting guide.

AUDIO

Select a station that is transmitting a stereo signal and check for an audio waveform at pin 56 of IC501. If missing, check pins 1, 6, 9, and 53 thru 56 of IC501. Check for audio waveforms at pins 7 and 10 of IC782. If missing, check IC601. If present, check IC782, IC602, and IC603. Check the volume control voltage at pin 30 of IC1, it should be 0V in mute and 10.8V at maximum volume.

MISCELLANEOUS ADJUSTMENTS

HIGH VOLTAGE CHECK

Tune in a picture and set brightness, contrast, and color to minimum. Connect a high voltage probe to CRT anode. High voltage range should be 25kV to 27kV.

HORIZONTAL CENTERING

Turn receiver on and tune in an active station. Adjust VR431 for best horizontal centering.

VERTICAL SIZE

Tune in a picture. Adjust VR316 for a slight overscan at the top and bottom of the screen.

RF AGC

Turn receiver on and tune in an active station. Turn VR204 fully clockwise, then counterclockwise to a point where snow just disappears.

SUB BRIGHTNESS

Tune in picture. Set color, contrast, and brightness to minimum. Adjust VR232 to a point where highlights are just visible.

ON SCREEN DISPLAY POSITION

Adjust L2 to center the on screen display on the lower portion of the screen.

EXTERNAL VIDEO LEVEL

Connect a 1.0Vp-p video signal to the video input jack. Use the input selection menu to put the set in the video mode. Connect an oscilloscope to pin 6 of IC781. Adjust VR751 for 1.5Vp-p.

EXTERNAL AUDIO LEVEL BALANCE

Connect a 1kHz 1.0Vp-p audio signal to the left and right audio input jacks. Connect a dual trace oscilloscope to collectors of Q704 and Q705. Adjust VR752 and VR753 for 1.0Vp-p amplitude.

WHITE BALANCE

Tune in an active station, allow a 10 to 30 minute warm up time. Set color, brightness, contrast, screen, VR912, VR922, and VR932 controls to minimum. Set VR911 and VR931 controls to midrange. Set SW501 to service position. Advance the screen control until a faint line of one predominant color appears on the screen. Adjust the two remaining bias controls for a dim white line. Set SW501 to normal position. Adjust VR911 and VR931 for best black and white picture on screen.

CONVERGENCE

Connect a color bar generator to the antenna input and tune in a dot pattern. Loosen the convergence magnets clamp screw. Adjust the 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.

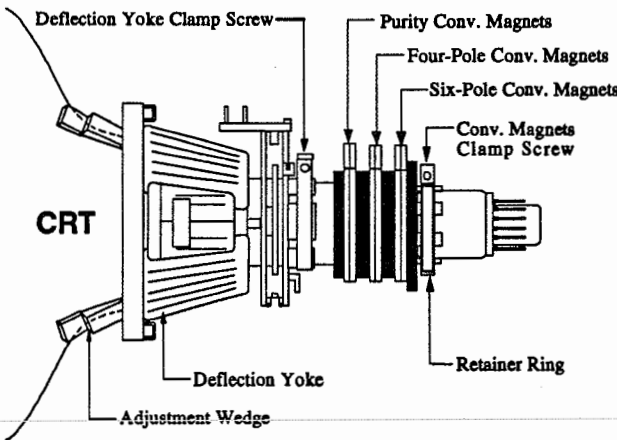
Tune in a crosshatch pattern. Remove the rubber wedges between deflection yoke and the CRT. Loosen the deflection yoke clamp screw. Tilt the deflection yoke up or down to converge the vertical lines at the top and bottom of the screen and the horizontal lines at the right and left sides of the screen. Tilt the deflection yoke to the right or left to converge the horizontal line at the top and bottom of the screen and the vertical line at the right and left sides of the screen. Replace the rubber wedges. Tighten the clamp screws.

PURITY

NOTE: Operate the receiver for 15 minutes to allow warm up of CRT.

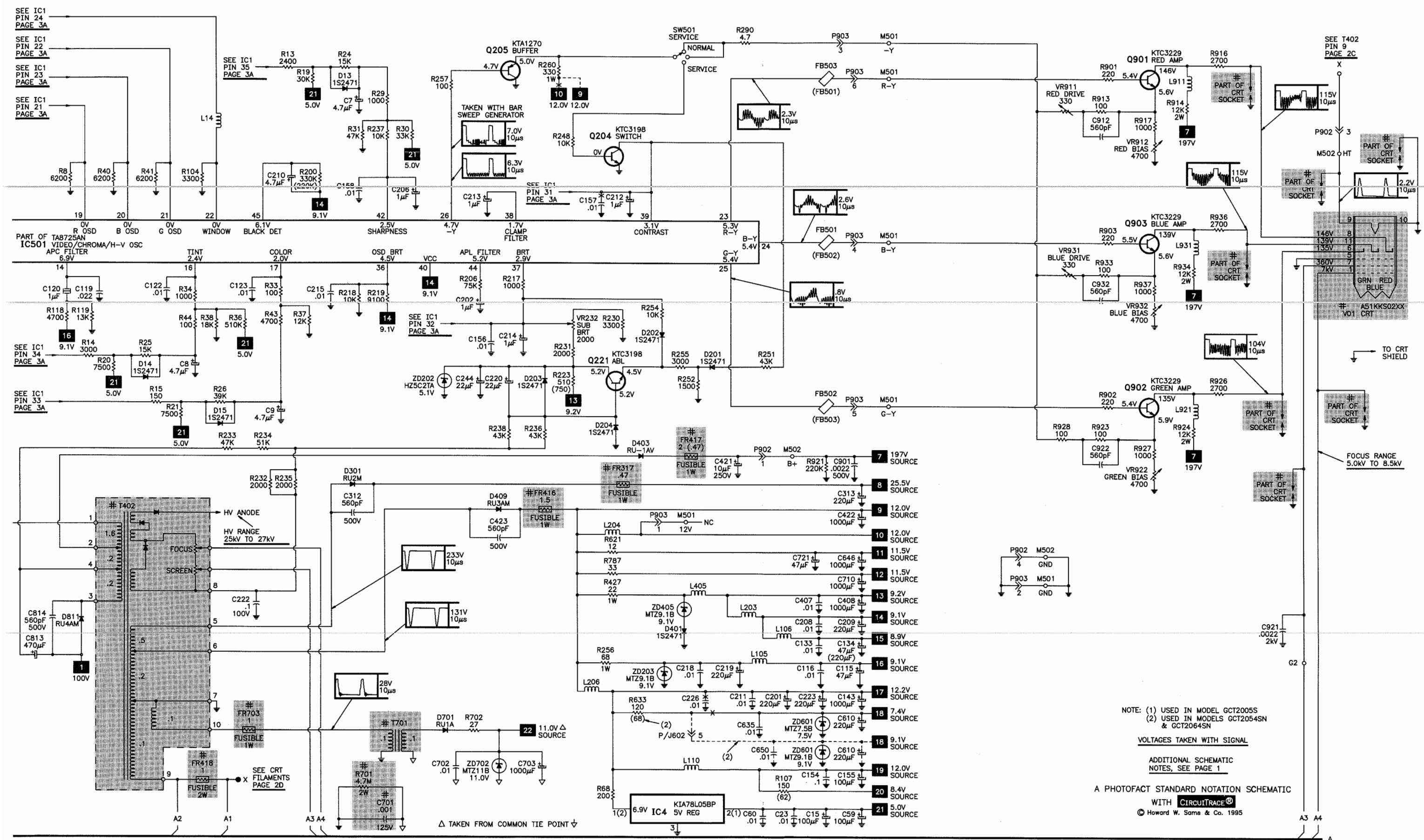
Use a degaussing coil to demagnetize the CRT. Set contrast and brightness to maximum and color to minimum. Tune in a green raster. Loosen the convergence magnets clamp screw. Adjust purity tabs to center the vertical green band. Loosen the deflection yoke clamp screw. Slide the deflection yoke forward to produce a uniform green screen. Tighten both clamp screws.

CRT NECK ASSEMBLY



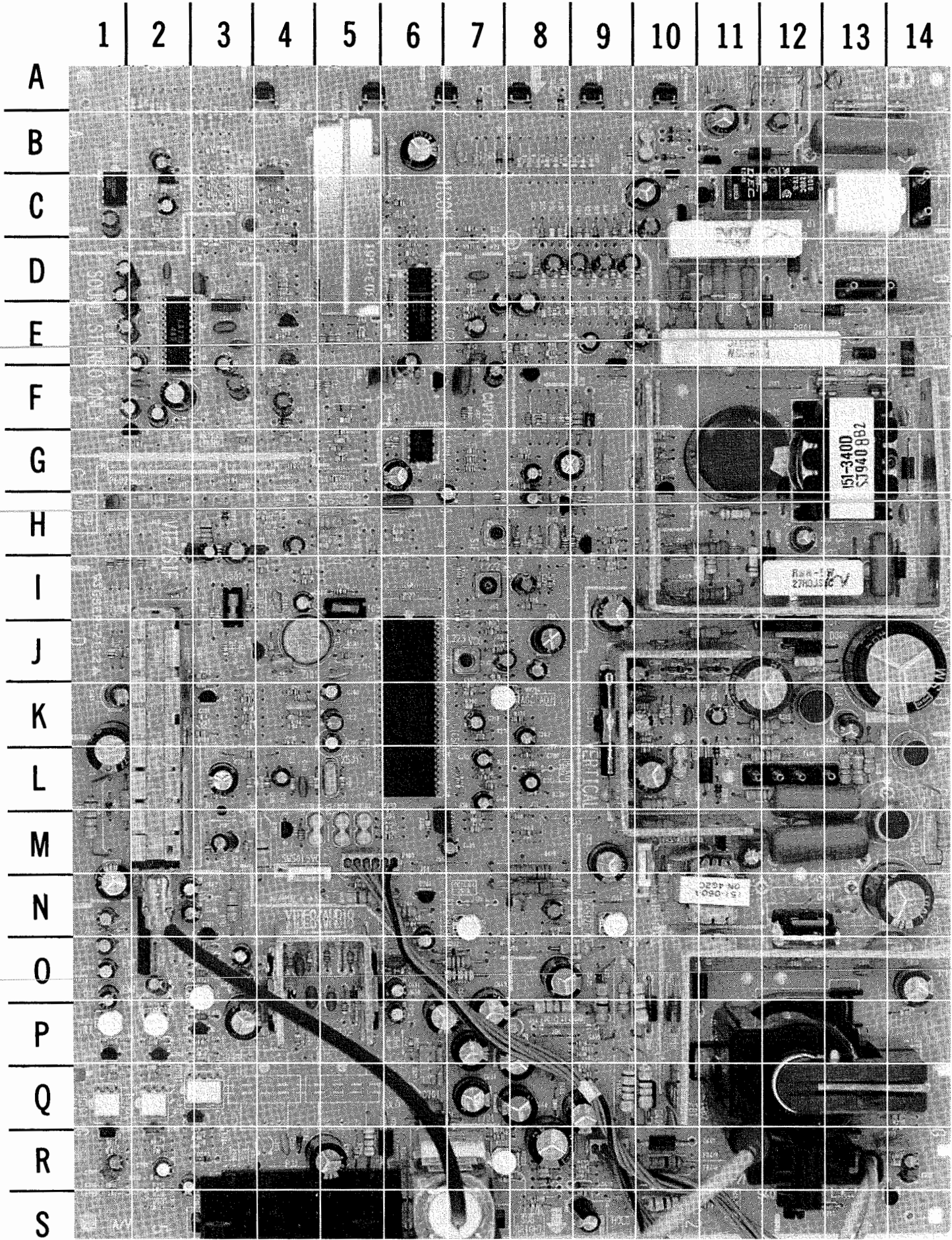
SOUND MULTIPLEX CIRCUIT ADJUSTMENT (FOR MODELS GCT2054SN AND GCT2064SN)

Plug in the set, and using remote transmitter, press the numbers 7, 3, 9, 1, 0, and Power button sequentially. Connect a signal generator to pin 4 of P602. Connect an oscilloscope to pin 9 of P602. Use the remote transmitter to make on screen changes for ATT, stereo VCO, SAP VCO, stereo and DBX filter, and SAP filter adjustments.



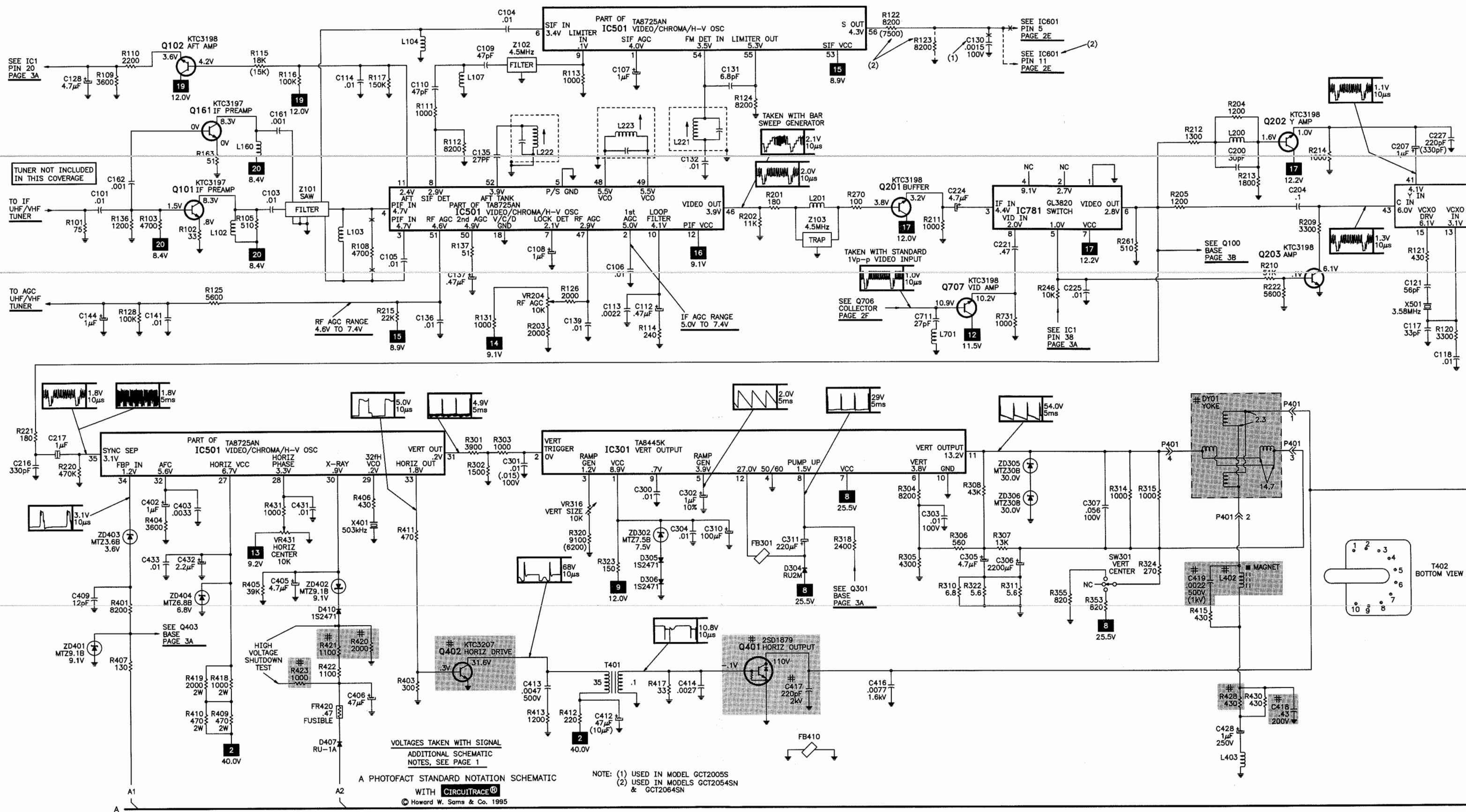
A HOWARD W. SAMS GRIDTRACE™ PHOTO

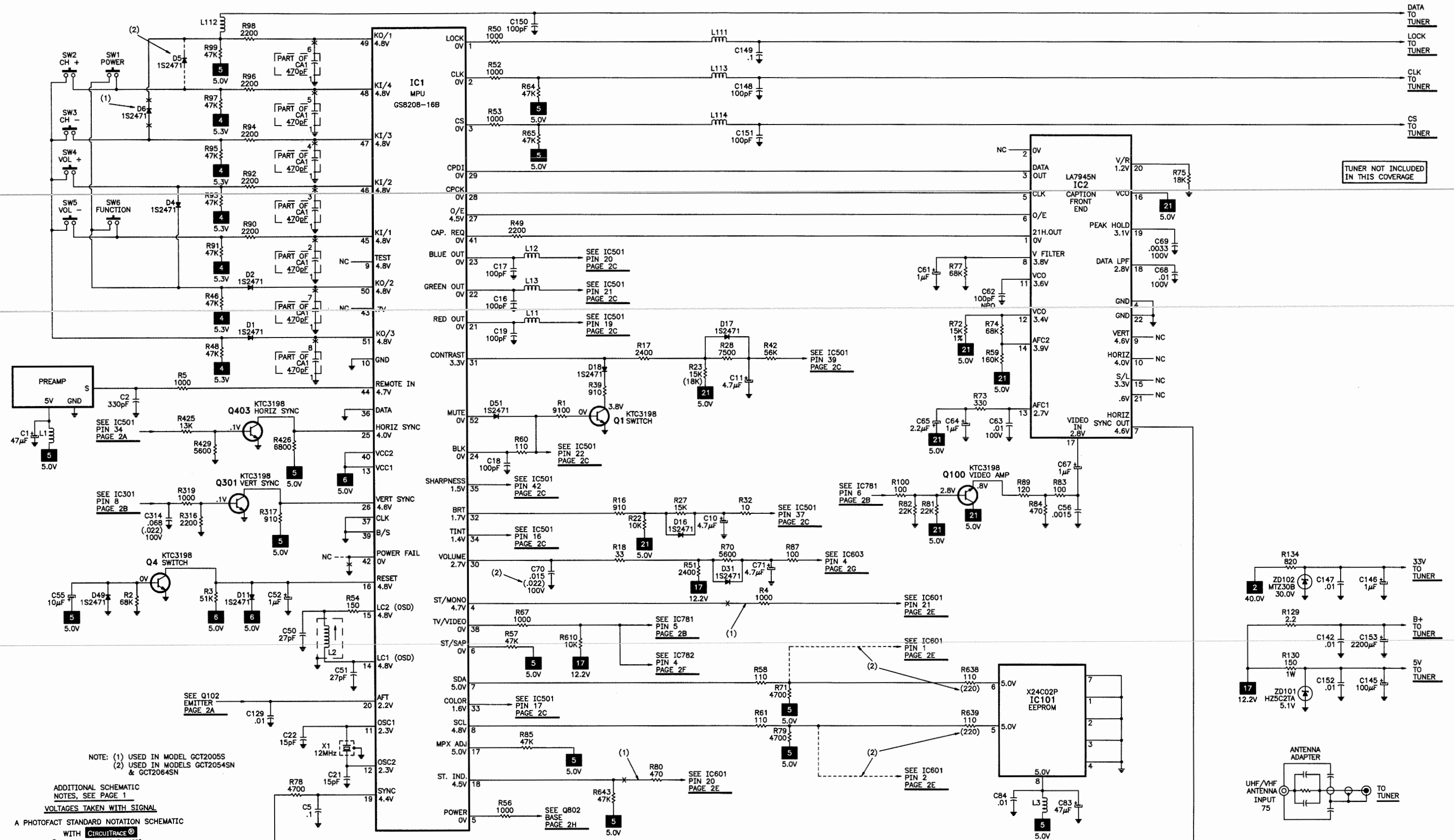
MAIN BOARD



MAIN BOARD, GRIDTRACE LOCATION GUIDE

C1	B-12	C143	N-1	C421	R-8	D2	B-8	IC603	O-4	Q802	B-10	R84	E-8	R234	Q-14	R627	P-4	VR232	R-7
C2	B-11	C144	M-3	C422	Q-9	D4	A-8	IC701	Q-3	Q803	C-11	R85	D-3	R235	R-14	R628	O-5	VR316	N-9
C4	B-6	C145	K-1	C423	Q-10	D6	A-7	IC702	Q-2	R1	F-5	R87	G-3	R236	R-14	R629	P-5	VR431	N-7
C5	E-5	C146	H-3	C428	K-13	D9	B-10	IC703	Q-1	R2	C-2	R89	E-8	R237	F-8	R630	O-6	VR751	O-3
C7	C-10	C147	I-2	C431	M-6	D11	C-4	IC781	G-6	R3	D-4	R90	B-8	R238	R-14	R631	P-6	VR752	P-1
C8	D-9	C148	J-1	C432	N-8	D13	C-9	IC782	O-2	R4	B-3	R91	B-8	R246	G-5	R632	O-6	VR753	P-2
C9	D-9	C149	J-1	C433	L-6	D14	C-8	IC801	J-12	R5	C-6	R92	B-8	R248	N-6	R633	H-2	X1	B-4
C10	D-8	C150	J-1	C610	F-2	D15	C-8	L1	A-11	R8	H-6	R93	B-8	R251	R-8	R638	C-2	X401	M-6
C11	D-9	C151	J-2	C617	O-1	D16	D-7	L2	C-3	R13	C-6	R94	B-8	R252	S-8	R639	C-2	X501	L-5
C12	C-4	C152	K-2	C618	N-1	D17	C-9	L3	C-2	R14	C-6	R95	B-8	R254	R-7	R643	D-3	X601	E-3
C15	B-10	C153	L-1	C624	F-3	D18	D-6	L4	D-3	R15	D-6	R96	B-7	R255	S-8	R645	O-5	Z101	J-4
C16	D-4	C154	H-3	C625	O-4	D31	F-4	L11	E-5	R16	D-6	R97	B-9	R256	M-4	R655	E-2	Z102	K-4
C17	D-4	C155	H-3	C626	O-3	D32	B-10	L12	F-5	R17	D-6	R98	B-7	R257	M-4	R666	D-2	Z103	H-8
C18	D-4	C156	G-7	C627	O-3	D33	B-10	L13	E-5	R18	G-5	R99	A-2	R260	N-5	R667	F-2	ZD101	L-1
C19	E-4	C157	H-7	C628	O-4	D49	B-2	L14	H-5	R19	C-9	R100	F-7	R261	G-6	R668	G-2	ZD102	H-3
C21	B-4	C158	G-8	C630	P-5	D51	F-5	L102	I-3	R20	C-8	R101	K-3	R270	H-9	R669	F-2	ZD202	O-7
C22	C-4	C161	J-4	C631	O-6	D201	R-8	L103	I-5	R21	C-8	R102	J-3	R290	N-5	R701	Q-6	ZD203	M-4
C23	E-9	C162	J-3	C632	P-6	D202	R-8	L104	J-5	R22	C-7	R103	J-3	R301	M-7	R702	R-5	ZD302	K-10
C30	B-7	C200	H-9	C633	O-6	D203	S-13	L105	L-3	R23	C-9	R104	H-6	R302	M-8	R704	R-5	ZD305	L-11
C50	C-4	C201	G-8	C634	E-3	D204	S-10	L106	I-8	R24	C-9	R105	I-3	R303	M-8	R707	R-3	ZD306	L-11
C51	D-3	C202	K-8	C635	F-2	D301	P-10	L107	K-3	R25	C-9	R107	I-3	R304	K-10	R708	R-3	ZD401	Q-9
C52	C-2	C204	H-10	C636	E-3	D304	L-11	L110	H-3	R26	C-8	R108	J-5	R305	K-10	R709	R-3	ZD402	R-8
C55	B-2	C206	H-8	C637	Q-7	D305	J-10	L111	I-1	R27	D-7	R109	H-4	R306	K-10	R710	R-1	ZD403	Q-8
C56	E-7	C207	J-8	C638	P-7	D306	J-11	L112	I-1	R28	C-9	R110	H-4	R307	K-11	R711	R-2	ZD404	N-8
C59	D-8	C208	L-8	C639	F-6	D401	F-9	L113	I-1	R29	D-10	R111	K-3	R308	L-11	R712	R-1	ZD405	O-9
C60	D-7	C209	J-8	C640	Q-8	D403	O-11	L114	I-2	R30	E-9	R112	K-3	R310	K-10	R713	R-2	ZD601	G-2
C61	E-6	C210	K-7	C642	N-2	D407	R-10	L160	J-4	R31	E-10	R113	K-4	R311	J-11	R714	R-1	ZD702	R-4
C62	F-6	C211	H-9	C643	P-7	D409	Q-10	L200	H-9	R32	D-8	R114	K-4	R314	K-12	R715	R-2	ZD812	D-10
C63	E-7	C212	G-8	C644	E-3	D410	R-9	L201	H-8	R33	F-8	R115	I-4	R315	K-12	R716	R-1		
C64	D-7	C213	L-7	C646	P-6	D701	R-6	L203	N-8	R34	F-8	R116	I-4	R316	F-4	R717	S-2		
C65	E-7	C214	E-9	C647	D-3	D703	R-3	L204	N-6	R36	E-8	R117	I-4	R317	E-4	R720	P-3		
C67	F-7	C215	L-7	C648	D-2	D801	D-12	L206	O-7	R37	E-8	R118	L-3	R318	I-10	R721	O-3		
C68	D-8	C216	I-10	C649	N-2	D802	E-13	L221	H-7	R38	E-9	R119	L-4	R319	G-5	R722	P-3		
C69	D-7	C217	L-8	C650	D-1	D803	E-13	L222	I-7	R39	F-6	R120	L-4	R320	O-9	R723	P-3		
C70	F-5	C218	L-3	C651	D-1	D804	E-12	L223	J-7	R40	H-5	R121	K-5	R322	J-11	R724	Q-2		
C71	F-4	C219	L-3	C652	E-2	D805	B-11	L402	M-14	R41	H-5	R122	I-6	R323	O-9	R725	P-2		
C83	C-1	C220	R-14	C653	F-1	D806	J-12	L403	K-12	R42	D-9	R124	I-7	R324	L-11	R727	Q-2		
C84	C-1	C221	H-6	C654	F-2	D807	I-13	L405	O-9	R43	D-8	R125	M-3	R353	L-10	R728	Q-1		
C101	K-3	C222	R-14	C655	F-2	D808	I-14	L701	O-3	R44	D-9	R126	K-7	R355	M-10	R729	P-1		
C103	I-4	C223	G-6	C656	E-1	D809	I-12	L801	L-14	R46	B-9	R128	M-3	R401	P-9	R730	Q-1		
C104	J-5	C224	H-7	C657	E-2	D810	G-12	P401	L-12	R47	A-2	R129	L-1	R403	M-8	R731	O-3		
C105	J-5	C225	G-6	C701	Q-6	D811	O-13	P601	Q-6	R48	B-9	R130	M-1	R404	M-7	R787	N-3		
C106	I-5	C226	G-6	C702	R-4	D813	C-11	P801	C-14	R49	C-6	R131	K-8	R405	Q-8	R792	R-2		
C107	I-4	C227	I-8	C703	R-5	D814	F-9	P901	D-13	R50	B-3	R134	H-5	R406	M-6	R793	S-1		
C108	K-5	C244	O-6	C706	R-2	D821	B-11	P902	R-9	R51	G-4	R136	K-3	R407	Q-9	R800	C-11		
C109	K-3	C300	L-10	C707	R-1	F801	A-13	P903	M-6	R52	B-3	R137	J-7	R409	I-11	R801	E-11		
C110	K-3	C301	K-10	C708	R-2	F802	P-13	P1	S-4	R53	B-3	R163	I-4	R410	H-11	R802	H-11		
C112	K-5	C302	K-10	C710	P-3	FB301	L-10	Q1	F-6	R54	D-4	R200	K-7	R411	L-7	R803	I-11		
C113	K-4	C303	K-10	C711	O-3	FB410	O-12	Q4	C-2	R56	B-9	R201	H-8	R412	L-12	R804	J-12		
C114	I-4	C304	J-10	C713	O-1	FB501	M-5	Q100	F-8	R57	B-3	R202	H-8	R413	N-10	R811	D-10		
C115	K-5	C305	K-11	C714	O-1	FB502	M-5	Q101	K-3	R58	B-3	R203	J-7	R415	L-13	R812	D-10		
C116	L-4	C306	K-12	C721	O-2	FB503	M-4	Q102	H-4	R59	E-7	R204	I-9	R417	O-12	R813	D-11		
C117	L-4	C307	M-11	C745	P-3	FB801	G-14	Q161	J-4	R60	F-5	R205	G-9	R418	M-8	R814	D-11		
C118	L-4	C310	J-10	C801	B-13	FB802	B-10	Q201	H-8	R61	C-3	R206	K-7	R419	N-8	R830	C-11		
C119	L-4	C311	L-10	C803	E-13	FR317	P-10	Q202	H-9	R62	C-10	R209	H-10	R420	S-9	R883	I-12		
C120	L-4	C312	P-10	C804	D-12	FR416	Q-9	Q203	G-10	R64	A-2	R210	G-10	R421	R-9	R890	E-14		
C121	L-5	C313	M-9	C805	E-14	FR417	Q-10	Q204	N-6	R65	A-2	R211	H-9	R422	R-9	RL801	C-12		
C122	G-7	C314	F-7	C806	G-11	FR418	R-10	Q205	M-4	R67	G-5	R212	H-9	R423	R-10	SW1	A-4		
C123	G-7	C402	L-7	C807	I-13	FR420	R-10	Q221	S-14	R68	F-9	R213	I-9	R425	G-5	SW2	A-5		
C128	H-4	C403	M-7	C809	H-14	FR703	S-10	Q301	E-4	R70	G-4	R214	I-8	R426	E-4	SW3	A-7		
C129	F-4	C405	M-7	C810	H-12	FR801	I-11	Q401	N-12	R71	C-3	R215	J-7	R427	P-9	SW4	A-8		
C130	H-1	C406	S-9	C811	J-14	FR805	M-14	Q402	M-11	R72	E-7	R217	G-8	R428	L-13	SW5	A-9		
C131	I-7	C407	N-8	C812	N-14	FR806	P-8	Q403	E-4	R73	E-7	R218	L-7	R429	F-4	SW6	A-10		
C132	H-8	C408	O-8	C813	O-14	IC1	C-5	Q602	F-2	R74	E-7	R219	L-7	R430	L-13	SW301	M-10		
C133	I-7	C409	P-9	C814	O-13	IC2	E-6	Q701	Q-3	R75	D-8	R220	L-8	R431	M-6	SW501	M-4		
C134	I-8	C412	M-11	C815	I-9	IC3	B-11	Q702	R-1	R77	F-6	R221	G-10	R609	G-3	T401	N-11		
C135	I-7	C413	M-10	C816	F-14	IC4	E-9	Q703	R-2	R78	E-5	R222	G-10	R610	G-4	T402	Q-12		
C136	J-7	C414	N-13	C817	B-11	IC101	C-1	Q704	P-1	R79	C-3	R223	O-7	R621	O-7	T701	R-7		
C137	J-7	C416	M-12	C818	C-10	IC301	K-9	Q705	P-2	R80	D-3	R230	R-7	R623	O-4	T801	C-13		
C139	K-7	C417	M-12	C888	J-12	IC501	K-6	Q706	P-3	R81	E-8	R231	R-7	R624	O-4	T802	G-13		
C141	M-3	C418	L-12	CA1	B-6	IC601	E-2	Q707	N-3	R82	E-8	R232	Q-14	R625	O-3	TH901	D-14		
C142	L-2	C419	K-13	D1	B-7	IC602	O-5	Q801	C-10	R83	E-8	R233	P-14	R626	O-3	VR204	K-7		





A PHOTOFACT STANDARD NOTATION SCHEMATIC
WITH **CIRCUITRACE®**
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PARTS LIST

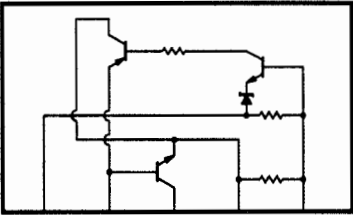
SEMICONDUCTORS					
(Select the replacement that gives the best results.)					
Item No.	Type No.	Mfr. Part No.	NTE Part No.	ECG Part No.	TCE Part No.
D1, 2, 4	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D5 (2)	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D6 (1)	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D9, 11	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D13 Thru					
D18	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D31, 32, 33	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D42, 51	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D201 Thru					
D204	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D301, 04	RU2M	-	NTE552	ECG552	SK9000
	RU-2MV	0DD200009AF	NTE552	ECG552	SK9000
D305, 06	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D401	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D403, 07	RU-1A	-	NTE552	ECG552	SK9000
	RU-1AV	0DD100009AE	NTE552	ECG552	SK9000
D409	RU3AM	-	NTE580	ECG580	SK3318A
	RU3AMV	0DD200009AC	NTE580	ECG580	SK3318A
D410	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D701	RU1A	-	NTE552	ECG552	SK9000
	RU-1AV	0DD100009AE	NTE552	ECG552	SK9000
D703	1S2471	0DD247109AA	NTE519	ECG519	SK3100
# D801 Thru					
# D804	GP15J	0DD150009CE	NTE125	ECG125	SK3081
D805	GP15J	0DD150009CE	NTE125	ECG125	SK3081
D806	RU-1AV	0DD100009AE	NTE552	ECG552	SK9000
D807	RGP15J	0DD150009CA	NTE580	ECG580	SK5036
D808	RG-2V	0DD200009AC	NTE580	ECG580	SK5036
	RG2	-	NTE580	ECG580	SK5036
D809	RU2AMV	0DD200009AH	NTE552	ECG552	SK9000
	RU-1AV	0DD100009AE	NTE552	ECG552	SK9000
D810	RGP15J	0DD150009CA	NTE580	ECG580	SK5036
D811	RU4AM	-	NTE580	ECG580	SK5036
	RGP15J	0DD150009CA	NTE580	ECG580	SK5036
D813	1S2471	0DD247109AA	NTE519	ECG519	SK3100
D814	1N4003	-	NTE116	ECG116	SK3113
	1N4003A	0DD400309AD	NTE116	ECG116	SK3311
D821	1S2471	0DD247109AA	NTE519	ECG519	SK3100
IC1	GS8208-16B	0ISA830816B	-	-	-
	LC864016B	-	-	-	-
IC2	LA7945N	0ISA794500B	-	-	-
IC3	KIA78L05BP	0IKE780500P	NTE977	ECG977	-
IC4	KIA78L05BP	0IKE780500P	NTE977	ECG977	-
IC101	X24C02P	0IX1240200B	-	-	-
	GCT2402C	-	-	-	-
IC301	TA8445K	0ITO844500A	-	-	-
IC501	TA8725AN	0ITO872500A	-	-	-
IC601 (1)	LA7765	0ISA776500A	-	-	-
IC601 (2)	CXA1734S	0ISO173400A	-	-	-
IC602, 03	AN5265	0IMA526500B	NTE1789	ECG1789	SK9876
# IC701	TLP651	0ITO651000A	-	-	-
# IC702, 03	TLP631	0ITO631000A	NTE3041	ECG3041	SK2041
IC781	GL3820	0IGS382000A	-	-	-
IC782	LA7222	0ISA722200A	NTE7066	ECG7066	-
# IC801	STR52100A	0ISK521000A	-	-	-
Q1, 4	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q100	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
# For SAFETY use only equivalent replacement part.					
(1) Used in model GCT2005S only.					
(2) Used in models GCT2054SN and GCT2064SN.					

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.
Q101	KTC3197	0TR319709AB	NTE107	ECG107	SK3293
	KTC388A	0TR319709AB	NTE85	ECG85	SK3132
Q102	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q161	KTC3197	0TR319709AB	NTE107	ECG107	SK3293
	KTC388A	0TR319709AB	NTE85	ECG85	SK3132
Q201	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q202, 03, 04	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q205	KTA1270-TP-Y	0TR127009AA	NTE290A	ECG290A	SK3114A
	KTA562TM	0TR127009AA	NTE290A	ECG290A	SK3114A
Q221	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q301	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
# Q401	KTD1555	0TR155500AA	NTE2331	ECG2331	SK9422
	2SD1879	-	NTE2331	ECG2331	SK10088
# Q402	KTC3207	0TR320709AA	NTE399	ECG399	SK9352
	KTC2482	0TR320709AA	NTE399	ECG399	SK3244
Q403	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q602 (1)	KTA1266-TP-Y	0TR126609AA	NTE290A	ECG290A	SK3114A
	KTA1015	0TR126609AA	NTE290A	ECG290A	SK9132
Q701 Thru					
Q707	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q801	KTC1627A	0TR322709AB	NTE382	ECG382	SK9137
	KTC3227-O	0TR322709AB	-	-	-
Q802	KRA106M	0TR106009AC	-	-	-
	KRA2206	0TR106009AC	-	-	-
Q803	KTC3198-TP-Y	0TR319809AA	NTE85	ECG85	SK9229
	KTC1815	0TR319809AA	NTE85	ECG85	SK3124A
Q901, 02, 03	KTC3229	0TR322900AA	-	ECG376	-
	KTC2068	0TR322900AA	NTE376	ECG376	SK3219
ZD101	HZ5C2TA	0D520009AA	NTE5010A	ECG5010A	SK5A1
ZD102	MTZ30B	0DZ300009BA	NTE5035A	ECG5035A	SK30A
ZD202	HZ5C2TA	0DZ520009AA	-	-	-
ZD203	MTZ9.1B	0DZ910009BA	NTE139A	ECG139A	SK9V1
ZD302	MTZ7.5B	0D5750009AA	NTE5015A	ECG5015A	SK7A5
ZD305, 06	MTZ30B	0DZ300009BA	NTE5035A	ECG5035A	SK30A
ZD401, 02	MTZ9.1B	0DZ910009BA	NTE139A	ECG139A	SK9V1
ZD403	MTZ3.6B	0DZ360009DA	-	-	-
ZD404	MTZ6.8B	0DZ680009AA	NTE5014A	ECG5014A	SK6A8
ZD405	MTZ9.1B	0DZ910009BA	NTE139A	ECG139A	SK9V1
ZD601 (2)	MTZ9.1B	0DZ910009BA	NTE139A	ECG139A	SK9V1
ZD601 (1)	MTZ7.5B	0DZ750009AA	NTE5015A	ECG5015A	SK7A5
ZD702	MTZ11B	0DZ110009AA	NTE5020A	ECG5020A	SK11A
ZD812	RD11FBD2	0DZ112009AD	NTE5074A	ECG5074A	SK11V
# For SAFETY use only equivalent replacement part.					
(1) Used in model GCT2005S.					
(2) Used in models GCT2054SN and GCT2064SN.					

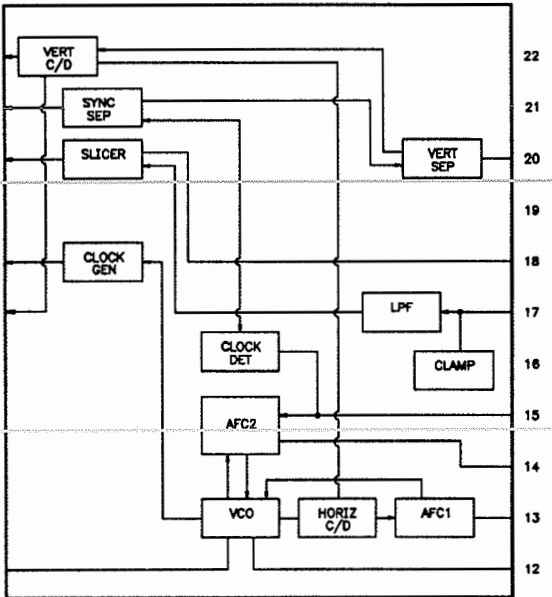
CONTROLS & RESISTORS			
Item No.	Function/Rating	Mfr. Part No.	NTE Part No.
# FR317	.47 5% 1W Fusible	ORF0470J607	-
# FR416	1.5 5% 1W Fusible	ORF0151J607	F1W1D5
# FR417	2 5% 1W Fusible	ORF0201J607	F1W2D0
	.47 5% 1W Fusible	-	-
# FR418	1 5% 2W Fusible	ORF0101K607	F2W1D0
FR420	.47 5% 1/2W Fusible	ORF0470H609	-
# FR703	1 5% 1W Fusible	ORF0101J607	F1W1D0
FR801	.47 5% 1/2W Fusible	ORF0470H609	-
# FR805	.27 5% 1W Fusible	ORN0270J607	-
# FR806	.47 5% 1W Fusible	ORF0470J607	-
R72	15K 1% 1/6W	ORN1502F409	-
# R420	2000 5% 1/6W	ORD2001F609	-
# R421	1100 5% 1/6W	ORD1101F609	-
# R423	1000 5% 1/6W	ORD1001F609	-
# R428	430 5% 1/2W	ORS4300H609	HW143
R601 (1)	62K 1%	-	-
	62K 5% 1/6W	ORD6202F609	-
R608 (1)	43K 1%	-	-
	43K 5% 1/6W	ORD4302F609	-
# R701	4.7M 10% 2W	180-783F	2W547
R800	1800 5% 7W Wirewound	180-830E	-
# R801	1 5% 10W Wirewound	180-822A	10W1D0
# R802	110K 5% 1/2W	ORD1103H609	HW411
R883	27 5% 5W Wirewound	180-142G	5W027
# TH901	6.8 Cold PTC	163-007A	-
VR204	10K RF AGC	180-451H	-
VR232	2000 Sub Brightness	180-451E	-
VR316	10K Vertical Size	180-451H	-
VR431	10K Horizontal Centering	180-451H	-
VR751	2000 External Video Level	180-451E	-
VR752	20K External Audio Level	180-451J	-
VR753	20K External Audio Level	180-451J	-
VR911	330 Red Drive	180-452B	-
VR912	4700 Red Bias	180-452G	-
VR922	4700 Green Bias	180-452G	-
VR931	330 Blue Drive	180-452B	-
VR932	4700 Blue Bias	180-452G	-
# For SAFETY use only equivalent replacement part.			
(1) Used in models GCT2054SN and GCT2064SN.			

IC FUNCTIONS

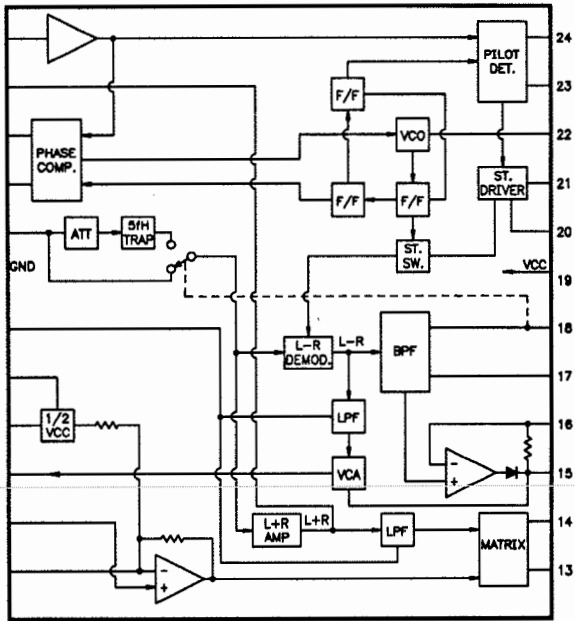
IC801
STR52100A



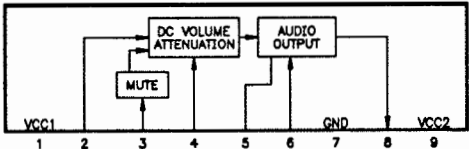
IC2
LA7945N



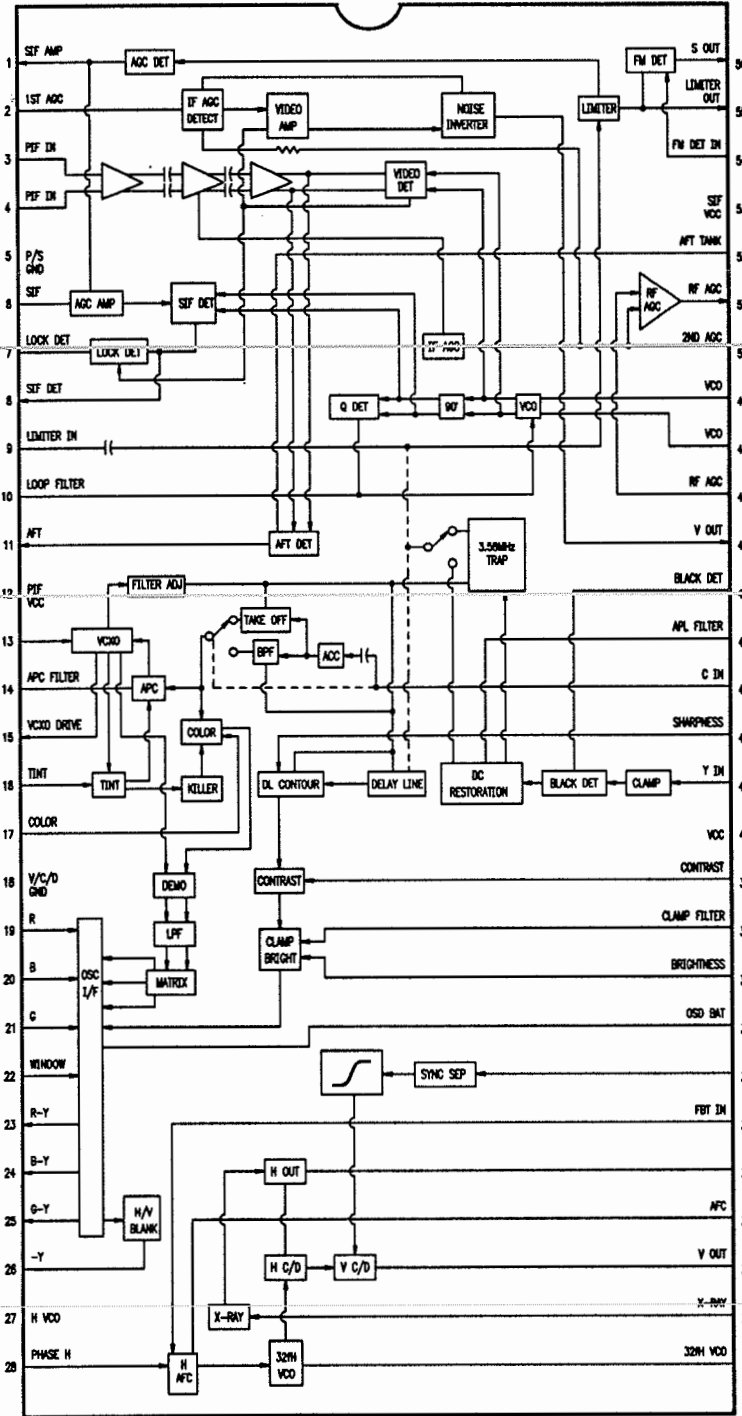
IC601
LA7765



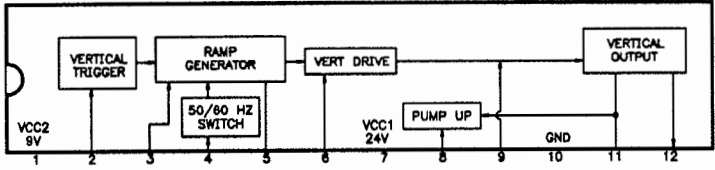
IC602, IC603
AN5265



IC501
TA8725AN



IC301
TA8445K



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	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	SC3100	TV Stereo Power Monitor	SR68, PA81
Frequency Meter	SC3100	Field Strength Meter	SL750
Hi-Voltage Probe	HP200	Transistor Tester	TF46
Accessory Probes	TP212	Video Analyzer	VG91, TVA92

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)
- PTS Electronics Corporation (PTS)
- Sencore, Inc.
- Thomson Consumer Electronics, Inc. (SK, TCE)

PARTS LIST continued

CAPACITORS & ELECTROLYTICS		
Item No.	Rating	Mfr. Part No.
C62	100pF 5% 50V NPO	OCC1010K415
C120	1µF 20% 50V NP	181-064R
C217	1µF 20% 50V NP	181-064R
C302	1µF 50V 10%	181-112F
C416	.0077 1.6kV	181-452N
# C417	220pF 10% 2kV	181-433D
# C418	.43 5% 200V	181-128H
# C419	.0022 10% 500V	OCC2220W515
	.0022 1kV	-
C602, 08 (1)	4.7µF 16V NP	181-064N
C612, 15 (1)	4.7µF 16V NP	181-064N
# C701	.001 10% 125V	181-093A
# C801	.22 125VAC	181-354K
# C811	100µF 160V	181-102E
# C812	100µF 20% 160V	OCE107BP61A
C921	.0022 10% 2kV	181-434K
CA1	470pF X 8 Network	167-102D
# For SAFETY use only equivalent replacement part. (1) Used in models GCT2054SN and GCT2064SN.		

CABINET PARTS	
Item	Mfr. Part No.
Model GCT2005S	
Button, Control	441-427A
Cabinet, Front Complete	300-B55B
Cabinet, Rear	303-H82B
Models GCT2054SN and GCT2064SN	
Button, Control	441-316A
Cabinet, Front Complete	300-A69D
Cabinet, Rear	303-G58J
Remote Transmitter	
Battery Cover	303-F92A

COILS & TRANSFORMERS		
Item No.	Function/Rating	Mfr. Part No.
# DY01	Yoke 100° Horiz 1.9mH Vert 29.5mH	153-178C
FB301	Ferrite Bead	125-123A
FB410	Ferrite Bead, 1µH	125-022K
FB501, 02, 03	Ferrite Bead	125-123A
FB801	Ferrite Bead, 1µH	125-022K
FB802	Ferrite Bead	125-123A
L1	100µH	0LA1000K119
L2	5.5MHz	150-489V
L3	100µH	0LA1000K119
L4 (1)	100µH	0LA1000K119
L11 Thru		
L14	220µH	0LA2200K119
L102	.79µH	150-167E
L103	.85µH	150-167J
L104	1µH	0LA0101K119
L105	47µH	0LA0472K119
L106	68µH	0LA0682K119
L107	27µH	0LA0272K119
L110	12µH	0LA0122K139
L111 Thru		
L114	15µH	0LA0152K119
L160	47µH	0LA0472K119
L200	47µH	0LA0472K119
L201	12µH	0LA0122K119
L203	120µH	0LA1200K139
L204	270µH	0LA2700K139
L206	100µH	0LA1000K119
L221	SIF	150-540Z
L222	AFT, 45.75MHz	150-916A
L223	VIF	150-540T
# L402	Horizontal Linearity	150-159A
L403	8.2mH	150-892A
L405	4.7 5% 1/2W	ORS0471H609
L701	22µH	0LA0222K119
L801	100µH	150-235C
# L901	Degaussing	150-139X
L911, 21, 31	270µH	0LA2700K139
T401	Horizontal Drive	151-060A
# T402 (2)	Horizontal Output	154-177D
# T701	Filter	150-151A
# T702, 03 (1)	Audio	151-433A
# T801	Line Filter	150-151A
# T802	SMPS	151-340D
# For SAFETY use only equivalent replacement part. (1) Used in models GCT2054SN and GCT2064SN. (2) Focus and screen controls are part of T402.		

MISCELLANEOUS			
Item No.	Description	Mfr. Part No.	Notes
# F801	Fuse	131-033X	4A, 125V, Slow Blow
# F802	Fuse	OFF1001A512	2A, 125V, Fast Acting
# P1 (1)	Line Cord	174-019K	AC, Polarized
# P1 (2)	Line Cord	174-019M	AC, Polarized
PJ1 (1)	Jack	401-734C	Assembly
PJ1 (2)	Jack	401-734A	Assembly
# RL801	Relay	141-018C	Power
SP1, 2 (1)	Speaker	120-C93F	2" X 3 1/2", 8 Ohms, 5W
SP1, 2 (2)	Speaker	120-487B	8 Ohms
SW1	Switch	140-333B	Power
SW2	Switch	140-333B	Channel Up
SW3	Switch	140-333B	Channel Down
SW4	Switch	140-333B	Volume Up
SW5	Switch	140-333B	Volume Down
SW6	Switch	140-333B	Function
SW301	Switch	140-111A	Vertical Centering
SW501	Switch	140-111A	Service
# V01	CRT	2055-V0951M	A51KKS02XX
X1	Filter	166-235B	12MHz
X401	Filter	166-015N	503kHz
X501	Oscillator	156-001C	3.58MHz
X601 (1)	Crystal	166-015Z	377.7kHz
Z101	Filter	166-236B	SAW
Z102	Filter	166-003D	4.5MHz
Z103	Trap	166-031J	4.5MHz
	Antenna	132-204H	Rod
	PC Board (3)	109-204A	CRT
	PC Board (3)(1)	109-202B	Main
	PC Board (3)(2)	109-202D	Main
	PC Board (3)(2)	109-127B	MPX
	Preamp	106-047B	SBX1620-72
	Remote Transmitter	105-207P	Model GCT2005S
	Remote Transmitter	105-198F	Model GCT2054SN
	Remote Transmitter	105-216B	Model GCT2064SN
	Shield Box	401-068M	Antenna
#	Socket	381-226D	CRT
	Tuner (3)	113-202T	UHF/VHF, CHR7A707T
# For SAFETY use only equivalent replacement part. (1) Used in model GCT2005S. (2) Used in models GCT2054SN and GCT2064SN. (3) Contact PTS Electronics Corporation for replacement; order by manufacturer's part number.			

GOLDSTAR

MODEL GCT2005S (CHASSIS NC-44A)



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employees of Howard W. Sams
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