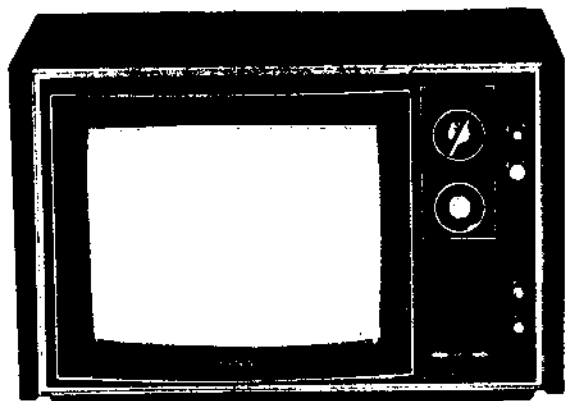


KV-1300E

Chassis No. Serial No.
SCC-22A-A) Up to 25,000
SCC-22A-B) 25,001 and later
SCC-22A-C



This manual contains the Supplement No. 1.

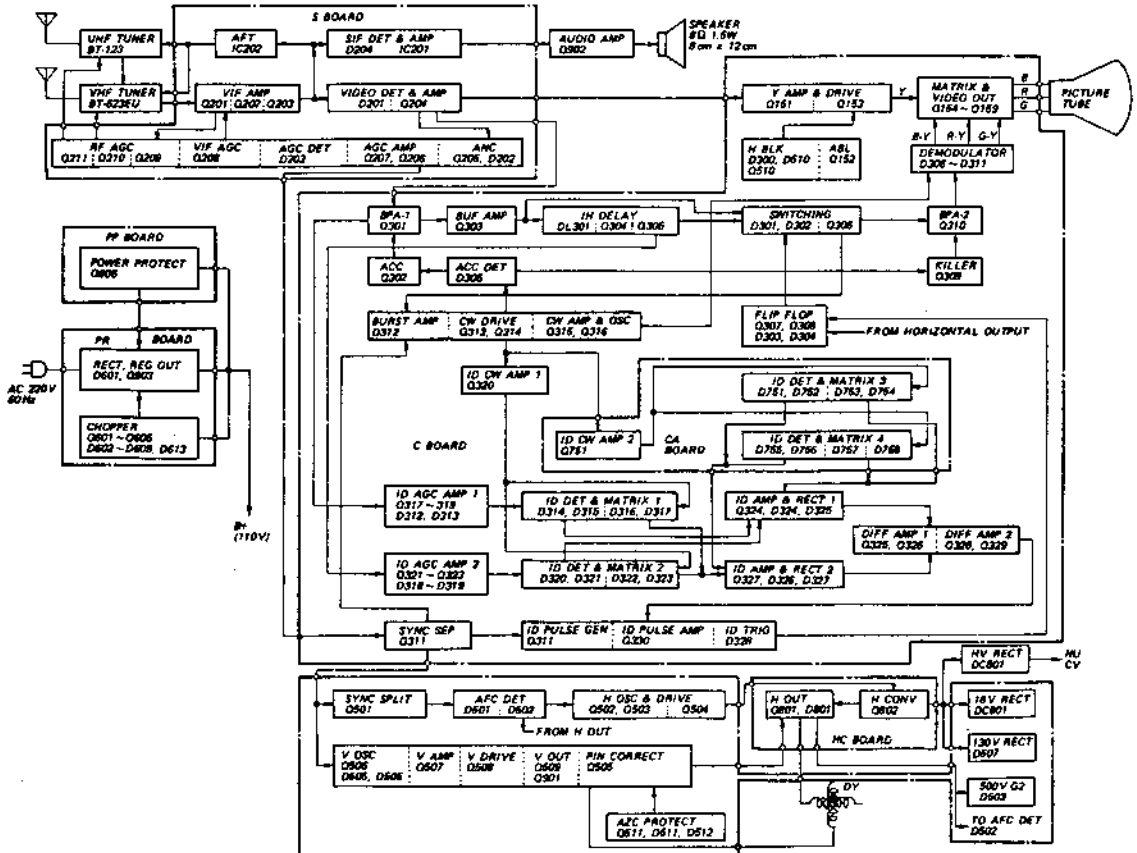
TRINITRON®
COLOUR TV

SPECIFICATIONS

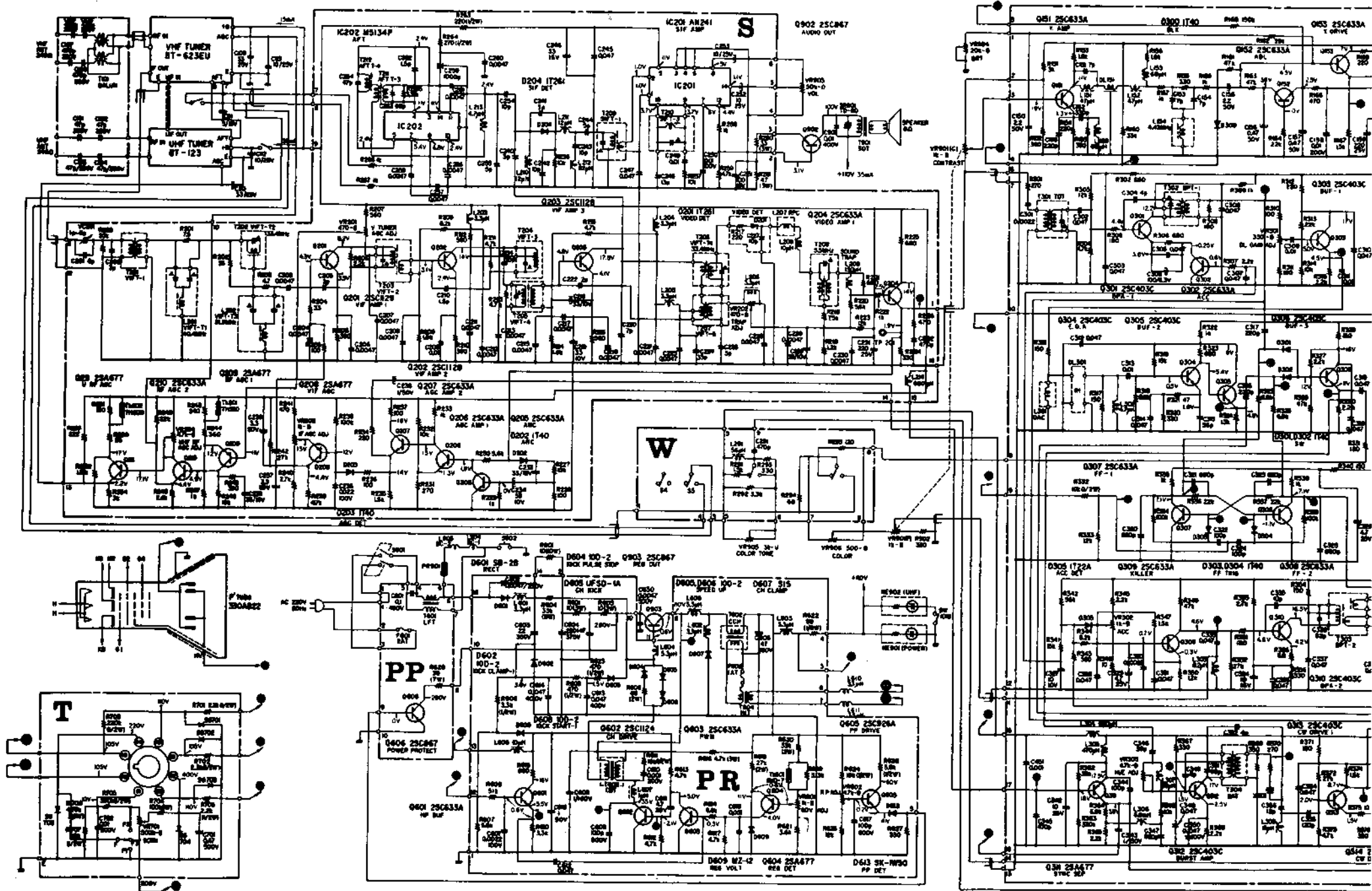
TV-signal standards:	CCIR system B and G	Power requirements:	AC 220V 50Hz
Picture tube:	13" 90° deflection TRINITRON system (330 AB22)	Power consumption:	78 watts
Semiconductors:	79 transistors, 68 diodes, 2 ICs, 3 thermistors, 2 varistors and 1 posistor	Anode voltage:	20kV at zero beam current
Channel coverage:	VHF; ch. E2 ~E12 UHF; ch. E21 ~E68	Automatic controls:	ACC (automatic color control) ACK (automatic color killer) ADG (automatic degaussing) ABL (automatic brightness limiter) ANC (automatic noise canceller) AFC (automatic frequency control) AFT (automatic fine tuning) AGC (automatic gain control) AVR (automatic voltage regulator) AZC (automatic zooming control)
Aerial system:	240-ohm aerial terminal type	Dimensions:	474 mm(W) x 318 mm(H) x 394 mm(D)
IF circuit:	3 stages with 1 double tuned and 3 single tuned elements	Weight:	14.1 kg
Intermediate frequency:	Picture i-f carrier; 36.9 MHz Sound i-f carrier; 33.4 MHz	Accessories:	Polishing cloth Instruction manual etc.
Video system:	Red, green and blue cathode drive system		
Sound system:	5.5 MHz intercarrier system Power output; 1.2 watts (at 10% harmonic distortion) Speaker; 8 x 12 cm, 8-ohm voice coil		
Convergence correction system:	Horizontal; electrostatic deflection system Vertical; magnetism correction system of magnet		

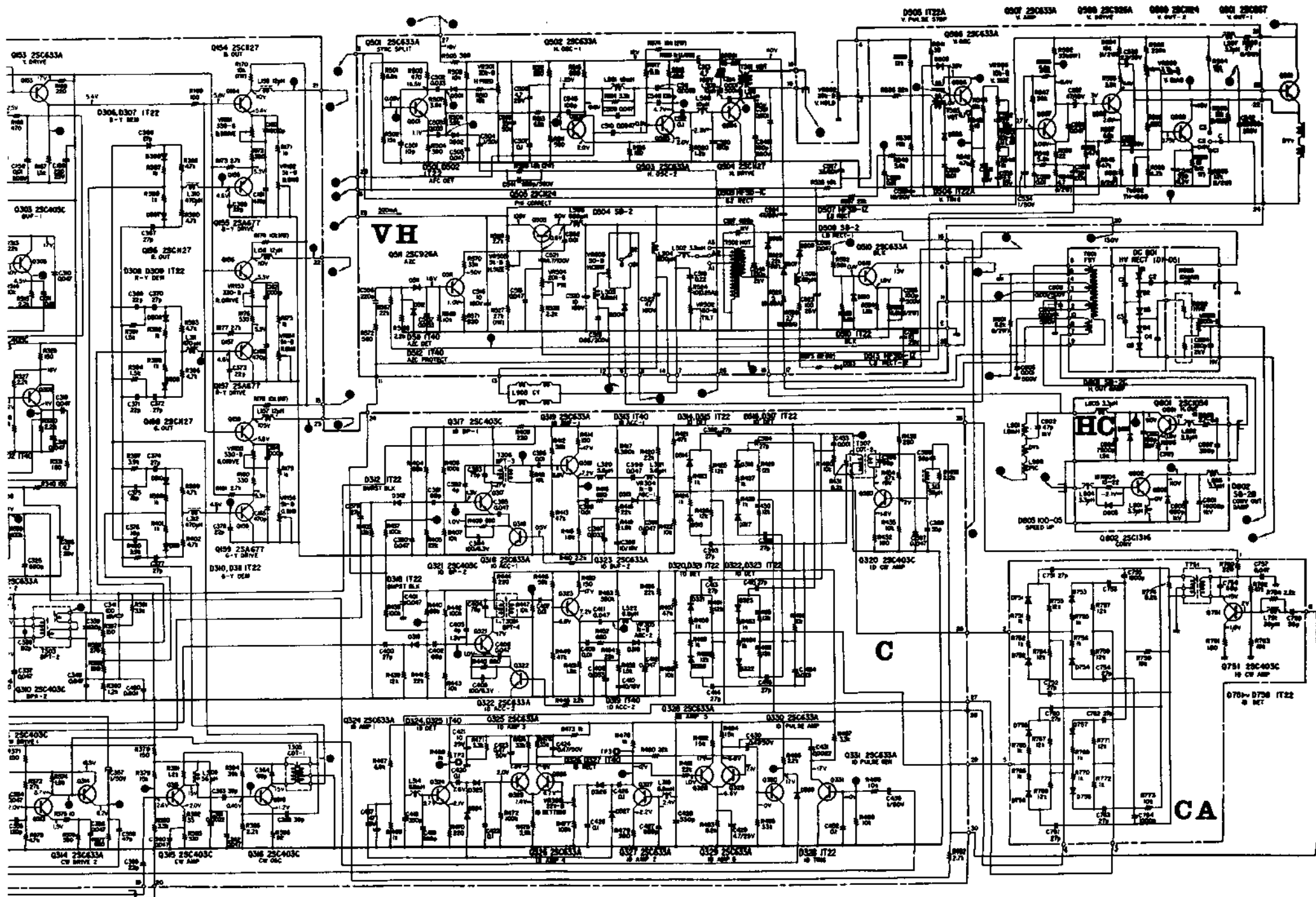
OUTLINE

BLOCK DIAGRAM



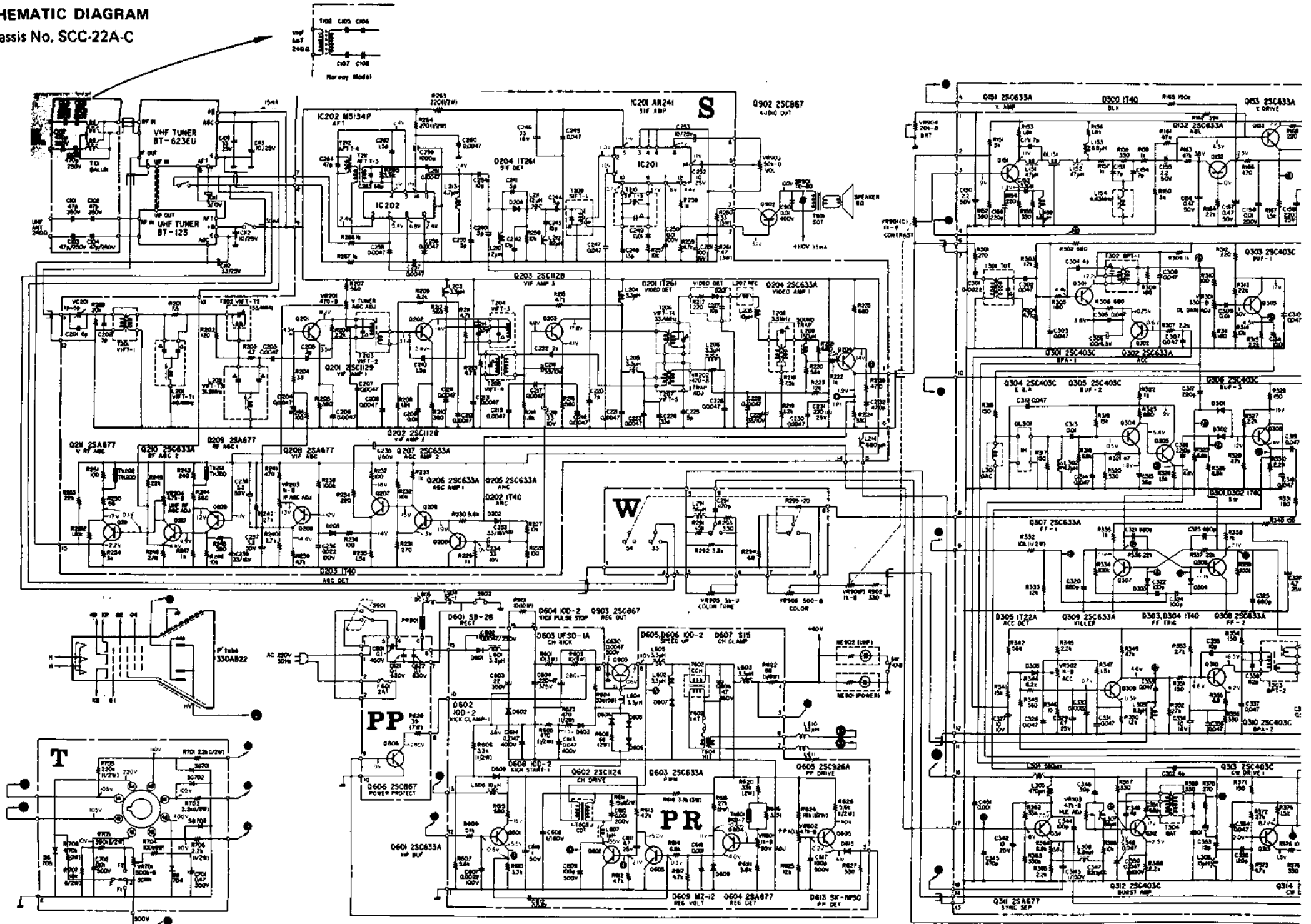
SCHEMATIC DIAGRAM Chassis No. SCC-22A-A, SCC-22A-B

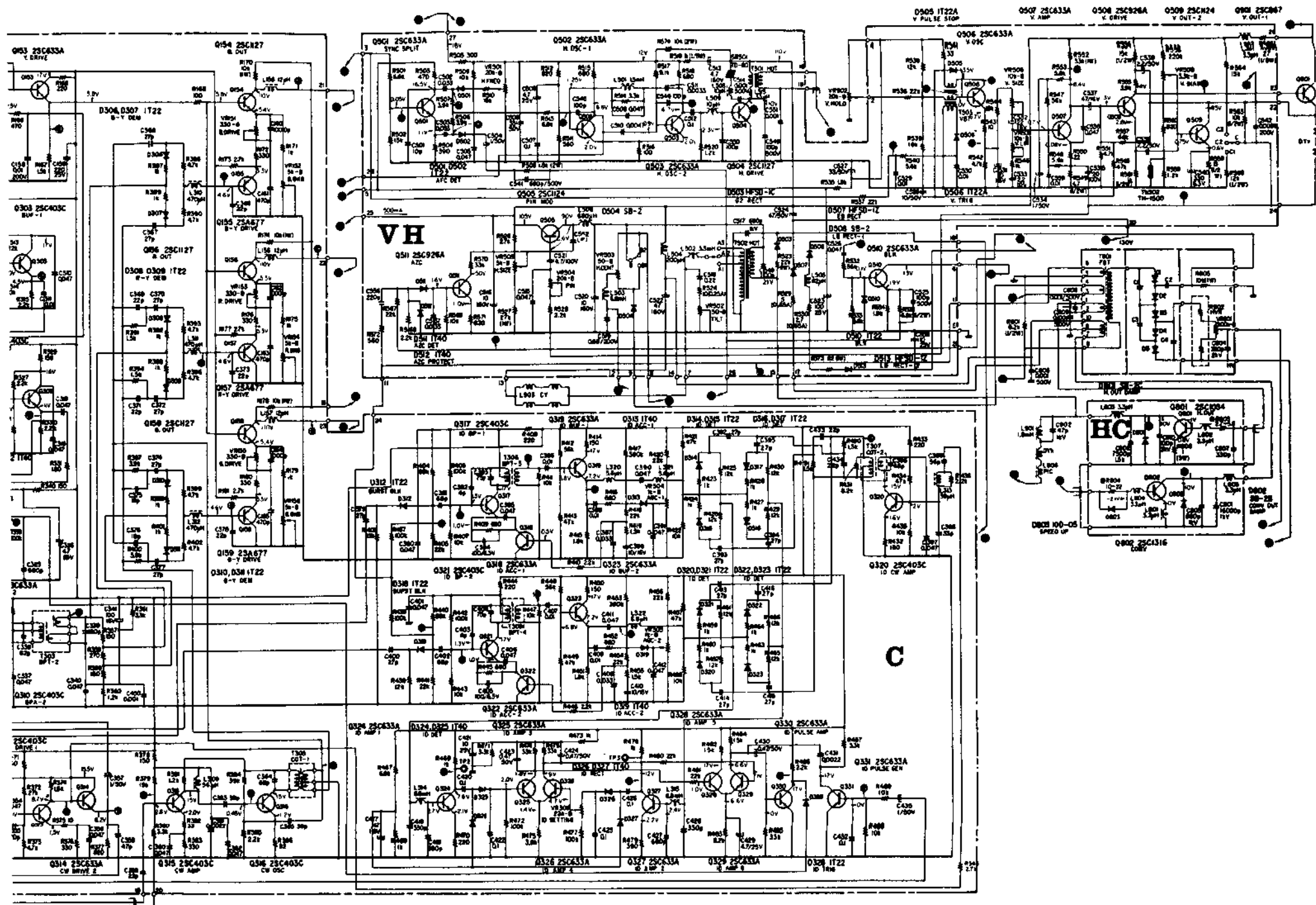


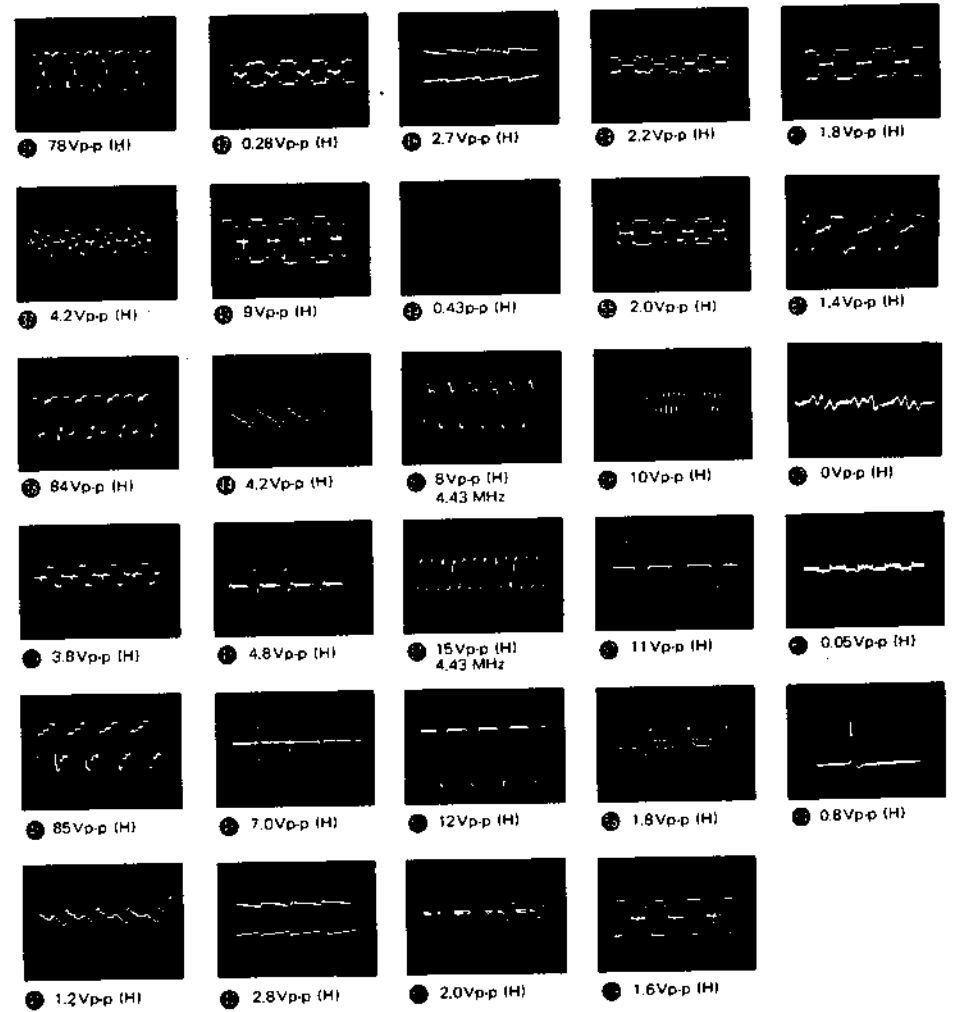
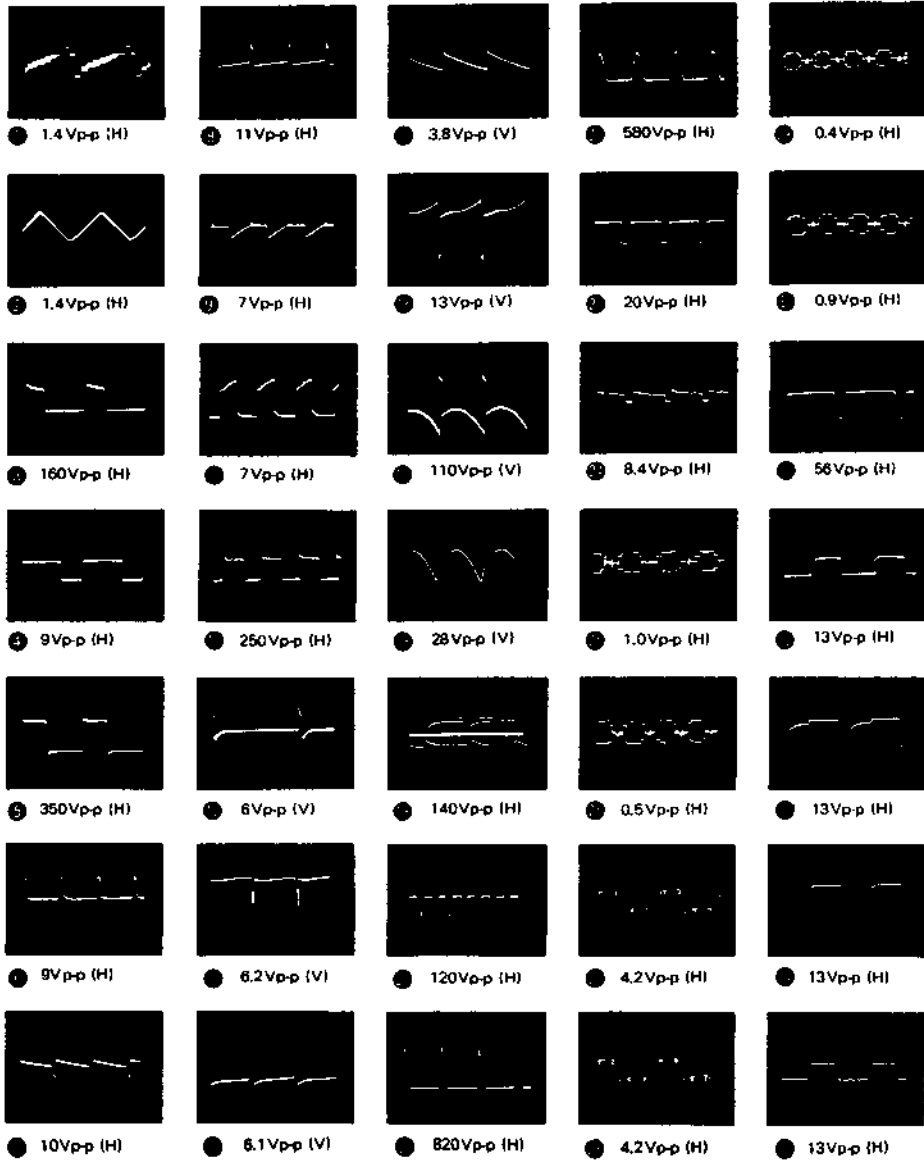


SCHEMATIC DIAGRAM

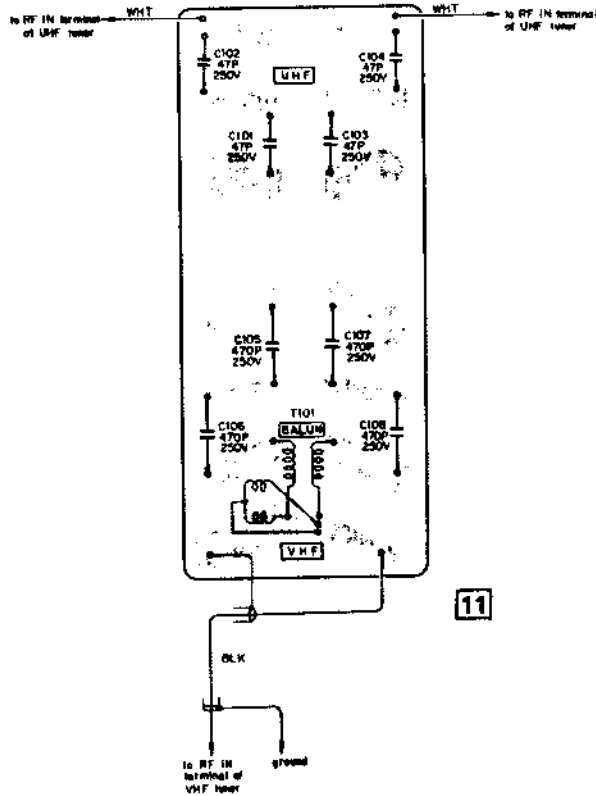
Chassis No. SCC-22A-C



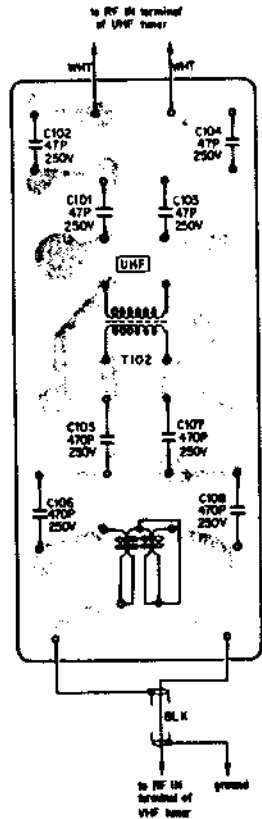




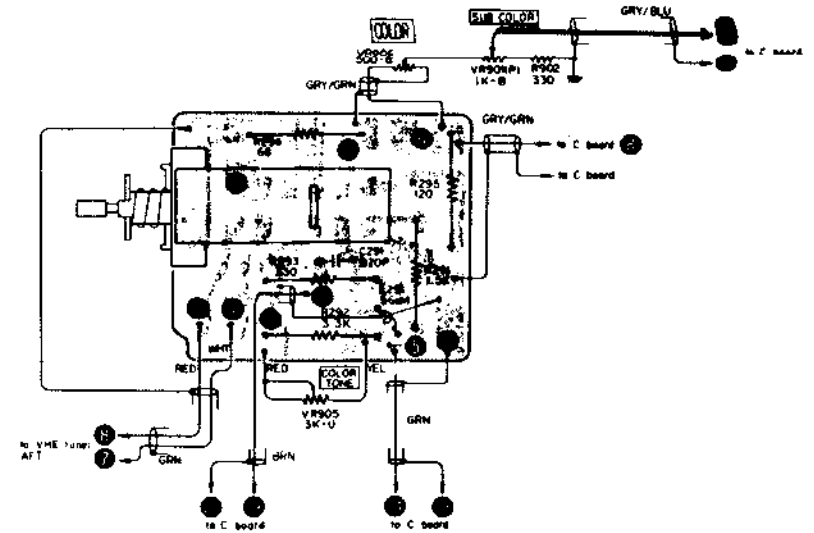
ANT CIRCUIT BOARD



— Norway model only —

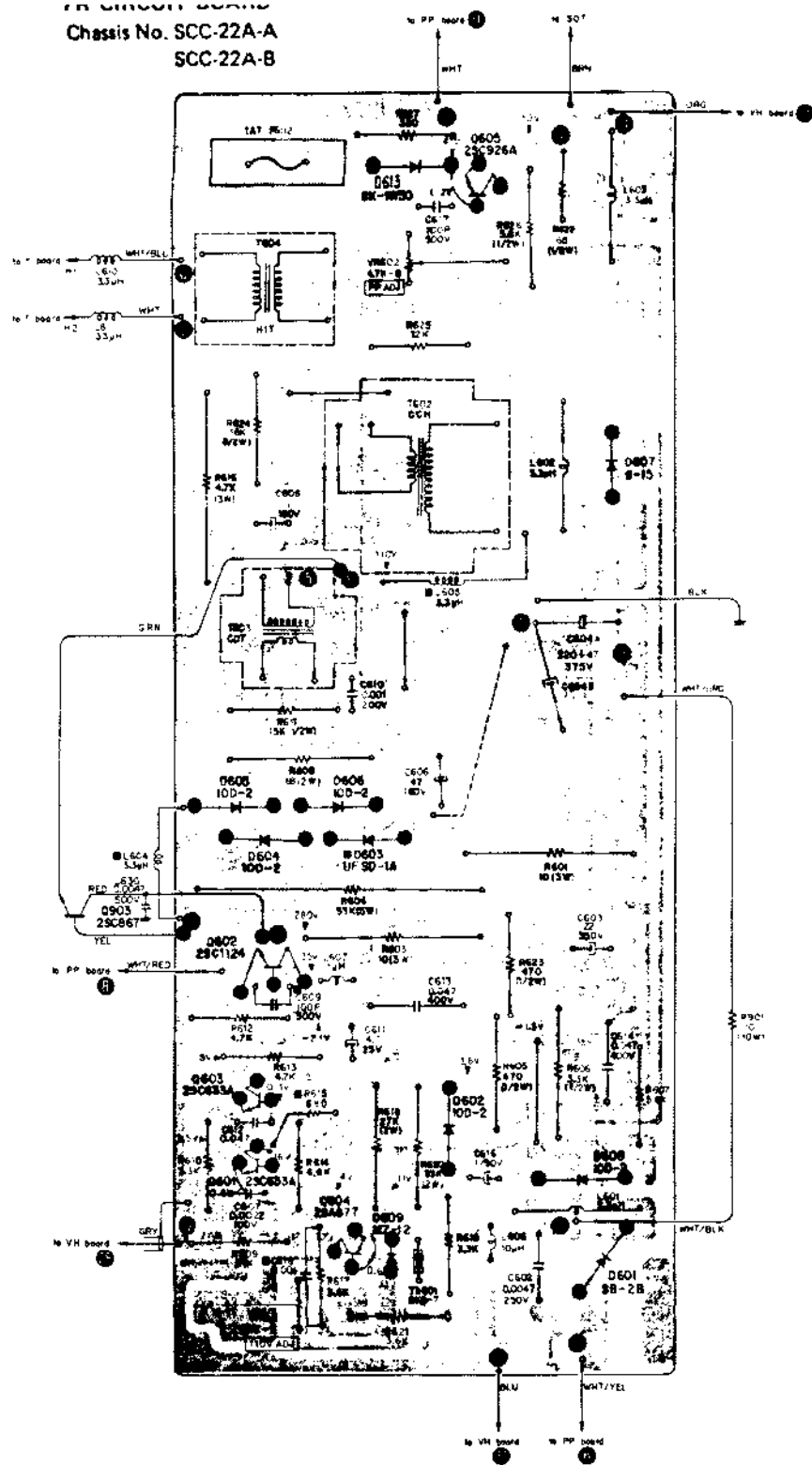


W CIRCUIT BOARD

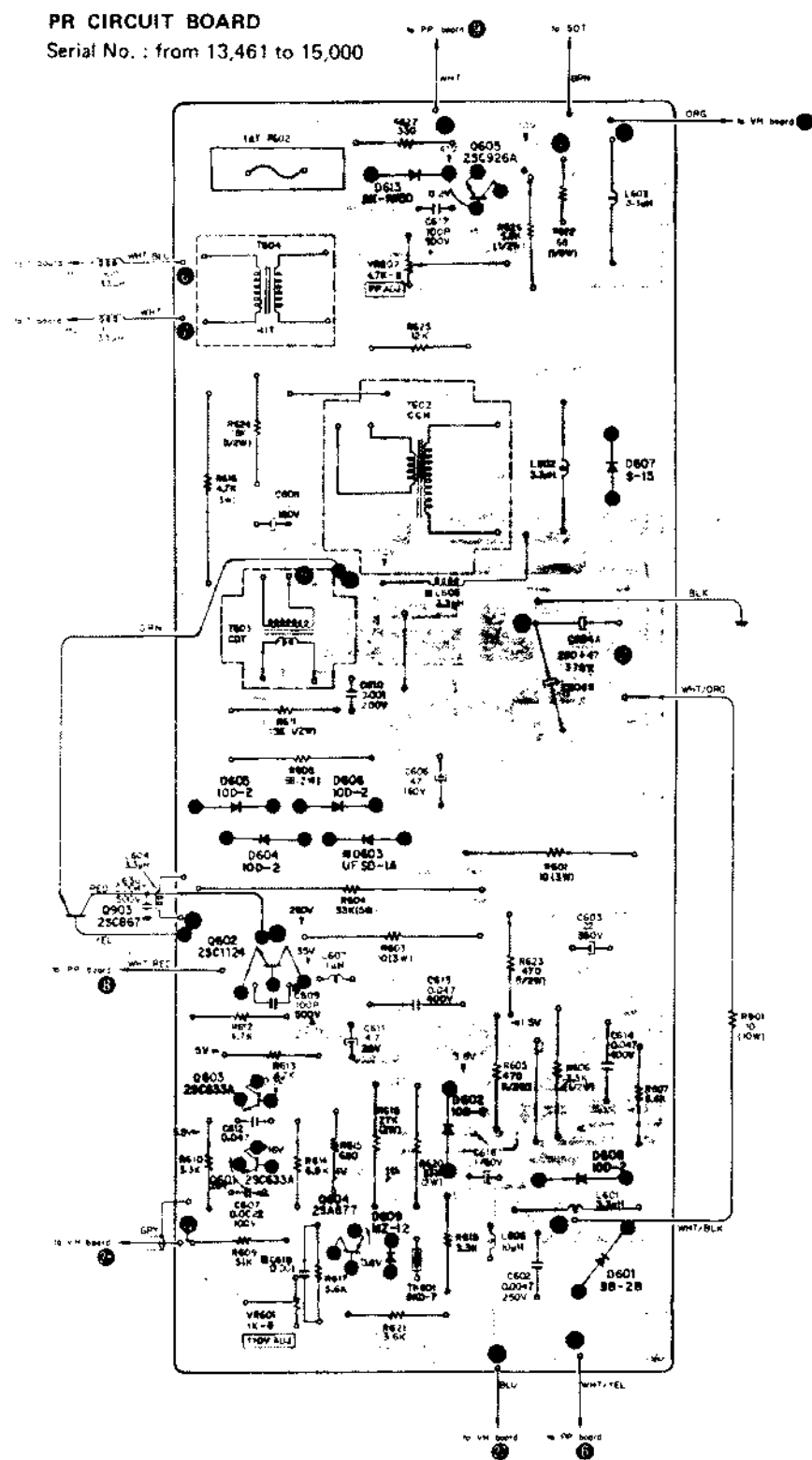


- Note:**
1. All capacitors are 50WV unless otherwise specified.
 2. All resistors are 1/4W unless otherwise specified.
 3. All resistance values are in ohms. k = 1,000.
 4. All capacitance values are in μF except as indicated with p, which means μF .
 5. Voltages measured from chassis to point indicated with a VOM (DC 20k ohms/V) at color signal input.
 6. The parts marked * indicates a component whose value is selected to yield specified operating condition.
 7. The blue circled numbers (● ~ ⊙) refer to waveform on page 51 and 52.

PR CIRCUIT BOARD
Chassis No. SCC-22A-A
SCC-22A-B



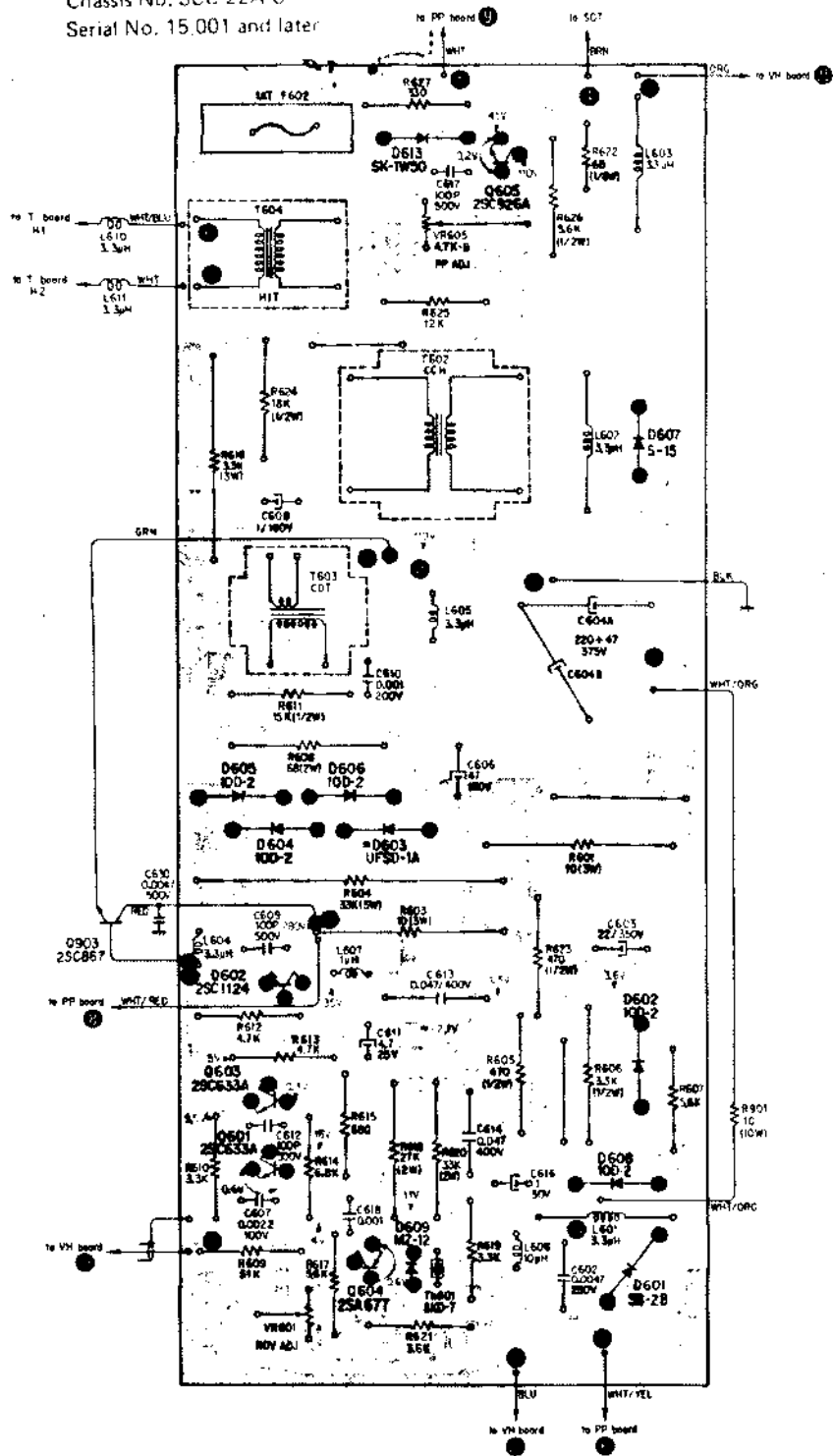
PR CIRCUIT BOARD
Serial No. : from 13,461 to 15,000



PR CIRCUIT BOARD

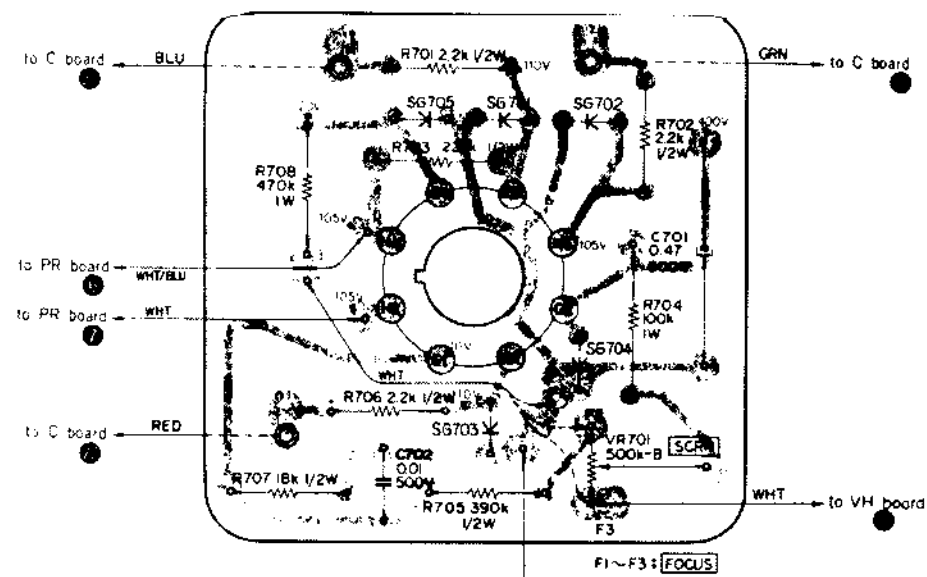
Chassis No. SCC 22A C

Serial No. 15,001 and later



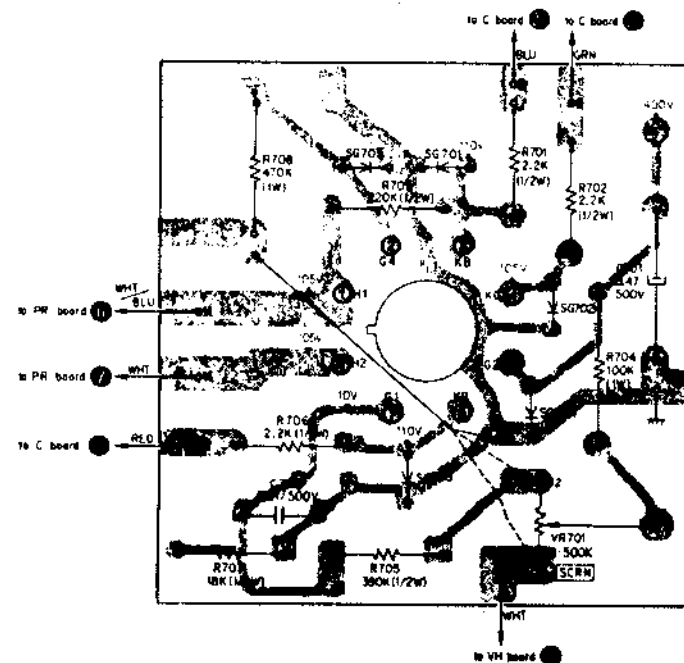
T CIRCUIT BOARD

Applicable serial No. up to 19,000



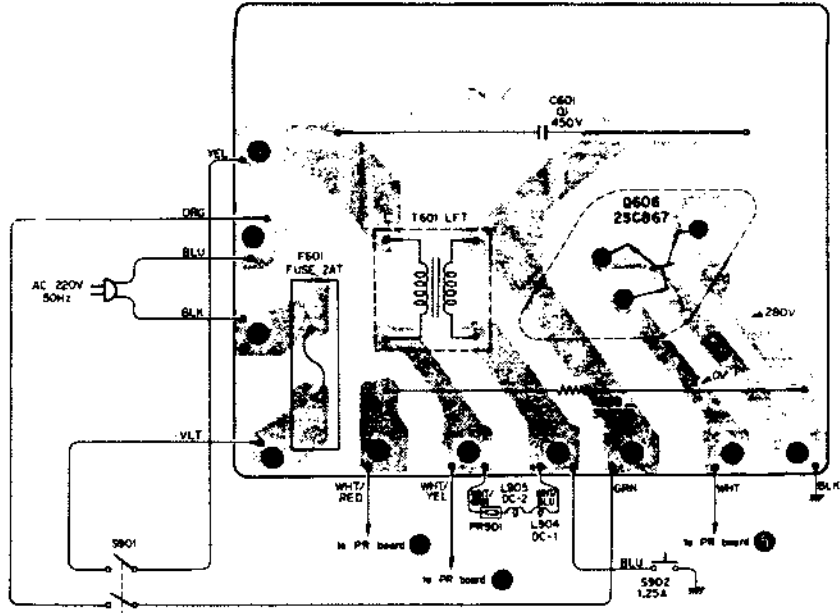
T CIRCUIT BOARD

Applicable serial No. 19,001 and later



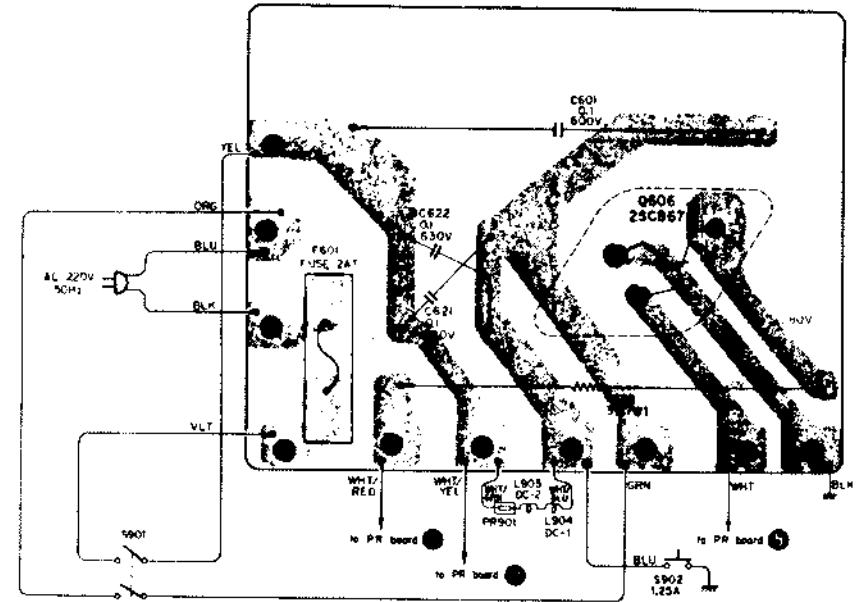
PP CIRCUIT BOARD

Serial No. Up to 14,000



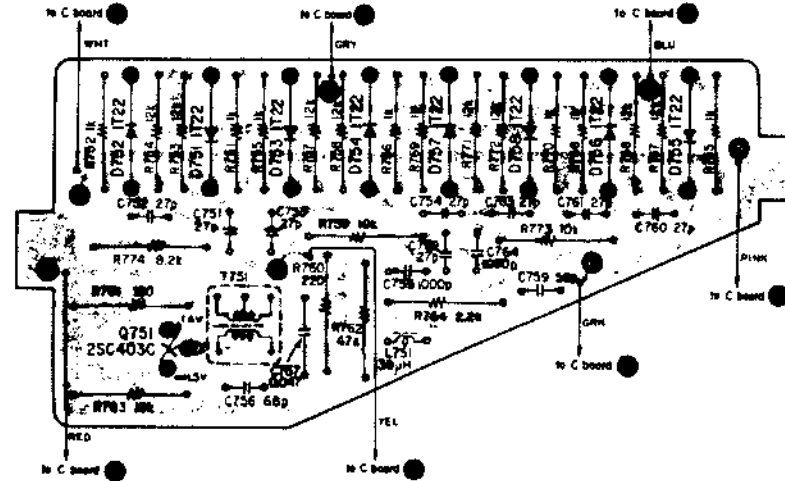
PP CIRCUIT BOARD

Serial No. : from 14,001 to 15,000



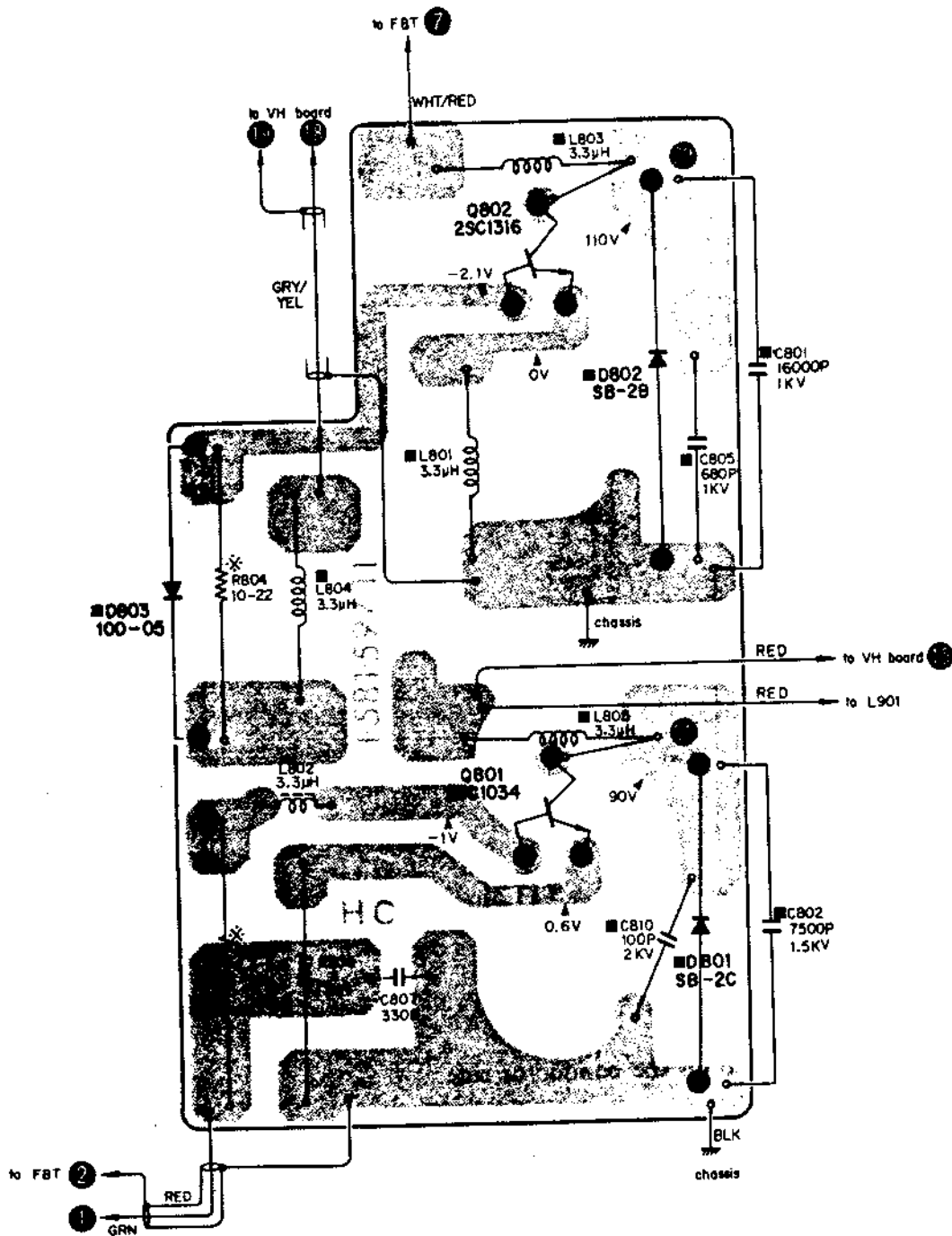
CA CIRCUIT BOARD

Chassis No. SCC-22A-A, SCC-22A-B



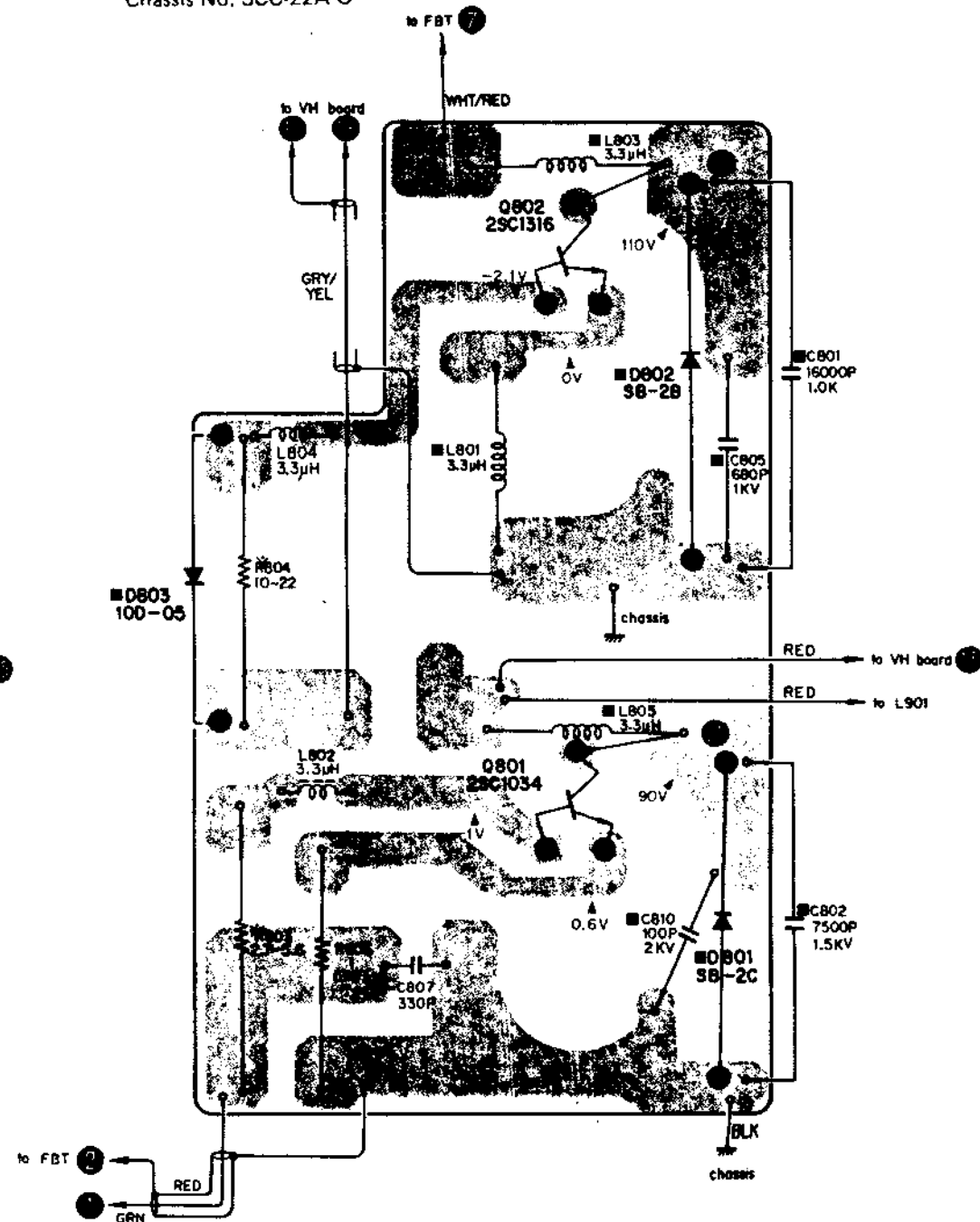
HC CIRCUIT BOARD

Chassis No. SCC-22A-A, SCC-22A-B



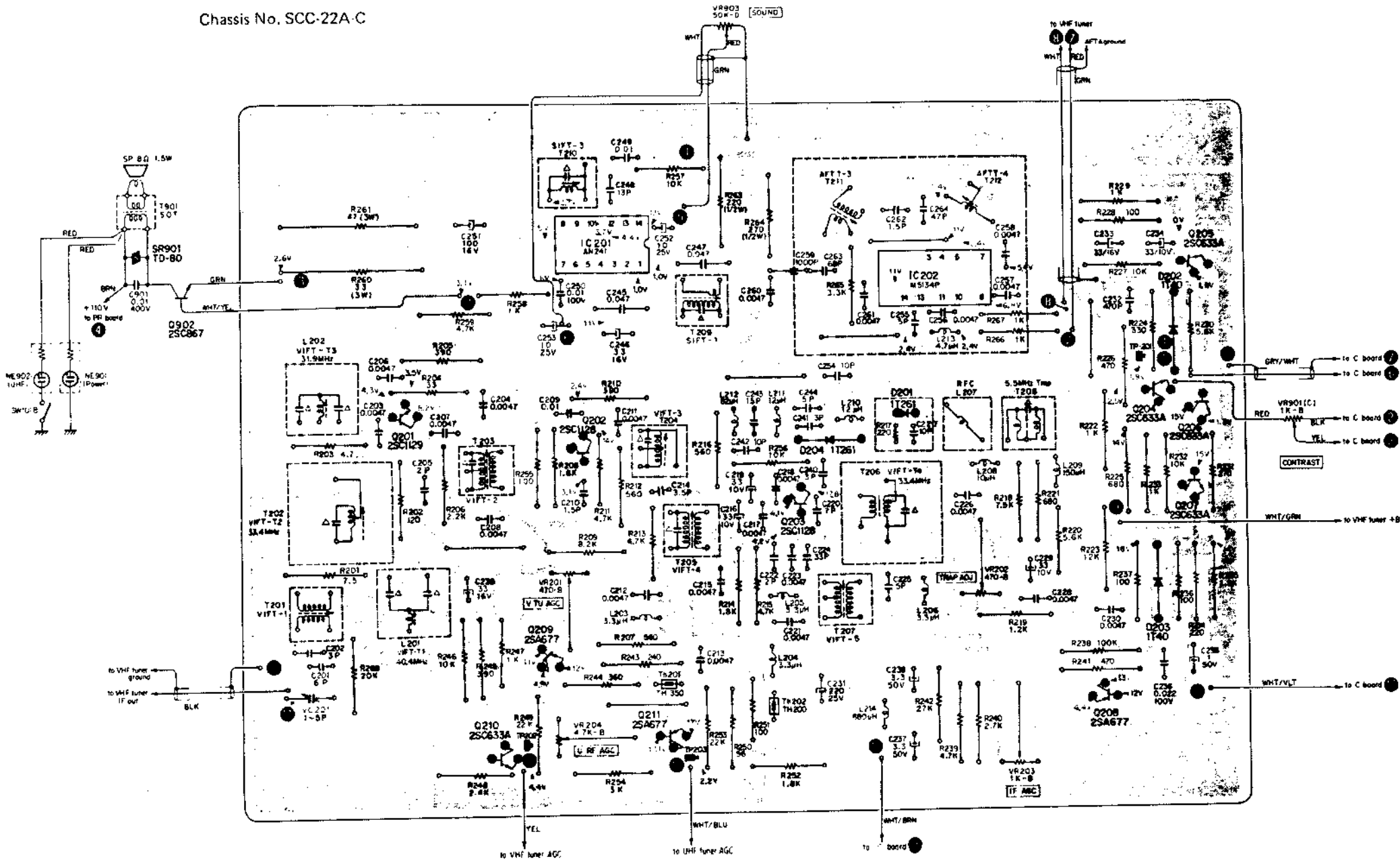
HC CIRCUIT BOARD

Chassis No. SCC-22A-C



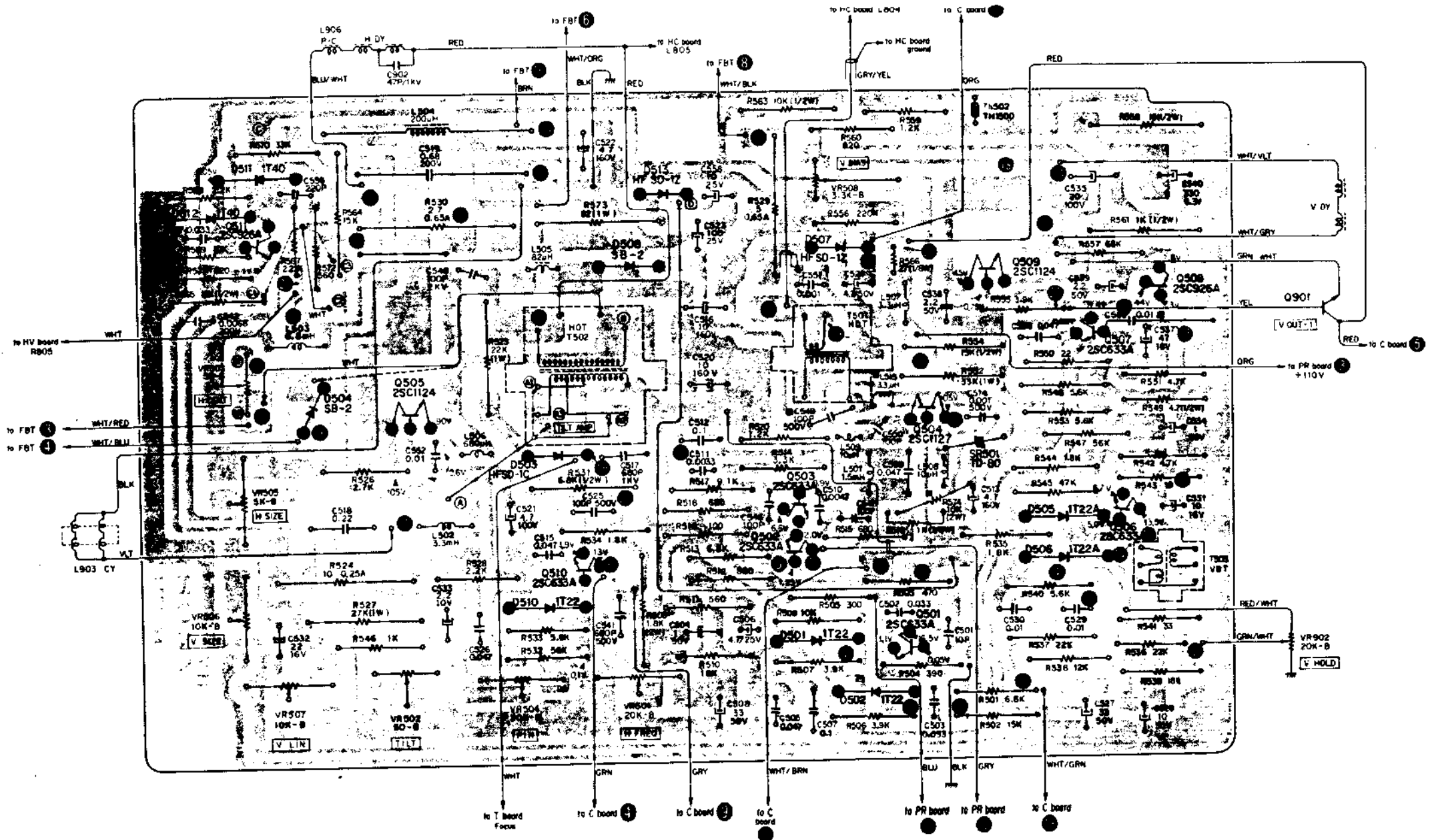
S CIRCUIT BOARD

Chassis No. SCC-22A-C

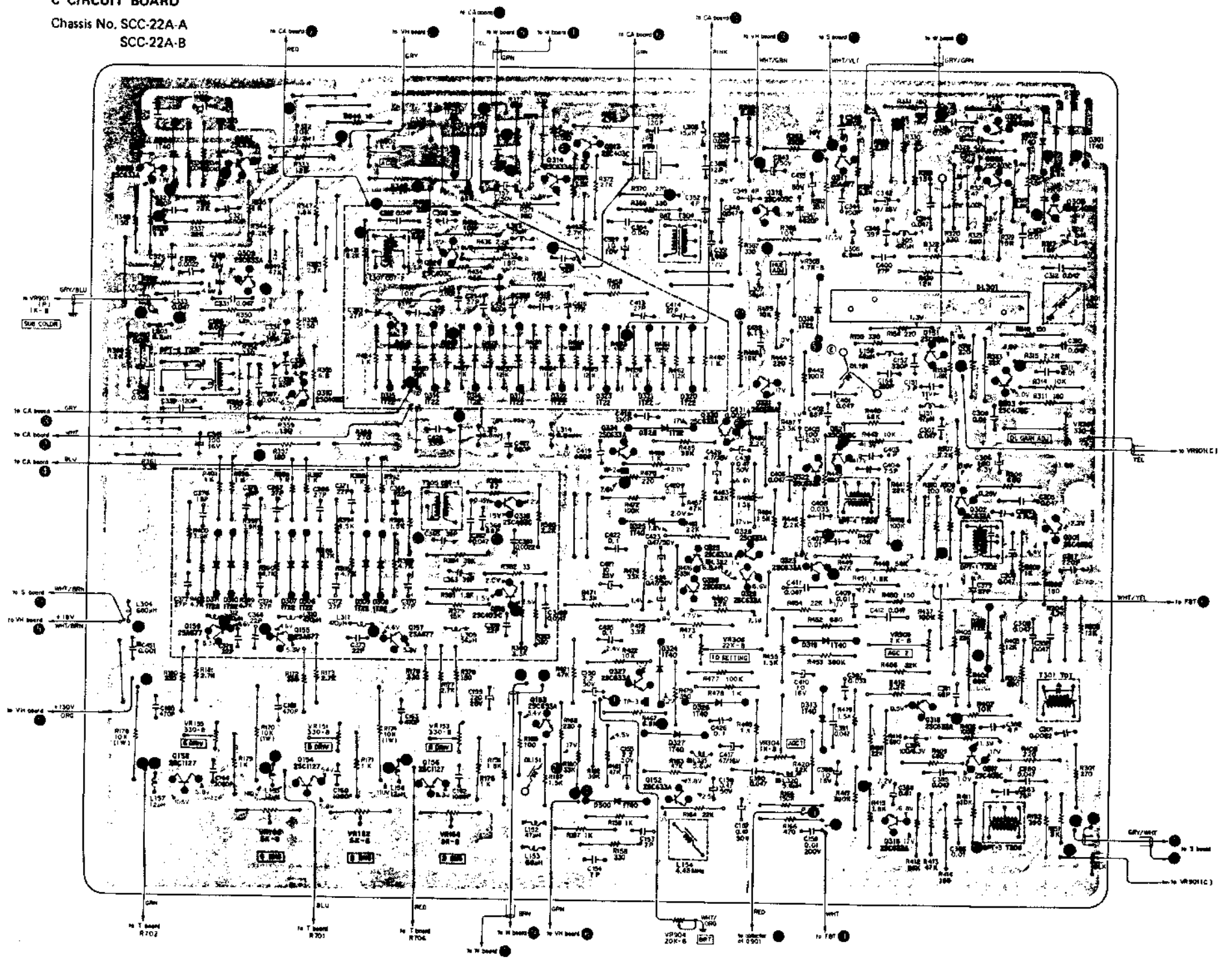


VH CIRCUIT BOARD

Chassis No. SCC-22A-C

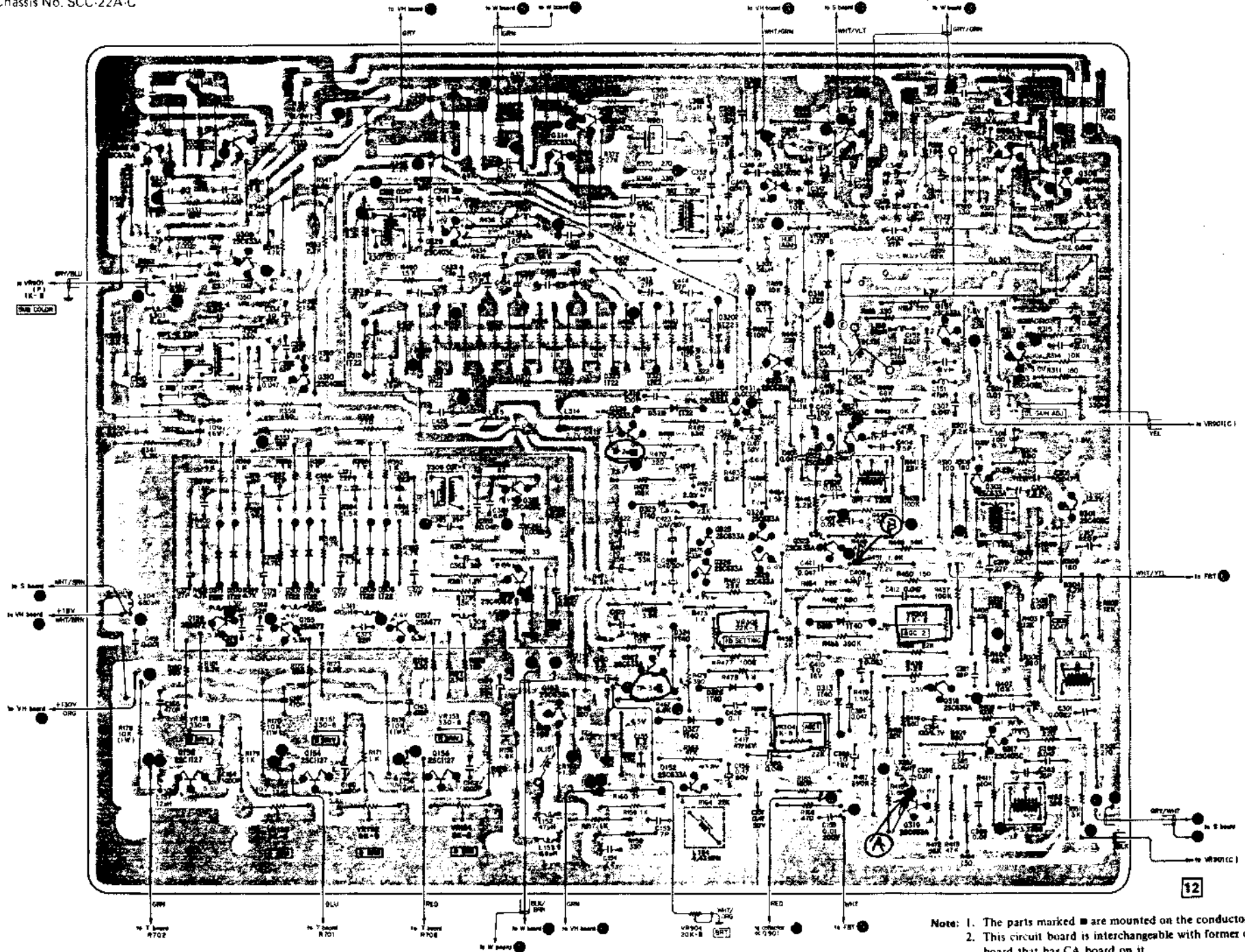


C CIRCUIT BOARD
Chassis No. SCC-22A-A
SCC-22A-B

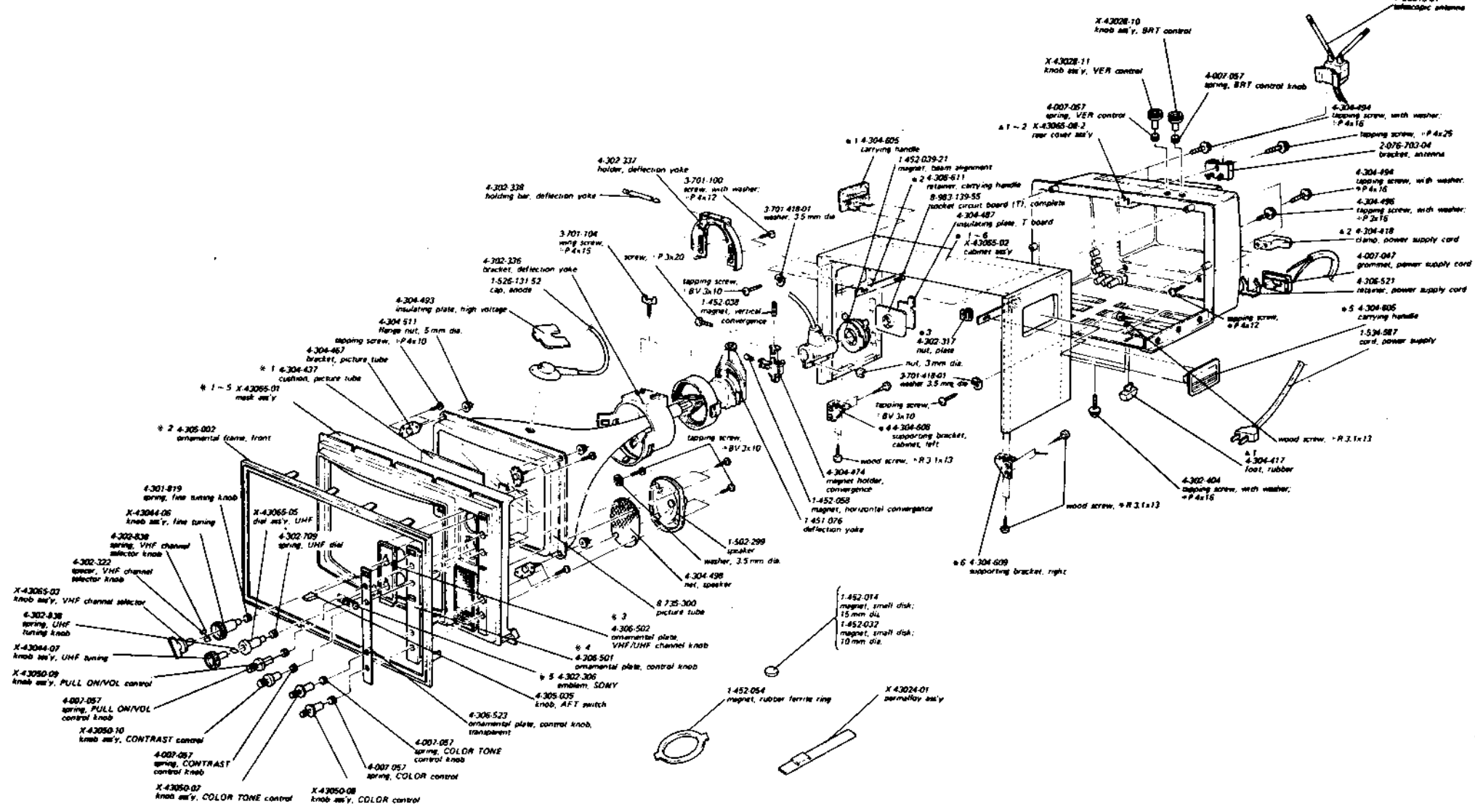


C CIRCUIT BOARD

Chassis No. SCC-22A-C

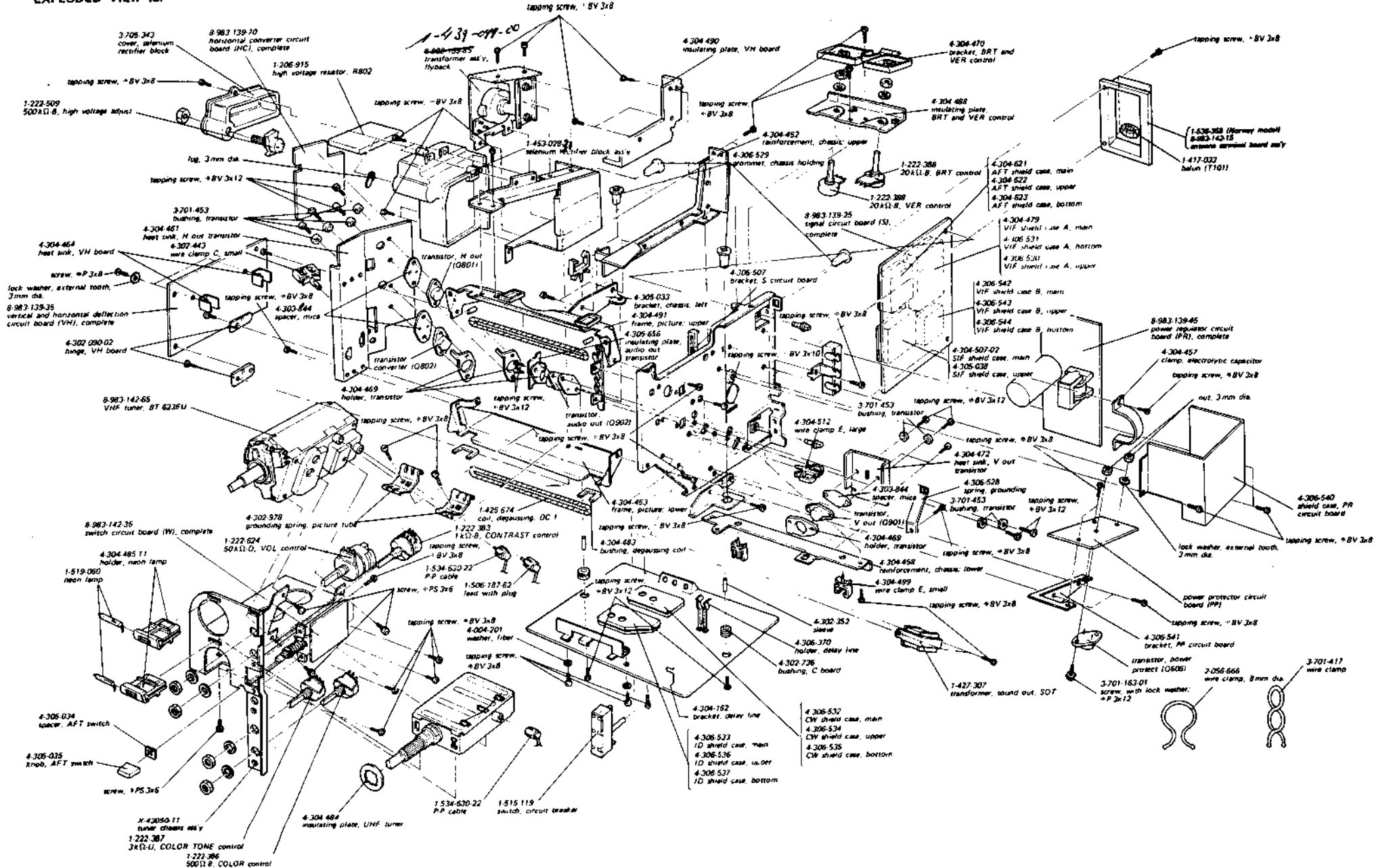


Note: 1. The parts marked ■ are mounted on the conductor side.
 2. This circuit board is interchangeable with former circuit board that has CA board on it.



- Note: # 1~5: X-43065-01 mask ass'y
▲ 1~2: X-43065-08-2 rear cover ass'y
● 1~6: X-43065-02 cabinet ass'y

EXPLODED VIEW (2)



X: 4-305-11
tuner chassis ass'y
1-222-387
3K1-U, COLOR TONE control
1-222-366
50011-B, COLOR control

ELECTRICAL PARTS LIST

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>	<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
TUNERS AND CIRCUIT BOARDS			⇒ Q302	8-729-663-47	2SC1364	⇒ D314-318	8-719-422-21	1T22AM	MISCELLANEOUS		
			Q303-306	8-724-375-01	2SC403C	⇒ D319	8-719-815-55	1S1555	Th201	1-800-071-00	Thermistor, TH-350
1-581-599-11	PP Board (power protector), SCC-22A-A/B		⇒ Q307-309	8-729-663-47	2SC1364	⇒ D320-323	8-719-422-21	1T22AM	Th202	1-800-059-00	Thermistor, TH-200
1-581-599-12	PP Board (power protector), SCC-22A-C		Q310	8-724-375-01	2SC403C	⇒ D324-327	8-719-815-55	1S1555	Th502	1-800-069-00	Thermistor, TH-15000
8-983-139-70	HC Board (horizontal converter), complete		⇒ Q311	8-729-612-77	2SA1027R	⇒ D328	8-719-422-21	1T22AM	Th601	1-800-081-00	Thermistor, 8KD-7
8-983-139-15	C Board (chroma circuit), complete		Q312, 313	8-724-375-01	2SC403C	⇒ DS01, 502	8-719-422-21	1T22AM	SR501, 901	1-800-032-00	Variator, TD-80
8-983-139-25	S Board (signal circuit), complete		⇒ Q314	8-729-663-47	2SC1364	⇒ DS03	8-719-305-15	GH3F	PR901	1-800-080-00	Thermistor (positive)
			Q315-317	8-724-375-01	2SC403C	⇒ DS04	8-719-305-15	GH3F	COIL		
8-983-139-35	VH Board (vertical horizontal deflection), complete		⇒ Q318, 319	8-729-663-47	2SC1364	⇒ DS05, 506	8-719-422-21	1T22AM	All coils are microinductors unless otherwise noted.		
8-983-139-45	PR Board (power regulator), complete		Q320, 321	8-724-375-01	2SC403C	⇒ DS07	8-719-305-15	GH3F	L151, 152	1-407-165-00	47μH
8-983-139-55	T Board (socket circuit), complete		⇒ Q322-331	8-729-668-47	2SC1364	⇒ DS08	8-719-305-15	GH3F	L153	1-407-167-00	68μH
8-983-139-85	Transformer Ass'y, flyback (T801)		⇒ Q501-503	8-729-663-47	2SC1364	⇒ DS10	8-719-422-21	1T22AM	L154	1-409-193-00	Coil, wave trap; 4.43MHz
			Q504, 505	8-725-412-00	2SC1124	⇒ DS11, 512	8-719-815-55	1S1555	L155-157	1-407-158-00	12μH
8-983-142-15	Antenna Terminal Board Ass'y		⇒ Q506, 507	8-729-663-47	2SC1364	⇒ DS13	8-719-305-15	GH3F	L158	1-407-167-00	68μH
including			⇒ Q508	8-729-255-12	2SC2551	D601	8-719-302-22	SB-2B	L201	1-409-214-00	VIFT-T1 40.4MHz
1-536-358-00	(1-536-358 : Norway model)		Q509	8-725-412-00	2SC1124	⇒ D602	8-719-200-02	10E2	L202	1-409-215-00	VIFT-T3 31.9MHz
1-417-033-00	Bafun (T101)		⇒ Q510	8-729-663-47	2SC1364	⇒ D603	8-719-333-10	UF1C	L203-206	1-407-184-00	3.3μH
1-508-492-00	Antenna Socket, UHF		⇒ Q511	8-729-255-12	2SC2551	⇒ D604-606	8-719-200-02	10E2	L207	1-425-504-00	RF Choke
1-508-493-00	Antenna Socket, VHF		⇒ Q601	8-729-663-47	2SC1364	⇒ D607	8-719-301-51	S-15H	L208	1-407-190-00	10μH
3-705-455-00	Plate, antenna terminal		Q602	8-725-412-00	2SC1124	⇒ D608	8-719-200-00	10E2	L209	1-407-171-00	150μH
1-581-591-00	Antenna Board		⇒ Q603	8-729-663-47	2SC1364	⇒ D609	8-719-930-12	EQB01-12Z	L210, 211	1-407-158-00	12μH
1-417-040-00	Transformer (T102) : Norway model					D613	8-719-200-50	SX-1W50	L212	1-407-168-00	82μH
8-983-142-25	UHF Tuner, BT-123		⇒ Q604	8-729-612-77	2SA1027R	⇒ D751-758	8-719-422-21	1T22AM (SCC-22A-A/B only)	L213	1-407-186-00	4.7μH
8-983-142-35	W Board (switch circuit), complete		⇒ Q605	8-729-255-12	2SC2551	⇒ D801	8-719-305-15	GH3F	L214	1-407-557-00	680μH
8-983-142-65	VHF Tuner, BT-623EU		⇒ Q606	8-765-132-00	2SC867A	D802	8-719-302-22	SB-2B	L291	1-407-166-00	56μH
			⇒ Q751	8-724-375-01	2SC403C	⇒ D803	8-719-200-02	10E2	L301	1-425-671-00	DAC
			Q801	8-723-424-16	2SC1034	DC801	1-453-028-21	Selenium Rectifier Block Ass'y	L302	1-407-186-00	4.7μH
							including	L303	1-407-189-00	8.2μH	
							1-222-509-00	500kΩ-B, adjustable; VR801 (High Voltage)	L304	1-407-557-00	680μH
							1-206-915-00	High Voltage Resistor, R802	L305	1-407-177-00	470μH
									L306	1-407-204-21	6.8mH
									L307	1-407-166-00	56μH
									L308	1-407-159-00	15μH
									L309	1-407-166-00	56μH
									L310-312	1-407-177-00	470μH
									L313	1-407-164-00	39μH
									L314, 315	1-407-595-00	6.8mH
									L320, 321	1-407-186-00	5.6μH
									L322	1-407-188-00	6.8μH

Note:

⇒: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

The mark * indicates the parts which is changed after Serial No. 15,001.

Ref. No.	Part No.	Description
L501	1-407-552-00	1.5mH
L502	1-459-075-00	3.3mH, dynamic convergence
L503	1-459-074-00	6.8mH, horizontal centering
L504	1-407-346-00	200uH Choke, spook
L505	1-407-553-00	82uH Choke, spook
L506	1-407-193-21	680uH
L507	1-407-364-00	3.3uH Choke
L508, 509	1-407-190-00	10uH
L515	1-407-364-00	3.3uH
L601-605	1-407-364-00	3.3uH
L606	1-407-190-00	10uH
L607	1-407-178-00	1uH
L610, 611	1-407-364-00	3.3uH
L801-805	1-407-364-00	3.3uH
L904, 905	1-425-674-00	Deguss (DC-1, 2)

L906 1-452-039-21 Beam Alignment Magnet

DL151 1-415-047-00 Delay Line
DL301 1-415-046-00 Delay Line

*L751 1-407-164-00 39uH (SCC-22A-A/B)

TRANSFORMERS

T201	1-403-728-00	VIFT-1
T202	1-409-217-00	VIFT-T2 33.4MHz
T203	1-403-729-00	VIFT-2
T204	1-403-841-00	VIFT-3
T205	1-403-729-00	VIFT-4
T206	1-409-218-00	VIFT-T4 33.4MHz
T207	1-403-730-00	VIFT-5
T208	1-409-235-00	Coil, wave trap; 5.5MHz
T209	1-403-842-00	SIFT-1
T210	1-403-843-00	SIFT-3
T211	1-403-810-00	AFT T3
T212	1-403-811-00	AFT T4
T301	1-403-844-21	TOT
T302	1-403-845-21	BPT-1
T303	1-425-506-21	BPT-2
T304	1-405-372-21	BAT
T305	1-425-618-21	COT-1

Ref. No.	Part No.	Description
T306	1-403-846-21	BPT-3
T307	1-425-618-21	COT-2
T308	1-403-846-21	BPT-4
T501	1-437-030-00	HDT
T502	1-439-097-00	HOT
T503	1-435-008-00	VBT
*T601	1-421-302-21	LFT
T602	1-437-032-00	CCH
T603	1-437-033-00	CDT
T604	1-441-855-00	HIT
*T751	1-425-618-00	COT-3
T901	1-427-307-00	SOT

CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted.
50WV or less are not indicated except for electrolytics.
p : μF , elect : electrolytic

C101-104	1-102-238-00	47p
C105-108	1-102-239-00	470p
C111	1-121-257-00	5 15V elect
C259	1-102-043-00	1000p 500V feed through
C513	1-121-246-00	4.7 160V elect
C514	1-102-038-00	0.001 500V
C517	1-102-219-00	680p 1kV
C519	1-108-549-11	0.68 200V mylar
C520	1-121-921-00	10 160V elect
C522	1-121-919-00	47 160V elect
C525	1-101-810-00	100p 500V
C541	1-102-002-00	680p 500V
C549	1-101-810-00	100p 500V
C601	1-115-101-21	0.1 450V oil
C602	1-102-240-00	0.0047 250V
C603	1-123-022-00	22 350V elect
C604	1-125-080-00	220 375V elect
C606	1-121-919-00	47 160V elect
C608	1-121-189-00	1 160V elect
C609	1-108-810-00	100p 500V
C613, 614	1-105-801-13	0.047 400V mylar
C617	1-101-810-00	100p 500V
*C621	1-129-739-00	0.1 630V film (SCC-22A-C)

Ref. No.	Part No.	Description
*C622	1-129-739-00	0.1 630V film
*C623	1-108-745-21	0.22 250V mylar
C630	1-102-085-00	0.0047 500V
C701	1-119-327-00	0.47 500V elect
C702	1-102-050-00	0.01 500V
C801	1-129-864-00	16,000p 1000V film
C802	1-129-859-00	7500p 1500V film
C804	1-102-155-00	330p 2kV
C805	1-102-219-00	680p 1kV
C806	1-102-038-00	0.001 500V
C808, 809	1-102-038-00	0.001 500V
C810	1-102-153-00	100p 2kV
C901	1-105-793-00	0.01 400V mylar

RESISTORS

All resistors are in ohms. Common $\frac{1}{8}\text{W}$ carbon resistors are omitted.
Refer to the list on the last page for their part numbers.
All variable and adjustable resistors have characteristic curve B, unless otherwise noted. $k\Omega$: 1000 Ω , $M\Omega$: 1000k Ω

R170	1-206-104-00	10k 1W metal oxide
R174	1-206-104-00	10k 1W metal oxide
R178	1-206-104-00	10k 1W metal oxide
R260	1-217-027-00	33 3W cement coated
R261	1-217-027-00	47 3W cement coated
R508	1-206-017-00	1.8k 2W metal oxide
R519	1-211-451-00	1k 1/8W carbon
R523	1-202-792-00	22k composition
R524	1-207-903-00	10 fuse
R527	1-206-109-00	27k 1W metal oxide
R529	1-207-241-00	5 fuse
R530	1-207-982-00	2.7 fuse
R549	1-207-471-00	4.7 1/8W wire wound
R552	1-202-794-00	33k composition
R566	1-211-932-00	27 1/8W
R573	1-206-080-00	82 1W metal oxide
R574	1-206-688-00	10k 2W metal oxide
R601	1-207-657-00	10 3W wire wound
R603	1-207-657-00	10 3W wire wound
R604	1-206-823-00	33k 5W metal oxide

Ref. No.	Part No.	Description
R608	1-206-483-00	68 2W metal oxide
R616	1-206-741-00	4.7 3W metal oxide
R618	1-206-698-00	27k 2W metal oxide
R620	1-206-700-00	33k 2W metal oxide
R622	1-211-931-00	68 1/8W carbon
R628	1-207-942-00	39 7W wire wound
R701, 702	1-202-581-00	2.2k 1/2W composition
R703	1-202-627-00	220k 1/2W composition
R704	1-202-800-00	100k 1/2W composition
R705	1-202-635-00	390k 1/2W composition
R706	1-202-581-00	2.2k 1/2W composition
R707	1-202-603-00	18k 1/2W composition
R708	1-202-808-00	470k 1W composition
*R803	1-206-918-00	2.7 3W metal film
	1-206-921-00	4.7 3W metal film
	1-206-922-00	5.6 3W metal film
	1-206-925-00	10 3W metal film
*R804	1-206-927-00	15 3W metal film
	1-206-928-00	18 3W metal film
	1-206-929-00	22 3W metal film
R805	1-202-788-00	10k composition
R806	1-217-007-00	1 3W cement coated
R901	1-205-483-00	10 10W cement coated
VR151	1-222-515-00	330, adjustable; B. DRIVE
VR152	1-222-344-00	5k, adjustable; B. BKG
VR153	1-222-515-00	330, adjustable; R. DRIVE
VR154	1-222-344-00	5k, adjustable; R. BKG
VR155	1-222-515-00	330, adjustable; G. DRIVE
VR156	1-222-344-00	5k, adjustable; G. BKG
VR201	1-222-516-00	470, adjustable; AGC
VR202	1-222-516-00	470, adjustable; TRAP
VR203	1-222-517-00	1k, adjustable; IF AGC
VR204	1-222-518-00	4.7k, adjustable; UHF RF AGC
VR301	1-222-515-00	330, adjustable; DL GAIN
VR302	1-222-517-00	1k, adjustable; ACC
VR303	1-222-518-00	4.7, adjustable; COLOR
VR304	1-222-517-00	1k, adjustable; AGC-1
VR305	1-222-517-00	1k, adjustable; AGC-2
VR306	1-222-786-00	22k, adjustable; ID SETTING

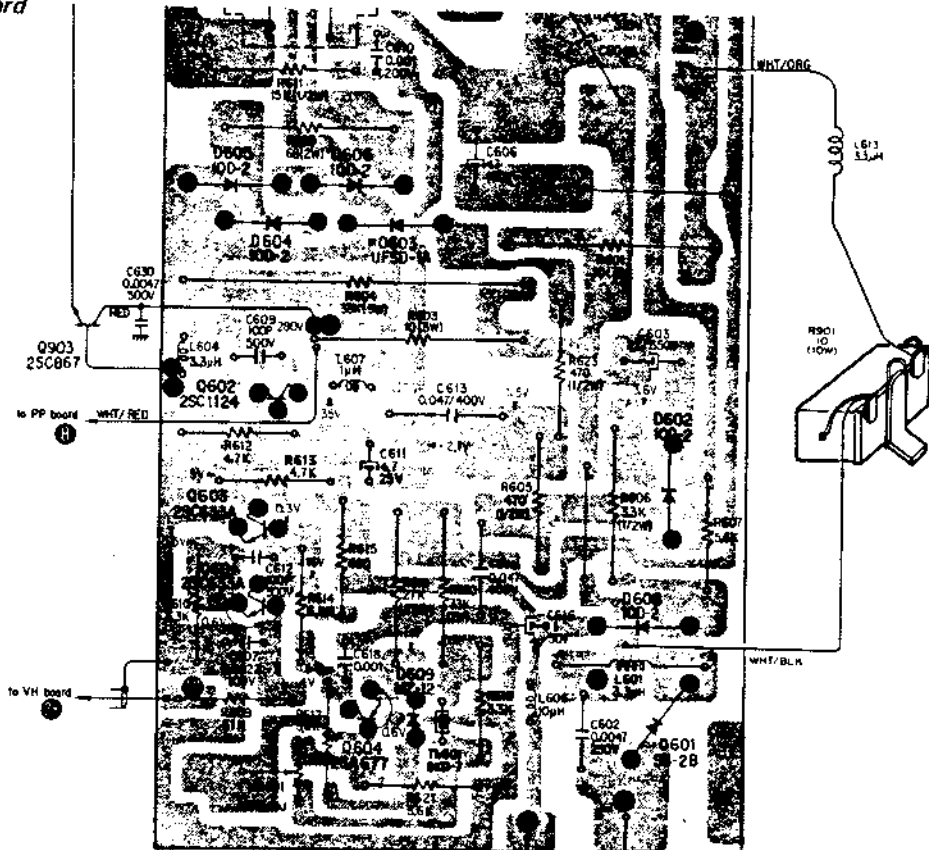
<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
VR501	1-222-725-00	20k, adjustable; H. FREQ
VR502	1-223-017-00	50k, adjustable; TILT
VR503	1-223-017-00	50k, adjustable; H. CENT
VR504	1-222-725-00	20k, adjustable; PIN
VR505	1-222-344-00	5k, adjustable; H. SIZE
VR506	1-222-512-00	10k, adjustable; V. SIZE
VR507	1-222-512-00	10k, adjustable; V. LIN
VR508	1-222-784-00	3.3k, adjustable; V. BIAS
VR601	1-222-517-00	1k, adjustable; 110V
VR602	1-222-518-00	4.7k, adjustable; PP
VR701	1-222-809-00	500k, adjustable; SCRN
VR801	1-222-509-00	500k, adjustable; H. STAT
VR901	1-222-383-00	1k, variable; CONTRAST
VR902	1-222-388-00	20k, variable; VER
VR903	1-222-624-00	50k-D, variable; VOL
VR904	1-222-388-00	20k, variable; BRT
VR905	1-222-387-00	3k-U, variable; COLOR TONE
VR906	1-222-386-00	500, variable; COLOR

MISCELLANEOUS

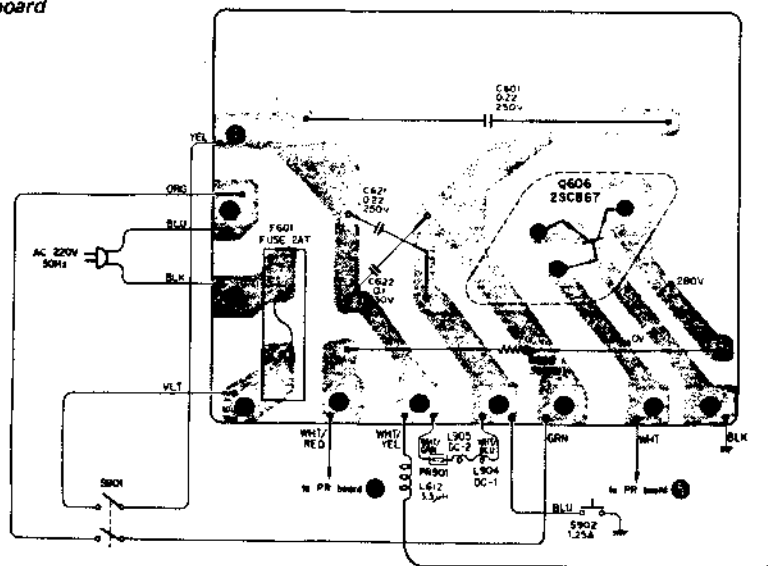
DY	1-451-676-11	Deflection Yoke
F601	1-532-203-00	Fuse, 2A
F602	1-532-078-00	Fuse, 1A
S902	1-515-119-00	Switch, circuit breaker
SG701-705	1-519-063-00	Spark Gap 1.5kV
NE901	1-519-060-00	Neon Lamp, POWER
NE902	1-519-060-00	Neon Lamp, UHF
VC201	1-141-138-00	1 - 5pF, trimmer
X301	1-527-183-00	Crystal
	1-452-014-00	Magnet, small disk; 15mm dia.
	1-452-032-00	Magnet, small disk; 10mm dia.
	1-452-038-00	Magnet, vertical convergence
	1-452-054-00	Magnet, rubber ferrite ring
	1-452-058-00	Magnet, horizontal convergence
	1-502-299-00	Speaker
	1-506-187-62	Lead, with plug
	1-514-897-00	Switch, pushbutton; APT
	1-526-086-00	Socket, picture tube
	1-526-130-61	Cap, anode

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
	1-526-131-52	Cap, convergence
	1-526-144-00	Cap, lead
	1-533-087-00	Holder, fuse
	1-534-587-00	Card, power supply
	1-534-630-22	Cable, p-p
	1-536-296-00	Lug, terminal
	1-536-327-00	Lug 1L1, terminal
	1-543-040-00	Core
	8-735-200-05	Picture Tube, 330AB22

301



PP board



— Serial No. 24,701 and later —

SUPPLEMENT

No. 2
May 1972

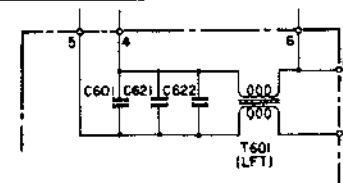
This supplement updates the service manual to include production changes starting with chassis number SCC-22A-A. File this supplement with the service manual.

- Subject:
1. Production Change of PP circuit board
 2. ANT circuit board for West Germany model
 3. Change of deflection yoke
 4. Cabinet for West Germany model

1. PRODUCTION CHANGE OF PP CIRCUIT BOARD

1-1. Netherlands, Sweden, Denmark and Finland Models

Ref. No.	~15,000	15,001~19,000	19,001~21,000	21,001~24,700	24,701 and later
T601(LFT)	○	—	○	○	—
C601	0.1μF/450V	0.1μF/450V	0.1μF/450V	0.22μF/250V	0.22μF/250V
C621	—	0.1μF/630V	—	—	—
C622	—	0.1μF/630V	0.1μF/630V	—	0.1μF/630V

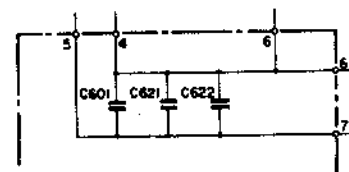


Note:

1. The mark ○ in this list indicates that the component is used and the mark — not used.
2. After serial number 24,701, two micro inductors are added. See diagrams on page 2 and 3.

1-2. Switzerland Model

Ref. No.	15,001~19,000	19,001~21,000	21,001~24,700	24,701 and later
T601(LFT)	—	—	—	—
C601	0.1μF/450V	—	0.22μF/250V	0.22μF/250V
C621	0.1μF/630V	—	—	—
C622	0.1μF/630V	—	0.1μF/630V	0.1μF/630V



Note:

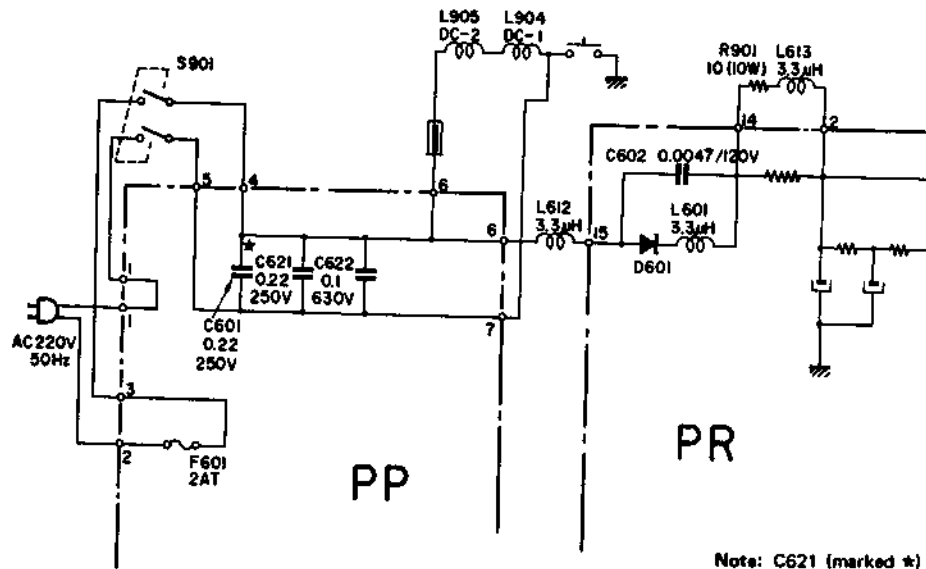
1. There is no Switzerland model between serial number 19,001 and 21,000.
2. The mark — in this list indicates that the component is not used.
3. After serial number 24,701, two micro inductors are added. See diagrams on page 2 and 3.

West Germany Model

The set for West Germany has serial number 24,701 and later.
See diagrams.

Partial Schematic Diagram

— Serial No. 24,701 and later —

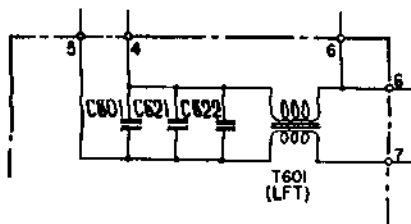


Note: C621 (marked *) is Norway model only.

C601	1-108-745-21	0.22	±20%	250WV	mylar
* C621	1-108-745-21	0.22	±20%	250WV	mylar
C622	1-129-739-00	0.1	±10%	630WV	film
L612	1-407-364-21	3.3μH			micro inductor
L613	1-407-364-21	3.3μH			micro inductor

Norway

Ref. No.	15,001~19,000	19,001~21,000	21,001~24,700	24,701 and later
T601(LFT)	○		○	—
C601	0.22μF/250V		0.22μF/250V	0.22μF/250V
C621	0.1μF/630V		—	0.22μF/250V
C622	0.22μF/250V		0.22μF/250V	0.1μF/630V



Note:

- There is no Norway model between serial number 19,001 and 21,000.
- The mark ○ in this list indicates that the component is used and the mark — not used.
- After serial number 24,701, two micro inductors are added. See diagrams on page 2 and 3.

Note: C621 is Norway model only.

ANT CIRCUIT BOARD FOR WEST GERMANY MODEL

ANT circuit board for West Germany model is the same with Norway model. T102 is added on the circuit board. See page 32 of *Service Manual KV-1300E* (Chassis No. SCC-22A-C, Serial No. 15,001 and later).

Parts	West Germany, Norway	Other Countries
ANT circuit board, complete	1-536-358-00	8-983-142-15
T102	1-417-040-00	omitted

CHANGE OF DEFLECTION YOKE

Deflection yoke is changed after serial number 19,001. Former deflection yoke can be replaced by the new type.

Former	New
1-451-076-11	1-451-091-00

CABINET FOR WEST GERMANY MODEL

In West Germany model, a new cabinet is used.

Parts	West Germany	Other Countries
Cabinet Ass'y	X-43065-10-0	X-43065-02-0
Rear Cover Ass'y	X-43065-09-0	X-43065-08-2

SUPPLEMENT

Subject: Electrical and Mechanical Changes

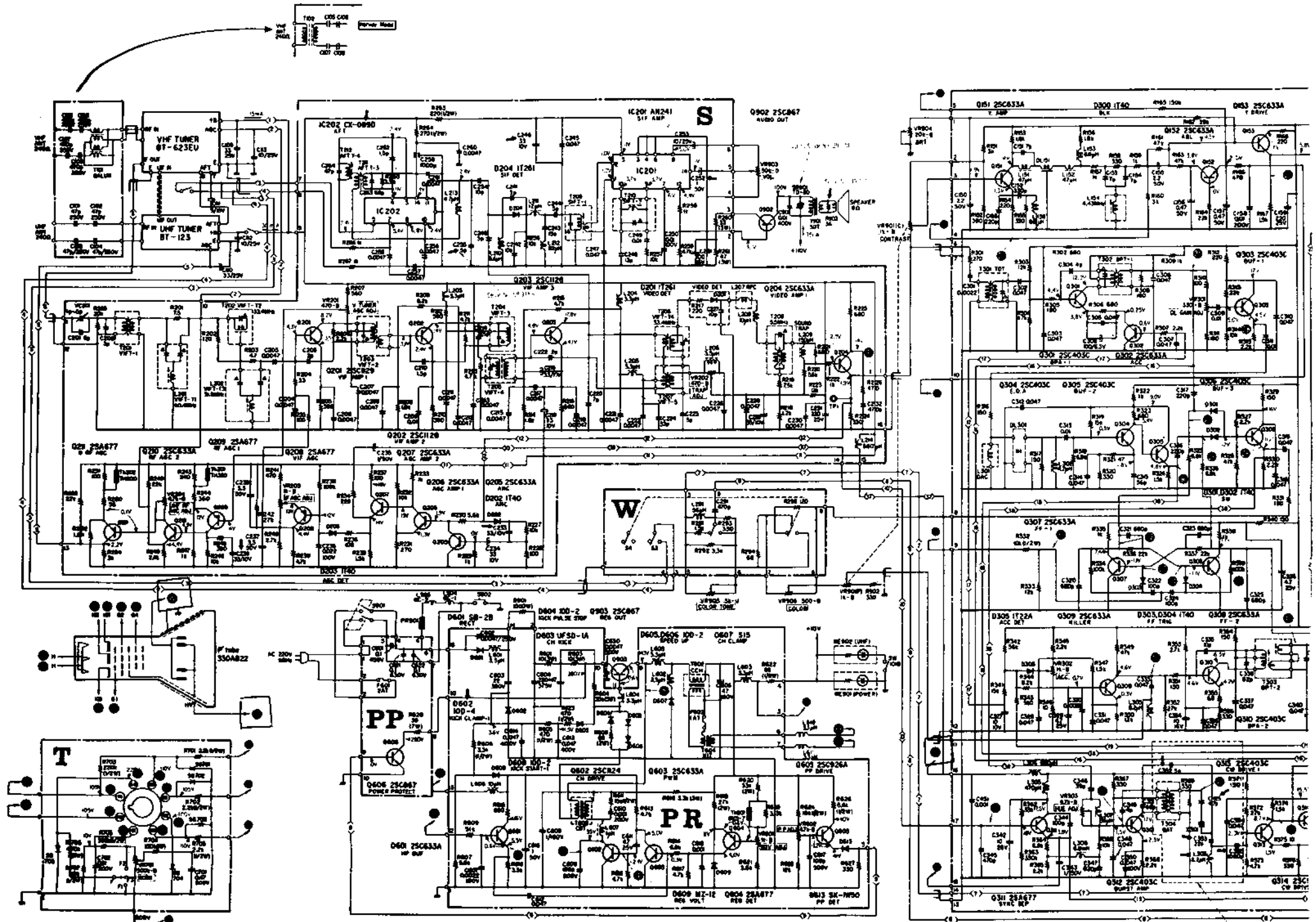
This supplement updates the service manual to include production changes on circuit and mechanical parts.
File this supplement with the service manual.

1. CHANGED PARTS LIST

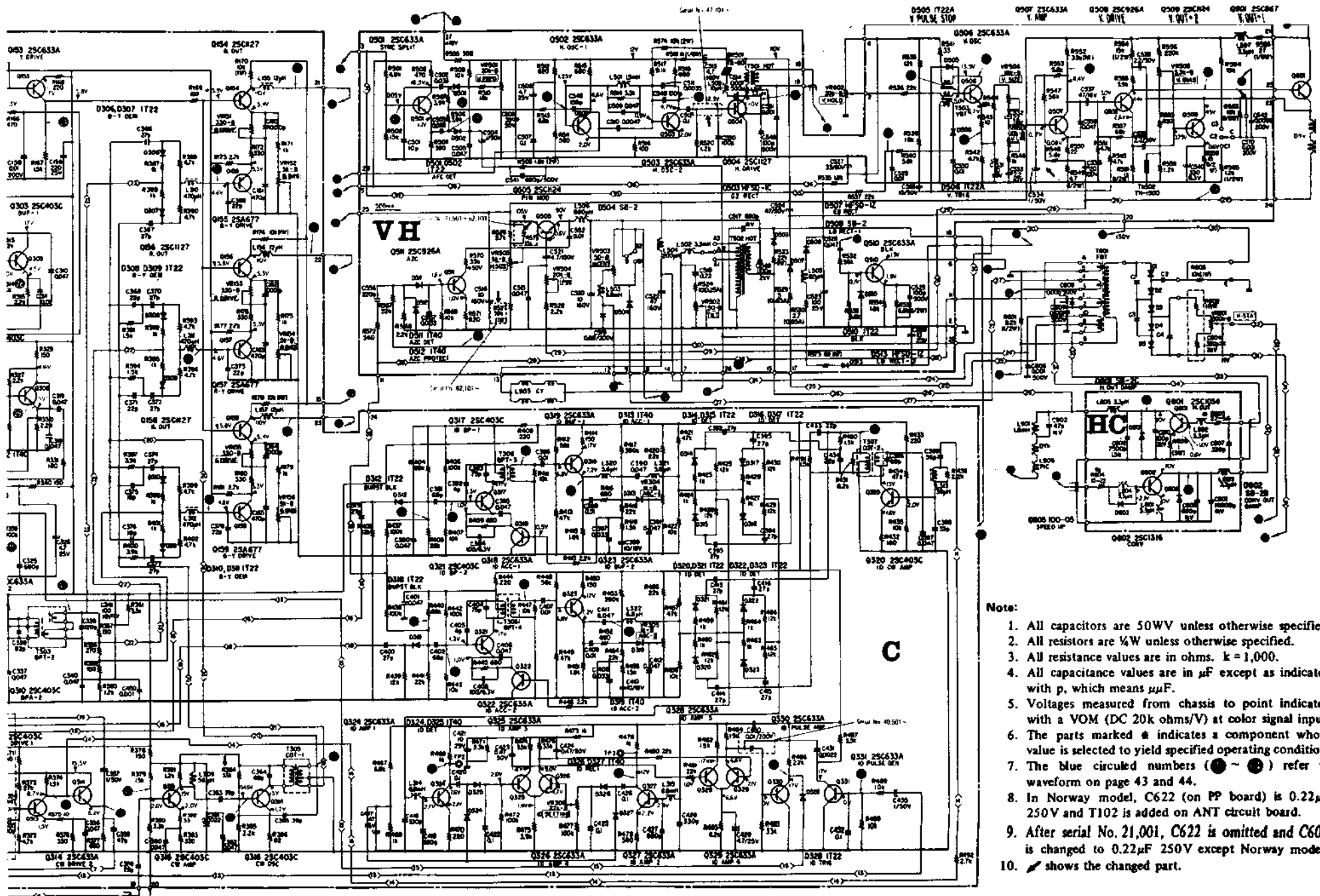
Ref. No.	Former Part Value	New Part No./ Part Value	Applicable Serial No./ Associated Circuit Board
C559	0.01 μ F/50V	-----	19,001 ~ , VH board
C570	-----	1-105-741-12 0.001 μ F \pm 10% 200V mylar	
*R370	270 ohm	-----	19,001 ~ , C board
R384	39k ohm	1-244-709-11 33k ohm	
R527	-----	1-244-701-11 15k ohm	23,501 ~ 62,100, VH board
^o R527	27k ohm	1-206-111-11 39k ohm 1W metal oxide	62,101 ~ , VH board
^o R575	15k ohm	-----	
R903	-----	1-244-643-11 56 ohm	39,001 ~ , speaker circuit

Ref. No.	Former Part Value	New Part No./ Part Value	Applicable Serial No./ Associated Circuit Board
IC202	M5134P	CX-089D	58,941 ~ , S board
D602	10D-2	10D-4	19,001 ~ , PR board
SR901	TD80	-----	39,000 ~ , Speaker circuit
L210	12 μ H	1-407-187-00 5.6 μ H	58,941 ~ , S board
L509	10 μ H	-----	47,701 ~ , VH board
*L308	15 μ H	1-407-189-00 8.2 μ H	19,001 ~ , C board
C233 C239 C246	33 μ F/16V	1-121-402-11 33 μ F \pm 18% 10V electrolytic	unknown S board
C252	10 μ F/25V	1-121-391-11 1 μ F \pm 18% 50V electrolytic	19,001 ~ , S board
*C352	4 pF	1-102-942-11 5 pF \pm 0.5 pF 50V ceramic	19,001 ~ , C board
*C353	12 pF	1-102-959-11 22 pF \pm 5% 50V ceramic	
*C355	120 pF	1-101-455-11 1000 pF \pm 20% 50V ceramic	
C430	0.47 μ F/50V electrolytic	1-106-753-12 0.01 μ F \pm 10% 200V mylar	40,501 ~ , C board
*C452	-----	1-101-880-11 47 pF \pm 5% 50V ceramic	19,001 ~ , C board

Note: All resistance values are in 5% \pm W carbon type unless otherwise indicated.
The parts marked * or ^o should be replaced altogether should replacement of any one of them be required.



See also the separate schematic sheets for the power transformer and the speaker.

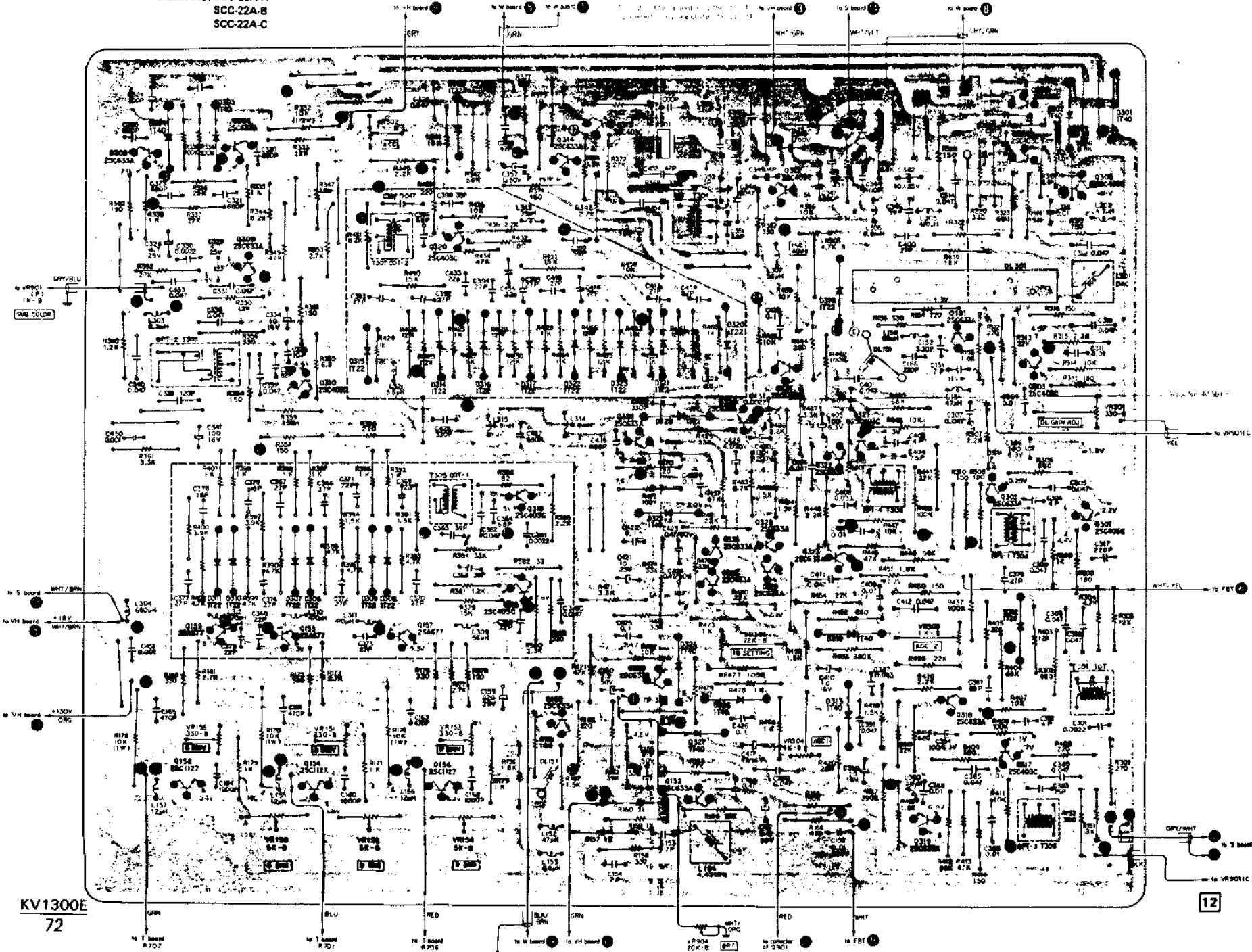


Note:

1. All capacitors are 50WV unless otherwise specified.
2. All resistors are 1/4W unless otherwise specified.
3. All resistance values are in ohms. $k = 1,000$.
4. All capacitance values are in μF except as indicated with p, which means μF .
5. Voltages measured from chassis to point indicated with a VOM (DC 20k ohms/V) at color signal input.
6. The parts marked # indicates a component whose value is selected to yield specified operating condition.
7. The blue circled numbers (●) refer to waveform on page 43 and 44.
8. In Norway model, C622 (on PP board) is $0.22\mu F$ 250V and T102 is added on ANT circuit board.
9. After serial No. 21,001, C622 is omitted and C601 is changed to $0.22\mu F$ 250V except Norway model.
10. / shows the changed part.

MOUNTING DIAGRAM - C Board -

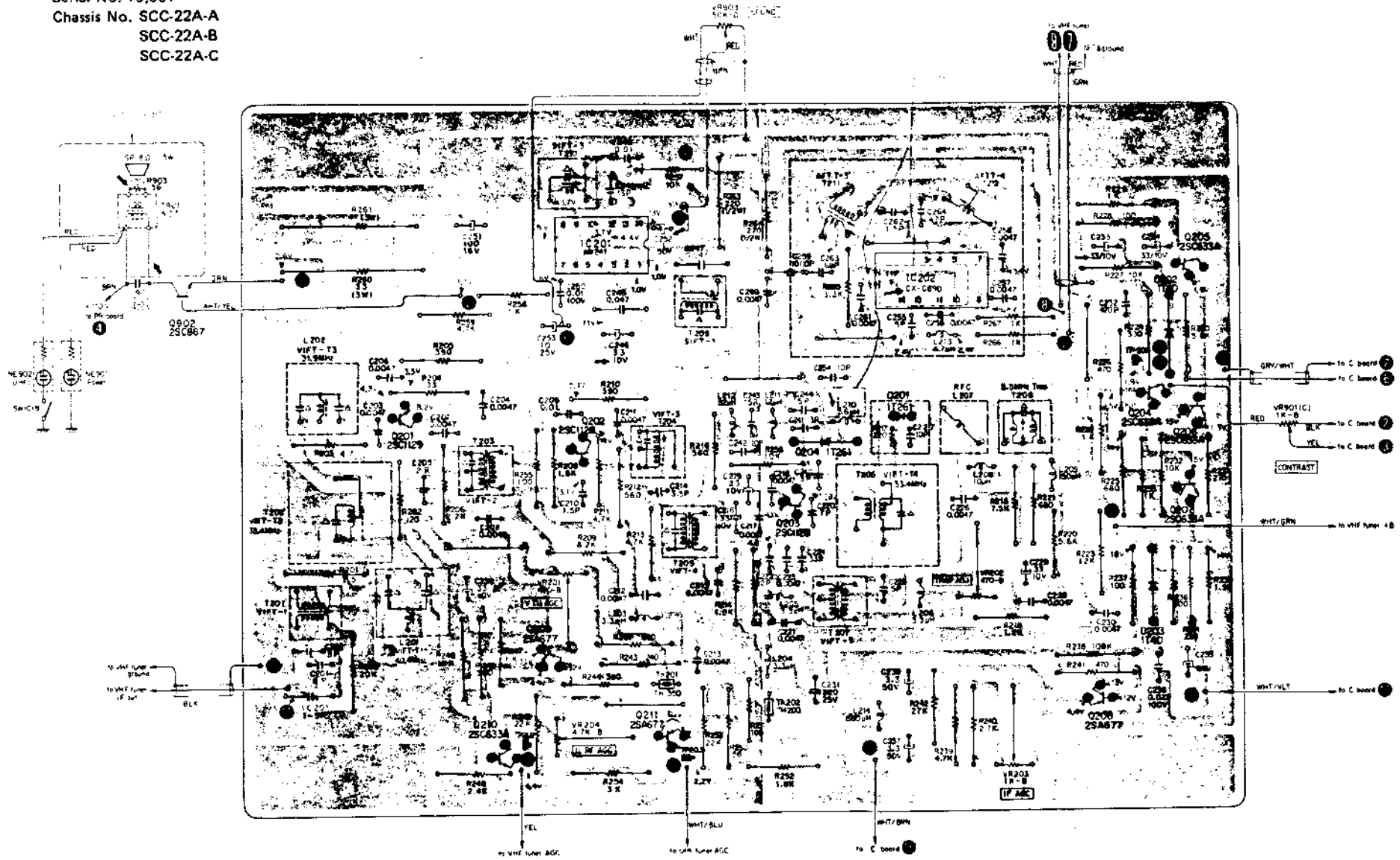
Serial No. 19,001-
 Chassis No. SCC-22A-A
 SCC-22A-B
 SCC-22A-C



Parts Location		
Q. IC	D	ADJ.
Q306	D301	
	D302	
Q313	D305	VR302
Q311	D304	
	D303	
Q307		
Q314		T304
Q304		
Q305		
Q312		
Q320		T307
		VR303
Q308		
	D318	L301
Q161	D314	
	D315	
Q303	D316	T303
Q331	D317	
Q310	D322	
	D323	
	D321	
	D320	
Q330	D328	VR301
Q324		
Q321		
Q322		
Q302		T308
Q316		T306
Q301	D325	
		T302
Q328	D311	
Q326	D310	
Q323	D307	
Q329	D308	
Q328	D309	
Q315	D308	
Q159	D312	
Q155	D319	
Q167		VR305
		VR306
	D324	
Q327		T301
Q318	D326	
Q153	D313	
	D327	VR155
		VR151
		VR153
		VR304
Q158		
Q154		
Q156		VR156
Q152		VR152
Q318		VR154
		T308
		L154

MOUNTING DIAGRAM - S Board -

Serial No. 19,001~
 Chassis No. SCC-22A-A
 SCC-22A-B
 SCC-22A-C

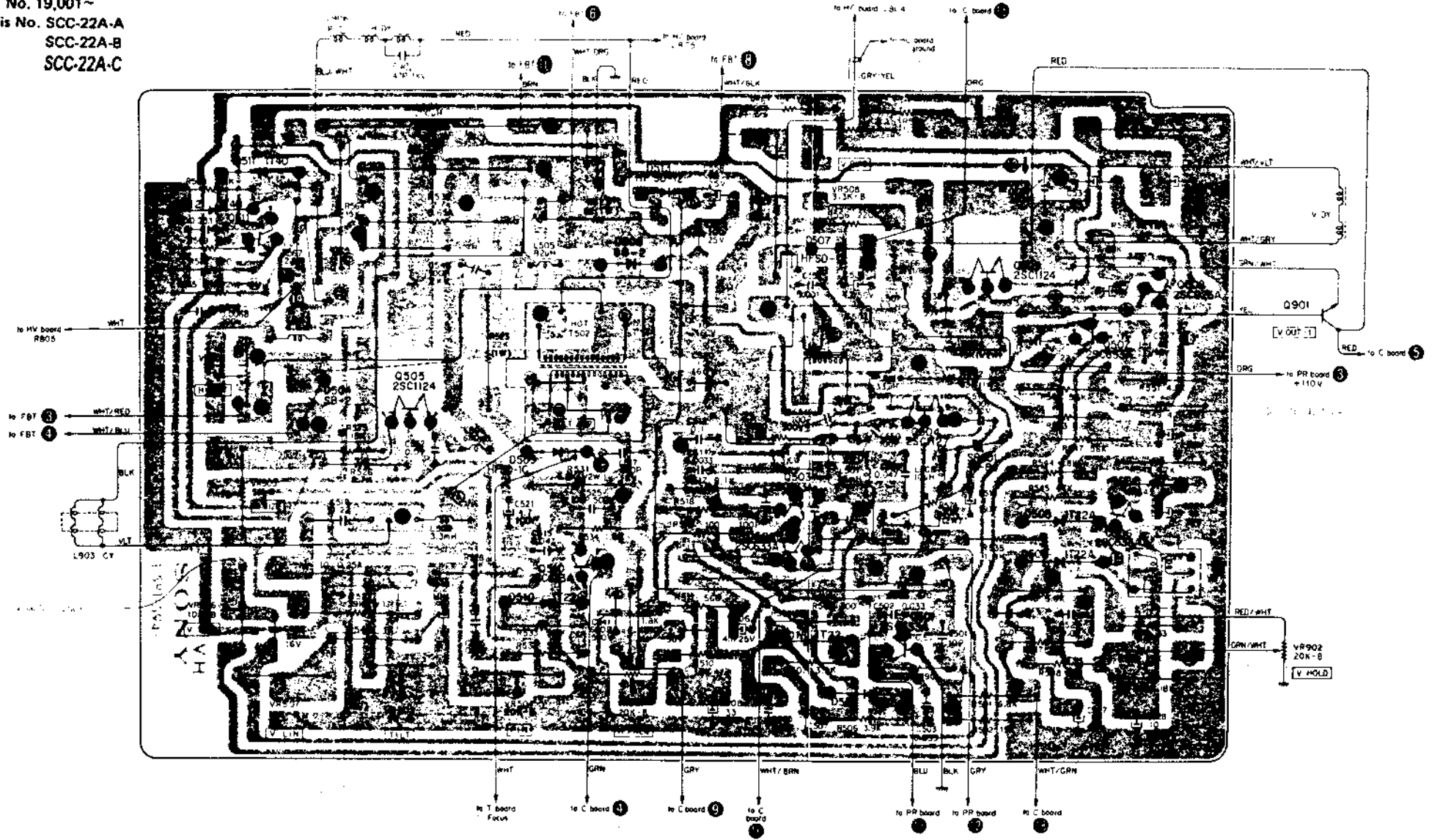


Parts Location

Q, IC	Q201	Q210	Q209	IC201	Q202	Q211	Q203	IC202	Q208	Q204	Q205	Q206	Q207
D							D204	D201		D202			
ADJ.	L202 T201 T202 VC201	L201	T203	T210 VR201 VR204	T204	T208 T205	T211 T207	T206	VR202	T208	VR203		

MOUNTING DIAGRAM - VH Board -

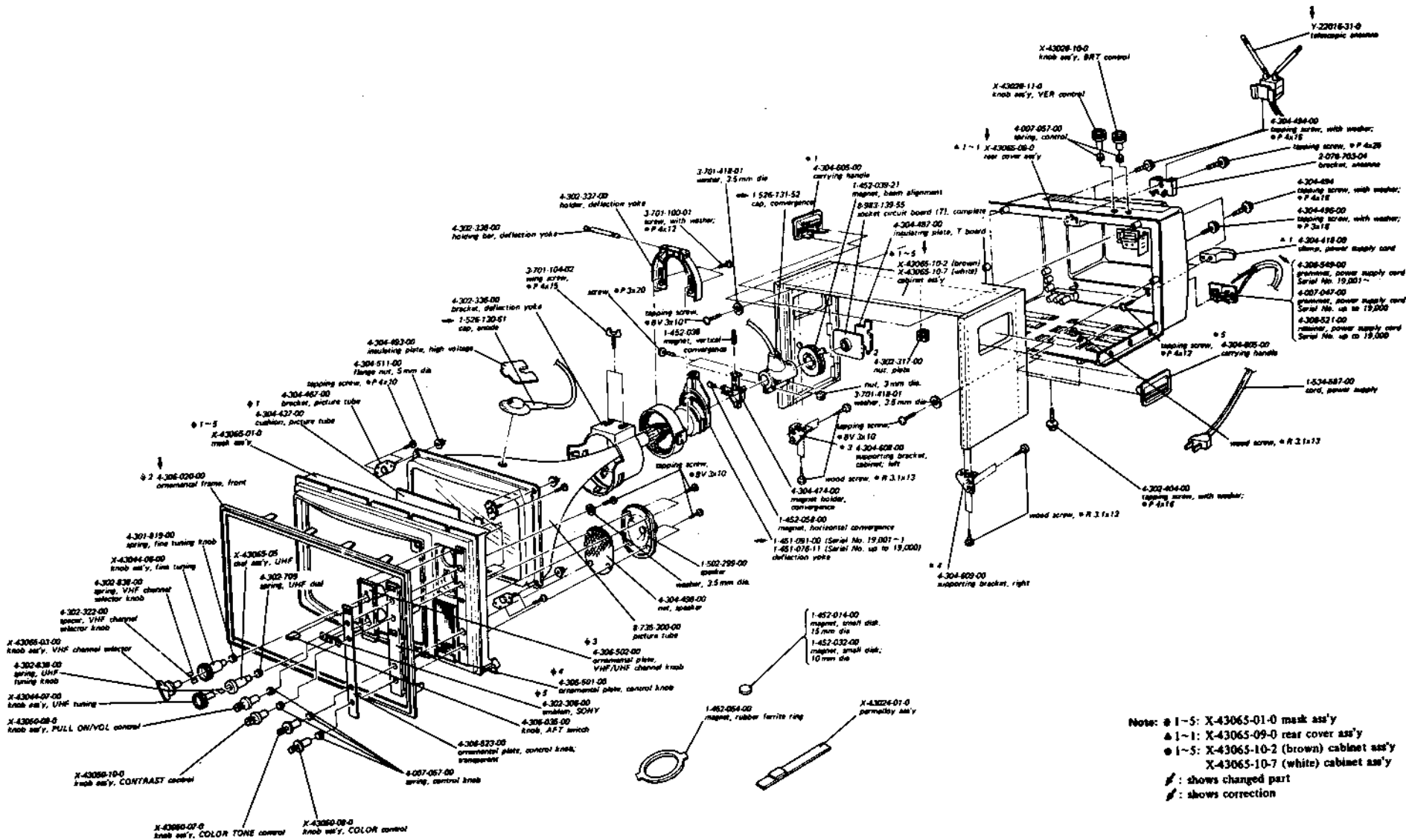
Serial No. 19,001~
 Chassis No. SCC-22A-A
 SCC-22A-B
 SCC-22A-C



Parts Location

Q	Q511	Q506	Q510	Q503 Q502	Q504	Q509	Q507 Q506	Q508
D	D512 D511	D504	D503 D510	D508 D513	D507	D501 D502	D505 D506	
ADJ	VR503 VR505 VR506 VR507	VR502	VR504	VR501	VR508			

EXPLODED VIEWS (1)



Note: # 1-5: X-43065-01-0 mask ass'y
 ▲ 1-1: X-43065-09-0 rear cover ass'y
 ● 1-5: X-43065-10-2 (brown) cabinet ass'y
 X-43065-10-7 (white) cabinet ass'y
 # : shows changed part
 / : shows correction

SUPPLEMENT

No. 4
April 1973

Subject: Electrical and Mechanical Changes

This supplement updates the service manual to include production changes covering Serial No. 69,249 ~ 71,249.
File this supplement with the service manual.

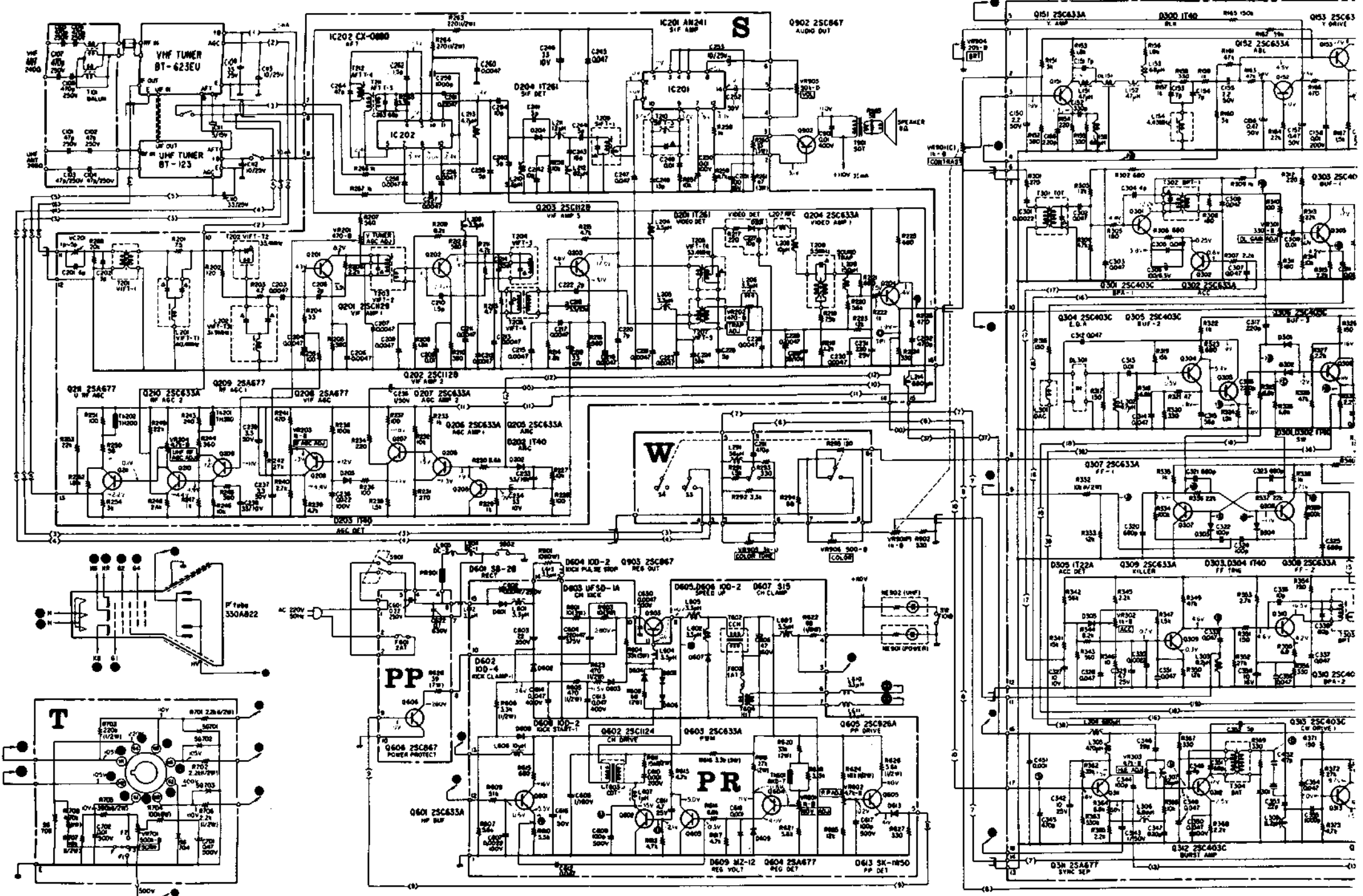
1. INTRODUCTION

The VH circuit board and deflection yoke have been changed in addition to some other electrical and mechanical changes.

2. CHANGED PARTS LIST

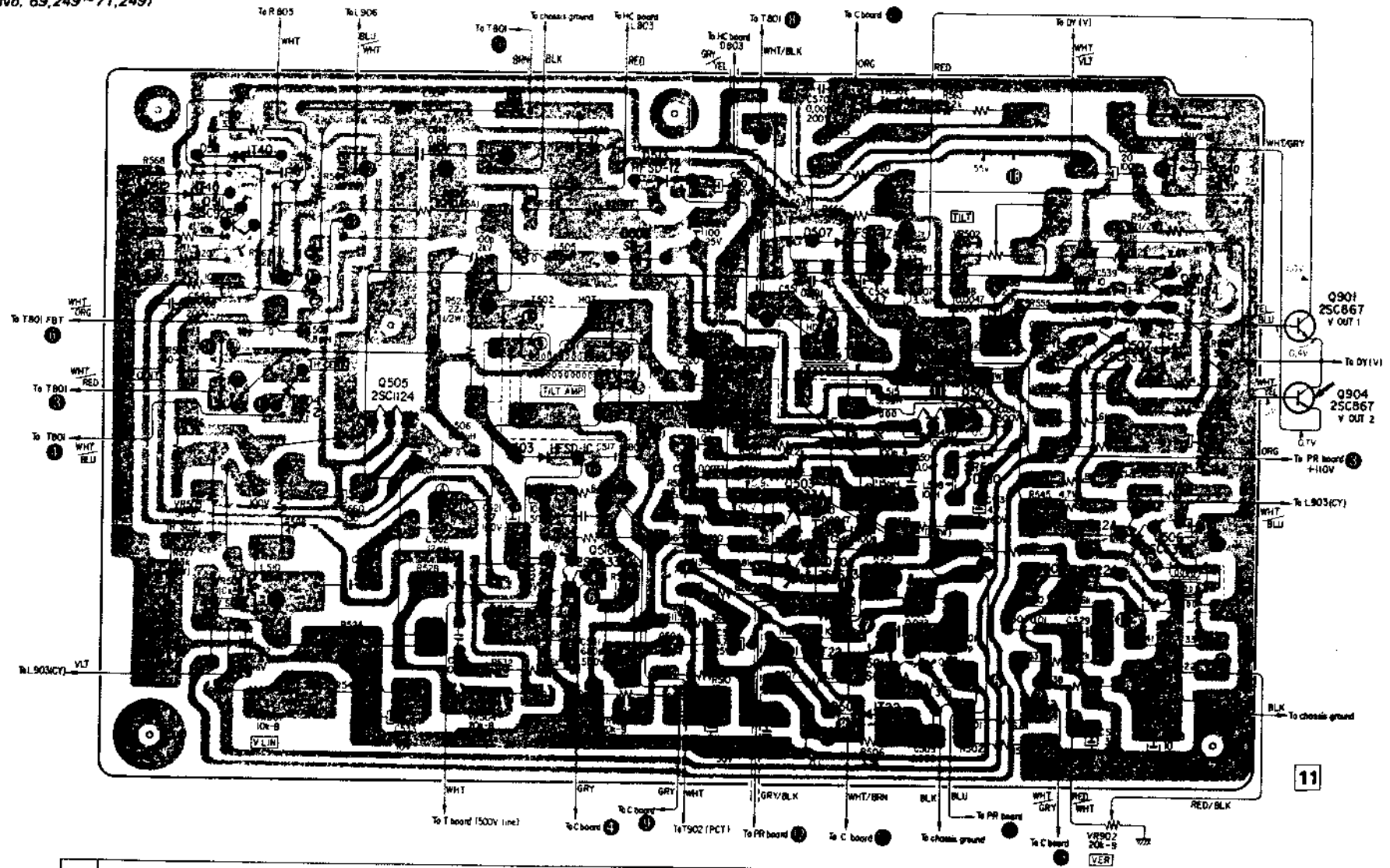
(Serial No. 69,249 ~ 71,249)

<i>Ref. No.</i>	<i>Former Part Value</i>	<i>New Part No./Part Value</i>
VH board	8-983-139-35	8-983-781-15
Q904	.....	2SC867
L907	.....	1-451-096-00 coil, phase adjustment; PAC
T902	.....	1-421-301-00 transformer, pincushion; PCT
C921	.....	1-108-632-11 0.33 μ F \pm 10% 100V mylar
R921	.....	1-244-673-11 1k Ω \pm 5% $\frac{1}{4}$ W carbon
R922	.....	1-244-673-11 1k Ω \pm 5% $\frac{1}{4}$ W carbon
R923	.....	1-244-703-11 18k Ω \pm 5% $\frac{1}{4}$ W carbon
DY	1-451-076-11	1-451-096-00 deflection yoke



MOUNTING DIAGRAM - VH Board -

(Serial No. 69,249 ~ 71,249)

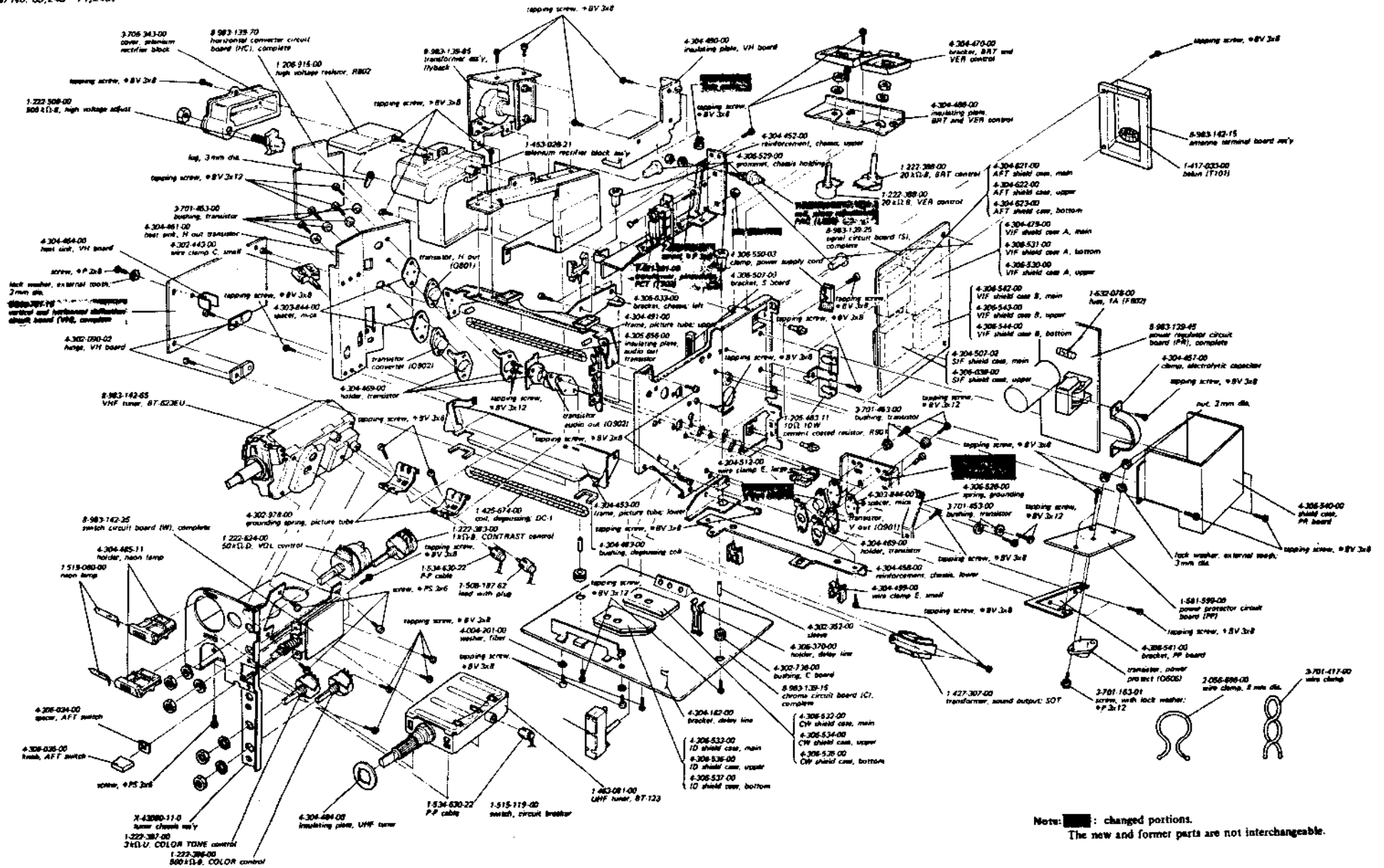



Q		Q505		Q510		Q503 Q502		Q504 Q501		Q507 Q506	Q508	Q901 Q904
D	D512	D511	D504	D503 D510	D508	D513	D507	D501 D502		D506 D508		
ADJ.	VR503 VR505 VR506 VR507			VR504		VR501		VR502			VR902	

Note: 1. The parts marked ■ are mounted on the conductor side.
 2. / shows the changed portion.

EXPLODED VIEW (2)

(Serial No. 69,249 - 71,249)



Note:  : changed portions.
 The new and former parts are not interchangeable.

NEW VH BOARD PARTS LIST

Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description	Ref. No.	Part No.	Description
SEMICONDUCTORS			CAPACITORS								
All the capacitors are in μF , 50V and ceramic unless otherwise noted. $p = \mu\text{mF}$.											
Q501		transistor 2SC633A	C501	1-102-947-11	10p $\pm 5\%$	C548	1-102-153-11	100p $\pm 20\%$ 2kV	R533	1-244-691-11	5.6k
Q502		transistor 2SC633A	C502	1-108-632-11	0.033 $\pm 10\%$ 100V mylar	C549	1-101-810-11	100p $\pm 5\%$ 500V	R534	1-244-679-11	1.8k
Q503		transistor 2SC633A	C503	1-108-632-11	0.033 $\pm 10\%$ 100V mylar	C550	1-102-973-11	100p $\pm 5\%$	R535	1-244-679-11	1.8k
Q504		transistor 2SC1127	C504	1-121-391-11	1 $\pm 15\%$ 50V electrolytic	C551	1-102-074-11	0.001 $\pm 10\%$	R536	1-244-705-11	22k
Q505		transistor 2SC1124	C505	1-108-634-11	0.047 $\pm 10\%$ 100V mylar	C552	1-101-004-11	0.01 $\pm 10\%$	R537	1-244-705-11	22k
Q506		transistor 2SC633A	C506	1-121-395-11	4.7 $\pm 15\%$ 25V electrolytic	C553	-----		R538	1-244-699-11	12k
Q507		transistor 2SC633A	C507	1-108-638-11	0.1 $\pm 10\%$ 100V mylar	C554	-----		R539	1-244-703-11	18k
Q508		transistor 2SC1124	C508	1-121-405-11	33 $\pm 10\%$ 50V electrolytic	C555	-----		R540	1-244-691-11	5.6k
Q509		-----	C509	1-106-212-12	0.047 $\pm 5\%$ 100V mylar	C556	1-102-978-11	220p $\pm 5\%$	R541	1-244-637-11	33
Q510		transistor 2SC633A	C510	1-106-188-12	0.0047 $\pm 5\%$ 100V mylar	C557	1-108-632-11	0.033 $\pm 10\%$ 100V mylar	R542	1-244-689-11	4.7k
Q511		transistor 2SC926A	C511	1-106-184-12	0.0033 $\pm 5\%$ 100V mylar	C558	1-121-398-11	10 $\pm 10\%$ 25V electrolytic	R543	1-244-625-11	10
D501		diode 1T22	C512	1-108-638-11	0.1 $\pm 10\%$ 100V mylar	C559	1-101-004-11	0.01 $\pm 10\%$	R544	1-244-679-11	1.8k
D502		diode 1T22	C513	1-121-246-11	4.7 $\pm 10\%$ 160V electrolytic	C560	1-121-656-11	330 $\pm 10\%$ 50V electrolytic	R545	1-244-713-11	47k
D503		diode HFSD-1C	C514	1-102-038-11	0.001 $\pm 10\%$ 500V	C561	1-105-713-12	0.01 $\pm 10\%$ 100V mylar	R546	1-244-673-11	1k
D504		diode SB-2	C515	1-105-729-13	0.22 $\pm 10\%$ 100V mylar	C562	1-108-704-11	0.1 $\pm 10\%$ 200V mylar	R547	1-244-715-11	56k
D505		diode 1T22A	C516	1-121-708-11	10 $\pm 10\%$ 160V electrolytic	RESISTORS					
D506		diode 1T22A	C517	1-102-219-11	680p $\pm 20\%$ 1kV	All the resistors are in ohms, $\pm 5\%$, $\frac{1}{2}\text{W}$ and carbon unless otherwise noted. $k = 1,000$ ohms.					
D507		diode HFSD-1Z	C518	1-106-212-12	0.047 $\pm 5\%$ 100V mylar	R501	1-244-693-11	6.8k	R548	1-244-691-11	5.6k
D508		diode SB-2	C519	1-108-549-11	0.68 $\pm 10\%$ 200V mylar	R502	1-244-701-11	15k	R549	1-207-471-11	4.7 $\frac{1}{2}\text{W}$ wirewound
D509		-----	C520	1-121-921-11	10 $\pm 10\%$ 160V electrolytic	R503	1-244-665-11	470	R550	1-244-633-11	22
D510		diode 1T22	C521	1-121-918-11	4.7 $\pm 10\%$ 100V electrolytic	R504	1-244-663-11	390	R551	1-244-689-11	4.7k
D511		diode 1T40	C522	1-121-919-11	47 $\pm 10\%$ 160V electrolytic	R505	1-244-660-11	300	R552	1-202-794-11	33k 1W composition
D512		diode 1T40	C523	1-121-416-11	100 $\pm 10\%$ 25V electrolytic	R506	1-244-687-11	3.9k	R553	1-244-691-11	5.6k
D513		diode HFSD-1Z	C524	1-121-396-11	4.7 $\pm 15\%$ 50V electrolytic	R507	1-244-687-11	3.9k	R554	1-244-899-11	12k $\frac{1}{2}\text{W}$
SR501	1-800-032-00	varistor TD-80	C525	1-101-810-11	100p $\pm 5\%$ 500V	R508	1-206-017-11	1.8k 2W metal oxide	R555	1-244-673-11	1k
			C526	1-108-634-11	0.047 $\pm 10\%$ 100V mylar	R509	1-244-697-11	10k	R556	1-244-717-11	68k
			C527	1-121-405-11	33 $\pm 10\%$ 50V electrolytic	R510	1-244-703-11	18k	R557	1-244-719-11	82k
			C528	1-121-738-11	10 $\pm 10\%$ 50V electrolytic	R511	1-244-667-11	560	R558	-----	
			C529	1-108-626-11	0.01 $\pm 10\%$ 100V mylar	R512	1-244-671-11	820	R559	-----	
			C530	1-108-626-11	0.01 $\pm 10\%$ 100V mylar	R513	1-244-693-11	6.8k	R560	1-244-657-11	220
			C531	1-131-158-11	10 $\pm 20\%$ 16V electrolytic	R514	1-244-685-11	3.3k	R561	1-244-873-11	1k $\frac{1}{2}\text{W}$
			C532	1-121-479-11	22 $\pm 10\%$ 16V electrolytic	R515	1-244-669-11	680	R562	-----	
			C533	1-127-024-11	2.2 $\pm 20\%$ 10V electrolytic (alox)	R516	1-244-649-11	100	R563	1-244-675-11	1.2k
						R517	1-244-696-11	9.1k	R564	1-244-899-11	12k $\frac{1}{2}\text{W}$
						R518	1-244-669-11	680	R565	1-244-897-11	10k $\frac{1}{2}\text{W}$
						R519	1-211-451-11	1k $\frac{1}{2}\text{W}$	R566	1-211-932-11	27 $\frac{1}{2}\text{W}$
						R520	1-244-675-11	1.2k	R567	1-244-705-11	22k
						R521	-----		R568	1-244-681-11	2.2k
						R522	-----		R569	1-244-697-11	10k
						R523	1-202-792-11	22k 1W composition	R570	1-244-709-11	33k
						R524	1-206-145-11	68 3W metal oxide	R571	1-244-671-11	820
						R525	-----		R572	1-244-667-11	560
						R526	1-244-683-11	2.7k	R573	1-206-080-11	82 1W metal oxide
						R527	1-206-110-11	33 1W metal oxide	R574	1-206-688-11	10k 2W metal oxide
						R528	1-244-681-11	2.2k	R575	1-244-675-11	1.2k
						R529	1-207-241-11	5 0.65 A fuse	R576	1-244-705-11	22k
						R530	1-207-982-11	2.7 0.65 A fuse	R577	1-244-681-11	2.2k
						R531	1-244-893-11	6.8k $\frac{1}{2}\text{W}$	R578	1-244-641-11	47
						R532	1-244-715-11	56k	R579	1-244-709-11	33k $\frac{1}{2}\text{W}$
									VR501	1-222-725-00	20k-B, adjustable (H FREQ control)
									VR502	1-223-019-00	300-B, adjustable (TILT control)
									VR503	1-223-017-00	50-B, adjustable (H CENT control)
									VR504	1-222-725-00	20k-B, adjustable (PIN control)
									VR505	1-222-344-00	5k-B, adjustable (H SIZE control)
									VR506	1-222-512-00	10k-B, adjustable (V SIZE control)
									VR507	1-222-512-00	10k-B, adjustable (V LIN control)