

COLOR MONITOR

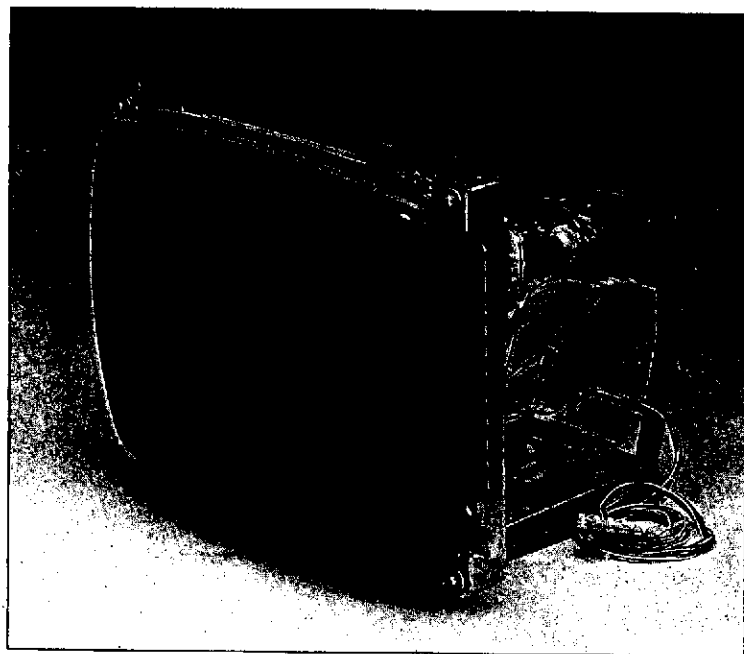
Instruction Manual (II)

19" Universal Monitor

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THE SOURCE™

Information in this publication current as of May, 1994.
Information subject to change as display technology advances.

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19" Universal Monitor (part No. 36-0236-00)

SAFETY PRECAUTIONS

1. High Voltage

This monitor contains high voltage capable of delivering lethal quantities of energy. Service should only be attempted by trained personnel familiar with the potential dangers inherent with high voltage equipment.

An isolation transformer must be used between the AC supply and the AC input of the monitor. The chassis and heat sink are directly connected to one side of the AC line, presenting an extreme shock hazard. Never attempt to service without the AC isolated.

2. X-radiation

The chassis of this monitor has been designed to emit a minimum of soft x-radiation, in accordance with internationally accepted standards. A special safety circuit guarantees horizontal oscillation shut-down should the high voltage exceed designed maximums.

3. CRT

The cathode ray tube is a highly evacuated component whose surfaces are subject to strong external pressures. Care must be exercised so as not to bump or scratch the CRT. Never handle the tube by its neck. Ensure the high voltage at the anode cap is fully discharged prior to handling or service.

SPECIFICATIONS

Input Voltage: 120VAC, +10%, -15%, 50/60Hz
Power Consumption: 70W nominal
Video Input: RGB Separate
Video Bandwidth: 8MHz
Synch Input: Separate Horizontal and Vertical
(negative or positive)
Composite Horizontal and Vertical
(negative or positive)
Scan Frequency: Horizontal 15.75KHz nominal
Vertical 50 or 60Hz nominal

OPERATING INSTRUCTIONS

1. Apply an isolated 120VAC power source to the monitor.
2. Apply signal source to the input signal connector, CT101 This monitor comes from the factory set up for negative going separate horizontal and vertical synch or negative going composite synch. To adjust synch polarity switches, SW301 and SW302.
3. Set operator adjustable controls to suit program material. All controls are preset at the factory, further adjustment may be necessary depending upon program material.

FUNCTION CONTROL DIAGRAM

Main PCB Controls

- Red Gain - R101
- Green Gain - R102
- Blue Gain - R103
- H-Position - R432
- H-Width Coil - L401
- V-Linearity - R225

Factory Sealed Controls

- X-Ray - R411
- B* - R603

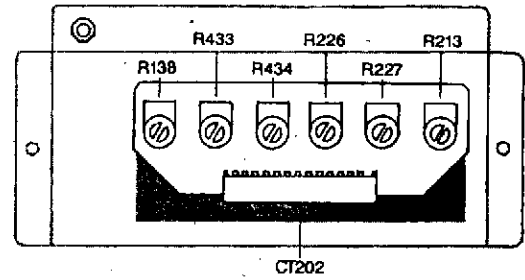
Video Control P.C Board

- Bright - R138
- H-Sub Positon - R433
- H-Hold - R434
- V-Hold - R226
- V-Height - R227
- V-Position - R213

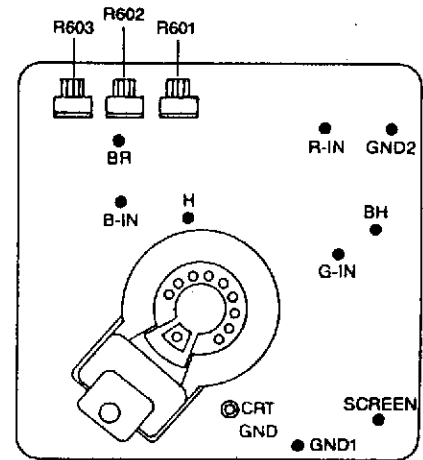
Neck Board Controls

- Red Bias - R601
- Green Bias - R602
- Blue Bias - R603

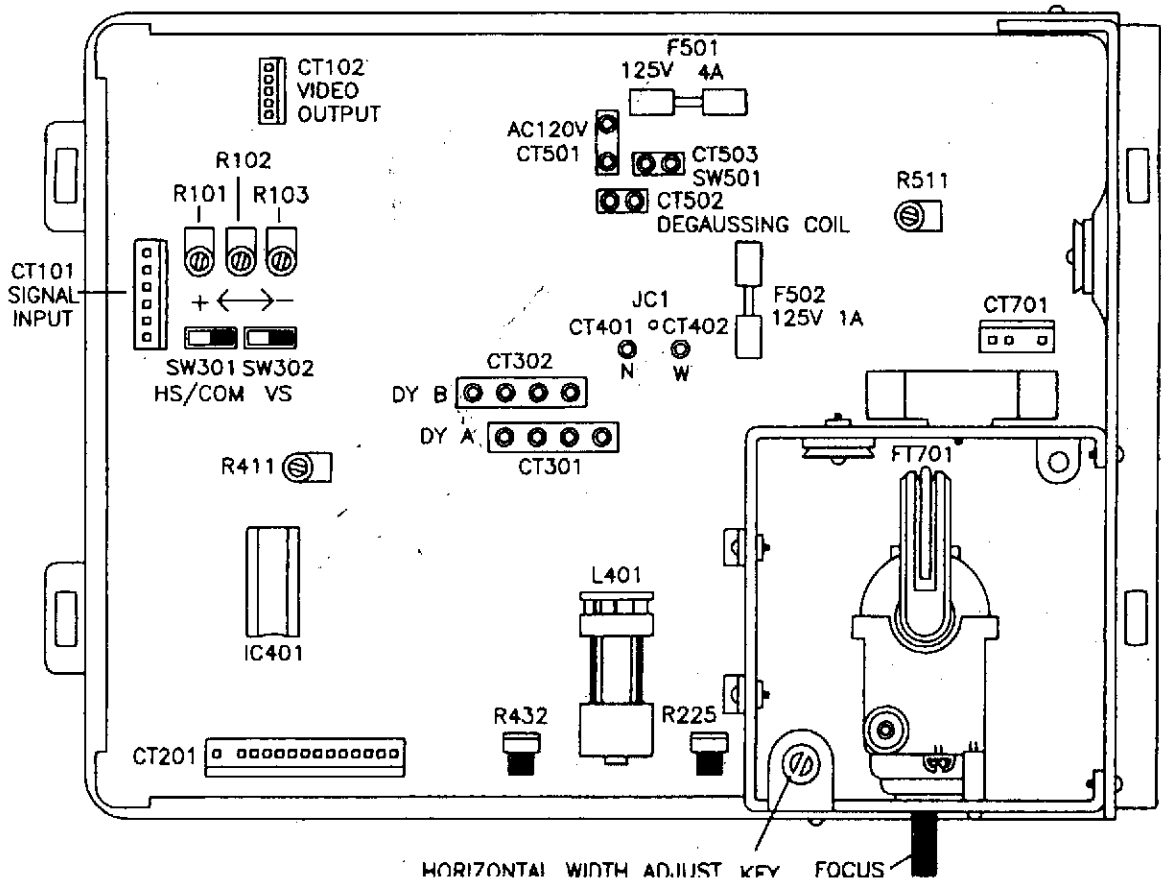
VIDEO CONTROL P.C. BOARD

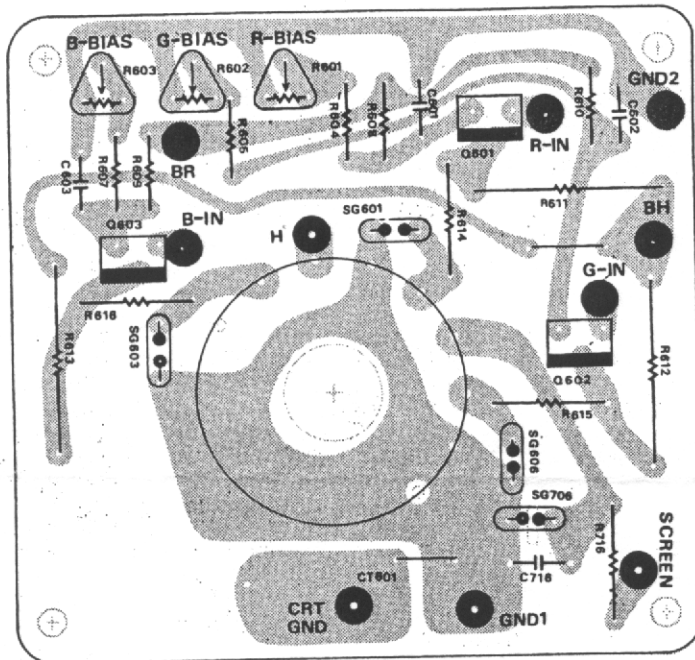


NECK BOARD PGB

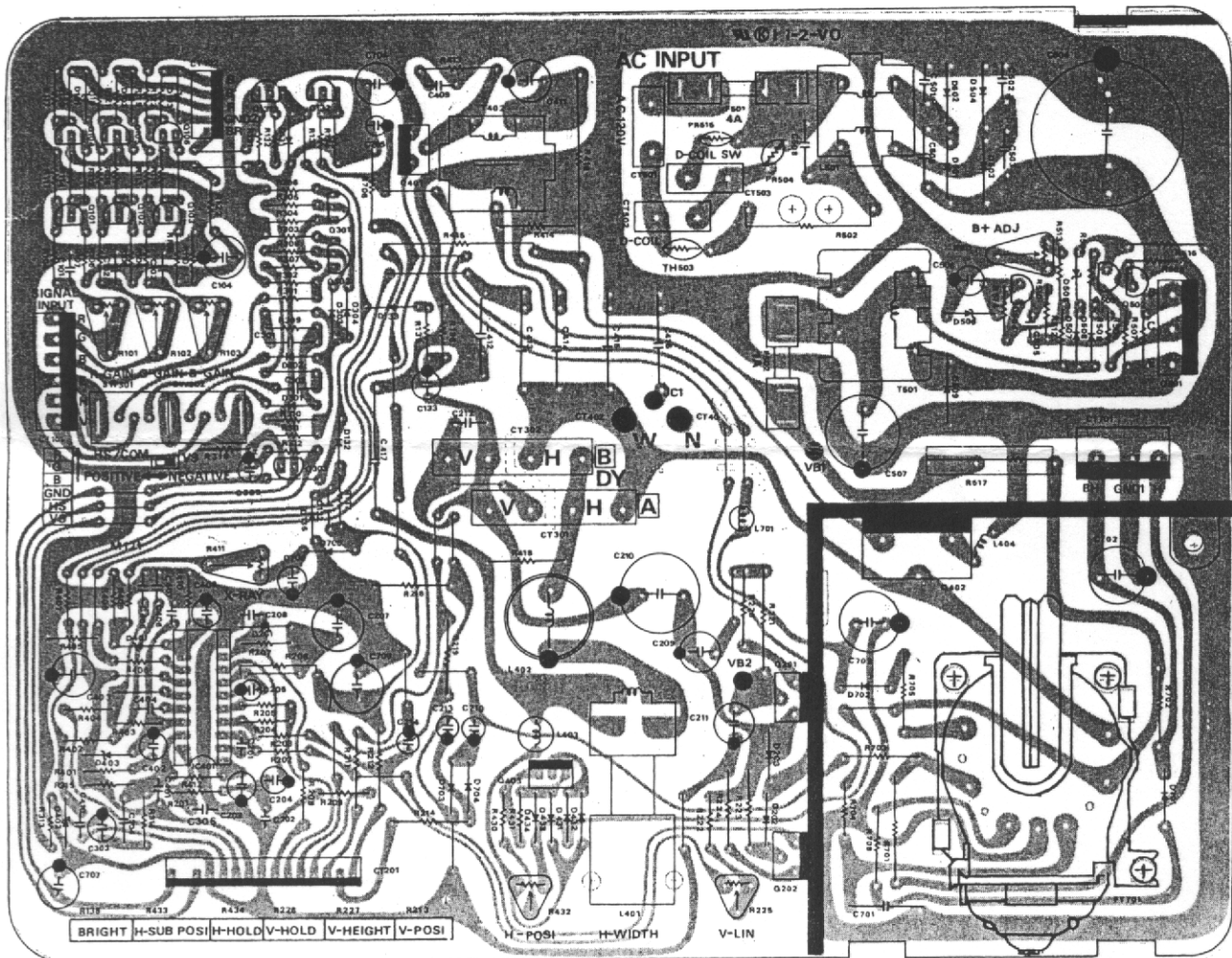


MAIN P.C. BOARD





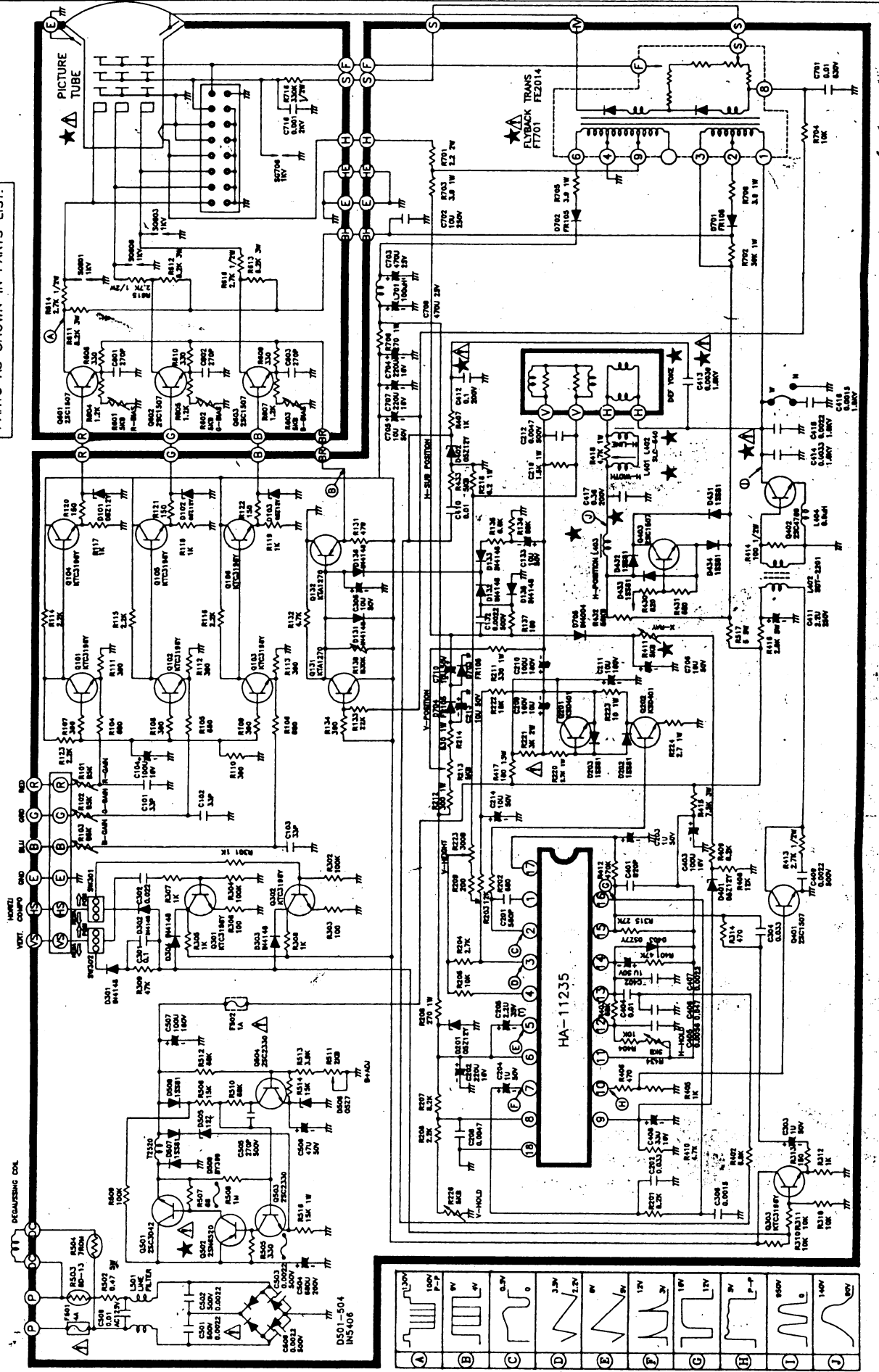
NECK P. C. BOARD (TOP VIEW)



MAIN P. C. BOARD (TOP VIEW)

SCHEMATIC DIAGRAM

CAUTION SAFETY CRITICAL COMPONENT.
X-RAY RADIATION-RELATED COMPONENT.
REPLACE ONLY WITH SAME TYPE.
PARTS AS SHOWN IN PARTS LIST.



202-250
 106-160
 C506
 C507

Ref. NO Part NO Description

RESISTORS

R104	10-168104	680 Ohm 1/4W Carbon
R105	10-168104	680 Ohm 1/4W Carbon
R106	10-168104	680 Ohm 1/4W Carbon
R107	10-139104	390 Ohm 1/4W Carbon
R108	10-139104	390 Ohm 1/4W Carbon
R109	10-139104	390 Ohm 1/4W Carbon
R110	10-139104	390 Ohm 1/4W Carbon
R111	10-139104	390 Ohm 1/4W Carbon
R112	10-139104	390 Ohm 1/4W Carbon
R113	10-139104	390 Ohm 1/4W Carbon
R114	10-122204	2.2 Kohm 1/4W Carbon
R115	10-122204	2.2 Kohm 1/4W Carbon
R116	10-122204	2.2 Kohm 1/4W Carbon
R117	10-110204	1 Kohm 1/4W Carbon
R118	10-110204	1 Kohm 1/4W Carbon
R119	10-110204	1 Kohm 1/4W Carbon
R120	10-115104	150 Ohm 1/4W Carbon
R121	10-115104	150 Ohm 1/4W Carbon
R122	10-115104	150 Ohm 1/4W Carbon
R123	10-122204	2.2 Kohm 1/4W Carbon
R131	10-147104	470 Ohm 1/4W Carbon
R132	10-147204	4.7 Kohm 1/4W Carbon
R133	10-122304	22 Kohm 1/4W Carbon
R134	10-139104	390 Ohm 1/4W Carbon
R135	10-168204	6.8 Kohm 1/4W Carbon
R136	10-168304	68 Kohm 1/4W Carbon
R137	10-118104	180 Ohm 1/4W Carbon
R201	10-182204	8.2 Kohm 1/4W Carbon
R202	10-168104	680 Ohm 1/4W Carbon
R203	10-112304	12 Kohm 1/4W Carbon
R204	10-127204	2.7 Kohm 1/4W Carbon
R205	10-110304	10 Kohm 1/4W Carbon
R206	10-247101	270 Ohm 1W Metal Oxide
R207	10-182204	8.2 Kohm 1/4W Carbon
R208	10-122204	2.2 Kohm 1/4W Carbon
R209	10-120104	200 Ohm 1/4W Carbon
R211	10-233101	330 Ohm 1W Metal Oxide
R212	10-233101	330 Ohm 1W Metal Oxide
R214	10-253101	530 Ohm 1W Metal Oxide
R218	10-262501	6.2 Ohm 1W Metal Oxide
R219	10-215201	1.5 Kohm 1W Metal Oxide
R220	10-227201	2.7 Kohm 1W Metal Oxide
R221	10-230202	3 Kohm 2W Metal Oxide
R222	10-118304	18 Kohm 1/4W Carbon
R223	10-201001	10 Ohm 1W Metal Oxide
R224	10-227501	2.7 Ohm 1W Metal Oxide
R301	10-110204	1 Kohm 1W Carbon
R302	10-110404	100 Kohm 1/4W Carbon

Ref. NO Part NO Description

RESISTORS

R303	10-110104	100 Ohm 1/4W Carbon
R304	10-110404	100 Kohm 1/4W Carbon
R305	10-110204	1 Kohm 1/4W Carbon
R306	10-110104	100 Ohm 1/4W Carbon
R307	10-110204	1 Kohm 1/4W Carbon
R308	10-110204	1 Kohm 1/4W Carbon
R309	10-147304	47 Kohm 1/4W Carbon
R310	10-110304	10 Kohm 1/4W Carbon
R311	10-110304	10 Kohm 1/4W Carbon
R312	10-110204	1 Kohm 1/4W Carbon
R313	10-115104	150 Ohm 1/4W Carbon
R314	10-147104	470 Ohm 1/4W Carbon
R315	10-127304	27 Kohm 1/4W Carbon
R318	10-110304	10 Kohm 1/4W Carbon
R401	10-147204	4.7 Kohm 1/4W Carbon
R402	10-168204	6.8 Kohm 1/4W Carbon
R403	10-168304	68 Kohm 1/4W Carbon
R404	10-110304	10 Kohm 1/4W Carbon
R405	10-110204	1 Kohm 1/4W Carbon
R406	10-147104	470 Ohm 1/4W Carbon
R407	10-110204	1 Kohm 1/4W Carbon
R408	10-112304	12 Kohm 1/4W Carbon
R409	10-182204	8.2 Kohm 1/4W Carbon
R410	10-147204	4.7 Kohm 1/4W Carbon
R412	10-147404	470 Kohm 1/4W Carbon
R413	10-127202	2.7 Kohm 1/2W Carbon
R414	10-110102	100 Ohm 1/2W Carbon
R415	10-275203	7.5 Kohm 3W Metal Oxide
R416	10-328205	2.8 Kohm 5W Cement
R417	10-318115	180 Ohm 15W Cement
R418	10-247201	4.7 Kohm 1W Metal Oxide
R430	10-182104	820 Ohm 1/4W Carbon
R431	10-168104	680 Ohm 1/4W Carbon
R502	10-247905	0.47 Ohm 1/4W Cement
R503	10-600013	Thermistor 8D-13
R504	10-600207	7 Rom Posistor
R505	10-733104	330 Ohm 1/4W Fuse
R506	10-115304	15 Kohm 1/4W Carbon
R507	10-768104	68 Ohm 1/4W Fuse
R508	10-110504	1 Mohm 1/4W Carbon
R509	10-110404	100 Kohm 1/4W Carbon
R510	10-168204	68 Kohm 1/4W Carbon
R512	10-168304	68 Kohm 1/4W Carbon
R513	10-139204	3.9 Kohm 1/4W Carbon
R514	10-115304	15 Kohm 1/4W Carbon
R516	10-215304	15 Kohm 1W Metal Oxide
R517	10-350805	5 Ohm 5W Cement
R604	10-112204	1.2 Kohm 1/4W Carbon

REPLACEMENT PARTS LIST

Ref. NO Part NO Description

RESISTORS

R605	10-112204	1.2 Kohm 1/4W Carbon
R607	10-112204	1.2 Kohm 1/4W Carbon
R608	10-133104	330 Ohm 1/4W Carbon
R609	10-133104	330 Ohm 1/4W Carbon
R610	10-133104	330 Ohm 1/4W Carbon
R611	10-282203	8.2 Kohm 3W Metal Oxide
R612	10-282203	8.2 Kohm 3W Metal Oxide
R613	10-282203	8.2 Kohm 3W Metal Oxide
R614	10-127202	2.7 Kohm 1/2W Carbon
R615	10-127202	2.7 Kohm 1/2W Carbon
R616	10-127202	2.7 Kohm 1/2W Carbon
R701	10-222202	2.2 Ohm 2W Metal Oxide
R702	10-239301	39 Kohm 1W Metal Oxide
R703	10-239501	3.9 Ohm 1W Metal Oxide
R704	10-110304	10 Kohm 1/4W Carbon
R705	10-239501	3.9 Ohm 1W Metal Oxide
R706	10-227101	270 Ohm 1W Metal Oxide
R708	10-239501	3.9 Ohm 1W Metal Oxide
R716	10-133402	330 Kohm 1/2W Carbon

SEMI-FIXED RESISTOR

R101	10-492502	92E 5 Kohm B
R102	10-492502	92E 5 Kohm B
R103	10-492502	92E 5 Kohm B
R138	10-492303	92E 30 Kohm B
R213	10-492502	92E 5 Kohm B
R226	10-492502	92E 5 Kohm B
R227	10-492301	92E 300 Ohm B
R411	10-492502	92E 5 Kohm B
R432	10-417503	117E 50 Kohm B
R433	10-492502	92E 5 Kohm B
R434	10-492502	92E 5 Kohm B
R511	10-492202	92E 2 Kohm B
R601	10-417502	117E 5 Kohm B
R602	10-417502	117E 5 Kohm B
R603	10-417502	117E 5 Kohm B

CAPACITORS

C101	11-105330	33pF 50V Ceramic
C102	11-105330	33pF 50V Ceramic
C103	11-105330	33pF 50V Ceramic
C104	11-416101	100 μ F 16V Electrolytic
C132	11-150222	0.0022 μ F 500V Ceramic
C133	11-405105	10 μ F 50V Electrolytic
C201	11-105561	560pF 50V Ceramic
C202	11-305333	0.033 μ F 50V Mylar

Ref. NO Part NO Description

CAPACITORS

C203	11-405105	1 μ F 50V Electrolytic
C204	11-405105	1 μ F 50V Electrolytic
C205	11-252223	2.2 μ F 35V Tantal
C207	11-416227	220 μ F 16V Electrolytic
C208	11-305472	0.0047 μ F 50V Mylar
C209	11-416106	10 μ F 160V Electrolytic
C210	11-416107	100 μ F 160V Electrolytic
C211	11-416106	10 μ F 160V Electrolytic
C212	11-150472	0.0047 μ F 500V Ceramic
C213	11-405106	10 μ F 50V Electrolytic
C214	11-405106	10 μ F 50V Electrolytic
C301	11-305104	0.1 μ F 50V Mylar
C302	11-305223	0.022 μ F 50V Mylar
C303	11-405105	1 μ F 50V Electrolytic
C304	11-305333	0.033 μ F 50V Mylar
C305	11-405105	10 μ F 50V Electrolytic
C306	11-305152	0.0015 μ F 50V Mylar
C401	11-105821	820 pF 50V Ceramic
C402	11-405105	1 μ F 50V Electrolytic
C403	11-416101	100 μ F 16V Electrolytic
C404	11-305103	0.01 μ F 50V Mylar
C405	11-310562	0.0056 μ F 100V Mylar
C406	11-305473	0.047 μ F 50V Mylar
C407	11-105222	0.002 μ F 500V Ceramic
C408	11-416336	33 μ F 16V Electrolytic
C409	11-150222	0.0021 μ F 500V Ceramic
C410	11-305101	0.01 μ F 50V Mylar
C411	11-425225	2.2 μ F 250V Electrolytic
C412	11-502104	0.1 μ F 200V P.P
C413	11-516392	0.0039 μ F 1.6KV P.P
C414	11-516333	0.0033 μ F 1.6KV P.P
C415	11-516333	0.0022 μ F 1.6KV P.P
C416	11-516152	0.0015 μ F 1.6KV P.P
C417	11-502364	0.36 μ F 200V P.P
C501	11-150222	0.0022 μ F 500V Ceramic
C502	11-150222	0.0022 μ F 500V Ceramic
C503	11-150222	0.0022 μ F 500V Ceramic
C504	11-412687	680 μ F 200V Electrolytic
C505	11-116277	270 pF 500V Electrolytic
C506	11-405476	47 μ F 50V Electrolytic
C507	11-416107	100 μ F 160V Electrolytic
C508	11-112103	0.01 μ F AC125V Ceramic
C509	11-150222	0.0022 μ F 500V Ceramic
C601	11-116271	270 pF 50V Ceramic
C602	11-116271	270 pF 50V Ceramic
C603	11-116271	270 pF 50V Ceramic
C701	11-506103	0.01 μ F 630V P.P
C702	11-425106	10 μ F 250V Electrolytic

Ref. NO Part NO Description

CAPACITORS

C703	11-425477	470 μ F 25V Electrolytic
C704	11-416227	220 μ F 16V Electrolytic
C705	11-405106	10 μ F 50V Electrolytic
C706	11-425106	10 μ F 250V Electrolytic
C707	11-416227	220 μ F 16V Electrolytic
C708	11-425477	470 μ F 25V Electrolytic
C710	11-405106	10 μ F 50V Electrolytic
C716	11-120102	0.001 μ F 2KV Ceramic

SEMICONDUCTORS

Q101	12-323198	KTC3198 Transistor
Q102	12-323198	KTC3198 Transistor
Q103	12-323198	KTC3198 Transistor
Q104	12-323198	KTC3198 Transistor
Q105	12-323198	KTC3198 Transistor
Q106	12-323198	KTC3198 Transistor
Q131	12-121270	KTA1270 Transistor
Q132	12-121270	KTA1270 Transistor
Q201	12-420401	KSD401 Transistor
Q202	23-420401	KSD401 Transistor
Q301	12-323198	KTC3198 Transistor
Q302	12-323198	KTC3198 Transistor
Q303	12-323198	KTC3198 Transistor
Q401	12-321507	2SC1507 Transistor
Q402	12-424769	2SC4769 Transistor
Q403	12-321507	2SC1507 Transistor
Q501	12-323042	2SC3042 Transistor
Q502	12-526520	2SCN6520 Transistor
Q503	12-322271	2SC2271 Transistor
Q504	12-322271	2SC2271 Transistor
Q601	12-321507	2SC1507 Transistor
Q602	12-321507	2SC1507 Transistor
Q603	12-321507	2SC1507 Transistor
D101	12-605012	05Z 12Y Zener Diode
D102	12-605012	05Z 12Y Zener Diode
D103	13-605012	05Z 12Y Zener Diode
D131	12-514148	1N4148 Diode
D132	12-514148	1N4148 Diode
D133	12-514148	1N4148 Diode
D135	12-514148	1N4148 Diode
D136	12-514148	1N4148 Diode
D201	12-605012	05Z 12Y Zener Diode
D202	12-800181	1SS81 Diode
D203	12-800181	1SS81 Diode
D301	12-514148	1N4148 Diode
D302	12-514148	1N4148 Diode
D303	12-514148	1N4148 Diode

Ref. NO Part NO Description

SEMICONDUCTORS

D304	12-514148	1N4148 Diode
D401	12-605012	05Z 12Y Zener Diode
D402	12-605012	05Z 12Y Zener Diode
D403	12-605007	05Z 07Y Zener Diode
D431	12-800181	1SS81 Diode
D432	12-800181	1SS81 Diode
D433	12-800181	1SS81 Diode
D434	12-800181	1SS81 Diode
D501	12-515406	1N5406 Diode
D502	12-515406	1N5406 Diode
D503	12-515406	1N5406 Diode
D504	12-515406	1N5406 Diode
D505	12-604012	12Y Zener Diode
D506	12-605007	05Z 07Y Zener Diode
D507	12-800181	1SS81 Diode
D508	12-800181	1SS81 Diode
D509	12-800399	BY3899 Diode
D701	12-700105	FR105 Diode
D702	12-700105	FR105 Diode
D703	12-700105	FR105 Diode
D704	12-700105	FR105 Diode
D705	12-514004	1N4004 Diode
IC401	12-911325	HA11325 IC

TRANSFORMER & COIL

T402	13-300100	Drive Transformer SDT-2201
L401	13-300200	Horizontal Width Coil
L402	12-300300	Linearity Coil
L403	13-300401	502 μ H Choke Coil
L404	13-300402	0.6 μ H Choke Coil
T501	13-300500	Pulse Transformer T-2520
L501	13-300600	800 μ H Line Filter
L701	13-300403	100 μ H Choke Coil
FT701	13-300720	F.B.T for 19 FE2014

COLOR PICTURE TUBE

P101	18-301020	19" CRT&DY
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MISCELLANEOUS

F501	20-125004	125V 4Amp Fuse
F502	20-125001	125V 4Amp Fuse
SG601	21-100100	1KV Spark Gap
SG603	21-100100	1KV Spark Gap
SG606	21-100100	1KV Spark Gap
SG706	21-100100	1KV Spark Gap