INSTRUCTION AND SERVICE MANUAL

ELECTROHOME ELECTRONICS

G07-901 R.G.B. COLOR MONITOR

Gremlin
Manual Part No.
420-0486

THIS INFORMATION IS UP TO DATE AS OF DECEMBER 1979

Operating Instructions

1. Apply a suitable power source to the monitor through an isolation transformer by means of P901.
2. Apply a suitable signal source to the monitor PCB by means of J201.
3. Set up Controls
   All controls are preset at the factory, but may be adjusted to suit program material. Refer to pages 6 and 8 (WHITE BALANCE AND GRAY SCALE TRACKING)

Performance and Operating Data

1.0 Supply

Voltage	108 VAC - 132 VAC
Frequency	44 Hz - 63 Hz

Note: Apply supply voltage through an isolation transformer with 1 Amp. capability.

2.0 High Voltage (EHT)

For 19″V models	22.5KV - 25.5 KV

Note: Condition for above I (beam) = 0
B_1 = 120V

3.0 Input Signal and Pin Assignments for J201

Pin No.	Description	Impedance	Signal Range
1	Red input	5K nom.	0 to 4V
2	Green input	5K nom.	0 to 4V
3	Blue input	5K nom.	0 to 4V
4	Ground		
5	Vertical sync pulse	35K nom.	+2V to +4V
6	Horizontal sync pulse	35K nom.	+2V to +4V

4. Service Set-Up Controls

4.1 B1 adjustment, R909 - Set for B1 = 120V DC

4.2 Vertical hold control, R302

4.3 Horizontal hold control, R504

4.4 Vertical size control, R408

4.5 Vertical centering tabs, 3 positions

4.6 CRT cut off controls (See fig. 3)

- Red cut off, R114
- Green cut off, R115
- Blue cut off, R113

4.7 Screen control (G2) R124 (See fig. 3)

4.8 Video drive controls (See fig. 3)

- Red drive, R105
- Green drive, R106

4.9 Horizontal width coil, L503

4.10 Focus control, R1

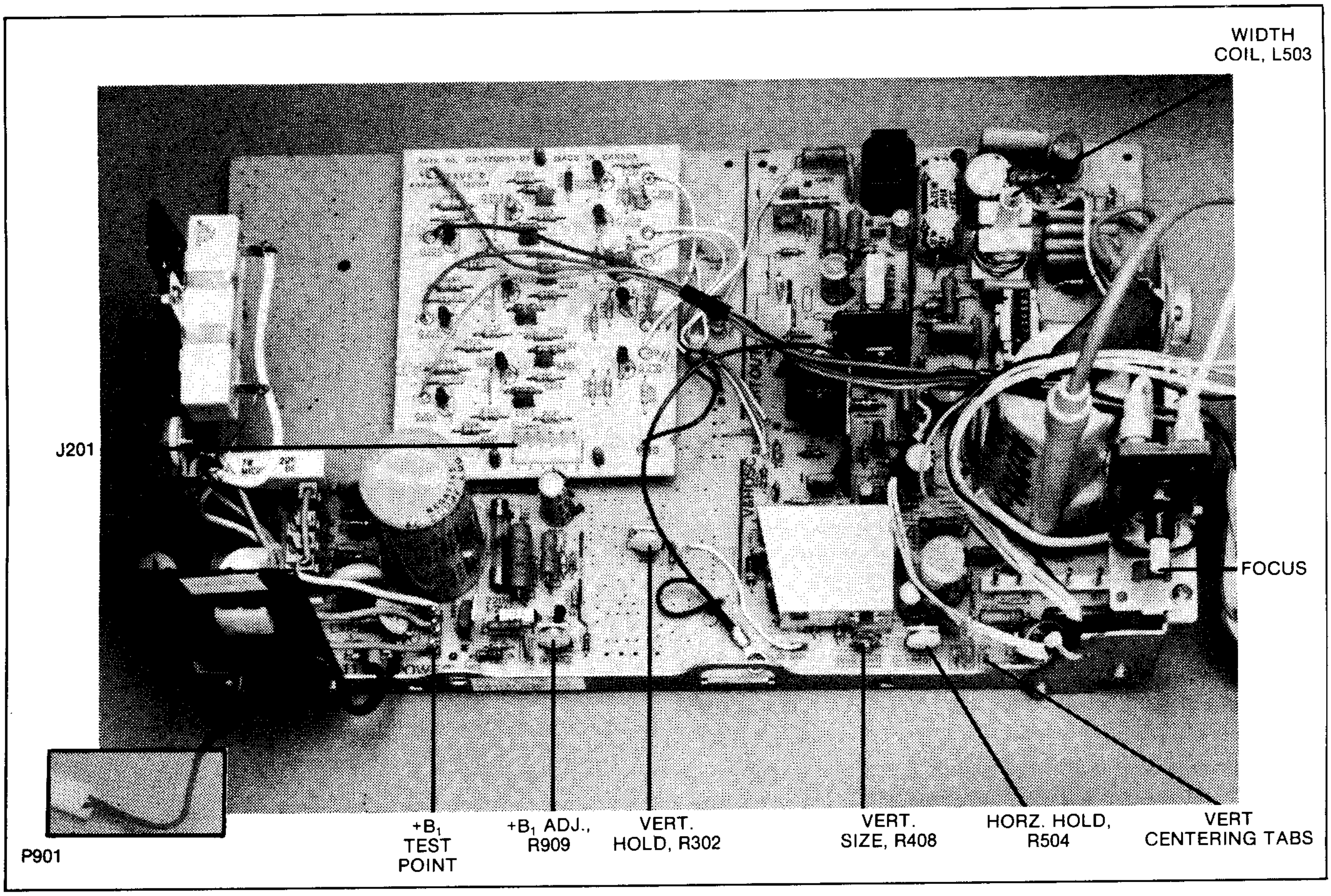


Figure 1

Product Safety and Servicing Guidelines

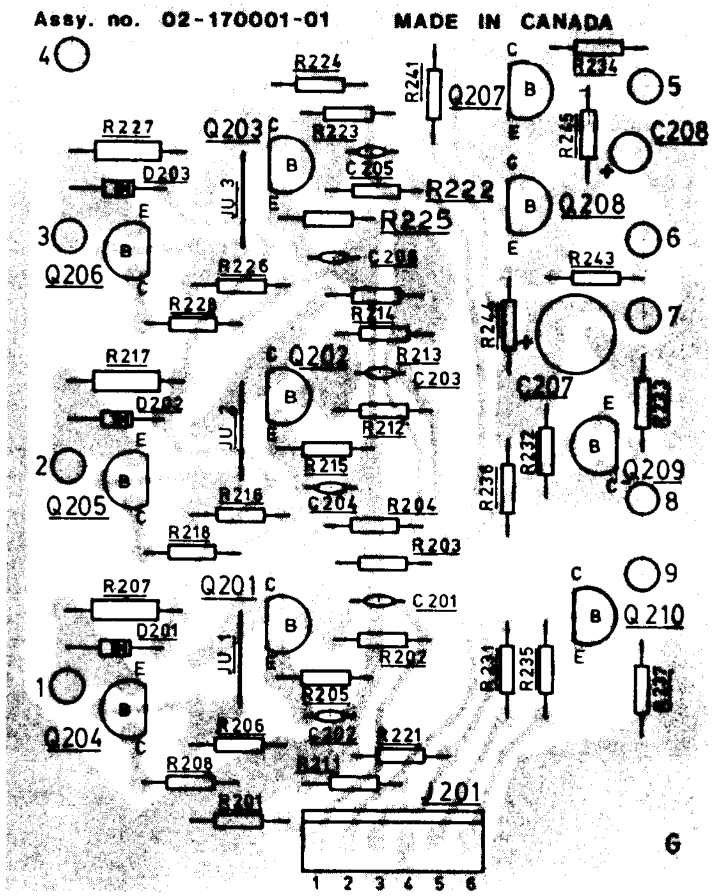
Safety Checks

Subject: Fire and Shock Hazard

1. No modification of any circuit should be attempted. Service work should be performed only after you are thoroughly familiar with all of the following safety checks and service guidelines. To do otherwise increases the risk of potential hazards and injury to the user.
2. When service is required, observe the original lead dress. Extra precaution should be given to assure correct lead dress in the high voltage circuitry area. Where a short circuit has occurred, replace those components that indicate evidence of overheating. Always use the manufacturer's specified replacement component. See parts list in the back of this manual.
3. Periodically check the high voltage for proper value using a meter of known accuracy and calibration.
4. Check for frayed insulation on wires.

Notes

INTERFACE P.C.B. COMPONENT LAYOUT



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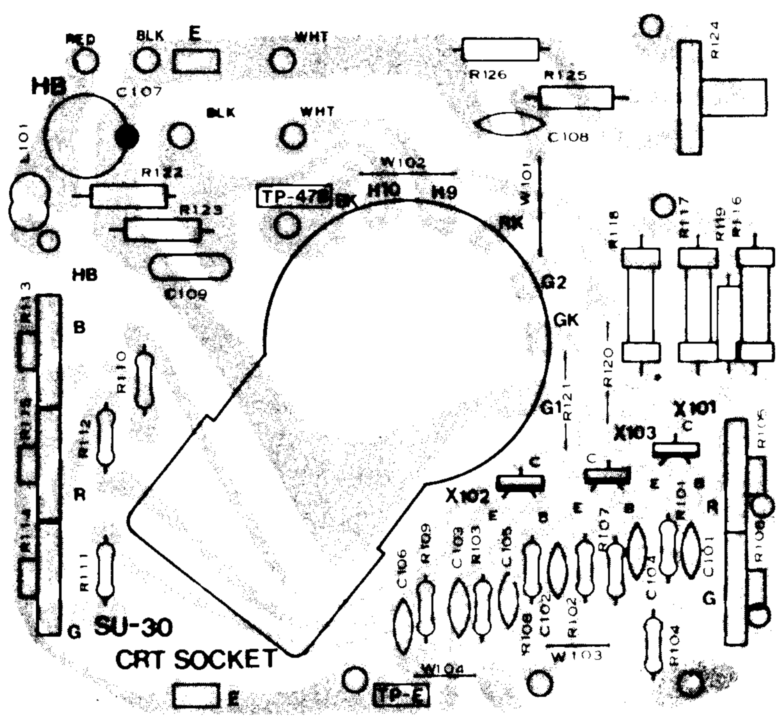
C.R.T. P.C.B. COMPONENT LAYOUT



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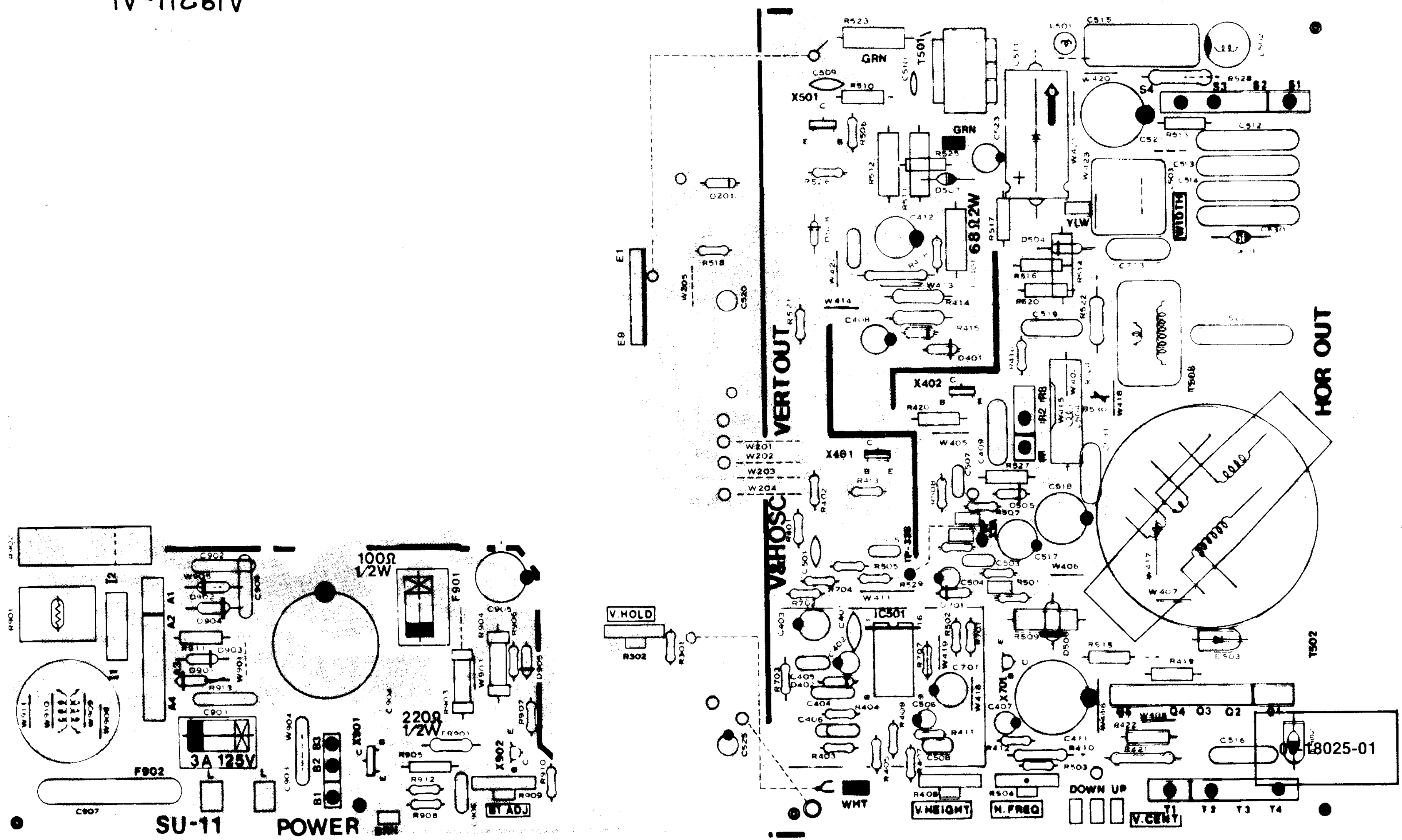
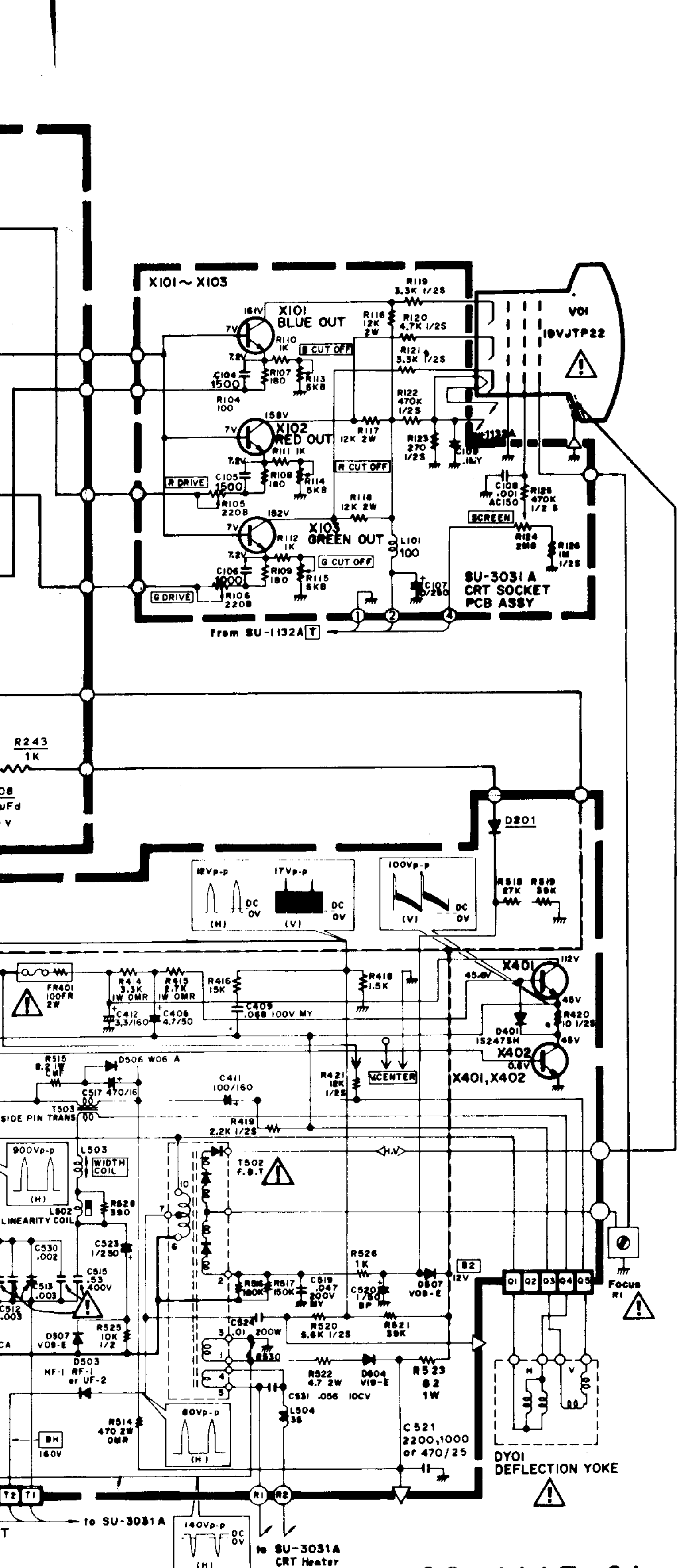
MAIN P.C.B. COMPONENT LAYOUT





Schematic Notes

Unless otherwise specified

Resistance: (Ω) (K→KΩ, M→MΩ), 1/4 (W) carbon resistor

Capacitance: 1 or higher→ (pF), less than 1→ (μF)

working voltage→ 50 (V)

ceramic capacitor

Inductance: (μH)

Electrolytic Cap: Capacitance Value (μF)/working voltage (V), NP → non-polar (or bipolar) electrolytic cap.

Refer to the parts list for additional component information.

- indicates test point connection
- indicates chassis ground unless otherwise specified

Hz indicates cycles per second

For **safety** purposes (and continuing reliability)

⚠ replace all components marked with safety symbol with identical type.

NOTE: FR → fusible resistor

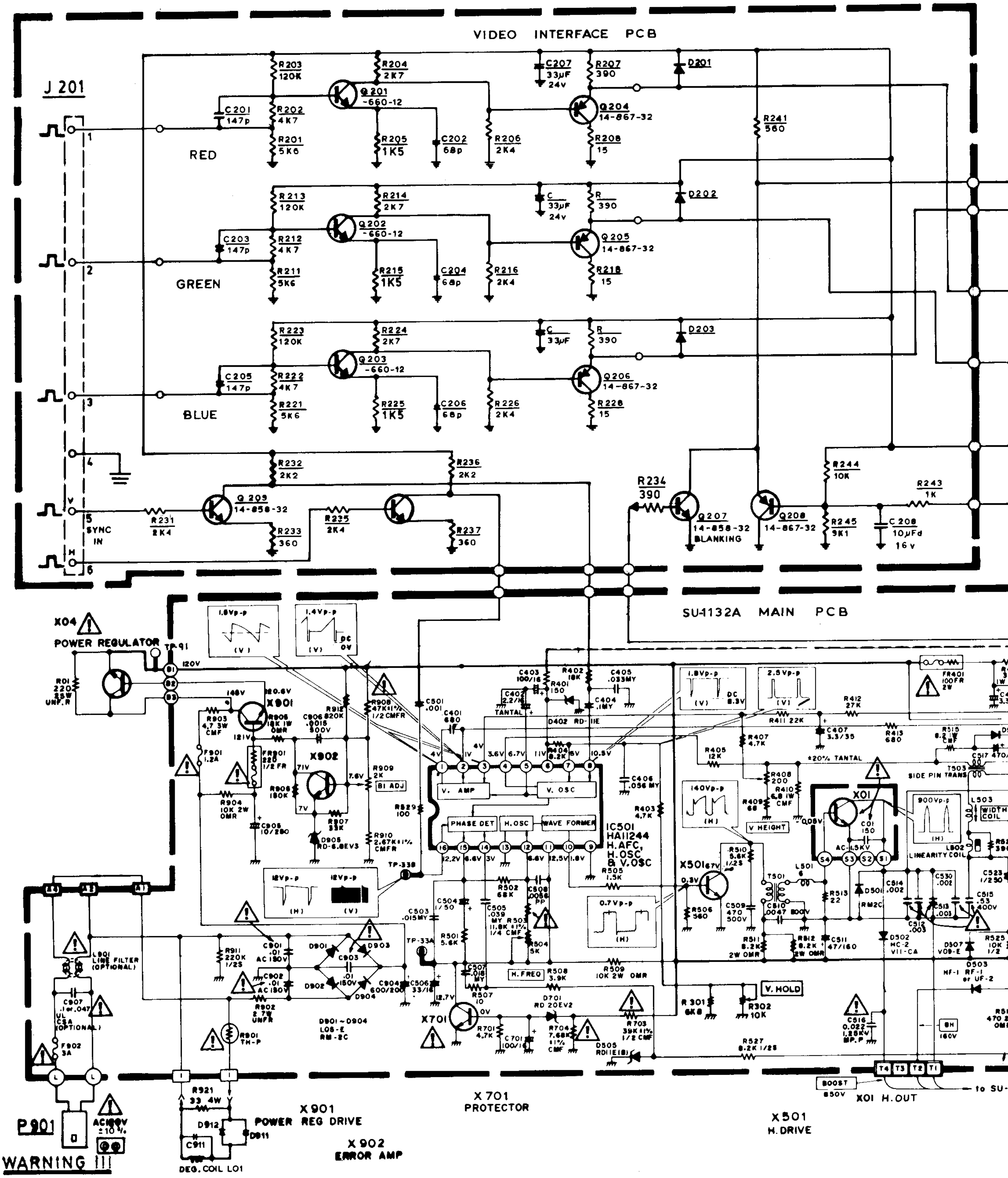
Parts identification on circuit boards:

e.g. SU1126A (R107 = R**1**107)

SU3030A (R113 = R**3**113)

00-4147-01

ISSUE 2



WARNING !!!

ISOLATION TRANSFORMER MUST BE USED.

DO NOT CONNECT DIRECTLY TO THE POWER LINE.

REPLACEMENT PARTS LIST

Components identified by the ⚠ symbol in the PARTS LIST and on the Schematic have special characteristics important to safety.

DO NOT degrade the safety of the set through improper servicing.

Abbreviations for Resistors and Capacitors

Resistor

C R	:	Carbon Resistor
Comp. R	:	Composition Resistor
OM R	:	Oxide Metal Film Resistor
V R	:	Variable Resistor
MF R	:	Metal Film Resistor
CMF R	:	Coating Metal Film Resistor
UNF R	:	Nonflammable Resistor
F R	:	Fusible Resistor

Capacitor

C Cap.	:	Ceramic Capacitor
M Cap.	:	Mylar Capacitor
E Cap.	:	Electrolytic Capacitor
BP E Cap.	:	Bi-Polar (or Non-Polar) Electrolytic Capacitor
MM Cap.	:	Metalized Mylar Capacitor
PP Cap.	:	Polypropylene Capacitor
MPP Cap.	:	Metalized PP Capacitor
PS Cap.	:	Polystyrol Capacitor
Tan. Cap.	:	Tantal Capacitor

Symbol	Description	Part Number
	Main P.C.B. Ass'y	SU-1132A
	CRT Socket P.C.B. Ass'y	SU-3031-A
	Complete Chassis (excluding interface P.C.B. Ass'y)	10-138-01
	Interface P.C.B. Ass'y	02-170001-01

Outside of the P.C.B. Ass'y

Symbol	Description	Part Number
⚠ DY01	Deflection Yoke	A29779-D
⚠ T502	Flyback Transf.	A29951-A
	PC Magnet	A75034-B
X01	Si. Transistor	2SC1413AV
X04	Si. Transistor	2SC1106A
V01	CRT (19VJTP22)	17-7198-02
⚠ V11	Focus V. Resistor	C30289
R05	UNF Resistor 220Ω, 25W. K	QRF258K-221
⚠ C01	C Capacitor 150 pF, AC1.5KV	QCZ0101-005

Main P.C.B. Ass'y (SU-1132A) Parts List

Resistors

Symbol	Description	Part Number
R302	V R 10KΩ (V. Hold)	QVZ3224-014
R408	V R 200Ω (V. Height)	QVZ3230-022
R410	CMF R 6.8Ω 1W +5%	QRX019J-6R8
R414	OM R 33.KΩ 1W +5%	QRG019J-332
R415	OM R 2.7 KΩ 1W +5%	QRG019J-272
R421	OM R 12 KΩ 2W +5%	QRG026J-123
⚠ FR401	F R 68Ω 2W +10%	QRH024K-680
⚠ R503	CMF R 11.8 KΩ ¼W +1%	QRV141F-1182
R504	V R 5 KΩ (H. Freq.)	QVZ3230-053
R509	OM R 10KΩ 2W +5%	QRG0267-103
R511	OM R 8.2KΩ 2W +5%	QRG026J-822
R512	OM R 8.2KΩ 2W +5%	QRG026J-822
R514	OM R 680Ω 2W +5%	QRG026J-681
R515	CMF R 8.2Ω 1W +5%	QRX019J-8R2

Main P.C.B. Ass'y (cont'd.)

Resistors

Symbol	Description	Part Number
R522	CMF R 4.7Ω 1W +5%	QRX019J-4R7
R523	CMF R 82Ω 2W +5%	QRX026J-820
R528	OM R 390Ω 1W +5%	QRG019J-391
R530	Zinc R 270Ω	ERZ-C05DK-271
R901	Posistor	A75414
R902	UNF R 2Ω 7W +10%	QRF076K-2R0
R903	CMF R 4.7Ω 3W +5%	QRX039J-4R7
R904	OM R 10KΩ 2W +5%	QRG026J-103
R905	OM R 18KΩ 1W +5%	QRG019J-183
⚠ R908	CMF R 47KΩ ½W +1%	QRV122F-4702
R909	V R 2KΩ (B1 Adj.)	QVZ3230-023
⚠ R910	CMF R 2.74KΩ ¼W +1%	QRV142F-2741
⚠ FR901	F R 220Ω ½W +10%	QRH124K-221
⚠ R703	CMF R 39KΩ ½W +1%	QRV122F-3902
R704	CMF R 7.68KΩ ¼W +1%	QRV142F-7681

Capacitor

Symbol	Description	Part Number
C402	Tan. Cap. 2.2 μF 16V +10%	QEE51CK-225
C411	E Cap. 100 μF 160V +100%	QEW52CA-107
C412	E Cap. 3.3 μF 160V +100%	QEW52CA-335
C508	PP Cap. 5600pF 50V +5%	QFP31HJ-562
C511	E Cap. 47 μF 160V +100%	QED22CA-476
⚠ C512	PP Cap. 2000pF 1500V +5%	QFZ0082-202
⚠ C513	PP Cap. 2000pF 1500V +5%	QFZ0082-202
⚠ C514	PP Cap. 2000pF 1500V +5%	QFZ0082-202
C515	PP Cap. 0.53 μF 1200V +10%	QFZ0067-534
⚠ C516	MPP Cap. 0.022 μF 1.25KV +10%	QFH63BK-223
C520	BPE Cap. 1 μF 50V +100%	QEN61HA-105
⚠ C522	PP Cap. 2000pF 1500V +5%	QFZ0082-202
C523	E Cap. 1 μF 160V +100%	QEW62CA-105
⚠ C530	PP Cap. 1500pF 1500V +5%	QFZ0082-152
⚠ C901	C Cap. 4700pF AC125V +80% -20%	QCZ9013-472
⚠ C902	C Cap. 4700pF AC125V +80% -20%	QCZ9013-472
C905	E Cap. 10 μF 250V +100%	QEW52EA-106
⚠ C907	MM Cap. 0.1 μF AC150V +80% -20%	QFZ9008-104

Coils

Symbol	Description	Part Number
L501	Peaking Coil	A75360-6
L502	Linearity Coil	A39835
L503	Width Coil	C30380-A
L504	Heater Choke Coil	C30316-A
⚠ L901	Line Filter	A39475-J

Transformers

Symbol	Description	Part Number
T501	Hor. Drive Transf.	A46022-BM
T503	Side Pin. Transf.	C39050-A or C39049-A or C39084-A

Semiconductors

Symbol	Description	Part Number
IC501	I.C.	HA11244
X401	Si. Transistor	2SD478
X402	Si. Transistor	2SD478
X501	Si. Transistor	2SC2371V
X701	Si. Transistor	2SC454(C)
X901	Si. Transistor	2SC2688(K,L,M)
X902	Si. Transistor	2SC1890A;(E,F)
D201	Si. Diode	1S2471V
D401	Si. Diode	1S2473H
D402	Zener Diode	RD11E(B)
D501	Si. Diode	RM2-(c)
D502	Si. Diode	V11-CA
D503	Si. Diode	HF-1
D504	Si. Diode	V19-(E)
D505	Zener Diode	RD11E(B)

Main P.C.B. Ass'y. (cont'd.)

Resistors

Symbol	Description	Part Number
D506	Si. Diode	W06-A
D507	Si. Diode	V09-E
D508	Si. Diode	V09-E
⚠ D701	Zener Diode	RD20EV2
⚠ D901	Si. Diode	RM2-(C)
⚠ D902	Si. Diode	RM2-(C)
⚠ D903	Si. Diode	RM2-(C)
⚠ D904	Si. Diode	RM2-(C)
⚠ D905	Zener Diode	RD68EV3

Miscellaneous

Symbol	Description	Part Number
⚠ F901	UL Fuse 1.2A	QMF66U1-1R2S
⚠ F902	UL Fuse 3A	QMF66U1-3R0s

CRT Socket P.C.B. Ass'y (SU-3031A) Parts List

Symbol	Description	Part Number
Resistors		
R015	V R 200Ω (R Drive)	QVZ3224-022
R106	V R 200Ω (G Drive)	QVZ3224-022
R113	V R 5KΩ (B Cut off)	QVZ3224-053
R114	V R 5KΩ (R Cut off)	QVZ3224-053
R115	V R 5KΩ (G Cut off)	QVZ3224-053
R116	DM R 12KΩ, 2W, +5%	QRG029J-123
R117	DM R 12KΩ, 2W, +5%	QRG029J-123
R118	DM R 12KΩ, 2W, +5%	QRG029J-123
R124	V R 2MΩ (Screen)	QVZ3243-026

Capacitors

Symbol	Description	Part Number
C107	E Cap. 10 µF 250V +100%	QEW52EA-106

Coils

Symbol	Description	Part Number
L101	Peaking Coil	QQL043K-101

Semiconductors

Symbol	Description	Part Number
X101	Si. Transistor	2SC2611
X102	Si. Transistor	2SC2611
X103	Si. Transistor	2SC2611

Miscellaneous

Symbol	Description	Part Number
⚠	CRT Socket	A76068

Video Interface P.C.B. Assembly 02-170001-01

Semiconductors

Symbol	Description	Part Number
D201	Diode	14-514-64
D202	Diode	14-514-64
D203	Diode	14-514-64
Q201	Transistor	14-802-12
Q202	Transistor	14-802-12
Q203	Transistor	14-802-12
Q204	Transistor	14-867-32
Q205	Transistor	14-867-32
Q206	Transistor	14-867-32
Q207	Transistor	14-802-12
Q208	Transistor	14-867-32
Q209	Transistor	14-802-12
Q210	Transistor	14-802-12

Video Interface P.C.B. Assembly (cont'd.)

Resistors

Symbol	Description	Part Number
R201	Resistor 5.6K ¼W 5%	40-125625-11
R202	Resistor 4.7K ¼W 5%	40-124725-11
R203	Resistor 120K ¼W 5%	40-121245-11
R204	Resistor 2.7K ¼W 5%	40-122725-11
R205	Resistor 1.5K ¼W 5%	40-121525-11
R206	Resistor 2.4K ¼W 5%	40-122425-11
R207	Resistor 390Ω ½W 5%	40-223915-11
R208	Resistor 15Ω ¼W 5%	40-121505-11
R211	Resistor 5.6K ¼W 5%	40-125625-11
R212	Resistor 4.7K ¼W 5%	40-124725-11
R213	Resistor 120K ¼W 5%	40-121245-11
R214	Resistor 2.7K ¼W 5%	40-122725-11
R215	Resistor 1.5K ¼W 5%	40-121525-11
R216	Resistor 2.4K ¼W 5%	40-122425-11
R217	Resistor 390Ω ½W 5%	40-223915-11
R218	Resistor 15Ω ¼W 5%	40-121505-11
R221	Resistor 5.6K ¼W 5%	40-125625-11
R222	Resistor 4.7K ¼W 5%	40-124725-11
R223	Resistor 120K ¼W 5%	40-121245-11
R224	Resistor 2.7K ¼W 5%	40-122725-11
R225	Resistor 1.5K ¼W 5%	40-121525-11
R226	Resistor 2.4K ¼W 5%	40-122425-11
R227	Resistor 390Ω ½W 5%	40-223915-11
R228	Resistor 15Ω ¼W 5%	40-121505-11
R231	Resistor 2.4K ¼W 5%	40-122425-11
R232	Resistor 2.2K ¼W 5%	40-122225-11
R233	Resistor 360Ω ¼W 5%	40-123615-11
R234	Resistor 360Ω ¼W 5%	40-123615-11
R235	Resistor 2.4K ¼W 5%	40-122425-11
R236	Resistor 2.2K ¼W 5%	40-122225-11
R237	Resistor 360Ω ¼W 5%	40-123615-11
R241	Resistor 560Ω ¼W 5%	40-125615-11
R243	Resistor 1K ¼W 5%	40-121025-11
R244	Resistor 10K ¼W 5%	40-121035-11
R245	Resistor 9.1K ¼W 5%	40-129125-11

Capacitors

Symbol	Description	Part Number
C201	Ceramic Cap. 47pF	46-347013-15
C202	Ceramic Cap. 68pF	46-368013-15
C203	Ceramic Cap. 47pF	46-347013-15
C204	Ceramic Cap. 68pF	46-368013-15
C205	Ceramic Cap. 47pF	46-347013-15
C206	Ceramic Cap. 68pF	46-368013-15
C207	Electrolytic 100 μF 35V	44-310104-04
C208	Electrolytic 10 μF 16V	44-310003-02

Miscellaneous

Symbol	Description	Part Number
J201	Molex 6-pin Wafer	34-548-06

Purity Shield Assembly 07-220083-03

Symbol	Description	Reference No.
X	Degaussing Coil	21-1007-30
D911	Rectifier 1A 600V	28-22-27
D912	Rectifier 1A 600V	28-22-27
C911	150 μF 10% 400V. Cap.	48-171544-62
R921	4W 33R 10% WW Res.	42-113301-03
X	Fire Ret Term Strip 4 Lug.	34-492-09