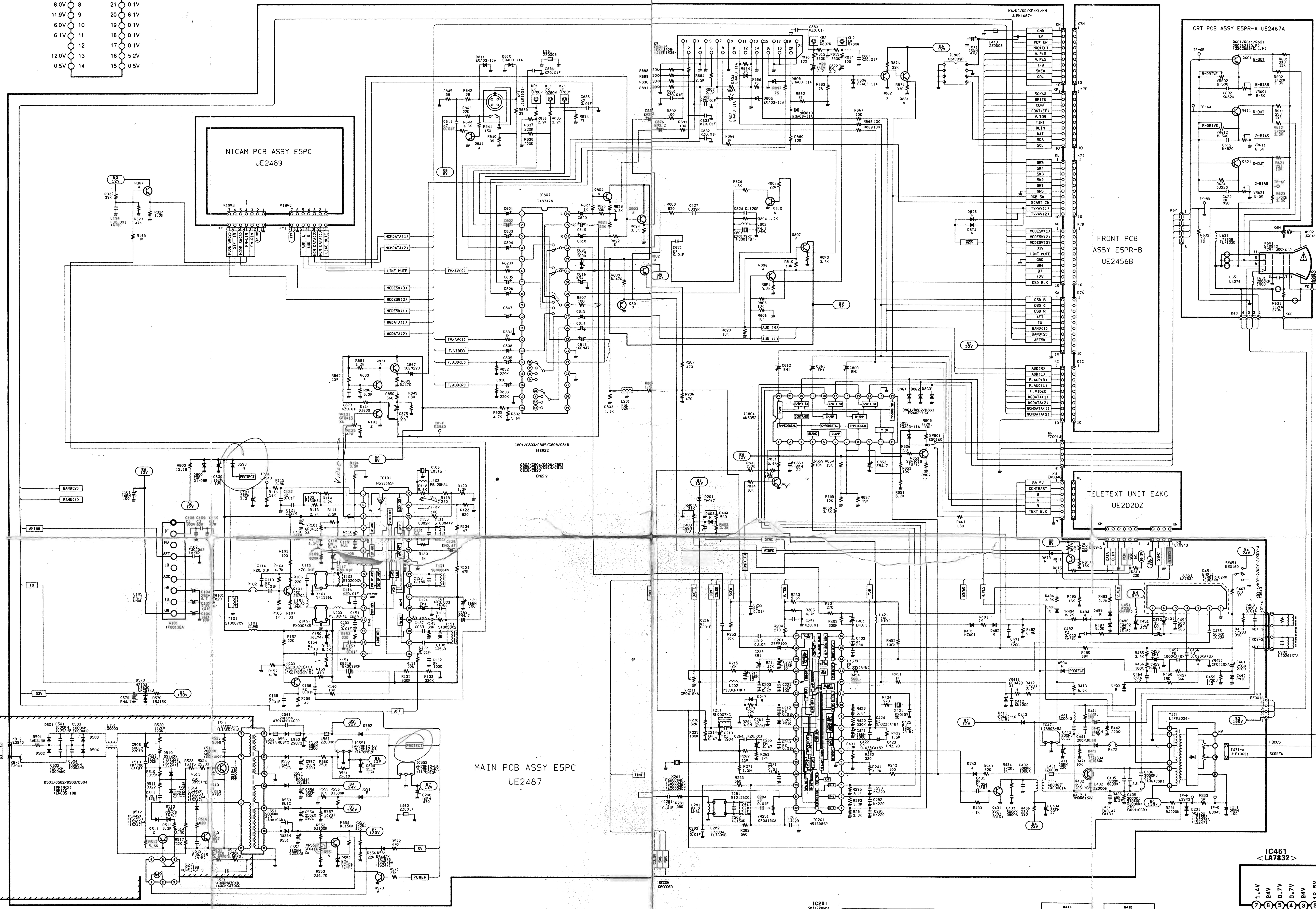
COLOUR TELEVISION A5-A CHASSIS SERIES

SANYO

SERVICE REF.NO. CBP2180 − 00

E5PC1



IC181

Pin	Volt.	Pin	Volt.
1	6.1V	28	8.2V
2	6.1V	27	6.1V
3	8.2V	26	6.1V
4	0.1V	25	6.1V
5	8.0V	24	6.1V
6	8.0V	23	6.1V
7	8.0V	22	6.1V
8	8.0V	21	0.1V
9	11.9V	20	0.1V
10	6.0V	19	0.1V
11	6.1V	18	0.1V
12		17	0.1V
13	12.0V	16	5.2V
14	0.5V	15	0.5V

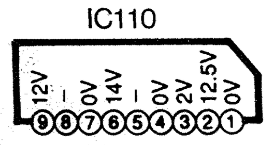
IC801

Pin	Volt.	Pin	Volt.
1	5.0V	36	5.3V
2	5.4V	35	5.0V
3	5.0V	34	5.4V
4	5.4V	33	3.6V
5	0.6V	32	9.0V
6	5.1V	31	3.6V
7	5.4V	30	3.2V
8	5.1V	29	0.1V
9	5.0V	28	3.4V
10	5.4V	27	4.1V
11		26	4.1V
12	0.1V	25	5.1V
13	5.0V	24	
14	0V	23	5.1V
15	5.0V	22	
16	5.4V	21	5.1V
17		20	5.4V
18	4.9V	19	5.4V

IC151

Pin	Volt.
1	12.0V
2	6.0V
3	2.4V
4	3.1V
5	
6	3.8V
7	3.8V
8	3.8V

IC110



IC101

Pin	Volt.	Pin	Volt.
1	6.3V	30	2.7V
2	3.4V	29	0.1V
3	3.0V	28	2.9V
4	3.0V	27	3.7V
5	9.0V	26	3.7V
6	4.4V	25	4.5V
7	4.4V	24	
8	2.4V	23	8.0V
9	2.4V	22	8.0V
10		21	9.1V
11	4.8V	20	3.3V
12	9.1V	19	4.6V
13	2.6V	18	4.5V
14	2.6V	17	6.2V
15	0.1V	16	7.8V

IC809

Pin	Volt.	Pin	Volt.
1		8	5.2V
2		7	0V
3		6	5.2V
4		5	5.2V

IC804

Pin	Volt.	Pin	Volt.
1	12.0V	22	3.4V
2	1.2V	21	6.7V
3	5.2V	20	6.7V
4	0.3V	19	3.4V
5	0.1V	18	6.7V
6	0.3V	17	6.7V
7	3.8V	16	3.4V
8	4.8V	15	6.8V
9	5.4V	14	6.8V
10	6.0V	13	
11	6.0V	12	0.1V

Transistor voltages (VOLT.)

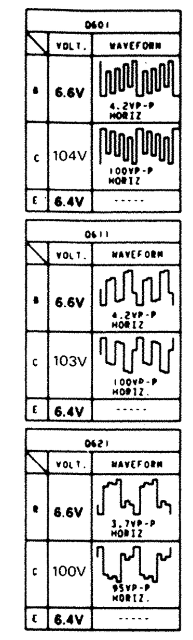
	E	C	B
Q307	5.4V	12.0V	6.1V
Q308	5.4V	12.0V	6.1V
Q841	4.7V	-	5.4V
Q801	4.0V	-	3.3V
Q802	3.7V	12.0V	0.1V
Q803	4.8V	9.1V	5.4V
Q804	4.8V	9.1V	5.7V
Q806	4.0V	9.1V	4.5V
Q807	3.9V	9.1V	4.5V
Q810	-	0.1V	0V
Q881	0V	12.0V	0.7V
Q834	5.4V	9.0V	6.2V
Q833	3.0V	6.2V	3.6V
Q103	1.9V	-	1.1V
Q152	1.1V	7.1V	0.3V
Q101	4.0V	0.4V	1.2V
Q851	6.7V	-	6.1V
Q853	6.5V	1.0V	5.9V
Q551	6.3V	33.8V	6.9V
Q570	-	33.8V	0.1V

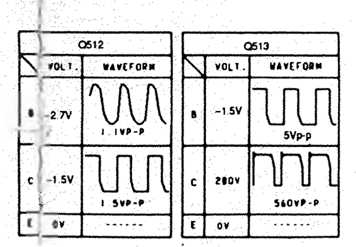
Q882	VOLT.
	0.7V
	-
	0V

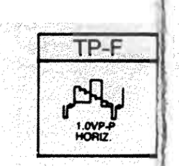
Q511	VOLT.
B	10V
C	−0.8V
E	10.8V

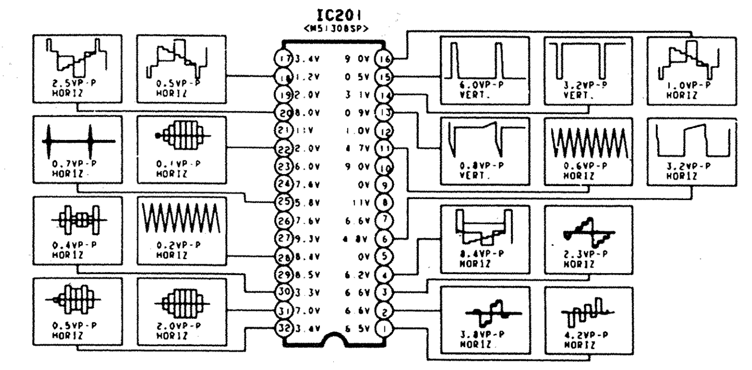
IC551	VOLT.
1	16.2V
2	-
3	12.0V

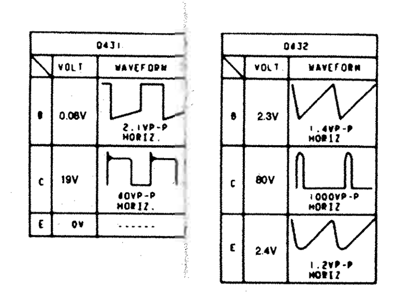
IC552	VOLT.
1	16.2V
2	-
3	12.0V

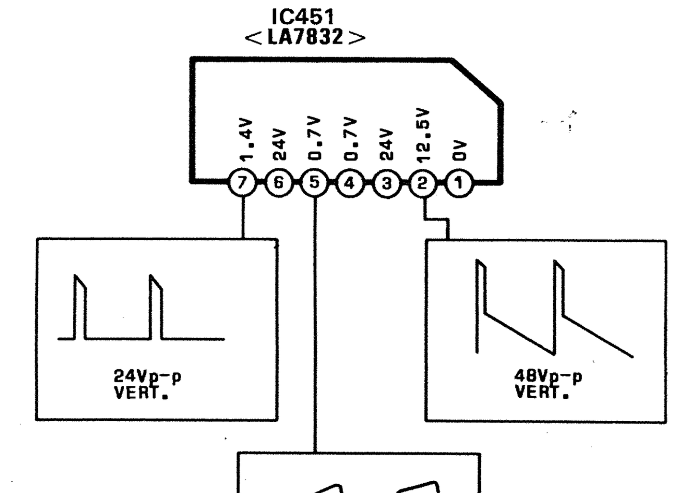












SERVICE PRECAUTION:
THE AREA ENCLOSED BY THIS LINE ( ) IS DIRECTLY CONNECTED WITH AC MAINS VOLTAGE. WHEN SERVICING THE AREA, CONNECT AN ISOLATING TRANSFORMER BETWEEN TV RECEIVER AND AC LINE TO ELIMINATE HAZARD OF ELECTRIC SHOCK.

PRODUCT SAFETY NOTICE

PRODUCT SAFETY SHOULD BE CONSIDERED WHEN A COMPONENT REPLACEMENT IS MADE IN ANY AREA OF A RECEIVER. COMPONENTS INDICATED BY A MARK ⚠ IN THIS CIRCUIT DIAGRAM SHOW COMPONENTS WHOSE VALUE HAVE SPECIAL SIGNIFICANCE TO PRODUCT SAFETY. IT IS PARTICULARLY RECOMMENDED THAT ONLY PARTS SPECIFIED ON THE PARTS LIST OF SERVICE MANUAL BE USED FOR COMPONENTS REPLACEMENT POINTED OUT BY THE MARK.

CIRCUIT DIAGRAM NOTES:

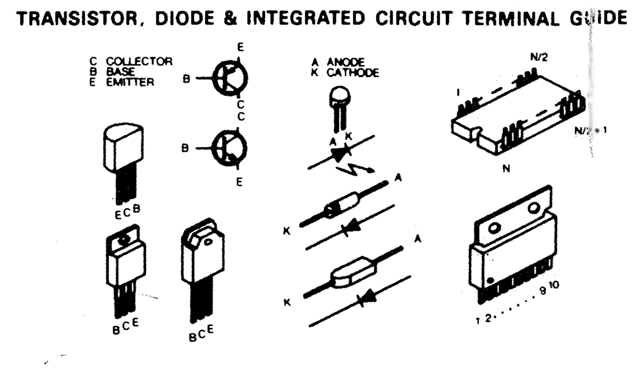
1. ALL RESISTANCE VALUES ARE IN OHMS, K = 1,000, M = 1,000,000.
2. ALL RESISTANCE RATED WATTAGES ARE 1/4W UNLESS OTHERWISE NOTED.
3. EXCEPTING ELECTROLYTIC CAPACITORS, ALL CAPACITANCE VALUES OF LESS THAN 1 ARE EXPRESSED IN UF, AND MORE THAN 1 ARE IN PF. ELECTROLYTIC CAPACITANCE VALUES ARE IN UF.
4. ALL CAPACITANCE RATED VOLTAGES ARE 50V UNLESS OTHERWISE NOTED.
5. ALL INDUCTANCE VALUES ARE IN UH.
6. VOLTAGE READINGS TAKEN WITH A "VTVM" ARE FROM POINT INDICATED TO CHASSIS GROUND. VOLTAGE READINGS TAKEN BY USING A COLOUR BAR SIGNAL ARE WITH ALL CONTROLS AT NORMAL AND AFC SWITCH IN "OFF" POSITION. SOME VOLTAGES MAY VARY WITH SIGNAL STRENGTH.
7. WAVEFORMS WERE TAKEN WITH COLOUR BAR SIGNAL AND CONTROLS ADJUSTED FOR NORMAL PICTURE. WAVEFORMS WERE TAKEN BY USING A WIDE BAND OSCILLOSCOPE AND A LOW CAPACITY PROBE.
8. VOLTAGE AND WAVEFORM VALUES OF TRANSISTORS IN THE AREA ENCLOSED BY LINE (- · -) ARE MEASURED TO BASE THE ELECTRIC POTENTIAL AT PIN 3 OF T311.
9. THIS CIRCUIT DIAGRAM COVERS A BASIC OR REPRESENTATIVE CHASSIS ONLY. THERE MAY BE SOME COMPONENTS OR PARTIAL CIRCUIT DIFFERENCES BETWEEN THE ACTUAL CHASSIS AND THE CIRCUIT DIAGRAM.
10. EXPRESSION OF CAPACITANCE AND RESISTANCE IN CIRCUIT DIAGRAM

CAPACITANCE (Example)
1000 C M 2200 D
- Characteristic
- Capacitance value (2200pF)
- Allowable error (±20%) — J ... 5%, K ... 10%, M ... 20%
- Kind (Ceramic) — T, A, E, U, D ... Electrolytic; C, K, B ... Ceramic; F ... Mylar film; M, N ... Polypropylene; Z ... Metalized paper
- Rated voltage (1000V)

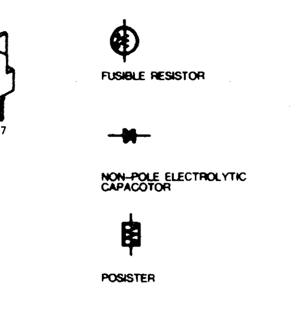
RESISTANCE (Example)
1/2 N J 1/2
- Resistance value (1.2Ω)
- Allowable error (±5%)
- Kind (Metalized carbon) — D ... Carbon; N ... Metalized carbon; S ... Oxide metalized; W ... Wire wounding; C ... Solid
- Rated Wattage (1/2W)

11. DIODE IS1555 MAY BE REPLACED WITH IS2473, IS2076 OR DS442 UNLESS OTHERWISE NOTED.
TRANSISTOR 2SC536 (E, F, G) MAY BE REPLACED WITH 2SC1740S (Q, R, S), 2SC1740 (Q, R, S), 2SC945A (Q, R, P) OR 2SC1815 (G, O, Y) UNLESS OTHERWISE NOTED.
TRANSISTOR 2SA608 (E, F) MAY BE REPLACED WITH 2SA933 (Q, R), 2SA564 (QA, RA) OR 2SA1015 (O, Y) UNLESS OTHERWISE NOTED

TRANSISTOR, DIODE & INTEGRATED CIRCUIT TERMINAL GUIDE



PARTICULAR PARTS SYMBOL



IC701

OSD Oscillator (5MHz)	1 OCS1	V_{DD} 48	+5V Supply
	2 OCS2	H - SYNC 47	Horizontal Sync. Pulse (OSD)
V – SYNC (50/60Hz Detect)	36	V - SYNC 46	Vertical Sync. Pulse (OSD)
AFT S - Curve Input	35 AD1	R 45	OSD R Output
Remote Control SG Input	34 INT1	G 44	OSD G Output
Tuning Voltage Output	33 D/A	B 43	OSD B Output
AFT Defeat Output	32 PWM0	I 42	
Volume Control Output	31 PWM1	OUT 41	OSD Blanking Output
Band Switch	30 P62	P00 40	Key Input 1
Band Switch	29 P63	P01 39	Key Input 2
System Switch 1	28 P64	P02 38	Key Input 3
System Switch 2	27 P65	P03 37	Key Input 4
System Switch 3	26 P66	P04 36	Key Output 1
System Switch 4	25 P67	P05 35	Key Output 2
System Switch 5	24 P33	P06 34	Key Output 3
Time Base Output	23 P32	P07 33	Key Output 4
50/60Hz Output	22 P31	P10 32	Key Output 5
Skew ON/OFF	21 P30	P11 31	
Over Load Detect Input	20 SRDY2	P12 30	Line Mute
RGB ON/OFF	19 PWM9	P13 29	Sound Mute
I²C BUS SCL	18 P45	P14 28	A2 (ST) Detect Input
I²C BUS SDA	17 P44	P15 27	A2 (BIL) Detect Input
UPD6326 LOAD	16 P43	P16 26	NICAM Detect Input
TEXT (PH:DLIM/TI:CEN)	15 P42	P17 25	NICAM Detect Input
(PH:DLIM/TI:CEN)/UPD6326:CLK	14 P41	P20 24	
UPD6326/TEXT (TI:SCL)	13 P40	P21 23	Stereo/Mono Switching
GND	12 CNV_{ss}	P22 22	
	11	P23 21	SCART 8Pin Input
Reset Input	10 RESET	P24 20	TV/AV Switching 2
CPU Clock Oscillator	9 X_{IN}	P25 19	TV/AV Switching 1
	8 X_{OUT}	P26 18	
GND	7 V_{SS}	P27 17	Power ON/OFF

Q703	VOLT.
E	-
C	4.3V
B	10.9V

Q702	VOLT.
E	-
C	5.1V
B	11.4V

Q7K1	VOLT.
E	6.9V
C	12.1V
B	7.5V

Q7K2	VOLT.
E	0.1V
C	-
B	6.9V

Q7K3	VOLT.
E	-
C	0.1V
B	0.8V

Q7K4	VOLT.
E	-
C	0.1V
B	0.1V

IC702

5.1V	1	16	11.3V
0.6V	2	15	5.4V
4.1V	3	14	4.9V
0.2V	4	13	5.4V
0V	5	12	1.1V
0.5V	6	11	8.6V
0.3V	7	10	6.0V
-	8	9	0.3V

Q706	VOLT.
E	-
C	0.1V
B	0.7V

Q705	VOLT.
E	-
C	0.2V
B	0.7V

Q707	VOLT.
E	0.1V
C	5.1V
B	5.1V

Q701	VOLT.
E	5.1V
C	17.8V
B	5.8V

TELETEXT UNIT E4KC
UE2020Z

FRONT PCB ASSY ESPR-B
UE2458B

SW710-1/.../SW710-6
ES0334

NICAM PCB ASSY ESPC
UE2489

PB1901 B1021AA--

IC1011 <SAA5231>

10.2V	1	28	3.0V
0V	2	27	4.2V
2.8V	3	26	5.0V
5.8V	4	25	0.6V
3.7V	5	24	9.2V
3.0V	6	23	1.7V
9.6V	7	22	3.2V
5.5V	8	21	4.7V
3.4V	9	20	1.1V
4.8V	10	19	4.7V
1.0V	11	18	6.3V
12.0V	12	17	6.1V
0V	13	16	12.0V
4.1V	14	15	3.2V

IC1031 <SAA5243M2>

4.8V	1	40	0.8V
0.8V	2	39	3.6V
0.8V	3	38	3.6V
2.7V	4	37	2.0V
4.2V	5	36	2.0V
0.8V	6	35	3.2V
4.2V	7	34	1.2V
0.2V	8	33	1.1V
6.2V	9	32	3.0V
0.5V	10	31	3.0V
3.2V	11	30	3.0V
8.8V	12	29	0.1V
0.2V	13	28	0.1V
0.2V	14	27	3.8V
0.2V	15	26	0.1V
5.2V	16	25	0.1V
2.6V	17	24	0.2V
0.1V	18	23	0.2V
3.0V	19	22	0.2V
2.9V	20	21	0V

IC1036 <TMM2064P-10>

0V	1	28	4.8V
0.8V	2	27	4.2V
2.0V	3	26	4.8V
2.0V	4	25	3.6V
3.2V	5	24	3.6V
1.2V	6	23	0.8V
1.1V	7	22	2.7V
3.0V	8	21	0.8V
3.0V	9	20	0V
3.2V	10	19	0.1V
0.2V	11	18	0.1V
0.2V	12	17	3.8V
0.2V	13	16	0.1V
4.0V	14	15	0.1V

IC1051 <MAB8481PW115>

0V	1	8	4.8V
0V	2	7	1.5V
0V	3	6	3.0V
0V	4	5	2.9V

IC1052 <PCD8572P>

0V	1	28	0V
0V	2	27	2.6V
0V	3	26	4.8V
0V	4	25	4.8V
0V	5	24	4.8V
0V	6	23	4.8V
0V	7	22	4.8V
0V	8	21	4.8V
0V	9	20	4.8V
0V	10	19	4.8V
0V	11	18	4.8V
0V	12	17	4.8V
0V	13	16	4.8V
0V	14	15	4.8V

Q1032	VOLT.
B	0.2V
C	4.6V
E	0V

Q1051	VOLT.
B	4.0V
C	2.2V
E	4.2V

Q1041	VOLT.
B	2.6V
C	4.8V
E	1.9V

Q1033	VOLT.
B	0.2V
C	4.8V
E	0V

Q1052	VOLT.
B	0.7V
C	0V
E	0V

Q1031	VOLT.
B	0.3V
C	4.8V
E	0V

IC710

0.5V	1	28	0V
0.12V	2	27	3.8V
-1V	3	26	8V
-0.05V	4	25	4V
0.12V	5	24	5.8V
0.5V	6	23	-0.05V
0V	7	22	3.8V
-0.05V	8	21	4.2V
-0.23V	9	20	8V
10V	10	19	11V
	11	18	5V
	12	17	
	13	16	
	14	15	

IC711

0V	1	28	0V
3.8V	2	27	0V
8V	3	26	0V
4V	4	25	0V
5.8V	5	24	0V
-0.05V	6	23	0V
3.8V	7	22	0V
4.2V	8	21	0V
8V	9	20	0V
11V	10	19	0V
5V	11	18	0V
	12	17	0V
	13	16	0V
	14	15	0V

IC1940

	1	28	5.0V
2.2V	2	27	4.3V
2.4V	3	26	5.0V
2.4V	4	25	2.5V
2.4V	5	24	2.5V
2.4V	6	23	2.5V
1.7V	7	22	0V
2.4V	8	21	2.4V
2.5V	9	20	0V
2.5V	10	19	4.4V
2.4V	11	18	4.4V
2.4V	12	17	4.4V
4.4V	13	16	4.4V
0V	14	15	4.5V

IC1941

	1	42	1.8V
1.6V	2	41	2.4V
1.6V	3	40	2.5V
1.6V	4	39	2.5V
	5	38	2.5V
5.0V	6	37	2.2V
2.6V	7	36	2.4V
2.5V	8	35	2.4V
1.8V	9	34	2.4V
0V	10	33	2.4V
	11	32	1.7V
	12	31	2.4V
	13	30	2.5V
	14	29	2.5V
	15	28	2.4V
	16	27	2.4V
4.8V	17	26	4.3V
	18	25	5.0V
	19	24	5.0V
	20	23	5.0V
	21	22	5.0V

IC1950

2.3V	1	24	2.4V
0V	2	23	2.4V
1.7V	3	22	2.2V
0V	4	21	2.3V
2.5V	5	20	2.3V
2.5V	6	19	2.3V
1.8V	7	18	2.3V
4.8V	8	17	2.3V
3.4V	9	16	2.2V
2.0V	10	15	1.1V
4.8V	11	14	2.4V
2.3V	12	13	2.4V

IC1910

10.0V	1	30	5.0V
6.0V	2	29	1.6V
8.0V	3	28	0.15V
1.1V	4	27	1.6V
0V	5	26	0V
4.4V	6	25	7.6V
4.4V	7	24	4.4V
7.6V	8	23	4.4V
7.0V	9	22	4.4V
4.2V	10	21	7.0V
4.2V	11	20	4.2V
7.0V	12	19	4.2V
4.0V	13	18	4.6V
3.0V	14	17	3.2V
4.0V	15	16	4.0V

IC1971/1972

12.0V	1		
6.0V	2		
6.0V	3		
6.0V	4		
	5		
6.0V	6		
6.0V	7		
6.0V	8		
12.0V	9		

IC1991

6.0V	1	14	12.0V
6.0V	2	13	9.0V
6.0V	3	12	9.0V
6.0V	4	11	6.0V
0.02V	5	10	6.0V
0.02V	6	9	6.0V
0V	7	8	6.0V

IC1970

6.0V	1	8	12.0V
6.0V	2	7	6.0V
6.0V	3	6	6.0V
0V	4	5	6.0V

Q7H2	VOLT.
E	0.1V
C	5.1V
B	0.1V

Q7H3	VOLT.
E	0.1V
C	5.1V
B	0.1V

Q7H4	VOLT.
E	0.1V
C	5.1V
B	0.1V

Q7T1	VOLT.
E	-
C	11.4V
B	0.1V

Q7I8	VOLT.
E	5V
C	5V
B	0.7V

Q710	VOLT.
E	-
C	0V
B	0.7V

Q711	VOLT.
E	1.9V
C	5.1V
B	0V

Q712	VOLT.
E	-
C	5.1V
B	0.1V

Q7M1	VOLT.
E	5.1V
C	0.1V
B	0.1V

Q7H1	VOLT.
E	0V
C	5.1V
B	0.1V

E5PC(1)