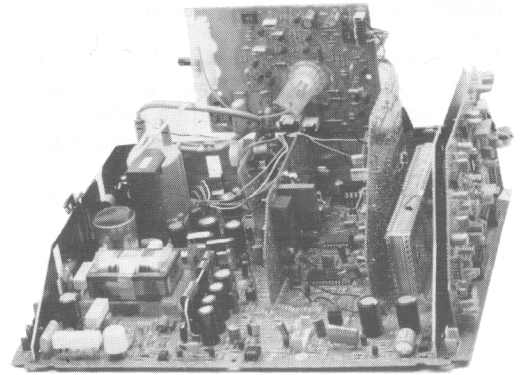


Service  
Service  
Service



Applicable to sets with serial numbers AG00

39 012 A

# Service Manual

**TECHNICAL DATA**

Mains voltage : 220-240 V ~ ( $\pm 10\%$ )  
 Aerial input impedance : 75  $\Omega$  - coax  
 Minimum aerial input VHF : 30  $\mu$ V  
 Minimum aerial input UHF : 40  $\mu$ V  
 Maximum aerial input : 180 mV

Pull-in range colour sync : +300 Hz/-300 Hz  
 Pull-in range horizontal sync : +600 Hz/-600 Hz  
 Pull-in range vertical sync : +5 Hz/-5 Hz  
 Picture tube range : 24/27 inch 110° flat-square  
 : 21 inch 90° flat square

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Remarks	2	PAL decoder	14+15
Mechanical instructions	3	PAL/SECAM decoder	16+17
Electrical instructions	3+4	Remote control RC5336	17
Electrical parts list	5	TXT decoder	18+19
Wiring diagram	6		20+21
Diagram A	7	Faultdiagnosis control system	22
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Print lay out main panel	9+10		
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Print lay out synchronisation panel	9+10		
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## 2.

### WARNINGS

1. Safety regulations demand that the set be restored to its original condition and that components identical to the original types be used.  
Safety components are marked by the symbol  $\triangle$ .
2. In order to preclude damage to IC's and transistors flashover of the EHT should be avoided.  
For checking the EHT, use a suitable measuring instrument.  
The picture tube should only be discharged in the manner shown in Fig. 1.

3. A set to be repaired should always be connected to the mains via a suitable isolating transformer.
4. Proceed with care when testing the EHT section and the picture tube.
5. Never replace any modules or other parts while the set is switched on.
6. Wear safety goggles during replacement of the picture tube.
7. Use plastic instead of metal alignment tools.  
This is in order to preclude short-circuits or to prevent a specific circuit from being rendered unstable.

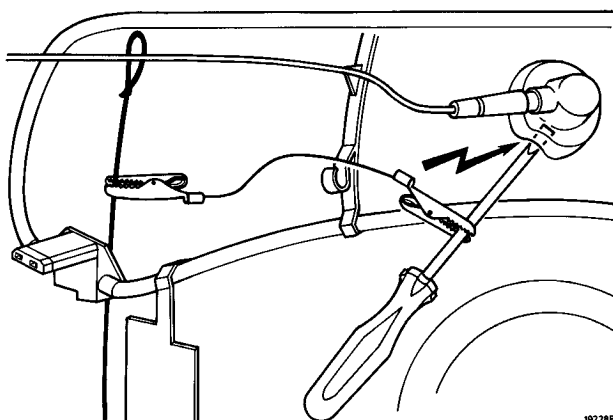


Fig. 1

### REMARKS

1. The direct voltages and waveforms should be measured relative to the nearest earthing point on the p.c. board.
2. The direct voltages should be measured as follows:  
Apply an aerial signal and adjust receiver for minimum brightness, maximum saturation and contrast.
3. The waveforms should be measured under the following conditions:
  - a. Use a colour-bar pattern as input signal.
  - b. Connect an oscilloscope (0,1 V/div.-DC) to point 5 of TDA4580 (item 7300) via an 10:1 attenuator probe.
  - c. Set the saturation control to obtain 3 V d.c. on point 16 of TDA4580 (item 7300).

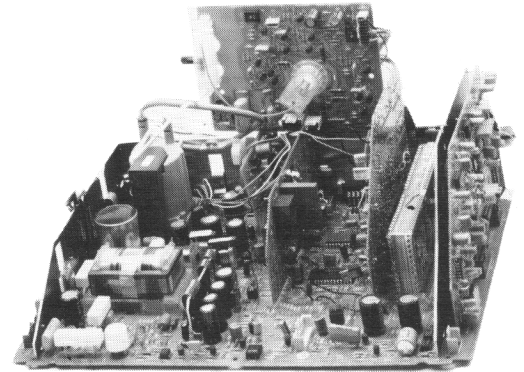
- d. Set the brightness control so that the level of the black bar in the video signal is situated at 3 V (see Fig. 2).
  - e. Set the contrast control for a video signal amplitude of 2,8 V.
4. The CRT board is provided with printed spark gaps. Each spark gap is arranged between an electrode of the CRT and the aquadag coating.
  5. During manufacture alternative semi-conductors may be used.  
However the semi-conductors specified in the parts list and circuit diagram can always be used as replacements.
  6. Connectors used for the modules (board to board) have been gold-plated and must be replaced by the same type only.



38 864 A12

Fig. 2

Service  
Service  
Service



Applicable to sets with serial numbers AG02 and higher

39 012 A

# Service Manual

**TECHNICAL DATA**

Mains voltage : 220-240 V ~ (± 10%)  
 Aerial input impedance : 75 Ω - coax  
 Minimum aerial input VHF : 30 μV  
 Minimum aerial input UHF : 40 μV  
 Maximum aerial input : 180 mV

Pull-in range colour sync : +300 Hz/-300 Hz  
 Pull-in range horizontal sync : +600 Hz/-600 Hz  
 Pull-in range vertical sync : +5 Hz/-5 Hz  
 Picture tube range : 24/27 inch 110° flat-square  
 : 21 inch 90° flat square

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	20+21
Faultdiagnosis control system	22
Symbols for faultfinding	22

## 2.

### WARNINGS

1. Safety regulations demand that the set be restored to its original condition and that components identical to the original types be used.  
Safety components are marked by the symbol  $\triangle$ .
2. In order to preclude damage to IC's and transistors flashover of the EHT should be avoided.  
For checking the EHT, use a suitable measuring instrument.  
The picture tube should only be discharged in the manner shown in Fig. 1.

3. A set to be repaired should always be connected to the mains via a suitable isolating transformer.
4. Proceed with care when testing the EHT section and the picture tube.
5. Never replace any modules or other parts while the set is switched on.
6. Wear safety goggles during replacement of the picture tube.
7. Use plastic instead of metal alignment tools.  
This is in order to preclude short-circuits or to prevent a specific circuit from being rendered unstable.

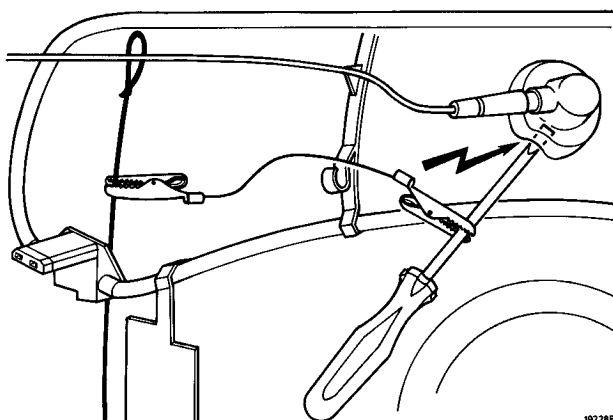


Fig. 1

### REMARKS

1. The direct voltages and waveforms should be measured relative to the nearest earthing point on the p.c. board.
2. The direct voltages should be measured as follows:  
Apply an aerial signal and adjust receiver for minimum brightness, maximum saturation and contrast.
3. The waveforms should be measured under the following conditions:
  - a. Use a colour-bar pattern as input signal.
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  - c. Set the saturation control to obtain 3 V d.c. on point 16 of TDA4580 (item 7300).

- d. Set the brightness control so that the level of the black bar in the video signal is situated at 3 V (see Fig. 2).
  - e. Set the contrast control for a video signal amplitude of 2,8 V.
4. The CRT board is provided with printed spark gaps. Each spark gap is arranged between an electrode of the CRT and the aquadag coating.
  5. During manufacture alternative semi-conductors may be used.  
However the semi-conductors specified in the parts list and circuit diagram can always be used as replacements.
  6. Connectors used for the modules (board to board) have been gold-plated and must be replaced by the same type only.

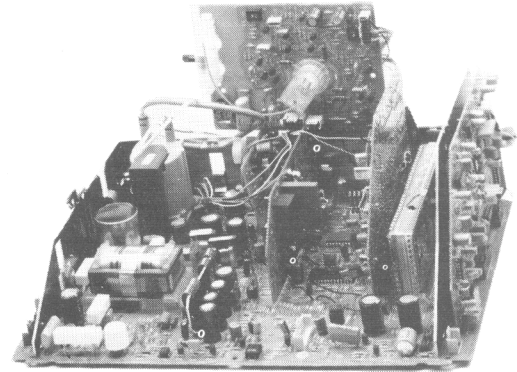


38 864 A12

Fig. 2

Service  
Service  
Service

Version 3



Applicable to sets with serial numbers AG04 and higher

39 012 A

# Service Manual

**TECHNICAL DATA**

Mains voltage	: 220-240 V ~ (± 10%)	Pull-in range colour sync	: +300 Hz/-300 Hz
Aerial input impedance	: 75 Ω - coax	Pull-in range horizontal sync	: +600 Hz/-600 Hz
Minimum aerial input VHF	: 30 μV	Pull-in range vertical sync	: +5 Hz/-5 Hz
Minimum aerial input UHF	: 40 μV	Picture tube range	: 24/27 inch 110° flat-square
Maximum aerial input	: 180 mV		: 21 inch 90° flat square

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Wiring diagram	6		22+23
Diagram A	7	Faultdiagnosis control system	23
Print lay out control panel	7	Symbols for faultfinding	24
Diagram B	8		
Print lay out main panel	9+10		
Print lay out picture tube panel	9+10		
Print lay out auxiliary panels	9+10		
Print lay out headphone panel	10		

2.

## WARNINGS

1. Safety regulations demand that the set be restored to its original condition and that components identical to the original types be used.  
Safety components are marked by the symbol ▲.
2. In order to preclude damage to IC's and transistors flashover of the EHT should be avoided.  
For checking the EHT, use a suitable measuring instrument.  
To prevent damage of the picture tube, the method indicated in Fig. 1 has to be applied when discharging the picture tube.  
Make use of a high-voltage probe and a universal meter (position DC-V)  
Discharge until the deflection on the meter has become 0 Volt (after about 30 s)

## 3. ESD



All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD) Careless handling during repair can reduce life drastically.

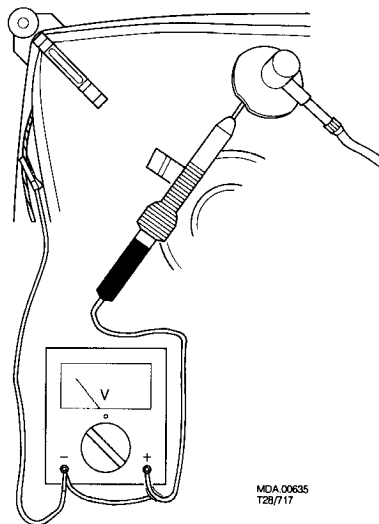
When repairing, make sure that you are connected with the same potential as the mass of the set via a wrist wrap with resistance.

Keep components and tools also at this potential.

## REMARKS

1. The direct voltages and waveforms should be measured relative to the nearest earthing point on the p.c. board.
2. The direct voltages should be measured as follows:  
Apply an aerial signal and adjust receiver for minimum brightness, maximum saturation and contrast.
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  - c. Set the saturation control to obtain 3 V d.c. on point 16 of TDA4580 (item 7300).

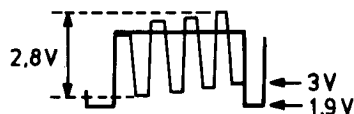
4. A set to be repaired should always be connected to the mains via a suitable isolating transformer.
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6. Never replace any modules or other parts while the set is switched on.
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8. Use plastic instead of metal alignment tools.  
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MDA 00635  
T28/717

Fig. 1

- d. Set the brightness control so that the level of the black bar in the video signal is situated at 3 V (see Fig. 2).
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38 864 A 12

Fig. 2

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Notes for fault finding tree NICAM	9
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## TECHNICAL DATA

Mains voltage	: 220–240 V (10 %)
Aerial input impedance	: 75 $\Omega$ – coax
Minimum aerial input VHF	: 30 $\mu$ V
Minimum aerial input UHF	: 40 $\mu$ V
Maximum aerial input	: 180 mV
Pull-in range colour sync	: +300 Hz / –300 Hz
Pull-in range horizontal sync	: +600 Hz / –600 Hz
Pull-in range vertical sync	: +5 Hz / –5 Hz
Picture tube range	: 24"/27" 110° flat-square : 21" 90° flat-square

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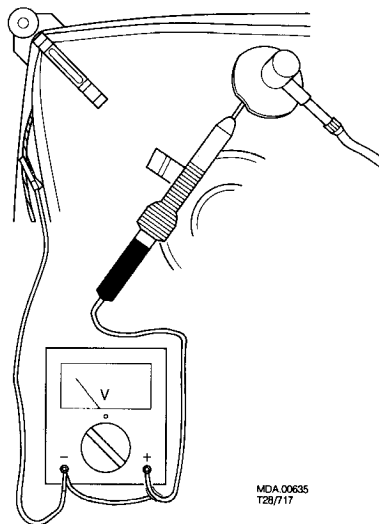
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MDA 00635  
T28/717

Fig. 1

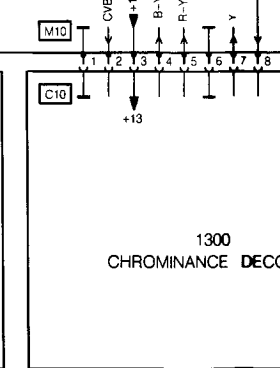
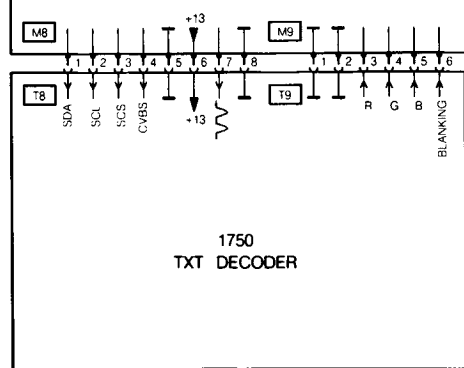
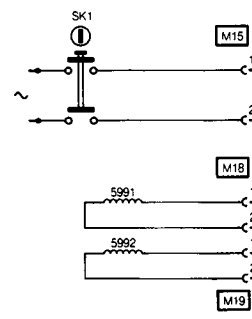
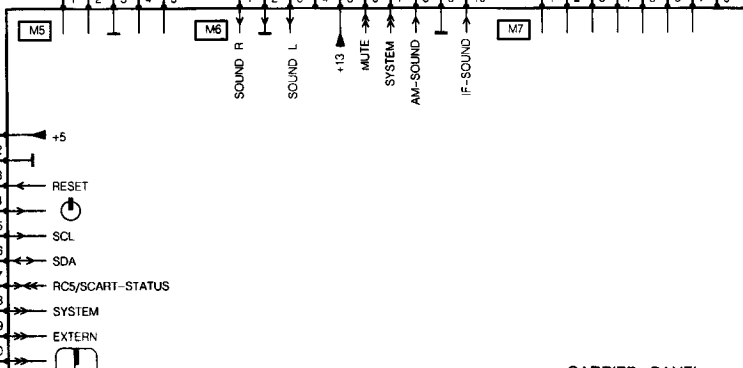
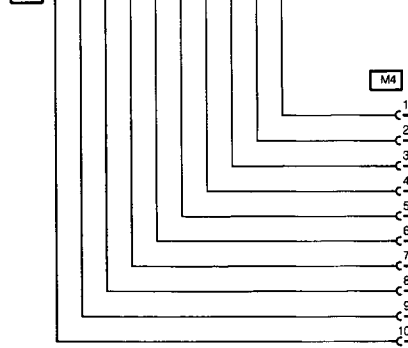
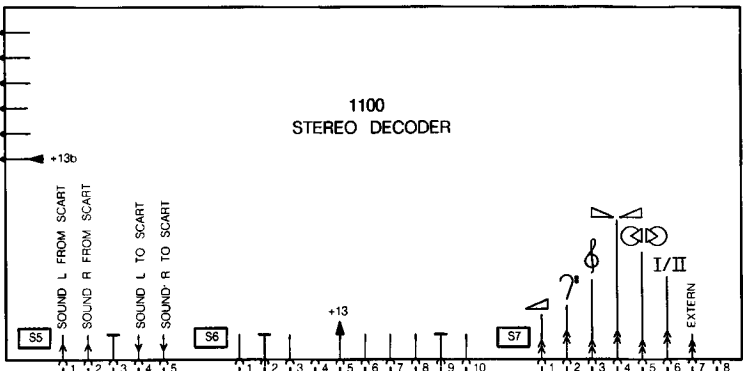
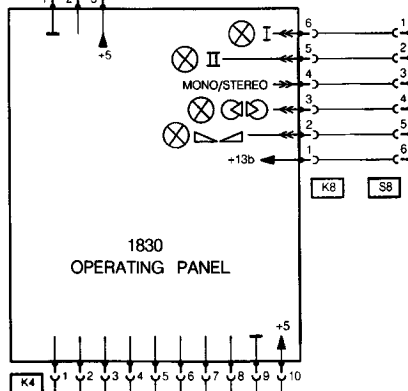
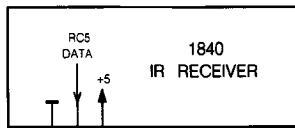
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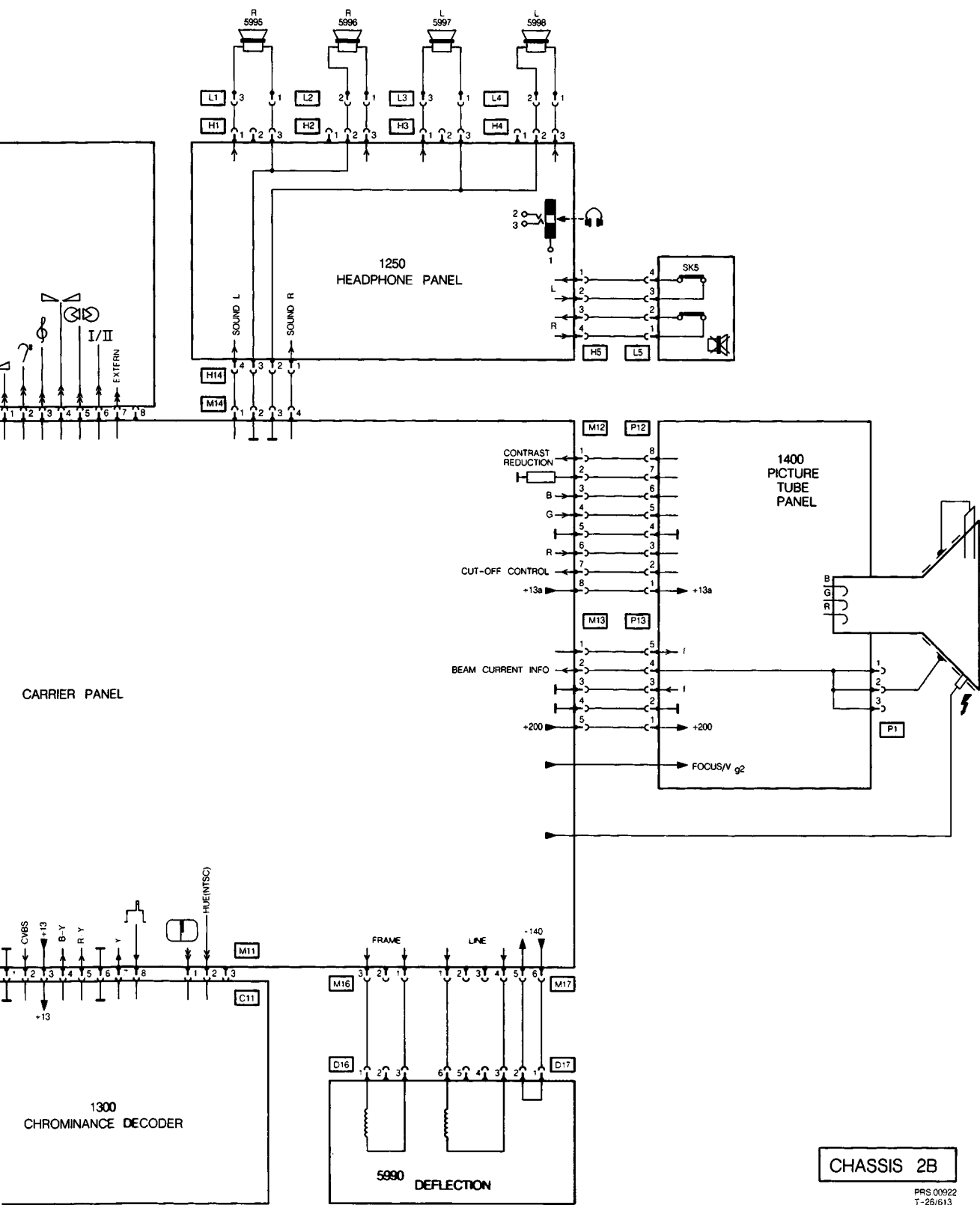


38 864 A 12

Fig. 2







CHASSIS 2B

PRS 00922  
T-25/613

**CARRIER PANEL**



CNX62	4822 130 90121	
PCD8571P	4822 209 10427	
SAB3035	4822 209 11012	
TDA1520AQ	4822 209 70223	(for 2x 15 W)
TDA1520BQ	4822 209 70021	(for 2x 10 W)
TDA3653AQ	4822 209 83263	(for 90°)
TDA3654Q	4822 209 83351	(for 110°)
TDA4580	4822 209 70018	
TDA8370	4822 209 70178	



BC369	5322 130 44593	
BC547	4822 130 44257	
BC548	4822 130 40938	
BC548C	4822 130 44196	
BC556	4822 130 40989	
BC557	4822 130 44256	
BC558	4822 130 40941	
BC558B	4822 130 44197	
BD234	4822 130 40917	
BD826	4822 130 41774	
BD943	5322 130 44921	
BF819	4822 130 42159	
BUT12A	4822 130 43919	
2SD1577PV	4822 130 43921	



BAS11	4822 130 41273	
BAV21	4822 130 30842	
BT151F-500R	4822 130 20194	
BY228	4822 130 41275	
BY229F-200	4822 130 33529	
BY229F-600	4822 130 33531	
BYD33D	4822 130 42488	
BYD33G	4822 130 42489	
BYD33J	4822 130 42606	
BYV27-150	4822 130 31628	
BYW95C	4822 130 41602	
BZV85-C5V1	4822 130 31456	
BZX55-B5V1	4822 130 33524	
BZX55-B6V2	4822 130 33525	
BZX55-B9V1	4822 130 33668	
BZX55-C33	4822 130 33684	
BZX79-C2V7	5322 130 34563	
BZX79-C3V9	4822 130 31981	
BZX79-C4V7	4822 130 34174	
BZX79-C12	4822 130 34197	
BZX79-C18	4822 130 31024	
BZX79-C33	4822 130 34142	
BZX79-C47	4822 130 34383	
HZ7A3	4822 130 33523	
OF705-8V2	4822 130 33633	
OF705-30	4822 130 32807	



SF2D41	4822 130 20193	
1N4148	4822 130 31438	
1N5061	4822 130 31933	



5027	4822 157 50961	
5555	4822 157 52681	
5567	4822 157 50964	
5601	4822 158 10728	(for 110°)
5601	4822 156 21293	(for 90°)
5611	4822 157 52472	(for 110°)
5611	4822 158 10553	(for 90°)
5612	4822 157 52688	(for 110°)
5612	4822 156 21332	(for 90°)
5619	4822 157 52505	
5620	4822 140 10294	Line output
5632	4822 146 10111	Line driver
5637	4822 157 51157	
5642	4822 157 52506	
5643	4822 157 52506	
5644	4822 157 52506	
5646	4822 157 52506	
5651	4822 157 52505	
5652	4822 157 52505	
5663	4822 146 21121	SOPS transformer
5687	4822 156 10769	
5697	4822 157 52407	
5698	4822 157 52407	

**Various**

1921	4822 242 70668	Crystal 4 MHz
1925	4822 138 10138	Battery 1,2 V
	4822 267 60172	SCART socket
	4822 276 11237	Switch SK2
	4822 410 24151	Knob on SK2
	4822 273 30324	Switch SK4
	4822 256 30274	Fuse holder 1651
	4822 267 30631	Socket var. level
1224	4822 280 20213	Relais
	4822 492 41268	Spring fix. TS7599
	4822 492 63339	Spring fix. TS7618
	4822 492 62907	Spring fix. other transistors and IC's
	4822 255 40527	Isolation plates
	4822 320 20097	EHT cable
	4822 320 20126	Focus cable long
	4822 320 40136	Focus cable short
	4822 267 50606	Connector on focus cable

CARRIER PANEL



3023	4822 111 30515	18 Ω	0,33 W
3030	4822 111 30505	7.5 Ω	0,33 W
3203	4822 111 30494	2.7 Ω	0,33 W
3213	4822 111 30494	2.7 Ω	0,33 W
3290	4822 111 30508	10 Ω	0,33 W
3535	4822 111 30508	10 Ω	0,33 W
3542	4822 100 20487	10 kΩ	potm.
3557	5322 116 64011	30 MΩ	0,25 W
3558	4822 110 72201	3.3 MΩ	0,25 W
3559	4822 100 11022	1 MΩ	potm.
3560	5322 116 64026	6.2 MΩ	0,25 W
3592	4822 116 52302	750 kΩ	0,5 W
3595	4822 100 20487	10 kΩ	potm.
3602	4822 111 30513	15 Ω	0,33 W
3632	4822 116 53418	2.7 kΩ	5 W
3632	4822 116 53568	3.3 kΩ	5 W
3644	4822 111 30483	1 Ω	0,33 W
3645	4822 111 30483	1 Ω	0,33 W
3646	4822 111 30494	2.7 Ω	0,33 W
3647	4822 111 30494	2.7 Ω	0,33 W
3651	4822 111 30553	470 Ω	0,33 W
3652	4822 111 30553	470 Ω	0,33 W
3653	4822 116 40033	NTC/PTC	(110°)
3653	4822 116 40065	PTC/PTC	( 90°)
3654	5322 113 41033	2.2 Ω	7 W
3654	4822 113 80388	3.9 Ω	7 W
3664	4822 113 80383	82 Ω	7 W
3666	4822 111 30502	5.6 Ω	0,33 W
3671	4822 113 11002	15 Ω	5 W
3678	4822 116 52784	2.7 kΩ	0,4 W
3679	4822 116 52776	2.2 kΩ	0,4 W
3683	4822 116 53087	1.2 kΩ	0,4 W
3705	4822 116 53028	7.5 kΩ	0,6 W
3715	4822 100 20488	470 Ω	potm.
3935	4822 111 30498	4.3 Ω	0,33 W



2544	4822 121 42477	47 nF	50 V
2553	4822 121 42477	47 nF	50 V
2554	4822 121 50753	2.2 nF	160 V
2572	4822 121 42477	47 nF	50 V
2608	4822 124 21208	4.7 μF	50 V
2609	4822 121 40249	8.2 nF	1600 V
2609	4822 121 42383	6.2 nF	2000 V
2611	4822 121 40479	390 nF	250 V
2612	4822 121 42597	360 nF	250 V
2612	4822 121 42376	470 nF	250 V
2617	4822 122 32771	1.5 nF	2000 V
2617	4822 122 20039	270 pF	2000 V
2638	4822 124 21923	3.3 μF	250 V
2651	4822 121 50627	470 nF	250 V
2654	4822 122 32769	2.2 nF	1000 V
2655	4822 122 32769	2.2 nF	1000 V
2656	4822 122 32769	2.2 nF	1000 V
2657	4822 122 32769	2.2 nF	1000 V
2659	4822 124 21686	220 μF	385 V
2664	4822 122 32071	2.2 nF	1000 V
2675	4822 121 42589	82 nF	63 V
2690	4822 124 41282	1 μF	50 V
2691	4822 122 20038	47 pF	
2694	4822 122 20039	270 pF	2000 V



1601	4822 253 30174	T125 mA	(for 90°)
1601	4822 253 10074	T315 mA	(for 110°)
1642	4822 253 10057	T800 mA	
1651	4822 253 30025	T2 A	
1704	4822 253 30089	T2,5 A	
1707	4822 253 30089	T2,5 A	
1711	4822 253 10074	T315 mA	



(board)







<b>M4</b>	4822 265 40442	10p
<b>M5</b>	4822 267 40648	5p
<b>M6</b>	4822 264 50149	10p
<b>M7</b>	4822 264 50148	8p
<b>M8</b>	4822 264 50148	8p
<b>M9</b>	4822 267 50591	6p
<b>M10</b>	4822 264 50148	8p
<b>M11</b>	4822 265 30437	3p
<b>M12</b>	4822 265 40422	8p
<b>M13</b>	4822 265 30351	5p
<b>M14</b>	4822 265 30378	4p
<b>M15</b>	4822 265 30389	2p
<b>M16</b>	4822 265 30407	3p
<b>M17</b>	4822 265 40421	6p
<b>M18</b>	4822 265 30389	2p
<b>M19</b>	4822 265 30389	2p






(cable)

<b>M4</b>	4822 267 50637	10p
<b>M12</b>	4822 265 40253	8p
<b>M13</b>	4822 265 30275	5p
<b>M14</b>	4822 267 40507	4p
<b>M15</b>	4822 267 40653	3p
<b>M16</b>	4822 265 30273	3p
<b>M17</b>	4822 267 30546	6p
<b>M18</b>	4822 267 30639	2p
<b>M19</b>	4822 267 30639	2p




## PICTURE TUBE PANEL 1400

	BC548C 4822 130 44196 BC558B 4822 130 44197 BF423 4822 130 41646 BF485 4822 130 42702 BF583 4822 130 60143 BF870 4822 130 60126																																																																																				
	1N4148 4822 130 31438																																																																																				
	<table border="0"> <tbody> <tr><td>3400</td><td>4822 111 30539</td><td>150 <math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3401</td><td>4822 111 30582</td><td>6.2 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3402</td><td>4822 111 30568</td><td>2 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3402</td><td>4822 111 30561</td><td>1 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3414</td><td>4822 100 20148</td><td>1 k<math>\Omega</math></td><td>potm.</td></tr> <tr><td>3419</td><td>4822 116 52408</td><td>2.2 k<math>\Omega</math></td><td>0,5 W</td></tr> <tr><td>3421</td><td>4822 111 30582</td><td>6.2 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3422</td><td>4822 111 30568</td><td>2 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3422</td><td>4822 111 30561</td><td>1 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3434</td><td>4822 100 20148</td><td>1 k<math>\Omega</math></td><td>potm.</td></tr> <tr><td>3439</td><td>4822 116 52408</td><td>2.2 k<math>\Omega</math></td><td>0,5 W</td></tr> <tr><td>3441</td><td>4822 111 30582</td><td>6.2 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3442</td><td>4822 111 30568</td><td>2 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3442</td><td>4822 111 30561</td><td>1 k<math>\Omega</math></td><td>0,33 W</td></tr> <tr><td>3459</td><td>4822 116 52408</td><td>2.2 k<math>\Omega</math></td><td>0,5 W</td></tr> <tr><td>3470</td><td>4822 116 52408</td><td>2.2 k<math>\Omega</math></td><td>0,5 W</td></tr> <tr><td>3471</td><td>4822 116 52413</td><td>2.7 k<math>\Omega</math></td><td>0,5 W</td></tr> <tr><td>3472</td><td>4822 101 10127</td><td>4.7 M<math>\Omega</math></td><td>potm.</td></tr> <tr><td>3473</td><td>5322 116 52489</td><td>1.3 M<math>\Omega</math></td><td>0,25 W</td></tr> <tr><td>3491</td><td>4822 116 53105</td><td>3.3 k<math>\Omega</math></td><td>0,6 W</td></tr> <tr><td>3492</td><td>4822 116 52776</td><td>2.2 k<math>\Omega</math></td><td>0,4 W</td></tr> </tbody> </table>	3400	4822 111 30539	150 $\Omega$	0,33 W	3401	4822 111 30582	6.2 k $\Omega$	0,33 W	3402	4822 111 30568	2 k $\Omega$	0,33 W	3402	4822 111 30561	1 k $\Omega$	0,33 W	3414	4822 100 20148	1 k $\Omega$	potm.	3419	4822 116 52408	2.2 k $\Omega$	0,5 W	3421	4822 111 30582	6.2 k $\Omega$	0,33 W	3422	4822 111 30568	2 k $\Omega$	0,33 W	3422	4822 111 30561	1 k $\Omega$	0,33 W	3434	4822 100 20148	1 k $\Omega$	potm.	3439	4822 116 52408	2.2 k $\Omega$	0,5 W	3441	4822 111 30582	6.2 k $\Omega$	0,33 W	3442	4822 111 30568	2 k $\Omega$	0,33 W	3442	4822 111 30561	1 k $\Omega$	0,33 W	3459	4822 116 52408	2.2 k $\Omega$	0,5 W	3470	4822 116 52408	2.2 k $\Omega$	0,5 W	3471	4822 116 52413	2.7 k $\Omega$	0,5 W	3472	4822 101 10127	4.7 M $\Omega$	potm.	3473	5322 116 52489	1.3 M $\Omega$	0,25 W	3491	4822 116 53105	3.3 k $\Omega$	0,6 W	3492	4822 116 52776	2.2 k $\Omega$	0,4 W
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3442	4822 111 30561	1 k $\Omega$	0,33 W																																																																																		
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3470	4822 116 52408	2.2 k $\Omega$	0,5 W																																																																																		
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3492	4822 116 52776	2.2 k $\Omega$	0,4 W																																																																																		
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P13	4822 265 30351 5p																																																																																				
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P13	4822 265 30275 5p																																																																																				
P1	4822 265 30273 3p																																																																																				
<b>Various</b>																																																																																					
1474	4822 101 20814 Focus pot. meter 4822 255 70216 Socket picture tube																																																																																				



## AUXILIARY PANEL NEAR SYNC. IC

	BC557 4822 130 44256 BC558 4822 130 40941												
	BZX55-C33 4822 130 33684 BZX79-C12 4822 130 34197 1N4148 4822 130 31438												
	<table border="0"> <tbody> <tr><td>3548</td><td>4822 110 72203</td><td>3.9 M<math>\Omega</math></td><td>0,25 W</td></tr> <tr><td>3549</td><td>4822 110 72214</td><td>10 M<math>\Omega</math></td><td>0,25 W</td></tr> <tr><td>3550</td><td>4822 110 72189</td><td>1.2 M<math>\Omega</math></td><td>0,25 W</td></tr> </tbody> </table>	3548	4822 110 72203	3.9 M $\Omega$	0,25 W	3549	4822 110 72214	10 M $\Omega$	0,25 W	3550	4822 110 72189	1.2 M $\Omega$	0,25 W
3548	4822 110 72203	3.9 M $\Omega$	0,25 W										
3549	4822 110 72214	10 M $\Omega$	0,25 W										
3550	4822 110 72189	1.2 M $\Omega$	0,25 W										

## HEADPHONE PANEL 1250

	2244 4822 124 21941 2.2 $\mu$ F 63 V 2245 4822 124 21941 2.2 $\mu$ F 63 V
	(board)
H1+H4	4822 265 30407 3p
H5	4822 265 30378 4p
H14	4822 265 30378 4p
	(cable)
H1+H4	4822 265 30273 3p
H5	4822 265 40507 4p
H14	4822 265 40507 4p
<b>Various</b>	
	4822 267 30324 Socket,jack 4822 404 30643 Bracket

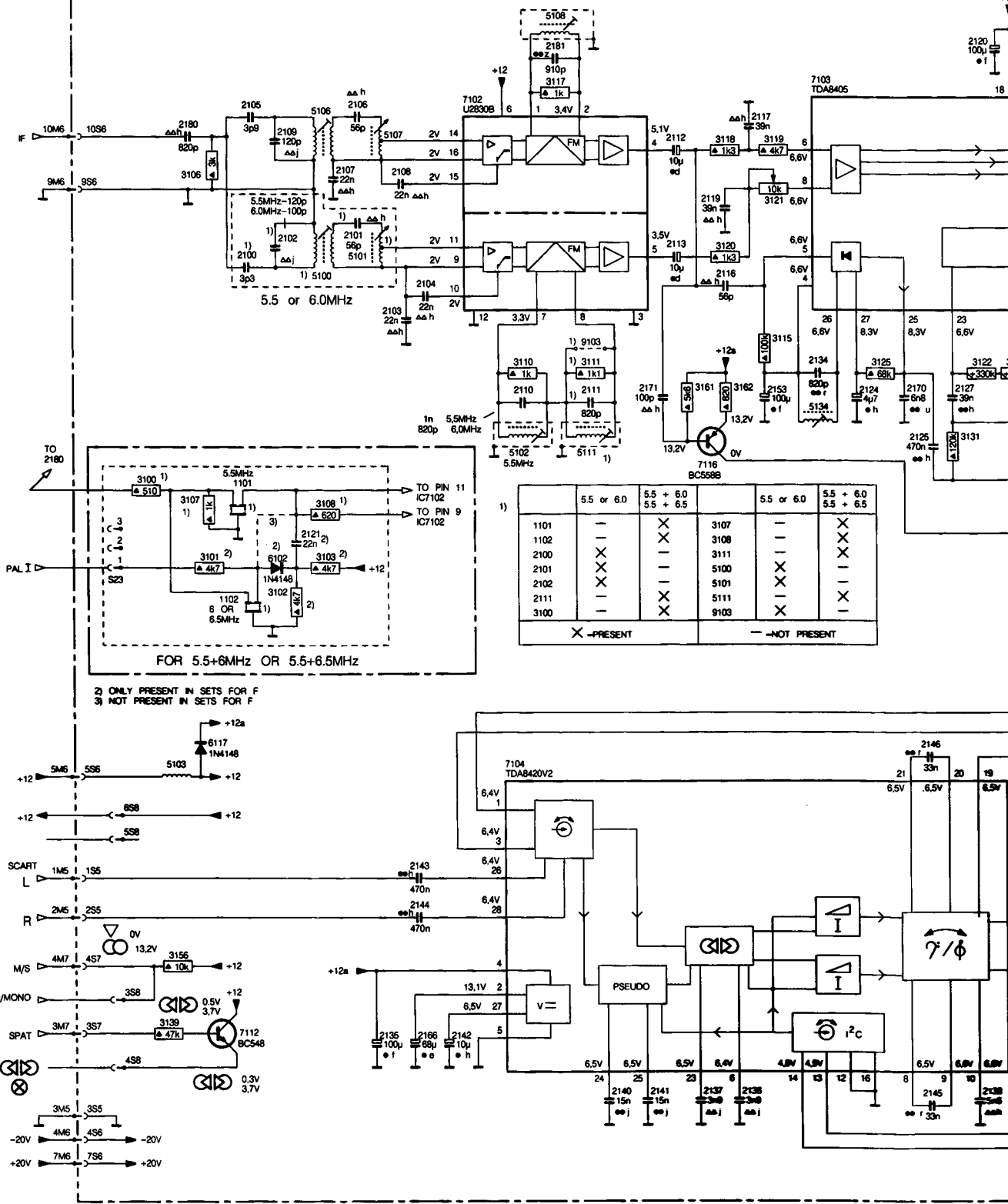
## MAINS FILTER 1950 (ONLY FOR 24 INCH)

	2101 4822 121 50627 470 nF 250 V
	5101 4822 158 30208

1100 STEREO SOUND MODULE

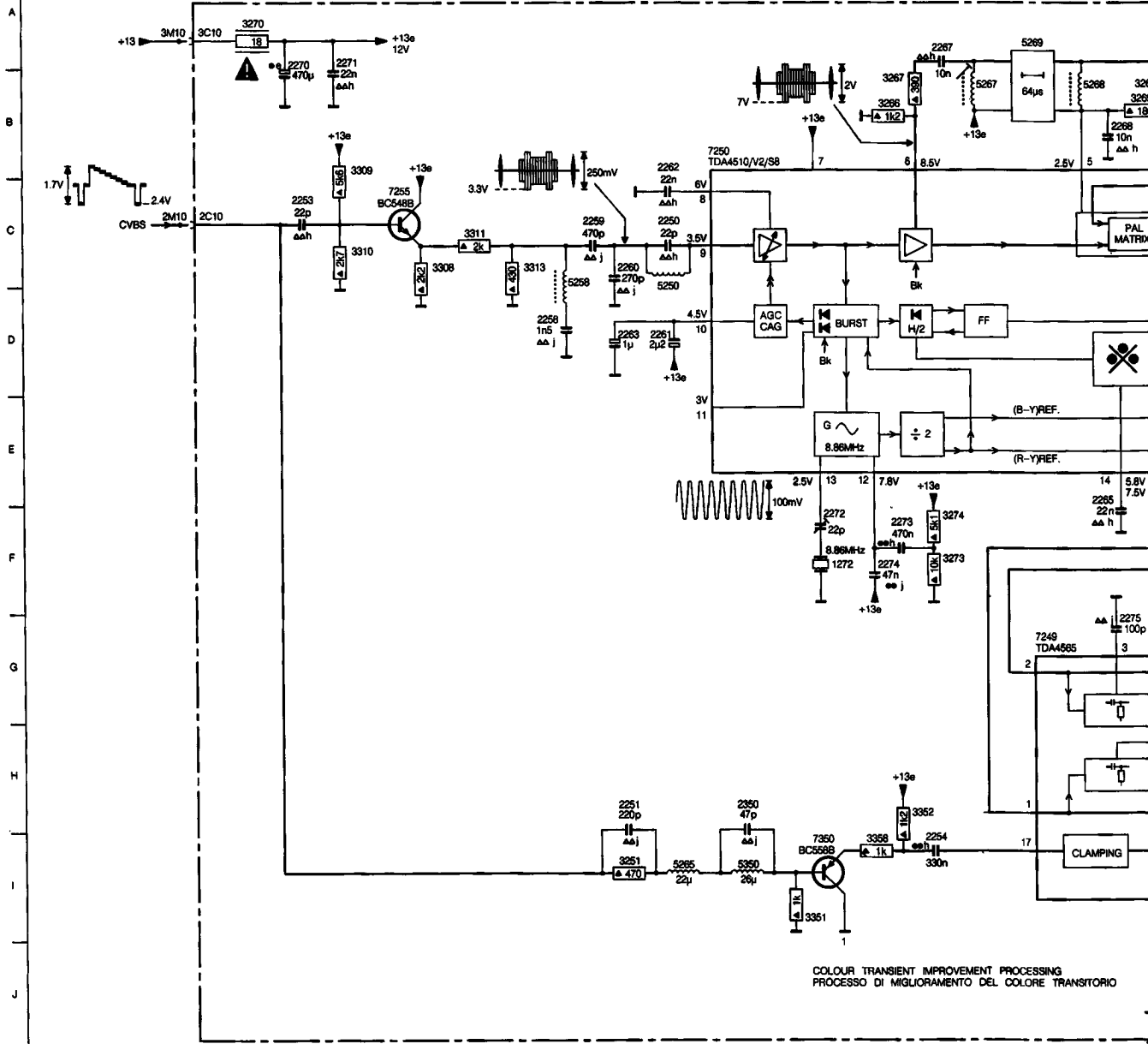
MODULO SONIDO STEREO

MÓDULOS SONIDO ESTEREOFONIE





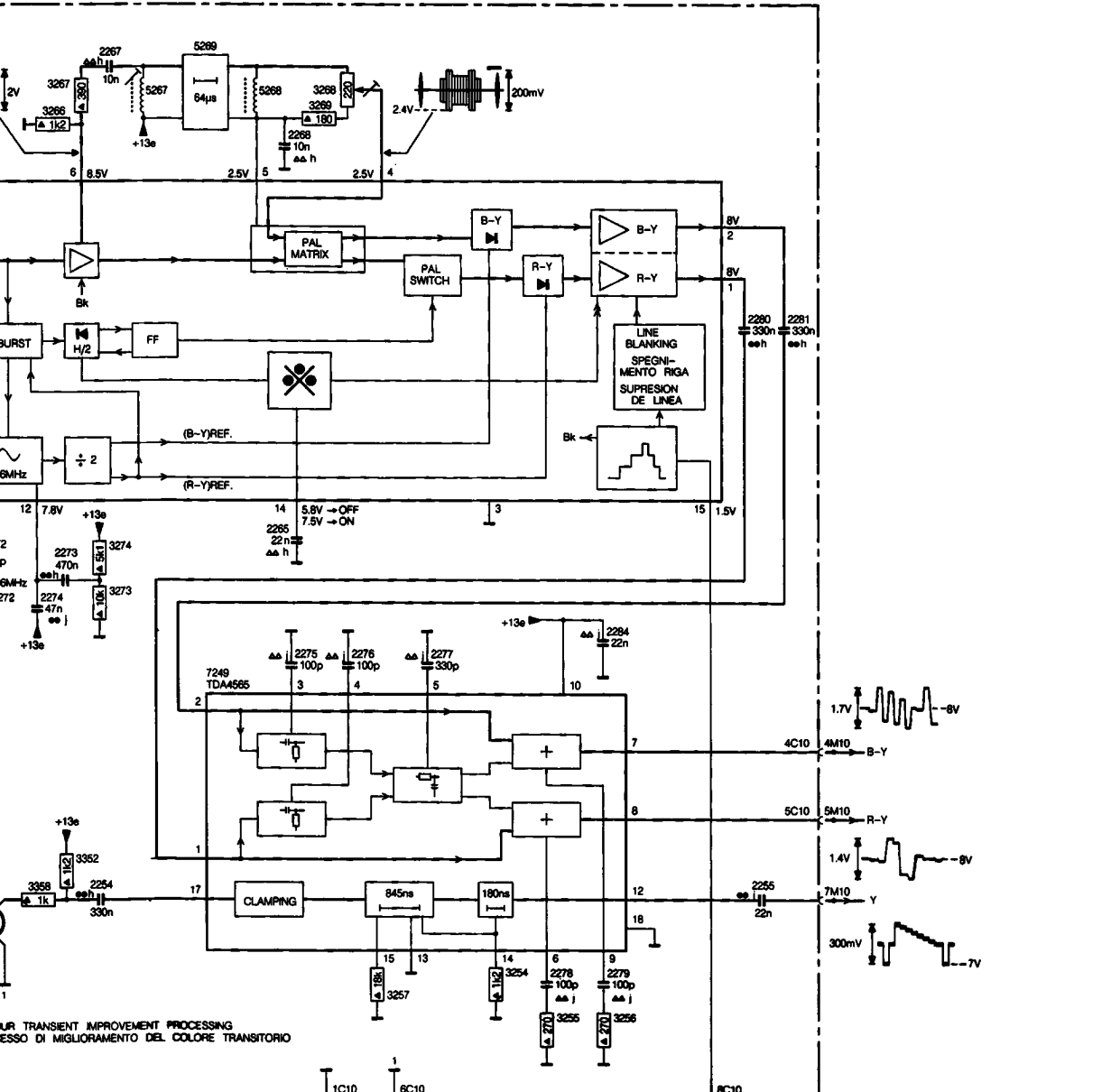
1300 CHROMINANCE DECODER DECODIFICATORE CROMINANZA DECODIFICADOR



COLOUR TRANSIENT IMPROVEMENT PROCESSING  
 PROCESSO DI MIGLIORAMENTO DEL COLORE TRANSITORIO



# MINANZA DECODIFICADOR CROMINANCIA PAL-CTI





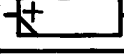
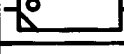

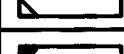

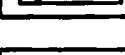
TRANSIENT IMPROVEMENT PROCESSING  
 PROCESSO DI MIGLIORAMENTO DEL COLORE TRANSITORIO



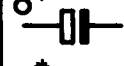

CHASSIS 2B-E PRS 02954 T02-750

- 1272 F 8
- 2250 C 6
- 2251 H 6
- 2253 C 3
- 2254 I 9
- 2255 I 15
- 2258 C 5
- 2259 C 6
- 2260 C 6
- 2261 D 6
- 2262 B 6
- 2263 D 6
- 2265 E 10
- 2267 A 9
- 2268 B 11
- 2270 A 3
- 2271 A 3
- 2272 F 8
- 2273 F 8
- 2274 F 9
- 2275 G 11
- 2276 G 11
- 2277 G 12
- 2278 I 13
- 2279 I 13
- 2280 D 15
- 2281 D 15
- 2284 F 13
- 2350 H 7
- 3251 I 6
- 3254 I 12
- 3255 J 13
- 3256 I 13
- 3257 J 11
- 3266 B 8
- 3267 B 8
- 3268 B 11
- 3269 B 11
- 3270 A 2
- 3273 F 9
- 3274 F 9
- 3308 C 4
- 3309 B 4
- 3310 C 4
- 3311 C 5
- 3313 C 5
- 3351 I 8
- 3352 H 8
- 3357 I 8
- 5250 C 6
- 5258 D 6
- 5265 I 6
- 5267 B 9
- 5268 B 10
- 5269 A 10
- 5350 I 7
- 7249 G 10
- 7250 B 7
- 7250 I 9
- 7255 C 4

- G
- H
- I
- J
- K

## SYMBOLS USED IN CIRCUIT DIAGRAMS

SYMBOL	TYPE	$t \begin{matrix} P \\ 70^\circ \\ \text{amb} \end{matrix}$	TOLERANCE	SERIES
	SFR16T	0.5	1E - 3M 5%	E24
	SFR25H	0.5	1E - 10M 5%	E24
	MRS25	0.6	1E - 1M 1%	E24
	MR30	0.5	1E - 1M 1% (2%)	E24
	VR37	0.5	220K - 33M 5%	E24
	PR37	1.6	1E - 1M 5%	E24
	VR68	1	100K - 68M 5%	E24
	MRS 16T	0.4	10R - 100K	E24/E96

SYMBOL	TYPE	VOLTAGE DC	TOLERANCE
	POLYESTER FLATFOIL	SEE NOTE	10%
	PLATE CERAMIC	SEE NOTE	DEPENDING ON CAPACITY
	ELCO MINIATURE SINGLE	SEE NOTE	-10+50%
	ELCO SINGLE ENDED	SEE NOTE	±20%

## NOTE:

*	f = 25V	q = 200V	x = 1000V	E = 20V
	g = 40V	r = 250V	z = 1600V	F = 35V
a = 2.5V	h = 63V	s = 300V	A = 1.6V	G = 50V
b = 4V	j = 100V	t = 350V	B = 6V	H = 75V
c = 6.3V	l = 125V	u = 400V	C = 12V	I = 80V
d = 10V	m = 150V	v = 500V	D = 15V	
e = 16V	n = 160V	w = 630V		

39 301 A13/617

**Notes to NICAM faultfinding tree**

**Note 1**

This signal depends on the input signal.  
 In case a generator with a NICAM sound signal is used the AF sound signal generated by the generator appears here.  
 In case an aerial signal with NICAM sound is used the broadcast AF sound signal appears here.

**Note 2**

Measurement of the I<sup>2</sup>S signals must take place as follows.  
 Connect one channel of the oscilloscope to the word selection (WS) line. Use this signal also to trigger the oscilloscope.  
 Measure with the other channel of the oscilloscope the clock (CL) signal (see fig.1).  
 Next connect one channel of the oscilloscope to the clock (CL) line. Use this signal to trigger the oscilloscope.  
 Measure with the other channel of the oscilloscope the data (DA) signal (see fig.2).

**Note 3**

The frequency of the clock signal (pin 22) is 728 kHz.  
 The data signal (pin 23) is locked to the clock signal and has a maximum frequency equal to the clock frequency (see fig.3).

**Note 4**

With this measurement the oscilloscope is operated in X-Y operation. Which signal is used as X or Y drive is immaterial; however, the input sensitivities have to be equal (1 V/div). The picture below (see fig.4) must be visible on the oscilloscope now and the cross pattern must be still and straight.

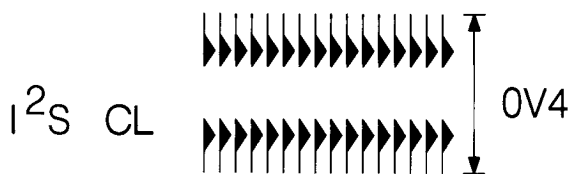
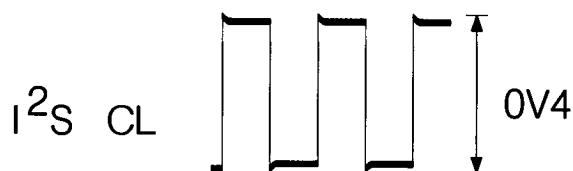


Fig. 1

Fig. 2

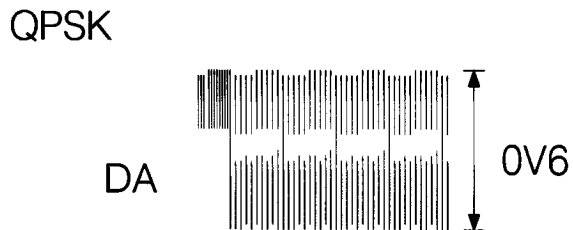
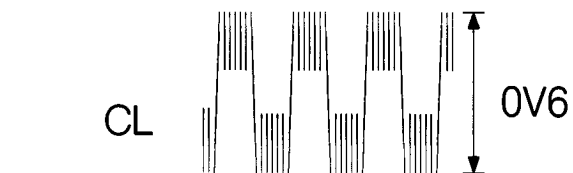


Fig. 3

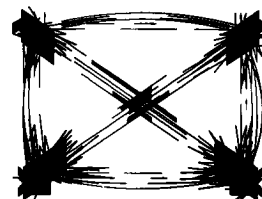








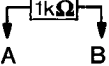


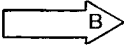










Fig. 4

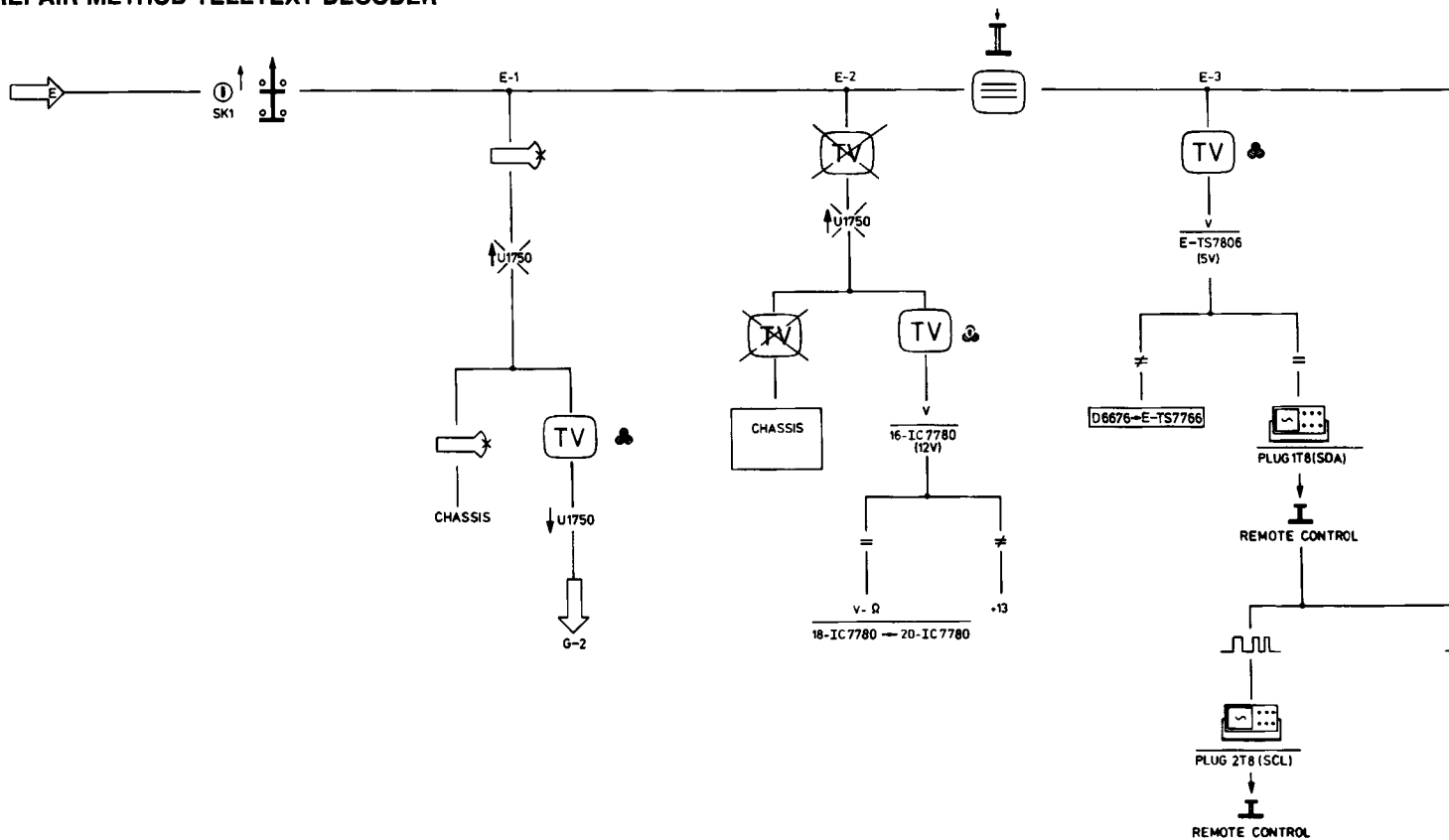
## SYMBOLS FOR FAULT-FINDING TREE

	Connect generator (with NICAM sound)		Supply aerial signal (with NICAM sound)
	Correct		Incorrect
	Measure the signal/ oscillogram		Check circuit between ... and ...
	Check the circuit		No or bad NICAM sound
	Insert 1000Ω resistor between A and B		Measure frequency
	Measure voltage		See faultfinding tree B








## SURVEY OF CONNECTORS

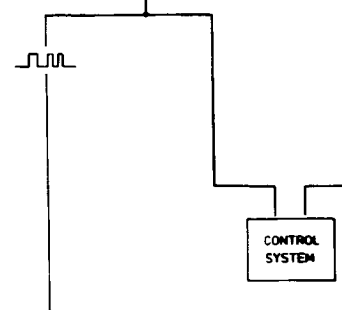
Board to board Au		
	male 	female 
3P	4822 265 30437	4822 265 30431
4P	4822 417 50217	4822 265 30276
5P	4822 267 40648	4822 265 40503
6P	4822 267 50591	4822 265 40469
8P	4822 264 50148	4822 265 40471
10P	4822 264 50149	4822 265 40472
Wire to board		
	male 	female 
3P	4822 264 40207	4822 267 40582
4P	4822 265 30378	4822 267 40597
5P	4822 265 30351	4822 267 40583
6P	4822 265 40421	4822 267 40584
8P	4822 265 40422	4822 267 50544
10P	4822 265 40442	4822 267 50571
Wire to board		
	male  (edge)	female 
3P	4822 267 40575	4822 267 40582
4P	4822 267 40576	4822 267 40597
5P	4822 265 30497	4822 267 40583
6P	4822 267 50592	4822 267 40584
8P	4822 267 50526	4822 267 50544
10P	4822 267 50593	4822 267 50571
Mains		
	male 	female 
2P	4822 265 30389	4822 267 30639
2P	4822 265 40596 (STOCKO)	4822 290 60626 (STOCKO)

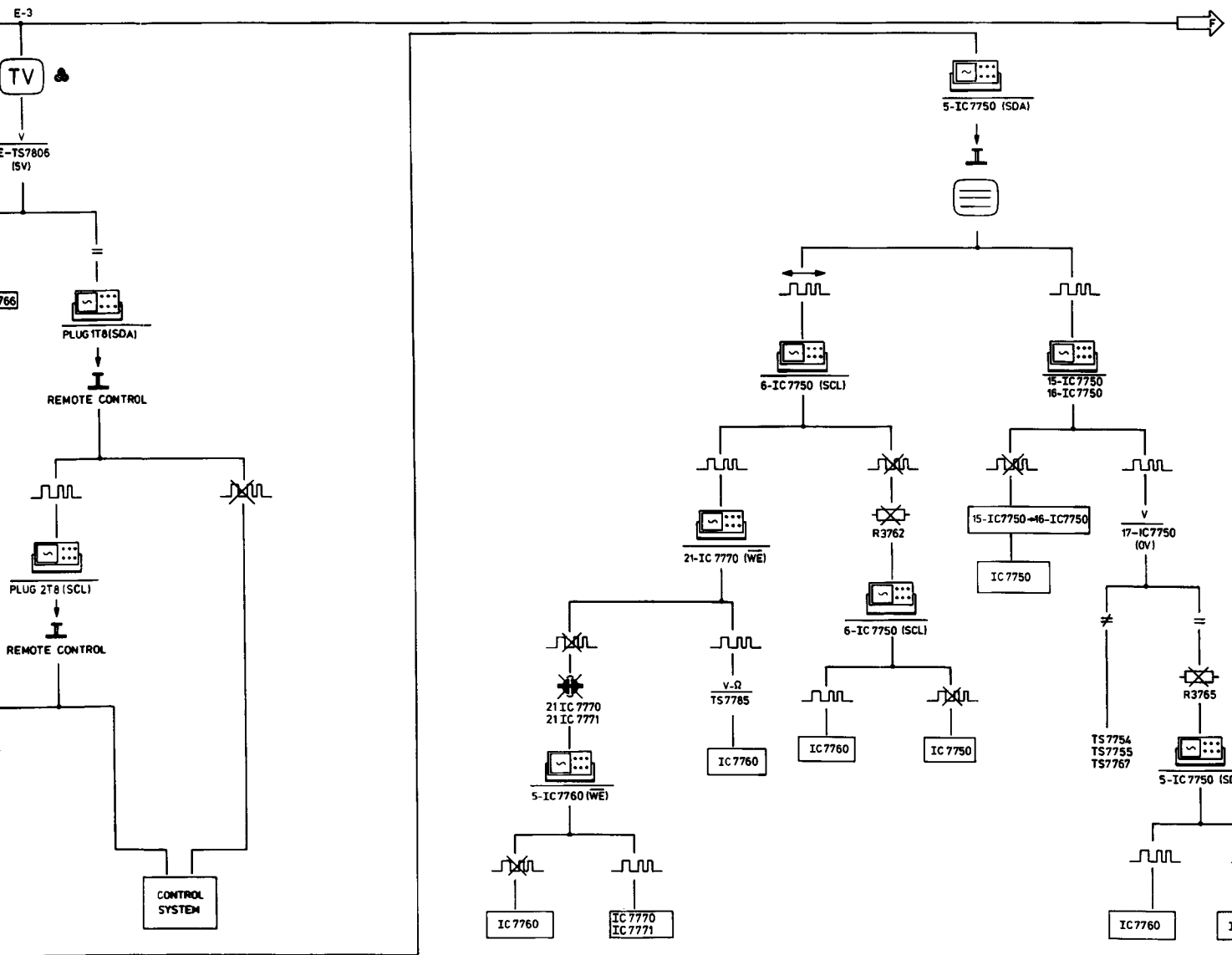
REPAIR METHOD TELETEXT DECODER



TXT DECODER 1750

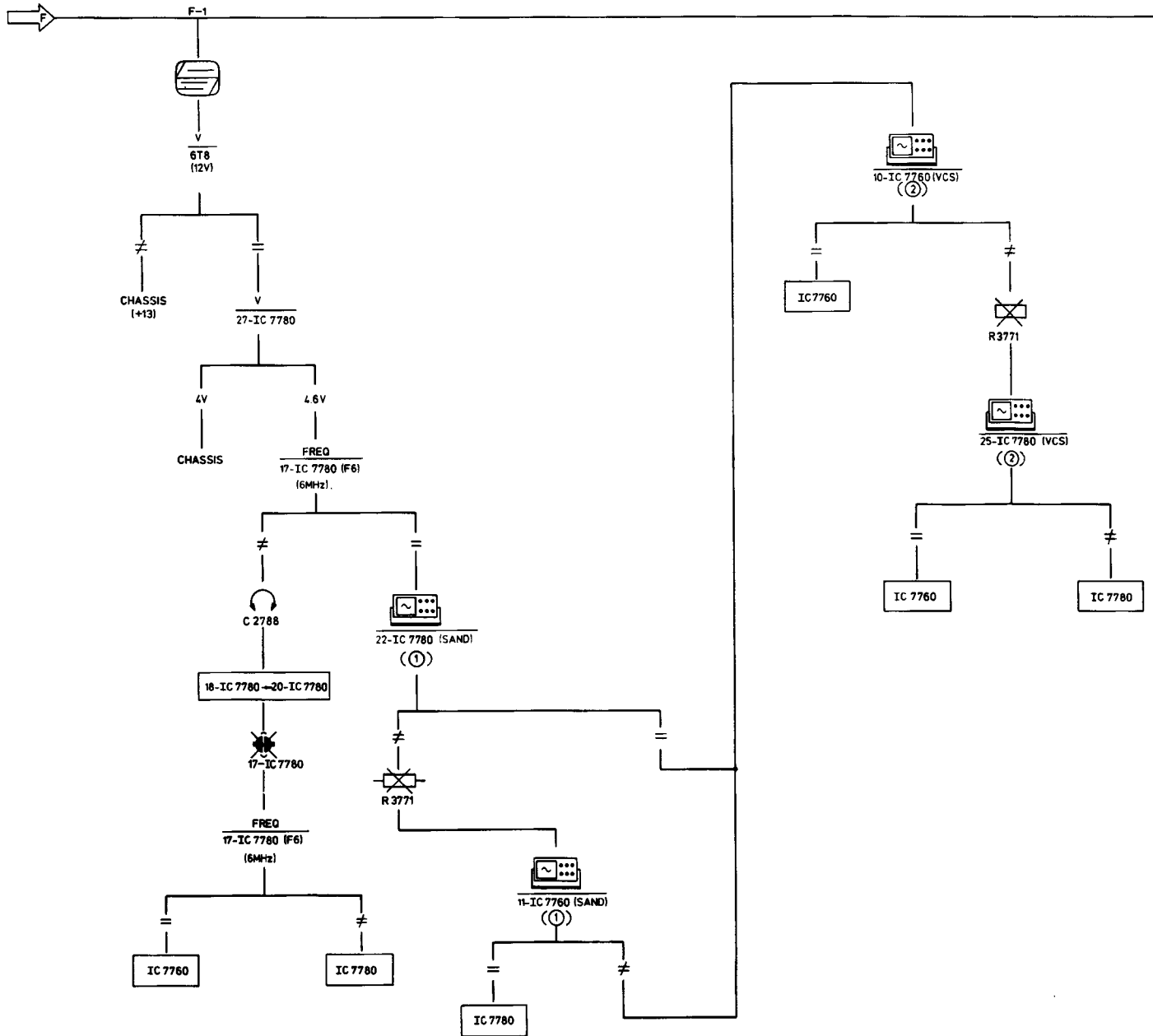
						
MAB8461P-W008	4822 209 11235	3787	4822 111 30494	2,7 Ω	0,33 W	
MSM2128	4822 209 10379					
SAA5230	4822 209 82786					
SAA5241A	4822 209 82819					
SAA5241B	4822 209 82785					
						
BC548	4822 130 40938	2788	4822 125 50045	20 pF	trimm.	
BC548B	4822 130 40937	2789	4822 124 21936	2.2 μF	50 V	
BC558	4822 130 40941					
BC558B	4822 130 44197					
BD943	5322 130 44921					
PH2369	4822 130 41594					
		<b>Various</b>				
		1752	4822 242 70932	Crystal	6 MHz	
		1788	4822 242 70932	Crystal	6 MHz	
		1800	4822 242 71417	Crystal	13,875 MHz	
						
BYD33G	4822 130 42489	T8	4822 265 40471	8p		
BZX55-B5V1	4822 130 33524	T9	4822 265 40469	6p		
BZX55-B8V2	4822 130 33526					
						
5750	4822 157 51462					
5766	4822 157 51157					
5795	4822 157 52392					
5800	4822 157 50965					

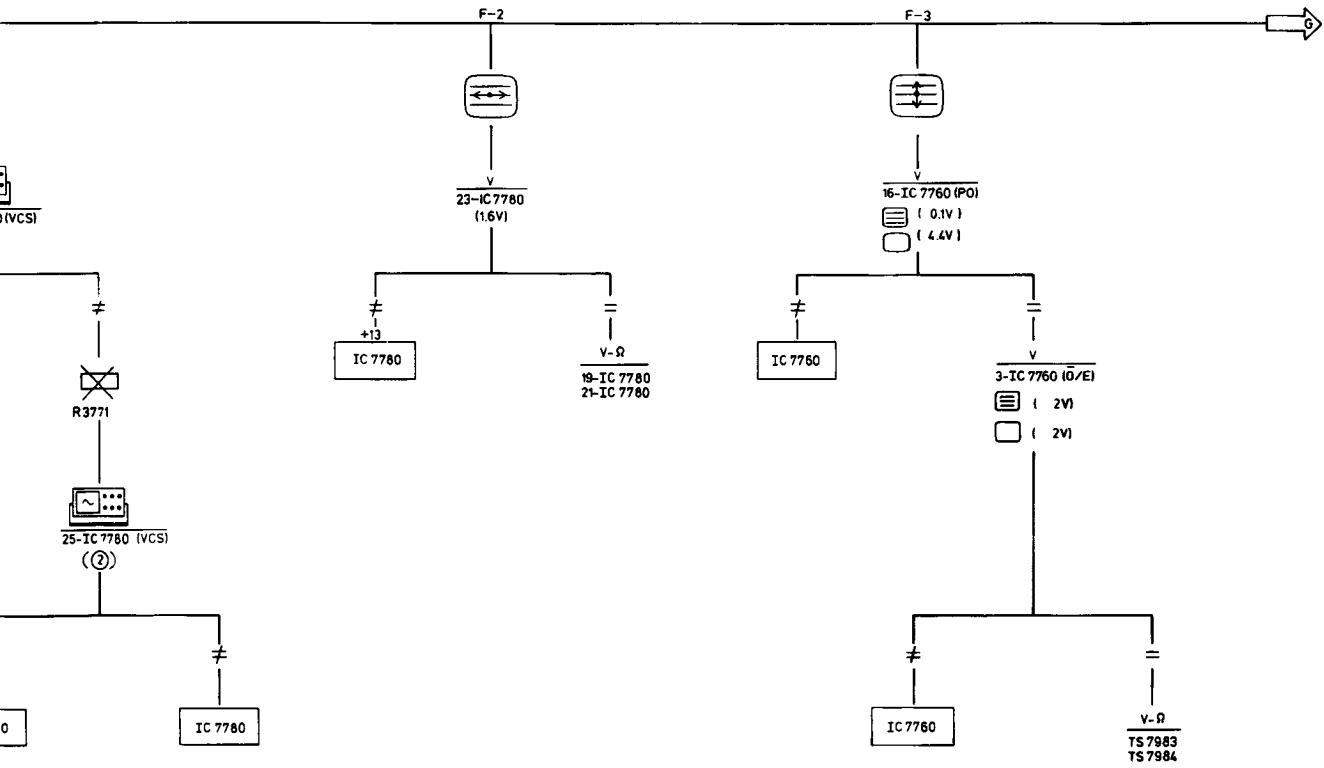




38 865 E12

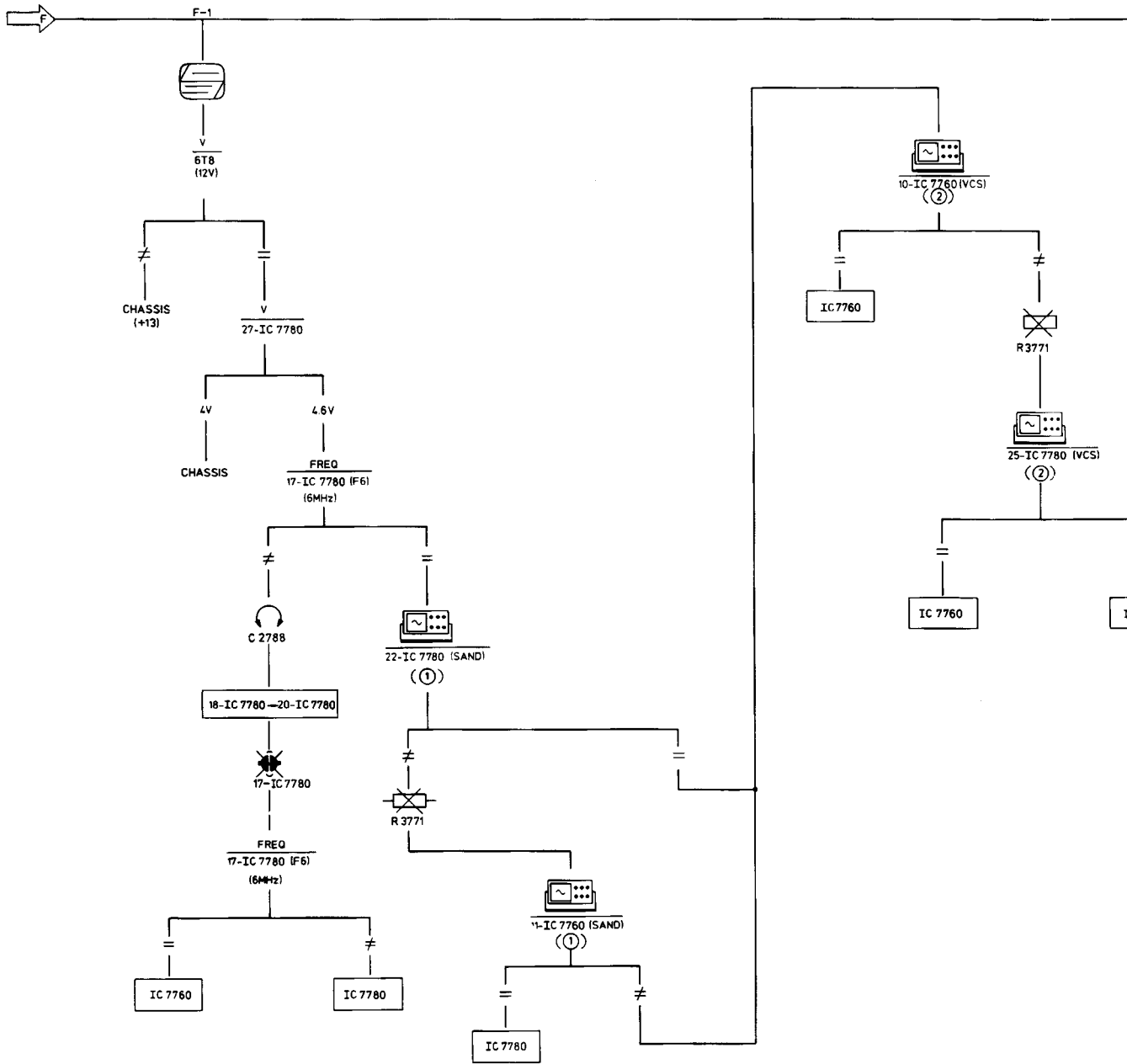
REPAIR METHOD TELETEXT DECODER

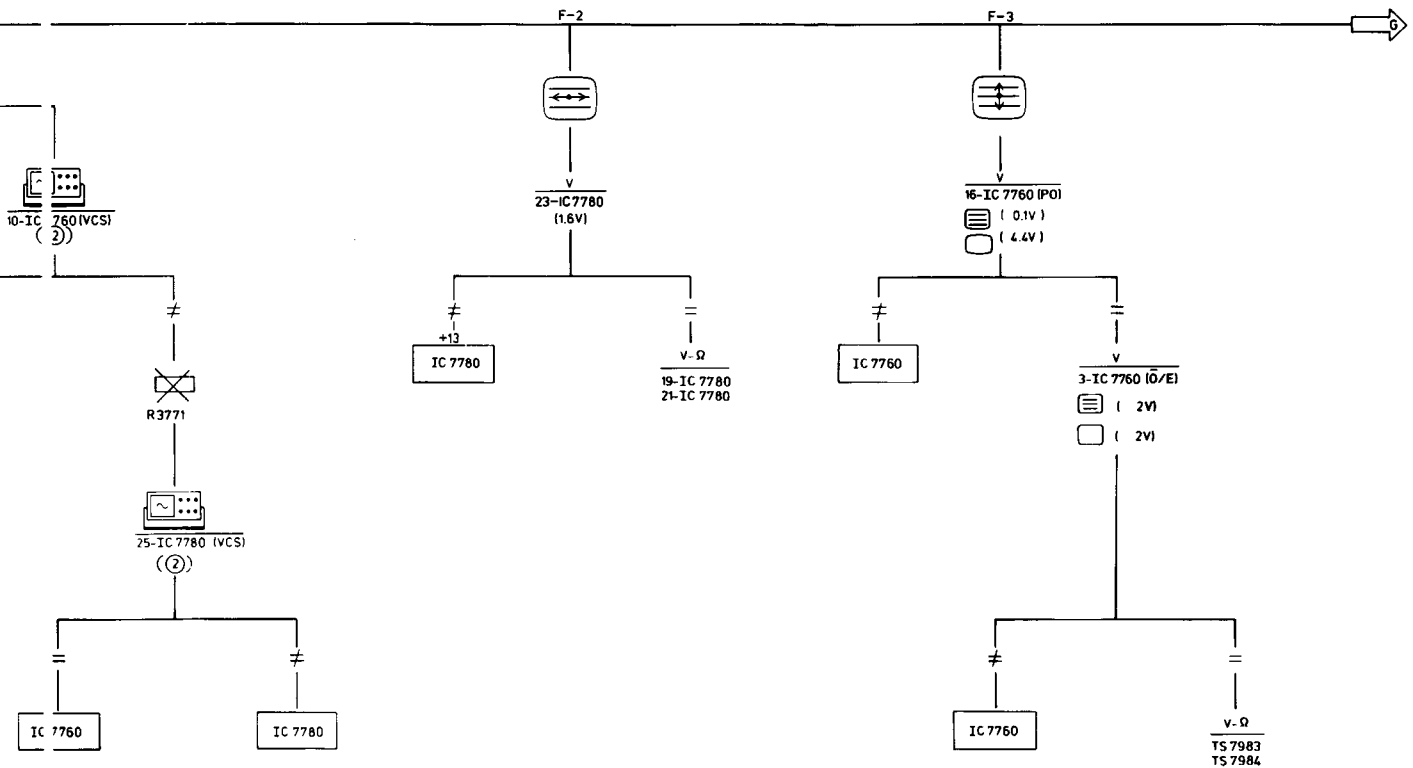






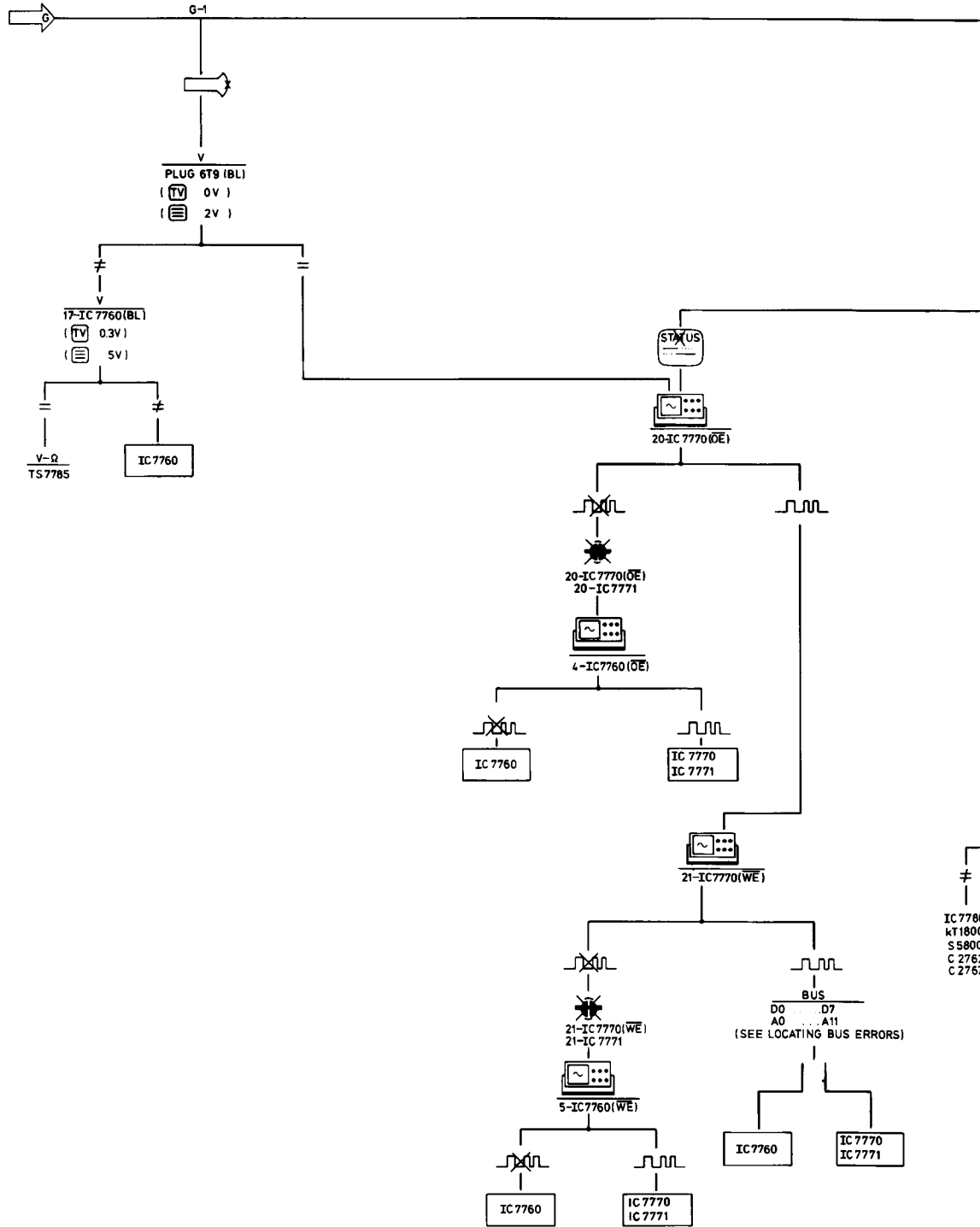
# REPAIR METHOD TELETEXT DECODER





38 866 ET2

RE 'AIR METHOD TELETEXT DECODER



IC 7760  
 KT1800  
 S5800  
 C 2762  
 C 2767

G-2



O.K.

\* AERIAL SYSTEM  
\* NO TXT TRANSMISSION



15-IC 7780 (T D)

(3)



14-IC 7780 (TTC)

(4)

11-IC 7780 (13.875 MHz) (6)  
12-IC 7780 (6.9 MHz) (5)



IC 7780  
KT1800  
S 5800  
C 2762  
C 2767



14-IC 7780



14-IC 7780 (TTC)

(5)



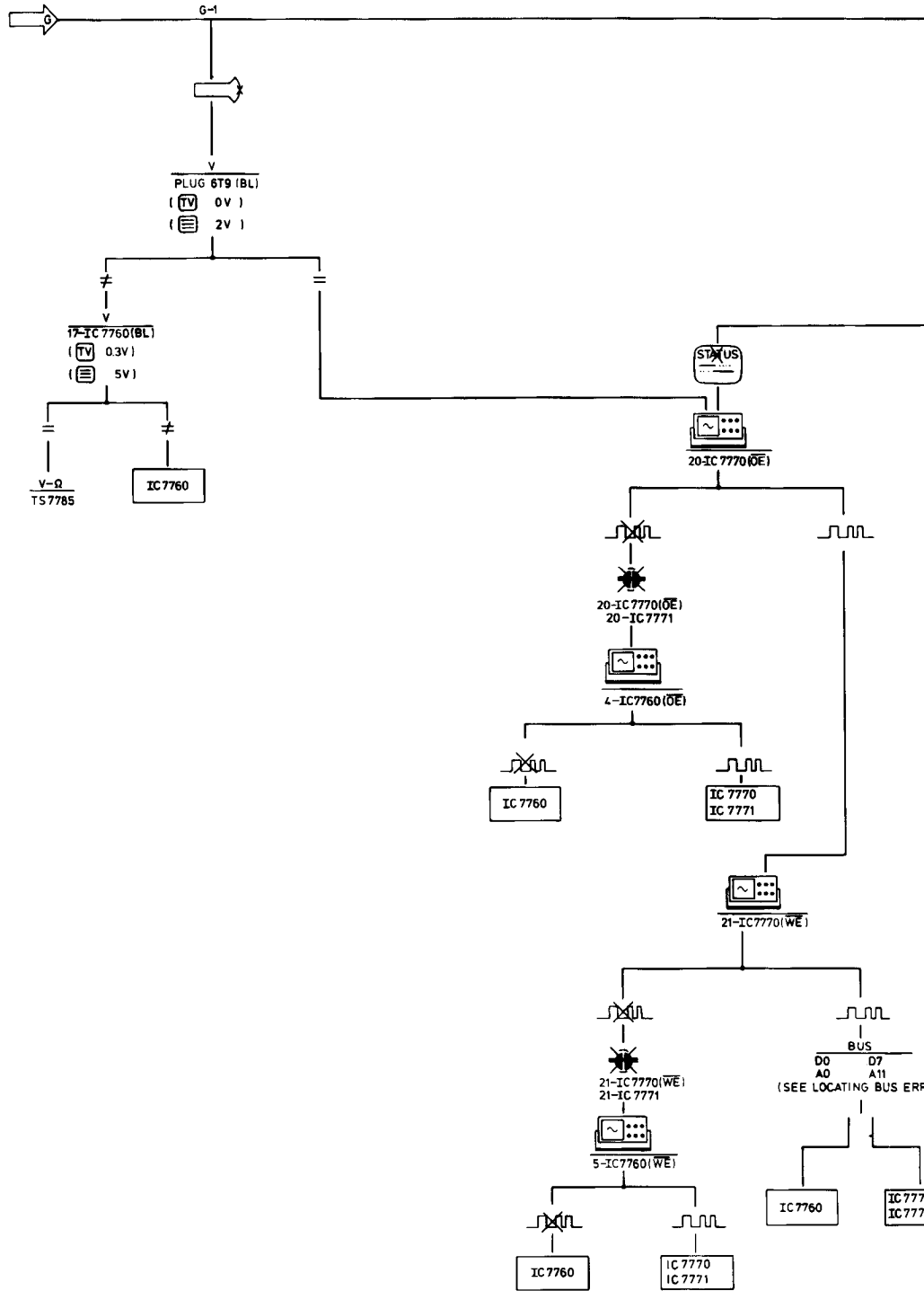
IC 7780  
KT1800  
S 5800  
C 2762  
C 2767

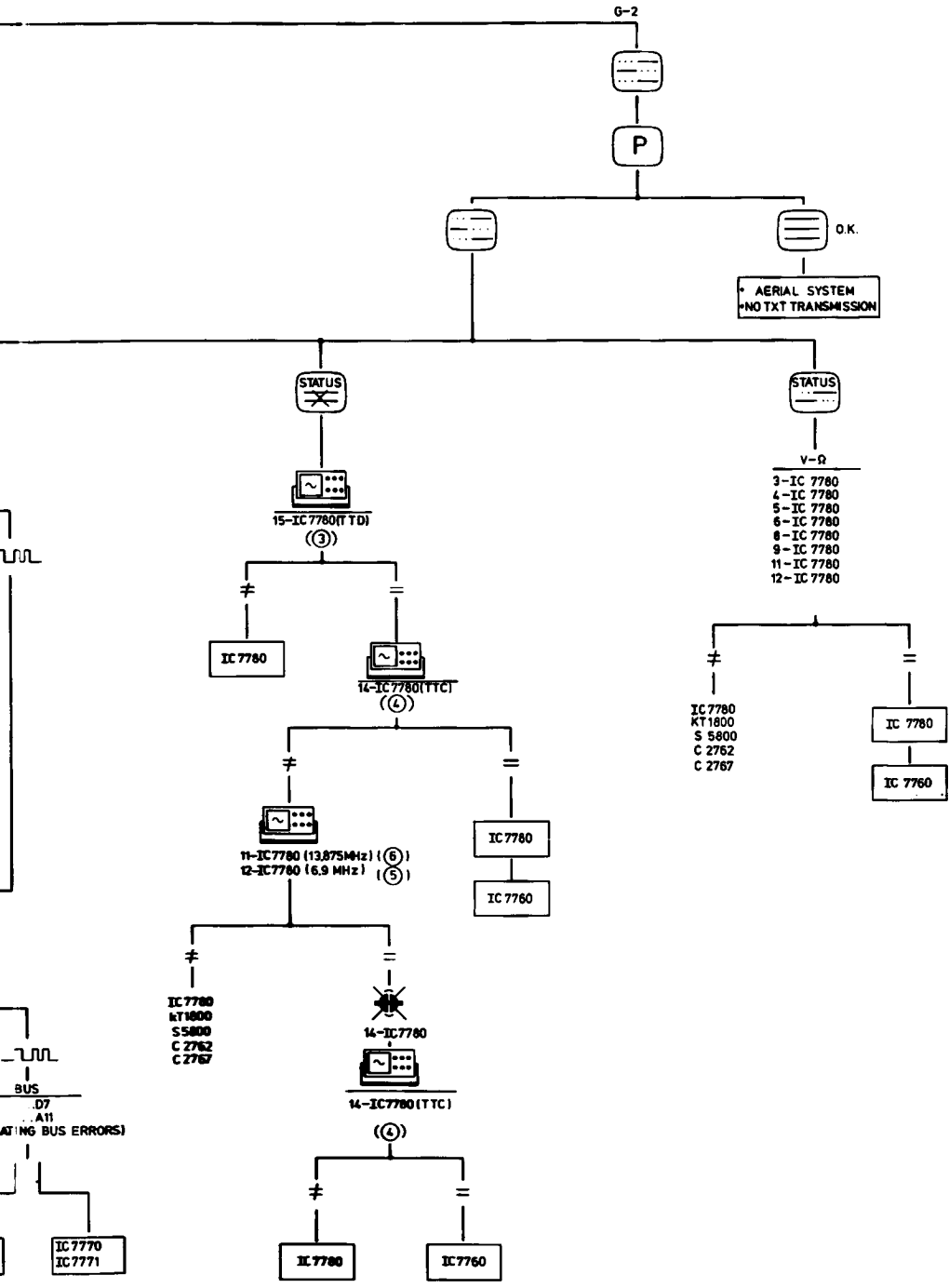


07  
A11  
BUS ERRORS)



# REPAIR METHOD TELETXT DECODER

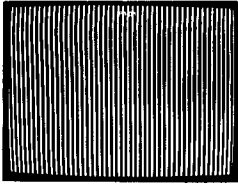




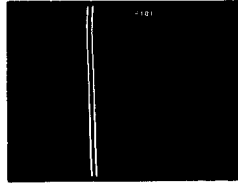
## LOCATING BUS ERRORS IN THE TELETEXT DECODER

- Loosen one side of resistor 3785 on the teletext decoder.  
Connect a piece of wire with measuring-pin to point 6 of socket T9.
- Connect a TV pattern generator (i.e. PM5519) and tune the receiver normally.  
Apply a white pattern and select the teletext mode with the remote control.

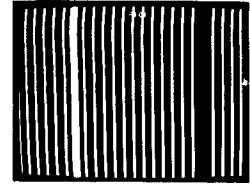
- When transferring the measuring-pin to the points of IC7760 which are indicated under the pictures below a defined pattern will be displayed on the screen.  
If the pattern is not present, but a uniform white or dark picture arises, there is question of short-circuit or an open connection on the relevant point. It may be caused by one of the three ICs, namely IC7760 - IC7770 - IC7771.



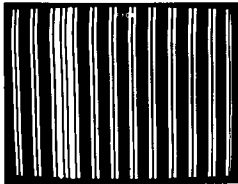
OE 4-IC7760



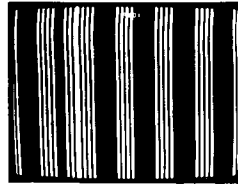
WE 5-IC7760



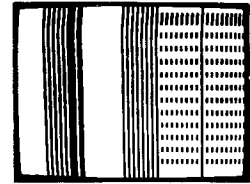
A0 30-IC7760



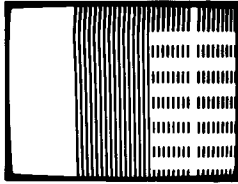
A1 31-IC7760



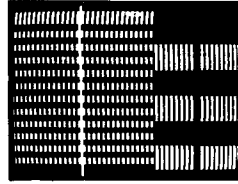
A2 32-IC7760



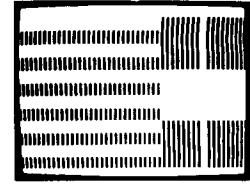
A3 33-IC7760



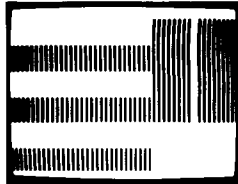
A4 34-IC7760



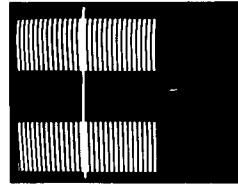
A5 35-IC7760



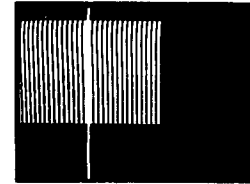
A6 36-IC7760



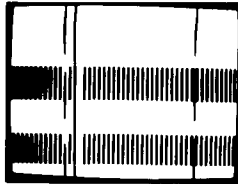
A7 37-IC7760



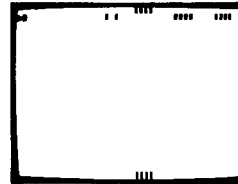
A8 38-IC7760



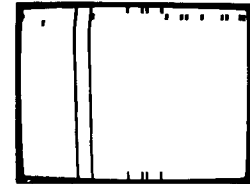
A9 39-IC7760



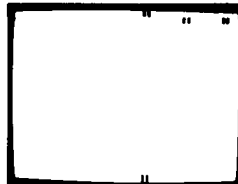
A10 40-IC7760



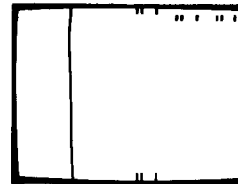
D0 22-IC7760



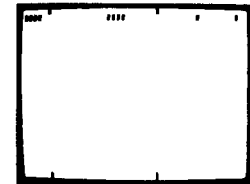
D1 23-IC7760



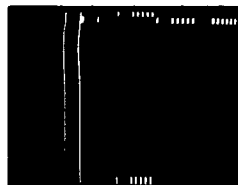
D2 24-IC7760



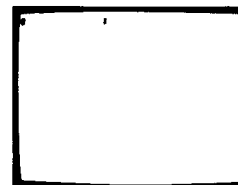
D3 25-IC7760



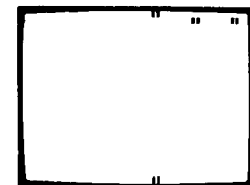
D4 26-IC7760



D5 27-IC7760



D6 28-IC7760



D7 29-IC7760