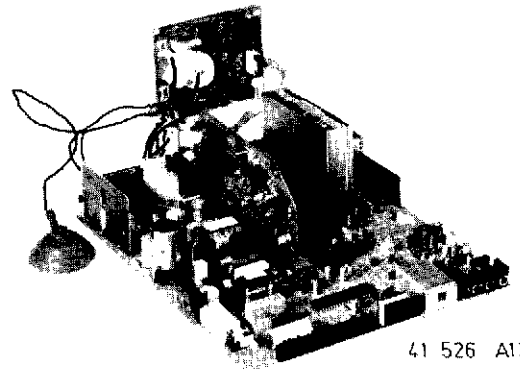


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# Service Manual





## TECHNICAL DATA

Mains voltage	: 220-240 V ~ ( $\pm 10\%$ )	Pull-in range colour sync	: +300 Hz/-300 Hz
Aerial input impedance	: 75 $\Omega$ - coax	Pull-in range horizontal sync	: +600 Hz/-600 Hz
Minimum aerial input VHF	: 30 $\mu$ V	Pull-in range vertical sync	: +5 Hz/-5 Hz
Minimum aerial input UHF	: 40 $\mu$ V		
Maximum aerial input	: 180 mV		






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



## CARRIER PANEL

	
CNX62      4822 209 70872 LA7910      4822 209 10892 LN524RA    4822 130 90388 TDA3561A   4822 209 81239 TDA8190    4822 209 70872	5108      4822 157 52809 5259      4822 157 51462 5261      4822 157 52807 5270      4822 157 52808 5271      4822 157 50961
	5600      4822 152 20558 5608      4822 157 52315 5611      4822 156 21332
BC328      4822 130 44104 BC547      4822 130 44257 BC548      4822 130 40938 BC548B     4822 130 40937 BC548C     4822 130 40196 BC556      4822 130 40989 BC558      4822 130 40941 BC636      4822 130 44283 BD943      5322 130 44921 BF483      4822 130 42607 BUT11AF    4822 130 42679	5620      4822 140 10306      Line output 5629      4822 146 21116      Line driver 5638      4822 158 10563 5642      4822 158 10551 5653      4822 158 10551 5654      4822 158 10551 5655      4822 158 30208 5674      4822 158 10604 5697      4822 158 10551 5763      4822 146 50217      SOPS transf. 5914      4822 157 50965 5960      4822 157 52806 5972      4822 156 10501
	5972      4822 156 10501
BAV19      4822 130 30967 BAV20      4822 130 33941 BAV21      4822 130 30842 BAX14      4822 130 34193 BPW50      4822 130 32376 BT151-500R 5322 130 24081 BYD33D    4822 130 42488 BYD33G    4822 130 42489 BYD33J    4822 130 42606 BYD33M    4822 130 32896 BYW95B    4822 130 32058 BZX79-C4V7 4822 130 34174 BZX79-C15 4822 130 34281 BZX79-F5V6 4822 130 34173 BZX79-F6V2 4822 130 34167 BZX79-F11 4822 130 34488 BZX79-F33 4822 130 34142 BZX79-F36 4822 130 34368 CQS51     4822 130 33943 SF2041    4822 130 20193 ZTK33B    4822 130 30959 1N4148-30 4822 130 33941 1N4148-75 4822 130 33939 1N5061    4822 130 31933	VARIOUS 1002      4822 210 10266      UV617 1002      4822 210 50118      U743 1040      4822 212 22607      SYNC/IF 1040      4822 121 22688      SYNC/IF (UK) 1103      4822 121 40543      filter 5.5 MHz 1262      4822 157 51056      delay line DL330 1267      4822 242 70626      crystal 8.867238 MHz 1270      4822 320 40096      delay line DL701 1934      4822 242 70831      filter 4822 138 10032      battery 2.5 V 4822 267 60172      CVBS/audio socket 4822 267 60188      scart socket 4822 256 30274      fuse holder 4822 276 12035      switch SK1 4822 273 30206      switch Sk20 4822 276 12035      keyboard switch assy 4822 492 63524      spring fix. trans. 4822 417 50217



# CARRIER PANEL

					
3002	4822 111 30508	10 $\Omega$ 0,33 W	2267	4822 125 50045	20 pF trimm.
3036	4822 111 30499	4.7 $\Omega$ 0,33 W	2608	4822 124 21208	4.7 $\mu$ F 50 V
3274	4822 100 20148	1 k $\Omega$ potm.	2610	5322 121 42523	8.2 nF 2 kV
3275	4822 111 30508	10 $\Omega$ 0,33 W	2611	4822 121 42442	nF 200 V
3571	4822 116 51091	18 k $\Omega$ 2,5 W	2619	4822 122 31692	1.5 nF 1 kV
3573	4822 116 51789	22 $\Omega$ 0,5 W	2652	4822 121 50627	470 nF 250 V
3574	4822 116 51789	22 $\Omega$ 0,5 W	2657	4822 122 40309	2.2 $\mu$ F 1 kV
3580	4822 100 10503	100 $\Omega$ potm.	2658	4822 122 40309	2.2 $\mu$ F 1 kV
3598	4822 101 20838	4.7 k $\Omega$ potm.	2659	4822 122 40309	2.2 $\mu$ F 1 kV
3600	4822 111 30506	8.2 $\Omega$ 0,33 W	2660	4822 122 40309	2.2 $\mu$ F 1 kV
3611	4822 111 30561	1 k $\Omega$ 0,33 W	2663	4822 124 22052	100 $\mu$ F 385 V
3623	4822 111 30506	8.2 $\Omega$ 0,33 W	2667	4822 121 42786	33 $\mu$ F 100 V
3628	4822 116 53717	430 k $\Omega$ 0,25 W	2678	4822 122 32069	470 pF 1 kV
3629	4822 116 51135	5.6 k $\Omega$ 2,5 W	2679	4822 122 31805	1 $\mu$ F 1 kV
3638	4822 111 30483	1 $\Omega$ 0,33 W	2680	4822 122 10375	680 pF 1 kV
3639	4822 111 30483	1 $\Omega$ 0,33 W	2682	4822 122 40449	33 pF 400 V
3653	4822 111 30561	1 k $\Omega$ 0,33 W	2696	4822 124 41056	47 $\mu$ F 200 V
3654	4822 111 30561	1 k $\Omega$ 0,33 W	2697	4822 124 41056	47 $\mu$ F 200 V
3655	4822 116 40065	PTC	2934	4822 122 32149	27 pF 100 V
3657	4822 115 10077	4.7 $\Omega$ 5 W	2935	4822 122 32149	27 pF 100 V
3665	4822 111 30499	4.7 $\Omega$ 0,33 W	2960	5322 121 54128	390 pF 630 V
3679	4822 113 60176	180 $\Omega$ 5 W	2963	4822 121 50632	1.5 $\mu$ F 250 V
3696	4822 116 53716	31.6 k $\Omega$	2972	4822 121 50538	6.8 $\mu$ F 63 V
3700	4822 100 20148	1 k $\Omega$ potm.			
3865	4822 111 30524	39 $\Omega$ 0,33 W	1580	4822 253 10054	T160 mA
3944	4822 100 11083	5 k $\Omega$ potm.	1640	4822 253 10041	T500 mA
3967	4822 111 30526	47 $\Omega$ 0,33 W	1652	4822 253 30025	T2A
 (board)			1690	4822 253 10064	T400 mA
M1	4822 265 40421	6P	 (cable)		
M2	4822 265 30378	4P	M1	4822 267 30546	6P
M6	4822 265 40421	6P	M2	4822 267 40507	4P
M7	4822 264 40207	3P	M6	4822 267 30546	6P
M8	4822 417 50217	4P	M7	4822 267 40582	3P
M9	4822 267 40648	5P	M16	4822 267 40582	3P
M13	4822 264 50148	8P	M17	4822 267 30639	2P
M14	4822 267 50591	6P	M20	4822 290 60626	2P
M16	4822 264 40207	3P			
M17	4822 265 30389	2P			
M20	4822 265 40596	2P			

PICTURE TUBE PANEL 1982

			
BC558	4822 130 40941		
BF483	4822 130 42607		
			
1N4148-75	4822 130 33939		
			
3406	5322 116 55147	12 kΩ	2,5 W
3407	4822 116 52399	1.5 kΩ	0,5 W
3412	4822 100 20168	1 kΩ	potm.
3421	4822 100 20171	2.2 kΩ	potm.
3426	5322 116 55147	12 kΩ	2,5 W
3427	4822 116 52399	1.5 kΩ	0,5 W
3432	4822 100 20168	1 kΩ	potm.
3441	4822 100 20171	2.2 kΩ	potm.
3446	5322 116 55147	12 kΩ	2,5 W
3447	4822 116 52399	1.5 kΩ	0,5 W
3452	4822 100 20168	1 kΩ	potm.
3473	4822 111 30483	1 Ω	0,33 W
3474	4822 116 52399	1.5 kΩ	0,5 W
3475	4822 116 52399	1,5 kΩ	0,5 W
			
5473	4822 157 52368		
 (board)			
L1	4822 265 40421	6P	
L2	4822 265 30378	4P	
L3	4822 264 10059	1P	
L4	4822 264 10059	1P	
 (cable)			
L1	4822 267 30546	6P	
L2	4822 267 40507	4P	
L3	4822 266 20063	1P	
L4	4822 266 20063	1P	

MUTE PANEL

		
BC548B	4822 130 40937	
BC558B	4822 130 44197	
		
1N4148-30	4822 130 33941	

# Service Information

1987-05-26

CP-90

CT87-38

**GB**

During the production the carrier panel, picture tube panel and the teletext decoder panel have been modified. These modified panels have been applied in sets, the serial number of which starts with PM01/PM02, BA01/BA02 or higher.

In the 21" sets, the serial number of which starts with PM02 or BA02 or higher the type of the picture tube has been modified in A51EAL30X05.

This service information contains the modified print layouts as well as the circuit diagrams of above-mentioned panels. Moreover, the circuit diagram, print layout and the adjustments of the SECAM/PAL transcoder have been added.

The electrical partslists replace the partslists published earlier.

**F**

En cours de production on a changé la platine porteuse, la platine du tube image et celle du décodeur télétexte. Toutes ces platines modifiées ont été montées dans les appareils dont les numéros de série commencent par PM01/PM02, BA01/BA02 ou supérieurs.

Sur les appareils 21", dont les numéros de série commencent par PM02 ou BA02 ou supérieurs, le type de tube image a été changé en A51EAL30X05.

Cette Info Service a pour but de donner les changements intervenus dans les dessins de platines ainsi que les nouveaux schémas de principe, de ces appareils modifiés. Vous y trouverez également le schéma de principe du transcodeur SECAM/PAL, le dessin de platine et les ajustages.

Les listes de composants électriques viennent en lieu et place des listes publiées précédemment.

**NL**

Tijdens productie zijn het dragerpaneel, beeldbuispaneel en het teletekstdecoderpaneel gewijzigd. Deze gewijzigde panelen zijn toegepast in apparaten waarvan het serienummer begint met PM01/PM02, BA01/BA02 of hoger.

In 21" apparaten, waarvan het serienummer begint met PM02 of BA02 of hoger is het type beeldbuis gewijzigd in A51EAL30X05.

Met deze service informatie worden de gewijzigde print lay-outs alsmede de principeschema's van bovengenoemde panelen gegeven. Tevens worden het principeschema, print lay-out en de afregelingen van de SECAM/PAL transcoder toegevoegd.

De elektrische stuklijsten vervangen de al eerder gepubliceerde stuklijsten.

**D**

Während der Produktion sind die Trägerplatte, Bildröhreplatte und die Videotextdecoderplatte geändert worden. Diese geänderten Platten sind in den Geräten, wovon die Seriennummer mit PM01/PM02, BA01/BA02 oder höher anfängt, angewandt worden.

In 21" Geräten, wovon die Seriennummer mit PM02 oder BA02 oder höher anfängt, ist die Bildröhretype in A51AEL30X05 geändert worden.

Diese Service-Information enthält die geänderten Printlayouts sowie die Schaltbilder der obengenannten Platten. Ausserdem sind das Prinzipschaltbild, das Printlayout und die Abreglungen des SECAM/PAL Transcoders hinzugefügt worden.

Die elektrischen Stücklisten ersetzen die bereits eher veröffentlichten Stücklisten.

GB

## ADJUSTMENTS SECAM/PAL TRANSCODER

### 1. "Circuit cloche"

Disconnect jumper 9302 at one side.  
Apply a signal of a signal generator to capacitor 2316.  
Adjust the frequency of the signal generator for 4.286 MHz.  
Connect an oscilloscope to pin 3 of IC7310.  
Adjust 5316 for maximum amplitude.

### 2. Subcarrier oscillator

Apply a 75 % SECAM colour bar pattern.  
Connect 6-IC7310 by means of a 10k $\Omega$  resistor to ground.  
Connect a frequency counter with a high input impedance (via a probe  $C \leq 2\text{pF}$ ) to pin 26-IC7260.  
Adjust 2332 for a frequency of 8.867236 MHz.

### 3. SECAM demodulator

Apply a SECAM black frame signal.  
Connect an oscilloscope to pin 14 of IC7310.  
Adjust 3347 and 5347 for a minimum modulation.

### 4. Delay line

#### a. amplitude

Apply a SECAM red frame signal.  
Connect an oscilloscope to pin 28 of IC7260.  
Adjust 3335 for an equal amplitude of the lines.

#### b. phase

Adjust for a normal brightness and contrast.  
Connect an oscilloscope to pin 16 of IC7260.  
Apply a 75 % colour bar pattern.  
Adjust the saturation control for an as flat as possible output voltage.  
Then apply a 75% SECAM colour bar pattern.  
Adjust 5337 so that the signal is virtually flat.

NL

## AFREGELINGEN SECAM/PAL TRANSCODER

### 1. "Circuit cloche"

Maak brugdraad 9302 aan een zijde los.  
Voer een signaal van een signaalgenerator toe aan condensator 2316.  
Stel de frequentie van de signaalgenerator in op 4.286 MHz.  
Sluit een oscilloscoop aan op pen 3-IC7310.  
Regel 5316 af op maximale amplitude.

### 2. Hulpdraaggolf oscillator

Voer een 75% SECAM kleurenbalkenpatroon toe.  
Verbindt 6-IC7310 met behulp van een weerstand van 10 k $\Omega$  met massa.  
Sluit een frequentieteller met een hoge ingangsimpedantie (via een probe  $C \leq 2\text{pF}$ ) aan op pen 26-IC7260.  
Regel met 2332 de frequentie af op 8.867236 MHz.

### 3. SECAM demodulator

Voer een SECAM zwartrastersignaal toe.  
Sluit een oscilloscoop aan op pen 14-IC7310.  
Regel 3347 en 5347 zodanig, dat er minimale modulatie ontstaat.

### 4. Vertragsingslijn







#### a. amplitude

Voer een SECAM roodrastersignaal toe.  
Sluit een oscilloscoop aan op pen 28-IC7260.  
Regel 3335 zodanig, dat de amplitude van elke lijn gelijk is.

#### b. fase.

Stel de helderheid en contrast normaal in.  
Sluit een oscilloscoop aan op pen 16-IC7260.  
Voer een 75% PAL kleurenbalkenpatroon toe.  
Regel met de verzadigingsregelaar de uitgangsspanning zodanig, dat deze zo vlak mogelijk is.  
Voer daarna een 75% SECAM kleurenbalkenpatroon toe.  
Regel 5337 zodanig dat het signaal weer nagenoeg vlak is.





# CARRIER PANEL

							
3002	4822 111 30508	10 $\Omega$	0,33 W	2267	4822 125 50045	20 pF	trimm.
3036	4822 111 30499	4.7 $\Omega$	0,33 W	2608	4822 124 21208	4.7 $\mu$ F	50 V
3274	4822 100 20148	1 k $\Omega$	potm.	2610	4822 121 43065**	7.5 nF	2 kV
3275	4822 111 30508	10 $\Omega$	0,33 W	2610	5322 121 42523	8.2 nF	2 kV
3571	4822 116 51091	18 k $\Omega$	2,5 W	2610	4822 121 43058*	11 nF	2KV
3573	4822 116 51789	22 $\Omega$	0,5 W	2611	4822 121 42917	470 nF	200 V
3574	4822 116 51789	22 $\Omega$	0,5 W	2611	4822 121 43057*	560 nF	200 V
3580	4822 100 10503	100 $\Omega$	potm.	2619	4822 122 31692	1.5 nF	1 kV
3598	4822 101 20838	4.7 k $\Omega$	potm.	2619	4822 122 40348**	2.2 $\mu$ F	1 kV
3598	4822 101 10626**	10 k $\Omega$	potm.	2652	4822 121 50627	470 nF	250 V
3600	4822 111 30506	8.2 $\Omega$	0,33 W	2657	4822 122 32769	2.2 nF	1 kV
3611	4822 111 30561	1 k $\Omega$	0,33 W	2658	4822 122 32769	2.2 nF	1 kV
3623	4822 111 30506	8.2 $\Omega$	0,33 W	2659	4822 122 32769	2.2 nF	1 kV
3628	4822 116 53717	430 k $\Omega$	0,25 W	2660	4822 122 32769	2.2 nF	1 kV
3629	4822 116 51135	5.6 k $\Omega$	2,5 W	2663	4822 124 22052	100 $\mu$ F	385 V
3638	4822 111 30483	1 $\Omega$	0,33 W	2667	4822 121 42786	33 nF	100 V
3639	4822 111 30483	1 $\Omega$	0,33 W	2678	4822 122 32069	470 pF	1 kV
3653	4822 111 30561	1 k $\Omega$	0,33 W	2679	4822 122 31805	1 nF	1 kV
3654	4822 111 30561	1 k $\Omega$	0,33 W	2680	4822 122 10375	680 pF	1 kV
3655	4822 116 40065	PTC		2682	4822 122 40449	33 pF	400 V
3657	4822 115 10095	4.7 $\Omega$	7 W	2696	4822 124 41056	47 $\mu$ F	200 V
3665	4822 111 30499	4.7 $\Omega$	0,33 W	2697	4822 124 41056	47 $\mu$ F	200 V
3679	4822 112 41087	180 $\Omega$	7 W	2934	4822 122 32149	27 pF	100 V
3694	4822 111 30508	10 $\Omega$	0,33W	2935	4822 122 32149	27 pF	100 V
3696	4822 116 53716	31.6 k $\Omega$	0.4W	2960	5322 121 54128	390 pF	630 V
3700	4822 100 20148	1 k $\Omega$	potm.	2963	4822 121 50632	1.5 nF	250 V
3865	4822 111 30524	39 $\Omega$	0,33 W	2972	4822 121 50538	6.8 nF	63 V
3944	4822 100 11083	5 k $\Omega$	potm.				
3967	4822 111 30526	47 $\Omega$	0,33 W				
 (board)							
M1	4822 265 40421	6P		1580	4822 253 10054	T160 mA	
M2	4822 265 30378	4P		1580	4822 253 10072	T200 mA	
M6	4822 265 40421	6P		1640	4822 253 20089	T630 mA	
M7	4822 264 40207	3P		1652	4822 253 30025	T2A	
M8	4822 417 50217	4P		1690	4822 253 10064	T400 mA	
M9	4822 267 40648	5P		 (cable)			
M13	4822 264 50148	8P					
M14	4822 267 50591	6P		M1	4822 267 40584	6P	
M16	4822 264 40207	3P		M2	4822 267 40597	4P	
M17	4822 265 30389	2P		M6	4822 267 40584	6P	
M20	4822 265 40596	2P		M7	4822 267 40582	3P	
				M16	4822 267 40582	3P	
				M20	4822 290 60626	2P	

\* For sets with picture tube: A51EAL30X05

\*\* For 11" sets

# CARRIER PANEL

					
CNX62	4822 130 90121	Opto-coupler	5108	4822 157 52809	
LA7910	4822 209 10892		5259	4822 157 51462	
LN524RAP	4822 130 90388	Display	5261	4822 157 52807	
TDA3047	4822 209 83257		5270	4822 157 52808	
TDA3561A	4822 209 71518		5271	4822 157 50961	
TDA8190	4822 209 70872		5600	4822 152 20558	
TMP47C432P	4822 209 11391		5608	4822 157 52315	
			5611	4822 156 21332	
BC328	4822 130 44104		5611	4822 157 52688*	
BC547	4822 130 44257		5611	4822 157 53205**	
BC548	4822 130 40938		5620	4822 140 10306	Line output
BC548B	4822 130 40937		5629	4822 146 21116	Line driver
BC548C	4822 130 44196		5638	4822 158 10563	
BC556	4822 130 40989		5642	4822 158 10551	
BC558	4822 130 40941		5653	4822 158 10551	
BC558C	5322 130 60068		5654	4822 158 10551	
BC636	4822 130 44283		5655	4822 158 30208	
BD939F	4822 130 42681		5674	4822 158 10604	
BD943	5322 130 44921		5697	4822 158 10551	
BF483	4822 130 42607		5763	4822 146 50217	SOPS transf.
BUT11AF	4822 130 42679		5914	4822 157 50965	
BUT12A	4822 130 43919*		5960	4822 157 52806	
			5972	4822 156 10501	
			VARIOUS		
BAV19	4822 130 30967		1002	4822 210 10266	UV617
BAV20	4822 130 34189		1002	4822 210 50118	U743
BAV21	4822 130 30842		1040	4822 212 22607	SYNC/IF
BAX14	4822 130 34193		1040	4822 212 22688	SYNC/IF (UK)
BPW50	4822 130 32376		1103	4822 121 40543	filter 5.5 MHz
BT151-500R	5322 130 24081	Thyristor	1103	4822 242 70279	filter 6.0 MHz
BYD33D	4822 130 42488		1262	4822 157 51056	delay line DL330
BYD33G	4822 130 42489		1267	4822 242 70626	crystal 8.867238 MHz
BYD33J	4822 130 42606		1270	4822 320 40096	delay line DL701
BYD33M	4822 130 32896		1934	4822 242 70831	filter
BYW95B	4822 130 32058			4822 138 10032	battery 2.5 V
BZX79-C4V7	4822 130 34174			4822 267 60172	scart socket
BZX79-C15	4822 130 34281			4822 267 60188	socket BU2/BU3/BU5
BZX79-F5V6	4822 130 34173			4822 256 30274	fuse holder
BZX79-F6V2	4822 130 34167			4822 276 12035	switch mains SK1
BZX79-F11	4822 130 34488			4822 273 30206	switch SK20
BZX79-F33	4822 130 34142			4822 276 80308	keyboard switch assy
BZX79-F36	4822 130 34368			4822 492 63524	spring fix. transistor
CQS51	4822 130 33943	Led			
SF2D41	4822 130 20193	Thyristor			
ZTK33B	4822 130 30959				
1N4148-30	4822 130 33941				
1N4148-75	4822 130 33939				
1N5061	4822 130 31933				

\* For sets with picture tube: A51EAL30X05

\*\* For 11" sets










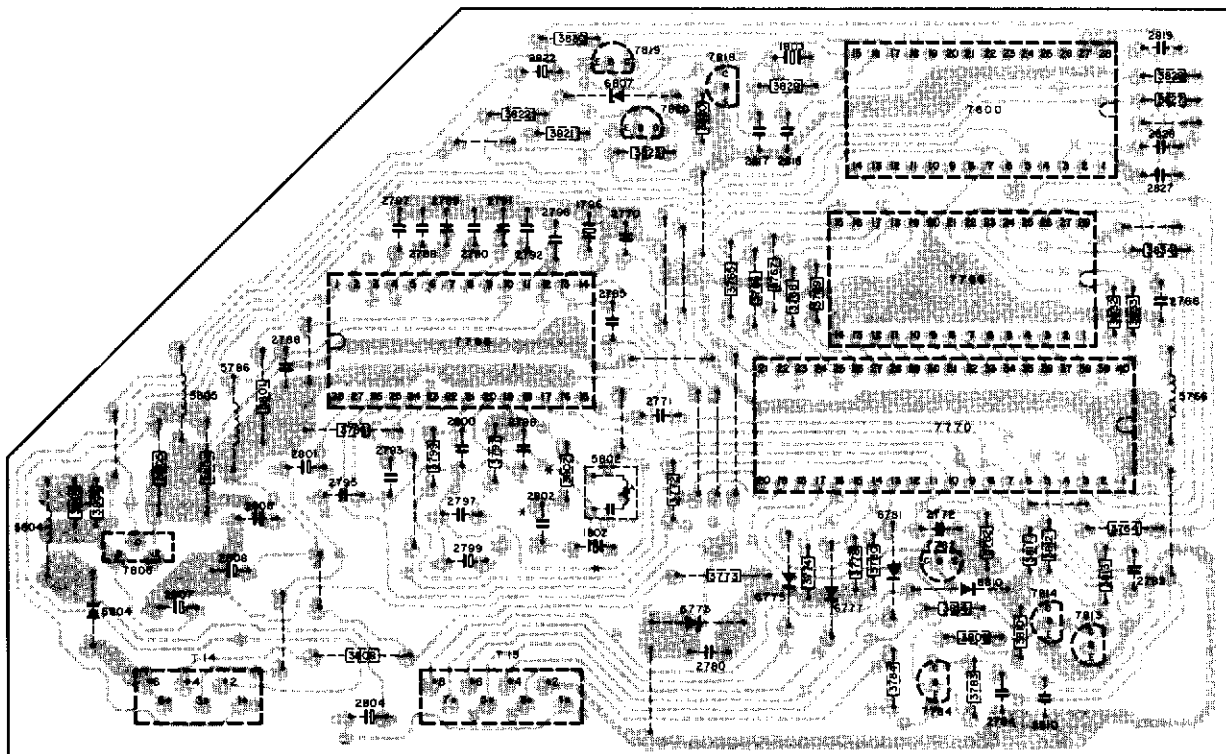
Service  
Service  
**Service**

CT88-11

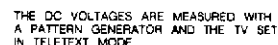
4822 727 16185

# TXT DECODER FLOF

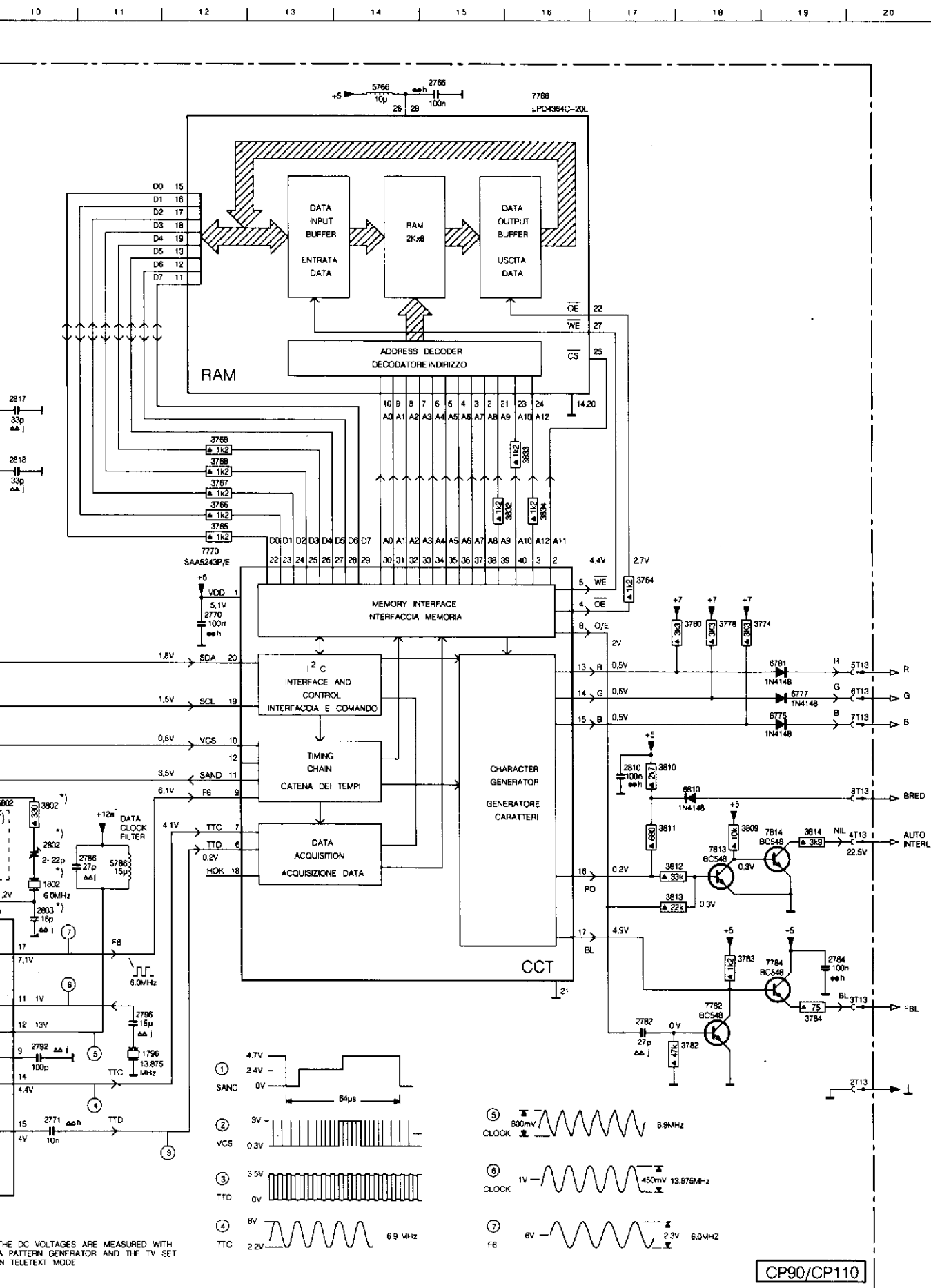
			
MAB8461P-W107	4822 209 72355	3808	4822 111 30494
SAA5231/V4	4822 209 72312		
SAA5243E/P	4822 209 72353		
UPD4364C-20L	4822 209 72359		
		2799	5322 124 40642
		2802	4822 125 50045
BC548	4822 130 40938	Various	
BC558	4822 130 40941		
BD943	5322 130 44921		
		1796	4822 242 71417 Crystal 13,875 MHz
		1802	4822 242 70932 Resonator 6,0 MHz
		1803	4822 242 70932 Resonator 6,0 MHz
BYD33G	4822 130 42489		
BZX79-F5V1	4822 130 32632		
BZX79-F7V5	4822 130 80135		
1N4148	4822 130 30621	T13	4822 265 40471 8P
		T14	4822 265 40469 6P
			
5766	4822 157 51462		
5786	4822 157 52224		
5802	4822 157 52825		
5804	4822 157 51157		
5805	4822 157 51462		



## FLOF



\* ) ITEM 5802 OR ALTERNATIVE 1802-2802-2803-3802



1796	L11
1802	J10
1803	E 9
2766	A15
2770	G12
2771	M10
2772	J 3
2780	E 4
2782	L17
2784	K19
2785	J 5
2786	J11
2787	N 5
2788	N 6
2790	N 6
2791	N 6
2792	L10
2793	J 6
2795	L 3
2796	L11
2797	J 8
2798	J 7
2799	J 8
2800	J 9
2801	M 2
2802	J10
2803	K10
2804	G 2
2806	G 4
2807	G 3
2808	E 3
2810	I 17
2817	E10
2818	E10
2819	A 6
2822	F 4
2827	B 5
2828	C 5
3764	G17
3765	F12
3766	F12
3767	F12
3768	E12
3769	E12
3772	J 4
3773	D 3
3774	G18
3778	G18
3780	G18
3782	L18
3783	K18
3784	L19
3785	J 7
3787	J 8
3789	J 8
3801	M 3
3802	J10
3804	F 3
3805	F 3
3805	G 3
3807	F 3
3808	E 2
3809	J18
3810	I 17
3811	J17
3812	J17
3813	K17
3814	J19
3820	G 4
3821	H 4
3822	H 3
3823	H 4
3827	B 4
3828	C 4
3829	E 9
3830	F 5
3832	F16
3833	E16
3834	F16
5766	A14
5786	J11
5802	I10
5804	F 2
5805	F 4
6773	E 3
6776	H19
6777	H19
6781	H19
6804	F 2
6807	H 4
6810	I18
7766	A16
7770	G12
7782	L18
7784	K19
7785	K 3
7800	B 8
7806	F 3
7813	J18
7814	J19
7818	G 5
7819	G 5
7820	G 4

# Service Information

1988-05-03

CHASSIS CP-90NRC  
CHASSIS CP 90

CT88-22

GB

During the production the carrier panel and the picture tube panel have been modified. These modified panels have been applied in sets, the serial number of which starts with PM03, BA03 or higher.  
Attached please find the modified circuit diagrams, the print layouts of the modified panels and a partslist of the modified parts.

F

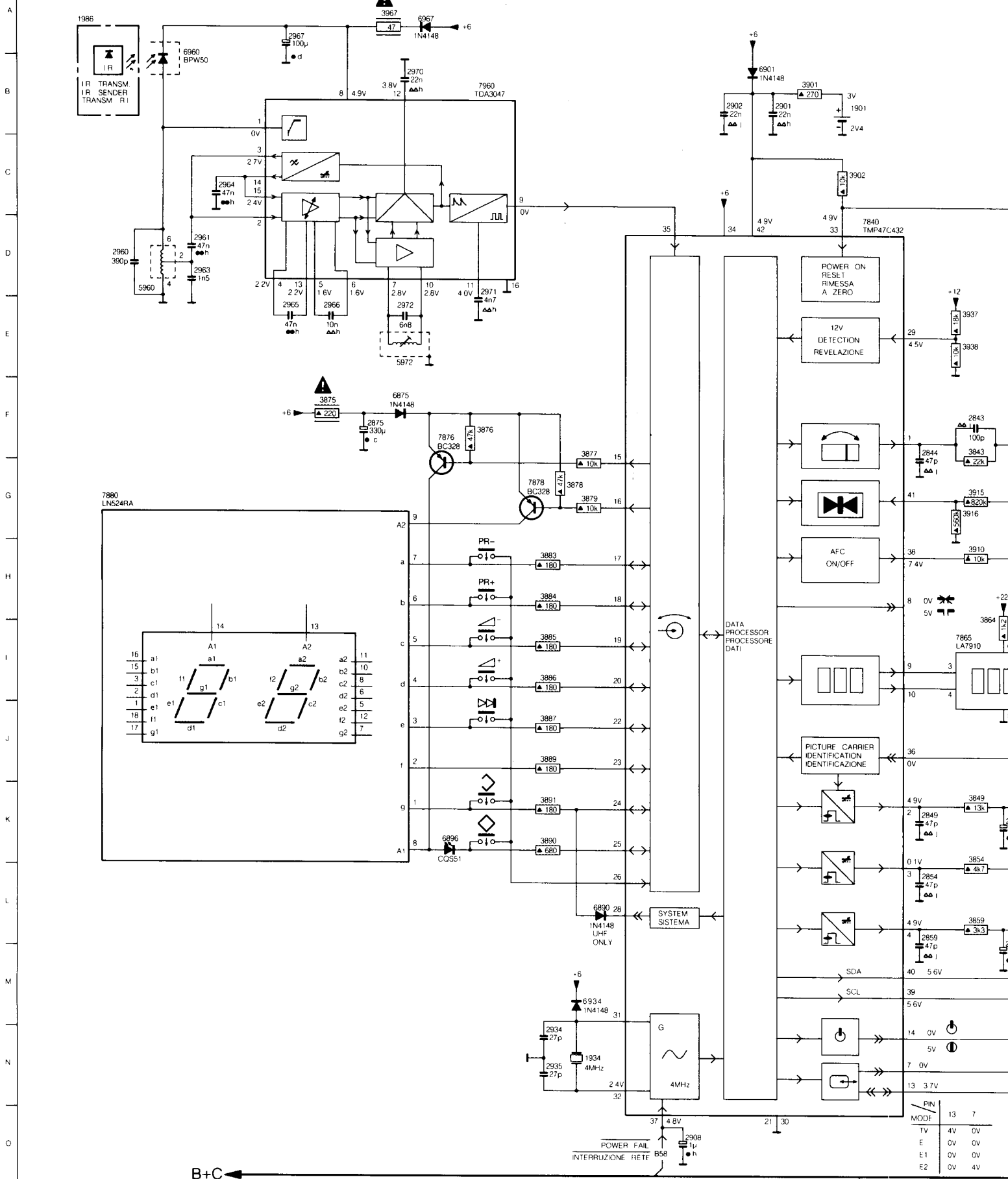
En cours de production on a changé la platine porteuse et celle la platine du tube image. Toutes ces platines modifiées ont été montées dans les appareils dont les numéros de série commencent par PM03, BA03 ou supérieurs.  
Cette Info Service a pour but de donner les changements intervenus dans la dessins de platines, les nouveaux schémas de principe ainsi que la liste des pièces des nouveaux composants.

NL

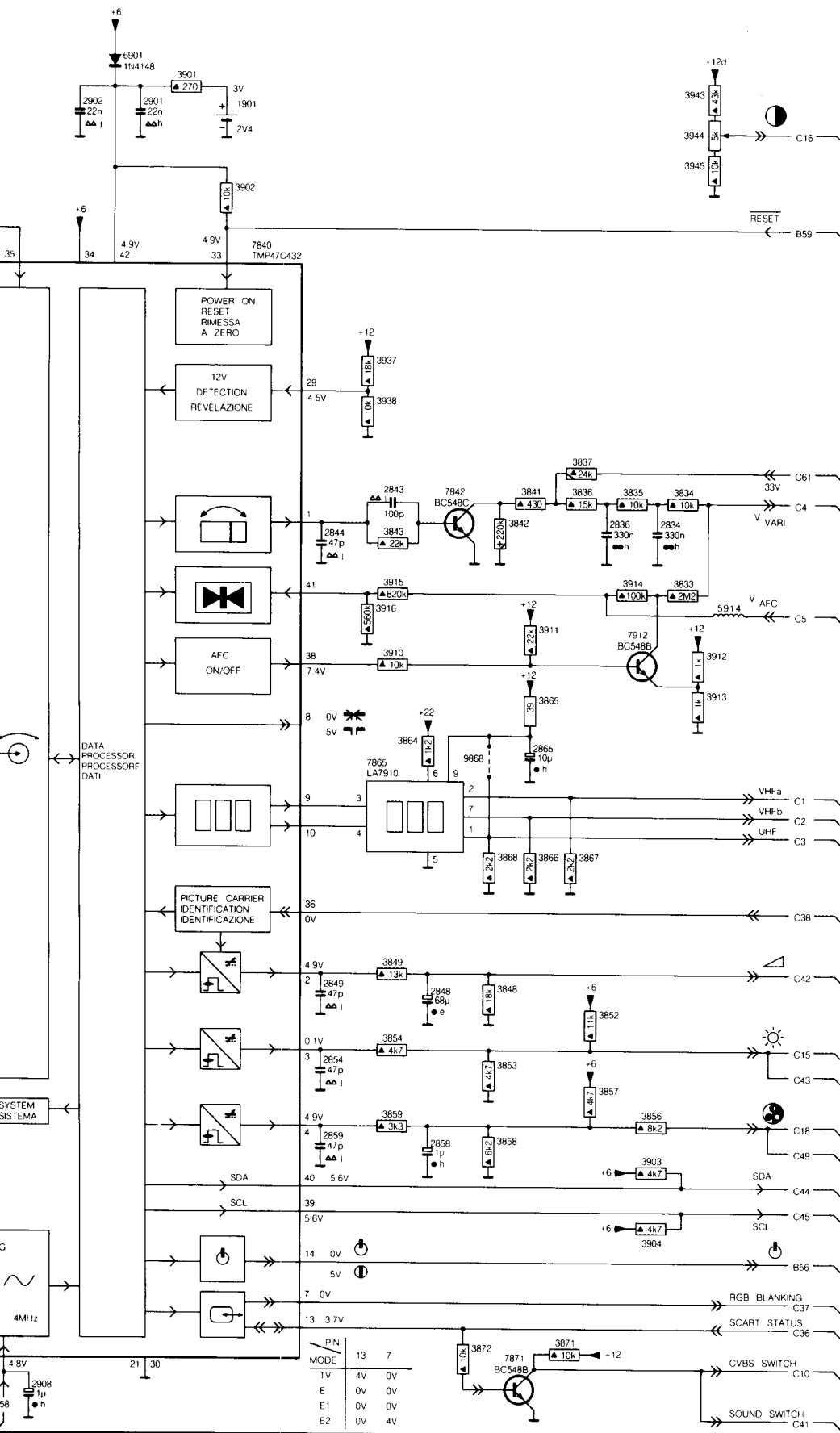
Tijdens produktie zijn het dragerpaneel en het beeldbuispaneel gewijzigd. Deze gewijzigde panelen zijn toegepast in apparaten waarvan het serienummer begint met PM03, BA03 of hoger.  
In deze service informatie worden de gewijzigde principe schema's, de print lay-outs van de gewijzigde panelen en een stuklijst van de gewijzigde onderdelen gegeven.

D

Während der Produktion sind die Trägerplatte und die bildröhreplatte geändert worden. Diese geänderten Platten sind in den Geräten, wovon die Seriennummer mit PM03, BA03 oder höher anfängt, angewandt.  
Bei dieser Service Information sind die Prinzipschaltbilder, die printlayouts der geänderten Platten und eine Stückliste der geänderten Einzelteile beigelegt worden.

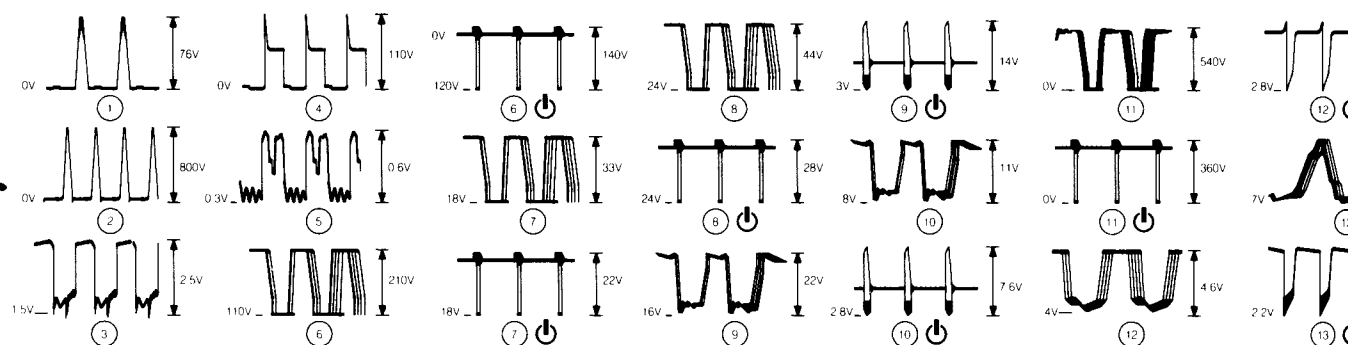
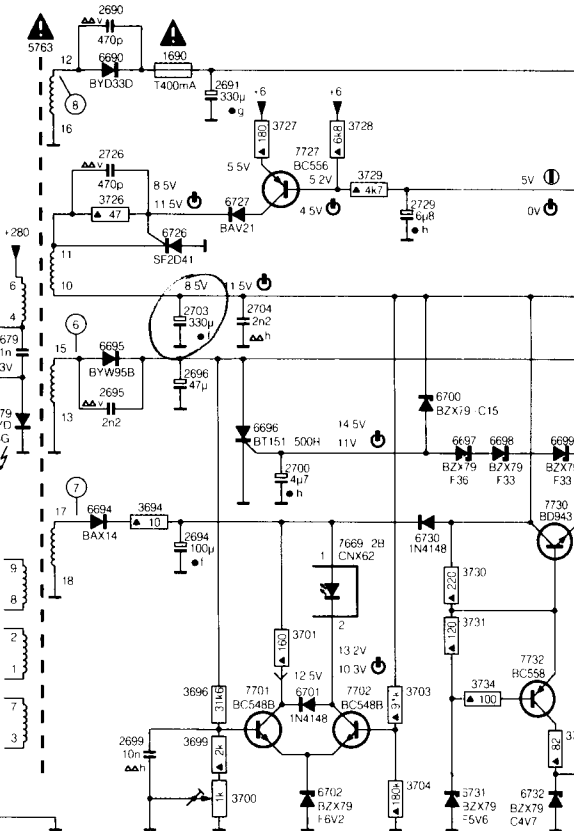
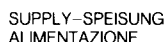


# VST2 SYSTEM SISTEMA VST2

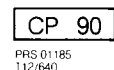
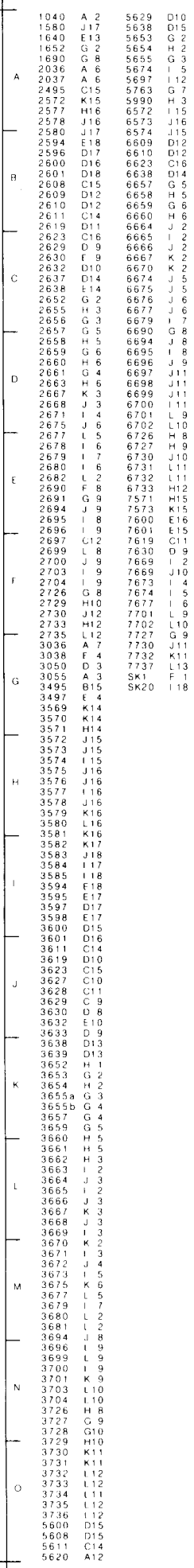
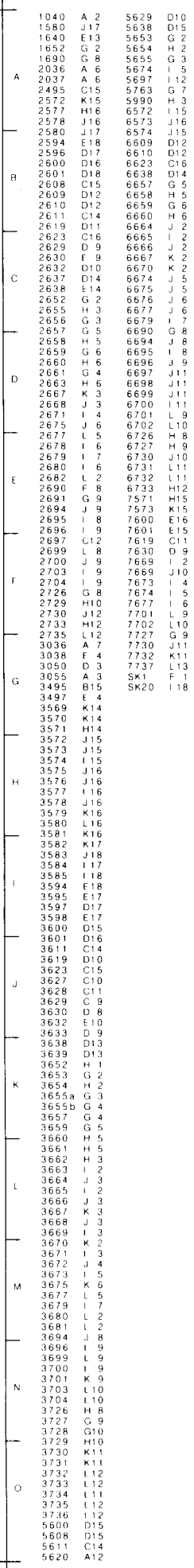


1901	B11
1934	N 8
1986	A 1
2834	F15
2836	F15
2843	F12
2844	F12
2848	K13
2849	K12
2854	L12
2858	L13
2859	L12
2865	I14
2875	F 5
2901	B10
2902	B 9
2908	F13
2909	O 9
2934	N 7
2935	N 7
2960	D 2
2961	D 3
2963	D 3
2964	C 3
2965	D 4
2966	D 4
2967	A 4
2970	B 5
2971	D 6
2972	D 5
3833	G15
3834	F15
3835	F15
3836	F14
3837	F14
3841	F14
3842	F14
3843	F12
3848	K14
3849	K12
3852	K15
3853	L14
3854	K12
3855	K15
3857	L15
3858	L14
3859	L12
3864	H13
3865	H14
3866	J14
3867	J14
3868	J14
3871	N14
3872	N12
3875	F 4
3876	F 6
3877	F 8
3878	G 7
3879	G 8
3883	H 7
3884	H 7
3885	I 7
3886	I 7
3887	J 7
3889	J 7
3890	K 7
3891	K 7
3901	B10
3902	C11
3903	M15
3904	M15
3906	D 2
3910	H12
3911	G14
3912	H16
3913	H16
3914	G15
3915	G12
3916	G12
3937	D12
3938	D12
3943	B15
3944	B15
3945	C15
3967	A 5
5914	G16
5960	D 2
5972	E 5
6875	F 5
6890	L 8
6896	K 6
6901	B10
6934	M 8
6960	A 3
6967	A 5
7840	D11
7842	F13
7865	I12
7871	O13
7876	F 6
7878	G 7
7880	G 2
7912	G15
7960	B 6
9868	I13

DIAGRAM-SCHALTBILD-SCHEMA B







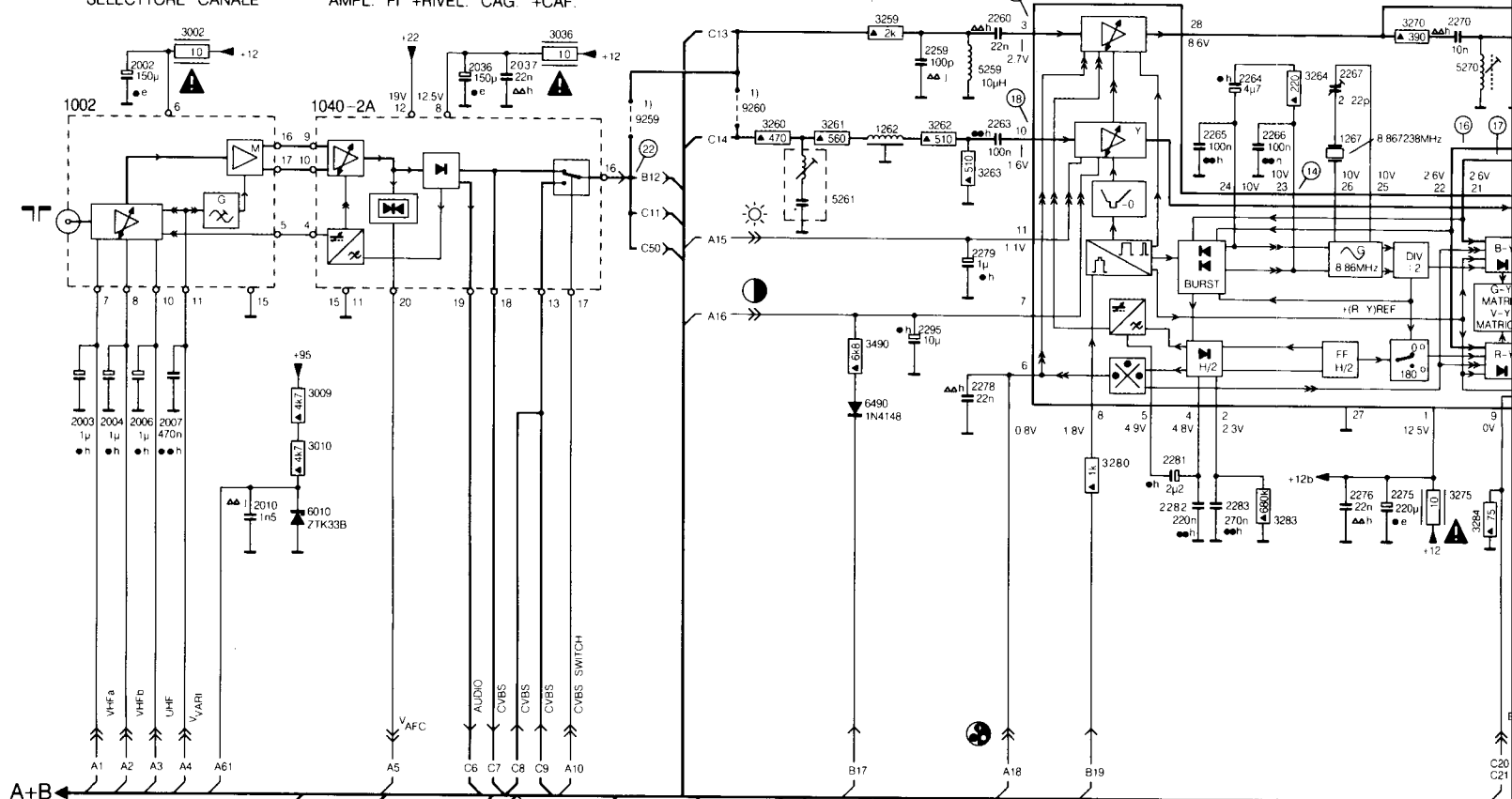
1002	B 1	1750	I 9	2010	F 3	2107	H15	2124	K16	2270	A13	2282	F10	2295	D 8	2508	L19	3010	E 3	3113	J19	3261	B 7	3274	B15	3290	F14	3409	G18	3429	E18	3449	C18	3474
1040	B 3	1982	A16	2036	B 4	2109	L17	2259	B 8	2271	B15	2283	F11	2410	G18	2509	L20	3036	B 5	3114	J19	3262	B 8	3275	E13	3291	F15	3410	G18	3430	D18	3450	C18	3474
1102	K19	1990	D21	2037	B 5	2111	J19	2260	A 9	2274	B15	2285	E14	2430	E18	2510	L20	3101	H18	3115	J20	3263	C 9	3280	E10	3292	F15	3411	G19	3431	D19	3451	C19	3474
1103	J13	2002	B 2	2101	I19	2112	J20	2263	B 9	2275	E12	2286	E14	2450	C18	2521	K15	3103	I13	3122	J17	3264	B11	3268	F11	3400	E15	3412	G19	3432	F19	3452	C19	3510
1262	B 8	2003	E 1	2102	I19	2113	J20	2263	B 9	2275	E12	2286	E14	2450	C18	2521	K16	3104	J13	3122	K17	3270	A12	3284	F13	3401	D17	3420	D17	3440	C17	3470	F17	3510
1267	B12	2004	E 1	2103	H18	2114	J18	2265	B11	2278	E 9	2290	E15	2502	K 5	2523	K15	3107	L13	3132	I20	3271	B14	3285	F14	3402	F17	3421	D17	3441	D17	3471	G17	3510
1270	A13	2006	E 2	2104	J13	2115	J20	2266	B11	2279	C 9	2291	E15	2503	K15	3002	B 2	3109	L16	3259	A 8	3272	A14	3286	F13	3406	F18	3426	D18	3446	B18	3472	I17	3510
1310	L 9	2007	E 2	2105	K14	2118	J18	2267	B12	2281	E10	2292	E15	2506	L19	3009	E 3	3111	J19	3260	B 7	3273	A15	3287	F13	3407	F19	3427	D19	3447	B19	3473	G19	3510
	1				2			3			4		5		6		7		8		9		10		11		12						13	

DIAGRAM-SCHALTBIELD-SCHEMA C

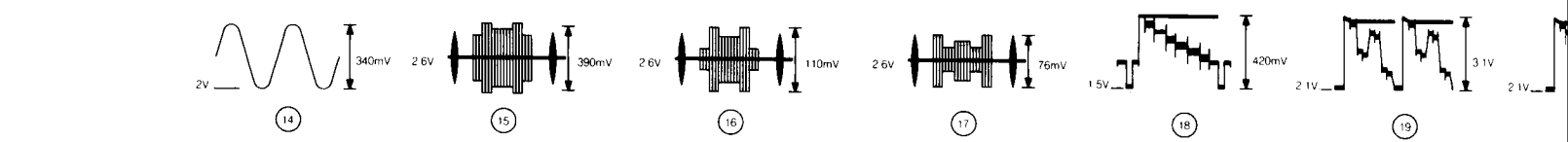
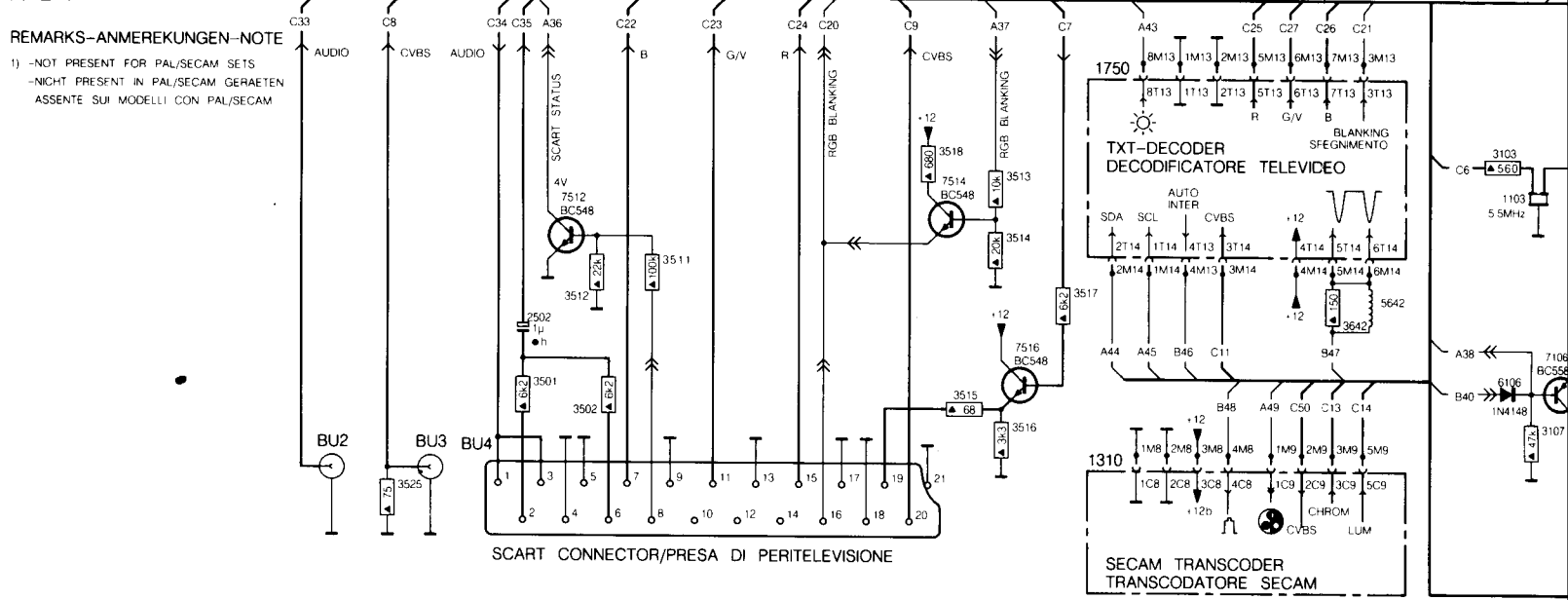
CHANNEL SELECTOR  
KANALWAHLER  
SELETTORE CANALE

IF AMPL.+DET. +AGC. +AFC.  
ZF VERST. +DEM. +AVR. +AFA.  
AMPL. FI +RIVEL. CAG +CAF.

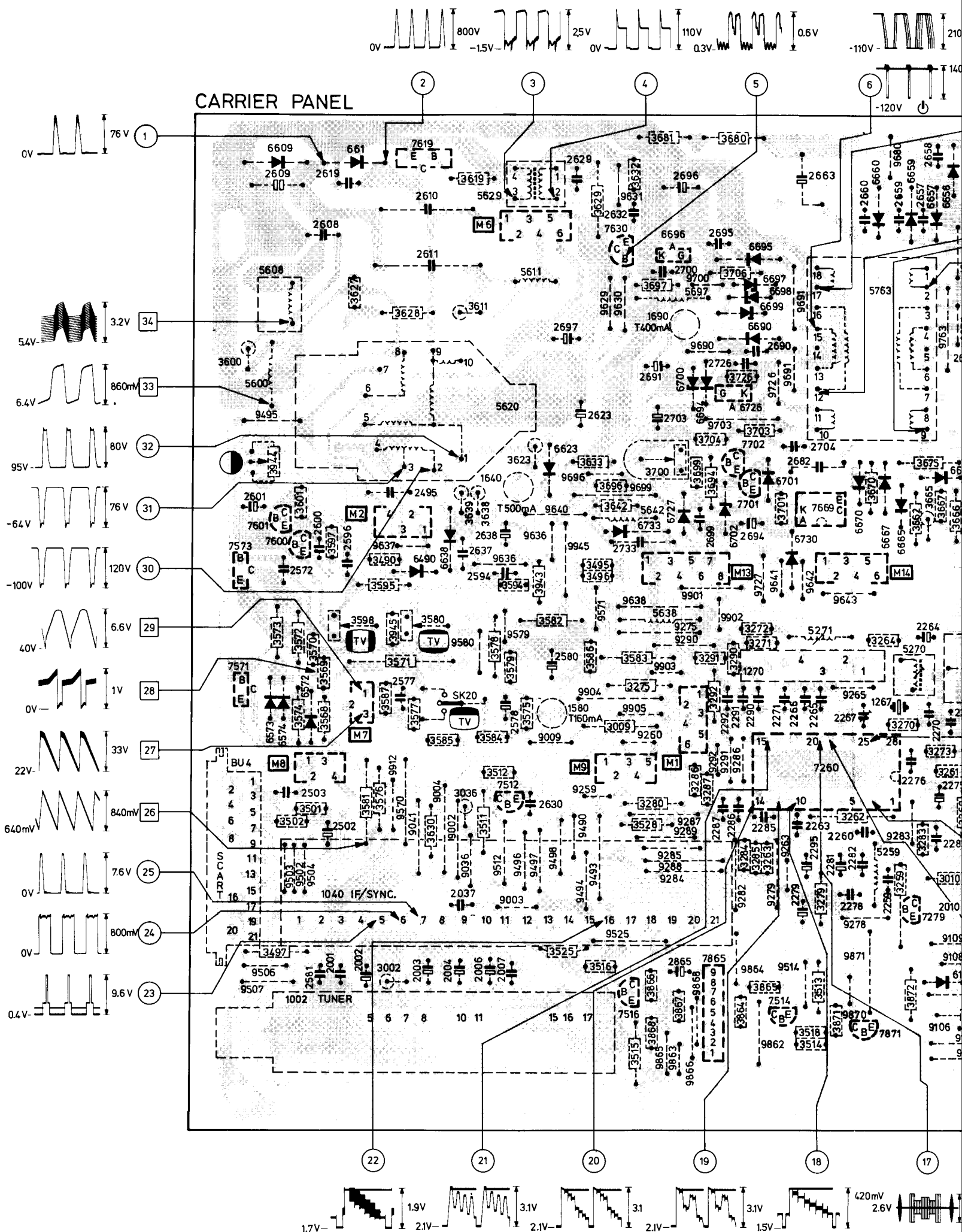
CHROMINANCE + LUMINANCE  
FARBART + LEUCHTDICHTE  
CROMINANZA + LUMINANZA

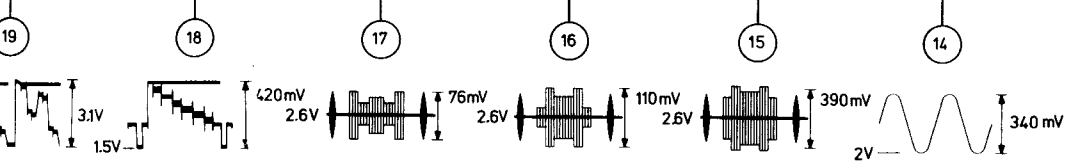
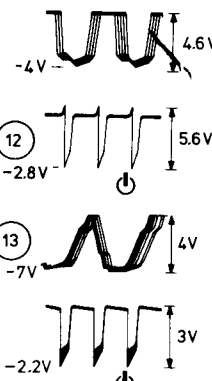
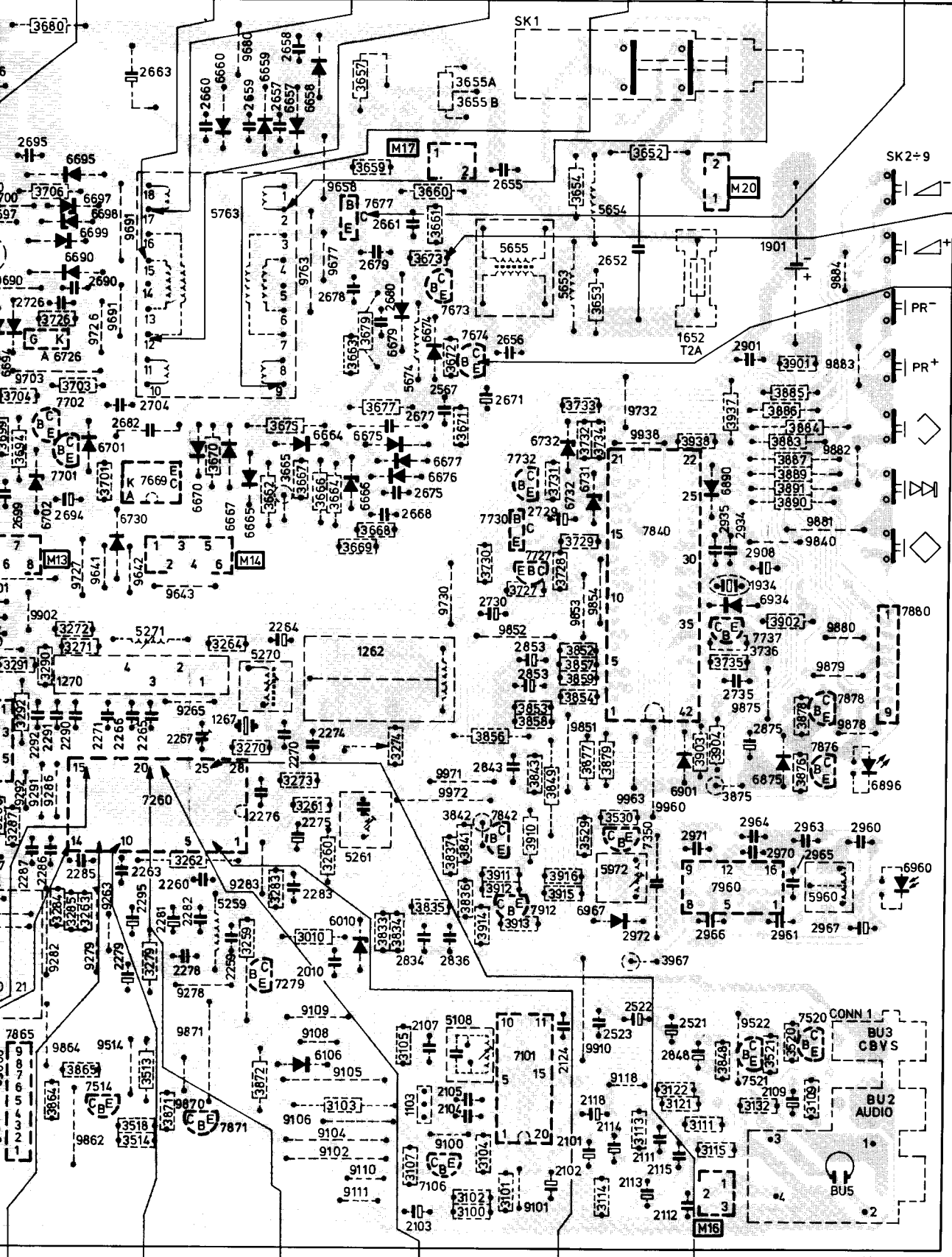
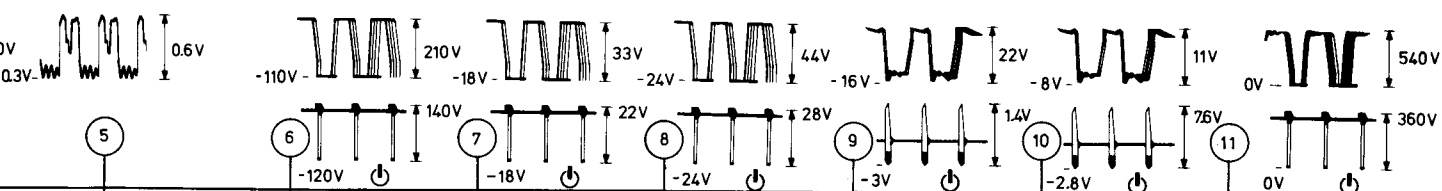


REMARKS-ANMERKUNGEN-NOTE  
1) -NOT PRESENT FOR PAL/SECAM SETS  
-NICHT PRESENT IN PAL/SECAM GERÄTEN  
-ASSENTE SUI MODELLI CON PAL/SECAM



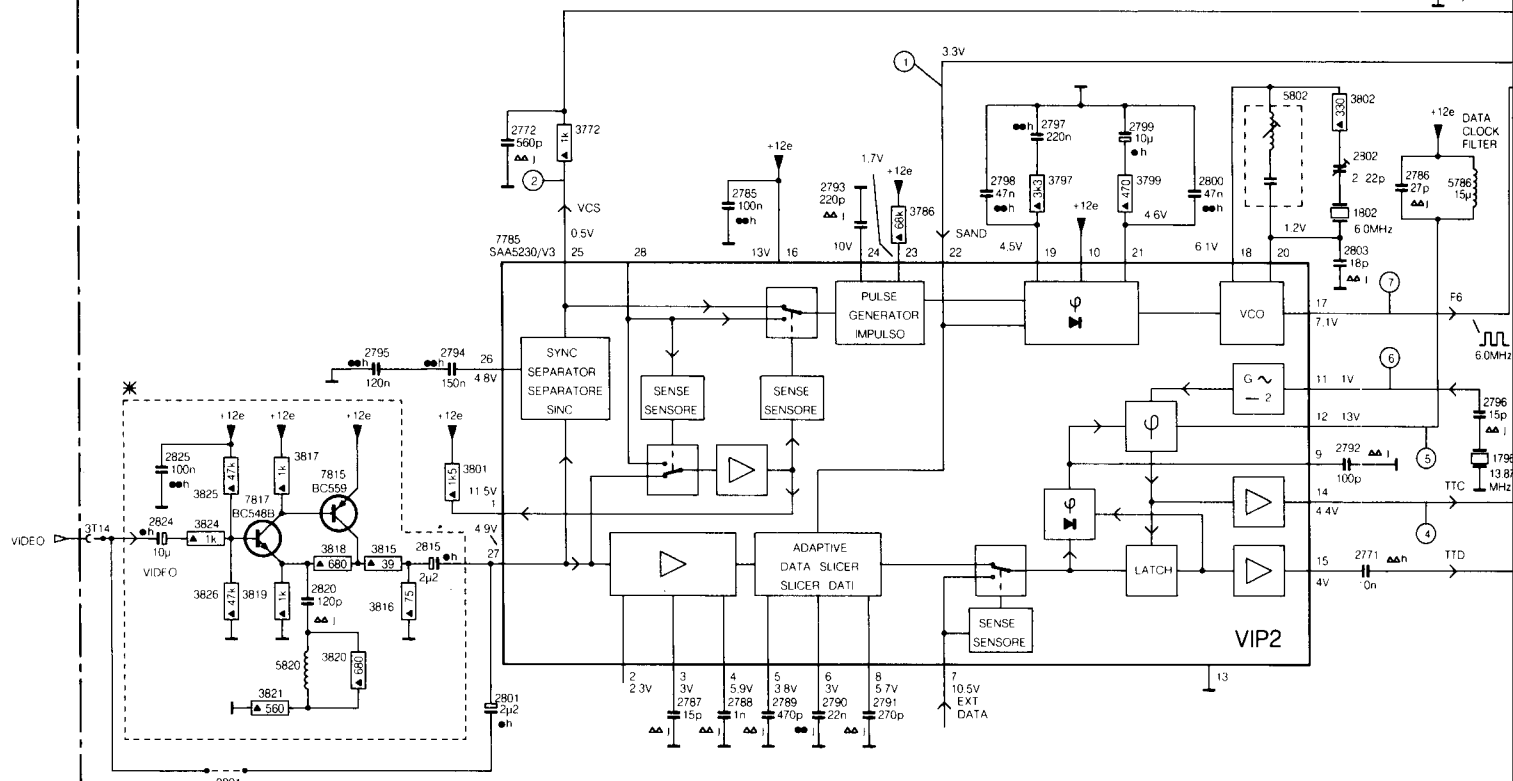
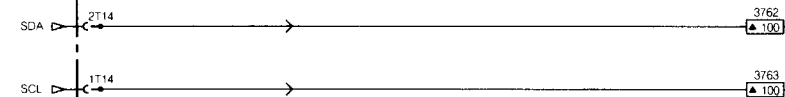
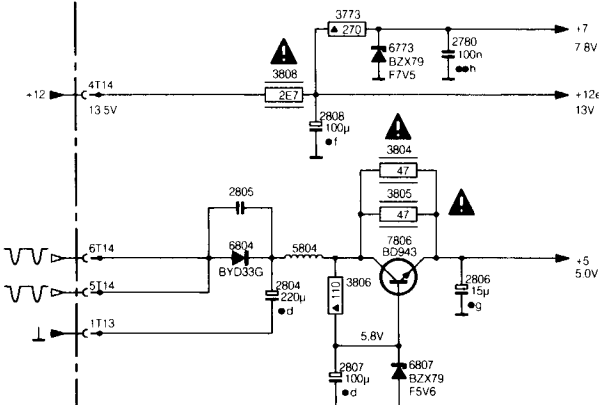
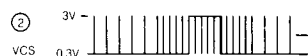
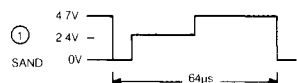




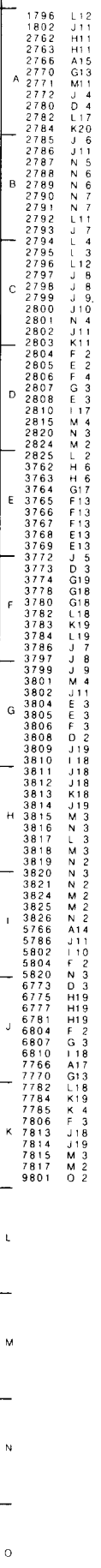


39 940 D12

# 1750 CCT-DECODER/DECODATORE



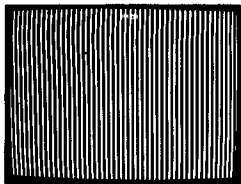
\* ONLY IN SCAN VERSION



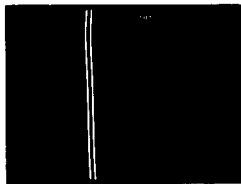
**LOCATING BUS ERRORS IN THE TELETEXT DECODER**

1. Loosen resistor 3784 on teletext decoder 1750 and resistor 3284 on the carrier panel. Connect a piece of wire with measuring pin to pin 9 of IC7260.

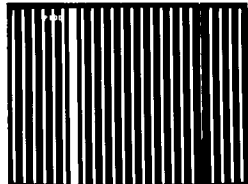
2. Connect a TV pattern generator (i.e. PM5519) and tune the receiver normally. Apply a white pattern and select the teletext mode with the remote control.
3. When transferring the measuring-pin to the points of IC7770 which are indicated under the pictures below a defined pattern is not present, but 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 two ICs, namely IC7766 - IC7770.



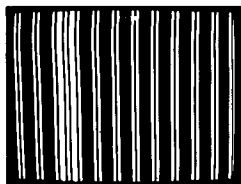
OE 4-IC7770



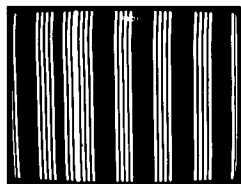
WE 5-IC7770



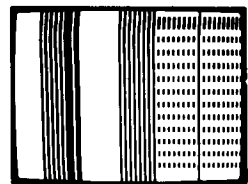
A0 30-IC7770



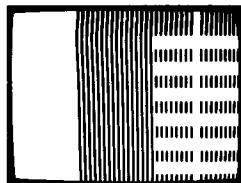
A1 31-IC7770



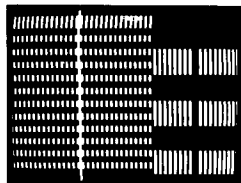
A2 32-IC7770



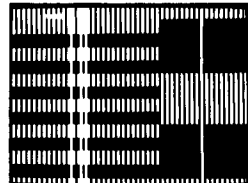
A3 33-IC7770



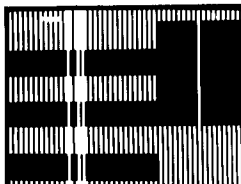
A4 34-IC7770



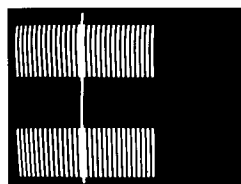
A5 35-IC7770



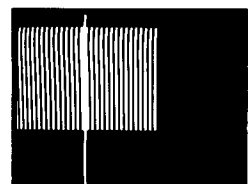
A6 36-IC7770



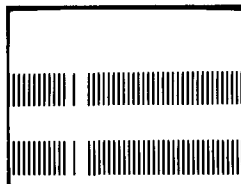
A7 37-IC7770



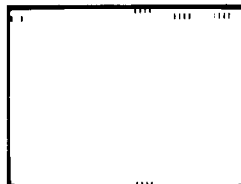
A8 38-IC7770



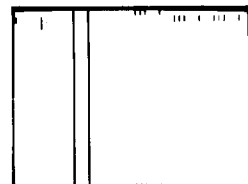
A9 39-IC7770



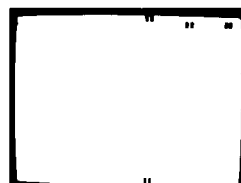
A10 40-IC7770



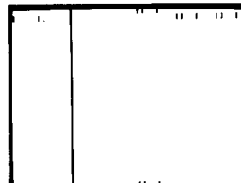
D0 22-IC7770



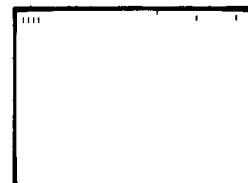
D1 23-IC7770



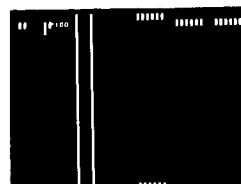
D2 24-IC7770



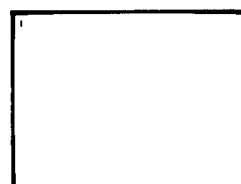
D3 25-IC7770



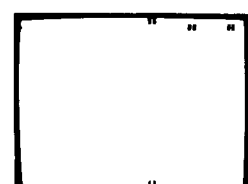
D4 26-IC7770



D5 27-IC7770




D6 28-IC7770



D7 29-IC7770



# **QUICK DIAGNOSIS CHART**

Indication on programme display Indikation auf Programm Anzeige	Incorrect functioning Unrichtiges Funktionieren	Correct functioning Richtiges Funktionieren	Possible defective component Eventuelle schadhafte Komponente
F0			IC7770 C2763 (U1750) IC7840
F1			+12 supply +12 Speisung IC7840
F2			IC7840
F3			IC7840
88 O.K.	R.C. commands Fernbedienungs- befehle	Local keyboard commands Nahbedienungs- befehle	D6960-IC7960
88 O.K.			IC7865

# Repair method power supply (SOPS)

## warning

If during the raising of the input voltage the voltage at pin D becomes greater than +95 V, check the load and its connections.

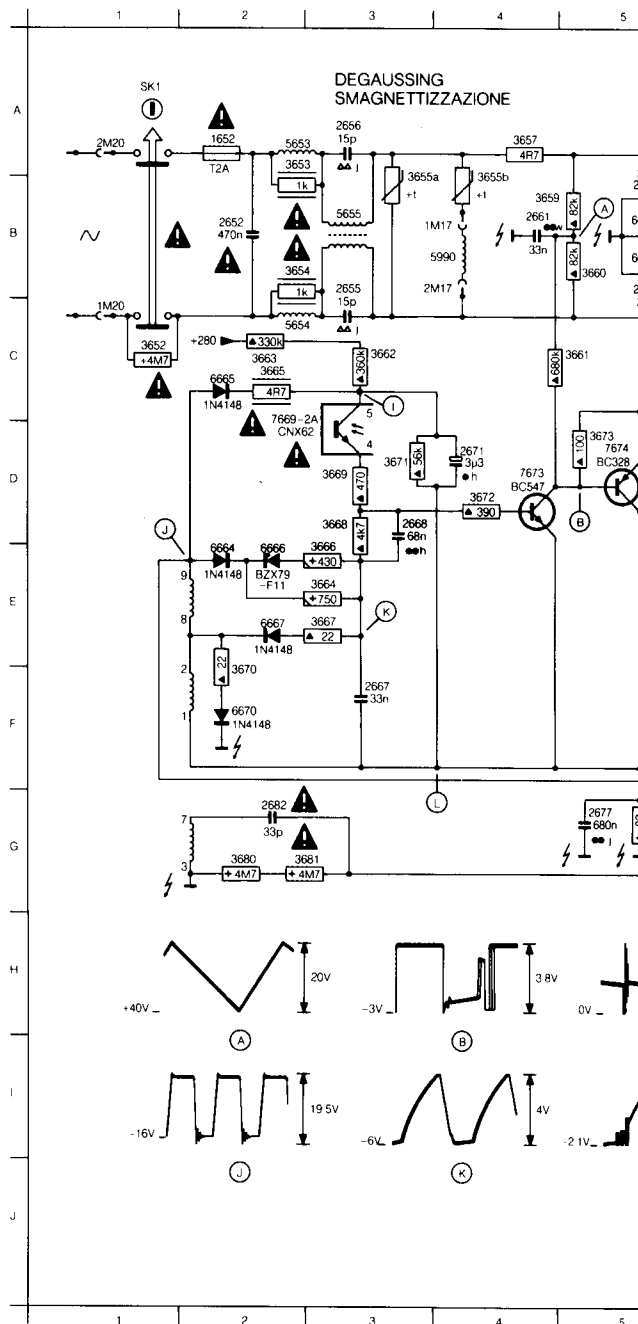
## Remark 1

Disconnect resistor 3672 and coil 5697.  
Connect a 220 V/100 W lamp between point D and  $\perp$ .  
Using a variable transformer, adjust the input voltage for about 95 V and check the voltage at point D by means of a voltmeter.

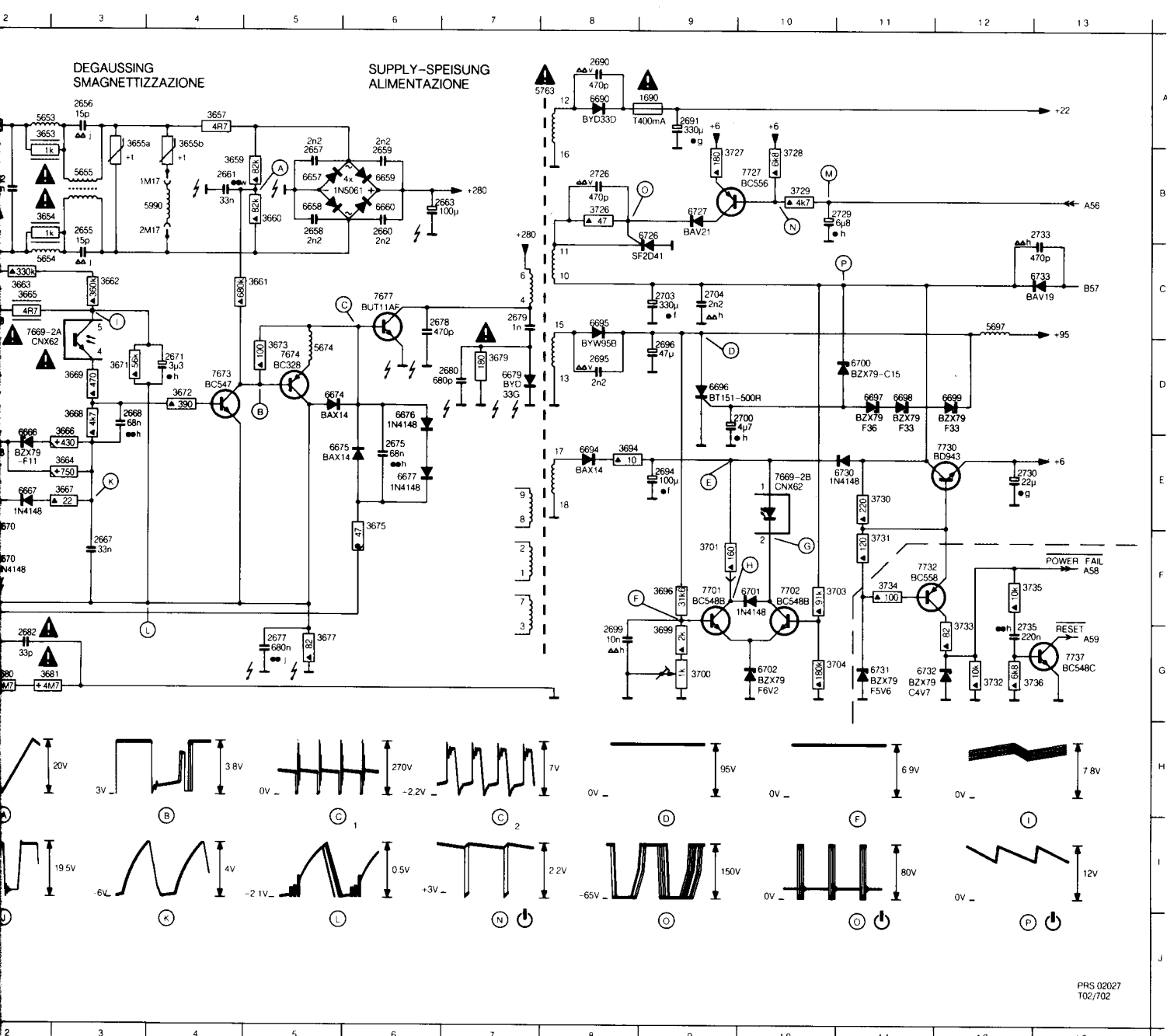
## Remark 2

Disconnect coil 5697 and connect a 220 V/100 W lamp between pin D and  $\perp$ . Using a variac, adjust the input voltage for 220 V and measure simultaneously the voltage at point D.



































































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1690	A 9	2660	B 6	2677	G 5	2694	E 9	2726	B 8	3654	B 2	3662	C 3
2652	B 2	2661	B 4	2678	C 7	2695	D 8	2729	B 11	3655a	A 3	3663	C 2
2655	B 3	2663	B 7	2679	C 7	2696	D 9	2730	E 12	3655b	A 4	3664	E 3
2656	A 3	2667	F 3	2680	D 7	2699	G 8	2733	B 13	3657	A 4	3665	C 2
2657	B 5	2668	D 3	2682	G 2	2700	D 10	2735	G 12	3659	B 4	3666	E 3
2658	B 5	2671	D 4	2690	A 8	2703	C 9	3652	C 1	3660	B 5	3667	E 3

















E 6	2691	A 9	2704	C 9	3653	A 2	3661	C 5	3668	D 3	3677	G 5	3700	G 9	3729	B10	3736	G13	5990	B 4	5666	E 2	6679	D 7	6699	D12	6731	G11	7677	C 6	SK1	A 1
G 5	2694	E 9	2726	B 8	3654	B 2	3662	C 3	3669	D 3	3679	D 7	3701	F 9	3730	E11	5653	A 2	6657	B 5	6667	E 2	6690	A 8	6700	D11	6732	G11	7701	F 9		
C 7	2695	D 8	2729	B11	3655a	A 3	3663	C 2	3670	F 2	3680	G 2	3703	F11	3731	F11	5654	C 2	6658	B 5	6670	F 2	6694	E 8	6701	F10	6733	C13	7702	F10		
C 7	2696	D 9	2730	E12	3655b	A 4	3664	C 3	3671	D 3	3681	G 3	3704	G11	3732	G12	5655	B 3	6659	B 6	6674	D 5	6695	C 6	6702	G10	7669	C 2	7727	B10		
D 7	2699	G 8	2733	B13	3657	A 4	3665	C 2	3672	D 4	3694	F 8	3726	B 8	3733	G12	5674	D 5	6660	B 6	6675	E 6	6696	D 9	6726	B 9	7669	E10	7730	E12		
G 2	2700	D10	2735	G12	3659	B 4	3666	C 3	3673	D 5	3696	F 9	3727	B10	3734	F11	5697	C12	6664	E 2	6676	D 6	6697	D11	6727	B 9	7673	D 4	7732	F11		
A 8	2703	C 9	3652	C 1	3660	B 5	3667	E 3	3675	E 6	3699	G 9	3728	B10	3735	F13	5763	A 8	6665	C 2	6677	E 6	6698	D11	6730	E11	7674	D 5	7737	G13		



SYMBOLS FOR FAULT-FINDING TREES

	Supply aerial signal (colour)		Normal sound		Line frame (Venetian blinds)
	Remove aerial signal		No or weak sound		Heavy horizontal bars
	Connect generator colour signal		No sound		Unstable TV picture
	Carry out voltage measurements		Sound distorted		Inject with frequency 2 half volume
	Carry out resistance (Ohmic) measurements		Connect black / white picture		... doesn't work
	Check ...		No or weak picture		Tune in ... Band
	Correct		Uniformly discoloured frame with no or weak picture		Colours
	Incorrect		Picture discoloured uniformly		One or two colours weak or not present
	Check circuit between .... and ....		Vertical amplitude too small or too large		Weak colours
	Set ...		Horizontal amplitude too small or too large		No colours
	Set ...		No vertical deflection		Switch the set on
	Remove unit		No vertical synchronisation		Correct television colour picture
	Insert unit		No horizontal synchronisation		TV-mode
	Connect the points A and B		Horizontal centring incorrect		Teletext-mode
	Remove connection between points A and B		Vertical centring incorrect		Teletext rows are missing or include incorrect characters
	Adjustment (general)		Vertical linearity incorrect		Statusrow is correct, other TXT-rows are missing
	Adjustment yields no result		The left and right vertical lines are curved		Statusrow is correct, other rows include errors
	Filament of picture tube glows		No horizontal deflection		Statusrow is not correct, other rows include errors
	Filament of picture tube does not glow		No synchronisation		Select other programm
	Too much light		Colour blurs in black / white picture		Unsynchronized TXT-picture
	Insufficient light		Strong colour noise in black / white picture		Teletext picture moves left / right
	No light		Correct sequence of colours		Teletext picture moves up / down

	Replace IC ...		No or weak horizontal bars
	Desolder ...		Vertical lines are curved no TV picture no synchronisation
	Resolder ...		Error indication on display
	Measure the signal / oscillogram		Programme display correct
$\frac{\text{Freq}}{\dots \text{ Hz}}$	Measure frequency		No teletext
	Pulse / pulse train present		Teletext correct
	Pulse / pulse train not present		Mixed teletext and TV picture
$\frac{\text{BUS}}{\dots}$	Check lines ... for bus errors		
	Depress key ...		
$\approx \dots$	Is approximately equal to ...		
$= \dots$	Is equal to ...		
$\neq \dots$	Is not equal to ...		

A  
B  
C  
D  
E  
F  
G  
H  
I  
J  
K  
L  
M  
N  
O



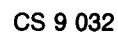
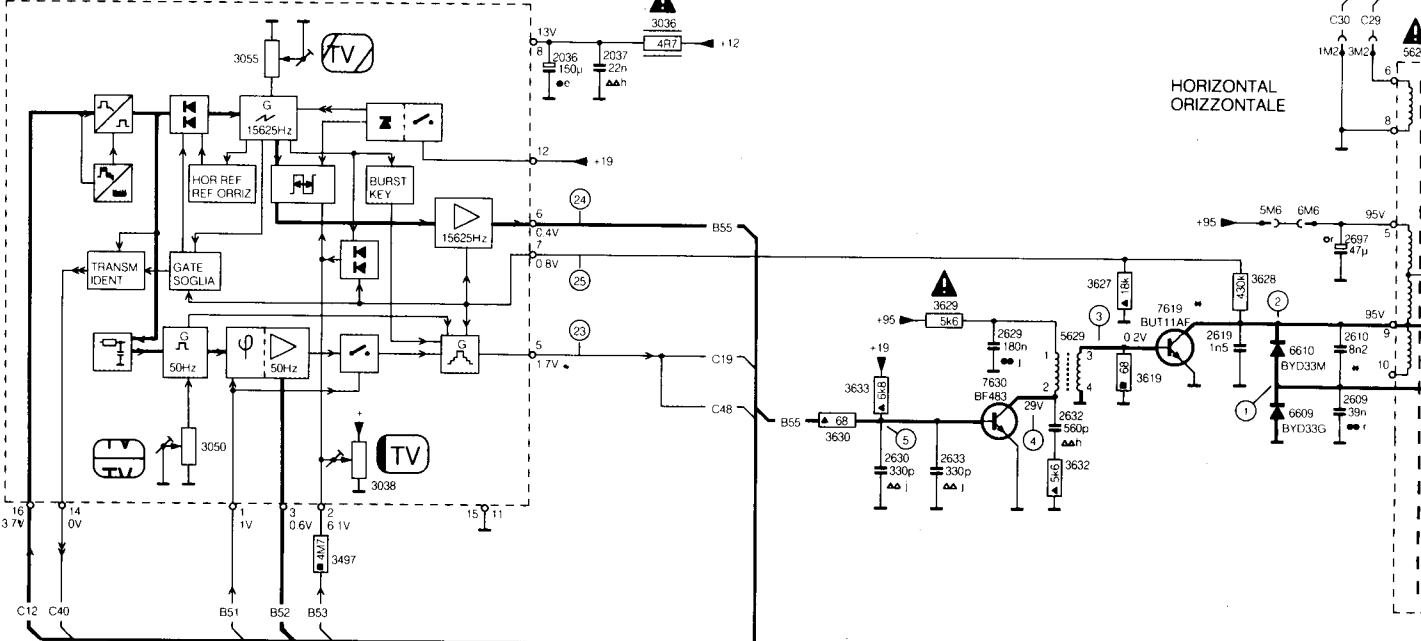
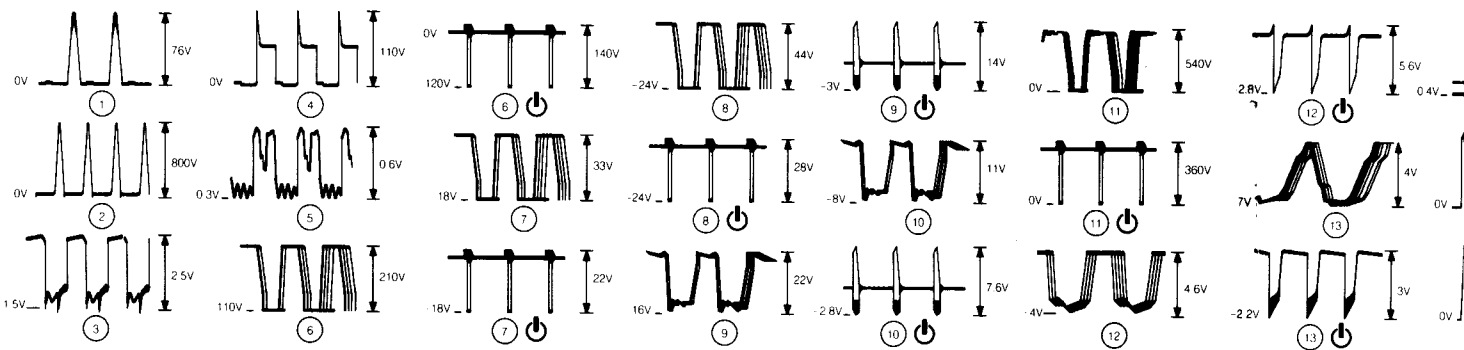
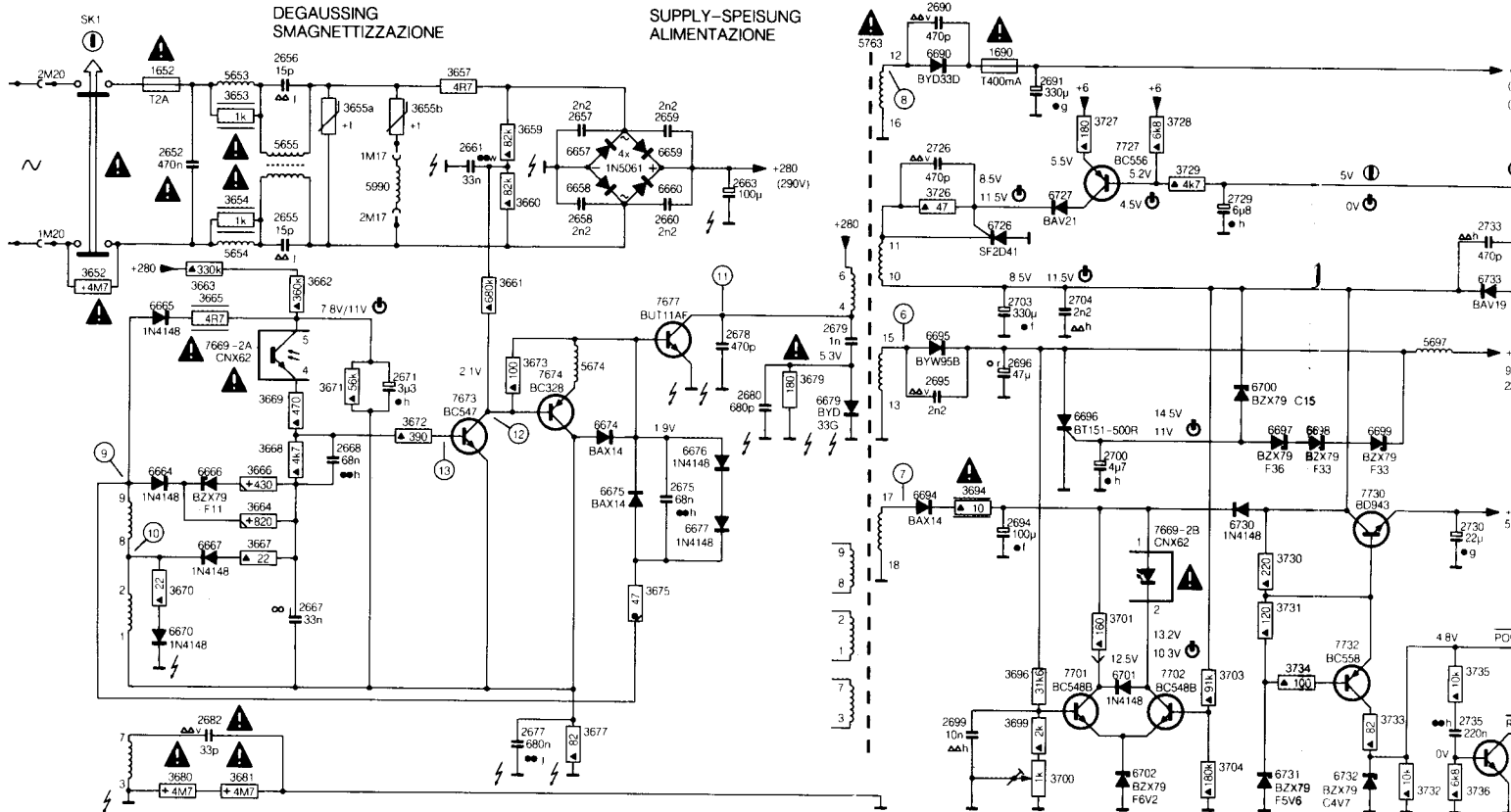


DIAGRAM-SCHALTBILD-SCHEMA B

1040 -2B SYNCHRONISATION-SINCRONIZZAZIONE

DEGAUSSING  
SMAGNETTIZZAZIONE

SUPPLY-SPEISUNG  
ALIMENTAZIONE







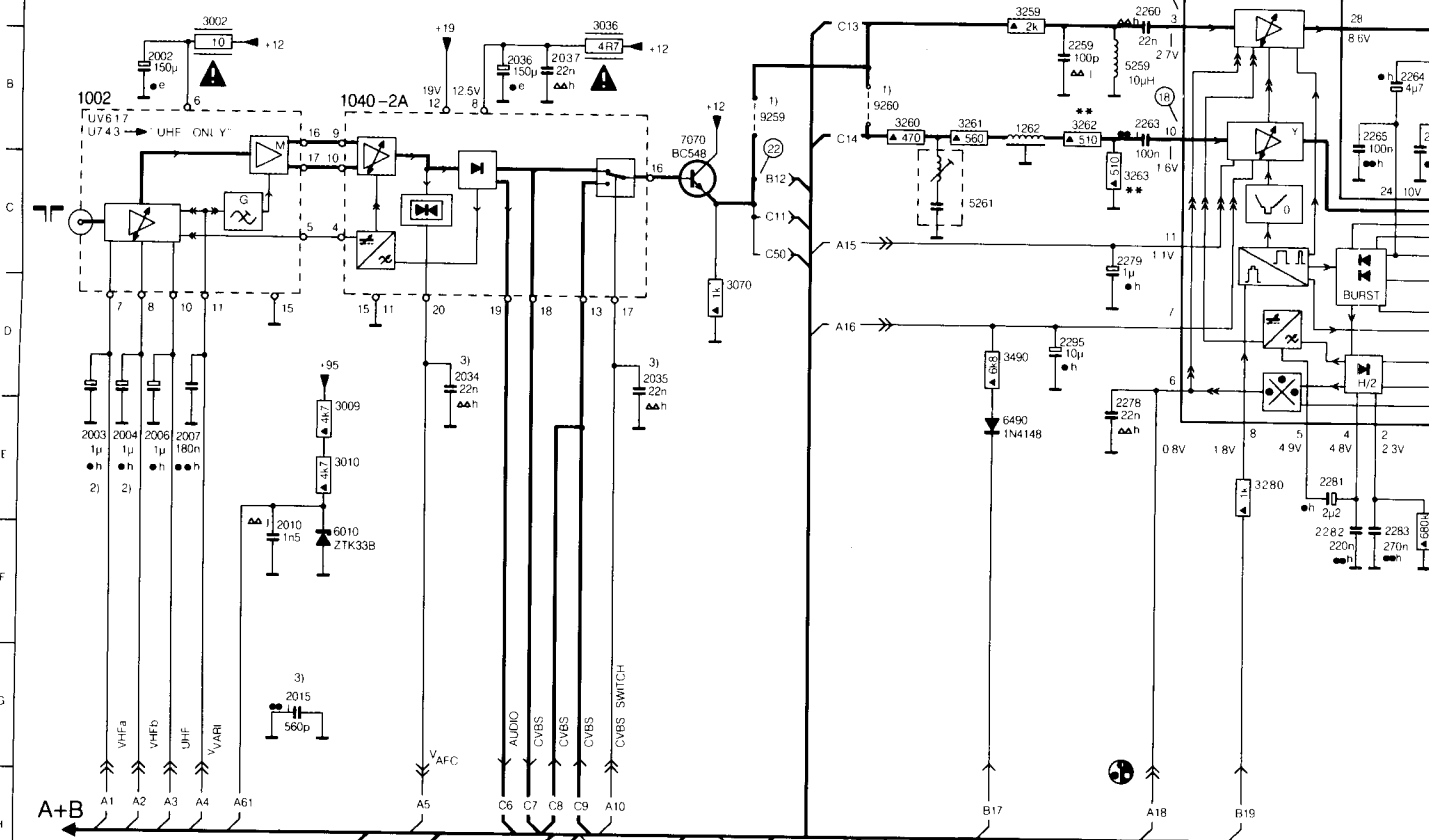
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1040	B 3	1990	D21	2035	D 5	2109	L17	2260	A 9	2275	E13	2287	E15	2502	K 5	3002	A 2	3107	L13	3259	A 8	3273	A15	3290	F15	3410	F18
1102	K19	2002	B 1	2036	B 4	2111	J19	2263	B 9	2276	E12	2290	E15	2503	L15	3009	F 3	3109	L16	3260	B 7	3274	B15	3291	F15	3411	F19
1103	J13	2003	E 1	2037	B 5	2112	J20	2264	B11	2278	D 9	2291	E16	2506	L19	3010	E 3	3111	J19	3261	B 8	3275	F13	3292	F15	3412	G19
1262	B 8	2004	E 1	2101	I19	2113	I20	2265	B11	2279	C 9	2292	E15	2508	L19	3036	A 5	3113	J19	3262	B 9	3276	E10	3400	E17	3420	D17
1267	B12	2006	E 1	2102	I19	2114	J18	2266	R11	2281	F11	2295	D 9	2509	L20	3070	D 6	3114	J19	3263	C 9	3277	F12	3401	D17	3421	D17
1270	A14	2007	E 2	2103	H18	2115	J20	2267	B12	2282	E11	2410	G18	2510	L20	3101	H18	3115	J20	3264	B12	3284	F13	3402	F17	3426	C19
1310	L 9	2010	F 2	2104	J13	2118	J18	2270	A13	2283	E11	2430	E18	2521	K15	3103	I13	3121	K17	3270	A13	3285	F14	3406	F19	3427	D19
1750	I 9	2015	G 3	2105	K14	2124	K16	2271	B15	2285	E15	2450	C18	2522	K16	3104	I13	3122	J17	3271	B15	3286	F14	3407	F19	3429	E19

# DIAGRAM-SCHALTBIID-SCHEMA C

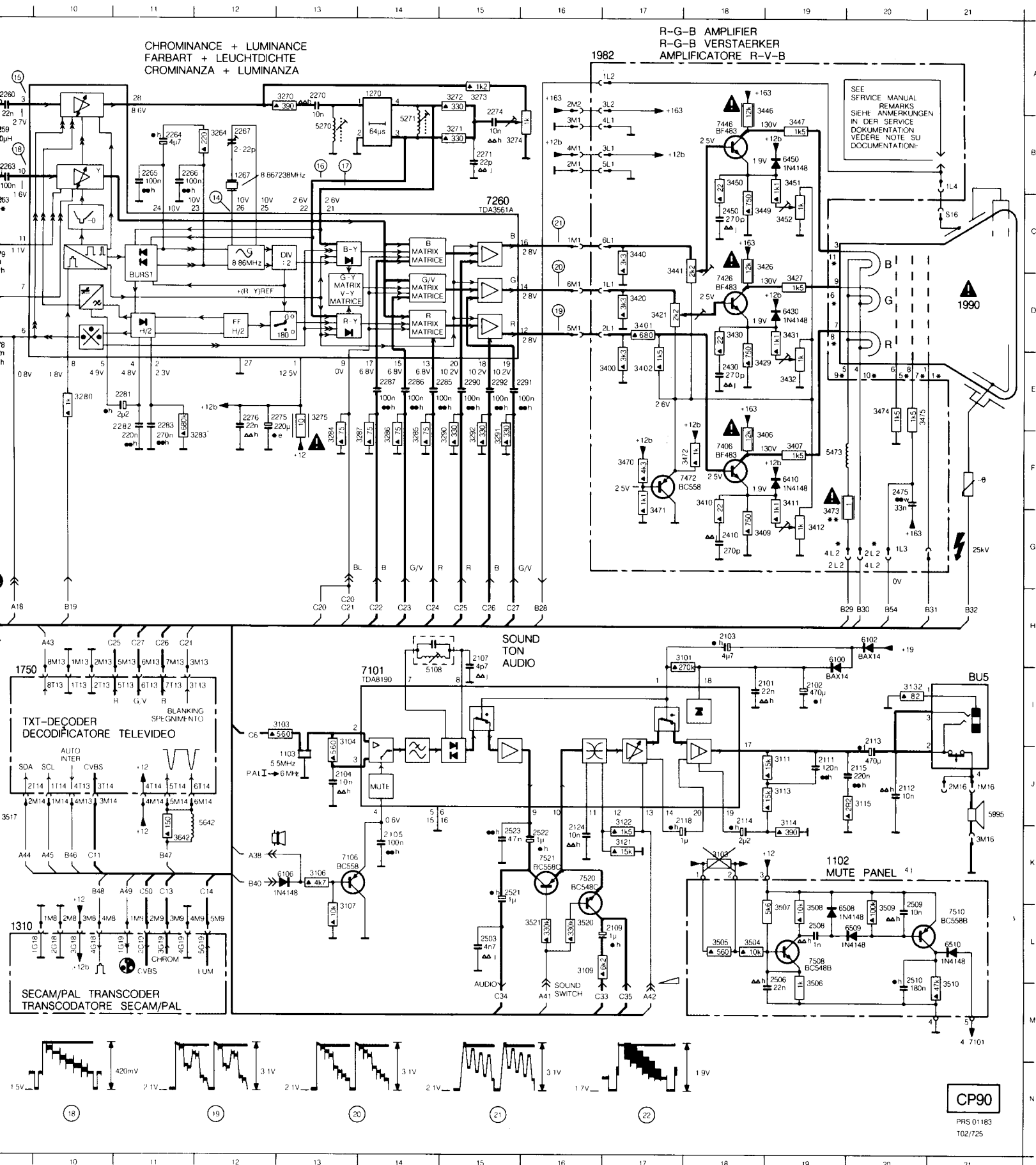
CHANNEL SELECTOR  
KANALWAHLER  
SELETTORE CANALE

IF AMPL.+DET. +AGC. +AFC.  
ZF VERST. +DEM. +AVR. +AFA.  
AMPL. FI +RIVEL. CAG. +CAF.

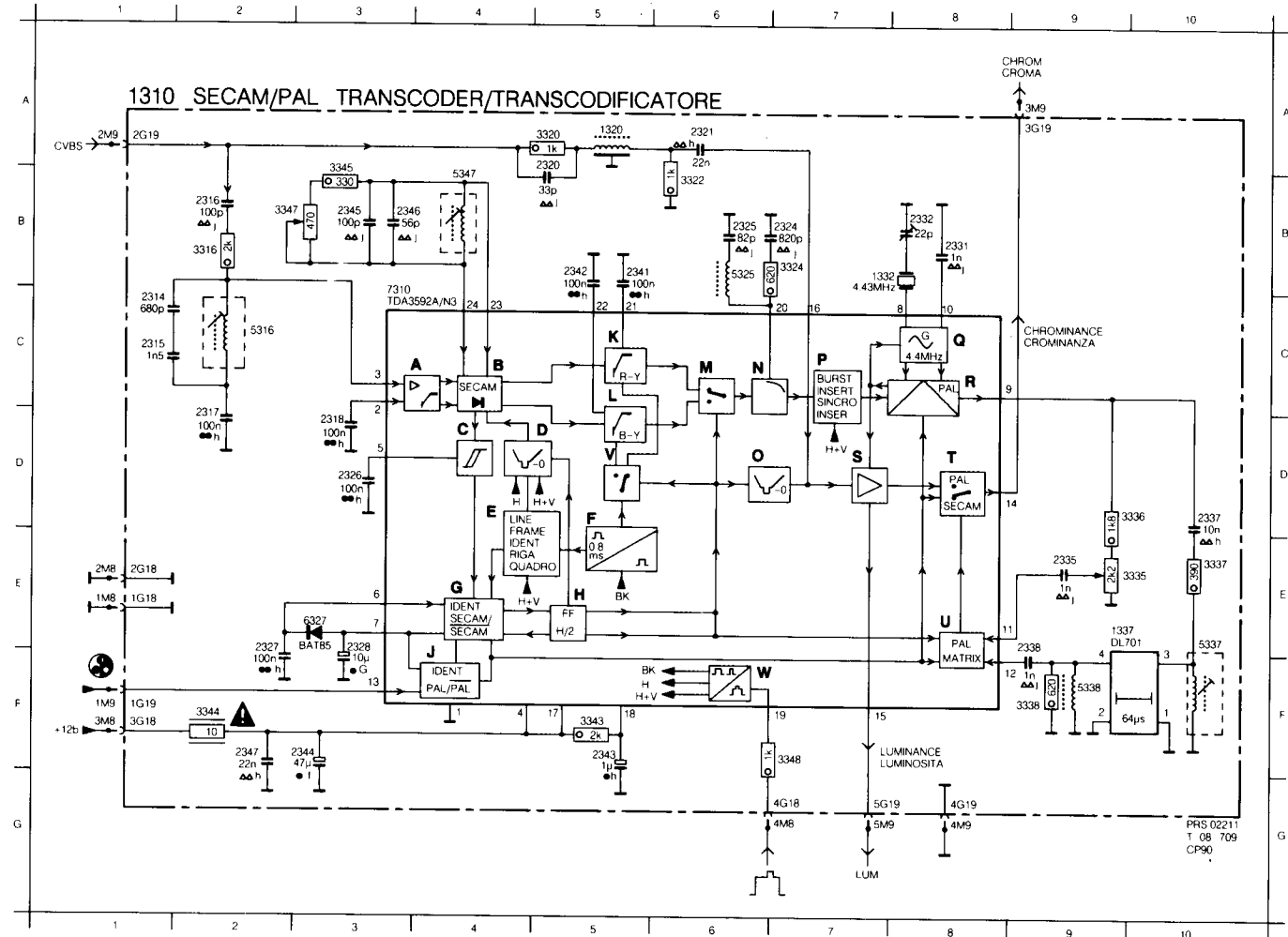
CHROM.  
FARBAR.  
CROMIN.



272	A15	3287	F14	3409	G19	3430	D18	3451	B19	3501	K 5	3511	J 6	3521	L16	5642	J12	6490	E 8	7426	D18	7521	K16
273	A15	3290	F15	3410	F18	3431	D19	3452	C19	3502	K 5	3512	J 5	3522	L 4	5995	J21	6508	L20	7446	B18	9259	B 6
274	B15	3291	F15	3411	F19	3432	E19	3470	F17	3504	L18	3513	I 9	3642	K11	6010	F 3	6509	L20	7472	F18	9260	B 7
275	F13	3292	F15	3412	G19	3440	C17	3471	G17	3505	L18	3514	J 9	5108	I14	6100	H19	6510	L21	7508	L19	BU2	L 3
280	E10	3400	E17	3420	D17	3441	C17	3472	F18	3506	M19	3515	K 8	5259	B 9	6102	H20	7070	B 6	7510	L21	BU3	L 4
283	F12	3401	G17	3421	D17	3446	A19	3473	G19	3507	L19	3516	L 9	5261	G 8	6106	K13	7101	F19	7512	J 5	BU4	L 4
284	F13	3402	E17	3426	C19	3447	B19	3474	E20	3508	L19	3517	J 9	5270	B13	6410	F19	7106	K13	7514	J 8		
285	F14	3406	F19	3427	D19	3449	C19	3475	E20	3509	L20	3518	I 8	5271	B14	6430	D19	7260	C15	7516	K 9		
286	F14	3407	F19	3429	F19	3450	B18	3490	D 8	3510	M21	3520	L16	5473	F19	6450	B19	7406	F18	7520	K16		



1320	A 5	2315	C 1	2320	A 5	2326	D 3	2332	B 8	2341	B 5	2345	B 3	3320	A 5	3336	D10	3344	F 2	5316	C 2	5347	H 4
1332	B 7	2316	B 2	2321	A 6	2327	E 2	2335	E 9	2342	B 5	2346	B 3	3322	B 6	3337	E10	3345	B 3	5325	B 6	6327	F 3
1337	E10	2317	D 2	2324	B 7	2328	E 3	2337	D10	2343	F 5	2347	F 2	3324	B 7	3338	F 9	3347	B 2	5337	E10	7310	C 3
2314	C 1	2318	D 3	2325	B 6	2331	B 8	2338	E 9	2344	F 3	3316	B 2	3335	E10	3343	F 5	3348	F 7	5338	F 9		



TUON SYSTEM  
SISTEMA TUON



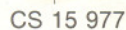
PRS.02253  
T02/B12



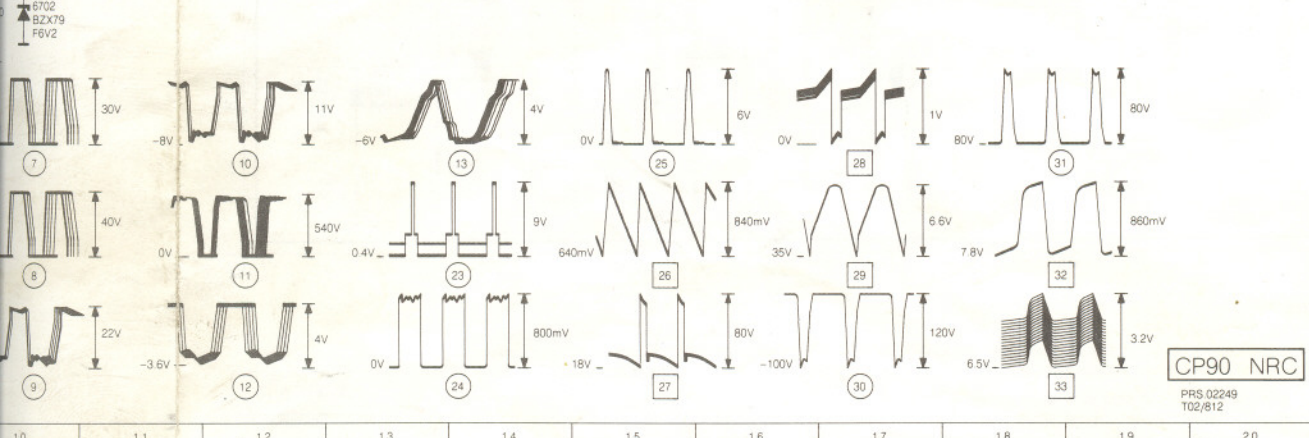
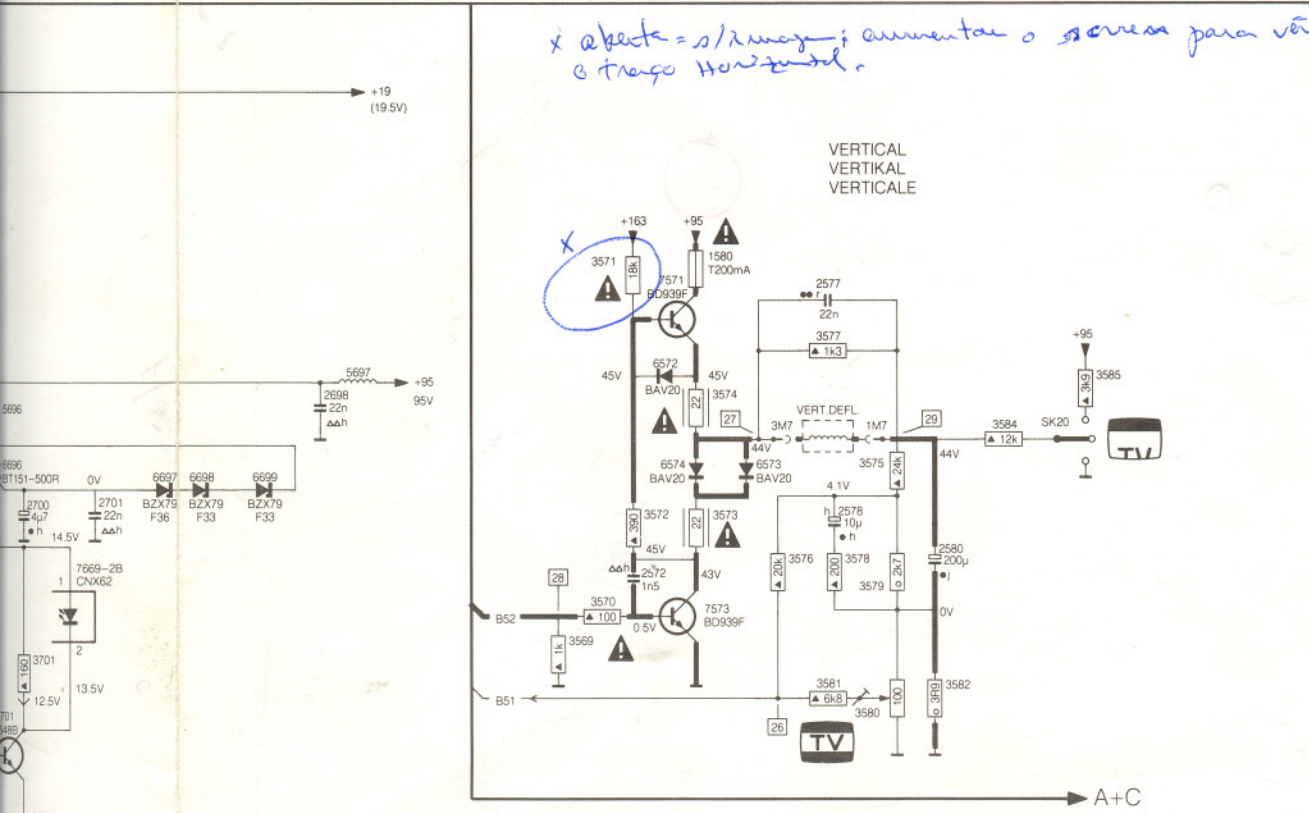
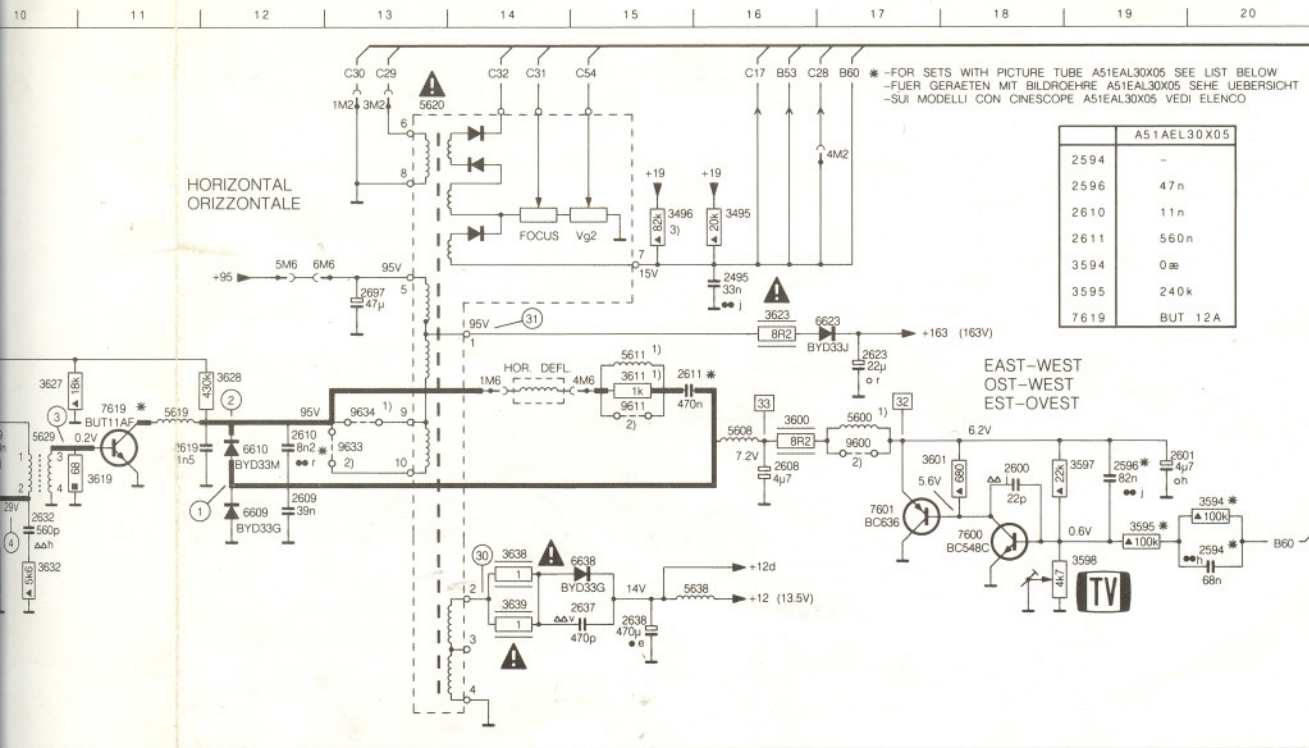
## 1040 -2B SYNCHRONISATION-SINCRONIZZAZIONE



- 1)-PRESENT FOR SETS WITH SCART CONNECTION  
-PRESENT IN GERÄTEN MIT SCART ANSCHLUSSMOEGLICHKEIT  
-PRESENTE SUI MODELLI CON COLLEGAMENTO SCART
- 2)-NOT PRESENT FOR SETS WITH SCART CONNECTION  
-NICHT PRESENT IN GERÄTEN MIT SCART ANSCHLUSSMOEGLICHKEIT  
-ASSENTE SUI MODELLI CON COLLEGAMENTO SCART
- 3)-PRESENT FOR SETS WITH PICTURE TUBE A51JAR30X01MZ  
-PRESENT IN GERÄTEN MIT BILDROEHRE A51JAR30X01MZ  
-PRESENTE SUI MODELLI CON CINESCOPO A51JAR30X01MZ
- 4)-ONLY PRESENT IN -/02 AND -/08 SETS  
-NUR ANWESEND IN -/02 UND -/08 GERÄTEN  
-PRESENTE SUI MODELLI -/02-/08







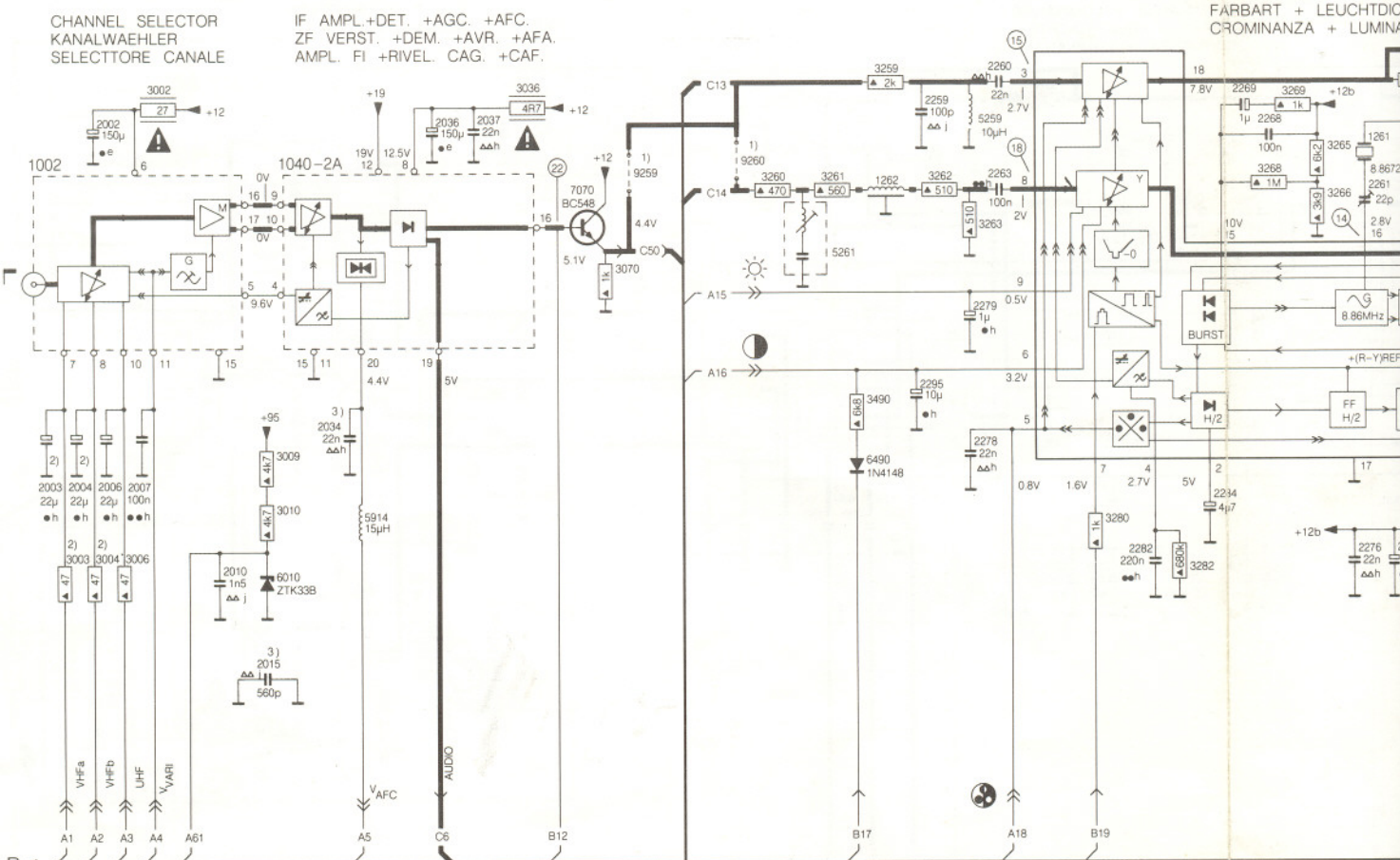
1040	A 2	6659	G 6
1560	H 6	6660	H 6
1652	G 2	6664	J 2
1690	G 9	6665	I 2
2036	A 6	6666	J 2
2037	A 7	6667	K 2
2038	E 8	6670	K 2
2039	B 6	6674	J 6
2495	B16	6675	J 6
2572	J15	6676	J 7
2577	H17	6677	J 7
2578	J17	6690	G 8
2580	J18	6694	J 8
2594	D20	6695	I 8
2596	D19	6696	J10
2600	D18	6697	J11
2601	D20	6698	J12
2608	D16	6699	J12
2609	D12	6702	L10
2610	D12	7571	H15
2611	C15	7573	K16
2619	D11	7600	K18
2623	C17	7601	D17
2629	D10	7619	C11
2630	E 9	7630	D10
2632	D10	7669	I 2
2633	E 9	7669	J11
2637	E15	7673	I 4
2638	E15	7674	I 5
2652	G 2	7677	I 7
2657	G 6	7701	L10
2658	H 6	9600	D17
2663	H 7	9611	C15
2667	K 3	9630	D 9
2668	J 3	9633	D13
2671	J 7	9634	C13
2675	J 7	SK1	F 1
2677	L 5	SK20	I18
2678	L 7		
2679	L 7		
2681	L 2		
2682	L 2		
2690	F 8		
2691	G 9		
2694	J 9		
2695	I 8		
2696	E 4		
2697	B13		
2698	I13		
2699	L 9		
2700	J10		
2701	J11		
3036	A 7		
3038	D 4		
3055	A 3		
3495	B16		
3496	B15		
3497	E 4		
3555	K15		
3570	K15		
3571	H15		
3572	J15		
3573	J16		
3574	I16		
3575	J17		
3576	J16		
3577	I17		
3578	J17		
3579	K17		
3580	L17		
3581	K17		
3582	K18		
3584	I18		
3585	I19		
3594	D20		
3595	D19		
3597	D19		
3598	E19		
3600	C16		
3601	D17		
3619	D11		
3623	C16		
3627	C10		
3628	C12		
3629	C 9		
3630	D 9		
3632	E10		
3633	D 9		
3638	D14		
3639	E14		
3652	H 1		
3653	G 2		
3654	H 2		
3655a	G 4		
3655b	G 4		
3659	G 5		
3660	H 5		
3661	I 5		
3662	H 3		
3663	I 2		
3664	J 3		
3665	I 2		
3666	J 3		
3667	K 3		
3668	J 3		
3669	I 3		
3670	K 2		
3671	I 3		
3672	J 4		
3673	I 5		
3675	K 6		
3677	L 6		
3679	I 7		
3680	L 2		
3681	L 3		
3694	J 9		
3696	L 9		
3699	L 9		
3700	L10		
3701	K10		
5600	C17		
5608	C16		
5611	C15		
5619	C11		
5620	A13		
5629	D10		
5638	E16		
5653	J 2		
5654	H 3		
5655	G 3		
5674	I 5		
5675	J 6		
5694	J 9		
5695	I 9		
5696	I10		
5697	I13		
5763	G 8		
5990	H 8		
5672	I15		
6573	J16		
6574	J15		
6609	D12		
6610	D12		
6623	C17		
6638	E15		
6657	G 6		
6658	H 6		



1	1310 K 8	2006 E 2	2037 B 5	2107 H15	2118 J18	2261 B12	2272 B15	2282 E10	2450 C18	3004 E 2	3100 H20	3111 J19	3123 L16	3263 C 9	3271 B14	3282 F11
2	1982 A16	2007 E 2	2101 I19	2111 J19	2122 K18	2262 B13	2274 B15	2284 E11	2475 F20	3006 E 2	3101 H18	3113 J19	3124 L16	3265 B12	3272 A14	3400 E17
3	1990 D21	2010 F 3	2102 I19	2112 J20	2123 K17	2263 B 9	2275 E12	2295 D 8	2523 K16	3009 E 3	3102 I20	3114 K19	3125 A 8	3266 B12	3273 A15	3401 D17
4	2002 B 2	2015 F 3	2103 H18	2113 I20	2124 J16	2268 B11	2276 E12	2410 G18	2524 K16	3010 E 3	3103 I13	3115 J20	3126 B 7	3268 B11	3274 B15	3402 E17
5	2003 E 1	2034 D 3	2104 J14	2114 J18	2259 B 8	2269 B11	2278 D 9	2426 B17	3002 B 2	3036 B 5	3104 I14	3121 K16	3126 B 8	3269 B11	3275 E13	3406 F18
6	2004 E 1	2036 B 4	2105 K14	2115 J20	2260 A 9	2270 A13	2279 C 9	2430 E18	3003 E 1	3070 C 6	3107 K13	3122 K17	3126 B 8	3270 A12	3280 E10	3407 F19

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# DIAGRAM-SCHALTBIKD-SCHEMA C





10	11	12	13	14	15	16	17	18	19	20	21
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