

Service Service Service

VR285/02/05/07/13/39/58
VR286/02
VR287/02/07/13/39
VR485/02/39/58
VR487/02/39/58
VR685/02/07/13/16/39/58
VR686/02/13/39

SB110/03
SB115/03
SB215/02
SB615/03/11



VRx87



VR686



VR286



VRx85



SBxxx

Service Manual

Evolution: AA

- GB** For chapters 2 and 4 reference is made to the Service Manual of QUEEN volume **4822 726 15512**.
- D** Für die Kapiteln 2 und 4 siehe Service Manual QUEEN volume **4822 726 15511**.
- NL** Voor de hoofdstuk 2 en 4 wordt verwezen naar de Service Documentatie van de QUEEN volume **4822 726 15514**.
- F** Pour ce qui est des chapitres 2 et 4 veuillez vous référer à la Documentation Service du QUEEN volume **4822 726 15513**.
- I** Per i capitoli 2 e 4 veda il Manuale di Servizio di QUEEN volume **4822 726 15515**.
- E** Para los capítulos 2 y 4 véase el manual de servicio de QUEEN volume **4822 726 15516**.

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Veiligheidsbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen identiek aan de gespecificeerde worden toegepast.

Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali.

Survey of versions:

/02/03	PAL B/G, VPS/PDC
/05	PAL I, UK
/07	PAL I, Ireland
/11	PAL B/G Belgium
/13	PAL B/G, Nordic
/16	PAL B/G, Spain
/38/39	SECAM L/L', PAL B/G, PAL I
/58/59	PAL/SECAM B/G, D/K

Survey of remote controls:

VR285/02/05/07/13/39/58, VR485/02/58 SB110/03, SB115/03 SB215/02, SB615/03/11	RT183/201 4822 219 10496
VR286/02, VR287/02/07/13 VR487/02/58 VR685/02/07/13/16/58, VR686/02/13	RT184/101 4822 219 10498
VR285/39, VR287/39, VR485/39 VR487/39, VR685/39, VR686/39	RT184/104 4822 219 10501

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.

Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de reemplazo sean idénticas a las originales.



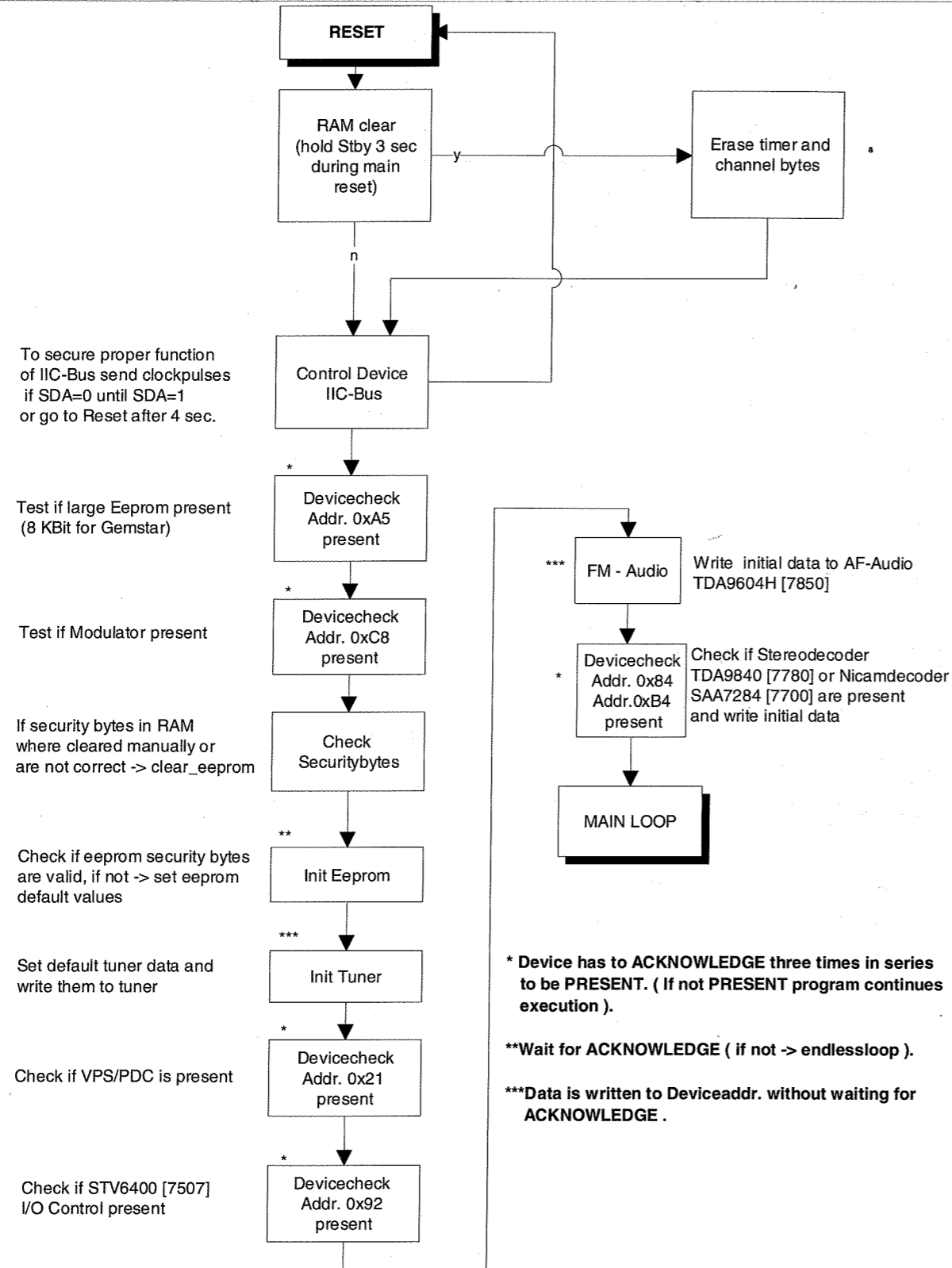
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Features

	VR285/02	VR285/05	VR285/07	VR285/13	VR285/39	VR285/58	VR286/02	VR287/02	VR287/07	VR287/13	VR287/39	VR485/02	VR485/39	VR485/58	VR487/02	VR487/39	VR487/58	VR685/02	VR685/07	VR685/13	VR685/16	VR685/39	VR685/58	VR686/02	VR686/13	VR686/39	SB110/03	SB115/03	SB215/02	SB615/03	SB615/11				
Low power standby [W]	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6			
Splitter for France					✓						✓		✓		✓							✓				✓									
Sound system: mono	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										✓	✓	✓						
Sound system: stereo																		✓	✓	✓	✓	✓	✓	✓	✓	✓						✓	✓		
Sound system: Nicam																		✓	✓	✓	✓	✓	✓	✓	✓	✓							✓	✓	
FOLLOW TV (analog)					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
WYSIWYR (analog)					✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Cable tuner incl. S-channels	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
Autoinstall (UK)		✓																																	
Video heads:	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	2	4	4			
FM-audio heads (for stereo)																		2	2	2	2	2	2	2	2	2							2	2	
Winding time E180 [sec]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	260	260	100	260	260				
Rewind time E180 [sec]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	170	170	100	170	170				
Clever Turbo Drive	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
Tape lengths recognition	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Longplay [8 h]		✓	✓																																
Quick view	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
Tape counter: linear relative																																			
Tape counter: linear (time used)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Tape counter: linear (time used/left)																																			
VISS next/previous index search	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Frame advance	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓																								
Field advance												✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Studio Picture Control	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
NTSC (non-standard) playback in color							✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Tuning presets	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	
Number of events / month	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	
Daily/weekly	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
GEMSTAR SHOWVIEW	✓			✓	✓	✓	✓					✓	✓	✓	✓	✓	✓																		
GEMSTAR VIDEOplus+		✓	✓			✓			✓										✓																
OTR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
VPS / PDC / VPS+PDC (VPDC)	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC								
Record-prepared mode (from SCART 2)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Backup of presets	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	
Backup of clock	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	
Transm.identif. via VPS/PDC	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓										
Audio: Stereo/HiFi - bilingual																		✓	✓	✓	✓	✓	✓	✓	✓	✓									
Audio dubbing																																			
OSD	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Child lock							✓	✓	✓	✓	✓																								
16:9 (via Scart pin 8)																																			
Audio out: cinch (rear)																			✓	✓	✓	✓	✓	✓	✓	✓									
Audio / Video in: cinch (front)																			✓	✓	✓	✓	✓	✓	✓	✓									
Number of scart connectors	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2	2	2	2	
VCR1/VCR2 selection																																			
Time download	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓									
Shuttle on front							✓	✓	✓	✓																									

Start - up software from the display control - µP



Survey of sets and PCB's with software versions

QMB - MOTHERBOARD

Page 3 -	7	8	9	10	11	12	13	14	15	16	17	10	11	67	19	19	19	Chapter 4												
	PAL BG	PAL I	SECAM BG	SECAM L/L'	MESECAM							QTDP2-xU	QDCE1-xP	QDCE2-xU	QDCE3-xU	QDCH1-xP	QDCH2-xU	QDCH3-xU	QDCH4-xU	QDCH5-xU	CINCH rear	CINCH front	QNIC	QKP21	WDQ-P2/0	WDQ-P2/0LP	WDQ-S4/0	WDQ-S4/2		
VR285/02	✓											✓	✓	✓																
VR285/05		✓										✓	✓	✓												✓				
VR285/07		✓										✓	✓	✓												✓				
VR285/13	✓											✓	✓	✓												✓				
VR285/39	✓	✓	✓	✓	✓							✓	✓	✓												✓				
VR285/58	✓		✓	✓	✓							✓	✓	✓												✓				
VR286/02	✓											✓	✓	✓												✓				
VR287/02	✓											✓	✓	✓												✓				
VR287/07	✓	✓										✓	✓	✓												✓				
VR287/13	✓											✓	✓	✓												✓				
VR287/39	✓	✓	✓	✓	✓							✓	✓	✓												✓				
VR485/02	✓											✓	✓	✓												✓				
VR485/39	✓	✓	✓	✓	✓							✓	✓	✓												✓				
VR485/58	✓		✓	✓	✓							✓	✓	✓												✓				
VR487/02	✓											✓	✓	✓												✓				
VR487/39	✓	✓	✓	✓	✓							✓	✓	✓												✓				
VR487/58	✓		✓	✓	✓							✓	✓	✓												✓				
VR685/02	✓											✓	✓	✓							✓	✓								
VR685/07		✓										✓	✓	✓							✓	✓	✓							
VR685/13	✓											✓	✓	✓							✓	✓	✓							
VR685/16	✓											✓	✓	✓							✓	✓	✓							
VR685/39	✓	✓	✓	✓	✓							✓	✓	✓							✓	✓	✓							
VR685/58	✓		✓	✓	✓							✓	✓	✓							✓	✓	✓							
VR686/02	✓											✓	✓	✓							✓	✓	✓							
VR686/13	✓											✓	✓	✓							✓	✓	✓							
VR686/39	✓	✓	✓	✓	✓							✓	✓	✓							✓	✓	✓							
SB110/03	✓											✓	✓	✓												✓				
SB115/03	✓											✓	✓	✓												✓				
SB215/02	✓											✓	✓	✓												✓				
SB615/03	✓											✓	✓	✓							✓	✓	✓							
SB615/11	✓											✓	✓	✓							✓	✓	✓							

GB

TECHNICAL DATA

Mains voltage	Netzspannung	Tension secteur	220 - 240 V, +/- 10%
Mains frequency	Netzfrequenz	Fréquence	45 - 65 Hz
Power consumption:	Leistungsaufnahme:	Puissance absorbée:	mono 12.5 W during operation HiFi 16 W during operation
without Low Power Standby	Standby	mode veille normal	mono 9.5 W HiFi 11 W
with Low Power Standby	Standby mit geringem Verbrauch	mode veille faible consommation ..	< 6 W standby
Ambient temperature	Raumtemperatur	Température ambiante	+10°C to +35°C
Relative humidity	Relative Luftfeuchtigkeit	Humidité relative	20 - 80 %
Dimensions	Abmessungen	Encombrement	380 x 260 x 94 mm
Weight	Gewicht	Poids	3,7 kg
Fast forward/rewind time (turbo) ...	Vor-/Rückspulzeit (turbo)	Temps (re-)bobinage (turbo)	typ. 100s (E180 cass.)
Position of use	Betriebslage	Position d'emploi	horizontally, max. 15°
Video resolution	Video-Auflösung	Puissance absorbée	≥240 lines
Audio	Audio	Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
		Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
		Stereo FM Audio	20Hz - 20kHz (≤3dB)

NL

TECHNISCHE GEGEVENS

Netspanning	Tensión de red	Tensione di alimentazione	220 - 240 V
Netfrequentie	Frecuencia de red	Frequenza di rete	45 - 65 Hz
Opgenomen vermogen:	Consumo de potencia:	Potenza assorbita:	mono 12.5 W during operation HiFi 16 W during operation
zonder Low Power Standby	sin standby de bajo consumo	in attesa non a basso consumo	mono 9.5 W during standby HiFi 11 W during standby
met Low Power Standby	con standby de bajo consumo	in attesa a basso consumo	< 6 W standby
Omgevingstemperatuur	Temperatura ambiente	Temperatura ambiente	+10°C to +35°C
Relatieve vochtigheid	Humedad relativa	Umidità relativa	20 - 80 %
Afmetingen	Dimensiones	Dimensioni	380 x 260 x 94 mm
Gewicht	Peso	Peso	3,7 kg
Vooruit/terugspoeltijd (turbo)	tiempo de (re-)bobinado (turbo)	Tempo di (ri-)avvolgimento (turbo) ..	typ. 100s (E180 cass.)
Gebruikspositie	Posición de uso	Posizione di funzionamento	horizontally, max. 15°
Oplossend vermogen	Resolución video	Risoluzione video	≥240 lines
Audio	Audio	Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
		Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
		Stereo FM Audio	20Hz - 20kHz (≤3dB)

Euroconnector (AV1) SCART plug 1

Connection to TV, monitor, projection TV ...

Pin 1 ARO (audio right out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 2 ARI (audio right in)	0,2 V _{rms} to 2V _{rms}	R _{in} 10 kOhm
Pin 3 ALO (audio left out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 6 ALI (audio left in)	0,2 V _{rms} to 2 V _{rms}	R _{in} 10 kOhm
Pin 7 Blue (out) **)		
Pin 8 Switching output:	(with R _{load} = 10kOhm, C _{load} < 2nF)	
	low: 2 V	
	high: 9.5 V	
	rise time: 5 ms	

Pin 11 Green (out) **)

Pin 15 Red (out) **)

Pin 16 Blanking (out) **) loop through enabled during standby, view-mode

Pin 19 CVBS II (video out) 1 V_{pp} +/- 2dB R_{out} 75 OhmPin 20 CVBS I (video in) 1 V_{pp} +/- 3dB R_{in} 75 Ohm

**) passive loop through from AV2

Euroconnector (AV2) SCART plug 2

Connection to decoder, SAT tuner, video disc, 2nd VCR

Pin 1 ARO (audio right out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 2 ARI (audio right in)	0,2 V _{rms} to 2 V _{rms}	R _{in} 10 kOhm
Pin 3 ALO (audio left out)	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
Pin 6 ALI (audio left in)	0,2 V _{rms} to 2 V _{rms}	R _{in} 10 kOhm
Pin 7 Blue (in) *)		
Pin 8 Switching input only	low: 2 V (low)	R _{in} 10 kOhm
	high: 4.5 V (high)	R _{in} 10 kOhm

Pin 11 Green (in) *)

Pin 15 Red (in) *)

Pin 16 Blanking (in) *) loop through enabled during standby, view-mode

Pin 19 CVBS II (video out) 1 V_{pp} +/- 2dB R_{out} 75 OhmPin 20 CVBS I (video in) 1 V_{pp} +/- 3dB R_{in} 75 Ohm

*) passive loop through to Euroconnector AV1

F

CARACTERISTIQUES

Tension secteur	220 - 240 V, +/- 10%
Fréquence	45 - 65 Hz
Puissance absorbée:	mono 12.5 W during operation HiFi 16 W during operation
mode veille normal	mono 9.5 W HiFi 11 W
mode veille faible consommation ..	< 6 W standby
Température ambiante	+10°C to +35°C
Humidité relative	20 - 80 %
Encombrement	380 x 260 x 94 mm
Poids	3,7 kg
Temps (re-)bobinage (turbo)	typ. 100s (E180 cass.)
Position d'emploi	horizontally, max. 15°
Puissance absorbée	≥240 lines
Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
Stereo FM Audio	20Hz - 20kHz (≤3dB)

I

DATI TECNICI

Tensione di alimentazione	220 - 240 V
Frequenza di rete	45 - 65 Hz
Potenza assorbita:	mono 12.5 W during operation HiFi 16 W during operation
in attesa non a basso consumo	mono 9.5 W during standby HiFi 11 W during standby
in attesa a basso consumo	< 6 W standby
Temperatura ambiente	+10°C to +35°C
Umidità relativa	20 - 80 %
Dimensioni	380 x 260 x 94 mm
Peso	3,7 kg
Tempo di (ri-)avvolgimento (turbo) ..	typ. 100s (E180 cass.)
Posizione di funzionamento	horizontally, max. 15°
Risoluzione video	≥240 lines
Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
Stereo FM Audio	20Hz - 20kHz (≤3dB)

Cinch Audio/Video input on front panel (OPTION)

Audio:

AINFR (audio right in) red	0.2 V _{rms} to 2 V _{rms}	typ. 500 mV _{rms}
AINFL (audio left in) white	0.2 V _{rms} to 2 V _{rms}	typ. 500 mV _{rms}
Input impedance	47 kOhm	

Video:

VFR yellow	1 V _{pp} +3 / -3 dB
Input impedance	75 Ohm

Cinch Audio Out Rear (OPTION)

AOUT1R (audio right out) red	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm
AOUT1L (audio left out) white	500 mV _{rms} +/- 3 dB	R _{out} 1 kOhm

This outputs are in parallel with the corresponding outputs on Euroconnector 1.

TUMOD

Modulator:

Frequency range loop through	45 MHz - 860 MHz
Gain: ANT IN - TV OUT	2 dB +3 / -2 dB
ANT IN - TUN OUT	2 dB +3 / -2 dB
Switch for RF input attenuation	NO
Frequency range out (tuned by IIC bus) Ch 21 - Ch55	


Tuner:

Frequency range	43 MHz - 860 MHz
for UK	450 MHz - 860MHz

Input voltage max.	< 100 dBμV
min.	> 60 dBμV

Avvertimenti

Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali.

Componenti di sicurezza sono marcati con 

- Tutti gli IC e semiconduttori sono sensibili a scariche elettrostatiche (ESD). Non curanze durante la riparazione di semiconduttori possono danneggiarli o condurre ad una riduzione drastica della durata. Durante la riparazione assicurarsi di essere collegati allo stesso potenziale attraverso un bracciale di protezione contro scariche elettrostatiche. Inoltre tenere anche tutti i componenti e gli attrezzi a questo potenziale.
- Apparecchi da riparare bisogna collegarli sempre via un trasformatore isolante (separatore) alla tensione normale.
- Non scambiare moduli o altri componenti quando l'apparecchio è in funzione.
- Per l'accordo usare soltanto attrezzi di plastica (non usare attrezzi metallici). Così si evitano cortocircuiti e collegamenti instabili.

Osservazioni

- Misurare le tensioni continue e gli oscillogrammi riferendosi alla massa dell'apparecchio.
ECCEZIONE
Le tensioni continue e gli oscillogrammi dall'alimentatore sono misurati sulla parte primaria contro GND-Live.
- Le tensioni continue e gli oscillogrammi indicati negli schemi di collegamento devono essere misurati secondo le condizioni seguenti: segnale barre colore, portante dell'immagine su: 503.25 MHz (C25).
- Gli oscillogrammi e le tensioni continue sono misurati in RECORD o PLAYBACK.
- I componenti indicati nelle liste sono intercambiabili con quelli nell'apparecchio nonostante l'eventuale denominazione di modelli.

WARNING FOR LITHIUM BATTERIES!

Lithium batteries, if incorrectly used (excessive heat, wrong connection of terminals, short circuit) represent a danger of explosion!

Lithium batteries must be replaced only by original spare parts.

WARNHINWEIS ZU LITHIUM-BATTERIEN!

Bei falscher Handhabung (Überhitzung, Falschpolung oder Kurzschluß) der Lithium-Batterien besteht Explosionsgefahr! Lithium-Batterien dürfen nur gegen Originalersatzteile getauscht werden.

ATTENTION!

Pile au lithium.


Danger d'explosion si traitée incorrectement. Ne peut être remplacée que par un spécialiste (comme décrit dans les instructions de réparation).

OPGELET MET LITHIUM-BATTERIJEN!

Bij foutieve behandeling (oververhitting, foutieve poling of kortsluiting) van lithium-batterijen bestaat er explosiegevaar! Lithium-batterijen mogen slechts door originele onderdelen vervangen worden.

Avisos

Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de repuesto, utilizadas para la reparación, sean idénticas a las originales.

Los componentes de seguridad están marcados con 

- Todos los IC y semiconductores son sensibles a descargas electrostáticas (ESD). Un tratamiento no conforme a las instrucciones de semiconductores en caso de reparación, podría llevar a la destrucción de estos componentes, o a una reducción drástica de la duración. Tenga cuidado de que, en caso de reparación, estar al mismo potencial que la masa del aparato, por una pulsera con resistencia. Ponga todos los componentes, herramientas y recursos al mismo potencial.
- Para reparar un aparato hay que conectarlo siempre a la alimentación a través de un transformador de aislamiento.
- Cuando un aparato está en marcha no pueden ser cambiados módulos u otras piezas de repuesto.
- Para los ajustes hay que utilizar exclusivamente herramientas de plástico (nunca herramientas metálicas). Así se evitarán cortocircuitos y circuitos inestables.

Notas

- Hay que medir las tensiones continuas y los oscilogramas contra la masa del aparato.
UITZONDERING:
Bij het netgedeelte zijn de gelijkspanningen in oscilogrammen aan de primaire kant tegen Live GND gemeten.
- Las tensiones continuas y los oscilogramas mencionados en los esquemas tienen que ser medidos de manera siguiente: señal barra de color portadora de imagen en 503.25MHz (C25)
- Los oscilogramas y las tensiones continuas son medidas en „RECORD“ y „PLAYBACK“
- Los componentes mencionados en las listas se los puede cambiar por los componentes en el aparato, a pesar de eventuales designaciones de tipos.

ATTENZIONE CON LE PILE AL LITIO!

In caso di utilizzo errato (surriscaldamento, errata posizione dei poli o cortocircuito) delle pile al litio consiste pericolo di esplosione! Le pile al litio si possono sostituire solo con pezzi di ricambio originali.

AVISO!

Bateria de litio.

Por una inadecuada intervención puede explotar. Solo debe ser cambiada por una persona con conocimientos técnicos (como en la guía de reparación se describe).

ADVARSEL!

Lithium batteri. Eksplosionsfare.

Udskiftning må kun foretages af en sagkyndig, og som beskrevet i servicemanualen.

VARNING!


Eksplosionsfara vid felaktigt batteribytest!
Använd samma batterityp eller ekvivalent typ som rekommenderas av apparatillverkaren.

VAROITUS!

Paristo voi räjähtää, jos se on virheellisesti asennettu!
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.

Safety instructions

Safety regulations demand that the set be restored to its original condition and that components identical with the original types be used.

Safety components are marked by the symbol 


- All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair may 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 on the same potential.
- A set to be repaired should always be connected to the mains via a suitable isolating transformer.
- Never replace any modules or any other parts while the set is switched on.
- Use plastic instead of metal alignment tools. This in order to preclude short-circuit or to prevent a specific circuit from being rendered unstable.

Remarks

- The direct voltages and oscillograms ought to be measured relative to the set mass.
EXCEPTION
At the power supply, the DC voltages and the oscillograms at the primary side are measured to LIVE GND.
- The direct voltages and oscillograms mentioned in the diagrams ought to be measured with a colour bar signal and the picture carrier at 503.25 MHz (C25).
- The oscillograms and direct voltages have been measured in RECORD or PLAY mode.
- The semiconductors, which are mentioned in the circuit diagram and in the parts lists, are fully exchangeable per position with the semiconductors in the set, irrespective of the type designation of these semiconductors.

Sicherheitshinweise

Die Sicherheitsvorschriften erfordern es, daß sich das Gerät nach der Reparatur in seinem originalen Zustand befindet und daß die zur Reparatur benutzten Ersatzteile mit den Originalersatzteilen identisch sind.

Sicherheits-Bauteile sind mit der Markierung  versehen


- Alle IC's und Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unvorschriftsmässige Behandlung von Halbleitern im Reparaturfall kann zur Zerstörung dieser Bauteile oder zu einer drastischen Reduzierung der Lebensdauer führen. Sorgen Sie dafür, daß Sie sich im Reparaturfall über ein Armband mit Widerstand auf dem gleichen Potential, wie die Masse des Gerätes befinden. Alle Bauteile, Werkzeuge und Hilfsmittel sind auf das gleiche Potential zu legen.
- Ein zu reparierendes Gerät ist immer über einen Trenntransformator an die Netzspannung anzuschließen.
- Bei eingeschaltetem Gerät dürfen keine Module oder sonstige Einzelteile ausgetauscht werden.
- Zum Abgleich sind ausschließlich Kunststoffwerkzeuge zu benutzen (keine Metallwerkzeuge verwenden). Dadurch wird vermieden, daß ein Kurzschluß entstehen kann oder eine Schaltung instabil wird.

Anmerkungen

- Die Gleichspannung und Oszillogramme sind gegen Gerätemasse zu messen.
AUSNAHME
Beim Netzteil sind die Gleichspannungen und Oszillogramme auf der Primärseite gegen Live GND gemessen.
- Die Gleichspannungen und Oszillogramme angeführt in den Schaltbildern sollen unter folgenden Bedingungen gemessen werden: Farbbalkensignal, Bildträger auf 503.25 MHz (C25)
- Die Oszillogramme und Gleichspannungen sind in RECORD oder PLAY gemessen. Die in den Stücklisten aufgeführten Bauteile sind positionsweise voll auswechselbar gegen die Bauteile in dem Gerät, ungeachtet der etwaigen Typenbezeichnungen.

Avertissements

Les normes de sécurité exigent qu'après réparation l'appareil soit remis dans son état d'origine et que soient utilisées les pièces de rechange identiques à celles spécifiées.


Les composants de sécurité sont marqués 

- Tout les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharges statiques (ESD). Leur longévité pourrait être considérablement écourté par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations s'assurer de bien être relié au même potentiel que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.
- Toujours alimenter un appareil à réparer à travers un transfo d'isolement.
- Ne jamais remplacer les modules ni d'autres composants quand l'appareil est sous tension.
- Pour l'ajustage, utiliser des outils en plastique au lieu d'instruments métalliques. Ceci afin d'éviter les court-circuits et exclure l'instabilité dans certains circuits.

Observations

- La mesure des tensions continues et des oscillogrammes doit se faire par rapport à la terre de l'appareil.
EXCEPTION
Sur l'unité d'alimentation la tension continue et l'oscillogramme sont mesurés sur le côté primaire en Live GND.
- La mesure des tensions continues et des oscillogrammes figurant sur le schéma doit se faire dans un signal de barre couleur porteuse image sur 503.25 MHz (C25).
- Les oscillogrammes et tension sont mesurées en mode RECORD ou PLAY.
- Les semi-conducteurs indiqués dans le schéma de principe et à la liste des composants, sont interchangeables par repère sur ce châssis avec les semi-conducteurs de l'appareil quelle que soit la désignation de type donnée sur ces semi-conducteurs.

Veiligheidsinstructies

Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, indientek aan de oorspronkelijke, worden toegepast.
De veiligheidsonderdelen zijn aangeduid met het symbool 

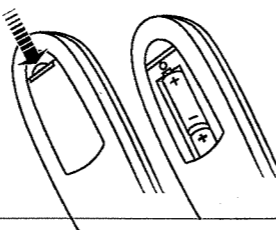
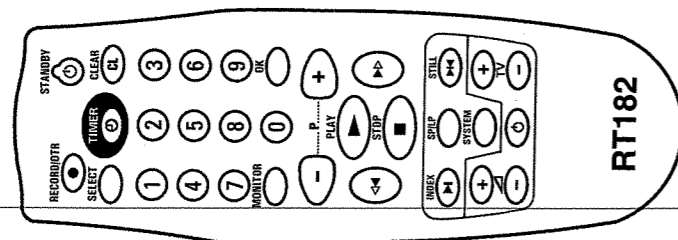
- Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor, dat U tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op hetzelfde potentiaal.
- Sluit een apparaat dat gerepareerd wordt altijd via een scheidingstransformator aan op de netspanning.
- Verwissel nooit modules of andere onderdelen terwijl het apparaat is ingeschakeld.
- Gebruik voor het afregelen plastic i.p.v. metalen gereedschap. Dit om mogelijke kortsluiting te voorkomen of een bepaalde schakeling instabiel te maken.

Opmerkingen

- De gelijkspanningen en oscillogrammen dienen gemeten te worden ten opzichte van de apparaat aarde.
- De gelijkspanningen en oscillogrammen vermeld in de schema's dienen gemeten te worden met een kleurbalkensignaal beelddraaggolf op 503.25 MHz (C25).
- De oscillogrammen en gelijkspanningen zijn in RECORD of PLAY mode gemeten.
- De halfgeleiders, die in het pricipeschema en in de stuklijsten, zijn vermeld, zijn per positie volledig uitwisselbaar met de halfgeleiders in het apparaat, ongeacht de typeaanduiding op deze halfgeleiders.

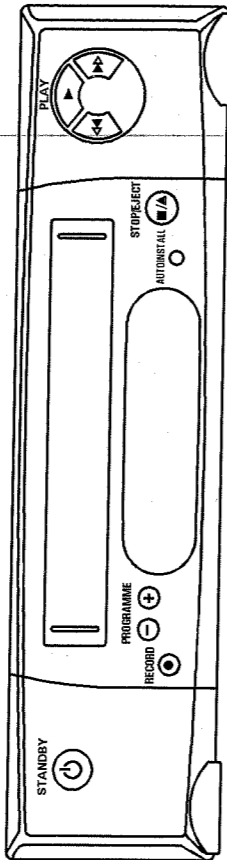
OPERATING INSTRUCTIONS IN BRIEF

The remote control



Front of the video recorder

- STANDBY
- RECORD
- PROGRAMME -
- PROGRAMME +
- AUTOINSTALL
- STOP/EJECT
- REWIND/Reverse scanning
- PLAY
- FORWARD wind/ Forward scanning



VR285, VR485, VR685

- RECORD/OTR
- STANDBY
- SELECT
- TIMER
- CLEAR (CL)
- 0-9
- MONITOR
- OK
- P-
- P+
- PLAY
- REWIND/Reverse scanning
- FORWARD wind/ Forward scanning
- STOP
- INDEX
- SP/LP
- STILL
- SYSTEM

Additional TV functions: Only function with televisions with the same remote control code.

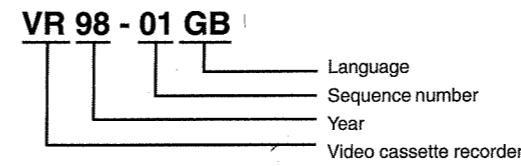
- TV volume plus
- TV volume minus
- Switch off TV
- Programme number +
- Programme number -

Modifications

Description of the system used for publishing modification data and supplements to the service manual.

All modification data and supplements to the Service Manual are published by means of Service Information bulletins.

Each Service information has a number, for example :



A Service Information bulletin consists of a front sheet, as the case may be followed by supplementary and/or replacement sheets.

Replacement sheets serve to replace existing sheets in the Service Manual. These sheets are identified by an additional letter after the page number, for example 5-1a. Page 5-1a then takes the place of page 5-1.

Supplementary sheets are inserted between the existing sheets in the Service Manual. These sheets can be identified by an additional figure following the page number, for example 5-1-1.

Sheet 5-1-1 should be inserted after page 5-1.

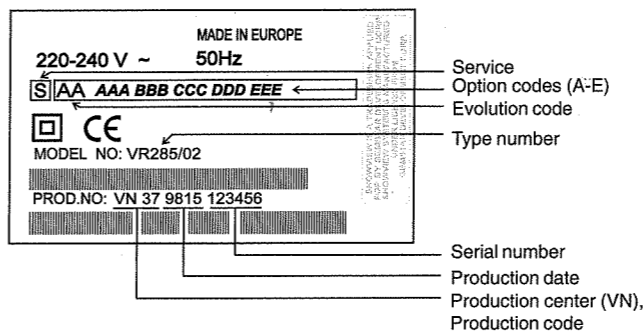
Description of the system by means of which modifications are indicated in the recorder.

All important parts of the recorder, such as tape deck, p.c. boards and modules, are provided with a sticker. These stickers specify a number of product data. The meaning of this data will now be explained for the most important sections.

The complete recorder

The type plate is located at the back of the recorder, below an example of such a type plate is given.

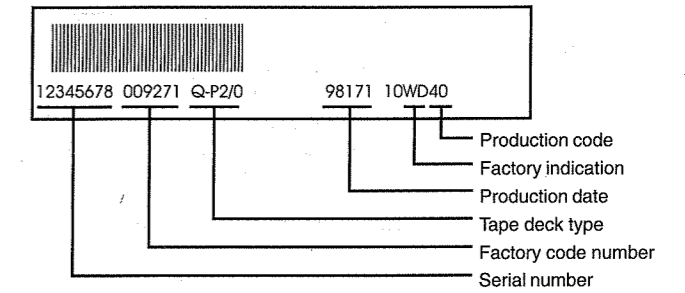
Type plate :



Note :

- In the case of an important modification to the recorder the production code on the type plate is increased by one. E.g. 37 becomes 38.
- In the case of an important modification to the service documentation the evolution code on the type plate is increased by one. E.g. AA becomes AB.

Tape deck



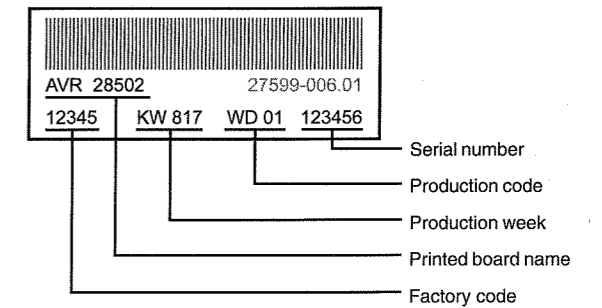
Note :

The production code and the serial number on the tape deck need not correspond to the production code and the serial number on the type plate.

Printed panels

The stickers are generally located on the track side of the module.

Example :



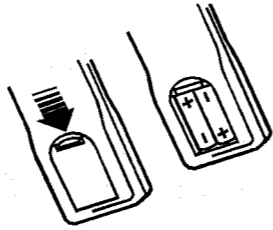
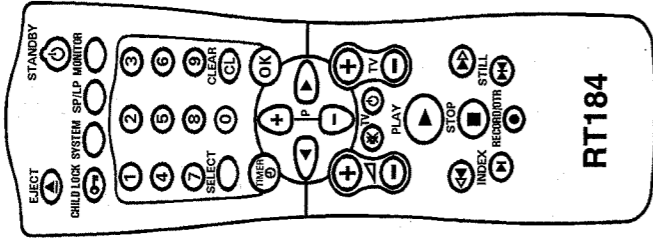
Remarks :

The production code number will not always be mentioned.

In case of an important modification, the last figure of the factory code number (point number) is increased by one. E.g. 6635.1 becomes 6635.2.

OPERATING INSTRUCTIONS IN BRIEF

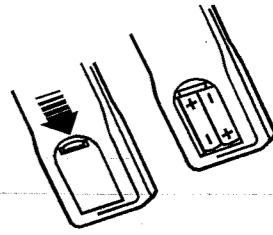
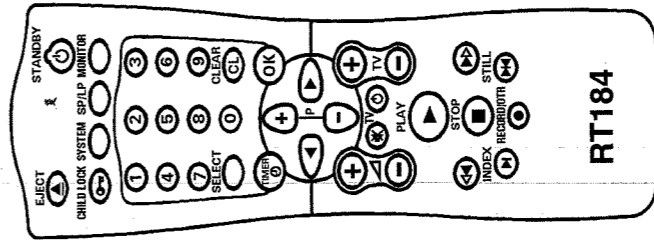
The remote control



- EJECT** ▲ Eject
 - STANDBY** ○ Standby
 - CHILD LOCK** ☐ Child lock
 - SYSTEM** Special function
 - SP/LP** SP/LP selection
 - MONITOR** TV monitor function
 - 0-9** Digit buttons 0-9
 - SELECT** Function selector
 - CLEAR (CL)** Reset, clear
 - TIMER** VIDEOPlus / TIMER programming
 - OK** Confirm button
 - P+** Up/Plus, programme number
 - Menu left**
 - Menu right**
 - P-** Down/Minus, programme number
 - PLAY** Playback
 - ◀◀** Rewind/Reverse scanning
 - STOP** Pause/Stop, Tuner-mode
 - ▶▶** Forward wind/ Forward scanning
 - INDEX** Index search
 - RECORD/OTR** Record
 - STILL** Still picture
- Additional TV functions:**
- TV+** TV volume plus
 - TV-** TV volume minus
 - TV** TV sound off
 - TV** Switch off TV
 - TV+** Programme number +
 - TV-** Programme number -

OPERATING INSTRUCTIONS IN BRIEF

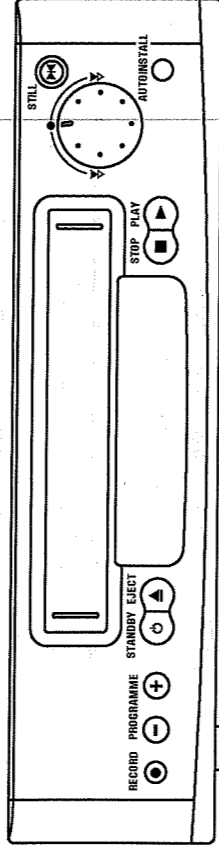
The remote control



- EJECT** ▲ Eject
 - STANDBY** ○ Standby
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 - SYSTEM** Special function
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 - Menu right**
 - P-** Down/Minus, programme number
 - PLAY** Playback
 - ◀◀** Rewind/Reverse scanning
 - STOP** Pause/Stop, Tuner-mode
 - ▶▶** Forward wind/ Forward scanning
 - INDEX** Index search
 - RECORD/OTR** Record
 - STILL** Still picture
- Additional TV functions:**
- TV+** TV volume plus
 - TV-** TV volume minus
 - TV** TV sound off
 - TV** Switch off TV
 - TV+** Programme number +
 - TV-** Programme number -

Front of the video recorder

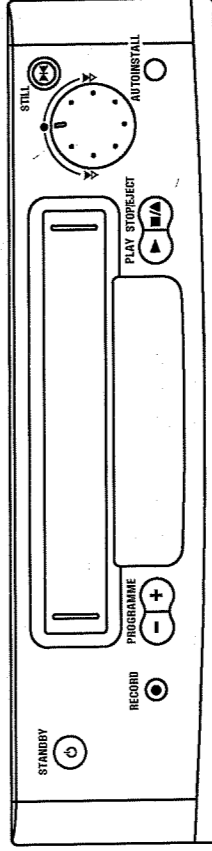
- RECORD** ● Record
- PROGRAMME -** Down/Minus, number
- PROGRAMME +** Up/Plus, number
- STANDBY** ○ Standby
- EJECT** ▲ Cassette eject
- STOP** ■ Pause/Stop
- PLAY** ▶ Playback
- STILL** ■ Still picture
- ◀◀** Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning
- AUTOINSTALL** Installation button



VR686

Front of the video recorder

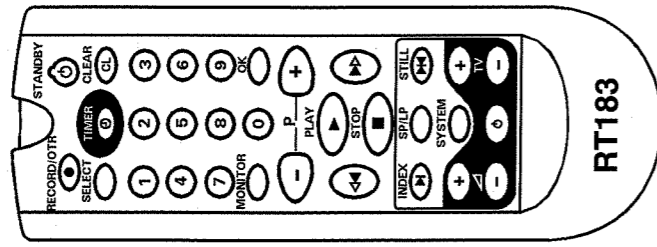
- STANDBY** ○ Standby
- RECORD** ● Record
- PROGRAMME -** Down/Minus, number
- PROGRAMME +** Up/Plus, number
- PLAY** ▶ Playback
- STOP/EJECT** ■ Stop/Cassette eject
- SHUTTLE ON / STILL** ■ Still picture
- ◀◀** Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning
- AUTOINSTALL** Installation button



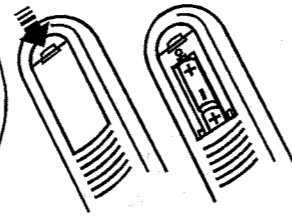
VR287, VR487

OPERATING INSTRUCTIONS IN BRIEF

The remote control



RT183



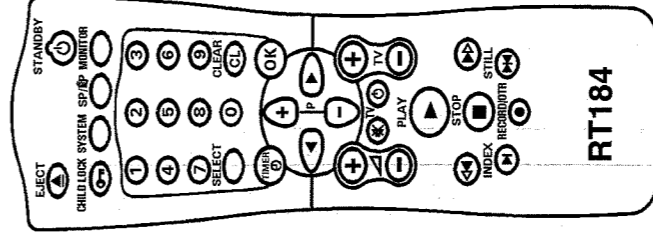
- RECORD/OTR ● Record
- STANDBY ◻ Standby
- SELECT ◻ Function selector
- TIMER ◻ 'VIDEOPlus' / 'TIMER' programming
- CLEAR (CL) ◻ Reset, clear
- 0-9 ◻ Digit buttons 0-9
- MONITOR ◻ TV monitor function
- OK ◻ Confirm button
- P- ◻ Down, number minus
- P+ ◻ Up, number plus
- PLAY ▶ ◻ Playback
- ◀ ◻ Rewind/Reverse scanning
- ▶ ◻ Forward wind/ Forward scanning
- STOP ■ ◻ Pause/Stop, Tuner-mode
- INDEX ▶ ◻ Index search
- SP/LP ◻ SP/LP selection
- STILL ▶ ◻ Still picture
- SYSTEM ◻ Special function

Additional TV functions: Only function with televisions with the same remote control code.

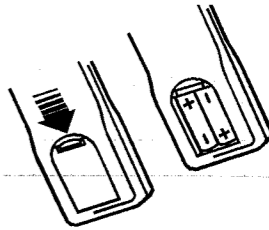
- ◻ TV volume plus
- ◻ TV volume minus
- ◻ Switch off TV
- TV+ ◻ Programme number +
- TV- ◻ Programme number -

OPERATING INSTRUCTIONS IN BRIEF

The remote control



RT184



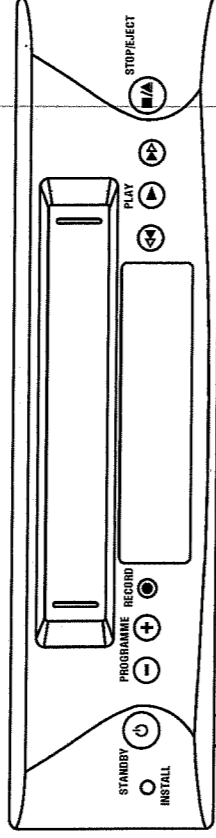
- EJECT ◻ Eject
- STANDBY ◻ Standby
- CHILD LOCK ◻ Child lock
- SYSTEM ◻ Special function
- SP/LP ◻ SP/LP selection
- MONITOR ◻ TV monitor function
- 0-9 ◻ Digit buttons 0-9
- SELECT ◻ Function selector
- CLEAR (CL) ◻ Reset, clear
- TIMER ◻ 'VIDEOPlus' / 'TIMER' programming
- OK ◻ Confirm button
- P+ ◻ Up/Plus, programme number
- ◻ Menu left
- ▶ ◻ Menu right
- P- ◻ Down/Minus, programme number
- PLAY ▶ ◻ Playback
- ◀ ◻ Rewind/Reverse scanning
- STOP ■ ◻ Pause/Stop, Tuner-mode
- ▶ ◻ Forward wind/ Forward scanning
- INDEX ▶ ◻ Index search
- RECORD/OTR ● Record
- STILL ▶ ◻ Still picture

Additional TV functions:

- ◻ TV volume plus
- ◻ TV volume minus
- TV ◻ TV sound off
- TV ◻ Switch off TV
- TV+ ◻ Programme number +
- TV- ◻ Programme number -

Front of the video recorder

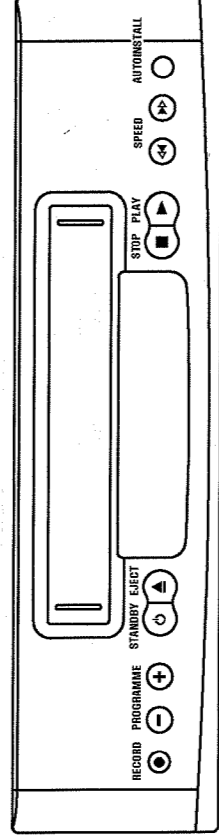
- INSTALL ◻ Installation button
- ◻ Standby
- PROGRAMME - ◻ Down/Minus, number
- PROGRAMME + ◻ Up/Plus, number
- RECORD ● ◻ Record
- ◀ ◻ Rewind/Reverse scanning
- PLAY ▶ ◻ Playback
- ▶ ◻ Forward wind/ Forward scanning
- STOP/EJECT ◻ Stop/Cassette eject



SB110, SB115, SB615

Front of the video recorder

- STANDBY ◻ Standby
- RECORD ● ◻ Record
- PROGRAMME - ◻ Down/Minus, number
- PROGRAMME + ◻ Up/Plus, number
- PLAY ▶ ◻ Playback
- STOP ■ ◻ Stop/Cassette eject
- SHUTTLE ON / STILL ▶ ◻ Still picture
- ◻ Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning
- INSTALL ◻ Installation button



VR286

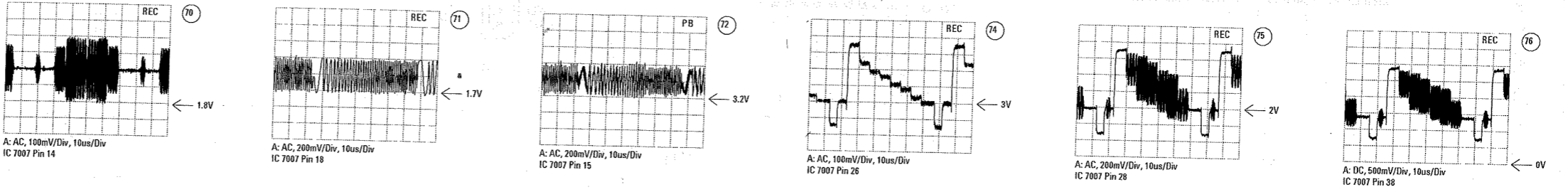
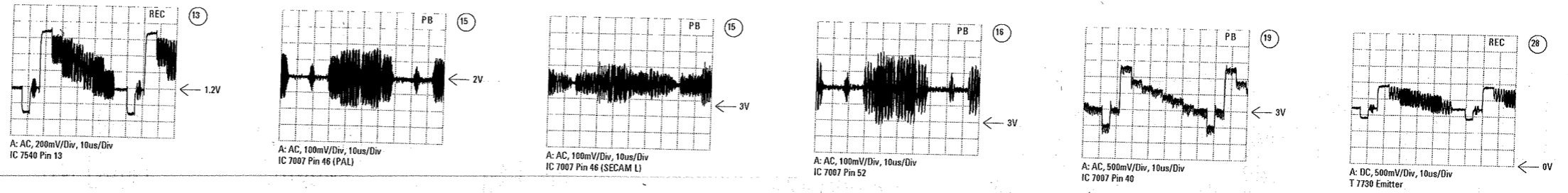
Signal	Description	Application									
CSCP	Colour phase switching for LP feature mode				DE		VS				
CSI	Colour system information				DE				SE		
CSP	Chrominance secam playback						VS		SE		
CSR	Chrominance secam record		HA						SE		
CSW	8V/14V switching for capstan motor	PS		DE							
CSYNC/1/2	Composite sync pulse		HA	DE		VS			SE		OS
CTL1/2	Control track signal			DE			AL				
DATD1/2	Serial bus data			DE	DC						
DEC	Audio switching voltage							IO			
ENVC	Envelope comparator signal		HA	DE							
FFP	Feature frame pulse			DE		VS					
FG	Capstan tacho pulse			DE							
FGD	Capstan tacho pulse digital			DE							
FMAP	FM audio playback		HA							AF	
FMAR	FM audio record		HA							AF	
FMPV	FM video playback		HA			VS			SE		
FMRV	FM video record		HA			VS					
FOME	Follow Me (video signals equal)			DE							OS
FTA	Threading tacho			DE							
FTAD	Threading tacho digital			DE							
GND A	Ground analog							IO	FV		QNIC
GND A1/A2	Ground analog QNIC										QNIC
GND AF	Ground analog AF									AF	
GND AIO	Ground analog IO							IO			
GND AL	Ground analog AL						AL				
GND D	Ground digital			DE				IO	AF		QNIC
GND EO	Ground erase oscillator						AL				
GND M	Ground capstan motor			DE							
GND VS	Ground signal electronics									AF	
GND VSIO	Ground analog VS, IO							IO			
GREEN	Green signal between scart1/2							IO			
HEHI	Heater for displaytube high	PS				DC					
HELO	Heater for displaytube low	PS				DC					
HEST	Heater voltage control signal					DC					
HP2	Head pulse audio		HA	DE						AF	
I/R	Deck switch / Record protection			DE							
I LED	LED-tower supply			DE							
INIT	Deck switch			DE							
IPOR	Inverse power on reset			DE	DC						
IRAF	Inverse record FM-audio		HA	DE							
IREV	Dubbing oscillator on/off			DE		VS	AL				
ISTBY	Inverse stand by	PS				DC					
ISWS	Video-FM mute			DE		VS					
IWIND	Control pulse amplification low			DE							
LH1/2/C	Long play heads		HA								
MEH1/2	Main erase head						AL				
MON	Monitor loop through scart 1/2							IO			
MOTO-3	Head motor Control lines			DE							
MTA	Audio mute			DE			AL				
NC	Not connected			DE							
OCLK	OSD-bus clock				DC						OS
OCS	OSD chip select				DC						OS
ODAT	OSD-bus data				DC						OS
OFF	Frame pulse			DE							OS

List of abbreviations

Signal	Description	Application									
+5AS	+5V analog after fuse 1700										QNIC
+5ASS	+5V digital, after coil 5706										QNIC
+5D	+5V digital				DE						QNIC
-28V	-28V display supply	PS				DC			IO		
-7V	-7V I/O-switches supply								IO		
12SW	+12V analog (< 6W switched)	PS						AL		FV	QNIC
12VA	+12V analog	PS							IO	FV	AF
14VM1	+14V for threading- and headmotor	PS		DE							
2FSC	2x Colour subcarrier						VS				OS
33V	+33V for tuner tuning voltage	PS								FV	
5VA	+5V analog	PS							IO	FV	AF
5VASW	+5V analog (< 6W switched)	PS	HA	DE		VS			SE	FV	OS
5VASW2	+5V analog after coil 5802										OS
5VASWB	+5V analog after coil 5726									FV	
5VD	+5V digital	PS		DE	DC					FV	
5VD1	+5V digital, after coil 5200					DC					
5VD2	+5V digital, after coil 5400				DE						
8SC1	Scart 1 pin 8 output				DE				IO		
8SC2	Scart 2 pin 8 input				DE				IO		
9/14VM2	Capstan motor supply, switched	PS		DE							
AEH1/2	Audio erase head							AL			
AF1	Audio from frontend, left							AL	IO	FV	AF
AF2	Audio from frontend, right									FV	AF
AFC	Automatic frequency control					DC				FV	
AFE	Audio from frontend									FV	QNIC
AGC	Automatic gain control				DE					FV	
AH1/2/C	Audio heads		HA								
AIN1	Audio input scart 1							AL	IO		
AIN1L	Audio input scart 1, left								IO		AF
AIN1R	Audio input scart 1, right								IO		AF
AIN2	Audio input scart 2							AL	IO		
AIN2L	Audio input scart 2, left								IO		AF
AIN2R	Audio input scart 2, right								IO		AF
AINFL	Audio left from Front connector								IO		AF
AINFR	Audio right from front connector								IO		AF
AMCO	Audio to the modulator									FV	AF
AML P	Audio mono playback							AL	IO	FV	AF
AML R	Audio mono record							AL	IO		AF
AN1/2	Analog voltage from keyboard matrix					DC					
ANIL	NICAM Audio, left									FV	QNIC
ANIR	NICAM Audio, right									FV	QNIC
AOUT1L	Audio output from scart 1, left								IO		AF
AOUT1R	Audio output from scart 1, right								IO		AF
AOUT2L	Audio output from scart 2, left								IO		AF
AOUT2R	Audio output from scart 2, right								IO		AF
APH	Audio playback head							AL			
ARH	Audio record head							AL			
BLANKING	Blanking pulse RGB loopthrough								IO		
BLUE	Blue signal between scart 1/2								IO		
CAP	Capstan control voltage				DE						
CKDET	Colour system information				DE		VS				
CLKD1	Serial bus clock				DE	DC					
CREV	Capstan reverse				DE						
CROT	Colour rotation on/off				DE		VS				

Signal	Description	Application																		
PBV	Playback				DE					SE										
PG/FG	Head wheel position/-speed				DE															
POS	Position pulse headwheel				DE															
PSS	PAL or secam-L					DC						FV								
RECP	Record protection				DE															
RED	Red signal between scart 1/2										IO									
REEL	Head wheel control				DE															
SB1	Secam band 1					DC						FV								
SCL	IIC bus clock										IO	FV	AF	OS	QNIC					
SCL2	Serial bus clock				DE	VS														
SDA	IIC bus data										IO	FV	AF	OS	QNIC					
SDA2	Serial bus data				DE	VS														
SFS	Sound filter switch					DC						FV								
SH1/2/C	Standard play heads				HA															
SSIF	Second sound interfrequency											FV			QNIC					
SWIN	Head switching pulse				HA	DE														
SYNC	Control track pulse				DE															
TAE	Tape end detection				DE															
TAS	Tape start detection				DE															
THIO	Threading motor in/out				DE															
TMO	Threading motor on/off				DE															
TMO1/2	Threading motor connection				DE															
TRIA/ALI	Tracking information audio / Audio level indication				DE								AF							
TRIV	Tracking information video				HA	DE														
VBS	Video input							VS		IO				OS						
VFR	Video from front connector									IO										
VFV	Video from frontend							VS		IO	FV		OS							
VIN1	Video input scart 1									IO										
VIN2	Video input scart 2									IO										
VISS	Control sync pulse inversion				DE															
VMOD	Video to the modulator									IO	FV									
VOUT	Video from OSD part									IO				OS						
VREC	Video record from I/O							VS			SE		OS							
VREF	Reference voltage										SE									
VSB	Video from signal electronics							VS					OS							
W/R	Control track write/read				DE															
WTL	Wind tachometer left				DE															
WTLD	Wind tachometer left digital				DE															
WTR	Wind tachometer right				DE															
WTRD	Wind tachometer right digital				DE															

PS	Power Supply	page 3-8
HA	Head Amplifier	page 3-9
DE	Deck Electronics	page 3-10
DC	Display Control	page 3-11
VS	Video Signal Processing	page 3-12
AL	Audio Linear	page 3-12
IO	In/Out	page 3-13
SE	Secam Processing	page 3-14
FV	Frontend	page 3-15
AF	Audio Processing	page 3-16
OS	On Screen Display	page 3-17
QNIC	Nicam Board	page 3-18



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& PLAYBACK

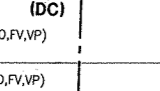
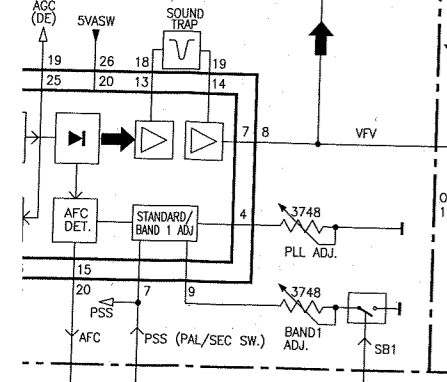
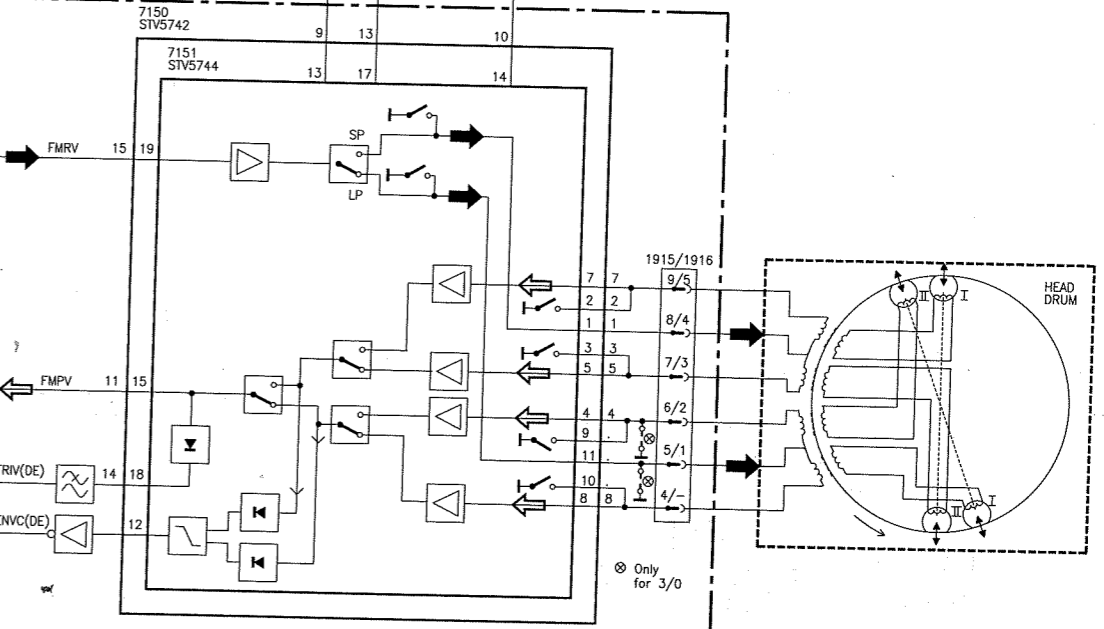
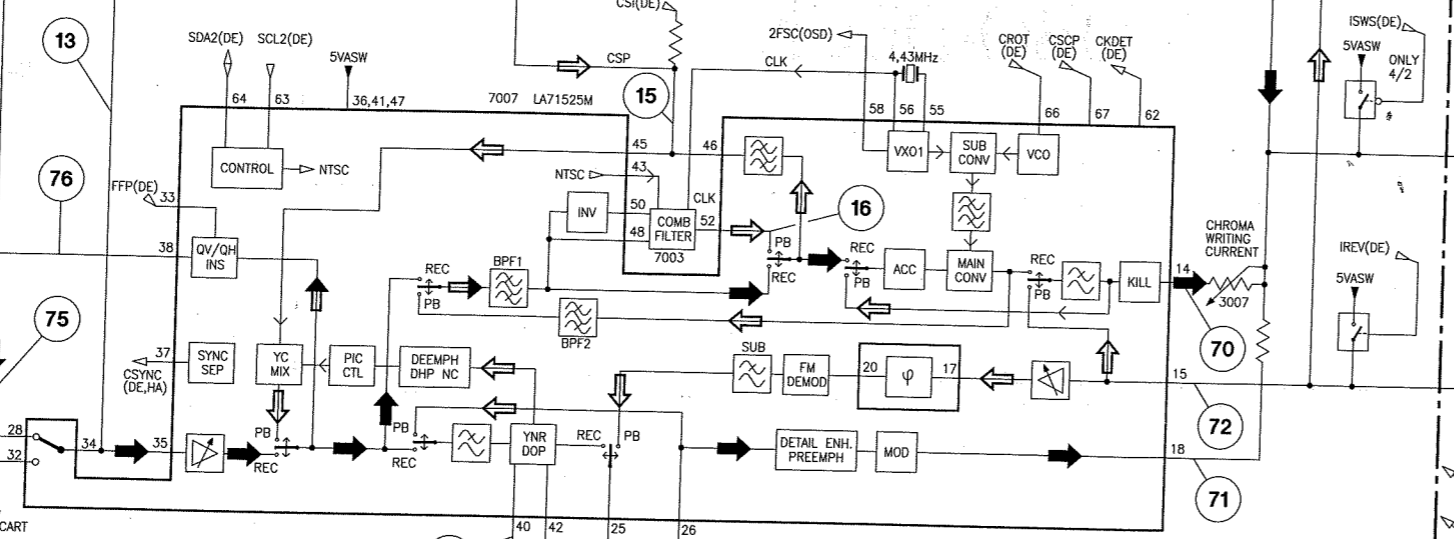
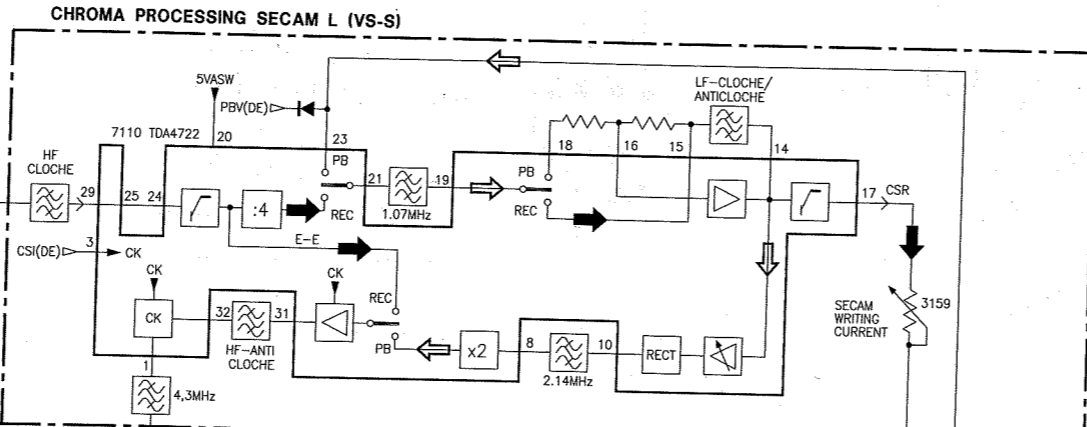
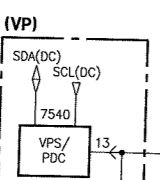
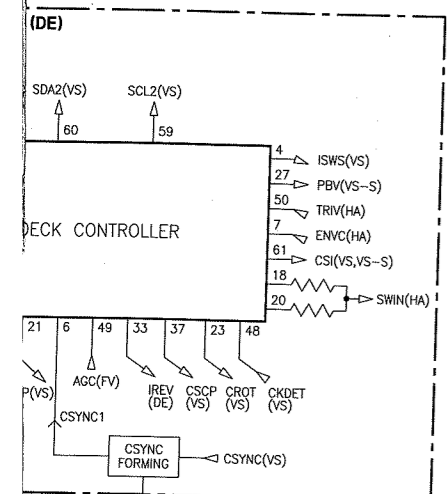
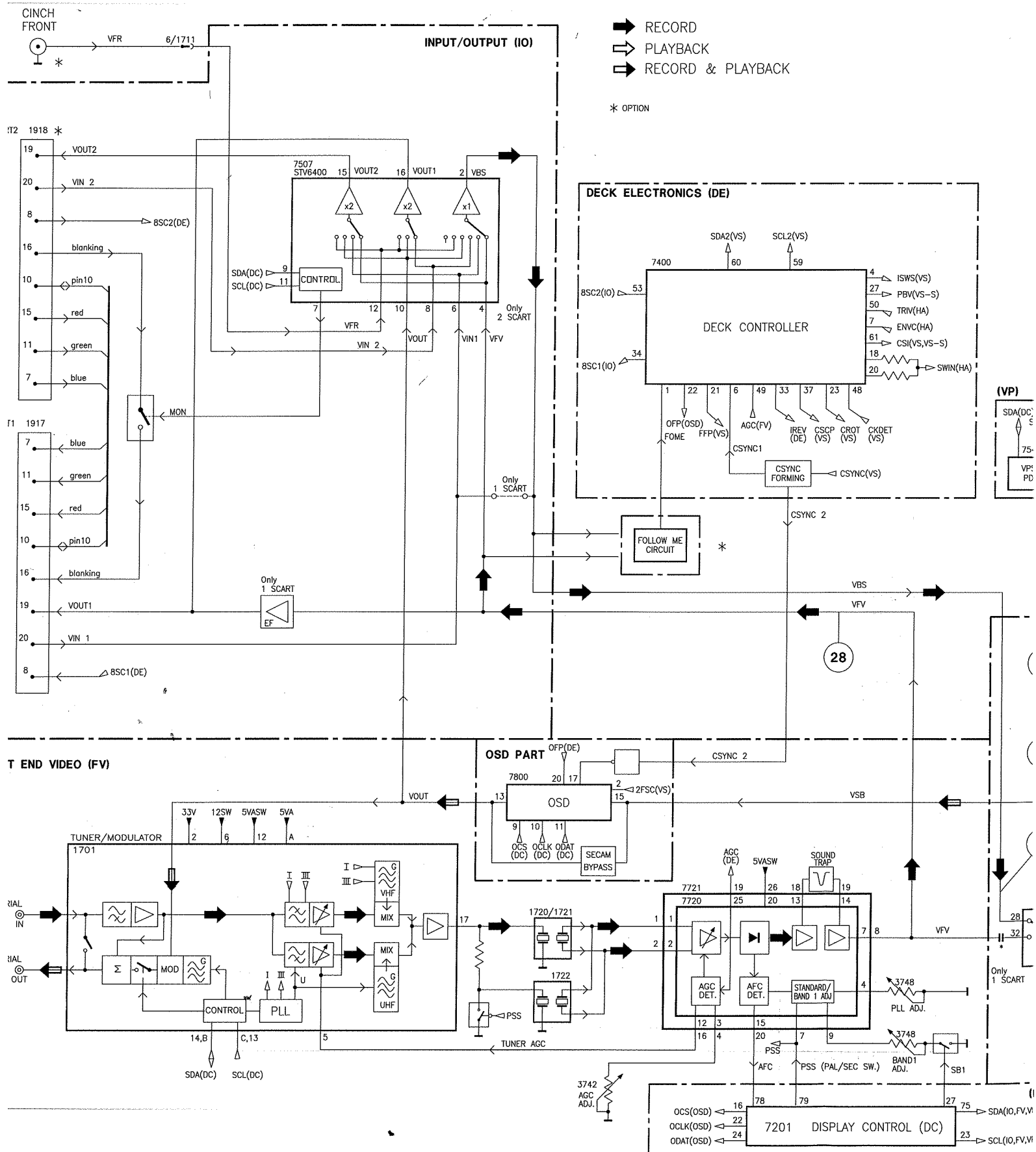
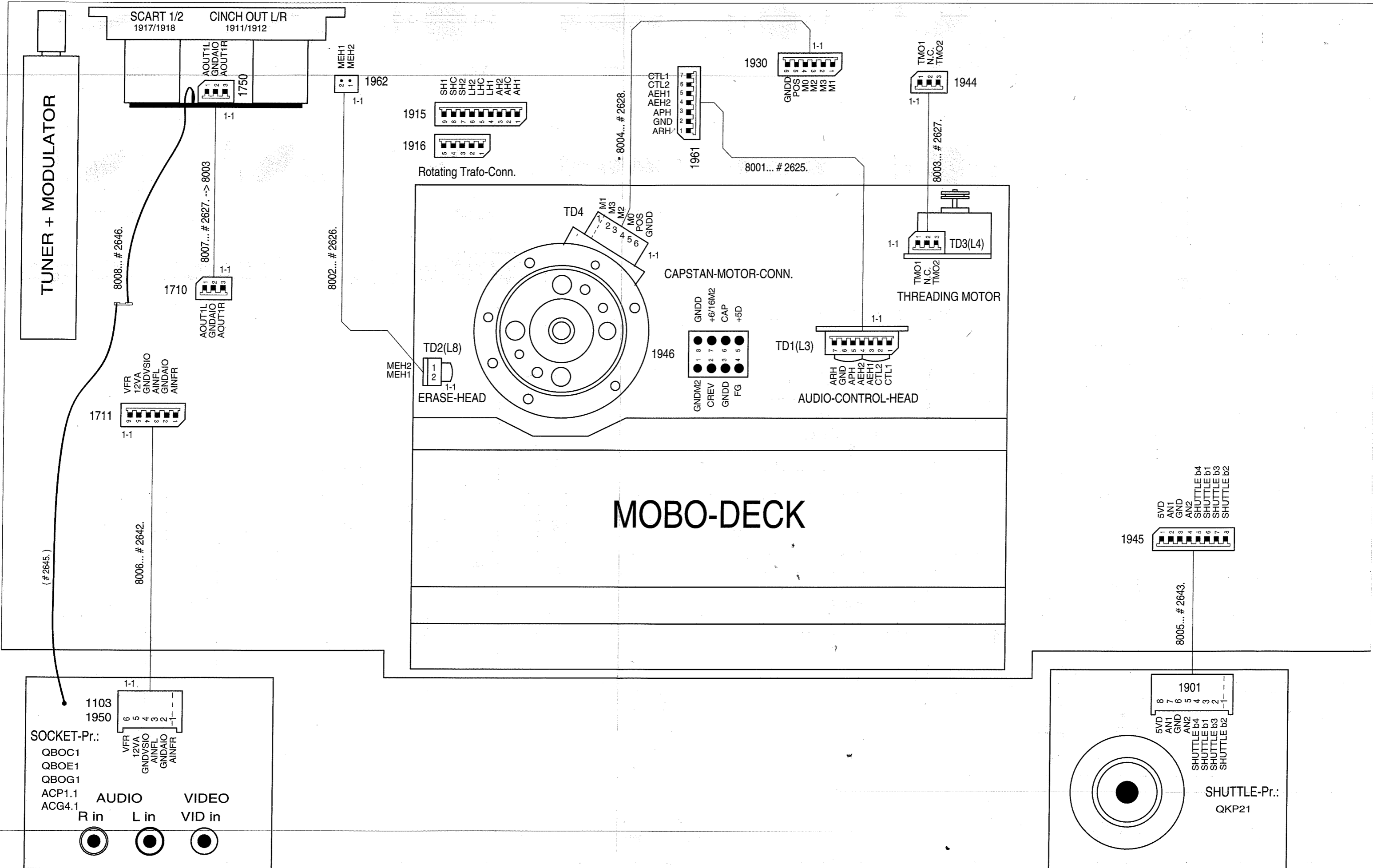


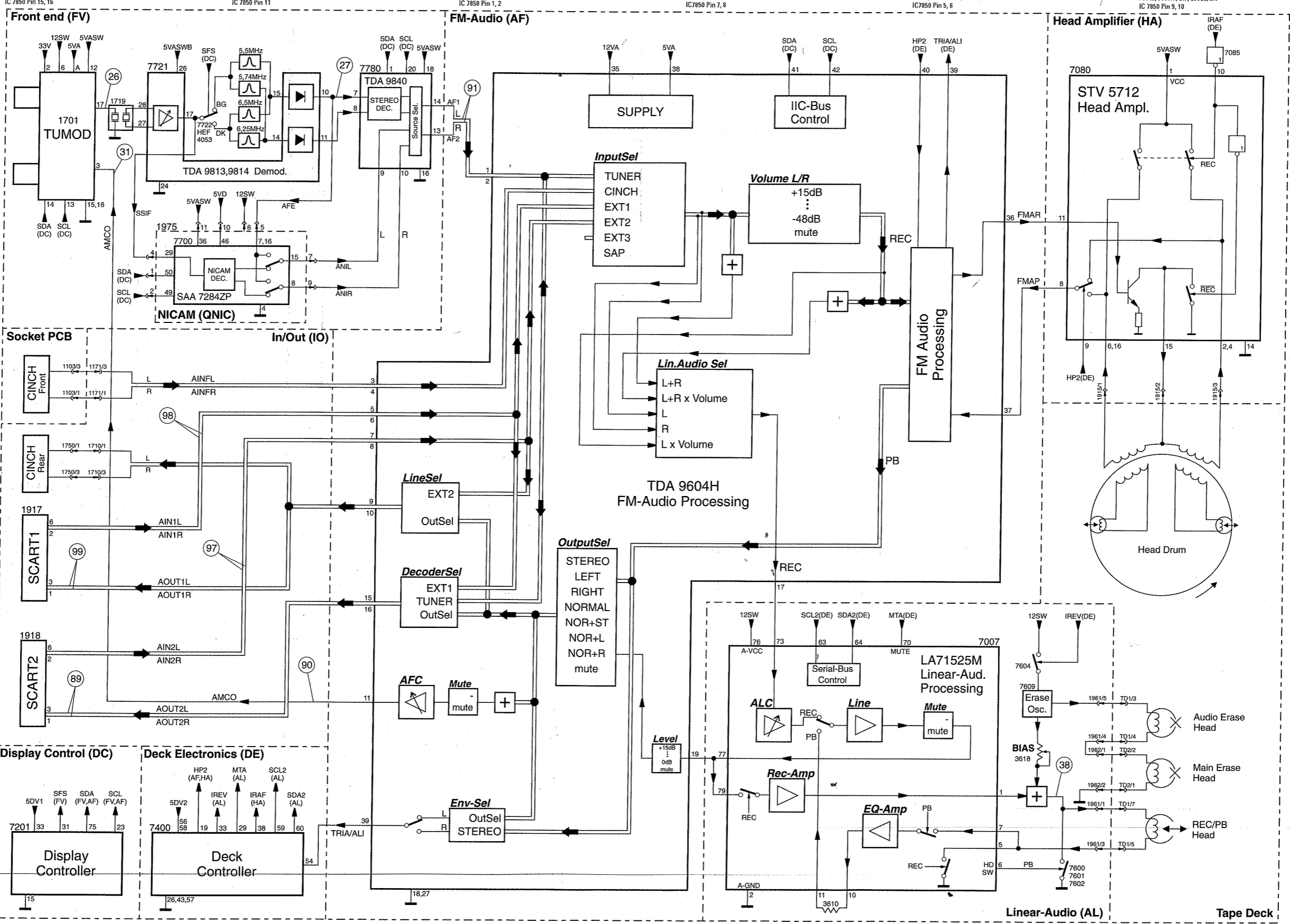
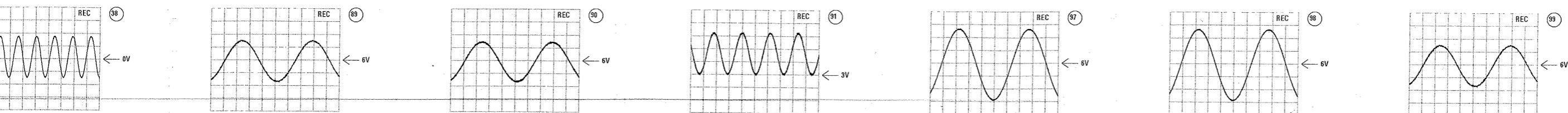
Diagram Video



Wiring Diagram



Block Diagram Audio Stereo



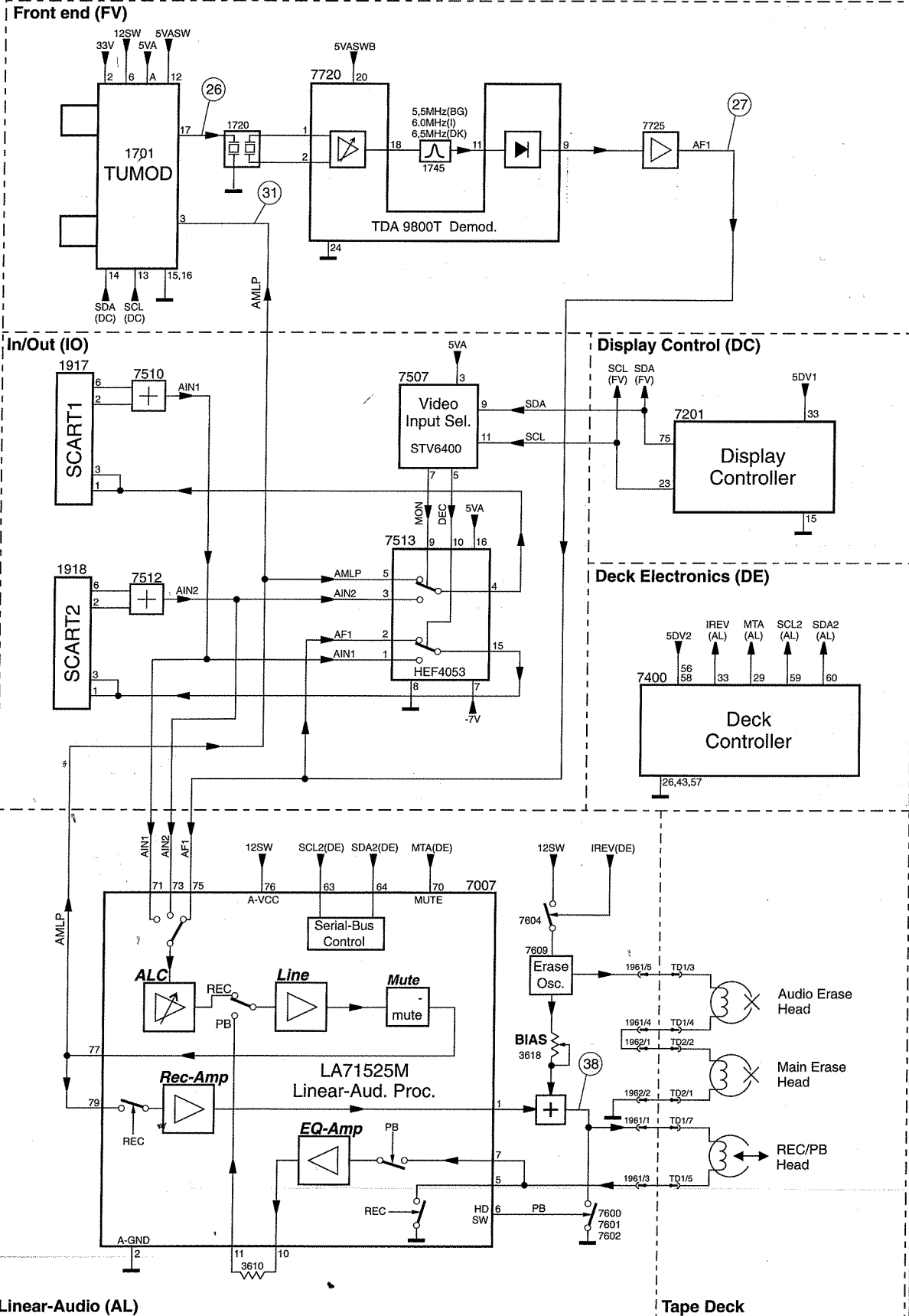
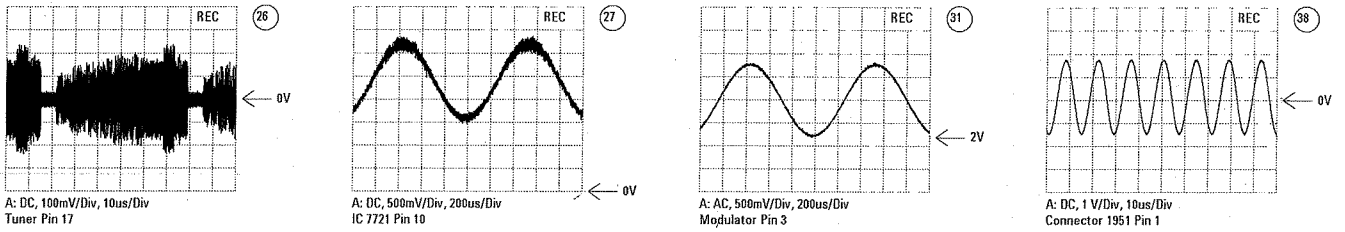
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Block Diagram Audio Mono

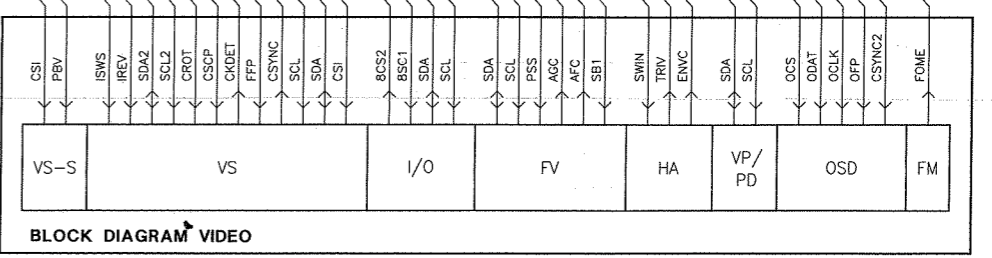
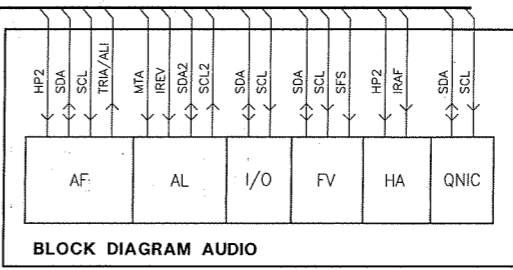
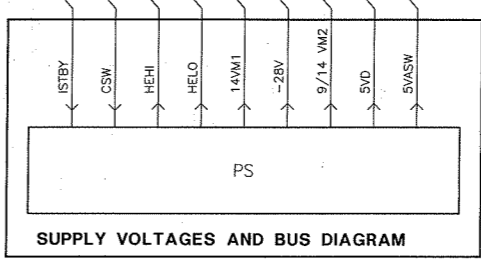
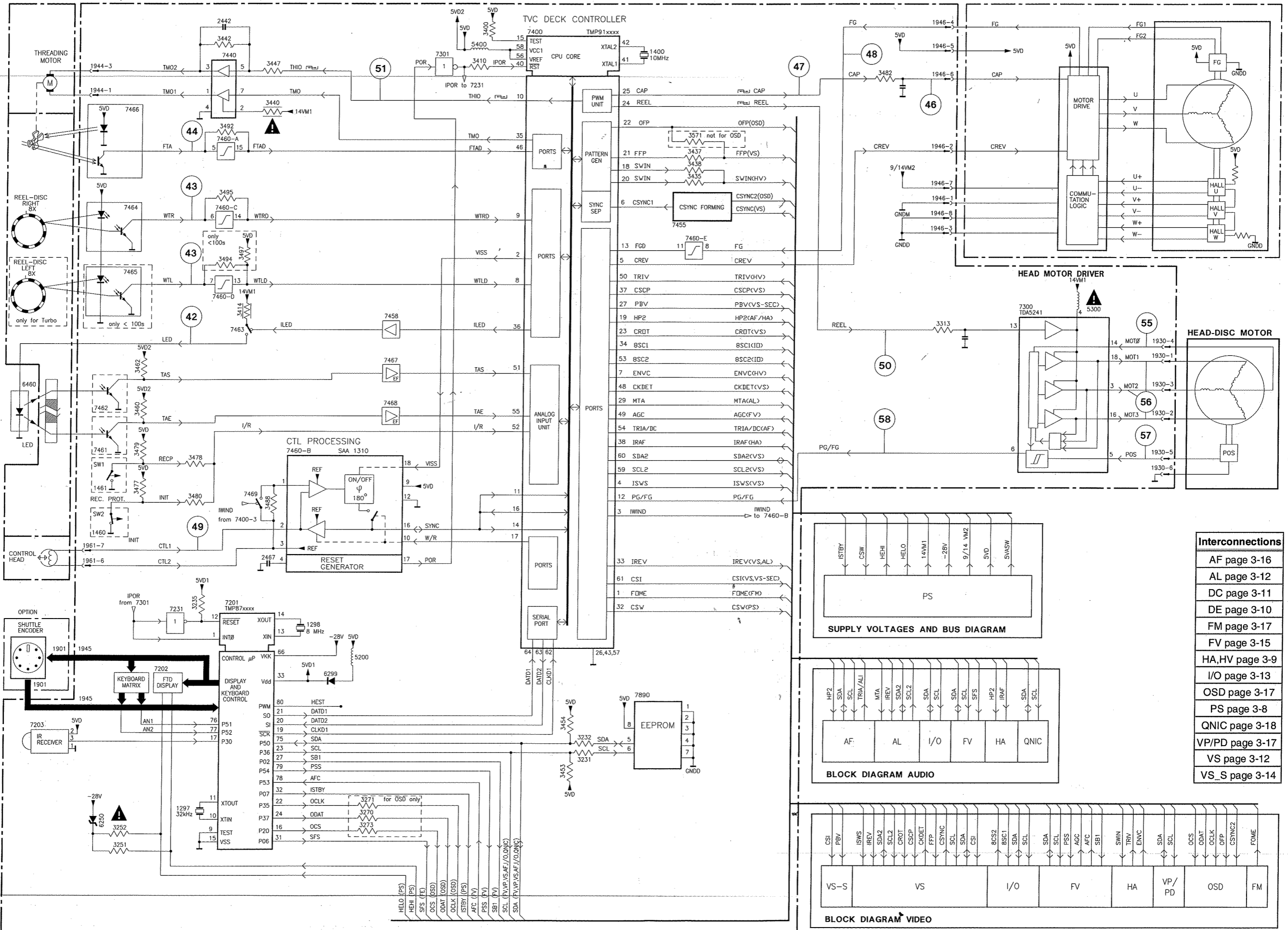


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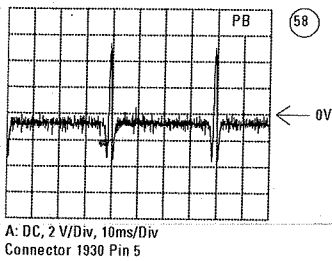
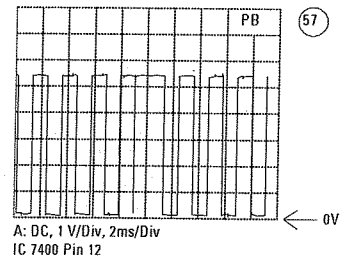
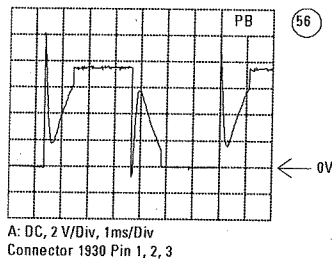
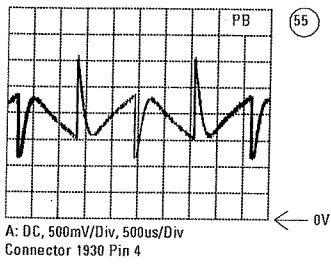
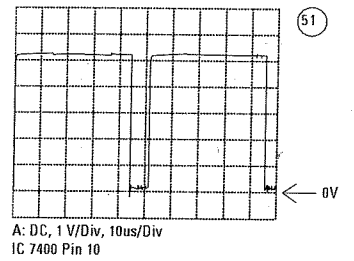
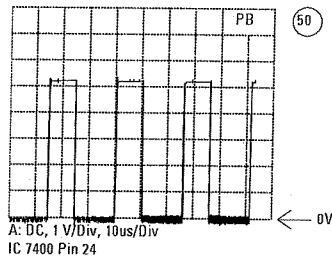
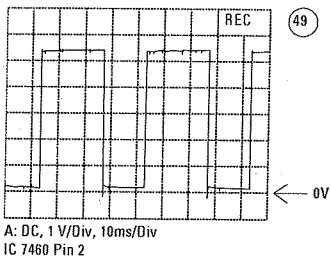
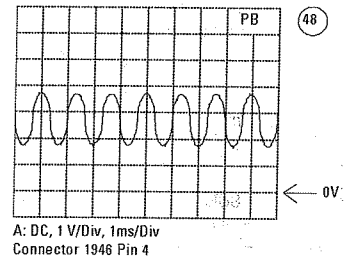
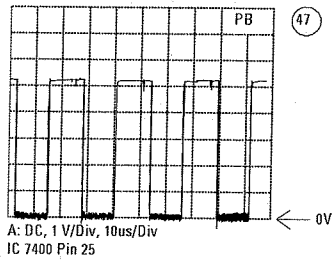
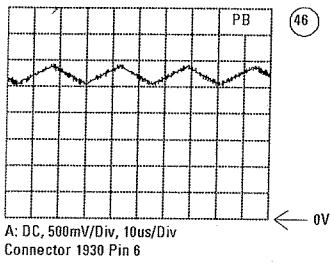
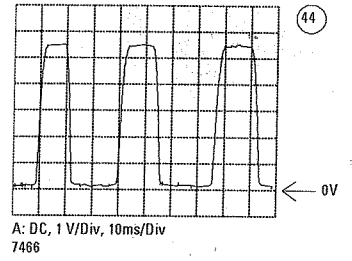
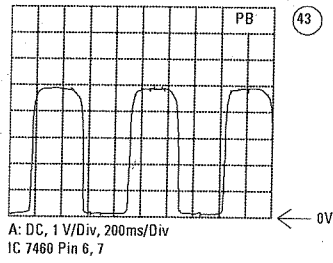
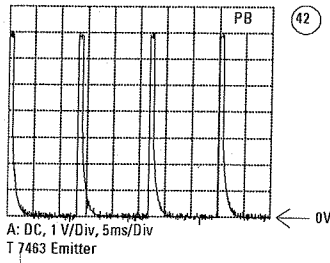
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Block Diagram Digital

TAPE-DECK QMB DE,DC-PART

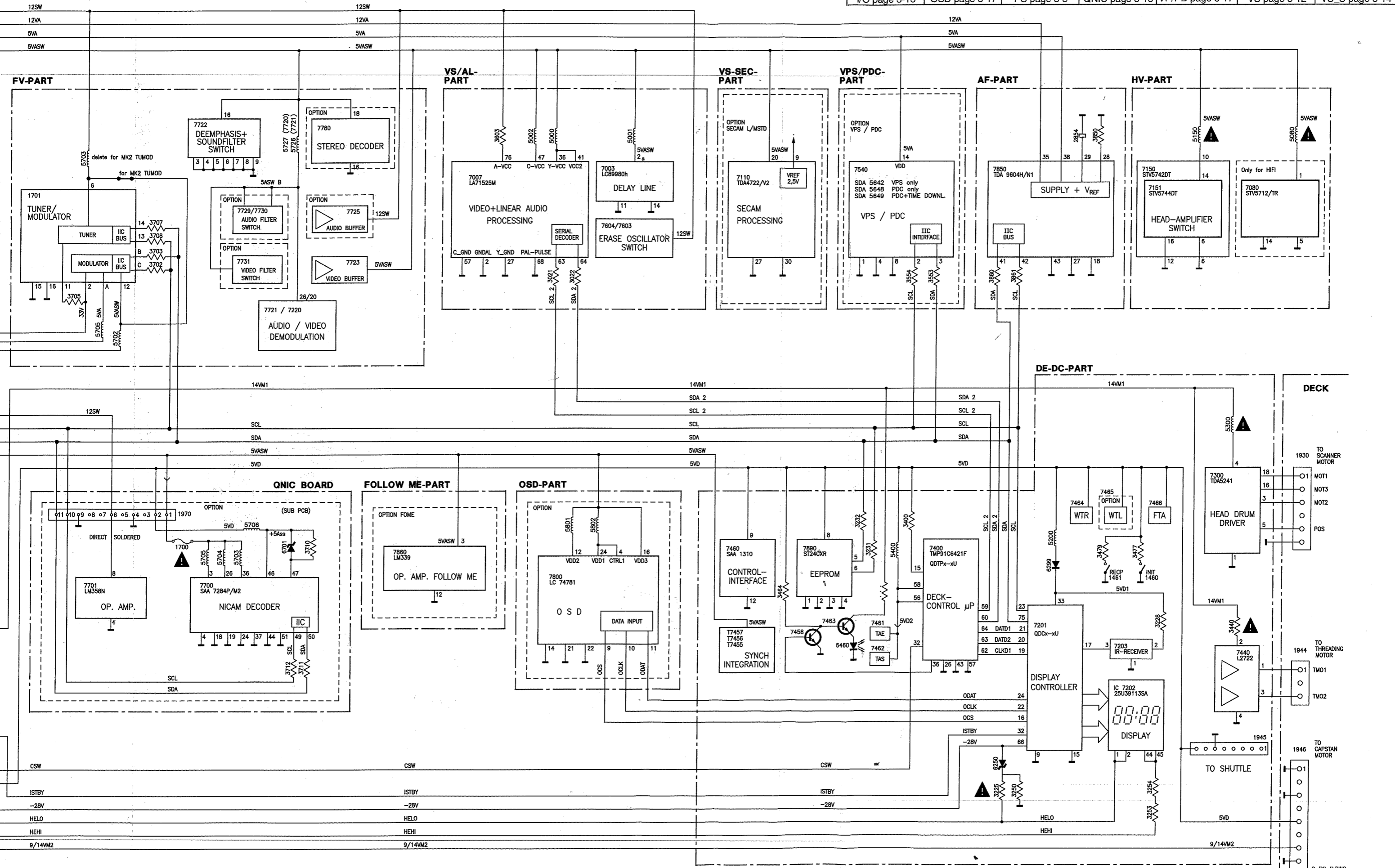


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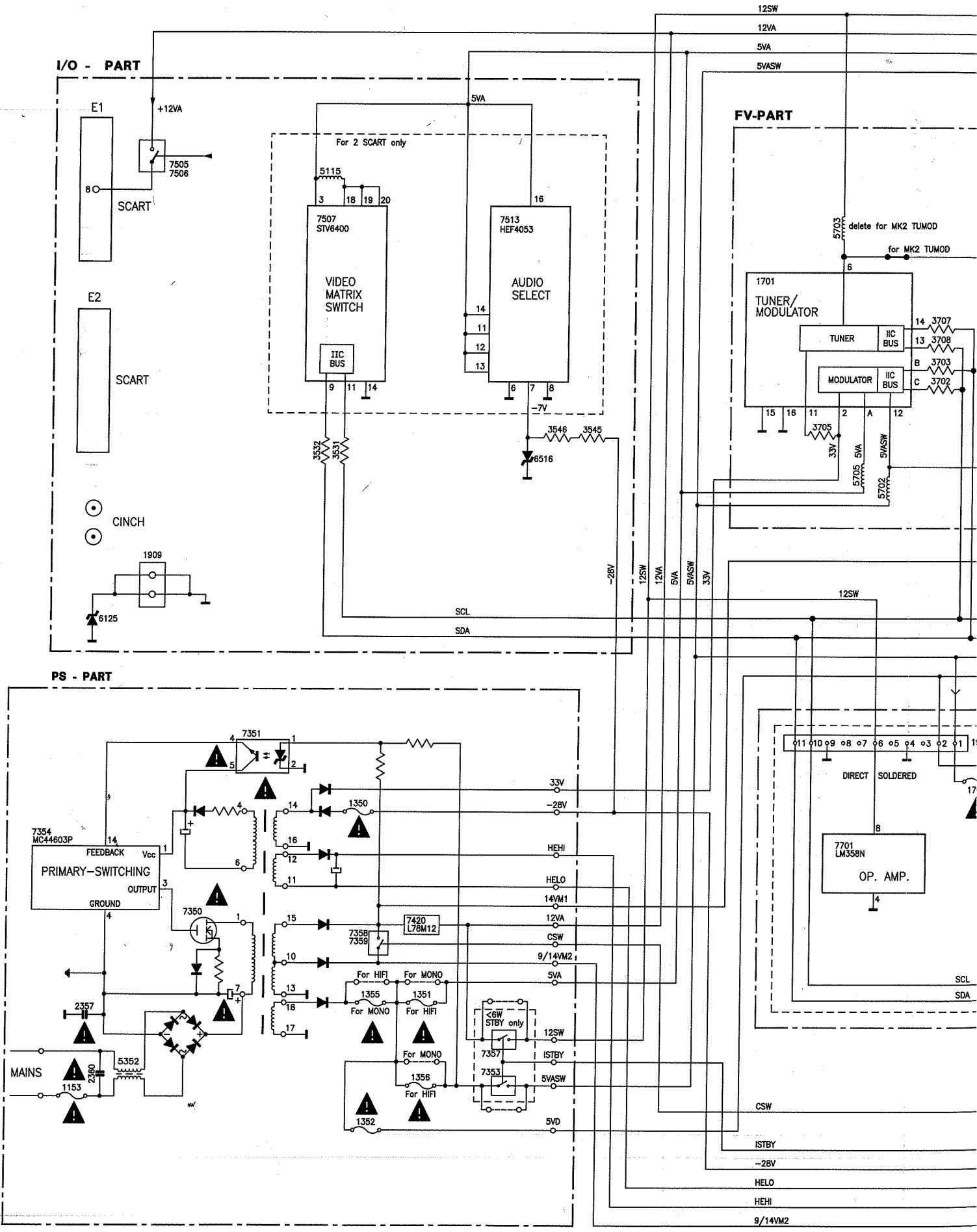


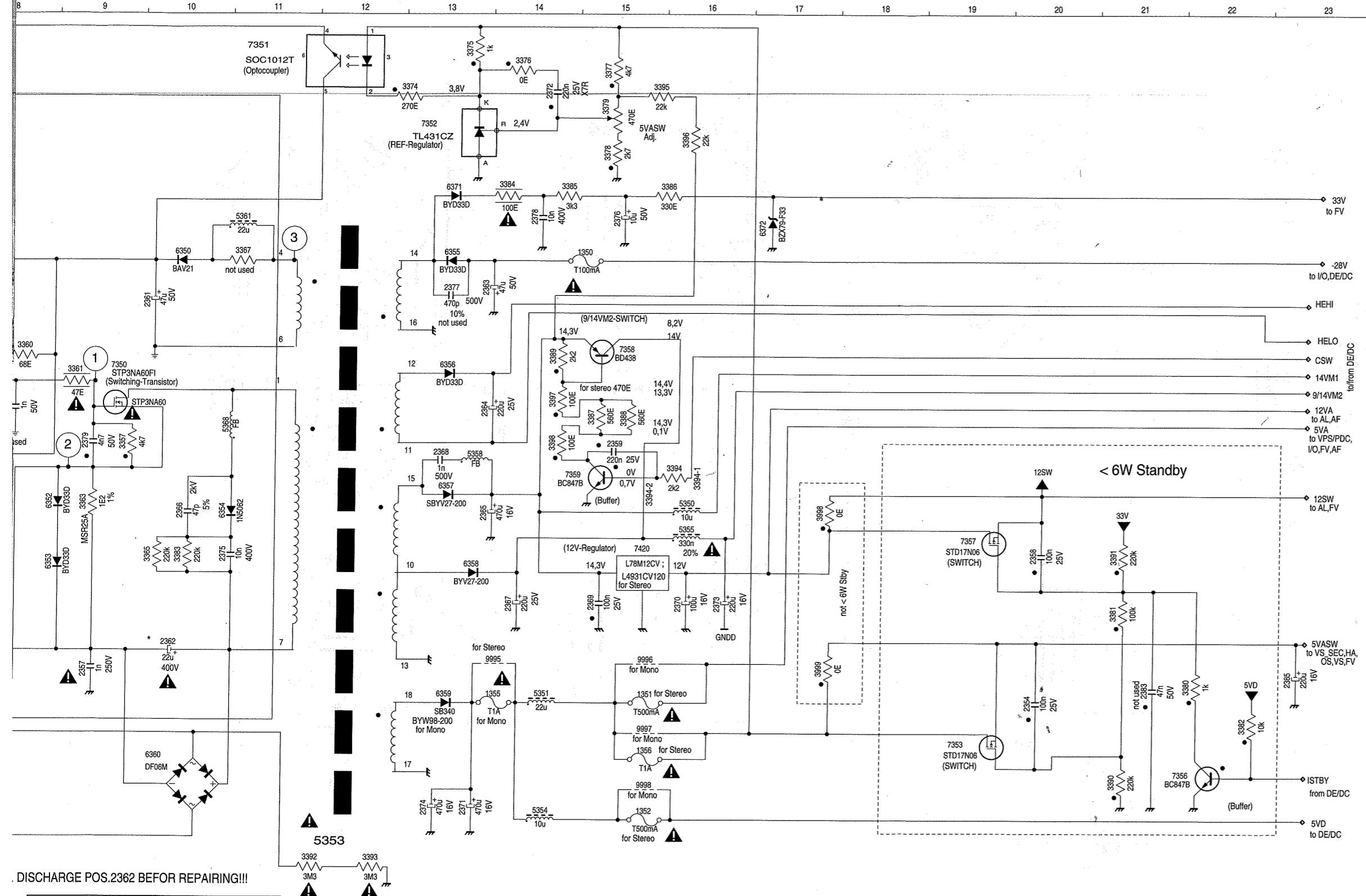
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Supply Voltages and Bus Diagram





DISCHARGE POS.2362 BEFORE REPAIRING!!!

HOT CIRCUIT , BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING

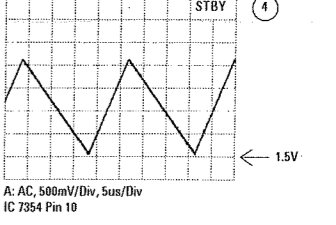
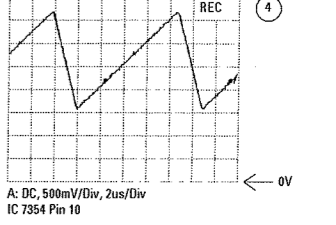
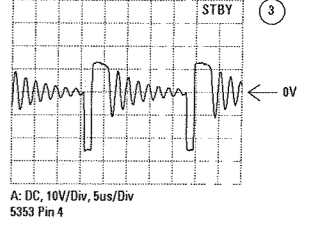
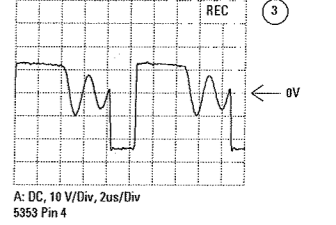
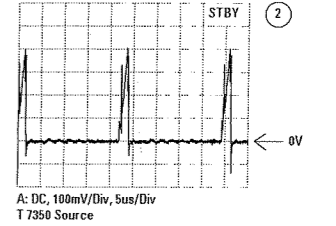
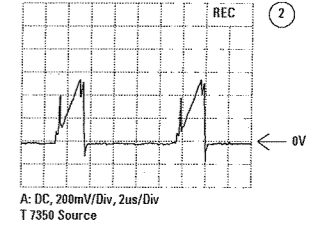
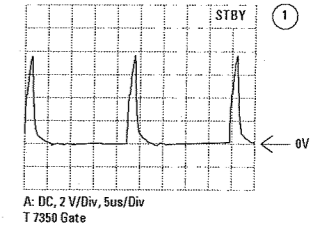
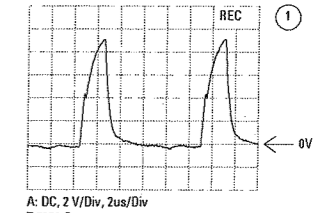
DO NOT OPERATE WITHOUT CASE

CAUTION : LETHAL POTENTIALS AT PRIMARY

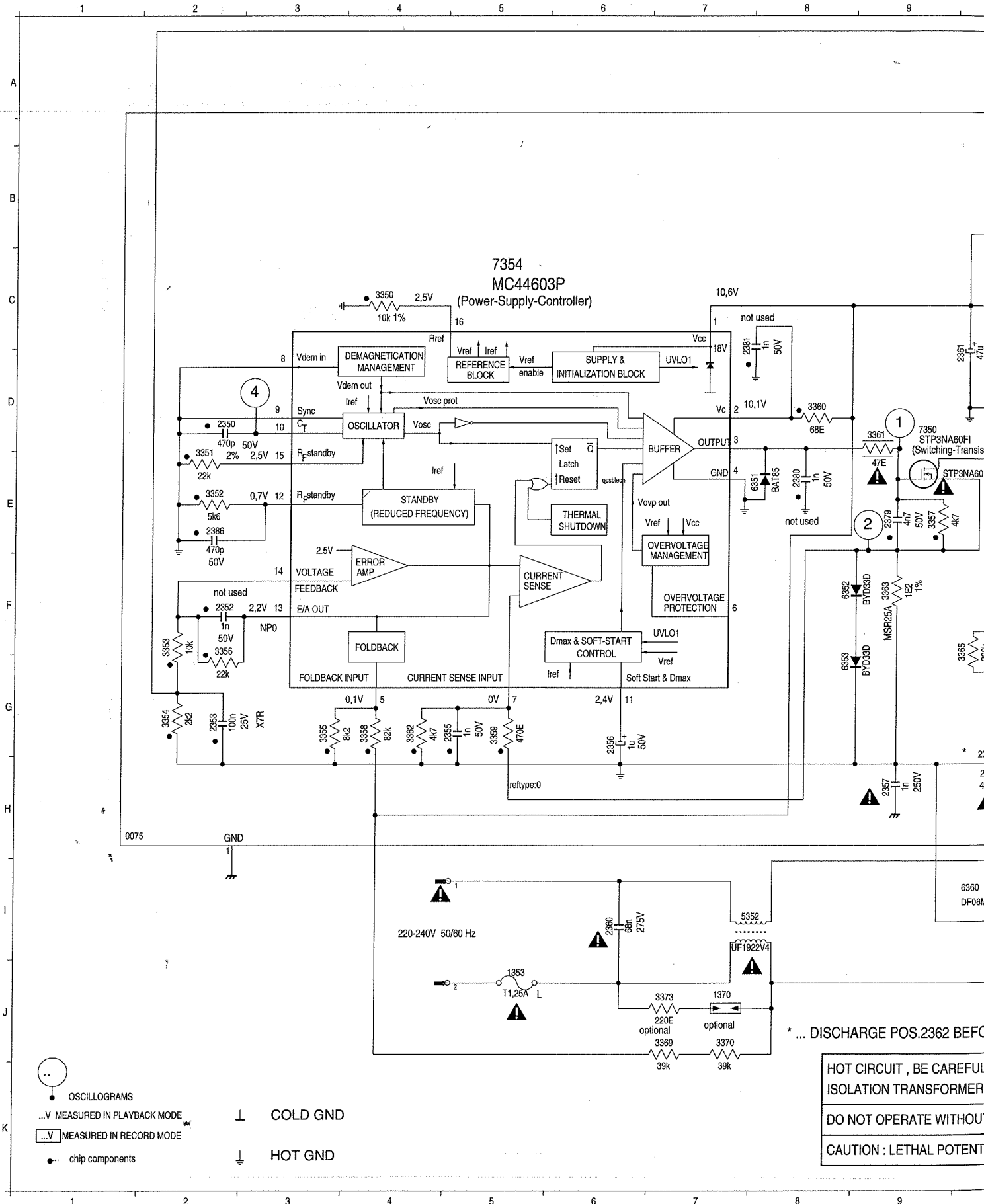
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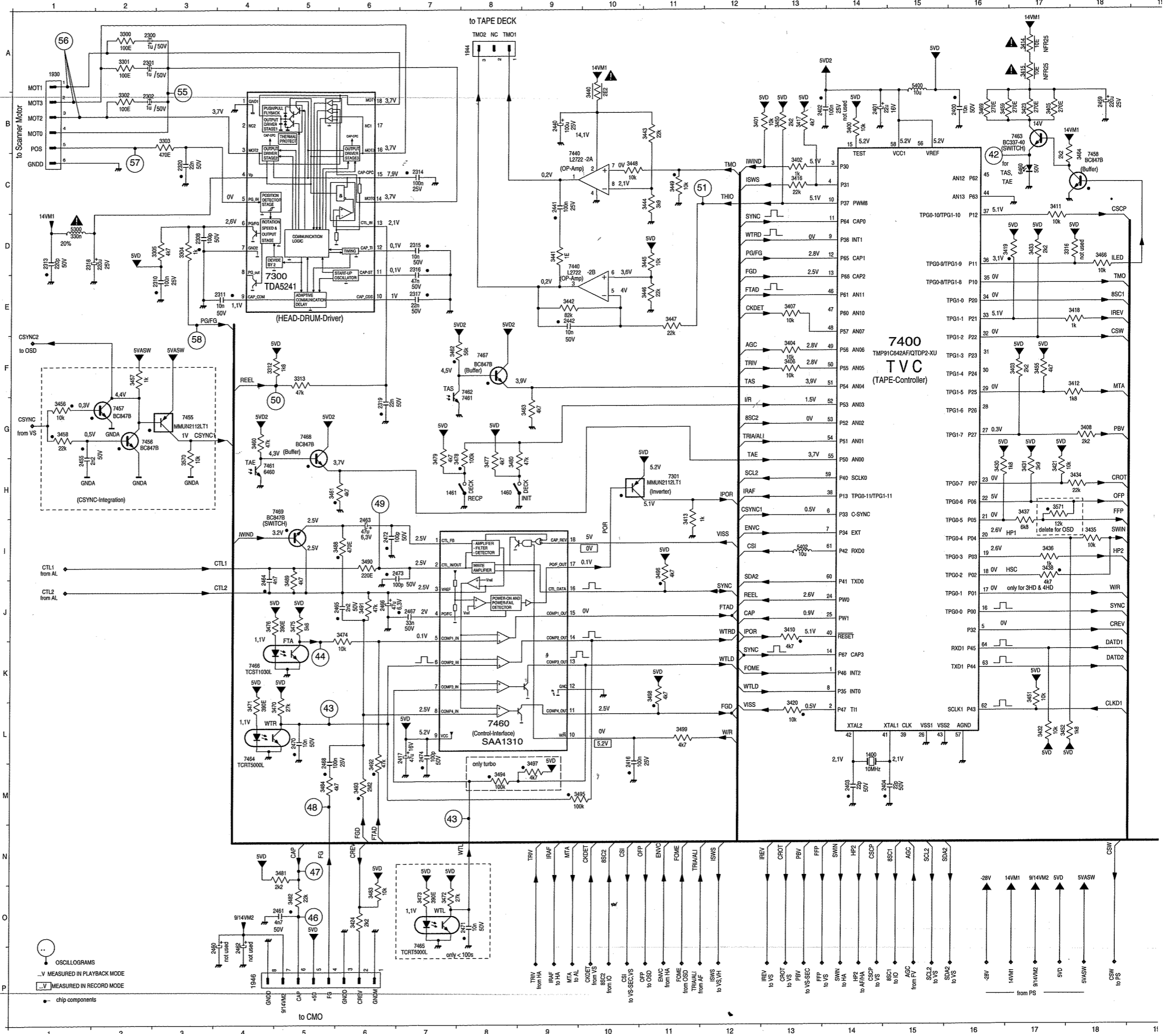
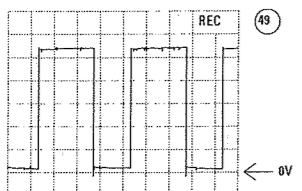
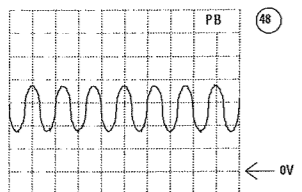
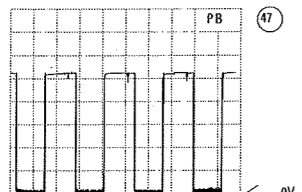
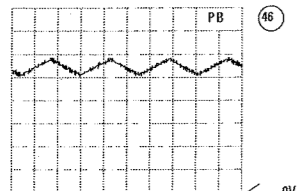
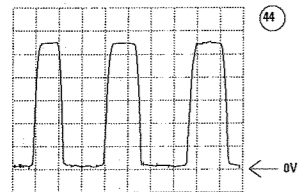
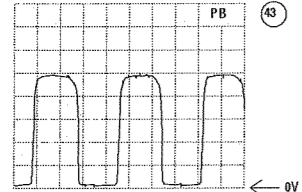
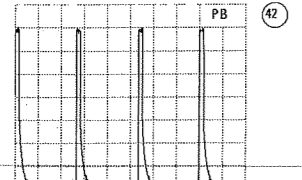
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- 1352 I15
- 1353 J 5
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- 2352 F 2
- 2353 G 2
- 2354 H20
- 2355 G 5
- 2356 G 6
- 2357 H 9
- 2358 F20
- 2359 E15
- 2360 I 6
- 2361 D10
- 2362 H10
- 2363 C13
- 2364 E13
- 2365 F13
- 2366 F10
- 2367 G14
- 2368 E13
- 2369 G15
- 2370 G16
- 2371 I13
- 2372 A14
- 2373 G16
- 2374 I13
- 2375 F10
- 2376 C15
- 2377 C13
- 2378 C14
- 2379 E 8
- 2380 E 8
- 2381 C 7
- 2383 H21
- 2385 H23
- 2386 E 2
- 3350 C 4
- 3351 E 2
- 3352 E 2
- 3353 F 2
- 3354 G 2
- 3355 G 3
- 3356 F 2
- 3357 F 9
- 3358 G 4
- 3359 G 5
- 3360 D 8
- 3361 D 9
- 3362 G 4
- 3363 F 9
- 3365 F10
- 3367 C11
- 3369 J 7
- 3370 J 7
- 3373 J 7
- 3374 A13
- 3375 A13
- 3376 A14
- 3377 A15
- 3378 B15
- 3379 A15
- 3380 H22
- 3381 G21
- 3382 H22
- 3383 F10
- 3384 B14
- 3385 B14
- 3386 B16
- 3387 E15
- 3388 E15
- 3389 D14
- 3390 I21
- 3391 F21
- 3392 J11
- 3393 J12
- 3394 E16
- 3395 A15
- 3396 B16
- 3397 E14
- 3398 E14
- 3399 H17
- 5350 F16
- 5351 H14
- 5352 I 8
- 5353 J12
- 5354 I14
- 5355 F16
- 5358 E13
- 5361 C11
- 5368 E10
- 6350 C10
- 6351 E 8
- 6352 F 8
- 6353 G 8
- 6354 F10
- 6355 C13
- 6356 D13
- 6357 F13
- 6358 G13
- 6359 H13
- 6360 I10
- 6371 B13
- 6372 C17
- 7350 D 9
- 7351 A11
- 7352 B13
- 7353 I19
- 7354 C 5



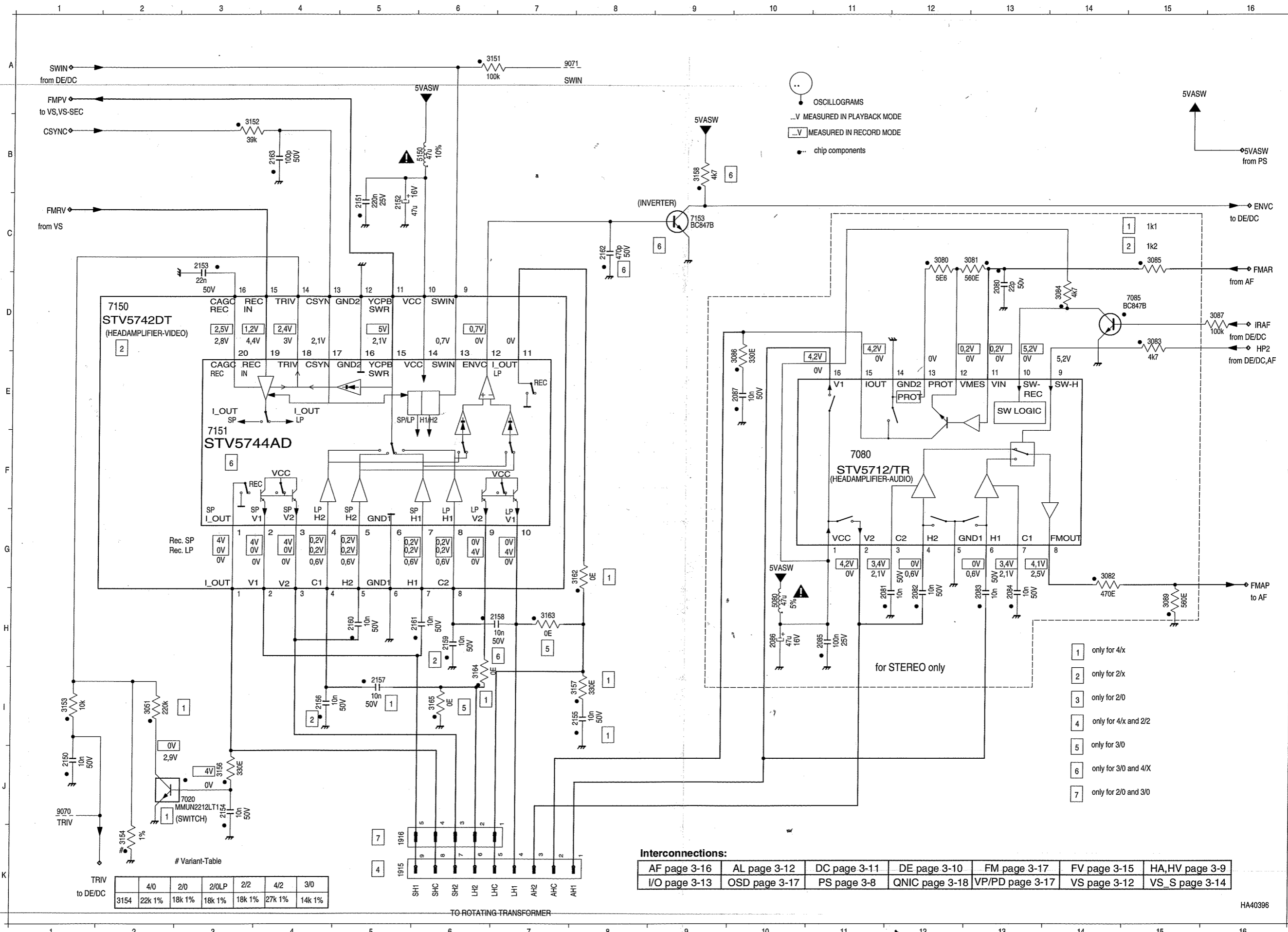
Power Supply (PS)



Deck Electronics (DE)



Head Amplifier (HA)



- 1915 K 5
- 1916 K 5
- 2080 D13
- 2081 H11
- 2082 H12
- 2083 H13
- 2084 H13
- 2085 H11
- 2086 H10
- 2087 E10
- 2150 J 1
- 2151 C 5
- 2152 C 5
- 2153 C 3
- 2154 J 3
- 2155 18
- 2156 14
- 2157 15
- 2158 H 7
- 2159 H 6
- 2160 H 5
- 2161 H 6
- 2162 C 8
- 2163 B 4
- 3051 L 2
- 3080 C12
- 3081 C13
- 3082 G14
- 3083 D15
- 3084 D14
- 3085 C15
- 3086 E10
- 3087 D16
- 3089 H15
- 3151 A 6
- 3152 B 3
- 3153 11
- 3154 K 2
- 3155 J 3
- 3157 18
- 3158 B 9
- 3162 G 8
- 3163 H 7
- 3164 16
- 3165 16
- 5080 H10
- 5150 B 6
- 7020 J 3
- 7080 F11
- 7085 D15
- 7150 D 2
- 7151 F 3
- 7153 C 9
- 9070 J 1
- 9071 A 7

Variant-Table

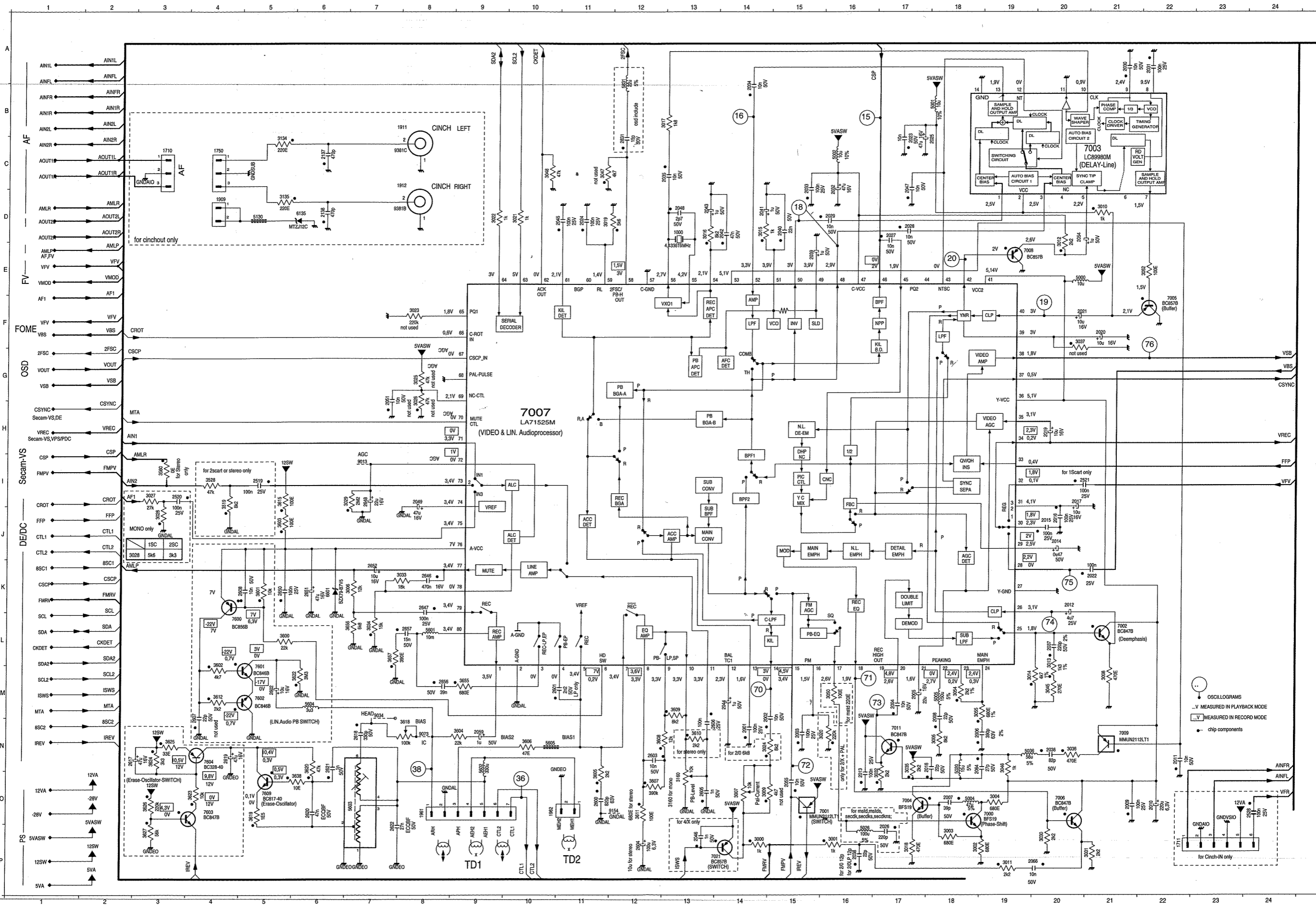
	4/0	2/0	2/0LP	2/2	4/2	3/0
TRIV to DE/DC	3154	22k 1%	18k 1%	18k 1%	18k 1%	27k 1%
						14k 1%

Interconnections:

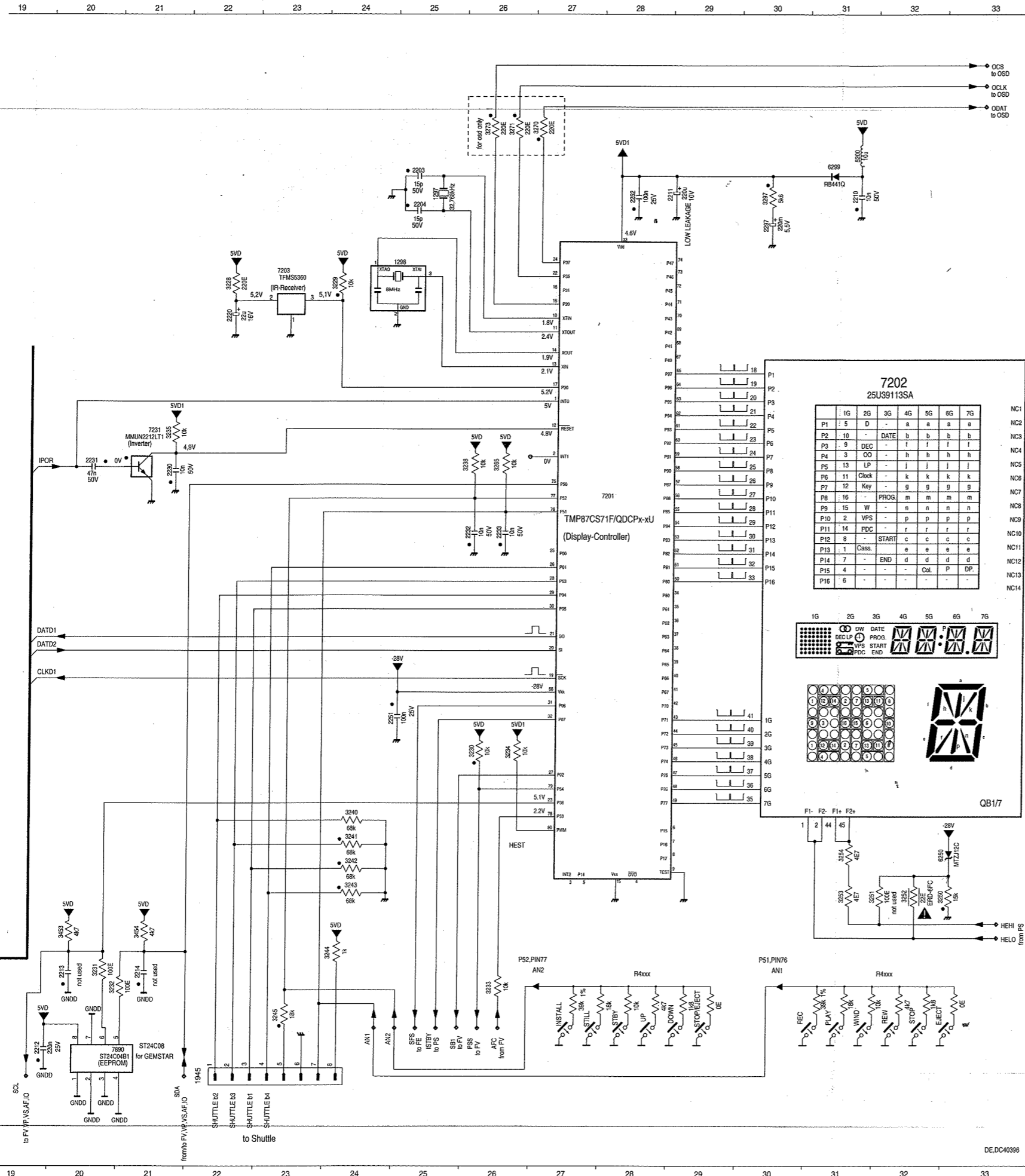
AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA, HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

HA40396

Video Signal Processing (VS), Audio Linear (AL)



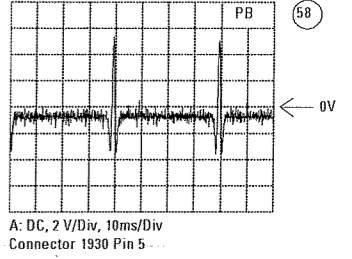
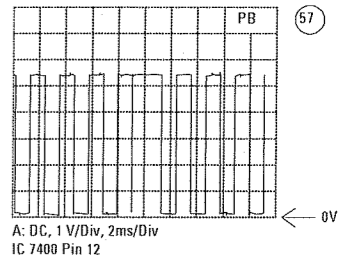
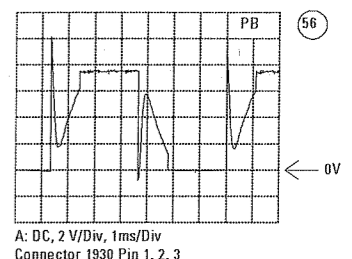
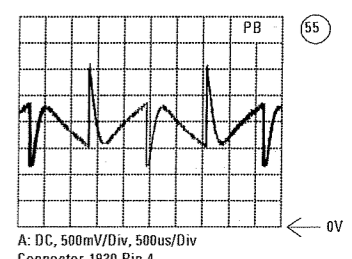
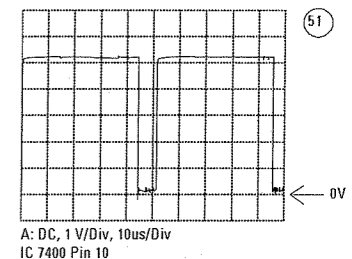
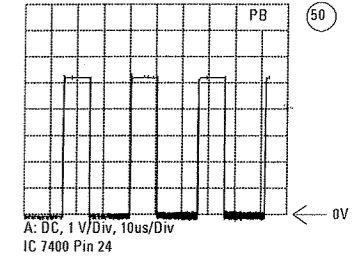
Display Control (DC)



- A 1930 A 1
- 2203 B25
- 2204 C25
- 2210 C31
- 2211 C29
- 2212 O20
- 2213 N20
- 2214 N21
- 2220 D22
- 2231 G20
- 2232 H26
- 2233 H26
- 2251 J25
- 2252 C28
- 2257 C30
- 2300 A 3
- 2301 A 3
- 2302 B 3
- 2308 D 3
- 2310 E 3
- 2311 E 4
- 2313 D 1
- 2314 C 7
- 2315 D 7
- 2316 D 7
- 2317 E 7
- 2318 D 2
- 2319 G 6
- 2320 C 3
- 2400 B16
- 2401 B15
- 2402 B14
- 2403 M14
- 2404 M15
- 2416 L11
- 2417 L 7
- 2440 B 9
- 2441 C 9
- 2442 E10
- 2455 G 2
- 2459 B18
- 2460 O 4
- 2461 O 5
- 2462 O 4
- 2463 H 6
- 2464 I 5
- 2465 J 6
- 2466 J 6
- 2467 J 7
- 2468 L 6
- 2470 L 5
- 2471 O 8
- 2472 I 7
- 2473 I 7
- 2474 L 7
- 3228 D22
- 3228 D24
- 3230 K26
- 3231 N20
- 3232 N21
- 3233 N26
- 3234 K26
- 3235 F21
- 3238 G26
- 3240 L24
- 3241 L24
- 3242 L24
- 3243 M24
- 3244 N24
- 3245 O23
- 3250 M33
- 3251 M32
- 3252 M32
- 3253 M31
- 3254 L31
- 3265 G26
- 3270 B27
- 3271 B26
- 3273 B26
- 3297 C30
- 3300 A 2
- 3301 A 2
- 3302 B 2
- 3303 B 3
- 3304 D 3
- 3305 D 3
- 3312 F 5
- 3316 D18
- 3400 B14
- 3401 B13
- 3402 C13
- 3403 K13
- 3404 F13
- 3405 B17
- 3406 F13
- 3407 E13
- 3408 G18
- 3410 J13
- 3411 C17
- 3412 F18
- 3413 H11
- 3414 A17
- 3415 A17
- 3416 C13
- 3417 B13
- 3418 E18
- 3419 D17
- 3420 K13
- 3421 H18
- 3423 B17
- 3424 O 6
- 3430 H17
- 3431 H17
- 3432 L17
- 3433 D17
- 3434 H18
- 3435 I18
- 3436 I17
- 3437 H17
- 3438 I17
- 3440 A10
- 3441 D 9
- 3442 F 9
- 3443 B11
- 3444 C11
- 3445 D11
- 3446 E11
- 3447 E11
- 3448 C11
- 3449 C11

Interconnections:

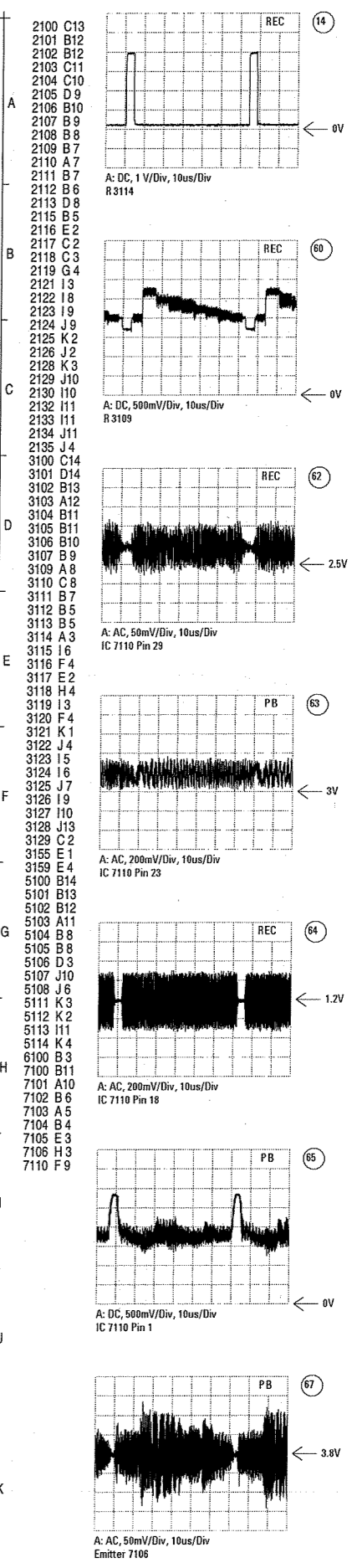
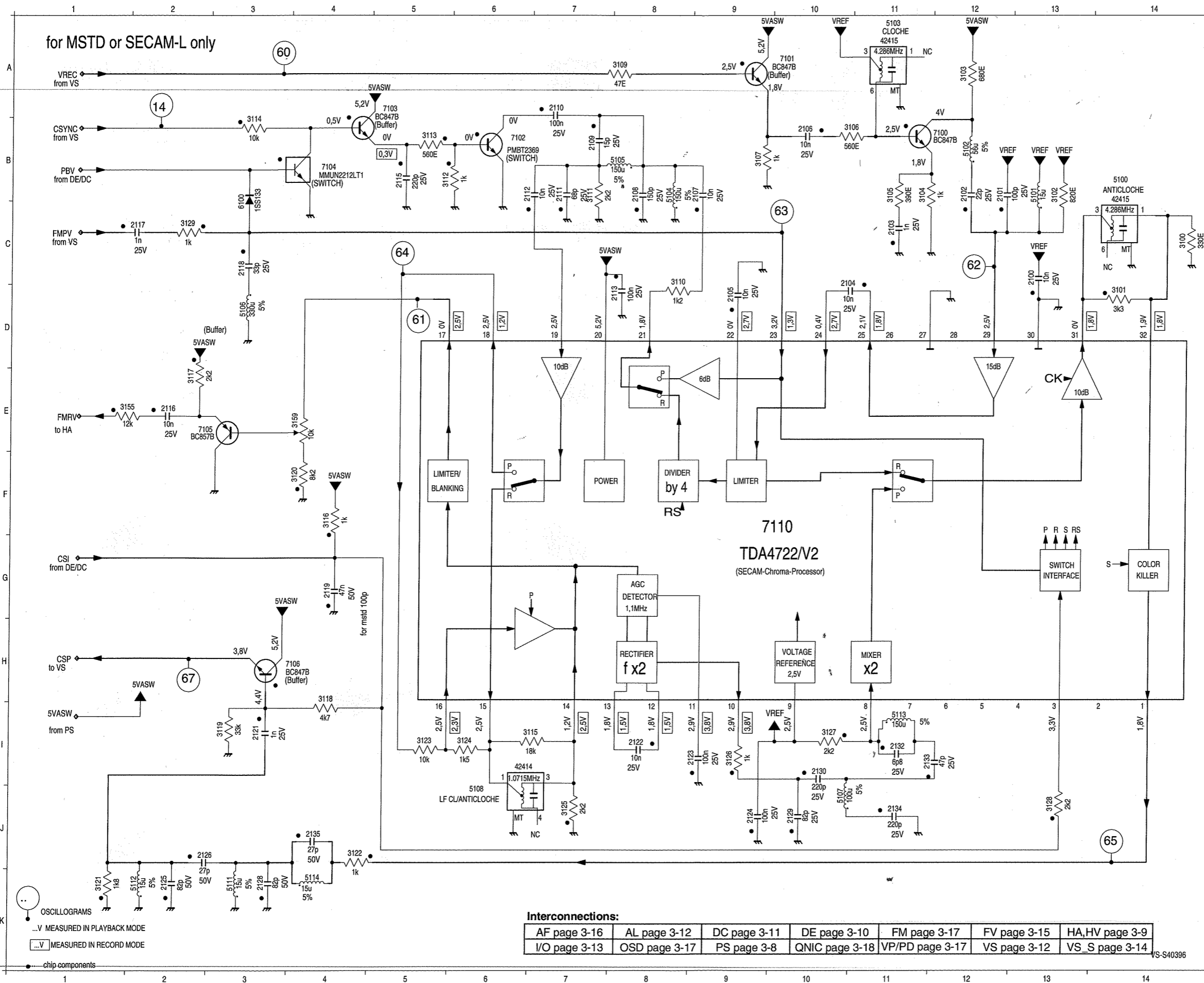
- AF page 3-16
- AL page 3-12
- DC page 3-11
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- FM page 3-17
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- HA, HV page 3-9
- I/O page 3-13
- OSD page 3-17
- PS page 3-8
- QNIC page 3-18
- VP/PD page 3-17
- VS page 3-12
- VS_S page 3-14



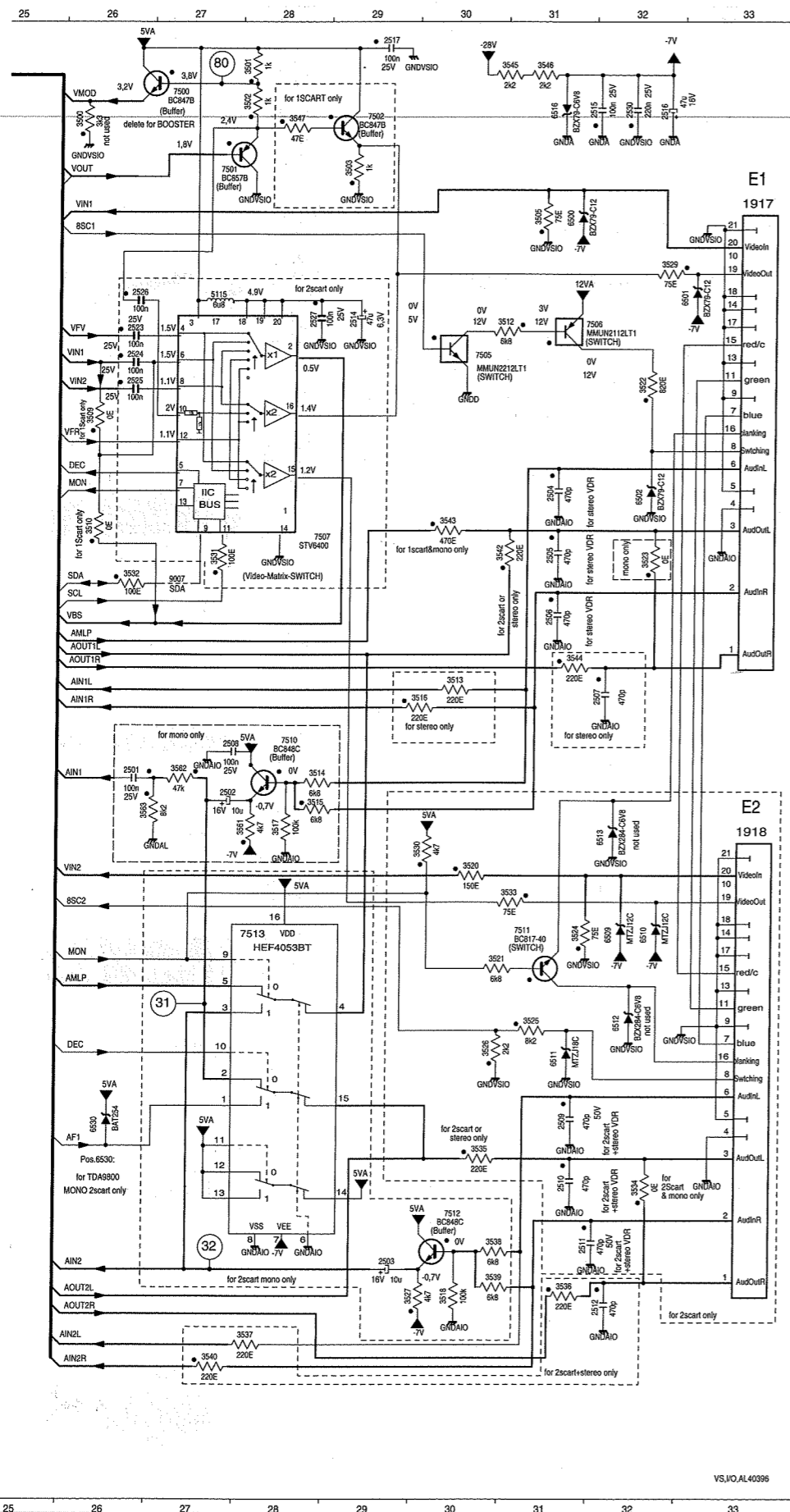
Keyfunction AN2	4xxx	Voltage pin77 P52
STOP/EJECT	0E	0V
DOWN	1k8	0.808V
UP	4k7	1.695V
STBY	10k	2.65V
STILL	18k	3.41V
INSTALL	39k	4.22V

Keyfunction AN1	4xxx	Voltage pin76 P51
EJECT	0E	0V
STOP	1k8	0.808V
REWIND	4k7	1.695V
WIND	10k	2.65V
PLAY	18k	3.41V
RECORD	39k	4.22V

Video Signal Processing Secam (VS_S)



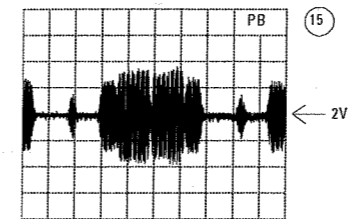
In/Out (I/O)



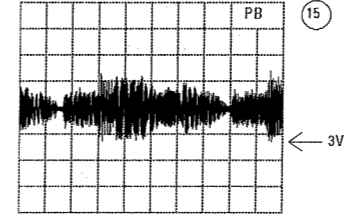
1000 D13	3022 D 9	7500 A27
1710 C 3	3023 F 8	7501 B27
1711 P22	3024 N14	7502 A29
1750 C 4	3025 G 8	7505 D30
1909 D 4	3026 G 8	7508 D31
1911 B 8	3027 I 3	7507 F28
1912 C 8	3028 J 3	7510 H28
1917 B33	3029 J 3	7511 J31
1918 I33	3030 P20	7512 N30
1961 O 8	3031 P21	7513 N30
1962 O10	3032 O17	7600 L 5
2001 N14	3033 K 8	7601 M 5
2002 M14	3034 L 7	7602 M 5
2003 N15	3035 N17	7603 O 4
2004 M17	3036 N20	7604 N 4
2005 M17	3037 F20	7605 O 5
2006 N18	3045 M20	9007 F27
2007 O18	3046 N19	9013 I 7
2008 M18	3047 C11	9034 M 7
2009 C21	3048 C10	9073 N 8
2010 Q22	3050 M16	9154 O12
2011 N22	3052 E22	
2012 K20	3054 M18	
2013 O16	3055 M18	
2014 J20	3133 C 5	
2015 J20	3135 D 5	
2016 J20	3160 O13	
2017 I20	3500 A28	
2018 N18	3501 A28	
2019 H20	3502 A28	
2020 F21	3503 B29	
2021 F20	3505 B31	
2022 K21	3509 E28	
2023 C17	3510 F28	
2024 D11	3512 D30	
2025 C17	3513 H30	
2026 P17	3514 I28	
2027 D17	3515 I28	
2028 D17	3516 H30	
2029 D16	3517 I28	
2030 A21	3518 O30	
2031 A22	3519 I 4	
2032 C16	3520 J30	
2033 C15	3521 K30	
2034 B14	3522 D32	
2035 C12	3523 F32	
2036 N20	3524 J31	
2037 L20	3525 K31	
2038 P16	3526 P30	
2039 E16	3527 O30	
2040 D15	3528 I 4	
2041 D14	3529 C32	
2042 D14	3530 J30	
2043 D13	3531 F27	
2044 M14	3532 F26	
2045 D10	3533 J31	
2046 P15	3534 M32	
2047 C17	3535 M30	
2048 D13	3536 N31	
2049 I 8	3537 O28	
2050 I 8	3538 N30	
2054 D20	3539 N30	
2055 O15	3540 O27	
2059 N 9	3542 F30	
2064 N18	3543 F30	
2066 P20	3544 G31	
2137 C 6	3545 A31	
2138 D 6	3546 A31	
2501 I26	3547 A28	
2502 I27	3560 I 3	
2503 N29	3561 I28	
2504 E31	3562 I27	
2505 G31	3563 I26	
2506 G31	3600 L 5	
2507 H32	3601 K 5	
2508 H27	3602 M 4	
2509 A31	3603 J 5	
2510 M31	3604 N 9	
2511 N31	3605 O11	
2512 O32	3606 N10	
2514 C29	3607 O12	
2515 A31	3608 N12	
2516 A32	3609 M13	
2517 A29	3610 N13	
2519 I 5	3611 O12	
2520 I 3	3612 M 4	
2521 I20	3615 I 5	
2523 D26	3618 N 8	
2524 D26	3619 O 5	
2525 D26	3620 N 6	
2526 C26	3622 M 6	
2527 C28	3623 O 4	
2528 O24	3624 N 6	
2530 A32	3625 N 3	
2600 O11	3626 O 3	
2601 M10	3627 P 3	
2602 M 5	3628 O 6	
2603 N12	3655 M 9	
2604 P12	3656 L 7	
2605 O13	3657 L 7	
2606 N13	5000 E20	
2607 M13	5001 B18	
2608 K 5	5002 C16	
2617 N 2	5004 O18	
2618 N 7	5005 M18	
2619 N 4	5000 N18	
2620 O 6	5026 P16	
2621 N 6	5036 N19	
2622 P 7	5115 C27	
2646 K 8	5130 D 5	
2647 K 8	5601 L 8	
2648 I 7	5602 N 9	
2650 K 5	5603 O 7	
2651 K 6	5604 M 6	
2652 K 7	5605 N10	
2656 M 8	5631 A12	
2657 L 8	6135 D 6	
2658 C12	6503 B31	
3000 P14	6501 C32	
3001 P16	6502 F32	
3002 I18	6509 J32	
3003 P18	6510 J32	
3004 O19	6511 L31	
3005 N18	6512 K32	
3006 K 7	6513 I32	
3007 O14	6516 A31	
3008 M21	6530 M26	
3009 O14	6601 K 6	
3010 D21	7000 O19	
3011 P19	7001 O16	
3012 D20	7002 L21	
3013 L20	7003 C20	
3014 M19	7004 O17	
3015 D14	7005 F22	
3016 D13	7006 O20	
3017 B12	7007 H10	
3018 P17	7008 E19	
3019 D11	7009 N21	
3020 N15	7011 N17	
3021 D10	7021 P13	

Interconnections:

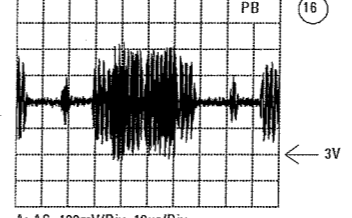
- AF page 3-16
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- VP/PD page 3-17
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- VS_S page 3-14



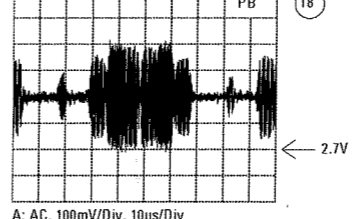
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (PAL)



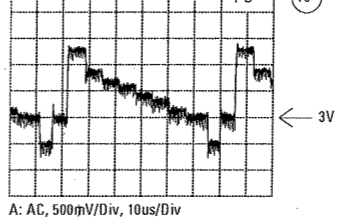
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (SECAM L)



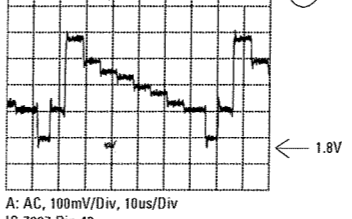
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 52



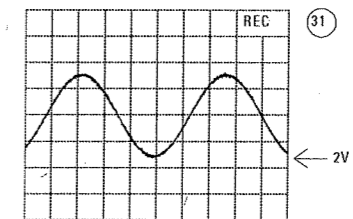
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 48/50



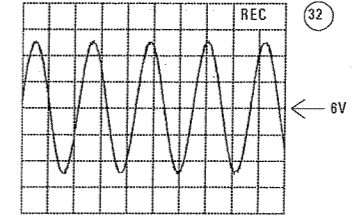
A: AC, 500mV/Div, 10us/Div
IC 7007 Pin 40



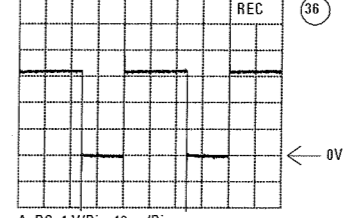
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 42



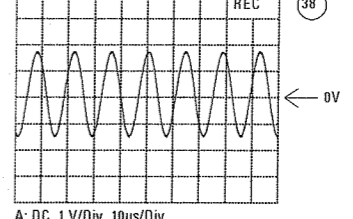
A: AC, 500mV/Div, 200us/Div
Modulator Pin 3



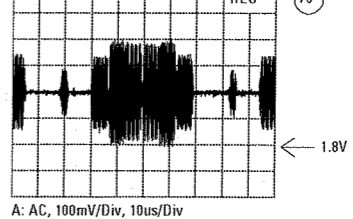
A: AC, 200mV/Div, 500us/Div
C 2503



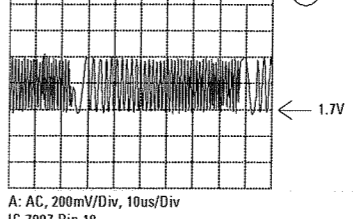
A: DC, 1V/Div, 10ms/Div
Connector 1961 Pin 7



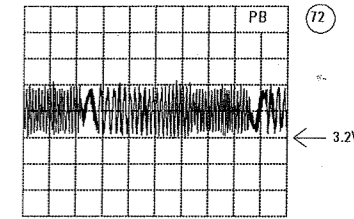
A: DC, 1V/Div, 10ms/Div
Connector 1951 Pin 1



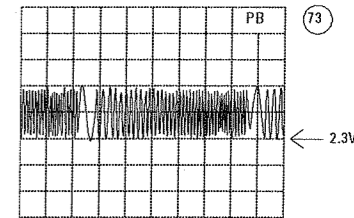
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 14



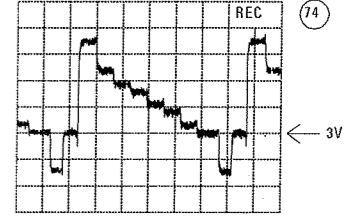
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 18



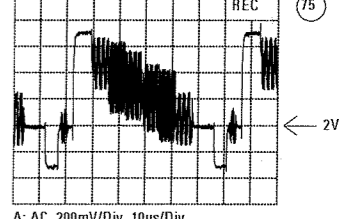
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 15



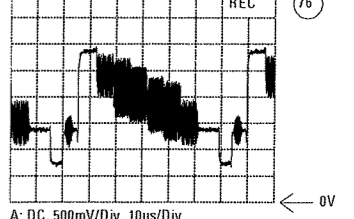
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 20



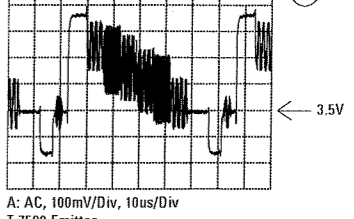
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 26



A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 28



A: DC, 500mV/Div, 10us/Div
IC 7007 Pin 38

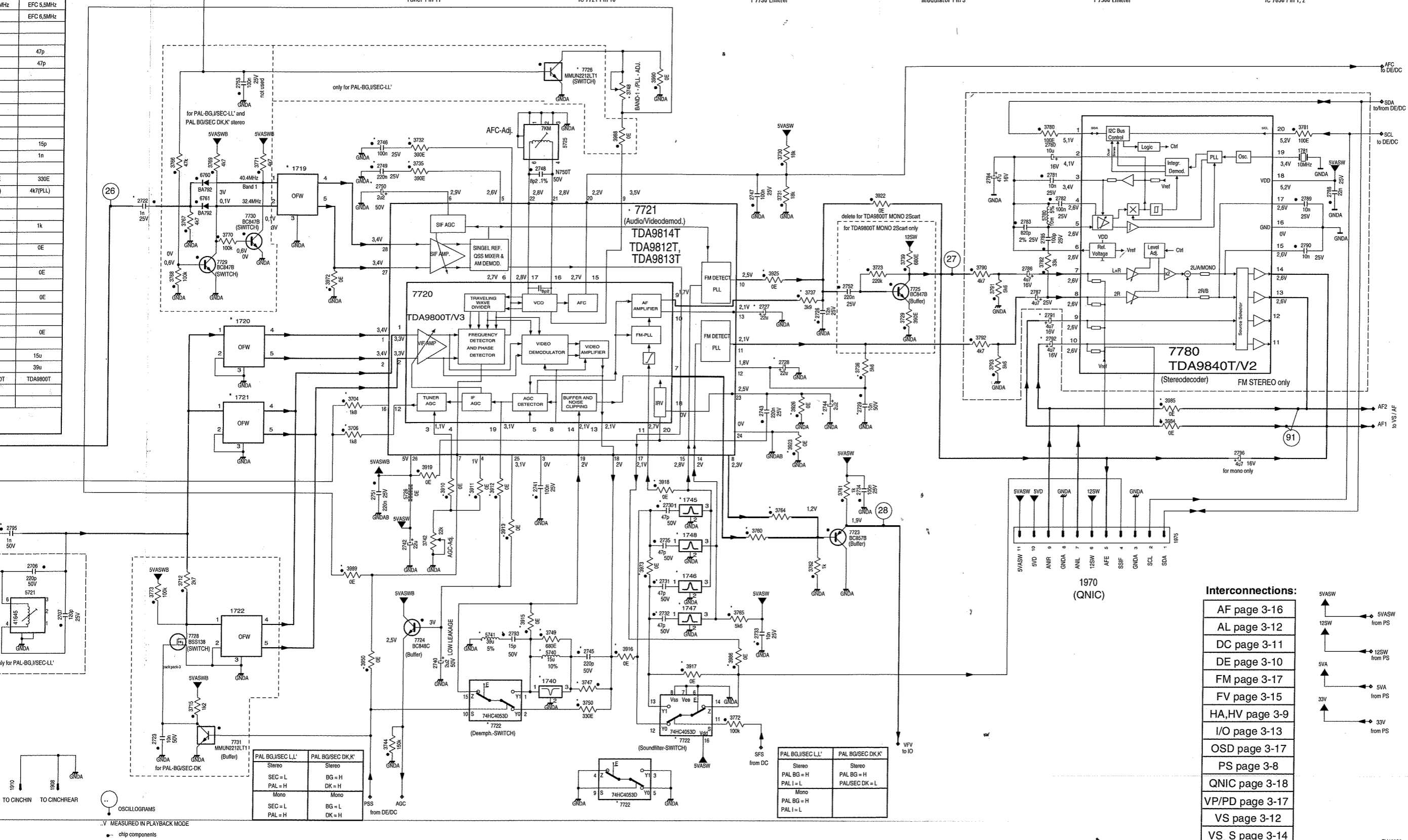
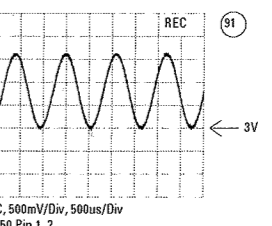
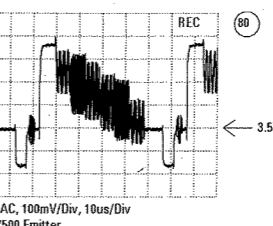
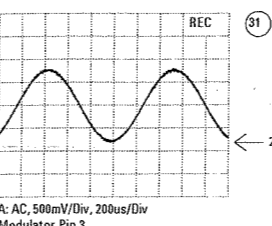
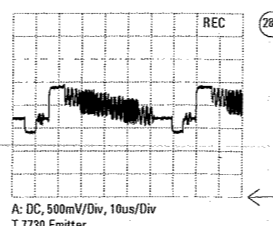
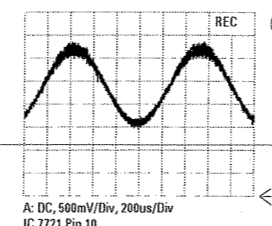
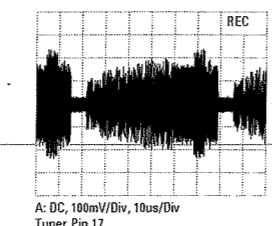


A: AC, 100mV/Div, 10us/Div
T 7500 Emitter

10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34
K1	PAL-BG/SEC-DK'																							
NO	FM MONO																							
203A	TMRG1-203A																							
M	G1968M																							
	L9360M																							
MHz	TRAP 5.5MHz																							
MHz	EFC 5.5MHz																							
	EFC 6.5MHz																							
	47p																							
	47p																							
	15p																							
	1n																							
	330E																							
	4k7(PLL)																							
	1k																							
	0E																							
	0E																							
	0E																							
	0E																							
	15u																							
	39u																							
OOT	TDA9800T																							

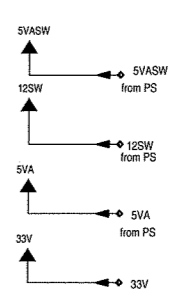
PAL BG/SEC LL'		PAL BG/SEC DK'	
Stereo	SEC L' = H	Stereo	PAL BG = L
PAL SEC L = L		PAL SEC DK = H	
Mono	SEC L' = H		
PAL SEC L = L			

PAL BG/SEC LL'		PAL BG/SEC DK'	
SEC = L	BG = H	Stereo	PAL BG = H
PAL = H	DK = H		
Mono	BG = L	Mono	PAL SEC DK = L
PAL = H	DK = H		



1701 K3	5700 K5
1719 E15	5702 P3
1720 H14	5703 J4
1721 I14	5705 P7
1722 M14	5721 L10
1740 N19	5725 E20
1745 K22	5726 K17
1746 L22	5740 M20
1747 M22	5741 M18
1748 K22	5780 F28
1781 E32	6760 E13
1908 P11	6761 F13
1910 P10	7720 G17
1975 K30	7721 F21
2700 J4	7722 Q22
2701 P4	7722 O19
2702 P6	7722 P21
2704 J3	7723 K25
2705 P5	7724 M17
2706 L11	7725 G26
2707 M11	7726 C20
2708 K6	7728 M13
2709 P5	7729 G14
2710 P7	7730 F14
2715 O8	7731 O14
2716 O8	7780 H30
2722 F12	9005 O9
2723 O13	
2726 H24	
2727 G23	
2728 H23	
2729 I25	
2730 K22	
2731 L21	
2732 M21	
2733 M23	
2734 K25	
2735 K21	
2740 M18	
2741 J19	
2742 K17	
2743 I23	
2744 I24	
2745 M20	
2746 E17	
2747 E23	
2748 E19	
2749 E17	
2750 E16	
2751 K16	
2752 G25	
2753 D14	
2754 E28	
2755 E28	
2782 F28	
2783 F28	
2784 E27	
2785 F28	
2786 G28	
2787 G28	
2788 E33	
2789 F33	
2790 F33	
2791 H28	
2792 H28	
2793 M19	
2794 P6	
2795 K10	
2796 J31	
3702 N9	
3703 O9	
3704 I16	
3705 P6	
3708 J16	
3707 M9	
3708 M9	
3709 L10	
3712 I13	
3715 H13	
3723 G25	
3725 J5	
3726 K7	
3729 H26	
3730 E23	
3731 E23	
3732 E17	
3735 E17	
3736 H25	
3737 C24	
3739 G26	
3742 K17	
3744 O17	
3747 N20	
3748 D21	
3749 M20	
3750 N20	
3760 K23	
3761 K25	
3762 L24	
3764 K23	
3765 M23	
3766 E13	
3767 F13	
3768 G13	
3769 E14	
3770 F14	
3771 E14	
3772 N23	
3773 L13	
3780 D28	
3781 D32	
3782 G28	
3790 G27	
3791 G27	
3792 H27	
3793 H27	
3910 K18	
3911 K18	
3912 K18	
3913 K19	
3914 J2	
3915 M19	
3916 M21	
3917 N22	
3918 J21	
3919 J17	
3922 F25	
3923 J24	
3925 G23	
3926 I24	
3950 M16	
3972 G16	
3973 L21	
3984 I30	
3985 I30	
3986 M23	
3988 D21	
3989 L16	
3990 C21	

- Interconnections:**
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 - DE page 3-10
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 - FV page 3-15
 - HA,HV page 3-9
 - I/O page 3-13
 - OSD page 3-17
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 - VP/PD page 3-17
 - VS page 3-12
 - VS_S page 3-14



OSCILLOGRAMS
 V MEASURED IN PLAYBACK MODE
 chip components

Frontend (FV)

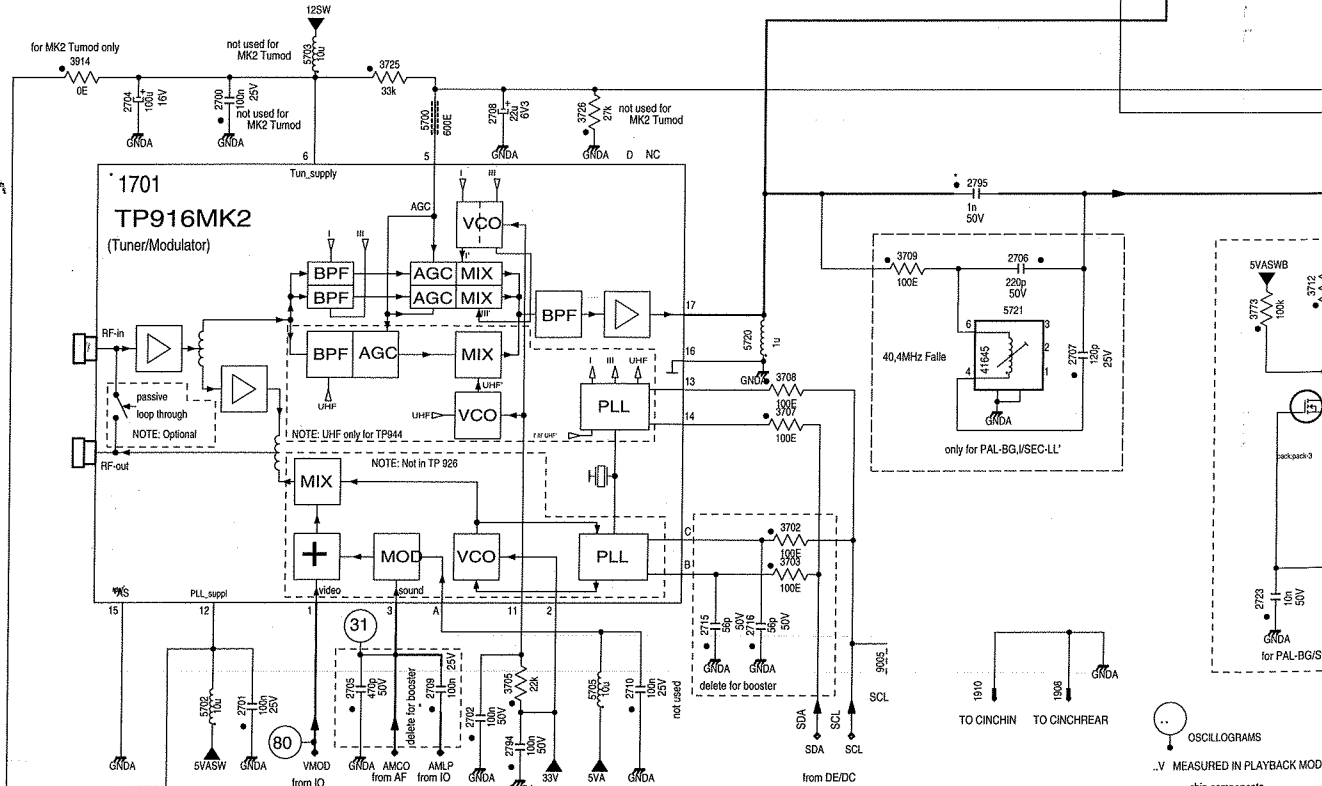
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VERSION STEREO

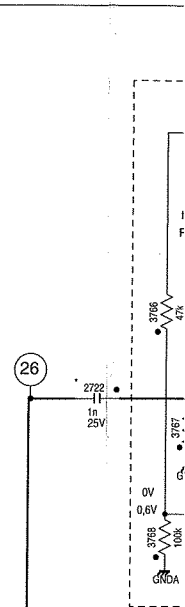
VERSION MONO

Amtsbl.	PAL-BG	PAL-BG	PAL-Ifullband	PAL-BG	PAL-BG/SEC-LL'	PAL-BG/SEC-DK	PAL-BG/SEC-DK	PAL-BG	PAL-Ifullband	PAL-BG/SEC-LL'	SEC-K1	PAL-BG/SEC-DK'
Pos.	FM STEREO	NICAM STEREO	NICAM STEREO	FM/STEREO	FM/STEREO	FM STEREO	FM/STEREO	FM MONO	FM MONO	FM/AM MONO	FM MONO	FM MONO
1701	TP 916	TP 916	TP944/TMRG1-110A	TP 916	TP926	TMRG1-203A	TMRG1-203A	TP 916	TP944/TMRG1-110A	TP926	TMRG1-203A	TMRG1-203A
1719					K9456M	K9463M	K9463M			K9456M		
1720	G1984M			G1984M	K3953M	G3956M	G3956M			G1965M		
1721		G1984M	J1980M					G1961M	J1980M		K2955M	G1966M
1722												L9360M
1740	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 6,0MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 6,0MHz	TRAP 5,5MHz	TRAP 6,5MHz	TRAP 5,5MHz
1745		EFC 5,5MHz	EFC 6,0MHz		EFC 6,0MHz	EFC 6,5MHz	EFC 6,5MHz	EFC 5,5MHz	EFC 6,0MHz	EFC 6,0MHz	EFC 6,5MHz	EFC 5,5MHz
1746	EFC 5,5MHz			EFC 5,5MHz	EFC 5,5MHz	EFC 5,5MHz	EFC 5,5MHz			EFC 5,5MHz		
1747	EFC 5,74MHz			EFC 5,74MHz	EFC 5,74MHz	EFC 5,74MHz	EFC 5,74MHz					
1748					EFC 6,25MHz	EFC 6,25MHz						
2730		47p	47p		47p	47p	47p	47p	47p	47p	47p	47p
2731	47p			47p	47p	47p	47p			47p		47p
2732	47p			47p	47p	47p	47p					
2735						47p	47p					
2745					220p					220p		
2750	2u2			2u2	2u2	2u2	2u2			2u2		
2791				4u7	4u7			4u7				
2792				4u7	4u7			4u7				
2793	15p	15p	15p	15p	15p					15p		15p
2795	1n	1n	1n	1n	1n	1n	1n	1n	1n	1n	1n	1n
3735	390E			390E	390E	390E	390E			160E		
3747	270E	270E	270E	270E	390E	330E	330E	330E	270E	390E	270E	330E
3748		4k7(PLL)	4k7(PLL)		22k(BD1)			4k7(PLL)	4k7(PLL)	22k(BD1)	4k7(PLL)	4k7(PLL)
3749					680E					680E		
3750					330E					330E		
3760		1k	820E					1k	820E		1k	1k
3764	1k			1k	820E	820E	820E			820E		
3915	0E	0E	0E	0E				0E	0E		0E	0E
3917	0E	0E	0E	0E				0E	0E		0E	0E
3924								0E	0E		0E	0E
3972	0E			0E							0E	0E
3973			0E								0E	0E
3984		0E	0E								0E	0E
3985		0E	0E								0E	0E
3987	0E	0E	0E	0E							0E	0E
3988					0E						0E	0E
5740	15u	15u	15u	15u	12u	15u	15u	15u	15u	12u	15u	15u
5741	39u	39u	39u	39u	39u	39u	39u	39u	39u	39u	39u	39u
7720		TDA9800T	TDA9800T					TDA9800T	TDA9800T		TDA9800T	TDA9800T
7721	TDA9813T			TDA9813T	TDA9814T	TDA9813T	TDA9813T			TDA9812T		TDA9800T
7722					74HC4053D	74HC4053D	74HC4053D					

for TDA 9800T only 2726, 2743, 2745, 3706, 3732, 3737, 3910, 3912, 3916, 3918, 3919, 3926, 3989, 3990.
 for TDA 9812T only 2723, 2741, 2744, 2749, 2750, 2751, 3704, 3738, 3911, 3913, 3923, 3925, 3950, 3986.
 for TDA 9813T only 2728, 2733, 2744, 2749, 2750, 2751, 3704, 3765, 3911, 3913, 3923, 3925, 3950, 3986.
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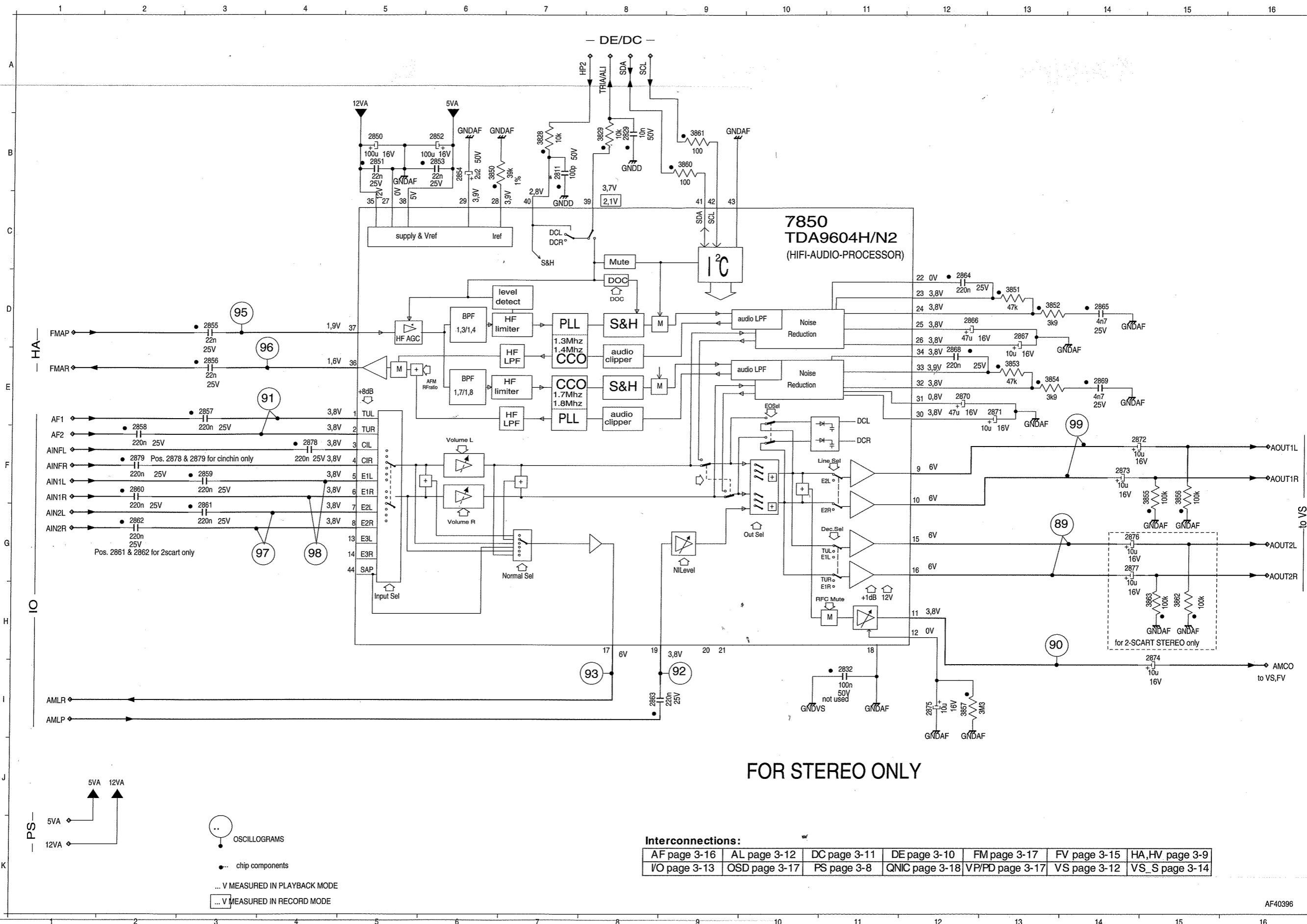


1 2 3 4 5 6 7 8 9 10 11 12 13



OSCILLOGRAMS
 .V MEASURED IN PLAYBACK MODE
 ● chip components

Audio FM Processing (AF)

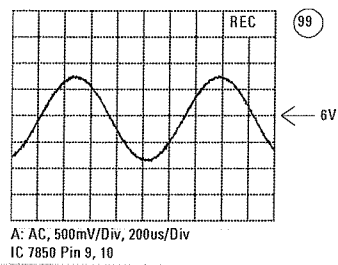
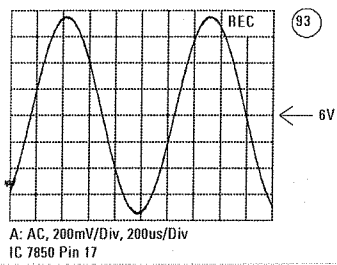
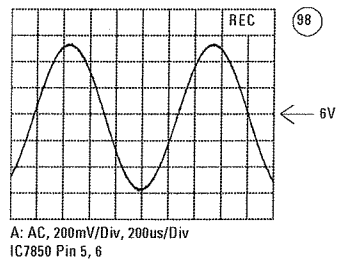
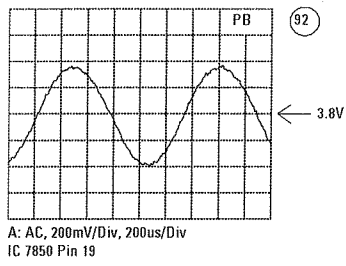
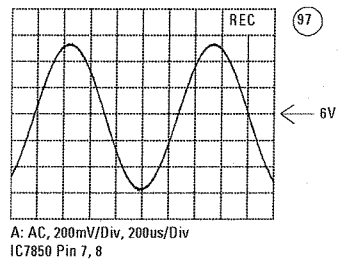
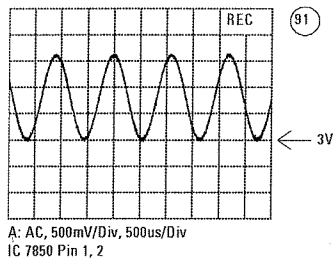
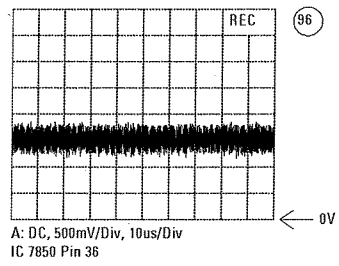
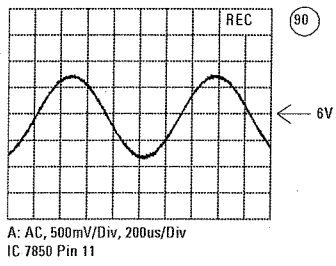
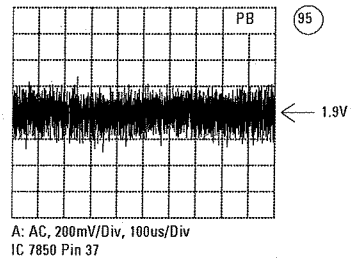
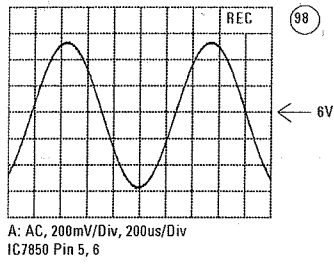


- 2811 B7
- 2829 B8
- 2832 I11
- 2850 B5
- 2851 B5
- 2852 B6
- 2853 B6
- 2854 B6
- 2855 D3
- 2856 E3
- 2857 E3
- 2858 F2
- 2859 F3
- 2860 F2
- 2861 G3
- 2862 G2
- 2863 I8
- 2864 D12
- 2865 D14
- 2866 D12
- 2867 D13
- 2868 E12
- 2869 E14
- 2870 E12
- 2871 E13
- 2872 F14
- 2873 F14
- 2874 I15
- 2875 I12
- 2876 G14
- 2877 G14
- 2878 F4
- 2879 F2
- 3828 B7
- 3829 B8
- 3850 B6
- 3851 D13
- 3852 D13
- 3853 E13
- 3854 E13
- 3855 F15
- 3856 F15
- 3857 I12
- 3860 B9
- 3861 B9
- 3862 H15
- 3863 H15
- 7850 C10

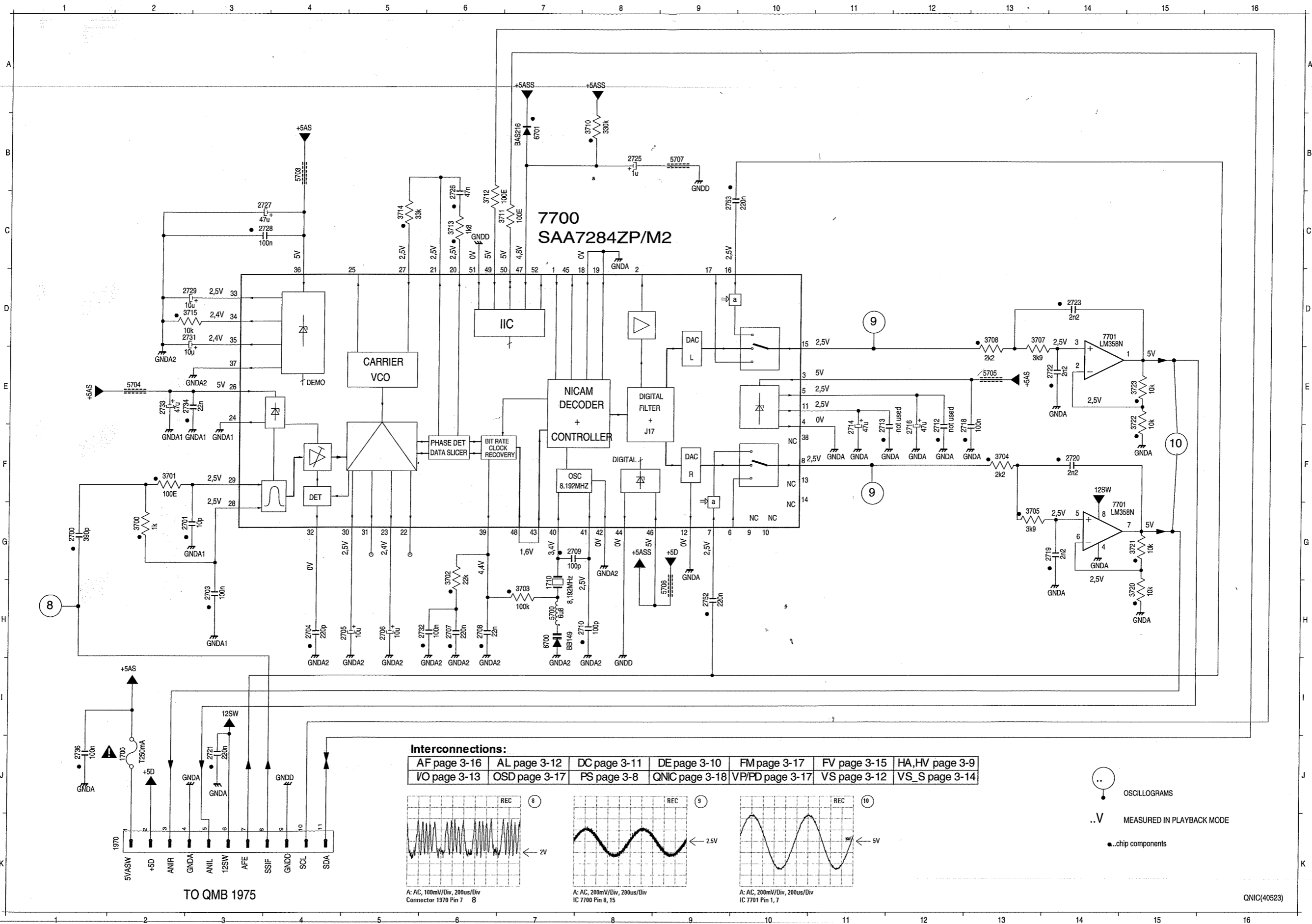
FOR STEREO ONLY

Interconnections:

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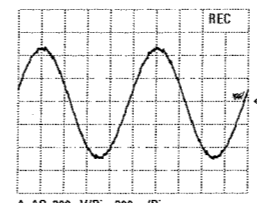
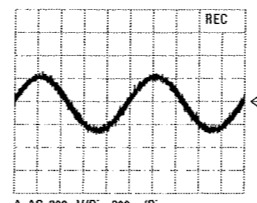
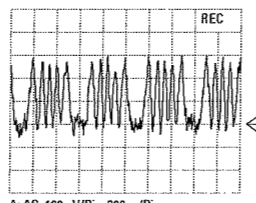
Nicam Board (QNIC)



- 1700 J2
- 1710 H7
- 1970 K2
- 2700 G1
- 2701 G2
- 2703 H3
- 2704 H4
- 2705 H5
- 2706 H6
- 2707 H6
- 2708 H6
- 2709 G7
- 2710 H8
- 2712 F12
- 2713 F11
- 2714 F11
- 2716 F12
- 2718 F12
- 2719 G14
- 2720 F14
- 2721 J3
- 2722 E14
- 2723 D14
- 2725 B8
- 2726 C6
- 2727 C3
- 2728 C3
- 2729 D2
- 2731 D2
- 2732 H6
- 2733 E2
- 2734 E2
- 2736 J1
- 2752 H9
- 2753 C9
- 3700 G2
- 3701 F2
- 3702 G6
- 3703 H7
- 3704 F13
- 3705 G13
- 3707 D13
- 3708 D13
- 3710 B8
- 3711 C7
- 3712 C6
- 3713 C6
- 3714 C5
- 3715 D3
- 3720 H15
- 3721 G15
- 3722 E15
- 3723 E15
- 5700 H7
- 5703 B4
- 5704 E2
- 5705 E13
- 5706 H9
- 5707 B9
- 6700 H7
- 6701 B7
- 7700 C7
- 7701 D14
- 7701 G14

Interconnections:

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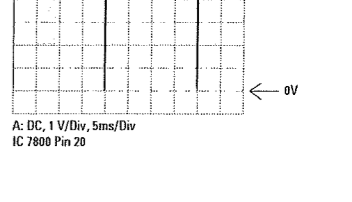
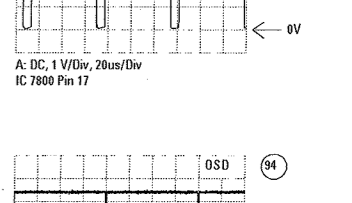
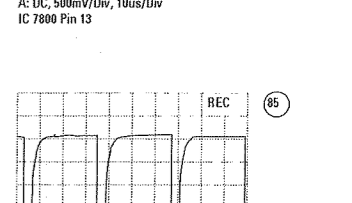
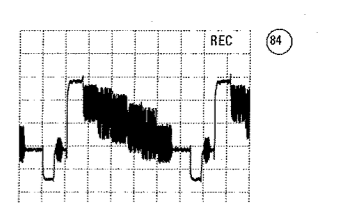
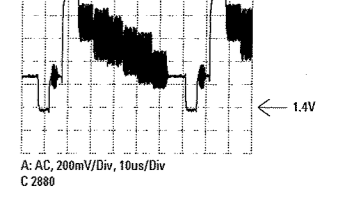
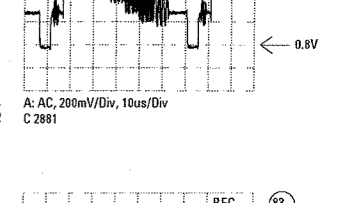
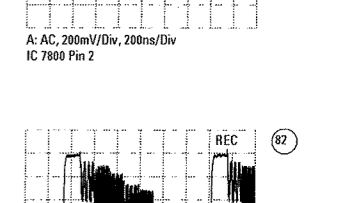
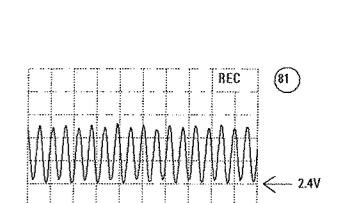
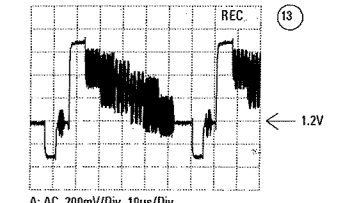
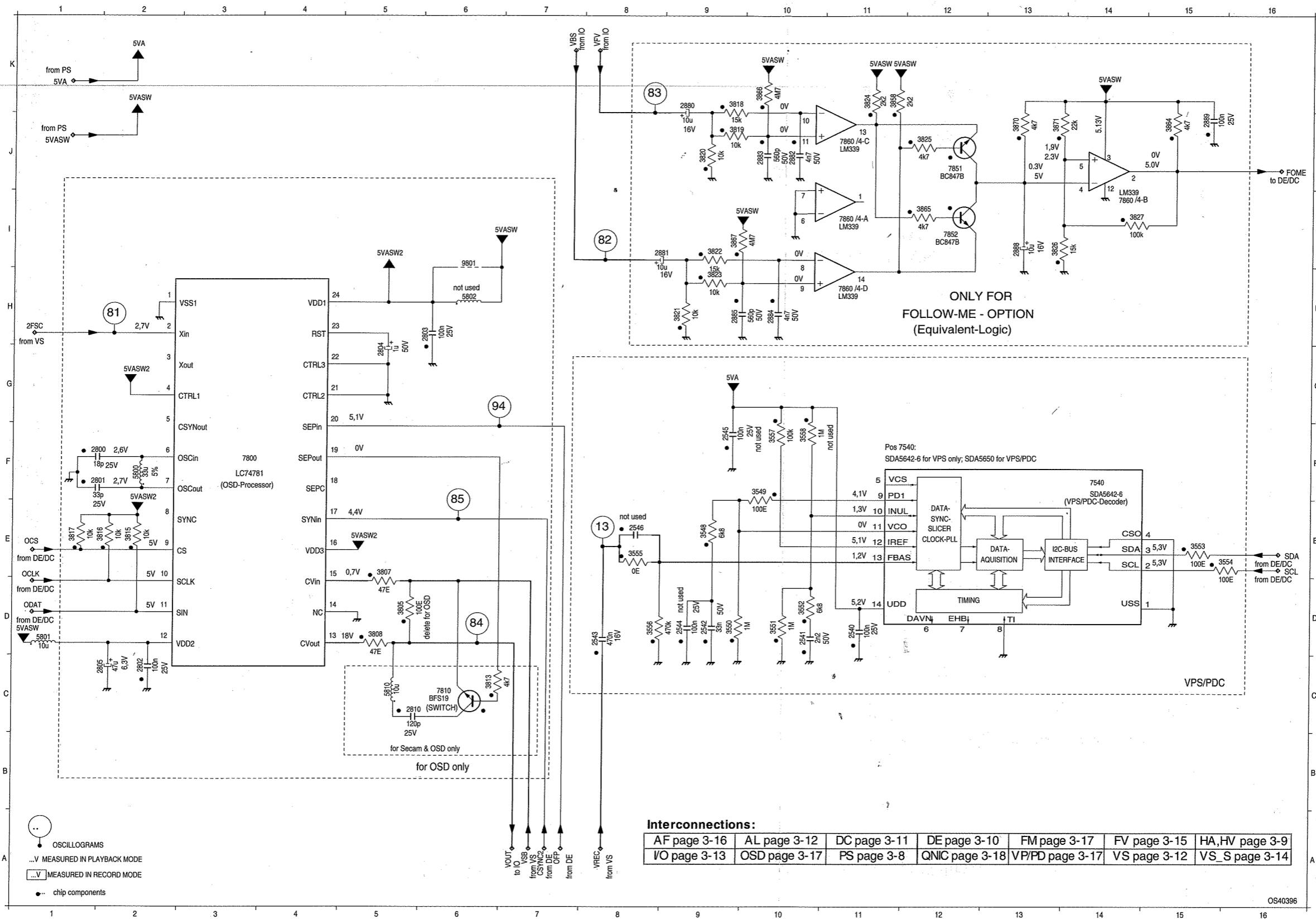


- OSCILLOGRAMS
- ..V MEASURED IN PLAYBACK MODE
- ...chip components

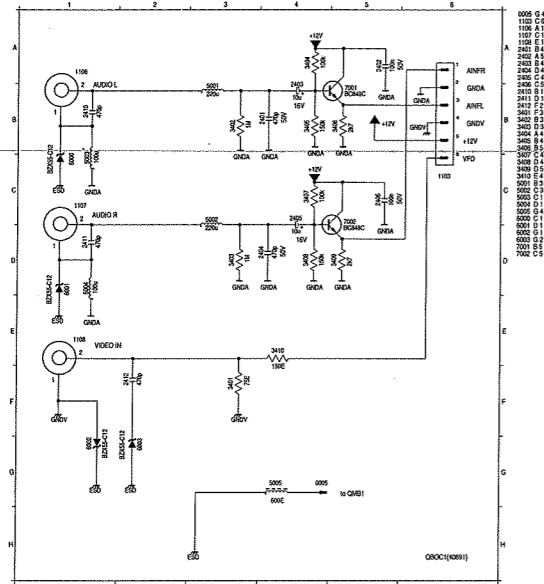
TO QMB 1975

QNIC(40523)

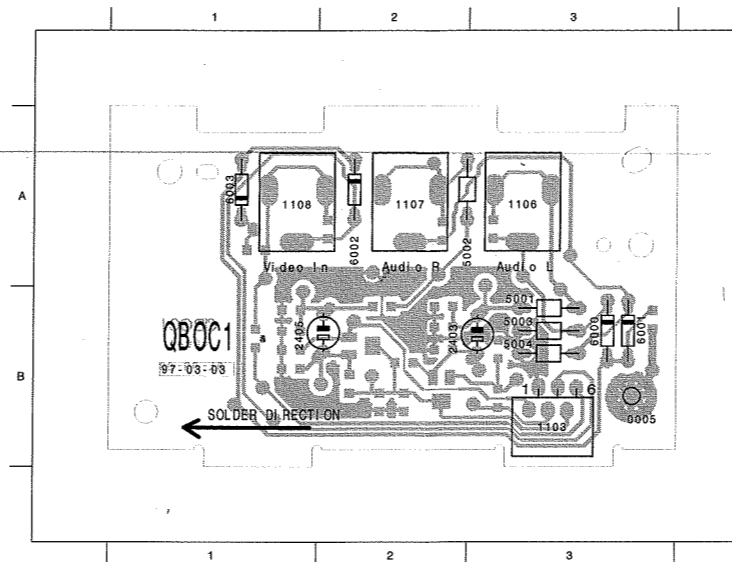
On Screen Display (OS), Follow Me (FM), Video Programming System / Programm Delivery Control (VP/PD)



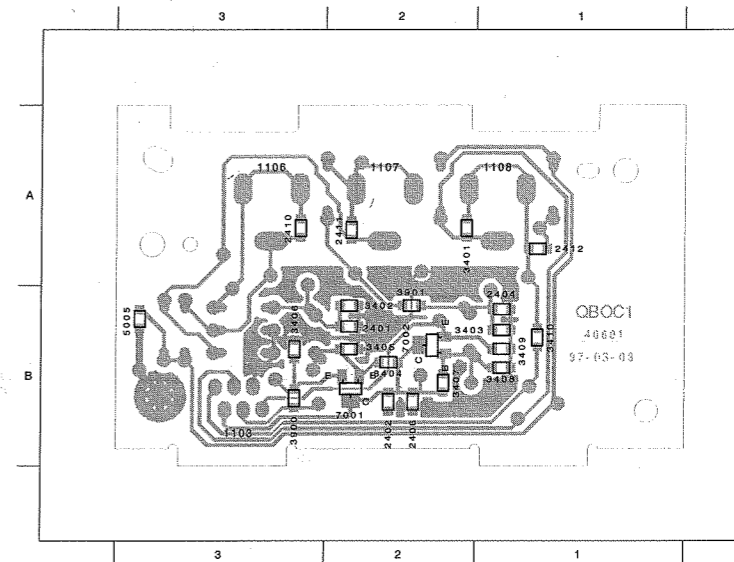
Socket Boards (QBOC1,QBOE1,QBOG1)



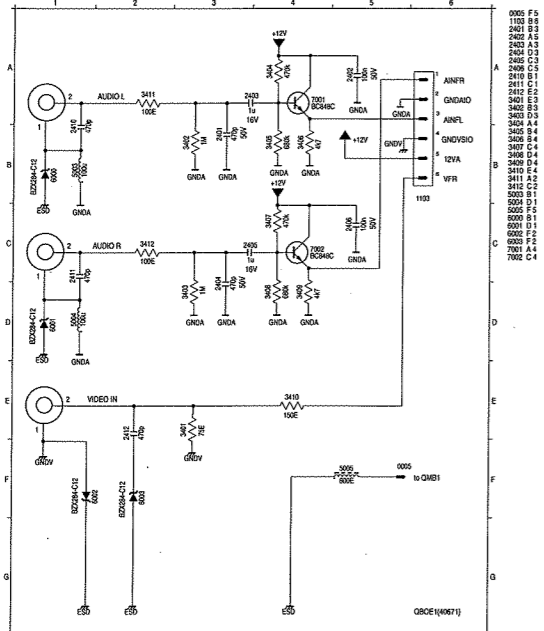
- 0005 B 4
- 1103 B 1
- 1106 B 1
- 1107 B 1
- 2401 B 1
- 2402 B 1
- 2403 B 1
- 2404 B 1
- 2405 B 1
- 2406 B 1
- 2410 A 2
- 2411 A 2
- 2412 A 2
- 3401 A 2
- 3402 B 1
- 3403 B 1
- 3404 B 1
- 3405 B 1
- 3406 B 1
- 3407 B 1
- 3408 B 1
- 3409 B 1
- 3410 B 1
- 3900 B 2
- 3901 B 2
- 5005 B 3
- 7001 B 2
- 7002 B 2



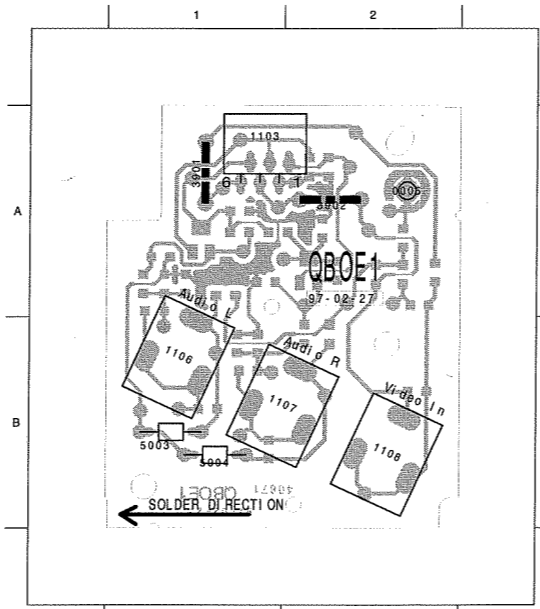
- 0005 B 3
- 1103 B 3
- 1106 A 3
- 1107 A 2
- 1108 A 2
- 2403 B 3
- 2405 B 2
- 5001 B 3
- 5002 A 2
- 5003 B 3
- 5004 B 3
- 6000 B 3
- 6001 B 3
- 6002 A 2
- 6003 A 1



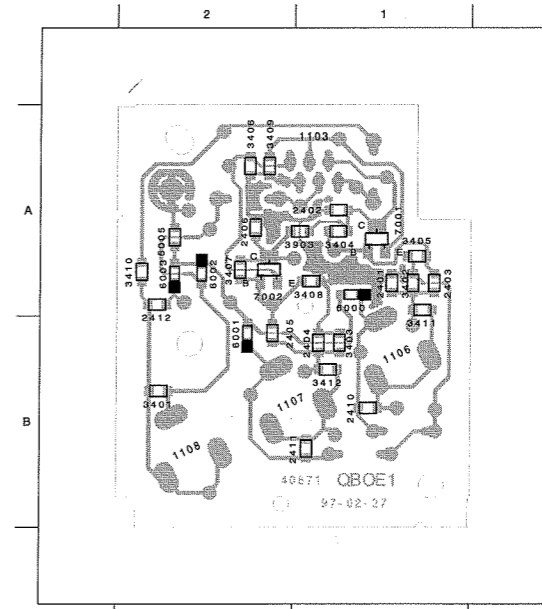
- 2401 B 2
- 2402 B 2
- 2404 B 1
- 2406 B 2
- 2410 A 3
- 2411 A 2
- 2412 A 1
- 3401 A 2
- 3402 B 1
- 3403 B 1
- 3404 B 2
- 3405 B 2
- 3406 B 3
- 3407 B 2
- 3408 B 1
- 3409 B 1
- 3410 B 1
- 3900 B 3
- 3901 B 2
- 5005 B 3
- 7001 B 2
- 7002 B 2



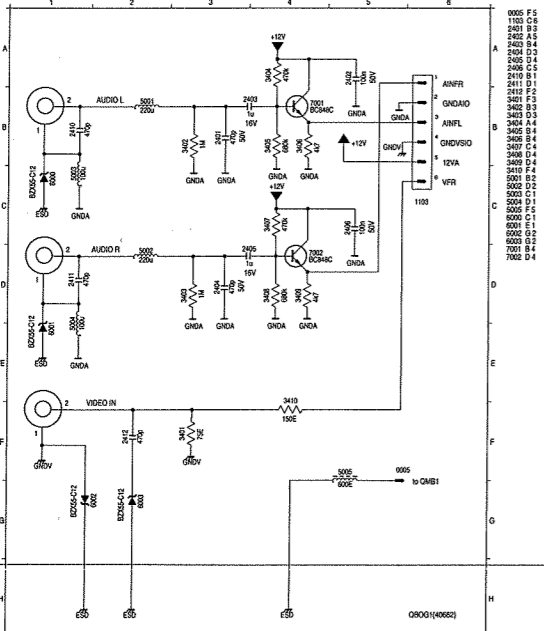
- 0005 F 5
- 1103 B 3
- 2401 B 3
- 2402 A 3
- 2403 A 3
- 2404 C 3
- 2405 C 3
- 2406 C 3
- 2410 B 1
- 2411 C 1
- 2412 E 2
- 3401 A 4
- 3402 B 4
- 3403 C 4
- 3404 D 4
- 3405 E 4
- 3406 F 4
- 3407 G 4
- 3408 H 4
- 3409 I 4
- 3410 J 4
- 3901 A 1
- 3902 A 2
- 5003 B 1
- 5004 B 1
- 6000 B 1
- 6001 B 2
- 6002 A 1
- 6003 A 2
- 7001 A 1
- 7002 C 1



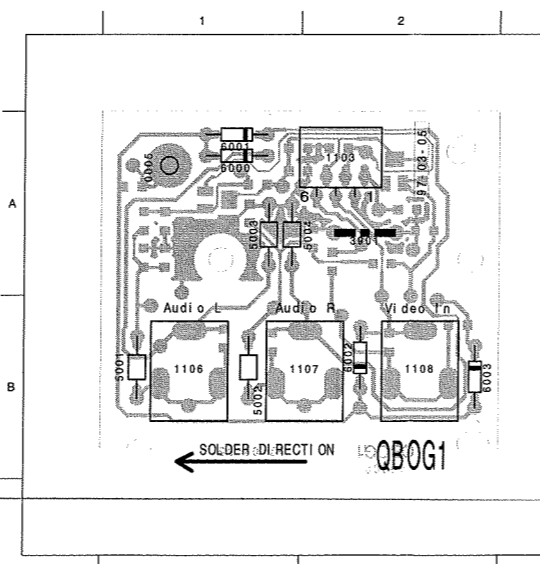
- 0005 A 2
- 1103 A 1
- 1106 B 1
- 1107 B 1
- 1108 B 2
- 3901 A 1
- 3902 A 2
- 5003 B 1
- 5004 B 1



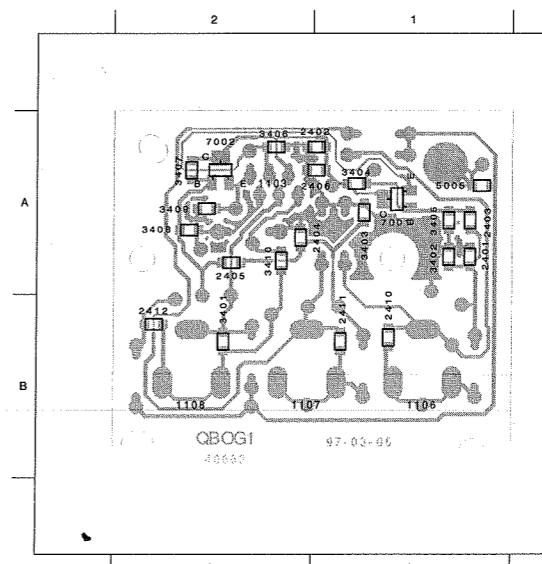
- 2401 A 1
- 2402 A 1
- 2403 A 1
- 2404 B 1
- 2405 B 2
- 2406 A 2
- 2410 B 1
- 2411 B 1
- 2412 A 2
- 3401 B 2
- 3402 A 1
- 3403 B 1
- 3404 A 1
- 3405 A 1
- 3406 A 2
- 3407 A 2
- 3408 A 1
- 3409 A 2
- 3410 A 2
- 3411 A 1
- 3412 B 1
- 3903 A 1
- 5005 A 2
- 6000 A 1
- 6001 B 2
- 6002 A 2
- 6003 A 2
- 7001 A 1
- 7002 A 2



- 0005 F 5
- 1103 B 3
- 2401 B 4
- 2402 B 4
- 2403 B 4
- 2404 B 4
- 2405 B 4
- 2406 B 4
- 2410 B 1
- 2411 B 1
- 2412 B 2
- 3401 A 4
- 3402 B 4
- 3403 C 4
- 3404 D 4
- 3405 E 4
- 3406 F 4
- 3407 G 4
- 3408 H 4
- 3409 I 4
- 3410 J 4
- 3901 A 1
- 3902 A 2
- 5003 B 1
- 5004 B 1
- 6000 B 1
- 6001 B 2
- 6002 A 1
- 6003 A 2
- 7001 B 4
- 7002 D 4



- 0005 A 1
- 1103 A 2
- 1106 B 1
- 1107 B 1
- 1108 B 2
- 3901 A 2
- 5001 B 1
- 5002 B 1
- 5003 A 1
- 5004 A 1
- 6000 A 1
- 6001 A 1
- 6002 B 2
- 6003 B 2



- 2401 A 1
- 2402 A 1
- 2403 A 1
- 2404 A 2
- 2405 A 2
- 2406 A 1
- 2410 B 1
- 2411 B 1
- 2412 B 2
- 3401 B 2
- 3402 A 1
- 3403 A 1
- 3404 A 1
- 3405 A 1
- 3406 A 2
- 3407 A 2
- 3408 A 2
- 3409 A 2
- 3410 A 2
- 3411 A 1
- 3412 B 1
- 3903 A 1
- 5005 A 1
- 6000 A 1
- 6001 A 1
- 6002 A 2
- 6003 A 2
- 7001 A 1
- 7002 A 2

4. DRIVE ASSEMBLY

4.1 MECHANICAL PARTS LIST

Pos.	Description	K I T S							Code number 4822
		B	I	L	P	Q	R	S	
1	Rec. protection lever (with spring)								402 10202
2	Chassis mounting spring (2x)								492 71022
5	Main brake left				P				
6	Main brake spring (2x)				P				
9	Damping roller *)								528 70782
10	Main brake right				P				
11	Tension arm spring								492 33317
12	Tension crank								403 70551
13	Slip ring						R		
14	Tension band				P				
15	Tension arm								403 70547
16	Erase head								249 10522
17	Swivelling gear						R		
18	Brake gear (2x)						R		
19	Swivelling plate						R		
20	Reel table (S)						R		
20a	Reel table (T)						R		
21	Headamplifier holder							T	
22	Bracket							T	
23	Roller unit left								528 70771
24	Loading arm left	B							
25	Loading arm right	B							
26	Roller unit right								528 70772
27	Loading gear	B							
30	Reverse clip					Q			
31	Reverse lever					Q			
32	Intermediate lever					Q			
33	Head disc 2/0								691 10583
33	Head disc 2/0-LP								691 10585
33	Head disc 4/0								691 10674
33	Head disc 4/0 Secam								691 21012
33	Head disc 4/2								691 10548
33	Head disc 4/2 Secam								691 10551
34	Scanner motor 2/0 (with screws)								361 10963
34	Scanner motor 4/0 (with screws)								361 10819
34	Scanner motor 4/2 (with screws)								361 10901
35	Cleaning roller								528 70773
36	A/C Head (with clip and screws)								249 10468
37	Pressure roller (with spring)								528 70774
38	Threading motor								361 10809
39	Threading belt								358 20421
40	Motor holder							T	
41	Pressure roller guide							S	
42	Reverse brake				P				
44	Slider gear	B						S	
45	Cam wheel							S	
46	Cam shaft							S	
47	Pulley shaft								528 81462
48	Worm shaft							S	
49	Chassis mounting clip							T	
50	WD-holder							T	

Pos.	Description	K I T S							Code number 4822
		B	I	L	P	Q	R	S	
101	Cassette loader trigger			L					
102	Clip			L					
103	Cassette loader gear1			L					
104	Cassette loader spring			L					
105	Cassette loader gear2			L					
106	Spindle								535 93277
111	Cam wheel reverse	B							
112	Tension lever							T	
113	Cam wheel tension	B							
114	Clutch lever (with spring)								403 70549
115	Clutch								528 20736
116	Changing gear			I					
117	Double gear			I					
118	Light prism							T	
119	Init flap and holder							T	
120	Cam wheel lever							T	
121	S-VHS lever							T	
122	Prism rihtg							T	
123	Prism left							T	
125	Main slider							T	
126	Driving belt								358 31166
127	Capstan motor (with screws)								361 10805
129	Reverse kicker with transmission gears *)								522 20451
128	Gear pulley			I					
150	Lift								443 64112
KIT B									310 31955
KIT I									310 31963
KIT L									310 32116
KIT P									310 32191
KIT Q									310 10658
KIT R									310 10659
KIT S									310 10661
KIT T									310 10662

*) optional

Um eine hohen Reparaturstandard zu gewährleisten sind mit Ausnahme von Kit T immer alle im Kit enthaltenen Teile zu tauschen.

In order to guarantee a high repairstandard all spare parts included in a kit have to be replaced with the exception of kit T.

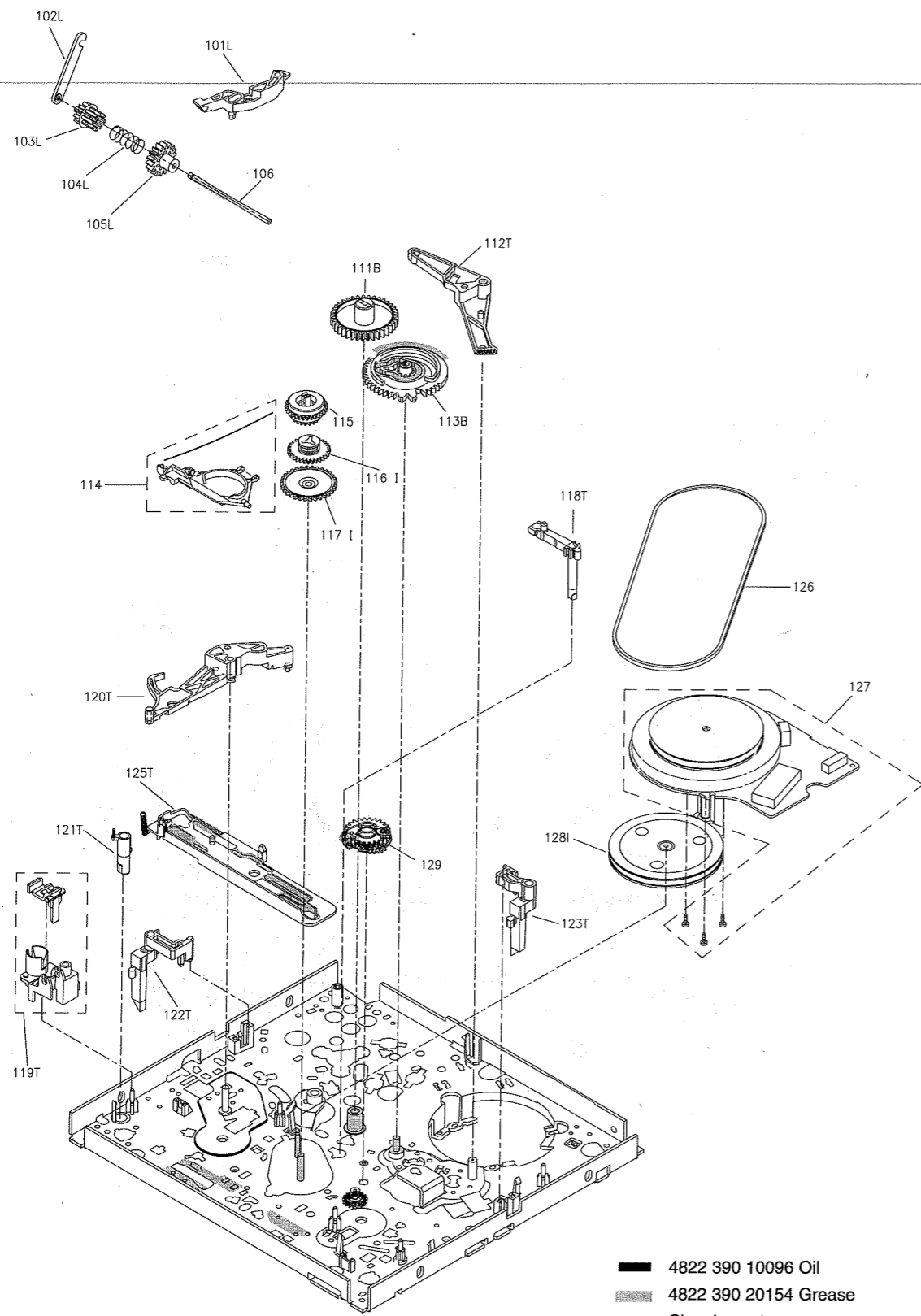
Per una riparazione garantita occorre sostituire tutti i pezzi contenuti nei kit, fatta eccezione per il kit T.

Para obtener un estándar de reparaciones elevado, es necesario cambiar todas las partes contenidas en el kit, la única excepción es para el kit T.

A fin d'obtenir un standard de réparations élevé, toutes les pièces de rechange incluses dans un kit sont à remplacer, exception faite du kit T.

Om een hoge reparatiekwaliteit te waarborgen moeten, met uitzondering van kit T, altijd alle zich in een kit bevindende onderdelen worden vervangen.

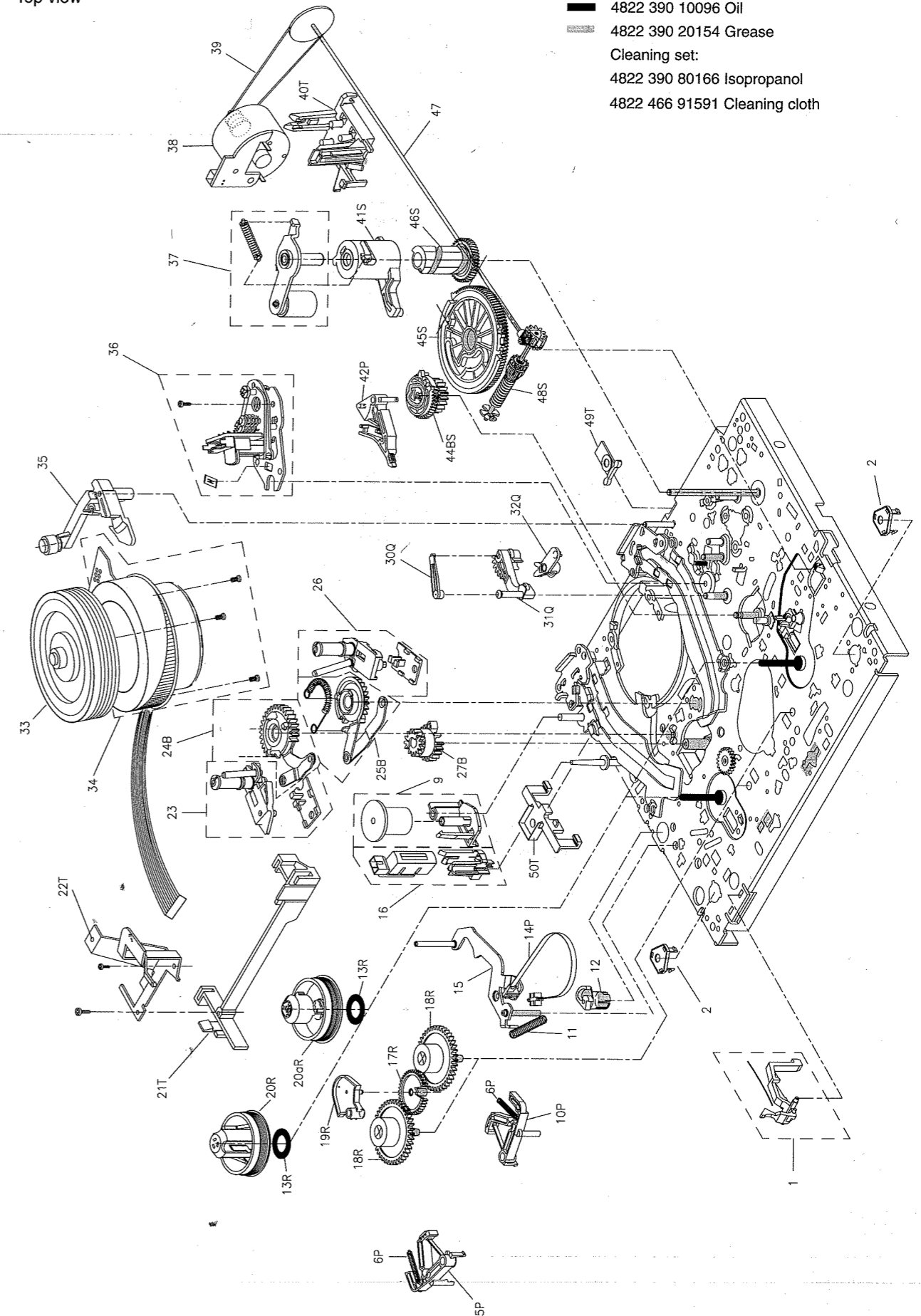
Underside view



- 4822 390 10096 Oil
- 4822 390 20154 Grease
- Cleaning set:
- 4822 390 80166 Isopropanol
- 4822 466 91591 Cleaning cloth

4.2 Exploded view

Top view



- 4822 390 10096 Oil
- 4822 390 20154 Grease
- Cleaning set:
- 4822 390 80166 Isopropanol
- 4822 466 91591 Cleaning cloth

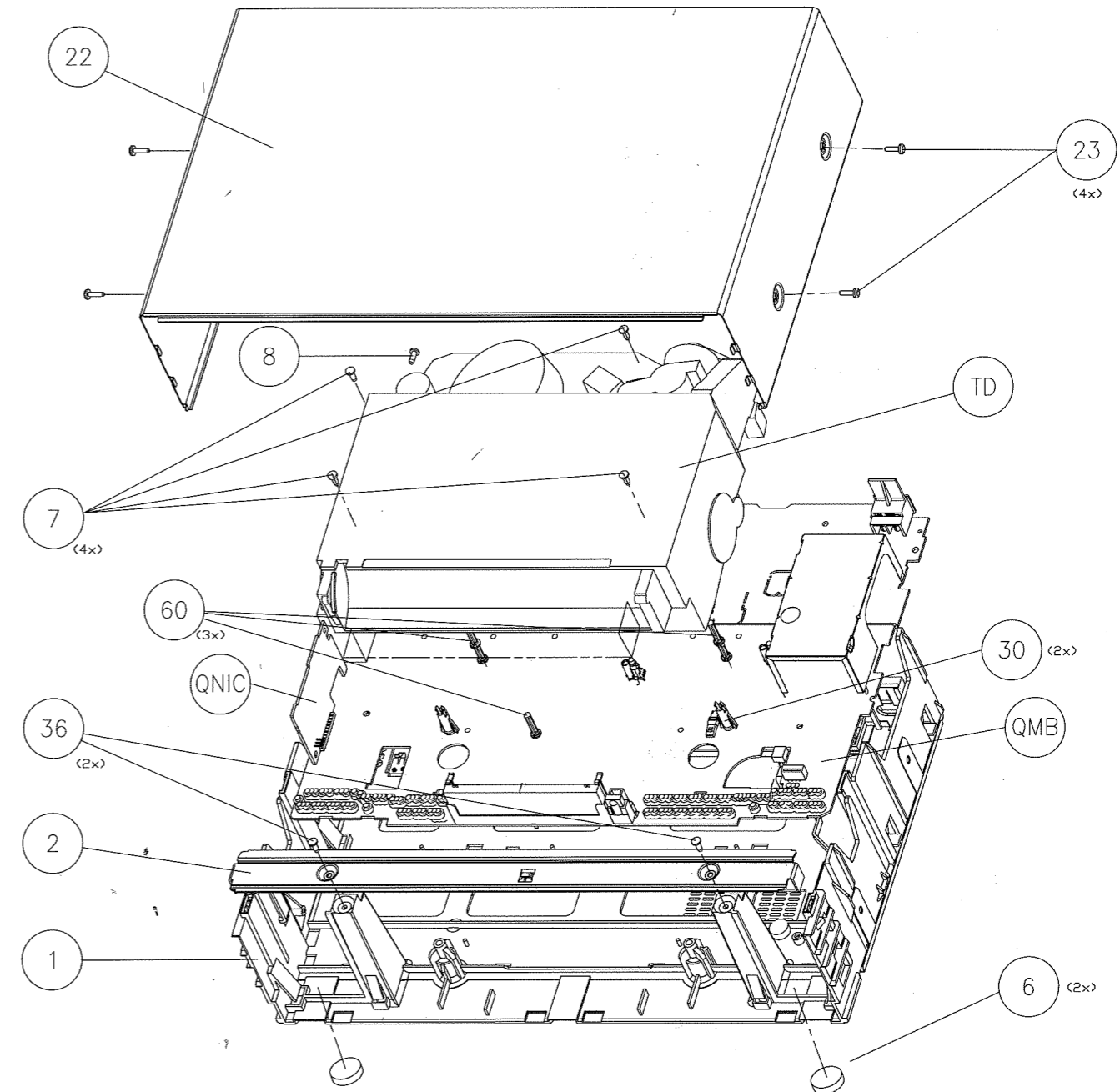
Set Parts List

Pos	Service code	Description
1	4822 464 10287	FRAME ASSY 1SCART SB110, SB115
	4822 464 10286	FRAME ASSY 2SCART VR28X, VR48X, SB215
	4822 464 10285	FRAME ASSY CINCH VR68X, SB615
2	4822 402 10709	BRACKET
6	4822 462 41806	FOOT FRAME
7	4822 502 13884	SCREW 3,5X16
8	4822 502 14431	SCREENING SCREW
22	4822 442 01371	COVER LACQUERED VRXXX
	4822 442 00887	COVER LACQUERED SBXXX
23	4822 502 14109	SCREW 3,5X10
30	4822 256 10198	DISTANCEHOLDER DECK
36	4822 502 11833	SCREW P2,9X12
60	4822 256 10359	DISTANCE HOLDER MOBO

Directions for use

Direction for use	Service code
VR285/02 DE,ES,FR,NL,IT,PT	4822 736 16116
VR285/02 GR	4822 736 16117
VR285/05 EN	4822 736 16115
VR285/07 EN	4822 736 16196
VR285/13 DA,FI,NO,SV	4822 736 16188
VR285/39 FR	4822 736 16153
VR285/58 EN,HU,PL,RU,SK,TS	4822 736 16145
VR286/02 DA,DE,ES,FI,FR,NL,NO,PT,SV	4822 736 16113
VR287/02 DE,FR,NL,IT,PT,ES	4822 736 16111
VR287/07 EN	4822 736 16109
VR287/13 DA,FI,NO,SV	4822 736 16187
VR287/39 FR	4822 736 16159
VR485/02 DA,DE,ES,FI,FR,GR,IT,NL,NO,P,SV	4822 736 16108
VR485/39 FR	4822 736 16107
VR485/58 EN,HU,PL,RU,SK,TS	4822 736 16106
VR487/02 DE,ES,FR,IT,PT	4822 736 16105
VR487/39 F	4822 736 16158
VR487/58 EN,HU,PL,RU,SK,TS	4822 736 16104
VR685/02 DE,FR,GR,IT,NL	4822 736 16156
VR685/07 EN	4822 736 16194
VR685/13 DA,FI,NO,SV	4822 736 16193
VR685/16 ES,FR,NL,PT	4822 736 16192
VR685/39 FR	4822 736 16191
VR685/58 EN,HU,PL,RU,SK,TS	4822 736 16189
VR686/02 DE,FR,NL,IT	4822 736 16103
VR686/13 DA,FI,NO,SV	4822 736 16157
VR686/39 FR	4822 736 16155
SB110/03 NL	4822 736 16121
SB115/03 NL	4822 736 16119
SB215/02 DA,DE,FI,NO,SV	4822 736 16195
SB615/03 NL	4822 736 16118
SB615/11 FR, NL	4822 736 16154

Exploded view set



Motherboard PAL, SECAM, MONO, STEREO

2464	5322 126 10223	4,7nF10%X7R	63V
2465	4822 122 33175	2,2nF 20% X7R	50V
2466	4822 124 23027	47µF	6.3V
2467	4822 122 33342	33nF10%X7R	63V
2468	4822 126 10002	100nF20%Y5V	25V
2470	4822 122 33177	10nF 20% X7R	50V
2471	4822 122 33177	10nF 20% X7R	50V
2472	5322 122 32531	100pF 5%	50V
2473	5322 122 32531	100pF 5%	50V
2474	5322 122 32531	100pF 5%	50V
2501	4822 126 10002	100nF20%Y5V	25V
2502	4822 124 22826	10µF	16V
2503	4822 124 22826	10µF	16V
2504	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2504	5322 122 32268	470pF 10%	50V for mono
2505	5322 122 32268	470pF 10%	50V for mono
2505	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2506	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2506	5322 122 32268	470pF 10%	50V for mono
2507	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2508	4822 126 10002	100nF20%Y5V	25V
2509	5322 122 32268	470pF 10%	50V for mono
2509	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2510	5322 122 32268	470pF 10%	50V for mono
2510	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2511	4822 116 10056	VDR 0805 1MA/ 8VMAX	for stereo
2511	5322 122 32268	470pF 10%	50V for mono
2512	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2514	4822 124 23027	47µF	6.3V
2515	4822 126 10002	100nF20%Y5V	25V
2516	4822 124 11568	47µF 20%	16V
2517	4822 126 10002	100nF20%Y5V	25V
2519	4822 126 10002	100nF20%Y5V	25V
2520	4822 126 10002	100nF20%Y5V	25V
2521	4822 126 10002	100nF20%Y5V	25V
2523	4822 126 10002	100nF20%Y5V	25V
2524	4822 126 10002	100nF20%Y5V	25V
2525	4822 126 10002	100nF20%Y5V	25V
2526	4822 126 10002	100nF20%Y5V	25V
2527	4822 126 10002	100nF20%Y5V	25V
2530	4822 126 13061	220nF20% Y5V	25V
2540	4822 126 10002	100nF20%Y5V	25V
2541	4822 122 33175	2,2nF 20% X7R	50V
2542	4822 122 33342	33nF10%X7R	63V
2543	4822 126 13482	470nF80/20%	16V
2545	4822 126 10002	100nF20%Y5V	25V
2600	5322 126 10184	680p 5%	50V
2601	4822 122 33175	2,2nF 20% X7R	50V
2602	4822 124 22826	10µF	16V
2603	4822 122 33177	10nF 20% X7R	50V
2604	4822 124 22739	100µF	50V for mono
2604	4822 124 22826	10µF	16V for stereo
2605	5322 122 34123	1nF10%X7R	50V
2606	4822 126 10002	100nF20%Y5V	25V
2608	4822 122 33177	10nF 20% X7R	50V
2617	4822 124 11568	47µF 20%	16V
2618	5322 122 31863	330pF 5%	50V
2619	4822 124 11568	47µF 20%	16V
2620	4822 121 51655	47nF	50V
2621	5322 122 34123	1nF10%X7R	50V
2622	4822 121 43873	27nF 5%	50V
2646	4822 126 13482	470nF80/20%	16V
2647	4822 126 10002	100nF20%Y5V	25V
2648	4822 124 23055	22µF20%	16V
2650	4822 126 10002	100nF20%Y5V	25V
2651	4822 124 11568	47µF 20%	16V
2652	4822 124 22826	10µF	16V
2656	4822 126 14127	39nF 10%	50V
2657	4822 122 33128	15nF10%X7R	63V
2700	4822 126 10002	100nF20%Y5V	25V
2701	4822 126 10002	100nF20%Y5V	25V
2702	4822 126 10002	100nF20%Y5V	25V
2704	4822 124 23052	100µF20%	16V
2705	5322 122 32268	470pF 10%	50V
2706	4822 122 33575	220pF 5%	50V
2707	5322 122 33861	120pF10%	50V
2708	4822 124 23055	22µF20%	16V
2709	4822 126 10002	100nF20%Y5V	25V
2715	5322 122 32661	56pF 5%	50V
2716	5322 122 32661	56pF 5%	50V
2722	5322 122 34123	1nF10%X7R	50V
2723	4822 122 33177	10nF 20% X7R	50V
2726	4822 126 12104	12nF 5%X7R	63V
2727	4822 124 23055	22µF20%	16V
2728	4822 124 23055	22µF20%	16V
2729	4822 122 33177	10nF 20% X7R	50V
2730	5322 122 32452	47pF 5%	63V
2731	5322 122 32452	47pF 5%	63V
2732	5322 122 32452	47pF 5%	63V
2733	4822 122 33177	10nF 20% X7R	50V
2734	4822 126 10002	100nF20%Y5V	25V
2735	5322 122 32452	47pF 5%	63V
2740	4822 124 41576	2,2µF 20%	50V
2741	4822 126 10002	100nF20%Y5V	25V
2742	4822 124 23055	22µF20%	16V
2743	4822 126 13061	220nF20% Y5V	25V
2744	4822 124 40786	2,2µF20%	63V
2745	4822 122 33575	220pF 5%	50V
2746	4822 126 10002	100nF20%Y5V	25V
2747	4822 126 10002	100nF20%Y5V	25V
2748	4822 126 12945	8,2pF 2%	50V
2749	4822 126 13061	220nF20% Y5V	25V
2750	4822 124 40786	2,2µF20%	63V
2752	4822 126 13061	220nF20% Y5V	25V
2780	4822 124 22826	10µF	16V
2781	4822 122 33177	10nF 20% X7R	50V
2782	4822 126 10002	100nF20%Y5V	25V
2783	5322 126 10184	680p 5%	50V
2784	4822 124 11568	47µF 20%	16V
2785	5322 122 32531	100pF 5%	50V
2786	4822 124 11569	4,7µF 20%	25V
2787	4822 124 11569	4,7µF 20%	25V
2788	5322 122 32654	22nF10% X7R	63V
2789	4822 122 33177	10nF 20% X7R	50V
2790	4822 122 33177	10nF 20% X7R	50V
2791	4822 124 11569	4,7µF 20%	25V
2792	4822 124 11569	4,7µF 20%	25V
2793	5322 122 32481	15pF 5%	50V
2794	4822 126 10002	100nF20%Y5V	25V
2795	5322 122 34123	1nF10%X7R	50V
2796	4822 124 11569	4,7µF 20%	25V
2800	4822 126 13689	18pF 1%	63V
2801	5322 122 32659	33pF 5%	50V
2802	4822 126 14118	100nF -20+80%	50V
2802	4822 126 10002	100nF20%Y5V	25V
2803	4822 126 10002	100nF20%Y5V	25V
2804	4822 124 23053	1µF20%	63V
2805	4822 124 23027	47µF	6.3V
2810	5322 122 33861	120pF10%	50V
2811	5322 122 32531	100pF 5%	50V
2829	4822 122 33177	10nF 20% X7R	50V
2831	5322 122 32481	15pF 5%	50V
2850	4822 124 23052	100µF20%	16V
2851	5322 122 32654	22nF10% X7R	63V
2852	4822 124 23052	100µF20%	16V
2853	5322 122 32654	22nF10% X7R	63V
2854	4822 124 40786	2,2µF20%	63V
2855	5322 122 32654	22nF10% X7R	63V
2856	5322 122 32654	22nF10% X7R	63V
2857	4822 126 13061	220nF20% Y5V	25V
2858	4822 126 13061	220nF20% Y5V	25V
2859	4822 126 13061	220nF20% Y5V	25V
2860	4822 126 13061	220nF20% Y5V	25V
2861	4822 126 13061	220nF20% Y5V	25V
2862	4822 126 13061	220nF20% Y5V	25V
2863	4822 126 13061	220nF20% Y5V	25V
2864	4822 126 13061	220nF20% Y5V	25V
2865	5322 126 10223	4,7nF10%X7R	63V
2866	4822 124 11568	47µF 20%	16V
2867	4822 124 22826	10µF	16V

▲ ... Safety component, use only this type

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Motherboard PAL, SECAM, MONO, STEREO

2032	4822 124 11568	47µF 20%	16V
2033	4822 126 10002	100nF20%Y5V	25V
2034	4822 122 33177	10nF 20% X7R	50V
2035	4822 122 33177	10nF 20% X7R	50V
2036	4822 122 33515	82pF 5%	63V
2037	4822 126 14124	220pF 2%	50V
2038	5322 122 32658	22pF 5%	50V
2038	5322 122 32139	12pF 2%	50V for 2 heads
2039	4822 124 23053	1µF20%	63V
2040	5322 122 32654	22nF10%X7R	63V
2041	4822 124 23053	1µF20%	63V
2042	4822 122 33797	47nF20%Y5V	50V
2043	4822 124 41969	1µF20%	50V
2044	4822 124 23053	1µF20%	63V
2045	4822 126 13196	100nF10%X7R	50V
2046	5322 122 34123	1nF10%X7R	50V
2048	5322 122 31873	2,7pF0,5%	100V
2047	4822 122 33177	10nF 20% X7R	50V
2049	4822 124 11568	47µF 20%	16V
2054	4822 124 41969	1µF20%	50V
2055	4822 122 33177	10nF 20% X7R	50V
2059	4822 124 23053	1µF20%	63V
2064	5322 122 31946	27pF 5%	63V
2066	4822 122 33177	10nF 20% X7R	50V
2080	5322 122 32658	22pF 5%	50V
2081	4822 122 33177	10nF 20% X7R	50V
2082	4822 122 33177	10nF 20% X7R	50V
2083	4822 122 33177	10nF 20% X7R	50V
2084	4822 122 33177	10nF 20% X7R	50V
2085	4822 126 10002	100nF20%Y5V	25V
2086	4822 124 11568	47µF 20%	16V
2087	4822 122 33177	10nF 20% X7R	50V
2100	4822 122 33177	10nF 20% X7R	50V
2101	5322 122 32531	100pF 5%	50V
2102	5322 122 32658	22pF 5%	50V
2103	5322 122 34123	1nF10%X7R	50V
2104	4822 122 33177	10nF 20% X7R	50V
2105	4822 122 33177	10nF 20% X7R	50V
2106	4822 122 33177	10nF 20% X7R	50V
2107	4822 122 33177	10nF 20% X7R	50V
2108	5322 122 33538	150pF 2%	63V
2109	5322 122 32481	15pF 5%	50V
2110	4822 126 10002	100nF20%Y5V	25V
2111	4822 126 13694	68pF 1%	63V
2112	4822 122 33177	10nF 20% X7R	50V
2113	4822 126 10002	100nF20%Y5V	25V
2115	4822 122 33575	220pF 5%	50V
2116	4822 122 33177	10nF 20% X7R	50V
2117	5322 122 34123	1nF10%X7R	50V
2118	5322 122 32659	33pF 5%	50V
2119	5322 122 32531	100pF 5%	50V for mstd /39
2119	4822 122 33797	47nF 20%	50V
2121	5322 122 34123	1nF10%X7R	50V
2122	4822 122 33177	10nF 20% X7R	50V
2123	4822 126 10002	100nF20%Y5V	25V
2124	4822 126 10002	100nF20%Y5V	25V
2125	4822 122 33515	82pF 5%	63V
2126	5322 122 31946	27pF 5%	63V
2128	4822 122 33515	82pF 5%	63V
2129	4822 122 33515	82pF 5%	63V
2130	4822 122 33575	220pF 5%	50V
2132	5322 122 32269	6,8pF 5%	50V
2133	5322 122 32452	47pF 5%	63V
2134	4822 122 33575	220pF 5%	50V
2135	5322 122 31946	27pF 5%	63V
2137	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2138	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2150	4822 122 33177	10nF 20% X7R	50V
2151	4822 126 13061	220nF20% Y5V	25V
2152	4822 124 11568	47µF 20%	16V
2153			

Motherboard PAL, SECAM, MONO, STEREO

3302	4822 116 52175	100E	5%	0,5W	
3303	4822 116 83883	470E	5%	0,5W	
3304	4822 050 11002	1K00	1%	0,4W	
3305	4822 116 52283	4K7	5%	0,5W	
3312	4822 116 52249	1K8	5%	0,5W	
3313	4822 116 83884	47K	5%	0,5W	
3350	4822 117 10833	10K	1%	0,1W	
3351	4822 051 20223	22K00	5%	0,1W	
3352	4822 051 20562	5K60	5%	0,1W	
3353	4822 117 10833	10K	1%	0,1W	
3354	4822 117 11449	2K2	1%	0,1W	
3355	4822 051 20822	8K20	5%	0,1W	
3356	4822 051 20223	22K00	5%	0,1W	
3357	4822 051 20472	4K70	5%	0,1W	
3358	4822 117 11149	82K	1%	0,1W	
3359	4822 051 20471	470R00	5%	0,1W	
3360	4822 051 20689	68R00	5%	0,1W	
3361▲	4822 052 10479	47R00	5%	0,33W	
3362	4822 051 20472	4K70	5%	0,1W	
3363	4822 050 21208	1R20	1%	0,6W	
3365	4822 116 83874	220K	5%	0,5W	
3369	4822 116 83882	39K	5%	0,5W	
3370	4822 116 83882	39K	5%	0,5W	
3374	4822 051 20271	270R00	5%	0,1W	
3375	4822 051 10102	1K00	2%	0,25W	
3376	4822 051 20008	0R00 JUMP (0805)			
3377	4822 051 20472	4K70	5%	0,1W	
3378	4822 051 20272	2K70	5%	0,1W	
3379	4822 101 11383	470E	30%	POT	
3380	4822 051 10102	1K00	2%	0,25W	
3381	4822 051 20104	100K00	5%	0,1W	
3382	4822 117 10833	10K	1%	0,1W	
3383	4822 116 83874	220K	5%	0,5W	
3384▲	4822 052 10101	100R00	5%	0,33W	
3385	4822 116 52269	3K30	1%	0,4W	
3386	4822 116 52219	330R00	1%	0,4W	
3387	4822 116 52226	560R00	5%	0,5W	
3387	4822 116 83883	470R00	5%	0,5W	for stereo
3388	4822 116 52226	560R00	5%	0,5W	
3388	4822 116 83883	470R00	5%	0,5W	for stereo
3389	4822 117 11449	2K2	1%	0,1W	
3390	4822 051 20224	220K00	5%	0,1W	
3391	4822 051 20224	220K00	5%	0,1W	
3392▲	4822 053 21335	3M30	5%	0,5W	
3393▲	4822 053 21335	3M30	5%	0,5W	
3394	4822 116 52256	2K2	5%	0,5W	
3395	4822 116 52257	22K	5%	0,5W	
3396	4822 116 52257	22K	5%	0,5W	
3397	4822 051 20101	100E	5%	0,5W	
3398	4822 051 20101	100E	5%	0,5W	
3400	4822 116 83864	10K	5%	0,5W	
3401	4822 116 83864	10K	5%	0,5W	
3402	4822 050 11002	1K00	1%	0,4W	
3403	4822 116 52256	2K2	5%	0,5W	
3404	4822 116 83864	10K	5%	0,5W	
3405	4822 116 83876	270E	5%	0,5W	
3406	4822 116 83864	10K	5%	0,5W	
3407	4822 116 83864	10K	5%	0,5W	
3408	4822 116 52256	2K2	5%	0,5W	
3410	4822 051 20472	4K70	5%	0,1W	
3411	4822 116 83864	10K	5%	0,5W	
3412	4822 116 52249	1K8	5%	0,5W	
3413	4822 050 11002	1K00	1%	0,4W	
3414▲	4822 052 10109	10R00	5%	0,33W	
3415▲	4822 052 10109	10R00	5%	0,33W	
3416	4822 116 52257	22K	5%	0,5W	
3417	4822 116 52283	4K7	5%	0,5W	
3418	4822 050 11002	1K00	1%	0,4W	
3419	4822 051 20472	4K70	5%	0,1W	
3420	4822 117 10833	10K	1%	0,1W	
3421	4822 116 83864	10K	5%	0,5W	
3423	4822 116 83876	270R	5%	0,5W	
3424	4822 116 52256	2K2	5%	0,5W	
3430	4822 116 52249	1K8	5%	0,5W	
3431	4822 116 52276	3K9	5%	0,5W	
3432	4822 116 83864	10K	5%	0,5W	
3433	4822 116 52256	2K2	5%	0,5W	
3434	4822 116 52257	22K	5%	0,5W	
3435	4822 116 83864	10K	5%	0,5W	
3436	4822 050 11002	1K00	1%	0,4W	
3437	4822 116 83961	6K8	5%	0,5W	
3438	4822 051 20472	4K70	5%	0,1W	
3440▲	4822 052 10228	2R20	5%	0,33W	
3441	4822 116 80176	1E	5%	0,5W	
3442	4822 116 52304	82K	5%	0,5W	
3443	4822 116 52257	22K	5%	0,5W	
3444	4822 116 52276	3K9	5%	0,5W	
3445	4822 116 83864	10K	5%	0,5W	
3446	4822 116 52257	22K	5%	0,5W	
3447	4822 116 52257	22K	5%	0,5W	
3448	4822 116 83864	10K	5%	0,5W	
3449	4822 117 10833	10K	1%	0,1W	
3450	4822 116 52256	2K2	5%	0,5W	
3451	4822 116 83864	10K	5%	0,5W	
3452	4822 116 52249	1K8	5%	0,5W	
3453	4822 116 52283	4K7	5%	0,5W	
3454	4822 116 52283	4K7	5%	0,5W	
3455	4822 116 52283	4K7	5%	0,5W	
3456	4822 117 10833	10K	1%	0,1W	
3457	4822 050 11002	1K00	1%	0,4W	
3458	4822 051 20223	22K00	5%	0,1W	
3459	4822 116 83876	270E	5%	0,5W	
3460	4822 116 83884	47K	5%	0,5W	
3461	4822 051 20472	4K70	5%	0,1W	
3462	4822 051 20563	56K00	5%	0,1W	
3463	4822 116 52283	4K7	5%	0,5W	
3464	4822 116 52256	2K2	5%	0,5W	
3466	4822 116 83864	10K	5%	0,5W	
3469	4822 116 83876	270E	5%	0,5W	
3470	4822 116 52264	27K	5%	0,5W	
3471	4822 116 52222	390E	5%	0,5W	
3472	4822 116 52264	27K	5%	0,5W	
3473	4822 116 52222	390E	5%	0,5W	
3474	4822 116 83864	10K	5%	0,5W	
3475	4822 116 52289	5K6	5%	0,5W	
3476	4822 116 52222	390E	5%	0,5W	
3477	4822 116 52283	4K7	5%	0,5W	
3478	4822 051 20104	100K00	5%	0,1W	
3479	4822 116 52283	4K7	5%	0,5W	
3480	4822 116 83884	47K	5%	0,5W	
3481	4822 116 52256	2K2	5%	0,5W	
3482	4822 116 52257	22K	5%	0,5W	
3483	4822 116 83864	10K	5%	0,5W	
3484	4822 116 52283	4K7	5%	0,5W	
3488	4822 051 20471	470R00	5%	0,1W	
3489	4822 116 52283	4K7	5%	0,5W	
3490	4822 116 83872	220R	5%	0,5W	
3491	4822 116 83884	47K	5%	0,5W	
3492	4822 051 20473	47K00	5%	0,1W	
3493	4822 051 20225	2M20	5%	0,1W	
3494	4822 051 20104	100K00	5%	0,1W	
3495	4822 051 20104	100K00	5%	0,1W	
3496	4822 051 20472	4K70	5%	0,1W	
3497	4822 051 20472	4K70	5%	0,1W	
3498	4822 051 20472	4K70	5%	0,1W	
3499	4822 116 52283	4K7	5%	0,5W	
3501	4822 051 10102	1K00	2%	0,25W	
3502	4822 051 10102	1K00	2%	0,25W	
3503	4822 051 10102	1K00	2%	0,25W	
3505	4822 051 20759	75R00	5%	0,1W	
3509	4822 051 20008	0R00 JUMP (0805)			
3510	4822 051 20008	0R00 JUMP (0805)			
3512	4822 051 20682	6K80	5%	0,1W	
3513	4822 116 83872	220E	5%	0,5W	
3514	4822 116 83961	6K80	5%		
3515	4822 051 20682	6K80	5%	0,1W	
3516	4822 117 11503	220R	1%	0,1W	
3517	4822 116 52234	100K	5%	0,5W	
3518	4822 116 52234	100K	5%	0,5W	
3519	4822 051 20822	8K20	5%	0,1W	

▲ ... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

2868	4822 126 13061	220nF20% Y5V	25V	
2869	5322 126 10223	4,7nF10%X7R	63V	
2870	4822 124 11568	47µF 20%	16V	
2871	4822 124 22826	10µF	16V	
2872	4822 124 22826	10µF	16V	
2873	4822 124 22826	10µF	16V	
2874	4822 124 22826	10µF	16V	
2875	4822 124 22826	10µF	16V	
2876	4822 124 22826	10µF	16V	
2877	4822 124 22826	10µF	16V	
2880	4822 124 22826	10µF	16V	
2881	4822 124 22826	10µF	16V	
2882	5322 126 10223	4,7nF10%X7R	63V	
2883	5322 116 80853	560pF 5%	63V	
2884	5322 126 10223	4,7nF10%X7R	63V	
2885	5322 116 80853	560pF 5%	63V	
2888	4822 124 22826	10µF	16V	
2889	4822 126 10002	100nF20%Y5V	25V	
3100	4822 116 52219	330E	5%	0,5W
3101	4822 051 20332	3K30	5%	0,1W
3102	4822 116 52231	820E	5%	0,5W
3103	4822 116 52228	680E	5%	0,5W
3104	4822 050 11002	1K00	1%	0,4W
3105	4822 116 52222	390E	5%	0,5W
3106	4822 116 52226	560E	5%	0,5W
3107	4822 050 11002	1K00	1%	0,4W
3109	4822 116 52195	47E	5%	0,5W
3110	4822 116 52207	1K2	5%	0,5W
3111	4822 116 52256	2K2	5%	0,5W
3112	4822 051 10102	1K00	2%	0,25W
3113	4822 051 20561	560R0	5%	0,1W
3114	4822 117 10833	10K	1%	0,1W
3115	4822 116 52251	18K	5%	0,5W
3116	4822 051 10102	1K00	2%	0,25W
3117	4822 116 52256	2K2	5%	0,5W
3118	4822 116 52283	4K7	5%	0,5W
3119	4822 116 52271	33K	5%	0,5W
3120	4822 116 52303	8K20	5%	0,5W
3121	4822 051 20182	1K80	5%	0,1W
3122	4822 051 10102	1K00	2%	0,25W
3123	4822 116 83864	10K	5%	0,5W
3124	4822 116 52243	1K5	5%	0,5W
3125	4822 117 11449	2K2	1%	0,1W
3126	4822 051 10102	1K00	2%	0,25W
3127	4822 117 11449	2K2	1%	0,1W
3128	4822 117 11449	2K2	1%	0,1W
3129	4822 051 10102	1K00	2%	0,25W
3134	4822 117 11503	220R	1%	0,1W
3135	4822 117 11503	220R	1%	0,1W
3151	4822 051 20104	100K00	5%	0,1W
3152	4822 051 20393	39K00	5%	0,1W
3153				

Motherboard PAL, SECAM, MONO, STEREO

3857	4822 051 20335	3M30	5%	0,1W
3858	4822 117 11449	2K2	1%	0,1W
3860	4822 051 20101	100R00	5%	0,1W
3861	4822 051 20101	100R00	5%	0,1W
3862	4822 051 20104	100K00	5%	0,1W
3863	4822 051 20104	100K00	5%	0,1W
3864	4822 051 20472	4K70	5%	0,1W
3865	4822 051 20472	4K70	5%	0,1W
3866	4822 051 20475	4M70	5%	0,1W
3867	4822 051 20475	4M70	5%	0,1W
3870	4822 051 20472	4K70	5%	0,1W
3871	4822 051 20223	22K00	5%	0,1W
3901	4822 051 20008	OR00 JUMP (0805)		
3902	4822 051 20008	OR00 JUMP (0805)		
3903	4822 051 20008	OR00 JUMP (0805)		
3905	4822 051 20008	OR00 JUMP (0805)		
3906	4822 051 20008	OR00 JUMP (0805)		
3907	4822 051 20008	OR00 JUMP (0805)		
3908	4822 051 20008	OR00 JUMP (0805)		
3910	4822 051 20008	OR00 JUMP (0805)		
3911	4822 051 20008	OR00 JUMP (0805)		
3912	4822 051 20008	OR00 JUMP (0805)		
3913	4822 051 20008	OR00 JUMP (0805)		
3915	4822 051 20008	OR00 JUMP (0805)		
3916	4822 051 20008	OR00 JUMP (0805)		
3917	4822 051 20008	OR00 JUMP (0805)		
3918	4822 051 20008	OR00 JUMP (0805)		
3919	4822 051 20008	OR00 JUMP (0805)		
3922	4822 051 20008	OR00 JUMP (0805)		
3923	4822 051 20008	OR00 JUMP (0805)		
3925	4822 051 20008	OR00 JUMP (0805)		
3926	4822 051 20008	OR00 JUMP (0805)		
3927	4822 051 20008	OR00 JUMP (0805)		
3928	4822 051 20008	OR00 JUMP (0805)		
3929	4822 051 20008	OR00 JUMP (0805)		
3930	4822 051 20008	OR00 JUMP (0805)		
3931	4822 051 20008	OR00 JUMP (0805)		
3941	4822 051 20008	OR00 JUMP (0805)		
3942	4822 051 20008	OR00 JUMP (0805)		
3943	4822 051 20008	OR00 JUMP (0805)		
3944	4822 051 20008	OR00 JUMP (0805)		
3945	4822 051 20008	OR00 JUMP (0805)		
3946	4822 051 20008	OR00 JUMP (0805)		
3947	4822 051 20008	OR00 JUMP (0805)		
3950	4822 051 20008	OR00 JUMP (0805)		
3951	4822 051 20008	OR00 JUMP (0805)		
3956	4822 051 20008	OR00 JUMP (0805)		
3960	4822 051 20008	OR00 JUMP (0805)		
3961	4822 051 20008	OR00 JUMP (0805)		
3962	4822 051 20008	OR00 JUMP (0805)		
3965	4822 051 20008	OR00 JUMP (0805)		
3966	4822 051 20008	OR00 JUMP (0805)		
3967	4822 051 20008	OR00 JUMP (0805)		
3970	4822 051 20008	OR00 JUMP (0805)		
3972	4822 051 20008	OR00 JUMP (0805)		
3973	4822 051 20008	OR00 JUMP (0805)		
3984	4822 051 20008	OR00 JUMP (0805)		
3985	4822 051 20008	OR00 JUMP (0805)		
3986	4822 051 20008	OR00 JUMP (0805)		
3988	4822 051 20008	OR00 JUMP (0805)		
3989	4822 051 20008	OR00 JUMP (0805)		
3990	4822 051 20008	OR00 JUMP (0805)		
3998	4822 051 20008	OR00 JUMP (0805)		
3999	4822 051 20008	OR00 JUMP (0805)		
4501	4822 117 12708	39K00	5%	0,1W for INST
4505	4822 117 10833	10K	1%	0,1W for STBY
4511	4822 117 10833	10K	1%	0,1W for STBY
4512	4822 117 12708	39K00	5%	0,1W for REC
4517	4822 051 20182	1K80	5%	0,1W for DOWN
4517	4822 117 10833	10K	1%	0,1W for STBY
4518	4822 117 12708	39K00	5%	0,1W for REC
4523	4822 117 10833	10K	1%	0,1W for STBY
4523	4822 051 20008	OR00 JUMP (0805)		for ST/EJ
4563	4822 117 10833	10K	1%	0,1W for STBY
4569	4822 051 20472	4K70	5%	0,1W for UP

4570	4822 117 12708	39K00	5%	0,1W for REC
4579	4822 051 20182	1K80	5%	0,1W for DOWN
4579	4822 117 12708	39K00	5%	0,1W for INST
4580	4822 117 12708	39K00	5%	0,1W for REC
4583	4822 117 10833	10K00	1%	0,1W for STBY
4583	4822 051 20472	4K70	5%	0,1W for UP
4583	4822 051 20182	1K80	5%	0,1W for DOWN
4591	4822 117 12708	39K00	5%	0,1W for INST
4591	4822 051 20182	1K80	5%	0,1W for DOWN
4595	4822 117 12708	39K00	5%	0,1W for INST
4595	4822 051 20472	4K70	5%	0,1W for UP
4596	4822 051 20008	OR00 JUMP (0805)		for EJECT
4596	4822 117 12708	39K00	5%	0,1W for REC
4609	4822 051 20182	1K80	5%	0,1W for DOWN
4653	4822 051 20182	1K80	5%	0,1W for DOWN
4659	4822 051 20182	1K80	5%	0,1W for STOP
4559	4822 117 12708	39K00	5%	0,1W for INST
4660	4822 051 20472	4K70	5%	0,1W for REW
4660	4822 051 20182	1K80	5%	0,1W for STOP
4660	4822 051 20183	18K00	5%	0,1W for PLAY
4665	4822 051 20472	4K70	5%	0,1W for UP
4671	4822 051 20008	OR00 JUMP (0805)		for ST/EJ
4671	4822 051 20182	1K80	5%	0,1W for DOWN
4671	4822 051 20472	4K70	5%	0,1W for UP
4672	4822 051 20183	18K00	5%	0,1W for PLAY
4678	4822 117 10833	10K	1%	0,1W for WIND
4683	4822 051 20008	OR00 JUMP (0805)		for ST/EJ
4683	4822 051 20472	4K70	5%	0,1W for UP
4684	4822 117 12708	39K00	5%	0,1W for REC
4740	4822 051 20472	4K70	5%	0,1W for REW
4745	4822 051 20008	OR00 JUMP (0805)		for ST/EJ
4746	4822 051 20472	4K70	5%	0,1W for REW
4752	4822 051 20472	4K70	5%	0,1W for REW
4757	4822 051 20008	OR00 JUMP (0805)		for ST/EJ
4758	4822 051 20183	18K00	5%	0,1W for PLAY
4763	4822 117 12708	39K00	5%	0,1W for INST
4764	4822 051 20183	18K00	5%	0,1W for PLAY
4764	4822 117 10833	10K	1%	0,1W for WIND
4764	4822 117 12708	39K00	5%	0,1W for REC
4772	4822 117 10833	10K	1%	0,1W for WIND
4772	4822 051 20472	4K70	5%	0,1W for REW

COILS

5000	4822 157 11234	10µH	5%	
5001	4822 152 20677	10µH		
5002	4822 152 20677	10µH		
5004	4822 157 11142	47µH	5%	
5005	4822 157 11145	150µH	5%	
5020	4822 157 10972	15µH	5%	
5026	4822 157 11228	LAN02TB101J		
5036	4822 157 11149	56µH	5%	
5080▲	4822 157 11226	47µH	5%	
5100	4822 157 63661	FIL LC VAR 4M286	5VS	
5101	4822 157 10972	15µH	5%	
5102	4822 157 11149	56µH	5%	
5103	4822 157 63661	FIL LC VAR 4M286	5VS	
5104	4822 157 11227	150µH	5%	
5105	4822 157 11227	150µH	5%	
5106	4822 157 11151	330µH	5%	
5107	4822 157 11228	LAN02TB101J		
5108	4822 157 63659	FIL LC VAR 1G072	5V2	
5111	4822 157 11229	15µH	5%	
5112	4822 157 10972	15µH	5%	
5113	4822 157 11145	150µH	5%	
5114	4822 157 10972	15µH	5%	
5115	4822 157 63717	6,8µH		
5130	4822 157 71206	BLM21A10PT		
5150▲	4822 157 53906	47µH		
5200	4822 152 20677	10µH		
5300▲	4822 157 53005	0.33µH	20%	
5350	4822 157 51462	10µH		
5351	4822 157 71461	22µH	10%	
5352▲	4822 157 10454	Line filter		

Motherboard PAL, SECAM, MONO, STEREO

3520	4822 117 10353	150R	1%	0,1W
3521	4822 116 83961	6K8	5%	
3522	4822 051 20821	820R00	5%	0,1W
3523	4822 051 20008	OR00 JUMP (0805)		
3524	4822 051 20759	75R00	5%	0,1W
3525	4822 051 20822	8K20	5%	0,1W
3526	4822 117 11449	2K20	1%	0,1W
3527	4822 051 20472	4K70	5%	0,1W
3528	4822 116 83884	47K	5%	0,5W
3529	4822 051 20759	75R00	5%	0,1W
3530	4822 051 20472	4K70	5%	0,1W
3531	4822 051 20101	100R00	5%	0,1W
3532	4822 051 20101	100R00	5%	0,1W
3533	4822 051 20759	75R00	5%	0,1W
3534	4822 051 20008	OR00 JUMP (0805)		
3535	4822 117 11503	220E	1%	0,1W
3536	4822 117 11503	220E	1%	0,1W
3537	4822 116 83872	220E	5%	0,5W
3538	4822 116 83961	6K8	5%	
3539	4822 116 83961	6K8	5%	
3540	4822 117 11503	220E	1%	0,1W
3542	4822 117 11503	220E	1%	0,1W
3543	4822 051 20471	470R00	5%	0,1W
3544	4822 117 11503	220R	1%	0,1W
3545	4822 116 52256	2K2	5%	0,5W
3546	4822 116 52256	2K2	5%	0,5W
3547	4822 051 20479	47R00	5%	0,1W
3548	4822 051 20682	6K80	5%	0,1W
3549	4822 051 20101	100R00	5%	0,1W
3550	4822 051 20105	1M00	5%	0,1W
3551	4822 051 20105	1M00	5%	0,1W
3552	4822 051 20682	6K80	5%	0,1W
3553	4822 051 20101	100R00	5%	0,1W
3554	4822 051 20101	100R00	5%	0,1W
3555	4822 051 20008	OR00 JUMP (0805)		
3556	4822 051 20474	470K00	5%	0,1W
3557	4822 051 20104	100K00	5%	0,1W
3560	4822 051 20008	OR00 JUMP (0805)		
3561	4822 051 20472	4K70	5%	0,1W
3562	4822 051 20473	47K00	5%	0,1W
3563	4822 051 20822	8K20	5%	0,1W
3570	4822 116 83864	10K	5%	0,5W
3571	4822 117 11383	12K	1%	0,1W
3600	4822 116 52257	22K	5%	0,5W
3601	4822 117 10833	10K	1%	0,1W
3602	4822 051 20472	4K70	5%	0,1W
3603	4822 051 20101	100R00	5%	0,1W
3604	4822 116 52257	22K	5%	0,5W
3605	4822 117 11449	2K2	1%	0,1W
3606	4822 116 52195	47E	5%	0,5W
3607	4822 051 20394	390K00	5%	0,1W
3608	4822 117 11383	12K	1%	0,1W
3609	4822 051 20822	8K20	5%	0,1W
3610	4822 117 11449	2K2	1%	0,1W
3611	4822 051 20101	100R00	5%	0,1W for mono
3611	4822 051 20681	680R00	5%	0,1W for stereo
3612	4822 117 11449	2K2	1%	0,1W
3615	4822 051 20101	100R00	5%	0,1W
3618	4822 100 12159	100K	30%	POT
3619	4822 051 20158	1R50	5%	0,1W
3620	4822 051 20473	47K00	5%	0,1W
3622	4822 051 20335	3M30	5%	0,1W
3623	4822 117 10833	10K	1%	0,1W
3624	4822 051 20332	3K30	5%	0,1W
3625	4822 051 20339	33R00	5%	0,1W
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Motherboard PAL, SECAM, MONO, STEREO

7507	4822 209 90016	STV6400
7510	5322 130 42136	BC848C
7511	4822 130 42615	BC817-40
7512	5322 130 42136	BC848C
7513	5322 209 14481	HEF4053BT
7513	5322 209 14481	HEF4053BT
7540	4822 209 15504	SDA5650 for VPS/PDC
7540	4822 209 32728	SDA5642.6 for VPS only
7600	4822 130 60373	BC856B
7601	5322 130 60159	BC846B
7602	5322 130 60159	BC846B
7603	4822 130 60511	BC847B
7604	4822 130 41715	BC328-40
7609	4822 130 42615	BC817-40
7720	4822 209 90288	TDA9800T/V3
7721	4822 209 90018	TDA9812T for SECAM mono
7721	4822 209 90431	TDA9813T/V2 for PAL FM stereo
7721	4822 209 90452	TDA9814T/V3 for SECAM stereo
7722	5322 209 14481	HEF4053BT
7723	5322 130 60508	BC857B
7724	5322 130 42136	BC848C
7725	4822 130 60511	BC847B
7726	4822 130 63732	MMUN2212
7728	4822 130 10802	BSS138
7729	4822 130 60511	BC847B
7730	4822 130 60511	BC847B
7731	4822 130 63732	MMUN2212
7780	4822 209 32501	TDA9840T/V2
7800	4822 209 15524	LC74781-9663
7810	4822 130 42353	BSF19-F2
7850	4822 209 15525	TDA9604H/N1
7851	4822 130 60511	BC847B
7852	4822 130 60511	BC847B
7860	4822 209 60177	LM339D
7890	4822 209 33113	ST24C08CB6 for GEMSTAR
7890	4822 209 30953	ST24C04CB6

Motherboard PAL, SECAM, MONO, STEREO

5353▲	4822 146 10786	SRW32ES-E01 (TRAFO)
5353/80	4822 466 11688	ISOL. PLATE (TRAFO 5353)
5354	4822 157 51462	10µH
5355▲	4822 157 53005	0,33µH
5358	4822 157 60147	2,2µH
5361	4822 157 52286	22µH
5368	4822 157 60147	2,2µH
5400	4822 152 20677	10µH
5402	4822 152 20677	10µH
5601	4822 157 11249	10.000UH5%
5602	4822 157 11151	330µH 5%
5603	4822 157 53531	Coil
5604	4822 157 11251	3,3µH 10%
5605	4822 157 71206	BLM21A10PT
5700	4822 157 71206	BLM21A10PT
5702	4822 152 20677	10µH
5703	4822 152 20677	10µH
5705	4822 152 20677	10µH
5720	4822 157 11231	LAN02TB1R0J
5721	4822 157 70877	H292ONS-6785NK
5725	4822 157 70877	H292ONS-6785NK
5726	4822 051 20008	OR00 JUMP (0805)
5740	4822 157 11232	12µH 5% for SECAM LL'
5740	4822 157 11229	15µH 5% for PAL
5741	4822 157 11223	39µH 5%
5780	4822 157 70038	10mH 5%
5800	4822 157 11233	LAN02TB330J
5801	4822 152 20677	10µH
5810	4822 157 11234	10µH 5%
5831	4822 157 11235	LANO2TB220J

DIODES

6100	4822 130 32778	1SS133
6135	4822 130 34197	BZX79-B12 (MTZJ12C)
6250	4822 130 34197	BZX79-B12
6299	4822 130 10869	RB441
6350	4822 130 30842	BAV21
6351	4822 130 31983	BAT85
6352	4822 130 42488	BYD33D
6353	4822 130 42488	BYD33D
6354	4822 130 80858	1N5062
6355	4822 130 42488	BYD33D
6356	4822 130 42488	BYD33D
6357	4822 130 10871	DIODE RECT SBYV2
6358	5322 130 31938	BYV27-200
6359	4822 130 32715	SB340 for stereo
6359	4822 130 83909	BYW98-200RL for mono
6360	4822 130 83147	DF06M
6371	4822 130 42488	BYD33D
6372	4822 130 34142	BZX79-B33
6460	4822 130 10231	SET: 2x Sens + 1x Led
6500	4822 130 34197	BZX79-B12
6501	4822 130 34197	BZX79-B12
6502	4822 130 34197	BZX79-B12
6509	4822 130 34197	BZX79-B12
6510	4822 130 34197	BZX79-B12
6511	4822 130 10884	MTZJ18C
6516	4822 130 34278	BZX79-B6V8
6530	4822 130 10654	BAT254
6601	4822 130 30861	BZX79-B7V5
6760	4822 130 10414	BA792
6761	4822 130 10414	BA792

TRANSISTORS & IC's

7000	4822 130 42353	BSF19-F2
7001	4822 130 10872	MMUN2112LT1
7002	4822 130 60511	BC847B
7003	4822 209 15526	LC89980M
7004	4822 130 42353	BSF19-F2
7005	5322 130 60508	BC857B
7006	4822 130 60511	BC847B
7007	4822 209 15527	LA71525M
7008	5322 130 60508	BC857B
7009	4822 130 10872	MMUN2112LT1
7011	4822 130 60511	BC847B
7020	4822 130 63732	MMUN2212
7021	5322 130 60508	BC857B
7080	4822 209 90421	STV5712
7085	4822 130 60511	BC847B
7100	4822 130 60511	BC847B
7101	4822 130 60511	BC847B
7102	4822 209 73852	PMBT2369
7103	4822 130 60511	BC847B
7104	4822 130 63732	MMUN2212
7105	5322 130 60508	BC857B
7106	4822 130 60511	BC847B
7110	4822 209 90189	TDA4722/V2
7150	4822 209 13121	STV5742
7151	4822 209 15548	STV5744AD
7153	4822 130 60511	BC847B
7201	4822 209 15516	TMP87CS71F QDCE1-xP
7201	4822 209 15517	TMP87CS71F QDCE2-xU
7201	4822 209 15518	TMP87CS71F QDCE3-xU
7201	4822 209 15521	TMP87CS71F QDCH1-xP
7201	4822 209 15519	TMP87CS71F QDCH2-xU
7201	4822 209 15528	TMP87CS71F QDCH3-xU
7201	4822 209 15549	TMP87CS71F QDCH4-xU
7201	4822 209 15573	TMP87CS71F QDCH5-xU
7202	4822 135 00115	25U39113SA (Display)
7203	4822 212 30842	TSOP1736 (IR-receiver)
7231	4822 130 63732	MMUN2212
7300	4822 209 13126	TDA5241
7301	4822 130 10872	MMUN2112LT1
7350▲	4822 130 63794	STP3NA60
7350/2	4822 255 10387	COOLING BLOCK (HEAT SINK)
7350/3	4822 502 14482	SCREW M3x6
7351▲	4822 209 32126	SOC1012T (OPTO)
7352	4822 209 81397	TL431CLpST
7353	4822 130 10214	STD17N06
7354	4822 209 90025	MC44603P
7356	4822 130 60511	BC847B
7357	4822 130 10214	STD17N06
7358	4822 130 40995	BD438
7359	4822 130 60511	BC847B
7400	4822 209 15529	TMP91C642AF QTDP2-xU
7420	4822 209 90313	L4812CV for stereo
7420	4822 209 81726	MC7812CT for mono
7440	4822 209 30146	L2722
7455	4822 130 10872	MMUN2112LT1
7456	4822 130 60511	BC847B
7457	4822 130 60511	BC847B
7458	4822 130 60511	BC847B
7460	4822 209 30836	SAA1310/N2
7461	4822 130 10231	SET: 2x Sens + 1x Led
7462	4822 130 10231	SET: 2x Sens + 1x Led
7463	4822 130 41344	BC337-40
7464	4822 130 10233	TCRT5000L
7465	4822 130 10233	TCRT5000L
7466	4822 130 10234	TCST1030L
7467	4822 130 60511	BC847B
7468	4822 130 60511	BC847B
7469	4822 130 60511	BC847B
7500	4822 130 60511	BC847B
7501	5322 130 60508	BC857B
7502	4822 130 60511	BC847B
7505	4822 130 63732	MMUN2212
7506	4822 130 10872	MMUN2112LT1

CABLES & SUB MODULS

CABLES

8001	4822 320 11889	FFC TD1-1961
8002	4822 323 10374	CABLE TREE TD2-1962
8003	4822 320 11891	FFC TD3-1944
8004	4822 320 11892	FFC TD4-1930
8005	4822 320 11888	FFC 1901-1945
8006	4822 320 12343	FFC 1103-1711
8007	4822 320 11891	FFC 1710-1750
8008	4822 323 10373	ESD-GND CONN.

▲	4822 321 10886	MAINS CORD (+FUSE) for UK
▲	4822 321 10249	MAINS CORD
	4822 320 50377	ANTENNA cable
	4822 321 63002	SCART cable

SUB MODULS

4822 214 12238	CINCH print rear
4822 214 12248	QKP21 Shuttle print
4822 214 12744	ACP1 CINCH print front

QNIC

MISCELLANEOUS

1700▲	4822 071 52501	Fuse	250mA
1710	4822 242 10433	Crystal	8,192 MHz
1970	4822 265 10943	CONN	11P

CAPACITORS

2700	4822 122 33172	390pF	5%	50V
2701	5322 122 32448	10pF	5%	50V
2703	4822 126 10002	100nF	20%	25V
2704	4822 122 33575	220pF	5%	50V
2705	4822 124 22826	10µF		16V
2706	4822 124 22826	10µF		16V
2707	4822 126 13061	220nF	20%	25V
2708	5322 122 32654	22nF	10%	63V
2709	5322 122 32531	100pF	5%	50V
2710	5322 122 32531	100pF	5%	50V
2714	4822 124 23027	47µF		6.3V
2716	4822 124 23027	47µF		6.3V
2718	4822 126 10002	100nF	20%	25V
2719	4822 122 33175	2,2nF	20%	50V
2720	4822 122 33175	2,2nF	20%	50V
2721	4822 126 13061	220nF	20%	25V
2722	4822 122 33175	2,2nF	20%	50V
2723	4822 122 33175	2,2nF	20%	50V
2725	4822 124 23053	1µF	20%	63V
2726	4822 122 33797	47nF	20%	50V
2727	4822 124 23027	47µF		6.3V
2728	4822 126 10002	100nF	20%	25V
2729	4822 124 22826	10µF		16V
2731	4822 124 22826	10µF		16V
2732	4822 126 10002	100nF	20%	25V
2733	4822 124 23027	47µF		6.3V
2734	5322 122 32654	22nF	10%	63V
2736	4822 126 10002	100nF	20%	25V
2752	4822 126 13061	220nF	20%	25V
2753	4822 126 13061	220nF	20%	25V

RESISTORS

3700	4822 051 10102	1K00	2%	0,25W
3701	4822 051 20101	100R00	5%	0,1W
3702	4822 051 20223	22K00	5%	0,1W
3703	4822 051 20104	100K00	5%	0,1W
3704	4822 117 11449	2K2	1%	0,1W
3705	4822 051 20392	3K90	5%	0,1W
3707	4822 116 52276	3K9	5%	0,5W
3708	4822 117 11449	2K2	1%	0,1W
3710	4822 051 20334	330K00	5%	0,1W
3711	4822 116 52175	100E	5%	0,5W
3712	4822 116 52175	100E	5%	0,5W
3713	4822 051 20182	1K80	5%	0,1W
3714	4822 051 20333	33K00	5%	0,1W
3715	4822 117 10833	10K	1%	0,1W
3720	4822 117 10833	10K	1%	0,1W
3721	4822 117 10833	10K	1%	0,1W
3722	4822 117 10833	10K	1%	0,1W
3723	4822 117 10833	10K	1%	0,1W
3790	4822 051 20008	0R00	JUMP (0805)	
3792	4822 051 20008	0R00	JUMP (0805)	
3793	4822 051 20008	0R00	JUMP (0805)	
3794	4822 051 20008	0R00	JUMP (0805)	
3795	4822 051 20008	0R00	JUMP (0805)	
3796	4822 051 20008	0R00	JUMP (0805)	
3797	4822 051 20008	0R00	JUMP (0805)	

COILS

5700	4822 157 63717	6,8µH
5703	4822 157 71206	BLM21A10
5704	4822 157 71206	BLM21A10
5705	4822 157 71206	BLM21A10
5706	4822 157 71206	BLM21A10
5707	4822 157 71206	BLM21A10

DIODES

6700	4822 130 10652	BB149
6701	4822 130 83757	BAS216

TRANSISTORS & IC's

7700	4822 209 14809	SAA7284Z
7701	5322 209 61487	LM358N