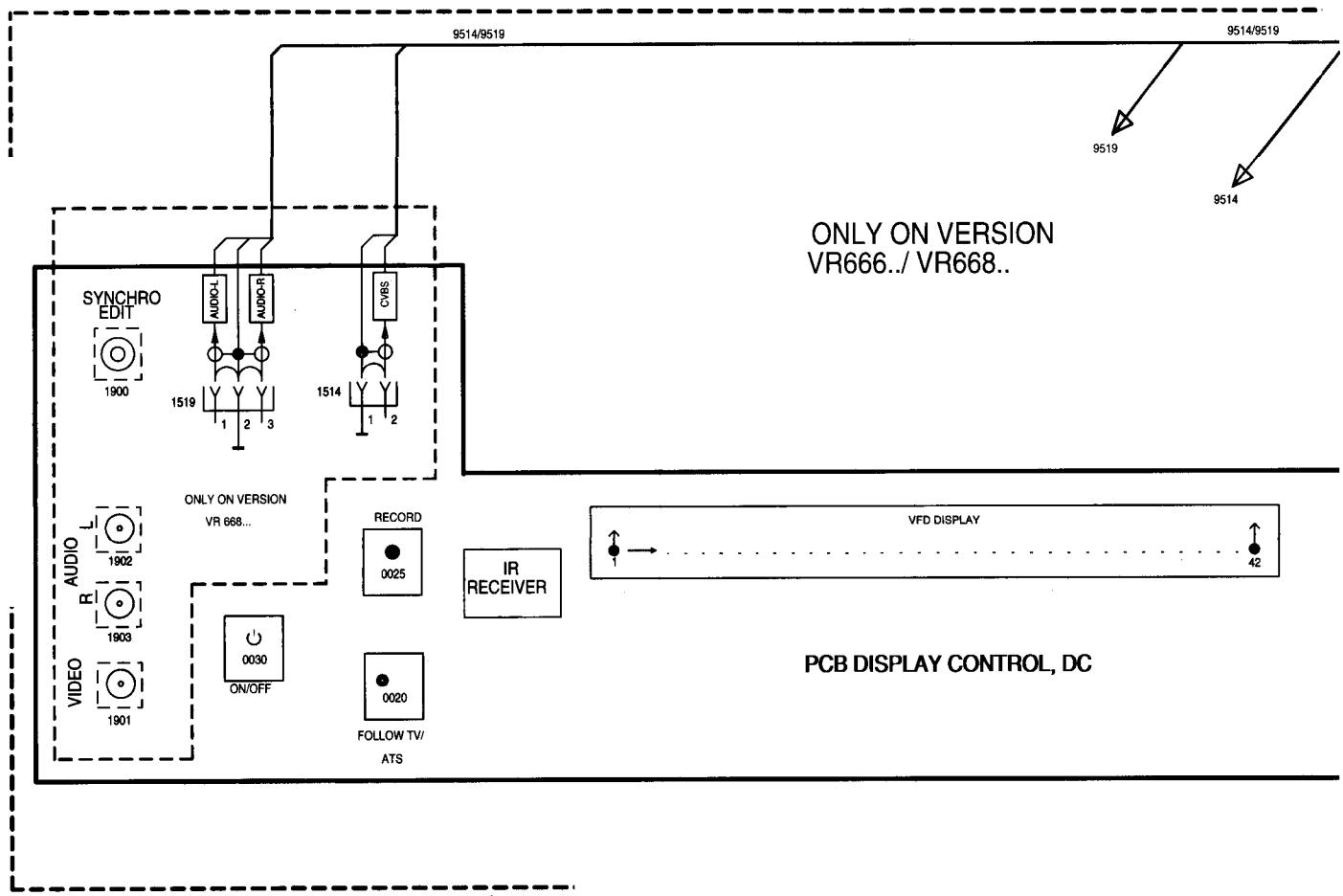
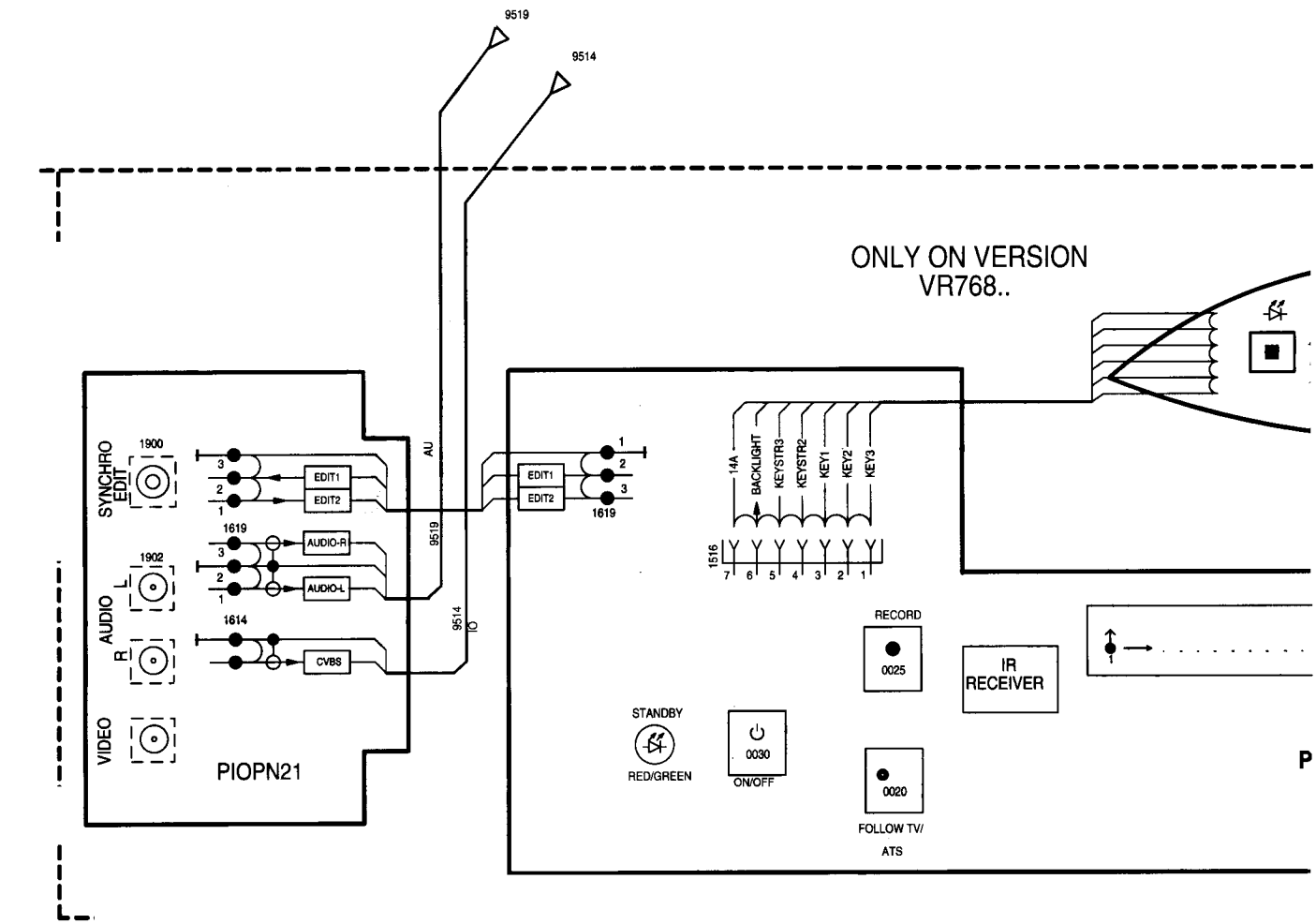
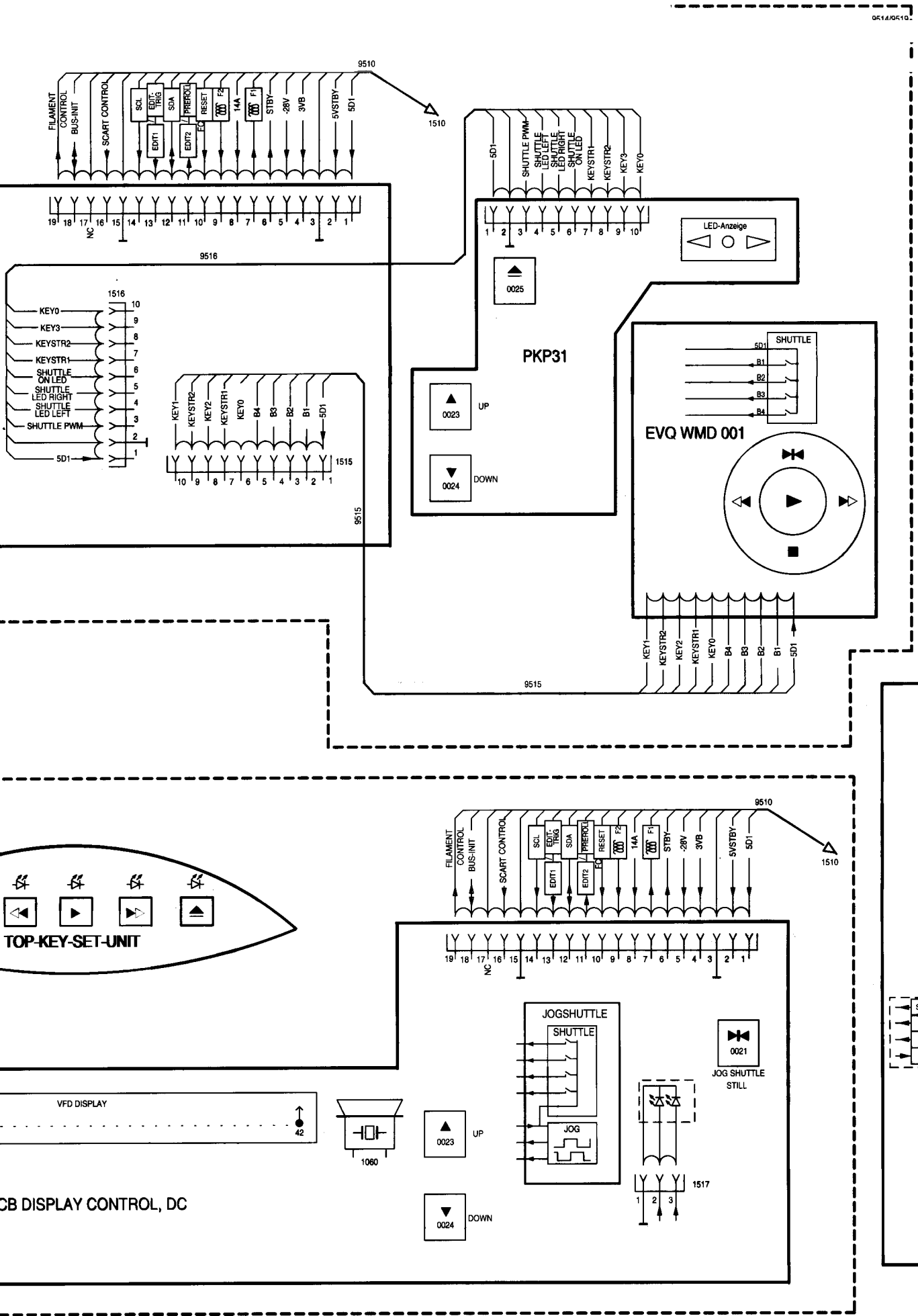
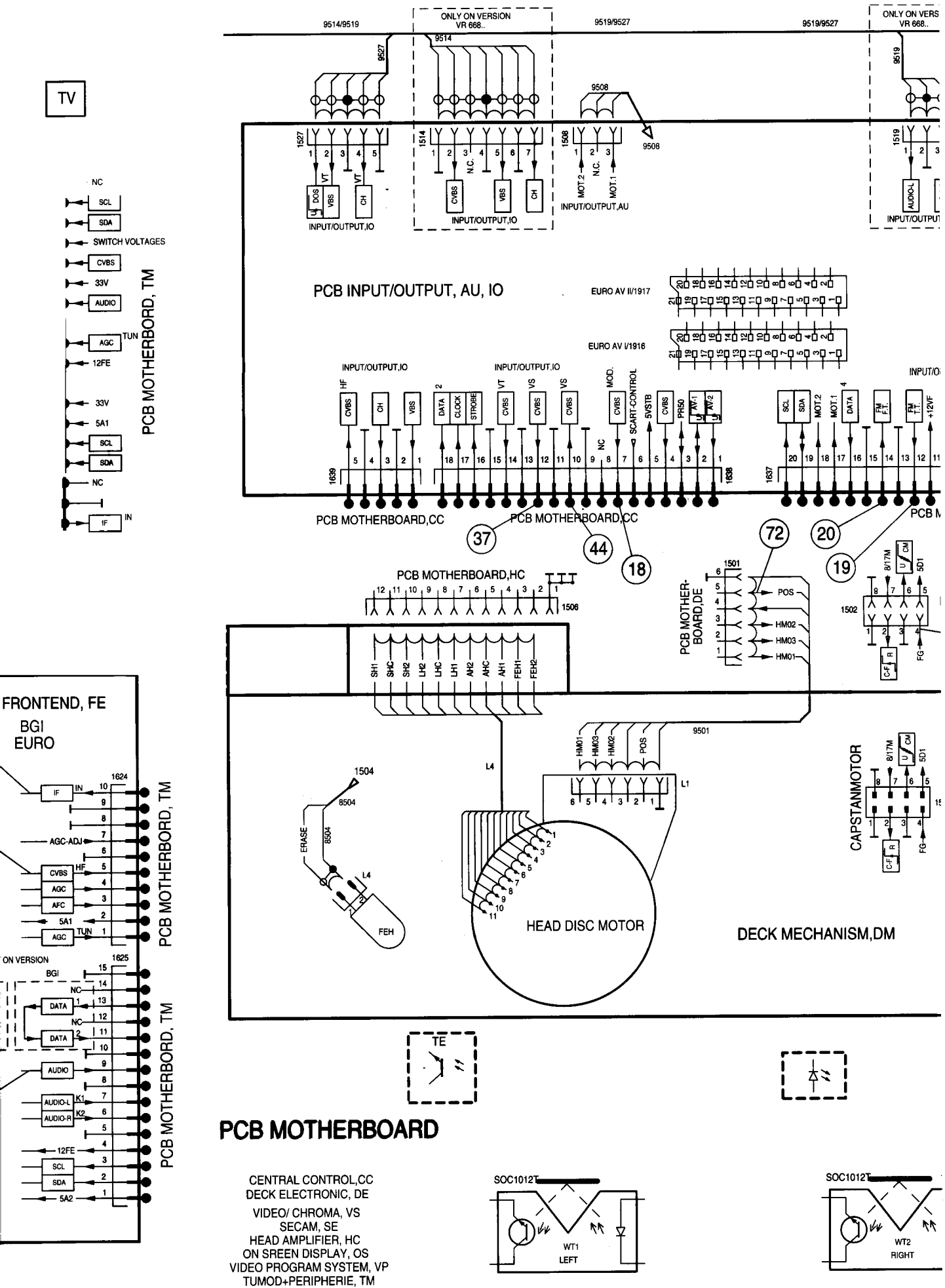
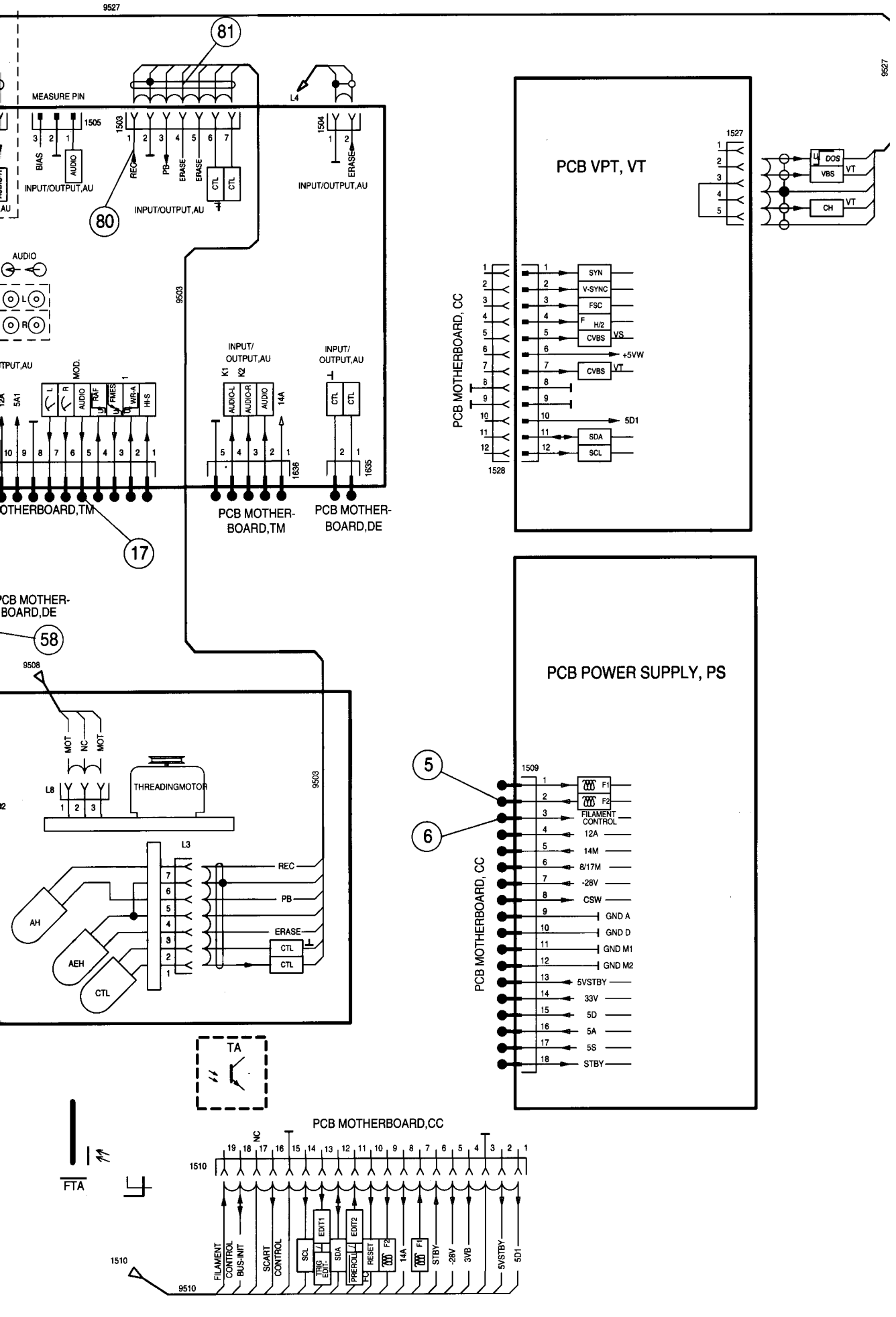
Wiring Diagram VHS



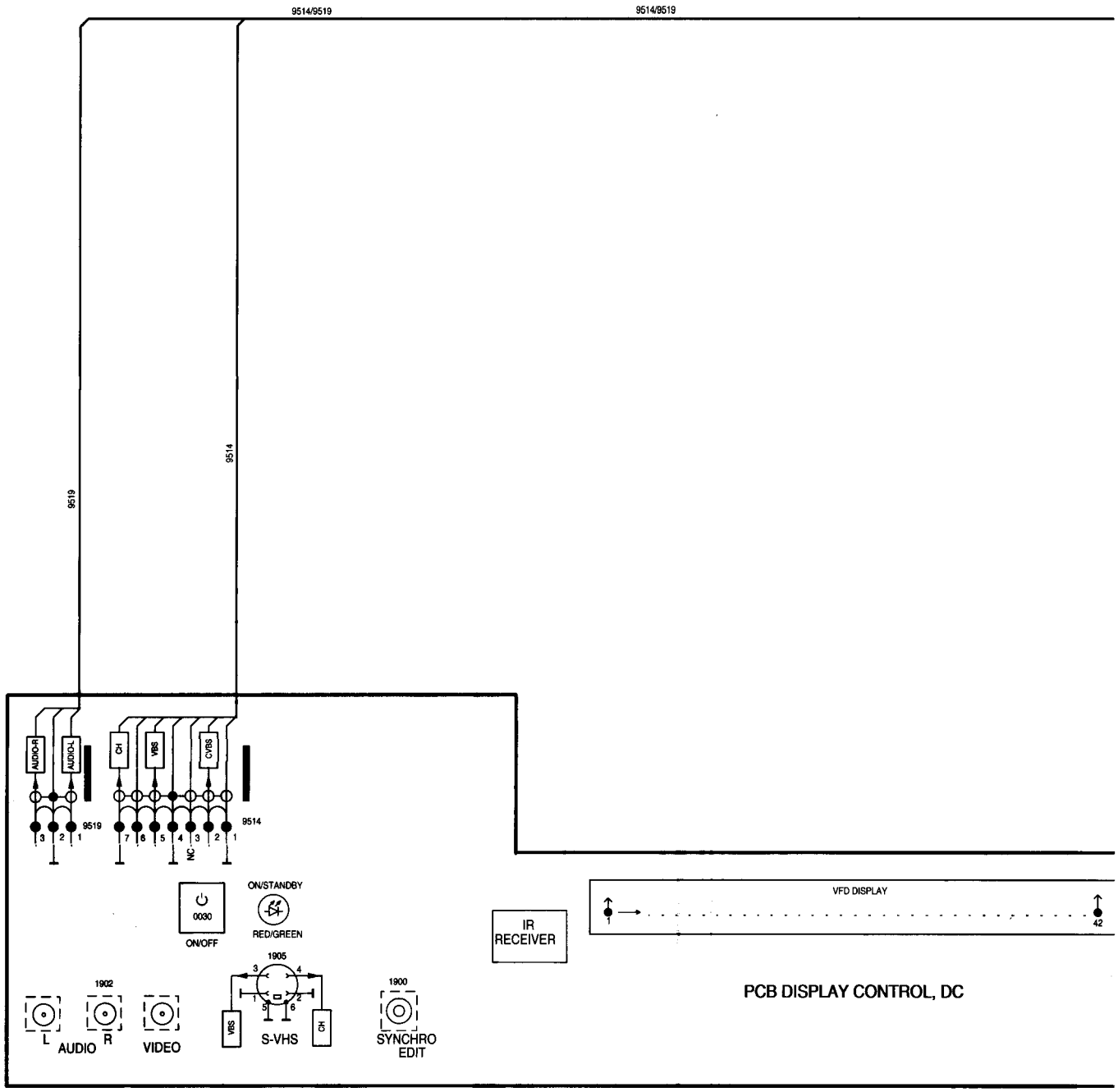


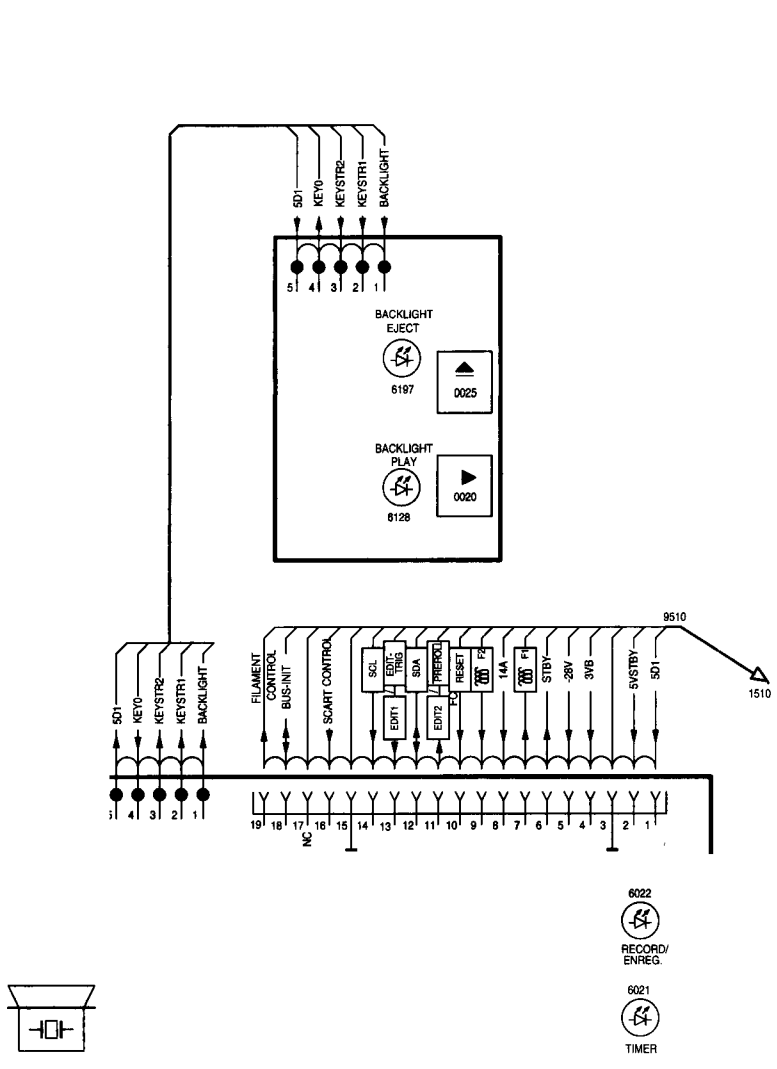

9510
1510
FILAMENT
CONTROL
BUS-INIT
SCART CONTROL
SCL
EDIT-TRIG
SDA
PREROLL
RESET
F2
14A
F1
STBY
-28V
3VB
5VSTBY
5D1
EDIT1
EDIT2
EQ
19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1
NC
9516
1516
KEY0
KEY3
KEYSTR2
KEYSTR1
SHUTTLE ON LED
SHUTTLE LED RIGHT
SHUTTLE LED LEFT
SHUTTLE PWM
5D1
10 9 8 7 6 5 4 3 2 1
KEY1
KEY2
B4
B3
B2
B1
1515
9515
SHUTTLE PWM
SHUTTLE LED LEFT
SHUTTLE LED RIGHT
SHUTTLE ON LED
KEYSTR1
KEYSTR2
KEY3
KEY0
1 2 3 4 5 6 7 8 9 10
LED-Anzeige
0025
PKP31
0023
UP
0024
DOWN
EVQ WMD 001
SHUTTLE
B1
B2
B3
B4
KEY1
KEYSTR2
KEY2
KEYSTR1
KEY0
B4
B3
B2
B1
5D1
9515
PCB
10
15
16
ONLY
EURO
STROBE
DATA
CLOCK
DATA
TOP-KEY-SET-UNIT
VFD DISPLAY
42
1060
JOGSHUTTLE
SHUTTLE
JOG
0021
JOG SHUTTLE STILL
1517
1 2 3
CB DISPLAY CONTROL, DC

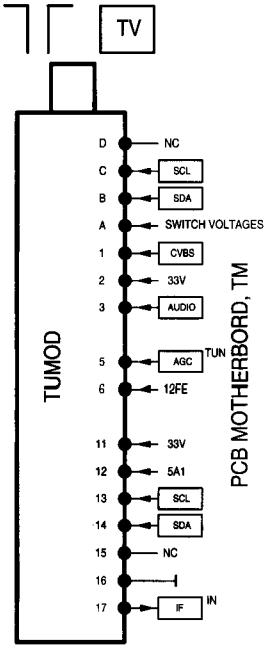

TV
NC
SCL
SDA
SWITCH VOLTAGES
CVBS
33V
AUDIO
TUN
AGC
12FE
33V
5A1
SCL
SDA
NC
IF
IN
PCB MOTHERBORD, TM
FRONTEND, FE
BGI
EURO
1624
IF
IN
AGC-ADJ
HF
CVBS
AGC
AFC
5A1
AGC
TUN
PCB MOTHERBORD, TM
ON VERSION
1625
BGI
NC
DATA
NC
DATA
AUDIO
AUDIO-L
AUDIO-R
K1
K2
12FE
SCL
SDA
5A2
PCB MOTHERBORD, TM
9514/9519
ONLY ON VERSION VR 668..
9519/9527
9519/9527
ONLY ON VERS VR 668..
9527
9514
9508
9508
9519
1527
1514
1508
1519
INPUT/OUTPUT,IO
INPUT/OUTPUT,IO
INPUT/OUTPUT,AU
INPUT/OUTPUT
PCB INPUT/OUTPUT, AU, IO
EURO AV II/1917
EURO AV I/1916
INPUT/OUTPUT,IO
INPUT/OUTPUT,IO
1639
1638
1637
PCB MOTHERBOARD,CC
PCB MOTHERBOARD,CC
PCB M
37
44
18
72
20
19
PCB MOTHERBOARD,HC
1506
1501
PCB MOTHER-BOARD,DE
POS
HM02
HM03
HM01
1502
8/17M
5D1
FG
SH1
SHC
SH2
LH2
LHC
LH1
AH2
AHC
AH1
FEH1
FEH2
9501
HM01
HM03
HM02
POS
L1
L4
1504
8504
8504
ERASE
L4
FEH
HEAD DISC MOTOR
DECK MECHANISM,DM
CAPSTANMOTOR
TE
PCB MOTHERBOARD
CENTRAL CONTROL,CC
DECK ELECTRONIC, DE
VIDEO/ CHROMA, VS
SECAM, SE
HEAD AMPLIFIER, HC
ON SREEN DISPLAY, OS
VIDEO PROGRAM SYSTEM, VP
TUMOD+PERIPHERIE, TM
SOC1012T
WT1
LEFT
SOC1012T
WT2
RIGHT

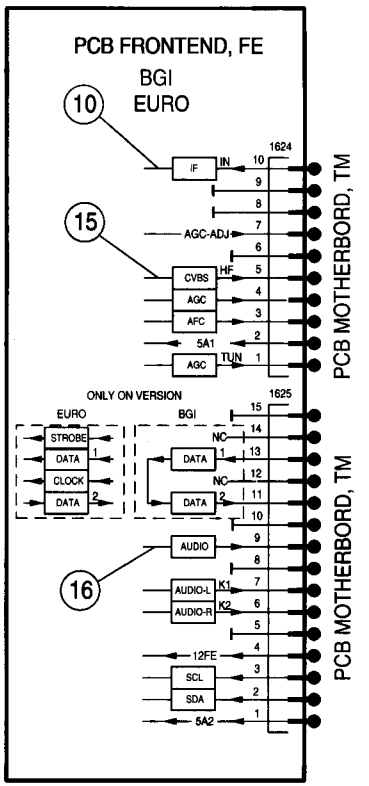

9527
81
MEASURE PIN
L4
1505
1503
1504
BIAS
AUDIO
REC
PB
ERASE
ERASE
CTL
CTL
INPUT/OUTPUT,AU
INPUT/OUTPUT,AU
INPUT/OUTPUT,AU
80
AUDIO
L
R
9503
INPUT/
OUTPUT,AU
INPUT/
OUTPUT,AU
MOD.
K1
K2
AUDIO-L
AUDIO-R
AUDIO
14A
CTL
CTL
1636
1635
PCB MOTHER-
BOARD,TM
PCB MOTHER-
BOARD,DE
17
PCB MOTHER-
BOARD,DE
58
9508
MOT
NC
MOT
L8
THREADINGMOTOR
9503
L3
REC
PB
ERASE
CTL
CTL
AH
AEH
CTL
TA
PCB MOTHERBOARD,CC
NC
1510
FTA
1510
9510
FILAMENT
CONTROL
BUS-INIT
SCART
CONTROL
SCL
EDIT1
TRIS
EDIT
SDA
EDIT2
PREROLL
RESET
F2
14A
F1
STBY
-28V
3VB
5VSTBY
5D1
PCB VPT, VT
1527
DOS
VBS
VT
CH
VT
PCB MOTHERBOARD, CC
1528
SYN
V-SYNC
FSC
F
H/2
CVBS
VS
+5VW
CVBS
VT
5D1
SDA
SCL
PCB POWER SUPPLY, PS
5
6
1509
F1
F2
FILAMENT
CONTROL
12A
14M
8/17M
-28V
CSW
GND A
GND D
GND M1
GND M2
5VSTBY
33V
5D
5A
5S
STBY
PCB MOTHERBOARD, CC

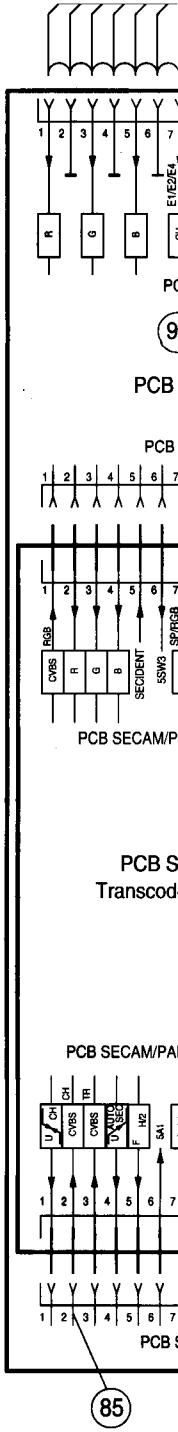
Wiring Diagram VR967

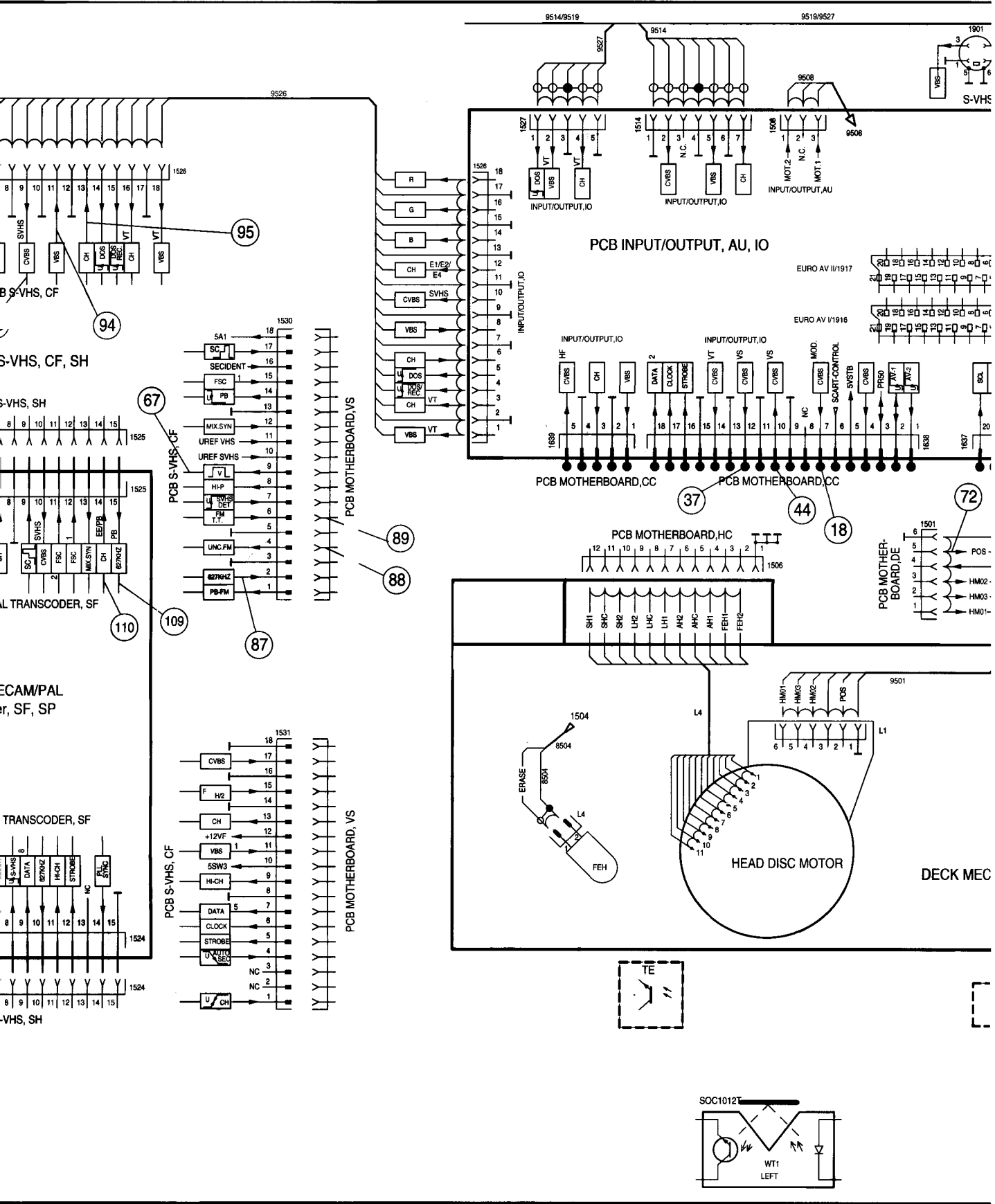


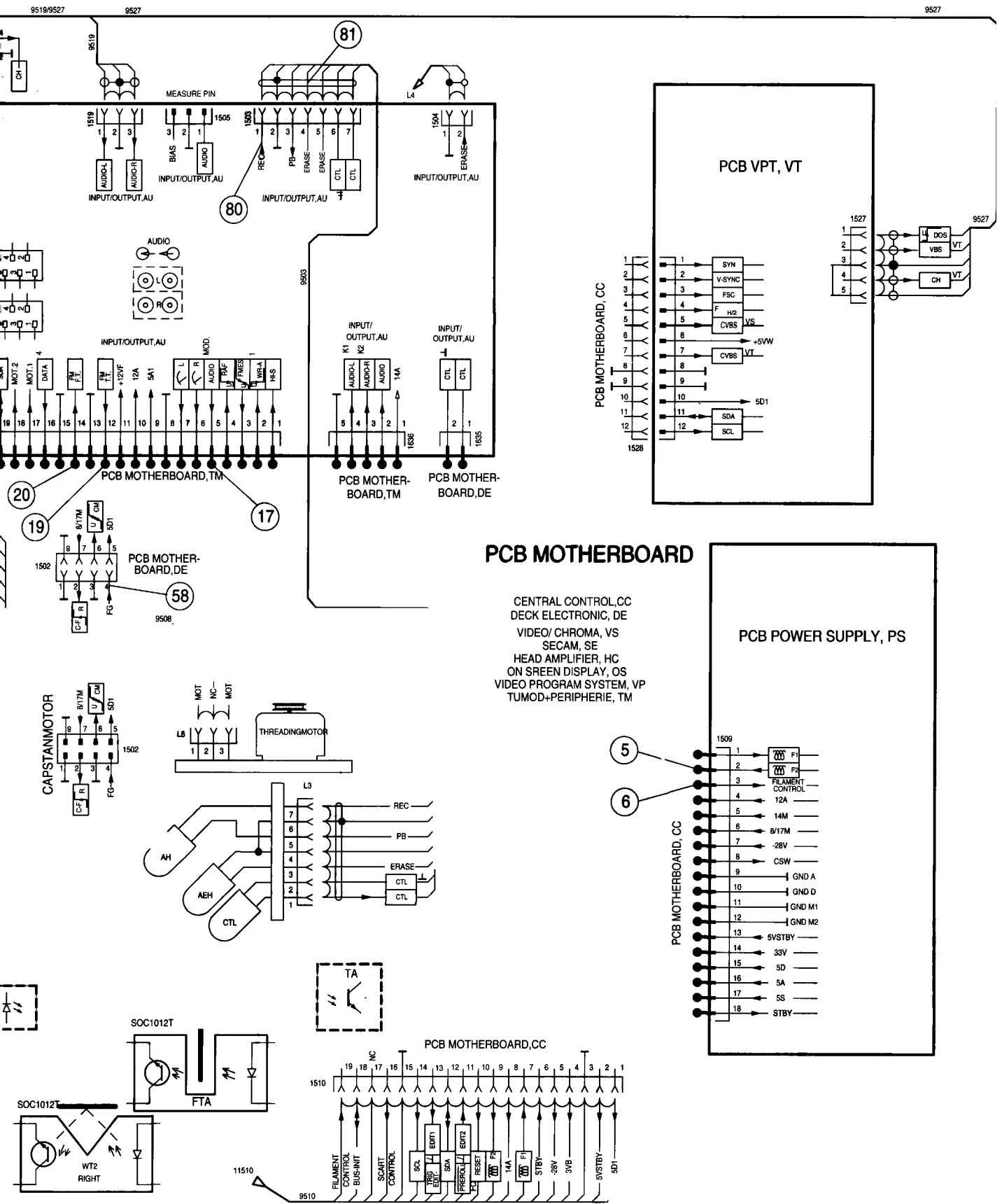

5D1
KEY0
KEYSTR2
KEYSTR1
BACKLIGHT
BACKLIGHT EJECT
6197
0025
BACKLIGHT PLAY
6128
0020
9510
1510
FILAMENT CONTROL
BUS-INIT
SCART CONTROL
SCL
EDIT-TRIG
SDA
PRERDL
RESET
F2
14A
F1
STBY
-28V
9V8
5VSTBY
5D1
EDIT1
EDIT2
PC
NC
6022
RECORD/ ENREG.
6021
TIMER
0029
FOLLOW TV/ ATS
0026
STOP
0021
0023
0027
RECORD/ ENREG.
0024
0028

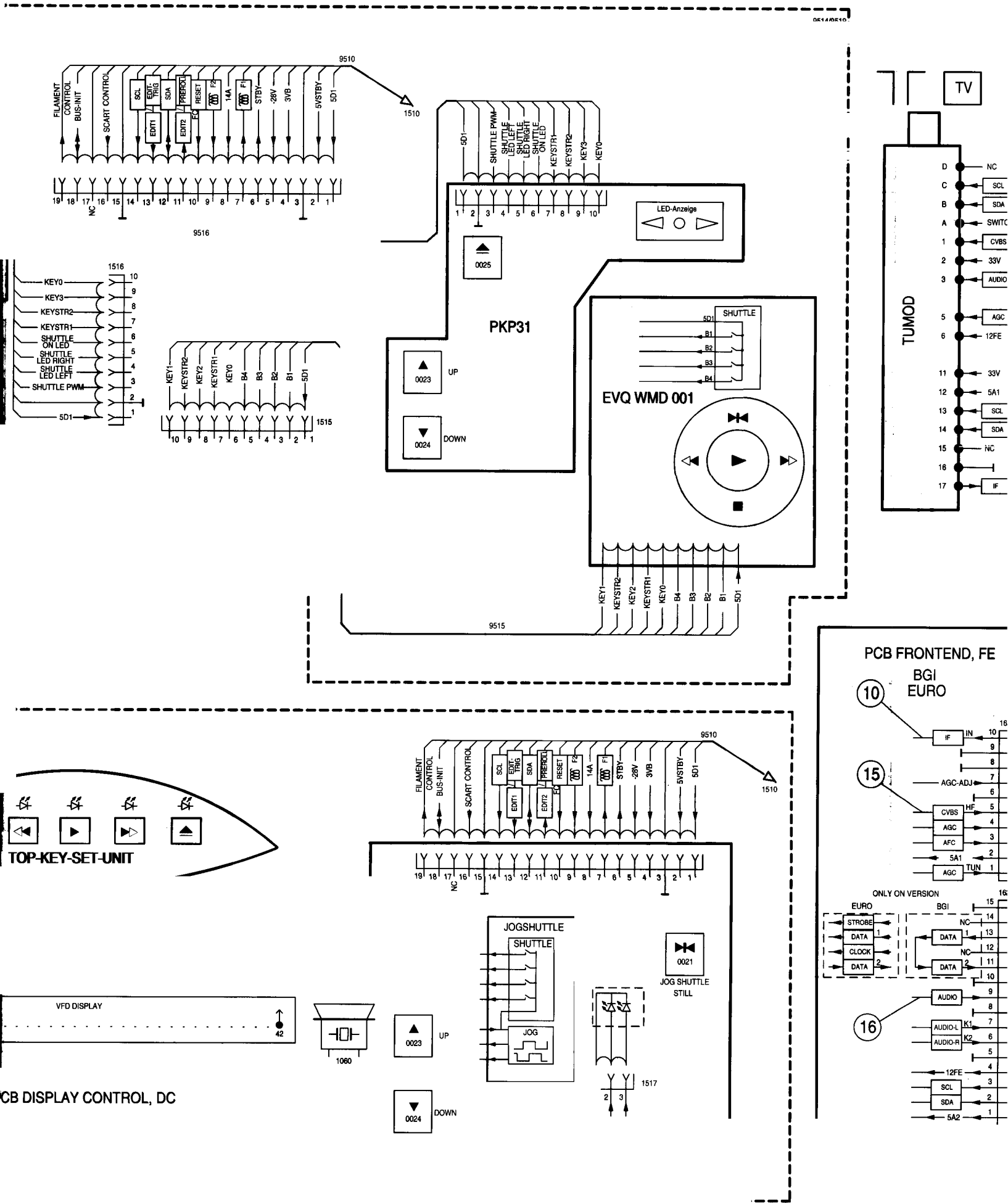

TV
TUMOD
D NC
C SCL
B SDA
A SWITCH VOLTAGES
1 CVBS
2 33V
3 AUDIO
5 AGC TUN
6 12FE
11 33V
12 5A1
13 SCL
14 SDA
15 NC
16
17 IF IN
PCB MOTHERBORD, TM


PCB FRONTEND, FE
BGI
EURO
10
IF IN
1624
15
AGC-ADJ
CVBS HF
AGC
AFC
5A1
AGC TUN
ONLY ON VERSION
1625
EURO
STROBE
DATA
CLOCK
DATA
BGI
NC
DATA
NC
DATA
16
AUDIO
AUDIO-L K1
AUDIO-R K2
12FE
SCL
SDA
5A2
PCB MOTHERBORD, TM

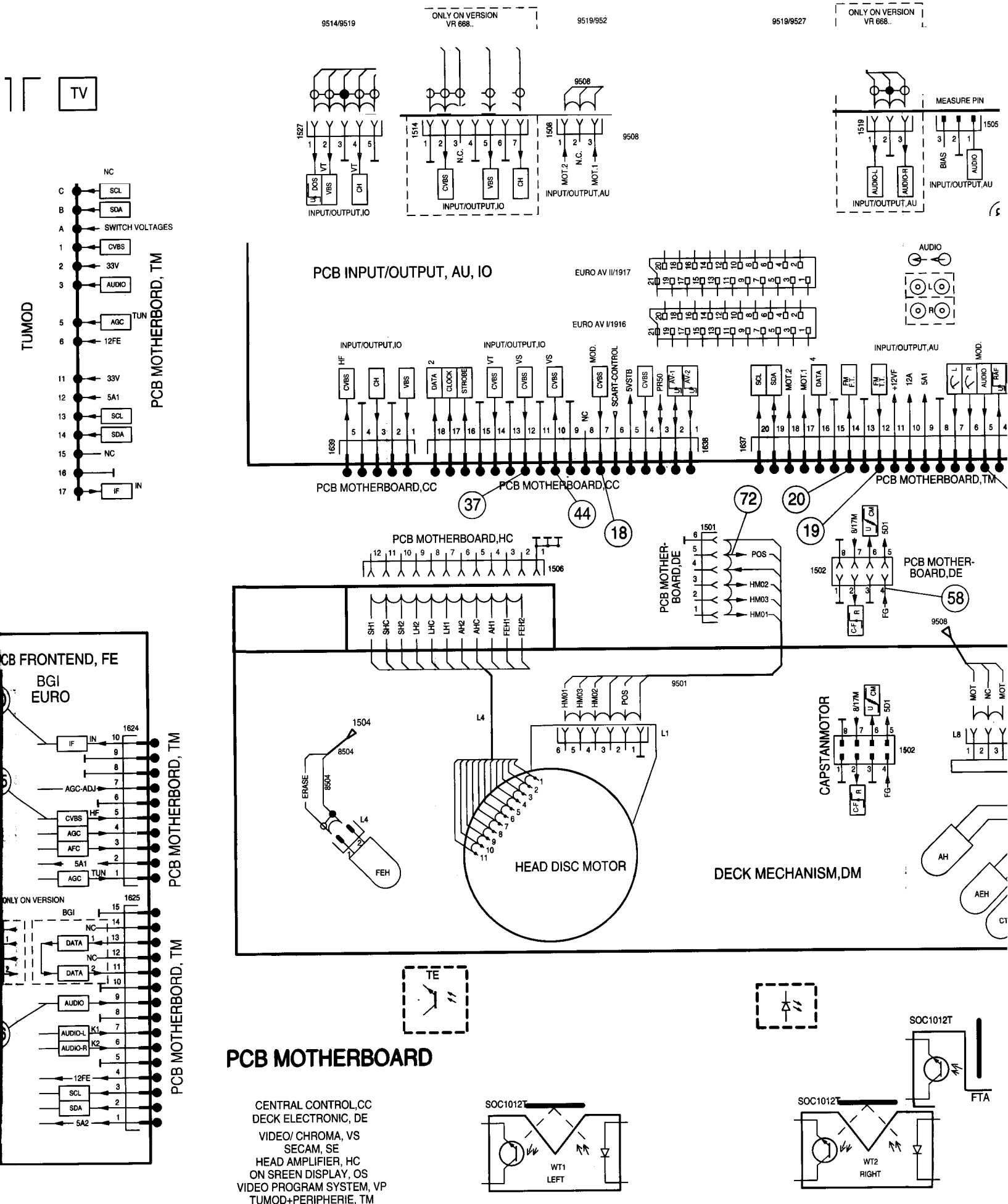

PCB
PCB SECAM/P
PCB S
Transcod
PCB SECAM/PA
85

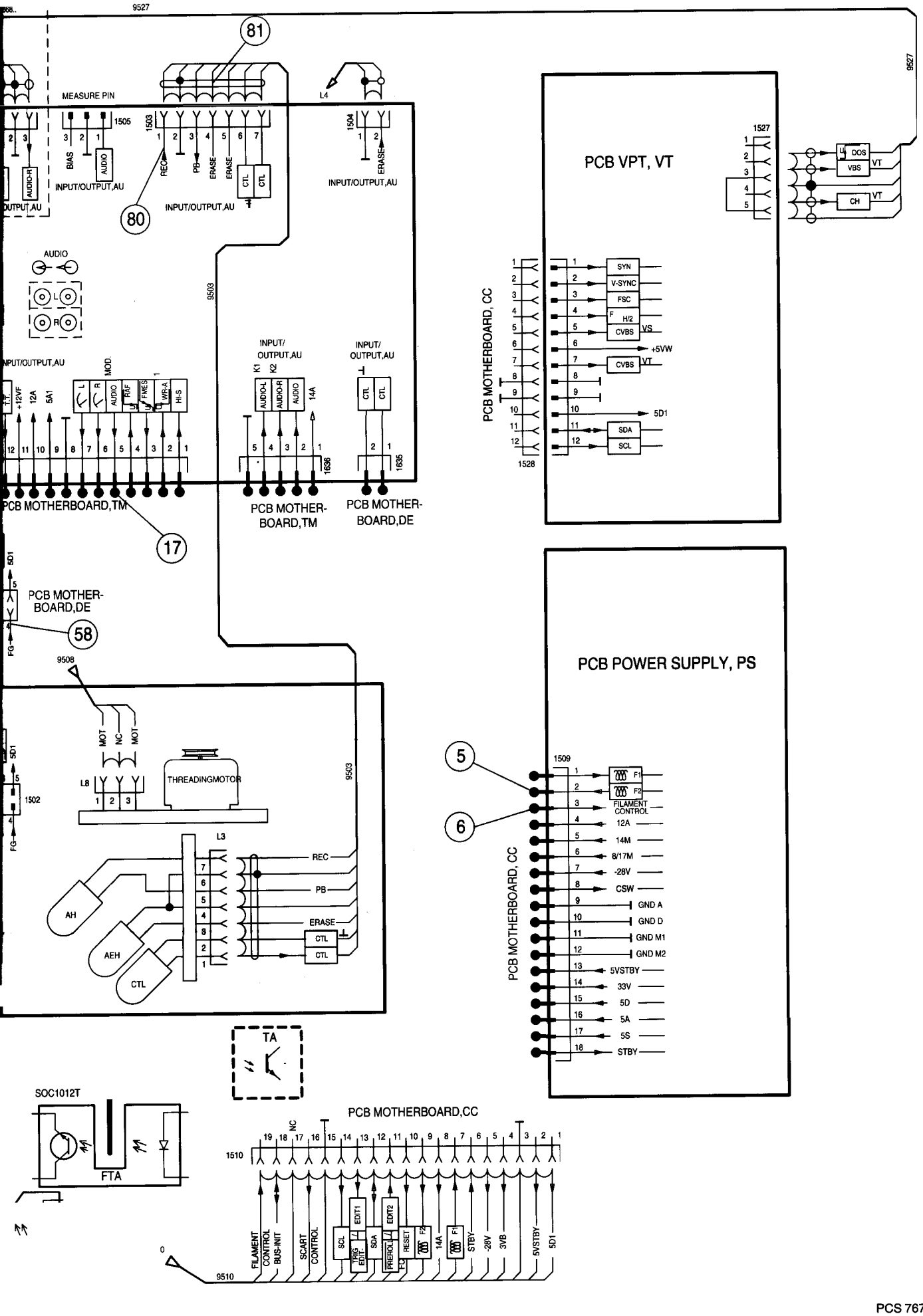

PCB INPUT/OUTPUT, AU, IO
INPUT/OUTPUT,IO
INPUT/OUTPUT,AU
EURO AV II/1917
EURO AV I/1916
PCB MOTHERBOARD,CC
PCB MOTHERBOARD,HC
PCB MOTHERBOARD,DE
PCB MOTHERBOARD,VS
PCB S-VHS, CF
PCB S-VHS, CF, SH
S-VHS, SH
TRANSCODER, SF
ECAM/PAL
HEAD DISC MOTOR
DECK MEC
SOC1012T
WT1
LEFT
9514/9519
9519/9527
9514
9527
9508
9526
1526
1527
1514
1506
1530
1531
1525
1524
1504
1501
1901
9501
8504
95
94
67
89
88
87
110
109
37
44
18
72


PCB MOTHERBOARD
CENTRAL CONTROL,CC
DECK ELECTRONIC, DE
VIDEO/ CHROMA, VS
SECAM, SE
HEAD AMPLIFIER, HC
ON SREEN DISPLAY, OS
VIDEO PROGRAM SYSTEM, VP
TUMOD+PERIPHERIE, TM
PCB VPT, VT
PCB POWER SUPPLY, PS
PCB MOTHERBOARD, CC
PCB MOTHER-BOARD,TM
PCB MOTHER-BOARD,DE
PCB MOTHERBOARD,TM
PCB MOTHERBOARD,DE
PCB MOTHERBOARD,CC
MEASURE PIN
INPUT/OUTPUT,AU
CAPSTANMOTOR
THREADINGMOTOR
SOC1012T
FTA
WT2
RIGHT
TA
REC
PB
ERASE
CTL
AUDIO
SYN
V-SYNC
FSC
CVBS
SDA
SCL
5D1
+5VW
VT
VS
DOS
VBS
CH
F1
F2
FILAMENT CONTROL
12A
14M
8/17M
-28V
CSW
GND A
GND D
GND M1
GND M2
5VSTBY
33V
5D
5A
5S
STBY
3VB
14A
RESET
EDIT1
EDIT2
TRIG EDIT
PREROL
FILAMENT CONTROL
BUS-INIT
SCART CONTROL
AH
AEH
CTL
L3
L4
L8
MOT
NC
1502
1503
1504
1505
1509
1510
1519
1527
1528
1635
1636
9503
9508
9510
9519
9527
11510

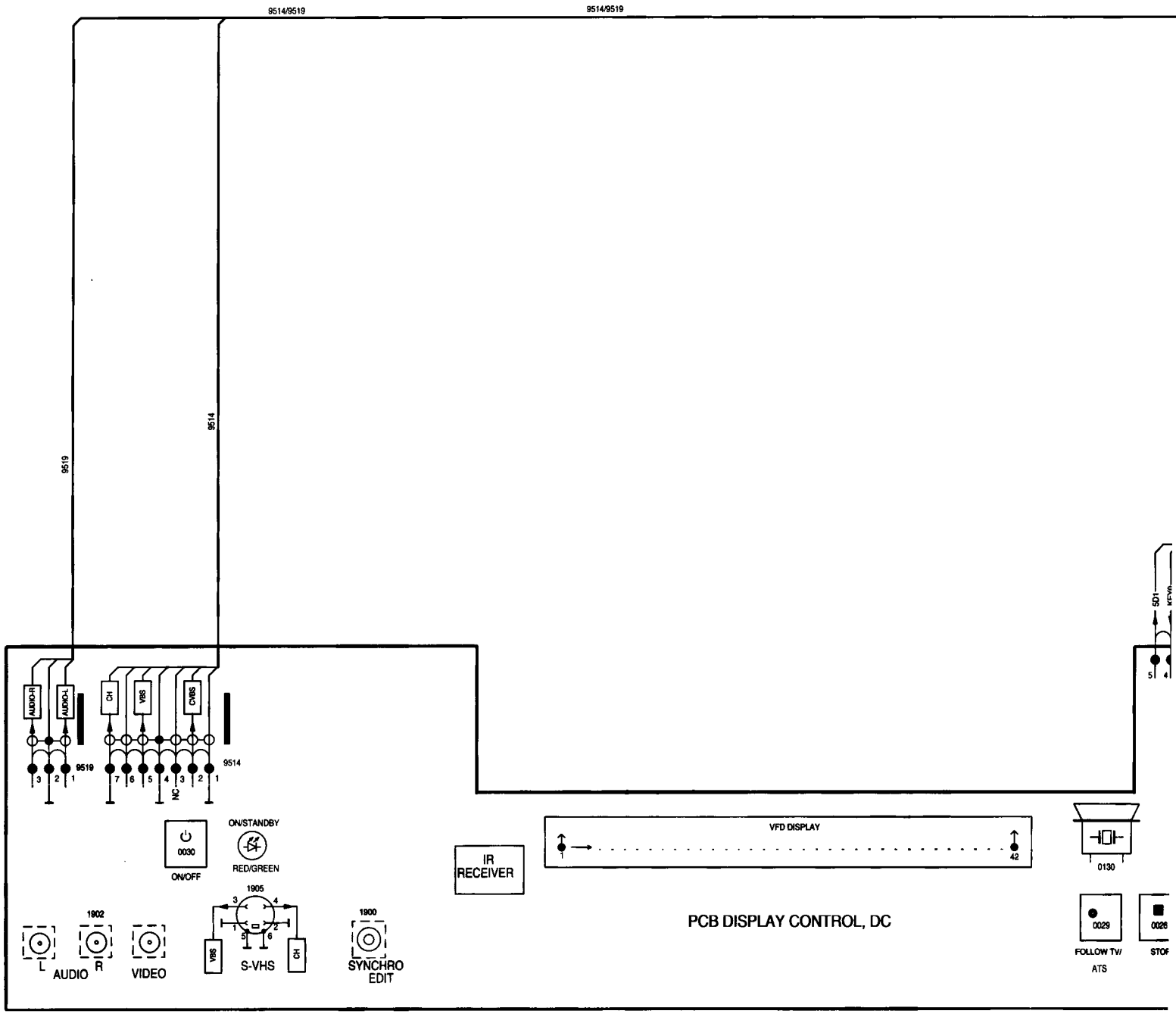

9510
1510
FILAMENT
CONTROL
BUS-INIT
SCART CONTROL
SCL
EDIT TRIG
SDA
PREROLL
RESET
F2
14A
F1
STBY
-28V
3VB
5VSTBY
5D1
EDIT1
EDIT2
EQ
NC
9516
1516
KEY0
KEY3
KEYSTR2
KEYSTR1
SHUTTLE ON LED
SHUTTLE LED RIGHT
SHUTTLE LED LEFT
SHUTTLE PWM
5D1
KEY1
KEYSTR2
KEY2
KEYSTR1
KEY0
B4
B3
B2
B1
5D1
1515
SHUTTLE PWM
SHUTTLE LED LEFT
SHUTTLE LED RIGHT
SHUTTLE ON LED
KEYSTR1
KEYSTR2
KEY3
KEY0
LED-Anzeige
0025
PKP31
0023
UP
0024
DOWN
SHUTTLE
B1
B2
B3
B4
EVQ WMD 001
9515
TV
TUMOD
NC
SCL
SDA
SWITC
CVBS
33V
AUDIO
AGC
12FE
33V
5A1
SCL
SDA
NC
IF
PCB FRONTEND, FE
BGI
EURO
10
15
16
IF
IN
AGC-ADJ
CVBS
HF
AGC
AFC
5A1
AGC
TUN
ONLY ON VERSION
EURO
BGI
STROBE
DATA
CLOCK
DATA
NC
DATA
NC
DATA
AUDIO
AUDIO-L
AUDIO-R
K1
K2
12FE
SCL
SDA
5A2
TOP-KEY-SET-UNIT
9510
1510
JOGSHUTTLE
SHUTTLE
JOG
0021
JOG SHUTTLE
STILL
VFD DISPLAY
42
1060
0023
UP
0024
DOWN
1517
PCB DISPLAY CONTROL, DC

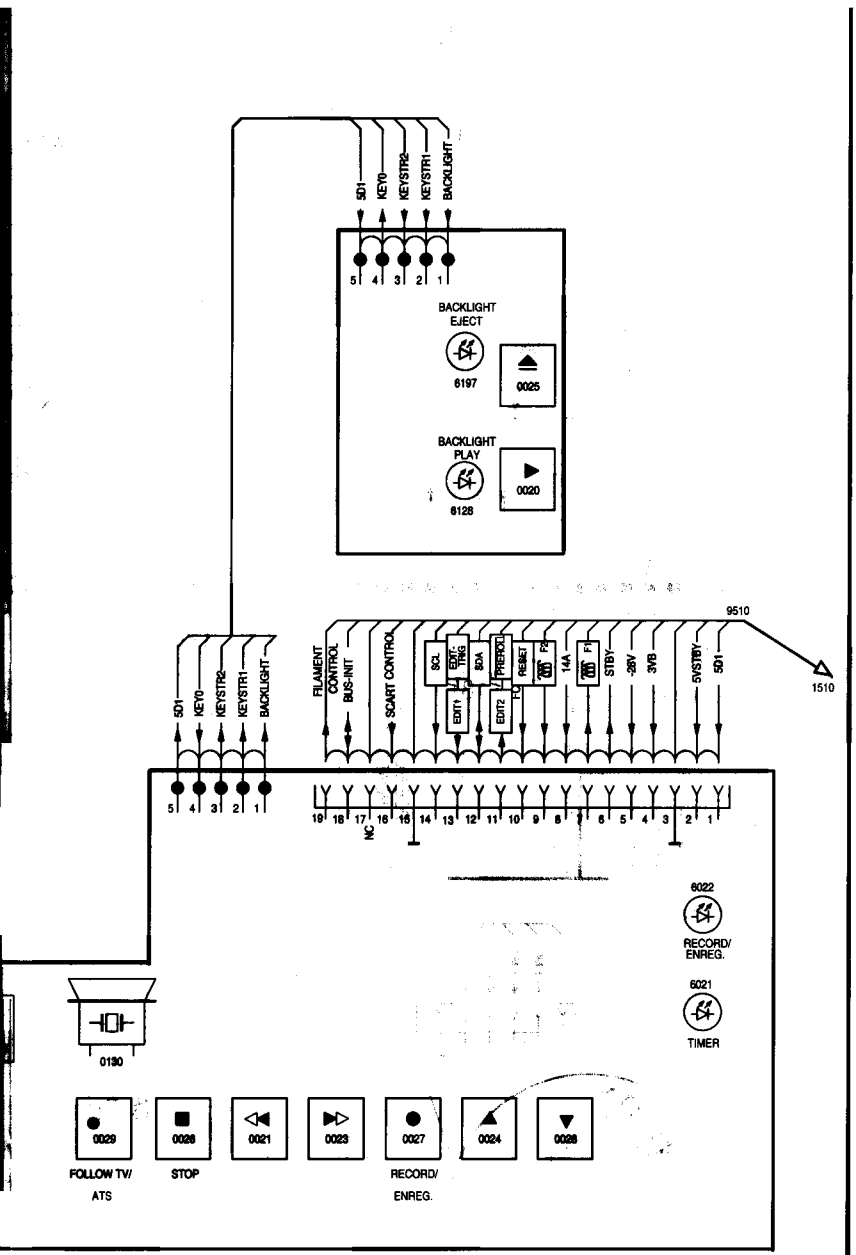
TV

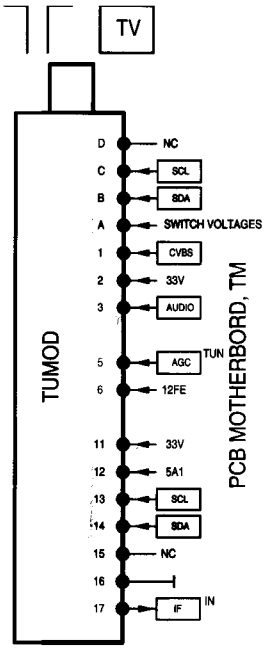

9514/9519
ONLY ON VERSION VR 668..
9519/952
9519/9527
ONLY ON VERSION VR 668..
9508
1527
1514
1508
INPUT/OUTPUT,IO
INPUT/OUTPUT,IO
INPUT/OUTPUT,AU
MEASURE PIN
1519
1505
BIAS
AUDIO-L
AUDIO-R
INPUT/OUTPUT,AU
INPUT/OUTPUT,AU
TUMOD
PCB MOTHERBORD, TM
NC
SCL
SDA
SWITCH VOLTAGES
CVBS
33V
AUDIO
AGC
TUN
12FE
33V
5A1
SCL
SDA
NC
IF
IN
PCB INPUT/OUTPUT, AU, IO
EURO AV II/1917
EURO AV I/1916
AUDIO
INPUT/OUTPUT,IO
INPUT/OUTPUT,IO
INPUT/OUTPUT,AU
PCB MOTHERBOARD,CC
PCB MOTHERBOARD,CC
PCB MOTHERBOARD,TM
37
44
18
72
20
19
PCB MOTHERBOARD,HC
PCB MOTHER-BOARD,DE
PCB MOTHER-BOARD,DE
58
9508
9501
1504
8504
ERASE
FEH
L4
HEAD DISC MOTOR
DECK MECHANISM,DM
CAPSTANMOTOR
AH
AEH
TE
PCB FRONTEND, FE
BGI
EURO
1624
IF
IN
AGC-ADJ
CVBS
AGC
AFC
5A1
AGC
TUN
PCB MOTHERBORD, TM
ONLY ON VERSION
1625
BGI
DATA
DATA
AUDIO
AUDIO-L
AUDIO-R
12FE
SCL
SDA
5A2
PCB MOTHERBORD, TM
PCB MOTHERBOARD
CENTRAL CONTROL,CC
DECK ELECTRONIC, DE
VIDEO/ CHROMA, VS
SECAM, SE
HEAD AMPLIFIER, HC
ON SREEN DISPLAY, OS
VIDEO PROGRAM SYSTEM, VP
TUMOD+PERIPHERIE, TM
SOC1012T
WT1
LEFT
SOC1012T
WT2
RIGHT
SOC1012T
FTA

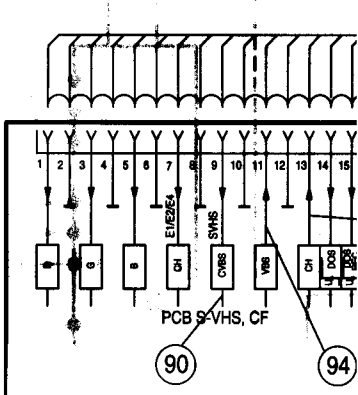

9527
81
MEASURE PIN
L4
1505
1503
1504
BIAS
AUDIO
REC
PB
ERASE
CTL
INPUT/OUTPUT,AU
80
AUDIO-R
AUDIO
9503
INPUT/
OUTPUT,AU
K1
K2
AUDIO-L
14A
1636
1635
PCB MOTHERBOARD,TM
PCB MOTHER-
BOARD,TM
PCB MOTHER-
BOARD,DE
17
PCB VPT, VT
1527
DOS
VBS
CH
VT
PCB MOTHERBOARD, CC
SYN
V-SYNC
FSC
H/2
CVBS
VS
+5VW
SDA
SCL
5D1
1528
58
9508
MOT
NC
THREADINGMOTOR
L8
1502
L3
AH
AEH
CTL
PCB POWER SUPPLY, PS
1509
F1
F2
FILAMENT
CONTROL
12A
14M
8/17M
-28V
CSW
GND A
GND D
GND M1
GND M2
5VSTBY
33V
5D
5A
5S
STBY
5
6
TA
SOC1012T
FTA
PCB MOTHERBOARD,CC
1510
NC
FILAMENT
CONTROL
BUS-INIT
SCART
CONTROL
EDIT1
EDIT2
RESET
F2
F1
9510

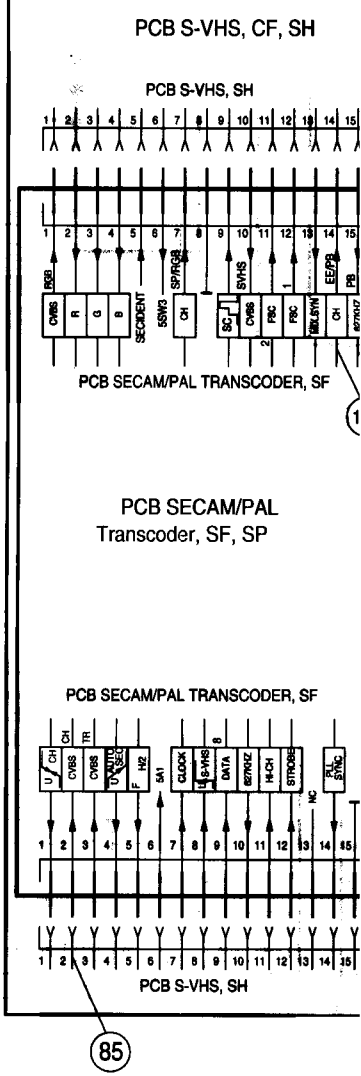
Wiring Diagram VR967

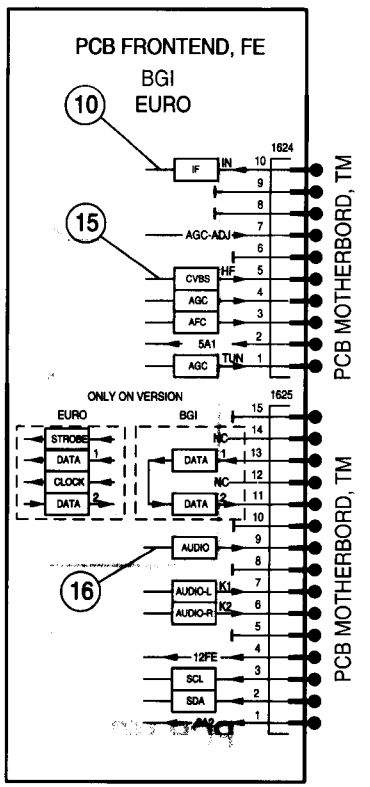


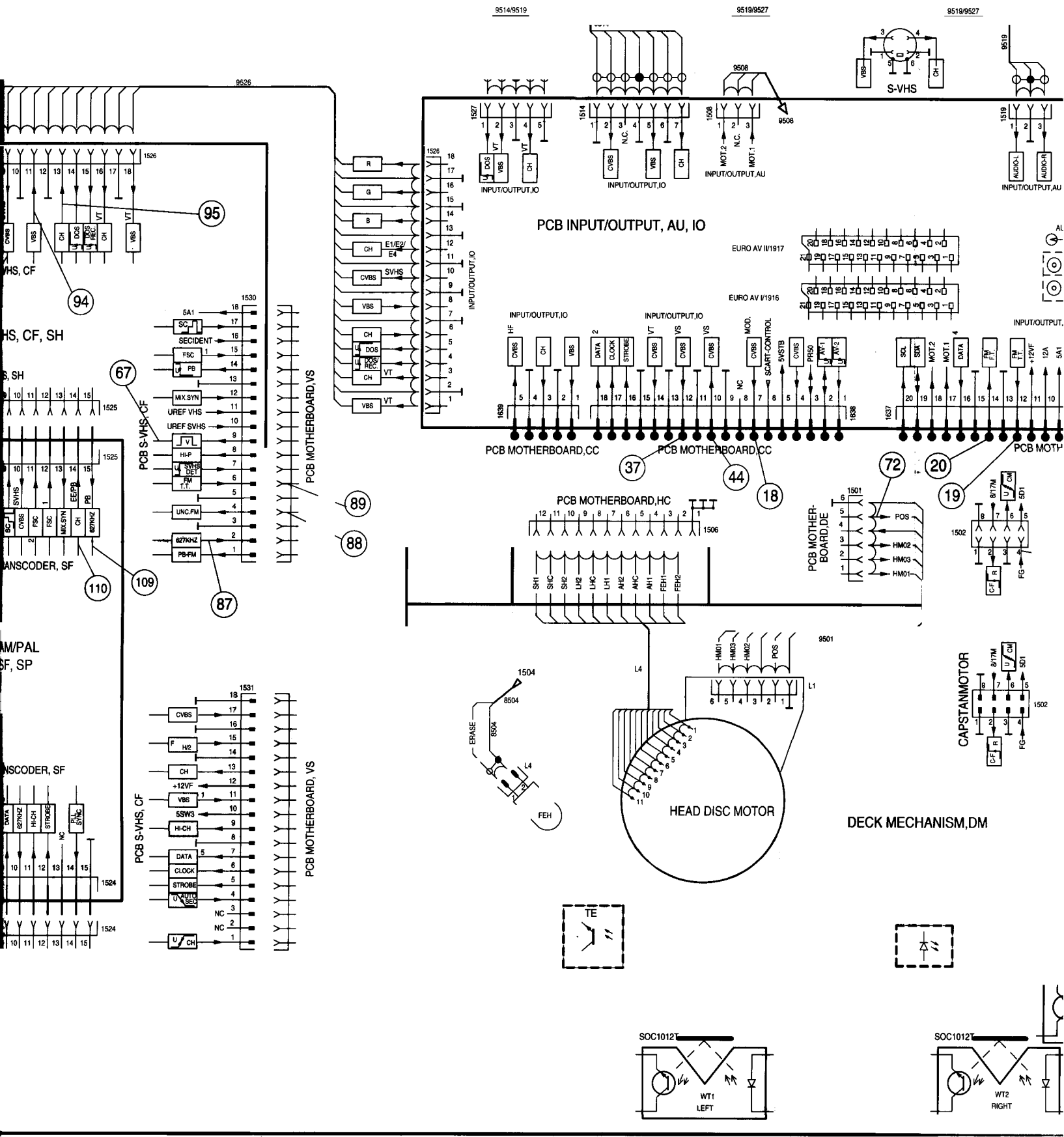

SDI
KEY0
KEYSTR2
KEYSTR1
BACKLIGHT
BACKLIGHT EJECT
6197
0025
BACKLIGHT PLAY
6128
0020
FILAMENT CONTROL
BUS-INIT
SCART CONTROL
SCL
EXT. TRIG.
SDA
PRERIOD
RESET
P2
P1
14A
STBY
-26V
3V8
5VSTBY
9510
1510
NC
6022
RECORD/ ENREG.
6021
TIMER
0130
0029
FOLLOW TV/ ATS
0028
STOP
0021
0023
0027
RECORD/ ENREG.
0024
0026

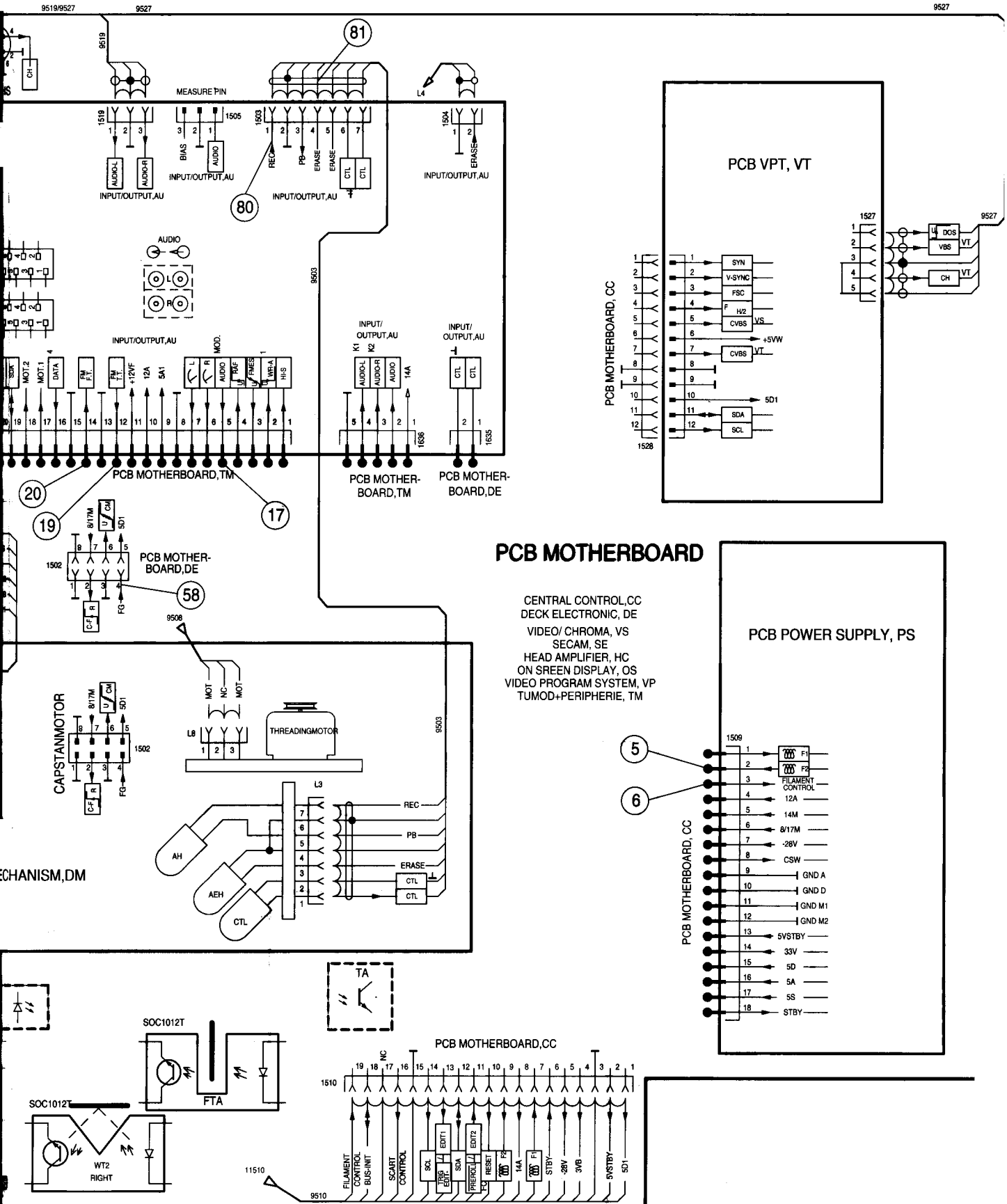

TV
TUMOD
NC
SCL
SDA
SWITCH VOLTAGES
CVBS
33V
AUDIO
TUN
AGC
12FE
5A1
IF
IN
PCB MOTHERBORD, TM


PCB S-VHS, CF
90
94

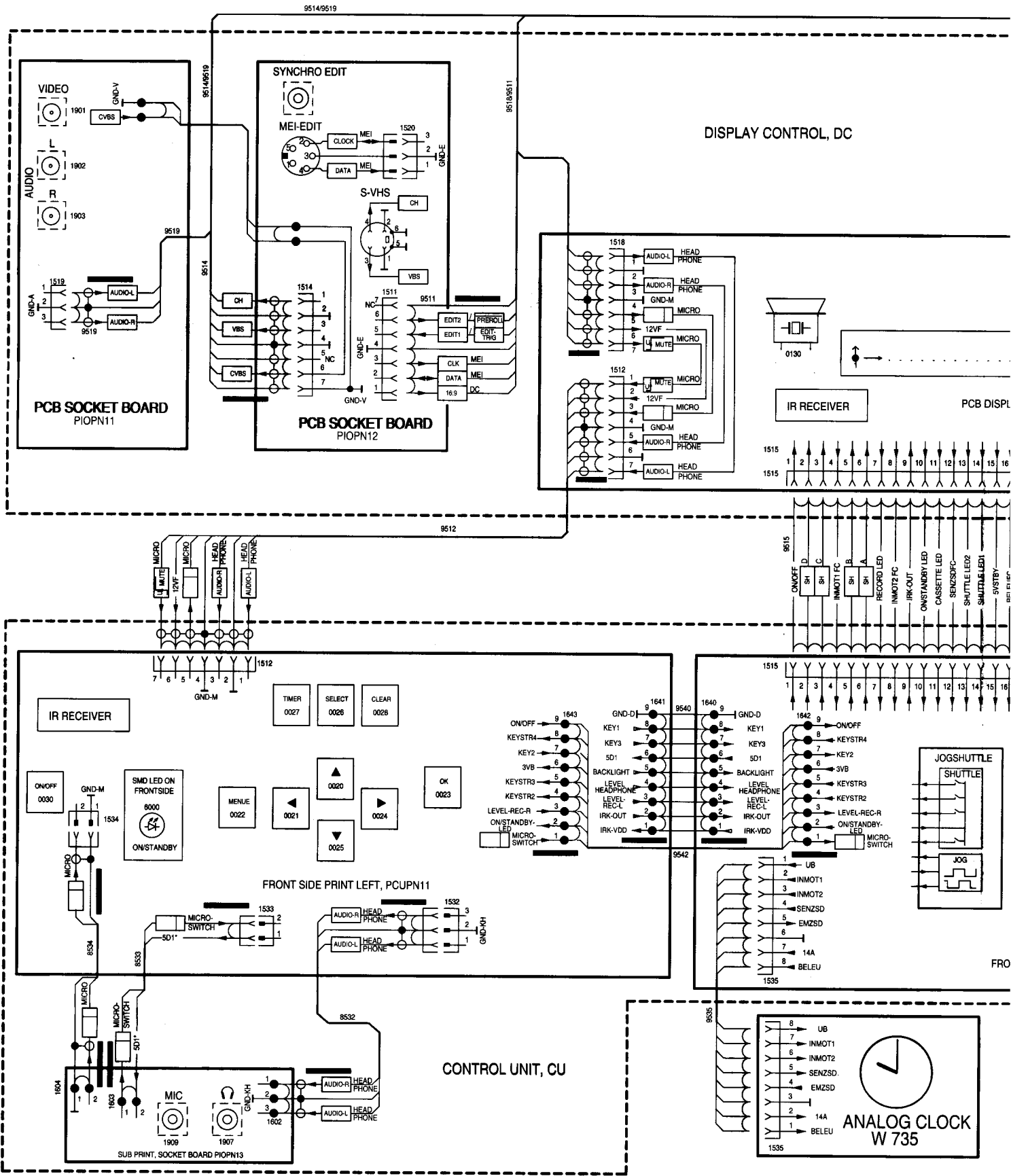

PCB S-VHS, CF, SH
PCB S-VHS, SH
PCB SECAM/PAL TRANSCODER, SF
PCB SECAM/PAL
Transcoder, SF, SP
PCB SECAM/PAL TRANSCODER, SF
PCB S-VHS, SH
85

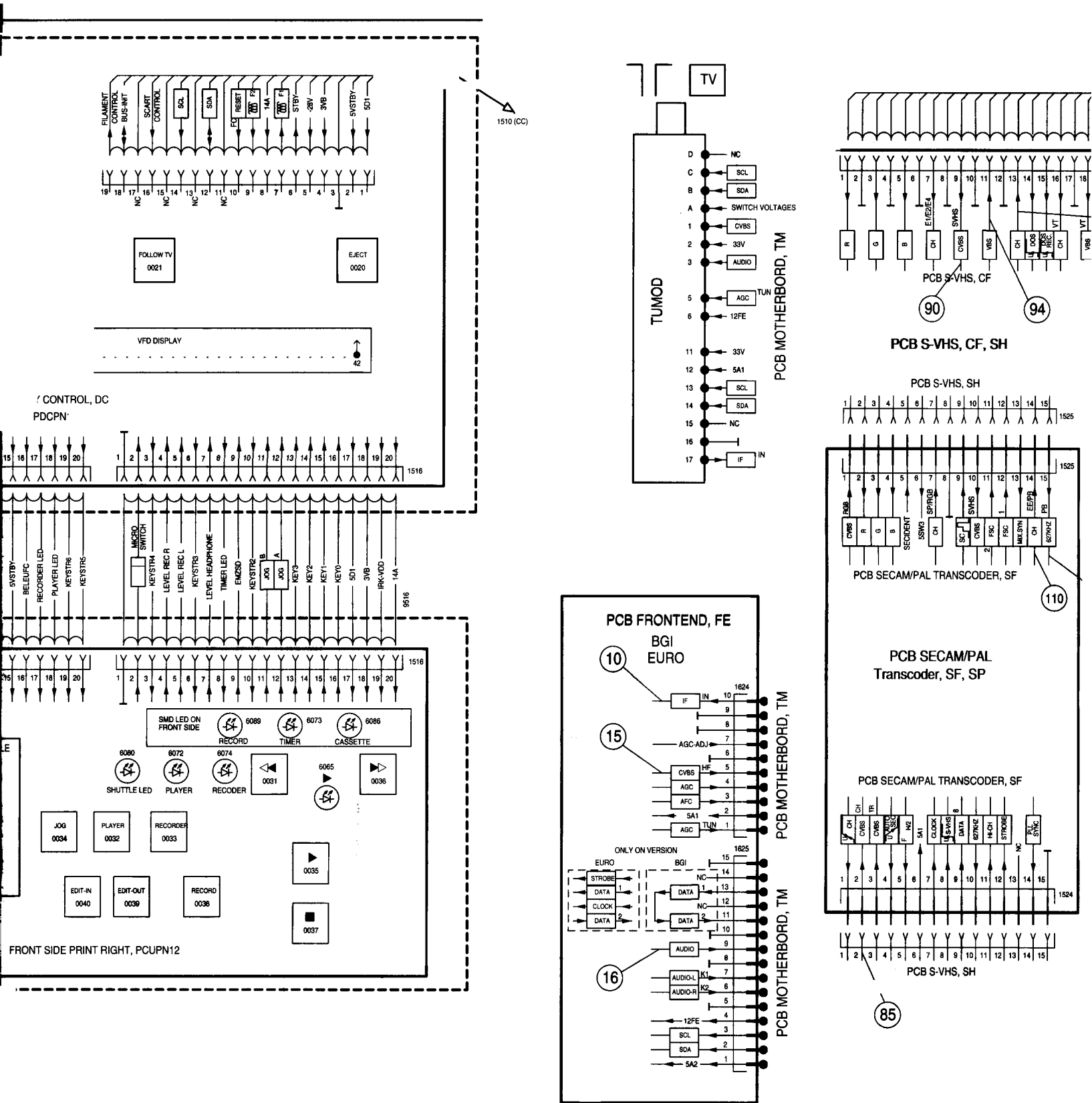

PCB FRONTEND, FE
BGI
EURO
10
15
16
IF
AGC-ADJ
CVBS
AGC
AFC
5A1
TUN
HF
1624
ONLY ON VERSION
EURO
BGI
STROBE
DATA
CLOCK
1625
AUDIO
AUDIO-L
AUDIO-R
12FE
SCL
SDA
PCB MOTHERBORD, TM

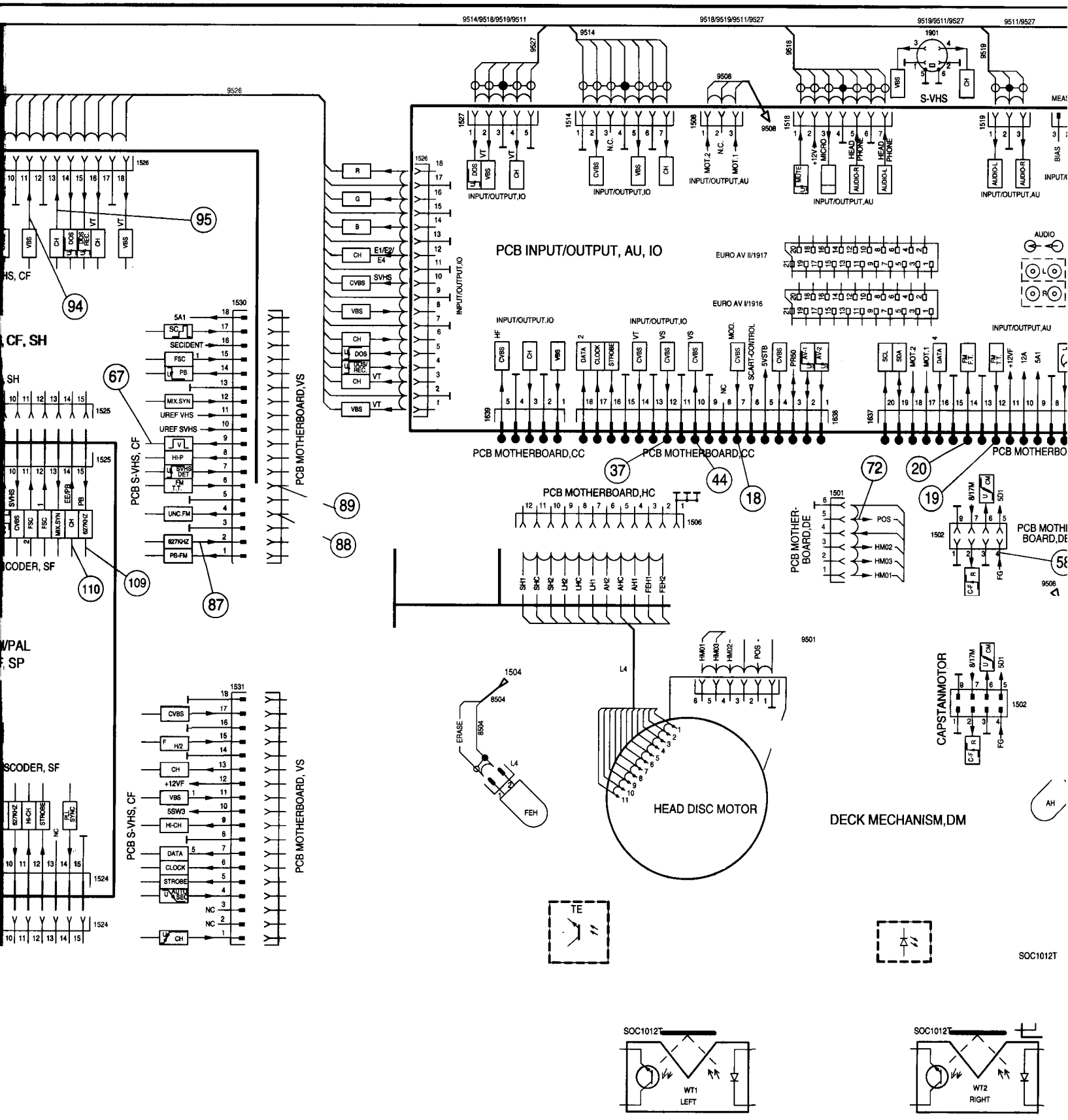

9514/9519
9519/9527
9519/9527
S-VHS
INPUT/OUTPUT,IO
INPUT/OUTPUT,IO
INPUT/OUTPUT,AU
INPUT/OUTPUT,AU
PCB INPUT/OUTPUT, AU, IO
EURO AV II/1917
EURO AV I/1916
INPUT/OUTPUT,IO
INPUT/OUTPUT,IO
PCB MOTHERBOARD,CC
PCB MOTHERBOARD,CC
PCB MOTHERBOARD,HC
PCB MOTHER-BOARD,DE
PCB MOTHERBOARD,VS
PCB S-VHS,CF
PCB MOTHERBOARD,VS
PCB S-VHS,CF
HEAD DISC MOTOR
DECK MECHANISM,DM
CAPSTANMOTOR
TE
SOC1012T
WT1
LEFT
SOC1012T
WT2
RIGHT
ANSCODER, SF
NSCODER, SF
HS, CF, SH
S, SH
HS, CF
AM/PAL
SF, SP

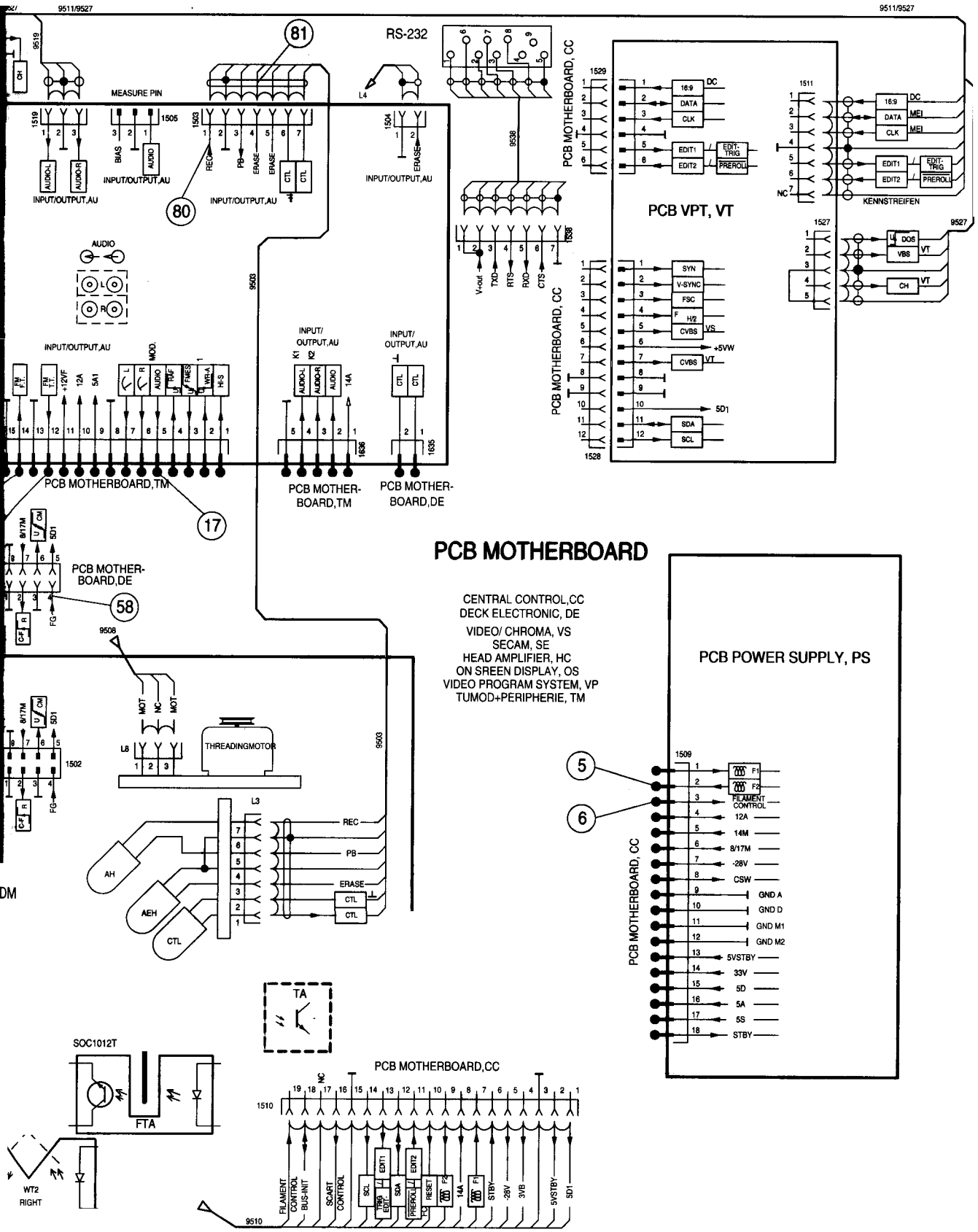

9519/9527
9527
9527
9619
81
MEASURE PIN
L4
1519
1505
1503
1504
AUDIO-L
AUDIO-R
BIAS
AUDIO
REC
PB
ERASE
ERASE
CTL
CTL
ERASE
INPUT/OUTPUT,AU
INPUT/OUTPUT,AU
INPUT/OUTPUT,AU
INPUT/OUTPUT,AU
80
AUDIO
L
R
9503
INPUT/OUTPUT,AU
INPUT/
OUTPUT,AU
INPUT/
OUTPUT,AU
K1
K2
SDX
MOT.2
MOT.1
DATA
FM
T.T.
FM
T.T.
+12VF
12A
5A1
MOD.
L
R
AUDIO
TAPE
FINES
WR-A
HI-S
AUDIO-L
AUDIO-R
AUDIO
14A
CTL
CTL
1636
1635
PCB MOTHERBOARD,TM
PCB MOTHER-
BOARD,TM
PCB MOTHER-
BOARD,DE
20
19
17
8/17M
CM
5D1
1502
PCB MOTHER-
BOARD,DE
58
C-F
R
FG
9508
MOT
NC
MOT
L8
THREADINGMOTOR
9503
CAPSTANMOTOR
8/17M
CM
5D1
1502
C-F
R
FG
L3
REC
PB
ERASE
CTL
CTL
AH
AEH
CTL
ECHANISM,DM
TA
SOC1012T
FTA
SOC1012T
WT2
RIGHT
PCB MOTHERBOARD,CC
1510
NC
FILAMENT
CONTROL
BUS-INIT
SCART
CONTROL
SCL
EDIT1
EDIT2
SDA
PRERO
RESET
F2
14A
F1
STBY
-28V
3VB
5VSTBY
5D1
11510
9510
PCB VPT, VT
1527
9527
DOS
VBS
CH
VT
VT
PCB MOTHERBOARD, CC
SYN
V-SYNC
FSC
F
H/2
CVBS
VS
+5VW
CVBS
VT
5D1
SDA
SCL
1528
PCB MOTHERBOARD
CENTRAL CONTROL,CC
DECK ELECTRONIC, DE
VIDEO/ CHROMA, VS
SECAM, SE
HEAD AMPLIFIER, HC
ON SREEN DISPLAY, OS
VIDEO PROGRAM SYSTEM, VP
TUMOD+PERIPHERIE, TM
PCB POWER SUPPLY, PS
5
6
1509
F1
F2
FILAMENT
CONTROL
12A
14M
8/17M
-28V
CSW
GND A
GND D
GND M1
GND M2
5VSTBY
33V
5D
5A
5S
STBY
PCB MOTHERBOARD, CC

Wiring Diagram VR969

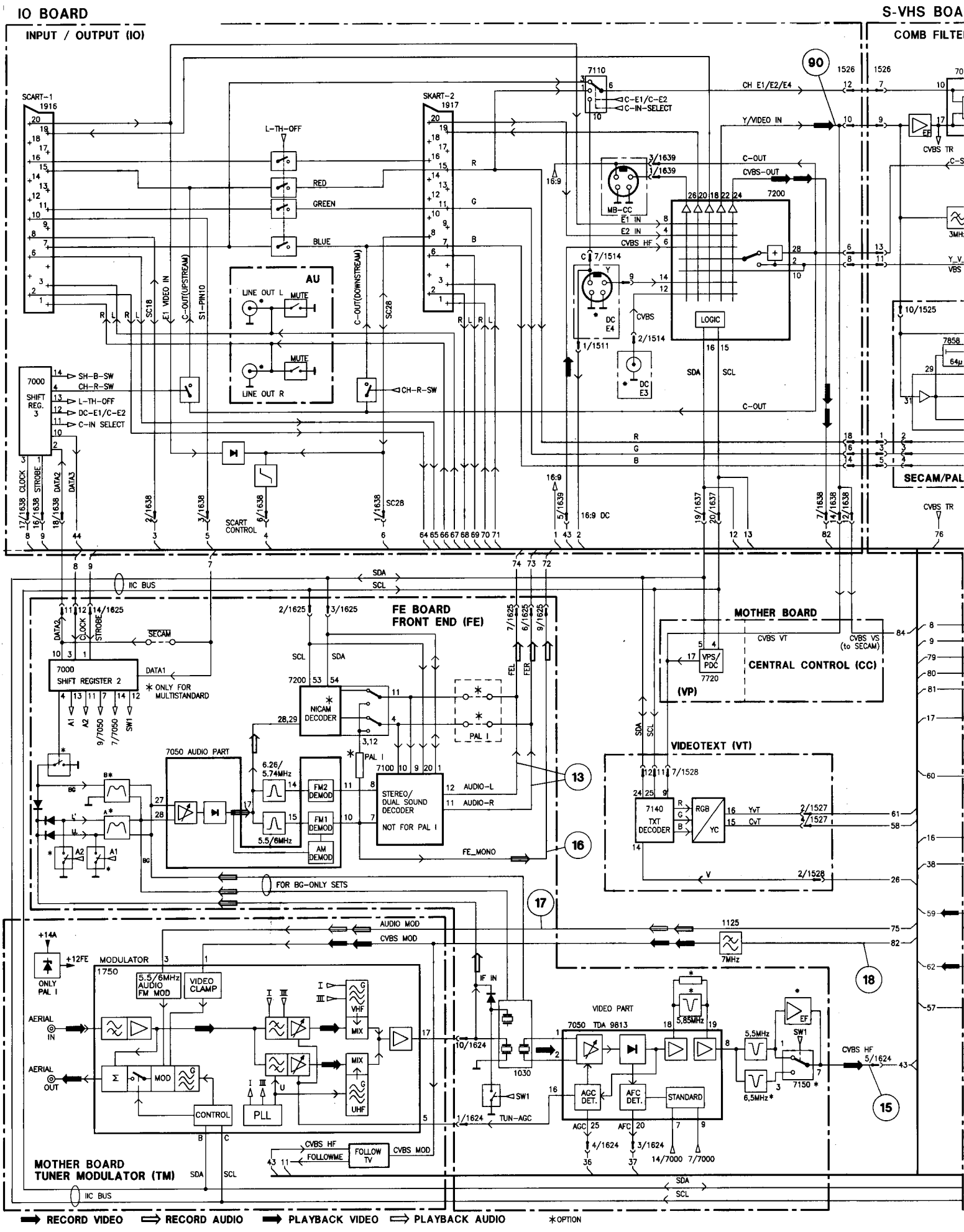


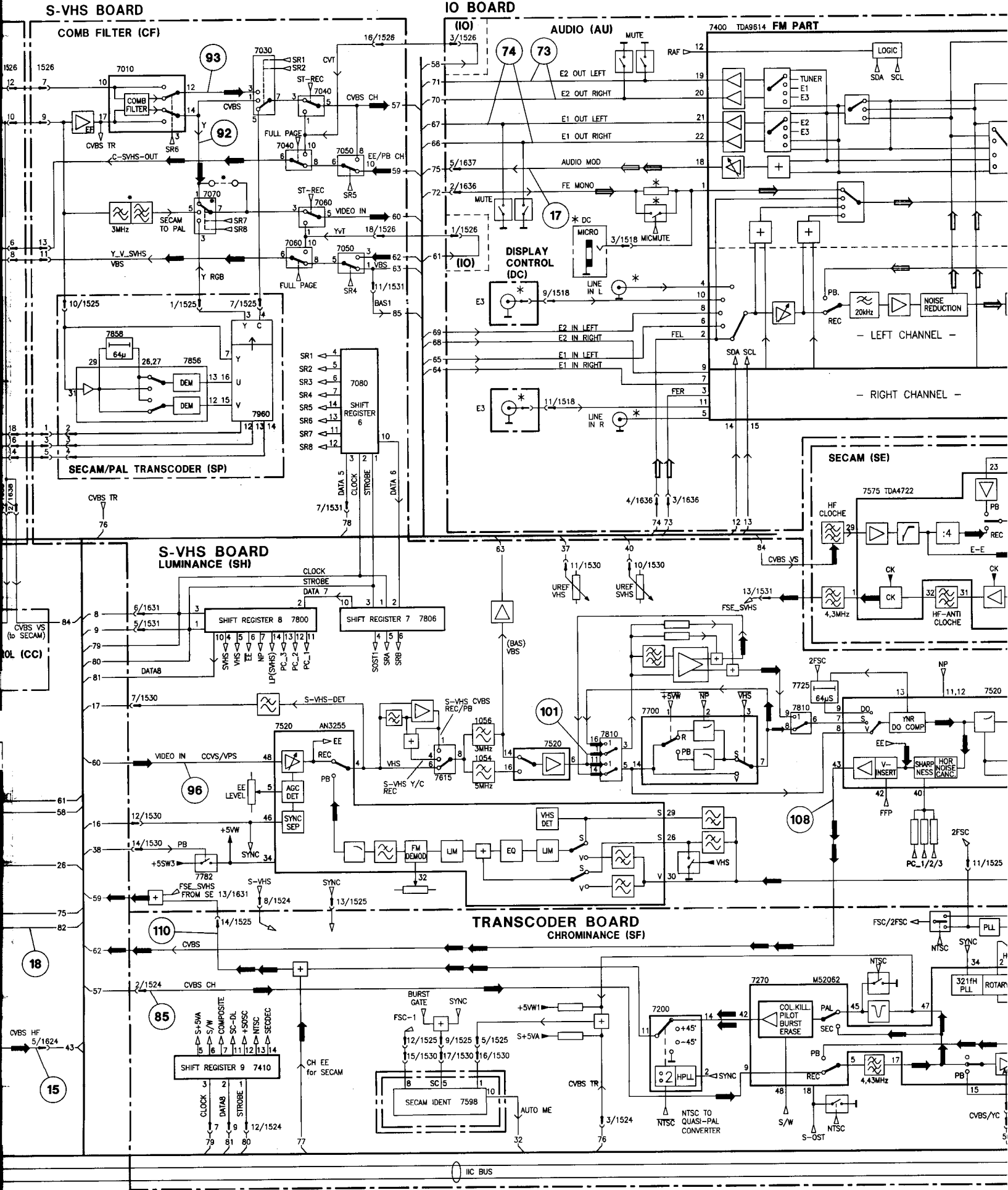

FILAMENT CONTROL
BUS-INT
SCART CONTROL
SCL
SDA
RESET
14A
STBY
-28V
3VB
5VSTBY
5D1
1510 (CC)
NC
FOLLOW TV 0021
EJECT 0020
VFD DISPLAY
42
CONTROL, DC
PDCPN
1516
MICRO SWITCH
5VSTBY
BELEUFC
RECORDER LED
PLAYER LED
KEYSTR6
KEYSTR5
KEYSTR4
LEVEL REC R
LEVEL REC L
KEYSTR3
LEVEL HEADPHONE
TIMER LED
EM2SD
KEYSTR2
JOG B
JOG A
KEY3
KEY2
KEY1
KEY0
5D1
3VB
IRK-VDD
14A
9516
SMD LED ON FRONT SIDE
6089 RECORD
6073 TIMER
6086 CASSETTE
6080 SHUTTLE LED
6072 PLAYER
6074 RECODER
0031
6065
0036
JOG 0034
PLAYER 0032
RECORDER 0033
0035
EDIT-IN 0040
EDIT-OUT 0039
RECORD 0038
0037
FRONT SIDE PRINT RIGHT, PCUPN12
TV
TUMOD
D NC
C SCL
B SDA
A SWITCH VOLTAGES
1 CVBS
2 33V
3 AUDIO
5 AGC TUN
6 12FE
11 33V
12 5A1
13 SCL
14 SDA
15 NC
16
17 IF IN
PCB MOTHERBORD, TM
PCB S-VHS, CF
90
94
PCB S-VHS, CF, SH
PCB S-VHS, SH
1525
PCB SECAM/PAL TRANSCODER, SF
110
PCB SECAM/PAL Transcoder, SF, SP
PCB SECAM/PAL TRANSCODER, SF
1524
PCB S-VHS, SH
85
PCB FRONTEND, FE
BGI
EURO
10
IF IN
1624
AGC-ADJ
15
CVBS HF
AGC
AFC
5A1
AGC TUN
ONLY ON VERSION
EURO
BGI
1625
STROBE
DATA
CLOCK
DATA
NC
DATA
NC
DATA
AUDIO
16
AUDIO-L K1
AUDIO-R K2
12FE
SCL
SDA
5A2
PCB MOTHERBORD, TM

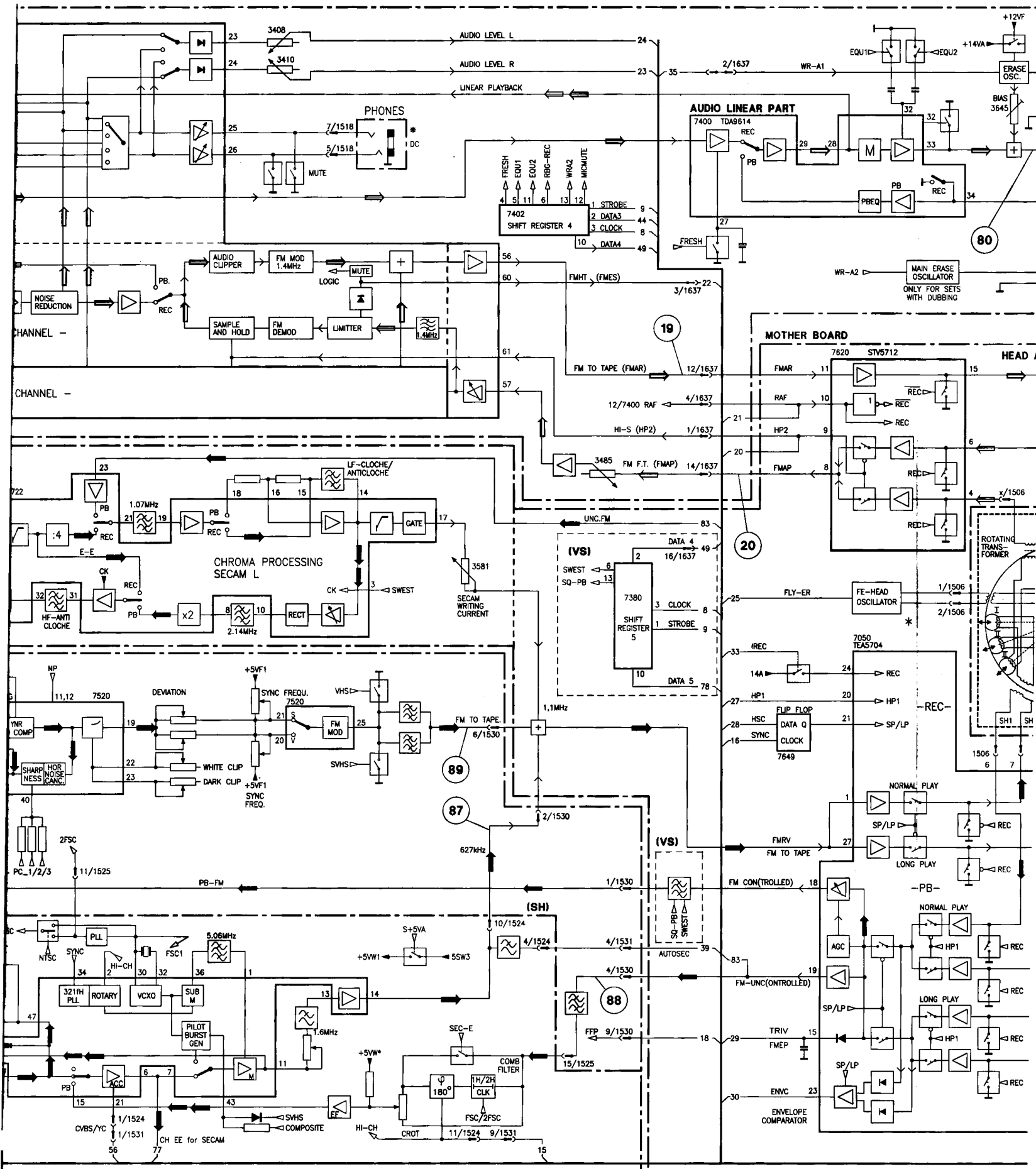

PCB INPUT/OUTPUT, AU, IO
PCB MOTHERBOARD,CC
PCB MOTHERBOARD,HC
PCB MOTHERBOARD,VS
PCB S-VHS, CF
PCB MOTHERBOARD,DE
HEAD DISC MOTOR
CAPSTANMOTOR
DECK MECHANISM,DM
INPUT/OUTPUT,IO
INPUT/OUTPUT,AU
S-VHS
EURO AV II/1917
EURO AV I/1916
SOC1012T
WT1 LEFT
WT2 RIGHT

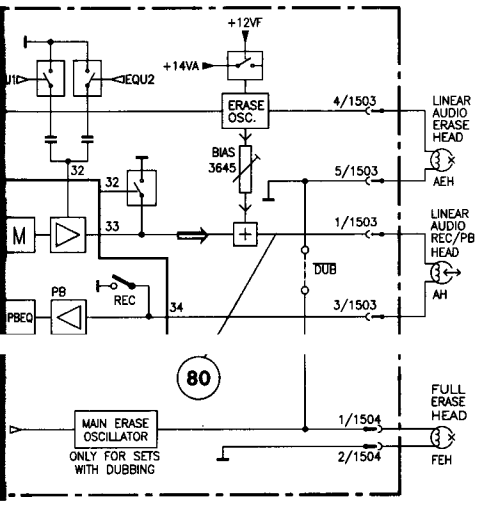

9511/9527
9511/9527
81
80
RS-232
MEASURE PIN
INPUT/OUTPUT,AU
PCB MOTHERBOARD, CC
PCB VPT, VT
KENNSTREIFEN
PCB MOTHERBOARD,TM
PCB MOTHER-BOARD,TM
PCB MOTHER-BOARD,DE
17
58
PCB MOTHERBOARD
CENTRAL CONTROL,CC
DECK ELECTRONIC, DE
VIDEO/ CHROMA, VS
SECAM, SE
HEAD AMPLIFIER, HC
ON SREEN DISPLAY, OS
VIDEO PROGRAM SYSTEM, VP
TUMOD+PERIPHERIE, TM
PCB POWER SUPPLY, PS
THREADINGMOTOR
REC
PB
ERASE
CTL
AH
AEH
TA
FTA
SOC1012T
WT2
RIGHT
PCB MOTHERBOARD,CC
5
6

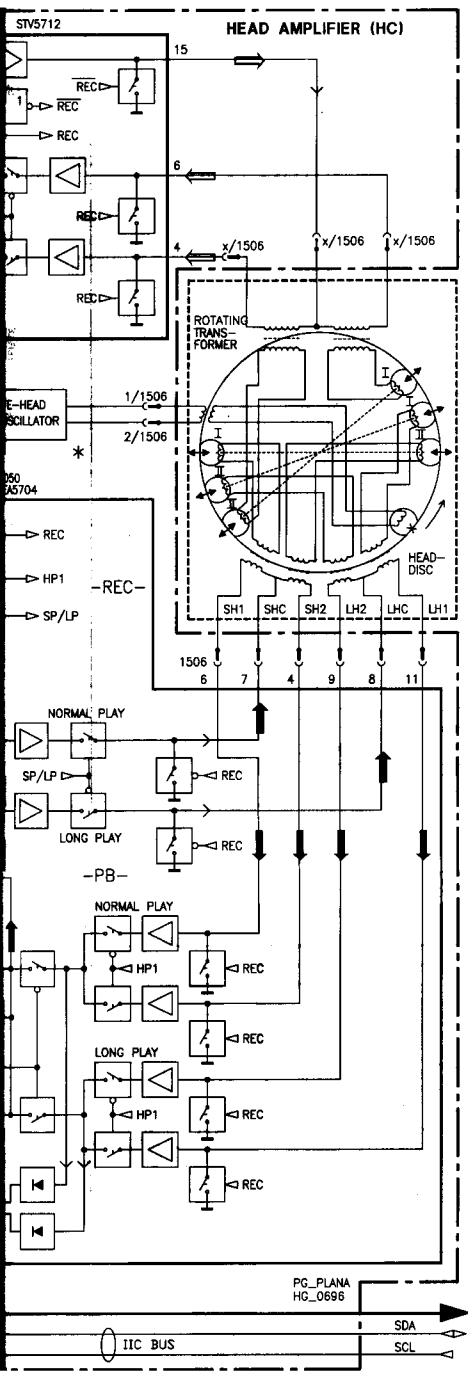
Block Diagram Analog S-VHS

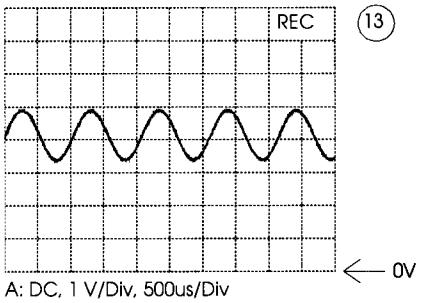



S-VHS BOARD
COMB FILTER (CF)
IO BOARD
(IO)
AUDIO (AU)
7400 TDA9614 FM PART
LOGIC
SDA SCL
TUNER
E1
E3
E2
E3
MUTE
RAF
E2 OUT LEFT
E2 OUT RIGHT
E1 OUT LEFT
E1 OUT RIGHT
AUDIO MOD
FE MONO
MICMUTE
DISPLAY CONTROL (DC)
MICRO
LINE IN L
LINE IN R
E2 IN LEFT
E2 IN RIGHT
E1 IN LEFT
E1 IN RIGHT
FEL
FER
PB.
REC
20kHz
NOISE REDUCTION
– LEFT CHANNEL –
– RIGHT CHANNEL –
SECAM (SE)
7575 TDA4722
HF CLOCHE
HF-ANTI CLOCHE
4,3MHz
E-E
PB
REC
CK
SECAM/PAL TRANSCODER (SP)
7858
64µ
7856
DEM
7960
7080
SHIFT REGISTER 6
SECAM TO PAL
3MHz
SR1
SR2
SR3
SR4
SR5
SR6
SR7
SR8
CVBS
CVBS TR
C-SVHS-OUT
Y RGB
Y_V_SVHS
VBS
CVBS CH
EE/PB CH
VIDEO IN
FULL PAGE
ST-REC
CVT
SR1
SR2
SR4
SR5
SR6
SR7
SR8
BAS1
DATA 5
CLOCK
STROBE
DATA 6
S-VHS BOARD
LUMINANCE (SH)
SHIFT REGISTER 8 7800
SHIFT REGISTER 7 7806
DATA8
DATA 7
CLOCK
STROBE
SVHS
VHS
EE
NP
LP(SVHS)
PC_3
PC_2
PC_1
SOST1
SRA
SRB
CVBS VS (to SECAM)
S-VHS-DET
S-VHS CVBS REC/PB
S-VHS Y/C REC
VIDEO IN
CCVS/VPS
AN3255
EE
REC
PB
AGC DET
SYNC SEP
EE LEVEL
VHS DET
FM DEMOD
LIM
EQ
+5VW
+5SW3
SYNC
FSE_SVHS FROM SE
S-VHS
TRANSCODER BOARD
CHROMINANCE (SF)
CVBS
CVBS CH
CVBS HF
SHIFT REGISTER 9 7410
SECAM IDENT 7598
CH EE for SECAM
AUTO ME
BURST GATE
FSC-1
SYNC
+5VW1
S+5VA
S+5VA
S/W
COMPOSITE
SC-DL
+5OSC
NTSC
SECDEC
CLOCK
DATA8
STROBE
7200
HPLL
NTSC TO QUASI-PAL CONVERTER
7270
M52062
COL.KILL. PILOT BURST ERASE
PAL
SEC
NTSC
S-OST
S/W
CVBS/YC
FSC/2FSC
PLL
321fH PLL
ROTARY
2FSC
PC_1/2/3
FFP
YNR DO COMP
SHARP NESS
HOR NOISE CANC.
V-INSERT
IIC BUS

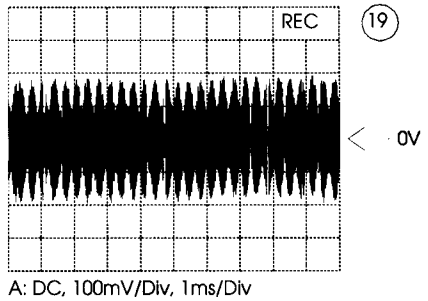

AUDIO LEVEL L
AUDIO LEVEL R
LINEAR PLAYBACK
PHONES
MUTE
AUDIO LINEAR PART
7400 TDA9614
REC
PB
PBEQ
ERASE OSC.
BIAS 3645
EQU1
EQU2
+12VF
+14VA
WR-A1
2/1637
7402
SHIFT REGISTER 4
STROBE
DATA3
CLOCK
DATA4
FRESH
EQU1
EQU2
RBG-REC
WRA2
MICMUTE
AUDIO CLIPPER
FM MOD 1.4MHz
LOGIC
NOISE REDUCTION
SAMPLE AND HOLD
FM DEMOD
LIMITTER
11.4MHz
CHANNEL –
FMHT (FMES)
3/1637
WR-A2
MAIN ERASE OSCILLATOR
ONLY FOR SETS WITH DUBBING
MOTHER BOARD
7620 STV5712
FM TO TAPE (FMAR)
12/1637
12/7400 RAF
4/1637
HI-S (HP2)
1/1637
FM F.T. (FMAP)
14/1637
FMAR
RAF
HP2
FMAP
HEAD
ROTATING TRANS-FORMER
CHROMA PROCESSING SECAM L
LF-CLOCHE/ ANTICLOCHE
1.07MHz
GATE
HF-ANTI CLOCHE
2.14MHz
RECT
SECAM WRITING CURRENT
SWEST
CK
UNC.FM
(VS)
SWEST
SQ-PB
DATA 4
16/1637
DATA 5
7380
SHIFT REGISTER 5
CLOCK
STROBE
FLY-ER
FE-HEAD OSCILLATOR
1/1506
2/1506
7050 TEA5704
FLIP FLOP
DATA Q
CLOCK
HSC
SYNC
7649
SP/LP
HP1
REC
-REC-
NORMAL PLAY
LONG PLAY
-PB-
NP
11,12
7520
DEVIATION
SYNC FREQU. 7520
+5VF1
VHS
SVHS
FM MOD
FM TO TAPE
6/1530
1,1MHz
WHITE CLIP
DARK CLIP
SHARP NESS
HOR NOISE CANC.
YNR COMP
2FSC
PC_1/2/3
11/1525
PB-FM
627kHz
2/1530
(SH)
10/1524
4/1524
4/1531
4/1530
FM CON(TROLLED)
FM-UNC(ONTROLLED)
AUTOSEC
SQ-PB
SWEST
FMRV
FM TO TAPE
PLL
NTSC
SYNC
FSC1
5.06MHz
HI-CH
321fH PLL
ROTARY
VCXO
SUB M
PILOT BURST GEN
1.6MHz
+5VW1
5SW3
S+5VA
+5VW*
SEC-E
COMB FILTER
1H/2H
CLK
FSC/2FSC
CROT
11/1524
9/1531
15/1525
FFP 9/1530
88
AGC
TRIV
FMEP
ENVC
ENVELOPE COMPARATOR
CVBS/YC
1/1524
1/1531
CH EE for SECAM
SVHS
COMPOSITE
IIC BUS
19
20
80
87
89



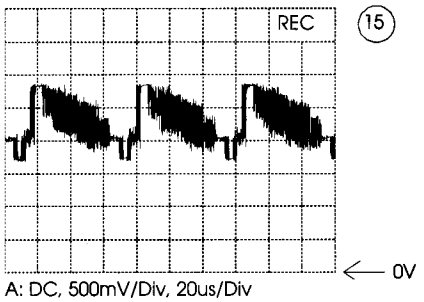




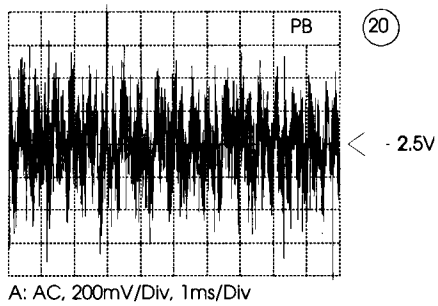
A: DC, 1 V/Div, 500us/Div
IC 7100 Pin 11/12



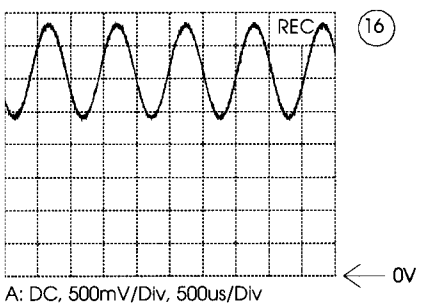
A: DC, 100mV/Div, 1ms/Div
Connector 1637 Pin 12



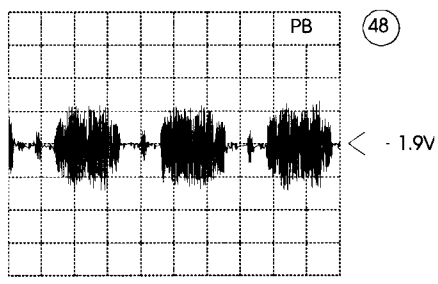
A: DC, 500mV/Div, 20us/Div
Connector 1624 Pin 5



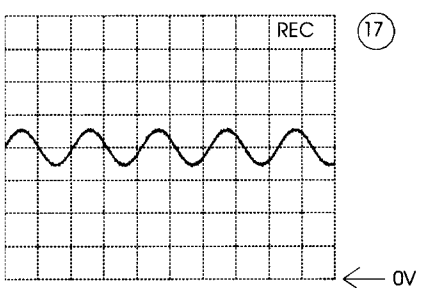
A: AC, 200mV/Div, 1ms/Div
Connector 1637 Pin 14



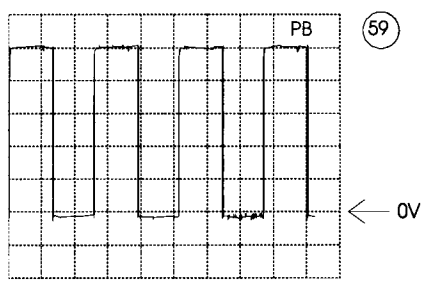
A: DC, 500mV/Div, 500us/Div
Connector 1625 Pin 9



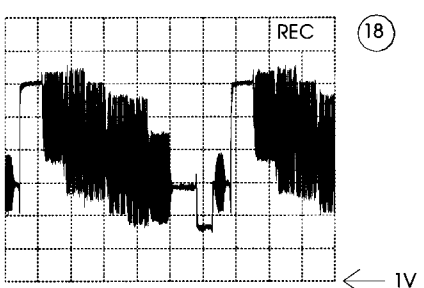
A: AC, 200mV/Div, 20us/Div
IC 7320 Pin 23



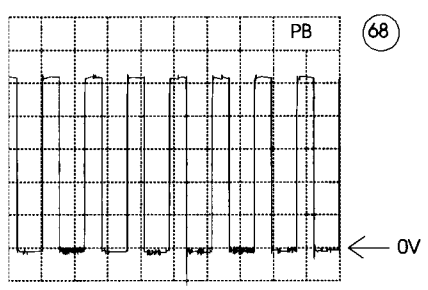
A: DC, 1 V/Div, 500us/Div
Connector 1637 Pin 5



A: DC, 1 V/Div, 10us/Div
IC 7085 Pin 25



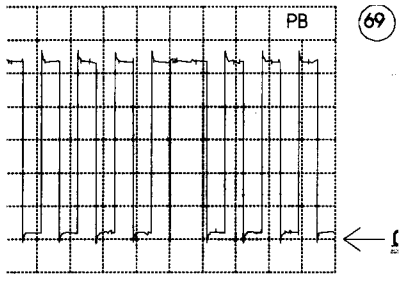
A: DC, 500mV/Div, 10us/Div
Connector 1638 Pin 7



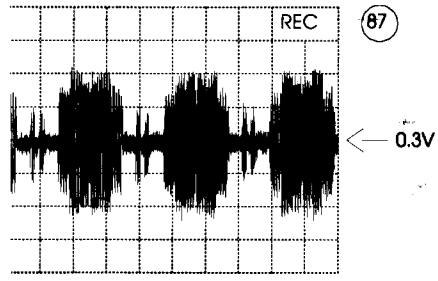
A: DC, 1 V/Div, 20us/Div
IC 7085 Pin 24

Interconnections:

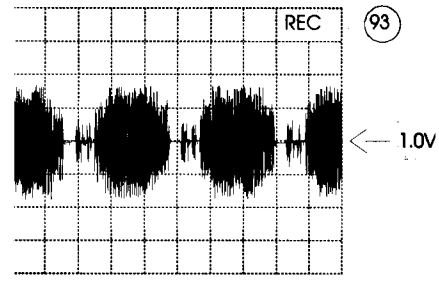
PS page 3-27	SE page 3-35	DE page 3-38	VP page 3-41	VT page 3-46	SF page 3-53
FE page 3-29/31	HC page 3-36	OS page 3-39	IO page 3-44	CF page 3-50	SP page 3-54
TM page 3-34	VS page 3-37	CC page 3-40	AU page 3-45	SH page 3-51	DC page 3-57...



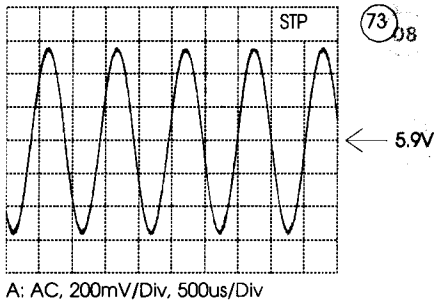
A: DC, 1 V/Div, 2ms/Div
IC 7085 Pin 12



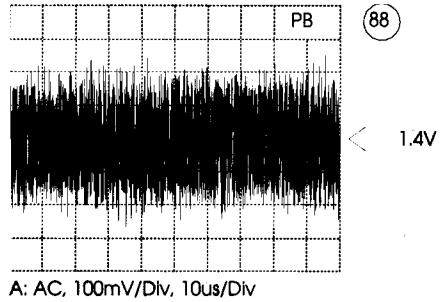
A: AC, 50mV/Div, 20us/Div
Connector 1530 Pin 2



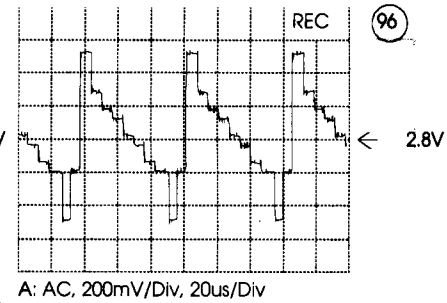
A: AC, 200mV/Div, 20us/Div
IC 7010 Pin 12



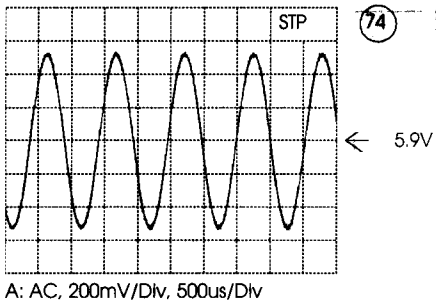
A: AC, 200mV/Div, 500us/Div
IC 7400 Pin 19/20



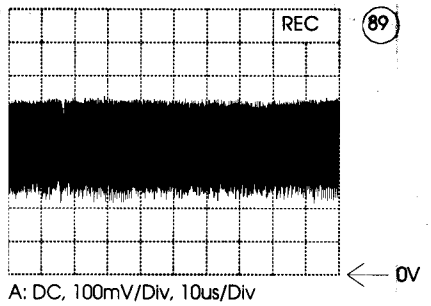
A: AC, 100mV/Div, 10us/Div
Connector 1530 Pin 4



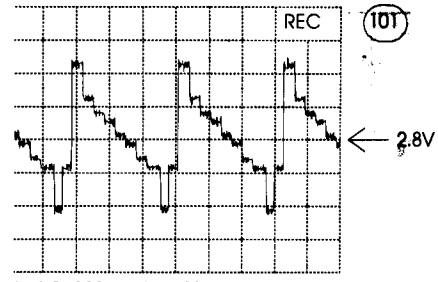
A: AC, 200mV/Div, 20us/Div
IC 7520 Pin 48



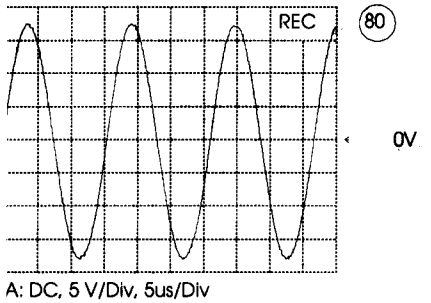
A: AC, 200mV/Div, 500us/Div
IC 7400 Pin 21/22



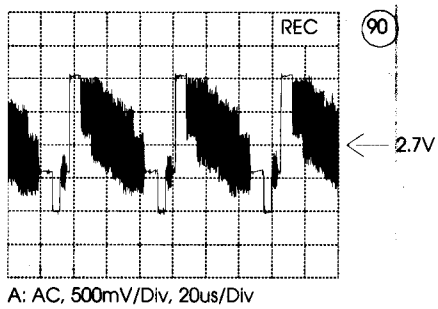
A: DC, 100mV/Div, 10us/Div
Connector 1530 Pin 6



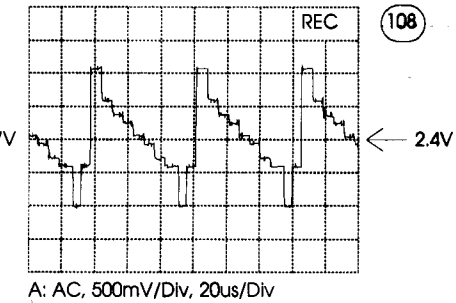
A: AC, 100mV/Div, 20us/Div
IC 7520 Pin 6



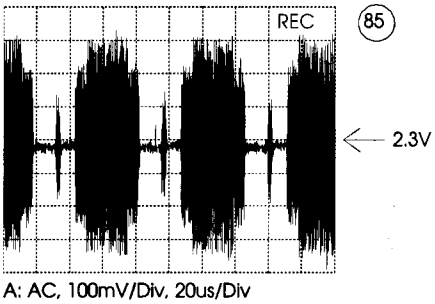
A: DC, 5 V/Div, 5us/Div
Connector 1503 Pin 1



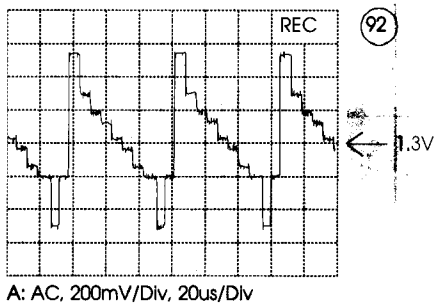
A: AC, 500mV/Div, 20us/Div
Connector 1526 Pin 9



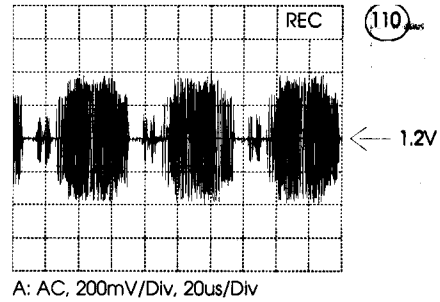
A: AC, 500mV/Div, 20us/Div
IC 7520 Pin 43



A: AC, 100mV/Div, 20us/Div
Connector 1524 Pin 2

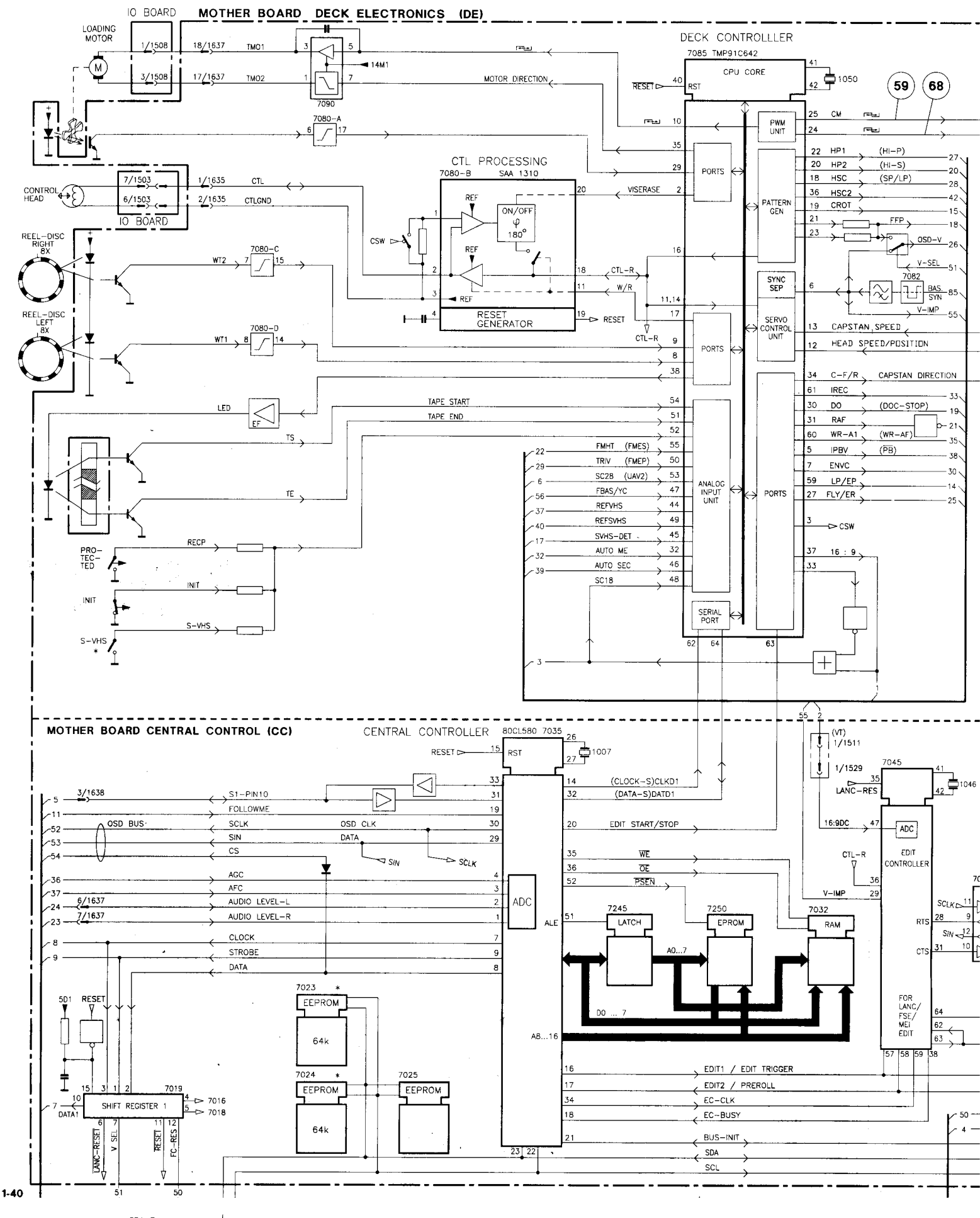


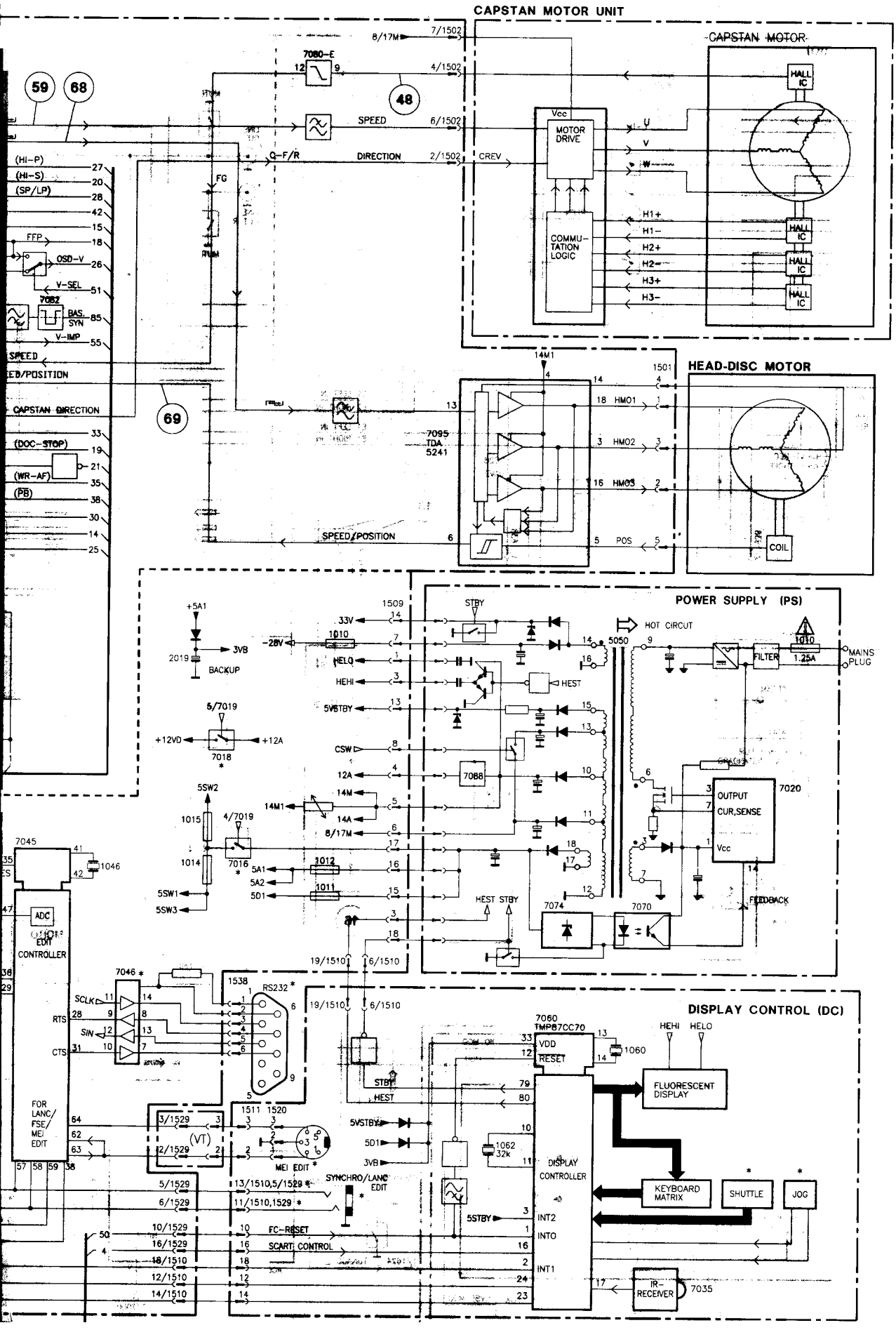
A: AC, 200mV/Div, 20us/Div
IC 7010 Pin 14



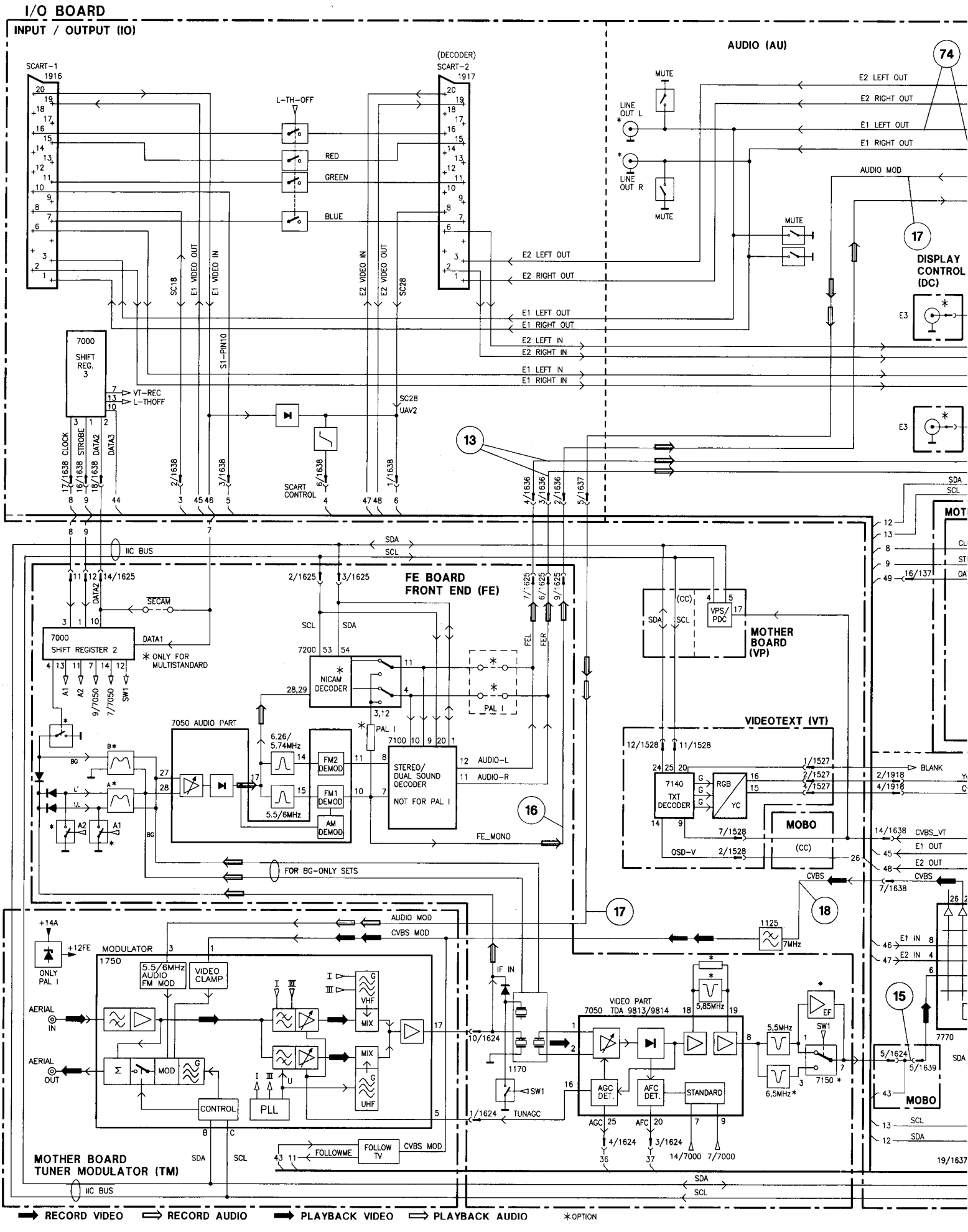
A: AC, 200mV/Div, 20us/Div
Connector 1525 Pin 14

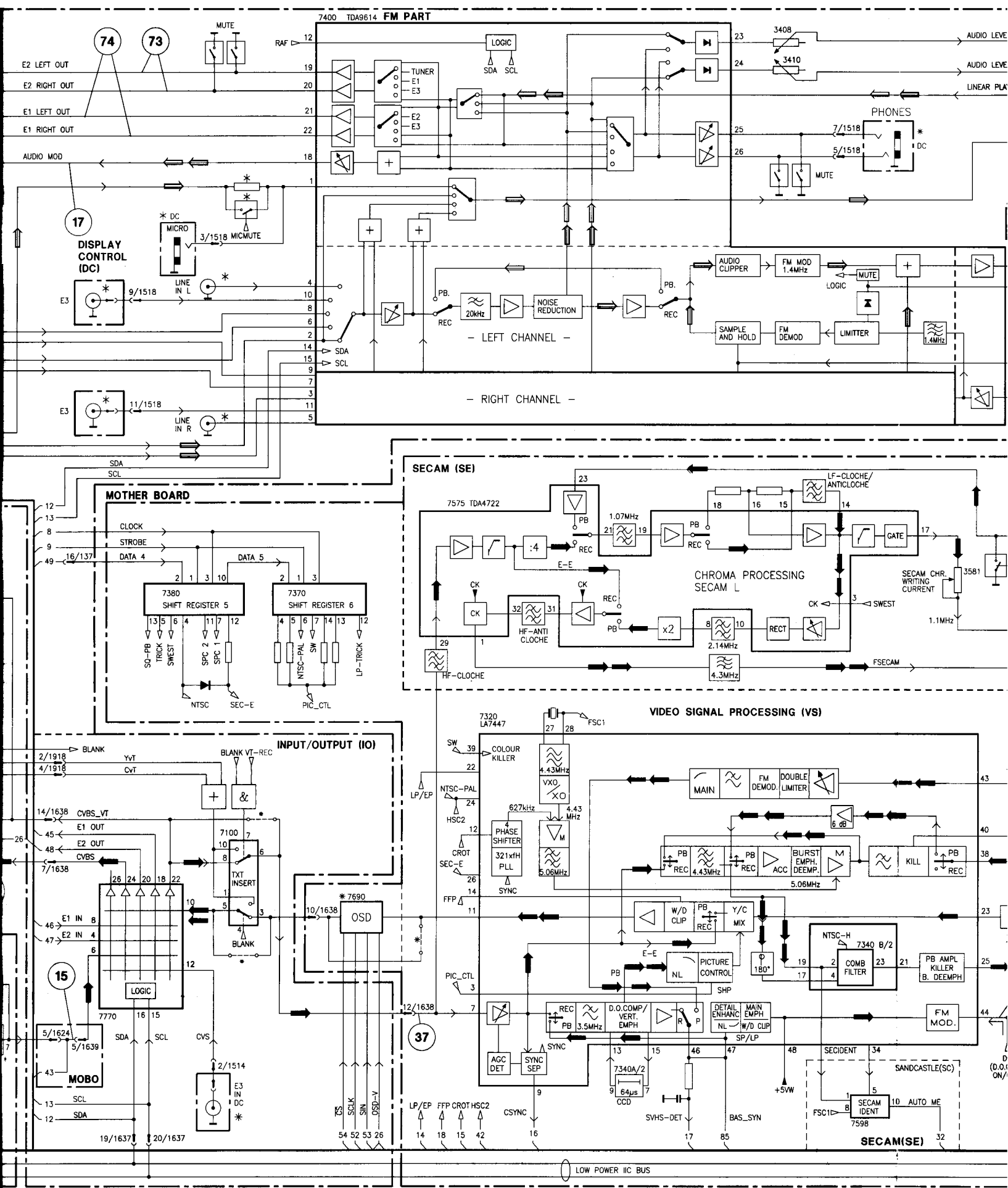
Block Diagram Digital

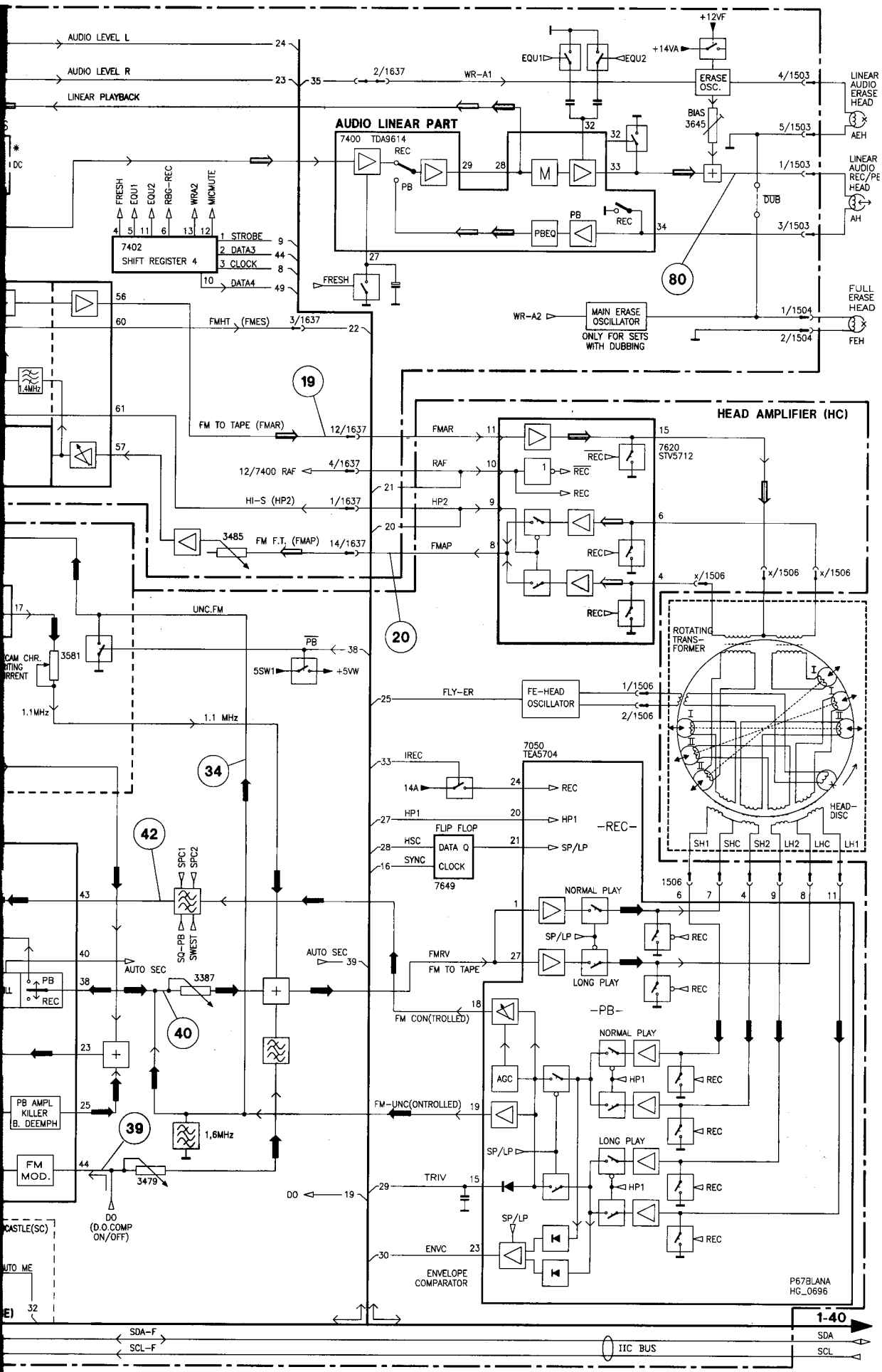


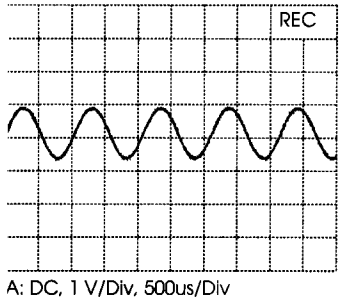

CAPSTAN MOTOR UNIT
CAPSTAN MOTOR
HALL IC
MOTOR DRIVE
COMMU-TATION LOGIC
Vcc
U
V
W
H1+
H1-
H2+
H2-
H3+
H3-
7/1502
8/17M
4/1502
6/1502
2/1502
CREV
SPEED
DIRECTION
C-F/R
FG
7080-E
48
59
68
69
(HI-P)
(HI-S)
(SP/LP)
FFP
OSD-V
V-SEL
7082
BAS. SYN
V-IMP
SPEED
EED/POSITION
CAPSTAN DIRECTION
(DOC-STOP)
(WR-AF)
(PB)
HEAD-DISC MOTOR
14M1
1501
7095 TDA 5241
HM01
HM02
HM03
POS
SPEED/POSITION
COIL
POWER SUPPLY (PS)
+5A1
3VB
BACKUP
2019
-28V
33V
HELO
HEHI
5VSTBY
CSW
12A
14M
14A
8/17M
5D1
HEST
STBY
HOT CIRCUT
1509
1010
5050
FILTER
1.25A
MAINS PLUG
5/7019
+12VD
+12A
7018
5SW2
1015
1014
4/7019
7016
5A1
5A2
5SW1
5SW3
1012
1011
7088
7074
7070
7020
OUTPUT
CUR.SENSE
Vcc
FEEDBACK
7045
ADC
EDIT CONTROLLER
1046
7046
SCLK
RTS
SIN
CTS
1538
RS232
19/1510
6/1510
DISPLAY CONTROL (DC)
7060 TMP87CC70
VDD
RESET
1060
FLUORESCENT DISPLAY
DISPLAY CONTROLLER
KEYBOARD MATRIX
SHUTTLE
JOG
1062 32k
3VB
5STBY
INT2
INTO
INT1
IR-RECEIVER
7035
FOR LANC/ FSE/ MEI EDIT
MEI EDIT
SYNCHRO/LANC EDIT
FC-RESET
SCART CONTROL
5/1529
6/1529
10/1529
16/1529
18/1510
12/1510
14/1510
13/1510,5/1529
11/1510,1529
3/1529
12/1529
1511
1520
(VT)

Block Diagram Analog VHS

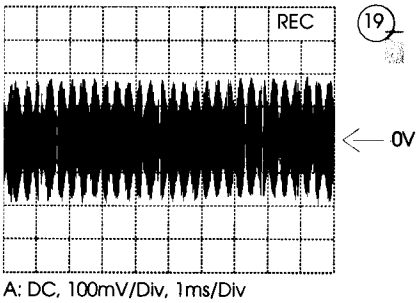



7400 TDA9614 FM PART
MUTE
74
73
E2 LEFT OUT
E2 RIGHT OUT
E1 LEFT OUT
E1 RIGHT OUT
AUDIO MOD
RAF
LOGIC
SDA SCL
TUNER
E1
E3
E2
E3
3408
3410
AUDIO LEVE
AUDIO LEVE
LINEAR PLA
PHONES
7/1518
5/1518
DC
MUTE
17
DISPLAY CONTROL (DC)
DC
MICRO
3/1518 MICMUTE
LINE IN L
E3
9/1518
PB.
REC
20kHz
NOISE REDUCTION
PB.
REC
AUDIO CLIPPER
FM MOD 1.4MHz
MUTE
LOGIC
SAMPLE AND HOLD
FM DEMOD
LIMITTER
1.4MHz
SDA
SCL
- LEFT CHANNEL -
- RIGHT CHANNEL -
E3
11/1518
LINE IN R
SDA
SCL
MOTHER BOARD
CLOCK
STROBE
DATA 4
DATA 5
16/137
7380 SHIFT REGISTER 5
7370 SHIFT REGISTER 6
SQ-PB
TRICK
SWEST
SPC 2
SPC 1
NTSC-PAL
SW
LP-TRICK
NTSC
SEC-E
PIC_CTL
SECAM (SE)
7575 TDA4722
PB
REC
1.07MHz
:4
E-E
CK
HF-ANTI CLOCHE
HF-CLOCHE
LF-CLOCHE/ ANTICLOCHE
GATE
CHROMA PROCESSING SECAM L
SECAM CHR. WRITING CURRENT
3581
1.1MHz
SWEST
x2
2.14MHz
RECT
4.3MHz
FSECAM
VIDEO SIGNAL PROCESSING (VS)
7320 LA7447
FSC1
COLOUR KILLER
4.43MHz VXO
627kHz
4.43 MHz
PHASE SHIFTER
321xfH PLL
5.06MHz
SYNC
LP/EP
NTSC-PAL
HSC2
CROT
SEC-E
FFP
MAIN
FM DEMOD.
DOUBLE LIMITER
6 dB
BURST EMPH. DEEMP.
ACC
KILL
W/D CLIP
Y/C MIX
PICTURE CONTROL
NL
180°
NTSC-H
7340 B/2
COMB FILTER
PB AMPL KILLER B. DEEMPH
D.O.COMP/ VERT. EMPH
DETAIL ENHANC
MAIN EMPH
W/D CLIP
SP/LP
FM MOD.
AGC DET
SYNC SEP
7340A/2
64µs
CCD
+5VW
SECIDENT
SANDCASTLE(SC)
SECAM IDENT
7598
AUTO ME
SECAM(SE)
SVHS-DET
BAS_SYN
CSYNC
INPUT/OUTPUT (IO)
BLANK
YvT
CvT
BLANK VT-REC
2/1918
4/1918
14/1638 CVBS_VT
E1 OUT
E2 OUT
CVBS
7/1638
7100
TXT INSERT
BLANK
E1 IN
E2 IN
LOGIC
7770
15
5/1624
5/1639
MOBO
SDA
SCL
CVS
2/1514
E3 IN DC
19/1637
20/1637
7690
OSD
10/1638
12/1638
37
CS
SCLK
SIN
OSD-V
54 52 53 26
LP/EP FFP CROT HSC2
14 18 15 42
CSYNC
16
SVHS-DET
17
BAS_SYN
85
LOW POWER IIC BUS

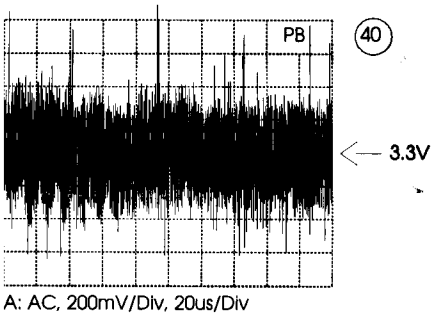

AUDIO LEVEL L
AUDIO LEVEL R
LINEAR PLAYBACK
AUDIO LINEAR PART
7400 TDA9614
REC
PB
PBEQ
M
EQU1
EQU2
+12VF
+14VA
ERASE OSC.
BIAS 3645
DUB
LINEAR AUDIO ERASE HEAD
AEH
LINEAR AUDIO REC/PE HEAD
AH
FULL ERASE HEAD
FEH
FRESH
EQU1
EQU2
RBG-REC
WRA2
MICMUTE
7402 SHIFT REGISTER 4
STROBE
DATA3
CLOCK
DATA4
WR-A1
WR-A2
MAIN ERASE OSCILLATOR
ONLY FOR SETS WITH DUBBING
FMHT (FMES)
FM TO TAPE (FMAR)
12/7400 RAF
HI-S (HP2)
FM F.T. (FMAP)
1.4MHz
3485
HEAD AMPLIFIER (HC)
7620 STV5712
FMAR
RAF
HP2
FMAP
ROTATING TRANS-FORMER
HEAD-DISC
SH1
SHC
SH2
LH2
LHC
LH1
UNC.FM
5SW1
+5VW
3581
1.1MHz
FLY-ER
FE-HEAD OSCILLATOR
7050 TEA5704
IREC
HP1
HSC
SYNC
FLIP FLOP
DATA Q
CLOCK
7649
SP/LP
-REC-
-PB-
NORMAL PLAY
LONG PLAY
SPC1
SPC2
SQ-PB
SWEST
AUTO SEC
3387
FM CON(TROLLED)
FM-UNC(ONTROLLED)
TRIV
ENVC
ENVELOPE COMPARATOR
AGC
PB AMPL KILLER B. DEEMPH
FM MOD.
1,6MHz
3479
DO
(D.O.COMP ON/OFF)
IIC BUS
SDA-F
SCL-F
SDA
SCL
P67BLANA HG_0696
1-40



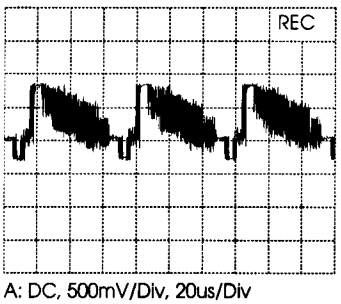
A: DC, 1 V/Div, 500us/Div
IC 7100 Pin 11/12



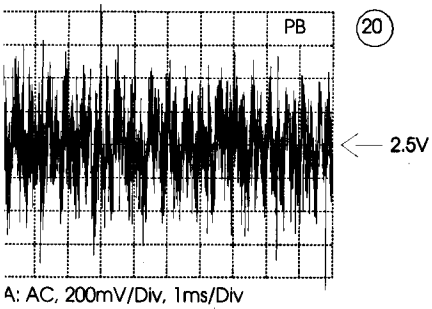
A: DC, 100mV/Div, 1ms/Div
Connector 1637 Pin 12



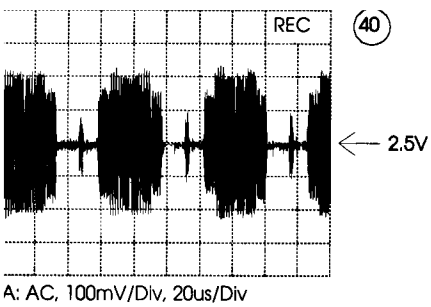
A: AC, 200mV/Div, 20us/Div
IC 7320 Pin 38



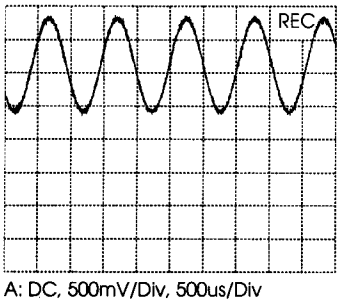
A: DC, 500mV/Div, 20us/Div
Connector 1624 Pin 5



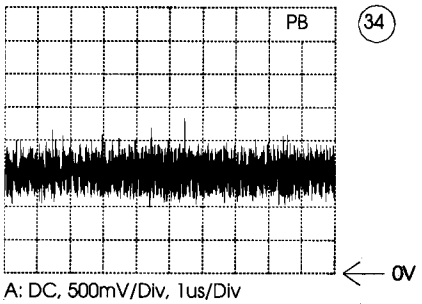
A: AC, 200mV/Div, 1ms/Div
Connector 1637 Pin 14



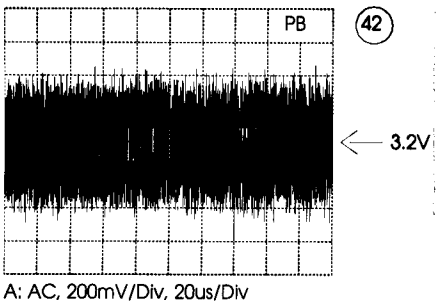
A: AC, 100mV/Div, 20us/Div
IC 7320 Pin 38



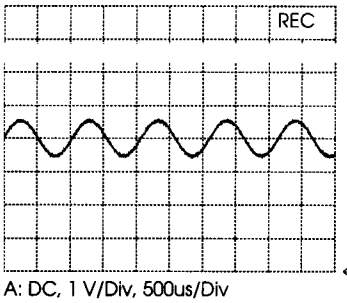
A: DC, 500mV/Div, 500us/Div
Connector 1625 Pin 9



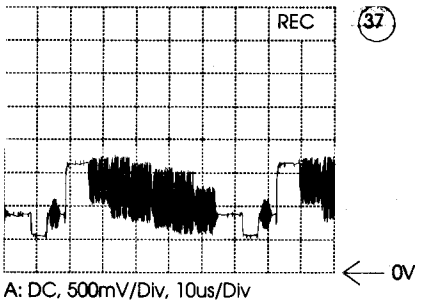
A: DC, 500mV/Div, 1us/Div
IC 7600 Pin 19



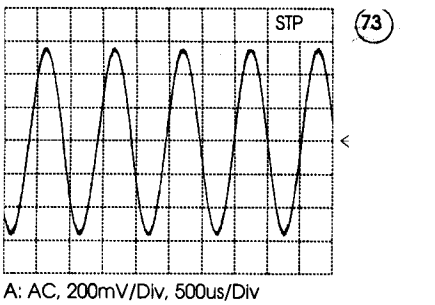
A: AC, 200mV/Div, 20us/Div
IC 7320 Pin 43



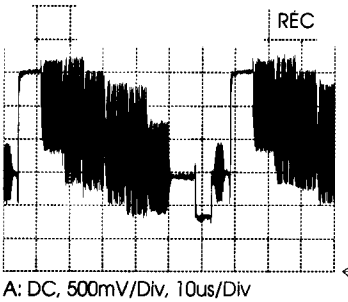
A: DC, 1 V/Div, 500us/Div
Connector 1637 Pin 5



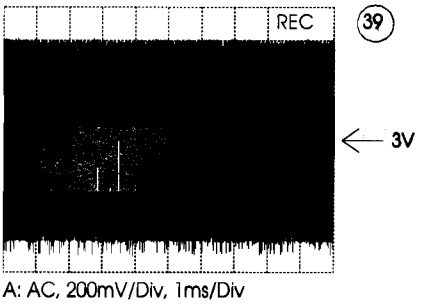
A: DC, 500mV/Div, 10us/Div
Connector 1638 Pin 12



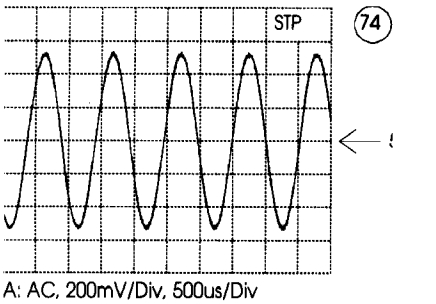
A: AC, 200mV/Div, 500us/Div
IC 7400 Pin 19/20



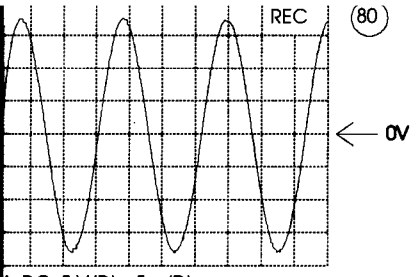
A: DC, 500mV/Div, 10us/Div
Connector 1638 Pin 7



A: AC, 200mV/Div, 1ms/Div
IC 7320 Pin 44



A: AC, 200mV/Div, 500us/Div
IC 7400 Pin 21/22



A: DC, 5 V/Div, 5us/Div
Connector 1503 Pin 1

Interconnections:

PS page 3-27	SE page 3-35	DE page 3-38	VP page 3-41	VT page 3-46	SF page 3-53
FE page 3-29/31	HC page 3-36	OS page 3-39	IO page 3-44	CF page 3-50	SP page 3-54
TM page 3-34	VS page 3-37	CC page 3-40	AU page 3-45	SH page 3-51	DC page 3-57...

Power Supply PSM

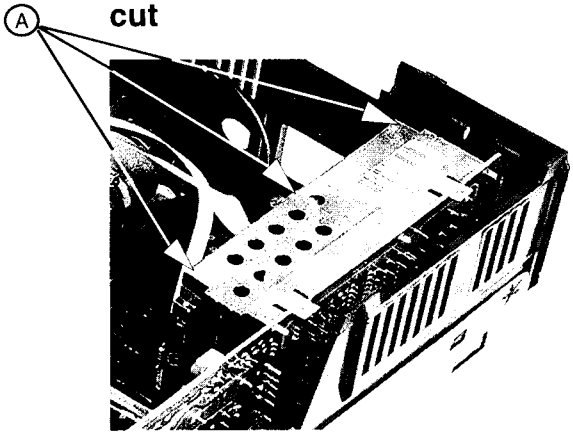
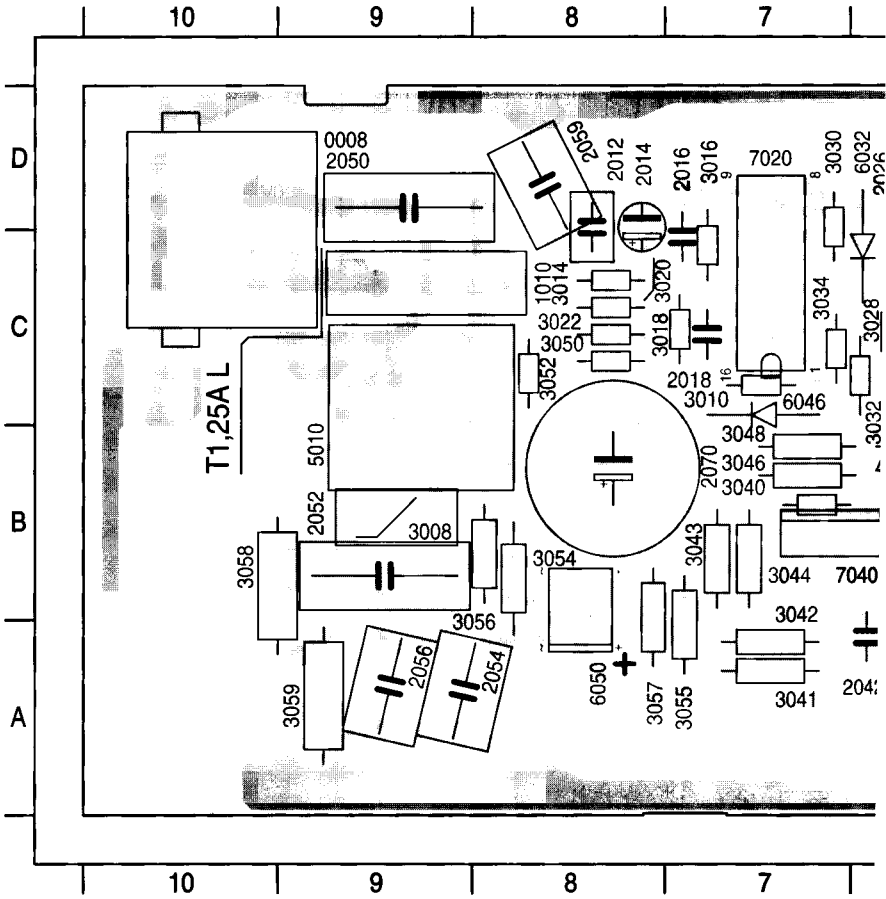


Fig.1



0008 D 10	2032 D 6	2062 A 4	2081 B 3	3008 B 9	3028 C 6	3046 B 7
1010 C 9	2036 C 6	2064 A 2	2084 B 3	3010 C 7	3030 D 6	3048 B 7
1509 A 2	2042 A 6	2068 A 3	2085 B 1	3012 D 6	3032 C 6	3050 C 8
2012 D 8	2050 D 9	2069 A 4	2088 B 3	3014 C 8	3034 C 6	3052 C 8
2014 D 7	2052 B 9	2070 B 8	2090 B 3	3016 C 7	3040 B 7	3054 B 8
2016 C 7	2054 A 8	2074 D 4	2092 B 2	3018 C 7	3041 A 7	3055 B 7
2018 C 7	2056 A 9	2076 C 4	2096 C 3	3020 C 8	3042 A 7	3056 B 8
2026 C 6	2059 D 8	2079 B 2	2098 C 2	3022 C 8	3043 B 7	3057 B 7
2030 D 5	2060 A 3	2080 C 3	2099 C 2	3026 C 6	3044 B 7	3058 B 9

(GB) How to remove the power supply shield
Cut the three slicing plates **A**, see Fig. 1.

(D) Wie entferne ich die Abdeckung des Power Supply
Die 3 Stege **A** (mittels Seitenschneider) durchtrennen, siehe Fig. 1.

(NL) Verwijderen afscherming voedingseenheid
Knip de drie lipjes **A** (m.b.v. zijkniptang) door, zie fig. 1.

(F) Comment retirer le blindage de l'alimentation
Coupez les trois ergots métalliques **A**, voir Fig. 1.

(I) Come rimuovere la schermatura dell'alimentatore
Tagliare i tre punti di connesione **A**, vedere fig. 1.

(E) Como retirar el apantallamiento de la fuente de alimentación
Cortar las tres pestañas **A**, ver Fig. 1.

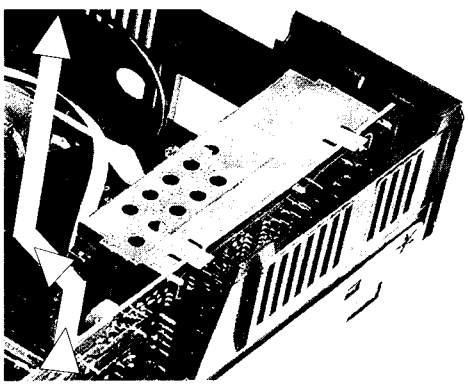


Fig. 2

(GB) Lift-up the shield cover about 3mm, disengage it and pull it out (see Fig. 2).
Note: To mount the shield cover please proceed in the reverse order.

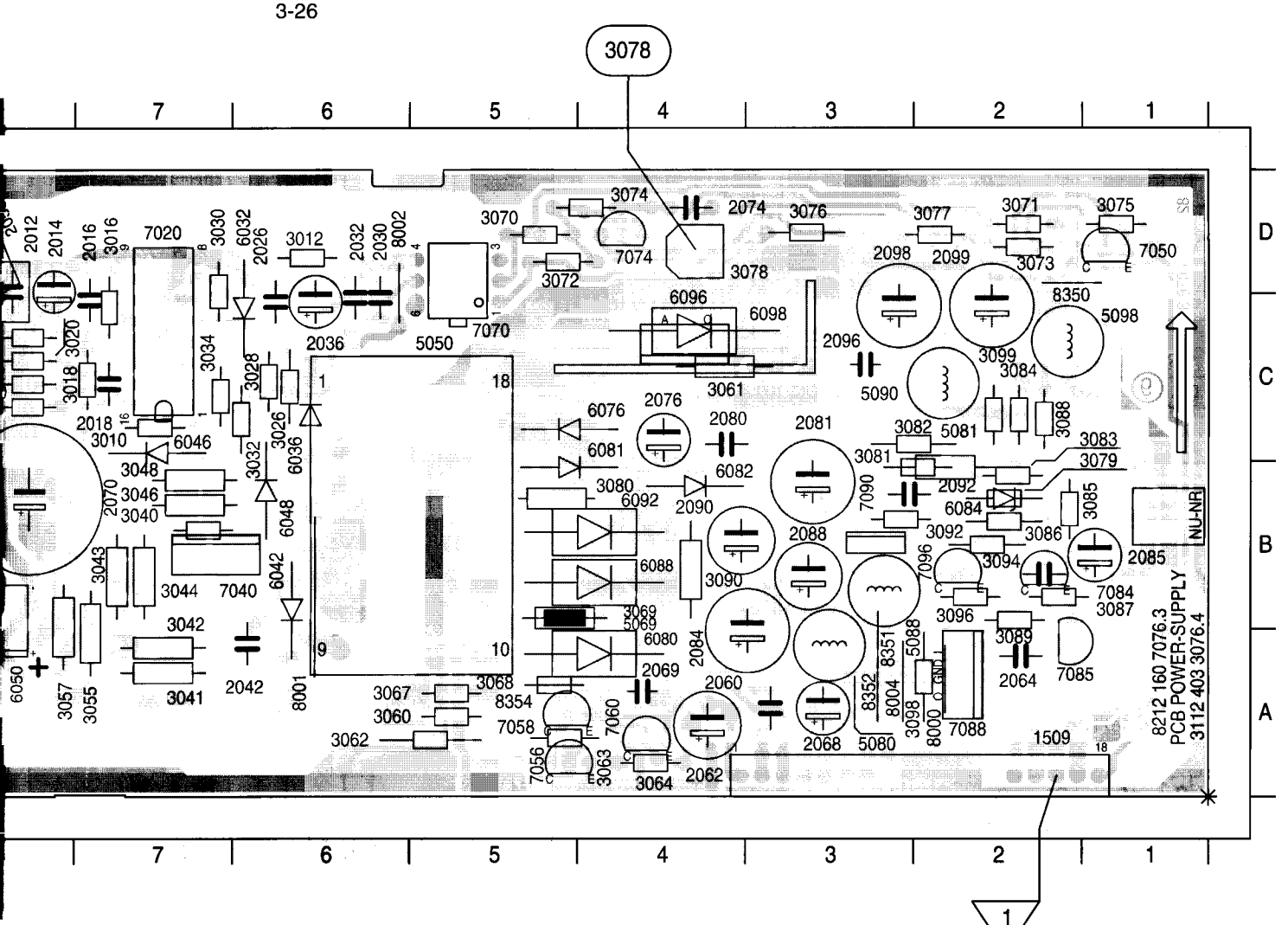
(D) Die Abdeckung an der Oberseite 3 mm anheben und nach innen abziehen, siehe Fig. 2. Die Montage erfolgt in umgekehrter Reihenfolge.

(NL) Til het afschermingsdeksel aan de bovenzijde 3 mm op, draai deze naar binnen, zie fig. 2. Nu kan de afscherming verwijderd worden.
Opm: De montage van de afscherming geschiedt in omgekeerde volgorde.

(F) Soulevez le blindage de 3mm vers le haut, dégagez-le vers la gauche et retirez-le (voir Fig. 2).
Pour remettre en place le blindage, procédez dans l'ordrte inverse.

(I) Sollevare il coperchio dalla parte superiore di circa 3 mm e ruotarlo per toglierlo, vedere fig. 2.
Ora la schermatura può essere tolta.
Nota: Per rimontare la schermatura, procedere in ordine inverso.

(E) Levantar la tapa de pantalla 3 mm, girarla y tirar de ella hacia arriba, ver Fig. 2.
Ahora el apantallamiento puede ser retirado.
Nota: Para montar el apantallamiento proceder en el orden inverso.



3028 C 6	3046 B 7	3059 A 9	3070 D 5	3079 B 2	3088 C 2	5050 B 5	6042 B 6		7056 A 4	7096 B 2
3030 D 6	3048 B 7	3060 A 5	3071 D 2	3080 B 4	3089 B 2	5069 B 4	6046 C 7		7058 A 4	8000 A 2
3032 C 6	3050 C 8	3061 C 3	3072 D 4	3081 B 2	3090 B 4	5080 A 3	6048 B 6	6088 B 4	7060 A 4	8001 B 6
3034 C 6	3052 C 8	3062 A 5	3073 D 2	3082 C 2	3092 B 2	5081 B 2	6050 B 8	6092 B 4	7070 D 5	8002 D 5
3040 B 7	3054 B 8	3063 A 4	3074 D 4	3083 B 2	3094 B 2	5088 B 2	6076 C 4	6096 C 4	7074 D 4	8004 A 2
3041 A 7	3055 B 7	3064 A 4	3075 D 1	3084 C 2	3096 B 2	5090 C 2	6080 A 4	6098 C 4	7084 B 1	8350 D 1
3042 A 7	3056 B 8	3067 A 5	3076 D 3	3085 B 1	3098 A 2	5098 C 1	6081 B 4	7020 C 7	7085 A 1	8351 A 2
3043 B 7	3057 B 7	3068 A 4	3077 D 2	3086 B 2	3099 C 2	6032 C 6	6082 B 4	7040 B 6	7088 A 2	8352 A 2
3044 B 7	3058 B 9	3069 B 4	3078 D 4	3087 B 1	5010 C 9	6036 C 6	6084 B 2	7050 D 1	7090 B 3	8354 A 4

B **solder**

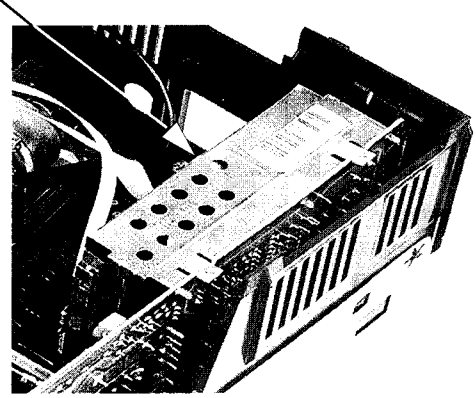


Fig.3

nach innen
eihenfolge.

op, draai
rd worden.
erde

GB **Important:**
After mounting the shield plate it is indispensable that the splicing plate B is resoldered for safety reasons, see Fig. 3.

D **Achtung:**
Nach Montage des Deckels muß der Steg B unbedingt aus Sicherheitsgründen mit dem Gehäuse verlötet werden, siehe Fig. 3

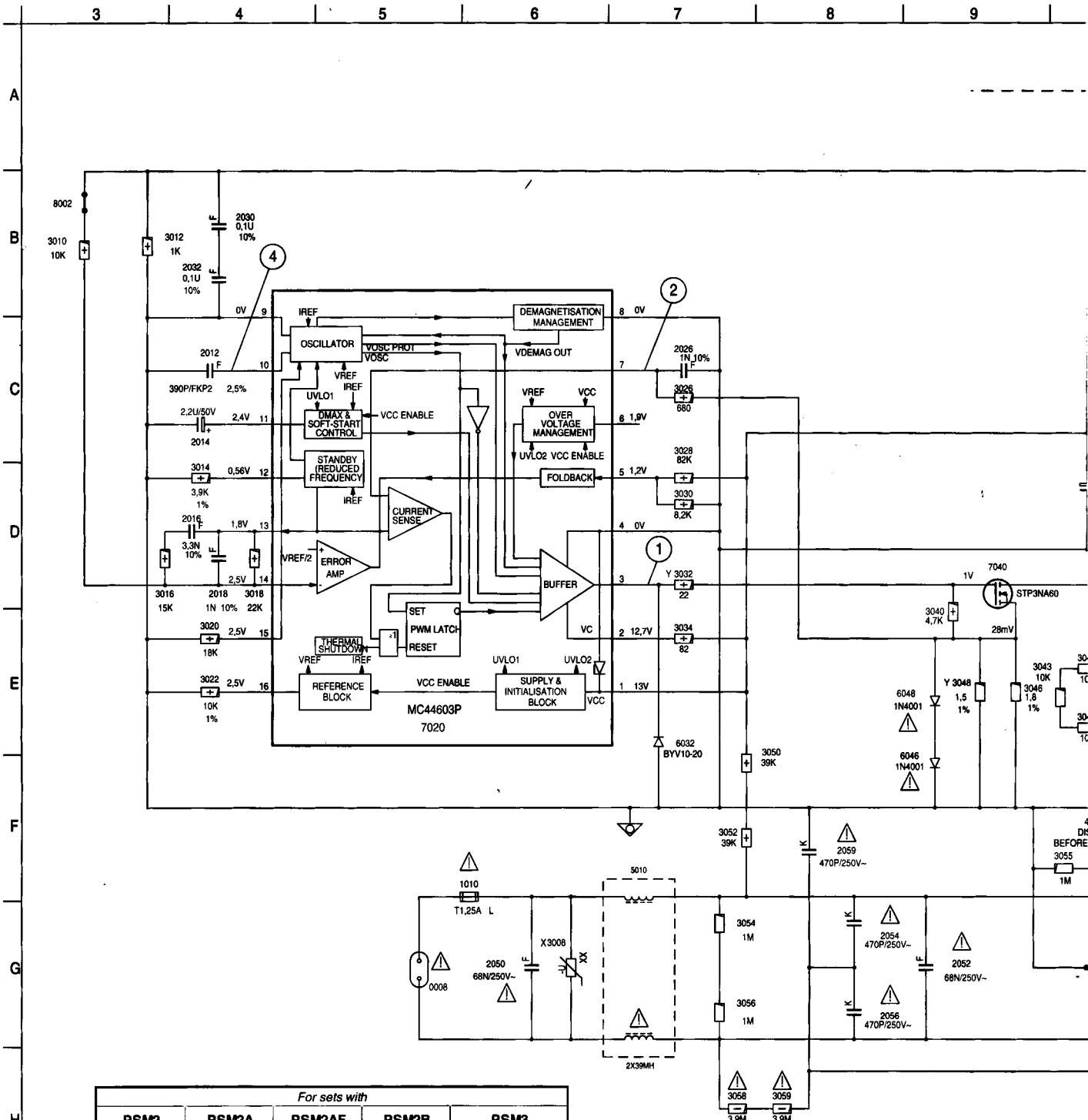
NL **Belangrijk:**
Na montage van de afschermplaat is het noodzakelijk dat het lipje B om veiligheidsredenen weer aan het huis gesoldeerd wordt, zie fig. 3.

F **Important:**
Une fois le blindage remis en place, il est indispensable de resouder l'ergot B pour des raisons de sécurité. voir Fig. 3.

I **Importante:**
Dopo aver montato la schermatura è indispensabile per ragioni di sicurezza saldare accuratamente la piastra B , vedere fig. 3.

E **Importante:**
Despues de montar el apantallamiento es indispensable que la pestaña B quede soldada por razones de seguridad, ver Fig. 3.

Power Supply PSM (PS)



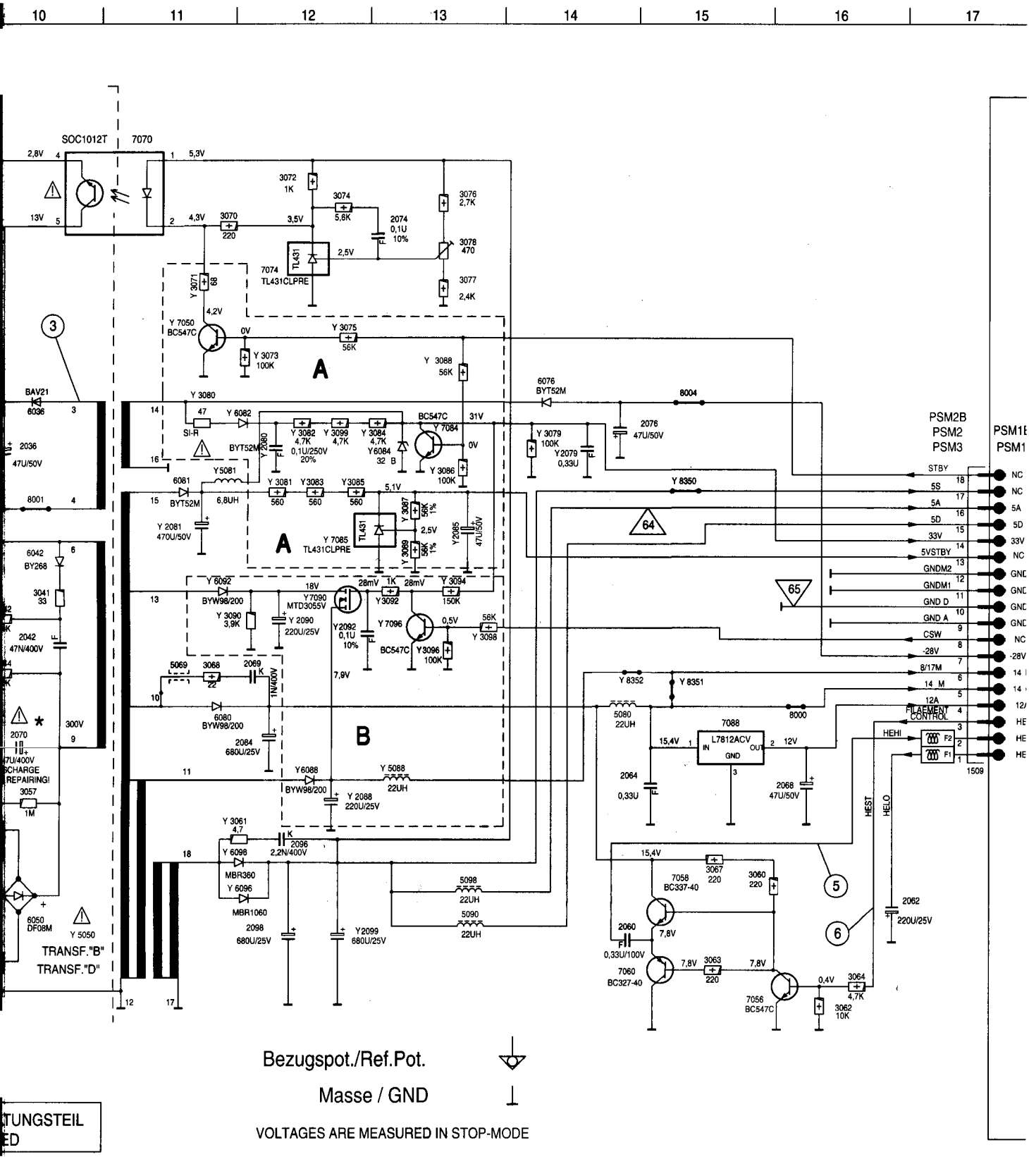
	For sets with				
	PSM2	**PSM2A**	**PSM2AF**	**PSM2B**	**PSM3**
A	Low P.Std.By	--	--	Low P.Std.By	Low P.Std.By
B	Turbo Drive	Turbo Drive	Turbo Drive	Turbo Drive	Turbo Drive
0014	--	--	--	--	Heat Sink(S-VHS)
0015	--	--	--	--	Clip (S-VHS)
2081	470µF/50V	47µF/50V	47µF/50V	470µF/50V	470µF/50V
2079	--	X	X	--	--
2099	X	X	X	X	X
3032	47	47	47	47	22
3048	1R5 1%	1R5 1%	1R5 1%	1R5 1%	1R5 1%
3061	X	X	X	2µ2	2µ2
3079	--	X	X	--	--
5050	Transf. B	Transf. B	Transf. D	Transf. D	Transf. D
5081	--	X	X	--	--
6084	X	--	--	X	X
6096	--	--	--	--	X
6098	X	X	X	X	--
8350	X	X	X	X	X
8351	--	--	--	--	--
8352	X	X	X	X	X

NICHT NETZGETRENNTER SCHAL
CIRCUIT NOT MAINS-ISOLATE

* ...Discharge Pos

Transformer Type C (CU-Foil) is electr. equiv. to Transformer Type A
Transformer Type D (CU-Foil) is electr. equiv. to Transformer Type B

PCB Power Supply, PS


10
11
12
13
14
15
16
17
SOC1012T
7070
2,8V
5,3V
13V
4,3V
3,5V
2,5V
TL431
7074
TL431CLPRE
4,2V
0V
BC547C
A
B
BAV21
6036
BYT52M
6,8UH
BY268
6042
BYW98/200
6080
MTD3055V
7090
BC547C
7096
L7812ACV
7088
IN
OUT
GND
15,4V
12V
7,9V
18V
28mV
0,5V
7,8V
0,4V
BC337-40
7058
BC327-40
7060
BC547C
7056
MBR360
6098
MBR1060
6096
DF08M
6050
Y 5050
TRANSF."B"
TRANSF."D"
5080
22UH
5088
22UH
5098
22UH
5090
22UH
Y2099
680U/25V
2098
680U/25V
2062
220U/25V
2068
47U/50V
2064
0,33U
2060
0,33U/100V
2070
before repairing
PSM2B
PSM2
PSM3
PSM1B
PSM1
STBY
5S
5A
5D
33V
5VSTBY
GNDM2
GNDM1
GND D
GND A
CSW
-28V
8/17M
14 M
12A
FILAMENT
CONTROL
HEHI
HEST
HELO
F2
F1
1509
8004
8000
8350
8351
8352
64
65
Bezugspot./Ref.Pot.
Masse / GND
VOLTAGES ARE MEASURED IN STOP-MODE
TUNGSTEIL
ED
NOTE ON THE COMPO
"X" components are not used
"Y" components are optional
Voltages measured in STOP-Mode

18 19

PSM2AF
PSM2A

NC
5S
5A
5D
33V
NC
GNDM2
GNDM1
GNDD
GNDA
CSW
-28V
8/17M
14 M
12A
HEST
HEHi
HELO

PCB MOTHER BOARD, CC

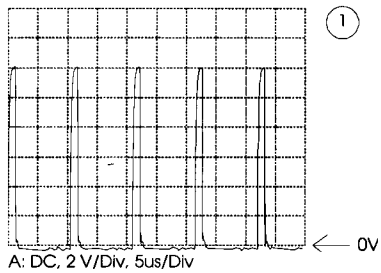
TRANSF."A","C"

3 14 16 4 15 6 10 9 18 12 17

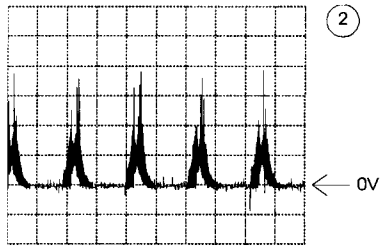
Y5050

A	0008 G5	3094 E13
	1010 F6	3096 E13
	1509 F17	3098 E13
	2012 C4	3099 D12
	2014 C4	5010 F7
	2016 D4	5050 G10
	2018 D4	5069 E11
	2026 C7	5080 F14
	2030 B4	5081 D11
	2032 B4	5088 F13
B	2036 D10	5090 G13
	2042 E10	5098 G13
	2050 G6	6032 E7
	2052 G9	6036 C10
	2054 G8	6042 D10
	2056 G8	6046 F9
	2059 F8	6048 E9
	2060 G14	6050 G10
	2062 G17	6076 C14
	2064 F14	6080 F11
C	2068 F16	6081 D11
	2069 E12	6082 C12
	2070 F10	6084 D13
	2074 B13	6088 F12
	2076 C15	6092 E11
	2079 D14	6096 G12
	2080 D12	6098 G12
	2081 D11	7020 E5
	2084 F12	7040 D9
	2085 D13	7050 C11
D	2088 F12	7056 H15
	2090 E12	7058 G15
	2092 E12	7060 H14
	2096 G12	7070 A11
	2098 G12	7074 B12
	2099 G13	7084 D13
	3008 G6	7085 D12
	3010 B3	7088 F15
	3012 B4	7090 E12
	3014 D4	7096 E13
	3016 D3	
E	3018 D4	
	3020 E4	
	3022 E4	
	3026 C7	
	3028 C7	
	3030 D7	
	3032 D7	
	3034 E7	
	3040 E9	
	3041 E10	
	3042 E10	
F	3043 E9	
	3044 E10	
	3046 E9	
	3048 E9	
	3050 E8	
	3052 F7	
	3054 G7	
	3055 F10	
	3056 G7	
	3057 F10	
G	3058 H7	
	3059 H8	
	3060 G15	
	3061 F12	
	3062 H16	
	3063 G15	
	3064 H16	
	3067 G15	
	3068 E11	
	3070 B11	
	3071 B11	
	3072 B12	
	3073 C12	
	3074 B12	
H	3075 C12	
	3076 B13	
	3077 B13	
	3078 B13	
	3079 D14	
	3080 C11	
	3081 D12	
	3082 D12	
	3083 D12	
	3084 D13	
I	3085 D12	
	3086 D13	
	3087 D13	
	3088 C13	
	3089 D13	
	3090 E11	
	3092 E13	

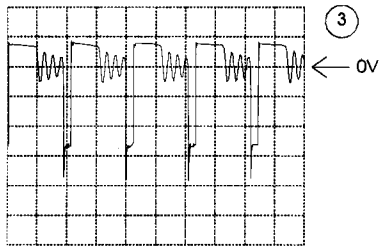
Playback:



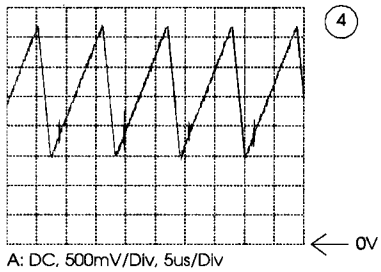
A: DC, 2 V/Div, 5us/Div
IC 7020 Pin 3



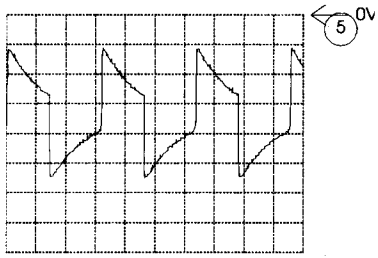
A: DC, 200mV/Div, 5us/Div
IC 7020 Pin 7



A: DC, 20 V/Div, 5us/Div
Diode 6036 Anode

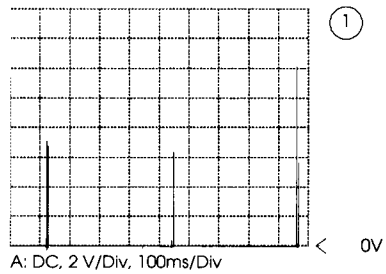


A: DC, 500mV/Div, 5us/Div
IC 7020 Pin 10

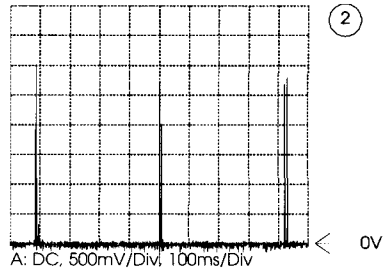


A: DC, 5 V/Div, 10us/Div
Connector 1509 Pin 2

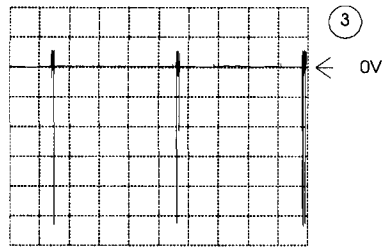
Low Power Standby:



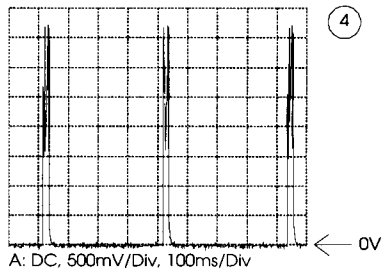
A: DC, 2 V/Div, 100ms/Div
IC 7020 Pin 3



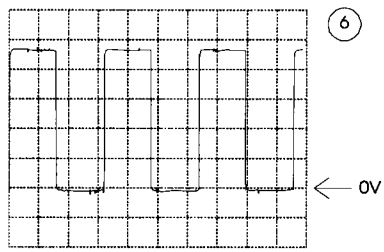
A: DC, 500mV/Div, 100ms/Div
IC 7020 Pin 7



A: DC, 10 V/Div, 100ms/Div
Diode 6036 Anode



A: DC, 500mV/Div, 100ms/Div
IC 7020 Pin 10



A: DC, 1 V/Div, 10us/Div
Connector 1509 Pin 3

Interconnections:

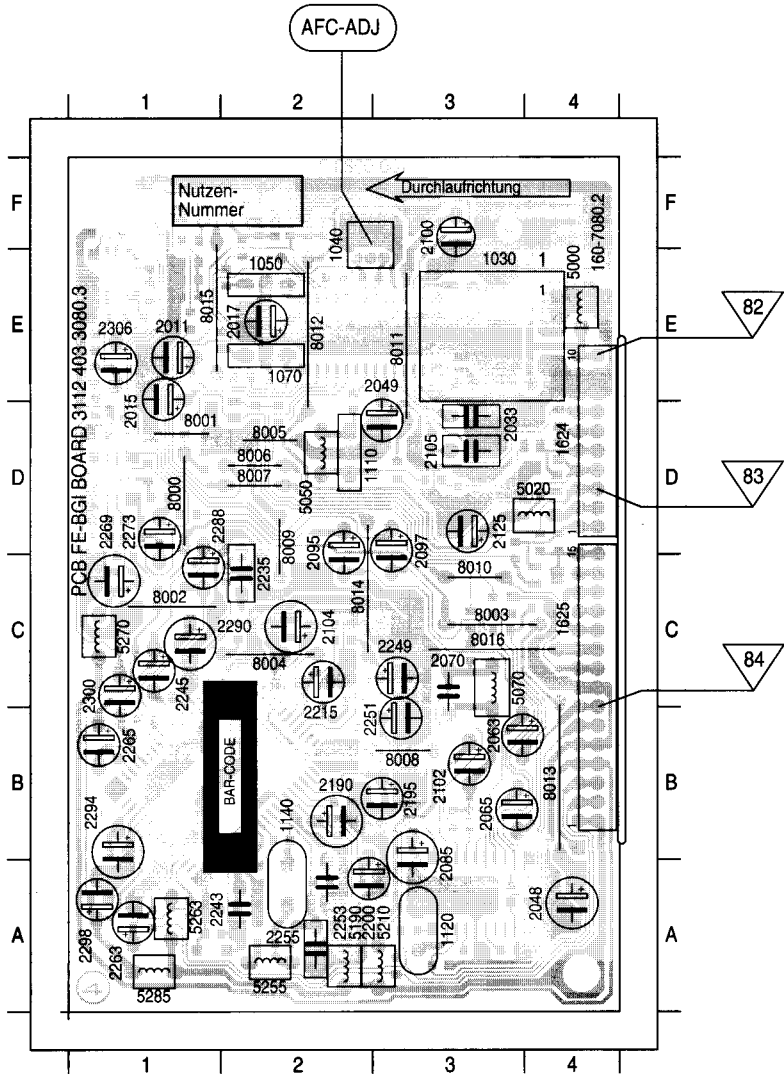
PS page 3-27	SE page 3-35	DE page 3-38	VP page 3-41	VT page 3-46	SF page 3-53
FE page 3-29/31	HC page 3-36	OS page 3-39	IO page 3-44	CF page 3-50	SP page 3-54
TM page 3-34	VS page 3-37	CC page 3-40	AU page 3-45	SH page 3-51	DC page 3-57...

Note on the components: "X" components are not used "Y" components are optional

Front End Board PAL B/G/I

Conventional Assembly

View of components side

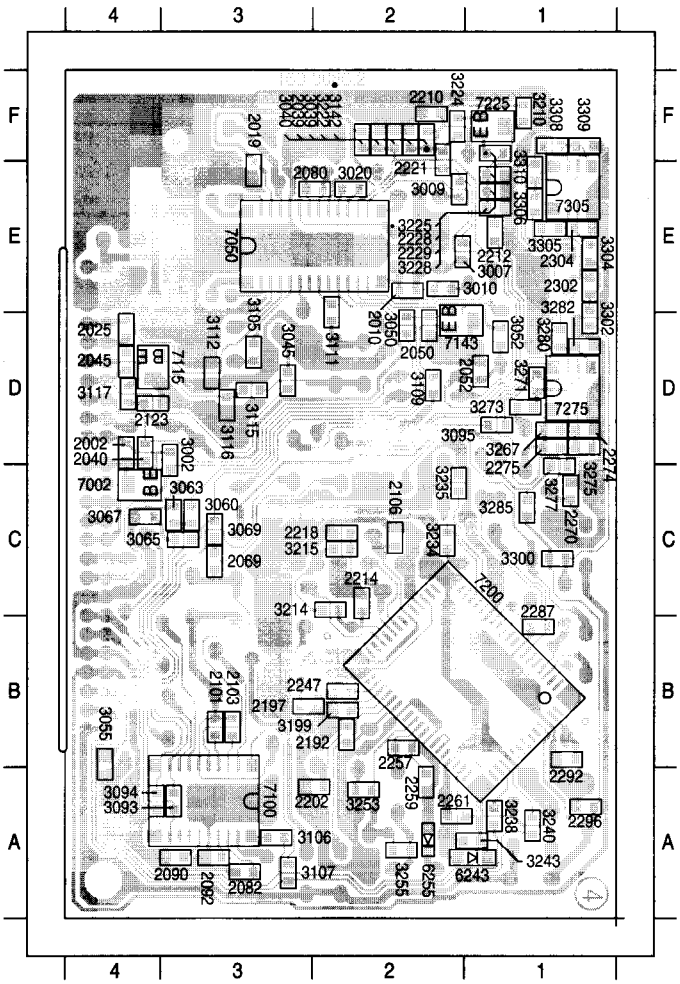


XX = Testpoint (XXX) = Adjustment

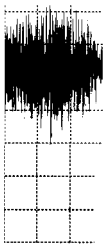
0902 B 2	2049 D 3	2215 C 2	2298 A 1	8002 C 1
1030 E 3	2063 B 4	2235 C 2	2300 C 1	8003 C 3
1040 F 3	2065 B 3	2243 A 2	2306 E 1	8004 C 2
1050 E 2	2070 C 3	2245 C 1	5000 E 4	8005 D 2
1070 E 2	2085 B 3	2249 C 3	5020 D 4	8006 D 2
1110 D 2	2095 D 2	2251 B 3	5050 D 2	8007 D 2
1120 A 3	2097 D 3	2253 A 2	5070 C 3	8008 B 3
1140 A 2	2100 F 3	2255 A 2	5190 A 2	8009 D 2
1624 D 4	2102 B 3	2263 A 1	5210 A 3	8010 C 3
1625 C 4	2104 C 2	2265 B 1	5255 A 2	8011 E 3
2011 E 1	2105 D 3	2269 C 1	5263 A 1	8012 E 2
2015 E 1	2125 D 3	2273 D 1	5270 C 1	8013 B 4
2017 E 2	2190 B 2	2288 C 1	5285 A 1	8014 C 2
2033 D 3	2195 B 3	2290 C 1	8000 D 1	8015 E 2
2048 A 4	2200 A 3	2294 B 1	8001 D 1	8016 C 3

SMD Assembly

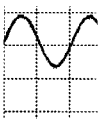
View of solder side

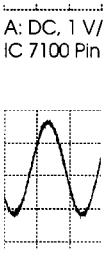


2002 D 4	2214 C 2	3040 F 2	3199 B 2	3300 C 1
2010 E 2	2218 C 2	3045 D 3	3210 F 1	3302 D 1
2019 E 3	2221 F 2	3050 D 2	3214 C 2	3304 E 1
2025 D 4	2228 E 1	3052 D 1	3215 C 2	3305 E 1
2039 F 2	2229 E 1	3055 B 4	3222 F 2	3306 E 1
2040 D 4	2247 B 2	3060 C 3	3224 F 2	3308 F 1
2045 D 4	2257 B 2	3063 C 3	3225 F 1	3309 F 1
2050 D 2	2259 A 2	3065 C 3	3228 E 1	3310 E 1
2052 D 1	2261 A 2	3067 C 4	3234 C 2	6243 A 1
2069 C 3	2270 C 1	3069 C 3	3235 C 2	6255 A 2
2080 E 3	2274 D 1	3093 A 3	3238 A 1	7002 C 4
2082 A 3	2275 D 1	3094 A 4	3240 A 1	7050 E 3
2090 A 3	2287 B 1	3095 D 1	3243 A 1	7100 A 3
2092 A 3	2292 B 1	3105 D 3	3253 A 2	7115 D 4
2101 B 3	2296 A 1	3106 A 3	3255 A 2	7143 D 2
2103 B 3	2302 E 1	3107 A 3	3267 D 1	7200 B 2
2106 C 2	2304 E 1	3109 D 2	3271 D 1	7225 F 1
2123 D 4	3002 D 3	3111 E 2	3273 D 1	7275 D 1
2192 B 2	3007 E 2	3112 D 3	3275 D 1	7305 E 1
2197 B 3	3009 E 2	3115 D 3	3277 D 1	
2202 A 3	3010 E 2	3116 D 3	3280 D 1	
2210 F 2	3020 E 2	3117 D 4	3282 D 1	
2212 E 1	3039 F 2	3142 F 2	3285 C 1	



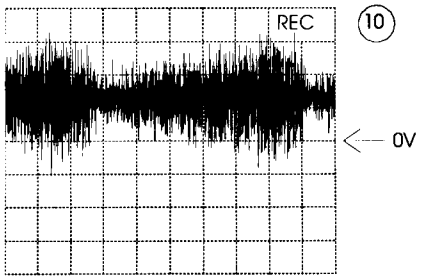
A: DC, 500r
Connector



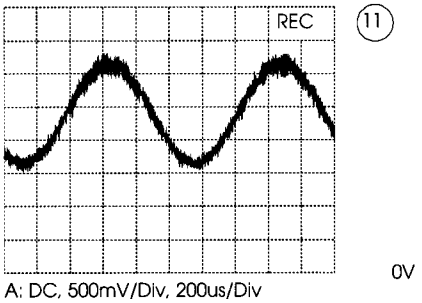


A: DC, 1 V/
IC 7100 Pin

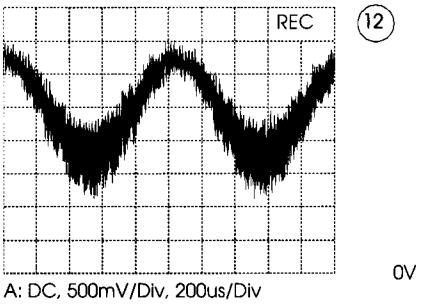
A: DC, 500r
Connector



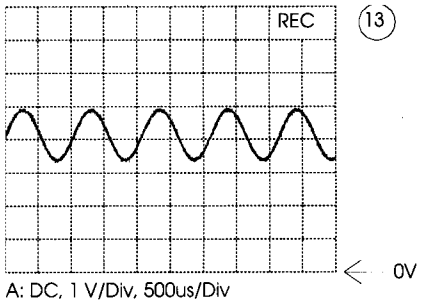
A: DC, 500mV/Div, 10us/Div
Connector 1624 Pin 10



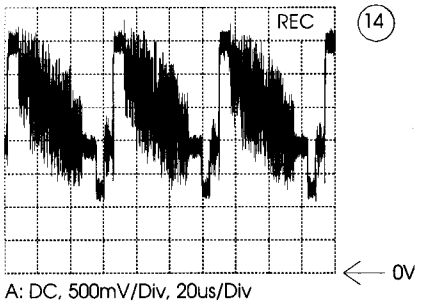
A: DC, 500mV/Div, 200us/Div
IC 7050 Pin 10



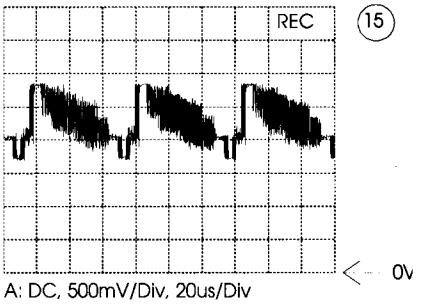
A: DC, 500mV/Div, 200us/Div
IC 7050 Pin 11



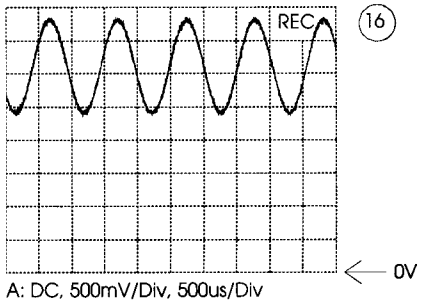
A: DC, 1 V/Div, 500us/Div
IC 7100 Pin 11/12



A: DC, 500mV/Div, 20us/Div
IC 7050 Pin 8



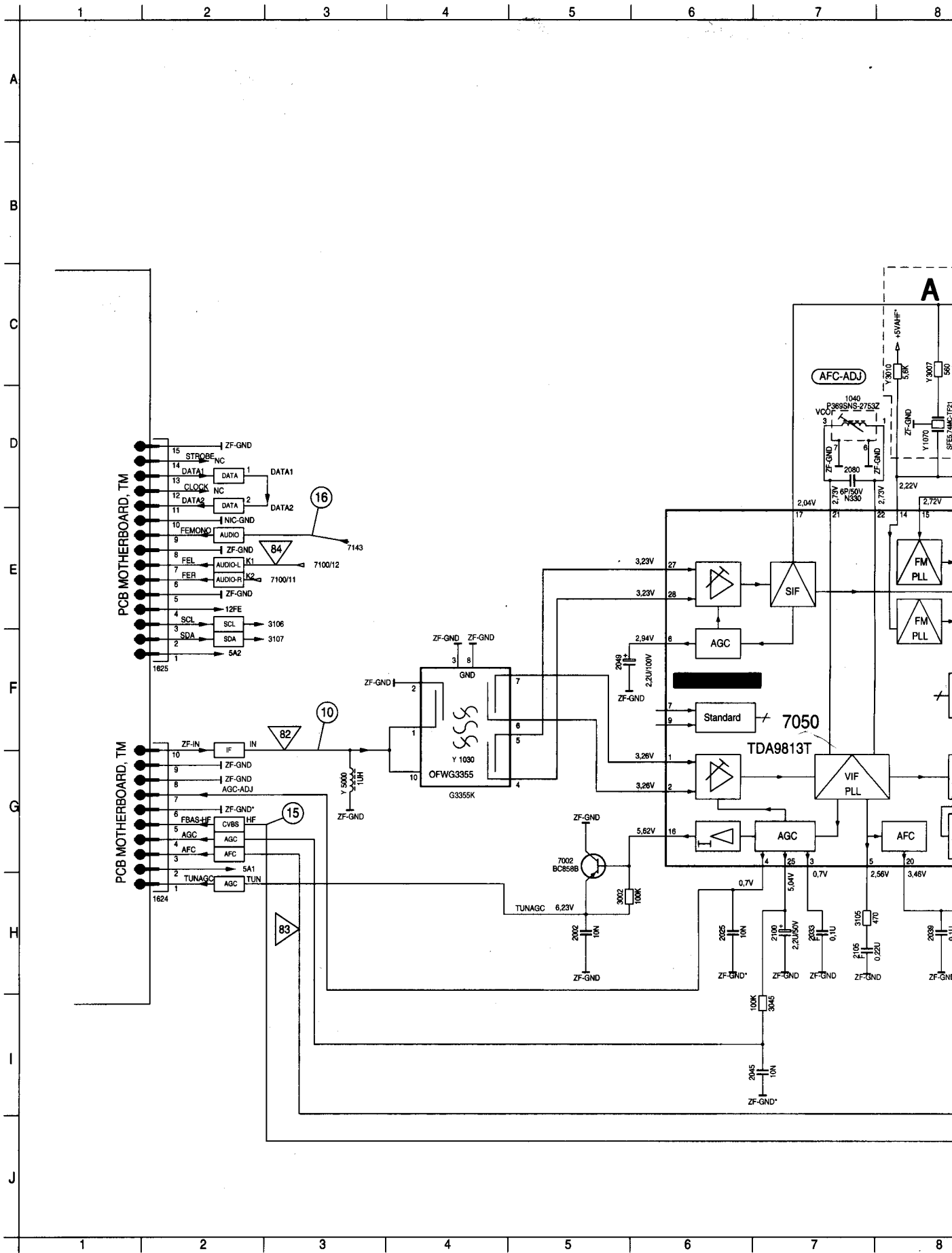
A: DC, 500mV/Div, 20us/Div
Connector 1624 Pin 5

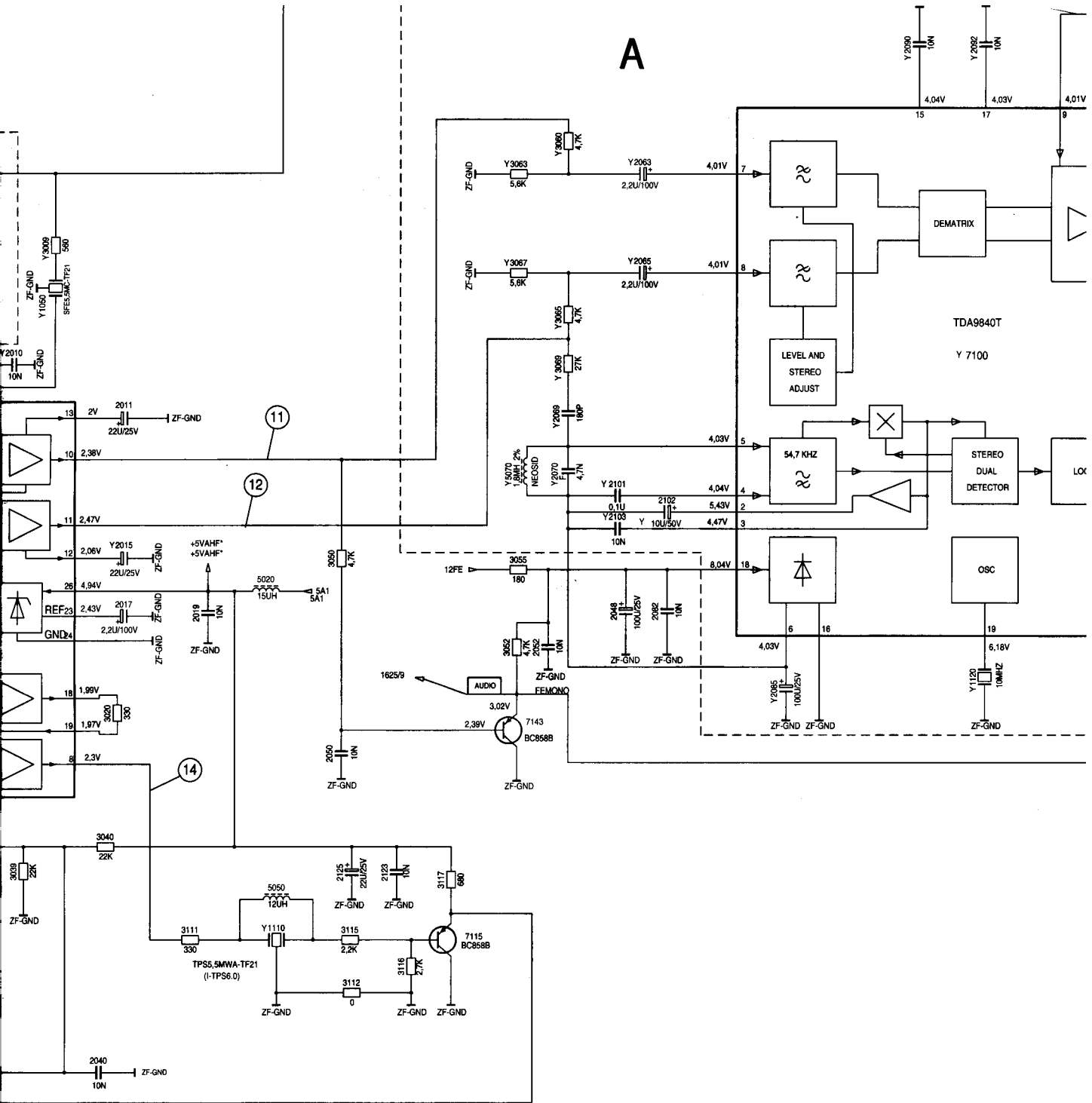


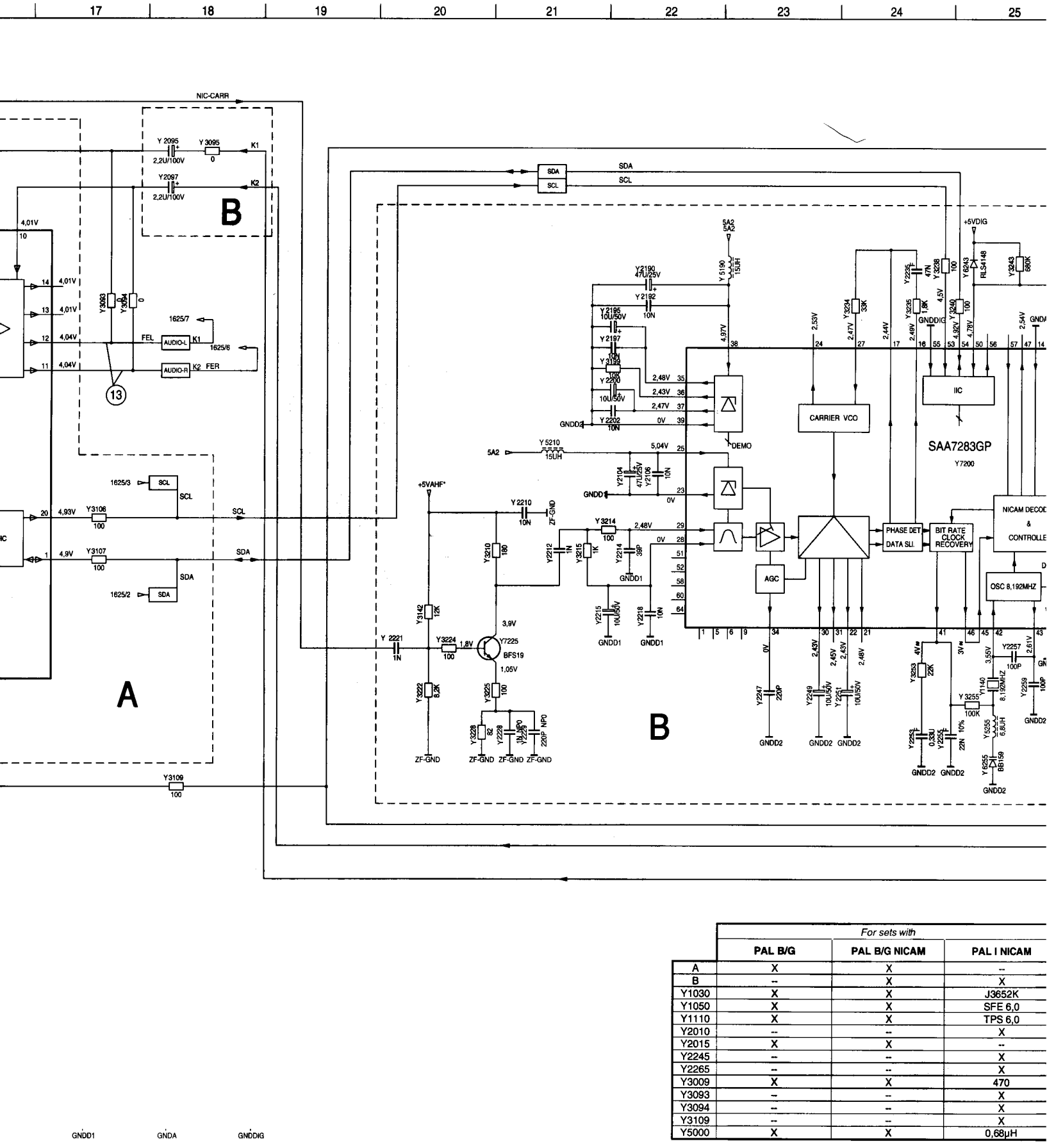
A: DC, 500mV/Div, 500us/Div
Connector 1625 Pin 9

Front End Board PAL B/G/I (FE)

1030 G4	1140 F25	2015 F9	2040 I9	2063 C13	2085 G14	2101 E13	2123 H11	2200 D22	2218 F22	2245 B26	2257 F25	2270 B29	2290 E27	2302 F28	3010 C8	3052 F12	3069 D12	3107
1040 D7	1624 H2	2017 F9	2045 I7	2065 D13	2090 B15	2102 E13	2125 H11	2202 D22	2221 F20	2247 F23	2259 F25	2273 C29	2292 E28	2304 F27	3020 G9	3055 F12	3093 C17	3109
1050 D8	1625 F2	2019 F10	2048 F13	2069 E12	2092 B15	2103 E13	2190 C22	2210 E21	2228 G21	2249 F23	2261 F26	2274 C27	2294 E28	2306 F29	3039 H8	3060 C12	3094 C17	3111
1070 D8	2002 H5	2025 H6	2049 F5	2070 E12	2095 B18	2104 D22	2192 C22	2212 E21	2229 G21	2251 F23	2263 F26	2275 C28	2296 E28	3002 H5	3040 H9	3063 C12	3095 B18	3112
1110 H10	2010 D8	2033 H7	2050 G11	2080 D7	2097 B18	2105 H7	2195 C22	2214 E22	2235 C24	2253 G24	2265 G26	2287 E27	2298 E28	3007 C8	3045 I7	3065 D12	3105 H7	3115
1120 G15	2011 E9	2039 H8	2052 F12	2082 F13	2100 H7	2106 D22	2197 C22	2215 F21	2243 C25	2255 G24	2269 B29	2288 D27	2300 E27	3009 C9	3050 F11	3067 D12	3106 E17	3116



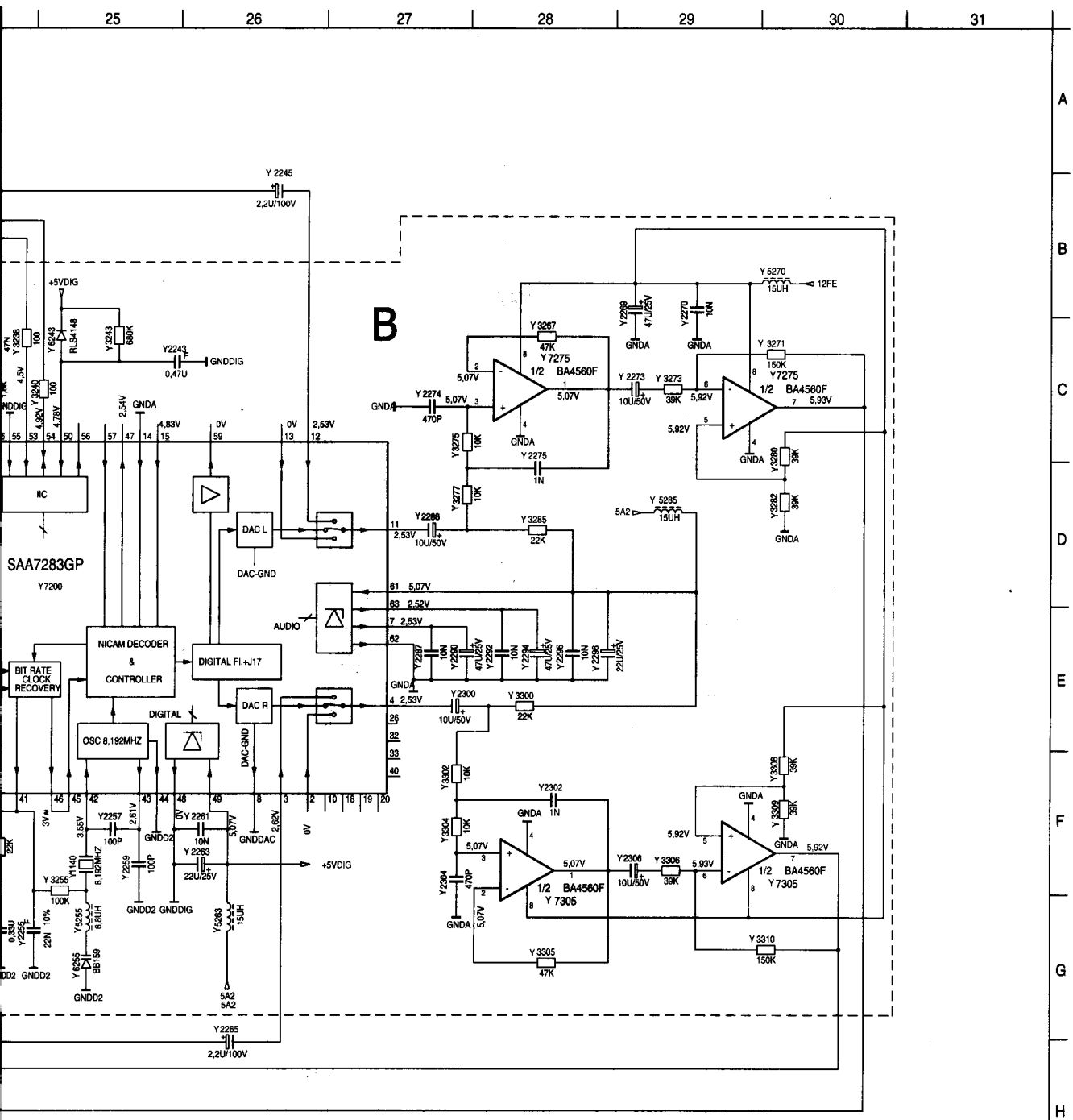

A
TDA9840T
Y 7100
DEMATRIX
LEVEL AND STEREO ADJUST
54,7 KHZ
STEREO DUAL DETECTOR
OSC
NEOSID
AUDIO
FEMONO
BC858B
TPS5,5MWA-TF21
(I-TPS6.0)
ZF-GND
+5VAHF*
12FE
REF23
GND24



	For sets with		
	PAL B/G	**PAL B/G NICAM**	**PAL I NICAM**
A	X	X	--
B	--	X	X
Y1030	X	X	J3652K
Y1050	X	X	SFE 6,0
Y1110	X	X	TPS 6,0
Y2010	--	--	X
Y2015	X	X	--
Y2245	--	--	X
Y2265	--	--	X
Y3009	X	X	470
Y3093	--	--	X
Y3094	--	--	X
Y3109	--	--	X
Y5000	X	X	0,68µH

Interconnections:

PS page 3-27	SE page 3-35	DE page 3-38	VP page 3-41	VT page 3-46	SF page 3-53
FE page 3-29/31	HC page 3-36	OS page 3-39	IO page 3-44	CF page 3-50	SP page 3-54
TM page 3-34	VS page 3-37	CC page 3-40	AU page 3-45	SH page 3-51	DC page 3-57...
Note on the components: "X" components are not used "Y" components are optional					



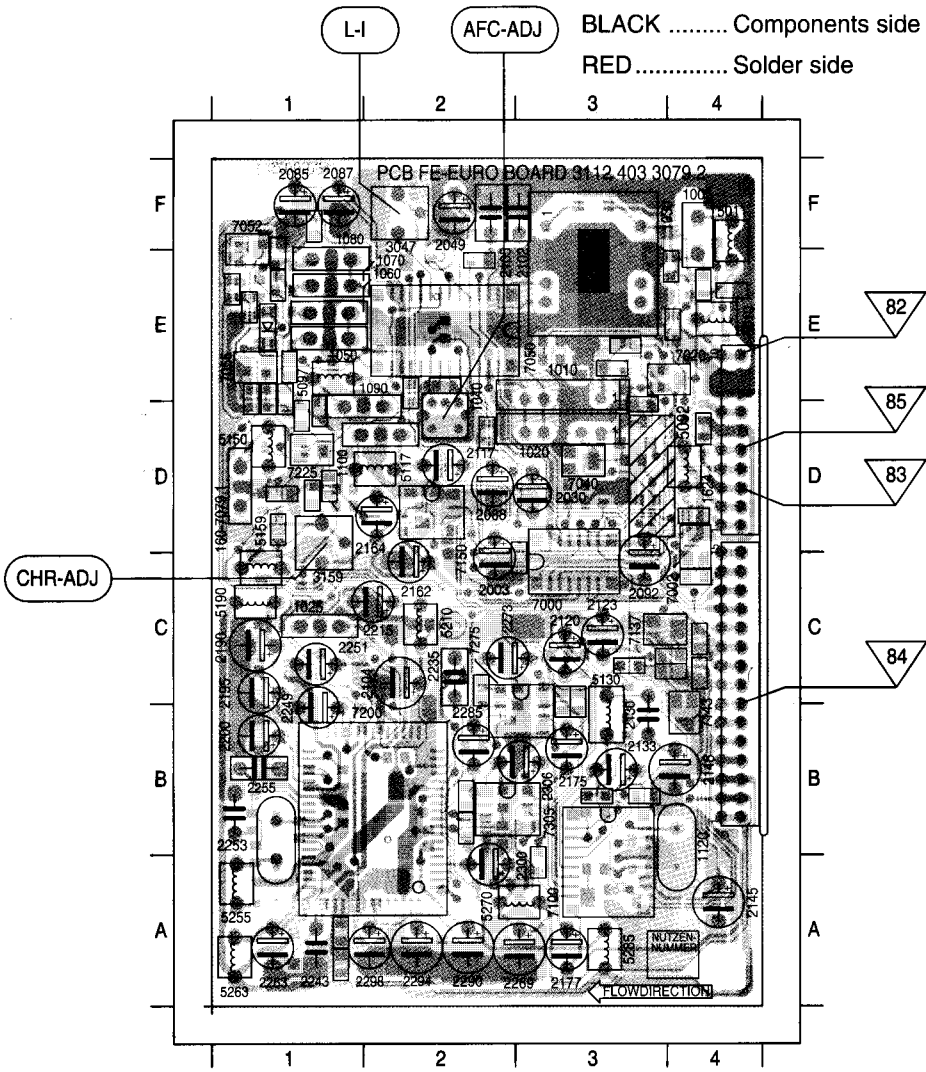
DC VOLTAGES FOR ALL MODUS
..V DC VOLTAGES MEASURED PLAYBACK
...V DC VOLTAGES MEASURED RECORD

	PAL I NICAM
	X
	J3652K
	SFE 6,0
	TPS 6,0
	X
	--
	X
	470
	X
	X
	X
	0,68µH

Front End Board Multistandard

Conventional Assembly

View of components side



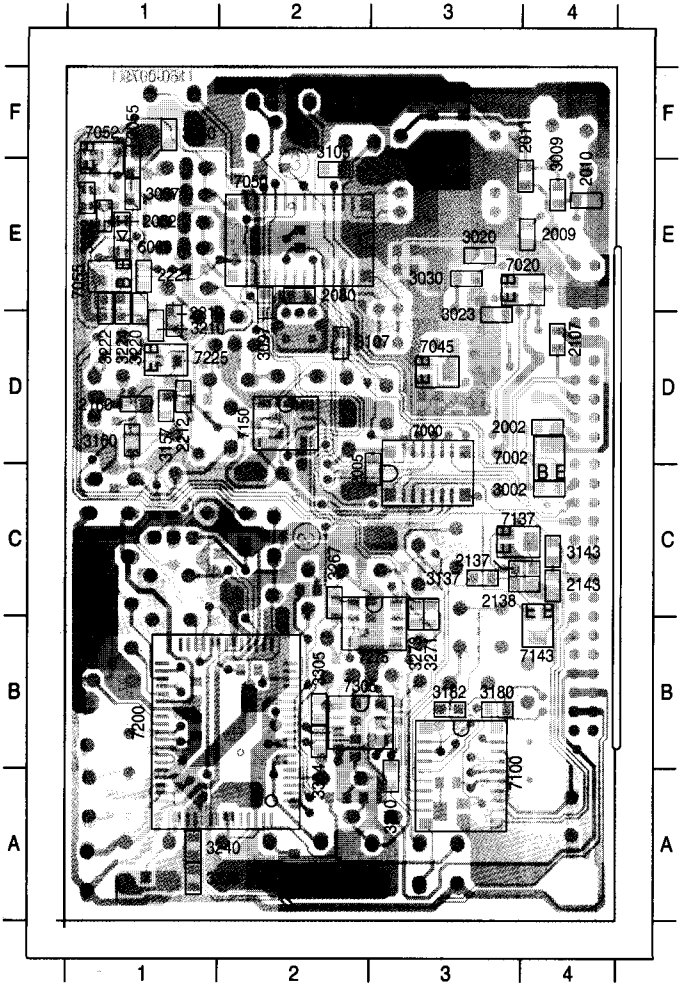
1005	F 4	1624	D 4	2130	B 3	2251	C 1	5011	F 4
1010	E 3	1625	C 4	2133	B 3	2253	B 1	5092	D 4
1020	D 3	2003	C 2	2145	A 4	2255	B 1	5097	E 1
1025	C 1	2030	D 3	2148	B 4	2263	A 1	5117	D 2
1030	E 3	2049	F 2	2162	C 2	2269	A 3	5130	B 3
1040	D 2	2085	F 1	2164	D 2	2273	C 2	5150	D 1
1050	E 1	2087	F 1	2175	B 3	2285	B 2	5159	C 1
1060	E 1	2088	D 2	2177	A 3	2290	A 2	5190	C 1
1070	E 1	2092	C 3	2190	C 1	2294	A 2	5210	C 2
1080	E 1	2102	F 3	2195	C 1	2298	A 2	5255	A 1
1090	D 2	2104	C 2	2200	B 1	2300	A 2	5263	A 1
1100	D 2	2105	F 2	2215	C 2	2306	B 3	5270	A 3
1110	D 1	2117	D 2	2235	C 2	3047	F 2	5285	A 3
1120	B 4	2120	C 3	2243	A 1	3159	D 1		
1140	B 1	2123	C 3	2249	C 1	5010	E 4		

SMD Assembly

View of components side

BLACK ..... Components side

RED ..... Solder side



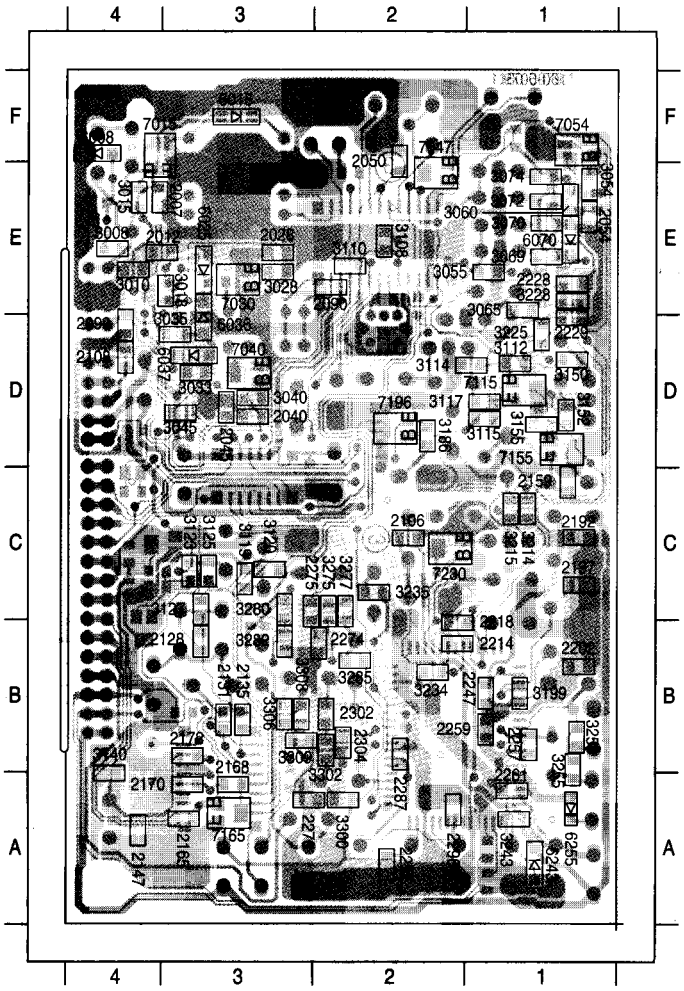
2002	D 4	2210	D 1	3107	D 2	3267	C 2	7055	E 1
2005	C 3	2212	D 1	3137	C 3	3271	C 3	7100	A 3
2009	E 4	2221	E 1	3143	C 4	3273	C 3	7137	C 4
2010	E 4	3002	C 4	3157	D 1	3304	B 2	7143	B 4
2011	E 4	3009	E 4	3160	D 1	3305	B 2	7150	D 2
2052	E 1	3020	E 3	3180	B 3	3310	A 3	7200	B 2
2055	F 1	3023	E 3	3182	B 3	6069	E 1	7225	D 1
2080	E 2	3030	E 3	3210	D 1	7000	C 3	7275	B 3
2107	D 4	3052	E 1	3220	E 1	7002	D 4	7305	B 2
2137	C 4	3057	E 1	3222	E 1	7020	E 4		
2138	C 4	3080	F 1	3224	E 1	7045	D 3		
2143	C 4	3097	E 2	3238	A 1	7050	E 2		
2160	D 1	3105	E 2	3240	A 1	7052	F 1		

SMD Assembly

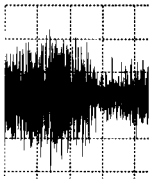
View of solder side

BLACK Solder side

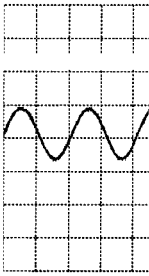
RED..... Components side



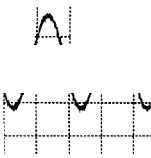
2007	E 4	2202	B 1	3033	D 3	3127	C 3	3302	B 2
2012	E 4	2214	B 2	3035	D 3	3140	B 4	3306	B 3
2028	E 3	2218	C 2	3040	D 3	3150	D 1	3308	B 3
2040	D 3	2228	E 1	3045	D 3	3152	D 1	3309	B 3
2045	D 3	2229	E 1	3054	E 1	3155	D 1	6008	F 4
2050	F 2	2247	B 1	3055	E 1	3186	D 2	6015	F 3
2054	E 1	2257	B 1	3060	E 1	3199	B 1	6025	E 3
2090	E 2	2259	B 1	3065	E 1	3214	C 1	6036	E 3
2099	D 4	2261	A 1	3069	E 1	3215	C 1	6037	D 3
2106	C 2	2270	A 3	3070	E 1	3225	D 1	6070	E 1
2108	D 4	2274	B 2	3072	E 1	3228	E 1	6243	A 1
2128	B 3	2275	C 3	3074	E 1	3234	B 2	6255	A 1
2131	B 3	2287	B 2	3108	E 2	3235	C 2	7015	F 4
2135	B 3	2292	A 2	3110	E 2	3243	A 1	7030	E 3
2147	A 4	2296	A 2	3112	D 1	3253	B 1	7040	D 3
2159	C 1	2302	B 2	3114	D 1	3255	B 1	7047	E 2
2165	A 3	2304	B 2	3115	D 1	3275	C 2	7054	F 1
2168	A 3	3008	E 4	3117	D 1	3277	C 2	7115	D 1
2170	A 3	3010	E 4	3119	C 3	3280	C 3	7155	D 1
2172	B 3	3015	E 4	3120	C 3	3282	B 3	7165	A 3
2192	C 1	3018	E 4	3123	C 3	3285	B 2	7196	D 2
2197	C 1	3028	E 3	3125	C 3	3300	A 2	7230	C 2

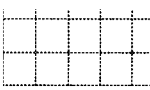


A: DC, 500mV/D
Connector 1624



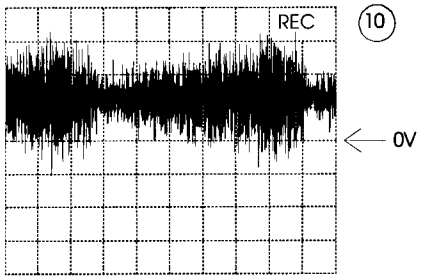
A: DC, 1 V/Div, 5
IC 7100 Pin 11/12



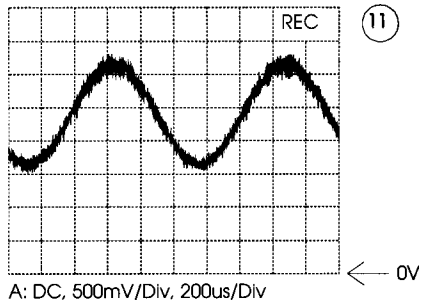


A: DC, 500mV/Di
Connector 1625

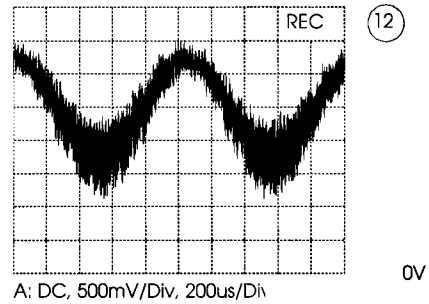
3-30



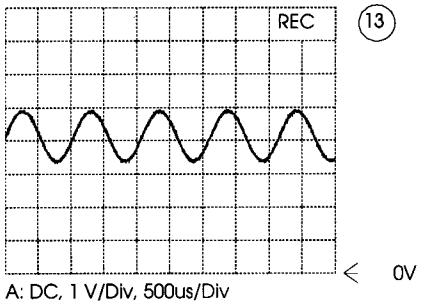
A: DC, 500mV/Div, 10us/Div
Connector 1624 Pin 10



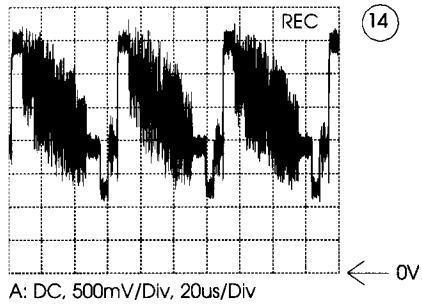
A: DC, 500mV/Div, 200us/Div
IC 7050 Pin 10



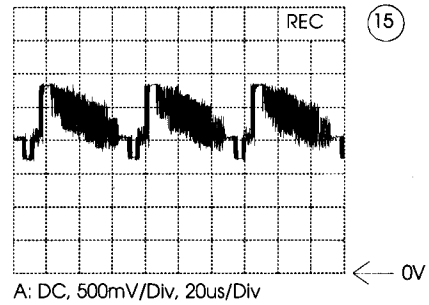
A: DC, 500mV/Div, 200us/Div
IC 7050 Pin 11



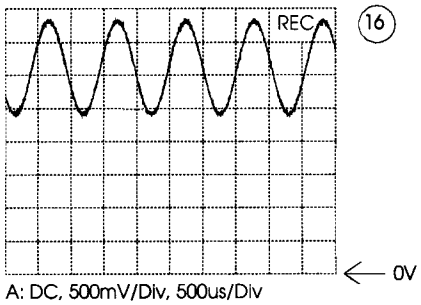
A: DC, 1 V/Div, 500us/Div
IC 7100 Pin 11/12



A: DC, 500mV/Div, 20us/Div
IC 7050 Pin 8



A: DC, 500mV/Div, 20us/Div
Connector 1624 Pin 5



A: DC, 500mV/Div, 500us/Div
Connector 1625 Pin 9

4. DRIVE ASSEMBLY

This tape deck has three motors; one providing precision drive for the scanner unit; the second providing direct drive for the capstan and belt drive for the reel tables; the third motor drives the lift and tape threading/dethreading operations.

Special features are:

Quick start
Short winding time
Automatic cleaning of video heads by cleaning roller

To obtain a high repair standard we have developped a range of service kit's. These kit's covers the spare parts which are engaged together.
The tape deck's sensors are located on the motherboard underneath the tape deck, and included in its circuitry, lay out and parts list.

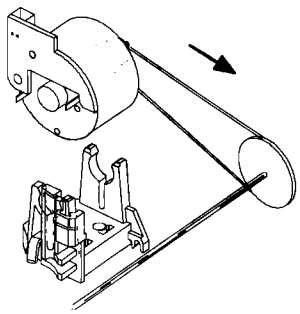
4.1 Deck parts replacement

The procedure for the removal and refitting of the following parts is described; only the lift, the scanner, the capstan motor and the A/C head are fixed by screws.
All the other deck assembly parts are held only by snap hooks.

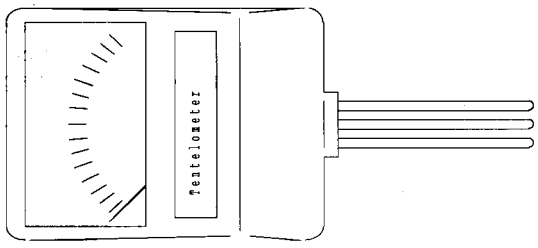
For the replacement of parts on the underside of the tape deck, remove the tape deck from the motherboard.

Manual extraction of cassette:
If, after the Eject button has been pressed, the drive does not unthread and eject the cassette, the dethreading/eject operation can also be carried out manually by turning the wheel at the rear of the threading motor.

fig. 1

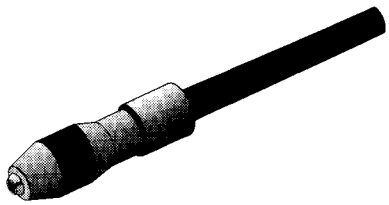


IMPORTANT:
After each repair has been carried out in the drive assembly, the first operation after repairing must be to bring the cassette compartment into „eject" position by hand.

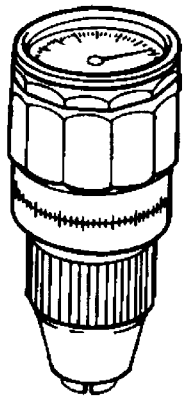


Tentelometer 4822 395 90584

Tool for tapetension adjustment 4822 395 50188



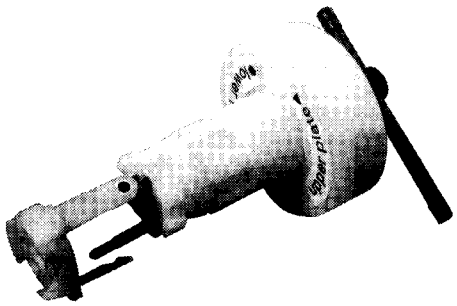
Handle 4822 256 90493



Torquemeter:
600 gf-cm 4822 395 90232
90 gf-cm 4822395 80196

Auxiliary tools for deck adjustment:

Post adjustment screwdriver 4822 395 50275



Tool for removing the head disc 4822 395 90977

Testcassette 4822 397 30103

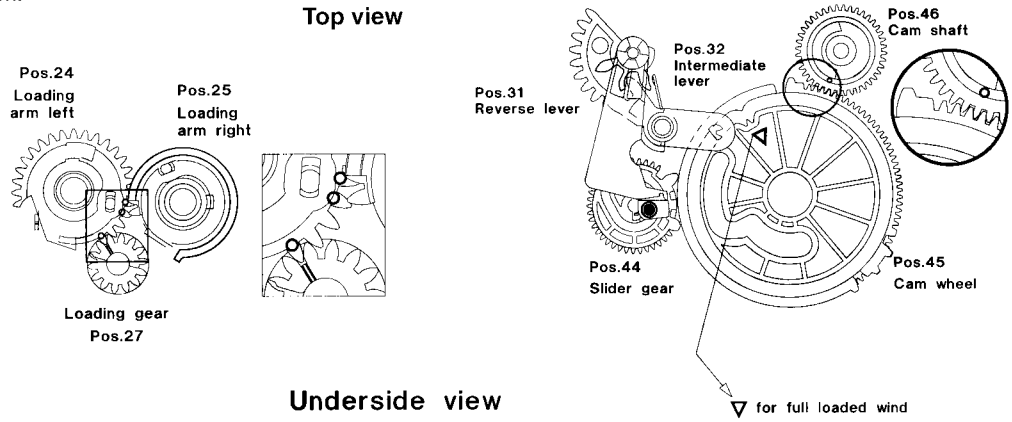
Nylon gloves 5322 395 94022

4.1.1 Deck lay out diagram

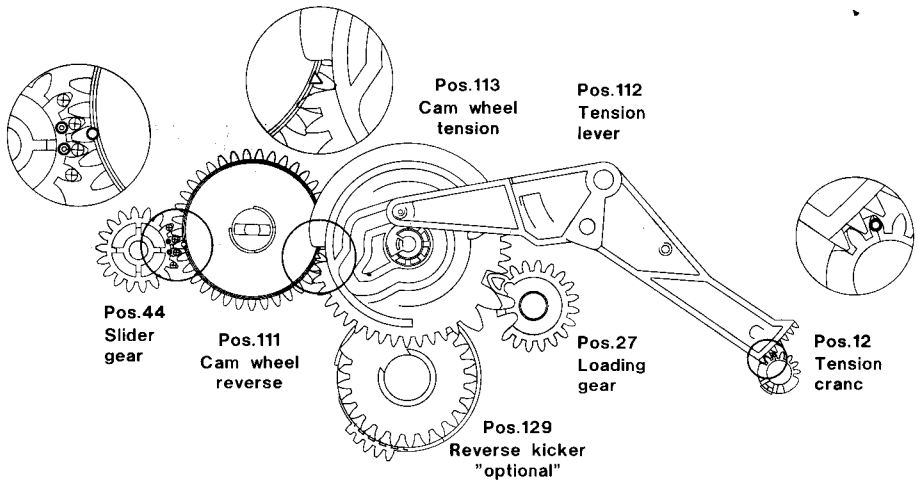
Deck in position „threaded out".

The following diagrams indicate the relative position of the gearwheels and levers when the deck is in the threaded out (cassette-compartment down) position.

Top view



Underside view



4.1.2 The Lift

Refitting the lift compartment:
Ensure the lift compartment is down and gear A is rotated one click stop anticlockwise from the down position.
The removal and refitting of the lift can be carried out in all deck positions with the exception of „eject" (ensure that gears 103/105 are free).

To remove the lift:
Free the holding bracket (Fig. 2) by rotating it up and back from the upper end.
Unscrew the 4 screws on the underside of the deck.
Carefully remove the lift vertically, noting the position of the record protect operating lever.

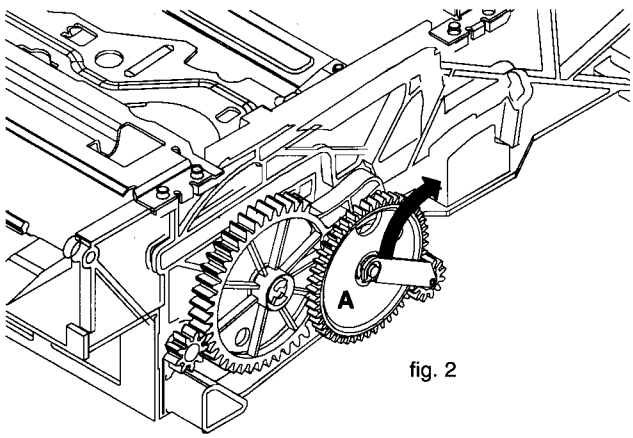


fig. 2

4.1.3 Head disc replacement

Removal :

Nylon gloves should be worn when handling the head disc.
Turn the headdisc until the long hole of the rotor appears in the bigger hole of the scannermotor
Insert the reference pin C (included with each service head disc) through the bigger hole of the lid of the scanner motor until the pin snaps in the long hole of the rotor. (Fig. 3)

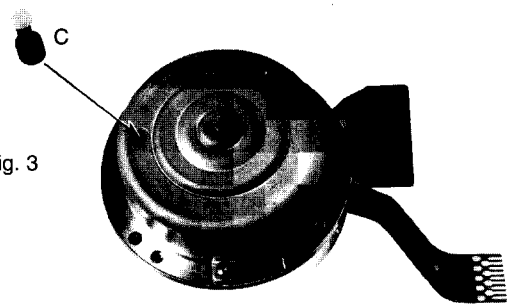
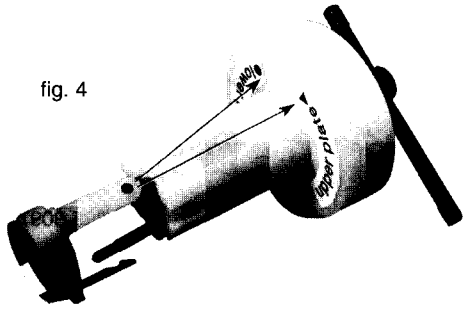


fig. 3

Important:

Choose Installation/Removal of the upper/lower clamping element by turning and attaching the reference element to the tool. (Fig. 4)

fig. 4



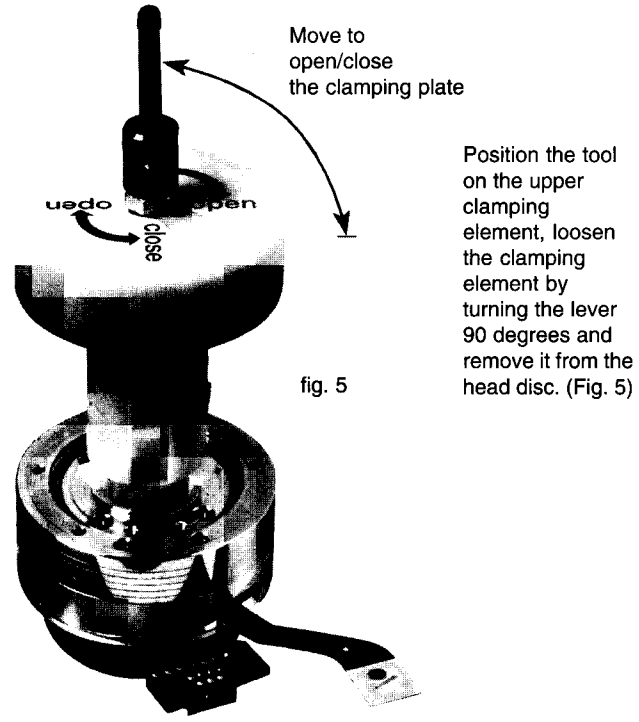


fig. 5

Position the tool on the upper clamping element, loosen the clamping element by turning the lever 90 degrees and remove it from the head disc. (Fig. 5)

Prepare the tool for the lower clamping element.Position the tool on the head disc and make sure that all 3 pins are snapped in the the lower clamping element. Loosen the clamping element by turning the lever 90 degrees and remove the head disc plus the tool from the scanner spindle. (Fig.6)

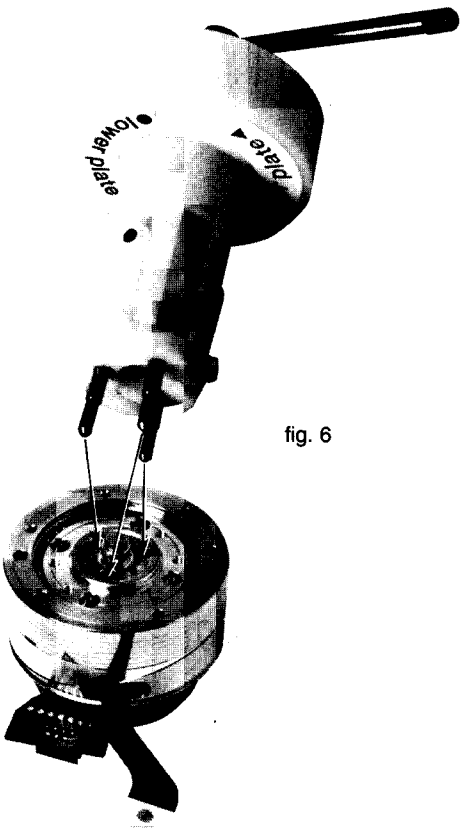


fig. 6

Installation:
Before carrying out the installation of the new head disc make sure that the scanner motor spindle is clean and undamaged. (The spindle has to be free of grease and must not be touched with bare hands)
Insert the 2 Mylar foils (included with each head disc) in the head disc. (Fig.7)

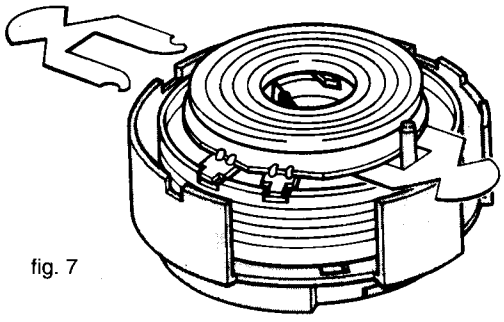


fig. 7

Position the tool (reference: lower clamping element) on the new headdisc (with protective cover) and loosen the lower clamping element.
Position the head disc so that pin D of the protective cover engages in the hole of the stator (the arrow on the protective cover must point towards the scanner print). (Fig. 8)

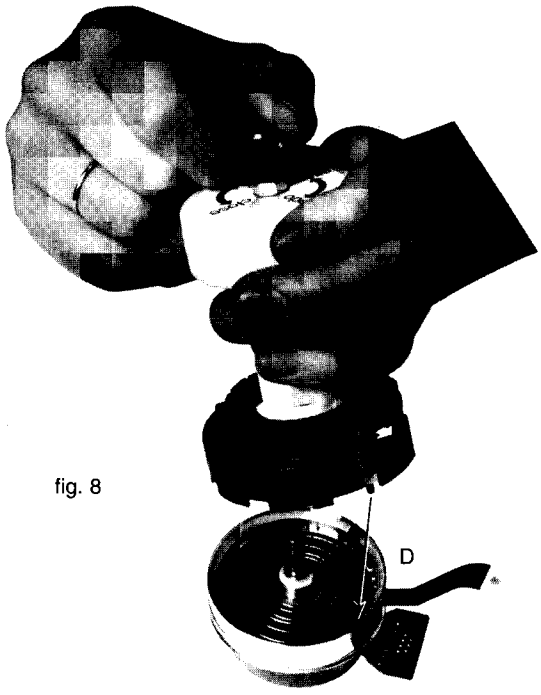


fig. 8

Reach the exact position through pressing the tool down with a force of 1 N. and fix the lower clamping element by turning the lever towards „close".
Remove the tool.
Change the tool to „upper clamping element" and position the clamping element exactly. (Fig. 9)

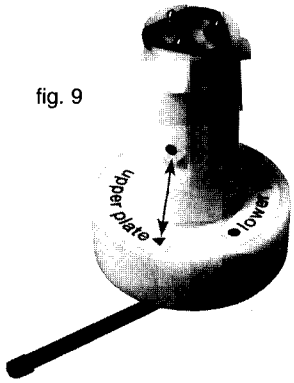


fig. 9

Tighten the clamping element through turning the lever towards „open". Position the tool planely on the head disc and fix the clamping element. (Fig.5 „close")
Remove the protecting cap from the head disc, withdraw the two Mylar foils and remove the reference pin C.

After replacing the head disc, carry out the following adjustments and checks :
Head switching pulse (gap position, chapter 3)
Write current adjustments (chapter 3)
Check tape path alignment (see paragraph 4.2.1.)

4.1.4 A/C Head (Combi head) (Pos. 36)

Remove the fixing spring (A) (fig. 10)
Remove the fixing screw and replace the A/C head.
Use a new fixing spring (included with new A/Chead) for reassembly.

After the A/C head has been replaced, all adjustments described in paragraph 4.2.1.2 and paragraph 4.2.2 have to be carried out.

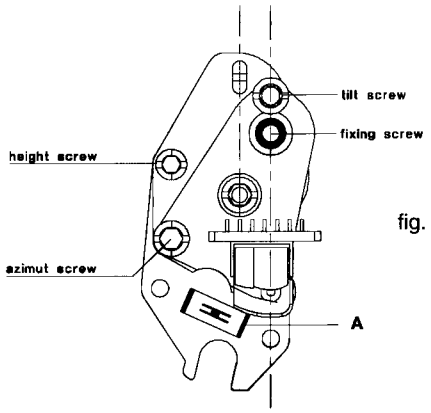


fig. 10

4.1.5 Threading motor (Pos. 38)

Remove the belt and disconnect the connector plug.
Remove the threading motor from the motor supports (Fig. 11).

During reassembly ensure that the threading motor is correctly located in the front and rear supports.

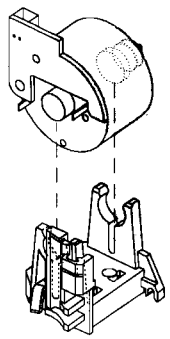


fig. 11

4.1.6 Capstan motor (Pos. 127)

Remove the tape deck.
Remove the belt (pos.126) on the underside;
Remove the three capstan motor fixing screws (Fig. 12) and withdraw the capstan motor downward from the drive assy.
The reassembly is carried out in reverse order. Make sure that the capstan is free of grease.

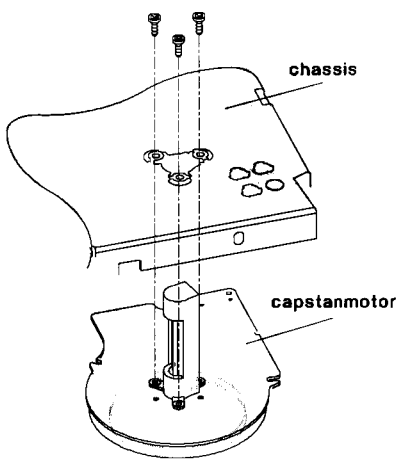


fig. 12

4.1.7 Pressure roller (Pos. 37)

Remove the tape deck
Unhook and remove the pressure roller tension spring.
Release the pressure roller guide (pos. 41) from the guide in the threading motor holder by pressing the top of the motor guide rearwards and rotating the pressure roller guide assembly clockwise by approximately a quarter of a turn (Fig. 13) The pressure roller and guide can now be lifted clear.

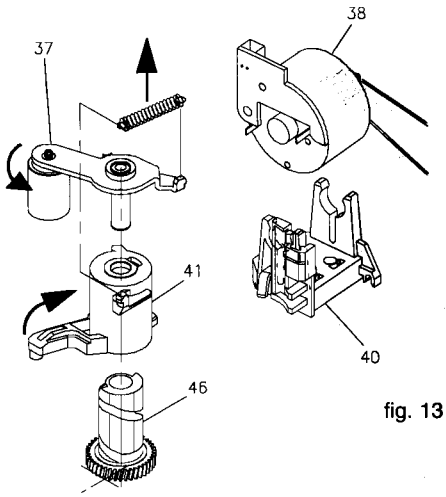
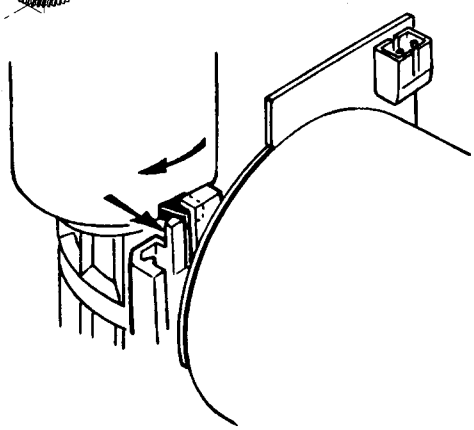


fig. 13



Ensure that no grease from the pressure roller guide gets to the capstan or pressure roller.
The reassembly is carried out in reverse order.

4.1.8 Roller unit right (Pos. 26)

Remove the tape deck.
Compress the two snap hooks by means of a pair of tweezers and remove the roller assy from the roller unit right (Fig. 14).
Unhinge the loading arm right from the holding plate and push the latter towards the front of the deck to remove from the guide (right).

NOTE: During reassembly ensure the link from 25 is engaged in the hole of the holder plate 26.
After replacing the roller unit (right), the tape path has to be checked, and adjusted if necessary (paragraph 4.2.1).

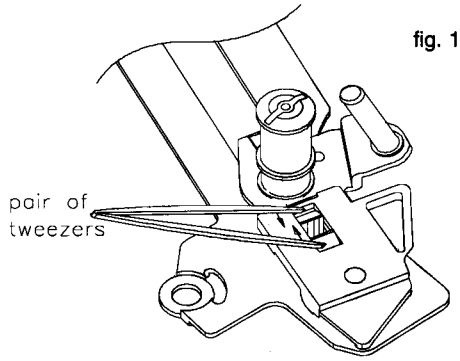


fig. 10

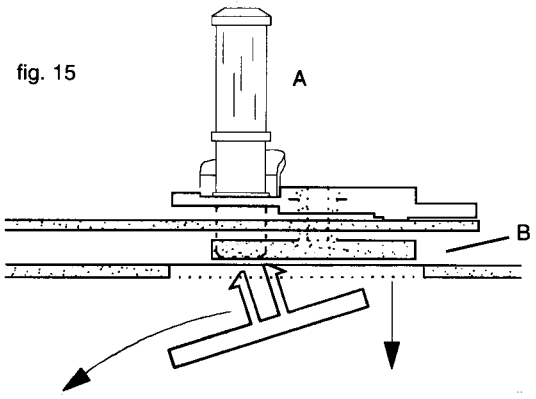
4.1.9 Roller unit left (Pos.23)

Set the drive assy to „Eject" position.
Unhook the tension arm spring (pos. 11), to avoid the tension arm spring being pre-loaded.
At the bottom side of the drive assy remove the tension lever (pos.112).
Compress the two snap hooks by means of a pair of tweezers (Fig. 9)and remove the roller assy (A) from the plate (B).
Unhinge the loading arm (left) from the holding plate and remove the latter downward from the drive assy through the recess in the chassis (Fig. 15).
The reassembly is carried out in reverse order.

NOTE : During reassembly
1. Place the carriage holding plate in the assembly with the half-round cutout nearest the rear of the deck.
2. When the loading arm is refitted ensure the pin on the underside of 23 is through the link of 24B.

After replacing the roller unit (left) the tape path has to be checked (paragraph 4.2.1.), and adjusted if necessary.

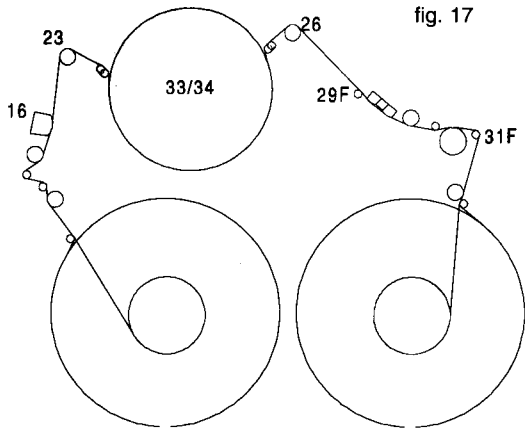
fig. 15



4.2 Adjustments

4.2.1 Tape path

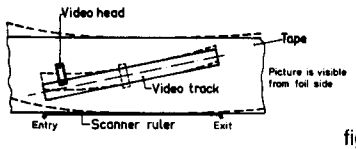
fig. 17



4.2.1.1 Roller left unit/roller unit right

Preparation:
Connect one input of a dual trace oscilloscope to observe the tape sync pulse CTL. The other input (DC coupled) to observe the tracking information TRIV.
Trigger the oscilloscope externally on the head pulse HP1.
Playback the black and white section of the alignment test tape.
Set the deck in the condition where the video heads are running along the upper edge of the tracks only by:

1. Call the service test program (chapter 2.1)
2. Activate manual tracking (service test program step 03) and watch the tape sync pulse move to the left in relation to the TRIV signal.
3. Note the extreme left hand position reached by the sync pulse, repeat as necessary.
4. Stop the movement of the pulse when the TRIV signal reduces to 1/2 to 2/3 maximum amplitude by pressing the normal play button. A noisy picture (disturbances) is visible on the TV set and the CTL pulse should be to the left of the display.
The recorder will hold this position until the service test progam step 03 is left.
This condition works only if X-distance is adjusted.



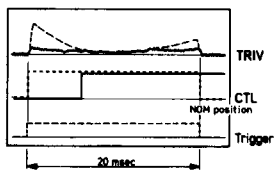


fig. 18

Adjustment:
Adjust the left and right roller units to make the tracking signal TRIV straight and flat as possible (Fig. 18).

4.2.1.2 A/C Combi head

Tilt angle adjustment

Set the drive to feature mode (e.g. +7)
Adjustment :
By means of the tilt angle adjusting screw move the tape until the lower edge just touches the tape guide A1 (see Fig. 19) the tape must not be distorted at the lower edge (by pressing onto guide).

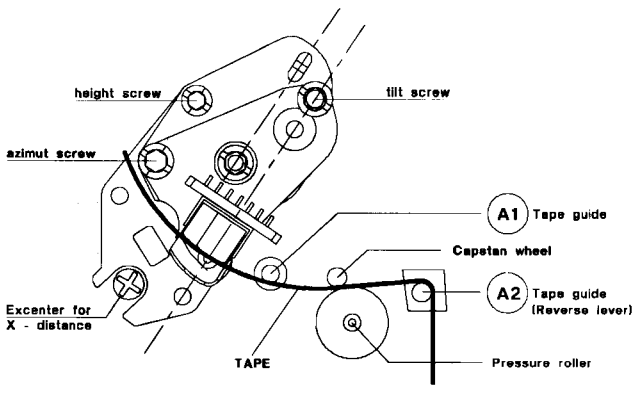


fig.19

Adjustment of the azimuth angle and the head height

Connect an oscilloscope to the linear Audio output.
Play the section of the test cassette with the audio signal 400 Hz.
Adjust for maximum output voltage by means of the height adjustment screw
Play the section of the test cassette with the audio signal 8 kHz.
Adjust to maximum output voltage by means of the azimuth adjustment screw (Fig. 19).
If necessary, repeat this procedure
Check the tilt angle adjustment

If the tape path was completely out of adjustment or if several components in the tape path have been replaced, it is possible, that the adjustments described in paragraph 4.2.1.1 and paragraph 4.2.1.2 have to be repeated several times.

4.2.2 Adjustment of the horizontal distance (x-distance)

Before this adjustment is carried out, insert the test cassette (start from Eject position). Call the service test program (tracking value will take up its nominal position) and press the „play" button.
Playback the black/white part of the test cassette.)
Display the TRIV signal on an oscilloscope (DC-coupled) and adjust for maximum voltage by means of the excentric screw (Fig.19).

4.2.3 Brake band and tape tension

Due to further development it is no longer necessary to make theseadjustments after replacement of the brake band.
If the brake band or tape tension are completely misadjusted, set them to a center position; set the drive to „play" and adjust the brake band until the edge of the elbow of the tape tension arm is aligned with the left inner edge of the left guide (fig. 20).

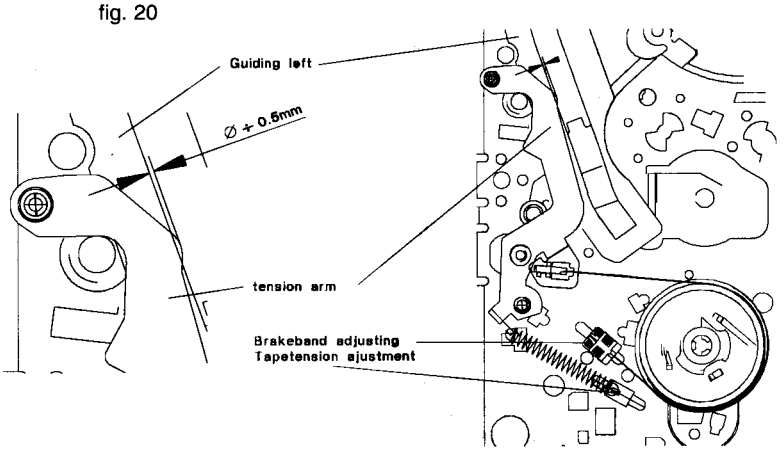
4.2.4 Friction clutch control check

Set the drive to „Play" position.
Place the torquemeter on the right reel.
Turn the capstan motor to move the right reel clockwise.
Keep turning, until the indication at the torquemeter no longer changes (Fig. 21)
The torque has to be 10,5 mNm +/-25% (105gFcm +/-25%)

4.2.5 Reverse brake control

Set the drive to „Reverse" position.
Place a torquemeter on the right reel and turn the latter counterclockwise, until the reel just starts to flip.
The value indicated at the torquemeter has to be 7mNm +/-3mNm (70 gFcm +/-30gFcm) (Fig. 21).

fig. 20



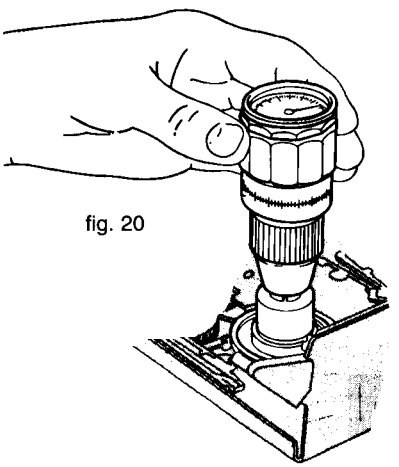
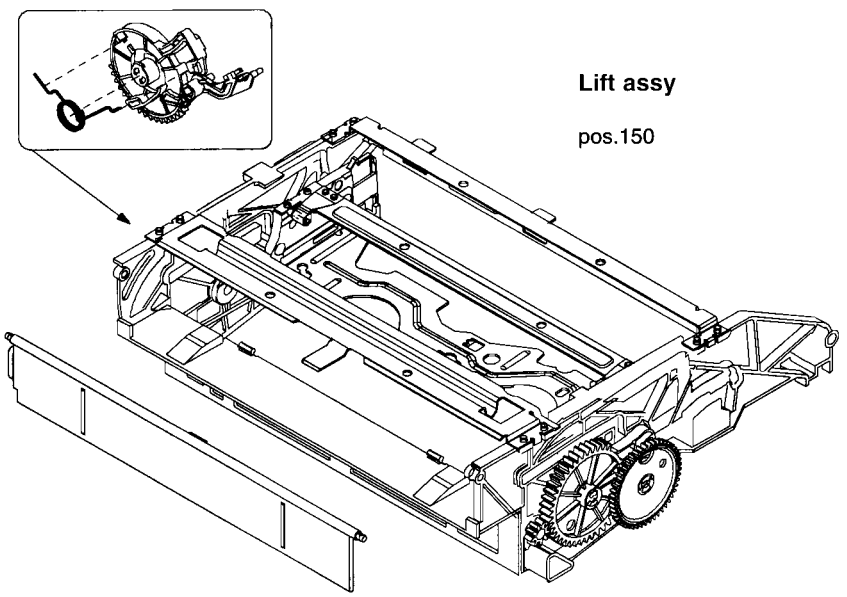


fig. 20

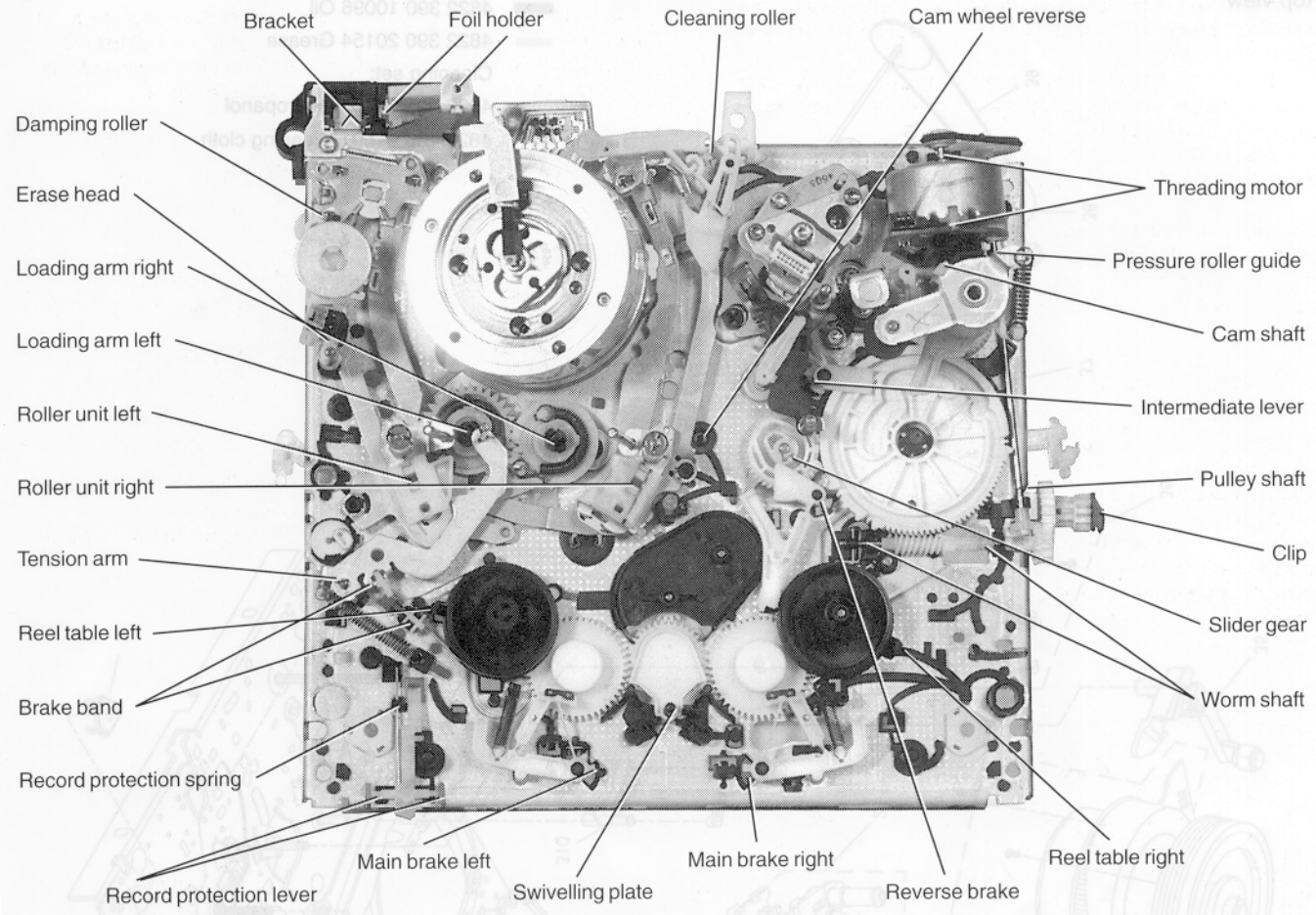


Lift assy

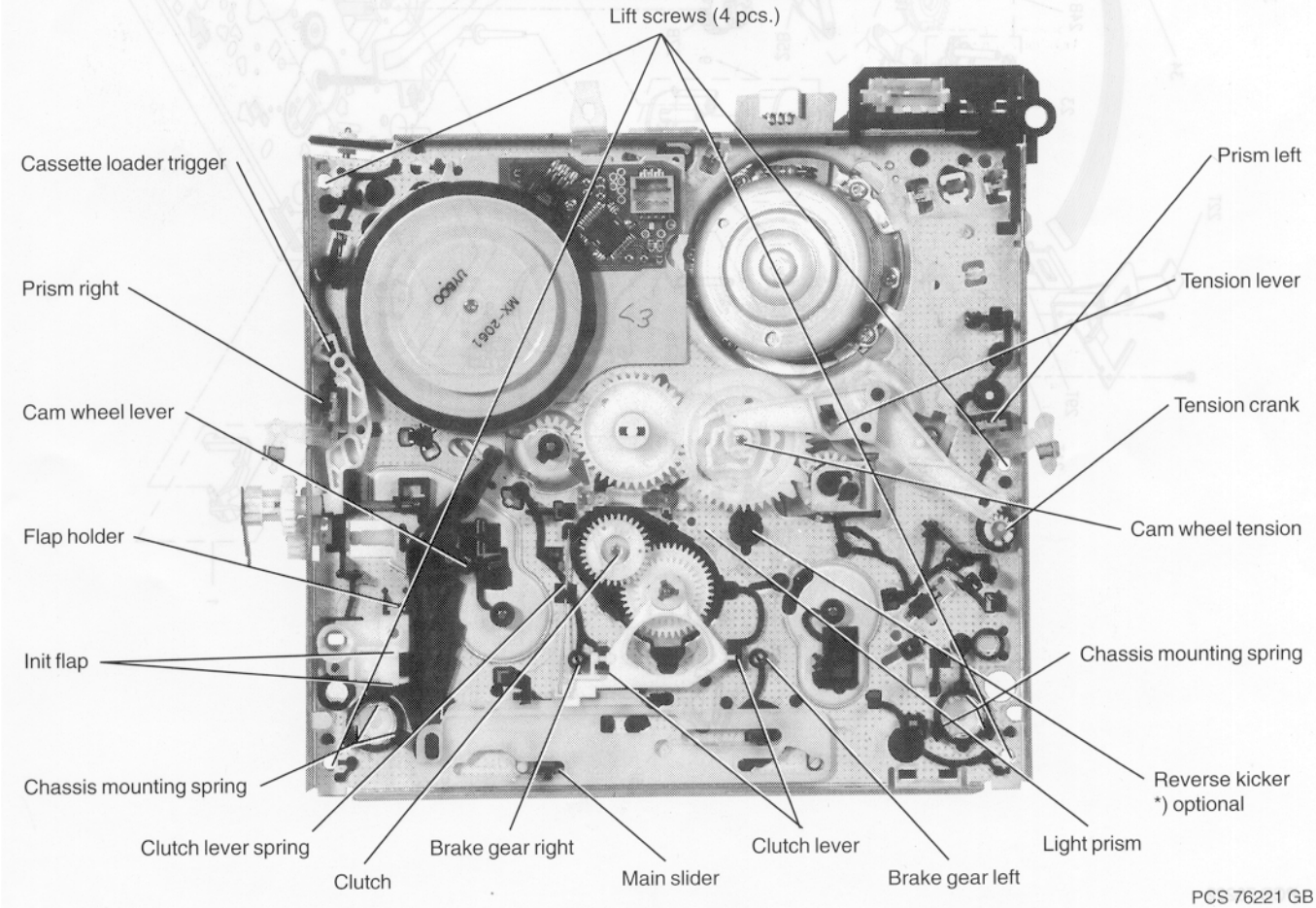
pos.150

In order to make the replacement of the deck parts easier, the snap hooks are marked with an arrow

TOP VIEW

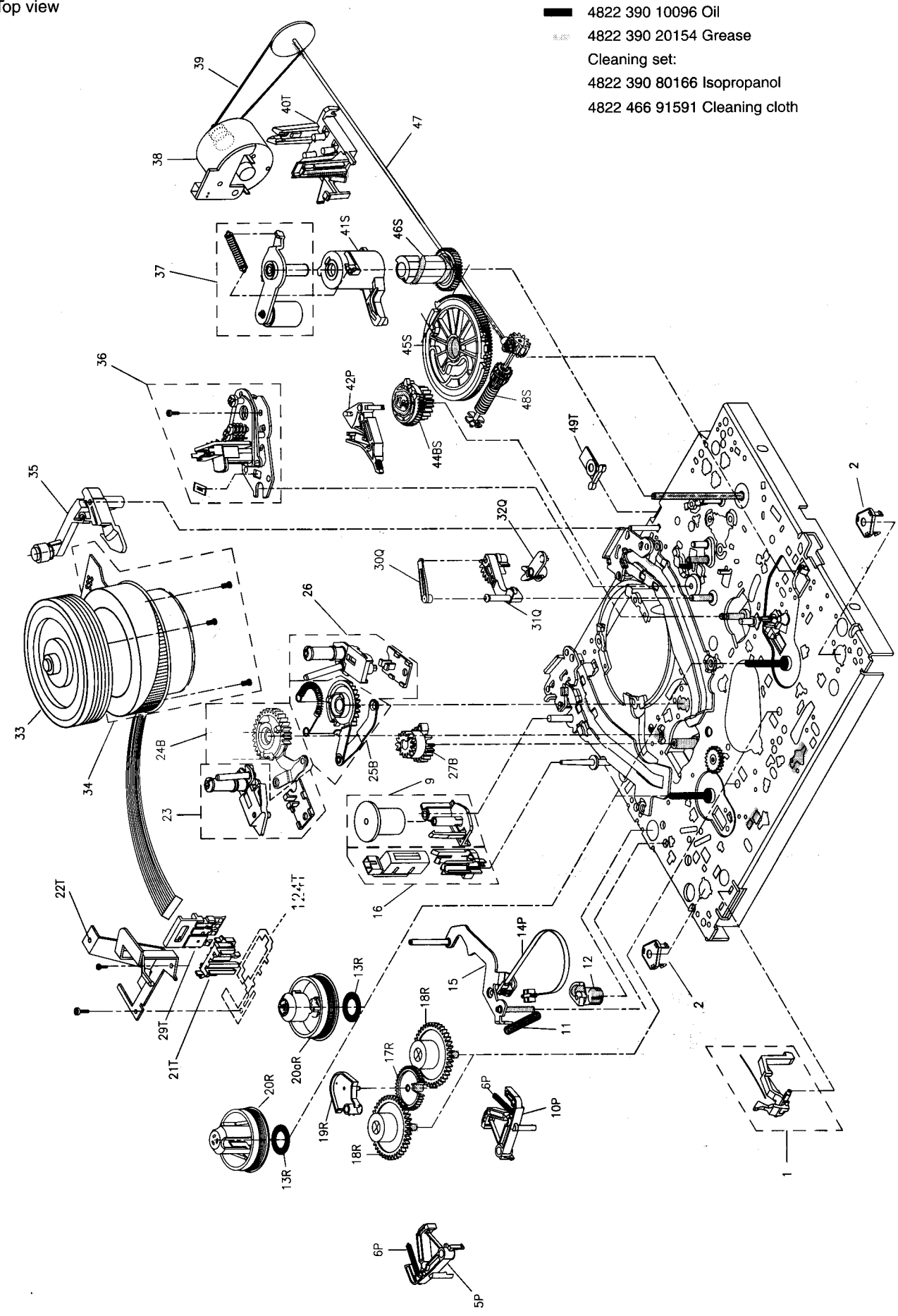


UNDERSIDE VIEW

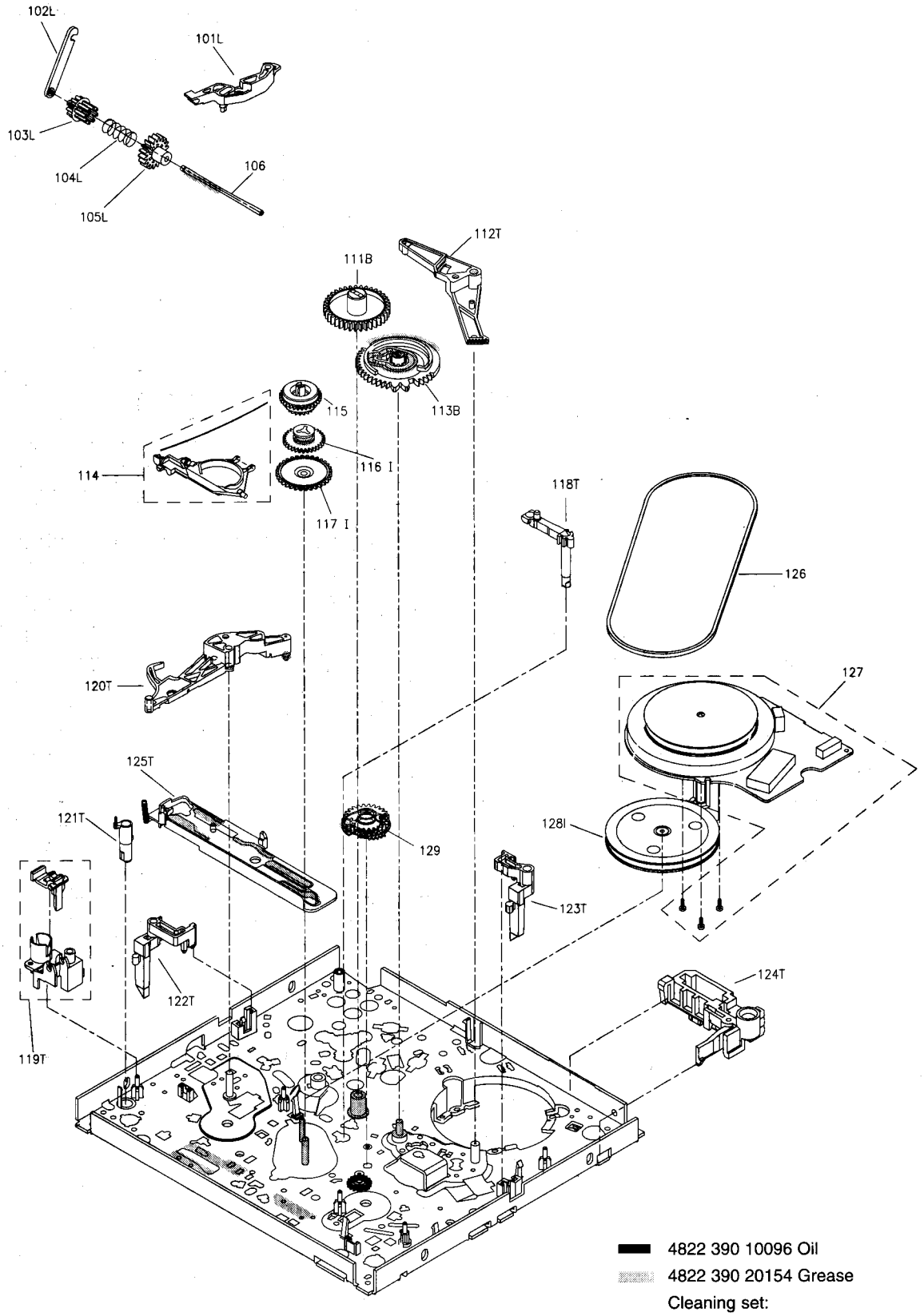


4.3 Exploded view

Top view



Underside viw



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

MECHANICAL PARTS LIST

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	R	S	T	
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	Foil 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								
29	Plate								T	
30	Reverse clip					Q				
31	Reverse lever					Q				
32	Intermediate lever					Q				
33	Head disc 4/2									691 10548
33	Head disc 4/2-Secam									691 10551
33	Head disc 4/2/1									691 10548
33	Head disc 4/2/1-Secam									691 10551
33	Head disc 4/2-S-VHS									691 10522
33	Head disc 4/2/1-S-VHS									691 10552
34	Scanner motor 4/2 (with screws)									361 10901
34	Scanner motor 4/2/1 (with screws)									361 10902
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	

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	R	S	T	
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 rihgt								T	
123	Prism left								T	
124	Holder								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							
140	Flex cable									320 40287
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.

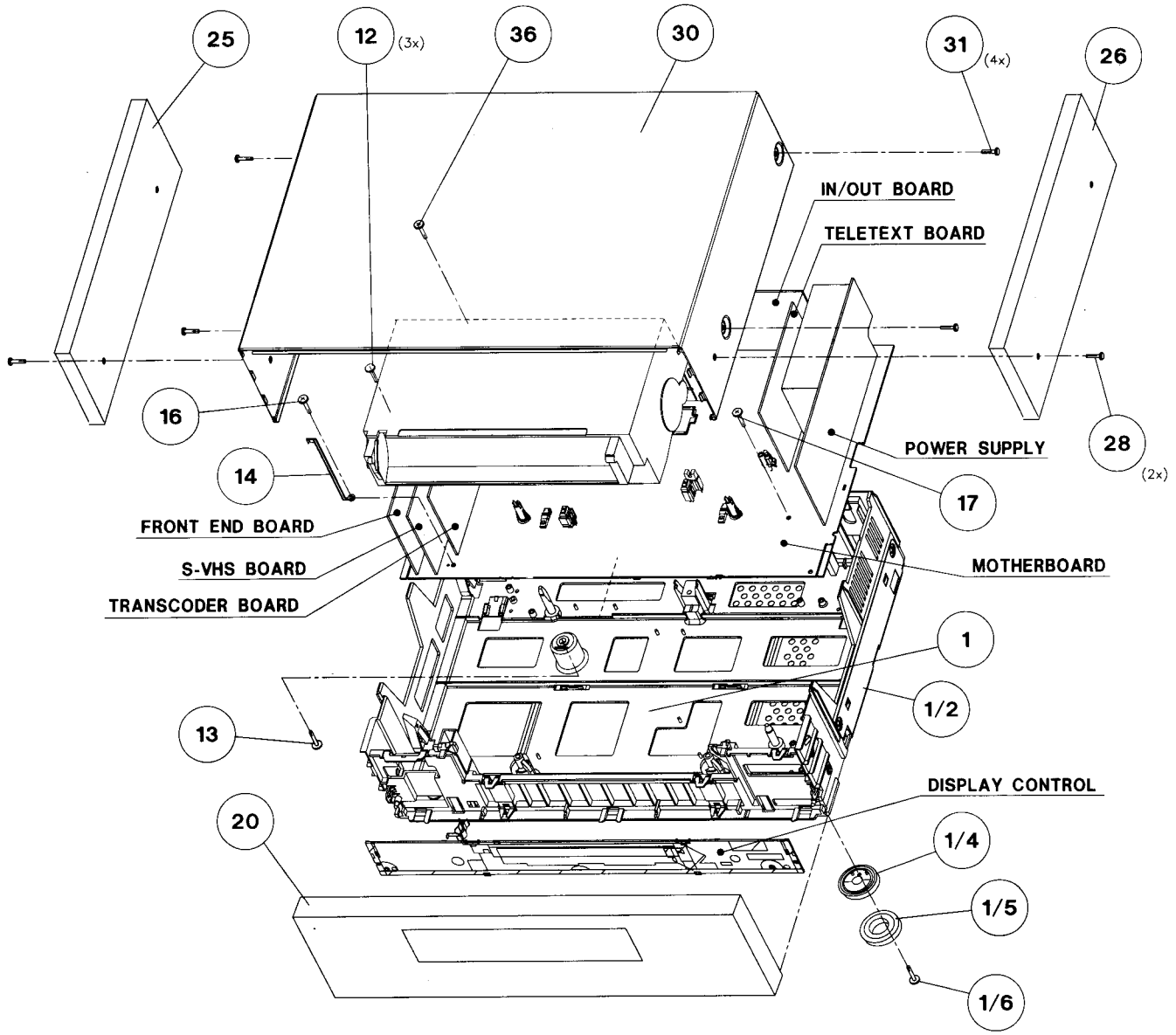
Per una riparazione garantita ocorre sostituire tutti i pezzi contenuti nei kit, fatta eccetione per il kit T.

Para obtener un estandár de reparaciones elevado,es necesario cambiar todas las partes contenidas en el kit, la única exceptión 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 waarbogen moeten, met uitzondering van kit T, altijd alle zich in een kit bevindende onderdelen worden vervangen.

Exploded View of the set



Set Parts List

Pos	Service Code	Description
1	4822 464 10175	FRAME ASSY VR969
1	4822 464 10172	FRAME ASSY VR768
1	4822 464 10178	FRAME ASSY VR967
1/2	4822 442 00278	BOTTOM
1/4	4822 462 10772	FOOT VR969
1/4	4822 462 10771	FOOT VR967
1/5	4822 462 10773	FOOT INLAY VR969
1/6	4822 502 14115	SCREW 3,15X8 ZN GEC
12	4822 502 13884	PLAST.SCREW 3,5X16
13	4822 502 14107	CONTACT CHASSIS SCREW
14	4822 256 10249	PCB-HOLDER TO S-VHS-BOARD
15	4822 256 10249	PCB-HOLDER TO VPT-BOARD
16	4822 502 21349	SCREW 3,15X10 ZN GEC Z R
17	4822 502 14115	SCREW 3,15X8 ZN GEC Z R
25	4822 426 10202	SIDE PANEL LEFT VR969
25	4822 426 10205	SIDE PANEL LEFT VR967
26	4822 426 10203	SIDE PANEL RIGHT VR969
26	4822 426 10206	SIDE PANEL RIGHT VR967
28	4822 502 14315	SCREW M3X12 TAPT SWC Z R
30	4822 442 00421	COVER VR969
30	4822 442 00422	COVER VR768
30	4822 442 00426	COVER VR666, VR668
30	4822 442 00429	COVER VR967
31	4822 502 14109	PLAST. SCREW 3,5X10 BK R
36	4822 502 21545	SCREW 2.5X4 TAPT. T8
150/1	4822 321 10249	MAINS CORD
150/1	4822 321 10886	MAINS CORD (+FUSE) for UK
150/2	4822 320 50377	CONNECTING CABLE PAL
150/3	4822 321 62402	S-VHS CABLE
150/4	4822 321 63006	SCART CABLE (WITH PIN10)
9501	4822 320 11498	FFC ASSY 6 POL.(TD-1501)
9503	4822 320 11483	FLAT FLEX CABLE SCR 7 POL
9508	4822 320 11484	FLAT FLEX CABLE 3 POL
9510	4822 320 11499	FLAT FLEX CABLE 19 POL
9516	4822 320 11501	FLAT FLEX CABLE 10 POL
9526	4822 320 11485	FLAT FLEX CABLE 18 POL
9538	4822 265 10637	RS 232 SOCKET ASSY
	4822 310 10748	Extension Adapter S-VHS Board

Front Panels

Pos	Service Code	Description
20/1	4822 459 04217	FRONT PANEL VR666/02
20/1	4822 459 04216	FRONT PANEL VR666/16
20/1	4822 459 04214	FRONT PANEL VR666/39
20/1	4822 459 04218	FRONT PANEL VR668/02
20/1	4822 459 04219	FRONT PANEL VR668/05
20/1	4822 459 04221	FRONT PANEL VR668/06/16
20/1	4822 459 04209	FRONT PANEL VR668/39
20/1	4822 459 04215	FRONT PANEL VR768/02
20/1	4822 459 04206	FRONT PANEL VR768/05
20/1	4822 459 04205	FRONT PANEL VR768/16/59
20/1	4822 459 04199	FRONT PANEL VR768/39
20/1	4822 459 04208	FRONT PANEL VR967/02
20/1	4822 459 04207	FRONT PANEL VR967/16/58
20/1	4822 459 04204	FRONT PANEL VR967/39
20/1	4822 459 04222	FRONT PANEL VR969/02
20/1	4822 459 04223	FRONT PANEL VR969/05/16/58
20/1	4822 459 04202	FRONT PANEL VR969/39

Front Panel VR666

Pos	Service Code	Description
20/1/6	4822 443 10357	LIFT FLAP VR666/39
20/1/6	4822 443 10356	LIFT FLAP VR666/02/16
20/1/7	4822 492 70896	LEG SPRING LIFT FLAP
20/3	4822 502 11839	PLAST.SCREW 2,9X8 VR666, VR668
20/10	4822 277 11576	DECK CONTROL UNIT VR666
20/11	4822 502 11839	PLAST.SCREW 2,9X8 VR666, VR668

Front Panel VR668

Pos	Service Code	Description
20/1/6	4822 443 10358	LIFT FLAP VR668/39
20/1/6	4822 443 10359	LIFT FLAP VR668/02/05/06/16
20/1/7	4822 492 70896	LEG SPRING LIFT FLAP
20/1/12	4822 443 10361	FLAP VR668
20/3	4822 502 11839	PLAST.SCREW 2,9X8 VR666, VR668
20/10	4822 277 11576	DECK CONTROL UNIT VR668
20/11	4822 502 11839	PLAST.SCREW 2,9X8 VR666, VR668

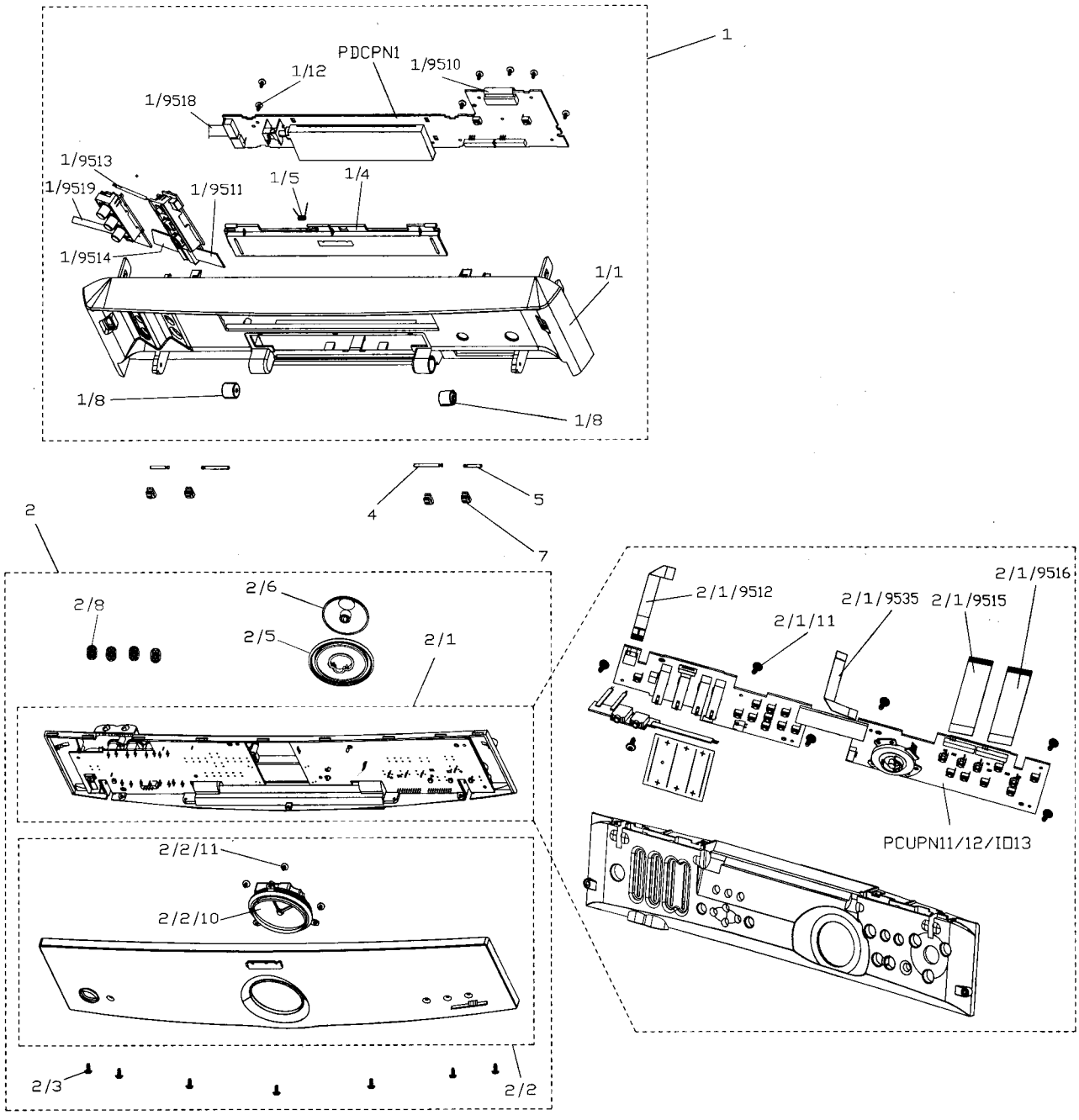
Front Panel VR768

Pos	Service Code	Description
20/5	4822 442 00423	FLAP VR768
20/6	4822 443 10339	LIFT FLAP VR768/02/05/16/59
20/6	4822 443 10331	LIFT FLAP VR768/39
20/7	4822 410 10565	KNOB JOG VR768
20/8	4822 492 70896	LEG SPRING LIFT FLAP
20/9	4822 410 10566	BUTTON SET TOP ASSY VR768
20/10	4822 410 10567	KNOB SHUTTLE ASSY VR768
20/11	4822 502 13886	SCR PAN TORX ST ZN BK 2X6 VR768
20/12	4822 502 30685	SCR PAN TORX ST ZN BK 2X8 VR768
20/13	4822 320 11482	FLAT FLEX CABLE 19 P VR768

Front Panel VR967

Pos	Service Code	Description
20/5	4822 443 10347	LIFT FLAP VR967
20/6	4822 442 00427	FLAP VR967
20/7	4822 442 00428	CORNER PIECE L/R VR967
20/8	4822 492 70896	LEG SPRING LIFT FLAP
20/9	4822 502 30685	SCR PAN TORX ST ZN BK 2X8 VR967
20/10	4822 502 30408	SCR PAN TORX ST ZN BK3X10 VR967

Exploded View Front Panel VR969 (Pos. 20)



Pos	Service Code	Description
20/1/4	4822 443 10365	LIFT FLAP VR969
20/1/5	4822 492 70896	LEG SPRING LIFT FLAP
20/1/8	4822 529 10368	DAMPER ASSY VR969
20/1/9510	4822 320 11499	FLAT FLEX CABLE 19POL VR969
20/2/1	4822 443 10336	FLAP INSIDE ASSY VR969/39
20/2/1	4822 443 10362	FLAP INSIDE ASSY VR969/02/05/16/58
20/2/1/11	4822 502 14317	SCREW 2,35X6 ZN SWC ZR VR969
20/2/1/9512	4822 320 11517	FLAT FLEX CABLE SCR 7 POL VR969
20/2/1/9515	4822 320 11518	FLAT FLEX CABLE 20 POL VR969
20/2/1/9516	4822 320 11518	FLAT FLEX CABLE 20 POL VR969
20/2/1/9535	4822 320 11519	FLAT FLEX CABLE 8 POL VR969
20/2/2	4822 443 10366	FLAP OUTSIDE ASS.VR969/39
20/2/2	4822 443 10363	FLAP OUTSIDE ASS.VR969/02/16/58
20/2/2	4822 443 10369	FLAP OUTSIDE ASS.VR969/05
20/2/2/10	4822 344 14001	ANALOG CLOCK W735 (JUNGH) VR969
20/2/2/11	4822 502 14317	SCREW 2,35X6 ZN SWC ZR VR969
20/2/3	4822 502 14317	SCREW 2,35X6 ZN SWC ZR VR969
20/2/5	4822 410 10592	SHUTTLE KNOB VR969
20/2/6	4822 410 10593	JOG KNOB VR969
20/2/8	4822 410 10594	SLIDE KNOB VR969
20/4	4822 535 10318	SHAFT VR969
20/5	4822 535 10315	SHAFT VR969
20/7	4822 500 10516	SAFETY BOLT VR969

Power Supply PSM

MISCELLANEOUS

0010	4822 256 30514	FUSE HOLDER
0011	4822 256 30514	FUSE HOLDER
1010 ⚠	4822 070 31252	2181.25(1.25A)

CONNECTORS

0008 ⚠	4822 267 31064	MAINS CONNECTOR
1509	4822 265 10484	PIN ASSY 18P

CAPACITORS

2012	4822 121 10524	910	pF	100V
2014	4822 124 11559	2.2	µF	50V
2016	4822 121 42687	3,3	nF	63V
2018	4822 121 51299	1	nF	50V
2026	4822 121 51299	1	nF	50V
2030	5322 121 42386	100	nF	63V
2032	5322 121 42386	100	nF	63V
2036	4822 124 80874	47	µF	50V
2042	4822 121 70481	47	nF	400V
2050 ⚠	4822 121 70674	68	nF	250V
2052 ⚠	4822 121 70674	68	nF	250V
2054 ⚠	4822 126 13859	470	pF	250V
2056 ⚠	4822 126 13859	470	pF	250V
2059 ⚠	4822 126 13859	470	pF	250V
2060	4822 121 10525	330	nF	100V
2062	4822 124 80875	220	µF	25V
2064	5322 121 42661	330	nF	63V
2068	4822 124 80874	47	µF	50V
2069	4822 122 31175	1	nF	500V
2070 ⚠	4822 124 11561	47	µF	400V
2074	5322 121 42386	100	nF	63V
2076	4822 124 80874	47	µF	50V
2080	5322 121 42578	100	nF	250V
2081	4822 124 41751	470	µF	50V
2084	4822 124 41747	680	µF	35V
2085	4822 124 80874	47	µF	50V
2088	4822 124 80875	220	µF	25V
2090	4822 124 80875	220	µF	25V
2092	5322 121 42386	100	nF	63V
2096	4822 122 31116	2	nF	400V
2098	4822 124 41747	680	µF	35V
2099	4822 124 41747	680	µF	35V

RESISTORS

3010	4822 116 83864	10	k	0,5W
3012	4822 050 11002	1	k	0,4W
3014	4822 050 13902	3,9	k	0,4W
3016	4822 116 52244	15	k	0,5W
3018	4822 116 52257	22	k	0,5W
3020	4822 116 52251	18	k	1/6W
3022	4822 050 11003	10	k	0,4W
3026	4822 116 52228	680	R	0,5W
3028	4822 116 52304	82	k	0,5W
3030	4822 116 52303	8,2	k	0,5W
3032	4822 116 52186	22	R	0,5W only for S-VHS
3032	4822 116 52195	47	R	0,5W
3034	4822 116 52202	82	R	0,5W
3040	4822 116 52283	4,7	k	0,5W
3041	4822 050 23309	33	R	0,6W
3042	4822 050 21003	10	k	0,6W
3043	4822 050 21003	10	k	0,6W
3044	4822 050 21003	10	k	0,6W
3046	4822 050 21808	1,8	R	0,6W
3048	4822 050 21508	1,5	R	0,6W
3050	4822 116 83882	39	k	0,5W
3052	4822 116 83882	39	k	0,5W
3054	4822 050 21005	1	M	0,6W
3055	4822 050 21005	1	M	0,6W
3056	4822 050 21005	1	M	0,6W
3057	4822 050 21005	1	M	0,6W
3058 ⚠	4822 053 21395	3,9	M	0,5W
3059 ⚠	4822 053 21395	3,9	M	0,5W
3060	4822 116 83872	220	R	0,5W
3061	4822 157 60147	IND FIX HF-BEAD		
3062	4822 116 83864	10	k	0,5W
3063	4822 116 83872	220	R	0,5W
3064	4822 116 52283	4,7	k	0,5W
3067	4822 116 83872	220	R	0,5W
3068	4822 116 52186	22	R	0,5W
3069	4822 050 24708	4,7	R	1/8W
3070	4822 116 83872	220	R	0,5W
3071	4822 116 52199	68	R	1/6W
3072	4822 050 11002	1	k	0,4W
3073	4822 116 52234	100	k	1/6W
3074	4822 116 52289	5,6	k	0,5W
3075	4822 116 52291	56	k	1/6W
3076	4822 116 52263	2,7	k	1/6W
3077	4822 116 52259	2,4	k	1/6W
3078	4822 100 12163	470	R	
3080 ⚠	4822 052 10479	47	R	
3081	4822 116 52226	560	R	1/6W
3082	4822 116 52283	4,7	k	1/6W
3083	4822 116 52226	560	R	1/6W
3084	4822 116 52283	4,7	k	1/6W
3085	4822 116 52226	560	R	1/6W
3086	4822 116 52234	100	k	1/6W
3087	4822 050 15603	56	k	
3088	4822 116 52291	56	k	1/6W
3089	4822 050 15603	56	k	
3090	4822 050 23902	3,9	k	0,6W
3092	4822 050 11002	1	k	0,4W
3094	4822 116 52245	150	k	0,5W
3096	4822 116 52234	100	k	0,5W
3098	4822 116 52291	56	k	0,5W
3099	4822 116 52283	4,7	k	1/6W

COILS

5010 ⚠	4822 157 10454	Mains Filter
5050 ⚠	4822 146 10529	TRAFO PCT 13205-12/14 VERS.D
5069	4822 157 60147	2,2 µH
5080	4822 157 71461	22 µH 10%
5081	4822 157 52285	6,8 µH
5088	4822 157 71461	22 µH 10%
5090	4822 157 71461	22 µH 10%
5098	4822 157 71461	22 µH 10%

DIODES

6032	4822 130 31631	BYV10-20
6036	4822 130 30842	BAV21
6042	4822 130 10439	BY268 A
6046 ⚠	4822 130 31438	1N4001G
6048 ⚠	4822 130 31438	1N4001G
6050	5322 209 12018	DF08M
6076	4822 130 82885	BYT52M
6080	4822 130 83909	BYW98-200RL
6081	4822 130 82885	BYT52M
6082	4822 130 82885	BYT52M
6084	4822 130 10456	BZX79-B32
6088	4822 130 83909	BYW98-200RL
6092	4822 130 83909	BYW98-200RL
6096	4822 130 10455	DIO REC MBR1060 S only S-VHS
6098	4822 130 83934	MBR360 only for VHS

TRANSISTORS & IC's

7020	4822 209 90025	MC44603P
7040	4822 130 63794	STP3NA60
7050	4822 130 44503	BC547C
7056	4822 130 44503	BC547C
7058	4822 130 41344	BC337-40
7060	4822 130 41327	BC327-40
7070 ⚠	4822 209 32126	SOC1012T
7074	4822 209 81397	TL431CLPST
7084	4822 130 44503	BC547C
7085	4822 209 81397	TL431CLPRE
7088	4822 209 72742	L7812ACV
7090	4822 130 10237	MTD3055V1
7096	4822 130 44503	BC547C

⚠ Safety component, use only this type