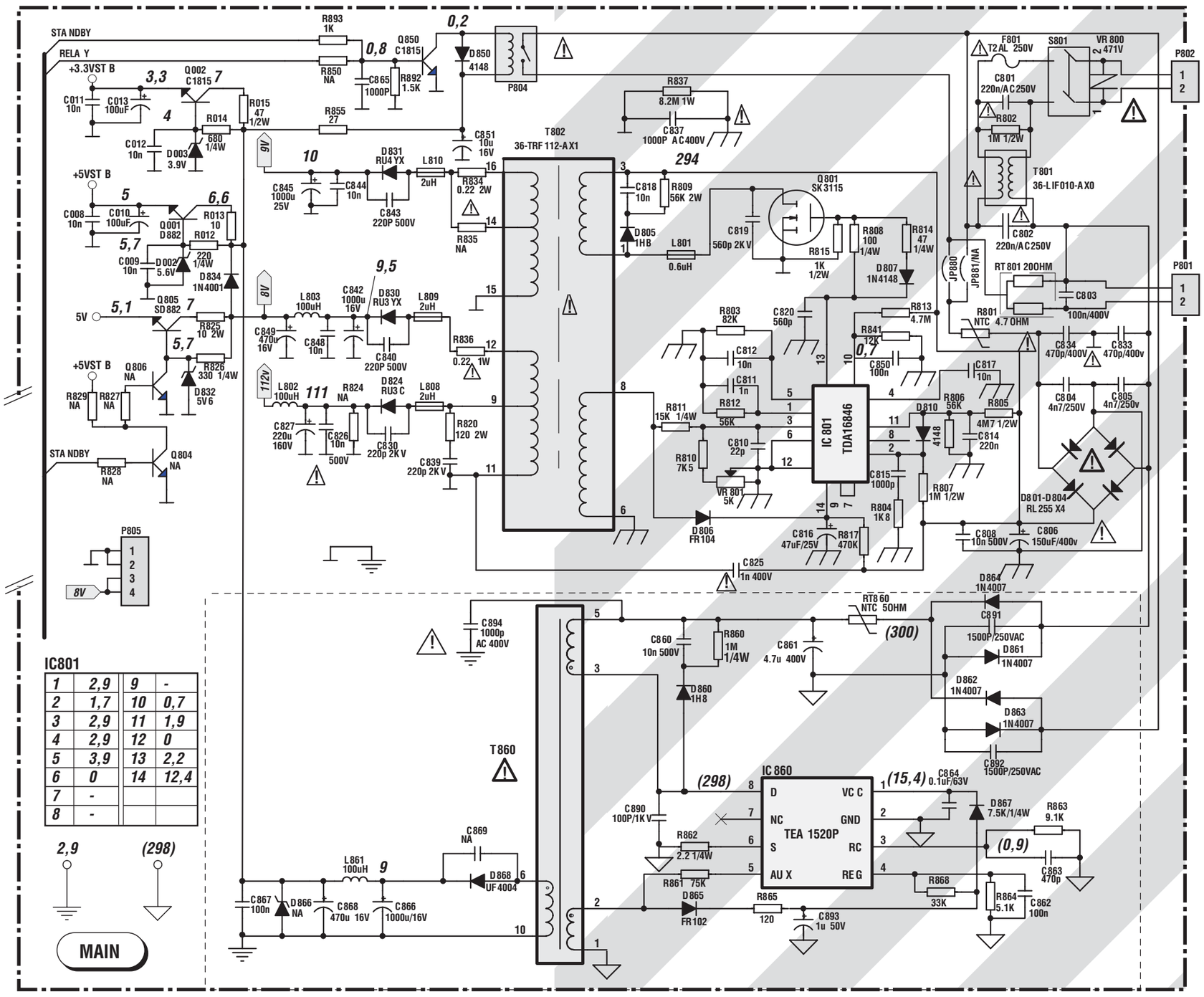
MAIN SCHEMATIC DIAGRAM - SCHEMA DE LA PLATINE PRINCIPALE - SCHALTBILD HAUPTPLATINE - SCHEMA DELLA PIASTRA PRINCIPALE- ESQUEMA DE LA PLATINA PRINCIPAL

(MAIN BOARD 1/4) / ETC009



IC801			
1	2,9	9	-
2	1,7	10	0,7
3	2,9	11	1,9
4	2,9	12	0
5	3,9	13	2,2
6	0	14	12,4
7	-		
8	-		

Note :
Power Supply primary circuit measurements.
- Use only (⏚ or ⏚) connection point.
Attention :
Mesure dans la partie primaire de l'alimentation
- Utiliser la masse du bloc alimentation (⏚ ou ⏚).
Achtung :
Bei Messungen im Primärnetzteil
- Primärnetzteilmasse verwenden (⏚ oder ⏚).
Attenzione :
misure nell'alimentatore primario
- usare massa alimentazione primario (⏚ o ⏚).
Cuidado :
Medida en el bloque de alimentacion
- Utilizar la masa del bloque de alimentacion (⏚ o ⏚).

Part of board connected to mains supply.
Partie du châssis reliée au secteur.
Primärseite des Netzteils.
Parte dello telaio collegata alla rete.
Parte del chasis conectada a la red.

⚠ Use isolating mains transformer
Utiliser un transformateur isolateur du secteur
Einen Trenntrafo verwenden
Utilizzare un transformatore per isolarvi dalla rete
Utilizar un transformador aislador de red

⚠ Indicates critical safety components, and identical components should be used for replacement. Only then can the operational safety be garanteed.

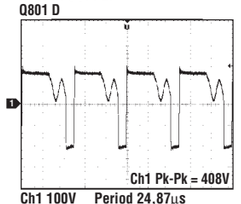
Le remplacement des éléments de sécurité (repérés avec le symbole ⚠) par des composants non homologués selon la Norme CEI 65 entraine la non-conformité de l'appareil. Dans ce cas, la responsabilité dufabricant n'est plus engagée.

Wenn Sicherheitsteile (mit dem Symbol ⚠ gekennzeichnet) durch nicht normgerechte Teile ersetzt werden, erlischt die Haftung des Herstellers.

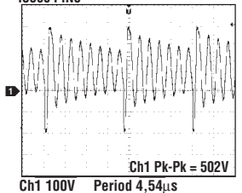
La sostituzione degli elementi di sicurezza (marcati con il segno ⚠) con componenenti non omologati secondo la norma CEI 65 comporta la non conformitá dell'apparecchio. In tal caso é “esclusa la responsabilità” del costruttore.

La subtitución de elementos de seguridad (marcados con el simbolo ⚠) por componentes no homologados segun la norma CEI 65, provoca la no conformidad del aparato. En ese caso, el fabricante cesa de ser responsable.

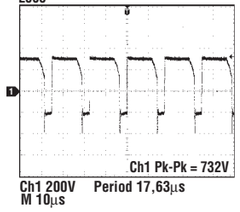
POWER SUPPLY
Q801 D



IC860 PIN8



L808



ETC009 - ETC010
First issue 10 / 04

MAIN SCHEMATIC DIAGRAM - SCHEMA DE LA PLATINE PRINCIPALE - SCHALTBILD HAUPTPLATINE - SCHEMA DELLA PIASTRA PRINCIPALE- ESQUEMA DE LA PLATINA PRINCIPAL

(MAIN BOARD 2/4) / ETC009

VD RA
VD RB
X-RAY
ABL
SANDCASE
H-OUT
E-W
D601
R350 2K2
R314 1K
C351 2200P
C350 1500P
R316 1K
IC 300
STV 9302
INPUT VCC POMP UP GND OUT VP VREF
0,8
+14V
C308 220uF/25V
D309 IN 4001
C313 4.7uF/50V
13
-11,5
-13
0,2
C323 100uF 35V
C325 0.33u
R313 1 1W
C360 100uF/35V
C324 100uF/25V
-14V
D300 4148
D306 3V9
D307 4148
D308 4148
C300 100uF/50V
D304 2V4
D305 4148
R300 1K2
C307 CA P POL
D320 4148
R351 10K
C337 1000P
R315 2K2
R324 220 1W
C342 0.22u
R321 1.5
R410 47K 1/4W
D400 FR104
L412 0uH
L411 50uH
C420 10u 160v
112V
R411 1K 2W
JP401
C421 0.39u/250v
P400
1 2 3 4
CON4
+14V
R414 10K
C407 2n2
T402
HV
EHT
To CRT
FOCUS
SCREEN
R415 1K
R406 10K
C422 5600p/63V
R408 15K 1/4W
D404 5V6
R286 330
R280 5K6
D281 4148
Q280 BC 857
2,5
19
D413 IN 4001
R407 1 1/2W
P403
R420 1.5 2W
210
33V
Q281 BC 847
-0,1
R282 0
R283 270
D280 24V
R285 470
R284 100K
C431 47uF 25V
R404 15K 1W
R403 1 1/2W
112V
C411 100u 160V
D833 4004
D405 4004
9V
+14V
R402 22 1W
109
0,4
R401 470
C405 100n
R413 220 1/2W
C414 3300
10,4
T401
Q402 SC5885
C404 1000P 500V
Q401 C2235
C401 1000P/500V
D403 FR104
R409 1 1/2W
C413 470u/25V
C403 390P/500V
-13
D402 FR104
R405 1 1/2W
+13
C415 470u 25V
C412 390p/500V
D401 FR104
R418 1 1/2W
C408 10U 250v
C409 390P 500V
D421 RS3FS
D422 FR104
C416 3300P 1.6KV
C417 7600pF 1.6KV
C419 2200 1.6KV
C410 100n
R450 68K
R451 3.9 2W
L450 600UH
C451 4.7uF 50V
C418 22n 400V
C450 10n
D450 5V6
Q450 IRF630

SCANNING / DEFLECTION
Vertical Deflection (pin 1 P400)
-10V
Ch1 Pk-Pk = 50V
Ch1 20V Period 20ms
M 10ms

SCANNING / DEFLECTION
Horizontal Deflection (pin 3 P400)
60V
0
Ch1 Pk-Pk = 108V
Ch1 50V Period 15,68µs
M 20µs

SCANNING / DEFLECTION
PIN 1 Of IC300 (Input)
Ch1 Pk-Pk = 1,8V
Ch1 1V Period 200µs
M 20ms

SCANNING / DEFLECTION
Vertical Deflection (PIN 2 P400)
Ch1 Pk-Pk = 2,4V
Ch1 1V Period 20,16ms
M 10ms

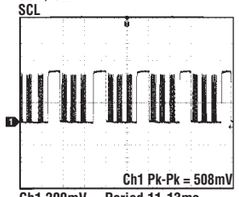
SCANNING / DEFLECTION
Horizontal Deflection (PIN 4 P400)
Ch1 Pk-Pk = 1040V
Ch1 500V Period 64µs
M 40µs

ETC009 - ETC010
First issue 01 / 06

MAIN SCHEMATIC DIAGRAM - SCHEMA DE LA PLATINE PRINCIPALE - SCHALTBILD HAUPTPLATINE - SCHEMA DELLA PIASTRA PRINCIPALE- ESQUEMA DE LA PLATINA PRINCIPAL

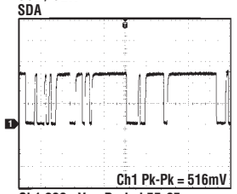
(MAIN BOARD 3/4) / ETC009

SCL / SDA
SCL



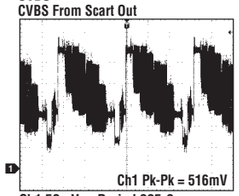
Ch1 200mV Period 11,13ms
M 400µs

SCL / SDA
SDA



Ch1 200mV Period 55,65µs
M 100µs

CVBS
CVBS From Scart Out



Ch1 50mV Period 225,2ns
M 20µs

IC201

TDA1 2020H

P962=>P902

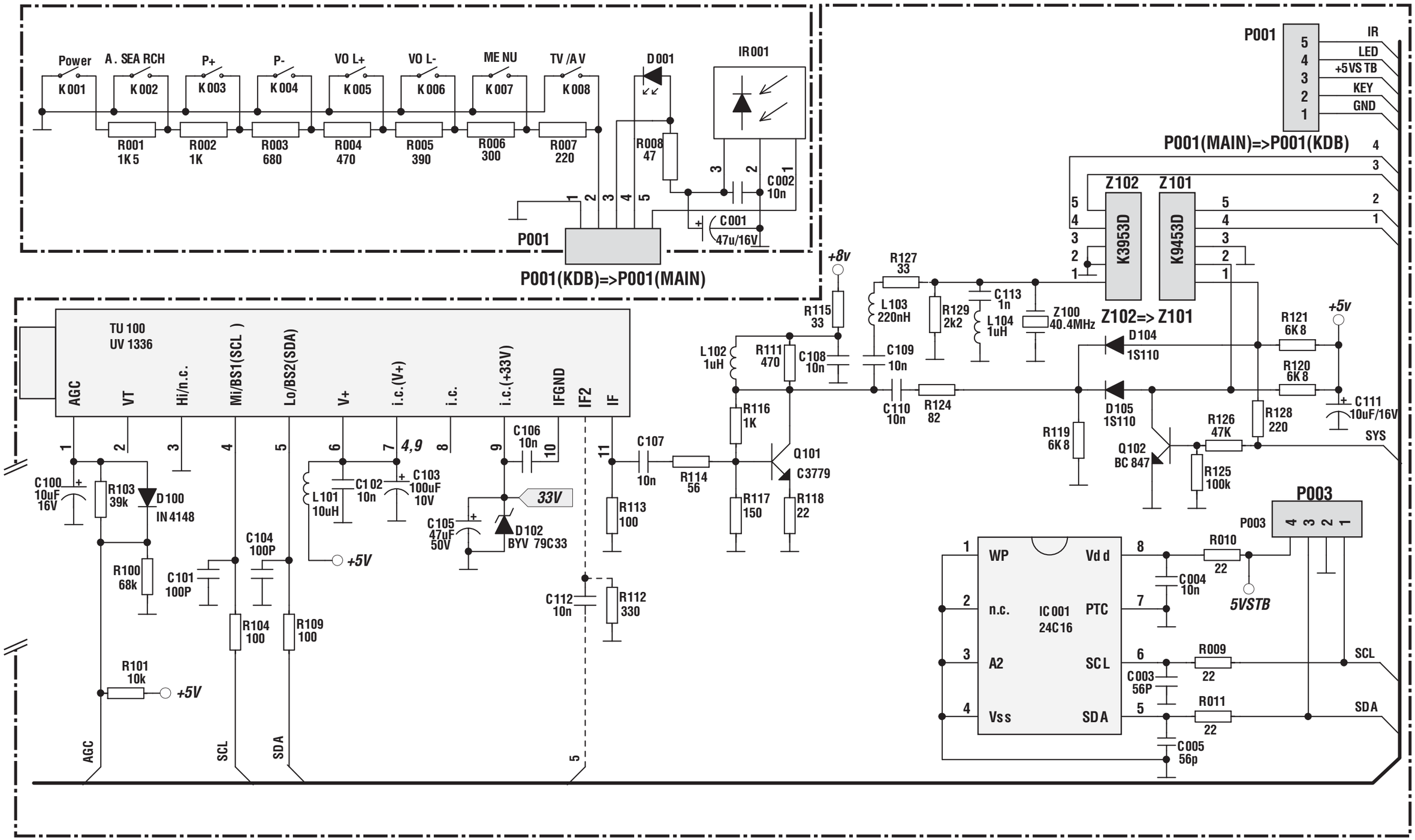
P963=>P602

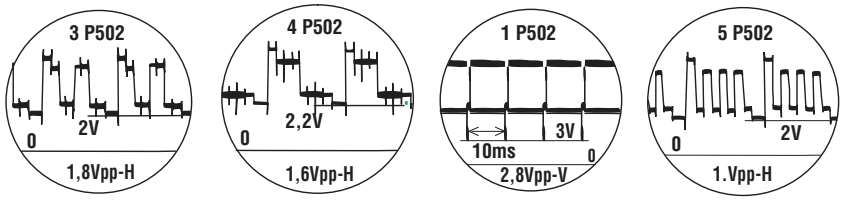
P202=>P502

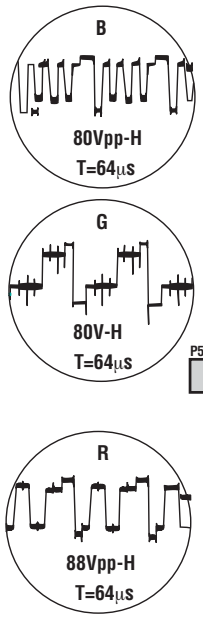
ETC009 - ETC010
First issue 10 / 04

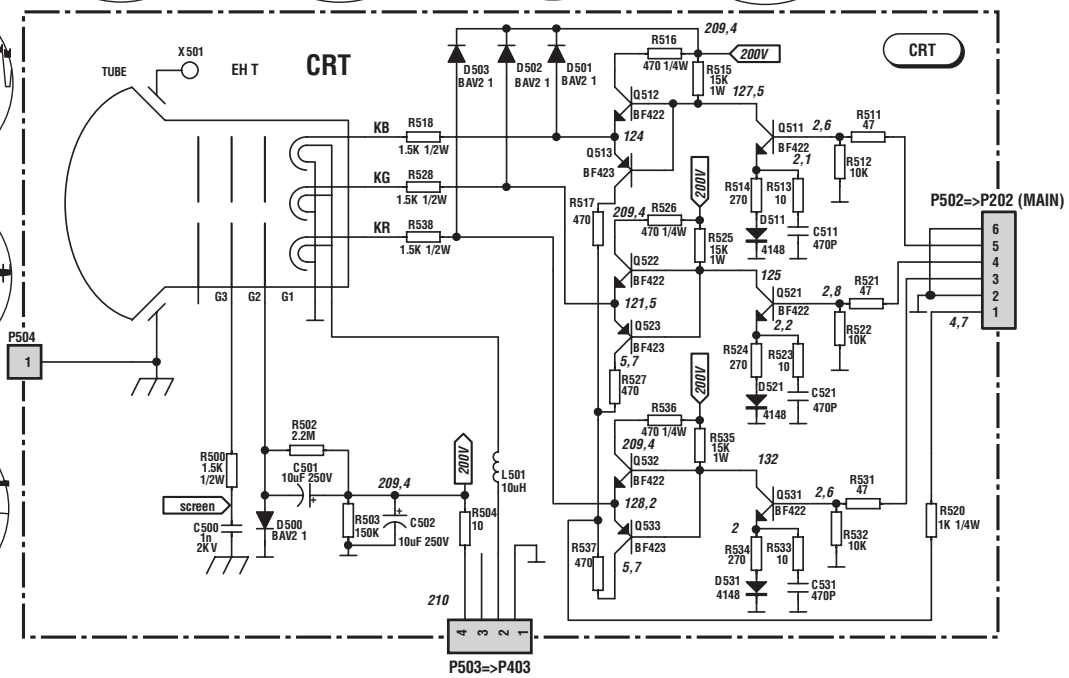
MAIN SCHEMATIC DIAGRAM - SCHEMA DE LA PLATINE PRINCIPALE - SCHALTBILD HAUPTPLATINE - SCHEMA DELLA PIASTRA PRINCIPALE- ESQUEMA DE LA PLATINA PRINCIPAL

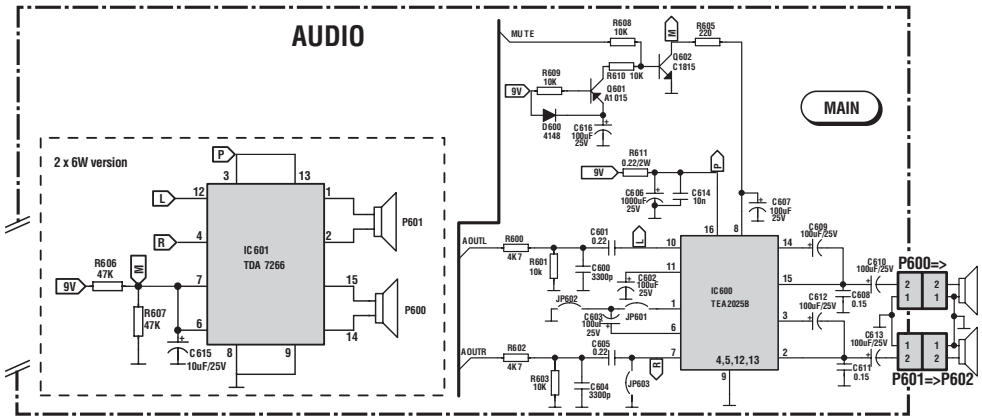
(MAIN BOARD 4/4) / ETC009

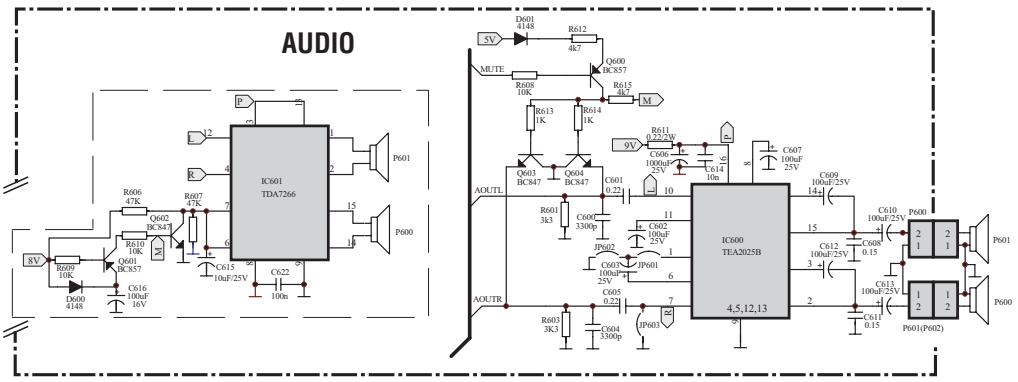


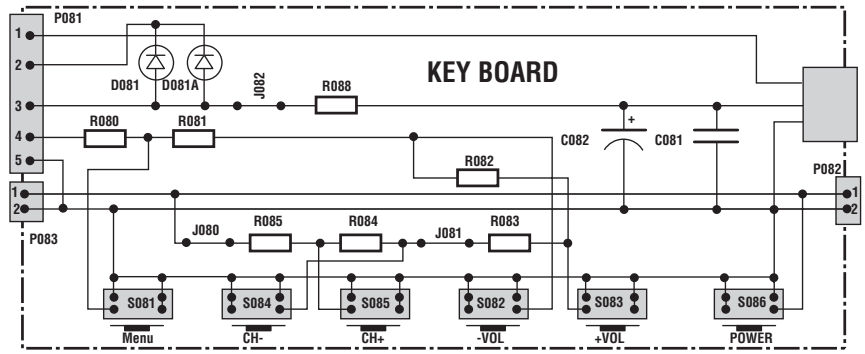

3 P502
2V
0
1,8Vpp-H
4 P502
2,2V
0
1,6Vpp-H
1 P502
3V
10ms
0
2,8Vpp-V
5 P502
2V
0
1.Vpp-H


B
80Vpp-H
T=64µs
G
80V-H
T=64µs
R
88Vpp-H
T=64µs


CRT
TUBE
X501
EH T
D503 BAV2 1
D502 BAV2 1
D501 BAV2 1
R516 470 1/4W
R515 15K 1W
209,4
200V
127,5
Q512 BF422
124
Q513 BF423
KB R518 1.5K 1/2W
KG R528 1.5K 1/2W
KR R538 1.5K 1/2W
G3 G2 G1
P504
1
R500 1.5K 1/2W
R502 2.2M
C501 10uF 250V
screen
C500 1n 2KV
D500 BAV2 1
R503 150K
C502 10uF 250V
L501 10uH
R504 10
210
P503=>P403
Q511 BF422
2,6
2,1
R511 47
R512 10K
R514 270
R513 10
D511 4148
C511 470P
R517 470
R526 470 1/4W
R525 15K 1W
Q522 BF422
125
121,5
Q523 BF423
5,7
Q521 BF422
2,8
2,2
R521 47
R522 10K
R524 270
R523 10
D521 4148
C521 470P
R527 470
R536 470 1/4W
R535 15K 1W
132
Q532 BF422
128,2
Q533 BF423
5,7
Q531 BF422
2,6
R531 47
R532 10K
R534 270
R533 10
D531 4148
C531 470P
R537 470
2
R520 1K 1/4W
P502=>P202 (MAIN)
4,7
CRT

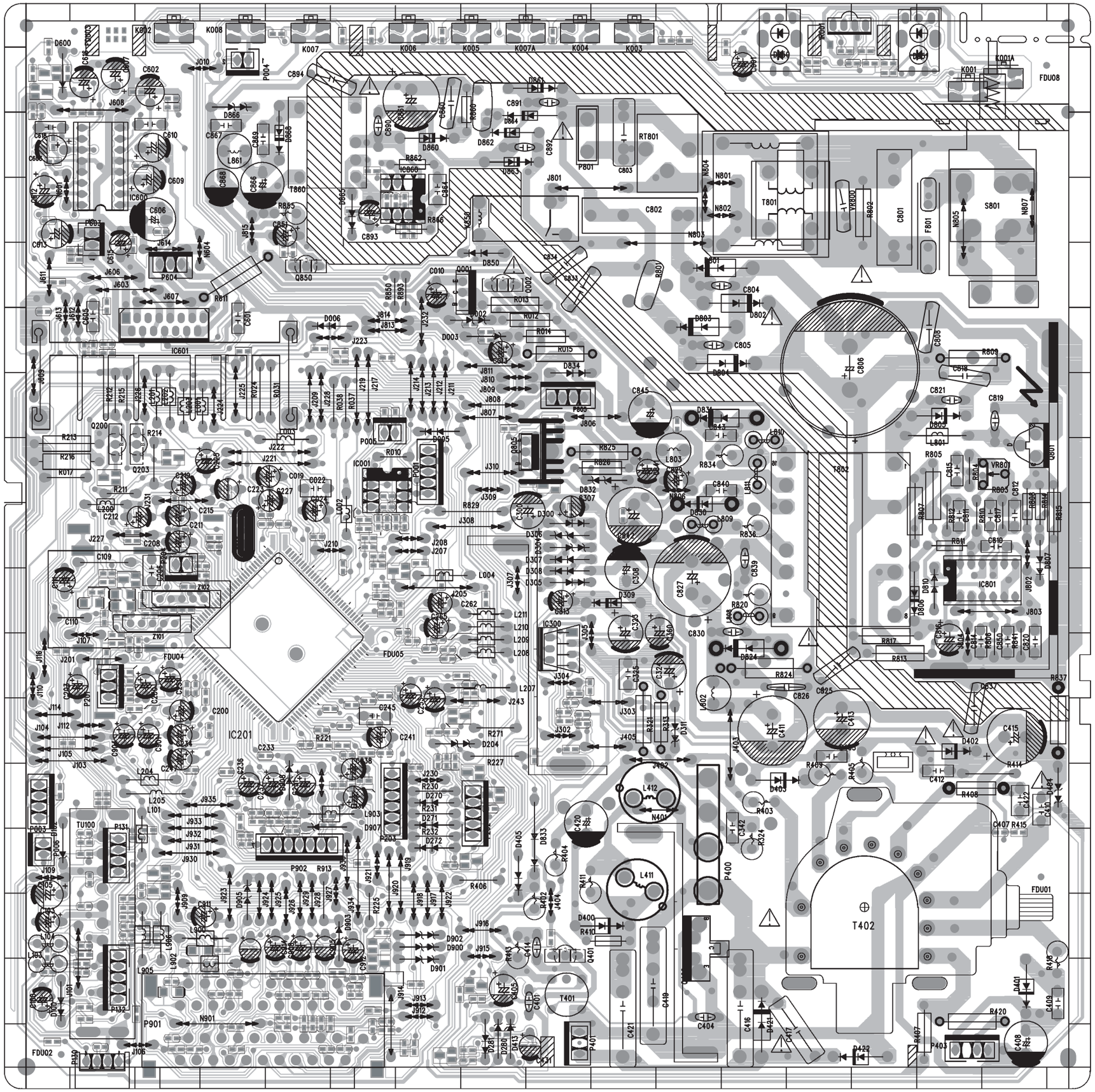

AUDIO
2 x 6W version
P
L
R
IC 601
TDA 7266
P601
P600
R606 47K
R607 47K
C615 10uF/25V
9V
MUTE
R608 10K
R605 220
Q602 C1815
R609 10K
R610 10K
Q601 A1 015
D600 4148
C616 100uF 25V
R611 0.22/2W
C606 1000uF 25V
C614 10n
C607 100uF 25V
C609 100uF/25V
AOUTL
AOUTR
R600 4K7
R601 10k
C600 3300p
JP602
C602 100uF 25V
JP601
C603 100uF 25V
C601 0.22
R602 4K7
R603 10K
C604 3300p
C605 0.22
JP603
IC 600
TEA 2025B
4,5,12,13
C610 100uF/25V
C612 100uF/25V
C608 0.15
C613 100uF/25V
C611 0.15
P600=>
P601=>P602
MAIN


AUDIO
IC601
TDA7266
P601
P600
R606 47K
R607 47K
Q602 BC847
R610 10K
Q601 BC857
R609 10K
D600 4148
C616 100uF 16V
C615 10uF/25V
C622 100n
8V
D601 4148
R612 4k7
5V
Q600 BC857
MUTE
R608 10K
R615 4k7
R613 1K
R614 1K
Q603 BC847
Q604 BC847
R611 0.22/2W
C606 1000uF 25V
C614 10n
C607 100uF 25V
C609 100uF/25V
AOUTL
AOUTR
R601 3k3
C600 3300p
JP602
C602 100uF 25V
JP601
C603 100uF 25V
C601 0.22
C605 0.22
JP603
R603 3K3
C604 3300p
IC600
TEA2025B
4,5,12,13
C610 100uF/25V
C612 100uF/25V
C608 0.15
C613 100uF/25V
C611 0.15
P600
P601
P601(P602)


KEY BOARD
P081
D081
D081A
J082
R088
R080
R081
C082
C081
R082
P082
P083
J080
R085
R084
J081
R083
S081
Menu
S084
CH-
S085
CH+
S082
-VOL
S083
+VOL
S086
POWER

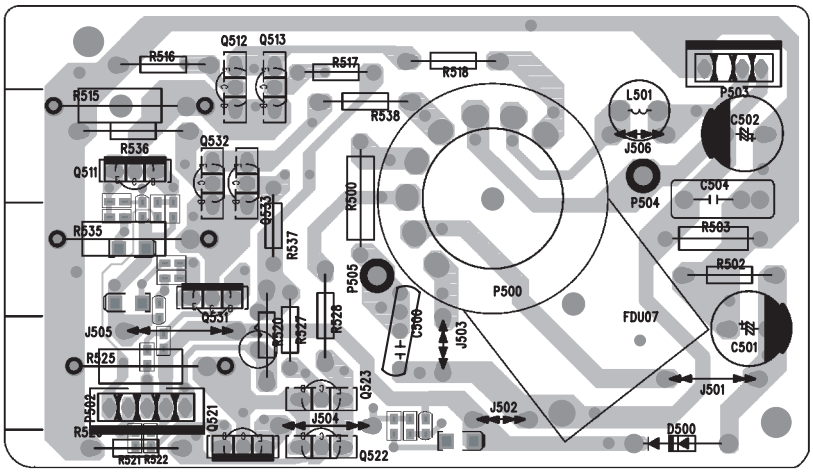
MAIN BOARD - PLATINE PRINCIPALE - CHASSIS GRUNDPLATTE - PIASTRA PRINCIPALE - PLATINA PRINCIPAL

COMPONENT SIDE - COTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES


K002
K008
K007
K006
K005
K007A
K004
K003
K001A
FDU08
D600
C602
J608
C610
C609
IC600
C606
J614
P604
N604
J606
J603
J607
R611
C601
IC601
J609
C894
J010
P004
D866
C867
C889
L861
C868
C866
T860
C890
C891
D861
D864
D860
D862
C892
R862
IC860
C864
R866
C893
R855
C851
Q850
J815
D865
P801
C803
RT801
J801
C802
T801
N804
N801
N802
N803
VR800
R802
C801
F801
N805
S801
N807
D850
C834
R833
R801
C010
Q001
Q002
R013
R012
R014
R015
D002
D003
C833
D834
J811
J810
J809
J808
J807
J806
C845
P803
R825
R826
L803
C839
R834
D834
D843
L810
C840
L811
D830
L809
R836
C827
C830
R820
J808
D824
R824
C825
C826
J802
C837
R837
C415
D402
R414
C412
R408
C422
D404
C410
C407 R415
J803
C411
C413
J405
J303
R321
R313
D311
J304
J305
J302
C328
C329
C327
C360
D309
D313
IC300
D306
D307
D308
D305
J307
L004
J205
C262
L211
L210
L209
L208
J208
J207
J210
C109
C110
J107
Z101
Z102
FDU04
FDU05
J201
J116
J110
J114
J104
J112
J105
J103
C200
IC201
C245
C241
R221
C233
R271
D204
R227
J243
L207
J230
R230
D270
R231
D271
R232
D272
L204
L205
L101
J935
J933
J932
J931
J930
L903
D907
P203
P902
R913
J929
J928
J927
J926
J925
J924
J923
J922
J921
J920
J919
J918
J917
J916
J915
J914
J913
J912
R225
R406
D405
D833
R404
C420
L411
R411
D400
R410
Q401
D902
D900
D901
R843
C414
C905
C401
T401
P401
C421
C419
C404
C416
D421
C417
D422
P403
R407
R420
D401
C408
R418
C409
P901
N901
J906
J907
J908
J909
J911
J912
J913
J914
J915
J916
J917
J918
J919
J920
J921
J922
J923
J924
J925
J926
J927
J928
J929
J930
J931
J932
J933
J934
J935
P902
R913
C911
L900
L902
L903
L905
L906
C902
C903
C904
C905
C906
C907
C908
C909
C910
C911
C912
C913
C914
C915
C916
C917
C918
C919
C920
C921
C922
C923
C924
C925
C926
C927
C928
C929
C930
C931
C932
C933
C934
C935
C936
C937
C938
C939
C940
C941

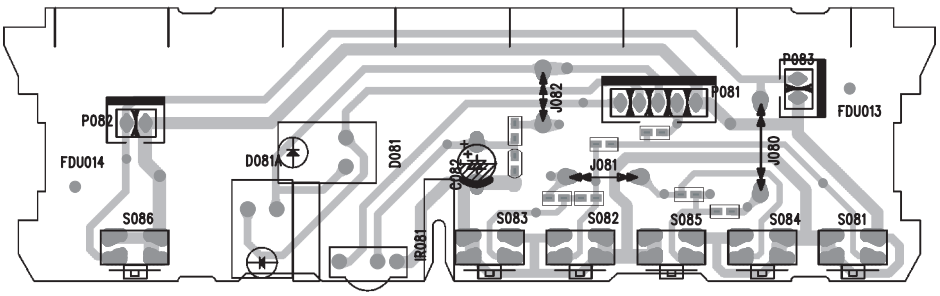
VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

COMPONENT SIDE - COTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES



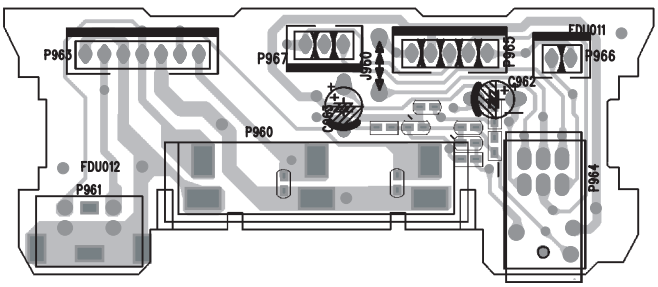
KB

COMPONENT SIDE - COTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES



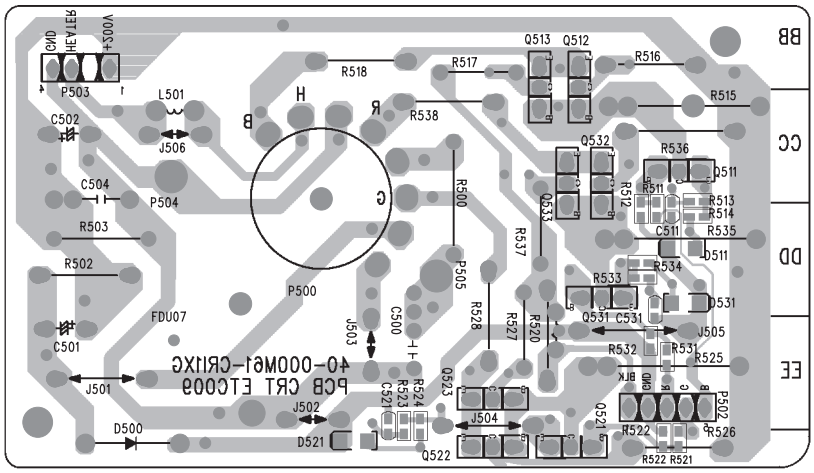
AV

COMPONENT SIDE - COTE COMPOSANTS - BESTÜCKUNGSSEITE - LATO COMPONENTI - LADO COMPONENTES



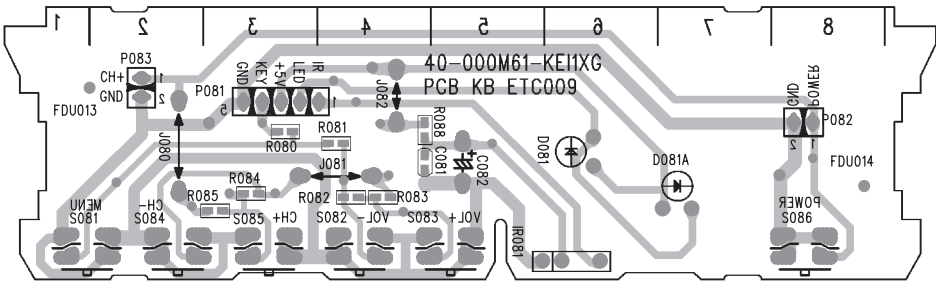
VIDEO AMPLIFIER BOARD - PLATINE AMPLIFICATEURS VIDEO - VIDEOVERSTÄRKERPLATTE - PIASTRA AMPLIFICATORE VIDEO - PLATINA AMPLIFICADOR VIDEO

SOLDER SIDE - COTÉ CUIVRE - LÖTSEITE - LATO SALDATURE - LADO DEL COBRE



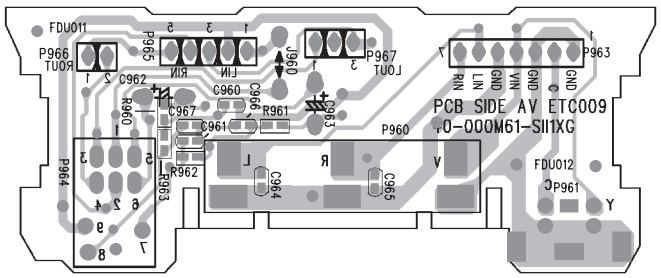
KB

SOLDER SIDE - COTÉ CUIVRE - LÖTSEITE - LATO SALDATURE - LADO DEL COBRE



AV

SOLDER SIDE - COTÉ CUIVRE - LÖTSEITE - LATO SALDATURE - LADO DEL COBRE



SERVICE-MODE - ALIGNMENT PROCEDURE EN

I - ENTER/EXIT SERVICE MODE

1.1. Accessing Service Mode

A) Switch the TV set into the Standby Mode.
B) Switch off Power Supply.
C) Switch on Power supply whilst pressing the magenta **"TEXT"** key continuously until TV set switch on and enter service mode.

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ADR0	01111010	ADR1	01010000
ADR2	10000010	ADR3	00011110
AFC	00000000	RG	00110111
GG	10110111	BG	00110111
DEFL	00001111	DISC	128
LAST	NV : 1878		
ERR:	00000000		
REV:	882204		

1.2. Page selecting

Press 1,2....8 or 9 key of the RCU to enter page 1,2,...8 or 9 of Service Mode.

1.3. Navigation:

- Press **"Up"** and **"Down"** key to select option;
- Press **"Left "** and **"Right "** key to adjust or select option.
- All change in service mode will be saved in EEPROM automatically

1.4 Temporary exit from Service Mode

- Press **"9"** key and select MODE 1.
- Set D-MODE to "Direct key enter enable" .
- Press **"OK"** KEY on the RC to exit or access to service menu.

1.5. Exiting from Service Mode

- Press **"OK"** KEY on the RC.

Note : Before exiting from Service mode check that D-MODE is set to "Direct key enter disable" (see 1.4).

1.6. Brief introduction on some special modes

1.6.1. Aging Mode

It is used before set alignment and should operate in Service mode;
The TV set cannot enter standby after 15 minutes when no signal if the "AGING" Mode is selected.
Press blue **"GUIDE"** Key, the Aging Mode will be entered when "Aging Mode" is shown on screen.
Press blue **"GUIDE"** key again will exit " Aging Mode ".

1.6.2. Vertical Stop mode

- it is used to adjust the screen voltage.

Press red **"PRESETS"** key and repress **"PRESETS"** (red) key to exit.

1.6.3. White balance alignment mode

- Press **"EXIT"** key on factory RCU, The set will display **" BUS OPEN "**, which means the I2C bus from the CPU to other UOC3 module and ICs had been released. This is only used during automatic adjustment of white balance.

Press other key will exit **" BUS OPEN ".**

1.6.4. Reset

- Initialization before the set will took away from factory.

In factory mode, press "INFO" (P<P) key, then "RESET" will be shown.
Press **"ZOOM+", "BUSY"** will be shown.
Initialization will be finished until "BUSY" disappear.

II . FLOW OF ALIGNMENT PROCEDURE

1) B+ Adjustment
2) RF AGC Adjustment
3) Crystal Oscillator Frequency Adjustment
4) Screen & Focus adjustment
5) Sub-color adjustment
6) White balance adjustment
7) Sub-brightness adjustment
8) Picture Geometric adjustment
9) Reset TV set

III - ALIGNMENT PROCEDURE

Notes: - Alignment should be done after 3 minutes warm up of TV .

3.1. B+ VOLTAGES

B+ Voltage	ETC009: VR801 ETC010: - (no alignment)	Standard TV - Settings : ☼+◑+◑=50% TV to AV1 : Black test pattern	V= DP805 (ETC010) DP824 (ETC009)	

CRT type	B+ Voltage
IRICO A36CPAA 00X02	108V +/- 0.5V
TTD A51ELD 032X004	112V +/- 0.5V
LGPD A51ERS 357X440 (SLIM)	
ZHONGHUA CHA34AGT13X53	108V +/- 0.5V
TTD ELM021X001	130V +/- 1.5V
TTD W76ELC011X001	132.5V +/- 1.5V

3.2. RF AGC

3.2.1. Method 1

1) Input 60dB PAL BG , with half-Color Bar signal
2) Press key "**2**" to enter page 2 of factory mode (Fig.1)
3) Select RF AGC with " **up** " or " **down** " key. .
4) Press "**ZOOM-** "(left) and " **ZOOM+** " (light) key until the hint display just change from "Inactive" to "active".)
5) Adjust AGCL for SECAM L /L' same as the PAL.

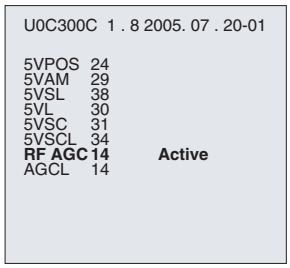
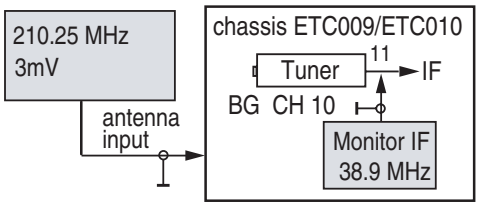


Fig.1 *page 2*

3.2.2. Method 2

1) Apply RF signal of 210.25MHz (BG CH 10) modulated with color bar at 3mVrmx to Tuner input
2) Tune to CH10
3) Go to factory mode, entry page 2 (Fig.1) & set "RF AGC" to 00 (max IF output).
4) Monitor 38.9MHz IF frequency response at Tuner pin11 with spectrum analyzer by using high impedance probe or equivalent.
5) Increase RF AGC control until IF frequency response 8 +1/-2 d B down from maximum.



3.3. CRYSTAL OSCILLATOR FREQUENCY

Notes: - If TV had NICAM function, we recommend to adjust crystal with NICAM.

3.3.1. Crystal oscillator frequency adjustment with NICAM

a) Apply PAL BG NICAM signal with good reception quality.
b) Enter factory mode, press "**Vol -**"(FORMAT) key , it will display " DCXOAUTO " , (Fig.2) then press "**ZOOM+**" (light) key to start auto adjust , when it displays "DCXOAUTO OK" , the adjust is finished .

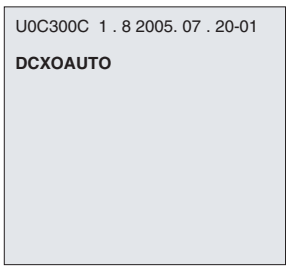


Fig.2

3.3.2. Crystal oscillator frequency adjustment without NICAM

(for software with UOC3 TDA12070/12072 only)
a) Input PAL color bar signal.
b) Enter factory mode, press "Vol -"(FORMAT) key , it will display " DCXOAUTO " , then press "ZOOM+" (light) key to start auto adjust , when it displays "DCXOAUTO OK" , the adjust is finished .

3.3.3. Crystal oscillator frequency adjustment without NICAM

a) Input PAL color bar signal.
b) In factory mode, press "0" to entry page 0 , (Fig.3).
Adjust "DCXO CAP" until display " DISC " is steady at 128.

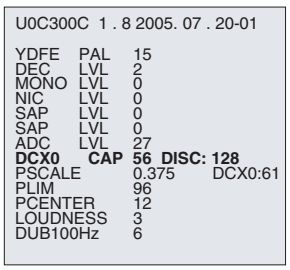
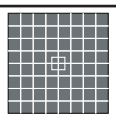


Fig.3 *page 0*

Notes: - Alignment below should be done after 15 minutes warm up of TV.

3.4. G2 & FOCUS

U G2 Screen voltage adjustment	G2 potentiometer : SCREEN Focus-Block	Standard TV - Settings : ☼ + ◑ + ◑ = 50% TV to AV1 : Black test pattern	1- Press red "PRESETS" (Led) Key on the remote control and the screen will become a horizontal line, 2- adjust the "screen voltage" of the fly back transformer until the horizontal line can just be seen barely (minimum visible intensity).	 No correct  Correct : minimum visible intensity
FOCUS	FOCUS VR Focus-Block	Standard TV - Settings : ☼ + ◑ + ◑ = 50%	TV to AV1 Test pattern 	Sharp picture 

3.5. SUB COLOR

a) Input NTSC Video pattern : AV
b) Press key "**4**" : page 4. (Fig.4).
Measure at the CRT blue Cathode (Fig.5).
c) Adjust COLC to make level a and d equal;
then TNTC to make level b and c equal;
d) Input PAL color bar signal.
e) Adjust COLP to make level of a,b,c,d equal ;
f) Input SECAM color bar signal, and adjust
COLS to make level of a,b,c,d equal.

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VOL	01	30
VOL	10	104
VOL	90	170
VOL	100	188
CNTC		31
BRTC		30
COLC		23
TNTC		35
COLP		3
COLS		23
SHPTV		32

Fig.4 *page 4*

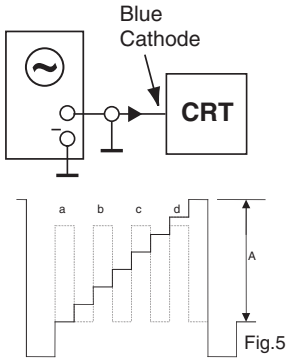

Fig.5

3.6. WHITE BALANCE

White Balance adjustment (neutral)
a) Input RF Black and White pattern signal (PAL).
b) Press "**1**" key to enter white balance adjustment (Page 1:Fig.6)
c) Measure the dark side of the picture with a color analyzer.
Adjust RED and GRN until the data on the analyzer
become x=284 +/-8, y=299 +/-8.
d) Measure the bright side of the picture.
Adjust WPR, WPG and WPB until the data on the analyzer
become x=284 +/-8, y=299 +/-8.
e) Repeat step c and d until you get right white balance
on both dark and bright side of the screen.
f) Input RGB Black and White pattern signal (PAL).
g) Measure the dark side of the picture with a color analyzer.
Adjust REDC and GRNC until the data on the
analyzer become x=284 +/-8, y=299 +/-8.
h) Measure the bright side of the picture.
Adjust WPRC and WPGC and WPBC until the data on the
analyzer become x=284 +/-8, y=299 +/-8.
i) Input SECAM L Black and White pattern signal.
j) Measure the dark side of picture with a color analyzer,
Adjust REDSECAM and GRNSECAM until the data on
the analyzer become x=284 +/-8, y=299 +/-8.

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		WPR	26	GRNC	40
		WPG	29	WPRC	18
RED	31	WPB	31	WPGC	18
GRN	29	REDC	32	WPBC	15

page 1

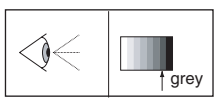

Fig.6

Warm color temperature
a) Press green " **LIST**" key .
b) item: Warm R ; Warm G ; Warm B : Factory adjust
c) Check the item values are as shown opposite.

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Warm	R	10
Warm	G	10
Warm	B	10
Cool	R	10
Cool	G	10
Cool	B	10

Alignment of Cool color temperature
a) Press green " **LIST**" key.
b) item: Cool R ; Cool G ; Cool B : : Factory adjust
c) Check the item values are as shown opposite.

3.7. SUB BRIGHTNESS

3.7.1. Sub brightness adjustment

1) Input eight steps gray signal.
2) Press key **"4"** to enter sub-brightness adjustment.
3) Adjust "BRTC" until the secondary gray bar just to be seen.(Fig.7).

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VOL	01	30
VOL	10	104
VOL	90	170
VOL	100	188
CNTC		31
BRTC		30
COLC		23
TNTC		35
COLP		3
COLS		23
SHPTV		32

page 4

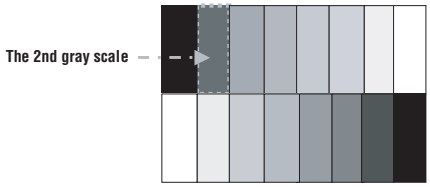

Fig.7

3.8 PICTURE GEOMETRY ADJUSTMENT

3.8.1. Vertical geometry items

- Press key **"2"** to enter Vertical geometry adjustment.

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5VPOS	24	
5VAM	29	
5VSL	38	
5VL	30	
5VSC	31	
5VSCL	34	
RF AGC	**14**	**Active**
AGCL	14	

page 2

VERTICAL GEOMETRY ITEMS					
5VSL (V-Slope)			**5VL (V-Linearity)**		
5VAM (V-Amplitude)			**5SCL (Vertical S-Correction)**		**S**
5VPOS (V-Position)			**5VX* (Vertical Over scan)**		

** According to Software*

3.8.2. Horizontal geometry items

- Press key **"3"** to enter Horizontal geometry adjustment.

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5HSH	36
5PAR	24
5BOW	22
5EWW	33
5EWP	35
5UCR	42
5LCR	32
5EWT	36
5WBR	7
5WBF	7

page 3

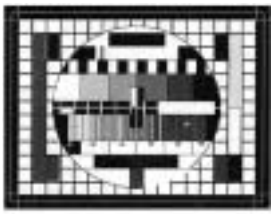
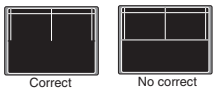
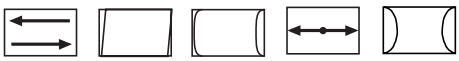
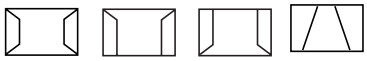
HORIZONTAL GEOMETRY ITEMS					
5HSH* (H-Position)			**5UCR (EW-Upper Corner)**		
5PAR* (Parallelogram)			**5LCR (EW-Lower Corner)**		
5BOW* (Bow Adjust.)			**5EWT (EW - Trapezium)**		
5EWW (H-Amplitude)			**5WBR****		**End of Blanking**
5EWP (Pincushion correct.)			**5WBF****		**Start of Blanking**

** Only valid for ETC009 except models with Slim CRT*
*** Only valid with 16:9 tubes*

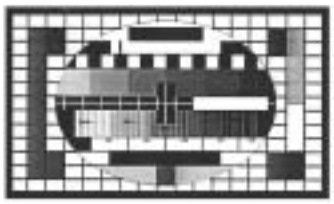
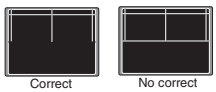
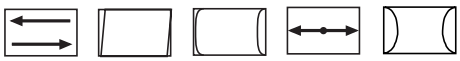
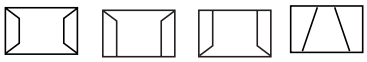
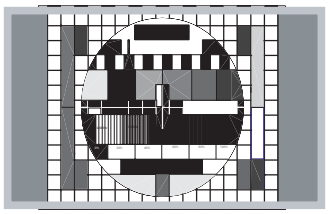
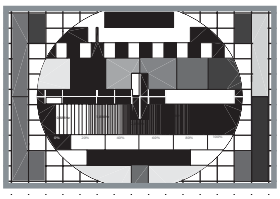
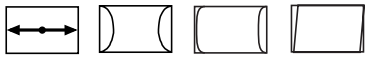
3.8.3. Adjustments

Signal : 4/3 test pattern - Cross hatch pattern (PAL or SECAM), NTSC signal to adjust NTSC geometry.

4/3 picture tube

4 / 3 standard mode		**Overscan V=107% , H=107%** **Vertical adjustment** : press "**2**" 1- Check the Factory adjust 5VSC = 31; Adjust Vertical Slope : 5VSL  Correct No correct 2- Adjust Vertical Position (5VPOS) , Vertical amplitude (5VAM). 3- Adjust Vertical Linearity (5VL) and S correction  **Horizontal adjustment** : press "**3**" 1- Adjust Horizontal Position (5HSH) and Horizontal parallelogram (5PAR), 2 -Adjust Horizontal Bow (5BOW) 3 -Adjust Horizontal width (5EWW) and Pincushion correction (5LCR)  4 -Adjust EW Amplitude (5EWP) , EW Upper (5UCR) / Lower Corner (5LCR) 5 -Adjust Trapezium correction (5EWT) 

16/9 picture tube

16 / 9 standard mode		**Overscan V=107% , H=107%** **Vertical adjustment** : press "**2**" 1- Check the Factory adjust 5VSC = 31; Adjust Vertical Slope : 5VSL  Correct No correct 2- Adjust Vertical Position (5VPOS) , Vertical amplitude (5VAM). 3- Adjust Vertical Linearity (5VL) and S correction  **Horizontal adjustment** : press "**3**" 1- Adjust Horizontal Position (5HSH) and Horizontal parallelogram (5PAR), 2 -Adjust Horizontal Bow (5BOW) 3 -Adjust Horizontal width (5EWW) and Pincushion correction (5LCR)  4 -Adjust EW Amplitude (5EWP) , EW Upper (5UCR) / Lower Corner (5LCR) 5 -Adjust Trapezium correction (5EWT) 
4 / 3 centered		**Overscan V=107% , H=77%** 1 - Check the 16 / 9 standard mode geometry. 2 - Adjust H. width 77% (5EWW) and pincushion correction (5LCR) 3 - Adjust if necessary lower/upper corner (5UCR/5LCR) 4 - Adjust if necessary the Bow correction (5BOW) and parallelogram (5PAR).  5 - Adjust 5WBF 4/3 and 5WBR 4/3to make the castellation just un-visible.
14 / 9		**Overscan V=122% , H=90%** 1 - Check the 16 / 9 standard mode geometry. 2 - Adjust H. width 90% (5EWW) and pincushion correction (5LCR) 3 - Adjust if necessary lower/upper corner (5UCR/5LCR) 4 - Adjust if necessary the Bow correction (5BOW) and parallelogram (5PAR).  5 - Adjust 5WBF 14/9 and 5WBR 14/9 to make the castellation just un-visible.

3.9 RESET TV

When all item alignment is finished, please make the TV to RESET as 1.4.4.

IV - FACTORY ALIGNMENT VALUES

KEY 1		KEY 2		KEY 3		KEY 4	
Item	Data	Item	Data	Item	Data	Item	Data
RED	32	5VPOS	32	5HSH	42	VOL 01	30
GRN	32	5VAM	23	5PAR	33	VOL 10	104
WPR	32	5VSL	28	5BOW	29	VOL 90	170
WPB	32	5VL	30	5EWW	39	VOL 100	188(ETC009 5W)
							194(ETC010 6W)
							176(ETC010,10W)
WPG	32	5VSC *	31	5EWP	34	CNTC	31(ETC009) 21(for 14"15")
							31(ETC010)
REDC	32	5SCL	31	5UCR	46	BRTC	30
GRNC	32	RF AGC	22	5LCR	43	COLC	23
WPRC	32	AGCL	22	5EWT	26	TNTC	35
WPGC	32			5WBR	7	COLP	3
WPBC	32			5WBF	7	COLS	23
REDSECAM	32					SHPTV	32
GRNSECAM	32						

* No adjustable

V - SERVICE MODE VALUES

5.1 Analog control adjustment

Press key "**5**" to enter analog adjustment.

KEY 5		
Item	Data	
	ETC009	ETC010
CNTX Max. Contrast value	63	63
CNTN Min. Contrast value	1	3
BRTX Max. Brightness value	63	63
BRTN Min. Brightness value	15	15
COLX Max. Color value	50	50
COLN Min. Color value	0	0
TNTX Max. Tint value	63	63
TNTN Min. Tint value	0	0
SHPX Max. Sharpness value	63	63
SHPN Min. Sharpness value	0	0

5.2 - Picture item adjustment

Press key "**6**" to enter analog adjustment.

Item	Data	
	ETC009	ETC010
CPFK PAL Peaking value	32	32
CFPEK PAL PAL peaking frequency & value	3.5M 143NS	3.5M 143NS
CFPEK NTS NTS peaking frequency & value	3.1M 160NS	3.1M 160NS
CFPEK YUV YUV peaking frequency & value	4.0M 125NS	4.0M 125NS
IFPL IF Offset	32	32
BBTC Base-band tint control (phase U,V signal)	32	32
PGR Original value of R	55	55
PGG Original value of G	55	55
PGB Original value of B	55	55
ON VAM (depends on tube)	3 (depends on tube)	0
VG2BRI Brightness of V line when adjust G2	20	20
HDOL RGB drive gain.	3	4

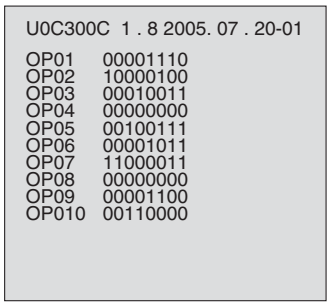
5.3 - OSD Position adjustment

Press key "**7**" to enter analog adjustment.

Item	Data
OSD BRI OSD brightness	8
CC BRI Teletext brightness	5
5CCD H Position for Teletext	11
5CCD V Position for Teletext	40
5OSD H OSD H position	9
5OSD V OSD V position	32
5MENU V Menu V. position	55
5MENU H Menu H. position	10

5.4 - Option adjustment

Press key "**8**" to enter Option adjustment.



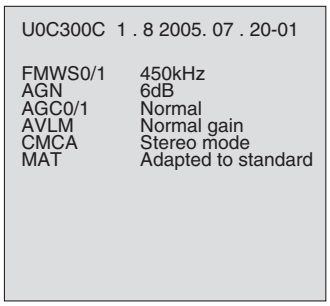
Item	Data
OP01	00001110
OP02	10000100
OP03	00010011
OP04	00000000
OP05	00100111 (10100111 for TDA12070/12072/H/N1F00)
OP06	00001011 (00000100 for TDA12070H/N1F00)
OP07	11000011
OP08	00000000
OP09	00001100
OPT010	00110000

Fig.8

Bit 7 ——┐ ***00001110*** ┌—— *Bit 0*

Check the bytes values. They indicate the configuration of the chassis and are given for information only.
The default values are indicated in the follow table.
- Choose the item Op01 ,Op02 ... by pressing **up**/**down** key.
- Access to the selected Option adjustments by pressing "**Left**" or "**Right**" key

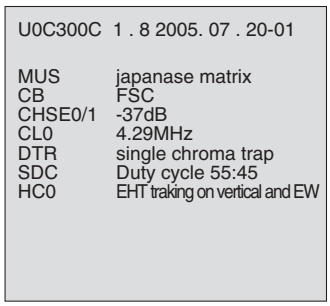
OP01



OP01 : default value : **00001110**

Bit 0 - Bit 1: FMWS0/1 (Band width FM; 10: 450kHz)
Bit 2 : AGN (Audio output amplitude; 1: +6dB gain)
Bit 3-Bit 4 : AGC0/1 (AGC time content selection; 01: Normal)
Bit 5 : AVLM (Gain for analog FM decoder; 0: Normal gain)
Bit 6 : CMCA (stereo/mono- 0: stereo 1: mono)
Bit 7 : MAT (Y,U,V to RGB matrix selection - 0:adapted to standard).

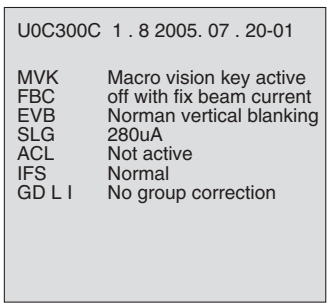
OP02



OP02 : default value : **10000100**

Bit 0 : MUS (Y,U,V to RGB matrix selection).
Bit 1 : CB (Select. for center of chroma band; 0: Fsc)
Bit 2-Bit 3 : CHSE0/1 (Sensivity of color killer; 01: -37dB)
Bit 4 : CL0 (center frequency of SECAM bell filter; 0: 4.29MHz)
Bit 5 : DTR (Dual Chroma trap; 0: single chroma trap) .
Bit 6 : SDC (Hor. drive pulse width; 0: Duty cycle 55:45).
Bit 7 : HC0 (EHT tracking only vertical or vertical and EW).

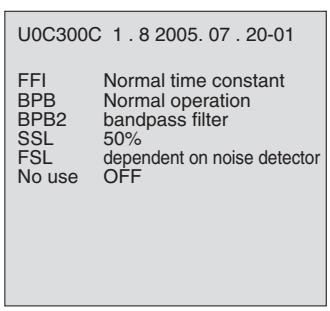
OP03



OP03 : default value : **00010011**

Bit 0 : MVK (Macro Vision Keying; 1: active).
Bit 1 : FBC (switch-off with blanked RGB outputs or fixed beam current)
Bit 2 : EVB (normal Vert. picture or extended vertical blanking)
Bit 3-Bit 4 : SLG0-SLG1 (selection of AKB black current; 10: 280uA)
Bit 5 : ACL (control the ratio of chroma/color burst; 0: Not active).
Bit 6 : IFS (IF sensitivity; 0: Normal).
Bit 7 : GDLI (group correction/group delay correction switch for L and I. 0: No group correction).

OP04



OP04 : default value : **00000000**

Bit 0 : FFI (IF PLL lock time constant, used for over modulation).
Bit 1 : BPB (sound bandpass - filter for mono 0: Normal operation).
Bit 2 : BPB2 (stereo band pass - filter for stereo/dual 0: active).
Bit 3 : SSL (slice level of Hor. syn. Pulse; 0: 50%).
Bit 4 : ACL (slice level of Vert. syn. Pulse; 0: dependant on noise detector).
Bit 5,6,7 : No use

OP05

U0C300C 1 . 8 2005. 07 . 20-01

VAI	Amplitude 12%
VA0/VA1	Amplitude +5%
FC0	OFF
VG2 MODE	LIGHT LINE
DSS	Normal operation
DSG	0dB

OP05 : default value : **00100111**

Bit 0 : VAI (gain correction; 0: no correction 1: +12% PAL I).
Bit 1-Bit 2 : VA0/VA1 (IF CVBS output amplitude correction; 10: +5%).
Bit 3 : OFB (Offset control on Red and Blue channel).
Bit 4 : FCO (force color on when bad signal, color killer not active).
Bit 5 : VG2 MODE (0:OSD indication 1:Line).
Bit 6 : DSS (0: normal operation 1: LCD / Pscan
Bit 7 : DSG (audio output selection amplitude; 0: 0dB)

OP06

U0C300C 1 . 8 2005. 07 . 20-01

DCXOMUX	Nicam
QSS	QSS Amp active
FMI	Output conn to QSS0
NICAM	ON
RPA0/1	1:1
RP00/1	1:1

OP06 : default value : **00001011**

Bit 0 : DCXOMUX (0:P3DCX0 TDA12070/12072/without NICAM 1: NICAM).
Bit 1 : QSS (validation QSS amplifier; 1: active).
Bit 2 : FMI (connexion QSS AMP output to SSD module or sound PLL demodulator; 0: Output conn to QSS0).
Bit 3 : NICAM (NICAM selection; 1: ON)
Bit 4-Bit 5 : RPA0 /1 (00)
Bit 6-Bit 7 : RPO0/1 (00)

OP07

U0C300C 1 . 8 2005. 07 . 20-01

PWL	3
SOC0/1	0% above PWL
PWL ON	PWL circuit active
GD BG DK	Group delay correction

OP07 : default value : **11000011**

Bit 0-1-2-3 : PWL (peak white limit; default : 3)
Bit 4-Bit 5 : SOC0/1 (% above PW level; 00: 0% above PWL).
Bit 6 : PWL ON (activation of the peak white limiting circuit; 1: active)
Bit 7 : GD BG DK (activation of the Group delay correction; 0: group correction)

OP08

U0C300C 1 . 8 2005. 07 . 20-01

No use	OFF

OP08 : default value : **00000000**

Bit : OFF (No use)

OP09

U0C300C 1 . 8 2005. 07 . 20-01

AFG	False
TYUV1	False
BPBS	True
CLF	True
BWYC	False
CBPS	False
SLD	False
OSB	False

OP09 : default value : **00001100**

Bit 0 : AFG (AFC measurement; 0: AFC False)
Bit 1 : TYUV1(Analog output selection for text; valid if TYUV0=1)
Bit 2 : BPBS (Enable bypass of sound filter at stereo mode)
Bit 3 : CLF (Comb filter diode clamp; set to1)
Bit 4 : BWYC (Bandwidth of anti aliasing filter at YC mode of 3.58MHz systems; 0: False)
Bit 5 : CBPS (Internal chroma bandpass filter mode; 0: False)
Bit 6 : SLD (Sleep mode detector status; 0: sleep enabled, False)
Bit 7 : OSB (width of Burstkey; 0: False burstkey=3.52us)

OP10

U0C300C 1 . 8 2005. 07 . 20-01

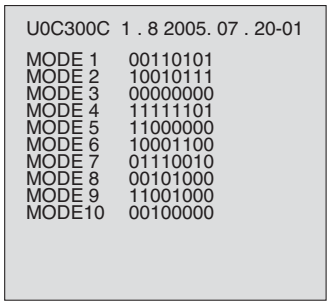
BKC	False
TYUV0	False
QDT	False
TCCON	True
TCI2X	True
TXTS	False
Blue SCN	False

OP10 : default value : **00110000**

Bit 0 : BKC (Internal burst key position; 0: False normal position)
Bit 1 : TYUV0 (TXT/CC output selection; 0: False, RGB format)
Bit 2 : QDT (Q values of Second chroma trap; 0: False)
Bit 3 : FBC1 (Fixed beam current during switch off; 0: False, 1mA)
Bit 4 : TCCON (Top sync. clamp control; 1: True , active)
Bit 5 : TCI2X (Top sync. clamp time constant; 1: True)
Bit 6 : TXTS (TXTS Mode : TEXT source; 0: False TXT from CVBS)
Bit 7 : Blue SCN (Blue screen with no signal; 0: False)

5.5 - Mode adjustment

Press key "**9**" to enter Mode adjustment.

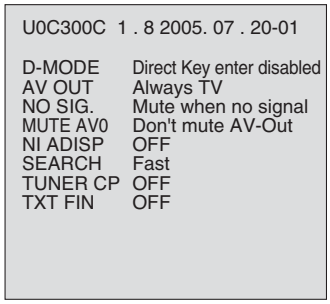


Item	Data
MODE 1	010110100
MODE 2	10011111 (10011011 for TDA12070/12072 without L standard)
MODE 3	00000000
MODE 4	11111101
MODE 5	01000000
MODE 6	10001100
MODE 7	01110010
MODE 8	00000000
MODE 9	11001000
MODE 10	00110000

Bit 7 ——┐ ***00001110*** └—— *Bit 0*

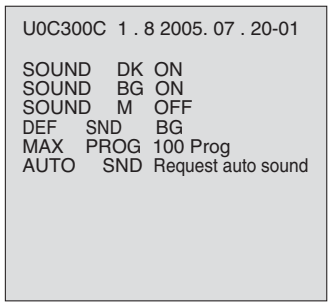
Check the bytes values. They indicate the configuration of the chassis and are given for information only.
The default values are indicated in the follow table.
- Choose the item MODE 1 ,MODE 2 ... by pressing **up**/**down** key.
- Access to the selected MODE adjustments by pressing "**Left**" or "**Right**" key

MODE 1



MODE1 : default value : **10110100**	
Bit 0	: D-MODE (Direct enter D-mode (Service mode) with "OK" key 0:enable 1:disable)
Bit 1	: AV OUT (0: Always TV - 1: Follow source)
Bit 2	: No Signal (0: Demute when no signal - 1 mute when no signal)
Bit 3	: MUTE AV0 (Mute AV-out)
Bit 4	: NI ADISP (1: Nicam auto detection OSD display enable)
Bit 5	: SEARCH (Auto search speed setting)
Bit 6	: TUNER CP (CP bit selection of tuner)
Bit 7	: TXTFIN (TXT fine tuning selection)

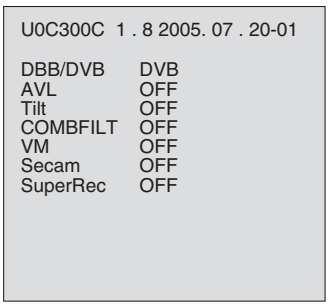
MODE 2



MODE 2 : default value : **10011111**	
Bit 0	: SOUND DK (depends on requirement)
Bit 1	: SOUND BG (depends on requirement)
Bit 2	: SOUND L (or I)* (depends on requirement)
Bit 3	: SOUND M (or I)* (depends on requirement)
Bit 4 - Bit5	: DEF SOUND (00: DK; 01: BG; 10: I; 11:M)
Bit 6	: MAX PROG. (0: 100, 1:200 (no used))
Bit 7	: AUTO SND (Request auto sound detect when auto searching (0: Don't request 1: request auto sound)

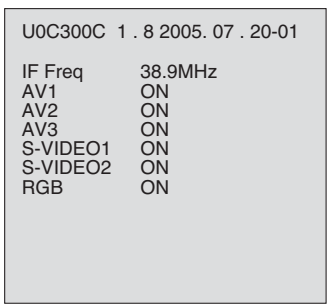
* *according models*

MODE 3



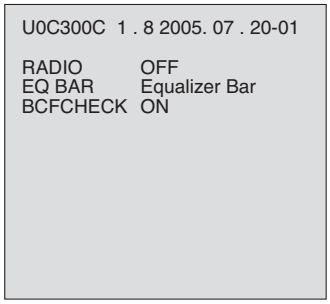
MODE 3 : default value : **00000000**	
Bit 0-Bit 1	: DBB/DVB (Woofer 00:DVB; 01:DB; 10: Woofer, 11:OFF)
Bit 2	: AVL (0: OFF)
Bit 3	: Tilt (0: OFF)
Bit 4	: COMB (Comb filter : 0: OFF)
Bit 5	: VM (0:OFF)
Bit 6	: SECAM (0:OFF)
Bit 7	: SUPERREC (0:OFF)

MODE 4



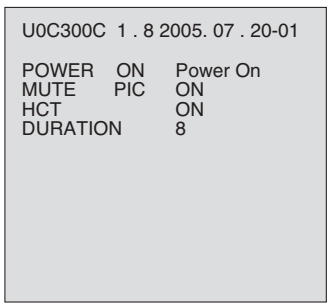
MODE 4 : default value : **11111101**	
Bit 0-Bit 1	: IF FREQ (00:45.75MHz; 01:38.9MHz; 10: 38MHz)
Bit 2	: AV1 (1:ON) (depends on requirement)
Bit 3	: AV2 (1: ON) (depends on requirement)
Bit 4	: AV3 (1: ON) (depends on requirement)
Bit 5	: S-VIDEO1 (1: ON) (depends on requirement)
Bit 6	: S-VIDEO2 (1: ON) (depends on requirement)
Bit 7	: RGB (1: ON) (depends on requirement)

MODE 5



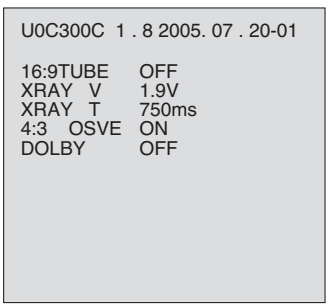
MODE 5 : default value : **01000000**
Bit 0,1,2,3,4 : No use Bit 5 : Radio (FM Radio 0:OFF) Bit 6 : EQ BAR (User menu display (0: bass & Treble; 1:Equalizer) Bit 7 : BCF CHEK (Beam current protection 1:ON)

MODE 6



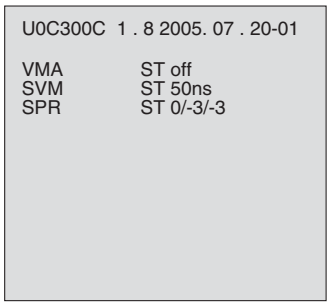
MODE 6 : default value : **10001100**
Bit 0 - Bit 1: Power ON (Power on status 00:ON, 01:standby, 10 last status) Bit 2 : MUTE PIC (Mute picture when changing channel; 1:ON) Bit 3 : HCT (High Contrast for OSD; 1:ON) Bit 4,5,6,7 : DURATION (mute time when changing channel; default 8)

MODE 7



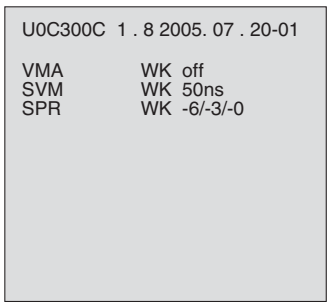
MODE 7 : default value : **01110010**
Bit 0 : No use Bit 1 - Bit 2: X-RAY V (Detection voltage for X-ray protection; 01:1.9V) Bit 3 - Bit 4: X-RAY T (Detect. time for X-ray protection; 10: 750ms) Bit 5 : No use Bit 6 : 4:3 OSVE (selection of vertical over scan; 1:ON) Bit 7 : DOLBY (selection of DOLBY; 1:ON)

MODE 8



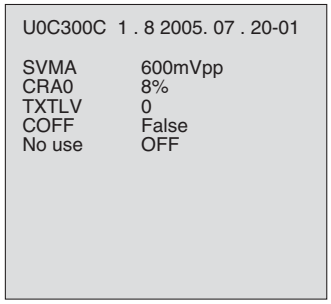
MODE 8 : default value : **00101000**
Bit 0-Bit 1 : VMA (Amplitude of SVM output ; 00 : ST OFF) Bit 2,3,4 : SVM (Delay of RGB to SVM output; 010 : ST 50ns) Bit 5,6,7 : SPR (Parabola on SVM output; 001 : 0/-3/-3)

MODE 9



MODE 9 : default value : **11001000**
Bit 0-Bit 1 : VMA (WEAK status 00: OFF) Bit 2,3,4 : SVM (WEAK status 010: 50ns) Bit 5,6,7 : SPR (WEAK status 110: -6/-3/-0)

MODE 10

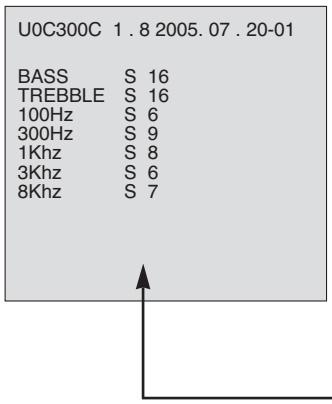


MODE 10 : default value : **00100000**
Bit 0 : SVMA (SVM output signal ; 0 : 600mVpp) Bit 1 : CRA0 (adjusted to 8% - Bit 1 = 0) Bit 2,3 : TXTLV (Scavem on TXT ampl.; 10: 1000mVpp) Bit 4 : COFF (adjusted to False - Bit 4= 0) Bit 5,6,7 : No use

VI - TEXT KEY

Press the "**Text**" key and check the item values are as shown below.

*Text key menu according to equalizer presetted in sound menu: ie "**S**tandard"*

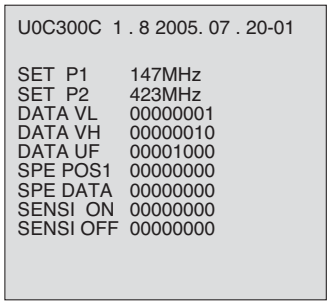


KEY TEXT (change item in sound menu / Equalizer)						
Item	**Data**					
	FL (Flat)	**M (Music)**	**V (Voice)**	**F (Film)**	**S (Standard)**	**P (Perso..)**
BASS	12	24	24	16	16	12
TREBLE	20	24	16	24	16	20
100HZ	6	7	6	7	6	6
300Hz	6	9	9	8	9	6
1KHz	6	6	9	6	8	6
5KHz	6	8	9	6	6	6
8KHz	6	10	6	9	7	6

VII - "PR-" / "0" KEYS

Press the "**PR-**" then "**0**" key and check the item values are as shown below.

"PR-" KEY



"0" KEY