Final stage stereo

Hyperband tuner

Hor. final stage

Power supply

Supply voltage potential

Set potential (off ground)

Vert. deflection

to Control unit

to Degaussing

to Signal Board W1731

to Signal Board W1311

to Signal Board W1003

O/W-Korrektur
E/W-correction

FLYBACK GENERATOR

Fokusblock

UB = 136V⁽⁾/150V*) 32" WSSF/16:9
UB = 142V⁽⁾/156V*) 33" FS/4:3
UB = 146V⁽⁾/160V*) 32" WSRF/16:9
UV+ = +13.0V / +14.5V*)
UV- = -13.0V / -14.5V*)
UG2 = 760V
UNF+ = +13.5V
UNF- = -13.5V
UVID = 210V
UMUTE = +7V
⁽⁾) = NTSC Mode
*) = 1080i Mode

= EW GND
= Defl GND
= HDGND
= HPGND
= SEKGND
= Primär GND
= Analog GND
= NF GND

Naming: Basic Board A2400
Variante: 071-073-074
Code/Part-N°.: 396-87715.
Index: f
Date: 26.07.2000

LOEWE.

Oscillograms

ch1: pkpk= 13.7 V ch1: T = 13.2µs
5.00V/Div DC
5.00µs/Div
MP1

ch1: pkpk= 25.7 V ch1: T = 20.0ms
10.0V/Div DC
5.00ms/Div
MP9

ch1: pkpk= 519 V ch1: T = 13.2µs
100V/Div DC
5.00µs/Div
MP2

ch1: pkpk= 47.0 V ch1: T = 20.0ms
10.0V/Div DC
5.00ms/Div
MP10

ch1: pkpk= 58.6 V ch1: T = 32.0µs
20.0V/Div DC
10.0µs/Div
MP3

ch1: pkpk= 1.39 V ch1: T = 20.1ms
500mV/Div DC
5.00ms/Div
MP11

ch1: T = 5.77µs
1.00V/Div DC
10.0µs/Div
MP4

ch1: pkpk= 1.65 V ch1: T = 20.0ms
500mV/Div DC
5.00ms/Div
MP12

ch1: pkpk= 1.12kV ch1: T = 32.0µs
200V/Div DC
10.0µs/Div
MP5

ch1: pkpk= 1.89 V ch1: T = 19.9ms
500mV/Div DC
5.00ms/Div
MP13

ch1: pkpk= 20.3 V ch1: T = 32.0µs
5.00V/Div DC
10.0µs/Div
MP6

ch1: pkpk= 995mV ch1: T = 20.1ms
500mV/Div DC
5.00ms/Div
MP14

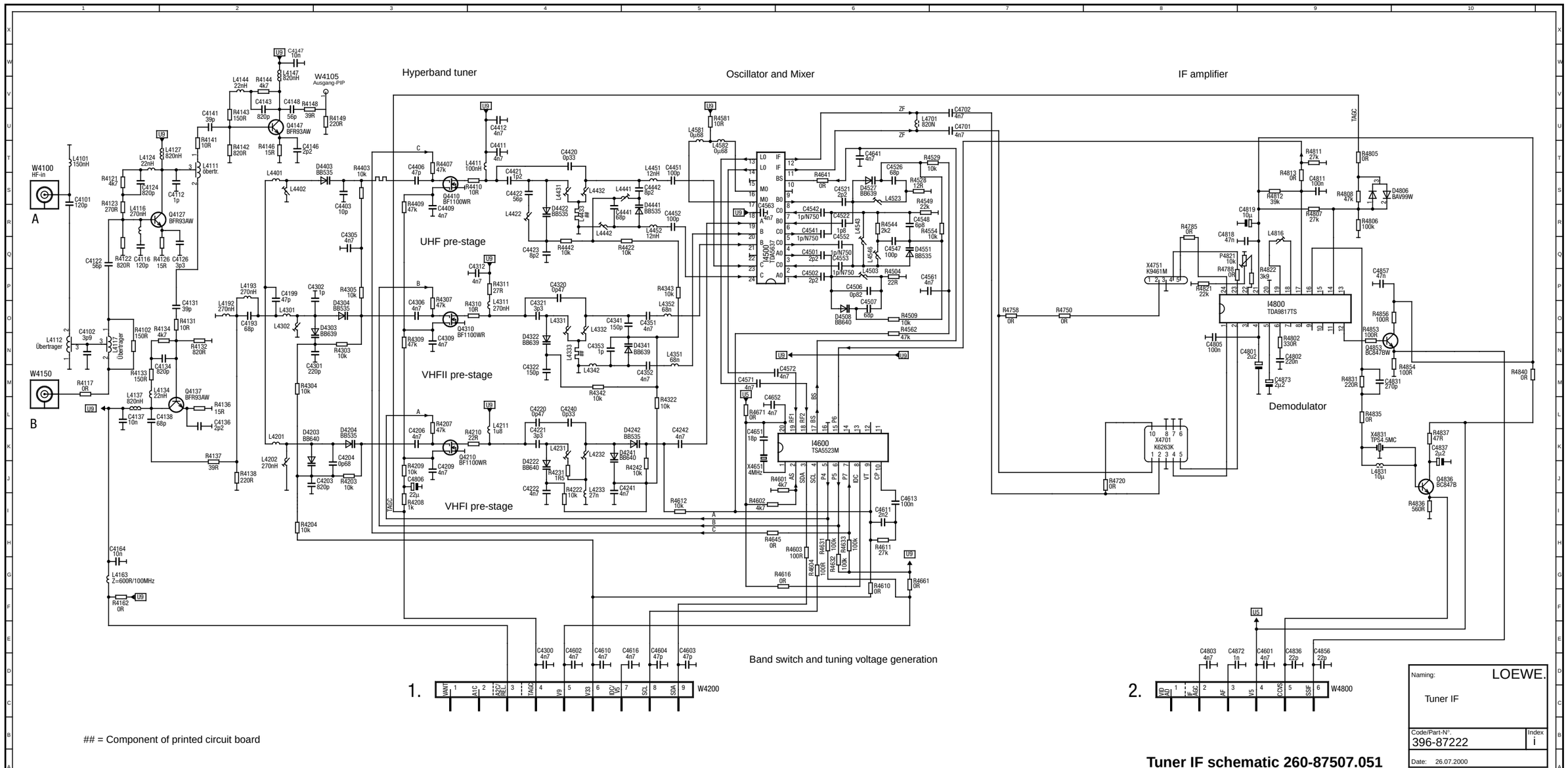
ch1: pkpk= 17.7 V ch1: T = 20.1ms
5.00V/Div DC
5.00ms/Div
MP7

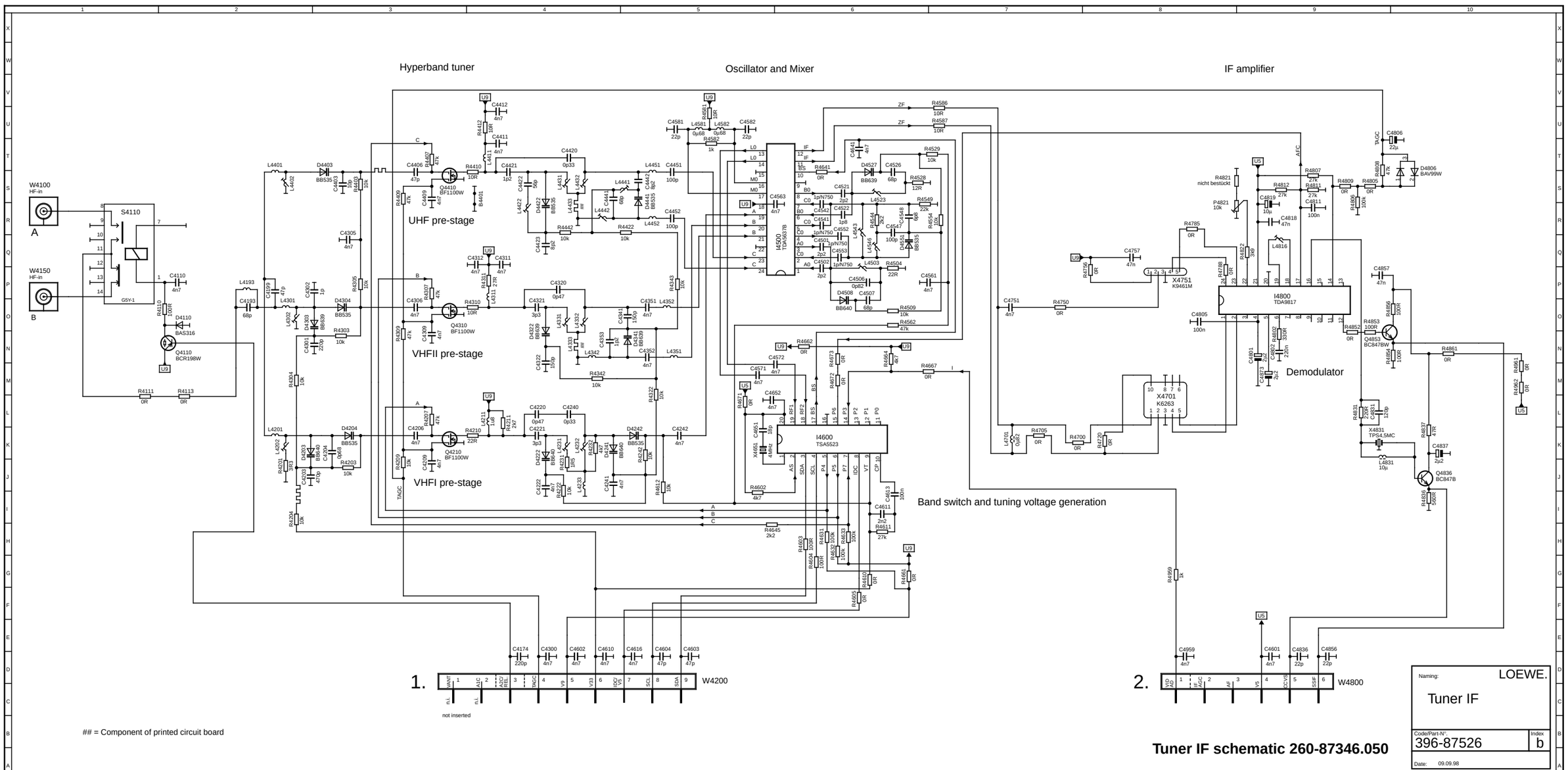
ch1: pkpk= 2.37 V ch1: T = 32.0µs
500mV/Div DC
10.0µs/Div
MP15

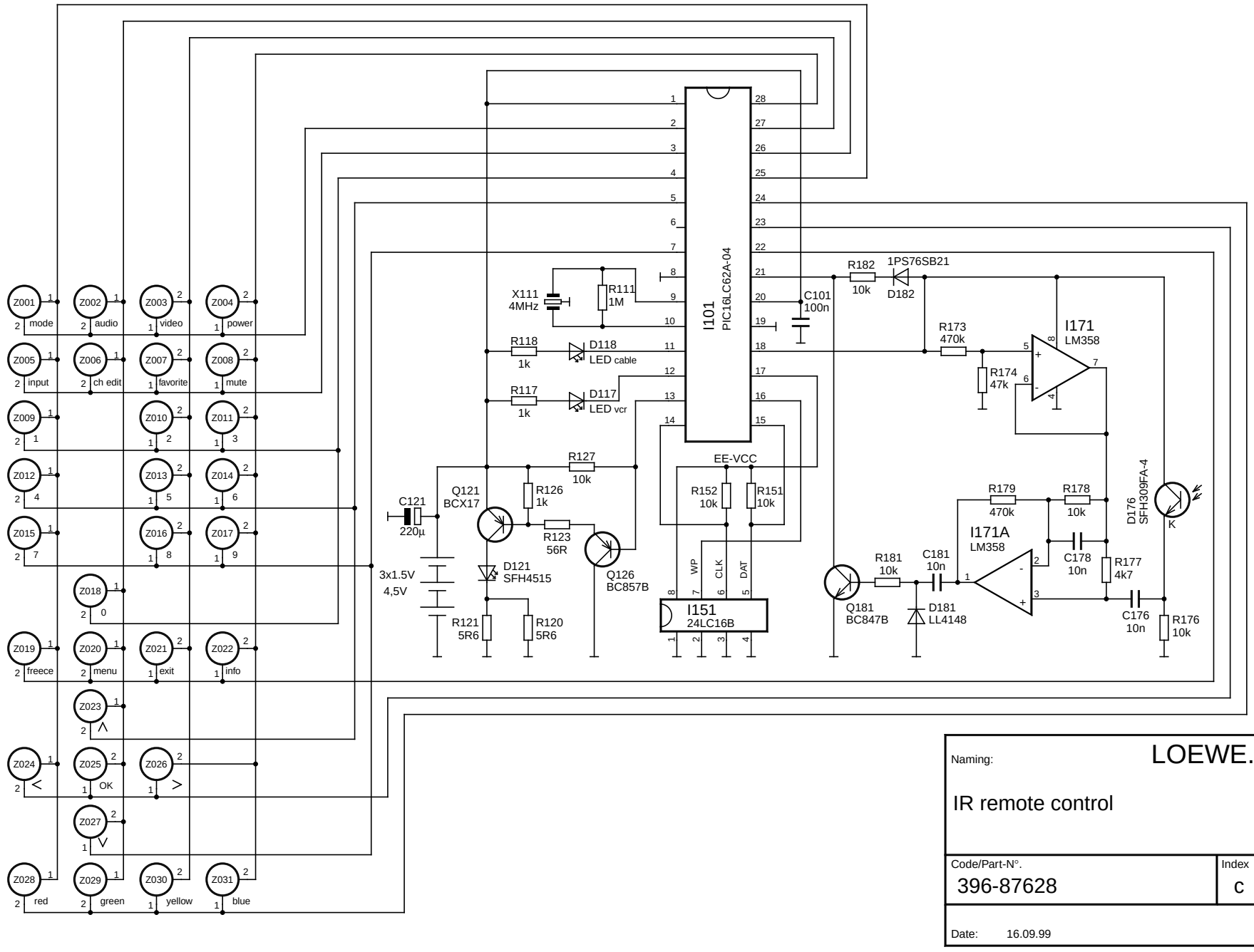
ch1: pkpk= 27.3 V ch1: T = 20.0ms
10.0V/Div DC
5.00ms/Div
MP8

Oscillograms

Naming:	LOEWE.
A2400	
Signal Board	
Code-Teile-Nr.: 396-87934.050	Index B
Datum: 02.08. 2000	


Hyperband tuner
Oscillator and Mixer
IF amplifier
UHF pre-stage
VHFII pre-stage
VHFI pre-stage
Band switch and tuning voltage generation
Demodulator
W4100 HF-in
W4150
W4105 Ausgang-PIP
W4200
W4800
I4600 TSA5523M
I4800 TDA9817TS
L4500 TDA6617
X4701 K6263K
X4751 KS461M
X4831 TPS4.5MC
X4651 4MHz
Tuner IF
Naming: LOEWE.
Code/Part-N°: 396-87222
Index i
Date: 26.07.2000
= Component of printed circuit board
Tuner IF schematic 260-87507.051


Hyperband tuner
Oscillator and Mixer
IF amplifier
UHF pre-stage
VHFII pre-stage
VHFI pre-stage
Band switch and tuning voltage generation
Demodulator
W4100
HF-in
A
W4150
HF-in
B
S4110
GSY-1
I4500
TDA5637B
I4600
TSA5523
I4800
TDA9817
X4751
K9461M
X4701
K6263
X4831
TPS4,5MC
Q4110
BCR198W
Q4310
BF1100W
Q4210
BF1100W
Q4836
BC847B
Q4853
BC847BW
D4110
BAS316
D4806
BAV99W
1.
W4200
not inserted
2.
W4800
= Component of printed circuit board
Tuner IF schematic 260-87346.050
LOEWE.
Naming:
Tuner IF
Code/Part-N°:
396-87526
Index
b
Date:
09.09.98



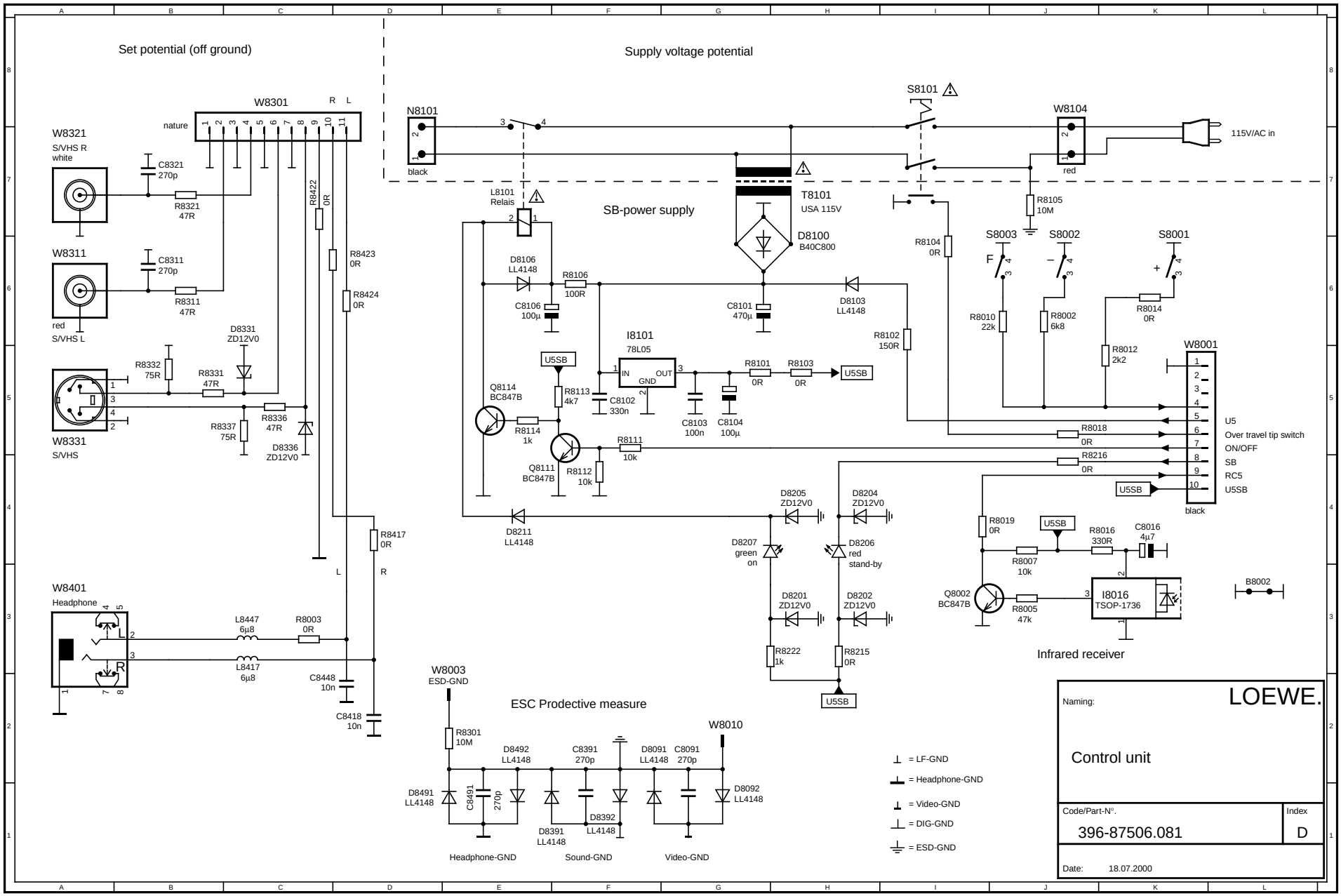
Naming: LOEWE.

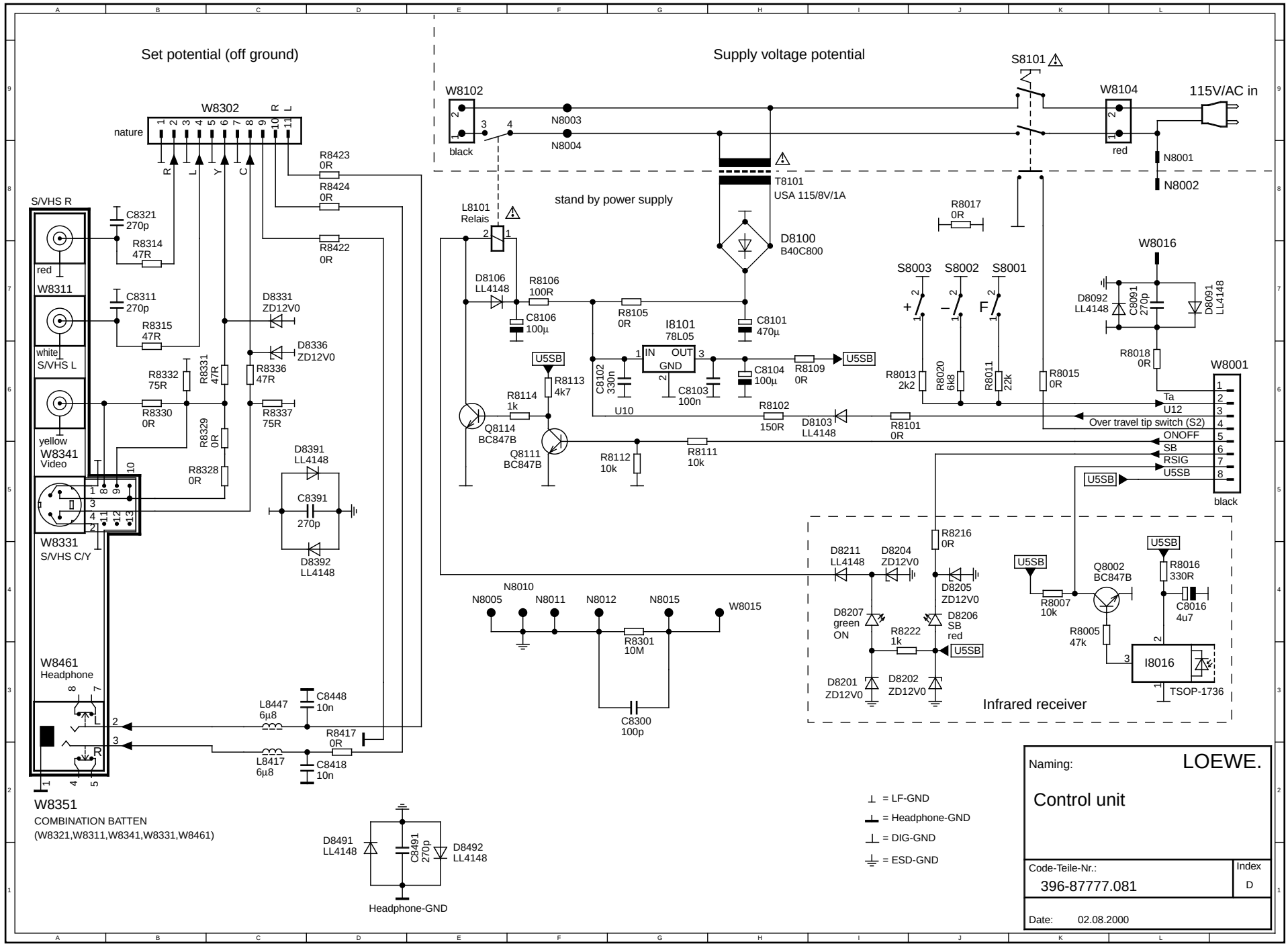
IR remote control

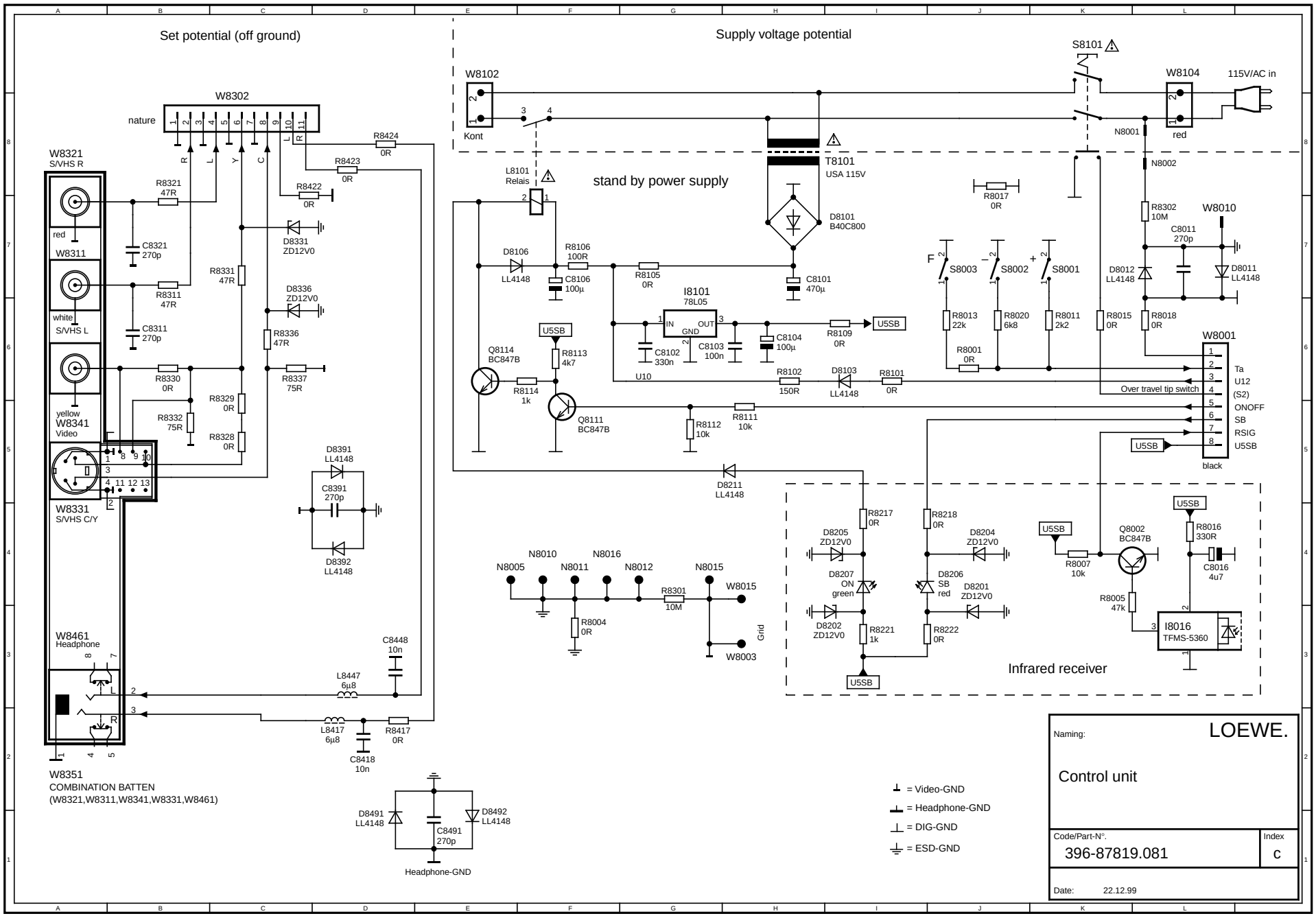
Code/Part-N°. 396-87628

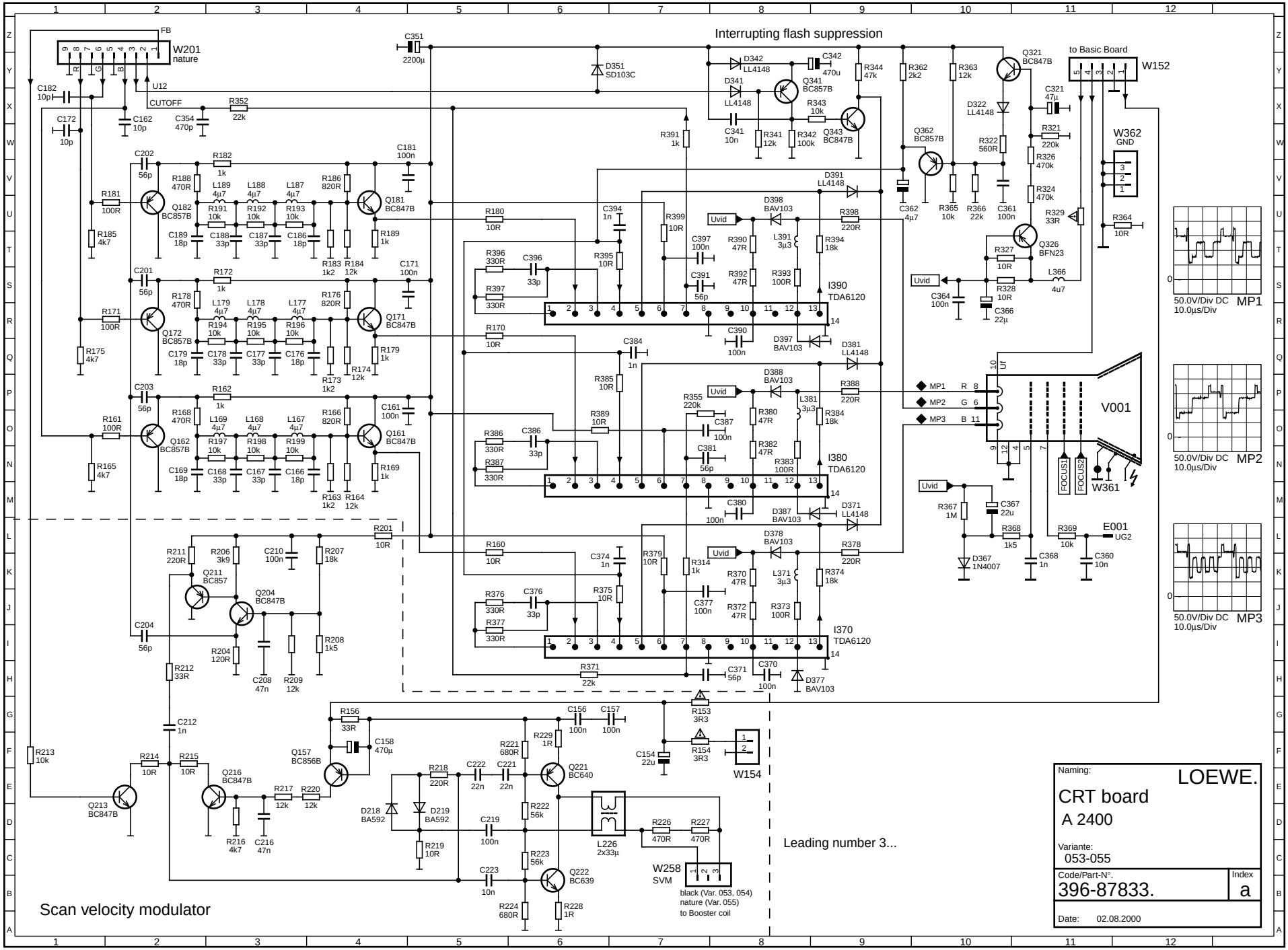
Index c

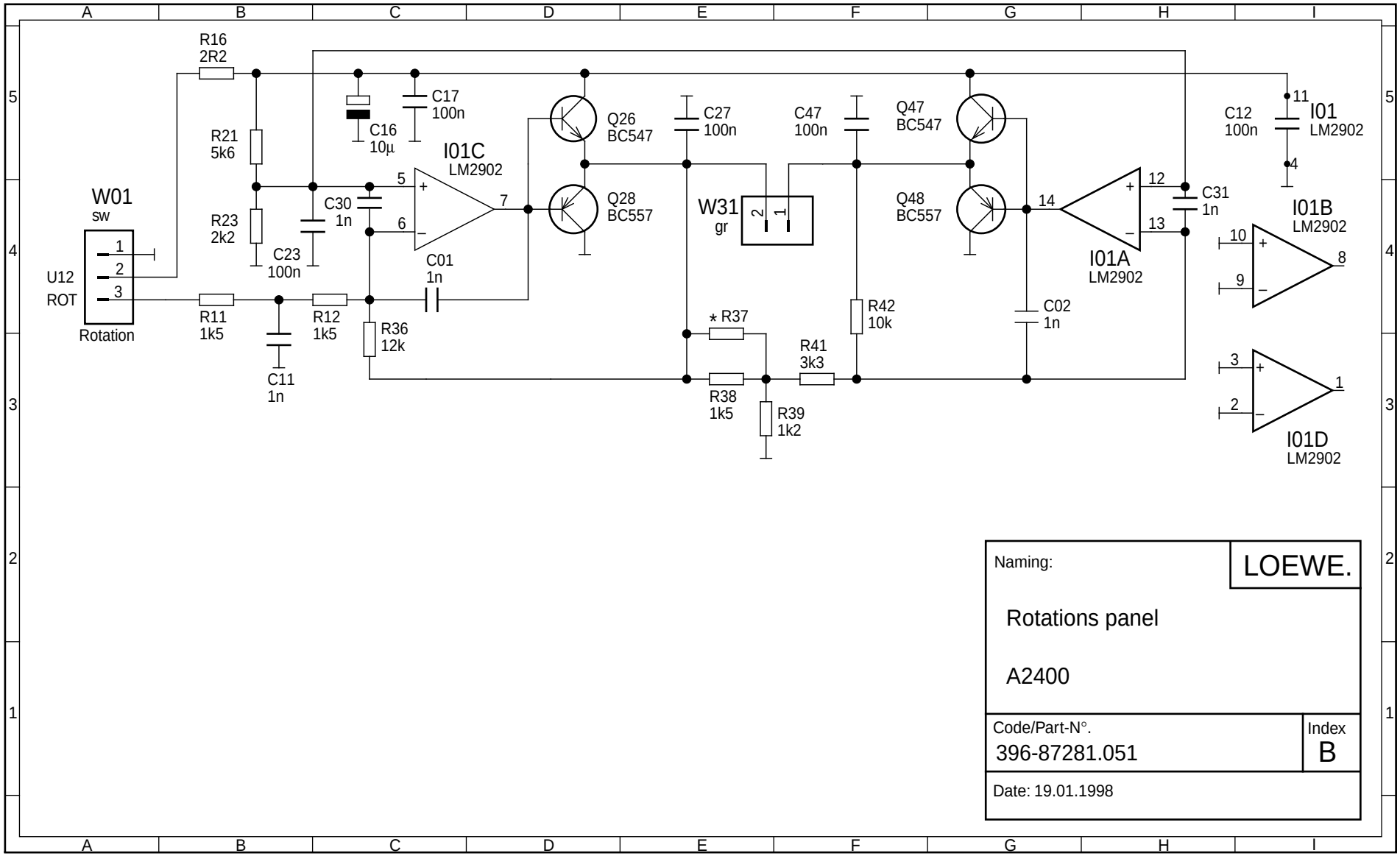
Date: 16.09.99

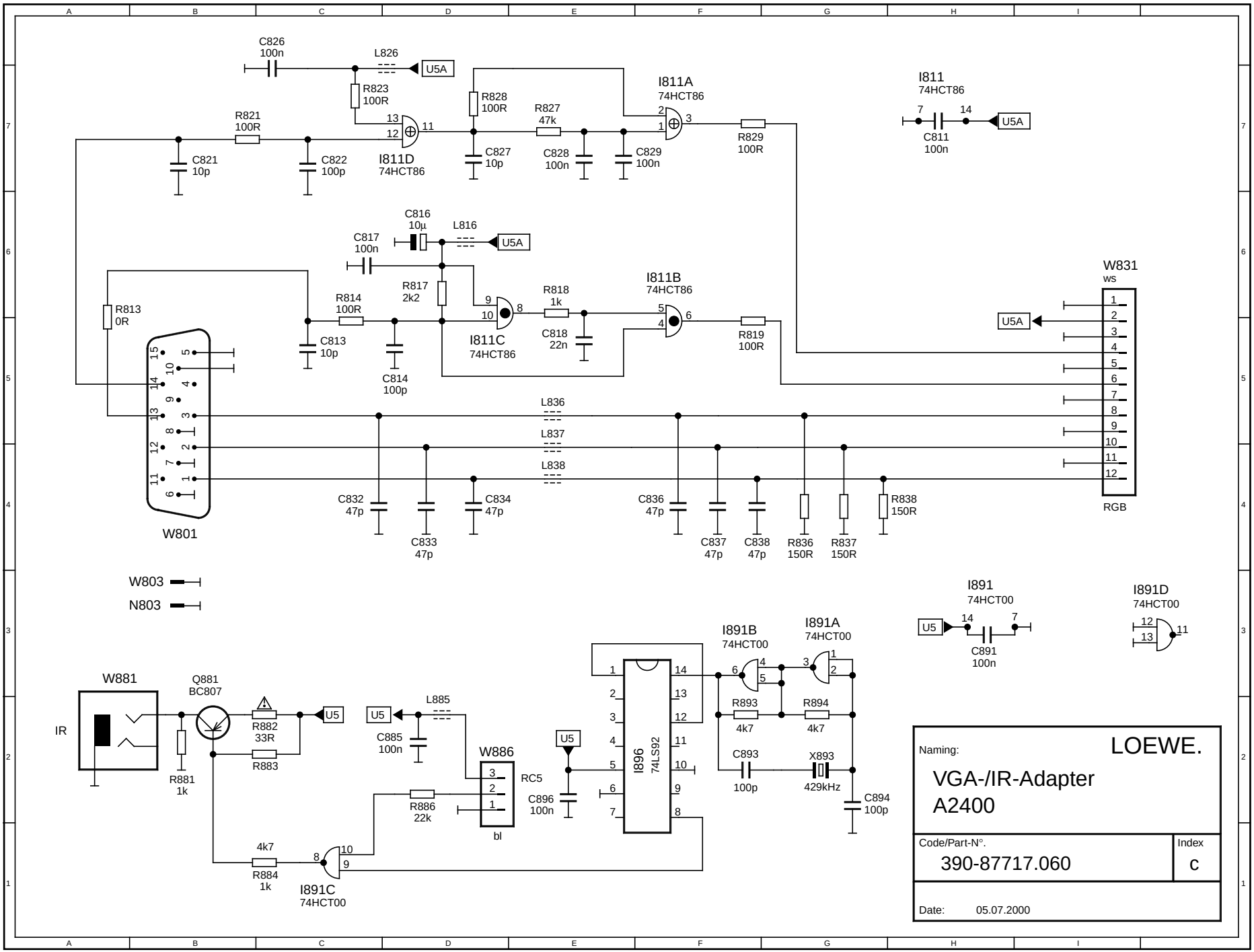

Set potential (off ground)
Supply voltage potential
W8301
R L
nature
W8321
S/VHS R
white
C8321
270p
R8321
47R
W8311
C8311
270p
R8311
47R
red
S/VHS L
W8331
S/VHS
R8332
75R
R8331
47R
D8331
ZD12V0
R8337
75R
R8336
47R
D8336
ZD12V0
R8422
0R
R8423
0R
R8424
0R
R8417
0R
L
R
W8401
Headphone
L8447
6µ8
L8417
6µ8
R8003
0R
C8448
10n
C8418
10n
N8101
black
S8101
W8104
red
115V/AC in
L8101
Relais
SB-power supply
T8101
USA 115V
D8100
B40C800
R8105
10M
R8104
0R
S8003
S8002
S8001
F
–
+
R8010
22k
R8002
6k8
R8014
0R
R8012
2k2
W8001
black
U5
Over travel tip switch
ON/OFF
SB
RC5
U5SB
D8106
LL4148
R8106
100R
C8106
100µ
C8101
470µ
D8103
LL4148
R8102
150R
I8101
78L05
IN
GND
OUT
U5SB
R8101
0R
R8103
0R
C8102
330n
C8103
100n
C8104
100µ
Q8114
BC847B
R8113
4k7
R8114
1k
Q8111
BC847B
R8112
10k
R8111
10k
R8018
0R
R8216
0R
D8211
LL4148
D8205
ZD12V0
D8204
ZD12V0
D8207
green
on
D8206
red
stand-by
D8201
ZD12V0
D8202
ZD12V0
R8222
1k
R8215
0R
R8019
0R
R8007
10k
R8016
330R
C8016
4µ7
Q8002
BC847B
R8005
47k
I8016
TSOP-1736
B8002
Infrared receiver
W8003
ESD-GND
ESC Prodective measure
W8010
R8301
10M
D8492
LL4148
C8391
270p
D8091
LL4148
C8091
270p
D8491
LL4148
C8491
270p
D8391
LL4148
D8392
LL4148
D8092
LL4148
Headphone-GND
Sound-GND
Video-GND
= LF-GND
= Headphone-GND
= Video-GND
= DIG-GND
= ESD-GND
Naming:
LOEWE.
Control unit
Code/Part-N°.
396-87506.081
Index
D
Date:
18.07.2000


Set potential (off ground)
Supply voltage potential
W8302
nature
R
L
Y
C
R8423 0R
R8424 0R
R8422 0R
S/VHS R
red
W8311
C8321 270p
R8314 47R
C8311 270p
R8315 47R
D8331 ZD12V0
D8336 ZD12V0
white
S/VHS L
R8332 75R
R8331 47R
R8336 47R
R8330 0R
R8337 75R
yellow
W8341
Video
R8329 0R
R8328 0R
D8391 LL4148
C8391 270p
D8392 LL4148
W8331
S/VHS C/Y
W8461
Headphone
L8447 6µ8
C8448 10n
R8417 0R
L8417 6µ8
C8418 10n
W8351
COMBINATION BATTEN
(W8321,W8311,W8341,W8331,W8461)
D8491 LL4148
C8491 270p
D8492 LL4148
Headphone-GND
W8102
black
N8003
N8004
S8101
W8104
115V/AC in
red
N8001
N8002
T8101
USA 115/8V/1A
stand by power supply
L8101
Relais
D8100
B40C800
R8017 0R
W8016
S8003
S8002
S8001
D8092 LL4148
C8091 270p
D8091 LL4148
D8106 LL4148
R8106 100R
R8105 0R
C8106 100µ
I8101
78L05
C8101 470µ
R8018 0R
W8001
U5SB
C8102 330n
C8103 100n
C8104 100µ
R8109 0R
R8113 4k7
R8114 1k
Q8114 BC847B
Q8111 BC847B
R8112 10k
R8111 10k
U10
R8102 150R
D8103 LL4148
R8101 0R
R8013 2k2
R8020 6k8
R8011 22k
R8015 0R
Ta
U12
Over travel tip switch (S2)
ONOFF
SB
RSIG
U5SB
black
N8010
N8005
N8011
N8012
N8015
W8015
R8301 10M
C8300 100p
D8211 LL4148
D8204 ZD12V0
R8216 0R
D8205 ZD12V0
D8207 green ON
D8206 SB red
R8222 1k
D8201 ZD12V0
D8202 ZD12V0
R8007 10k
Q8002 BC847B
R8016 330R
C8016 4u7
R8005 47k
I8016
TSOP-1736
Infrared receiver
⊥ = LF-GND
= Headphone-GND
⊥ = DIG-GND
= ESD-GND
Naming:
LOEWE.
Control unit
Code-Teile-Nr.:
396-87777.081
Index
D
Date:
02.08.2000


Set potential (off ground)
Supply voltage potential
W8302
nature
W8321
S/VHS R
W8311
S/VHS L
W8341
Video
W8331
S/VHS C/Y
W8461
Headphone
W8351
COMBINATION BATTEN
(W8321,W8311,W8341,W8331,W8461)
W8102
Kont
S8101
W8104
115V/AC in
N8001
red
N8002
T8101
USA 115V
D8101
B40C800
L8101
Relais
stand by power supply
I8101
78L05
IN
OUT
GND
U5SB
U10
Q8114
BC847B
Q8111
BC847B
D8106
LL4148
D8211
LL4148
S8003
S8002
S8001
W8001
Ta
U12
(S2)
ONOFF
SB
RSIG
U5SB
black
Over travel tip switch
W8010
D8012
LL4148
D8011
LL4148
N8010
N8016
N8005
N8011
N8012
N8015
W8015
W8003
Grid
Infrared receiver
D8205
ZD12V0
D8207
ON
green
D8202
ZD12V0
D8204
ZD12V0
D8206
SB
red
D8201
ZD12V0
Q8002
BC847B
I8016
TFMS-5360
D8391
LL4148
D8392
LL4148
D8491
LL4148
D8492
LL4148
Headphone-GND
= Video-GND
= Headphone-GND
= DIG-GND
= ESD-GND
LOEWE.
Naming:
Control unit
Code/Part-N°.
396-87819.081
Index
c
Date:
22.12.99


Interrupting flash suppression
W201
nature
FB
U12
CUTOFF
C182 10p
C172 10p
C162 10p
C354 470p
R352 22k
C351 2200µ
D351 SD103C
D342 LL4148
C342 470u
D341 LL4148
Q341 BC857B
R343 10k
C341 10n
R341 12k
R342 100k
Q343 BC847B
R344 47k
R362 2k2
R363 12k
Q321 BC847B
to Basic Board
W152
D322 LL4148
C321 47µ
R321 220k
R322 560R
R326 470k
R324 470k
W362
GND
Q362 BC857B
R365 10k
R366 22k
C361 100n
C362 4µ7
R329 33R
Q326 BFN23
R327 10R
R328 10R
L366 4u7
C364 100n
C366 22µ
R364 10R
R391 1k
D391 LL4148
C202 56p
R182 1k
C181 100n
R181 100R
R188 470R
Q182 BC857B
L189 4µ7
L188 4µ7
L187 4µ7
R191 10k
R192 10k
R193 10k
R186 820R
Q181 BC847B
C189 18p
C188 33p
C187 33p
C186 18p
R183 1k2
R184 12k
R189 1k
R185 4k7
C201 56p
R172 1k
C171 100n
R171 100R
R178 470R
Q172 BC857B
L179 4µ7
L178 4µ7
L177 4µ7
R194 10k
R195 10k
R196 10k
R176 820R
Q171 BC847B
C179 18p
C178 33p
C177 33p
C176 18p
R173 1k2
R174 12k
R179 1k
R175 4k7
C203 56p
R162 1k
C161 100n
R161 100R
R168 470R
Q162 BC857B
L169 4µ7
L168 4µ7
L167 4µ7
R197 10k
R198 10k
R199 10k
R166 820R
Q161 BC847B
C169 18p
C168 33p
C167 33p
C166 18p
R163 1k2
R164 12k
R169 1k
R165 4k7
R180 10R
C394 1n
R399 10R
D398 BAV103
Uvid
R398 220R
C397 100n
R390 47R
L391 3µ3
R394 18k
R396 330R
C396 33p
R395 10R
C391 56p
R392 47R
R393 100R
R397 330R
I390
TDA6120
C390 100n
D397 BAV103
D381 LL4148
R170 10R
C384 1n
R385 10R
D388 BAV103
R388 220R
R355 220k
C387 100n
L381 3µ3
R380 47R
R384 18k
R389 10R
C381 56p
R382 47R
R386 330R
C386 33p
R387 330R
R383 100R
I380
TDA6120
C380 100n
D387 BAV103
D371 LL4148
R201 10R
R160 10R
C374 1n
R379 10R
D378 BAV103
R378 220R
R314 1k
R370 47R
L371 3µ3
R374 18k
R375 10R
C377 100n
R372 47R
R376 330R
C376 33p
R377 330R
R373 100R
I370
TDA6120
R371 22k
C371 56p
C370 100n
D377 BAV103
R153 3R3
R154 3R3
C154 22µ
W154
R156 33R
C156 100n
C157 100n
C158 470µ
R221 680R
R229 1R
Q221 BC640
R218 220R
C222 22n
C221 22n
D218 BA592
D219 BA592
R222 56k
C219 100n
L226 2x33µ
R226 470R
R227 470R
R219 10R
R223 56k
Q222 BC639
C223 10n
R224 680R
R228 1R
W258
SVM
black (Var. 053, 054)
nature (Var. 055)
to Booster coil
R213 10k
R214 10R
R215 10R
Q213 BC847B
Q216 BC847B
R217 12k
R220 12k
R216 4k7
C216 47n
Q157 BC856B
R211 220R
R206 3k9
C210 100n
R207 18k
Q211 BC857
Q204 BC847B
C204 56p
R204 120R
R208 1k5
C208 47n
R209 12k
R212 33R
C212 1n
Leading number 3...
Scan velocity modulator
MP1 R 8
MP2 G 6
MP3 B 11
V001
UF
FOCUS1
FOCUS2
W361
R367 1M
C367 22u
R368 1k5
R369 10k
E001
UG2
D367 1N4007
C368 1n
C360 10n
50.0V/Div DC
10.0µs/Div
MP1
MP2
MP3
Naming:
LOEWE.
CRT board
A 2400
Variante:
053-055
Code/Part-N°.
396-87833.
Index
a
Date: 02.08.2000


R16
2R2
R21
5k6
R23
2k2
C16
10µ
C17
100n
I01C
LM2902
C30
1n
C23
100n
C01
1n
W01
sw
U12
ROT
Rotation
R11
1k5
R12
1k5
C11
1n
R36
12k
Q26
BC547
Q28
BC557
C27
100n
W31
gr
* R37
R38
1k5
R39
1k2
C47
100n
R41
3k3
R42
10k
Q47
BC547
Q48
BC557
C02
1n
I01A
LM2902
C31
1n
C12
100n
I01
LM2902
I01B
LM2902
I01D
LM2902
Naming:
LOEWE.
Rotations panel
A2400
Code/Part-N°.
396-87281.051
Index
B
Date: 19.01.1998



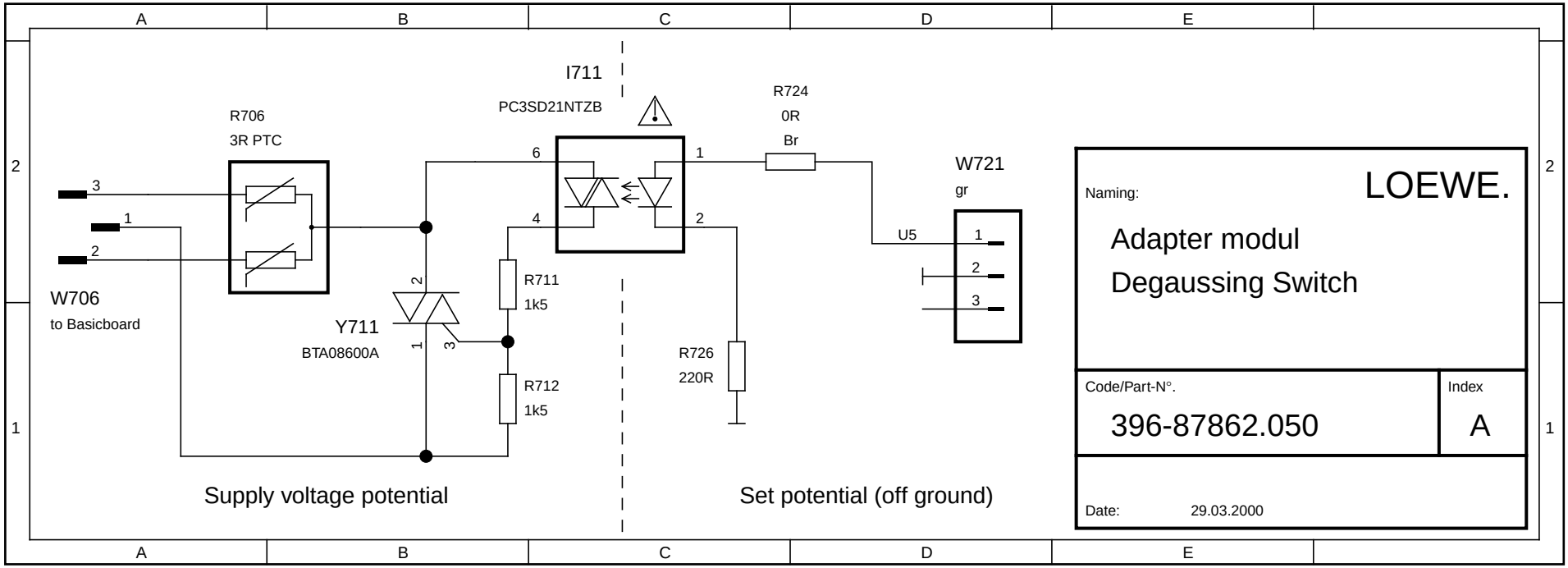
Naming: LOEWE.

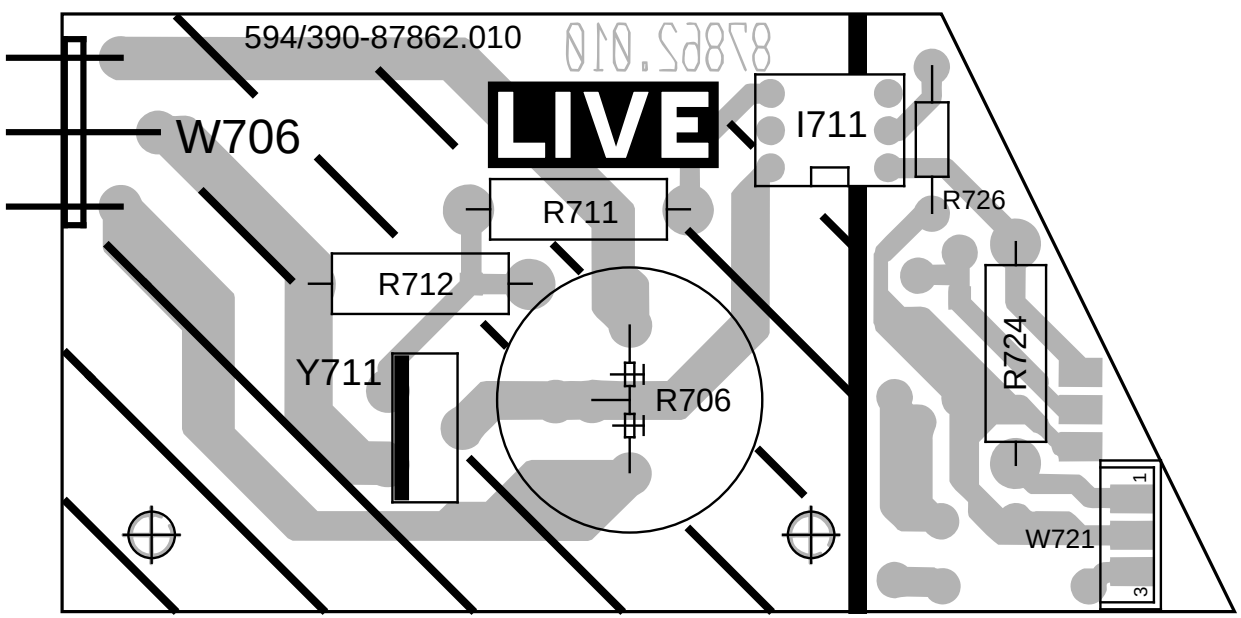
VGA-/IR-Adapter
A2400

Code/Part-N°. 390-87717.060

Index c

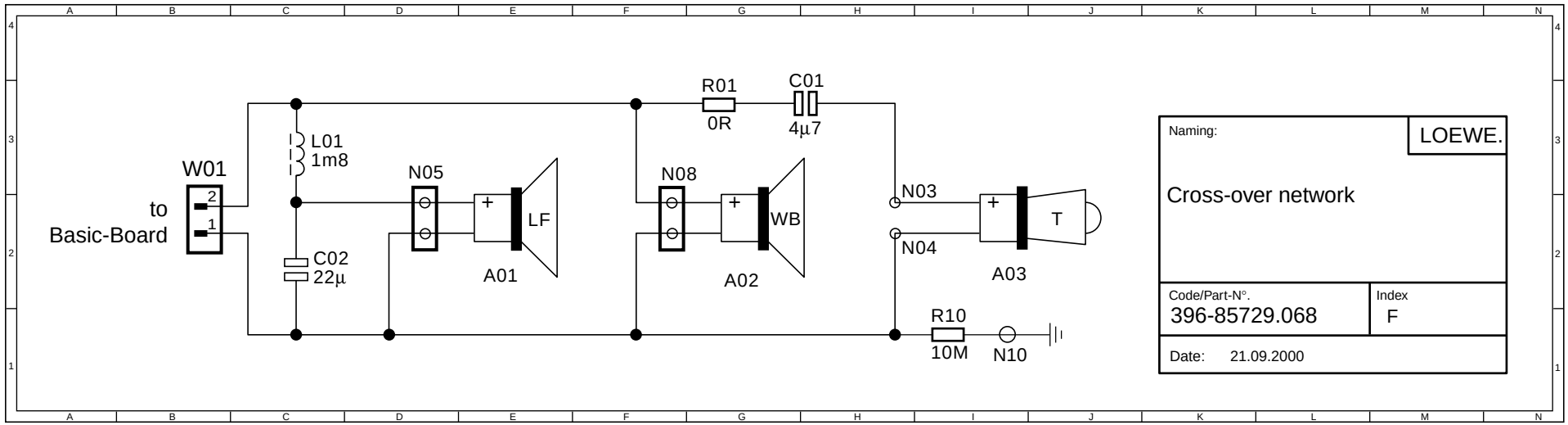
Date: 05.07.2000

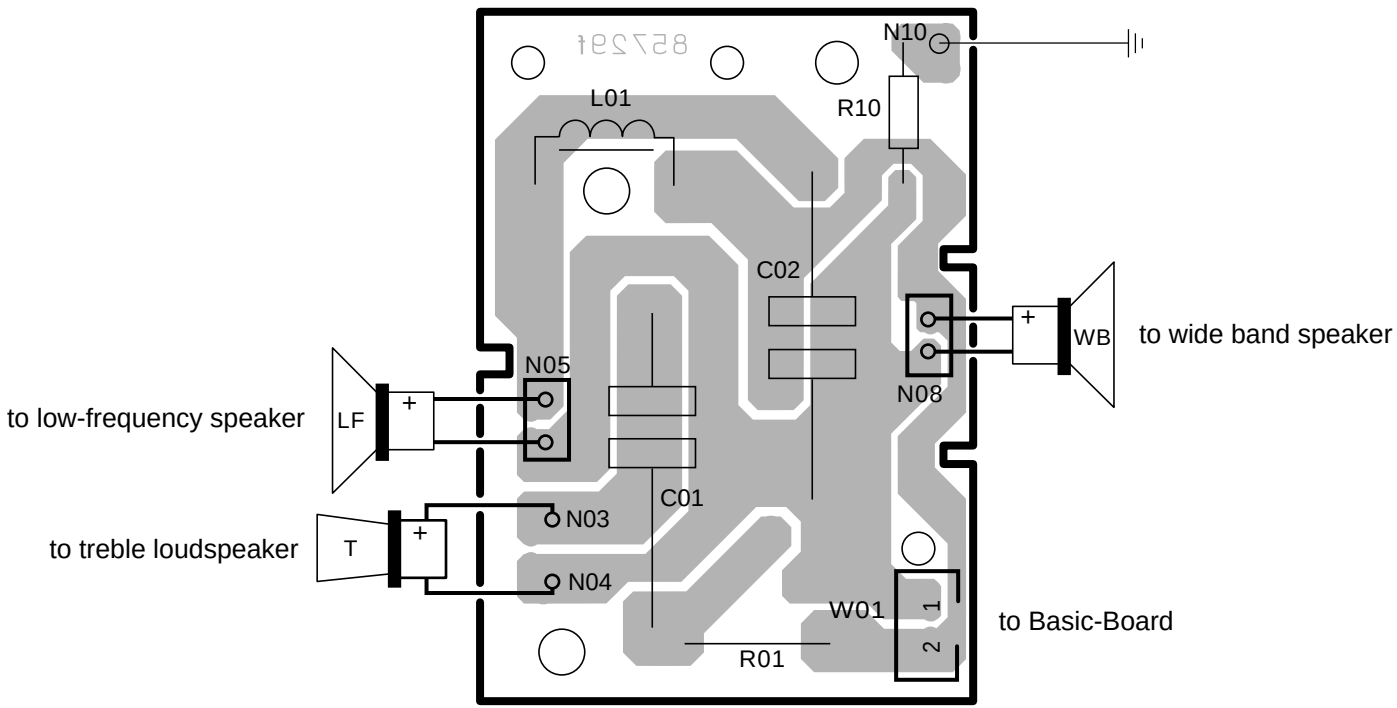




Degaussing switch **396-87862A**

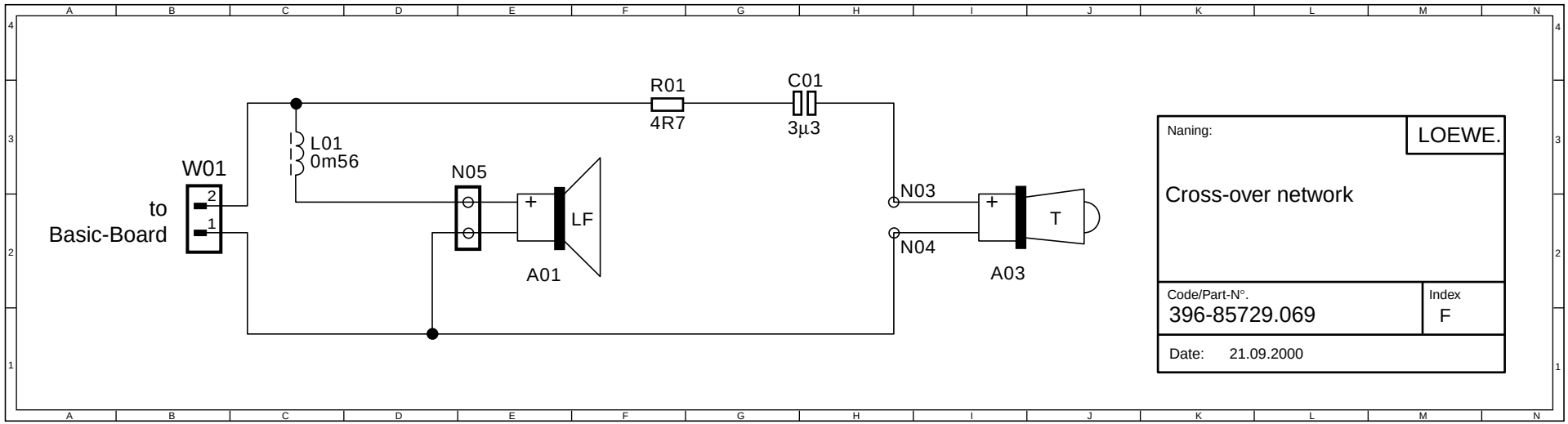
Components side

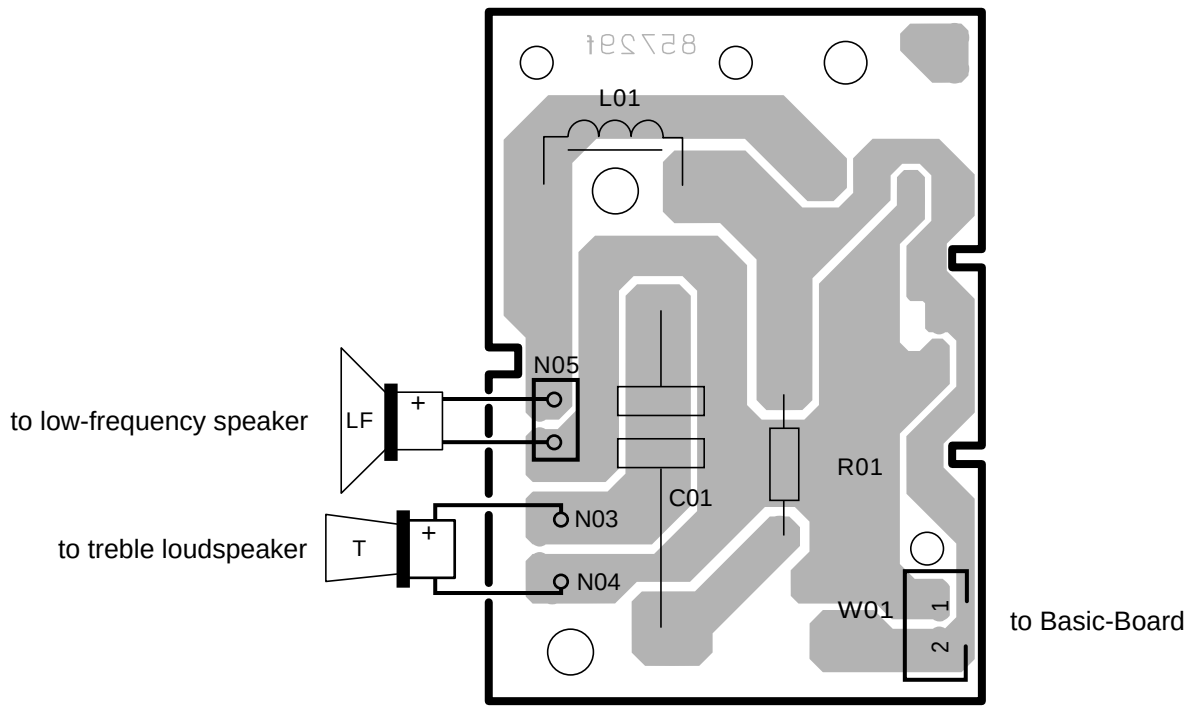




Cross-over network PCB **396-85723.068**

Component side





Cross-over network PCB **396-85723.069**

Component side

Technical specifications

CAL 2323 MB
with micro digital chassis A 2400 / 8 bit

Picture tube:	Philips 33” 4:3, picture diagonal length: 84cm (visible 79cm), deflection angle 110°,
	heating voltage 6.3 Vrms (28Vp-p)/310 mA, degaussing each time the set is switched on
Power requirement:	96 to 132 V~, 60 Hz
Power consumption:	185 W (SB mode 1 W)
Vertical frequency:	60 Hz NTSC-M (progressive scan)
Horizontal freq.:	31500 Hz NTSC-M
Dimensions:	79 x 73 x 54 (W x H x D)
Weight:	54 kg
Connections	
(front):	Headphones jack with separate setting from loudspeaker, two cinch jacks for sound input, hosiden jack for video input
(back)	Input signals: S-Video (AV I & AV II), Component Video (Y, R-Y, B-Y), video/sound (AV I & AV II), VGA (synch. & RGB), Audio VGA Output signals: S-Video (AV II), video/sound (AV I Tuner), video/sound (AV II Monitor), Audio, ext. speaker 1 & 2
Features:	Dialogue control system, MTS-sound decoder, tuning and memory system digital, digital channel selector ACP, OSD indication, Sharpness Control System (SCS), DTI Plus, Automatic Volume Control AVC, Parental Lock, Digital Line Control (DLC), Digital Noise Control (DNC), Digital Line Interpolation (DLI), Automatic Movie Detection (AMD), Digital Comb Filter, Photo CD, electronic alignment with the remote control, hyperband tuner USA-PIP/hyperband tuner USA: 47 MHz - 861 MHz NTSC-M (3,58) Standard selection by means with the remote control, Closed Caption, Extented Data System (XOS)
Audio system:	2 x 40 W for an impedance of 4 ohms, 4 loudspeakers, base broadening for stereo, spatial sound for mono

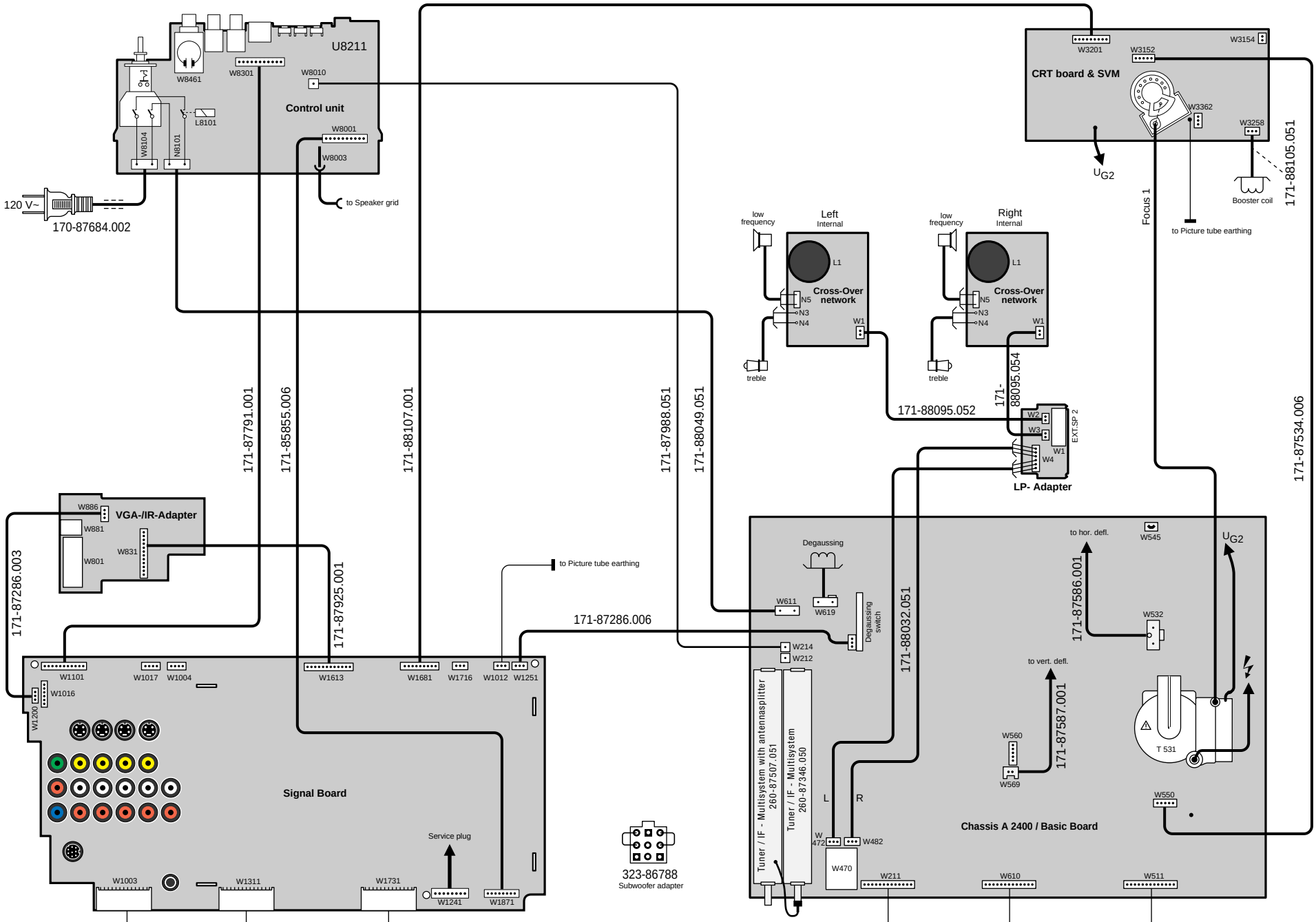
ACO 9303 MB
Technical specifications (deviating from CAL 2323MB)

Picture tube:	Philips 32” 16:9 Real Flat, picture diagonal length: 81cm (visible 76cm)
Dimensions:	85,5 x 62,5 x 57,5 (W x H x D)
Weight:	55 kg
Connections	
(front):	cinch jack for video input

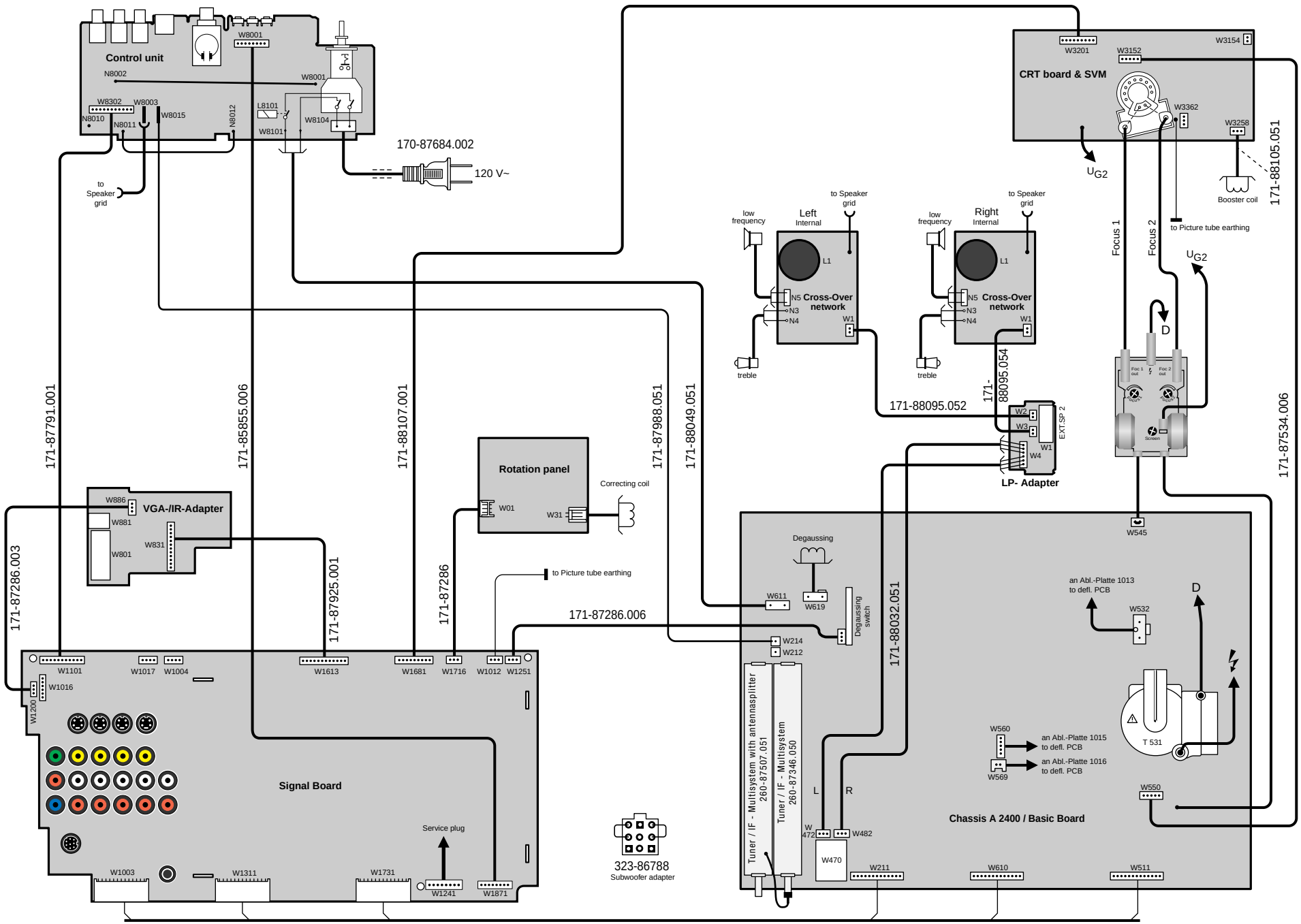
PLA 5303
Technical specifications (deviating from CAL 2323MB)

Picture tube:	Philips 32” 16:9 Real Flat, picture diagonal length 81cm (visible 76cm)
Dimensions:	99 x 59,5 x 57,5 (W x H x D)
Weight:	52,5 kg
Connections	
(front):	Cinch jack for video input
Audio system:	6 loudspeakers

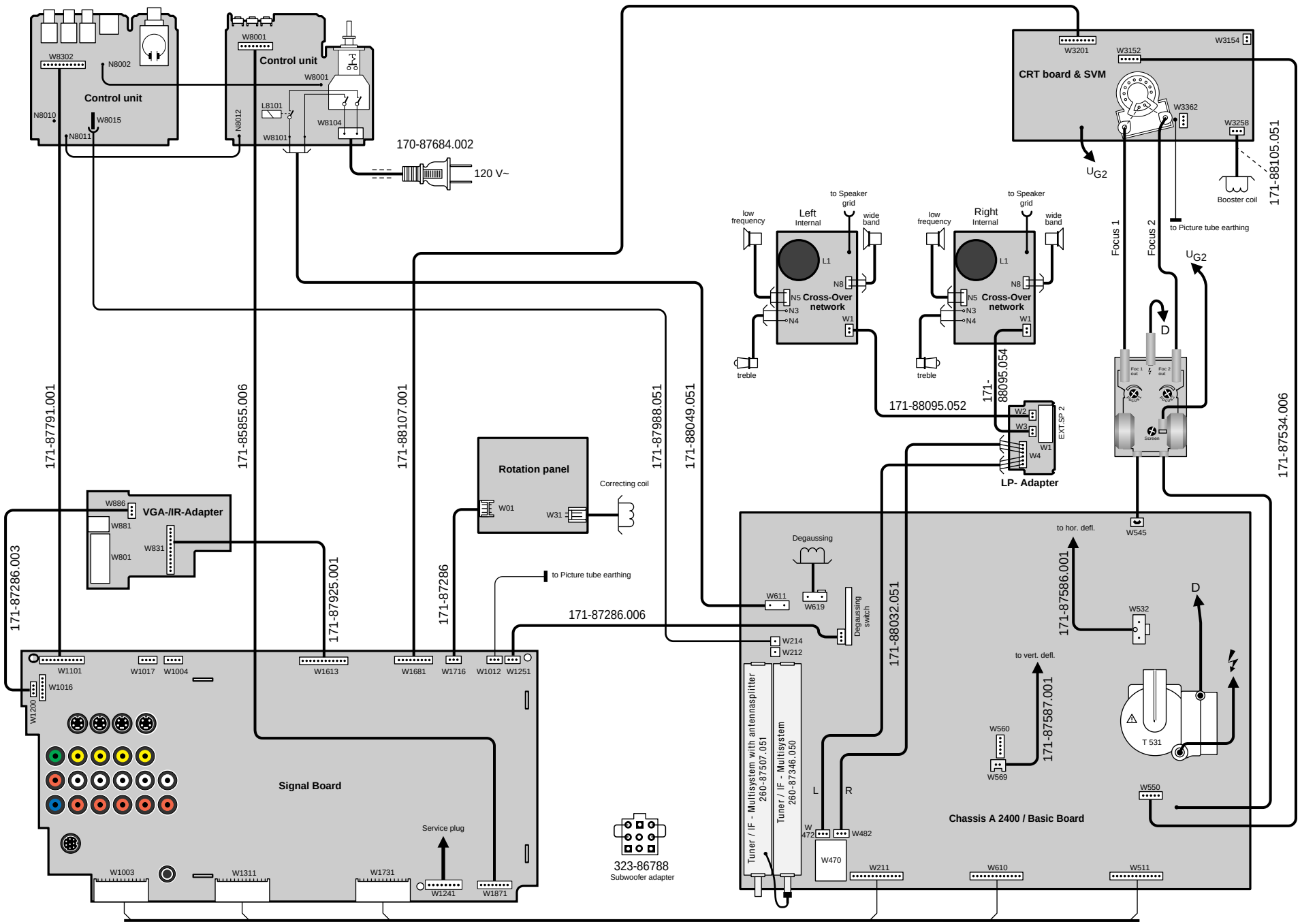
Wiring diagram • CAL 2323 MB



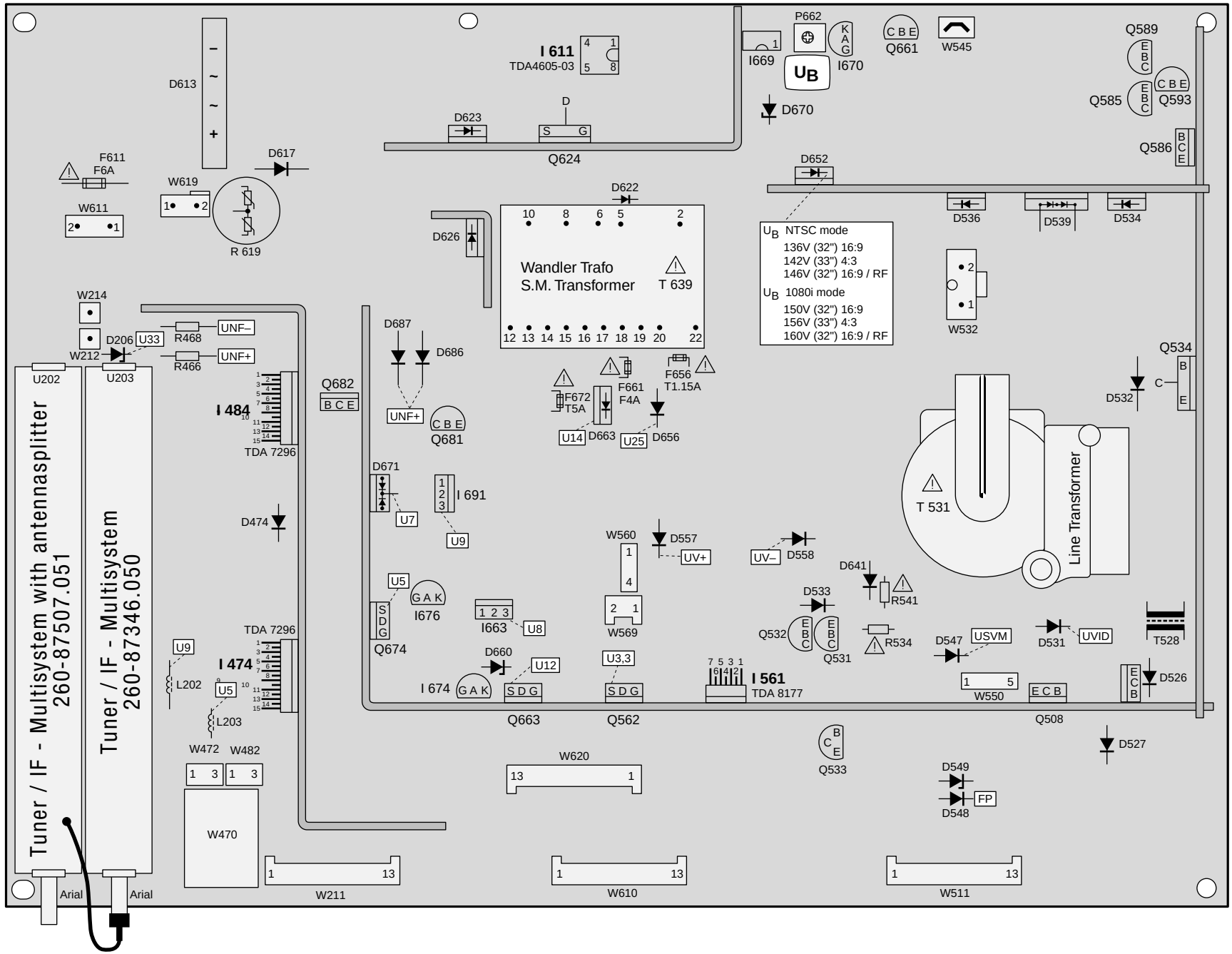
Wiring diagram • ACO 9323 MB



Wiring diagram • PLA 5303

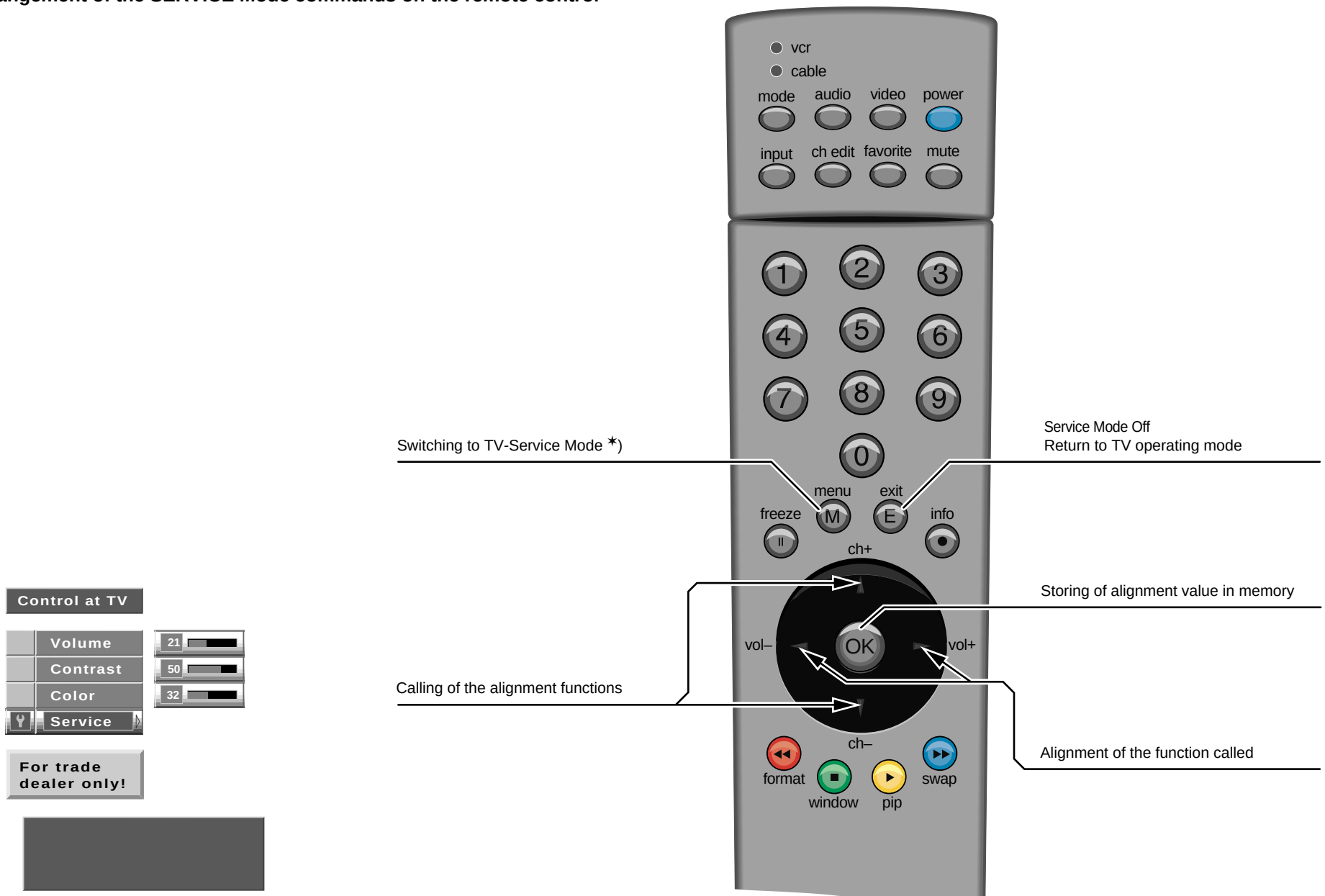


Basic Board (A 2400)



Service layout diagram **Component side**

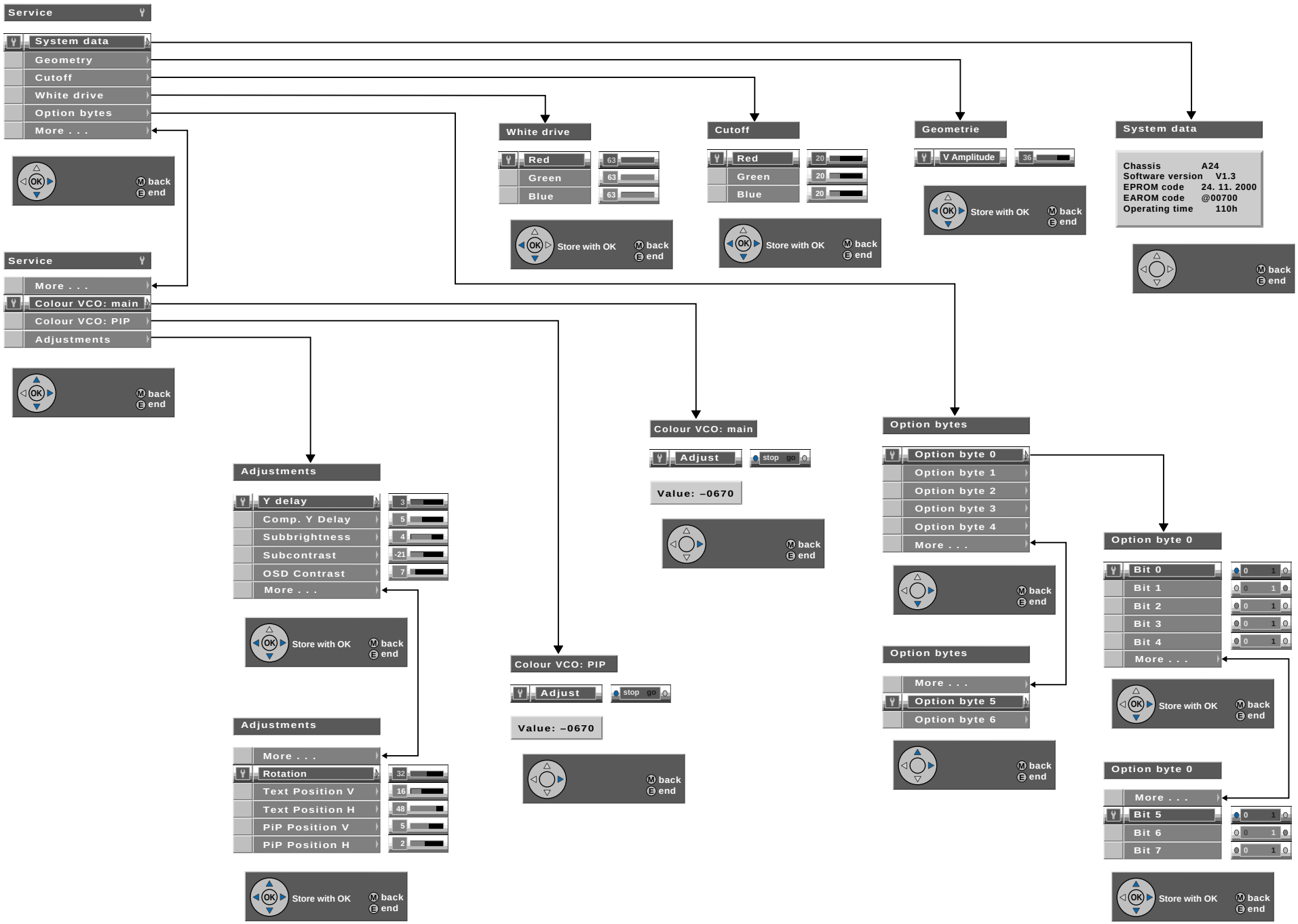
Arrangement of the SERVICE Mode commands on the remote control



Entering Service Mode

*) On the local control press function key ↻ four times (indication „Service“ will appear), afterwards within a sec. press key M on the remote control.

Service menu (A 2400)



Adjustment procedures

Service Mode A 2400 30.05.2000

High voltage at zero beam: Ⓐ	Max high voltage: Ⓑ	
Picture size	UB (NTSC Mode)	High voltage
33" / 4:3	142 V	Ⓐ 31,0 kV Ⓑ 32,0 kV
32" / 16:9	136 V	Ⓐ 33,0 kV Ⓑ 34,0 kV
32" / 16:9 Real flat	146 V	Ⓐ 33,0 kV Ⓑ 34,0 kV

Measuring UB parallel to C651

High voltage at zero beam: Ⓐ	Max high voltage: Ⓑ	
Picture size	UB (1080i Mode)	High voltage
33" / 4:3	150 V	Ⓐ 31,0 kV Ⓑ 32,0 kV
32" / 16:9	156 V	Ⓐ 33,0 kV Ⓑ 34,0 kV
32" / 16:9 Real flat	160 V	Ⓐ 33,0 kV Ⓑ 34,0 kV

Measuring UB plus pole C651 to Chasssis GND

1. Function

Service mode permits the calibration of variable EAROM values.

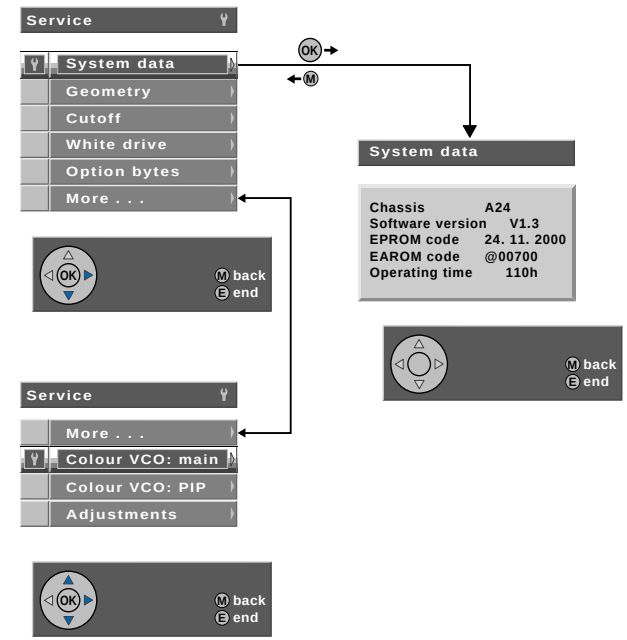
2. Entering Service Mode

The Adjustment sequence for the service mode is indicated in the pictures: “Arrangement of the service mode commands on the remote control” (p. 11).
The set is now in the service mode basic routine and documents this with the following on-screen display.

3. Instructions on Geometry Alignment

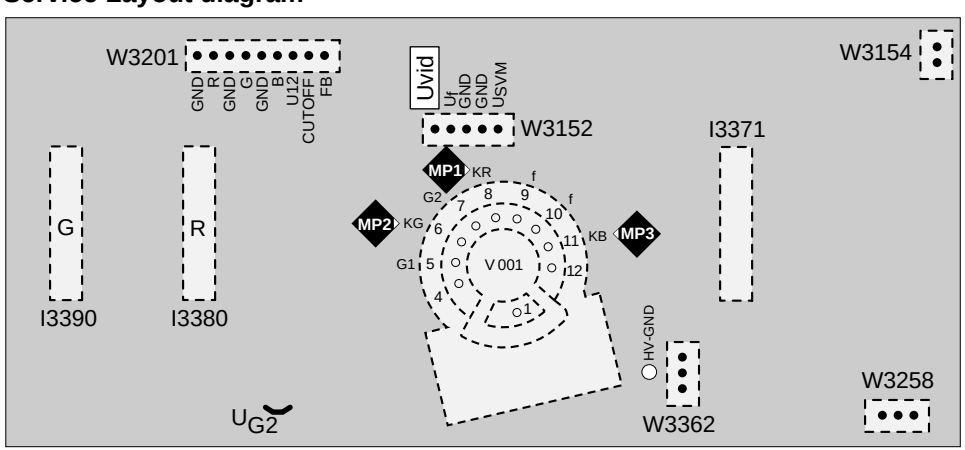
Vertical amplitude, Vertical position, Vertical linearity, Vertical symmetrie, Hor. amplitude, Hor. phase, E-W corr., Trapezium comp., etc will be adjustet separately for 50/60Hz vertical frequencies. Therefore they have to be regulated separately.

CRT:	4:3	16:9
- 50Hz - 60Hz	Test pattern: 4:3 4:3	Test pattern: 16:9 16:9



Table–1

Service Layout diagram

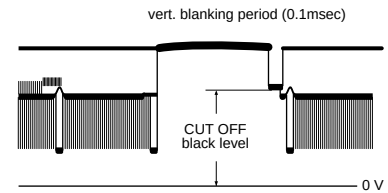


Picture tube board & SVM
Solder side

4. Alignment functions (0-12)

Alignment functions		Display - Screen e.g.	Settings / special features
0	Vertical Amplitude	Geometrie V Amplitude xx	Optimum setting Color test pattern (FuBK)
1	Vertical Position	Geometrie V Position xx	
2	Vertical Symmetry	Geometrie V Symmetry xx	
3	Vertical Linearity	Geometrie V Linearity xx	
4	Horizontal Amplitude	Geometrie H Amplitude xx	
5	Horizontal Position	Geometrie H Position xx	Separate adjustments for the various screen settings.
6	EW Amplitude	Geometrie EW Amplit. xx	Optimum settings
7	EW upper	Geometrie EW Upper xx	
8	EW lower	Geometrie EW Lower xx	
9	Trapezium Correction	Geometrie Trapezium xx	
10	Vertical Bow	Geometrie V Bow xx	
11	Vertical Angle	Geometrie V Angle xx	
12	Horizontal Offset	Geometrie H Offset xx	

5. Alignment functions (13-21)

Alignment functions		Display - Screen e.g.	Settings / special features
13a	Cutoff Measuring Pulse	Cutoff Red xx Green xx Blue xx	At colour output stage (MP1, MP2, MP3) check the highest of the displayed tension. Use Ug2 controller in DST or controller unit to adjust: Cutoff = 148 ± 2.5V DC [Before that adjustment contrast has to be set to 50, brightness to 23 and colour saturation to 32. For all 3 colours Cutoff must display 20 and White Level (14) 63! All 16:9 TV sets have to be set to 16:9 mode!] 
13b	Cutoff Reference Value	Cutoff Red xx Green xx Blue xx	In the grey area rise the missing two colours until black becomes standard, then store these values with ”OK” key.
14	White Level	White drive Red xx Green xx Blue xx	In the white area reduce the dominant two colours until black becomes standard, then store these values with ”OK” key.
15	Option bytes	Option byte 0 Bit 0 1 2 3 4 5 6 7 x x x x x x x x	Caution! Here inputs and memorizing: a) in the event of necessary repairs b) if you wish to alter programs/norms For alignment method see Option Bytes Table
16	Option bytes	Option byte 1 Bit 0 1 2 3 4 5 6 7 x x x x x x x x	
17	Option bytes	Option byte 2 Bit 0 1 2 3 4 5 6 7 x x x x x x x x	
18	Option bytes	Option byte 3 Bit 0 1 2 3 4 5 6 7 x x x x x x x x	
19	Option bytes	Option byte 4 Bit 0 1 2 3 4 5 6 7 x x x x x x x x	
20	Option bytes	Option byte 5 Bit 0 1 2 3 4 5 6 7 x x x x x x x x	
21	Option bytes	Option byte 6 Bit 0 1 2 3 4 5 6 7 x x x x x x x x	

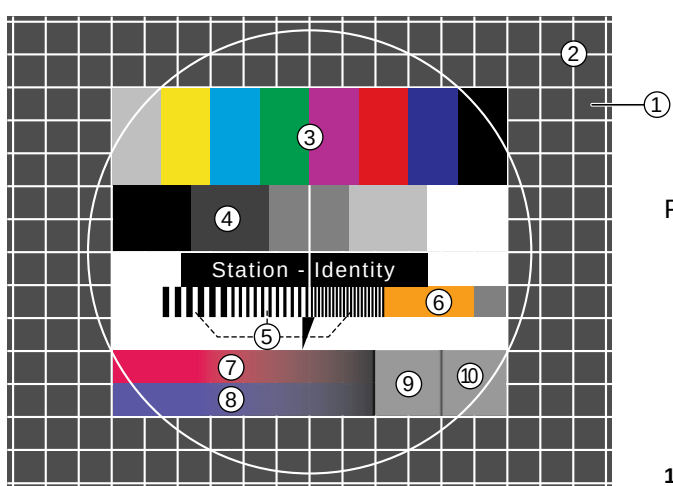
6. Alignment functions (22-37)

Alignment functions		Display - Screen e.g.	Settings / special features
22	Subcarrier Osc.	Colour VCO: main stop start	Adjust zero beat (autom. adjustment)
23	Subcarrier Osc.	Colour VCO: PIP stop start	Adjust zero beat (autom. adjustment)
24	Y Delay	Adjustments Y delay xx	Optimum settings
25	Comp. Y Delay	Adjustments Comp. Y Delay xx	
26	Brightness Offset	Adjustments Subbrightness xx	Don't adjust!
27	Subcontrast	Adjustments Subcontrast xx	
28	OSD Contrast	Adjustments OSD Contrast xx	Optimum settings
29	Rotation	Adjustments Rotation xx	
30	Vertikal Pos. TT	Adjustments Text Position V xx	
31	Horizontal Pos. TT	Adjustments Text Position H xx	
32	Vertikal Pos. PiP	Other adjustments PiP Position V xx	
33	Horizontal Pos. PiP	Adjustments PiP Position H xx	
34	EAROM Transfer via AV	Only program data From AV2 to TV stop start	Set expects external programming via EAROM programmer (Program locations)
35	EAROM Transfer via AV	Only program data From TV to AV2 stop start	Set expects external programming from TV in the EAROM programmer (Program locations)
36	EAROM Transfer via AV	All data ! From AV2 to TV stop start	Set expects external programming via EAROM programmer (all EAROM data)
37	EAROM Transfer via AV	All data ! From TV to AV2 stop start	Set expects external programming from TV in the EAROM programmer (all EAROM data)

7. Analog adjustments

Alignment functions outside the Service Mode (= analog alignment points)						
Adjustment		**Signal**	**Condition**	**Mst. point**	**Adjustments**	**Settings / special features**
1a	Operating voltage	Test pattern (NTSC Mode)	110/120V~	Screen U_B Measuring UB C651 V UB	P 662 (Basic Board)	142V ± 0,5V (33") 4:3 136V ± 0,5V (32") 16:9 146V ± 0,5V (32") 16:9 / RF If necessary correct hor. amplitude afterwards!
1b	Operating voltage	Test pattern (1080i Mode)	110/120V~	Screen U_B Measuring UB C651 V UB	P 662 (Basic Board)	150V ± 2,0V (33") 4:3 156V ± 2,0V (32") 16:9 160V ± 2,0V (32") 16:9 / RF If necessary correct hor. amplitude afterwards!
2	Focus	Test pattern		Screen	Focus at the line trans-former or controller unit	Optimum settings

Colour test pattern (FuBK)



Picture components

1) Grey field (30% white)
2) Grid network (15 hor.- 19 vert. Line)
3) Colour bar (75% white, yellow, cyan, green, purple, red, blue, black)
4) Shade of grey (0-25-50-75-100% white)
5) Frequency group (1-2-3 MHz)
6) Orange field (4,43 MHz/Phase G-Y=0)
7) Red wedge (±V Sawtooth)
8) Blue wedge (+U Sawtooth)
9) Grey field (+V)
10) Grey field (±U)

Option Byte Table

Alignement function	Bit-Nr. N°.	Meaning	"0"	"1"	Adjusted in the factory		
					CAL 33"	PLA 32"	ACO 32"
					4:3	16:9	16:9/RF
Byte 0	0	HDLC	Timeout	No Timeout	0	0	0
	1	Synch slicer threshold	not written	written	0	0	0
	2	Read sidepanel from	PROM (new BESIC)	EAROM	1	1	1
	3	free	—	—	0	0	0
	4	Available TV-Mode	480 lines proscan	960 lines interlace	0	0	0
	5	Blue picture w/o signal	yes	no	0	0	0
	6	VGA Modul	yes	no	0	0	0
	7	VGA switch	delayed	undelayed	1	1	1
Byte 1	0	Timer controlled prg switch	yes	no	0	0	0
	1	Auto YC on AV input	yes	no	0	0	0
	2	Text mode	black backround	drop shadow	0	0	0
	3	Close caption	enhanced attr. off	enhanced attr. on	0	0	0
	4	PIP	frame mode	field mode	0	0	0
	5	16:9 sets and PIP on	pan/cin/zoom possible	pan/cin/zoom impossible	0	0	0
	6	Auto PAL/NTSC via AV	no	yes	0	0	0
	7	Side panels	from VPC	from BESIC	1	1	1
Byte 2	0	Auto color PAL/NTSC	only NTSC	always on (only for fafactory use)	0	0	0
	1	Indicate movie mode	no	yes	0	0	0
	2	Lock Mode VPC	no	via side panel color	0	0	0
	3	Blanking program switch	yes	no	0	0	0
	4	VCR headjump meas line (VPC)	normal (line 5)	modified (line 3)	0	0	0
	5	AGC memory	off	on	1	1	1
	6	Reaction of del commands	fast	slow	0	0	0
	7	Auto movie source detect.	disabled	enabled	1	1	1

Option Byte Table

Alignement function	Bit-Nr. N°.	Meaning	"0"	"1"	Adjusted in the factory		
					CAL 33"	PLA 32"	ACO 32"
					4:3	16:9	16:9/RF
Byte 3	0	Default aspect ratio	enabled	disabled	1	1	1
	1	Picture size	4:3	16:9	0	1	1
	2	Rotations coil	no	yes	0	1	1
	3	Split screen vert. delay	disabled	enabled	0	0	0
	4	Switch-off autom. (w/o Sync)	yes	no	0	0	0
	5	Warm up mode	off	on	0	0	0
	6	free	—	—	0	0	0
	7	First switch on	no	yes	1	1	1
Byte 4	0	Sound ident info OSD active	no	yes (only for test)	0	0	0
	1	Auto volume control (AVC)	slow	fast	0	0	0
	2	50Hz progressive scan	disabled	enabled	0	0	0
	3	60Hz progressive scan	disabled	enabled	1	1	1
	4	Auto movie detect (AMD)	fast	slow	1	1	1
	5	Warm up mode	on	off	1	1	1
	6	Chroma inverter BESIC	on	off	0	0	0
	7	free	—	—	0	0	0
Byte 5	0	Scan velocity modulation	disabled	enabled	1	1	1
	1	Welcome screen	from EPROM	from EAROM	0	0	0
	2	Output selected	monitor	tuner	0	0	0
	3	Basic board	Q2460	Q2400	0	0	0
	4	VGA synch switching	old	new	1	1	1
	5	Values for upconversion	automatic	manual recursion	0	0	0
	6	Input locking source	input 1	VGA	0	0	0
	7	Input locking	off	on	0	0	0
Byte 6	0	Gamma-settings (1080i)	from EAROM	from EPROM	0	0	0
	1-7	free	—	—	0	0	0

TV Menu (A 2400)