



SERVICE MANUAL

EU3216STF

16:9 CTV

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1.INTRODUCTION

11AK45 is a 50Hz colour television capable of driving 24" + CRT sizes(beginning from 24" 16:9 up to 33").

The chassis is capable of operation in PAL, SECAM, NTSC (playback) colour standards and multiple transmission standards as B/G, D/K, I/I', and L/L'.

Sound system output is supplying 2x10W (10%THD) for left and right outputs of 8ohm speakers.

TV supports FASTTEXT. It is possible to decode transmissions including high graphical data.

The chassis is equipped with three full EuroScarts, only one of them supports RGB input, one headphone output, one FAV input, one SVHS input (via SCART)

2.TUNER

The hardware and software of the TV is suitable for tuners, supplied by different companies, which are selected from the Service Menu. These tuners can be combined VHF, UHF tuners suitable for CCIR systems B/G, H, L, L', I/I', and D/K. The tuning is available through the digitally controlled I²C bus (PLL). Below you will find info on one of the Tuners in use.

General description of UV1316:

The UV1316 tuner belongs to the UV 1300 family of tuners, which are designed to meet a wide range of applications. It is a combined VHF, UHF tuner suitable for CCIR systems B/G, H, L, L', I and I'. The low IF output impedance has been designed for direct drive of a wide variety of SAW filters with sufficient suppression of triple transient.

Features of UV1316:

1. Member of the UV1300 family small sized UHF/VHF tuners
2. Systems CCIR: B/G, H, L, L', I and I'; OIRT: D/K
3. Digitally controlled (PLL) tuning via I²C-bus
4. Off-air channels, S-cable channels and Hyperband
5. World standardized mechanical dimensions and world standard pinning
6. Compact size
7. Complies to "CENELEC EN55020" and "EN55013"

Pinning:

1. Gain control voltage (AGC) : 4.0V, Max: 4.5V
2. Tuning voltage
3. I²C-bus address select : Max: 5.5V
4. I²C-bus serial clock : Min:-0.3V, Max: 5.5V
5. I²C-bus serial data : Min:-0.3V, Max: 5.5V
6. Not connected
7. PLL supply voltage : 5.0V, Min: 4.75V, Max: 5.5V
8. ADC input
9. Tuner supply voltage : 33V, Min: 30V, Max: 35V
10. Symmetrical IF output 1
11. Symmetrical IF output 2

3.IF PART (TDA9885/86)

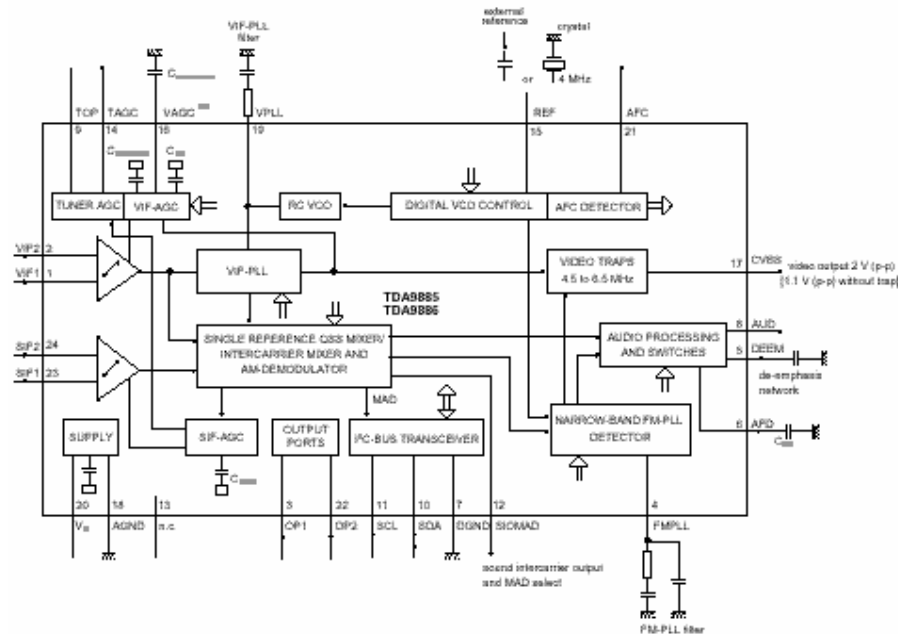
The TDA9885 is an alignment-free single standard (without positive modulation) vision and sound IF signal PLL.

The TDA9886 is an alignment-free multistandard (PAL, SECAM and NTSC) vision and sound IF signal PLL. Both devices can be used for TV, VTR, PC and set-top box applications.

The following figure shows the simplified block diagram of the integrated circuit.

The integrated circuit comprises the following functional blocks:

VIF amplifier, Tuner and VIF-AGC, VIF-AGC detector, Frequency Phase-Locked Loop (FPLL) detector, VCO and divider, Digital acquisition help and AFC, Video demodulator and amplifier, Sound carrier trap, SIF amplifier, SIF-AGC detector, Single reference QSS mixer, AM demodulator, FM demodulator and acquisition help, Audio amplifier and mute time constant, I²C-bus transceivers and MAD (module address), Internal voltage stabilizer.



4.VIDEO SWITCH TEA6415

In case of three or more external sources are used, the video switch IC TEA6415 is used. The main function of this device is to switch 8 video-input sources on the 6 outputs. Each output can be switched on only one of each input. On each input an alignment of the lowest level of the signal is made (bottom of sync. top for CVBS or black level for RGB signals). Each nominal gain between any input and output is 6.5dB. For D2MAC or Chroma signal the alignment is switched off by forcing, with an external resistor bridge, 5VDC on the input. Each input can be used as a normal input or as a MAC or Chroma input (with external Resistor Bridge). All the switching possibilities are changed through the BUS. Driving 75ohm load needs an external resistor. It is possible to have the same input connected to several outputs.

5.MULTI STANDARD SOUND PROCESSOR

The MSP 34x10G family of single-chip Multi-standard Sound Processors covers the sound processing of all analog TV-Standards worldwide, as well as the NICAM digital sound standards. The full TV sound processing, starting with analog sound IF signal-in, down to processed analog AF-out, is performed on a single chip. The DBX noise reduction, or alternatively, MICRONAS Noise Reduction (MNR) is performed alignment free. Other processed standards are the Japanese FM-FM multiplex standard (EIA-J) and the FM Stereo Radio standard.

6.SOUND OUTPUT STAGE WITH TDA7269A

The TDA7269A is class AB dual Audio power amplifier assembled in the Multi-watt package, specially designed for high quality sound application as Hi-Fi music centers and stereo TV sets.

7.BERTICAL OUTPUT STAGE WITH STV9379FA

The IC STV9379FA is the vertical deflection booster circuit. Two supply voltages, +14V and -14V are needed to scan the inputs VERT+ and VERT-, respectively. And a third supply voltage, +60V for the flyback limiting are needed. The vertical deflection coil is connected in series between the output and feedback to the input.

8.VIDEO OUTPUT AMPLIFIER TDA6108

The TDA6108Q includes three video output amplifiers is intended to drive the three cathodes of a colour picture tube.

9. POWER SUPPLY (SMPS)

The DC voltages required at various parts of the chassis are provided by an SMPS transformer controlled by the IC MC44608, which is designed for driving, controlling and protecting switching transistor of SMPS. The transformer generates 145V for FBT input, +/-14V for audio amplifier, 5V and 3.3V stand by voltage and 8V, 12V and 5V supplies for other different parts of the chassis.

An optocoupler is used to control the regulation of line voltage and stand-by power consumption. There is a regulation circuit in secondary side. This circuit produces a control voltage according to the changes in 145V DC voltage, via an optocoupler (TCET1102G) to pin3 of the IC.

During the switch on period of the transistor, energy is stored in the transformer. During the switch off period energy is fed to the load via secondary winding. By varying switch-on time of the power transistor, it controls each portion of energy transferred to the second side such that the output voltage remains nearly independent of load variations.

10. MICROCONTROLLER SDA55XX

10.1. General Features

- Feature selection via special function register
- Simultaneous reception of TTX, VPS, PDC, and WSS (line 23)
- Supply Voltage 2.5 and 3.3 V
- ROM version package PSDIP52-2, PMQFP64-1
- Romless version package PMQFP100-2, PLCC84-2

10.2. External Crystal and Programmable Clock Speed

- Single external 6MHz crystal, all necessary clocks are generated internally
- CPU clock speed selectable via special function registers.
- Normal Mode 33.33 MHz CPU clock, Power Save mode 8.33 MHz

10.3. Microcontroller Features

- 8bit 8051 instruction set compatible CPU.
- 33.33-MHz internal clock (max.)
- 0.360 ms (min.) instruction cycle
- Two 16-bit timers
- Watchdog timer
- Capture compare timer for infrared remote control decoding
- Pulse width modulation unit (2 channels 14 bit, 6 channels 8 bit)
- ADC (4 channels, 8 bit)
- UART (rx, tx)

10.4. Memory

- Non-multiplexed 8-bit data and 16 ... 20-bit address bus (ROMless Version)
- Memory banking up to 1Mbyte (Romless version)
- Up to 128 Kilobyte on Chip Program ROM
- Eight 16-bit data pointer registers (DPTR)
- 256-bytes on-chip Processor Internal RAM (IRAM)
- 128bytes extended stack memory.
- Display RAM and TXT/VPS/PDC/WSS-Acquisition-Buffer directly accessible via MOVX
- UP to 16KByte on Chip Extended RAM (XRAM) consisting of;
 - 1 Kilobyte on-chip ACQ-buffer-RAM (access via MOVX)
 - 1 Kilobyte on-chip extended-RAM (XRAM, access via MOVX) for user software
 - 3 Kilobyte Display Memory

10.5. Display Features

- ROM Character Set Supports all East and West European Languages in single device
- Mosaic Graphic Character Set
- Parallel Display Attributes
- Single/Double Width/Height of Characters
- Variable Flash Rate
- Programmable Screen Size (25 Rows x 33...64 Columns)
- Flexible Character Matrixes (HxV) 12 x 9...16
- Up to 256 Dynamical Redefinable Characters in standard mode; 1024 Dynamical Redefinable Characters in Enhanced Mode
- CLUT with up to 4096 colour combinations

- Up to 16 Colours per DRCS Character
- One out of Eight Colours for Foreground and Background Colours for 1-bit DRCS and ROM Characters
- Shadowing
- Contrast Reduction
- Pixel by Pixel Shiftable Cursor With up to 4 Different Colours
- Support of Progressive Scan and 100 Hz.
- 3 X 4Bits RGB-DACs On-Chip
- Free Programmable Pixel Clock from 10 MHz to 32MHz
- Pixel Clock Independent from CPU Clock
- Multinorm H/V-Display Synchronization in Master or Slave Mode

10.6.Acquisition Features

- Multi-standard Digital Data Slicer
- Parallel Multi-norm Slicing (TTX, VPS, WSS, CC, G+)
- Four Different Framing Codes Available
- Data Caption only limited by available Memory
- Programmable VBI-buffer
- Full Channel Data Slicing Supported
- Fully Digital Signal Processing
- Noise Measurement and Controlled Noise Compensation
- Attenuation Measurement and Compensation
- Group Delay Measurement and Compensation
- Exact Decoding of Echo Disturbed Signals

10.7.Ports

- One 8-bit I/O-port with open drain output and optional I²C Bus emulation support (Port0)
- Two 8-bit multifunction I/O-ports (Port1, Port3)
- One 4-bit port working as digital or analogue inputs for the ADC (Port2)
- One 2-bit I/O port with secondary function (P4.2, 4.3, 4.7)
- One 4-bit I/O-port with secondary function (P4.0, 4.1, 4.4) (Not available in P-SDIP 52)

11.CLASS AB STEREO HEADPHONE DRIVER TDA1308

The TDA1308 is an integrated class AB stereo headphone driver contained in a DIP8 plastic package. The device is fabricated in a 1 mm CMOS process and has been primarily developed for portable digital audio applications.

12.SAW FILTERS

K3953M:

Standard

B/G, D/K, I, L/L'

Features

TV IF filter with Nyquist slopes at 33,90 MHz and 38,90 MHz

Constant group delay

Suitable for CENELEC EN 55020

Terminals

Tinned CuFe alloy

Pin configuration

1 Input

2 Input - ground

3 Chip carrier - ground

4 Output

5 Output

K3958M:

Standard

B/G, D/K, I, L/L'

Features

TV IF filter with Nyquist slopes at 33.90 MHz and 38.90 MHz

Constant group delay

Terminal and Pin configuration are the same with K3953M

K9356M:

Standard

B/G, D/K, I, L

Features

TV IF audio filter with pass band for sound carriers at 32,40 MHz (D/K, L), 32,90 MHz (I) and 33,40 MHz (B/G)

Terminal and Pin configuration are the same with K3953M

K9656M:

Standard

B/G, D/K, I, L/L'

Features

TV IF audio filter with two channels

Channel 1 (L') with one pass band for sound carriers at 40,40 MHz (L') and 39,75 MHz (L' - NICAM)

Channel 2 (B/G, D/K, L, I) with one pass band for sound carriers between 32,35 MHz and 33,40 MHz

Terminal and Pin configuration are the same with K3953M

13.IC DESCRIPTIONS

LM317T

MSP3410G

TEA6415

TDA7269A

24C08

MC44608

TDA9885T

TDA1308T

VDP3130Y

STV9379FA

LM7805/LM7808

SDA55XX

TCET1102G

13.1.LM317T

13.1.1.Description

The LM317T is an adjustable 3 terminal positive voltage regulator capable of supplying in excess of 1.5 amps over an output range of 1.25 to 37 volts. This voltage regulator is exceptionally easy to use and requires only two external resistors to set the output voltage. Further, it employs internal current limiting, thermal shutdown and safe area compensation, making it essentially blow-out proof. The LM317 serves a wide variety of applications including local, on card regulation. This device can also be used to make a programmable output regulator, or by connecting a fixed resistor between the adjustment and output, the LM317 can be used as a precision current regulator.

13.1.2.Features

- Output Current in Excess of 1.5 A
- Output Adjustable between 1.2 V and 37 V
- Internal Thermal Overload Protection
- Internal Short Circuit Current Limiting Constant with Temperature
- Output Transistor Safe-Area Compensation
- Floating Operation for High Voltage Applications
- Available in Surface Mount D²PAK, and Standard 3-Lead Transistor Package
- Eliminates Stocking many Fixed Voltages

13.2.TDA1308T

13.2.1.General Description

The TDA1308 is an integrated class AB stereo headphone driver contained in an SO8 or a DIP8 plastic package. The device is fabricated in a 1 mm CMOS process and has been primarily developed for portable digital audio applications. It gets its input from two analog audio outputs (DACA_L and DACA_R) of MSP 34x0G. The gain of the output is adjustable by the feedback resistor between the inputs and outputs.

13.2.2.Features

- Wide temperature range
- No switch ON/OFF clicks
- Excellent power supply ripple rejection

- Low power consumption
- Short-circuit resistant
- High performance
- high signal-to-noise ratio
- High slew rate
- Low distortion
- Large output voltage swing.

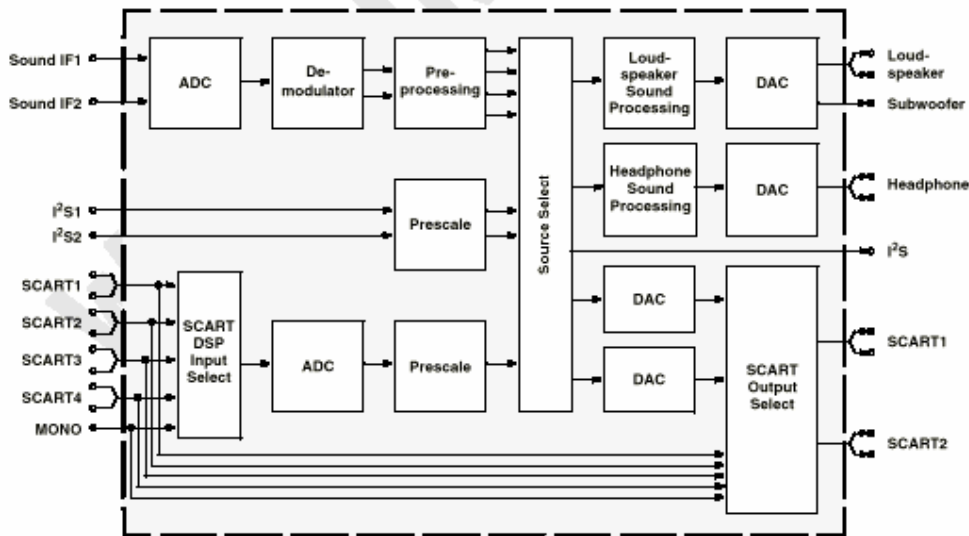
13.2.3.Pinning

SYMBOL	PIN	DESCRIPTION
OUTA	1	Output A
INA(neg)	2	Inverting input A
INA(pos)	3	Non-inverting input A
V _{SS}	4	Negative supply
INB(pos)	5	Non-inverting input B
INB(neg)	6	Inverting input B
OUTB	7	Output B
V _{DD}	8	Positive supply

13.3.MSP34X0G (MSP3410G)

13.3.1.Description

The MSP 34x0G family of single-chip Multi standard Sound Processors covers the sound processing of all analog TV-Standards worldwide, as well as the NICAM digital sound standards. The full TV sound processing, starting with analog sound IF signal-in, down to processed analog AF-out, is performed on a single chip. Figure shows a simplified functional block diagram of the MSP 34x0G.



This new generation of TV sound processing ICs now includes versions for processing the multi channel television sound (MTS) signal conforming to the standard recommended by the Broadcast Television Systems Committee (BTSC). The DBX noise reduction, or alternatively, MICRONAS Noise Reduction (MNR) is performed alignment free. Other processed standards are the Japanese FM-FM multiplex standard (EIA-J) and the FM Stereo Radio standard. Current ICs have to perform adjustment procedures in order to achieve good stereo separation for BTSC and EIA-J. The MSP 34x0G has optimum stereo performance without any adjustments.

All MSP 34x0G versions are pin and software downward compatible to the MSP34x0D. The MSP34x0G further simplifies controlling software. Standard selection requires a single I²C transmission only.

The MSP 34x0G has built-in automatic functions: The IC is able to detect the actual sound standard automatically (Automatic Standard Detection). Furthermore, pilot levels and identification signals can be evaluated internally with subsequent switching between mono/stereo/bilingual; no I²C interaction is necessary (Automatic Sound Selection).

13.3.2.Features

Standard Selection with single I²C transmission
Automatic Standard Detection of terrestrial TV standards
Automatic Sound Selection (mono/stereo/bilingual), new registers MODUS, STATUS
Two selectable sound IF (SIF) inputs
Automatic Carrier Mute function
Interrupt output programmable (indicating status change)
Loudspeaker / Headphone channel with volume, balance, bass, treble, loudness
AVC: Automatic Volume Correction
Subwoofer output with programmable low-pass and complementary high-pass filter
5-band graphic equalizer for loudspeaker channel
Spatial effect for loudspeaker channel
Four Stereo SCART (line) inputs, one Mono input; two Stereo SCART outputs
Complete SCART in/out switching matrix
Two I²S inputs; one I²S output
Dolby Pro Logic with DPL 351xA coprocessor
All analog FM-Stereo A2 and satellite standards; AM-SECAM L standard
Simultaneous demodulation of (very) high-deviation FM-Mono and NICAM
Adaptive deemphasis for satellite (Wegener-Panda, acc. to ASTRA specification)
ASTRA Digital Radio (ADR) together with DRP 3510A
All NICAM standards
Korean FM-Stereo A2 standard

13.3.3.Pin connections

NC = not connected; leave vacant
LV = if not used, leave vacant
X = obligatory; connect as described in circuit diagram
DVSS: if not used, connect to DVSS
AHVSS: connect to AHVSS

Pin No.					Pin Name	Type	Connection (if not used)	Short Description
PLCC 68-pin	PSDIP 64-pin	PSDIP 52-pin	PQFP 80-pin	PLQFP 64-pin				
1	16	14	9	8	ADR_WS	OUT	LV	ADR word strobe
2	-	-	-	-	NC		LV	Not connected
3	15	13	8	7	ADR_DA	OUT	LV	ADR Data Output
4	14	12	7	6	I2S_DA_IN1	IN	LV	I ² S1 data input
5	13	11	6	5	I2S_DA_OUT	OUT	LV	I ² S data output
6	12	10	5	4	I2S_WS	IN/OUT	LV	I ² S word strobe
7	11	9	4	3	I2S_CL	IN/OUT	LV	I ² S clock
8	10	8	3	2	I2C_DA	IN/OUT	X	I ² C data
9	9	7	2	1	I2C_CL	IN/OUT	X	I ² C data
10	8	-	1	64	NC		LV	Not connected
11	7	6	80	63	STANDBYQ	IN	X	Stand-by (low-active)
12	6	5	79	62	ADR_SEL	IN	X	I ² C bus address select
13	5	4	78	61	D_CTR_I/O_0	IN/OUT	LV	D_CTR_I/O_0
14	4	3	77	60	D_CTR_I/O_1	IN/OUT	LV	D_CTR_I/O_1
15	3	-	76	59	NC		LV	Not connected
16	2	-	75	58	NC		LV	Not connected
17	-	-	-	-	NC		LV	Not connected
18	1	2	74	57	AUD_CL_OUT	OUT	LV	Audio clock output (18.432 MHz)
19	64	1	73	56	TP		LV	Test pin
20	63	52	72	55	XTAL_OUT	OUT	X	Crystal oscillator
21	62	51	71	54	XTAL_IN	IN	X	Crystal oscillator
22	61	50	70	53	TESTEN	IN	X	Test pin
23	60	49	69	52	ANA_IN2+	IN	AVSS via 56 pF/LV	IF Input 2 (can be left vacant, only if IF input 1 is also not in use)
24	59	48	68	51	ANA_IN-	IN	AVSS via 56 pF/LV	IF common (can be left vacant, only if IF input 1 is also not in use)
25	58	47	67	50	ANA_IN1+	IN	LV	IF input 2
26	57	46	66	49	AVSUP		X	Analog power supply 5v
-	-	-	65	-	AVSUP		X	Analog power supply 5v

-	-	-	64	-	NC		LV	Not connected
-	-	-	63	-	NC		LV	Not connected
27	56	45	62	48	AVSS		X	Analog ground
-	-	-	61	-	AVSS		X	Analog ground
28	55	44	60	47	MONO_IN	IN	LV	Mono input
-	-	-	59	-	NC		LV	Not connected
29	54	43	58	46	VREFTOP		X	Reference voltage IF A/D converter
30	53	42	57	45	SC1_IN_R	IN	LV	SCART 1 input, right
31	52	41	56	44	SC1_IN_L	IN	LV	SCART 1 input, left
32	51	-	55	43	ASG1		AHVSS	Analog Shield Ground 1
33	50	40	54	42	SC2_IN_R	IN	LV	SCART 2 input, right
34	49	39	53	41	SC2_IN_L	IN	LV	SCART 2 input, left
35	48	-	52	40	ASG2		AHVSS	Analog Shield Ground 2
36	47	38	51	39	SC3_IN_R	IN	LV	SCART 3 input, right
37	46	37	50	38	SC3_IN_L	IN	LV	SCART 3 input, left
38	45	-	49	37	ASG4		AHVSS	Analog Shield Ground 4
39	44	-	48	36	SC4_IN_R	IN	LV	SCART 4 input, right
40	43	-	47	35	SC4_IN_L	IN	LV	SCART 4 input, left
41	-	-	46	-	NC		LV or AHVSS	Not connected
42	42	36	45	34	AGNDC		X	Analog reference voltage
43	41	35	44	33	AHVSS		X	Analog ground
-	-	-	43	-	AHVSS		X	Analog ground
-	-	-	42	-	NC		LV	Not connected
-	-	-	41	-	NC		LV	Not connected
44	40	34	40	32	CAPL_M		X	Volume capacitor MAIN
45	39	33	39	31	AHVSUP		X	Analog power supply 8V
46	38	32	38	30	CAPL_A		X	Volume capacitor AUX
47	37	31	37	29	SC1_OUT_L	OUT	LV	SCART output 1, left
48	36	30	36	28	SC1_OUT_R	OUT	LV	SCART output 1, right
49	35	29	35	27	VREF1		X	Reference ground 1
50	34	28	34	26	SC2_OUT_L	OUT	LV	SCART output 2, left
51	33	27	33	25	SC2_OUT_R	OUT	LV	SCART output 2, right
52	-	-	32	-	NC		LV	Not connected
53	32	-	31	24	NC		LV	Not connected
54	31	26	30	23	DACM_SUB	OUT	LV	Subwoofer output
55	30	-	29	22	NC		LV	Not connected
56	29	25	28	21	DACM_L	OUT	LV	Loudspeaker out, left
57	28	24	27	20	DACM_R	OUT	LV	Loudspeaker out, right
58	27	23	26	19	VREF2		X	Reference ground 2
59	26	22	25	18	DACA_L	OUT	LV	Headphone out, left
60	25	21	24	17	DACA_R	OUT	LV	Headphone out, right
-	-	-	23	-	NC		LV	Not connected
-	-	-	22	-	NC		LV	Not connected
61	24	20	21	16	RESETQ	IN	X	Power-on-reset
62	23	-	20	15	NC		LV	Not connected
63	22	-	19	14	NC		LV	Not connected
64	21	19	18	13	NC		LV	Not connected
65	20	18	17	12	I2S_DA_IN2	IN	LV	I ² S2-data input
66	19	17	16	11	DVSS		X	Digital ground
-	-	-	15	-	DVSS		X	Digital ground
-	-	-	14	-	DVSS		X	Digital ground
67	18	16	13	10	DVSUP		X	Digital power supply 5V
-	-	-	12	-	DVSUP		X	Digital power supply 5V
-	-	-	11	-	DVSUP		X	Digital power supply 5V
68	17	15	10	9	ADR_CL	OUT	LV	ADR clock

13.4.VDP313xY

13.4.1.Introduction

The VDP 313xY is a video IC family of high-quality single-chip video processors. Modular design and a sub-micron technology allow the economic integration of features in all classes of TV sets. The VDP 313xY family is based on the VDP 31xxB including YCRCb inputs for DVD component signals.

The VDP 313xY includes complete video, display and deflection processing. All processing is done digitally, the video frontend and video backend are interfacing to the analog world. Most functions of the VDP can be controlled by software via I²C-Bus interface

13.4.2.Features

Video Decoding and Processing

- four CVBS, one S-VHS input, one YC R C B component input
- integrated high-quality A/D converters and associated clamp and AGC circuits
- adaptive 2H comb filter Y/C separator
- multistandard colour decoder PAL/NTSC/SECAM including all substandards
- multistandard sync decoder
- automatic standard recognition
- black-line detector
- linear horizontal scaling (0.25...4), as well as nonlinear horizontal scaling "Panoramavision"
- black-level expander
- dynamic peaking
- soft limiter (gamma correction)
- colour transient improvement

RGB Processing and Deflection

- programmable RGB matrix
- two analog RGB / Fastblank inputs
- half-contrast switch
- picture frame generator
- scan velocity modulation output
- high-performance H/V deflection
- separate ADC for tube measurements
- EHT compensation
- angle and bow correction
- one 20.25 MHz crystal, few external components
- I²C-Bus Interface
- 64-pin PSDIP package

13.4.3.Pin Connections and short descriptions

NC = not connected

X = obligatory; connect as described in circuit diagram

OUT = Output

LV = if not used, leave vacant

IN = Input

SUPPLY = Supply Pin

Pin no PSDIP 64-pin	Pin name	Type	Connection (if not used)	Short description
1	TEST	IN	GNDD	Test Input
2	RESQ	IN	X	Reset Input
3	SCL	IN/OUT	X	I ² C Bus Clock
4	SDA	IN/OUT	X	I ² C Bus Data
5	GNDD	SUPPLY	X	Digital Ground
6	HCS	IN	LV	Half Contrast Switch Input
7	FSY	OUT	LV	Front Sync Output
8	CSY	OUT	LV	Composite Sync Output
9	VS	OUT	LV	Vertical Sync Output (=VS Bit of MSY for TPU)
10	INTLC	OUT	LV	Intefrace Control Output
11	VPROT	IN	GNDAB	Vertical Protection Input
12	SAFETY	IN	GNDAB	Safety Input
13	HFLB	IN	HOUT	Horizontal Flyback Input
14	GNDD	SUPPLY	X	Digital Ground
15	VSUPD	SUPPLY	X	Digital Supply Voltage (3.3V)
16	GNDD	SUPPLY	X	Digital Ground
17	VSUPD	SUPPLY	LV	Digital Supply Voltage (3.3V)
18	P0	IN/OUT	LV	Port 1, Bit 0
19	P1	IN/OUT	LV	Port 1, Bit 1
20	P2	IN/OUT	GNDD	Port 1, Bit 2
21	P3	IN/OUT	GNDD	Port 1, Bit 3
22	P4	IN/OUT	GNDD	Port 1, Bit 4
23	P5	IN/OUT	GNDD	Port 1, Bit 5
24	P6	IN/OUT	GNDD	Port 1, Bit 6

25	GNDD	SUPPLY	X	Digital Ground
26	RSW2	OUT	GNDAB	Range Switch 2 for Measurement ADC
27	RSW1	OUT	GNDAB	Range Switch 1 for Measurement ADC
28	SENSE	IN	GNDAB	Sense ADC Input
29	GNDM	SUPPLY	X	Ground, MADC input
30	VERTQ	OUT	LV	Inverted Vertical Sawtooth Output
31	VERT	OUT	LV	Vertical Sawtooth Output
32	E/w	OUT	LV	Vertical Parabola Output
33	XREF	IN	X	Reference Input for RGB DACs
34	SVMOUT	OUT	VSUPAB	Analog Scan Velocity Modulation Output
35	GNDAB	SUPPLY	X	Analog Ground Backend
36	VSUPAB	SUPPLY	X	Analog Supply Voltage (5.0V) Backend
37	ROUT	OUT	VSUPAB	Analog Red Output
38	GOUT	OUT	VSUPAB	Analog Green Output
39	BOUT	OUT	VSUPAB	Analog Blue Output
40	VRD	IN	X	DAC Reference
41	RIN	IN	GNDAB	Analog Red Input
42	GIN	IN	GNDAB	Analog Green Input
43	BIN	IN	GNDAB	Analog Blue Input
44	FBLIN	IN	GNDAB	Fast Blank Input
45	RIN2	IN	GNDAB	Analog Red Input2
46	GIN2	IN	GNDAB	Analog Green Input2
47	BIN2	IN	GNDAB	Analog Blue Input2
48	FBLIN2	IN	GNDAB	Fast Blank Input2
49	CLK20	OUT	LV	20.25 MHz System Clock Output
50	HOUT	OUT	X	Horizontal Drive Output
51	XTAL 1	IN	X	Analog Crystal Input
52	XTAL 2	OUT	X	Analog Crystal Output
53	CIN 2/CRIN		LV	Analog Chroma 2/Component C _R Input
54	CBIN	IN	LV	Component C _B Input
55	GNDAF	SUPPLY	X	Analog Ground Frontend
56	SGND	IN	GNDAF	Signal Ground for Analog Input
57	VRT	IN	X	Reference Voltage Top, Video ADC
58	VSUPAF	SUPPLY	X	Analog Supply Voltage (5.0V) Frontend
59	VOUT	OUT	LV	Analog Video Output
60	CIN1	IN	VRT	Analog Chroma 1 Input
61	VIN1	IN	VRT	Analog Video 1 Input
62	VIN2	IN	VRT	Analog Video 2 Input
63	VIN3	IN	VRT	Analog Video 3 Input
64	VIN4	IN	VRT	Analog Video 4 Input

13.5.TEA6415C

13.5.1.General Description

The main function of the IC is to switch 8 video input sources on 6 outputs. Each output can be switched on only one of each input. On each input an alignment of the lowest level of the signal is made (bottom of synch. top for CVBS or black level for RGB signals). Each nominal gain between any input and output is 6.5dB. For D2MAC or Chroma signal the alignment is switched off by forcing, with an external resistor bridge, 5 V_{DC} on the input. Each input can be used as a normal input or as a MAC or Chroma input (with external resistor bridge). All the switching possibilities are changed through the BUS. Driving 75Ω load needs an external transistor. It is possible to have the same input connected to several outputs. The starting configuration upon power on (power supply: 0 to 10V) is undetermined. In this case, 6 words of 16 bits are necessary to determine one configuration. In other case, 1 word of 16 bits is necessary to determine one configuration.

13.5.2.Features

- 20MHz Bandwidth
- Cascadable with another TEA6415C (Internal address can be changed by pin 7 voltage)
- 8 Inputs (CVBS, RGB, MAC, CHROMA,...)
- 6 Outputs
- Possibility of MAC or chroma signal for each input by switching-off the clamp with an external resistor bridge
- Bus controlled

- 6.5dB gain between any input and output
- 55dB crosstalk at 5mHz
- Fully ESD protected

13.5.3.Pinning

1. Input : Max : 2Vpp, Input Current: 1mA, Max : 3mA
2. Data : Low level: -0.3V Max: 1.5V,
High level : 3.0V Max : Vcc+0.5V
3. Input : Max : 2Vpp, Input Current: 1mA, Max : 3mA
4. Clock : Low level: -0.3V Max: 1.5V,
High level : 3.0V Max : Vcc+0.5V
5. Input : Max : 2Vpp, Input Current: 1mA, Max : 3mA
6. Input : Max : 2Vpp, Input Current: 1mA, Max : 3mA
7. Prog
8. Input : Max : 2Vpp, Input Current: 1mA, Max: 3mA
9. Vcc : 12V
10. Input : Max : 2Vpp, Input Current: 1mA, Max : 3mA
11. Input : Max : 2Vpp, Input Current: 1mA, Max : 3mA
12. Ground
13. Output : 5.5Vpp, Min : 4.5Vpp
14. Output : 5.5Vpp, Min : 4.5Vpp
15. Output : 5.5Vpp, Min : 4.5Vpp
16. Output : 5.5Vpp, Min : 4.5Vpp
17. Output : 5.5Vpp, Min : 4.5Vpp
18. Output : 5.5Vpp, Min : 4.5Vpp
19. Ground
20. Input : Max : 2Vpp, Input Current : 1mA, Max : 3mA

13.6.STV9379FA

13.6.1.Description

Designed for monitors and high performance TVs, the STV9379FA vertical deflection booster can handle flyback voltage up to 90V. Further to this, it is possible to have a flyback voltage, which is more than the double of the supply (Pin 2). This allows to decrease the power consumption, or to decrease the flyback time for a given supply voltage. The STV9379FA operates with supplies up to 42V and provides up to 2.6APP output current to drive the yoke. The STV9379FA is offered in HEPTAWATT package.

13.6.2.Features

Power Amplifier
Thermal Protection
Output Current Up To 2.6APP
Flyback Voltage Up To 90V (on Pin 5)
Suitable For DC Coupling Application
External Flyback Supply

13.6.3.Pinning

Pin1 : Output Stage Supply
Pin2 : Output
Pin3 : GND or Negative Supply
Pin4 : Flyback Supply
Pin5 : Supply Voltage
Pin6 : Inverting Input
Pin7 : Non-inverting Input

13.7.TDA7269A

13.7.1.Description

The TDA7269A is class AB dual Audio power amplifier assembled in the Multiwatt package, specially designed for high quality sound application as Hi-Fi music centers and stereo TV sets.

13.7.2.Features

Wide Supply Voltage Range Up To $\pm 20V$
Split Supply
High Output Power
14 + 14W @THD =10%, $R_L = 8\Omega$, $V_S = +16V$
No Pop at Turn-On/Off
Mute (Pop Free)
Stand-By Feature (Low I_q)
Short Circuit Protection To Gnd
Thermal Overload Protection

13.8.LM7800 (LM7805/LM7808)

13.8.1.Description

The L7800 series of three-terminal positive regulators is available in TO-220 TO-220FP TO-3 and D 2 PAK packages and several fixed output voltages, making it useful in a wide range of applications. These regulators can provide local on-card regulation, eliminating the distribution problems associated with single point regulation. Each type employs internal current limiting, thermal shutdown and safe area protection, making it essentially indestructible. If adequate heat sinking is provided, they can deliver over 1A output current. Although designed primarily as fixed voltage regulators, these devices can be used with external components to obtain adjustable voltages and currents.

13.8.2.Features

Output Current Up To 1.5 A
Output Voltages of 5; 5.2; 6; 8; 8.5; 9; 12; 15; 18; 24V
Thermal Over load protection
Short Circuit Protection
Output Transition SOA Protection

13.9.AT24C08

13.9.1.Description

The AT24C01A/02/04/08/16 provides 1024/2048/4096/8192/16384 bits of serial electrically erasable and programmable read-only memory (EEPROM) organized as 128/256/512/1024/2048 words of 8 bits each. The device is optimized for use in many industrial and commercial applications where low-power and low-voltage operation are essential. The AT24C01A/02/04/08/16 is available in space-saving 8-pin PDIP, (AT24C01A/02/04/08/16), 8-lead TSSOP (AT24C01A/02/04/08/16) and 8-lead JEDEC SOIC (AT24C01A/02/04/08/16) packages and is accessed via a 2-wire serial interface. In addition, the entire family is available in 5.0V (4.5V to 5.5V), 2.7V (2.7V to 5.5V), 2.5V (2.5V to 5.5V) and 1.8V (1.8V to 5.5V) versions.

13.9.2.Features

- Low-voltage and Standard-voltage Operation
 - 5.0 (V CC = 4.5V to 5.5V)
 - 2.7 (V CC = 2.7V to 5.5V)
 - 2.5 (V CC = 2.5V to 5.5V)
 - 1.8 (V CC = 1.8V to 5.5V)
- Internally Organized 128 x 8 (1K), 256 x 8 (2K), 512 x 8 (4K), 1024 x 8 (8K) or 2048 x 8 (16K)
- 2-wire Serial Interface
- Schmitt Trigger, Filtered Inputs for Noise Suppression
- Bi-directional Data Transfer Protocol
- 100 kHz (1.8V, 2.5V, 2.7V) and 400 kHz (5V) Compatibility
- Write Protect Pin for Hardware Data Protection

- 8-byte Page (1K, 2K), 16-byte Page (4K, 8K, 16K) Write Modes
- Partial Page Writes are Allowed
- Self-timed Write Cycle (10 ms max)
- High-reliability
 - Endurance: 1 Million Write Cycles
 - Data Retention: 100 Years
- Automotive Grade and Extended Temperature Devices Available
- 8-lead JEDEC SOIC, 8-pin PDIP and 8-lead TSSOP Packages

13.9.3.Pin Configurations

Pin name	Function
A0-A2	Address Inputs
SDA	Serial Data
SCL	Serial Clock Input
WP	Write Protect
NC	No Connect

13.10.SDA5555

13.10.1.General definition

The SDA55XX is a single chip teletext decoder for decoding World System Teletext data as well as Video Programming System (VPS), Program Delivery Control (PDC), and Wide Screen Signalling (WSS) data used for PAL plus transmissions (Line 23). The device also supports Closed caption acquisition and decoding. The device provides an integrated general-purpose, fully 8051-compatible Microcontroller with television specific hardware features. Microcontroller has been enhanced to provide powerful features such as memory banking, data pointers, and additional interrupts etc. The on-chip display unit for displaying Level 1.5 teletext data can also be used for customer defined on screen displays. Internal XRAM consists of up to 16 Kbytes. Device has an internal ROM of up to 128 KBytes. ROMless versions can access up to 1 MByte of external RAM and ROM. The SDA 55XX supports a wide range of standards including PAL, NTSC and contains a digital slicer for VPS, WSS, PDC, TTX and Closed Caption, an accelerating acquisition hardware module, a display generator for Level 1.5 TTX data and powerful On screen Display capabilities based on parallel attributes, and Pixel oriented characters (DRCS).

13.10.2.Features

General

- Feature selection via special function register
- Simultaneous reception of TTX, VPS, PDC, and WSS (line 23)
- Supply Voltage 2.5 and 3.3 V
- ROM version package PSDIP52-2, PMQFP64-1
- Romless version package PMQFP100-2, PLCC84-2

External Crystal and Programmable Clock Speed

- Single external 6MHz crystal, all necessary clocks are generated internally
- CPU clock speed selectable via special function registers.
- Normal Mode 33.33 MHz CPU clock, Power Save mode 8.33 MHz

Microcontroller Features

- 8bit 8051 instruction set compatible CPU.
- 33.33-MHz internal clock (max.)
- 0.360ms (min.) instruction cycle
- Two 16-bit timers
- Watchdog timer
- Capture compare timer for infrared remote control decoding
- Pulse width modulation unit (2 channels 14 bit, 6 channels 8 bit)
- ADC (4 channels, 8 bit)
- UART

Memory

- Non-multiplexed 8-bit data and 16 ... 20-bit address bus (ROMless Version)
- Memory banking up to 1Mbyte (Romless version)
- Up to 128 Kilobyte on Chip Program ROM
- Eight 16-bit data pointer registers (DPTR)
- 256-bytes on-chip Processor Internal RAM (IRAM)
- 128bytes extended stack memory.
- Display RAM and TXT/VPS/PDC/WSS-Acquisition-Buffer directly accessible via MOVX
- UP to 16KByte on Chip Extended RAM (XRAM) consisting of;
 - 1 Kilobyte on-chip ACQ-buffer-RAM (access via MOVX)
 - 1 Kilobyte on-chip extended-RAM (XRAM, access via MOVX) for user software
 - 3 Kilobyte Display Memory

Display Features

- ROM Character Set Supports all East and West European Languages in single device
- Mosaic Graphic Character Set
- Parallel Display Attributes
- Single/Double Width/Height of Characters
- Variable Flash Rate
- Programmable Screen Size (25 Rows x 33...64 Columns)
- Flexible Character Matrixes (HxV) 12 x 9...16
- Up to 256 Dynamical Redefinable Characters in standard mode; 1024 Dynamical Redefinable Characters in Enhanced Mode
- CLUT with up to 4096 colour combinations
- Up to 16 Colours per DRCS Character
- One out of Eight Colours for Foreground and Background Colours for 1-bit DRCS and ROM Characters
- Shadowing
- Contrast Reduction
- Pixel by Pixel Shiftable Cursor With up to 4 Different Colours
- Support of Progressive Scan and 100 Hz.
- 3 X 4Bits RGB-DACs On-Chip
- Free Programmable Pixel Clock from 10 MHz to 32MHz
- Pixel Clock Independent from CPU Clock
- Multinorm H/V-Display Synchronization in Master or Slave Mode

Acquisition Features

- Multistandard Digital Data Slicer
- Parallel Multi-norm Slicing (TTX, VPS, WSS, CC, G+)
- Four Different Framing Codes Available
- Data Caption only Limited by available Memory
- Programmable VBI-buffer
- Full Channel Data Slicing Supported
- Fully Digital Signal Processing
- Noise Measurement and Controlled Noise Compensation
- Attenuation Measurement and Compensation
- Group Delay Measurement and Compensation
- Exact Decoding of Echo Disturbed Signals

Ports

- One 8-bit I/O-port with open drain output and optional I²C Bus emulation support (Port 0)
- Two 8-bit multifunction I/O-ports (Port 1, Port 3)
- One 4-bit port working as digital or analog inputs for the ADC (Port 2)
- One 2-bit I/O port with secondary functions (P4.2, 4.3, 4.7)
- One 4-bit I/O-port with secondary function (P4.0, 4.1, 4.4) (Not available in P-SDIP 52)

13.11.MC44608

13.11.1.Description

The MC44608 is a high performance voltage mode controller designed for off-line converters. This high voltage circuit that integrates the start-up current source and the oscillator capacitor, requires few

external components while offering a high flexibility and reliability. The device also features a very high efficiency stand-by management consisting of an effective Pulsed Mode operation. This technique enables the reduction of the stand-by power consumption to approximately 1W while delivering 300mW in a 150W SMPS.

- Integrated Start-Up Current Source
- Lossless Off-Line Start-Up
- Direct Off-Line Operation
- Fast Start-Up

13.11.2.General Features

- Flexibility
- Duty Cycle Control
- Under voltage Lockout with Hysteresis
- On Chip Oscillator Switching Frequency 40, or 75kHz
- Secondary Control with Few External Components

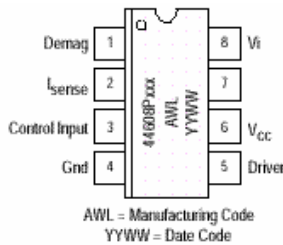
Protections

- Maximum Duty Cycle Limitation
- Cycle by Cycle Current Limitation
- Demagnetization (Zero Current Detection) Protection
- “Over Vcc Protection” Against Open Loop
- Programmable Low Inertia Over Voltage Protection Against Open Loop
- Internal Thermal Protection

GreenLine™ Controller

- Pulsed Mode Techniques for a Very High Efficiency Low Power Mode
- Lossless Startup
- Low dV/dT for Low EMI Radiations

13.11.3.Pin Connections



13.11.4.Pin Function description

Pin	Name	Description
1	Demag	The Demag pin offers 3 different functions: Zero voltage crossing detection (50mV), 24mA current detection and 120mA current detection. The 24mA level is used to detect the secondary reconfiguration status and the 120mA level to detect an Over Voltage status called Quick OVP.
2	ISENSE	The Current Sense pin senses the voltage developed on the series resistor inserted in the source of the power MOSFET. When I sense reaches 1V, the Driver output (pin 5) is disabled. This is known as the Over Current Protection function. A 200mA current source is flowing out of the pin 3 during the start-up phase and during the switching phase in case of the Pulsed Mode of operation. A resistor can be inserted between the sense resistor and the pin 3; thus a programmable peak current detection can be performed during the SMPS stand-by mode.
3	Control Input	A feedback current from the secondary side of the SMPS via the opto-coupler is injected into this pin. A resistor can be connected between this pin and GND to allow the programming of the Burst duty cycle during the Stand-by mode.
4	Ground	This pin is the ground of the primary side of the SMPS.
5	Driver	The current and slew rate capability of this pin are suited to drive Power MOSFETs.
6	VCC	This pin is the positive supply of the IC. The driver output gets disabled when the voltage becomes higher than 15V and the operating range is between 6.6V and 13V. An intermediate voltage level of 10V creates a disabling condition called Latched Off phase.
7		This pin is to provide isolation between the Vi pin 8 and the VCC pin 6.
8	Vi	This pin can be directly connected to a 500V voltage source for start-up function of the IC. During the Start-up phase a 9 mA current source is internally delivered to the VCC pin 6 allowing a rapid charge of the VCC capacitor. As soon as the IC starts-up, this current source is disabled.

13.12.TCET1102G

13.12.1.Description

The TCET110/ TCET2100/ TCET4100 consists of a phototransistor optically coupled to a gallium arsenide infrared-emitting diode in a 4-lead up to 16-lead plastic dual inline package. The elements are mounted on one lead frame using a **coplanar technique**, providing a fixed distance between input and output for highest safety requirements.

13.12.2.Applications

Circuits for safe protective separation against electrical shock according to safety class II (reinforced isolation):

For appl. class I – IV at mains voltage ≤ 300 V

For appl. class I – III at mains voltage ≤ 600 V

According to VDE 0884, table 2, suitable for: **Switch-mode power supplies, line receiver, computer peripheral interface, microprocessor system interface.**

13.12.3.Features

VDE 0884 related features:

Rated impulse voltage (transient overvoltage) $V_{IOTM} = 8$ kV peak

Isolation test voltage (partial discharge test voltage) $V_{pd} = 1.6$ kV

Rated isolation voltage (RMS includes DC) $V_{IOWM} = 600$ V RMS (848 V peak)

Rated recurring peak voltage (repetitive) $V_{IORM} = 600$ V RMS

General features:

CTR offered in 9 groups

Isolation materials according to UL94-VO

Pollution degree 2 (DIN/VDE 0110 / resp. IEC 664)

Climatic classification 55/100/21 (IEC 68 part 1)

Special construction: Therefore, extra low coupling capacity of typical 0.2pF, high **Common Mode Rejection**

Low temperature coefficient of CTR

G = Leadform 10.16 mm; provides creepage distance > 8 mm, for TCET2100/ TCET4100 optional; suffix letter 'G' is not marked on the optocoupler

Coupling System U

13.13.TDA9885T

13.13.1.General Description

The TDA9885 is an alignment-free single standard (without positive modulation) vision and sound IF signal PLL.

13.13.2.Features

- 5 V supply voltage
- Gain controlled wide-band Vision Intermediate Frequency (VIF) amplifier (AC-coupled)
- Multistandard true synchronous demodulation with active carrier regeneration (very linear demodulation, good intermodulation figures, reduced harmonics, excellent pulse response)
- Gated phase detector for L/L accent standard
- Fully integrated VIF Voltage Controlled Oscillator (VCO), alignment-free; frequencies switchable for all negative and positive modulated standards via I²C-bus
- Digital acquisition help, VIF frequencies of 33.4, 33.9, 38.0, 38.9, 45.75 and 58.75 MHz
- 4 MHz reference frequency input [signal from Phase-Locked Loop (PLL) tuning system] or operating as crystal oscillator
- VIF Automatic Gain Control (AGC) detector for gain control, operating as peak sync detector for negative modulated signals and as a peak white detector for positive modulated signals
- Precise fully digital Automatic Frequency Control (AFC) detector with 4-bit digital-to-analog converter; AFC bits via I²C -bus readable
- TakeOver Point (TOP) adjustable via I²C-bus or alternatively with potentiometer
- Fully integrated sound carrier trap for 4.5, 5.5, 6.0 and 6.5 MHz, controlled by FM-PLL oscillator
- Sound IF (SIF) input for single reference Quasi Split Sound (QSS) mode (PLL controlled)

- SIF AGC for gain controlled SIF amplifier; single reference QSS mixer able to operate in high performance single reference QSS mode and in intercarrier mode, switchable via I²C-bus
- AM demodulator without extra reference circuit
- Alignment-free selective FM-PLL demodulator with high linearity and low noise
- I²C-bus control for all functions
- I²C-bus transceiver with pin programmable Module Address (MAD).

13.13.3.Pinning

SYMBOL	PIN	DESCRIPTION
VIF1	1	VIF differential input 1
VIF2	2	VIF differential input 2
OP1	3	output 1 (open-collector)
FMPLL	4	FM-PLL for loop filter
DEEM	5	de-emphasis output for capacitor
AFD	6	AF decoupling input for capacitor
DGND	7	digital ground
AUD	8	audio output
TOP	9	tuner AGC TakeOver Point (TOP)
SDA	10	I ² C-bus data input/output
SCL	11	I ² C-bus clock input
SIOMA	12	sound intercarrier output and MAD select
n.c.	13	not connected
TAGC	14	tuner AGC output
REF	15	4 MHz crystal or reference input
VAGC	16	VIF-AGC for capacitor; note 1
CVBS	17	video output
AGND	18	analog ground
VPLL	19	VIF-PLL for loop filter
V _p	20	supply voltage (+5 V)
AFC	21	AFC output
OP2	22	output 2 (open-collector)
SIF1	23	SIF differential input 1
SIF2	24	SIF differential input 2

13.14.PI5V330

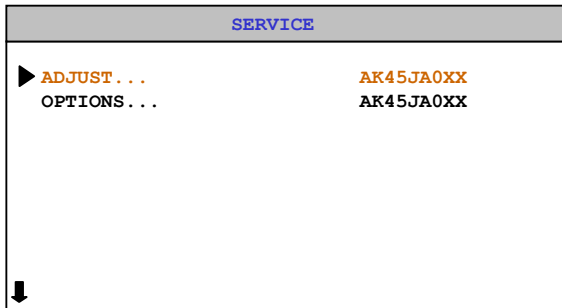
13.14.1.General Description

The PI5V330 is well suited for video applications when switching composite or RGB analog. A picture-in-picture application will be described in this brief. The pixel-rate creates video overlays so two or more pictures can be viewed at the same time. An inexpensive NTSC titler can be implemented by superimposing the output of a character generator on a standard composite video background.

14.AK45 CHASSIS PRODUCTION SERVICE MODE ADJUSTMENTS

14.1.SERVICE MENU

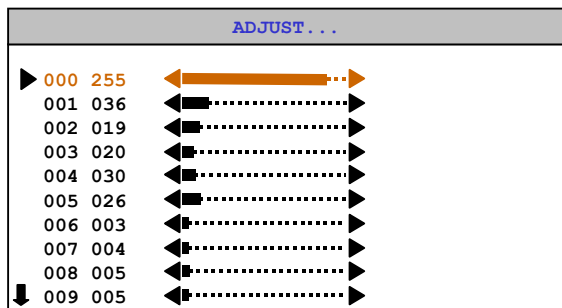
All system, geometry and white balance alignments are performed in production service mode. Before starting the production mode alignments, make sure that all manual adjustments are done correctly. To start production mode alignments enter the MAIN MENU and then press the digits 4, 7, 2 and 5 respectively or press **MUTE** and **INFO** buttons at the same time. The following first menu appears on the screen.



You can select Adjust or Options items by pressing Up/Down buttons. Selected parameter will be highlighted. In order to enter the selected parameter, press Left or Right button. To exit the service menu press MENU button. Entire service menu parameters of AK45 CHASSIS are listed below.

14.2.ADJUST MENU

Select the parameter by pressing up/down buttons. Adjust the parameter by pressing Left/Right buttons. In ADJUST menu, changed values are stored automatically.



White Point Red, White Point Green, White Point Blue:

Not used.

AGC

Apply PAL BG signal, VHF-3 Channel-12 and 60dB μ V signal level. Adjust AGC (Automatic Gain Control) item by pressing Left/Right buttons till the voltage at AGC point (pin1 of the tuner) becomes 3.0 volts.

If PLL negative

Not used.

If PLL positive

Not used.

Y-Delay

Enter a PAL B/G colour and black-white bar test pattern via RF. Adjust Y-Delay for PAL till the colour transients on the colour bar of the pattern become as sharper and colours between transients do not mix with each other as possible.

Y-Delay SECAM

Enter a SECAM B/G colour and black-white bar test pattern via RF. Adjust Y-Delay SECAM till the colour transients on the colour bar of the pattern become as sharper and colours between transients do not mix with each other as possible.

Y-Delay NTSC

Enter an NTSC colour and black-white bar test pattern via RF. Adjust Y-Delay NTSC till the colour transients on the colour bar of the pattern become as sharper and colours between transients do not mix with each other as possible.

Y-Delay other

Not used.

Vertical Position Offset

This value is fixed (127)

Vertical Position Offset

This value is fixed (127)

Horizontal Position Offset

This value is fixed (127)

Horizontal Position Offset

This value is fixed (127)

Vertical Blank Start

This register will be used only at 4:3 tube for 16:9 mode adjustment. It adjusts the vertical blank start position.

Vertical Blank Stop

This register will be used only at 4:3 tube for 16:9 mode adjustment. It adjusts the vertical blank stop position.

Angle

Change Angle by pressing Left/Right buttons till the vertical lines of the crosshatch pattern become completely perpendicular to horizontal lines without any angle of vertical deviation. Check and readjust ANGLE item if the adjustment becomes improper after some other geometric adjustments are done.

Bow

Change Bow by pressing Left/Right buttons till the vertical lines especially ones close to the left and right sides will of equal and symmetrical bending, i.e. they together will neither be towards left side nor right side. Check and readjust BOW item if the adjustment becomes improper after some other geometric adjustments are done.

4:3 Horizontal Blank Start

This register will be used only at 16:9 tube for 4:3 mode adjustment. It adjusts the horizontal blank start position.

4:3 Horizontal Blank Stop

This register will be used only at 16:9 tube for 4:3 mode adjustment. It adjusts the horizontal blank stop position.

EHTV Compensation

It's used to adjust the EHT compensation vertical gain coefficient.

EHTTM Compensation

It's used to adjust the EHT compensation time constant.

EHTEW Compensation

It's used to adjust the EHT compensation east/west gain coefficient.

WDR

The amplitude of R of RGB output can be adjusted with the drive parameter WDR.

WDG

The amplitude of G of RGB output can be adjusted with the drive parameter WDG.

WDB

The amplitude of B of RGB output can be adjusted with the drive parameter WDB.

CR

The DC offset values of R of RGB output can be adjusted with the cutoff parameter CR.

CG

The DC offset values of G of RGB output can be adjusted with the cutoff parameter CG.

CB

The DC offset values of B of RGB output can be adjusted with the cutoff parameter CB.

COR coring level

The amplitude of the correction signal is adjustable. Small noise amplitudes in the correction signal are suppressed by an adjustable coring circuit.

REGULAR VERT_POS (Regular mode Vertical Position)

Enter a PAL B/G circle test pattern via RF. Change Vertical Position till the test pattern is vertically centered. Horizontal line at the center pattern is in equal distance both to upper and lower side of the picture tube. Check and readjust Vertical Position item if the adjustment becomes improper after some other geometric adjustments are done.

It's used to adjust the vertical position of regular mode.

REGULAR VERT_AMPL (Regular mode Vertical Amplitude)

It's used to adjust the vertical amplitude of regular mode.

REGULAR VERT_SCOR (Regular mode Vertical S-Correction)

It's used to adjust the vertical s-correction of regular mode.

REGULAR VERT_SSYM(Regular mode Vertical S Symmetry)

It's used to adjust the vertical s-symetry of regular mode.

REGULAR TRAPEZE (Regular mode Trapeze)

Change Trapezium by pressing Left/Right buttons till vertical lines, especially lines at the sides of the picture frame became parallel to the both sides of picture tube as close as possible. Check and readjust TRPEZ item if the adjustment becomes improper after some other geometric adjustments are done.

It's used to adjust the trapeze of regular mode.

REGULAR CUSHION (Regular mode Cushion)

It's used to adjust the cushion of regular mode.

REGULAR HOR_COR_SYM (Regular mode Horizontal Corner Symmetry)

It's used to adjust the horizontal corners symmetry of regular mode.

REGULAR HOR_CORNER (Regular mode Horizontal Corner)

It's used to adjust the horizontal corners of regular mode.

REGULAR HORZ_POS (Regular mode Horizontal Position)

Enter a PAL B/G circle test pattern via RF. Change Horizontal Position until the picture is horizontally centered. Check and readjust Horizontal Position item if the adjustment becomes improper after some other geometric adjustments are done.

It's used to adjust the horizontal position of regular mode.

REGULAR HORZ_AMPL (Regular mode Horizontal Amplitude)

It's used to adjust the horizontal amplitude of regular mode.

PANORAMIC VERT_POS (Panoramic mode Vertical Position)

It's used to adjust the vertical position of panoramic mode.

PANORAMIC VERT_AMPL (Panoramic mode Vertical Amplitude)

It's used to adjust the vertical amplitude of panoramic mode.

PANORAMIC VERT_SCOR (Panoramic mode Vertical S-Correction)

It's used to adjust the vertical s-correction of panoramic mode.

PANORAMIC VERT_SSYM (Panoramic mode Vertical S-Symmetry)

It's used to adjust the vertical s-symmetry of panoramic mode.

PANORAMIC TRAPEZE (Panoramic mode Trapeze)

It's used to adjust the trapeze of panoramic mode.

PANORAMIC CUSHION (Panoramic mode Cushion)

It's used to adjust the cushion of panoramic mode.

PANORAMIC HOR_COR_SYM (Panoramic mode Horizontal corner symmetry)

It's used to adjust the horizontal corners symmetry of panoramic mode.

PANORAMIC HOR_CORNER (Panoramic mode Horizontal corner)

It's used to adjust the horizontal corners of panoramic mode.

PANORAMIC HORZ_POS (Panoramic mode Horizontal position)

It's used to adjust the horizontal position of panoramic mode.

PANORAMIC HORZ_AMPL (Panoramic mode Horizontal amplitude)

It's used to adjust the horizontal amplitude of panoramic mode.

14:9 ZOOM VERT_POS (14:9 Zoom mode Vertical Position)

It's used to adjust the vertical position of 14:9 zoom mode.

14:9 ZOOM VERT_AMPL (14:9 Zoom mode Vertical Amplitude)

It's used to adjust the vertical amplitude of 14:9 zoom mode.

14:9 ZOOM VERT_SCOR (14:9 Zoom mode Vertical S-Correction)

It's used to adjust the vertical s-correction of 14:9 zoom mode.

14:9 ZOOM VERT_SSYM (14:9 Zoom mode Vertical Symmetry)

It's used to adjust the vertical s-symmetry of 14:9 zoom mode.

14:9 ZOOM TRAPEZE (14:9 Zoom mode Trapeze)

It's used to adjust the trapeze of 14:9 zoom mode.

14:9 ZOOM CUSHION (14:9 Zoom mode Cushion)

It's used to adjust the cushion of 14:9 zoom mode.

14:9 ZOOM HOR_COR_SYM (14:9 Zoom mode Corner Symmetry)

It's used to adjust the horizontal corners symmetry of 14:9 zoom mode.

14:9 ZOOM HOR_CORNER (14:9 Zoom mode Horizontal Corner)

It's used to adjust the horizontal corners of 14:9 zoom mode.

14:9 ZOOM HORZ_POS (14:9 Zoom mode Horizontal Position)

It's used to adjust the horizontal position of 14:9 zoom mode.

14:9 ZOOM HORZ_AMPL (14:9 Zoom mode Horizontal Amplitude)

It's used to adjust the horizontal amplitude of 14:9 zoom mode.

16:9 ZOOM VERT_POS (16:9 Zoom mode Vertical Position)

It's used to adjust the vertical position of 16:9 zoom mode.

16:9 ZOOM VERT_AMPL (16:9 Zoom mode Vertical Amplitude)

It's used to adjust the vertical amplitude of 16:9 zoom mode.

16:9 ZOOM VERT_SCOR (16:9 Zoom mode Vertical S-Correction)

It's used to adjust the vertical s-correction of 16:9 zoom mode.

16:9 ZOOM VERT_SSYM (16:9 Zoom mode Vertical S-Symmetry)

It's used to adjust the vertical s-symmetry of 16:9 zoom mode.

16:9 ZOOM TRAPEZE (16:9 Zoom mode Trapeze)

It's used to adjust the trapeze of 16:9 zoom mode.

16:9 ZOOM CUSHION (16:9 Zoom mode Cushion)

It's used to adjust the cushion of 16:9 zoom mode.

16:9 ZOOM HOR_COR_SYM (16:9 Zoom mode Horizontal corner symmetry)

It's used to adjust the horizontal corners symmetry of 16:9 zoom mode.

16:9 ZOOM HOR_CORNER (16:9 Zoom mode Horizontal corner)

It's used to adjust the horizontal corners of 16:9 zoom mode.

16:9 ZOOM HORZ_POS (16:9 Zoom mode Horizontal position)

It's used to adjust the horizontal position of 16:9 zoom mode.

16:9 ZOOM HORZ_AMPL (16:9 Zoom mode Horizontal amplitude)

It's used to adjust the horizontal amplitude of 16:9 zoom mode.

16:9 ZOOM SUBTITLE VERT_POS (16:9 Zoom Subtitle mode Vertical position)

It's used to adjust the vertical position of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE VERT_AMPL (16:9 Zoom Subtitle mode Vertical amplitude)

It's used to adjust the vertical amplitude of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE VERT_SCOR (16:9 Zoom Subtitle mode Vertical S-Correction)

It's used to adjust the vertical s-correction of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE VERT_SSYM (16:9 Zoom Subtitle mode Vertical Symmetry)

It's used to adjust the vertical s-symmetry of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE TRAPEZE (16:9 Zoom Subtitle mode Trapeze)

It's used to adjust the trapeze of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE CUSHION (16:9 Zoom Subtitle mode Cushion)

It's used to adjust the cushion of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE HOR_COR_SYM (16:9 Zoom Subtitle mode Horizontal Corner Symmetry)

It's used to adjust the horizontal corners symmetry of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE HOR_CORNER (16:9 Zoom Subtitle mode Horizontal corner)

It's used to adjust the horizontal corners of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE HORZ_POS (16:9 Zoom Subtitle mode Horizontal position)

It's used to adjust the horizontal position of 16:9 zoom subtitle mode.

16:9 ZOOM SUBTITLE HORZ_AMPL (16:9 Zoom Subtitle mode Horizontal amplitude)

It's used to adjust the horizontal amplitude of 16:9 zoom subtitle mode.

OSD Position

It's used to adjust the horizontal position of the OSD.

BCLTHR

Beam current threshold

BCLG

Beam current loop gain

ROTATION (TILT)

This adjustment only works when the TV has rotation option. Change TILT by pressing Left/Right buttons to rotate the complete raster clock-wise and counter clock-wise depending on the CRT. Check and readjust TRPEZ item if the adjustment becomes improper after some other geometric adjustments are done.

LSLSA, LSLSB, LSL2, LSLTA, LSLTB (Luma soft limiter)

LSLSA: Luma soft limiter slope A (fixed)

LSLSB: Luma soft limiter slope B (fixed)

LSL2: Luma soft limiter absolute limit (fixed)

LSLTA: Luma soft limiter segment A tilt point (fixed)

LSLTB: Luma soft limiter segment A tilt point (fixed)

REFERENCE WDR RED (NORMAL)

The amplitude of R of RGB output can be adjusted with the drive parameter WDR for the colour temperature of normal mode.

REFERENCE WDR GREEN (NORMAL)

The amplitude of G of RGB output can be adjusted with the drive parameter WDR for the colour temperature of normal mode.

REFERENCE WDR BLUE (NORMAL)

The amplitude of B of RGB output can be adjusted with the drive parameter WDR for the colour temperature of normal mode.

REFERENCE CUTOFF RED

It's fixed.

REFERENCE CUTOFF GREEN

It's fixed.

REFERENCE CUTOFF BLUE

It's fixed.

IBRM

Internal Brightness, the brightness for measurement can be set to measure at higher cutoff current. The measurement brightness is independent of the drive values. It's used to adjust the maximum brightness level.

WDRV

White drive measurement control. It is used to adjust the maximum contrast level.

ACC_SAT (COLOUR OFFSET)

It's used to adjust the max. colour level.

G2 CUTOFF REFERENCE

It's fixed.

G2 WDR REFERENCE

It's fixed.

POFS2 (RGB HORIZONTAL SHIFT)

It's used to adjust the horizontal position of RGB signal.

REFERENCE WDR RED COOL

The amplitude of R of RGB output can be adjusted with the drive parameter WDR for the colour temp of cool mode.

REFERENCE WDR GREEN COOL

The amplitude of G of RGB output can be adjusted with the drive parameter WDR for the colour temp of cool mode.

REFERENCE WDR BLUE COOL

The amplitude of B of RGB output can be adjusted with the drive parameter WDR for the colour temp of cool mode.

REFERENCE WDR RED WARM

The amplitude of R of RGB output can be adjusted with the drive parameter WDR for the colour temp of warm mode.

REFERENCE WDR GREEN WARM

The amplitude of G of RGB output can be adjusted with the drive parameter WDR for the colour temp of cool mode.

REFERENCE WDR BLUE WARM

The amplitude of B of RGB output can be adjusted with the drive parameter WDR for the colour temp of cool mode.

STANDARD MODE BRIGHTNESS

It's used to adjust the brightness value of standard mode.

STANDARD MODE COLOUR

It's used to adjust the colour value of standard mode.

STANDARD MODE CONTRAST

It's used to adjust the contrast value of standard mode.

FULL VERT_POS (16:9 MODE)

It's used to adjust the vertical position of 16:9 mode (full mode).

FULL VERT_AMPL

It's used to adjust the vertical amplitude of 16:9 mode (full mode).

FULL VERT_SCOR

It's used to adjust the vertical s-correction of 16:9 mode (full mode).

FULL VERT_SSYM

It's used to adjust the vertical s-symmetry of 16:9 mode (full mode).

FULL TRAPEZE

It's used to adjust the trapeze of 16:9 mode (full mode).

FULL CUSHION

It's used to adjust the cushion of 16:9 mode (full mode).

FULL HOR_COR_SYM

It's used to adjust the horizontal corners symmetry of 16:9 mode (full mode).

FULL HOR_CORNER

It's used to adjust the horizontal corners of 16:9 mode (full mode).

FULL HORZ_POS

It's used to adjust the horizontal position of 16:9 mode (full mode).

FULL HORZ_AMPL

It's used to adjust the horizontal amplitude of 16:9 mode (full mode).

BRIGHT MODE BRIGHTNESS

It's used to adjust the brightness value of bright mode.

BRIGHT MODE COLOUR

It's used to adjust the colour value of bright mode.

BRIGHT MODE CONTRAST

It's used to adjust the contrast value of bright mode.

SOFT MODE BRIGHTNESS

It's used to adjust the brightness value of soft mode.

SOFT MODE COLOUR

It's used to adjust the colour value of soft mode.

SOFT MODE CONTRAST

It's used to adjust the contrast value of soft mode.

PERSONAL MODE FACTORY SETTING BRIGHTNESS

It's fixed.

PERSONAL MODE FACTORY SETTING COLOUR

It's fixed.

PERSONAL MODE FACTORY SETTING CONTRAST

It's fixed.

SCINC FOR PANAROMIC MODE

scaler1 coefficient, this scaler is compressing the signal.

SCINC1 FOR PANAROMIC MODE

scaler2 coefficient, this scaler is expanding the signal.

VOLUME AFTER APS

It's used to adjust the volume level after APS.

VERTICAL SCROLL

It's used to adjust the step width for scroll function.

14:9 HORIZONTAL START

It's used to adjust the horizontal blank start position for 14:9 mode.

14:9 HORIZONTAL STOP

It's used to adjust the horizontal blank stop position for 14:9 mode.

4:3 RGB HORIZONTAL AMPLITUDE

It's used to adjust the horizontal amplitude in 4:3 mode for RGB signals.

4:3 RGB CUSHION

It's used to adjust the cushion in 4:3 mode for RGB signals.

14:9 RGB HORIZONTAL AMPLITUDE

It's used to adjust the horizontal amplitude in 14:9 mode for RGB signals.

14:9 RGB CUSHION

It's used to adjust the cushion in 14:9 mode for RGB signals.

PANAROMIC RGB HORIZONTAL AMPLITUDE

It's used to adjust the horizontal amplitude in panoramic mode for RGB signals.

16:9 RGB HORIZONTAL AMPLITUDE

It's used to adjust the horizontal amplitude in 16:9 mode for RGB signals.

16:9 SUBTITLE RGB HORIZONTAL AMPLITUDE

It's used to adjust the horizontal amplitude in 16:9 subtitle mode for RGB signals.

FULL RGB HORIZONTAL AMPLITUDE

It's used to adjust the horizontal amplitude in full mode for RGB signals.

TELETEXT HORZ_POS

It's used to adjust the horizontal position of teletext signal.

ADJUST	EXPLANATION	2835	2835W
		MULTI	MULTI - PAL I
000	White Point RED	255	255
001	White Point GREEN	126	036
002	Whit Point BLUE	127	019
003	AGC (Automatic Gain Control)	20 It will be adjusted to below 1V of Max. AGC for each TV.	
004	IF-PLL Negative	030	030
005	IF-PLL Positive	026	026
006	Y-Delay	003	002
007	Y-Delay SECAM	004	003
008	Y-Delay NTSC	005	005
009	Y-Delay OTHER	005	005
010	Vertical Position Offset	127	127
011	Vertical Amplitude Offset	127	127
012	Horizontal Position Offset	127	127
013	Horizontal Amplitude Offset	127	127
014	Vertical Blank Start (It will be used only at 4:3 tube for 16:9 mode adjustment)	149	119
015	Vertical Blank Stop (It will be used only at 4:3 tube for 16:9 mode adjustment)	013	034
016	Angle	132	132
017	Bow	126	131
018	4:3 Horz. Blank Start (It will be used only at 16:9 tube for 4:3 mode adjustment)	021	042
019	4:3 Horz. Blank Stop (It will be used only at 16:9 tube for 4:3 mode adjustment)	140	175
020	EHTV compensation	054	066
021	EHTTM compensation	004	001
022	EHTEW compensation	219	160
023	WDR	VIDEO PROCESSOR ADJUSTS ITSELF.	
024	WDG		
025	WDB		
026	CR		
027	CG		
028	CB		
029	COR coring level	015	031
030	REGULAR VERT_POS (Vertical Position)	128	129
031	REGULAR VERT_AMPL (Vertical Amplitude)	081	055
032	REGULAR VERT_SCOR (Vertical S Correction)	131	129
033	REGULAR VERT_SSYM (Vertical S Symmetry)	139	136
034	REGULAR TRAPEZE	125	127
035	REGULAR CUSHION	162	153
036	REGULAR HOR_COR_SYM(Horizontal Corner Symmetry)	137	132
037	REGULAR HOR_CORNER (Horizontal Corner)	094	113
038	REGULAR HORZ_POS (Horizontal Position)	055	052
039	REGULAR HORZ_AMPL (Horizontal Amplitude)	057	030
040	PANORAMIC VERT_POS	-	129
041	PANORAMIC VERT_AMPL	-	050
042	PANORAMIC VERT_SCOR	-	129
043	PANORAMIC VERT_SSYM	-	139
044	PANORAMIC TRAPEZE	-	125
045	PANORAMIC CUSHION	-	156
046	PANORAMIC HOR_COR_SYM	-	141
047	PANORAMIC HOR_CORNER	-	108
048	PANORAMIC HORZ_POS	-	030

049	PANORAMIC HORZ_AMPL	-	013
050	14:9 ZOOM VERT_POS	-	129
051	14:9 ZOOM VERT_AMPL	-	043
052	14:9 ZOOM VERT_SCOR	-	129
053	14:9 ZOOM VERT_SSYM	-	140
054	14:9 ZOOM TRAPEZE	-	125
055	14:9 ZOOM CUSHION	-	159
056	14:9 ZOOM HOR_COR_SYM	-	141
057	14:9 ZOOM HOR_CORNER	-	110
058	14:9 ZOOM HORZ_POS	-	053
059	14:9 ZOOM HORZ_AMPL	-	032
060	16:9 ZOOM VERT_POS	-	129
061	16:9 ZOOM VERT_AMPL	-	035
062	16:9 ZOOM VERT_SCOR	-	129
063	16:9 ZOOM VERT_SSYM	-	148
064	16:9 ZOOM TRAPEZE	-	125
065	16:9 ZOOM CUSHION	-	164
066	16:9 ZOOM HOR_COR_SYM	-	138
067	16:9 ZOOM HOR_CORNER	-	104
068	16:9 ZOOM HORZ_POS	-	036
069	16:9 ZOOM HORZ_AMPL	-	020
070	16:9 ZOOM SUBTITLE VERT_POS	-	137
071	16:9 ZOOM SUBTITLE VERT_AMPL	-	039
072	16:9 ZOOM SUBTITLE VERT_SCOR	-	124
073	16:9 ZOOM SUBTITLE VERT_SSYM	-	146
074	16:9 ZOOM SUBTITLE TRAPEZE	-	119
075	16:9 ZOOM SUBTITLE CUSHION	-	164
076	16:9 ZOOM SUBTITLE HOR_COR_SYM	-	162
077	16:9 ZOOM SUBTITLE HOR_CORNER	-	081
078	16:9 ZOOM SUBTITLE HORZ_POS	-	035
079	16:9 ZOOM SUBTITLE HORZ_AMPL	-	021
080	OSD Position	217	205
081	BCLTHR Beam current threshold	050	060
082	BCLG Beam current loop gain	008	007
083	ROTATION (TILT)	000	000
084	LSLSA Luma soft limiter	000	003
085	LSLSB Luma soft limiter	000	000
086	LSL2 Luma soft limiter	255	255
087	LSLTA Luma soft limiter	000	000
088	LSLTB Luma soft limiter	000	001
089	REFERENCE WDR RED (NORMAL)	088	092
090	REFERENCE WDR GREEN (NORMAL)	074	083
091	REFERENCE WDR BLUE (NORMAL)	075	082
092	REFERENCE CUTOFF RED	065	055
093	REFERENCE CUTOFF GREEN	068	069
094	REFERENCE CUTOFF BLUE	077	069
095	IBRM	200	215
096	WDRV	075	060
097	ACC_SAT (COLOUR OFFSET)	154	130
098	G2_CUTOFF_REFERENCE	200	220
099	G2_WDR_REFERENCE	090	090
100	POFS2 (RGB HORIZONTAL SHIFT)	053	034
101	REFERENCE WDR RED COOL	090	089
102	REFERENCE WDR GREEN COOL	078	082
103	REFERENCE WDR BLUE COOL	093	090
104	REFERENCE WDR RED WARM	096	104
105	REFERENCE WDR GREEN WARM	070	085
106	REFERENCE WDR BLUE WARM	073	080
107	STANDARD MODE BRIGHTNESS	027	043

108	STANDARD MODE COLOUR	050	047
109	STANDARD MODE CONTRAST	022	029
110	FULL VERT_POS (16:9 MODE)	128	129
111	FULL VERT_AMPL	093	055
112	FULL VERT_SCOR	131	129
113	FULL VERT_SSYM	133	136
114	FULL TRAPEZE	127	126
115	FULL CUSHION	148	153
116	FULL HOR_COR_SYM	137	136
117	FULL HOR_CORNER	109	109
118	FULL HORZ_POS	055	035
119	FULL HORZ_AMPL	057	020
120	BRIGHT MODE BRIGHTNESS	027	043
121	BRIGHT MODE COLOUR	050	050
122	BRIGHT MODE CONTRAST	030	032
123	SOFT MODE BRIGHTNESS	027	043
124	SOFT MODE COLOUR	050	058
125	SOFT MODE CONTRAST	017	020
126	PERSONAL MODE FACTORY SETTING BRIGHTNESS	027	043
127	PERSONAL MODE FACTORY SETTING COLOUR	050	050
128	PERSONAL MODE FACTORY SETTING CONTRAST	030	032
129	SCINC FOR PANORAMIC MODE	032	056
130	SCINC1 FOR PANORAMIC MODE	032	125
131	VOLUME AFTER APS		005
132	VERTICAL SCROLL	005	008
133	14:9 HORIZONTAL START (It will be used only at 16:9 tube for 14:9 mode adjustment)	-	031
134	14:9 HORIZONTAL STOP (It will be used only at 16:9 tube for 14:9 mode adjustment)	-	185
135	4:3 RGB HORIZONTAL AMPLITUDE	055	074
136	4:3 RGB CUSHION	163	150
137	14:9 RGB HORIZONTAL AMPLITUDE	-	055
138	14:9 RGB CUSHION	-	158
139	PANAROMIC RGB HORIZONTAL AMPLITUDE	-	031
140	16:9 RGB HORIZONTAL AMPLITUDE	-	027
141	16:9 SUBTITLE RGB HORIZONTAL AMPLITUDE	-	027
142	FULL RGB HORIZONTAL AMPLITUDE	054	027
143	TELETEXT HORIZONTAL POSITION	101	095

14.3.OPTIONS MENU

Select the parameter by pressing up/down buttons. Adjust the parameter by pressing Left/Right buttons. . In OPTIONS menu, some of the changed parameters are not stored automatically. To store the adjusted parameters, you should turn off and on TV.

OPTIONS...		
▶	000 02	00000010
	001 00	00000000
	002 22	00100010
	003 08	00001000
	004 00	00000000
	005 10	00010000
	006 00	00000000
	007 56	01010110
	008 39	00111001
↓	009 0F	00001111

Option 0. Video Processor Crystal Indication

B7: x = x
B6: x = x
B5: x = x
B4: x = x
B3: x = x
B2: x = x
B1: Xa = note1 (Crystal indication)
B0: Xb = note1 (Crystal indication)

note 1:

Xa,Xb

0,1 : Pal M, Pal N, NTSC M

Pin 34 : 3.58 (1, 2 or 3 crystals)

Pin 35 : No crystal

1,0 : Pal BG, Pal DK, Pal I/I+, Secam BG, Secam DK, Secam L/L', Secam K1

Pin 34 : No crystal

Pin 35 : 4.43 (1 crystal)

1,1 : Pal BG, Pal DK, Pal I/I+, Secam BG, Secam DK, Secam L/L', Secam K1, Pal M, Pal N, Ntsc M

Pin 34 : 3.58 (1, 2 or 3 crystals)

Pin 35 : 4.43 (1 crystal)

Option 1. (0x01) Video Processor Decoder Mode Register

B7: x = x
B6: x = x
B5: x = x
B4: x = x
B3: x = x
B2: x = x
B1: x = x
B0: x = x

Option 2. (0x18) Video Processor Blanking Control

B7: SWF = 1 (Subwoofer item at menu)
B6: Vsd = 0 (Vertical scan disable)
B5: x = x

B4: x = x
 B3: x = x
 B2: x = x
 B1: LUMA = 1 Luma Soft Limiter Enabled
 B0: BB = 1 Blue Background Option

Option 3. (0x19) Video Processor Cathode Drive Level

B7: x = x
 B6: x = x
 B5: x = x
 B4: x = x
 B3: x = x
 B2: x = x
 B1: x = x
 B0: country = note 0

Note 0: choice for others country option

1 : BG
 0 : DK

Option 4.

B7: x = x
 B6: x = x
 B5: x = x
 B4: x = x
 B3: x = x
 B2: x = x
 B1: x = x
 B0: x = x

Option 5. CTI Available, Mono AVL

B7: x = x
 B6: x = x
 B5: x = x
 B4: x = x
 B3: x = x
 B2: x = x
 B1: x = x
 B0: x = x

Option 6.

B7: = TEXT LANGUAGE 3
 B6: = TEXT LANGUAGE 2
 B5: = TEXT LANGUAGE 1
 B4: x = x
 B3: x = x
 B2: x = x
 B1: x = x
 B0: x = x

Option 7. OPTIONHOTELACTIVE, PLL_VST, PIP Zoom Mode, PIP Position

B7: x = x
 B6: x = x
 B5: F = note 1
 B4: x = x
 B3: x = x
 B2: PZM = x
 B1: AV2 = 1 AV2 Output enabled
 B0: x = x

note 1:

F :Frequency Mode

1: = Frequency Menu Item available

0: = Frequency Menu Item not available

Option 8. IF Frequency

B7: x = x

B6: x = x

B5: IfI = 0 note 3

B4: IfD = 0 note 4

B3: IfM = note 5

B2: Aps = note 6

B1: Hp = note 7

B0: Hue = note 8

note 3:

IfI

1 = IF I 39.5 MHz Great Britain I , Only UHF Tuner

0 = IF I 38.9 MHz Ireland I+, Standard Tuner

note 4:

IfD

1 = IF DK 38.0 MHz

0 = IF DK 38.9 MHz

note 5:

IfM

1 = IF M,N 45.75 MHz S&N American Models , Tuner UV1336 (Only Pal M/N, Ntsc M)

0 = IF M,N 38.9 MHz Euro M,N Models , Standard Tuner

Note 6:

Aps (Only for PLL)

0 = A.P.S. done

1 = A.P.S. set

note 7:

Hp : Headphone available

0 = No headphone

1 = Headphone available

note 8:

Hue : Hue Available

0 = No Hue

1 = Hue available

Option 9. Standard Available

B7: NM = note 1

B6: PN = note 1

B5: PM = note 1

B4: K1 = note 1

B3: L = note 1

B2: I = note 1

B1: DK = note 1

B0: BG = note 1

note 1:

0 = Standard not supported

1 = Standard available

Option 10. Scart, Combfilter, Teletext, Language

B7: x = x
B6: RGB = note 2
B5: FAV =
B4: AV2S =
B3: FSVHS = note 3
B2: BAV = note 4
B1: Sc2 = note 5
B0: BSVHS = note 6

note 2 :

RGB = RGB Menu Item active/inactive

0 = RGB Menu Item inactive
1 = RGB Menu Item active

note 3:

0 = Front S-VHS not supported
1 = Front S-VHS available

note 4:

0 = Back AV (AV-3) not supported
1 = Back AV (AV-3) available

note 5:

0 = Scart 2 not supported
1 = Scart 2 available

note 6:

0 = Back SVHS not supported
1 = Back SVHS available

Option 11. PLL Tuner Control 1 Byte

PLL tuner control 1 byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316T MK3	1	0	0	0	1	1	1	0
Philips	UV1316MK2	1	0	0	0	1	1	1	0
Alps	TELE9X062A	1	0	0	0	1	1	1	0
Samsung	TEXX2949PG28A	1	0	0	0	1	1	1	0
Siel	PT060	1	0	0	0	1	1	1	0
Temic	5001PH5-3X0003	1	0	0	0	1	1	1	0
Thomson	CTT5020	1	0	0	0	1	1	1	0

Option 12. PLL Tuner Control 2 Low Byte

PLL tuner control 2 low byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316T MK3	0	0	0	0	0	0	0	1
Philips	UV1316MK2	1	0	1	0	0	0	0	1
Alps	TELE9X062A	0	0	0	0	0	0	0	1
Samsung	TEXX2949PG28A	0	0	0	0	0	0	0	1
Siel	PT060	0	1	1	0	0	0	0	0
Temic	5001PH5-3X0003	0	0	0	0	0	0	1	0
Thomson	CTT5020	0	0	0	0	0	0	1	1

Option 13. PLL Tuner Control 2 Mid Byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316T MK3	0	0	0	0	0	0	1	0
Philips	UV1316MK2	1	0	0	1	0	0	1	0
Alps	TELE9X062A	0	0	0	0	0	0	1	0
Samsung	TEXX2949PG28A	0	0	0	0	0	0	1	0
Siel	PT060	1	1	0	1	0	0	0	0
Temec	5001PH5-3X0003	0	0	0	0	0	1	0	0
Thomson	CTT5020	0	0	0	0	0	1	1	0

Option 14. PLL Tuner Control 2 High Byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316T MK3	0	0	0	0	0	1	0	0
Philips	UV1316MK2	0	0	1	1	0	1	0	0
Alps	TELE9X062A	0	0	0	0	1	0	0	0
Samsung	TEXX2949PG28A	0	0	0	0	1	0	0	0
Siel	PT060	0	0	1	1	0	0	0	0
Temec	5001PH5-3X0003	0	0	0	0	0	0	0	1
Thomson	CTT5020	1	0	0	0	0	1	0	1

Option 15. PLL Tuner VHF LOW – VHF HIGH Crossover Low Byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316T MK3	0	0	1	0	0	0	0	0	
Philips	UV1316MK2	0	0	0	0	1	0	1	0	(0A hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	0	0	0	0	1	0	0	0	
Siel	PT060	0	0	0	0	1	0	1	0	
Temec	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	1	0	1	0	1	0	1	0	(AA hex)

Option 16. PLL Tuner VHF LOW – VHF HIGH Crossover High Byte

PLL tuner VHF LOW - VHF HIGH crossover high byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316T MK3	0	0	0	0	1	1	0	0	
Philips	UV1316MK2	0	0	0	0	1	1	0	0	(0C hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	0	0	0	0	1	1	0	1	
Siel	PT060	0	0	0	0	1	1	0	1	
Temec	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	0	0	0	0	1	0	0	1	(09 hex)

Option 17. PLL Tuner VHF HIGH – UHF Crossover Low Byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316T MK3	0	0	0	0	0	0	1	0	
Philips	UV1316MK2	1	1	1	0	0	0	1	0	(E2 hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	1	0	1	0	0	0	1	0	
Siel	PT060	1	0	1	0	0	1	0	0	
Temec	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	1	0	1	0	0	0	1	0	(A2 hex)

Option 18. PLL Tuner VHF HIGH – UHF Crossover High Byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316T MK3		0	0	0	1	1	1	1	0
Philips	UV1316MK2	0	0	0	1	1	1	1	0	(1D hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	0	0	0	1	1	1	1	0	
Siel	PT060	0	0	0	1	1	1	1	0	

Temic	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	0	0	0	1	1	0	1	1	(1B hex)

Option 19. PIP PLL Tuner Control 1 Byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316MK2	1	0	0	0	1	1	1	0
Alps	TELE9X062A	1	0	0	0	1	1	1	0
Samsung	TEXX2949PG28A	1	0	0	0	1	1	1	0
Siel	PT060	1	0	0	0	1	1	1	0
Temic	5001PH5-3X0003	1	0	0	0	1	1	1	0
Thomson	CTT5020	1	0	0	0	1	1	1	0

Option 20. PIP PLL Tuner Control 2 Low Byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316MK2	1	0	1	0	0	0	0	1
Alps	TELE9X062A	0	0	0	0	0	0	0	1
Samsung	TEXX2949PG28A	0	0	0	0	0	0	0	1
Siel	PT060	0	1	1	0	0	0	0	0
Temic	5001PH5-3X0003	0	0	0	0	0	0	1	0
Thomson	CTT5020	0	0	0	0	0	0	1	1

Option 21. PIP PLL Tuner Control 2 Mid Byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316MK2	1	0	0	1	0	0	1	0
Alps	TELE9X062A	0	0	0	0	0	0	1	0
Samsung	TEXX2949PG28A	0	0	0	0	0	0	1	0
Siel	PT060	1	1	0	1	0	0	0	0
Temic	5001PH5-3X0003	0	0	0	0	0	1	0	0
Thomson	CTT5020	0	0	0	0	0	1	1	0

Option 22. PIP PLL Tuner Control 2 High Byte

		b7	b6	b5	b4	b3	b2	b1	b0
Philips	UV1316MK2	0	0	1	1	0	1	0	0
Alps	TELE9X062A	0	0	0	0	1	0	0	0
Samsung	TEXX2949PG28A	0	0	0	0	1	0	0	0
Siel	PT060	0	0	1	1	0	0	0	0
Temic	5001PH5-3X0003	0	0	0	0	0	0	0	1
Thomson	CTT5020	1	0	0	0	0	1	0	1

Option 23. PIP PLL Tuner VHF LOW – VHF HIGH Crossover Low Byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316MK2	0	0	0	0	1	0	1	0	(0A hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	0	0	0	0	1	0	0	0	
Siel	PT060	0	0	0	0	1	0	1	0	
Temic	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	1	0	1	0	1	0	1	0	(AA hex)

Option 24. PIP PLL Tuner VHF LOW – VHF HIGH Crossover High Byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316MK2	0	0	0	0	1	1	0	0	(0C hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	0	0	0	0	1	1	0	1	
Siel	PT060	0	0	0	0	1	1	0	1	
Temic	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	0	0	0	0	1	0	0	1	(09 hex)

Option 25. PIP PLL Tuner VHF HIGH – UHF Crossover Low Byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316MK2	1	1	1	0	0	0	1	0	(E2 hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	1	0	1	0	0	0	1	0	
Siel	PT060	1	0	1	0	0	1	0	0	
Temic	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	1	0	1	0	0	0	1	0	(A2 hex)

Option 26. PIP PLL Tuner VHF HIGH – UHF Crossover High Byte

		b7	b6	b5	b4	b3	b2	b1	b0	
Philips	UV1316MK2	0	0	0	1	1	1	1	0	(1D hex)
Alps	TELE9X062A	0	0	0	0	0	0	0	0	
Samsung	TEXX2949PG28A	0	0	0	1	1	1	1	0	
Siel	PT060	0	0	0	1	1	1	1	0	
Temic	5001PH5-3X0003	0	0	0	0	0	0	0	0	
Thomson	CTT5020	0	0	0	1	1	0	1	1	(1B hex)

Option 27. Language Available 1

B7: L7 = DANISH
 B6: L6 = SWEDISH
 B5: L5 = ITALIAN
 B4: L4 = PORTUGUESE
 B3: L3 = SPANISH
 B2: L2 = FRENCH
 B1: L1 = GERMAN
 B0: L0 = ENGLISH

1: Language available

0: Language not available

Option 28. Language Available 2

B7: L15 = CROATIC
 B6: L14 = POLISH
 B5: L13 = SLOVAK
 B4: L12 = CZECH
 B3: L11 = HUNGARY
 B2: L10 = GREEK
 B1: L9 = TURKEY
 B0: L8 = NORWEGIAN

1: Language available

0: Language not available

Option 29. Language Available 3 and Zoom Mode Available

B7: ZSP = 16:9 ZOOM SUBTITLE MODE
 B6: ZSB = 16:9 ZOOM MODE
 B5: ZCN = 14:9 ZOOM MODE
 B4: PNM = 1 (Panaromic zoom mode)
 B3: Tub = note 2
 B2: Z.Def = note 3
 B1: PMK = note 1
 B0:

1: Available

0: Not available

note 1 :

PMK : Picture mode key

0 : Not available picture mode key from RC

1 : available picture mode key from RC

note 2:

Tub : Tube size

0 = 16:9 Tube size
 1 = 4:3 Tube size

note 3:

Z.Def : Zoom Default Mode

0 = 16:9 mode default
 1 = 4:3 mode default

Option 30. Country

B7: C4 = note 1
 B6: C3 = note 1
 B5: C2 = note 1
 B4: C1 = note 1
 B3: C0 = note 1
 B2: x = x
 B1: x = x
 B0: x = x

note 1:

C5,C4,C3,C2,C1,C0 = Country

0, 0, 0, 0, 0	= OTHER,	Not allowed
0, 0, 0, 0, 1	= D,	Germany
0, 0, 0, 1, 0	= A,	
0, 0, 0, 1, 1	= CH,	
0, 0, 1, 0, 0	= I,	
0, 0, 1, 0, 1	= F,	
0, 0, 1, 1, 0	= RSM,	
0, 0, 1, 1, 1	= B,	
0, 1, 0, 0, 0	= DK,	
0, 1, 0, 0, 1	= S,	
0, 1, 0, 1, 0	= N,	
0, 1, 0, 1, 1	= FIN,	
0, 1, 1, 0, 0	= GB,	
0, 1, 1, 0, 1	= IRL,	
0, 1, 1, 1, 0	= IS,	
0, 1, 1, 1, 1	= NL,	
1, 0, 0, 0, 0	= E,	
1, 0, 0, 0, 1	= P,	
1, 0, 0, 1, 0	= PL,	
1, 0, 0, 1, 1	= CZ,	
1, 0, 1, 0, 0	= H,	
1, 0, 1, 0, 1	= HR,	
1, 0, 1, 1, 0	= GR,	
1, 0, 1, 1, 1	= TR	

Option 31. Prescaler MSP FM (AVL=OFF)

	b7	b6	b5	b4	b3	b2	b1	b0
prescaler MSP FM (AVL = OFF)	0	0	0	0	1	0	0	0

	b7	b6	b5	b4	b3	b2	b1	b0
prescaler MSP FM (AVL = OFF)	0	0	0	0	1	0	0	0 (if virtual dolby option is available)

Option 32. Prescaler MSP NICAM (AVL=OFF)

	b7	b6	b5	b4	b3	b2	b1	b0
prescaler MSP NICAM (AVL = OFF)	0	0	0	1	1	1	1	1

b7 b6 b5 b4 b3 b2 b1 b0

prescaler MSP NICAM (AVL = OFF) 0 0 0 1 1 1 1 1 (if virtual dolby option is available)

Option 33. Prescaler MSP SCART (AVL=OFF)

b7 b6 b5 b4 b3 b2 b1 b0

prescaler MSP SCART (AVL = OFF) 0 0 0 0 1 1 0 0

b7 b6 b5 b4 b3 b2 b1 b0

prescaler MSP SCART (AVL = OFF) 0 0 0 1 1 0 0 1 (if virtual dolby option is available)

Option 34. Prescaler MSP I2S (AVL=OFF)

b7 b6 b5 b4 b3 b2 b1 b0

prescaler MSP I2S (AVL = OFF) not defined yet
(if virtual dolby option is available)

Option 35. Not used

B7: x = note 7
 B6: x = note 6
 B5: x = note 5
 B4: x = note 4
 B3: AV2S = Scart2 SVHS
 B2: Macro = Macrovision
 B1: DP = Dolby Prologic
 B0: VD = Virtual Dolby

Option 36. Not used

B7: x = note 7
 B6: TAT = 1 Tilt and trapez enabled
 B5: SWF = 1 Subwoofer enabled
 B4: VLO = 1 Variable line out
 B3: VBUS = 1 Vestelbus enabled
 B2: x = x
 B1: DVD = 1 DVD enabled
 B0: DVB = 1 DVB enabled

Option 37. Reserved for USA

Option 38. TV Teletext Mode Selection, Child Lock, Equalizer Country

B7: VCR = note 7
 B6: C = note 6
 B5: LM = note 5
 B4: EQ = note 4
 B3: x = x
 B2: CL = note 2
 B1: T1 = note 1
 B0: T0 = note 1

note 1:

Teletext selection
 T1, T0:
 0,0 = No TV Text
 0,1 = Simple TV Text (One page)
 1,1 = Fasttext/Toptext TV Text (Eight pages)

note 2 :

CL = Child Lock
 0 = Off
 1 = On (Active)

note 3 :

RGB = RGB Menu Item active/inactive
 0 = RGB Menu Item inactive
 1 = RGB Menu Item active

note 4 :

EQ = Equalizer available
 0 = Equalizer not available
 1 = Equalizer available

note 5 :

LM = List Mode available
 0 = List Mode not available
 1 = List Mode available

note 6 :

C = Country Line available / Aps available or not
 0 = Country Line not available / Aps not available
 1 = Country Line available / Aps available

note 7 :

VCR = VCR Menu Item available / not available
 0 = VCR Menu Item not available
 1 = VCR Menu Item available

Option 39. Personal Preference Equalizer Band 1

	b7 b6 b5 b4 b3 b2 b1 b0
EQUALIZER BAND 1	0 0 0 0 0 1 1 0

Option 40. Personal Preference Equalizer Band 2

	b7 b6 b5 b4 b3 b2 b1 b0
EQUALIZER BAND 2	0 0 0 0 0 1 1 0

Option 41. Personal Preference Equalizer Band 3

	b7 b6 b5 b4 b3 b2 b1 b0
EQUALIZER BAND 3	0 0 0 0 0 1 1 0

Option 42. Personal Preference Equalizer Band 4

	b7 b6 b5 b4 b3 b2 b1 b0
EQUALIZER BAND 4	0 0 0 0 0 1 1 0

Option 43. Personal Preference Equalizer Band 5

	b7 b6 b5 b4 b3 b2 b1 b0
EQUALIZER BAND 5	0 0 0 0 0 1 1 0

Option 44. Sound Effect (Standard; Music; Speech; Jazz; Pp)

	b7 b6 b5 b4 b3 b2 b1 b0
SOUND EFFECT	0 0 0 0 0 1 1 0

Option 45. Volume Offset Left

	b7 b6 b5 b4 b3 b2 b1 b0
VOLUME OFFSET LEFT	0 0 0 0 0 1 1 0

Option 46. Volume Offset Right

	b7 b6 b5 b4 b3 b2 b1 b0
VOLUME OFFSET RIGHT	0 0 0 0 0 1 1 0

Option 47. Volume Offset Center

	b7	b6	b5	b4	b3	b2	b1	b0
VOLUME OFFSET CENTER	0	0	0	0	0	1	1	0

Option 48. Volume Offset Rear

	b7	b6	b5	b4	b3	b2	b1	b0
VOLUME OFFSET REAR	0	0	0	0	0	1	1	0

Option 49. Surround Delay

	b7	b6	b5	b4	b3	b2	b1	b0
SURROUND DELAY	0	0	0	0	0	0	0	1

Option 50. FM Prescale

	b7	b6	b5	b4	b3	b2	b1	b0
FM PRESCALE for Stereo	0	0	0	0	1	1	0	0

	b7	b6	b5	b4	b3	b2	b1	b0
FM PRESCALE for Dolby	0	0	0	0	1	0	0	1

Note: if virtual dolby is available, this option is not used.**Option 51. NICAM Prescale**

	b7	b6	b5	b4	b3	b2	b1	b0
NICAM Prescale for Stereo	0	0	1	0	1	1	0	1

	b7	b6	b5	b4	b3	b2	b1	b0
3D Panorama	0	0	0	0	1	0	1	1

	b7	b6	b5	b4	b3	b2	b1	b0
NICAM Prescale for Dolby	0	0	0	0	1	1	1	0

Note: if virtual dolby is available, this option is not used.**Option 52. Scart Input Prescale**

	b7	b6	b5	b4	b3	b2	b1	b0
Scart Input Prescale for Stereo	0	0	0	0	1	0	0	0

	b7	b6	b5	b4	b3	b2	b1	b0
Scart Input Prescale for Dolby	0	0	0	0	1	1	1	1

	b7	b6	b5	b4	b3	b2	b1	b0
prescaler MSP Scart (AVL = OFF)	0	0	0	1	1	0	0	1

 (if virtual dolby option is available)
Note: if virtual dolby is available, this option is not used.**Option 53. I2S Prescale**

	b7	b6	b5	b4	b3	b2	b1	b0
I2S Prescale for Stereo	0	0	0	0	0	1	1	0

	b7	b6	b5	b4	b3	b2	b1	b0
I2S Prescale for Dolby	0	0	0	0	0	1	1	0

Note: if virtual dolby is available, this option is not used.**Option 54. Scart Output Prescale**

	b7	b6	b5	b4	b3	b2	b1	b0
Scart Output Prescale	0	1	1	1	1	1	1	1

Option 55. Speaker Setup

	b7	b6	b5	b4	b3	b2	b1	b0
Speaker Setup (L/R, L/C/R, L/R/S, L/C/R/S)	0	0	0	0	0	0	0	0

Option 56. Audio Options Available Or Not

Attention: All bits on the Option 56 must be the "0" for MONO TV SETS

B7: nicam	=	note 7
B6: ASD	=	note 6
B5: VRS	=	note 5
B4: CRM	=	note 4
B3: ...	=	x
B2: LBE	=	note 2
B1: Spa	=	note 1
B0: Avl	=	note 0

note 7 :

nicam	=	nicam available
0	=	nicam not available
1	=	nicam available

note 6 :

ASD	=	Auto Sound Detection available/not available
0	=	Auto Sound Detection not available
1	=	Auto Sound Detection available

note 5 :

VRS	=	Virtual Surround
0	=	VRS not available
1	=	VRS available

note 4 :

CRM	=	CARRIER MUTE OFF/ON
0	=	Sound carrier mute is ON in the Stereo Sound IC
1	=	Sound carrier mute is OFF in the Stereo Sound IC (i.e. option available)

note 2 :

LBE	=	LBE (Dynamic Bass)
0	=	LBE not available
1	=	LBE available

note 1 :

Spa	=	Spatial Effect available
0	=	Spatial Effect not available
1	=	Spatial Effect available

note 0 :

Avl	=	Automatic volume level available on the Menu
0	=	Automatic volume level not available
1	=	Automatic volume level available

Option 57. Stereo Threshold

B7: b7	=	note 1	Remark :
B6: b6	=	note 1	
B5: b5	=	note 1	-Threshold for all FM A2 signals to switch from MONO to STEREO.
B4: b4	=	note 1	-For first check after programme change half value is changed (0Ch) 19h/2
B3: b3	=	note 1	-For switching from STEREO back to MONO: 19h/4 *3
B2: b2	=	note 1	
B1: b1	=	note 1	
B0: b0	=	note 1	

note 1 :

b7 b6 b5 b4 b3 b2 b1 b0

MSP Stereo/Mono Threshold 0 0 0 1 1 0 0 1

Option 58. MSP Audio Flags

B7: b7 = x
 B6: b6 = x
 B5: b5 = x
 B4: Trs = note 1
 B3: Trb = note 1
 B2: Bbe = note 1
 B1: Spa = note 1
 B0: Avl = note 1

note 1 :

Defines whether the feature is toggled ON or OFF in the menu and stored.

0 : OFF

1 : ON

Option 59. NICAM Threshold

b7 b6 b5 b4 b3 b2 b1 b0

MSP NICAM Threshold 0 1 1 0 0 1 0 0

Option 60. Power Delay Time

B7: NZ = x
 B6: HM = x
 B5: L5 = note 3
 B4: L4 = note 3
 B3: L3 = note 3
 B2: L2 = note 3
 B1: L1 = note 3
 B0: L0 = note 3

note 3:

L7 L6 L5 L4 L3 L2 L1 L0

Default Value : x x 1 1 0 0 0 0

1000 MSEC = 1SN

Number	L7L6L5L4L3L2L1L0	Delay	Number	L7L6L5L4L3L2L1L0	Delay
0	00000000	= 4 sec	32	00100000	= 12 sec
1	00000001	= 4,25 sec	33	00100001	= 12,25 sec
2	00000010	= 4,5 sec	34	00100010	= 12,5 sec
3	00000011	= 4,75 sec	35	00100011	= 12,75 sec
4	00000100	= 5 Sec	36	00100100	= 13 sec
5	00000101	= 5,25 Sec	37	00100101	= 13,25 sec
6	00000110	= 5,5 Sec	38	00100110	= 13,5 sec
7	00000111	= 5,75 Sec	39	00100111	= 13,75 sec
8	00001000	= 6 sec	40	00101000	= 14 sec
9	00001001	= 6,25 sec	41	00101001	= 14,25 sec
10	00001010	= 6,5 sec	42	00101010	= 14,5 sec
11	00001011	= 6,75 sec	43	00101011	= 14,75 sec
12	00001100	= 7 sec	44	00101100	= 15 sec
13	00001101	= 7,25 sec	45	00101101	= 15,25 sec
14	00001110	= 7,5 sec	46	00101110	= 15,5 sec
15	00001111	= 7,75 sec	47	00101111	= 15,75 sec
16	00010000	= 8 sec	48	00110000	= 16 sec
17	00010001	= 8,25 sec	49	00110001	= 16,25 sec
18	00010010	= 8,5 sec	50	00110010	= 16,5 sec
19	00010011	= 8,75 sec	51	00110011	= 16,75 sec

20	00010100	=	9	sec
21	00010101	=	9,25	sec
22	00010110	=	9,5	sec
23	00010111	=	9,75	sec
24	00011000	=	10	sec
25	00011001	=	10,25	sec
26	00011010	=	10,5	sec
27	00011011	=	10,75	sec
28	00011100	=	12	sec
29	00011101	=	12,25	sec
30	00011110	=	12,5	sec
31	00011111	=	12,75	sec

52	00110100	=	17	sec
53	00110101	=	17,25	sec
54	00110110	=	17,5	sec
55	00110111	=	17,75	sec
56	00111000	=	18	sec
57	00111001	=	18,25	sec
58	00111010	=	18,5	sec
59	00111011	=	18,75	sec
60	00111100	=	19	sec
61	00111101	=	19,25	sec
62	00111110	=	19,5	sec
63	00111111	=	19,75	sec

	76543210	Bit Positions		76543210
0	00000000		32	00100000
1	00000001	Colour Code	33	00100001
2	00000010		34	00100010
3	00000011		35	00100011
4	00000100		36	00100100
5	00000101		37	00100101
6	00000110		38	00100110
7	00000111		39	00100111
8	00001000		40	00101000
9	00001001		41	00101001
10	00001010		42	00101010
11	00001011		43	00101011
12	00001100		44	00101100
13	00001101		45	00101101
14	00001110		46	00101110
15	00001111		47	00101111
16	00010000		48	00110000
17	00010001		49	00110001
18	00010010		50	00110010
19	00010011		51	00110011
20	00010100		52	00110100
21	00010101		53	00110101
22	00010110		54	00110110
23	00010111		55	00110111
24	00011000		56	00111000
25	00011001		57	00111001
26	00011010		58	00111010
27	00011011		59	00111011
28	00011100		60	00111100
29	00011101		61	00111101
30	00011110		62	00111110
31	00011111		63	00111111

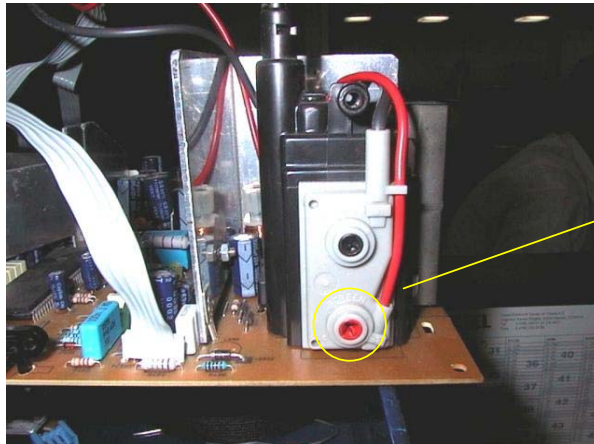
14.4.OPTION TABLE RECOMMENDED VALUES

X listed in the option can be 0 or 1

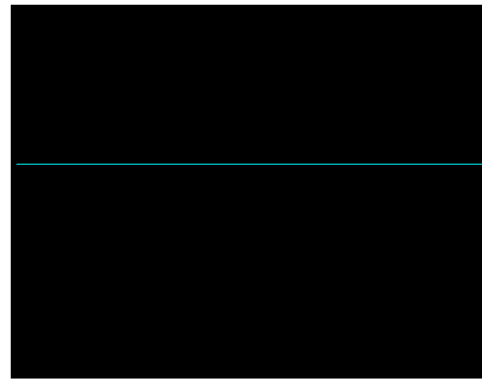
OPTION	2835 MULTI	2835W MULTI	2835W PAL I
000	X2 XXXXXX10	X2 XXXXXX10	X2 XXXXXX10
001	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
002	23 001XXX11	23 001XXX11	23 001XXX11
003	XX XXXXXXXX0	XX XXXXXXXX0	XX XXXXXXXX0
004	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
005	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
006	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
007	XX XX0XXX1X	XX XX0XXX1X	XX XX0XXX1X
008	A1 11000001	01 00000001	01 00000001
009	0B 00001111	0B 00001111	04 00001111
010	X2 XXXXX011	X7 XXXXX111	X7 XXXXX111
011	8E 10001110	8E 10001110	8E 10001110
012	03 00000011	03 00000011	03 00000011
013	06 00000110	06 00000110	06 00000110
014	15 10000101	15 10000101	15 10000101
015	AA 10101010	AA 10101010	AA 10101010
016	09 00001001	09 00001001	09 00001001
017	A2 10100010	A2 10100010	A2 10100010
018	1B 00011011	1B 00011011	1B 00011011
019	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
020	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
021	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
022	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
023	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
024	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
025	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
026	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
027	FF 11111111	FF 11111111	FF 11111111
028	FF 11111111	FF 11111111	FF 11111111
029	FF 11111111	EF 11101111	EF 11101111
030	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
031	0F 00001111	0F 00001111	0F 00001111
032	23 00100011	23 00100011	23 00100011
033	0E 00001110	0E 00001110	0E 00001110
034	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
035	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
036	X4 XXXXX1XX	X4 XXXXX1XX	X4 XXXXX1XX
037	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
038	AF 11001111	AF 11001111	AF 11001111
039	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
040	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
041	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
042	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
043	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
044	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
045	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
046	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
047	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
048	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
049	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
050	XX XXXXXXXX	XX XXXXXXXX	XX XXXXXXXX
051	41 01000001	41 01000001	41 01000001
052	1B 00011011	1B 00011011	1B 00011011
053	06 00000110	06 00000110	06 00000110

054	75 01110101	75 01110101	75 01110101
055	00 00000000	00 00000000	00 00000000
056	DE 11011110	DE 11011110	DE 11011110
057	19 00011001	19 00011001	19 00011001
058	00 00000000	00 00000000	00 00000000
059	64 01100100	64 01100100	64 01100100
060	10 00010000	10 00010000	10 00010000

14.5.SCREEN ADJUSTMENT (FBT SCREEN)



SCREEN
ADJUST
POT



From the option list change option 2 bit 6 from 0 to 1 for disabling vertical scan. Adjust horizontal line via screen adjust pot. as thin as possible. Then press 0 to leave service menu.

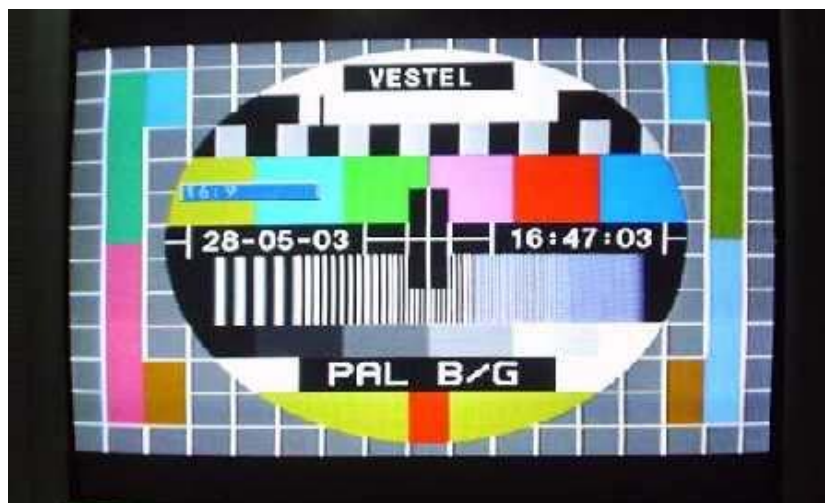
14.6.GEOMETRY ADJUSTMENT

4:3 FORMATS

4:3 MODE

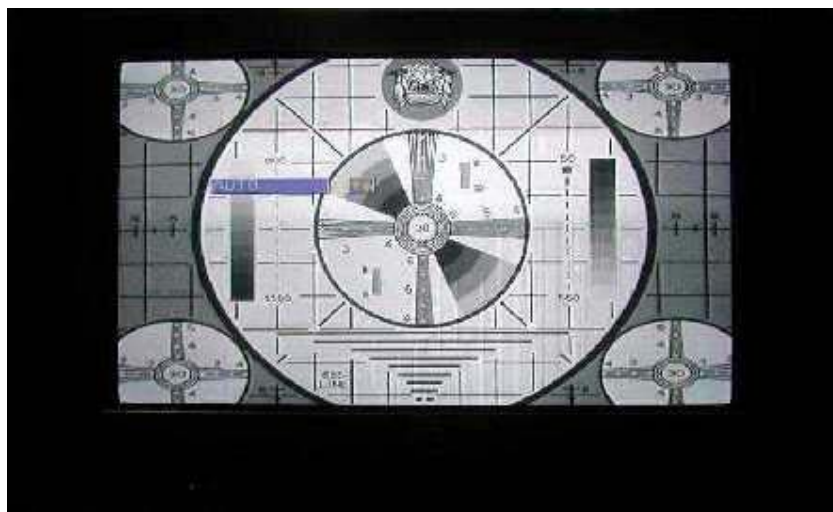


16:9 MODE

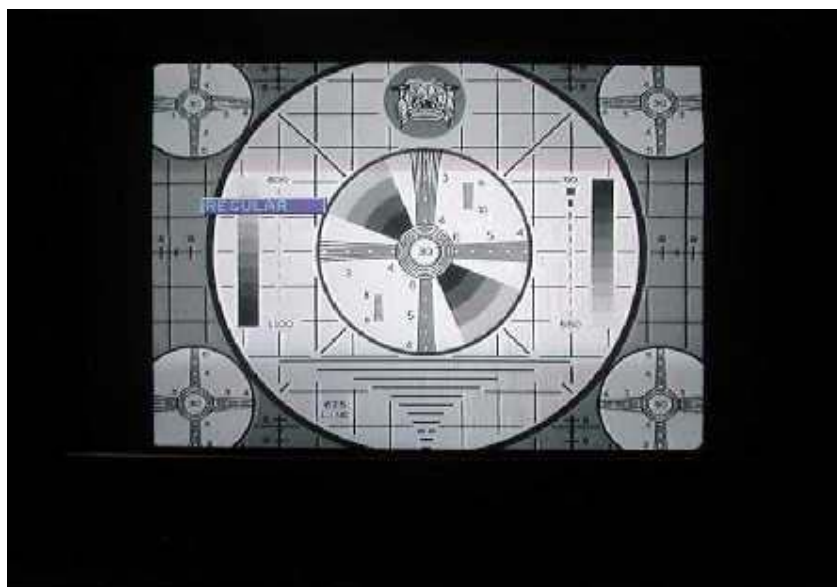


16:9 FORMATS

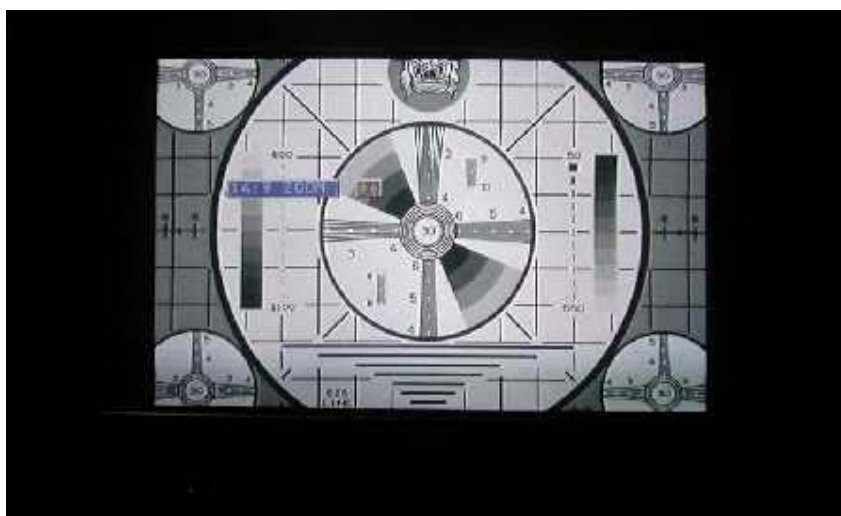
AUTO MODE



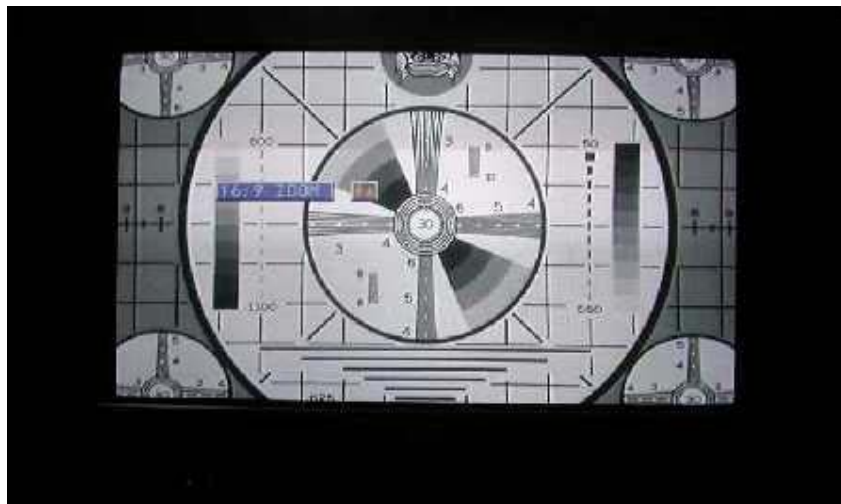
REGULAR MODE



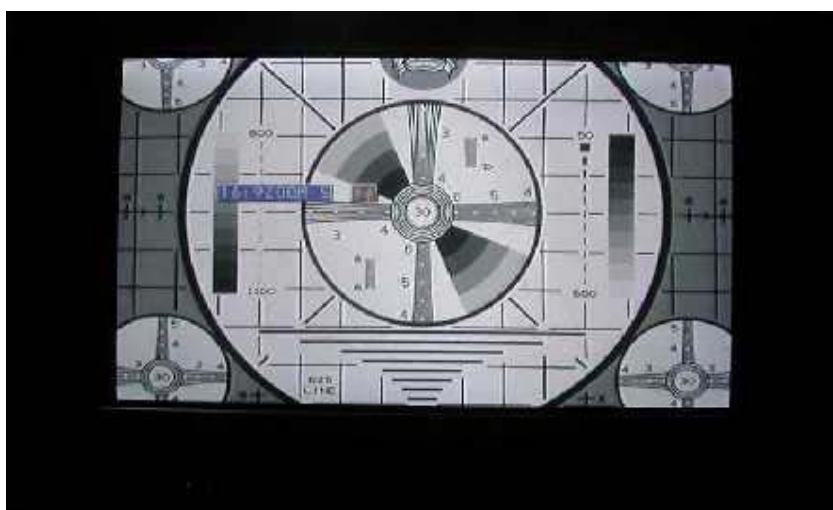
ZOOM 14:9 MODE



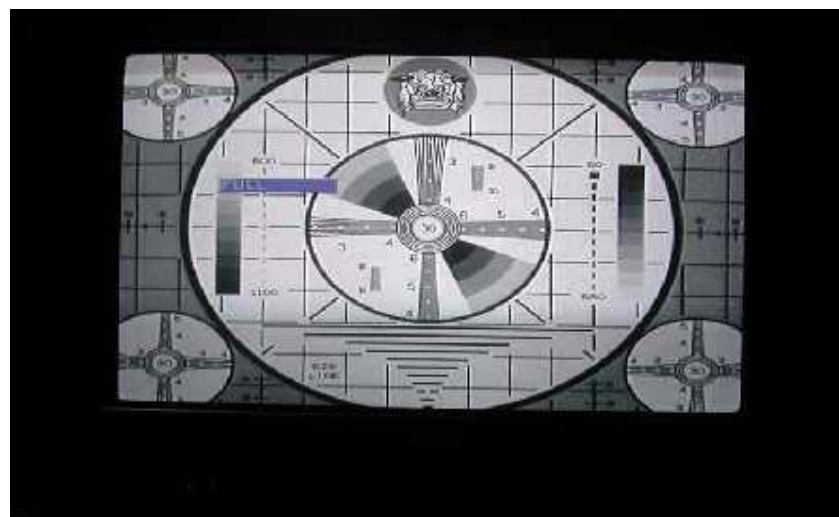
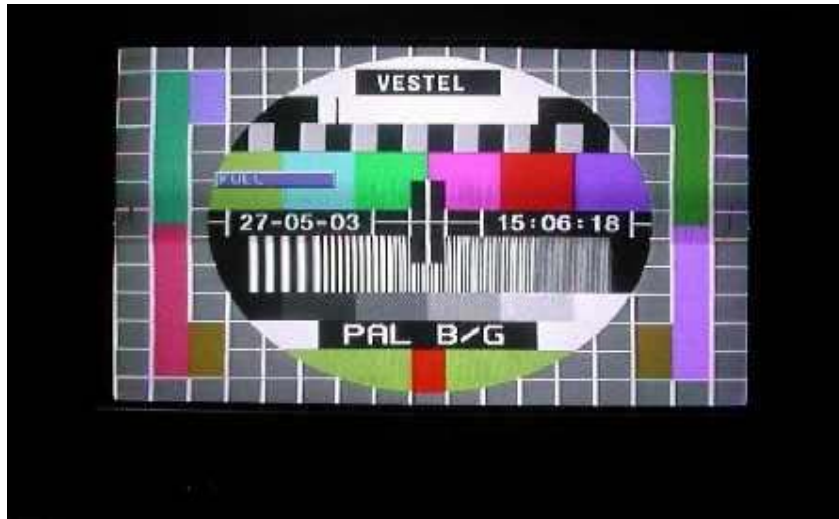
ZOOM 16:9 MODE



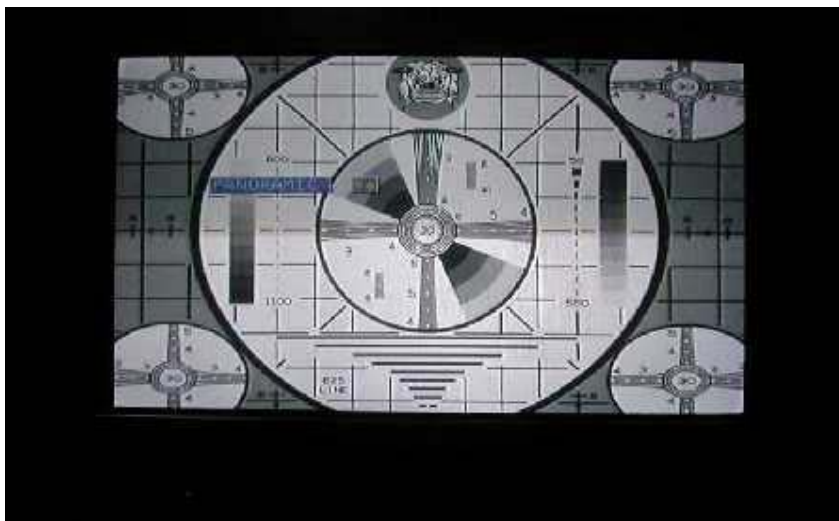
SUBTITLE ZOOM MODE



FULL MODE



PANOROMIC MODE



BILL OF MATERIAL LIST									
10023314					3216*TEAC TEAC EU3216STF(AK45)H.FUME				
BOM Date : 28/11/2003									
NO	COMPONENT CODE	MATERIAL	POSITION NUMBER						
1	20036465	ON/OFF AS.110°(32-33°)(2.2/AU)(W/MAKARON	
2	30002174	SWITCH SAFE ON/OFF 4A/64A	
3	30002368	CNAS 2P/650 AC MAINS W/C	
4	30014059	POWER CORD 2.2MT W/FILTER AUST.TYPE	
5	40000127	SWITCH INSULATION DOOR LK101	
6	40001898	MACARON (12cm.Isý ile daralan)	
7	20099115	BASE 3215/16W (I) (AK37/45/52) V.0	
8	60000009	FR-HIPS NATR.V-0	
9	60000022	MASTERBATCH (BLACK)	
10	20108289	SNOW BOX ASSY 3215W-3216W	
11	20099120	SNOW BOX BOTTOM 3215/16	
12	60000011	EPS	
13	20099121	SNOW BOX TOP 3215/16	
14	60000011	EPS	
15	20108425	MD.ASY.TK131-XX16 5SW WO/DVD AK41	
17	20119034	LED HOLDER (d9x10)	
18	60000008	HIPS (NATURAL)	
19	30001279	LED RED/GREEN LTL293SJ	D101	
20	30001670	PREAMPLIFIER TFMS5360	IC101	
21	30002181	SWITCH TACT(4)	SW101	SW102	SW103	SW104	SW105		
22	30002302	CNAS 6P/450 TB FLT W/C UL2468AWG24	PL110	
28	30000526	RES CF 1/4W 1.5K J	R105	
29	30000622	RES CF 1/4W 270R J	R108	
30	30000689	RES CF 1/4W 3.9K J	R109	
31	30000712	RES CF 1/4W 470R J	R101	
32	30000770	RES CF 1/4W 680R J	R107	
33	30019615	PCB 11TK131-1	
34	30000371	CAP EL 22UF 50V M	C104	
35	20115442	CRT KIT (32"16:9 REALFLAT) AK45 WO/UL	
36	30006889	32"16:9DEG&EARTH CB.SAFE WO/UL REAL/FLAT	
37	30016483	CNAS 2P/600 HRZ DIS W/C UL1672AWG24	PL602	

38	30019083	CNAS 2P/600 SIS W/C+FER UL1007AWG24	PL603
39	30020461	CNAS 2P+1 AK45 EMC	PL200
40	20138835	MD.ASY.SB18H FAV+HP XX15/16 (AK45)
42	30001830	CONN HEADER 2P 2.5MM TOP BLUE SD	PL103
43	30001839	CONN HEADER 3P 2.5MM TOP GREEN SD	PL104
44	30001891	RCA JACK 1P WHITE 28 FAV	CON103
45	30001892	RCA JACK 1P RED 28 FAV	CON104
46	30001893	RCA JACK 1P YELLOW 28 FAV	CON102
48	30001902	JACK HEADPHONE STEREO WO/SW	CON105
49	30001963	FERRITE AK18 AUDIO	T105	T106	.	.	.
50	30013231	CNAS 3P/900 FLT W/C UL2468AWG24	PL102
52	30001962	FERRITE AK18 VIDEO	T103
53	30001963	FERRITE AK18 AUDIO	T104	T107	.	.	.
54	30002362	CNAS 830 FAV SHL W/4C+FER
59	30000594	RES CF 1/4W 22K J	R107	R109	.	.	.
60	30000712	RES CF 1/4W 470R J	R108	R110	.	.	.
61	30024335	PCB 11SB18H
62	30000190	CAP CER 100PF 50V J CH	C106
63	30000213	CAP CER 180PF 50V J CH	C103	C104	.	.	.
67	30000471	RES CF 1/4W 10K J	R101	R102	.	.	.
68	30000551	RES CF 1/4W 18R J	R103	R105	.	.	.
69	30000115	CAP MKT 6.8NF 100V J	C101	C102	.	.	.
70	20140415	CHS.ASSY.45- 11F7312A3121123311287
71	20104819	CRT DIFF.KIT AK45-32" PAN(RF)DA.L.145V
72	30000123	CAP PP 33NF 630V K	C617
73	30000134	CAP MKP SAFE 11NF 2000V %3.5	C621
74	30000151	CAP MKP 3.3NF 2KV %3.5	C616
75	30000162	CAP MKP SAFE 470NF 250V J	C623
76	30000172	CAP MKP SAFE 680NF 250V J (P=15)	C624
77	30000965	RES MF 1/2W 0.33R J	R641
78	30001215	RES FUSE SAFE 1W 1R J	R618
79	30001234	RES FUSE 2W 33R J	R613
81	30002829	FIXED COIL BRIDGE 1.5MH	L603
82	30012003	CAP MKP SAFE 18NF 630V J	C622
83	30017085	LINEARITY COIL 20UH	L602
84	30017518	TRF FBT DOUBLE COMMON FOCUS LAYER (AK33)	TR600

88	30002183	RELAY SAFE MON15 KI-S-212M	RL100
90	20108005	MD.ASY.RT45-ROTATION (TILT) AK45	PL509
92	30001665	IC LM358N	IC1
93	30001829	CONN HEADER 2P 2.5MM TOP WHT SD	PL2
94	30001912	PIN F 5P/2.5MM (11.5MM)	PL1
96	20108009	MD.SMD.RT45-ROTATION (TILT) AK45
99	30000078	CAP MKT 1UF 100V M	C5
100	30000353	CAP EL 100UF 25V M	C1	C3	.	.	.
101	30001452	TR BC327	Q1	Q4	.	.	.
102	30001453	TR BC337	Q2	Q3	.	.	.
103	30009699	DIODE ZENER SMD BZT55C12	D1	D2	.	.	.
104	30012603	CAP SMD 100NF 25V K R (0603)	C2	C4	.	.	.
105	30012641	RES SMD 1/16W 10K J (0603)	R2
106	30012642	RES SMD 1/16W 120K J (0603)	R5
107	30012657	RES SMD 1/16W 1K J (0603)	R7
108	30012673	RES SMD 1/16W 270R J (0603)	R1	R6	.	.	.
109	30012677	RES SMD 1/16W 3.3K J (0603)	R4
111	30001518	IC TDA1308	IC704
112	30001836	CONN HEADER 3P 2.5MM TOP BLACK SD	PL711
114	20113603	MD.ASY.DF45-DYNAMIC FOCUS (AK45)	PL605
116	30000145	CAP MKP 220NF 250V J	C23
117	30000152	CAP MKP 330NF 250V J	C24
118	30001127	RES MO 1W 22K J	R18
120	30007686	CONN HOUSING 7P 2.5MM SIDE WHT LT W/SN	PL1
121	30015576	TRF DFOCUS COIL 50HZ E25	L2
122	30016083	FIXED COIL 1MH AK33 HIGH CURRENT	L3
123	30016771	CNAS 1P/300 DFOCUS DIS W/DC UL1672AWG24	PL4
124	30022463	PCB 11DF41J-3
125	30022517	CNAS 1P/300 DFOCUS DIS W/DC UL1672AWG24	PL3
126	35000135	TEST PIN 1.1MM	PL3	PL4	.	.	.
127	35000176	EYELET BR 2*3MM	PL3	PL4	.	.	.
128	30007685	CONN HEADER 7P 2.5MM TOP WHT LT W/SN	PL605
129	35000135	TEST PIN 1.1MM	PL601	PL606	.	.	.
130	40007356	SPACER SUPPORT SCC-8 (CRT TERMINAL)
132	30001830	CONN HEADER 2P 2.5MM TOP	PL207

		BLUE SD					
133	30001839	CONN HEADER 3P 2.5MM TOP GREEN SD	PL703
134	30009834	CABL 1P/60 SIS	B-B
136	30010921	DOUBLE-DECK SCART SOCKET	PL204
138	30013658	IC MSP3410G SDIP64	IC700
140	30009637	TUNER WSP (PLL) 38.9 MK2 - BATCH	TU200
142	30019493	IC VDP3133Y	IC200
144	30001619	IC VIDEO SWITCH TEA6415C DIP20	IC201
146	20075415	HE.ASSY.41-LM317 (AK41/45)	IC103
147	30001668	IC LM317T
148	35000142	HEATSINK 15AK14/15 15/TP ORTAK
149	35000158	NUT C ZN BOTTOM M3
150	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)
151	35000182	SCREW C ZN YSMB M3*10
152	20092405	CN.ASY.37-DIODE UF5407+FERRITE BAR 5*8	D121
153	30001964	FERRITE BAR 5*8
154	30007681	DIODE UF5407 3A/800V 150A
155	20108354	DIODE BRIDGE GBU4M 4A/1000V 150A(FORMLU)	D101
156	30007758	DIODE BRIDGE GBU4M 4A/1000V 150A
157	20113525	HE.ASY.45-VERTICAL W/CABLE HOLDER
158	30007793	IC STV9379FA	IC600
159	35000158	NUT C ZN BOTTOM M3
160	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)
161	35000183	SCREW C ZN YSMB M3*12
162	35006411	HEATSINK AK45 VERTICAL
163	40000020	TR HOLDER TR-06A
164	40000146	INSULATOR SILICON PAD (15*20)
165	40011922	EDGE SADDLE (CT-16)
166	20113526	HE.ASY.45-AUDIO W/CABLE HOLDER
167	30016113	IC AAMP TDA7269A 2*14W MULTIWATT11	IC301
168	35000158	NUT C ZN BOTTOM M3
169	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)
170	35000182	SCREW C ZN YSMB M3*10

171	35006161	HEATSINK AK38 AUDIO
172	40011922	EDGE SADDLE (CT-16)
173	20113527	HE.ASY.45-HORIZONTAL W/CABLE HOLDER
174	30001429	TR BUK444-200A	Q600
175	30001441	TR BU2508AF	Q602
176	35000158	NUT C ZN BOTTOM M3
177	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)
178	35000181	SCREW C ZN YSMB M3*8
179	35000182	SCREW C ZN YSMB M3*10
180	35006412	HEATSINK AK45 HORIZONTAL
181	40011922	EDGE SADDLE (CT-16)
182	20113528	HE.ASY.45-REGULATOR
183	30001500	IC LM7808	IC104
184	30001622	IC 7805 (1A)	IC101
185	35000158	NUT C ZN BOTTOM M3
186	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)
187	35000182	SCREW C ZN YSMB M3*10
188	35006081	HEATSINK AK45 REGULATOR
189	30000075	CAP MKT 100NF 250V K (DC)	C604
190	30000076	CAP MKT SAFE 100NF 275V M AC	C160
191	30000084	CAP MKT SAFE 150NF 275V M AC P=15	C102
192	30000094	CAP MKT SAFE 220NF 275V M AC	C103
193	30000161	CAP MKP SAFE 47NF 630V J	C108
194	30000348	CAP EL 10UF 160V M	C612
195	30000351	CAP EL 10UF 350V M	C601
196	30000359	CAP EL 1000UF 16V M	C141
197	30000360	CAP EL 1000UF 25V M	C148	C613	C614	.	.
198	30000402	CAP EL 47UF 100V M	C603
199	30000406	CAP EL 47UF 250V M (HR) 105°	C125	C605	.	.	.
200	30000409	CAP EL 470UF 25V M	C608	C809	.	.	.
201	30000440	CAP CER SAFE 2.2NF 4KV M	C161	C115	.	.	.
203	30001134	RES MO 2W 2.2R J	R640
204	30001224	RES FUSE SAFE 1/2W 0.22R J	R152
205	30001270	PTC SAFE 9 OHM	TH100
206	30001299	DIODE UF5404 3A/400V 150A	D603	D604	.	.	.
207	30001320	DIODE GUC BY228	D625
208	30001668	IC LM317T	IC102
209	30001756	XTAL 18.432MHZ	X700
210	30001762	CONN HEADER 2P	PL708

		2.5MM(9.7MM) TOP					
211	30001764	CONN HEADER 2P 2.5MM(9.7MM) TOP BLACK	PL709	PL200	.	.	.
212	30001783	CONN HEADER 5P 2.5MM TOP BD	PL500
213	30001784	CONN HEADER 6P 2.5MM TOP BD	PL502
214	30001792	CONN HEADER 2P 7.5MM TOP WHT	PL100	PL602	.	.	.
215	30001795	CONN HEADER 3P 5/7.5MM TOP WHT	PL101
216	30001829	CONN HEADER 2P 2.5MM TOP WHT SD	PL603
217	30001850	CONN HEADER 6P 2.5MM TOP WHT SD	PL604
218	30002031	FIXED COIL INJECTION 15MH	L601
219	30002090	LINE DRIVER NEW TYPE	TR601
220	30002851	XTAL 4MHZ L.C=30PF	X200
221	30006662	XTAL 6MHZ	X500
222	30007681	DIODE UF5407 3A/800V 150A	D611
224	30008778	XTAL 20.25MHZ	X201
225	30009833	CABL 1P/100 SIS
226	30009848	CABL 1P/240 SIS	A-A
227	30010039	CONN HEADER 8P 2.5MM TOP WHT	PL206
229	30011968	IC SMPS MC44608 DIP8	IC106
230	30015087	IC SAFE OPTOCOUPLER TCET1102G	IC100
231	30018085	CAP VAR SAFE 510V K MFCN14D511	R167
232	30018259	CAP EL 4700UF 25V M	C135	C133	C134	.	.
233	30018904	RES MO 5W 4.7k J	R616
234	35000135	TEST PIN 1.1MM	PL214
235	40006432	MOUNTING BUTTON (MB-10)
236	70000029	SOLDER (INGOT) 63/37
237	70000030	SOLDER WIRE CAP 1.00mm 60Sn40Pb
238	20118131	MB.M.45-SMP170-270VWO/D-D- S(WO/P(29-32-3
239	20070614	HE.ASY.37-SMPS 170-270V (AK37/45/52)	Q102
240	30001386	TR MTP6N60E (PLASTIC)
241	35000158	NUT C ZN BOTTOM M3
242	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)
243	35000181	SCREW C ZN YSMB M3*8
244	35006413	HEATSINK SMPS AK45

245	70000074	SILICON (GRES)
246	30000421	CAP EL 220UF 400V M (FOR 28")	C107
247	30007774	NTC 5 OHM	R103
248	30018866	LINE FILTER SAFE 2X22MH 10mmX12.5mm	L101
249	30019432	TRF SMPS SAFE AK45 110° (170- 270V)	TR100
251	30001705	FILTER SAW OFWG9353M	Z201
252	30015591	FILTER SAW G3967	Z200
254	20000848	FUSE ASSY.TK79-A (2.5A)	F100
255	30001731	FUSE SAFE 2.5A 250V 5*20MM
256	35000136	FUSE HOLDER TK79-A (GRAY)
259	20140108	PR.IC.45-SDA55XX TEAC
260	30011957	IC SDA55XX FLASH	IC500
262	30000092	CAP MKT 220NF 63V J	S219
263	30009835	CABL 1P/150 SIS	PL219- PL220	NOT-2	.	.	.
264	30009846	CABL 1P/40 SIS	NOT3
266	20147207	CN.ASY.45- F.B.3.5X4.7X0.8+R.F.1/2W0.47R	R603
267	30001244	RES FUSE SAFE 1/2W 0.47R J
268	30006712	FERRITE BEAD 3.5X4.7X0.8
270	30009366	DIODE UF5402 3A/200V 150A	D118	D119	.	.	.
276	30001329	DIODE 1N4007 1A/1000V 30A	D120	D123	.	.	.
281	30000393	CAP EL 3.3UF 50V M	C531
282	30012641	RES SMD 1/16W 10K J (0603)	R583
283	30012703	RES SMD 1/16W 56K J (0603)	R556
290	30000393	CAP EL 3.3UF 50V M	C507
291	30000815	RES CF 1/4W 8.2K J	R326
292	30006770	FIXED COIL 0.22UH	L506
293	30000480	RES SMD 1/10W 100K J (0805)	R327
294	30001457	TR BC848B SMD	Q208
295	30012668	RES SMD 1/16W 220R J (0603)	R282
296	30012684	RES SMD 1/16W 330R J (0603)	R284
297	30012707	RES SMD 1/16W 680R J (0603)	R283
300	30000345	CAP EL 10UF 50V M	C769
301	30000352	CAP EL 100UF 16V M	C776	C782	.	.	.
302	30000362	CAP EL 1UF 50V M	C784
304	30001971	FERRITE BEAT (805) BLM21A601S	L714	L715	.	.	.
305	30012581	CAP SMD 1NF 50V K R (0603)	C706	C715	C779	C786	.
306	30012585	CAP SMD 2.2NF 50V K R (0603)	C775	C785	C795	C796	.
307	30012641	RES SMD 1/16W 10K J (0603)	R747	R756	.	.	.
308	30012692	RES SMD 1/16W 4.7K J (0603)	R742	R746	.	.	.

309	30012709	RES SMD 1/16W 7.5K J (0603)	R749	R754	.	.	.
310	30016126	CAP SMD 220NF 16V K R (0603)	C763	C767	.	.	.
311	30016654	CAP SMD 100NF 16V K R (0603)	C765
315	30012581	CAP SMD 1NF 50V K R (0603)	C740	C741	.	.	.
316	30012657	RES SMD 1/16W 1K J (0603)	R725	R726	.	.	.
317	30016126	CAP SMD 220NF 16V K R (0603)	C729	C730	.	.	.
324	30000459	RES CF 1/4W 100R J	R723
325	30000770	RES CF 1/4W 680R J	R288
326	30000792	RES CF 1/4W 75R J	R219
327	30000345	CAP EL 10UF 50V M	C771	C772	.	.	.
328	30001457	TR BC848B SMD	Q200
329	30001971	FERRITE BEAT (805) BLM21A601S	L216	L217	L212	L220	.
330	30012510	RES SMD 1/16W 100R J (0603)	R724
331	30012581	CAP SMD 1NF 50V K R (0603)	C290	C302	C746	C747	C750
.	.	.	C751
332	30012589	CAP SMD 4.7NF 50V K (0603)	C296	C308	.	.	.
333	30012603	CAP SMD 100NF 25V K R (0603)	C362
334	30012607	CAP SMD 150PF 50V J (0603)	C287	C304	.	.	.
335	30012650	RES SMD 1/16W 15K J (0603)	R528
336	30012657	RES SMD 1/16W 1K J (0603)	R718	R719	.	.	.
337	30012707	RES SMD 1/16W 680R J (0603)	R285
338	30012713	RES SMD 1/16W 75R J (0603)	R202
340	30016126	CAP SMD 220NF 16V K R (0603)	C719	C733	.	.	.
346	30001173	RES MO 1W 0.47R J	R116
350	30012713	RES SMD 1/16W 75R J (0603)	R334
356	30000459	RES CF 1/4W 100R J	R206	R207	.	.	.
357	30000792	RES CF 1/4W 75R J	R317
358	30000352	CAP EL 100UF 16V M	C212
359	30001457	TR BC848B SMD	Q202
360	30001971	FERRITE BEAT (805) BLM21A601S	L227
361	30012641	RES SMD 1/16W 10K J (0603)	R222	R238	R237	R316	R220
.	.	.	R308
362	30012657	RES SMD 1/16W 1K J (0603)	R318
363	30012713	RES SMD 1/16W 75R J (0603)	R215	R200	R236	R205	R310
.	.	.	R201
365	30016126	CAP SMD 220NF 16V K R (0603)	C234	C210	C208	C217	C214
.	.	.	C215	C222	C209	.	.
366	30016654	CAP SMD 100NF 16V K R (0603)	C231
369	30001288	DIODE BYV27-200 2A/200V 50A	D110
370	30001315	DIODE BYD33D 1A/200V 20A	D127
371	30000090	CAP MKT 22NF 100V J	C119
379	30000452	RES CF 1/4W 10R J	R108

380	30000459	RES CF 1/4W 100R J	R266	R567	R568	R265	.
381	30000466	RES CF 1/4W 1K J	R537	R150	R519	R658	R657
.	.	.	R336	R337	R338	.	.
382	30000470	RES CF 1/2W 10K J	R601
383	30000471	RES CF 1/4W 10K J	R505	R506	R612	.	.
384	30000481	RES CF 1/4W 1M J	R137
385	30000495	RES CF 1/4W 1.2K J	R131	R132	.	.	.
386	30000500	RES CF 1/4W 12K J	R247
387	30000580	RES CF 1/4W 22R J	R118	R645	.	.	.
388	30000649	RES CF 1/2W 33R J	R644
389	30000655	RES CF 1/4W 330R J	R235
390	30000660	RES CF 1/4W 3.3K J	R138
391	30000718	RES CF 1/4W 4.7K J	R100
392	30000723	RES CF 1/4W 47K J	R818
393	30000792	RES CF 1/4W 75R J	R221	R231	.	.	.
394	30000848	RES MF 1/4W 1K F	R652
395	30000872	RES MF 1/4W 120K F	R630
396	30000880	RES MF 1/4W 130K F	R133
397	30000896	RES MF 1/4W 160K G	R101
398	30000982	RES MF 1/4W 4.7K J	R105
399	30001082	RES MO 1/2W 1K J	R650
400	30001100	RES MO 1W 150R J	R608
401	30001159	RES MO 1W 0.33R J	R165
402	30001228	RES FUSE SAFE 1/2W 2.2R J	R649
403	30001244	RES FUSE SAFE 1/2W 0.47R J	R604
404	30001257	RES MG SAFE 1/2W 4.7M J	R117
405	30001284	DIODE 1N4148 0.15A/100V 0.5A	D627
406	30001291	DIODE HER107 1A/800V 30A	D613
407	30001315	DIODE BYD33D 1A/200V 20A	D108
408	30001318	DIODE BA159 1A/800V 20A	D103	D610	D104	D615	D105
.	.	.	D131	D609	D602	D111	.
409	30001329	DIODE 1N4007 1A/1000V 30A	D100	D130	.	.	.
410	30001344	DIODE ZENER 6.2V 1/2W	D106
411	30001377	DIODE ZENER 33V UZT 33B	D601
412	30001979	FIXED COIL 1UH Q45 M-A	L206	L207	L263	L264	L717
.	.	.	L265
413	30001987	FIXED COIL 4.7UH Q70 K-A	L266
414	30001992	FIXED COIL 10UH Q65 K-A	L103	L504	L500	L505	L501
.	.	.	L502	L503	.	.	.
415	30001996	FIXED COIL 22UH Q40 K	L700	L711	L701	L203	L702
.	.	.	L703	J344	.	.	.
416	30003722	DIODE ZENER ZPD15V	D133
417	30015222	RES MO 1W 0.75R J	R140

418	30025271	PCB 11AK45B5
419	30000069	CAP MKT 1NF 100V J	C648
420	30000074	CAP MKT 100NF 63V J	C632
421	30000082	CAP MKT 15NF 63V J	C609
422	30000092	CAP MKT 220NF 63V J	C638	C718	C717	C643	.
423	30000107	CAP MKT 47NF 250V J	C219
424	30000109	CAP MKT 470NF 63V J	C327	C265	C348	C356	C225
.	.	.	C266
425	30000225	CAP CER 220PF 50V J SL	C166
426	30000296	CAP CER 100NF 100V Z F	C646	C631	.	.	.
427	30000313	CAP CER 22NF 50V Z F	C172
428	30000345	CAP EL 10UF 50V M	C808
429	30000345	CAP EL 10UF 50V M	C229	C701	C259	C277	C744
.	.	.	C736	C351	C280	C737	C283
.	.	.	C253	C739	C524	C286	C357
.	.	.	C506	C720	C508	C724	C522
.	.	.	C523	C525	C358	.	.
430	30000352	CAP EL 100UF 16V M	C700	C754	C226	.	.
431	30000362	CAP EL 1UF 50V M	C789	C791	C165	C164	.
432	30000367	CAP EL 1UF 250V M	C137	C619	.	.	.
433	30000371	CAP EL 22UF 50V M	C106
434	30000375	CAP EL 220UF 16V M	C145	C152	C154	C155	C530
435	30000376	CAP EL 220UF 25V M	C124
436	30000387	CAP EL 33UF 50V M	C142	C252	.	.	.
437	30000393	CAP EL 3.3UF 50V M	C735	C140	.	.	.
438	30000407	CAP EL 470UF 16V M	C708
439	30000436	CAP CER 10NF 1KV ZE	C130
440	30000444	CAP CER 470PF 1KV KB	C618
441	30001384	TR MCR22-6	Q110
442	30001428	TR BF423	Q107
443	30001435	TR NBJT BC639 1A/100V TO92	Q601
444	30001454	TR BC548B	Q103	Q106	.	.	.
445	30001506	IC TL431	IC116	IC601	.	.	.
446	30006940	CAP CER 2.7NF 1KV K B	C113
447	30007308	CAP CER 220PF 1KV K (PULSE)	C111	C118	C120	C122	.
448	30007708	CAP CER 1NF 1KV K (PULSE)	C162
449	30009208	CAP CER 470PF 1KV K (PULSE)	C114	C636	.	.	.
450	30000480	RES SMD 1/10W 100K J (0805)	R144	R625	R627	.	.
451	30000494	RES SMD 1/10W 120R J (0805)	R162
452	30000575	RES SMD 1/10W 2K J	R134
453	30000593	RES SMD 1/10W 2.2K J (0805)	R139	R164	R106	R259	R276
454	30001285	DIODE 1N4148 SMD	D622	D125	D204	D623	D200
.	.	.	D112	D624	D129	D702	D617

.	.	.	D114	D132	D134	D212	D612
.	.	.	D706	D628	D629	.	.
455	30001457	TR BC848B SMD	Q108	Q113	Q501	Q109	Q502
.	.	.	Q203	Q114	Q503	Q216	Q504
.	.	.	Q500	Q220	Q201	Q222	Q704
.	.	.	Q223
456	30001458	TR BC858B SMD	Q505	Q700	Q218	Q112	Q603
.	.	.	Q605	Q606	Q703	.	.
458	30001968	FERRITE BEAD (0805) BLM21B201S	L719
459	30001971	FERRITE BEAT (805) BLM21A601S	L102	L251	L236	L252	L232
.	.	.	L239	L247	L213	L214	L215
.	.	.	L218
460	30003720	DIODE ZENER BZT55C5V6 5.6V SMD	D113
461	30007761	DIODE ZENER SMD BZT55C3V6	D701
462	30012412	DIODE ZENER 2.4V SMD	D506
463	30012506	RES SMD 1/16W 1.5K J (0603)	R555
464	30012508	RES SMD 1/16W 1.8K J (0603)	R538	R539	R540	.	.
465	30012509	RES SMD 1/16W 100K J (0603)	R653
466	30012510	RES SMD 1/16W 100R J (0603)	R208	R705	R209	R503	R713
.	.	.	R504	R714	R704	R299	R350
.	.	.	R351	R241	R703	R600	R428
.	.	.	R429	R430	.	.	.
467	30012559	CAP SMD 10PF 50V D COG (0603)	C278	C279	C240	.	.
468	30012560	CAP SMD 100PF 50V J (0603)	C121	C242	.	.	.
469	30012565	CAP SMD 1.8PF 50V J CH (0603)	C742	C743	.	.	.
470	30012566	CAP SMD 22PF 50V J (0603)	C170
471	30012567	CAP SMD 220PF 50V J (0603)	C764	C774	.	.	.
472	30012572	CAP SMD 390PF 50V J (0603)	C331
473	30012573	CAP SMD 47PF 50V J (0603)	C520	C521	C803	.	.
474	30012574	CAP SMD 470PF 50V J (0603)	C810	C811	.	.	.
475	30012576	CAP SMD 56PF 50V J CH (0603)	C721	C738	C722	.	.
476	30012579	CAP SMD 82PF 50V J (0603)	C333
477	30012581	CAP SMD 1NF 50V K R (0603)	C149	C732	C258	C267	C745
.	.	.	C793	C749	C712	C349	C713
.	.	.	C794	C728	C359	C360	C353
478	30012583	CAP SMD 1.5NF 50V K (0603)	C748	C731	C702	C237	.
479	30012584	CAP SMD 1.8NF 50V K R (0603)	C635
480	30012585	CAP SMD 2.2NF 50V K R (0603)	C282	C260	C284	.	.
481	30012586	CAP SMD 22NF 50V K (0603)	C246	C248	.	.	.
482	30012588	CAP SMD 33NF 50V K (0603)	C261	C263	.	.	.
483	30012589	CAP SMD 4.7NF 50V K (0603)	C288	C289	C292	C300	C637

484	30012590	CAP SMD 47NF 50V K (0603)	C268	C273	C781	C783	C171
485	30012591	CAP SMD 5.6NF 50V K (0603)	C644	C645	.	.	.
486	30012603	CAP SMD 100NF 25V K R (0603)	C146	C126	C127	C633	C630
.	.	.	C264	C105	C361	C129	C174
.	.	.	C175	C176	C173	.	.
487	30012607	CAP SMD 150PF 50V J (0603)	C293	C301	.	.	.
488	30012609	CAP SMD 68NF 50V K (0603)	C213
489	30012610	CAP SMD 10NF 50V J (0603)	C218	C262	C249	C238	C607
.	.	.	C235
490	30012641	RES SMD 1/16W 10K J (0603)	R126	R130	R548	R154	R151
.	.	.	R248	R141	R622	R155	R582
.	.	.	R623	R156	R270	R269	R119
.	.	.	R268	R157	R535	R636	R589
.	.	.	R762	R759	R656	R817	R166
.	.	.	R349	R230	.	.	.
491	30012643	RES SMD 1/16W 120R J (0603)	C202
492	30012644	RES SMD 1/16W 12K J (0603)	R357	R815	.	.	.
493	30012650	RES SMD 1/16W 15K J (0603)	R520	R406	R647	.	.
494	30012654	RES SMD 1/16W 180K J (0603)	R646
495	30012655	RES SMD 1/16W 180R J (0603)	R256	R358	.	.	.
496	30012657	RES SMD 1/16W 1K J (0603)	R112	R267	R571	R549	R142
.	.	.	R158	R702	R330	R342	R628
.	.	.	R254	R233	R149	R161	R110
.	.	.	R637	R710	R715	R411	R412
497	30012658	RES SMD 1/16W 1M J (0603)	R648
498	30012661	RES SMD 1/16W 2.4K J (0603)	R427
499	30012662	RES SMD 1/16W 2.7K J (0603)	R513	R518	R541	R210	.
500	30012668	RES SMD 1/16W 220R J (0603)	R512
501	30012669	RES SMD 1/16W 22K J (0603)	R765	R766	R359	R400	R260
502	30012673	RES SMD 1/16W 270R J (0603)	R281
503	30012674	RES SMD 1/16W 27K J (0603)	R638	R629	R655	.	.
504	30012677	RES SMD 1/16W 3.3K J (0603)	R261
505	30012679	RES SMD 1/16W 3.9K J (0603)	R526	R277	R590	R550	R527
.	.	.	R524	R415	R521	R819	.
506	30012685	RES SMD 1/16W 33K J (0603)	R533
507	30012692	RES SMD 1/16W 4.7K J (0603)	R127	R153	R554	R129	R516
.	.	.	R522	R343	R404	R624	R626
.	.	.	R211
508	30012695	RES SMD 1/16W 470R J (0603)	R553	R700	R701	R607	R416
.	.	.	R417	R418	R419	R420	R421
.	.	.	R422	R423	R424	R426	R425
.	.	.	R793	R794	.	.	.
509	30012696	RES SMD 1/16W 47K J (0603)	R507	R508	R509	R510	R242

.	.	.	R621	R820	.	.	.
510	30012697	RES SMD 1/16W 5.1K J (0603)	R146
511	30012698	RES SMD 1/16W 5.6K J (0603)	R352
512	30012702	RES SMD 1/16W 560R J (0603)	R274	R760	R763	R234	.
513	30012707	RES SMD 1/16W 680R J (0603)	R286	R289	.	.	.
514	30012708	RES SMD 1/16W 68K J (0603)	R654
515	30012711	RES SMD 1/16W 75K J (0603)	R591
516	30012712	RES SMD 1/16W 8.2K J (0603)	R523
517	30012713	RES SMD 1/16W 75R J (0603)	R203	R239	R278	R279	R280
.	.	.	R232	R204	R413	R414	R409
.	.	.	R272
520	30014022	RES SMD 1/16W 47R J (0603)	R122
521	30014076	RES SMD 1/16W 4.7R J (0603)	R753	R755	.	.	.
522	30014465	RES SMD 1/16W 2.7K F (603)	R632
523	30016126	CAP SMD 220NF 16V K R (0603)	C628	C255	.	.	.
524	30016654	CAP SMD 100NF 16V K R (0603)	C269	C270	C271	C274	C275
.	.	.	C276	C352	.	.	.
525	30016654	CAP SMD 100NF 16V K R (0603)	C147	C516	C716	C227	C734
.	.	.	C527	C150	C517	C350	C233
.	.	.	C509	C537	C156	C518	C510
.	.	.	C707	C519	C511	C138	C157
.	.	.	C725	C514	C515	.	.
526	30020455	RES SMD 1/16W 1.5K F (0603)	R143	R147	.	.	.
527	30020457	RES SMD 1/16W 910R F (0603)	R145	R148	.	.	.
528	30025773	DIODE ZENER SMD BZT55B5V1	D614	D214	D215	D216	.
534	30000452	RES CF 1/4W 10R J	S224
535	30012982	RES SMD 1/16W 10R J 0603	S226	S227	S225	.	.
537	30021082	IC TDA9885T/V3-SO24	IC206
539	30001457	TR BC848B SMD	Q511
540	30001457	TR BC848B SMD	Q508
541	30001458	TR BC858B SMD	Q513
542	30012510	RES SMD 1/16W 100R J (0603)	R565	R561	.	.	.
543	30012641	RES SMD 1/16W 10K J (0603)	R587	R585	R586	R588	.
544	30012641	RES SMD 1/16W 10K J (0603)	R566
545	30012692	RES SMD 1/16W 4.7K J (0603)	R564
550	30000880	RES MF 1/4W 130K F	R631
551	30000927	RES MF 1/4W 220K J	R605
552	30001162	RES MO 1W 390R J	R639
553	30001244	RES FUSE SAFE 1/2W 0.47R J	R611	R614	.	.	.
559	30016126	CAP SMD 220NF 16V K R (0603)	C336
560	20148984	IC 24C16 V078NE113A01010110512
561	30009005	IC 24C16

562	20141922	CRT B.ASSY.TP45B-5-DUAL FOCUS (AK45)
564	20103005	HE.ASY.52-CRT BOARD (AK52/AK45)	IC900
565	30018768	IC TDA6109	IC900
566	35000131	HEATSINK 11TP18 RGB
567	35000158	NUT C ZN BOTTOM M3
568	35000165	KNURL WASHER C ZNSY 3*6*04 (M3)
569	35000180	SCREW C ZN YSMB M3*6
570	30001856	SOCKET CRT SAFE NAR.NECK DUAL FOCUS
572	20141943	CRT B.ASSY.TP45B-5-SMD COMMON(AK45)
577	20141948	CRT B.ASSY.TP45B-5-PER COMMON(AK45)
578	35000176	EYELET BR 2*3MM	PL904	PL905	PL909	.	.
580	30000428	SPARK GAP 300V	SG901	SG902	SG903	SG904	.
581	30000459	RES CF 1/4W 100R J	R901	R902	R903	R912	R914
582	30000466	RES CF 1/4W 1K J	R911
583	30000477	RES CF 1/4W 100K J	R905	R906	R909	R930	.
584	30000535	RES CF 1/2W 150K J	R904
585	30000583	RES CF 1/4W 220R J	R917	R923	R927	.	.
586	30000788	RES CF 1/4W 6.8M J	R900
587	30001284	DIODE 1N4148 0.15A/100V 0.5A	D903
588	30001318	DIODE BA159 1A/800V 20A	D902	D904	D905	D907	.
589	30021483	RES CC 1W 2.2K K	R913
590	30021532	SPARK GAP 1500V	SG905
591	30023197	RES CC 1W 1.5K K	R907	R908	R910	.	.
592	30026990	PCB 11TP45B-5
593	30000287	CAP CER 10NF 50V K B	C904
594	30000352	CAP EL 100UF 16V M	C916
595	30000367	CAP EL 1UF 250V M	C932
596	30000407	CAP EL 470UF 16V M	C915
597	30000438	CAP CER 2.2NF 2KV	C908
598	30001427	TR BF422	Q900
599	30001452	TR BC327	Q906
600	30014346	IC 78L05 TO-92 (100mA)	IC902
601	30014346	IC 78L05 TO-92 (100mA)	IC901
602	30000294	CAP SMD 100NF 50V K (0805)	C910	C913	C921	.	.
603	30001285	DIODE 1N4148 SMD	D910
604	30001285	DIODE 1N4148 SMD	D909
605	30001458	TR BC858B SMD	Q901	Q902	Q903	Q904	Q905
606	30012510	RES SMD 1/16W 100R J (0603)	R928
607	30012577	CAP SMD 560PF 50V J (0603)	C918	C919	C920	.	.

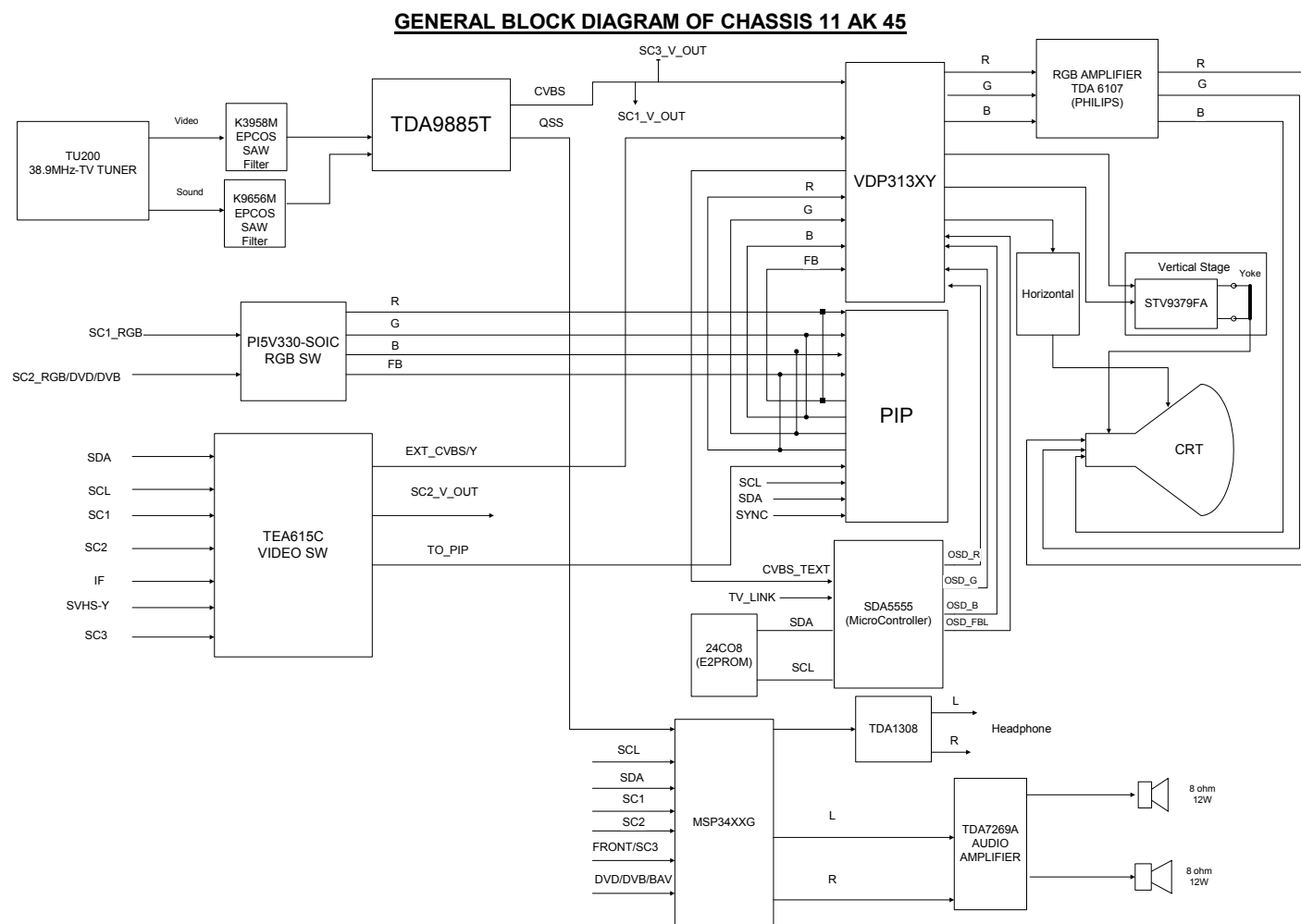
608	30012577	CAP SMD 560PF 50V J (0603)	C914
609	30012603	CAP SMD 100NF 25V K R (0603)	C934
610	30012644	RES SMD 1/16W 12K J (0603)	R919
611	30012649	RES SMD 1/16W 150R J (0603)	R915	R921	R925	.	.
612	30012667	RES SMD 1/16W 220K J (0603)	R931
613	30012698	RES SMD 1/16W 5.6K J (0603)	R920
614	30012707	RES SMD 1/16W 680R J (0603)	R932	R933	.	.	.
615	30014128	RES SMD 1/16W 33R J (0603)	R916	R922	R926	.	.
616	30014353	DIODE BAT85	D908
618	30000075	CAP MKT 100NF 250V K (DC)	C900	C906	.	.	.
619	30000075	CAP MKT 100NF 250V K (DC)	C931
620	30000350	CAP EL 10UF 250V M	C905
621	30000359	CAP EL 1000UF 16V M	C909
622	30000415	CAP EL 4.7UF 250V M	C902
623	30001850	CONN HEADER 6P 2.5MM TOP WHT SD	PL903
624	30010039	CONN HEADER 8P 2.5MM TOP WHT	PL902
625	30027043	CNAS 6P-4P+1P/600 SIS W/3C+FER UL1007	PL903
626	30027546	CNAS 5P/350 SHL+3P/350 SIS RGB W/DC+FER	PL902
627	35000135	TEST PIN 1.1MM	PL905	PL909	.	.	.
628	20143448	ARTWORK TEAC EU3216STF(AK45)EKO
629	20142179	R/C 1541 TEAC (S) (EKO2GRAY(I)
630	20129851	R/C 1541 NOBRAND (S) (EKO2GRAY)(F)
631	20121852	R/C KIT 1541
632	20121796	MD.ASY.UK10
633	20121797	MD.ASY.UK10 (SMD)
634	30000546	RES SMD 1/10W 1.5R J (0805)	R106
635	30002735	IC SAA3010T	IC1
636	30012510	RES SMD 1/16W 100R J (0603)	R101
637	30012641	RES SMD 1/16W 10K J (0603)	R104
638	30012696	RES SMD 1/16W 47K J (0603)	R105
639	30012705	RES SMD 1/16W 6.8K J (0603)	R100
640	30012986	RES SMD 1/16W 68R J (0603)	R103
641	30013001	RES SMD 1/16W 1K F (0603)	R102
642	30020343	PCB 11UK10-2
643	30000395	CAP EL 47UF 6.3V M (4*7MM)	C100
644	30001452	TR BC327	Q102
645	30002733	LED INFRARED IR333	D100
646	30002734	TR BC548C	Q101

647	30011443	XTAL REZ 429KHZ (0.9MM)	X100
648	35000001	SINGLE BATTERY CONTACT (-)
649	35005006	SINGLE BATTERY CONTACT (+) TOSHIBA
650	35005007	DOUBLE BATTERY CONTACT UKV-900 TOSHIBA
651	40012332	RUBBER PAD (RC 1541)
652	40011955	BATTERY COVER RC 5010-11 EKO2GRAY(I)
653	40014912	BOTTOM COVER RC 1541 EKO2GRAY (I)
654	40014913	TOP CVR.R/C 1541 NOBRAND(S)(EKO2GRAY)
655	30027396	CNAS SCART TO RCA (YUV) 150CM
656	50045077	I/B TEAC EU3216STF PLL/AK45/1541/ENG
657	20143449	F CARTON BOX TEAC EU3216STF(AK45)H.FUME
658	20143450	LBL.BCK.CVR.TEAC EU3216STF "45"
659	20013018	LBL.BCK.CVR.ASSY (TV) (WO/UL)
660	50023173	LABEL LOT W/BARCODE (77X256)
661	70000621	RIBBON 80MM*450MM
662	20143451	FRONT3216W W/H WO/SV.H.FUM/SILV(P)T+P(UL
663	20143463	BACK CVR. 3215/16W HIT.FUME (P) (UL)
664	20143464	BACK CVR.3215/16W (I) (BOYAN%1) (UL)
665	60000009	FR-HIPS NATR.V-0
666	60000022	MASTERBATCH (BLACK)
667	60000946	PAINT HIT.FUME C77 (SU BAZ)L8342175
668	20143465	BUTTON ASSY 3216W(HI.FUME/P)(LENS/SILVER
669	20099123	LENS LED_PRE-AMP xx16 RF (I)
670	60000927	CRYSTAL PS (NATURAL)
671	20111885	BUTTON ON/OFF 2985 (HIT.FUME/P)
672	20093254	BUTTON ON/OFF 2985 (I)(SM BASKI)
673	60000003	ABS BLACK
674	60000946	PAINT HIT.FUME C77 (SU BAZ)L8342175
675	20124334	BUTTON FUNCTION XX15/16 (HIT.FUME/P)

676	20098945	BUTTON FUNCTION xx15/16 (I)
677	60000003	ABS BLACK
678	60000946	PAINT HIT.FUME C77 (SU BAZ)L8342175
679	20125086	LENS 3216W LEFT (SILVER/P)
680	20125087	LENS 3216W LEFT EKO GRAY (I)
681	60000001	ABS (NATURAL)
682	60001195	MASTERBATCH EKO.GRAY GR 3216 SE1
683	60000895	PAINT SILVER 022-6485 (SU BAZLI)L8341413
684	20125088	LENS 3216W RIGHT (SILVER/P)
685	20125089	LENS 3216W RIGHT EKO GRAY (I)
686	60000001	ABS (NATURAL)
687	60001195	MASTERBATCH EKO.GRAY GR 3216 SE1
688	60000895	PAINT SILVER 022-6485 (SU BAZLI)L8341413
689	35000013	SPRING ON/OFF SWITCH
690	20144928	SCR.ASSY.3216W SB (AK45) (V.0)
691	20081285	WASHER - bracket speaker - 128x77 (I)
692	60000008	HIPS (NATURAL)
693	20084045	STRAP TIE (L:118)
694	60000018	COPOLYMER POLYPROPYLENE
695	20120113	BACK DOOR AK45/52 (I) (V.0)
696	60000009	FR-HIPS NATR.V-0
697	60000022	MASTERBATCH (BLACK)
698	35000199	SCREW S C ZN YSMB 3.9*25
699	35000211	SCREW S C ZNSY YSMB 2.9*9.5
700	35000212	SCREW S C ZNSY YSMB 2.9*13
701	35000217	SCREW S C SYF YFMB 3.5*9.5
702	35000224	SCREW C SK ZN YFMB 2.9*9.5
703	35000231	SCREW SK C NI YFMB 2.9*6.5
704	35000235	SCREW P C ZN AKBR 7*32
705	35004572	SCREW P C AgSYF YSB 4x20
706	40000082	FOOT RUBBER 8410/11
707	20144929	EXPEND KIT 3215/16 (V.0)
708	20004520	CABLE HOLDER DX15 (I)
709	60000991	KIRMA - HDPE
710	20085269	CABLE HOLDER CRT (I) UL94V-0
711	60000855	KIRMA FR-ABS BLUE CRT
712	40006731	ISOLATION COTTON (9x25000mm)

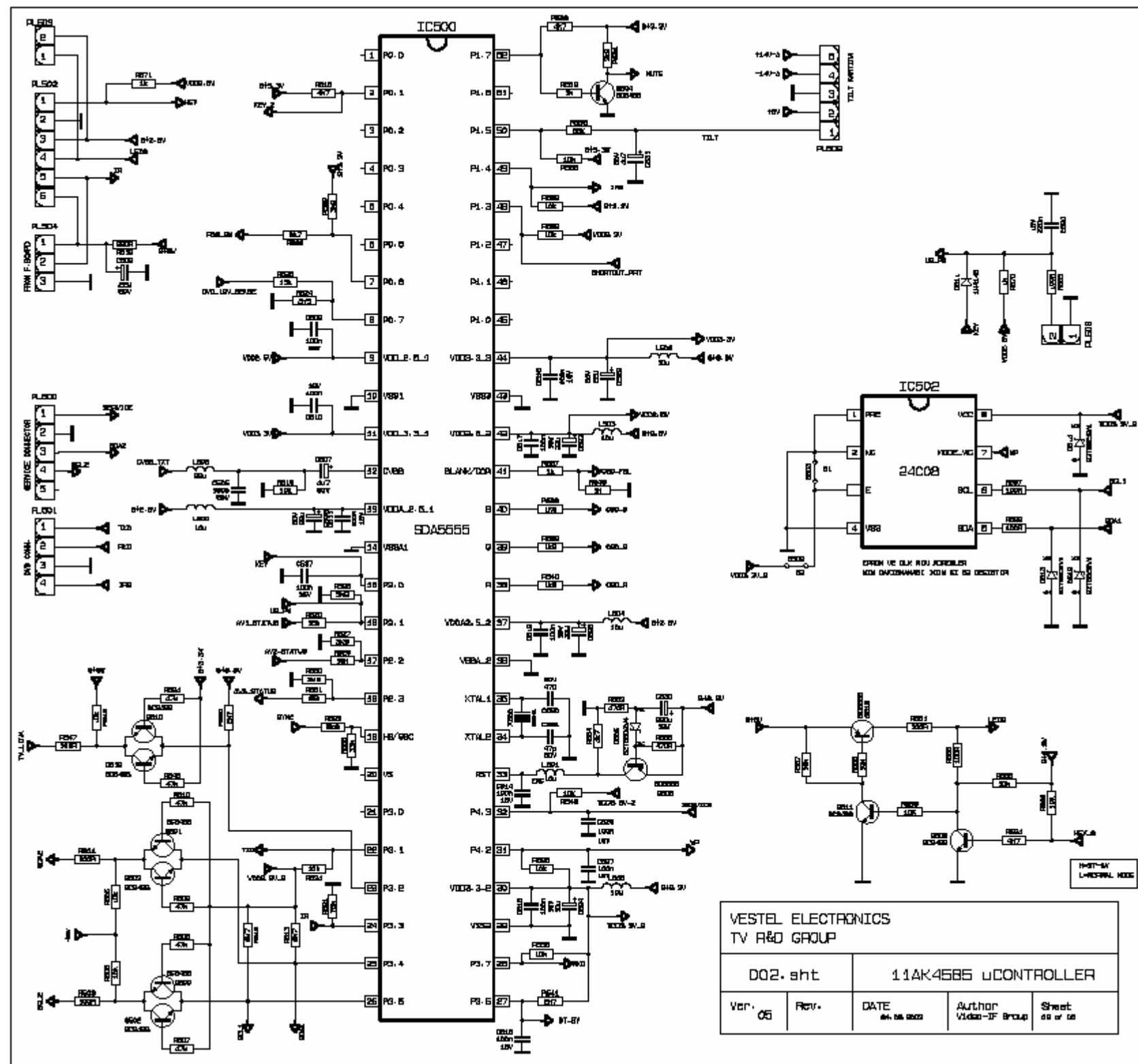
713	50006325	CARTON SEPERATOR 665x980x6.5 (8270/71)
714	70000331	ADHESIVE TAPE 75MM/660M (4125)
715	20150135	SPK.AS.2880/81/82/83 (28"16:9)(AK45)
716	20150136	SPK.AS.2880/81/82/83 (28"16:9) R AK45
717	20090587	BRACKET SPEAKER - 160x57 28xx (I)
718	60000008	HIPS (NATURAL)
719	60000022	MASTERBATCH (BLACK)
720	30000426	CAP EL 6.8UF 50V M (BPL)
721	30001947	TWEETER 8R 15W CLOSED
722	30002238	CABL 2P/200 SPK DIS UL1672AWG24
723	30012631	CNAS 2P/760 DIS W/BL C+FER UL2547 AWG24
724	30028092	SPEAKER 8R 15W 57*160 (improved)
725	35000231	SCREW SK C NI YFMB 2.9*6.5
726	40009944	SPONGE- bracketspeaker -160x57 (55Kg/m3)
727	50011720	LABEL HIGH END
728	20150137	SPK.AS.2880/81/82/83 (28"16:9) L AK45
729	20090587	BRACKET SPEAKER - 160x57 28xx (I)
730	60000008	HIPS (NATURAL)
731	60000022	MASTERBATCH (BLACK)
732	30000426	CAP EL 6.8UF 50V M (BPL)
733	30001947	TWEETER 8R 15W CLOSED
734	30002238	CABL 2P/200 SPK DIS UL1672AWG24
735	30013903	CNAS 2P/900 DIS W/C+FER UL2547 AWG24
736	30028092	SPEAKER 8R 15W 57*160 (improved)
737	35000231	SCREW SK C NI YFMB 2.9*6.5
738	40009944	SPONGE- bracketspeaker -160x57 (55Kg/m3)
739	50011720	LABEL HIGH END
740	30015088	32" CPT TUBE SAFE 50HZ 16:9 REALFLAT
741	30015231	ROTATION COIL AK33 29"
742	40001939	LOGO TEAC(D.C.-SILVER)(BIG)
743	50042313	PLASTIZOTE BAG (1450mm*1150mm)

16.BLOCK DIAGRAM

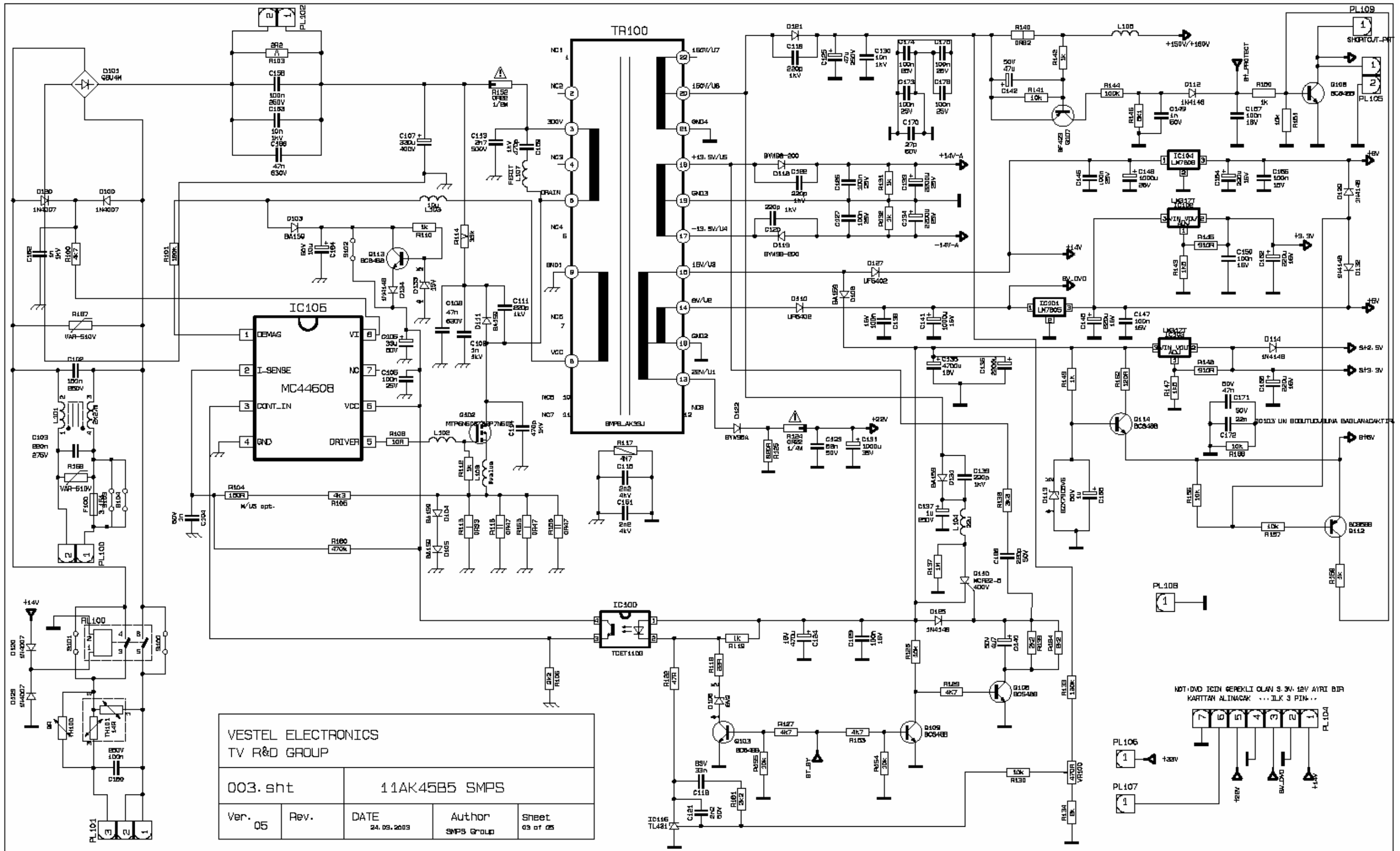


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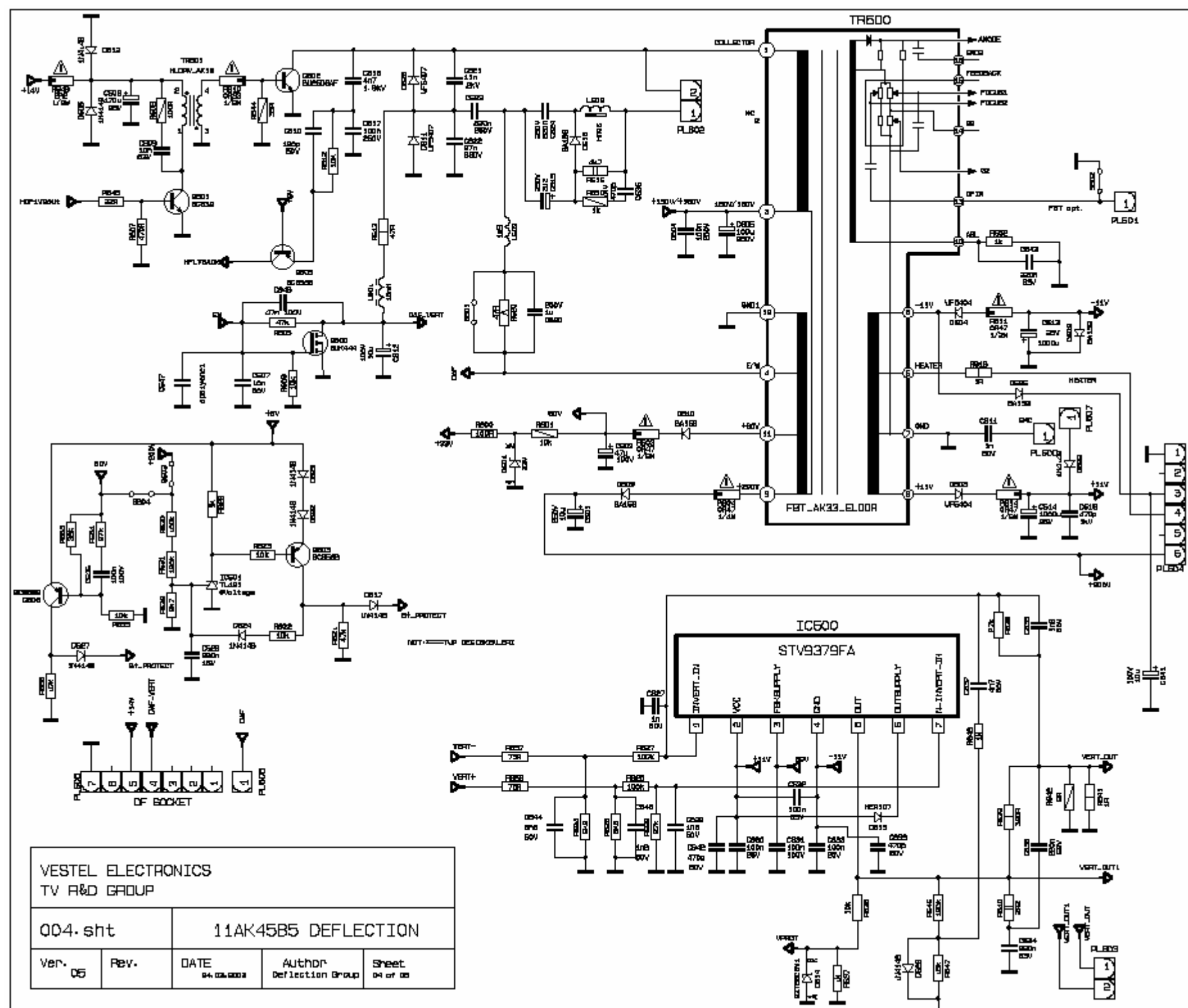




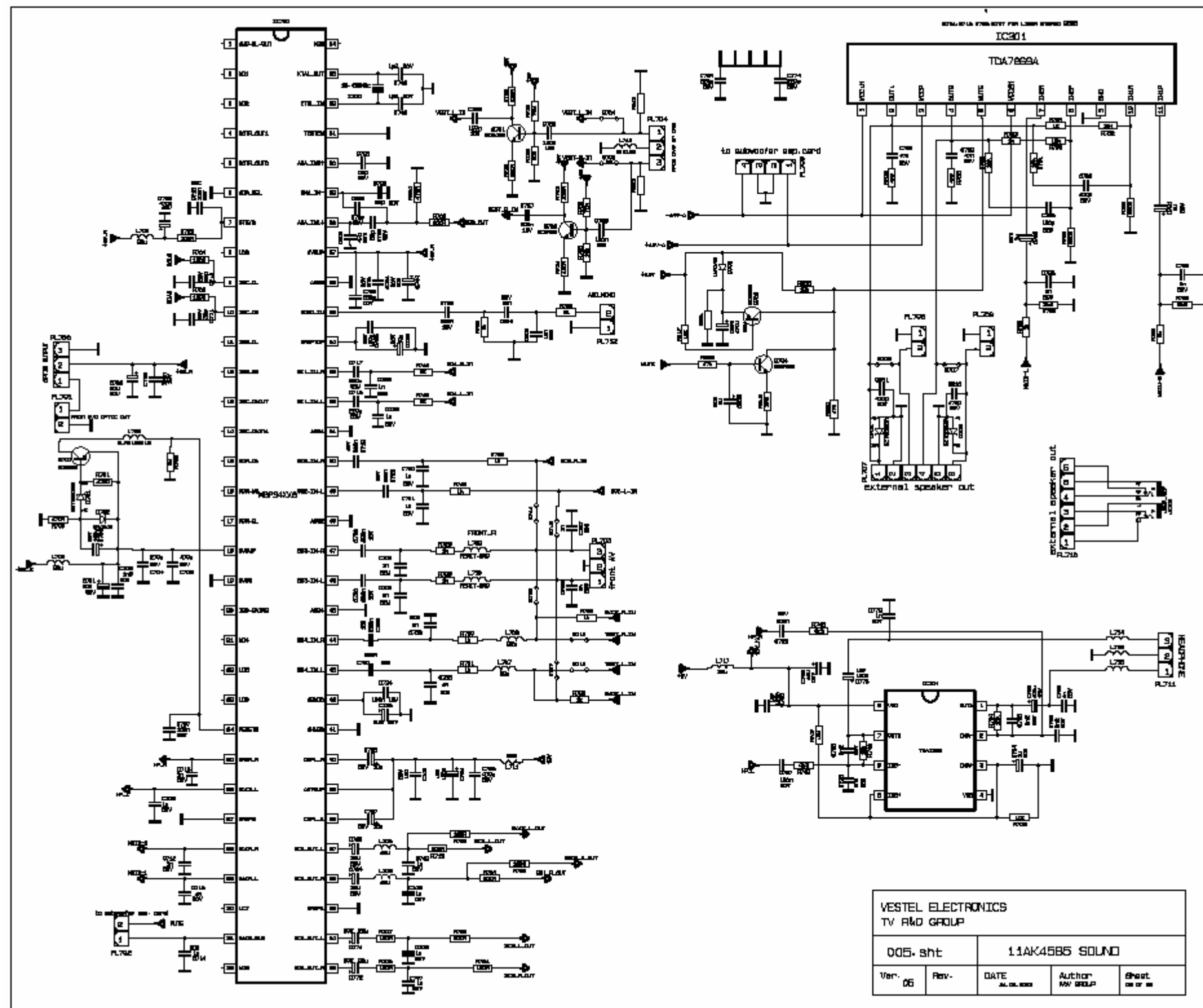
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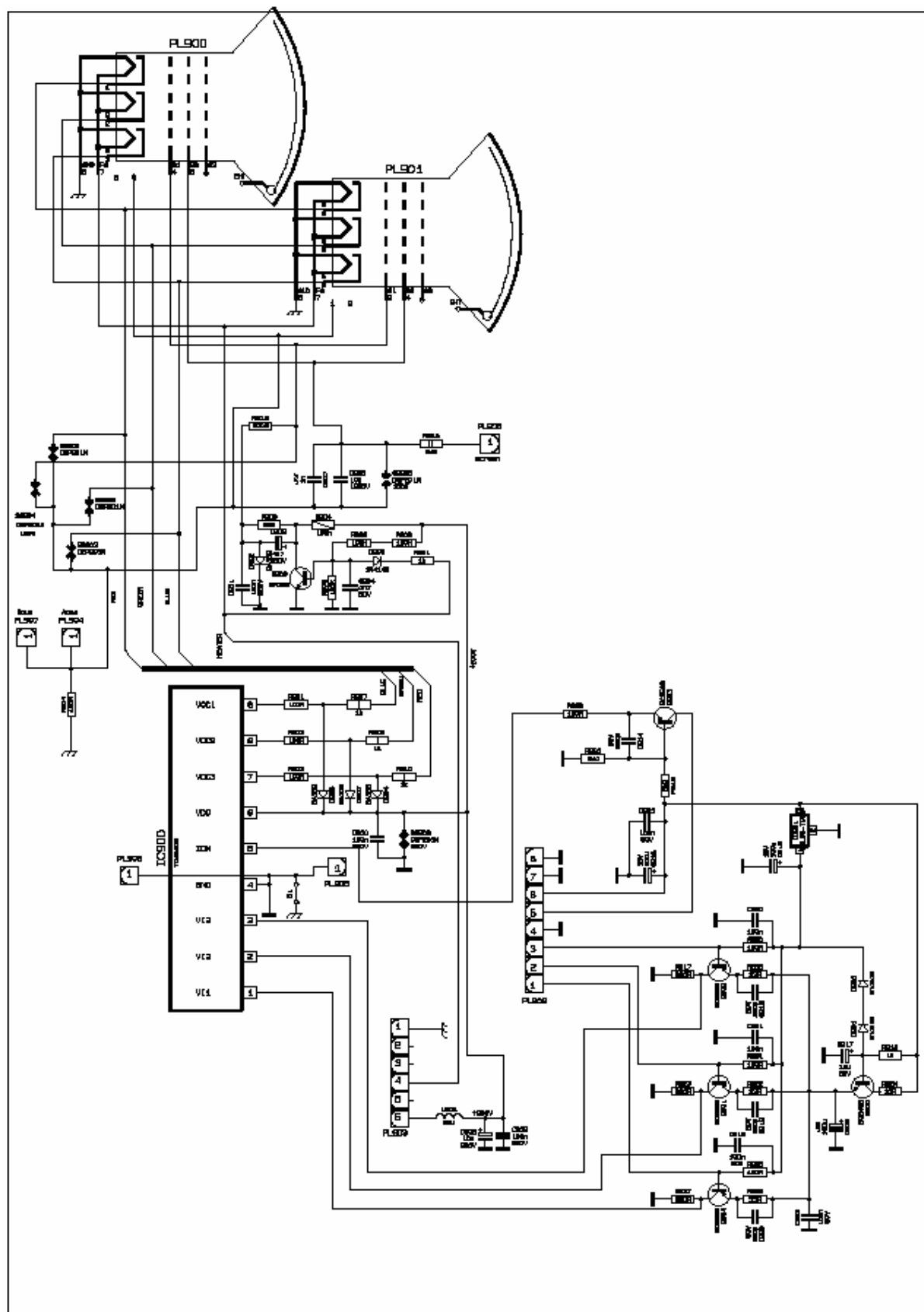
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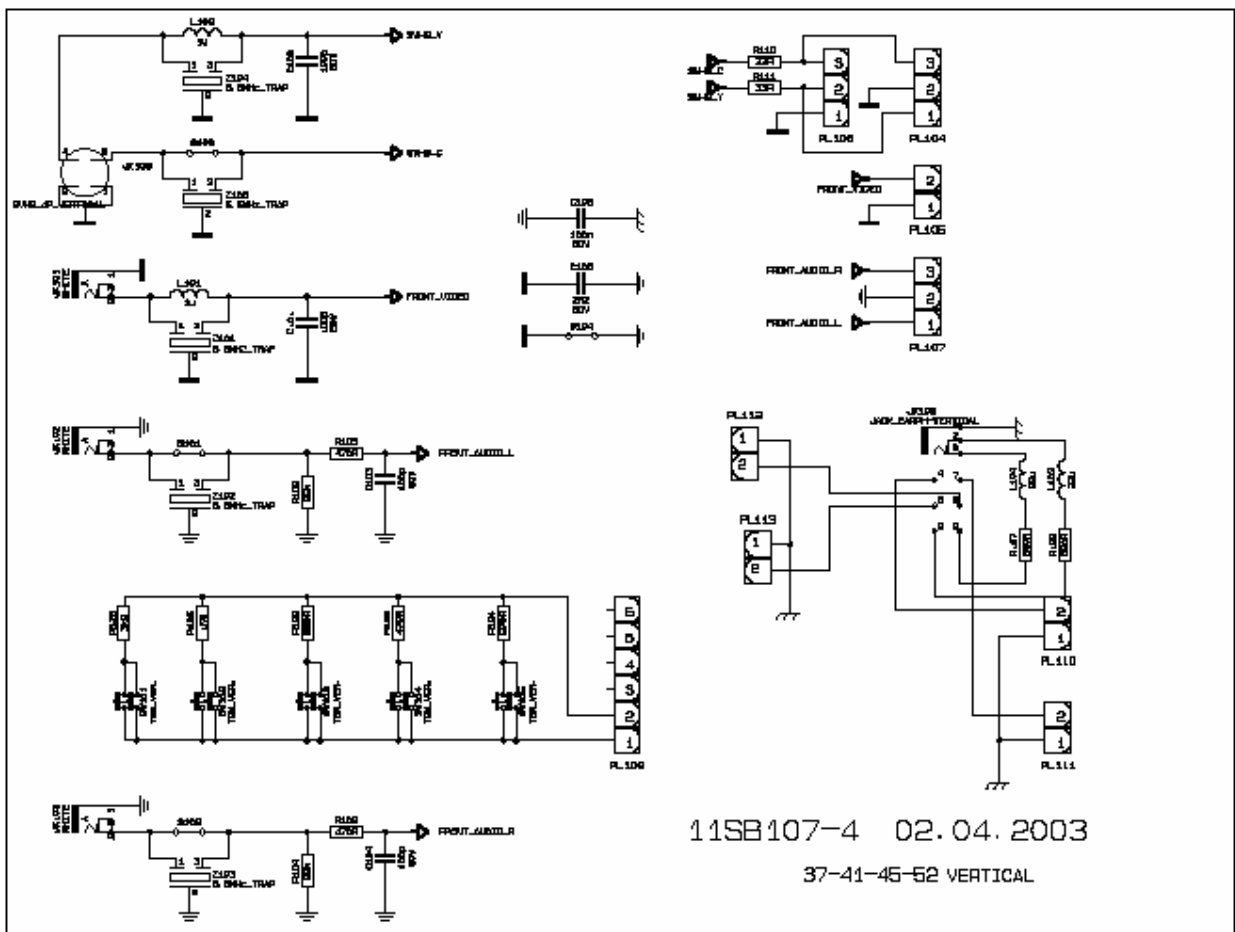
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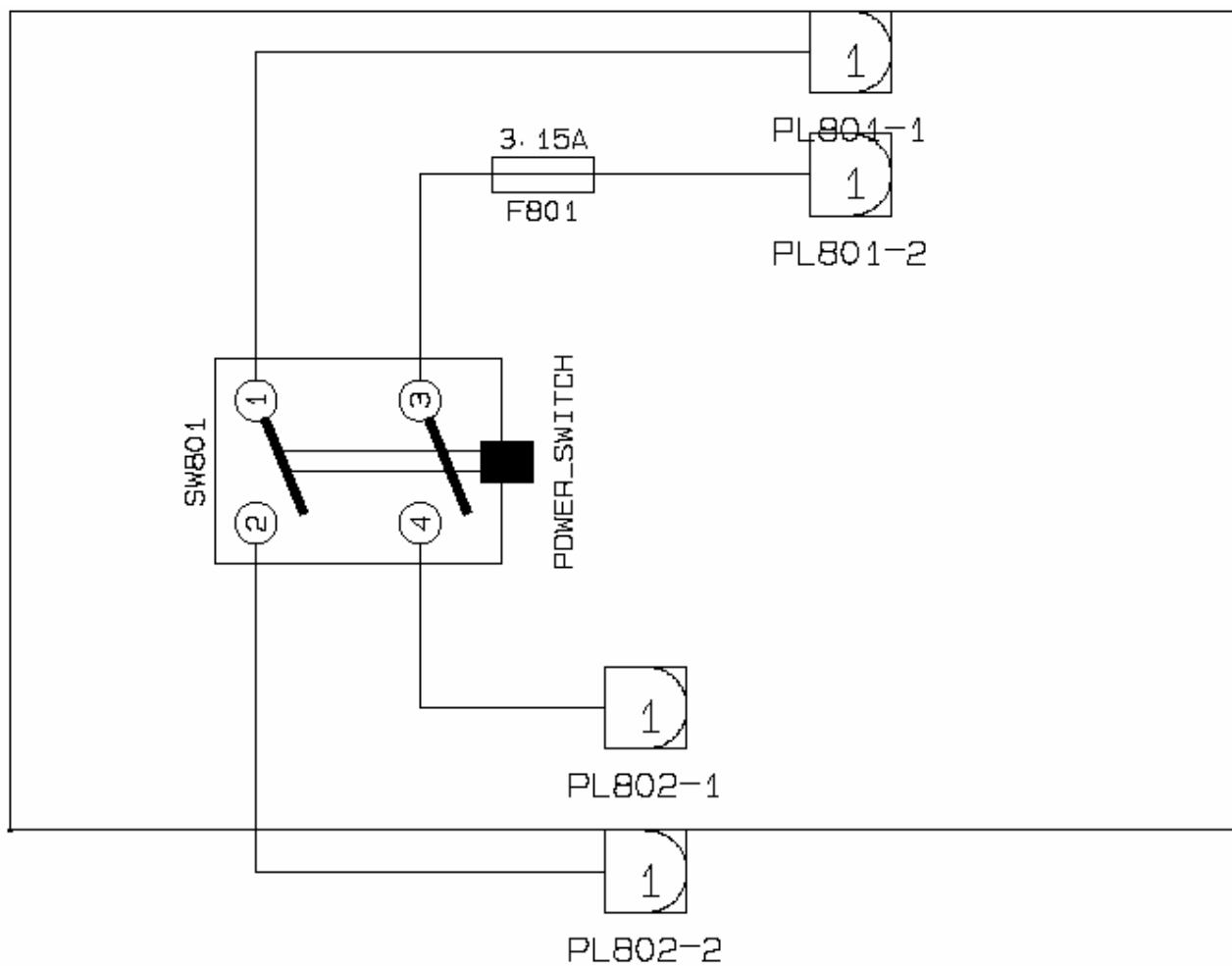
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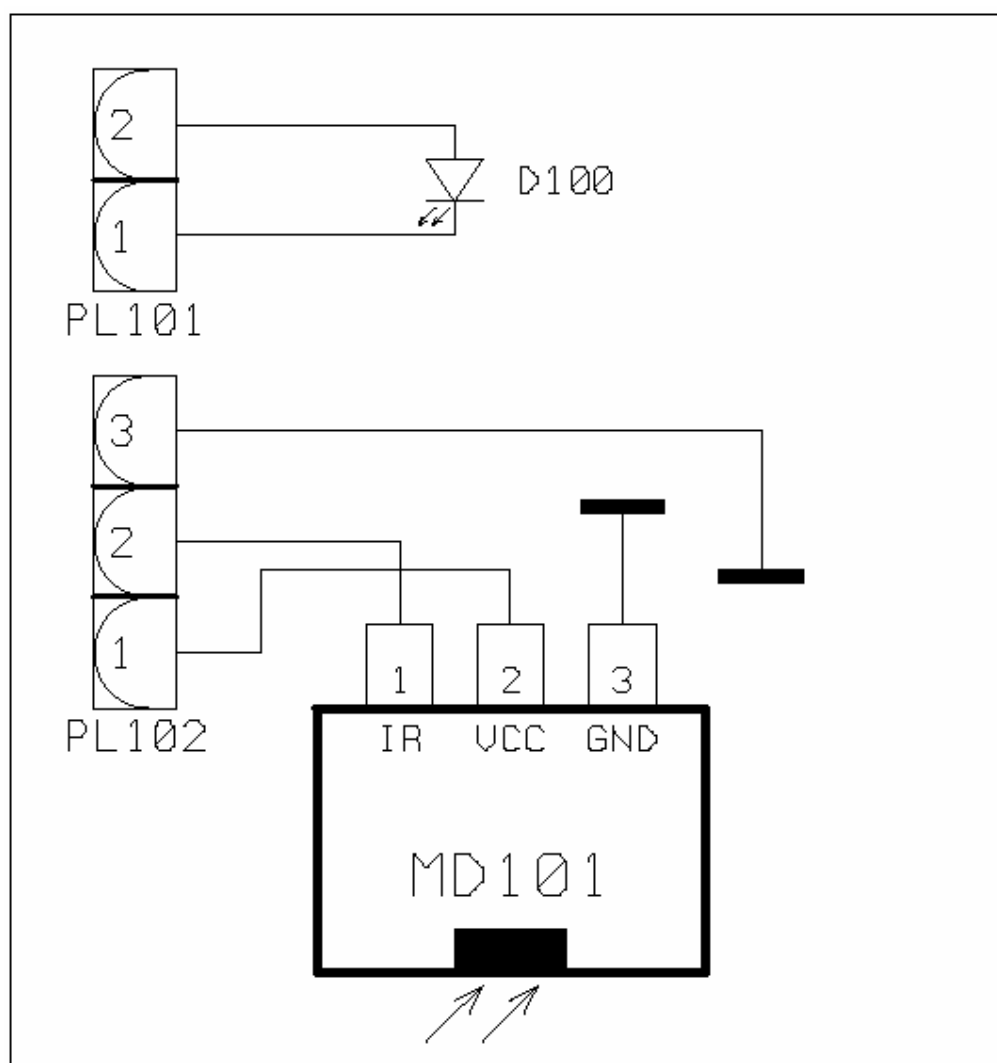
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11SW01-3



11LD13

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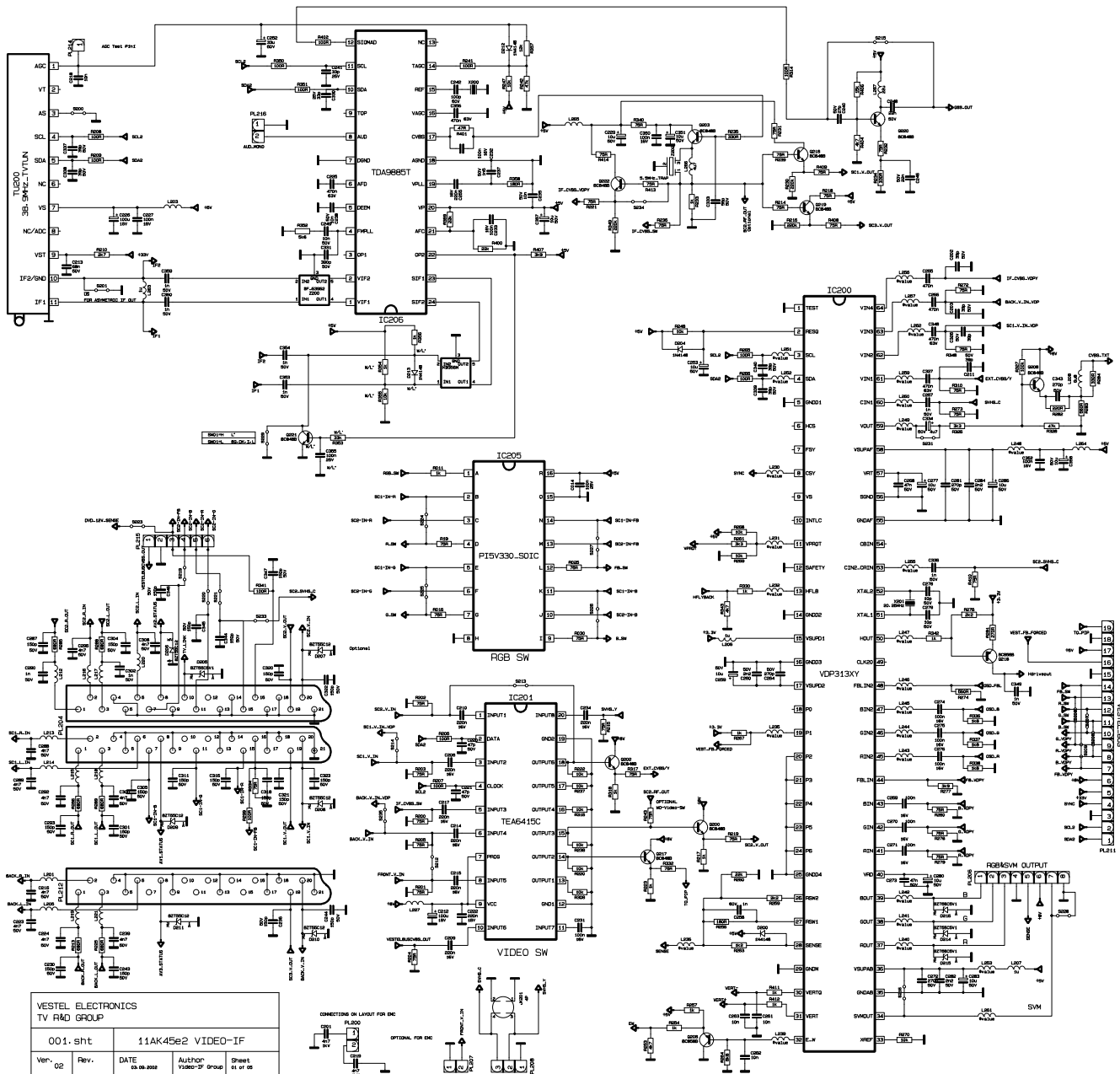
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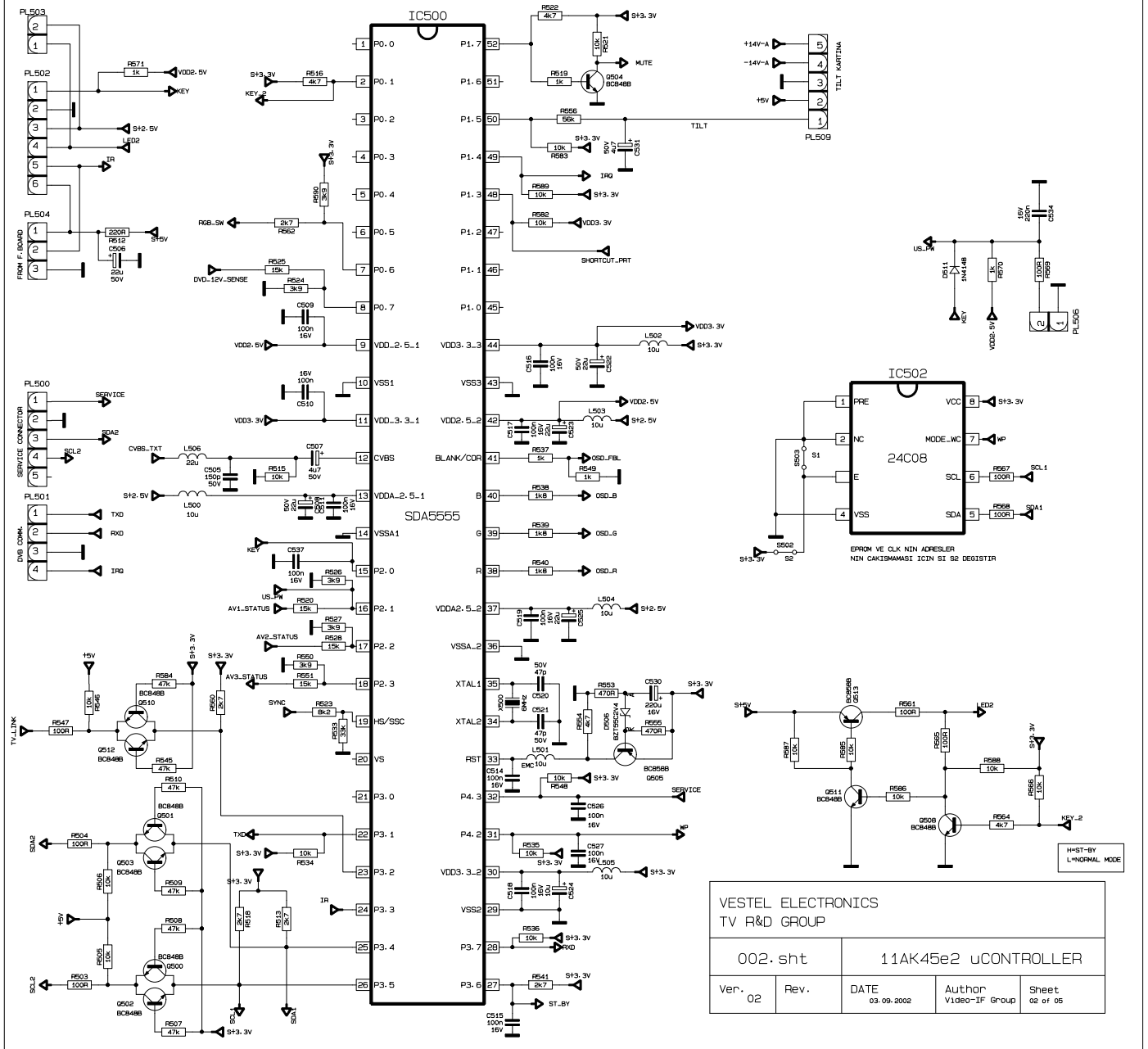
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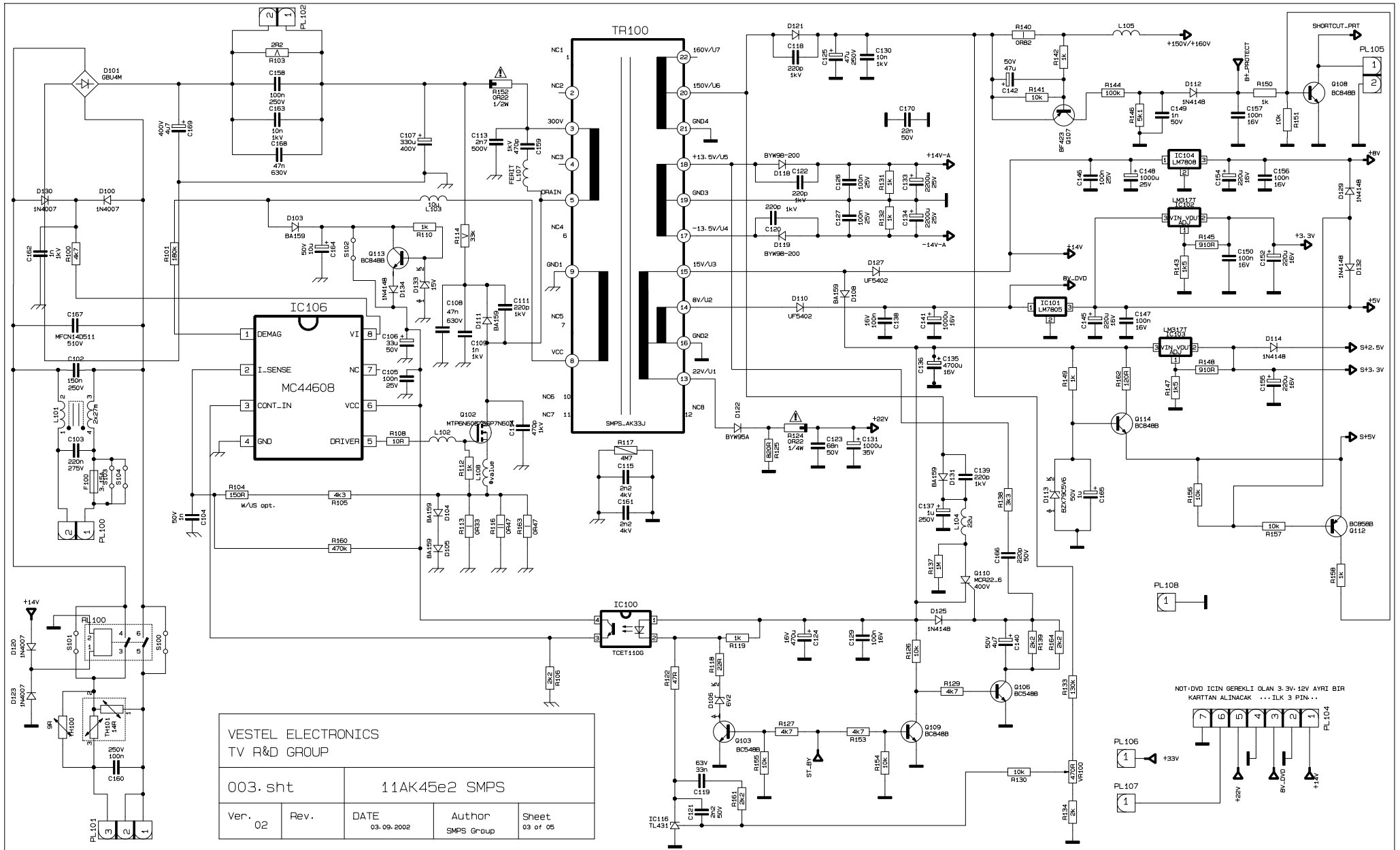
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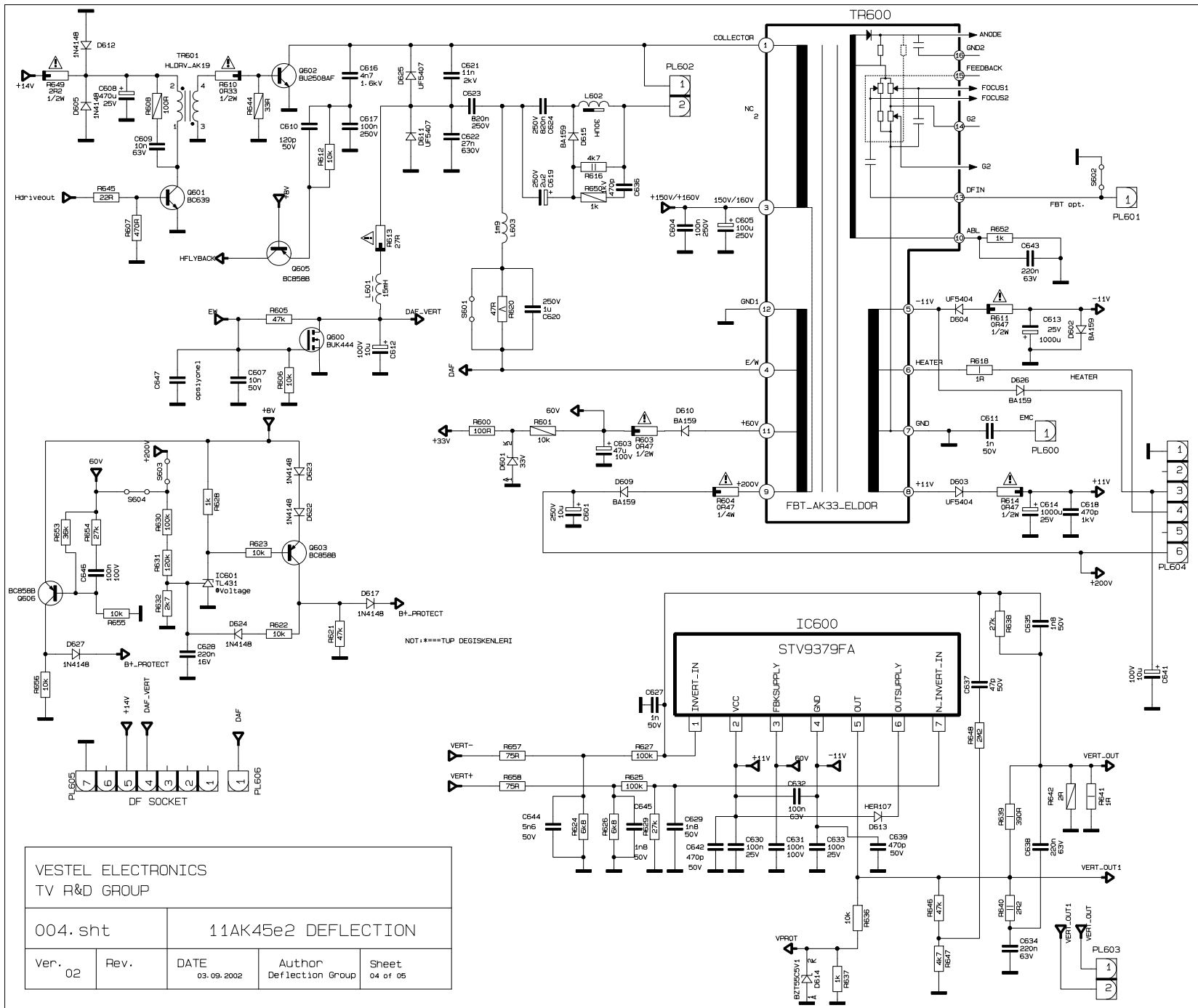
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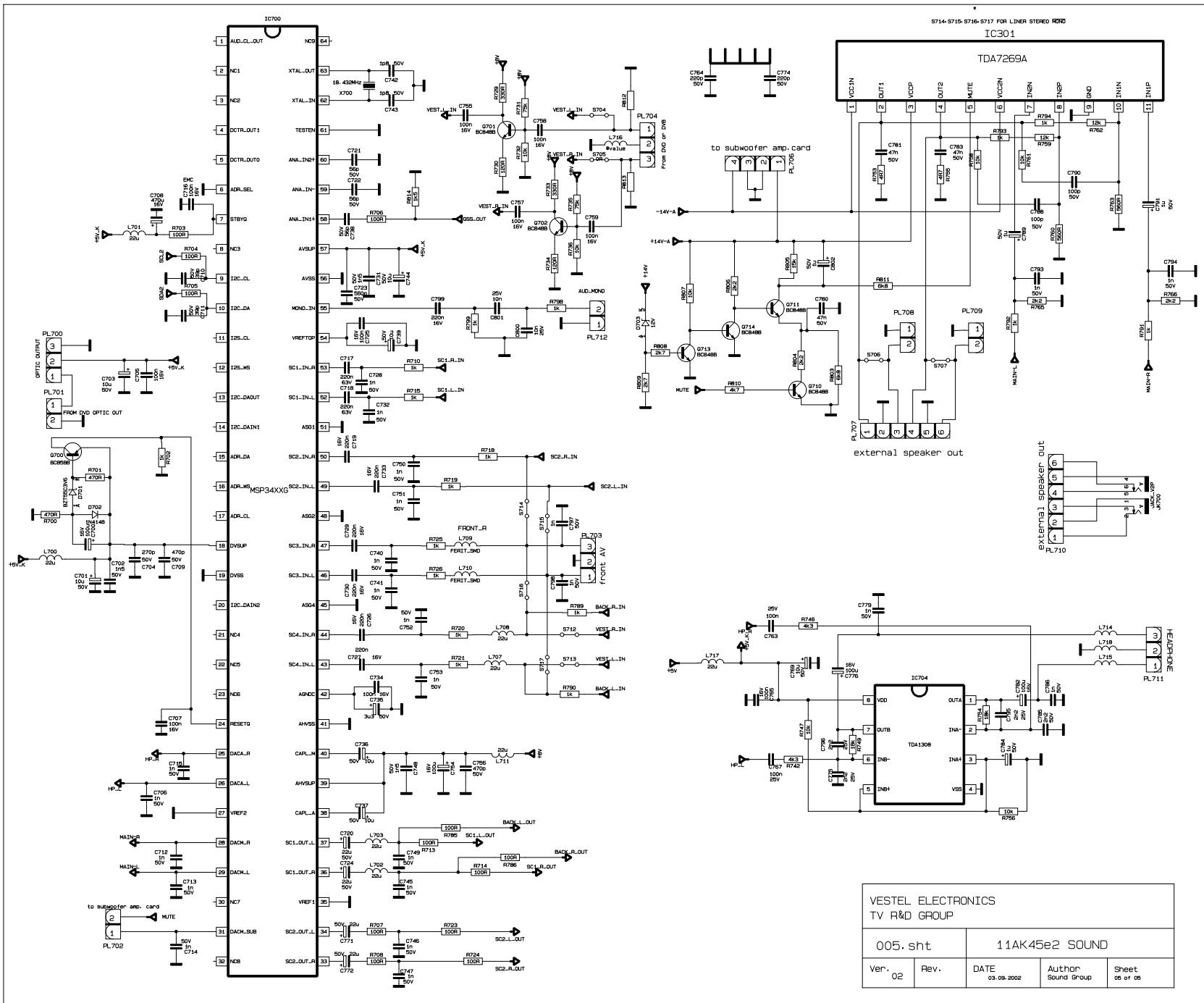
Author
SMPS Group

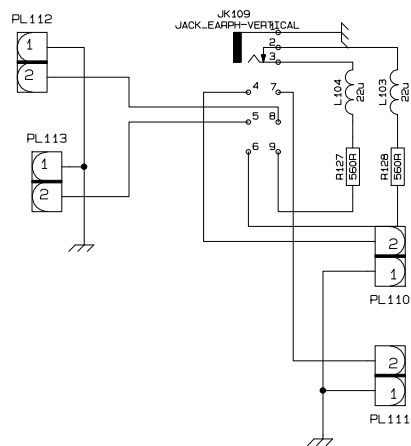
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NOT-DVD ICIN GEREKLI OLAN 3-3V-12V AYRI BIR
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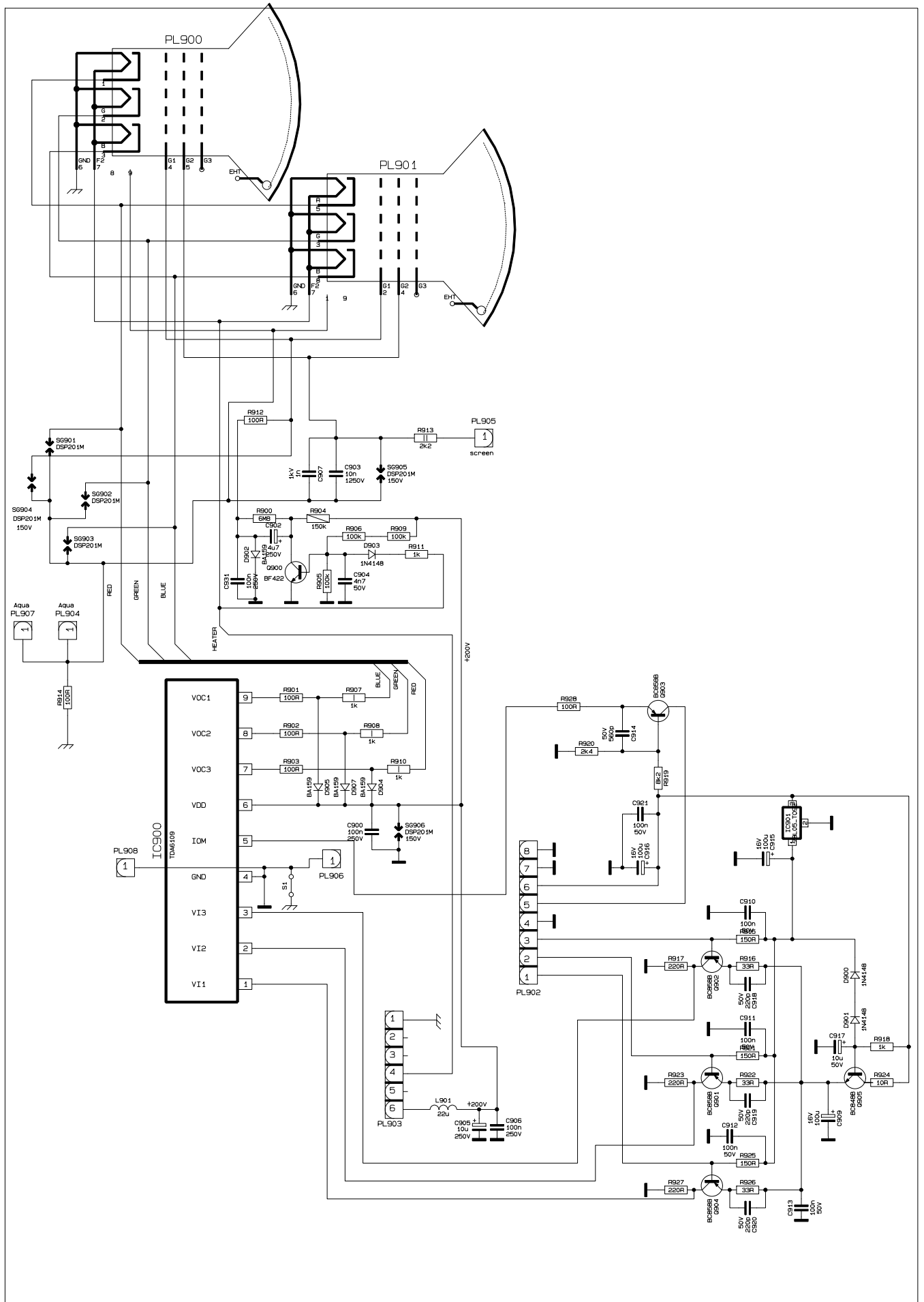
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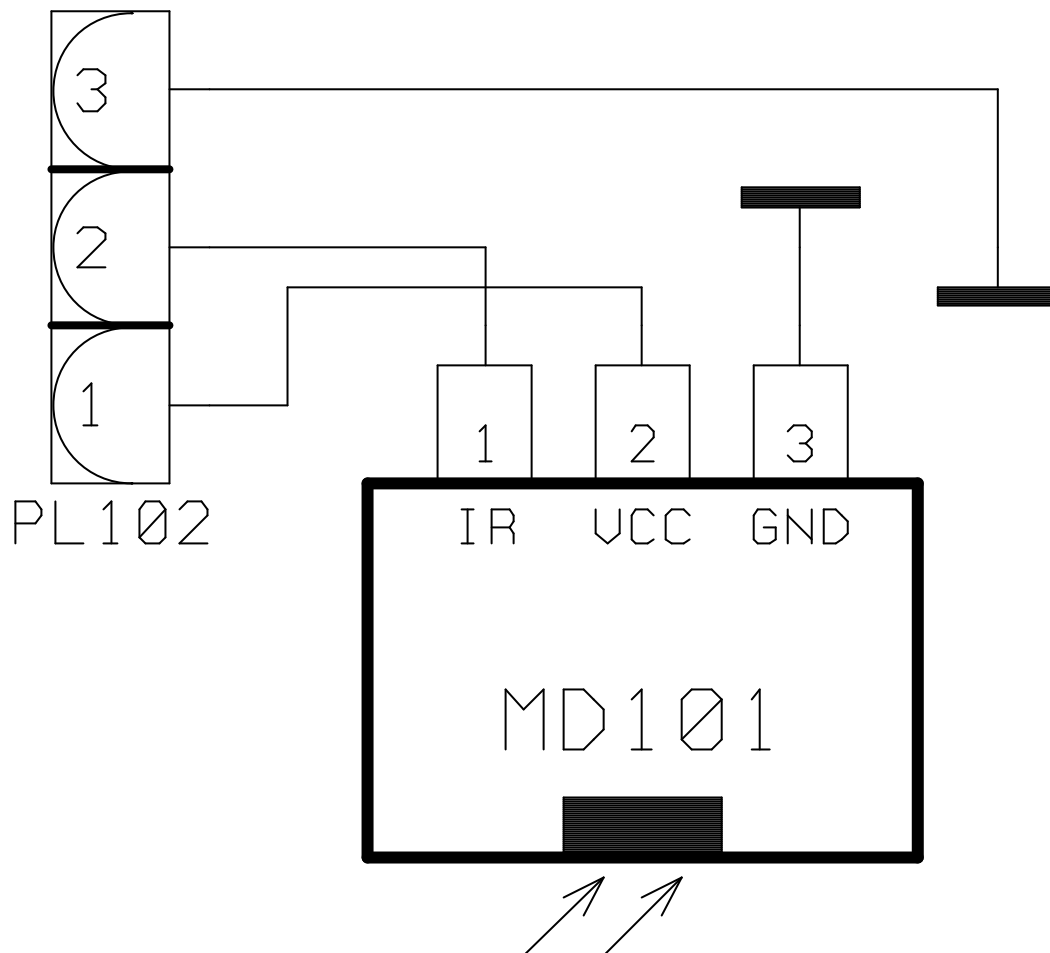
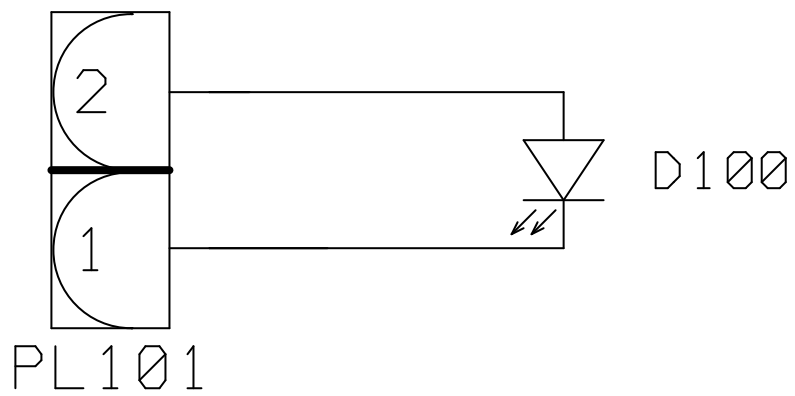
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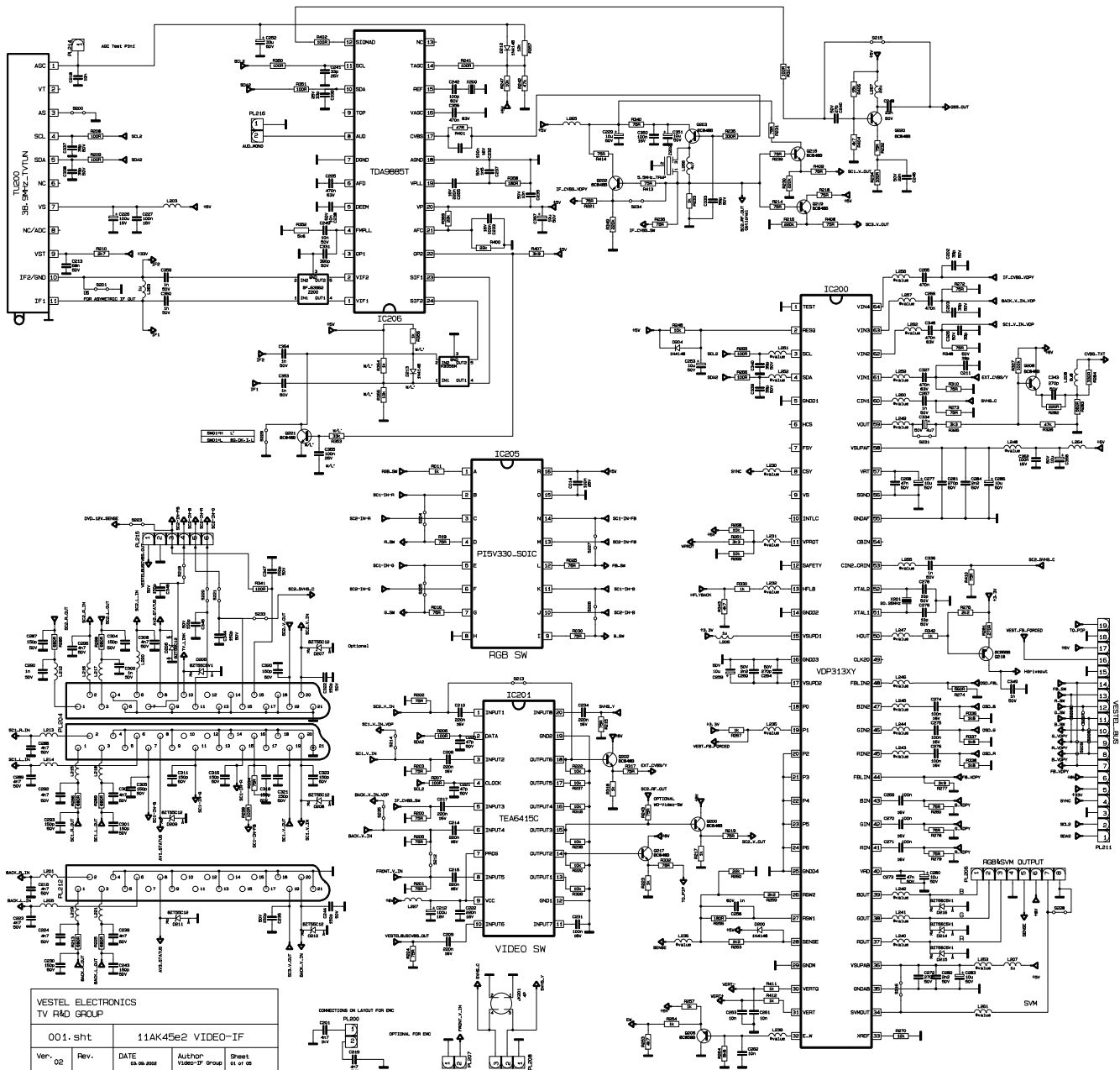
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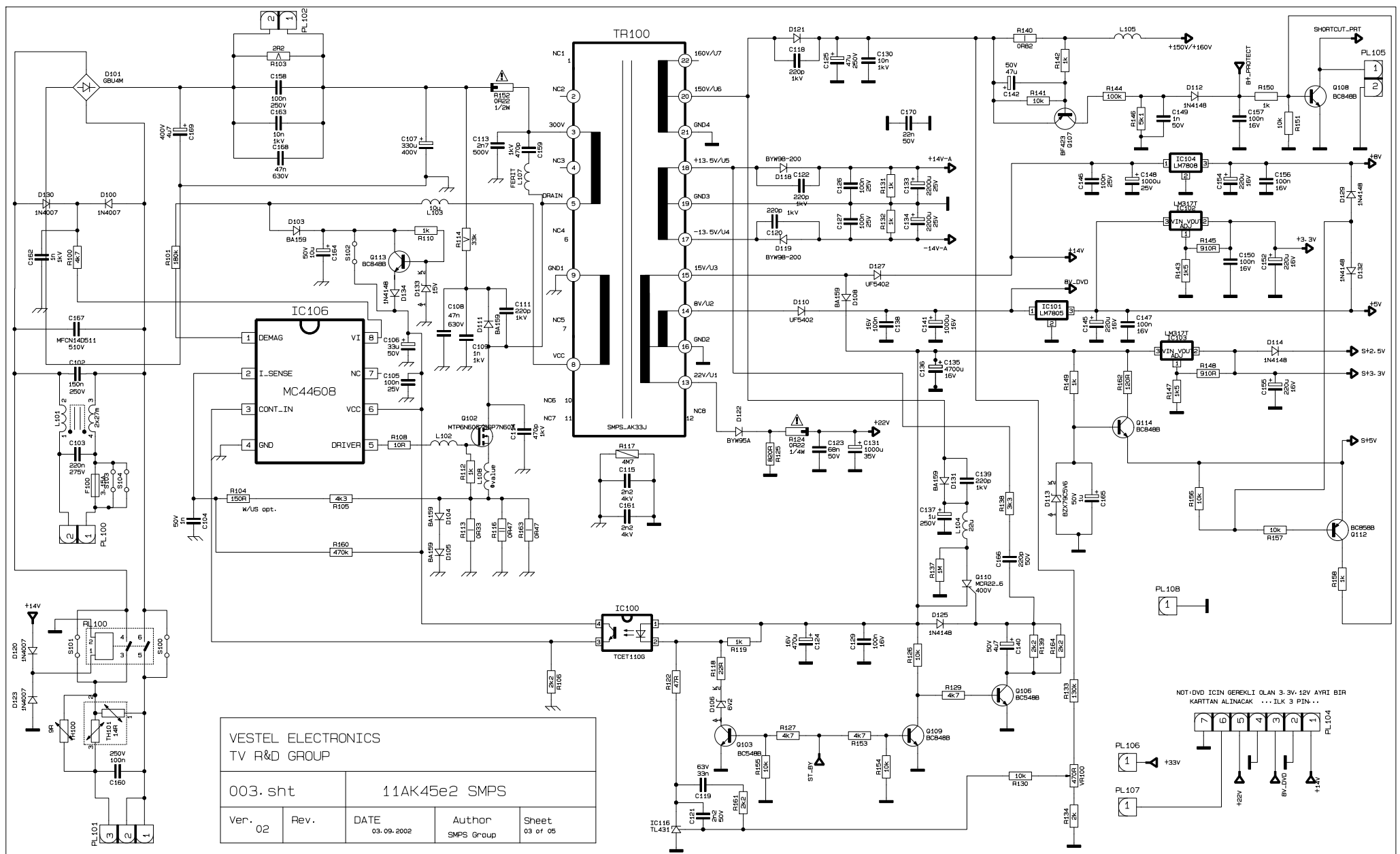
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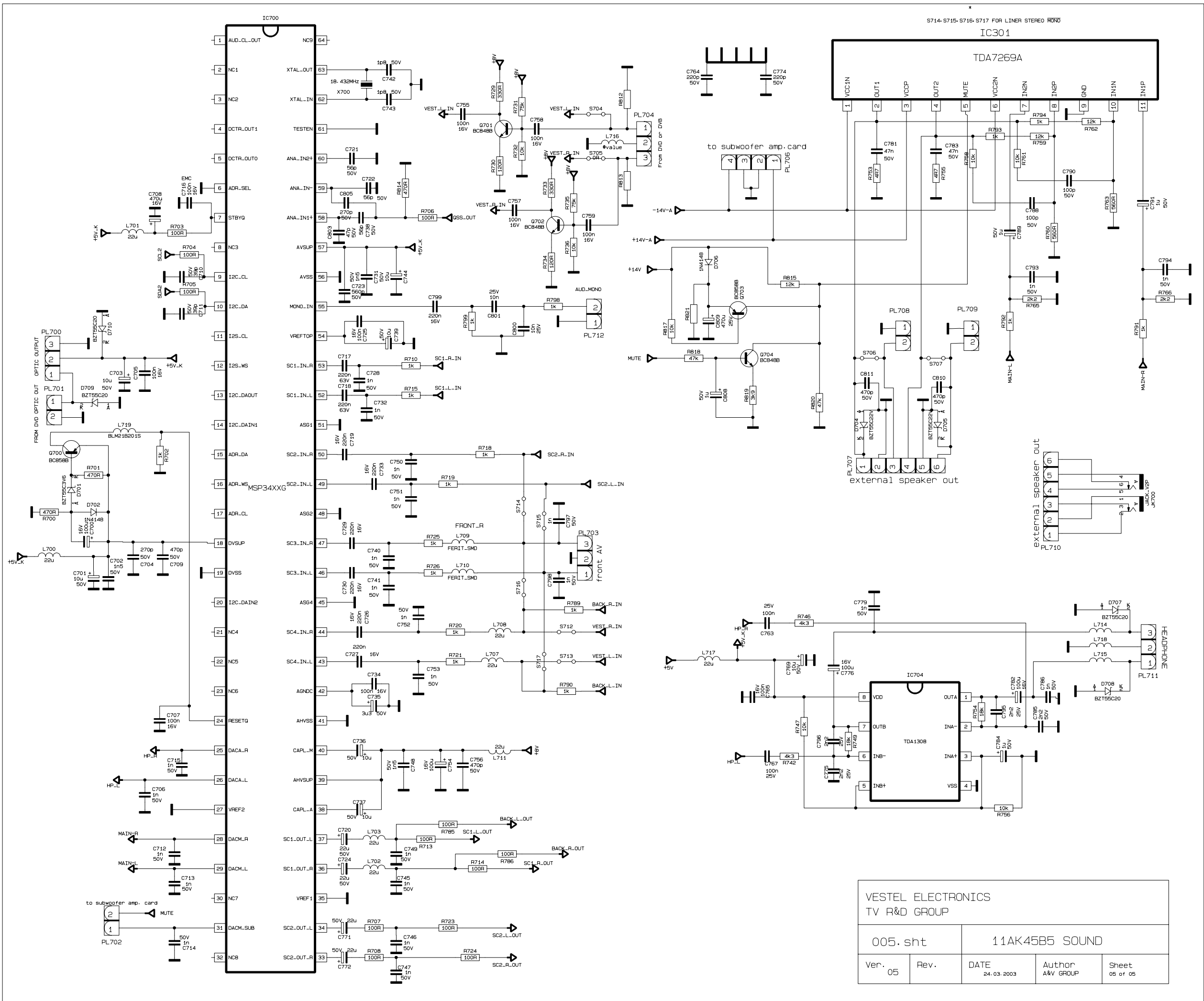
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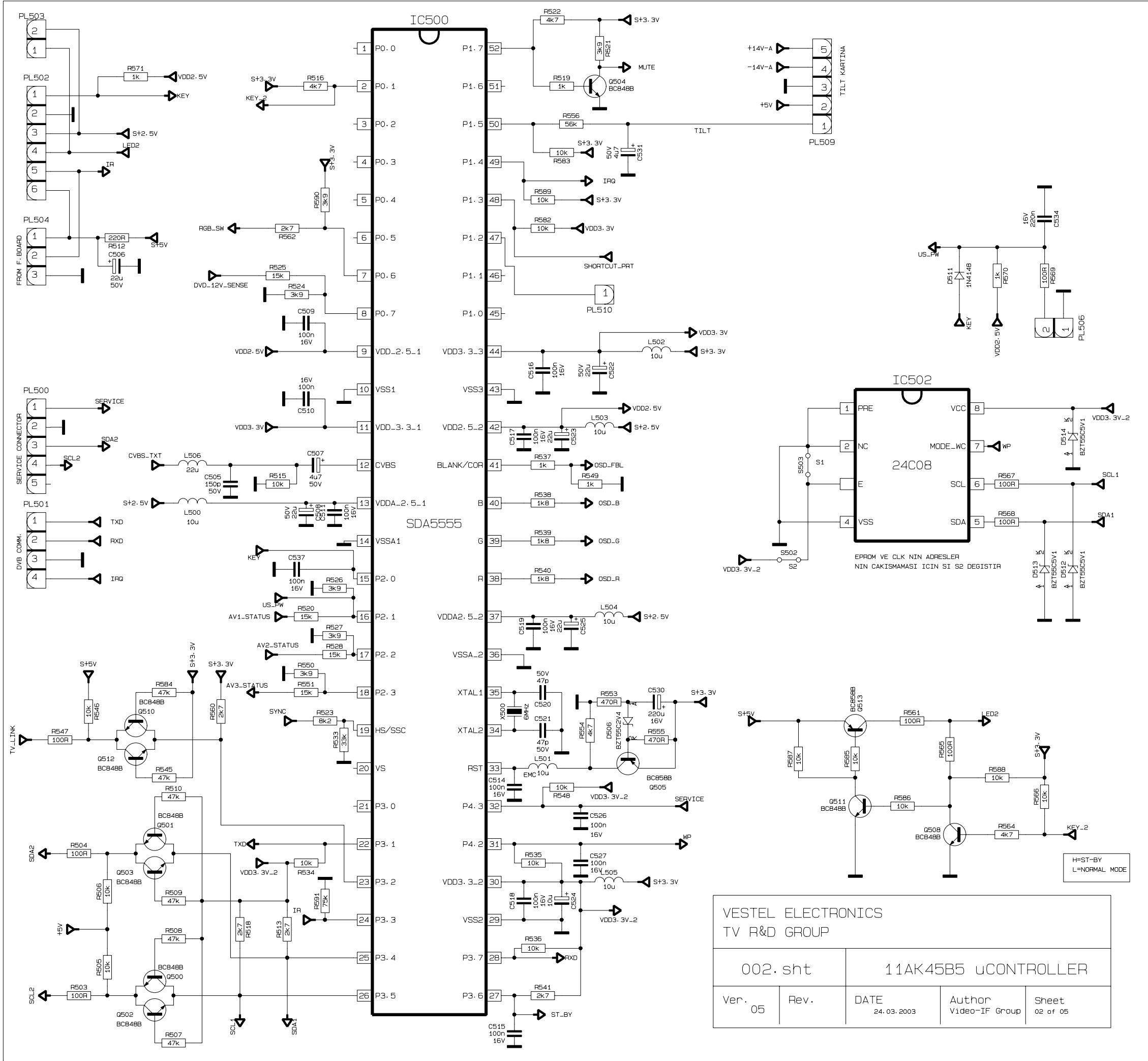


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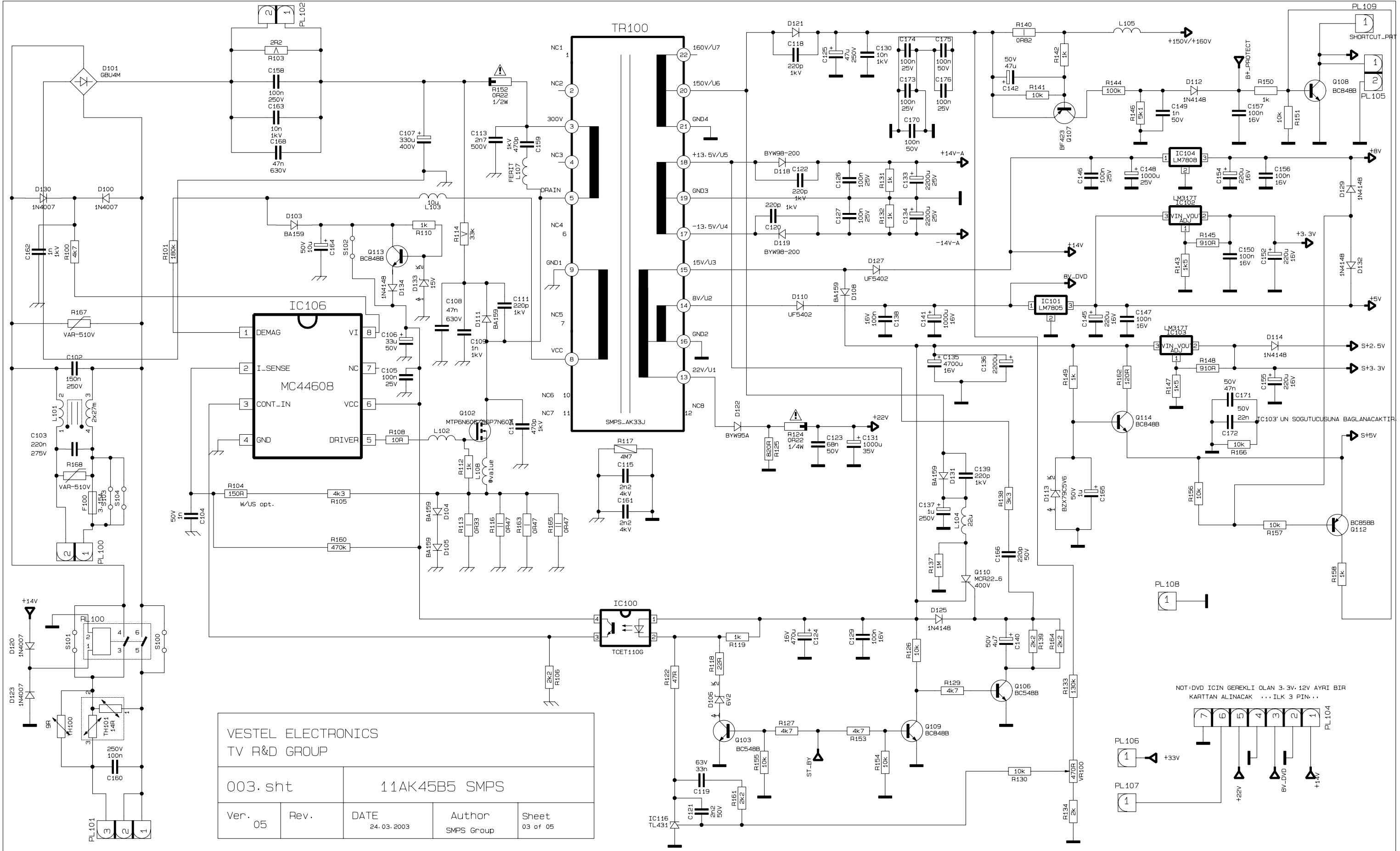




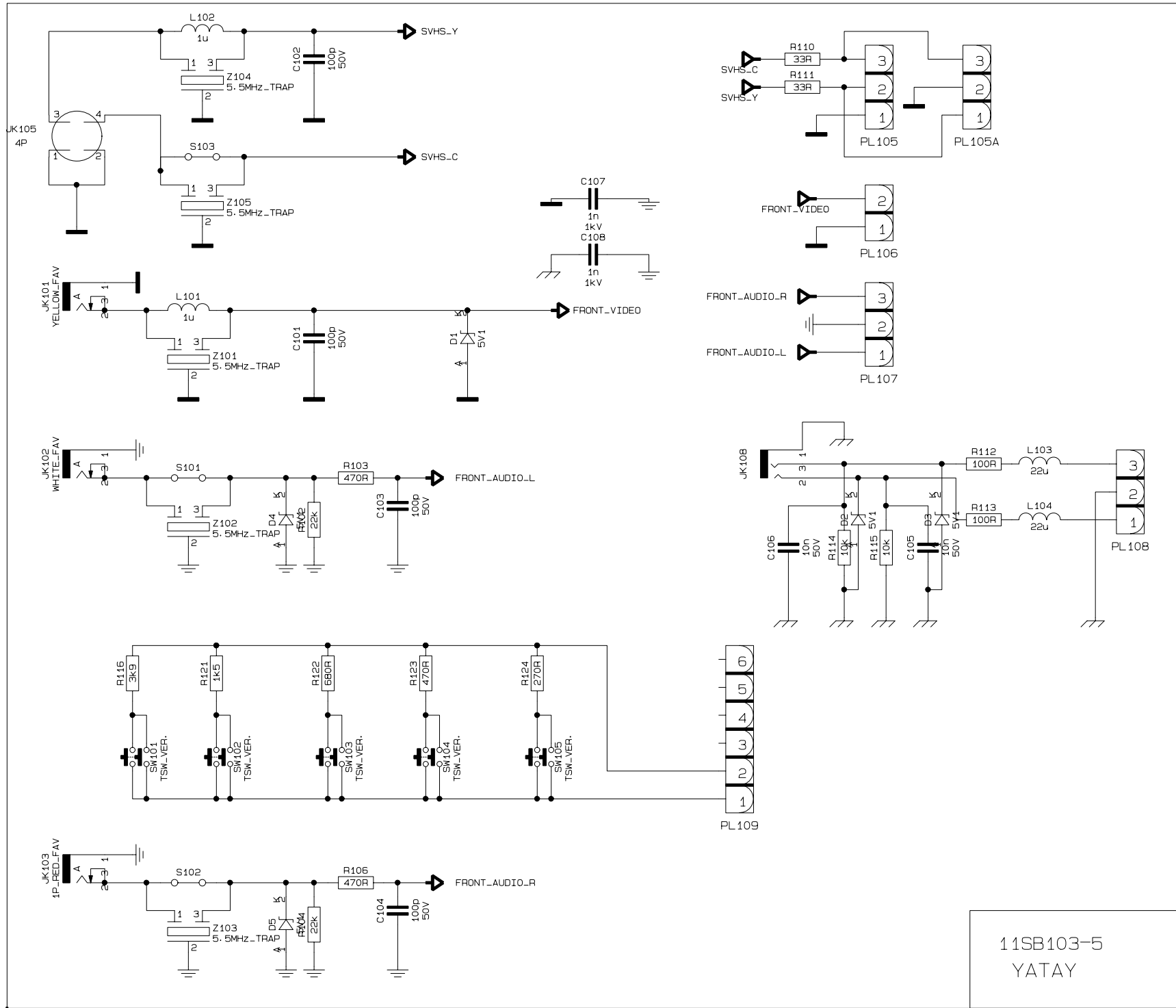


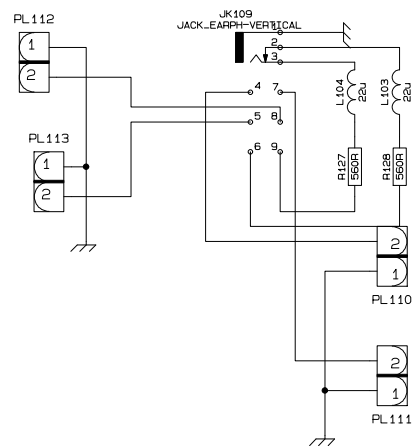


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