

A close-up photograph of a printed circuit board (PCB) with various electronic components. The board is green and features several integrated circuits (ICs) and passive components. Labels such as 'U3', 'C108', 'C107', 'C113', 'C112', and 'U5' are visible. A large, multi-pin connector is prominent in the center. The background is blurred, showing other parts of the board and components.

MB61
IDTV
SERVICE MANUAL

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1. INTRODUCTION

17MB61 mainboard is driven by MSD9WB7GX-LF-2. This IC is capable of handling Video and audio processing, Scaling-Display processing, 3D comb filter, OSD and text processing, LVDS transmitting, channel and MPEG2/4 decoding.

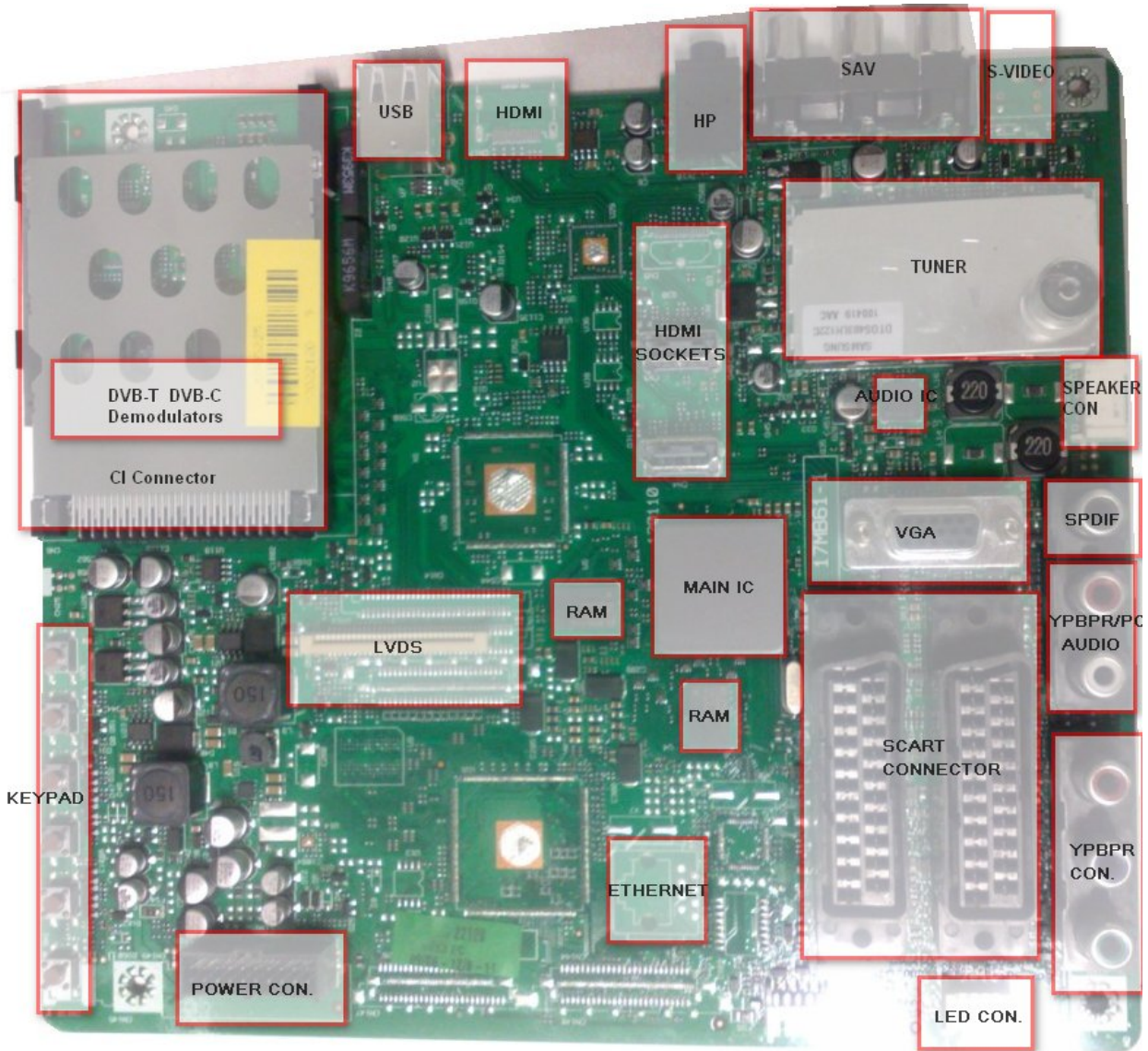
TV supports PAL, SECAM, NTSC colour standards and multiple transmission standards as B/G, D/K, I/I', and L/L' including German and NICAM stereo. Also DVB T, DVB-C are supported external demodulators.

Sound system output is supplying max. 2x8W (10%THD) for stereo 8Ω speakers.

Supported peripherals are:

- 1 RF input VHF I, VHF III, UHF @ 75Ω(Common)
- 1 Side AV (CVBS, R/L_Audio)
- 2 SCART socket(Common)
- 1 YPbPr (Common)
- 1 PC input(Common)
- 4 HDMI 1.3 input(2 HDMI inputs are common, 4 inputs are optional)
- 1 S/PDIF output(Common)
- 1 Headphone(Common)
- 1 Common interface(Common)
- 2 USB(Common)
- 1 DVD(Optional)
- 1 On-board Keypad(Optional)
- 1 External Keypad(Optional)
- 1 External TouchPad(Optional)

1.2. MB61 Placement of Blocks



- UHF CH. E21 ~ E69 (474 MHz ~ 858 MHz)
- Receiving Channel (PAL, Picture carrier frequency):
 - VHF Low CH. E2 ~ S10 (48.25MHz ~ 168.25MHz)
 - VHF High CH. E5 ~ S41 (175.25MHz ~ 463.25MHz)
 - UHF CH. E21 ~ E70 (471.25MHz ~ 863.25MHz)
- Intermediate Frequency:
 - Digital(center) DVB-T (36.167 MHz)
 - Digital(center) DVB-C (36.125 MHz)
 - Analog(picture) 38.9 MHz
- Input Impedance: 75Ω, Unbalanced
- Band Change-Over System
- PLL Control System
- Tuning System
 - Electronic Tuning System With PLL
- Internal(or External) RF AGC function
 - Built in wideband AGC detector with 6 programmable take-over points

1.3. Pinning:

Pin no.	Terminal Name	Pin Description
1	Ant Power	Active Antenna Power
2	B+	+5V, Supply Voltage (Preamplifier, DC/DC)
3	RF AGC	RF AGC (internal or external mode)
4	CL	I2C Serial Clock
5	DA	I2C Serial Clock
6	BP	+5V, Supply Voltage (RF Amp, PLL, IF Amp)
7	BT(T.P)	+33V, within DC/DC circuit
8	AS	I2C Address Selection of the PLL
9	IF AGC	Control voltage for the IF AGC
10	IF OUT +	Output 2 of the IF Amplifier
11	IF OUT -	Output 1 of the IF Amplifier
12	AIF Output	IF output of the Analog BroadBand

2. SAW FILTER – Audio – Epcos K9656M(Z101)

2.1. Standart

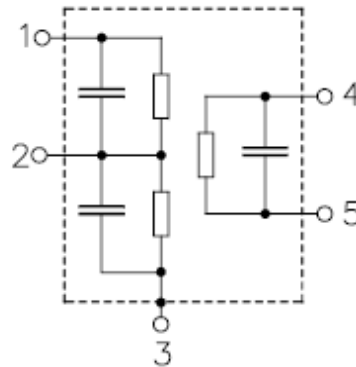
- B/G
- D/K
- I
- L/L'

2.2. 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

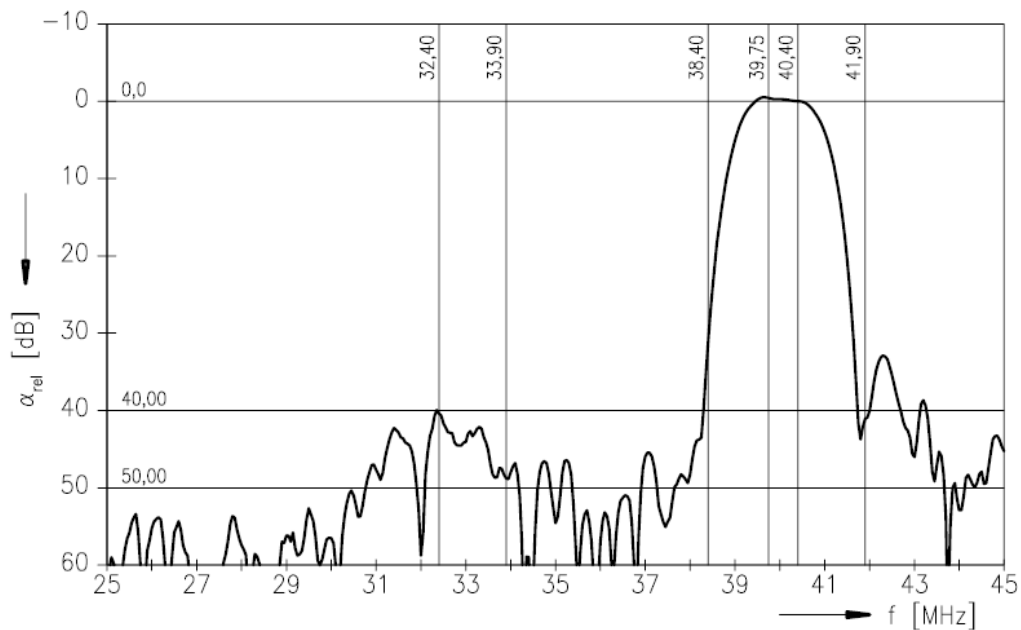
2.3. Pin configuration

- 1 Input
- 2 Switching input
- 3 Chip carrier - ground
- 4 Output
- 5 Output

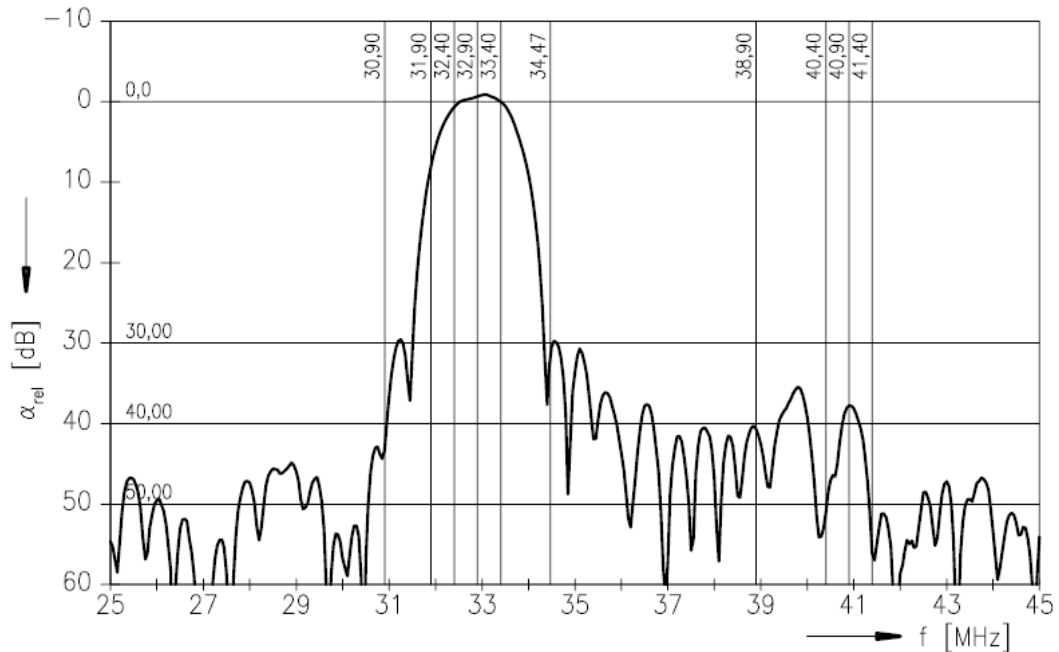


2.4. Frequency response

Frequency response of channel 1



Frequency response of channel 2



3. SAW FILTER – Video – Epcos K3958M(Z102)

3.1. Standart

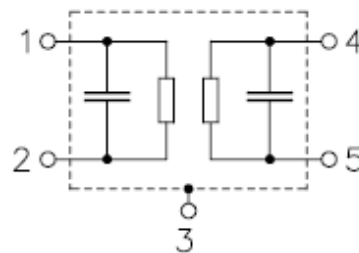
- B/G
- D/K
- I
- L/L'

3.2. Features

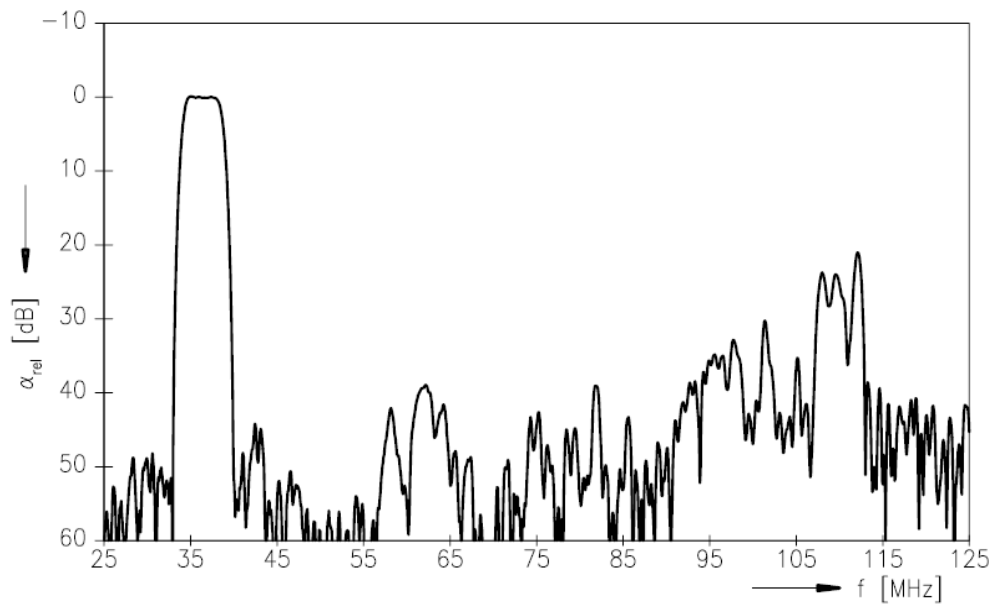
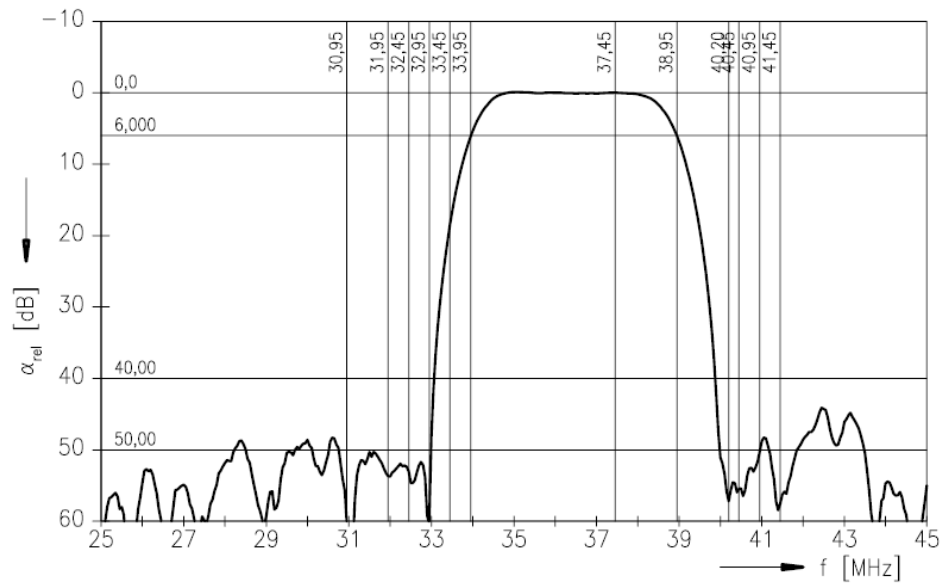
- TV IF filter with Nyquist slopes at 33.90 MHz and 38.90 MHz
- Constant group delay

Pin configuration:

- 1 Input
- 2 Input - ground
- 3 Chip - carrier ground
- 4 Output
- 5 Output



3.3. Frequency response



4. AUDIO AMPLIFIER STAGE WITH MAX9736

4.1. General Description

The MAX9736A/B Class D amplifiers provide high-performance, thermally efficient amplifier solutions. The MAX9736A delivers 2 x 15W into 8Ω loads, or 1 x 30W into a 4Ω load. The MAX9736B delivers 2 x 6W into 8Ω loads or 1 x 12W into a 4Ω load. These devices are pin-for-pin compatible, allowing a single audio design to work across a broad range of platforms, simplifying design efforts, and reducing PCB inventory.

Both devices operate from 8V to 28V and provide a high PSRR, eliminating the need for a regulated power supply. The MAX9736 offers up to 88% efficiency at 12V supply.

Pin-selectable modulation schemes select between filterless modulation and classic PWM modulation. Filterless modulation allows the MAX9736 to pass CE EMI limits with 1m cables using only a low-cost ferrite bead and capacitor on each output. Classic PWM modulation is optimized for best audio performance when using a full LC filter.

A pin-selectable stereo/mono mode allows stereo operation into 8Ω loads or mono operation into 4Ω loads. In mono mode, the right input op amp becomes available as a spare device, allowing flexibility in system design.

Comprehensive click-and-pop reduction circuitry minimizes noise coming into and out of shutdown or mute. Input op amps allow the user to create summing amplifiers, lowpass or highpass filters, and select an optimal gain.

The MAX9736A/B are available in 32-pin TQFN packages and specified over the -40°C to +85°C temperature range.

4.2. Features

Wide 8V to 28V Supply Voltage Range

- ◆ Spread-Spectrum Modulation Enables Low EMI Solution
- ◆ Passes CE EMI Limits with Low-Cost Ferrite Bead/Capacitor Filter
- ◆ Low BOM Cost, Pin-for-Pin Compatible Family
- ◆ High 67dB PSRR at 1kHz Reduces Supply Cost
- ◆ 88% Efficiency Eliminates Heatsink
- ◆ Thermal and Output Current Protection
- ◆ < 1μA Shutdown Mode
- ◆ Mute Function
- ◆ Space-Saving, 7mm x 7mm x 0.8mm, 32-Pin TQFN Package

4.3. Absolute Ratings

4.3.1. Electrical Characteristics

($V_{PVDD} = 20V$, $V_{VS} = 5V$, $AGND = PGND = 0V$, $V_{MOD} = V_{SHDN} = V_{MUTE} = 5V$, $REGEN = MONO = AGND$, $C1 = 0.1\mu F$, $C2 = 1\mu F$, $R_{IN_} = 20k\Omega$ and $R_{FB_} = 20k\Omega$, $R_L = \infty$, AC measurement bandwidth 22Hz to 22kHz, $T_A = T_{MIN}$ to T_{MAX} , unless otherwise noted. Typical values are at $T_A = +25^\circ C$.) (Notes 4, 5)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
AMPLIFIER DC CHARACTERISTICS						
Speaker Supply Voltage Range	PVDD	Inferred from PSRR test	8		28	V
Preamplifier Supply Voltage Range	VS	(Notes 1 and 7)	4.5		5.5	V
Undervoltage Lockout	UVLO			7		V
Quiescent Supply Current	I_{PVDD}	$R_L = \infty$, $V_{REGEN} = 5V$, $V_{VS} = \text{open}$	$T_A = +25^\circ C$	30	45	mA
			$T_A = T_{MIN}$ to T_{MAX}		50	
	I_{VS}	$R_L = \infty$, $V_{REGEN} = 0V$, $V_{VS} = 5V$	$T_A = +25^\circ C$	14	20	mA
			$T_A = T_{MIN}$ to T_{MAX}		22	
Shutdown Supply Current	I_{SHDN}	$V_{SHDN} = 0V$	I_{PVDD}	1	10	μA
			I_{VS}		10	
REG Voltage	VREG			4.2		V
Preregulator Voltage	VS	Internal regulated 5V, $V_{REGEN} = 5V$		4.8		V
COM Voltage	VCOM		1.9	2.05	2.2	V
INPUT AMPLIFIER CHARACTERISTICS						
Capacitive Drive	C_L			30		pF
Output Swing (Note 6)		Sinking $\pm 1mA$		± 2		V
Open-Loop Gain	A_{VO}	$V_{FB_} = V_{COM} \pm 500mV$, $R_{FB_} = 20k\Omega$ to $IN_$		88		dB
Input Offset Voltage	V_{OS}			± 1		mV

ELECTRICAL CHARACTERISTICS (continued)

(V_{PVD} = 20V, V_{VS} = 5V, $AGND$ = $PGND$ = 0V, V_{MOD} = V_{SHEN} = V_{MUTE} = 5V, $REGEN$ = $MONO$ = $AGND$, C_1 = 0.1 μ F, C_2 = 1 μ F, R_{NL} = 20k Ω and R_{FB} = 20k Ω , R_L = ∞ , AC measurement bandwidth 22Hz to 22kHz, T_A = T_{MIN} to T_{MAX} , unless otherwise noted. Typical values are at T_A = +25°C.) (Notes 4, 5)

PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNITS
Input Amplifier Slew Rate					2.5		V/ μ s
Input Amplifier Unity-Gain Bandwidth					3.5		MHz
AMPLIFIER CHARACTERISTICS							
Output Amplifier Gain (Note 8)	A_v	MAX9736A		16.5	17	17.5	dB
		MAX9736B		13.1	13.6	14.1	
Output Current Limit				3.3	4.6		A
Output Offset	V_{OS}	OUT_+ to OUT_-, T_A = +25°C			± 2	± 10	mV
Power-Supply Rejection Ratio	PSRR	PVDD = 8V to 28V, T_A = +25°C		65	60		dB
		f = 1kHz, 100mVp.p ripple			67		
MAX9736A Output Power (THD+N = 1%)	$P_{OUT_1\%}$	PVDD = 12V	Stereo	R_L = 8 Ω	6		W
				R_L = 4 Ω	13		
		Mono	R_L = 4 Ω	15.5			
			PVDD = 16V	Stereo	R_L = 8 Ω	13.5	
		R_L = 4 Ω			27		
		Mono	R_L = 8 Ω	13.5			
R_L = 4 Ω	27						
MAX9736B Output Power (THD+N = 1%)	$P_{OUT_1\%}$	PVDD = 12V	Stereo	R_L = 8 Ω	6		W
				R_L = 4 Ω	11		
		Mono	R_L = 4 Ω	12			
			PVDD = 16V	Stereo	R_L = 8 Ω	6	
		R_L = 4 Ω			12		
		Mono	R_L = 8 Ω	6			
R_L = 4 Ω	12						
MAX9736A Output Power (THD+N = 10%)	$P_{OUT_10\%}$	PVDD = 12V	Stereo	R_L = 8 Ω	10		W
				R_L = 4 Ω	16		
		Mono	R_L = 4 Ω	19.5			
			PVDD = 16V	Stereo	R_L = 8 Ω	17.5	
		R_L = 4 Ω			35		
		Mono	R_L = 8 Ω	17.5			
R_L = 4 Ω	35						
MAX9736B Output Power (THD+N = 10%)	$P_{OUT_10\%}$	PVDD = 12V	Stereo	R_L = 8 Ω	7.5		W
				R_L = 4 Ω	14		
		Mono	R_L = 4 Ω	15			
			PVDD = 16V	Stereo	R_L = 8 Ω	7.5	
		R_L = 4 Ω			15		
		Mono	R_L = 8 Ω	7.5			
R_L = 4 Ω	15						

ELECTRICAL CHARACTERISTICS (continued)

(V_{PVDD} = 20V, V_{YS} = 5V, AGND = PGND = 0V, V_{MOD} = V_{SHDN} = V_{MUTE} = 5V, REGEN = MONO = AGND, C1 = 0.1μF, C2 = 1μF, R_{INL} = 20kΩ and R_{FB} = 20kΩ, R_L = ∞, AC measurement bandwidth 23Hz to 22kHz, T_A = T_{MIN} to T_{MAX}, unless otherwise noted. Typical values are at T_A = +25°C.) (Notes 4, 5)

PARAMETER	SYMBOL	CONDITIONS		MIN	TYP	MAX	UNITS
Total Harmonic Distortion Plus Noise	THD+N	MAX9736A, P _{OUT} = 4W, f = 1kHz, PWM modulation mode, R _L = 8Ω		0.04			%
		MAX9736B, P _{OUT} = 2W, f = 1kHz, PWM modulation mode, R _L = 8Ω		0.04			
Signal-to-Noise Ratio	SNR	A-weighted	MAX9736A, P _{OUT} = 8W, R _L = 8Ω	96.5			dB
			MAX9736B, P _{OUT} = 6W, R _L = 8Ω	97			
Noise	V _N	A-weighted (Note 9)	MAX9736A	120			μV _{RMS}
			MAX9736B	100			
Crosstalk		L to R, R to L, P _{OUT} = 1W, f = 1kHz, R _L = 8Ω		100			dB
Efficiency	η	P _{OUT} = 6W, MAX9736A, P _{VDD} = 12V, R _L = 8Ω		88			%
Click-and-Pop Level	KCP	Peak voltage, 32 samples/second, A-weighted (Notes 9 and 10)	Into mute	36			dBV
			Out of mute	36			
Switching Frequency			270	300	330		kHz
Spread-Spectrum Bandwidth			±4				kHz
Thermal Shutdown Level			160				°C
Thermal Shutdown Hysteresis			30				°C
Turn-On Time	t _{ON}		110				ms
DIGITAL INTERFACE							
Input Voltage High	V _{INH}		2				V
Input Voltage Low	V _{INL}				0.8		V
Input Voltage Hysteresis			50				mV
Input Leakage Current					±10		μA

Note 4: All devices are 100% production tested at +25°C. All temperature limits are guaranteed by design.

Note 5: Stereo mode (MONO = GND) specified with 8Ω resistive load in series with a 68μH inductive load connected across BTL outputs. Mono mode (MONO = 5V) specified with a 4Ω resistive load in series with a 33μH inductive load connected across BTL outputs.

Note 6: Output swing is specified with respect to V_{COM}.

Note 7: For typical applications, an external 5V supply is not required. Therefore, set REGEN = 5V. If thermal performance is a concern, set REGEN = 0V and provide an external regulated 5V supply.

Note 8: Output amplifier gain is defined as:

$$20 \times \log \left(\frac{I(V_{OUT+}) - (V_{OUT-})I}{I_{FB-1}} \right)$$

Note 9: Amplifier inputs AC-coupled to GND.

Note 10: Specified at room temperature with an 8Ω resistive load in series with a 68μH inductive load connected across BTL outputs. Mode transitions controlled by \overline{SHDN} control pin.

4.4. Pinning

PIN	NAME	FUNCTION
1, 2	OUTL-	Left-Channel Negative Speaker Output
3	BOOT	Charge-Pump Output. Connect a 1 μ F charge-pump holding capacitor from BOOT to PGND.
4	MONO	Mono Select. Set MONO high for mono mode, low for stereo mode.
5	FBL	Left-Channel Feedback. Connect feedback resistor between FBL and INL to set amplifier gain.
6	INL	Stereo Left-Channel Inverting Input. In mono mode, INL is the inverting audio input for the mono amplifier.
7, 8, 17	N.C.	No Connection. Not internally connected. OK to connect to PGND.
9	MUTE	Mute Input. Drive MUTE low to place the device in mute mode.
10	SHDN	Shutdown Input. Drive SHDN low to place the device in shutdown mode.
11	REGEN	Internal Regulator Enable Input. Connect REGEN to SHDN to enable the internal regulator. Drive REGEN low to disable the internal regulator, and supply the device with an external 5V supply on VS. See the <i>Power-Supply Sequencing</i> section.
12	COM	Internal 2V Bias. Bypass COM to AGND with a 1 μ F capacitor.
13, 14	AGND	Analog Ground
15	REG	Internal Regulator Output. Bypass REG to AGND with a 1 μ F capacitor.
16	VS	5V Regulator Supply. Bypass VS to AGND with a 1 μ F capacitor. If REGEN is low, the internal regulator is disabled, and an external 5V supply must be connected to VS. See the <i>Power-Supply Sequencing</i> section.
18	INR	Stereo Right-Channel Inverting Audio Input. In mono mode, INR is the inverting audio input for the uncommitted preamplifier (see the <i>Mono Configuration</i> section for more details).
19	FBR	Right-Channel Feedback. Connect feedback resistor between FBR and INR to set amplifier gain.
20	MOD	Output Modulation Select. Sets the output modulation scheme: V _{MOD} = Low, classic PWM/fixed-frequency mode V _{MOD} = High, filterless modulation/spread-spectrum mode
21	C1N	Charge-Pump Flying-Capacitor Negative Terminal
22	C1P	Charge-Pump Flying-Capacitor Positive Terminal
23, 24	OUTR-	Right-Channel Negative Speaker Output
25, 26	OUTR+	Right-Channel Positive Speaker Output
27, 30	PVDD	Power Supply. Bypass each PVDD pin to ground with 0.1 μ F capacitors. Also, use a single 220 μ F capacitor between PVDD and PGND.
28, 29	PGND	Power Ground
31, 32	OUTL+	Left-Channel Positive Speaker Output
—	EP	Exposed Pad. Must be externally connected to PGND.

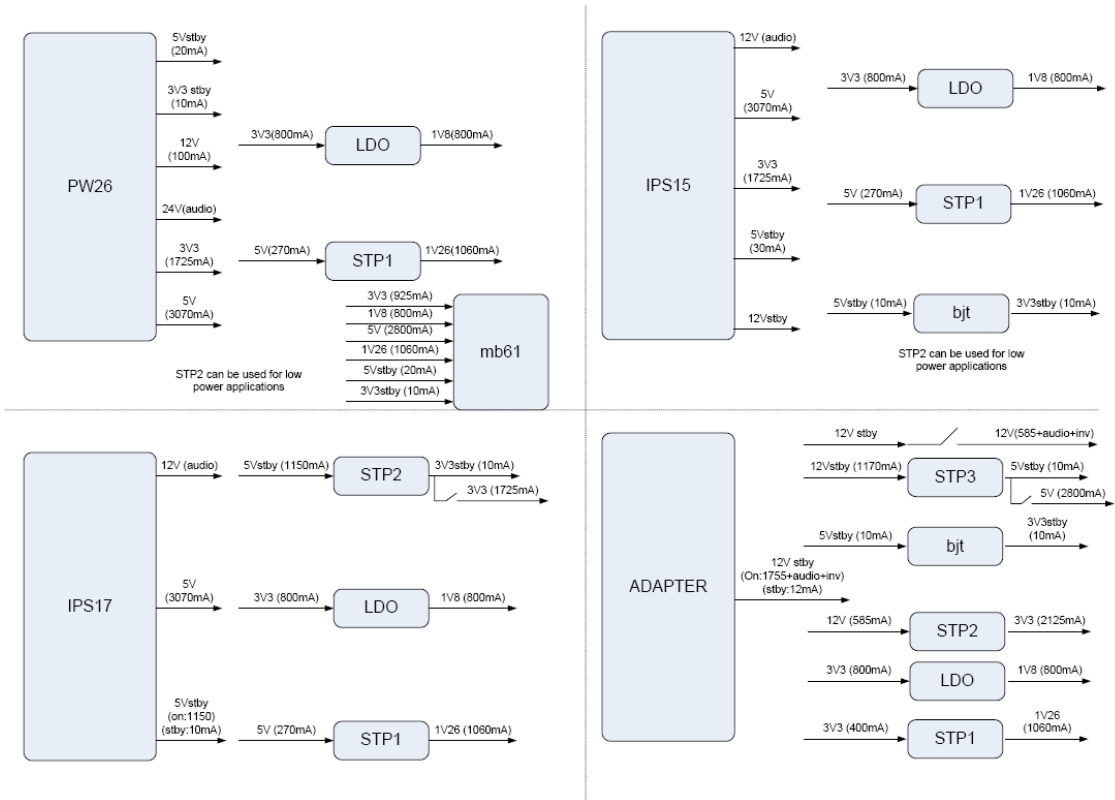
5. POWER STAGE

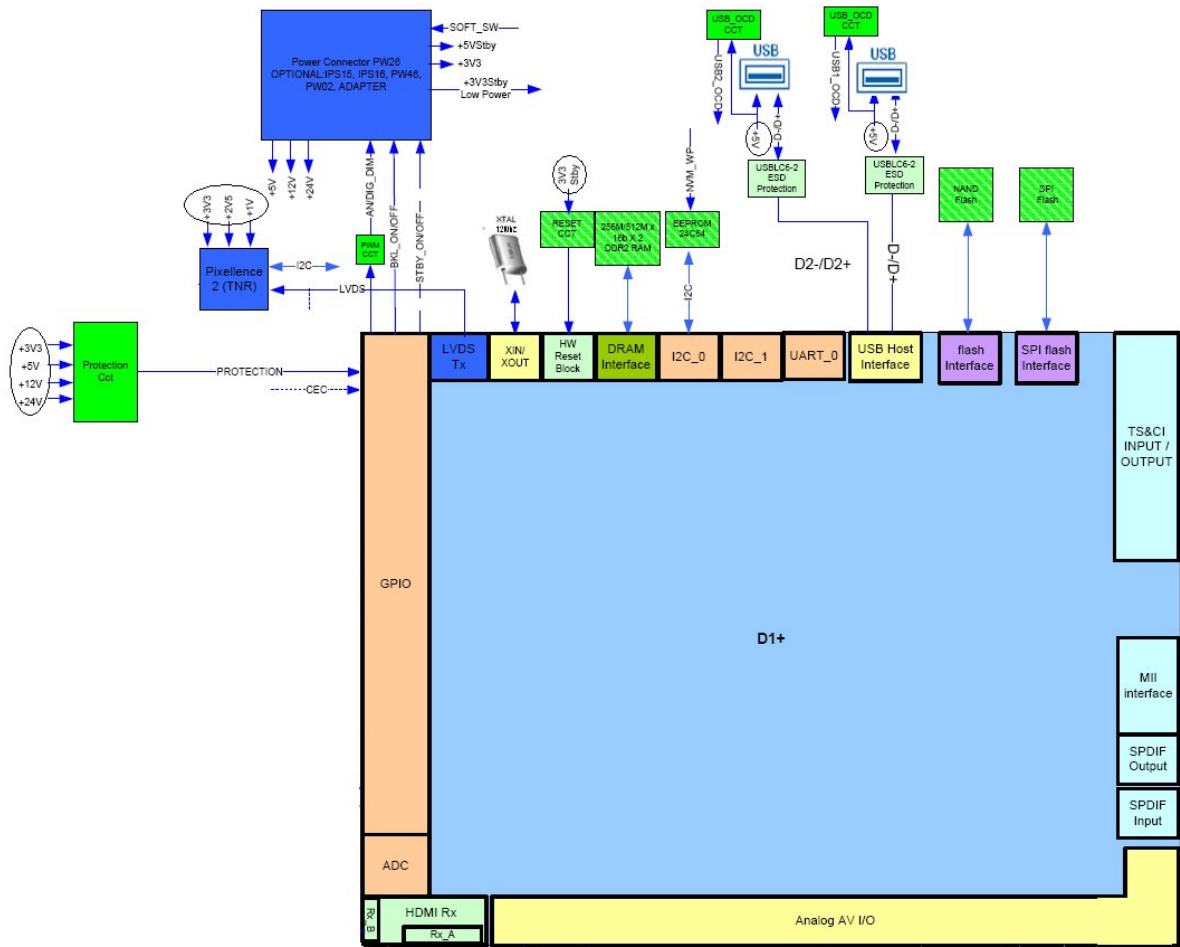
17MB61 General power management block diagram is shown below:

Voltage	Total Current	
3V3	925mA	
3V3 stby	10mA	
5V	2800mA	1500mA PANEL
5V stby	20mA	
1V8	800mA	
1V26	1060mA	
12V	1500mA	PANEL
24V	8250mA	BACKLIGHT

Table 9: Power Consumption

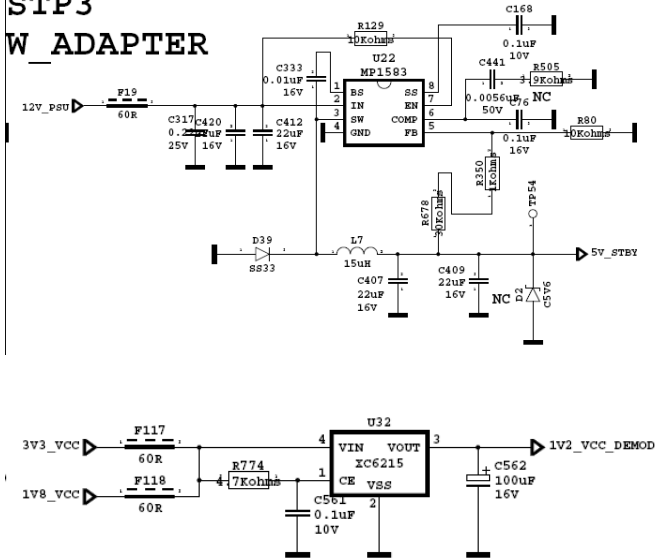
- 1) These values calculated from max. ratings of existing panels. Meaning values will be lower than calculated values.
- 2) Total consumption value does not contain the CCFL consumption.



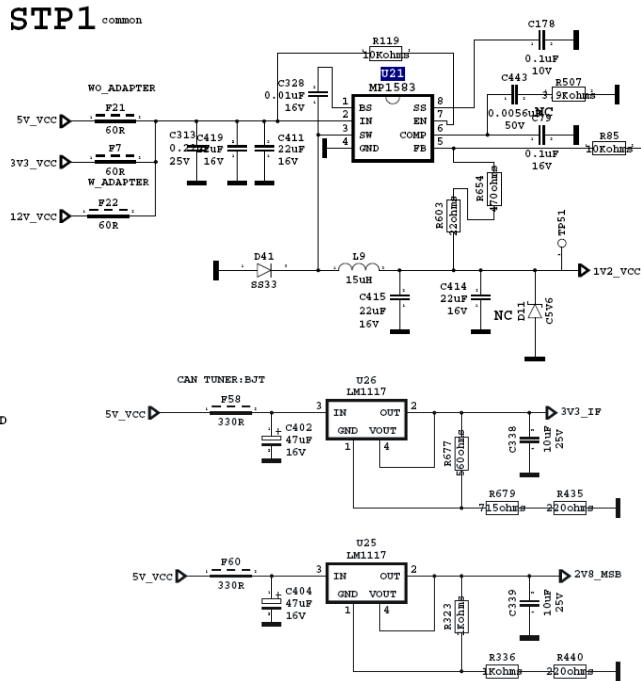


Power Domain

STP3
W_ADAPTER



STP1 common



Power ICs

6. MICROCONTROLLER – MSTAR(U157)

MSD9WB7GX-LF-2

GENERAL DESCRIPTION

The MSD9WB7GX-2 is a highly integrated controller IC for LCD/PDP DTV applications with resolutions up to WUXGA (1920x1200). It is configured with an integrated triple-ADC/PLL, a multi-standard TV video and audio decoder, a motion adaptive video de-interlacer, a scaling engine, the MStarACE-3 color engine, an advanced 2D graphics engine, a transport processor, a high-definition (HD) MPEG video decoder, a high-definition (HD) H.264 video decoder, a Real Video decoder, a JPEG video decoder, a MPEG-4 decoder, and a 24-bit DSP for MPEG audio decoding, a DVI/HDCP/HDMI receiver, and a peripheral control unit providing a variety of HDTV control functions.

For digital TV application, the MSD9WB7GX-2 comprises an MPEG-2 transport processor with advanced section filtering capability, an MPEG-2 (MP@HL profile) video decoder, a MPEG-4 decoder, a H.264 video decoder, and an audio DSP decoder for MPEG audio streams, MPEG layer I and II digital audio decoder with analog audio outputs that are designed to support existing and future DVB-T programs while handling conditional access. Furthermore, it is also possible to decode JPEG, Real Video streams, and MP3 formats from external sources such as USB interface.

For analog TV, the MSD9WB7GX-2 includes NTSC/PAL/SECAM multi-standard video decoder comprising a 3D motion adaptive comb filter and time-based correction, and a NICAM/A2 audio decoder to support worldwide television standards. The MSD9WB7GX-2 is also configured with a VBI processor to decode digital information such as Close Caption/V-chip/teletext/WSS/CGMS-A/VPS. In addition, the MStar advanced LCD TV processor enhances video quality, motion adaptive de-interlacer, picture quality adjustment units, and MStarACE-3 color engine.

With USB 2.0 host controllers, UART, IR, SPI, I2C, and PWM, the MSD9WB7GX-2 fulfills all requirements in advanced DTV sets. Furthermore, MSD9WB7GX-2 can access files from networks with embedded Ethernet MAC and external PHY via the MII/RMII interface. To reduce system costs, the MSD9WB7GX-2 also integrates intelligent power management control capability for green-mode requirements and spread-spectrum support for EMI management.

The MSD9WB7GX-LF-2 is composed of several modules:

High performance micro-processor

- Embedded micro-processor supports Linux operating system
- Interrupt controller
- Supports ISP
- Three full duplex UARTs
- DMA engine to speed up large data movement

Transport Stream De-multiplexer

- Two external TS inputs and one internal TS data path
- Supports both parallel and serial TS interface, with or without sync signal
- Maximum TS data rate is 104 Mb/sec for serial or 13 MB/sec for parallel
- 32 general purpose PID filters and section filters for each transport stream de-multiplexer
- One video PES and one audio PES channel
- Supports MHEG5, DVB subtitle and digital teletext
- Supports additional audio/video/PCR filters
- Supports TS DMA channel for time-shift
- Supports AES encryption/decryption

MPEG-2 A/V Decoder

- ISO/IEC 13818-2 MPEG-2 video MP@HL
- Automatic frame rate conversion
- Supports resolution in HDTV (1080i, 720p) and SDTV
- Supports MPEG-1, MPEG-2 (Layer I/II), Dolby1 Digital (AC-3), and AAC audio decoding
- Supports Dolby Digital Plus (E-AC-3)2 decoding, and Dolby Digital Compatible Output (DDCO) for HE-AAC to DD transcodingOptional

MPEG-4 Video Decoder

- ISO/IEC 14496-2 MPEG-4 ASP video decoding
- Supports resolution in HDTV (1080p@30fps)
- Supports DivX3 Home Theater or HD profileOptional

H.264 Decoder

- ITU-T H.264, ISO/IEC 14496-10 (main and high profile up to level 4.0) video decoding
- Supports resolutions for all DVB, ATSC, HDTV, DVD and VCD
- Supports resolution up to 1080p@30fps
- Supports CABAC and CAVLC stream types
- Processing of ES and PES streams, extractions and provision of time stamps

RealMedia DecoderOptional

- Supports maximum resolution up to 720p@30fps
- Supports RV8, RV9, RV10, RA8-LBR and HE-AAC decoders
- Supports file formats with RM and RMVB
- Supports Picture Re-sampling
- Supports in-loop de-block for B-frame

Hardware JPEG

- Supports sequential mode, single scan
- Supports both color and grayscale picture
- Operates in scan unit; hardware decoder will handle the bit stream after scan header
- Supports programmable region of interest (ROI)
- Supports format: 422/411/420/444/422T
- Decoded picture will be stored in DRAM with UYVY format
- Supports scaling down ratio: 1/2, 1/4, 1/8, applied to height and width simultaneously
- Supports picture rotation

NTSC/PAL/SECAM Video Decoder

- Supports NTSC-M, NTSC-J, NTSC-4.43, PAL (B, D, G, H, M, N, I, Nc), and SECAM
- Automatic TV standard detection
- Motion adaptive 3D comb filter for NTSC/PAL
- Eight configurable CVBS & Y/C S-video inputs
- Supports Teletext level-1.5, Closed Caption (analog CC 608/ analog CC 708/digital CC 608/digital CC 708), V-chip and SCTE
- Two CVBS video outputs

Multi-Standard TV Sound Processor

- Supports BTSC/A2/EIA-J demodulation in NTSC and A2/NICAM/FM/AM demodulation in PAL
- Supports MTS Mode Mono/Stereo/SAP in BTSC/EIA-J and Mono/Stereo/Dual in A2/NICAM
- L/R audio line-in x6 and SIF audio input
- L/R speaker and 2 additional L/R audio line-out
- Built-in audio sampling rate conversion (SRC)
- Built-in audio ADC
- Built-in audio DAC's
- Audio processing for loudspeaker channel, including volume, balance, mute, tone, EQ, virtual stereo/surround, and treble/bass
- Advanced soundOpti onal available (Dolby, SRS1, BBE2... etc)
- Supports digital audio format decoding:
 - MPEG-1, MPEG-2 (Layer III), MP3, AC-3 (Dolby Digital), AAC-LC, WMA
 - E-AC-3 (Dolby Digital Plus) decoding and E-AC-3 to AC-3 conversion at the same time

Digital Audio Interface

- I2S digital audio input & output
- S/PDIF digital audio input & output
- HDMI audio channel processing capability
- Programmable delay for audio/video synchronization

Analog RGB Compliant Input Ports

- Three analog ports support up to 1080P
- Supports PC RGB input up to SXGA@75Hz
- Supports HDTV RGB/YPbPr/YCbCr
- Supports Composite Sync and SOG (Sync-on-Green) separator
- Automatic color calibration

Auto-Configuration/Auto-Detection

- Auto input signal format and mode detection
- Auto-tuning function including phasing, positioning, offset, gain, and jitter detection
- Sync Detection for H/V Sync

DVI/HDCP/HDMI Compliant Input Port

- Three DVI/HDCP/HDMI input ports support up to 225MHz @ 1080P 60Hz with 12-bit deep-color resolution
- Single link on-chip DVI 1.0 compliant receiver
- High-bandwidth Digital Content Protection (HDCP) 1.1 compliant receiver
- High Definition Multimedia Interface (HDMI) 1.3 compliant receiver with CEC (Consumer Electronics Control) support
- Long-cable tolerant robust receiving

High-Performance Scaling Engines

- Fully programmable shrink/zoom capabilities
- Nonlinear video scaling supports various modes including Panorama

Video Processing & Conversion

- 3D motion adaptive video de-interlacers with edge-oriented adaptive algorithm for smooth low-angle edges
- Automatic 3:2 pull-down & 2:2 pull-down detection and recovery
- MStar 3rd Generation Advanced Color Engine (MStarACE-3) automatic picture enhancement:
 - Brilliant and fresh color
 - Blue Stretch
 - Intensified contrast and details
 - Vivid skin tone
 - Sharp edge
 - Enhanced depth of field perception
 - Accurate and independent color control
- Supports sRGB and xvYCC color processing
- Supports HDMI 1.3 deep color format
- Supports enhanced and seamless color mapping for wider gamut panels
- 10-bit internal data processing
- Programmable 12-bit RGB gamma CLUT
- 3D video noise reduction
- MPEG artifact removal including de-blocking and mosquito noise reduction
- Frame rate conversion

Output Interface

- Supports up to 10-bit dual LVDS WUXGA (1920x1200) panel interface
- Supports 2 data output formats: Thin & T1 data mappings
- Compatible with TIA/EIA
- With 6/8 bits optional dithered output
- Spread spectrum output frequency for EMI suppression

CVBS Video Output

- Supports CVBS bypass output
- Built-in video encoder for encoding digital video into CVBS output

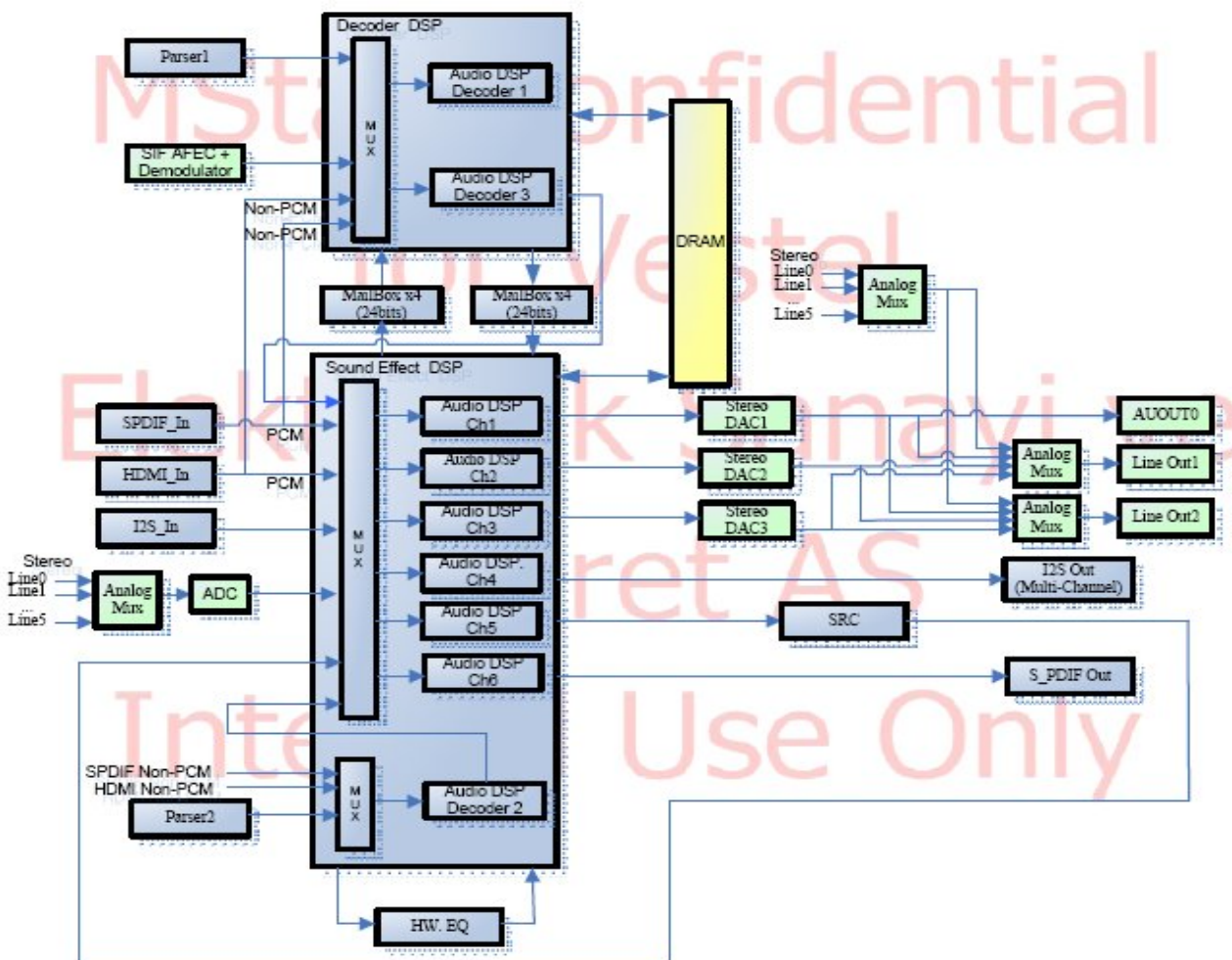
2D Graphics Engine

- Point draw, line draw, rectangle draw/fill and text draw
- BitBlit and stretch BitBlit
- Raster Operation (ROP)

Miscellaneous

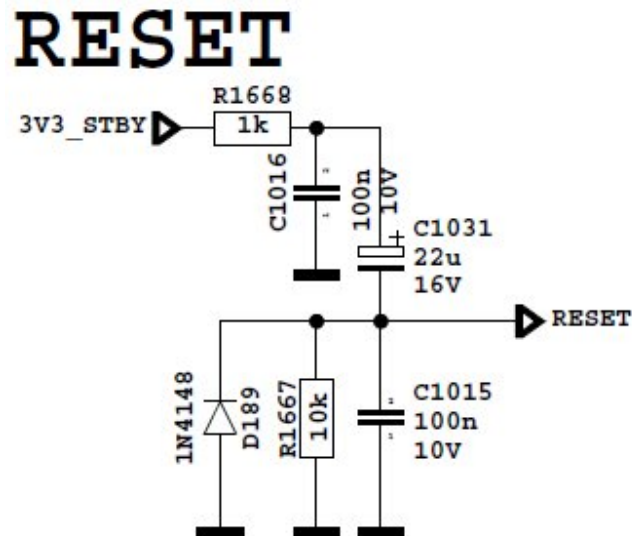
- DRAM controller to support up to two 16-bit DDR2 interfaces
- Supports Common Interface for conditional access
- SPI serial interface for external SPI flash
- Parallel interface for external parallel NOR flash and NAND flash
- Build-in 10/100Mbps Ethernet Mac
- High efficiency power control module
- Two ports of USB 2.0 host controller with the flexibility for connecting external storage devices
- 505-ball TFBGA package
- Operating at 1.26V (core), 1.9V (DDR2), and 3.3V (I/O and analog)

6.1. MSTAR Block Diagram



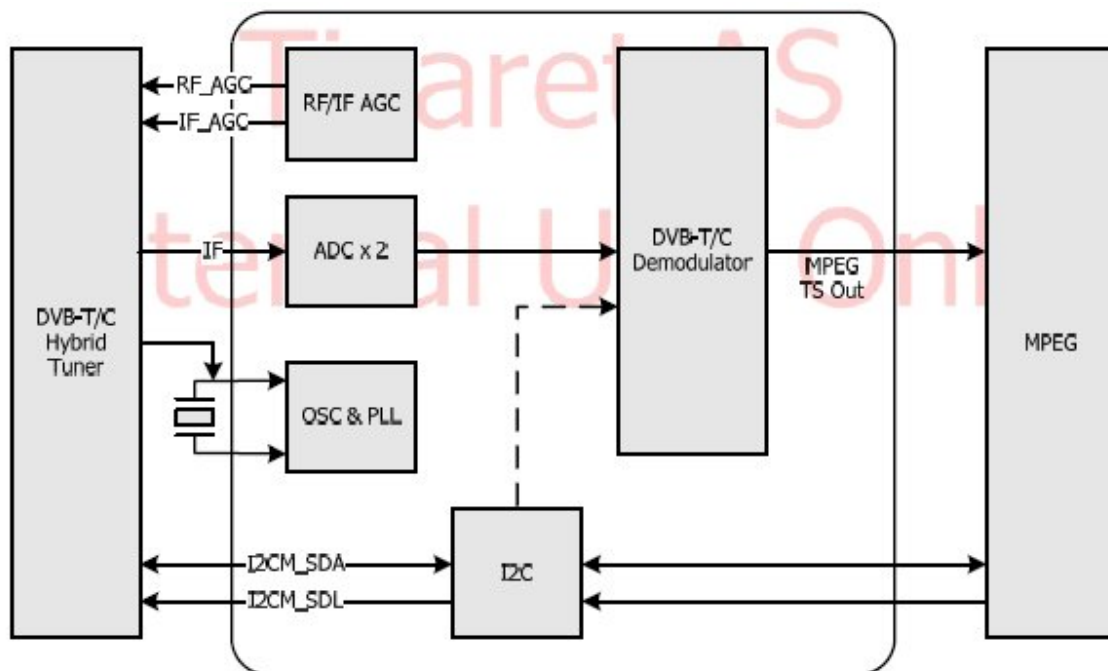
6.2. Reset Circuit

Reset circuit using for initializing main Mstar IC. Reset condition is high and normal working condition is low for RESET pin.



7. CI INTERFACE

7.1 Block Diagram



7.1 CI Interface Power Switch

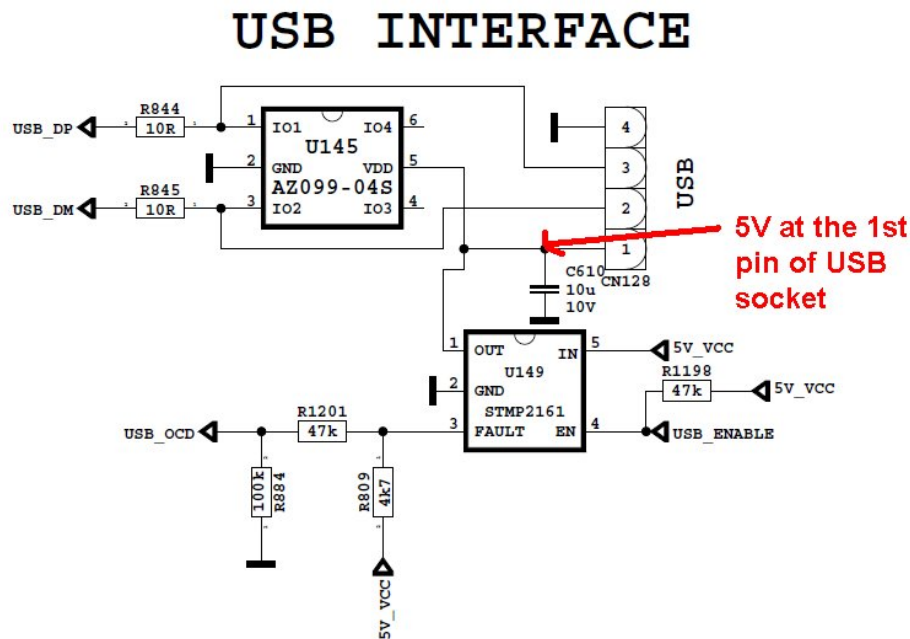
It is used for CI module supply, when Module is inserted (it means CI detect is low) This circuit is opened or closed by CI_POWER_CTRL port of main uController

8. USB INTERFACE

Main Concept IC has integrated 2 USB 2.0 interface. One of them is used for ethernet function, the other one is used for USB connectivity for last user. Last user can play video, picture and audio files. Also digital channels can be record to external storage device by this interface. All SW files can be updated with interface.

USB circuit has 3 main parts

- Integrated USB 2.0 Host interface of D3 (U157)
- Protection IC (U145)
- Over Current Protection IC (U149)



9. DDR2 SDRAM 8M × 4 BANKS × 16 BIT (W9751G6JB) (U154, U155)

9.1. General Description

The W9751G6JB is a 512M bits DDR2 SDRAM, organized as 8,388,608 words × 4 banks × 16 bits. This device achieves high speed transfer rates up to 1066Mb/sec/pin (DDR2-1066) for general applications. W9751G6JB is sorted into the following speed grades: -18, -25 and -3. The -18 is compliant to the DDR2-1066/CL7 specification. The -25 is compliant to the DDR2-800 (5-5-5) or DDR2-800 (6-6-6) specification. The -3 is compliant

to the DDR2-667 (5-5-5) specification. All of the control and address inputs are synchronized with a pair of externally supplied differential clocks. Inputs are latched at the cross point of differential clocks (CLK rising and CLK falling). All I/Os are synchronized with a single ended DQS or differential DQS- DQS pair in a source synchronous fashion.

9.2. Features

- Power Supply: VDD, VDDQ = 1.8 V \pm 0.1 V
- Double Data Rate architecture: two data transfers per clock cycle
- CAS Latency: 3, 4, 5, 6 and 7
- Burst Length: 4 and 8
- Bi-directional, differential data strobes (DQS and DQS) are transmitted / received with data
- Edge-aligned with Read data and center-aligned with Write data
- DLL aligns DQ and DQS transitions with clock
- Differential clock inputs (CLK and CLK)
- Data masks (DM) for write data
- Commands entered on each positive CLK edge, data and data mask are referenced to both edges of DQS
- Posted CAS programmable additive latency supported to make command and data bus efficiency
- Read Latency = Additive Latency plus CAS Latency (RL = AL + CL)
- Off-Chip-Driver impedance adjustment (OCD) and On-Die-Termination (ODT) for better signal quality
- Auto-precharge operation for read and write bursts
- Auto Refresh and Self Refresh modes
- Precharged Power Down and Active Power Down
- Write Data Mask
- Write Latency = Read Latency - 1 (WL = RL - 1)
- Interface: SSTL_18

9.3. Electrical Characteristics

SYM.	PARAMETER	MIN.	TYP.	MAX.	UNIT	NOTES
VDD	Supply Voltage	1.7	1.8	1.9	V	1
VDDL	Supply Voltage for DLL	1.7	1.8	1.9	V	5
VDDQ	Supply Voltage for Output	1.7	1.8	1.9	V	1, 5
VREF	Input Reference Voltage	0.49 x VDDQ	0.5 x VDDQ	0.51 x VDDQ	V	2, 3
VTT	Termination Voltage (System)	VREF - 0.04	VREF	VREF + 0.04	V	4

9.4. Pinning

1	2	3	4	5	6	7	8	9
VDD	NC	VSS		A		VSSQ	$\overline{\text{UDQS}}$	VDDQ
DQ14	VSSQ	UDM		B		UDQS	VSSQ	DQ15
VDDQ	DQ9	VDDQ		C		VDDQ	DQ8	VDDQ
DQ12	VSSQ	DQ11		D		DQ10	VSSQ	DQ13
VDD	NC	VSS		E		VSSQ	$\overline{\text{LDQS}}$	VDDQ
DQ6	VSSQ	LDM		F		LDQS	VSSQ	DQ7
VDDQ	DQ1	VDDQ		G		VDDQ	DQ0	VDDQ
DQ4	VSSQ	DQ3		H		DQ2	VSSQ	DQ5
VDDL	VREF	VSS		J		VSSDL	CLK	VDD
	CKE	$\overline{\text{WE}}$		K		$\overline{\text{RAS}}$	$\overline{\text{CLK}}$	ODT
NC	BA0	BA1		L		$\overline{\text{CAS}}$	$\overline{\text{CS}}$	
	A10/AP	A1		M		A2	A0	VDD
VSS	A3	A5		N		A6	A4	
	A7	A9		P		A11	A8	VSS
VDD	A12	NC		R		NC	NC	

BALL NUMBER	SYMBOL	FUNCTION	DESCRIPTION
M8,M3,M7,N2,N8,N3,N7,P2,P8,P3,M2,P7,R2	A0–A12	Address	Provide the row address for active commands, and the column address and Auto-precharge bit for Read/Write commands to select one location out of the memory array in the respective bank. Row address: A0–A12. Column address: A0–A9. (A10 is used for Auto-precharge)
L2,L3	BA0–BA1	Bank Select	BA0–BA1 define to which bank an ACTIVE, READ, WRITE or PRECHARGE command is being applied.
G8,G2,H7,H3,H1,H9,F1,F9,C8,C2,D7,D3,D1,D9,B1,B9	DQ0–DQ15	Data Input / Output	Bi-directional data bus.
K9	ODT	On Die Termination Control	ODT (registered HIGH) enables termination resistance internal to the DDR2 SDRAM.
F7,E8	LDQS, $\overline{\text{LDQS}}$	LOW Data Strobe	Data Strobe for Lower Byte: Output with read data, input with write data for source synchronous operation. Edge-aligned with read data, center-aligned with write data. LDQS corresponds to the data on DQ0–DQ7. $\overline{\text{LDQS}}$ is only used when differential data strobe mode is enabled via the control bit at EMR (1)[A10 EMRS command].
B7,A8	UDQS, $\overline{\text{UDQS}}$	UP Data Strobe	Data Strobe for Upper Byte: Output with read data, input with write data for source synchronous operation. Edge-aligned with read data, center-aligned with write data. UDQS corresponds to the data on DQ8–DQ15. $\overline{\text{UDQS}}$ is only used when differential data strobe mode is enabled via the control bit at EMR (1)[A10 EMRS command].
L8	$\overline{\text{CS}}$	Chip Select	All commands are masked when $\overline{\text{CS}}$ is registered HIGH. $\overline{\text{CS}}$ provides for external bank selection on systems with multiple ranks. $\overline{\text{CS}}$ is considered part of the command code.
K7,L7,K3	$\overline{\text{RAS}}$, $\overline{\text{CAS}}$, $\overline{\text{WE}}$	Command Inputs	$\overline{\text{RAS}}$, $\overline{\text{CAS}}$ and $\overline{\text{WE}}$ (along with $\overline{\text{CS}}$) define the command being entered.
B3,F3	UDM LDM	Input Data Mask	DM is an input mask signal for write data. Input data is masked when DM is sampled high coincident with that input data during a Write access. DM is sampled on both edges of DQS. Although DM pins are input only, the DM loading matches the DQ and DQS loading.
J8,K8	CLK, $\overline{\text{CLK}}$	Differential Clock Inputs	CLK and $\overline{\text{CLK}}$ are differential clock inputs. All address and control input signals are sampled on the crossing of the positive edge of CLK and negative edge of $\overline{\text{CLK}}$. Output (read) data is referenced to the crossings of CLK and $\overline{\text{CLK}}$ (both directions of crossing).
K2	CKE	Clock Enable	CKE (registered HIGH) activates and CKE (registered LOW) deactivates clocking circuitry on the DDR2 SDRAM.
J2	VREF	Reference Voltage	VREF is reference voltage for inputs.
A1,E1,J9,M9,R1	VDD	Power Supply	Power Supply: 1.8V ± 0.1V.
A3,E3,J3,N1,P9	VSS	Ground	Ground.
A9,C1,C3,C7,C9,E9,G1,G3,G7,G9	VDDQ	DQ Power Supply	DQ Power Supply: 1.8V ± 0.1V.
A7,B2,B8,D2,D8,E7,F2,F8,H2,H8	VSSQ	DQ Ground	DQ Ground. Isolated on the device for improved noise immunity.
A2,E2,L1,R3,R7,R8	NC	No Connection	No connection.
J7	VSSDL	DLL Ground	DLL Ground.
J1	VDDL	DLL Power Supply	DLL Power Supply: 1.8V ± 0.1V.

Headphone Amplifier-TDA1308

The TDA1308 is an integrated class AB stereo headphone driver.

- Power supply maximum 60 mW to 32Ω (THD<0.1%)
- 5V single supply
- SNR 110 dB
- Power supply ripple rejection

- Typically 3 mA supply current at no load
 - 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.

Pin configuration and description is given in Figure 16 and Table 18.

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

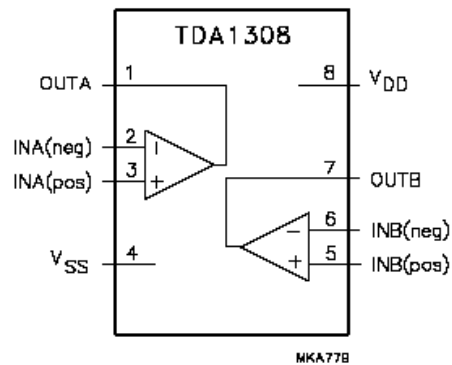


Table 18: Pin configuration

Figure 19: Pin configuration

INB (pos) and INA (pos) are connected to a reference voltage 2.5 V by dividing VDD supply. INA (neg) and INB (neg) is connected to HEADPHONER, HEADPHONEL outputs of VCTH. Those audio outputs are parallel to LINE_OUT connectors. Headphone has also detection property from the connector. It is controlled by VCTH GPIO pin “HP Detect”.

Demodulators

MSB1210

The MSB1210 is the world's 1st hybrid demodulator to receive both analog terrestrial TV and digital TV signals. It contains the state of the art Signal Processing to offer high quality reception of analog terrestrial TV signals compliant with PAL B(G), PAL I standards. It also contains a superior COFDM demodulator. It can be used in all 2K, 4K and 8K modes with 5,6,7 and 8 MHz channels and is capable of receiving all modes of transmission.

The device includes a high performance 11 bit A/D converter capable of accepting direct IF at 36 or 44 MHz. It can also support low IF and ZIF signaling. Sampling rates required for all these frequencies in OFDM channels can be generated from a single 24MHz crystal.

The device demodulates standard- and high-definition television signals according to European digital television broadcast standards (terrestrial TV). Analog TV broadcasts are translated to baseband video and digital audio output signals.

Features

- Integrated DVB-T Receiver
 - Compliant with DVBT(ETSI ET 300 744)
 - Nordig-Unified, D-Book, E-Book IEC62002 compliant
 - Supports single or dual AGC control
 - CCI and ACI rejection capability
- Integrated VIF Receiver
 - Multistandard analog TV receiver applications
 - Digital low IF architecture
 - Maximum IF gain of 48dB
- Support for legacy analog standards:
 - ATV PAL/SECAM/NTSC VIF demodulator
 - ATV PAL/SECAM/NTSC (FM/A2, AM, BTSC,SAP, EIA-J, NICAM) audio demodulator/decoder
 - FM Radio with RDS / RBDS
- Comfortable software drivers for integration of tuner and demodulator
- Interfaces:
 - IF and (optional) RF gain control outputs to tuners and sense input for tuner output signal
 - Parallel and serial MPEG_TS outputs
 - Analog CVBS and SIF output
 - I2S digital audio output (8-49 kHz with 16/32 bit per sample) for analog TV audio
 - I2C master/slave interface
 - Secondary I2C interface for tuner control
 - JTAG
 - GPIO
- Frontend integration and flexibility:
 - AGC controls: RF-AGC, IF-AGC
 - Support for low- / near-zero-IF

Block Diagram

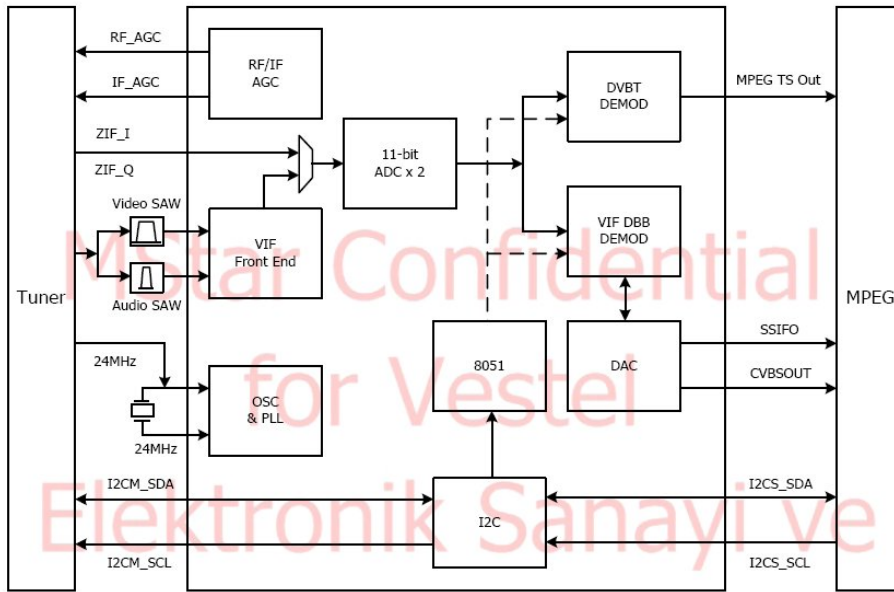


Figure 20: MSB1210 Block Diagram

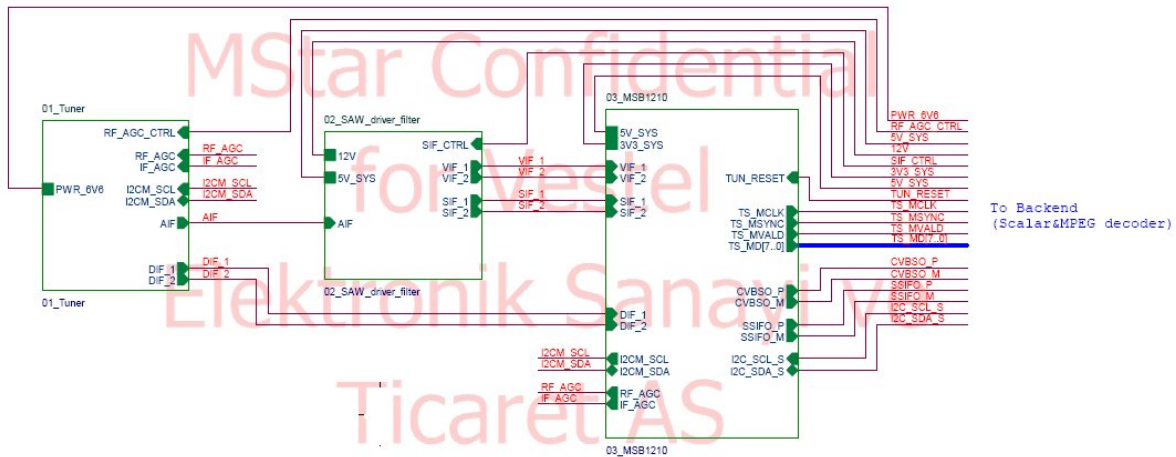


Figure 21: MSB1210 Application Circuit

MSB1222

The MSB1222 contains a superior COFDM demodulator that is Nordig Unified 1.0.3/2.0, D-Book5.0, E-Book, DVB-T compliant. It can be used in all 2K, 4K and 8K modes with 5, 6, 7 and 8 MHz channels and is capable of receiving all modes of transmission.

The MSB1222 also includes a QAM demodulator which supports 16, 32, 64, 128 and 256 QAM while being compliant to DVB-C, ITU_T J.83 Annex A/C and China GY/T 170-2001.

The device includes low-power, high performance A/D converters capable of accepting direct IF at 36/44 MHz. Furthermore, it supports low IF and ZIF signaling.

Features

- DVB-T Demodulator
 - Compliant with DVB-T
 - All digital demodulation and timing recovery loops
 - CCI and ACI rejection capability
 - Impulse-Noise suppression
 - Direct 36MHz, 44MHz IF sampling scheme from tuner
- DVB-C Demodulator
 - Compliant with DVB-C(EN300429) and ITU-T J.83 Annex A/C
 - Supports symbol rates up to 7M Baud
 - Single IF filter bandwidth for all symbol rates
- Configurable parallel/serial MPEG2 transport stream interface
- Supports I2C interface

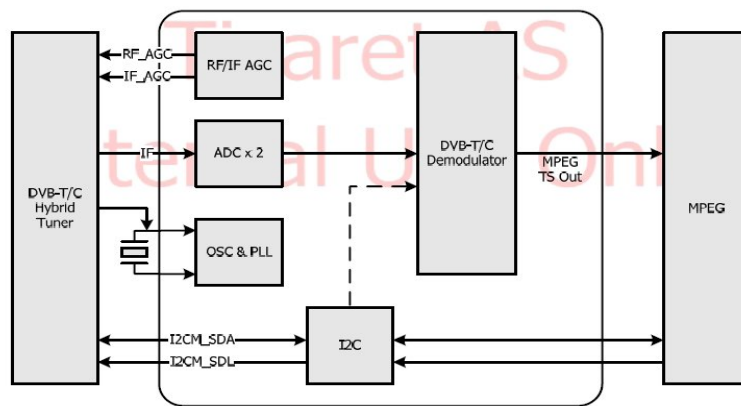


Figure 22: MSB1222 Block Diagram

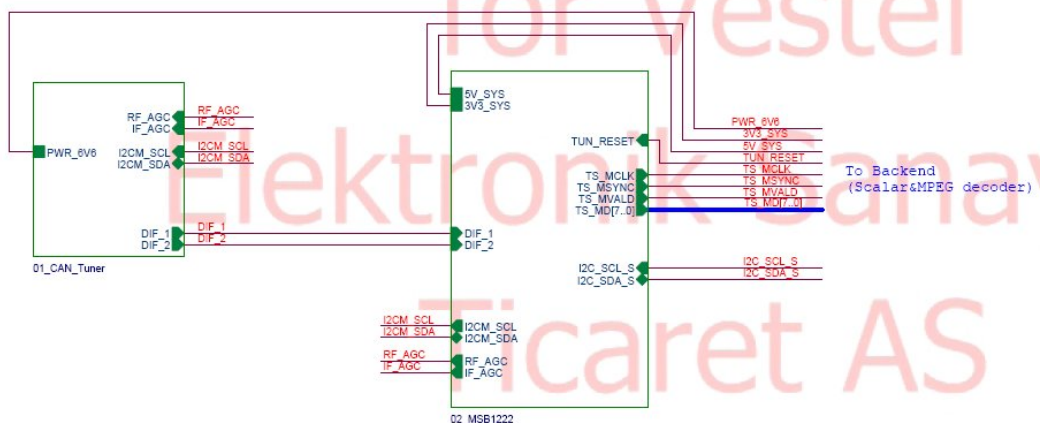


Figure 23: MSB1222 Application Circuit

CXD2820D

The Sony CXD2820R is a combined DVB-T2, DVB-T and DVB-C demodulator that conforms to the ETSI EN 302-755 (second generation Terrestrial) ETSI EN 300-744 (Terrestrial) and ETSI EN 300-429 (Cable) standards.

The CXD2820R is a DVB-T2 demodulator offering class-leading performance, optimised BOM requiring no external memory and low processor overhead. It includes a

highly integrated dual-core DVB-T and DVB-C demodulator which complies with all relevant European performance standards.

Features

- Supports all DVB-T2 modes, including
 - Single and multiple-PLPs
 - SISO and MISO transmission
- Simple API
 - Fully-automatic acquisition
 - Fully-automatic L1-signalling decoding
 - Automatic guard-interval detection
 - Automatically-calculated constant-rate TS output (using L1 signalling and ISSY)
- Acquisition range $\pm 857\text{kHz}$
- Stream processor for automatic common- and data-PLP combination
- Null-packet insertion
- Access to channel echo profile and constellation via I2C
- Single, 41MHz crystal (can be shared with CXD2813R analogue demod IC)
- High performance differential signal ADC
- RF power level monitor ADC
- Low IF and high IF (36MHz) mode input
- Fast 400kHz I2C compatible bus interface
- Quiet I2C interface for dedicated tuner control
- Automatic IF AGC and optional programmable RF AGC/GPIO functions
- Configurable parallel and serial MPEG-2 TS outputs with smoothing buffer
- 3.3V, 2.5V, 1.2V supplies
- Temperature range -20°C to $+85^{\circ}\text{C}$ • 64 pin exposed-pad LQFP 10mm x 10mm package
- RF power level monitor ADC
- 64 pin exposed-pad LQFP 10mm x 10mm package

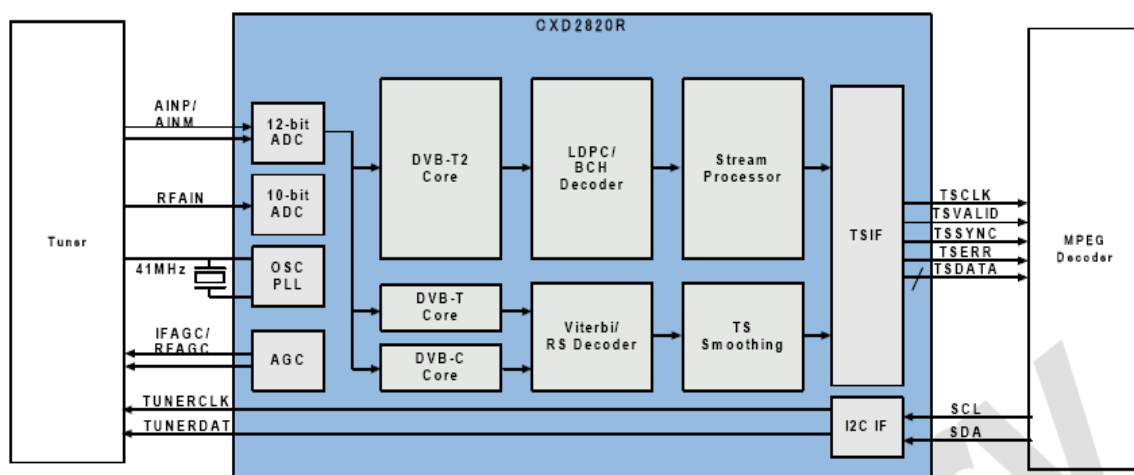
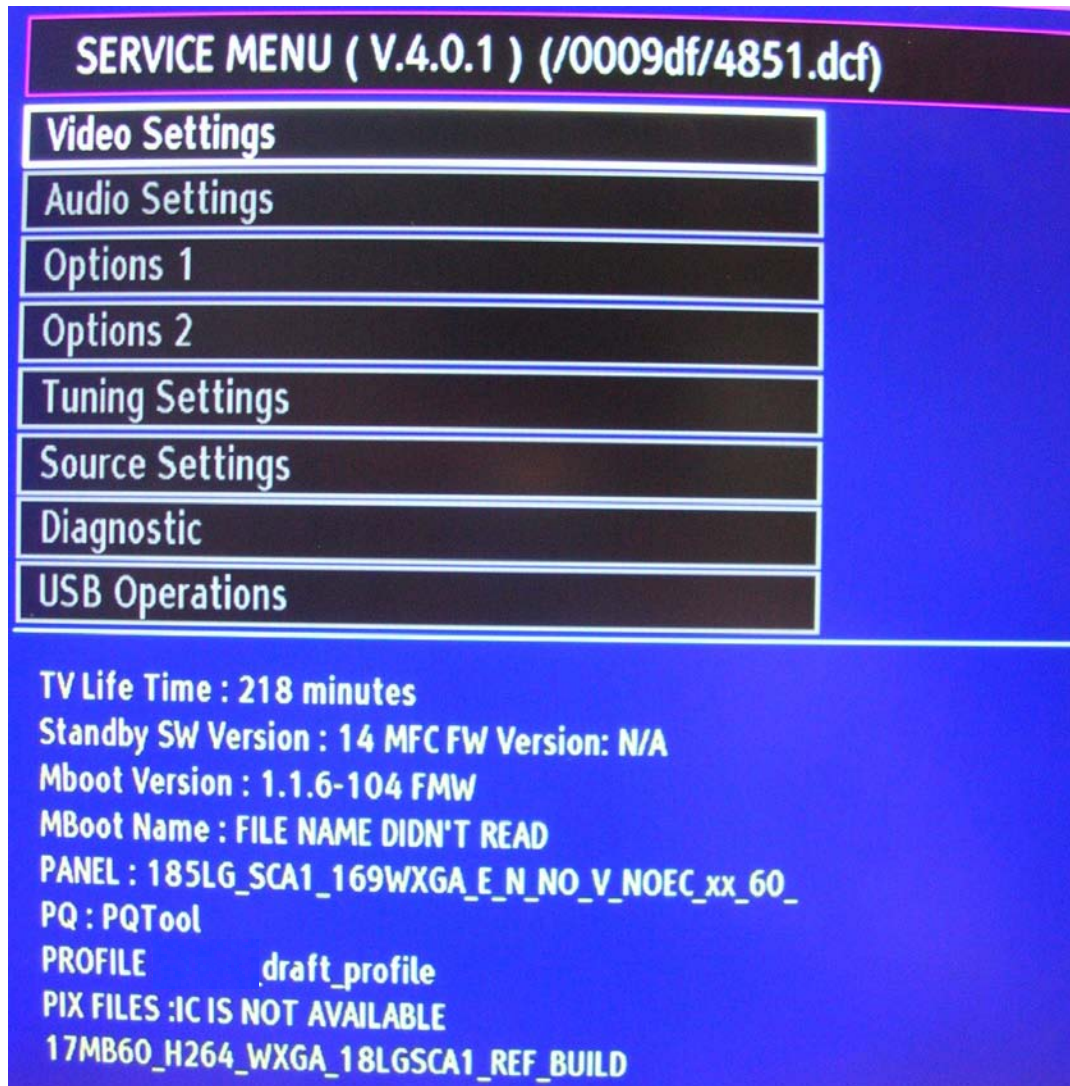


Figure 24: CXD2820D Block Diagram

10. SERVICE MENU SETTINGS





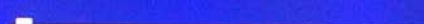







In order to reach service menu, First Press “MENU” Then press the remote control code two times, which is “4725”.


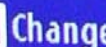


In first screen following items can be seen:



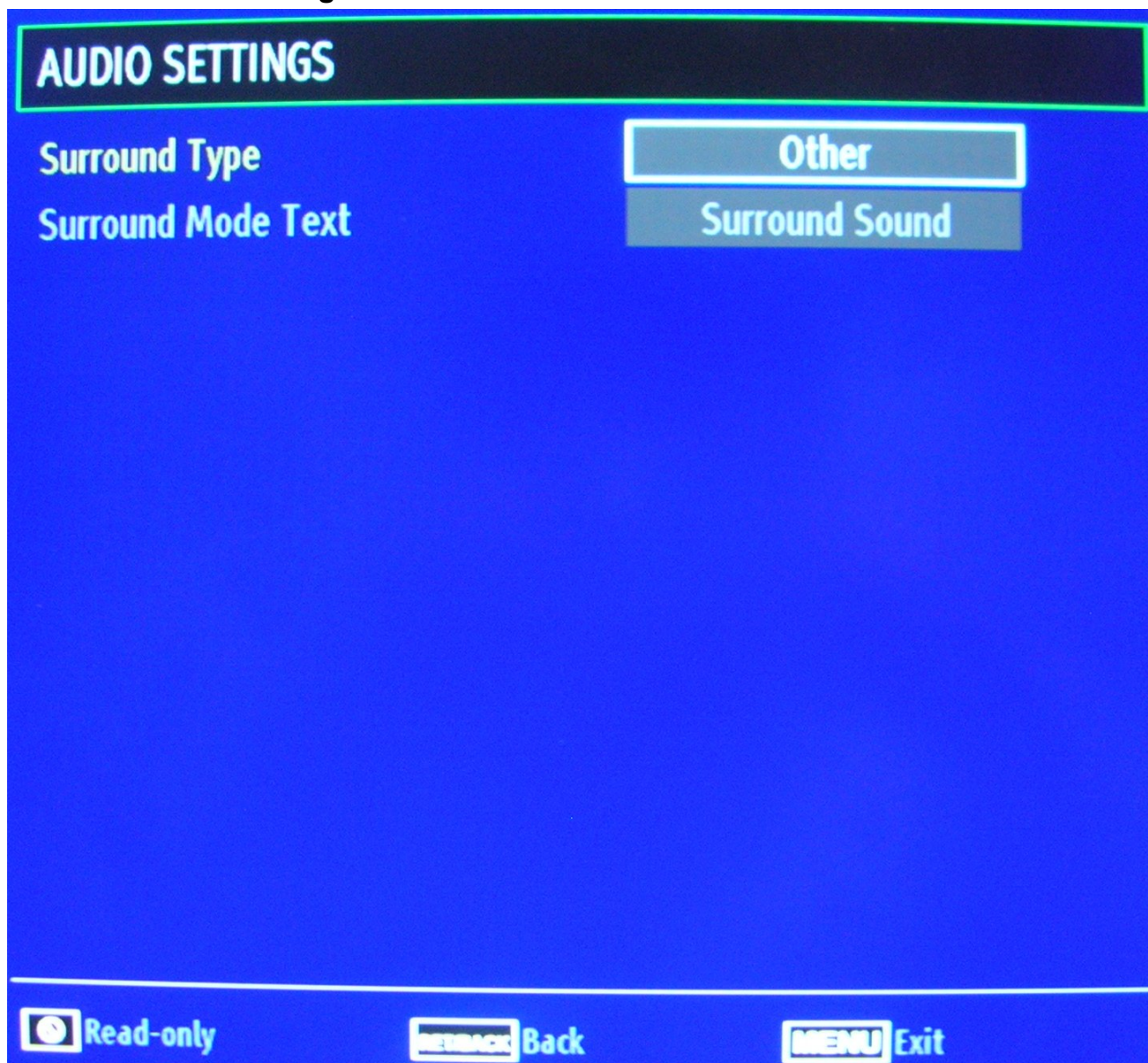
10.1. Video Settings

VIDEO SETTINGS

RF AGC SECAM		3
RF AGC NEIGHBOUR NO IMAGE NO		3
RF AGC NEIGHBOUR NO IMAGE YES		3
RF AGC NEIGHBOUR YES IMAGE NO		6
RF AGC NEIGHBOUR YES IMAGE YES		6
RF AGC TEST		3
ADC Calibration Source	EXT-1	
ADC Calibration R Gain		82
ADC Calibration G Gain		82
ADC Calibration B Gain		81
ADC Calibration R Offset		0
ADC Calibration G Offset		0
ADC Calibration B Offset		0

  Change Value  Back  Exit

10.2. Audio Settings



10.3. Options

Options-1




Option	Value
Auto TV OFF	4 h
Power Up Mode	Last State
BacklightTrick Mode	Yes
Cable Support	No
EPG Type	2
Hotel Mode	Yes
LCN	No
PC Standby	Yes
Stby Search	Yes
Test Tool	Yes
Local Key	KeyPad
Volume Level	15

Read-only RET/BACK Back MENU Exit

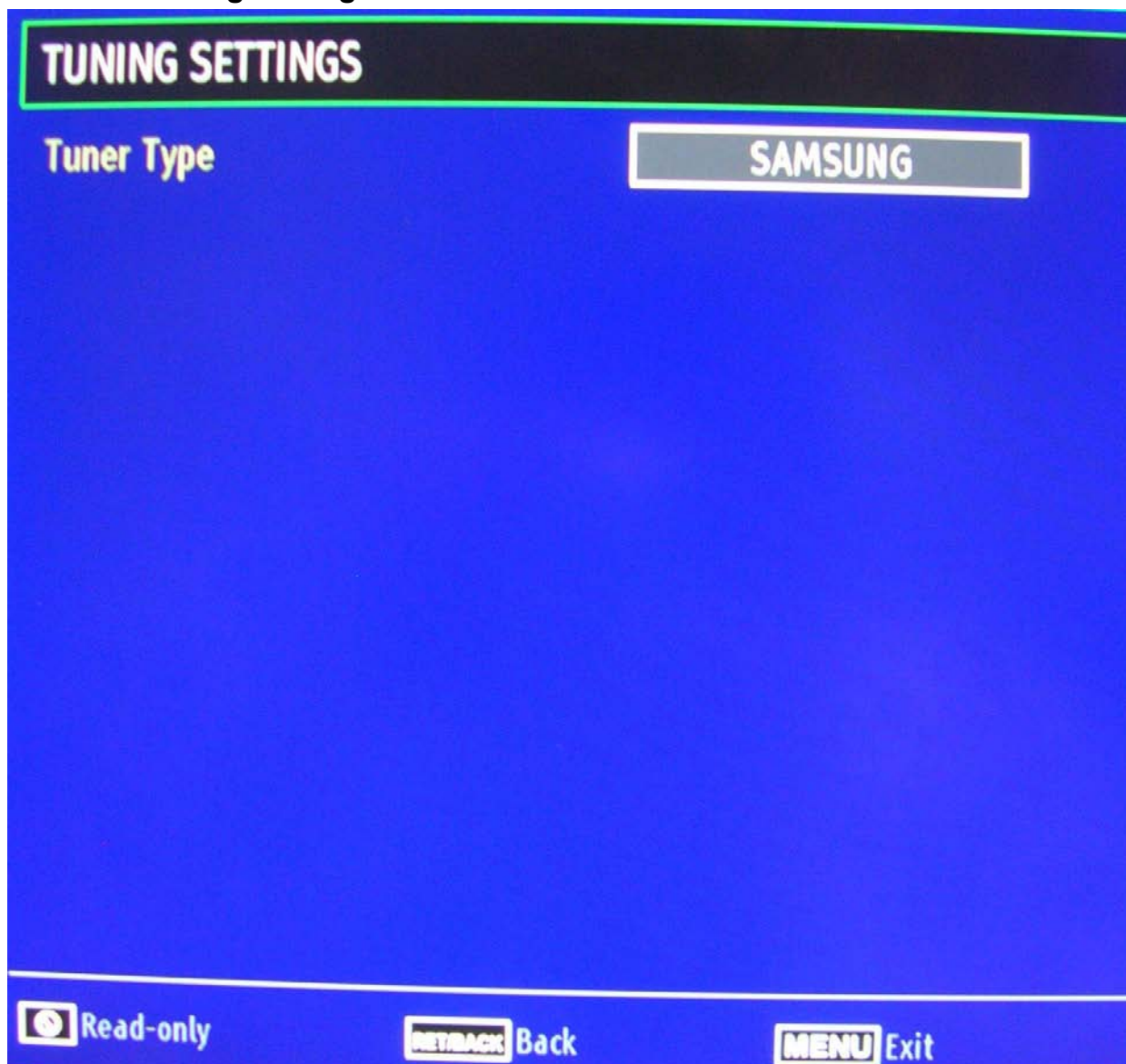
Options-2

OPTIONS 2

Aps Sorting	Enabled
Dynamic Menu	Disabled
EPG Menus	Enabled
Transparent Text	Enabled
HDMI Number	2
HDMI Auto Switch	Enabled
Rc Type	Rc3900
DCF ID	4851.dcf
Touchpad Sw Version	0




 Read-only  Back  Exit

10.4. Tuning Settings

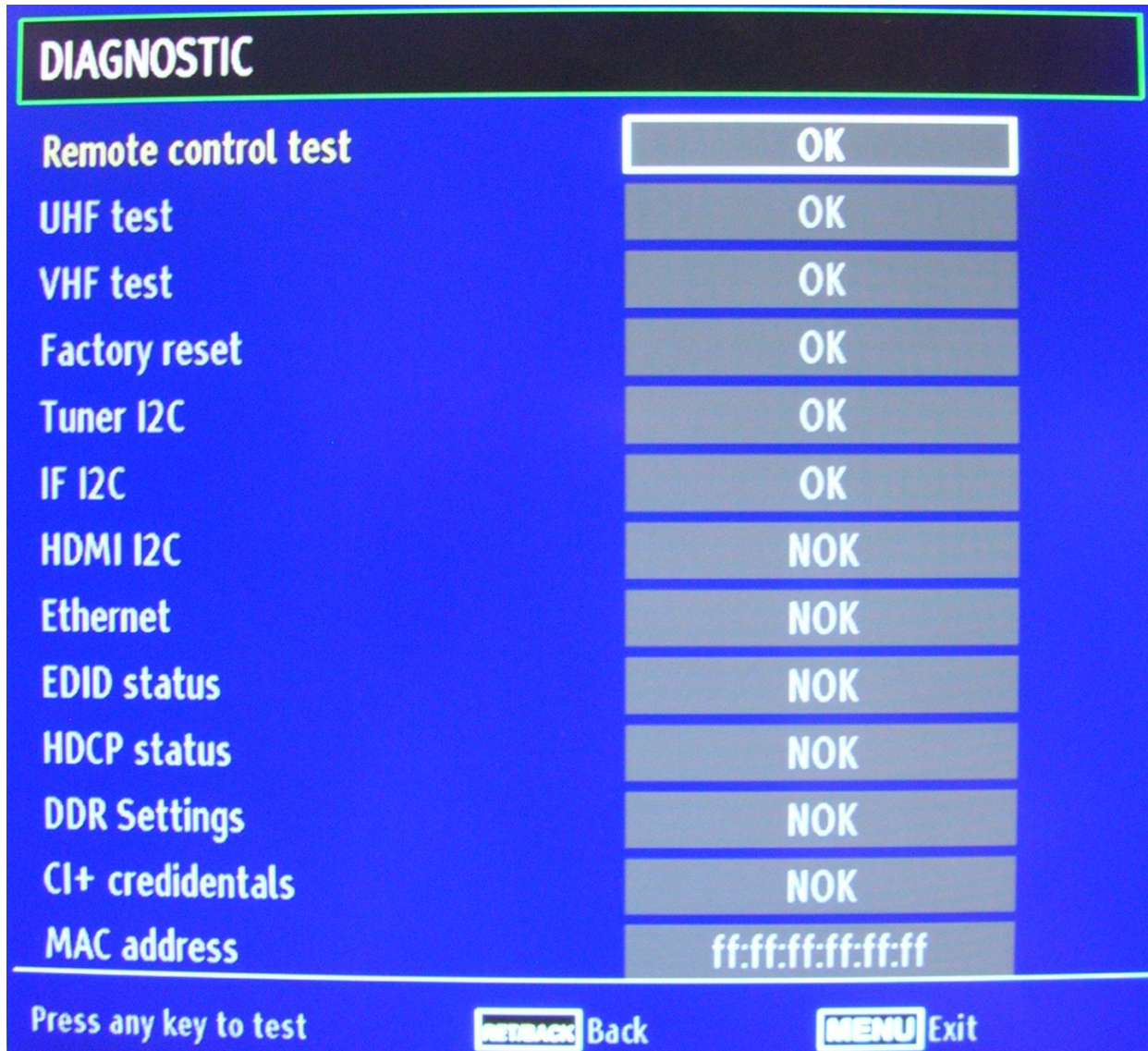


10.5. Source Settings

SOURCE SETTINGS	
SCART	Yes
SCART2	No
SCART2-S	No
SIDE AV	Yes
SCART-S	Yes
HDMI1	Yes
HDMI2	Yes
HDMI3	No
HDMI4	No
YPbPr	Yes
VGA/PC	Yes
BluRay	No

 Read-only  Back  Exit

10.6. Diagnostic



The screenshot shows a blue background with white text. At the top, a black bar with a green border contains the word "DIAGNOSTIC" in white. Below this, a list of diagnostic tests is shown, each with its result in a grey box. The tests and their results are: Remote control test (OK), UHF test (OK), VHF test (OK), Factory reset (OK), Tuner I2C (OK), IF I2C (OK), HDMI I2C (NOK), Ethernet (NOK), EDID status (NOK), HDCP status (NOK), DDR Settings (NOK), CI+ credentials (NOK), and MAC address (ff:ff:ff:ff:ff:ff). At the bottom, there is a footer with the text "Press any key to test" on the left, and two buttons: "RETRAC Back" and "MENU Exit" on the right.

Test	Result
Remote control test	OK
UHF test	OK
VHF test	OK
Factory reset	OK
Tuner I2C	OK
IF I2C	OK
HDMI I2C	NOK
Ethernet	NOK
EDID status	NOK
HDCP status	NOK
DDR Settings	NOK
CI+ credentials	NOK
MAC address	ff:ff:ff:ff:ff:ff

Press any key to test **RETRAC** Back **MENU** Exit

10.7. USB Operations

USB operations option can not be used directly. It can be used for updating panel tool, hw configuration etc.

11. SOFTWARE UPDATE

In MB61 project there is only one software. From following steps software update procedure can be seen:

1. MB61_en.bin, mboot.bin and usb_auto_update_T4.txt documents should copy directly inside of a flash memory(not in a folder).
2. Put flash memory to the tv when tv is powered off.
3. Power on the and wait when the tv is opened.
4. If First Time Installation screen comes, it means software update procedure is successful.

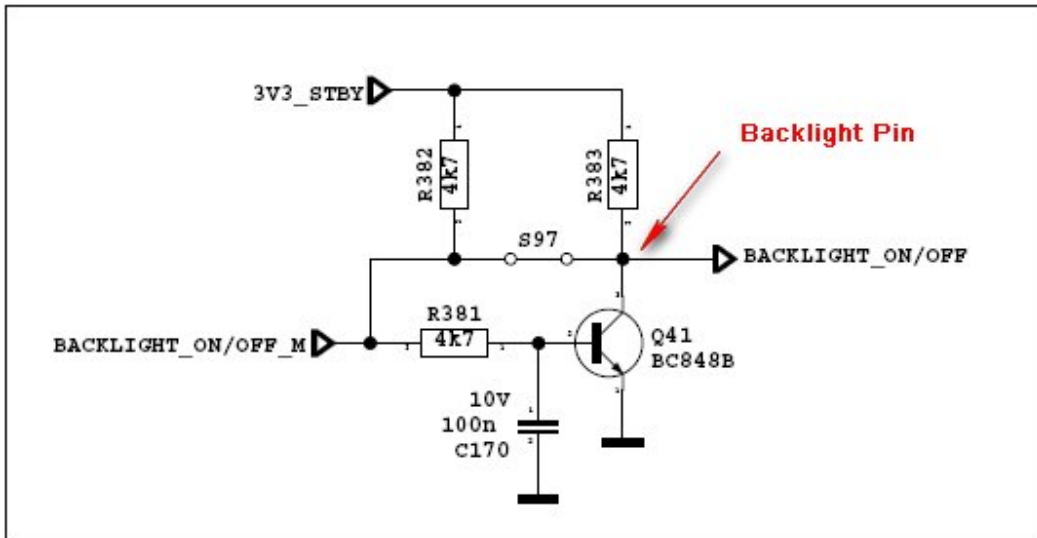
12. TROUBLESHOOTING

12.1. No Backlight Problem

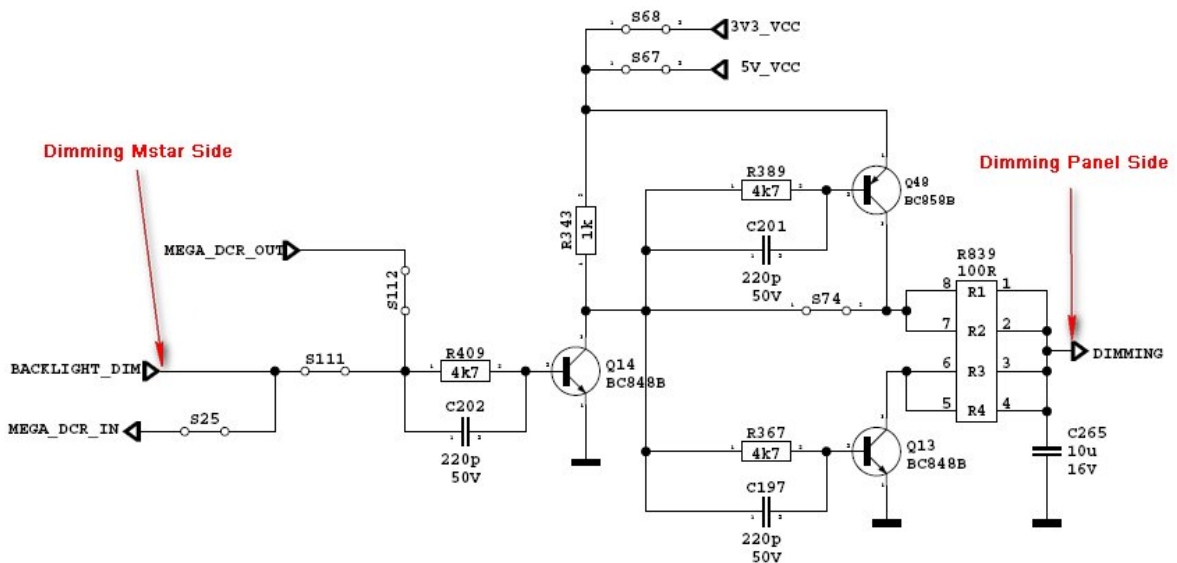
Problem: If TV is working, led is normal and there is no picture and backlight on the panel.

Possible causes: Backlight pin, dimming pin, backlight supply, stby on/off pin

Backlight pin should be high in open position. If it is low, please check Q41 and panel cables.

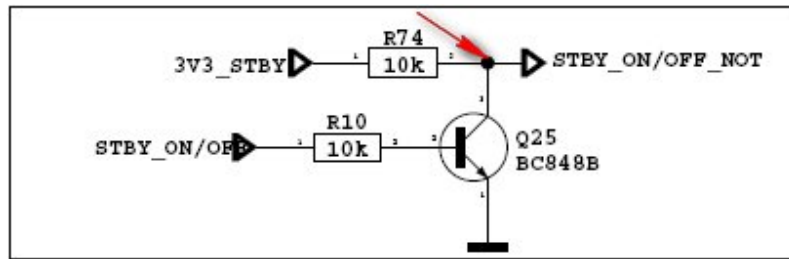


Dimming pin should be high or square wave in open position. If it is low, please check S111 for Mstar side and panel or power cables, connectors.



Backlight power supply should be in panel specs.

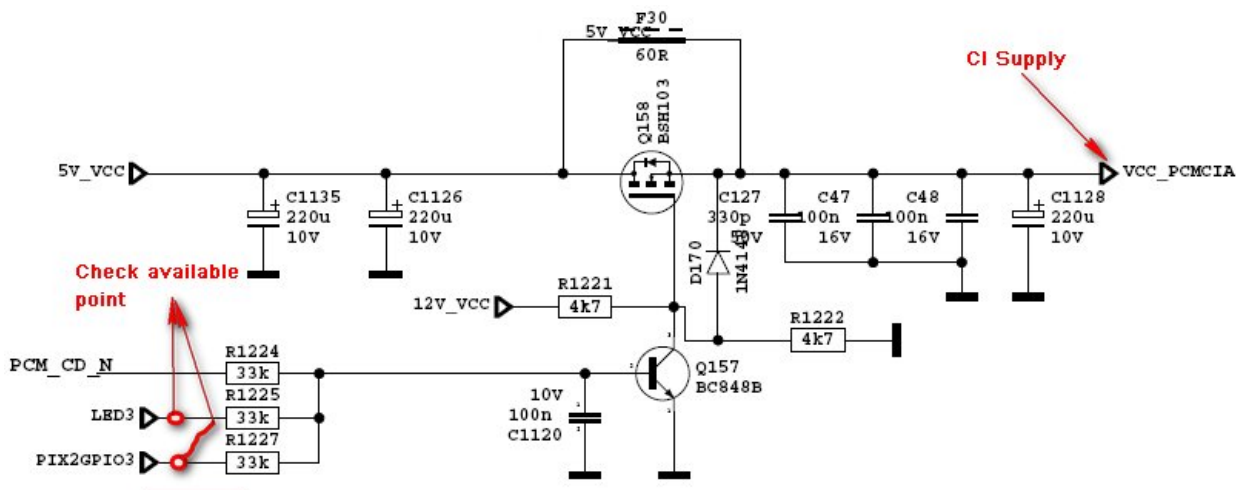
STBY_ON/OFF should be low for standby on condition, please check R74.



12.2. CI Module Problem

Problem: CI is not working when CI module inserted.

Possible causes: Supply, supply control pin, detect pins, mechanical positions of pins
CI supply should be 5V when CI module inserted. If it is not 5V please check LED3 or PIX2 pin, this pin should be low.



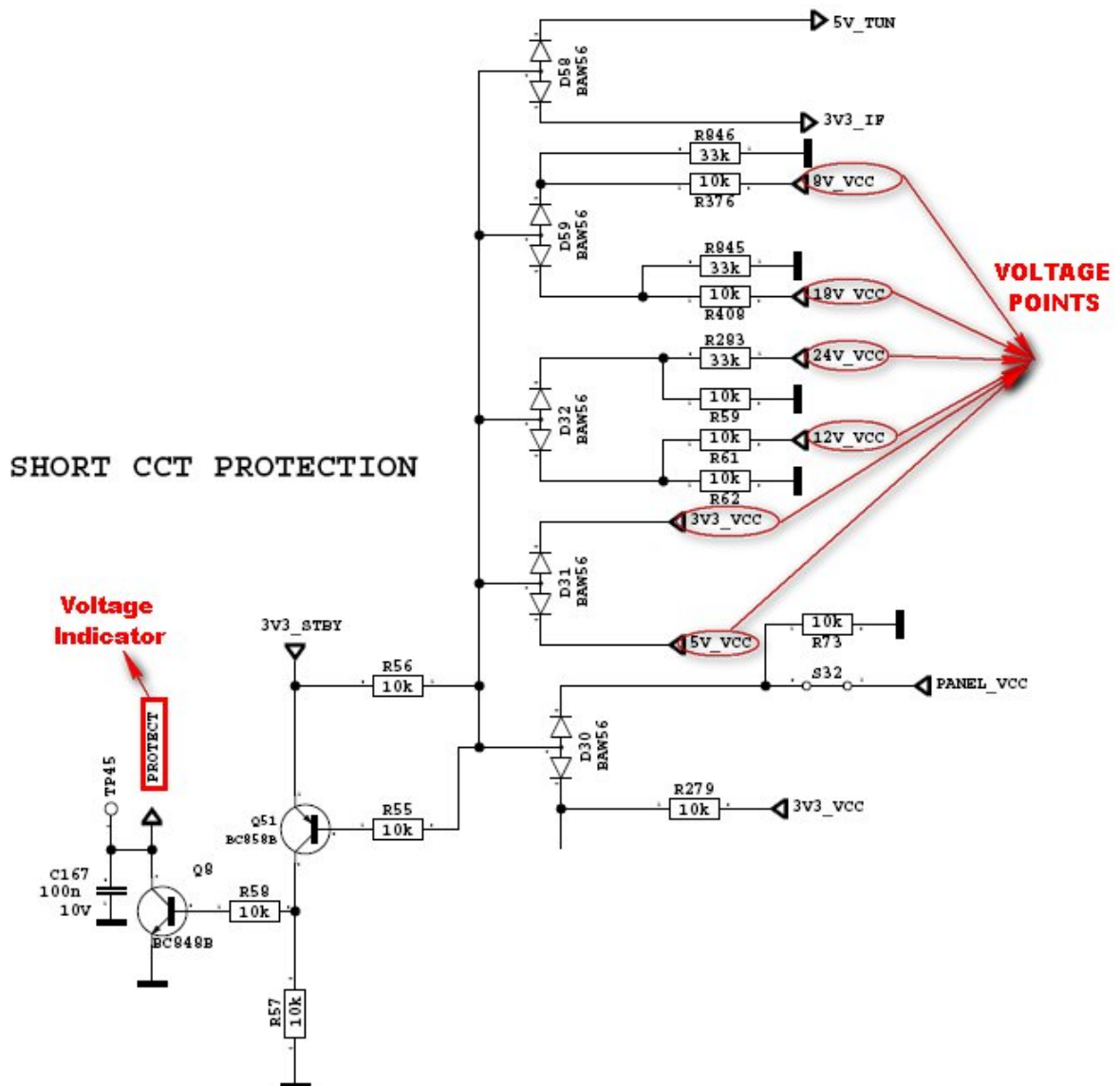
Please check mechanical positions of CI module.

Detect ports should be low. If it is not low please check CI connector pins, CI module pins and 3V3_VCC on MB61.

12.3. Led Blinking Problem

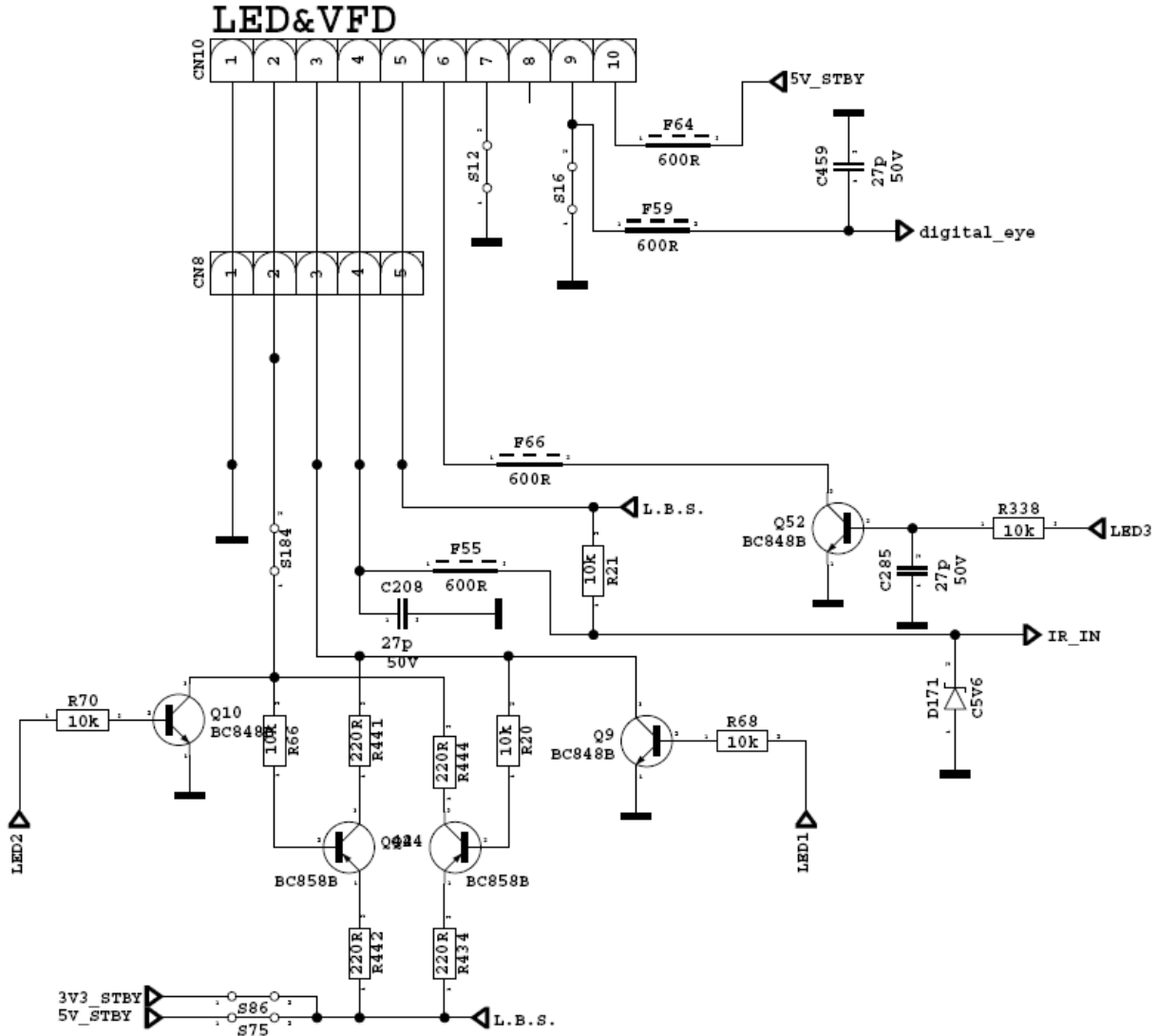
Problem: LED blinking, no other operation

This problem indicates a short on Vcc voltages. Protect pin should be logic high while normal operation. When there is a short circuit protect pin will be logic low. If you detect logic low on protect pin, unplug the TV set and control voltage points with a multimeter to find the shorted voltage to ground.



12.4. IR Problem

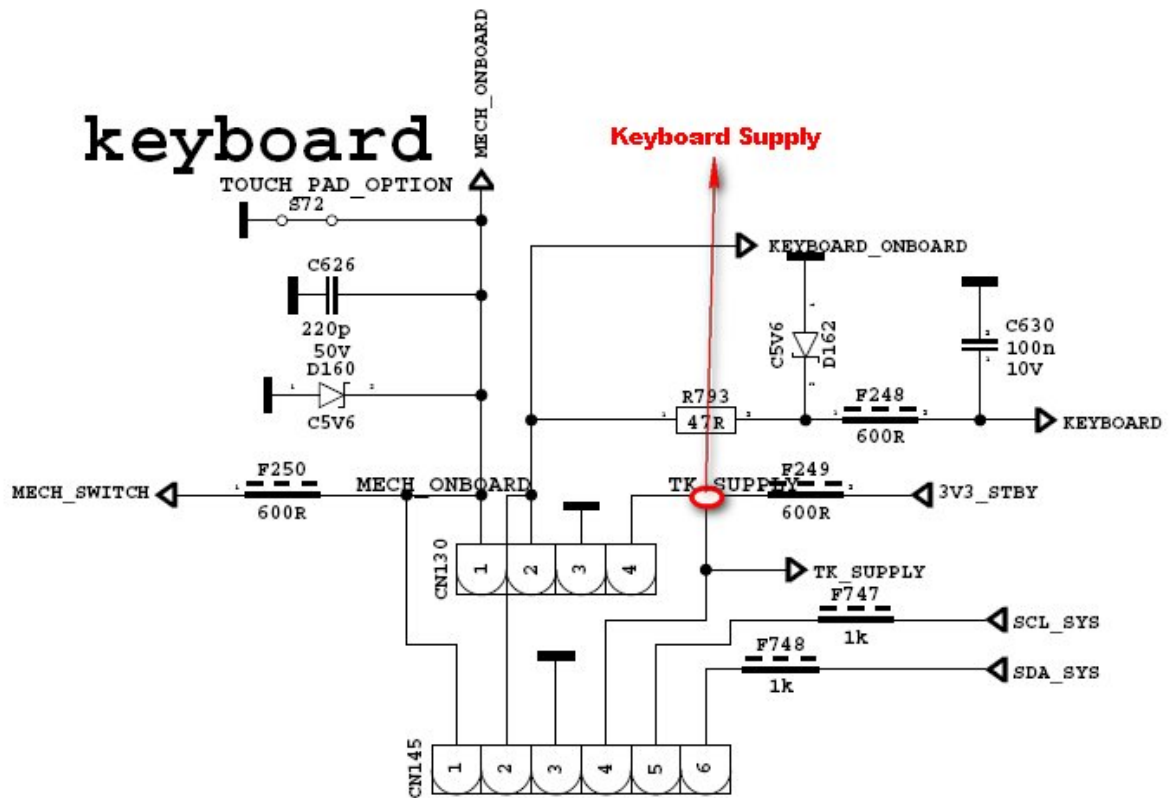
Problem: LED or IR not working
Check LED card supply on MB61 chasis.



12.5. Keypad Touchpad Problems

Problem: Keypad or Touchpad is not working

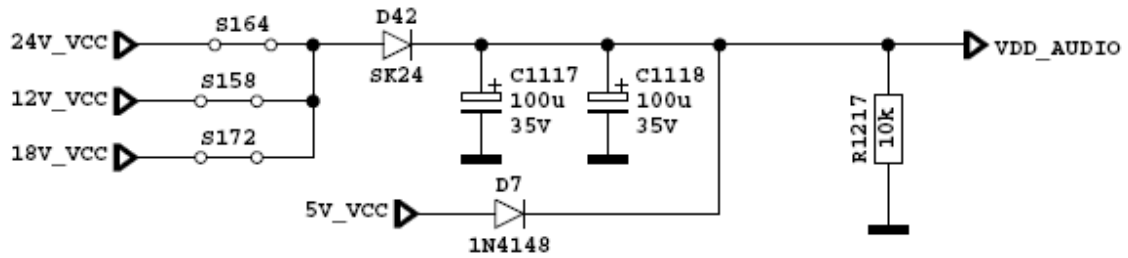
Check keypad supply and KEYBOARD pin on MB61.



12.7. No Sound Problem

Problem: No audio at main TV speaker outputs.

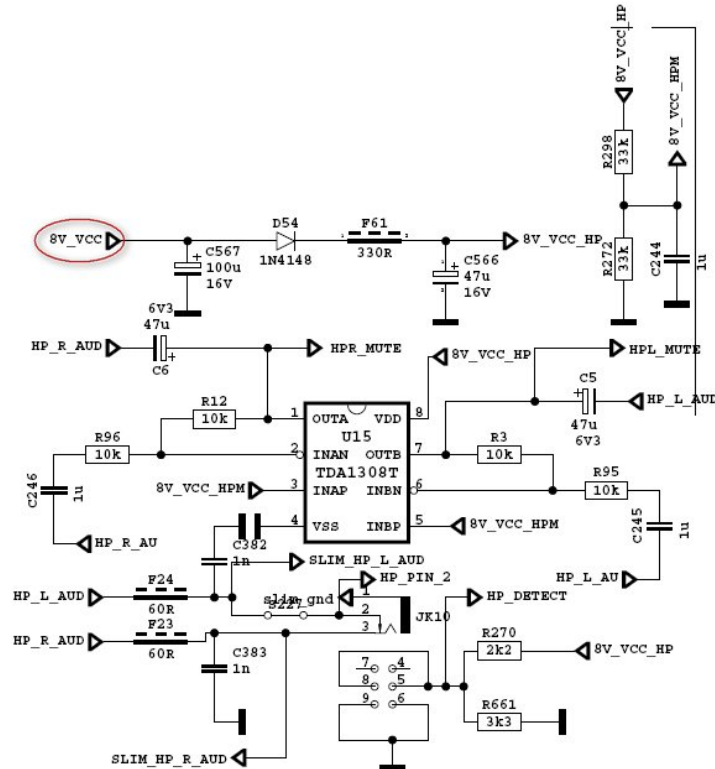
Check supply voltages of VDD_AUDIO, 5V_VCC and 3V3_VCC with a voltage-meter. There may be a problem in headphone connector or headphone detect circuit (when headphone is connected, speakers are automatically muted). Measure voltage at HP_DETECT pin, it should be 3.3v.



12.8. No Sound Problem at Headphone

Problem: No audio at headphone output.

Check HP detect pin, when headphone is. Check 8V_VCC with a voltage-meter.



12.9. Standby On/Off Problem

Problem:

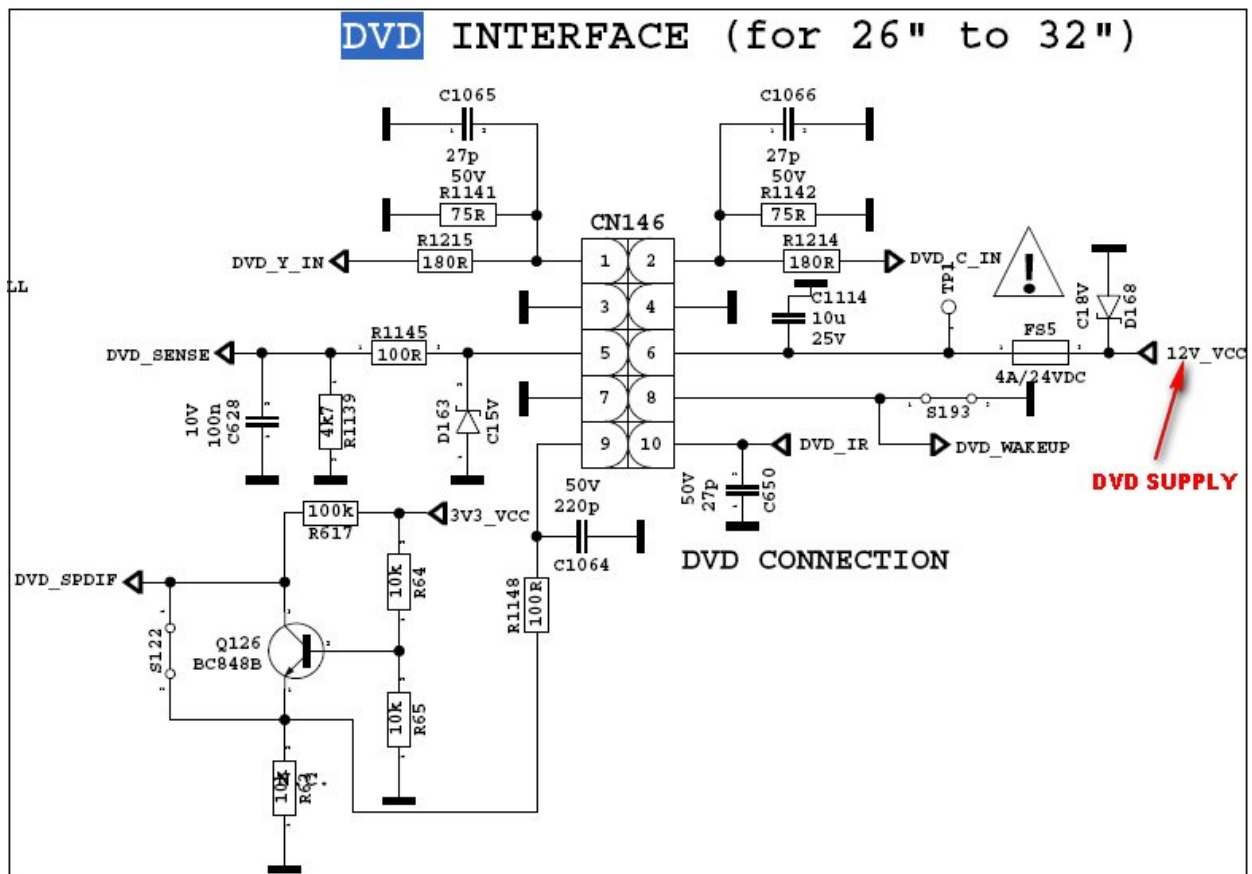
Device cannot boot, TV hangs in standby mode.

There may be a problem about power supply. Check 12V_VCC, 5V_VCC and 3V3_VCC with a voltage-meter. Also there may be a problem about SW. Try to update TV with latest SW. Additionally it is good to check SW printouts via hyper-terminal (or Teraterm). These printouts may give a clue about the problem.

DVD Problems

Problem: DVD is not working.

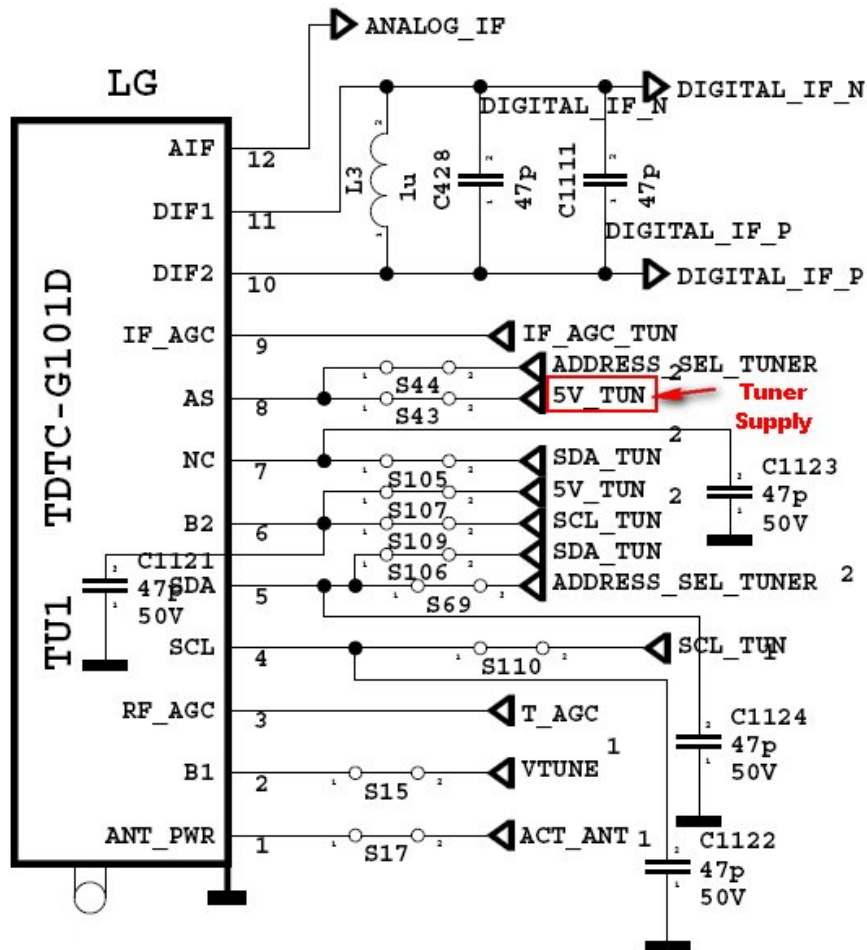
Check that DVD source is selected in Service menu. Check supply voltage of DVD namely 12V_VCC.



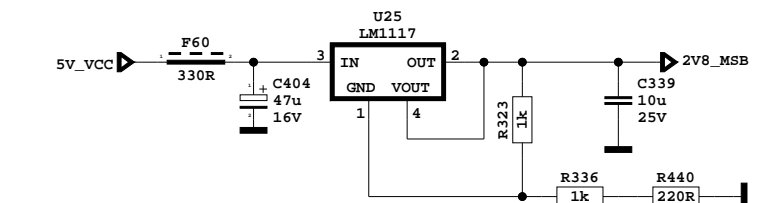
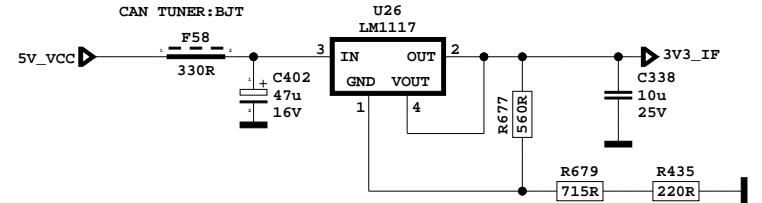
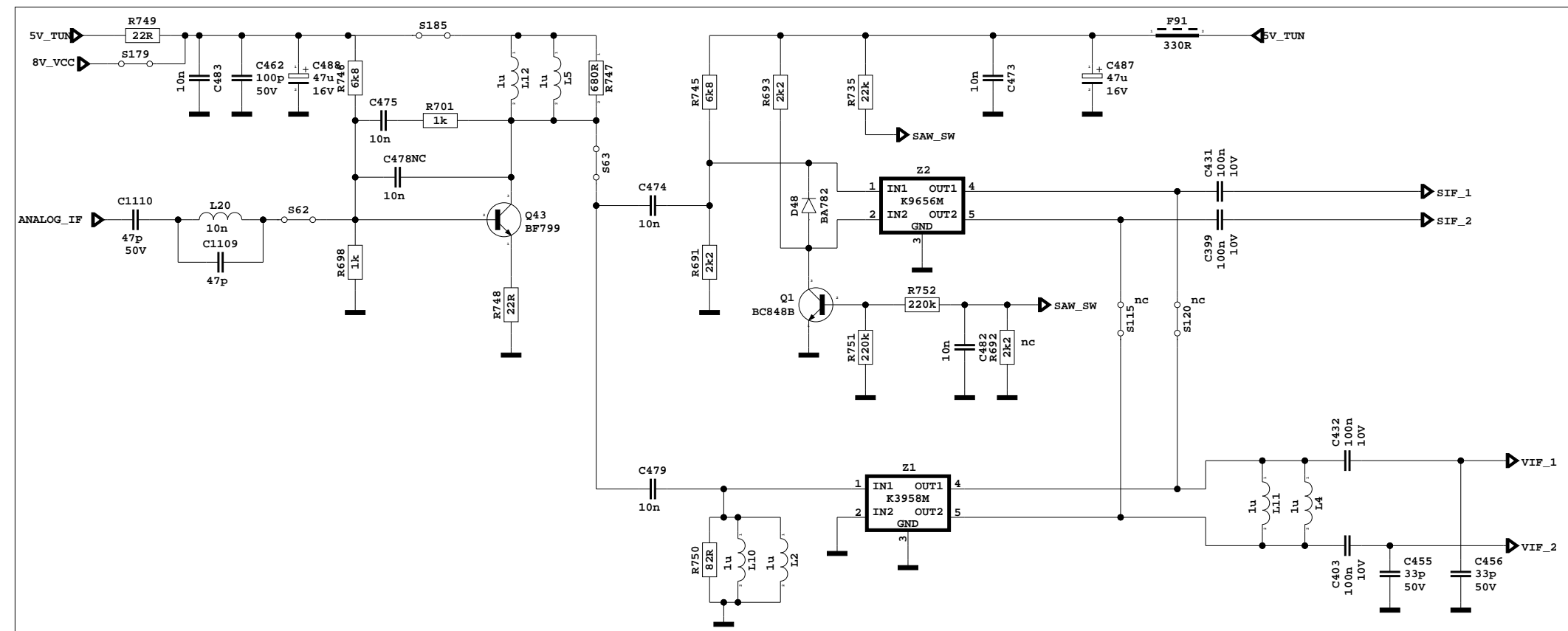
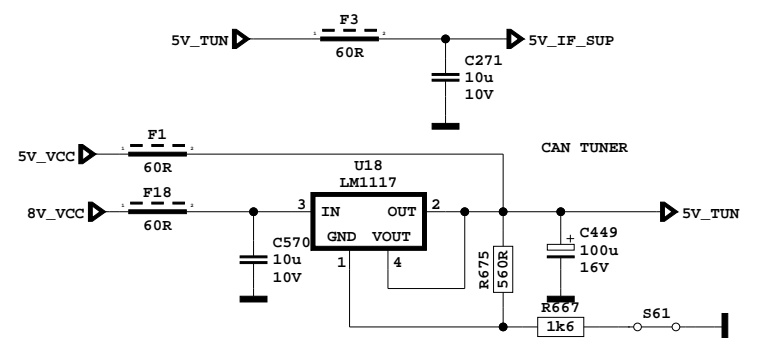
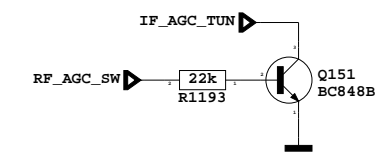
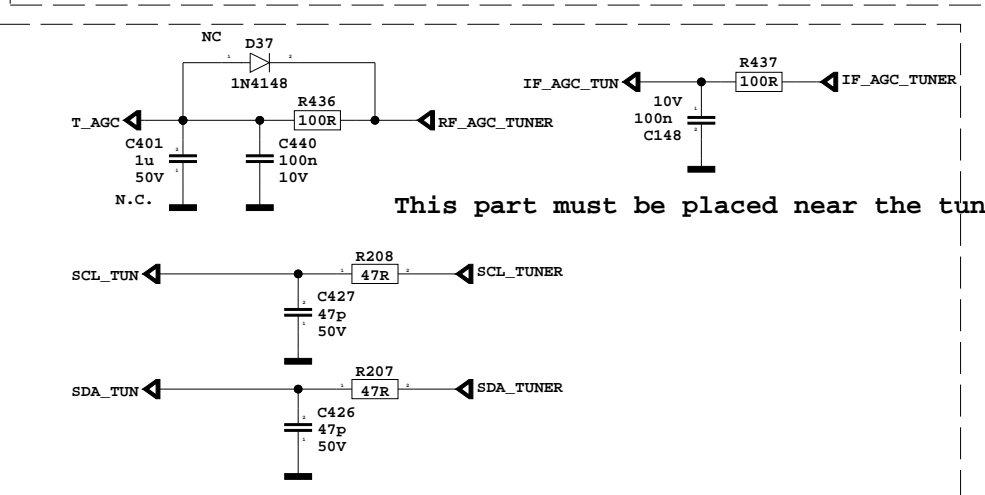
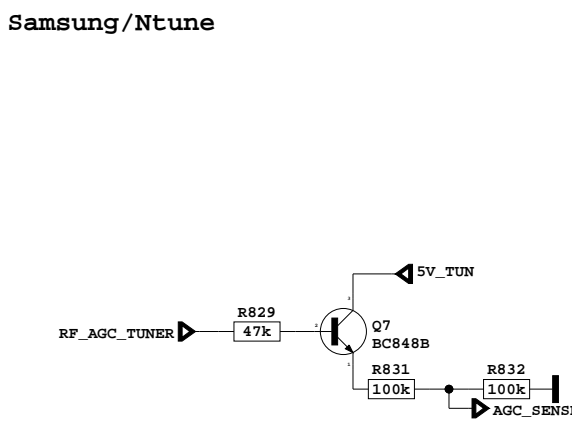
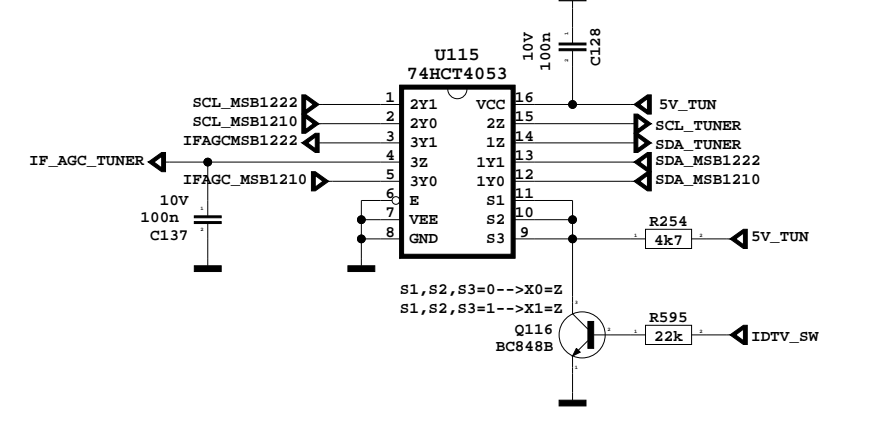
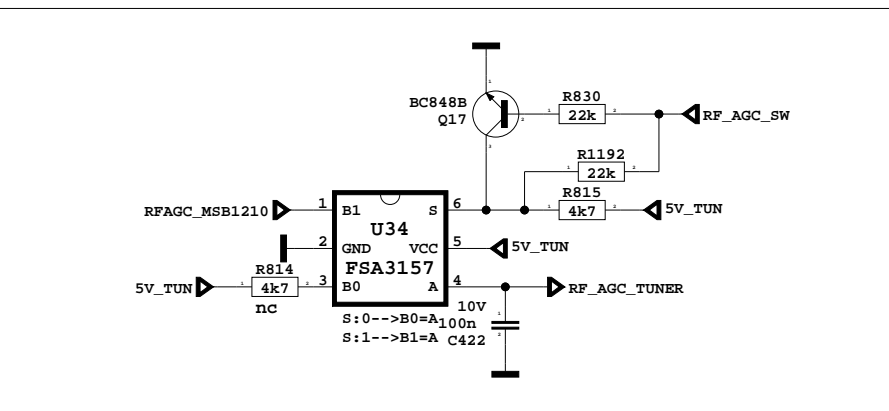
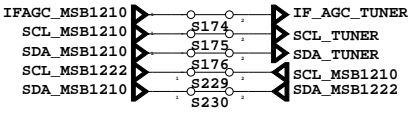
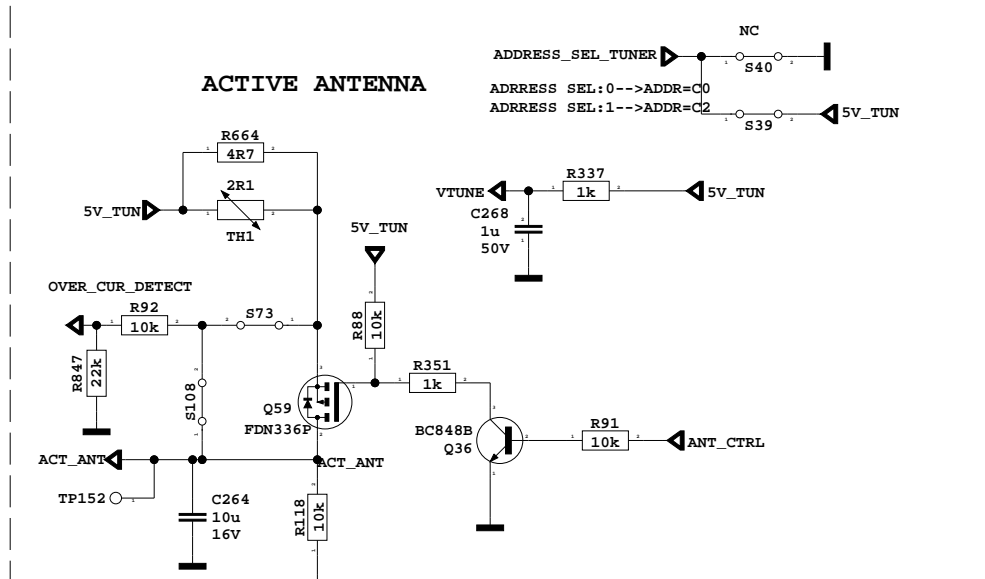
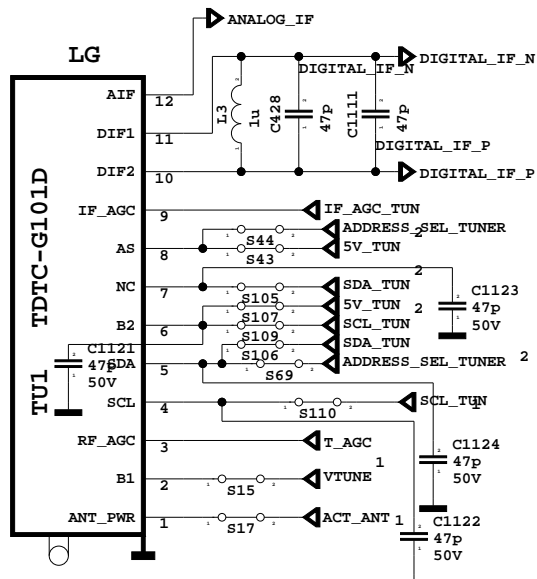
12.10. No Signal Problem

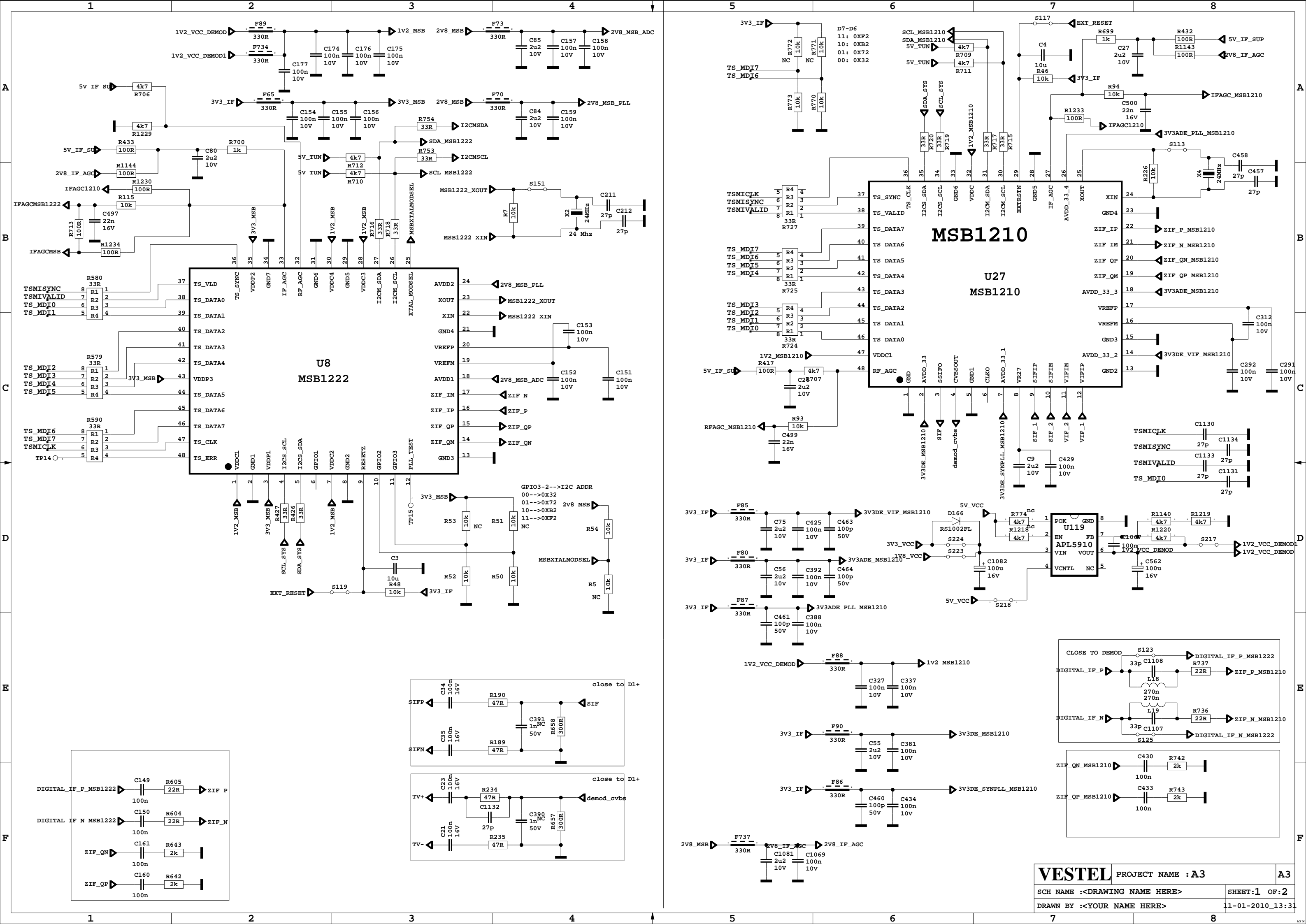
Problem: No signal in TV mode.

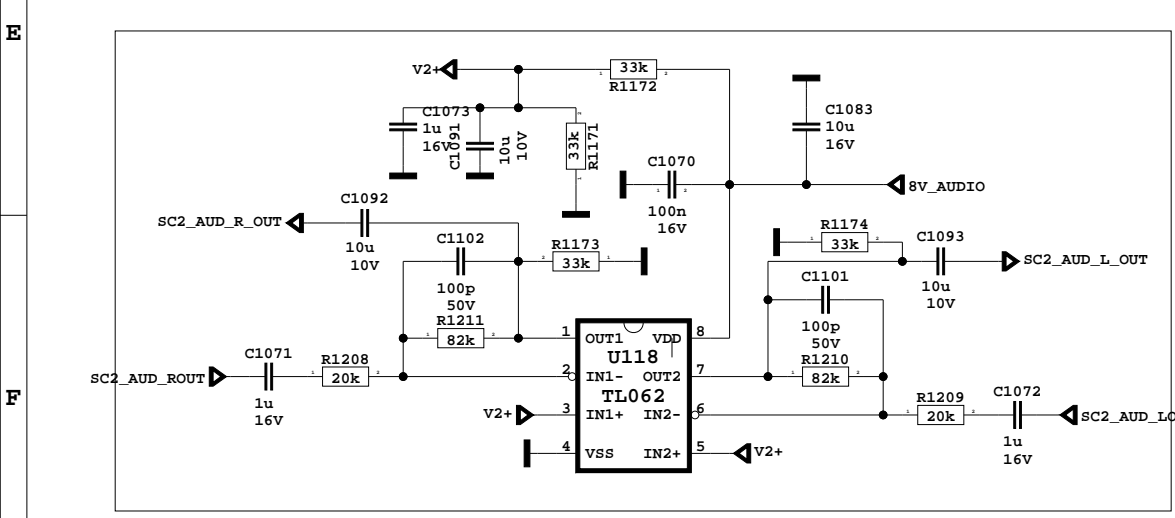
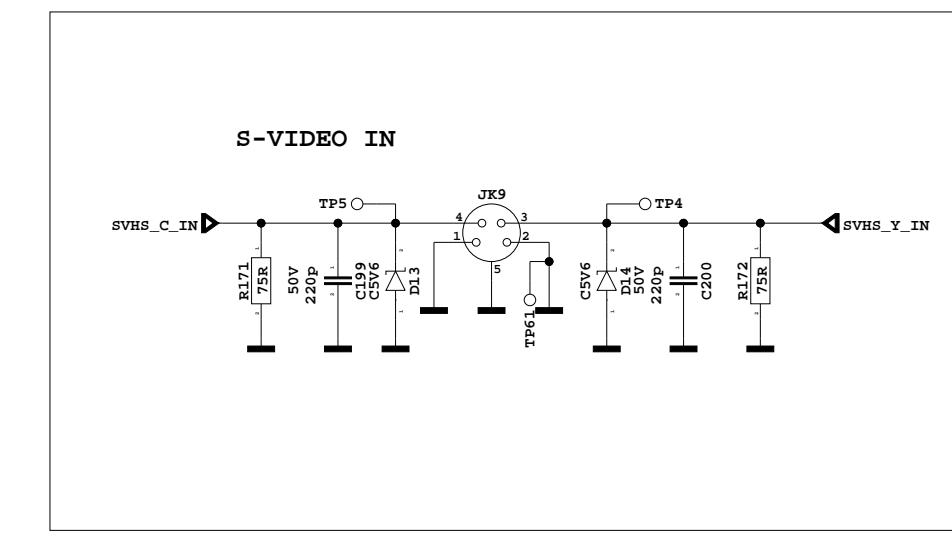
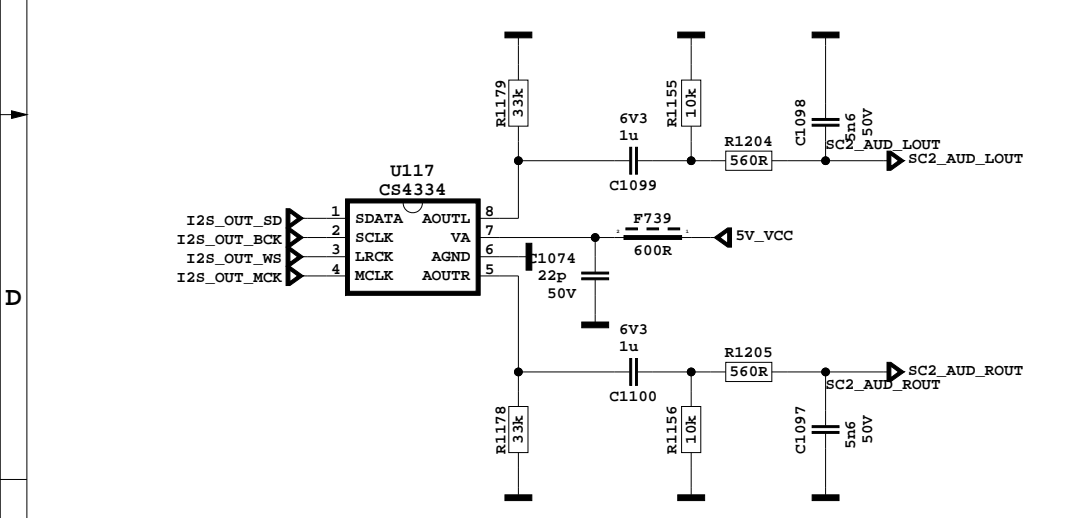
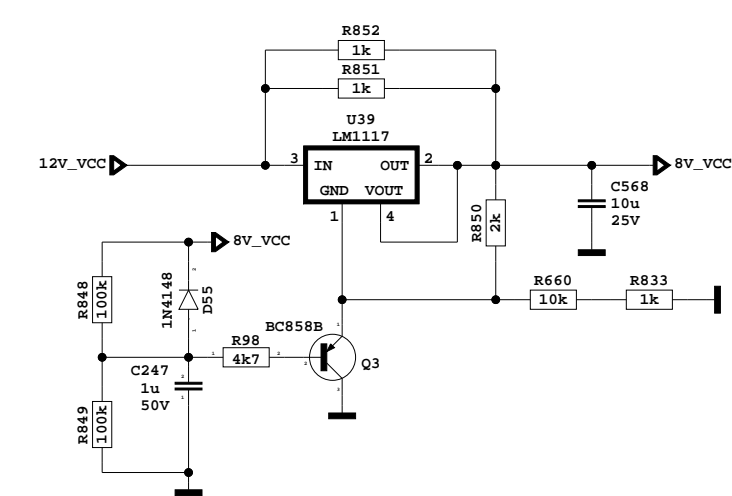
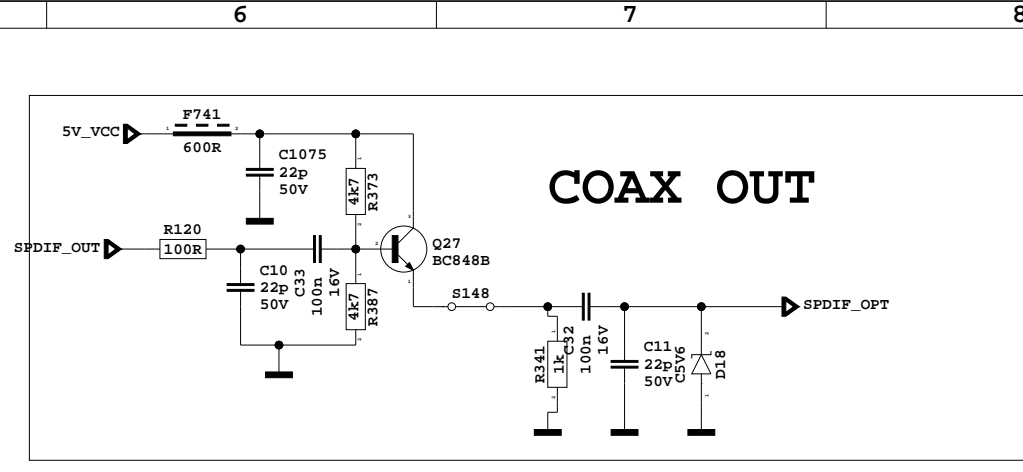
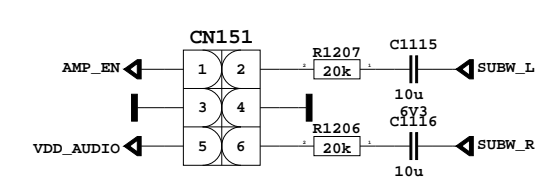
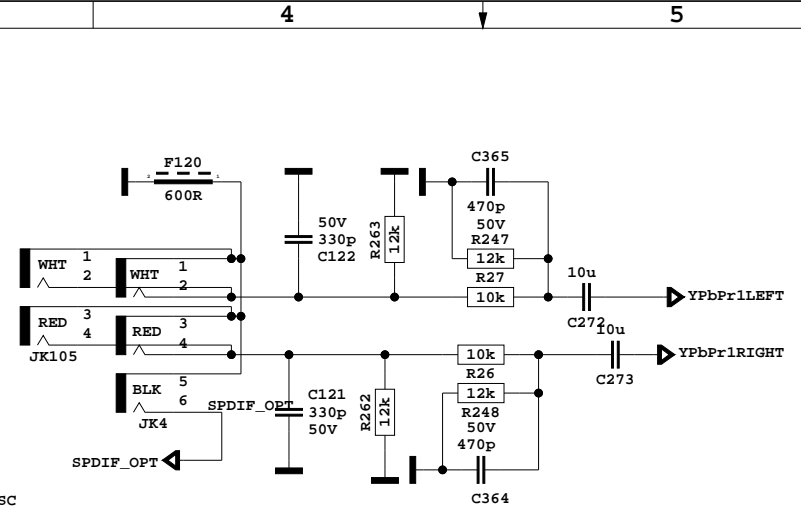
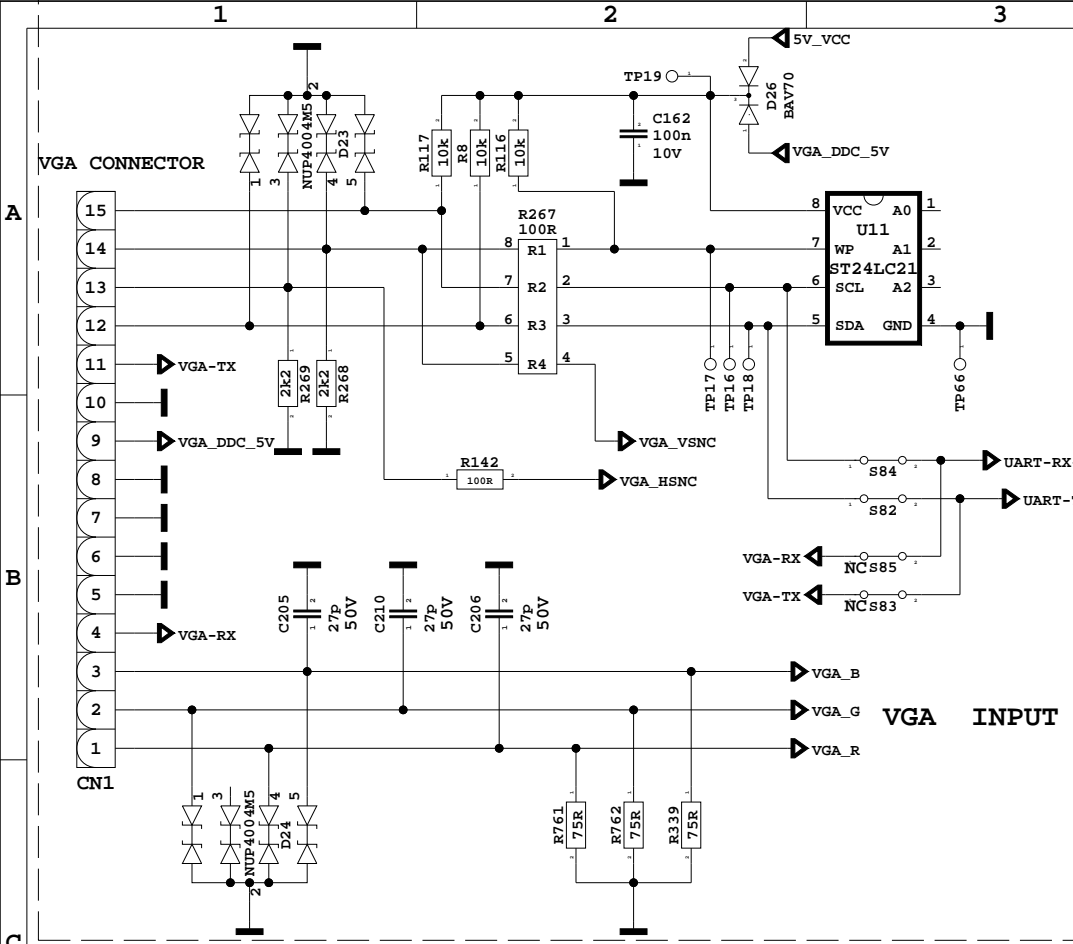
Check tuner supply voltage; 5V_TUN. Check tuner options are correctly set in Service menu. Check AGC voltage at RF_AGC pin of tuner.

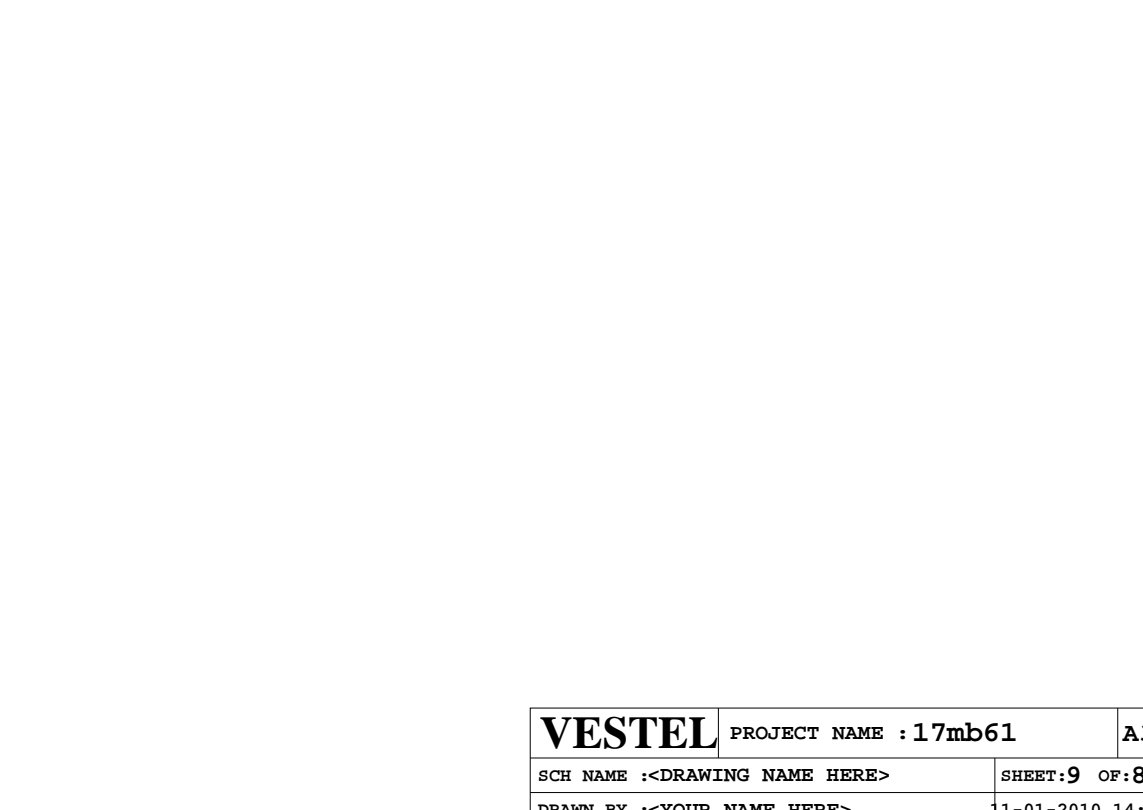
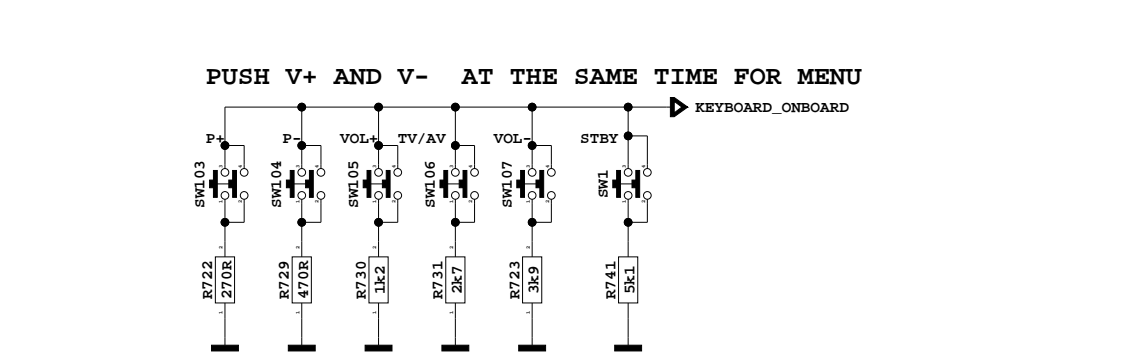
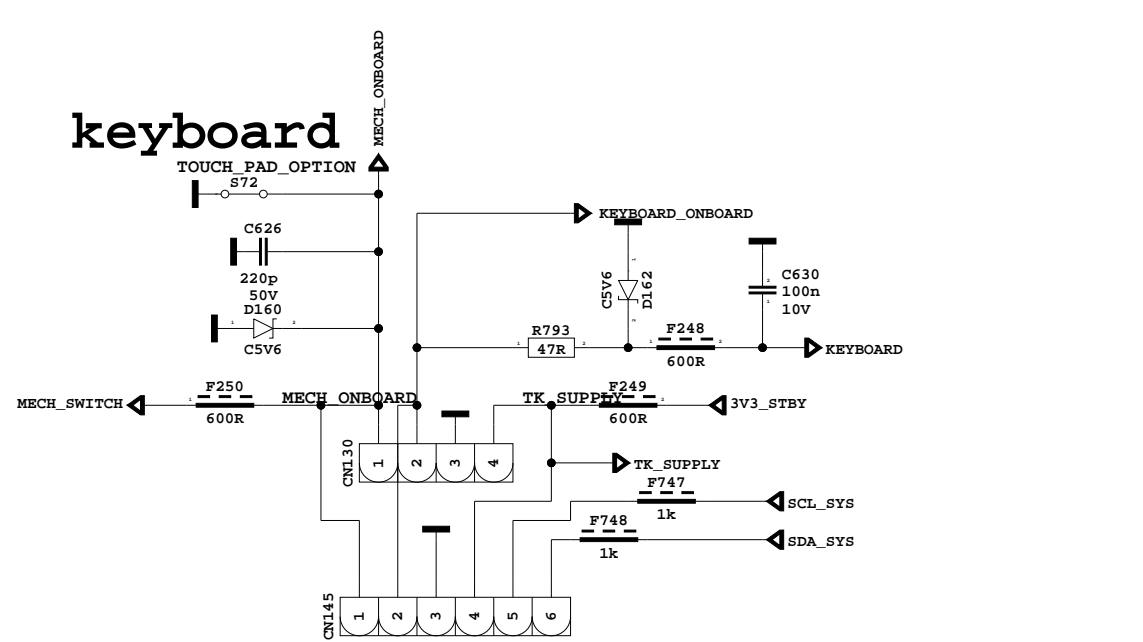
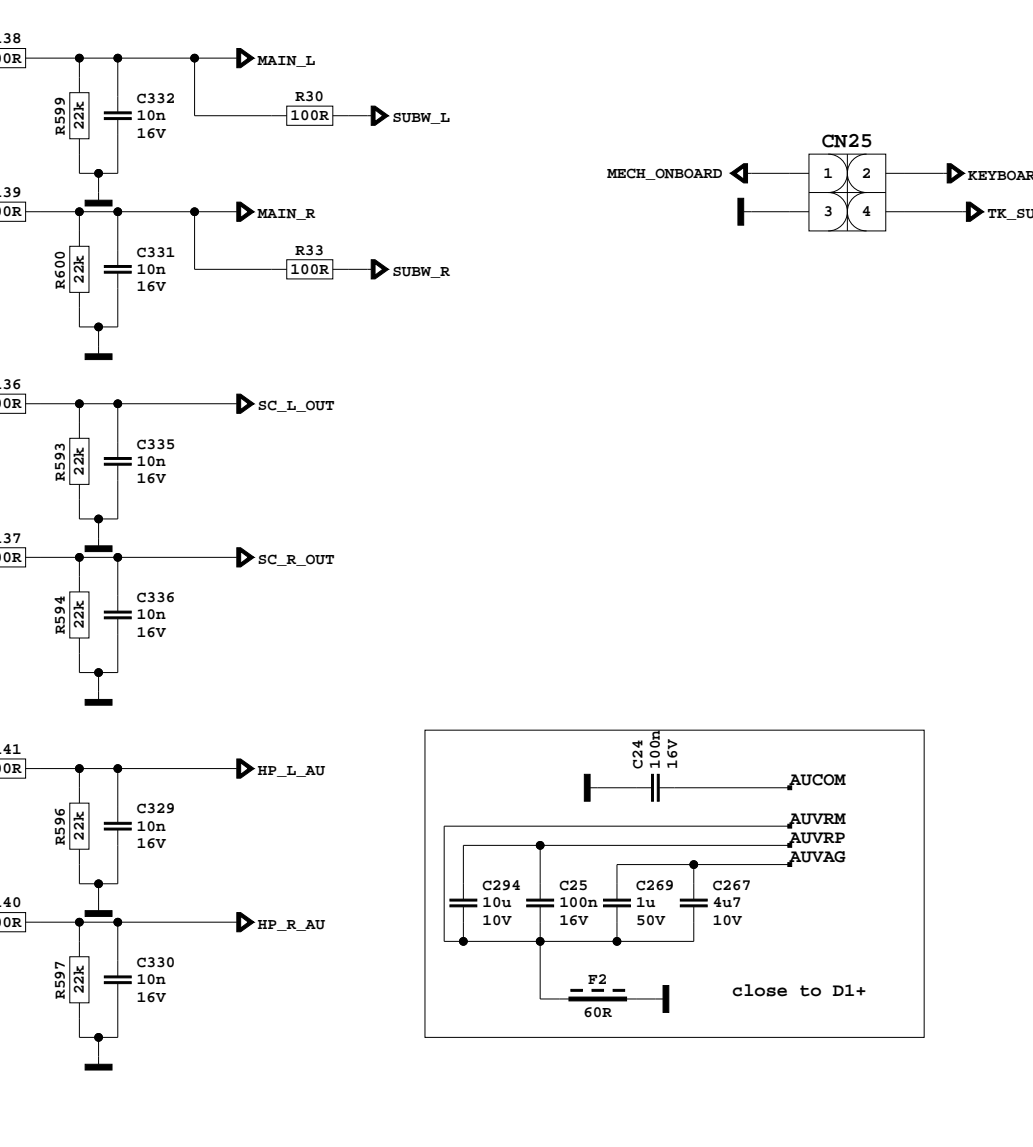
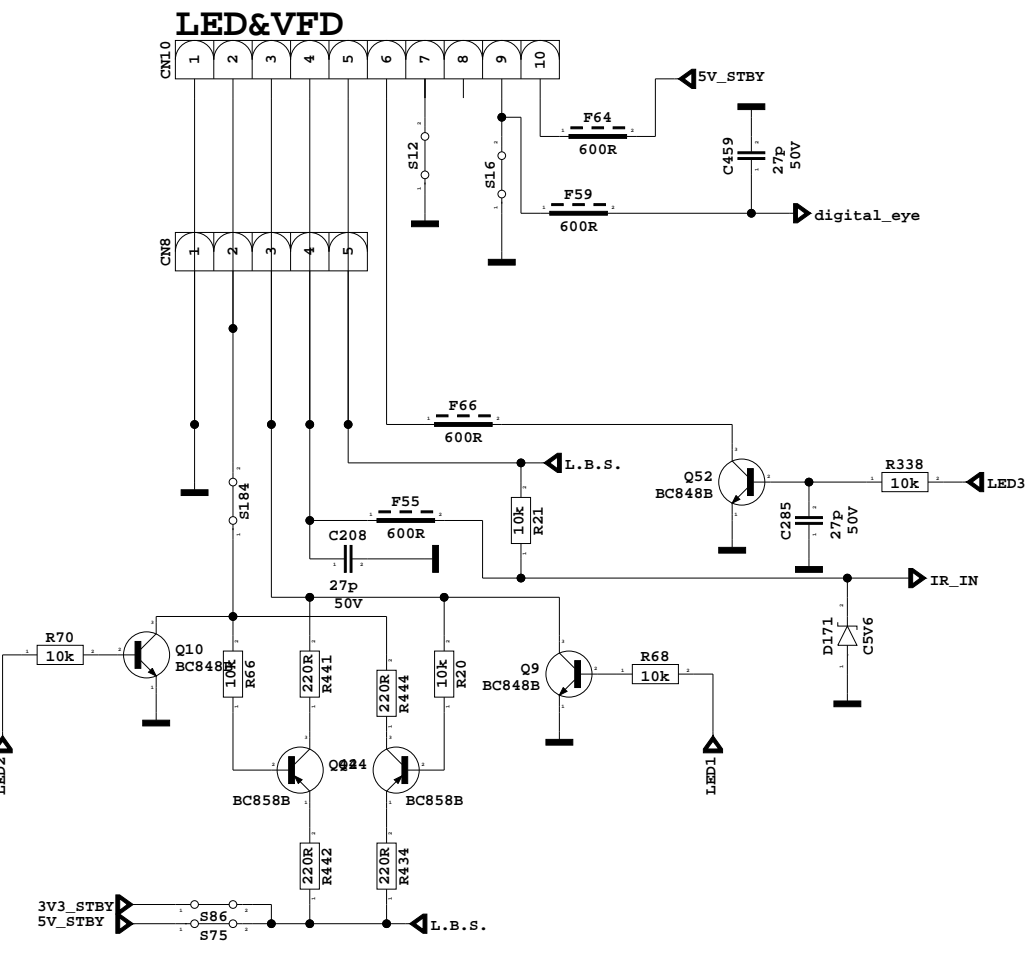
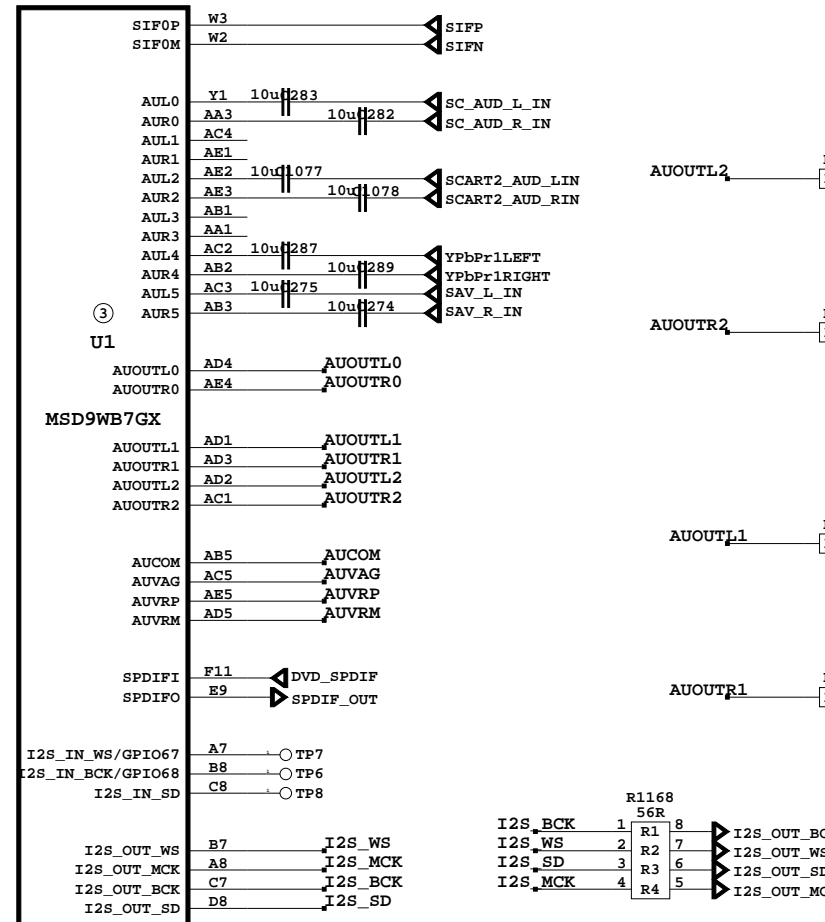
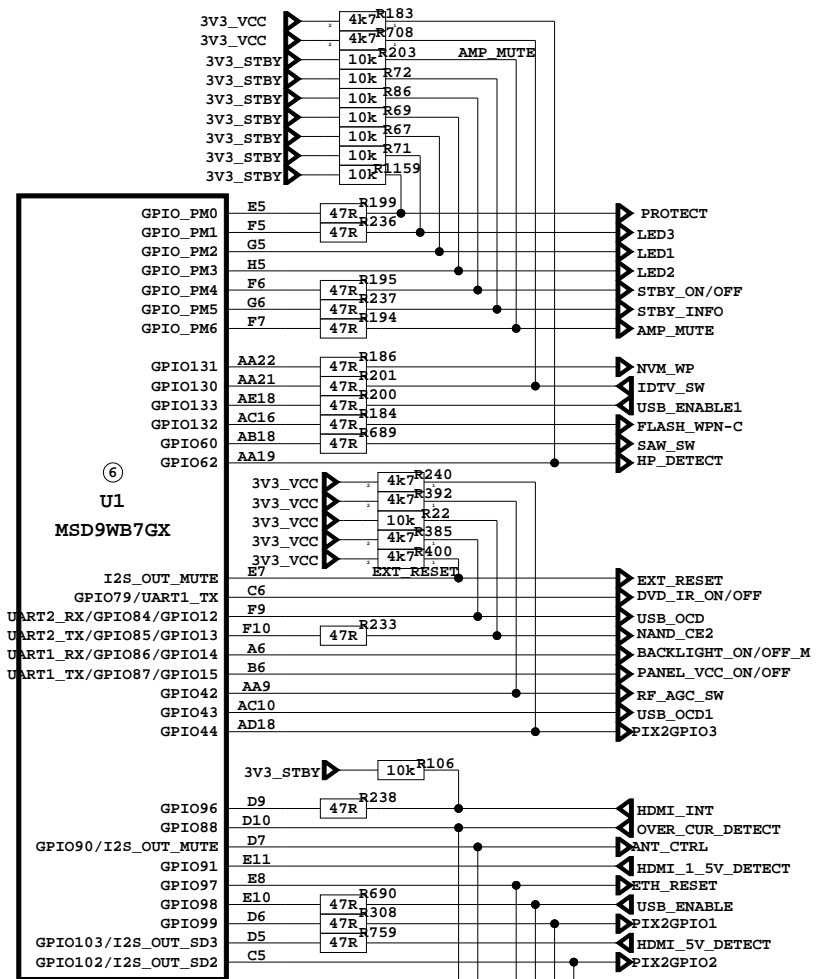


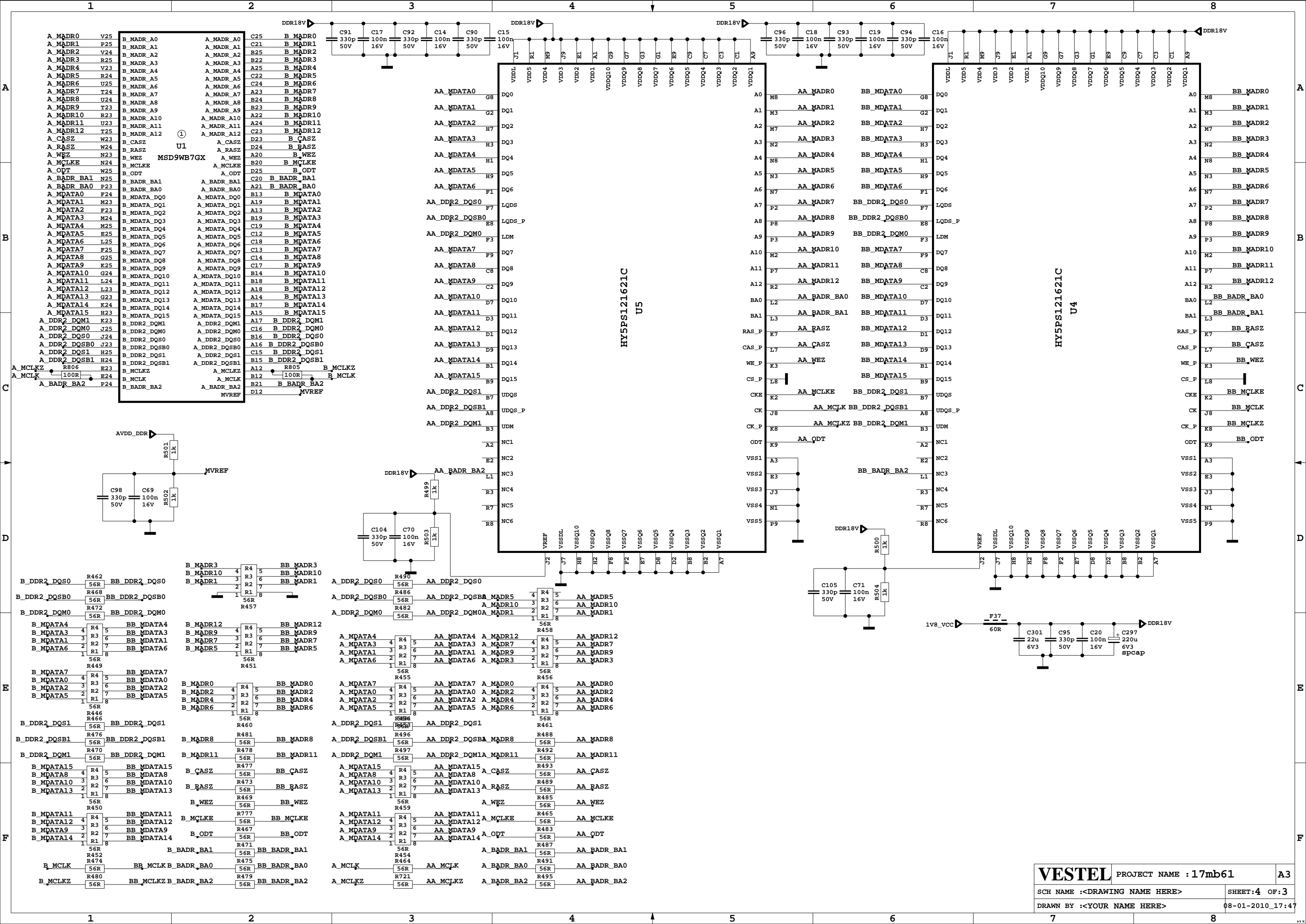
Samsung/Ntune

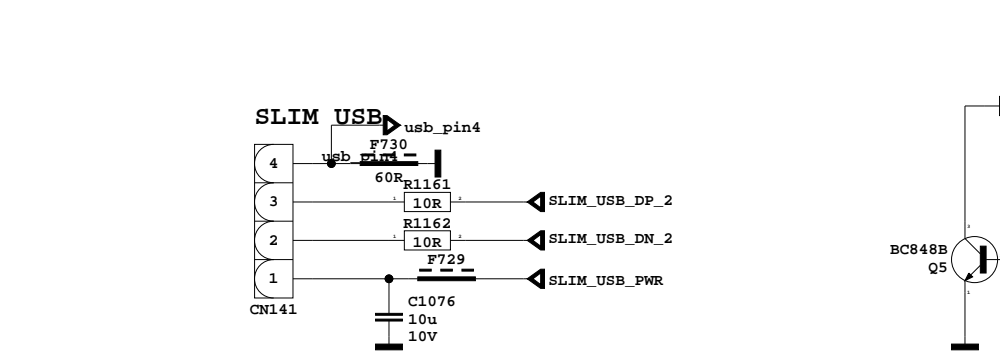
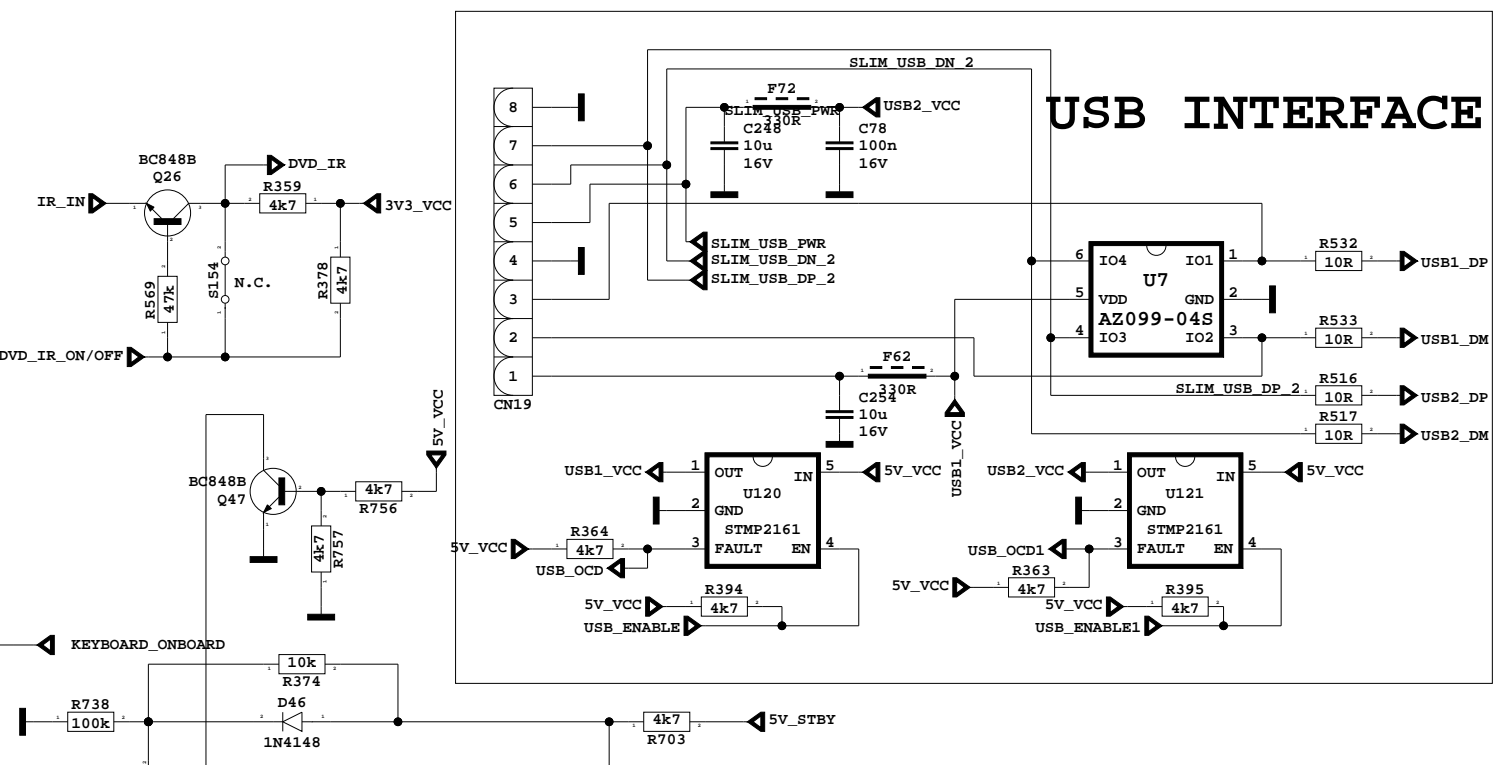
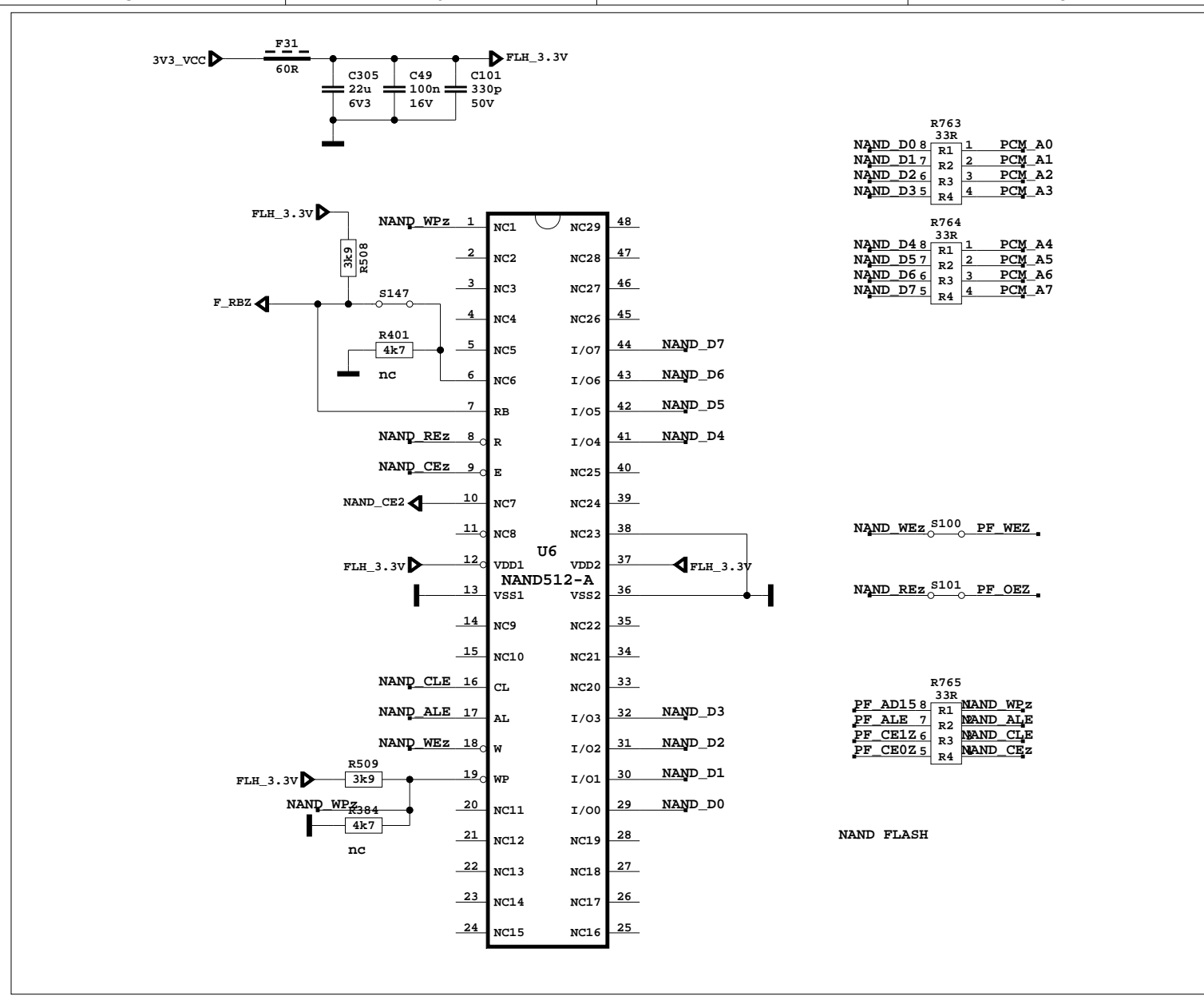
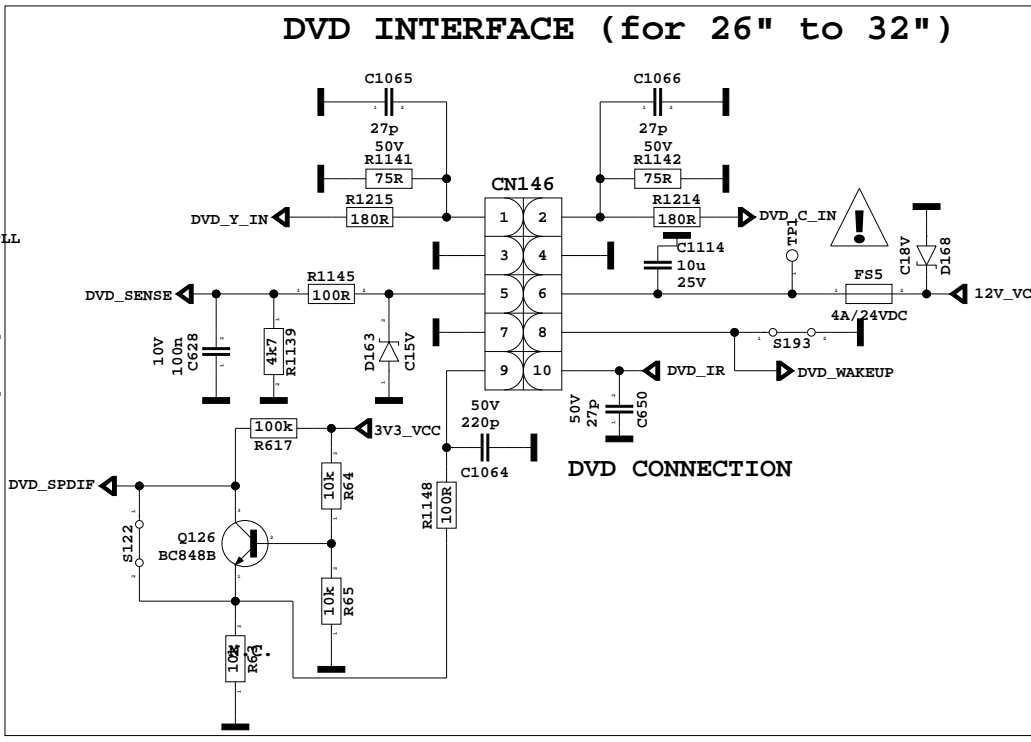
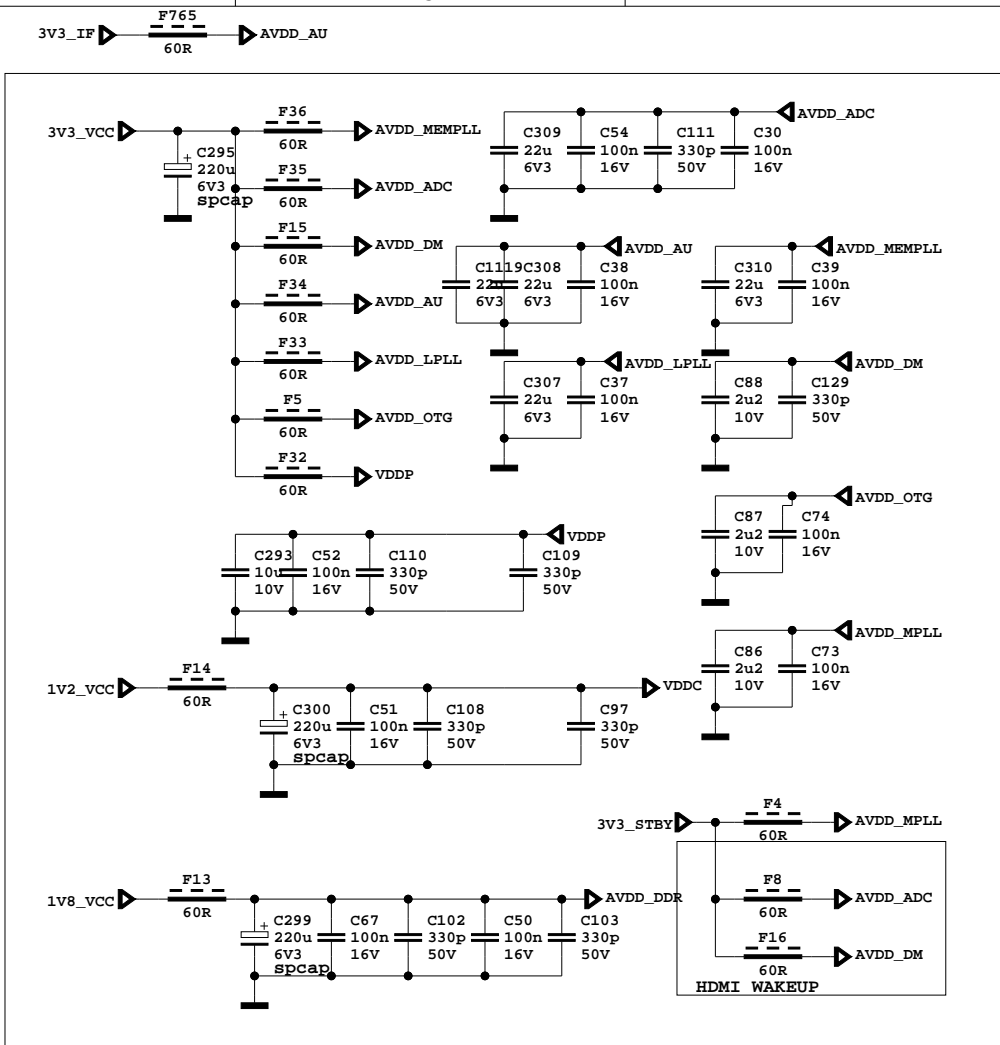
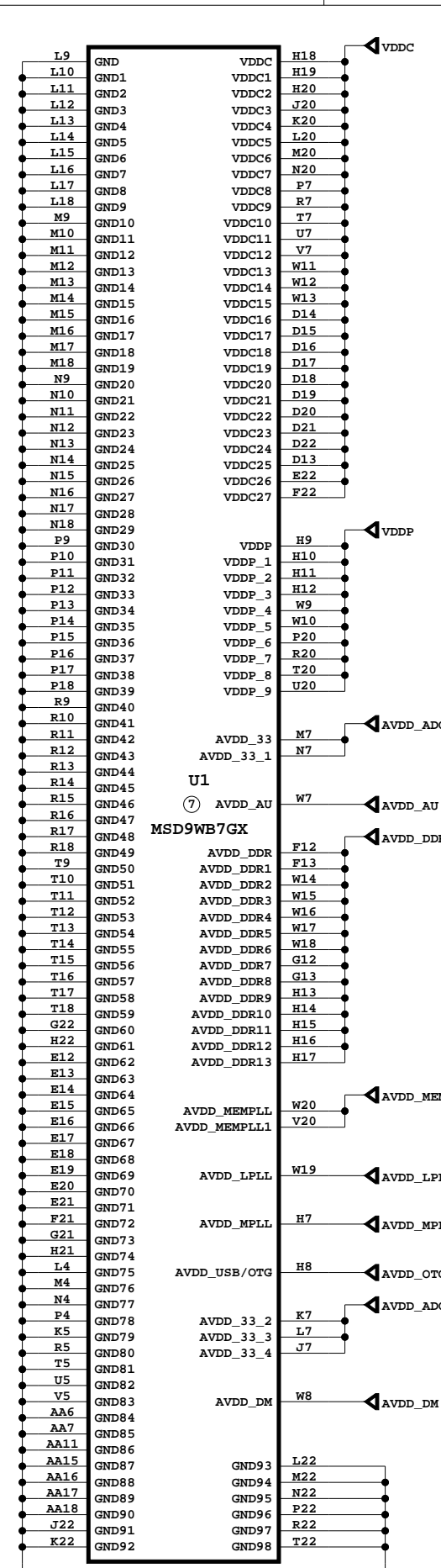




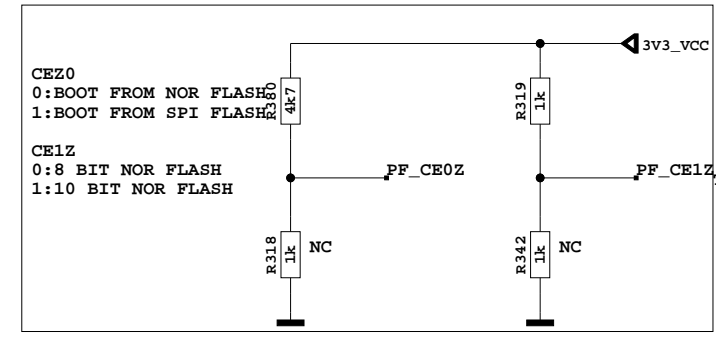
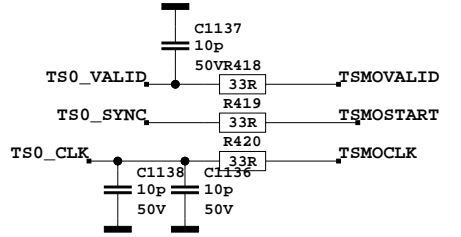
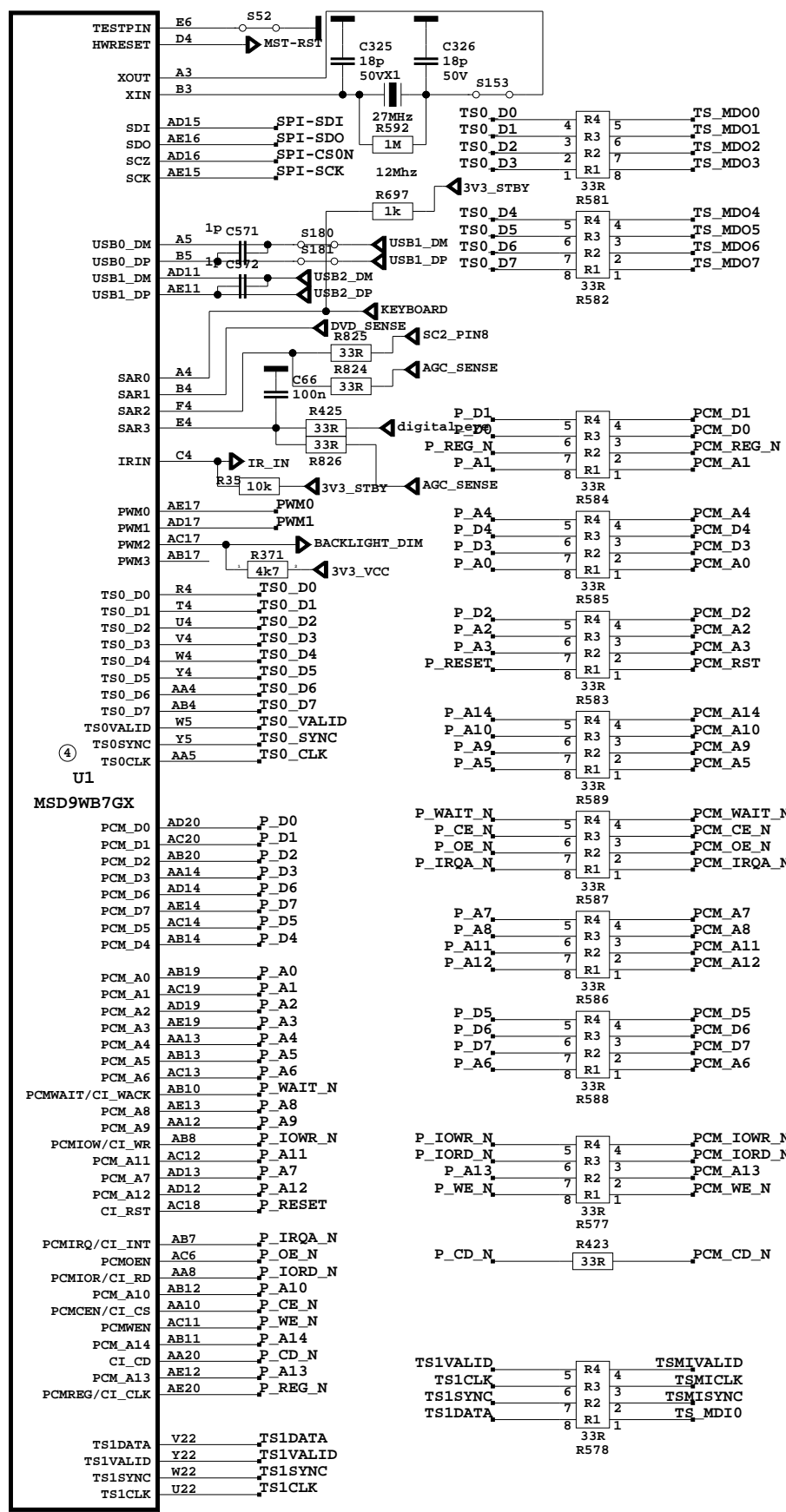




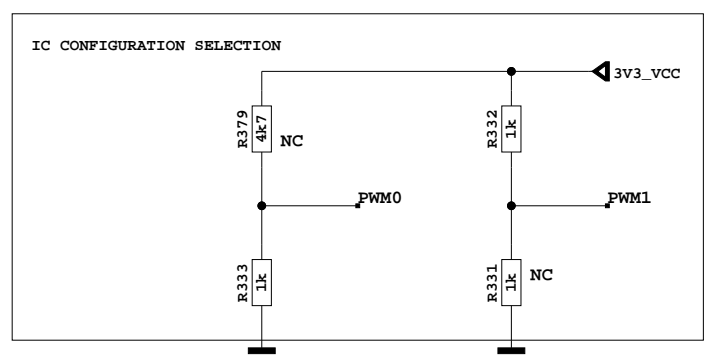
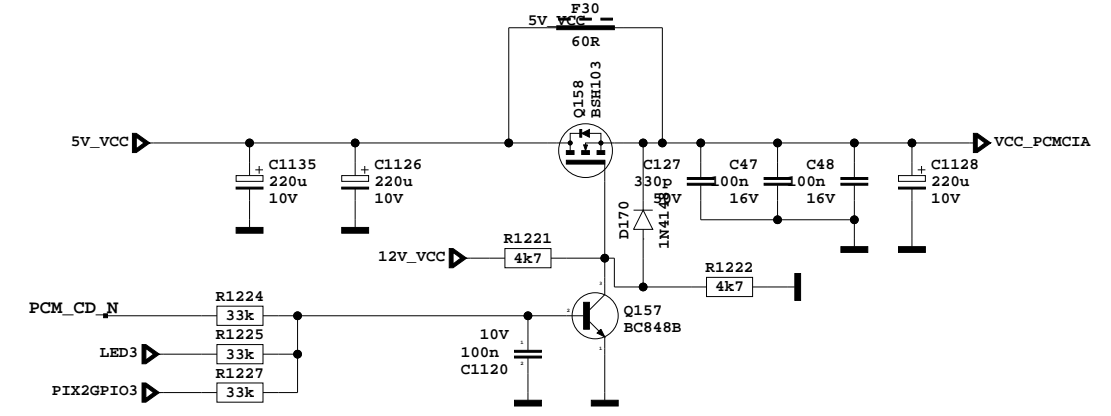
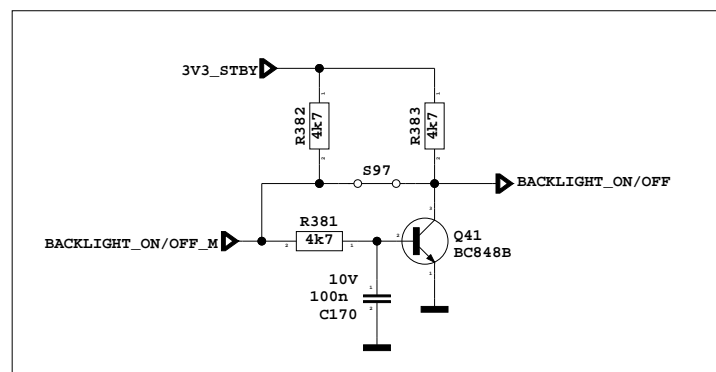
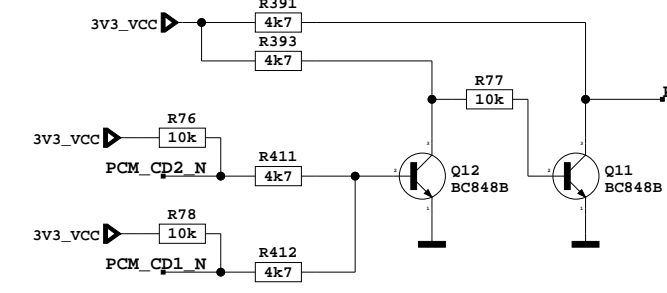
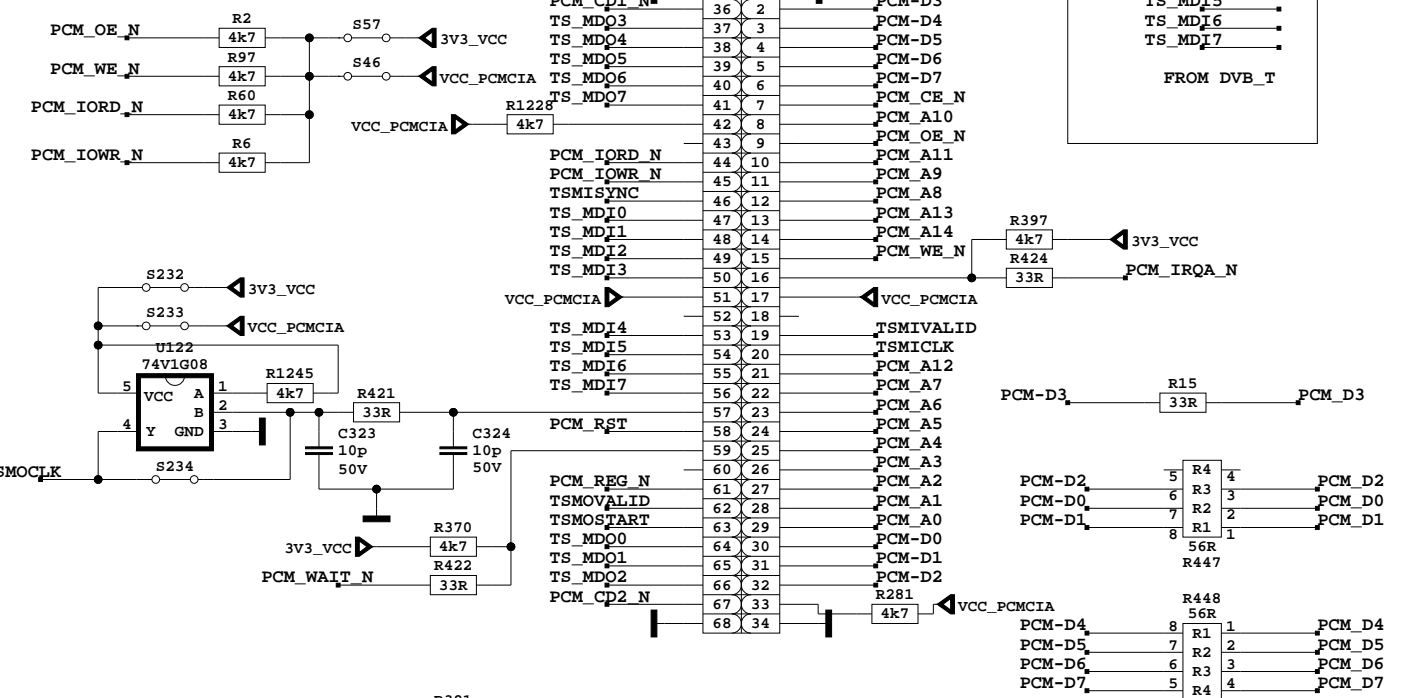




R763		33R		NAND D0 8		R1		1		PCM_A0	
R764		33R		NAND D1 7		R2		2		PCM_A1	
R765		33R		NAND D2 6		R3		3		PCM_A2	
R766		33R		NAND D3 5		R4		4		PCM_A3	
R767		33R		NAND D4 8		R1		1		PCM_A4	
R768		33R		NAND D5 7		R2		2		PCM_A5	
R769		33R		NAND D6 6		R3		3		PCM_A6	
R770		33R		NAND D7 5		R4		4		PCM_A7	

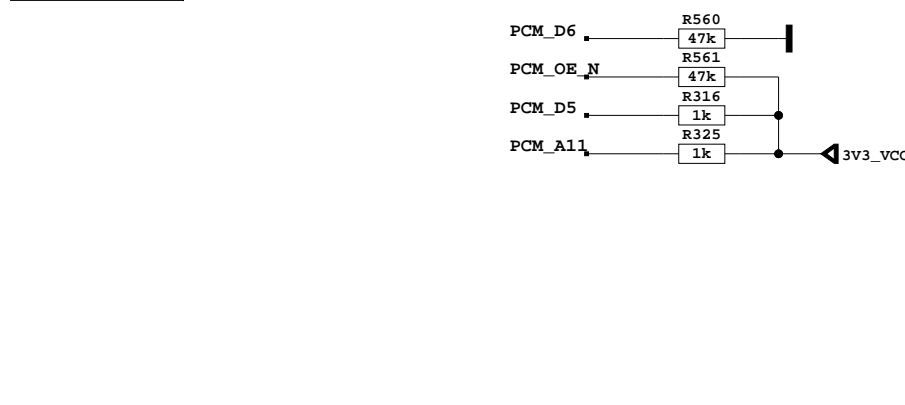


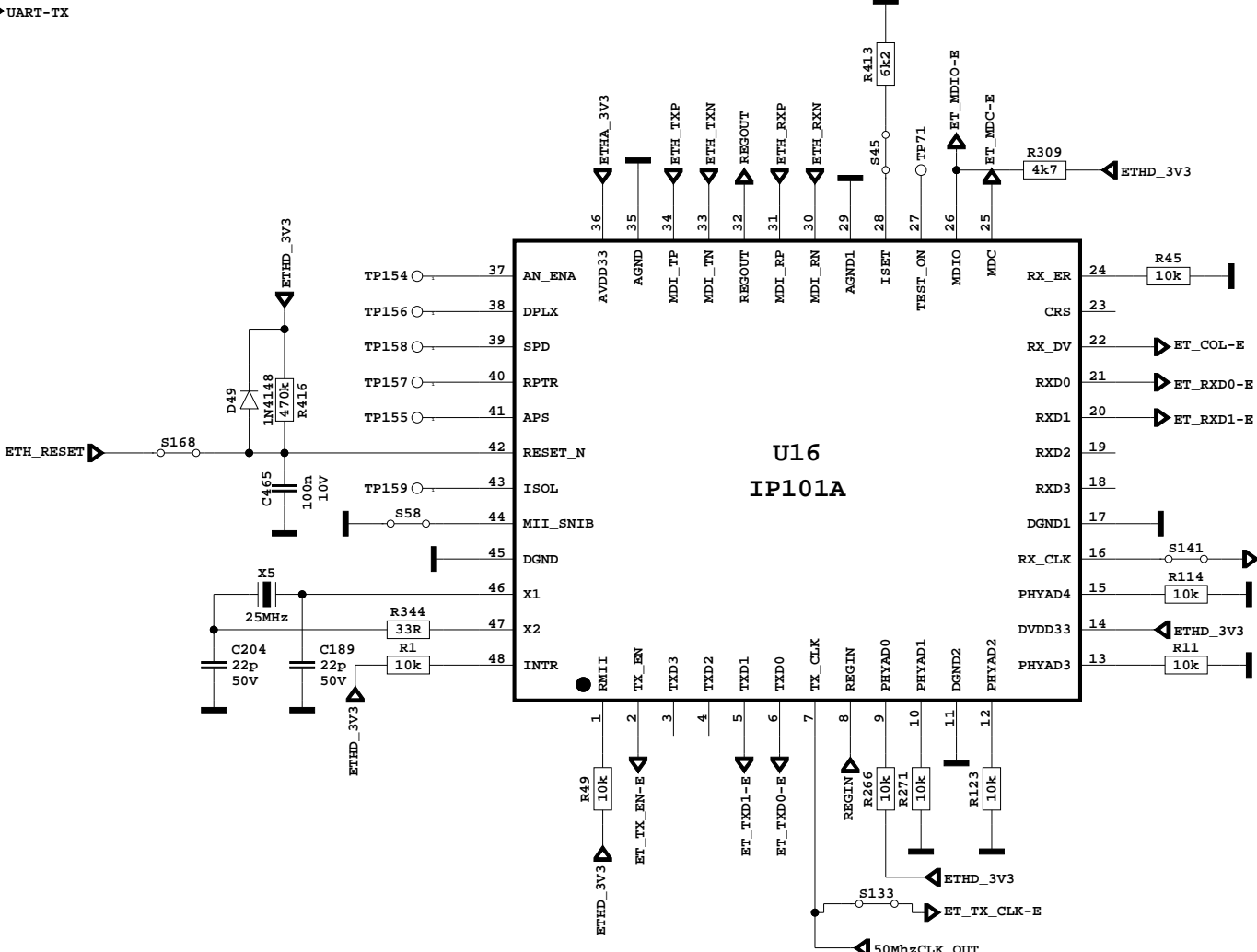
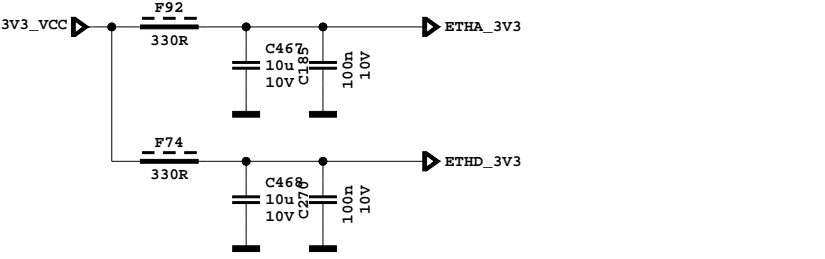
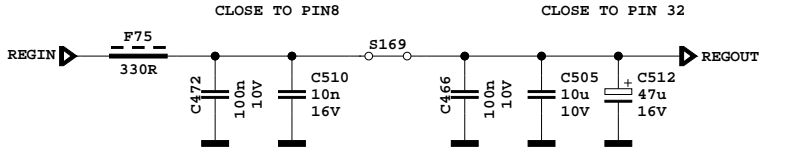
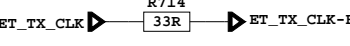
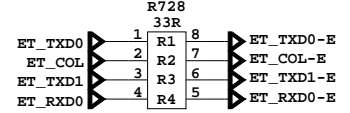
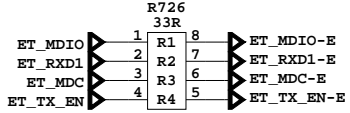
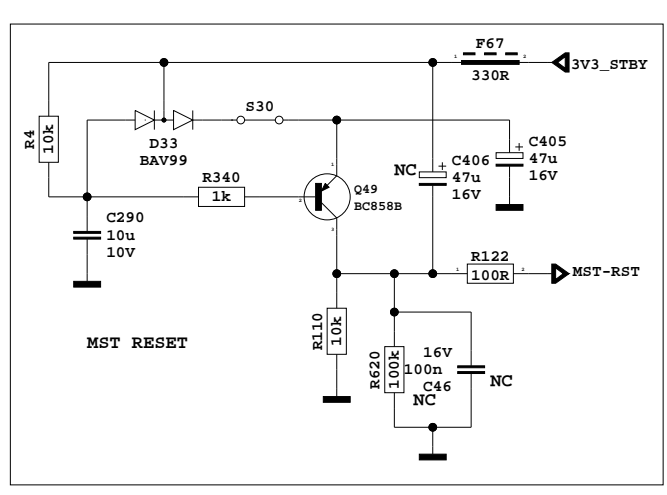
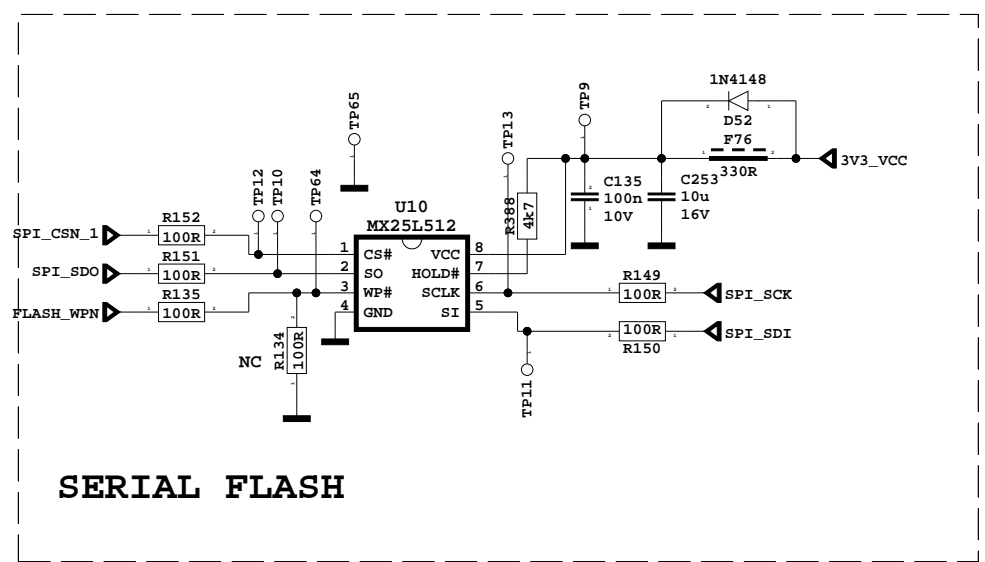
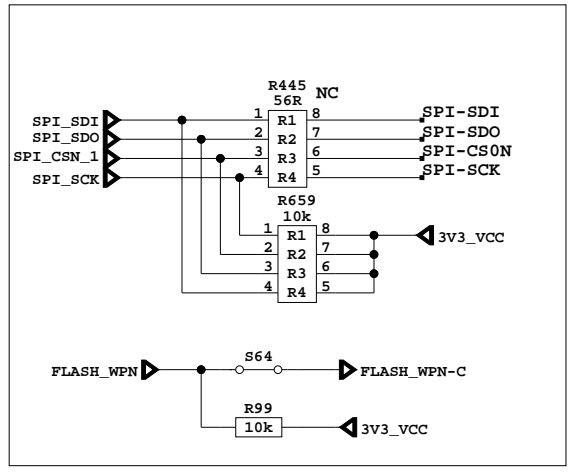
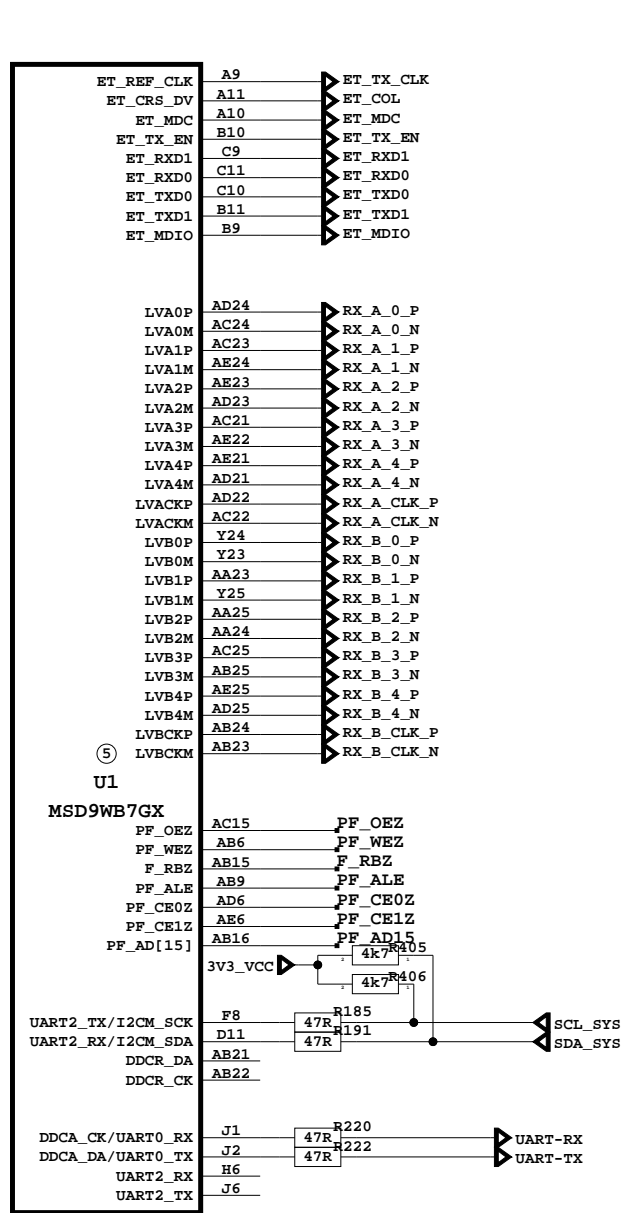
CI INTERFACE



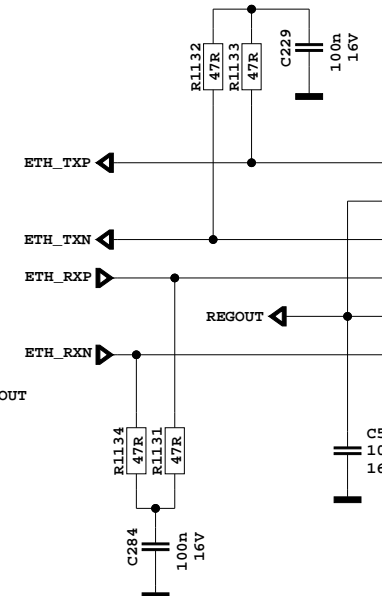
U1 MSD9WB7GX

PCM_D0	AD20	P_D0
PCM_D1	AC20	P_D1
PCM_D2	AE20	P_D2
PCM_D3	AA14	P_D3
PCM_D6	AD14	P_D6
PCM_D7	AE14	P_D7
PCM_D5	AC14	P_D5
PCM_D4	AB14	P_D4
PCM_A0	AB19	P_A0
PCM_A1	AC19	P_A1
PCM_A2	AD19	P_A2
PCM_A3	AE19	P_A3
PCM_A4	AA13	P_A4
PCM_A5	AB13	P_A5
PCM_A6	AC13	P_A6
PCMWAIT/CI_WACK	AB10	P_WAIT_N
PCM_A8	AE13	P_A8
PCM_A9	AA12	P_A9
PCMIOW/CI_WR	AB8	P_IOWR_N
PCM_A11	AC12	P_A11
PCM_A7	AD13	P_A7
PCM_A12	AD12	P_A12
CI_RST	AC18	P_RESET
PCMIRQ/CI_INT	AB7	P_IRQA_N
PCMOEN	AC6	P_OE_N
PCMIOR/CI_RD	AA8	P_IORD_N
PCM_A10	AB12	P_A10
PCMCEN/CI_CS	AA10	P_CE_N
PCMWEN	AC11	P_WE_N
PCM_A14	AB11	P_A14
CI_CD	AA20	P_CD_N
PCM_A13	AE12	P_A13
PCMREG/CI_CLK	AE20	P_REG_N
TS1DATA	V22	TS1DATA
TS1VALID	Y22	TS1VALID
TS1SYNC	W22	TS1SYNC
TS1CLK	U22	TS1CLK





Place these resistors close to STE100P

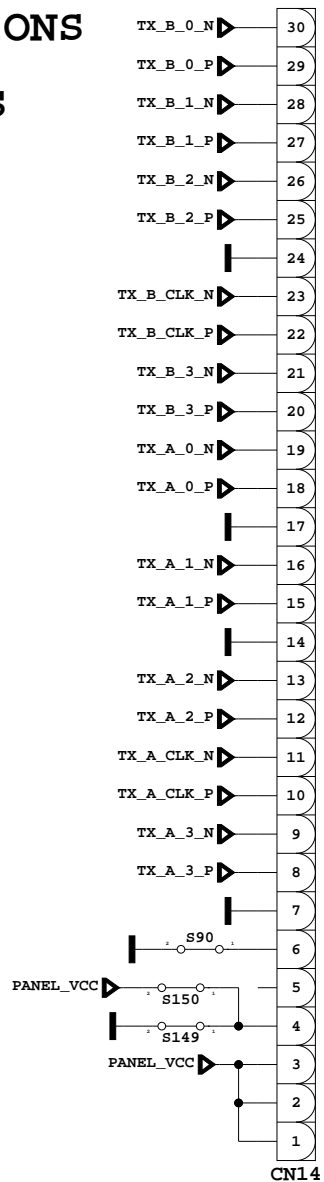


speed nets, except for the chassis ground. Also keep traces short and route as matched length differential pairs. Do not place any parts or traces under the transformer.

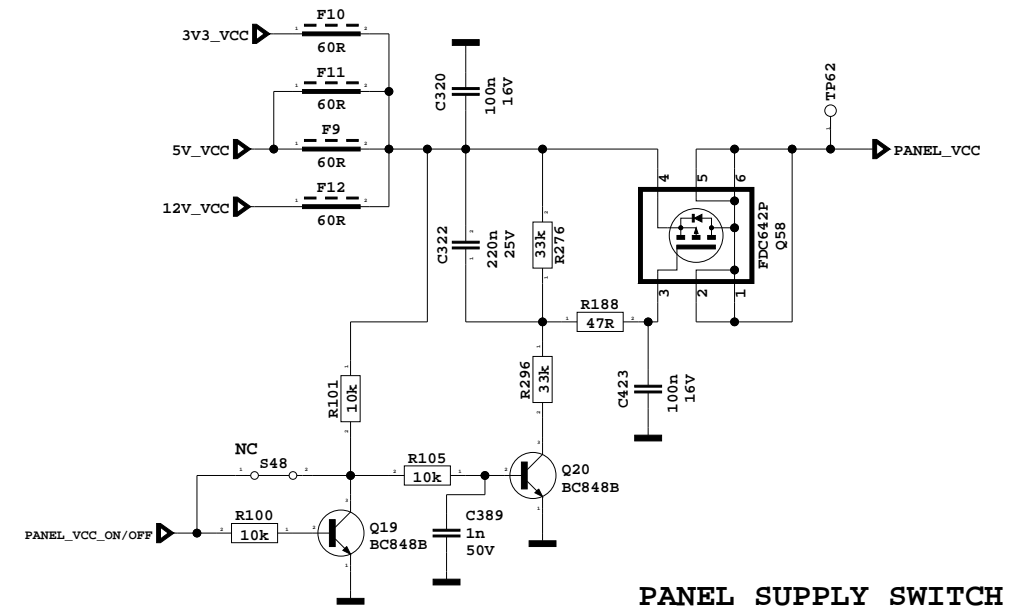
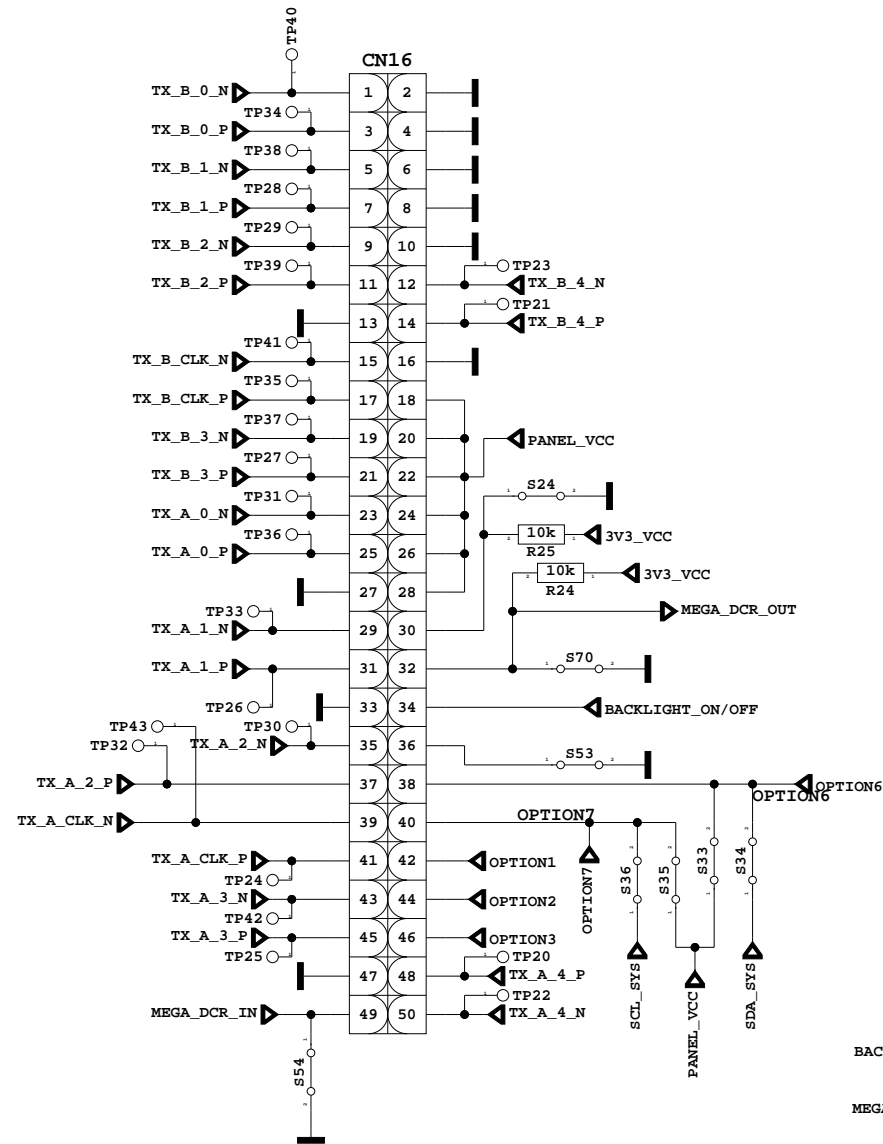
Ethernet lines must be 100ohm differential pairs

19" TO 22" FFC OPTIONS

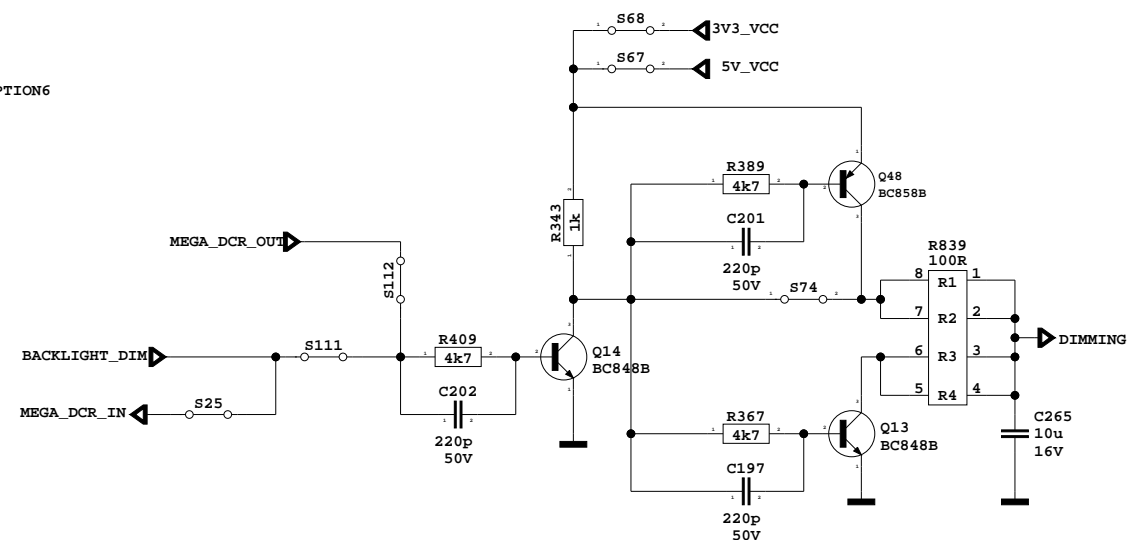
26" UT FFC OPTIONS



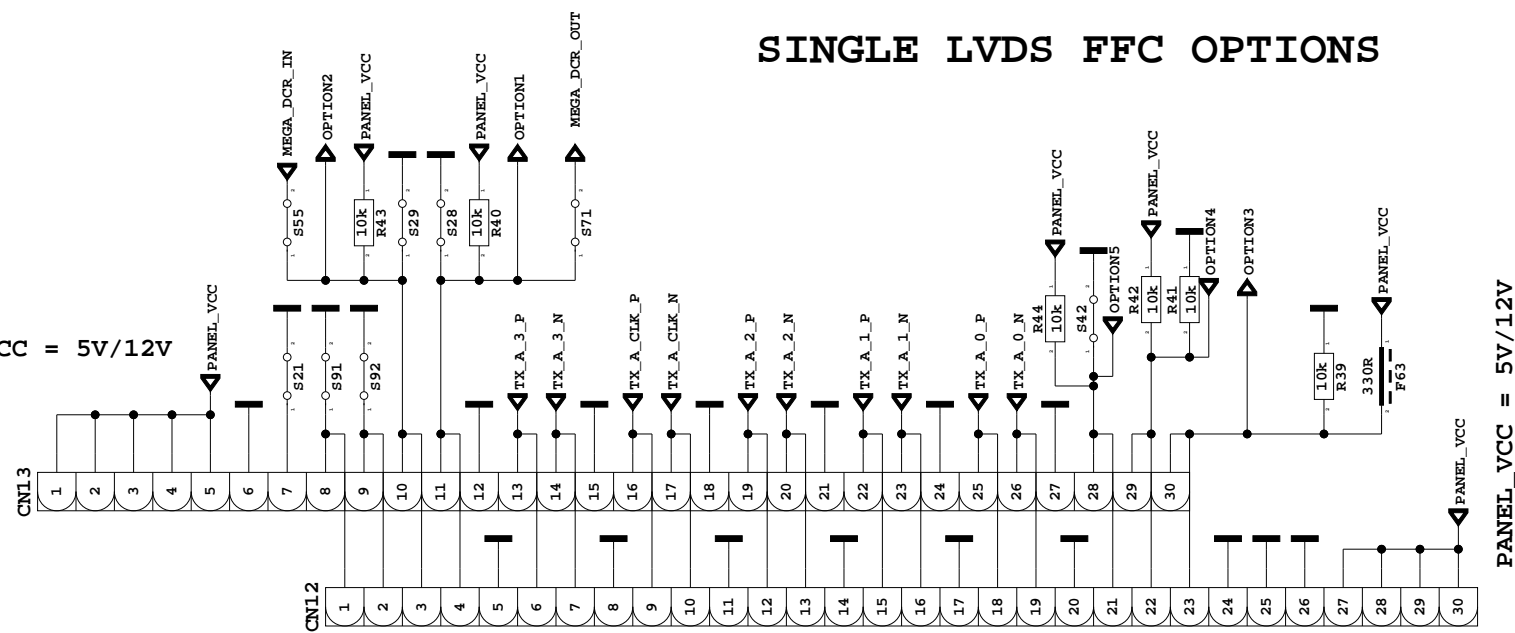
LVDS CABLE



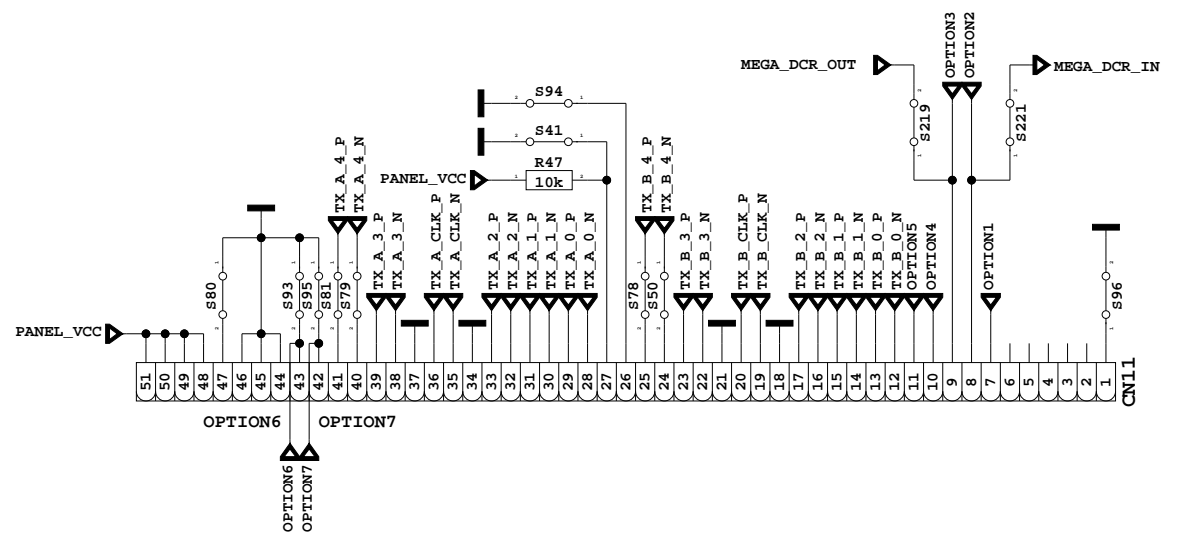
PANEL SUPPLY SWITCH

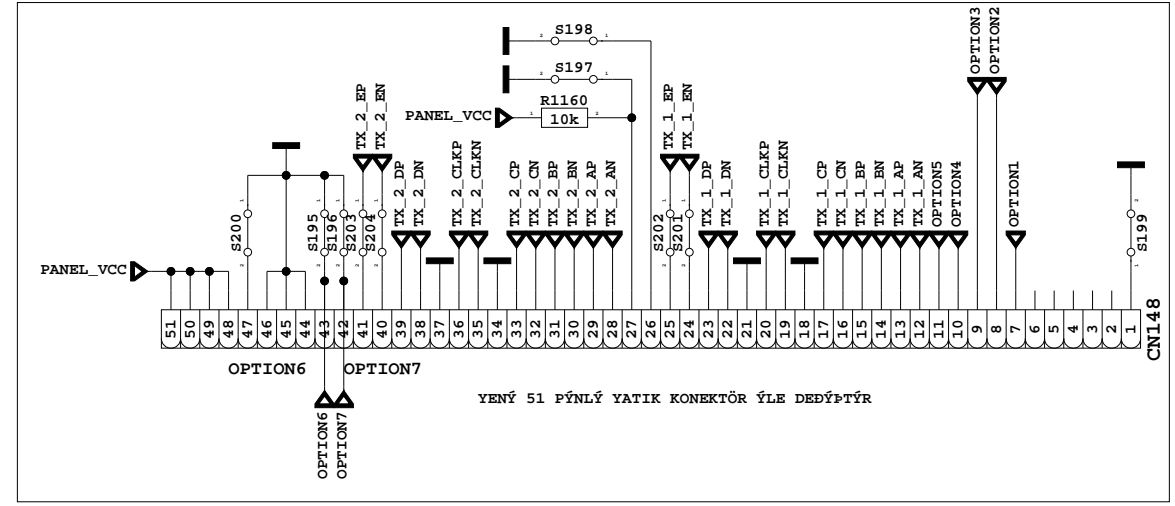
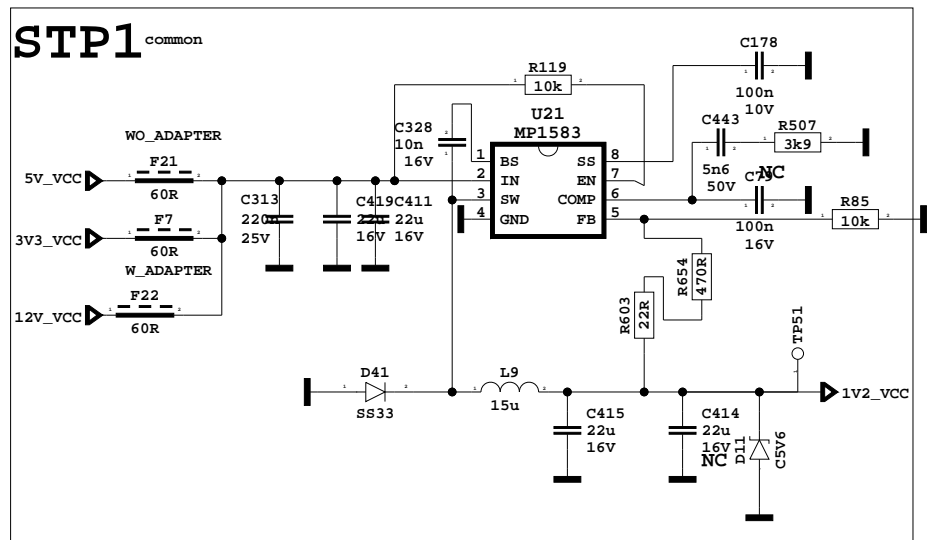
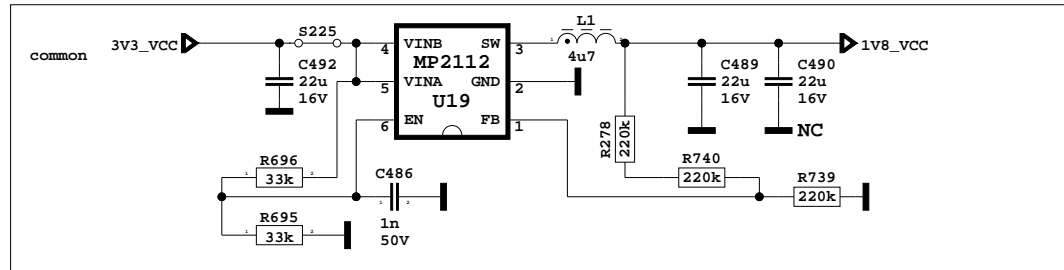
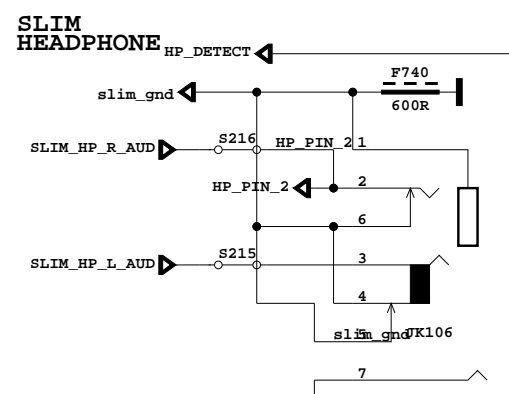
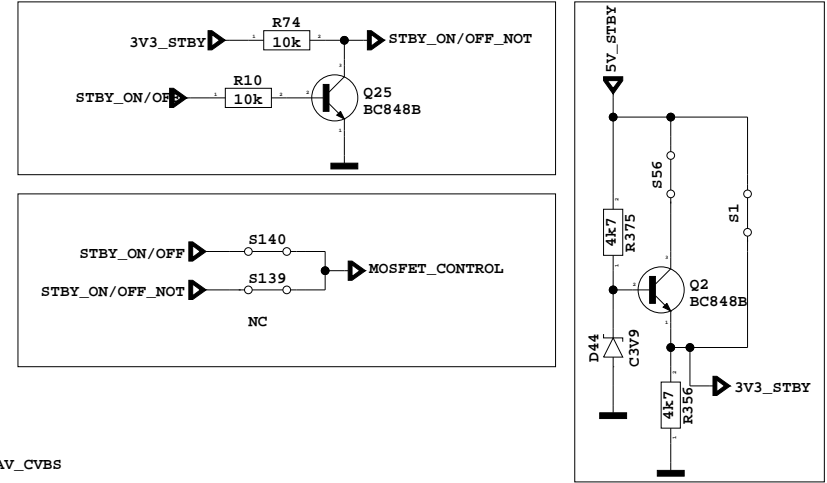
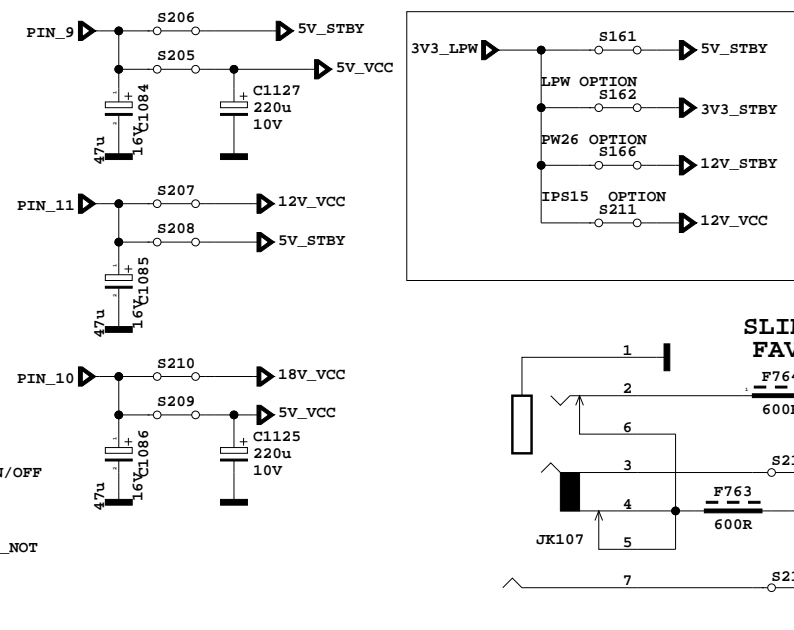
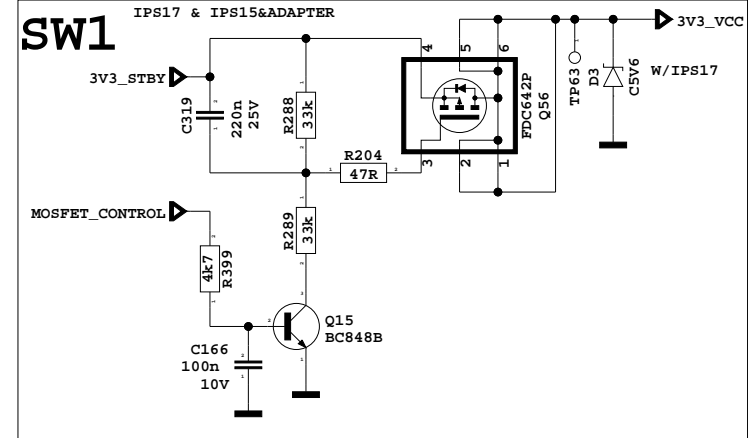
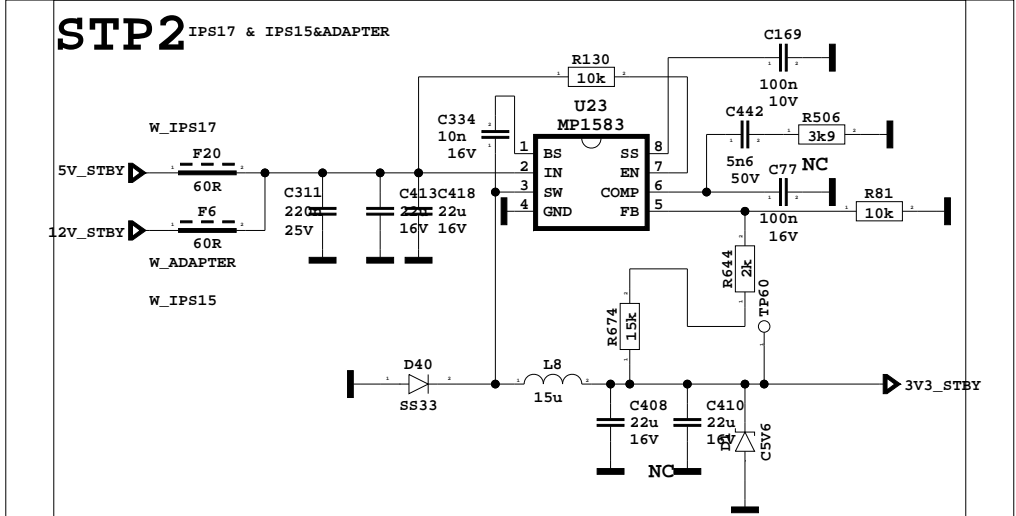
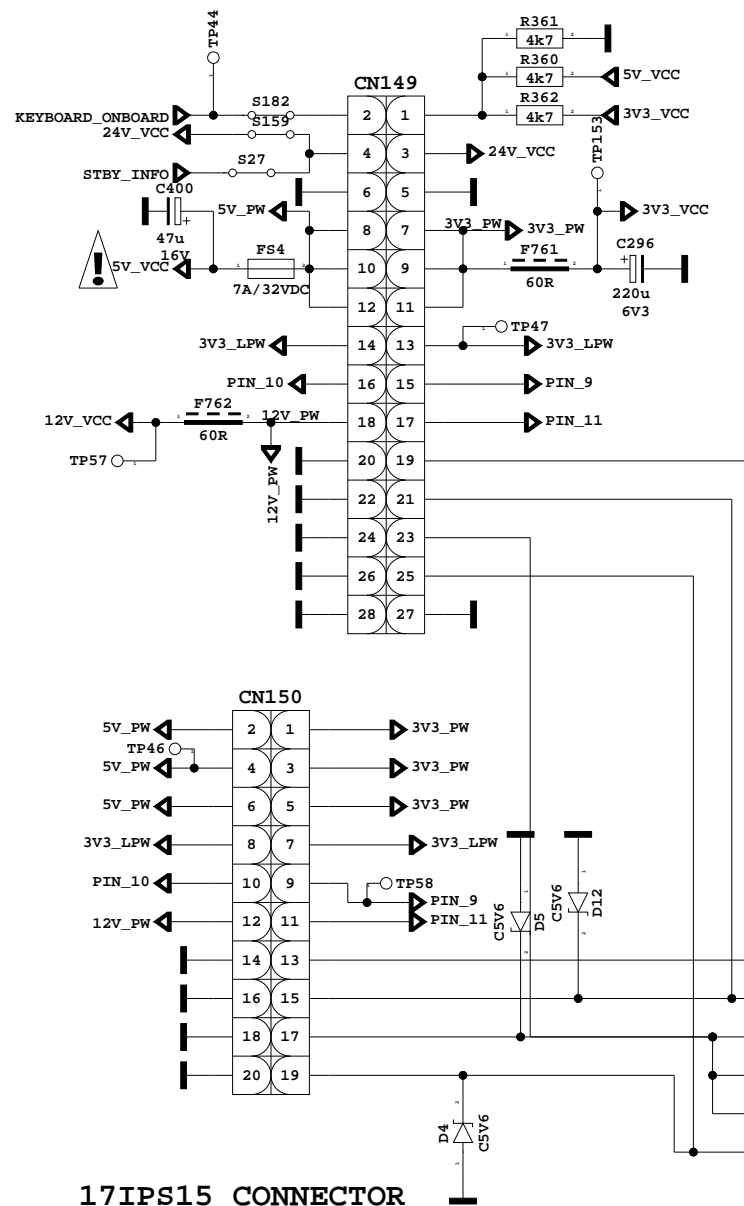


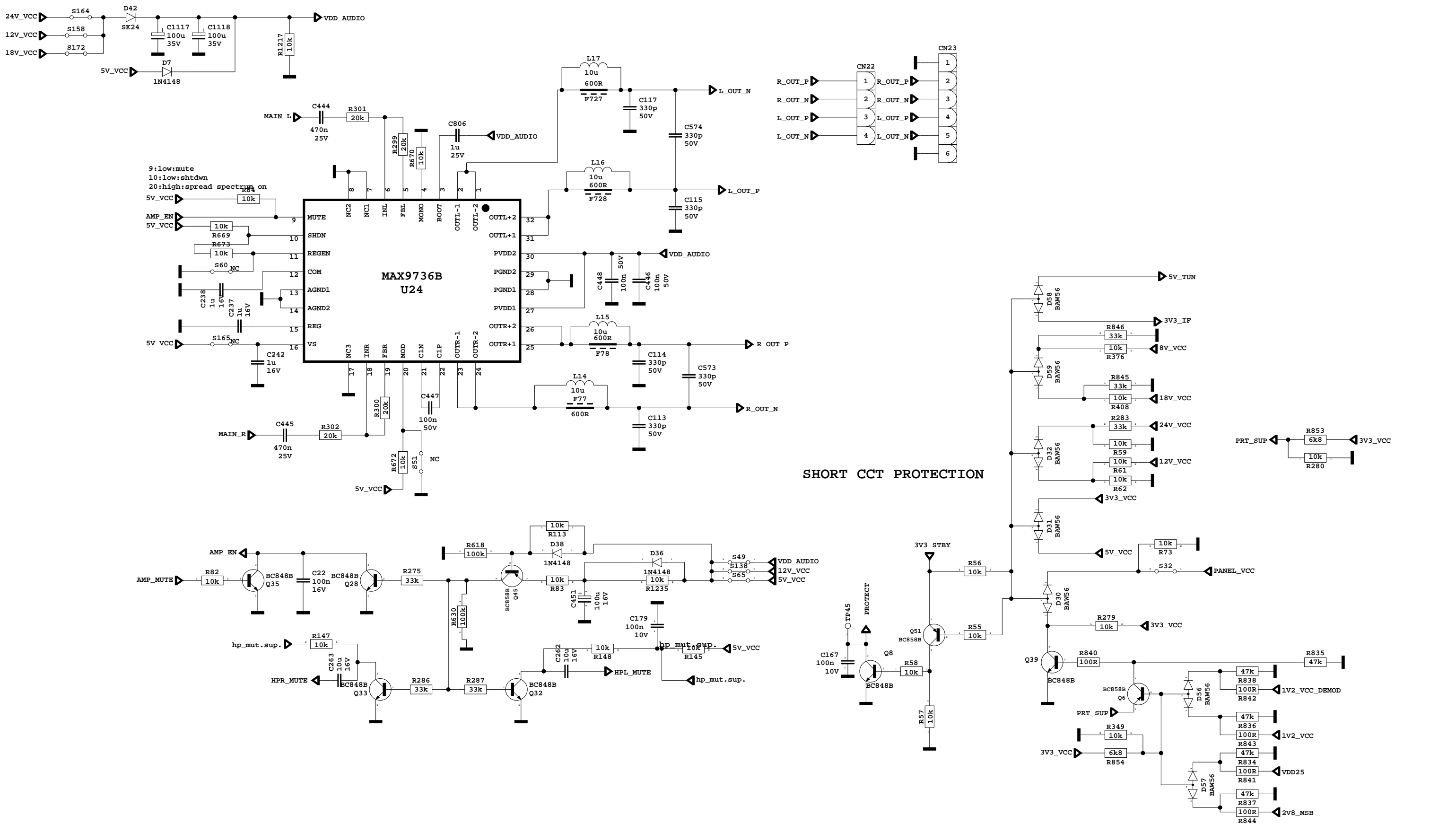
SINGLE LVDS FFC OPTIONS



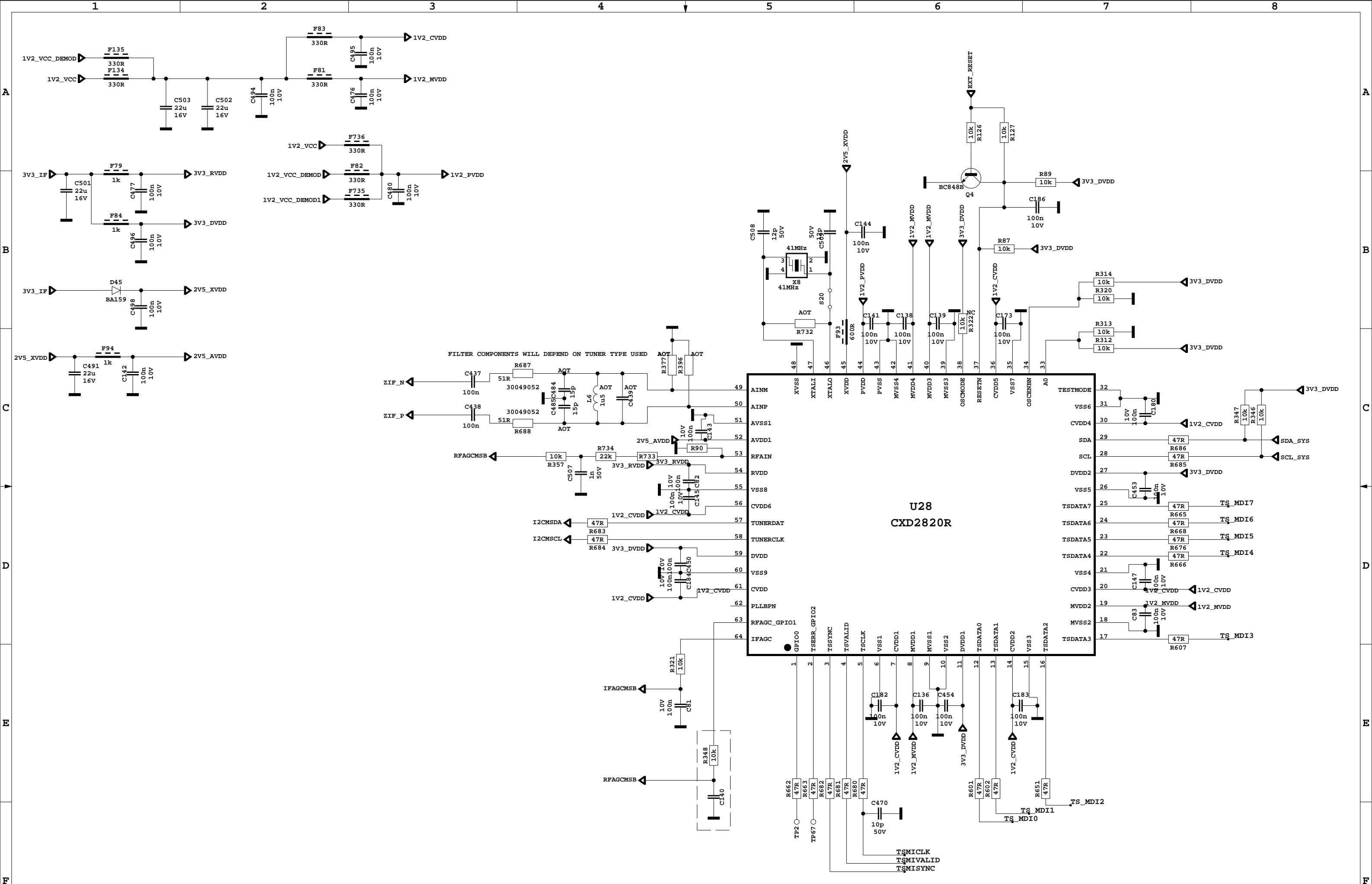
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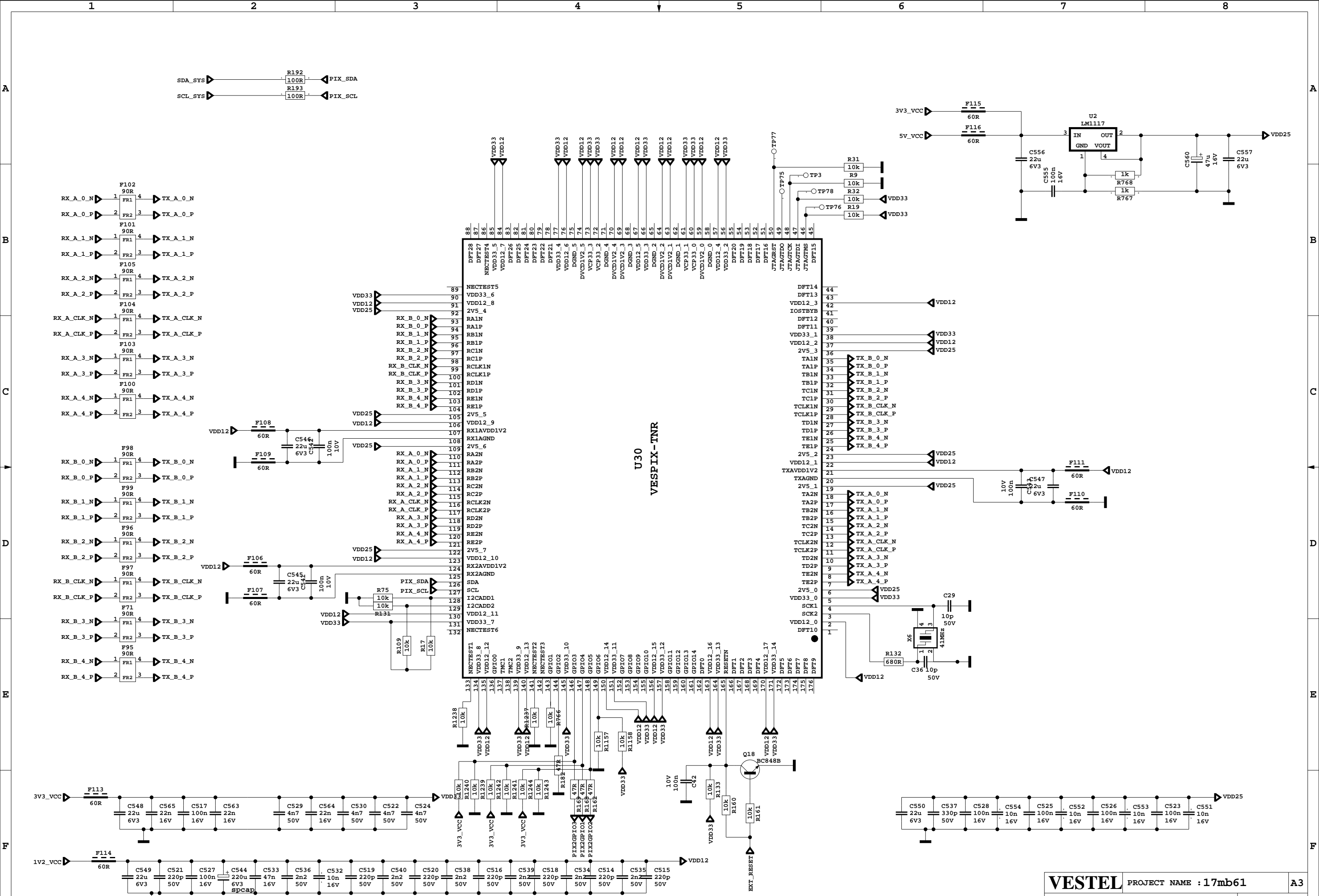


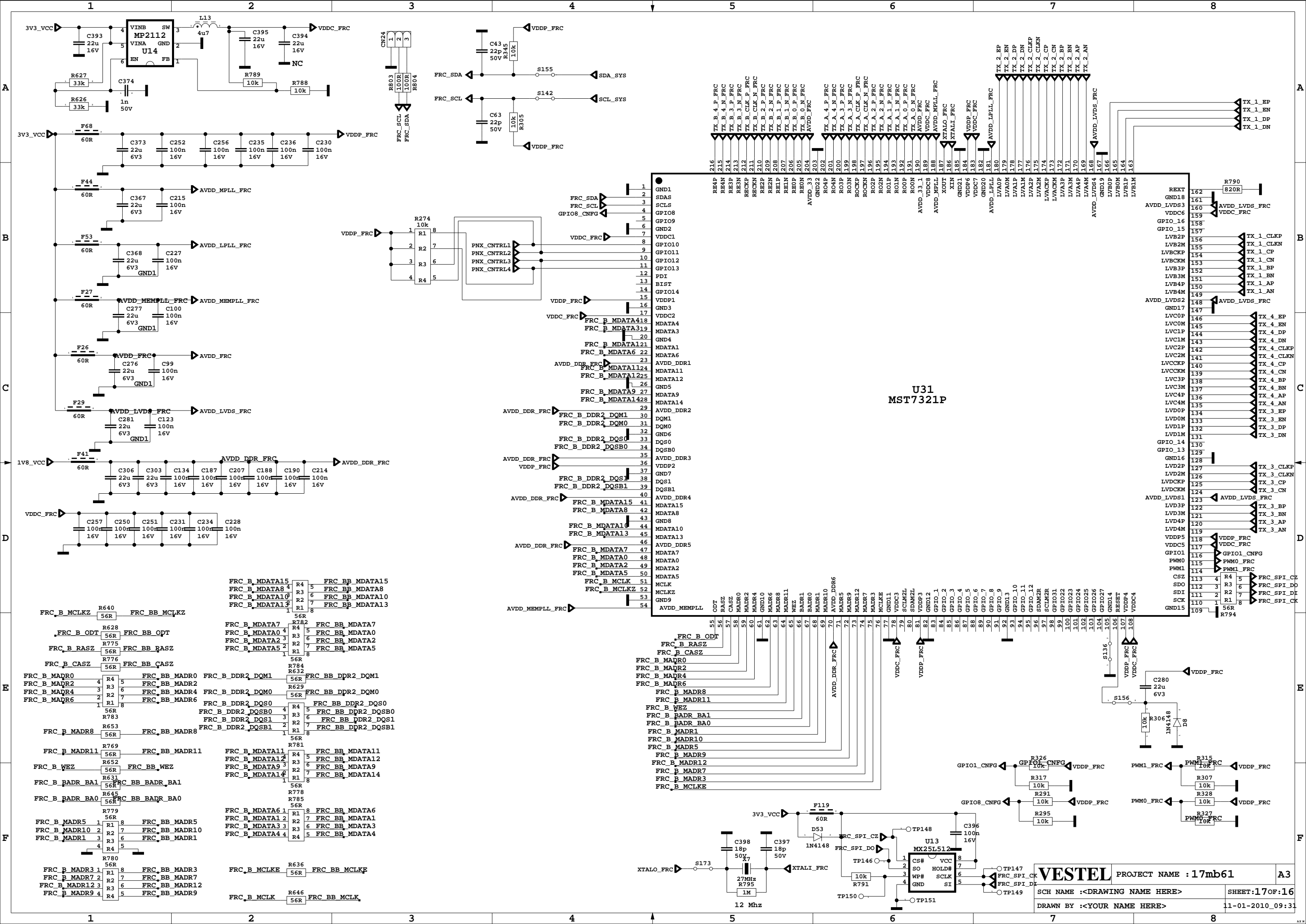


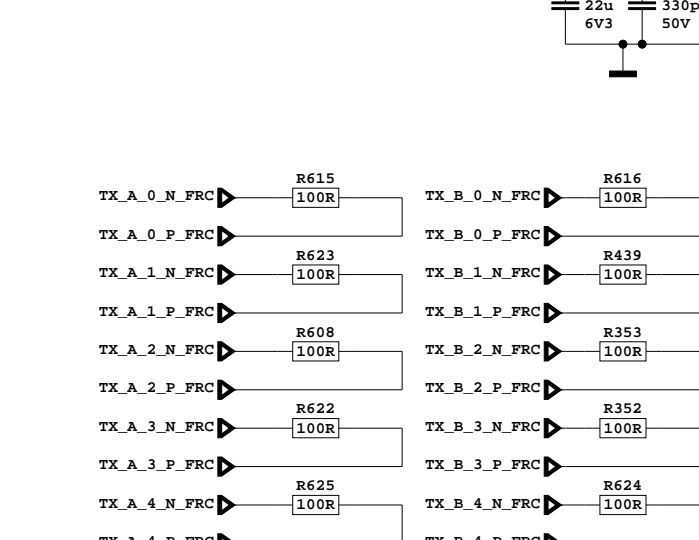
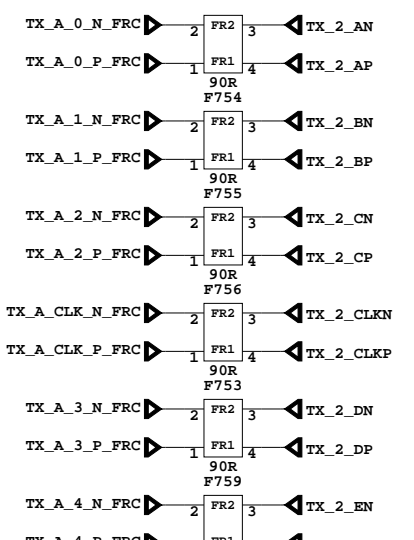
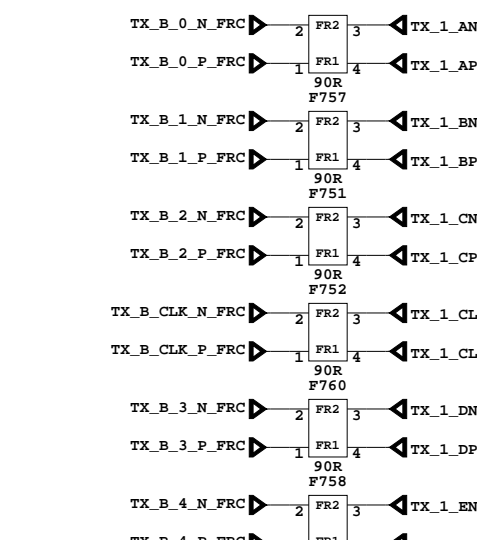
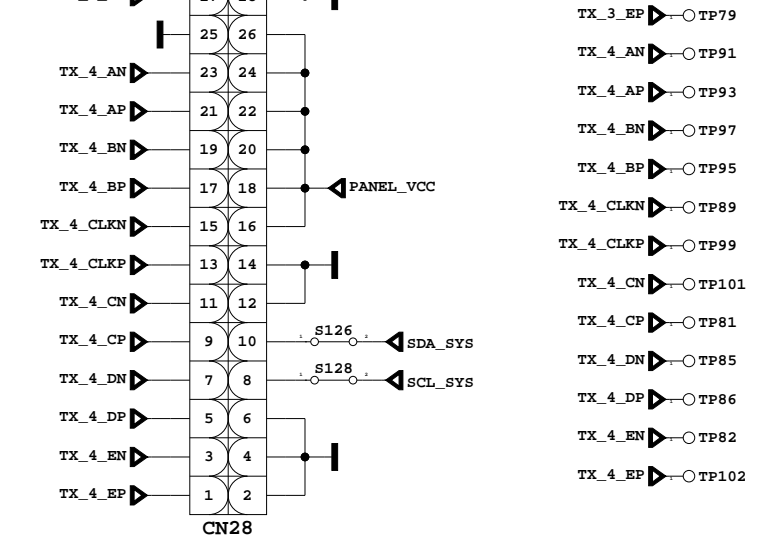
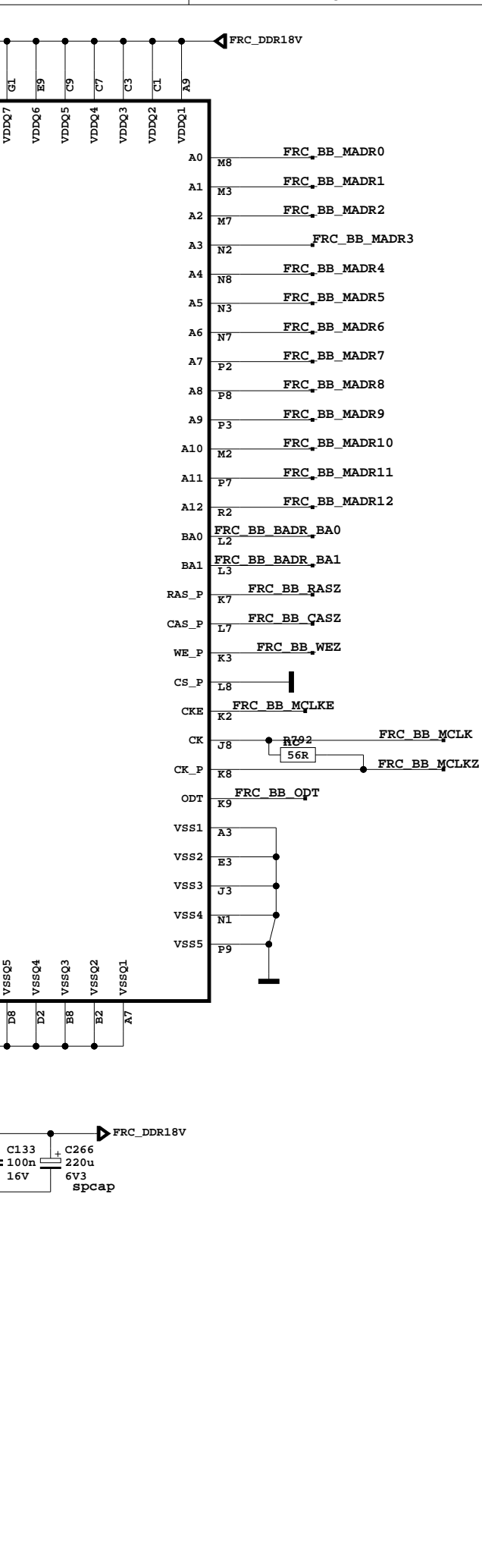
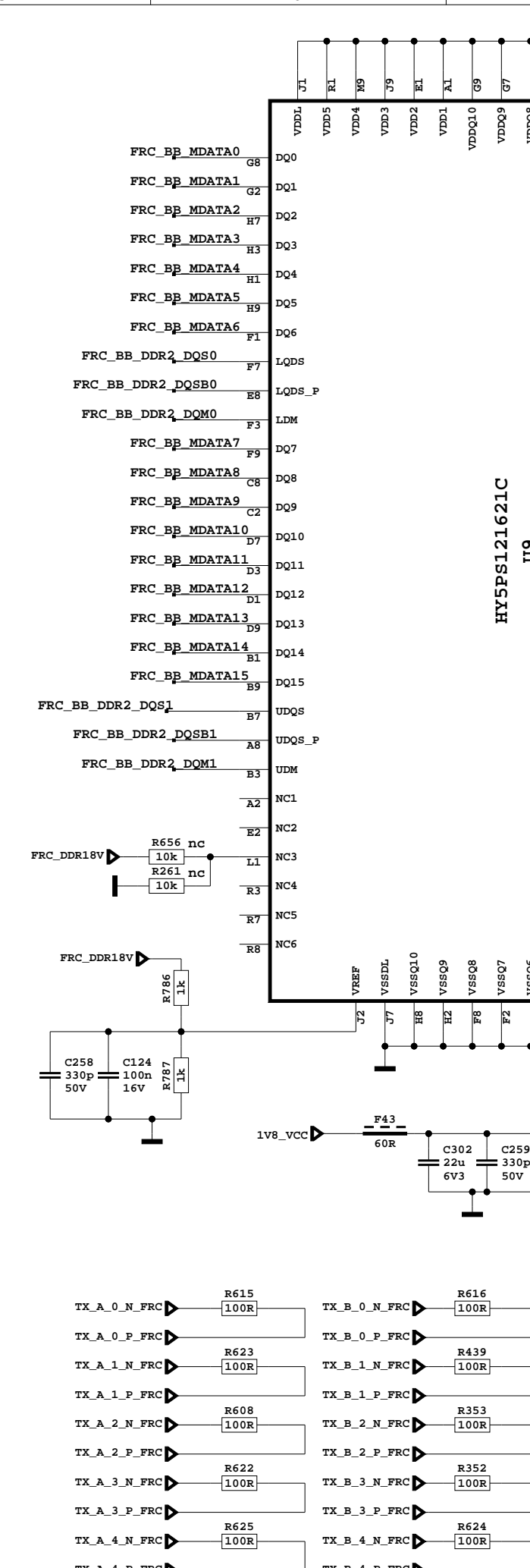
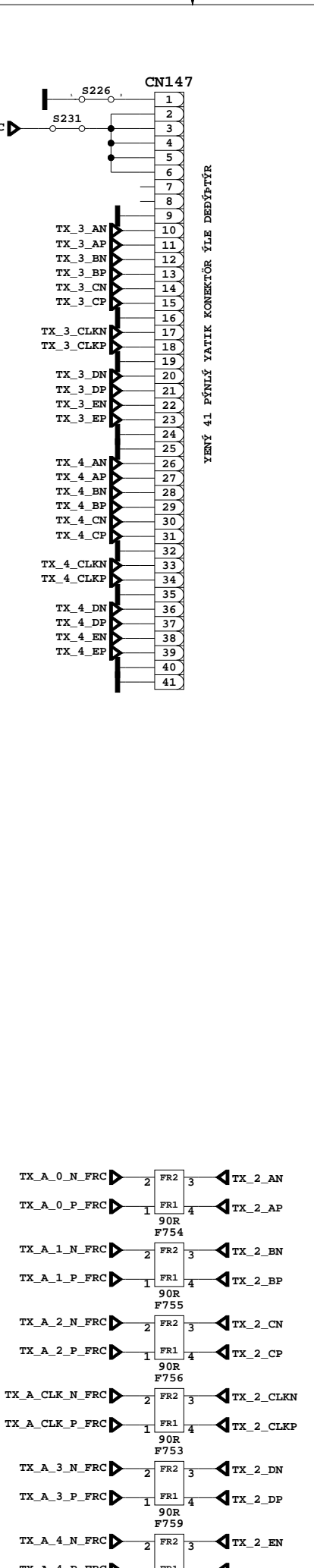
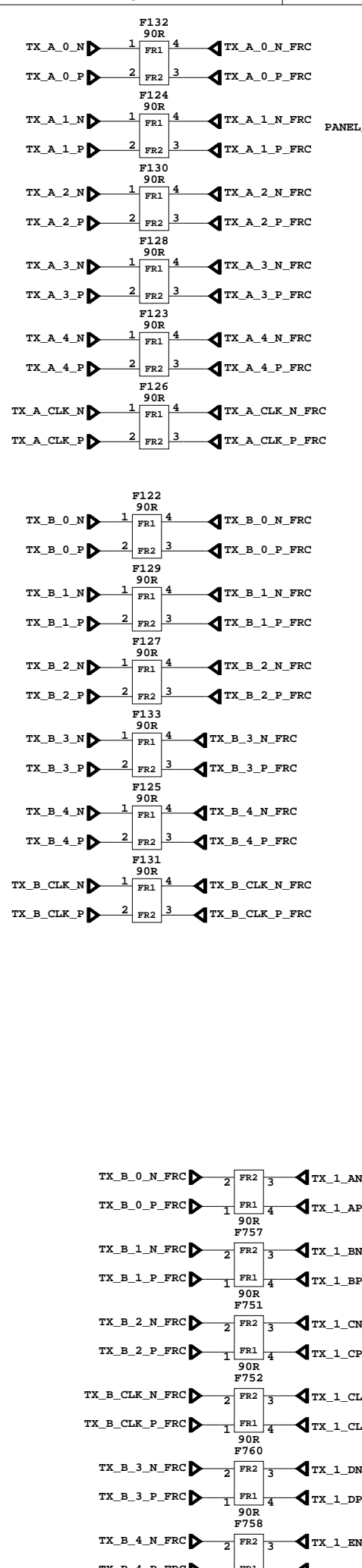
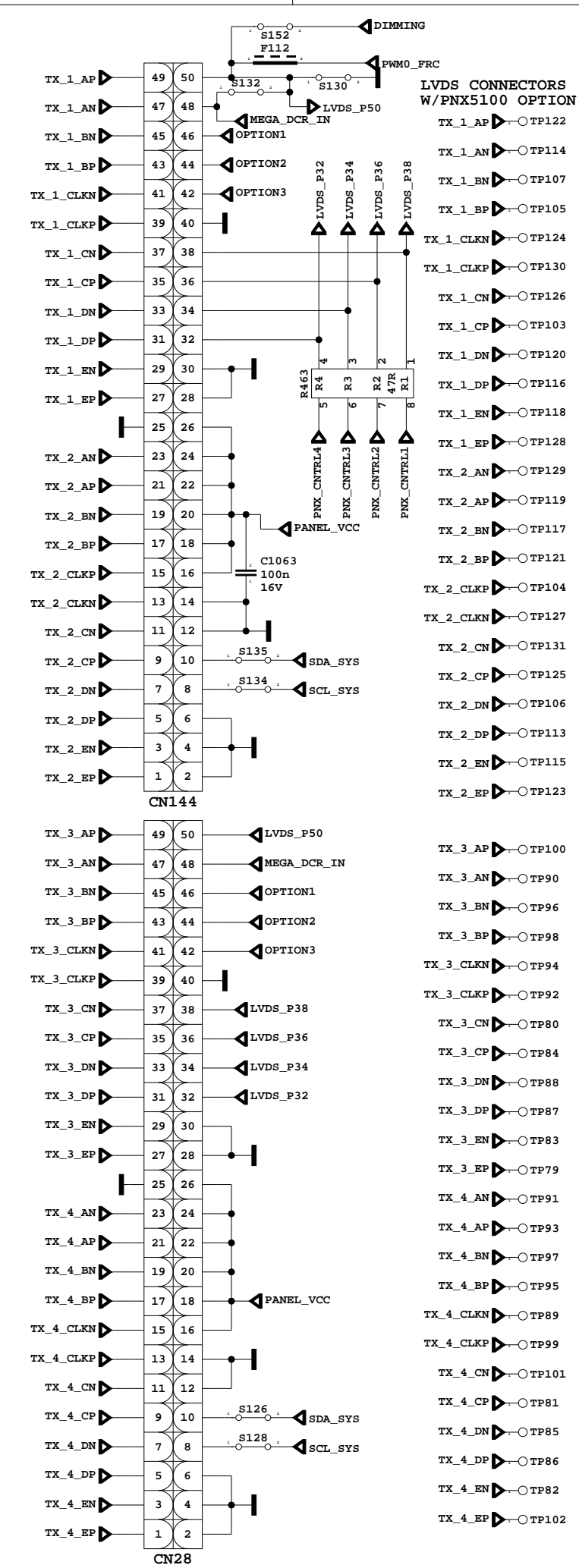


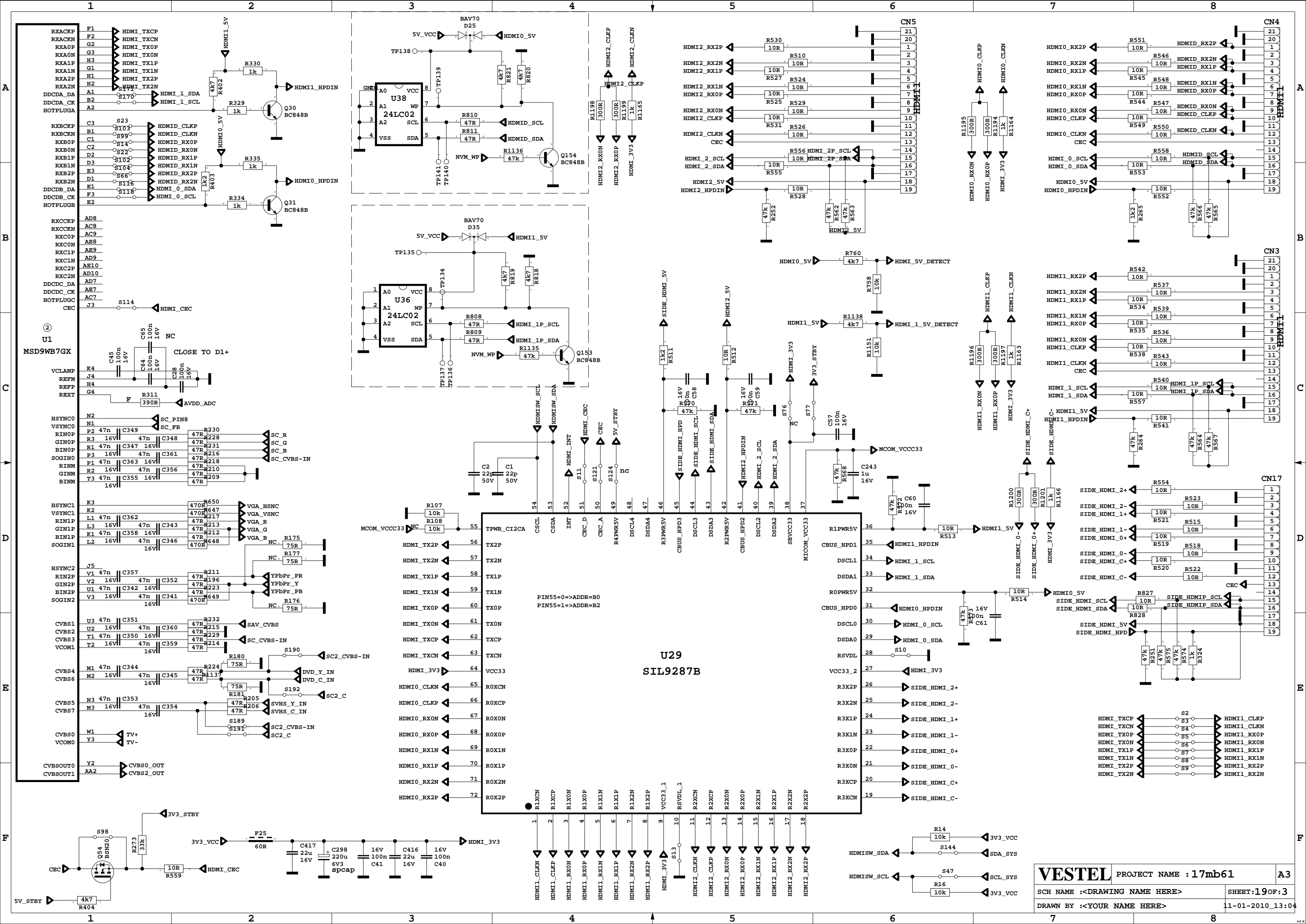
SHORT CCT PROTECTION

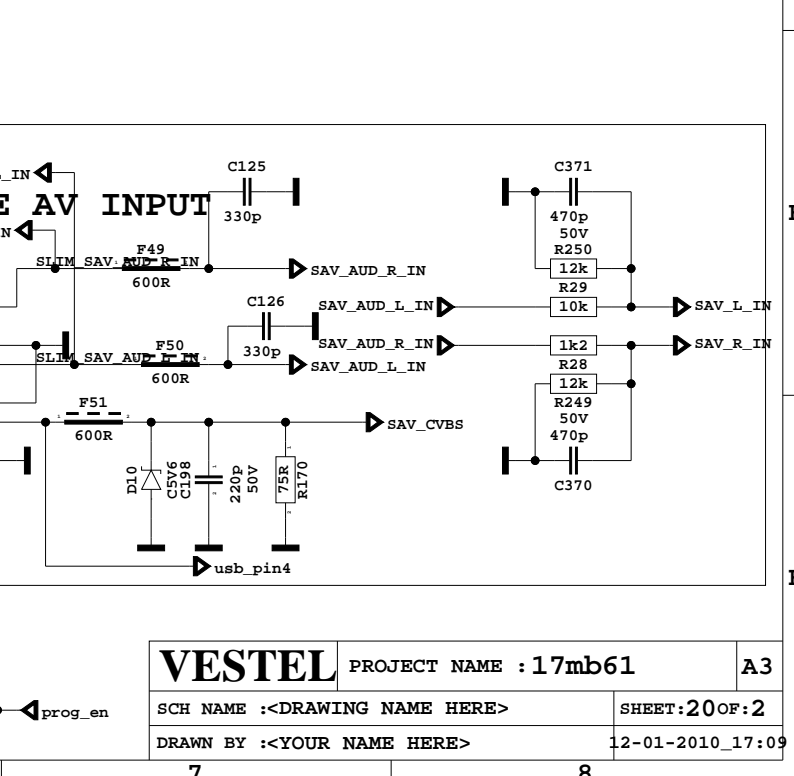
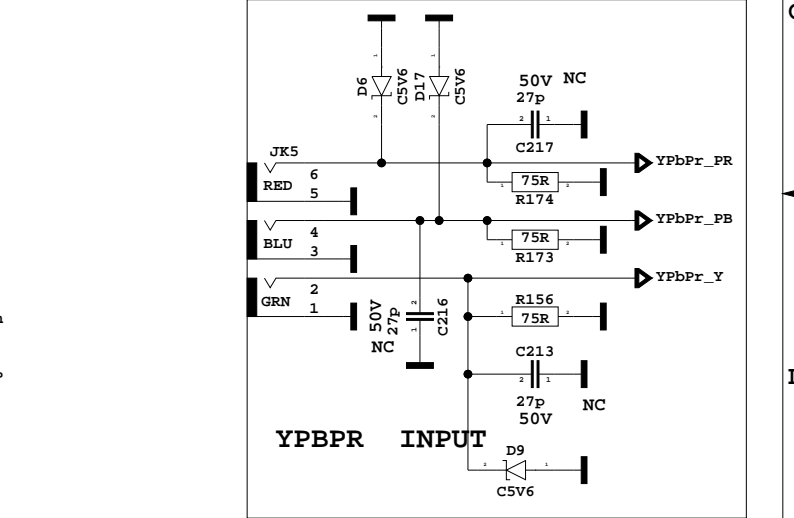
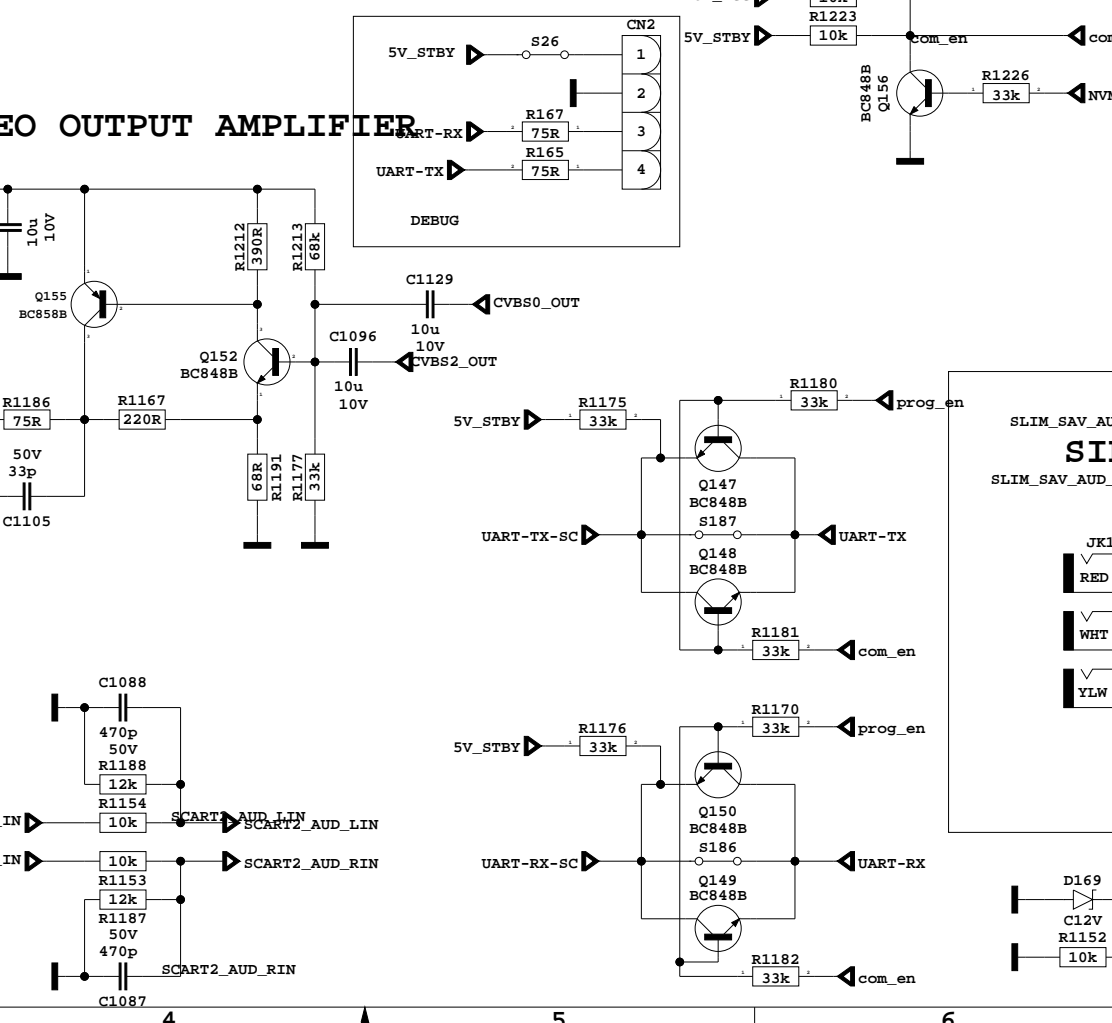
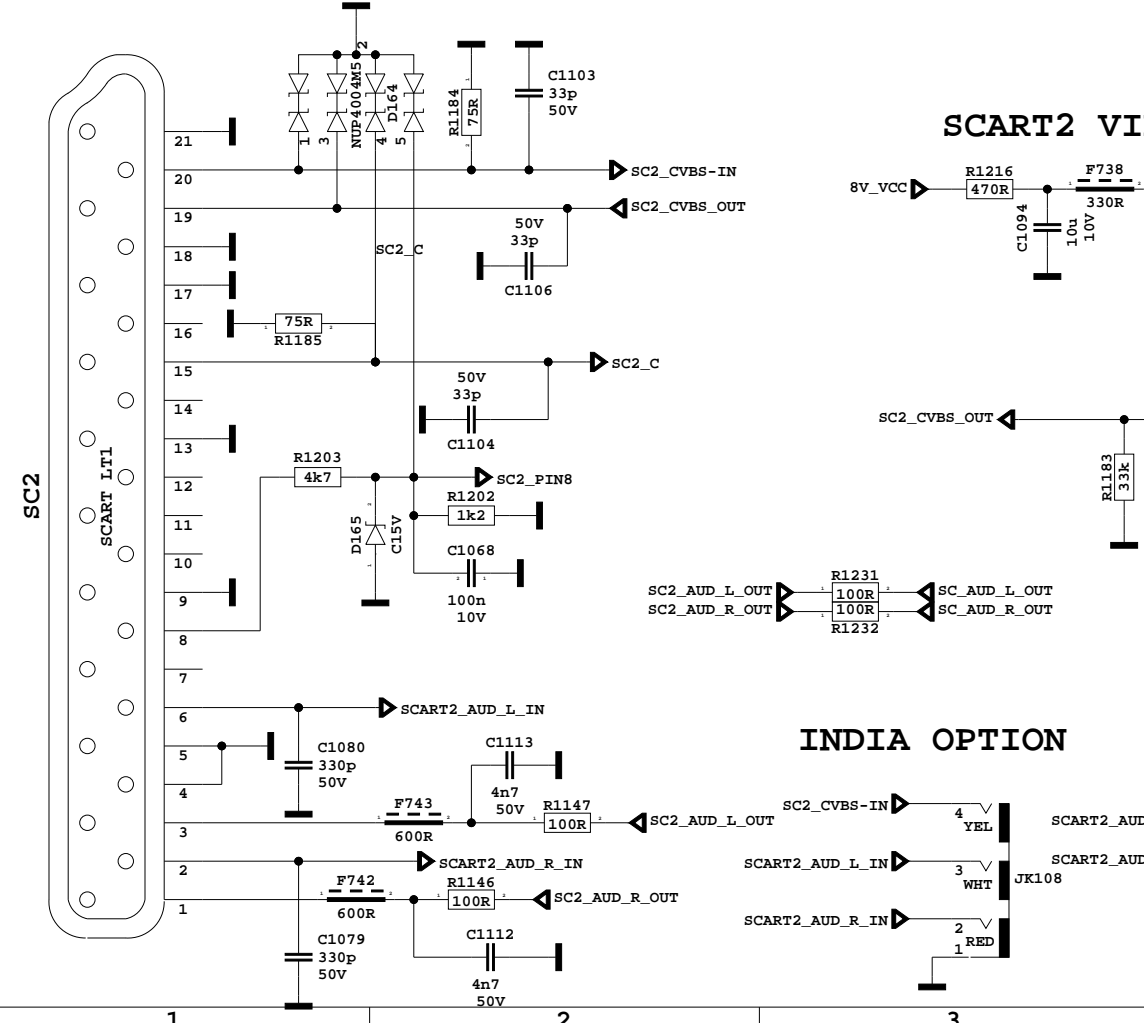
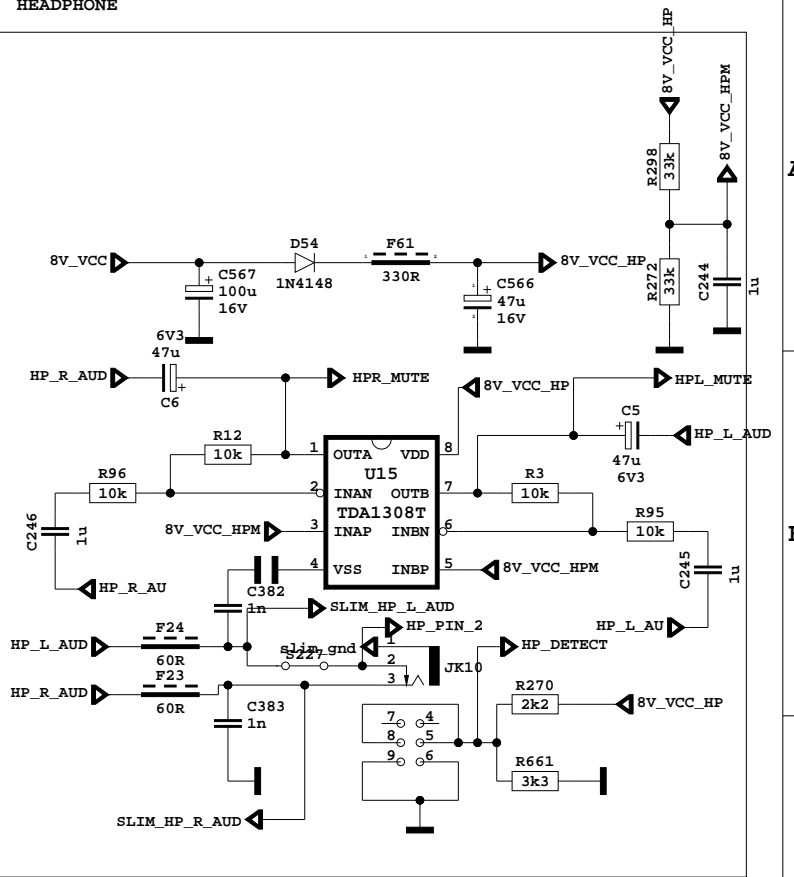
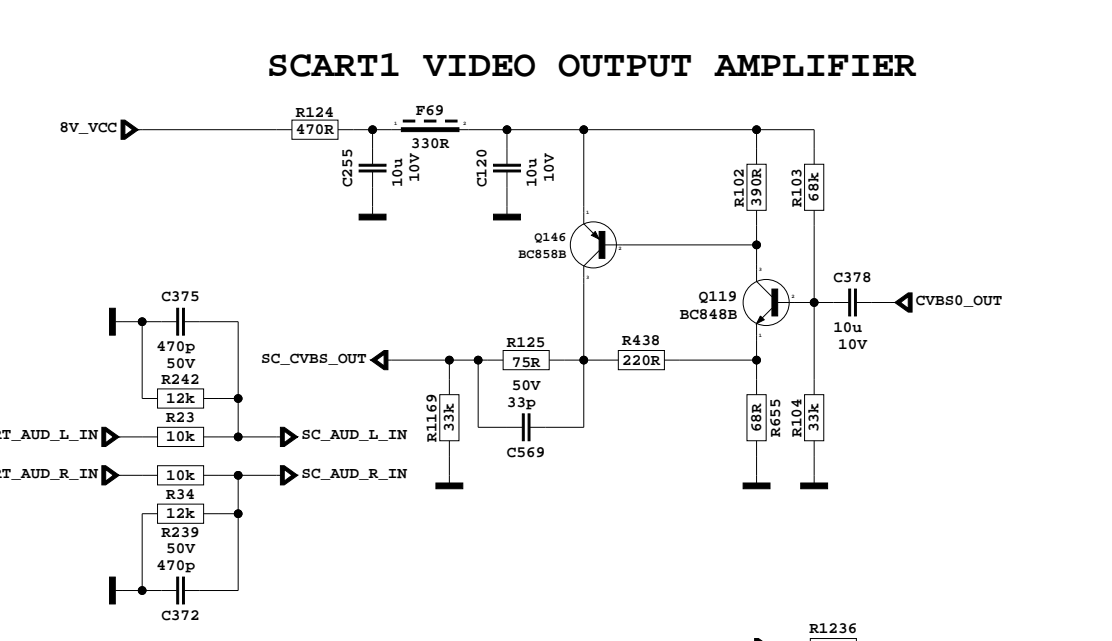
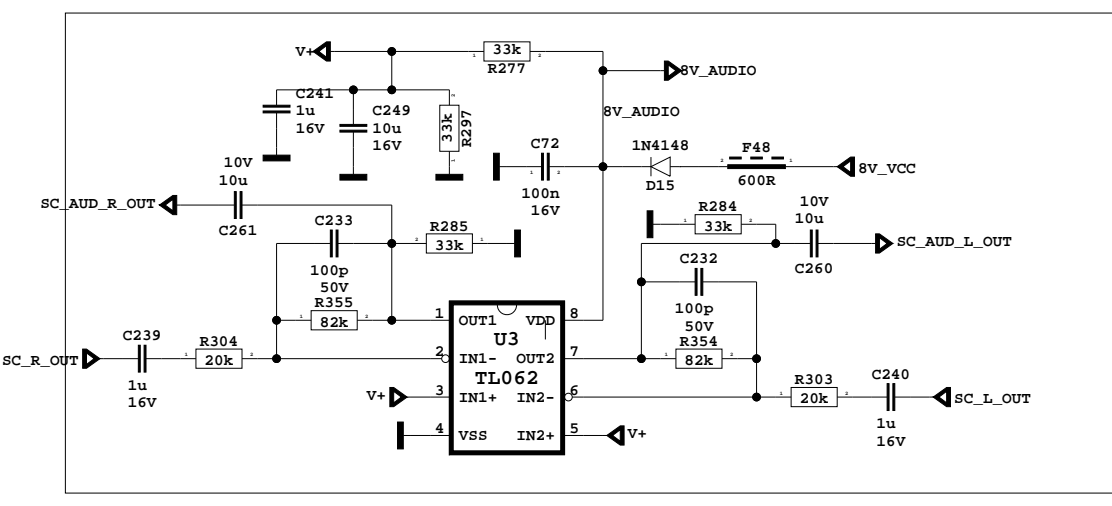
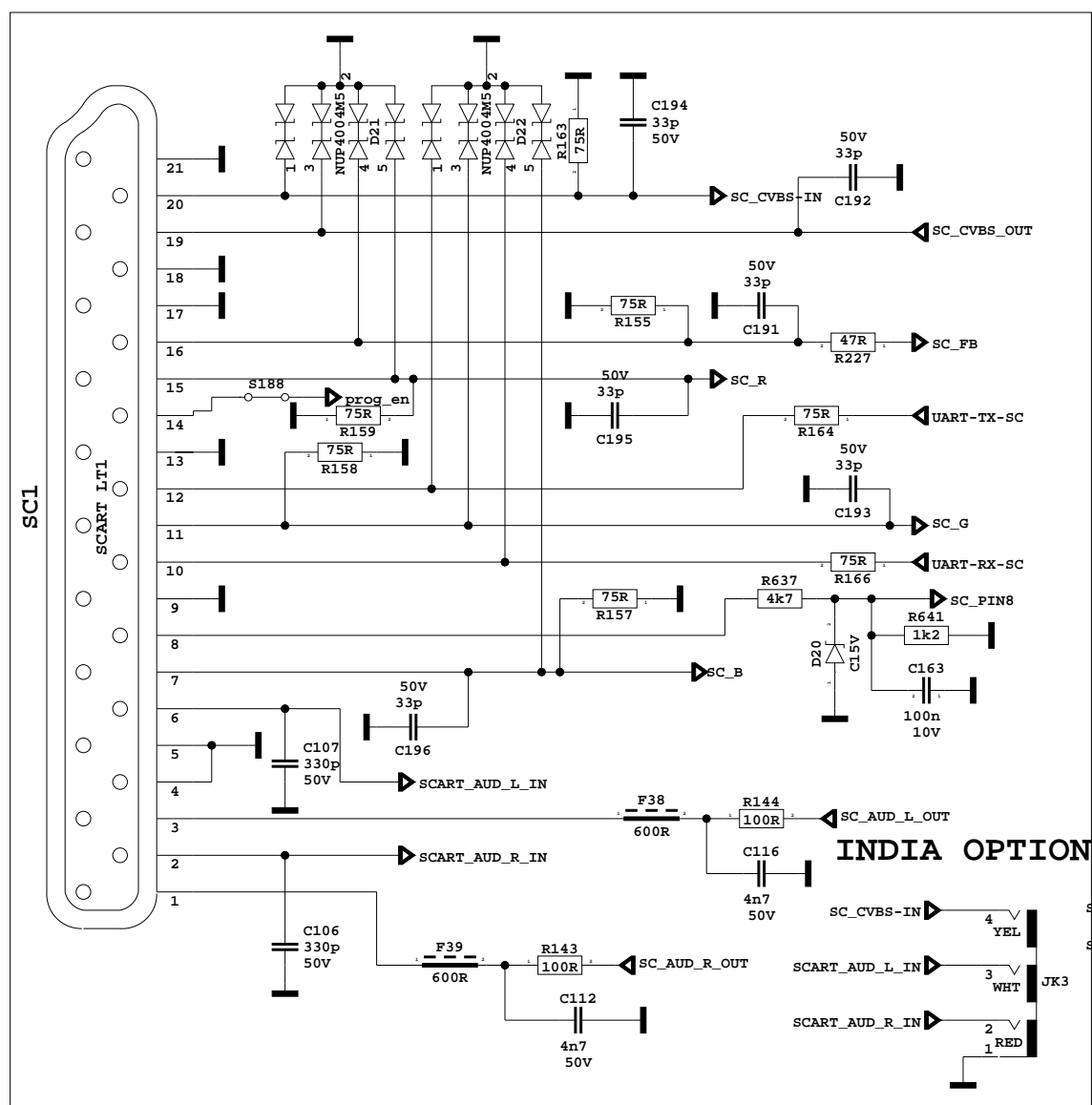


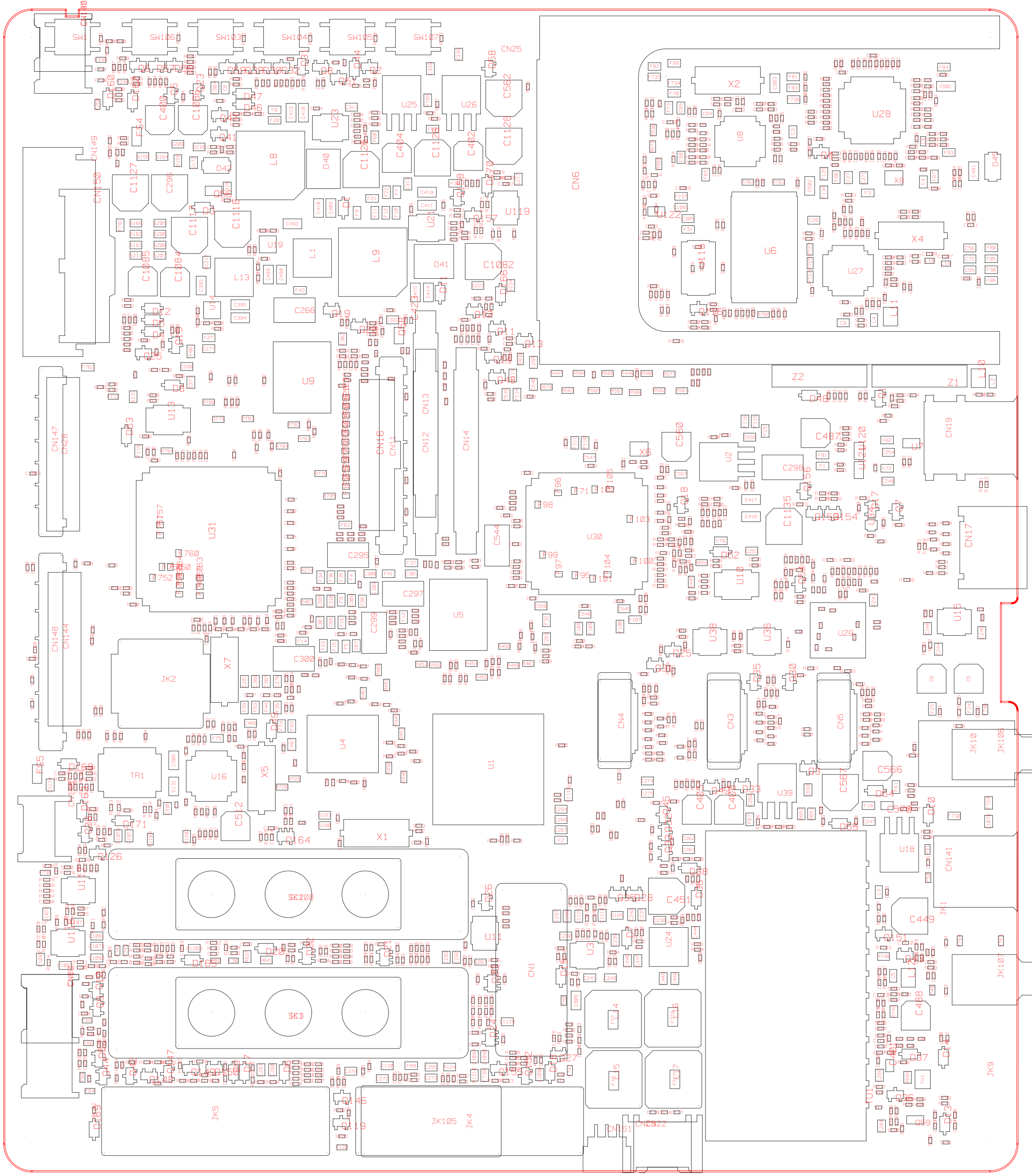












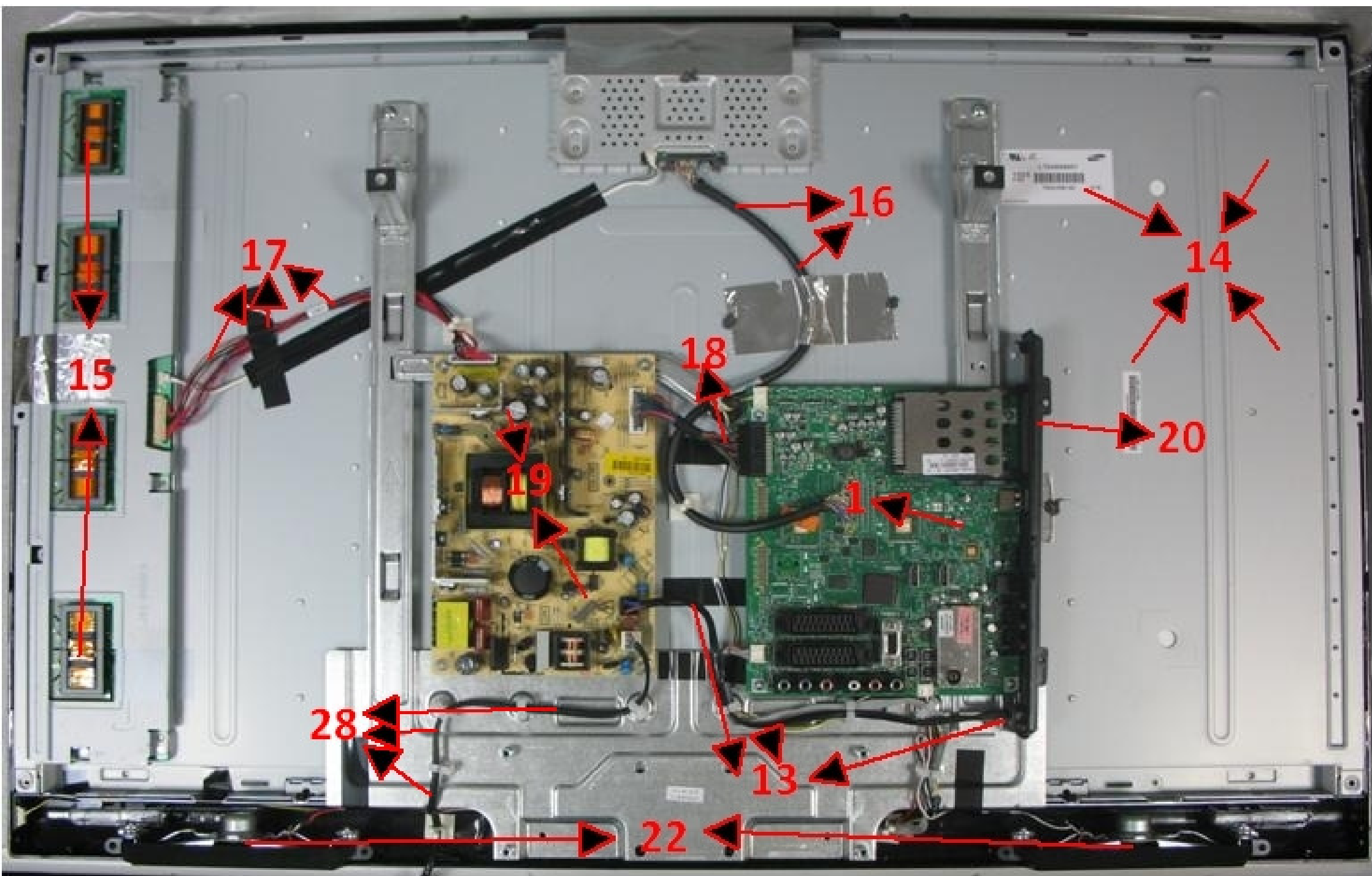
PART LIST

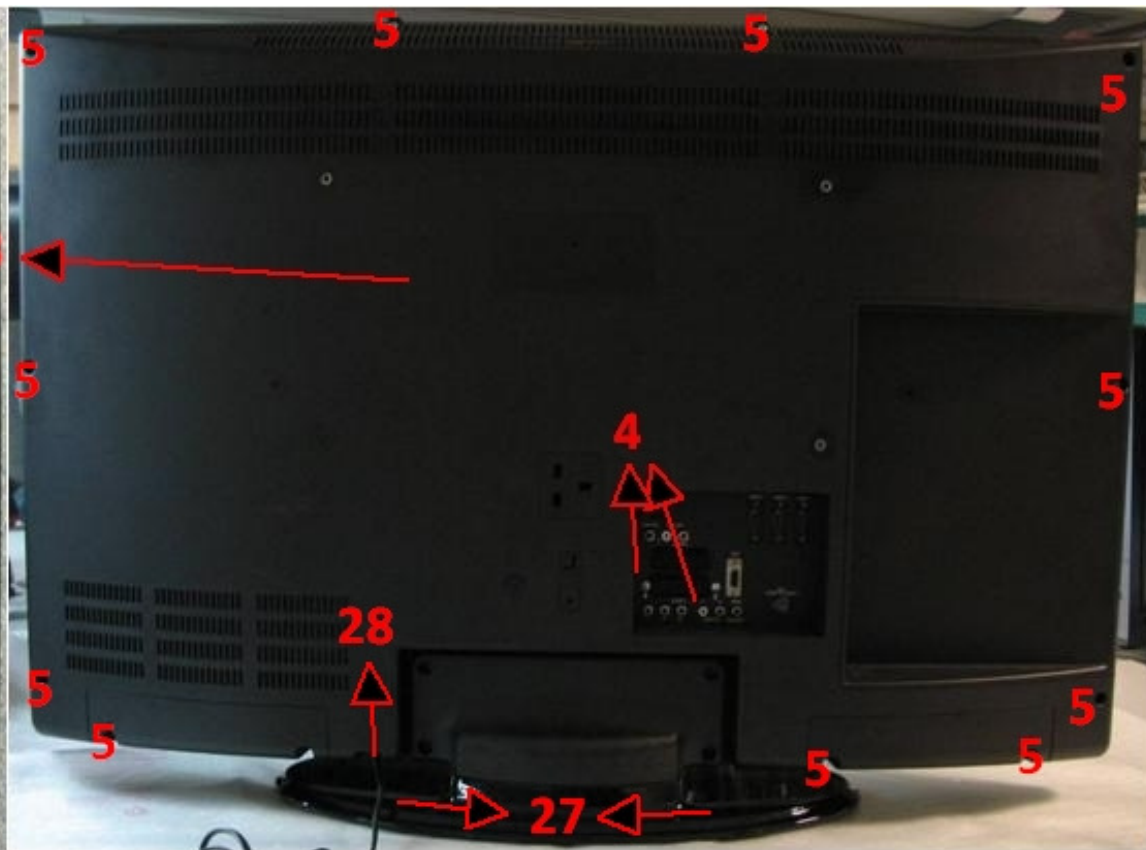
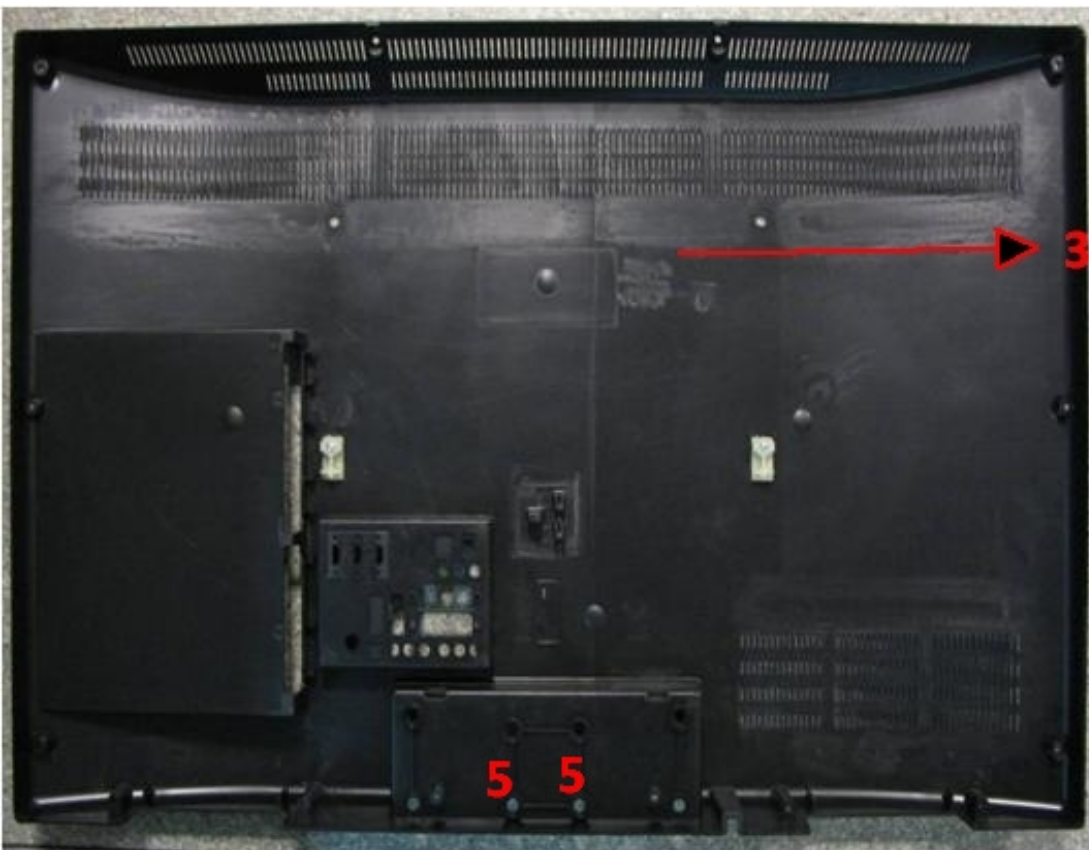
LC-40F22E

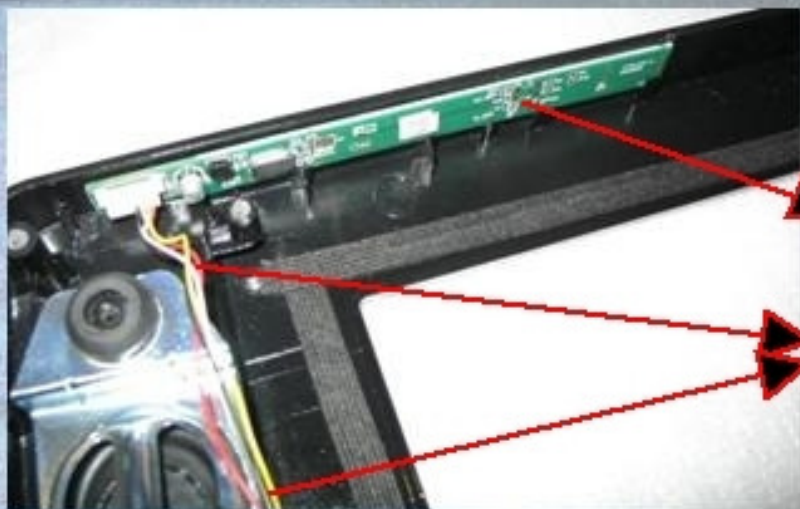
LC-32D12E

LC-40F22E PART LIST

No	Part Code	Description	Detail Description
1	20545496	CHS.ASSY.17MB61-B251211H1712121112141	
2	20499393	FRONT 40883 W/TB(B.C.BL/P-V(SHARP/S)(V0)	Front Plastic
3	20501345	BC.40882 SPK-BOT (I)V0_SHARP_M5	Back Cover
4	35024895	SCREW P C ZN RYSB 3*12 RoHS	screw
5	35021523	SCREW P C ZN YSMB 4*20	screw
6	35008875	SCREW P C ZN YFSB 4X16 R8,5	screw
7	40042936	LENS COSM.LCD40883(AKR)-SILV-SILK PRINT	
8	40043120	LED IR LENS TFT XX856 (%3 MILKY) VER2.	
9	20467110	MD.ASY.17TK129CY-2-26-42855/6/7	Button Card
10	30069264	CNAS 8P-6/1150 CY W/DC+FER UL1571#28RHS	Button Card Cable
11	20531239	MD.ASY.17LD98-7-37-42880 (MB25/35(SHARP	Led Board
12	30062667	CNAS 5P/550 FLT W/C UL2468AWG26 ROHS	Led Board Cable
13	20505572	ROC.SW.AS.26" (MB38_SHARP)	
14	30067954	TFT LCD 40"W SAM FHD LTA400HA07-D (SL)M	
15	30065751	40" SAM LTA400HA07-D MASTER INVERTER	
16	30066220	CNAS51P-50/45010BFHD40"UL20276#30LVDSROH	Cable
17	30069818	CNAS 12-14P/300 SISW/DCINV UL1007#24SHAR	Cable
18	30068853	CNAS 28P/100 SIS W/DC MB61 UL1061#24RoHS	Cable
19	20543070	MD.ASY.17PW26-4-37-42"170-270ROC18SHA	Power Board
20	40045295	BRACKET IO 17MB35 VER114 (I(V0_SHARP	
21	50168106	LABEL BR.MB61 VER.2	
22	20542632	SPK.AS.40" MB61_6P(R/L)JIE(35X135(BL(SH	Speaker Assy
23	50114050	PLASTIZOTE BAG(1300mm*1100mm)(D.PL)	
24	20458751	SNOW BOX ASSY (T/B) 40882	
25	20533760	ARTWORK SHARP LC-40F22E	
26	50177277	CARTON BOX SHARP LC-40F22E	
27	20529612	FOOT ASSY 40740(B.C.BL/P-V-BLACK(V0_SHAR	
28	20406681	POWER CORD AS.GR-(180-37(UK)	

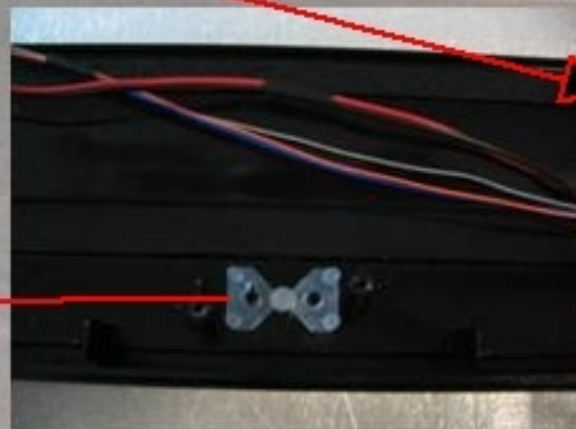






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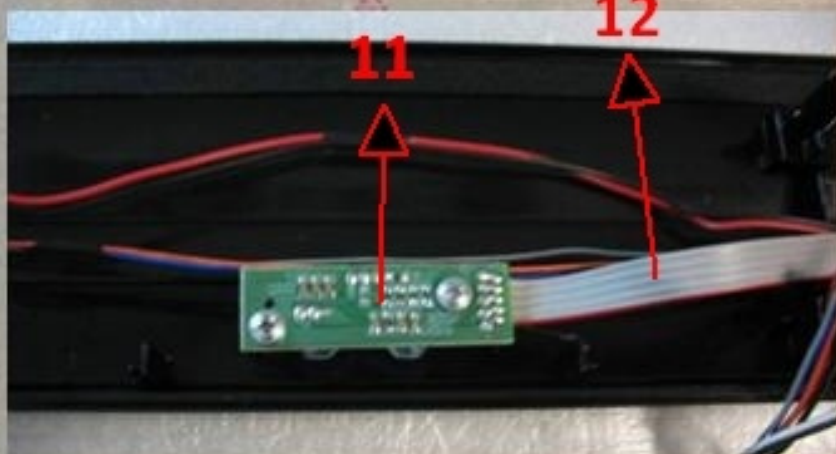
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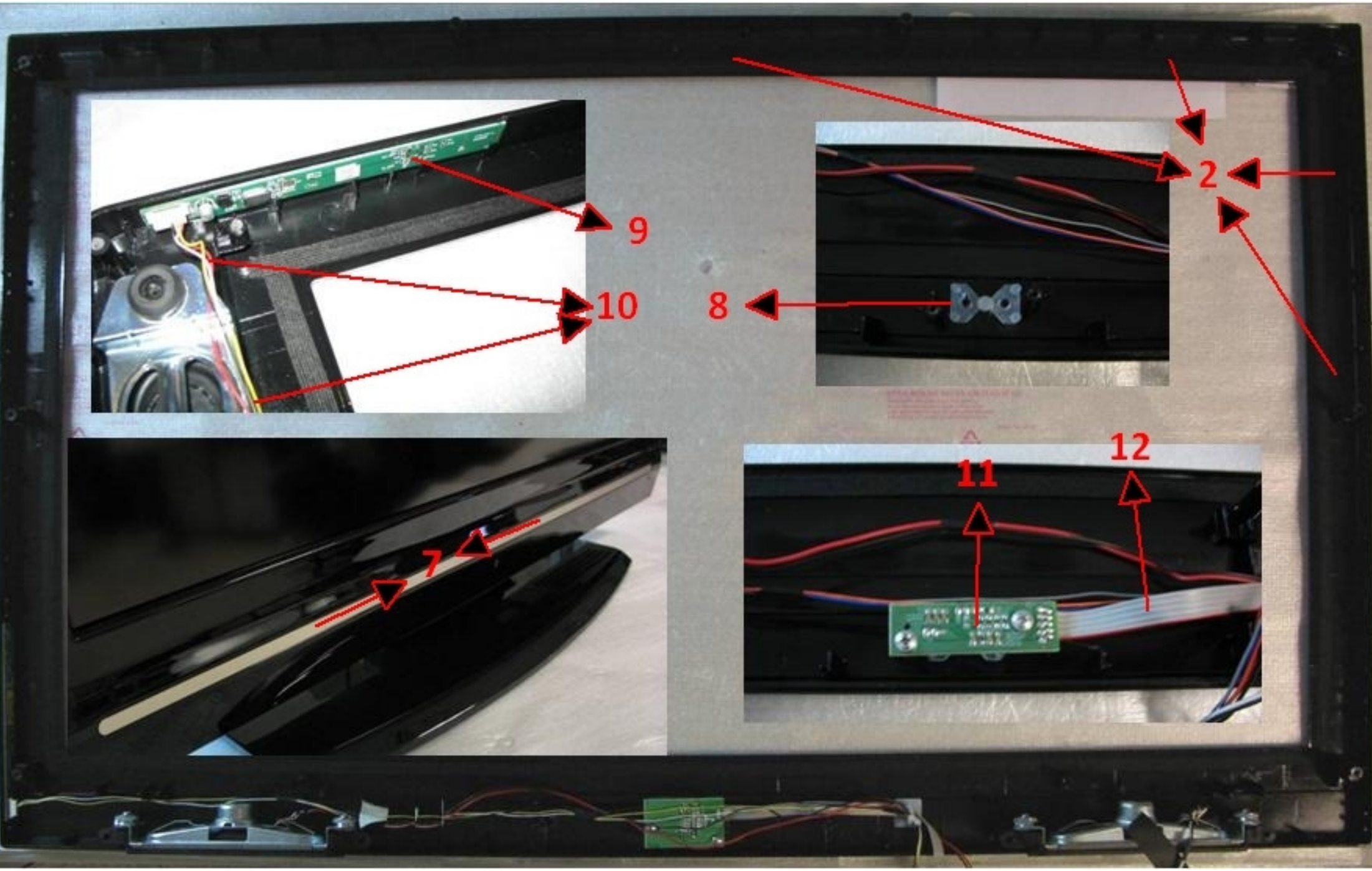
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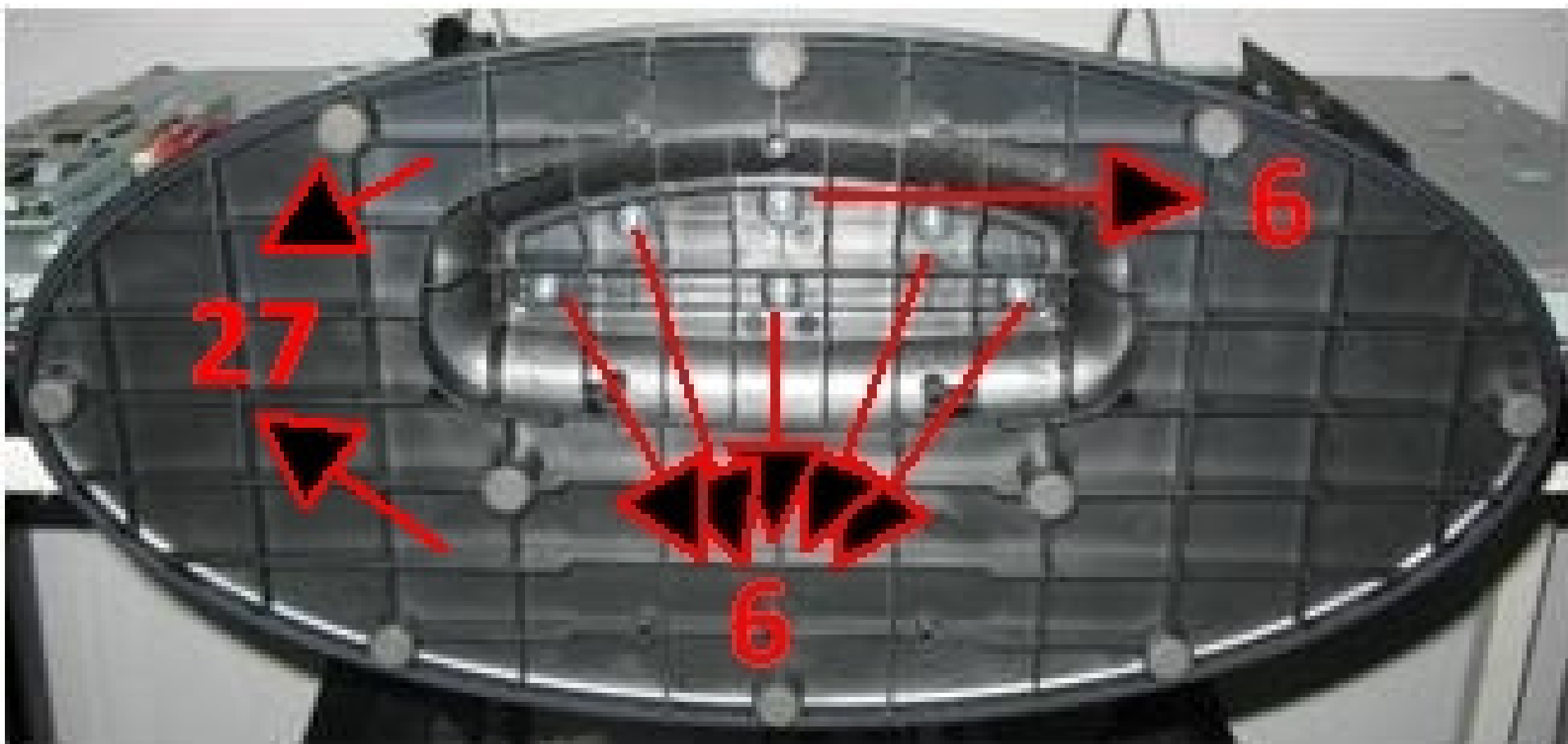
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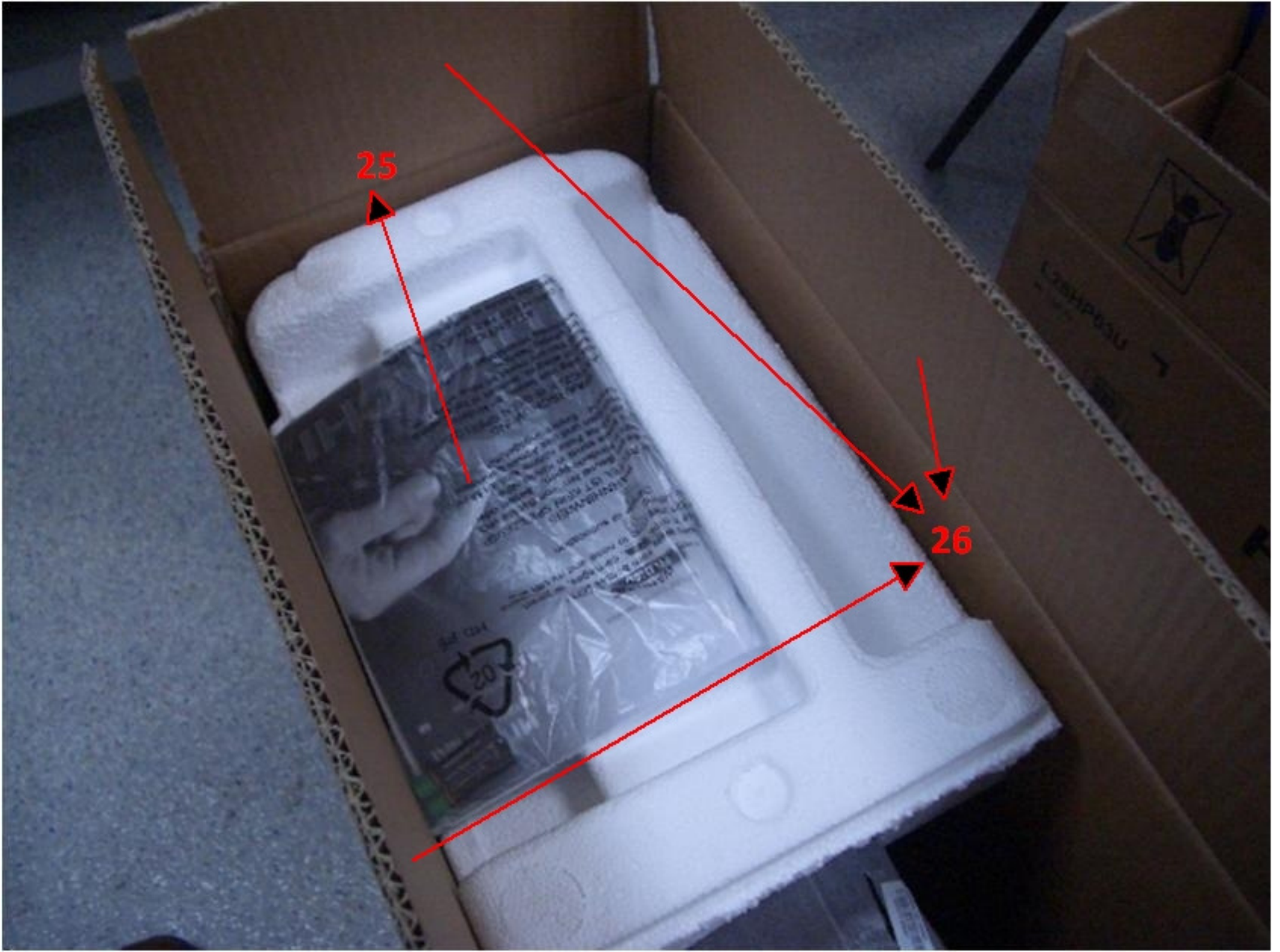


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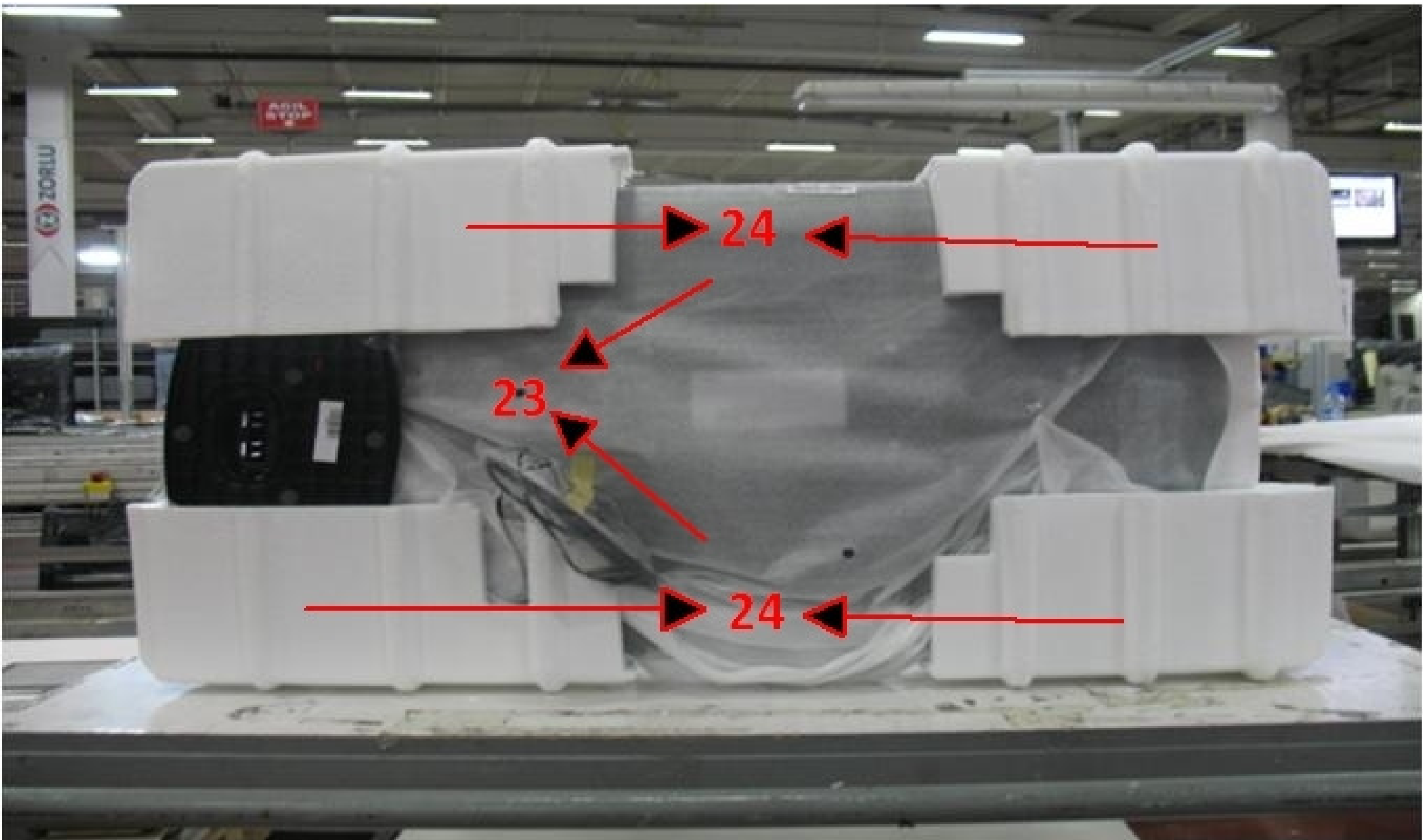
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NO	Part Code	Description	Position				
1	20545496	CHS.ASSY.17MB61-B251211H1712121112141					
	30000294	CAP SMD 100NF 50V K X7R (0805) ROHS	C447	C446	C448		
	30000473	RES SMD 1/8W 10K J 1206 RoHS	D36				
	30000475	RES SMD 1/10W 10K J 0805 ROHS	R851	R852	R1217	R1202	
	30000597	RES SMD 1/10W 22K J 0805 ROHS	R637				
	30000710	RES SMD 1/10W 47R J 0805 ROHS	F61				
	30000721	RES SMD 1/10W 4.7K J 0805 ROHS	R641				
	30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q1	Q10	Q11	Q116	Q119
			Q12	Q17	Q25	Q28	Q32
			Q33	Q35	Q39	Q41	Q7
			Q8	Q9	Q13	Q14	Q19
			Q20	Q148	Q150	Q152	Q156
			Q157	Q27	Q159	Q160	Q161
			Q163				
	30001458	TR BC858B SMD	Q146	Q42	Q44	Q45	Q49
			Q51	Q6	Q48	Q3	Q155
	30001734	RES SMD 1/10W OR 0805 ROHS	S180	S181	S217	C1129	C378
			S224	F768			
	30006462	RES SMD 1/10W 22R J 0805 ROHS	R749				
	30007169	DIODE DUALBAV99 0.215A/70V 4.5ASOT23ROHS	D33				
	30007800	TR NBJT BF799 0.35A/30V RF SOT23 RoHS	Q43				
	30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C247	C269			
	30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C237	C238	C239	C240	C241
			C242	C268	C401		
	30010560	CAP SMD 220NF 25V K X7R (0805) ROHS	C313				
	30012411	DIODE SMD BA782 0.1A 35V SOD123 ROHS	D48				
	30016659	COIL SMD 1uH 50mA K 0R4 805 Ro	L5				
	30018060	TR PMOS FDC642P -4A/-20V SSOT6 ROHS	Q58				
	30018574	DIODE SCH SS33 3A/30V DO214AB ROHS	D41				
	30019087	FERRIT SMD 60R/100MHz 0.025 M 3A 0805Roh	F13	F14	F15	F18	F2
			F3	F31	F32	F33	F35
			F36	F37	F4	F5	R124
			F765	R1216			
	30019996	DIODE BAV70 215mA/75V 4A SOT23 RoHS	D26				
	30020394	FERRIT SMD 330/100MHz 0.1R M 1.5A 805Ro	F58	F60	F62	F67	F69
			F72	F80	F85	F86	F87
			F88	F90	F91	F737	F738
	30020530	FERRIT SMD 600R/100MHz 0.5R M 0.2A 603Ro	F248	F38	F39	F48	F49
			F50	F55	F741	F742	F743
	30021958	RES SMD 1/16W 47K J 0402 RoHS	R560	R561	R829	R834	R835
			R836	R837	R838	R630	
	30021960	RES SMD 1/16W 47R J 0402 ROHS	R184	R185	R186	R189	R190
			R191	R194	R195	R196	R199
			R200	R201	R207	R208	R209
			R210	R211	R212	R213	R214
			R215	R217	R218	R220	R222
			R223	R224	R227	R228	R229
			R230	R231	R232	R233	R236
			R237	R238	R308	R689	R690
			R759	R793	R188	R1137	
	30021984	RES SMD 1/16W 1.6K J (0402) RoHS	R667				
	30021986	RES SMD 1/16W 4.7K F 0402 ROHS	R1140	R1220			
	30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R2	R240	R241	R254	R310
			R363	R364	R369	R370	R371
			R380	R381	R382	R386	R388
			R391	R392	R393	R394	R395
			R397	R400	R405	R406	R6
			R60	R705	R708	R709	R711

		R760	R815	R97	R98	R367
		R389	R409	R1138	R1218	R1221
		R1228	R1229	R1245	R1139	R373
		R387	R1175	R1246	R1247	R1248
		R1249	R1250	R1251	R1252	R1254
		R1255	R1256	R1257	R1259	R1261
30021989	RES SMD 1/16W 100K J 0402 ROHS	R275	R286	R287	R831	R832
		R1225				
30021991	RES SMD 1/16W 100R J 0402 ROHS	R122	R136	R137	R138	R139
		R140	R141	R143	R144	R417
		R437	R840	R841	R842	R843
		R844	R30	R33	R655	R1143
		R1144	R1146	R1147	R1191	R1231
		R1232	R1233	R142	R120	
30021994	RES SMD 1/16W 10K F 0402 ROHS	R669	R670	R673		
30021996	RES SMD 1/16W 10K J 0402 ROHS	R10	R106	R110	R145	R147
		R148	R20	R203	R21	R22
		R226	R23	R279	R280	R281
		R29	R34	R349	R35	R376
		R46	R55	R56	R57	R58
		R66	R660	R67	R68	R69
		R70	R71	R72	R74	R76
		R77	R770	R773	R78	R82
		R84	R85	R86	R93	R94
		R100	R101	R105	R99	R119
		R62	R28	R1152	R1153	R1154
		R1159	R1235	R113	R116	R117
		R26	R27	R8	R1176	R1222
30022003	RES SMD 1/16W 470R J 0402 ROHS	R647	R648	R649	R650	R216
30022024	RES SMD 1/16W 12K J 0402 ROHS	R239	R242	R249	R250	R436
		R247	R248	R1187	R1188	
30022041	RES SMD 1/16W 1K F 0402 ROHS	R499	R500	R501	R502	R503
		R504	R603			
30022042	RES SMD 1/16W 1K J 0402 RoHS	R316	R319	R323	R325	R332
		R336	R699	R343	R379	R701
		R1223	R411	R412	R1253	
30022043	RES SMD 1/16W 1M J 0402 ROHS	R592				
30022046	RES SMD 1/16W 2.2K J 0402 RoHS	R691	R693	R850	R268	R269
30022051	RES SMD 1/16W 2.7K J 0402 ROHS	R746				
30022054	RES SMD 1/16W 20K J 0402 ROHS	R303	R304			
30022055	RES SMD 1/16W 220K J 0402 ROHS	R739	R740	R278	R751	R752
30022056	RES SMD 1/16W 220R J 0402 RoHS	R434	R440	R441	R442	R444
		R435	R341	S148		
30022057	RES SMD 1/16W 22K J 0402 RoHS	R593	R594	R595	R596	R597
		R599	R600	R735	R830	R1193
30022058	RES SMD 1/16W 22R J 0402 ROHS	R736	R737			
30022063	RES SMD 1/16W 560R J 0402 ROHS	R675	R677			
30022065	RES SMD 1/16W 56R J 0402 ROHS	R462	R464	R465	R466	R467
		R468	R469	R470	R471	R472
		R473	R474	R475	R476	R477
		R478	R479	R480	R481	R482
		R483	R485	R486	R487	R488
		R489	R490	R491	R492	R493
		R494	R495	R496	R497	R721
		R777				
30022068	RES SMD 1/16W 6.8K F 0402 ROHS	R853	R854			
30022068	RES SMD 1/16W 6.8K F 0402 ROHS	R745				
30022069	RES SMD 1/16W 6.8K J 0402 RoHS	R1151	R758			
30022073	RES SMD 1/16W 2K J 0402 ROHS	R742	R743	R698		

30022074	RES SMD 1/16W 3.3K J 0402 RoHS	R654					
30022078	RES SMD 1/16W 3.9K J 0402 RoHS	R507	R508	R509			
30022080	RES SMD 1/16W 300R J 0402 RoHS	R657	R658	R438	R1167		
30022084	RES SMD 1/16W 33K J 0402 RoHS	R277	R284	R285	R297	R695	
		R696	R846	R1169	R1181	R1182	
		R1183	R1226				
30022085	RES SMD 1/16W 33R J 0402 RoHS	R418	R419	R422	R423	R424	
		R715	R717	R719	R720	R826	
		R421	R420	R825			
30022088	RES SMD 1/16W 680R F 0402 ROHS	R747					
30022113	RES SMD 1/16W 68R J 0402 RoHS	R1186	R125				
30022118	RES SMD 1/16W 75R J 0402 RoHS	R155	R157	R158	R159	R163	
		R164	R165	R166	R167	R170	
		R1184	R1185	R156	R173	R174	
		R339	R761	R762			
30022121	RES SMD 1/16W 820R J 0402 ROHS	R833					
30022122	RES SMD 1/16W 82K J 0402 ROHS	R354	R355				
30022132	RES SMD 1/16W 0R 0402 ROHS	R149	R150	R151	R152	S100	
		S101	S113	S117	S147	S153	
		S30	S39	S52	S57	S61	
		S62	S63	S64	S75	S111	
		S68	R135	S138	R337	R15	
		R235	S185	S218	S225	S234	
		S51	R372	S186	S187	S242	
		S243	S244	S245	S246	S247	
		S248	S249	S250	S251	S252	
		S253	S254	S255	S256	S257	
30022142	RES SMD 1/16W 2.7K F 0402 RoHS	R1219					
30022196	CAP SMD 470PF 50V J X7R (0402) ROHS	C364	C370	C371	C372	C375	
		C1087	C1088	C365			
30022200	CAP SMD 1NF 50V J X7R (0402) ROHS	C486	C389	C346	C341	C361	
30022235	CAP SMD 18PF 50V J COG (402) ROHS	C325	C326				
30022236	CAP SMD 22PF 50V J COG (0402) ROHS	C1075	C10	C11			
30022237	CAP SMD 27PF 50V J COG (0402) ROHS	C208	C1132	C205	C206	C210	
		C213	C216	C217			
30022238	CAP SMD 33PF 50V J COG (0402) ROHS	C191	C193	C194	C195	C196	
		C1103	C1104	C457	C458		
30022240	CAP SMD 47PF 50V J COG (0402) ROHS	C1110					
30022241	CAP SMD 56PF 50V J COG (0402) ROHS	C232	C233				
30022244	CAP SMD 100PF 50V J COG (0402) ROHS	C460	C461	C462	C463	C464	
		C569	C1105				
30022248	CAP SMD 220PF 50V J COG (0402) RoHS	C198	C197	C201	C202		
30022250	CAP SMD 330PF 50V K X7R (0402) RoHS	C101	C102	C103	C104	C105	
		C106	C107	C108	C109	C110	
		C111	C125	C126	C127	C129	
		C90	C91	C92	C93	C94	
		C95	C96	C97	C98	C1079	
		C1080	C121	C122			
30022338	CAP SMD 4.7NF 50V J X7R (0402) RoHS	C112	C116	C1112	C1113		
30022339	CAP SMD 5.6NF 50V J X7R (0402) ROHS	C443					
30022342	CAP SMD 10NF 16V J X7R (0402) ROHS	C328	C329	C330	C331	C332	
		C335	C336	C473	C474	C475	
		C479	C482	C483			
30022347	CAP SMD 22NF 16V J X7R (0402) ROHS	C499	C500				
30022351	CAP SMD 47NF 16V J X5R (0402) ROHS	C342	C343	C344	C345	C347	
		C348	C349	C350	C351	C352	
		C353	C354	C355	C356	C357	
		C358	C362	C363			
30024769	CAP ELCH 47UF 16V M 52mA 5x5.4 ROHS	C487	C488	C1084	C1085	C1086	

30032028	IC MUX/DEMUX 74HCT4053 SO16 RoHS	U115				
30036983	IC EEPROM 24LC02 2Kbx8 SO8 RoHS	U11				
30038476	DIODE SMD ZEN C12V SOD123 ROHS	D169				
30038480	DIODE SMD ZEN C5.6V SOD123 ROHS	D10	D11	D12	D162	D20
		D5	D165	D171		
30038497	DIODE SMD ZEN C3.9V SOD123 ROHS	D1				
30038507	DIODE SMD 1N4148 0.15A/100V SOD123 RoHS	D15	D37			
30038984	RES NET 1/32W 100R J 8P 0402 ROHS	R724	R725	R267		
30042066	DIODE SMDSCH1N5819 1A/40V/25A SOD123ROHS	D52				
30042505	RES NET 1/32W 33R J 8P 0402 ROHS	R577	R583	R584	R585	R586
		R587	R588	R589	R763	R764
		R765	R581	R582		
30043940	RES NET 1/32W OR J 8P 0402 ROHS	R447	R448	R578		
30044848	CAP SMD 100NF 16V K X7R (0402) ROHS	C14	C15	C16	C17	C18
		C19	C20	C21	C22	C23
		C24	C25	C28	C30	C34
		C35	C37	C38	C39	C45
		C47	C48	C49	C50	C51
		C52	C54	C64	C66	C67
		C69	C70	C71	C72	C73
		C74	C78	C320	C128	C135
		C148	C163	C167	C170	C178
		C179	C291	C292	C312	C327
		C337	C381	C388	C392	C425
		C429	C430	C433	C434	C440
		C630	C399	C403	C431	C432
		C142	C423	C1067	C1068	C1069
		C1120	C162	C32	C33	C1144
		C1145	C1146	C1147	C1148	C1149
		C1150	C1152			
30045875	RES NET 1/16W 56R J 8P 0402 ROHS	R445	R446	R449	R450	R451
		R452	R453	R454	R455	R456
		R457	R458	R459	R460	R461
30046152	CAP SMD 1UF 50V Z Y5V (0805) ROHS	C1153				
30047294	CAP SMD 4.7UF 10V K X5R (0805) ROHS	C267				
30047296	CAP SMD 22UF 6.3V M X5R (0805) ROHS	C301	C305	C307	C308	C309
		C310	C1119	C248	C254	
30048473	DIODE DUALSMD BAW56 4A/75V/4A SOT23ROHS	D30	D31	D32	D56	D57
		D58	D59			
30049062	RES SMD 1/16W 100K F 0402 RoHS	R848				
30049079	RES SMD 1/16W 3.6K J 0402 ROHS	R61				
30049203	CAP SMD 1PF 50V ±0.25pF (0402) ROHS	C571	C572			
30049522	RES NET 1/16W 10K J 8P 0402 ROHS	R659				
30050025	CAP ELCH 220UF 6.3V M 86mA 6.3x5.4 ROHS	C296	C1125	C1126	C1127	C1128
		C1135				
30050543	RES SMD 1/8W 36K F 0805 RoHS	R1203				
30051609	RES SMD 1/16W 390R F (0402) RoHS	R311				
30051609	RES SMD 1/16W 390R F (0402) RoHS	R102	R1212			
30051792	CAP SMD 470NF 16V M Y5V (0402) ROHS	C1063				
30051799	RES SMD 1/16W 3.3R F (0402)ROHS	R516	R517	R532	R533	
30053657	DIODE ARRAY ESD NUP4004M5 TSOP-5 RoHS	D21	D22	D164	D23	
30053941	IC 74LCX244 (TSSOP-20) ROHS	U129				
30054012	IC 74LCX245 (TSSOP-20) ROHS	U124	U125	U128		
30057263	XTAL 24MHz 22pF 30ppm 25OhmHC49S SMDROHS	X4				
30057644	IC DOPAMP TL062 SO8 RoHS	U3				
30059259	CAP SMD 2.2UF 25V K X7R (0805) ROHS	C26	C55	C56	C75	C86
		C87	C88	C9	C1081	C27
30060344	IC LDO LM1117 ADJ/1A DPAK ROHS	U18	U25	U26	U39	
30060852	IC ANALOG 2:1SWITCH FSA3157 SC70 ROHS	U34				

30060985	IC STEP DOWN MP2112 1A QFN6 RoHS	U19				
30061048	COIL SMD 15uH 4.5A M 27R 12x12(SHL)Ro	L9				
30061154	CAP SMD 82PF 50V J COG (0402) MXM ROHS	C1109				
30061408	COIL SMD 4.7uH 3A M 54R 7x7(SHL)Ro	L1				
30062359	CAP SMD 47NF 16V K X7R (0402) ROHS	C359	C360			
30062607	CAP POS 220UF 4V M ESR=15mR 2.7A ROHS	C295	C297	C299	C300	
30062776	DIODE ESD AZ1045-04S SOT23-6 ROHS	U7				
30063139	RES SMD 1/16W 715R F 0402 ROHS	R679				
30063686	CAP ELCH 100UF 16V M 105C 6.3x5.4 ROHS	C451	C449	C562	C567	C1082
30064117	CAP SMD 10UF 16V K X5R (0805) RoHS	C249	C253	C262	C263	C338
		C339	C568			
30064325	XTAL 12MHZ 16pF ±30ppm HC49/SMD ROHS	X1				
30065826	RES SMD 1/16W 62R F 0402 ROHS	R234				
30066412	IC AAMP MAX9736A 2x15W BTL TQFN32 ROHS	U24				
30066874	CAP ELCH 47UF 16V M 105C 48mA 5x5.4 ROHS	C405	C400	C404	C402	
30066921	IC DVB-T/VIF DEMOD MSB1210 LQFP48 ROHS	U27				
30066925	IC STEP DOWN MP1484 ADJ/3A SO8 RoHS	U21				
30066938	COIL SMD 22uH 3.6A M 0.73R 10x10x4"SHLRO	L15	L16			
30067295	IC LDO APL5910 1A SOP-8P ROHS	U119				
30067595	CAP SMD 22UF 16V M X5R (1206) RoHS	C411	C414	C415	C419	C489
		C490	C492			
30067872	CAP SMD 10UF 10V M X5R (0805) ROHS	C1077	C1078	C1095	C120	C260
		C261	C271	C272	C273	C274
		C275	C282	C283	C287	C289
		C290	C293	C294	C4	C445
		C570				
30067968	CAP SMD 10UF 10V M X7R (0805) ROHS	C444				
30067972	CAP ELCH 100UF 35V M105C120mA6.3x7.7RoHS	C1117	C1118			
30067982	IC DDR2 64Mx16 NT5TU64M16GG-AC BGA84ROH	U4	U5			
30068276	CAP SMD 30PF 50V G COG (0402) RoHS	C1107	C1108			
30068280	COIL SMD 150nH 0.15A J 2R8 402 Ro	L20				
30068281	COIL SMD 330nH 0.15A J 2R8 603 Ro	L18	L19			
30069322	IC NAND 512Mb NAND512BW3D TSOP48 ROHS	U6				
30069749	TR NMOS BSH105 1.05A/30V SOT23 ROHS	Q158				
30069973	IC STMP52161 MB61 SOT23-5L ROHS	U120				
30070314	IC FLASH SPI 8Mb MX25L8006E SO8 ROHS	U10				
30020530	FERRIT SMD 600R/100MHz 0.5R M 0.2A 603Ro	F249				
30063052	FERRIT SMD 1K/100MHz 0.09R M 0.2A 0402Ro	F747	F748			
30000735	RES SMD 1/10W 4.7R J 0805 ROHS	R664				
30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q36				
30021996	RES SMD 1/16W 10K J 0402 ROHS	R88	R91	R92		
30022042	RES SMD 1/16W 1K J 0402 RoHS	R351				
30022057	RES SMD 1/16W 22K J 0402 RoHS	R847				
30022132	RES SMD 1/16W OR 0402 ROHS	S17	S73			
30047143	TR PMOS FDN336P -1.3A/-20V SOT23 RoHS	Q59				
30064117	CAP SMD 10UF 16V K X5R (0805) RoHS	C264				
30020394	FERRIT SMD 330/100MHz 0.1R M 1.5A 805Ro	F65	F70	F73	F734	
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R706	R710	R712		
30021996	RES SMD 1/16W 10K J 0402 ROHS	R115	R48	R54	R7	R51
		R53				
30022042	RES SMD 1/16W 1K J 0402 RoHS	R700				
30022058	RES SMD 1/16W 22R J 0402 ROHS	R604	R605			
30022073	RES SMD 1/16W 2K J 0402 ROHS	R642	R643			
30022085	RES SMD 1/16W 33R J 0402 RoHS	R426	R427	R716	R718	
30022132	RES SMD 1/16W OR 0402 ROHS	S119	S123	S125	S151	
30022237	CAP SMD 27PF 50V J COG (0402) ROHS	C211	C212			
30022347	CAP SMD 22NF 16V J X7R (0402) ROHS	C497				
30042505	RES NET 1/32W 33R J 8P 0402 ROHS	R579	R580	R590		
30044848	CAP SMD 100NF 16V K X7R (0402) ROHS	C149	C150	C151	C152	C153

		C154	C155	C156	C157	C158
		C159	C160	C161	C174	C175
		C176	C177			
30057263	XTAL 24MHz 22pF 30ppm 250hmHC49S SMDROHS	X2				
30059259	CAP SMD 2.2UF 25V K X7R (0805) ROHS	C80	C84	C85		
30067868	IC QAM DEMOD. MSB1224 QFP48 ROHS	U8				
30067872	CAP SMD 10UF 10V M X5R (0805) ROHS	C3				
30066443	IC MSD9WB7GX-2 -SA TFBGA505 ROHS	U1				
30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q30	Q31			
30021958	RES SMD 1/16W 47K J 0402 RoHS	R564	R565	R566	R567	
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R402	R403			
30021996	RES SMD 1/16W 10K J 0402 ROHS	R264	R265			
30021999	RES SMD 1/16W 10R J 0402 RoHS	R534	R535	R536	R537	R538
		R539	R540	R541	R542	R543
		R552	R553	R557	R558	
30022042	RES SMD 1/16W 1K J 0402 RoHS	R329	R330	R334	R335	
30022132	RES SMD 1/16W OR 0402 ROHS	S102	S103	S104	S116	S118
		S14	S170	S171	S2	S22
		S23	S3	S4	S5	S6
		S66	S7	S8	S9	S99
30066018	SOCKET HDMI 19P 0.5MM TOP ROHS	CN3	CN4			
30001734	RES SMD 1/10W OR 0805 ROHS	S162	S206	S207	S210	
30001734	RES SMD 1/10W OR 0805 ROHS	F22				
30019087	FERRIT SMD 60R/100MHz 0.025 M 3A 0805Roh	F761	F762			
30021958	RES SMD 1/16W 47K J 0402 RoHS	R83				
30022132	RES SMD 1/16W OR 0402 ROHS	S182				
30022132	RES SMD 1/16W OR 0402 ROHS	R390	R368			
30028331	FUSE SAFE SMD 7A/32VDC 1206 RoHS	FS4				
30047443	FERRIT SMD 100R/100MHz 0.02 M 4A 805Roh	S164				
30064287	RES SMD 1/16W 750R J 0402 ROHS	C470				
30021960	RES SMD 1/16W 47R J 0402 ROHS	R205	R206			
30022132	RES SMD 1/16W OR 0402 ROHS	S190	S192			
30060822	FERRIT SMD 90R/100MHz 2R5 M 0.1A 2x504Ro	F100	F101	F102	F103	F104
		F105	F71	F95	F96	F97
		F98	F99			
30015459	CAP SMD 470NF 25V K X7R (0805) RoHS	C322				
30019087	FERRIT SMD 60R/100MHz 0.025 M 3A 0805Roh	F12				
30021996	RES SMD 1/16W 10K J 0402 ROHS	R39				
30022003	RES SMD 1/16W 470R J 0402 ROHS	R383				
30022024	RES SMD 1/16W 12K J 0402 ROHS	R276				
30022084	RES SMD 1/16W 33K J 0402 RoHS	R296				
30022132	RES SMD 1/16W OR 0402 ROHS	S28	S27			
30061441	CONN HEADER 50P 1MM TOP DR SMD ROHS	CN16				
30064117	CAP SMD 10UF 16V K X5R (0805) RoHS	C265				
30021996	RES SMD 1/16W 10K J 0402 ROHS	R4				
30022042	RES SMD 1/16W 1K J 0402 RoHS	R340				
30000710	RES SMD 1/10W 47R J 0805 ROHS	F23	F24			
30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C244	C245	C246		
30020530	FERRIT SMD 600R/100MHz 0.5R M 0.2A 603Ro	F51				
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R183				
30021996	RES SMD 1/16W 10K J 0402 ROHS	R95	R96			
30022046	RES SMD 1/16W 2.2K J 0402 RoHS	R270				
30022074	RES SMD 1/16W 3.3K J 0402 RoHS	R661				
30022132	RES SMD 1/16W OR 0402 ROHS	S227	S184			
30022342	CAP SMD 10NF 16V J X7R (0402) ROHS	C382	C383			
30024769	CAP ELCH 47UF 16V M 52mA 5x5.4 ROHS	C5	C6			
30024778	FERRIT SMD 60R/100MHz 0.1R M 0.5A 603Ro	F740				
30038480	DIODE SMD ZEN C5.6V SOD123 ROHS	D17	D6	D9		
30038507	DIODE SMD 1N4148 0.15A/100V SOD123 RoHS	D54				

30049062	RES SMD 1/16W 100K F 0402 RoHS	R272	R298			
30053657	DIODE ARRAY ESD NUP4004M5 TSOP-5 RoHS	D24				
30061329	RES SMD 1/16W 49.9K F (0402) MXM ROHS	R12	R3			
30064353	IC HEADPHONE TDA1308T MB35 SO8 RoHS	U15				
30066874	CAP ELCH 47UF 16V M 105C 48mA 5x5.4 ROHS	C566				
30038984	RES NET 1/32W 100R J 8P 0402 ROHS	R839				
30038984	RES NET 1/32W 100R J 8P 0402 ROHS	R727				
30010641	RES SMD 1/10W 27R J 0805 ROHS	R748				
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R707				
30022042	RES SMD 1/16W 1K J 0402 RoHS	R118				
30022132	RES SMD 1/16W 0R 0402 ROHS	S106	S107	S110	S15	S44
30022239	CAP SMD 39PF 50V J COG (0402) RoHS	C428				
30022244	CAP SMD 100PF 50V J COG (0402) ROHS	C1122				
30049016	COIL SMD 470nH 0.25A M 0R65 805 Ro	L3				
30021988	RES SMD 1/16W 1.8K J (0402) RoHS	R301	R302			
30049532	DIODE SCH SK24 2A/40V/50A DO214AC ROHS	D42				
30061343	RES SMD 1/16W 7.5K F (0402) MXM ROHS	R299	R300			
30066938	COIL SMD 22uH 3.6A M 0.73R 10x10x4"SHLRO	L14	L17			
30069618	CAP SMD 100NF 50V K X5R (0402) RoHS	C113	C114	C115	C117	C573
		C574				
30066919	CONN HEADER 6P 2.0MM SIDE W/LOCK RoHS	CN145				
30001692	FILTER SAW OFWK3953MROHS	Z1				
30012545	FILTER SAW K9656M ROHS	Z2				
30059740	SOCKET D-SUB 15P TOP 11.9MM RoHS	CN1				
30061293	JACK RCA 3P GREEN/BLUE/RED TOP ROHS	JK5				
30061294	JACK RCA 3P WHITE/RED/BLACK TOP ROHS	JK4				
30063090	CONN HEADER 5P 2.0MM SIDE W/LOCK RoHS	CN8				
30067935	CONN HEADER 2X14P 2.54 W/LOCK SIDE RoHS	CN149				
40043122	SUPER THIN POWDER (20*20*2)Rohs	U1				
30031077	JACK HEADPHONE SIDE RoHS	JK10				
30044670	SOCKET USB SIDE RoHS	CN19				
30062840	JACK RCA 3P RED/WH/YELLOW SIDE SLIM ROHS	JK1				
30064327	SOCKET PCMCIA S.DECK 5mm5V W/G W/SHLROHS	CN6				
30059738	SOCKET SCART 21P TOP LEFT BLACK ROHS	SC2				
30069671	TUNER DIG. HALF-NIM DTOS403LH122E RoHS	TU1				
30059738	SOCKET SCART 21P TOP LEFT BLACK ROHS	SC1				
30066919	CONN HEADER 6P 2.0MM SIDE W/LOCK RoHS	CN23				
40046284	ISOLATION PLATE MB70 CI SHARP					

NO	Part Code	Description	Position			
19	20543070	MD.ASY.17PW26-4-37-42"170-270ROC18SHA				
	20349668	HE.ASY.17IPS02-2-SMPS 20/100V DIODE	Q827			
	30048782	DIODE SCH STPS20H100CFP20A/100V TO220ROH	Q827			
	35017056	SCREW S C ZN YSMB 2,9*7,5 W-R RoHS				
	20407053	HE.ASY.17PW26-37-42-PFC-SMPS HALFBRIDGE				
	30039463	TR NMOS FQPF9N50C 9A/500V TO220F ROHS.	Q803			
	30046467	TR NMOS FQPF13N50C 13A/500V TO220F ROHS	Q813	Q814		
	35017056	SCREW S C ZN YSMB 2,9*7,5 W-R RoHS				
	20434318	CN.ASY.Ferrite Bead(FTZ) 20µH 1A+MAKARON	L846	L845		
	30002170	Ferrite Bead(FTZ) RADIAL 14x8x8 RoHS				
	40008113	ISIYLA DARALAN MAKARON) RoHS				
	20542946	HE.ASY.17PW26-SMPS37-42"20A/100V(ELO(EMC				
	30048782	DIODE SCH STPS20H100CFP20A/100V TO220ROH	Q815	Q816		
	35017056	SCREW S C ZN YSMB 2,9*7,5 W-R RoHS				
	30001132	RES MO 2W 0.22R J FORMED ROHS	R971			
	30001265	RES THE SAFE 10R/3A NTC SCK-103 RoHS	TH1	TH2		
	30002012	Choke Coil 150uH 3A K 12.5x15 RoHS	L837			
	30002170	Ferrite Bead(FTZ) RADIAL 14x8x8 RoHS	L818			
	30005819	CAP EL 1000UF 16V M 105°1110mA 10x20ROHS	C851	C863		
	30007748	CAP EL 1000UF 35V M 105°1950mA12.5x25ROH	C852	C948	C962	
	30007750	CAP EL 470UF 35V M 105°1400mA 10x20 ROHS	C961	C931		
	30007858	CAP MKTSAFE 470NF 275V M A 225BOXTOSRoHS	C800			
	30009366	DIODE UF5402 3A/200V 150A DO201AD RoHS	D893			
	30012161	CAP EL 1000UF 50V M 105°2555mA 16x25ROHS	C850			
	30013531	TR PBJT BD140 -1.5A/-80V SOT32 ROHS	Q844			
	30014352	DIODE MUR460 4A/600V DO-27 ROHS	D882	D883	D898	
	30015087	IC SAFE OPTOCOUPLER TCET1102G	IC801	IC809	IC811	
	30018085	CAP VAR SAFE 510V K MFCN14D511 ROHS	R801			
	30029522	CONN HEADER 12P 2.5MM TOP BLK RoHS	PL802			
	30031046	CONN HEADER SAFE 2P(V0)7.5MM TOP WHT TOS	PL809			
	30031825	CAP EL 2200UF 6.3V M 935mA 10x20 RoHS	C860			
	30032635	CONN HEADER 6P 2.5MM TOP WHT SD ROHS	PL804			
	30037619	CONN HEADER 10P 2.5MM TOP YLW SD RoHS	PL801			
	30039383	CAP MKT SAFE 1UF 450V K 15DIP RoHS	C802	C934		
	30044818	IC SMPS FSDL321 50KHz DIP8 ROHS	IC806			
	30051128	CAP EL 150UF 450V M 105°840mA 30x25 ROHS	C819			
	30054292	TRF SMT SAFE St-By 26"/52" EF25 22mmRo	TR803			
	30056344	CAP MKP 10NF 630Vdc/622Vpp J 15BOX ROHS	C810			
	30059889	Choke coil Toroid 22uH 3A M 18x9.5 Ro	L800			
	30060103	TRF PFC SAFE26/32/42"EER3019N250µHK21Ro	TR806			
	30060175	IC PWM HISIDE BALLAST FAN 7711 DIP8 RoHS	IC830			
	30061594	Line Filter Safe 2x16mH%50 2A ET24 RoHS	L840			
	30061705	CONN HEADER 2x14P 2-5mm W/LOCK ROHS	PL816			
	30061879	CAPMKP 22NF 630Vdc/622Vpp J15BOXRoHS	C878			
	30062016	CAP EL 2700UF 16V M 105°2400mA 13x20ROHS	C818			
	30062820	CONN HEADER SAFE 2P V0 7.5MM TOP BLK TOS	PL815			
	30064312	DIODE BRI GBU4M 4A/1000V 150A LCD ROHS	D800			
	30065734	Choke Coil 1uH 5A M 0.7R 8x7 Ro	L804	L811		
	30067402	TRF SMT SAFE 37"/42" EFD30PW2629mmRohs	TR810			
	30069935	CAP CER SAFE 1.5NF 4KV M 3.5MMSHARPROHS	C873	C933		
	30069936	CAP CER SAFE 150PF 4KV M 3.5MMSHARPROHS	C847	C917	C918	
	35016591	GROUND TERMINAL 3.5MM ROHS	PL800	PL813	PL814	
	30001160	RES MO 2W 0.33R J RoHS	R830			
	30001174	RES MO 2W 0.47R J ROHS	R829			
	30001291	DIODE HER107 1A/800V 30A DO41 ROHS	D894			
	30006712	FERRIT BEAD AXI 70/100M 3A 3.5x4.7Roh	J163			

30066355	RES MG SAFE 1/2W 4.7M J NEW ROHS	R960				
30000353	CAP EL 100UF 25V M 150mA 6.3X11 ROHS	C892				
30000376	CAP EL 220UF 25V M 320mA 8x11 ROHS	C817				
30000387	CAP EL 33UF 50V M 100mA 5x11 ROHS	C801				
30000400	CAP EL 47UF 50V M	C814				
30000444	CAP CER 470PF 1KV K Y5P ROHS	C966	C967	C968		
30014346	IC REG 78L05 5V/0.1A TO92 RoHS	IC829				
30018416	CAP EL 470UF 16V M 105° ROHS	C811				
30028356	FUSE SAFE 3.15A 250V (RADIAL) ROHS	F800				
30034077	CAP EL 47UF 50V M 105C ROHS	C874				
30044218	CAP EL 33UF 50V M 105 ROHS	C840				
30066377	CAP CER 220PF 1KV K YRN 125C(PULSE) ROHS	C914				
30000263	CAP SMD 56PF 50V J COG (0805) ROHS	C916				
30000284	CAP SMD 1NF 50V K X7R (0805) ROHS	C941	C942			
30000289	CAP SMD 10NF 50V K X7R (0805) ROHS	C839				
30000294	CAP SMD 100NF 50V K X7R (0805) ROHS	C804	C883	C894	C824	C830
		C841	C845	C862	C915	C947
		C969	C855	C833		
30000309	CAP SMD 2.2NF 50V K X7R (0805) ROHS	C849	C898			
30000334	CAP SMD 47NF 50V K X7R (0805) ROHS	C856	C964			
30000340	CAP SMD 6.8NF 50V K X7R (0805) RoHS	C920	R1029			
30000341	CAP SMD 68NF 50V K X7R (0805) ROHS	C904				
30000457	RES SMD 1/10W 10R J 0805 ROHS	R1033				
30000464	RES SMD 1/10W 100R J 0805 ROHS	R846	R873	R1014		
30000469	RES SMD 1/10W 1K J 0805 ROHS	R869				
30000475	RES SMD 1/10W 10K J 0805 ROHS	R833	R834	R852	R864	R865
		R866	R882	R892	R893	R977
		R1039	R1040			
30000480	RES SMD 1/10W 100K J 0805 ROHS	R815	R897	R855	R964	
30000494	RES SMD 1/10W 120R J 0805 ROHS	R1003				
30000503	RES SMD 1/10W 12K J 0805 ROHS	R857	R933			
30000517	RES SMD 1/10W 15R J 0805 ROHS	R823				
30000529	RES SMD 1/10W 1.5K J 0805 ROHS	R1024				
30000534	RES SMD 1/10W 15K J 0805 ROHS	R1044	R1013			
30000563	RES SMD 1/10W 1.8K J 0805 ROHS	R826	R831			
30000567	RES SMD 1/10W 18K J 0805 ROHS	R946				
30000571	RES SMD 1/10W 180K J 0805 ROHS	R1015				
30000588	RES SMD 1/10W 220R J 0805 ROHS	R972				
30000593	RES SMD 1/10W 2.2K J 0805 ROHS	R1031	R887	R1046	R838	
30000597	RES SMD 1/10W 22K J 0805 ROHS	R820				
30000609	RES SMD 1/10W 2.2R J 0805 RoHS	R1032	R811	R812		
30000614	RES SMD 1/10W 2.4K J 0805 RoHS	R1038				
30000644	RES SMD 1/10W 3K J 0805 ROHS	R880	R800			
30000653	RES SMD 1/10W 33R J 0805 ROHS	R860	R861	R802	R976	R810
30000659	RES SMD 1/10W 330R J 0805 ROHS	C951				
30000664	RES SMD 1/10W 3.3K J 0805 ROHS	R839	R872	R883		
30000668	RES SMD 1/10W 33K J 0805 ROHS	R832	R863	R859	R949	
30000688	RES SMD 1/10W 390R J 0805 ROHS	R1026				
30000721	RES SMD 1/10W 4.7K J 0805 ROHS	R856	R858	R891		
30000727	RES SMD 1/10W 47K J 0805 ROHS	R822	R824	R828	R836	R862
		R910	R970	R948		
30000735	RES SMD 1/10W 4.7R J 0805 ROHS	R888	R889			
30000751	RES SMD 1/10W 5.6K J 0805 ROHS	R962	R965	R804		
30000774	RES SMD 1/10W 680R J 0805 ROHS	R1045				
30000782	RES SMD 1/10W 68K J (0805) ROHS	R947	R1012			
30000797	RES SMD 1/10W 75R J 0805 ROHS	R881				
30000818	RES SMD 1/10W 8.2K J 0805 ROHS	R1000	R1001	R1002	R996	R997

		R998	R999	R1027		
30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q802	Q804	Q805	Q806	Q807
		Q810	Q812	Q818	Q831	Q833
		Q834	Q845	Q846		
30001458	TR BC858B SMD	Q811	Q841			
30001734	RES SMD 1/10W OR 0805 ROHS	J121	L826	J120	J156	J160
		R979				
30001735	RES SMD 1/8W OR 1206 ROHS	R1020	J117	J132	J158	R1036
30006462	RES SMD 1/10W 22R J 0805 ROHS	R1022				
30007021	RES SMD 1/10W 1K F 0805 ROHS	R809	R966	R874	R1037	
30007026	RES SMD 1/10W 5.1K J 0805 ROHS	R870				
30007169	DIODE DUALBAV99 0.215A/70V 4.5ASOT23ROHS	D876				
30007789	RES SMD 1/10W 27K F 0805 ROHS	R877	R803			
30007798	TR NBJT BC848C 0.1A/30V SOT23 RoHS	Q800				
30008996	IC VREF TL431SAMF2 ADJ %1 SOT23 ROHS	D819	D851			
30010641	RES SMD 1/10W 27R J 0805 ROHS	R884				
30010643	RES SMD 1/10W 39R J 0805 ROHS	R1023				
30012355	RES SMD 1/10W 6.8K F 0805 RoHS	R1030	C928			
30012852	RES SMD 1/10W 3.9K F 0805 RoHS	R875				
30015227	RES SMD 1/10W 1.2K F 0805 RoHS	R879				
30015459	CAP SMD 470NF 25V K X7R (0805) RoHS	C901	C803	C807		
30019996	DIODE BAV70 215mA/75V 4A SOT23 RoHS	D878				
30020394	FERRIT SMD 330/100MHz 0.1R M 1.5A 805Ro	L832				
30024779	FERRIT SMD 50R/100MHz 0.4R M 3A 1206 Roh	L820	L822	L823	L825	L833
		L836	L838	L801	L830	L844
30025823	RES SMD 1/10W 15K F 0805 ROHS	R1025	R808	R973	R867	R868
30029322	TR NMOS FDV303N 0.68A/25V SOT23 ROHS	Q837				
30033743	TR NMOS NTGS3446 5.1A/20V TSOP6 RoHS	IC824				
30038476	DIODE SMD ZEN C12V SOD123 ROHS	D886				
30038477	DIODE SMD ZEN C8.2V SOD123 ROHS	D867				
30038481	DIODE SMD ZEN C6.8V SOD123 ROHS	D801	D826	D847		
30038495	DIODE SMD ZEN C22V SOD123 ROHS	D887				
30038498	DIODE SMD ZEN C18V SOD123 ROHS	D854				
30038507	DIODE SMD 1N4148 0.15A/100V SOD123 RoHS	D802	D811	D842	D857	D862
		D865	D885	D888	D889	
30039196	RES SMD 1/4W 1M F 1206 ROHS	R912	R980	R981	R932	
30039384	CAP SMD 1NF 1KV K X7R (1206) ROHS	C842	C893			
30046152	CAP SMD 1UF 50V Z Y5V (0805) ROHS	C954	C932	C953	C838	C956
30050065	RES SMD 1/4W 619K F 1206 ROHS	R817	R818	R819		
30050066	RES SMD 1/4W 649K F 1206 ROHS	R940	R982			
30051690	DIODE SMD FYD0504S 5A/40V 75A DPAK RoHS	IC831				
30052271	CAP SMD 10UF 25V K X5R (1206) ROHS	C935	C950	C955	C938	C939
30053502	IC PFC FAN7529 SO8 ROHS	IC802				
30057252	DIODE SMD RS1002FL 0.5A/200V SOD123FL RO	D807	D869	D884		
30058193	RES SMD 1/8W 30K F 0805 ROHS	R876				
30059220	DIODE SMD RS1008FL 0.5A/800V SOD123FL RO	D880	D806			
30059235	DIODE SMD SCH BAT54J 0.2/30V SOD323FRoHS	D861				
30059258	IC PWM CONT CAT7581 SO8 RoHS	IC800				
30060652	RES SMD 1/4W 100K J (1206) RoHS	R1006	R1007	R1010	R1011	
30061026	CAP SMD 1UF 25V K X7R (0805) ROHS	C870	C913	C965		
30064313	RES SMD 1/10W 12K F (0805) ROHS	R931				
30065572	CAP SMD 10UF 25V K X7R (1206) ROHS	C881	C925			
30066849	TR DN MOS FDS8984 7A/30V SO8 RoHS	IC803				

NO	Part Code	Description	Position		
11	20531239	MD.ASY.17LD98-7-37-42880 (MB25/35(SHARP			
	30047579	IC PREAMP TSOP58236 36kHz 5V ROHS	MD1		
	30062667	CNAS 5P/550 FLT W/C UL2468AWG26 ROHS	PL2		
	30064838	LED WHITE 3MM VWL-30933 RoHS	D1		
	30000294	CAP SMD 100NF 50V K X7R (0805) ROHS	C4	C5	C6
	30000464	RES SMD 1/10W 100R J 0805 ROHS	R1		
	30006462	RES SMD 1/10W 22R J 0805 ROHS	R2		
	30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C1	C2	C3

NO	Part Code	Description	Position				
9	20467110	MD.ASY.17TK129CY-2-26-42855/6/7					
	40042671	TESA(4926) (11.5X1.2) CM					
	30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q1				
	30022004	RES SMD 1/16W 11K J 0402 ROHS	R12				
	30022054	RES SMD 1/16W 20K J 0402 ROHS	R11				
	30022063	RES SMD 1/16W 560R J 0402 ROHS	R1	R10	R2	R3	R4
			R5	R6	R7	R8	
	30022132	RES SMD 1/16W 0R 0402 ROHS	R14	R9			
	30022200	CAP SMD 1NF 50V J X7R (0402) ROHS	C3				
	30030097	CAP SMD 100NF 10V K X5R (0402) RoHS	C2				
	30051792	CAP SMD 470NF 16V M Y5V (0402) ROHS	C5				
	30059485	IC PSOC CY8C20234 (QFN16) ROHS	IC1				
	30062117	SMD MAGNETIC TRANSDUCER 5x5MM 12R 3VROHS	VZ1				
	30062657	CONN HEADER 8P 1.25MM TOP WHT SMT RoHS	E1				
	30067595	CAP SMD 22UF 16V M X5R (1206) RoHS	C1				

22 20542632 SPK.AS.40" MB61_6P(R/L)JIE(35X135(BL(SH
20449366 SPEAKER 35x135MM 8R 10W (phantom
40045298 BRACKET SPEAKER 35x135 (I)V0_SHARP
35008812 SCREW P C ZN RYSB 3x10 RoHS
30070240 CNAS 6P/600+350 SPK SISW/C UL1007AWG24Ro
40045942 EPDM SPONGE (1,5 X 15 X 135)

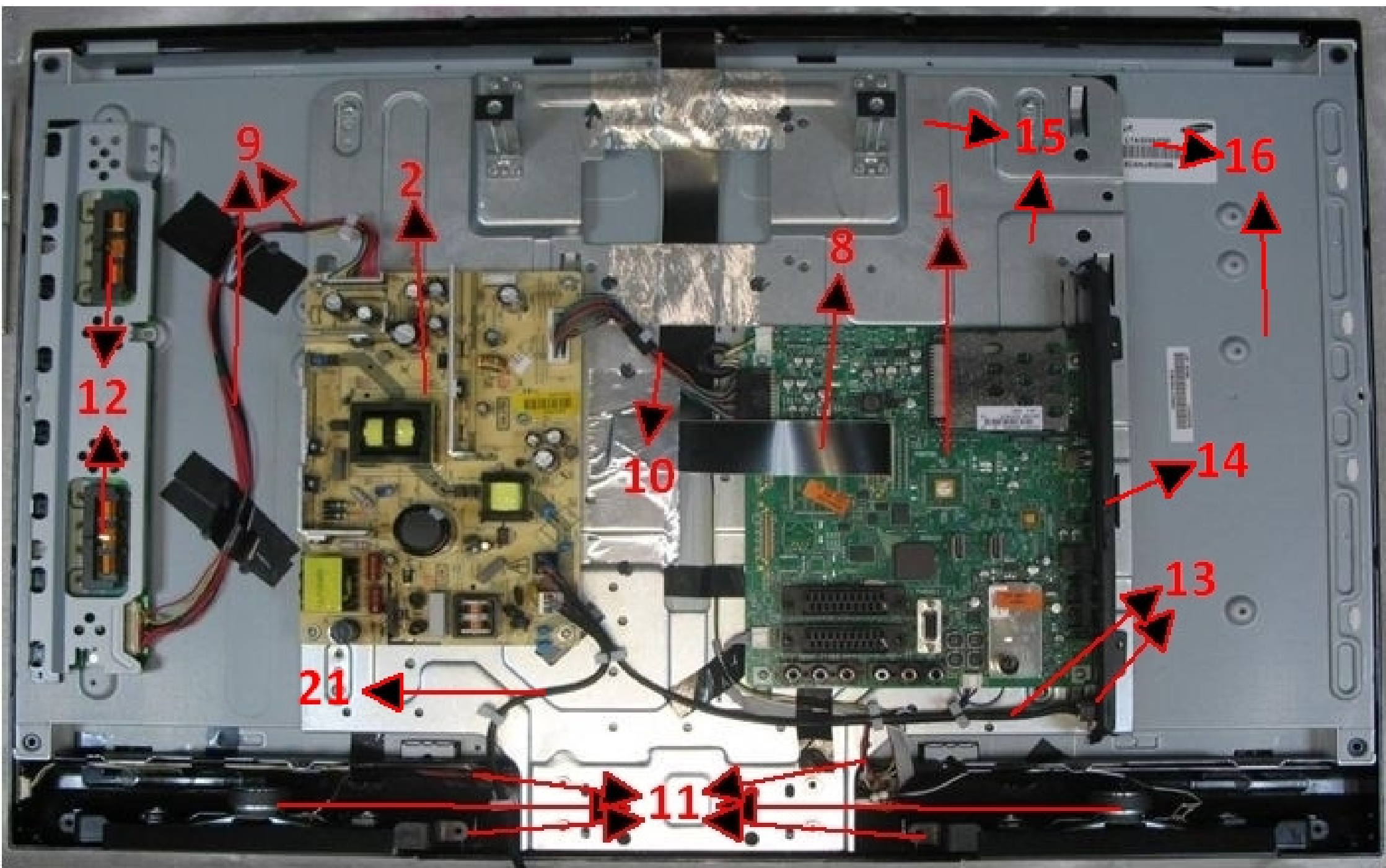
27 20529612 FOOT ASSY 40740(B.C.BL/P-V-BLACK(V0_SHAR
20529609 COVER FOOT 40740 WO/SW(B.C.BL/P-V(V0_SHA
40045297 FOOT SUPPORT 40740 (PC-ABS(I(V0_SHARP
35014062 SCREW P C ZN YFMB 4*8
20499738 FOOT ASSY 40740 (METAL)
35008875 SCREW P C ZN YFSB 4X16 R8,5
40026070 PDP STAND PLASTİK AYAK (SİYAH)
40026526 PDP PLASTİK AYAK PİMİ (SİYAH)

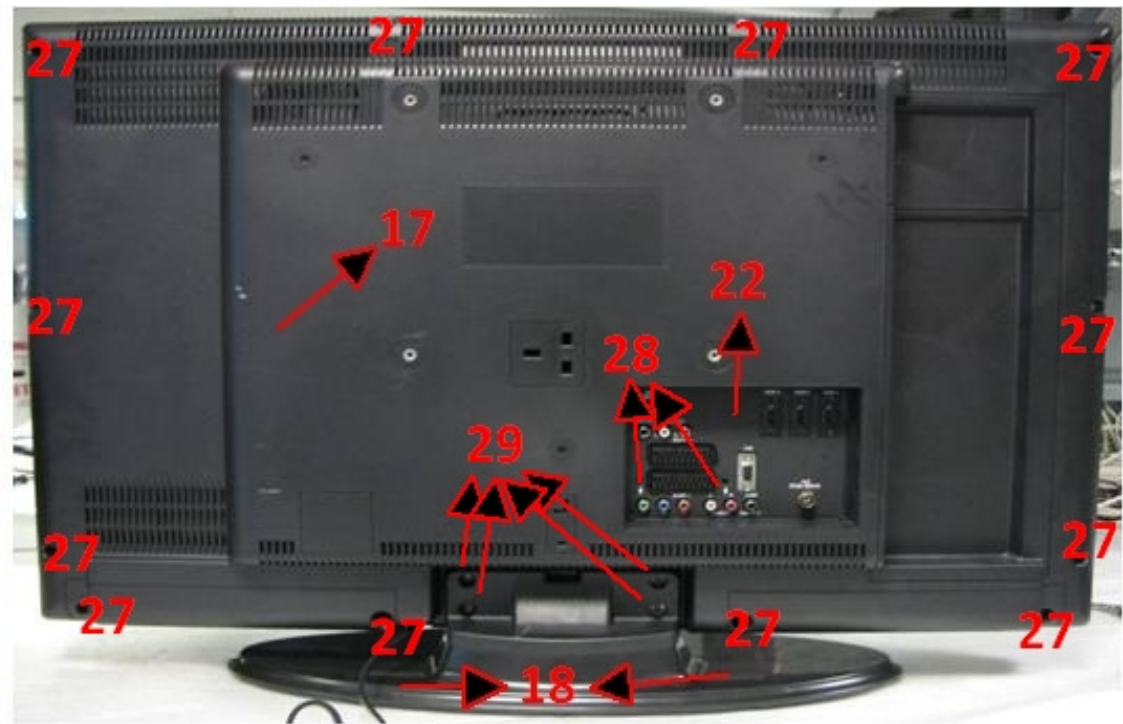
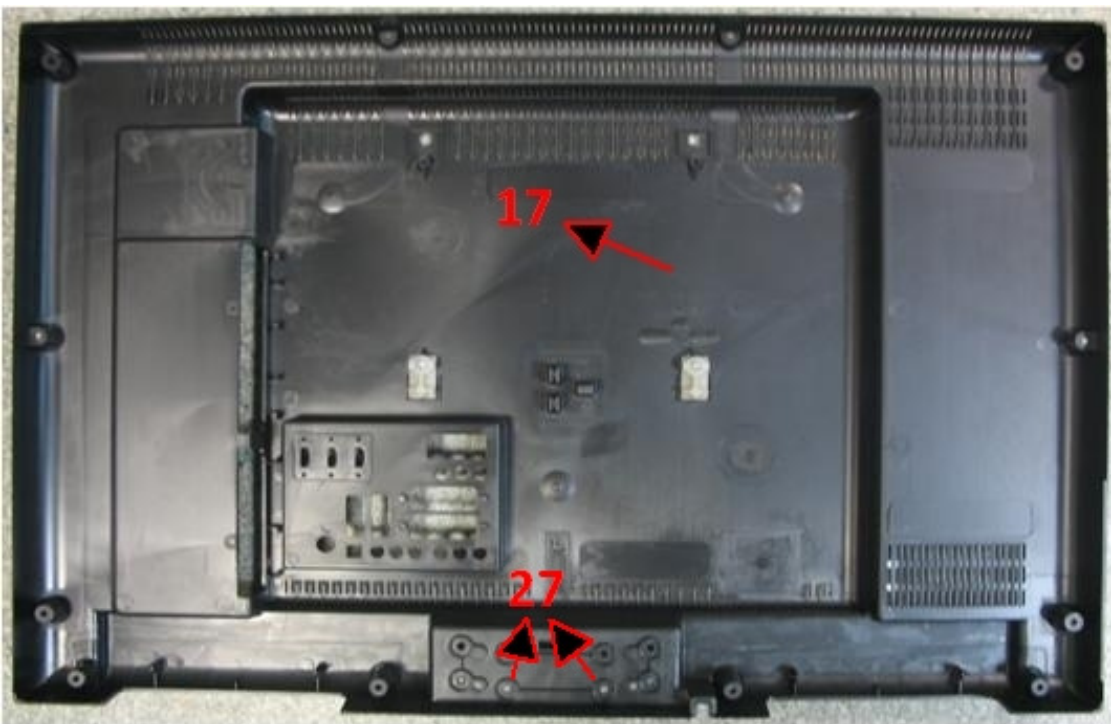
25 20533760 ARTWORK SHARP LC-40F22E
50177278 I/B SHARP LC-40F22E MB61/3902/ENG
20527505 R/C 3902 SHARP&3902 (GRAY/S)(BLACK/P)
30063603 BATTERY AAA ALKALINE R03 2006/66/EC ROHS
50177281 PAP.I/B QSG SHARP SHARP LC-40F22E
50165205 WARR.CARD SHARP "Aguos care plan"
50165208 WARR.CARD SHARP "Guarantee regisration"
50165209 WARR.CARD SHARP "Aguos regisration card"
40043135 CABLE HOLDER 50x30 WHITE(I

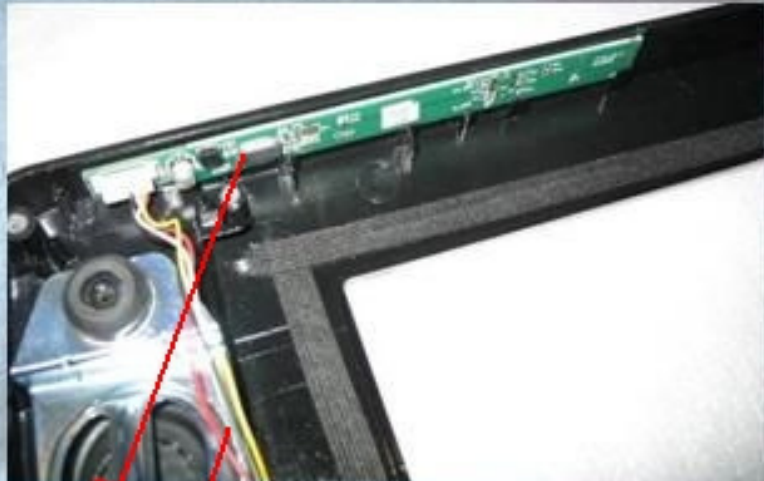
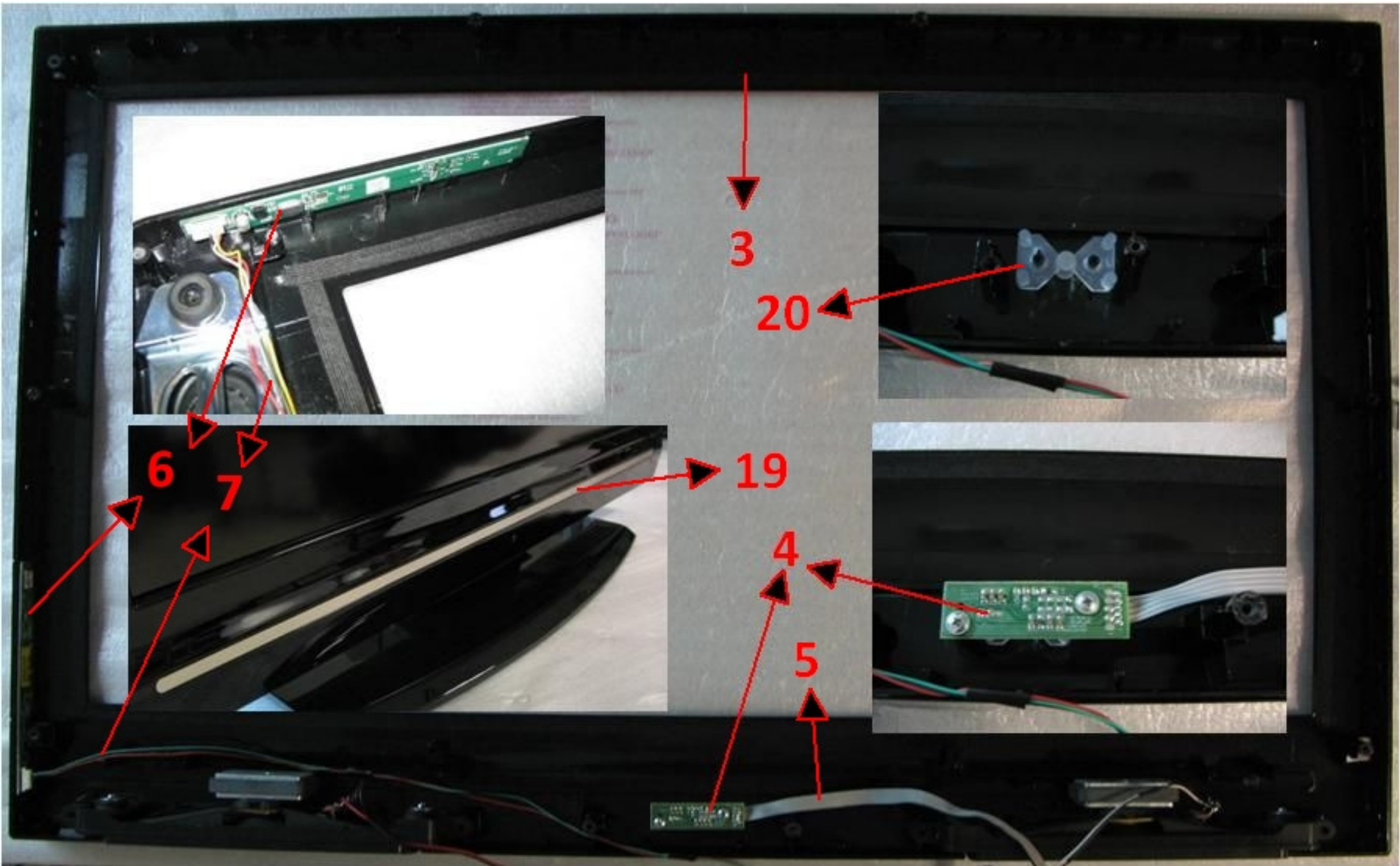
13 20505572 ROC.SW.AS.26" (MB38_SHARP)
30069580 SWITCH ROCKER SAFE6A/250VAC SPSTSHARPROH
30064875 CNAS SAFE 2P(V0)/350(VDE) W/BLK C ROHS
40001898 MACARON (12cm.İsı ile daralan)

LC-32D12E PART LIST

No	Part Code	Description	Detail Description
1	20545526	CHS.ASSY.17MB61-B251211H1712111112222	Main Board
2	20519700	MD.ASY.17PW26-4-26-32"170-270ROC61SH	Power Board
3	20497779	FRONT 32883 W/TB(B.C.BL/P-V)(SHARP/S)(V0)	Front Plastic
4	20531135	MD.ASY.17LD98-7-26880(MB25/35)(SHARP)	Led Board
5	30062668	CNAS 5P/300 FLT W/C UL2468AWG26 ROHS	Led Board Cable
6	20467110	MD.ASY.17TK129CY-2-26-42855/6/7	Button Board
7	30069262	CNAS 8P-6/900 CY W/DC+FER UL1571#28RoHS	Button Board Cable
8	20505712	CN.A.FFC 30P/550 LVDS FI-X(32"ML MB61	Panel FFC Cable
9	30069817	CNAS 12P+14P/400 SISW/DCUL1007 INVT SHAR	Inverter Cable
10	30069930	CNAS 28P/150 SIS W/DC UL1061#24SHARP RHS	Power Board Cable
11	20542662	SPK.AS.32850 35_6P(R/L)JIE(42X(6W(BL(Speaker Group Code
12	30067593	32" SAM LTA320AP06 INVERTER	Inverter
13	20521139	ROC.SW.AS.(MB60_SHARP)	Rocer Switch wiht cable
14	40045295	BRACKET IO 17MB35 VER114 (I)(V0_SHARP	IO Bracket
15	45010090	FR 32ML MB37 H=2 V6	Metal Frame
16	30068871	TFT LCD 32"W SAM LTA320AP06 M SAFE ROH	LCD Panel
17	20501343	BC.32880 SPK-BOT WO/MD (I)V0_SHARP	Back Cover
18	20529654	FOOT ASSY 32882(B.CO.BL/P-V-BLACK)SHARP	Foot Assy
19	40042934	LENS COSM.LCD32883(AKR)-SILV-SILK PRINT	Lens
20	40043425	LED IR LENS TFT XX856 (%3 MILKY) VER7.	Led Lens
21	20462587	POWER CORD AS.GR-(180-27(UK)	Power Cord
22	50168106	LABEL BR.MB61 VER.2	Label
23	50165992	LAMI.BAG(TFT-32") (1000X800)	Lami Bag
24	20427012	SNOW BOX ASSY (T/B) 32880/882	Snow Box
25	20534277	ARTWORK SHARP LC-32D12E	Artwork Group
26	50177410	CARTON BOX SHARP LC-32D12E	Carton Box
27	35008088	SCREW P C ZN YSMB 4*16 RoHS	Back Cover Screw
28	35024895	SCREW P C ZN RYSB 3*12 RoHS	Screw
29	35008875	SCREW P C ZN YFSB 4X16 R8,5	Screw
30	35003339	SCREW C ZN YSB M4x12 RoHS	Screw





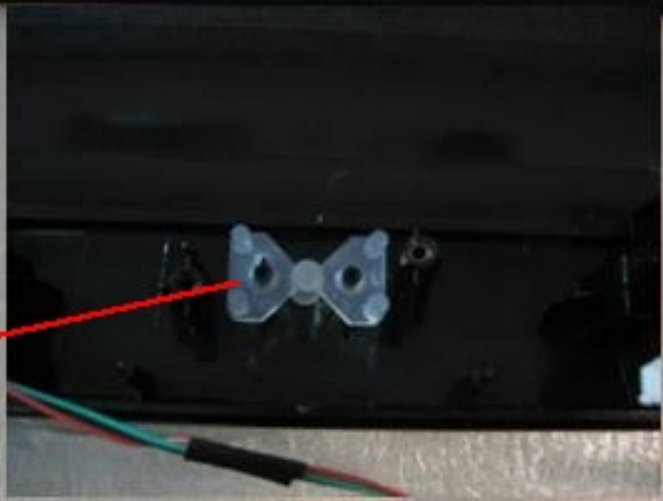


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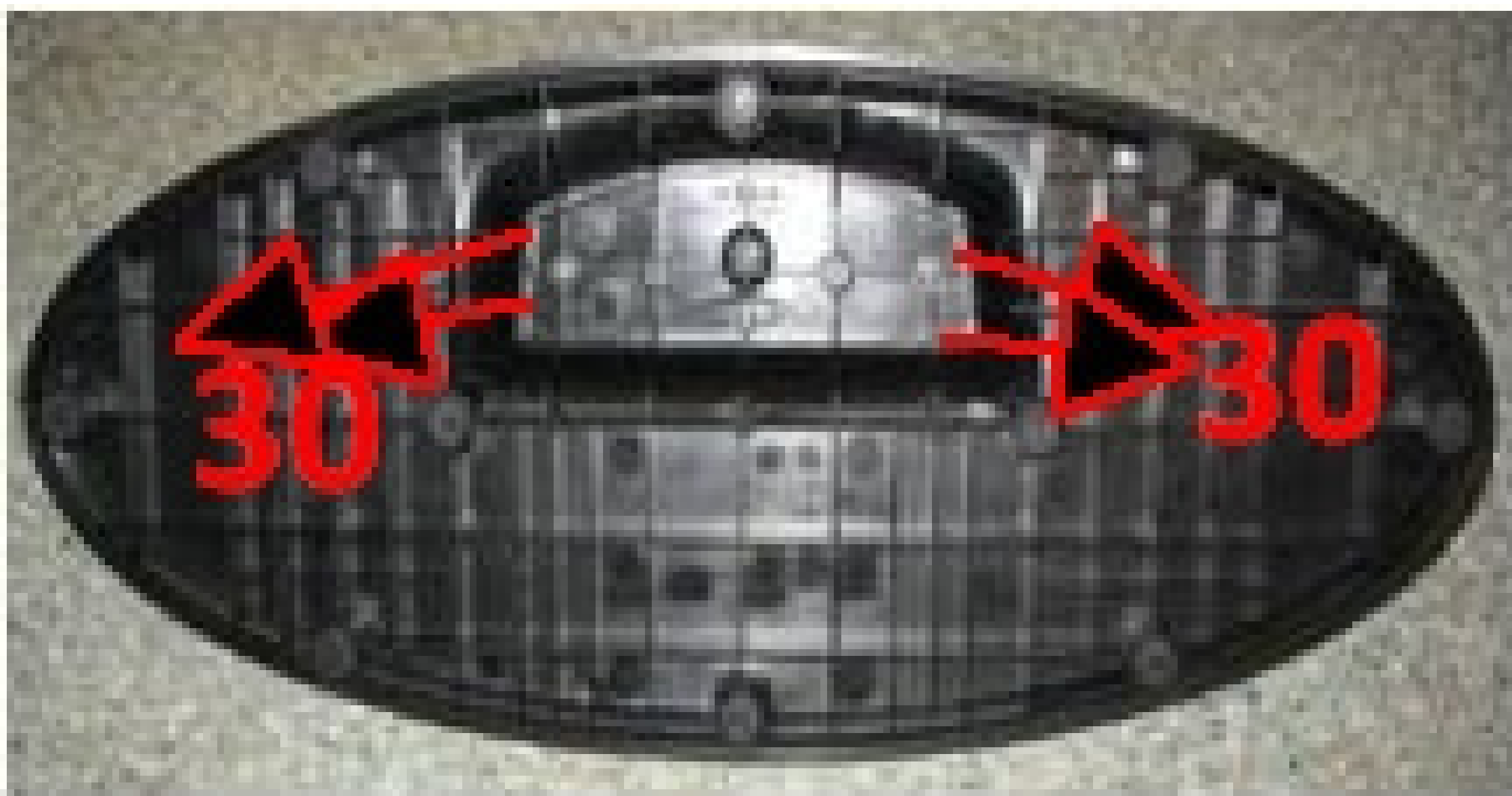
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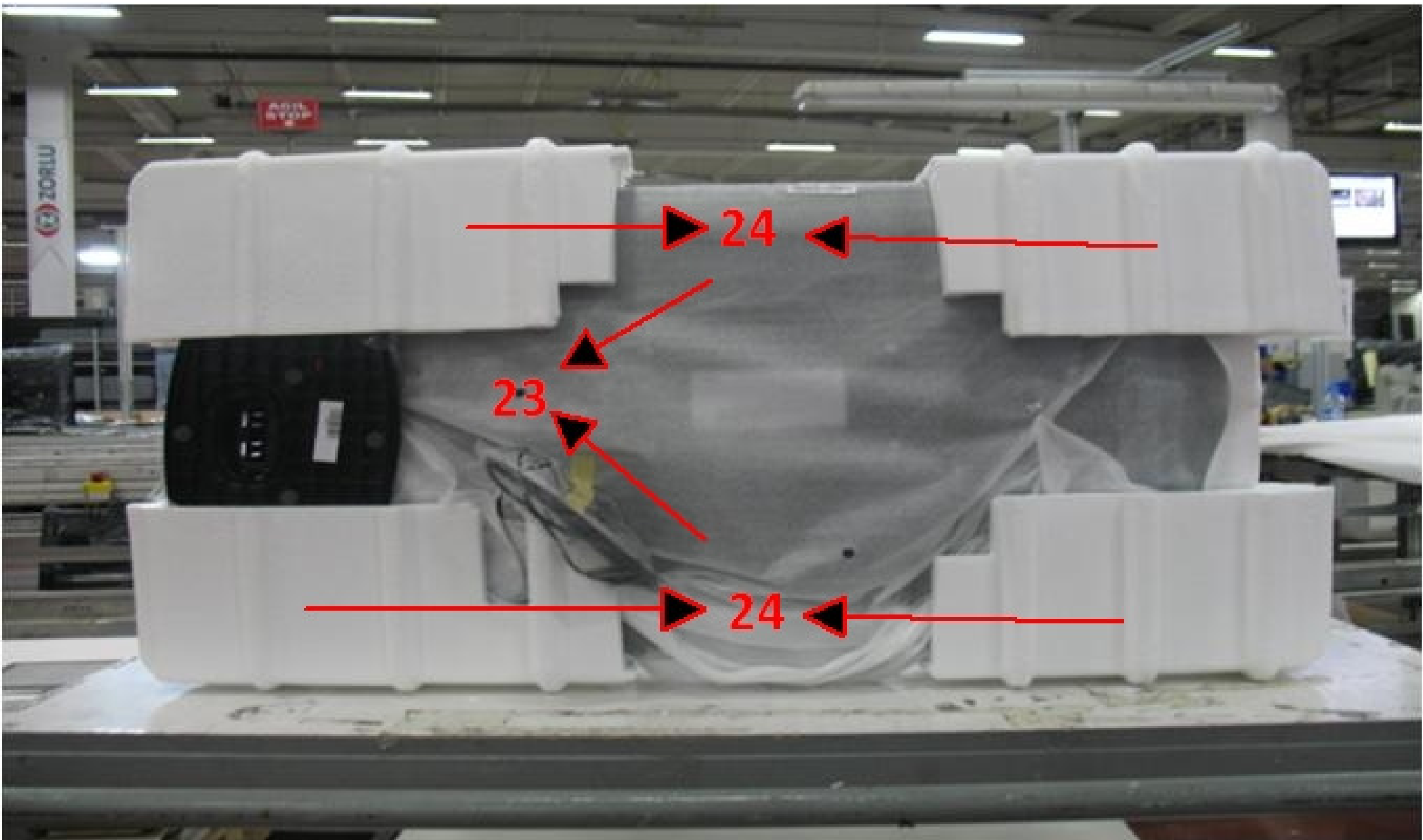
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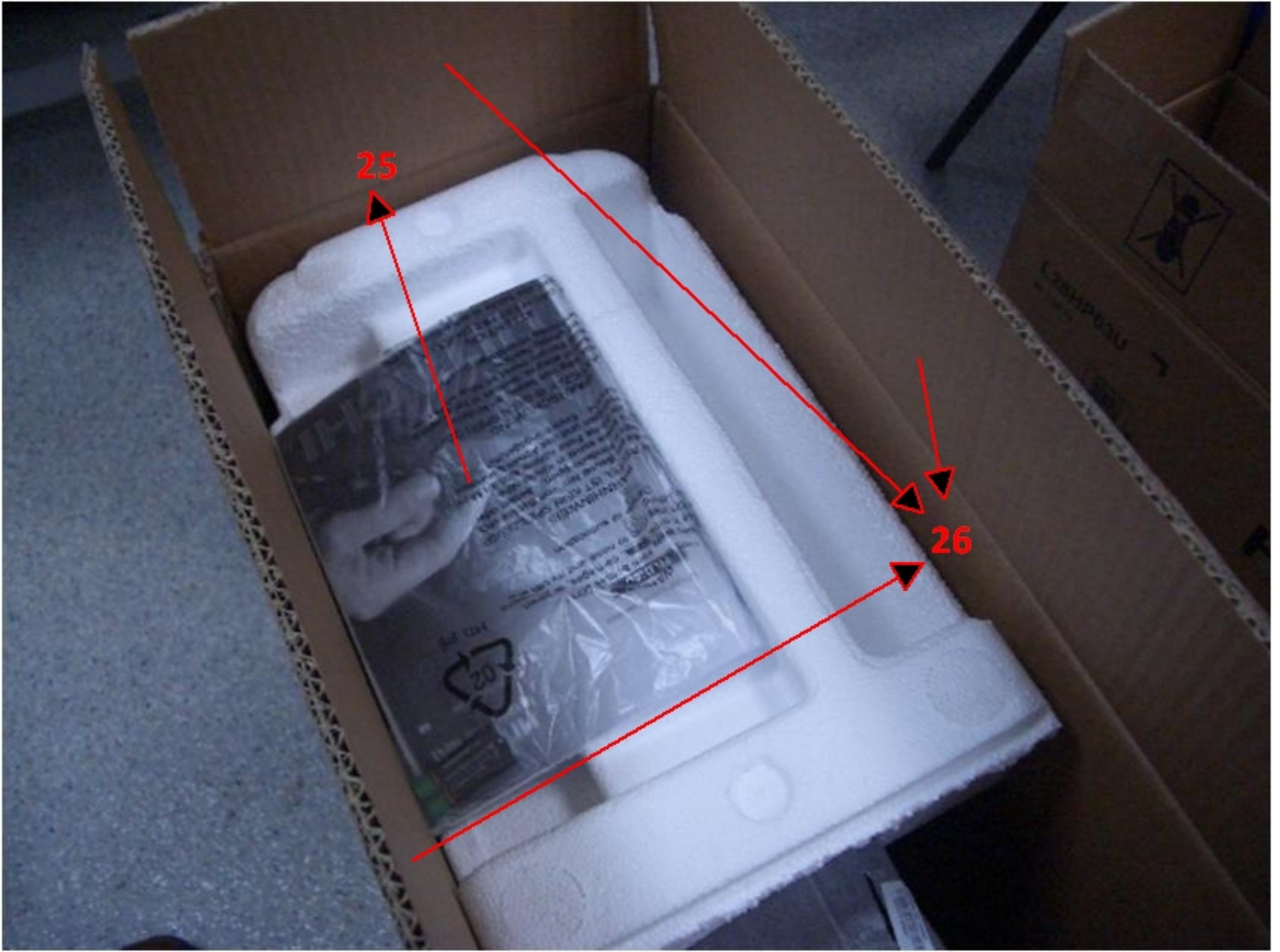




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Part No	DESC.	Position				
30000294	CAP SMD 100NF 50V K X7R (0805) ROHS	C447	C446	C448		
30000473	RES SMD 1/8W 10K J 1206 RoHS	D36				
30000475	RES SMD 1/10W 10K J 0805 ROHS	R851	R852	R1217	R1202	
30000597	RES SMD 1/10W 22K J 0805 ROHS	R637				
30000710	RES SMD 1/10W 47R J 0805 ROHS	F61				
30000721	RES SMD 1/10W 4.7K J 0805 ROHS	R641				
30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q1	Q10	Q11	Q116	Q119
		Q12	Q17	Q25	Q28	Q32
		Q33	Q35	Q39	Q41	Q7
		Q8	Q9	Q13	Q14	Q19
		Q20	Q148	Q150	Q152	Q156
		Q157	Q27	Q159	Q160	Q161
		Q163				
30001458	TR BC858B SMD	Q146	Q42	Q44	Q45	Q49
		Q51	Q6	Q48	Q3	Q155
30001734	RES SMD 1/10W OR 0805 ROHS	S180	S181	S217	C1129	C378
		S224	F768			
30006462	RES SMD 1/10W 22R J 0805 ROHS	R749				
30007169	DIODE DUALBAV99 0.215A/70V 4.5ASOT23ROHS	D33				
30007800	TR NBJT BF799 0.35A/30V RF SOT23 RoHS	Q43				
30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C247	C269			
30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C237	C238	C239	C240	C241
		C242	C268	C401		
30010560	CAP SMD 220NF 25V K X7R (0805) ROHS	C313				
30012411	DIODE SMD BA782 0.1A 35V SOD123 ROHS	D48				
30016659	COIL SMD 1uH 50mA K OR4 805 Ro	L5				
30018060	TR PMOS FDC642P -4A/-20V SSOT6 ROHS	Q58				
30018574	DIODE SCH SS33 3A/30V DO214AB ROHS	D41				
30019087	FERRIT SMD 60R/100MHz 0.025 M 3A 0805Roh	F13	F14	F15	F18	F2
		F3	F31	F32	F33	F35
		F36	F37	F4	F5	R124
		F765	R1216			
30019996	DIODE BAV70 215mA/75V 4A SOT23 RoHS	D26				
30020394	FERRIT SMD 330/100MHz 0.1R M 1.5A 805Ro	F58	F60	F62	F67	F69
		F72	F80	F85	F86	F87
		F88	F90	F91	F737	F738
30020530	FERRIT SMD 600R/100MHz 0.5R M 0.2A 603Ro	F248	F38	F39	F48	F49
		F50	F55	F741	F742	F743
30021958	RES SMD 1/16W 47K J 0402 RoHS	R560	R561	R829	R834	R835
		R836	R837	R838	R630	
30021960	RES SMD 1/16W 47R J 0402 ROHS	R184	R185	R186	R189	R190
		R191	R194	R195	R196	R199
		R200	R201	R207	R208	R209
		R210	R211	R212	R213	R214
		R215	R217	R218	R220	R222
		R223	R224	R227	R228	R229
		R230	R231	R232	R233	R236
		R237	R238	R308	R689	R690
		R759	R793	R188	R1137	
30021984	RES SMD 1/16W 1.6K J (0402) RoHS	R667				
30021986	RES SMD 1/16W 4.7K F 0402 ROHS	R1140	R1220			
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R2	R240	R241	R254	R310
		R363	R364	R369	R370	R371
		R380	R381	R382	R386	R388
		R391	R392	R393	R394	R395
		R397	R400	R405	R406	R6
		R60	R705	R708	R709	R711

		R760	R815	R97	R98	R367
		R389	R409	R1138	R1218	R1221
		R1228	R1229	R1245	R1139	R373
		R387	R1175	R1246	R1247	R1248
		R1249	R1250	R1251	R1252	R1254
		R1255	R1256	R1257	R1259	R1261
30021989	RES SMD 1/16W 100K J 0402 ROHS	R275	R286	R287	R831	R832
		R1225				
30021991	RES SMD 1/16W 100R J 0402 ROHS	R122	R136	R137	R138	R139
		R140	R141	R143	R144	R417
		R437	R840	R841	R842	R843
		R844	R30	R33	R655	R1143
		R1144	R1146	R1147	R1191	R1231
		R1232	R1233	R142	R120	
30021994	RES SMD 1/16W 10K F 0402 ROHS	R669	R670	R673		
30021996	RES SMD 1/16W 10K J 0402 ROHS	R10	R106	R110	R145	R147
		R148	R20	R203	R21	R22
		R226	R23	R279	R280	R281
		R29	R34	R349	R35	R376
		R46	R55	R56	R57	R58
		R66	R660	R67	R68	R69
		R70	R71	R72	R74	R76
		R77	R770	R773	R78	R82
		R84	R85	R86	R93	R94
		R100	R101	R105	R99	R119
		R62	R28	R1152	R1153	R1154
		R1159	R1235	R113	R116	R117
		R26	R27	R8	R1176	R1222
30022003	RES SMD 1/16W 470R J 0402 ROHS	R647	R648	R649	R650	R216
30022024	RES SMD 1/16W 12K J 0402 ROHS	R239	R242	R249	R250	R436
		R247	R248	R1187	R1188	
30022041	RES SMD 1/16W 1K F 0402 ROHS	R499	R500	R501	R502	R503
		R504	R603			
30022042	RES SMD 1/16W 1K J 0402 RoHS	R316	R319	R323	R325	R332
		R336	R699	R343	R379	R701
		R1223	R411	R412	R1253	
30022043	RES SMD 1/16W 1M J 0402 ROHS	R592				
30022046	RES SMD 1/16W 2.2K J 0402 RoHS	R691	R693	R850	R268	R269
30022051	RES SMD 1/16W 2.7K J 0402 ROHS	R746				
30022054	RES SMD 1/16W 20K J 0402 ROHS	R303	R304			
30022055	RES SMD 1/16W 220K J 0402 ROHS	R739	R740	R278	R751	R752
30022056	RES SMD 1/16W 220R J 0402 RoHS	R434	R440	R441	R442	R444
		R435	R341	S148		
30022057	RES SMD 1/16W 22K J 0402 RoHS	R593	R594	R595	R596	R597
		R599	R600	R735	R830	R1193
30022058	RES SMD 1/16W 22R J 0402 ROHS	R736	R737			
30022063	RES SMD 1/16W 560R J 0402 ROHS	R675	R677			
30022065	RES SMD 1/16W 56R J 0402 ROHS	R462	R464	R465	R466	R467
		R468	R469	R470	R471	R472
		R473	R474	R475	R476	R477
		R478	R479	R480	R481	R482
		R483	R485	R486	R487	R488
		R489	R490	R491	R492	R493
		R494	R495	R496	R497	R721
		R777				
30022068	RES SMD 1/16W 6.8K F 0402 ROHS	R853	R854			
30022068	RES SMD 1/16W 6.8K F 0402 ROHS	R745				
30022069	RES SMD 1/16W 6.8K J 0402 RoHS	R1151	R758			
30022073	RES SMD 1/16W 2K J 0402 ROHS	R742	R743	R698		

30022074	RES SMD 1/16W 3.3K J 0402 RoHS	R654				
30022078	RES SMD 1/16W 3.9K J 0402 RoHS	R507	R508	R509		
30022080	RES SMD 1/16W 300R J 0402 RoHS	R657	R658	R438	R1167	
30022084	RES SMD 1/16W 33K J 0402 RoHS	R277	R284	R285	R297	R695
		R696	R846	R1169	R1181	R1182
		R1183	R1226			
30022085	RES SMD 1/16W 33R J 0402 RoHS	R418	R419	R422	R423	R424
		R715	R717	R719	R720	R826
		R421	R420	R825		
30022088	RES SMD 1/16W 680R F 0402 ROHS	R747				
30022113	RES SMD 1/16W 68R J 0402 RoHS	R1186	R125			
30022118	RES SMD 1/16W 75R J 0402 RoHS	R155	R157	R158	R159	R163
		R164	R165	R166	R167	R170
		R1184	R1185	R156	R173	R174
		R339	R761	R762		
30022121	RES SMD 1/16W 820R J 0402 ROHS	R833				
30022122	RES SMD 1/16W 82K J 0402 ROHS	R354	R355			
30022132	RES SMD 1/16W 0R 0402 ROHS	R149	R150	R151	R152	S100
		S101	S113	S117	S147	S153
		S30	S39	S52	S57	S61
		S62	S63	S64	S75	S111
		S68	R135	S138	R337	R15
		R235	S185	S218	S225	S234
		S51	R372	S186	S187	S242
		S243	S244	S245	S246	S247
		S248	S249	S250	S251	S252
		S253	S254	S255	S256	S257
30022142	RES SMD 1/16W 2.7K F 0402 RoHS	R1219				
30022196	CAP SMD 470PF 50V J X7R (0402) ROHS	C364	C370	C371	C372	C375
		C1087	C1088	C365		
30022200	CAP SMD 1NF 50V J X7R (0402) ROHS	C486	C389	C346	C341	C361
30022235	CAP SMD 18PF 50V J COG (402) ROHS	C325	C326			
30022236	CAP SMD 22PF 50V J COG (0402) ROHS	C1075	C10	C11		
30022237	CAP SMD 27PF 50V J COG (0402) ROHS	C208	C1132	C205	C206	C210
		C213	C216	C217		
30022238	CAP SMD 33PF 50V J COG (0402) ROHS	C191	C193	C194	C195	C196
		C1103	C1104	C457	C458	
30022240	CAP SMD 47PF 50V J COG (0402) ROHS	C1110				
30022241	CAP SMD 56PF 50V J COG (0402) ROHS	C232	C233			
30022244	CAP SMD 100PF 50V J COG (0402) ROHS	C460	C461	C462	C463	C464
		C569	C1105			
30022248	CAP SMD 220PF 50V J COG (0402) RoHS	C198	C197	C201	C202	
30022250	CAP SMD 330PF 50V K X7R (0402) RoHS	C101	C102	C103	C104	C105
		C106	C107	C108	C109	C110
		C111	C125	C126	C127	C129
		C90	C91	C92	C93	C94
		C95	C96	C97	C98	C1079
		C1080	C121	C122		
30022338	CAP SMD 4.7NF 50V J X7R (0402) RoHS	C112	C116	C1112	C1113	
30022339	CAP SMD 5.6NF 50V J X7R (0402) ROHS	C443				
30022342	CAP SMD 10NF 16V J X7R (0402) ROHS	C328	C329	C330	C331	C332
		C335	C336	C473	C474	C475
		C479	C482	C483		
30022347	CAP SMD 22NF 16V J X7R (0402) ROHS	C499	C500			
30022351	CAP SMD 47NF 16V J X5R (0402) ROHS	C342	C343	C344	C345	C347
		C348	C349	C350	C351	C352
		C353	C354	C355	C356	C357
		C358	C362	C363		
30024769	CAP ELCH 47UF 16V M 52mA 5x5.4 ROHS	C487	C488	C1084	C1085	C1086

30032028	IC MUX/DEMUX 74HCT4053 SO16 RoHS	U115				
30036983	IC EEPROM 24LC02 2Kbx8 SO8 RoHS	U11				
30038476	DIODE SMD ZEN C12V SOD123 ROHS	D169				
30038480	DIODE SMD ZEN C5.6V SOD123 ROHS	D10	D11	D12	D162	D20
		D5	D165	D171		
30038497	DIODE SMD ZEN C3.9V SOD123 ROHS	D1				
30038507	DIODE SMD 1N4148 0.15A/100V SOD123 RoHS	D15	D37			
30038984	RES NET 1/32W 100R J 8P 0402 ROHS	R724	R725	R267		
30042066	DIODE SMDSCH1N5819 1A/40V/25A SOD123ROHS	D52				
30042505	RES NET 1/32W 33R J 8P 0402 ROHS	R577	R583	R584	R585	R586
		R587	R588	R589	R763	R764
		R765	R581	R582		
30043940	RES NET 1/32W OR J 8P 0402 ROHS	R447	R448	R578		
30044848	CAP SMD 100NF 16V K X7R (0402) ROHS	C14	C15	C16	C17	C18
		C19	C20	C21	C22	C23
		C24	C25	C28	C30	C34
		C35	C37	C38	C39	C45
		C47	C48	C49	C50	C51
		C52	C54	C64	C66	C67
		C69	C70	C71	C72	C73
		C74	C78	C320	C128	C135
		C148	C163	C167	C170	C178
		C179	C291	C292	C312	C327
		C337	C381	C388	C392	C425
		C429	C430	C433	C434	C440
		C630	C399	C403	C431	C432
		C142	C423	C1067	C1068	C1069
		C1120	C162	C32	C33	C1144
		C1145	C1146	C1147	C1148	C1149
		C1150	C1152			
30045875	RES NET 1/16W 56R J 8P 0402 ROHS	R445	R446	R449	R450	R451
		R452	R453	R454	R455	R456
		R457	R458	R459	R460	R461
30046152	CAP SMD 1UF 50V Z Y5V (0805) ROHS	C1153				
30047294	CAP SMD 4.7UF 10V K X5R (0805) ROHS	C267				
30047296	CAP SMD 22UF 6.3V M X5R (0805) ROHS	C301	C305	C307	C308	C309
		C310	C1119	C248	C254	
30048473	DIODE DUALSMD BAW56 4A/75V/4A SOT23ROHS	D30	D31	D32	D56	D57
		D58	D59			
30049062	RES SMD 1/16W 100K F 0402 RoHS	R848				
30049079	RES SMD 1/16W 3.6K J 0402 ROHS	R61				
30049203	CAP SMD 1PF 50V ±0.25pF (0402) ROHS	C571	C572			
30049522	RES NET 1/16W 10K J 8P 0402 ROHS	R659				
30050025	CAP ELCH 220UF 6.3V M 86mA 6.3x5.4 ROHS	C296	C1125	C1126	C1127	C1128
		C1135				
30050543	RES SMD 1/8W 36K F 0805 RoHS	R1203				
30051609	RES SMD 1/16W 390R F (0402) RoHS	R311				
30051609	RES SMD 1/16W 390R F (0402) RoHS	R102	R1212			
30051792	CAP SMD 470NF 16V M Y5V (0402) ROHS	C1063				
30051799	RES SMD 1/16W 3.3R F (0402)ROHS	R516	R517	R532	R533	
30053657	DIODE ARRAY ESD NUP4004M5 TSOP-5 RoHS	D21	D22	D164	D23	
30053941	IC 74LCX244 (TSSOP-20) ROHS	U129				
30054012	IC 74LCX245 (TSSOP-20) ROHS	U124	U125	U128		
30057263	XTAL 24MHz 22pF 30ppm 25OhmHC49S SMDROHS	X4				
30057644	IC DOPAMP TL062 SO8 RoHS	U3				
30059259	CAP SMD 2.2UF 25V K X7R (0805) ROHS	C26	C55	C56	C75	C86
		C87	C88	C9	C1081	C27
30060344	IC LDO LM1117 ADJ/1A DPAK ROHS	U18	U25	U26	U39	
30060852	IC ANALOG 2:1SWITCH FSA3157 SC70 ROHS	U34				

30060985	IC STEP DOWN MP2112 1A QFN6 RoHS	U19				
30061048	COIL SMD 15uH 4.5A M 27R 12x12(SHL)Ro	L9				
30061154	CAP SMD 82PF 50V J COG (0402) MXM ROHS	C1109				
30061408	COIL SMD 4.7uH 3A M 54R 7x7(SHL)Ro	L1				
30062359	CAP SMD 47NF 16V K X7R (0402) ROHS	C359	C360			
30062607	CAP POS 220UF 4V M ESR=15mR 2.7A ROHS	C295	C297	C299	C300	
30062776	DIODE ESD AZ1045-04S SOT23-6 ROHS	U7				
30063139	RES SMD 1/16W 715R F 0402 ROHS	R679				
30063686	CAP ELCH 100UF 16V M 105C 6.3x5.4 ROHS	C451	C449	C562	C567	C1082
30064117	CAP SMD 10UF 16V K X5R (0805) RoHS	C249	C253	C262	C263	C338
		C339	C568			
30064325	XTAL 12MHZ 16pF ±30ppm HC49/SMD ROHS	X1				
30065826	RES SMD 1/16W 62R F 0402 ROHS	R234				
30066412	IC AAMP MAX9736A 2x15W BTL TQFN32 ROHS	U24				
30066874	CAP ELCH 47UF 16V M 105C 48mA 5x5.4 ROHS	C405	C400	C404	C402	
30066921	IC DVB-T/VIF DEMOD MSB1210 LQFP48 ROHS	U27				
30066925	IC STEP DOWN MP1484 ADJ/3A SO8 RoHS	U21				
30066938	COIL SMD 22uH 3.6A M 0.73R 10x10x4"SHLRO	L15	L16			
30067295	IC LDO APL5910 1A SOP-8P ROHS	U119				
30067595	CAP SMD 22UF 16V M X5R (1206) RoHS	C411	C414	C415	C419	C489
		C490	C492			
30067872	CAP SMD 10UF 10V M X5R (0805) ROHS	C1077	C1078	C1095	C120	C260
		C261	C271	C272	C273	C274
		C275	C282	C283	C287	C289
		C290	C293	C294	C4	C445
		C570				
30067968	CAP SMD 10UF 10V M X7R (0805) ROHS	C444				
30067972	CAP ELCH 100UF 35V M105C120mA6.3x7.7RoHS	C1117	C1118			
30067982	IC DDR2 64Mx16 NT5TU64M16GG-AC BGA84ROH	U4	U5			
30068276	CAP SMD 30PF 50V G COG (0402) RoHS	C1107	C1108			
30068280	COIL SMD 150nH 0.15A J 2R8 402 Ro	L20				
30068281	COIL SMD 330nH 0.15A J 2R8 603 Ro	L18	L19			
30069322	IC NAND 512Mb NAND512BW3D TSOP48 ROHS	U6				
30069749	TR NMOS BSH105 1.05A/30V SOT23 ROHS	Q158				
30069973	IC STMP52161 MB61 SOT23-5L ROHS	U120				
30070314	IC FLASH SPI 8Mb MX25L8006E SO8 ROHS	U10				
30020530	FERRIT SMD 600R/100MHZ 0.5R M 0.2A 603Ro	F249				
30063052	FERRIT SMD 1K/100MHZ 0.09R M 0.2A 0402Ro	F747	F748			
30000735	RES SMD 1/10W 4.7R J 0805 ROHS	R664				
30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q36				
30021996	RES SMD 1/16W 10K J 0402 ROHS	R88	R91	R92		
30022042	RES SMD 1/16W 1K J 0402 RoHS	R351				
30022057	RES SMD 1/16W 22K J 0402 RoHS	R847				
30022132	RES SMD 1/16W 0R 0402 ROHS	S17	S73			
30047143	TR PMOS FDN336P -1.3A/-20V SOT23 RoHS	Q59				
30064117	CAP SMD 10UF 16V K X5R (0805) RoHS	C264				
30020394	FERRIT SMD 330/100MHZ 0.1R M 1.5A 805Ro	F65	F70	F73	F734	
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R706	R710	R712		
30021996	RES SMD 1/16W 10K J 0402 ROHS	R115	R48	R54	R7	R51
		R53				
30022042	RES SMD 1/16W 1K J 0402 RoHS	R700				
30022058	RES SMD 1/16W 22R J 0402 ROHS	R604	R605			
30022073	RES SMD 1/16W 2K J 0402 ROHS	R642	R643			
30022085	RES SMD 1/16W 33R J 0402 RoHS	R426	R427	R716	R718	
30022132	RES SMD 1/16W 0R 0402 ROHS	S119	S123	S125	S151	
30022237	CAP SMD 27PF 50V J COG (0402) ROHS	C211	C212			
30022347	CAP SMD 22NF 16V J X7R (0402) ROHS	C497				
30042505	RES NET 1/32W 33R J 8P 0402 ROHS	R579	R580	R590		
30044848	CAP SMD 100NF 16V K X7R (0402) ROHS	C149	C150	C151	C152	C153

		C154	C155	C156	C157	C158
		C159	C160	C161	C174	C175
		C176	C177			
30057263	XTAL 24MHz 22pF 30ppm 250hmHC49S SMDROHS	X2				
30059259	CAP SMD 2.2UF 25V K X7R (0805) ROHS	C80	C84	C85		
30067868	IC QAM DEMOD. MSB1224 QFP48 ROHS	U8				
30067872	CAP SMD 10UF 10V M X5R (0805) ROHS	C3				
30066443	IC MSD9WB7GX-2 -SA TFBGA505 ROHS	U1				
30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q30	Q31			
30021958	RES SMD 1/16W 47K J 0402 RoHS	R564	R565	R566	R567	
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R402	R403			
30021996	RES SMD 1/16W 10K J 0402 ROHS	R264	R265			
30021999	RES SMD 1/16W 10R J 0402 RoHS	R534	R535	R536	R537	R538
		R539	R540	R541	R542	R543
		R552	R553	R557	R558	
30022042	RES SMD 1/16W 1K J 0402 RoHS	R329	R330	R334	R335	
30022132	RES SMD 1/16W 0R 0402 ROHS	S102	S103	S104	S116	S118
		S14	S170	S171	S2	S22
		S23	S3	S4	S5	S6
		S66	S7	S8	S9	S99
30066018	SOCKET HDMI 19P 0.5MM TOP ROHS	CN3	CN4			
30001734	RES SMD 1/10W 0R 0805 ROHS	S162	S206	S207	S210	
30001734	RES SMD 1/10W 0R 0805 ROHS	F22				
30019087	FERRIT SMD 60R/100MHz 0.025 M 3A 0805Roh	F761	F762			
30021958	RES SMD 1/16W 47K J 0402 RoHS	R83				
30022132	RES SMD 1/16W 0R 0402 ROHS	S182				
30022132	RES SMD 1/16W 0R 0402 ROHS	R390	R368			
30028331	FUSE SAFE SMD 7A/32VDC 1206 RoHS	FS4				
30047443	FERRIT SMD 100R/100MHz 0.02 M 4A 805Roh	S164				
30064287	RES SMD 1/16W 750R J 0402 ROHS	C470				
30021960	RES SMD 1/16W 47R J 0402 ROHS	R205	R206			
30022132	RES SMD 1/16W 0R 0402 ROHS	S190	S192			
30060822	FERRIT SMD 90R/100MHz 2R5 M 0.1A 2x504Ro	F100	F101	F102	F103	F104
		F105				
30015459	CAP SMD 470NF 25V K X7R (0805) RoHS	C322				
30019087	FERRIT SMD 60R/100MHz 0.025 M 3A 0805Roh	F12				
30022003	RES SMD 1/16W 470R J 0402 ROHS	R383				
30022024	RES SMD 1/16W 12K J 0402 ROHS	R276				
30022084	RES SMD 1/16W 33K J 0402 RoHS	R296				
30022132	RES SMD 1/16W 0R 0402 ROHS	S21	S28	S29	S91	S27
30060746	CONN FFC 30P 1MM TOP LVDS ROHS	CN13				
30064117	CAP SMD 10UF 16V K X5R (0805) RoHS	C265				
30021996	RES SMD 1/16W 10K J 0402 ROHS	R4				
30022042	RES SMD 1/16W 1K J 0402 RoHS	R340				
30000710	RES SMD 1/10W 47R J 0805 ROHS	F23	F24			
30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C244	C245	C246		
30020530	FERRIT SMD 600R/100MHz 0.5R M 0.2A 603Ro	F51				
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R183				
30021996	RES SMD 1/16W 10K J 0402 ROHS	R95	R96			
30022046	RES SMD 1/16W 2.2K J 0402 RoHS	R270				
30022074	RES SMD 1/16W 3.3K J 0402 RoHS	R661				
30022132	RES SMD 1/16W 0R 0402 ROHS	S227	S184			
30022342	CAP SMD 10NF 16V J X7R (0402) ROHS	C382	C383			
30024769	CAP ELCH 47UF 16V M 52mA 5x5.4 ROHS	C5	C6			
30024778	FERRIT SMD 60R/100MHz 0.1R M 0.5A 603Ro	F740				
30038480	DIODE SMD ZEN C5.6V SOD123 ROHS	D17	D6	D9		
30038507	DIODE SMD 1N4148 0.15A/100V SOD123 RoHS	D54				
30049062	RES SMD 1/16W 100K F 0402 RoHS	R272	R298			
30053657	DIODE ARRAY ESD NUP4004M5 TSOP-5 RoHS	D24				

30061329	RES SMD 1/16W 49.9K F (0402) MXM ROHS	R12	R3			
30064353	IC HEADPHONE TDA1308T MB35 SO8 RoHS	U15				
30066874	CAP ELCH 47UF 16V M 105C 48mA 5x5.4 ROHS	C566				
30038984	RES NET 1/32W 100R J 8P 0402 ROHS	R839				
30038984	RES NET 1/32W 100R J 8P 0402 ROHS	R727				
30010641	RES SMD 1/10W 27R J 0805 ROHS	R748				
30021987	RES SMD 1/16W 4.7K J 0402 RoHS	R707				
30022042	RES SMD 1/16W 1K J 0402 RoHS	R118				
30022132	RES SMD 1/16W 0R 0402 ROHS	S106	S107	S110	S15	S44
30022239	CAP SMD 39PF 50V J COG (0402) RoHS	C428				
30022244	CAP SMD 100PF 50V J COG (0402) ROHS	C1122				
30049016	COIL SMD 470nH 0.25A M 0R65 805 Ro	L3				
30021988	RES SMD 1/16W 1.8K J (0402) RoHS	R301	R302			
30022068	RES SMD 1/16W 6.8K F 0402 ROHS	R299	R300			
30049532	DIODE SCH SK24 2A/40V/50A DO214AC ROHS	D42				
30066938	COIL SMD 22uH 3.6A M 0.73R 10x10x4"SHLRO	L14	L17			
30069618	CAP SMD 100NF 50V K X5R (0402) RoHS	C113	C114	C115	C117	C573
		C574				
30066919	CONN HEADER 6P 2.0MM SIDE W/LOCK RoHS	CN145				
30001692	FILTER SAW OFWK3953MROHS	Z1				
30012545	FILTER SAW K9656M ROHS	Z2				
30059740	SOCKET D-SUB 15P TOP 11.9MM RoHS	CN1				
30061293	JACK RCA 3P GREEN/BLUE/RED TOP ROHS	JK5				
30061294	JACK RCA 3P WHITE/RED/BLACK TOP ROHS	JK4				
30063090	CONN HEADER 5P 2.0MM SIDE W/LOCK RoHS	CN8				
30067935	CONN HEADER 2X14P 2.54 W/LOCK SIDE RoHS	CN149				
40043122	SUPER THIN POWDER (20*20*2)Rohs	U1				
30031077	JACK HEADPHONE SIDE RoHS	JK10				
30044670	SOCKET USB SIDE RoHS	CN19				
30062840	JACK RCA 3P RED/WH/YELLOW SIDE SLIM ROHS	JK1				
30064327	SOCKET PCMCIA S.DECK 5mm5V W/G W/SHLROHS	CN6				
30059738	SOCKET SCART 21P TOP LEFT BLACK ROHS	SC2				
30069671	TUNER DIG. HALF-NIM DTOS403LH122E RoHS	TU1				
30059738	SOCKET SCART 21P TOP LEFT BLACK ROHS	SC1				
30066919	CONN HEADER 6P 2.0MM SIDE W/LOCK RoHS	CN23				

NO	Part Code	Description	Position			
2	20519700	MD.ASY.17PW26-4-26-32"170-270ROC61SH				
	20349668	HE.ASY.17IPS02-2-SMPS 20/100V DIODE	Q827			
	30048782	DIODE SCH STPS20H100CFP20A/100V TO220ROH	Q827			
	35017056	SCREW S C ZN YSMB 2,9*7,5 W-R RoHS				
	20397357	HE.ASY.17PW26-SMPS26"-32"20A/100V DIODES				
	30048782	DIODE SCH STPS20H100CFP20A/100V TO220ROH	Q828			
	35017056	SCREW S C ZN YSMB 2,9*7,5 W-R RoHS				
	20397368	HE.ASY.17PW26-PFC-SMPS HALFBRIDGE				
	30039463	TR NMOS FQPF9N50C 9A/500V TO220F ROHS.	Q803			
	30060725	TR NMOS STP9NK50ZFP 7.2A/500V TO220FROHS	Q813	Q814		
	35017056	SCREW S C ZN YSMB 2,9*7,5 W-R RoHS				
	20434318	CN.ASY.Ferrite Bead(FTZ) 20μH 1A+MAKARON	L846	L845		
	30001265	RES THE SAFE 10R/3A NTC SCK-103 RoHS	TH1	TH2		
	30002012	Choke Coil 150uH 3A K 12.5x15 RoHS	L837			
	30002170	Ferrite Bead(FTZ) RADIAL 14x8x8 RoHS	L818			
	30005819	CAP EL 1000UF 16V M 105°1110mA 10x20ROHS	C851	C863		
	30006765	RES MO 2W 0.22R J TAPED RoHS	R971			
	30007748	CAP EL 1000UF 35V M 105°1950mA12.5x25ROH	C852	C962		
	30007750	CAP EL 470UF 35V M 105°1400mA 10x20 ROHS	C961	C931		
	30007858	CAP MKTSAFE 470NF 275V M A 225BOXTOSRoHS	C800			
	30009366	DIODE UF5402 3A/200V 150A DO201AD RoHS	D893			
	30012161	CAP EL 1000UF 50V M 105°2555mA 16x25ROHS	C850			
	30013531	TR PBJT BD140 -1.5A/-80V SOT32 ROHS	Q844			
	30014352	DIODE MUR460 4A/600V DO-27 ROHS	D882	D883	D898	
	30015087	IC SAFE OPTOCOUPLER TCET1102G	IC801	IC809	IC811	
	30018085	CAP VAR SAFE 510V K MFCN14D511 ROHS	R801			
	30029522	CONN HEADER 12P 2.5MM TOP BLK RoHS	PL802			
	30031046	CONN HEADER SAFE 2P(V0)7.5MM TOP WHT TOS	PL809			
	30031825	CAP EL 2200UF 6.3V M 935mA 10x20 RoHS	C860			
	30032635	CONN HEADER 6P 2.5MM TOP WHT SD ROHS	PL804			
	30039383	CAP MKT SAFE 1UF 450V K 15DIP RoHS	C802	C934		
	30044818	IC SMPS FSDL321 50KHz DIP8 ROHS	IC806			
	30051128	CAP EL 150UF 450V M 105°840mA 30x25 ROHS	C819			
	30054292	TRF SMT SAFE St-By 26"/52" EF25 22mmRo	TR803			
	30056344	CAP MKP 10NF 630Vdc/622Vpp J 15BOX ROHS	C810			
	30059889	Choke coil Toroid 22uH 3A M 18x9.5 Ro	L800			
	30060103	TRF PFC SAFE26/32/42"EER3019N250μHK21Ro	TR806			
	30060175	IC PWM HISIDE BALLAST FAN 7711 DIP8 RoHS	IC830			
	30061594	Line Filter Safe 2x16mH%50 2A ET24 RoHS	L840			
	30061705	CONN HEADER 2x14P 2-5mm W/LOCK ROHS	PL816			
	30061879	CAPMKP 22NF 630Vdc/622Vpp J15BOXRoHS	C878			
	30062016	CAP EL 2700UF 16V M 105°2400mA 13x20ROHS	C818			
	30062820	CONN HEADER SAFE 2P V0 7.5MM TOP BLK TOS	PL815			
	30064312	DIODE BRI GBU4M 4A/1000V 150A LCD ROHS	D800			
	30065734	Choke Coil 1uH 5A M 0.7R 8x7 Ro	L804	L811	L816	
	30067289	TRF SMT SAFE EER35 32"Res.32mm Rohs	TR810			
	30069935	CAP CER SAFE 1.5NF 4KV M 3.5MMSHARPROHS	C873	C933		
	30069936	CAP CER SAFE 150PF 4KV M 3.5MMSHARPROHS	C847	C917	C918	
	30001291	DIODE HER107 1A/800V 30A DO41 ROHS	D894			
	30006712	FERRIT BEAD AXI 70/100M 3A 3.5x4.7Roh	J163			
	30006765	RES MO 2W 0.22R J TAPED RoHS	R829			
	30066355	RES MG SAFE 1/2W 4.7M J NEW ROHS	R960			
	30000353	CAP EL 100UF 25V M 150mA 6.3X11 ROHS	C892			
	30000376	CAP EL 220UF 25V M 320mA 8x11 ROHS	C817			
	30000387	CAP EL 33UF 50V M 100mA 5x11 ROHS	C801			
	30000400	CAP EL 47UF 50V M	C814			
	30000444	CAP CER 470PF 1KV K Y5P ROHS	C966	C967	C968	
	30014346	IC REG 78L05 5V/0.1A TO92 RoHS	IC829			

30018416	CAP EL 470UF 16V M 105° ROHS	C811				
30028356	FUSE SAFE 3.15A 250V (RADIAL) ROHS	F800				
30034077	CAP EL 47UF 50V M 105C ROHS	C874				
30044218	CAP EL 33UF 50V M 105 ROHS	C840				
30066377	CAP CER 220PF 1KV K YRN 125C(PULSE) ROHS	C914				
30000263	CAP SMD 56PF 50V J COG (0805) ROHS	C916				
30000284	CAP SMD 1NF 50V K X7R (0805) ROHS	C941	C942			
30000289	CAP SMD 10NF 50V K X7R (0805) ROHS	C839	C947			
30000294	CAP SMD 100NF 50V K X7R (0805) ROHS	C804	C883	C894	C824	C830
		C841	C845	C862	C915	C969
		C855	C833			
30000309	CAP SMD 2.2NF 50V K X7R (0805) ROHS	C849	C898			
30000334	CAP SMD 47NF 50V K X7R (0805) ROHS	C856	C964			
30000340	CAP SMD 6.8NF 50V K X7R (0805) RoHS	C920	R1029			
30000341	CAP SMD 68NF 50V K X7R (0805) ROHS	C904				
30000457	RES SMD 1/10W 10R J 0805 ROHS	R1033				
30000464	RES SMD 1/10W 100R J 0805 ROHS	R846	R873	R1014		
30000469	RES SMD 1/10W 1K J 0805 ROHS	R869				
30000475	RES SMD 1/10W 10K J 0805 ROHS	R833	R834	R852	R864	R865
		R866	R882	R892	R893	R977
		R1039	R1040			
30000480	RES SMD 1/10W 100K J 0805 ROHS	R815	R897	R855	R964	
30000494	RES SMD 1/10W 120R J 0805 ROHS	R1003				
30000503	RES SMD 1/10W 12K J 0805 ROHS	R857	R933			
30000517	RES SMD 1/10W 15R J 0805 ROHS	R823				
30000529	RES SMD 1/10W 1.5K J 0805 ROHS	R1024				
30000534	RES SMD 1/10W 15K J 0805 ROHS	R1044	R1013			
30000563	RES SMD 1/10W 1.8K J 0805 ROHS	R826	R831			
30000567	RES SMD 1/10W 18K J 0805 ROHS	R946				
30000571	RES SMD 1/10W 180K J 0805 ROHS	R1015				
30000588	RES SMD 1/10W 220R J 0805 ROHS	R972				
30000593	RES SMD 1/10W 2.2K J 0805 ROHS	R1031	R887	R1046	R838	
30000597	RES SMD 1/10W 22K J 0805 ROHS	R820				
30000609	RES SMD 1/10W 2.2R J 0805 RoHS	R1032	R811	R812		
30000614	RES SMD 1/10W 2.4K J 0805 RoHS	R1038				
30000644	RES SMD 1/10W 3K J 0805 ROHS	R880	R800			
30000653	RES SMD 1/10W 33R J 0805 ROHS	R860	R861	R802	R976	R810
30000659	RES SMD 1/10W 330R J 0805 ROHS	C951				
30000664	RES SMD 1/10W 3.3K J 0805 ROHS	R839	R872	R883		
30000668	RES SMD 1/10W 33K J 0805 ROHS	R832	R863	R859	R949	
30000688	RES SMD 1/10W 390R J 0805 ROHS	R1026				
30000710	RES SMD 1/10W 47R J 0805 ROHS	R1023				
30000721	RES SMD 1/10W 4.7K J 0805 ROHS	R856	R858	R891		
30000727	RES SMD 1/10W 47K J 0805 ROHS	R822	R824	R828	R836	R862
		R910	R970	R948		
30000735	RES SMD 1/10W 4.7R J 0805 ROHS	R888	R889			
30000751	RES SMD 1/10W 5.6K J 0805 ROHS	R962	R965	R804		
30000774	RES SMD 1/10W 680R J 0805 ROHS	R1045				
30000782	RES SMD 1/10W 68K J (0805) ROHS	R947	R1012			
30000797	RES SMD 1/10W 75R J 0805 ROHS	R881				
30000818	RES SMD 1/10W 8.2K J 0805 ROHS	R1000	R1001	R1002	R996	R997
		R998	R999	R1027		
30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q802	Q804	Q805	Q806	Q807
		Q810	Q812	Q818	Q831	Q833
		Q834	Q845	Q846		
30001458	TR BC858B SMD	Q811	Q841			
30001734	RES SMD 1/10W OR 0805 ROHS	J121	L826	J120	J156	J160
		R979				
30001735	RES SMD 1/8W OR 1206 ROHS	R1020	J117	J132	J158	R1036

30006462	RES SMD 1/10W 22R J 0805 ROHS	R1022				
30007021	RES SMD 1/10W 1K F 0805 ROHS	R809	R966	R874	R1037	
30007026	RES SMD 1/10W 5.1K J 0805 ROHS	R870				
30007169	DIODE DUALBAV99 0.215A/70V 4.5ASOT23ROHS	D876				
30007789	RES SMD 1/10W 27K F 0805 ROHS	R877	R803			
30007798	TR NBJT BC848C 0.1A/30V SOT23 RoHS	Q800				
30008996	IC VREF TL431SAMF2 ADJ %1 SOT23 ROHS	D819	D851			
30010641	RES SMD 1/10W 27R J 0805 ROHS	R884				
30012355	RES SMD 1/10W 6.8K F 0805 RoHS	R1030	C928			
30012852	RES SMD 1/10W 3.9K F 0805 RoHS	R875				
30015227	RES SMD 1/10W 1.2K F 0805 RoHS	R879				
30015459	CAP SMD 470NF 25V K X7R (0805) RoHS	C901	C803	C807		
30019996	DIODE BAV70 215mA/75V 4A SOT23 RoHS	D878				
30020394	FERRIT SMD 330/100MHz 0.1R M 1.5A 805Ro	L832				
30024779	FERRIT SMD 50R/100MHz 0.4R M 3A 1206 Roh	L820	L822	L823	L825	L833
		L836	L838	L801	L830	L844
30025823	RES SMD 1/10W 15K F 0805 ROHS	R1025	R808	R973	R867	R868
30029322	TR NMOS FDV303N 0.68A/25V SOT23 ROHS	Q837				
30033743	TR NMOS NTGS3446 5.1A/20V TSOP6 RoHS	IC824				
30038476	DIODE SMD ZEN C12V SOD123 ROHS	D886				
30038477	DIODE SMD ZEN C8.2V SOD123 ROHS	D867				
30038481	DIODE SMD ZEN C6.8V SOD123 ROHS	D801	D826	D847		
30038495	DIODE SMD ZEN C22V SOD123 ROHS	D887				
30038498	DIODE SMD ZEN C18V SOD123 ROHS	D854				
30038507	DIODE SMD 1N4148 0.15A/100V SOD123 RoHS	D802	D811	D842	D857	D862
		D865	D885	D888	D889	
30039196	RES SMD 1/4W 1M F 1206 ROHS	R912	R980	R981	R932	
30039384	CAP SMD 1NF 1KV K X7R (1206) ROHS	C842	C893			
30046152	CAP SMD 1UF 50V Z Y5V (0805) ROHS	C954	C932	C953	C838	C956
30050065	RES SMD 1/4W 619K F 1206 ROHS	R817	R818	R819		
30050066	RES SMD 1/4W 649K F 1206 ROHS	R940	R982			
30051690	DIODE SMD FYD0504S 5A/40V 75A DPAK RoHS	IC831				
30052271	CAP SMD 10UF 25V K X5R (1206) ROHS	C935	C950	C955	C938	C939
30053502	IC PFC FAN7529 SO8 ROHS	IC802				
30057252	DIODE SMD RS1002FL 0.5A/200V SOD123FL RO	D807	D869	D884		
30058193	RES SMD 1/8W 30K F 0805 ROHS	R876				
30059220	DIODE SMD RS1008FL 0.5A/800V SOD123FL RO	D880	D806			
30059235	DIODE SMD SCH BAT54J 0.2/30V SOD323FRoHS	D861				
30059258	IC PWM CONT CAT7581 SO8 RoHS	IC800				
30060652	RES SMD 1/4W 100K J (1206) RoHS	R1006	R1007	R1010	R1011	
30061026	CAP SMD 1UF 25V K X7R (0805) ROHS	C870	C913	C965		
30064313	RES SMD 1/10W 12K F (0805) ROHS	R931				
30065572	CAP SMD 10UF 25V K X7R (1206) ROHS	C881	C925			
30066849	TR DN MOS FDS8984 7A/30V SO8 RoHS	IC803				

NO	Part Code	Description	Position								
6	20467110	MD.ASY.17TK129CY-2-26-42855/6/7									
	30001457	TR NBJT BC848B 0.1A/30V SOT23 ROHS	Q1								
	30022004	RES SMD 1/16W 11K J 0402 ROHS	R12								
	30022054	RES SMD 1/16W 20K J 0402 ROHS	R11								
	30022063	RES SMD 1/16W 560R J 0402 ROHS	R1	R10	R2	R3	R4	R5	R6	R7	R8
	30022132	RES SMD 1/16W 0R 0402 ROHS	R14	R9							
	30022200	CAP SMD 1NF 50V J X7R (0402) ROHS	C3								
	30030097	CAP SMD 100NF 10V K X5R (0402) RoHS	C2								
	30051792	CAP SMD 470NF 16V M Y5V (0402) ROHS	C5								
	30059485	IC PSOC CY8C20234 (QFN16) ROHS	IC1								
	30062117	SMD MAGNETIC TRANSDUCER 5x5MM 12R 3VROHS	VZ1								
	30062657	CONN HEADER 8P 1.25MM TOP WHT SMT RoHS	E1								
	30067595	CAP SMD 22UF 16V M X5R (1206) RoHS	C1								

NO	Part Code	Description	Position		
4	20531135	MD.ASY.17LD98-7-26880(MB25/35(SHARP)			
	30047579	IC PREAMP TSOP58236 36kHz 5V ROHS	MD1		
	30062668	CNAS 5P/300 FLT W/C UL2468AWG26 ROHS	PL2		
	30064838	LED WHITE 3MM VWL-30933 RoHS	D1		
	30000294	CAP SMD 100NF 50V K X7R (0805) ROHS	C4	C5	C6
	30000464	RES SMD 1/10W 100R J 0805 ROHS	R1		
	30006462	RES SMD 1/10W 22R J 0805 ROHS	R2		
	30010555	CAP SMD 1UF 16V K X7R (0805) ROHS	C1	C2	C6

11	20542662 SPK.AS.32850 35_6P(R/L)JIE(42X(6W(BL(Speaker Group Code
a	30070240 CNAS 6P/600+350 SPK SISW/C UL1007AWG24Ro	Speaker Cable
b	40045315 BRACKET SPEAKER 42*160*105 (I)V0_SHARP	Bracket
c	35008812 SCREW P C ZN RYSB 3x10 RoHS	Screw
d	30068914 SPEAKER 33x105 8R 10W (MTL) ROHS	Speaker
18	20529654 FOOT ASSY 32882(B.CO.BL/P-V-BLACK)SHARP	Foot Assy
a	35003339 SCREW C ZN YSB M4x12 RoHS	Foot Assy Screw
25	20534277 ARTWORK SHARP LC-32D12E	Artwork Group
a	50177411 I/B SHARP LC-32D12E MB761/3902/E	
b	20527505 R/C 3902 SHARP&3902 (GRAY/S)(BLACK/P)	
c	30063603 BATTERY AAA ALKALINE R03 2006/66/EC ROHS	
d	50177413 PAP.I/B QSG SHARP LC-32D12E	
e	50165205 WARR.CARD SHARP "Aquos care plan"	
f	50165208 WARR.CARD SHARP "Guarantee regisration"	
g	50165209 WARR.CARD SHARP "Aguos regisration card"	
h	40043135 CABLE HOLDER 50x30 WHITE(I	