

Service Service Service



Service Manual

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**CLASS 1
LASER PRODUCT**

(GB) 3141 785 39830

Mechanical and Dismantling Instructions

Dismantling Instruction

Detailed information please refer to the model set.

The following guidelines show how to dismantle the player.

Step 2:Dismantle the loader.Open the tray,dismantle the CD door,disconnect connectors(J11,J12,XP7,P2), remove 2 screws beside the loader,then pull up the loader.(Figure 2)

Step 3:Dismantle the main board.Disconnect connectors(XP6,XP9,XP4,XP13),remove 2 screws on the main board and 5 screws on the back panel.then pull up the main board.(Figure 2)

Step 4:Dismantle the amplifier board.Disconnect connectors(XP3,XP58),remove 2 screws on the amplifier board and 3 screws on the back panel.then pull up the amplifier board.(Figure 2)

Step 4:Dismantle the power board.Remove 4 screws on the power board, then pull up the board.(Figure 2)



Figure 2

Step 5:Dismantle the front control board.Remove 3 screws on the board, then pull up the board.(Figure 3)

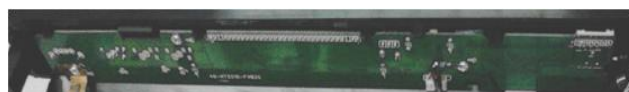


Figure 3

Software Upgrade

1. There are 2 ways to software upgrade:

First:

Upgrade from USB:

Copy the upgrade file HTD5510_X X.BIN to USB then press the USB key on RC or SOURCE key on front panel.

When upgrade file detected, select "Yes" to upgrade, select "Cancel" to cancel.

After upgrading begins, a message "DO NOT POWER OFF" will show, or the product will hang up and upgrading failed.

Second:

Upgrade from Disc:

Copy the upgrade file HTD5510_X X.BIN to disc then read the disc.

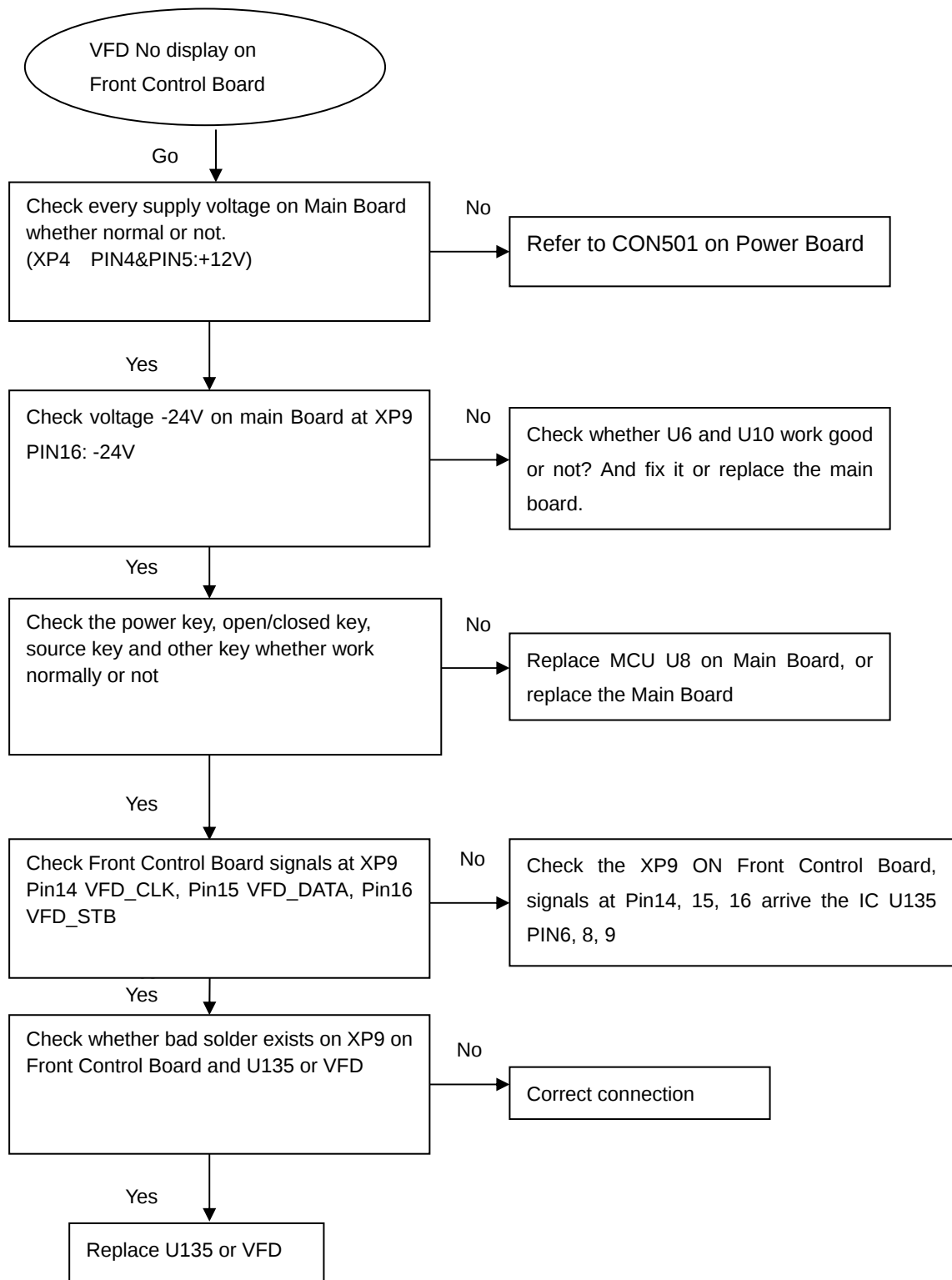
When upgrade file detected, select "Yes" to upgrade, select "Cancel" to cancel.

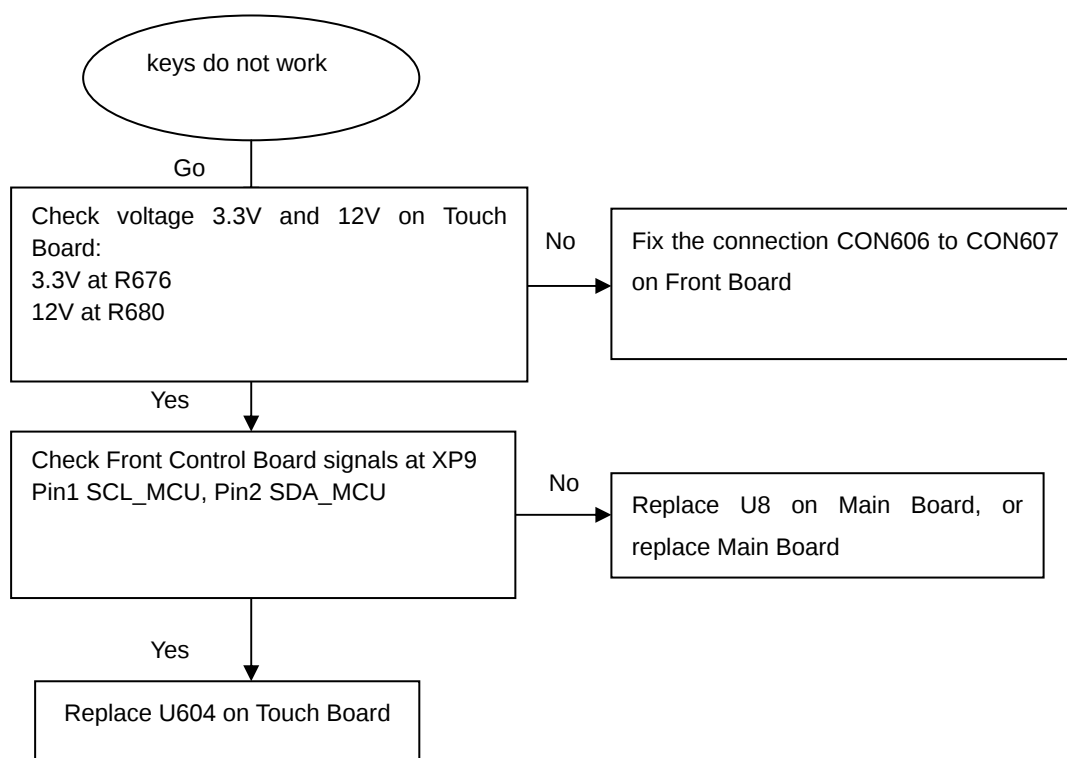
After upgrading begins, a message "DO NOT POWER OFF" will show, or the product will hang up and upgrading failed.

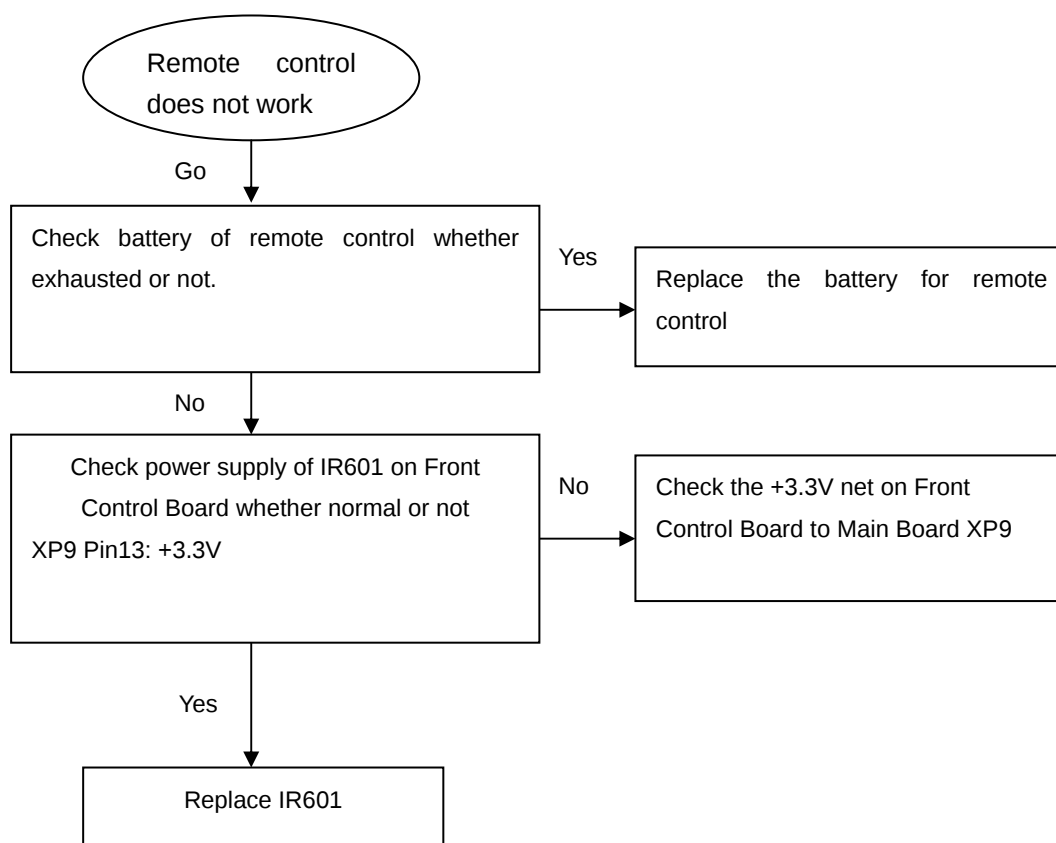
2. Check the version information after upgraded.

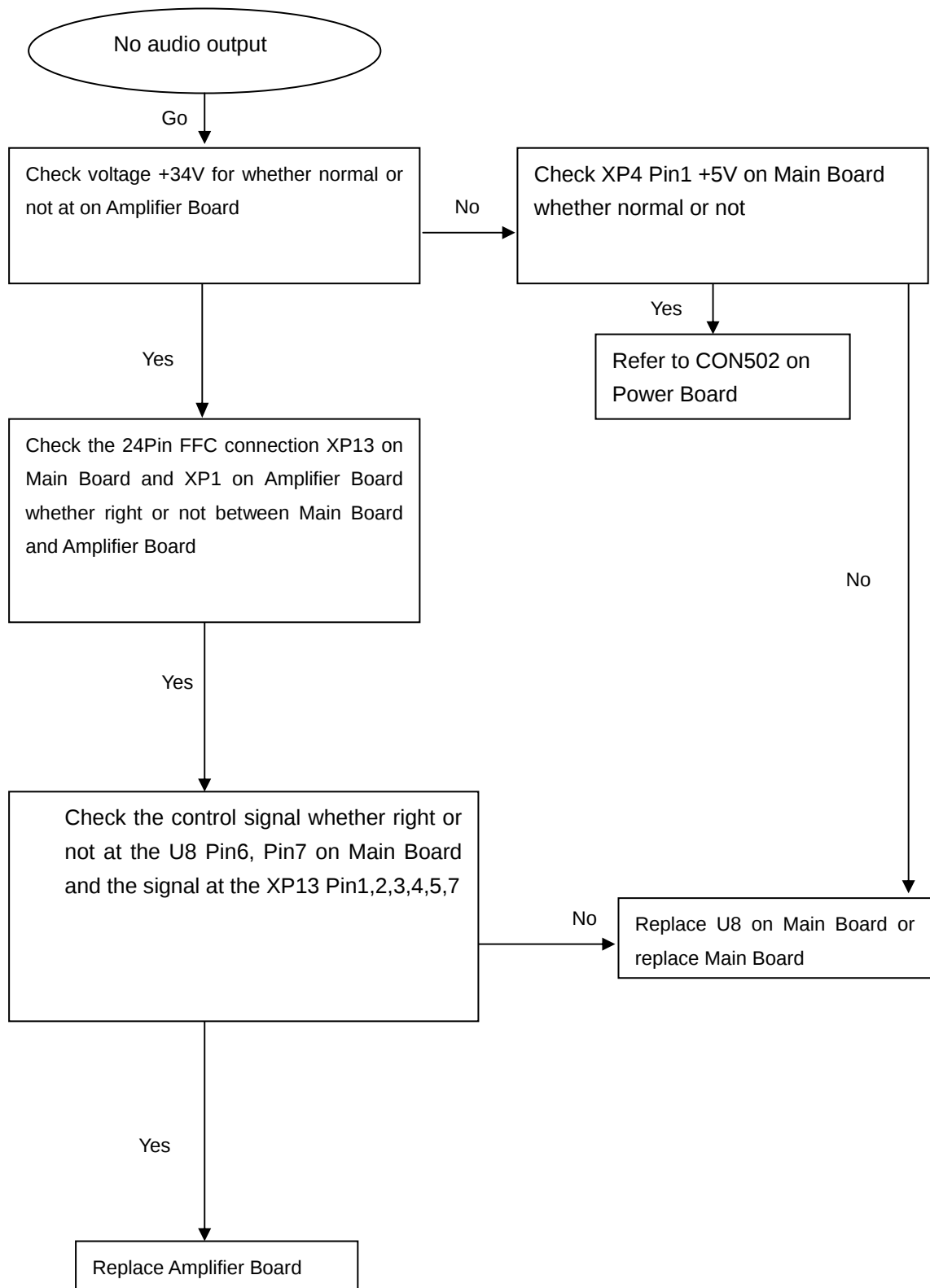
Press the setup key on RC , select Preference Setup, and then Version info , press OK Key you will see a interface below:

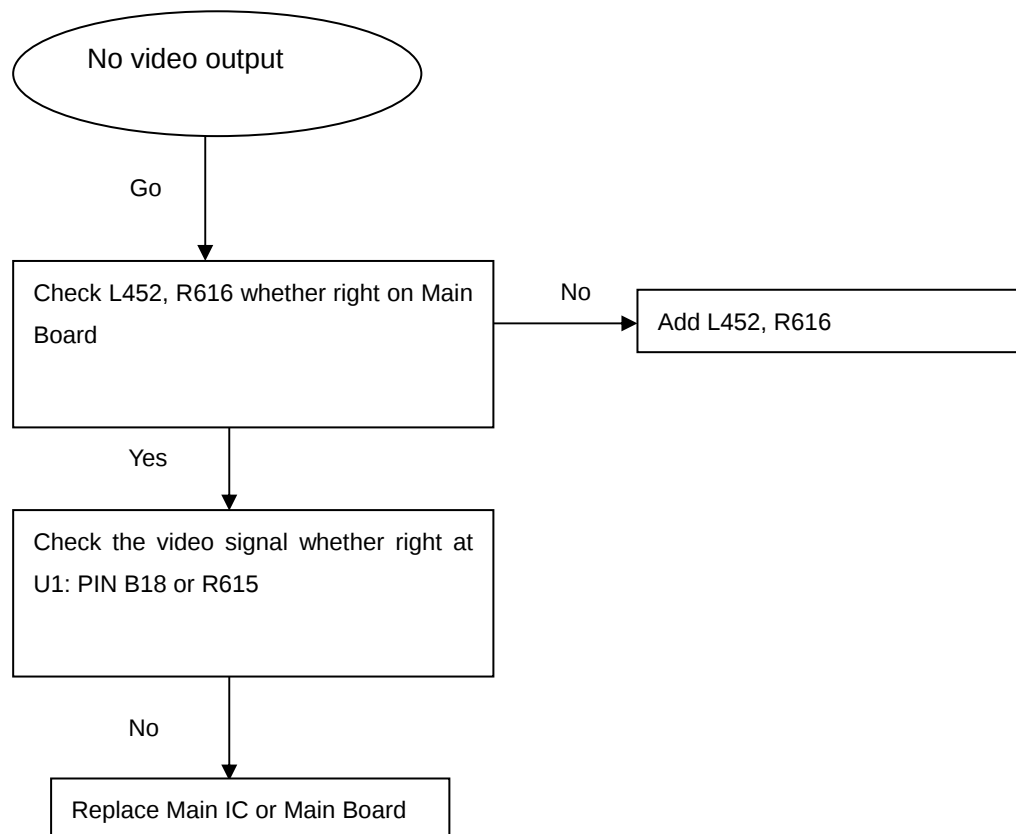
Preference	
File Name	HTD 5510_12.BIN
Version	XX.XX.XXX.XX
8203RX	19.85.05.16
RISC	026.5BXC 03R-A-026
Servo	DL0DL2-FAA-774X
Region Code	2
OK	

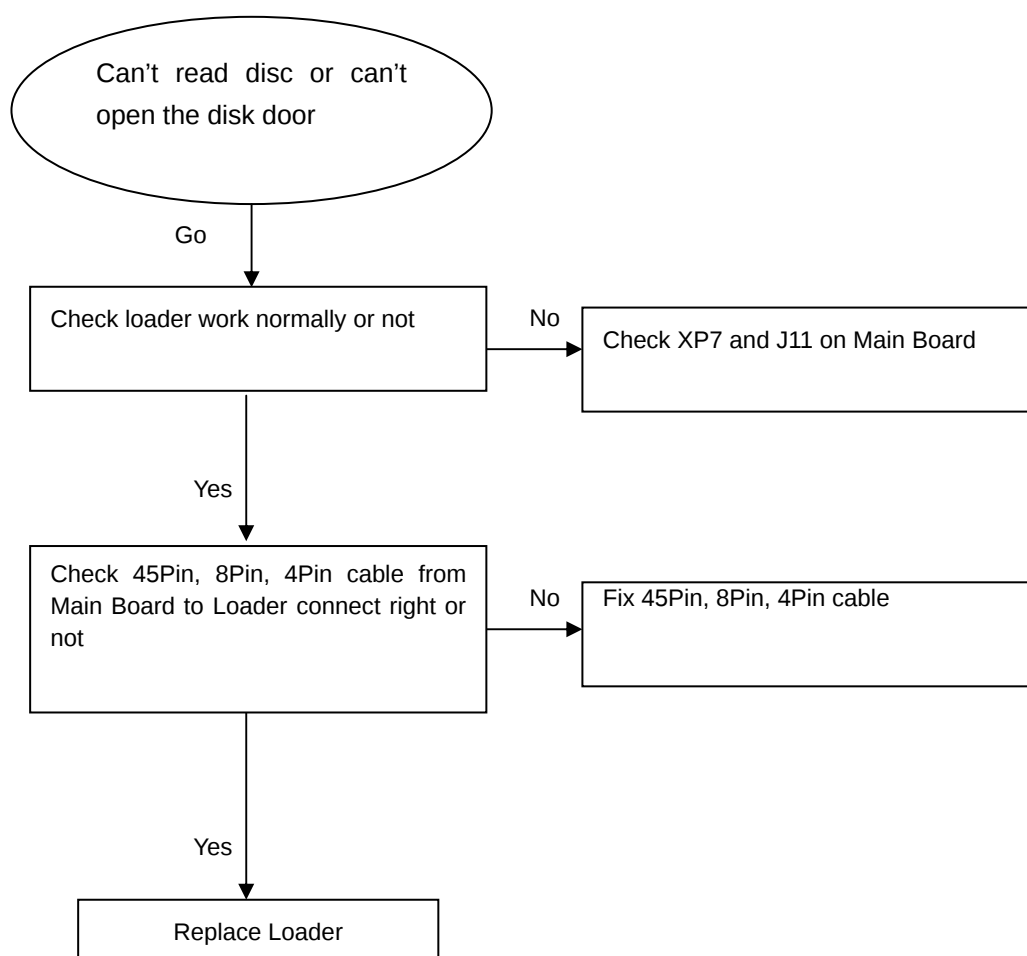
VFD No display on Front Control Board

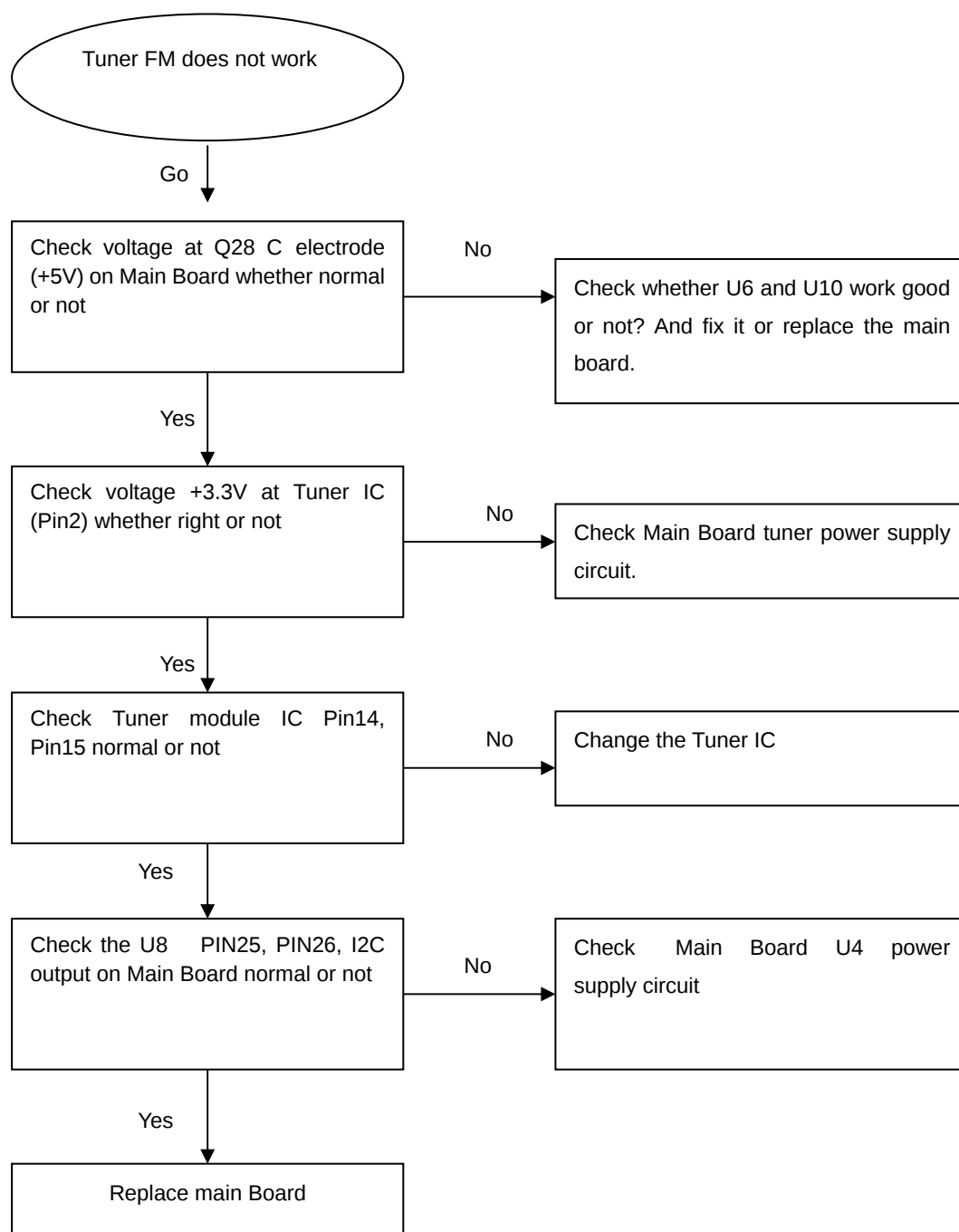
Touch keys do not work

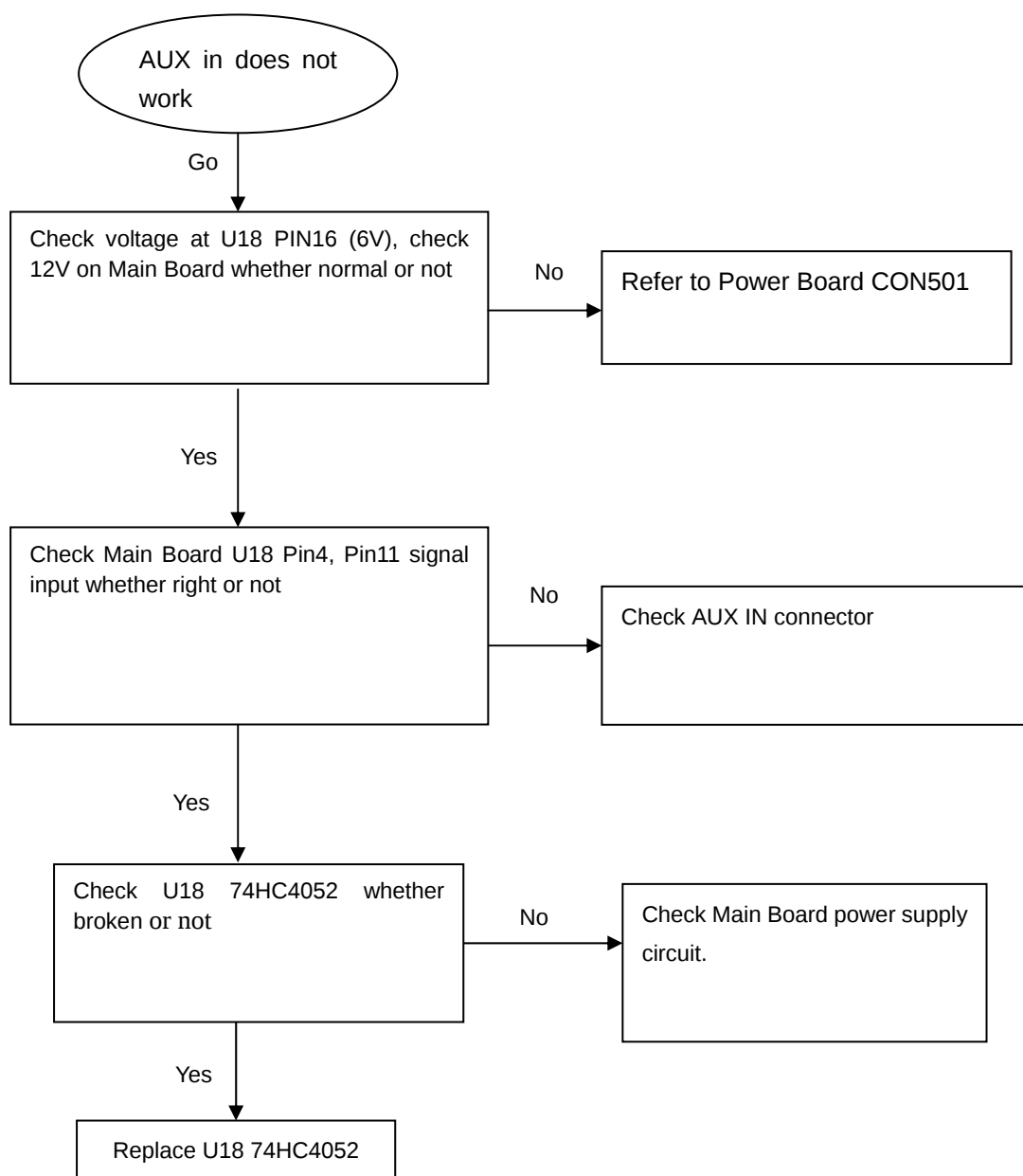
Remote control does not work

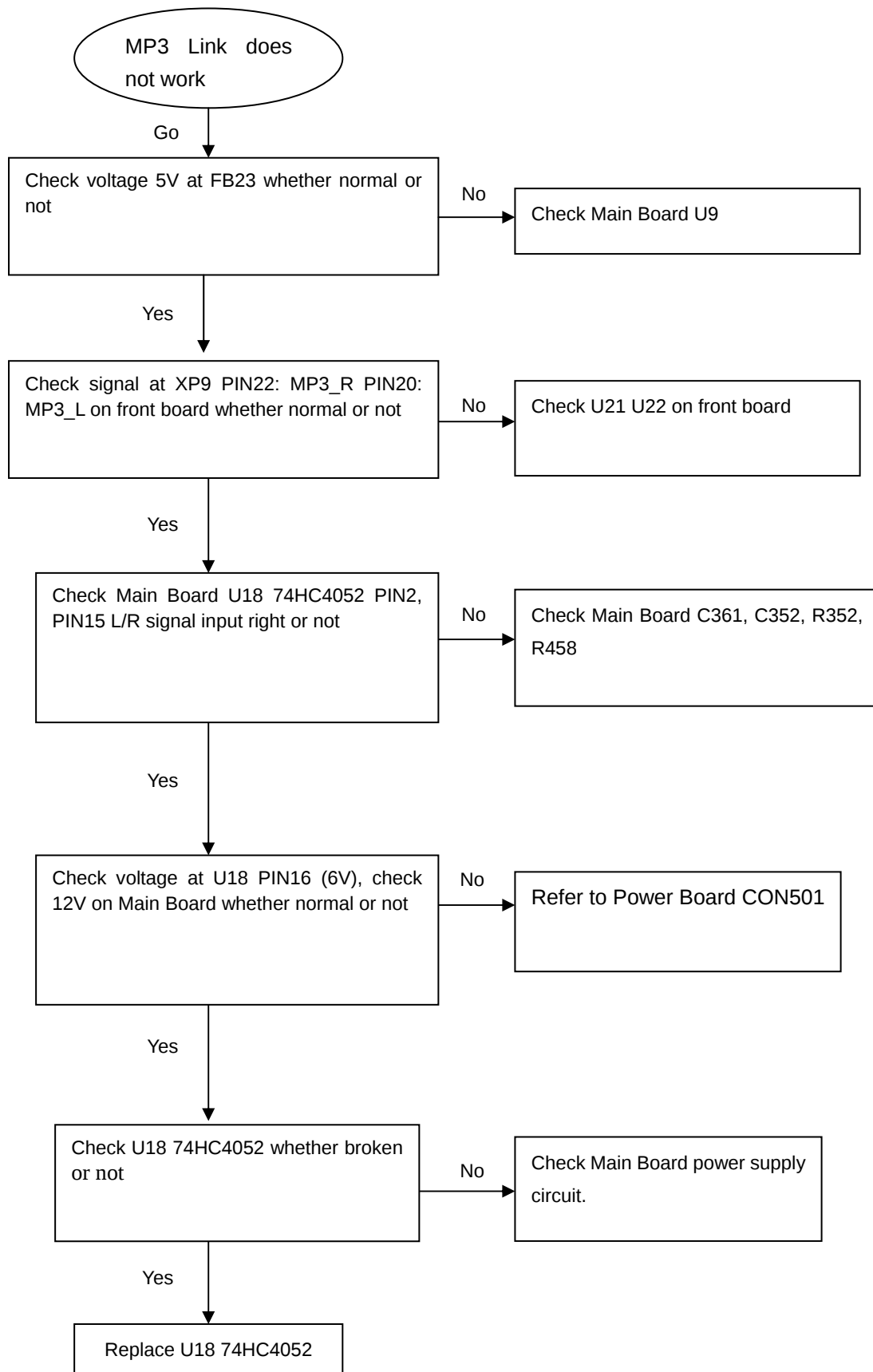
No audio output

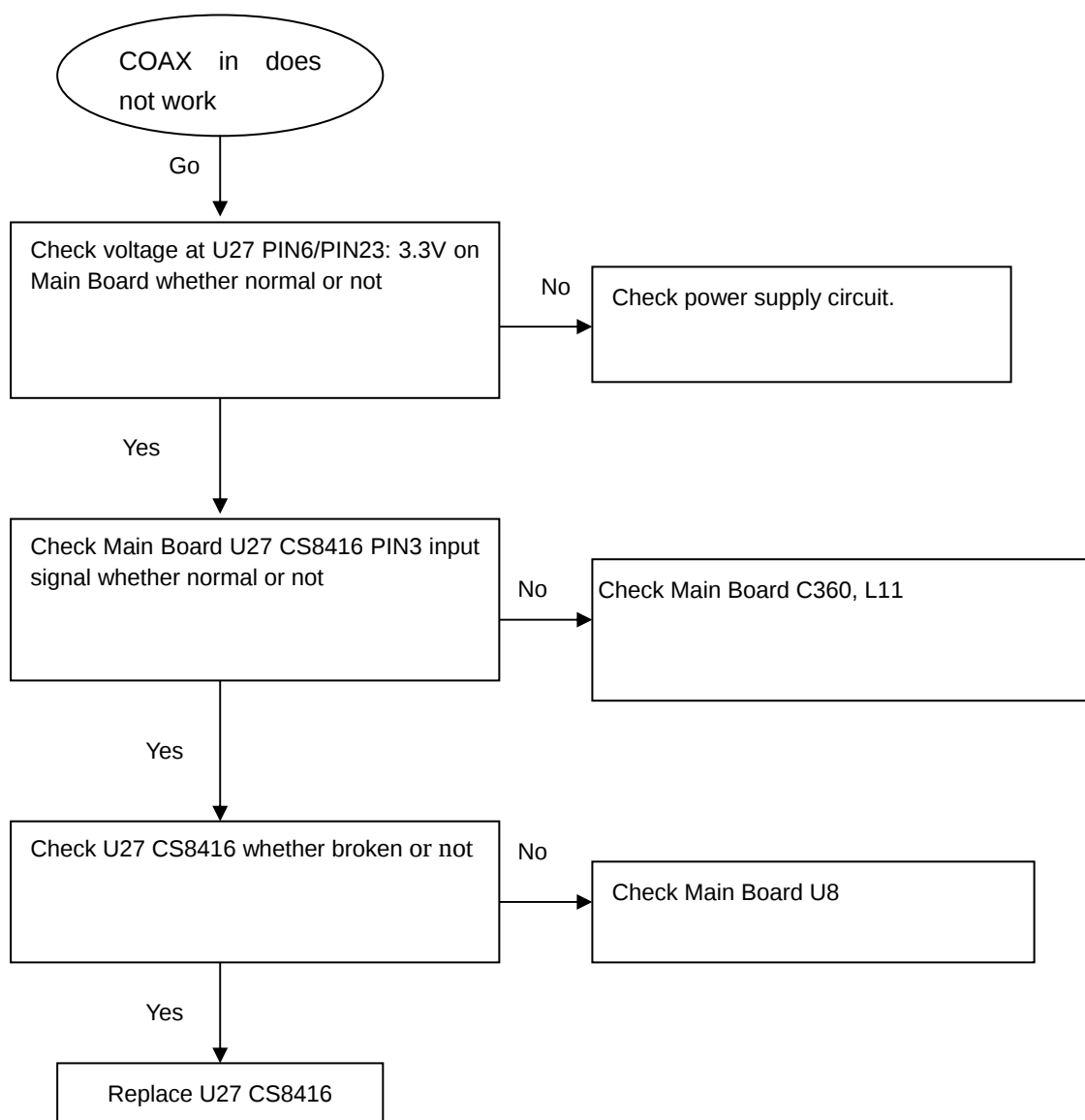
No video output

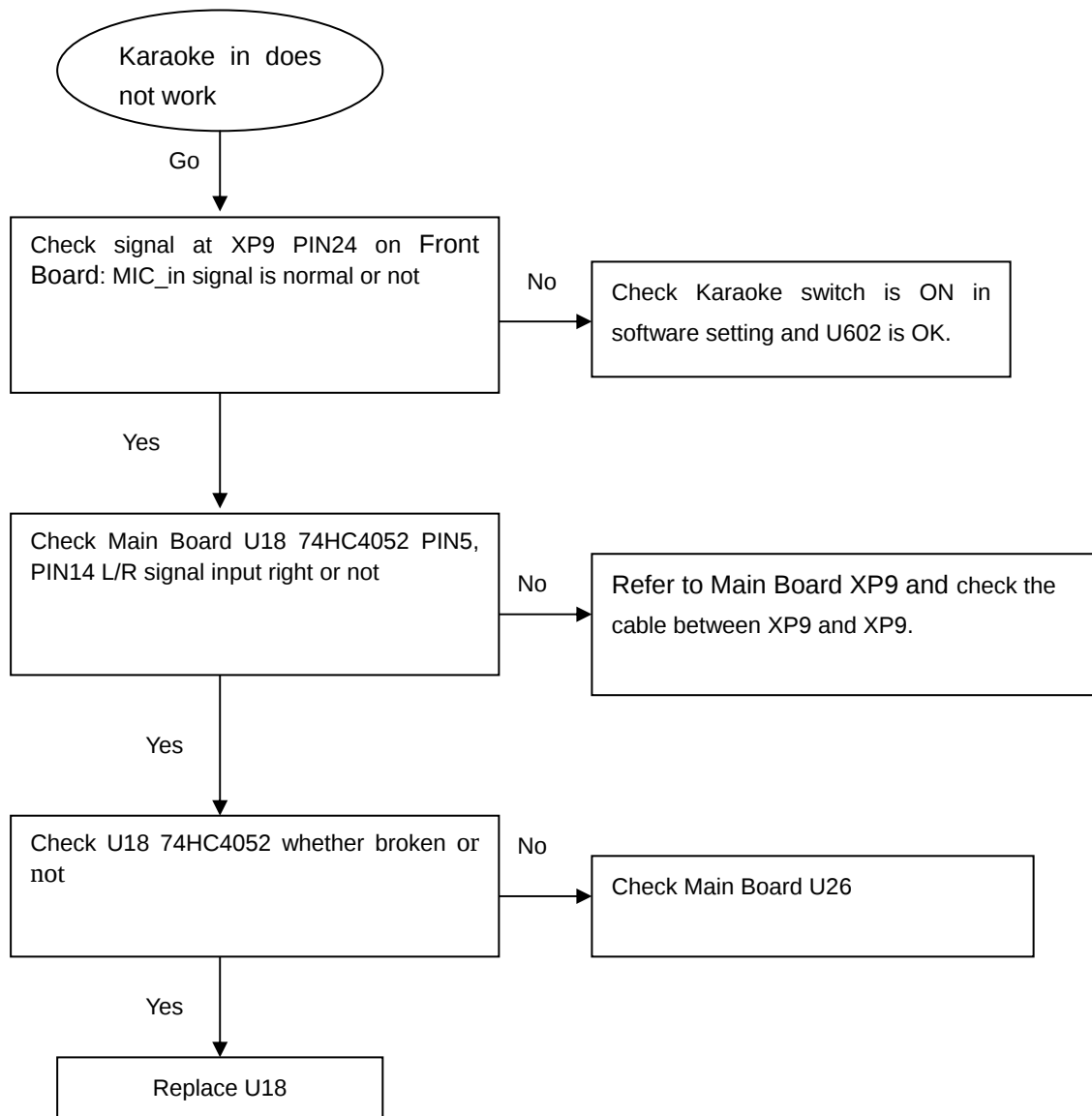
Can't read disc or can't open the disk door

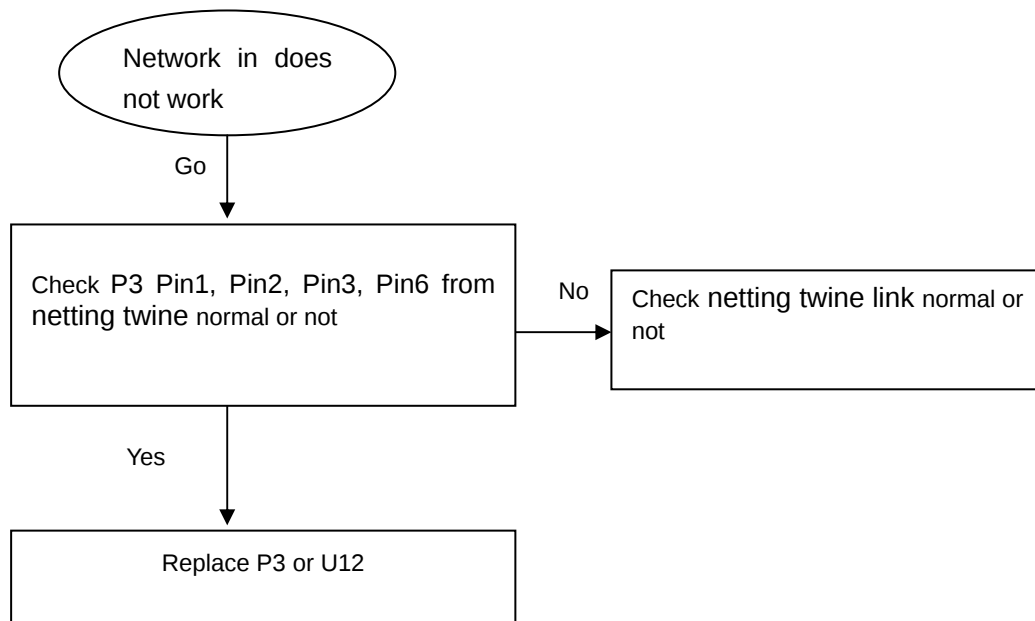
Tuner FM does not work

AUX in does not work

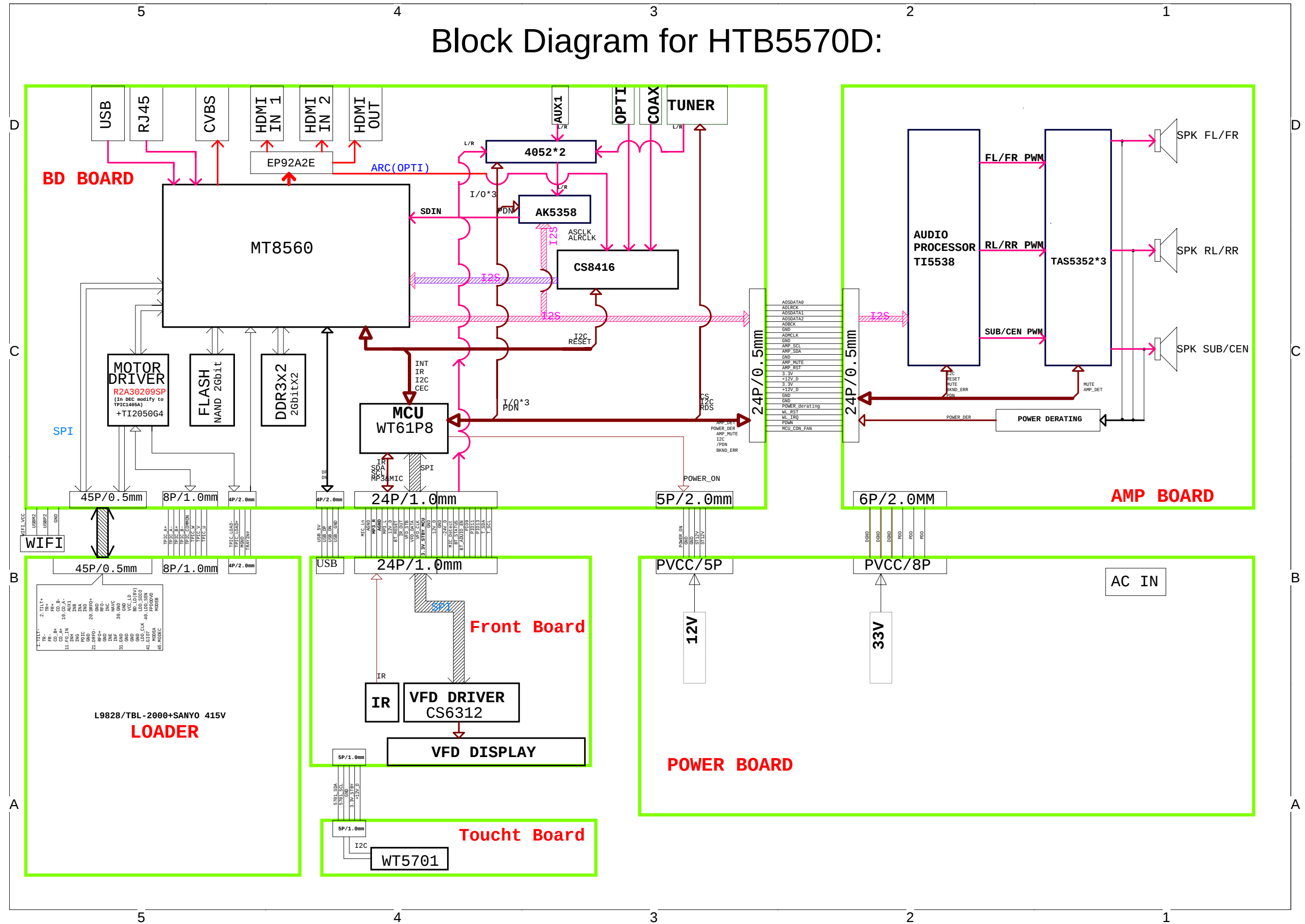
MP3 Link does not work

COAX in does not work

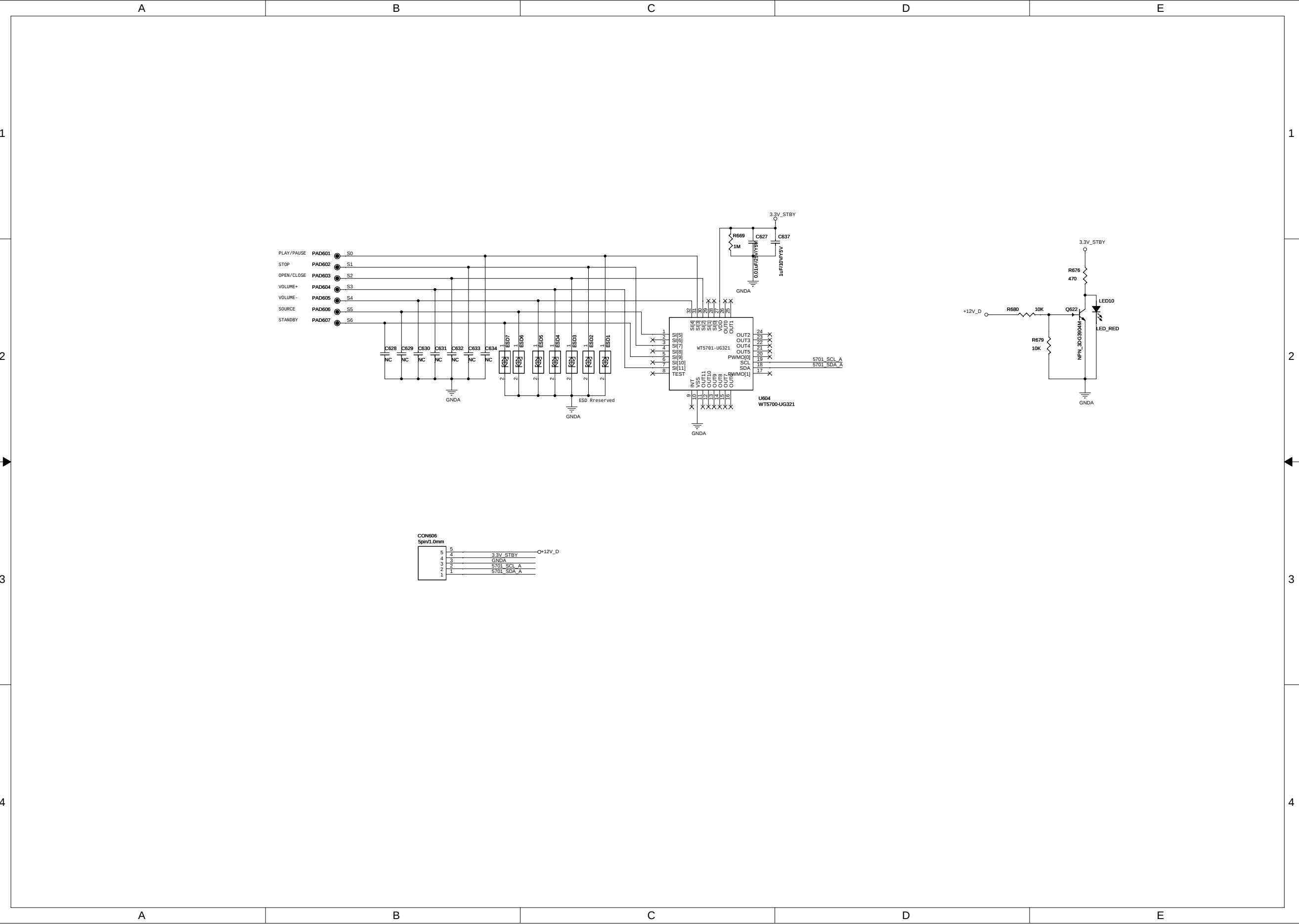
Karaoke in does not work

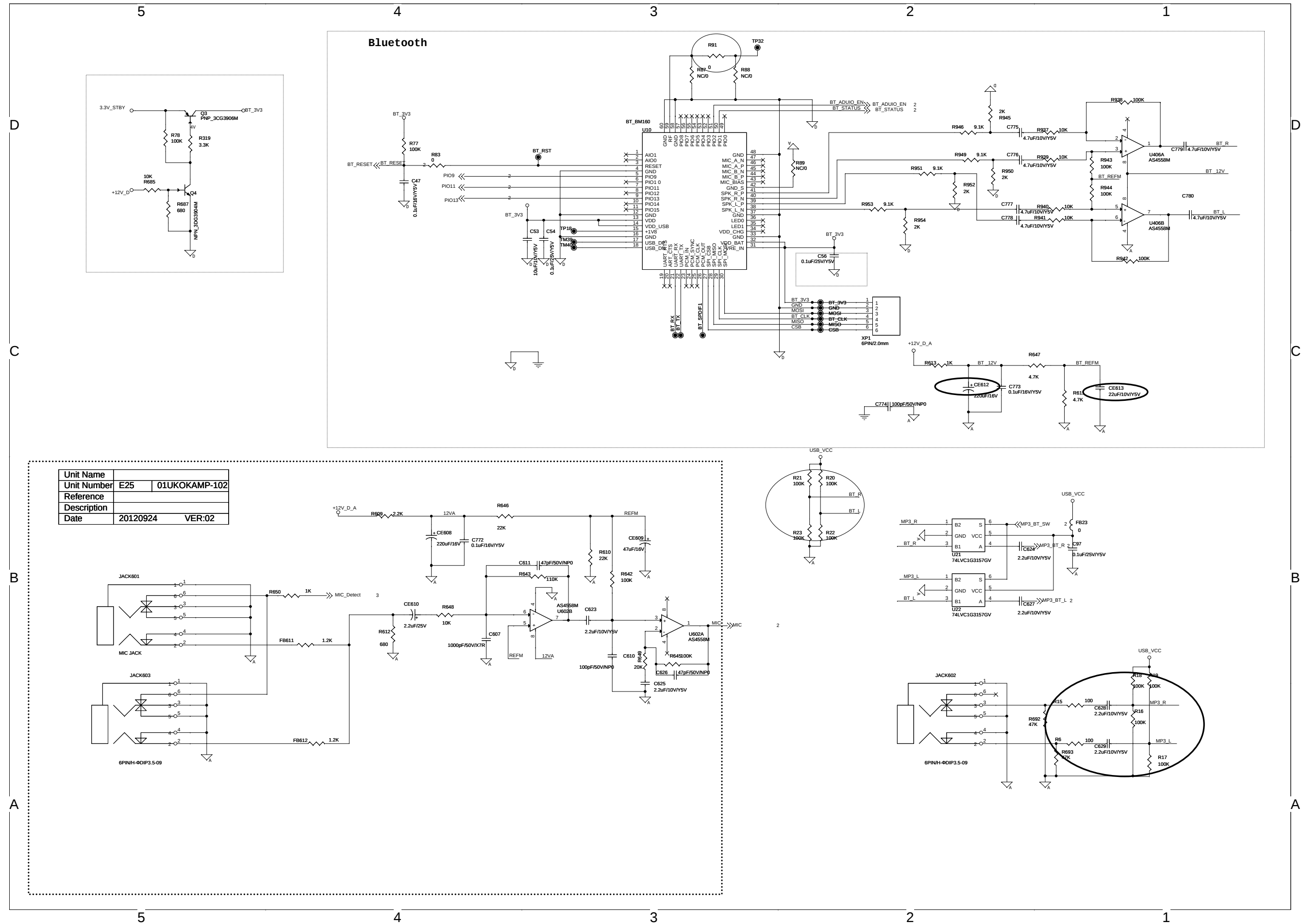
Network in does not work

Block Diagram for HTB5570D:

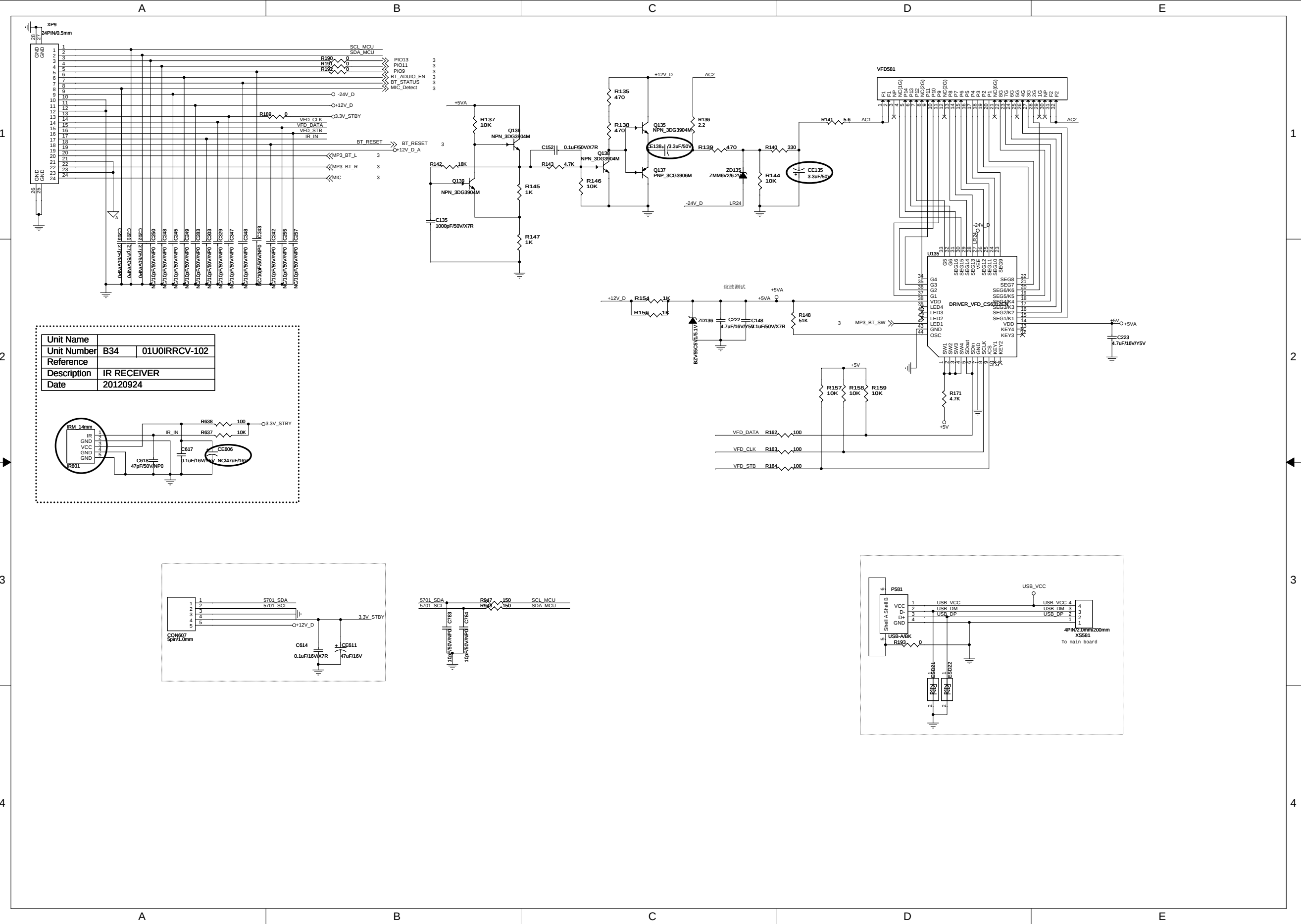


Touch Board Circuit Diagram:



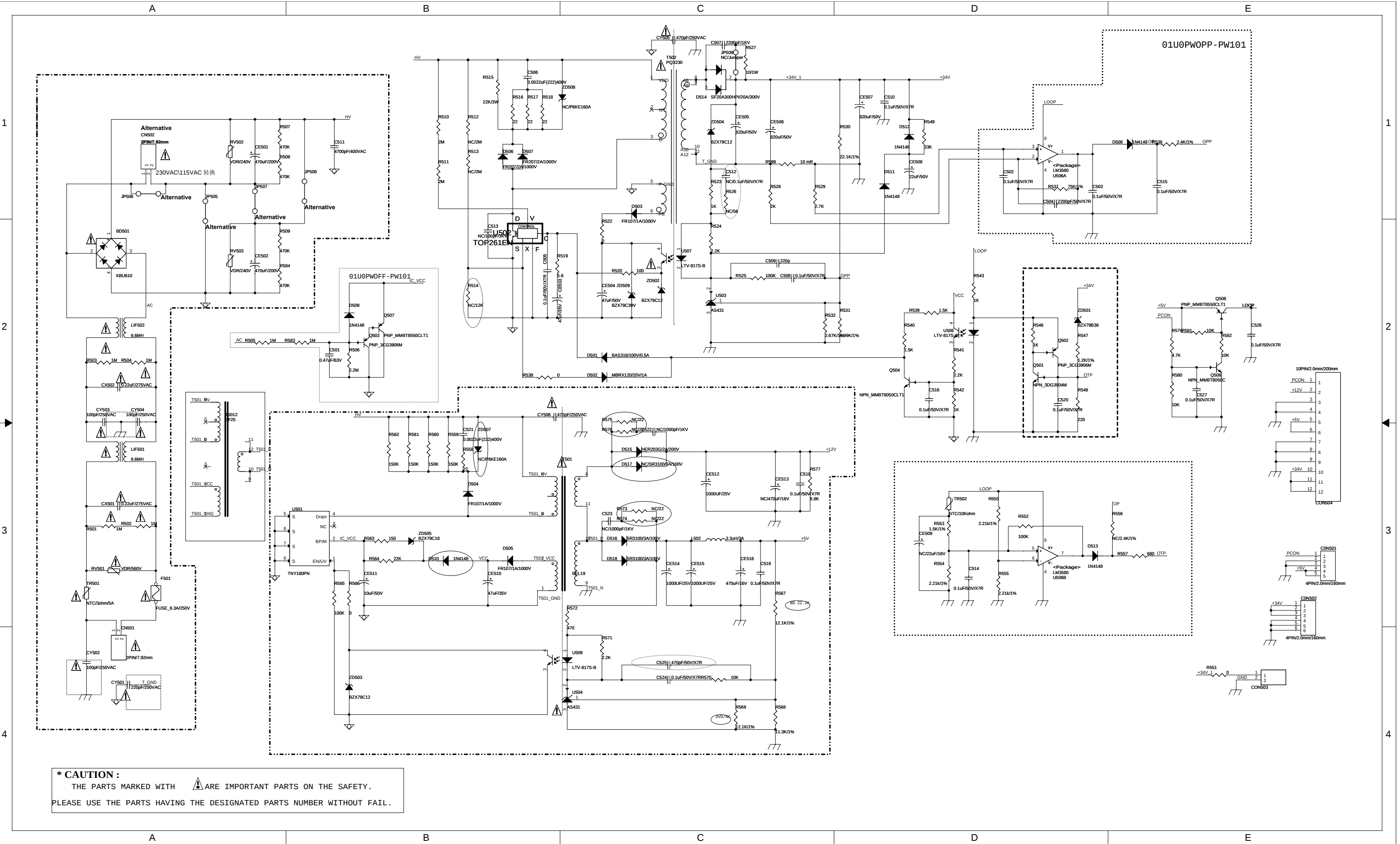


Front Control Board Circuit Diagram:Bluetooth

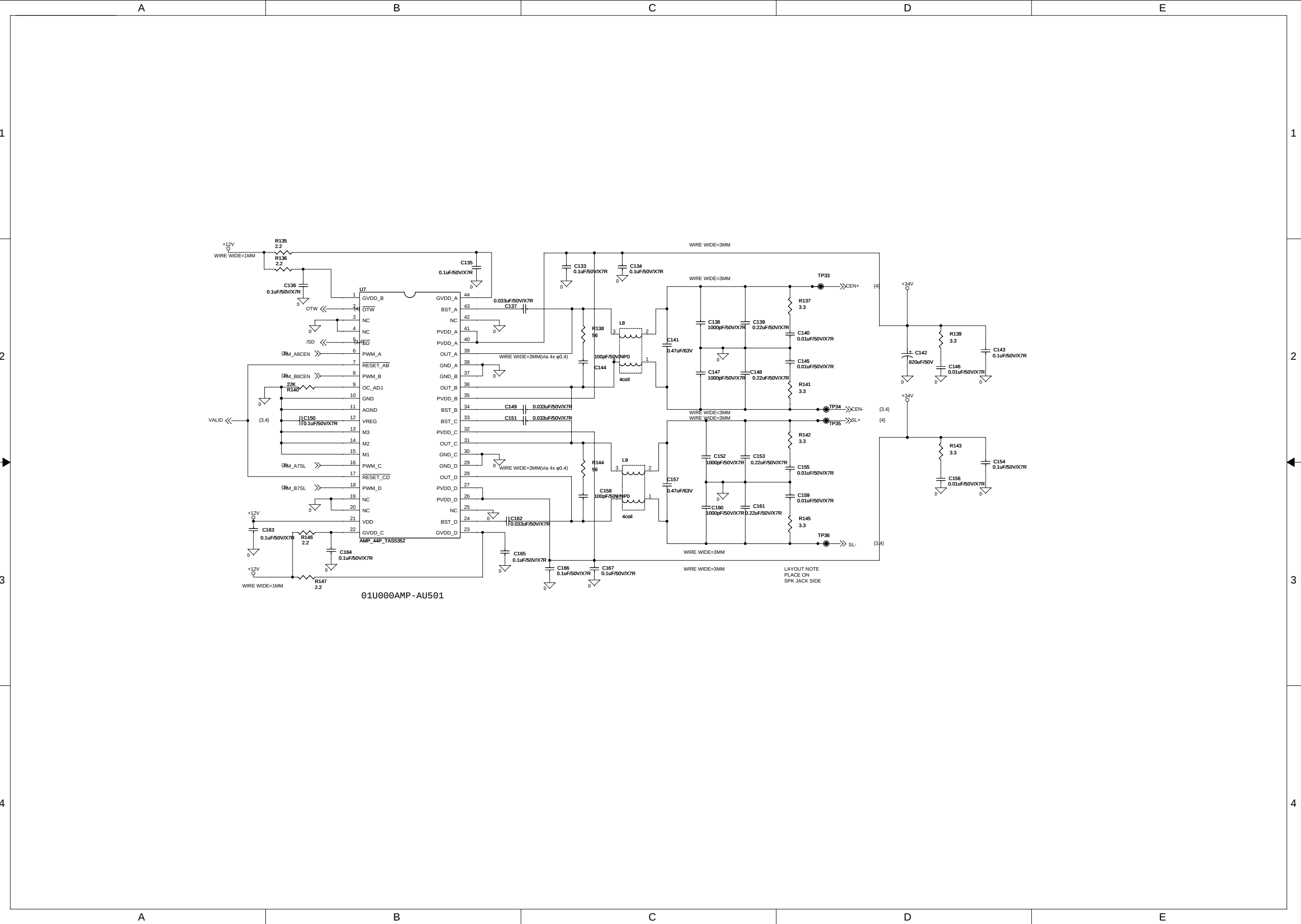


7-4
Power Board Circuit Diagram:

7-4



Amplifier Board Circuit Diagram:SL+SW



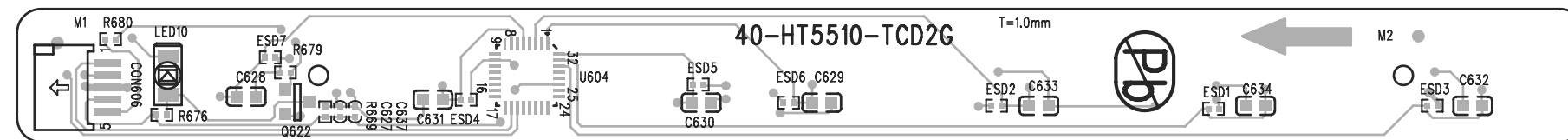
[illegible]

The image shows a detailed PCB layout for a TMS320C6748 DSP. The layout is organized into five vertical sections labeled A, B, C, D, and E at the top and bottom. The components are arranged in a grid-like fashion, with various functional blocks and components labeled.

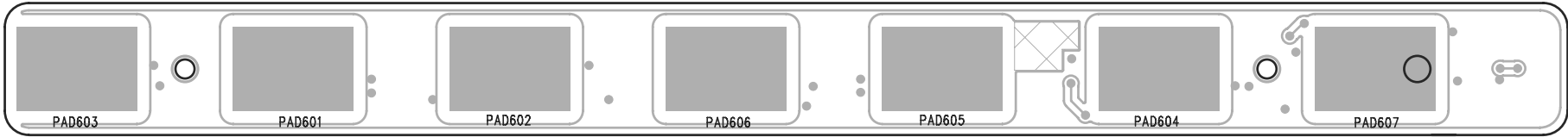
Functional Blocks and Components:

- Power ON / OFF Mute:** Located in section A, this block includes a PNP transistor (Q1), a diode (D1), and various resistors (R32, R40, R45, R50) and capacitors (C2, C3, C6, C7, C16, C17, C22, C23, C24, C25, C26, C27, C28, C29, C30, C31, C32, C33, C34, C35, C36, C37, C38, C39, C40, C41, C42, C43, C44, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C59, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96, C97, C98, C99, C100).
- Power detect&DC FAN Control Circuit:** Located in section A, this block includes a PNP transistor (Q581), a diode (D1), and various resistors (R589, R584, R611, R612, R610, R609, R608, R607, R606, R605, R604, R603, R602, R601, R600, R599, R598, R597, R596, R595, R594, R593, R592, R591, R590, R589, R588, R587, R586, R585, R584, R583, R582, R581, R580, R579, R578, R577, R576, R575, R574, R573, R572, R571, R570, R569, R568, R567, R566, R565, R564, R563, R562, R561, R560, R559, R558, R557, R556, R555, R554, R553, R552, R551, R550, R549, R548, R547, R546, R545, R544, R543, R542, R541, R540, R539, R538, R537, R536, R535, R534, R533, R532, R531, R530, R529, R528, R527, R526, R525, R524, R523, R522, R521, R520, R519, R518, R517, R516, R515, R514, R513, R512, R511, R510, R509, R508, R507, R506, R505, R504, R503, R502, R501, R500, R499, R498, R497, R496, R495, R494, R493, R492, R491, R490, R489, R488, R487, R486, R485, R484, R483, R482, R481, R480, R479, R478, R477, R476, R475, R474, R473, R472, R471, R470, R469, R468, R467, R466, R465, R464, R463, R462, R461, R460, R459, R458, R457, R456, R455, R454, R453, R452, R451, R450, R449, R448, R447, R446, R445, R444, R443, R442, R441, R440, R439, R438, R437, R436, R435, R434, R433, R432, R431, R430, R429, R428, R427, R426, R425, R424, R423, R422, R421, R420, R419, R418, R417, R416, R415, R414, R413, R412, R411, R410, R409, R408, R407, R406, R405, R404, R403, R402, R401, R400, R399, R398, R397, R396, R395, R394, R393, R392, R391, R390, R389, R388, R387, R386, R385, R384, R383, R382, R381, R380, R379, R378, R377, R376, R375, R374, R373, R372, R371, R370, R369, R368, R367, R366, R365, R364, R363, R362, R361, R360, R359, R358, R357, R356, R355, R354, R353, R352, R351, R350, R349, R348, R347, R346, R345, R344, R343, R342, R341, R340, R339, R338, R337, R336, R335, R334, R333, R332, R331, R330, R329, R328, R327, R326, R325, R324, R323, R322, R321, R320, R319, R318, R317, R316, R315, R314, R313, R312, R311, R310, R309, R308, R307, R306, R305, R304, R303, R302, R301, R300, R299, R298, R297, R296, R295, R294, R293, R292, R291, R290, R289, R288, R287, R286, R285, R284, R283, R282, R281, R280, R279, R278, R277, R276, R275, R274, R273, R272, R271, R270, R269, R268, R267, R266, R265, R264, R263, R262, R261, R260, R259, R258, R257, R256, R255, R254, R253, R252, R251, R250, R249, R248, R247, R246, R245, R244, R243, R242, R241, R240, R239, R238, R237, R236, R235, R234, R233, R232, R231, R230, R229, R228, R227, R226, R225, R224, R223, R222, R221, R220, R219, R218, R217, R216, R215, R214, R213, R212, R211, R210, R209, R208, R207, R206, R205, R204, R203, R202, R201, R200, R199, R198, R197, R196, R195, R194, R193, R192, R191, R190, R189, R188, R187, R186, R185, R184, R183, R182, R181, R180, R179, R178, R177, R176, R175, R174, R173, R172, R171, R170, R169, R168, R167, R166, R165, R164, R163, R162, R161, R160, R159, R158, R157, R156, R155, R154, R153, R152, R151, R150, R149, R148, R147, R146, R145, R144, R143, R142, R141, R140, R139, R138, R137, R136, R135, R134, R133, R132, R131, R130, R129, R128, R127, R126, R125, R124, R123, R122, R121, R120, R119, R118, R117, R116, R115, R114, R113, R112, R111, R110, R109, R108, R107, R106, R105, R104, R103, R102, R101, R100, R99, R98, R97, R96, R95, R94, R93, R92, R91, R90, R89, R88, R87, R86, R85, R84, R83, R82, R81, R80, R79, R78, R77, R76, R75, R74, R73, R72, R71, R70, R69, R68, R67, R66, R65, R64, R63, R62, R61, R60, R59, R58, R57, R56, R55, R54, R53, R52, R51, R50, R49, R48, R47, R46, R45, R44, R43, R42, R41, R40, R39, R38, R37, R36, R35, R34, R33, R32, R31, R30, R29, R28, R27, R26, R25, R24, R23, R22, R21, R20, R19, R18, R17, R16, R15, R14, R13, R12, R11, R10, R9, R8, R7, R6, R5, R4, R3, R2, R1, R0).
- Power detect&DC FAN Control Circuit:** Located in section A, this block includes a PNP transistor (Q581), a diode (D1), and various resistors (R589, R584, R611, R612, R610, R609, R608, R607, R606, R605, R604, R603, R602, R601, R600, R599, R598, R597, R596, R595, R594, R593, R592, R591, R590, R589, R588, R587, R586, R585, R584, R583, R582, R581, R580, R579, R578, R577, R576, R575, R574, R573, R572, R571, R570, R569, R568, R567, R566, R565, R564, R563, R562, R561, R560, R559, R558, R557, R556, R555, R554, R553, R552, R551, R550, R549, R548, R547, R546, R545, R544, R543, R542, R541, R540, R539, R538, R537, R536, R535, R534, R533, R532, R531, R530, R529, R528, R527, R526, R525, R524, R523, R522, R521, R520, R519, R518, R517, R516, R515, R514, R513, R512, R511, R5

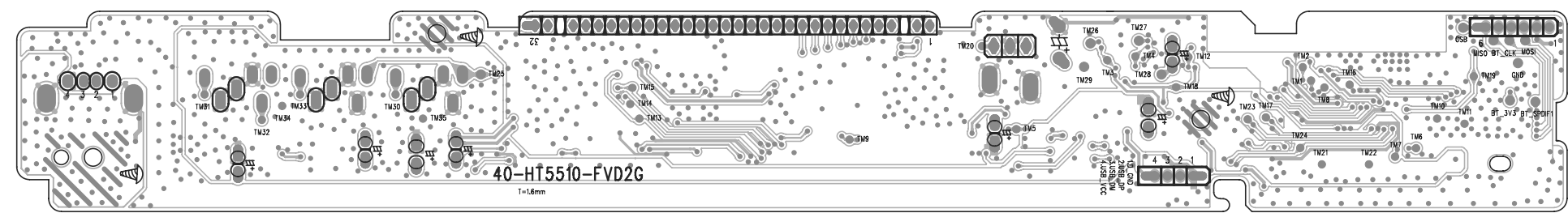
Touch Board Print layout (bottom side):



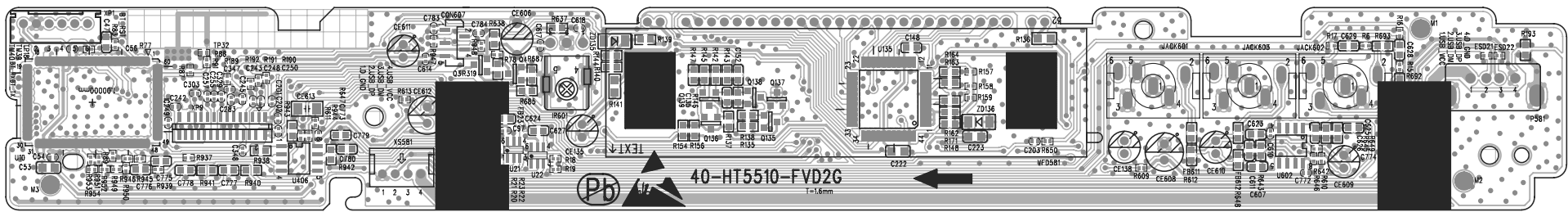
Touch Board Print layout (top side):

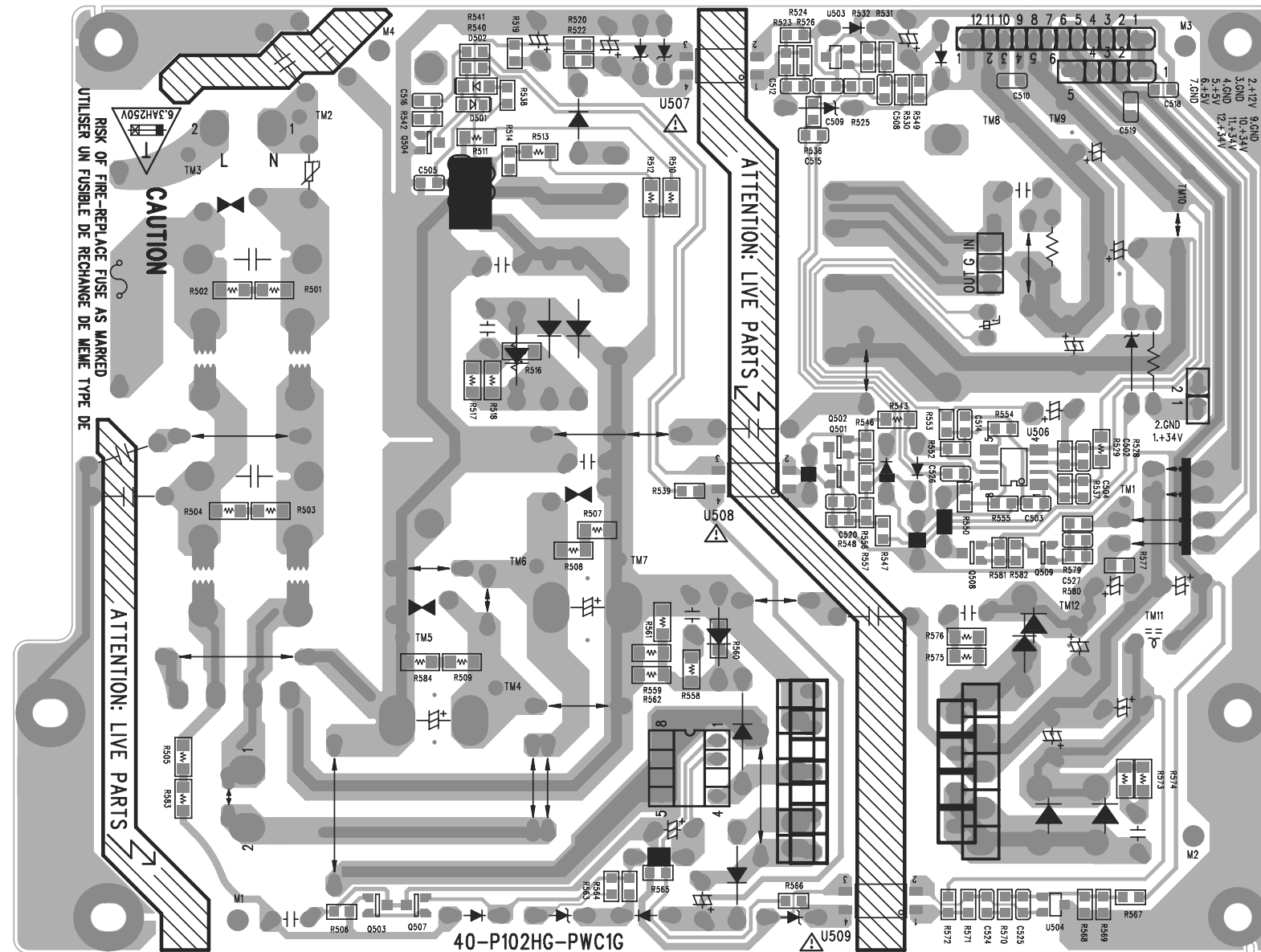


Front Control Board Print layout (bottom side):

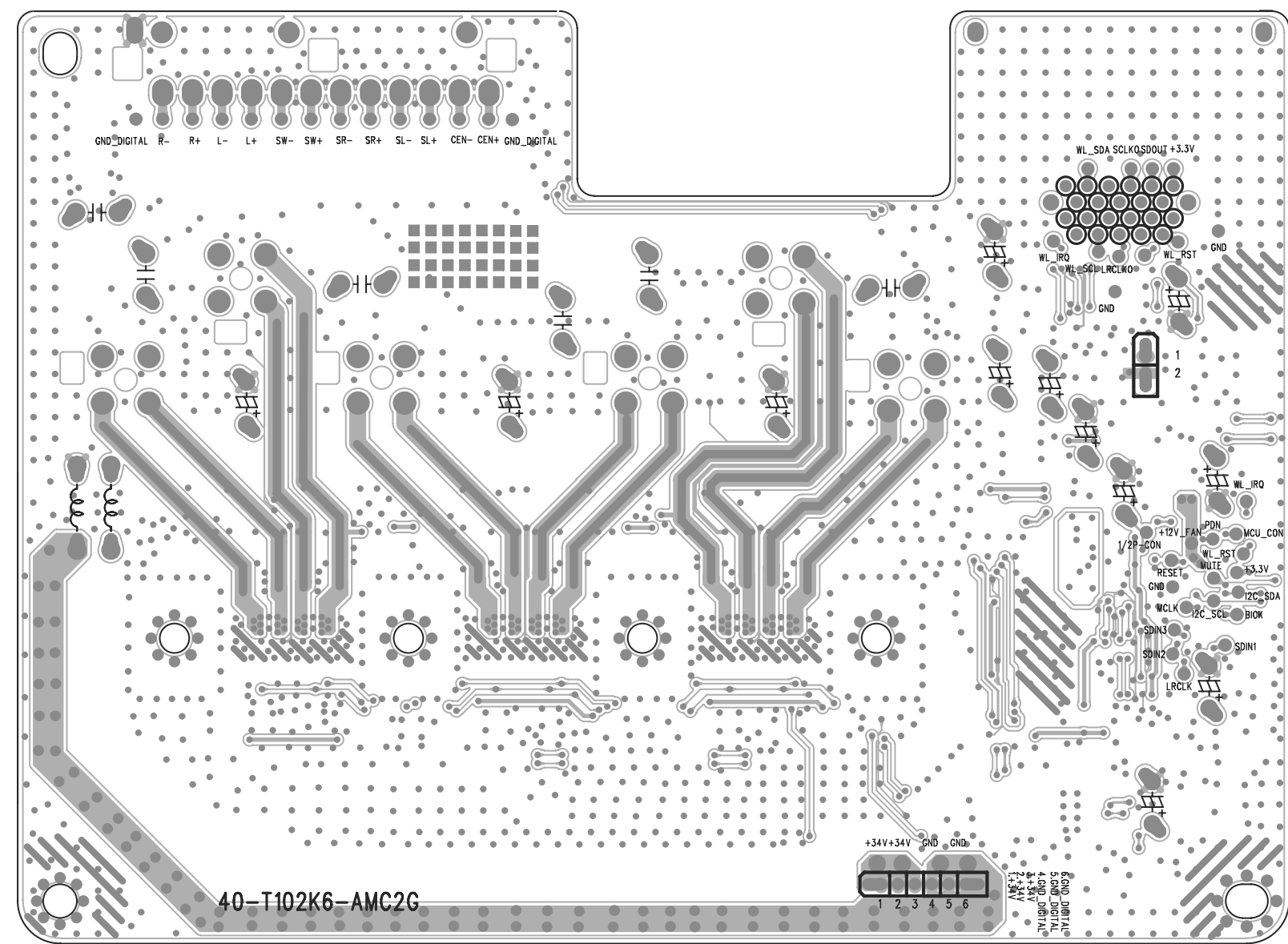


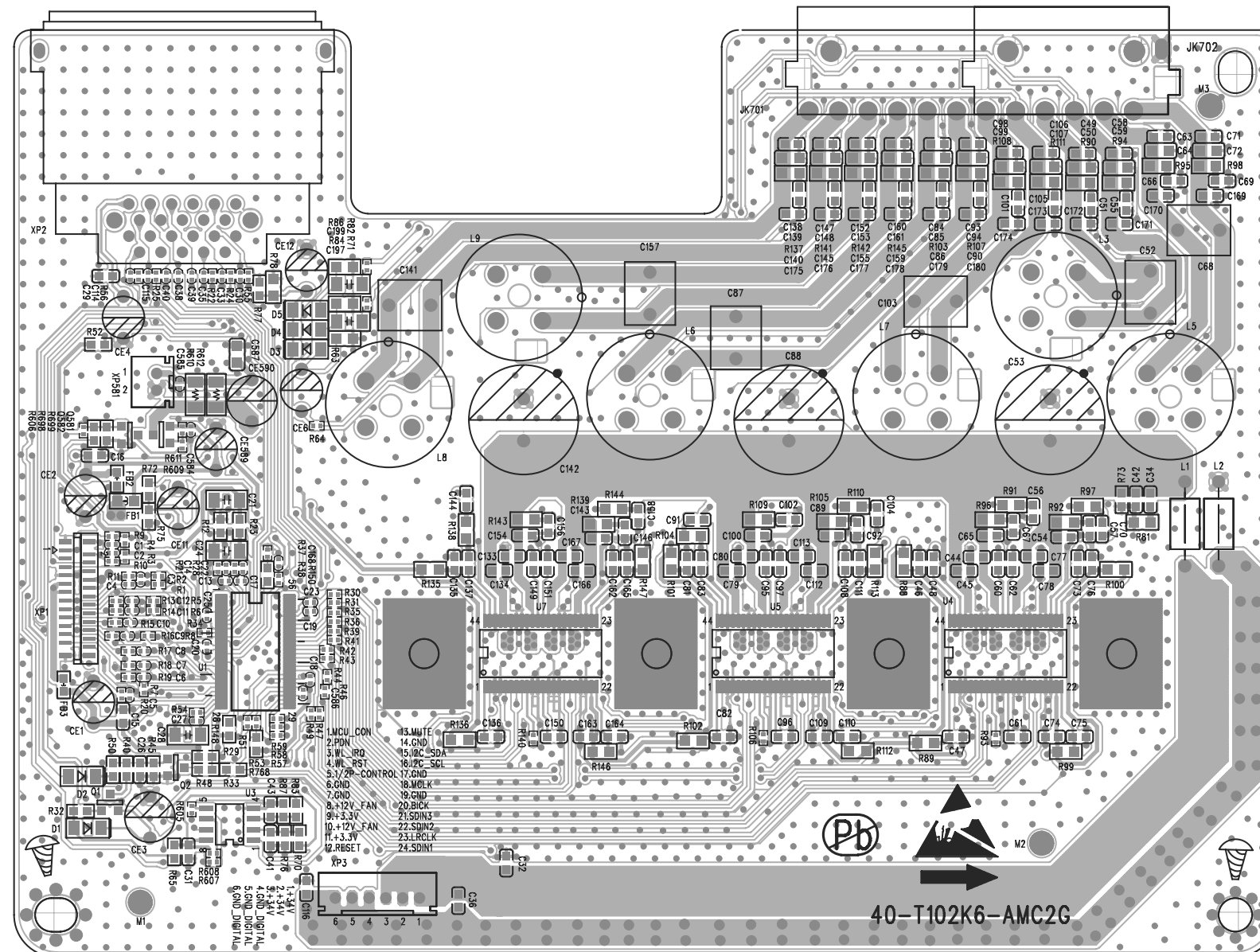
Front Control Board Print layout (top side):





Amplifier Board Print layout (bottom side):





Voltage for Connection

XP4--From Main Board Connect to Power Board		
Pin No	Pin Assin	Remarks
1	VCC_D	4.75-5.25V
2	GND	
3	GND	
4	+12V	11.4-12.6V
5	+12V	11.4-12.6V

XP9--From Main Board Connect to Front Board		
Pin No	Pin Assin	Remarks
1	MIC_in	
2	AGND	
3	MP3_R	
4	AGND	
5	MP3_L	
6	+12V_D	11.4-12.6V
7	BT_RESET	
8	IR_OUT	
9	VFD_STB	SPI
10	VFD_DATA	
11	VFD_CLK	
12	3.3V_STBY_MCU	3.2-3.4V
13	GND	
14	+12V_D	11.4-12.6V
15	GND	
16	-24V_D	-19.0--24.0V
17	MIC_Detect	
18	BT_STATUS	
19	BT_ADUIO_EN	
20	PIO9	
21	PIO11	
22	PIO13	
23	T_SDA	
24	T_SCL	

XP13--From Main Board Connect to Amp Board		
Pin No	Pin Assin	Remarks
1	AOSDATA0	I2S
2	AOLRCK	
3	AOSDATA1	
4	AOSDATA2	
5	AOBCK	
6	GND	
7	AOMCLK	I2S
8	GND	
9	AMP_SCL	IIC
10	AMP_SDA	
11	GND	
12	AMP_MUTE	
13	AMP_RST	
14	3.3V	3.2-3.4V
15	+12V_D	11.4-12.6V
16	3.3V	3.2-3.4V
17	+12V_D	11.4-12.6V
18	GND	
19	GND	
20	POWER_derating	
21	WL_RST	
22	WL_IRQ	
23	PDWN	
24	MCU_CON_FAN	

XP6--From Main Board Connect to Front USB		
Pin No	Pin Assin	Remarks
1	USB_VCCF	4.75-5.25V
2	USBP1	High spped difference
3	USBM1	
4	GND	

Waveforms for measure point

图1.XP13.1 DATA0

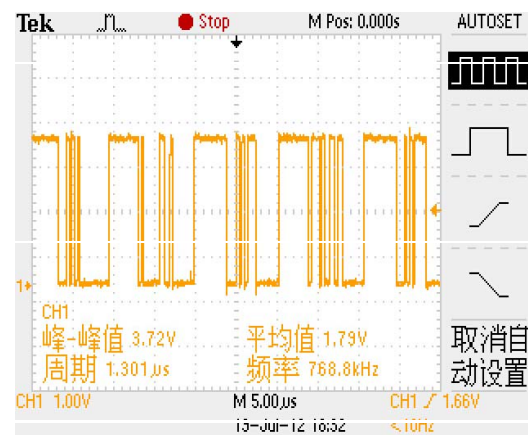


图2.XP13.2 LRCKL

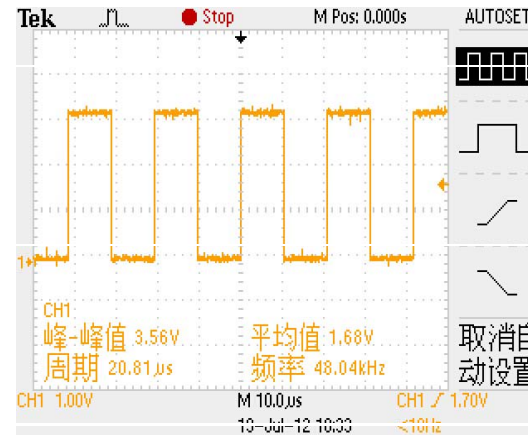


图3.XP13.3 DATA1

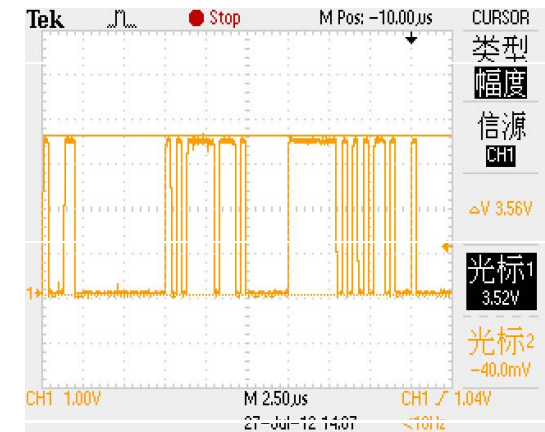


图4.XP13.4 DATA2



图5.XP13.5 BCLK

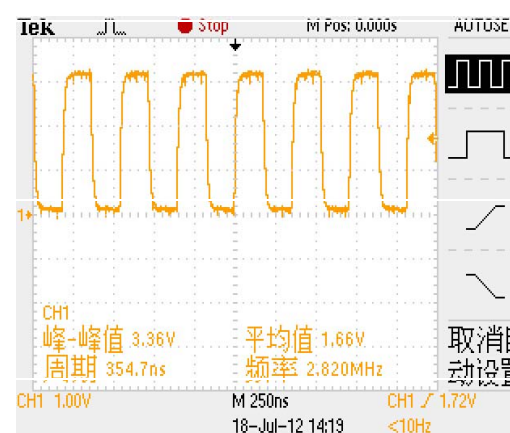
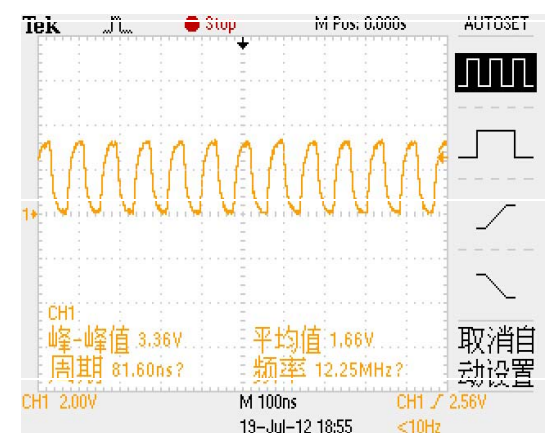


图6.XP13.7 MCLK



Waveforms for measure point

图7.XP13.9 AMP_SCL

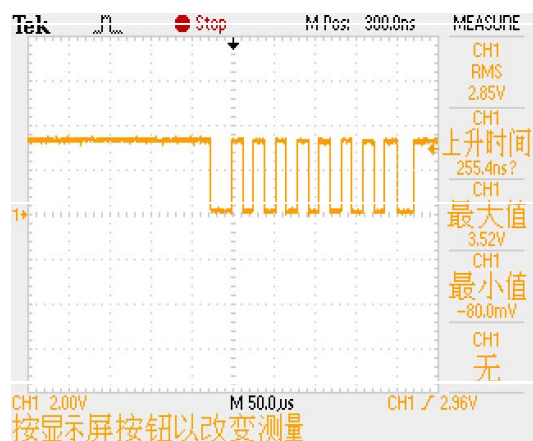


图8.XP13.10 AMP_SDA

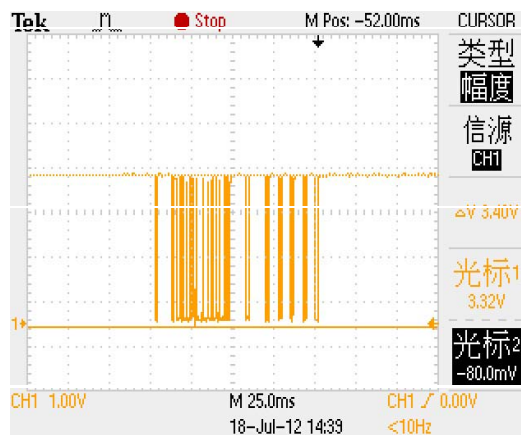


图9.XP13.12 AMP_MUTE

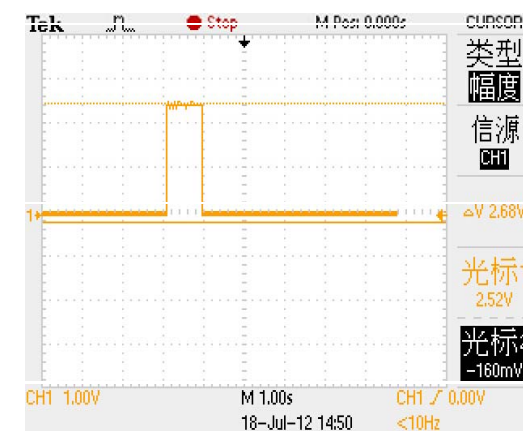


图10.XP13.13 AMP_RST

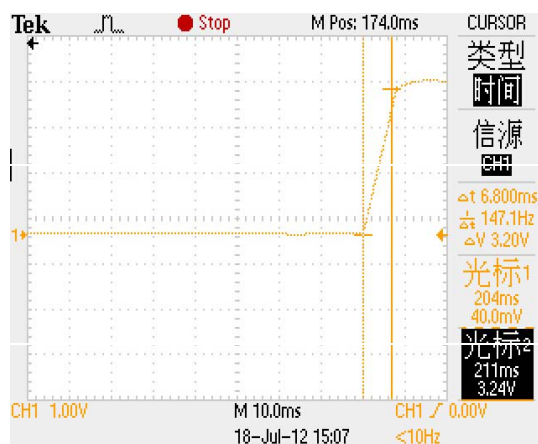
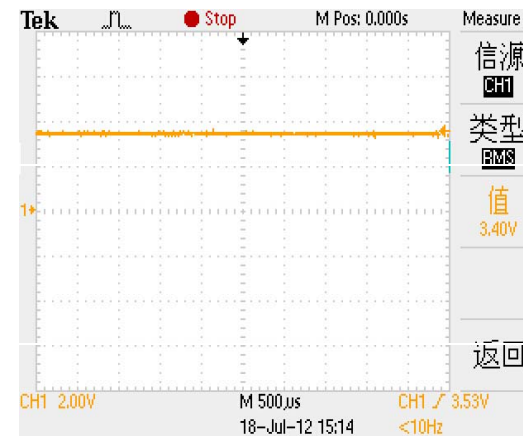


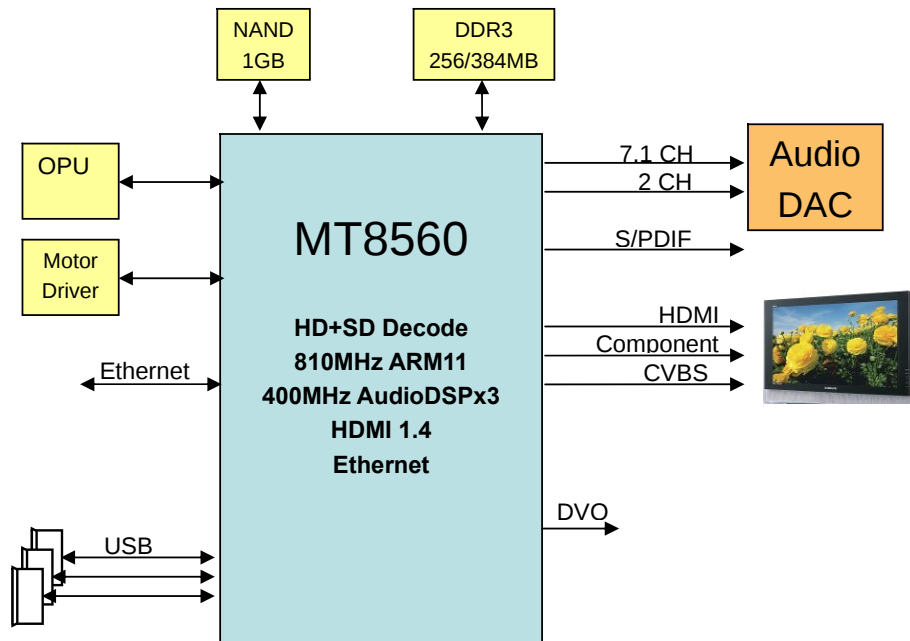
图11.XP13.20 POWER_derating



图12.XP13.23 PDWN



FUNCTIONAL BLOCK DIAGRAM FOR MAIN IC MT8560



PIN ASSIGNMENT

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25			
A	TRINC	TRINA	FPDOD_D	VWDIO3_O	TXVN_0	TXVN_1	SPDIF			AL0	NS_XTA_LI		CH2_M	CH1_M	CH0_M	CLK_M		VDACB_OUT	CEC		RESET_1	VSUP	VDATA	VOUTD_14	VOUTD_12	A		
B	INB	TRIND	TRINB	FVREF	TXVP_0	TXVP_1	REXT			AR0	NS_XTA_LO		CH2_P	CH1_P	CH0_P	CLK_P		VDACX_OUT	HDMISD	HDMISC_K	OPWRS_B	IR	VTA	VOUTD_13	VOUTD_10	B		
C	IND	INC	INA	FPDOD_VD		VWDIO2_O	AOSDA_TAI	AOSDA_TAI2	AOSDA_TAI1	AOLRC_K					AVDD12_HDML_D	AVDD12_HDML_C		VDACR_OUT	VDAOC_OUT		HTPLG		GPI02	VOUTD_11	VOUTD_8	C		
D	ING	INH					AOSDA_TAI3			AOSDA_TAI0		AVDD33_DAC	AVDD33_HDML		AVDD33_VDAC_R					GPI00	DVCC33_J0_STB	LCDRD		VOUTD_9	VOUTD_6	D		
E	INF	INE	AVDD33_1	HAVC	VDAC0	RST1					AVSS33_DAC			AVSS33_HDML		AVSS33_VDAC_R				GPI01	UATXD		DVCC33_J0_STB	VOUTD_15	VOUTD_7	VOUTD_4	E	
F	MPXOU_T2	MPXOU_T3		MPXOU_T1	AUX1	AGND33_3			AVDD33_COM	AVSS33_AR0		AVSS33_LD		AVSS33_VDAC_R						UAPXD		DVCC33_J0	VOUTC_LK	VOUTD_5	VOUTD_2	F		
G	RFIP	RFIN							AVDD33_LD	AVSS33_AR0											DVCC33_J0	VOUTV_SYNC		VOUTD_3	VOUTD_1	VOUTD_0	G	
H	RFIP2	RFIN2	V14	FOO	AGND12_1		AGND12_2							DGND1_2_K		AVDD12_LDO						DGND1_2_K	VOUTH_SYNC		RCLKD	RCLKD_0	H	
J		TRO	TLO	AVDD12_2		AVDD33_3			DVCC33_J0			DVCC33_J0									DGND1_2_K		DGND1_2_K	RQD14	RQD13	J		
K		FEF0A_SW3		FEF0A_SW1		AGND33_2	DVCC33_J0	DVCC12_J0	DVCC12_J0		DVCC12_J0	DVCC12_J0		DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD14	RQD13	K		
L	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC33_J0	DVCC12_J0	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD14	RQD13	L		
M		FEF0A_SW2	FEF0A_SW4						DGND1_2_K	DGND1_2_K		DGND1_2_K		DGND1_2_K	DGND1_2_K	DGND1_2_K								RQD15	RQD12	M		
N	FEF0A_SW3	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2				DGND1_2_K	DGND1_2_K		DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	DGND1_2_K	RQD15	RQD12	N	
P		FETR4_PWM	FEF0A_SW4						DVCC12_J0	DGND1_2_K		DGND1_2_K		DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0		RQD15	RQD12	P		
R	FEF0A_SW3	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2				DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD15	RQD12	R		
T	FEF0A_SW3	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2				DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD15	RQD12	T		
U	FEF0A_SW3	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2				DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD15	RQD12	U		
V	FEF0A_SW3	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2				DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD15	RQD12	V		
W	FEF0A_SW3	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2				DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD15	RQD12	W		
Y	FEF0A_SW3	FEF0A_SW2	FEF0A_SW4	DGND1_2_K	FEF0A_SW3	FEF0A_SW1	FEF0A_SW2				DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DGND1_2_K	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DVCC12_J0	DGND1_2_K	RQD15	RQD12	Y		
AA	SCL	SDA	AVDD33_USB	GPI04	GPI03	RCKE_B		RA6_B		RA4_B		RWE_B											AVDD33_MEMPL_L	TA_ME_MPLL	RA3	RA5	RA0	AA
AB	GPI05	GPI06	NFD6	DVCC33_J0		RA10_B		RBA0_B		RA3_B	RA13_B	DGND1_2_K	RQD15_B	RQD14_B	RQD13_B	RQD12_B							AVSS33_MEMPL_L	TP_ME_MPLL	RA7	RA2	AB	
AC	NFD7	NFD4	NFD0	DVCC33_J0	NFALE		RA5_B		RA4_B	RBA2_B	RQD15_B	RQD14_B	RQD13_B	RQD12_B	RQD11_B	RQD10_B							AVSS33_MEMPL_L	TP_ME_MPLL	RA7	RA2	AC	
AD	NFD5	NFD2	NFRBN	NFCEN	NFCLE	NFWEN	RA8_B	RA7_B	RA6_B	RA5_B	RA4_B	RA3_B	RA2_B	RA1_B	RA0_B								AVSS33_MEMPL_L	TP_ME_MPLL	RA7	RA2	AD	
AE	NFD3	NFD1	NFRBN	NFCEN	NFCLE	NFWEN	RA8_B	RA7_B	RA6_B	RA5_B	RA4_B	RA3_B	RA2_B	RA1_B	RA0_B								AVSS33_MEMPL_L	TP_ME_MPLL	RA7	RA2	AE	

PIN DESCRIPTION

Pin	Symbol	Type	Description
Digital power/ground			
K9 K11 K12 K15 K17 K18 L9 L17 L18 N17 N18 P9 P18 R17 T9 T11 T12 T14 T16 T17 U9 U11 U12 U14 U15 U16	DVCC12_K	Power	1.2 V digital power

Pin	Symbol	Type	Description
H14	DGND12_K	Ground	Digital ground
H21			
J22			
K21			
L5			
L6			
L7			
L10			
L11			
L12			
L13			
L14			
L15			
L16			
L21			
M10			
M12			
M14			
M16			
N4			
N10			
N11			
N13			
N15			
N16			
N22			
N23			
P10			
P12			
P14			
P16			
R4			
R10			
R11			
R12			
R13			
R14			
R15			
T21			
U6			
U22			
V5			
Y13			
Y15			
Y17			
Y19			
AA19			
AB13			
AC18			

Pin	Symbol	Type	Description
F21 G20 J9 J11 K8 L8 AB4 AC5	DVCC33_IO	Power	3.3 V digital IO power
D21 E22	DVCC33_IO_S TB	Power	3.3 V digital IO power for Stand-By Module
J20 K19 L19 L20 N19 N20 P19 R20 T18 V14 V16 V17 V18 W15 W16 W18 Y14	DDRVCCIO	Power	1.5 V digital IO power
XTAL/PLL			
AA21	AVDD33_MEM PLL	Power	3.3 V Analog Power for MEMPLL
AB19	AVSS33_MEM PLL	Ground	Analog Ground for MEMPLL
AA22	TN_MEMPLL	Analog	Test Pin
AB23	TP_MEMPLL	Analog	Test Pin
H16	AVDD12_LDO	Power	1.2V standby power
F17	AVDD33_LDO	Power	3.3V power for standby
G16	AVSS33_LDO	Ground	Analog ground for standby
C12	AVDD33_PLLG P	Power	3.3V Analog Power for PLL Group
C13	AVSS33_PLLG P	Power	Analog Ground for PLL Group
A11	NS_XTALI	I	27MHz Crystal In
B11	NS_XTALO	O	27MHz Crystal Out

Pin	Symbol	Type	Description
Audio PWM DAC interface			
D12	AVDD33_DAC	Power	3.3V Analog Power
E11	AVSS33_DAC	Ground	Analog Ground
A10	AL0	I/O	Multiple function: (1) Audio output bit clock (2) Audio PWM output (3) GPIO
B10	AR0	I/O	Multiple function: (1) Audio output master clock (2) Audio PWM output (3) GPIO
Audio interface			
U5	AMUTE	I/O	Multiple function: (1) 1st Audio DAC mute (2) GPIO
C10	AOLRCK	I/O	Multiple function: (1) Audio output left-right clock (2) 2nd Audio DAC mute (3) Video out DE signal (4) 2nd RS232 TX (5) External Interrupt 4 (6) Slave I2C clock (7) PWM control signal output (8) Ethernet Activity LED (9) GPIO
D10	AOSDATA0	I/O	Multiple function: (1) Audio output serial data 0 (2) 2nd Audio DAC mute (3) Video out DE signal (4) 2nd RS232 RX (5) External Interrupt 2 (6) Slave I2C data (7) PWM control signal output (8) Ethernet Duplex LED (9) GPIO

Pin	Symbol	Type	Description
C9	AOSDATA1	I/O	Multiple function: (1) Audio output serial data 1 (2) Audio output master clock (3) Microphone input master clock (4) Video out DE signal (5) External Interrupt 1 (6) 3th RS232 TX (7) Slave I2C clock (8) PWM control signal output (9) Ethernet Activity LED (10) GPIO
C8	AOSDATA2	I/O	Multiple function: (1) Audio output serial data 2 (2) Audio output bit clock (3) Microphone input bit clock (4) Video out DE signal (5) External Interrupt 4 (6) 3th RS232 RX (7) Slave I2C data (8) PWM control signal output (9) Ethernet Duplex LED (10) 1st Audio DAC mute (11) GPIO
D7	AOSDATA3	I/O, 5V	Multiple function: (1) Audio output serial data 3 (2) Audio output left-right clock (3) Microphone input left-right clock (4) Video out DE signal (5) External Interrupt 2 (6) 2nd RS232 TX (7) Slave I2C clock (8) PWM control signal output (9) Ethernet Speed LED (10) GPIO
C7	AOSDATA4	I/O, 5V	Multiple function: (1) Audio output serial data 4 (2) Audio line input data (3) Microphone input data (4) Video out DE signal (5) External Interrupt 1 (6) 2nd RS232 RX (7) Slave I2C data (8) PWM control signal output (9) Ethernet Link LED (10) GPIO

Pin	Symbol	Type	Description
A7	SPDIF	I/O	Multiple function: (1) SPDIF digital audio output (2) GPIO
Analog Video Out Interface			
E16	AVDD33_VDA C	Power	3.3V Analog Power
D16	AVDD33_VDA C_R	Power	3.3V Analog Power
G14	AVSS33_VDAC	Ground	Analog Ground
F14	AVSS33_VDAC _R	Ground	Analog Ground
A18	VDACB_OUT	Analog	DAC output
C18	VDACG_OUT	Analog	DAC output
C17	VDACR_OUT	Analog	DAC output
B18	VDACX_OUT	Analog	DAC output
Digital Video Output Interface			
F22	VOUTCLK	I/O, 5V	Multiple function: (1) Video out mode: CLOCK (2) 2nd RS232 TX (3) Slave I2C clock (4) PWM control signal output (5) Ethernet Activity LED (6) NAND Flash Data input/output bit 5 (7) Secure Disk interface clock (8) GPIO
H22	VOUTHSYNC	I/O	Multiple function: (1) Video out mode: HSYNC (2) 2nd RS232 RX (3) Slave I2C data (4) External Interrupt 1 (5) Ethernet Duplex LED (6) NAND Flash Data input/output bit 7 (7) Secure Disk interface command (8) GPIO
G21	VOUTVSYNC	I/O	Multiple function: (1) Video out mode: VSYNC (2) 3th RS232 TX (3) External Interrupt 2 (4) Ethernet Speed LED (5) NAND Flash Data input/output bit 6 (6) Secure Disk interface data bit 0 (7) GPIO

Pin	Symbol	Type	Description
G25	VOUTD0	I/O	Multiple function: (1) Video out 16-bit 422 mode: C0 (2) External Interrupt 4 (3) 3th RS232 RX (4) Ethernet Link LED (5) NAND Flash Data input/output bit 4 (6) Secure Disk interface data bit 1 (7) GPIO
G24	VOUTD1	I/O	Multiple function: (1) Video out 16-bit 422 mode: C1 (2) Slave I2C clock (3) NAND Flash Data input/output bit 3 (4) Secure Disk interface data bit 2 (5) GPIO
F25	VOUTD2	I/O	Multiple function: (1) Video out 16-bit 422 mode: C2 (2) Slave I2C data (3) NAND Flash Data input/output bit 2 (4) Secure Disk interface data bit 3 (5) GPIO
G23	VOUTD3	I/O	Multiple function: (1) Video out 16-bit 422 mode: C3 (2) JTAG ICE data out (3) GPIO
E25	VOUTD4	I/O	Multiple function: (1) Video out 16-bit 422 mode: C4 (2) JTAG ICE clock (3) GPIO
F24	VOUTD5	I/O	Multiple function: (1) Video out 16-bit 422 mode: C5 (2) JTAG ICE mode select (3) GPIO
D25	VOUTD6	I/O	Multiple function: (1) Video out 16-bit 422 mode: C6 (2) JTAG ICE data in (3) GPIO
E24	VOUTD7	I/O	Multiple function: (1) Video out 16-bit 422 mode: C7 (2) Audio line input data (3) GPIO

Pin	Symbol	Type	Description
C25	VOUTD8	I/O	Multiple function: (1) Video out 16-bit 422 mode: Y0 (2) Microphone input master clock (3) 2nd RS232 TX (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Activity LED (7) NAND Flash Data input/output bit 1 (8) GPIO
D24	VOUTD9	I/O	Multiple function: (1) Video out 16-bit 422 mode: Y1 (2) Microphone input bit clock (3) 2nd RS232 RX (4) Slave I2C data (5) External Interrupt 1 (6) Ethernet Duplex LED (7) NAND Flash Data input/output bit 0 (8) GPIO
B25	VOUTD10	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y2 (2) Microphone input left-right clock (3) 3th RS232 TX (4) Slave I2C clock (5) External Interrupt 2 (6) Ethernet Speed LED (7) NAND Flash ready/busy (8) GPIO
C24	VOUTD11	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y3 (2) Microphone input data (3) 3th RS232 RX (4) Slave I2C data (5) External Interrupt 4 (6) Ethernet Link LED (7) NAND Flash read enable (8) GPIO
A25	VOUTD12	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y4 (2) SPDIF input master clock (3) 2nd RS232 TX (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Activity LED (7) NAND Flash chip enable (8) GPIO

Pin	Symbol	Type	Description
B24	VOUTD13	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y5 (2) SPDIF input bit clock (3) 2nd RS232 RX (4) Slave I2C data (5) External Interrupt 1 (6) Ethernet Duplex LED (7) NAND Flash command latch enable (8) GPIO
A24	VOUTD14	I/O, 5V	Multiple function: (1) Video out 16-bit 422 mode: Y6 (2) SPDIF input left-right clock (3) 3th RS232 TX (4) Slave I2C clock (5) External Interrupt 2 (6) Ethernet Speed LED (7) NAND Flash address latch enable (8) GPIO
E23	VOUTD15	I/O	Multiple function: (1) Video out 16-bit 422 mode: Y7 (2) SPDIF input data (3) 3th RS232 RX (4) Slave I2C data (5) External Interrupt 4 (6) Ethernet Link LED (7) NAND Flash write enable (8) GPIO
HDMI TX			
C16	AVDD12_HDMI_C	Power	1.2V Analog Power
C15	AVDD12_HDMI_D	Power	1.2V Analog Power
D14	AVDD33_HDMI	Power	3.3V Analog Power
E14	AVSS33_HDMI	Ground	Analog Ground
A15	CH0_M	Analog	HDMI TX data 0 differential pair (M)
B15	CH0_P	Analog	HDMI TX data 0 differential pair (P)
A14	CH1_M	Analog	HDMI TX data 1 differential pair (M)
B14	CH1_P	Analog	HDMI TX data 1 differential pair (P)
A13	CH2_M	Analog	HDMI TX data 2 differential pair (M)
B13	CH2_P	Analog	HDMI TX data 2 differential pair (P)
A16	CLK_M	Analog	HDMI TX clock differential pair (M)

Pin	Symbol	Type	Description
B16	CLK_P	Analog	HDMI TX clock differential pair (P)
NAND Flash Interface			
AC6	NFALE	I/O	Multiple function (1) NAND Flash address latch enable (2) GPO
AD4	NFCEN	I/O	Multiple function (1) NAND Flash chip enable (2) GPO
AE5	NFCEN2	I/O	Multiple function (1) NAND Flash 2 nd chip enable (2) 2nd RS232 TX (3) External Interrupt 2 (4) 3th RS232 TX (5) Slave I2C clock (6) PWM control signal output (7) GPO
AD5	NFCLE	I/O	Multiple function (1) NAND Flash command latch enable (2) GPO
AC3	NFD0	I/O	Multiple function (1) NAND Flash Data input/output bit0 (2) GPIO
AE2	NFD1	I/O	Multiple function (1) NAND Flash Data input/output bit1 (2) GPIO
AD2	NFD2	I/O	Multiple function (1) NAND Flash Data input/output bit2 (2) GPIO
AE1	NFD3	I/O	Multiple function (1) NAND Flash Data input/output bit3 (2) GPIO
AC2	NFD4	I/O	Multiple function (1) NAND Flash Data input/output bit4 (2) GPIO
AD1	NFD5	I/O	Multiple function (1) NAND Flash Data input/output bit5 (2) GPIO
AB3	NFD6	I/O	Multiple function (1) NAND Flash Data input/output bit6 (2) GPIO

Pin	Symbol	Type	Description
AC1	NFD7	I/O	Multiple function (1) NAND Flash Data input/output bit7 (2) GPIO
AD3	NFRBN	I/O	Multiple function (1) NAND Flash ready/busy (2) GPIO
AE3	NFRBN2	I/O	Multiple function (1) NAND Flash 2 nd ready/busy (2) 2nd RS232 RX (3) External Interrupt 1 (4) 3th RS232 RX (5) Slave I2C data (6) PWM control signal output (7) GPO
AE4	NFREN	I/O	Multiple function (1) NAND Flash read enable (2) GPO
AD6	NFWEN	I/O	Multiple function (1) NAND Flash write enable (2) GPO
Dram Channel A			
AA25	RA0	O	Memory address bit 0
U21	RA1	O	Memory address bit 1
AB25	RA2	O	Memory address bit 2
AA23	RA3	O	Memory address bit 3
W21	RA4	O	Memory address bit 4
AA24	RA5	O	Memory address bit 5
W22	RA6	O	Memory address bit 6
AB24	RA7	O	Memory address bit 7
W20	RA8	O	Memory address bit 8
AC24	RA9	O	Memory address bit 9
AD23	RA10	O	Memory address bit 10
V22	RA11	O	Memory address bit 11
AA20	RA12	O	Memory address bit 12
AD25	RA13	O	Memory address bit 13
Y24	RBA0	O	Memory bank address bit 0

Pin	Symbol	Type	Description
AE24	RBA1	O	Memory bank address bit 1
AD24	RBA2	O	Memory bank address bit 2
AC22	RCAS_	O	Memory column address strobe
AE23	RCKE	O	Memory clock enable
H24	RCLK0	O	Memory clock 0 positive
H25	RCLK0_	O	Memory clock 0 negative
Y23	RCS_	O	Memory chip select
V24	RDQ0	I/O	Memory data bit 0
V23	RDQ1	I/O	Memory data bit 1
U25	RDQ2	I/O	Memory data bit 2
U23	RDQ3	I/O	Memory data bit 3
K22	RDQ4	I/O	Memory data bit 4
J23	RDQ5	I/O	Memory data bit 5
K23	RDQ6	I/O	Memory data bit 6
J24	RDQ7	I/O	Memory data bit 7
T23	RDQ8	I/O	Memory data bit 8
T22	RDQ9	I/O	Memory data bit 9
R24	RDQ10	I/O	Memory data bit 10
T24	RDQ11	I/O	Memory data bit 11
M24	RDQ12	I/O	Memory data bit 12
L23	RDQ13	I/O	Memory data bit 13
L22	RDQ14	I/O	Memory data bit 14
M23	RDQ15	I/O	Memory data bit 15
R23	RDQM0	O	Memory data mask bit 0
R22	RDQM1	O	Memory data mask bit 1
P24	RDQS0	I/O	Memory positive data strobe bit 0
P25	RDQS0_	I/O	Memory negative data strobe bit 0
N25	RDQS1	I/O	Memory positive data strobe bit 1
N24	RDQS1_	I/O	Memory negative data strobe bit 1
W24	RODT	O	Memory on die termination enable

Pin	Symbol	Type	Description
W25	RRAS_	O	Memory row address strobe
T19	RVREF0	I	Memory VREF
AE25	RWE_	O	Memory write enable
AC25	RRESET	O	Memory reset
DRAM Channel B			
AC10	RA0_B	O	Memory address bit 0
Y10	RA1_B	O	Memory address bit 1
AE8	RA2_B	O	Memory address bit 2
AB10	RA3_B	O	Memory address bit 3
AA10	RA4_B	O	Memory address bit 4
AC8	RA5_B	O	Memory address bit 5
AA8	RA6_B	O	Memory address bit 6
AD8	RA7_B	O	Memory address bit 7
W10	RA8_B	O	Memory address bit 8
AD7	RA9_B	O	Memory address bit 9
AB6	RA10_B	O	Memory address bit 10
W12	RA11_B	O	Memory address bit 11
Y8	RA12_B	O	Memory address bit 12
AB11	RA13_B	O	Memory address bit 13
AB8	RBA0_B	O	Memory bank address bit 0
W8	RBA1_B	O	Memory bank address bit 1
AC11	RBA2_B	O	Memory bank address bit 2
Y12	RCAS_B	O	Memory column address strobe
AA6	RCKE_B	O	Memory clock enable
AD22	RCLK0_B	O	Memory clock 0 positive
AE22	RCLK0__B	O	Memory clock 0 negative
AE10	RCS_B	O	Memory chip select
AC12	RDQ0_B	I/O	Memory data bit 0
AC13	RDQ1_B	I/O	Memory data bit 1
AD13	RDQ2_B	I/O	Memory data bit 2

Pin	Symbol	Type	Description
AE13	RDQ3_B	I/O	Memory data bit 3
AD21	RDQ4_B	I/O	Memory data bit 4
AC21	RDQ5_B	I/O	Memory data bit 5
AD20	RDQ6_B	I/O	Memory data bit 6
AC20	RDQ7_B	I/O	Memory data bit 7
AC15	RDQ8_B	I/O	Memory data bit 8
AC16	RDQ9_B	I/O	Memory data bit 9
AB15	RDQ10_B	I/O	Memory data bit 10
AB14	RDQ11_B	I/O	Memory data bit 11
AC19	RDQ12_B	I/O	Memory data bit 12
AE18	RDQ13_B	I/O	Memory data bit 13
AE19	RDQ14_B	I/O	Memory data bit 14
AD18	RDQ15_B	I/O	Memory data bit 15
AB16	RDQM0_B	O	Memory data mask bit 0
AA15	RDQM1_B	O	Memory data mask bit 1
AD16	RDQS0_B	I/O	Memory positive data strobe bit 0
AE16	RDQS0__B	I/O	Memory negative data strobe bit 0
AD17	RDQS1_B	I/O	Memory positive data strobe bit 1
AC17	RDQS1__B	I/O	Memory negative data strobe bit 1
AD10	RODT_B	O	Memory on die termination enable
AE11	RRAS_B	O	Memory row address strobe
Y18	RVREF0_B	I	Memory VREF
AA12	RWE_B	O	Memory write enable
AE7	RRESET_B	O	Memory reset
MISC			
A19	CEC	I/O, 5V	Multiple function (1) HDMI CEC (2) GPIO (3) JTAG ICE data in

Pin	Symbol	Type	Description
D20	GPIO0	I/O, 5V	Multiple function (1) Serial interface control line (2) Slave I2C clock (3) External Interrupt 3 (4) GPIO
E18	GPIO1	I/O, 5V	Multiple function (1) Serial interface data line (2) Slave I2C data (3) External Interrupt 3 (4) GPIO
C22	GPIO2	I/O, 5V	Multiple function (1) Video output DE signal (2) 2nd RS232 TX (3) External Interrupt 1 (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Speed LED (7) GPIO
AA5	GPIO3	I/O, 5V	Multiple function (1) Audio line input data (2) 2nd RS232 RX (3) External Interrupt 2 (4) Slave I2C data (5) PWM control signal output (6) Ethernet Link LED (7) GPIO
AA4	GPIO4	I/O, 5V	Multiple function (1) Microphone input data (2) 2nd RS232 TX (3) External Interrupt 4 (4) Slave I2C clock (5) PWM control signal output (6) Ethernet Activity LED (7) GPIO
AB1	GPIO5	I/O, 5V	Multiple function (1) Microphone input left-right clock (2) 2nd RS232 RX (3) External Interrupt 1 (4) Slave I2C data (5) PWM control signal output (6) Ethernet Duplex LED (7) GPIO

Pin	Symbol	Type	Description
AB2	GPIO6	I/O, 5V	Multiple function (1) Microphone input bit clock (2) 3th RS232 TX (3) External Interrupt 2 (4) Slvae I2C clock (5) PWM control signal output (6) Ethernet Speed LED (7) GPIO
Y6	GPIO7	I/O, 5V	Multiple function (1) Microphone input master clock (2) 3th RS232 RX (3) External Interrupt 4 (4) Slvae I2C data (5) PWM control signal output (6) Ethernet Link LED (7) GPIO
B20	HDMISCK	I/O, 5V	Multiple function (1) HDMI I2C Clock (2) GPIO (3) JTAG ICE clock
B19	HDMISD	I/O, 5V	Multiple function (1) HDMI I2C Data (2) GPIO (3) JTAG ICE mode select
C20	HTPLG	I/O, 5V	Multiple function (1) HDMI Hot Plug (2) GPIO (3) JTAG ICE data out
B22	IR	I/O, 5V	Multiple function (1) Infrared input (2) GPIO
D22	LCDRD	I/O, 5V	Multiple function (1) LCD read strobe (2) GPIO
E6	RSTI	I	Front-End Power on reset
B21	OPWRSB	I/O, 5V	Power Control
A21	RESET_	I, 5V	Power on reset
F19	UARXD	I/O, 5V	Reserved for debug-only Uart pins. (1) 1 st RS232 RX (2) T8032 RS232 RX

Pin	Symbol	Type	Description
E20	UATXD	I/O, 5V	Reserved for debug-only Uart pins (1) 1 st RS232 TX (2) T8032 RS232 TX
A22	VCLK	I/O, 5V	Multiple function (1) VFD clock (2) GPIO (3) Slave I2C data (4) Serial interface data line
A23	VDATA	I/O, 5V	Multiple function (1) VFD data (2) GPIO (3) External Interrupt 3
B23	VSTB	I/O, 5V	Multiple function (1) VFD strobe (2) GPIO (3) Slave I2C clock (4) Serial interface control line
AA1	SCL	I/O, 5V	Multiple function (1) Serial interface control line (2) Slave I2C clock (3) GPIO
AA2	SDA	I/O, 5V	Multiple function (1) Serial interface data line (2) Slave I2C data (3) GPIO
USB			
AA3	AVDD33_USB	Power	3.3V Analog power for USB
W4	AVSS33_USB	Ground	Analog ground for USB
W2	USB_DM_P0	Analog	USB port0 differential serial data bus (minus)
W1	USB_DP_P0	Analog	USB port0 differential serial data bus (plus)
Y2	USB_DM_P1	Analog	USB port1 differential serial data bus (minus)
Y1	USB_DP_P1	Analog	USB port1 differential serial data bus (plus)
V2	USB_DM_P2	Analog	USB port2 differential serial data bus (minus)
V1	USB_DP_P2	Analog	USB port2 differential serial data bus (plus)
U3	USB_VRT	Analog	USB reference resistor
E-fuse			
W7	EFPWRQ	Power	2.5V power for E-fuse programming
Ethernet PHY			
G9	AVDD33_LD	Power	Line driver 3.3V analog power

Pin	Symbol	Type	Description
F9	AVDD33_COM	Power	PLL/BG 3.3V analog power
F13	AVSS33_LD	Ground	Line driver analog ground
E9	AVSS33_PLL	Ground	PLL/BG analog ground
G11	AVDD12_REC	Power	ADC analog power
F11	AVSS12_REC	Ground	ADC analog ground
B5	TXVP_0	Analog	Ethernet TD+
B6	TXVP_1	Analog	Ethernet RD+
A5	TXVN_0	Analog	Ethernet TD-
B7	REXT	Analog	External reference resistor
A6	TXVN_1	Analog	Ethernet RD-
SERVO			
F6	AGND33_1	Analog Ground	Analog Ground
K7	AGND33_2	Analog Ground	Analog Ground
F7	AGND33_3	Analog Ground	Analog Ground
H5	AGND12_1	Analog Ground	Analog Ground
H7	AGND12_2	Analog Ground	Analog Ground
F5	AUX1	Analog I/O	Auxiliary Input Alternative Function : Signal Monitoring
K5	AVDD12_1	Analog Power(1.2V)	Power Pin
J4	AVDD12_2	Analog Power(1.2V)	Power Pin
E3	AVDD33_1	Analog Power(3.3V)	Power Pin
J6	AVDD33_3	Analog Power(3.3V)	Power Pin
L4	FECFREQ	3.3V LVTTTL I/O, 5V-tolerance, Slow slew, 2, 4, 6, 8mA PDR, 75K pull-up (3.3V)	Frequency selection signal output, or LDD serial interface data or I2C SDA. The pin is spike-free at power-on stage.

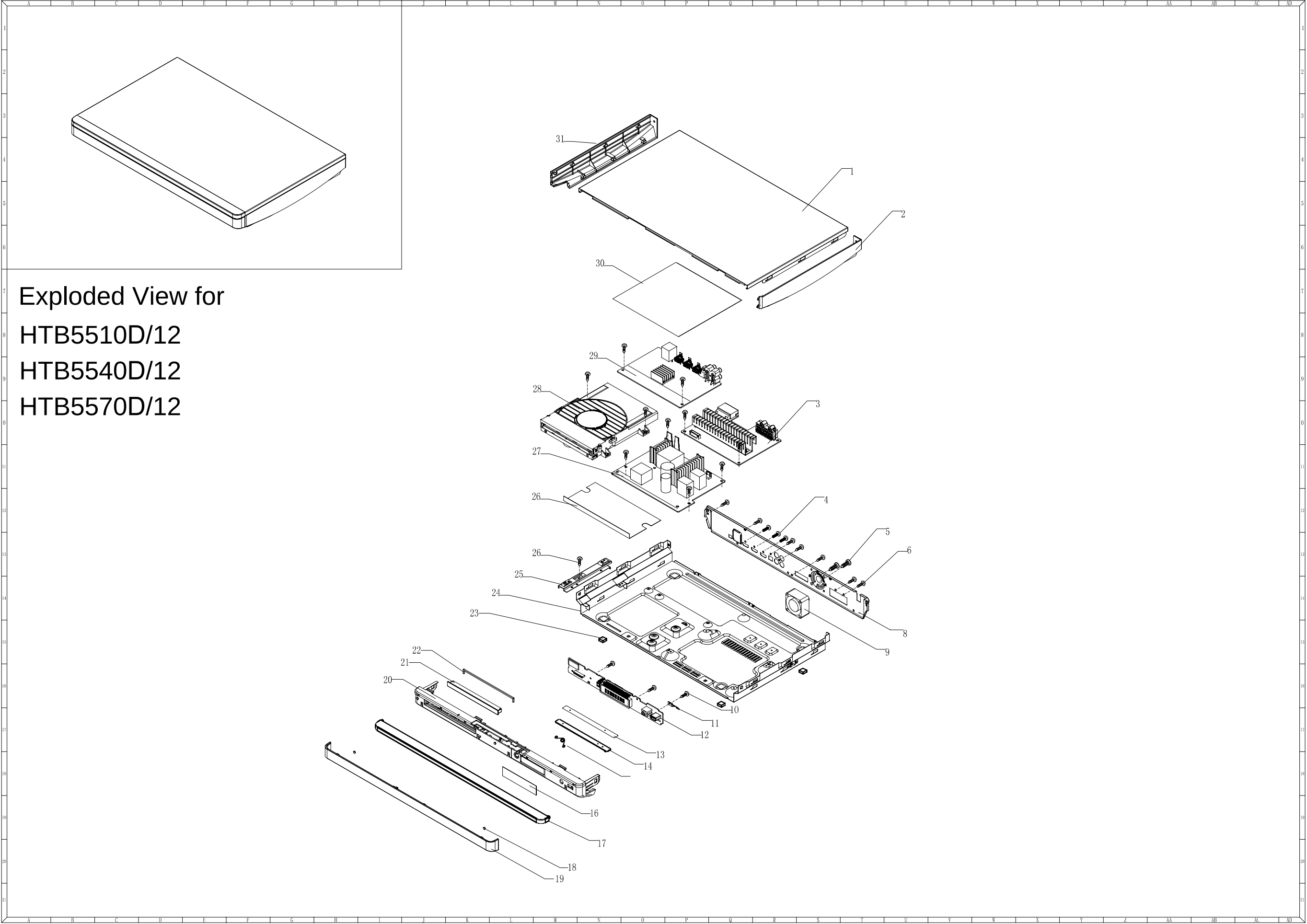
Pin	Symbol	Type	Description
L3	FECMOD	3.3V LVTTTL I/O, 5V-tolerance, Slow slew, 2, 4, 6, 8mA PDR, 75K pull-down (0V)	High frequency modulation mode selection signal output, or LDD serial interface command enable. The pin is spike-free at power-on stage.
P3	FEDMO	Analog Output	Disk motor control output. DAC output.
T1	FEEJECT_	3.3V LVTTTL I/O, 5V-tolerance, 6 mA PDR, 75K pull-up (3.3V)	Eject/stop key input, active low. The pin is spike-free at power-on stage. Alternate function : General IO.
R1	FEFG	3.3V LVTTTL I/O, 5V-tolerance, 6 mA PDR, 75K pull-up (3.3V)	Motor Hall sensor input. The pin is spike-free at power-on stage.
N1	FEFMO	Analog Output	Feed motor 1 control. DAC output.
N2	FEFMO2	Analog Output	Feed motor 2 control. DAC output.
N3	FEFMO3	Analog I/O	Feed motor 3 control. DAC output. Alternative Function : Auxiliary servo input
M3	FEFMO4	Analog I/O	Feed motor 4 control. DAC output. Alternative Function : Auxiliary servo input
H4	FOO	Analog Output	Focus servo output. PDM output of focus servo compensator.
A3	FPDOCD	Analog Input	Laser Power Monitor Input for CD APC / Differential negative input
C4	FPDODVD	Analog Input	Laser Power Monitor Input for DVD APC / Differential positive input
L2	FEGAINSW1	Analog Output	Read gain switch. 1
M2	FEGAINSW2	Analog Output	Read gain switch 2.
L1	FEGAINSW3	Analog Output	Read gain switch 3.

Pin	Symbol	Type	Description
R2	FEGIO0	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	LDD serial interface data. The pin is spike-free at power-on stage. The pin is not allowed to pull-up in circuit layout. Alternate function: 1. Internal monitored signal output 2. General IO
R3	FEGIO1	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	LDD serial interface CLK. The pin is spike-free at power-on stage. The pin is not allowed to pull-up in circuit layout. Alternate function: 1. Internal monitored signal output 2. General IO
T3	FEGIO10	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-up (3.3V)	PC RS232 serial receive data. The pin is spike-free at power-on stage Alternate function: 1. High speed serial output port. (CLOCK) 2. Internal monitored signal output 3. LED Control Output. Initial "0" Output 4. General IO.
U1	FEGIO11	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-up (3.3V)	PC RS232 serial transmit data. The pin is spike-free at power-on stage. Alternate function: 1. High speed serial output port (Data) 2. Internal monitored signal output 3. General IO.
U2	FEGIO3	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	LED Control Output. Initial 0 Output. The pin is spike-free at power-on stage. Alternate function : 1. Internal monitored signal output 2. General IO
R6	FEGIO4	Analog Output	Read gain switch 4 Alternate function : 1. LCD serial interface command enable. 2. LCD_DRV: Square wave output for LCD control. 3. Internal monitored signal output 4. General IO.
N5	FEGIO5	Analog Output	Read gain switch 5 Alternate function : 1. SIDM 2. LCD serial interface command enable. 3. Internal monitored signal output 4. General IO.

Pin	Symbol	Type	Description
N7	FEGIO6	Analog Output	Read gain switch 6. The pin is not allowed to pull-up in circuit layout. Alternate function : 1. SIDM 2. LCD serial interface command enable. 3. Internal monitored signal output 4. General IO.
N6	FEGIO7	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	General IO. The pin is spike-free at power-on stage. The pin is not allowed to pull-up in circuit layout.
R5	FEGIO9	3.3V LVTTL I/O, 5V-tolerance, 2,4,6,8 mA PDR, 75K pull-down (0V)	General IO. The pin is spike-free at power-on stage. Alternate function : 1. Internal monitored signal output 2. Spoke input. 3. Power on reset input, high active. 4. General IO.
E4	HAVC	Analog Output	Decoupling Pin for Reference Voltage of Main and Sub Beams
C3	INA	Analog Input	Input of Main Beam Signal (A)
B1	INB	Analog Input	Input of Main Beam Signal (B)
C2	INC	Analog Input	Input of Main Beam Signal (C)
C1	IND	Analog Input	Input of Main Beam Signal (D)
E2	INE	Analog Input	Input of Sub-Beam Signal (E)
E1	INF	Analog Input	Input of Sub-Beam Signal (F)
D1	ING	Analog Input	Input of Sub-Beam Signal (G)
D2	INH	Analog Input	Input of Sub-Beam Signal (H)
F4	MPXOUT1	Analog Output	Multiplexer Output 1 for Signal Monitoring. The pin is not allowed to pull-up in circuit layout. Alternate function: Internal monitored signal output / General output.
F2	MPXOUT2	Analog Output	Multiplexer Output 2 for Signal Monitoring. The pin is not allowed to pull-up in circuit layout. Alternate function: Internal monitored signal output / General output.
F1	MPXOUT3	Analog Output	Multiplexer Output 3 for Signal Monitoring. The pin is not allowed to pull-up in circuit layout. Alternate function : Internal monitored signal output / General output.

Pin	Symbol	Type	Description
K3	FEOSCEN	3.3V LVTTL I/O, 5V-tolerance, Slow slew, 2, 4, 6, 8mA PDR, 75K pull-up (3.3V)	High frequency modulation enable signal output, or LDD serial interface CLK or I2C SCL. The pin is spike-free at power-on stage.
G2	RFIN	Analog Input	Differential Input of AC Coupling RF SUM Signal (Negative)
H2	RFIN2	Analog Input	Differential Input of AC Coupling RF SUM Signal (Negative)
G1	RFIP	Analog Input	Differential Input of AC Coupling RF SUM Signal (Positive)
H1	RFIP2	Analog Input	Differential Input of AC Coupling RF SUM Signal (Positive)
J3	TLO	Analog Output	Tilt servo output
T2	FETRAYIN_	3.3V LVTTL I/O, 5V-tolerance, 6 mA, 75K pull-up (3.3V)	Tray_is_in Input, A Logical Low Indicates the Tray is IN. Feedback Flag is from Tray Connector. The pin is spike-free at power-on stage. Alternate function : General IO.
U4	FETRAYOUT_	3.3V LVTTL I/O, 5V-tolerance, 6 mA, 75K pull-up (3.3V)	Tray_is_out Input. A Logical Low Indicates the Tray is OUT. Feedback Flag is from Tray Connector. The pin is spike-free at power-on stage. Alternate function : General IO.
P2	FETRAYPWM	Analog Output	Tray DAC / PWM control output. Controlled by μ P.
A2	TRINA	Analog Input	Input of Tracking Signal (A)
B3	TRINB	Analog Input	Input of Tracking Signal (B)
A1	TRINC	Analog Input	Input of Tracking Signal (C)
B2	TRIND	Analog Input	Input of Tracking Signal (D)
J2	TRO	Analog Output	Tracking servo output. PDM output of tracking servo compensator.
H3	V14	Analog Output	Output of Voltage Reference (1.4V)
E5	VDAC0	Analog Output	Output of General DAC
B4	FVREF	Analog Output	Output of Voltage Reference
C6	VWDC2O	Analog Output	Output Voltage 2 of Laser Diode Control in APC

Pin	Symbol	Type	Description
A4	VWDC3O	Analog Output	Output Voltage 3 of Laser Diode Control in APC



Exploded View for
HTB5510D/12
HTB5540D/12
HTB5570D/12

Revision List

Version 1.0

* Initial Release for HTB5570D/12: