

Settop-Box

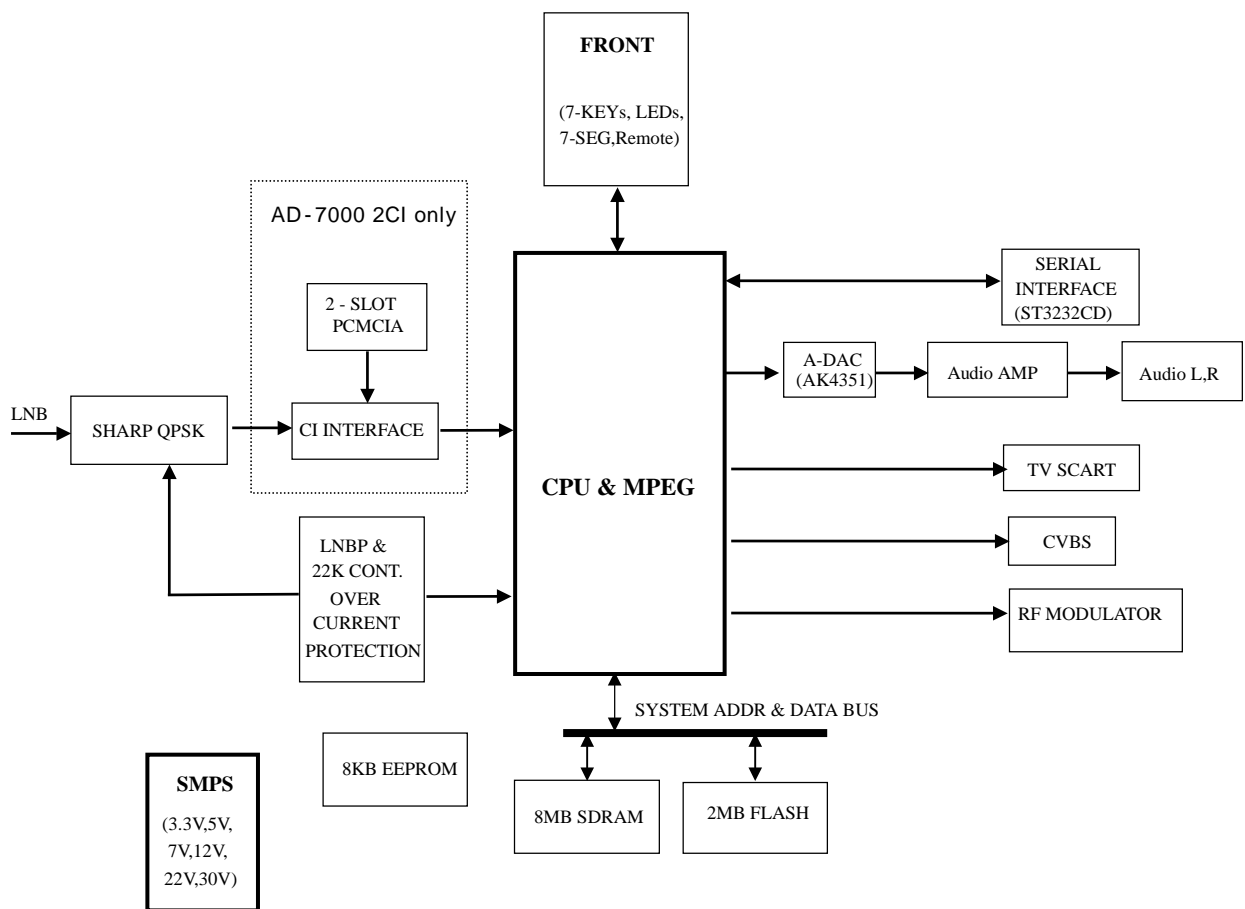
Service Manual

**Model : AD-7300 PLUS
AD-7000 2CI**

CONTENTS INDEX

1. Block Diagram	3 page
2. Features	4 page
3. Technical Specifications	5 page
4. Trouble Shooting	9 page
5. Bill of Materials List	22 page
5-1. AD-7300 PLUS BOM	
5-2. AD-7000 2CI BOM	
6. Circuit Drawing	33 page
6-1. Main / Front PCB Board	
6-2. SMPS PCB Board	
7. Working Guide	47 page

1. BLOCK DIAGRAM



2. Features

- DVB Common Interface (Viaccess, Irdeto, Nagra Vision, Conax, CryptoWorks, etc) – AD-7000 2CI only
- Easy Graphic MENU Interface
- RS232C Port for Updating Control Software and Additional Service
- Supports DiSEqC1.0/DiSEqC 1.2, 13/18V, 0/22KHz Tone
- 1-SCART(TV) Connectors & 3-RCA(CVBS,L,R)
- Multi-language Function (Menu, Audio)
- Last Channel Memory
- OSD: Transparency & Blending, 256 Palette Colors
- 7 Front Panel Buttons & IR Remote Controller User Interface
- Editing Functions(TV or Radio Channel, Channel Name, PID, Transponder Name)
- EPG for On Screen Channel Information
- Channels Memory for Multi-satellite
- 3 Operation Modes(Digital TV, Digital Radio, Favorite)
- Receives QPSK Satellite Broadcasting RF Signal and Decodes the Digitally Encoded Signal
- Digital Tuner with Loop-through
- SCPC/MCPC Receivable from C/KU-band Satellite
- Wide Symbol Rate 2~45 Mbps & 950~2150 MHz input Frequency
- MPEG-2 Main Profile at Main Level
- Teletext Supported by VBI
- 4900 Channels Memory
- Max. 12 Characters of Channel Name Length
- PLL RF Modulator UHF 21~69 with PAL G/I/K
- Dolby Digital Audio (Optional)
- Support Games (Tetris, Snake etc)

3. TECHNICAL SPECIFICATIONS

1. Conditional Access Interface (AD-7000 2CI only)

PCMCIA	2 Slot. Type1 or Type2 DVB Common Interface Standard (Viaccess, Irdeto, Nagra Vision, Conax, CryptoWorks ...)
--------	---

2. Tuner & Demodulator

LNB IF input	1 × F Type, IEC169-24, Female
LNB IF loop through output	1 × F Type, IEC169-24, Female
Input Frequency Range	950MHz to 2150MHz
RF input Signal Level	-25 ~ -65 dBm
RF impedance	75 ohms
LNB Power	13.5 / 18.5Vdc +/- 5%,0.5Amax Overload Protected
LNB tone switch	22KHz +/- 2KHz, 0.6Vpp +/- 0.2V
DiSEqC	Version1.2, Tone burst A/B
Demodulation	QPSK
Symbol Rate	2 ~ 45 Msps, SCPC/MCPC

3. MPEG

Transport Stream	MPEG-2 TS Specification(ISO/IEC 13818)
Input Rate	Max. 60Mbit/s
VIDEO	MPEG-2 MP@ML
AUDIO	MPEG-1/2 Audio layer 1,2
Aspect Ratio	4:3, 16:9
Video Resolution	720 × 576(PAL), 720 × 480(NTSC)
Audio mode	Stereo, Dual channel, Joint stereo, Mono
Audio Sampling Frequency	32/44.1/48KHz

4. A/V & Data In/Out

TV SCART	RGB, CVBS, L, R out
----------	---------------------

RCA JACK	CVBS(Yellow) Audio L, R(White, Red)
Serial Port	RS232C D-Sub MaleType

5. MEMORY

FLASH MEMORY	2 Mbytes
SDRAM	8 Mbytes
EEPROM	8 Kbytes

6. RF Modulator

TV Standard	PAL G/I/K Selectable by Menu Setting
Audio Output	Mono with Volume Control
Preset Channel	CH 38(or TBD). Software changeable by Menu Screen

7. Power Supply

Input Voltage Range	90Vac ~ 240Vac(SMPS)
Input Frequency Range	50Hz ~ 60Hz
Power Consumption	Max 40W
Standby Power Consumption	Less then or equal to 6.5W
Protection	Separate Internal Fuse The input shall the lighting protection

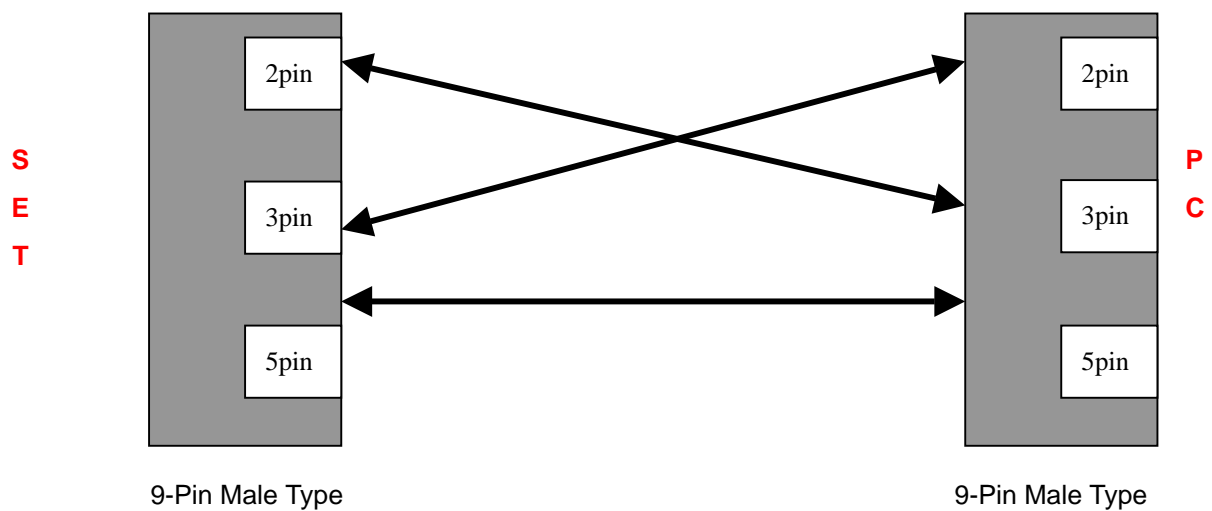
8. SCART Socket

PIN No.	TV	AUX
1	Audio out Right	Audio out Right
2	-	Audio in Right
3	Audio out Left	Audio out Left
4	Audio ground	Audio ground
5	BLUE ground	BLUE ground
6	-	Audio in Left-
7	BLUE out	BLUE in
8	Function control out	Function control in
9	GREEN ground	GREEN ground
10	-	-
11	GREEN out	GREEN in
12	-	-
13	RED ground	RED ground

14	Fast blanking ground	Fast blanking ground
15	RED out	RED in
16	Fast blanking out	Fast blanking in
17	CVBS ground	CVBS ground
18	CVBS ground	CVBS ground
19	CVBS out	CVBS out
20	-	CVBS in
21	Ground	Ground

9. Serial(RS-232) Connector

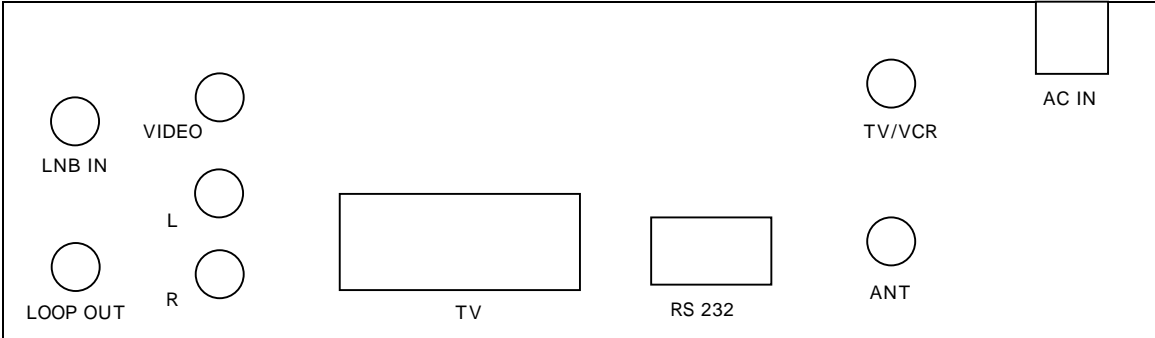
PIN No.	Signal Name
1	-
2	RxD(Receive Data)
3	TxD(Transmit Data)
4	-
5	Ground
6	-
7	-
8	-
9	-



10. Physical Specification & Environmental Condition

Weight	2.0 Kg
Size(W x H x D)	280mm x 55mm x 245mm
Operating Temperature	0 °C ~ 40 °C
Storage Temperature	-10 °C ~ 80 °C
Operating Humidity Range	10 ~ 85% RH, Non-condensing
Storage Humidity Range	5 ~ 90% RH, Non-condensing

11. REAR Panel (Back View)



4. TROUBLE SHOOTING

4-1. Appearance (Exterior) Test

Check the condition of install, joining of connectors, break or bend of PCB, cold-soldering or Short of components and problem of part ,etc.

4-2. Power Test

5V	Check the power at L(910,905,906)
3.3V	Check the power at L(909,907,908)
30V	Check the power at L901
23V	Check the power at L902
12V	Check the power at L903
7V	Check the power at L904

4-3. System Test

Check whether STI5518 CPU or Flash Memory TE28F160 works normally.

Check Message Display by Hyper Terminal in PC.

Configuration of Hyper Terminal	
Baud rate:	115,200 bps
Data bit:	8 bits
Parity bit:	none
Stop bit:	1
Control:	none

4-3-1. Check STI5518 Clock

4-3-2. Test for Flash Memory

4-4. MPEG and Audio Video Test

Check the whole process from MPEG Decoder (STI5518) and Video buffer.

Also Check the Audio signal of U601(AK4351VT) and output port.

4-4-1. STI5518 (MPEG-2 Audio/Video Decoder)

4-4-2. Video Out

4-4-3. Audio DAC AK4351VT(U601)

4-5. Channel Test

4-5-1. When "NO SIGNAL" Message display.

4-5-1-1. U105 (KA317 Regulator) => Check the Voltage 21V ~ 24V at Pin 3.

Check the Voltage 13V(Vert) or 18V(Horz) at L106.

4-5-1-2. I2C Control Signal

4-5-2. 22KHz Tone, TS-Data and Data Error control signal

4-6. Common Interface Test (AD-7000 2CI only)

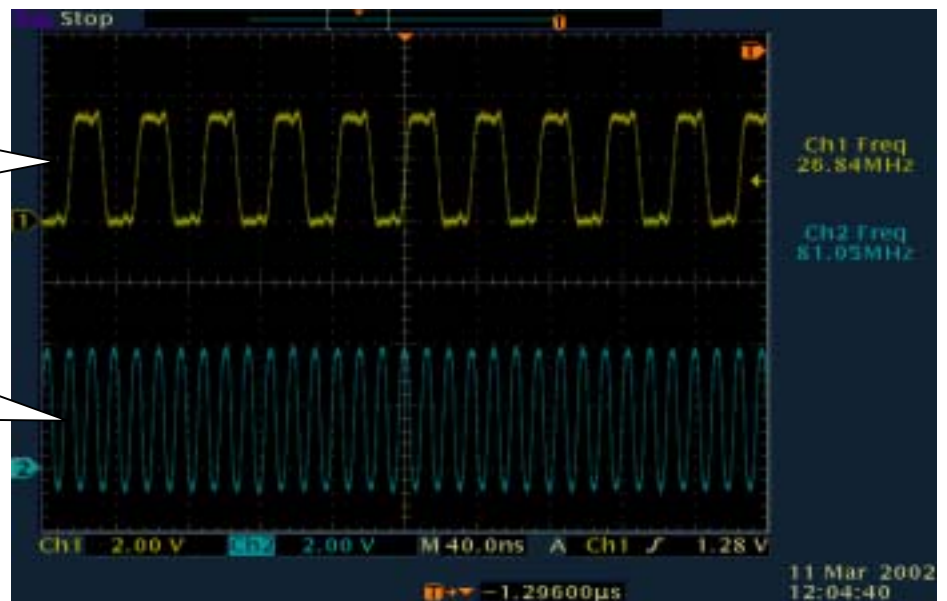
[4-3-1. Check STI5518 Clock]

27MHz

Check point : U301 Pin 120
or R310 or R309.

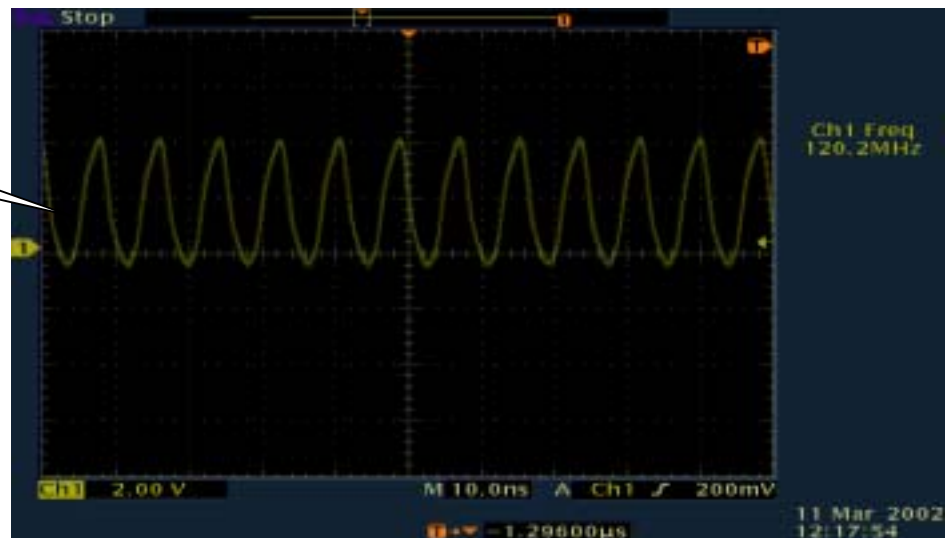
81MHz

Check point : U301 Pin 118
or TP301



120 MHz

Check point : U402 Pin 38



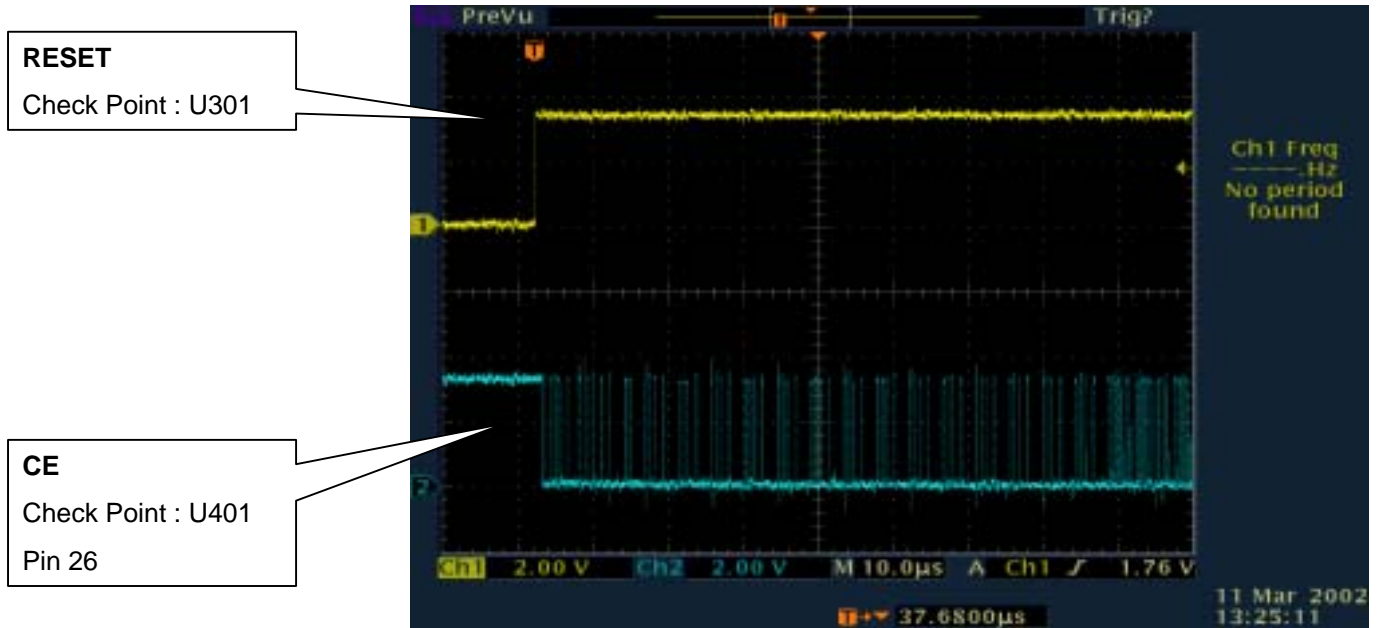
Failure Causes and Solution.

If the 27MHz is unstable, Check the U304 and U402(SDRAM) and U301(STI5518) is damaged or not.

If you are firm belief of damage for the device, then replace the device.

If the clock 81MHz on TP301, 120MHz on Pin-38 of U402 is not generated from inside of the chip, Please check the soldering state of U301.

[4-3-2. Test for Flash Memory]



Failure Causes and Solution

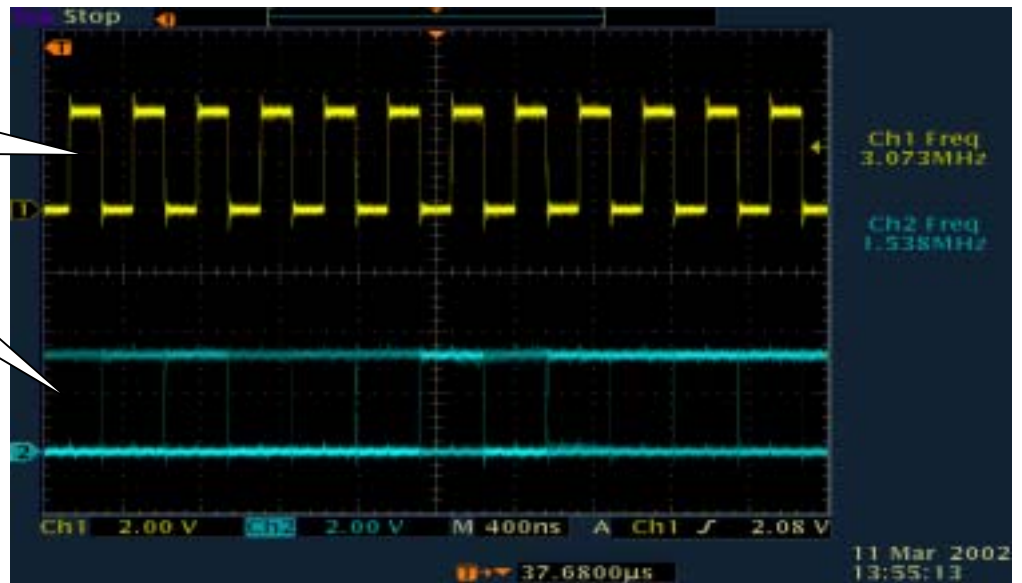
If the set do not operating correctly, the chip select pin and the reset pin of ST15518 must be checked. And if these signal are not acting like above figure, then check the soldering state of U301, U401 and RA3xx.

Before checking these signal you must check the power for U301, U401 etc. Check 3.3V on L304 and check 2.5V on L303, L305, L306 respectively.

[4-4-1. STI5518(MPEG-2 Audio/Video Decoder)]

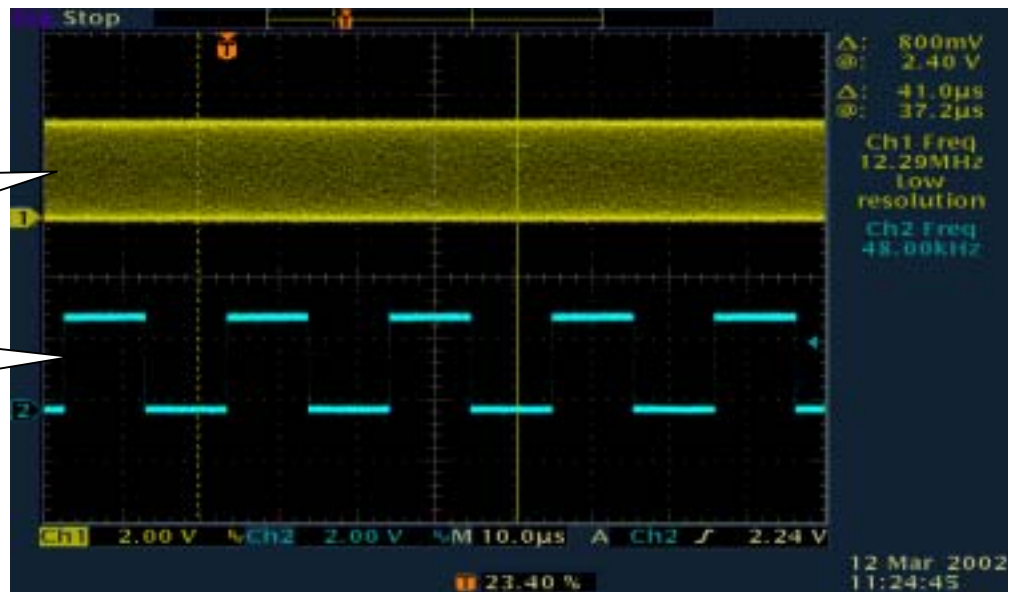
SCLK
 Check point : U301
 Pin 51

SDATA
 Check Point : U301
 Pin 52



MCLK
 Check Point : U301
 Pin 55

LRCLK
 Check Point : U301
 Pin 56



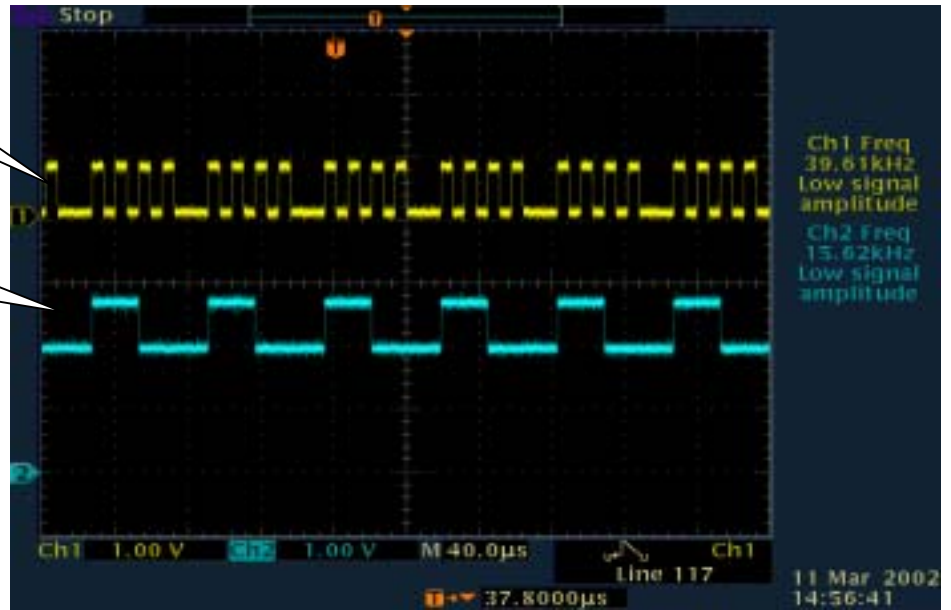
Failure Causes and Solution

If the Audio Main CLK MCLK(2.048MHz ~12.8MHz) is acting unstably, check the soldering state of STI5518. And check the oscillator U304 is generating 27 MHz clock. If STI5518 and oscillator are OK, then check the Audio DAC U601. And all these are OK, STI5518 maybe damaged. Then you can try to replace the STI5518.

[4-4-2. Video Out Check]

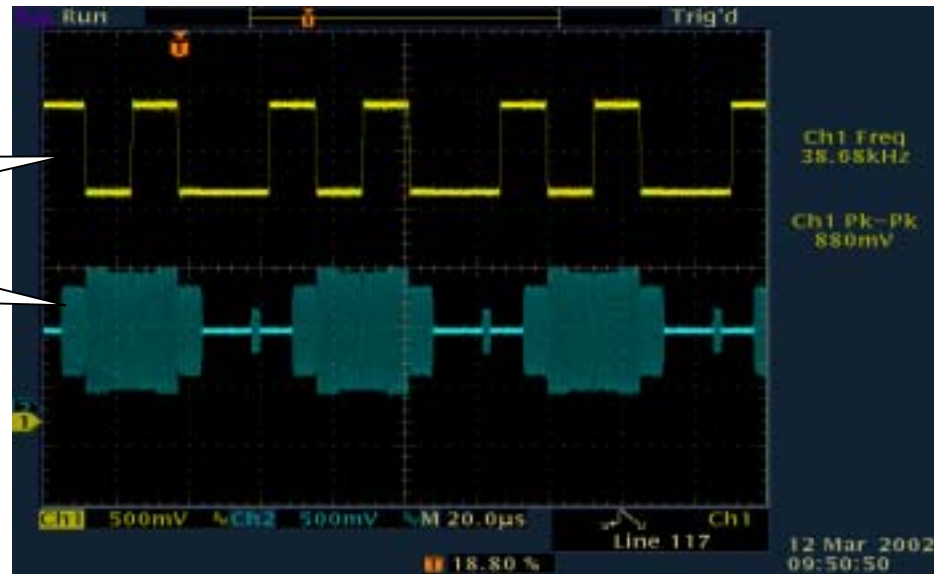
BLUE
Check Point : R708

GREEN
Check Point : R728

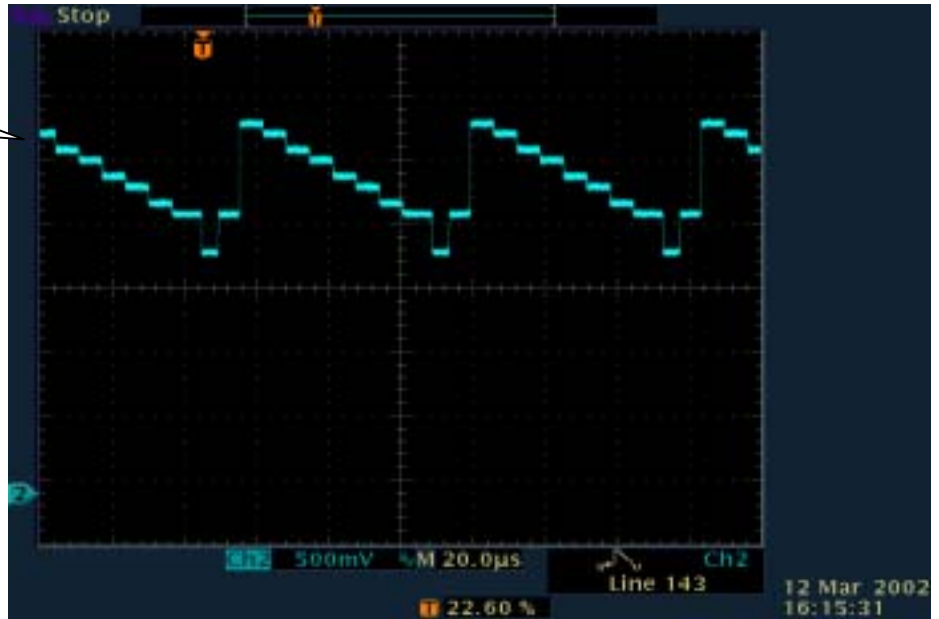


RED
Check Point : R718

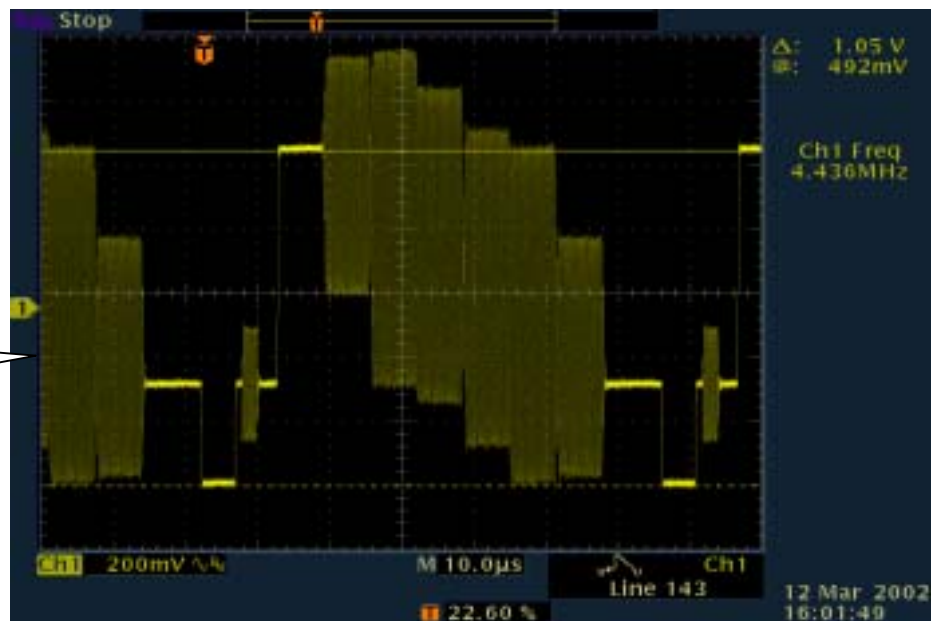
C
Check Point : U301
Pin 33



Y
Check Point : U301
Pin 32



CVBS
Check Point : R523

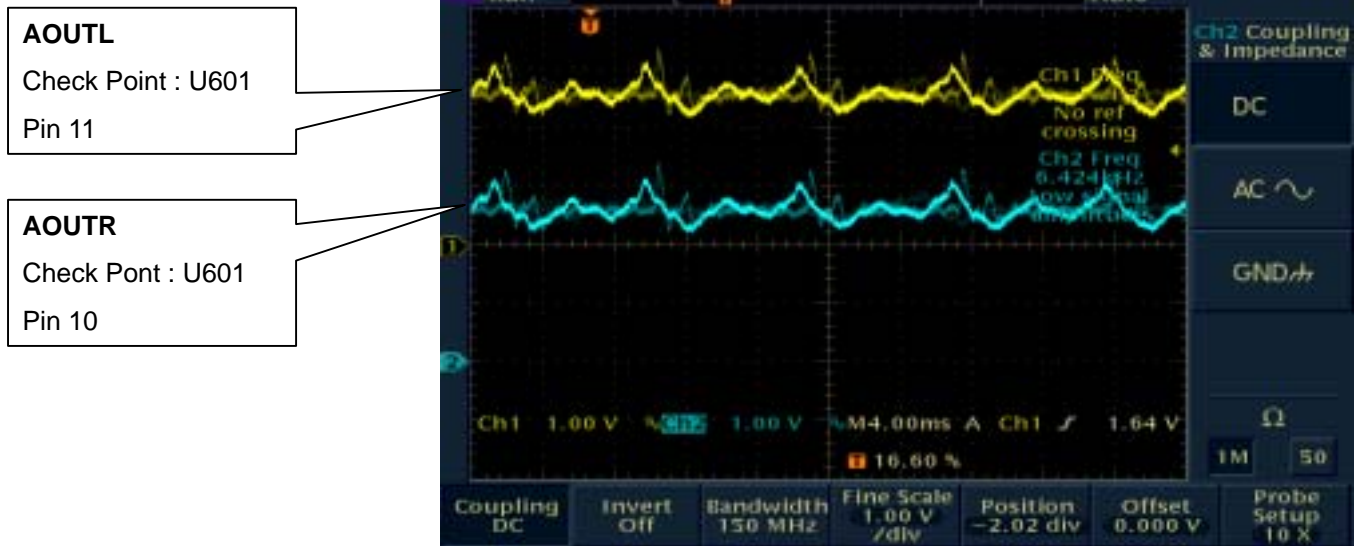


Failure Causes and Solution

If the video signal is not operating correctly, you should check R314, R315(18 Kohm).

And you may try to check the net concerning to B, G, R, CVBS on R703, R723, R713, R503. When you had finished checking the above net or device and all these are OK, STI5518 maybe damaged. hen you can try to replace the STI5518.

[4-4-3. Audio DAC AK4351VT]



Failure Causes and Solution

If there are no audio outputs, you should check the input signal LRCLK, SCLK, SDTA and MCLK of Audio DAC U601. And you may try to check the net concerning to audio L, R on R614, R617 and pin 1, 7 of U602. When you had finished checking the above net or device and all these are OK, Audio DAC maybe damaged. Then you can try to replace the Audio DAC.

[4-5. Channel Test]

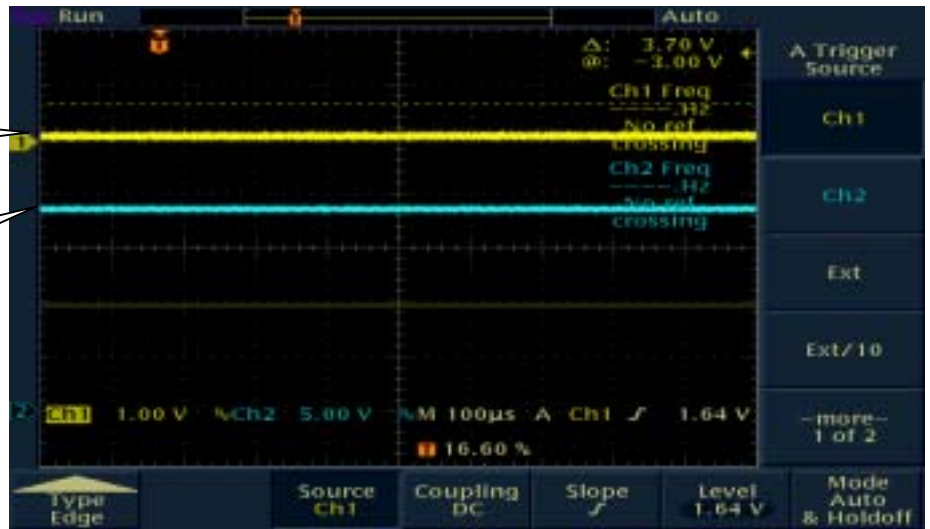
[4-5-1. When “NO SIGNAL” is displayed.]

1. Check the RF cable is connected to LNB IN connector of rear panel. Then check U105(KA317 Regulator) pin 3 is powered between 21V to 24V. And check the voltage on L101 ~ L104 is proper level.

When you had finished checking the above net or device and all these are OK, Tuner maybe have problem. Replace the Tuner.

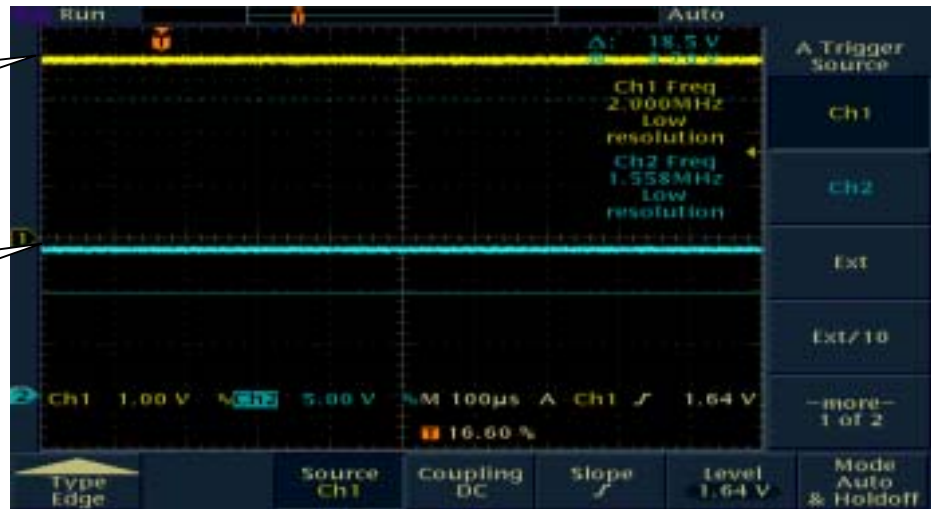
In case of Horz Polarity
Check Pont : R125

LNBA
Check Point : L106, (18V)



In case of Vert Polarity
Check Pont : R125

LNBA
Check Point : L106, (13V)



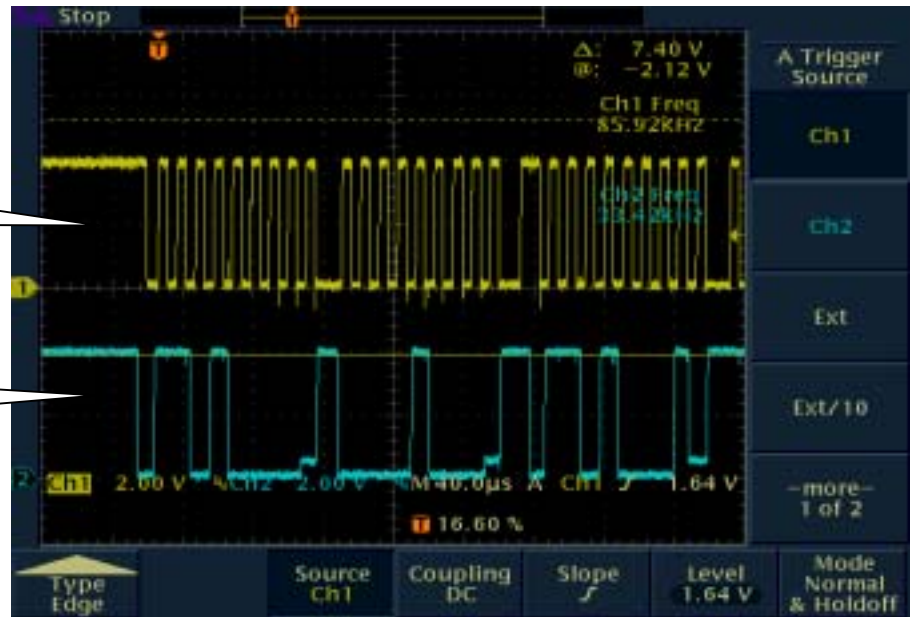
Failure Causes and Solution

If there's no 13V or 18V on the output connector of Tuner U101, you should check High(3.3V)/low(0V) state of R121. And this is properly high then check the Q107, U105 and Q109 respectively.

2. I2C Control Signal

SCL_NIM
Check Point : U301
Pin 20

SDA_NIM
Check Point : U301
Pin 21



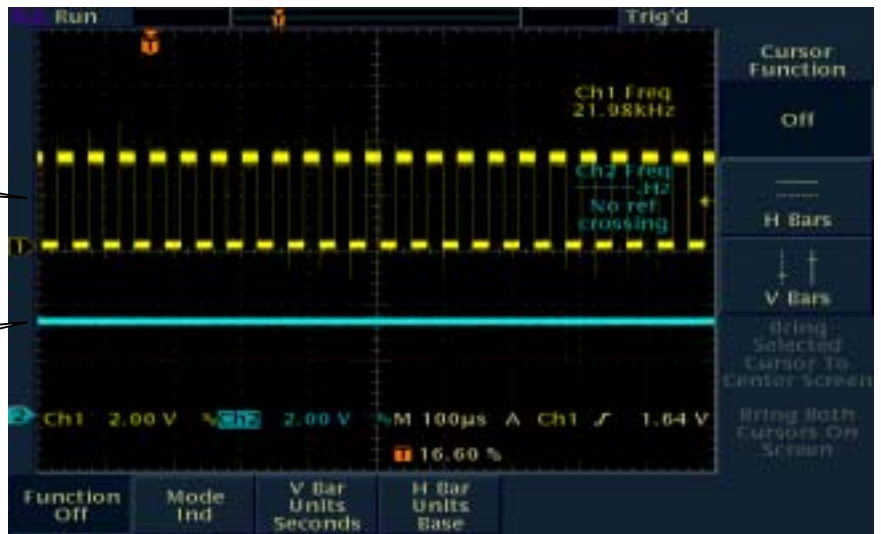
Failure Causes and Solution

If there's no or different signal compare to above picture on I2C line, check the associated net.

[4-5-2. 22KHz Tone , BCLK and ERROROUT control signal]

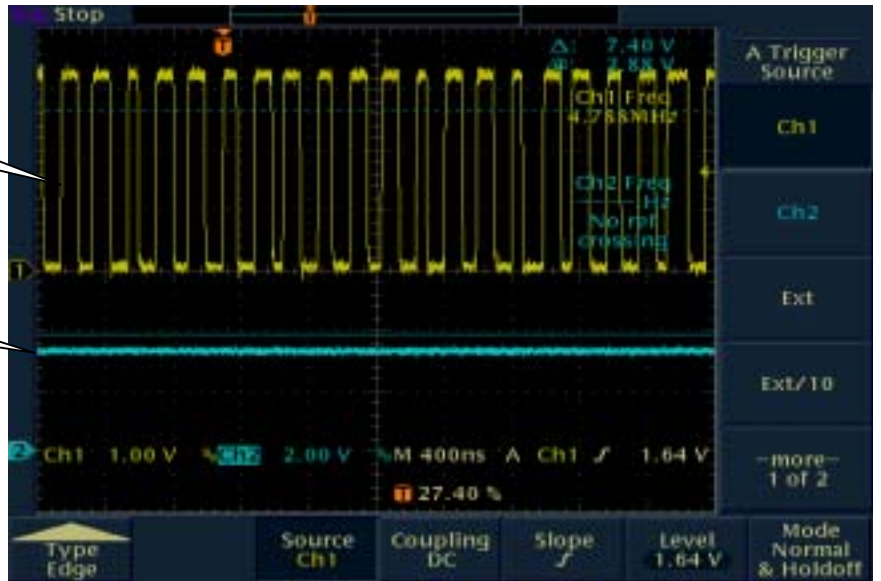
22KHz
Check Point : R127

22KHz ON(L) / OFF(H)
Check Point : R128



CH_CLK
Check Point : RA463
Pin 4

ERROROUT
Check Point : RA463
Pin 1



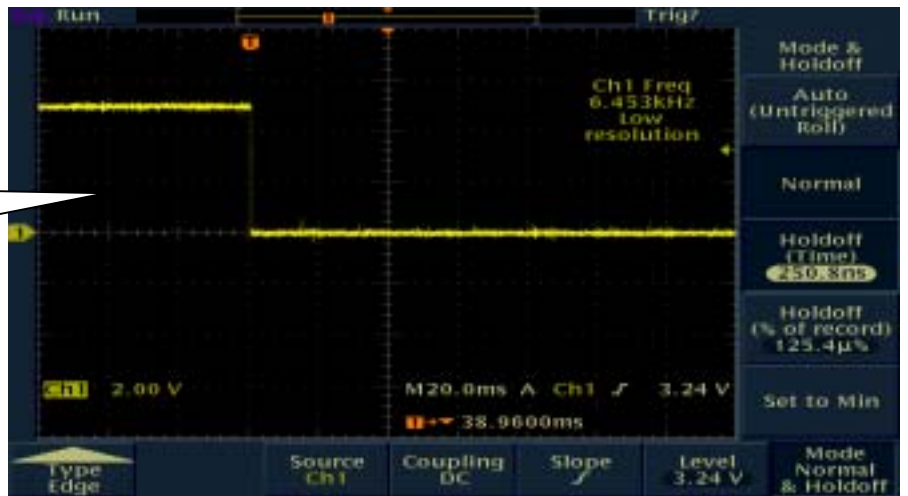
[4-6. Common Interface Test] (AD-7000 2CI only)

CDA# / CDB#

Check Point :

CDA# : U203 Pin 7, 72

CDB# : U203 Pin 6, 71

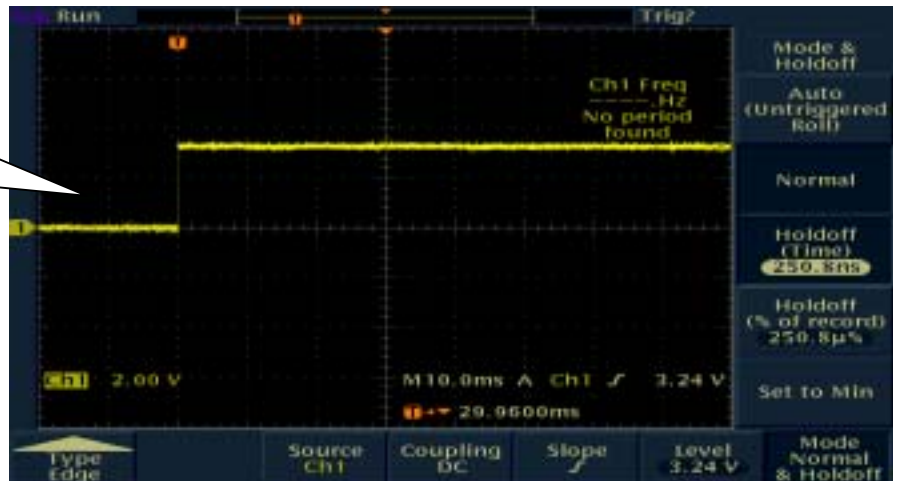


PCMCIA_A / PCMCIA_B

Check Point :

PCMCIA_A: R249

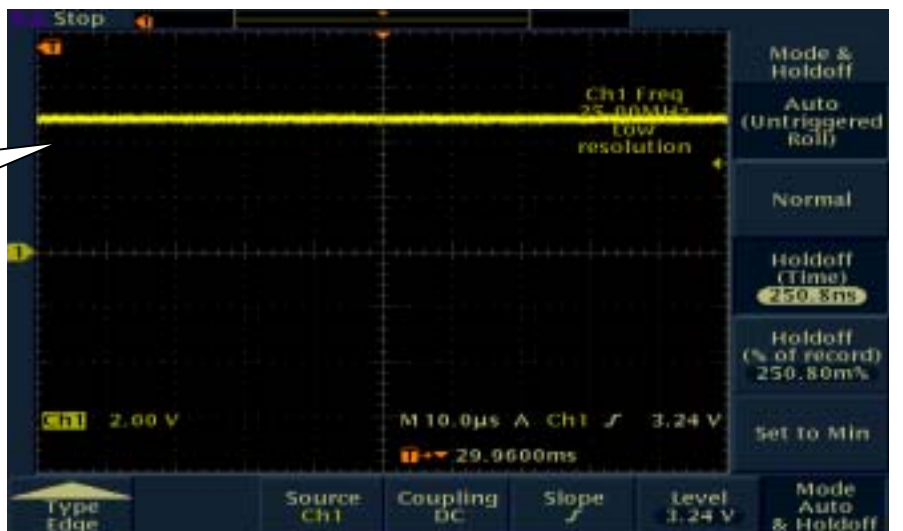
PCMCIA_B: R251



VCC1,VCC2

Check Point :

VCC1,VCC2 : Collector of Q201, Q202

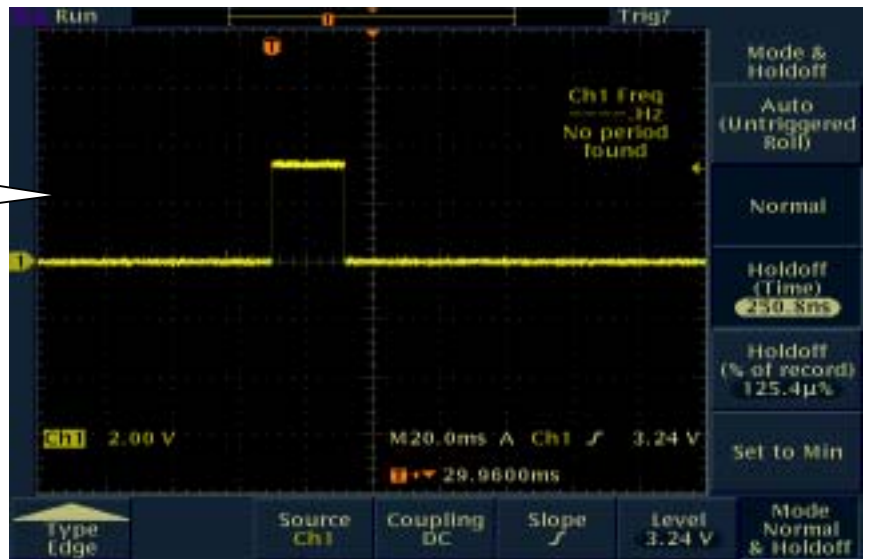


RSTA / RSTB

Check Point :

RSTA : U203 Pin 120

RSTB : U203 Pin 119



TS-Signal

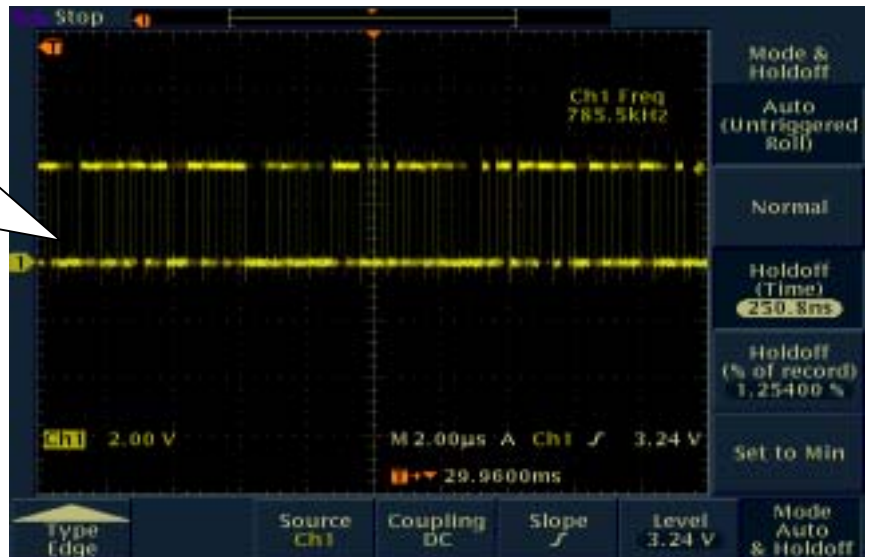
Check Point : U203

Pin 40 ~ 47,

MDIA[7:0], MDIB[7:0],

MDOA[7:0], MDOB[7:0],

U203 Pin 53 ~ 60 and U201



Failure Causes and Solution

If above signal is not acting properly, check the associated net.

AD-7300 PLUS

TV SCART

3-RCA

RF

RS232

K3 FRONT

WITHOUT 4 DIGIT 7 SEGMENT

2M FLASH

1. MAN PCB ASS'Y

1-1 SMD

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	SMD	22	L101,L102,L103,L303,L304, L305,L306,L451,L452,L453, L601,L801,L802,L901,L905, L906,L907,L908,L909,L910 L512,L602	FCM2012C-101	TAI-Tech	I3301-001375	FCM2012C-101 (2012 size)
2	SMD	6	L104,L105,L106,L902,L903, L904	FCM2012C-470	TAI-Tech	I3301-001378	FCM2012C-470 (2012 size)
3	SMD	1	L501	FCI2021-100(10%)	TAI-Tech	I2703-000125	10uH (2012 size)
4	SMD	3	L701,L711,L721	FCI2021-120(10%)	TAI-Tech	I2703-001266	12uH (2012 size)
5	SMD	61	BC101,BC102,BC103,BC104,BC105, BC106,BC108,BC301,BC306,BC309, BC313,BC315,BC317,BC319, BC320,BC321,BC323,BC351,BC401 BC402,BC403,BC404,BC405,BC408, BC421,BC451,BC452,BC453,BC454, BC501,BC511,BC521, BC601,BC602,BC603,BC604,BC631, BC701,BC711,BC721,BC731,BC732, BC733,BC801,BC802,BC803,BC804, BC805,BC901,BC902,BC903,BC904, BC905,BC906,BC907,BC908,BC909, BC910,BC911,BC912,C102	CS1608Y5V104Z500NR	SAMWHA	I2203-006000	C-Ceramic, 0.1uF (1608 size)
6	SMD	3	C521,C733,C801	CS1608C0G100J500NR	SAMWHA	I2203-000296	C-Ceramic, 10pF (1608 size)
7	SMD	1	C104	CS1608C0G220J500NR	SAMWHA	I2203-006001	C-Ceramic, 22pF (1608 size)
8	SMD	2	C803,C804	CS1608C0G330J500NR	SAMWHA	I2203-005665	C-Ceramic, 33pF (1608 size)
9	SMD	2	C603,C601	CS1608C0G470J500NR	SAMWHA	I2203-005000	C-Ceramic, 47pF (1608 size)
10	SMD	4	C501,C701,C711,C721	CS1608C0G200J500NR	SAMWHA	I2203-000548	C-Ceramic, 20pF (1608 size)

11	SMD	4	C502,C702,C712,C722	CS1608C0G201J500NR	SAMWHA	I2203-000560	C-Ceramic, 200pF (1608 size)
12	SMD	2	C602,C604	CS1608C0G391J500NR	SAMWHA	I2203-002017	C-Ceramic, 390pF (1608 size)
13	SMD	8	C429,C522,C523,C731,C732, C101,C103,C802	CS1608X7R102K500NR	SAMWHA	I2203-000440	C-Ceramic, 1nF (1608 size)
14	SMD	12	C105,C303,C304,C430,,C421 C422,C423,C424,C425,C426 C427,C428	CS1608X7R103K500NR	SAMWHA	I2203-000257	C-Ceramic, 0.01uF (1608 size)
15	SMD	1	R126	CR 1/10 121 JT	HAN RYUK	I2007-000023	120ohm (2012 size)
16	SMD	2	R113,R122	CR 1/10 241 JT	HAN RYUK	I2007-040210	240ohm (2012 size)
17	SMD	1	R901	CR 1/10 331 JT	HAN RYUK	I2007-000766	330ohm (2012 size)
18	SMD	2	R110,R124	CR 1/10 911 JT	HAN RYUK	I2007-001239	910ohm (2012 size)
19	SMD	1	R131	CR 1/10 102 JT	HAN RYUK	I2007-000468	1Kohm (2012 size)
20	SMD	1	R123	CR 1/10 122 JT	HAN RYUK	I2007-000221	1.2Kohm (2012 size)
21	SMD	2	R735,R736	CR 1/10 202 JT	HAN RYUK	I2007-000671	2Kohm (2012 size)
22	SMD	4	R102,R103,R119,R120	CR 1/10 472 JT	HAN RYUK	I2007-000872	4.7Kohm (2012 size)
23	SMD	8	R138,R319,R329,R330,R405, R407,R408,R413	CR 1/16 000 JT	HAN RYUK	I2007-000070	0ohm (1608 size)
24	SMD	2	R136,R132	CR 1/16 1R0 JT	HAN RYUK	I2007-002425	1ohm (1608 size)
25	SMD	4	R502,R702,R712,R722	CR 1/16 100 FT(1%)	HAN RYUK	I2007-007488	10 ohm (1%) (1608 size)
26	SMD	10	R305,R309,R310,R312,R313, R321,R328,R351,R352,R631	CR 1/16 330 JT	HAN RYUK	I2007-000113	33ohm (1608 size)
27	SMD	1	R737	CR 1/16 470 JT	HAN RYUK	I2007-000072	47ohm (1608 size)
28	SMD	8	R363,R364,R523,R708,R718, R734,R743,R728,	CR 1/16 750 JT	HAN RYUK	I2007-001167	75 ohm (1608 size)
29	SMD	4	R505,R705,R715,R725	CR 1/16 750 FT (1%)	HAN RYUK	I2007-001168	75 ohm (1%) (1608 size)
30	SMD	5	R107,R108,R742,R806,R807	CR 1/16 101 JT	HAN RYUK	I2007-000074	100ohm (1608 size)
31	SMD	6	R140,R303,R524,R525,R731, R732	CR 1/16 221 JT	HAN RYUK	I2007-000075	220ohm (1608 size)
32	SMD	4	R504,R704,R714,R724	CR 1/16 332 FT(1%)	HAN RYUK	I2007-000683	3.3 Kohm (1%) (1608 size)
33	SMD	4	R501,R701,R711,R721	CR 1/16 391 FT (1%)	HAN RYUK	I2007-000820	390 ohm (1%) (1608 size)
34	SMD	20	R133,R320,R322,R521,R601, R606,R607,R614,R617,R707, R717,R727,R733,R738,R801, R802,R803,R804,R805,R615	CR 1/16 102 JT	HAN RYUK	I2007-000078	1Kohm (1608 size)
35	SMD	4	R503,R703,R713,R723	CR 1/16 151 FT(1%)	HAN RYUK	I2007-000040	150 ohm (1%) (1608 size)
36	SMD	12	R301,R302,R304,R316,R317, R401,R402,R403,R410,R411, R609,R741	CR 1/16 472 JT	HAN RYUK	I2007-000084	4.7 Kohm (1608 size)
37	SMD	25	R101,R104,R105,R109,R111, R112,R114,R117,R118,R121, R125,R127,R128,R129,R139, R307,R311,R361,R362,R365, R632,R633,R634,R739,R740	CR 1/16 103 JT	HAN RYUK	I2007-000090	10Kohm (1608 size)

38	SMD	1	R134	CR 1/16 153JT	HAN RYUK	I2007-000092	15Kohm (1608 size)
39	SMD	2	R314,R315	CR 1/16 183 FT(1%)	HAN RYUK	I2007-000455	18 kohm (1%) (1608 size)
40	SMD	2	R611,R618	CR 1/16 273 JT	HAN RYUK	I2007-000655	27 Kohm (1608 size)
41	SMD	3	R135,R612,R619	CR 1/16 473 JT	HAN RYUK	I2007-000939	47Kohm (1608 size)
42	SMD	2	R610,R621	CR 1/16 683 JT	HAN RYUK	I2007-000100	68kohm (1608 size)
43	SMD	17	RA302,RA303,RA304,RA305,RA306,RA307,RA308,RA309,RA310,RA311,RA312,RA313,RA421,RA422,RA461,RA462,RA463	CN 164 330 JT	HAN RYUK	I2011-001282	33ohm 4-ARRAY RESISTOR
44	SMD	2	RA361,RA423,RA424	CN 164 472 JT	HAN RYUK	I2011-001280	4.7Kohm 4-ARRAY RESISTOR
45	SMD	20	Q102,Q104,Q106,Q108,Q109 Q110,Q111,Q112,Q113,Q521 Q631,Q632,Q702,Q712,Q722 Q731,Q732,Q733,Q734,Q801	KST3904-MTF(SOT-23)	KEC	I0501-002275	SOT-23
46	SMD	4	Q501,Q701,Q711,Q721	KN3906S(SOT-23)	KEC	I0501-002276	SOT-23
47	SMD	1	U103	AMS1117CD-3.3V	AMS	I1203-001921	AMS1117CD-3.3V
48	SMD	1	U301	STI5518	ST	I0902-001289	IC-STB Decoder, PQFP-208, BVB Version
49	SMD	1	U302	MM74HC125M	Fairchild	I0801-003020	IC-COMOS Logic, SOIC-14
50	SMD	1	U303	MM74HC14	Fairchild	I0801-003011	IC-COMOS Logic(Schmitt Trgger), SOIC-14
51	SMD	1	U351	AT24C64N-10SC-2.7	ATMEL	IMD13-00125D	AT24C64N-10SC-2.7
52	SMD	1	U401	TE28F160C3TA90	Intel	I1107-001164	IC-Flash, 3.3V, 1M*16, 90ns, TSOP-48
53	SMD	1	U402	K4S641632D-TC/L80	SamSung	I1105-001318	IC-SDRAM,3.3V,1M*16*4Banks,125Mhz
54	SMD	1	U451	ST3232CD	Sipex	I1006-000008	IC-Interface, 3.3V, SOIC-16
55	SMD	1	U601	AK4351VT	Asahi-Kasei	I1204-003510	IC-Audio DAC, TSSOP-16
56	SMD	1	U602	KA358D(SOP)	Fairchild	I1201-000166	KA358
57	PCB	1	MAIN-PCB	IT415S		P-IT415S	IT415S, 2Layer

1-2 DIP

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	DIP	3	CE101,CE107,CE803	1uF/50V-5*11*5,FORMING CUT TYPE	DAEWOO	I2401-000602	C-AL ; 1uF/50V-5*11*5,FORMING CUT TYPE
2	DIP	6	CE307,CE601,CE602,CE603,CE604,CE804	10UF/10V	DAEWOO	I2401-003531	C-AL ; 10uF, 20%, 10V, TP, 3X5, 2.5mm
3	DIP	4	CE501,CE701,CE711,CE721	220UF/16V	DAEWOO	I2401-000010	C-AL ; 220uF, 20%, 16V, GP, TP, 6.3X11mm
4	DIP	3	CE605,CE607,CE608,	10UF/16V	DAEWOO	I2401-000408	C-AL ; 10uF, 20%, 16V, TP, 3X5, 2.5mm
5	DIP	2	CE303,CE805	47uF/10V-5*11*5	DAEWOO	I2401-001510	C-AL ; 47uF/10V-5*11*5, FORMING CUT TYPE
6	DIP	1	CE908	100uF, 20%, 25V, GP, TP, 6X11, 5	DAEWOO	I2401-002347	C-AL ; 100uF, 20%, 25V, GP, TP, 6X11, 5
7	DIP	1	CE301	100UF/10V		I2401-003102	C-AL ; 100uF, 20%, 10V, GP, TP, 5X11, 5
8	DIP	6	CE102,CE103,CE104,CE106,CE910,CE912	RSM/T 220uF, 20%, 10V,, 6X11.5mm	DAEWOO	I2401-002383	C-AL ; 220uF, 20%, 10V, GP, TP, 6X11.5mm
9	DIP	1	CE511	470uF/16V	DAEWOO	I2401-000007	C-AL ; 470uF,20% ,16V, 8*11.5*5 FORMING CUT TYPE
10	DIP	1	CE606	470uF/10V	DAEWOO		C-AL ; 470uF,20% ,10V,

11	DIP	2	R902,R903	47 OHM		I2001-003118	R-CARBON ; 47ohm,5%,2w,AA ,TP
12	DIP	2	D101,D102	1N4004A	PHILIP, ROHM	I0402-001242	Diode
13	DIP	1	D301	1N5404	Fine On Ltd	I0402-001247	Diode-Rectifier, 3A, 400V
14	DIP	1	D901	MTZ J 33B	PHILIP, ROHM	I0403-001406	30V ZENER DIODE
15	DIP	1	D103	MTZ J 3.6B	PHILIP, ROHM	I0403-001407	3V ZENER DIODE
16	DIP	1	D601	MTZ J 6.2B	PHILIP, ROHM	I0403-000595	6.2V ZENER DIODE
17	DIP	3	Q103,Q105,Q114	KTA1273(TO92)	KEC	I0502-001107	TO-92
18	DIP	2	Q101,Q107	KSB772-Y	Fairchild	I0502-000249	TR-POWER,KSB772-Y,PNP,10W,TO-126
19	DIP	2	U102,U801	78L05	Fairchild	I1203-001930	IC-Regulator, 100mA, 5V, TO-92, LM78L05
20	DIP	1	U511	KA7809TU		I1203-001924	IC-Regulator, 9V, TO-220
21	DIP	1	U802	RMUP74055FS		IRMUP74055FS	RF-MODULATOR ; RMUP74055FS
22	DIP	1	U101	BS2F7VZ0184	sharp	I4703-000011	SHARP ST0299 QPSK DEMODULATOR
23	DIP	1	U304	SXO-8100C		I2806-001226	Clock Oscillator, 27MHz, 3.3V, Half Type
24	DIP	1	CON361	2110-DS20-G	ILSSAN	I3711-001361	2.54mm,Dual-Row,20-pin Header
25	DIP	1	CON421	SMW200-12	HAN LIM	IAJ37-00605L	2.0mm, 12-Pin Wafer,LOCKING TYPE
26	DIP	1	J501	2203-21T	ILSSAN	I3722-001409	ILSSAN:SINGLE SCART 2203-21T
27	DIP	1	CON521	JE0300391N		I3722-001512	RCA JACK-3P(Shield ,YELLOW,WHITE,RED COLOR)
28	DIP	1	JP901	5267-11		I3711-005000	5267-11,2WALL,11P,1R,2.5mm STRIGHT
29	DIP	1	CON451	3302-09P-AFS-0	ILSSAN	I3710-001574	DB9, Mail-type
30	DIP	1	JP302	2110-SS2-G	ILSSAN	I3711-005028	2.54mm,2-pin Header,
31	DIP	1	SW301	KPT1115	KYUNGIN	I3403-001097	SW PUSHBUTTON
32	DIP	1	U105	KA317TU(TO220)	Fairchild	I1203-001923	LM317
33	DIP	1	H1(FOR U105)	002A-1		I6203-000002	HEAT SINK 27mm(w) * 40mm(L)
34	DIP	1	H1 SCREW(FOR U105)	TT2, BIN(+)*WTH 3*6 (BLACK) T		I6009-001019	SCREW

2.FRONT ASS'Y(K3 MOLD)

DIP							
Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	DIP	1	U3A	TSOP1238			
2	DIP	1	SUPPORT(U1)	Support : 7mm		I6103-001040	7mm,blu
3	DIP	1	R5	RNL 1/6 330 JT-52	HAN RYUK	I2001-003115	33
4	DIP	2	R1,R9	RNL 1/6 331 JT-52	HAN RYUK	I2001-040213	330ohm
5	DIP	3	R6,R7,R8	RNL 1/6 102 JT-52	HAN RYUK	I2001-003113	1K
6	DIP	3	Q1,Q2,Q3	2N3904(TO92)	KEC	I0501-002277	TO-92
7	DIP	1	CE1	47uF/25V-5*11*5	DAEWOO	I2401-001075	C-AL ; 47uF/25V-5*11*5, FORMING CUT TYPE
8	DIP	1	CB1	CR051BX7R104Z500R	SAMWHA	I2202-000857	C-CERAMIC, MLC-RADIAL ; 100nF, 10%, 50V,X7R
9	DIP	1	CON1	12P, 180 M/M, LOCKING TYPE			2.0mm, 12-Pin Cable Ass'y,LOCKING TYPE
10	DIP	7	S1,S2,S3,S4,S5,S6,S7	KPT1115	KYUNGIN	I3403-001097	SW PUSHBUTTON
11	DIP	1	LED1	LH3330	LIGITEK	I0601-001378	LED ; ROUND ; LH3330,RED,5mm,565mm
12	DIP	1	LED2	LG3330	LIGITEK	I0601-001377	LED ; ROUND ; LG3330,GREEN,5mm,565mm
13	DIP	2	SUPPORT(D3,D5)	Support : 5mm		I6103-001040	5mm,blu

14	DIP	6	JP1,JP2,JP3,JP4,JP5,JP7	7.5mm, JUMPER		I3811 -000548	7.5mm, JUMPER
15		1	FRONT PCB(IT513S)	IT415S-K3; PR1.0			

3. SMPS

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	DIP	1	SMPS	DDI-220/A		SMPS-DDI220A	
2	DIP	1	POWER CORD	KKP420C-C50		I3801-000012	

4.Remote Controller

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	ass'y	1	Remocon				
2	ass'y	2	BATTERY			A - BD00000001	
3		1	1 SCART TO 3 RCA CABLE				

AD-7000 2CI

TV SCART

3-RCA

RF

RS232

K3 FRONT

4 DIGIT 7 SEGMENT

WITH CI_SUB BOARD

1. MAN PCB ASS'Y

1-1 SMD

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	SMD	22	L101,L102,L103,L303,L304, L305,L306,L451,L452,L453, L601,L801,L802,L901,L905, L906,L907,L908,L909,L910 L512,L602	FCM2012C-101	TAI-Tech	I3301-001375	FCM2012C-101 (2012 size)
2	SMD	6	L104,L105,L106,L902,L903, L904	FCM2012C-470	TAI-Tech	I3301-001378	FCM2012C-470 (2012 size)
3	SMD	1	L501	FCI2021-100(10%)	TAI-Tech	I2703-000125	10uH (2012 size)
4	SMD	3	L701,L711,L721	FCI2021-120(10%)	TAI-Tech	I2703-001266	12uH (2012 size)
5	SMD	63	BC101,BC102,BC103,BC104,BC105, BC106,BC108,BC301,BC306,BC309, BC313,BC315,BC317,BC319, BC320,BC321,BC323,BC351,BC401 BC402,BC403,BC404,BC405,BC408, BC421,BC451,BC452,BC453,BC454, BC461,BC462,BC501,BC511,BC521, BC601,BC602,BC603,BC604,BC631, BC701,BC711,BC721,BC731,BC732, BC733,BC801,BC802,BC803,BC804, BC805,BC901,BC902,BC903,BC904, BC905,BC906,BC907,BC908,BC909, BC910,BC911,BC912,C102	CS1608Y5V104Z500NR	SAMWHA	I2203-006000	C-Ceramic, 0.1uF (1608 size)
6	SMD	3	C521,C733,C801	CS1608C0G100J500NR	SAMWHA	I2203-000296	C-Ceramic, 10pF (1608 size)
7	SMD	1	C104	CS1608C0G220J500NR	SAMWHA	I2203-006001	C-Ceramic, 22pF (1608 size)
8	SMD	2	C803,C804	CS1608C0G330J500NR	SAMWHA	I2203-005665	C-Ceramic, 33pF (1608 size)
9	SMD	2	C603,C601	CS1608C0G470J500NR	SAMWHA	I2203-005000	C-Ceramic, 47pF (1608 size)
10	SMD	4	C501,C701,C711,C721	CS1608C0G200J500NR	SAMWHA	I2203-000548	C-Ceramic, 20pF (1608 size)
11	SMD	4	C502,C702,C712,C722	CS1608C0G201J500NR	SAMWHA	I2203-000560	C-Ceramic, 200pF (1608 size)

12	SMD	2	C602,C604	CS1608C0G391J500NR	SAMWHA	I2203-002017	C-Ceramic, 390pF (1608 size)
13	SMD	8	C429,C522,C523,C731,C732, C101,C103,C802	CS1608X7R102K500NR	SAMWHA	I2203-000440	C-Ceramic, 1nF (1608 size)
14	SMD	4	C105,C303,C304,C430	CS1608X7R103K500NR	SAMWHA	I2203-000257	C-Ceramic, 0.01uF (1608 size)
15	SMD	1	R126	CR 1/10 121 JT	HAN RYUK	I2007-000023	120ohm (2012 size)
16	SMD	2	R113,R122	CR 1/10 241 JT	HAN RYUK	I2007-040210	240ohm (2012 size)
17	SMD	1	R901	CR 1/10 331 JT	HAN RYUK	I2007-000766	330ohm (2012 size)
18	SMD	2	R110,R124	CR 1/10 911 JT	HAN RYUK	I2007-001239	910ohm (2012 size)
19	SMD	1	R131	CR 1/10 102 JT	HAN RYUK	I2007-000468	1Kohm (2012 size)
20	SMD	1	R123	CR 1/10 122 JT	HAN RYUK	I2007-000221	1.2Kohm (2012 size)
21	SMD	2	R735,R736	CR 1/10 202 JT	HAN RYUK	I2007-000671	2Kohm (2012 size)
22	SMD	4	R102,R103,R119,R120	CR 1/10 472 JT	HAN RYUK	I2007-000872	4.7Kohm (2012 size)
23	SMD	8	R138,R319,R329,R330,R405, R407,R408,R413	CR 1/16 000 JT	HAN RYUK	I2007-000070	0ohm (1608 size)
24	SMD	2	R136,R132	CR 1/16 1R0 JT	HAN RYUK	I2007-002425	1ohm (1608 size)
25	SMD	4	R502,R702,R712,R722	CR 1/16 100 FT(1%)	HAN RYUK	I2007-007488	10 ohm (1%) (1608 size)
26	SMD	10	R305,R309,R310,R312,R313, R321,R328,R351,R352,R631	CR 1/16 330 JT	HAN RYUK	I2007-000113	33ohm (1608 size)
27	SMD	1	R737	CR 1/16 470 JT	HAN RYUK	I2007-000072	47ohm (1608 size)
28	SMD	8	R363,R364,R523,R708,R718, R734,R743,R728,	CR 1/16 750 JT	HAN RYUK	I2007-001167	75 ohm (1608 size)
29	SMD	4	R505,R705,R715,R725	CR 1/16 750 FT (1%)	HAN RYUK	I2007-001168	75 ohm (1%) (1608 size)
30	SMD	5	R107,R108,R742,R806,R807	CR 1/16 101 JT	HAN RYUK	I2007-000074	100ohm (1608 size)
31	SMD	6	R140,R303,R524,R525,R731, R732	CR 1/16 221 JT	HAN RYUK	I2007-000075	220ohm (1608 size)
32	SMD	4	R504,R704,R714,R724	CR 1/16 332 FT(1%)	HAN RYUK	I2007-000683	3.3 Kohm (1%) (1608 size)
33	SMD	4	R501,R701,R711,R721	CR 1/16 391 FT (1%)	HAN RYUK	I2007-000820	390 ohm (1%) (1608 size)
34	SMD	20	R133,R320,R322,R521,R601, R606,R607,R614,R617,R707, R717,R727,R733,R738,R801, R802,R803,R804,R805,R615	CR 1/16 102 JT	HAN RYUK	I2007-000078	1Kohm (1608 size)
35	SMD	4	R503,R703,R713,R723	CR 1/16 151 FT(1%)	HAN RYUK	I2007-000040	150 ohm (1%) (1608 size)
36	SMD	13	R301,R302,R304,R316,R317, R401,R402,R403,R410,R411, R461,R609,R741	CR 1/16 472 JT	HAN RYUK	I2007-000084	4.7 Kohm (1608 size)
37	SMD	25	R101,R104,R105,R109,R111, R112,R114,R117,R118,R121, R125,R127,R128,R129,R139, R307,R311,R361,R362,R365, R632,R633,R634,R739,R740	CR 1/16 103 JT	HAN RYUK	I2007-000090	10Kohm (1608 size)
38	SMD	1	R134	CR 1/16 153JT	HAN RYUK	I2007-000092	15Kohm (1608 size)
39	SMD	2	R314,R315	CR 1/16 183 FT(1%)	HAN RYUK	I2007-000455	18 kohm (1%) (1608 size)
40	SMD	2	R611,R618	CR 1/16 273 JT	HAN RYUK	I2007-000655	27 Kohm (1608 size)

41	SMD	4	R135,R462,R612,R619	CR 1/16 473 JT	HAN RYUK	I2007-000939	47Kohm (1608 size)
42	SMD	2	R610,R621	CR 1/16 683 JT	HAN RYUK	I2007-000100	68kohm (1608 size)
43	SMD	13	RA302,RA303,RA304,RA305,RA306, RA307,RA308,RA309,RA310,RA311, RA312,RA313,RA421	CN 164 330 JT	HAN RYUK	I2011-001282	33ohm 4-ARRAY RESISTOR
44	SMD	2	RA361,RA423	CN 164 472 JT	HAN RYUK	I2011-001280	4.7Kohm 4-ARRAY RESISTOR
45	SMD	20	Q102,Q104,Q106,Q108,Q109 Q110,Q111,Q112,Q113,Q521 Q631,Q632,Q702,Q712,Q722 Q731,Q732,Q733,Q734,Q801	KST3904-MTF(SOT-23)	KEC	I0501-002275	SOT-23
46	SMD	4	Q501,Q701,Q711,Q721	KN3906S(SOT-23)	KEC	I0501-002276	SOT-23
47	SMD	1	U103	AMS1117CD-3.3V	AMS	I1203-001921	AMS1117CD-3.3V
48	SMD	1	U301	STI5518	ST	I0902-001289	IC-STB Decoder, PQFP-208, BVB Version
49	SMD	1	U302	MM74HC125M	Fairchild	I0801-003020	IC-COMOS Logic, SOIC-14
50	SMD	1	U303	MM74HC14	Fairchild	I0801-003011	IC-COMOS Logic(Schmitt Trgger), SOIC-14
51	SMD	1	U351	AT24C64N-10SC-2.7	ATMEL	IMD13-00125D	AT24C64N-10SC-2.7
52	SMD	2	U461,U462	74LCX244 MTC	Fairchild	I0801-003015	IC-CMOS Logic, TSSOP-20
53	SMD	1	U401	TE28F160C3TA90	Intel	I1107-001164	IC-Flash, 3.3V, 1M*16, 90ns, TSOP-48
54	SMD	1	U402	K4S641632D-TC/L80	SamSung	I1105-001318	IC-SDRAM,3.3V,1M*16*4Banks,125Mhz
55	SMD	1	U451	ST3232CD	Sipex	I1006-000008	IC-Interface, 3.3V, SOIC-16
56	SMD	1	U601	AK4351VT	Asahi-Kasei	I1204-003510	IC-Audio DAC, TSSOP-16
57	SMD	1	U602	KA358D(SOP)	Fairchild	I1201-000166	KA358
58	PCB	1	MAIN-PCB	IT415S		P-IT415S	IT415S, 2Layer

1-2 DIP

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	DIP	3	CE101,CE107,CE803	1uF/50V-5*11*5,FORMING CUT TYPE	DAEWOO	I2401-000602	C-AL ; 1uF/50V-5*11*5,FORMING CUT TYPE
2	DIP	6	CE307,CE601,CE602,CE603,CE604, CE804	10UF/10V	DAEWOO	I2401-003531	C-AL ; 10uF, 20%, 10V, TP, 3X5, 2.5mm
3	DIP	4	CE501,CE701,CE711,CE721	220UF/16V	DAEWOO	I2401-000010	C-AL ; 220uF, 20%, 16V, GP, TP, 6.3X11mm
4	DIP	3	CE605,CE607,CE608,	10UF/16V	DAEWOO	I2401-000408	C-AL ; 10uF, 20%, 16V, TP, 3X5, 2.5mm
5	DIP	2	CE303,CE805	47uF/10V-5*11*5	DAEWOO	I2401-001510	C-AL ; 47uF/10V-5*11*5, FORMING CUT TYPE
6	DIP	1	CE908	100uF, 20%, 25V, GP, TP, 6X11, 5	DAEWOO	I2401-002347	C-AL ; 100uF, 20%, 25V, GP, TP, 6X11, 5
7	DIP	1	CE301	100UF/10V		I2401-003102	C-AL ; 100uF, 20%, 10V, GP, TP, 5X11, 5
8	DIP	6	CE102,CE103,CE104,CE106,CE910 CE912	RSM/T 220uF, 20%, 10V,, 6X11.5mm	DAEWOO	I2401-002383	C-AL ; 220uF, 20%, 10V, GP, TP, 6X11.5mm
9	DIP	1	CE511	470uF/16V	DAEWOO	I2401-000007	C-AL ; 470uF,20% ,16V, 8*11.5*5 FORMING CUT TYPE
10	DIP	1	CE606	470uF/10V	DAEWOO		C-AL ; 470uF,20% ,10V,
11	DIP	2	R902,R903	47 OHM		I2001-003118	R-CARBON ; 47ohm,5%,2w,AA ,TP
12	DIP	2	D101,D102	1N4004A	PHILIP, ROHM	I0402-001242	Diode
13	DIP	1	D301	1N5404	Fine On Ltd	I0402-001247	Diode-Rectifier, 3A, 400V
14	DIP	1	D901	MTZ J 33B	PHILIP, ROHM	I0403-001406	30V ZENER DIODE

15	DIP	1	D103	MTZ J 3.6B	PHILIP, ROHM	I0403-001407	3V ZENER DIODE
16	DIP	1	D601	MTZ J 6.2B	PHILIP, ROHM	I0403-000595	6.2V ZENER DIODE
17	DIP	3	Q103,Q105,Q114	KTA1273(TO92)	KEC	I0502-001107	TO-92
18	DIP	2	Q101,Q107	KSB772-Y	Fairchild	I0502-000249	TR-POWER,KSB772-Y,PNP,10W,TO-126
19	DIP	2	U102,U801	78L05	Fairchild	I1203-001930	IC-Regulator, 100mA, 5V, TO-92, LM78L05
20	DIP	1	U511	KA7809TU		I1203-001924	IC-Regulator, 9V, TO-220
21	DIP	1	U802	RMUP74055FS		IRMUP74055FS	RF-MODULATOR ; RMUP74055FS
22	DIP	1	U101	BS2F7VZ0184	sharp	I4703-000011	SHARP ST0299 QPSK DEMODULATOR
23	DIP	1	U304	SXO-8100C		I2806-001226	Clock Oscillator, 27MHz, 3.3V, Half Type
24	DIP	1	CON361	2110-DS20-G	ILSSAN	I3711-001361	2.54mm,Dual-Row,20-pin Header
25	DIP	1	CON421	SMW200-8	HAN LIM	IAJ37-00609G	2.0mm, 8-Pin Wafer,LOCKING TYPE
26	DIP	1	J501	2203-21T	ILSSAN	I3722-001409	ILSSAN:SINGLE SCART 2203-21T
27	DIP	1	CON461	PTRZ-64RI-B-030	DAFIELD	I3710-001575	CONNECTOR-SOCKET:FEMALE HEADER, 64P,R/A TYPE
28	DIP	1	CON521	JE0300391N		I3722-001512	RCA JACK-3P(Shield,YELLOW,WHITE,RED COLOR)
29	DIP	1	JP901	5267-11		I3711-005000	5267-11,2WALL,11P,1R,2.5mm STRIGHT
30	DIP	1	JP902	5267-03		I3711-005035	5267-03 2WALL,3P,1R,2.5mm STRIGHT
31	DIP	1	CON451	3302-09P-AFS-0	ILSSAN	I3710-001574	DB9, Mail-type
32	DIP	1	JP302	2110-SS2-G	ILSSAN	I3711-005028	2.54mm,2-pin Header,
33	DIP	1	SW301	KPT1115	KYUNGIN	I3403-001097	SW PUSHBUTTON
34	DIP	1	U105	KA317TU(TO220)	Fairchild	I1203-001923	LM317
35	DIP	1	H1(FOR U105)	002A-1		I6203-000002	HEAT SINK 27mm(w) * 40mm(L)
36	DIP	1	H1 SCREW(FOR U105)	TT2, BIN(+)*WTH 3*6 (BLACK) T		I6009-001019	SCREW

2.FRONT ASS'Y(K3 MOLD) - EF364S-IT211

2-1. SMD

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	SMD	1	U3	TP6311		UPD16311-AB6	VFD Controller, PQFP-52, 2nd:uPD16311GC
2	SMD	1	U4	74HCT245MTC	Fairchild	I0801-003035	IC-CMOS Logic, TSSOP-20, 2nd : 74LS245MTC
3	SMD	1	R10	CR 1/16 563 JT	HAN RYUK	I2007-000098	Chip Resistor, 1608 Size, 56 Kohm 5%
4	SMD	4	R4,R20,R22,R23	CR 1/16 103 JT	HAN RYUK	I2007-000090	Chip Resistor, 1608 Size, 10 Kohm 5%
5	SMD	3	R25,R26,R27	CR 1/16 472 JT	HAN RYUK	I2007-000084	Chip Resistor, 1608 Size, 4.7 Kohm 5%
6	SMD	12	R16,R17,R18,R19,R28,R29,R30,R31, R32,R33,R34,R35	CR 1/16 102 JT	HAN RYUK	I2007-000078	Chip Resistor, 1608 Size, 1.0 Kohm 5%
7	SMD	1	R6	CR 1/16 621 JT	HAN RYUK	I2007-001093	Chip Resistor, 1608 Size, 620 Ohm 5%
8	SMD	3	R1,R2,R3	CR 1/16 221 JT	HAN RYUK	I2007-000075	Chip Resistor, 1608 Size, 220 Ohm 5%
9	SMD	8	R5,R7,R11,R12,R13,R14,R15,R21	CR 1/16 151 JT	HAN RYUK	I2007-000402	Chip Resistor, 1608 Size, 150 Ohm 5%
10	SMD	1	R8	CR 1/16 330 JT	HAN RYUK	I2007-000113	Chip Resistor, 1608 Size, 33 Ohm 5%
11	SMD	1	R24	CR 1/16 000 JT	HAN RYUK	I2007-000070	Chip Resistor, 1608 Size, 0 Ohm 5%
12	SMD	5	BC1,BC2,BC3,BC4,BC5	CS1608Y5V104Z500NR	SAMWHA	I2203-006000	Chip Ceramic, 1608 Size, 0.1uF
13	PCB	1	FRONT PCB	IT364F-PR1.1,2Layer		P-IT364F-1.1	PCB-FRONT; IT364_PR1.1 ,2LAYER

2-2. DIP

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	DIP	1	U1	IC-REMOTE CONTRPL ; TSOP1238	Vishay	I1204-001624	IC-REMOTE CONTRPL ; TSOP1238
2	DIP	1	SUPPORT(U1)	Support : 7mm		I6103-001040	7mm,blu
3	DIP	2	D1,D2	1N4004A	Philips	I0402-001243	Diode-Rectifier, 1A
4	DIP	4	Q1,Q2,Q3,Q4	PN2222ATA	KEC	I0501-002278	TR, TO-92, 2nd:2N2222A(KEC),KSP2222A(Fairchild)
5	DIP	1	CE1	RSM/T 25-47 5*11* 5	DAEWOO	I2401-001075	C-AL, 47uF/25V
6	DIP	1	CE2	RSM/T 50-10 5*711*5	DAEWOO	I2401-000480	C-AL, 10uF/50V
7	DIP	1	LED1	LFD4162-10/SKP95	LIGITEK	I0703-000003	4-Digit 7-Segment, Support 5mm
8	DIP	1	D3	LH3330	LIGITEK	I0601-001378	LED-RED, Round, 5
9	DIP	1	D5	LY3330	LIGITEK	I0601-001410	LED-YELLOW, Round, 5
10	DIP	2	SUPPORT(D3,D5)	Support : 5mm		I6103-001043	5mm,blu
11	DIP	1	J1	IT01B08L-180A		I3711-001152	2.0mm Pitch, 180mm, 8-Pin Cable Ass'y,LOCKING TYPE
12	DIP	7	SW1,SW2,SW3,SW4,SW5,SW6,SW7	KPT-1115A	KYUNGIN	I3403-001097	Push Buttom Switch, TRT134A SW

3. CI_SUB PCB ASS'Y

3-1 SMD

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	SMD	5	L201,L282,L283,L284,L285	FCM2012C-101	TAI-Tech	I3301-001375	FCM2012C-101 (2012 size)
2	SMD	17	BC201,BC202,BC203,BC204,BC205, BC206,BC207,BC208,BC209,BC210, BC211,BC212,BC213,BC214,BC283, BC284,BC291,	CS1608Y5V104Z500NR	SAMWHA	I2203-006000	C-Ceramic, 0.1uF (1608 size)
3	SMD	4	C201,C202,C209,C212	CS1608C0G220J500NR	SAMWHA	I2203-006001	C-Ceramic, 22pF (1608 size)
4	SMD	5	C203,C204,C205,C206,C213,	CS1608X7R103J500NR	SAMWHA	I2203-000257	C-Ceramic, 0.01uF (1608 size)
5	SMD	2	C207,C208	CS1608C0G101J500NR	SAMWHA	I2203-000247	C-Ceramic, 100pF (1608 size)
6	SMD	2	R250,R252	CR 1/10 241 JT	HAN RYUK	I2007-040210	240ohm (2012 size)
7	SMD	4	R234,R240,R266,R267	CR 1/10 331 JT	HAN RYUK	I2007-000766	Chip Resistor, 2012 Size, 330 Ohm 5%
8	SMD	4	R253,R254,R261, R293	CR 1/16 000 JT	HAN RYUK	I2007-000070	0ohm (1608 size)
9	SMD	4	R213,R220,R226,R265	CR 1/16 330 JT	HAN RYUK	I2007-000113	33ohm (1608 size)
10	SMD	4	R276,R277,R278,R279	CR 1/16 331 JT	HAN RYUK	I2007-000076	330ohm (1608 size)
11	SMD	4	R204,R205,R206,R271	CR 1/16 101 JT	HAN RYUK	I2007-000074	100ohm (1608 size)
12	SMD	6	R211,R212,R218,R219,R280, R281	CR 1/16 221 JT	HAN RYUK	I2007-000075	Chip Resistor, 1608 Size, 220 Ohm 5%
13	SMD	2	R275,R273	CR 1/16 472 JT	HAN RYUK	I2007-000084	4.7 Kohm (1608 size)
14	SMD	3	R228,R242,R291	CR 1/16 102 JT	HAN RYUK	I2007-000078	Chip Resistor, 1608 Size, 1.0 Kohm 5%
15	SMD	14	R227,R229,R230,R231,R235, R236,R237,R241,R243,R244, R249,R251,R258,R259	CR 1/16 103 JT	HAN RYUK	I2007-000090	10Kohm (1608 size)
16	SMD	9	RA203,RA204,RA205,RA206,RA207,	CN 1/16W 330 JT	HAN RYUK	I2011-001282	33ohm

			RA208,RA210,RA211,RA212			
17	SMD	3	RA201,RA202,RA213	CN 1/16W 331 JT	HAN RYUK	I2011-000449 330ohm
18	SMD	4	RA209,RA214,RA215,RA216	CN 1/16W 101 JT	HAN RYUK	I2011-001305 100ohm
19	SMD	2	Q203,Q204	KST3904-MTF(SOT-23)	KEC	I0501-002275 SOT-23
20	SMD	1	U203	STV0700A	ST	I0904-001308 IC-CI H/W Controller, PQFP-128
21	SMD	1	U204	74LCX245MTC	Fairchild	I0801-003014 IC-CMOS Logic, TSSOP-20
22	SMD	2	U205,U206	74LCX373MTC	Fairchild	I0801-003019 IC-CMOS Logic, TSSOP-20
23	SMD	1	U291	74LCX374MTC	Fairchild	I0801-003012 IC-CMOS Logic, TSSOP-20
24	PCB	1/2	CI_SUB PCB	IT415S-CI-SUB1.4 (2002.04.25)		P-IT415-PR14 IT415S-CI-SUB1.4, 2Layer

3-2 DIP

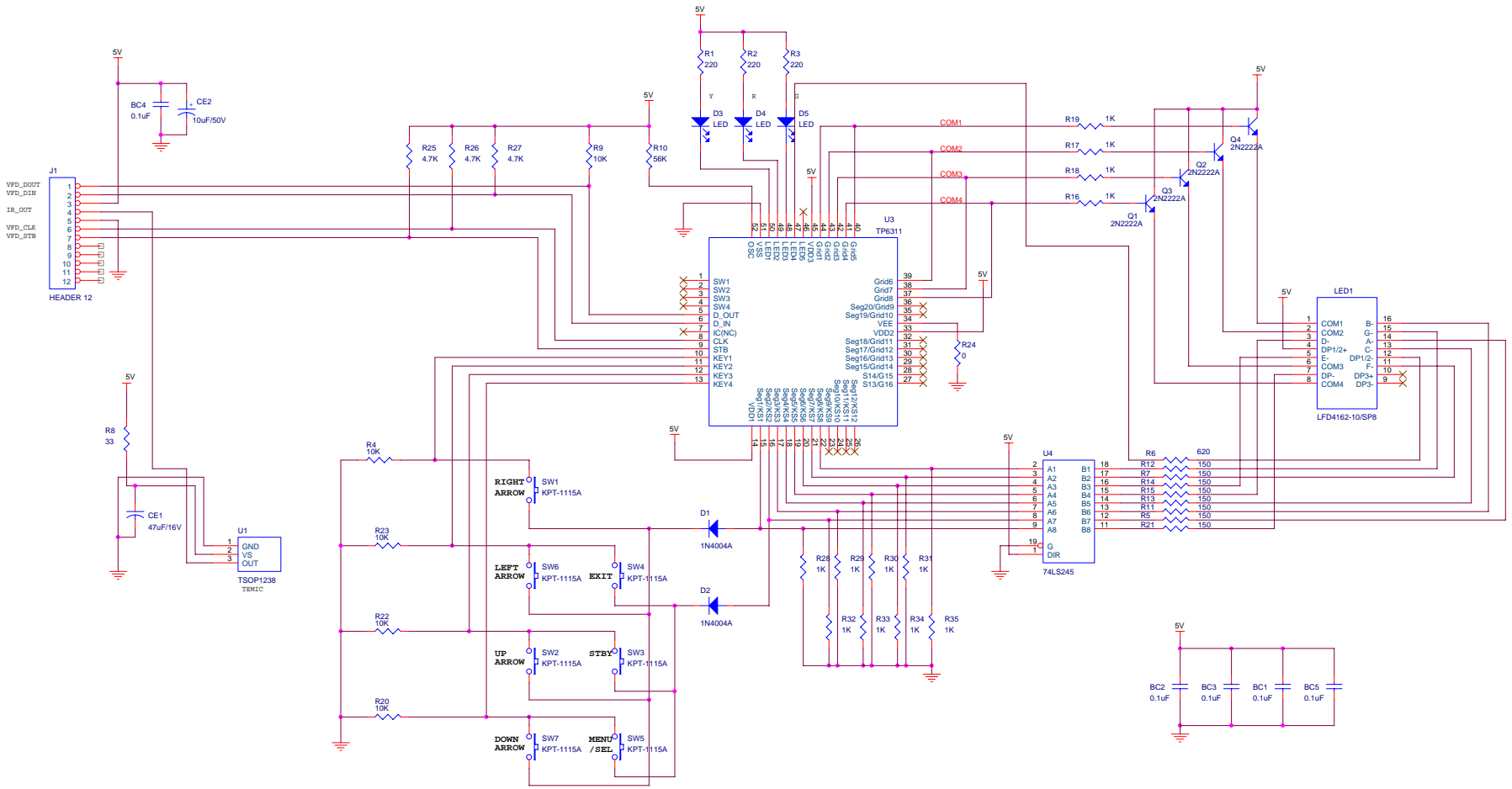
Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	DIP	1	CE201	220uF/10V		I2401-002383	C-AL ; 220uF ,20% ,10V,GP,TP,6*11.5*5mm
2	DIP	2	CE282,CE283	10uF/10V-5*7*5	DAEWOO	I2401-003531	C-AL ;10uF/10V,3*5*2.5mm
3	DIP	2	CE202,CE203	RSM/T 1uF, 20%, 50V, 5X11,5mm	DAEWOO	I2401-000602	C-AL ; 1uF, 20%, 50V, GP, TP, 5X11, 5mm
4	DIP	2	Q201,Q202	KTA1273(TO92)	KEC	I0502-001107	TR-POWER ; KTA1273, PNP, TO-92
5	DIP	1	CON201	LTZ-64R2-B-0401-28	DAFIELD	I3711-005034	CONNECTOR-HEADER:PIN HEADER,64P,R/A,TYPE
6	DIP	1	CON202	IT01A03S-100A		I3711-001151	BOARD IN TYPE; 100 M/M,2.5 PITCH ,3PIN CABLE
7	DIP	1	P201	PCMCIA SOCKET 2-SLOT	OTAX	I3709-001142	CONNECTOR-PCMCIA;P1T2B1393,LONG EJECT

4. SMPS

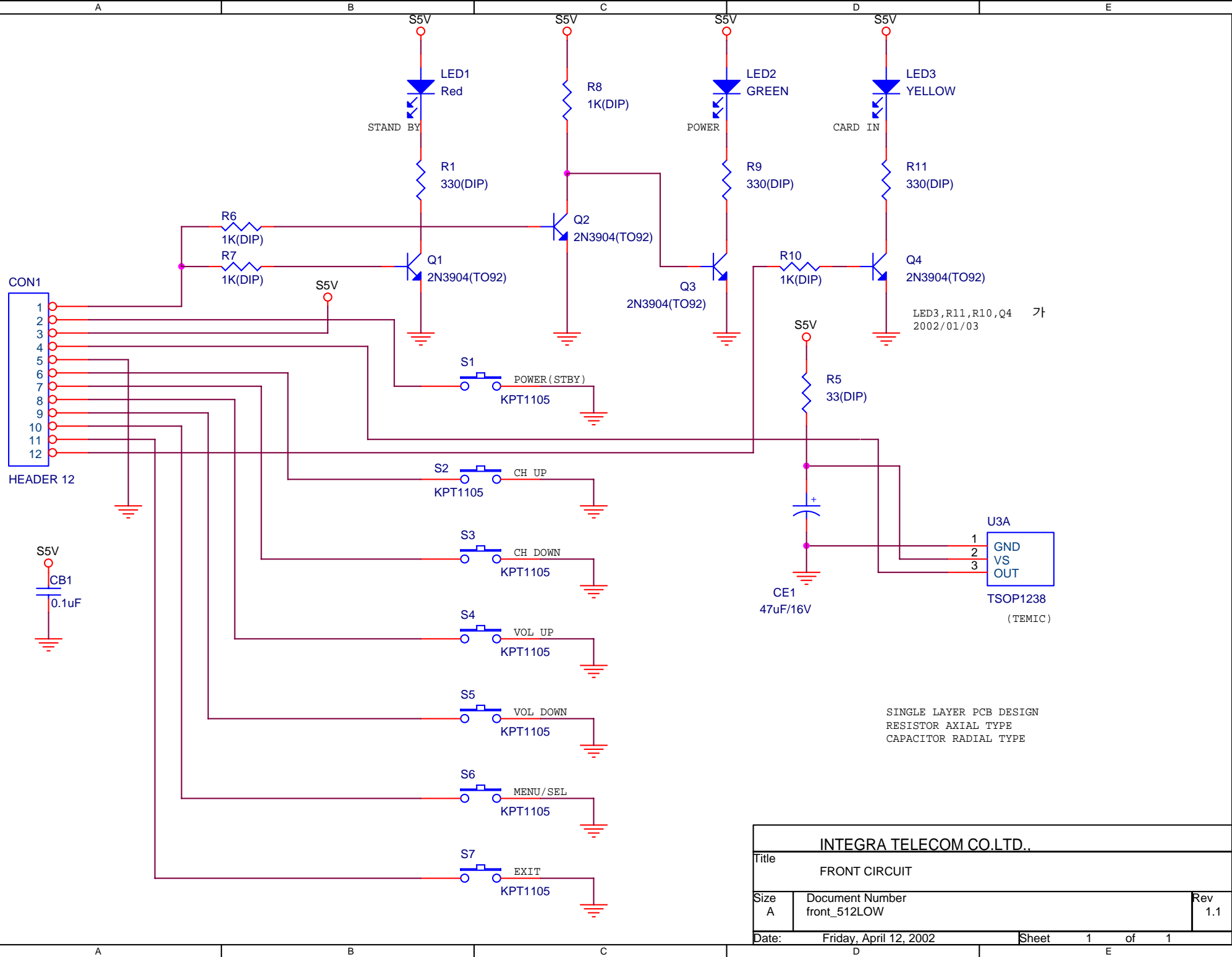
Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	DIP	1	SMPS	DDI-220/A		SMPS-DDI220A	
2	DIP	1	POWER CORD	KKP420C-C50		I3801-000012	

5. Remote Controller

Item	type	Quantity	Reference	Part Number	Vendor	CODE	Remark
1	ass'y	1	Remocon				
2	ass'y	2	BATTERY			A-BD00000001	

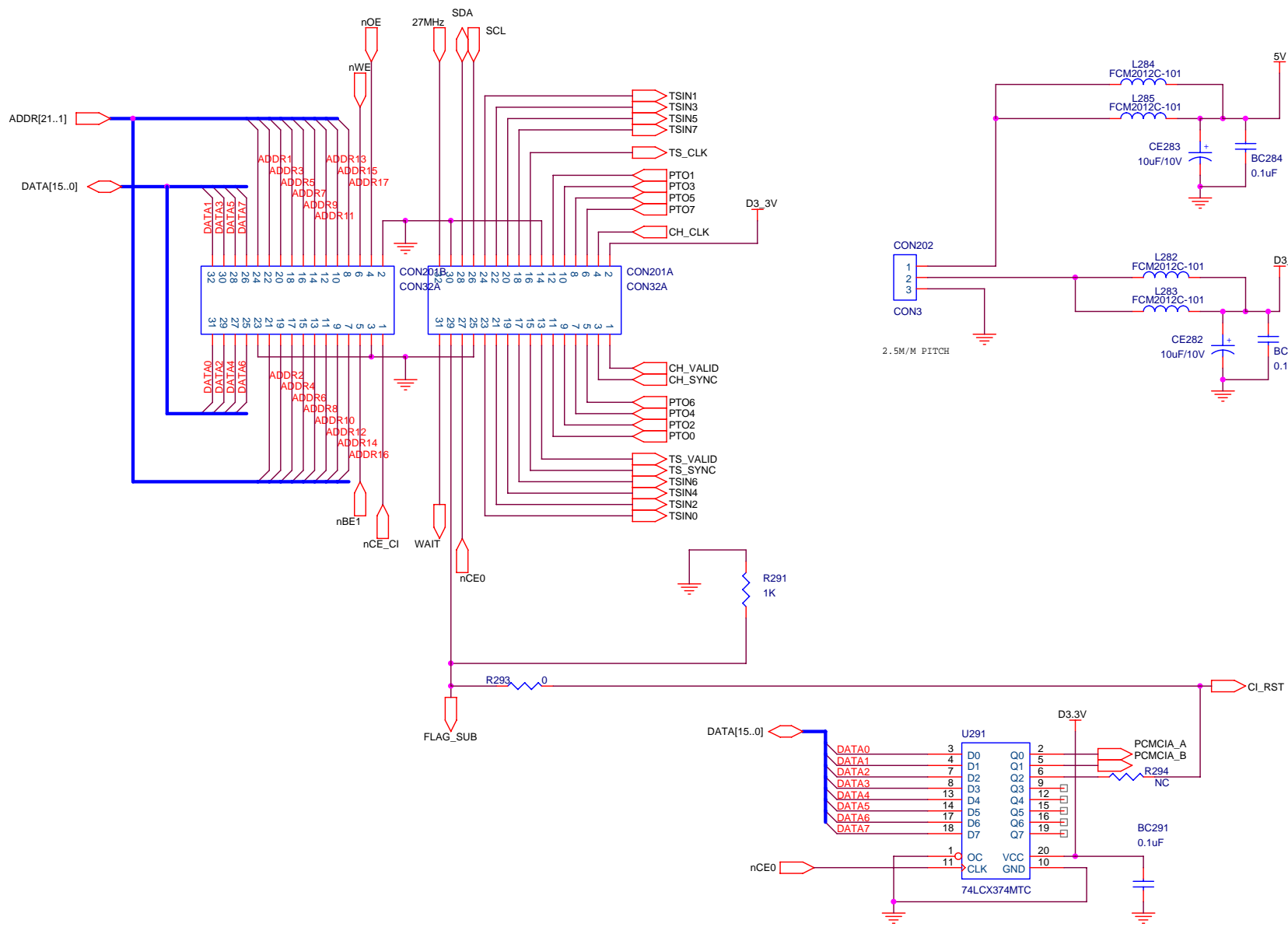


File		5518 PVR
Size	Document Number	Rev
C	(Doc)	1.0
Date:	Friday, April 12, 2002	Sheet 1 of 1

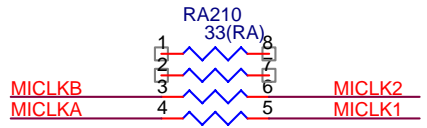
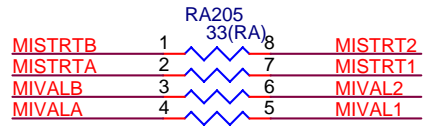
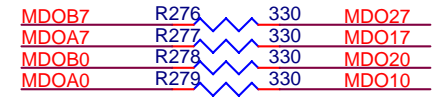
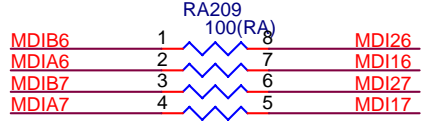
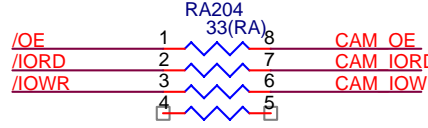
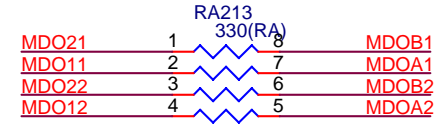
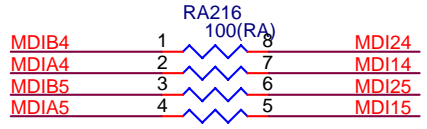
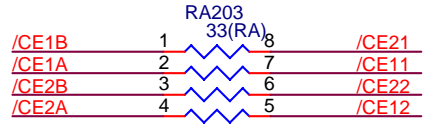
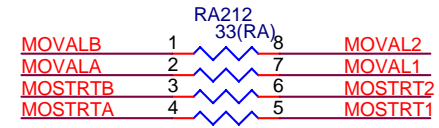
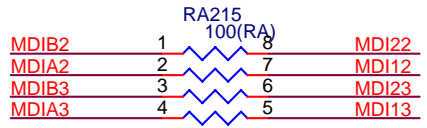
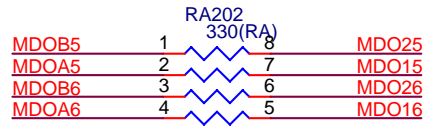
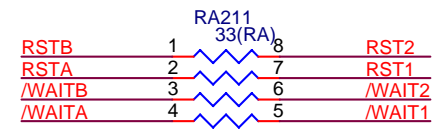
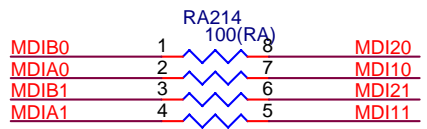
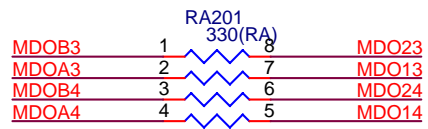


SINGLE LAYER PCB DESIGN
 RESISTOR AXIAL TYPE
 CAPACITOR RADIAL TYPE

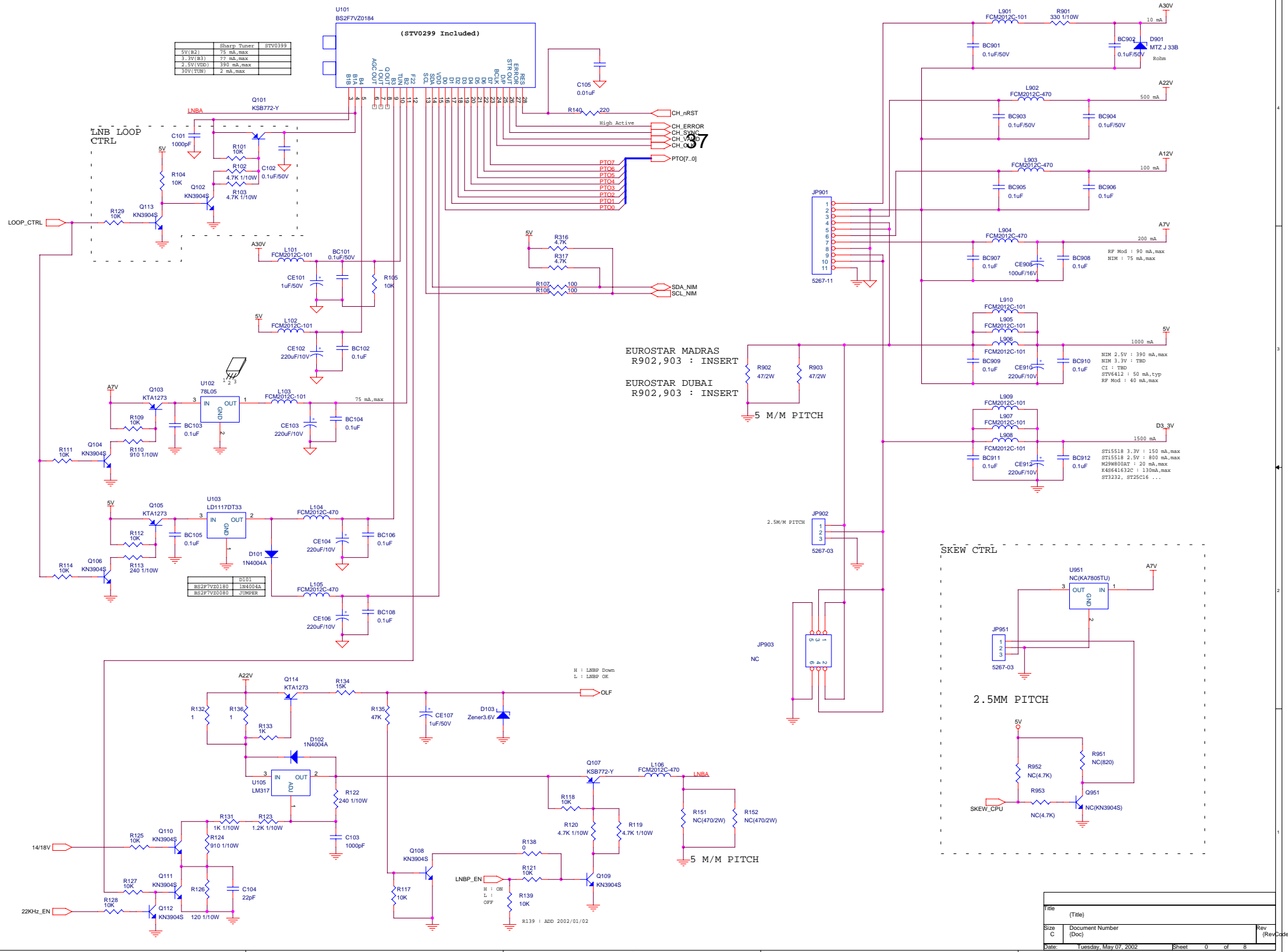
INTEGRA TELECOM CO.LTD.,		
Title FRONT CIRCUIT		
Size A	Document Number front_512LOW	Rev 1.1
Date: Friday, April 12, 2002	Sheet 1	of 1



INTEGRA TELECOM		
Title PCMCIA Interface		
Size B	Document Number	Rev 1.0
Date:	Friday, April 12, 2002	Sheet 2 of 5



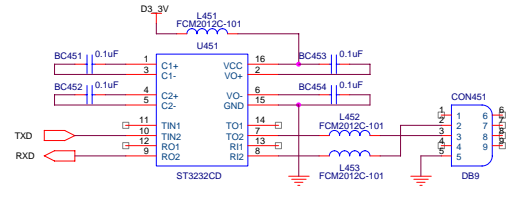
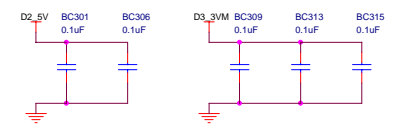
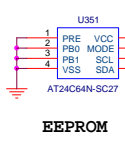
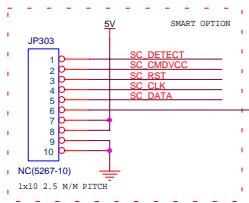
Title		
{Title}		
Size	Document Number	Rev
Custom	{Doc}	{RevCode}
Date:	Wednesday, April 24, 2002	Sheet 1 of 1



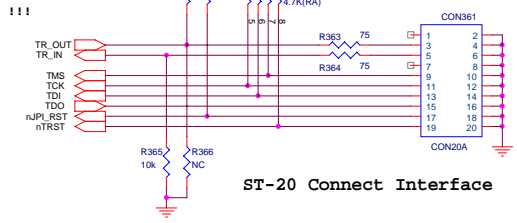
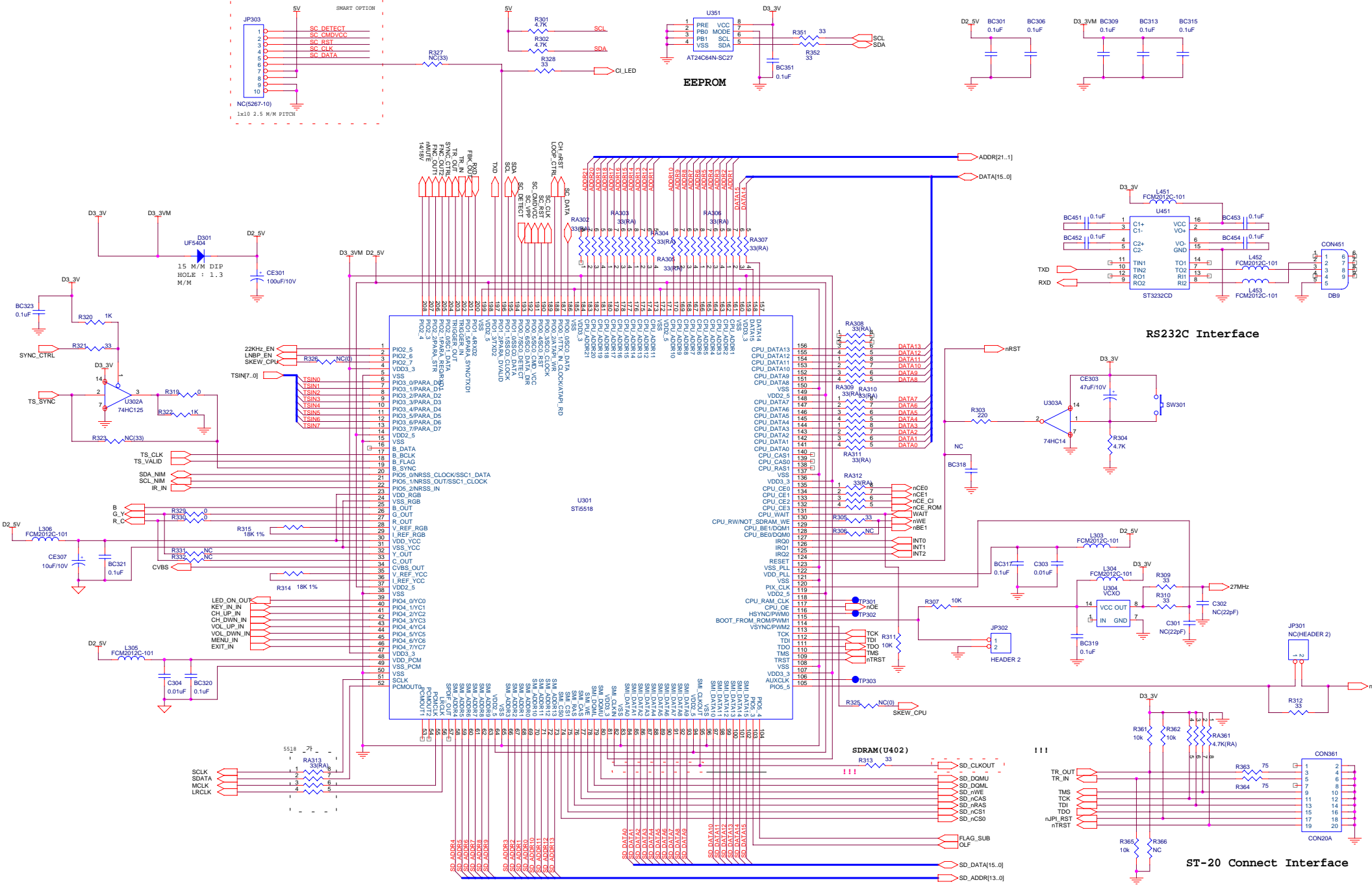
5V (B2)	Sharp Tuner	STV0399
3.3V (B3)	75 mA,max	
2.5V (VDD)	75 mA,max	
30V (VBI)	150 mA,max	
30V (VBI)	2 mA,max	

D101	1N4004A
BS2FVZ0180	JUMPER
BS2FVZ0080	JUMPER

File	(Title)	Rev
Size	Document Number	(Rev)
C	(Doc)	(Case)
Date:	Tuesday, May 07, 2002	Sheet 0 of 8

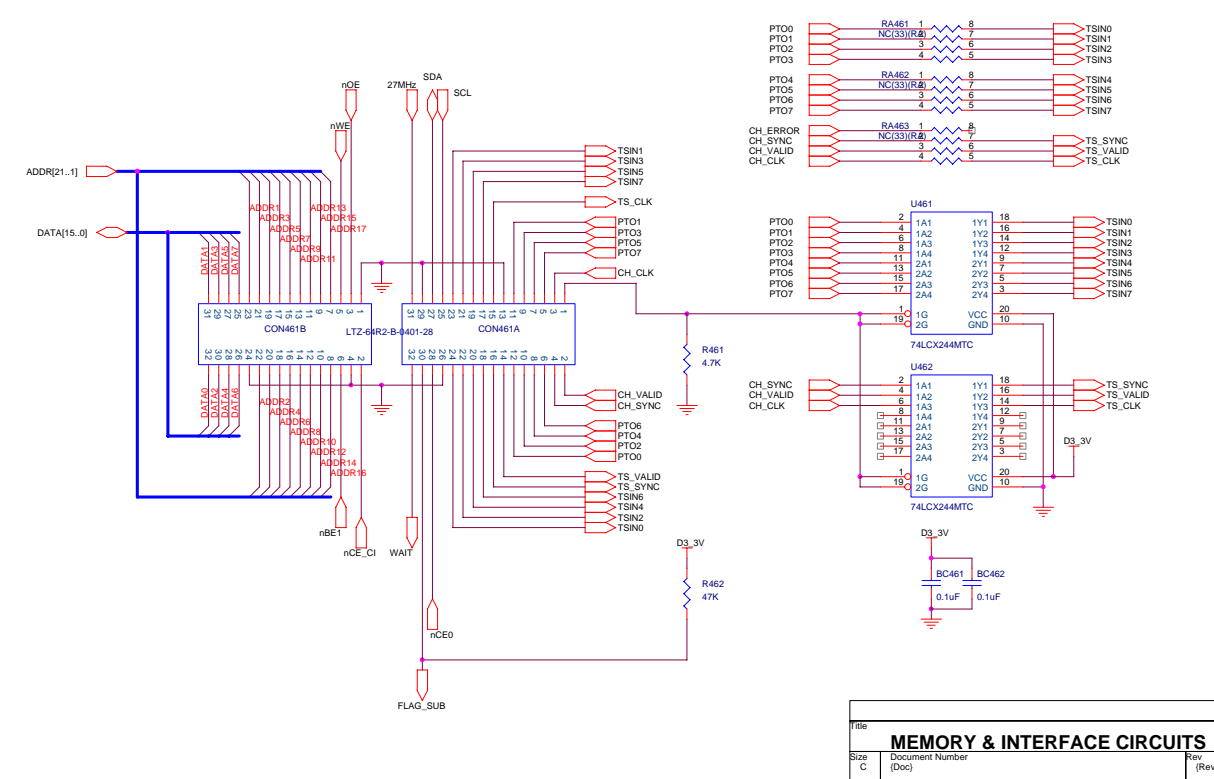
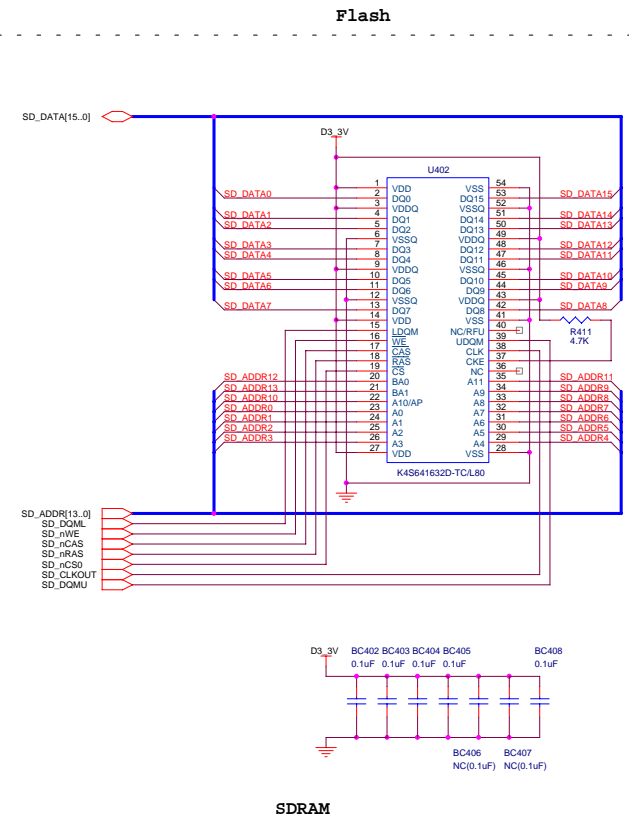
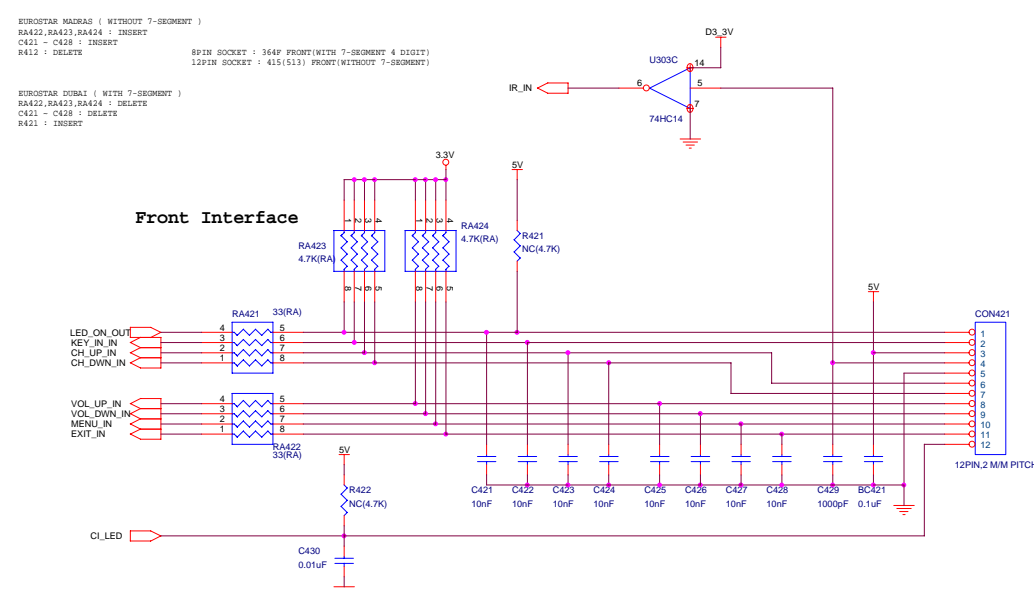
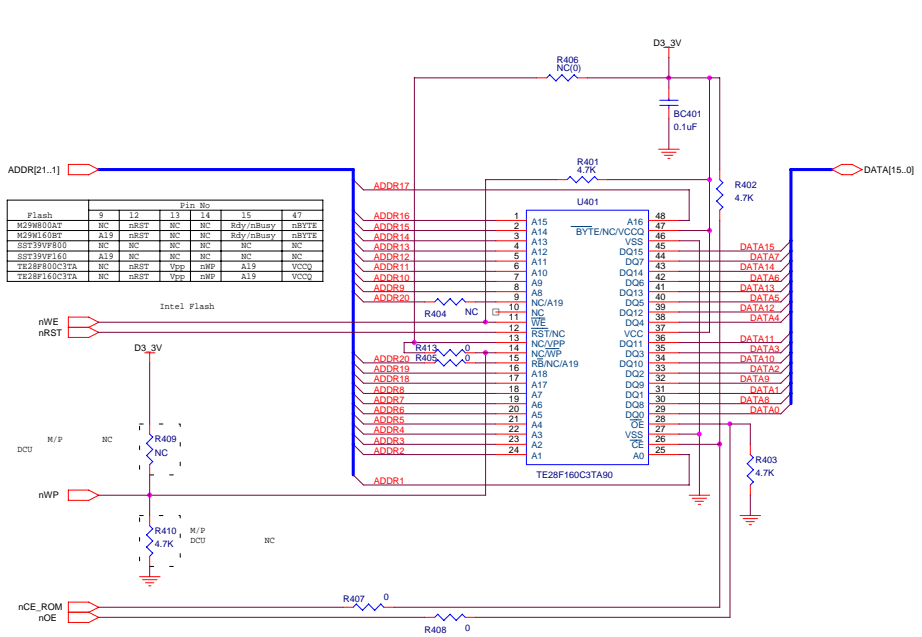


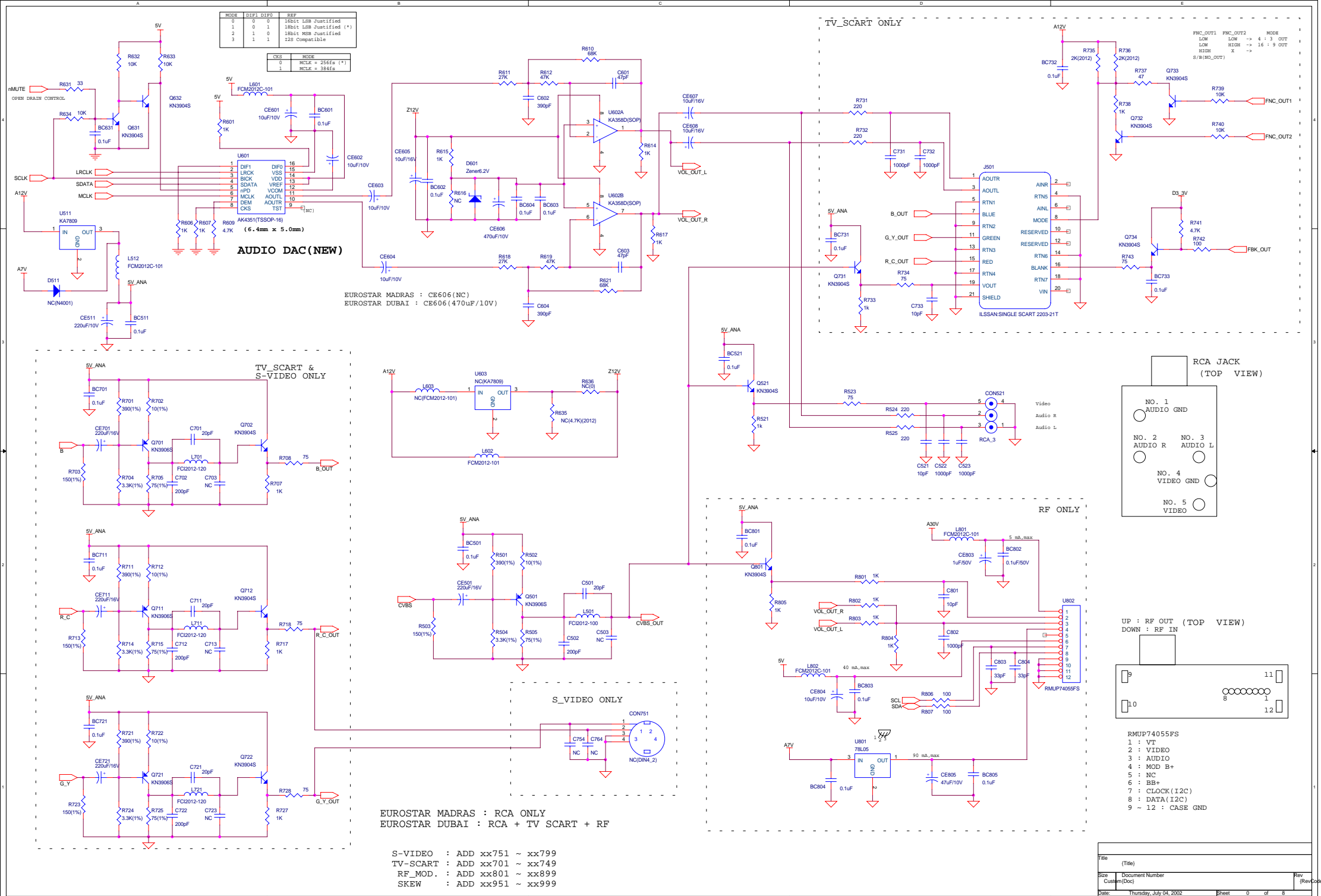
RS232C Interface

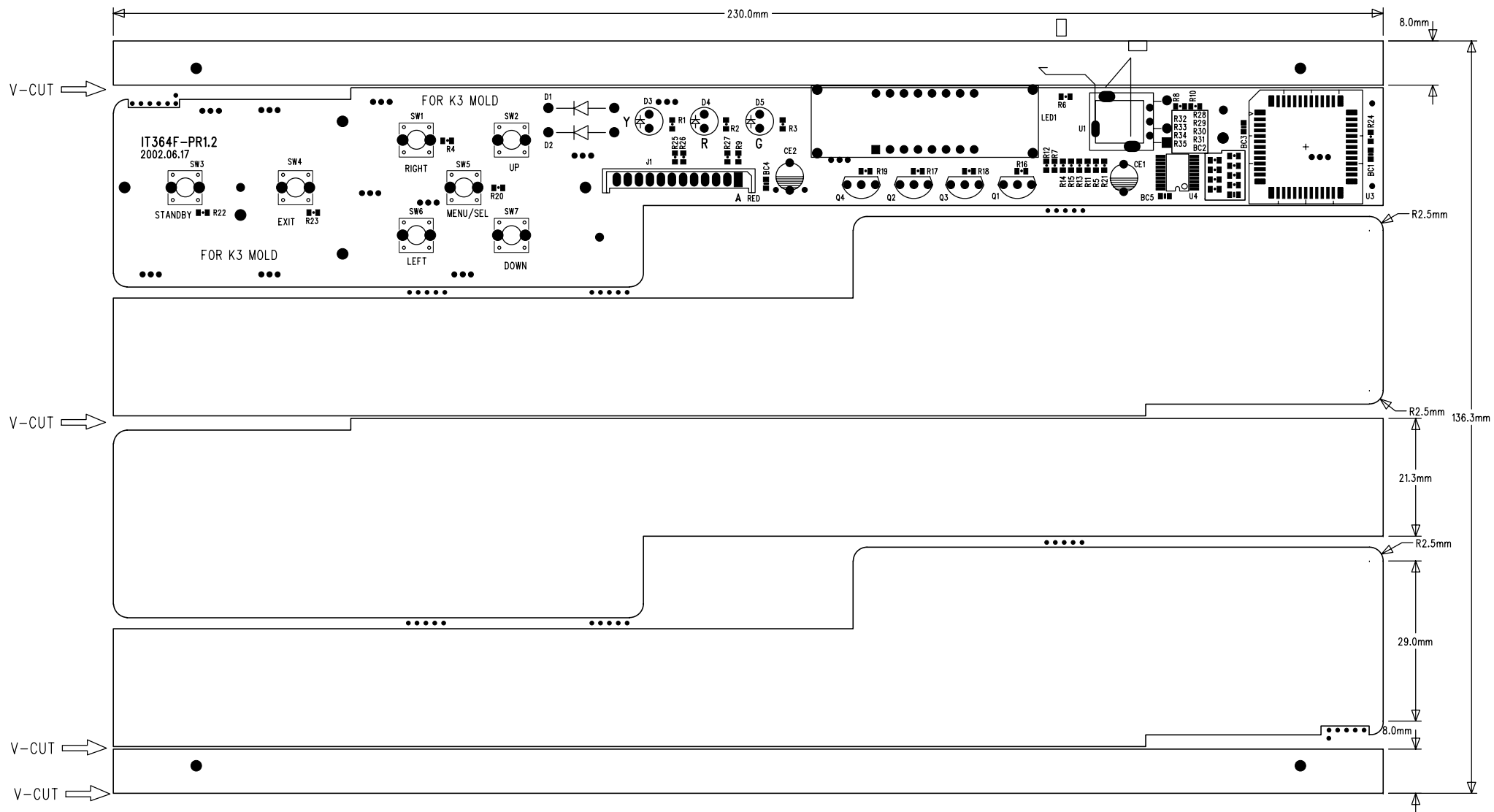


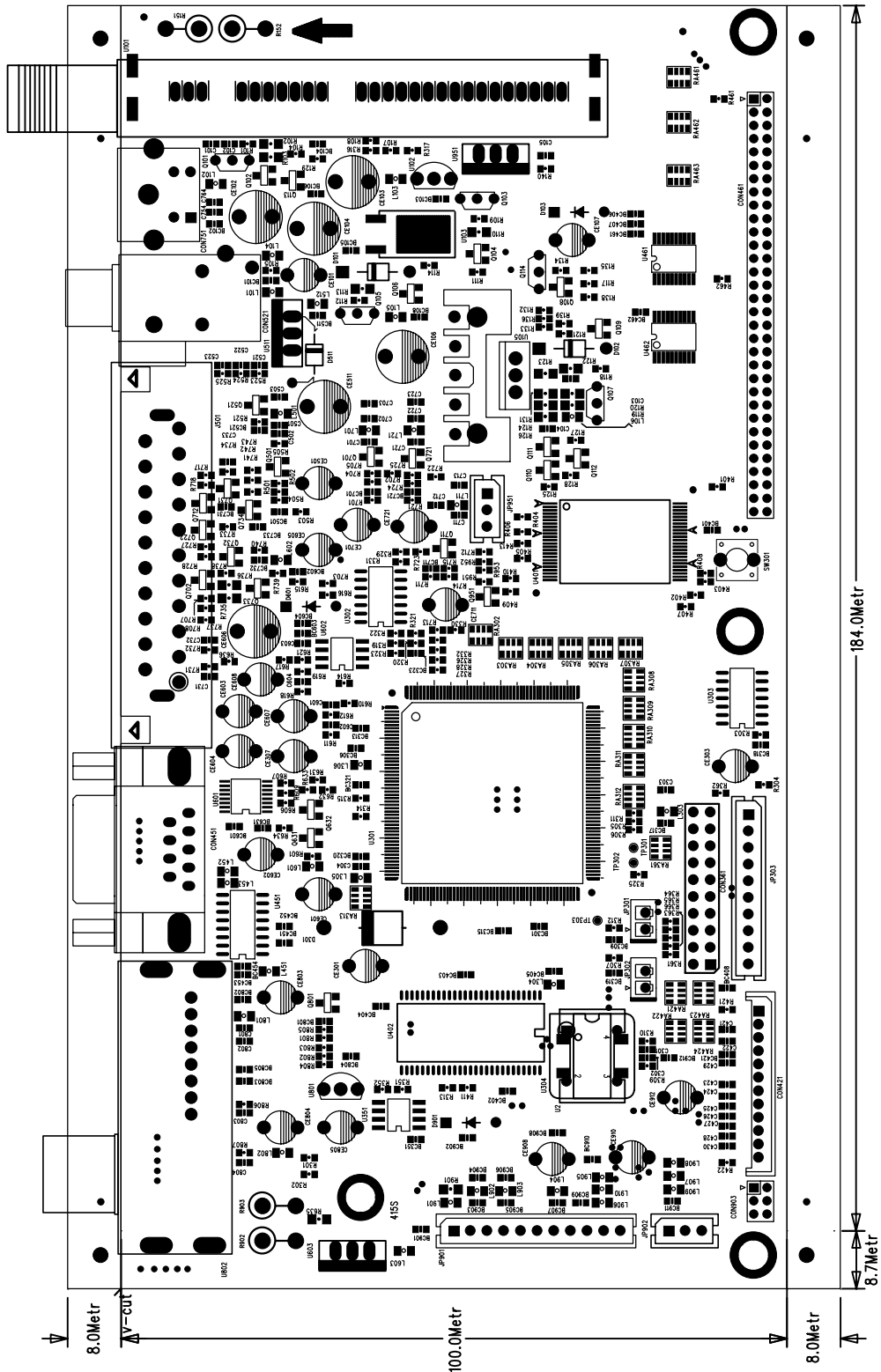
ST-20 Connect Interface

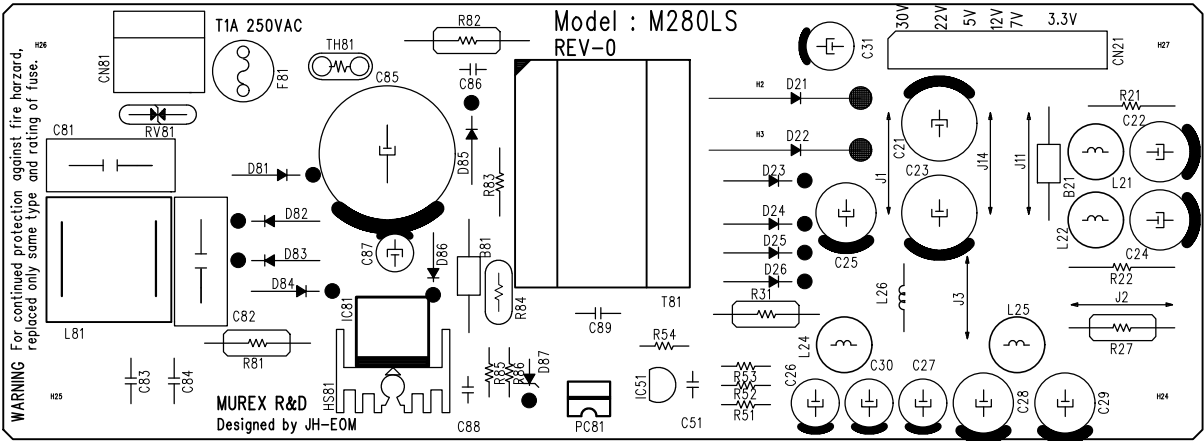
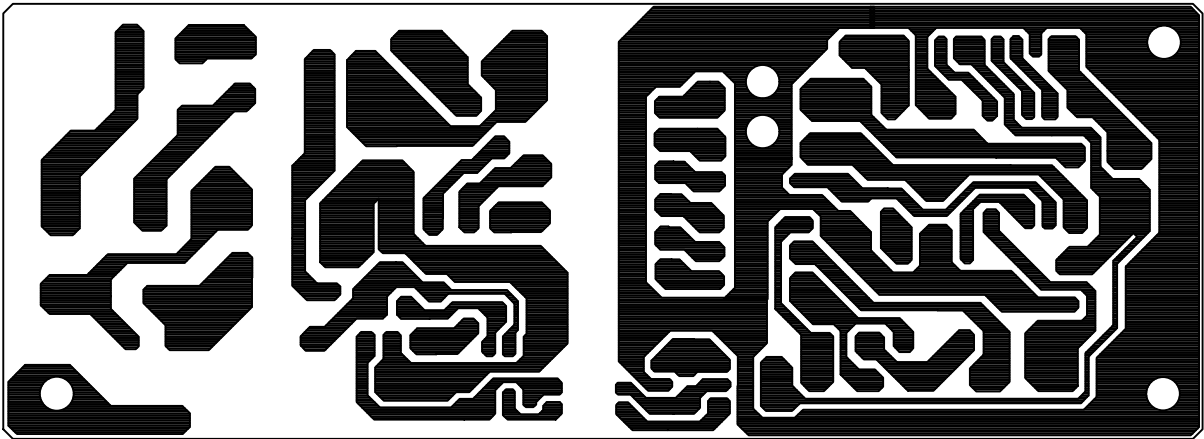
Title	(Title)	Rev
Size	Document Number	
Customer	(Doc)	
Date	Wednesday, July 10, 2002	Sheet 0 of 8











7. Working Guide

7.1 Front Ass'y



7.2 Main Ass'y

7.2.1 Assemble the Rear.



7.2.2 Assemble the Main Board.



7.2.3 Assemble the SMPS.



7.2.4 Assemble the Front & Power cord.



7.2.5 Screw up of Rear.



7.2.6 Assemble the Top Cover.



7.3 Packing.

