HUMAX STB

Service Manual

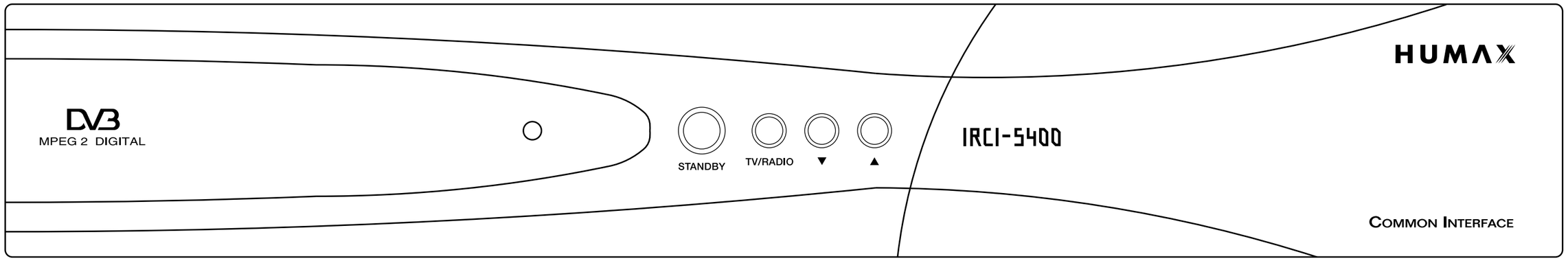
For OAK

Model

Satellite STB
IRCI-5400
CRCI-5500
CR-5510

Cable STB
CI-5100C
VA-5200C

HUMAX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STANDBY
TV/RADIO
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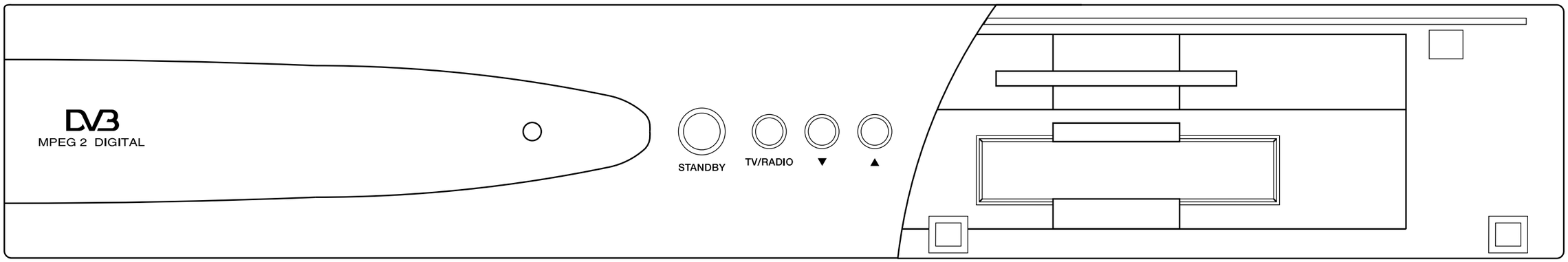
IRCI-5400
HUMAX
COMMON INTERFACE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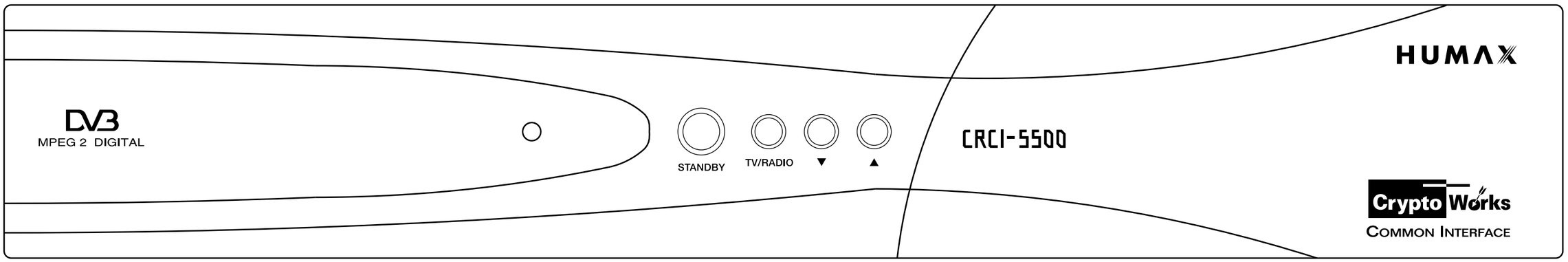
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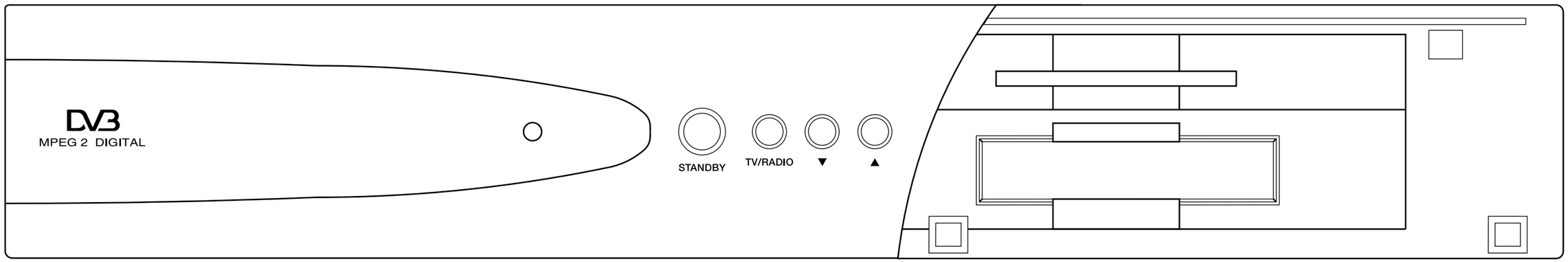
CRCI-5500
HUMAX
CryptoWorks
COMMON INTERFACE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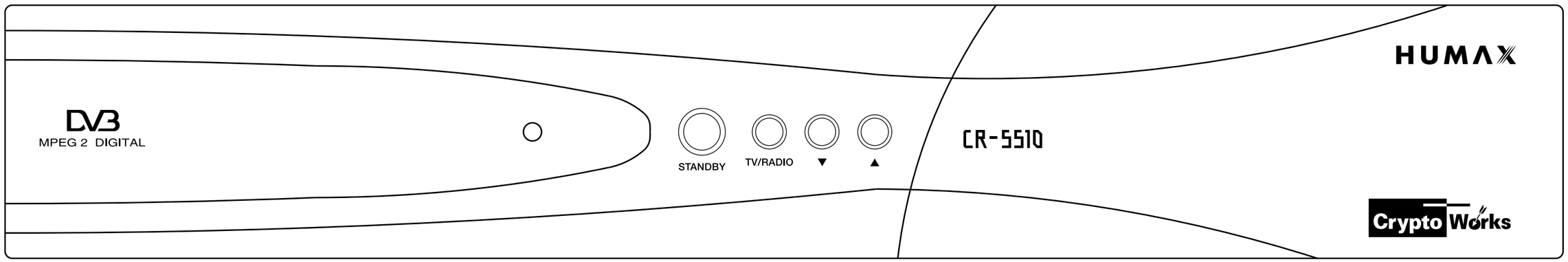
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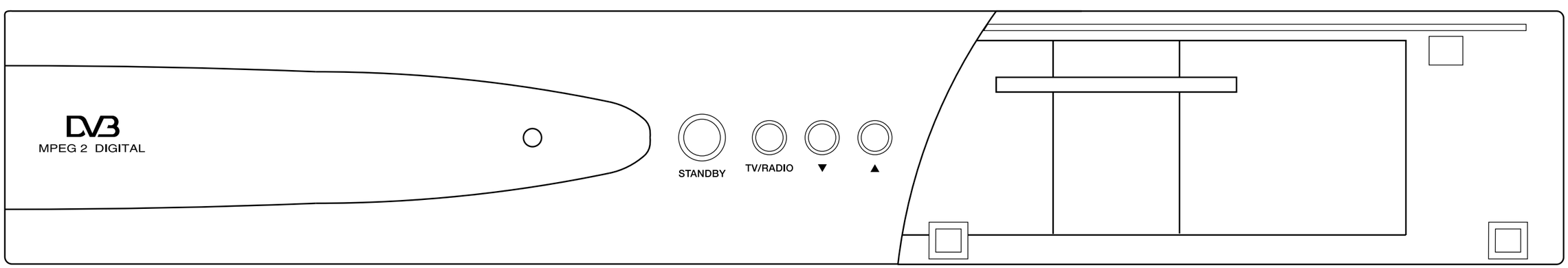
CR-5510
HUMAX
CryptoWorks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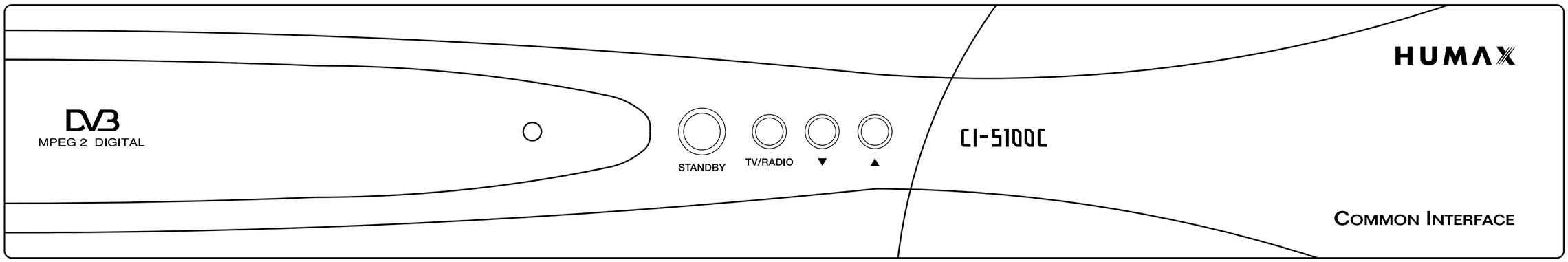
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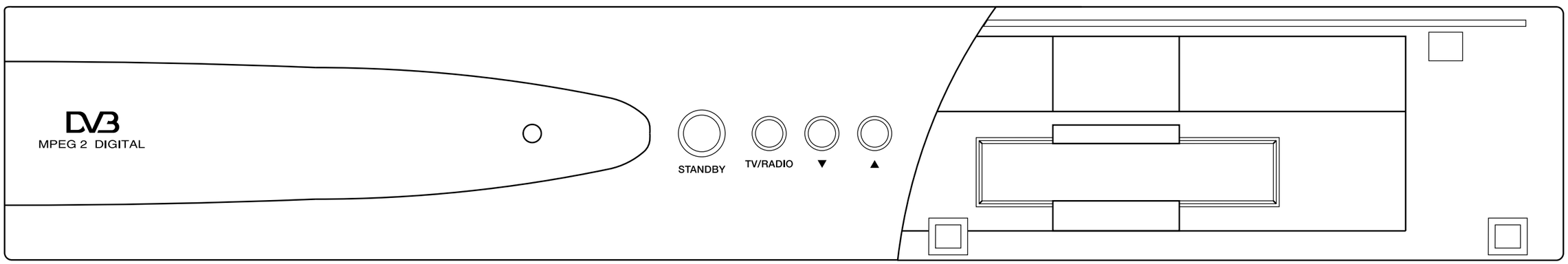
HUMAX
CI-5100C
COMMON INTERFACE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TV/RADIO
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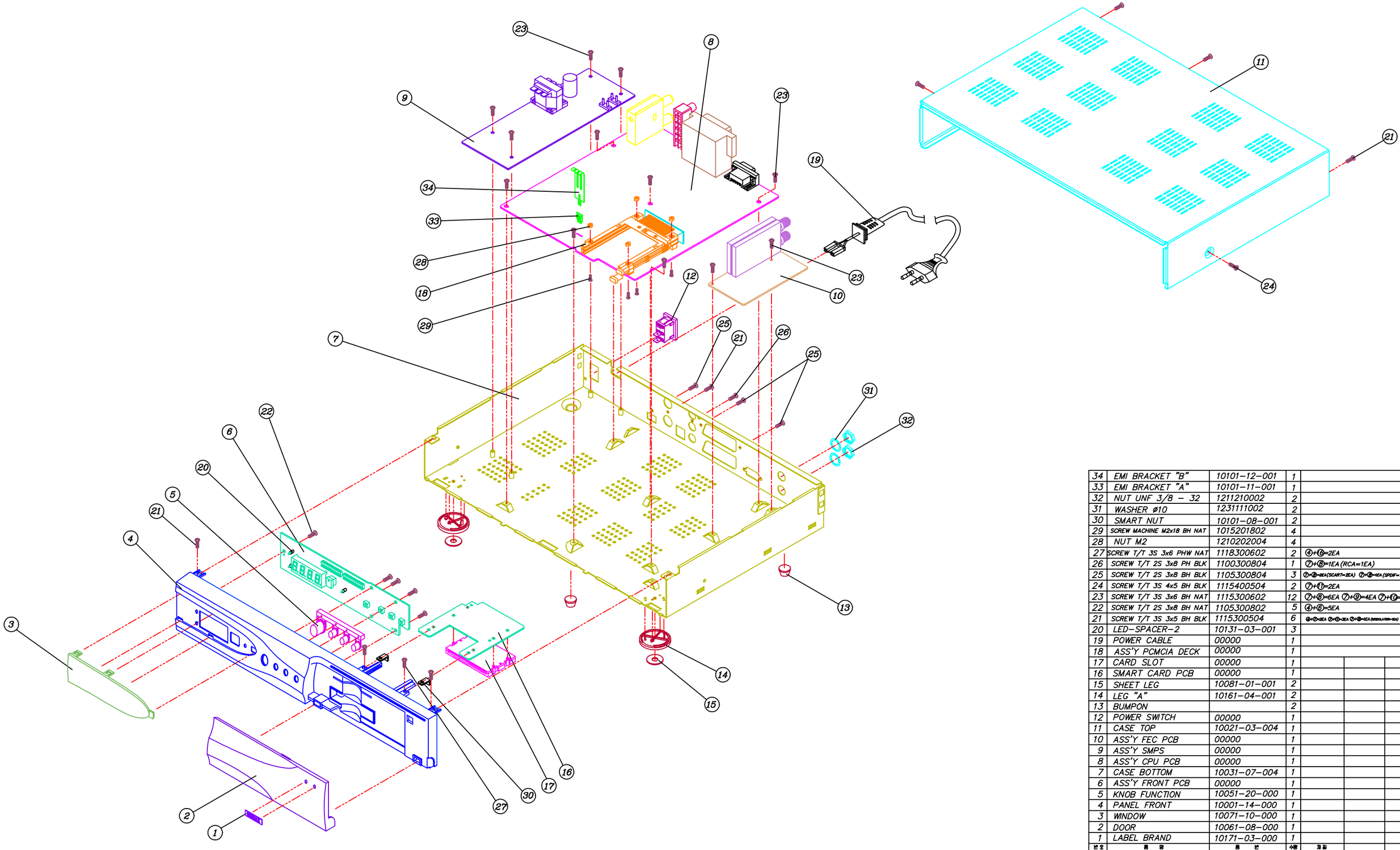
NO.	DESCRIPTION OF CHANGE	REASON OF CHANGE	DATE	DESIGNED	APPROVED
1					
2					



번호 NO.	품명 PART NAME	품번 PART NUMBER	수량 Q'ty	재질 MATERIAL	FINISHED	REMARK
34	EMI BRACKET "B"	10101-12-001	1			
33	EMI BRACKET "A"	10101-11-001	1			
32	NUT UNF 3/8 - 32	1211210002	2			
31	WASHER ø10	1231111002	2			
30	SMART NUT	10101-08-001	2			
29	SCREW MACHINE M2x18 BH NAT	1015201802	4			
28	NUT M2	1210202004	4			
27	SCREW T/T 3S 3x6 PHW NAT	1118300602	2	④+⑥=2EA		
26	SCREW T/T 2S 3x8 PH BLK	1100300804	1	⑦+⑧=1EA (RCA=1EA)		
25	SCREW T/T 2S 3x8 BH BLK	1105300804	3	⑦+⑧=2EA(SCART=2EA) ⑦+⑧=1EA (SPDIF=1EA)		
24	SCREW T/T 3S 4x5 BH BLK	1115400504	2	⑦+⑪=2EA		
23	SCREW T/T 3S 3x6 BH NAT	1115300602	12	⑦+⑧=6EA ⑦+⑨=4EA ⑦+⑩=2EA		
22	SCREW T/T 2S 3x8 BH NAT	1105300802	5	④+⑥=5EA		
21	SCREW T/T 3S 3x5 BH BLK	1115300504	6	⑨+⑦=2EA ⑦+⑪=3EA ⑦+⑧=1EA (INSULATOR=1EA)		
20	LED-SPACER-2	10131-03-001	3			
19	POWER CABLE	00000	1			
18	ASS'Y PCMCIA DECK	00000	1			
17	CARD SLOT	00000	1			
16	SMART CARD PCB	00000	1			
15	SHEET LEG	10081-01-001	2			
14	LEG "A"	10161-04-001	2			
13	BUMPON		2			
12	POWER SWITCH	00000	1			
11	CASE TOP	10021-03-004	1			
10	ASS'Y FEC PCB	00000	1			
9	ASS'Y SMPS	00000	1			
8	ASS'Y CPU PCB	00000	1			
7	CASE BOTTOM	10031-07-004	1			
6	ASS'Y FRONT PCB	00000	1			
5	KNOB FUNCTION	10051-20-000	1			
4	PANEL FRONT	10001-14-000	1			
3	WINDOW	10071-10-000	1			
2	DOOR	10061-08-000	1			
1	LABEL BRAND	10171-03-000	1			

일반 허용차 TOLERANCE (±mm)	0 ~ 6	6 ~ 30	31~120	121~200	201~315	316 ~1100
A	0.05	0.1	0.15	0.15	0.2	0.3
B	0.1	0.2	0.3	0.4	0.5	0.8
C	0.2	0.3	0.4	0.5	0.8	1.0

3RD ANGLE PROJECTION

SCALE	UNIT	DATE	REVISION
N/S	XX	2000 19/05	A

도면 DRAWING	설계 DESIGNED	검도 CHECKED	승인 APPROVED
	B.M.Kim 04.06.1999		

모델명 PROJECT NAME	OAK (IRCI-5400)
품명 PART NAME	EXPLODE
품번 PART NUMBER	
리퍼 도번 REF. NO.	

SHEETS: 1

HUMAX

NO.	DESCRIPTION OF CHANGE	REASON OF CHANGE	DATE	DESIGNED	APPROVED
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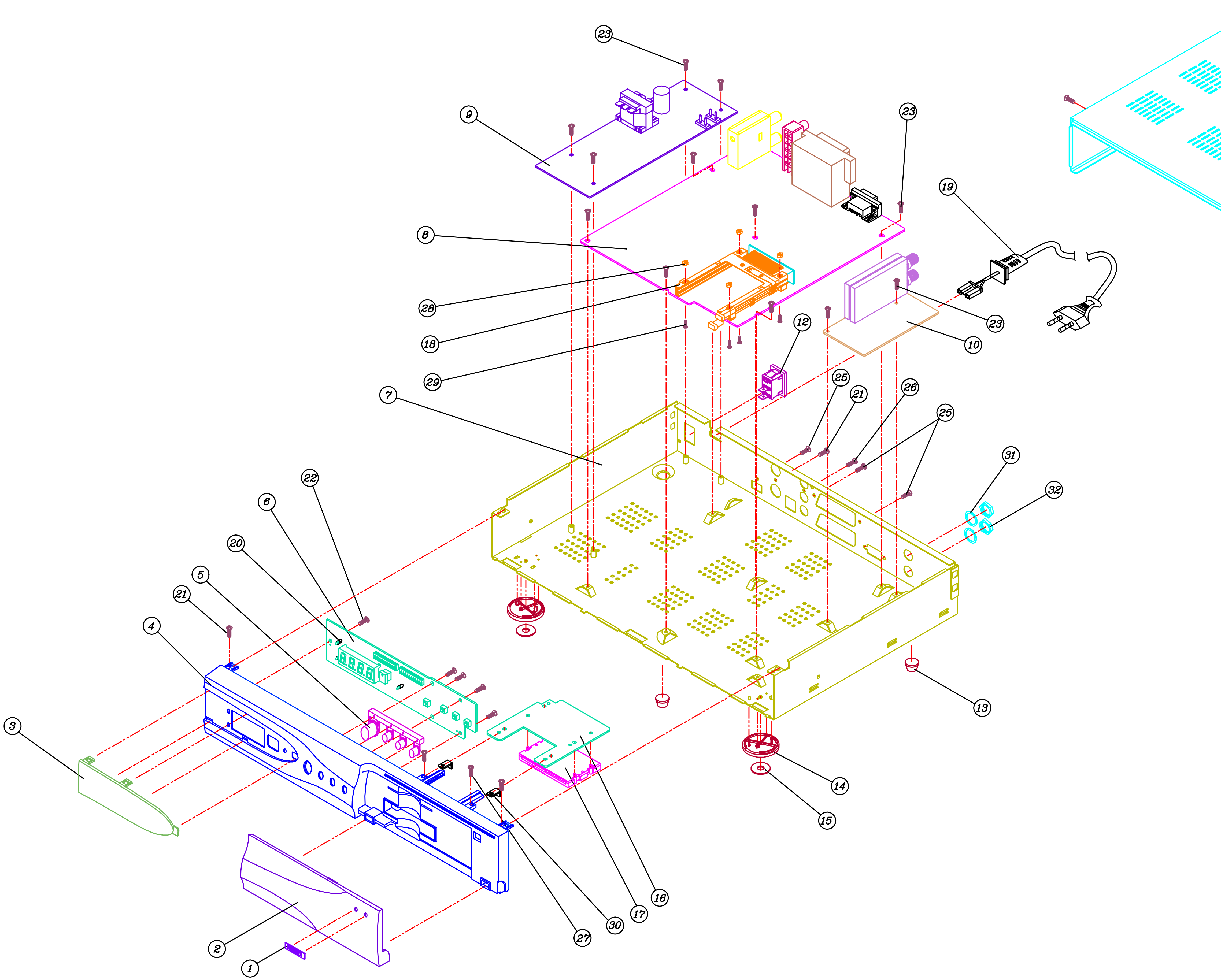
⚠2					



번호 NO.	품명 PART NAME	품번 PART NUMBER	수량 Q'ty	재질 MATERIAL	FINISHED	REMARK
32	NUT UNF 3/8 – 32	1211210002	2			
31	WASHER ø10	1231111002	2			
30	SMART NUT	10101–08–001	2			
29	SCREW MACHINE M2x18 BH NAT	1015201802	4			
28	NUT M2	1210202004	4			
27	SCREW T/T 3S 3x6 PHW NAT	1118300602	2	④+⑯=2EA		
26	SCREW T/T 2S 3x8 PH BLK	1100300804	1	⑦+⑧=1EA (RCA=1EA)		
25	SCREW T/T 2S 3x8 BH BLK	1105300804	3	⑦+⑧=2EA(SCART=2EA) ⑦+⑧=1EA(SPDIF=1EA)		
24	SCREW T/T 3S 4x5 BH BLK	1115400504	2	⑦+⑪=2EA		
23	SCREW T/T 3S 3x6 BH NAT	1115300602	12	⑦+⑧=6EA ⑦+⑨=4EA ⑦+⑩=2EA		
22	SCREW T/T 2S 3x8 BH NAT	1105300802	5	④+⑥=5EA		
21	SCREW T/T 3S 3x5 BH BLK	1115300504	6	④+⑦=2EA ⑦+⑪=3EA ⑦+⑧=1EA (MODULATOR=1EA)		
20	LED–SPACER–2	10131–03–001	3			
19	POWER CABLE	00000	1			
18	ASS'Y PCMCIA DECK	00000	1			
17	CARD SLOT	00000	1			
16	SMART CARD PCB	00000	1			
15	SHEET LEG	10081–01–001	2			
14	LEG "A"	10161–04–001	2			
13	BUMPON		2			
12	POWER SWITCH	00000	1			
11	CASE TOP	10021–03–004	1			
10	ASS'Y FEC PCB	00000	1			
9	ASS'Y SMPS	00000	1			
8	ASS'Y CPU PCB	00000	1			
7	CASE BOTTOM	10031–07–004	1			
6	ASS'Y FRONT PCB	00000	1			
5	KNOB FUNCTION	10051–20–000	1			
4	PANEL FRONT	10001–14–000	1			
3	WINDOW	10071–10–000	1			
2	DOOR	10061–08–000	1			
1	LABEL BRAND	10171–03–000	1			

일반 허용 공차 TOLERANCE (±MM)	0 ~ 6	6 ~ 30	31~120	121~200	201~315	316 ~1100
A	0.05	0.1	0.15	0.15	0.2	0.3
B	0.1	0.2	0.3	0.4	0.5	0.8
C	0.2	0.3	0.4	0.5	0.6	1.0

3RD ANGLE PROJECTION

SCALE	UNIT	DATE	REVISION
N/S	✕	2000 19/05	A

제도 DRAWING	설계 DESIGNED	검도 CHECKED	승인 APPROVED
	B.M.Kim 04.06.1999		

모델명 PROJECT NAME	OAK (CRCI–5500)	SHEETS
품명 PART NAME	EXPLODE	1
품번 PART NUMBER		
관련 도번 REF. NO.		

HUMAX

NO.	DESCRIPTION OF CHANGE	REASON OF CHANGE	DATE	DESIGNED	APPROVED
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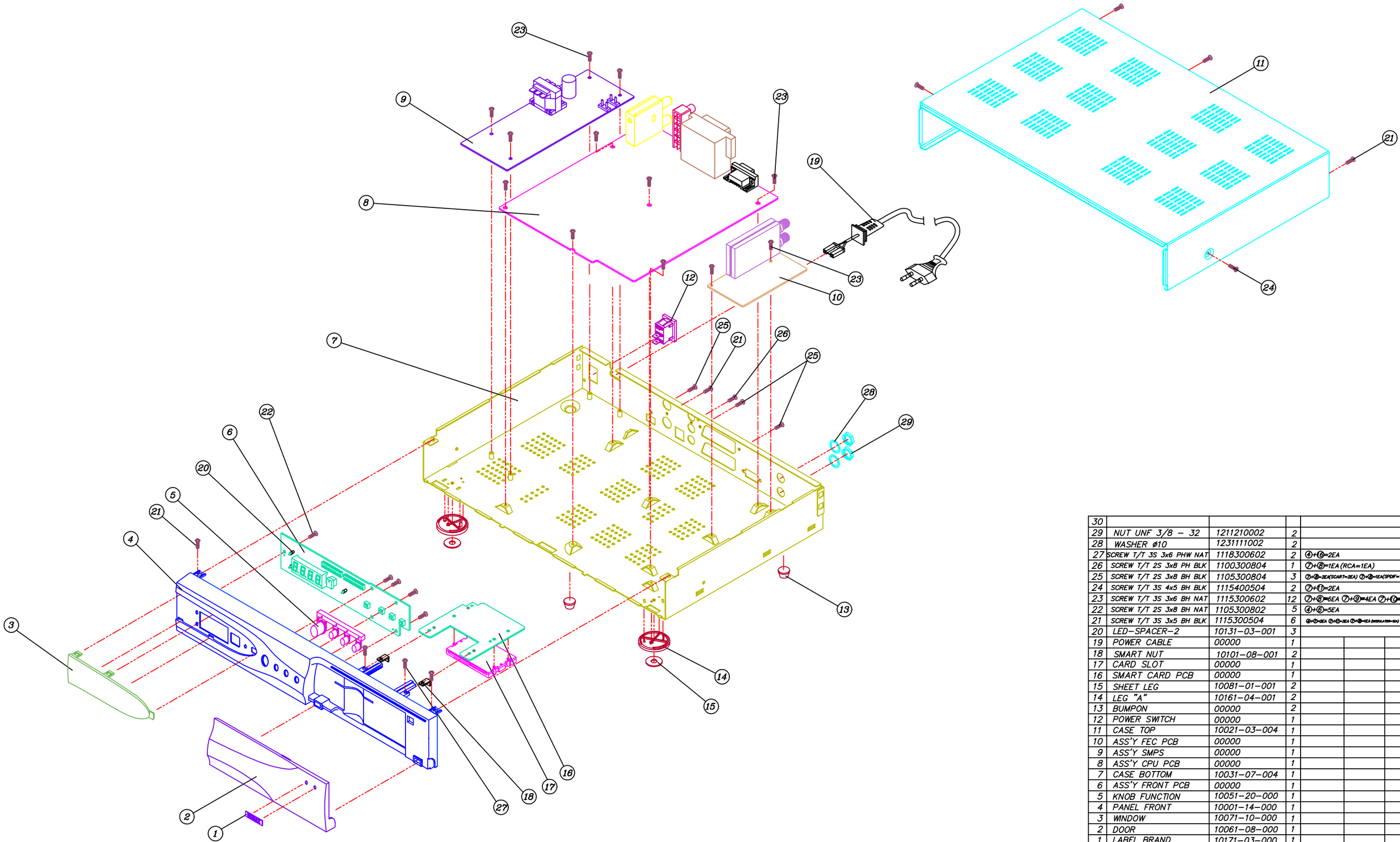

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29	NUT UNF 3/8 – 32	1211210002	2	
28	WASHER ø10	1231111002	2	
27	SCREW T/T 3S 3x6 PHW NAT	1118300602	2	④+⑥=2EA
26	SCREW T/T 2S 3x8 PH BLK	1100300804	1	⑦+⑧=1EA (RCA=1EA)
25	SCREW T/T 2S 3x8 BH BLK	1105300804	3	⑦+⑧=2EA(SCART=2EA) ⑦+⑧=1EA(SPDIF=1EA)
24	SCREW T/T 3S 4x5 BH BLK	1115400504	2	⑦+⑪=2EA
23	SCREW T/T 3S 3x6 BH NAT	1115300602	12	⑦+⑨=6EA ⑦+⑨=4EA ⑦+⑩=2EA
22	SCREW T/T 2S 3x8 BH NAT	1105300802	5	④+⑥=5EA
21	SCREW T/T 3S 3x5 BH BLK	1115300504	6	④+⑦=2EA ⑦+①=3EA ⑦+⑨=1EA (MODULATOR=1EA)
20	LED-SPACER-2	10131-03-001	3	
19	POWER CABLE	00000	1	
18	SMART NUT	10101-08-001	2	
17	CARD SLOT	00000	1	
16	SMART CARD PCB	00000	1	
15	SHEET LEG	10081-01-001	2	
14	LEG "A"	10161-04-001	2	
13	BUMPON	00000	2	
12	POWER SWITCH	00000	1	
11	CASE TOP	10021-03-004	1	
10	ASS'Y FEC PCB	00000	1	
9	ASS'Y SMPS	00000	1	
8	ASS'Y CPU PCB	00000	1	
7	CASE BOTTOM	10031-07-004	1	
6	ASS'Y FRONT PCB	00000	1	
5	KNOB FUNCTION	10051-20-000	1	
4	PANEL FRONT	10001-14-000	1	
3	WINDOW	10071-10-000	1	
2	DOOR	10061-08-000	1	
1	LABEL BRAND	10171-03-000	1	

번호 NO.	품명 PART NAME	품번 PART NUMBER	수량 Q'ty	재질 MATERIAL	FINISHED	REMARK

일반 공차 (끝자리 TOLERANCE LEVEL)	0 ~ 6	6 ~ 30	31~120	121~200	201~315	315 ~1100
A	0.05	0.1	0.15	0.15	0.2	0.3
B	0.1	0.2	0.3	0.4	0.5	0.8
C	0.2	0.3	0.4	0.5	0.8	1.0

3RD ANGLE PROJECTION

SCALE	UNIT	DATE	REVISION
N/S	X	2000 19/05	A

도면 DRAWING	설계 DESIGNED	검도 CHECKED	승인 APPROVED
	B.M.Kim		
	04.06.1999		

모델명 PROJECT NAME	OAK (CR-5510)
품명 PART NAME	EXPLODE
품번 PART NUMBER	
대체 도번 REF. NO.	

SHEETS: 1

HUMAX

NO.	DESCRIPTION OF CHANGE	REASON OF CHANGE	DATE	DESIGNED	APPROVED
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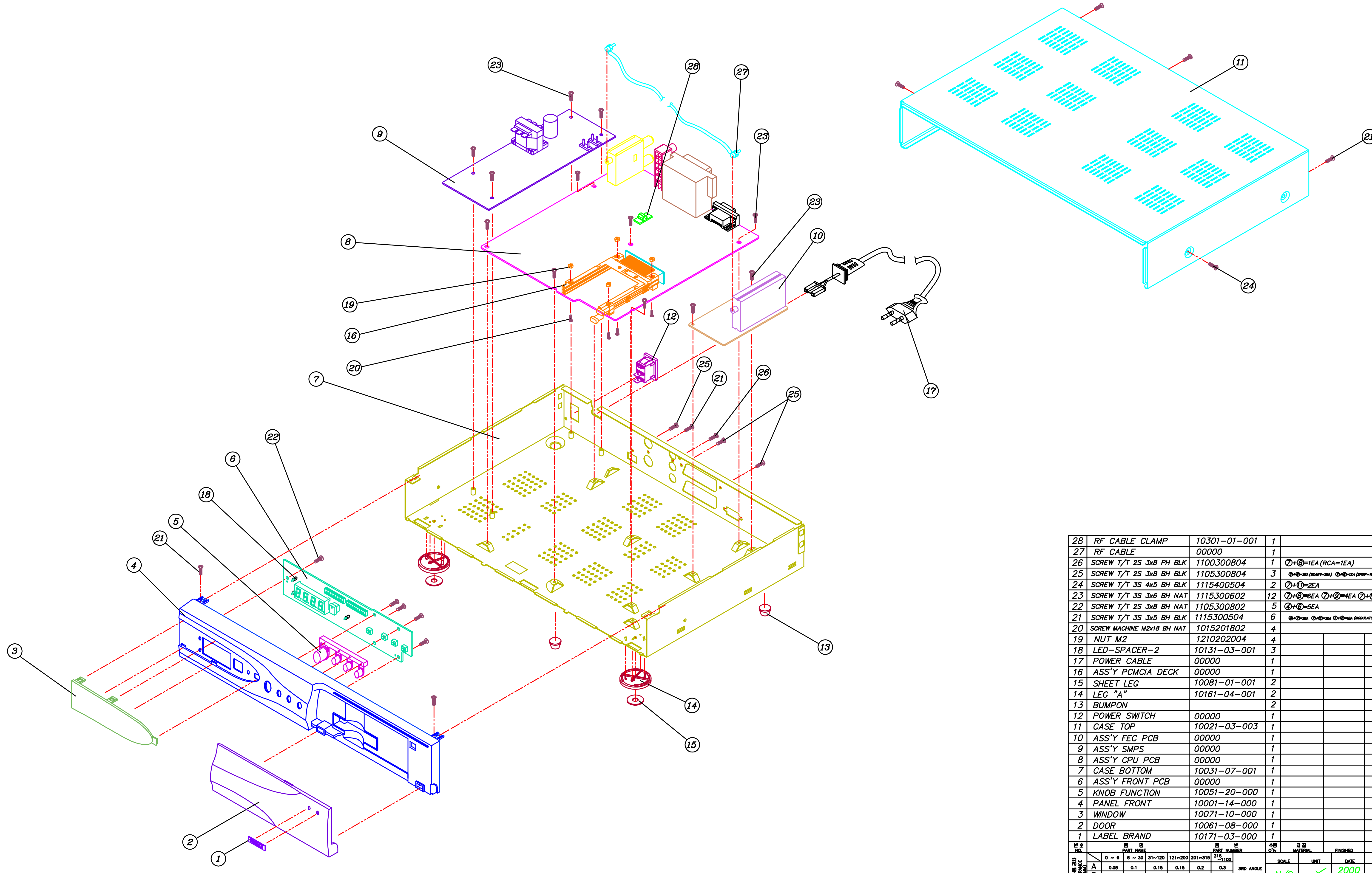
⚠2					



번호 NO.	품명 PART NAME	품번 PART NUMBER	수량 Q'ty	재질 MATERIAL	FINISHED	REMARK
28	RF CABLE CLAMP	10301-01-001	1			
27	RF CABLE	00000	1			
26	SCREW T/T 2S 3x8 PH BLK	1100300804	1	⑦+⑧=1EA (RCA=1EA)		
25	SCREW T/T 2S 3x8 BH BLK	1105300804	3	⑦+⑧=2EA (SCART=2EA) ⑦+⑧=1EA (SPDIF=1EA)		
24	SCREW T/T 3S 4x5 BH BLK	1115400504	2	⑦+⑪=2EA		
23	SCREW T/T 3S 3x6 BH NAT	1115300602	12	⑦+⑧=6EA ⑦+⑨=4EA ⑦+⑩=2EA		
22	SCREW T/T 2S 3x8 BH NAT	1105300802	5	④+⑥=5EA		
21	SCREW T/T 3S 3x5 BH BLK	1115300504	6	④+⑦=2EA ⑦+⑪=3EA ⑦+⑧=1EA (MODULATOR=1EA)		
20	SCREW MACHINE M2x18 BH NAT	1015201802	4			
19	NUT M2	1210202004	4			
18	LED-SPACER-2	10131-03-001	3			
17	POWER CABLE	00000	1			
16	ASS'Y PCMCIA DECK	00000	1			
15	SHEET LEG	10081-01-001	2			
14	LEG "A"	10161-04-001	2			
13	BUMPON		2			
12	POWER SWITCH	00000	1			
11	CASE TOP	10021-03-003	1			
10	ASS'Y FEC PCB	00000	1			
9	ASS'Y SMPS	00000	1			
8	ASS'Y CPU PCB	00000	1			
7	CASE BOTTOM	10031-07-001	1			
6	ASS'Y FRONT PCB	00000	1			
5	KNOB FUNCTION	10051-20-000	1			
4	PANEL FRONT	10001-14-000	1			
3	WINDOW	10071-10-000	1			
2	DOOR	10061-08-000	1			
1	LABEL BRAND	10171-03-000	1			

일반 허용 공차 TOLERANCE (±MM)	0 ~ 6	6 ~ 30	31~120	121~200	201~315	316 ~1100
A	0.05	0.1	0.15	0.15	0.2	0.3
B	0.1	0.2	0.3	0.4	0.5	0.8
C	0.2	0.3	0.4	0.5	0.6	1.0

3RD ANGLE PROJECTION	SCALE	UNIT	DATE	REVISION
	N/S	X	2000 19/05	A

제도 DRAWING	설계 DESIGNED	검도 CHECKED	승인 APPROVED
	B.M.KIM 27.07.1999		

모델명 PROJECT NAME	OAK (CI-5100C)	SHEETS
품명 PART NAME	EXPLODE	1
품번 PART NUMBER		
관련 도번 REF. NO.		

HUMAX

Component and Function list of Each Circuit Page

Page	Component	Main Function	Remark
1	TUNER	SD1228E/LA MK Channel Tuning	Be careful of the component heat
	LNB SUPPLY	LNBP15SP LNB Power Supply	Be careful of static electricity during repairs
	REGULATOR	LM7805 Convert +8V to +5V(Tunner Supply)	
2	QPSK Demodulator	TDA8044AH Channel Locking	PLL part has a low degree of static electricity
3	Irdeto Descrambler Chip	SAS004 :Irdeto Decrambling	Inner Irdeto CAS Option(IRCI-5400 only)
4	CI controller	CXD1957AQ : CI & TS buffer controller	
	Voltage Switching MOSFET	IRF7303 : PCMCIA Card Power supply	Vcc Tr/Tf timing control
	74 Series	TS & Address buffer	Be careful of Timing delay in each TS
5	74 Series	TS & Address buffer	
6	74 Series	TS & Address buffer	
7	Voltage Switching MOSFET	IRF7303 +5V,+3.3V ON/OFF control	Turn off power when the system is Standby
8	Connector	Channel ,Front b'd & SC Connector	
9	Linear Regulator	LM78L12 : Convert 15V to 12V(DC12V)	
10	MPEG TS Demux	SAA7219(MIPS processor) : MPEG TS Processing	PLL part has a low degree of static electricity
	12MHz Oscillator	Irdeto SC clock	Be careful of frequency oscillator Option(IRCI-5400 only)
11	74 Series	Buffer/ Control Logic Gate	
12	Fast Boot Block FLASH	28F160F3B(16Mb)or28F800F3B(8Mb) : Main Code is located	Volume of memory is different in each model
13	FLASH	28F160B3B-90(16Mb)or 28F800B3B-90(8Mb) : Channel Data & Constant is located	Volume of memory is different in each model

15	SDRAM	16M main system memory	Option(IRCI-5400 only)
16	MPEG Decoder	SAA7215 :EMPEG decoding & A/V signal output	
17	MPEG SDRAM	KM416S1020BT-G10 MPEG Decoding Memory	
18	OSD SDRAM	KM416S1020BT-G10 : OSD & Main Memory	
19	Serial and Modem	Supporting UART protocol and external modem	
20	Internal Modem	Supporting UART protocol and internal modem	
21	SPDIF	TOTX178A : Digital Audio Output	
22	Audio DAC	UDA1320 : Audio Digital to Analog Conversion	
23	A/V Switching	STV6411AD : TV,VCR Scart output switching	
24	RF Modulator	RMUP74055VA	
25	CINCH	DPAM-9601E :Video(CVBS) & Audio(L/R)Output	
26	SCART Connector	2201-42RT : TV & VCR Connector	
27	4M Processor	PIC16C64A(One chip micom) - Main B/D Power Control - RCU Receiver - Key Scan - 7-Segment Display - Parallel Communication I/F	Front B/D
	Remote Sensor	LTM-97AT-38N : RCU receive	
	7-Segment	LTC-5623G-12 : Channel & Clock Display	
28	Irdeto SC I/F	TDA8004 : Smart Card Coupler	S/C B/D
29	Tuner	CD1516/P	Option(CI5100C, VA5200C Only)
	If Down Converter	UPC2798GR	
	REGULATOR	LM7805 :Convert +8V to +5V (Tuner supply) LM7812 :Convert +17V to +12V (Tuner supply)	
30	QAM Decoder	IC BCM3118B	

SECTION	Service Items

- Highly recommended follow service flow.

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 parts, etc.

2. Power Test
   - After the power is on the set, check the output power at JP200 Connector.
     The output power is
     ➔ +3.3V, +5V, +8V, +15V, +17V, +24V, +30V
   - Check the Clock and Reset timing.

3. System Test
   - Check whether CPU of SAA7219 works normally.
     This includes Reset, Clock, Memory Access, and the essential items to the basic movement.

4. MPEG and AV Test
   - Check the whole process from MPEG Decoding to A/V output
     Also check the output port function(SCART, RF-MODULATOR, Phone Jack and etc.) at back panel.

5. Channel Test (refer to repair of IRCI-5400, CR-5510, CRCI-5500, VACI-5300)
   - Front End part is Receiving, Tuning and Locking of RF frequency from LNB of Antenna. Check the part, which generates DC power supply and 22KHz Tone signal output.

6. Test Smart Card I/F
   - Check the card is accepted normally.
   - Check the I/P signal is proper one.

7. Channel Test (refer to the repair of CI-5100C, VA-5200C)
   - Receive, tuning and locking the RF frequency from Cable.
   - Check the repair regarding channel part with tuner and BCM31118B.

- The pictures in Humax Service Manual can be varied according to the system conditions, input signal, etc.

- It is important to trace the consistent flow of signals and find the trouble spot when the problem occurs. The examples of waves should be referred as one pattern of consistent signals.

SECTION	Basic Test

Item : Power of SMPS, FEC and MAIN B/D

Symptom : System not working.

Explanation:

- In this case, check at circuit page 07/JP200 whether each power supply.
- Item : SMPS Connector
  Check point(JP200) : Circuit Diagram Page 07

  1Pin : 30V 2Pin : 24V 3Pin : 17V 5Pin : 8V
  7Pin : 5VF 9Pin : 3.3V 11pin : 15V
  GND: 4, 6, 8, 10, 12 pins

- Item : the rear part of Power Control
  Check point(U200): Circuit Diagram Page 07

  1Pin : +5V
  3Pin : +3.3V

  When 0V electricity passes at Q200 2pin, power is supplied to U200
  It is controlled by FRONT B/D.

- Item: FEC B/D Connector
  Check point(JP333): Circuit Diagram Page08

  18pin : +3.3V 19pin : +3.3V 20pin: +8V 21pin: +24V
  22pin : +30V 24pin : +17V
  GND : 1, 17, 23 pins

  All errors of those powers should be within 5% or 10%.

- Action Notes for failures

  Check the connection of power supply connector.
  If the failures continue after checking, replace SMPS.

SECTION	Basic Test

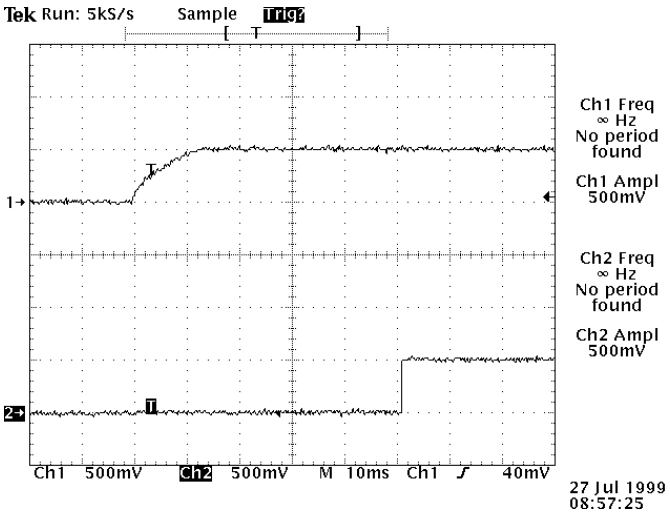
Item : Time interval of power supply between FRONT B/D and MAIN B/D

Symptom : Malfunction of initial display at FRONT B/D or failure of Power-on sequence

- After stabilization of µCom at FRONT B/D, check the power supply of MAIN B/D. It checks whether µCom controls power of MAIN B/D normally.
- The timing of Front B/D power +5VF and +5V power controlled by Front B/D is shown down below. Then, the key point is the interval of two signals.

+5VF →

+5V →



- Check Point :

  +5VF : Circuit Diagram Page07/JP200,Pin7
  +5V : Circuit Diagram Page07/U200,Pin1

- Failure Causes & Action notes

  It is the case of improper control by FRONT B/D, so replace FRONT B/D or, check power supply again as Basic Item Test.

SECTION	Basic Test

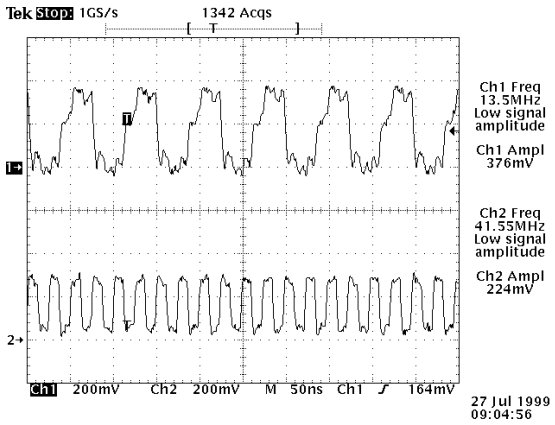
Item : SAA7219 CLOCK(13.5MHz) and SAA7215 CLOCK(40.5MHz)

Symptom : System not acting
Or intermittently acting.

- SAA7219 CLOCK uses VCXO as system clock.
- The internal clock of SAA7219 uses several clocks by generating external 13.5MHz system clock. This test checks that one of them, 40.5MHz, is generated.
- SAA7215 gets 40.5MHz system clock, and then generates and uses system clock of 27MHz and 81MHz. This test checks whether 27MHz system clock is generated.

13.5MHz →

40.5MHz →

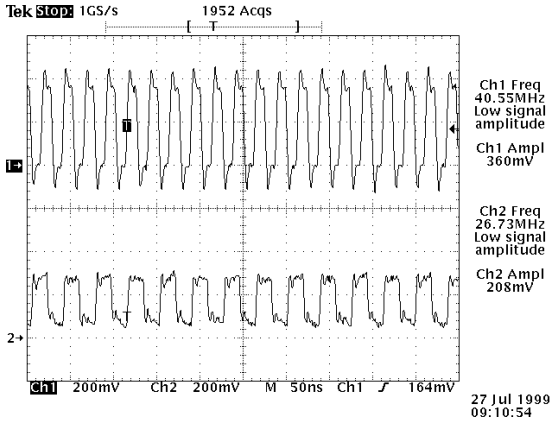


Check Point : Circuit Diagram
Page 10/F210,Pin3

Check Point : Circuit Diagram
Page10/ U220,Pin91

40.5MHz →

27MHz →



Check Point : Circuit Diagram
Page16/ U290,Pin168

Check Point : Circuit Diagram
Page16/ U290,Pin126

- Failure Causes & Action Plan

If the 13.5MHz is acting unstably, it means that VCXO or SAA7219 is damaged. Replacement of parts is required. Because 40.5 MHz clock and 27MHz clock is not generated from inside of the chip, soldering or the chip is considered as a cause.
Be cautious, when replacing components. The static of soldering may damage the components.
Check the general install, soldering condition, wrong or reverse insertion of parts..

SECTION	Basic Test

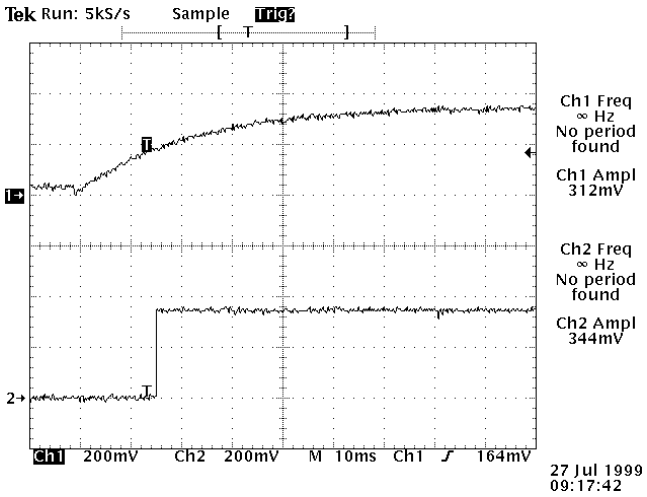
Item : SAA7219 RESET and SAA7215 RESET

Symptom : SAA7219 not Acting
SAA7215 not Acting

- This part has less probability of failure but check this reset timing when a failure comes out.
- SAA7215 Reset is using SAA7219 PIO. Therefore SAA7219 RESET comes out after SAA7219 RESET.

SAA7219 Reset ➔

SAA7215 Reset ➔



- Check Point
  - SAA7219 Reset : Circuit Diagram Page10/U221, Pin 3
  - SAA7215 Reset : Circuit Diagram Page16/U290, Pin 145
- SAA7219 Reset is connected with FLASH and CXD1957AQ.
- Failure Causes & Action Plan

  In case of SAA7219 Reset timing failure, check the wrong insertion of elements and soldering condition.
  In case of malfunction of SAA7215 Reset check the error of SAA7219.

SECTION	Basic Test

Item : System Reset and System Clock

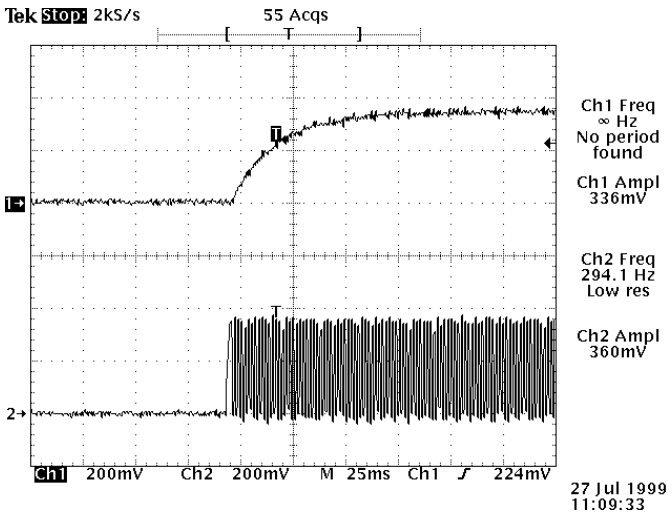
Symptom : Power On not Reset
Cannot write Flash Memory

- System clock 13.5Mhz should be in the stable condition when the System Resets or Power On resets.
  However, at the moment of Power On Reset, the poor VCXO can make clock unstable until the System Reset is off.

  For the test of this item measure the following wave when Main Power On after Off, and check the measured wave is maintained.

SAA7219 Reset →

13.5M Clock →



- Check Point
  - SAA7219 Reset : Circuit Diagram Page10/U220,Pin3
  - 13.5M Clock : Circuit Diagram Page10/F210,Pin3

- Failure Causes & Action notes

  In this case, one of the causes is poor VCXO. Replace parts.
  Otherwise, check the install and soldering condition, etc.

SECTION	System Test

Item : Test of FLASH1 Movement

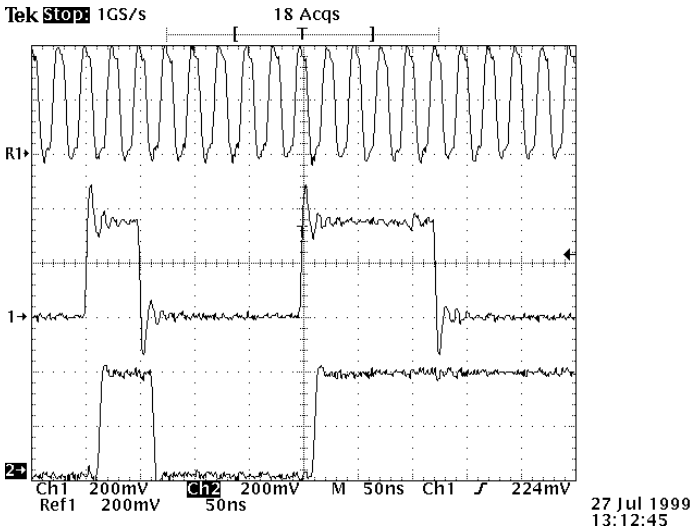
Symptom : MPEG Play not acting though no Failure on Basic Test Items

- When Basic Test Items have no faults and system is not acting, check FLASH1containing program code. In normal case, FLASH1shows control signal continuously as below.

40.5MHz Clock Input →

FLASH1 CE# →

FLASH1 OE# →



- Check Point :

  40.5MHz : Circuit Diagram Page12/U255,Pin2
  CE# : Circuit Diagram Page12/U255,Pin36
  OE# : Circuit Diagram Page12/U255,Pin38

- Failure Causes & Action notes

  If the above signal is not acting, examine the short of soldering error, cold-soldering, etc. When the soldering has no error, check the basic test items, Data Bus and Address Bus.

  Replacing Chip should be the last option.

SECTION	System Test

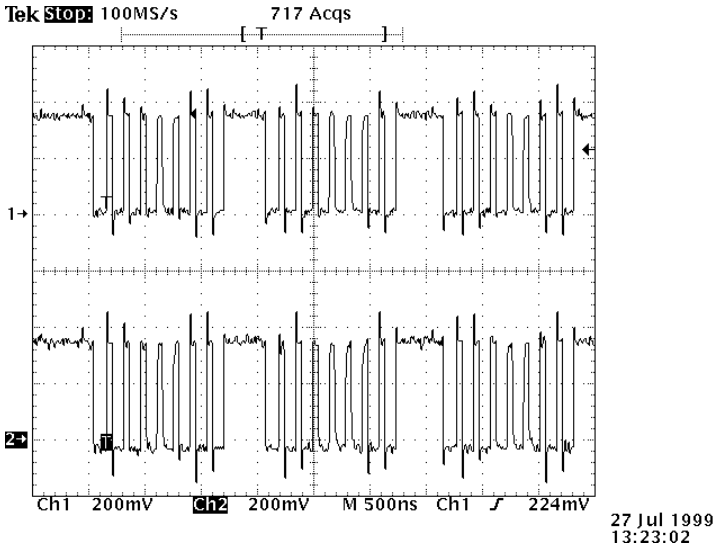
Item : Test of FLASH2 Movement

Symptom : MPEG Play not Acting

- When no errors are found even after Basic Test and System is not acting, check FLASH2 containing channel data and Program constants. When the System is acting normally, FLASH2 shows control signals continuously as below.
- The below picture shows the similar timing to that of FLASH1

FLASH2 CE# →

FLASH2 OE# →



- Check Point :

  CE# : Circuit Diagram Page13/U260,Pin26
  OE# : Circuit Diagram Page13/U260,Pin28

- Failure Causes & Action notes

  If the above signal is not acting, examine the short of soldering error, cold-soldering, etc. When the soldering has no error, check the basic test items, Data Bus and Address Bus.

  Replacing Chip should be the last option.

SECTION	System Test

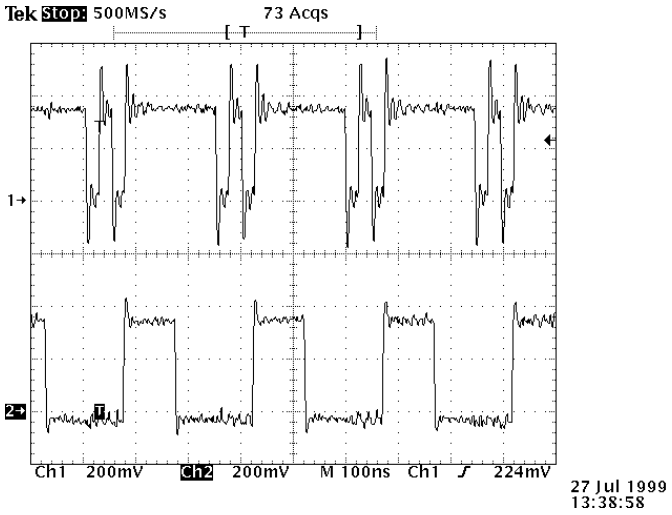
Item : Test of MPEG GRAPHICS SDRAM Movement

Symptom : MPEG Play not Acting without any errors at Basin Test Items

- When no errors are found after Basic Test and system is not acting, it is necessary to check MPEG GRAPHICS SDRAM of SAA7215 as Main Data and MPEG Graphic domain.
- When the CS_SDN signal of SAA7219 is low, MPEG Graphics SDRAM of SAA7215 is selected. SAA7219 detects DTACK signal and end Bus Cycle. These two normal signals show continuously as below.

7215DTACK →

CS_SDN →



- Check Point :

7215DTACK : Circuit Diagram Page16/U290,Pin203
CS_SEN : Circuit Diagram Page16/U290,Pin202

- Failure Causes & Action notes:

If the above signals are not acting, examine the Data Bus and Address Bus. If this test found No problem, examine the short of soldering error, cold-soldering, etc.

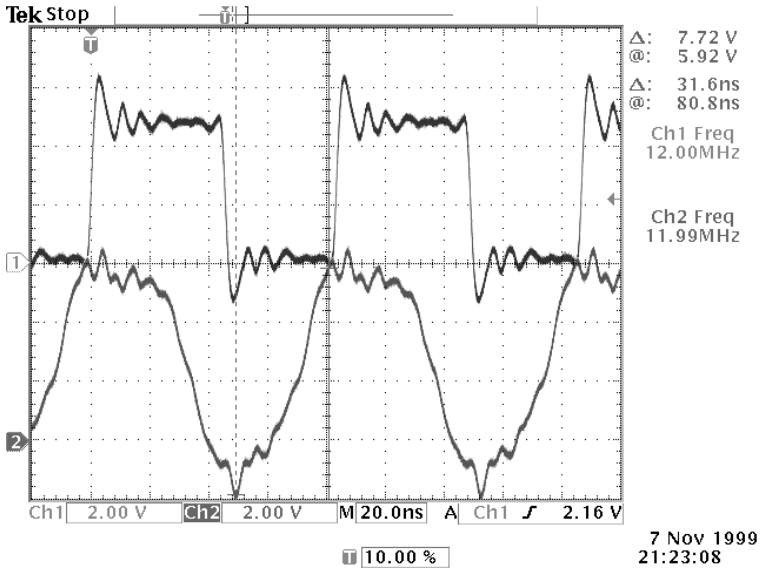
Replacing Chip should be the last option.

SECTION	System Test(Only IRCI-5400)
Item : Test of I-Chip and Irdeto SC	
Symptom : TS by-pass or Descramble failure by I-Chip or Irdeto SC malfunction	

- I-Chip function as CI in IRCI-5400. Shortly I-Chip plays as a CAM of Irdeto stream and Descramble can be conducted by Irdeto SC.

1) TS bypass no acting
- In the case of Free channel, TS is planned to be By-pass when it is power on by the initialization of I-Chip. If the I-Chip has badness, malfunction of MPEC display or screen may be happening as I-Chip output TS is broken.
- Check this thing TS input/output of I-Chip (U170)

2) Descramble no acting by SC
- Irdeto descramble has another format different from normal of ISO7816-3 format.
- Firstly check the Crystal output of 12MHz.



(1) :12MHz crystal ouput
(Page 10/U224,Pin4)

(2) : Bead ouput,
TDA8004 input
(Page28/U700,Pin24)

-Two symptom appears as above
ㄱ) 3'rd oscillation : 36MHz oscillation by inferiority of crystal or Load Cap attachment
ㄴ) non oscillation Clock : This is caused by inserting failure of Crystal, 74HC04, Cap

SECTION	System Test

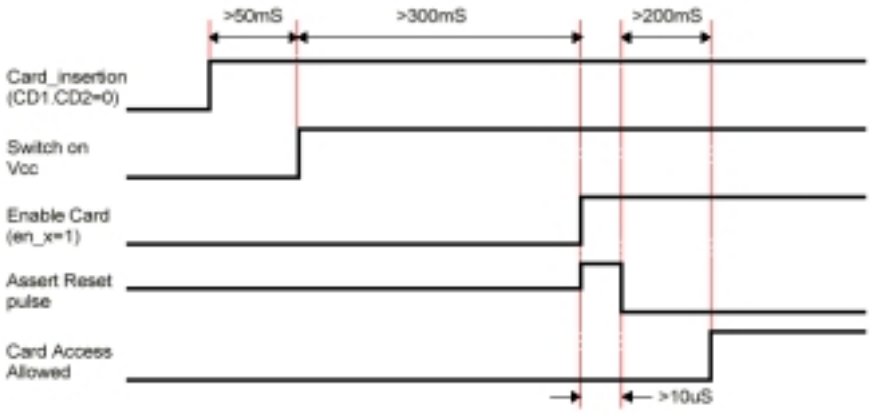
Item : Sequence of PCMCIA CI Functional Test

Symptom : Transport Stream De-scramble or CAM Initialization failure caused by CI

- The test related with PCMCIA is necessary to understand the below Sequence and System Control flow.

1) Card Insertion : When CAM is inserted, CD Pin contact at CI Slot makes signal.
   - When the Card is inserted, signal of C1CD1and C1CD2 is converted from high level to low level. It should be detected by CXD1957.
2) CI Power Supply : After Card Detection and a while(more than 50 ㎳), +5V Power is supplied.
   - The Rising Time of Power should be about 300㎲. In case of delay, initialization of Card makes trouble, so check it cautiously.
3) TS Input Buffer Enable & Card Enable : Activating 300ms later after CI Power supply
4) CAM Reset : CAM Resets at the same time of Card enable and High voltage section should be maintained for more than 10㎲.
5) Card Access : Card should be accessed 200ms later after Reset Off.

The below graph is PCMCIA Sequence Timing graph.



- CI Control IC is SONY CXD1957AQ to control One Chip 2-Slot.

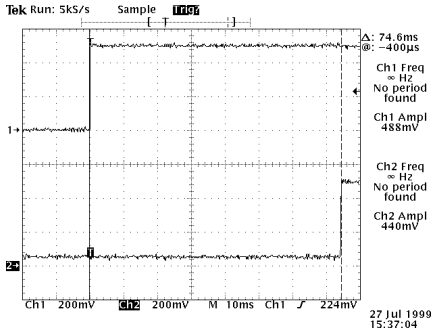
1) CI IC Reset is using the same reset as SAA7219 (check Reset signal)
2) CI DTACK is generated through being combined with DTACK of MPEG Decoder (SAA7215).

SECTION	System Test

Item : PCMCIA Common Interface

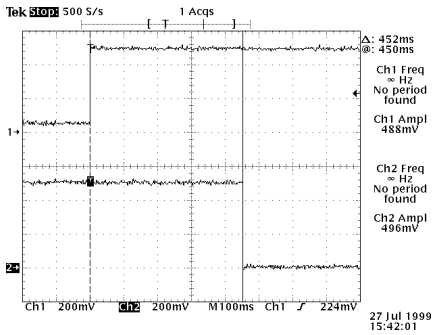
Symptom : Failure of Transport Stream De-scramble or CAM Initialization by CI

- It is necessary to check PCMCIA sequence timing.

C1CD1 → 

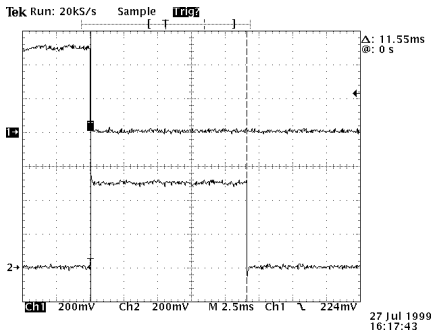
Check Point: Circuit Diagram Page04/ U106A,Pin1

CARD POW → Check Point: Circuit Diagram Page04/ U102A,Pin1

CARD POW → 

Check Point: Circuit Diagram Page04/ U102A,Pin1

CAS1SIG → Check Point: Circuit Diagram Page04/ U100,Pin1

CAS1SIG → 

Check Point: Circuit Diagram Page04 /U100,Pin1

CAS1RST → Check Point: Circuit Diagram Page04/ U103,Pin20

- Failure Causes & Action notes

  When the above signal is not acting, it is necessary to check the signal according to the generating route of interrupt by inserting and ejecting Card.

  The flow of TS(Transport Stream) refers at MPEG Item.

SECTION	MPEG and A/V Test Item

Item : TS Stream

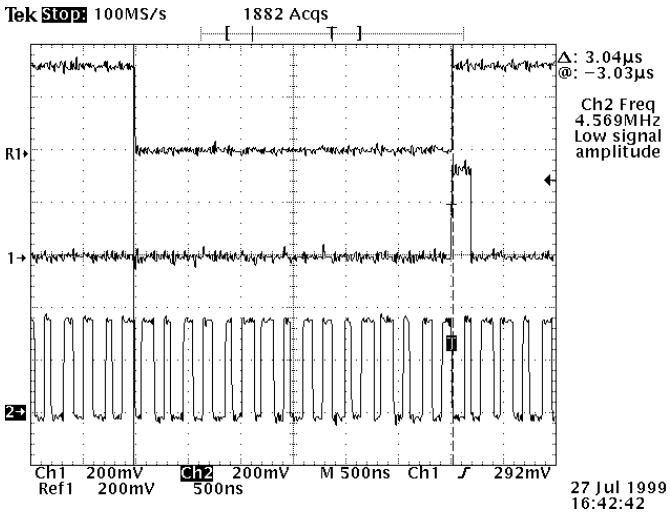
Symptom : Power On but System not Acting

- TS signal from FEC B/D goes to SAA7219. It is very important to trace this route.

TS Valid →

TS STR →

TS CLK →



- Check Point :

  TS VLD : Circuit Diagram Page08/JP333,Pin14 Page04/U101A,Pin4 Page06/U165,Pin7
  TS STR : Circuit Diagram Page08/JP333,Pin15 Page04/U101A,Pin2 Page06/U165,Pin4
  TS CLK : Circuit Diagram Page08/JP333,Pin16 Page04/U101A,Pin6 Page06/U165,Pin9

- Failure Causes & Action notes

  The above Check Points are sequential. Among Check Points, the signals pass several signal routes. If the signals show different shapes from the above graphs, find the position by referencing Circuit Diagram.

  If MPEG Play is not acting , check whether the soldering condition such as cold-soldering makes signal error at TS Data Line.

SECTION	A/V Test Item

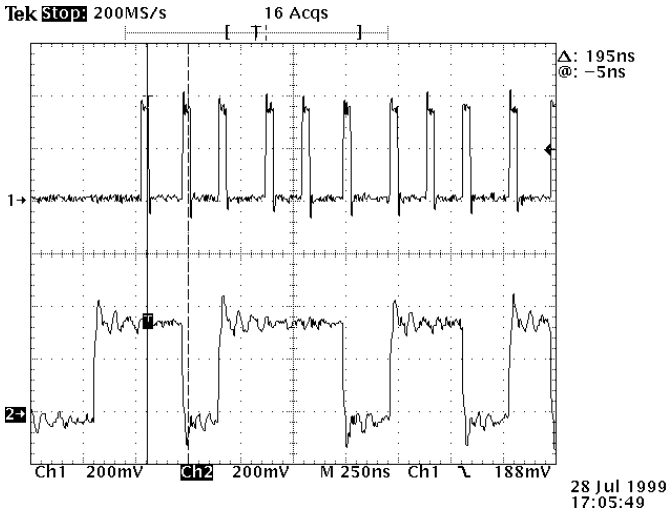
Item : 7219 A/V Strobe

Symptom : MPEG Play not Acting

- This test checks that SAA7219 de-multiplexes MPEG TS. If the digital A/V signals, such as A_STROBE, V_STROBE, and AVD[7..0] are checked, SAA7219 is acting normally.

A_STROVE →

AVD0 →



- Check Point :

  A_STROVE : Circuit Diagram Page10/U220,Pin94 Page16/U290,Pin164
  AVD0 : Circuit Diagram Page10/U220,Pin103 Page16/U290,Pin155

- Failure Causes & Action notes

  A_STROVE is a similar signal to V_STROVE.

  AVD[7..0] are almost same.

  If MPEG Play is not acting after checking above signals, check each 8Bit Line AVD[0..7] and examine A/V MPEG TS Data from TDA8044ADH.

  Sometimes, the poor TDA8044 makes that SAA7201is not acting.

SECTION	MPEG and A/V Test Item

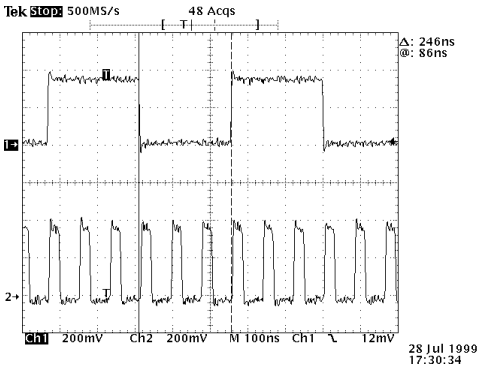
Item : A/V Output

Symptom : Audio Signal not Generating.

- If the system is normal, but Audio signal does not appear by TV SCART, VCR SCART and etc., check Digital Audio Input of UDA1320.
- If Digital Audio signal is normal, trace the route of Analog Audio signal from UDA1320 Output to SCART, and check the signal.

SCLK(8MHz) →

A_CLK(3MHz) →

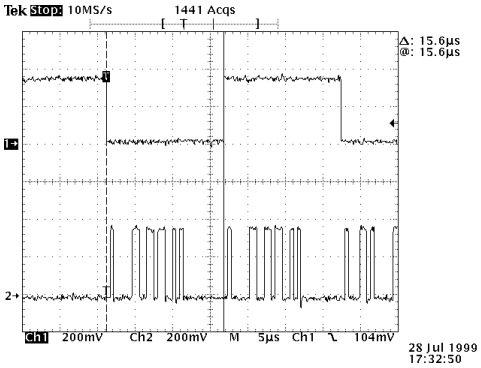


Check Point: Circuit Diagram Page22/ U400,Pin6

Check Point: Circuit Diagram Page22/ U400,Pin1

A_WS(48KHz) →

A_DATA →



Check Point: Circuit Diagram Page22/ U400,Pin2

Check Point: Circuit Diagram Page22/ U400,Pin3

- Failure Causes & Action notes

  The output level and characteristic of Audio is sensitive to R and C values. Check the soldering condition or R and C values.

  The signal levels are generated by the position of the circuit.

SECTION	MPEG and A/V Test Item

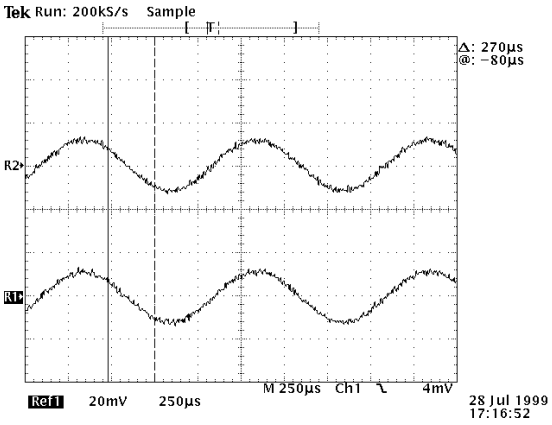
Item : DAC TDA1320 Audio Output

Symptom : Audio signal not Generating.

- If Audio signal is not generating in SCART and Phone Jack, check on two Audio DAC.
  U400 and TDA1320 generate audio signal to TV-SCART and Phone Jack.
  U401 and TDA1320 generate audio signal to VCR-SCART.
- The output level and characteristic of Audio is sensitive to R and C values. Check the soldering condition or values. Check R and C values when the certain part causes a problem.
- The picture down below shows the output wave using 1KHz Tone signal.

Audio Left →

Audio Right →



- Check Point :

  T_AOL : Circuit Diagram Page22/U400,Pin14
  T_AOR : Circuit Diagram Page22/U400,Pin16

- Failure Causes & Action notes

  If the output of Audio DAC is normal, trace each circuit to find the problem spot.

  Like Video, Audio is a part of analog, so most failures are probably found in soldering and poor components.

SECTION	MPEG and A/V Test Item

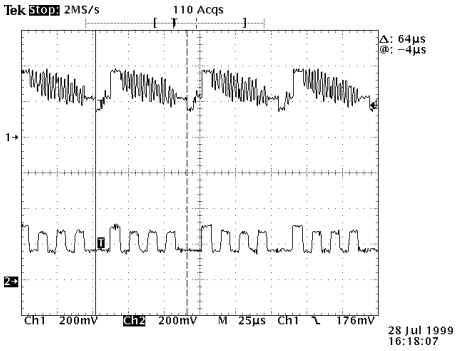
Item : Video Output

Symptom : Video signal not generating.

- If the system is normal, but Video signal does not appear by TV SCART, VCR SCART and etc., check Digital Audio Input of STV6411AD.
- The input of STV6411AD has CVBS, SVHS, R, G and B output respectively. The picture shown down below is the output pattern by using 75% color bar signal.

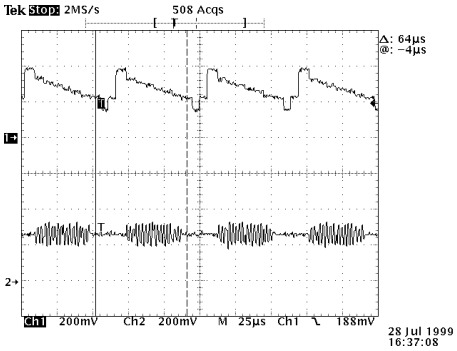
CVBS → Check Point: Circuit Diagram Page23/ U420,Pin36

Red → Check Point: Circuit Diagram Page23/ U420,Pin42



Y(Luminance) → Check Point: Circuit Diagram Page23/ U420,Pin36

C(Chromaticity) → Check Point: Circuit Diagram Page23/ U420,Pin40



- Failure Causes & Action notes

  If all outputs o0f U420 are normally generated, the error of each signals comes from the circuit. To fix the error, trace the circuit related SCART, and check the waves of each part.

  The output levels on each circuit diagram are different. The level in general is marked on the Circuit Diagram, so refer to it if necessary.

SECTION	Channel Test

Item : CHANNEL PART Servicing FLOW

Symptom : Items to be checked in case of CHANNEL PART Servicing

Locking of signal is made by TUNER 7 TDA8044, so this section will describes each part in circuit then symptom of easy checking.

1. Test POINT(Circuit Diagram Page01, Page02)
   1) TUNER : check internal power +5V
      (+4.75 ~ +5.25v)
   2) TUNER TUNING VOLTAGE : check tuning voltage 30V and RIPPLE
      (+28.5 ~ 31V / MAX 50mV)
   3) Check whether LNB POWER CONTROL signal and LNB POWER is generated
      (LNB POWER CONTROL SIGNAL → EN, VSEL)
      (LNB POWER → LNBA)
   4) Check whether 22KHz TONE wave is generated
      (400~800mV AMPLITUDE duty 45~55%)
   5) Check 479.5MHz CARRIER VCO INPUT voltage of TUNER
      (Check if it is 2.4 ~ 2.6v)
   6) Check TUNER OUTPUT I/Q voltage and wave.
      (Check if the voltage is 1.9 ~2.0v and the wave is about 600mVpp)
   7) Check TDA 8044 power 3.3v
      (Check if it is 3.2 ~ 3.4v)
   8) Check the TDA 8044 CLOCK is 4.0625MHz.
   9) When power is on, check 12C BUS LINE which generates signal by initialization of TUNER and TDA8044.
   10) Check 8044CLK and 8044VLD signal.
      (BCLK is approx. 5.4MHz and VILD is approx. 26KHz. They vary according to the SYMBOL RATE)
   11) Check if PBAD signal is 3.3V HIGH.
      (3.3 Volt HIGH should be maintained while 8bit DATA is being generated.)
      (If LOW or Negative Width, LOCK may not be working or broken.)

Each of 11 items above is described at each chapter about symptoms, causes and action notes.

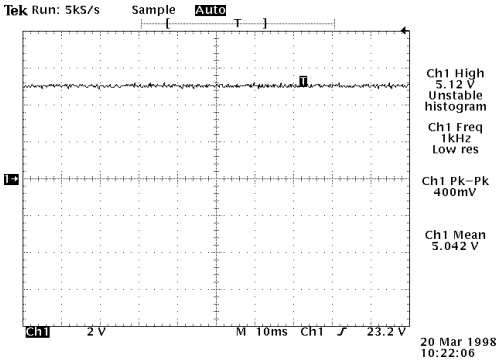
SECTION	Channel Test

Item : 1,2) TUNER working voltage and VT voltage

Symptom : LOCKING Failure.

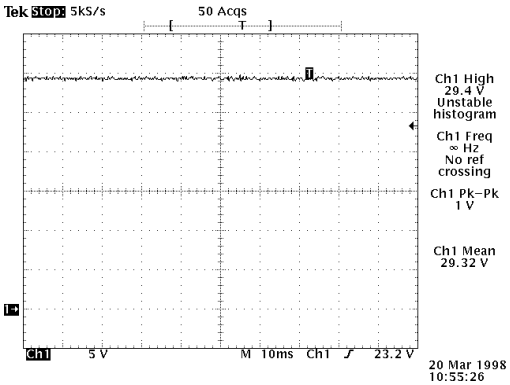
- +5V, given to TUNER Internal Working Voltage. It is one of the causes of TUNER Internal Frequency Change when the RIPPLE or the voltage is shaking. If the TUNIG VOLTAGE 30V is abnormally low and RIPPLE is more than 200mV, TUNER Internal Working voltage generates the noise of 479.5MH IF wave by living on the Local Frequency which is generated by TUNER Internal.

TUNER(+5VT) →



Check Point: Circuit Diagram Page01/ TN1,Pin8

TUNER(+30V) →



Check Point: Circuit Diagram Page01/ TN1,Pin7

- Failure Causes & Action notes

After checking the soldering condition and REG. IC Input voltage, replace 7805 and SMPS.

SECTION	Channel Test

Item : 3) 13.5 / 18V LNB Working Voltage Failure.

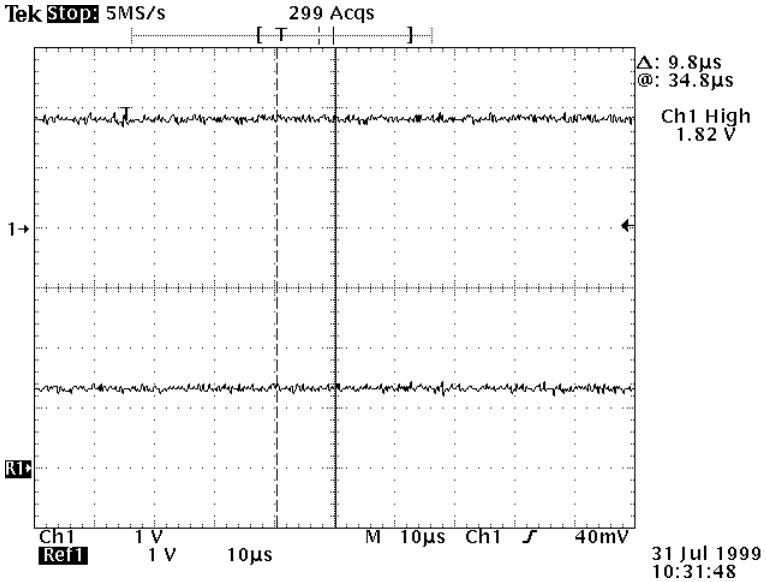
Symptom : LOCKING Failure.

- +13.5/18V, which is carried to LNB through a Tuner loop, is LNB internal voltage power. It is used as Input voltage of LNB Internal REG. In case of LNB DUAL POLA, +13.5/18V is also used during the polarization conversion of Horizontal/Vertical.
- LNB POWER CONTROL SIGNAL

  18V → VSEL(HIGH), EN(HIGH)
  13.5V → VSEL(LOW), EN(HIGH)

LNB POWER(+18V) →

LNB POWER(+13V) →



- Check Point

  LNB POWER : Circuit Diagram Page01/U2,Pin3
  VSEL : Circuit Diagram Page01/U2.Pin4
  EN : Circuit Diagram Page01/U2,Pin5

- Failure Causes & Action notes

  Check the input power of U2 and NBP15SP. If the input power is normal, replacement of the chip can be considered.

SECTION	Channel Test

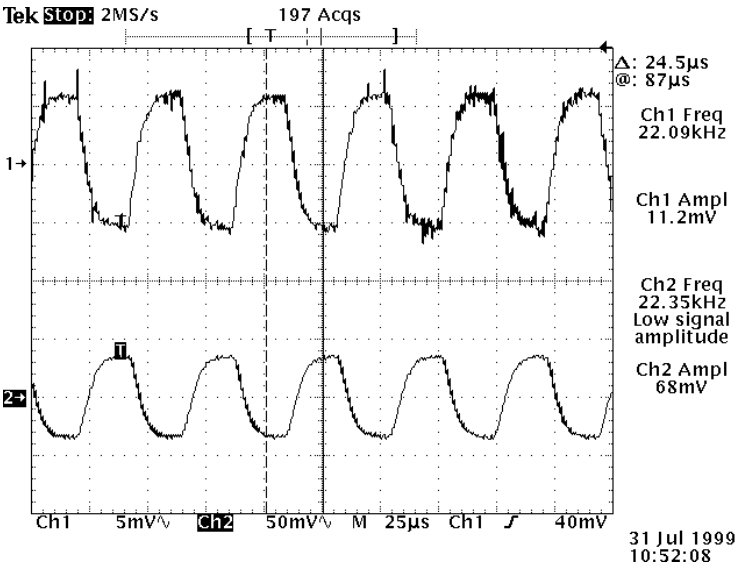
Item : 4,5) 22KHz TONE & CARRIER Voltage

Symptom : LOCKING Failure.

- 22KHz TONE is used for selecting HIGH Band (1150 – 2150MHz) and LOW Band (950 – 1150MHz). CARRIER_VCO voltage makes 479.5MKz in QPSK DEMOULATOR. 479.5MHz is used LOCAL OSC for I/Q signal.
- The picture below shows the values when the actual LNB is not loaded. If it is loaded, Amplitude should be 400~800mV and +duty should be 45~55%.

22KHz (INPUT) →

22KHz (OUTPUT) →



- Check Point

  22KHz (INPUT) : Circuit Diagram Page01/U2,Pin9
  22KHz(OUTPUT) : Circuit Diagram Page01/U2,Pin3

- Failure Causes & Action notes

  The incorrect amplitude and duty is caused by cold-soldering and wrong insertion. Check the soldering condition.

  TUNER +5V is divided into 2.6V by R4 and R5. Check U18 7805 voltage and resistance value of R4 and R5.

SECTION	Channel Test

Item : 6,7) TUNER OUTPUT I/Q & TDA 8044 Working Voltage

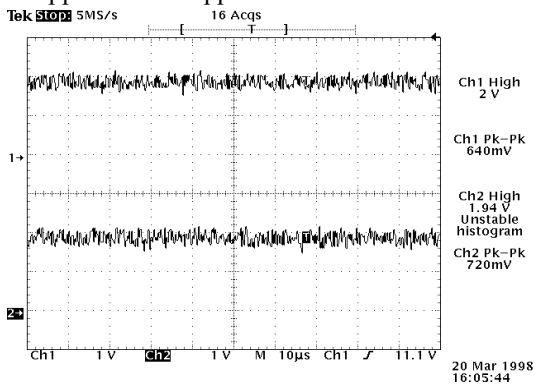
Symptom : LOCKING Failure

- I/Q signal from Tuner Output is Analog wave through QPSK Demodulator in TUNER internal. It is used A/D CONVERTOR input of next port.
  3V, which is supplied CHANNEL PART, is used the working power of TDA8044 and is separated as a pattern.

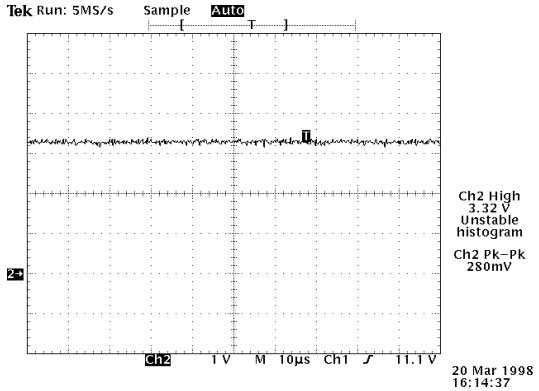
- I/Q wave has approx. 600mVpp and 1.7V ~1.9Vto BIAS in TDA8043.

I → Check Point: Circuit Diagram Page01/ TN1,Pin17

Q → Check Point: Circuit Diagram Page01/ Tn1,Pin16



3.3V → Check Point: Circuit Diagram Page02/ All power of U20



- Failure Causes & Action notes

  In cases of the BAIS voltage low or failure, check the soldering at TDA8044 power and components around TDA8044.

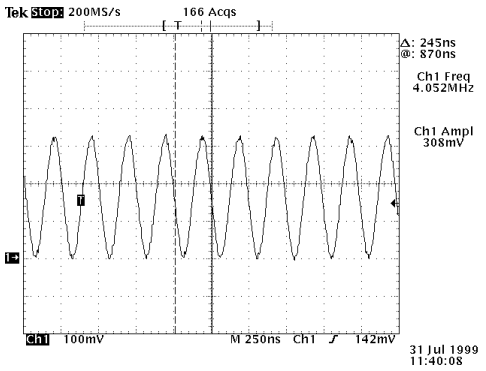
SECTION	Channel Test

Item : 8,9) TDA8044 65MHz CLOCK & I2C BUS

Symptom : LOCKING Failure

- 65MHz external Clock makes A/D Clock through internal divider and uses internal Clock(TDA8043 uses it). Check the wave from X-TAL.
- I2C BUS is generated by SAA7219 for controlling TUNER and TDA8044. 12C BUS is used for Data Setting in CHANNERL LOCKING and STATUS READING.

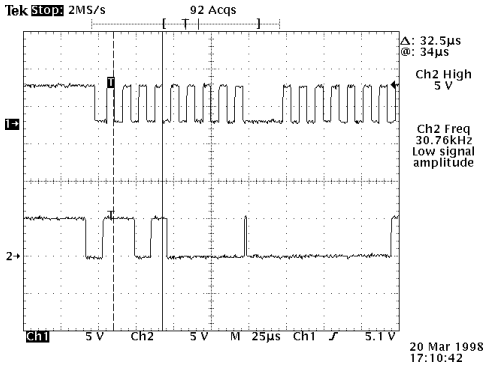
CLOCK (4.0625MHz) →



Check Point: Circuit Diagram Page02/ Y20/Pin1,2

SDA0 →

SCL0 →



Check Point: Circuit Diagram Page02/ U20,Pin53

Check Point: Circuit Diagram Page02/ U20,Pin52

- Failure Causes & Action notes

  If the wave is different from above, cold-soldering or wrong insertion is the main cause. If unlocking happens often, make sure to use the frequency counter. Since X-TAL oscillating can deviate from +/- 30ppm SPEC.

  If there is no signal in I2C BUS LINE, mostly Pins are short or system down. Re-soldering is necessary.

SECTION	Channel Test

Item : 10, 11) TDA8044 OUTPUT Signal (1)

Symptom : LOCKING Failure

- TDA8043 output signal is divided into TDA8044 Output Bit Clock(5.4 MHz), VALID(25.8KHz), 8BIT DATA, PBAD (LOW). It varies according to the setting of symbol Rate. Each signal is generated when TDA8044 internal locking is all setup.

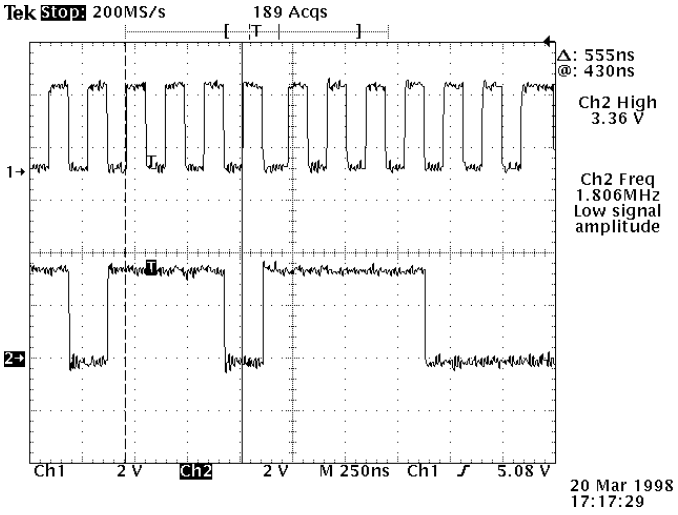
  The order of TDA8044 internal lock is ;

  1. A/D CONVERTOR → 2. DE-PUNCTURING → 3. VITERBI
  4. DE-INTERLEVING → 5. RS SOLOMOM → 6 DE-RANDOMIZER

- TDA8044 Status must be check for locking of each step, but it can be supposed that locking is successful if TDA8044 56, 57,58 PIN(DEMOD LOCK, VITERBI, R-SOLOMOM) IS 3.3v High.

TS CLOCK →

TS DATA →



- Check Point

  TS CLOCK : Circuit Diagram Page02/U20,Pin28
  TS DATA : Circuit Diagram Page02/U20,Pin29
  8044D[7..0]

- Failure Causes & Action notes

  TS DATA should be changed into 8044D[7..0] when BIT CLK is POSITIVE-EDGE.
  BIT CLOCK(R42) and 8BIT DATA is 8044 OUTPUT, and their DATA is synchronized with BIT CLOCK and generated.

  If BIT CLOCK and DATA are not coming, check the items mentioned above and replace TDA8044 after re-soldering. If TDA8044 DATA is correct but Locking is fails, check carefully it because it is caused mainly by short of the rear part at 8Bit data LINE Resistor.

Classification	SMART CARD CHECK

Item: SMART CARD INTERFACE

Symptom: SMART CARD is Not Realized or
SMART CARD is realized, but the picture is Not Descrambled due to data disturbance

The SMART CARD I/F signal contains CARD DETECT, DATA I/O, RESET, VCC_ENABLE, CARD CLOCK. Each of these functions as follows:

1) CARD DETECT: Informs SAA7219 whether the Smart Card is inserted into the SMART CARD SOCKET or not
2) DATA I/O: Serial Communication Signal (BIDIRECTION)
3) RESET: Sent to the SMART CARD in order to initialize it
4) VCC_ENABLE: Enables to supply power to the SMART CARD
5) CARD CLOCK: SMART CARD Operation Clock.

[Procedure for SMART CARD Communication]

1. Inserting the SMART CARD
   1) Insert the Smart Card into the Smart Card Slot.
   2) SAA7219 realizes the SMART CARD is inserted and CLOCK is output.
      - CLOCK is about 12MHz (This value doesn't comply with ISO7816-3)
      - The effective clock of SMART CARD is 6 MHz. This value equals to half of the clock that is generated by a 12 MHz of oscillator.
   3) Supply power to the Smart Card by activating VCC_ENABLE PIN
   4) To initialize the SMART CARD, SAA7219 switches Reset 'L' to Reset 'H'.
   5) SERIAL DATA Communication runs.
2. Extracting the SMART CARD from the IRD
   Do in reverse order to the above.

Countermeasures

- Check that the supply voltages (+3.3V and +5V) are normally applied from the main board to the smart board.
- When the Smart Card is inserted, check the voltage (0V,LOW)of pin 4 of JP700 (connector) goes up to +3.3V (HIGH). If this operation is not properly done, it results in abnormal communication (because CPU can't realize whether the card has been inserted). In this case, check the connector is correctly connected.
- When the above function is normal, check the voltage of pin 7 of JP700 (+3.3V, HIGH) goes down to 0V LOW. If this operation is not properly done, the product doesn't operate because the power is not applied to the SMART CARD. In this case, check the connector is correctly connected and monitor each signal line with using an oscilloscope.
- Check each of the other signals normally functions. (Use an oscilloscope).
- The Smart Board is not complex, so any particular defect except assay related ones doesn't happen on the board.

Classification	Channel Check (CI-5100C,VA-5200C only)

Item: Channel Part Troubleshooting

Symptom: Items to be checked when troubleshooting the Channel part

Since Tuner and BCM3118B are linked together and locked, check all controlled signals relating to Channel Part Troubleshooting.

2. Use an oscilloscope. (See the schematic diagrams to pages 29~30)
   2) Check the operation power (+5V) of Tuner
      (It must be within +4.75 ~ +5.25V)
   3) Check the operation power (+12V) of uPC2798G.
      (It must be within +11 ~ +13V)
   4) Check the power (5V) of BCM3118B.
      (It must be within +5.25 ~ +5.25V)
   5) Check the BCM3118B input signal level.
      (Make sure the signal level is about 750 mV at +2.5 V of DC level)
   6) Check XTAL (14MHz, BCM3118B clock source) oscillates.
   7) When switching into Power ON, check the I2C-bus line that is produced when initializing TUNER and BCM3118B.
   8) Check 3118D[0..7], 3118BCLK, 3118VLD, 3118STR.
      (3118BCLK varies between 0.75~7 MHz and the value depends on SYMBOL RATE and QAM constellation. 3118VLD must keep HIGH during the output of 8 bit data. 3118D[0..7] is latched at the rising edge of 3118BCLK.

2. Use a spectrum analyzer. (See the schematic diagrams to pages 29~30)
   9) Check the output spectrum of TUNER.
      (At 36.125 MHz, the signal that its bandwidth is less than 8 MHz must exist.
   9) Check XTAL (29.125MHz) oscillates.
      (If the probe is placed on XTAL in normal condition robe, locking is released and therefore 'No Picture' may happen)

Causes and appropriate countermeasures by each check item will be described in each chapter.

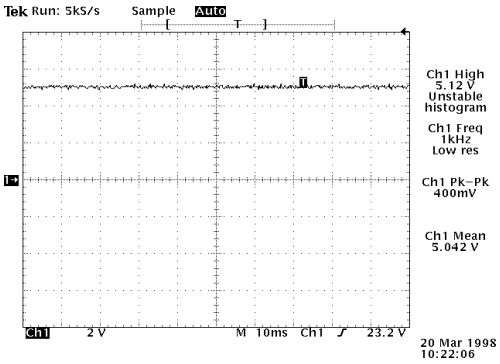
Classification	Channel Check (CI-5100C,VA-5200C only)

Item : 1,2,3) The input voltage (+5V & +12 V) of TUNER, uPC2798G and BCM3118B fails

Symptom :Locking fails.

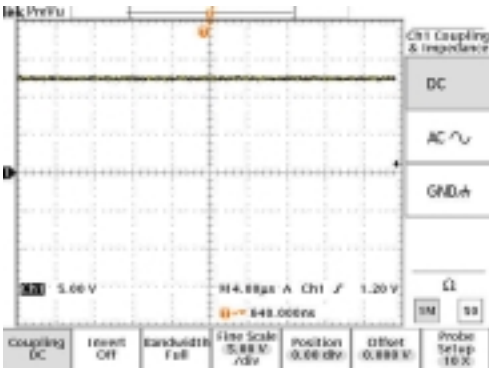
- +5V that is supplied to TUNER, uPC2798G and BCM3118B is an operating voltage. It can cause a locking failure because it fluctuates the internal frequency of Tuner when the voltage ripples and trembles.

+5V →:



Measurement:
See the schematic diagram
to Page29/U2, Pin 0,7,
U3, Pin 4,
Page 30/U5, Pin 58, 64, 65

+ 12V →



+12V Measurement : See the schematic diagram to page29/U1,Pin 3

- Cause & Countermeasure

  After checking the soldering status, check the In/Out voltage of REG. IC and (if necessary) replace 7805, 7812, SMPS.

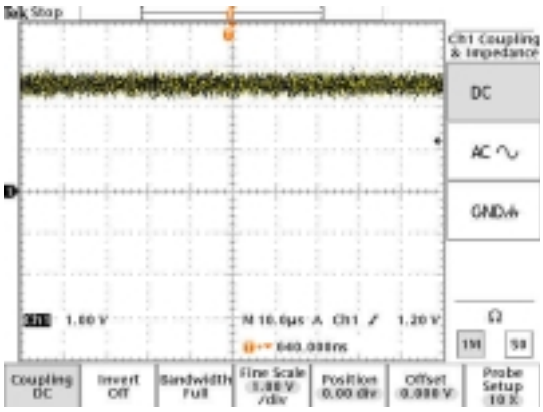
Classification	Channel Check (CI-5100C,VA-5200C only)

Item: 4) The BCM3118B input signal level doesn't reach 750 mV.

Symptom: Locking Fails.

- Even though the input voltage of the internal ADC of BCM3118B is 1 Vpeak-to-peak, the input signal level is set at 75% of the input voltage to prevent the ADC saturation. Therefore when the RF signal input is within normal range, the BCM3118B input level must be 750±100 mV peak-to-peak.

- BCM3118B Input Signal Specification
  Peak-to-peak voltage → 750 mV
  DC bias → 2.5 V



- Measurement
  BCM3118B (U5) Input Signal Level → See the schematic diagram page30/U5, pins 67, 68
  BCM3118B (U5) Output Control Signal Level → See the schematic diagram page30/U5, pin 55
  Tuner (U2) Output Signal→ See the schematic diagram page29/U2, pins 10, 11
  Tuner (U2) Control Signal→ See the schematic diagram page29/U2, pin 1
  29.125 MHz XTAL (Y1) → See the schematic diagram page29/U3, pins 9, 10
  14 MHz XTAL (Y2) → See the schematic diagram page30/U5, pins 51, 52

* Check +5V, +12V first and make sure the RF signal is correctly input.
Check the Tuner Output Spectrum (item 8). If no output signal exists at 36.125 MHz, check the voltage of Tuner (U2) pin 1. If the voltage is 0V, check the voltage of U5 pin 55 is also 0V. IF the voltage of U5 pin 55 is 0V, replace Y1 (if Y1 does not oscillate) or U5 (if Y1 oscillates) after checking XTAL(Y1). But if the voltage of U5 pin 55 is not 0V, check the soldering status at R22, 23, 24.

If the Tuner Output Spectrum doesn't exist even though the voltage of U2 pin 1is not 0V, replace the tuner (U2).

If the BCM3118B input signal level is not 750±100 mV even though the Tuner Output Spectrum exists. Check 29.125 MHz XTAL(Y1) oscillates according to item 9.

If XTAL does not oscillate, replace XTAL(Y1). And if XTAL oscillates , replace U3.

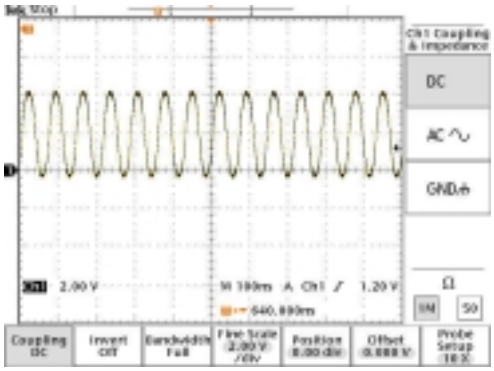
Classification	Channel Check (CI-5100C,VA-5200C only)

Item : 5) 14MHz XTAL (clock source of BCM3118B) fails in oscillation

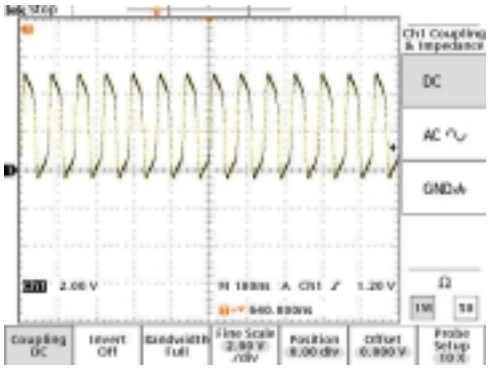
Symptom: Locking Fails

- 14MHz XTAL(Y2) functions as the Main Clock of BCM3118B (U5). If this XTAL doesn't oscillate, the FEC board will NOT operate at all.
- The output waveform of Y2 is as shown in the figure below. 14 MHz (INPUT) and 14 MHz (OUTPUT) apply to the waveforms that are measured at U5 pin 51 and 52 .

14 MHz (INPUT) →



14 MHz (OUTPUT) →



- Measurement

  14 MHz (INPUT) : See the schematic diagram page30/U5, pin 51
  14 MHz (OUTPUT) : See the schematic diagram page30/U5, pin 52

- Cause & Countermeasure

  - The oscillation of X-TAL may deviate from ± 50ppm standard. Check the oscillation of X-TAL with using the frequency counter. If it deviates from ± 50ppm, replace XTAL.
  - If the amplitude and duty of waveforms fail, replace Y2. If XTAL doesn't oscillate after replacing Y2, replace the capacitors (C26 and C29) around XTAL with 16 pF ones and check again whether XTAL oscillates. If it does not oscillate nevertheless, check +5V (supply voltage) of U5 and then replace U5.

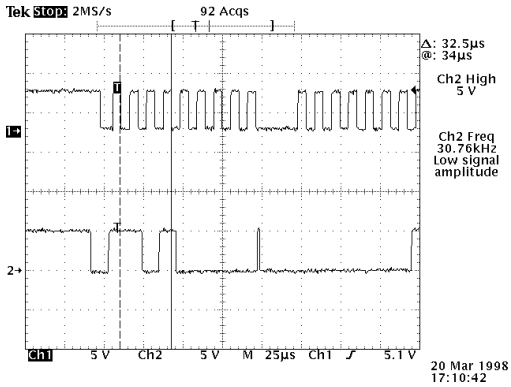
Classification	Channel Check (CI-5100C,VA-5200C only)

Item: 6) BCM3118B I2C bus signal fails

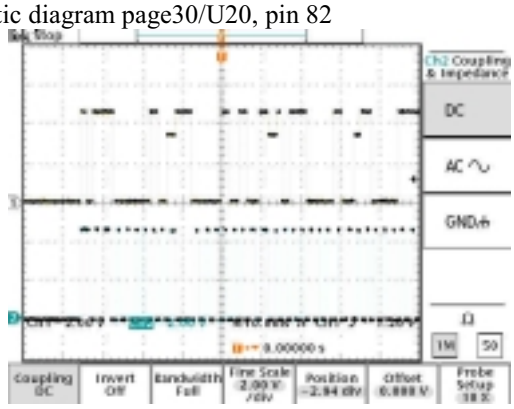
Symptom: Locking Fails

- I2C BUS signal is generated via SAA7219 and it controls BCM3118B. It is usually used to set the required data during CHANNEL LOCKING and also used to read STATUS. The tuner I2C BUS signal is generated via BCM3118B pins 82(SCL) and 83(SDA) and it is used to select the QAM signal input frequency.
-

B_SDA: See the schematic diagram page30/ U5, pin 39
B_SCL: See the schematic diagram page30/ U5, pin 40



B_SDA: See the schematic diagram page30/ U20, pin 83
B_SCL: See the schematic diagram page30/U20, pin 82



- Cause & Countermeasure

  If there is no signal in I2C BUS LINE, it is assumed that that happens because the associated pins are shorted or the system goes down. So re-solder them.

Classification	Channel Check (CI-5100C,VA-5200C only)

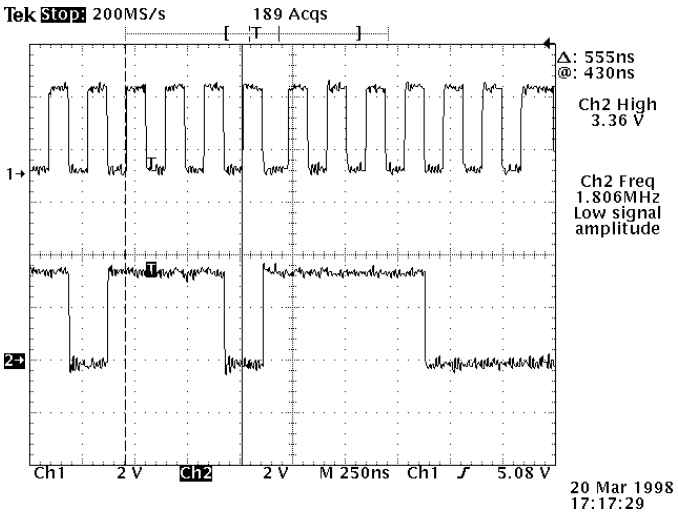
Item: 7) BCM3118B output signal fails

Symptom: A/V Decoding Fails

- BCM3118B OUTPUT includes 3118BCLK , 3118VLD, 3118D[0..7], and 3118STR. The frequency depends on the set symbol rate and QAM constellation. Each signal is generated when locking happens inside BCM3118B. The locking inside BCM3118B proceeds as follows.
  2. AGC → 2. CLOCK Sync → 3. Adaptive Equalization → 4. Carrier Sync
  5. DE-INTERLEVING → 6. R-S decoder → 7. DE-RANDOMIZER
  Whether each phase is locked can be checked by reading the BCM3118B register. Externally, whether all phases (from AGC to DE-RANDOMIZER) are locked can be only checked via pin 36(P_ERROR) locked. (If P_ERROR is 5V, it means all phases are LOCKED.)

3118BCLK →

3118D[0..7] →



- Measurement
  3118BCLK : See the schematic diagram page30/JP3, pin 9
  3118D[0..7] : See the schematic diagram page30/ JP3, pins [12..19]
  3118VLD : See the schematic diagram page30/ JP3, pin 11
  3118STR : See the schematic diagram page30/JP3, pin 10
  P_ERROR : See the schematic diagram page30/U5, pin 35

- Cause & Countermeasure

TS DATA must be changed when performing 3118BCLK POSITIVE-EDGE via 3118D [7..0]. 3118BCLK and 8 bit data are synchronized to 3118B OUTPUT and DATA to BYTE CLOCK(3118BCLK) and they are output.

If BYTE CLOCK and DATA are not output, check the above measurement items and then replace PR1,/2/3 or 3118 after re-soldering. There are cases where 3118B DATA is correct but it can't be locked. Those cases may happen because the second part of 8Bit data line resistance is SHORTED . Therefore, check carefully with your eyes.

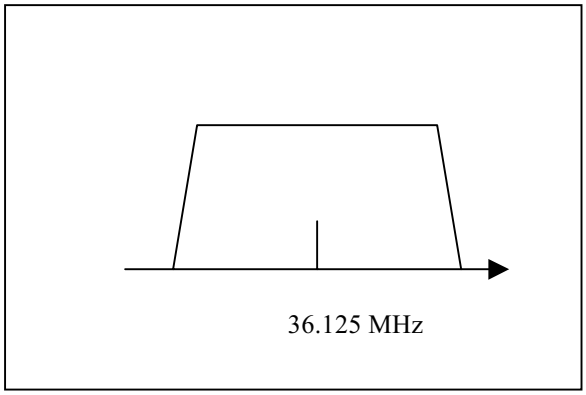
Classification	Channel Check (CI-5100C,VA-5200C only)

Item: 8) TUNER output spectrum fails

Symptom: Locking Fails

- The tuner output signal is IF signal. For cable TV, the IF signal is 36.125 MHz. The IF output level is about –10 dBm. (Use a spectrum analyzer to detect whether the signal exists. It is hard to detect whether the signal exists by using an oscilloscope.)

- Spectrum analyzer setting:
  Center Freq: 36 MHz, Freq span : 20 MHz
  VBW: 1 kHz, RBW: 30 kHz
  Ref level : -50 dBm



- Measurement

  IF + : See the schematic diagram page29/U2, pin 11
  IF - : See the schematic diagram page29/U2, pin 10

- Cause & Countermeasure

  Check the RF signal and POWER are properly input. And check the voltage of Tuner (U2) pin 1. If the voltage is 0V, check the voltage of U5 pin 55 is also 0V. If the voltage of U5 pin 55 is 0V, check XTAL(Y1) and then replace Y1 (if Y1 doesn't oscillate) or U5(if Y1 oscillates). If the voltage of U5 pin 55 is not 0V, check the soldering status at R22, 23, 24.

  If the tuner output spectrum doesn't exist, even though the voltage of U2 pin 1 is not 0V, replace TUNER(U2).

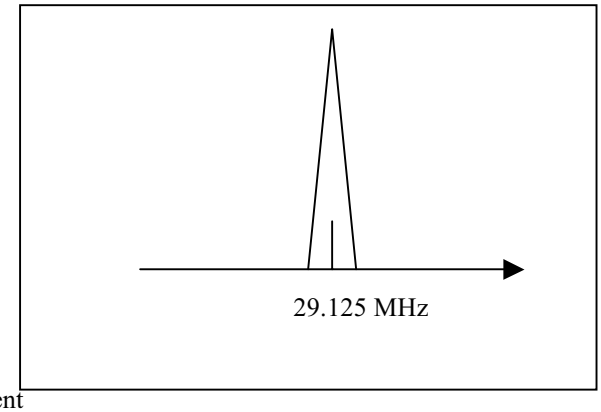
Classification	Channel Check (CI-5100C,VA-5200C only)

Item: 9) 29.125MHz XTAL fails in oscillation

Symptom: Locking Fails

- 29.125 MHz XTAL is used to down-convert 36.125 MHz of the center frequency of IF signal to 7 MHz. If 29.125 MHz XTAL doesn't oscillate, only noise is input to BCM3118B. Because the XTAL output signal has very small amplitude, use a spectrum analyzer to detect whether it oscillates. (The oscilloscope or frequency counter is not suitable.) It should be noted that "No Picture" may happen because locking is released by accessing the probe to XTAL in normal condition.

- Spectrum analyzer setting:
  Center Freq: 29.125 MHz, Freq span : 1 MHz
  VBW: 1 kHz, RBW: 30 kHz
  Ref level : -60 dBm

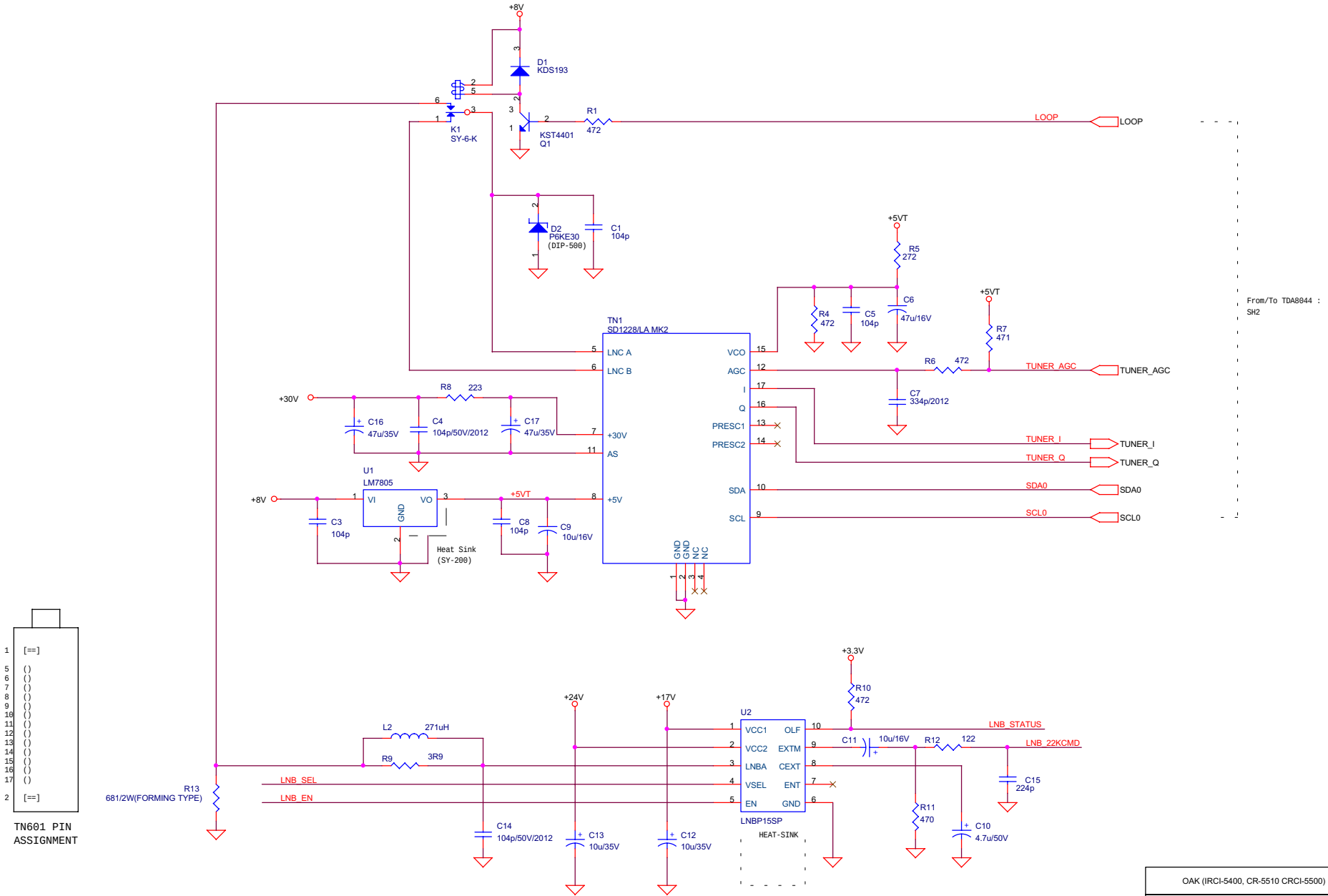


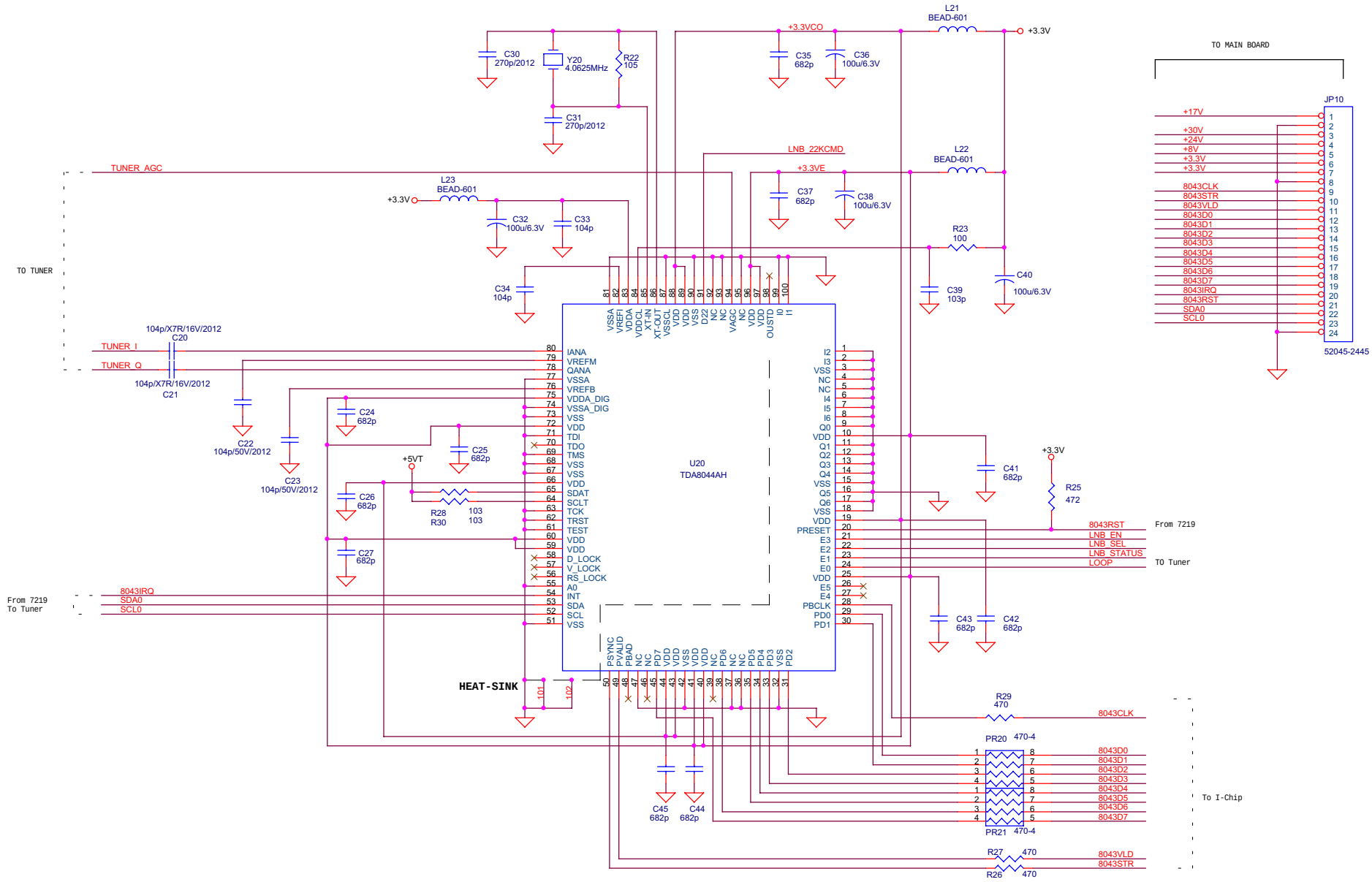
- Measurement

  See the schematic diagram page29/U5, pin 10

- Cause & Countermeasure

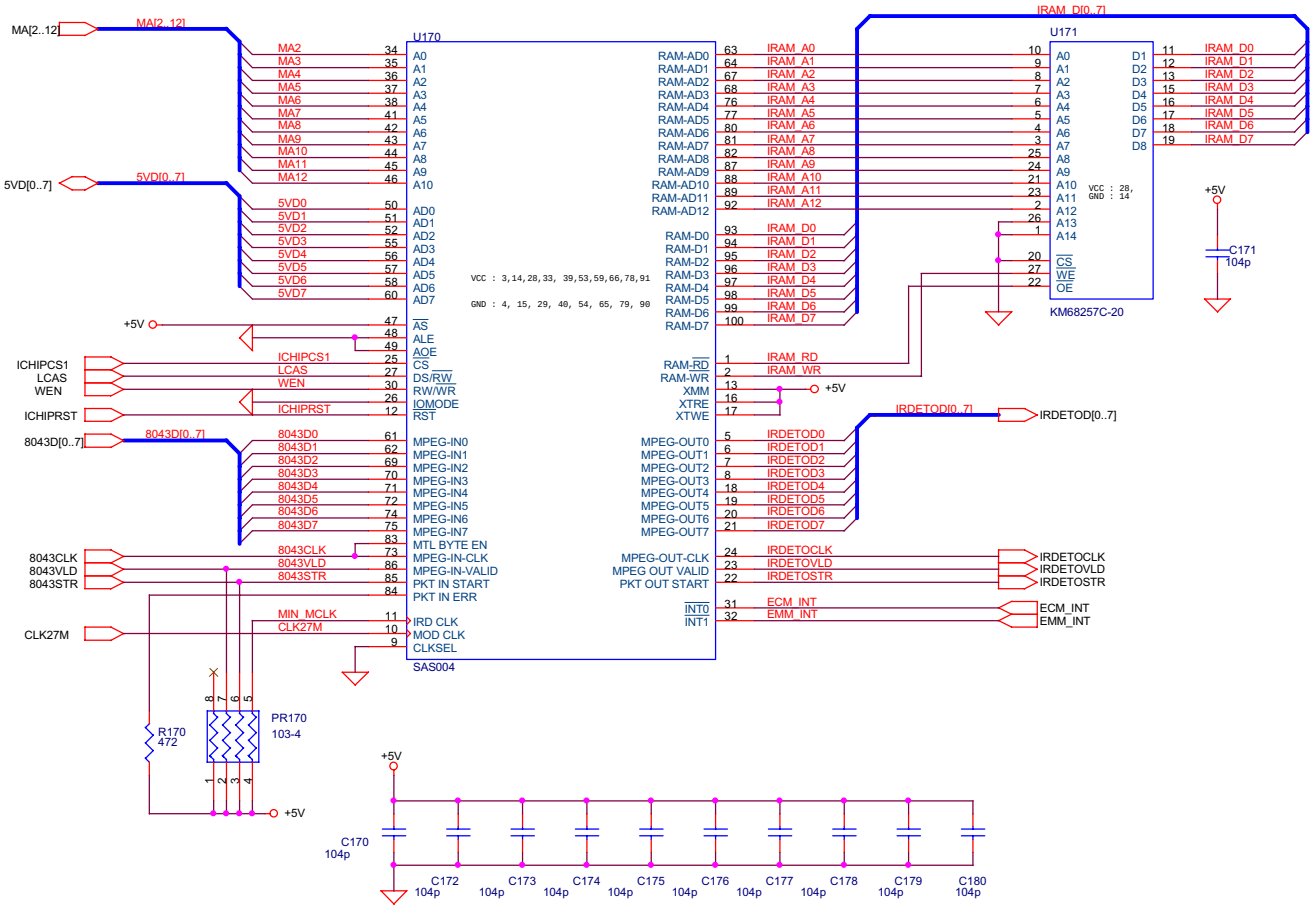
Check +12V POWER is normally supplied. If 29.125 MHz spectrum doesn't exist, even though power is supplied, replace XTAL(Y1) . It may be damaged.


+8V
D1
KDS193
K1
SY-6-K
KST4401
Q1
R1
472
LOOP
D2
P6KE30
(DIP-500)
C1
104p
+5VT
R5
272
R4
472
C5
104p
C6
47u/16V
R7
471
From/To TDA8044 :
SH2
TN1
SD1228/LA MK2
LNC A
LNC B
VCO
AGC
I
Q
PRESC1
PRESC2
SDA
SCL
GND
GND
NC
NC
R6
472
TUNER_AGC
C7
334p/2012
TUNER_I
TUNER_Q
SDA0
SCL0
+30V
R8
223
C16
47u/35V
C4
104p/50V/2012
C17
47u/35V
AS
U1
LM7805
VI
VO
GND
C3
104p
C8
104p
C9
10u/16V
Heat Sink
(SY-200)
+3.3V
R10
472
U2
VCC1
VCC2
LNBA
VSEL
EN
OLF
EXTM
CEXT
ENT
GND
LNBP15SSP
HEAT-SINK
LNB_STATUS
C11
10u/16V
R12
122
LNB_22KCMD
C15
224p
R11
470
C10
4.7u/50V
+24V
+17V
L2
271uH
R9
3R9
LNB_SEL
LNB_EN
R13
681/2W(FORMING TYPE)
C14
104p/50V/2012
C13
10u/35V
C12
10u/35V
TN601 PIN
ASSIGNMENT
All locations are from 1 to 19 in this page.
OAK (IRCI-5400, CR-5510 CRCI-5500)
Channel Part
Custom
Tuner
Rev
1.0
Thursday, June 08, 2000
Sheet 1 of 30



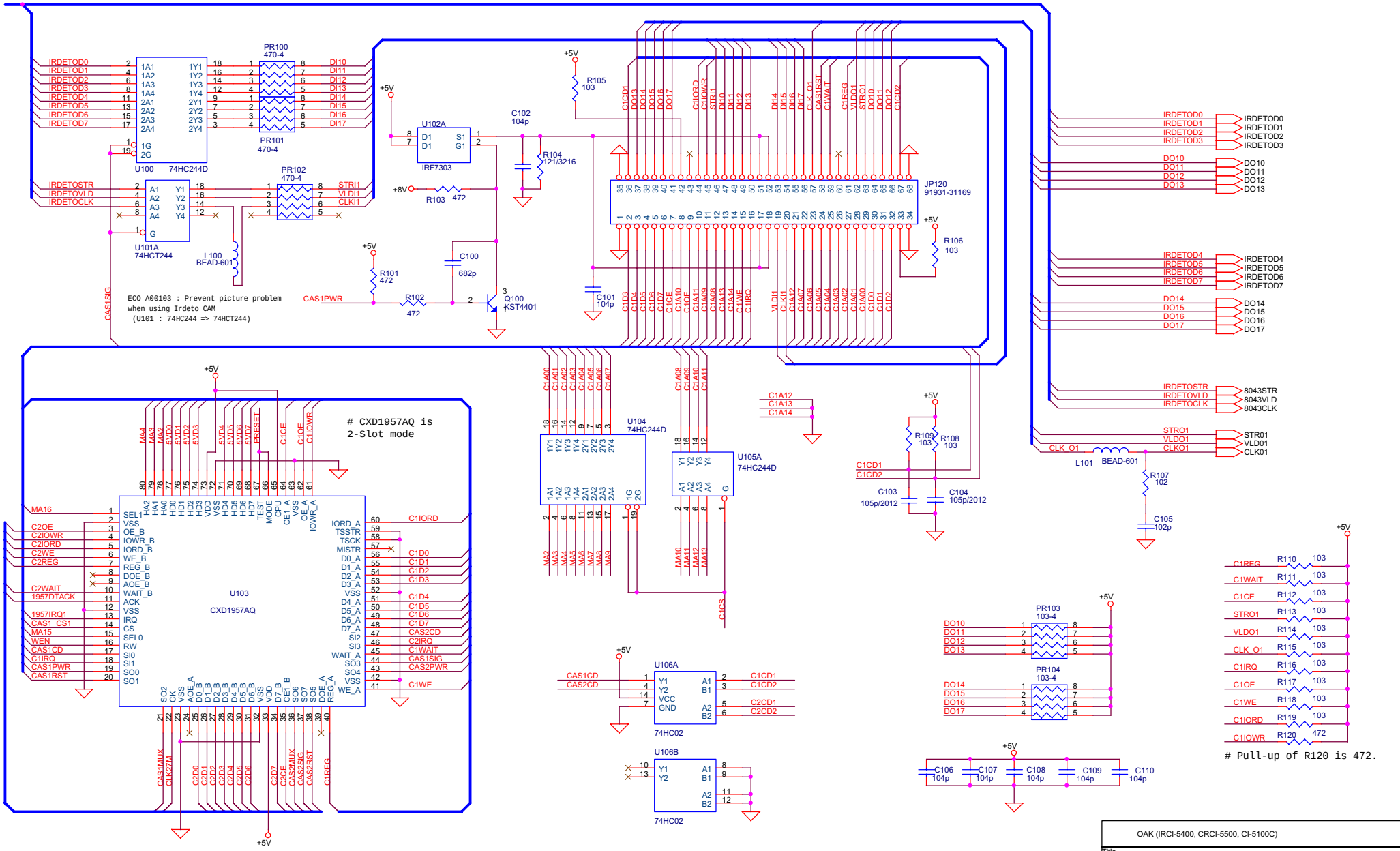
All locations are from 20 to 49 in this page.

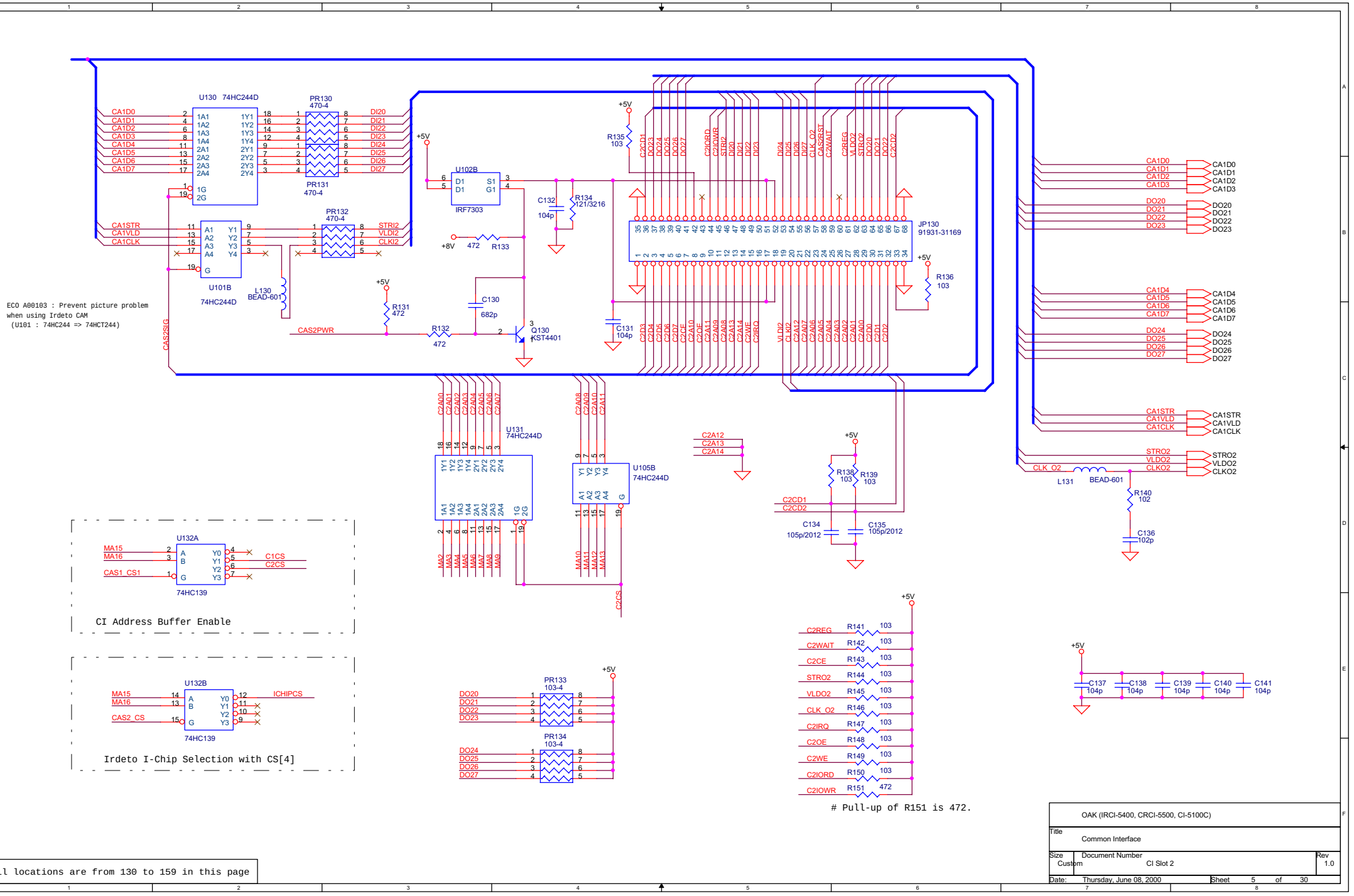
OAK (IRCI-5400, CR-5510, CRCI-5500)		
Title: Channel Part		
Size: Custom	Document Number: 8044 QPSK	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 2 of 30	



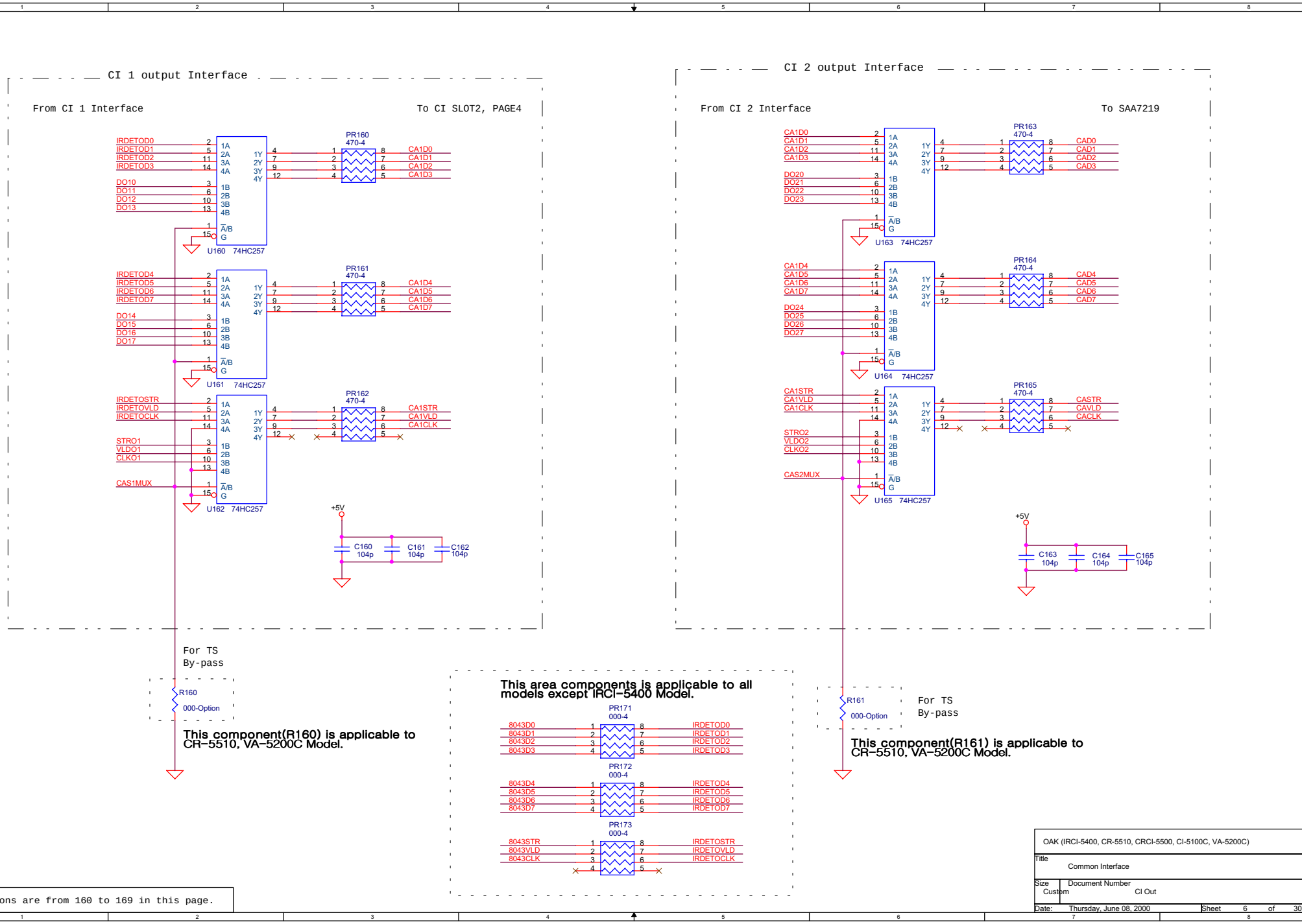
All locations are from 170 to 189 in this page.

OAK (ONLY IRCI-5400)		
Title: IChip		
Size: Custom	Document Number: IChip	Rev: 1.0
Date: Wednesday, May 31, 2000	Sheet 3 of 30	


U100 74HC244D
U101A 74HCT244
PR100 470-4
PR101 470-4
PR102 470-4
U102A IRF7303
JP120 91931-31169
L100 BEAD-601
L101 BEAD-601
ECO A00103 : Prevent picture problem when using Irdeto CAM (U101 : 74HC244 => 74HCT244)
U103 CXD1957AQ
CXD1957AQ is 2-Slot mode
U104 74HC244D
U105A 74HC244D
U106A 74HC02
U106B 74HC02
PR103 103-4
PR104 103-4
Pull-up of R120 is 472.
All locations are from 100 to 129 in this page.
OAK (IRCI-5400, CRCI-5500, CI-5100C)
Title Common Interface
Size Custom
Document Number CI Slot 1
Rev 1.0
Date: Thursday, June 08, 2000
Sheet 4 of 30

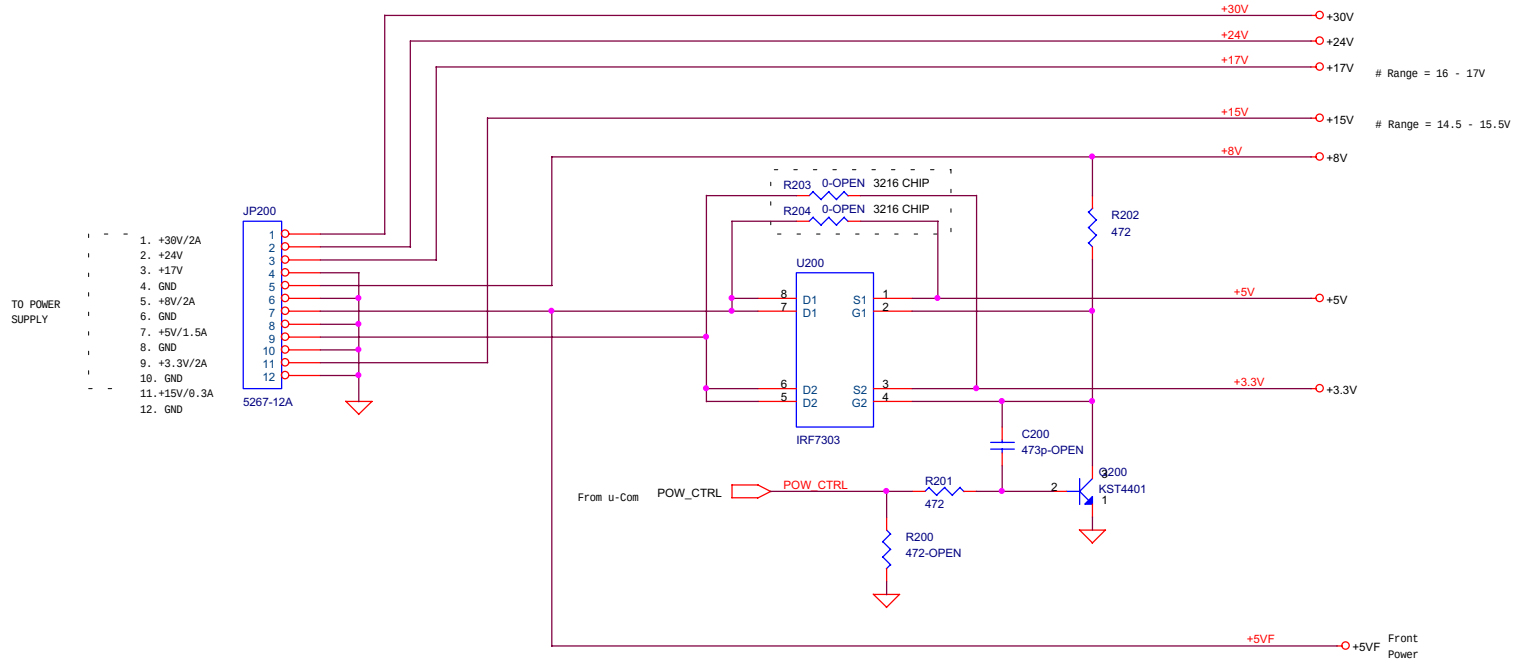

U130 74HC244D
PR130 470-4
PR131 470-4
PR132 470-4
U101B 74HC244D
L130 BEAD-601
U102B
IRF7303
R133 472
R134 121/3216
C132 104p
R135 103
C130 682p
R131 472
R132 472
Q130 KST4401
C131 104p
JP130 91931-31169
R136 103
ECO A00103 : Prevent picture problem when using Irdeto CAM (U101 : 74HC244 => 74HCT244)
U131 74HC244D
U105B 74HC244D
C2A12
C2A13
C2A14
R138 103
R139 103
C134 105p/2012
C135 105p/2012
R140 102
C136 102p
L131 BEAD-601
U132A
74HC139
C1CS
C2CS
CI Address Buffer Enable
U132B
74HC139
ICHIPCS
Irdeto I-Chip Selection with CS[4]
PR133 103-4
PR134 103-4
R141 103
R142 103
R143 103
R144 103
R145 103
R146 103
R147 103
R148 103
R149 103
R150 103
R151 472
Pull-up of R151 is 472.
C137 104p
C138 104p
C139 104p
C140 104p
C141 104p
All locations are from 130 to 159 in this page
OAK (IRCI-5400, CRCI-5500, CI-5100C)
Common Interface
CI Slot 2
Custom
Rev 1.0
Thursday, June 08, 2000
Sheet 5 of 30

de}



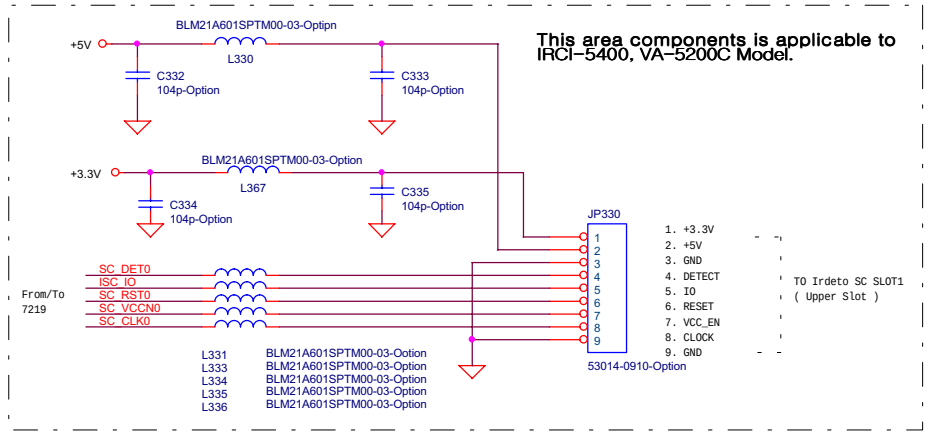
All locations are from 160 to 169 in this page.

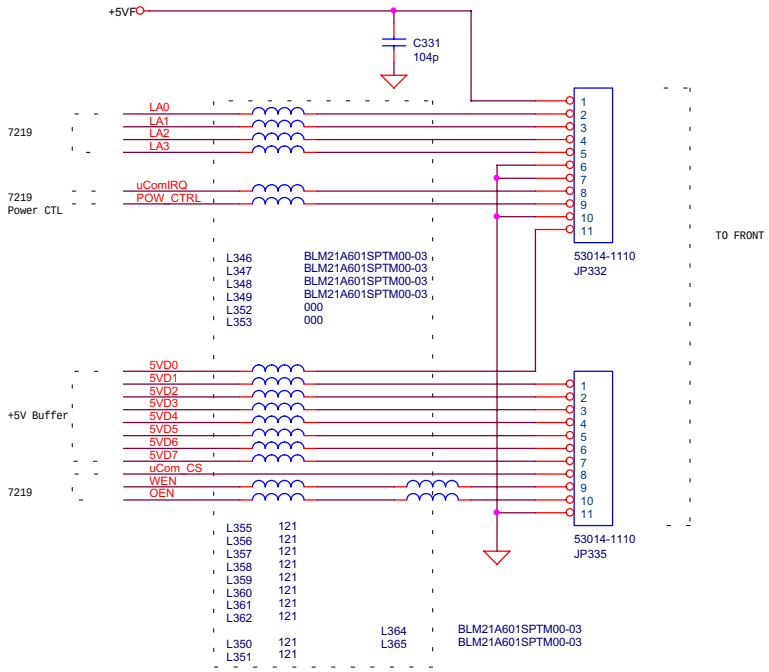
OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C, VA-5200C)		
Title: Common Interface		
Size: Custom	Document Number: CI Out	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 6 of 30	



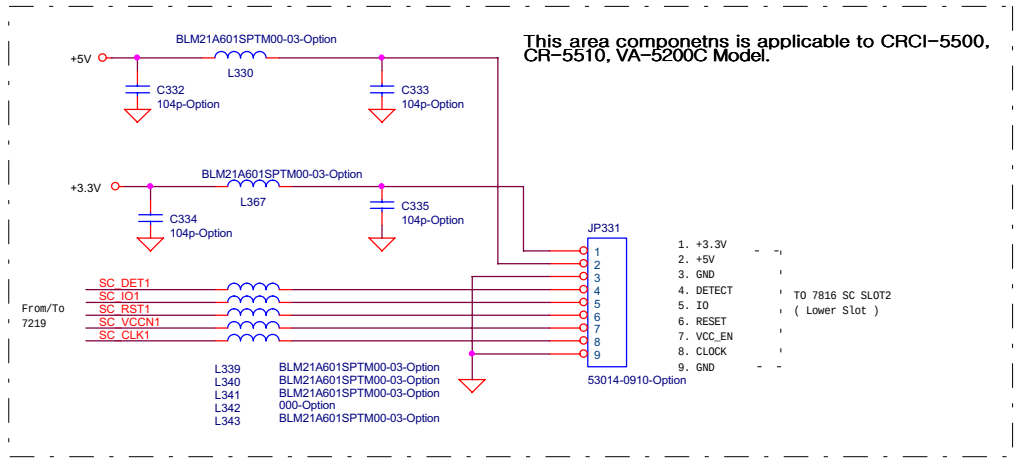
All locations are from 190 to 209 in this page.

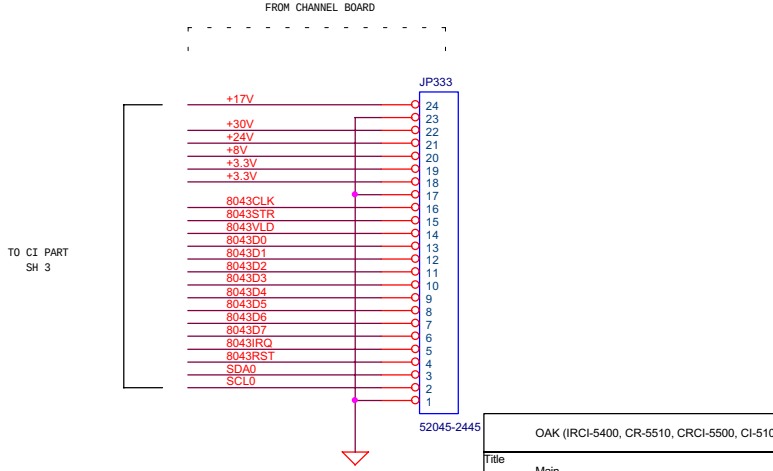
OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: Power Control	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 7 of 30	





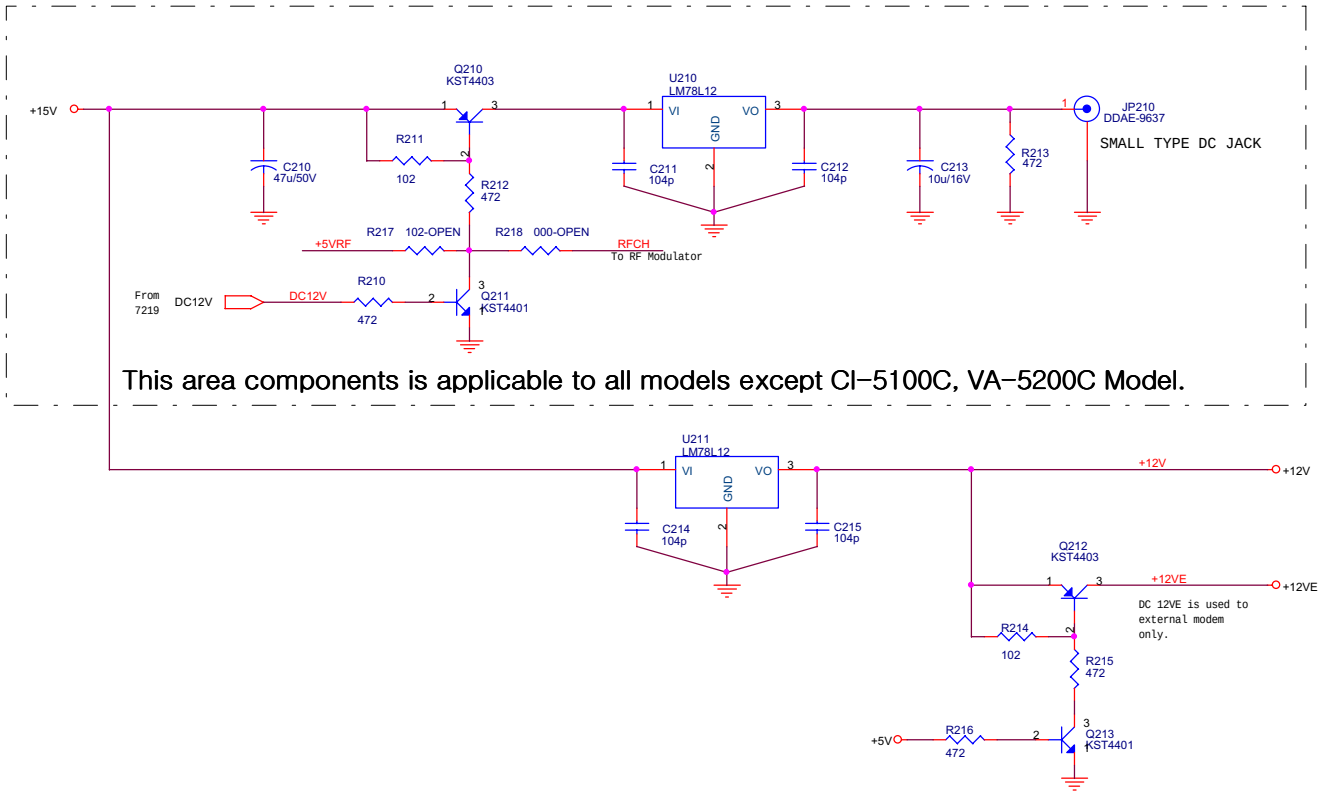
L363 of uCOM_CS is located near
7219 uCOM_CS OUT as L221
Bead-601 is replaced by BLM21B222SB for EMI





Location Number of 'L' is from 330 to 367.
And others are from 330 to 339.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: Main Connector	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 8 of 30	



All locations are from 210 to 219

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: DC 12V	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 9 of 30	

*** Note***

R232 is only for VA-5200C Model.

R231 is applicable to all models except VA-5200C Model.

R236 is only for IRCI-5400 Model

SAA7219HS/C1

U220

VDDP : 3, 17, 27, 31, 43, 66, 79, 80, 92, 115, 130, 145, 182, 187

VSSP : 10, 23, 26, 37, 57, 72, 78, 86, 104, 127, 131, 170, 183, 198

SQFP208

L222 BLM21A601SPTM00-03

L221 BLM21A601SPTM00-03

L224 BEAD-601-Option

L223 000-Option

L220 BEAD-330

L224 is to connector

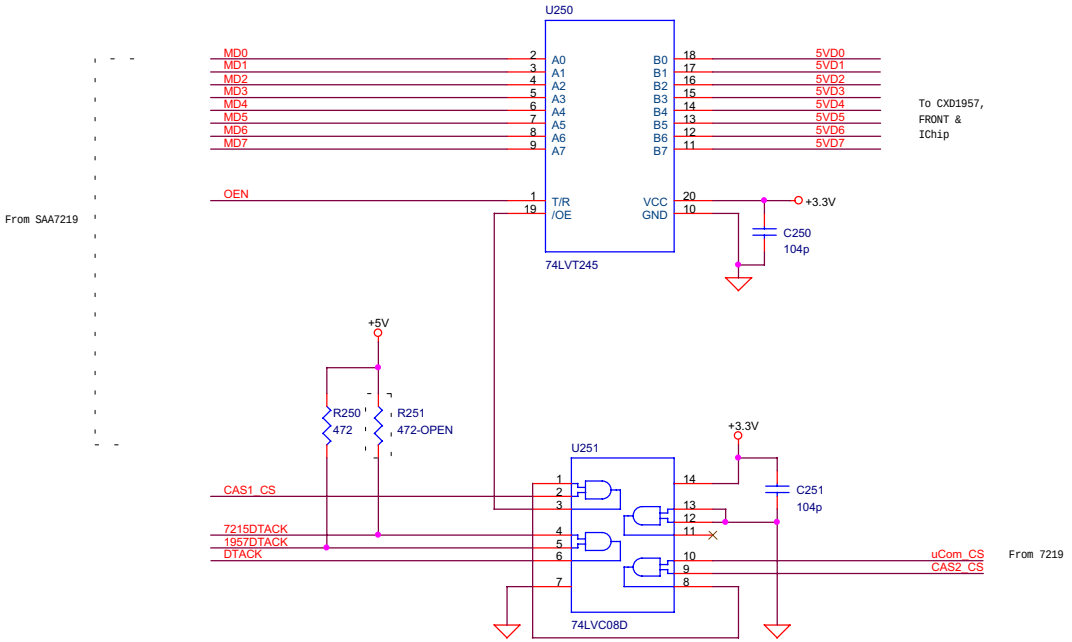
This area components is applicable to IRCI-5400 Model.

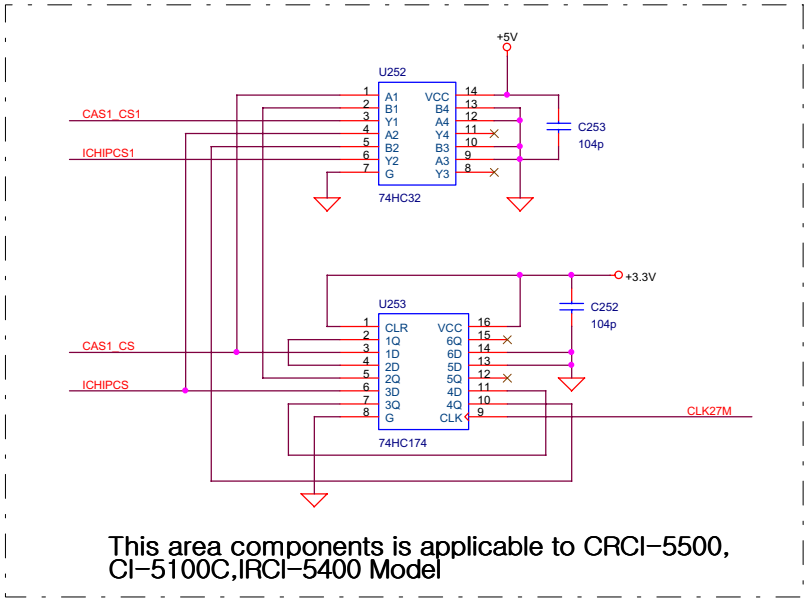
This area components is applicable to IRCI-5400 Model.

F210 is replaced by 50M Filter(NFM51R00P506)

All locations are from 220 to 249 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)	
Title: Main	
Size: Custom	Document Number: Demux - CPU
Rev: 1.0	
Date: Thursday, June 08, 2000	Sheet 10 of 30





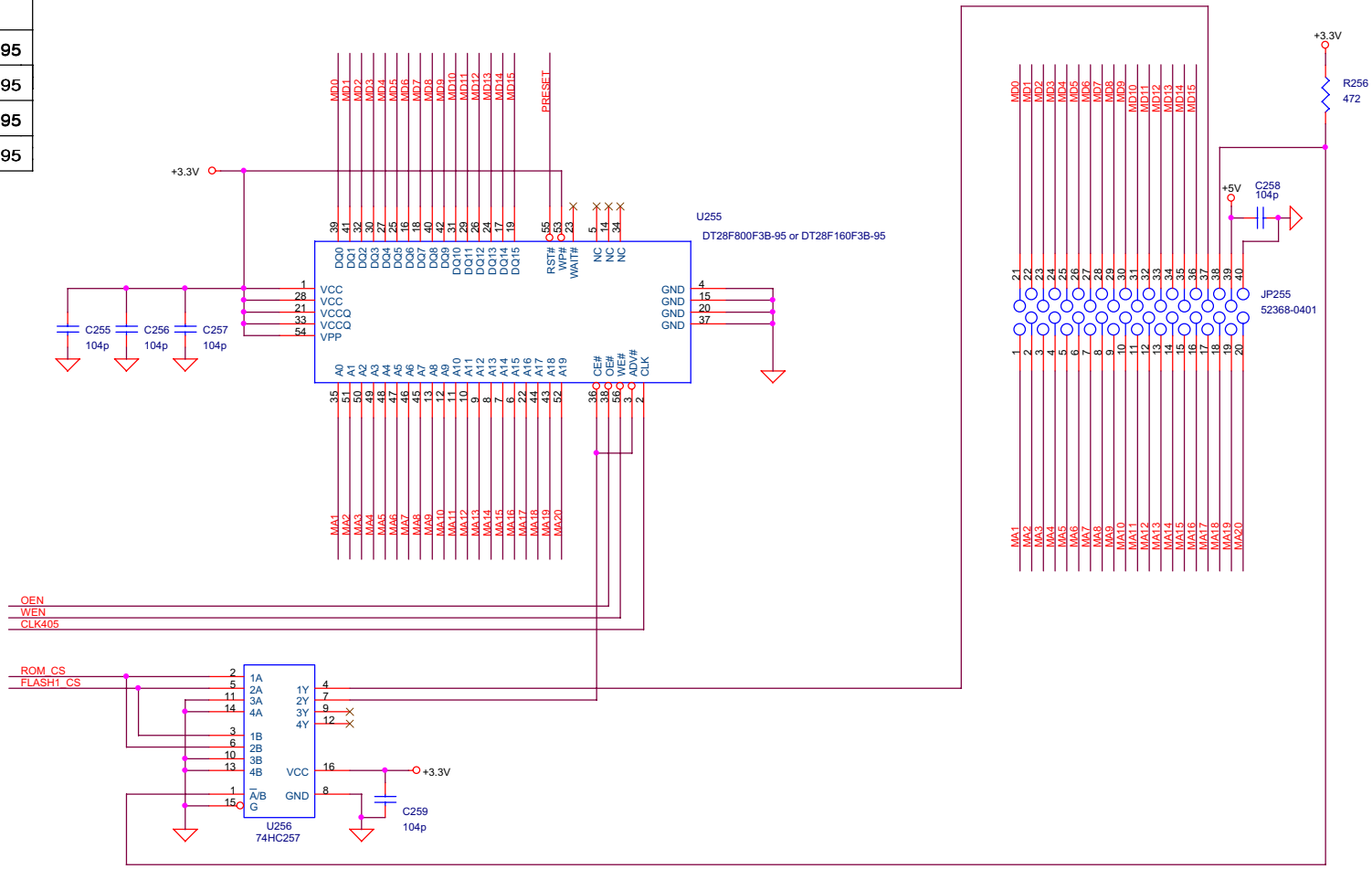
5V Data IC = CXD1957, u-COM, I-Chip

All locations are from 250 to 254 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: +5V Buffer	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 11 of 30	

Flash memory size table

MODEL	Used Flash memory
CI-5100C	DT28F800F3B-95
CR-5510	DT28F160F3B-95
CRCI-5500	DT28F160F3B-95
VA-5200C	DT28F160F3B-95
IRCI-5400	DT28F160F3B-95



All locations are from 255 to 259 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)

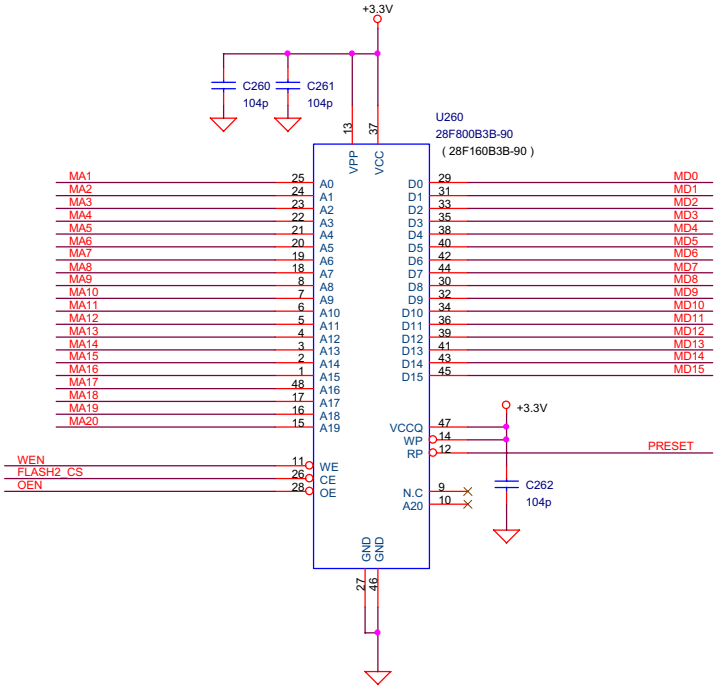
Title: Main

Size: Custom | Document Number: Flash 1 (8M) | Rev: 1.0

Date: Thursday, June 08, 2000 | Sheet 12 of 30

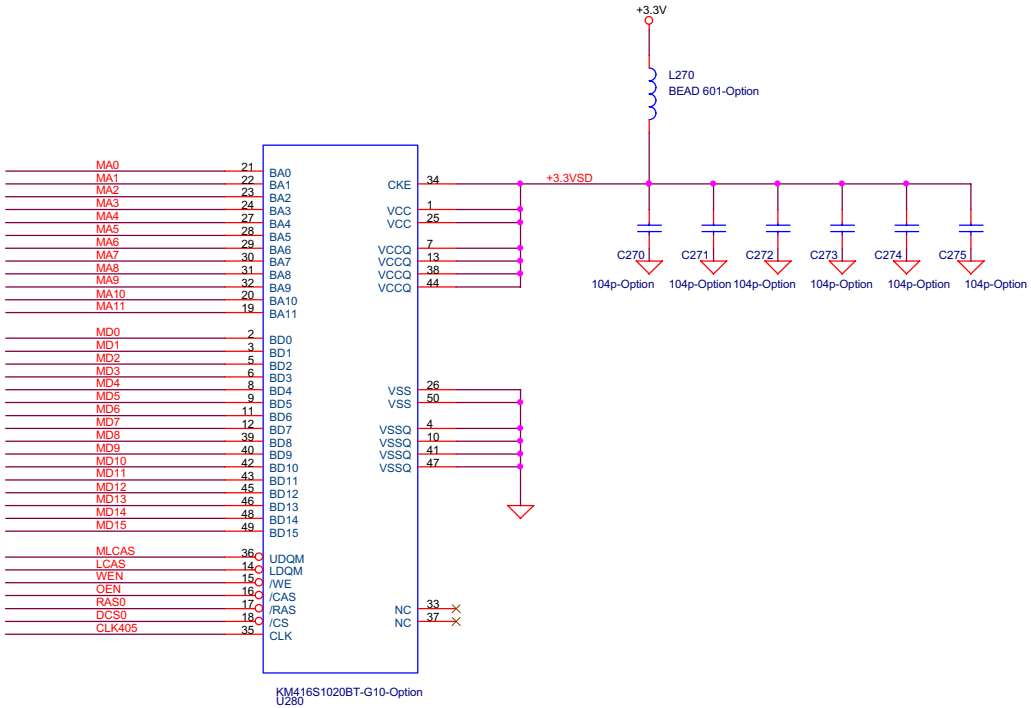
Flash memory size table

MODEL	Used Flash memory
CRCI-5500	28F800B3B-90
CR-5510	28F800B3B-90
CI-5100C	28F800B3B-90
VA-5200C	28F800B3B-90
IRCI-5400	28F160B3B-90



All locations are from 260 to 269 in this page.

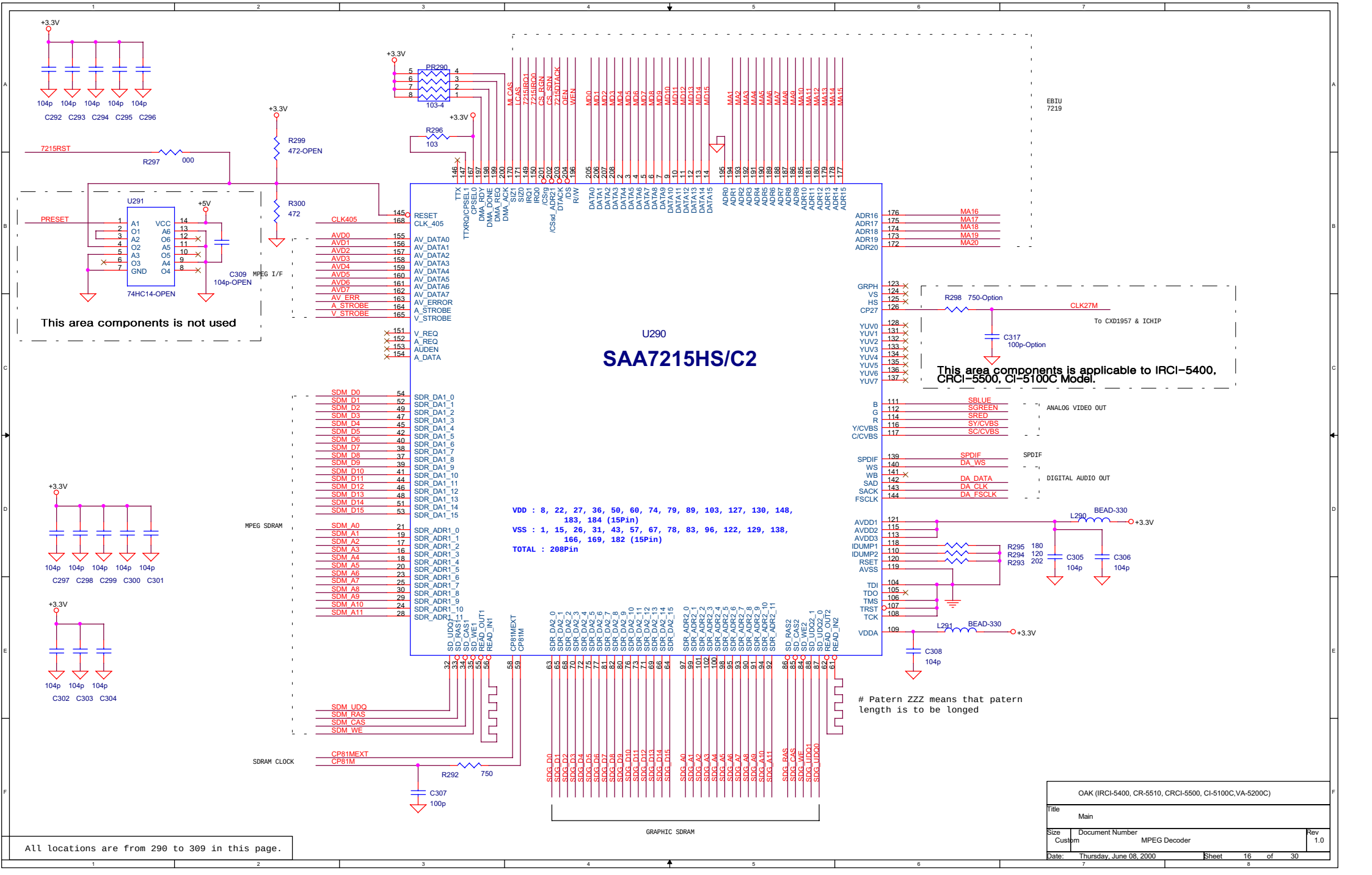
OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: Flash 1 (8M)	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 13 of 30	

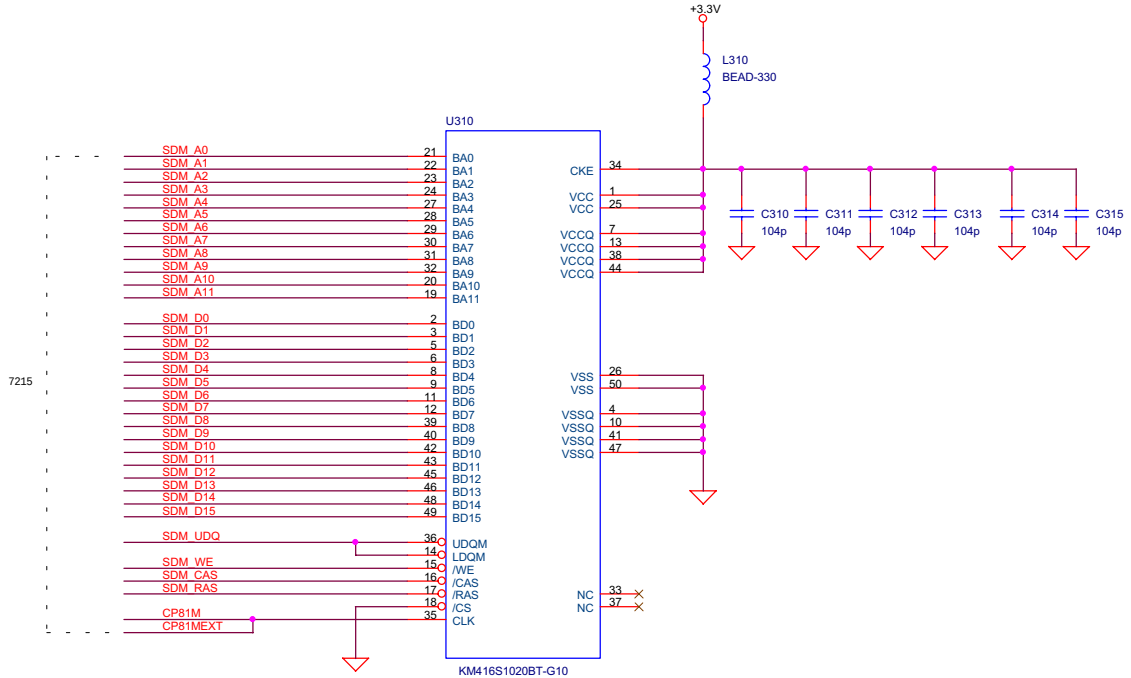


Option : U270 or 280

All locations are from 280 to 289 in this page.

OAK (ONLY IRCI-5400)		
Title: Main		
Size: Custom	Document Number: 16M SDRAM	Rev: 1.0
Date: Wednesday, May 31, 2000	Sheet 15 of 30	

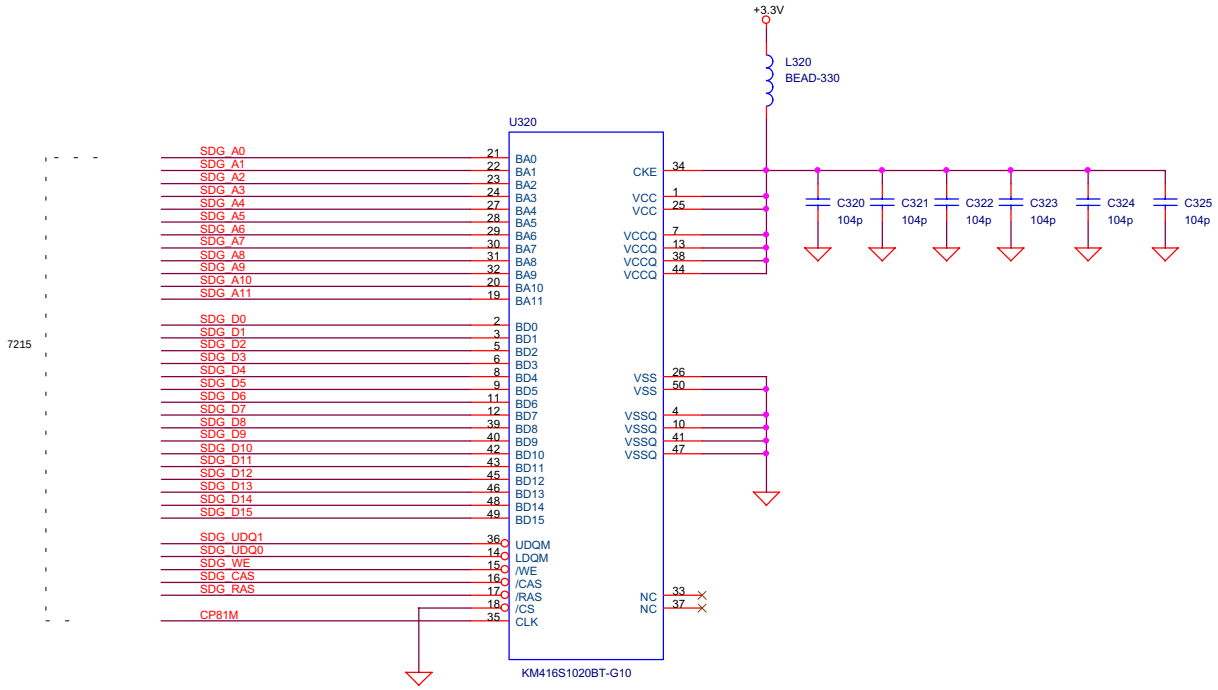

U290
SAA7215HS/C2
VDD : 8, 22, 27, 36, 50, 60, 74, 79, 89, 103, 127, 130, 148, 183, 184 (15Pin)
VSS : 1, 15, 26, 31, 43, 57, 67, 78, 83, 96, 122, 129, 138, 166, 169, 182 (15Pin)
TOTAL : 208Pin
EBIU 7219
MPEG SDRAM
SDRAM CLOCK
GRAPHIC SDRAM
ANALOG VIDEO OUT
DIGITAL AUDIO OUT
SPDIF
This area components is not used
This area components is applicable to IRCI-5400, CRCI-5500, CI-5100C Model.
To CXD1957 & ICHIP
74HC14-OPEN
C309 MPEG I/F 104p-OPEN
Patern ZZZ means that patern length is to be longed
All locations are from 290 to 309 in this page.
OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)
Title Main
Size Custom
Document Number MPEG Decoder
Rev 1.0
Date: Thursday, June 08, 2000
Sheet 16 of 30



All locations are from 310 to 319 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)

Title: Main		
Size: Custom	Document Number: MPEG SDRAM	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 17 of 30	

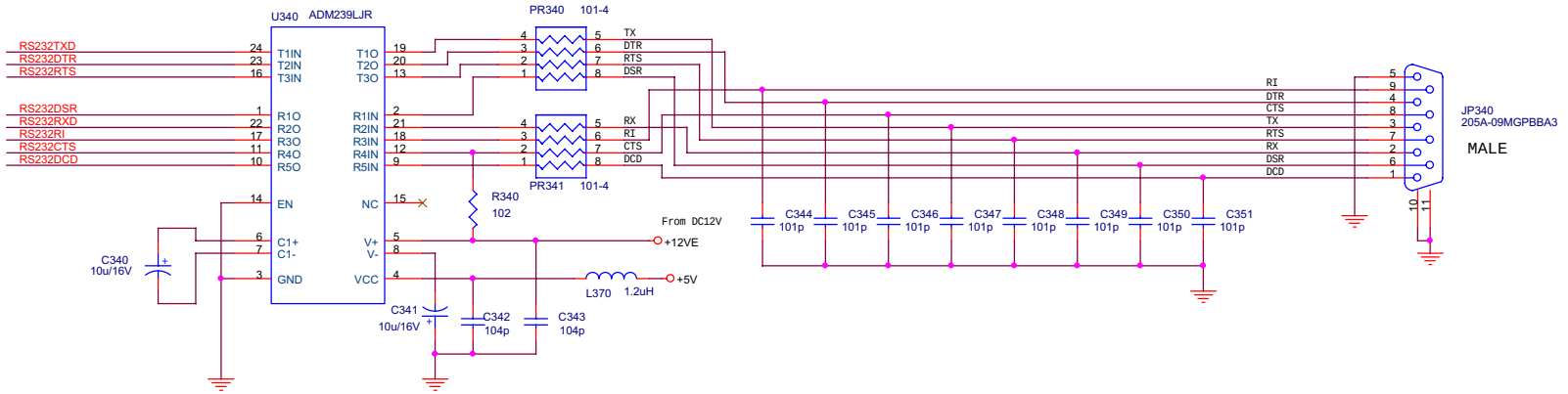


All locations are from 320 to 329 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: OSD SDRAM	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 18 of 30	

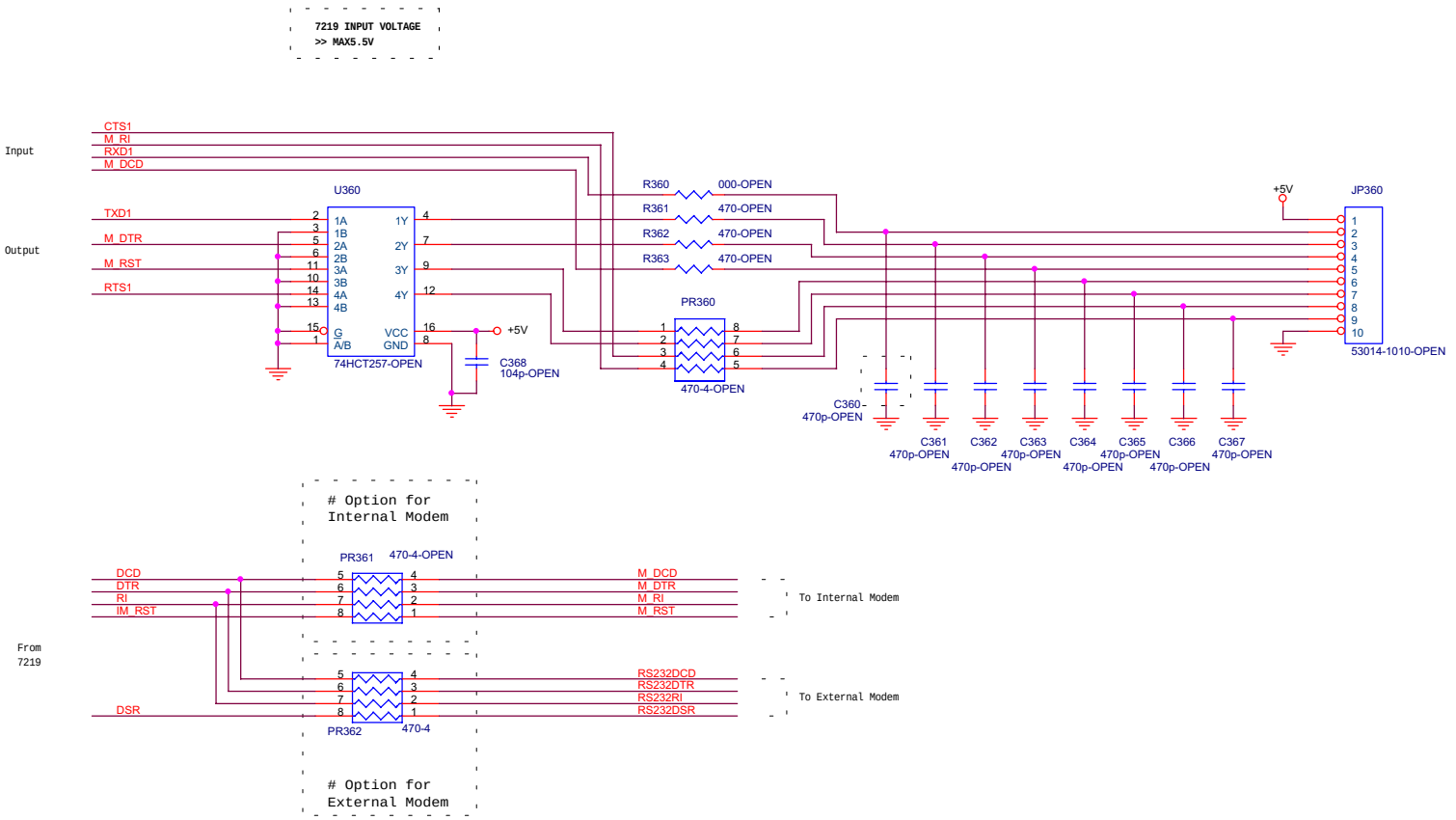
[9-Pin Serial port connector specification : Male-PC)

Pin#	Name	Abs.	Direction
1	Data carrier detect	DCD	In
2	Receive data	Rx	In
3	Trasnmit data	Tx	Out
4	Data ternimal ready	DTR	Out
5	Signal ground	GND	
6	Data set ready	DSR	In
7	Request to send	RTS	OUT
8	Clear to send	CTS	In
9	Ring indicator	RI	In



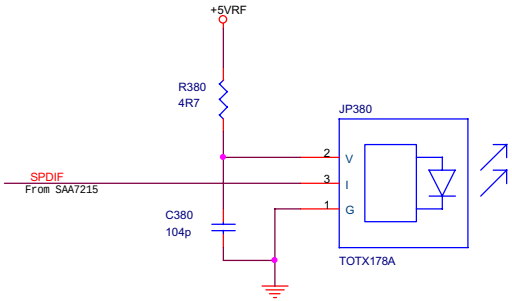
Location Number of 'L' is 370.
And others are from 340 to 359.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: External Modem	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 19 of 30	



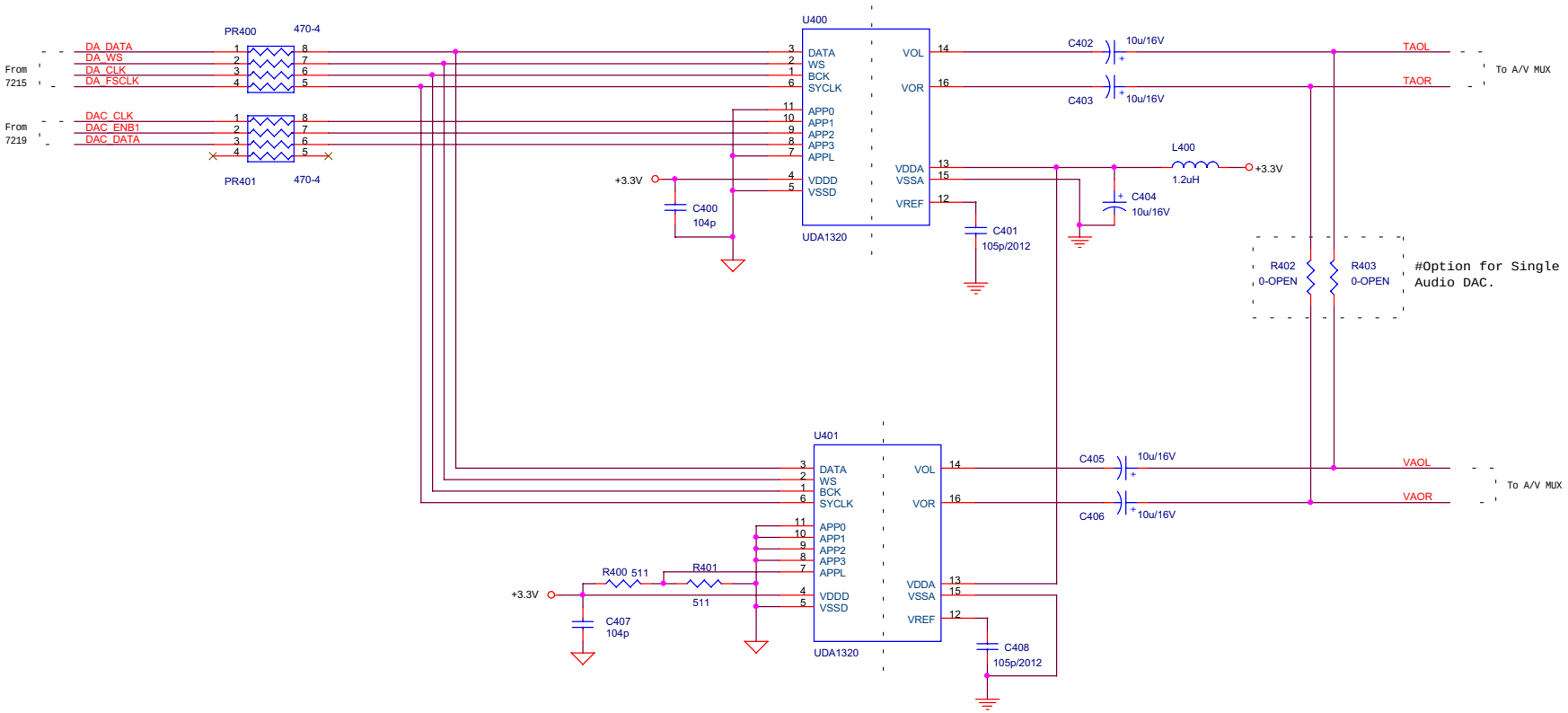
Location Number of 'L' is from 372 to 379.
And others are from 360 to 379.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: Internal Moder	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 20 of 30	



All locations are from 380 to 389 in this page.

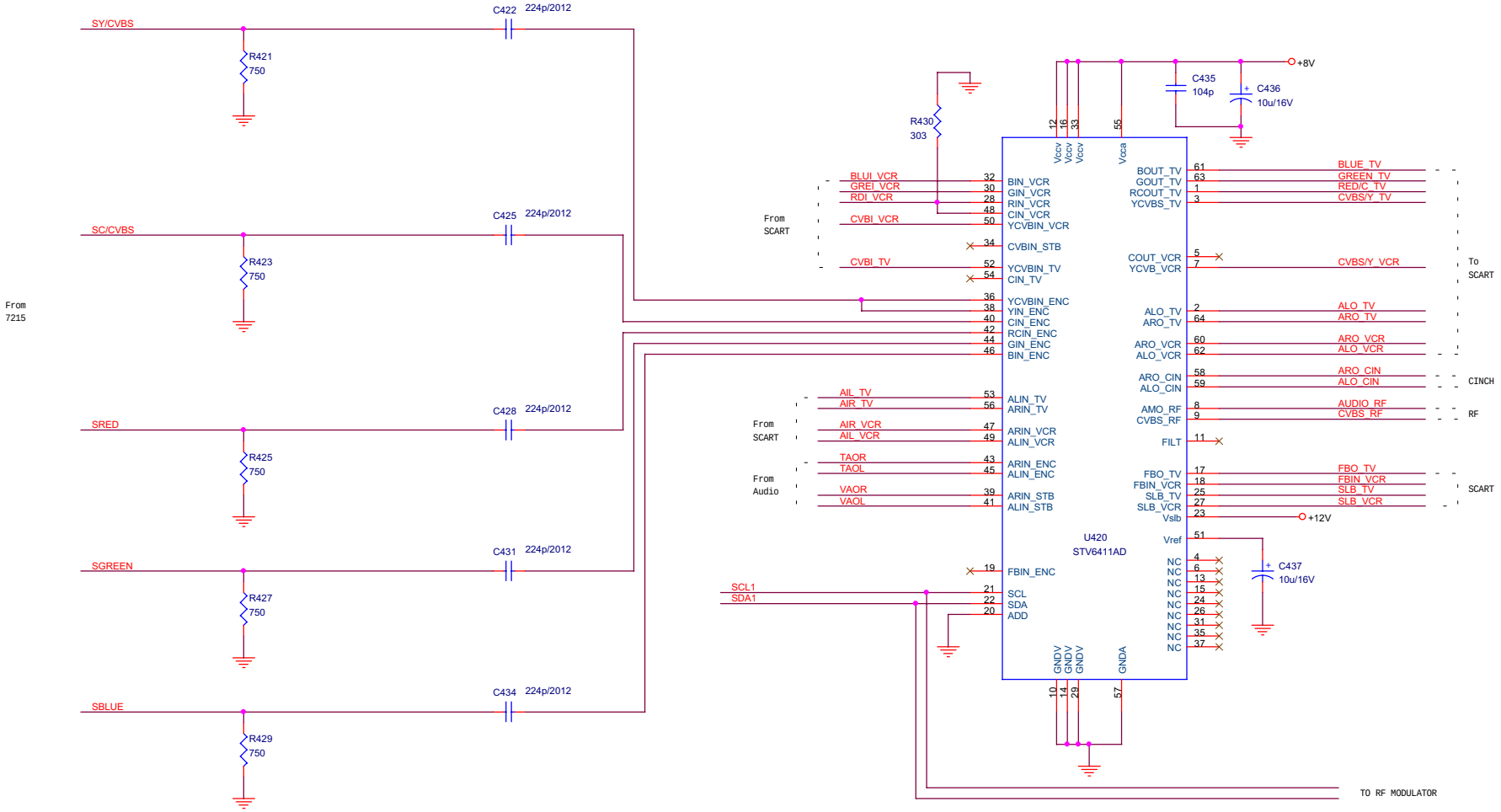
OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: Main		
Size: Custom	Document Number: SPDIF	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 21 of 30	



MODE SETTING	
SAMPLING	384fs
FORMAT	I2S

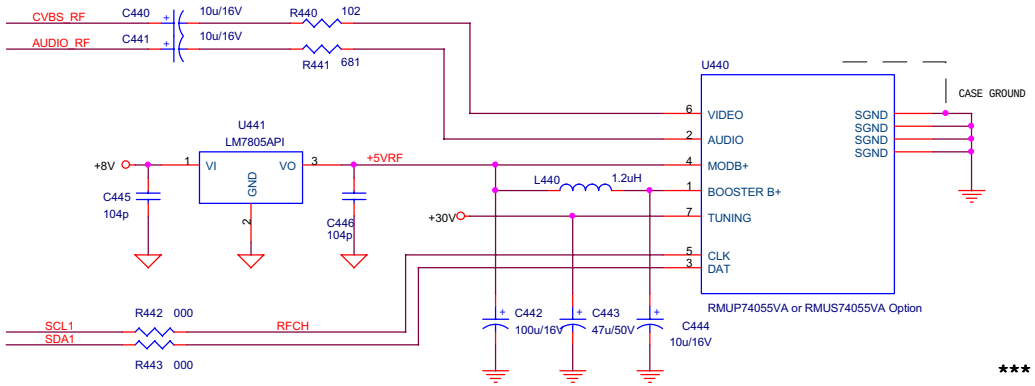
All locations are from 400 to 419 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: AV_SACRT		
Size: Custom	Document Number: Audio DAC	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 22 of 30	



All locations are from 420 to 439 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: AV_SACRT		
Size: Custom	Document Number: AV_MUX	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 23 of 30	



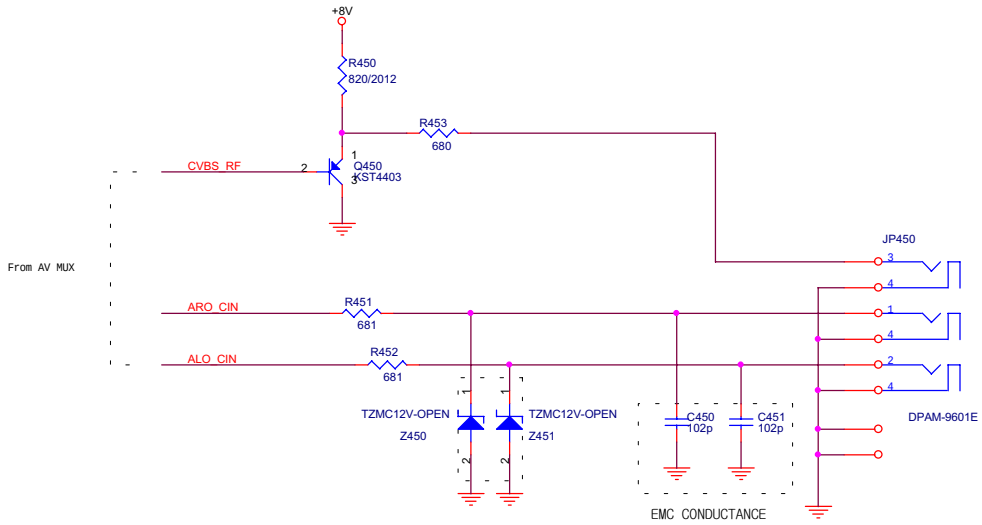
*** Note ***

RMUP74055VA is applicable to all models except CI-5100C, VA-5200C Model.

RMUS74055VA is only for CI-5100C, VA-5200C Model.

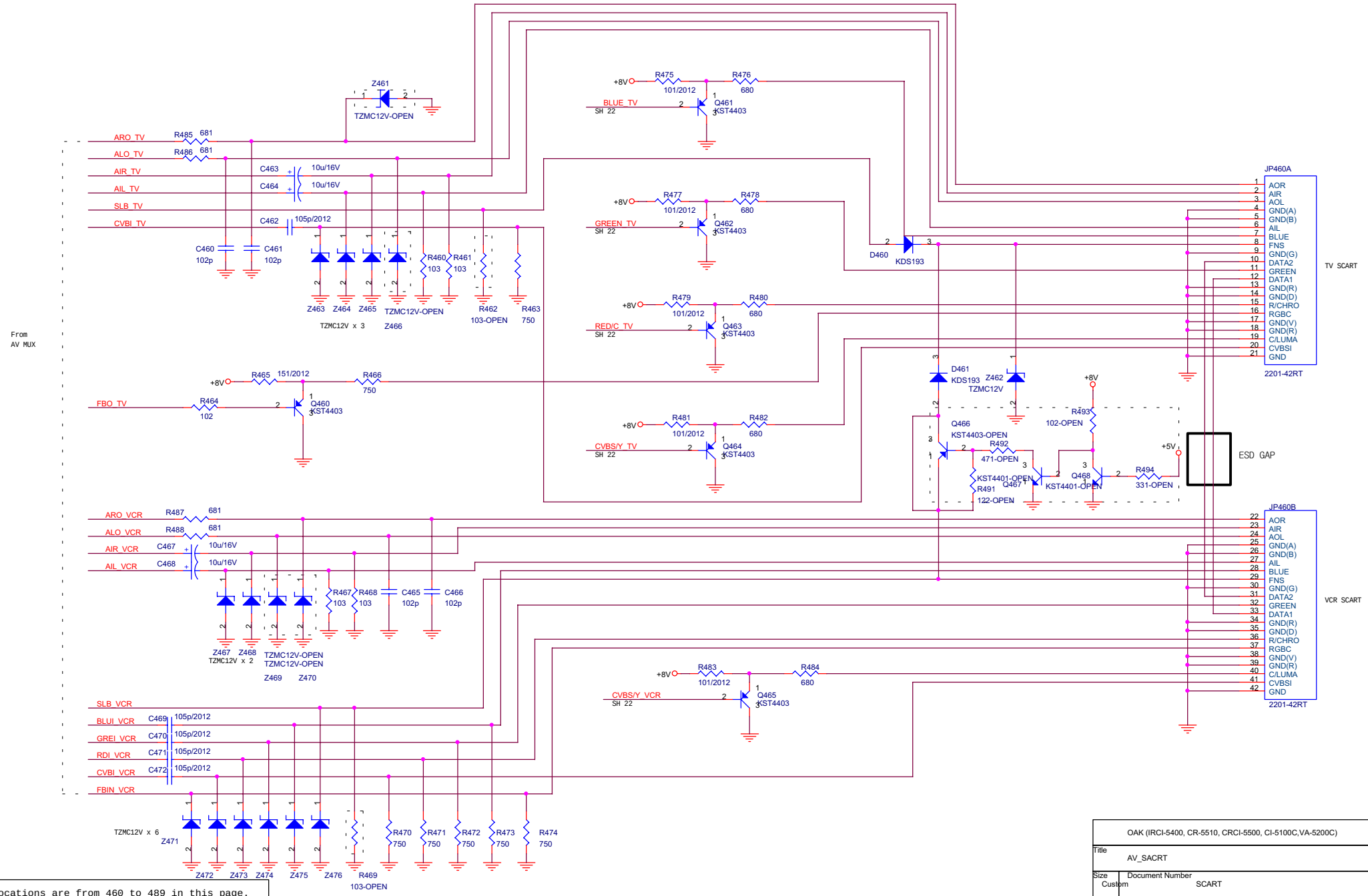
All locations are from 440 to 449 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: AV_SACRT		
Size: Custom	Document Number: RF Modulator	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 24 of 30	



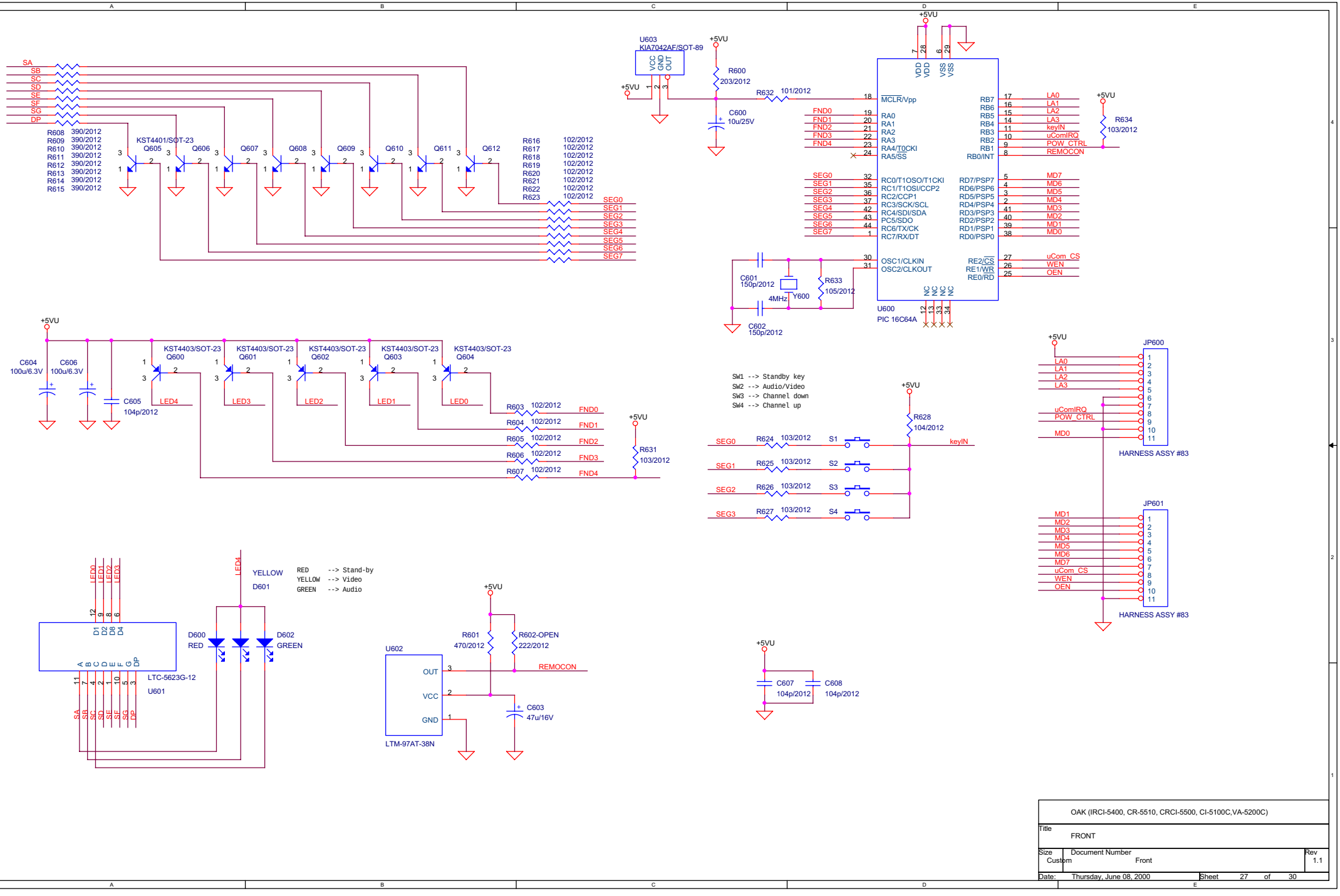
All locations are from 450 to 459 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: AV_SACRT		
Size: Custom	Document Number: CINCH	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 25 of 30	



All locations are from 460 to 489 in this page.

OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)		
Title: AV_SACRT		
Size: Custom	Document Number: SCART	Rev: 1.0
Date: Thursday, June 08, 2000	Sheet 26 of 30	


SA
SB
SC
SD
SE
SF
SG
DP
R608 390/2012
R609 390/2012
R610 390/2012
R611 390/2012
R612 390/2012
R613 390/2012
R614 390/2012
R615 390/2012
KST4401/SOT-23
Q605
Q606
Q607
Q608
Q609
Q610
Q611
Q612
R616 102/2012
R617 102/2012
R618 102/2012
R619 102/2012
R620 102/2012
R621 102/2012
R622 102/2012
R623 102/2012
SEG0
SEG1
SEG2
SEG3
SEG4
SEG5
SEG6
SEG7
U603
KIA7042AF/SOT-89
VCC
GND
OUT
+5VU
R600
203/2012
R632 101/2012
C600
10u/25V
MCLR/Vpp
RA0
RA1
RA2
RA3
RA4/T0CKI
RA5/SS
FND0
FND1
FND2
FND3
FND4
RC0/T1OSO/T1CKI
RC1/T1OSI/CCP2
RC2/CCP1
RC3/SCK/SCL
RC4/SDI/SDA
PC5/SDO
RC6/TX/CK
RC7/RX/DT
OSC1/CLKIN
OSC2/CLKOUT
C601
150p/2012
4MHz
Y600
R633
105/2012
C602
150p/2012
U600
PIC 16C64A
VDD
VSS
NC
RB7
RB6
RB5
RB4
RB3
RB2
RB1
RB0/INT
RD7/PSP7
RD6/PSP6
RD5/PSP5
RD4/PSP4
RD3/PSP3
RD2/PSP2
RD1/PSP1
RD0/PSP0
RE2/CS
RE1/WR
RE0/RD
LA0
LA1
LA2
LA3
keyIN
uComIRQ
POW_CTRL
REMOCON
R634
103/2012
MD7
MD6
MD5
MD4
MD3
MD2
MD1
MD0
uCom_CS
WEN
OEN
C604
100u/6.3V
C606
100u/6.3V
C605
104p/2012
KST4403/SOT-23
Q600
Q601
Q602
Q603
Q604
LED4
LED3
LED2
LED1
LED0
R603 102/2012
R604 102/2012
R605 102/2012
R606 102/2012
R607 102/2012
R631
103/2012
SW1 --> Standby key
SW2 --> Audio/Video
SW3 --> Channel down
SW4 --> Channel up
R628
104/2012
R624 103/2012
R625 103/2012
R626 103/2012
R627 103/2012
S1
S2
S3
S4
JP600
HARNESS ASSY #83
JP601
HARNESS ASSY #83
LED0
LED1
LED2
LED3
LED4
YELLOW
D601
RED --> Stand-by
YELLOW --> Video
GREEN --> Audio
D600
RED
D602
GREEN
LTC-5623G-12
U601
U602
OUT
VCC
GND
LTM-97AT-38N
R601
470/2012
R602-OPEN
222/2012
C603
47u/16V
C607
104p/2012
C608
104p/2012
OAK (IRCI-5400, CR-5510, CRCI-5500, CI-5100C,VA-5200C)
Title
FRONT
Size
Custom
Document Number
Front
Rev
1.1
Date:
Thursday, June 08, 2000
Sheet
27
of
30

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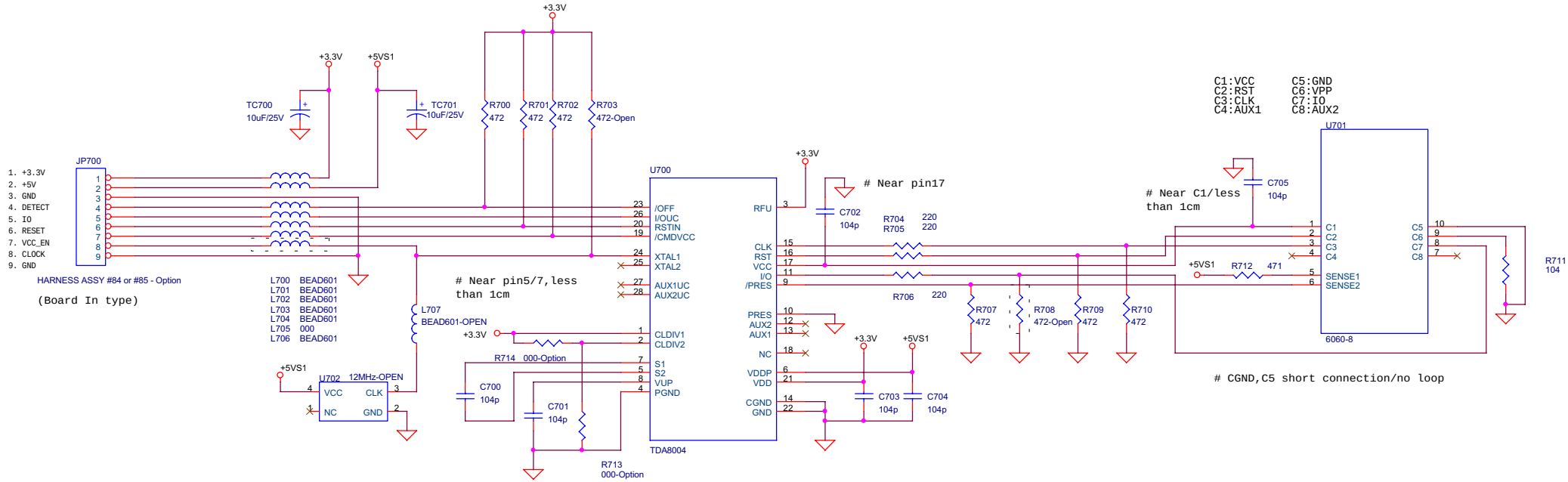


*** Note ***

HARNESS ASSY #84 is for IRCI-5400, VA-5200C
HARNESS ASSY #85 is for CR-5510, CRCI-5500, VA-5200C

*** Note ***

R714 is only for IRCI-5400
R713 is applicable to all models except IRCI-5400 Model.

※ For Test

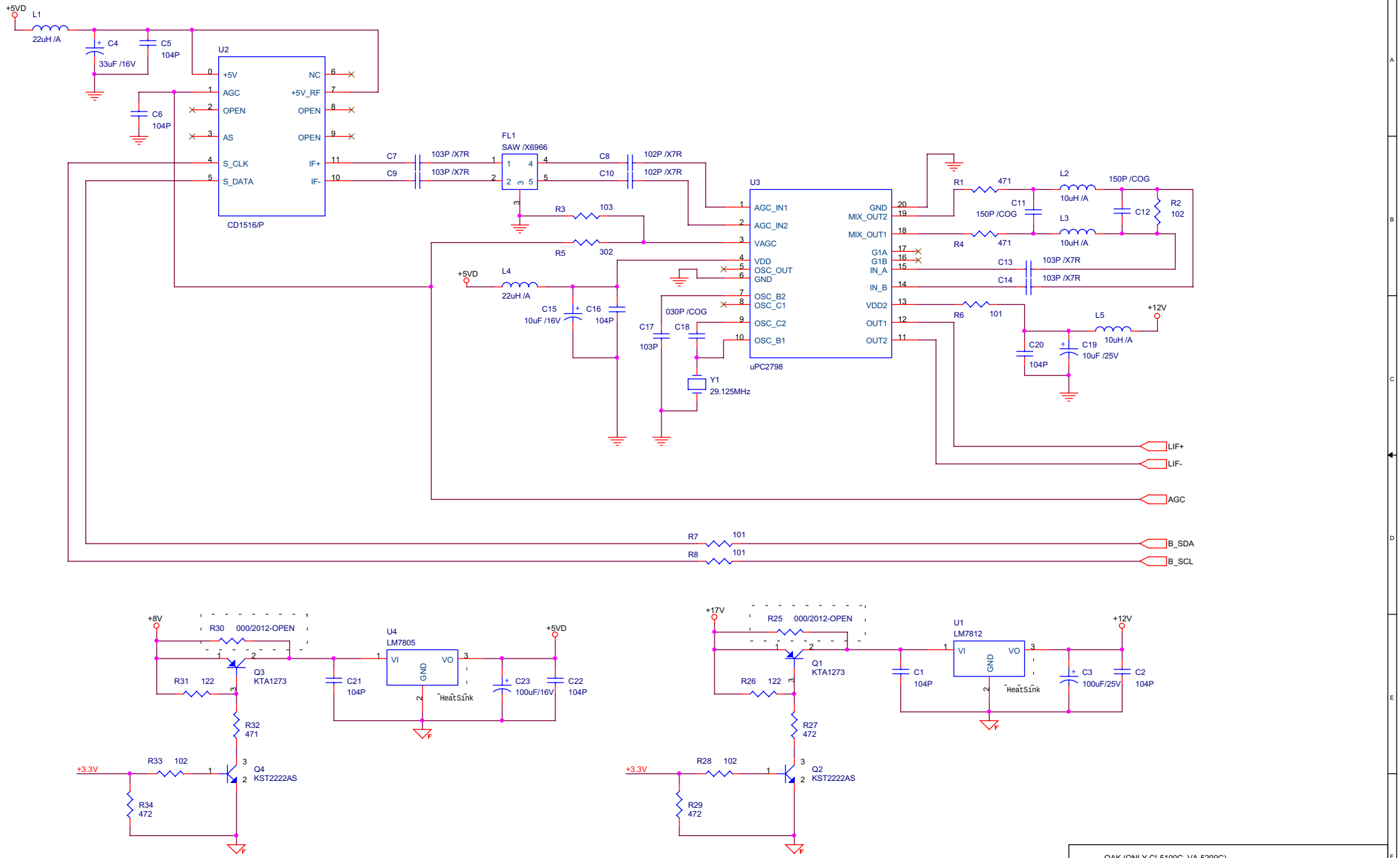
1. SC CLK is fixed to 6MHz by oscillator
2. IO is connected to UART (RxD1 & TxD1 common) for partity control
3. Other sognals are connected to SMART Part of SAA7219

※ For Irdeto SC interface

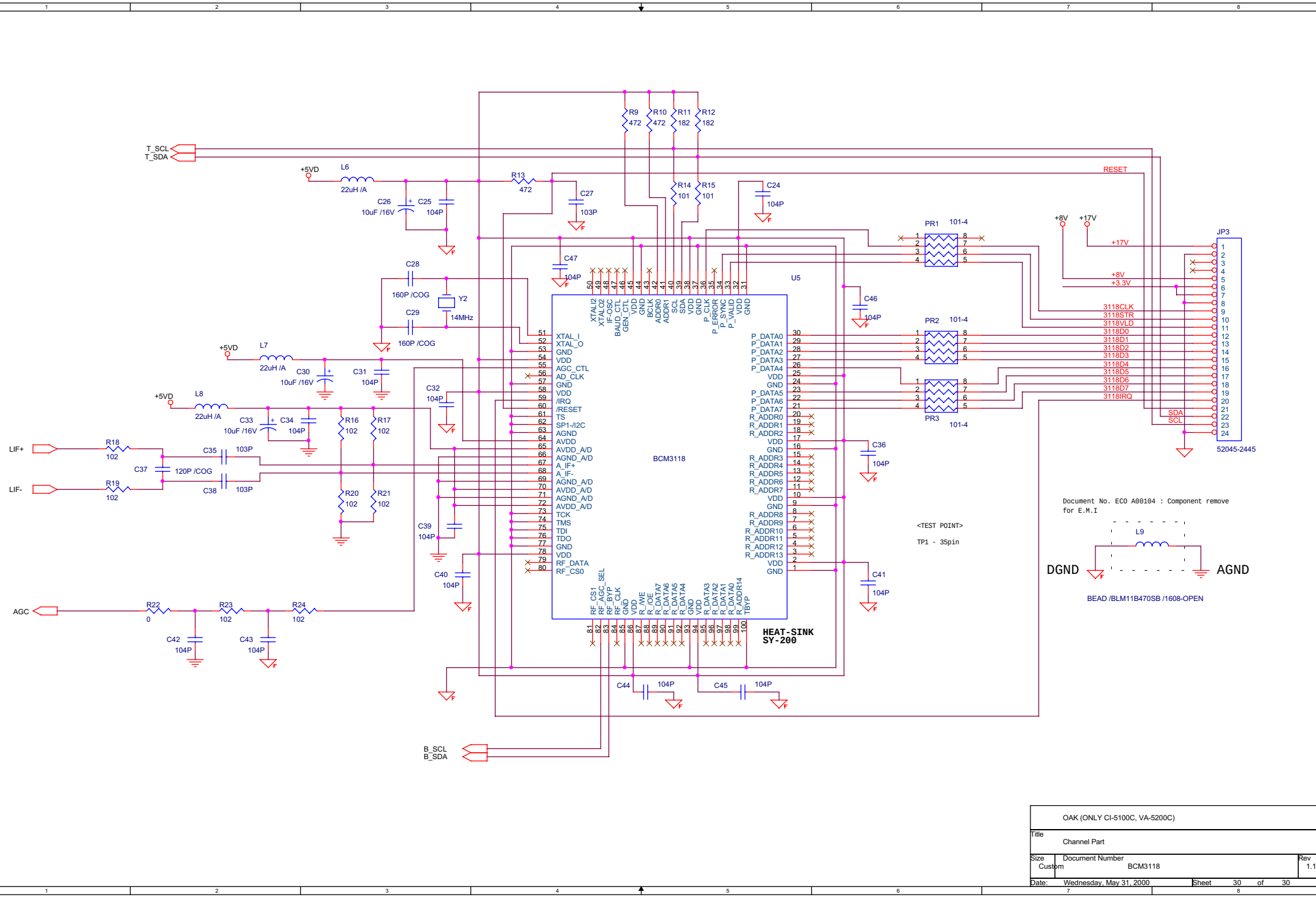
1. SC CLK is fixed to 12MHz by oscillator
2. Card CLK is used 6MHz, So CLKDVD2 is to be VCC(1:2 mode)

All locations are from 700 to 719 in this page.

OAK (CRCI-5500, CR-5510, VA-5200C)		
Title: Irdeto SC Interface		
Size: Custom	Document Number: IrdetoSC	Rev: 1.0
Date: Tuesday, May 16, 2000	Sheet 28 of 30	



OAK (ONLY CI-5100C, VA-5200C)		
Title: Channel Part		
Size: Custom	Document Number: Tuner	Rev: 1.1
Date: Wednesday, May 31, 2000	Sheet 29 of 30	



OAK (ONLY CI-5100C, VA-5200C)		
Title: Channel Part		
Size: Custom	Document Number: BCM3118	Rev: 1.1
Date: Wednesday, May 31, 2000	Sheet 30 of 30	

BOM List

Model Name : IRCI-5400
Model Code : 16-004

Code	Name	Q'ty	Unit	Location
16-004	**IRCI-5400**			
000-0099	F-ASSY SET IRCI-5400	1.0 /1	PCS	
10701-03-013	BOX CARTON HUMAX BRAND, IQG.1	1.0 /5	PCS	
000-0099	**F-ASSY SET IRCI-5400**			
030-0050	ASSY ACCESSARY IRCI-5400	1.0 /1	PCS	
040-0106	ASSY SET IRCI-5400	1.0 /1	PCS	
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
10501-1121	STICKER, (GIFT BOX 부착용:IRCI-5400)	1.0 /1	PCS	
10601-11-001	PULP PAD (OAK,SUPERSET)	2.0 /1	PCS	
10701-01-029	BOX GIFT (S/S, OAK)	1.0 /1	PCS	
10711-01-011	BAG VINYL "A" OAK,SUPERSET	1.0 /1	PCS	
10731-01-001	SILICAGEL 3g	1.0 /1	PCS	
030-0050	**ASSY ACCESSARY IRCI-5400**			
01300-0004	FLY LEAD (RF CABLE)	1.0 /1	PCS	
01400-0030	REMOCON OAK	1.0 /1	PCS	
09900-0003	BATTERY 1.5V, "AAA"	2.0 /1	PCS	
10711-01-002	BAG VINYL "B"	1.0 /1	PCS	
10801-0513	MANUAL IRCI-5400(VER:H0IRCI5400.202)	1.0 /1	PCS	
040-0106	**ASSY SET IRCI-5400**			
010-0102	ASSY FEC B/D (OAK)	1.0 /1	PCS	
010-0127	ASSY CPU B/D IRCI-5400	1.0 /1	PCS	
010-0132	ASSY SMART CARD B/D IRCI-5400	1.0 /1	PCS	
01300-0016	CABLE POWER CORD (OAK:KKP-419C/B-275,KLCE-2F)	1.0 /1	PCS	
01403-0009	POWER SMPS / P-102 (REV 1.0)	1.0 /1	PCS	
020-0117	ASSY FRONT IRCI-5400	1.0 /1	PCS	
050-0074	ASSY BOTTOM CI-5100,F1-5000	1.0 /1	PCS	
060-0004	ASS'Y POWER S/W(WITH HARNESS #82)	1.0 /1	PCS	
10021-03-004	CASE TOP OAK	1.0 /1	PCS	
10081-10-001	PAPER WASHER (PAI 7.8X0.8T:내측 PAI 3.3T)	1.0 /1	PCS	
10101-08-001	SMART NUT	2.0 /1	PCS	ASSY FRONT+ASSY SMART CARD B/D(2EA)
10101-12-001	EMI BRACKET "B" (IRCI-5400)	1.0 /1	PCS	
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
1100300804	SCREW T/T 2S P/H BLK (03*8)	1.0 /1	PCS	ASSY CPU B/D(RCA)+CASE BOTTOM(1EA)
1105300804	SCREW T/T 2S B/H BLK (03*8)	3.0 /1	PCS	ASSY CPU B/D(SCART)+CASE BOTTOM(2EA),ASSY CPU B/D(SPDIF)+CASE BOTTOM(1EA)
1115300504	SCREW T/T 3S B/H BLK (03*5)	6.0 /1	PCS	ASSY FRONT+CASE BOTTOM(2EA),CASE TOP+CASE BOTTOM(3EA), RF MODULATOR+PANEL BACK(1EA)
1115300602	SCREW T/T 3S B/H NAT (03*6)	12.0 /1	PCS	ASSY CPU B/D+CASE BOTTOM(6EA),POWER SMPS+CASE BOTTOM(4EA),

BOM List

Model Name : IRCI-5400
Model Code : 16-004

Code	Name	Q'ty	Unit	Location
				ASSY FEC B/D+CASE BOTTOM(2EA)
1115400504	SCREW T/T 3S B/H BLK (04*5)	2.0 /1	PCS	CASE TOP+CASE BOTTOM(2EA)
1118300602	SCREW T/T 3S PHW NAT(03*6)	2.0 /1	PCS	ASSY FRONT+ASSY SMART CARD B/D(2EA)
1211210002	NUT UNF 3/8INCH*32	2.0 /1	PCS	ASSY FEC B/D+PANEL BACK(2EA)
1231111002	WASHER PA110	2.0 /1	PCS	ASSY FEC B/D+PANEL BACK(2EA)
010-0102	**ASSY FEC B/D (OAK)**			
01302-0003	FLEXIBLE CABLE 24LINE (60mm,CPU-FEC)	1.0 /1	PCS	ASS'Y CPU B/D+ASS'Y FEC B/D
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	7.0 /1	PCS	C1,3,5,8,14,33,34
00107-0019	CAP ELE 4.7uF/50V/SSL	1.0 /1	PCS	C10
00107-0034	CAP ELE 10uF/35V/SSL	2.0 /1	PCS	C12,13
00106-0092	CAP MULTI CERAMIC-CHIP 0.22uF/224p/16V/X7R/2012	1.0 /1	PCS	C15
00106-0002	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/X7R/2012	2.0 /1	PCS	C20,21
00106-0055	CAP MULTI CERAMIC-CHIP 0.0068uF/682p/25V/X7R/1608	11.0 /1	PCS	C24-27,35,37,41-45
00106-0014	CAP MULTI CERAMIC-CHIP 27pF/270p/50V/C0G/2012	2.0 /1	PCS	C30,31
00107-0083	CAP ELE 100uF/10V/SSL	4.0 /1	PCS	C32,36,38,40
00106-0053	CAP MULTI CERAMIC-CHIP 0.01uF/103p/25V/X7R/1608	1.0 /1	PCS	C39
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3.0 /1	PCS	C4,22,23
00107-0005	CAP ELE 47uF/16V/SSL	1.0 /1	PCS	C6
00106-0093	CAP MULTI CERAMIC-CHIP 0.33uF/334p/25V/Y5V/2012	1.0 /1	PCS	C7
00107-0057	CAP ELE 10uF/16V/SSL	2.0 /1	PCS	C9,11
00304-0001	DIODE SWITCHING KDS193/SOT-23	1.0 /1	PCS	D1
00305-0001	TVS DIODE P6KE30	1.0 /1	PCS	D2
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP10
09900-0029	RELAY SY-6-K	1.0 /1	PCS	K1
01100-0009	INDUCTOR 270uH/5PI/RADIAL	1.0 /1	PCS	L2
01103-0004	CHIP BEAD-601 CIM21U601NE	3.0 /1	PCS	L21-23
00207-0006	RES CHIP NETWORK 47*4	2.0 /1	PCS	PR20,21
00400-0007	TR CHIP KST4401/NPN/SOT-23	1.0 /1	PCS	Q1
00200-0087	RES CHIP 4.7K, 5%, 1608	5.0 /1	PCS	R1,4,6,10,25
00200-0098	RES CHIP 47, 5%, 1608	4.0 /1	PCS	R11,26,27,29
00200-0092	RES CHIP 1.2K, 5%, 1608	1.0 /1	PCS	R12
00205-0011	RES METAL OXIDE 680, 2W, 5% (FORMING TYPE)	1.0 /1	PCS	R13
00200-0095	RES CHIP 1M, 5%, 1608	1.0 /1	PCS	R22
00200-0091	RES CHIP 10, 5%, 1608	1.0 /1	PCS	R23
00200-0096	RES CHIP 10K, 5%, 1608	2.0 /1	PCS	R28,30
00200-0121	RES CHIP 2.7K, 5%, 1608	1.0 /1	PCS	R5
00200-0088	RES CHIP 470, 5%, 1608	1.0 /1	PCS	R7
00200-0093	RES CHIP 22K, 5%, 1608	1.0 /1	PCS	R8
00200-0227	RES CHIP 3.9, 5%, 1608	1.0 /1	PCS	R9
01404-0002	TUNER SD1228/LA-MK2	1.0 /1	PCS	TN1
00009-0001	IC REGULATOR 7805/TO-220	1.0 /1	PCS	U1

BOM List

Model Name : IRCI-5400
Model Code : 16-004

Code	Name	Q'ty	Unit	Location
10191-0080	HEAT SINK SY200 HAR SERIES	1.0 /1	PCS	U1 ACCESSARY
1105300804	SCREW T/T 2S B/H BLK (03*8)	1.0 /1	PCS	U1 ACCESSARY
00018-0001	IC LNB POWER SUPPLY LNBP15SP	1.0 /1	PCS	U2
00010-0029	IC QPSK DEMODULATOR TDA8044AH/C2/QFP100	1.0 /1	PCS	U20
00500-0022	VIBRATOR CRYSTAL 3rD OVERTONE 4.0625MHz/30PPM	1.0 /1	PCS	Y20
01004-0072	PCB FEC REV 1.1 (OAK)	1.0 /1	PCS	
010-0127	**ASSY CPU B/D IRCI-5400**			
1015201802	SCREW B/H NAT(M2*18)	4.0 /1	PCS	ASSY CPU B/D+PCMCIA DECK
00106-0055	CAP MULTI CERAMIC-CHIP 0.0068uF/682p/25V/X7R/1608	2.0 /1	PCS	C100,130
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	114.0/1	PCS	C101,102,106-110,131,132,137-141,160-165,170-180,211,212,214,215,220-234,236, 237,240,241,247,250-253,255-262,270-275,292-306,308,310-315,320-325,331-335, 342,343,380,400,407,435,445,446
00106-0081	CAP MULTI CERAMIC-CHIP 1uF/105p/16V/Y5V/2012	11.0 /1	PCS	C103,104,134,135,401,408,462,469-472
00106-0052	CAP MULTI CERAMIC-CHIP 0.001uF/102p/25V/X7R/1608	8.0 /1	PCS	C105,136,450,451,460,461,465,466
00106-0088	CAP MULTI CERAMIC-CHIP 0.047uF/473/25V/Y5V/1608	1.0 /1	PCS	C200
00107-0067	CAP ELE 47uF/50V/SSL	2.0 /1	PCS	C210,443
00107-0057	CAP ELE 10uF/16V/SSL	17.0 /1	PCS	C213,340,341,402-406,436,437,440,441,444,463,464,467,468
00107-0018	CAP ELE 2.2uF/50V/SSL	1.0 /1	PCS	C235
00107-0078	CAP ELE 1000uF/6.3V/SHL	1.0 /1	PCS	C238
00106-0048	CAP MULTI CERAMIC-CHIP 10pF/100p/25V/C0G/1608	3.0 /1	PCS	C239,307,317
00106-0018	CAP MULTI CERAMIC-CHIP 39pF/390p/50V/C0G/2012	2.0 /1	PCS	C248,249
00106-0047	CAP MULTI CERAMIC-CHIP 100pF/101p/25V/C0G/1608	8.0 /1	PCS	C344-351
00106-0079	CAP MULTI CERAMIC-CHIP 0.22uF/224p/16V/Y5V/2012	5.0 /1	PCS	C422,425,428,431,434
00107-0001	CAP ELE 100uF/16V/SSL	1.0 /1	PCS	C442
00304-0001	DIODE SWITCHING KDS193/SOT-23	2.0 /1	PCS	D460,461
01200-0003	FILTER EMI NFM51R00P506	1.0 /1	PCS	F210
00906-0042	PCMCIA WAFER 91931-31169	2.0 /1	PCS	JP120,130
00906-0043	CON WAFER 5267-12A	1.0 /1	PCS	JP200
00901-0015	JACK DC POWER DDAE-9637	1.0 /1	PCS	JP210
00906-0048	CON WAFER 52368-0401	1.0 /1	PCS	JP255
00906-0030	CON WAFER 53014-0910	1.0 /1	PCS	JP330
00906-0049	CON WAFER 53014-1110	2.0 /1	PCS	JP332,335
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP333
00999-0022	CON D-SUB 9PIN (205A-09MGPBBA3)	1.0 /1	PCS	JP340
00909-0001	CONNECTOR SPDIF TOTX178A	1.0 /1	PCS	JP380
00901-0009	JACK PIN JACK DPAM-9601E	1.0 /1	PCS	JP450
00999-0018	CON SCART 2201-42RT DOUBLE	1.0 /1	PCS	JP460
01103-0004	CHIP BEAD-601 CIM21U601NE	24.0 /1	PCS	L100,101,130,131,170-177,221,222,224,270,330,346-349,364,365,367
01103-0005	POWER BEAD CIB21P330NE	5.0 /1	PCS	L220,290,291,310,320
00200-0000	RES CHIP 0, 5%, 2012	7.0 /1	PCS	L223,331,333-335,352,353
00200-0220	RES CHIP 120, 5%, 2012	10.0 /1	PCS	L350,351,355-362
01100-0002	INDUCTOR 1.2uH/3PI/AXIAL	3.0 /1	PCS	L370,400,440

BOM List

Model Name : IRCI-5400
Model Code : 16-004

Code	Name	Q'ty	Unit	Location
00207-0006	RES CHIP NETWORK 47*4	14.0 /1	PCS	PR100-102,130-132,160-165,400,401
00207-0003	RES CHIP NETWORK 10K*4	6.0 /1	PCS	PR103,104,133,134,170,290
00207-0005	RES CHIP NETWORK 4.7K*4	3.0 /1	PCS	PR220-222
00207-0002	RES CHIP NETWORK 100*4	2.0 /1	PCS	PR340,341
00400-0007	TR CHIP KST4401/NPN/SOT-23	5.0 /1	PCS	Q100,130,200,211,213
00400-0008	TR CHIP KST4403/PNP/SOT-23	9.0 /1	PCS	Q210,212,450,460-465
00200-0087	RES CHIP 4.7K, 5%, 1608	24.0 /1	PCS	R101-103,120,131-133,151,170,201,202,210,212,213,215,216,222,226,231,234,235,250,256,300
00200-0171	RES CHIP 120, 5%, 3216	2.0 /1	PCS	R104,134
00200-0096	RES CHIP 10K, 5%, 1608	34.0 /1	PCS	R105,106,108-119,135,136,138,139,141-150,229,296,460,461,467,468
00200-0094	RES CHIP 1K, 5%, 1608	7.0 /1	PCS	R107,140,211,214,340,440,464
00200-0098	RES CHIP 47, 5%, 1608	1.0 /1	PCS	R225
00200-0113	RES CHIP 750, 5%, 1608	1.0 /1	PCS	R227
00200-0121	RES CHIP 2.7K, 5%, 1608	1.0 /1	PCS	R233
00200-0090	RES CHIP 0, 5%, 1608	3.0 /1	PCS	R236,442,443
00200-0095	RES CHIP 1M, 5%, 1608	1.0 /1	PCS	R237
00200-0106	RES CHIP 75, 5%, 1608	14.0 /1	PCS	R292,298,421,423,425,427,429,463,466,470-474
00200-0223	RES CHIP 2K, 1%, 1608	1.0 /1	PCS	R293
00200-0222	RES CHIP 12, 1%, 1608	1.0 /1	PCS	R294
00200-0224	RES CHIP 18, 1%, 1608	1.0 /1	PCS	R295
00200-0099	RES CHIP 4.7, 5%, 1608	1.0 /1	PCS	R380
00200-0204	RES CHIP 510, 5%, 1608	2.0 /1	PCS	R400,401
00200-0111	RES CHIP 30K, 5%, 1608	1.0 /1	PCS	R430
00200-0120	RES CHIP 680, 5%, 1608	7.0 /1	PCS	R441,451,452,485-488
00200-0221	RES CHIP 82, 5%, 2012	1.0 /1	PCS	R450
00200-0146	RES CHIP 68, 5%, 1608	6.0 /1	PCS	R453,476,478,480,482,484
00200-0070	RES CHIP 150, 5%, 2012	1.0 /1	PCS	R465
00200-0002	RES CHIP 100, 5%, 2012	5.0 /1	PCS	R475,477,479,481,483
00012-0018	IC CMOS 74HC244/SOP	5.0 /1	PCS	U100,104,105,130,131
00012-0026	IC CMOS 74HCT244/SOP	1.0 /1	PCS	U101
00402-0000	FET IRF7303/SOP	2.0 /1	PCS	U102,200
00016-0001	IC C/I CONTROLLER CXD1957AQ/QFP80	1.0 /1	PCS	U103
00012-0037	IC CMOS 74HC02/SOP	1.0 /1	PCS	U106
00012-0042	IC CMOS 74HC139/SOP	1.0 /1	PCS	U132
00012-0016	IC CMOS 74HC257/SOP	7.0 /1	PCS	U160-165,256
00019-0001	IC I-CHIP SAS004	1.0 /1	PCS	U170
00005-0005	IC CMOS S-RAM 32K*8BIT KM68257C/SOJ	1.0 /1	PCS	U171
00009-0008	IC REGULATOR 78L12/TO-92	2.0 /1	PCS	U210,211
00010-0031	IC MPEG-2 SOURCE DECODER SAA7219(HS/C1)/SQFP208	1.0 /1	PCS	U220
00099-0052	IC VOLTAGE DETECTOR KIA7027AF/SOT-89	1.0 /1	PCS	U221
00502-0002	VCXO 13.5MHZ/15pF/DIP	1.0 /1	PCS	U222
00012-0044	IC CMOS 74HC05	1.0 /1	PCS	U223
00012-0017	IC CMOS 74HC04/SOP	1.0 /1	PCS	U224

BOM List

Model Name : IRCI-5400
Model Code : 16-004

Code	Name	Q'ty	Unit	Location
00012-0045	IC CMOS 74LVT245/SOP	1.0 /1	PCS	U250
00012-0046	IC CMOS 74LVC08D/SOP	1.0 /1	PCS	U251
00012-0019	IC CMOS 74HC32/SOP	1.0 /1	PCS	U252
00012-0020	IC CMOS 74HC174/SOP	1.0 /1	PCS	U253
00013-0009	IC FLASH MEMORY 16MB DT28F160F3B-95/SSOP	1.0 /1	PCS	U255
00013-0003	IC FLASH MEMORY 16MB 28F160B3B-90	1.0 /1	PCS	U260
00004-0007	IC SD-RAM K4S161622D/TSOP II	3.0 /1	PCS	U280,310,320
00010-0030	IC MPEG AVGD DECODER SAA7215(HS/C2)/SQFP208	1.0 /1	PCS	U290
10591-03-001	HEAT SINK-L	1.0 /1	PCS	U290 ACCESSARY
10081-11-001	SHEET GLUE (26 X 26 X 0.5T) WITH 5302A (NITTO)	1.0 /1	PCS	U290 ACCESSARY
00017-0006	IC RS232 DRIVER ADM239LJR	1.0 /1	PCS	U340
00014-0007	IC DAC UDA1320/SSOP16	2.0 /1	PCS	U400,401
00099-0053	IC SCART CONTROL STV6411AD/TQFP64	1.0 /1	PCS	U420
01405-0004	RF MODULATOR RMUP74055VA	1.0 /1	PCS	U440
00009-0019	IC REGULATOR 7805API	1.0 /1	PCS	U441
00500-0000	VIBRATOR CRYSTAL 12.0000MHz,20pF/HC-49/U	1.0 /1	PCS	Y220
00301-0018	DIODE ZENER TZM5242B(12V)/SOD80	12.0 /1	PCS	Z462-465,467,468,471-476
00903-0015	PCMCIA DECK (52493-250CA)	1.0 /1	PCS	
01004-0079	PCB CPU REV 1.3 (IRCI-5400 ONLY)	1.0 /1	PCS	
10101-11-001	EMI BRACKET "A" (IRCI-5400)	1.0 /1	PCS	
10501-0590	LABEL BAR-CODE	1.0 /1	PCS	
010-0132	**ASSY SMART CARD B/D IRCI-5400**			
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	6.0 /1	PCS	C700-705
00200-0173	RES CHIP 0, 5%, 3216	5.0 /1	PCS	J700-704
01301-0084	HARNESS ASSY#84 (9PIN,125mm,SMART)	1.0 /1	PCS	JP700
01103-0004	CHIP BEAD-601 CIM21U601NE	3.0 /1	PCS	L700,701,706
00200-0000	RES CHIP 0, 5%, 2012	5.0 /1	PCS	L702-705,R714
00200-0038	RES CHIP 4.7K, 5%, 2012	7.0 /1	PCS	R700-703,707,709,710
00200-0018	RES CHIP 22, 5%, 2012	3.0 /1	PCS	R704-706
00200-0005	RES CHIP 100K, 5%, 2012	1.0 /1	PCS	R711
00200-0037	RES CHIP 470, 5%, 2012	1.0 /1	PCS	R712
00107-0026	CAP ELE 10uF/25V/SSE/BULK	2.0 /1	PCS	TC700,701
00099-0054	IC SMART CARD TDA8004T	1.0 /1	PCS	U700
00999-0016	CON SMART CONNECTOR 6060-08-2	1.0 /1	PCS	U701
01004-0090	PCB SMART CARD REV 1.2 (OAK)	1.0 /1	PCS	
020-0117	**ASSY FRONT IRCI-5400**			
010-0103	ASSY FRONT B/D CI-5100,F1-5000 (OAK)	1.0 /1	PCS	
050-0079	ASSY SUB FRONT IRCI-5400	1.0 /1	PCS	
1105300802	SCREW T/T 2S B/H NAT (03*8)	5.0 /1	PCS	ASSY FRONT B/D+ASSY SUB FRONT(5EA)
050-0074	**ASSY BOTTOM CI-5100,F1-5000**			

BOM List

Model Name : IRCI-5400
Model Code : 16-004

Code	Name	Q'ty	Unit	Location
050-0067	ASSY LEG F1,F1-CI,F1-VA,F1-VACI	1.0 /1	PCS	
10031-07-004	CASE BOTTOM OAK(BACK.BUMPON ASSY)	1.0 /1	PCS	
060-0004	**ASS'Y POWER S/W(WITH HARNESS #82)**			
00800-0001	POWER SW (JRA1102K)	1.0 /1	PCS	
010-0103	**ASSY FRONT B/D CI-5100,F1-5000 (OAK)**			
00107-0026	CAP ELE 10uF/25V/SSE/BULK	1.0 /1	PCS	C600
00106-0009	CAP MULTI CERAMIC-CHIP 15pF/150p/50V/C0G/2012	2.0 /1	PCS	C601,602
00107-0068	CAP ELE 47uF/16V/SSE/BULK	1.0 /1	PCS	C603
00107-0077	CAP ELE 100uF/6.3V/SSE/BULK	2.0 /1	PCS	C604,606
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3.0 /1	PCS	C605,607,608
00602-0000	LED RED SLR124	1.0 /1	PCS	D600
10131-03-001	LED SPACER-2 SAT500IRD	3.0 /1	PCS	D600-602 ACCESSARY
00602-0002	LED YELLOW SLY124	1.0 /1	PCS	D601
00602-0001	LED GREEN SLG124	1.0 /1	PCS	D602
01301-0083	HARNESS ASSY#83 (11PIN,130mm,FRONT)	2.0 /1	PCS	JP600,601
00400-0008	TR CHIP KST4403/PNP/SOT-23	5.0 /1	PCS	Q600-604
00400-0007	TR CHIP KST4401/NPN/SOT-23	8.0 /1	PCS	Q605-612
00200-0075	RES CHIP 20K, 5%, 2012	1.0 /1	PCS	R600
00200-0057	RES CHIP 47, 5%, 2012	1.0 /1	PCS	R601
00200-0003	RES CHIP 1K, 5%, 2012	13.0 /1	PCS	R603-607,616-623
00200-0031	RES CHIP 39, 5%, 2012	8.0 /1	PCS	R608-615
00200-0004	RES CHIP 10K, 5%, 2012	6.0 /1	PCS	R624-627,631,634
00200-0005	RES CHIP 100K, 5%, 2012	1.0 /1	PCS	R628
00200-0002	RES CHIP 100, 5%, 2012	1.0 /1	PCS	R632
00200-0006	RES CHIP 1M, 5%, 2012	1.0 /1	PCS	R633
00802-0000	S/W TACT KPT-1105A/4pin/6*6(BULK)	4.0 /1	PCS	S1-4
00001-0006	IC MICOM PIC16C64A-4	1.0 /1	PCS	U600
00603-0001	7-SEGMENT LED DISPLAY LTC-5623G-12(높이4mm)	1.0 /1	PCS	U601
09900-0042	REMOCON SENSOR LTM-97AT-38W	1.0 /1	PCS	U602
00099-0055	IC VOLTAGE DETECTOR KIA7042AF/SOT-89	1.0 /1	PCS	U603
00500-0024	VIBRATOR CRYSTAL FUNDAMETAL 4MHZ/14pF/HC-49S/BST1249S	1.0 /1	PCS	Y600
01004-0073	PCB FRONT REV 1.1 (OAK)	1.0 /1	PCS	
050-0067	**ASSY LEG F1,F1-CI,F1-VA,F1-VACI**			
10161-04-001	LEG FOOT (LOCKING TYPE)	2.0 /1	PCS	
050-0079	**ASSY SUB FRONT IRCI-5400**			
10001-14-002	PANEL FRONT CRCI-5500,IRCI-5400,VACI-5300	1.0 /1	PCS	
10051-20-001	KNOB FUNCTION OAK	1.0 /1	PCS	
10061-08-005	DOOR IRCI-5400	1.0 /1	PCS	

BOM List

Model Name : IRCI-5400
Model Code : 16-004

Code	Name	Q'ty	Unit	Location
10071-10-001	WINDOW OAK	1.0 /1	PCS	
10171-03-002	BADGE HUMAX (OAK)	1.0 /1	PCS	

BOM List

Model Name : CRCI-5500
Model Code : 16-003

Code	Name	Q'ty	Unit	Location
16-003	**CRCI-5500**			
000-0094	F-ASSY SET CRCI-5500	1.0 /1	PCS	
10701-03-013	BOX CARTON HUMAX BRAND, IQG.1	1.0 /5	PCS	
000-0094	**F-ASSY SET CRCI-5500**			
030-0049	ASSY ACCESSARY CRCI-5500	1.0 /1	PCS	
040-0093	ASSY SET CRCI-5500	1.0 /1	PCS	
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
10501-1131	STICKER, (GIFT BOX 부착용:CRCI-5500)	1.0 /1	PCS	
10601-11-001	PULP PAD (OAK,SUPERSET)	2.0 /1	PCS	
10701-01-029	BOX GIFT (S/S, OAK)	1.0 /1	PCS	
10711-01-011	BAG VINYL "A" OAK,SUPERSET	1.0 /1	PCS	
10731-01-001	SILICAGEL 3g	1.0 /1	PCS	
030-0049	**ASSY ACCESSARY CRCI-5500**			
01300-0004	FLY LEAD (RF CABLE)	1.0 /1	PCS	
01400-0030	REMOCON OAK	1.0 /1	PCS	
09900-0003	BATTERY 1.5V, "AAA"	2.0 /1	PCS	
10711-01-002	BAG VINYL "B"	1.0 /1	PCS	
10801-0502	MANUAL CRCI-5500(VER HOCRCI5500.202)	1.0 /1	PCS	
040-0093	**ASSY SET CRCI-5500**			
010-0102	ASSY FEC B/D (OAK)	1.0 /1	PCS	
010-0115	ASSY CPU B/D CRCI-5500,VACI-5300	1.0 /1	PCS	
010-0116	ASSY SMART CARD B/D CRCI-5500,CR-5510	1.0 /1	PCS	
01300-0016	CABLE POWER CORD (OAK:KKP-419C/B-275,KLCE-2F)	1.0 /1	PCS	
01403-0009	POWER SMPS / P-102 (REV 1.0)	1.0 /1	PCS	
020-0121	ASSY FRONT CRCI-5500	1.0 /1	PCS	
050-0074	ASSY BOTTOM CI-5100,F1-5000	1.0 /1	PCS	
060-0004	ASS'Y POWER S/W(WITH HARNESS #82)	1.0 /1	PCS	
10021-03-004	CASE TOP OAK	1.0 /1	PCS	
10101-08-001	SMART NUT	2.0 /1	PCS	ASSY FRONT+ASSY SMART CARD B/D(2EA)
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
1100300804	SCREW T/T 2S P/H BLK (03*8)	1.0 /1	PCS	ASSY CPU B/D(RCA)+CASE BOTTOM(1EA)
1105300804	SCREW T/T 2S B/H BLK (03*8)	3.0 /1	PCS	ASSY CPU B/D(SCART)+CASE BOTTOM(2EA),ASSY CPU B/D(SPDIF)+CASE BOTTOM(1EA)
1115300504	SCREW T/T 3S B/H BLK (03*5)	6.0 /1	PCS	ASSY FRONT+CASE BOTTOM(2EA),CASE TOP+CASE BOTTOM(3EA), RF MODULATOR+PANEL BACK(1EA)
1115300602	SCREW T/T 3S B/H NAT (03*6)	12.0 /1	PCS	ASSY CPU B/D+CASE BOTTOM(6EA),POWER SMPS+CASE BOTTOM(4EA),

BOM List

Model Name : CRCI-5500
Model Code : 16-003

Code	Name	Q'ty	Unit	Location
				ASSY FEC B/D+CASE BOTTOM(2EA)
1115400504	SCREW T/T 3S B/H BLK (04*5)	2.0 /1	PCS	CASE TOP+CASE BOTTOM(2EA)
1118300602	SCREW T/T 3S PHW NAT(03*6)	2.0 /1	PCS	ASSY FRONT+ASSY SMART CARD B/D(2EA)
1211210002	NUT UNF 3/8INCH*32	2.0 /1	PCS	ASSY FEC B/D+PANEL BACK(2EA)
1231111002	WASHER PAI10	2.0 /1	PCS	ASSY FEC B/D+PANEL BACK(2EA)
010-0102	**ASSY FEC B/D (OAK)**			
01302-0003	FLEXIBLE CABLE 24LINE (60mm,CPU-FEC)	1.0 /1	PCS	ASS'Y CPU B/D+ASS'Y FEC B/D
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	7.0 /1	PCS	C1,3,5,8,14,33,34
00107-0019	CAP ELE 4.7uF/50V/SSL	1.0 /1	PCS	C10
00107-0034	CAP ELE 10uF/35V/SSL	2.0 /1	PCS	C12,13
00106-0092	CAP MULTI CERAMIC-CHIP 0.22uF/224p/16V/X7R/2012	1.0 /1	PCS	C15
00106-0002	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/X7R/2012	2.0 /1	PCS	C20,21
00106-0055	CAP MULTI CERAMIC-CHIP 0.0068uF/682p/25V/X7R/1608	11.0 /1	PCS	C24-27,35,37,41-45
00106-0014	CAP MULTI CERAMIC-CHIP 27pF/270p/50V/C0G/2012	2.0 /1	PCS	C30,31
00107-0083	CAP ELE 100uF/10V/SSL	4.0 /1	PCS	C32,36,38,40
00106-0053	CAP MULTI CERAMIC-CHIP 0.01uF/103p/25V/X7R/1608	1.0 /1	PCS	C39
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3.0 /1	PCS	C4,22,23
00107-0005	CAP ELE 47uF/16V/SSL	1.0 /1	PCS	C6
00106-0093	CAP MULTI CERAMIC-CHIP 0.33uF/334p/25V/Y5V/2012	1.0 /1	PCS	C7
00107-0057	CAP ELE 10uF/16V/SSL	2.0 /1	PCS	C9,11
00304-0001	DIODE SWITCHING KDS193/SOT-23	1.0 /1	PCS	D1
00305-0001	TVS DIODE P6KE30	1.0 /1	PCS	D2
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP10
09900-0029	RELAY SY-6-K	1.0 /1	PCS	K1
01100-0009	INDUCTOR 270uH/5PI/RADIAL	1.0 /1	PCS	L2
01103-0004	CHIP BEAD-601 CIM21U601NE	3.0 /1	PCS	L21-23
00207-0006	RES CHIP NETWORK 47*4	2.0 /1	PCS	PR20,21
00400-0007	TR CHIP KST4401/NPN/SOT-23	1.0 /1	PCS	Q1
00200-0087	RES CHIP 4.7K, 5%, 1608	5.0 /1	PCS	R1,4,6,10,25
00200-0098	RES CHIP 47, 5%, 1608	4.0 /1	PCS	R11,26,27,29
00200-0092	RES CHIP 1.2K, 5%, 1608	1.0 /1	PCS	R12
00205-0011	RES METAL OXIDE 680, 2W, 5% (FORMING TYPE)	1.0 /1	PCS	R13
00200-0095	RES CHIP 1M, 5%, 1608	1.0 /1	PCS	R22
00200-0091	RES CHIP 10, 5%, 1608	1.0 /1	PCS	R23
00200-0096	RES CHIP 10K, 5%, 1608	2.0 /1	PCS	R28,30
00200-0121	RES CHIP 2.7K, 5%, 1608	1.0 /1	PCS	R5
00200-0088	RES CHIP 470, 5%, 1608	1.0 /1	PCS	R7
00200-0093	RES CHIP 22K, 5%, 1608	1.0 /1	PCS	R8
00200-0227	RES CHIP 3.9, 5%, 1608	1.0 /1	PCS	R9

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Model Name : CRCI-5500
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Code	Name	Q'ty	Unit	Location
01404-0002	TUNER SD1228/LA-MK2	1.0 /1	PCS	TN1
00009-0001	IC REGULATOR 7805/TO-220	1.0 /1	PCS	U1
10191-0080	HEAT SINK SY200 HAR SERIES	1.0 /1	PCS	U1 ACCESSARY
1105300804	SCREW T/T 2S B/H BLK (03*8)	1.0 /1	PCS	U1 ACCESSARY
00018-0001	IC LNB POWER SUPPLY LNBP15SP	1.0 /1	PCS	U2
00010-0029	IC QPSK DEMODULATOR TDA8044AH/C2/QFP100	1.0 /1	PCS	U20
00500-0022	VIBRATOR CRYSTAL 3rD OVERTONE 4.0625MHz/30PPM	1.0 /1	PCS	Y20
01004-0072	PCB FEC REV 1.1 (OAK)	1.0 /1	PCS	
010-0115	**ASSY CPU B/D CRCI-5500,VACI-5300**			
1015201802	SCREW B/H NAT(M2*18)	4.0 /1	PCS	ASSY CPU B/D+PCMCIA DECK
00106-0055	CAP MULTI CERAMIC-CHIP 0.0068uF/682p/25V/X7R/1608	2.0 /1	PCS	C100,130
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	95.0 /1	PCS	C101,102,106-109,110,131,132,137-141,160-165,211,212,214,215,220-234,236,237,240,250-253,255-262,292-306,308,310-315,320-325,331-335,342,343,380,400,407,435,445,446
00106-0081	CAP MULTI CERAMIC-CHIP 1uF/105p/16V/Y5V/2012	11.0 /1	PCS	C103,104,134,135,401,408,462,469-472
00106-0052	CAP MULTI CERAMIC-CHIP 0.001uF/102p/25V/X7R/1608	8.0 /1	PCS	C105,136,450,451,460,461,465,466
00107-0067	CAP ELE 47uF/50V/SSL	2.0 /1	PCS	C210,443
00107-0057	CAP ELE 10uF/16V/SSL	17.0 /1	PCS	C213,340,341,402-406,436,437,440,441,444,463,464,467,468
00107-0018	CAP ELE 2.2uF/50V/SSL	1.0 /1	PCS	C235
00107-0078	CAP ELE 1000uF/6.3V/SHL	1.0 /1	PCS	C238
00106-0048	CAP MULTI CERAMIC-CHIP 10pF/100p/25V/C0G/1608	3.0 /1	PCS	C239,307,317
00106-0047	CAP MULTI CERAMIC-CHIP 100pF/101p/25V/C0G/1608	8.0 /1	PCS	C344-351
00106-0079	CAP MULTI CERAMIC-CHIP 0.22uF/224p/16V/Y5V/2012	5.0 /1	PCS	C422,425,428,431,434
00107-0001	CAP ELE 100uF/16V/SSL	1.0 /1	PCS	C442
00304-0001	DIODE SWITCHING KDS193/SOT-23	2.0 /1	PCS	D460,461
01200-0003	FILTER EMI NFM51R00P506	1.0 /1	PCS	F210
00906-0042	PCMCIA WAFER 91931-31169	2.0 /1	PCS	JP120,130
00906-0043	CON WAFER 5267-12A	1.0 /1	PCS	JP200
00901-0015	JACK DC POWER DDAE-9637	1.0 /1	PCS	JP210
00906-0048	CON WAFER 52368-0401	1.0 /1	PCS	JP255
00906-0030	CON WAFER 53014-0910	1.0 /1	PCS	JP331
00906-0049	CON WAFER 53014-1110	2.0 /1	PCS	JP332,335
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP333
00999-0022	CON D-SUB 9PIN (205A-09MGPBBA3)	1.0 /1	PCS	JP340
00909-0001	CONNECTOR SPDIF TOTX178A	1.0 /1	PCS	JP380
00901-0009	JACK PIN JACK DPAM-9601E	1.0 /1	PCS	JP450
00999-0018	CON SCART 2201-42RT DOUBLE	1.0 /1	PCS	JP460
01103-0004	CHIP BEAD-601 CIM21U601NE	18.0 /1	PCS	L100,101,130,131,221,222,330,339-341,343,346-349,364,365,367
01103-0005	POWER BEAD CIB21P330NE	5.0 /1	PCS	L220,290,291,310,320
00200-0000	RES CHIP 0, 5%, 2012	3.0 /1	PCS	L342,352,353

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Model Name : CRCI-5500
Model Code : 16-003

Code	Name	Q'ty	Unit	Location
00200-0220	RES CHIP 120, 5%, 2012	10.0 /1	PCS	L350,351,355-362
01100-0002	INDUCTOR 1.2uH/3PI/AXIAL	3.0 /1	PCS	L370,400,440
00207-0006	RES CHIP NETWORK 47*4	15.0 /1	PCS	PR100-102,130-132,160-165,362,400,401
00207-0003	RES CHIP NETWORK 10K*4	5.0 /1	PCS	PR103,104,133,134,290
00207-0011	RES CHIP NETWORK 0*4	3.0 /1	PCS	PR171-173
00207-0005	RES CHIP NETWORK 4.7K*4	3.0 /1	PCS	PR220-222
00207-0002	RES CHIP NETWORK 100*4	2.0 /1	PCS	PR340,341
00400-0007	TR CHIP KST4401/NPN/SOT-23	5.0 /1	PCS	Q100,130,200,211,213
00400-0008	TR CHIP KST4403/PNP/SOT-23	9.0 /1	PCS	Q210,212,450,460-465
00200-0087	RES CHIP 4.7K, 5%, 1608	21.0 /1	PCS	R101-103,120,131-133,151,201,202,210,212,213,215,216,222,226,231,250,256,300
00200-0171	RES CHIP 120, 5%, 3216	2.0 /1	PCS	R104,134
00200-0096	RES CHIP 10K, 5%, 1608	34.0 /1	PCS	R105,106,108-119,135,136,138,139,141-150,229,296,460,461,467,468
00200-0094	RES CHIP 1K, 5%, 1608	7.0 /1	PCS	R107,140,211,214,340,440,464
00200-0098	RES CHIP 47, 5%, 1608	1.0 /1	PCS	R225
00200-0113	RES CHIP 750, 5%, 1608	1.0 /1	PCS	R227
00200-0121	RES CHIP 2.7K, 5%, 1608	1.0 /1	PCS	R233
00200-0106	RES CHIP 75, 5%, 1608	14.0 /1	PCS	R292,298,421,423,425,427,429,463,466,470-474
00200-0223	RES CHIP 2K, 1%, 1608	1.0 /1	PCS	R293
00200-0222	RES CHIP 12, 1%, 1608	1.0 /1	PCS	R294
00200-0224	RES CHIP 18, 1%, 1608	1.0 /1	PCS	R295
00200-0090	RES CHIP 0, 5%, 1608	3.0 /1	PCS	R297,442,443
00200-0099	RES CHIP 4.7, 5%, 1608	1.0 /1	PCS	R380
00200-0204	RES CHIP 510, 5%, 1608	2.0 /1	PCS	R400,401
00200-0111	RES CHIP 30K, 5%, 1608	1.0 /1	PCS	R430
00200-0120	RES CHIP 680, 5%, 1608	7.0 /1	PCS	R441,451,452,485-488
00200-0221	RES CHIP 82, 5%, 2012	1.0 /1	PCS	R450
00200-0146	RES CHIP 68, 5%, 1608	6.0 /1	PCS	R453,476,478,480,482,484
00200-0070	RES CHIP 150, 5%, 2012	1.0 /1	PCS	R465
00200-0002	RES CHIP 100, 5%, 2012	5.0 /1	PCS	R475,477,479,481,483
00012-0018	IC CMOS 74HC244/SOP	5.0 /1	PCS	U100,104,105,130,131
00012-0026	IC CMOS 74HCT244/SOP	1.0 /1	PCS	U101
00402-0000	FET IRF7303/SOP	2.0 /1	PCS	U102,200
00016-0001	IC C/I CONTROLLER CXD1957AQ/QFP80	1.0 /1	PCS	U103
00012-0037	IC CMOS 74HC02/SOP	1.0 /1	PCS	U106
00012-0042	IC CMOS 74HC139/SOP	1.0 /1	PCS	U132
00012-0016	IC CMOS 74HC257/SOP	7.0 /1	PCS	U160-165,256
00009-0008	IC REGULATOR 78L12/TO-92	2.0 /1	PCS	U210,211
00010-0031	IC MPEG-2 SOURCE DECODER SAA7219(HS/C1)/SQFP208	1.0 /1	PCS	U220
00099-0052	IC VOLTAGE DETECTOR KIA7027AF/SOT-89	1.0 /1	PCS	U221
00502-0002	VCXO 13.5MHZ/15pF/DIP	1.0 /1	PCS	U222
00012-0045	IC CMOS 74LVT245/SOP	1.0 /1	PCS	U250

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Model Name : CRCI-5500
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Code	Name	Q'ty	Unit	Location
00012-0046	IC CMOS 74LVC08D/SOP	1.0 /1	PCS	U251
00012-0019	IC CMOS 74HC32/SOP	1.0 /1	PCS	U252
00012-0020	IC CMOS 74HC174/SOP	1.0 /1	PCS	U253
00013-0009	IC FLASH MEMORY 16MB DT28F160F3B-95/SSOP	1.0 /1	PCS	U255
00013-0007	IC FLASH MEMORY 8MB 28F800B3B-90/TSOP	1.0 /1	PCS	U260
00010-0030	IC MPEG AVGD DECODER SAA7215(HS/C2)/SQFP208	1.0 /1	PCS	U290
10081-11-001	SHEET GLUE (26 X 26 X 0.5T) WITH 5302A (NITTO)	1.0 /1	PCS	U290 ACCESSARY
10591-03-001	HEAT SINK-L	1.0 /1	PCS	U290 ACCESSARY
00004-0007	IC SD-RAM K4S161622D/TSOP II	2.0 /1	PCS	U310,320
00017-0006	IC RS232 DRIVER ADM239LJR	1.0 /1	PCS	U340
00014-0007	IC DAC UDA1320/SSOP16	2.0 /1	PCS	U400,401
00099-0053	IC SCART CONTROL STV6411AD/TQFP64	1.0 /1	PCS	U420
01405-0004	RF MODULATOR RMUP74055VA	1.0 /1	PCS	U440
00009-0019	IC REGULATOR 7805API	1.0 /1	PCS	U441
00301-0018	DIODE ZENER TZM5242B(12V)/SOD80	12.0 /1	PCS	Z462-465,467,468,471-476
00903-0015	PCMCIA DECK (52493-250CA)	1.0 /1	PCS	
01004-0071	PCB CPU REV 1.1 (OAK)	1.0 /1	PCS	
10501-0590	LABEL BAR-CODE	1.0 /1	PCS	
010-0116	**ASSY SMART CARD B/D CRCI-5500,CR-5510**			
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	6.0 /1	PCS	C700-705
00200-0173	RES CHIP 0, 5%, 3216	5.0 /1	PCS	J700-704
01301-0085	HARNESS ASSY#85 (9PIN,110mm,SMART)	1.0 /1	PCS	JP700
01103-0004	CHIP BEAD-601 CIM21U601NE	6.0 /1	PCS	L700-704,706
00200-0000	RES CHIP 0, 5%, 2012	2.0 /1	PCS	L705,R713
00200-0038	RES CHIP 4.7K, 5%, 2012	6.0 /1	PCS	R700-702,707,709,710
00200-0018	RES CHIP 22, 5%, 2012	3.0 /1	PCS	R704-706
00200-0005	RES CHIP 100K, 5%, 2012	1.0 /1	PCS	R711
00200-0037	RES CHIP 470, 5%, 2012	1.0 /1	PCS	R712
00107-0026	CAP ELE 10uF/25V/SSE/BULK	2.0 /1	PCS	TC700,701
00099-0054	IC SMART CARD TDA8004T	1.0 /1	PCS	U700
00999-0016	CON SMART CONNECTOR 6060-08-2	1.0 /1	PCS	U701
01004-0090	PCB SMART CARD REV 1.2 (OAK)	1.0 /1	PCS	
020-0121	**ASSY FRONT CRCI-5500**			
010-0103	ASSY FRONT B/D CI-5100,F1-5000 (OAK)	1.0 /1	PCS	
050-0078	ASSY SUB FRONT CRCI-5500	1.0 /1	PCS	
1105300802	SCREW T/T 2S B/H NAT (03*8)	5.0 /1	PCS	ASSY FRONT B/D+ASSY SUB FRONT(5EA)
050-0074	**ASSY BOTTOM CI-5100,F1-5000**			
050-0067	ASSY LEG F1,F1-CI,F1-VA,F1-VACI	1.0 /1	PCS	

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Model Name : CRCI-5500
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Code	Name	Q'ty	Unit	Location
10031-07-004	CASE BOTTOM OAK(BACK.BUMPON ASSY)	1.0 /1	PCS	
060-0004	**ASS'Y POWER S/W(WITH HARNESS #82)**			
00800-0001	POWER SW (JRA1102K)	1.0 /1	PCS	
010-0103	**ASSY FRONT B/D CI-5100,F1-5000 (OAK)**			
00107-0026	CAP ELE 10uF/25V/SSE/BULK	1.0 /1	PCS	C600
00106-0009	CAP MULTI CERAMIC-CHIP 15pF/150p/50V/C0G/2012	2.0 /1	PCS	C601,602
00107-0068	CAP ELE 47uF/16V/SSE/BULK	1.0 /1	PCS	C603
00107-0077	CAP ELE 100uF/6.3V/SSE/BULK	2.0 /1	PCS	C604,606
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3.0 /1	PCS	C605,607,608
00602-0000	LED RED SLR124	1.0 /1	PCS	D600
10131-03-001	LED SPACER-2 SAT500IRD	3.0 /1	PCS	D600-602 ACCESSARY
00602-0002	LED YELLOW SLY124	1.0 /1	PCS	D601
00602-0001	LED GREEN SLG124	1.0 /1	PCS	D602
01301-0083	HARNESS ASSY#83 (11PIN,130mm,FRONT)	2.0 /1	PCS	JP600,601
00400-0008	TR CHIP KST4403/PNP/SOT-23	5.0 /1	PCS	Q600-604
00400-0007	TR CHIP KST4401/NPN/SOT-23	8.0 /1	PCS	Q605-612
00200-0075	RES CHIP 20K, 5%, 2012	1.0 /1	PCS	R600
00200-0057	RES CHIP 47, 5%, 2012	1.0 /1	PCS	R601
00200-0003	RES CHIP 1K, 5%, 2012	13.0 /1	PCS	R603-607,616-623
00200-0031	RES CHIP 39, 5%, 2012	8.0 /1	PCS	R608-615
00200-0004	RES CHIP 10K, 5%, 2012	6.0 /1	PCS	R624-627,631,634
00200-0005	RES CHIP 100K, 5%, 2012	1.0 /1	PCS	R628
00200-0002	RES CHIP 100, 5%, 2012	1.0 /1	PCS	R632
00200-0006	RES CHIP 1M, 5%, 2012	1.0 /1	PCS	R633
00802-0000	S/W TACT KPT-1105A/4pin/6*6(BULK)	4.0 /1	PCS	S1-4
00001-0006	IC MICOM PIC16C64A-4	1.0 /1	PCS	U600
00603-0001	7-SEGMENT LED DISPLAY LTC-5623G-12(높이4mm)	1.0 /1	PCS	U601
09900-0042	REMOCON SENSOR LTM-97AT-38W	1.0 /1	PCS	U602
00099-0055	IC VOLTAGE DETECTOR KIA7042AF/SOT-89	1.0 /1	PCS	U603
00500-0024	VIBRATOR CRYSTAL FUNDAMETAL 4MHZ/14pF/HC-49S/BST1249S	1.0 /1	PCS	Y600
01004-0073	PCB FRONT REV 1.1 (OAK)	1.0 /1	PCS	
050-0067	**ASSY LEG F1,F1-CI,F1-VA,F1-VACI**			
10161-04-001	LEG FOOT (LOCKING TYPE)	2.0 /1	PCS	
050-0078	**ASSY SUB FRONT CRCI-5500**			
10001-14-002	PANEL FRONT CRCI-5500,IRCI-5400,VACI-5300	1.0 /1	PCS	
10051-20-001	KNOB FUNCTION OAK	1.0 /1	PCS	

BOM List

Model Name : CRCI-5500
Model Code : 16-003

Code	Name	Q'ty	Unit	Location
10061-08-006	DOOR CRCI-5500	1.0 /1	PCS	
10071-10-001	WINDOW OAK	1.0 /1	PCS	
10171-03-002	BADGE HUMAX (OAK)	1.0 /1	PCS	

BOM List

Model Name : CR-5510
Model Code : 16-005

CODE	NAME	Q'ty	UNIT	Location
16-005	**CR-5510**			
000-0097	F-ASSY SET CR-5510	1.0 /1	PCS	
10701-03-013	BOX CARTON HUMAX BRAND, IQG.1	1.0 /5	PCS	
000-0097	**F-ASSY SET CR-5510**			
030-0051	ASSY ACCESSARY CR-5510	1.0 /1	PCS	
040-0095	ASSY SET CR-5510	1.0 /1	PCS	
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
10501-1151	STICKER, (GIFT BOX 부착용:CR-5510)	1.0 /1	PCS	
10601-09-001	CUSHION PAD-PE (L)	1.0 /1	PCS	
10601-09-002	CUSHION PAD-PE (R)	1.0 /1	PCS	
10701-01-029	BOX GIFT (S/S, OAK)	1.0 /1	PCS	
10711-01-003	BAG VINYL "A"	1.0 /1	PCS	
10731-01-001	SILICAGEL 3g	1.0 /1	PCS	
030-0051	**ASSY ACCESSARY CR-5510**			
01300-0004	FLY LEAD (RF CABLE)	1.0 /1	PCS	
01400-0027	REMOCON OAK (DHT-343A)	1.0 /1	PCS	
09900-0003	BATTERY 1.5V, "AAA"	2.0 /1	PCS	
10711-01-002	BAG VINYL "B"	1.0 /1	PCS	
10801-0530	MANUAL CR-5510 (REV H0CR.100)	1.0 /1	PCS	
040-0095	**ASSY SET CR-5510**			
010-0102	ASSY FEC B/D (OAK)	1.0 /1	PCS	
010-0116	ASSY SMART CARD B/D CRCI-5500,CR-5510	1.0 /1	PCS	
010-0119	ASSY CPU B/D CR-5510	1.0 /1	PCS	
01300-0015	CABLE POWER CORD (3A FUSED & H03VVH2-F2X0.75mm)	1.0 /1	PCS	
01403-0009	POWER SMPS / P-102 (REV 1.0)	1.0 /1	PCS	
020-0123	ASSY FRONT CR-5510	1.0 /1	PCS	
050-0074	ASSY BOTTOM CI-5100,F1-5000	1.0 /1	PCS	
060-0004	ASS'Y POWER S/W(WITH HARNESS #82)	1.0 /1	PCS	
10021-03-004	CASE TOP OAK	1.0 /1	PCS	
10101-08-001	SMART NUT	2.0 /1	PCS	ASSY FRONT+ASSY SMART CARD B/D(2EA)
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
1100300804	SCREW T/T 2S P/H BLK (03*8)	1.0 /1	PCS	ASSY CPU B/D(RCA)+CASE BOTTOM(1EA)
1105300804	SCREW T/T 2S B/H BLK (03*8)	3.0 /1	PCS	ASSY CPU B/D(SCART)+CASE BOTTOM(2EA),ASSY CPU B/D(SPDIF)+CASE BOTTOM(1EA)
1115300504	SCREW T/T 3S B/H BLK (03*5)	6.0 /1	PCS	ASSY FRONT+CASE BOTTOM(2EA),CASE TOP+CASE BOTTOM(3EA), RF MODULATOR+PANEL BACK(1EA)
1115300602	SCREW T/T 3S B/H NAT (03*6)	12.0 /1	PCS	ASSY CPU B/D+CASE BOTTOM(6EA),POWER SMPS+CASE BOTTOM(4EA),

BOM List

Model Name : CR-5510
Model Code : 16-005

CODE	NAME	Q'ty	UNIT	Location
				ASSY FEC B/D+CASE BOTTOM(2EA)
1115400504	SCREW T/T 3S B/H BLK (04*5)	2.0 /1	PCS	CASE TOP+CASE BOTTOM(2EA)
1118300602	SCREW T/T 3S PHW NAT(03*6)	2.0 /1	PCS	ASSY FRONT+ASSY SMART CARD B/D(2EA)
1211210002	NUT UNF 3/8INCH*32	2.0 /1	PCS	ASSY FEC B/D+PANEL BACK(2EA)
1231111002	WASHER PAI10	2.0 /1	PCS	ASSY FEC B/D+PANEL BACK(2EA)
010-0102	**ASSY FEC B/D (OAK)**			
01302-0003	FLEXIBLE CABLE 24LINE (60mm,CPU-FEC)	1.0 /1	PCS	ASS'Y CPU B/D+ASS'Y FEC B/D
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	7.0 /1	PCS	C1,3,5,8,14,33,34
00107-0019	CAP ELE 4.7uF/50V/SSL	1.0 /1	PCS	C10
00107-0034	CAP ELE 10uF/35V/SSL	2.0 /1	PCS	C12,13
00106-0092	CAP MULTI CERAMIC-CHIP 0.22uF/224p/16V/X7R/2012	1.0 /1	PCS	C15
00106-0002	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/X7R/2012	2.0 /1	PCS	C20,21
00106-0055	CAP MULTI CERAMIC-CHIP 0.0068uF/682p/25V/X7R/1608	11.0 /1	PCS	C24-27,35,37,41-45
00106-0014	CAP MULTI CERAMIC-CHIP 27pF/270p/50V/C0G/2012	2.0 /1	PCS	C30,31
00107-0083	CAP ELE 100uF/10V/SSL	4.0 /1	PCS	C32,36,38,40
00106-0053	CAP MULTI CERAMIC-CHIP 0.01uF/103p/25V/X7R/1608	1.0 /1	PCS	C39
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3.0 /1	PCS	C4,22,23
00107-0005	CAP ELE 47uF/16V/SSL	1.0 /1	PCS	C6
00106-0093	CAP MULTI CERAMIC-CHIP 0.33uF/334p/25V/Y5V/2012	1.0 /1	PCS	C7
00107-0057	CAP ELE 10uF/16V/SSL	2.0 /1	PCS	C9,11
00304-0001	DIODE SWITCHING KDS193/SOT-23	1.0 /1	PCS	D1
00305-0001	TVS DIODE P6KE30	1.0 /1	PCS	D2
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP10
09900-0029	RELAY SY-6-K	1.0 /1	PCS	K1
01100-0009	INDUCTOR 270uH/5PI/RADIAL	1.0 /1	PCS	L2
01103-0004	CHIP BEAD-601 CIM21U601NE	3.0 /1	PCS	L21-23
00207-0006	RES CHIP NETWORK 47*4	2.0 /1	PCS	PR20,21
00400-0007	TR CHIP KST4401/NPN/SOT-23	1.0 /1	PCS	Q1
00200-0087	RES CHIP 4.7K, 5%, 1608	5.0 /1	PCS	R1,4,6,10,25
00200-0098	RES CHIP 47, 5%, 1608	4.0 /1	PCS	R11,26,27,29
00200-0092	RES CHIP 1.2K, 5%, 1608	1.0 /1	PCS	R12
00205-0011	RES METAL OXIDE 680, 2W, 5% (FORMING TYPE)	1.0 /1	PCS	R13
00200-0095	RES CHIP 1M, 5%, 1608	1.0 /1	PCS	R22
00200-0091	RES CHIP 10, 5%, 1608	1.0 /1	PCS	R23
00200-0096	RES CHIP 10K, 5%, 1608	2.0 /1	PCS	R28,30
00200-0121	RES CHIP 2.7K, 5%, 1608	1.0 /1	PCS	R5
00200-0088	RES CHIP 470, 5%, 1608	1.0 /1	PCS	R7
00200-0093	RES CHIP 22K, 5%, 1608	1.0 /1	PCS	R8
00200-0227	RES CHIP 3.9, 5%, 1608	1.0 /1	PCS	R9
01404-0002	TUNER SD1228/LA-MK2	1.0 /1	PCS	TN1

BOM List

Model Name : CR-5510
Model Code : 16-005

CODE	NAME	Q'ty	UNIT	Location
00009-0001	IC REGULATOR 7805/TO-220	1.0 /1	PCS	U1
10191-0080	HEAT SINK SY200 HAR SERIES	1.0 /1	PCS	U1 ACCESSARY
1105300804	SCREW T/T 2S B/H BLK (03*8)	1.0 /1	PCS	U1 ACCESSARY
00018-0001	IC LNB POWER SUPPLY LNBP15SP	1.0 /1	PCS	U2
00010-0029	IC QPSK DEMODULATOR TDA8044AH/C2/QFP100	1.0 /1	PCS	U20
00500-0022	VIBRATOR CRYSTAL 3rD OVERTONE 4.0625MHz/30PPM	1.0 /1	PCS	Y20
01004-0072	PCB FEC REV 1.1 (OAK)	1.0 /1	PCS	
010-0116	**ASSY SMART CARD B/D CRCI-5500,CR-5510**			
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	6.0 /1	PCS	C700-705
00200-0173	RES CHIP 0, 5%, 3216	5.0 /1	PCS	J700-704
01301-0085	HARNESS ASSY#85 (9PIN,110mm,SMART)	1.0 /1	PCS	JP700
01103-0004	CHIP BEAD-601 CIM21U601NE	6.0 /1	PCS	L700-704,706
00200-0000	RES CHIP 0, 5%, 2012	2.0 /1	PCS	L705,R713
00200-0038	RES CHIP 4.7K, 5%, 2012	6.0 /1	PCS	R700-702,707,709,710
00200-0018	RES CHIP 22, 5%, 2012	3.0 /1	PCS	R704-706
00200-0005	RES CHIP 100K, 5%, 2012	1.0 /1	PCS	R711
00200-0037	RES CHIP 470, 5%, 2012	1.0 /1	PCS	R712
00107-0026	CAP ELE 10uF/25V/SSE/BULK	2.0 /1	PCS	TC700,701
00099-0054	IC SMART CARD TDA8004T	1.0 /1	PCS	U700
00999-0016	CON SMART CONNECTOR 6060-08-2	1.0 /1	PCS	U701
01004-0090	PCB SMART CARD REV 1.2 (OAK)	1.0 /1	PCS	
010-0119	**ASSY CPU B/D CR-5510**			
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	79.0 /1	PCS	C106,138,140,162-165,211,212,214,215,220-234,236,237,240,250,255-262,292-306, 308,310-315,320-325,331-335,342,343,380,400,407,435,445,446
00107-0067	CAP ELE 47uF/50V/SSL	2.0 /1	PCS	C210,443
00107-0057	CAP ELE 10uF/16V/SSL	17.0 /1	PCS	C213,340,341,402-406,436,437,440,441,444,463,464,467,468
00107-0018	CAP ELE 2.2uF/50V/SSL	1.0 /1	PCS	C235
00107-0078	CAP ELE 1000uF/6.3V/SHL	1.0 /1	PCS	C238
00106-0048	CAP MULTI CERAMIC-CHIP 10pF/100p/25V/C0G/1608	2.0 /1	PCS	C239,307
00106-0047	CAP MULTI CERAMIC-CHIP 100pF/101p/25V/C0G/1608	8.0 /1	PCS	C344-351
00106-0081	CAP MULTI CERAMIC-CHIP 1uF/105p/16V/Y5V/2012	7.0 /1	PCS	C401,408,462,469-472
00106-0079	CAP MULTI CERAMIC-CHIP 0.22uF/224p/16V/Y5V/2012	5.0 /1	PCS	C422,425,428,431,434
00107-0001	CAP ELE 100uF/16V/SSL	1.0 /1	PCS	C442
00106-0052	CAP MULTI CERAMIC-CHIP 0.001uF/102p/25V/X7R/1608	6.0 /1	PCS	C450,451,460,461,465,466
00304-0001	DIODE SWITCHING KDS193/SOT-23	2.0 /1	PCS	D460,461
01200-0003	FILTER EMI NFM51R00P506	1.0 /1	PCS	F210
00906-0043	CON WAFER 5267-12A	1.0 /1	PCS	JP200
00901-0015	JACK DC POWER DDAE-9637	1.0 /1	PCS	JP210
00906-0048	CON WAFER 52368-0401	1.0 /1	PCS	JP255
00906-0030	CON WAFER 53014-0910	1.0 /1	PCS	JP331

BOM List

Model Name : CR-5510
Model Code : 16-005

CODE	NAME	Q'ty	UNIT	Location
00906-0049	CON WAFER 53014-1110	2.0 /1	PCS	JP332,335
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP333
00999-0022	CON D-SUB 9PIN (205A-09MGPBBA3)	1.0 /1	PCS	JP340
00909-0001	CONNECTOR SPDIF TOTX178A	1.0 /1	PCS	JP380
00901-0009	JACK PIN JACK DPAM-9601E	1.0 /1	PCS	JP450
00999-0018	CON SCART 2201-42RT DOUBLE	1.0 /1	PCS	JP460
01103-0005	POWER BEAD CIB21P330NE	5.0 /1	PCS	L220,290,291,310,320
01103-0004	CHIP BEAD-601 CIM21U601NE	14.0 /1	PCS	L221,222,330,339-341,343,346-349,364,365,367
00200-0000	RES CHIP 0, 5%, 2012	3.0 /1	PCS	L342,352,353
00200-0220	RES CHIP 120, 5%, 2012	10.0 /1	PCS	L350,351,355-362
01100-0002	INDUCTOR 1.2uH/3PI/AXIAL	3.0 /1	PCS	L370,400,440
00207-0006	RES CHIP NETWORK 47*4	9.0 /1	PCS	PR160-165,362,400,401
00207-0011	RES CHIP NETWORK 0*4	3.0 /1	PCS	PR171-173
00207-0005	RES CHIP NETWORK 4.7K*4	3.0 /1	PCS	PR220-222
00207-0003	RES CHIP NETWORK 10K*4	1.0 /1	PCS	PR290
00207-0002	RES CHIP NETWORK 100*4	2.0 /1	PCS	PR340,341
00400-0007	TR CHIP KST4401/NPN/SOT-23	3.0 /1	PCS	Q200,211,213
00400-0008	TR CHIP KST4403/PNP/SOT-23	9.0 /1	PCS	Q210,212,450,460-465
00200-0090	RES CHIP 0, 5%, 1608	5.0 /1	PCS	R160,161,297,442,443
00200-0087	RES CHIP 4.7K, 5%, 1608	13.0 /1	PCS	R201,202,210,212,213,215,216,222,226,231,250,256,300
00200-0094	RES CHIP 1K, 5%, 1608	5.0 /1	PCS	R211,214,340,440,464
00200-0098	RES CHIP 47, 5%, 1608	1.0 /1	PCS	R225
00200-0113	RES CHIP 750, 5%, 1608	1.0 /1	PCS	R227
00200-0096	RES CHIP 10K, 5%, 1608	6.0 /1	PCS	R229,296,460,461,467,468
00200-0121	RES CHIP 2.7K, 5%, 1608	1.0 /1	PCS	R233
00200-0106	RES CHIP 75, 5%, 1608	13.0 /1	PCS	R292,421,423,425,427,429,463,466,470-474
00200-0223	RES CHIP 2K, 1%, 1608	1.0 /1	PCS	R293
00200-0222	RES CHIP 12, 1%, 1608	1.0 /1	PCS	R294
00200-0224	RES CHIP 18, 1%, 1608	1.0 /1	PCS	R295
00200-0099	RES CHIP 4.7, 5%, 1608	1.0 /1	PCS	R380
00200-0204	RES CHIP 510, 5%, 1608	2.0 /1	PCS	R400,401
00200-0111	RES CHIP 30K, 5%, 1608	1.0 /1	PCS	R430
00200-0120	RES CHIP 680, 5%, 1608	7.0 /1	PCS	R441,451,452,485-488
00200-0221	RES CHIP 82, 5%, 2012	1.0 /1	PCS	R450
00200-0146	RES CHIP 68, 5%, 1608	6.0 /1	PCS	R453,476,478,480,482,484
00200-0070	RES CHIP 150, 5%, 2012	1.0 /1	PCS	R465
00200-0002	RES CHIP 100, 5%, 2012	5.0 /1	PCS	R475,477,479,481,483
00012-0016	IC CMOS 74HC257/SOP	7.0 /1	PCS	U160-165,256
00402-0000	FET IRF7303/SOP	1.0 /1	PCS	U200
00009-0008	IC REGULATOR 78L12/TO-92	2.0 /1	PCS	U210,211
00010-0031	IC MPEG-2 SOURCE DECODER SAA7219(HS/C1)/SQFP208	1.0 /1	PCS	U220
00099-0052	IC VOLTAGE DETECTOR KIA7027AF/SOT-89	1.0 /1	PCS	U221

BOM List

Model Name : CR-5510
Model Code : 16-005

CODE	NAME	Q'ty	UNIT	Location
00502-0002	VCXO 13.5MHZ/15pF/DIP	1.0 /1	PCS	U222
00012-0045	IC CMOS 74LVT245/SOP	1.0 /1	PCS	U250
00012-0046	IC CMOS 74LVC08D/SOP	1.0 /1	PCS	U251
00013-0009	IC FLASH MEMORY 16MB DT28F160F3B-95/SSOP	1.0 /1	PCS	U255
00013-0007	IC FLASH MEMORY 8MB 28F800B3B-90/TSOP	1.0 /1	PCS	U260
00010-0030	IC MPEG AVGD DECODER SAA7215(HS/C2)/SQFP208	1.0 /1	PCS	U290
10081-11-001	SHEET GLUE (26 X 26 X 0.5T) WITH 5302A (NITTO)	1.0 /1	PCS	U290 ACCESSARY
10591-03-001	HEAT SINK-L	1.0 /1	PCS	U290 ACCESSARY
00004-0007	IC SD-RAM K4S161622D/TSOP II	2.0 /1	PCS	U310,320
00017-0006	IC RS232 DRIVER ADM239LJR	1.0 /1	PCS	U340
00014-0007	IC DAC UDA1320/SSOP16	2.0 /1	PCS	U400,401
00099-0053	IC SCART CONTROL STV6411AD/TQFP64	1.0 /1	PCS	U420
01405-0004	RF MODULATOR RMUP74055VA	1.0 /1	PCS	U440
00009-0019	IC REGULATOR 7805API	1.0 /1	PCS	U441
00301-0018	DIODE ZENER TZM5242B(12V)/SOD80	12.0 /1	PCS	Z462-465,467,468,471-476
01004-0071	PCB CPU REV 1.1 (OAK)	1.0 /1	PCS	
10501-0590	LABEL BAR-CODE	1.0 /1	PCS	
020-0123	**ASSY FRONT CR-5510**			
010-0103	ASSY FRONT B/D CI-5100,F1-5000 (OAK)	1.0 /1	PCS	
050-0083	ASSY SUB FRONT CR-5510	1.0 /1	PCS	
1105300802	SCREW T/T 2S B/H NAT (03*8)	5.0 /1	PCS	ASSY FRONT B/D+ASSY SUB FRONT(5EA)
050-0074	**ASSY BOTTOM CI-5100,F1-5000**			
050-0067	ASSY LEG F1,F1-CI,F1-VA,F1-VACI	1.0 /1	PCS	
10031-07-004	CASE BOTTOM OAK(BACK.BUMPON ASSY)	1.0 /1	PCS	
060-0004	**ASS'Y POWER S/W(WITH HARNESS #82)**			
00800-0001	POWER SW (JRA1102K)	1.0 /1	PCS	
010-0103	**ASSY FRONT B/D CI-5100,F1-5000 (OAK)**			
00107-0026	CAP ELE 10uF/25V/SSE/BULK	1.0 /1	PCS	C600
00106-0009	CAP MULTI CERAMIC-CHIP 15pF/150p/50V/C0G/2012	2.0 /1	PCS	C601,602
00107-0068	CAP ELE 47uF/16V/SSE/BULK	1.0 /1	PCS	C603
00107-0077	CAP ELE 100uF/6.3V/SSE/BULK	2.0 /1	PCS	C604,606
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3.0 /1	PCS	C605,607,608
00602-0000	LED RED SLR124	1.0 /1	PCS	D600
10131-03-001	LED SPACER-2 SAT500IRD	3.0 /1	PCS	D600-602 ACCESSARY
00602-0002	LED YELLOW SLY124	1.0 /1	PCS	D601
00602-0001	LED GREEN SLG124	1.0 /1	PCS	D602
01301-0083	HARNESS ASSY#83 (11PIN,130mm,FRONT)	2.0 /1	PCS	JP600,601

BOM List

Model Name : CR-5510
Model Code : 16-005

CODE	NAME	Q'ty	UNIT	Location
00400-0008	TR CHIP KST4403/PNP/SOT-23	5.0 /1	PCS	Q600-604
00400-0007	TR CHIP KST4401/NPN/SOT-23	8.0 /1	PCS	Q605-612
00200-0075	RES CHIP 20K, 5%, 2012	1.0 /1	PCS	R600
00200-0057	RES CHIP 47, 5%, 2012	1.0 /1	PCS	R601
00200-0003	RES CHIP 1K, 5%, 2012	13.0 /1	PCS	R603-607,616-623
00200-0031	RES CHIP 39, 5%, 2012	8.0 /1	PCS	R608-615
00200-0004	RES CHIP 10K, 5%, 2012	6.0 /1	PCS	R624-627,631,634
00200-0005	RES CHIP 100K, 5%, 2012	1.0 /1	PCS	R628
00200-0002	RES CHIP 100, 5%, 2012	1.0 /1	PCS	R632
00200-0006	RES CHIP 1M, 5%, 2012	1.0 /1	PCS	R633
00802-0000	S/W TACT KPT-1105A/4pin/6*6(BULK)	4.0 /1	PCS	S1-4
00001-0006	IC MICOM PIC16C64A-4	1.0 /1	PCS	U600
00603-0001	7-SEGMENT LED DISPLAY LTC-5623G-12(높이4mm)	1.0 /1	PCS	U601
09900-0042	REMOCON SENSOR LTM-97AT-38W	1.0 /1	PCS	U602
00099-0055	IC VOLTAGE DETECTOR KIA7042AF/SOT-89	1.0 /1	PCS	U603
00500-0024	VIBRATOR CRYSTAL FUNDAMETAL 4MHZ/14pF/HC-49S/BST1249S	1.0 /1	PCS	Y600
01004-0073	PCB FRONT REV 1.1 (OAK)	1.0 /1	PCS	
050-0067	**ASSY LEG F1,F1-CI,F1-VA,F1-VACI**			
10161-04-001	LEG FOOT (LOCKING TYPE)	2.0 /1	PCS	
050-0083	**ASSY SUB FRONT CR-5510**			
10001-15-002	PANEL FRONT CR-5510	1.0 /1	PCS	
10051-20-001	KNOB FUNCTION OAK	1.0 /1	PCS	
10061-08-008	DOOR CR-5510	1.0 /1	PCS	
10071-10-001	WINDOW OAK	1.0 /1	PCS	
10171-03-002	BADGE HUMAX (OAK)	1.0 /1	PCS	

BOM List

Nodel Name : CI-5100C
Model Code: 16-006

CODE	NAME	Q'ty	UNIT	Location
16-006	**CI-5100C**			
000-0115	F-ASSY SET CI-5100C	1.0 /1	PCS	
10701-03-016	BOX CARTON CI-5100C	1.0 /5	PCS	
000-0115	**F-ASSY SET CI-5100C**			
030-0055	ASSY ACCESSARY CI-5100C	1.0 /1	PCS	
040-0115	ASSY SET CI-5100C	1.0 /1	PCS	
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
10501-1220	STICKER (G/T 부착용:CI-5100C)	1.0 /1	PCS	
10601-11-001	PULP PAD (OAK,SUPERSET)	2.0 /1	PCS	
10701-01-029	BOX GIFT (S/S, OAK)	1.0 /1	PCS	
10711-01-011	BAG VINYL "A" OAK,SUPERSET	1.0 /1	PCS	
10731-01-001	SILICAGEL 3g	1.0 /1	PCS	
030-0055	**ASSY ACCESSARY CI-5100C**			
01300-0004	FLY LEAD (RF CABLE)	1.0 /1	PCS	
01400-0030	REMOCON OAK	1.0 /1	PCS	
09900-0003	BATTERY 1.5V, "AAA"	2.0 /1	PCS	
10711-01-002	BAG VINYL "B"	1.0 /1	PCS	
10801-0563	MANUAL CI-5100C (REV HOCI5100C.202)	1.0 /1	PCS	
040-0115	**ASSY SET CI-5100C**			
010-0151	ASSY QAM B/D CI-5100C	1.0 /1	PCS	
010-0152	ASSY CPU B/D CI-5100C	1.0 /1	PCS	
01300-0016	CABLE POWER CORD (OAK:KKP-419C/B-275,KLCE-2F)	1.0 /1	PCS	
01300-0025	CABLE RCA (RCA/R*2+22cm)	1.0 /1	PCS	
01403-0009	POWER SMPS / P-102 (REV 1.0)	1.0 /1	PCS	
020-0130	ASSY FRONT CI-5100C	1.0 /1	PCS	
050-0087	ASSY BOTOM CI-5100C	1.0 /1	PCS	
060-0004	ASS'Y POWER S/W(WITH HARNESS #82)	1.0 /1	PCS	
10021-03-004	CASE TOP OAK	1.0 /1	PCS	
10501-0660	LABEL BAR-CODE (50X15, RIBBON)	1.0 /1	PCS	
10501-1290	STICKER (BOTTOM:CI-5100C)	1.0 /1	PCS	
1100300804	SCREW T/T 2S P/H BLK (03*8)	1.0 /1	PCS	ASSY CPU B/D(RCA)+CASE BOTTOM(1EA)
1105300804	SCREW T/T 2S B/H BLK (03*8)	3.0 /1	PCS	ASSY CPU B/D(SCART)+CASE BOTTOM(2EA),ASSY CPU B/D(SPDIF)+CASE BOTTOM(1EA)
1115300504	SCREW T/T 3S B/H BLK (03*5)	6.0 /1	PCS	ASSY FRONT+CASE BOTTOM(2EA),CASE TOP+CASE BOTTOM(3EA), RF MODULATOR+PANEL BACK(1EA)

BOM List

Model Name : CI-5100C
Model Code: 16-006

CODE	NAME	Q'ty	UNIT	Location
1115300602	SCREW T/T 3S B/H NAT (03*6)	12.0 /1	PCS	ASSY CPU B/D+CASE BOTTOM(6EA),POWER SMPS+CASE BOTTOM(4EA), ASSY FEC B/D+CASE BOTTOM(2EA)
1115400504	SCREW T/T 3S B/H BLK (04*5)	2.0 /1	PCS	CASE TOP+CASE BOTTOM(2EA)
010-0151	**ASSY QAM B/D CI-5100C**			
01302-0003	FLEXIBLE CABLE 24LINE (60mm,CPU-FEC)	1.0 /1	PCS	ASSY CPU B/D+ASSY QAM B/D
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	23.0 /1	PCS	C1,2,5,6,16,20-22,24,25,31,32,34,36,39-47
00106-0049	CAP MULTI CERAMIC-CHIP 15pF/150p/25V/C0G/1608	2.0 /1	PCS	C11,12
00107-0057	CAP ELE 10uF/16V/SSL	4.0 /1	PCS	C15,26,30,33
00106-0098	CAP MULTI CERAMIC-CHIP 3pF/030p/50V/C0G/1608	1.0 /1	PCS	C18
00107-0009	CAP ELE 10uF/25V/SSL	1.0 /1	PCS	C19
00107-0001	CAP ELE 100uF/16V/SSL	1.0 /1	PCS	C23
00106-0095	CAP MULTI CERAMIC-CHIP 16pF/160p/50V/C0G/1608	2.0 /1	PCS	C28,29
00107-0010	CAP ELE 100uF/25V/SSL	1.0 /1	PCS	C3
00106-0096	CAP MULTI CERAMIC-CHIP 12pF/120p/50V/C0G/1608	1.0 /1	PCS	C37
00107-0069	CAP ELE 33uF/16V/SSL	1.0 /1	PCS	C4
00106-0053	CAP MULTI CERAMIC-CHIP 0.01uF/103p/25V/X7R/1608	8.0 /1	PCS	C7,9,13,14,17,27,35,38
00106-0052	CAP MULTI CERAMIC-CHIP 0.001uF/102p/25V/X7R/1608	2.0 /1	PCS	C8,10
01204-0003	BAND PASS FILTER X6966M	1.0 /1	PCS	FL1
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP3
01100-0021	INDUCTOR 22uH/3PI/AXIAL	5.0 /1	PCS	L1,4,6-8
01100-0010	INDUCTOR 10uH/3PI	3.0 /1	PCS	L2,3,5
00207-0002	RES CHIP NETWORK 100*4	3.0 /1	PCS	PR1-3
00401-0014	TR NOMAL KTA1273/PNP/TO-92L	2.0 /1	PCS	Q1,3
00400-0007	TR CHIP KST4401/NPN/SOT-23	2.0 /1	PCS	Q2,4
00200-0088	RES CHIP 470, 5%, 1608	3.0 /1	PCS	R1,4,32
00200-0200	RES CHIP 1.8K, 5%, 1608	2.0 /1	PCS	R11,12
00200-0094	RES CHIP 1K, 5%, 1608	11.0 /1	PCS	R2,16-21,23,24,28,33
00200-0090	RES CHIP 0, 5%, 1608	1.0 /1	PCS	R22
00200-0092	RES CHIP 1.2K, 5%, 1608	2.0 /1	PCS	R26,31
00200-0096	RES CHIP 10K, 5%, 1608	1.0 /1	PCS	R3
00200-0215	RES CHIP 3K, 5%, 1608	1.0 /1	PCS	R5
00200-0100	RES CHIP 100, 5%, 1608	5.0 /1	PCS	R6-8,14,15
00200-0087	RES CHIP 4.7K, 5%, 1608	6.0 /1	PCS	R9,10,13,27,29,34
00009-0004	IC REGULATOR 7812	1.0 /1	PCS	U1
10191-0080	HEAT SINK SY200 HAR SERIES	2.0 /1	PCS	U1,4 ACCESSARY
1105300804	SCREW T/T 2S B/H BLK (03*8)	2.0 /1	PCS	U1,4 ACCESSARY
01404-0004	TUNER CD1516/P	1.0 /1	PCS	U2
00014-0008	IC IF DOWN CONVERTER UPC2798GR	1.0 /1	PCS	U3

BOM List

Model Name : CI-5100C
Model Code: 16-006

CODE	NAME	Q'ty	UNIT	Location
00009-0001	IC REGULATOR 7805/TO-220	1.0 /1	PCS	U4
00010-0032	IC QAM DECODER BCM3118B	1.0 /1	PCS	U5
10081-07-001	SHEET GLUE (3M TAPE #9890,12X18)	1.0 /1	PCS	U5 ACCESSARY
10591-02-001	HEAT SINK F1-CI	1.0 /1	PCS	U5 ACCESSARY
00500-0025	VIBRATOR CRYSTAL 29.125MHZ/HC-49U	1.0 /1	PCS	Y1
00500-0026	VIBRATOR CRYSTAL 14.000MHZ/HC-49U	1.0 /1	PCS	Y2
01004-0091	PCB QAM B/D REV 1.1	1.0 /1	PCS	
010-0152	**ASSY CPU B/D CI-5100C**			
1015201802	SCREW B/H NAT(M2*18)	4.0 /1	PCS	ASSY CPU B/D+PCMCIA DECK
00106-0055	CAP MULTI CERAMIC-CHIP 0.0068uF/682p/25V/X7R/1608	2.0 /1	PCS	C100,130
00106-0042	CAP MULTI CERAMIC-CHIP 0.1uF/104p/25V/Y5V/1608	89.0 /1	PCS	C101,102,106-109,110,131,132,137-141,160-165,214,215,220-234,236,237,240, 250-253,255-262,292-306,308,310-315,320-325,331,342,343,380,400,407,435,445,446
00106-0081	CAP MULTI CERAMIC-CHIP 1uF/105p/16V/Y5V/2012	11.0 /1	PCS	C103,104,134,135,401,408,462,469-472
00106-0052	CAP MULTI CERAMIC-CHIP 0.001uF/102p/25V/X7R/1608	8.0 /1	PCS	C105,136,450,451,460,461,465,466
00107-0018	CAP ELE 2.2uF/50V/SSL	1.0 /1	PCS	C235
00107-0078	CAP ELE 1000uF/6.3V/SHL	1.0 /1	PCS	C238
00106-0048	CAP MULTI CERAMIC-CHIP 10pF/100p/25V/C0G/1608	3.0 /1	PCS	C239,307,317
00107-0057	CAP ELE 10uF/16V/SSL	16.0 /1	PCS	C340,341,402-406,436,437,440,441,444,463,464,467,468
00106-0047	CAP MULTI CERAMIC-CHIP 100pF/101p/25V/C0G/1608	8.0 /1	PCS	C344-351
00106-0079	CAP MULTI CERAMIC-CHIP 0.22uF/224p/16V/Y5V/2012	5.0 /1	PCS	C422,425,428,431,434
00107-0001	CAP ELE 100uF/16V/SSL	1.0 /1	PCS	C442
00107-0067	CAP ELE 47uF/50V/SSL	1.0 /1	PCS	C443
00304-0001	DIODE SWITCHING KDS193/SOT-23	2.0 /1	PCS	D460,461
01200-0003	FILTER EMI NFM51R00P506	1.0 /1	PCS	F210
00906-0042	PCMCIA WAFER 91931-31169	2.0 /1	PCS	JP120,130
00906-0043	CON WAFER 5267-12A	1.0 /1	PCS	JP200
00906-0048	CON WAFER 52368-0401	1.0 /1	PCS	JP255
00906-0049	CON WAFER 53014-1110	2.0 /1	PCS	JP332,335
00906-0037	CON FFC WAFER 52045-2445	1.0 /1	PCS	JP333
00999-0022	CON D-SUB 9PIN (205A-09MGPBBA3)	1.0 /1	PCS	JP340
00909-0001	CONNECTOR SPDIF TOTX178A	1.0 /1	PCS	JP380
00901-0009	JACK PIN JACK DPAM-9601E	1.0 /1	PCS	JP450
00999-0018	CON SCART 2201-42RT DOUBLE	1.0 /1	PCS	JP460
01103-0004	CHIP BEAD-601 CIM21U601NE	12.0 /1	PCS	L100,101,130,131,221,222,346-349,364,365
01103-0005	POWER BEAD CIB21P330NE	5.0 /1	PCS	L220,290,291,310,320
00200-0220	RES CHIP 120, 5%, 2012	10.0 /1	PCS	L350,351,355-362
00200-0000	RES CHIP 0, 5%, 2012	2.0 /1	PCS	L352,353
01100-0002	INDUCTOR 1.2uH/3PI/AXIAL	3.0 /1	PCS	L370,400,440
00207-0006	RES CHIP NETWORK 47*4	15.0 /1	PCS	PR100-102,130-132,160-165,362,400,401

BOM List

Model Name : CI-5100C
Model Code: 16-006

CODE	NAME	Q'ty	UNIT	Location
00207-0003	RES CHIP NETWORK 10K*4	5.0 /1	PCS	PR103,104,133,134,290
00207-0011	RES CHIP NETWORK 0*4	3.0 /1	PCS	PR171-173
00207-0005	RES CHIP NETWORK 4.7K*4	3.0 /1	PCS	PR220-222
00207-0002	RES CHIP NETWORK 100*4	2.0 /1	PCS	PR340,341
00400-0007	TR CHIP KST4401/NPN/SOT-23	4.0 /1	PCS	Q100,130,200,213
00400-0008	TR CHIP KST4403/PNP/SOT-23	8.0 /1	PCS	Q212,450,460-465
00200-0087	RES CHIP 4.7K, 5%, 1608	18.0 /1	PCS	R101-103,120,131-133,151,201,202,215,216,222,226,231,250,256,300
00200-0171	RES CHIP 120, 5%, 3216	2.0 /1	PCS	R104,134
00200-0096	RES CHIP 10K, 5%, 1608	34.0 /1	PCS	R105,106,108-119,135,136,138,139,141-150,229,296,460,461,467,468
00200-0094	RES CHIP 1K, 5%, 1608	6.0 /1	PCS	R107,140,214,340,440,464
00200-0098	RES CHIP 47, 5%, 1608	1.0 /1	PCS	R225
00200-0113	RES CHIP 750, 5%, 1608	1.0 /1	PCS	R227
00200-0121	RES CHIP 2.7K, 5%, 1608	1.0 /1	PCS	R233
00200-0106	RES CHIP 75, 5%, 1608	14.0 /1	PCS	R292,298,421,423,425,427,429,463,466,470-474
00200-0223	RES CHIP 2K, 1%, 1608	1.0 /1	PCS	R293
00200-0222	RES CHIP 12, 1%, 1608	1.0 /1	PCS	R294
00200-0224	RES CHIP 18, 1%, 1608	1.0 /1	PCS	R295
00200-0090	RES CHIP 0, 5%, 1608	3.0 /1	PCS	R297,442,443
00200-0099	RES CHIP 4.7, 5%, 1608	1.0 /1	PCS	R380
00200-0204	RES CHIP 510, 5%, 1608	2.0 /1	PCS	R400,401
00200-0111	RES CHIP 30K, 5%, 1608	1.0 /1	PCS	R430
00200-0120	RES CHIP 680, 5%, 1608	7.0 /1	PCS	R441,451,452,485-488
00200-0221	RES CHIP 82, 5%, 2012	1.0 /1	PCS	R450
00200-0146	RES CHIP 68, 5%, 1608	6.0 /1	PCS	R453,476,478,480,482,484
00200-0070	RES CHIP 150, 5%, 2012	1.0 /1	PCS	R465
00200-0002	RES CHIP 100, 5%, 2012	5.0 /1	PCS	R475,477,479,481,483
00012-0018	IC CMOS 74HC244/SOP	5.0 /1	PCS	U100,104,105,130,131
00012-0026	IC CMOS 74HCT244/SOP	1.0 /1	PCS	U101
00402-0000	FET IRF7303/SOP	2.0 /1	PCS	U102,200
00016-0001	IC C/I CONTROLLER CXD1957AQ/QFP80	1.0 /1	PCS	U103
00012-0037	IC CMOS 74HC02/SOP	1.0 /1	PCS	U106
00012-0042	IC CMOS 74HC139/SOP	1.0 /1	PCS	U132
00012-0016	IC CMOS 74HC257/SOP	7.0 /1	PCS	U160-165,256
00009-0008	IC REGULATOR 78L12/TO-92	1.0 /1	PCS	U211
00010-0031	IC MPEG-2 SOURCE DECODER SAA7219(HS/C1)/SQFP208	1.0 /1	PCS	U220
00099-0052	IC VOLTAGE DETECTOR KIA7027AF/SOT-89	1.0 /1	PCS	U221
00502-0002	VCXO 13.5MHZ/15pF/DIP	1.0 /1	PCS	U222
00012-0045	IC CMOS 74LVT245/SOP	1.0 /1	PCS	U250
00012-0046	IC CMOS 74LVC08D/SOP	1.0 /1	PCS	U251
00012-0019	IC CMOS 74HC32/SOP	1.0 /1	PCS	U252

BOM List

Model Name : CI-5100C
Model Code: 16-006

CODE	NAME	Q'ty	UNIT	Location
00012-0020	IC CMOS 74HC174/SOP	1.0 /1	PCS	U253
00013-0008	IC FLASH MEMORY 8MB DT28F800F3B-95/SSOP	1.0 /1	PCS	U255
00013-0007	IC FLASH MEMORY 8MB 28F800B3B-90/TSOP	1.0 /1	PCS	U260
00010-0030	IC MPEG AVGD DECODER SAA7215(HS/C2)/SQFP208	1.0 /1	PCS	U290
10591-03-001	HEAT SINK-L	1.0 /1	PCS	U290 ACCESSARY
10081-11-001	SHEET GLUE (26 X 26 X 0.5T) WITH 5302A (NITTO)	1.0 /1	PCS	U290 ACCESSARY
00004-0007	IC SD-RAM K4S161622D/TSOP II	2.0 /1	PCS	U310,320
00017-0006	IC RS232 DRIVER ADM239LJR	1.0 /1	PCS	U340
00014-0007	IC DAC UDA1320/SSOP16	2.0 /1	PCS	U400,401
00099-0053	IC SCART CONTROL STV6411AD/TQFP64	1.0 /1	PCS	U420
01405-0005	RF MODULATOR RMUS74055VA	1.0 /1	PCS	U440
00009-0019	IC REGULATOR 7805API	1.0 /1	PCS	U441
00301-0018	DIODE ZENER TZM5242B(12V)/SOD80	12.0 /1	PCS	Z462-465,467,468,471-476
00903-0015	PCMCIA DECK (52493-250CA)	1.0 /1	PCS	
01004-0071	PCB CPU REV 1.1 (OAK)	1.0 /1	PCS	
10501-0590	LABEL BAR-CODE	1.0 /1	PCS	
020-0130	**ASSY FRONT CI-5100C**			
010-0103	ASSY FRONT B/D CI-5100,F1-5000 (OAK)	1.0 /1	PCS	
050-0084	ASSY SUB FRONT CI-5100C	1.0 /1	PCS	
1105300802	SCREW T/T 2S B/H NAT (03*8)	5.0 /1	PCS	ASSY FRONT B/D+ASSY SUB FRONT(5EA)
050-0087	**ASSY BOTOM CI-5100C**			
050-0067	ASSY LEG F1,F1-CI,F1-VA,F1-VACI	1.0 /1	PCS	
10031-07-003	CASE BOTTOM CI-5100C	1.0 /1	PCS	
060-0004	**ASS'Y POWER S/W(WITH HARNESS #82)**			
00800-0001	POWER SW (JRA1102K)	1.0 /1	PCS	
010-0103	**ASSY FRONT B/D CI-5100,F1-5000 (OAK)**			
00107-0026	CAP ELE 10uF/25V/SSE/BULK	1.0 /1	PCS	C600
00106-0009	CAP MULTI CERAMIC-CHIP 15pF/150p/50V/COG/2012	2.0 /1	PCS	C601,602
00107-0068	CAP ELE 47uF/16V/SSE/BULK	1.0 /1	PCS	C603
00107-0077	CAP ELE 100uF/6.3V/SSE/BULK	2.0 /1	PCS	C604,606
00106-0025	CAP MULTI CERAMIC-CHIP 0.1uF/104p/50V/Y5V/2012	3.0 /1	PCS	C605,607,608
00602-0000	LED RED SLR124	1.0 /1	PCS	D600
10131-03-001	LED SPACER-2 SAT500IRD	3.0 /1	PCS	D600-602 ACCESSARY
00602-0002	LED YELLOW SLY124	1.0 /1	PCS	D601
00602-0001	LED GREEN SLG124	1.0 /1	PCS	D602

BOM List

Model Name : CI-5100C
Model Code: 16-006

CODE	NAME	Q'ty	UNIT	Location
01301-0083	HARNESS ASSY#83 (11PIN,130mm,FRONT)	2.0 /1	PCS	JP600,601
00400-0008	TR CHIP KST4403/PNP/SOT-23	5.0 /1	PCS	Q600-604
00400-0007	TR CHIP KST4401/NPN/SOT-23	8.0 /1	PCS	Q605-612
00200-0075	RES CHIP 20K, 5%, 2012	1.0 /1	PCS	R600
00200-0057	RES CHIP 47, 5%, 2012	1.0 /1	PCS	R601
00200-0003	RES CHIP 1K, 5%, 2012	13.0 /1	PCS	R603-607,616-623
00200-0031	RES CHIP 39, 5%, 2012	8.0 /1	PCS	R608-615
00200-0004	RES CHIP 10K, 5%, 2012	6.0 /1	PCS	R624-627,631,634
00200-0005	RES CHIP 100K, 5%, 2012	1.0 /1	PCS	R628
00200-0002	RES CHIP 100, 5%, 2012	1.0 /1	PCS	R632
00200-0006	RES CHIP 1M, 5%, 2012	1.0 /1	PCS	R633
00802-0000	S/W TACT KPT-1105A/4pin/6*6(BULK)	4.0 /1	PCS	S1-4
00001-0006	IC MICOM PIC16C64A-4	1.0 /1	PCS	U600
00603-0001	7-SEGMENT LED DISPLAY LTC-5623G-12(Hight: 4mm)	1.0 /1	PCS	U601
09900-0042	REMOCON SENSOR LTM-97AT-38W	1.0 /1	PCS	U602
00099-0055	IC VOLTAGE DETECTOR KIA7042AF/SOT-89	1.0 /1	PCS	U603
00500-0024	VIBRATOR CRYSTAL FUNDAMETAL 4MHZ/14pF/HC-49S/BST1249S	1.0 /1	PCS	Y600
01004-0073	PCB FRONT REV 1.1 (OAK)	1.0 /1	PCS	
050-0067	**ASSY LEG F1,F1-CI,F1-VA,F1-VACI**			
10161-04-001	LEG FOOT (LOCKING TYPE)	2.0 /1	PCS	
050-0084	**ASSY SUB FRONT CI-5100C**			
10001-14-001	PANEL FRONT CI-5100	1.0 /1	PCS	
10051-20-001	KNOB FUNCTION OAK	1.0 /1	PCS	
10061-08-009	DOOR QAM(DIGITAL CABLE RECEIVER)	1.0 /1	PCS	
10071-10-001	WINDOW OAK	1.0 /1	PCS	
10171-03-002	BADGE HUMAX (OAK)	1.0 /1	PCS	