



Technical Manual

AM/FM HD RADIO TUNER RT-1084

Table of Contents

- Specification.....1
- Parts List.....2~7
- Upgrade.....8
- Wiring.....9
- PCB Assembly.....10~11
- Schematic Diagram12~15

Specifications

HD FM

- Tuning Frequency :**
87.5 to 107.9 MHz
- Sensitivity:**
-88dBm
- Signal to Noise Ratio :**
85 dB
- THD+N:**
0.10%
- Channel Separation :**
75dB
- Frequency Response :**
20Hz-20kHz, ± 1.5 dB
- Digital Output:**
Optical, Coax: 44.1KHz
- Analog Output:**
1Vrms

Analog FM

- Tuning Frequency:**
87.5 to 107.9 MHz
- IHF Sensitivity:**
1.99µV / 17.2 dBf
- Signal to Noise Ratio :**
68 dBf(mono)
70 dBf(stereo)
- THD + N:**
0.5% (mono)
0.6% (stereo)
- Frequency Response :**
20 Hz-14 kHz, ± 1.5 dB

HD AM

- Tuning Frequency:**
520 to 1710 KHz
- Sensitivity:**
-86dBm
- Signal to Noise Ratio:**
50 dB
- THD+N :**
0.10%
- Channel Separation :**
75dB
- Frequency Response :**
40 Hz-14.7 kHz, ± 1.5 dB
- Digital Output:**
Optical, Coax: 44.1KHz
- Analog Output:**
300mVrms

Analog AM

- Tuning Frequency:**
520 to 1710 KHz
- Sensitivity:**
1770 µV/m (600KHz)
880 µV/m (1000KHz)
- Signal to Noise Ratio:**
35 dB
- THD+ N:**
2.0%
- Selectivity:**
20 dB

Sirius Tuner

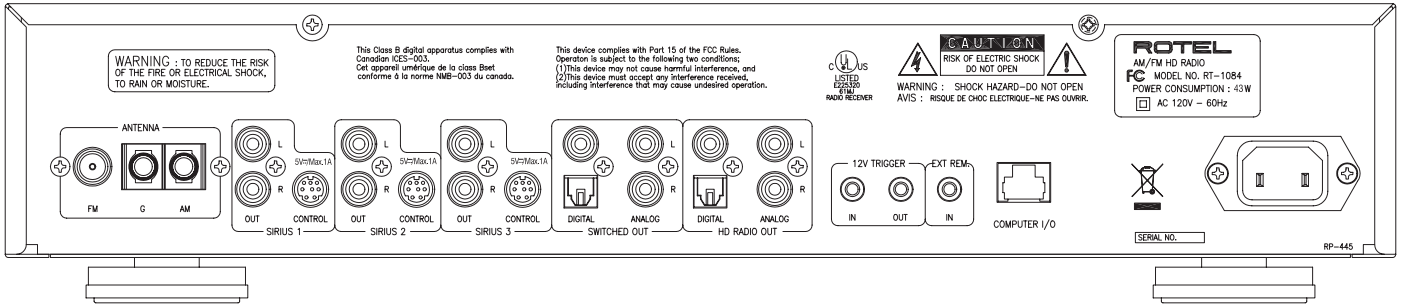
- Signal to Noise Ratio:**
73 dB
- THD + N :**
0.20%
- Channel Separation :**
73dB

General

- Power Consumption:**
23 watts (rated)
- Max Power Consumption :**
52 watts (with three Sirius modules connected)
- Power Requirements (AC):**
120 volts, 60 Hz (USA version)
- Weight:**
6.5 Kg/14.3 lb.
- Dimensions (W x H x D):**
432 x 92 x 343 mm
17.01" x 3.62" x 13.51"
- Tuning Frequency:**
87.5 to 108 MHz
- Station Presets:**
HD/AM/FM: 30 max
Sirius 1 : 30 max
Sirius 2 : 30 max
Sirius 3 : 30 max

THE ROTEL CO., LTD
SHINSEN-BLD. 4F 10-10 SHINSEN-CHO, SHIBUYA-KU,
TOKYO 150-0045, JAPAN

Serial. NO. Beginning



SYMBOL	PARTS NO.	DESCRIPTION
	016 E-1473A00 PCB ASSY	
	501 E-1473-A	PCB ASSY (MAIN)
U33	120003460T	IC SMD IS63LV1024L-10HL
U46	120100920T	IC SMD (RESET IC) KIA7032AF-RTF
U3	120101040T	IC SMD CS4398-CZZR
U2,U42	120200310TPB	IC SMD 74HC126D
U22,U34	120201191T	IC SMD MC14052BDG
U20	120400391T	IC SMD (REG.) MIC39102YM
U23	120402460T	IC SOT-25 X6209F 332MR
U10	120402470T	IC SOT-25 X6209F 502MR
U9	120600590T	IC SMD (CPU/FLASH) ATMEGA128L-8A
U1,U35	120800061T	IC SMD MIC29152WU
U16	120800350TPB	IC SMD SP3232EEY-L(SIPEX)
U28	120800811T	IC SMD MC74HC573ADWR2G
U4,U17,U24	120800950T	IC SMD (ISOLATION AMP) BA3121F
U11,U14,U15,U32	120803170T	IC SMD (OPE DUAL) OPA2134UA
U27,U29,U30,U31	120803180T	IC SMD (OPE AMP) OPA134UA
U45	120803190T	IC (CONVERTER) SRC4192IDB
U22,U34	120803520T	IC SMD CD4052BCMX
U6,U7,U12,U21	121400040T	IC (REG.+5V) KIA7805API
U8	121400661T	IC (REG.+8V) KIA7808API
U5	121400821T	IC (REG.-5V) KIA7905PI
U13	121400830T	IC (REG.) KIA278R12PI
U18,U19,U25	121400840T	IC (REG.) KIA278R05PI
U1,U2,U3	121400840T	IC (REG.) KIA278R05PI
Q1,Q3-7,Q9-10,Q14-16,Q19-21, Q25,Q29,Q32-33,Q39-40	140010200T	TRANSISTOR KRC102S
Q8,Q11,Q18,Q24,Q42	140010200T	TRANSISTOR KRC102S
Q2,Q12-13,Q17,Q22-23,Q26-28,Q408	140290701TPB	TRANSISTOR CHIP STN2907AS
U39,U47	141023301T	TRANSISTOR KRC233S
Y4	161081701T	IC (PHOTO COUPLER) PC817
Y1	170005700TPB	CRYSTAL SMD 24.576MHZ
Z1,Z2,Z3,Z4,Z5,Z6,Z7,Z8,Z9,Z10,Z11	170005900TPB	CRYSTAL SMD 7.3728MHZ
D1,D2,D3,D4,D5,D10,D11	210005101T	DIODE ZENER CHIP 5V1W
D6,D7,D8,D9	211040601T	DIODE BRIDGE GBU406
L2,L3	211400401T	DIODE 1N4004
B14,B26,L1	260004901T	MICRO INDUCTOR CHIP 1uH
T2,T5	260029800T	MICRO INDUCTOR CHIP 10uH
P3	331000600B	PULSE TRANSFORMER
J12	380004600B	SWITCH TACT ST250
(J12)	401000600B	FUSE 1A506
C115	401000700B	FUSE HOLDER FB22
C90,C107,C122,C124	410221000T03	TANTALUM CAPACITOR 35V220uF
C38,C44,C45,C46,C131,C139,C148,	410471010T	CAPACITOR TANTALUM 16V470uF
C161,C172,C179	411100100T	ELECTROLYTIC CAPACITOR 16V10uF
C19,C20,C66,C69	411100100T	ELECTROLYTIC CAPACITOR 16V10uF
C4,C13	411102060T	ELECTROLYTIC CAPACITOR 16V1000uF
C12,C15,C17,C22	411102070T	ELECTROLYTIC CAPACITOR 50V1000uF
C32,C39	411222040T	ELECTROLYTIC CAPACITOR 16V2200uF
C30,C31,C33,C34,C35,C36,C77,C86,	420070090T	CAPACITOR CHIP 7pF
C151,C240,C241,C273,C274	420101010TPB	CAPACITOR CHIP 100pF
C232,C233,C236,C237	420101010TPB	CAPACITOR CHIP 100pF
C116,C198	420102060TPB	CAPACITOR CHIP 1000pF
C3,C5-7,C10,C14,C16,C18,C21,C23,	420103090TPB	CAPACITOR CHIP 0.01uF
C25-26,C29,C37,C40,C42-43,C47,C49,C55,	420104070TPB	CAPACITOR CHIP 16V0.1uF
	420104070TPB	CAPACITOR CHIP 16V0.1uF

Parts List 2/4

RT-1084

SYMBOL	PARTS NO.	DESCRIPTION
C57-58,C60-62,C64-65,C71,C73,C83,C92,	420104070TPB	CAPACITOR CHIP 16V0.1uF
C95,C98-99,C104,C120,C127,C135,C138,	420104070TPB	CAPACITOR CHIP 16V0.1uF
C143,C150,C153,C157,C164,C168,C176,	420104070TPB	CAPACITOR CHIP 16V0.1uF
C181-182,C189-190,C201-202,C205,	420104070TPB	CAPACITOR CHIP 16V0.1uF
C218-219,C222,C225-226,C229,C246,	420104070TPB	CAPACITOR CHIP 16V0.1uF
C248,C256,C259-266,C268,C284	420104070TPB	CAPACITOR CHIP 16V0.1uF
C100,C101,C156,C167,C174,C204	420105100TPB	CAPACITOR CHIP 16V1uF
C257,C258	420121060T	CAPACITOR CHIP 120pF
C91	420123100TPB	CAPACITOR CHIP 0.012uF
C76	420152090T01	CAPACITOR CHIP 1500pF
C75,C123,C125	420201000T	CAPACITOR CHIP 200pF
C129,C136,C145,C159,,C170,C177	420220020T01	CAPACITOR CHIP 22pF
C196,C221,C234,C235	420221020T	CAPACITOR CHIP 220pF
C11,C52,C53,C56	420470040TPB	CAPACITOR CHIP 47pF
C50,C149	420471070TPB	CAPACITOR CHIP 470pF
C130,C137,C146,C160,C171,C178	420561010T	CAPACITOR CHIP 560pF
C285	421472030T	SPARK KILLER 400V4700pF
C1,C8,C9,C24,C27,C51,C54,C68,C78-81,	430106060TPB	CAPACITOR TANTAL 16V10uF
C84-85,C88-89,C93-94,C96-97,C102-103,	430106060TPB	CAPACITOR TANTAL 16V10uF
C106,C108-114,C117-118,C121,C126,	430106060TPB	CAPACITOR TANTAL 16V10uF
C128,C133,C141,C152,C154,C166,	430106060TPB	CAPACITOR TANTAL 16V10uF
C197,C199-200,C203,C206,C208-212,	430106060TPB	CAPACITOR TANTAL 16V10uF
C216-217,C220,C223-224,C227-270	430106060TPB	CAPACITOR TANTAL 16V10uF
C2,C28,C41,C48,C59,C63,C67,C70,C74,	430476100TPB	CAPACITOR TANTAL 16V47uF
C82,C134,C142,C144,C147,C158,	430476100TPB	CAPACITOR TANTAL 16V47uF
C183,C267,C271	430476100TPB	CAPACITOR TANTAL 16V47uF
R4,R6,R9,R11-12,R37,R56,R58,R62-64,	500000000TPB	RESISTOR CHIP 1/16W 0
R111-112,R144,C72	500000000TPB	RESISTOR CHIP 1/16W 0
R1,R3,R5,R13,R15,R24-26,R29,R38,	500001300TPB	RESISTOR CHIP 1/16W 1K
R50,R54,R59-61,R97,R98,R109,R113,	500001300TPB	RESISTOR CHIP 1/16W 1K
R116,R121,R133,R143,R155,R190,	500001300TPB	RESISTOR CHIP 1/16W 1K
R219,R221,R225	500001300TPB	RESISTOR CHIP 1/16W 1K
R2,R16,R39,R65,R67,R142,R154	500010300TPB	RESISTOR CHIP 1/16W 10K
R66,R68,R69,R71,R72,R156,R157,R232	500013300T	RESISTOR CHIP 1/16W 13K
R33,R96,R125,R148,R149,,R150,R209,	500033000TPB	RESISTOR CHIP 1/16W 33
R211,R233,R256,R257	500033000TPB	RESISTOR CHIP 1/16W 33
R34,R40,R43	500033001T	RESISTOR CHIP 1/10W 33
R28,R53,R70,R73,R203	500033200TPB	RESISTOR CHIP 1/16W 3.3K
R30-32,R41-42,R44-45,R48,R51,R74,R75,	500047200TPB	RESISTOR CHIP 1/16W 4.7K
R138-139,R164,R167,R171,R172,R191,	500047200TPB	RESISTOR CHIP 1/16W 4.7K
R205-206	500047200TPB	RESISTOR CHIP 1/16W 4.7K
R118,R131,R132,R134	500047300TPB	RESISTOR CHIP 1/16W 47K
R77,R81,R85,R89,R93,R159	500051200TPB	RESISTOR CHIP 1/16W 5.1K
R46,R47	50005600T	RESISTOR CHIP 1/16W 56
R27	500056200T	RESISTOR CHIP 1/16W 5.6K
R78,R82,R86,R90,R94,R160	500056300T	RESISTOR CHIP 1/16W 56K
R106,R137	500075000TPB	RESISTOR CHIP 1/16W 75
R35,R52,R135,R193,R258,R259,R260	500100000TPB	RESISTOR CHIP 1/16W 100
R17-22,76,80,84,88,92,114-115,158	500100300TPB	RESISTOR CHIP 1/16W 100K
R14,R23,R55,R57,R120,R122,R126,R129,	500220000TPB	RESISTOR CHIP 1/16W 220
R179-180,R185-186,R188-189,R195-196	500220000TPB	RESISTOR CHIP 1/16W 220
R49	500390000TPB	RESISTOR CHIP 1/16W 430
R127,R128,R130,R136	500470000TPB	RESISTOR CHIP 1/16W 470
R79,R83,R87,R91,R95,R161	500560003T	RESISTOR CHIP 1/16W 560
R261	501047502T	MOF RESISTOR 1/2W 4.7

SYMBOL	PARTS NO.	DESCRIPTION
R99,R100,R101	511010303B	RESISTOR METAL 1W 10K
J21	5711031300	CONNECTOR 13P
J35	5711031400	CONNECTOR 3P
J4	5711031410	CONNECTOR 3P
J2	5711031420	CONNECTOR 3P
J5	5711031500	CONNECTOR 6P
J16,J17,J19	5711031800	MINI DIN JACK 8P DJ04-085M-BK/S
J1	5712006500	CONNECTOR 9P
H4,H5	5712045900	PIN HEADER KD1031-S-D-01A
H2,H3,H4	5712061800	HEADER(WAFER) YMW025-04R
J15	5714006800	TERMINAL RJ45 SY010-8P
J28	5714006900	3.5Φ MINATURE JACK (MONO) YKB21-5111A
J29,J30	5714007000	3.5Φ MINIATURE JACK (ST) YKB21-5103A
J3,J9,J10,J14,J18	5714007200	PIN JACK JS0200440G
J24,J25	5714007300	PIN JACK+OPTO YKC22-0748
J6	5714007400	ANTENNA TERMINAL SC0210586N
J20	5716001400	HEADER SOCKET SMD 30P
B1-8,B13,B17,B27,BEAD1,L7	5814002900PB	FERRITE BEAD CHIP PBY321611T-500Y-N
FB3	5814003000PB	FERRITE BEAD Chip SBK160808T-110Y-N
016 E -1472A00 PCB ASSY		
	501 E-1472-A	PCB ASSY (FRONT)
U9	120600461T	IC SMD (CPU) ATMEGA128-16A
Y1	170005501T	CRYSTAL 14.7456MHZ
L2	260029800T	MICRO INDUCTOR CHIP 10uH
U1	320010600B	IC (REMOTE RECEIVER) RPM7138-H9
S1	381004400B	POWER SWITCH PS3-22SPA-P7CZ TV-8 (PCB)
C12,C13,C14,C15	420100210T01	CAPACITOR CHIP 10pF
C3,C5,C57,C98	420104290T	CAPACITOR CHIP 0.1uF
C7,C8	420270080T	CAPACITOR CHIP 27pF
C1	421472030T	SPARK KILLER 400V4700pF
C32	430106060TPB	TANTAL CAPACITOR 16V10uF
R20,R36,R53	500010304T	RESISTOR CHIP 1/16W 10K
R21,R32,R52	500012303T	RESISTOR CHIP 1/16W 12K
R9,R22,R37	500015306T	RESISTOR CHIP 1/16W 15K
R8,R33	500020304T	RESISTOR CHIP 1/16W 20K
R7,R15	500027304T	RESISTOR CHIP 1/16W 27K
R6,R16	500039301T	RESISTOR CHIP 1/16W 39K
R25	500047200TPB	RESISTOR CHIP 1/16W 4.7K
R4,R17,R56	500056204T	RESISTOR CHIP 1/16W 5.6K
R23,R24	500062306T	RESISTOR CHIP 1/16W 62K
R18,R35,R55,R57,R58,R59	500068204T	RESISTOR CHIP 1/16W 6.8K
R19,R31,R54	500082203T	RESISTOR CHIP 1/16W 8.2K
R2,R3,R10,R11,R12,R13,R14	500100000TPB	RESISTOR CHIP 1/16W 100
R5	500330000TPB	RESISTOR CHIP 1/16W 330
J3	5711031200	CONNECTOR WAFER 2P
J4	5730025500	CONNECTOR WAFER 13P
J1	5730025600	CONNECTOR WAFER 7P
H1	5730025700	3P DEPLEX INSULATION ASS'Y WP-3PWTB-250
L1,L3,L5	5814002900PB	FERRITE BEAD CHIP PBY321611T-500Y-N
	061 C-4679A04	TACT SWITCH 9.5mm DARK GRAY HV061095GS
OTHERS		
	011 FP-610-B	BLACK PANEL ASSY
	011 FP-610-S	SILVER PANEL ASSY
	011 TF3-01B00	H/S PANEL

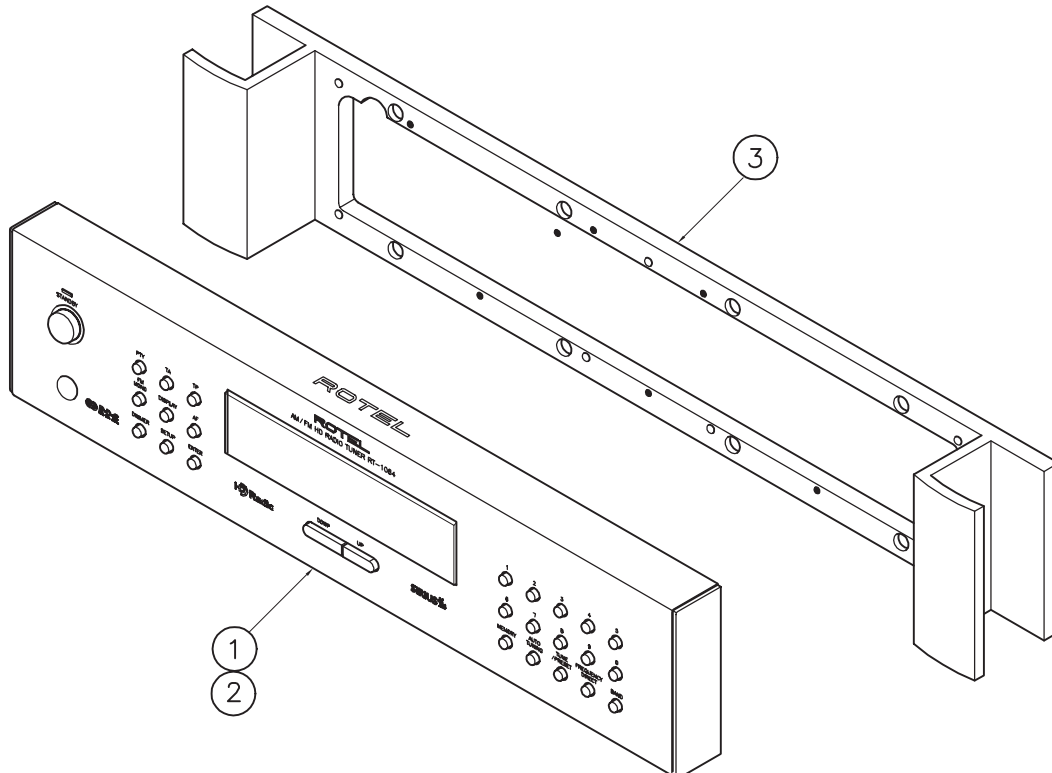
SYMBOL	PARTS NO.	DESCRIPTION
T001	012 RV4-09A00	PUSH BUTTON 14Φ (BLACK)
	012 RV4-09A01	PUSH BUTTON 14Φ (SILVER)
	012 SK3-05A00	TACT BUTTON 9KEY (BLACK)
	012 SK3-05A01	TACT BUTTON 9KEY (SILVER)
	012 TN2-08A00	TACT BUTTON 15KEY (BLACK)
	012 TN2-08A01	TACT BUTTON 15KEY (SILVER)
	012 TN3-07A00	TACT BUTTON 2KEY (BLACK)
	012 TN3-07A01	TACT BUTTON 2KEY (SILVER)
	014 C-4713C02	UPPER COVER
	014 WC3-04A00	FL ORNAMENT PLATE
	019 4TSH-19#2	PLASTIC FOOT 50Φ (BLACK)
	019 C-4714A00	POWER KNOB RING 14Φ (BLACK)
	019 C-4714A01	POWER KNOB RING 14Φ (SILVER)
	121201000	RF_IBOC MODULE SET ASSY
	341000100B	POWER TRANSFORMER
	021 RLA145A01	AM LOOP ANT S0146BY-01
	034 SEL1124R	LED (RED) 1X5
	034 SEL1E24W	LED (BLU) 1X5
	035 HCR132S161A1	FL DISPLAY
	069 18-24	F CONNECTOR
	069 C-4629A01	AC 2P INLET 6102.3100 (WIRING)
	072 4TR-2489	3.5mm PLUG SHIELD CORD (for 12V TRIG)
	072 4TR-2875	PIN PLUG OFC CORD
	072 4TR-3228	T TYPE ANTENNA
	072 C-4621A03	AC CORD SET for U.S.A.
082 OMRT-1084	OWNER'S MANUAL	
092 RR-T96	REMOTE CONTROL UNIT	

Addendum List for Black and Silver

RT1084

SYMBOL	PARTS	DESCRIPTION
①	011 FP-610-B	BLACK PANEL ASSY
②	011 FP-610-S	SILVER PANEL ASSY
③	011 TF3-01B00	H/S PANEL
	012 RV4-09A00	PUSH BUTTON 14F (BLK)
	012 RV4-09A01	PUSH BUTTON 14F (SLV)
	012 SK3-05A00	TACT BUTTON 9KEY(BLK)
	012 SK3-05A01	TACT BUTTON 9KEY(SLV)
	012 TN2-08A00	TACT BUTTON 15KEY(BLK)
	012 TN2-08A01	TACT BUTTON 15KEY(SLV)
	012 TN3-07A00	TACT BUTTON 2KEY(BLK)
	012 TN3-07A01	TACT BUTTON 2KEY(SLV)
	034 SEL1124R	LED (RED) 1X5
	034 SEL1E24W	LED (BLU) 1X5

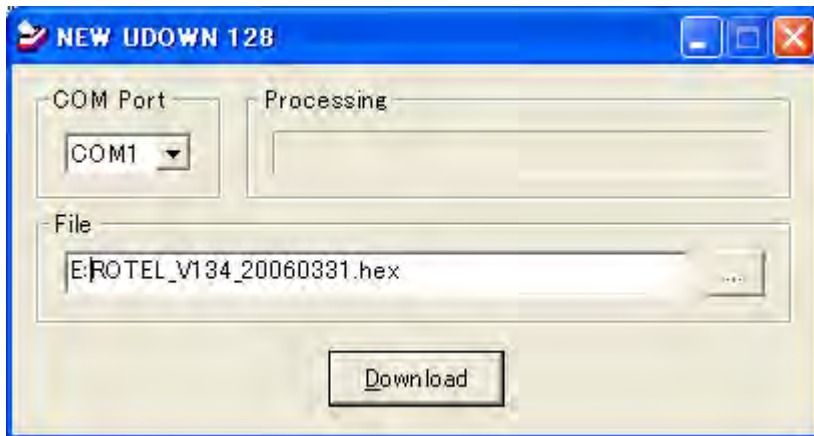
Panel Assy is included:
 Panel Window
 Side Cap
 Knob Ring
 Tact buttons
 LED



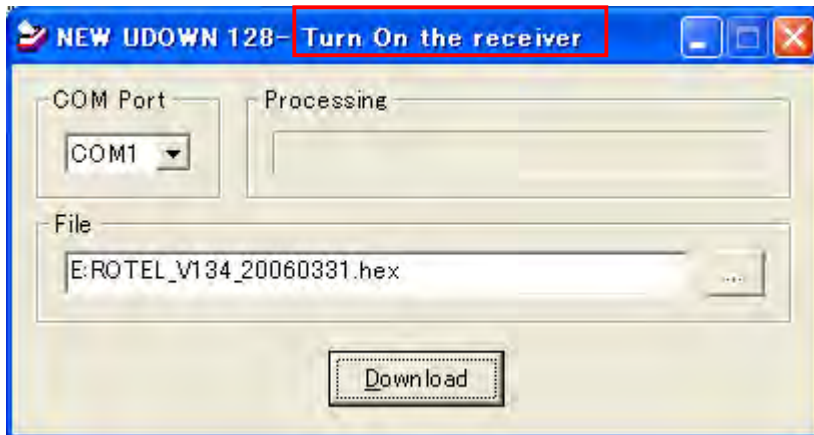
RT1084 Main Software Upgrade Procedure

Allocate the Rotel supply “NewUDown128.exe” upgrade program in the folder.
Setup the PC RS232: Set Baud Rate 38400 from “My Computer Devices”.

1. Connect Computer I/O cable between PC and RJ 45 of RT1084.
2. Turn ON RT1084 by press front panel main POWER switch.
3. Execute the “NewUDown128.exe”.

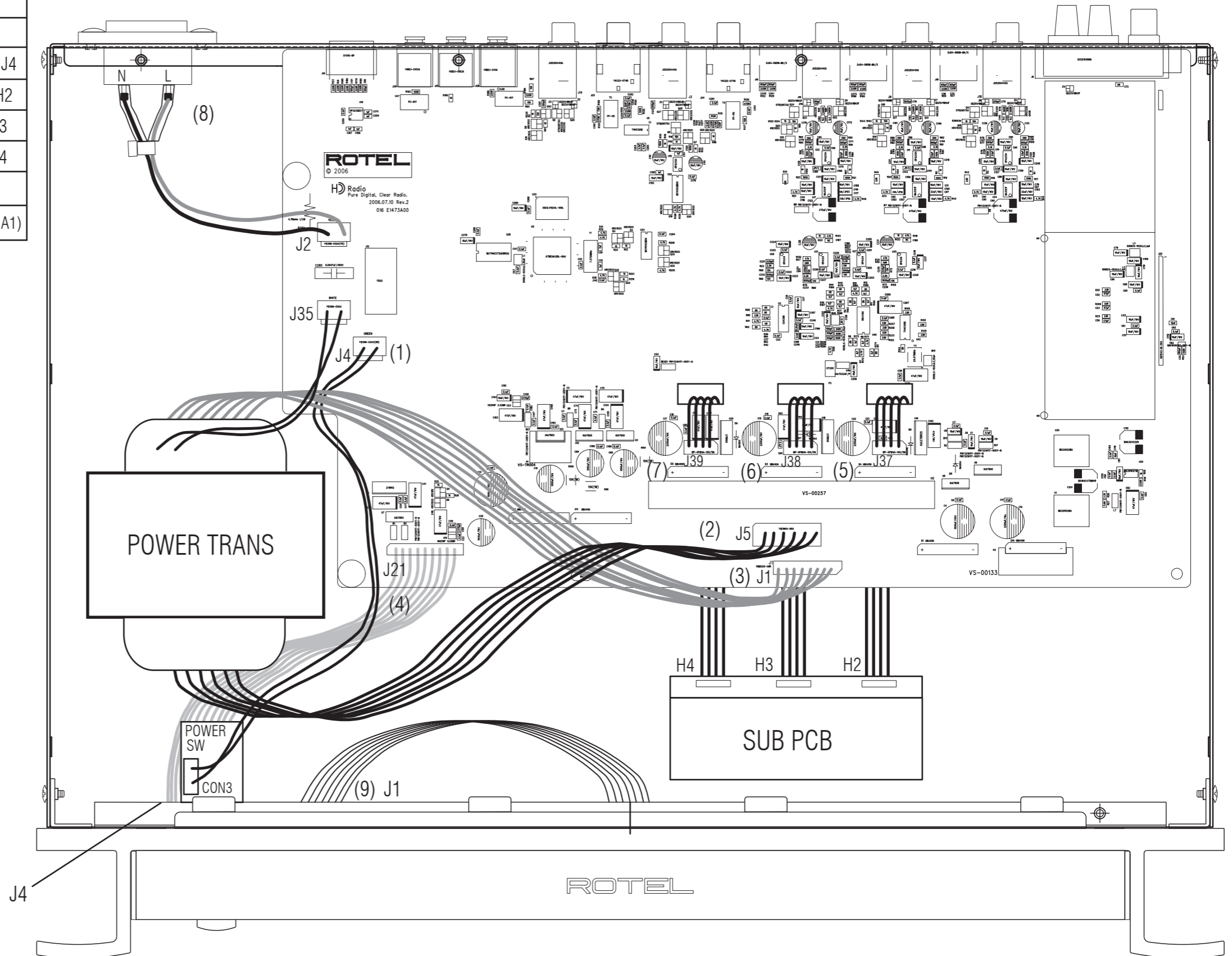


4. After select the Update “hex” file you want to download, Click "Download" button.
5. After appeared the message "Turn On the receiver" on the top-bar of program, Turn OFF then ON RT1084 unit.



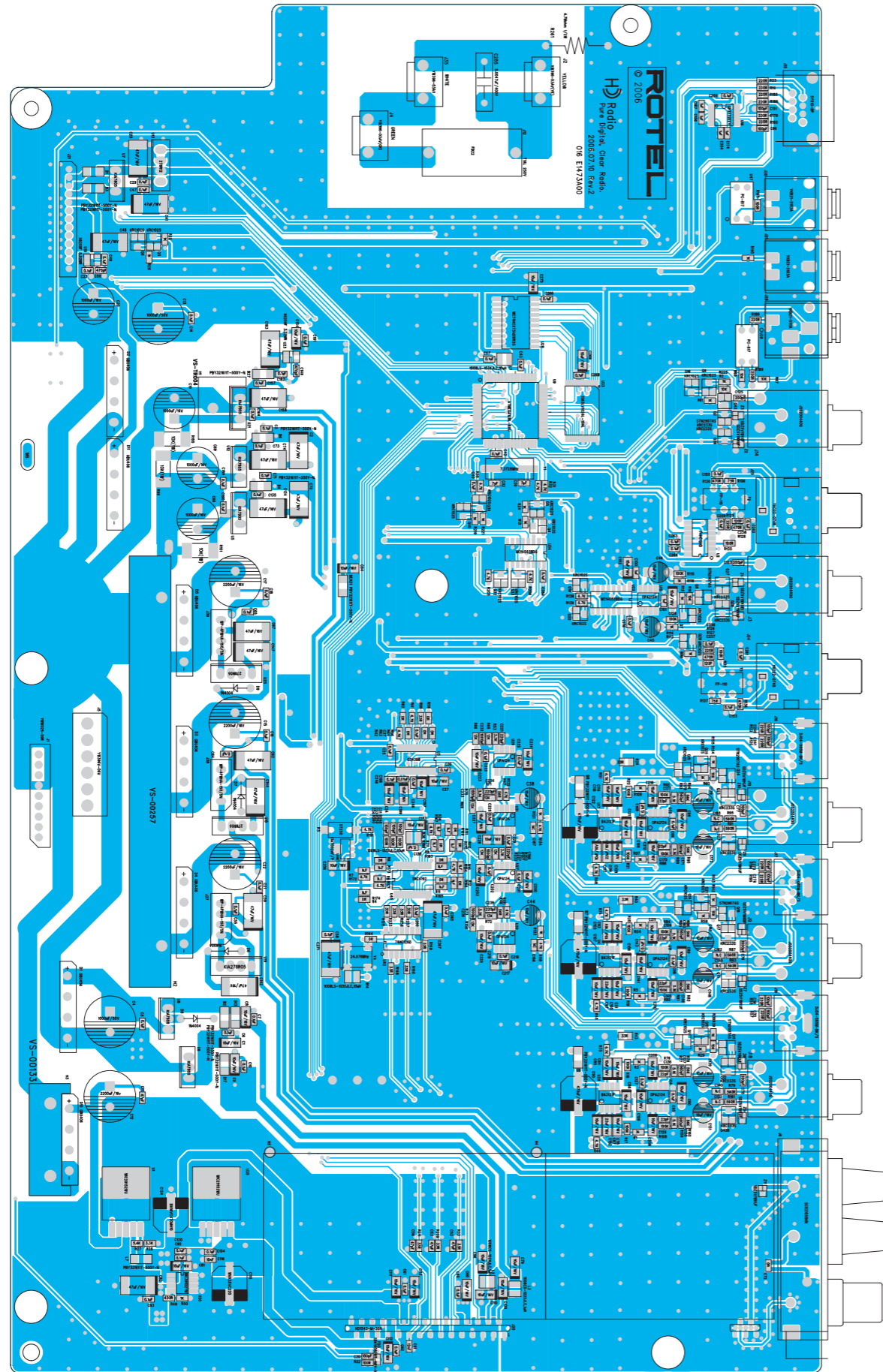
6. It is started processing in the “Processing bar ===>”. Please do not turn off the RT1084 during processing.
7. After completing the processing, It is indicated "DONE" on the top-bar of program, Tune OFF then ON RT1084 again to store the software.
8. The updated software version can be confirmed on the “SETUP”/“Software version” screen in the VFD.

WIRING	
(1)	MAIN PCB (016 E-1473A00) J4 → POWER SW () CON3
(2)	MAIN PCB (016 E-1473A00) J5 → POWER TRANS
(3)	MAIN PCB (016 E-1473A00) J1 → POWER TRANS
(4)	MAIN PCB (016 E-1473A00) J21 → FRONT PCB (016 E-1472A00) J4
(5)	MAIN PCB (016 E-1473A00) J37 → SUB PCB (016 E-1475A00) H2
(6)	MAIN PCB (016 E-1473A00) J38 → SUB PCB (016 E-1475A00) H3
(7)	MAIN PCB (016 E-1473A00) J39 → SUB PCB (016 E-1475A00) H4
(8)	AC INLET → MAIN PCB (016 E-1473A00) J2
(9)	FRONT PCB (016 E-1472A00) J1 → FL MODULE (035 HCR132S161A1)

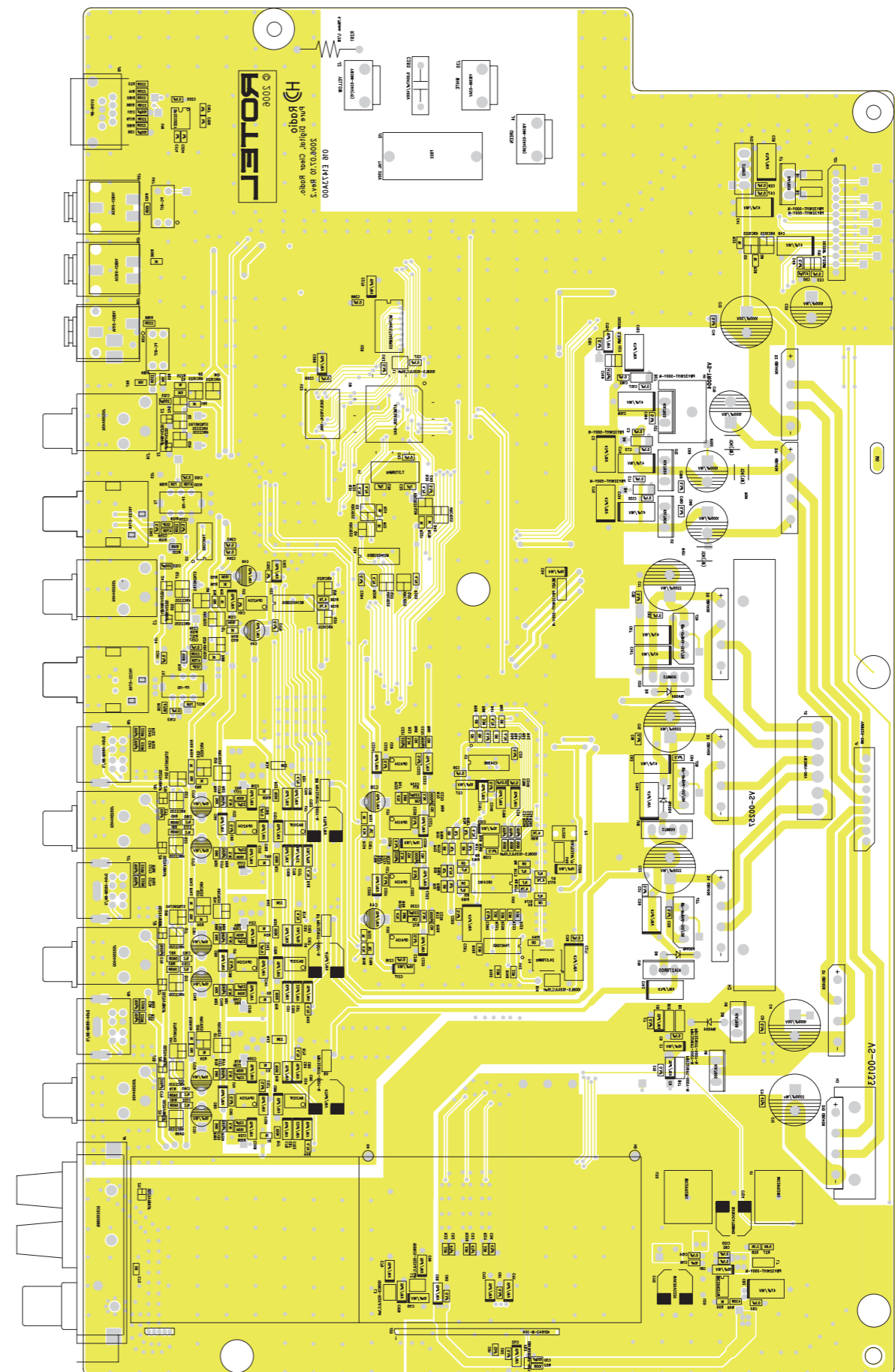


MAIN PCB 016 E-1473A00

Top View

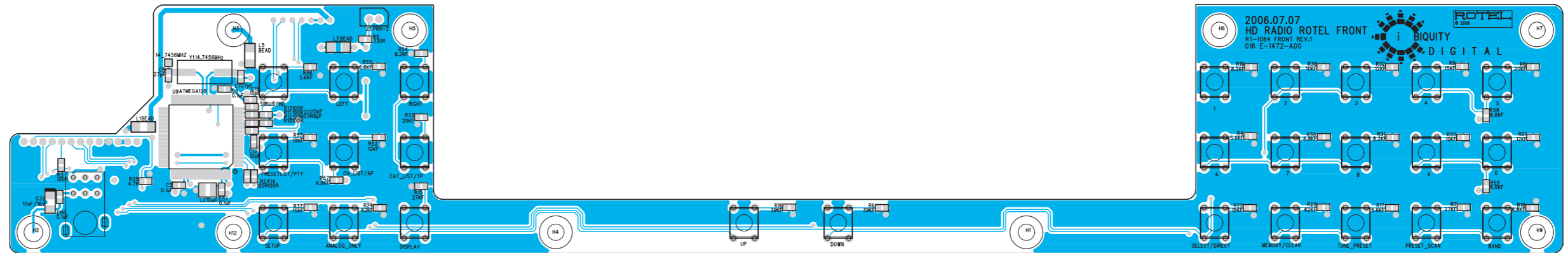


Bottom View

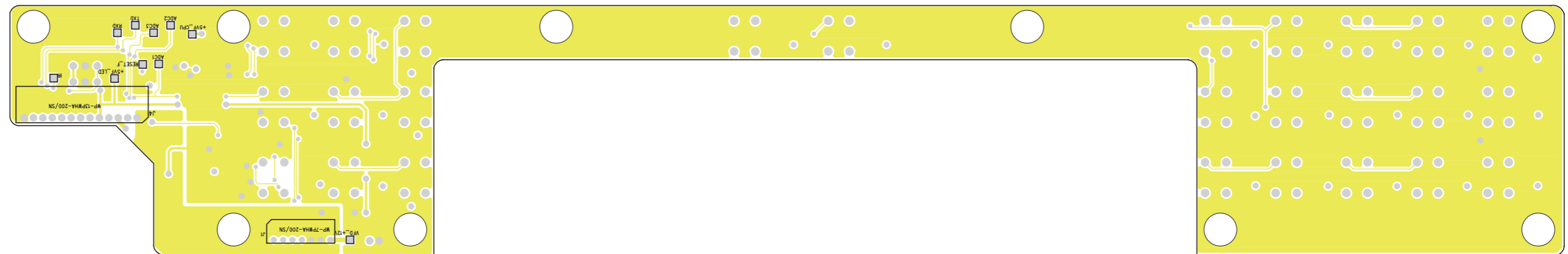


FRONT PCB 016 E-1472A00

Top View

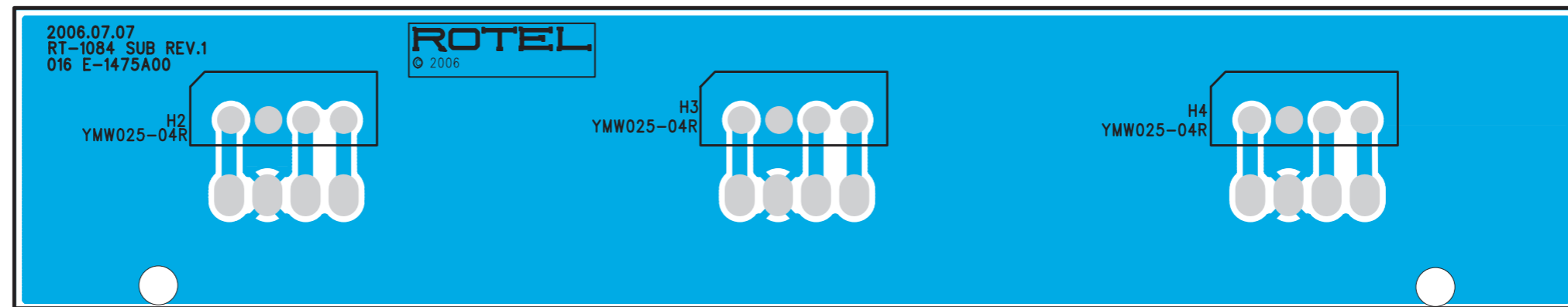


Bottom View

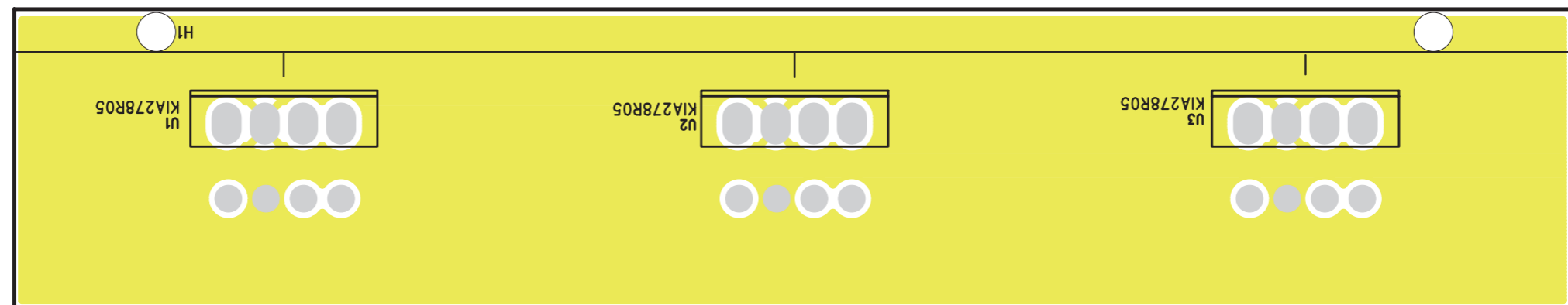


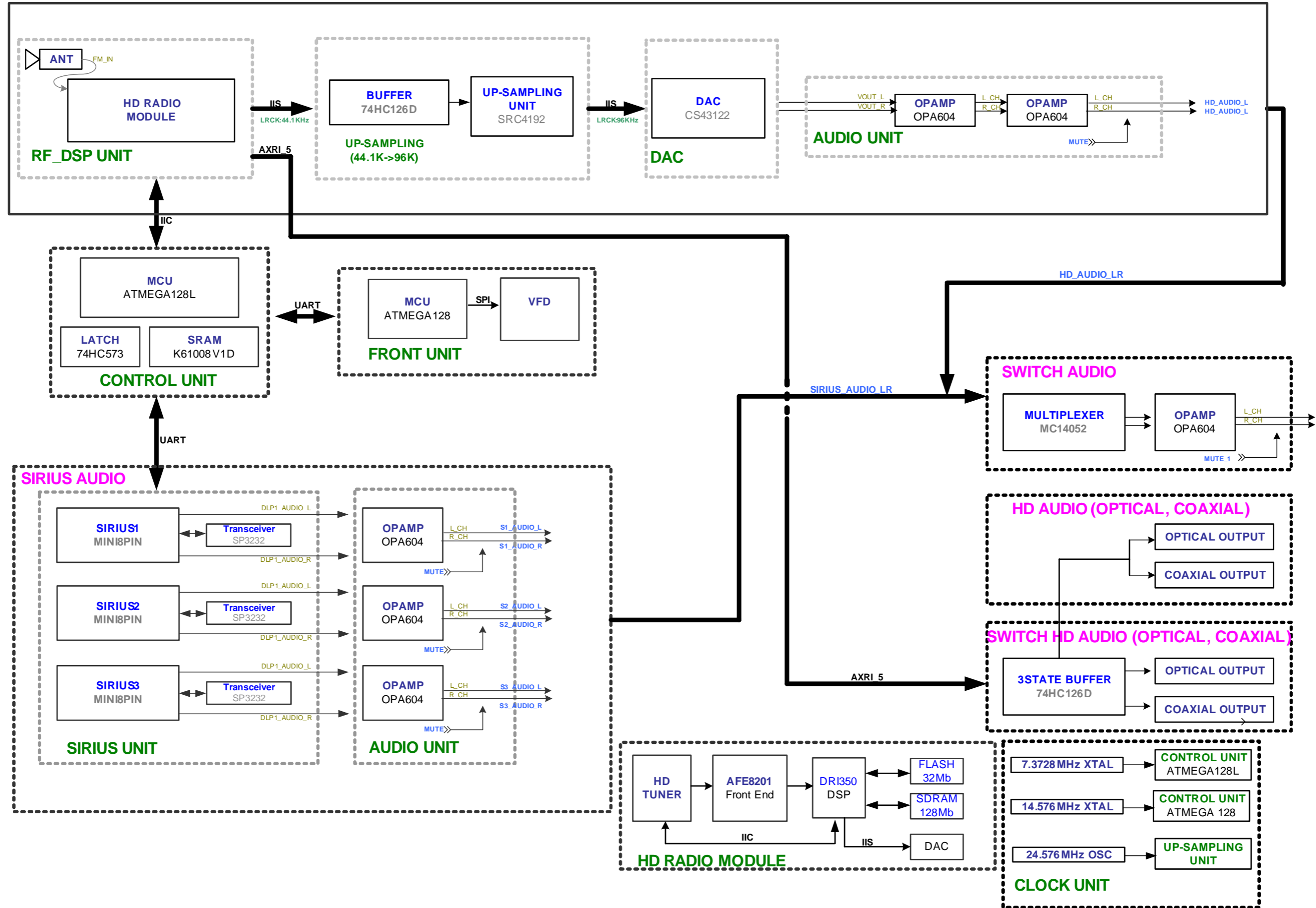
SUB PCB 016 E-1475A00

Top View

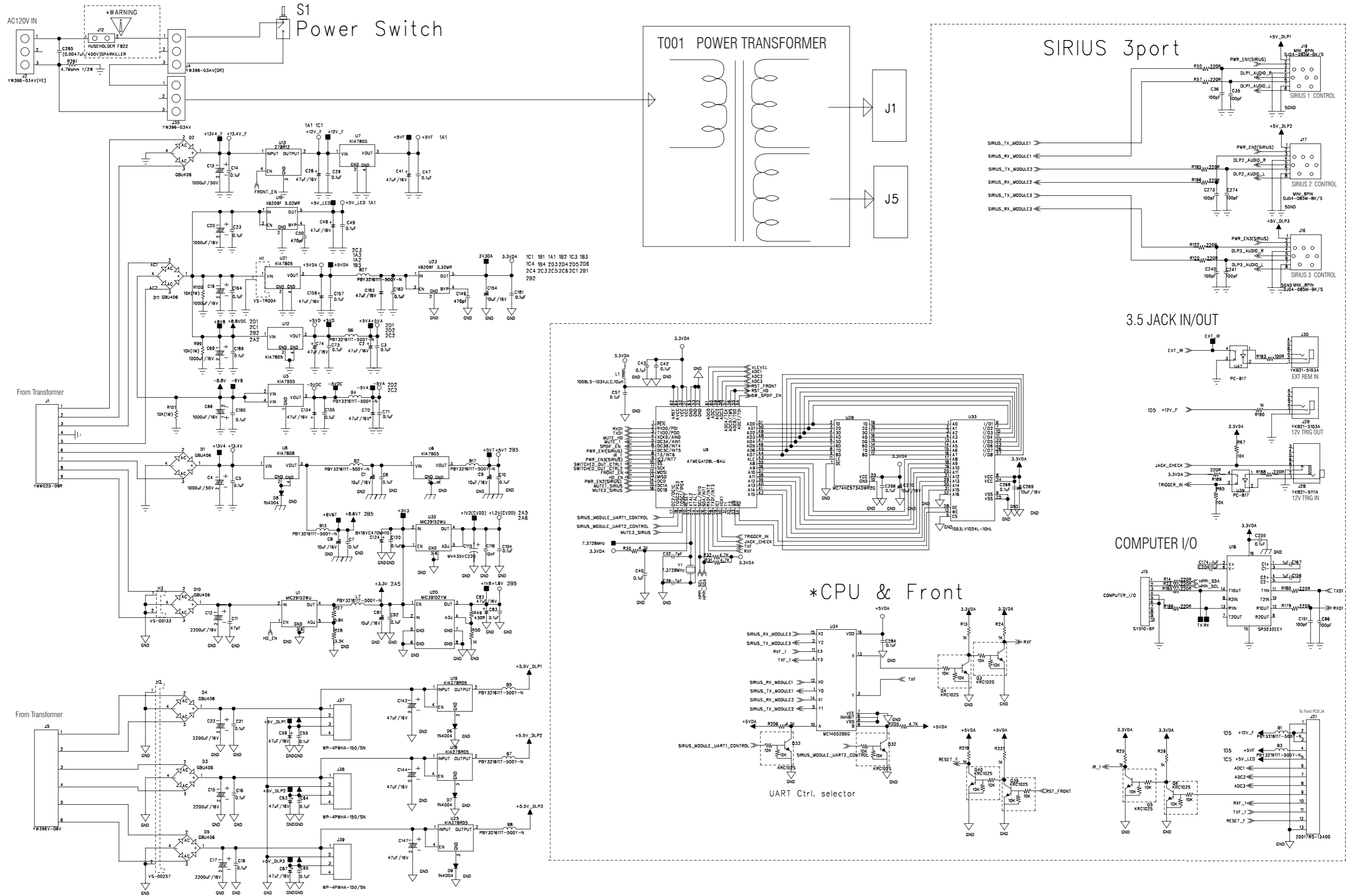


Bottom View

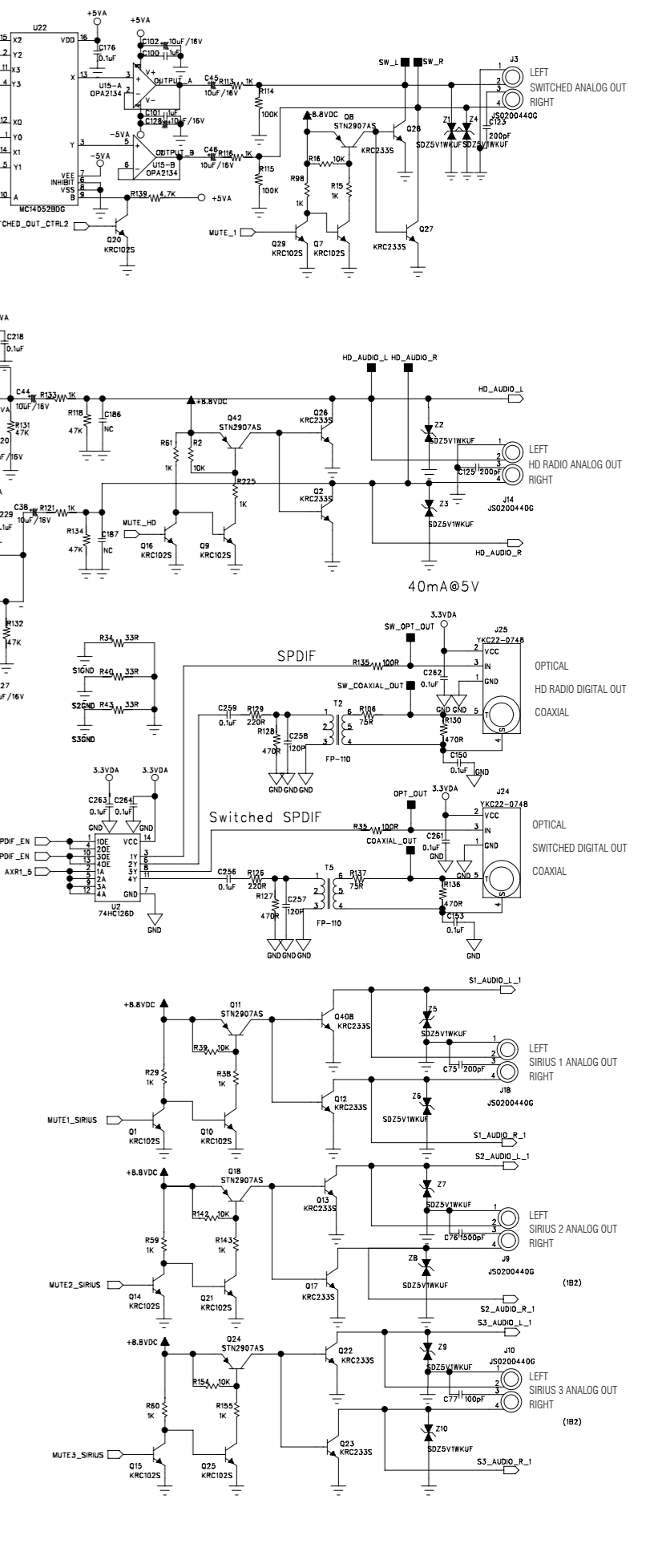
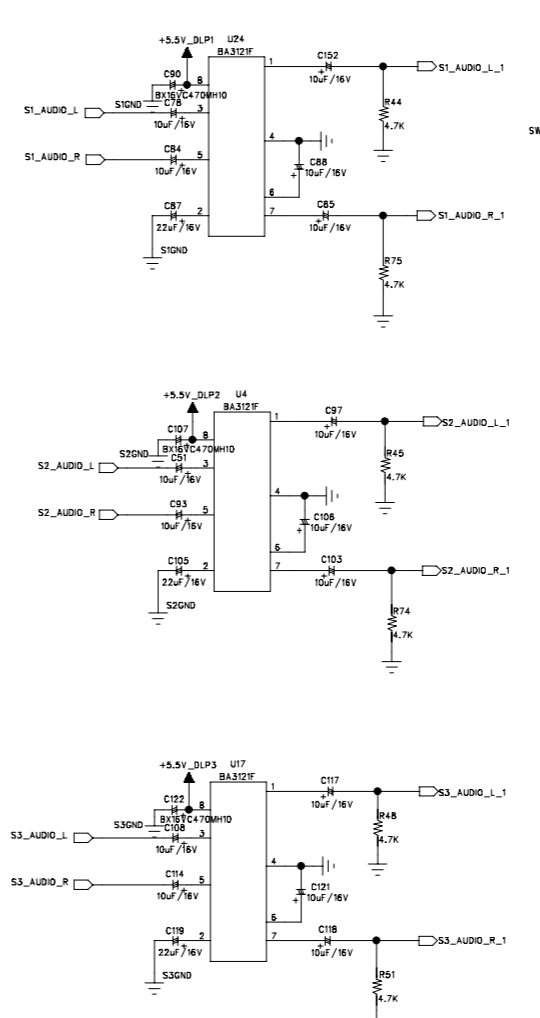
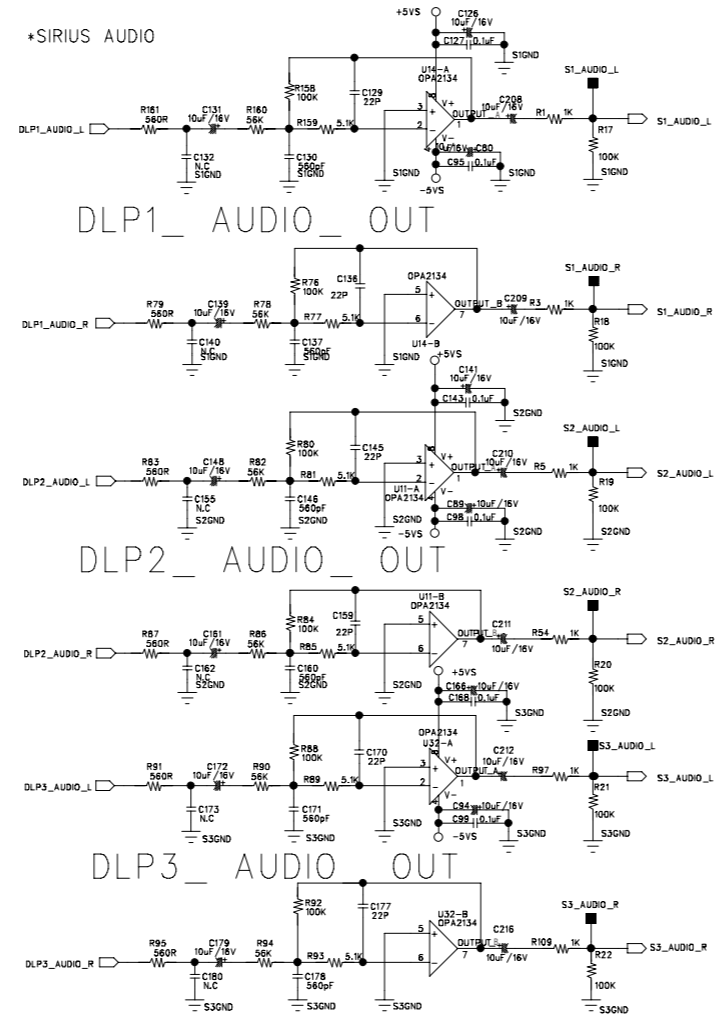
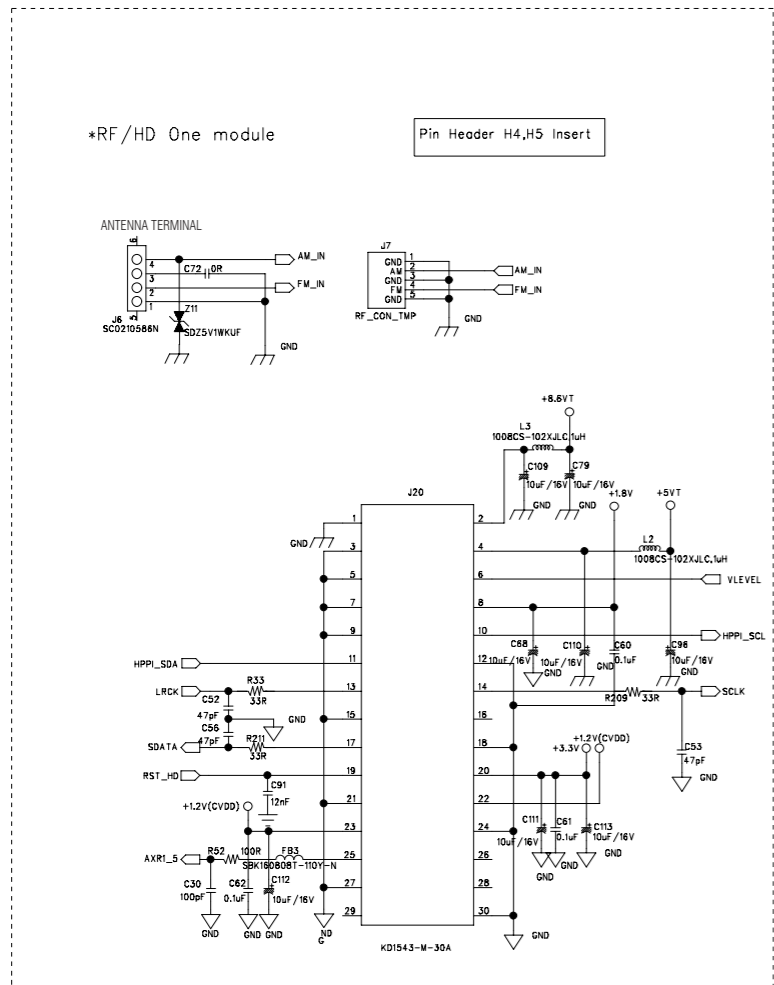
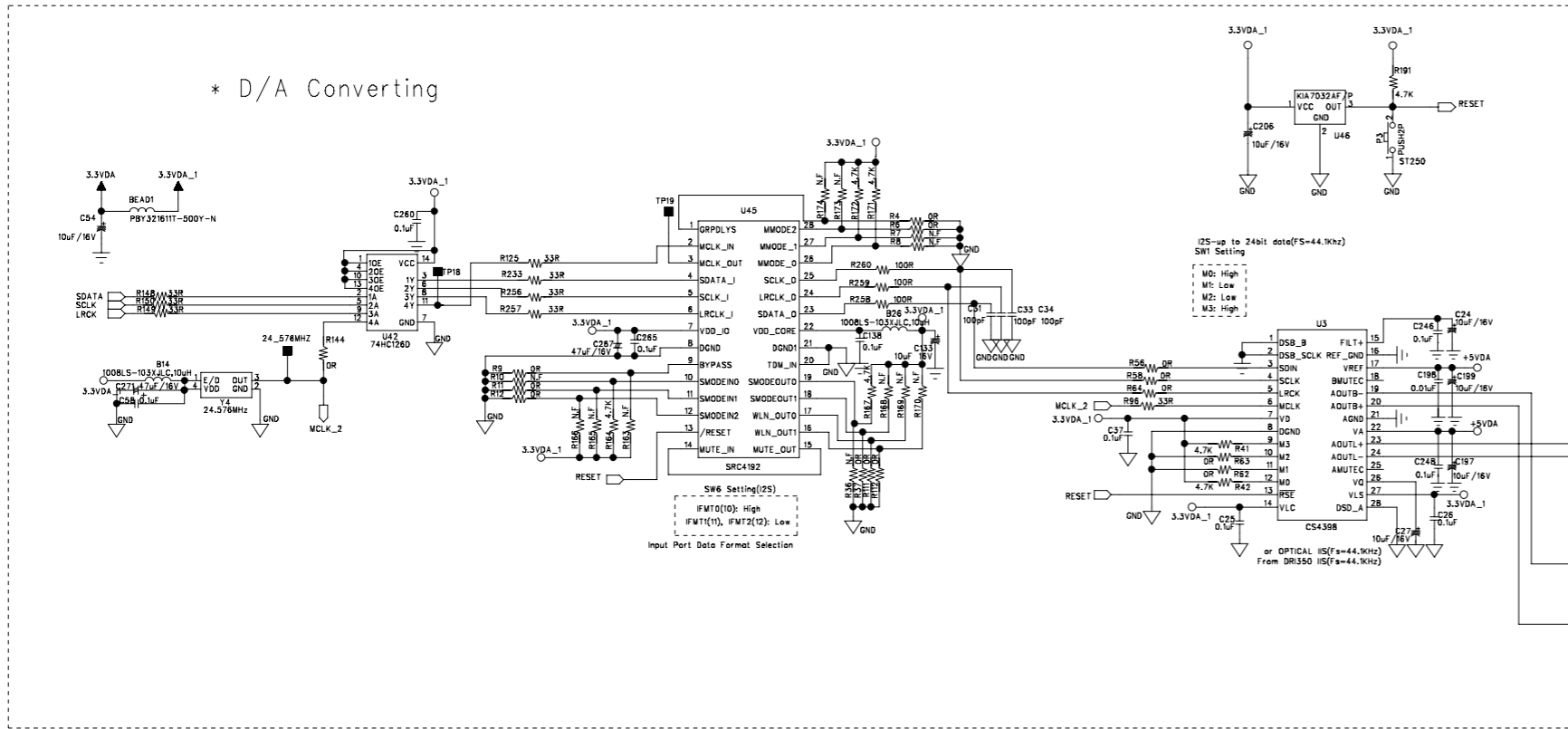




MAIN PCB (1/2) 016 E-1473A00



MAIN PCB (2/2) 016 E-1473A00



Schematic Diagram 3/3

FRONT PCB 016 E-1472A00

SUB PCB 016 E-1475A00

