TYT Electronics Co, .Ltd

UHF Transceiver TX790U service manual

Introduction

This manual provides the technical information necessary for servicing for the TX790U DMR UHF Transceiver

Servicing this equipment requires expertise in handing surface-mount chip components. Attempts

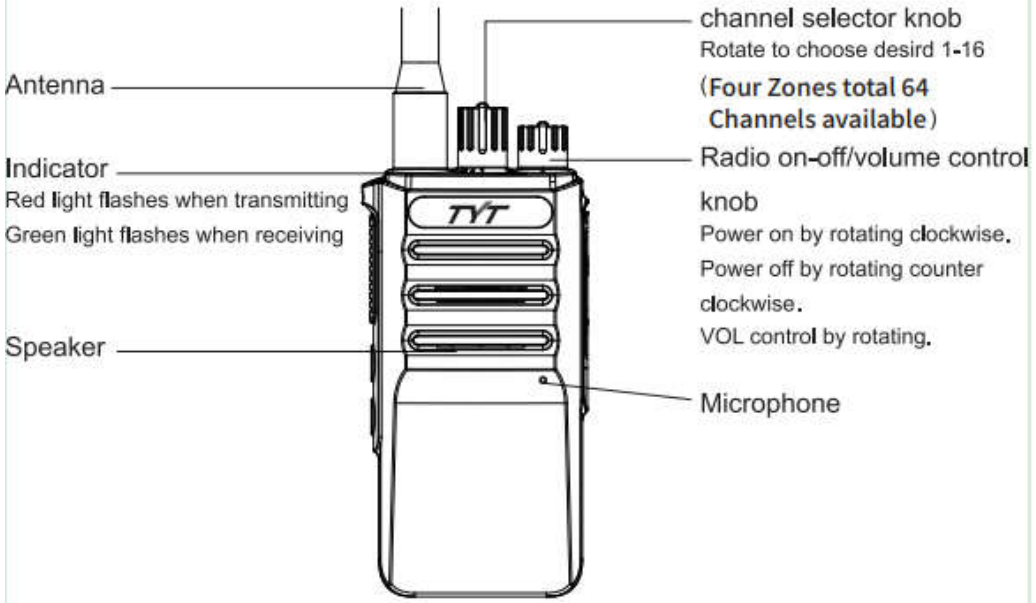
By non-qualified person to service this equipment may result in permanent damage not covered by The warranty ,and may be illegal in some countries

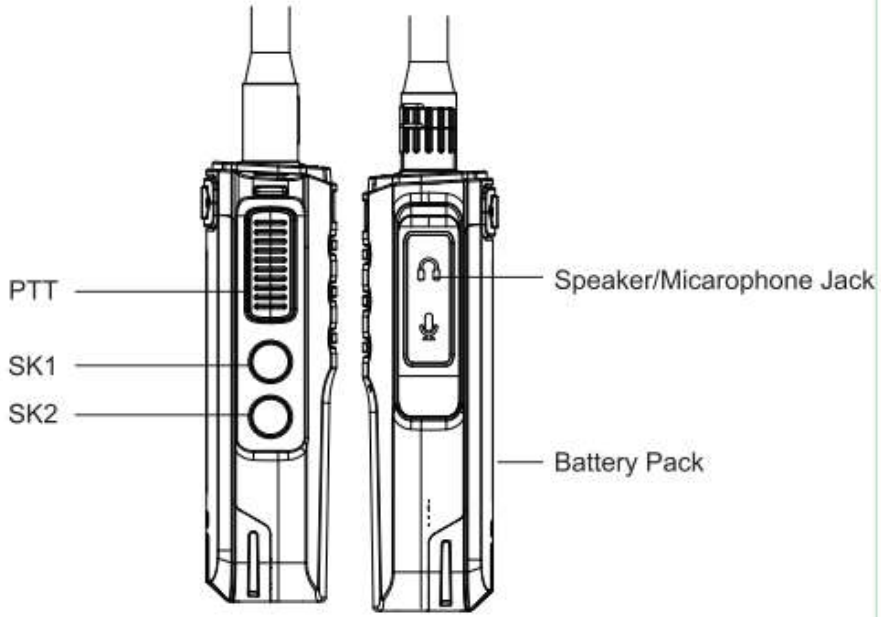
Two PCB layout diagrams are provided for each double - sided board in this transceiver. Each side Of the board is referred to by the type of the majority of components installed on that side(side A Or Side B),In most cases one side had only chip components (surface-mount services), and the Other has either a mixture of both chip and leaded components (trimmers, coils , electrolytic capacitors, ICs etc.),Or leaded components only .

As described in the pages to follow, the advanced microprocessor design of the TX790U Transceiver allows a complete alignments can be performed from the front panel, using the Alignment mode menu.

While we believe the information in this manual to be correct ,TYT assumes no liability for damage that may occur as a result of typographical or other errors that may be present. Your cooperation in pointing out any inconsistencies in the technical information would be appreciated

Getting Acquainted





Note: Program Key 1/2 can be defined the following functions by short/long press.
SK:1. None 2. Beeper on/off 3.Emergency on 4.Emergency off 5.High/Low power 6.Monitor 7.Scan channel delete (Temporary) 8. One touch access 9. One touch access 10. One touch access 11. One touch access 12. One touch access 13. One touch access 14. Repeater / Talk around 15. Scan on / off 16. Squelch on / off 17.Voice Encryption on / off 18.Vox on /off 19.Zone Switch 20.Battery Indicator 21.Lone work on / off

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Specification : PHOENIX(CE)

General

Frequency range : 400-480MHz
Channel : 64 Channels
Power supply Voltage : 7.4V DC±10%
Current consumption : ≤1.6A
Channel spacing : 12.5 / 25khz
Pll Steps: 2.5 / 5 / 6.25Khz
Operating temperature Range : -30° C to +60° C
Charging temperature range : 0° C to +45° C
Frequency stability : ±1ppm
RF Input-Output : 50Ω
Dimension (H x W x D) : 133*61*46mm (without antenna)
Weight : 276g

Receiver

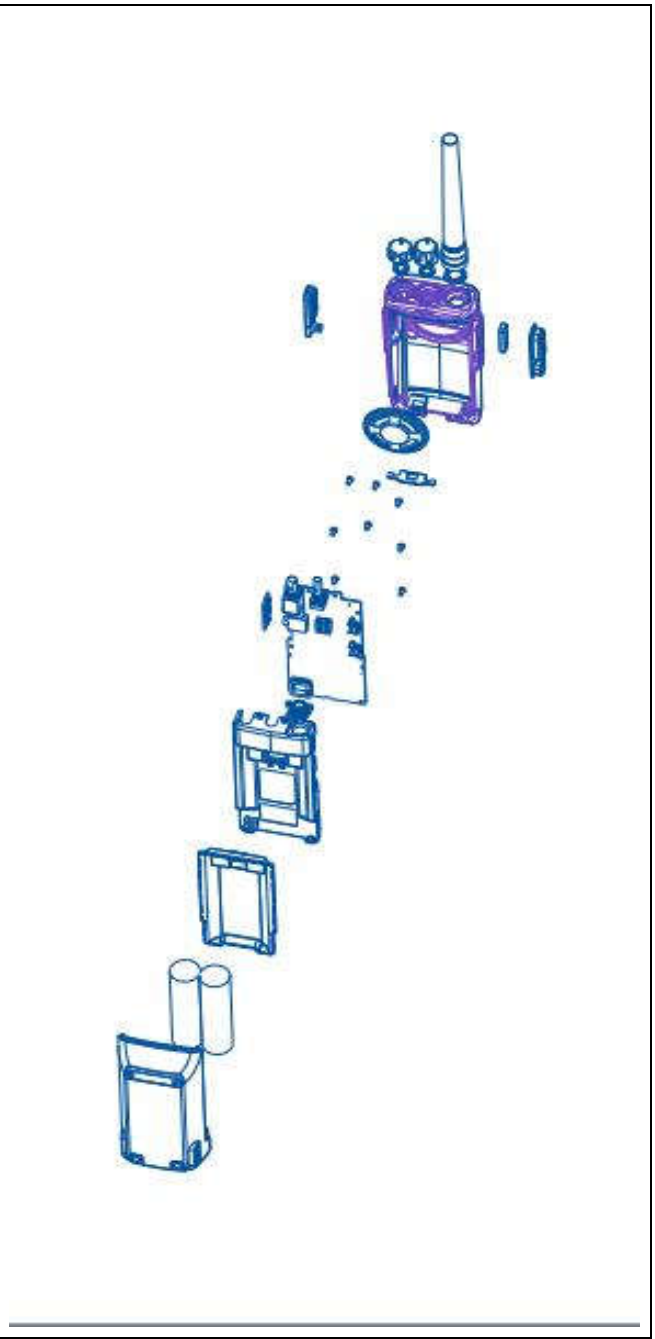
Circuit Type:
Sensitivity : 0.22μV in analog mode / 0.3μV in digital mode
Adjacent channel selectivity: ≥60dB
Blocking : ≥84dB
Spurious response : 65dB
Audio output :＜1 W
Spurious response suppression : 70dB
Audio response ： +1~-3dB

Transmitter

Output power: High 5 watt / Low 1 watt
FM Noise : -40dB@12.5KHz
Spurious emission :＜ -36dB@1GHz
Adjacent channel selectivity : -60dB@12.5KHz
FM Modulation mode : 12.5KHz 11F0F3E
Audio response ： +1~-3dB
Rated audio distortion : ≤3%
Digital protocol : ETSITS102361-1,-2,-3
Vocoder Type : AMBE+2TM

TX790U DMR Transceiver service manual

Exploded View & Miscell aneous parts

Front case assy (component)	
Front case	
Main plate	
Model lable (TX790U)	
Rubber (PTT)	
Rubber(sp/mic)	
Volume / Channel Knob	
Mini speaker	
Latch (channel)	
Latch (volume)	
Battery lock Spring	
Indicator	
Wire	
Screw	
Sheet (antenna connector)	
MIC/SP (component)	
Audio jack	
Earphone jack	
Lithium – Plate	
Battery case	
Battery chip	
Screw	
Main Unit (component)	
Pcb main board	
Sponge	
Mini microphone	
Screw	

Non-designated parts are available only as part of a designated assembly.

Parts list

REF.	DESCRIPTION	VALUE	NFR"S DESIG	TYT P/N
	FRONT CASE			25010MD795A00000
	MIC/SP CAP			25010MD795A0000H
	Lithium plate			41010TC595LB0000
	Rubber packing			25010MD795A0000H
	Rubber boots			25010MD795A0000H
	Sheet			25010MD795A0000H
	Sheet		101	25010MD795A0000H
	wire	TX790	30*100mm	25010MD795A0000H
	Mechanical parts			
	Knob		Volume	40040MD795YL0000
	Knob		Channel	40040MD795XD0000
	Main unit part			
	Pcb circuit board			32700MD790VHFV10
	Metal dome			25010MD795A0000H
LQFP48	Chipset	1	HRC_7000	30300HRC70000000
	Potentiometer Channel			31500R09011N010K
	Potentiometer Volume			31500R09011N010K
Voice -D	Voice prompt		795A	30300AUDIO000619
0805/ UDZSN P	Stabilize diode	1	TE-175.1B	3012005110008050
	Tantalum capacitor	1	DE-4.5/A18	41020A1JS0000000
26M	Transistor	1	3.2*2.5	3160026M32250000
MIC1	Mini speaker	6MM	58db	3171000006027581
Jack1	Audio jack	2.5mm	JAKK2.5D	45010MD795RJG000
Jack2	Earphone jack	3.5mm	JAKK3.5D	45010MD795RJG000
			When replace a chip fuse,	
			Use the part of the same type and value	

AF POWER AMP

U106 SGM4157YC
DMR_AF C157 105 R153 22K C186 NC
NC COM GND V+ NO IN
C155 105 R152 2K7
3V3
FM/DMR_AF_SW
C187 104 C188 102
LINE_OUT R165 1K2 R164 1K2 R163 1K2 R150 0R R151 0R C152 104 R162 NC
C173 562 C172 562 C171 562 C170 562 C153 NC C156 NC
2T/5T/DTMF_OUT C177 104 R160 10K C159 102
TONE/BEEP R169 270R R168 270R R167 47K C174 104
C158 102 C176 273 C175 273

BAT+ POW_SW
SW101 VOL-SWITCH
VOL_IN VOL_OUT2
R161 100R R120 100R
C160 47P
C128 104 R128 10K C111 68P R129 390K
C124 47P
AMP_C R127 1K C161 102
U101 LN4898_C
-IN +IN BYPASS SD -VO1 +VO2 VDD GND AMP_VDD
R126 47K C130 103 C129 105
EC104 100uF/6.3V
C136 220P R136 NC R137 10R R138 10R C137 104 C138 104 C117 100P C116 100P
D107 NC D108 NC
SPK100 SPK- SPK101 SPK+
JK102 SPK-JACK-D2.5mm
EXT_SPK-
SPK+
D-
L100 GZ1005D221TF
TP103 D-
R125 22R
USB_D-
D104 BSD9L5.0ST5G
POW_SW
L105 UPZ1608U221-2R2TF
C135 22uF/16V C131 104 C132 104 C133 103 C134 2uF/16V

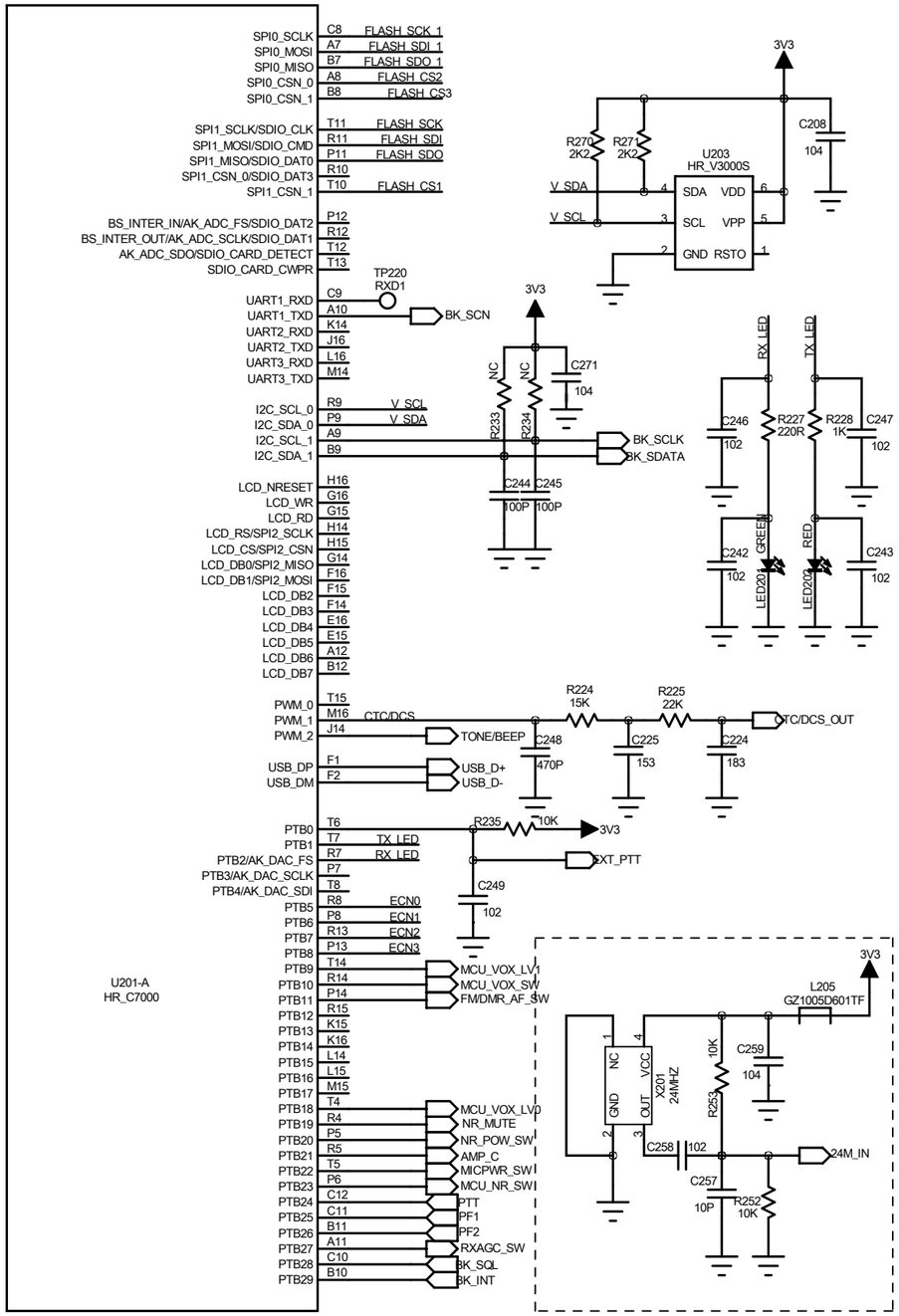
MCU_VOX_LV0 Q106 NC C180 102
LV0 1V8 R185 NC TP106 IPS1_TXDAT ES_SDA ES_SCL I2S0_TXDAT
C184 NC R183 NC R184 NC R186 NC
TP107 LV1
MCU_VOX_LV1 Q107 NC C181 102
LV1
TP110 1V2
1V2 C169 NC R182 NC
1V8 C168 NC
NR_ON/OFF
MCU_NR_SW Q102 NC C182 102
NR_VOX
NR_VOX_SW
3V3 R130 NC Q108 NC R131 NC VOX
NR_VOX C183 102
3V3 R132 NC
NR_VOX_SW
MCU_VOX_SW Q103 NC C185 102

U103 NC
GND DAI2_BCLK IOVDD DAI1_TXDAT DAI1_RXDAT DAI1_LRCLK DAI1_BCLK DAI0_TXDAT
LV0 DAI2_LRCLK
LV1 DAI2_RXDAT
DAI2_TXDAT DAI2_TXDAT
DVDD
DAI3_BCLK
DAI3_LRCLK
IOVDD
DAI0_RXDAT I2S0_RXDAT
IOVDD
DAI0_LRCLK I2S0_LRCLK
DAI0_BCLK I2S0_BCLK
DVDD
I2CS_SDA IG_SDA
I2CS_SCL IG_SCL
DAI3_RXDAT DAI3_TXDAT TEST_EN AVDD28_PLL AVDD18_OSC RSTB MCLK_IN
NR_VOX
NR_VOX_SW
TP109 1V8
C164 NC
C163 NC
TP105 IG_SDA
TP104 IG_SCL
R187 NC R188 NC
TP108 GND
R189 NC
R181 NC C166 NC C167 NC C165 NC

ES_SDA R148 NC R149 NC C162 NC R180 NC
ES_SCL R146 NC C151 NC
DAI2_TXDAT R145 NC
L103 NC
R140 NC C139 NC NR_MIC_IN
C140 NC
C141 NC
U104 NC
AGND CE CDATA MIC1P/DMIC_SDA MIC1N VMID
CCLK MCLK PVDD DVDD DGND
ADCVREF DACVREF OUTN OUTP AVDD
C142 NC C143 NC C144 NC R159 NC R141 NC R142 NC C118 NC NR_MIC_OUT
C148 NC C149 NC C150 NC
SCLK/DMIC_SCL ASDOUT LRCK DSDIN AGND
C146 NC C147 NC C145 NC C179 NC
I2S0_BCLK
I2S0_RXDAT
I2S0_LRCLK
I2S0_TXDAT

NR_MUTE R101 NC C109 102
NR_MIC_IN R103 1K8 R104 470R C103 103 C108 4.7uF/16V C127 105 C189 470P C190 15uF/6.3V
MIC3V3
Q109 2SC4617(S) R115 4K7 D106 KDS160E C191 470P
MIC_3V3
Q101 NC
G S D
MICOUT C107 104 R113 1K
BK_MIC_IN C121 104 R109 6K8 R102 1K C114 100P C113 472 D102 1SS372
NR_MIC_OUT C106 104 L102 GZ1005D601TF R114 NC C115 NC C105 220P
L101 GZ1005D601TF
TP101 MIC
R106 1K EXT_PTT
EXT-PTT
EXT_MIC+
IN_MIC+
C104 100P D105 ESD9L5.0ST5G
JK101 MIC-JACK-D3.5mm
D+
TP102 D+
R105 22R
USB_D+
D103 ESD9L5.0ST5G
MIC3V3
C123 105
C120 103 R108 10K R110 1K
VOX R111 1K C110 102 C126 105 R112 470K D101 1SS372 C125 105 R107 150K
Q104 KTC4082(HF)
L107 GZ1005D601TF
MIC+ MIC- MIC101 MIC
C112 220P C101 470P
L108 GZ1005D601TF

Model:	MD790_UHF			Designer:	
Filename:	MD790_UHF-MAIN BOARD			Check:	
File NO.:				Approve:	
Rev:	3.0	Page:	1 of 4	Date:	2022.10.31



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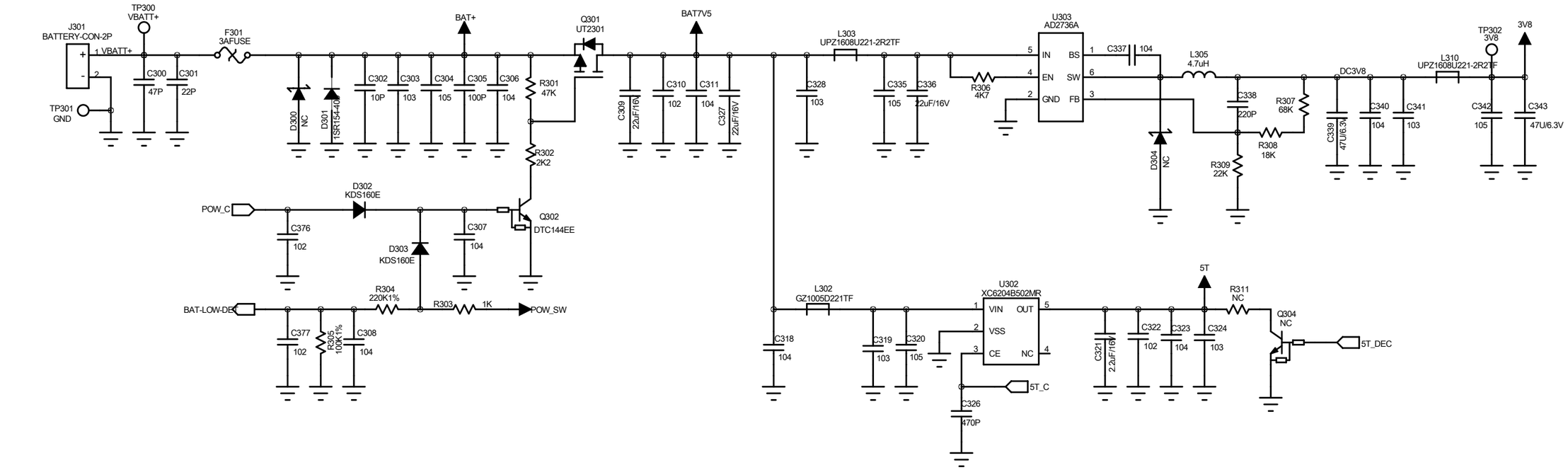

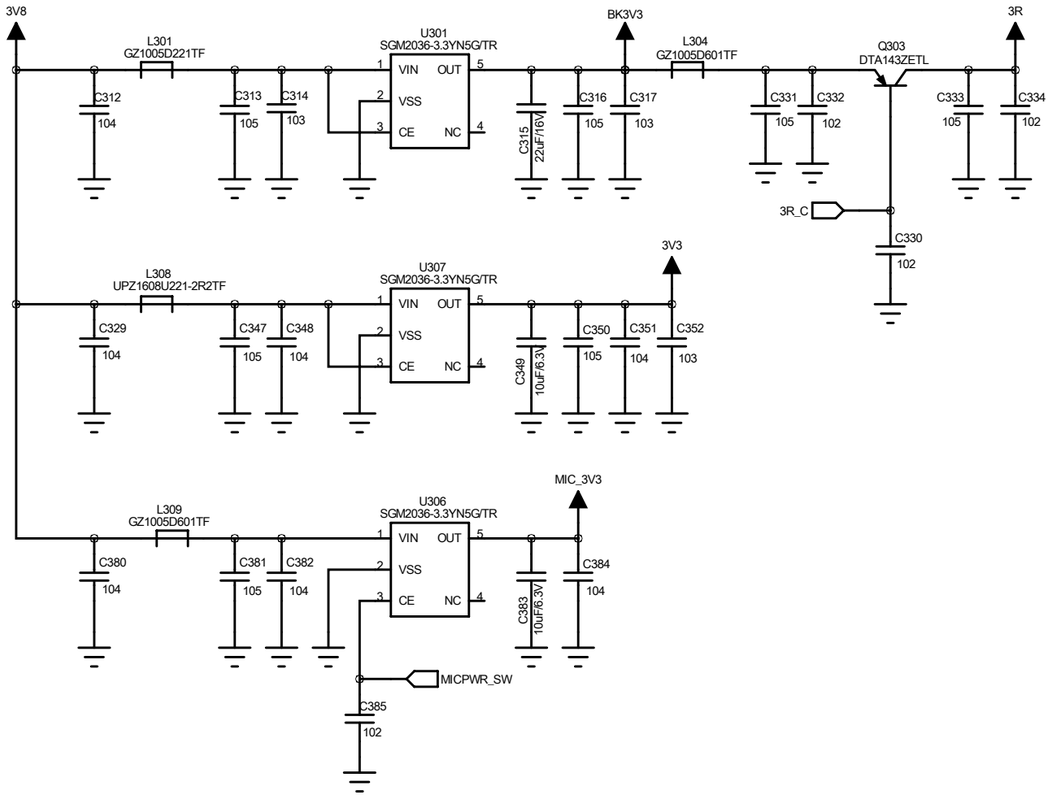

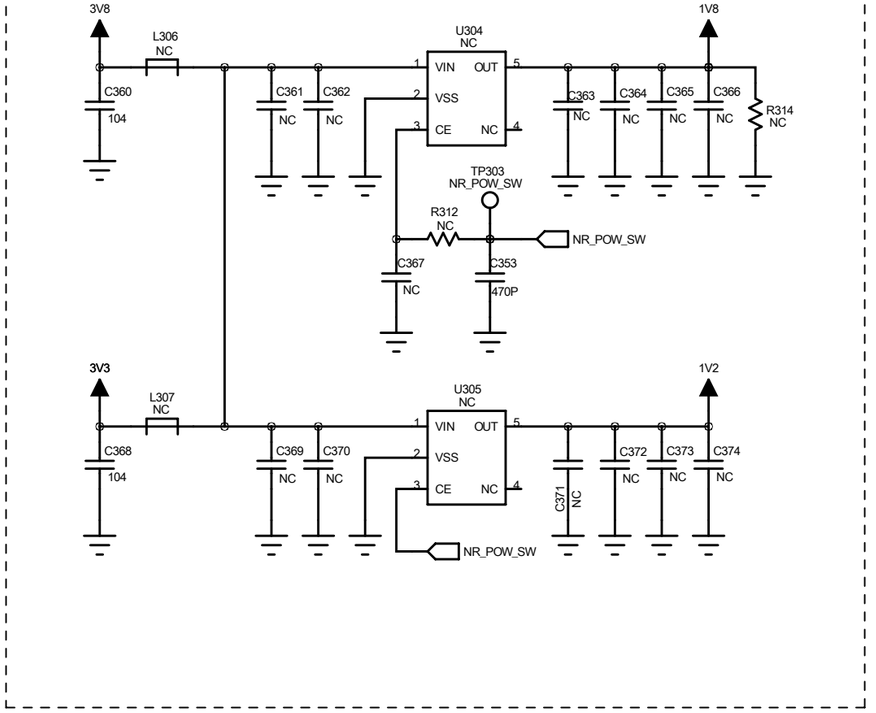

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TX/RX

J401 ANTENNA
TP401 ANT
TP402 GND
ANT
L400 1uH
C400 NC
L401 ER0.4X1.5X4T
C401 2P
C402 6P
L402 ER0.4X1.5X4T
C403 1P
C404 6P
L403 ER0.4X1.5X3T
C405 1P
C406 7P
C407 470P
L404 ER0.4X1.5X4T
D402 BA592
D401 BA592
C408 3P
C446 12P
C511 NC
L421 220nH
R430 270R
R431 270R
5T
C459 104
C458 102
C457 104
L420 ER0.4X1.5X2T
C444 10P
C443 NC
C500 NC
C442 NC
C441 27P
C440 5P
C439 NC
C499 NC
C445 5P
L418 EL0.35X1.6X8T
Q408 HTU7G06S011P
R410 NC
R427 47R
L417 1.5nH
C437 33P
C438 33P
L416 0R
C436 NC
R475 NC
L414 100nH
C503 NC
L415 UPZ1608U221-2R2TF
R454 330R
Q407 H3
C428 47P
L410 4.7nH
C426 NC
C434 10P
C435 NC
R424 47R
R425 12K
R426 47K
C450 103
C429 470P
5T
C449 220P
L413 22nH
R420 330R
R421 6K8
Q406 2SC3356
TX AMP
R422 4K7
C432 NC
C433 470P
R423 47R
C456 22uF/16V
C455 103
C454 470P
R429 82K
R428 22K
C453 103
C497 470P
C452 470P
C451 104
C466 22P
C465 220P
C464 470P
C463 103
C462 104
D400 HSC277
D403 HSC277
D404 HSC277
C409 NC
C410 4P
L603 ER0.4X1.5X3T
L431 NC
C512 NC
ZD401 EDZ5.1B
C461 102
C460 470P
R471 1K
APC_VCC
TX-BAT
R435 150K1%
C469 56P
R441 270R
R432 0.39R
R433 0.39R
R434 0.39R
C506 NC
R440 1.5M
R437 150K1%
U404 NJM2904V
V+ AOUT
BOUT A-IN
B-IN A+IN
B+IN GND
R444 47K
C471 103
R442 2K2
C472 473
R443 27K
C473 470P
C509 220P
R445 47K
APC
C470 102
R446 NC
C513 470P
APC_VCC
U405 UMC4N
BAT+
C467 103
RF_APC_SW
C514 470P
C468 47P
R438 150K1%
R439 1.5M
C507 220P
C508 220P
R436 150K1%
L405 NC
L427 ER0.4X1.5X3T
3R
L430 GZ1005D601TF
C418 104
C419 470P
C417 103
R401 100K
R461 100K
C494 470P
L419 27nH
R402 NC
BK3V3
L423 GZ1005D221TF
C424 104
C425 102
C482 105
C475 10uF/6.3V
C476 104
C477 102
R403 NC
R404 22R
C496 5P
C414 10P
L426 39nH
L425 47nH
C484 NC
C411 470P
L408 0R
L406 0R
L407 NC
L424 NC
C415 NC
C413 NC
Q401 2SK318AA
C485 470P
R460 100K
R458 NC
R459 NC
R407 4R7
C412 470P
L409 NC
RXAGC_SW
Q402 NC
C510 470P
BK_MIC_IN
C505 10uF/6.3V
R411 0R
DMR_AF
C486 105
R412 10K
2T/5T
C518 102
C474 105
U401 BK4819
NC LNAIN MICP MICN NC VCC NC NC
PAOUT
VRAMP
EARO
XI
XO
VCC
GPIO6
GPIO5
SCK SCN SDATA GPIO0 GPIO1 GPIO2 GPIO3 GPIO4 GND
C481 104
C480 470P
L422 3.3uH
C479 NC
C493 10P
X601 26MHZ
OUT VCC
GND VC
C478 104
BK3V3
L411 GZ1005D601TF
C423 105
C420 102
C421 104
C422 105
C487 220P
R447 100K
MOD2
R449 100K
R448 560K
CTC/DCS_OUT
R452 4K7
U403 TC75S51F
-V
+V
C492 NC
C490 104
R453 NC
R451 1K
C489 105
R450 1K
MOD_BIAS
C488 153
C517 470P
5T
R419 10R
L412 22nH
R418 330R
C447 470P
C448 104
TX_AMP_C431 6P
R416 22K
C427 NC
Q405 2SC3356
C430 470P
R414 0R
R417 NC
R415 NC
C416 5P
R413 NC
BK_SCLK
BK_SCN
BK_SDATA
BK_INT
BK_SQL
C516 102
C515 102

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Circuit description

RF Receiving

The RF carrier signal enters a low -pass filter through antenna, and then via antenna switch diode D401 (BA592) ＆ D402 (BA592), D400 (BA277) ＆ D403 (BA277), D404 (BA277), and then pass through a tape filter. , Then send it to the RF amplifier Q401 (2SK318AA). After enlarged the signal and pass another filter, finally send it to the U401 (BK4819) for demodulation.

Audio circuit

In the DMR mode, the baseband signal is output from the 8th pin of the U401 (BK4819), and then enters the N2 pin of the U201 (C7000), and then outputs the audio signal from the C14 pin to the U103 audio signal from the C7000 processing code to the U103. The signal passes the switch of the U105 analog mode and the DMR mode, and then output the audio signal through the volume adjustment switch SW101, and finally send it to the audio power amplifier U101 (LN4898) to amplify

In the analog mode, the baseband signal is output from the 8th pin of the U401 (BK4819), the output audio signal is adjusted to the SW103 by the volume adjustment switch, and the audio power amplifier U101 (LN4898) is enlarged and sent to the speaker.

Squelch Control

In the analog mode , the squelch switch output depend on U401 (BK4819) 28th pin and 29th pin ,U201 (C7000) CPU checked the pin as low power and switch off squelch noise and audio amplify . when U201(C7000) received the carrier and the decoding . Squelch control and Audio amplify released the sound from the speaker .

In the DMR mode, Squelch switch also depend on the baseband U201(C7000) whether matched the correct color code and calling id , once correct it will switch the sound and audio amplify. If not it will switch off the sound and audio .

TX signal path

In the analog mode, the voice signal is first passed through the microphone, and the U106 switch is sent to the 14th pin of the U401 (BK4819) for RF carrier signal modulation. The RF carrier signal was output from the 17th pin of the U401 (BK4819), After the buffering large q405 (2SC3356) and enter the Q406 amplification. Send it to the promotion amplifier Q407 (H3) and then to the power magnification Q408 (HTU7G06S011P) to amplify the radio frequency signal to 10 watts. Then pass the RF switch D401 (BA592) and D402 (BA592), and then send the signal to the antenna through a low -pass filter.

In the DMR mode, the voice signal is first sent to the A13 pin of U201 (C7000) through the microphone, The C7000 has been processed by the voice code and the baseband as a 4FSK signal from the 1st pin of the X601 (26M crystal) to modify the carrier wave signal. output from the 17th pin of the RF carrier signal from the U401 (BK4819), After entering the Q406 amplification through the buffer large q405 (2SC3356), then send it to the promotion amplifier Q407 (H3) and then to the power amplifier Q408 (HTU7G06S011P) to amplify the radio frequency signal to 10 watts. Then pass the radio frequency switching tube D401 (BA592) and D402 (BA592), and then send the signal to the antenna through the low -pass filter

PTT circuit and APC control circuit

When the PTT button is pressed, the T6 pin of the U201 (C7000) is pulled down, and then the U201 (C7000) opens the transmitting switch circuit to enter the transmitting state. U201 (C7000) outputs a voltage to U404 (NJM2904V) to generate an APC Voltage controls the radio frequency transmission power.

RF PART KEY COMPONENTS LIST					
NO	Name	Model	Size	Manufacturer	Mark
1	Board	MD790-UHF-V3.0-	MD790-UHF-V3.0-221019	MZ HS	
2	MCU	HR_C7000	PBGA11X11-16X16P220-0R65	HZ DH	
3	PA	HTU7G06S011P	SOT-89	QZ HT	
4	Antenna	MD595	400-480MHz	QZ JH	

PART LIST :

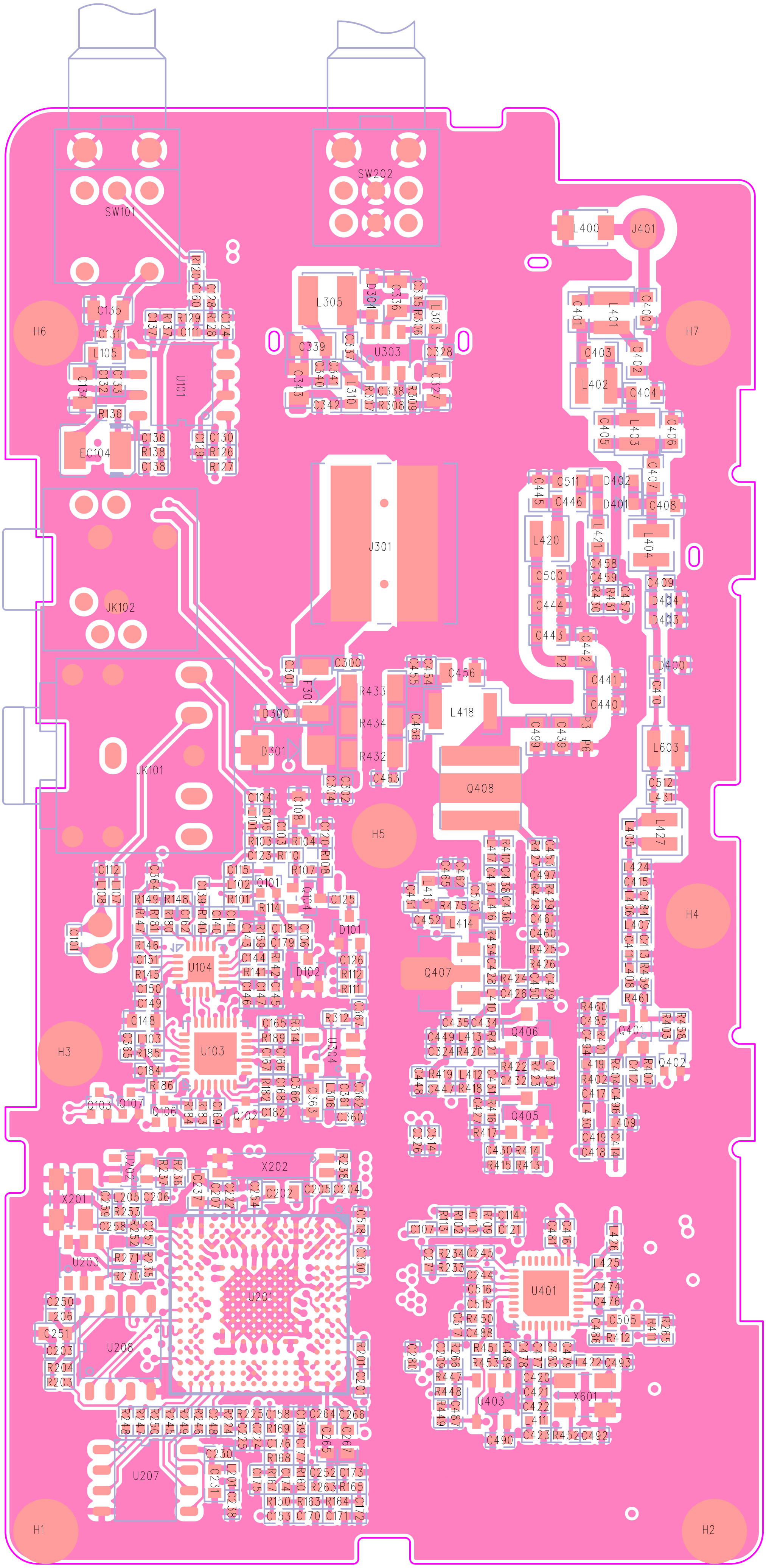
MD-795A PART LIST				
DATE	25-Oct-2023	MODEL SIZE	MD790-UHF-V3.0/5W（20221019）	
Version	V3.0			
TYT CODE	NAME AND ZISE	UNIT	QTY	
3001000000004020	0Resistance 0402/0R/J	unit	8.00	
30010047A4104020	0Resistance 0402/4.7R/J	unit	1.00	
3001001004104020	1Resistance 0402/10R/J	unit	3.00	
3001002204104020	1Resistance 0402/22R/J	unit	3.00	
3001003304104020	1Resistance 0402/33R/J	unit	6.00	
3001004704104020	1Resistance 0402/47R/J	unit	3.00	
3001010004104020	2Resistance 0402/100R/J	unit	3.00	
3001015004104020	2Resistance 0402/150R/J	unit	1.00	
3001022004104020	2Resistance 0402/220R/J	unit	2.00	
3001027004104020	2Resistance 0402/270R/J	unit	5.00	
3001033004104020	2Resistance 0402/330R/J	unit	3.00	
3001001024104020	3Resistance 0402/1.0K/J	unit	13.00	
3001001224104020	3Resistance 0402/1.2K/J	unit	5.00	
3001001524104020	3Resistance 0402/1.5K/J	unit	1.00	
3001002224104020	3Resistance 0402/2.2K/J	unit	4.00	
3001004724104020	3Resistance 0402/4.7K/J	unit	5.00	
3001006824104020	3Resistance 0402/6.8K/J	unit	2.00	
3001001034104020	4Resistance 0402/10K/J	unit	10.00	
3001001032104020	4Resistance 0402/10K/F	unit	1.00	
3001001234104020	4Resistance 402/12K/J	unit	1.00	
3001001232104020	4Resistance 0402/12K/F	unit	1.00	
3001001534104020	4Resistance 0402/15K/J	unit	2.00	
3001001834104020	4Resistance 0402/18K/J	unit	1.00	
3001002234104020	4Resistance 0402/22K/J	unit	5.00	
3001002734104020	4Resistance 0402/27K/J	unit	1.00	
3001004734104020	4Resistance 0402/47K/J	unit	12.00	
3001006834104020	4Resistance 0402/68K/J	unit	1.00	
3001008234104020	4Resistance 0402/82K/J	unit	1.00	
3001001044104020	5Resistance 0402/100K/J	unit	5.00	
3001001042104020	5Resistance 0402/100K/F	unit	1.00	
3001001541104020	5Resistance 0402/150K/D	unit	5.00	
300100221F004020	5Resistance 0402/220K/F	unit	1.00	
3001003944104020	5Resistance 0402/390K/J	unit	1.00	
3001004744104020	5Resistance 402/470K/J	unit	1.00	
3001005644104020	5Resistance 0402/560K/J	unit	1.00	
3001001554104020	6Resistance 0402/1.5M/J	unit	2.00	
3001001064104020	7Resistance 0402/10M/J	unit	1.00	

3003002015104020	capacitance 0402/2.0P/B/NP0/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003003015104020	capacitance 0402/3.0P/B/NP0/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003004015104020	capacitance 0402/4.0P/B/NP0/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003005015104020	capacitance 0402/5.0P/B/NP0/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003006015104020	capacitance 0402/6.0P/C/NP0/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003010055104020	capacitance 0402/10P/J/COG/50V/1.0*0.5*0.5mm/ Murate	unit	5.00	
3003015055104020	capacitance 0402/15P/J/COG/50V/1.0*0.5*0.5mm/ Murate	unit	2.00	
3003022055104020	capacitance 0402/22P/J/COG/50V/1.0*0.5*0.5mm/ Murate	unit	2.00	
3003033055104020	capacitance 0402/33P/J/COG/50V/1.0*0.5*0.5mm/ Murate	unit	2.00	
3003047055104020	capacitance 0402/47P/J/COG/50V/1.0*0.5*0.5mm/ Murate	unit	5.00	
3003056055104020	capacitance 0402/56P/J/COG/50V/1.0*0.5*0.5mm/ Murate	unit	2.00	
3003010165104020	capacitance 0402/100P/J/COG/50V/1.0*0.5*0.5mm/ Murate	unit	10.00	
3003012165104020	capacitance 0402/120P/K/X7R/50V	unit	1.00	
3003022165104020	capacitance 0402/220P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	11.00	
3003047165104020	capacitance 0402/470P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	30.00	
3003047265104020	capacitance 0402/472P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003010265004020	capacitance 0402/102P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	39.00	
3003010365004020	capacitance 0402/103P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	28.00	
3003015365004020	capacitance 0402/153P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	2.00	
3003018365004020	capacitance 0402/183P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003022365104020	capacitance 0402/223P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003022565104020	capacitance 0402/225P/K/X5R/10V/1.0*0.5*0.5mm/ Murate	unit	4.00	

3003027365104020	capacitance 0402/273P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	2.00	
3003047365104020	capacitance 0402/473P/K/X7R/50V/1.0*0.5*0.5mm/ Murate	unit	1.00	
3003010465004020	capacitance 0402/104P/K/X7R/16V/1.0*0.5*0.5mm/ Murate	unit	62.00	
3003010565004020	capacitance 0402/105P/K/X5R/10V/1.0*0.5*0.5mm/ Murate	unit	29.00	
3003056265104020	capacitance 0402/562P/K/X7R/50V	unit	4.00	
300300101510603C	capacitance 0603/1.0PF/B/NPO/50V/1.6*0.8*0.8mm/Murate	unit	2.00	
300300201510603C	capacitance 0603/2.0PF/B/NPO/50V/1.6*0.8*0.8mm/Murate	unit	1.00	
300300301510603C	capacitance 0603/3.0P/B/NPO/50V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300300501510603C	capacitance 0603/5.0P/B/NPO/50V/1.6*0.8*0.8mm/ Murate	unit	2.00	
300300601510603C	capacitance 0603/6.0P/C/NPO/50V/1.6*0.8*0.8mm/ Murate	unit	2.00	
300300701510603C	capacitance 0603/7.0P/C/NPO/50V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300301005510603C	capacitance 0603/10P/J/COG/50V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300301205510603C	capacitance 0603/12P/J/COG/50V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300302705510603C	capacitance 0603/27P/J/COG/50V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300301066500603C	capacitance 0603/106P/K/X5R/10V/1.6*0.8*0.8mm/ Murate	unit	10.00	
300302256510603C	capacitance 0603/225P/K/X5R/50V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300304716510603C	capacitance 0603/470P/K/X7R/50V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300304756510603C	capacitance 0603/475P/K/X5R/10V/1.6*0.8*0.8mm/ Murate	unit	1.00	
300302266K008053	capacitance 0805/226P/22UF/K/X5R/10V/2.0*1.25*1.25mm/Murate	unit	9.00	
300304766K008053	capacitance 0805/476P/47UF/K/X5R/10V/2.0*125**1.25mm/Murate	unit	2.00	
30010039B4112060	M Resistance 1206/0.39R/J	unit	3.00	
3003010760012100	T1capacitance 1210/100UF/6.3V/B /3.50*2.80*1.00mm/	unit	1.00	
30070CH105N04020	L0 inductance 0402/CH1.5N	unit	1.00	

30070CH303N04020	L0 inductance 0402/CH3.3N	unit	1.00	
30070CH407N04020	L0 inductance 0402/CH4.7N	unit	1.00	
300700CH22N04020	L1 inductance 0402/CH22N	unit	2.00	
300700CH27N04020	L1 inductance 0402/CH27N	unit	1.00	
30070CH39N004020	L1 inductance 0402/CH39N	unit	1.00	
300700CH47N04020	L1 inductance 0402/CH47N	unit	1.00	
30070CH100N06030	M3 inductance 0603/CH100N	unit	1.00	
30070CH220N06030	M3 inductance 0603/CH220N	unit	1.00	
300701UH3315M000	W6 PA inductance 3*3*1.5/4.7UH	unit	1.00	
30150221T0004020	0 Magnetic bead 0402/221T	unit	4.00	
30150601T0004020	0 Magnetic bead 0402/601T	unit	13.00	
30150221T0006030	1 Magnetic bead 0603/221T	unit	5.00	
30070CM1UH100810	inductance 1008/CM1UH	unit	1.00	
3014001LEDR06030	Light diode 0603/LED-R/red	粒	1.00	
3014007LEDG06030	Light diode 0603/LED-G/green	粒	1.00	
30110BA2778K0000	Diode BA277G/SOD-523/8K/KNC	unit	3.00	
30110KDS160E0603	Diode KDS160E/SOD723	unit	3.00	
30110ISR15440000	Diode 1SR154-400	unit	1.00	
3011000BA5920805	Diode BA592/SOD323	unit	2.00	
30200DTC144EE000	Triode PDTC144EE/EMT3/SOT-423/NXP	unit	1.00	
30200DTA143ZE000	Triode DTA143ZE/SC-90/SOT-423	unit	1.00	
302001SS37200000	Triode 1SS372N9/SOT-323/YQ	unit	2.00	
30200UT2301G0000	Triode UT2301G/IS2301/NP2301AVR	unit	1.00	
302002SC33560000	Triode 2SC3356/SOT-23/R25	unit	2.00	
302002PC4617R000	Triode 2PC4617R/SC-90-CBE/SOT-323	unit	1.00	
3012005110008050	stabilization diode 0805/UDZSNP TE-175.1B	unit	1.00	
30110LKEUCO5NB00	Diode LKEUCO5N-B	unit	2.00	
30110PESD5V0S1UB	Patch anti -static diode PESD5V0S1UB/SOD523	unit	1.00	
302002SC40820000	Triode 2SC4082T106P/SC-70	unit	1.00	
30200UMC40000000	Triode UMC4NTR/SOT-323-5	unit	1.00	
302007G06S011P00	Triode PA / HTL7G06S011P	unit	1.00	
302003SK318AA000	Triode 3SK318AA/SOT-343	unit	1.00	
302002SK3078H300	Triode PA /2SK3078/H3/SOT-89	unit	1.00	
30200SG2200B33M0	Triode SG2200B33M	unit	3.00	
30200SG1301B50M0	Triode SG1301B50M	unit	1.00	
3256012064A00000	Fuse 0466004/NRHF/12064A	unit	1.00	
41020A1JS0000000	Touch chip /DE-4.5/A18 golden	unit	1.00	
3160024MHZ000000	B Crystal 24MHZ/2520	unit	1.00	
3160026M32250000	Crystal 26M/3.2*2.5/KDS1XTV26000MCA Temperature supplement/SDN	unit	1.00	

3160032768000A00	B Crystal 32.768 /	unit	1.00	
30300TC75S51F000	Integrated circuit TC75S51F	unit	1.00	
30300AD2736A0000	Integrated circuit AD2736A/SOT23-6	unit	1.00	
3030P25Q16HSSHIT	Integrated circuit P25Q16SH-SSH-IT	unit	2.00	
30300LN4898SOP80	Integrated circuit Audio AM/LN4898_C/SOP8	unit	1.00	
30300BK4819X0000	Integrated circuit BK4819/new	unit	1.00	
30300BA2904SFVE2	Integrated circuit BA2904SFV-E2	unit	1.00	
30300R3111Q271A0	Integrated circuit R3111Q271A	unit	1.00	
30300HRC70000000	Integrated circuit Baseband /HR-C7000	unit	1.00	
300700EL04153TL0	Coil inductance low pin /EL0.4*1.5*3TL	unit	3.00	
300700EL04154TL0	Coil inductance low pin //EL0.4*1.5*4TL	unit	3.00	
30070EL035168TL0	Coil inductance low pin //EL0.35*1.6*8TL	unit	1.00	
300700EL05133TL0	Coil inductance low pin //EL0.5*1.3*3TL	unit	1.00	
41070MD790000000	Shield cover MD-790	unit	1.00	
32700MD790UHFV30	Circuit board MD790-UHF-V3.0	pcs	1.00	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H4
Q407
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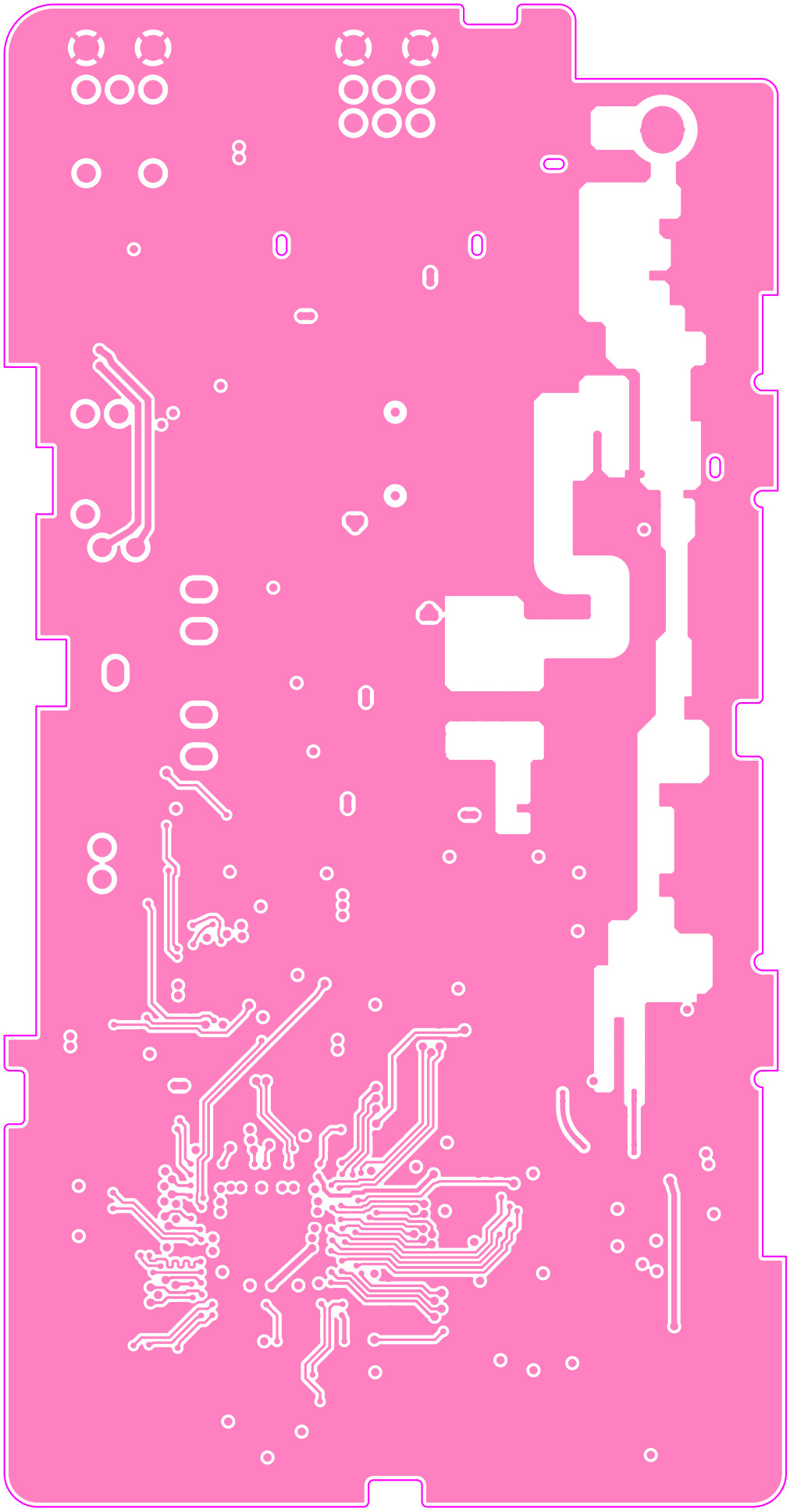
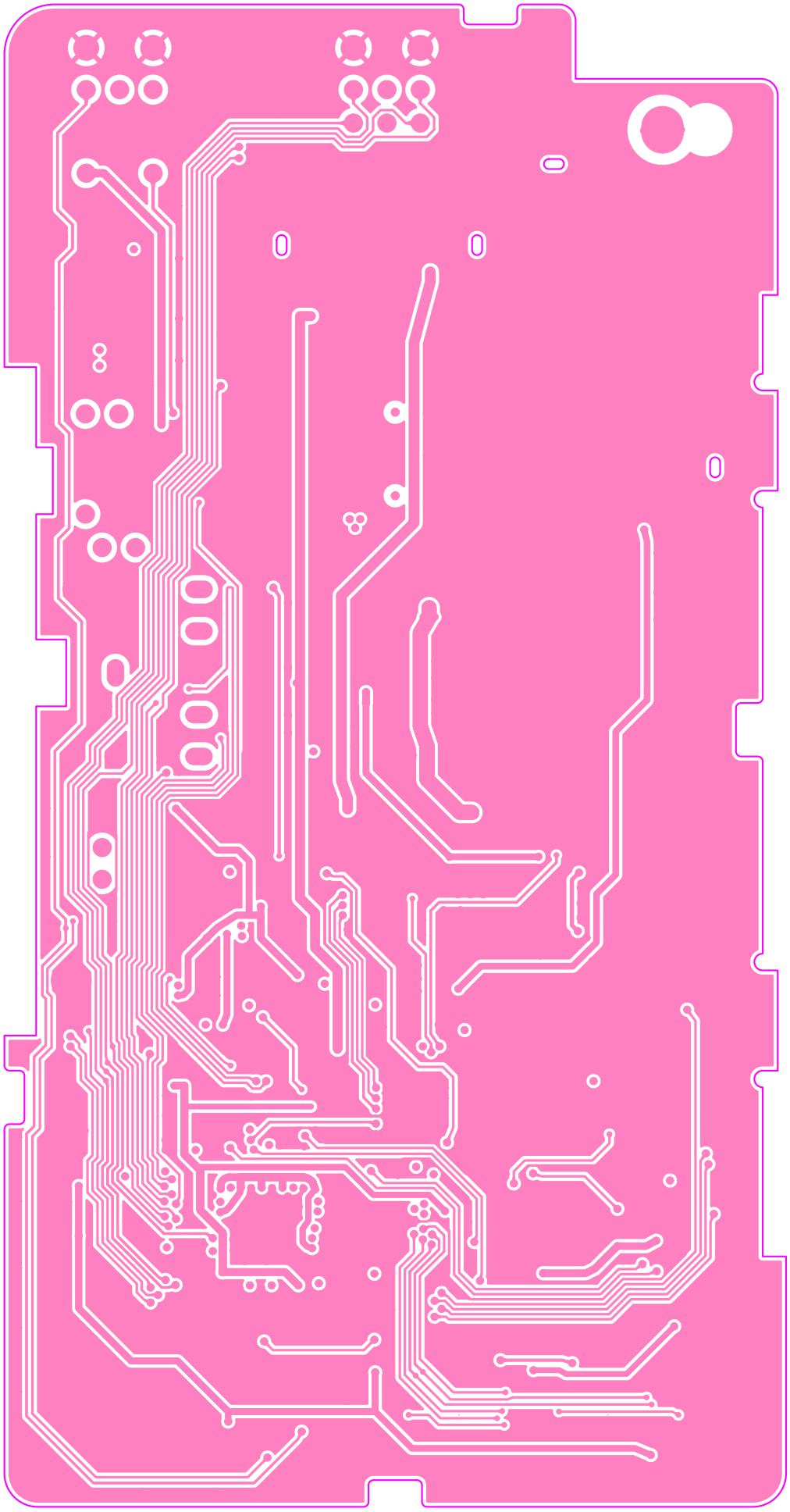
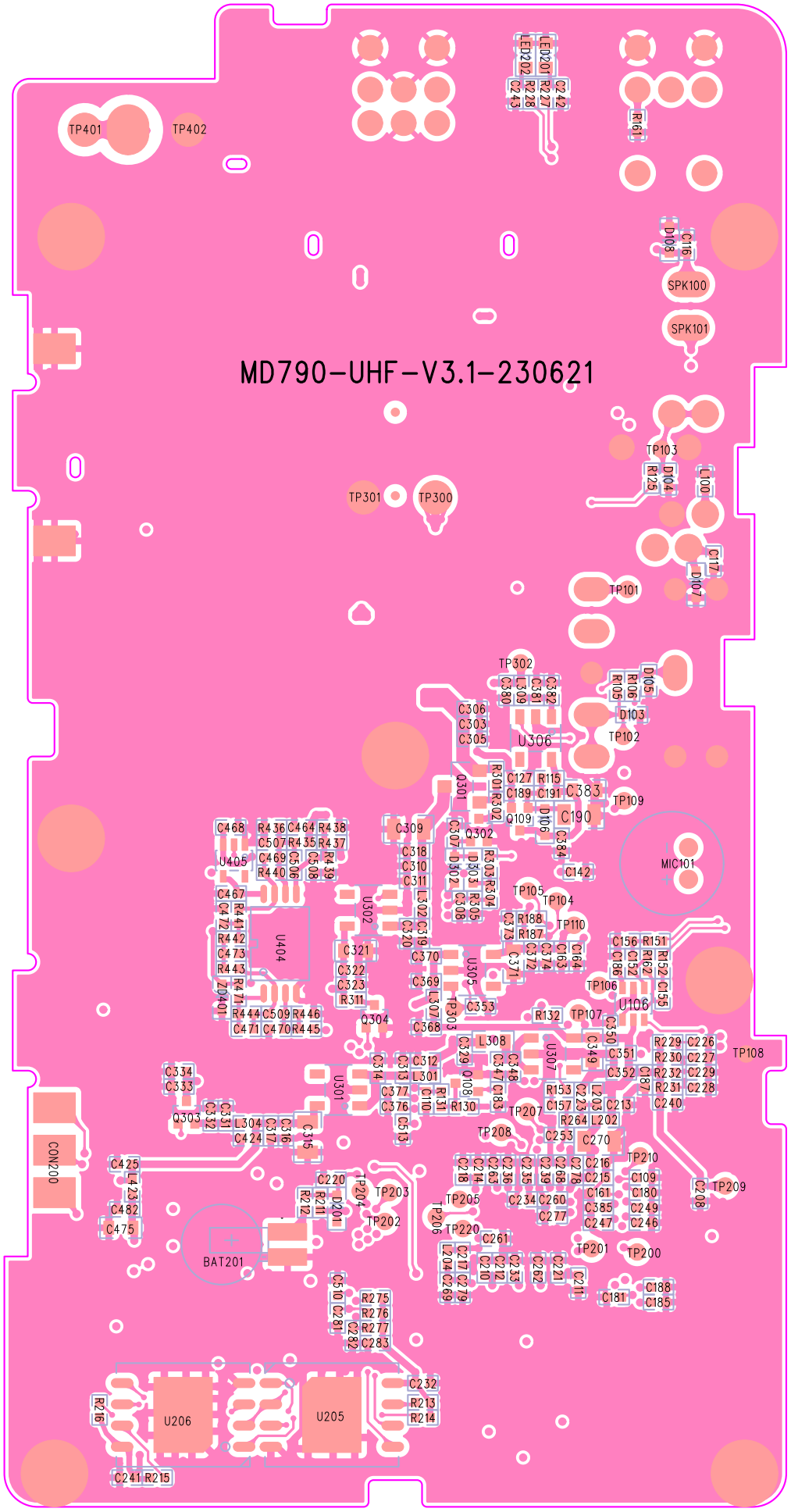
U207
H1
H2



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LED202
R228
C243
R161
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C116
SPK100
SPK101
TP103
D104
R125
L100
C117
D107
TP101
TP301
TP300
TP302
C380
C381
C382
L309
R105
R106
D105
D103
TP102
C306
C303
C305
U306
R301
R302
Q301
C127
R115
C189
C191
C383
TP109
Q109
D106
C384
C190
C309
Q302
C307
D302
D303
R303
R304
C318
C310
C311
C308
R305
C142
MIC101
TP105
TP104
C468
R436
C464
R438
C507
R435
R437
U405
C469
C506
C508
R440
C467
R441
C472
R442
C473
R443
U404
Z401
R471
R444
C509
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R188
R187
C373
C372
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C263
C236
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C278
C216
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TP205
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C233
C262
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TP200
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C188
C185
CON200
C425
L423
C482
C475
C220
TP204
R212
R211
D201
TP203
TP202
BAT201
C510
C281
R275
R276
R277
C282
C283
R216
U206
U205
C232
R213
R214
C241
R215

TX790U Radio technical specification

1 Overview

latest generation of high-quality, high-efficiency and high-performance radio intercom, its ultra-clear call quality and beautiful, compact and modern structure design, flexible expansion and simple Its operational performance makes it widely used in the airport, security, military, entertainment, service, manufacturing and property management industries.

Monitor

Press the side key that be programmed to the monitor, the radio will issue a squelch voice. This function can check the current channel is occupied or not before transmit. Ir can release anti-interference code (CTCSS/DCS) temporarily, also can receive the weak signal by this function, release the key to exit this function.

(Notice: This function is invalid in digital channel.)

VOX

Press the side key that be programmed to the VOX can choose open or close the VOX function. Speak to the microphone, it will open the transmitting and send the voice automatically; when stop speaking, the radio will stop transmitting and waiting for receiving automatically when your radio is opened the VOX function.

Switch Zone

Press the side key that be programmed to switch zone, you can choose the different zones set by programming software, radio will voice prompt the current zone and current channels .

Repeater/Talk around

Press the side key which is programmed repeater/talk around can switch the repeater/talk around.when use the talk around function to communicate with handheld radio or correspond groups without repeater, the TX frequency will same as the RX frequency, the TX signal will same as RX signal.

Low Battery Alarm

When the voltage is lower than 5.8V, the radio is always in a low battery state, the red light flashed every 2s, and the radio makes the " low power" alarm, remind the end user to charger or replace the battery in time.

Battery Save Function

When the radio do not have any operations and not receive any useful data or detect any useful carrier in a period time, the radio will enter the battery save mode. Receiving circuit and DSP enter a low power state in cycle to extend the use time of radio. Every time the radio is transmitting, according to the battery save mode settings, will send some pre carrier wave or voice head, in order to ensure that the sleep mode of the radio can be normally received. We call this time " Battery save mode delay time", which can be programmed by the programming software, ranging from 1s to 600s, the default value is 50s, users can choose whether to open the battery save mode.