MIDLAND®
The World in Communication

ATLANTIC-I

Ricetrasmettitore marino portatile
Handheld marine transceiver

Cte international
The World in Communication
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Cod.603774

Atlantic
TECHNICAL DESCRIPTION

A). GENERAL DESCRIPTION

The Atlantic Marine radio is a self-contained transceiver unit with integral antenna intended for use as a general communication tool. The useable range, while dependent upon terrain and other radio propagation principles, is typically five miles. The Atlantic uses the maximum transmit power allowed to help ensure the maximum communication range.

Features include: Channels, 10 channels Weather radio, Channel Monitor, Page and LCD Display. The unit is equipped with an external Headset option connector. Four AA alkaline batteries that are readily available in retail outlets supply operating power. An automatic power savings feature allows the typical standby battery life to extend to more than 10 days.

B). FREQUENCY DETERMINING CIRCUITS

The fundamental frequency for both the transmitter and the receiver local oscillators are controlled by a phase lock loop (PLL) circuit IC201 (Toshiba TB31202, or equipvalent). The frequency of operation of the FRS voltage controlled oscillator (VCO), composed of Q301 and Q302 operating in cascade is phase locked to a voltage controlled crystal reference (VCXO) operating at 20.95MHz (X202).

The VCO is locked to the fundamental of the transmit signal in the transmit mode and is locked to the receive 1st LO (Fundamental channel frequency minus 21.4MHz) in the receive mode. The crystal reference frequency is shared with the 2nd LO of 20.95MHz.

C). TRANSMITTER CIRCUITS

The transmitter amplifies the 0 dBm signal from the VCO to approximately 27dBm that is fed to the antenna. The transmitter is a three stage amplifier composed of Q1,3,4 and Q11. The first two stages are operated class A and the final is operated class B in full saturation to help prevent unwanted amplitude modulation. The fundamental transmit signal is fed through an elliptical low pass filter (5-pole, 2 zero) in order to suppress the harmonics to below –50 dBc. The desired frequency modulation of the carrier is accomplished by modulating the current in the VCO directly with the microphone audio signal. The microphone audio is conditioned with a three-pole high pass filter at 300 Hz (IC5C,D), a hard clipper circuit (IC5B) to limit maximum deviation to +/- 2.5 kHz and a three-pole low pass or splatter filter at 2.8 kHz (IC5A

D). RECEIVER CIRCUITS

The received signal from the antenna is band limited to 200Mhz by the transmitter harmonic filter. The desired signal is fed to a low noise amplifier (LNA – Q6) centered from 156MHz to 164MHz that provides approximately 10 dB of gain. The output of the LNA is filtered with a Band Pass filter (SF1) with pass-band of 156 to 164MHz and stopband attenuation of 50 dB. The filtered receive signal is one input to the 1st mixer (Q8), the other mixer input (1st LO) is the output of the VCO at the desired channel frequency minus 21.4MHz. The output of the mixer is tuned to the 1st IF of 21.4 MHz.

The 1st IF is transformer coupled for impedance matching to a X-tal filter centered at 21.4MHz with a bandwidth of +/-3.75Hz. The filtered 1st IF is then amplified by Q9 and fed to the 2nd mixer input of the multi-function receiver IC (IC1). The 2nd LO (20.95 MHz) is generated by VCXO that is the reference frequency for the PLL. The 2nd mixer output of 450 kHz is filtered through a 4 section ceramic filter that in combination with the 21.4MHz X-tal filter provides approximately 50 dB of adjacent channel attenuation. The 450 kHz 2nd IF is then amplified, limited and fed to a quadrature detector for FM demodulation. The resulting audio output signal is bandpass filtered from 300 to 3 kHz (Q22) and amplified to provide 150mW of audio power (IC2). A squelch circuit is provided (IC1 pins 10 through 11) to mute the receiver noise under low signal conditions. The squelch circuit amplifies and detects noise in a narrow bandwidth at approximately 5 kHz. When the detected noise exceeds a threshold set to trigger at approximately 9 dB SINAD receive signal strength, the audio output is muted.

E). TRANSMIT/RECEIVE SWITCH

When the radio is in the transmit mode, pin diode switches D13 and D1 are both turned on (representing less than 0.7 ohms). D13 allows the transmit signal to pass to the antenna and D1 shorts one leg of a T matching network (L3, L15 and C4) to ground in the receive path. This results in a parallel tuned circuit high impedance being presented to the transmit signal so that the receive path does not load the transmit signal. In the receive mode, both D13 and D1 are off, resulting in the antenna signal being coupled into the receive LNA through the 50 ohm T matching network and the unwanted load of the transmit final amplifier is reduced to less than 1 pF by D1.

F). RADIO CONTROL CIRCUIT

A microprocessor (CPU1) is used to control the transceiver. User stimuli is provided through a tack switch for PTT (push to talk), along with the keypad for channel selection, channel monitor, receive volume, and page. Pressing the PTT switch instructs CPU1 to switch to the transmit mode. This is accomplished by loading the proper channel counter information through a 3-wire serial link to the PLL IC (IC201), turning on power to the PLL and VCO, microphone and transmit audio circuits and the transmit RF amplifiers.

Pressing the call switch causes the microcontroller to transmit a warbling tone for approximately 3 seconds on the current channel selected that is used to notify another person with Marine radio that you wish to communicate. Pressing the channel Up/Down buttons (active in receive mode only) instructs CPU1 to increment or decrement respectively the channel frequency by one channel from the channel previously selected.

In receive mode the microcontroller periodically switches on the VCO and receiver power and checks for a valid received signal by monitoring the squelch circuit output. If a valid signal is present, the audio output is turned on and receive power is maintained for the duration of the valid signal. If the valid signal is removed or no valid signal was present, the microcontroller removes power from the VCO and receiver, waits for approximately 100 ms and then checks again. This periodic cycling of the power to the receiver circuits results in a much longer battery life vs. leaving power on continuously. The total period of the cycling is selected such that the worst case delay in 'seeing' a valid receive signal is not disruptive to normal two-way voice communications.

Midland ATLANTIC-I

Test and Alignment Procedure

REVISION SHEET

Rev. Code	Rev. Date	Revision	Revised By:

TABLE OF CONTENT

1. RECOMMENDED TEST EQUIPMENT

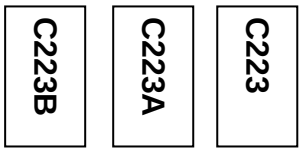
1.1 HP8920A,B Radio Communication Tester or equivalent
1.2 Fluke 187 Digital Voltmeter or equivalent
1.3 HPE3615A Power Supply or equivalent

2. TEST PREPARATION

2.1 Connect a 6.0Vdc power supply to the positive battery terminal input point and the negative battery terminal input point (GND) into the negative terminal.
2.3 Connect the HP8920A,B RF Output port to the ANT point.
2.4 TP12 should be connected to the ***Audio In Hi*** and Spkr (-) should be connected to the ***GND*** of the HP8920B.
2.5 Set the unit at Ch1.

3. CRYSTAL SELECT

4.1 X202 crystal is marked with red, blue, and no color marking. Matching capacitors **C223, C223A, and C223B** that are in PCB will be determined by the markings and are as follows:



Note : Below are matching matrix for each grade of X202

Crystal		C223A	C223B
A	Red	**3P**	**3P**
B	NO COLOR	**3P**	**NC**
C	Blue	**NC**	**NC**

4. VCO ADJUSTMENT

5.1 Set the unit at Ch1 and connect a digital voltmeter to TP1 (VCO PD).
5.2 Press the PTT Button so the unit is in transmit mode.
5.3 ***Adjust CT1 until the voltmeter reads 1.3 to 1.6Vdc (without VCO Plate). CT1 is located under the shieldcan.***
Solder VCO Plate and let temperature stabilize. Recheck TX VCO at Ch1, should be 1.0~1.5 Vdc

5.4 Release the PTT switch so the unit will be in receive mode.
5.5 Observe the voltage at TP1, the voltage should be **0.6~3.0Vdc**.
5.6 Set the unit at CH88.
5.7 Press the PTT switch so the unit is in transmit mode.

5.8 Observe the voltage at TP1, the voltage should be **0.6~3.0Vdc**.
5.9 Release the PTT switch so the unit will be in receive mode.
5.10 Observe the voltage at TP1, the voltage should be **0.6~3.0Vdc**.

NOTE : Above Specifications are measured with VCO Plate soldered.

5. TRANSMITTER FREQUENCY ALIGNMENT

6.1 Set the unit at Ch1. Press the PTT button so the unit will be in transmit mode.
6.2 Adjust CT201 trimmer capacitor until such that the output frequency is equal to the channel frequency with maximum error of +/-200Hz **(OQA Limit of +/-800Hz).** Production will control as follows:
- PCBA Alignment : +/-200Hz
- Casing Test : +/-500Hz
- OQA Limit : +/-800Hz

6. TRANSMITTER OUTPUT POWER CHECK

7.1 Set the unit at Ch1. Set the Power Supply at 6Vdc. Power is at Hi condition (use short cable)
7.2 Press the PTT button so the unit is in transmit mode. Make sure Batt. Voltage is at 6Vdc during PTT.
7.3 Transmit Power should be **>4.5W.**
7.4 Set the unit at Power Lo condition.
7.5 Press the PTT button so the unit is in transmit mode. Ensure the TX Power is within **0.3~1.0W.**

7. TRANSMITTER DEVIATION ADJUSTMENT

8.1 Connect an audio generator (600ohms) to the microphone terminal pads. The audio frequency should be set at 1kHz with a level of 200mVrms.
8.2 Connect an FM Deviation Meter (on the HP8920B) on ANT point. Set the monitor to read ***(Pk to Pk)/2*** deviation. Set ***Filter 1*** to <20Hz and ***Filter 2*** to 15kHz. ***De-emphasis*** should be set to Off.
8.3 Press the PTT button so the unit will be in transmit mode.
8.4 Adjust RV2 and observe the reading at the Deviation Meter, the reading should be between 3.9 to 4.1kHz. Checking at all condition should be 3.7 ~ 4.3kHz.
8.5 Decrease the audio generator level until the deviation reads +/-3.0kHz. The generator level should be between **3 to 10mV**.
8.6 Set the Modulation @ 2.0kHz, check that the transmit audio distortion is less than 5%.

8. RECEIVER ALIGNMENT

9.1 Set the RF Generator level to –47dBm. The generator should be set for 3.0kHz deviation at 1kHz modulation.
9.2 Set ***Filter 1*** to 25Hz and ***Filter 2*** to 15kHz.
9.3 Set the Volume at 50mW Output.
9.4 Confirm that the RX Distortion is less than 5%.
9.5 Reduce the RF Generator signal level until a 12dB Sinad reading is achieved. The RF Generator level should be less than –120dBm (nominal -123dBm).
9.6 Set the RF Generator level to –47dBm, and set the unit Volume Level to maximum.
9.7 Check the maximum Audio Output Level, should be **1.8~2.2Vrms (w/o load @6.0Vdc)**.

9. SQUELCH THRESHOLD AND HYSTERISIS

10.1 Set unit same as 9.1.
10.2 Set the RF Generator level to -124dBm.
10.3 Adjust RV1 until the unit squelches (RX Off).
10.4 Slowly increase the RF Signal Generator level until the unit un-squelches (RX On), confirm that the sensitivity is between **6~16**dB Sinad.

10. VOX TEST

11.1 Set the unit into VOX Mode (Level 2). The VOX icon should be displayed on the LCD.
11.2 Connect an audio generator into the microphone terminal. The audio frequency should be set for 1kHz frequency with a level of 1mVrms and the output should be turned off.
11.3 Turn on the output of the audio generator.
11.4 Increase the Audio Generator level until unit goes into TX Mode.
11.5 Check the Generator level, it should be between **1.5~3.0mV**.

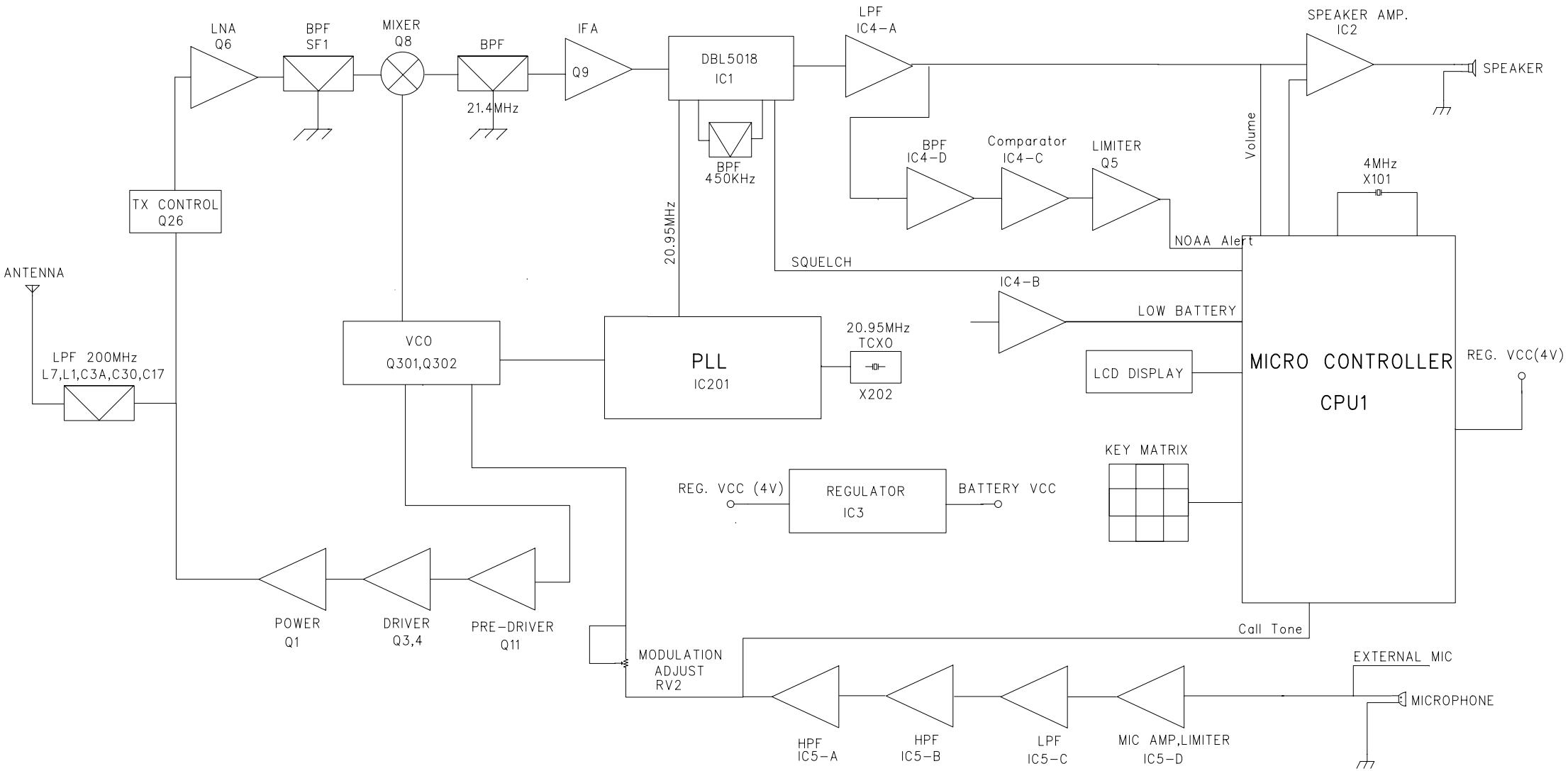
11. LOW BATTERY LEVEL TEST

12.1 Set the unit into receive mode or standby mode.
12.2 Set the Power Supply voltage to 5.0Vdc.
12.3 Slowly decrease the Power Supply Voltage until the Low Battery icon appears and blink in the LCD Display.
12.4 Observe the Power Supply Level. The level must be **4.0 to 4.4Vdc**.

12. CHARGING TEST

13.1 Connect a charged Ni-MH Battery Pack (~6.0Vdc) into the unit.
13.2 Connect a MW904 Wall Charger into the Mic/Chg Jack
13.3 Monitor the current on the **Battery (+)** line.
13.4 Confirm the Charging Current is **135~165mA** (unit is at Power Off condition).

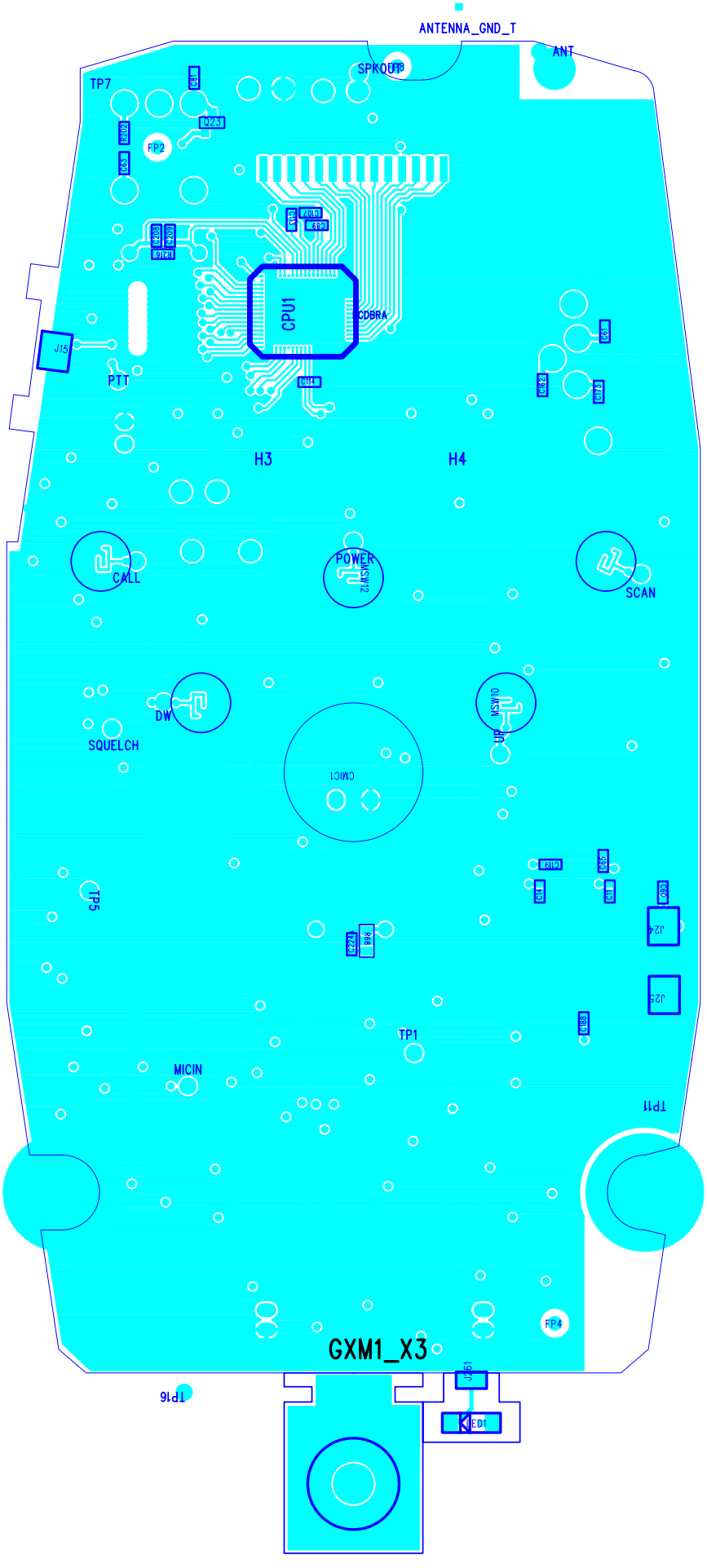
Atlantic BLOCK DIAGRAM

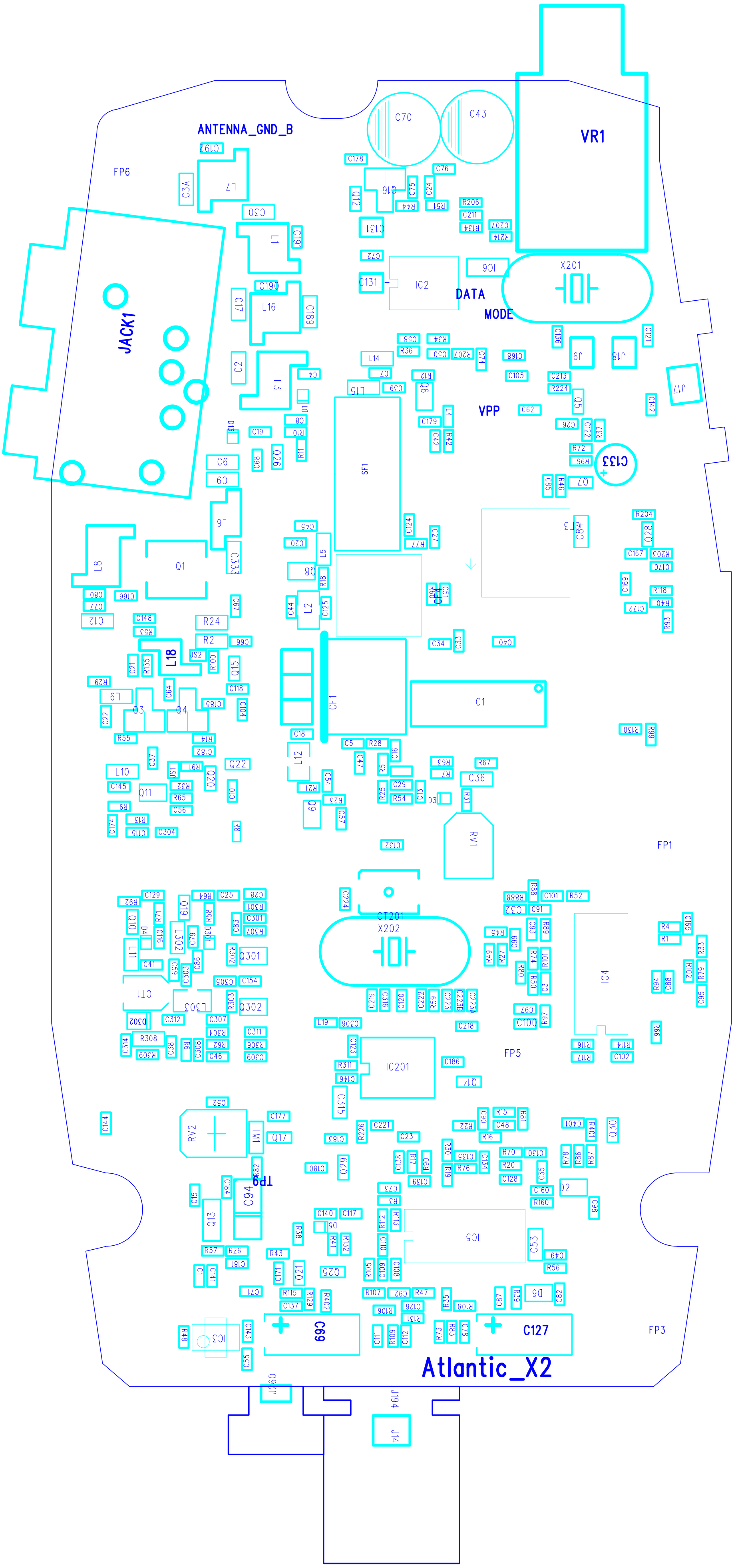


BLOCK DIAGRAM

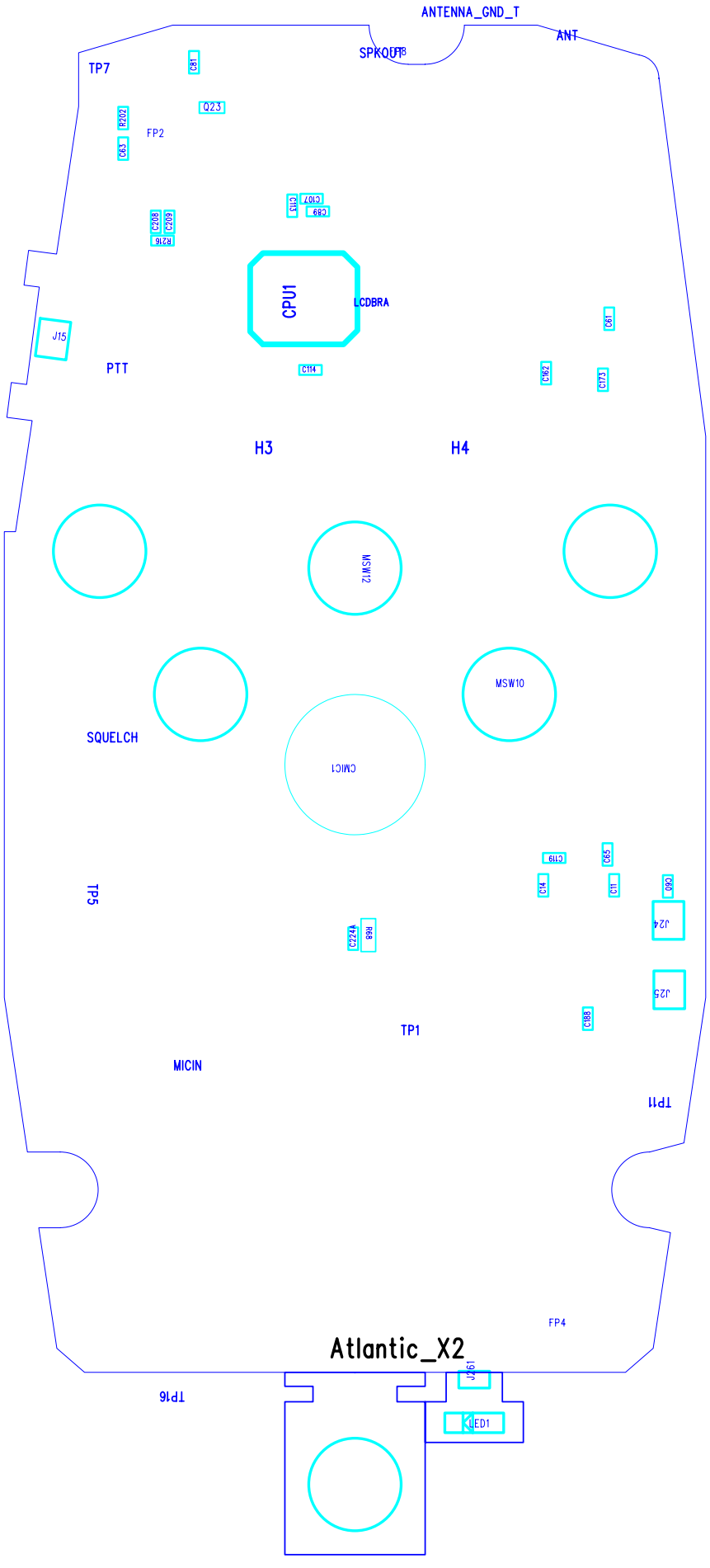
Title	ATLANTICBLK.SCH			
Drawn	Sheet	Drawing No	PCB No	REV


ANTENNA_GND_B
JACK1
VR1
X201
DATA
MODE
VPP
IC2
IC1
IC4
IC5
IC201
X202
C127
C133
FP1
FP2
FP3
FP5
FP6

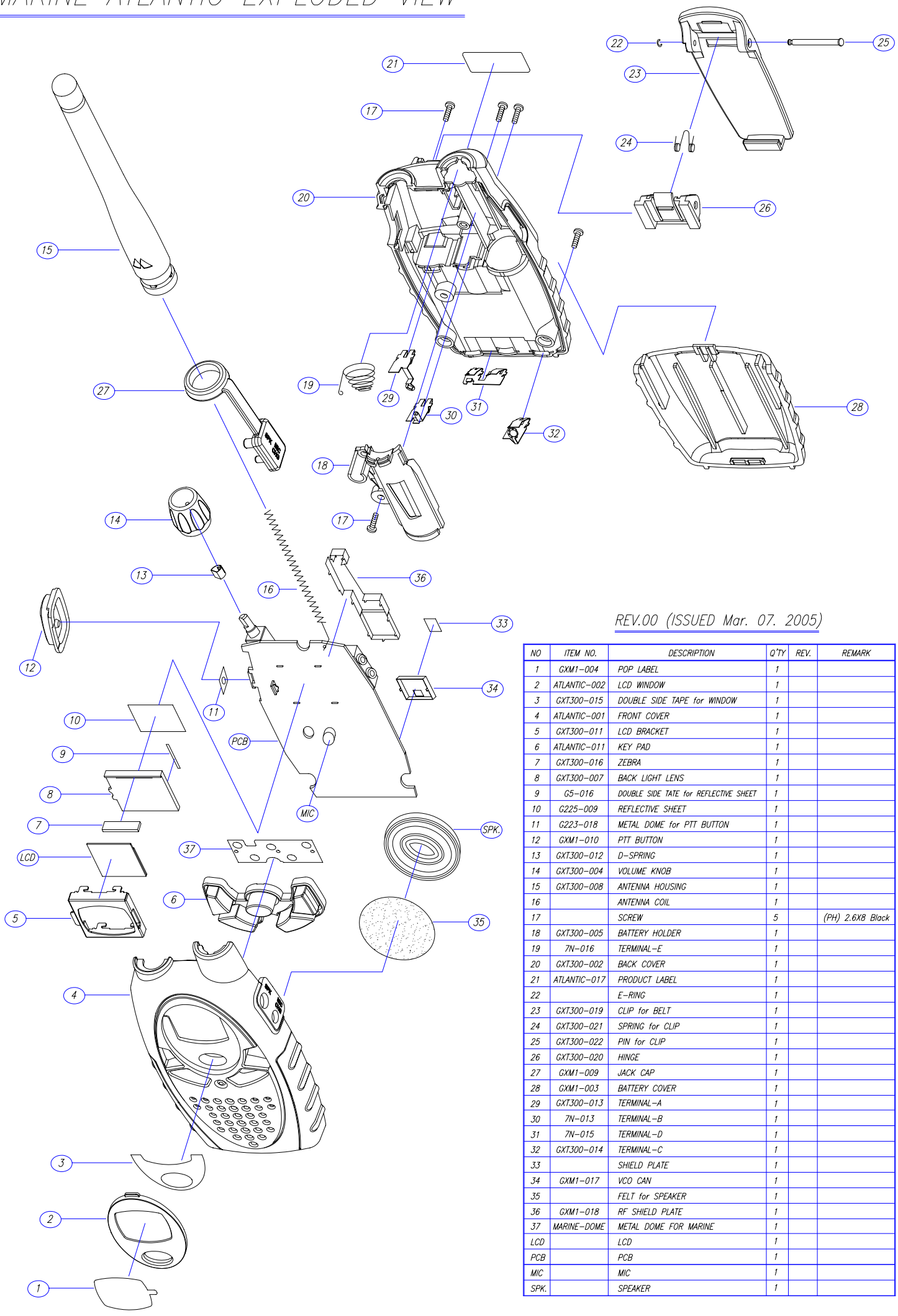

ANTENNA_GND_T
ANT
SPKOUT
TP7
FP2
CPU1
COBRA
J15
PTT
H3
H4
CALL
POWER
SCAN
DW
SQUELCH
MICIN
TP1
TP11
TP16
FP4
GXM1_X3



ANTENNA_GND_B
FP6
VR1
C70
C43
JACK1
X201
IC2
DATA
MODE
VPP
C133
SF1
L18
CF1
IC1
Q1
RV1
FP1
CT201
X202
IC4
IC201
FP5
RV2
TP9
IC5
C69
C127
FP3
Atlantic_X2
J194
J14


ANTENNA_GND_T
ANT
SPKOUT
TP7
C81
Q23
R202
FP2
C63
C107
C89
C208
C209
R216
CPU1
LCDBRA
J15
PTT
C114
C61
C62
C173
H3
H4
MSW12
MSW10
SQUELCH
CMIC1
C119
C65
C64
C11
C60
J24
J25
C224A
R68
C188
TP1
MICIN
TP11
FP4
Atlantic_X2
TP16
J161
LED1

MARINE ATLANTIC EXPLODED VIEW



REV.00 (ISSUED Mar. 07. 2005)

NO	ITEM NO.	DESCRIPTION	Q'TY	REV.	REMARK
1	GXM1-004	POP LABEL	1		
2	ATLANTIC-002	LCD WINDOW	1		
3	GXT300-015	DOUBLE SIDE TAPE for WINDOW	1		
4	ATLANTIC-001	FRONT COVER	1		
5	GXT300-011	LCD BRACKET	1		
6	ATLANTIC-011	KEY PAD	1		
7	GXT300-016	ZEBRA	1		
8	GXT300-007	BACK LIGHT LENS	1		
9	G5-016	DOUBLE SIDE TATE for REFLECTIVE SHEET	1		
10	G225-009	REFLECTIVE SHEET	1		
11	G223-018	METAL DOME for PTT BUTTON	1		
12	GXM1-010	PTT BUTTON	1		
13	GXT300-012	D-SPRING	1		
14	GXT300-004	VOLUME KNOB	1		
15	GXT300-008	ANTENNA HOUSING	1		
16		ANTENNA COIL	1		
17		SCREW	5		(PH) 2.6X8 Black
18	GXT300-005	BATTERY HOLDER	1		
19	7N-016	TERMINAL-E	1		
20	GXT300-002	BACK COVER	1		
21	ATLANTIC-017	PRODUCT LABEL	1		
22		E-RING	1		
23	GXT300-019	CLIP for BELT	1		
24	GXT300-021	SPRING for CLIP	1		
25	GXT300-022	PIN for CLIP	1		
26	GXT300-020	HINGE	1		
27	GXM1-009	JACK CAP	1		
28	GXM1-003	BATTERY COVER	1		
29	GXT300-013	TERMINAL-A	1		
30	7N-013	TERMINAL-B	1		
31	7N-015	TERMINAL-D	1		
32	GXT300-014	TERMINAL-C	1		
33		SHIELD PLATE	1		
34	GXM1-017	VCO CAN	1		
35		FELT for SPEAKER	1		
36	GXM1-018	RF SHIELD PLATE	1		
37	MARINE-DOME	METAL DOME FOR MARINE	1		
LCD		LCD	1		
PCB		PCB	1		
MIC		MIC	1		
SPK.		SPEAKER	1		

Ref.No	Items	Description	Q'ty	Manufacturer	1st Vendor	U/Price		
						☐	HKD/RMB	Amount
Q3	BFQ67W	Transistor Chip	1	Visay	Array			
Q4	BFQ67W	Transistor Chip	1	Visay	Array			
IC6		3.5Vdc Detector IC	1	Torex	Bluesky			
IC3	XC6201	IC Regulator 4V	1	Torex	Bluesky			
IC2	AZ386M	IC Speaker	1	AAC	Britestone			
L4	39NH	Inductor Chip 0402	1	Ceratec	Englory			
L14	1.2UH(03)	Inductor Chip 0603	1	Ceratec	Englory			
L300	2.2UH(03)	Inductor Chip 0603	1	Ceratec	Englory			
L5	220NH(03)	Inductor Chip 0603	1	Ceratec	Englory			
L9	22nH(03)	Inductor Chip 0603	1	Ceratec	Englory			
L10	33NH(03)	Inductor Chip 0603	1	Ceratec	Englory			
L15	82NH(03)	Inductor Chip 0603	1	Ceratec	Englory			
L11	5.6UH(03)	Inductor Chip 0603	1	Sunlord	Sunlord			
L302	5.6UH(03)	Inductor Chip 0603	1	Sunlord	Sunlord			
L2	10UH(05)	Inductor Chip 0805	1	Ceratec	Englory			
L12	5.6UH(05)	Inductor Chip 0805	1	Ceratec	Englory			
L303	47NH	Inductor Chip 0805	1	Sunlord	Sunlord			
L18	0.3X1.0X5T(R)	Inductor Air	1	Fine	Fine			
L1	0.45X2.0X6T(R)	Inductor Air	1	Fine	Fine			
L16	0.45X2.0X6T(R)	Inductor Air	1	Fine	Fine			
L7	0.45X2.0X6T(R)	Inductor Air	1	Fine	Fine			
L8	0.45X2.0X8T(L)	Inductor Air	1	Fine	Fine			
L6	0.4X1.7X3T(R)	Inductor Air	1	Fine	Fine			
L3	0.4X2.0X8T(L)	Inductor Air	1	Fine	Fine			
CX201	4 MHz X-tal	D4.00C(20pF) HS-49/S	1	Dtron	GL			
X202	20.95MHZ X-tal	DA20.950TF(16pF) HC-49/S	1	Dtron	GL			
CF1	21.4MHZ	X-tal filter 21.4MHz +/-3.75KHz UM5	1	Dtron	GL			
IC1	3361	IC IF	1	Samsung	AV concept			
IC4	S324	IC OP	1	AUK	GL			
IC5	S324	IC OP	1	AUK	GL			
IC201	TB31202	IC PLL	1	Toshiba	GL			
Q301	2SC4226 (R25)	Transistor Chip	1	NEC	GL			
Q302	2SC4226 (R25)	Transistor Chip	1	NEC	GL			
Q6	2SC4226 (R25)	Transistor Chip	1	NEC	GL			
Q8	2SC4226 (R25)	Transistor Chip	1	NEC	GL			
CT201	10P (Trimmer) 3 dia	STC3M10-T1	1	STD	GL			
LED1	LTST-S320GKT	Chip LED	1	Hualight	Hualight			
C127	10UF(3X5)	Capacitor Elect	1	Hunan Fareast	Hunan Fareast			
C133	10UF(3X5)	Capacitor Elect	1	Hunan Fareast	Hunan Fareast			
C69	10UF(3X5)	Capacitor Elect	1	Hunan Fareast	Hunan Fareast			
C43	220/6.3(5X11)	Capacitor Elect	1	Hunan Fareast	Hunan Fareast			
C70	220/6.3(5X11)	Capacitor Elect	1	Hunan Fareast	Hunan Fareast			
C131	47uF/6.3(4X7)	Capacitor Elect	1	Hunan Fareast	Hunan Fareast			
CMIC1	F9745AP342-34	Condensor Mic	1	Innovation	Innovation			
D1	KDS114E	Diode Chip	1	KEC	KEC			
D13	KDS114E	Diode Chip	1	KEC	KEC			
D3	KDS114E	Diode Chip	1	KEC	KEC			
D301	KDS114E	Diode Chip	1	KEC	KEC			
D4	KDS114E	Diode Chip	1	KEC	KEC			
D5	KDS114E	Diode Chip	1	KEC	KEC			
D6	KDS115	Diode Chip	1	KEC	KEC			
D2	KDS120	Diode Chip	1	KEC	KEC			
D302	KDV258	Diode Chip	1	KEC	KEC			
Q13	KRA226S	Transistor Chip	1	KEC	KEC			
Q16	KRA226S	Transistor Chip	1	KEC	KEC			
Q22	KRA304E	Transistor Chip	1	KEC	KEC			
Q14	KRA306E	Transistor Chip	1	KEC	KEC			
Q29	KRA306E	Transistor Chip	1	KEC	KEC			
Q10	KRC401E	Transistor Chip	1	KEC	KEC			
Q19	KRC401E	Transistor Chip	1	KEC	KEC			
Q28	KRC401E	Transistor Chip	1	KEC	KEC			
Q12	KRC404E	Transistor Chip	1	KEC	KEC			
Q25	KRC404E	Transistor Chip	1	KEC	KEC			
Q30	KRC404E	Transistor Chip	1	KEC	KEC			
Q5	KRC404E	Transistor Chip	1	KEC	KEC			
Q15	KRC405E	Transistor Chip	1	KEC	KEC			
Q17	KRC405E	Transistor Chip	1	KEC	KEC			
Q20	KRC405E	Transistor Chip	1	KEC	KEC			
Q23	KRC405E	Transistor Chip	1	KEC	KEC			
Q26	KRC405E	Transistor Chip	1	KEC	KEC			
Q7	KTA2014E	Transistor Chip	1	KEC	KEC			
Q21	KTC4075E	Transistor Chip	1	KEC	KEC			
CPU1	W742C81A-XXXXX (MTP-W742E81A)	IC CPU	1	Winbond	Linpo			
PCB1	PCB	4-layer	1	Multi	Multi			
RV1	200K(B)	Semifixed Resistor 3dia	1	Noble	Noble			
RV2	4.7K(B)	Semifixed Resistor 3dia	1	Noble	Noble			
Q1	NE5511279A	FET PA	1	NEC	Numata			
C94	Tantal	100UF 3.2x1.6 T-A Type	1	Philconic	Philconic			
C96	Tantal	33UF 3.2x1.6 T-A Type	1	Philconic	Philconic			
VR1	093V SN-1 15F A10K	Volume Switch	1	Philconic	Philconic			
Q11	2SC4083	Transistor Chip	1	Rohm	Rohm			
Q9	2SC4083	Transistor Chip	1	Rohm	Rohm			
J9-A	EXT MIC	ST-171-02	1	S&A	S&A			
C4	10P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C45	10P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C115	12P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C312	12P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C307	15P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C59	15P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C86	15P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C179	18P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C20	1P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C306	220P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C224	22P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C309	22P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C311	22P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C41	22P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C148	27P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C21	27P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C223	27P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C208	33P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C209	33P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C37	33P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C44	33P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			

Ref.No	Items	Description	Q'ty	Manufacturer	1st Vendor	U/Price		
						☐	HKD/RMB	Amount
C223A	3P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C223B	3P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C139	47P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C154	47P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C64	47P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C190	4P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C218	5P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C128	68P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C222	68P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C18	7P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C303	7P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C304	7P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C224A	8P	Capacitor Ceramic 0402 NP0	1	Murata	Asung			
C125	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C145	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C15	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C22	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C221	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C42	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C67	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C8	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C80	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C82	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C83	0,001	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C138	0,0018	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C109	0,0022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C111	0,0022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C16	0,0022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C32	0,0022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C87	0,0022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C92	0,0022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C93	0,0022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C100	0,0047	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C58	0,0047	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C90	0,0047	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C97	0,0047	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C13	0,01	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C167	0,01	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C168	0,01	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C27	0,01	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C50	0,01	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C77	0,01	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C110	0,022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C112	0,022	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C146	0,033	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C130	0,039	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C38	0,047	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C48	0,047	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C5	0,056	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C29	220P(X7R)	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C31	220P(X7R)	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C91	330P(X7R)	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C1	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C10	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C104	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C105	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C11	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C116	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C118	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C119	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C120	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C121	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C122	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C123	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C126	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C129	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C132	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C136	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C137	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C14	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C140	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C141	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C142	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C143	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C144	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C160	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C162	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C165	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C166	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C169	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C170	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C172	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C173	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C174	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C177	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C178	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C180	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C181	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C182	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C183	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C184	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C185	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C186	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C188	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C19	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C207	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C213	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C219	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C23	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C25	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C26	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C28	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C305	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C308	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			

Ref.No	Items	Description	Q'ty	Manufacturer	1st Vendor	U/Price		
						☐	HKD/RMB	Amount
C314	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C35	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C39	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C46	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C49	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C54	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C56	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C61	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C62	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C63	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C65	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C66	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C68	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C7	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C73	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C74	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C76	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C79	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C81	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C85	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C95	470P	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C108	820P(X7R)	Capacitor Ceramic 0402 X7R +/-10%	1	Murata	Asung			
C101	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C102	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C107	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C113	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C117	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C134	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C135	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C171	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C211	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C24	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C3	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C301	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C33	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C34	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C40	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C401	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C52	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C55	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C57	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C60	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C71	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C72	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C75	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C78	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C88	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C89	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C98	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C99	0,1	Capacitor Ceramic 0402 Y5V	1	Murata	Asung			
C333	10P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C9	10P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C3A	18P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C17	22P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C189	39P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C2	470P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C30	47P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C6	68P(03)	Capacitor Ceramic 0603 NP0	1	Murata	Asung			
C53	0.1(X7R)	Capacitor Ceramic 0603 X7R +/-10%	1	Murata	Asung			
C36	0,33	Capacitor Ceramic 0603 Y5V	1	Murata	Asung			
C12	1UF	Capacitor Ceramic 0603 Y5V	1	Murata	Asung			
C315	1UF	Capacitor Ceramic 0603 Y5V	1	Murata	Asung			
C84	1UF	Capacitor Ceramic 0603 Y5V	1	Murata	Asung			
R1	180K	Resistor Chip 0402 +/-1%	1	Samsung	Samsung			
R4	33K	Resistor Chip 0402 +/-1%	1	Samsung	Samsung			
R79	470K	Resistor Chip 0402 +/-1%	1	Samsung	Samsung			
R33	82K	Resistor Chip 0402 +/-1%	1	Samsung	Samsung			
R206	0	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R29	2,2	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R44	2,2	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R51	4,7	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R301	10	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R77	10	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R32	12	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R226	22	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R307	33	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R83	47	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R94	47	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R65	82	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R202	100	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R224	100	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R300	100	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R91	100	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R78	150	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R86	150	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R87	150	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R100	220	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R306	220	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R8	220	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R11	560	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R135	680	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R55	680	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R96	680	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R777	0 ohm	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R14	1.8K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R39	1.8M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R47	1.8M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R101	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R108	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R115	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R116	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R117	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R118	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R132	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			

Ref.No	Items	Description	Q'ty	Manufacturer	1st Vendor	U/Price		
						☐	HKD/RMB	Amount
R19	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R204	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R22	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R35	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R36	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R40	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R48	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R50	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R88	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R93	100K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R129	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R130	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R134	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R16	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R203	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R38	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R41	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R46	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R59	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R82	10K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R90	120K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R31	180K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R73	180K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R80	180K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R42	1K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R72	1K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R207	1M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R21	1M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R216	1M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R10	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R131	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R15	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R160	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R23	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R26	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R3	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R302	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R309	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R34	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R52	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R53	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R56	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R57	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R60	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R64	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R70	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R92	2.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R102	2.2M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R13	2.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R37	2.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R17	220K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R97	220K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R54	22K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R27	27K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R25	3.3K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R49	3.3K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R5	3.3K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R304	3.9K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R43	330K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R107	39K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R89	3M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R112	4.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R113	4.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R311	4.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R45	4.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R81	4.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R9	4.7K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R114	4.7M	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R18	470K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R401	470K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R67	470K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R76	470K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R106	47K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R214	47K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R402	47K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R62	47K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R66	47K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R99	47K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R109	5.6K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R303	5.6K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R58	5.6K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R6	5.6K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R71	5.6K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R20	560K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R28	6.8K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R63	680K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R12	68K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R105	8.2K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R7	820K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R30	91K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R74	91K	Resistor Chip 0402 +/-5%	1	Samsung	Samsung			
R2	47	Resistor Chip 0603 +/-5%	1	Samsung	Samsung			
R24	3.3K(03)	Resistor Chip 0603 +/-5%	1	Samsung	Samsung			
R68	Thermistor 100	NSM3101J280J3Z	1	HDK	Shinsang			
CT1	10P(TM) 2dia	TZY2Z100A001R00 10P(TM)	1	Murata	Stock			
SPK1	speaker (MD36B-858)	Speaker 36 dia 8ohm	1	Wabony	Wabony			
LCD1	GXM1 LCD		1		Wooho			
SF1	SAW FILTER (HDF160FS)	160 MHz (160ohms) F-11 SMT	1	Shoulder	YEL			
CF2	Ceramic discriminator	CBD450C3-L1	1	Shoulder	YEL			
CF3	LTM450EU	Ceramic filter LTM450EU	1	Shoulder	YEL			

MECHANICAL ITEM

	☐1 . 5	E-ring	1		Bonso			
GXT300-022	SPCC	Shaft (Pin) for belt Clip	1		Bonso			

Ref.No	Items	Description	Q'ty	Manufacturer	1st Vendor	U/Price		
						☐	HKD/RMB	Amount
	SPTE, 0.2t	Shield Plate	1		Bonso			
GXT300-021	SUS 304, ☐1.0	Spring for belt clip	1		Bonso			
	Screw (2.6 x 8)	Screw	5		Chensinhang			
	PHA T4.0 x 16 SUS	Screw (for Star washer)	2		chensinhang			
GXT300-012	SK-5	D-spring	1	whain	GL			
		Antenna Coil	1		Han Kyung			
GXM1-008	Urethane (Black)	Antenna Housing (GXM1)	1		Han Kyung			
ATLANTIC Ger-041	SW1 with White Wood Free Paper.	Gift Box (ATLANTIC-Germany)	1		Hung chow			
ATLANTIC-042	SW1 (2.0t)	Inner Box (Atlantic)	1		Hung chow			
ATLANTIC-007	Wood Free Paper	Manual (ATLANTIC)	1		Hung chow			
G223-018	1 point (10 x 10)	Metal Dome	1		Hung chow			
Marine-DOME	5 point, for function button	Metal Dome for Atlantic	1		Hung chow			
ATLANTIC I-040	DW1	Out Carton (Atlantic-I)	0,1666		Hung chow			
		RTTE BOOKLET+Declaration of conformity (Atlantic-I)	1		Hung chow			
Alan777-032-UK	Warranty card UK	Wood free paper	1		Hung chow			
Alan777-032-Italy	Warranty card Italy		1		Hung chow			
G5-032-2	Warranty card Spanish		1		Hung chow			
GXT300-011	SPTE, 0.3t	LCD bracket	1		Kechenda			
GXM1-018	SPTE, 0.2t	RF Shield plate	1		Kechenda			
GXT300-013	SUS 304, 1H, 0.2t	Terminal-A	1		Kechenda			
7N-013	SUS 304, 1H, 0.2t	Terminal-B	1		Kechenda			
GXT300-014	SUS 304, 1H, 0.2t	Terminal-C	1		Kechenda			
7N-015	SUS 304, 1H, 0.2t	Terminal-D (Dual)	1		Kechenda			
7N-016	NICO SUS 304 (☐0.8)	Terminal-E	1		Kechenda			
GXM1-017	SPTE, 0.2t	VCO can	1		Kechenda			
		EU countury label (Atlantic-I)	1		Long Xiang			
ATLANTIC-004	3M, #4187 clear	Pop Label (Atlantic)	1		Ren mei			
ATLANTIC I-017	Polyester, 0.1t	Production Label (Atlantic-I)	1		Ren mei			
G5-016	Nitto, No 500	Double Side Tape for reflective sheet	1		Risings			
GXT300-015	Nitto, No 500	Double Side Tape for window	1		Risings			
G225-009	PE, white, 0.1t	Reflective Sheet	1		Shenda			
	felt	Felt	1		Shengda			
GXM1-009	NBR (Pantone 431, Gray)	Jack Cap	1		SSA			
ATLANTIC-011	Silicone-Pantone 431 and 032, Silk-White	Key Pad (Atlantic)	1		SSA			
GXM1-010	Silicone-Pantone 431	PTT button (GXM1)	1		SSA			
GXM1-045	PE 0.05t, 105(W) x 300(L)	Poly bag	1		XIONGPENG			
GXT300-002	ABS	Back Cover	1		Yahun			
GXT300-007	Acryl	Back Light Lens	1		Yahun			
GXM1-003	ABS	Battery Cover	1		Yahun			
GXT300-005	ABS	Battery Holder	1		Yahun			
GXT300-019	PC	Belt Clip	1		Yahun			
ATLANTIC-001	ABS (Black), 1silk(White)	Front Cover (Atlantic)	1		Yahun			
GXT300-020	PC	Hinge for belt clip	1		Yahun			
ATLANTIC-002	Acryl	LCD window (Atlantic)	1		Yahun			
GXT300-004	ABS	Volume Knob	1		Yahun			
	Stranded Wire AWG#22 52mm	BATT WIRE	1		Yinlong			
	Lead wire BLK 2-50mm-2AWG#30/1571	Lead wire BLK	1		Yinlong			
	Lead wire RED 2-50mm-2AWG#30/1571	Lead wire RED	1		Yinlong			
GXT300-016	Zebra	Zebra	1		You eal			
	PE 100x100 0.05t	Poly bag (for Screw and Washer)	1					
G5-031	Wood Free Paper	Serial No. label	1					
	Soft PVC 12 x 6 x 0.2t black	Soft PVC sheet	1					
0140-995500-001	Soft PVC 25 x 6 x 0.2t black	Soft PVC Sheet	1					
		Atlantic I label (on gift box)	1					
		Frequcney band paper	0		Hung chow			
		CODE label (ATLANTIC)	0					
G223-016	SUS 304, 1H, 0.15t	Charge Terminal	0		Bonso			

Consigned parts

	For Inside Dia 4.0 SUS	Star washer	2		GL			
ATLANTIC-020 00	Holder ATLANTIC	PC	1		Hankyung			
GXM1-044		Water proof bag + Necklace	1		Mobo			

Germany version ---> No warranty card for German version. Others are same.

SCHEMATIC DIAGRAM