QUANSHENG

Professional FM Transceiver

User's Manual

| 144/430MHz Dual band | FM radio | PC Programming |

TG-UV

QUANSHENG

TG-UV

QS Electronics Co., Ltd

Features

- Dual Band

- FM Radio

- Voice Scrambler (Optional)

- CTCSS/DCS

- Dual-Watch Operation

- Power Switch: 4W/2W/1W

- Built-in VOX Function

- Priority Scan

- Wide/Narrow Bandwidth

- PC Programmable

- Busy Lock

- Cable Clone

- Alarm Function

CAUTIONS BEFORE USING

- Pls read the user's manual before using. It gives us important information about how to operate the portable radio.

- The users except those permitted are strictly prohibited to use the battery packs in coal (gas) mine; oil (gas) tank, dust and aerostat.

- Maintenance can be only undertook by professional technicians.

- Do not turn on the radio while refueling or parking at the gas station in case of danger and accident.

- By any reason should you refit or revise the radio.

- Do not expose the radio in the sunlight for a long time, or put it near the heater or high temperature environment.

- Do not put it in the extreme dusty, wet or splashed places or on the unsteady surfaces.

- Keep it dry. (Raindrops or moisture will erode the electronic board.)

- If you find smell or mist giving off from the radio, pls turn off the radio, take off the battery pack and contact with QS agents.

CONTENTS

SUPPLIED ACCESSORIES

Carefully unpack the portable radio. We suggest you check the following items listed before you throw away the packing materials. If any item is missing or damaged during shipment, pls file a claim to the carrier asap.

STANDARD SUPPLIED ACCESSORIES

| ITEM	QTY
Portable radio	1
Inductively loaded antenna	1
Li-ion battery (7. 2V)	1
Adapter (ADP)	1
Battery charger	1
Belt clip	1
User's Manual	1
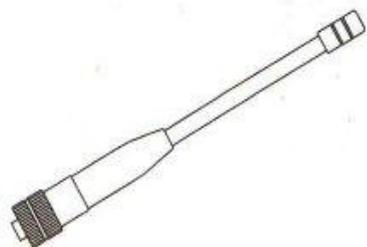
Inductively loaded antenna

Belt clip
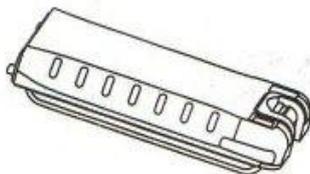
Li-ion battery (7. 2V)
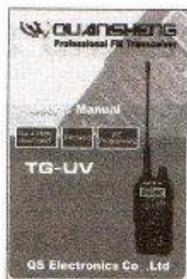
User's Manual

Battery charger

Adapter

CHARGING NOTICES (1)

Notices for charging the battery pack:

- Battery packs are not charged when they are made. Pls charge them before use.

- Initially charging the battery pack after purchase or extended storage (longer than 2 months) will not bring the battery pack to its greatest capacity or its normal charging, which can be done after repeated charging and discharging twice or three times.

- The average use time of battery pack is 10 hours. The way of calculate average using time is 5% for transmitting, 5 % for receiving and 90 % for awaiting order.

⚡ **CAUTIONS** ⚠

- The battery pack life is over when its using time decreases even though it is correctly. Pls fit or buy a new one.
- Do not short the battery terminals or throw the battery into fire.
- Never attempt to remove the casing from the battery pack.

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CHARGING NOTICES(2)

- First, plug the ADP output in the back connected jack of charger.
  Then plug the electric cable of alternating power in 220V.
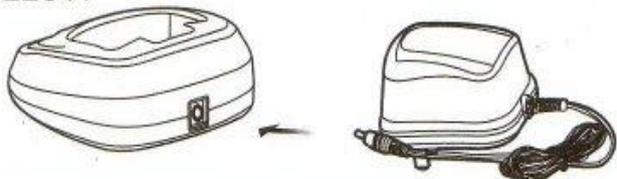
- Slide the Li-ion battery pack or radio with a Li-ion battery pack into the charger.
- Make sure the battery pack are in connect with the charging terminals.
- When charging begins, the RED LED light display, when the battery pack is charged to it's greatest capality, GREEN LED light display.
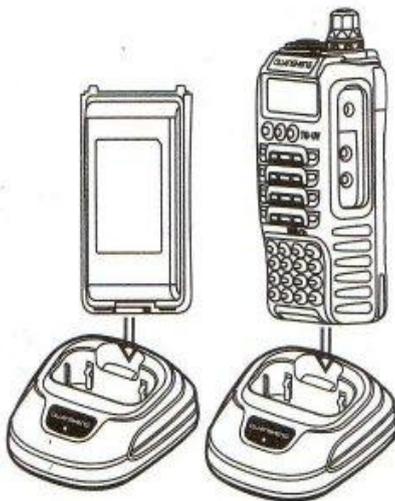
After the GREEN LED light display, take the battery pack or the portable radio out of the charger.

TO ATTACH THE BATTERY PACK

- Slide the battery pack on the back of the radio in the direction of the arrow (❶), then lock it with the battery release button.
  Slide the battery pack until the battery release button makes a "click" sound.
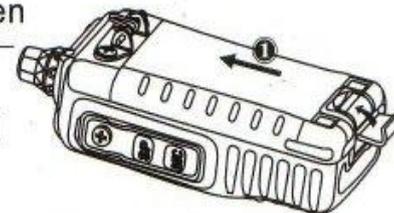
TO RELEASE THE BATTERY PACK

- Pls turn off the radio before release the battery pack.

- First, push the battery release button in the direction

  of the arrow(❶) as show below.

- The battery pack is then released.
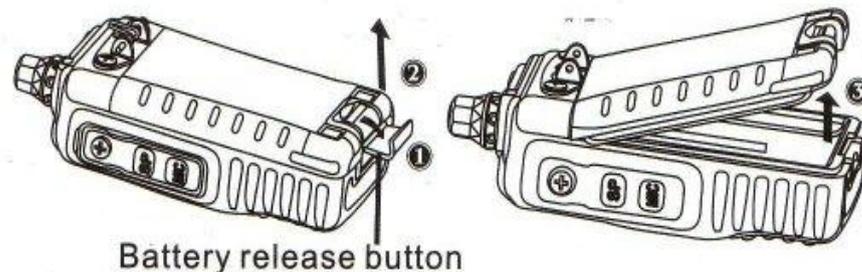
Battery release button

INSTALLING ANTENNA

Attach the antenna to the radio as illustrated at right.

INSTALLING BELT CLIP

Conveniently attaches to your belt.
Attach the belt clip with the supplied screws using a phillips screw driver.
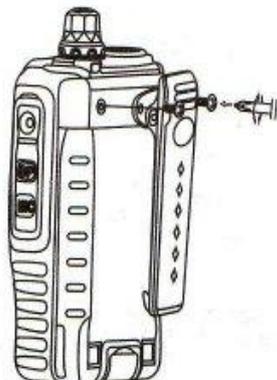
To attach the belt clip

INSTALLING RAINPROOF SPEAKER/ MICROPHONE COVER

❯ If you are not using a speaker/microphone, install the speaker/microphone cover. (The cover has been fitted when the radio is made.)

PS : To keep the radio rain resistant, you must install waterproof speaker/ microphone cover.

INSTALLING EXTERNAL SPEAKER/ MICROPHONE

❯ Insert the speaker/microphone plugs into the speaker/microphone jacks.

PS : The radio is not fully rain resistant while using the external speaker/microphone.

Receive/Transmit indicator lamp

Power/volume switch

Antenna connector

LCD display

Function key

Speaker

Microphone

Keypad

PTT switch

Monitor

Ear/Mic jacks

Belt clip

Battery pack
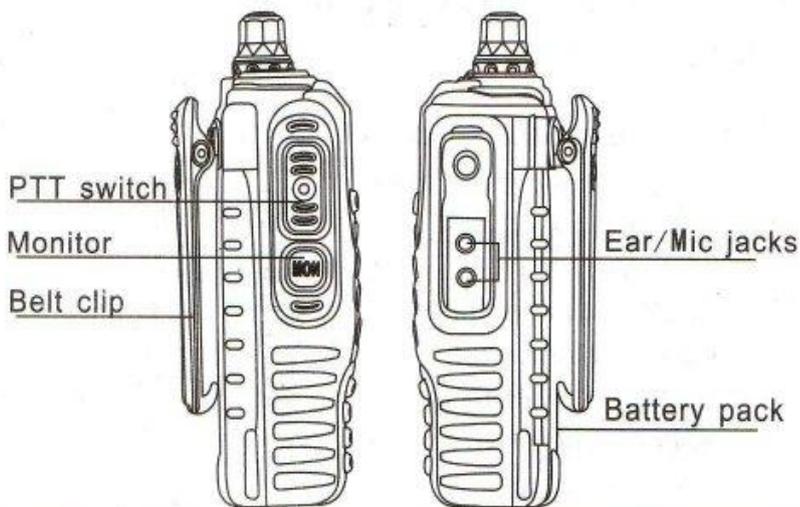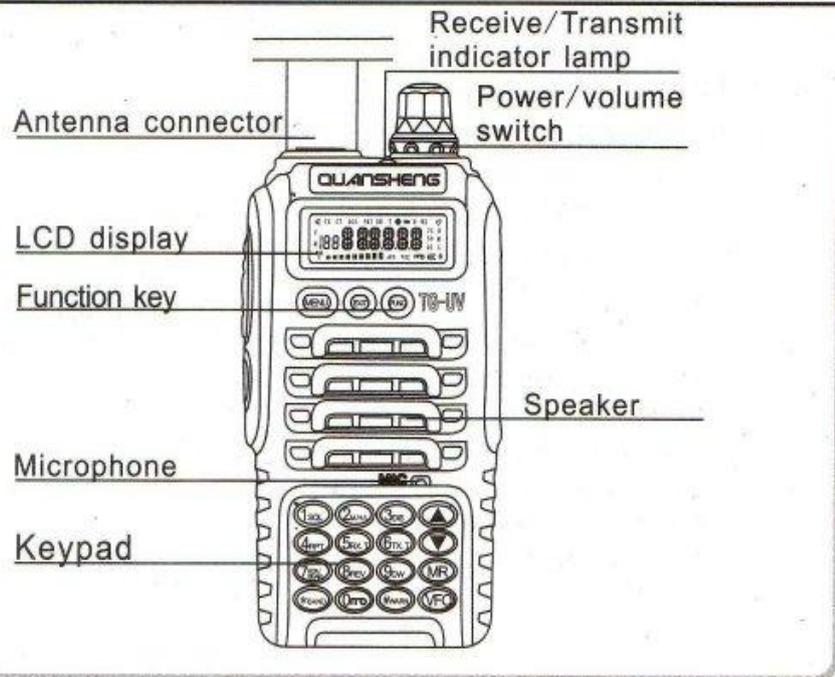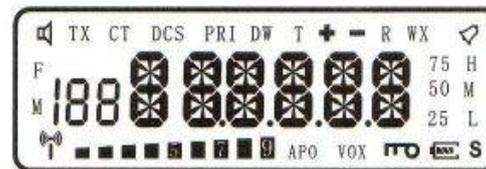
F	Function indicator
⬠======▰▰▰	Signal indicator
◇	Keypad beep
▭	Battery capacity indicator
⌐o	Keypad lock
888888	Frequency display
H/M/L	Output power indicator
VOX	Vox
S	Scan
PRI	Priority scan
×188	Memory channel indicator
TX	Transmitting indication
CT	CTCSS
DCS	DCS
DW	Dual-watch operation
+ −	Repeater shift direction
R	Reverse frequency function
WX	Dual-watch channel operation
T	Priority scan channel

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TG-UV   KEYPAD DESCRIPTION

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TG-UV   KEYPAD DESCRIPTION
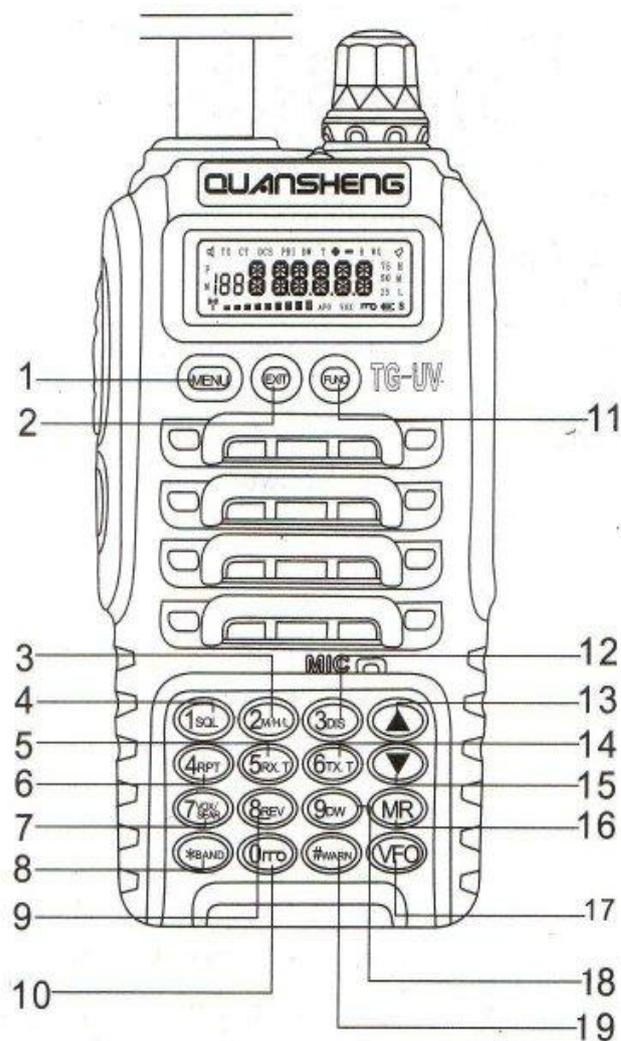
1. Menu/confirm
2. Exit
3. High/medium/low power adjust
4. Squelch adjust
5. CTCSS/DCS receive
6. Repeater shift direction
7. VOX search
8. Frequency band switch
9. Reverse frequency function
10. Keypad lock
11. Function key
12. Channel/frequency display
13. Up key
14. CTCSS/DCS transmit
15. Down key
16. Channel mode
    Channel scan
17. Frequency mode
    Frequency scan
18. Dual-watch operation
19. Emergency alarm

BASIC OPERATIONS

- Switch the Power/Volume to turn the power on. When you turn it on, it will beep and the channel will diaplay on the LCD, the LCD backlight shows.

- Turn power switch/volume controller counter-clockwise to turn off the radio's power supply.

P-1   P-2

PS: Pressing and hold the Monitor,then rotating the power/volume switch to turn up and down the radio.

- To make a call, press and hold the "PTT switch", then speak into the microphone in normal speaking voices.

  PS: Hold the microphone approxi-mately 1.5 inches (3-4cm) from your lips.

P-3

- Release"PTT"to receive signals.
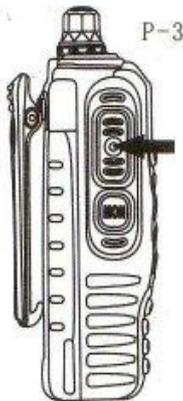
- Press key"FUNC"+"1SQL", set the squelch level, press key"▲" or"▼"to choose it from 0~9, press"MENU" to confirm and save.

  LCD display as picture: `sSQL.  0`
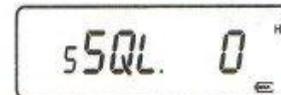
- Press key"FUNC"+"2H M L", set the High/Medium/Low power, operation repeat, choose it from H/M/L (LCD display)

  LCD display as picture: `400.770`

- Press key"MR"into channel mode, then press key "FUNC"+"3DIS"to switch the channel mode and cha-nnel+frequency mode. .

  LCD display as picture:

  01: channel number   `01 U2-00`   `01 400750`
  U_2: frequency band
  00: memory channels
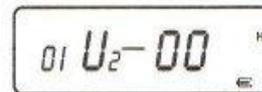
- Press key"FUNC"+"4RPT", set repeater shift direction , operation repeat,choose it from OFF/+/-,press"MENU" to confirm and save.

- Press key"FUNC"+"5RX T", set CTCSS/DCS receive, show "rc OFF", press"*BAND"change the CTCSS/DCS mode:
  rc OFF:no CTCSS/DCS
  rc CT:CTCSS
  rc N(I) :DCS
  press key"▲" or"▼"to choose CTCSS code or DCS code, and then prees"MENU"to save.

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❯ Press key "FUNC" + "6TX T", Set CTCSS/DCS Transmit, show "tc OFF".

Press key "*BAND" to choose the CTCSS/DCS Trasmit mode:

tc OFF:NO CTCSS/DCS

tc CT:CTCSS

tc N(I):DCS

(Press key "▲" or "▼", choose CTCSS code or DCS code and then press "MENU" to save.)

❯ Press key "FUNC" + "7VOX SEAR", Set the VOX grade, press key "▲" or "▼" to choose the grade from 0~9. Press "MENU" confirm and save.

LCD display as picture:

$$15 \; VOX.OFF$$
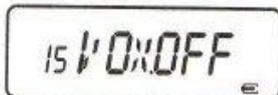
❯ Press key "FUNC" + "8REV", use the reverse frequency function, LCD show "R", operation again to exit.

LCD display as picture:

$$01 \; 400.750 ^R$$

❯ Press key "FUNC" + "9DW", use the dual-watch operation, LCD show "DW", the radio awaits the using channel and dual-watch channel at the same time, Press "EXIT" to exit.

LCD display as picture:

$$01 \; 410.050 ^{DW}$$ $$02 \; 420.050 ^{DW \; WX}$$
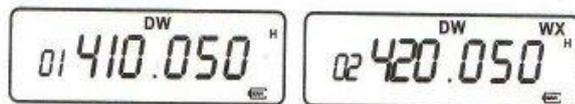
Note: It needs to set the dual-watch channel first. Choose Menu 4 "DCH" as "ON", LCD shows "WX", then the dual-watch channel is set.

❯ Press key "FUNC" + "#WARN", use the alarm function, LCD show "WARN", press "PTT" to exit.

LCD display as picture:

$$^F \; F_2 WARN ^H$$
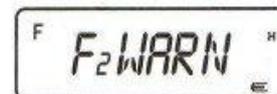
❯ Press key "FUNC" + "*BAND", frequency band switch. On the mode of frequency, switch among F_0、F_1、F_2、F_3、F_4.

❯ Press key "0" more than 2 seconds, keypad lock, LCD show "ⁱⁱᵒ", operation again, keypad unlock.

❯ Press key "7VOX SEAR" more than 2 seconds, LCD show "SEARCH", search CTCSS or DCS, LCD show the CTCSS/DCS when searched, on the mode of frequency, press key "MENU" to save, press key "EXIT" to end the search.

LCD display as picture:

$$01 \; SEARCH ^H$$

MENU MODE SETTING

The using method of menu

1. Press key "MENU" into the menu mode.
2. Press key "▲" or "▼" to choose your need menu option.
3. Then press key "MENU" again into menu content.
4. Press "▲" or "▼" to choose the parameter of menu option.
5. After choosing the needed parameter, Press key "MENU" to save and exit, Press key "EXIT" to exit

NO.	Feature	LCD display	Choice content
1	Channel step	STP.	5/6. 25/10/12. 5/15/20/25/30/50/100KHz
2	RX CTCSS/DCS	Rx .CODE	OFF/CTCSS/DCS
3	TX CTCSS/DCS	Tx. CODE	OFF/CTCSS/DCS
4	Dual-watch channel	DCH	ON/OFF
5	Squelch level shift direction	SQL.	0~9
6	Repeater shift direction	RPT.	OFF/-/+
7	Repeater shift value	OFFSET	Press key"#"then input0~70.000MHz
8	Power choosing	POW.	HI/MI/LO
9	Time-out-Timer	TOT.	0~9
10	Channel spacing	W/N.	W(25KHz)/N(12. 5KHz)
11	Keypad beep switch	BEEP	ON/OFF
12	Voice scrambler	SCR.	ON/OFF
13	Priority scan	PCH	ON/OFF
14	Busy channel lock	BCL.	ON/OFF
15	VOX	VOx .	OFF/1~9
16	Channel display switch	CH. PLAY	ON/OFF
17	Delete	BEL.	YES/NO
18	Reset	RESET	VFO/FULL

PC Programmable Function

This radio can be programmed by computer, the operation details see **QS** PC software.

Frequency Mode

Press key "VFO" into frequency mode, change the frequency according channel step by pressing key "▲" or "▼", or input the frequency directly by press key "#WARN".

Example: #+095500 ➡ F0 95. 5MHz

#+150000 ➡ F1 150. 000MHz

If you want to set different frequency, it needs to set the RPT, then set the CTCSS/DCS (if necessary) and then to talk.

Channel store

On the frequency mode, set the receiving frequency first, if you want to set different frequency, it needs to set the RPT, then set the CTCSS/DCS (if necessary), press key "FUNC" + "MR", choose the storing channel by pressing key "▲" or "▼", or input the channel number directly by press key "#WARN", then press key "MR" to save. This radio can total "0~99" total 100 channels.

Choose stored channel

Press key "MR" into channel mode, then press key "▲" or "▼" to choose the channel you need, or press key "#WARN" to input the channel you need directly, then you can talk.

❂ Delete the stored channel

Press key"**MR**"into channel mode, choose the channel need to delete. Press key"**MENU**"then press "**▲**"or"**▼**"to choose menu"19", and then press "**MENU**"to choose"YES"(delete)or"NO"(undelete) then press key"**MENU**"to confirm and exit.

❂ Busy channel lock

The busy lock feature disables the transmitter if another signal is present, if the function open, the radio alarm by pressing PTT,shows"Busy"on the display and stop tran- smitting.

❂ VOX

VOX function can't switch to transmit mode manua- lly each time. Once the vox circuit check you speak to microphone, the radio switch to transmit mode au- tomatically.

❂ VOX PLUS

You must adjust the VOX PLUS level correctly and then can use VOX function effectly.
"OFF/1~9", "1"denote the VOX PLUS lowest, "9" denote the VOX PLUS highest.
The user needs to choose the proper level accord- ing to the environment.

❂ Reset

The radio has two kinds reset function, "VFO"shows frequency mode reset, press"**MENU**"and then press "**▲**"or"**▼**"switch to No.18 menu, then press "**MENU**"to choose"VFO", press key"**MENU**"to choose "YES", "FULL"means reset completely.

❂ Time-out-timer

To avoid someone transmit without permission or transmit careless, it can be set to forbid transmitting choose from"0~9", "0"means that it can't be open this function, "1~9"means transmit 1~9 minutes.

❂ Voice scrambler(optional)

When scrambler, other radio without voice scra- mbler can receive the signal but can't hear the content of other two radios communication. Only communication when two radios both have chosen voice scrambler.

❂ Cable cloning function

Press the key"monitor"of master radio, turn the power on, LCD show"COPY"into cable clone, turn the power on of sub-master, connect the cloning cable, Press key "Monitor"of master radio to copy, LCD show"WAIT". The receiving indicator glitter of sub-master radio.After copying turn the power off.

◉ Scan Function(FM radio)

Press key "VFO" into the frequency mode, press key "VFO" more than 2 seconds , then it can scan frequency according the channel step.

It can change the scan direction by pressing "▲" or "▼", press key "EXIT" to exit, press key "MR" into channel mode, press key "MR" more than 2 seconds then it can scan channel, press key "▲" or "▼" to change the scan direction, press "EXIT" to exit.

◉ Priority Scan

When monitor other frequency need to check the priority frequency, you can use "Priority Scan" Function. Setting a priority scan channel before use this function.

Priority scan channel:

Choose Menu NO. 13 PCH as "ON", LCD show "T" when set.

Press key "FUNC" into priority scan when channel scan, LCD shows "PRI", press key "FUNC" again to exit.

◉ The annunciation of no transmitting

1. If busy channel lock, LCD show "BUSY".
2. If PLL unlock, LCD show "LOST".
3. If the battery voltage higher than normal, LCD show "HIGH".
4. If the battery voltage lower than normal, LCD show "LOW".
5. If time out timer, LCD show "OVER".

CTCSS

1	67.0	18	118.8	35	183.5
2	69.3	19	123.0	36	186.2
3	71.9	20	127.3	37	189.9
4	74.4	21	131.8	38	192.8
5	77.0	22	136.5	39	196.6
6	79.7	23	141.3	40	199.5
7	82.5	24	146.2	41	203.5
8	85.4	25	151.4	42	206.5
9	88.5	26	156.7	43	210.7
10	91.5	27	159.8	44	218.1
11	94.8	28	162.2	45	225.7
12	97.4	29	165.5	46	229.1
13	100.0	30	167.9	47	233.6
14	103.5	31	171.3	48	241.8
15	107.2	32	173.8	49	250.3
16	110.9	33	177.3	50	254.1
17	114.8	34	179.9		

1	D023N	43	D251N	85	D532N	127	D132I	169	D411I
2	D025N	44	D252N	86	D546N	128	D134I	170	D412I
3	D026N	45	D255N	87	D565N	129	D143I	171	D413I
4	D031N	46	D261N	88	D606N	130	D145I	172	D423I
5	D032N	47	D263N	89	D612N	131	D152I	173	D431I
6	D036N	48	D265N	90	D624N	132	D155I	174	D432I
7	D043N	49	D266N	91	D627N	133	D156I	175	D445I
8	D047N	50	D271N	92	D631N	134	D162I	176	D446I
9	D051N	51	D274N	93	D632N	135	D165I	177	D452I
10	D053N	52	D306N	94	D654N	136	D172I	178	D454I
11	D054N	53	D311N	95	D662N	137	D174I	179	D455I
12	D065N	54	D315N	96	D664N	138	D205I	180	D462I
13	D071N	55	D325N	97	D703N	139	D212I	181	D464I
14	D072N	56	D331N	98	D712N	140	D223I	182	D465I
15	D073N	57	D332N	99	D723N	141	D225I	183	D466I
16	D074N	58	D343N	100	D731N	142	D226I	184	D503I
17	D114N	59	D346N	101	D732N	143	D243I	185	D506I
18	D115N	60	D351N	102	D734N	144	D144I	186	D516I
19	D116N	61	D356N	103	D743N	145	D245I	187	D523I
20	D122N	62	D364N	104	D754N	146	D246I	188	D526I
21	D125N	63	D365N	105	D023I	147	D251I	189	D532I
22	D131N	64	D371N	106	D025I	148	D252I	190	D546I
23	D132N	65	D411N	107	D026I	149	D255I	191	D565I
24	D134N	66	D412N	108	D031I	150	D261I	192	D606I
25	D143N	67	D413N	109	D032I	151	D263I	193	D612I
26	D145N	68	D423N	110	D036I	152	D265I	194	D624I
27	D152N	69	D431N	111	D043I	153	D266I	195	D627I
28	D155N	70	D432N	112	D047I	154	D271I	196	D631I
29	D156N	71	D445N	113	D051I	155	D274I	197	D632I
30	D162N	72	D446N	114	D053I	156	D306I	198	D654I
31	D165N	73	D452N	115	D054I	157	D311I	199	D662I
32	D172N	74	D454N	116	D065I	158	D315I	200	D664I
33	D174N	75	D455N	117	D071I	159	D325I	201	D703I
34	D205N	76	D462N	118	D072I	160	D331I	202	D712I
35	D212N	77	D464N	119	D073I	161	D332I	203	D723I
36	D223N	78	D465N	120	D074I	162	D343I	204	D731I
37	D225N	79	D466N	121	D114I	163	D346I	205	D732I
38	D226N	80	D503N	122	D115I	164	D351I	206	D734I
39	D243N	81	D506N	123	D116I	165	D356I	207	D743I
40	D244N	82	D516N	124	D122I	166	D364I	208	D754I
41	D245N	83	D523N	125	D125I	167	D365I		
42	D246N	84	D526N	126	D131I	168	D371I		

GENERAL

		Receive	Transmitter
Frequency range	FM (F$_0$)	88~108MHz	OFF
	VHF (F$_1$)	136~173.995MHz	136~173.995MHz
	UHF1 (F$_2$)	350~389.995MHz	OFF
	UHF2 (F$_3$)	400~469.995MHz	400~469.995MHz
	UHF3 (F$_4$)	470~519.995MHz	OFF
Frequency sensitivity		5 PPm	
Rated Voltage		DC7.2V (6 recharge Li-ion battery)	
Memory channel		100channels	
Antenna disposition		Inductively loaded antenna	
Antenna impedance		50Ω	
Working manner		Same frequency single operation or different frequency single operation	
Dimension		110mm X 56mm X 37mm	

TRANSMITTER

Output power	H≥4W M≥2W L≥1W
Modulation mode (wide/narrow channel bandwidth)	16KØF3E/11KØF3E
Maximum frequency deviation (wide/narrow channel bandwidth)	<5K /<2.5KHz
Remanent radiation	<7uW
Preemphasis character	6dB
Emission current	<1.5A (4W)
CTCSS/DCS deviation (wide/narrow)	0.75KHz±50Hz, 0.37KHz±30Hz
Modulation sensitivity	12mV
Modulation distortion	<5%

RECEIVER

Sensitivity	-122dBm (12dB SINAD)	
Audio frequency power	0.5W	
Audio distortion	<10%	
Blocking	≥85dB	
Intermodulation (wide/narrow channel badnwidth)	≥60dB	≥55dB
Adjacent channel selectivity	≥65dB	≥60dB
Spurious rejection	≥65dB	

■ All stated specifications are subject to change without notice or obligation.