Instructions for Dual Band Vehicle Transceiver

Remind:

Purchase and use of this equipment belongs to set up using the radio (station) behavior, we must apply the law to establish the station approval procedures to obtain a radio station license. When using the machine, it should work in accordance with the station license approved projects. Arbitrarily set using a radio (station), interference of radio services, not according to the approved project work and other violations of radio regulations by the radio management organizations subject to administrative penalties. Radio serious violations may violate the "Criminal Law" Section 288 or "Security Administration Punishment Law" Article 28, will be sentenced to three years imprisonment, criminal detention or control, concurrently or fined or punished by the criminal the public security organ shall impose administrative penalties detention.

Thank you very much for purchasing our products. Our company devotes to supply the best quality and expeditionary vehicle transceiver. We believe that you would be satisfied with our products.

Note:

Please obey following rules, so that can avoid fire, the harm on person or damage on vehicle transceiver.
● When you are driving, please don not try to setting the vehicle transceiver, otherwise it will lead to dangerous consequences.
● This vehicle transceiver should be connected to 13.8V DC power supply! Do not use 24V power supply to operate this vehicle transceiver
● Please do not transmit by high power for a long time, otherwise the vehicle transceiver will be over-heated and the lifespan will be shortened.
● Please do not put vehicle transceiver under the sun overtime, and do not put in beside the heating equipment.
● Please do not put the vehicle transceiver in the place where is dusty and moist, and do not put in one the uneven flat.
● If there is smell or smog from vehicle transceivers, please turn off the power and contact the dealer.
● Using vehicle transceiver when driving may violate traffic rules, please obey local traffic rules.

Unpacking and Inspection:

Welcome to use radio. Before using, we suggest you:
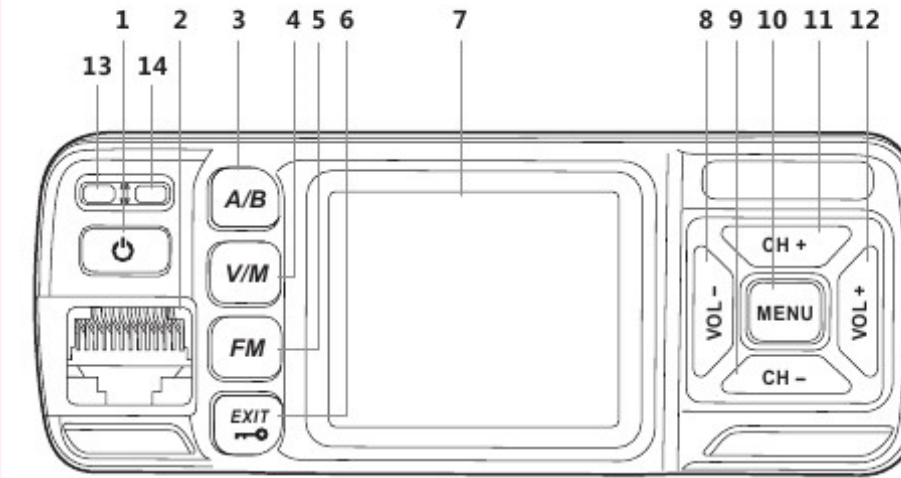● Please check the packaging of this product if there is damage.
● Please carefully open the box checking whether the products are as following listed table.
● If there is any damage or lost of product and its accessories during transportation, please contact dealer immediately.

Standard Configuration

Attachment	Quantity
Machine body	1
Hand microphone	1
Assembly supporting rac	1
Power wire	1
Screws	1
Instructions	1

Panel Description

1   2   3 4 5 6   7   8 9 10 11 12
13 14

1. Power switch   2. Hand microphone/ Frequency writing connection hole
3. Upper and lower frequency switching   4. Working mode switch
5. Radio button   6. Quit/locking key   7. Display screen
8. Volume down   9. Down   10. function button   11. Up
12. Volume up   13. Transmitting indicator   14. Receiving indicator
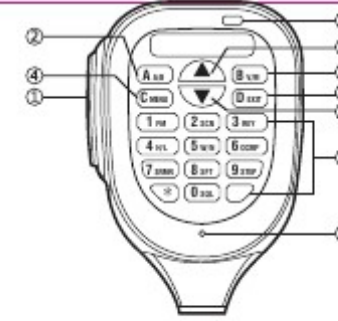
Display screen

Picture	Instruction
(signal bars)	When transmitting,the screen indicates transmitting signal strength and when receiving, the screen indicates receiving signal strength.
¡88	In channel mode, channel serial number is shown under the frequency and channel name.When setting the menu, screen shows the current menu number.
(frequency display)	Indicating receiving and transmitting frequency, FM frequency, menu, menu value and other status.
CT	Indicating CTCSS, when it shows during transmitting, it indicates CTCSS is during transmitting.
(T)	Indicating the scrambler function is opening.
DCS	Indicating digital sound, when it shows during transmitting, it indicated DCS is during transmitting.
(D)	Indicating companding function is opening.
+	When this symbol shows under the frequency mode, it indicates the transmitting frequency is receiving frequency plus a slip frequency.
−	When this symbol shows under the frequency mode, it indicates transmitting frequency is receiving frequency plus a slip frequency.
BDR	This symbol shows when repeater function is opening.
VOX	This symbol is undefined.
(R)	The receiving and transmitting frequency is reversed when in frequency and channel mode.
N	This symbol shows when channel working in narrowband way.
✉	This symbol is undefined.
(W)	This symbol is undefined.
▥0	This symbol shows when keyboard is locked, and it will be relived when long pressing "EXIT".
FM	Turn on the FM radio.
H	Indicating the current transmitting frequency is a high frequency.
M	Indicating the current transmitting frequency is a middle frequency.
L	Indicating the current transmitting frequency is a low frequency.
(MENU)	Indicating the current working frequency of transmitting, receiving and standby.

Hand microphone

1. [PTT]: Transmitting
2. [A/B]: A/B channel switch, character"A"
3. [B V/M]: Working mode switch, character"B"
4. [C MENU]: Function key, character"C"
5. [D EXIT]: Exit key, character"D"
6. [↑]: Frequency, channel and menu up
7. [↓]: Frequency, channel and menu down
8. Number key: Number"0~9, *, #"
9. Microphone: Press[PTT], talk to microphone
10.Transmitting indicator: Transmitting indicator

Hand microphone shortcut key operation instruction

Function	Operation process
Frequency adjusting	Press[A A/B] →↑/↓key to adjust frequency → or input frequency needed directly by keyboard.
Working mode selecting	Press[B V/M], (once the key pressed, the working mode is circulated in frequency mode → channel frequency+channel number → channel name+channel number)
FM radio	[C MENU] →[1FM] →↑(channel selection) →↓ (channel selection), press[D EXIT]to exit.
Frequency scanning	[C MENU] →[2SCN], press↑/↓can change up scanning or down scanning → [C MENU] (stop or current channel) or [D EXIT](stop in current scanning channel)
Reverse frequency setting	[C MENU] →[3REV], start receiving/transmitting exchanging and reliving: same movement
Transmitting frequency adjusting	[C MENU] →[4H/L] →↑(up)/↓(down) → [C MENU]exit.
Channel working bandwidth	[C MENU] →[5W/N] →↑(up)/↓(down) → [C MENU]exit.
Companding function	[C MENU] →[6CMP] →↑(up)/↓(down) → [C MENU]exit.
Encryption function	[C MENU] →[7SRMR] →↑(up)/↓(down) → [C MENU]exit.
Slip frequency direction	[C MENU] →[8SFT] →↑(up)/↓(down) → [C MENU]exit.

Menu function setting operation

Menu setting step:[MENU key]→[MENU key]→[CH+ key]or[CH- key]to select→[MENU key]enter to select items→[CH+ key]or[CH- key] to adjust parameters→[MENU key] to storage→[EXIT key]exit.The right number in the screen is the item number:

Menu	Function description	Second level menu displaying character	Second level menu setting description and pre-set(○)
01	R-CTC	OFF	No CTCSS
		67.0~254.1Hz	CTCSS standard series
02	R-DCSN	OFF	No CTCSS
		D023N~D754N	Digital sound correcting code standard series
03	R-DCSI	OFF	No CTCSS
		D023I~D754I	Receive digital sound radix-minus-one complement standard series
04	R-MOD	QT	No CTCSS
		QT+DTMF	The horn opens when CTCSS frequency matches. The horn opens when CTCSS frequency and DTMF both can be matched.
05	T-CTC	OFF	No CTCSS
		67.0~254.1Hz	CTCSS standard series
06	T-DCSN	OFF	No CTCSS
		D023N~D754N	Digital sound positive code standard series
07	T-DCSI	OFF	No CTCSS
		D023I~D754I	Digital sound inverse code standard series
08	T-DTM1	OFF	Press PTT to stop transmit code
		DTMF1~8	Press PTT to transmit DTMF code
09	T-DTM2	OFF	Loose PTT to stop transmit code
		DTMF1~8	Loose PTT to transmit DTMF code

Function	Operation process
Step frequency setting	[C MENU] →[9STEP] →↑(up)/↓(down) (2.5K、5.0K、6.25K、10.0K、12.5K、25.0K、50K) → [C MENU]exit.
SQL adjusting	[C MENU] →[0SQL] →↑/↓key (SQ0~SQ9) → [C MENU]exit. (SQ0 is SQL opening, there is rustle in the background, SQ1 is the most sensitive one, and SQ9 is the lowes one)

Menu	Function description	Second level menu displaying character	Second level menu setting description and pre-set(○)
10	POWER	HIGH	Transmit with high frequency
		MIG	Transmit with middle frequency
		LOW	Transmit with low frequency
11	W/NA	WIDE	Wide band working ○
		NARR	Narrow band working
12	COMP	OFF	No companding function
		ON	Open companding function(improving communication clarity)
13	SRMR	OFF	No voice encryption function ○
		ON	Open voice encryption function(to make voice encryption on communication)
14	SFT	OFF	In the frequency mode, transmitting frequency and receiving frequency have not slip frequency ○
		ADD	In the frequency mode, transmitting frequency is receiving frequency plus slip frequency
		SUB	In the frequency mode, transmitting mode is receiving frequency minus slip frequency
15	OFFSET	00.0000-90.0000	In the frequency mode, the slip frequency between transmitting and receiving frequency ○00.0000Mhz
16	STEP	2.50K 5.00K 6.25K 10.00K 12.50K 25.0K 50.00K	In the frequency mode, press UP and DOWN to change frequency step value
17	CH-MEM	001~128	When storing channel, it indicates the storage channel number
18	CH-DEL	001~128	When deleting channel, it indicates the deleting channel number
19	LED-SW	AUTO	In the standby mode, do not have any operation, the backlight will close automatically
		NO	In the standby mode, blacklight is on
20	BEEP	OFF	Close operation warning tone
		ON	Open operation warning tone ○

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Menu	Function description	Second level menu displaying character	Second level menu setting description and pre-set(○)
21	RING	OFF	Close calling warning tone ○
		1~9S	When receiving matched signal, machine sends out voice, when the voice times out, the horn will be opened
22	BCL	OFF	When the channel is occupied, it's allowed to transmit ○
		ON	When the channel is occupied, it's not allowed to transmit
23	TOT	OFF	There is not time limit when continuous transmitting
		30S~600S	When pressing PTT key, the transmitting time is the longest ○120s
24	TONE	1000Hz	When transmitting, press EXIT key to adjust frequency and active relay station
		1450Hz	When transmitting, press EXIT key to adjust frequency and active relay station
		1750Hz	When transmitting, press EXIT key to adjust frequency and active relay station
		2100Hz	When transmitting, press EXIT key to adjust frequency and active relay station
25	DTM-TM	50MS	When sending DTMF code automatically, the interval time between code and code
		100MS	When sending DTMF code automatically, the interval time between code and code
		150MS	When sending DTMF code automatically, the interval time between code and code
		200MS	When sending DTMF code automatically, the interval time between code and code
26	SQL	0~9	0 is to open SQL, ,the SQL can be opened when the 1~9 value bigger,and signal strength is bigger ○SQL4
27	RPT		This function is not opened yet
28	DTMF	8sets	Send out these codes when need
29	ANI_ID		Its to observe machine's setting(only can be done by frequency writing program)
30	AB-SW	OFF	Single band transmit, single band receive stand by
		ON	Dual band transmit, Dual band receive stand by○

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Menu	Function description	Second level menu displaying character	Second level menu setting description and pre-set(○)
31	MODE	A&B-MODE	
		SCAN-MODE	
32	LANGUAGE	ENGLISH	
		±	
33	RESET	REST-NO	Do not use menu initialization
		REST-SET	Menu initialization
		REST-ALL	
34	SS-COLOR	blue	
		Sky-blue	
		black	
		white	
		purple	
		red	
		emerald	
35	SS-STR-COLOR	blue	
		Sky-blue	
		black	
		white	
		purple	
		red	
		emerald	
36	UP-COLOR	blue	
		Sky-blue	
		black	
		white	
		purple	
		red	
		emerald	
37	UP-STR-COLOR	blue	
		Sky-blue	
		black	
		white	
		purple	
		red	
		emerald	
38	DN-COLOR	blue	

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Menu	Function description	Second level menu displaying character	Second level menu setting description and pre-set(○)
		Sky-blue	
		black	
		white	
		purple	
		red	
		emerald	
39	SS-STR-COLOR	blue	
		Sky-blue	
		black	
		white	
		purple	
		red	
		emerald	

Selected calling team calling and group calling
This machine equipped with function of sending and editing personal code as well as DTMF decoding. To achieve selected calling and group calling without using other equipment.
Note: When using any other radio in the group, should edit different individual code.
Following parameters should be set when using this function:
1.Set up the reception mode(function menu no.4) is QT+ANI（CTCSS+ individual code）。
2.Set ringing time(function menu no.21).

Group calling function
Press[PTT]key to transmit, input[*]key from keyboard.(input[*]digits is same as machine's ID code).
For example: If the ID code of called party is [12345], then press[PTT] key to transmit, input five [*] key from keyboard. All the called party who have same digits will have ring.

Team calling function
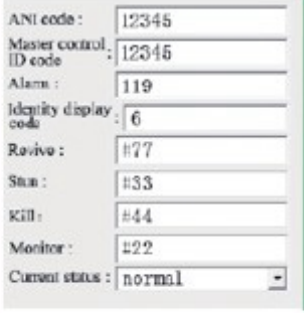Press [PTT] key to transmit, input[team number]+[*]key.(input digits is same as machine's ID code).
For example: if the ID code of called party has [12345] [12789] [23888] then press [PTT] key to transmit, then input[12]+[***]key. All the called party who have [12] in the beginning will have ring, called party who has [23] in the beginning will not have ring.

Selected calling function
Press [PTT] key to transmit, input the called party's individual code from keyboard.
For example: if the called party's ID code has [12345], then press[PTT] key to transmit, input[12345]key. All selected radio will have ring.
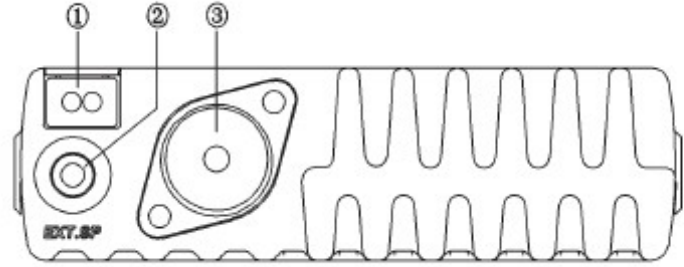
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Remote control function
Before using remote control function, the machine should be active, at the same time, should set radio's ID code that is main master code. All the setting only can be done by frequency writing program.
1- Open frequency writing program.
2- Vehicle transceiver connects with PC through frequency writing cable. (8 needle crystal head insert to hand microphone port)
The precondition of using remote control function is to set ID code. Different remote control function should set different control code.
As following picture:(following value is for reference)

- In the above table, the longest control code has 7 digits, the shortest has 1 digit. The length of control code should within 3-5 digits.
- The control code in the above only can be set by frequency writing program provided by our company.
- The opening code, stunning code, shaking code and monitoring code should begin with "#".
- Master ID code should be set be same with machine ID code.
- If don't want to be controlled, the control code is not need to input.

Remote stunning(prohibit to be transmitted by controlled party)
Press PTT+#33(stunning code)+12345 master control ID code,then loose PTT.
If the stunning code of controlled party is same as master ID code, the remote stunning function is prohibited.

Remote shaking code(the controlled party is prohibited to receiving and transmitting)
Press PTT+#44(shaking code)+12345 master ID code, then loose PTT.
If controlled party's shaking code is same as master's ID code, the remote shaking function is prohibited.

Remote monitoring(monitor the controlled partys environment voice)
Press PTT+#22(monitoring code)+12345 master ID code, then loose PTT.
If the controlled party's monitoring code is same as master's ID code, then the controlled party will transmit automatically and start monitoring function.(monitoring time is 7 seconds)

Remote reliving stunning and shaking
Press PTT+#77(opening code)+12345 （master ID code）, then loose PTT.
If the controlled party's opening code is same as master's ID code, then the function will be relived,

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Alarm
Press PTT+119 alarming code,then loose PTT.
If the controlled party's alarming code is same the sending one, then the controlled starts alarm.
If adding master's ID code or others in the end of alarm code, then the controlled party will display master's ID code and others after starts alarm, so that the controlled party can know which party starts alarm.

Specification

	Technical data	
Working frequency scope	A model: VHF1: 136.000MHz ~ 174.000MHz B model: VHF2: 220.000MHz ~ 250.000MHz C model: UHF1: 350.000MHz ~ 450.000MHz D model: UHF2: 400.000MHz ~ 470.000MHz	
System	F3E (FM)	
Antenna impedance	50Ω	
Frequency stability	±2.5ppm @ -10℃~ +60℃	
Working environment temperature	-20℃ ~ +60℃（-4°F ~ +140°F）	
Input voltage	Direct current 13.8V （±15%）， negative grounding	
Output power	High power: ≤25W; middle power: ≤10W; low power: ≤5W	
Output power (Costom- made)	High power: ≤10W; middle power: ≤6W; low power: ≤3W	
Max. Frequency deviation	±5KHz	
Noise radiation	≤-60dB	
Flexibility	≤0.2uV (12dB SINAD)	
Max. Audio output	2W @ 8Ω 5% distortion	
Working current	Receive	0.3A (SQL)
	Transmit	5A (Max.)
Dimension	105 X 30 X 106mm （width X hight X depth not including the outparts）	
Weight	about 0.5 kg	

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Rear Panel

13.8V DC power supply interface
13.8V DC power supply interface. Make sure the red wire is connected with the positive polarity (+) and the black wire with the negative polarity (-) of the power supply.
External speaker interface
Connect with an external speaker for better sound effect when necessary. This interface can connect with a 3.5mm single channel plug.
Antenna interface
Connect external antenna to this interface. The impedance of the antenna should be 50 Ω.

Declaration
This manual has been sought during the preparation of accurate and complete, but for the errors and omissions that may appear on the text, the company is not responsible. The company has right to change product's design and specifications without prior notice.

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