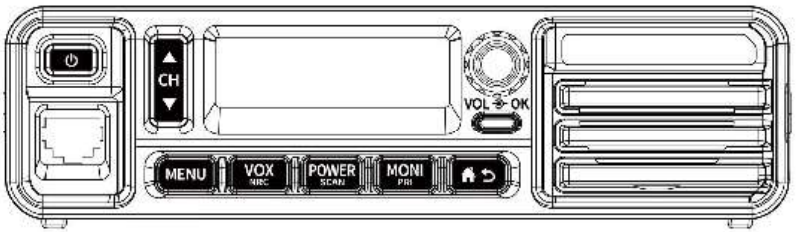
Radioddity
DB35-UV Manual



1. Overview

- ✧ The DB35-UV is a dual-band analog mobile transceiver.
- ✧ It includes a main radio unit, a handheld microphone, and a mounting bracket.

2. Product Features

- ✧ LCD display with 7 selectable backlight colors
- ✧ TX/RX indicator LED
- ✧ Main unit with display
- ✧ Keypad on Main Unit and Microphone
- ✧ RJ45 interface between main unit and microphone
- ✧ Frequency Range: 420–450 / 144–148 MHz (TX)
  400–470 / 136–174 MHz (RX)
- ✧ 80 Programmable channels
- ✧ PC programming support
- ✧ High/Low power selection
- ✧ Wide/Narrow bandwidth selection
- ✧ Offset direction and offset value settings
- ✧ Priority Channel (PRI)
- ✧ Scan
- ✧ Monitor (MONI)
- ✧ Squelch (SQL)
- ✧ Transmit Timeout Timer (TOT)
- ✧ CTCSS/DCS
- ✧ Noise Reduction (NRC)
- ✧ Key Beep
- ✧ VOX (5 levels)
- ✧ Mic Gain (3 levels)
- ✧ Cooling fan

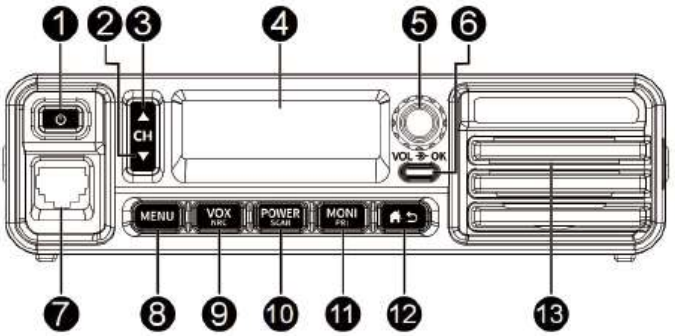
3. Technical Specifications

GENERAL	
Frequency Range	TX: 420-450/144-148 MHz RX:400-470/136-174MHz
Channel Spacing	12.5KHz/25KHz
Channel Capacity	80 Programmable channels
Frequency Stability	±300Hz
Operating Temperature	-30℃~+60℃
Operating Voltage	13.8V
Size	169*167*46 mm
TRANSMITTER	
Power Output	High: 35W / Low: 5W
Emission current	High：10A/ Low：4.5A
Modulation Limiting	Narrow：≦2.5KHz/Wide：≦5.0KHz

Adjacent Channel Power	Narrow：≧60dB/Wide：≧65dB
Hum& Noise	≧40dB
Audio Distortion	≦5%
Mic Sensitivity(@L2)	5-10mV
Antenna port hum	9KHz-1GHz：≦-50dBc 1GHz-12.75GHz≦-55dBc
RECEIVER	
Sensitivity	≦-118dBm@SINAD=12dB
Audio Distortion	≦5%
Hum & Noise	≧45dB@25KHz/≧40dB@12.5KHz
Adjacent Channel Selectivity	≧60dB@12.5KHz/≧60dB@25KHz
Inter Modulation	≧60dB
Blocking or Desensitization	≧84dB
Co-Channel Rejection	≧-12dB
Max Audio Output@1KHz 8Ω	≧1W
Standby Current	≦360mA

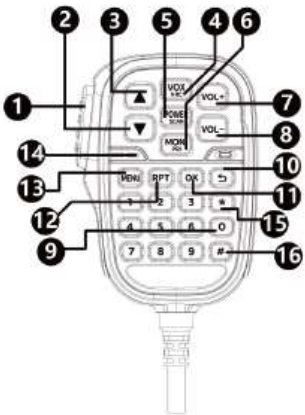
4. Structural Appearance

✧ Main Unit



No.	Name	Short Press	Long Press
1	Power Key		Power On/Off
2	▽	Channel Down	Scroll Down Continuously
3	△	Channel Up	Channel Up Continuously
4	LCD Display		
5	Volume Knob	Adjust Volume / Menu Select	
6	TX/RX Indicator		
7	RJ45 Interface		
8	MENU Key	Enter Menu	Keypad Lock On/Off
9	VOX / NRC	VOX On/Off	NRC On/Off
10	Power / SCAN	Power Switch	Scan On/Off
11	MONI / PRI	Monitor On/Off	Set Priority Channel
12	Back Key	Return to Previous Menu	Return to Home Screen
13	Speaker		

✧ Microphone



No.	Name	Short Press		Long Press
1	PTT	Transmit		
2	CH-	Channel Down	Menu Select	Scroll Down Continuously
3	CH+	Channel Up	Menu Select	Channel Up Continuously
4	VOX / NRC	VOX On/Off		NRC On/Off
5	Power / SCAN	Power Switch		Scan On/Off
6	MONI / PRI	Monitor On/Off		Set Priority Channel
7	VOL+	Increase Volume		Increase Volume Continuously
8	VOL −	Decrease Volume		Decrease Volume Continuously
9	Keypad (0–9)	VFO Mode: Input Frequency Channel Mode: Input Channel		
10	Back Key	Return to Previous Menu		Return to Home Screen
11	OK	Confirm		
12	RPT	Offset Direction On/Off		
13	MENU	Menu Access		Lock (except PTT and Volume)
14	MIC	Microphone		
15	*	Add/Remove Scan List		Enter/Exit WX Mode
16	#	Recall Priority Channel		Enter Frequency Edit

5.LCD Display Indicators

CH01	Channel Number /VFO Mode	**N**	N: Narrowband W: Wideband	
WX	Weather Mode Indicator	+	+	TX=RX+OFFSET
			-	TX=RX-OFFSET
NR	Noise Reduction	**SC**	Scan	
P	Priority Channel	**MON**	Monitor	
462.56250M	Frequency Display	**CTC**	CTC	CTCSS
			DCS	DCS
R	R/T: RX or TX Indicator	**Hi**	Hi	High Power
			Lo	Low Power
m	Scan List Indicator	**V**	VOX	
		BCL	Busy Channel Lock	
	RX/TX Signal Level		Volume Level Display – Shown when adjusting volume	

6.Function Introduction

6.1 Power on/off

Press and hold the **Power Key** for 2 seconds to turn the radio on or off.

High Voltage Alert:

If the input voltage exceeds 16V, the radio will emit a high-voltage warning tone and transmission will be disabled.

Low Voltage Alert:

If the voltage drops below 10V, the radio will emit a low-voltage warning tone.

Low Voltage Shutdown:

If the voltage drops below 9V, the radio will automatically shut down to protect the circuit.

6.2 Channel Selection

You can select the operating channel by using the △/▽ keys on the main unit or the microphone.
You may also enter a channel number directly using the numeric keypad and press OK to jump to that channel.
Example: Input 05 and press OK → the radio switches to Channel 5.

6.3 Volume Adjustment

Rotate the **Volume Knob** clockwise/counterclockwise on the main unit or use the microphone keys **VOL+ / VOL–** to increase or decrease the speaker volume.

6.4 Transmit & Receive

To communicate between two radios, both units must be set to the same frequency and same CTCSS/DCS (if used).
To transmit a call, press and hold the PTT key and speak toward the microphone at a normal voice level.
For best audio clarity, hold the microphone 2 – 3 inches (5 – 7 cm) away from your mouth.
During TX, the LCD will display the TX icon continuously.
During RX, the LCD will display the RX icon continuously.

6.5 Squelch Level Adjustment

The squelch level can be adjusted through the menu.
This radio offers 10 squelch levels (0 – 9):

0 - Squelch Open
1 - Highest sensitivity (lowest squelch)
5 - Medium sensitivity (medium squelch)
9 - Lowest sensitivity (highest squelch)

6.6 CTCSS/DCS Settings

You may configure the sub-audio tone via the radio menu.
This model provides: 38 CTCSS tones / 208 DCS codes (104 DCS-N & 104 DCS-I)
For detailed tone and code lists, refer to the CTCSS/DCS Tables at the end of this manual.

6.7 Power Level Setting

The radio provides **High** and **Low** power levels.
You can select the appropriate level depending on your environment and communication distance requirements.

6.8 Priority Channel - Set / Recall / Watch

Set Priority Channel:
Select your desired channel, then long-press the "**MON/PRI**" key to set it as the priority channel.
The "PRI" icon will appear above the channel name.
Priority Recall:
During operation, short-press the "#" key to toggle instantly between the current channel and the priority channel.
Priority Watch:
When Priority Watch is enabled (Pri Watch), the radio will intermittently check the priority channel while

scanning other channels.

6.9 Scan Function

The radio supports scanning to locate active channels (only channels included in the scan list).

Start / Stop Scan:

Long-press the POWER/SCAN key to begin or exit scanning. While scanning, the SC icon flashes on the LCD.

Scan Behavior:

When an active signal is detected, the radio stops and enters receive mode. After the signal disappears, the radio stays on that channel for 5 seconds, then continues scanning.

If you press PTT during scanning, it will transmit on the current active channel. Once PTT is released, the radio remains on that channel for 5 seconds, then continues scanning.

Adding/Removing Channels from the Scan List

You can manage the scan list through the Scan Menu:

Select "**Scan**" → the current channel is added to the scan list.

Select "**Skip**" → the current channel is excluded from the scan list.

When a channel is in the scan list, the SC icon will remain displayed above the channel. If the SC icon is not shown, the channel is not in the scan list.

6.10 VOX (Voice-Operated Transmit)

The radio is equipped with VOX for hands-free operation.

When VOX is enabled, speaking toward the microphone will automatically trigger transmission without pressing PTT.

VOX provides **5 sensitivity levels**:

The higher the level, the stronger the voice signal required to activate VOX transmission.

6.11 Noise Reduction (NRC)

When NRC is enabled, the radio reduces (but does not completely eliminate) background noise received from the transmitting radio, improving overall audio clarity and listening comfort.

6.12 Busy Channel Lockout (BusyLock)

When BusyLock is enabled:

If the radio is receiving a signal and you press PTT, transmission will be blocked.

The radio will emit a continuous prohibition tone until PTT is released.

This prevents users from transmitting over an active channel.

6.13 Transmit Timeout Timer (TOT)

The TOT function limits the maximum continuous transmission time.

After TOT is enabled and a time limit is set:（OFF，60S，120S，180S）

The radio starts counting once you press PTT.

When the preset time is reached, transmission will automatically stop.

To continue transmitting, release PTT and press it again.

6.14 Microphone Gain Adjustment

You may adjust the microphone gain through the menu.
The radio provides 3 levels (L1 / L2 / L3):
The higher the level, the higher the microphone sensitivity.

6.15 NOAA Weather Radio: Scan / Monitor / Alert (North America Only)

The DB35-UV is equipped with NOAA Weather Receive and Weather Alert functions.
It can receive severe weather warnings and emergency alerts broadcast by the National Weather Service (NWS), allowing you to take timely safety actions.

WX Band Channels

Channel Number	Frequency (MHz)
1	162.550
2	162.400
3	162.475
4	162.425
5	162.450
6	162.500
7	162.525
8	161.650
9	161.775
10	163.275

Weather Scan

Long-press the * key for 2 seconds to enter Weather Mode. The radio will automatically scan all active NOAA weather channels. The WX icon flashes during scanning.
When a valid weather broadcast is received, scanning stops and the radio enters monitoring mode.
Press the △/▽ keys to resume scanning.
Long-press the * key again for 2 seconds to exit Weather Mode (WX icon disappears).

Weather Alert Monitor

In Weather Alert Scan mode, press and hold the **POWER/SCAN** key to stop weather alert scanning and enter Monitor mode.
To resume scanning from Weather Alert Monitor mode, press **POWER/SCAN** again.

Weather Alert

While in Weather Monitor Mode:

1. Use the channel keys to select the desired NOAA weather alert channel.
2. Short-press the **MENU** key to enter the Weather Alert setting.
3. Use channel keys to select ON or OFF.

When Weather Alert is enabled:

In Weather Mode:

Any NOAA channel that receives a 1050 Hz alert tone will immediately trigger an alert.

In Normal Radio Mode:

The WX icon continues flashing, and the radio silently monitors the previously selected weather alert channel in the background.

6.16 Repeater Offset (Offset & Shift Settings)

Users may configure the transmit – receive frequency difference (Offset & Shift) using the radio menu.

Offset Value Setting

1. Short-press MENU to enter the menu.
2. Use △/▽ to scroll to Offset.
3. Press MENU to enter the Offset menu.
4. Input the desired offset value directly using the numeric keypad.
5. Press OK to confirm.

Factory Default: 0.600 MHz

Offset Direction (Shift) Setting

1. Short-press MENU to enter the menu.
2. Use △/▽ to select Shift.
3. Use △/▽ to choose offset direction: OFF / + / -.
4. Press OK to confirm.

Once the transmit/receive shift direction has been enabled in the menu, you can also quickly enable or disable the shift function on the main screen by short-pressing the microphone's RPT key.

OFF: TX frequency = RX frequency (default)
+ : TX = RX + Offset
− : TX = RX − Offset

6.17 Frequency Mode (VFO)

You may manually enter operating frequencies within the following ranges: 420–450 / 144–148 MHz (TX)
400–470 / 136–174 MHz (RX)

How to Enter VFO Mode:

Long-press the # key to enter VFO mode.
You may directly input a frequency using the numeric keypad.
Or use △/▽ to adjust the frequency according to the selected step size.

How to Set Frequency Step:

1. Short-press MENU → enter menu.
2. Use △/▽ to select Step.
3. Press MENU to enter the Step menu.
4. Use △/▽ to select the desired step size.
5. Press OK to confirm.

Available step sizes:
2.5 / 5.0 / 6.25 / 12.5 / 25 / 50 / 100 kHz
Factory Default: 12.5 kHz

Saving a Custom Channel

After setting the desired frequency:

1. Press OK to confirm the frequency.
2. Long-press MENU to begin channel storage.
3. The radio will jump automatically to the nearest empty channel; the channel number will flash.
4. Use △/▽ to choose the target channel.
5. Long-press MENU again to save.

6.18 Reset (Restore Factory Settings)

You may restore factory settings through the Reset menu.

Select Yes → the radio resets to factory defaults.

Select No → cancel and exit the Reset menu.

The factory settings after reset are as follows:：

CH NO.	TX Frequency(MHz)	RX Frequency(MHz)	Code(Hz)	Band	Power
1	144.975	144.975	OFF	Wide	High
2	145.750	145.750	OFF	Wide	High
3	430.375	430.375	OFF	Wide	High
4	438.650	438.650	OFF	Wide	High

SQ	1	CTC/DCS	OFF
Scan List	All Channels	NRC Level	L2
Key Beep	ON	VOX	OFF
Roger Beep	ON	VOX Level	L1
Backlight Brightness	L2	Backlight Color	Blue
Busy Channel Lockout	OFF	Noise Reduction (NRC)	OFF
Backlight Timeout	30S	Transmit Timeout Timer (TOT)	ON（180S）
Mic Gain	L2	Priority Channel	02
Shift	OFF	Priority Watch (Pri Watch)	On
Step	12.5KHz	Offset	0.600MHz

7.Menu Description

Main Menu	Submenu	Option	Description
Scan	Scan/Skip		Scan: channel included in scan list. Skip: channel excluded from

			scan list.
CTCSS/DCS	OFF/CTC/DCS	38 CTCSS / 208 DCS	Sets sub-audio signaling.
PRI Watch	ON/OFF		ON: the radio periodically checks the priority channel during scanning. OFF：The priority channel is not scanned.
Step	2.5KHz/5.0KHz/6.25KHz/12.5KHz/25KHz/50KHz/100KHz		Default：12.5KHz
VOX	L1/L2/L3/L4/L5		Enables VOX. VOX level determines sensitivity.
NRC	L1/L2/L3/L4/L5		Enables noise reduction during RX.
Bandwidth	Narrow/Wide		Select wideband or narrowband.
Backlight	OFF/L1/L2/L3		LCD backlight brightness level.
BackColor	White / Blue / Green / Red / Cyan / Purple / Yellow		LCD backlight color selection.
BakcTime	Always/10s/20s/30s		Backlight timeout duration.
KeyBeep	ON/OFF		Enables or disables keypad tone.
SQL	0-9		Squelch level adjustment.
TOT	OFF/ON		TX timeout limit.
Roger Beep	ON/OFF		Enables or disables transmission end tone.
Mic Gain	L1/L2/L3		Microphone sensitivity level.
BusyLock	ON/OFF		ON: Transmission prohibited during reception. OFF: Transmission permitted during reception.
Shift	OFF/+/-		OFF: TX frequency = RX frequency (default) + : TX = RX + Offset - : TX = RX – Offset
OFFSET	Numeric Input		Frequency offset value (default: 0.6 MHz).
Reset	Yes/No		Restore factory settings.
Version			Firmware version.

8.CTCSS Table

CTCSS Number	Frequency Hz	CTCSS Number	Frequency Hz	CTCSS Number	Frequency Hz	CTCSS Number	Frequency Hz
1	67.0	**11**	97.4	**21**	136.5	**31**	192.8
2	71.9	**12**	100.0	**22**	141.3	**32**	203.5
3	74.4	**13**	103.5	**23**	146.2	**33**	210.7
4	77.0	**14**	107.2	**24**	151.4	**34**	218.1
5	79.7	**15**	110.9	**25**	156.7	**35**	225.7
6	82.5	**16**	114.8	**26**	162.2	**36**	233.6
7	85.4	**17**	118.8	**27**	167.9	**37**	241.8
8	88.5	**18**	123.0	**28**	173.8	**38**	250.3
9	91.5	**19**	127.3	**29**	179.9		
10	94.8	**20**	131.8	**30**	186.2		

9.DCS Table

DCS-N Table

CDCSS Number	Octal Code	CDCSS Number	Octal Code	CDCSS Number	Octal Code	CDCSS Number	Octal Code
1	023N	**27**	152N	**53**	311N	**79**	466N
2	025N	**28**	155N	**54**	315N	**80**	503N
3	026N	**29**	156N	**55**	325N	**81**	506N
4	031N	**30**	162N	**56**	331N	**82**	516N
5	032N	**31**	165N	**57**	332N	**83**	523N
6	036N	**32**	172N	**58**	343N	**84**	526N
7	043N	**33**	174N	**59**	346N	**85**	532N
8	047N	**34**	205N	**60**	351N	**86**	546N
9	051N	**35**	212N	**61**	356N	**87**	565N
10	053N	**36**	223N	**62**	364N	**88**	606N
11	054N	**37**	225N	**63**	365N	**89**	612N
12	065N	**38**	226N	**64**	371N	**90**	624N
13	071N	**39**	243N	**65**	411N	**91**	627N
14	072N	**40**	244N	**66**	412N	**92**	631N
15	073N	**41**	245N	**67**	413N	**93**	632N
16	074N	**42**	246N	**68**	423N	**94**	654N
17	114N	**43**	251N	**69**	431N	**95**	662N
18	115N	**44**	252N	**70**	432N	**96**	664N
19	116N	**45**	255N	**71**	445N	**97**	703N
20	122N	**46**	261N	**72**	446N	**98**	712N
21	125N	**47**	263N	**73**	452N	**99**	723N

22	131N	**48**	265N	**74**	454N	**100**	731N
23	132N	**49**	266N	**75**	455N	**101**	732N
24	134N	**50**	271N	**76**	462N	**102**	734N
25	143N	**51**	274N	**77**	464N	**103**	743N
26	145N	**52**	306N	**78**	465N	**104**	754N

DCS-I Table

CDCSS Number	Octal Code	CDCSS Number	Octal Code	CDCSS Number	Octal Code	CDCSS Number	Octal Code
105	023I	**131**	152I	**157**	311I	**183**	466I
106	025I	**132**	155I	**158**	315I	**184**	503I
107	026I	**133**	156I	**159**	325I	**185**	506I
108	031I	**134**	162I	**160**	331I	**186**	516I
109	032I	**135**	165I	**161**	332I	**187**	523I
110	036I	**136**	172I	**162**	343I	**188**	526I
111	043I	**137**	174I	**163**	346I	**189**	532I
112	047I	**138**	205I	**164**	351I	**190**	546I
113	051I	**139**	212I	**165**	356I	**191**	565I
114	053I	**140**	223I	**166**	364I	**192**	606I
115	054I	**141**	225I	**167**	365I	**193**	612I
116	065I	**142**	226I	**168**	371I	**194**	624I
117	071I	**143**	243I	**169**	411I	**195**	627I
118	072I	**144**	244I	**170**	412I	**196**	631I
119	073I	**145**	245I	**171**	413I	**197**	632I
120	074I	**146**	246I	**172**	423I	**198**	654I
121	114I	**147**	251I	**173**	431I	**199**	662I
122	115I	**148**	252I	**174**	432I	**200**	664I
123	116I	**149**	255I	**175**	445I	**201**	703I
124	122I	**150**	261I	**176**	446I	**202**	712I
125	125I	**151**	263I	**177**	452I	**203**	723I
126	131I	**152**	265I	**178**	454I	**204**	731I
127	132I	**153**	266I	**179**	455I	**205**	732I
128	134I	**154**	271I	**180**	462I	**206**	734I
129	143I	**155**	274I	**181**	464I	**207**	743I
130	145I	**156**	306I	**182**	465I	**208**	754I

FCC compliance statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) this device must accept any interference including received interference that may cause undesired operation.

The grantee is not responsible for any changes or modifications not expressly approved by the party responsible for compliance. Such modifications could void the user's authority to operate the equipment.

Replacement of any transmitter component (crystal, semiconductor, etc.) not authorized by the FCC equipment authorization for this radio could violate FCC rules.

WARNING: MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBITED UNDER FCC RULES AND FEDERAL LAW.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Sain3 LLC

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