



Addendum

to the Radioddity DB25-D manual

V1.1, September 2021

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1 Disclaimer

This document does describe only those details, that are required to know in order to successfully get started with the DB25-D CPS. Please refer to the manual that came with your radio for details on specific radio parameters. If you find anything that needs correction, please let us know via support@radioddity.com.

We advise you to take a look at the document our engineers prepared for those new to DMR. Check the corresponding blog-entry for more details.

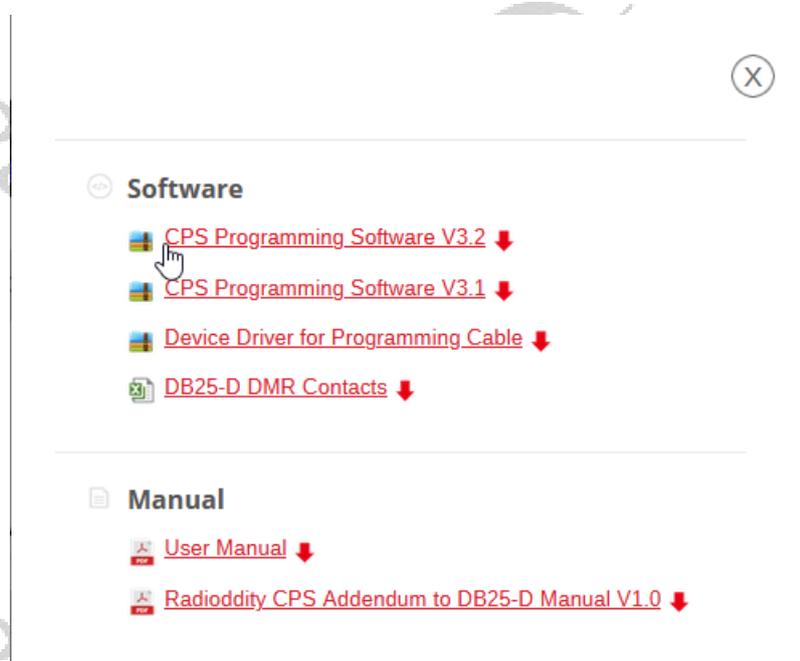
Windows™, Linux™ and OS X™ are the properties of their respective owners. Should any trademark attribution be missing, mistaken or erroneous, please contact us as soon as possible for rectification.

2 Where to find support material

Please kindly note that all the firmware, software, and user manuals can be found in the Support area on our official website by following steps:

<https://www.radioddity.com/> → Support → Radioddity → click on 'DB25-D'

As for the DB25-D the resulting page will look similar to the following:



As soon as any new material becomes available (such as firmware updates, updated manuals or even this guide), it will be published within our Support area.

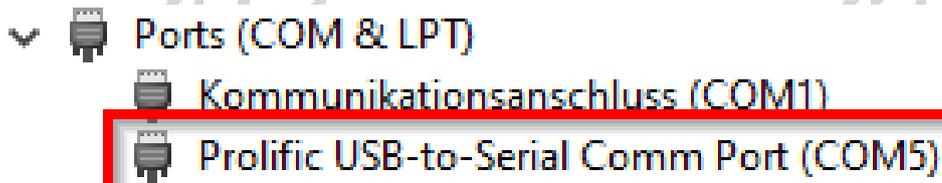
3 Install device driver

Quite likely, your DB25-D came with a programming cable. This programming cable adds an additional virtual COM-port to your system. It does include a small chip of type Prolific PL2303 that converts signals to and from the USB-side into serial signals in the K1 style connector.

As soon as you plug in the USB side of the cable to your PC, you should hear the "USB device connected"-sound on your PC. In case your Windows system is not able to automatically install the required driver, you will see an entry, similar to



within Windows device manager. However normally after a few seconds, Windows has automatically loaded and installed the required driver and you should see an entry, similar to



In case the driver did not install automatically, we have prepared a [download link on our DB25-D support page](#). Internally the signals of the cable are connected as follows:

Signal name	K1
Radio TXD	3.5 mm sleeve
Radio RXD	2.5 mm ring
GND	2.5 mm sleeve

You may also use this cable for most of our analog radios that come with a combined 2.5 mm and 3.5 mm TRS K1-style jack.

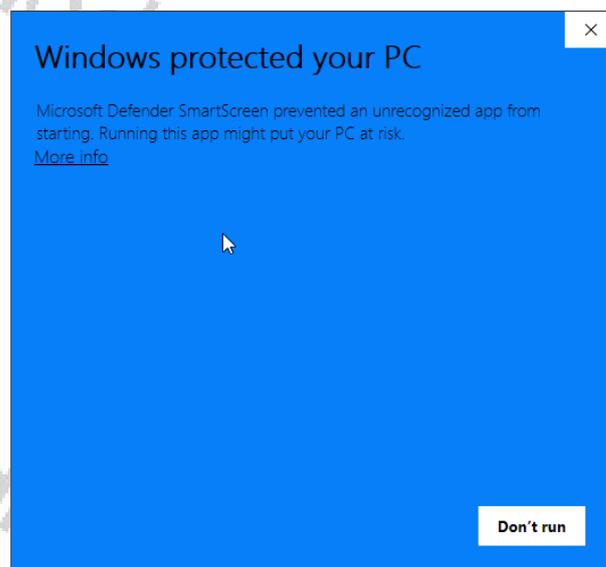
4 CPS installation

Download the current DB25-D CPS version from our Support area. After download, unpack the archive into a temporary directory of your choice. Initially you will find just one single file within the archive.

Name	Date modified	Type	Size
Radioddity DB25-D CPS.exe	11.05.2021 11:57	Application	13.401 KB

File description: Setup Application
File version: 7.0.1.0
Date created: 29.07.2021 13:46
Size: 13,0 MB

Double click on the executable to start the installation process. Due to the fact, that the executable isn't signed, Windows may give you a popup-warning.



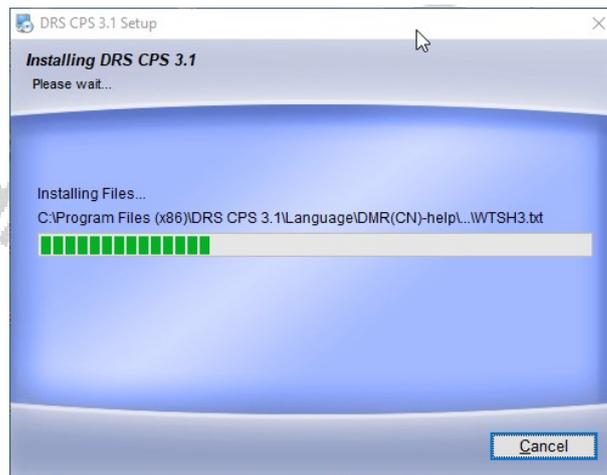
Click on the underlined '[More info](#)' and continue by clicking on 'Run anyway'.



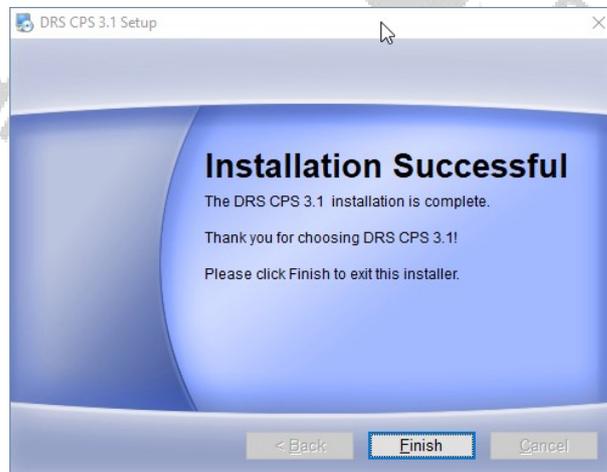
An additional confirmation dialog will follow, asking 'Do you want to allow this app from an unknown publisher to make changes to your device?'. Confirm this dialog by clicking 'Yes'.



Follow the standard installation procedure by mostly clicking on 'Next'.



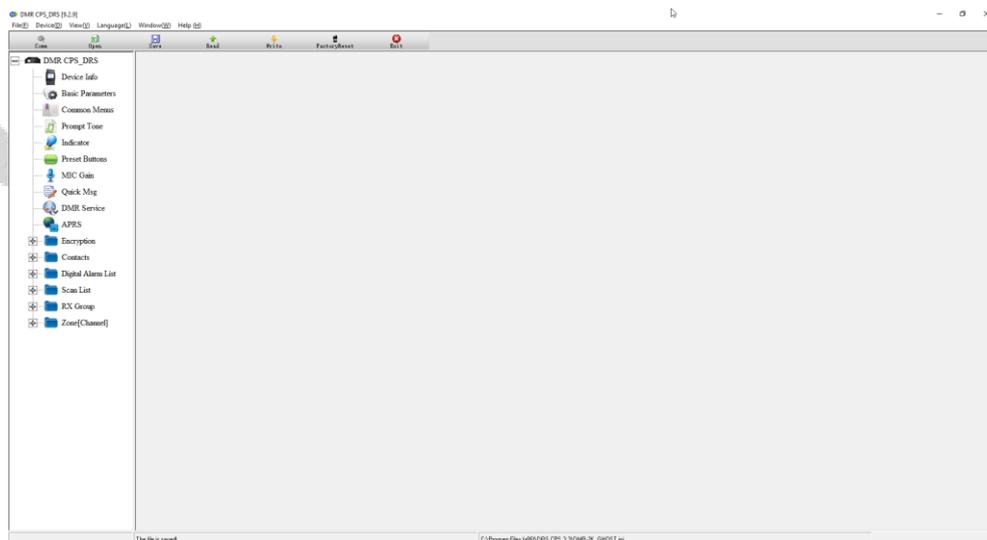
After a while, the installation process finishes with



Click 'Finish' to confirm the completion of the installation process.

5 Start CPS

During installation of the CPS, a shortcut had been placed on your desktop. Double click on that shortcut to start the CPS. As the CPS has never been used before, it will be preloaded with certain default data. Whenever you start the CPS again, the last settings will automatically be preloaded. However, we do advise to regularly make backup copies of the current settings. Those settings are often also called 'code plug'.



Within the bottom line of the CPS you are presented a bunch of statistical data, such as: Number of Contacts, Number of Zones and Number of channels

Number of Contacts:10 Number of Zones:1 Number of channels:17 Space Occupation:18

C:\Program Files (x86)\DRS CPS 3\DMR-2K_GHOST.ini

Whenever changes to parameters have been made, the complete setting ('code plug') must be written back to the radio. But we will come to that later.

5.1 Special functions

Some of the computers keyboard function keys have been assigned special functionality within the CPS.

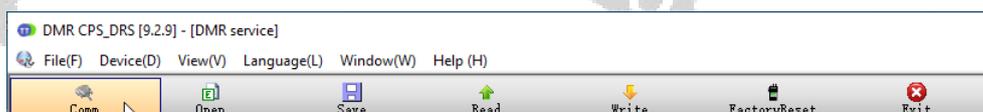
Key	Function
F1	Turn Toolbar On/Off
F2	Turn Navigation bar On/Off
F3	Turn Status bar On/Off
F4	Font
F5	Background Color
F6	Font Color
F7	English
F8	Chinese
F9	Stack-up
F11	Tile horizontal
F12	Tile Vertical
Ctrl+O	Read codeplug from file (File → Open)
Ctrl+S	Write codeplug to file (File → Save)
Ctrl+X	Exit CPS (File → Exit)
Ctrl+K	Radio COM-port (Device → Comm)
Ctrl+R	Transfer data from radio to CPS (Device → Read)
Ctrl+W	Transfer data from CPS to radio (Device → Write)

5.2 Safe factory settings to a file

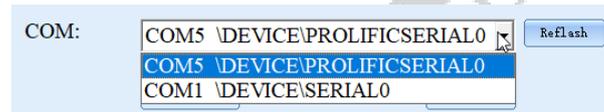
Before you start making your first changes, transfer the data from your radio to your PC and safe them as 'factory settings' for later use. It is always advisable to have the original factory settings at hand.

5.3 Connect to the radio

Make sure, that your radio is connected with the supplied programming cable to your Windows machine. Start by clicking on 'Comm' within the toolbar.



You will then be presented a list of COM-ports identified on your Windows machine. This is required before any 'Read'- or 'Write'-Operation to/from the radio.

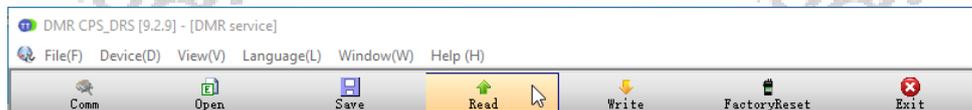


Select the COM-port that does represent your connected programming cable.

Note: Only COM-port 1...8 are currently supported.

5.4 Read code plug from DB25-D

To read the current codeplug as stored on the radio, click on 'Read' within the toolbar to start the transfer of data from the radio to the PC.



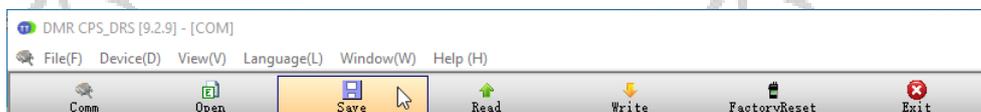
The radio will display 'Flash Read' whilst data is being transferred from the radio to the CPS.



As soon as all data has been transferred from the radio to the PC, the text 'Flash Read' will disappear.

5.5 Safe code plug to file

If this is the first time you used the READ-function, we advise to save the data to a file of your choice, such as 'Factory setting of my DB25-D'. To do so, click on the 'Save' button within the toolbar.



A normal file dialog will follow.

5.6 Write code plug to DB25-D

Whenever you have made any changes to your current codeplug, using the CPS and want those changes to become active on the radio, you need to write the changed code plug to the radio. To do so, just click on the button, named 'Write' in the toolbar.



The radio will display 'Flash Write' whilst data is being transferred from the CPS to the DB25-D.



As soon as all data has been transferred from the CPS to the DB25-D, the text 'Flash Write' will disappear.

5.7 Open existing codeplug

Code plugs that have previously been saved to a file can be loaded into the CPS at any time. To do so, click on the 'Open' button within the toolbar.



A normal file dialog will follow.

5.8 FactoryReset

The FactoryReset functionality is slightly different to what you may be used to with other radios. Whilst it is actually activated on the radio itself, using 'MENU → Local Set → FactoryReset', the settings that will then be restored to the radio may be predefined using the FactoryReset-functionality within the CPS.

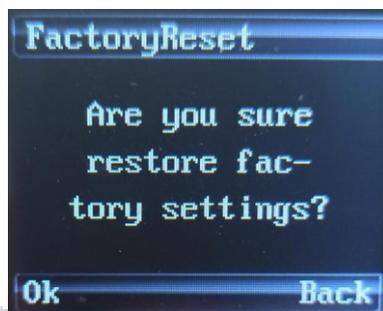
To do so, just open your favourite codeplug (the one you want to become the 'Factory-defaults' one) within the CPS. Then, instead of writing it to the DB25-D using the normal 'Write'-function, click on 'FactoryReset' in order to have the codeplug being written to the radio the same as the normal 'Write'-function but also been saved to a special area within the radios memory for later use with the FactoryReset-function of the radio itself.

The radio will display 'Write Factory' whilst data is being transferred from the CPS to the DB25-D.



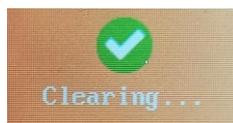
As soon as all data has been transferred from the CPS to the DB25-D, the text 'Write Factory' will disappear.

If you now, later on, do activate the FactoryReset on the radio via using 'MENU → Local Set → FactoryReset', you will first be asked if you are sure to restore the factory-settings.



Confirm by pushing the MENU-knob.

Now the settings previously stored as factory-defaults will be restored. You will see a couple of screens.



The complete process takes about 15 seconds, depending on the size of the factory-defaults codeplug you previously saved to the radio.

6 Make changes to your settings

In total there are currently 16 menus, but you will find out that some of them are needed just once whilst others are needed more often.

6.1 Device Info

This menu mainly refers to the general information of the device as provided by the manufacturer.

Device Info	
Factory Number	1205000
Serial Number	50000000
Model Number	DR300UV
Firmware Version	909E.D4.EARSAB.007
Version Date	May 12 2021
Frequency Range	F136-480 Mhz
The Latest Update	31.07.2021 12:43
Firmware ID	DRS-300UV

Factory Number

With this number, Radioddity can track the selling country or area of the product.

Serial Number

A sequence of numbers and letters to identify the individual device. Every device has a unique serial number, and cannot be amended or edited.

Model Number

A number to indicate the radio type and cannot be amended or edited.

Note: You may find other radios looking similar to the DB25-D and even sharing the very same 'Model Number'. Be careful as to not use any firmware or CPS not downloaded from our website with your DB25-D as this may void any warranty.

Firmware Version

It refers to the program-controlled software version. It indicates the non-editable version of firmware.

Version Data

It is to indicate the date of firmware version from the manufacturer.

Frequency Range

Refers to the device working frequency range.

The Latest Update

To display the last programmed time and date.

Firmware ID

A unique number to indicate the radio's firmware.

6.2 Basic Parameters

Those 'Basic Parameters' will likely be a menu you need before starting your first QSO with your new DB25-D as it does include important settings such as Radio Name (Call sign) and Radio ID (DMR ID).

Basic Parameter	
Radio Name	<input type="text" value="G4LJL"/>
Radio ID	<input type="text" value="511506"/>
Language	English
TOT	60S
Busy Channel Lockout	Off
VOX	Off
VOX Sensitivity	12
Power-saving	On
Power Saving Ratio	1:1
Save power startup time	11S
Scan Mode	TO
End-tone types	55Hz
Squelch(A) Level	4
Squelch(B) Level	4
Backlight ON/OFF	On
Keylock	Off
Roaming	Off
Roaming Mode	Manual
Rssi Set	-90dBm
Connect Check Timer	10S
Repeater Check Timer	10S
Connect Timer	1
Record Set	Off

Rolling code

Radio Name

This field represents the name of your radio. And the name can be found on the menu settings of your radio. It can be composed by numbers, symbols, letters, Chinese characters, space, and special characters etc., with a maximum of 16 characters. HAM operators would use their call sign,

Rolling Code

This feature is for companies using larger quantities of DB25-D. If the checkbox is ticked the specified 'Radio ID.' Will get increased by one on each 'write' of the code plug to the next radio.

Language

Users can select a preset language from the device setting as menu display language.

Options: English
Chinese

Default: *English*

TOT

TOT as abbreviation for Time-Out-Timer defines the longest time allowed for each transmission.

Options: Maximum: 600s
Minimum: 20s
Increment: 10s

Default: *300s*

Busy Channel Lockout

In literature, this parameter is often abbreviated by BCL. Users are allowed to turn the Busy Channel Lockout on or off.

Options: On Turn on the busy channel lockout. The radio will be forbidden to transmit when receiving signals to protect the call quality of other users in this frequency.

Off Turn off the busy channel lockout. The radio is allowed to transmit while receiving signals.

Default: *Off*

VOX

Users are allowed to turn on or off VOX. With the VOX on, once the microphone detects the audio, the radio will transmit automatically.

Options: On Users don't have to press PTT to transmit.
Off Users should press PTT to transmit.

Default: *Off*

VOX Sensitivity

This is used to adjust the VOX sensitivity level. There are 12 levels. Among them, level 1 is the lowest while level 12 is the highest. It is recommended to choose a suitable level to avoid triggering VOX accidentally or having difficulty to trigger VOX. Some elements, such as component type, using surroundings, speaking volume of the user and so on, should be considered so as to choose the most suitable level to achieve the best performance.

Options: Maximum: 12
Minimum: 1
Stepping: 1
Default: 4

Power-saving

This value is not user changeable.

Default: On

Power Saving Ratio

This value is not user changeable.

Default: 1:1

Save power startup time

This value is not user changeable.

Default: 11 s

Scanmode

Users can enable this function according to the working environment and actual needs to set scan mode, so as to improve scan efficiency.

Scan mode options: CO: Carrier Off scan: Once radio receives a scanned signal over the air, it will stay on that channel until signal disappears, and then continue to scanning.
TO: Time-Out scan: Once the radio receives a scanned signal over the air, it will stay on that channel for a preset time (5/10/15/20s). Once time is over, it will continue to scan.
SE: Seek scan: Once the radio receives a scanned signal over the air, it will stay on that channel and stop scanning until you re-activate to scanning.

default: CO

Note: Whilst channel A is selected, channel B will no longer be monitored during scanning. Whilst channel B is selected, channel A will no longer be monitored during scanning.

End-tone types

Users can enable this function according to the working environment and actual needs to set the end-tone type after PTT released, so as to facilitate the receiver to turn off its speaker in advance.

End-tone options: 55HZ
120°
180°
240°

Default: 55HZ

Squelch (A) Level

Users can set the squelch level of expectations, when receiving carrier signal strength reaches the preset squelch level, the audio circuit can be turned on.

Selection range: Maximum value: 9
Minimum value: 1
Increment: 1
Squelch circuit off 0 (audio circuit normally open)

Default: 4

Note: The greater the squelch level value is set, the stronger the carrier signal needs to be. It is only available in Analog Mode.

Squelch (B) Level

Users can set the squelch level of expectations, when receiving carrier signal strength reaches the preset squelch level, the audio circuit can be turned on.

Selection range: Maximum value: 9
Minimum value: 1
Increment: 1
Squelch circuit off 0 (audio circuit normally open)

Default: 4

Note: The greater the squelch level value is set, the stronger the carrier signal needs to be. It is only available in Analog Mode.

Radio ID

You can program a unique ID to identify your radio. The other radios can use that ID to call you. For example, to initiate a private call or send a text message.

ID editable range: Max: 16776415
Minimum: 1
Increment: 1

Default: <empty>

Note: If the radio is used for DMR amateur radio, this is the place to setup your DMR ID.

Backlight ON/OFF

Users can enable this feature based on working environment and actual need, this will help to save the battery power, and prolong battery life.

Options: Off Screen Background Light is on the darkest condition.
On Screen lights on.
Auto Screen Background will turn off automatically if there is no operation within 1 minute.

Default: On

Keylock

User can lock or unlock the keypads according their actual needs.

Options: Off Turn off keylock feature.
Auto Keypad will be locked automatically if there is no operation within 1 minute. Long press the Menu-key (normally the channel knob) to unlock the keyboard.
Manual Long press the Menu-key (normally the channel knob) to lock or unlock the keyboard.
Auto&Manual Keypad will be locked automatically if there is no operation within 1 minute. Long press the Menu-key (normally the channel knob) to lock or unlock the keyboard.

Default: Off

Roaming

Users can enable this function according to the working environment and actual needs to set if to make radio directly start roaming after booting up.

Options: Off Do not start roaming after booting up.
On Start roaming after booting up.

Default: Off

Roaming Mode

Users can enable this function according to the working environment and actual needs to set the roaming mode, which is to improve the its user-friendly.

options: Auto When scanning a roaming list, radio will automatically switch to repeater channel with strong signal.
Manual When scanning a roaming list, radio will automatically switch to repeater channel with strong signal and exit the scan roaming.
Strong RSSI Priority When a repeater signal is higher than RSSI threshold, radio will switch to the repeater channel automatically.

Default: Auto

Record Set

Users can enable this function according to the working environment and actual needs to set recording functions.

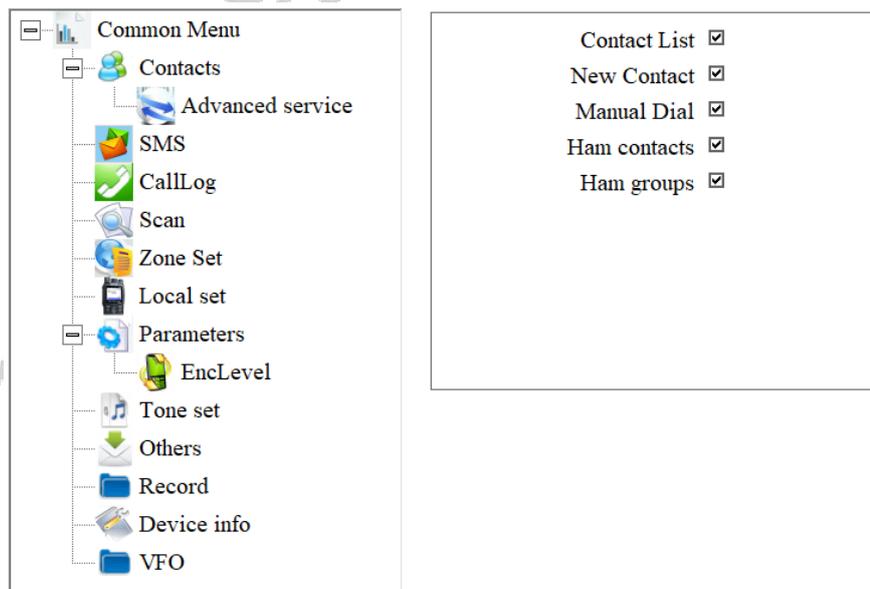
Options: Off Close the recording.
RX Record the received voice whenever radio is receiving
TX Record the voice call whenever radio is transmitting
TX/RX Record the transmitting and receiving voice call

Default: OFF

Note: This function is only available in digital mode.

6.3 Common Menus

Users can disable or enable some menu options to show on the radio screen, to prohibit or allow users to check and operate the menu items from the radio screen menu. Users can tick '☑' the various boxes next to the option, to allow users to check or program the corresponding item.



6.4 Prompt Tone

You can turn on or off all sounds and prompt tones thru this item, or just set partial prompt tones of specific radio items.

Prompt Tone	
Profiles	Standard
SMS prompt	3
Private Call Tone	4
Group Call Tone	5
Roaming restart prompt	3
Repeater selected prompt	3
Keytone	On
Volume	10
Low battery alert tone	On
Volume	10
Boot ringtone	On
Call hang up	On

Profiles

Select a predefined audio profile.

Mode Options: Standard All prompt tones of radio items are on
Silent All prompt tones of radio items are off

Default: Standard

SMS prompt

Once receiving a message, the message Tone will be heard if this option is selected.

Mode Options: off, 1~5

Default: 3

Private Call Tone

Once receiving a private call, the Private Call Tone will be heard if this option is selected.

Mode Options: off, 1~5

Default: 4

Group Call Tone

Once receiving a group call, the Group Call Tone will be heard if this option is selected.

Mode Options: off, 1~5

Default: 5

Roaming restart prompt

Users can select the 'Roaming restart prompt' option to play a prompt whenever the radio restarts roaming.

Mode Options: off, 1~5

Default: 3

Repeater lock prompt

Users can use the 'Repeater lock prompt' option to play this prompt when the radio scanned for a repeater and locked to it.

Default: 3

Keytone

You can turn on or off 'Keytone' thru this item.

Options: On Turn on Keytone
Off Turn off Keytone

Default: On

Keytone volume

You can increase or decrease the 'Keytone volume' thru this item.

Volume Range: Maximum: 13
Minimum: 1
Increment: 1

Default: 10

Low Battery Alert tone

After selecting it on, low battery alert will be heard when battery voltage is less than preset battery power level, which reminds you to charge or change the battery pack.

Options: On Turn on Low Battery Alert
Off Turn off Low Battery Alert

Default: On

Low Battery Alert volume

You can choose the volume of Low Battery Alert thru this item.

Volume Range: Maximum: 13
Minimum: 1
Increment: 1

Default: 10

Boot ringtone

User could turn on or off the tone for radio power ON through the option.

Options: On Turn on the power on prompt tone
Off Turn off the power on prompt tone

Default: On

Call hang up

This parameter is only been evaluated in digital mode. Depending on the settings of 'DMR Service' -> 'Group call hang time' and 'Private call hang time', a sound will be played (if this parameter is set to on), whenever the corresponding time period has exceeded.

Options: On Turn on Call hang up
Off Turn off Call hang up

Default: On

6.5 Indicator

You can enable or disable some status indicators thru this menu.

Indicator Set

All Indicators	On
TX Indicator	On
RX Indicator	On
Scanning Indicator	On
Low battery Indicator	On

All Indicators

You can activate or disable all working status indicators of the radio thru this item.

Options: On Turn on all working status indicators of the radio
Off Turn off all working status indicators of the radio

Default: On

TX Indicator

You can activate or disable the working status of the LED indicator for transmitting thru this item.

Options: On LED indicator is on when the radio is transmitting
Off LED indicator is off when the radio is transmitting

Default: On

RX Indicator

You can activate or disable the working status of the LED indicator for receiving a signal thru this item.

Options: On LED indicator is on when the radio is receiving
Off LED indicator is off when the radio is receiving

Default: On

Scanning Indicator

You can activate or disable the working status of the LED indicator for scanning thru this item.

Options: On LED indicator is on and flashing when the radio is scanning
Off LED indicator is off when the radio is scanning

Default: On

Low battery Indicator

You can activate or disable working status of the LED indicator for battery voltage being less than preset battery power level thru this item.

Options: On LED indicator is on and flashing when the battery voltage is less than preset battery power level
Off LED indicator is off when the battery voltage is less than preset battery power level

Default: On

6.6 Preset Buttons

Users can define the buttons through this menu.

Preset Buttons

Long Press Duration

Radio Buttons

	Long Press Functions	Short Press Functions
P1 key	<input type="text" value="Back"/>	<input type="text" value="Menu"/>
P2 key	<input type="text" value="Promiscuous"/>	<input type="text" value="Monitor"/>
P3 key	<input type="text" value="GPS"/>	<input type="text" value="A/B"/>
P4 key	<input type="text" value="Undefined"/>	<input type="text" value="Undefined"/>
P5 key	<input type="text" value="Monitor"/>	<input type="text" value="Undefined"/>
P6 key	<input type="text" value="Undefined"/>	<input type="text" value="Undefined"/>
P7 key	<input type="text" value="Undefined"/>	<input type="text" value="Undefined"/>

Long Press Duration

You can distinguish using functions between Long Press and Short Press thru this item.

Options: Longest: 5.0S
 Shortest: 0.5S
 Increment: 0.5S
Default: 2.0S

Possible settings are

Setting	Description
Undefined	Button is not assigned to any special function
High/Low power option	Allows users to switch between high power and low power
Backlight Auto on/off	Turn on and off the radio screen backlight
Keylock	To lock or unlock the radio keypads
VOX on/off	To turn VOX feature of the radio On and Off
Zone switch	To select a working zone
Scan on/off	Activate or disable radio scanning feature
Scan mode	Switch scanning mode among TO, CO, and SE
Repeater / Talk Around	Switch between Repeater mode and Talk Around

Setting	Description
Emergency Alarm on/off	Make an emergency alarm call or stop sending an emergency call. (Being available only in Digital Working Mode) Note: Not used within HAM networks
Encryption on/off	Turn radio encryption On or Off. (Being available only in Digital Working Mode) Note: Not used within HAM networks
Contacts	Access to contact list to make a call or activate any other additional call feature
SMS	Access to Message items
Radio Revive	Remotely revive a disabled (killed) radio. (Being available only in Digital Working Mode and if enabled on target radio)
Radio Detection	Detect and confirm if the radio is within the scope of the system activity without sending any indication or making visual inspection. (Being available only in Digital Working Mode and if enabled on target radio)
Radio Kill	Disable a target radio remotely, which can protect stolen or missed radios being used by others. (Being available only in Digital Working Mode and if enabled on target radio)
Remote Monitor	Remotely activate Mic and Transmitter of a target radio, and create a call silently without sending any indication or visual inspection message to the target radio, etc. (Being available only in Digital Working Mode and if enabled on target radio)
Monitor	Turn on or off radio squelch to receive weak analog signal. (Being available only in Analog Working Mode)
Permanent Monitor	Permanent Monitor is same as Monitor feature, which is allowing you to monitor the channel to make sure it is not occupied before transmitting; their difference is once Permanent Monitor is on, the radio will always be in this Monitor mode, till you exit it
1750Hz	To transmit 1750Hz signal. (Analog)
DTMF on/off	To turn DTMF on or off
Roaming on/off	To turn Roaming scan On or Off
GPS on/off	To turn GPS on or off
Menu	Press assigned P-key to access the menu without pushing the channel knob
Up	Emulating the microphones Up-Key
Down	Emulating the microphones Down-Key

Setting	Description
Back	Emulating the back button of the radio base on one of the microphones programmable keys (P4...P7)
DQT/QT	Switch between QT, DQT and DQI QT is the equivalent to CTCSS DQT is the equivalent to DCS DQI is the equivalent to DCS-inverted (Only available if selected channel is of type 'Analog')
A/B	Switch between Upper (A) and lower (B) channel (same as the B/E button on the radio base)
Volume	Emulating the Volume button of the radio base on one of the microphones programmable keys (P4...P7)
VFO	Turn VFO mode on or off
Promiscuous	Turn Promiscuous mode on or off (Only possible if selected channel is of type 'Digital')

6.7 Mic Gain

You can turn on, off or set the MIC gain level of the radio.

MIC1 refers to the Speaker-Microphone that comes with the DB25-D and is connected via the RJ45-Socket. Mic2 refers to a microphone attached to the K1-socket at the left side of the DB25-D.

MIC Gain

MIC Gain 1 ON/OFF	On
MIC Gain 1	8dB
MIC Gain 2 ON/OFF	On
MIC Gain 2	8dB

MIC Gain 1 ON/OFF

You can turn on or off Built-in MIC Gain 1 feature of the Speaker-Microphone that comes with the DB25-D and is connected via the RJ45-Socket and with the parameter turned 'On', the radio audio level will be amplified in accordance with the set-up gain ratio of Built-in MIC Gain 1, but the receiver can still adjust his own speaker level.

Options: On Turn on built-in MIC Gain 1 feature.
Off Turn off built-in MIC Gain 1 feature.

Default: On

MIC Gain 1

Deciding the audio amplification, where audio level of TX radio will be amplified on its value.

Option: Maximum: 20 dB
 Minimum: 0 dB
 Stepping: 4 dB
Default: 8 dB

Note: This option is effective ONLY when the status of the mic gain 1 is 'ON'.

MIC Gain 2 ON/OFF

You can turn on or off Built-in MIC Gain 2 feature of the microphone attached to the K1-socket at the left side of the DB25-D and with the parameter turned 'On', the radio audio level will be amplified in accordance with the setup gain ratio of built-in MIC Gain 2, but the receiver can still adjust his own speaker level.

Options: On Turn on built-in MIC Gain 2 feature.
 Off Turn off built-in MIC Gain 2 feature.

Default: On

MIC Gain 2

Define the gain rate and the transmitting audio will be amplified accordingly.

Option: Maximum: +43 dB
 Minimum: 0 dB
 Stepping: 1 dB
Default: 8 dB

Note: This option is effective ONLY when the status of the mic gain 2 is 'ON'.

6.8 Quick Msg

The users can pre-program up to 100 messages, each message content up to 40 characters. Valid characters include alphanumeric characters, spaces, and special characters. Users can access the function through the Message menu function.

Serial Number	Quick Msg(Max=40Bytes)
1	Hello
2	
3	
4	
5	
6	
7	
8	
9	
10	
11	
12	

6.9 DMR Service

Users are allowed to turn on or off the advanced services through DMR Services, if required.

DMR service	
Remote monitor duration	10S
Remote Monitor Decode	Off
Remote Kill Decode	Off
Radio Detection Decode	Off
Radio Revive Decode	On
Call Alert	On
Group call hang time	7000ms
Private call hang time	7000ms
Import Delay	200ms
DTMF Duration (On-time)	60ms
DTMF Interval (Off time)	60ms
DTMF Volume (Local)	7
DTMF ON/OFF	<input type="checkbox"/> 1234
GPS	On
GPS Interval	1Min
GPS Channel	Current Channel Se
Mandown	On
Mandown Interval	255min
Mandown Angle	90°
Mandown Alarm Duration	255s
Inactive time	1min
Pre-alarm Time	1s
Response transmission interrupt	On
Scrambling frequency	3600Hz
Keylock Password ON/OFF	On
Keypad Password	

Note: The parameters are all related to digital operation.

Remote monitor duration

By programming, users can program how long the radio will keep the microphone and transmitter on after it receives the remote monitor command from another radio. No visual or audio indication will be shown to your radio.

Options: Maximum: 120s
 Minimum: 10s
 Stepping: 10s
Default: 10s

Note: This is available ONLY in digital mode.

Remote Monitor Decode

It allows the radio to receive and deal with the 'Remote Monitor' command. The radio will activate the microphone and transmitter and send the audio activities of the surroundings for the specific time programmed after receiving the 'Remote Monitor' command. No indication will be shown.

Options: On Allow other users to activate and start remote monitor function
 Off Do not allow users to access to the remote monitor function
Default: Off

Note: This is available ONLY in digital mode.

Remote Kill Decode

It allows the radio to receive and deal with the 'Remote Kill' command. The radio will be forbidden to be used, which would be useful to protect a stolen or missing radio from being used by others.

Options: On Allow and accept to be killed by other radios
Off Forbid to be killed by others

Default: Off

Note: This is available ONLY in digital mode.

Radio Detection

Users or base station operators can send a 'Radio Detection' command to a target radio to see whether it is active in the system, and without showing any indications.

Options: On Allow and accept to be detected by other radios
Off Forbid other radios to detect this radio

Default: Off

Note: This is available ONLY in digital mode.

Radio Revive

It allows the radio to receive and deal with the 'Radio Revive' command, and activate itself to be used again.

Options: On Allow and accept to be revived by other radios
Off Forbid other radios to revive this radio

Default: Off

Note: This is available ONLY in digital mode.

Call Alert

It allows the radio to receive and deal with the "Call Alert" command, and will reply to it at its convenience.

Options: On Allow the radio to receive the call alert command
Off Forbid the radio to receive call alert command

Default: Off

Note: This is available ONLY in digital mode.

Group Call Hang Time

The duration that the radio will reply back to a received call or continues the transmitted Talk within a Group Call of the received or transmitted digital Group ID. This allows to answer on a call, although the active talkgroup is not selected within the current channel, but is a member of the RX group that is associated with

the current channel. After the specified time has expired, the channel will transmit to the designated contacts (digital group) as programmed for the current channel.

Options: Maximum: 7000 ms
Minimum: 0 ms
Increment: 500 ms

Default: 3000 ms

Note: This is available ONLY in digital mode.

Private Call Hang Time

The free time for Talk Around Private Call after releasing PTT button, which can prevent more calling when you press PTT to transmit every time. In this period, as the channel is free, other radios can still transmit. After the specified time has expired, the channel will transmit to the designated contact as programmed for the current channel.

Options: Maximum: 7000 ms
Minimum: 0 ms
Increment: 500 ms

Default: 3000 ms

Note: This is available ONLY in digital mode.

Import Delay

By setting this parameter, user can set the duration time from the PTT pressed to the first DTMF code sent, when radio call is issued.

Options: Maximum: 500 ms
Minimum: 50 ms
Increment: 10 ms

Default: 200 ms

Note: This is available ONLY in digital mode.

DTMF Duration (On-time)

To change the duration of each DTMF code send by setting this parameter.

Options: Maximum: 500 ms
Minimum: 50 ms
Increment: 10 ms
Recommendation: 100 ms

Default: 60 ms

Note: This is available ONLY in digital mode.

DTMF Interval (Off-time)

To change the time interval between the end of each DTMF code and the next DTMF code by setting this parameter.

Options: Maximum: 500 ms
Minimum: 50 ms
Increment: 10 ms
Recommendation: 100 ms
Default: 60 ms

Note: This is available ONLY in digital mode.

DTMF Volume

To adjust the volume of local playback sound of the DTMF code issued by the radio, by setting this parameter.

Options: Maximum: 12
Minimum: off
Increment: 1
Recommendation: 8
Default: 7

Note: This is available ONLY in digital mode.

DTMF code

By setting this parameter, users can make the radio send out a set of DTMF codes in advance when PTT is pressed, so as to achieve the effect of a phone ring. DTMF code supports 11-character (0-9, ABCD*#) composition.

Default: 1234

Note: This is available ONLY in digital mode.

GPS

By setting this parameter, users can turn on the GPS module.

Options: Off Close the GPS
On Open the GPS

Default: Off

Note: This is available ONLY in digital mode.

GPS interval

Once the GPS feature is activated, The DB25-D will send the GPS data whenever the 'GPS interval' has elapsed.

Options: Max: 250 min
Min: Off (No interval)

Default: 1 min

Note: This is available ONLY in digital mode.

GPS channel

Once GPS activated, the radio will send the GPS data to others from the appointed channel. It can be any digital channel including the channel selected by channel selector.

Default: *off*

Note: At least on channel is to be used as group call.
If every digital channel has a group contact, the appointed option is effective.
This is available ONLY in digital mode.

Mandown

This value is not applicable for the DB25-D. Please ignore it.

Default: *On*

Mandown Interval

This value is not applicable for the DB25-D. Please ignore it.

Default: *255 min*

Mandown Angle

This value is not applicable for the DB25-D. Please ignore it.

Default: *90°*

Mandown Alarm Duration

This value is not applicable for the DB25-D. Please ignore it.

Default: *255 s*

Inactive Time

This value is not applicable for the DB25-D. Please ignore it.

Default: *1 min*

Pre-alarm Time

This value is not applicable for the DB25-D. Please ignore it.

Default: *1 s*

Response transmission interrupt

This value is not applicable for the DB25-D. Please ignore it.

Default: *On*

Scrambling frequency

This value is not applicable for the DB25-D. Please ignore it.

Default: *3600 Hz*

Keylock Password On/Off

This value is not applicable for the DB25-D. Please ignore it.

Default: On

Keypad Password

This value is not applicable for the DB25-D. Please ignore it.

Default: ----

6.10 APRS

The APRS (Automatic Packet Reporting System) protocol has first been used back in the early 80s and got lot of extensions since then. Within amateur radio and in combination with a GPS receiver it is mainly used to publish the current geographic position to a repeater or an iGate whereas those do forward the information to other sites, such as <https://aprs.fi> or <https://www.aprsdirect.com/>. More details on APRS to be found at <http://www.aprs.org/>.

The DB25-D is capable of analog and digital transmission of GPS position data (called 'APRS beacon') using APRS protocol.

Those parameters in common with both are specified within the topmost block of the APRS parameters.

Manual TX Intervals[s]	0	Latitude (degrees)	0	N
APRS Auto TX Intervals[s]	0	Longitude (degrees)	0	E
Beacon	Fixed Location			

Analog APRS

For Analog APRS data, check which frequency and further parameters are to be used for your region. Within the CPS, those settings required for analog APRS are specified within the following block:

TX Freq[MHz]	0	Transmit Power	Low	Your SSID	0	APRS Signal Path	
TX QT/DQT	Off	APRS Tone	Off	Your Call Sign		Your Sending Text	
Transmit Delay	0ms	Destn SSID	0	APRS Symbol Table			
Prewave Time	0ms	Destn Call Sign		APRS Map Icon			

Digital APRS

For Digital APRS a DMR network is required and the APRS-message is sent to a certain talk group either as Private or as Group call, depending on the DMR network and country/region. A total of 8 possible Digital APRS settings may be defined. Within the channel definition one of those 8 digital APRS settings or the analog APRS setting may be selected for APRS.

No	Report Channel	APRS TG	Report Slot	Call Type	PTT
1	Current channel	0	Current Slot	Private call	Off ▾
2	Current channel	0	Current Slot	Private call	Off
3	Current channel	0	Current Slot	Private call	Off
4	Current channel	0	Current Slot	Private call	Off
5	Current channel	0	Current Slot	Private call	Off
6	Current channel	0	Current Slot	Private call	Off
7	Current channel	0	Current Slot	Private call	Off
8	Current channel	0	Current Slot	Private call	Off

Manual TX Interval[s]

When using analog APRS, an APRS packet (beacon) will be send out on the very first use of the PTT key. This also triggers the 'Manual TX Interval timer'. As long as the timer has not reached its specified value, new APRS packets will not be send when PTT gets depressed. This APRS packet transmission is independent of the specified 'APRS Auto TX Intervals'.

Interval period: Maximum: 255
 Minimum: 0
 Increment: 1

Default: 30

APRS Auto TX Intervals[s]

It makes little sense to transmit the current position too often. This parameter defines the interval at which the current position is to be transmitted via APRS protocol.

Interval period: Maximum: 7650
 Minimum: 0
 Increment: 30

Default: 120

Beacon

If the DB25-D is mainly used as a radio station at home, we advise to not use GPS but set the GPS-data within the APRS protocol to the fixed location as specified with the parameters 'Latitude' and 'Longitude'

Options: Fixed Location
 GPS Location

Default: *GPS Location*

Latitude (degrees)

Latitude and Longitude define an exact position on earth. The parameters 'Latitude' and 'Longitude' are used when 'Fixed Location' had been selected for the APRS functionality.

Default: 0

Note: This parameter is mandatory if using APRS with 'Fixed Location'.

Longitude (degrees)

Latitude and Longitude define an exact position on earth. The parameters 'Latitude' and 'Longitude' are used when 'Fixed Location' had been selected for the APRS functionality.

Default: 0

Note: This parameter is mandatory if using APRS with 'Fixed Location'.

TX Freq [MHz]

The frequency specified with this parameter for analog APRS is totally independent of the selected channels frequency. The APRS beacon is transmitted using 1200 Baud AFSK. The frequency data within the following table is subject to change without prior notice.

Region	Frequency
Argentina, Uruguay	144.9300 MHz
Australia	145.1750 MHz
Austria (test)	433.8000 MHz
Brazil	145.5700 MHz
Chile	144.3900 MHz
China	144.6400 MHz
Colombia	144.3900 MHz
Europe	144.8000 MHz
Germany	432.5000 MHz
Indonesia	144.3900 MHz
International Space Station (ISS)	145.8250 MHz
Japan	144.6400 MHz
Malaysia	144.3900 MHz
Netherlands (test)	430.5125 MHz
New Zealand	144.5750 MHz
North America	144.3900 MHz
Russia	144.8000 MHz
South Africa	144.8000 MHz
Taiwan	144.6400 MHz
Thailand	145.5250 MHz

Default: 0

Note: This parameter is only relevant for analog APRS

TX QT/DQT

It may be required to setup CTCSS or DCS whenever transmitting your position on analog APRS to a repeater or iGate. This parameter is normally 'off' (no CTCSS/DCS used), but may be assigned any of the supported CTCSS frequencies or DCS/DCS-I values. See Appendix A for supported CTCSS frequencies and DCS/DCS-I values.

Default: *Off*

Note: This parameter is only relevant for analog APRS

Transmit Delay

The two parameters 'Transmit Delay' and 'Prewave Time' are responsible for the delay between automatic PTT activation (for analog APRS) and the actual transmission of the APRS beacon.

Delay period: Maximum: 5100 ms
Minimum: 0 ms
Increment: 20 ms

Recommended: *80 ms*

Note: This parameter is only relevant for analog APRS

Prewave Time

The two parameters 'Transmit Delay' and 'Prewave Time' are responsible for the delay between automatic PTT activation (for analog APRS) and the actual transmission of the APRS beacon.

Time period: Maximum: 2550ms
Minimum: 0ms
Increment: 10ms

Recommended: *100 ms*

Note: This parameter is only relevant for analog APRS

Transmit Power

The output power for analog APRS can be set to either High or Low.

Options: High Use 20W output power whenever a stronger signal is required to enhance the transmit range.

Low Use the 5W option for short range communication

Default: *High*

Note: This parameter is only relevant for analog APRS

APRS Tone

If you want to hear the transmitted APRS packet (AFSK modulated) you may set this parameter to 'On'.

Options: Off
On

Default: *Off*

Note: This parameter is only relevant for analog APRS

Destn SSID

The specified digit will be appended to the destination call sign

Value: Maximum: -15
Minimum: 0
Increment: -1

Default: 0

Note: This parameter is only relevant for analog APRS

Destn Call Sign

This parameter is required to specify the destination call sign and may not be left empty for analog APRS.

Recommended: *APAT81*

Note: This parameter is only relevant for analog APRS

Your SSID

To further specify the type of station that sends out an APRS beacon, 15 SSIDs have been assigned as follows:

SSID	Definition
0	Your primary station usually fixed and message capable
-1	generic additional station, digi, mobile, wx, etc.
-2	generic additional station, digi, mobile, wx, etc.
-3	generic additional station, digi, mobile, wx, etc.
-4	generic additional station, digi, mobile, wx, etc.
-5	Smartphone user
-6	Satellite or special operations (Camping)
-7	walkie talkies, HT's or other human portable
-8	boats, sailboats, RV's or second main mobile
-9	Primary Mobile (usually message capable)
-10	internet, iGates, echolink, winlink, AVRS, APRN, etc
-11	balloons, aircraft, spacecraft, etc
-12	APRStt, DTMF, RFID, devices, one-way trackers, etc
-13	Weather station
-14	Truckers or generally full-time drivers
-15	generic additional station, digi, mobile, wx, etc

The specified digit will be appended to your own call sign as specified within the parameter 'Your Call Sign'.

Value: Minimum: 0
Maximum: -15

Recommended: *-9* For using your DB25-D in a car

Note: This parameter is only relevant for analog APRS

Your Call Sign

This parameter is also mandatory for analog APRS as it does specify your own call sign

Default: <empty>

Note: This parameter is only relevant for analog APRS

APRS Symbol Table

Initially APRS supported just 192 different symbols. This has recently been enhanced to several thousands. The selected 'APRS Symbol Table' in combination with the selected 'APRS MAP Icon' define the symbols that will be used within sites such as <https://aprs.fi> or <https://www.aprsdirect.com/> to visually show the type of station at its current location. More details on that topic to be found at <http://www.aprs.org/symbols.html>. Recommended setting for 'APRS Symbol Table': '/

Recommended: /

Note: This parameter is only relevant for analog APRS

APRS Map Icon

Initially APRS supported just 192 different symbols. This has recently been enhanced to several thousands. The selected 'APRS Symbol Table' in combination with the selected 'APRS Map Icon' defines the symbol that will be used within sites such as <https://aprs.fi> or <https://www.aprsdirect.com/> to visually show the type of station at its current location. More details on that topic to be found at <http://www.aprs.org/symbols.html>. The recommended setting for 'APRS Map Icon' will lead to a car being displayed on sites such as <https://aprs.fi> or <https://www.aprsdirect.com/>.

K Truck

[Human person (used for HT)

Recommended: > Car

Note: This parameter is only relevant for analog APRS

The following table lists the resulting icons according to the selected 'APRS Symbol Table' in combination with the selected 'APRS Map Icon'.

Table	!	"	#	\$	%	&	'	()	*	+	,	-	.	/	0
/																
\																

Table	1	2	3	4	5	6	7	8	9	:	;	<	=	>	?	@	
/																	
\																	

Table	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
/																
\																

Table	Q	R	S	T	U	V	W	X	Y	Z	[\]	^	_	`
/																
\																

Table	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
/																
\																

Table	q	r	s	t	u	v	w	x	y	z	{		}	~		
/																
\																

By selecting the 'APRS Symbol Table' and 'APRS Map Icon', you define the resulting icon that will be displayed on APRS service pages such as <https://aprs.fi> or <https://www.aprsdirect.com/>. The following table list the most used icons and their corresponding 'APRS Symbol Table', 'APRS Map Icon' and 'SSID' that are applicable for your DB25-D:

Note: We advise not to take any other combinations besides those listed.

Description	APRS Symbol Table	APRS Map Icon	Icon	SSID
Human Person (with HT)	/	[	-7
Car	/	>		-9
Truck	/	K		-14

More on those APR Symbol Table and Map Icons to be found at:

<https://www.aprsdirect.com>.

APRS Signal Path

This parameter defines the path your APRS beacon packets should take.

Recommended: *WIDE1-1WIDE2-1*

Note: There is no space between 'WIDE1-1' and 'WIDE2-1'.
This parameter is only relevant for analog APRS

Your Sending Text

Within this field a maximum of 60 alphanumeric characters may be defined. Those text will become part of the APRS beacon and will be displayed alongside the Call sign on maps such as <https://aprs.fi> or <https://www.aprsdirect.com/>.

Recommended: *using Radioddity DB25-D*

Note: This parameter is only relevant for analog APRS

No

A total of 8 APRS reporting channel definitions is possible for digital APRS. For each of those definitions, you may specify a different 'Report Channel', 'APRS TG', 'Report Slot', 'Call Type' and 'PTT' setting.

Note: This parameter is only relevant for digital APRS

Report Channel

You may either specify a specific channel out of all channels that are within your various zone definitions or just use the current channel whenever APRS beacon data is to be transmitted.

Default: *Current channel*

Note: This parameter is only relevant for digital APRS

APRS TG

In digital APRS the APRS data will be transmitted to the talk group, specified by this parameter. The talk group is depending on the network that is used by the defined APRS channel. The following table lists some of those talkgroups as found on the DMR Brandmeister network.

	Talk group (TG)	Report Slot	Call Type
France	208999		Private Call
Germany	262999	2	Private Call
Greece	202999		Private Call
Hungary	216950-216959		Private Call
North America	310999		Private Call
Norway	242999		Private Call
Poland	260099		Private Call
Portugal	268999		Private Call
United Kingdom	232999	2	Private Call

Note: This parameter is only relevant for digital APRS

Report Slot

As digital APRS makes use of DMR repeaters we need DMR Tier 2 with its support for time slots. This parameter defines the time slot to be used for transmitting your APRS beacon data. You may either specify a specific time slot or just use the timeslot of the currently selected digital channel.

Default: *Current Slot*

Note: This parameter is only relevant for digital APRS

Call Type

Depending on the digital network used by the specified APRS channel, the transmission of the APRS beacon is either established as a 'Private Call' or as a 'Group Call'. Check with your digital network provider on the required setting. As for digital DMR Brandmeister network, APRS calls are transferred as 'Privat Call'.

Default: *Private call*

Note: This parameter is only relevant for digital APRS

PTT

Define if PTT should trigger the transmission of an APRS beacon

Options: Off Do not send an APRS beacon when radio is keyed up
On Send an APRS beacon when radio is keyed up

Default: *Off*

Note: This parameter is only relevant for digital APRS

6.11 Encryption

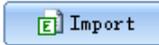
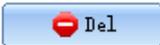
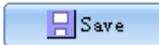
Users are allowed to program a maximum of 10 encryption key names and their 2 Byte encryption key values. The encryption level (low, middle and high) should be programmed to be the same. Otherwise, the encryption value can't be used. If the encryption level is programmed to be 'off', this function can't be used.

Note: This feature only works with radios of same brand and model.
This feature may not be used by HAM operators!

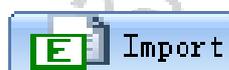
6.12 Contacts

Contact list

It is convenient for users to create, modify, edit, add and delete digital Contacts in the current channel, or to copy ham contacts or Ham groups to the contact list, which is convenient for you to call an associated contact or talk group on a specified channel for communication. If necessary, you can create, modify, edit, add, delete the contacts and groups that are in your 'Contact list'. The capacity of this contact list can reach up to 2000 private contacts or groups, including 'Contact name' (call sign or Talk group), 'Contact ID' (DMR ID) and 'Call Type' (mainly 'Private Call' or 'Group Call').

ADD QTY	<input type="text" value="1"/>		
Delete QTY	<input type="text" value="1"/>		

Serial No	Contact name	Contact ID	Call Type
1	Parrot	262997	Private call
2	local	9	Group Call
3	regional	8	Group Call
4	Ruhrgebiet	26243	Group Call
5	NRW	2624	Group Call
6	DE	262	Group Call
7	EU	92	Group Call
8	WW	91	Group Call



If you press the button 'Import', you will be directed to the default file path of the system, and you can directly import a CSV file of digital contacts. For your convenience we have included a sample file 'contacts 2000.csv'. This sample file

has a couple of sample contacts their 'Serial No', 'Contact ID', 'Contact name' and 'Call Type', whilst the following assignment is valid for the different call types:

Call Type #	Call Type
1	Group call
2	Private call
3	All call
4	No-address call
5	RawData
6	Define Data
7	SPDATA

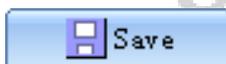
Normally only Call Type 1 (Group call) and Call Type 2 (Private call) are used. If you need to update the imported contacts CSV file, you need to re-import the updated digital contacts CSV file to replace the previously imported contacts.

The format of the CSV file is as follows:

```
Serial No,Contact ID,Contact name,Call Type
```

```
my contacts.csv
1 Serial No,Contact ID,Contact name,Call Type,1-Group Call2-Private call3-All call4-No-address call5-RawData6-Define Data7-SPDATA
2 1,677,Call1,1
3 2,2,Call2,2
4 3,3,Call3,2
5 4,16777200,Call4,3
6 5,5945,Call5,1
7 6,6,Call6,1
8 7,7,Call7,1
9 8,8,Call8,1
10 9,9,Call9,1
```

Note: We advise to not use Excel but some plain text editor such as <https://notepad-plus-plus.org/> to edit CSV files.



What 'Import' is for getting CSV file data into the CPS is 'Save' for storing it into a CSV file. If you press the 'Save' button, you will be directed to the default file path of the system in order to directly save the current content of your 'Contact list' to a CSV file of your choice.



To manually add one or more records ('Serial No's) to the 'Contact list', first specify the total number of records you want to add within the field labeled 'ADD QTY' before you push the button '+ Add'. Be careful as to not exceed the maximum number of allowed records.



To manually delete one or more records ('Serial No's) from your current 'Contact list', first specify the total number of records you want to delete within the field labeled 'Delete QTY', then position the cursor at the Serial No you want to start the delete-process at before you push the button '- Del'. Be careful as to not try deleting more records than actually do exist.

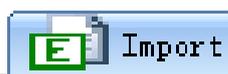


To save the 'Contact list' to the radio, click on 'Write' within the top menu selection of the CPS. Do not forget to do that.

Ham contacts

The 'Ham contacts' is mainly used for high-end users or amateur groups. At the same time, it allows users to create, modify, edit, add and delete the ham contacts list through a CSV file, or download the CSV file of the ham contacts from a designated website or other ways directly import or copy it to the CSV file and then import. This 'Ham Contacts' can hold up to 300,000 Contacts with details such as 'Contact Alias' (call sign), 'Contact ID' (DMR ID), 'Name' (Name of operator), 'City', 'State/Province' and 'Country'.

<input type="checkbox"/> Serial No	Contact Alias	Contact ID	Name	City	State	Country/Region
<input type="checkbox"/> 1	WHP562	1186223	Floor M	American Canyon	National Capital	Philippines
<input type="checkbox"/> 2	WHP562	1186276	Floor M	American Canyon	National Capital	Philippines
<input type="checkbox"/> 3	KP1TR	3760001	Seffner	Seffner	All Regions	Puerto Rico
<input type="checkbox"/> 4	KP1TR	3760017	Seffner	Seffner	All Regions	Puerto Rico
<input type="checkbox"/> 5	YY1BNC	7220008	Valencia	Valencia	Aragua	Venezuela
<input type="checkbox"/> 6	YY1BNC	7220012	Valencia	Valencia	Aragua	Venezuela
<input type="checkbox"/> 7	YY1BNC	7220011	Valencia	Valencia	Carabobo	Venezuela
<input type="checkbox"/> 8	YY1BNC	7220011	Valencia	Valencia	Carabobo	Venezuela
<input type="checkbox"/> 9	HI200P	3760011	Miraflores Valdes	Coson	Samana	Dominican Rept
<input type="checkbox"/> 10	HI200P	3760011	Miraflores Valdes	Coson	Samana	Dominican Rept
<input type="checkbox"/> 11	LU800T	7220008	Olivos	Olivos	Buenos Aires	Argentina Repul
<input type="checkbox"/> 12	LU800T	7220011	Olivos	Olivos	Buenos Aires	Argentina Repul
<input type="checkbox"/> 13	LU800T	7220008	Olivos	Olivos	Buenos Aires	Argentina Repul
<input type="checkbox"/> 14	KP1TR	3760001	St. Thomas	St. Thomas		U.S. Virgin Islar
<input type="checkbox"/> 15	KP1TR	3760001	St. Thomas	St. Thomas		U.S. Virgin Islar
<input type="checkbox"/> 16	NP1Y2	3760011	San Juan	San Juan		Puerto Rico



If you press the 'Import' button, you will be directed to the default file path of the system in order to directly import a CSV file of digital contacts. For your convenience we have included a sample file 'Ham contacts_ALL_20200505193301 max 200000.csv' within the installation directory of the DB25-D CPS. This sample file has more than 160000 records with their 'DMR ID', 'Call sign', 'Full name', 'City', 'State/Province' and 'Country'.

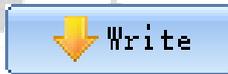
If you need to update the imported contacts CSV file, you need to re-import the updated digital contacts CSV file to replace the previously imported contacts.

The format of the CSV file is as follows:

```
Intercom ID (DMR ID),Alias (Call sign),Name, City, State/Province, Country,,,,
```



Note: We advise to not use Excel but some plain text editor such as <https://notepad-plus-plus.org/> to edit CSV files.
Due to a bug within the CPS/firmware, the file needs to be sorted with ascending DMR IDs.



When you have imported the digital contacts CSV file, you can press the 'Write' button to write the list to the radio. Only The 'Ham contacts' will be written to the radio. This is the only way to write the 'Ham contacts' to the radio.

Tip: You can choose what information and details to write using these two options:

<input checked="" type="radio"/> 16Bytes <input type="radio"/> 128Bytes	Choose this option, to just write the 'Contact ID' (DMR ID) and the 'Contact alias' (call sign) of the ham contact to the radio. This option significantly minimizes the time to write the contacts to the radio.
<input type="radio"/> 16Bytes <input checked="" type="radio"/> 128Bytes	Choose this option, to write all details of the ham contacts including 'Contact ID' (DMR ID), 'Contact alias' (call sign), Name, City, State, Country/Region and address etc to the radio. This is very convenient for the user to browse and view detailed contact information. However, this option <u>significantly</u> increases the required time to transfer the contact details to the radio. For 200.000 Ham contacts this currently takes about an hour.

Note: This function only applies to the digital 'Private call' type.



When you have imported the digital contacts CSV file, you can select your desired friend contacts from it, and then tick '☑' in the '☐' box next to serial number. After all the required contacts have been selected, press the 'copy' button to copy the name and number of the selected contacts to the 'Contacts list' which make it more convenient for you to call an associated contact on a specified channel for communication. Once copy successes, 'Has copied to Contacts list successfully' will pop up. If necessary, you can modify, create, edit, add, delete contacts in the

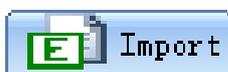
contacts list. The 'Contacts list' capacity can be up to 2000 private contacts (or talk groups) including name, number and call attributes.

Remark: The call type of contact ID selected should be same as the target radio, so as for communication.

Ham groups

The ham groups is mainly used for high-end users or amateur groups. At the same time, it allows users to create, modify, edit, add and delete the ham groups through the CSV file, or download a CSV file of the ham groups through a designated website or other ways directly import or copy it to a CSV file and then import. This 'Ham groups' can hold up to 20,000 groups, including details such as digital group name (Talk Group Name) and Group ID (Talk Group ID).

<input type="checkbox"/> Serial No	Groups name	Groups ID
<input type="checkbox"/> 1	Worldwide	1
<input type="checkbox"/> 2	Local 2 (SW FL Regional)	2
<input type="checkbox"/> 3	North America	3
<input type="checkbox"/> 4	Local 9	9
<input type="checkbox"/> 5	Worldwide German	10
<input type="checkbox"/> 6	Worldwide English	13
<input type="checkbox"/> 7	Worldwide Spanish	14
<input type="checkbox"/> 8	Brandmeister WW	91
<input type="checkbox"/> 9	Brandmeister NA	93
<input type="checkbox"/> 10	UA German 1	110
<input type="checkbox"/> 11	UA English 1	113
<input type="checkbox"/> 12	UA Spanish 1	114
<input type="checkbox"/> 13	UA All Lang 1	119
<input type="checkbox"/> 14	UA German 2	120
<input type="checkbox"/> 15	UA English 2	123
<input type="checkbox"/> 16	UA Spanish 2	124



If you press the 'import' button, you will be directed to the default file path of the system in order to directly import a CSV file of Ham groups. If you need to update the imported 'Ham group' CSV file, you need to re-import the updated 'Ham group' CSV file to replace the previously imported 'Ham groups'.

The format of the CSV file is as follows:

TG #,Talkgroup,TS



TG #	Talkgroup	TS
1	Worldwide	1
2	Local 2 (SW FL Regional)	2
3	North America	1
9	Local 9	2
10	Worldwide German	1
13	Worldwide English	1
14	Worldwide Spanish	1
91	Brandmeister WW	1
93	Brandmeister NA	1

Note: We advise to not use Excel but some plain text editor such as <https://notepad-plus-plus.org/> to edit CSV files.



When you have imported the ham groups CSV file, you can select your desired groups from it, and then tick '☑' in the '☐' box next to serial number. After all the required groups have been selected, press the 'Copy' button to copy the Groups name and Groups ID of the selected ones to the 'Contact list' which is convenient for you to call an associated group on a specified channel for communication. Once copy has completed, 'Has copied to Contacts list successfully' will pop up. Then, you can check the 'Contact list'. If necessary, you can modify, create, edit, add, delete contacts and groups within the 'Contact list'. The 'Contact list' capacity can be up to 2000 private contacts, including Contact name, Contact ID and Call Type.



After you have imported the 'Ham groups' CSV file, you can press the button 'Write' to transfer the data to the radio. Only the hams groups will be written to the radio. This is the only way to write 'Ham groups' to the radio.

Note: This function only applies to the digital 'Group call' type.

6.13 Digital Alarm List

The user can create, modify, edit, or delete the set of alarm system in the digital alarm list. The digital alarm system list is the signaling protocol used to communicate in an emergency in digital mode. Up to 4 digital alarm systems can be created

Serial	List name	Alarm type	Alarm mode	Alarm Channel	Impolite Attempts	Emergent MIC Duration
1	A1	Standard	Emergency Alarm	Off	2	6S
2	A2	Standard	Emergency Alarm	Off	2	6S
3	A3	Standard	Emergency Alarm	Off	2	6S
4	A4	Standard	Emergency Alarm	Off	2	6S

Note: The alarm type cannot be set as disable.
This function only applies to digital mode.

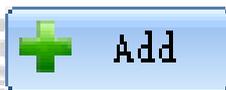
6.14 Scan List

A Scan/Roaming list can be associated with each channel. Once scan is 'On', this Scan/Roaming list will be monitored for activity on the current channel. If Roaming is turned 'On' within the 'Basic Parameters' menu, the radio will scan the repeater channels on the roaming list to search for a available repeater station. To perform a roaming scan, the list must contain repeater channels. Every channel can only enable whether scan or roaming scan. A maximum of 250 groups of scan lists can be setup, with a maximum of 50 members per group.

Note: When Scanning is turned on and VFO A is currently selected, the radio will no longer monitor VFO B. When Scanning is turned on and VFO B is currently selected, the radio will no longer monitor VFO A.

Scan List

The user can edit, rename, or delete the name of the scan/roaming list. The maximum length of the Scan list name may need exceed 10 characters, using letters, numbers, spaces and special marks. Leaving the name empty is not allowed. It is possible, to set up a maximum of 250 San lists, each containing up to 50 Channels.



Press the button '+ Add' to add a new scan list with the name specified by the input field 'Scan List' to the existing scan lists. The total number of scan lists will increase by 1.



Mark one of the existing scan lists. Its name will be displayed in the input field 'Scan List'. Now press the button '- Del' to delete than scan list from the existing scan lists. The total number of scan lists will decrease by 1.

Talkback

The feature allows the user to press PTT key to transmit on the current received channel, during scanning or within 3s after the received signal has disappeared.

Options: On Activate Talkback
Off Deactivate Talkback. Talkback/reply will be based on the setting of 'Scan TX Mode'.

Default: Off

Note: When the talkback is set 'ON', the setting of 'Scan TX Mode' will be ignored. When the talkback is set 'Off', the setting of 'Scan TX Mode' will be evaluated.

Scan TX Mode

During scanning process, it is allowed to initiate a call or reply back on the current channel by pressing the PTT-key when a scanned signal disappeared or scanning stops.

Options: Current channel Transmit only in the initial channel before the scan starts.
Last Operated Channel Transmit only in the last operated channel where the radio stays lastly or scan stops.
Appointed channel Transmit only on the selected channel.

default: *Appointed channel*

Note: The 'Scan TX Mode' is only valid when 'Talkback' function set 'off' or after scanned signal disappears within 3s.

Appointed Channel

To select a specific channel out of all channels that are within your various zone definitions for transmitting and replying during scanning. When set to 'Off', the channel won't be available for transmitting and replying during scanning.

Default: Off

Note: The setting is only used, when the 'Scan TX Mode' is set to 'Appointed Channel'.

Optional Channel

Displays all available channel members that can be added to the scan/roaming list.

Note: When you add a member shown in the 'Optional Channels' window to the scan/roaming list, the selected channel member information will no longer appear in the 'Optional Channels' window, unless you delete the channel member from the 'Selected Channels' window.

Selected Channels

Lists all channel members selected and added to the scan/roaming list. You can add up to 50 channel members. You can review the available scan/roaming list member information in the 'Selected Channels' window. You can also remove any of the channel members from the 'Selected Channels' window, and the removed channel members will no longer participate in any activity of the scan/roaming list members. Any available channel can optionally be associate to the scan/roaming list.



Click on one of the members within the 'Optional Channels' window and press the button '+ Add' to add that member from the 'Optional Channels' window to the 'Selected Channels' window.

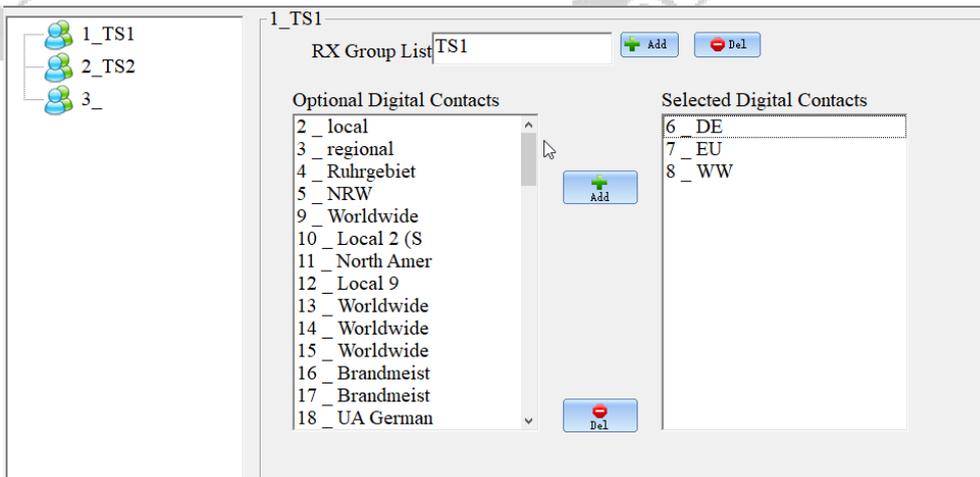


Click on one of the members within the 'Selected Channels' window and press the button '- Del' to remove that member from the 'Selected Channels' window. It will then be listed within the 'Optional Channels' window.

Note: When you remove members of the 'Selected Channels' windows from the scan/roaming list, the information of that channel will no longer be displayed in 'Selected Channels' windows but they will again be listed within the 'Optional Channels' windows.

6.15 RX Group

An RX Group needs to be setup for the user to initiate a group call to members with the same configuration. You can set or select any group from the available lists (1-250) as a 'RX Group List' (up to 100 RX Group Lists).



Within the Channel settings a RX Group should be assigned to each channel.

Note: This feature is available only in digital mode.

6.16 Zone [Channel]

Zone is a collection of channels. The user can customize the zone and channel capacity according to the actual needs. A zone supports 1~3999 digital or analog channels.

Note: When editing channel information, the user can select digital or analog channels based on the type of channels.

Zone name

Users can edit, modify and delete the zone name. A maximum of 10 characters can be entered. Valid characters include numbers, symbols, letters, spaces and special characters.

7 Setup of channels

A channel is defined by several parameters. Some of them apply both, to analog as well as digital channels, others apply to analog or digital channels only. The following 25 chapters do explain all those parameters in more detail.

7.1 Z-1

The number within this column of the channel definition is just an internal number and designates the position of that channel within the selected zone. Currently it

is not possible to alter a channels position, except if you use the 'Import' and 'Safe' functions and resort the channels within a CSV file. Whenever a channel is been deleted, all other channels following to the position that got deleted will be shifted upwards and such getting decreased 'Z-1' numbers.

7.2 CH mode

User could choose the current channel working mode from the option.

Possible modes:	Analog	Channel will become an analogue channel
	Digital	Channel will become an analogue channel
	A&D,TX-A	Channel can receive both digital and analogue signal, but will transmit analogue
	A&D,TX-D	channel can receive both digital and analogue signal, but will transmit digital

Default: *Analog*

7.3 CH Name

The display will show channel the channel name. Users can create, edit, rename or delete the channel name. The maximum length for the channel name is 10 characters. Those can be numbers, symbols, letters, space or Chinese characters.

7.4 RX Freq

Users can set the channels receive frequency (in MHz). The possible frequency depends on the available frequency ranges of the DB25-D.
In 'Digital' mode, the DB25-D does not support simplex DMR Tier 1 operation with different TX and RX frequency. Whenever the RX and TX frequencies are different, the channel will be defined as a repeater channel (using DMR Tier 2), using time slots to communicate with the repeater.

7.5 TX Freq

Users can set the channels transmit frequency (in MHz). The possible frequency depends on the available frequency ranges of the DB25-D.
In 'Digital' mode, the DB25-D does not support simplex DMR Tier 1 operation with different TX and RX frequency. Whenever the RX and TX frequencies are different, the channel will be defined as a repeater channel (using DMR Tier 2), using time slots to communicate with the repeater.

7.6 Power

For each channel the transmit output power can be set independently. You can edit it through programmable buttons of short key or long key (H/L Power) or the menu for power function ('Menu' -> 'Parameters' -> 'Power').

Options: High Use 20W output power whenever a stronger signal is required to enhance the transmit range.
Low Use the 5W option for short range communication

Default: High

7.7 Only RX

Each of the channels defined within a zone may be set for receive only.

Options: On Limit the channel to only receive
Off Transmitting and receiving is possible for that channel

Default: Off

7.8 Alarm

Users can decide to show a visual notification when they received an alarm call. If the function is disabled, the radio will not respond when it receives an alarm call. This option is based per channel.

Options: Off Disable decoding of alarm call
On Enable decoding of alarm call

Recommended: Off

7.9 Prompt

The radio will not respond when it receives an alarm call. The call prompt is requesting the receiver either to call back the transmitter when they can communicate. It is only available in the channel to receive the call tone. This option is based per channel.

Options: Off Disable alarm call prompt
On Enable alarm call prompt

Recommended: Off

7.10 PCT (Private Call Type)

This function sets the Private Call Type of the current channel either to PATCS (Press And Talk Call Setup) or OACSU (Off Air Call Set Up).

Options: PATCS There is no need to give the radio a respond, they can send the voice to the radio directly.

OACSU It needs to give the radio a respond, then it will send the voice to the radio.

Default: *PATCS*

Note: This parameter is only available in digital mode.

7.11 RX TS

The DB25-D is based on TDMA technology and can divide a 12.5kHz channel into two alternate time slots.

When operating a digital repeater or duplex-hotspot with the DB25-D, normally the digital repeater does have a TX-frequency different to its RX-frequency and uses DMR Tier 2 for transmission. DMR Tier 2 makes uses of the time slot technique, allowing two separate information channels to be transmitted using the very same physical channel. Normally the time slots (TS) for TX and RX have to be set to the very same time slot, either 1 or 2.

Whereas, when operating a simplex station (such as a simplex hotspot), normally, DMR Tier 1 is in place. DMR Tier 1 does not make use of those timeslots.

Whenever TX-frequency and RX-frequency are identical (which is the case in simplex mode), a third option 'On' (for direct simplex mode) becomes available for such channel.

Options:

Slot 1	Use DMR Tier 2, time slot 1 for RX
Slot 2	Use DMR Tier 2, time slot 2 for RX
On	Use DMR Tier 1 for RX without any time slots

Default: *On*

Note: This parameter is only available in digital mode.

7.12 TX TS

The use of this parameter is identical to 'RX TS', except that it refers to transmit mode of the DB25-D.

Options:

Slot 1	Use DMR Tier 2, time slot 1 for TX
Slot 2	Use DMR Tier 2, time slot 2 for TX
On	Use DMR Tier 1 for TX without any time slots

Default: *On*

Note: This parameter is only available in digital mode.

DMR use with simplex hotspot

Most Ham operators nowadays do have their own personal hotspot. Some of those hotspots do support 'full duplex', others only support 'simplex' operation. In

order to successfully use a simplex hotspot with your DB25-D channel definition needs to be different than for duplex repeaters or duplex hotspots. Whilst duplex-systems use DMR Tier 2, simplex systems do use DMR Tier 1 or Tier 2 but requiring to use just one fixed time slot (often TS 2).

In order to instruct the radio to use DMR Tier 1 (which is only possible when TX and RX frequency are both the same), select the option 'On' for 'RX TS' and 'TX TS' within the channel definition.

RX Freq	TX Freq	Power	Only RX	Alarm	Prompt	PCT	RX Time	TX Time	RX CC	TX CC	Msg Type	TX Policy	GCL
436.00000	436.00000	Low	Off	On	On	Pates	On	On	1	1	Unconfirm	Impolite	1

All other required parameters are identical to those of a duplex channel.

Note: The option to set ,RX TS ' and ,TX TS' to ,On' is only available if RX and TX frequency are both the same and 'CH Mode' is set to 'Digital'

7.13 RX CC (Color Code)

Users can assign a color code for a RX channel. The channel Color Code can be same or different, but a repeater can have only one Color Code.

A single Color Code is used to identify a single system. Different Color Codes are used to identify multiple systems sharing the same frequency. This feature can be switched between channels using the same operating frequency but with different Color Codes.

Normally the Color Code RX and TX have to be set to the very same value.

Option range: Maximum: 15
Minimum: 0
Increment: 1

Default: 1

Note: This parameter is only available in digital mode.

7.14 TX CC

Users can assign a color code for a TX channel. The channel Color Code can be same or different, but a repeater can have only one Color Code.

A single Color Code is used to identify a single system. Different Color Codes are used to identify multiple systems sharing the same frequency. This feature can be switched between channels using the same operating frequency but with different Color Codes.

Normally the Color Code RX and TX have to be set to the very same value.

Option range: Maximum: 15
Minimum: 0
Increment: 1

Default: 1

Note: This parameter is only available in digital mode.

7.15 Msg Type

This parameter allows user to decide which message type to be used when they send a message to another radio.

Options:

Unconfirmed data	When the radio received the message from the transmitter, it will not reply.
Confirmed data	When the radio received the message from the transmitter, it will reply automatically.

Default: *Unconfirmed data*

Note: This parameter is only available in digital mode.

7.16 TX Policy

The Transmit Limit is represented by the TX Policy. It refers to the behavior when pressing the PTT-key at the radio. The activity status of the current channel determines how the radio will react.

Options:

Impolite	Regardless of the current channel activity, pressing the PTT-Key immediately triggers a transmission.
Polite to CC	Regardless of the channel being available, as long as the Color Code (CC) matches, pressing the PTT-Key will trigger a transmission.
Polite to ALL	Only if the current channel is available, pressing the PTT-Key will trigger a transmission.

Default: *Impolite*

7.17 RX Group

In order to be able to receive a group call within the channel, a 'RX Group' should be defined and assigned to the channel. Only those groups, that are listed with their Digital Contact (Talk group ID) within the assigned 'RX Group' may be heard when listening to the channel. If set to 'Off' you will not hear any group calls on this channel, unless the group ID is the same as the TX Contact ID (Talk group ID). This function is used to receive more than just the group selected by the specified entry of the 'Contact List' when listening to the channel.

Default: *Off*

Note: This parameter is only available in digital mode.

7.18 Encryption List

Users can use this feature to encrypt the selected digital channels. Encryption is a kind of software based scrambling solution and not very reliable, thus only to prevent eavesdropping. Part of the transmitted signal and user identification is not encrypted. The receiver must have the same encryption key and encryption type as the transmitter, in order to decrypt the encrypted voice calls and receive encrypted data. You can enable or disable the encryption of the channel by using a short press or by long press custom button ('Encryption On/Off'). The radio uses the encryption settings of the selected channel to transmit encrypted signals, but the receiver does not need to do so. The encrypted channel is still capable for receiving a clear transmit signal (After decryption).

Before Using an "Encryption List" please configure its key ID and digital encryption key initialization, otherwise it will use the default values.

Default: *Off*

Note: This parameter is only available in digital mode.

Attention: Using encryption techniques is not allowed if the radio is used in a Ham environment.

7.19 Scan List

A predefined 'Scan List' may be assigned to the channel. During the scan, all members on the specified list will be scanned for activity. If the parameter is set to 'Off', the scan function on this channel will be disabled, (Including auto scan).

Note: If set to 'Off', auto scan will be disabled.

7.20 Contacts

Each digital channel may be assigned a specific Contact. Whenever the PTT-key is pressed, the radio will start to transmit a call on the selected channel and targeted to the specified contact our group. If a group call is initiated and another Contact ID (group ID) is already active within that channel, the call will be terminated to signal that a call may currently not be initiated.

If this parameter is set to 'Off', a call on the channel will not be possible, making it a RX-only channel. Only those Contacts, defined within the 'Contact list' may be selected.

Note: This parameter is only available in digital mode.

7.21 EAS (Emergency Alarm System)

Connect all available digital emergency systems to this channel for emergency usage. To disable the use of the digital Alarm List, select 'Off'. Before using the Emergency Alarm System, it needs to be defined within the 'Digital Alarm list'.

Note: This parameter is only available in digital mode.
Digital Alarm systems are not supported within Ham radio networks.

7.22 Bandwidth

For each channel it is possible to specify the working bandwidth for TX and RX frequency. Narrow band as 12.5 kHz and Wide band as 25 kHz. In digital mode, the channel bandwidth is set for 12.5 kHz and cannot be changed or adjusted.

7.23 RX SQ

The user can select decoder type or decoder value of CTCSS, DCS or DCS-I when the radio receives the effective carrier signal. The function can avoid the interference of the same frequency or independent carrier signal.

Options: QT	Only if the CTCSS decoding frequency of the DB25-D is consistent with the CTCSS frequency of the transmitting radio, squelch will be opened.
DQT	Only if the DCS decoding value of the DB25-D is consistent with the DCS encoding of the transmitting radio, squelch will be opened on the DB25-D.
Reverse DQT	Only if the DCS inverted decoding value of the DB25-D is consistent with the DCS inverted encoding of the transmitting radio, squelch will be opened on the DB25-D.
Off	Squelch will be opened regardless of the CTCSS, DCS or DCS-I values received from the transmitting radio.

Default: Off

Note: This parameter is only available in analog mode.

7.24 RX QT/DQT (RX CTCSS/DCS)

Depending on the option selected as 'RX SQ', this is the place to specify the CTCSS frequency or DCS/DCS-I code.

See Appendix A for supported CTCSS frequencies and DCS/DCS-I values.

Default: Off

Note: This parameter is only available in analog mode.

7.25 TX SQ

The user can select the encoder type or encoder value of CTCSS, DCS or DCS-I when the radio transmits the effective carrier signal. The function can avoid the interference of the same frequency or independent carrier signal.

Options:

Q T	Only if the CTCSS encoding frequency of the DB25-D is consistent with the CTCSS frequency of the receiving radio, squelch on the receiving radio will be opened.
DQT	Only if the DCS encoding value of the DB25-D is consistent with the DCS encoding of the receiving radio, squelch on the receiving radio will be opened.
Reverse DQT	Only if the DCS inverted encoding value of the DB25-D is consistent with the DCS inverted decoding of the receiving radio, squelch on the receiving radio will be opened . DCS inverted values are displayed as 'DxxxI'.
Off	Squelch will be opened regardless of the CTCSS, DCS or DCS-I values received from the transmitting radio.

Default: Off

Note: This parameter is only available in analog mode.

7.26 TX QD/DQT

Depending on the option selected as 'TX SQ', this is the place to specify the CTCSS frequency or DCS/DCS-I code.

Default: Off

Note: This parameter is only available in analog mode.

7.27 APRS

Specify the APRS channel to be used when transmitting the APRS beacon. Either one of the 8 digital APRS channels or the analog APRS definition may be assigned for APRS of this channel.

Options:

maximum:	8
Minimum:	1
Increment:	1
APRS(A)	Transmit the APRS beacon using analog APRS
Off	Turn off APRS for this channel

Default: Off

Note: Analog APRS 'APRS(A)' is currently only possible if the channel is analog as well (CH Mode set to 'analog').

8 Firmware update

In general, an update of PC-software (CPS) or radio-firmware should only be done if it is really required, following the golden rule **'If it isn't broken, don't fix it!'**.

Install program for firmware update

To install the updater, just unzip the archive you downloaded from Radioddity support and double click on the file named 'IAP(setup).exe'. This will install the firmware update program on your Windows machine and place a shortcut on your desktop.



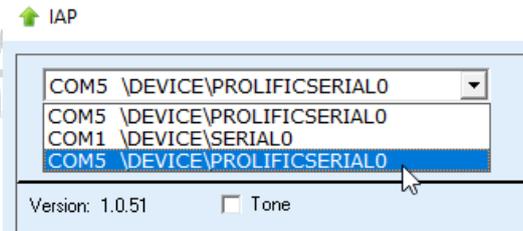
8.1 Perform Firmware update

In order to perform a firmware update, the radio needs to be put into firmware upgrade mode first. To do so:

1. Turn off the radio
2. Close the CPS (in case it had been running) in order to make sure the virtual COM-port of your programming cable is not occupied.
3. Connect your Radioddity DB25-D via the supplied programming cable to your Windows PC
4. Press the 'P1' button on top of the Radioddity DB25-D and keep it depressed
5. Additionally press the 'power button' left to the 'P1' button on the Radioddity DB25-D to turn it on
6. The status-LED will constantly light up red
7. The display will stay blank and backlight will be on, regardless of your normal settings
8. Release the 'P1' button.
9. Now start the updater



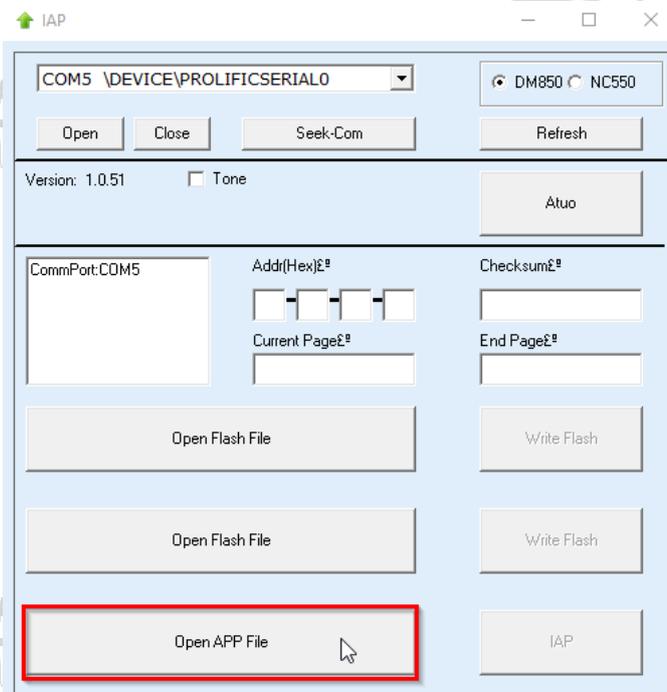
- Choose the virtual COM-port that does represent your programming cable



- Click on 'Open'



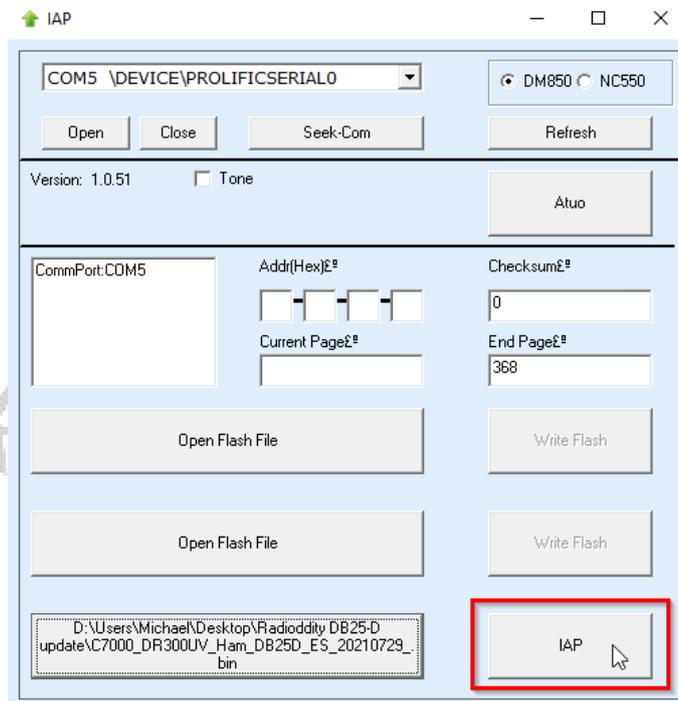
- If the updater is able to connect to your Radioddity DB25-D, it will output 'IAP Successfully'. If it isn't able to connect to the radio, it will stay on 'CommPort:COMx' (where 'x' represents the selected virtual COM-port number of your DB25-D programming cable). If you forgot to shutdown the CPS, you will get a 'The COMM port is occupied or doesn't exit!' error.
- Next click on the button 'Open APP file'.



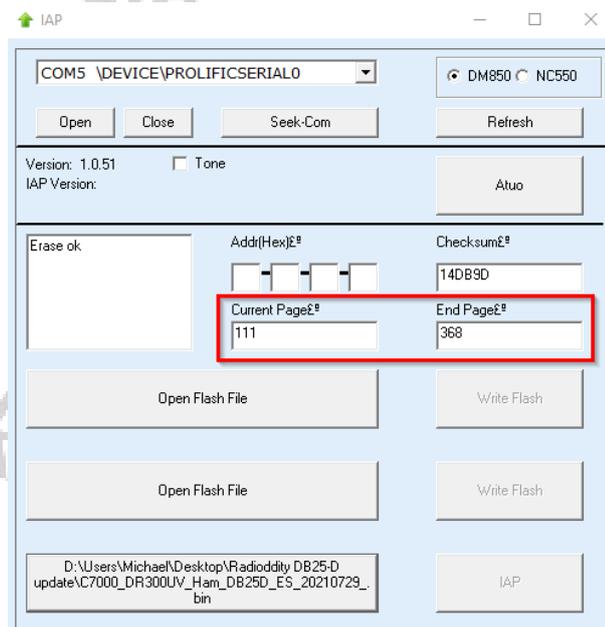
- Now navigate to the path that does contain the update file that is intended to be transferred to the Radioddity DB25-D, such as: 'C7000_DR300UV_Ham_DB25D_20210902.bin'.

Note: Do not use update files intended for other radios, even if those may be looking similar to the Radioddity DB25-D. Using files not intended to be put on a Radioddity DB25-D may result in a loss of any guarantee.

15. To start the actual update process click on the 'IAP' button.



16. Do not press any key on the radio, do not remove power, just wait until the radio has finished the update process and turns off! During the update process, the status-LED will flash green and red and the application show the progress by the increasing number of 'Current Page'.



17. As soon as the update has finished, the radio will automatically shut down.
18. You may now normally power on the radio again.
19. To check which firmware version currently is installed, click: MENU → Device Info → Version

You will get a screen similar to:

```
Version
DB25-D
909E.D4.EARSAB.008.
F136-174, F400-480
Sep  2 2021
15:40:32
Back
```

9 Revision history of this document

We are constantly trying to update our manuals according to changes resulting of new firmware versions. If you miss any aspect in this document or believe that something has been described incorrectly or in a misleading way, please feel free to give us feedback at support@radioddity.com. We will try our best to make the next version of this document of even more added value for you.

revision	Changes	released
v1.1	Minor bugfixes, more details regarding the APRS settings, renaming of parameters due to updated CPS version 3.3, new chapters on factory default setting and firmware upgrade. Renamed to 'Addendum to the DB25-D manual'	2021-09-14
v1.0	Initial version	2021-08-02

We would like to thank all DB25-D customers for their constructive feedback.

10 CPS Release notes

The following lists the release notes for new versions of the CPS.

10.1 CPS 3.3 as of September 6th, 2021

- New function 'FactoryReset' for saving factory defaults to the radio
- Additional 'Group call hang time' of 30s and 60s
- Startup logo exchanged

10.2 CPS 3.2 as of August 17th, 2021

- No more unwanted changes of parameters
- Additional shortcut 'Ctrl+S' for saving the codeplug to the PC
- Display of readable text within the communications window
- Update of built-in help texts
- Headlines in channel definitions shortened and no longer truncated
- Renaming of 'GCL' to 'RX Group' within channel settings
- Correction of popups
- Proper display of APRS(A) within channel settings
- Using 'Del' within the 'Contact list' now deletes, starting at the current cursor position

11 Firmware Release notes

The following table lists the release notes for new versions of the firmware.

11.1 Firmware 909E.D4.EARSAB.008. as of September 2nd, 2021

- Improved single VFO display (full screen now utilized)
- Factory reset reverts back to the factory settings saved from the CPS
- Record number / max record number no longer displayed during transfers

12 Common problems and how to solve them

Problem	Solution
Channel selector knob does no longer allow to switch between the channels	Turn on Channel Sw: MENU (press knob) -> Local Set -> Channel Sw ->MENU (press knob to change setting) When the indicator turns GREEN, you have again assigned the Channel select function to the knob.
Do not want to be interrupted by activity on second channel (which is not selected)	Turn off Dual-Channel mode:
Contact details not shown during QSO	Make sure that the Ham contacts have been imported from a CSV file, sorted by ascending DMR IDs.
Activities on VFO currently not selected does not activate squelch	Turn off any SCAN-mode as the scanning feature requires the unselected VFO.

13 Appendix A

The DB25-D supports a total of 51 CTCSS (Continuous Tone Coded Sub audio Squelch) frequencies, 103 normal DCS values and additional 103 inverted DCS values.

13.1 Supported CTCSS frequencies

62,5	67,0	69,3	71,9	74,4	77,0	79,7	82,5
85,4	88,5	91,5	94,8	97,4	100,0	103,5	107,2
110,9	114,8	118,8	123,0	127,3	131,8	136,5	141,3
146,2	151,4	156,7	159,8	162,2	165,5	167,9	171,3
173,8	177,3	179,9	183,5	186,2	189,9	192,8	196,6
199,5	203,5	206,5	210,7	218,1	225,7	229,1	233,6
241,8	250,3	254,1					<i>All figures in Hz</i>

13.2 Supported DCS (Digital Coded Squelch)

0nn	1nn	2nn	3nn	4nn	5nn	6nn	7nn
D017N	D114N	D205N	D306N	D411N	D503N	D606N	D703N
D023N	D115N	D212N	D311N	D412N	D506N	D612N	D712N
D025N	D116N	D223N	D315N	D413N	D516N	D624N	D723N
D026N	D122N	D225N	D325N	D423N	D523N	D627N	D731N
D031N	D125N	D226N	D331N	D431N	D526N	D631N	D732N
D032N	D131N	D243N	D332N	D432N	D532N	D632N	D734N
D036N	D132N	D244N	D343N	D445N	D546N	D645N	D743N
D043N	D134N	D245N	D346N	D464N	D565N	D646N	D754N
D047N	D143N	D246N	D351N	D465N		D654N	
D050N	D145N	D251N	D356N	D466N		D662N	
D051N	D152N	D252N	D364N			D664N	
D053N	D155N	D255N	D365N				
D054N	D156N	D261N	D371N				
D065N	D162N	D263N					
D071N	D165N	D265N					
D072N	D172N	D266N					
D073N	D174N	D271N					
D074N		D274N					

13.3 Supported DCS-I (Digital Coded Squelch Inverted) values

0nn	1nn	2nn	3nn	4nn	5nn	6nn	7nn
D017I	D114I	D205I	D306I	D411I	D503I	D606I	D703I
D023I	D115I	D212I	D311I	D412I	D506I	D612I	D712I
D025I	D116I	D223I	D315I	D413I	D516I	D624I	D723I
D026I	D122I	D225I	D325I	D423I	D523I	D627I	D731I
D031I	D125I	D226I	D331I	D431I	D526I	D631I	D732I
D032I	D131I	D243I	D332I	D432I	D532I	D632I	D734I
D036I	D132I	D244I	D343I	D445I	D546I	D645I	D743I
D043I	D134I	D245I	D346I	D464I	D565I	D646I	D754I
D047I	D143I	D246I	D351I	D465I		D654I	
D050I	D145I	D251I	D356I	D466I		D662I	
D051I	D152I	D252I	D364I			D664I	
D053I	D155I	D255I	D365I				
D054I	D156I	D261I	D371I				
D065I	D162I	D263I					
D071I	D165I	D265I					
D072I	D172I	D266I					
D073I	D174I	D271I					
D074I		D274I					

14 Technical specifications of the DB25-D

All of the following technical specifications are subject to change without further notice.

14.1 General specifications

Parameter	VHF	UHF
Frequency	136...174 MHz	400...480 MHz
Frequency Stability	±2.5 ppm	
Type	Dual band, Dual standby, Dual mode	
Digital mode	TDMA 2-time slot technology (Tier 1 and Tier 2)	
Digital vocoder	AMBE+2™	
Digital agreement	ETSI-TS 102 361-1, -2, -3	
Zones	16	
Channel Capacity	4000 (250 Channels per Zone)	
PLL Channel Spacing	12.5 kHz / 25 kHz	
Operating Temperature	-20° C...+60° C	
Antenna Impedance	50 Ω	
Rated Voltage	13.8V DC ±10%	
Current Consumption	Standby: 0.1 A	
	Receive: 0.3 A	
	Transmit: 3 A	
Dimension (H x W x D)	121.5 mm x 65.5 mm x 42.5 mm	
Weight (without microphone)	1500 g	
Compatible With American Military Standard (MIL-STD-810C/D/E)		

14.2 Receiver

Parameter	VHF	UHF
Frequency Range	136...174 MHz	400...480 MHz
Channel Spacing	12.5 kHz / 25 kHz	
Operating Bandwidth	$\leq \pm 5$ kHz @ 12.5 kHz / $\leq \pm 7$ kHz @ 25 kHz	
Frequency stability (-20 °C ... +25 °C)	± 1.5 ppm	
IFs	51.550 MHz	
FM modulation Type	12.5 kHz: 11KOF3E / 25 kHz: 16KOF3E	
Sensitivity (12 db SINAD)	0.25uV @ 12.5 kHz / 0.2 uV @ 25 kHz	
Squelch Selectivity	0.2 uV @ 12.5 kHz / 0.15 uV @ 25 kHz	
Analogue sensitivity	0.3 μ V / 0.25 μ V	
Digital sensitivity (5 % BER)	0.25 μ V / 0.2 μ V	
Intermodulation	≥ 70 dB	
Adjacent Channel Selectivity	≥ 65 dB @ 12.5 kHz / ≥ 70 dB @ 25 kHz	
Spurious rejection	65 dB	
Image Rejection	≥ 70 dB	
Rated audio	500 mW	
Audio Distortion @ rated audio	≤ 5 %	
FM hum & noise	-40 dB @ 12.5 kHz / -45 dB @ 25 kHz	
Audio response	+1 dB, -3 dB	
Conducted / radiated emission	-57 dBm	

14.3 Transmitter

Parameter	VHF	UHF
Frequency Range	144...148 MHz	420...450 MHz
Channel Spacing	12.5 kHz / 25 kHz	
Frequency stability (-20°C, +25°C)	± 1.5 ppm	
Low Power	5 W	5 W
High Power	20 W	20 W
FM modulation Type	12.5 kHz: 11KOF3E / 25 kHz: 16KOF3E	
Modulation restriction	± 2.5 dB @ 12.5 kHz / ± 5 dB @ 25 kHz	
FM hum & noise	-40 dB @ 12.5 kHz / -45 dB @ 25 kHz	
Conducted / radiated emission	-36 dBm < 1GHz / -30 dBm > 1 GHz	
Adjacent channel selectivity	-60 dB @ 12.5 kHz / -65 dB @ 25 kHz	
Maximum Deviation	$\leq \pm 2.5$ kHz @ 12.5 kHz $\leq \pm 5.0$ kHz @ 25 kHz	
Spurious Emission	≤ 65 dB below carrier	
Modulation Distortion	≤ 5 % (300...3000 Hz)	
Audio Response	+1 dB, -3 dB	
Audio Distortion	3%	
4FSK digital modulation	12.5 kHz data: 7K60F1D and 7K60FXD 12.5 kHz audio: 7K60F1E and 7K60FXE	

14.4 Connectivity

The Radioddity DB25-D has various sockets for connecting power, antennas, speaker-microphone, programming cable and other accessories. Their internal connections are as follows:

HF Antenna

Socket of type SO-239, requiring plug of type PL-259.

GPS antenna

Socket of type SMA female, requiring antenna with plug of type SMA-male. The GPS antenna that comes with the Radioddity DB25-D is a passive one and absolutely sufficient for use with the DB25-D.

If you plan to add an external antenna to the DB25-D you need to make sure that sufficient input level gets to the DB25-D. This will more or less require the use of an active GPS antenna. The operation of active antennas often requires a DC voltage coupled from the radio (here DB25-D) via the antenna line to the GPS antenna. The DB25-D does not provide such DC coupling. If your active GPS antenna comes with an external power supply, it might work. However We do not recommend to use any other GPS antenna than the passive one that came with the Radioddity DB25-D.

As the main use-case for the Radioddity DB25-D is within a car or truck, there is normally no need for any special GPS antenna besides the one that comes with the Radioddity DB25-D.

Power

The connector is of so called T-type and often used within cars for 2pin connections. Your Radioddity DB25-D came with the proper counterpart, connected to a plug that does fit in a car's cigarette lighter socket in order to get you on the air within seconds, without the hassle of any specific wiring for your car.

Attention: Do not power the Radioddity DB25-D with no more than 13.8V DC

K1 connector

At the left side of the radio there is a K1 socket with the following pin assignment:

Signalname	K1
PTT / Radio RXD	3.5 mm sleeve
MIC+	3.5 mm ring
GND	2.5 mm sleeve
Radio TXD	2.5 mm ring
Speaker+	2.5 mm tip





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