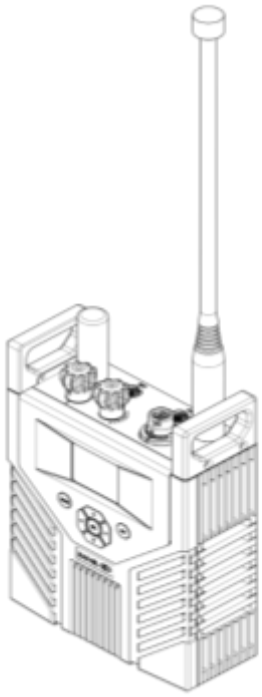
Broadband Network Manpack Soldier (MPS) Software Defined Radio (SDR)

Draft Technical Manual



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1 SAFETY INSTRUCTIONS

1.1 WARNINGS, CAUTIONS AND NOTES

Warnings and cautions precede the text and follow the paragraph heading to which they apply. Notes may precede or follow applicable text, depending upon the material to be highlighted. Warnings, cautions or notes are concise statements used to emphasize important or critical data. The definitions of warning, caution and note are as follows:

WARNING

Highlights an essential operational procedure, practice, condition, statement etc., which if not strictly observed, could result in injury to, or death of, personnel or in long term health hazards.

CAUTION

Highlights an essential operational procedure, practice, condition, statement etc., which if not strictly observed could result in damage to, or destruction of equipment or loss of mission effectiveness.

NOTE

Highlights an essential operational or maintenance procedure, condition, or statement.

2 MANPACK SOLDIER

2.1 GENERAL DESCRIPTION

Manpack Soldier (MPS) is a modular multiband SDR for tactical users and commanders.

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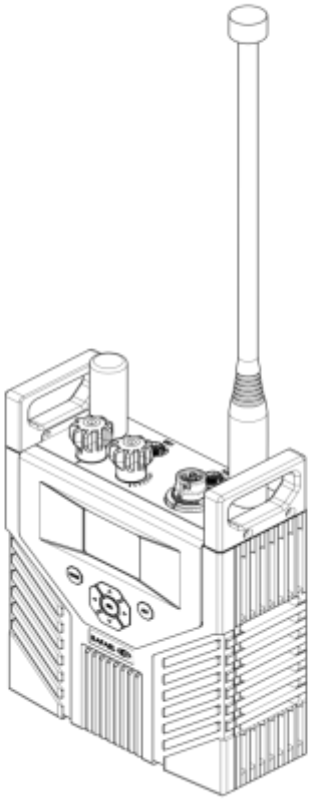

Figure 2-1: Manpack

2.2 PHYSICAL DESCRIPTION

Table 2-1: Manpack – Physical Description

No	Name	Description
1	GPS antenna	• Connects to the MPS via an RF connector. • Receives GPS signals from the GPS satellite.
2	UHF/VHF antenna	• Connects to the MPS via an RF connector. • Enables coverage for the V/UHF frequency band 30-406.1 MHz.
3	Display	Displays the unit software interface.
4	C-module service inlet	Used for C-module maintenance.
5	Label	Provides the P/N and details about MPS.

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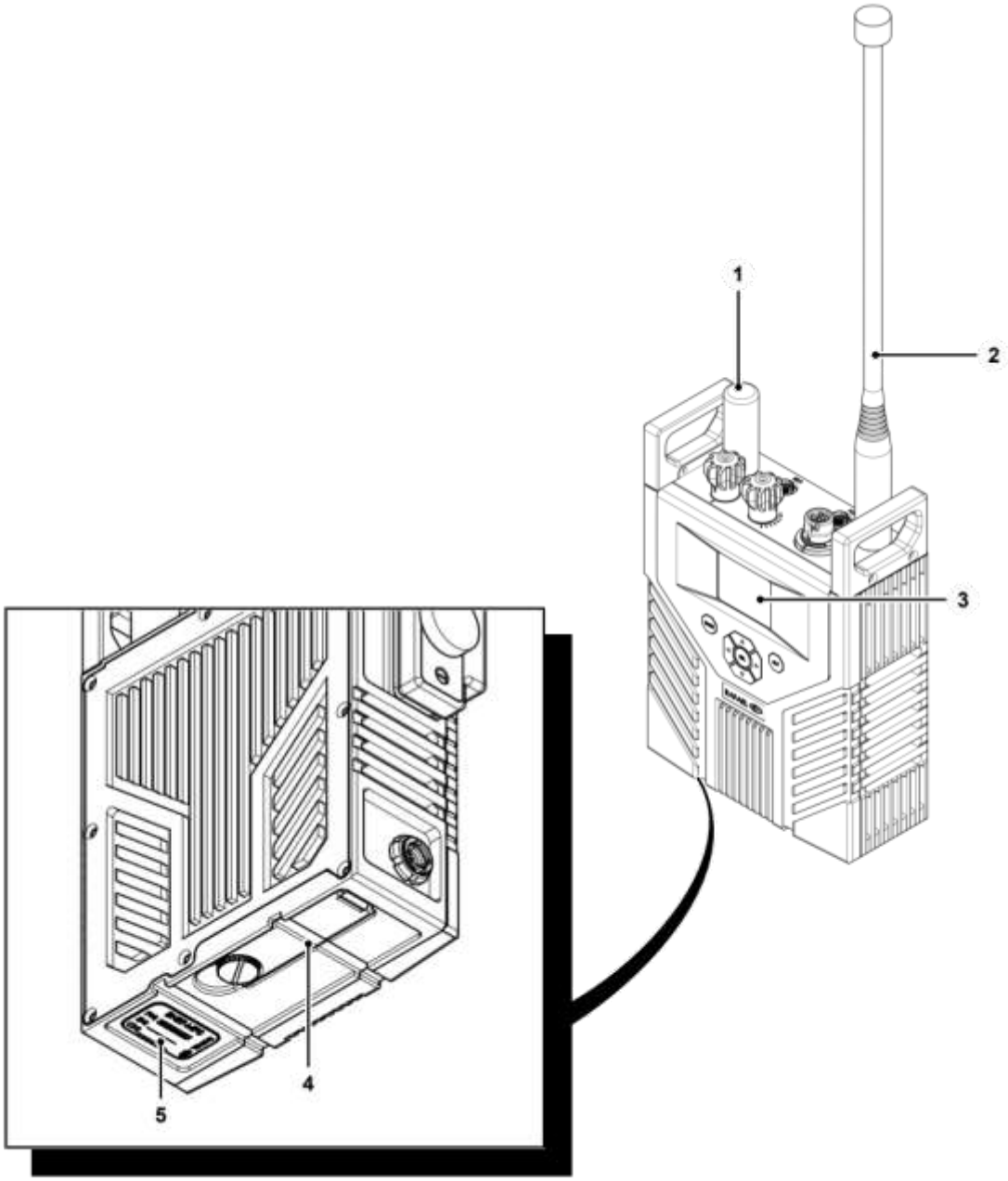

Figure 2-2: Manpack - Physical Description

2.3 CONTROLS AND INDICATORS

Table 2-2: Manpack – Controls and Indicators

No	Name	Description
1	Volume knob	Used for increasing/decreasing the volume.
2	Channel selector	Used for selecting different presets.

No	Name	Description
3	Back	Navigates to the previous menu.
4	Navigation keys	Used for navigating the interface.
5	ALT	Used for setting the ALT button in a dedicated function.

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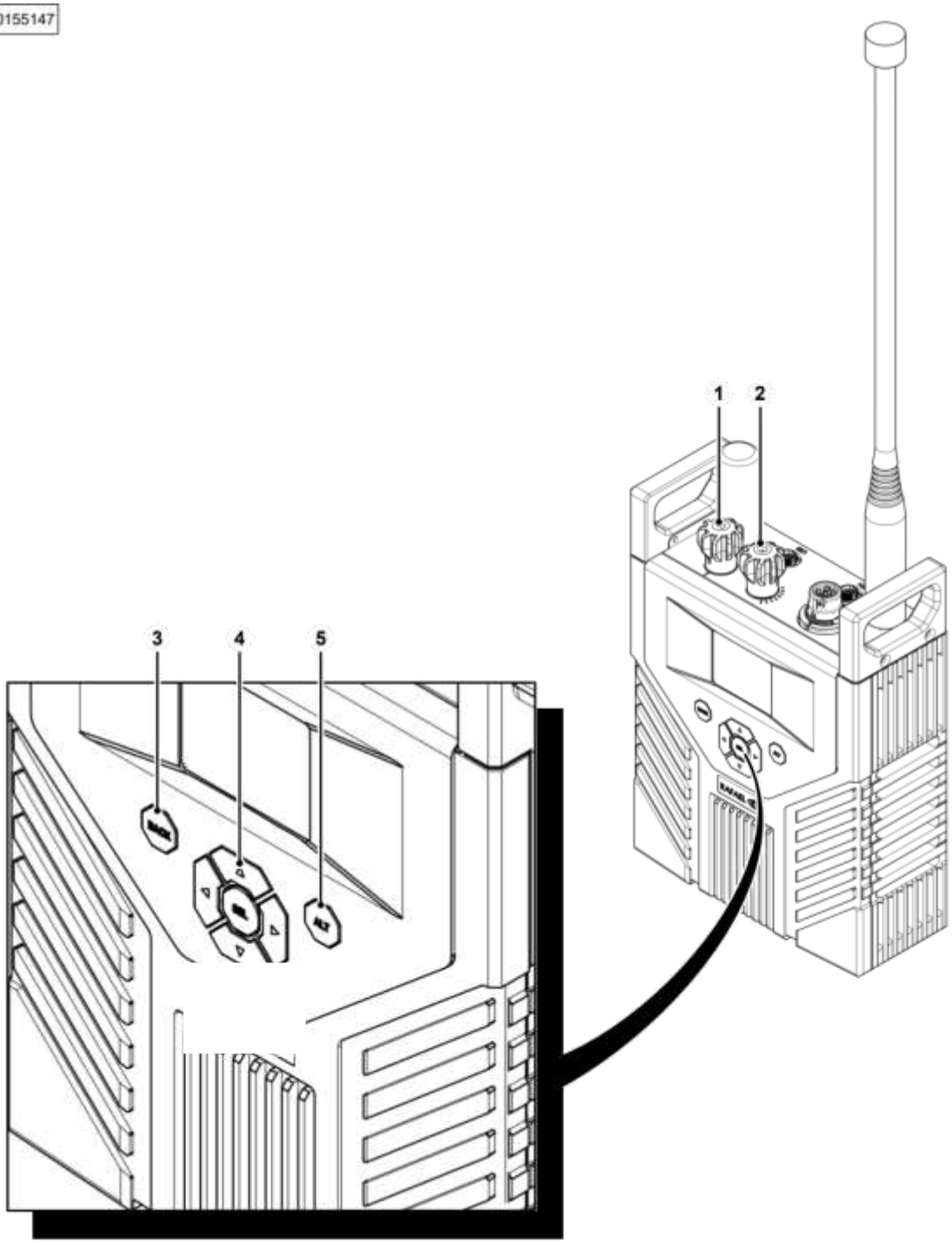

Figure 2-3: Manpack - Controls and Indicators

2.4 ELECTRICAL CONNECTORS

Table 2-3: Manpack – Electrical Connectors

No	Name	Description
1	UHF/VHF antenna connector	Used for connecting the UHF/VHF antenna.
2	Headset connector	Used for connecting a headset to the unit.
3	GPS antenna connector	Used for connecting the GPS antenna to the unit.
4	Communication connector	Used for communication with different devices.
5	Battery connector	Used for connecting the battery to the unit.
6	USB connector	Used for connecting to a key fill device (KFD).
7	ETH connector	Used for connecting the unit to the OLTE tester.

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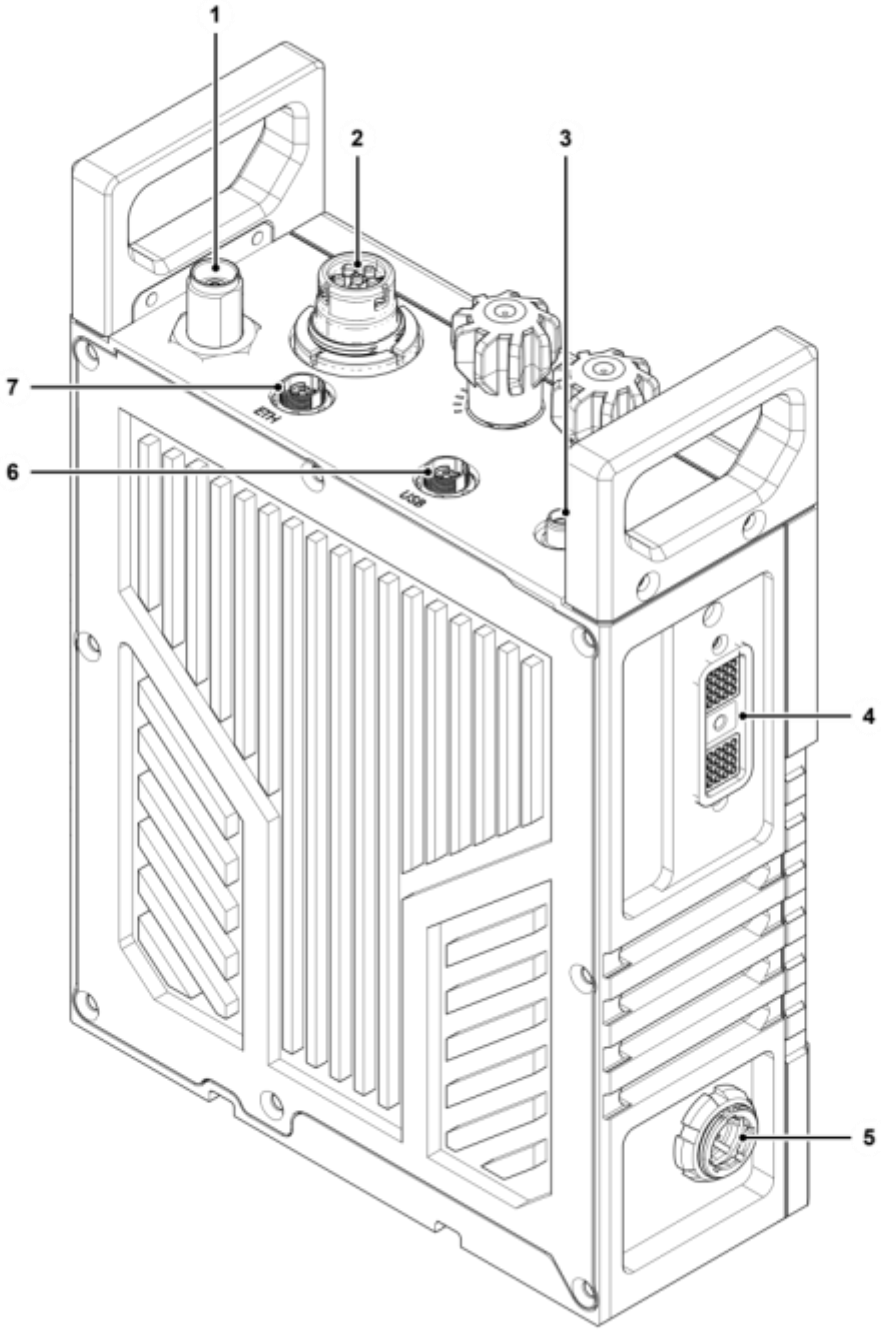

Figure 2-4: Manpack - Electrical Connectors

2.5 TECHNICAL DATA

Table 2-4: Manpack – Technical Data

Specification	Description
Dimensions	• With handles:150 x 62 x 206 mm (L x W x H) • Without handles: 150 x 62 x 168 mm (L x W x H)
Weight	TBD

2.6 MAINTENANCE POLICY

2.6.1 Corrective Maintenance

Corrective maintenance is carried out after a failure has been detected. The goal of corrective maintenance is to correct a failure so that the unit/equipment can be restored to operational state.

Table 2-5: MPS – Corrective Maintenance Policy

No	Component Name	Level	Actions
1	UHF/VHF Antenna	O-Level	• Removal (see section 2.11.1) • Installation (see section 2.11.2) • Return to Service (see section 2.11.3)
2	GPS Antenna	O-Level	• Removal (see section 2.12.1) • Installation (see section 2.12.2) • Return to Service (see section 2.12.3)

2.6.2 Preventive Maintenance Task

Preventive maintenance ensures that the equipment is in optimal condition and performs as required. The primary goal of preventive maintenance is to avoid or minimize the consequences of equipment failure. Preventive maintenance consists of activities performed at predefined frequencies and intervals.

Table 2-6: MPS – Preventive Maintenance Policy

No	Interval	Level	Description
1	Visual Inspection	Operator/O-Level	Visual inspection of the MPS.

2.6.3 Tools, Support Equipment and Materials

The following tables provide a list of tools, support equipment and materials of the MPS.

Table 2-7: MPS – Maintenance Policy - Tools

No	Name	Description
1	TBD	TBD
2	TBD	TBD

Table 2-8: MPS – Maintenance Policy - Materials

No	Name	P/N	Used for
1	TBD	TBD	TBD
2	TBD	TBD	TBD

Table 2-9: MPS – Maintenance Policy - Support Equipment

No	Name	P/N	Used for
1	Tester	TBD	TBD

2.7 VISUAL INSPECTION

2.7.1 Personnel

One O-level technician

2.7.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.7.3 Tools and Equipment

N/A

2.7.4 Materials

N/A

2.7.5 Preparations

N/A

2.7.6 Procedure

a) Make sure that the MPS is not damaged or scratched.

b) Make sure that the MPS display is not damaged or scratched.

c) Make sure that the MPS menu navigation keys are not damaged.

d) Ensure that the antenna connectors are not bent or broken.

e) For disconnected antennas and accessories, ensure that there are no broken or bent pins in the antenna's connectors or accessories connectors.

Also see about this

- chapter 1 Safety Instructions

2.8 PACKING

2.8.1 Personnel

One O-level technician

2.8.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.8.3 Tools and Equipment

N/A

2.8.4 Materials

N/A

2.8.5 Preparations

1. Turn OFF the MPS (see section 2.9.1).
2. Remove GPS antenna. (see section 2.12.1)
3. Remove UHF/VHF antenna. (see section 2.11.1)

2.8.6 Procedure

a) Cover the electrical connectors with protective caps or plastic caps.

b) Attach serviceable tag to the MPS.

c) Make sure that all cushioning pads in the shipping box are positioned correctly.

d) Carefully place the MPS in a plastic bag and place the covered MPS in the box.

e) Close the cover and secure the box using locking tie-down straps.

f) Attach an ID sticker to the outside of each box and fill-in the required information.

2.9 OPERATION

The following operations can be performed:

- Turning ON and OFF the radio. (see section 2.9.1)
- Performing IBIT. (see section 2.9.2)
- Changing channels. (see section 2.9.3)
- Changing presets. (see section 2.9.4)
- Changing the volume. (see section 2.9.5)
- Loading networks. (see section 2.9.6)
- Loading presets. (see section 2.9.7)

2.9.1 Powering ON and OFF

2.9.1.1 Personnel

One O-level technician

2.9.1.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.9.1.3 Tools and Equipment

N/A

2.9.1.4 Materials

N/A

2.9.1.5 Preparations

N/A

2.9.1.6 Power ON

a) Press and hold the volume knob (1) for three seconds.

Result:
The display (2) shows a screen with ASTRA RAFAEL logo and a rotating bar to indicate that the radio is in power up mode. Once the radio is ON, the user is notified.

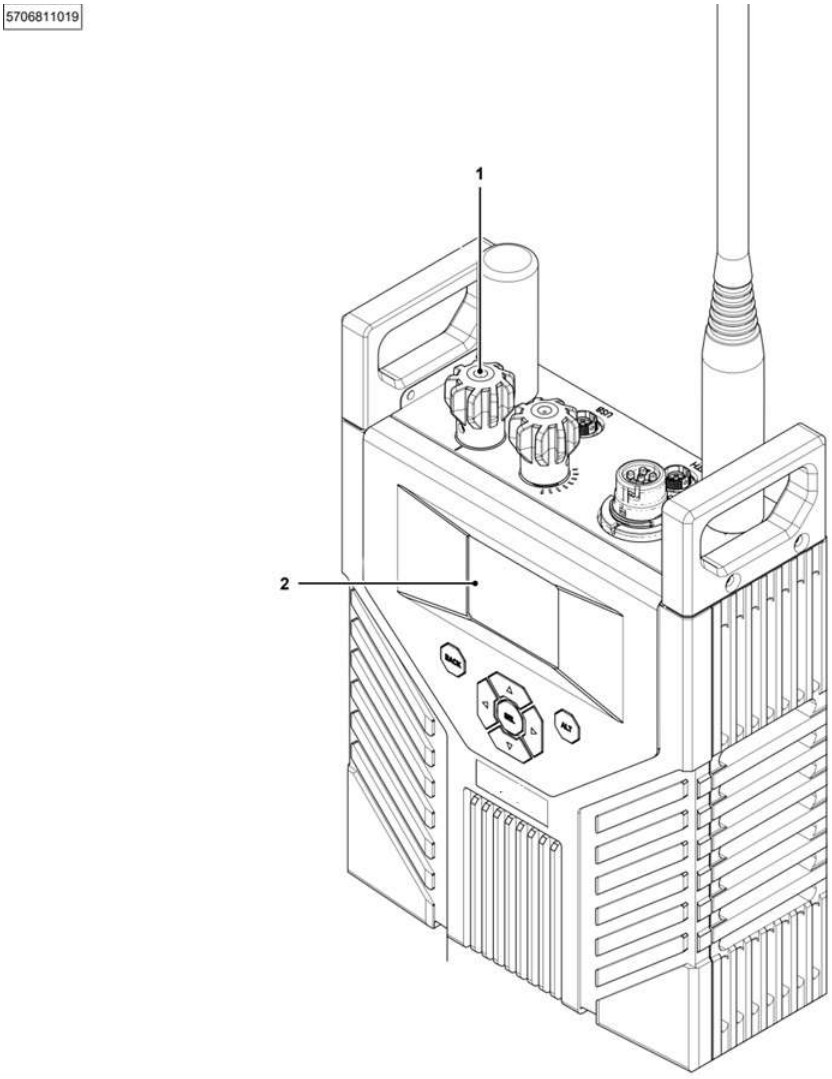

Figure 2-5: Powering ON the MPS

2.9.1.7 Power OFF

a) Press and hold the volume knob (1) for five seconds.

Result:
The radio initiates the power-off sequence.

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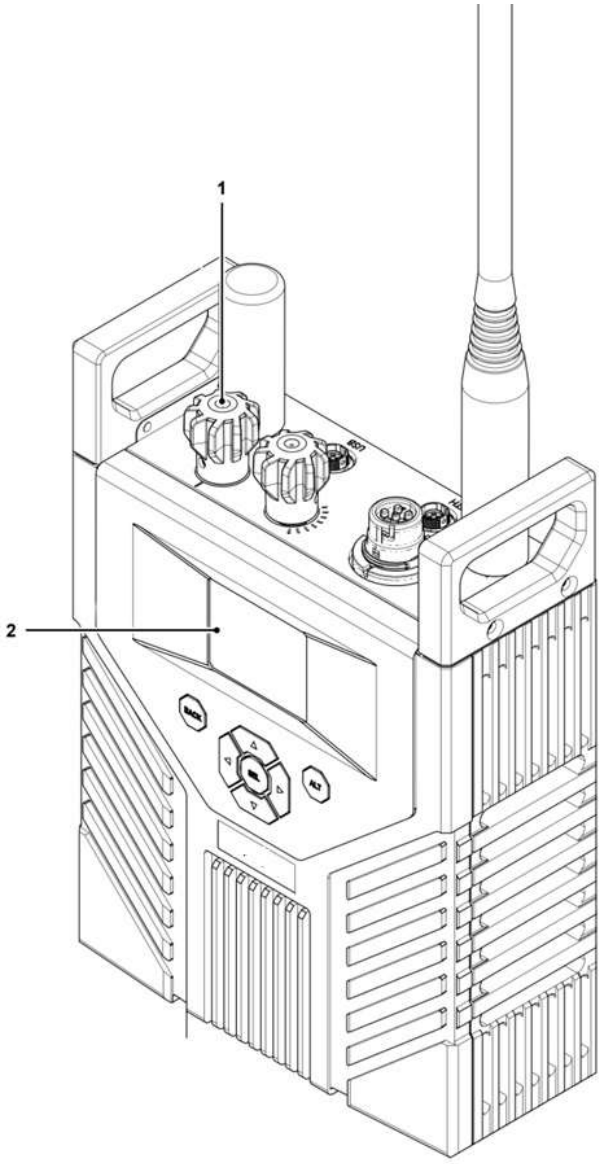

Figure 2-6: Powering OFF the MPS

Also see about this

chapter 1 Safety Instructions

2.9.2 Performing IBIT

2.9.2.1 Personnel

One O-level technician

2.9.2.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.9.2.3 Tools and Equipment

N/A

2.9.2.4 Materials

N/A

2.9.2.5 Preparations

N/A

2.9.2.6 Procedure

a) TBD

Also see about this

- chapter 1 Safety Instructions

2.9.3 Changing a Channel

2.9.3.1 Personnel

One O-level technician

2.9.3.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.9.3.3 Tools and Equipment

N/A

2.9.3.4 Materials

N/A

2.9.3.5 Preparations

N/A

2.9.3.6 Procedure

a) TBD

Also see about this

- chapter 1 Safety Instructions

2.9.4 Changing Presets

2.9.4.1 Personnel

One O-level technician

2.9.4.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.9.4.3 Tools and Equipment

N/A

2.9.4.4 Materials

N/A

2.9.4.5 Preparations

Turn OFF the MPS. (see section 2.9.1)

2.9.4.6 Procedure

TBD

Also see about this

- chapter 1 Safety Instructions

2.9.5 Changing the Volume

2.9.5.1 Personnel

One O-level technician

2.9.5.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.9.5.3 Tools and Equipment

N/A

2.9.5.4 Materials

N/A

2.9.5.5 Preparations

N/A

2.9.5.6 Procedure

a) Rotate the volume knob (1) CW to increase the audio level, or CCW to decrease the audio level.

Result:
The volume change is reflected on the display (2).

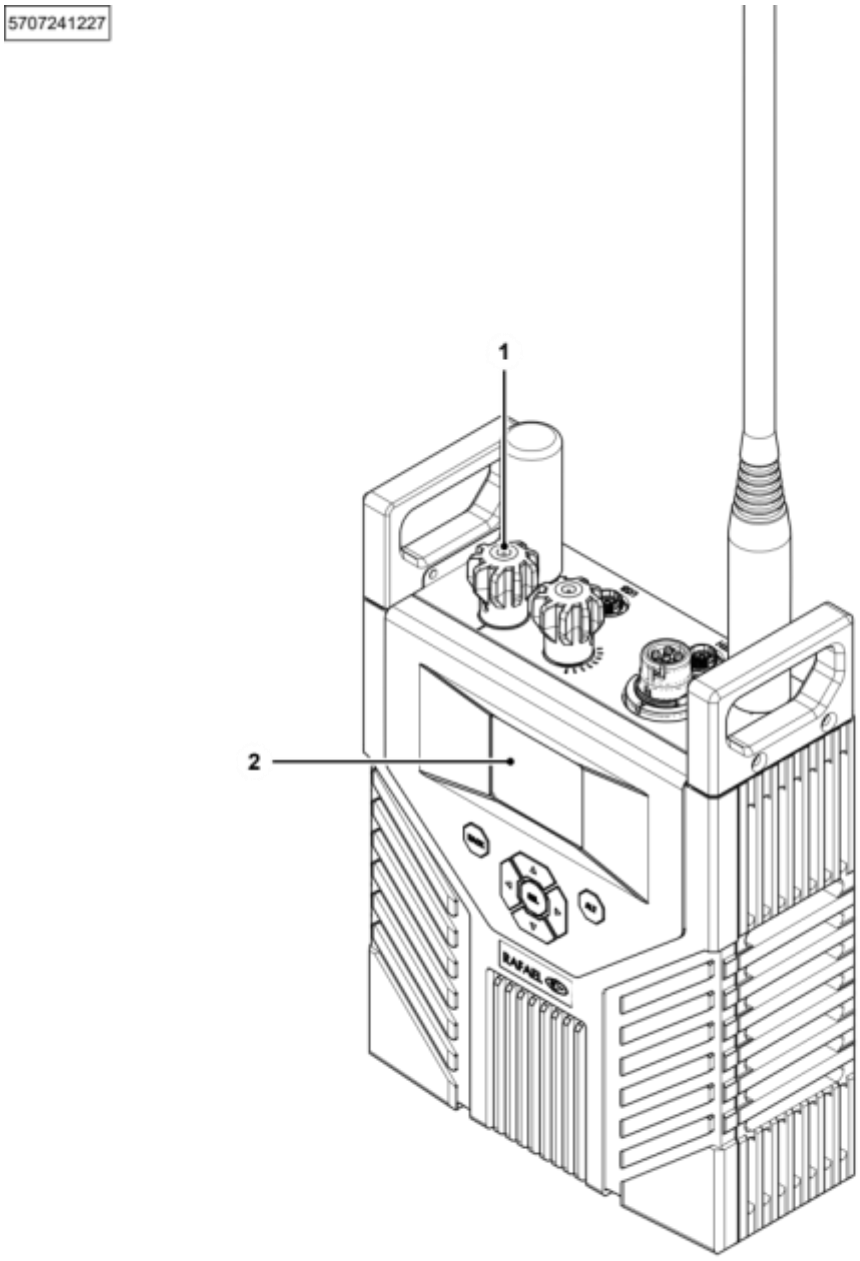

Figure 2-7: Changing the Volume

Also see about this

- chapter 1 Safety Instructions

2.9.6 Loading Networks

2.9.6.1 Personnel

One O-level technician

2.9.6.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.9.6.3 Tools and Equipment

N/A

2.9.6.4 Materials

N/A

2.9.6.5 Preparations

N/A

2.9.6.6 Procedure

a) TBD

Also see about this

- chapter 1 Safety Instructions

2.9.7 Loading Presets

2.9.7.1 Personnel

One O-level technician

2.9.7.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.9.7.3 Tools and Equipment

N/A

2.9.7.4 Materials

N/A

2.9.7.5 Preparations

N/A

2.9.7.6 Procedure

a) TBD

Also see about this

- chapter 1 Safety Instructions

2.10 USER INTERFACE DESCRIPTION

The display is split into two menus:

- Status bar – A static menu which displays general information and provides shortcuts to specific submenus.
- Main area – A menu which enables accessing different radio operational settings.

2.10.1 Menu Tree

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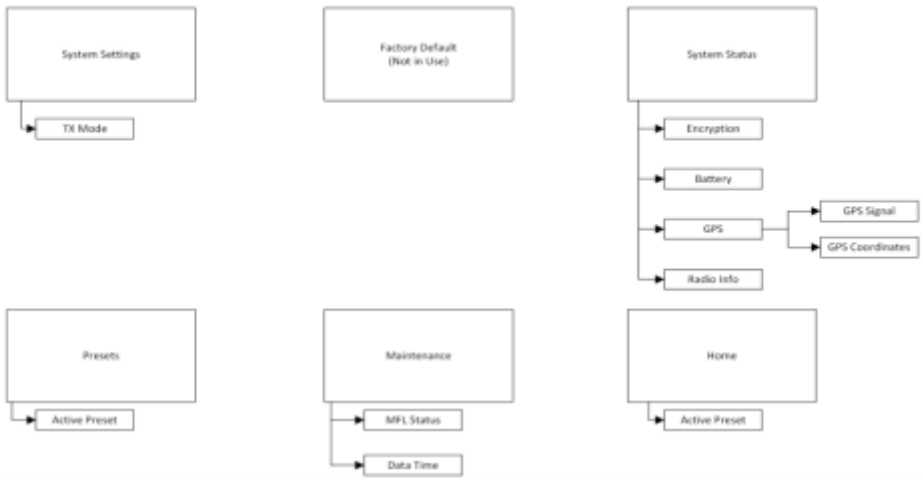

Figure 2-8: Menu Tree

2.10.2 User Interface Description

Table 2-10: User Interface Description

No	Name	Description
1	Master Volume	Displays current master volume.
2	GPS Reception Indication	Displays GPS status.
3	MFL	Maintenance alert.
4	Preset Number	Displays preset number indication
5	TX Mode	• Indicates that the radio is in receive mode. • The Radio does not transmit – therefore not visible by others.
6	Battery Status	Displays Battery capacity status.
7	Keypad lock	Indicates if Keypad is activated.
8	Status Menu Bar	Displays all status icons.
9	Main Area	Displays the Navigation menu.

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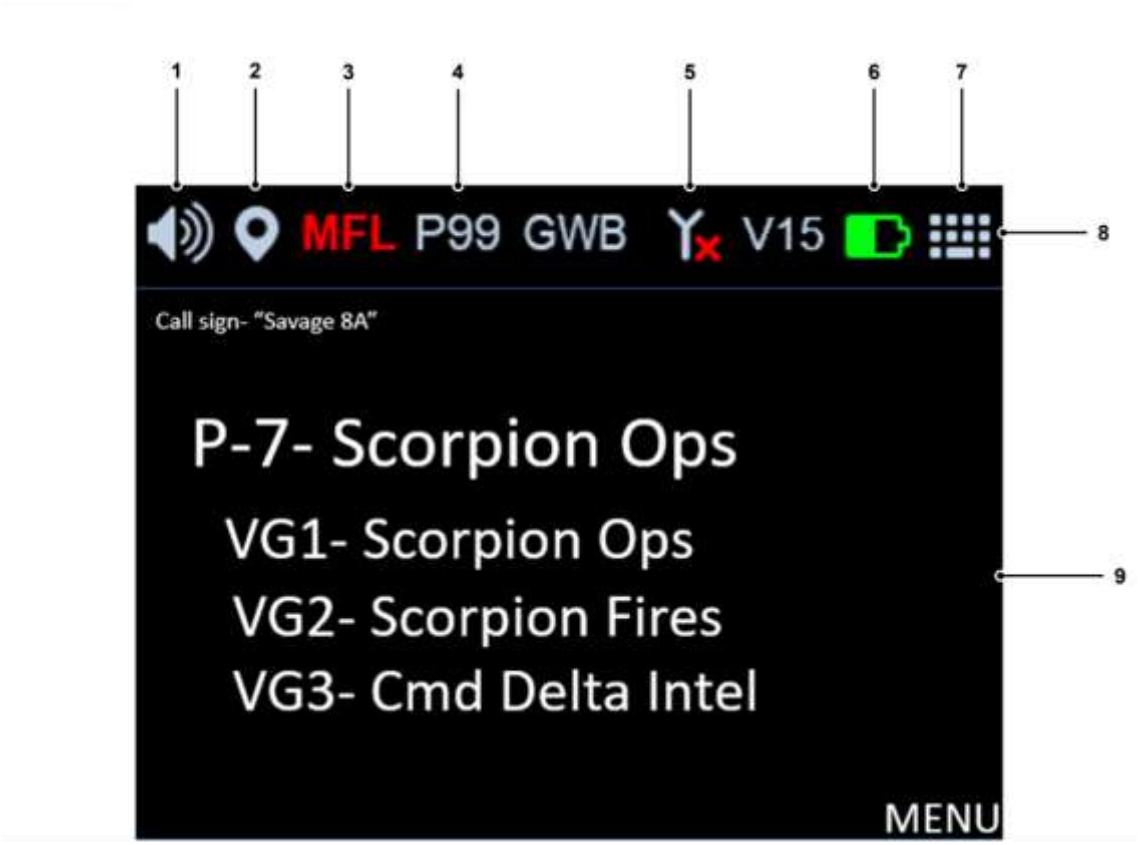

2.10.3 Status Menu Bar

The table below describes the indicators displayed to the user

Table 2-11: Status Menu Bar – Description

No	Name	Range	Description	Icon	Shortcut
1	Master Volume	1. Minimum 2. Medium 3. Max 4. Mute	Displays current master volume.		Via Status Bar
2	GPS Reception	1. Established and stable 2. No reception	Displays GPS reception status.		Via Status Bar
3	Silent Mode Status	Appears only if silent mode is on	The radio is in receive only mode. The radio does not transmit, therefore not visible to others.	-	
4	Preset Number	0-99	Displays preset number indication.		Via Status Bar
5	Running WF Information	1. AM 2. FM 3. NB 4. WB 5. GNB 6. GWB 7. MAINT	Displays the current waveform used.		Via Status Bar
6	Voice Group	0-99	Displays the current voice group number, which appears only if voice groups were configured as part of the preset.		
7	MFL	1. Normal 2. Minor 3. Major	Maintenance alert.		Via Status Bar

No	Name	Range	Description	Icon	Shortcut
8	Encryption Mode	1. Clear 2. Secured 3. Hopping	Displays current encryption mode.	-	
9	Battery Status	0-100 % 1. 10 levels 2. Charging	Displays Battery capacity status.		
10	Keypad Lock	Appears only if lock mode is active	Keypad is not activated.		

2.10.4 Main Menu

Table 2-12: Main Menu – Description

No	Name	Description
1	System Settings (see section 2.10.4.1)	Enables to adjust the following system setting: TX Mode
2	Presets (see section 2.10.4.2)	Enables to change the preset that was set by the NMS.
3	Factory Default	Not In Use
4	Maintenance (see section 2.10.4.3)	Enables to see that data of the following: • MFL • Time
5	System Status (see section 2.10.4.4)	Enables to view the system status of the following: • Encryption • Battery • GPS • Radio Info
6	Home (see section 2.10.4.5)	Shows the active preset (see section 2.10.4.2.1).

4875562635

Figure 2-9: Main Menu

2.10.4.1 System Settings

Table 2-13: System Settings – Description

No	Name	Description
1	TX Mode (see section 2.10.4.5)	Used to select the transmission mode of the handheld, has four different options.
2	Operation mode	Displays the current operation mode.

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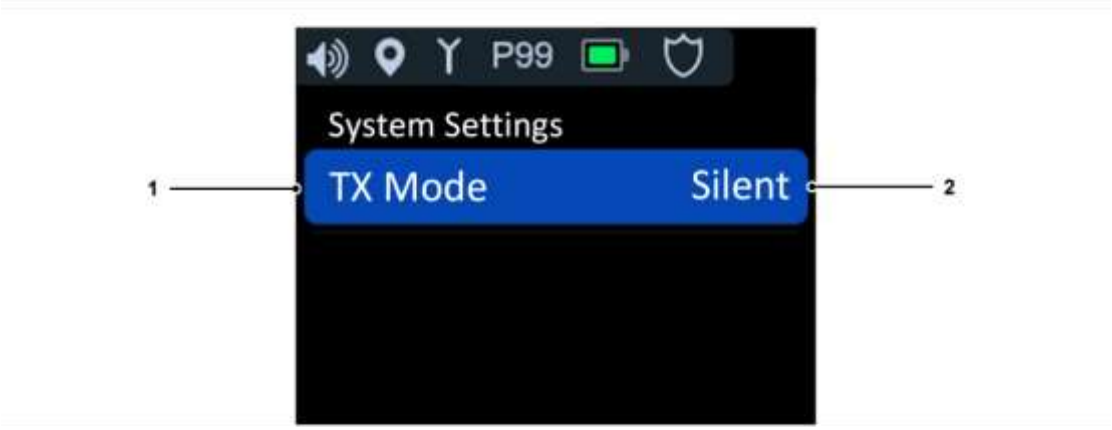

Figure 2-10: System Settings

2.10.4.1.1 Tx Mode

Table 2-14: TX Mode – Physical Description

No	Name	Description
1	SILENT	Enables to operate TX in silent mode.
2	LOW	Enables to operate TX in low transmission mode.
3	MEDIUM	Enables to operate TX in medium transmission mode.
4	HIGH	Enables to operate TX in high transmission mode.

4884923915

Figure 2-11: TX Mode

2.10.4.2 Presets

Table 2-15: Presets – Description

No	Name	Description
1	Presets	Used to select the preset for handheld.

4875629963

Figure 2-12: Presets

2.10.4.2.1 Active Preset

Table 2-16: Preset Status –Description

No	Name	Description
1	Active Preset screen	Displays the settings set for the current preset. 1: Displays the first group status • TXRX 2: Displays the second group status • RX

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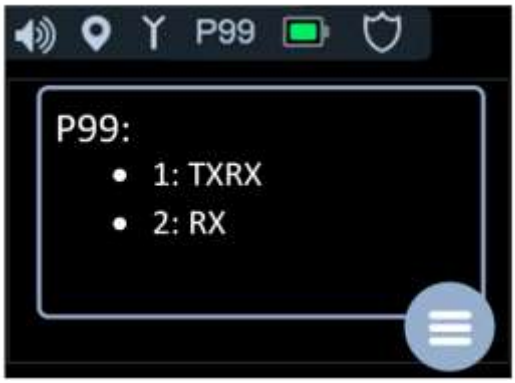

Figure 2-13: Preset Status

2.10.4.3 Maintenance

Table 2-17: Maintenance – Description

No	Name	Description
1	MFL (see section 2.10.4.3.1)	Displays the malfunction list and ID of the BNET Handheld.
2	Time (see section 2.10.4.3.2)	Used for changing time and data.

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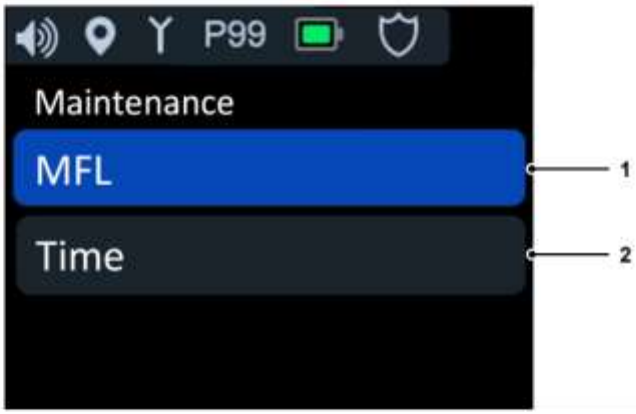

Figure 2-14: Maintenance

2.10.4.3.1 MFL Status

Table 2-18: MFL Status – Description

No	Name	Description
1	Malfunction List	Displays the malfunctions of the BENT HH.
2	Malfunction ID	Displays the ID of the malfunction.

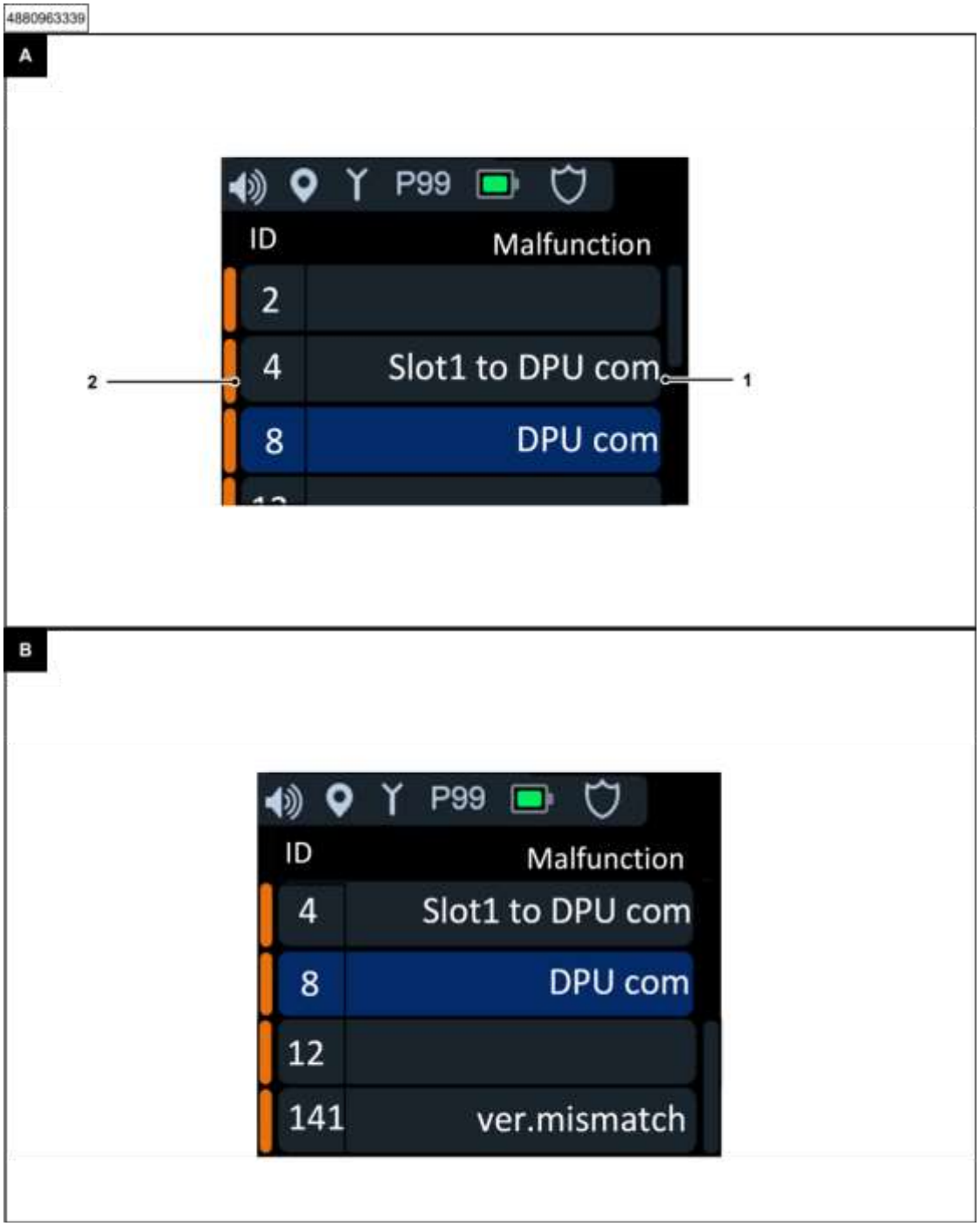

Figure 2-15: MFL Full

2.10.4.3.2 Date Time

Table 2-19: Date Time – Description

No	Name	Description
1	SysUpTime	Displays the time that the Handheld is up.
2	Date	Displays the date set at the Handheld.
3	Time	Displays the time set at the Handheld.

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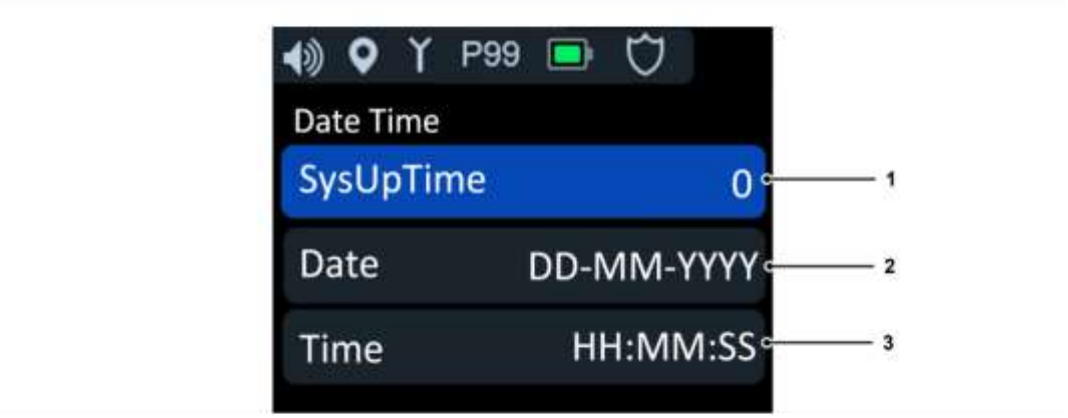

Figure 2-16: Data Time

2.10.4.4 System Status

Table 2-20: System Status – Description

No	Name	Description
1	Encryption (see section 2.10.4.4.1)	Displays encryption status: • ON – encryption is enabled • OFF – encryption is disabled
2	Battery (see section 2.10.4.4.2)	Displays battery status.
3	GPS (see section 2.10.4.4.3)	Displays GPS status.
4	Radio Info (see section 2.10.4.4.4)	Displays radio info.

4875638027

Figure 2-17: System Status

2.10.4.4.1 Encryption

Table 2-21: Encryption – Description

No	Name	Description
1	Encryption Toggle	Enables to change the encryption between two options: • ON • OFF

4875554571

Figure 2-18: Encryption

2.10.4.4.2 Battery Status

Table 2-22: Battery Status – Description

No	Name	Description
1	Battery Icon	Displays the battery status, shown in a few different stages (see section 2.10.3).
2	Battery Percentage	Displays the numeric percentage of the battery.

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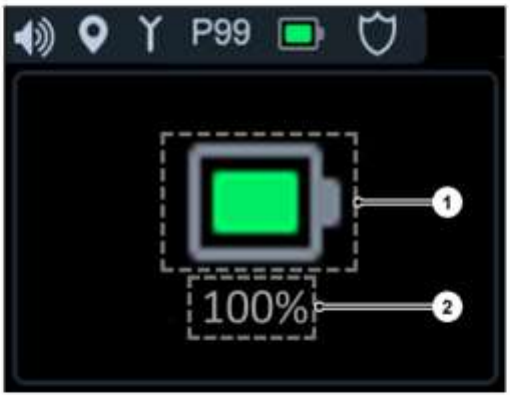

Figure 2-19: Battery Status

2.10.4.4.3 GPS

Table 2-23: GPS – Description

No	Name	Description
1	GPS Signal	Displays GPS signals data: • Satellites Num • Signal Strength
2	GPS Coordinates	Displays GPS coordinates data: • Latitude • Longitude • Height

4883186315

Figure 2-20: GPS Status

a. GPS Signal

Table 2-24: GPS Signal –Description

No	Name	Description
1	Satellites Num	Displays the number of satellites the BNET HH is connected to.
2	Signal Strength	Displays the Signal strength of the BNET HH.

4875559947

Figure 2-21: GPS Signal

b. GPS Coordinates

Table 2-25: GPS Coordinates –Description

No	Name	Description
1	Latitude	Displays the GPS coordinates latitude.
2	Longitude	Displays the GPS coordinates longitude.
3	Height	Displays the GPS coordinates height.

4875557259

Figure 2-22: GPS Coordinates

2.10.4.4.4 Radio Info

Table 2-26: LRU Name – Physical Description

No	Name	Description
1	Model	Displays the BNET model.
2	BNET ID	Display the current BNET Handheld ID.
3	SW Ver.	Displays the current BNET Handheld software version.
4	FW Ver.	Displays the current BNET Handheld firmware version.
5	Display Ver.	Displays the current BNET Handheld display version.

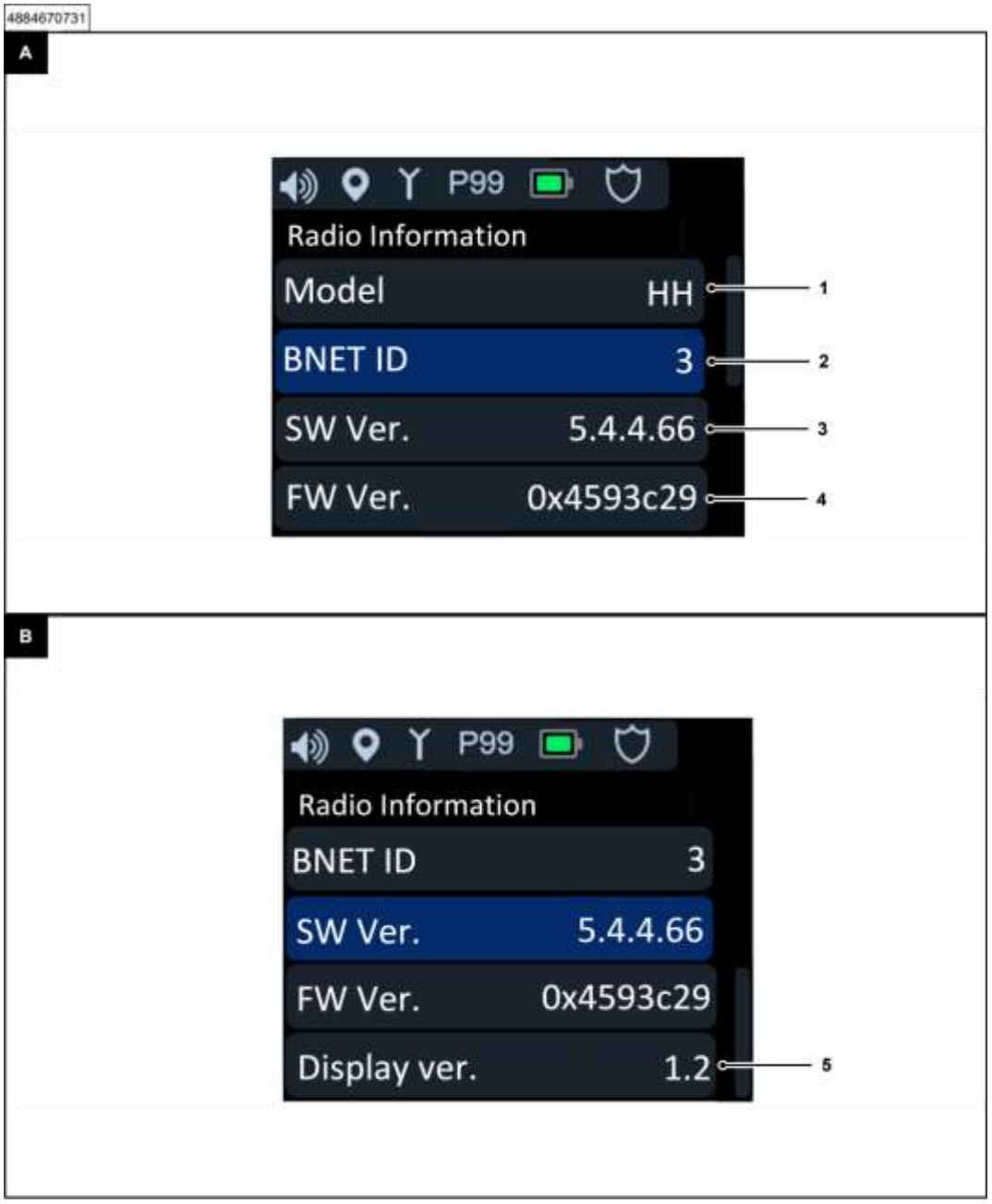

Figure 2-23: Radio Information

2.10.4.5 Home

Table 2-27: Home – Description

No	Name	Description
1	Home Button	Displays the active preset (see section 2.10.4.2.1) screen.

4890051467

Figure 2-24: Home

2.11 UHF/VHF ANTENNA

The UHF/VHF antenna enables the connected MPS to transmit and receive RF signals for wireless communication between BNET devices.

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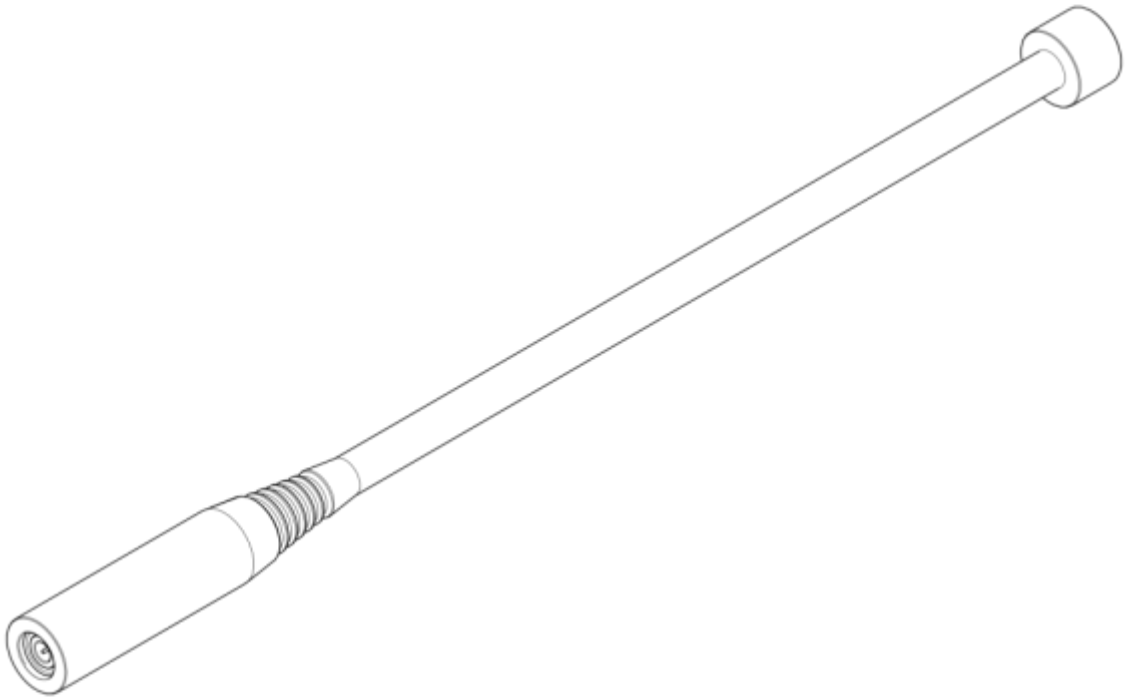

Figure 2-25: UHF/VHF Antenna

2.11.1 Removal

2.11.1.1 Personnel

One O-level technician

2.11.1.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.11.1.3 Tools and Equipment

N/A

2.11.1.4 Materials

N/A

2.11.1.5 Preparations

Turn OFF the MPS. (see section 2.9.1)

2.11.1.6 Procedure

Turn the UHF/VHF antenna (1) CCW to remove it from the UHF/VHF antenna connector (2).

5704482187

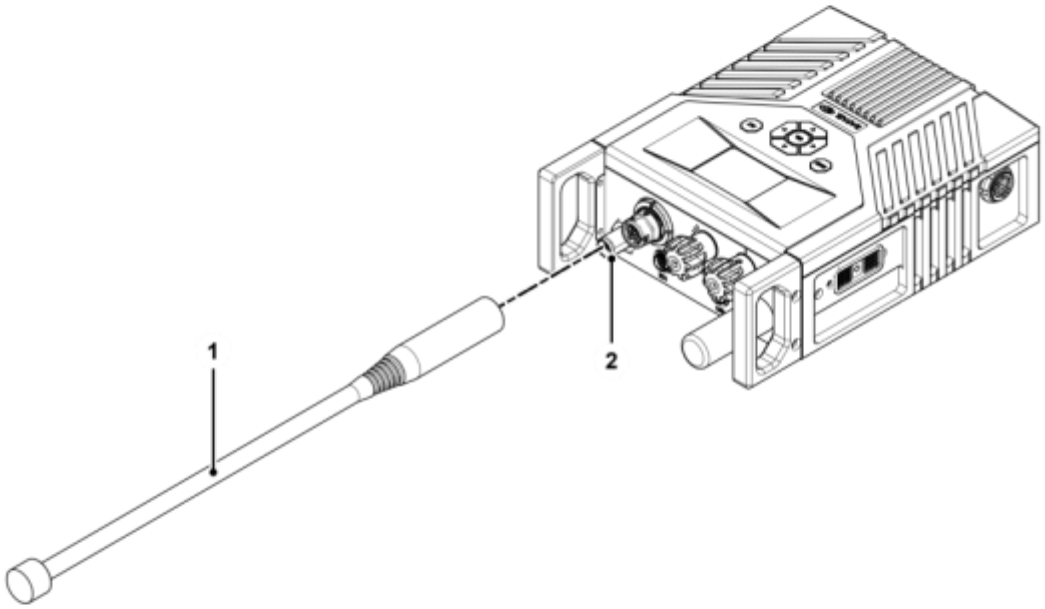

Figure 2-26: UHF/VHF Antenna Removal

Also see about this

- chapter 1 Safety Instructions

2.11.2 Installation

2.11.2.1 Personnel

One O-level technician

2.11.2.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.11.2.3 Tools and Equipment

N/A

2.11.2.4 Materials

N/A

2.11.2.5 Preparations

Make sure that the MPS is turned OFF.

2.11.2.6 Procedure

a) Place the UHF/VHF antenna (1) on the UHF/VHF antenna connector (2).

b) Turn the UHF/VHF antenna (1) CW to install it on the MPS.

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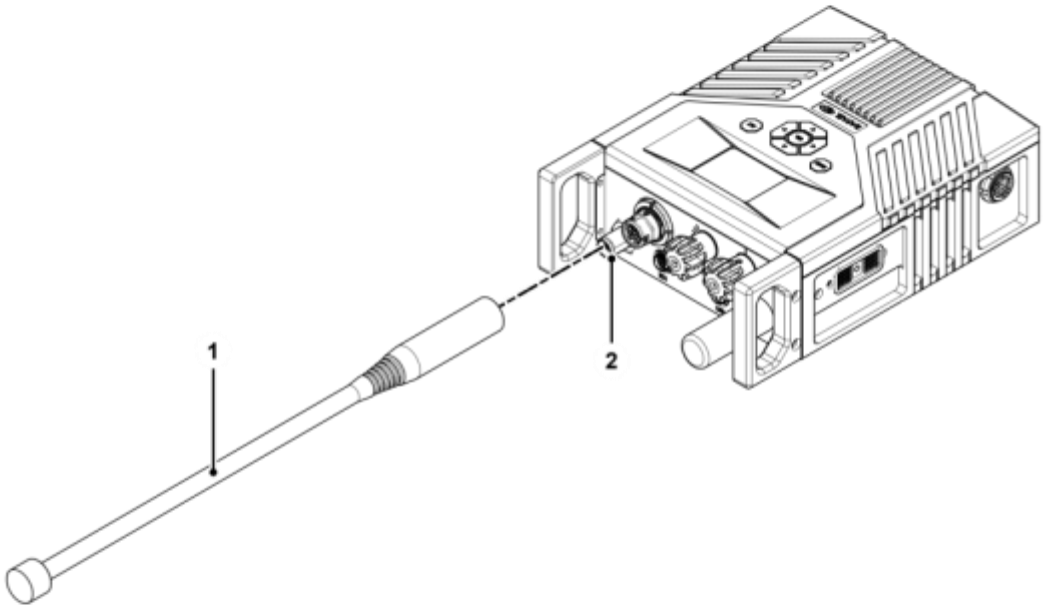

Figure 2-27: UHF Antenna Installation

Also see about this

- chapter 1 Safety Instructions

2.11.3 Return to Service

2.11.3.1 Personnel

One O-level technician

2.11.3.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.11.3.3 Tools and Equipment

N/A

2.11.3.4 Materials

N/A

2.11.3.5 Preparations

N/A

2.11.3.6 Procedure

a) Turn ON the MPS (see section 2.9.1).

b) In GPS Signal screen (see section 2.10.4.4.3a), make sure it is connected to at least one satellite.

Also see about this

- chapter 1 Safety Instructions

2.12 GPS ANTENNA

The GPS antenna enables the connected MPS receive GPS signal from GPS satellite.

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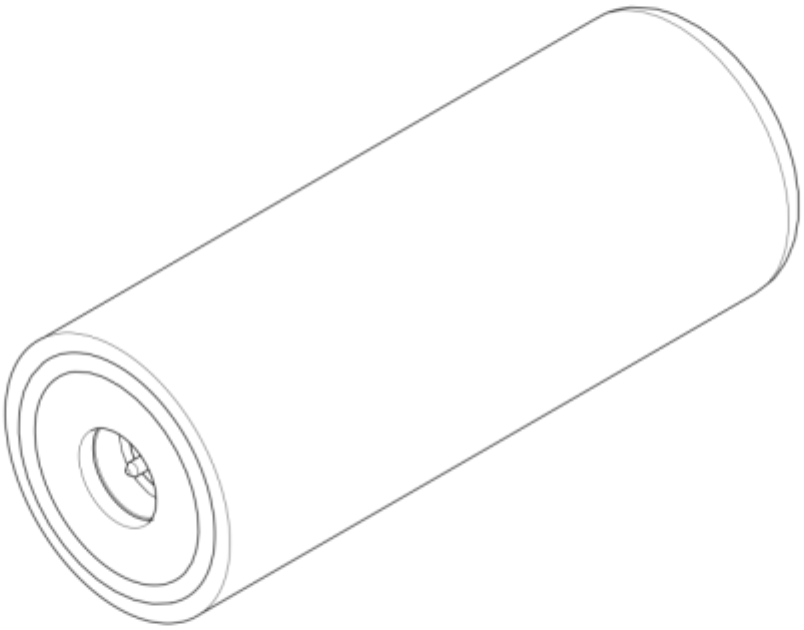

Figure 2-28: GPS Antenna

2.12.1 Removal

2.12.1.1 Personnel

One O-Level Technician.

2.12.1.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.12.1.3 Tools and Equipment

N/A

2.12.1.4 Materials

N/A

2.12.1.5 Preparations

Turn OFF the MPS. (see section 2.9.1)

2.12.1.6 Procedure

Turn the GPS antenna (1) CCW to remove it from the GPS antenna connector (2).

5704717195

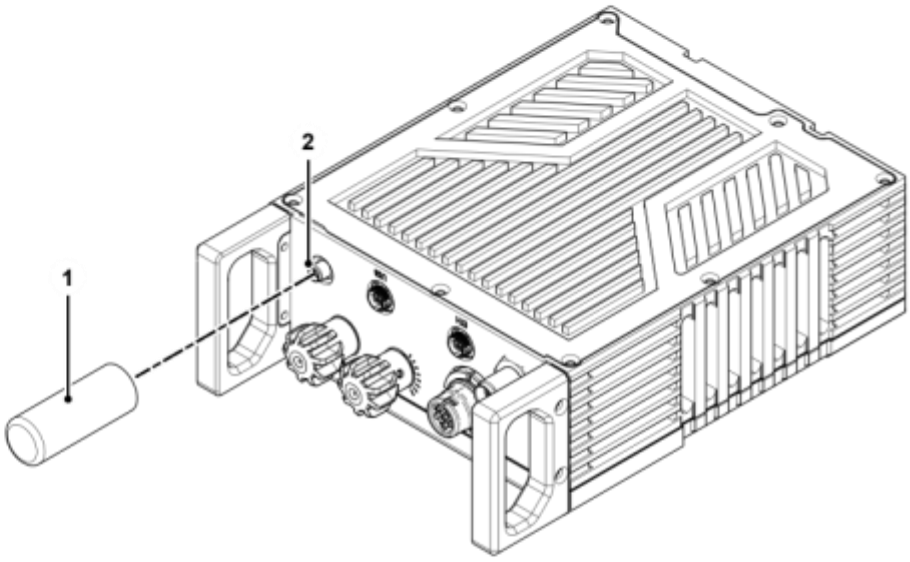

Figure 2-29: GPS Antennas Removal

Also see about this

- chapter 1 Safety Instructions

2.12.2 Installation

2.12.2.1 Personnel

One O-level technician

2.12.2.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.12.2.3 Tools and Equipment

N/A

2.12.2.4 Materials

N/A

2.12.2.5 Preparations

Make sure that the MPS is turned OFF.

2.12.2.6 Procedure

a) Place the GPS antenna (1) on the GPS antenna connector (2).

b) Turn the GPS antenna (1) clockwise to install it on the MPS.

5704717195

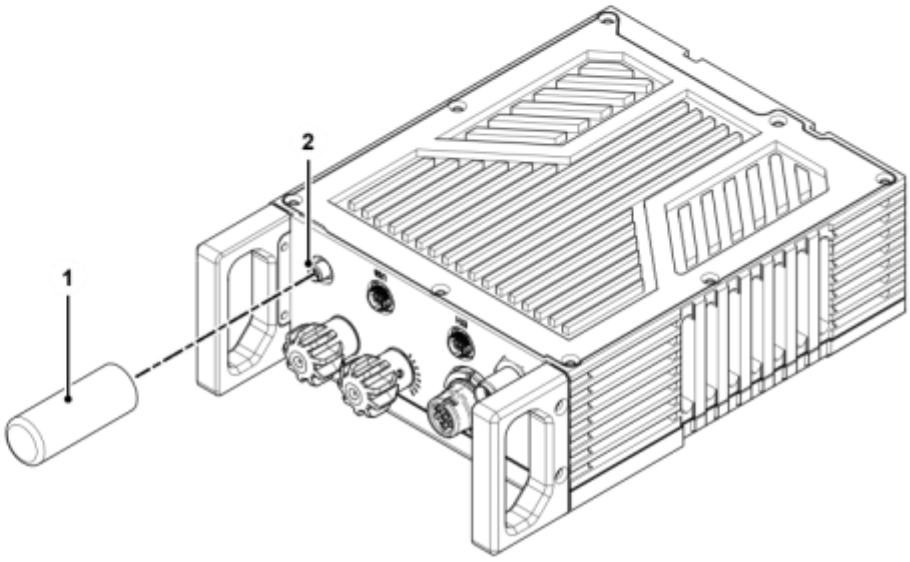

Figure 2-30: GPS Antenna Installation

Also see about this

- chapter 1 Safety Instructions

2.12.3 Return to Service

2.12.3.1 Personnel

One O-level technician

2.12.3.2 Safety

WARNING

Read the applicable safety instructions. (see chapter 1)

2.12.3.3 Tools and Equipment

N/A

2.12.3.4 Materials

N/A

2.12.3.5 Preparations

N/A

2.12.3.6 Procedure

a) Turn ON the MPS. (see section 2.9.1)

b) In GPS Signal screen (see section 2.10.4.4.3a), make sure it is connected to at least one satellite.

Also see about this

- chapter 1 Safety Instructions

2.13 HANDSET

The handset is used for hearing audio messages played by the loudspeaker, as well as sending voice messages, using the PTT control, to transmit via the BNET-V to other BNET-V devices.

5698878859

Figure 2-31: Handset

2.13.1 Controls and Connector

Table 2-28: Handset – Controls and Connector

No	Name	Description
1	PTT	Pressing and holding sends a transmission control signal via the loud-speaker to the BNET-V. **NOTE:** When not pressed, the BNET-V is in reception mode.
2	Speaker	Enables audio output.
3	J1 connector	Connects to the Loudspeaker for the following: • Input of BNET-V received audio messages. • Output of operator PTT control and voice messages.
4	Microphone	Enables voice input.

5698883723

Figure 2-32: Handset - Physical Description

2.13.2 Technical Data

Table 2-29: Handset – Technical Data

Microphone	
Specification	**Description**
Sensitivity	At least -56 dB (at 1 KHz).
Impedance	150 ohms +/- 20% (at 1 KHz).
Insulation resistance	At least 1M ohms.
Distortion	Less than 5% (300~3500 KHz).
Speaker	
Specification	**Description**
Sensitivity	102 dB +/- 3 dB (200~3500KHz).
Impedance	1000 ohms +/20% (at 1 KHz).
Insulation resistance	At least 1M ohms.
Distortion	Less than 5% (at 250 VDC).

3 R-NMS SOFTWARE APPLICATIONS

The following applications enable configuring and managing BNET devices and networks:

- Mission Planning application (see section 3.2) – enables planning the BNET mission: network and waveform.
- R-NMS application (see section 3.3) – enables remotely managing all the network BNET devices.
- EMS application (see section 3.4) – enables configuring the local BNET device, connected by cable to the EMS laptop/tablet.

3.1 R-NMS LOGIN SCREEN

The R-NMS Login screen is the first screen displayed when activating the R-NMS.

Table 3-1: R-NMS Login Screen

No	Name	Description
1	User Name	Box to enter the user username.
2	Password	Box to enter the user password.
3	Sign In	Validates the user credentials, and opens the application pre-defined for the user: • Mission Planning main screen (see section 3.2) • R-NMS main screen (see section 3.3)

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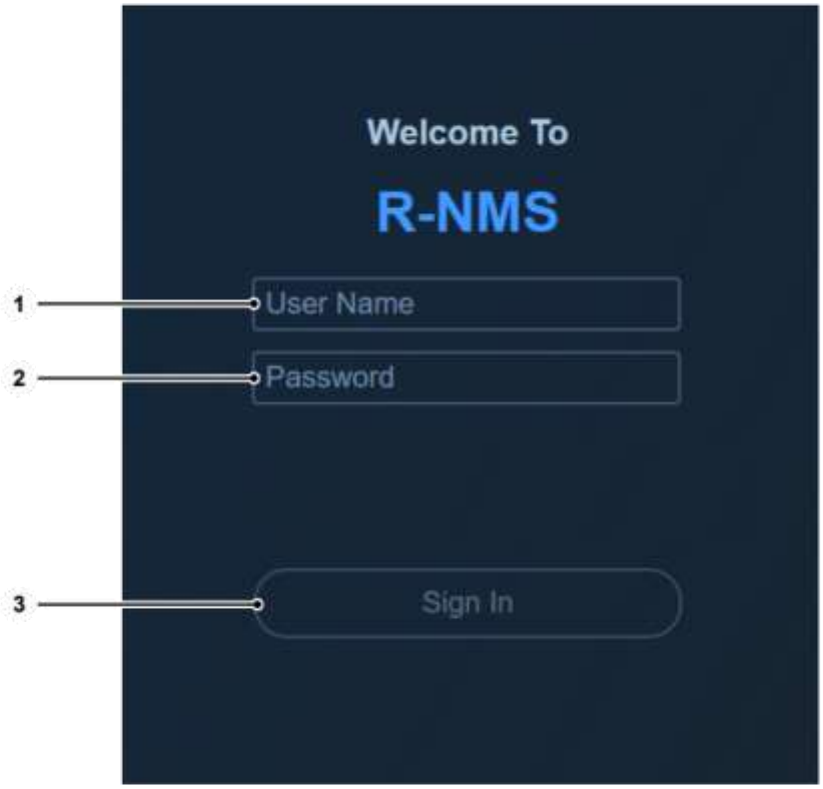

Figure 3-1: R-NMS Login Screen

3.2 MISSION PLANNING APPLICATION

Table 3-2: Mission Planning Application - Main Screen

No	Name	Description
1	Expand/collapse toolbar	Expands/collapses the main toolbar: • In expanded state – the toolbar shows names and icons. • In collapsed state – the toolbar shows only icons.
2	Inventory	Opens the Inventory screen (see section 3.2.1), to add platforms, devices and roles to the application database, and to configure existing ones.
3	Networks	Opens the Networks screen (see section 3.2.2), to add GWB/FM networks to the application database, and to configure existing networks.
4	Missions	Opens the Missions screen (see section 3.2.3), to add, configure and distribute a new mission, and to configure existing missions.
5	Selected screen display area	Displays the screen selected in the main toolbar (2-4). Note: By default, Inventory screen is displayed automatically after login.
6	Logout	Logs out of the current user, and reopens the login screen (see section 3.1).
7	Time and date	Displays the R-NMS computer time (hh:mm) and date (dd/mm/yyyy).

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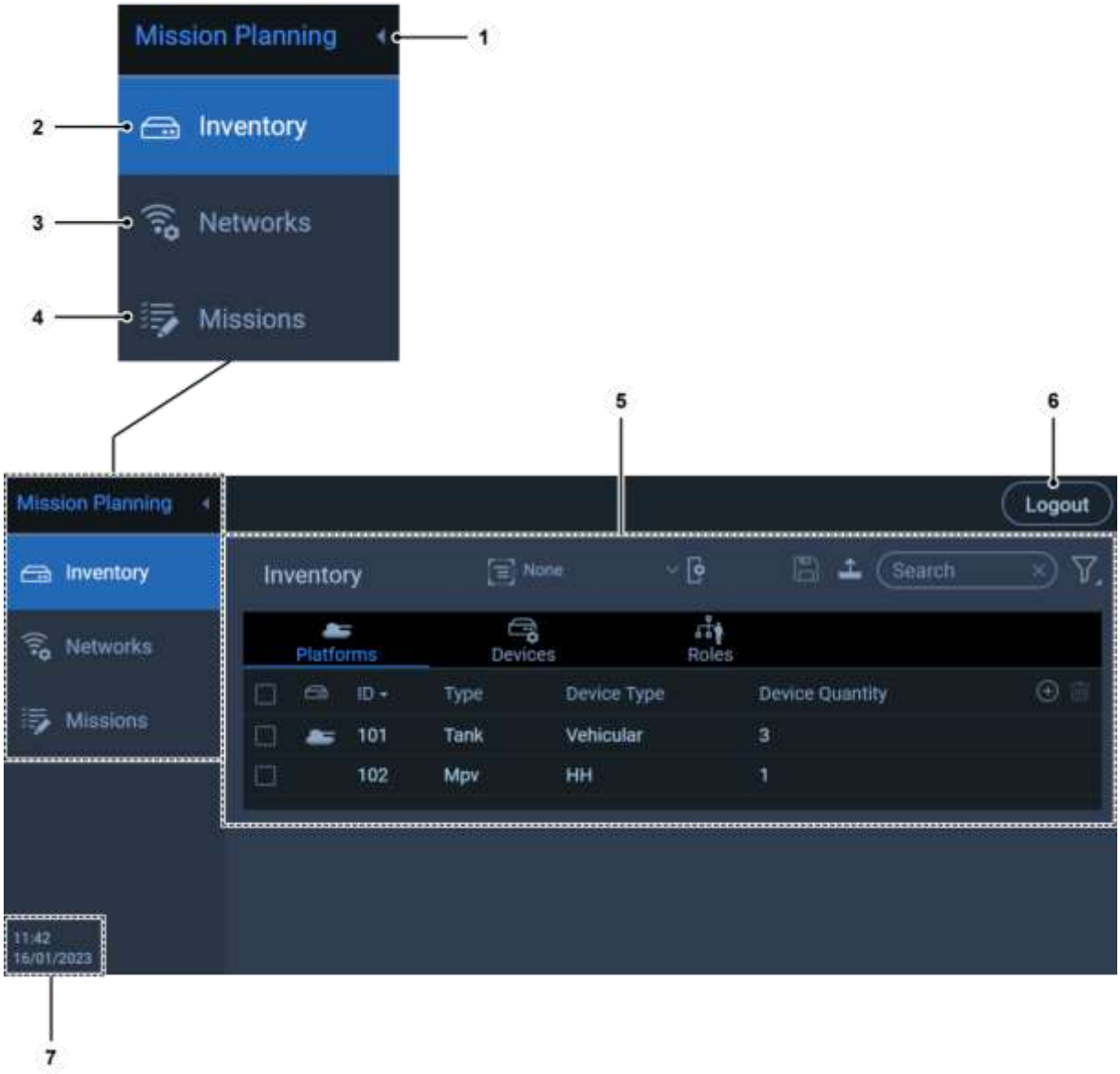

Figure 3-2: Mission Planning Application - Main Screen

3.2.1 Inventory Screen

Table 3-3: Inventory Screen

No	Name	Description
1	Group By	• Enables selecting a parameter (column) by which to group the platforms/devices/roles in the table. • Displays None value, when no parameter is selected.
2	Column Management	Enables sorting the table columns, and selecting to show/hide columns.
3	Save Inventory	Enabled only when a new Inventory is added or an existing Inventory is changed: 1. Saves the Inventory file. 2. Opens a Inventory Save Changes message box, to indicate that the Inventory changes are saved.
4	Load Inventory	Opens the Load Inventory (see section 3.2.1.1) window, to load an Inventory file to the application database.
5	Search	• Box to enter a letter/digit/word/number of any of the column values, by which to filter the devices displayed in the table. • While typing, the table rows (devices) are automatically filtered.
6	Filter	Enables filtering devices in the table by selecting values according to columns.
7	Platforms	Switches to the Platforms tab (see section 3.2.1.2) (default): • To view the platforms included in the Inventory. • To add a new platform to the Inventory. • To edit an existing platform.
8	Devices	Switches to the Devices tab (see section 3.2.1.3): • To view the devices included in the Inventory. • To add a new device to the Inventory.
9	Roles	Switches to the Roles tab (see section 3.2.1.4): • To view the roles included in the Inventory. • To add new role to the Inventory. • To edit an existing role.

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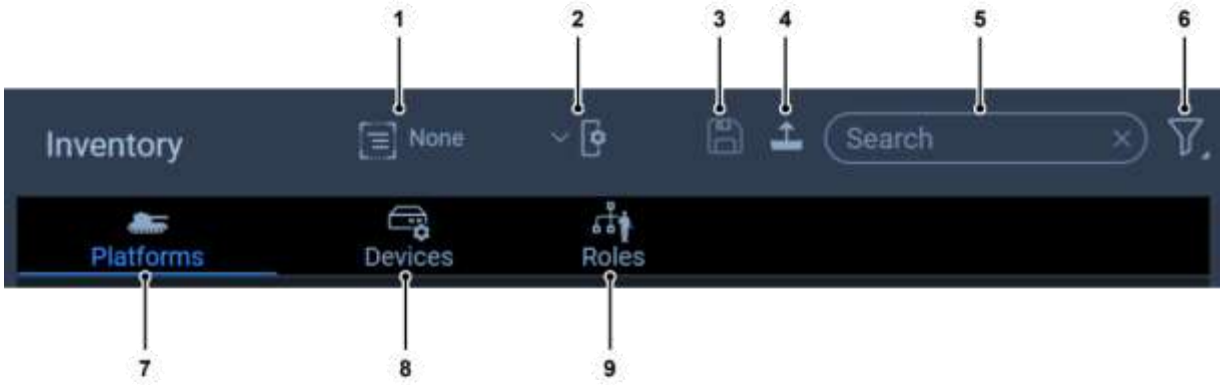

Figure 3-3: Inventory Screen

3.2.1.1 Load Inventory Window

Table 3-4: Load Inventory Window

No	Name	Description
1	Choose File	Box to select the inventory file to load.
2	Load	Loads the selected inventory file to the window (3).
3	File list	When the selected inventory file is loaded, displays a list of platforms/devices/roles files contained in the inventory file.
4	Close	Closes the window without saving the inventory files.
5	Save	Saves the inventory files (3) to the Platforms/Devices/Roles tables, and closes the window.

5622426763

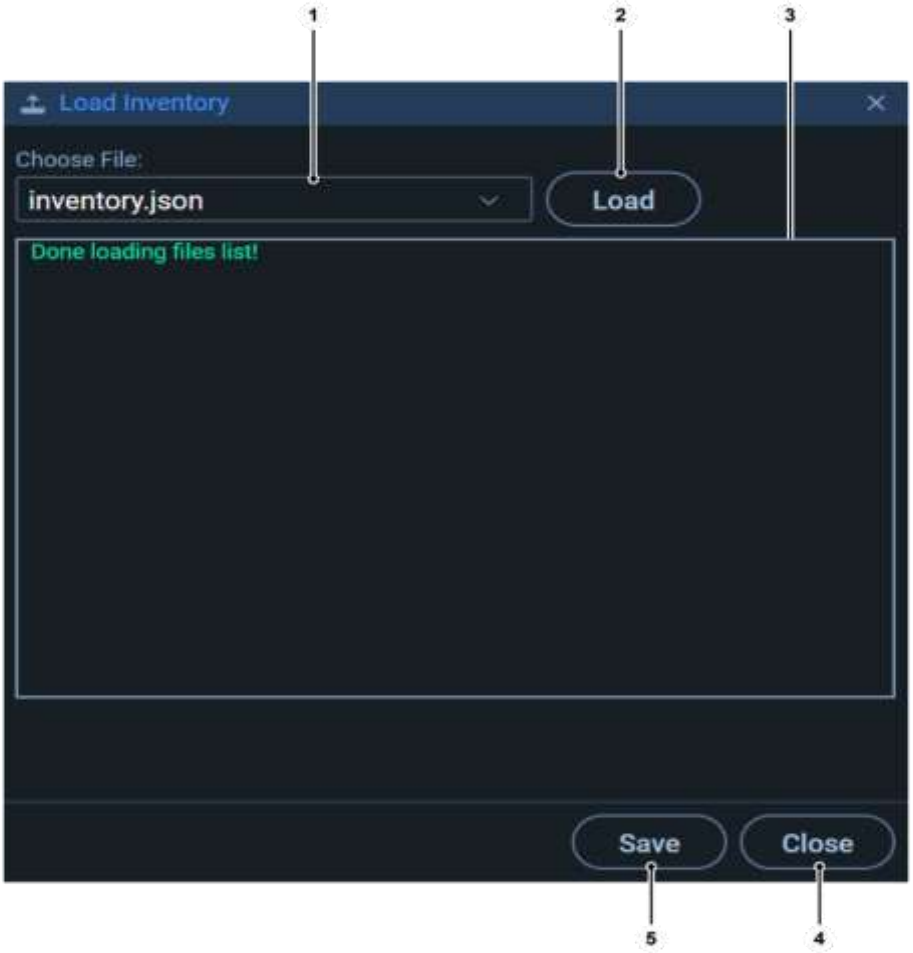

Figure 3-4: Load Inventory Window

3.2.1.2 Platforms Tab

Table 3-5: Platforms Tab

No	Name	Description
Table buttons:		
1	Add platform	Opens the Add/Edit Platform window (see section 3.2.1.2.1), to add a new platform to the Inventory.
2	Delete platform	• Enabled after platform(s) row(s) is(are) selected (3). • Deletes all the selected platform(s).
Platforms table columns:		
3	Row selection	Checkboxes to select/clear platform rows.
4	Platform type	Displays an icon of the platform type.
5	ID	Displays the platform identifier number.
6	Type	Displays the platform type.
7	Device Type	Displays the type of the BNET device(s) installed on the platform (2-3).
8	Device Quantity	Displays the quantity of the BNET device(s) installed on the platform (2-3).
Row buttons:		
9	Edit platform	• Shown after a platform row is selected (3). • Opens the Add/Edit Platform window (see section 3.2.1.2.1), to edit the selected platform (3).
10	Delete platform	• Shown after a platform row is selected (3). • Deletes the selected platform.

5622439563

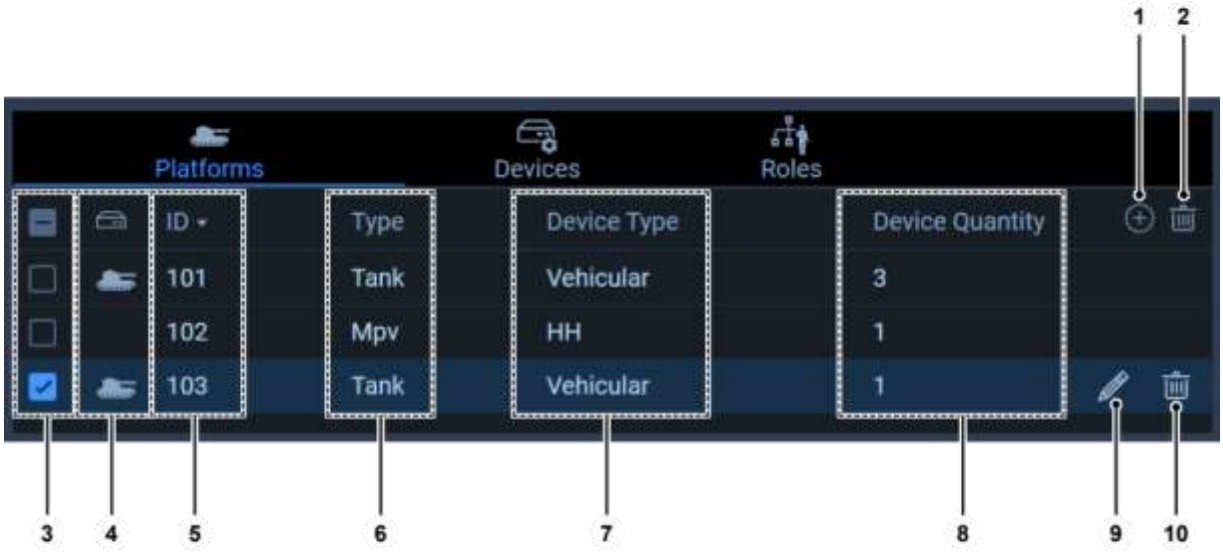

Figure 3-5: Platforms Tab

3.2.1.2.1 Add/Edit Platform Window

Table 3-6: Add/Edit Platform Window

No	Name	Description
1	ID	Box to enter an identifier number for the new platform. Note: When an existing platform ID is entered, the font colour is changed to bright red, indicating that it is reserved.
2	Type	Box to select the type of the new platform: Mpv, Soldier, Tank.
3	Icon	After selecting the platform type (2), displays the platform icon.
4	Device Type	Box to select the type of device installed in the new platform.
5	Quantity	Box to enter the number of devices (4) installed in the new platform.
6	Add	• Enabled after entering/selecting the parameter values (1, 2, 4, 5). • Adds the new platform to the Inventory, and closes the window.
7	Cancel	Closes the window without adding the new platform.

5622433163

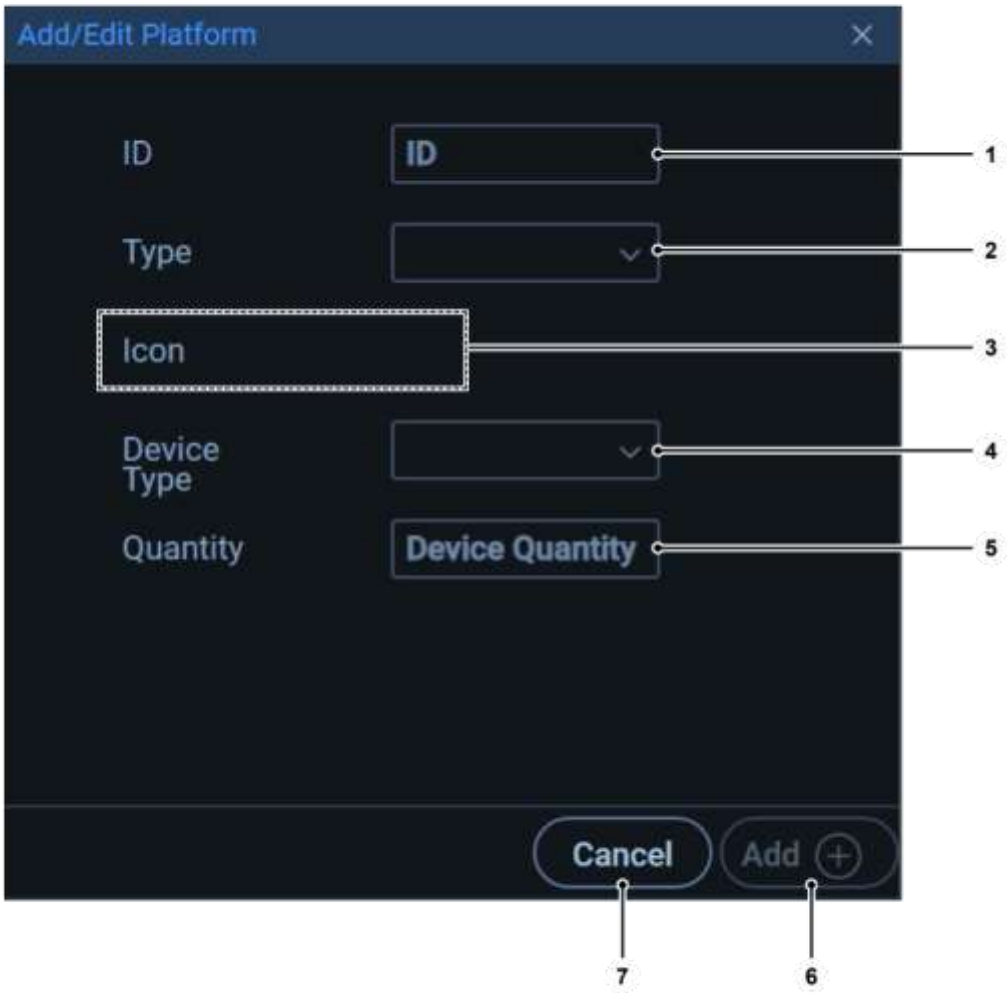

Figure 3-6: Add/Edit Platform Window

3.2.1.3 Devices Tab

Table 3-7: Devices Tab

No	Name	Description
Table buttons:		
1	Add device	Not in use in this version.
2	Delete device	• Enabled after device(s) row(s) is(are) selected (3). • Deletes the selected device(s).
Devices table columns:		
3	Row selection	Checkboxes to select/clear device rows.
4	Device type icon	Displays an icon of the device type.
5	Name	Displays the device name.
6	Serial#	Displays the device serial number.
7	Type	Displays the device type: HH, MPS, AR, MPV, Infra, Vehicular.
8	Product	Displays the device product name.
Row buttons:		
9	Edit device	Opens a window, to change the selected device (3) name.
10	Delete device	• Shown after a device row is selected (3). • Deletes the selected device.

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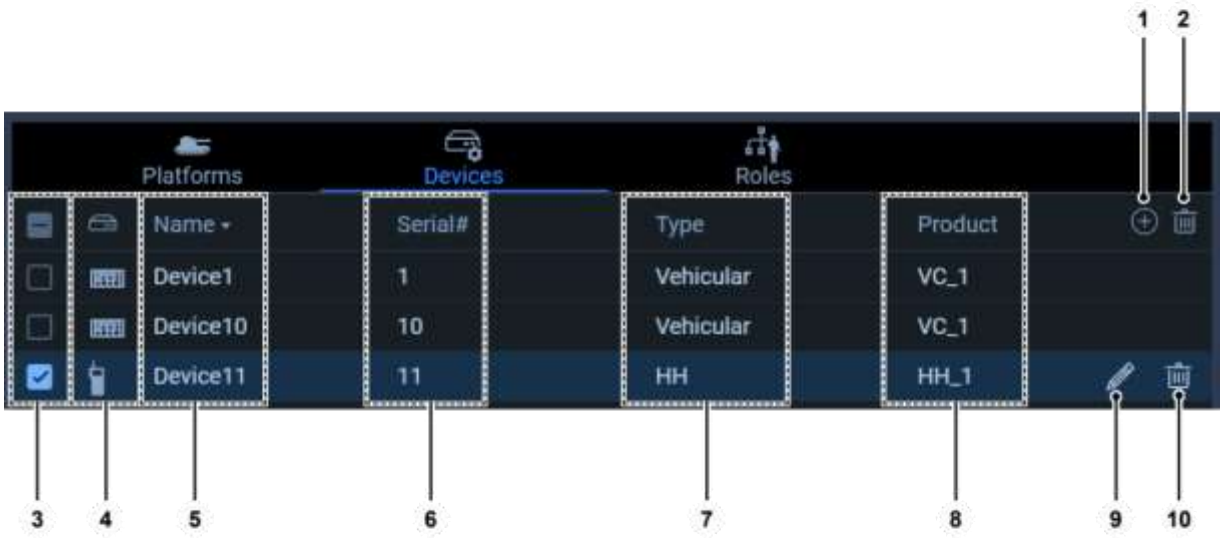

Figure 3-7: Devices Tab

3.2.1.4 Roles Tab

Table 3-8: Roles Tab

No	Name	Description
Table buttons:		
1	Add role	Opens the Add/Edit Role window (see section 3.2.1.4.1), to add a new role to the Inventory.
2	Delete role	• Enabled after a role row is selected (3). • Deletes the selected role.
Roles table columns:		
3	Row selection	Checkboxes to select/clear role rows.
4	Name	Displays the role name.
5	ID	Displays the role identifier number.
6	Callsign	Displays the role callsign.
Row buttons:		
7	Edit role	• Shown after a role row is selected (3). • Opens the Add/Edit Role window (see section 3.2.1.4.1), to edit the selected (3).
8	Delete role	• Enabled after a role row is selected (3). • Deletes the selected role.

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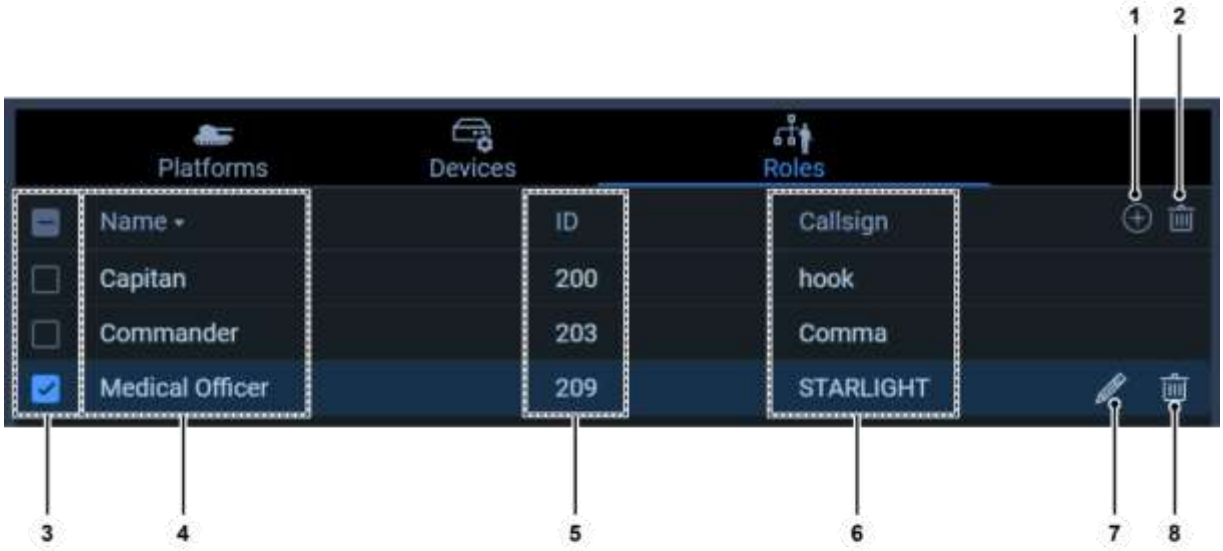

Figure 3-8: Roles Tab

3.2.1.4.1 Add/Edit Role Window

Table 3-9: Add/Edit Role Window

No	Name	Description
1	ID	Box to enter a unique identifier number for the new role. Note: When an existing role ID is entered, the font colour is changed to bright red, indicating that it is reserved.
2	Name	Box to enter a unique name for the new role.
3	Callsign	Box to enter a unique callsign for the new role.
4	Add	Adds the new role to the Inventory.
5	Cancel	Closes the window without adding the new role.

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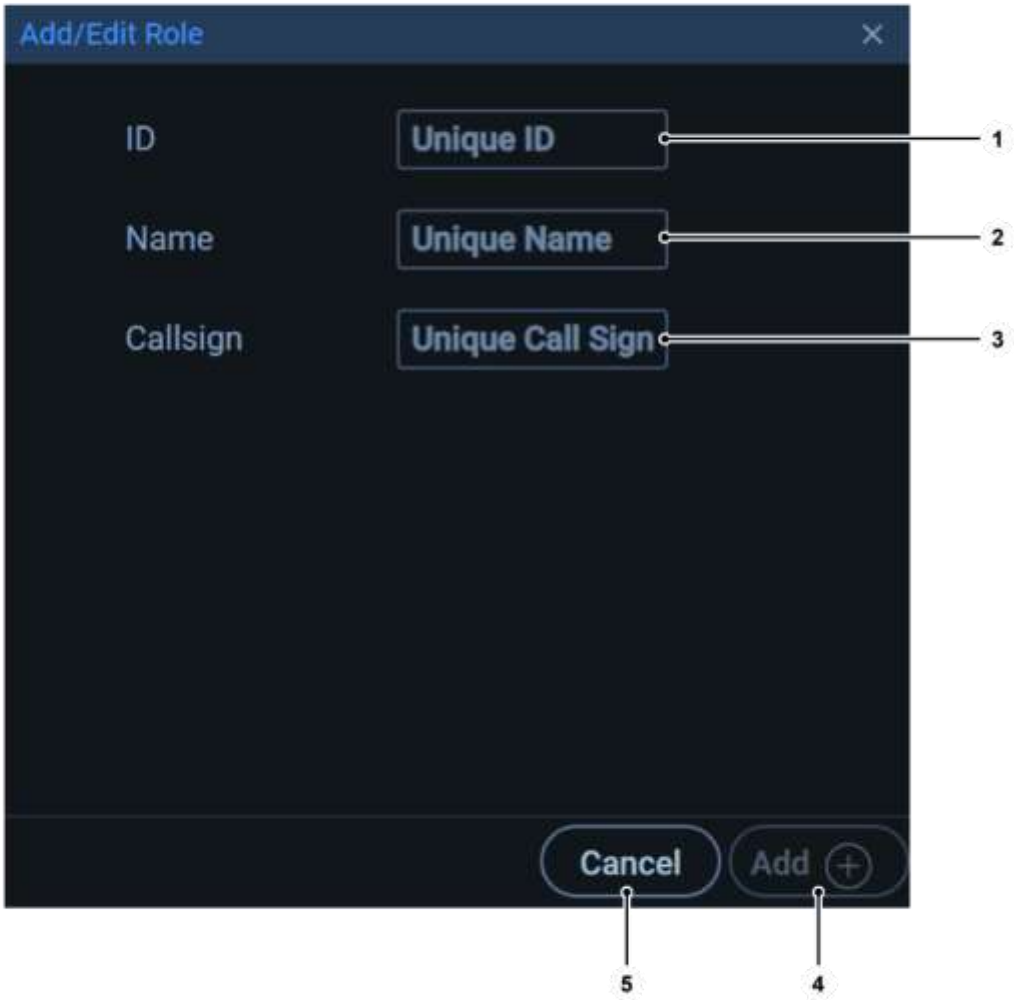

Figure 3-9: Add/Edit Role Window

3.2.2 Networks Screen

Table 3-10: Networks Screen

No	Name	Description
1	Networks ()	Displays in parenthesis the number of networks saved in the database.
2	Add network	Opens the Add Network window, to .add a new network to the database.
Networks table columns:		
3	Net Name	Displays the network name.
4	WF Type	Displays the network Waveform type: FM or GWB.
The following columns are relevant only for GWB networks:		
5	Voice	√ - indicates that the network Voice Enable function is turned On.
6	Hopping	√ - indicates that the network Hopping function is turned On.
7	Secured Mode	√ - indicates that the network Secured Mode function is turned On.
Note: Double-clicking a network row, opens a network screen, according to the selected Waveform (4), to view and configure the selected network: • FM Network screen (see section 3.2.2.2) • GWB Network screen (see section 3.2.2.3)		

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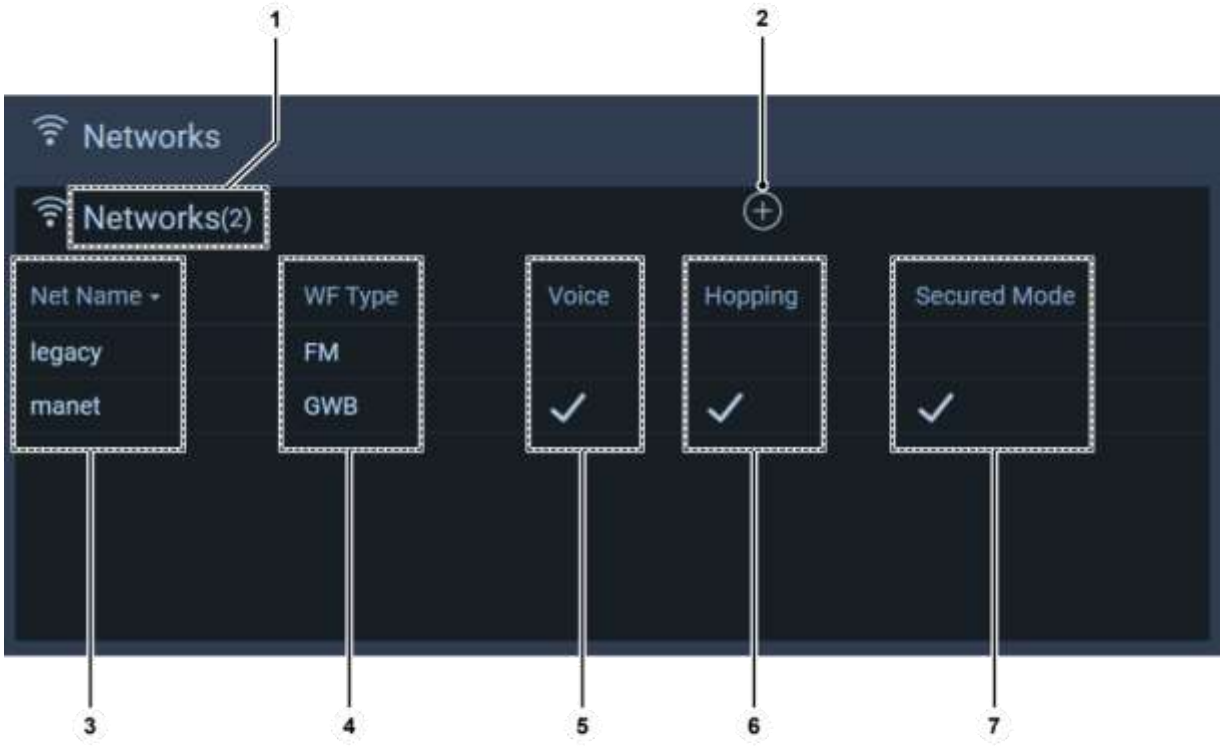

Figure 3-10: Networks Screen

3.2.2.1 Add Network Window

Table 3-11: Add Network Window

No	Name	Description
1	Type	Box to select the new network Waveform type: FM or GWB.
2	Name	Box to enter the new network name.
3	Add	Closes the window, and opens a network screen, according to the selected Waveform (1), to configure the new network: • GWB Network screen (see section 3.2.2.3) • FM Network screen (see section 3.2.2.2)
4	Cancel	Closes the window without adding a new network.

5622484363

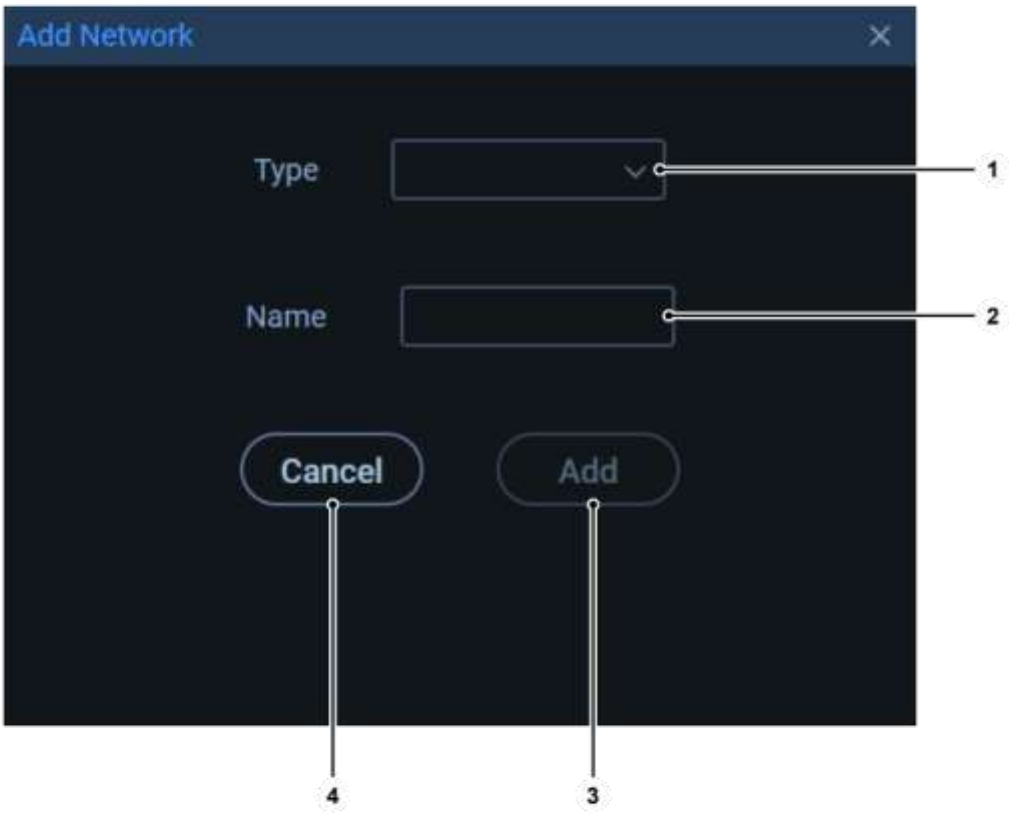

Figure 3-11: Add Network Window

3.2.2.2 New FM Network Screen

Table 3-12: New FM Network Screen

No	Name	Description
1	Name	Displays the network name.
2	ID	Displays the network identifier number.
3	Waveform Type	Displays the network Waveform type: FM.
4	Range	Displays the network frequency range.
5	Bandwidth [MHz]	Displays the network frequency bandwidth in Megahertz.
FM Presets table columns:		
6	#	Displays the preset serial number.
7	Preset Name	Box to enter the preset name.
8	Tx/Rx[MHz]	Box to enter the preset frequency in megahertz, within the pre-defined range (4).
9	FM Mode	Box to select the preset FM mode: Squelch Tone or Noise Detect.
10	Save	• Enabled when the presets are configured (7-9). • Saves the new network, and reverts to the Networks screen (see section 3.2.2). Note: In the Networks screen, the new network is displayed in the Networks table.
11	Cancel	Opens a dialog box, to confirm exiting to the Networks screen (see section 3.2.2), without saving the new network.

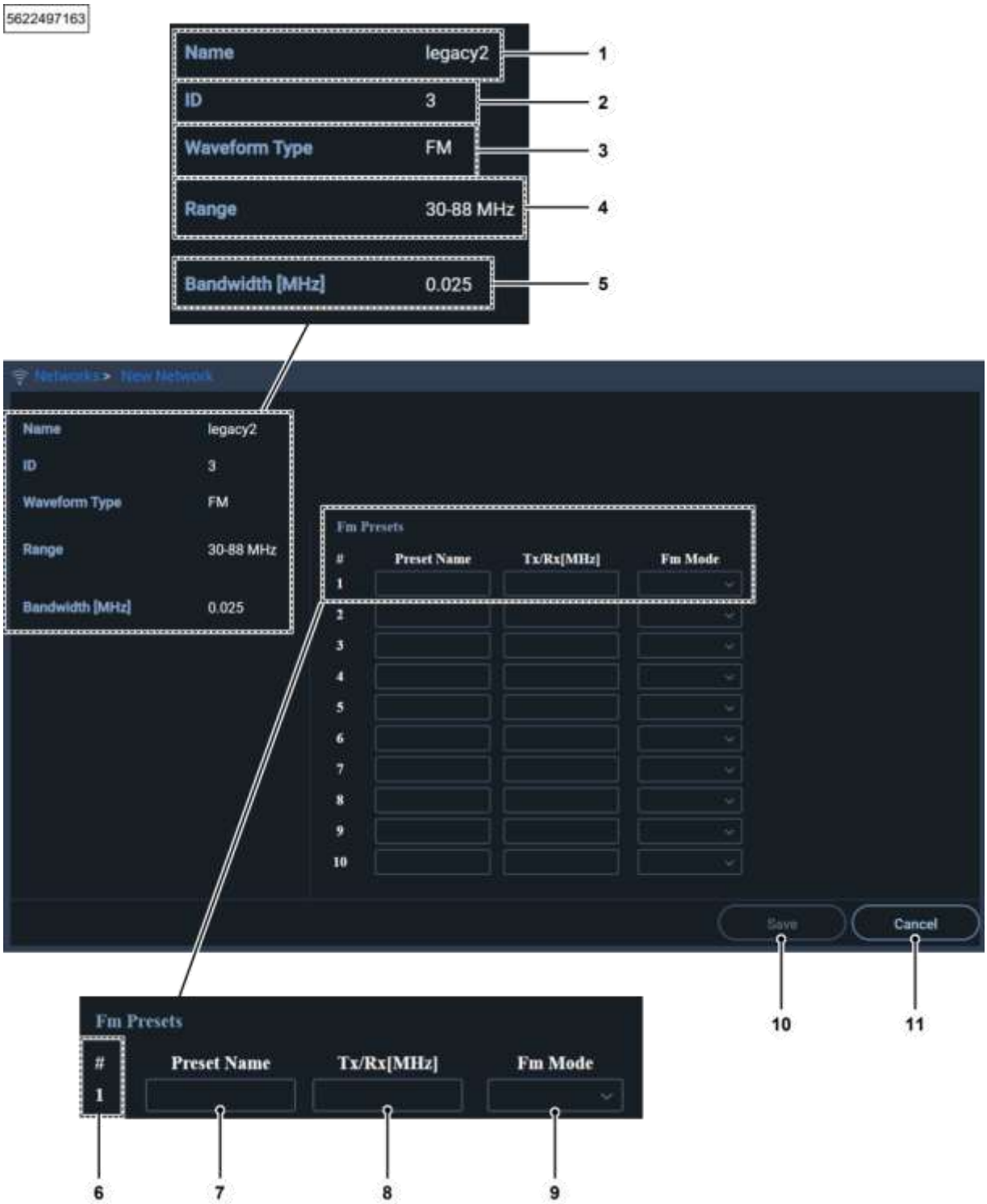

Figure 3-12: New FM Network Screen

3.2.2.3 New GWB Network Screen

Table 3-13: GWB Network Screen

No	Name	Description
1	Networks >	• Displays the name of the new/existing GWB network. • Clicking Networks, reverts to the Networks screen (see section 3.2.2).
2	Details (see section 3.2.2.3.1)	1st stage of configuring a new network or viewing and configuring an existing network main parameters.
3	Freq. (see section 3.2.2.3.2)	2nd stage of configuring a new network or viewing and configuring an existing network frequency channels.
4	Groups (see section 3.2.2.3.4)	3rd stage of configuring a new network or viewing and configuring an existing network voice and data groups.

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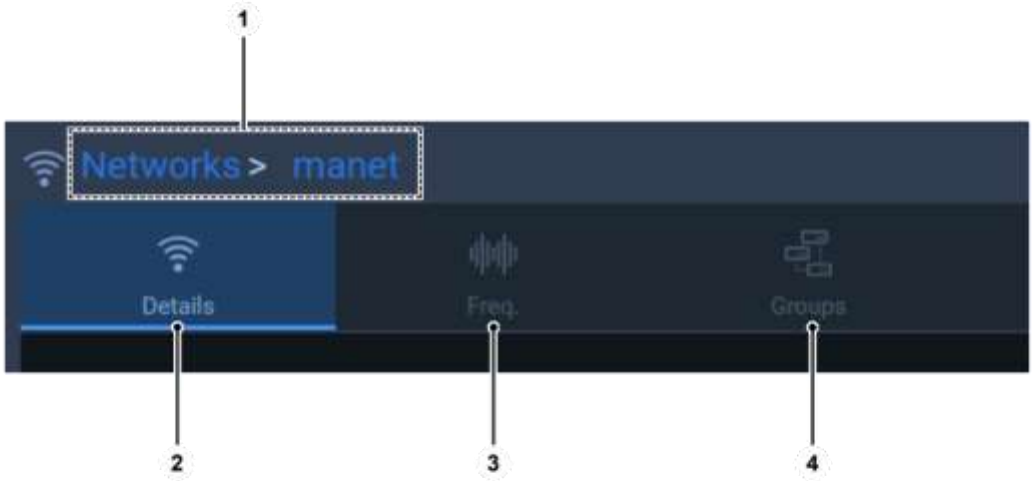

Figure 3-13: GWB Network Screen

3.2.2.3.1 New GWB Network - Details Tab

Table 3-14: Details Tab

No	Name	Description
1	Name	Displays the network name.
2	Net ID	Displays the network identifier number.
3	Waveform	Displays the network Waveform type: GWB.
4	Hopping On/Off	Toggle button to turn On/Off the network Hopping function.
5	Secured Mode On/Off	Toggle button to turn On/Off the network Secured Mode function.
6	Modulation	Box to select the network Modulation.
7	Voice Enable On/Off	Toggle button to turn On/Off the network Voice transmission/reception function.
8	Max. number of Hops	Displays the network maximum number of Hops for Data and Voice transmission.
9	Cancel	Opens a dialog box, to confirm exiting to the Networks screen (see section 3.2.2), without saving the new network.
10	Next	Switches to the next stage: Freq. tab (see section 3.2.2.3.2).

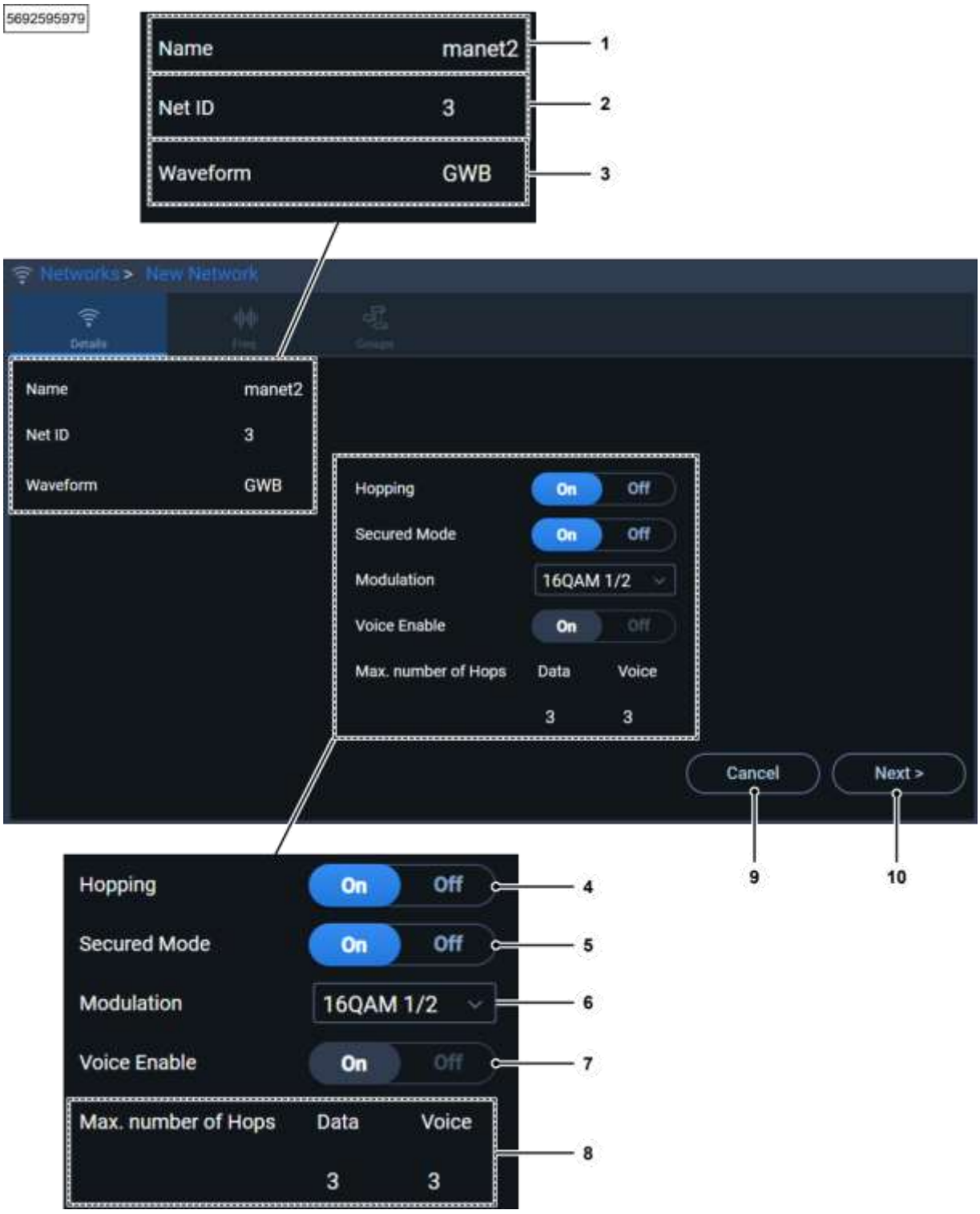

Figure 3-14: Details Tab

3.2.2.3.2 New GWB Network - Freq. Tab - General Pane

Table 3-15: New GWB Network - Freq. Tab - General Pane

No	Name	Description
1	GWB Range [MHz] From/To	Displays the full frequency range pre-determined for a GWB type network: 225 MHz to 512 MHz.
2	Net Range [250 MHz]	• From – box to set the range start frequency for the new network. Note: If the entered value is not within the range (225-512), the font colour changes to bold red. • To – displays the range end frequency, calculated automatically according to the start frequency with an increment of 250 MHz.
3	Ch. width	Displays the pre-determined frequency channel width: 1.25 MHz.
4	Add manual range	Adds a row of From/To boxes (5).
5	Frequency Ranges [MHz] From/To	After adding (4), boxes to manually enter the frequency ranges for the new network, instead of a single range (2).
6	Back	Reverts to the Details tab (see section 3.2.2.3.1).
7	Select	Displays possible frequency channels in the Select Frequencies pane (see section 3.2.2.3.3), automatically calculated according the set range (2) or ranges (5) and the pre-determined channel width (3).

Figure 3-15: New GWB Network - Freq. Tab - General Pane

3.2.2.3.3 New GWB Network - Freq. Tab - Select Frequencies Pane

Table 3-16: New GWB Network - Freq. Tab - Select Frequencies Pane

No	Name	Description
Select Frequencies pane:		
1	Frequency selection	• Enabled when the frequency is available. • Checkboxes to select available frequencies for allocation to channels.
2	Frequency	Displays the frequency in megahertz.
3	Reserved frequency	Displays an indication that the frequency is reserved, because it is already selected for this network (1) or it is reserved for another network.
4	Clear	Clears the selected checkboxes (1),
Selected pane:		
5	Selected ()	Displays in parenthesis the number of frequencies selected for channels (6).
6	Selected frequencies	Displays the frequencies selected (1) for channels in megahertz.
7	Cancel	Opens a dialog box, to confirm exiting to the Networks screen (see section 3.2.2), without saving the new network.
8	Next	Switches to the next stage: Groups tab (see section 3.2.2.3.4).

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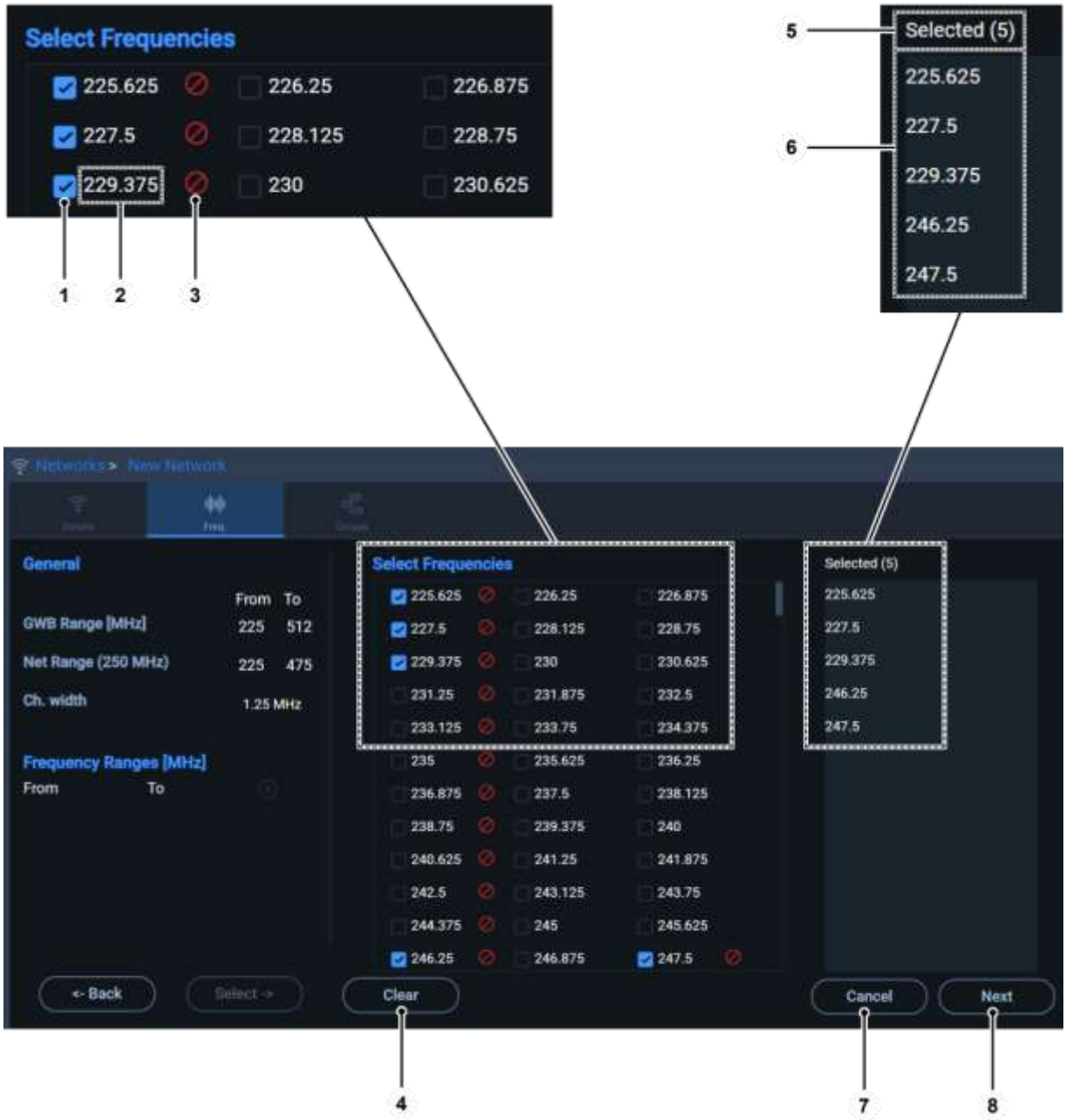

Figure 3-16: New GWB Network - Freq. Tab - Select Frequencies Pane

3.2.2.3.4 New GWB Network - Groups Tab

Table 3-17: New GWB Network - Groups Tab

No	Name	Description
Data Groups table:		
1	Group ID, Name	Display the added (2) data group identifier number and name. Note: • Data group (ID) 1 is automatically set by default. • Each row (groups) can be edited or deleted.
2	Add data group	Opens the Add Data Group window (see section a), to add a data group to the new network.
Voice Groups table:		
3	Group ID, Name	Display the added (4) voice group identifier number and name. Note: Each row (groups) can be edited or deleted.
4	Add voice group	Opens the Add Voice Group window (see section b), to add a voice group to the new network.
Voice Presents table:		
5	#	Displays the voice preset serial number: 1 to 10. Note: All 10 presents must be set.
6	Preset Name	Displays the preset name.
7	Rx/Tx Group	Displays the preset voice transmission (main) group. Note: Only the main group can transmit.
8	Rx Group	Displays the preset first voice reception group.
9	Rx Group	Displays the preset second voice reception group.
10	Add/Edit present	Opens the Edit window (see section c), to add a new preset or edit an existing preset (row).
11	Delete present	Deletes the preset (row).
12	Copy Present	Opens the Copy Voice Preset window (see section d), to select which group to copy.

No	Name	Description
13	Back	Reverts to the Freq. tab (see section 3.2.2.3.2).
14	Cancel	Opens a dialog box, to confirm exiting to the Networks screen (see section 3.2.2), without saving the new network.
15	Save	Saves the new network, and reverts to the Networks screen (see section 3.2.2). Note: In the Networks screen, the new network is displayed in the Networks table.

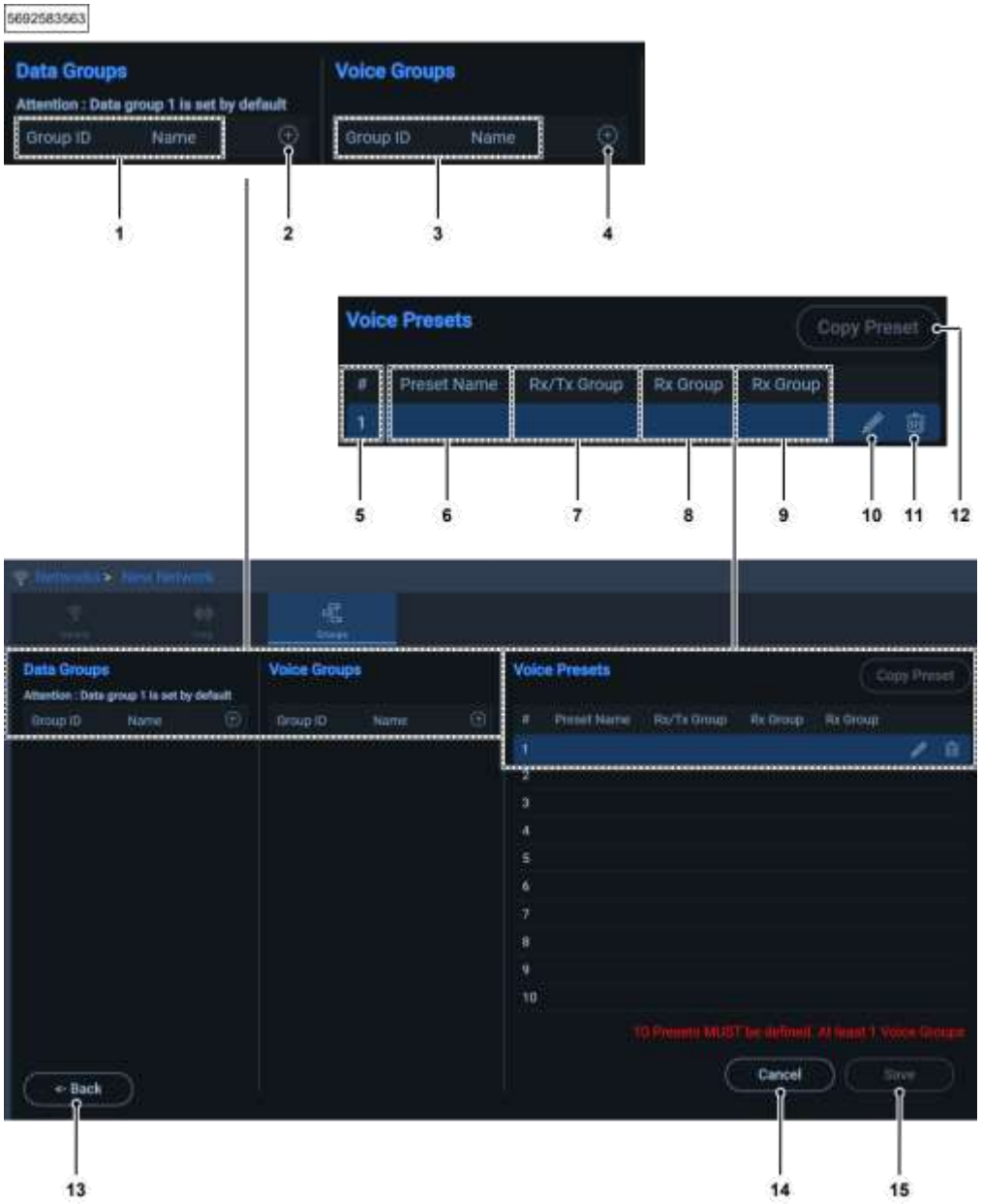

Figure 3-17: New GWB Network - Groups Tab

a. Add Data Group Window

Table 3-18: Add Data Group Window

No	Name	Description
1	Group ID	Box to enter the data group identifier number. Note: ID 1 is reserved by default to the initial automatically set group.
2	Name	Box to enter the data group name.
Note: If a reserved ID/name, i.e. already saved for another group, is entered, the font colour of the entered value changes to bold red.		
3	Save	• Enabled when an available ID (1) and name (2) are entered. • Saves the data group to the new network, and closes the window.
4	Cancel	Closes the window, without saving the data group.

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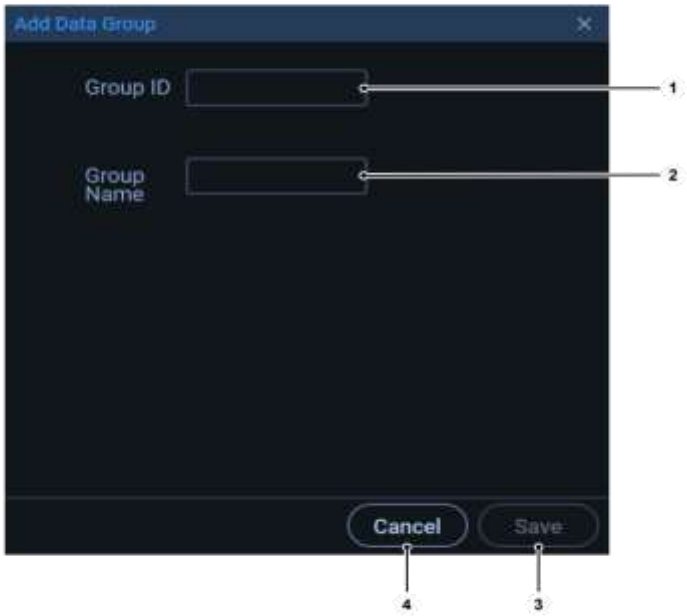

Figure 3-18: Add Data Group Window

b. Add Voice Group Window

Table 3-19: Add Voice Group Window

No	Name	Description
1	Group ID	Box to enter the voice group identifier number.
2	Name	Box to enter the data group name.
Note: If a reserved ID/name, i.e. already saved for another group, is entered, the font colour of the entered value changes to bold red.		
3	Save	• Enabled when an available ID (1) and name (2) are entered. • Saves the voice group to the new network, and closes the window.
4	Cancel	Closes the window, without saving the voice group.

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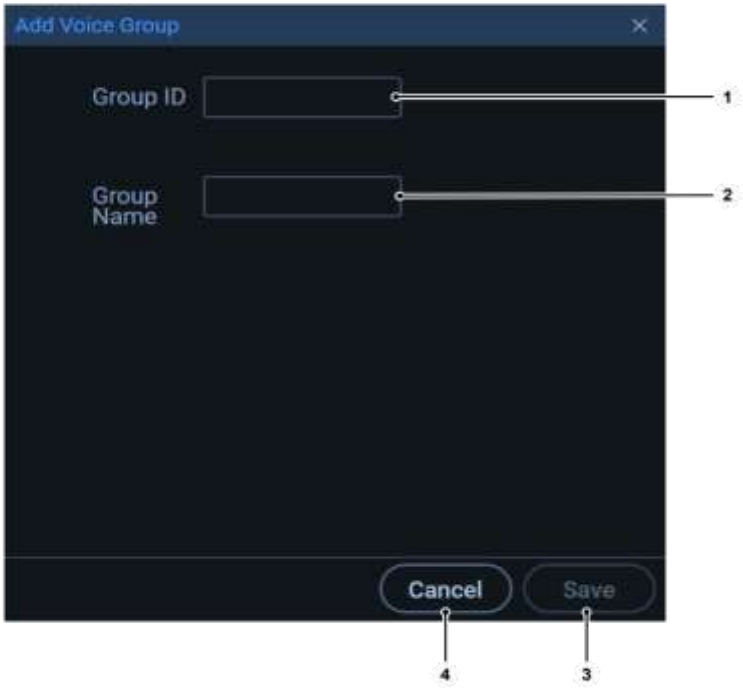

Figure 3-19: Add Voice Group Window

c. Edit Window

Table 3-20: Edit Window

No	Name	Description
1	Preset Name	Box to enter the preset name.
2	Rx/Tx Group	Box to select the preset voice transmission (main) group.
3	Rx Group	Box to select the preset first voice reception group.
4	Rx Group	Box to select the second voice reception group.
5	Update	• Enabled when all values are entered/selected (1-4). • Saves/updates the voice preset, and closes the window.
6	Cancel	Closes the window, without saving/updating the voice preset.

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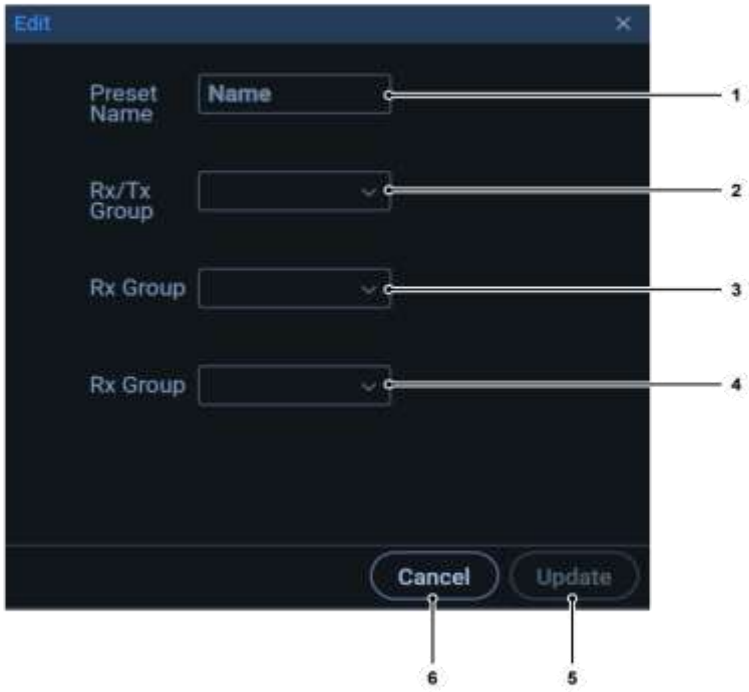

Figure 3-20: Edit Window

d. Copy Voice Preset Window

Table 3-21: Copy Voice Preset Window

No	Name	Description
1	Preset Name	Box to select the preset to copy.
2	#Copies	Opens a dropdown list of nine checkboxes of the other nine presets, to select preset(s) to which to copy the selected preset (1).
3	Copy	• Enabled when the preset name and copies are selected (1-2). • Copies the selected preset (1) to the selected preset(s) (2), and closes the window.
4	Cancel	Closes the window, without coping the preset.

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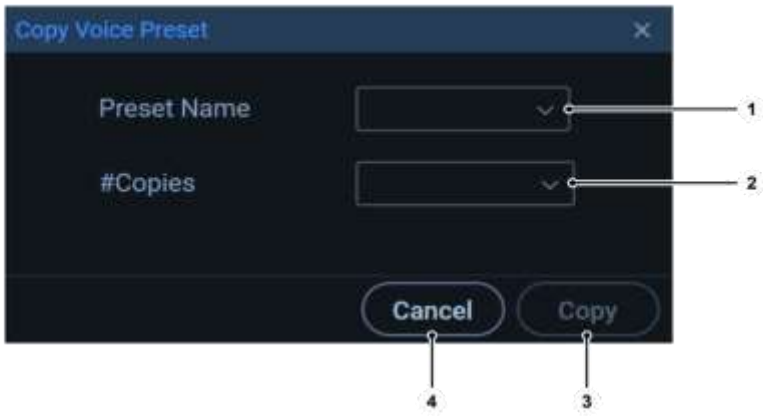

Figure 3-21: Copy Voice Preset Window

3.2.3 Missions Screen

Table 3-22: Missions Screen

No	Name	Description
1	Add mission	Opens the New Mission screen - General Tab (see section 3.2.3.2), to start configuring the new mission.
2	Export mission	Opens the Export Mission window (see section 3.2.3.1), to select a mission to export to a mission parameters file for the BNET device.
3	Search	• Box to enter a letter/digit/word/number of any of the column values, by which to filter the missions displayed in the table. • While typing, the table rows (missions) are automatically filtered.
Missions table columns:		
4	Time end alert	Displays an alert indication, when a mission end time (7) is passed.
5	Name	Displays the mission name.
6	Start	Displays the mission start date and time (H:M:S AM/PM)
7	End	Displays the mission end date and time (H:M:S AM/PM)

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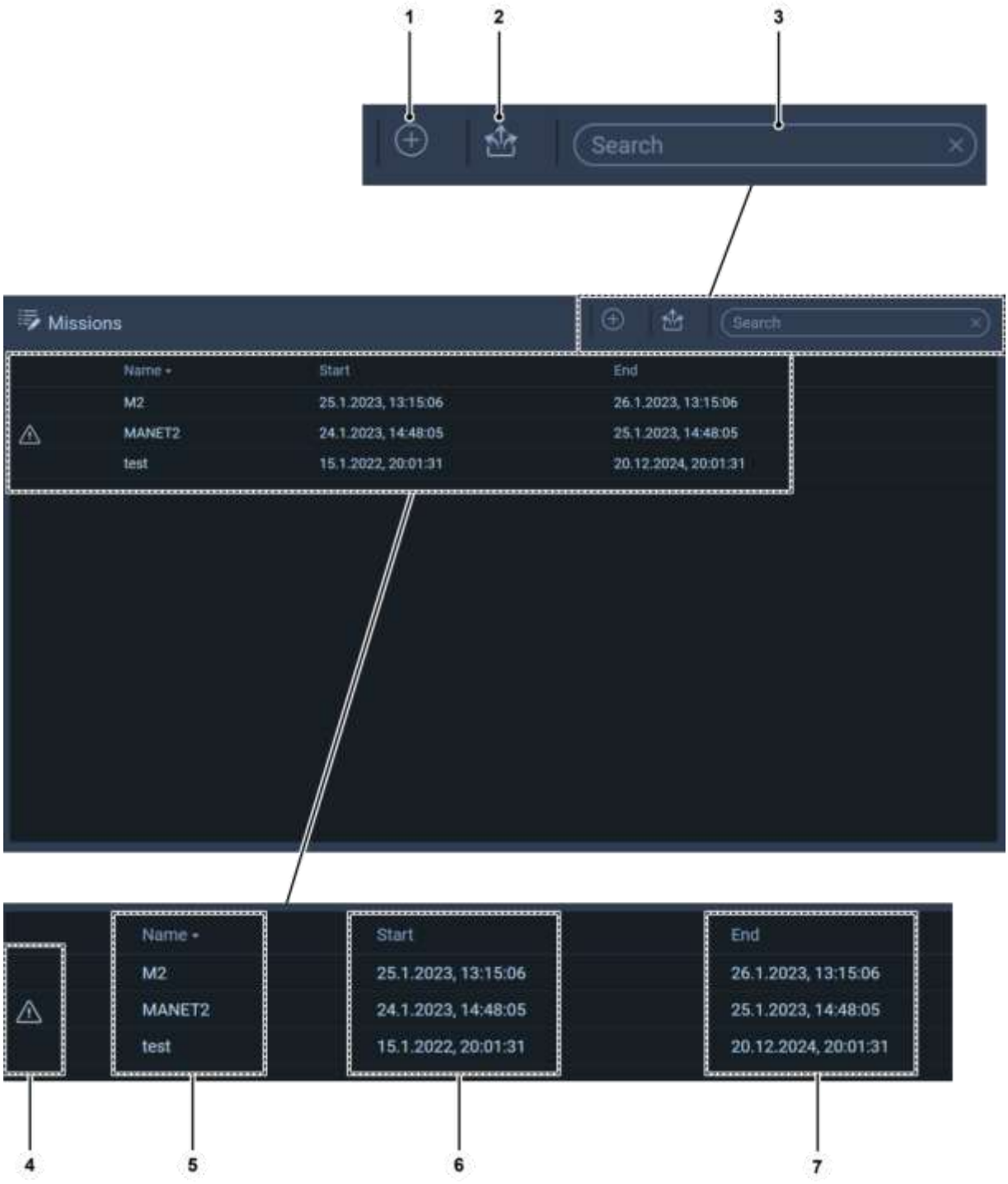

Figure 3-22: Missions Screen

3.2.3.1 Export Mission Window

Table 3-23: Export Mission Window

No	Name	Description
1	Choose a mission to export	Box to select a saved mission to export.
2	OK	Exports the selected mission to a parameters file for the BNET device, and closes the window.
3	Cancel	Closes the window without exporting the mission.

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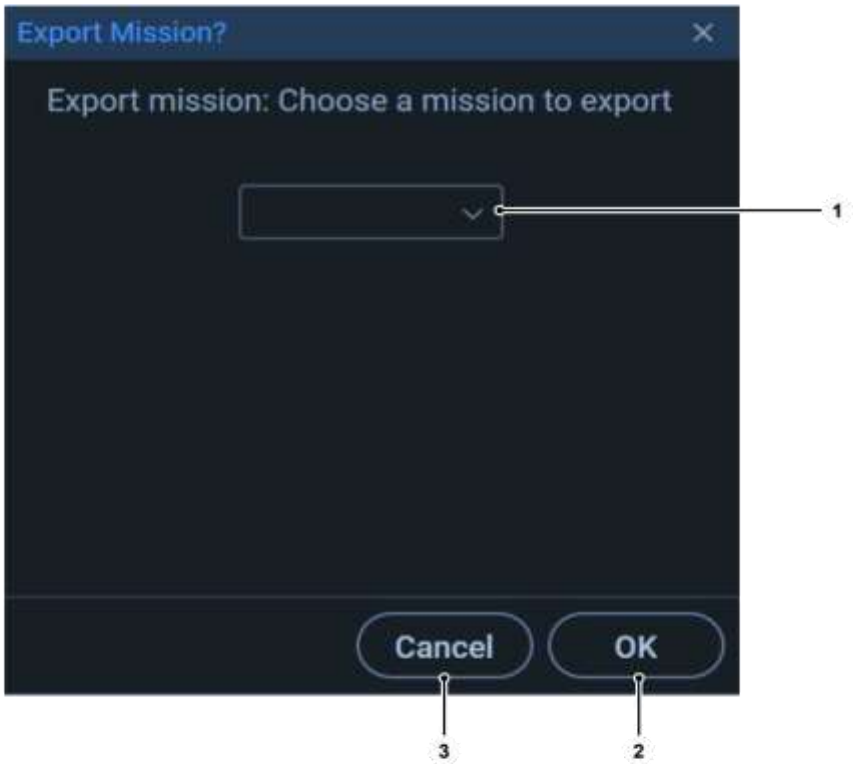

Figure 3-23: Export Mission Window

3.2.3.2 New Mission Screen - General Tab

Table 3-24: New Mission Screen - General Tab

No	Name	Description
1	Name	Box to enter the mission name.
2	Created By	Box to enter the name of the user which creates the mission.
3	Creation Date	Displays the time and date on which the New Mission screen was opened.
4	Validity	Not in use.
5	Start Date	• Calendar button – opens a standard calendar, to select the time and date on which the mission is to start. • Box – displays the selected start time and date.
6	End Date	• Calendar button – opens a standard calendar, to select the time and date on which the mission is to end. • Box – displays the selected start time and date. Note: When the end time and date is identical to the start time and date, the font colour changes to bold red
7	Cancel	Opens a dialog box, to confirm exiting to the Missions screen (see section 3.2.3), without saving the new mission.
8	Next	Switches to the next stage: Allocate tab (see section 3.2.3.3).

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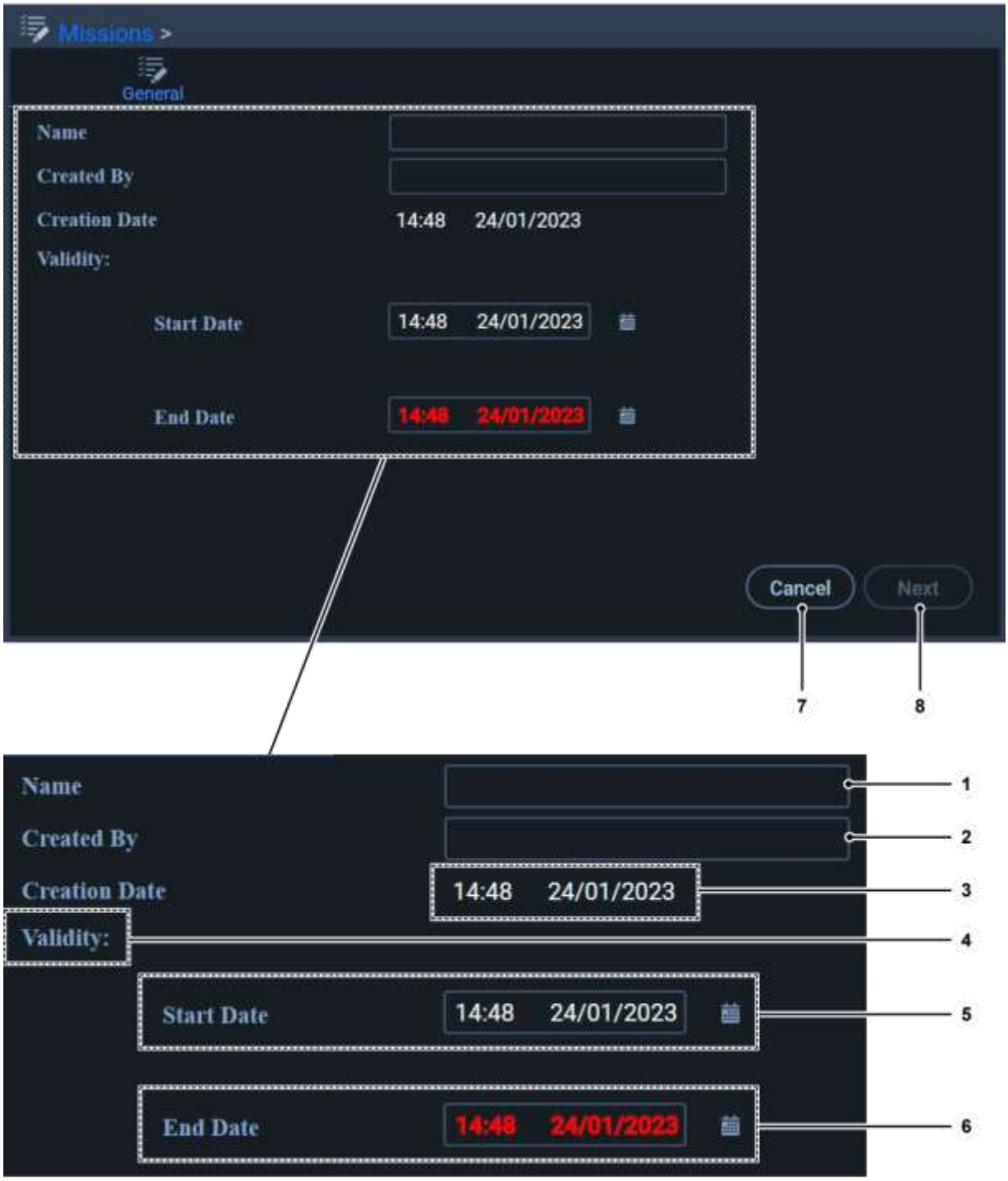

Figure 3-24: New Mission Screen - General Tab

3.2.3.3 New Mission Screen - Allocate Tab

Table 3-25: New Mission Screen - Allocate Tab

No	Name	Description
1	Unit	Opens the Add Unit window (see section 3.2.3.3.1), to add a unit to the mission.
2	Network	Opens the Add Network window (see section 3.2.3.3.2), to add networks to the mission.
3	Save	• Enabled when a unit (1) and networks (2) are added. • Saves the mission to the server: – Closes the window. – Opens a message box to indicate the server response.
4	Cancel	Opens a dialog box, to confirm exiting to the Missions screen (see section 3.2.3), without saving the new mission.

5695206203

Figure 3-25: New Mission Screen - Allocate Tab

3.2.3.3.1 Add Unit Window

Table 3-26: Add Unit Window

No	Name	Description
1	Unit Name	Box to enter a unique name for the new unit. Note: When an existing unit name is entered, the font colour is changed to bright red, indicating that it is reserved.
2	Unit Type	Box to select the new unit echelon: Brigade, Battalion, Company, Platoon, Squad.
3	Unit id	Displays an identifier number allocated by the system to the new unit.
4	Add	• Enabled after entering a name and selecting a type. • Adds the new unit to the mission, and closes the window.
5	Cancel	Closes the window without adding the new unit to the mission.

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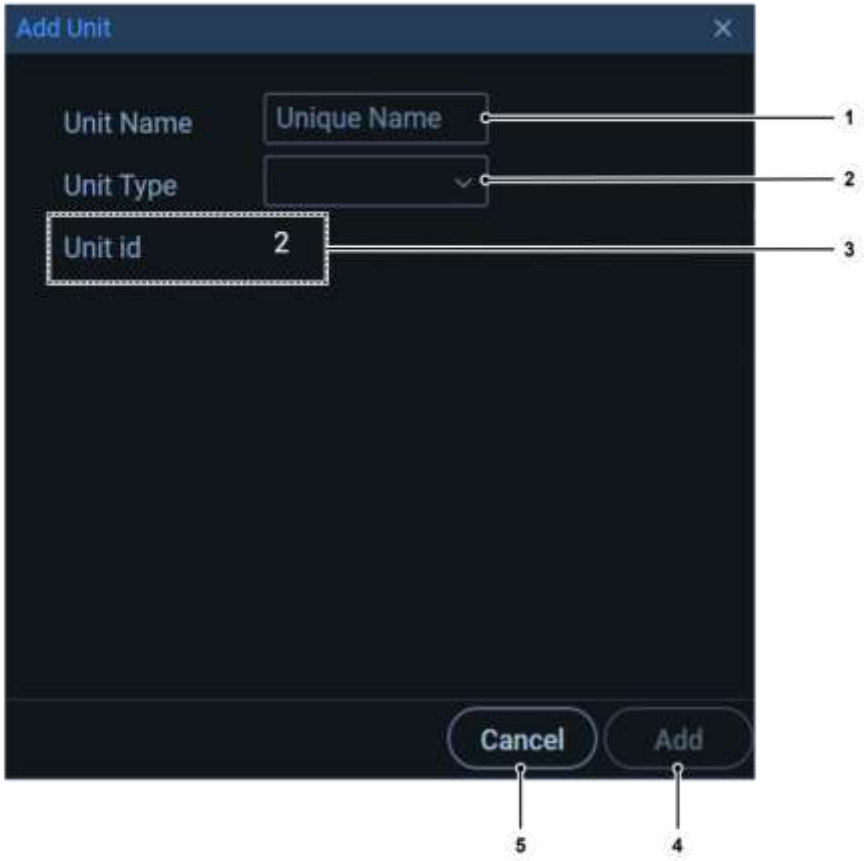

Figure 3-26: Add Unit Window

3.2.3.3.2 Add Network Window

Table 3-27: Add Network Window

No	Name	Description
1	Type	Box to select the network type: FM or GWB.
2	Network	Box to select the one of the saved networks of the selected type (1).
3	Add	• Enabled after selecting a type and network. • Adds the selected network to the mission, and closes the window.
4	Cancel	Closes the window without adding the network to the mission.

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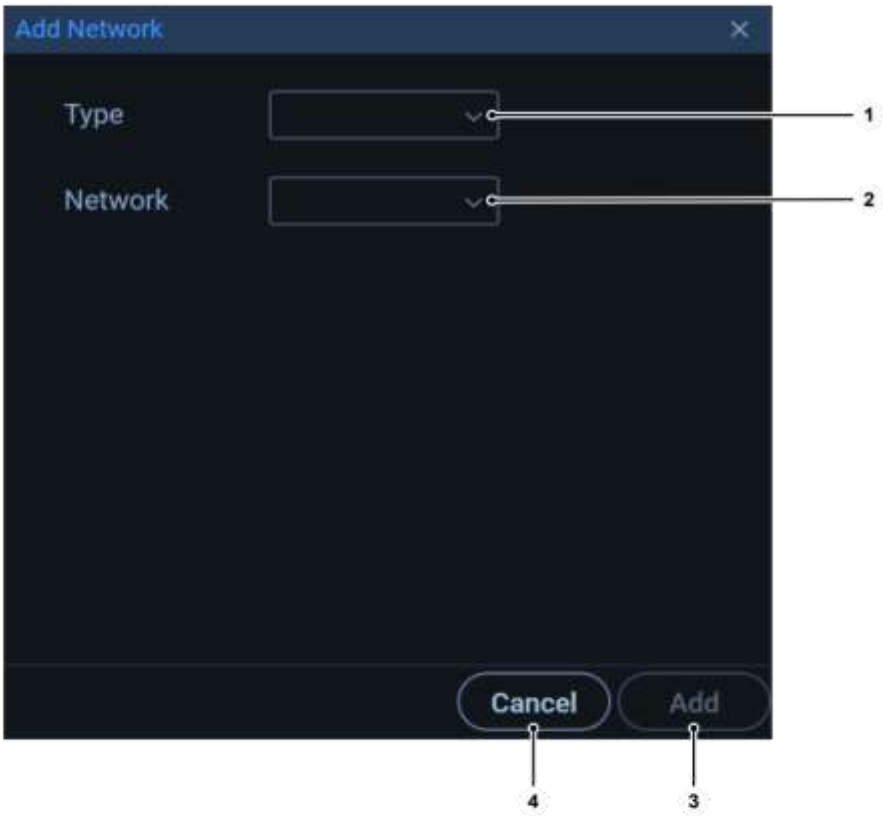

Figure 3-27: Add Network Window

3.2.3.4 New Mission Screen - Allocate Tab - Unit Expanded

Table 3-28: New Mission - Allocate Tab - Unit Expanded

No	Name	Description
Unit table:		
1	Force	Displays the unit name.
2	Platform	Displays the unit platform.
3	Roles	Displays the unit roles.

No	Name	Description
4	Devices	Displays the unit devices.
5	Edit platform	Opens the Edit Platform window (see section 3.2.3.4.1), to edit the unit platform, roles and devices (2-4).
6	Delete unit	Deletes the unit.
7	Add platform	Opens the Add Platform window (see section 3.2.3.4.2), to add a platform and roles to the unit.
8	Expand/collapse unit	Expands/collapses the unit row.
Network table:		
9	Delete network	Deletes the FM/GWB network.
10	FM RX/TX	Checkboxes to select/clear the FM network RX/TX function.
11	Edit groups	Opens the Edit GWB Groups window (see section 3.2.3.4.3), to edit the data groups and voice presets of the GWB network only for the selected BNET device.
12	GWB RX/TX	Checkboxes to select/clear the GWB network RX/TX function.

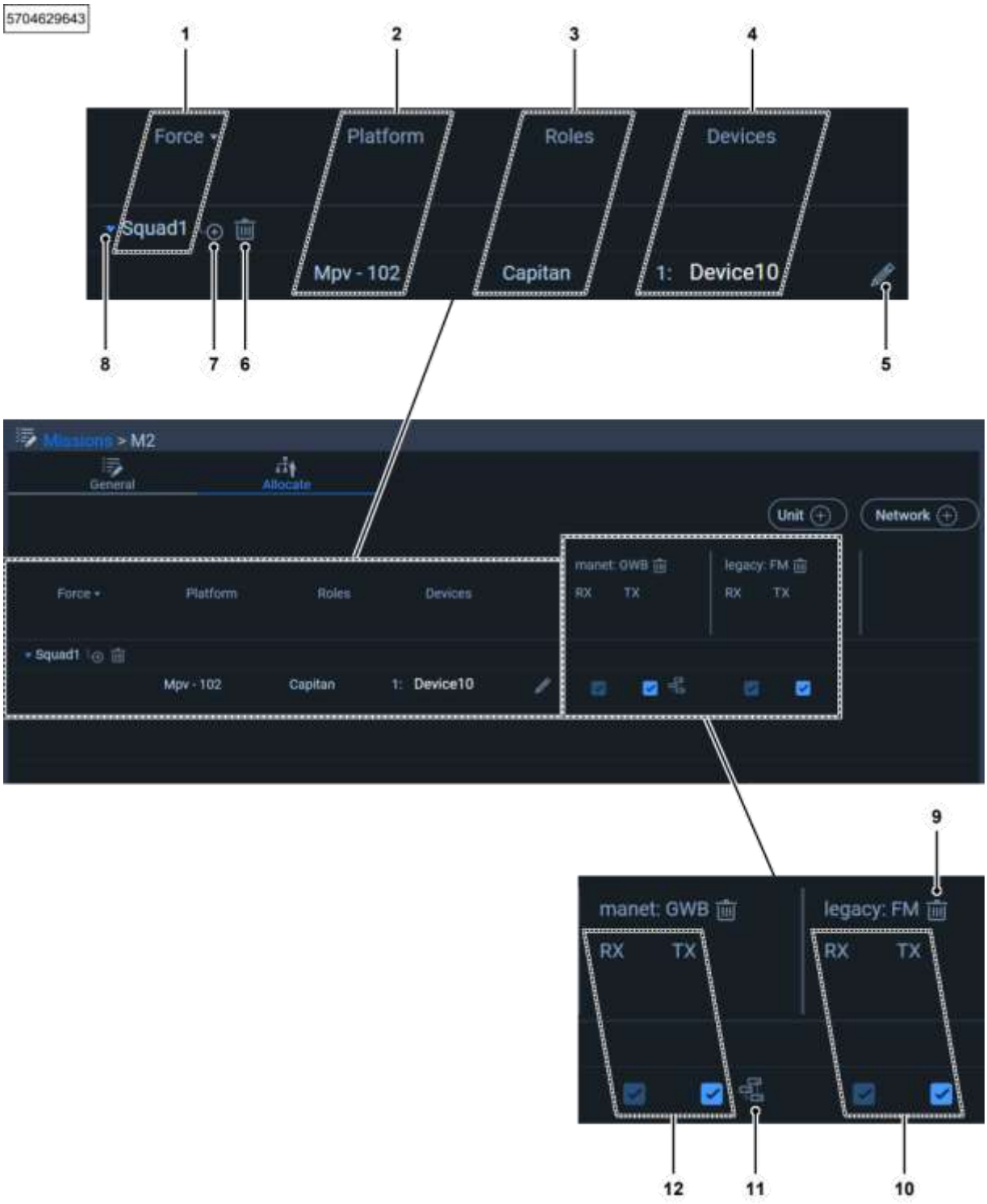

Figure 3-28: New Mission - Allocate Tab - Unit Expanded

3.2.3.4.1 Edit Platform Window

Table 3-29: Edit Platform Window

No	Name	Description
1	Platform	Box to select a platform.
2	Roles	Box to select a role of the person which uses the BNET device on the platform (1).
3	Add role	Adds a role (box), to select another role (2).
4	Delete device	Deletes a device (box) (5).
5	Devices	Box to select a device installed on the platform (1).
6	Save	Saves the changes to the platform, and closes the window.
7	Cancel	Closes the window without saving the changes.

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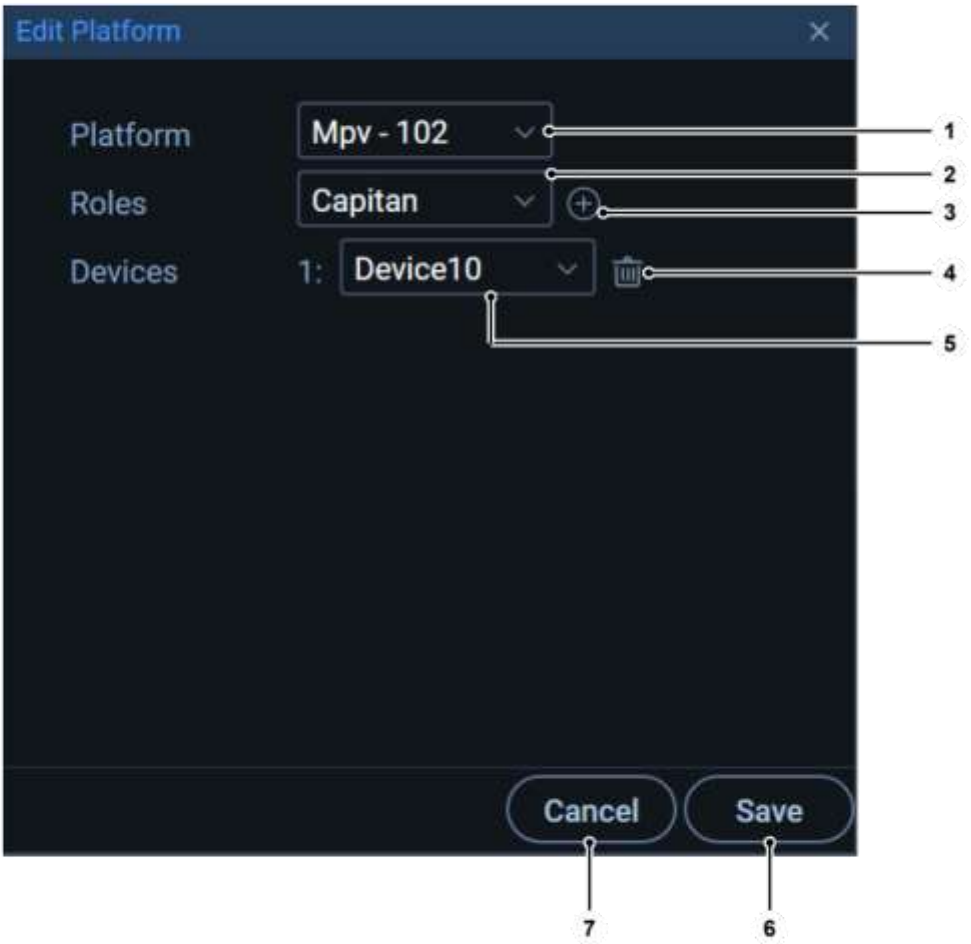

Figure 3-29: Edit Platform Window

3.2.3.4.2 Add Platform Window

Table 3-30: Add Platform Window

No	Name	Description
1	Platform	Box to select a platform to add to the mission.
2	Add role	Adds a role (box), to select another role (3).
3	Roles	Box to select a role of the person which uses the BNET device on the platform (1).
4	Save	• Enabled after selecting platform (1) and role (3). • Adds the platform to the mission, and closes the window.
5	Cancel	Closes the window without adding the platform to the mission.

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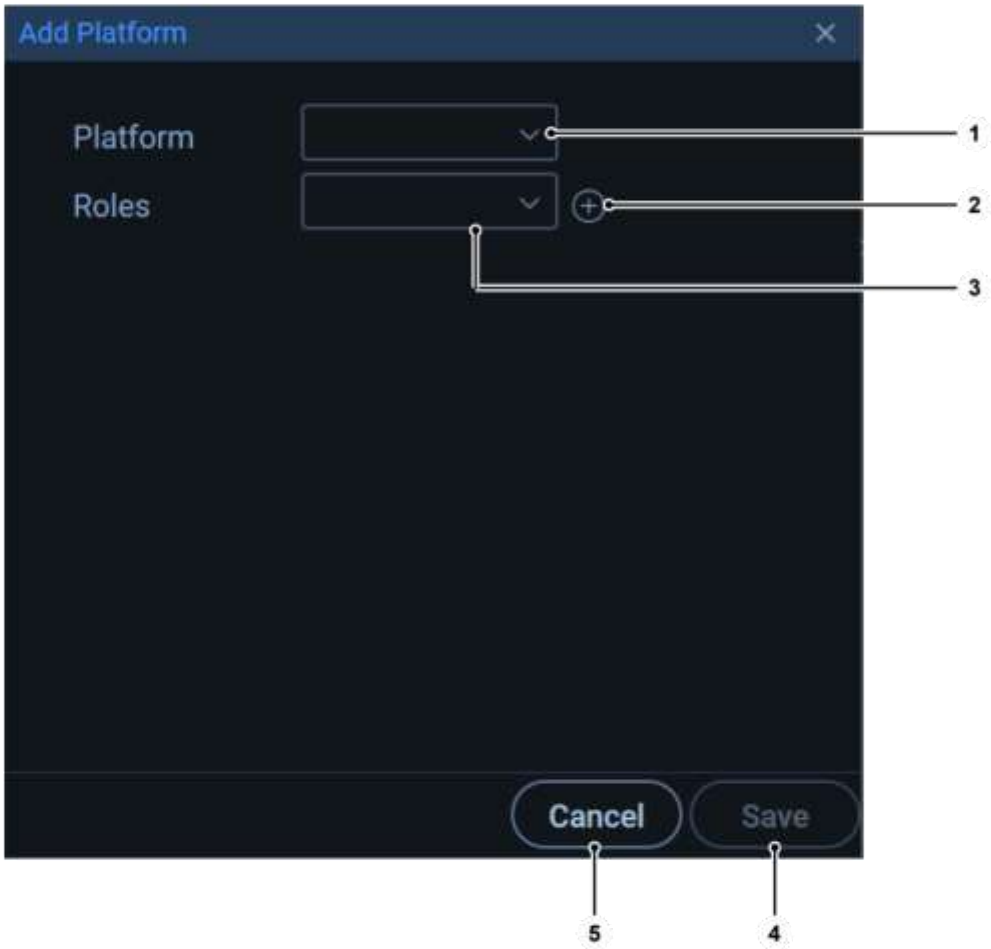

Figure 3-30: Add Platform Window

3.2.3.4.3 Edit GWB Groups Window

Table 3-31: Edit GWB Groups Window

No	Name	Description
Data Groups table:		
1	Group selection	Checkboxes to select/clear the data groups in the mission network.
2	Group ID	Displays the data group identifier number.
3	Name	Displays the data group name.
Voice Presents table:		
4	#	Displays the voice preset serial number: 1 to 10.
5	Template	Box to select the preset (name).
6	Rx/Tx Group	Box to select the present voice transmission (main) group.
7	Rx Group	• Box to select the present first voice reception group. • X – deletes the Rx group.
8	Rx Group	• Box to select the present second voice reception group. • X – deletes the Rx group.
9	Delete preset	Deletes the preset (row).
10	Cancel	Closes the window, without saving the changes.
11	Save	Saves the changes to the mission network, and closes the window.

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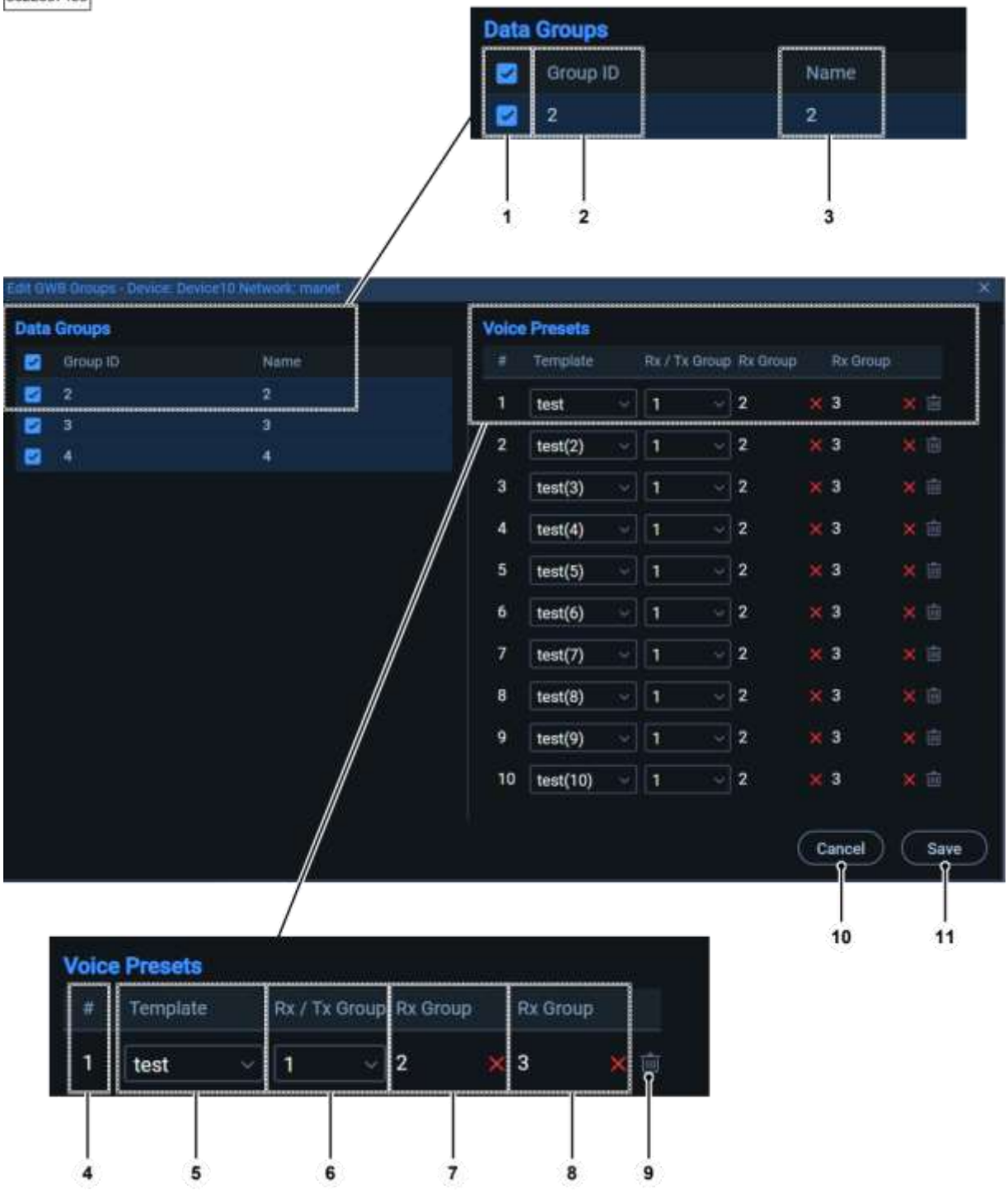

Figure 3-31: Edit GBW Groups Window

3.3 R-NMS APPLICATION

Table 3-32: R-NMS - Main Screen

No	Name	Description
1	Main toolbar (see section 3.3.1)	• Contains navigation buttons for NMS screens. • Displayed in two states: – Expanded – shows the names and icons. – Collapsed – shows only icons.
2	Selected screen display area	Displays a screen selected in the main toolbar (1). Note: By default, Map screen (see section 3.3.2) is displayed automatically after login.
3	Logout	Logs out of the current user, and reopens the R-NMS login screen.
4	Time and date	Displays the R-NMS computer time (hh:mm) and date (dd/mm/yyyy).

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Figure 3-32: R-NMS - Main Screen

3.3.1 Main Toolbar

Table 3-33: R-NMS Main Toolbar

No	Name	Description
1	Expand/collapse toolbar	Expands/collapses the main toolbar: • In expanded state – the toolbar shows names and icons. • In collapsed state – the toolbar shows only icons.
2	Map	Opens the Map screen (see section 3.3.2), to view the currently loaded map, on which icons of the system active BNET devices are displayed.
3	Devices	Opens the Devices screen (see section 3.3.3), to view and configure the system BNET devices.
4	Alarms	Opens the Alarms screen (see section 3.3.4), to view failures reported by BNET devices, and recommended actions for correcting each failure.
5	Versions	Opens the Versions screen (see section 3.3.5), to view software and firmware versions of the system BNET devices.
6	Users (ADMIN)	• Enabled only for Admin user. • Opens the Users screen (see section 3.3.6), to manage the R-NMS users.

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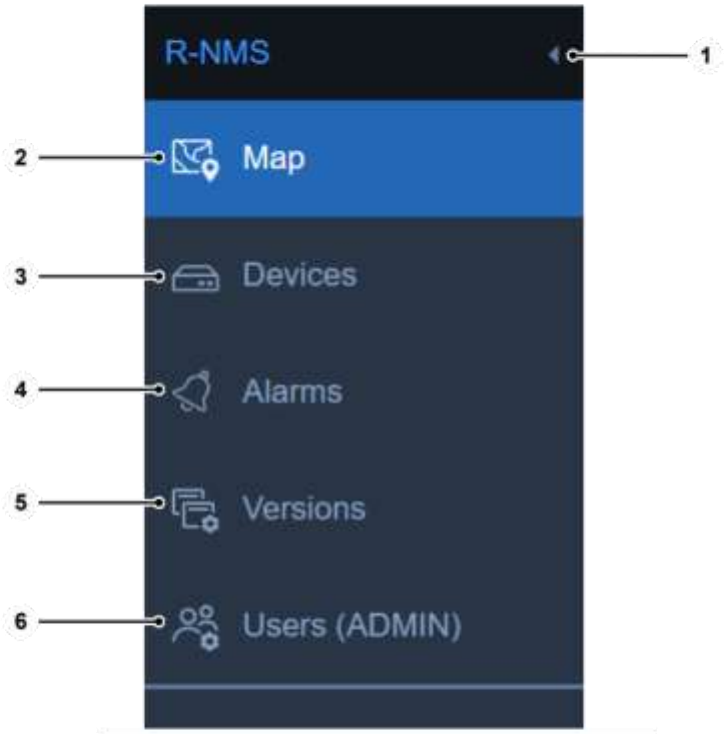

Figure 3-33: R-NMS Main Toolbar

3.3.2 Map Screen

Table 3-34: Map Screen

No	Name	Description
1	BNET name	Displays the BNET device name.
2	BNET icon	• Displays an icon of the BNET device type: Vehicular. • Double-clicking the icon, opens the EMS main screen (see section 3.4.1), to view and configure the BNET device parameters.
3	Point to location	Points to the BNET device location on the map.
4	Map	Displays the map, uploaded from the map file contained in the R-NMS folder.
5	Fake Location	• Toggle button to turn on/off the fake location function. • When on, all active BNET devices are displayed on the map in a circle form, as the fake location coordinates are the circle center.
6	Set	Displays on the map all active BNET devices, which do not report their GPS location, around the active BNET devices, which do report their GPS location.

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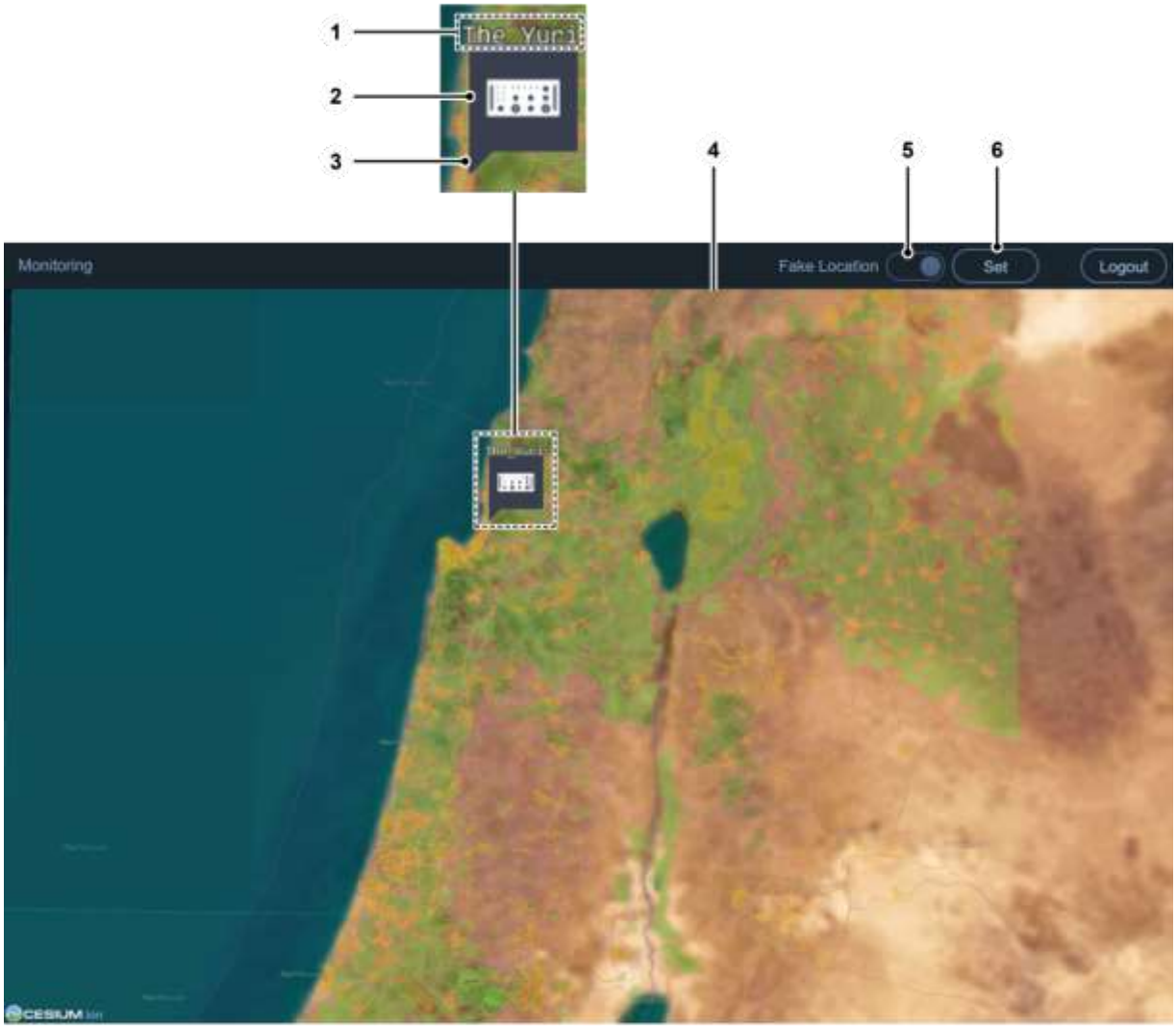

Figure 3-34: Map Screen

3.3.3 Devices Screen

Table 3-35: Devices Screen

No	Name	Description
1	Group By	• Enables selecting a parameter (column) by which to group the devices in the table. • Displays None value, when no parameter is selected.
Devices table columns:		
2	Selected unit	Displays the unit selected as Group By (1).
3	Callsign	Displays the BNET device call sign.
4	Platform-ID	Displays the BNET device force identifier number.
5	Mission	Displays the BNET device mission name.
6	Alert	Displays an indication when a BNET device error is reported. Note: See BNET device error details and recommended actions in the Alerts screen (see section 3.3.4).
7	BNET icon	Displays the BNET device type icon.
8	Name	Displays the BNET device name.
9	ID	Displays the BNET device identifier number.
10	Type	Displays the BNET type: Vehicular.
11	Connectivity	Displays the BNET connectivity quality: • GOOD – indicates that the BNET device is connected to the network. • POOR – indicates BNET device data packet loss. • UNREACHABLE – indicates that the BNET device is not connected to the network.
Note: Double-clicking the local BNET device row, opens the EMS main screen (see section 3.4.1), to view and configure the BNET device parameters.		

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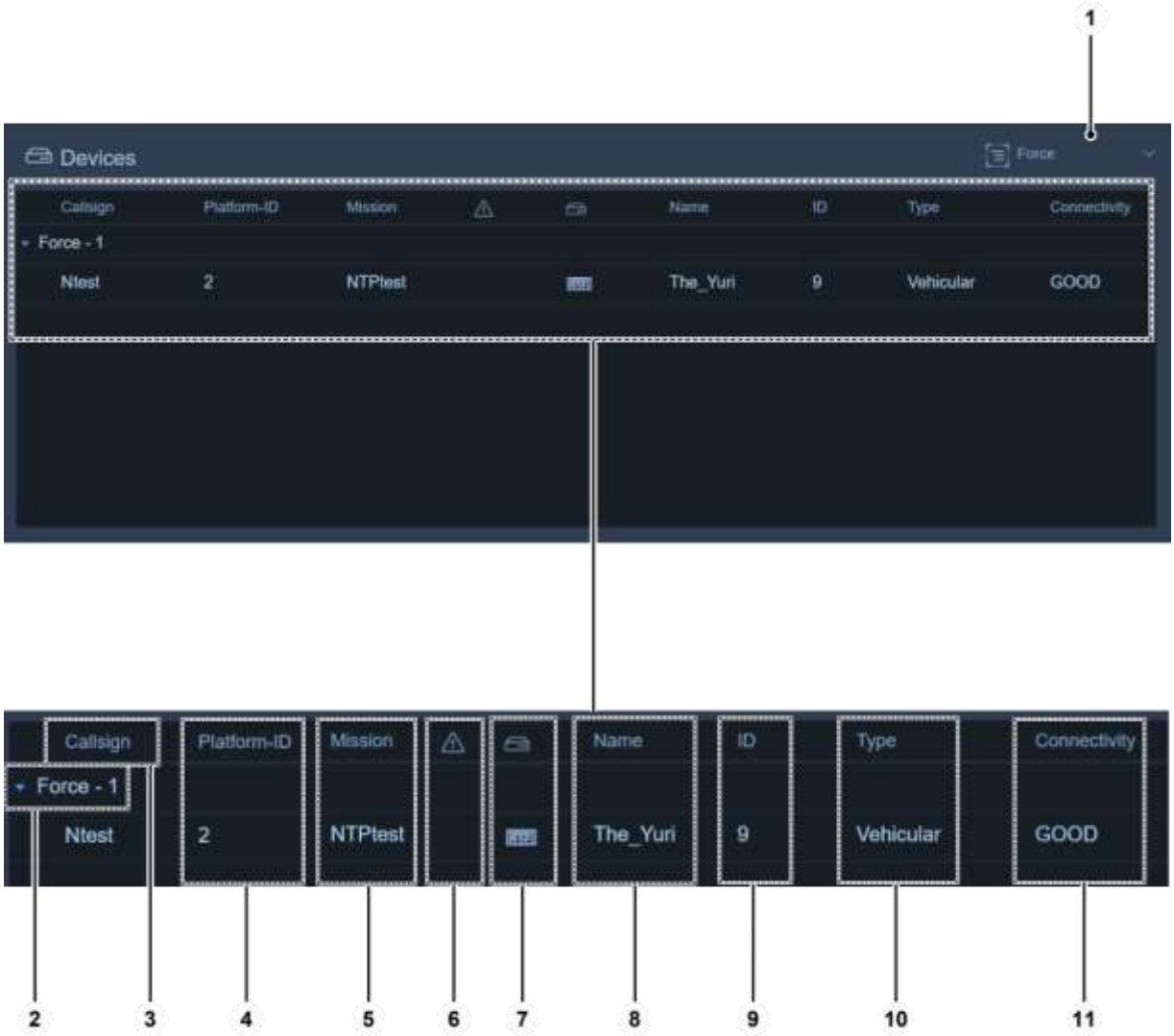

Figure 3-35: Device Screen

3.3.4 Alarms Screen

Table 3-36: Alarms Screen

No	Name	Description
1	Group By	• Enables selecting a parameter (column) by which to group the devices in the table. • Displays None value, when no parameter is selected.
2	Search	• Box to enter a letter/digit/word/number of any of the column values, by which to filter the devices displayed in the table. • While typing, the table rows (devices) are automatically filtered.
3	Filter	Enables filtering devices in the table by selecting values according to columns.
4	Recommended Actions	Displays action(s) recommended for correcting the BNET device error (5).
5	Selected row	Double-clicking a table row: • Highlights in blue the selected row. • Opens the Recommended Actions pane (4).
Alarms table columns:		
6	Severity	Displays a colour-code icon of the failure severity level: • Critical – red • Warning – yellow.
7	BNET type	Displays the BNET device type icon.
8	BNET Name	Displays the BNET device name.
9	ID	Displays the BNET device identifier number.
10	Force	Displays the BNET device force name.
11	Description	Displays a description of the error.
12	Reported at	Displays the time (hh:mm:ss) the failure was detected.

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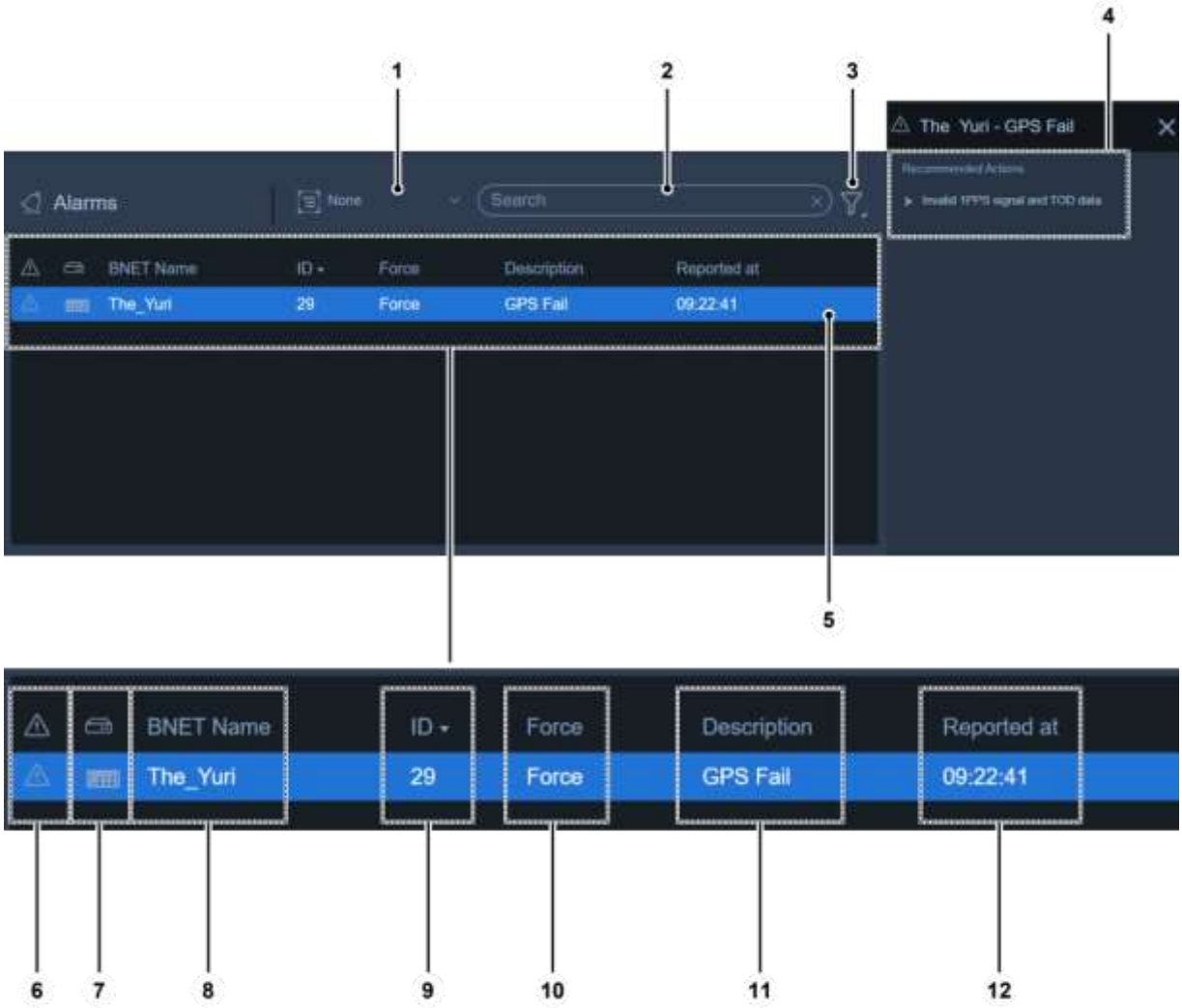

Figure 3-36: Alarms Screen

Also see about this

- section 3.4 EMS Application

3.3.5 Versions Screen

Table 3-37: Versions Screen

No	Name	Description
1	Group By	• Enables selecting a parameter (column) by which to group the devices in the table. • Displays None value, when no parameter is selected.
2	Search	• Box to enter a letter/digit/word/number of any of the column values, by which to filter the devices displayed in the table. • While typing, the table rows (devices) are automatically filtered.
3	Filter	Enables filtering devices in the table by selecting values according to columns.
Versions table columns:		
4	Selection checkbox	Not in use in this version.
5	Alert	Indicates that one or more of the BNET component versions is not compatible with the latest version.
6	BNET type	Displays the BNET device type icon.
7	Name	Displays the BNET device name.
8	Force	Displays the BNET device force name.
9	MV	Displays the BNET Master Version.
10	NMS/EMS	Displays the NMS/EMS software version.
11	Product	Displays the product version.
12	Map Format	Displays the map format.

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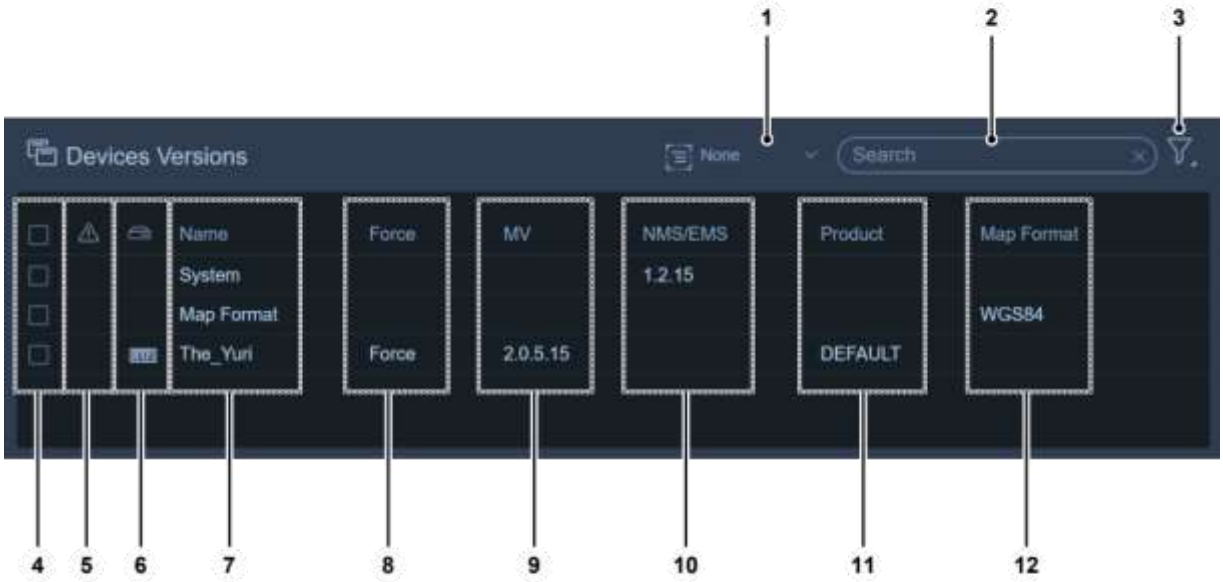

Figure 3-37: Versions Screen

Also see about this

- section 3.4 EMS Application
- section 3.3.4 Alarms Screen

3.3.6 Users Screen

Table 3-38: Users Screen

No	Name	Description
1	Search	• Box to enter a letter/digit/word/number of any of the column values, by which to filter the devices displayed in the table. • While typing, the table rows (devices) are automatically filtered.
2	Group By	• Enables selecting a parameter (column) by which to group the devices in the table. • Displays None value, when no parameter is selected.
3	Filter	Enables filtering devices in the table by selecting values according to columns.
Users table columns:		
4	Name	Displays the user name.
5	Role	Displays the user role.
6	Last Login	Displays the date and time of the user last login.
7	Edit	• Displayed only when a row (user) is selected. • Opens the Set Password window (see section 3.3.6.1), to change the user password.

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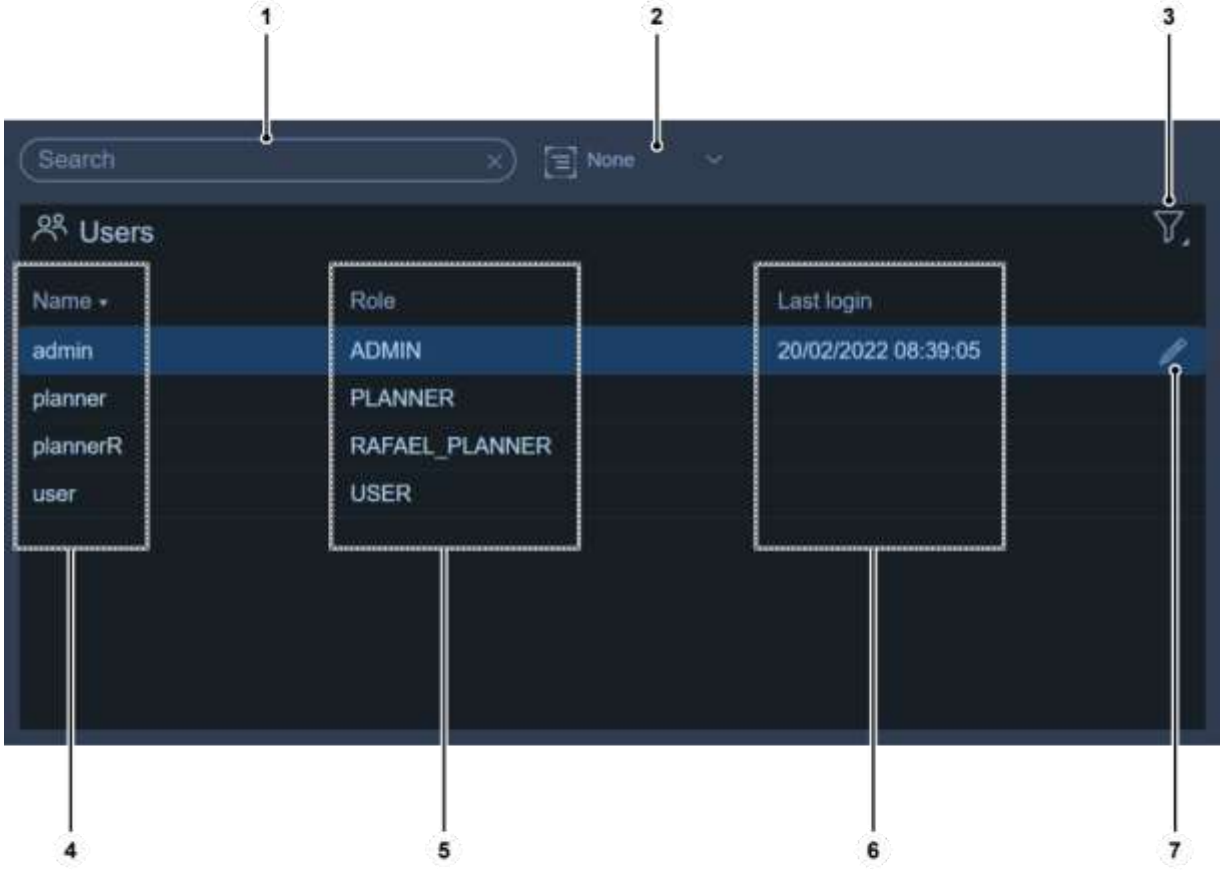

Figure 3-38: Users Screen

3.3.6.1 Set Password Window

Table 3-39: Set Password Window

No	Name	Description
1	Password	Box to type a new password for the selected user.
2	Retype Password	Box to retype the new password (1).
3	Cancel	Closes the window without saving the new password.
4	Save	Saves the new password, and closes the window.

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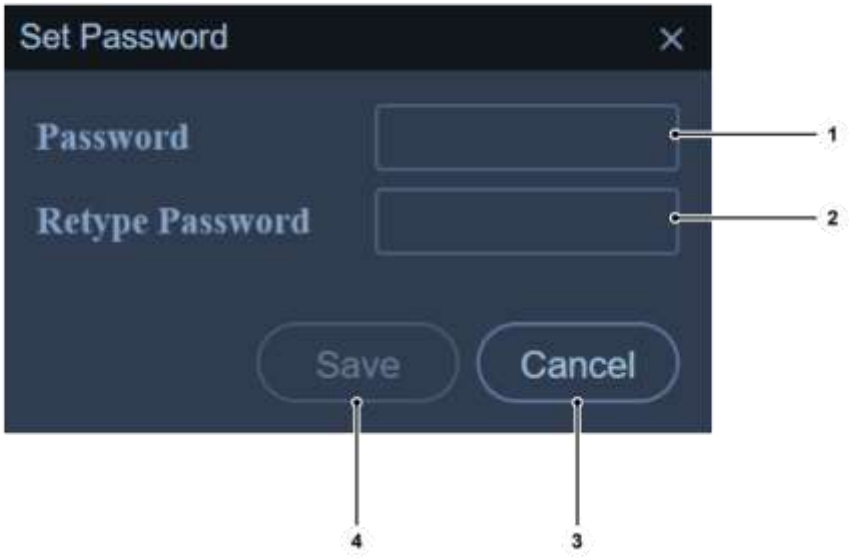

Figure 3-39: Set Password Window

3.4 EMS APPLICATION

The Login screen is the first screen displayed when activating the EMS.

Table 3-40: Login Screen

No	Name	Description
1	User Name	Box to enter the user username.
2	Password	Box to enter the user password.

No	Name	Description
3	Sign In	Validates the user credentials, and opens the device selection pane (4-5).
4	Device	Box to select the connected BNET ID.
5	Select Device	Opens the EMS main screen (see section 3.4.1), to view and configure the connected BNET device parameters.

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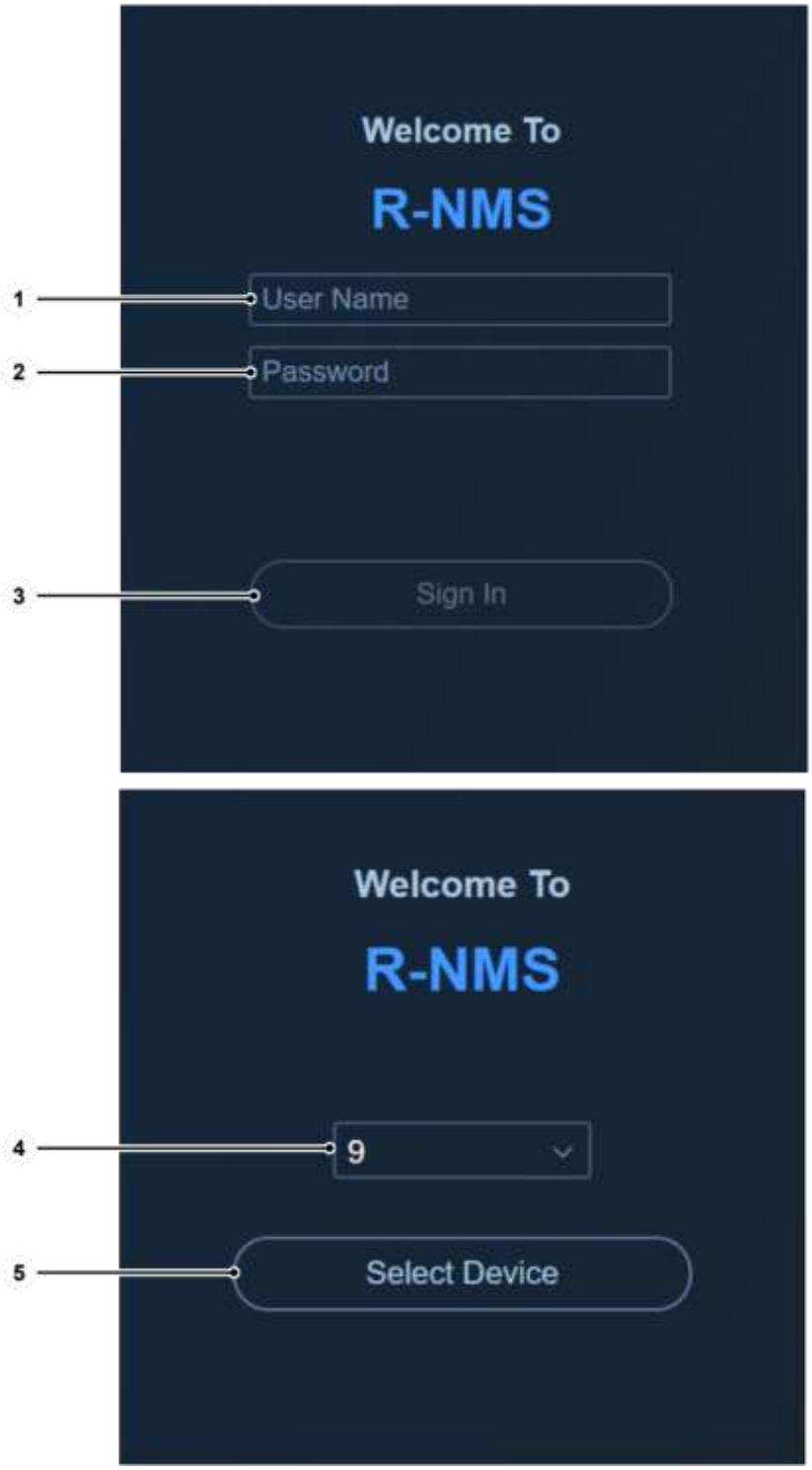

Figure 3-40: EMS Login Screen

3.4.1 EMS Main Screen

Table 3-41: EMS Main Screen

No	Name	Description
1	BNET icon	Displays the local BNET device type icon.
2	BNET name (ID)	Displays the local BNET device name and identifier number.
3	ems:	Displays the name of the logged in user.
4	General (see section 3.4.1.2)	Switches to the General tab (see section 3.4.1.2) (default tab), to configure communication parameters.
5	Links (see section 3.4.1.3)	Switches to the Links tab (see section 3.4.1.3), to view links RSSI..
6	Nets (see section 3.4.1.4)	Switches to the Nets tab (see section 3.4.1.4), to configure network parameters.
7	GPS & Time (see section 3.4.1.5)	Switches to the GPS & Time tab (see section 3.4.1.5), to configure GPS parameters.
8	Main toolbar (see section 3.4.1.1)	Includes buttons to: • Open windows that display detailed information of the BNET device components and communication. • Reset and shutdown the EMS application. • Show the frequency spectrum.
9	Discard Changes	• Enabled when a parameter is changed in the current tab (11). • Reverts the changed parameters to their previous value.
10	Upload	• Enabled when a parameter is changed in the current tab (11). • Uploads the parameters file to the connected BNET device.
11	Displayed tab	Displays the selected tab (4, 5, 6 or 7).

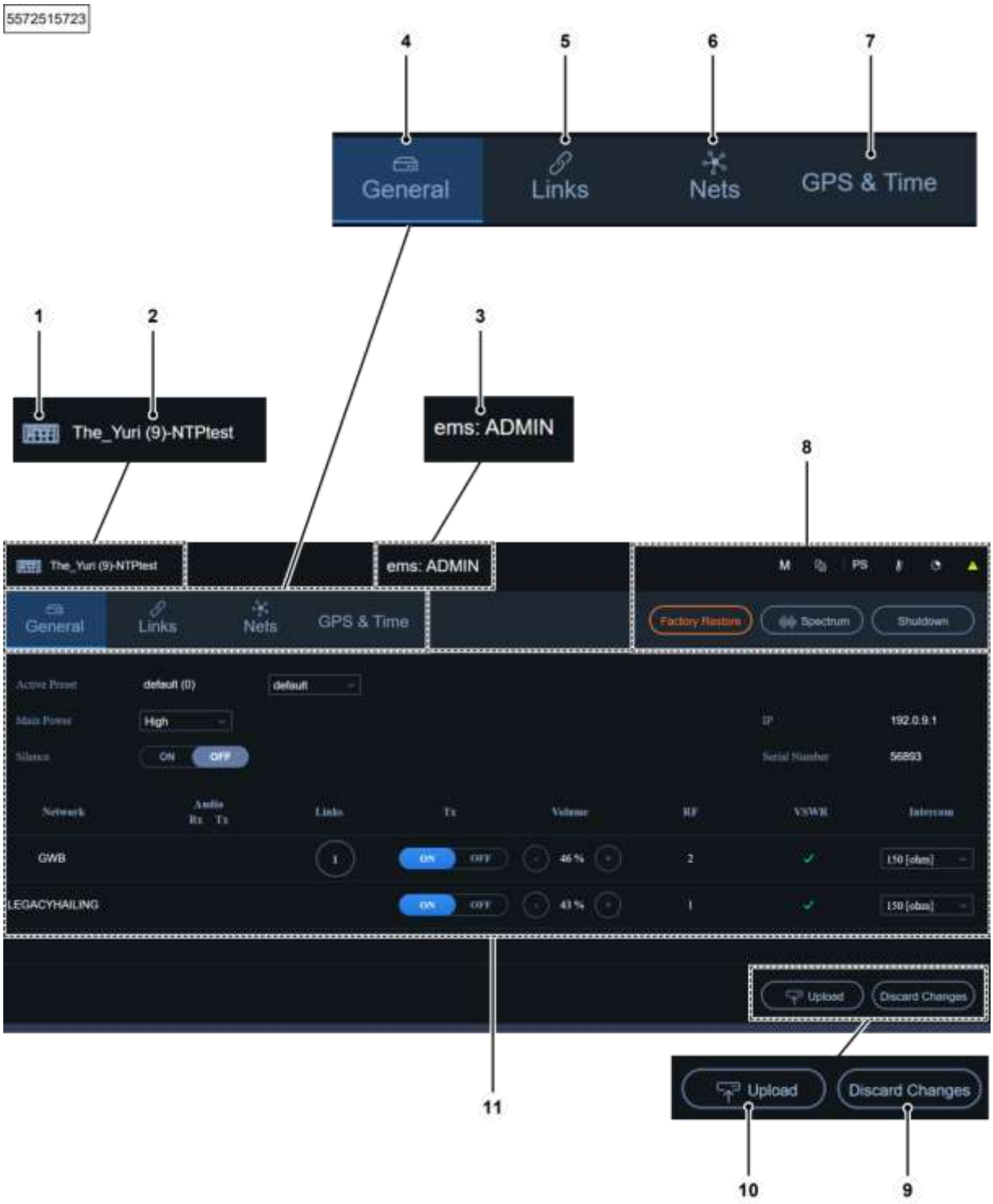

Figure 3-41: EMS Main Screen

3.4.1.1 Main Toolbar

Table 3-42: EMS Main Toolbar

No	Name	Description
1	Load mission	Opens the Mission Actions window (see section 3.4.1.1.1), to select a planned mission to load to the EMS.
2	Versions	Opens the Versions window (see section 3.4.1.1.2), to view the software/firmware versions of the BNET device components.
3	Power Supply	Opens the Power Supply window, to view voltage received by the BNET device components.
4	Temperatures	Opens the Temperatures window, to view the temperatures measured in the BNET device components.
5	Data Usage	Not in use in this version.
6	Alarms	Opens the Alarms window (see section 3.4.1.1.5), to view BNET device detected failure(s).
7	Shutdown	Shuts down the EMS application.
8	Spectrum	Enables to view a visual representation of the signal strength/loudness over-time at various frequencies present in a particular waveform, and to check whether there is more or less energy at a specific frequency used by the BNET RF head, as well as check how the energy levels of a frequency vary over time.
9	Factory Restore	• Enabled only for Admin user. • Opens a dialog box to confirm resetting the connected BNET device to its initial settings and parameter values.

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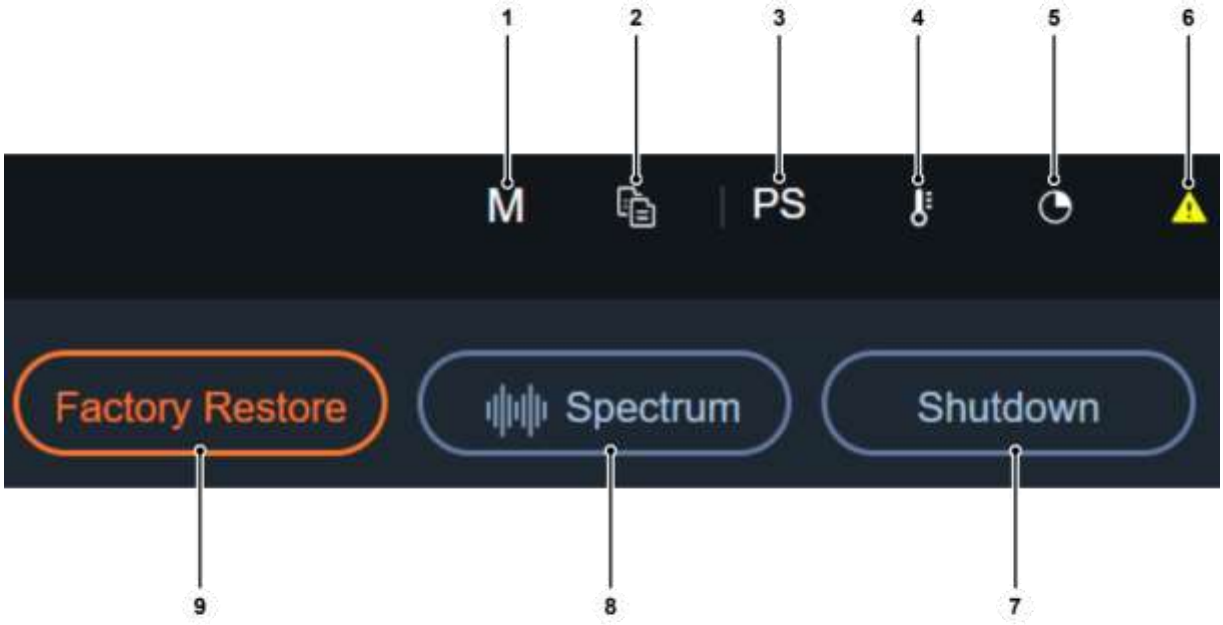

Figure 3-42: EMS Main Toolbar

Also see about this

- section 3.4.1.1.3 Power Supply Window
- section 3.4.1.1.4 Temperatures Window

3.4.1.1.1 Mission Actions Window

Table 3-43: Mission Actions Window

No	Name	Description
1	Mission	Box to select a planned mission to load to the connected BNET device.
2	Load Mission	Loads the selected mission to the BNET device, and displays in the EMS screen.
3	Restore Original	Reverts to the BNET device original mission.

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Figure 3-43: Mission Actions Window

3.4.1.1.2 Versions Window

Table 3-44: Versions Window

No	Name	Description
1	Missions/Logs	Not in use in this version.
Versions table columns:		
2	Name	Displays the software/firmware name. Note: Identical to the details displayed in the NMS Versions screen (see section 3.3.5).
3	Version	Displays the software/firmware version.
4	Upload	Opens a standard file browser, to select a version file to upload to the connected BNET device.

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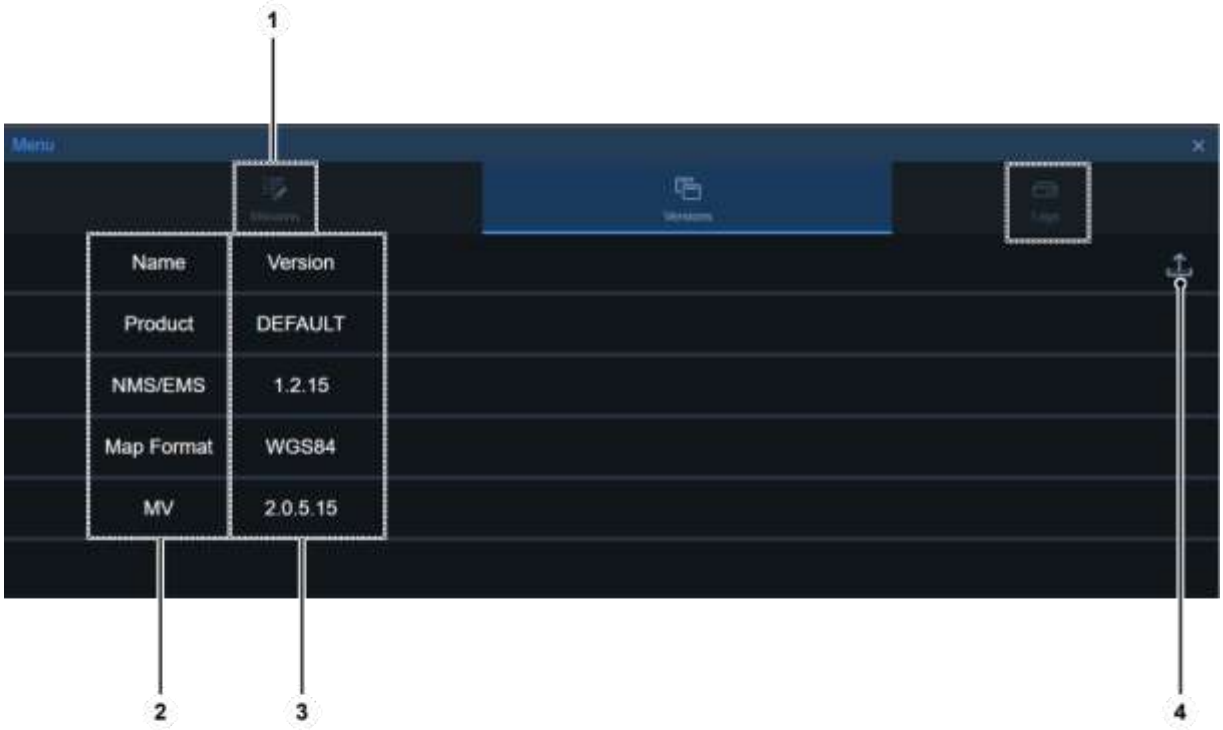

Figure 3-44: Versions Window

3.4.1.1.3 Power Supply Window

Table 3-45: Power Supply Window

No	Name	Description
1	Low Power	Displays power supplied to BNET device components.
2	Measured voltage	Displays the actual measured voltages received by the BNET device components.

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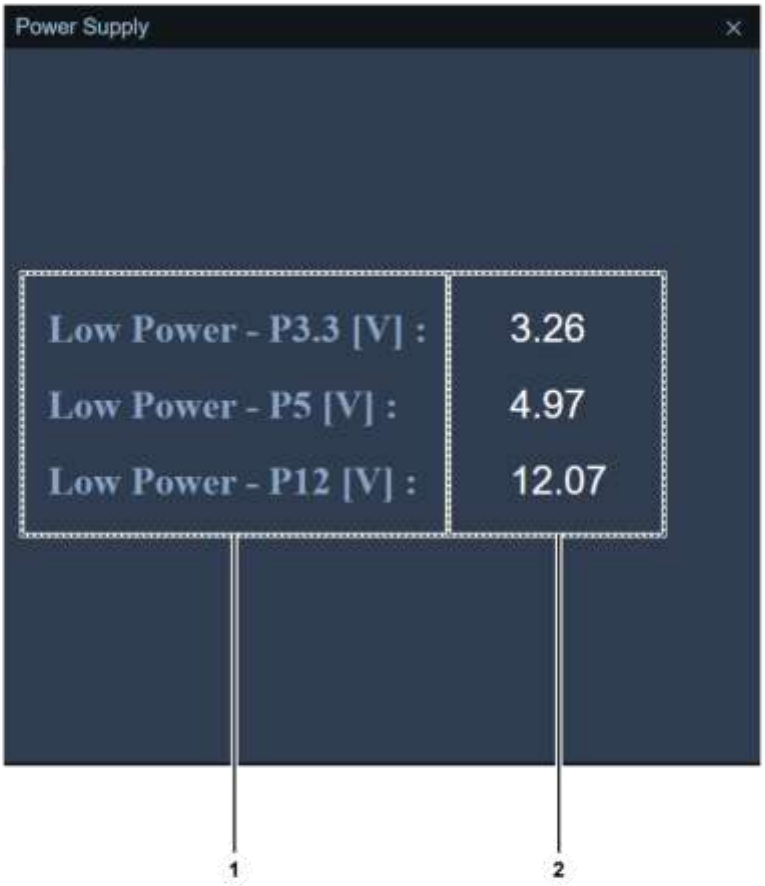

Figure 3-45: Power Supply Window

3.4.1.1.4 Temperatures Window

Table 3-46: Temperatures Window

No	Name	Description
1	Component temp [degC]	Displays the temperatures, in degrees Celsius, measured in the BNET device components.

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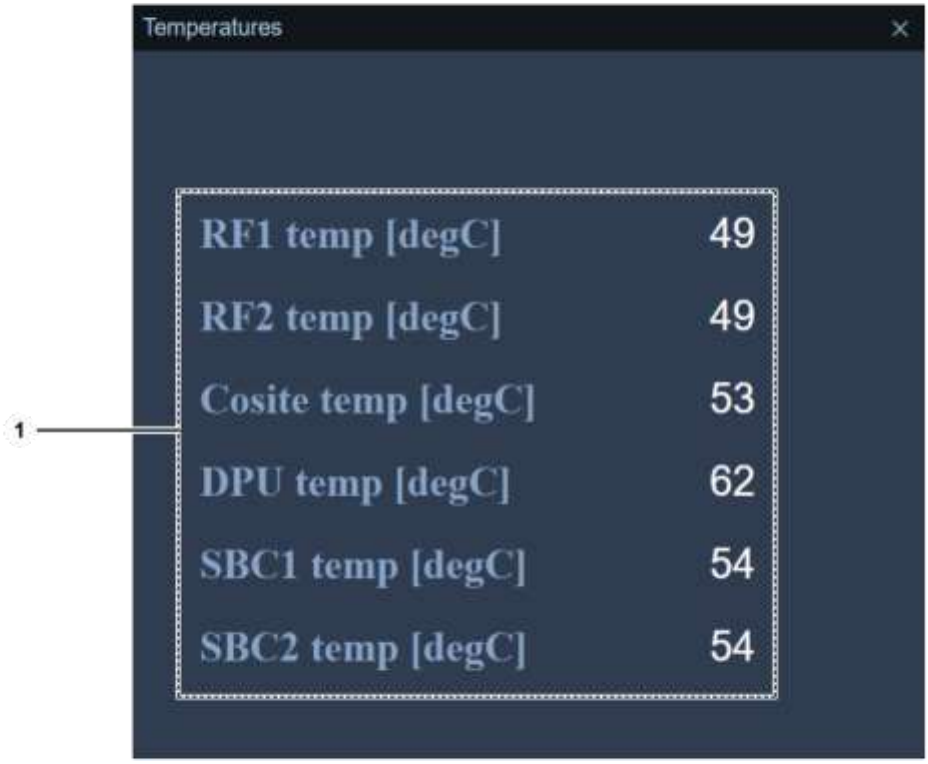

Figure 3-46: Temperatures Window

3.4.1.1.5 Alarms Window

Table 3-47: Alarms Window

No	Name	Description
1	Severity	Displays a colour-coded indication of the failure severity level: • Critical – red • Warning – yellow.
2	Name	Displays the failure name.
3	Update Time	Displays the date and time (HH:MM:SS) the failure was detected.
4	Description	Displays a description of the failure.

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Figure 3-47: Alarms Window

3.4.1.2 General Tab

Table 3-48: General Tab (1 of 2)

No	Name	Description
1	Active Preset	Displays the selected channel preset.
2	Active Preset	Box to select a channel preset: default or Preset_1 to Preset_9.
3	Main Power	Box to select the BNET transmission power: High, Medium or Low.
4	Silence	Toggle button that turns ON/OFF the Silence mode.
5	IP	Displays the BNET IP address.
6	Serial Number	Displays the BNET serial number.

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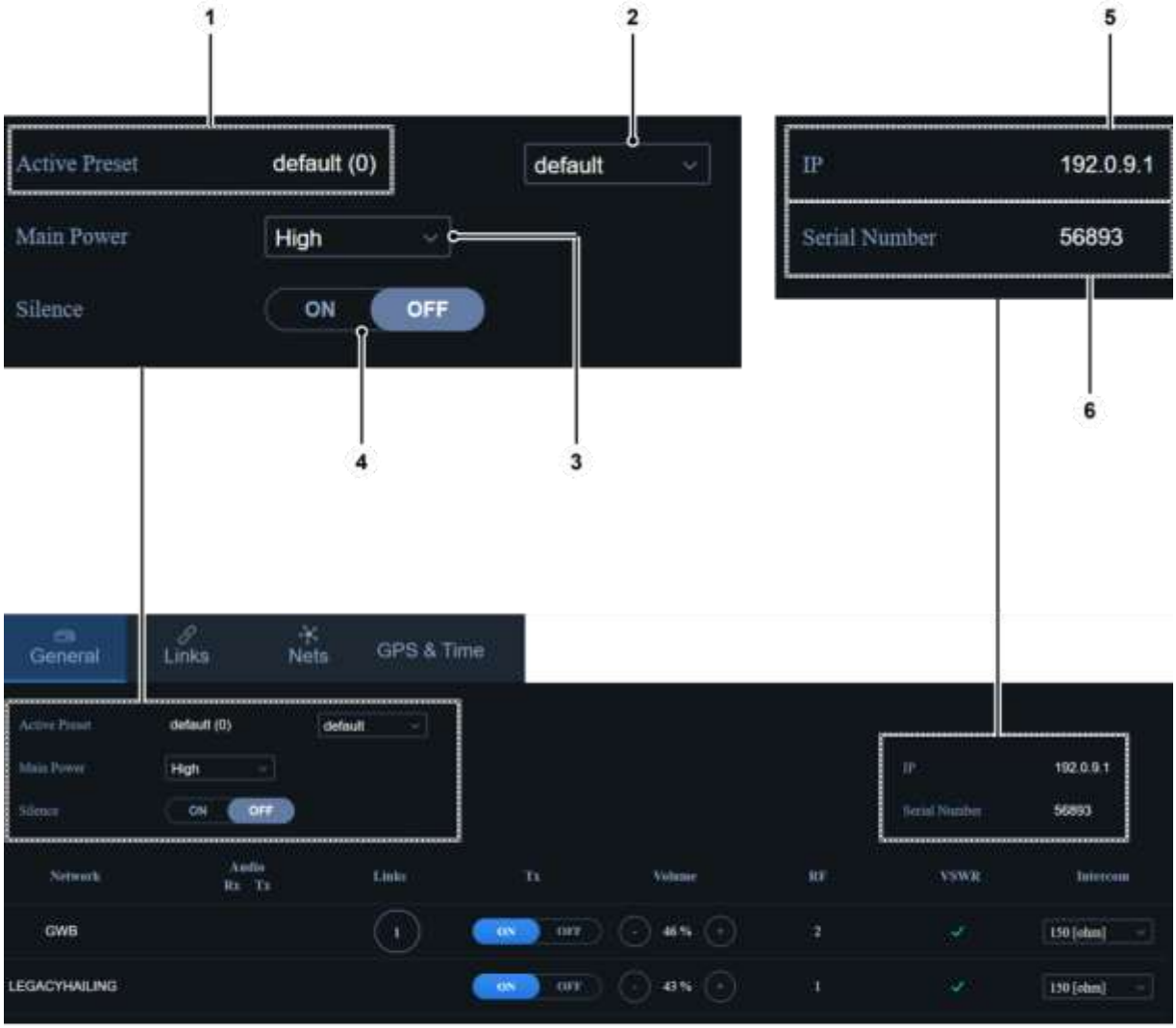

Figure 3-48: General Tab (1 of 2)

3.4.1.2.1 General Tab (2 of 2)

Table 3-49: General Tab (2 of 2)

No	Name	Description
1	Network	Displays the network name.
2	Audio Rx/Tx	Displays an indication of the channel audio reception/transmission.
3	Links	• Displays the number of links detected in the network. • Clicking switches to the Links tab (see section 3.4.1.3), to view the link(s).
4	Tx	ON/OFF Toggle button that enables/disables the BNET transmission capability..
5	Volume -/+	Decreases/increases the channel audio volume. Note: The displayed value in percentage represents the last set volume, either using the EMS or by the BNET physical controls.
6	RF	Displays the RF Head number used for the network communication..
7	VSWR	Displays an indication that the channel measured VSWR is as required.
8	Intercom	Box to select the mode of the external intercom: GW 600 [ohm], 150 [ohm], 600 [ohm].

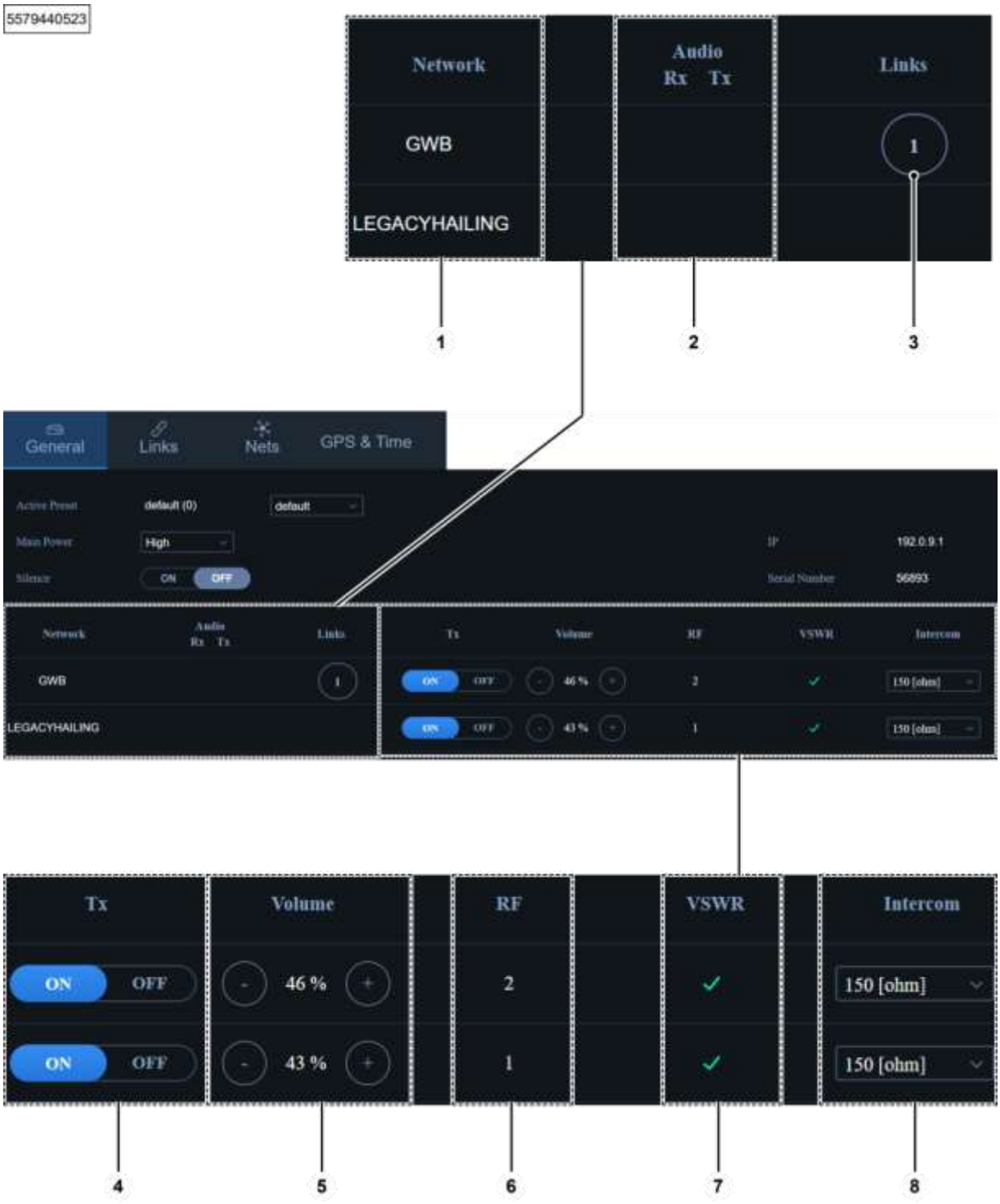

Figure 3-49: General Tab (2 of 2)

3.4.1.3 Links Tab

Table 3-50: Links Tab

No	Name	Description
1	Remote	Displays the remote BNET device identifier number.
2	RSSI [dBm]	Displays the link Received Signal Strength Indicator level in dBm.
3	SNR	Displays the link Signal-to-Noise Ratio value.
4	RX [kbit/s]	Displays the link reception rate in kilobit per second.
5	Selected link row	Double-clicking a link row, opens the graph pane (6-8), to display the link RSSI/SNR graph (8).
6	RSSI	Selects to display the link RSSI level graph (8).
7	SNR	Selects to display the link SNR graph (8).
8	Link graph	Displays the link RSSI level/SNR in dBm (Intensity) over a period of 10 second (time). Note: The graph refreshes every second.

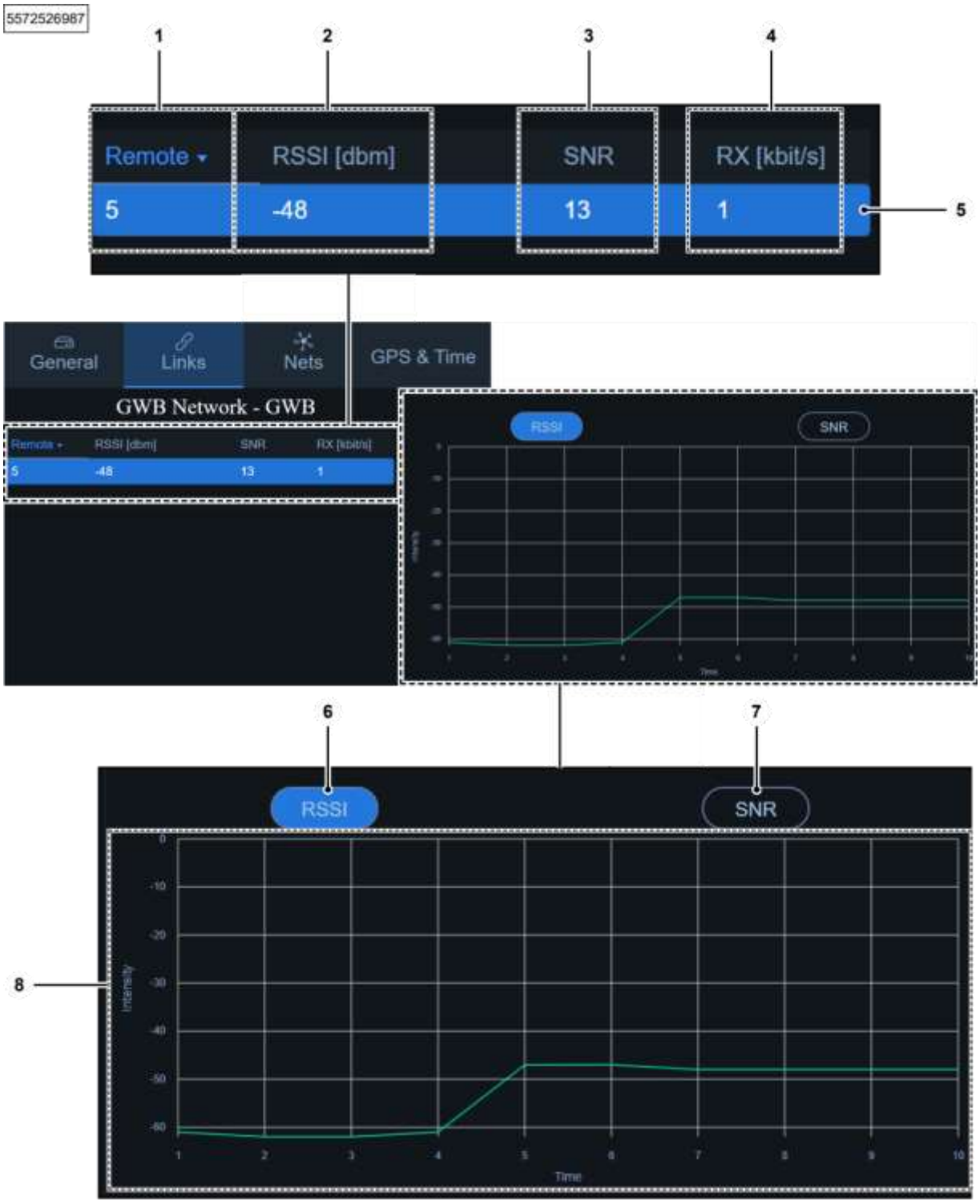

Figure 3-50: Links Tab

3.4.1.4 Nets Tab - GWB Network Pane

Table 3-51: Nets Tab - GWB Network Pane

No	Name	Description
1	GWB Network	Displays the name of the GWB network.
2	Secured Mode	Toggle button, to turn ON/OFF the network Secured mode.
3	Hopping	Toggle button, to turn ON/OFF the network Hopping mode.
4	Voice Groups	Displays the changing the selected preset three voice group settings: • RxTx - displays the preset selected as the main voice group for transmission and reception. • Rx1/2 – displays the selected voice group preset for reception..
5	Modulation	Box to select the waveform modulation type.

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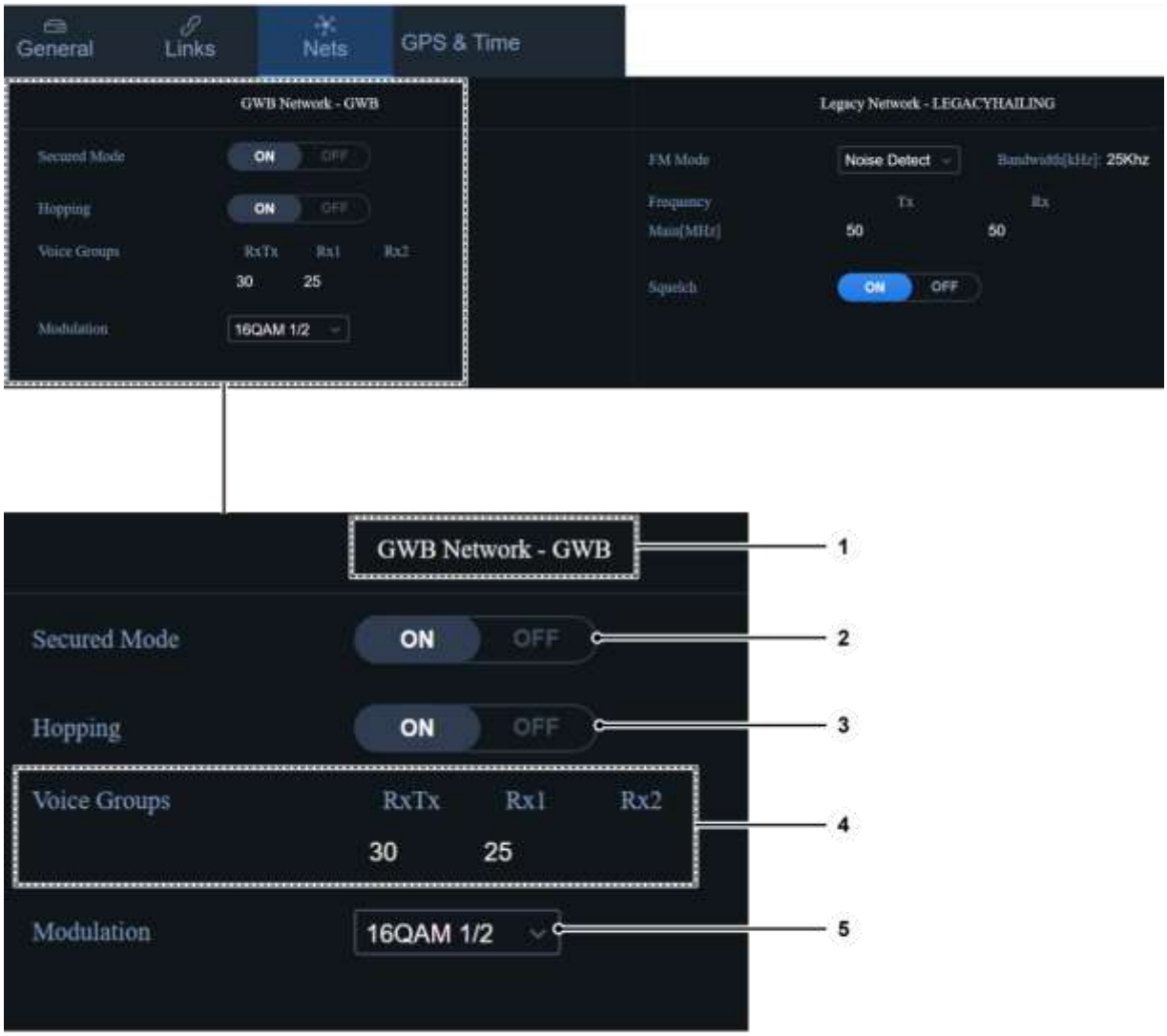

Figure 3-51: Nets Tab - GWB Network Pane

3.4.1.4.1 Nets Tab - Legacy Network Pane

Table 3-52: Nets Tab - Legacy Network Pane

No	Name	Description
1	Legacy Network	Displays the name of the Legacy network.
2	FM Mode	Box to select the FM mode: Noise Detect or Squelch Tone. Note: See pane parameters when Squelch Tone is selected (6-8).
3	Bandwidth [kHz]	Displays the network configured bandwidth in kilohertz.
4	Frequency Main [MHz]	Displays the Legacy network main frequencies in megahertz for Transmission (Tx) and Reception (Rx).
5	Squelch	Toggle button, to turn ON/OFF the Squelch mode.
Changed parameters when Squelch Tone is selected:		
6	Frequency Main [MHz]	• Tx – box to enter the frequency in megahertz for transmission. • Rx – changes accordingly.
7	Tone [Hz]	Displays the tone in hertz for Transmission (Tx) and Reception (Rx).
8	Tone Dev. [Hz]	Displays the tone deviation in hertz.

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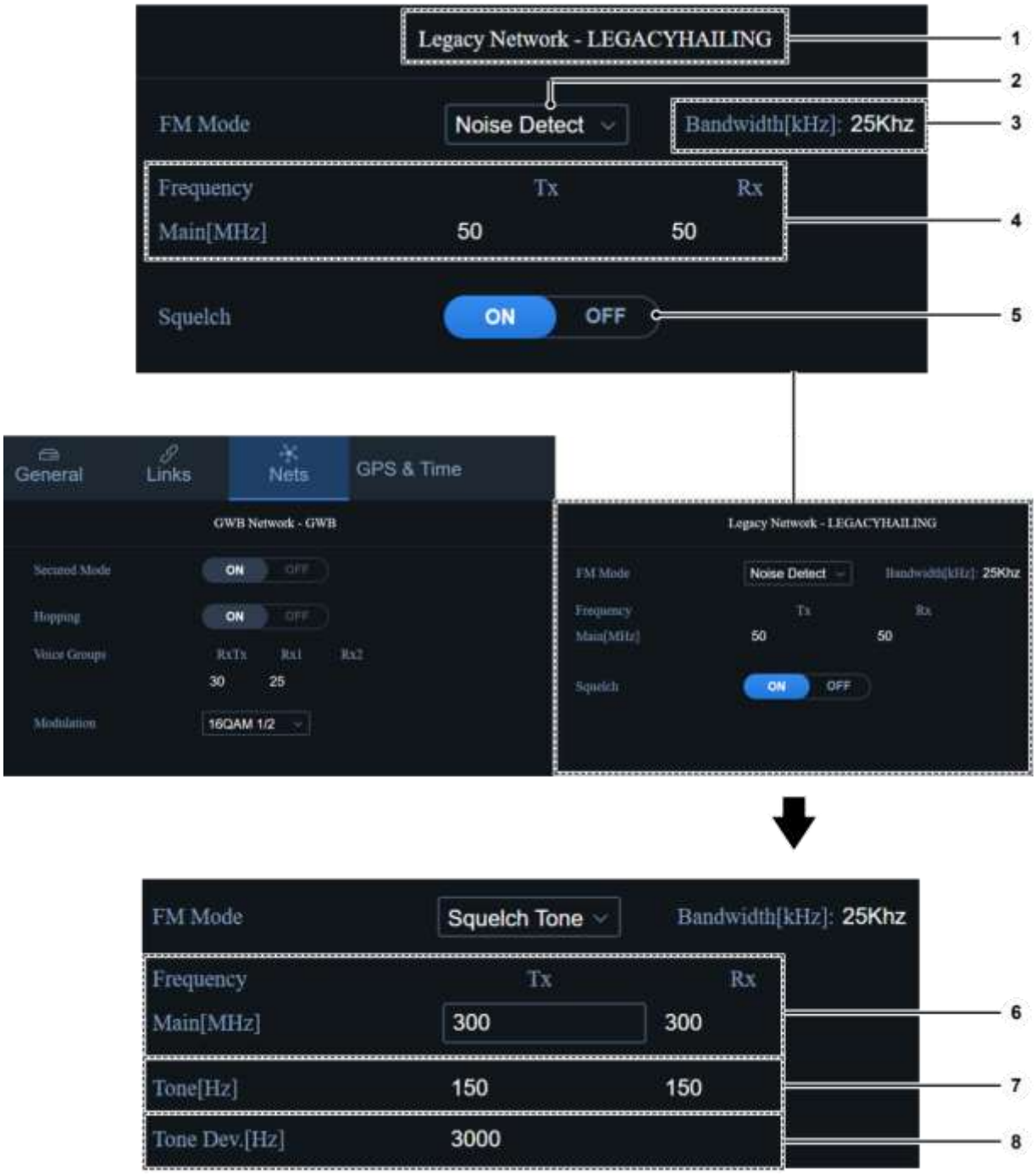

Figure 3-52: Nets Tab - Legacy Network Pane

3.4.1.5 GPS & Time Tab

Table 3-53: GPS & Time Tab

No	Name	Description
1	Latitude	Displays the BNET device latitude coordinate.
2	Longitude	Displays the BNET device longitude coordinate.
3	Altitude [m]	Displays the BNET device altitude in meters.
4	Velocity [Km/h]	Displays the BNET device velocity in kilometer per hour.
5	Direction	Displays the BNET device direction.
6	GPS TOD	Displays the GPS Time of Day.
7	GPS Enable	ON/OFF toggle button, to select the BNET GPS source (2) to External/Internal.
8	GPS Source	Box to select the BNET GPS source: • Internal - satellite via GPS antenna connected the BNET device. • External - 1PPS/TOD source connected to the BNET device. Note: Requires connecting the external GPS source to the BNET J14 connector, before changing the setting.
9	GPS OTA Enable	ON/OFF toggle button, to select to enable/disable the GPS Over-the-Air capability.
10	NTP Server IP	Displays the Network Time Protocol server IP address.
11	GWB WF Time	Displays the time and date of the GWB network waveform start.

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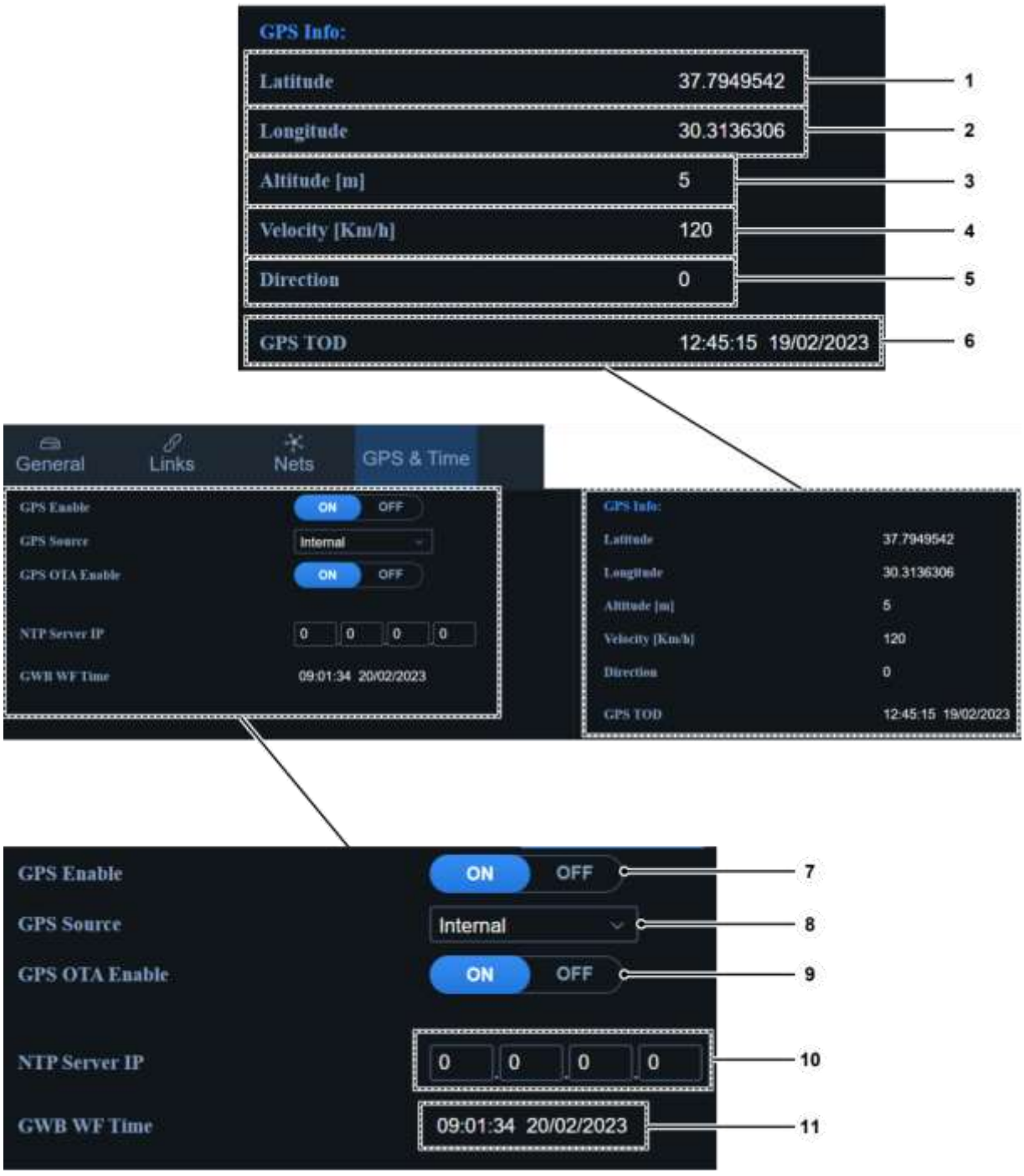

Figure 3-53: GPS & Time Tab

4 OLTE DESCRIPTION AND OPERATION

4.1 OLTE - OVERVIEW

The OLTE is a rugged tablet made by Panasonic.

An application that interfaces with the BNET-ARs is installed on the OLTE.

The O-Level technician connects the OLTE to the system via Ethernet and uses the tablet to perform the following:

- Update BNET-AR Software (SW) and Firmware (FW).
- Update BNET-AR encryption keys.
- Update BNET-AR frequencies.
- Update BNET-AR tail number.
- Check BNET-AR version.
- Run BNET-AR and RCU diagnostics using IBIT.
- View PBIT/CBIT diagnostics results.

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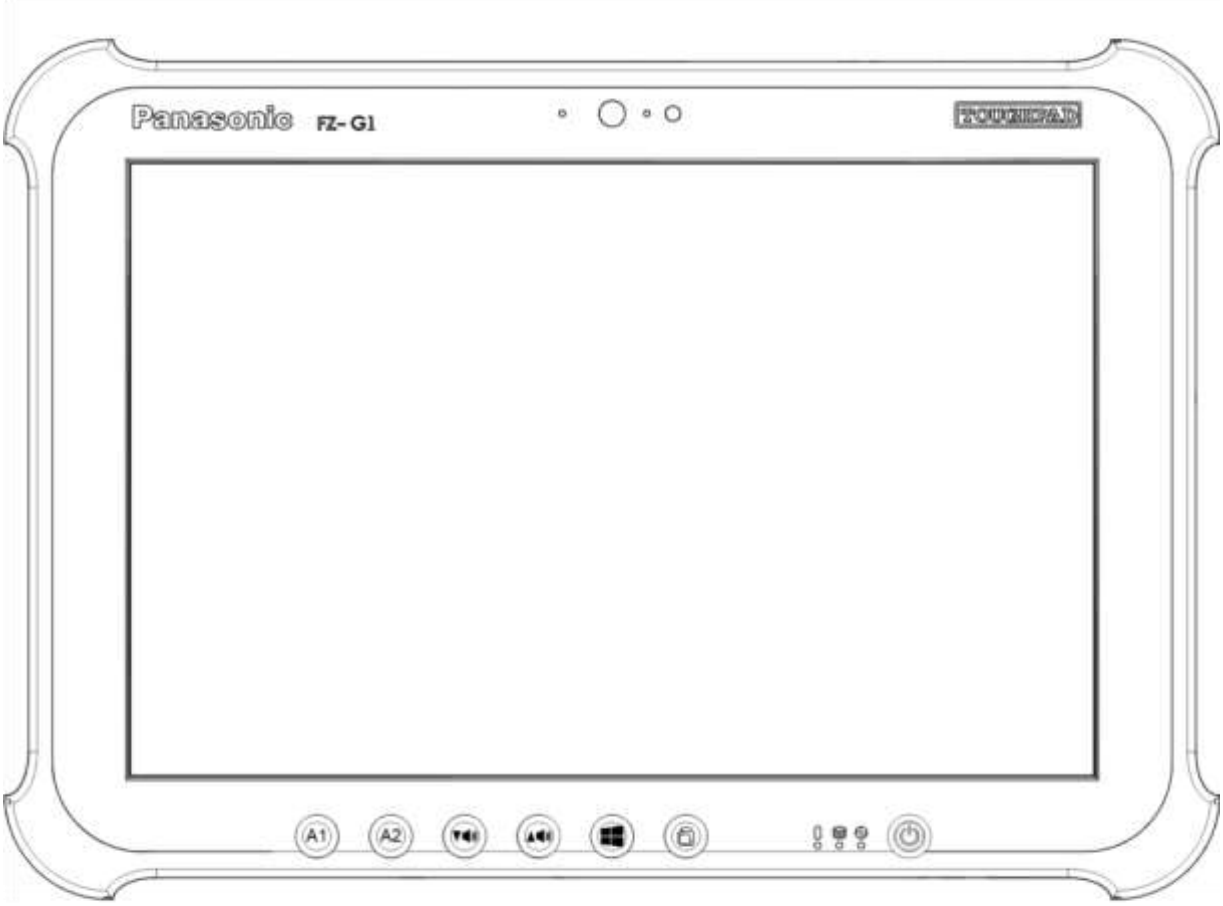

Figure 4-1: OLTE - Overview

4.2 KIT DESCRIPTION

Table 4-1: OLTE Kit Description

No	Name	Type	Description
1	Original Equipment Manufacturer (OEM) Operating Instructions	Manual	TOUGHBOOK FZ-G1 manual.
2	Digitizer Pen	Stylus	Waterproof digitizer pen.
3	OLTE	TOUGHBOOK FZ-G1	• MIL-STD-810G certified IP65 ruggedized tablet. • Windows OS installed. • 10.1" 10-point capacitive multi touch display. • 10.6"(L) × 7.4"(W) × 0.8"(H). • 2.4 lbs. (standard battery).
4	Power Adapter	AC Adapter	• Input: 100 V - 240 VAC, 50 Hz/60 Hz. • Output: 16 VDC, 4.06 A.
5	Laptop Bag	13.4" CLAMSHELL	Holds the OLTE kit.
6	Ethernet Cables	CAT6A Shielded	3-meter cables, used to connect the OLTE to the SDR system.

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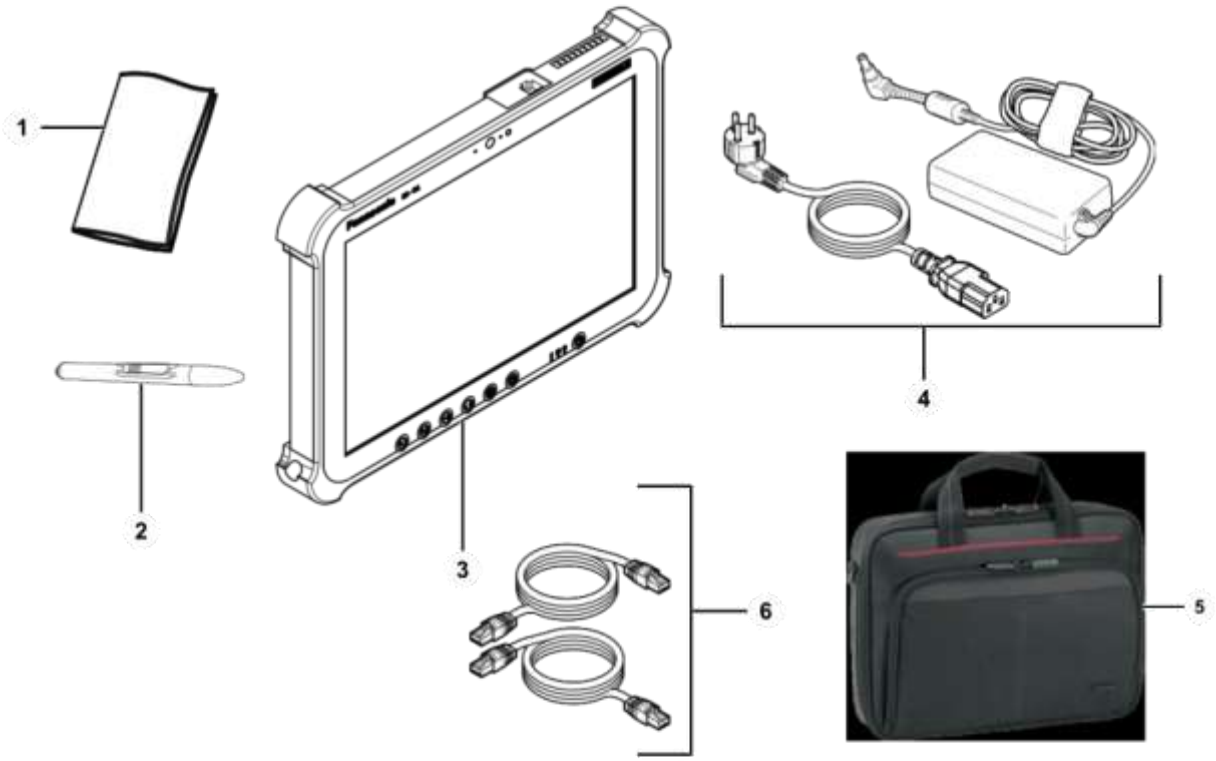

Figure 4-2: OLTE Kit Description

4.3 PHYSICAL DESCRIPTION

Table 4-2: OLTE - Physical Description

No	Name	Type	Description
1	Front Camera Indicator	LED	Not in use.
2	Front Camera	Camera	Not in use.
3	Microphone	Mono-Microphone	Not in use.
4	Ambient Light Sensor	Ambient Light Sensor	Senses the light from the surroundings and is then used by the OLTE to automatically adjust the brightness of the display accordingly.
5	Display	IPS display with direct bonding	• 10.1" WUXGA 1920×1200 with LED backlighting. • 10-point capacitive multi touch + Waterproof Digitizer pen daylight-readable screen. • Automatic screen rotation. • Anti-reflective and anti-glare screen treatments.
6	Air Exhaust	Ventilation Hole	Enables warm air to flow out of the device.
7	Air Intake	Ventilation Hole	Enables air to flow into of the device.
8	Back Camera Indicator	LED	Not in use.
9	Back Camera	Camera	Not in use.
10	Camera Light	White LED	Not in use.
11	Battery Pack	Li-Ion	Specification: • 11.1 V. • 4200 mAh. • Operation - 11 hours. • Charging time - 2.5 hours off, 3 hours on.
12	Battery Pack Compartment	Compartment	Holds the battery pack.
13	Battery Release Latch	Latch	Releases the battery pack from the compartment.
14	Pen Holder	Compartment	Holds the digitizer pen.
15	Speaker	Speaker	Sound output from the device.
16	Smart Card Slot	Smart Card Compartment	Not in use.

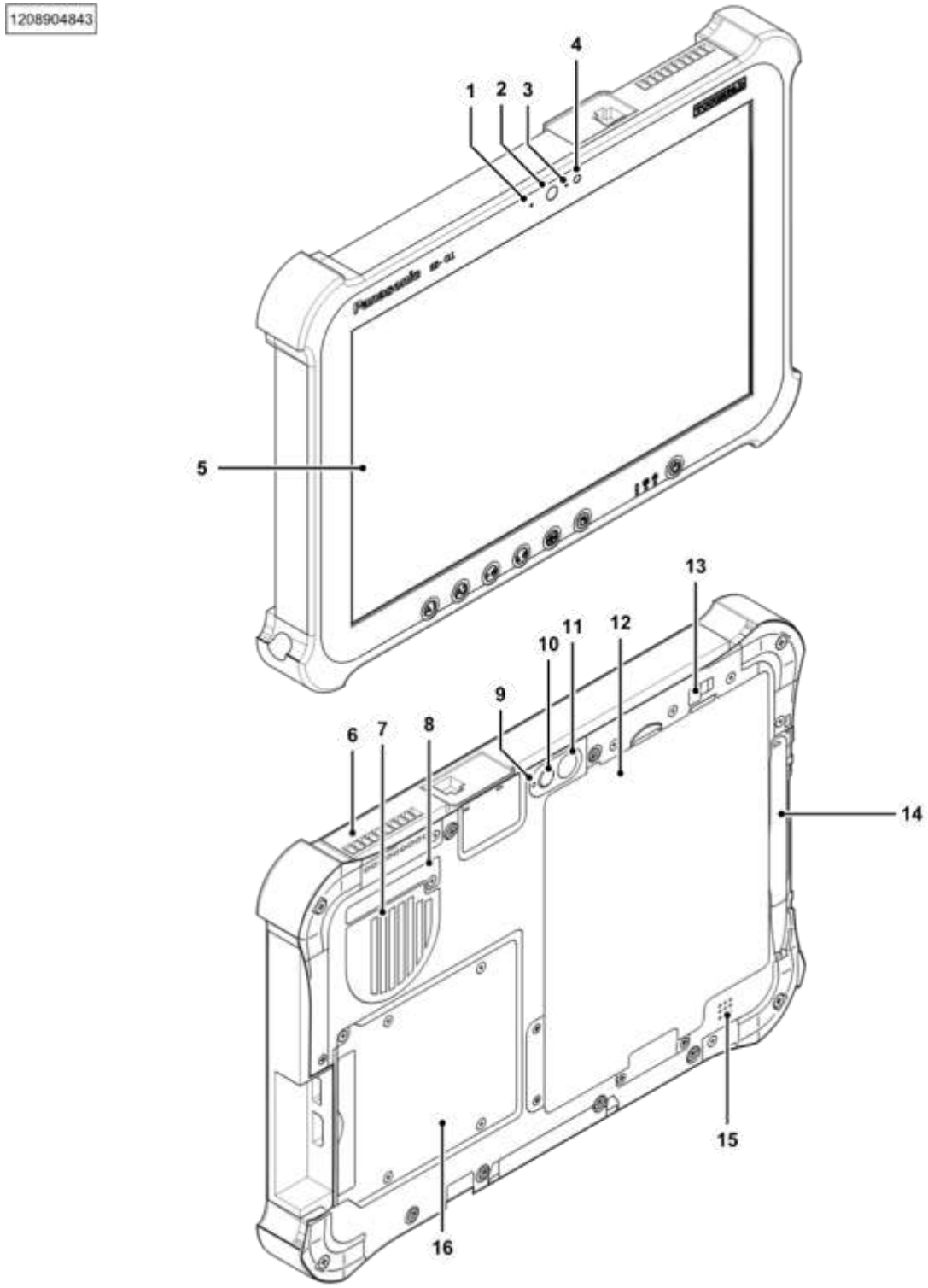

Figure 4-3: OLTE - Physical Description

4.4 CONTROLS AND INDICATORS

Table 4-3: OLTE - Controls and Indicators

No	Name	Type	Description
1	A1	Button	Custom function key. By default, opens the Dashboard for Panasonic PC application.
2	A2	Button	Custom function key. By default, opens the Windows Input Panel.
3	Volume Down	Button	Decreases the volume.
4	Volume Up	Button	Increases the volume.
5	Windows Start	Button	Opens or closes the Windows start menu.
6	Rotation	Button	Enables or disables screen rotation.
7	Battery Status	Red/Green/Orange LED	Indicates the following: • Off - battery pack is not inserted or not charging. • Orange - charging. • Green - fully charged. • Blinking green - high temperature mode, battery pack is discharging to 80%. • Red - remaining battery is 9% or less. • Blinking red - battery pack or charging circuit is not operating properly. • Blinking orange - the battery pack cannot charge due to one of the following: • Internal temperature is out of the acceptable range. • Power supply is not sufficient because software or peripheral devices are consuming a large amount of power. CAUTION! Do not remove the battery pack while the LED is blinking green.

No	Name	Type	Description
8	Drive Status	Orange LED	Indicates that the drive is working.
9	Power Indicator	Green LED	Indicates the following: • Off - powered off, or in hibernation mode. • On - powered on. • Blinking - sleep mode.
10	Power Button	Button	Controls the OLTE power as follows: • OLTE off - turns OLTE on. • OLTE on - performs one of the following: • Short press (less than eight seconds) - initiates shut down process. • Long press (more than eight seconds) - cuts OLTE power.

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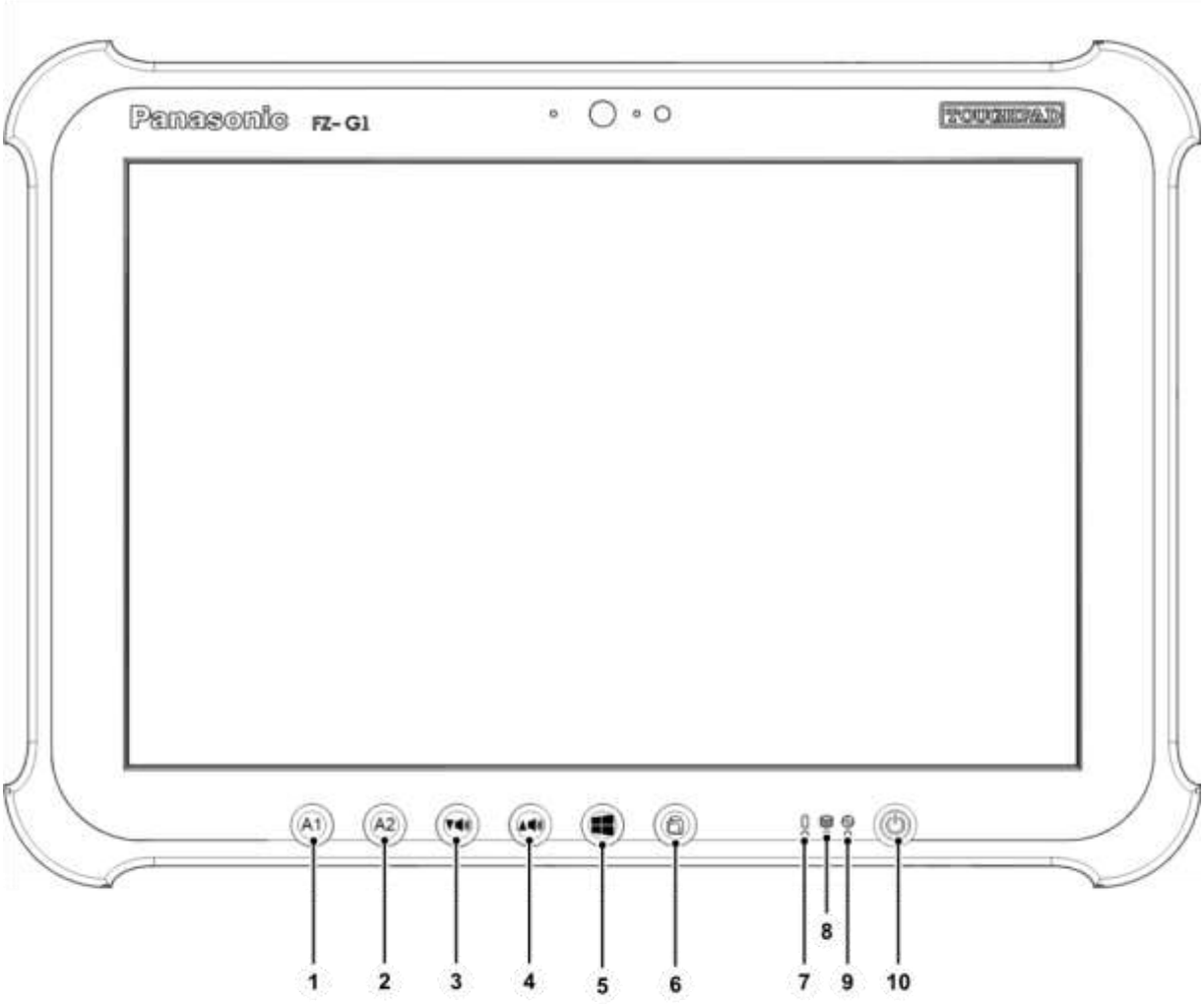

Figure 4-4: OLTE - Controls and Indicators

4.5 CONNECTORS

Table 4-4: OLTE - Connectors

No	Name	Type	Description
1	Ethernet Port	RJ-45	Connects the OLTE to the SDR using RJ45 interface.
2	Power Port	Circular Power Socket	Socket for the AC adapter to supply power to the OLTE and charge the battery pack. Input: 16 VDC, 4.06 A.
3	Expansion Bus Connector	24-pin	Docking connector.
4	HDMI	Type A	Connection for external display.
5	USB Port	USB 3.0	Connection for peripheral hardware.

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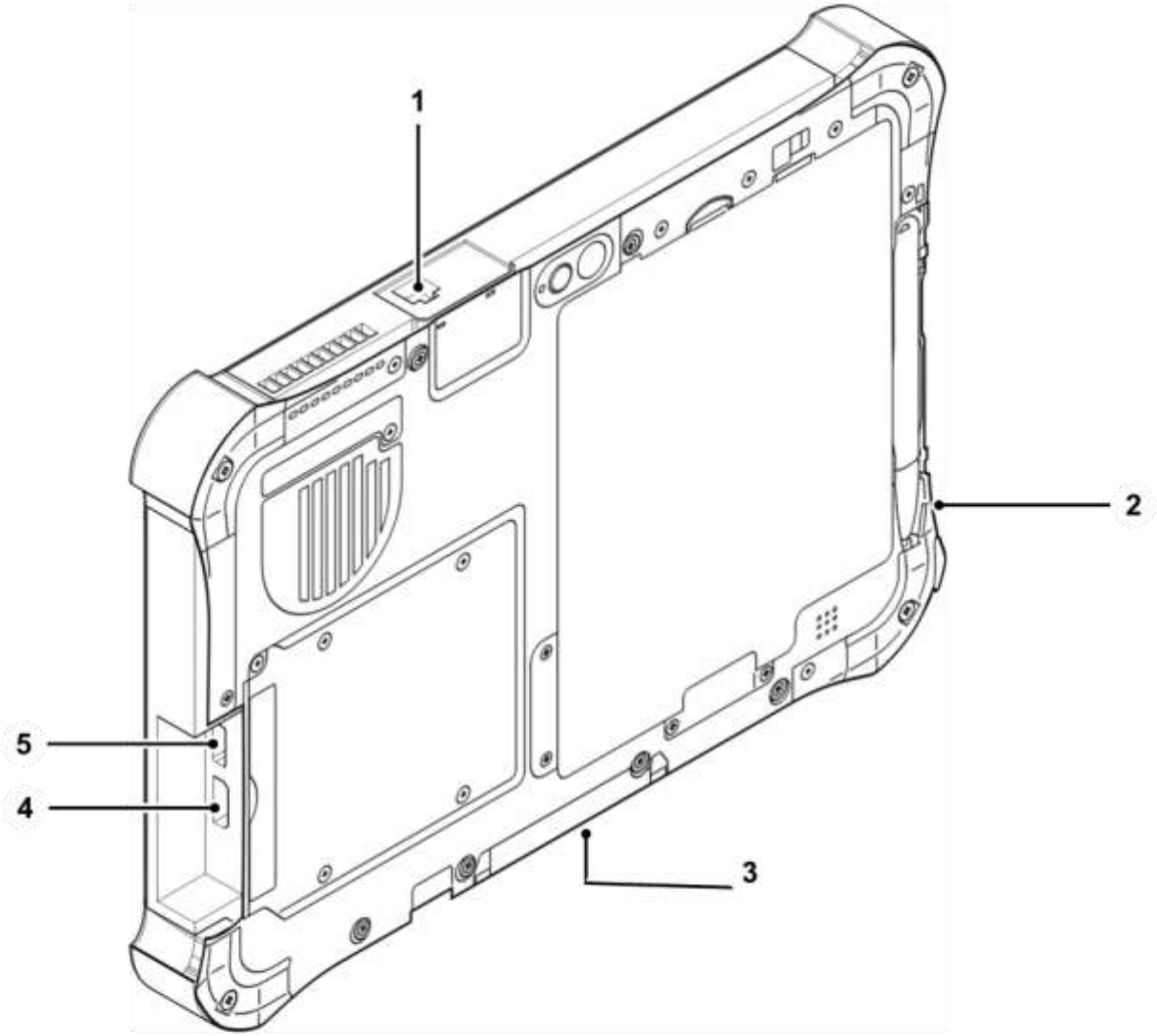

Figure 4-5: OLTE - Connectors

4.6 OLTE SOFTWARE GUI AND SCREEN DESCRIPTION

4.6.1 OLTE Software GUI and Screen Description

- Menu Screens Layout (see section 4.6.2)
- General GUI Description (see section 4.6.3)
- Main Menu (see section 4.6.4)
- Configure (see section 4.6.5)
- Versions Menu (see section 4.6.6)
- BIT Menu (see section 4.6.7)

4.6.2 Menu Screens Layout

4.6.2.1 Menu Screens Layout

Shows the layout of the O-Level OLTE Software screens.

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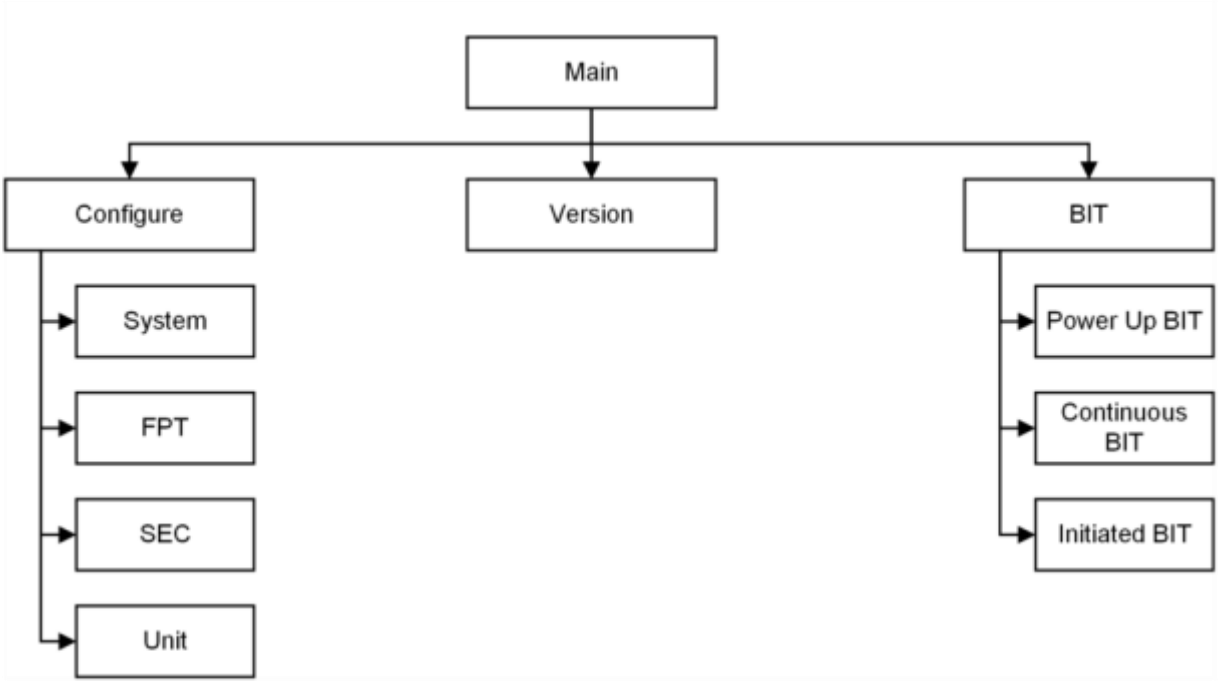

Figure 4-6: O-Level OLTE Software - Screen Layout

4.6.3 General GUI Description

Table 4-5: General GUI Description

No	Name	Type	Description
1	Main Display	Area	Displays the OLTE software menus and their controls.
2	Close	Area	Exits the software.
3	Status bar	Area	Displays the software status: • OLTE Ready - ready to use the software. • If any other message - an error has occurred, proceed according to the message that appears.
4	Menus	Buttons	Displays the main available software menus: • Configure • Versions • BIT
5	Help	Button	Displays the About window.
6	Netcor (BNET-AR) state	Area	Displays the following: • On the left: – A numeric representation of the BNET-AR with an icon to show the BNET-AR connection state: –  (Orange) - Disconnected –  (Green) - Connected • On the right: – BNET-AR Name. – BNET-AR connection state - connected or disconnected. – BNET-AR ID.

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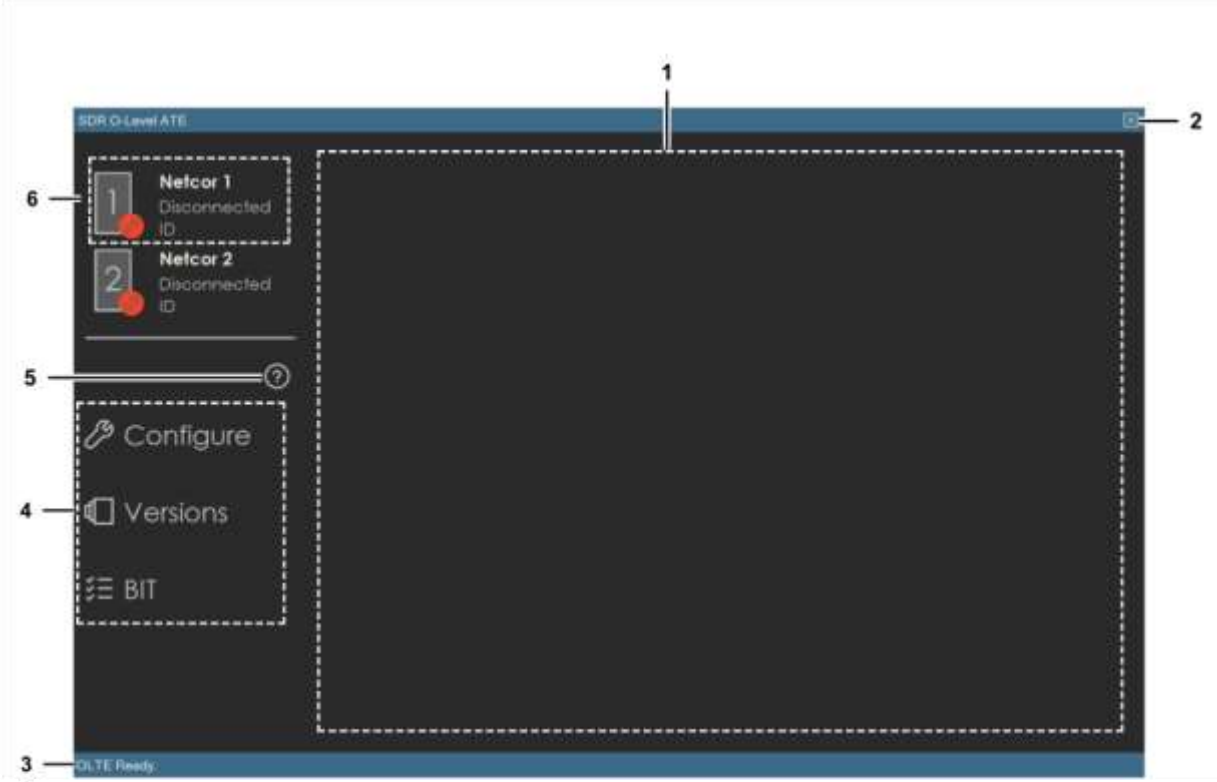

Figure 4-7: OLTE Software - General GUI Description

4.6.4 Main Menu

4.6.4.1 Main Menu

The Main menu is available only after opening the software:

- Displays the state of the BNET-AR, and provides access to other sub-menus.
- Shows the O-Level OLTE Software main menu.

1204378507

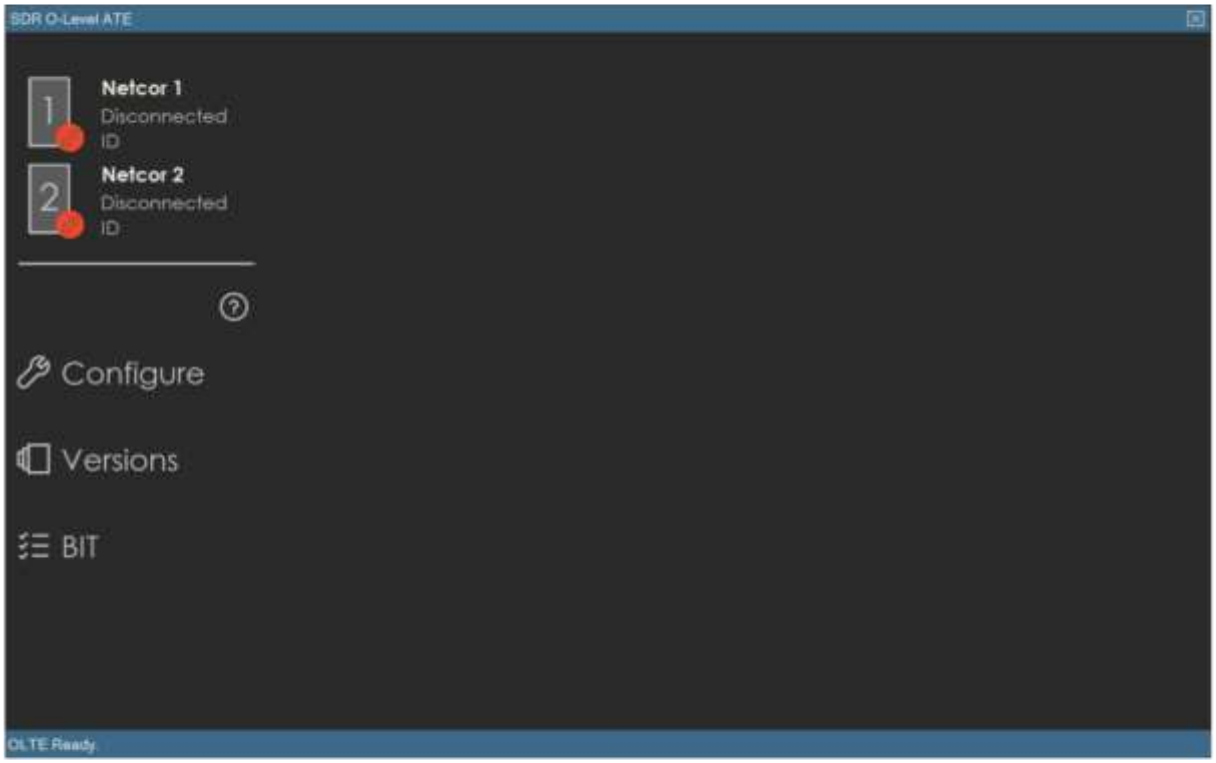

Figure 4-8: O-Level OLTE Software - Main Menu

4.6.5 Configure

4.6.5.1 Configure

The Configure menu provides access to its sub-menus.

The Configure menu opens the System sub-menu by default.

Table 4-6: O-Level OLTE Software - Configure Menu

No	Name	Type	Description
1	System	Button	Displays the System configuration sub-menu.
2	FPT	Button	Displays the Forced Perfect Termination (FPT) configuration sub-menu.
3	SEC	Button	Displays the SEC configuration sub-menu.
4	Unit	Button	Displays the Unit configuration sub-menu.

1204471179

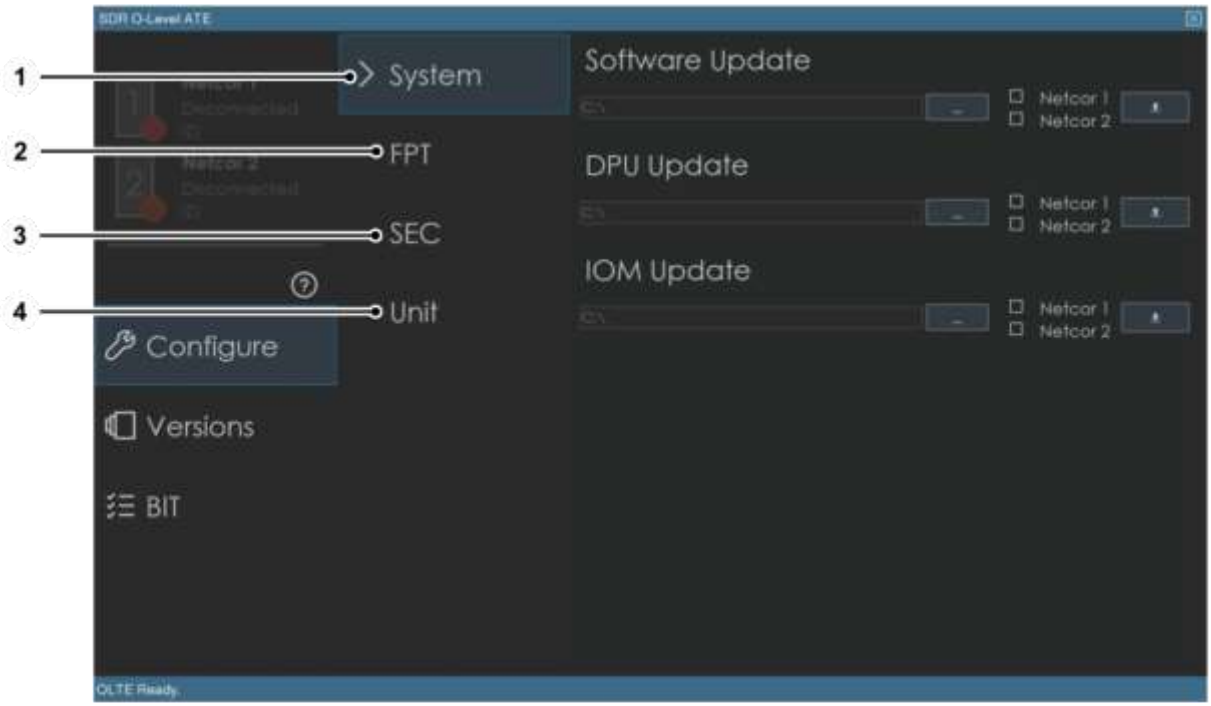

Figure 4-9: O-Level OLTE Software - Configure Menu

4.6.5.2 System Sub-Menu

The System sub-menu enables to upload updated SW and FW files to the BNET-AR.

Table 4-7: System Sub-Menu

No	Name	Type	Description
1	Software Update	Area	Contains controls to upload and update the BNET-AR SW.
2	DPU Update	Area	Contains controls to upload and update the BNET-AR DPU card FW.
3	IOM Update	Area	Contains controls to upload and update the BNET-AR IOM card FW.
4	Upload	Button	Starts the upload process for the selected file.
5	Netcore 1	Check box	• Selected - updates the BNET-AR after tapping the upload button. • Cleared – does not update.
6	Browse	Button	Opens a Windows Explorer window to locate and select the file required for uploading.
7	Path	Display box	Displays the location of the selected file for uploading.

1210248843

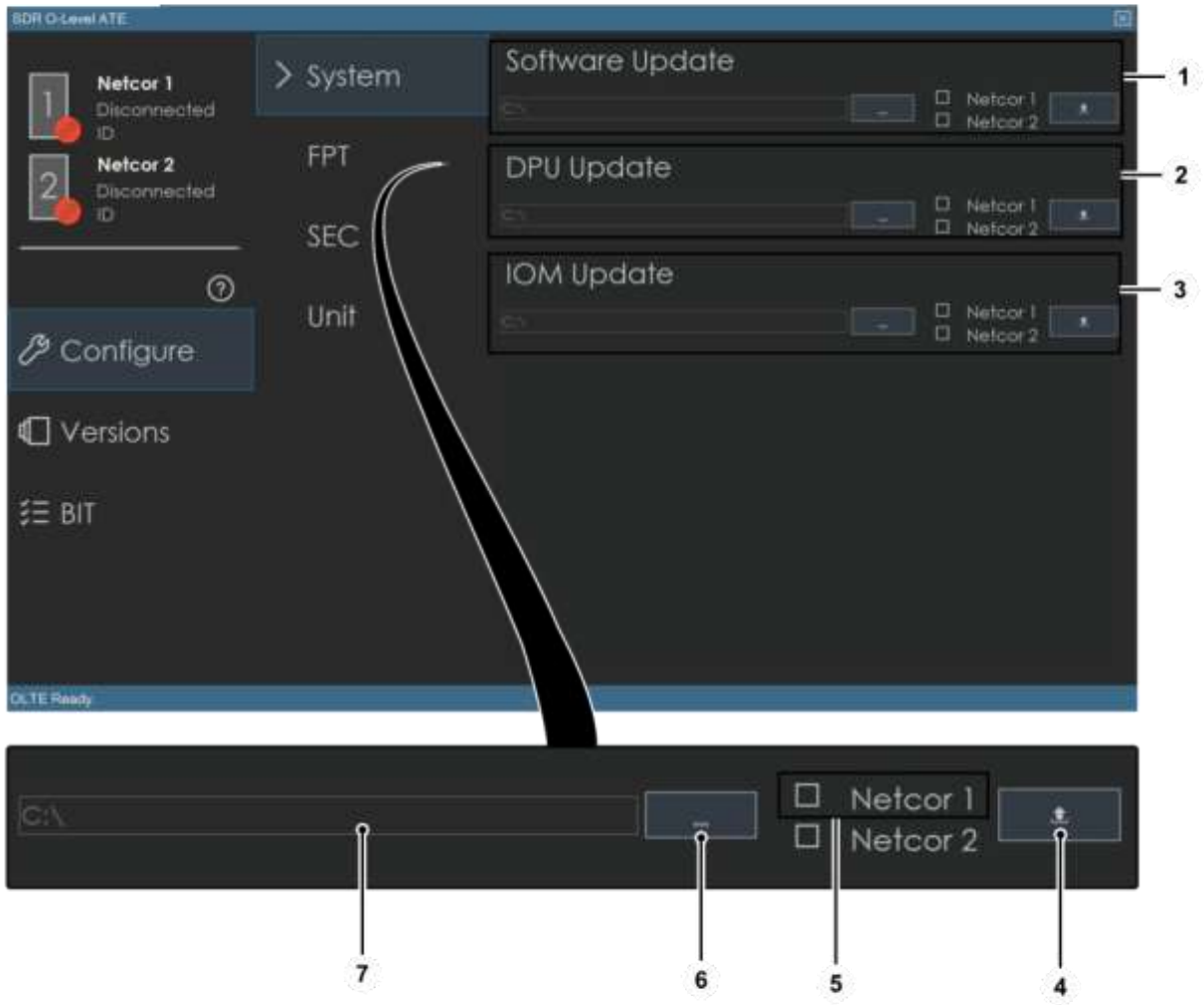

Figure 4-10: System Sub-Menu

4.6.5.3 FPT Sub-Menu

The FPT sub-menu enables to upload updated frequency files to the BNET-AR.

Table 4-8: FPT Sub-Menu

No	Name	Type	Description
1	MANET	Area	Contains controls to upload and update the BNET-AR MANET waveform configuration.
2	SATCOM	Area	Not in use in this system.
3	Legacy	Area	Contains controls to upload and update the BNET-AR Legacy waveform configuration.
4	Upload	Button	Begins the upload process for the selected file.
5	Netcor 1	Check box	• Selected - updates the BNET-AR after tapping the upload button. • Cleared – does not update.
6	Browse	Button	Opens a Windows Explorer window to locate and select the file to be uploaded.
7	Path	Display box	Displays the location of the file selected for uploading.

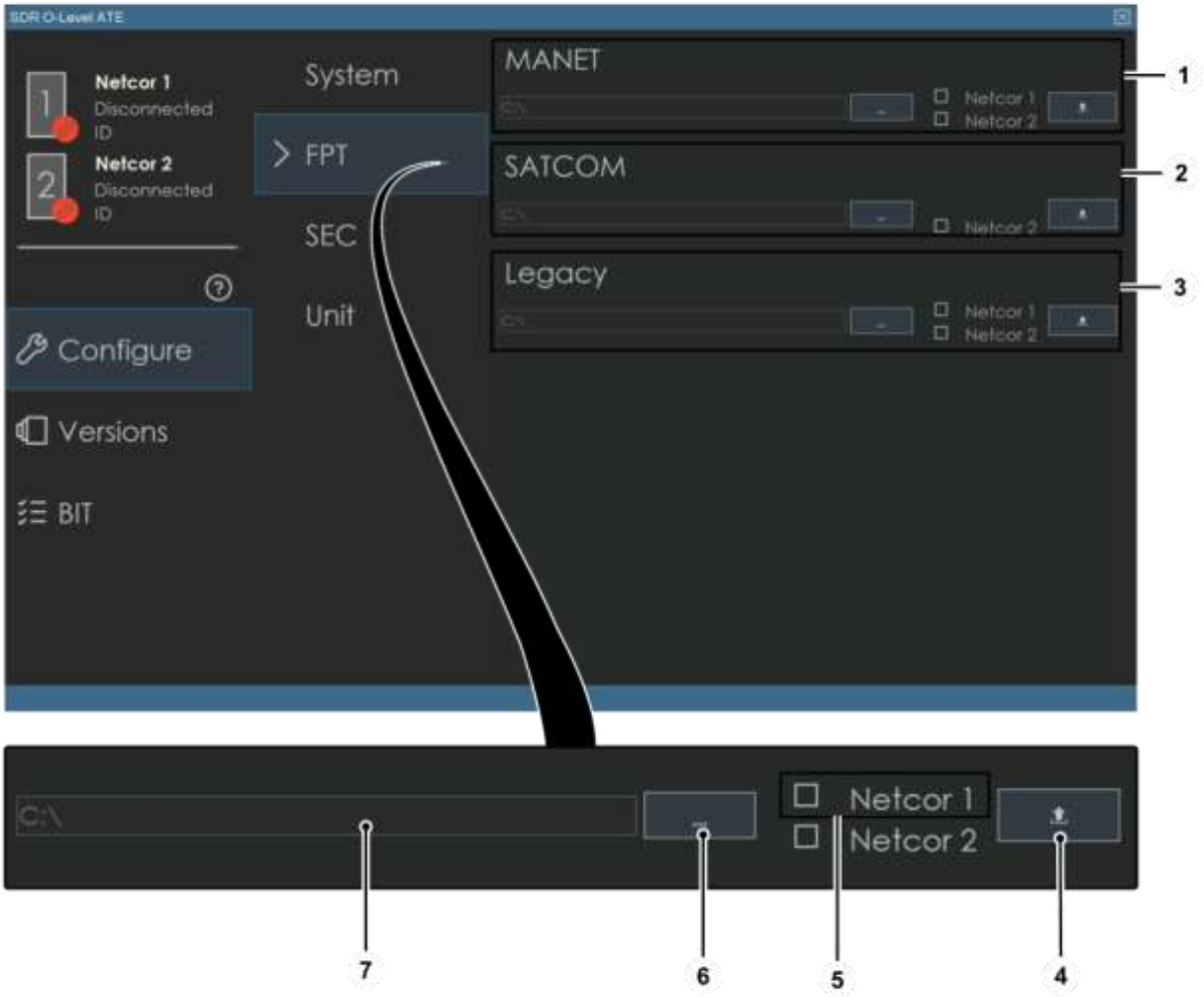

Figure 4-11: FPT Sub-Menu

4.6.5.4 SEC Sub-Menu

The SEC sub-menu enables to upload updated encryption keys to the BNET-AR.

Table 4-9: SEC Sub-Menu

No	Name	Type	Description
1	Commsec Key 1	Area	Provides the controls to upload and update the BNET-AR Communication Security (Commsec) Key 1 encryption.
2	Commsec Key 2	Area	Provides the controls to upload and update the BNET-AR Commsec Key 2 encryption.
3	Transec Base	Area	Provides the controls to upload and update the BNET-AR Transmission Security (TRANSEC) encryption.
4	Upload	Button	Begins the upload process for the selected file .
5	Netcor 1	Check box	• Selected - updates the BNET-AR after tapping the upload button. • Cleared – does not update.
6	Browse	Button	Opens a Windows Explorer window to locate and select the file for uploading.
7	Path	Display Box	Displays the location of the file selected for uploading.

1214819083

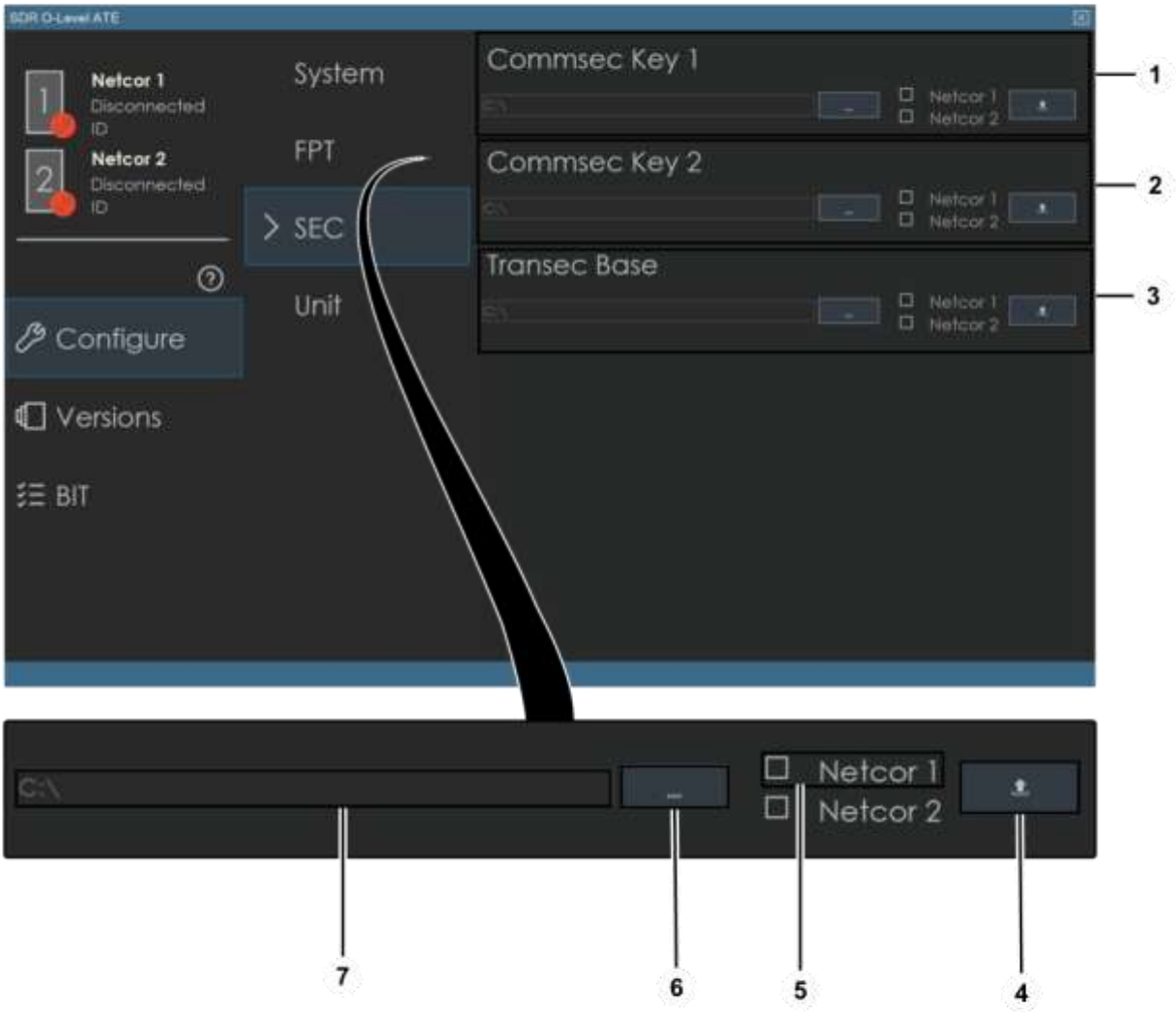

Figure 4-12: SEC Sub-Menu

4.6.5.5 Unit Sub-Menu

The Unit configuration sub-menu enables the operator to change the BNET-AR A/C tail number, view and set the BNET-AR cards IPs.

Table 4-10: Unit Sub-Menu

No	Name	Type	Description
1	Tail number	Text box	Box to enter the BNET-AR tail number.
2	Upload	Button	Updates the BNET-AR tail number.
3	Netcor 1	Area	Contains BNET-AR IP addresses for configuration.
4	Apps	Text Box	Box to change the BNET-AR Applications card IP address.
5	VL300	Text Box	Box to change the BNET-AR VL300 card IP address.
6	VCCS	Text Box	Box to change the BNET-AR VCCS card IP address.
7	RCU	Display box	Displays the RCU IP address.
8	NC	Display box	Displays the BNET-AR IP address.
9	Update IP	Button	Updates the BNET-AR IP addresses.

1210471563

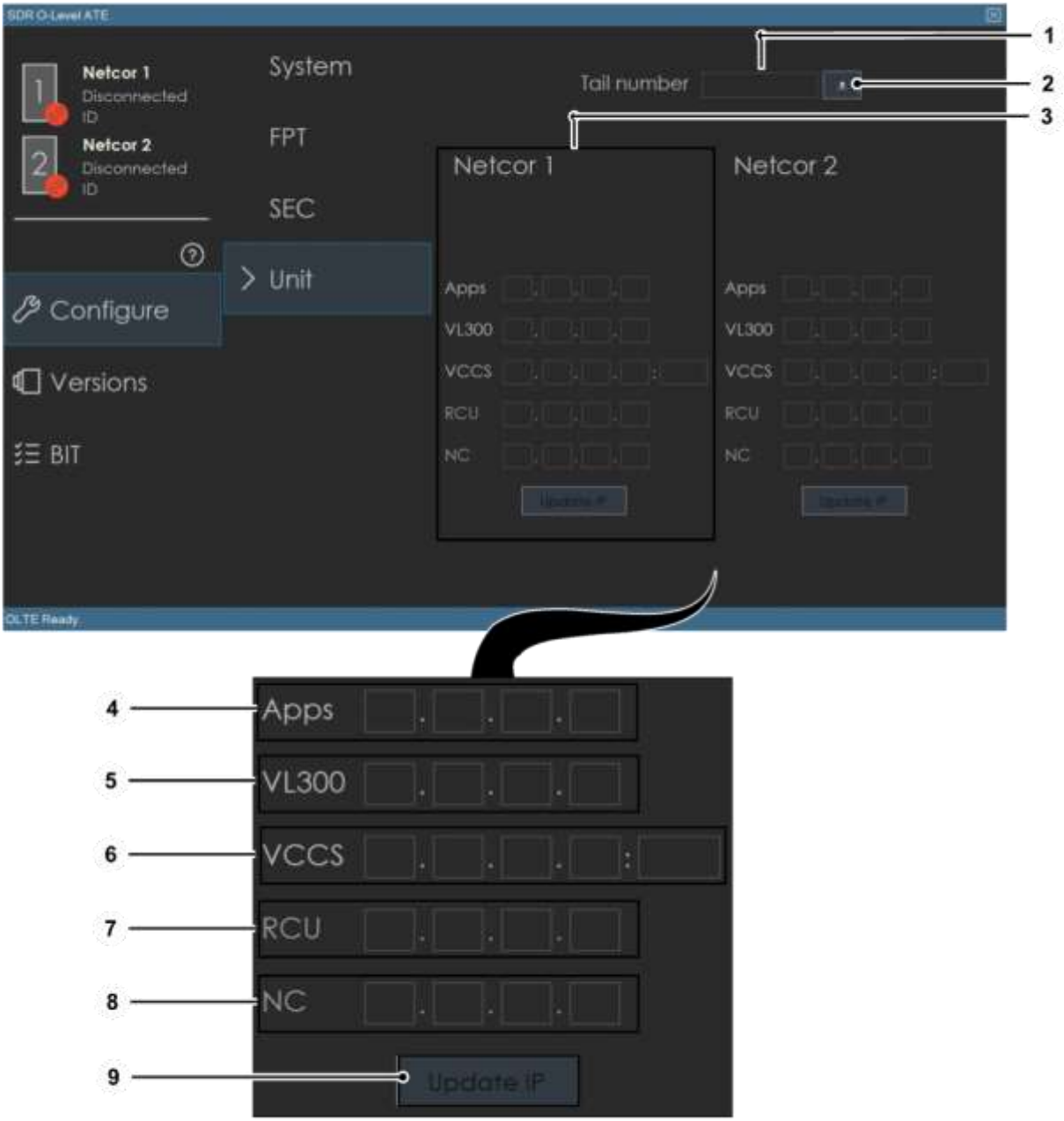

Figure 4-13: Configure Menu - Unit Sub-Menu

4.6.6 Versions Menu

The Versions menu displays the ID, BNET-AR tail number, associated aircraft and the versions in the BNET-AR.

Table 4-11: Versions Menu

No	Name	Type	Description
1	Netcor 1	Area	Displays BNET-AR information.
2	ID	Label	Displays the BNET-AR ID.
3	Tail Number	Label	Displays the BNET-AR associated tail number.
4	Aircraft	Label	Displays the BNET-AR associated aircraft.
5	Netcor Image	Label	Displays the BNET-AR image version.
6	RCU1 SW	Label	Displays the RCU version.
7	RCU2 SW	Label	Not in use.
8	Version	Label	Displays the BNET-AR Master Version (MV).

1210483339

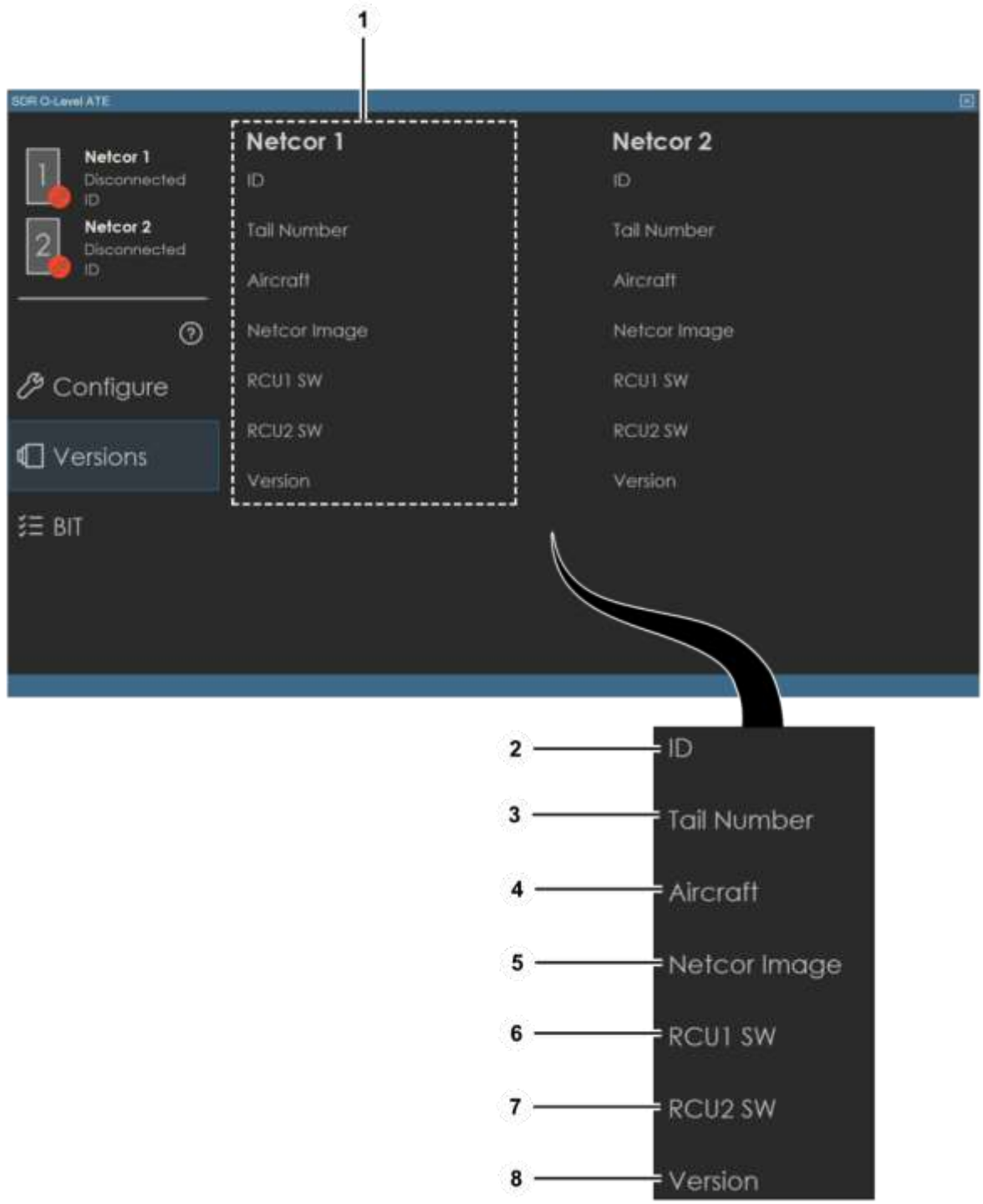

Figure 4-14: O-Level OLTE Software - Versions Menu

4.6.7 BIT Menu

The BIT menu provides access to its sub-menus.

The BIT menu opens the Power Up BIT sub-menu by default.

Table 4-12: BIT Menu

No	Name	Type	Description
1	Power Up BIT	Button	Displays the Power Up BIT sub-menu.
2	Continuous BIT	Button	Displays the Continuous BIT sub-menu.
3	Initiated BIT	Button	Displays the Initiated BIT sub-menu.

1212174987

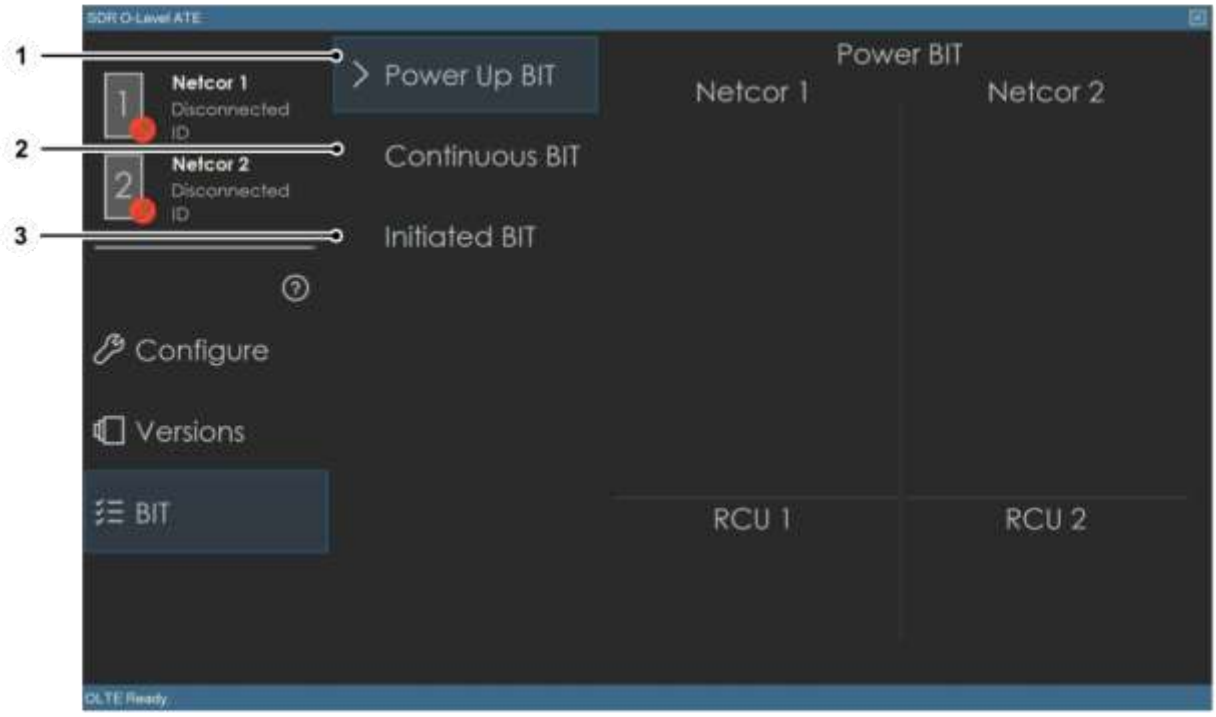

Figure 4-15: O-Level OLTE Software - BIT Menu

4.6.7.1 Power Up BIT Sub-Menu

The Power-Up BIT sub-menu displays the BIT results received while the system was powering up.

Table 4-13: Power Up BIT Sub-Menu

No	Name	Type	Description
1	Netcor 1	Area	Displays a selectable list of BNET-AR PBIT results.

1214147211

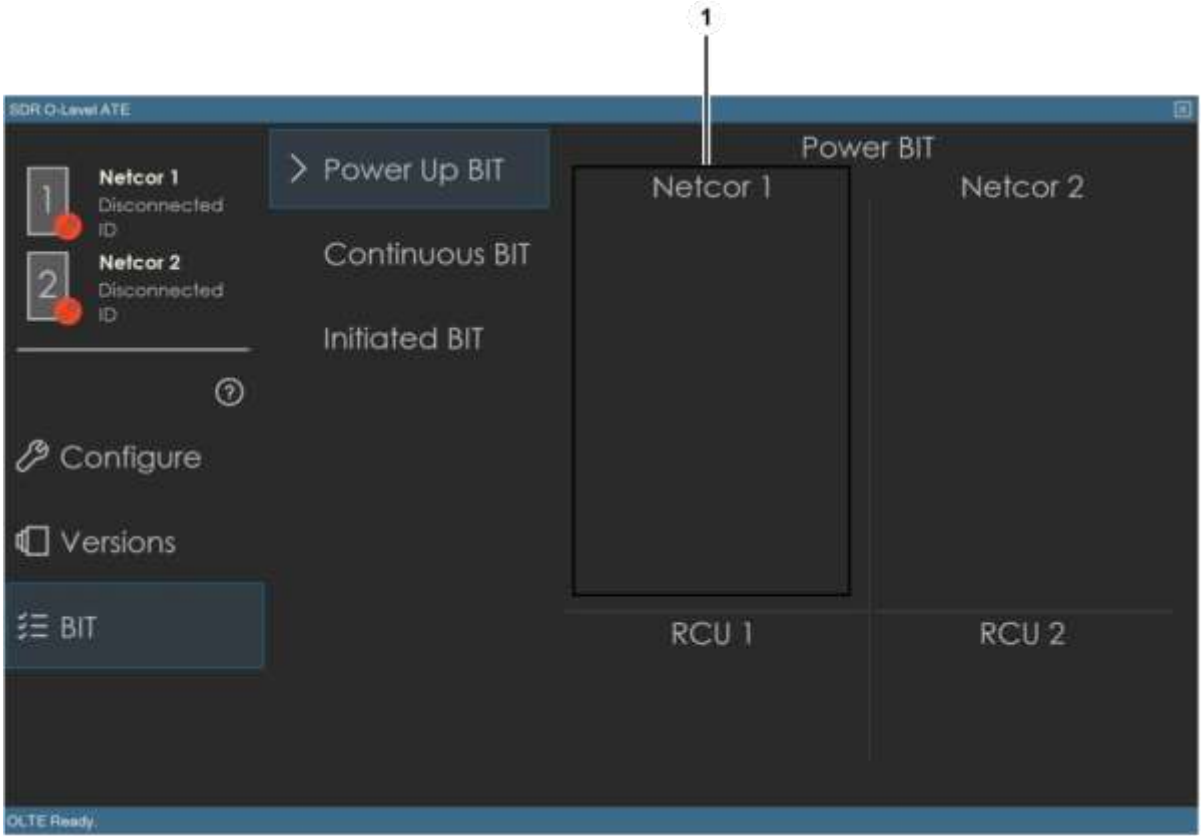

Figure 4-16: Power Up BIT Sub-Menu

4.6.7.2 Continuous BIT Sub-Menu

The Continuous BIT sub-menu displays BIT results received while the system is operational.

Table 4-14: Continuous BIT Sub-Menu

No	Name	Type	Description
1	Netcor 1	Area	Displays a selectable list of BNET-AR CBIT results.

1214209547

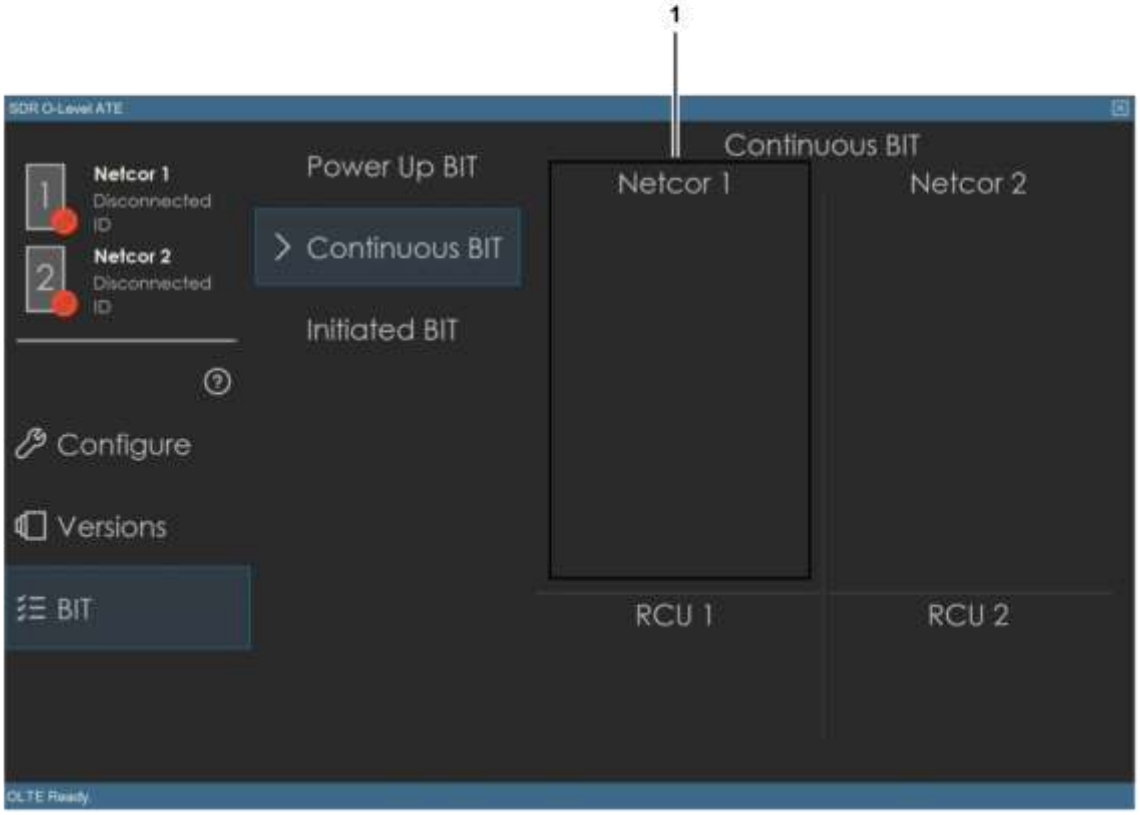

Figure 4-17: Continuous BIT Sub-Menu

4.6.7.3 Initiated BIT Sub-Menu

The Initiated BIT sub-menu displays BIT results received after the IBIT is complete.

Table 4-15: Initiated BIT Sub-Menu

No	Name	Type	Description
1	Netcor 1	Area	Displays a selectable list of BNET-AR IBIT results.
2	Perform IBIT	Button	Starts BNET-AR IBIT.

1214219915

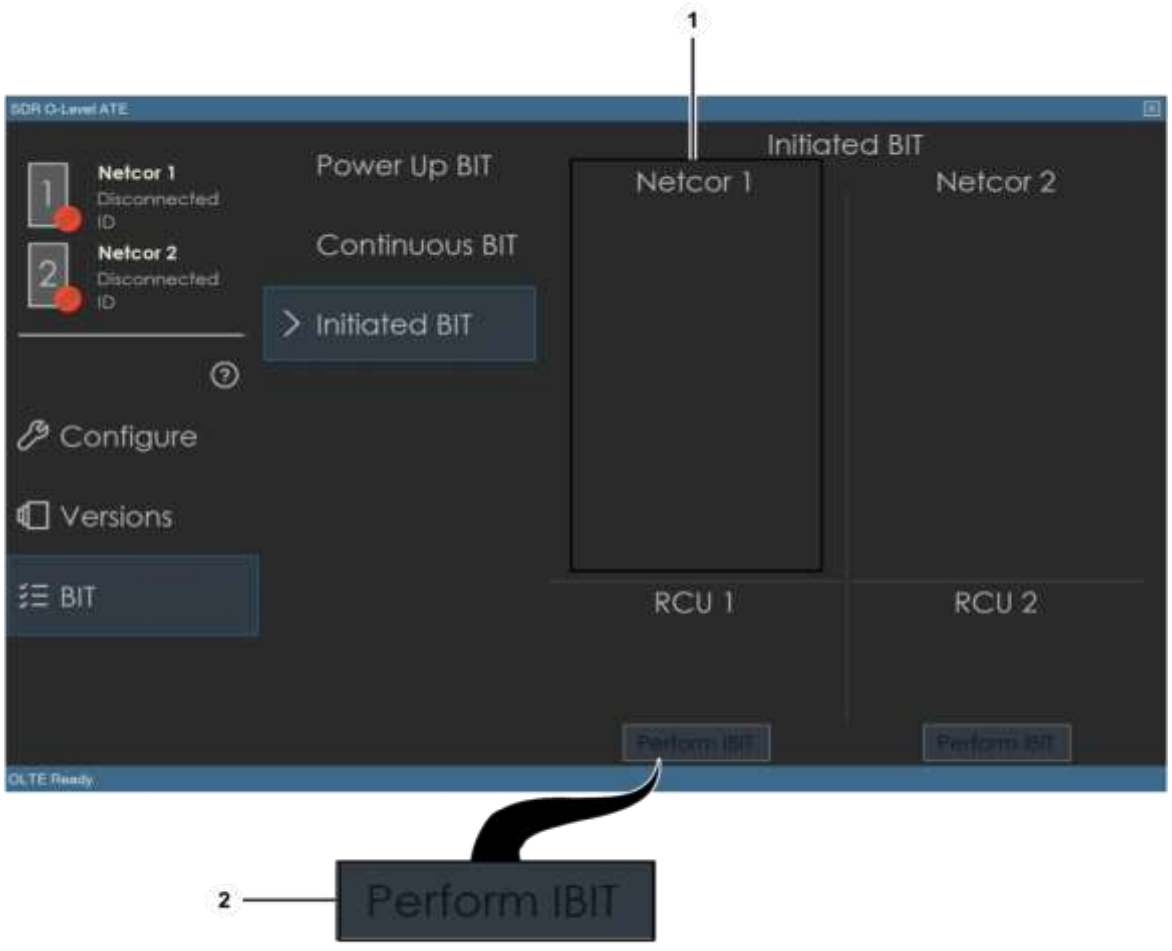

Figure 4-18: Initiated BIT Sub-Menu

4.7 OLTE USER GUIDE AND SOFTWARE OPERATION

4.7.1 OLTE User Guide and Software Operation

- OLTE Power On (see section 4.7.2)
- Running Testing Software (see section 4.7.3)
- Connecting and Disconnecting OLTE to SDR (see section 4.7.4)
- Uploading New BNET-AR System and Operational Images (see section 4.7.5)
- Uploading New BNET-AR Encryption Keys (see section 4.7.6)
- Uploading New BNET-AR Frequency Configuration (see section 4.7.7)
- Configuring BNET-AR IP (see section 4.7.8)
- Updating BNET-AR Tail Number (see section 4.7.9)
- View BNET-AR Version (see section 4.7.10)
- Performing IBIT (see section 4.7.11)
- Viewing BNET-AR BIT Results (see section 4.7.12)
- Exiting Testing Software (see section 4.7.13)
- OLTE Power Off (see section 4.7.14)

4.7.2 OLTE Power On

4.7.2.1 OLTE Power On

NOTE

NOTE
If the OLTE was just powered off, wait at least 10 seconds before powering it back on.

a) Make sure that the OLTE is charged.

b) Press and hold the power button until the power indicator lights up.

Result:
The OLTE indicators flash once.

Result:
The OLTE display is turned on.

Result:
The Windows loading screen appears.

CAUTION

While the drive indicator is on:

Do not connect or disconnect the AC adaptor.

Do not press the power button.

Do not touch the OLTE buttons, screen or external mouse/keyboard.

Do not hold down the power button longer than four seconds, Failure to comply cuts off the power supply to the OLTE.

4.7.3 Opening OLTE Application

4.7.3.1 Open OLTE Application

a) Double tap the OLTE icon on the desktop to run the OLTE application.

Result:
The OLTE application opens.

Result:
OLTE Ready is displayed in the status bar (1).

1962305803

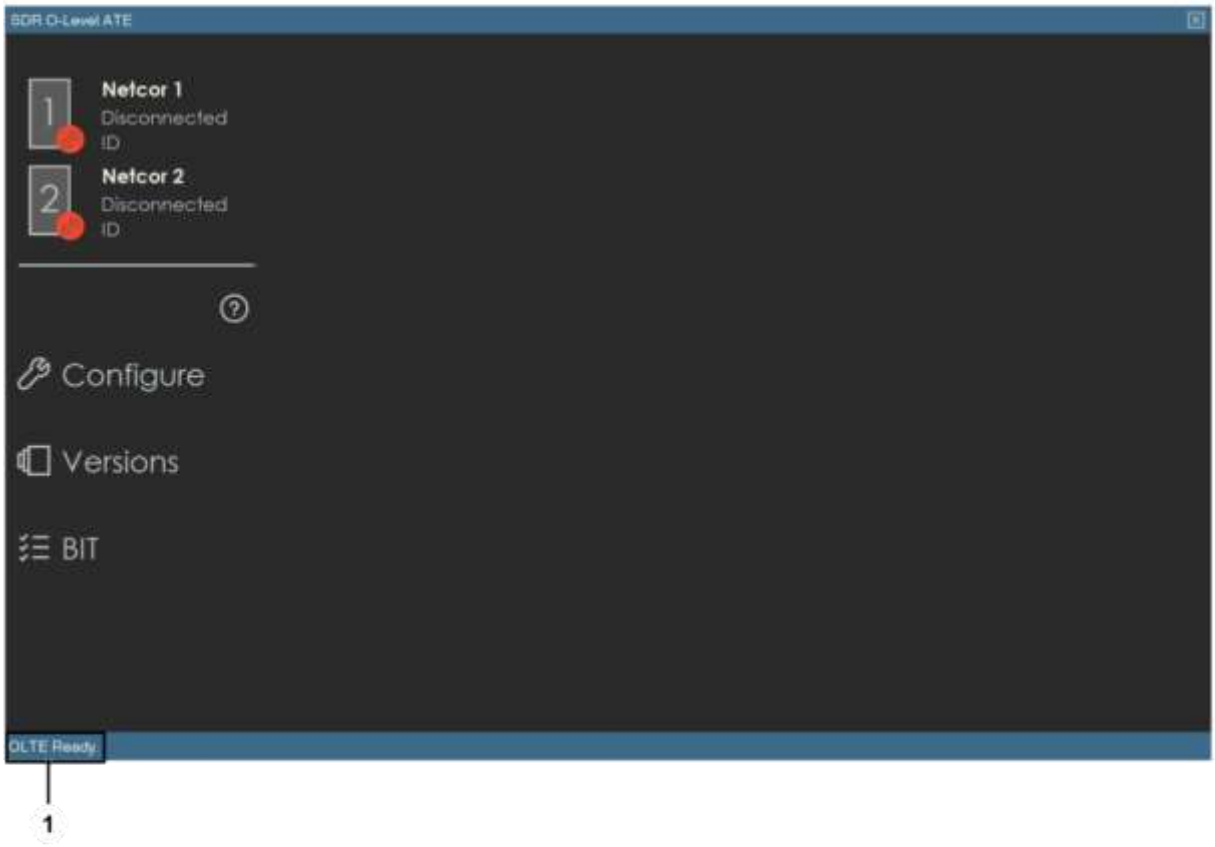

Figure 4-19: Opening OLTE Application

4.7.4 Connecting/Disconnecting OLTE to Radio Equipment Rack

4.7.4.1 Personnel

One Technician

4.7.4.2 Safety

Carefully observe the safety instructions.

4.7.4.3 Tools and Equipment

Ethernet Cable

4.7.4.4 Materials

N/A

4.7.4.5 Preparation

a) Charge the OLTE.

b) Power ON the OLTE (see section 4.7.2).

c) Power ON the Radio Equipment rack.

4.7.4.6 Connect OLTE to Radio Equipment Rack

a) Run the OLTE software (see section 4.7.3).

b) Connect the Ethernet cable (2) between the OLTE port (3) and the Radio Equipment rack J1 connector (1).

Result:
The Netcor (BNET-AR) state indicators in the OLTE change from disconnected (red) to connected (green).

Result:
BNET-AR ID and Tail Number are displayed.

Result:
Connected status is displayed.

1214268683

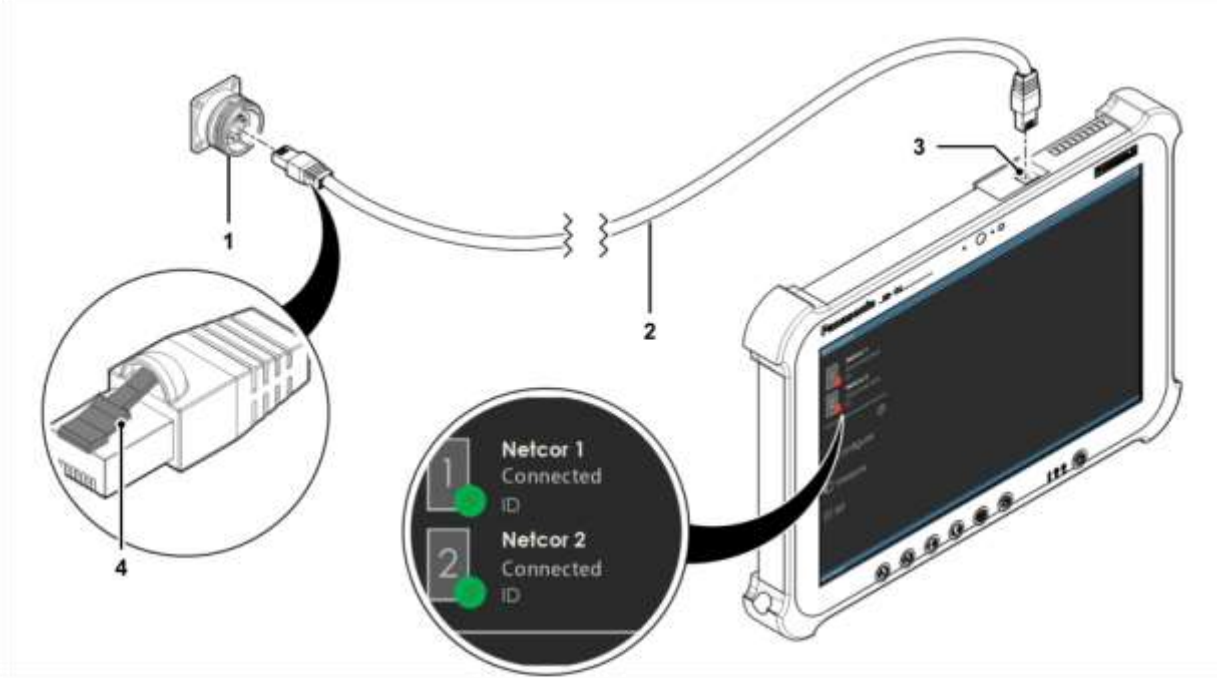

Figure 4-20: Connecting and Disconnecting the OLTE to/from Radio Equipment Rack (1 of 2)

4.7.4.7 Disconnect OLTE from Radio Equipment Rack

CAUTION

Do not disconnect the OLTE while an upload is in progress.

a) Power off the Radio Equipment rack.

b) Power off the OLTE (see section 4.7.14).

c) Press and hold the Ethernet cable connector tab (4).

CAUTION

Do not disconnect the cable by pulling on the cable itself.

a) Using the cable connector, pull the Ethernet cable (2) to remove it from the Ethernet ports on the Radio Equipment rack and OLTE.

b) Store the Ethernet cable (2) in its designated compartment.

1214268683

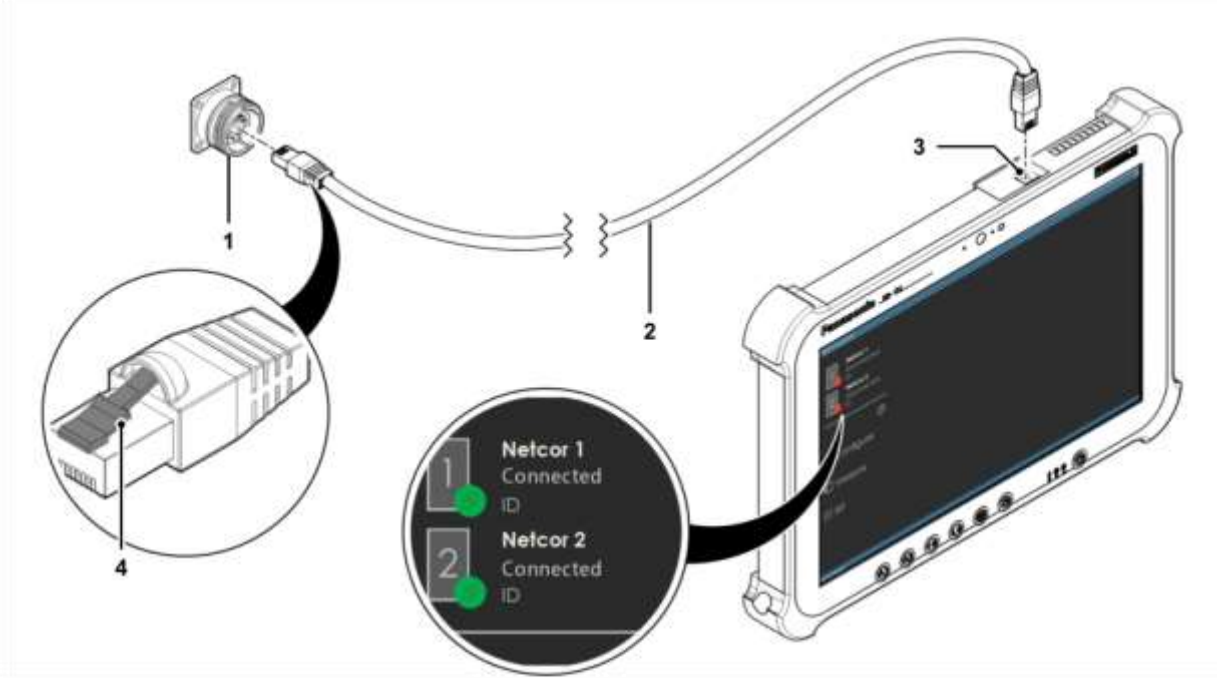

Figure 4-21: Connecting and Disconnecting the OLTE to/from Radio Equipment Rack (2 of 2)

4.7.5 Uploading SW/FW Update to BNET-AR

4.7.5.1 Upload SW/FW Update to BNET-AR

CAUTION

Do not upload more than one System and Operational Image at a time.

Prior to updating the BNET-AR, make sure that the OLTE is charged to **at least 50%**.

NOTE

The following procedure is identical for Software, DPU and IOM updates.

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the System sub-menu: Main Menu > Configure (1) > System (3).

Result:
The System sub-menu is displayed.

e) According to the FW or SW to be updated, tap browse (4).

Result:
A Browse window is displayed.

f) Locate and select the FW or SW file.

Result:
The full path of the file is displayed in the path text box (5).

g) Tick the Netcor 1 (BNET-AR) checkbox (6).

CAUTION

Do not Turn off the OLTE and BNET-AR during the upload process**.**

NOTE

It is not possible to stop the upload process once it is initiated.

a) Tap upload (7) to initiate the upload process.

Result:
The upload process begins.

Result:
Upload progress is displayed in the status bar at the bottom of the screen.

Result:
Once the upload process is complete, a message appears in the status bar.

b) Restart the BNET-AR.

c) Power off the OLTE (see section 4.7.14).

d) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

1961781771

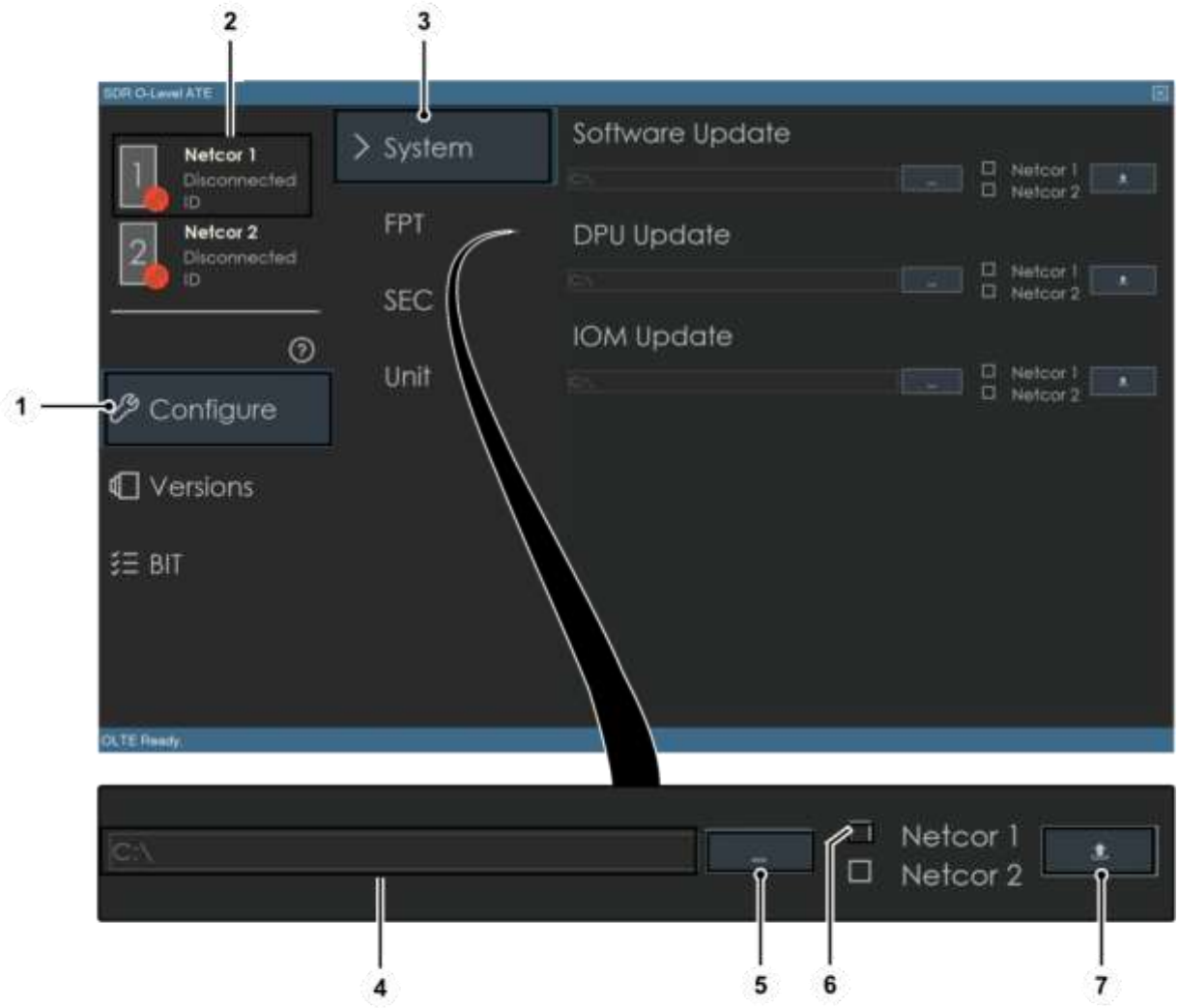

Figure 4-22: Uploading SW/FW Update to BNET-AR

4.7.6 Uploading Encryption Key File to BNET-AR

4.7.6.1 Upload Encryption Key File to BNET-AR

CAUTION

Do not upload more than one Encryption Key file at a time.

Prior to updating the BNET-AR, make sure that the OLTE is charged to at **least 50%**.

NOTE

The following procedure is identical for Commsec Key 1, Commsec Key 2 and Transec Base encryption files.

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the SEC sub-menu:
Main Menu > Configure (1) > SEC (3).

Result:
The SEC sub-menu is displayed.

e) According to the encryption key to be updated, tap browse (4).

Result:
Browse window is displayed.

f) Locate and select the configuration file.

Result:
The full path of the file is displayed in the path text box (5).

g) Tick the Netcor 1 (BNET-AR) checkbox (6).

CAUTION

Do not turn off the OLTE and BNET-AR during upload process.

NOTE

It is not possible to stop the upload process once it is initiated.

a) Tap upload (7) to initiate the upload process.

Result:
The upload process begins.

Result:
Upload progress is displayed in the status bar at the bottom of the screen.

Result:
Once the upload process is complete, a message appears in the status bar.

b) Restart the BNET-AR.

c) Power off the OLTE (see section 4.7.14).

d) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

1961880075

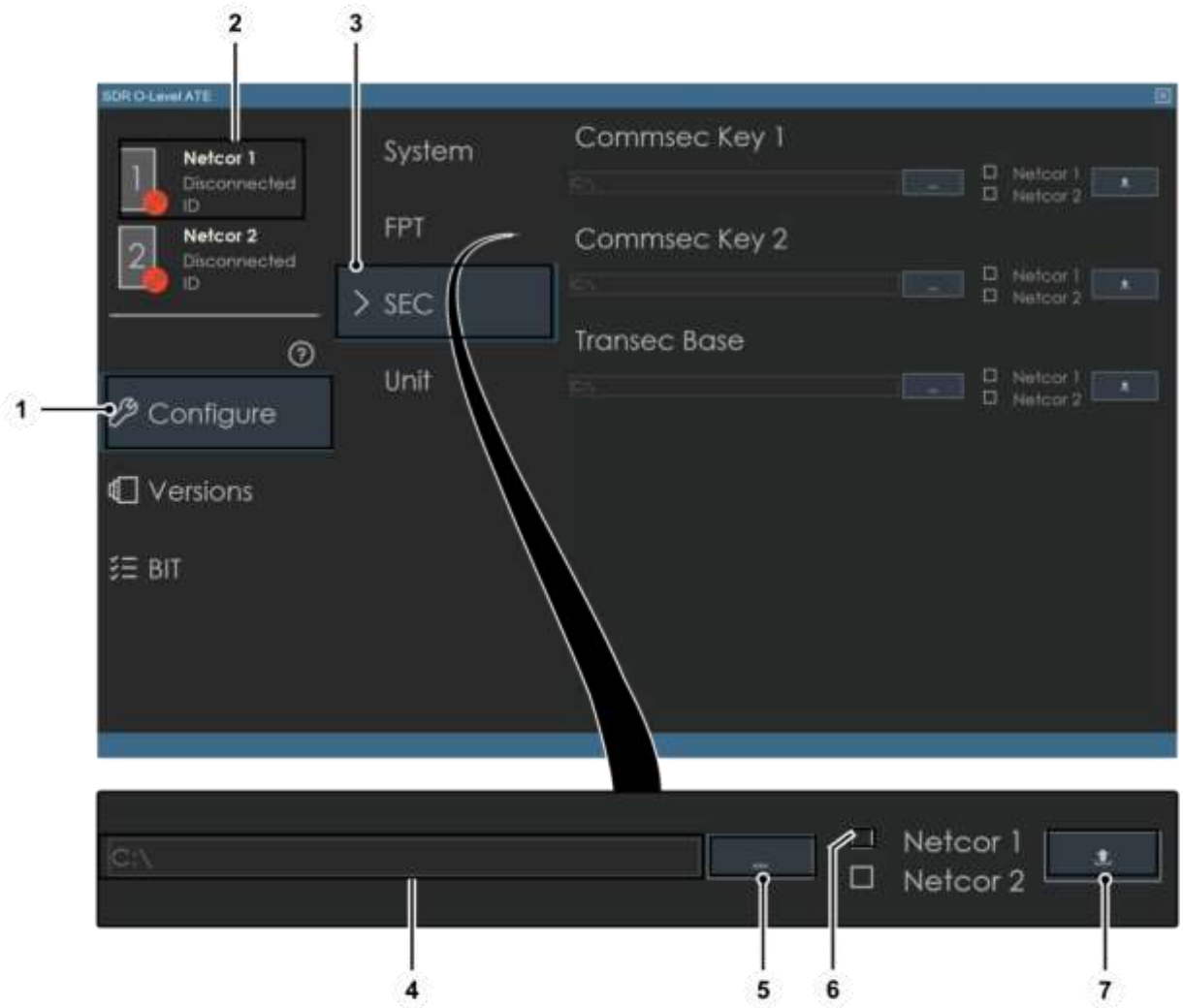

Figure 4-23: Uploading Encryption Key File to BNET-AR

4.7.7 Uploading Frequency Configuration to BNET-AR

4.7.7.1 Upload Frequency Configuration File to BNET-AR

CAUTION

Do not upload more than one Frequency Configuration file at a time.

Prior to updating the BNET-AR, make sure that the OLTE is charged to at **least 50%**.

NOTE

The following procedure is identical for MA-NET and Legacy configuration files.

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the FPT sub-menu: Main Menu > Configure (1) > FPT (3).

Result:
The FPT sub-menu is displayed.

e) According to the work mode to be updated, tap browse (4).

Result:
Browse window is displayed.

f) Locate and select the configuration file.

Result:
The full path of the file is displayed in the path text box (5).

g) Tick the Netcor 1 (BNET-AR) checkbox (6).

CAUTION

Do not turn off the OLTE and BNET-AR during upload process.

NOTE

It is not possible to stop the upload process once it is initiated.

a) Tap upload (7) to initiate upload.

Result:
The upload process begins.

Result:
Upload progress is displayed in the status bar at the bottom of the screen.

Result:
Once the upload process is complete, a message appears in the status bar.

b) Restart the BNET-AR.

c) Power off the OLTE (see section 4.7.14).

d) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

1961903243

Figure 4-24: Uploading Frequency Configuration File to BNET-AR

4.7.8 Configuring BNET-AR IP Addresses

4.7.8.1 Configure BNET-AR IP Addresses

NOTE

The following procedure is identical for Apps, VL300 and VCCS.

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the Unit sub-menu: Main Menu > Configure (1) > Unit (3).

Result:
The Unit sub-menu is displayed.

e) In Netcor 1 pane (4), tap each IP box, to edit all required IP addresses.

f) Tap Update IP (5).

Result:
The IP addresses are updated in the BNET-AR.

g) Restart the BNET-AR.

h) Power off the OLTE (see section 4.7.14).

i) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

1961950731

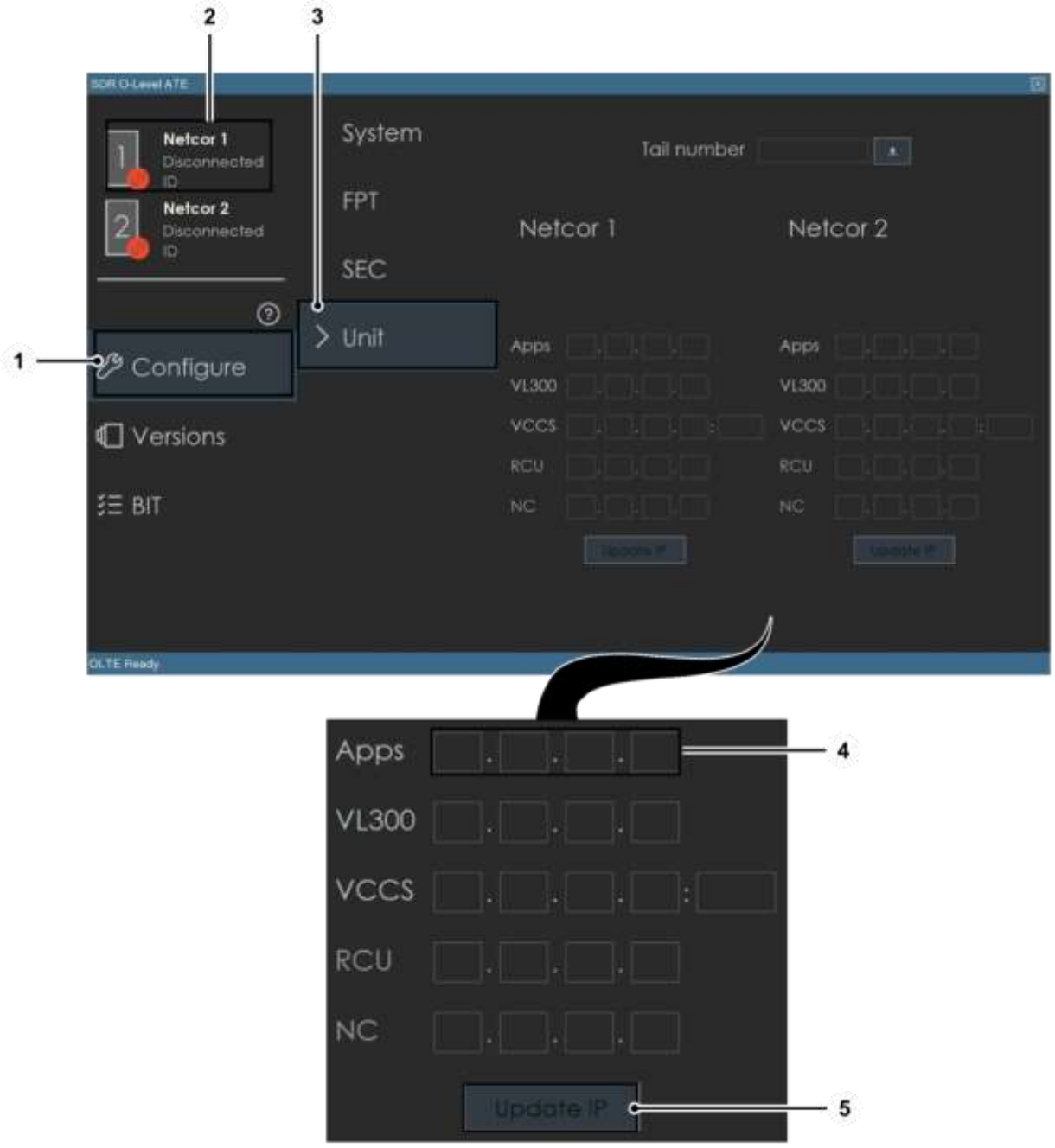

Figure 4-25: Configuring BNET-AR IP Addresses

4.7.9 Setting BNET-AR Tail Number

4.7.9.1 Set BNET-AR Tail Number

NOTE

The following procedure is identical for Apps, VL300 and VCCS.

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the Unit sub-menu: Main Menu > Configure (1) > Unit (3).

Result:
The Unit sub-menu is displayed.

e) Tap the Tail number box (4), and select the tail number.

f) Tap upload (5).

Result:
The BNET-AR tail number is updated.

g) In the Version menu (see section 4.7.10), make sure that Netcor 1 (BNET-AR) tail number is updated.

h) Power off the OLTE (see section 4.7.14).

i) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

1961970187

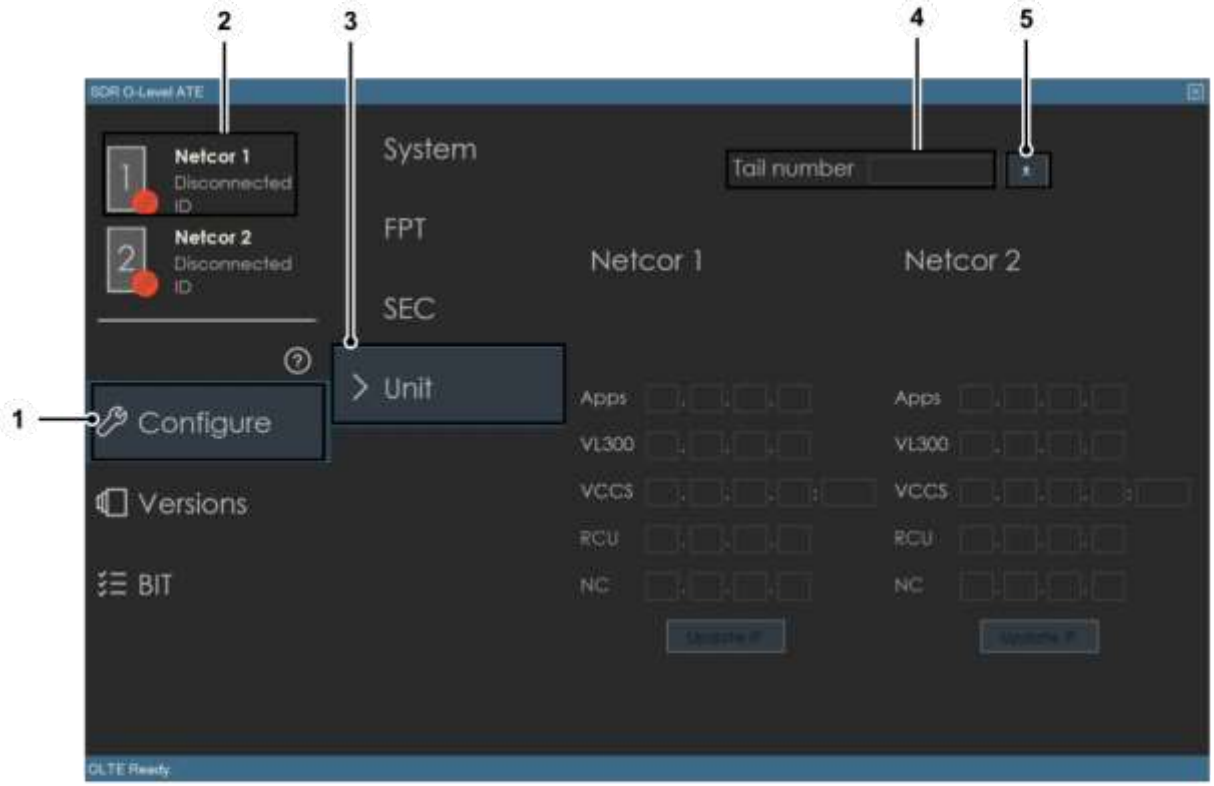

Figure 4-26: Setting BNET-AR Tail Number

4.7.10 Verifying BNET-AR Versions

4.7.10.1 Verify BNET-AR Versions

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the Versions menu: Main Menu > Versions (1).

Result:
The Versions menu is displayed.

e) Make sure that Netcor 1 (BNET-AR) versions and tail number (3) are as required.

f) Power off the OLTE (see section 4.7.14).

g) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

1962145163

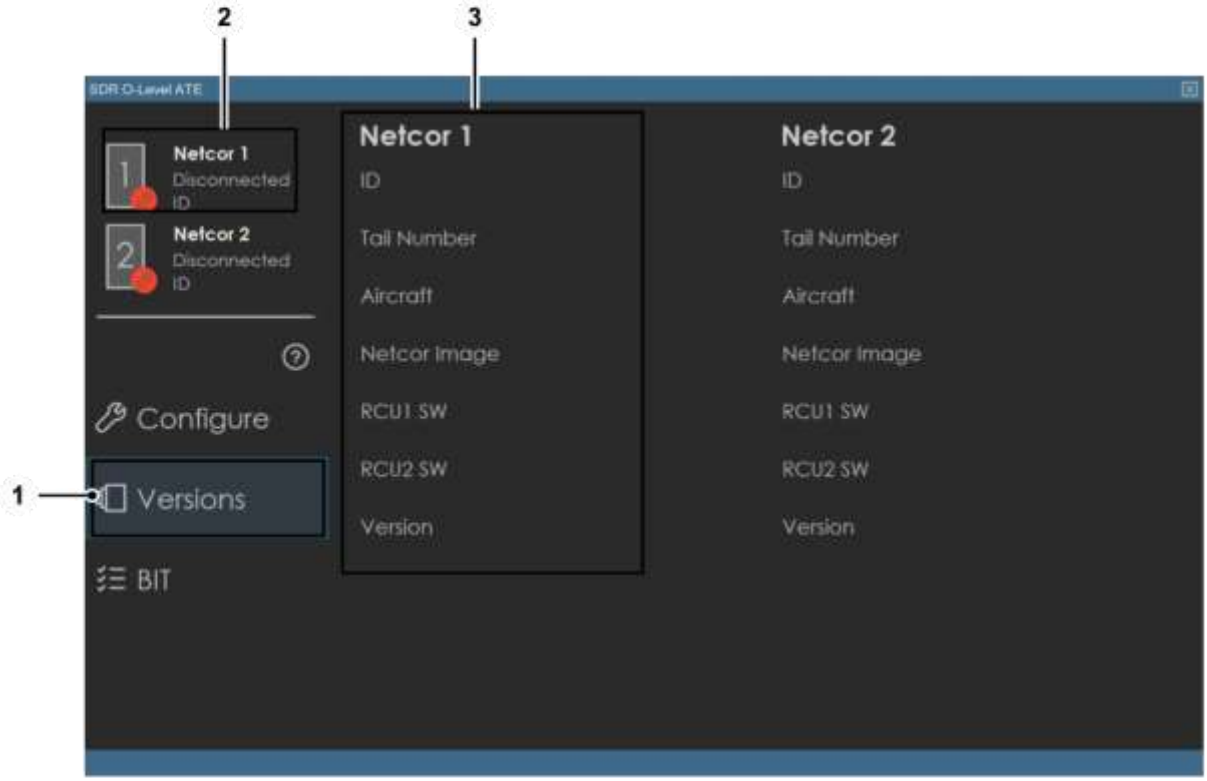

Figure 4-27: Verifying BNET-AR Versions

4.7.11 Performing BNET-AR IBIT

4.7.11.1 Perform BNET-AR IBIT

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the Initiated BIT sub-menu: Main Menu > BIT (1) > Initiated BIT (3).

Result:
The IBIT menu is displayed.

e) Tap Perform IBIT (5).

Result:
BNET-AR IBIT runs in the background.

Result:
If a failure is detected, results are shown in Netcor 1 area (4).

Result:
When IBIT is complete, a Completed label appears in the status bar (6).

f) Power off the OLTE (see section 4.7.14).

g) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

1214293387

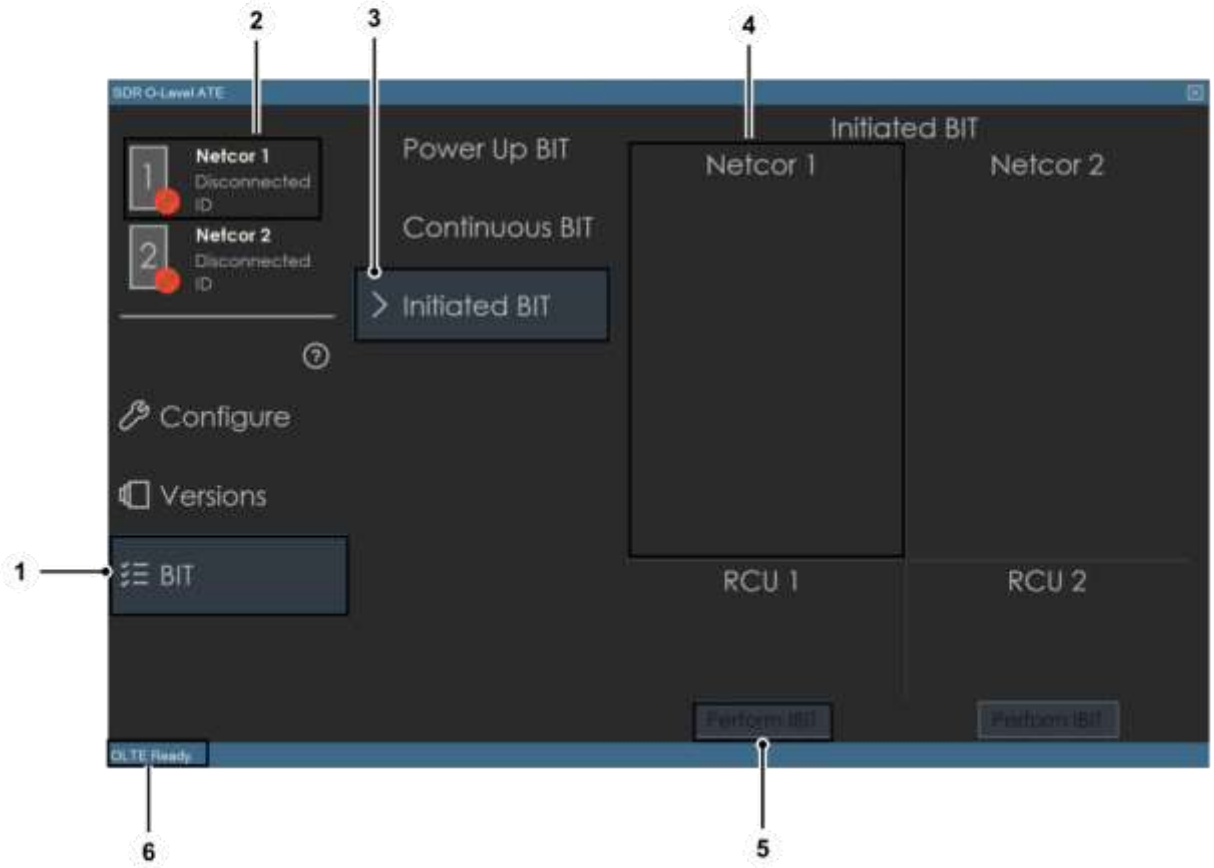

Figure 4-28: Performing BNET-AR IBIT

4.7.12 Viewing BNET-AR PBIT/CBIT Results

4.7.12.1 View BNET-AR PBIT Results

NOTE

The following procedure is identical for viewing CBIT results.

a) Power on and connect the OLTE to the Radio Equipment rack (see section 4.7.4).

b) Run the OLTE software (see section 4.7.3).

c) Make sure that Netcor 1 (BNET-AR) indication is Connected (2).

d) Enter the Power-up BIT sub-menu: Main Menu > BIT (1) > Power-up BIT (3).

Result:
The PBIT menu is displayed.

Result:
If a failure is detected, results are displayed in Netcor 1 area (4).

e) Select a failure to display additional information.

f) Power off the OLTE (see section 4.7.14).

g) Disconnect the OLTE from the Radio Equipment rack (see section 4.7.4).

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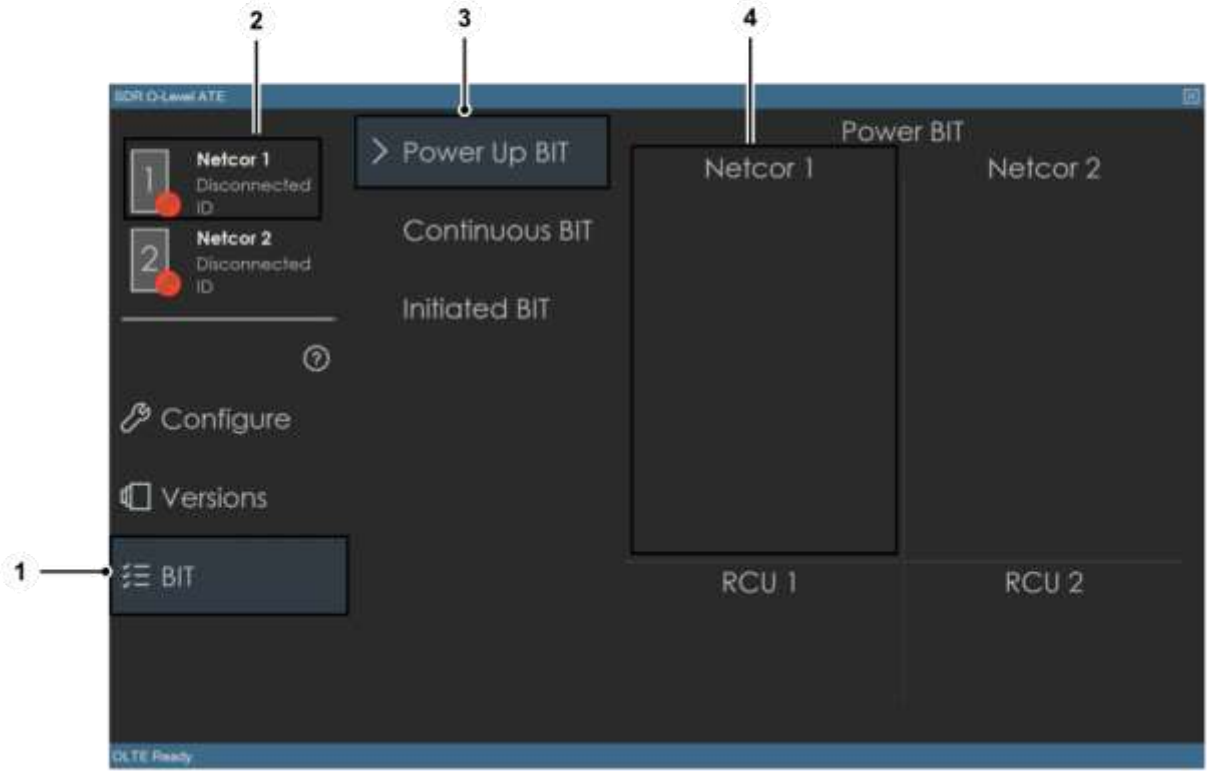

Figure 4-29: Viewing BNET-AR PBIT/CBIT Results

4.7.13 Closing OLTE Application

4.7.13.1 Close OLTE Application

CAUTION

Do not exit the application while an upload is in progress.

a) Tap ☒ (1).

Result:
Any process in progress is aborted.

Result:
The application closes.

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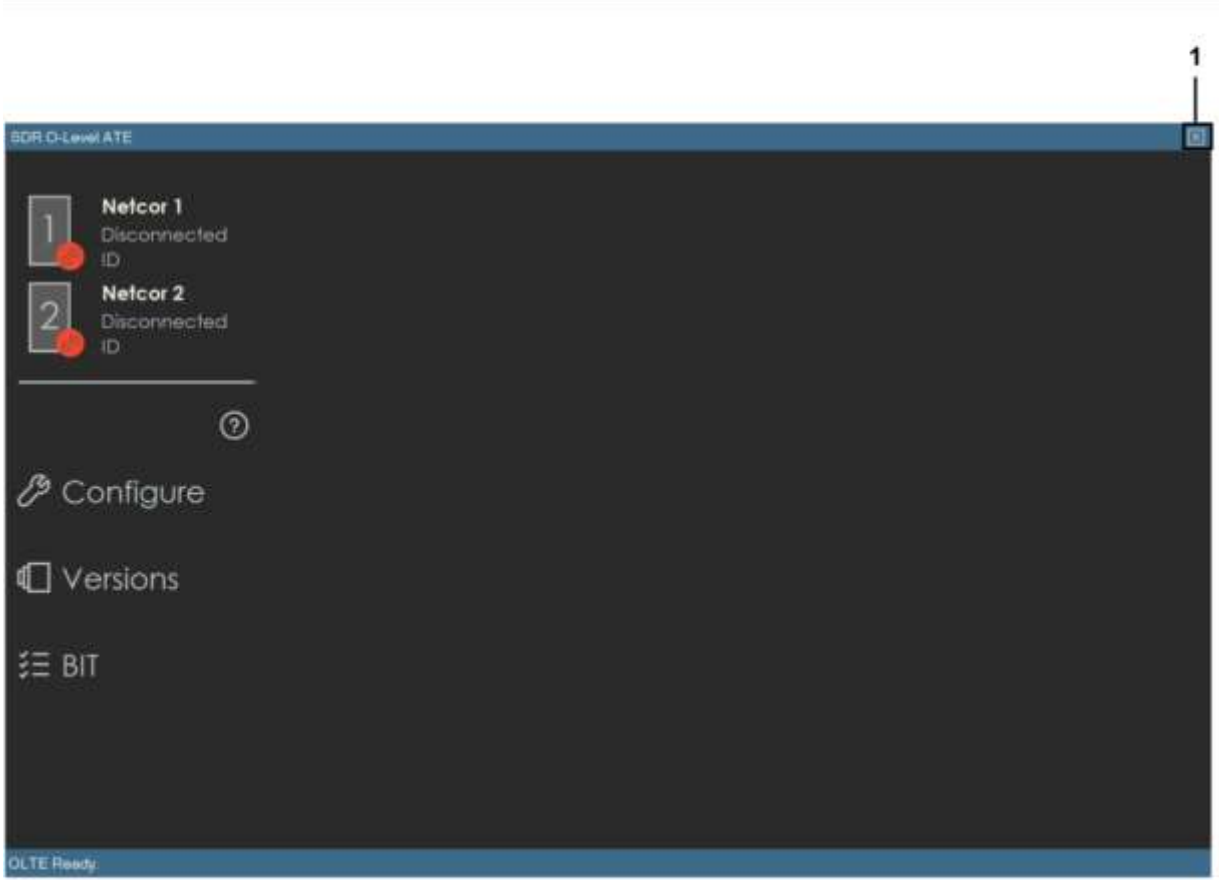

Figure 4-30: Closing OLTE Application

4.7.14 OLTE Power Off

4.7.14.1 OLTE Power Off

CAUTION

Do not power OFF the OLTE.

Do not power OFF the OLTE while an up-load is in progress.

Do not hold down the power button longer than four seconds, Failure to comply cuts off the power supply to the OLTE.

a) Disconnect the OLTE from the SDR.

b) Exit the application.

c) Tap the  (Start) button in the Windows taskbar.

Result:
The Windows Start menu opens.

d) Tap the Shutdown button in the start menu.

Result:
The OLTE initiates the power OFF procedure.

4.8 OLTE CONFIGURATION AND OLTE APPLICATION INSTALLATION

4.8.1 OLTE Configuration and OLTE Application Installation

- Configuring OLTE (see section 4.8.2)

  The configuration is performed once after receiving a new or formatted OLTE.

- Installing OLTE Application (see section 4.8.3)

4.8.2 Configuring OLTE

4.8.2.1 Personnel

One Technician

4.8.2.2 Safety

Carefully observe the safety instructions.

4.8.2.3 Tools and Equipment

N/A

4.8.2.4 Materials

N/A

4.8.2.5 Preparations

Power ON the OLTE.

Procedure

a) Tap the  (Start) button in the Windows taskbar.

Result:
The Windows Start menu opens.

b) Tap the Control Panel in the Start menu.

Result:
The Control Panel window appears.

c) Tap the Network and Sharing Center.

Result:
The Network and Sharing Center window appears.

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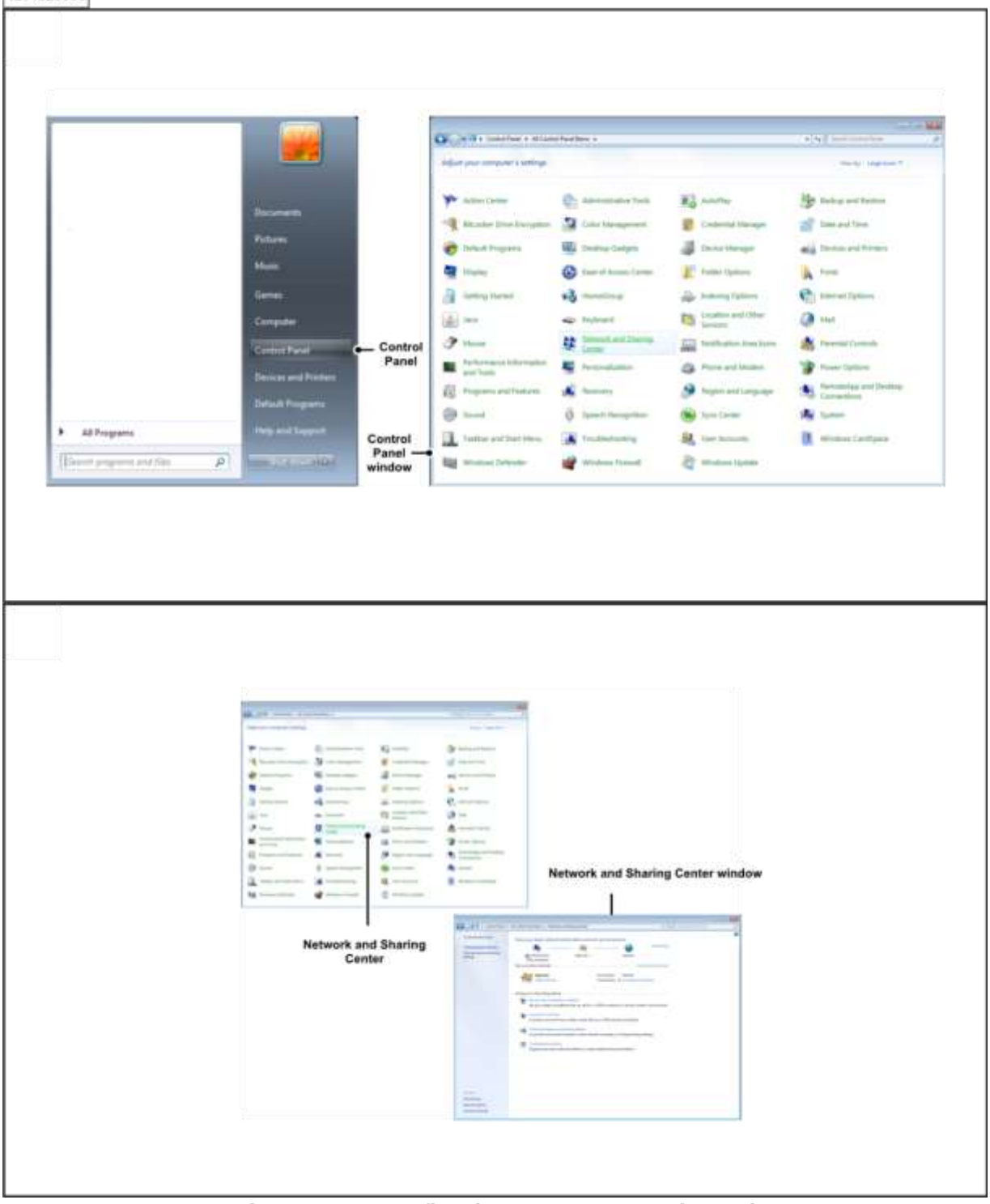

Figure 4-31: Configuring OLTE - Control Panel

4.8.2.6 Configuring OLTE

a) Tap Change adapter settings in the left window pane.

Result:
The Network Connections window appears.

b) Long press the Local Area Connection icon in the window.

Result:
Right click menu appears.

c) Tap the Properties icon in the right click menu.

Result:
The Local Area Connection Properties window appears.

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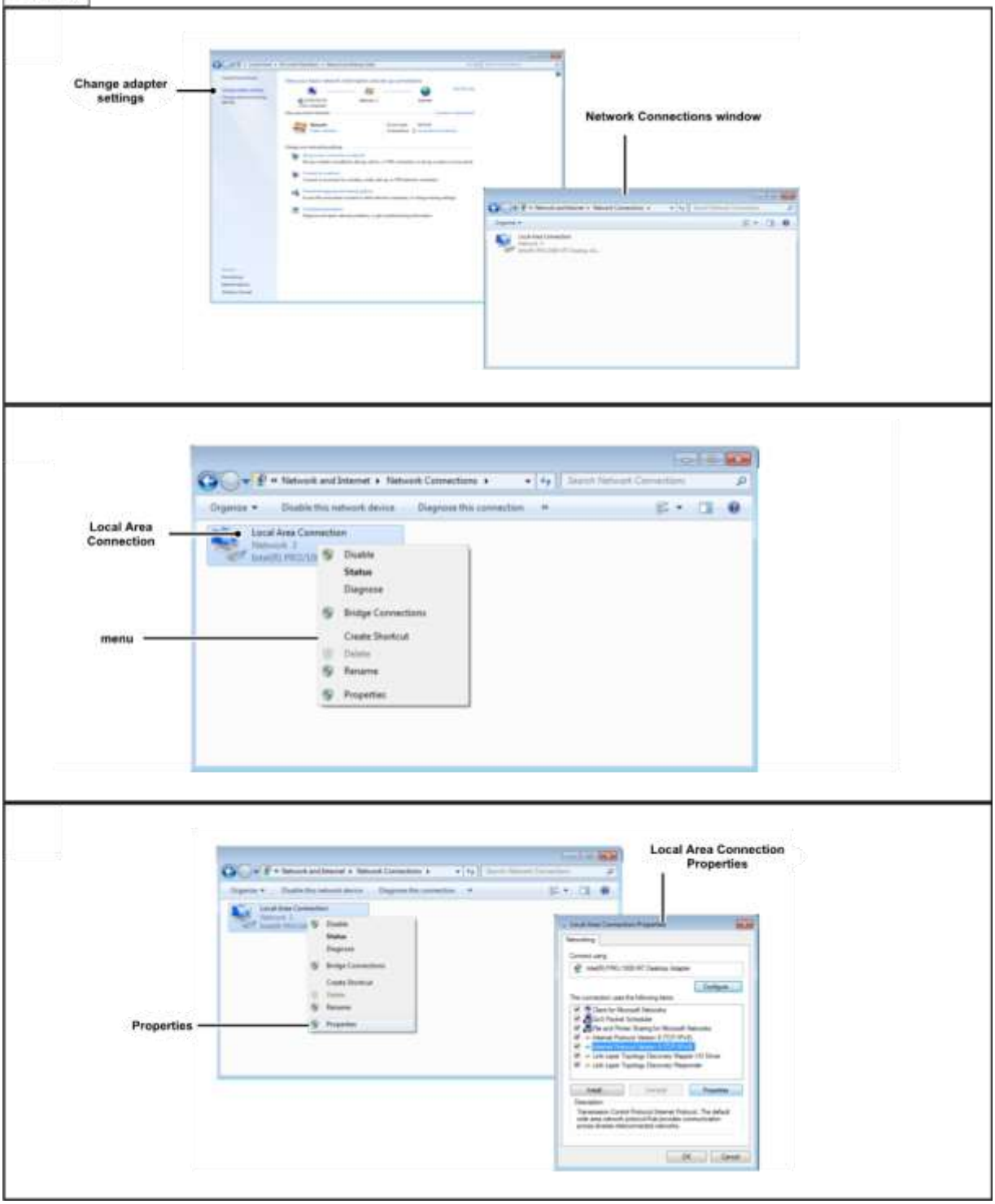

Figure 4-32: Network Connections

4.8.2.7 Configuring OLTE

a) Tap Internet Protocol Version 4 (TCP/IPv4).

Result:
Internet Protocol Version 4 (TCP/IPv4) is highlighted.

b) Tap the Properties button.

Result:
Internet Protocol Version 4 Properties (TCP/IPv4) window appears.

c) Tap Use the following IP address.

Result:
The window fields are enabled.

d) Input the following settings in the following fields:

- IP address - 50.50.50.88
- Subnet mask - 255.255.255.0
- Leave everything else blank.

a) Tap the OK button.

Result:
The Internet Protocol Version 4 (TCP/IPv4) Properties window closes.

b) Close the other remaining windows.

c) Restart the OLTE.

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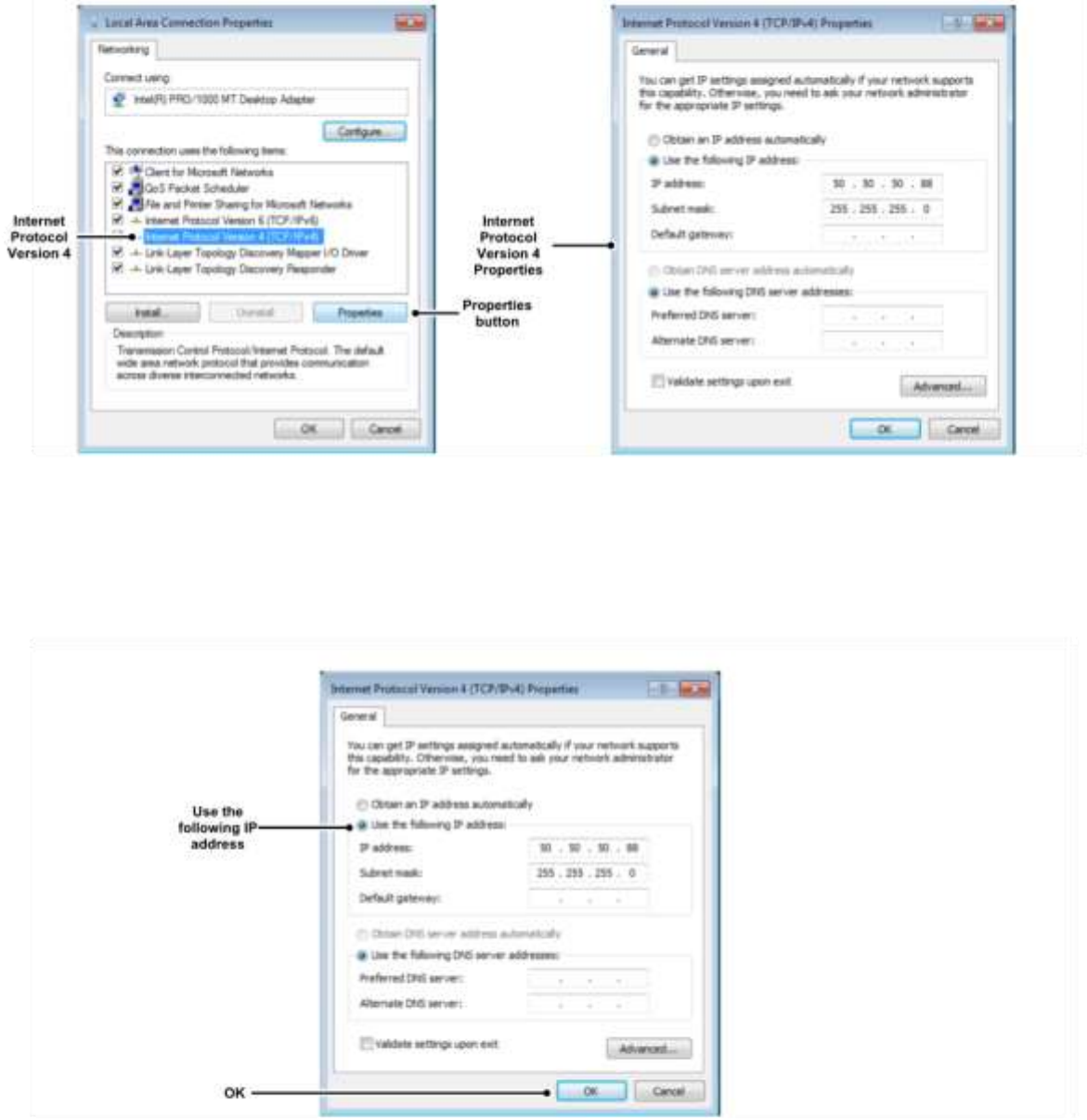

Figure 4-33: Configuring OLTE - Internet Protocol Version 4 (TCP/IPv4) Properties

4.8.3 Installing OLTE Application

4.8.3.1 Personnel

One Technician

4.8.3.2 Safety

Carefully observe the safety instructions.

4.8.3.3 Tools and Equipment

N/A

4.8.3.4 Materials

N/A

4.8.3.5 Preparations

a) Power ON the OLTE.

b) Install DotNet 4.7.2.

c) Install 7-Zip.

d) Copy installation folder from storage device to the OLTE desktop.

4.8.3.6 Procedure

a) Open OLTE-V1.2.8 folder on the desktop.

b) Double tap to install.bat file.

Result:
A Command Prompt window appears.

c) Wait for installation to complete.

Result:
Command Prompt windows closes.

Result:
Testing software appears.

d) Exit the testing software.

e) Make sure that a shortcut labelled OLTE is created on the desktop.