



Installation & Operations Manual

SmartCommand System



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WARRANTY

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At RATH®, we take great pride in our products, service, and support. We have been in the Emergency Communication business for over three decades and are the largest manufacturer of Emergency Phones in North America so you can rest assured that the quality and performance of our Communication Systems lead the industry. It is our sincere hope that your experience with us has and will continue to surpass your expectations.

The RATH® Team

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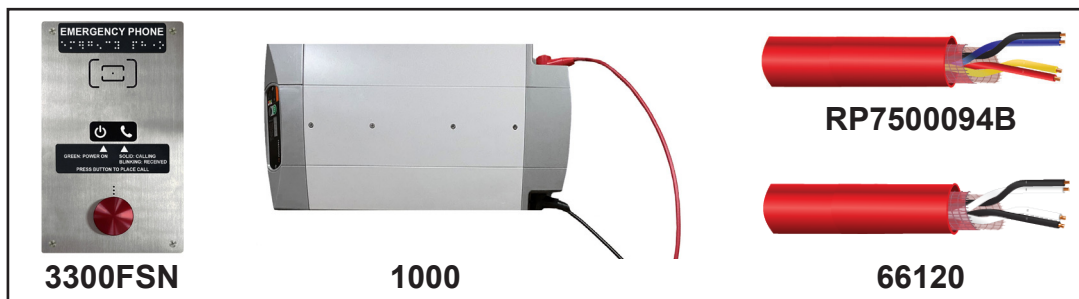
Pre-Installation

Included:

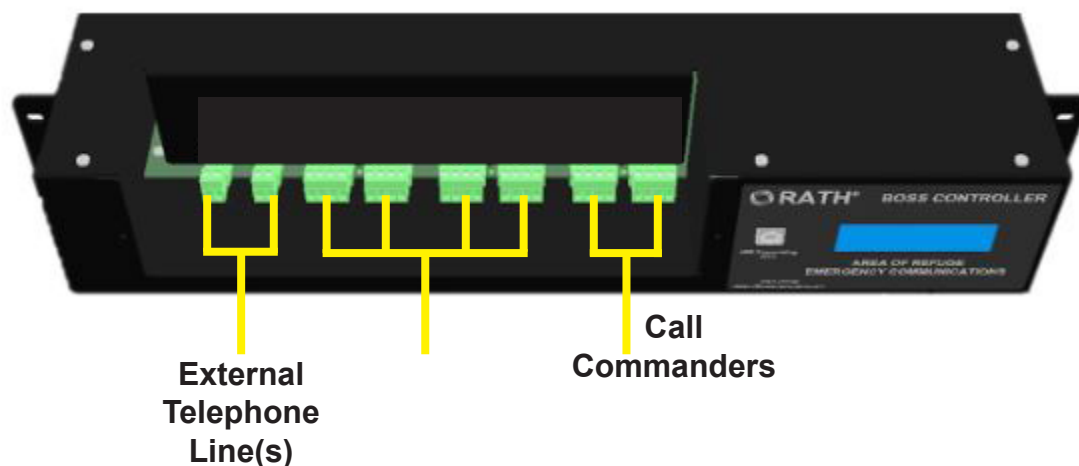
- RATH® Call Commander (Part #s: 3200S, 3200F, or 3200D)
- USB programming cable
- USB flash drive with Configurator Software
- AC power cable
- 4-pin loop connectors
- 2-pin phone line connector

Not Included/Sold Separately:

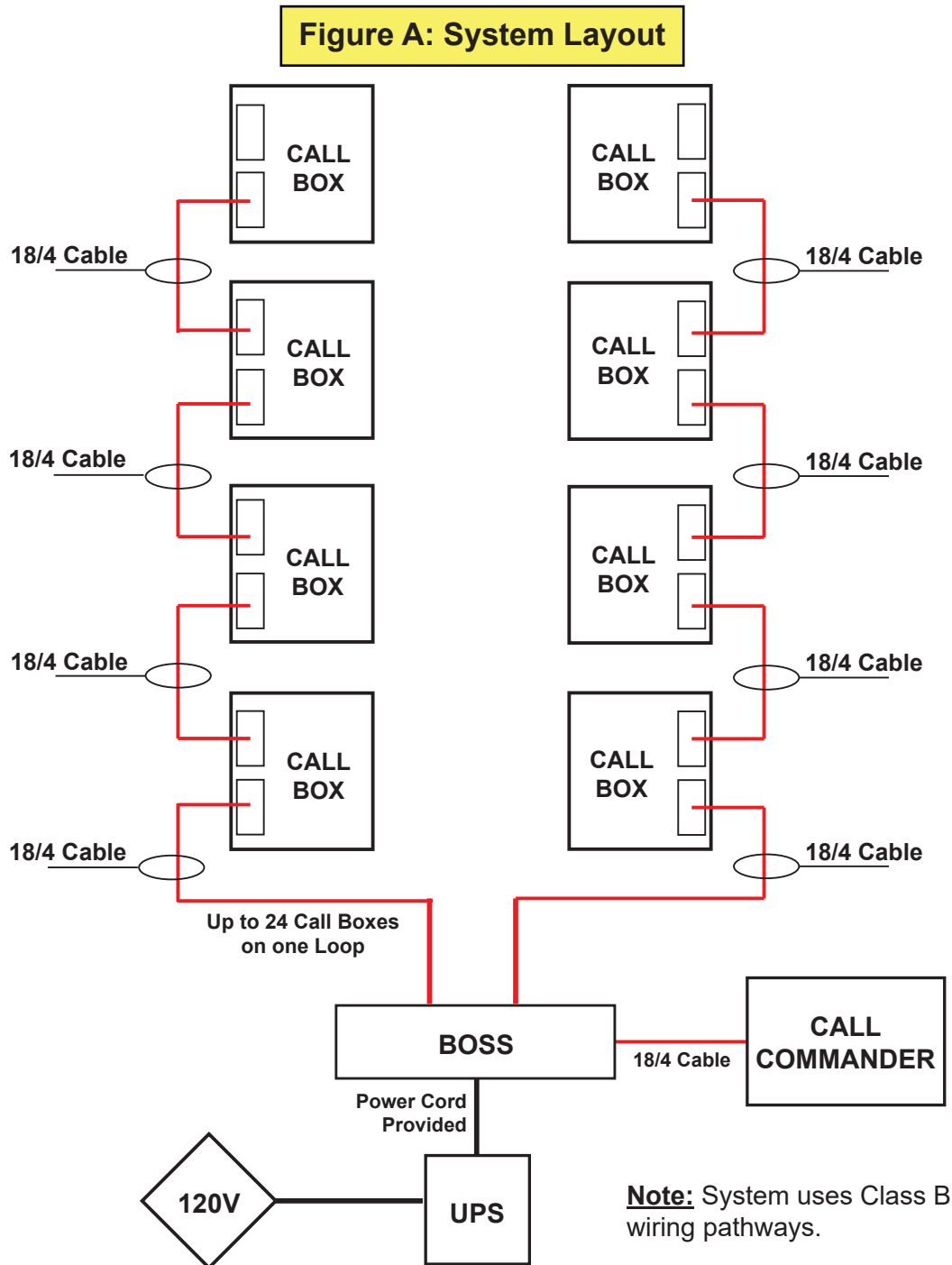
- RATH® 3300 Series Call Boxes
- Power supply with battery backup (Part #: 1000)
- 18AWG, 4 conductor, 2 pair cable
 - **Plenum Part #:** RP7500094B
 - **2 Hour Fire-Rated Part #:** 66120
- 120vac power
- Multimeter
- Windows based laptop (Windows 7 or greater required)
- Dedicated analog or digital phone line (if the system needs the ability to call out)



Brains of SmartCommand System (BOSS) Internal Overview



Typical System Layout



System Installation & Wiring

Powering the System

1. Mount the BOSS unit and power supply with battery backup in an appropriate location. The BOSS should be installed in a secure area with limited public access. A network closet or machine room is recommended.

Note: The BOSS can be rack mounted or wall mounted.

2. Plug power supply with battery backup into a standard 120v wall outlet.

Note: System is to be powered by 120v, 60Hz, AC outlet protected by a 15A maximum circuit breaker.

3. Using the provided power cord, plug the 3-pin female connector side into the power input next to the power switch on the BOSS unit. Plug the male 3-prong side of the power cable into any of the open outlets on the back of the power supply with battery backup. Wait to power the BOSS unit until all connections are made.

Call Commander Wiring

1. Install the Call Commander

a. **Desk Mount:** Install included foot stand on the back of the Call Commander and place in location per owner's specifications.

b. **Cabinet Mount:** Use the provided Allen Wrench to remove the back box or back plate from the cabinet. Remove any applicable knockouts. Mount the backbox or plate in location per owner's specifications using appropriate mounting hardware. Wait to reassemble the cabinet until all wiring is done.

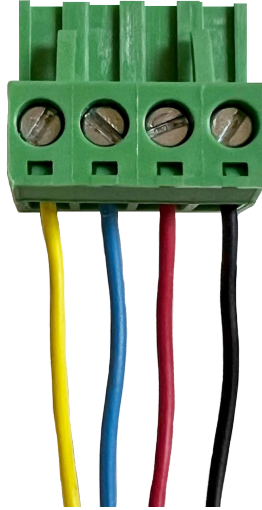
2. Run an 18/4 cable from the Call Commander back to the BOSS unit.

Note: This cable provides communication and power. No additional power is needed.

Note: Maximum wire run length from the Call Commander to the BOSS is 500 feet.

3. On both ends of the 18/4 cable, strip back and expose 1/4" of wire on individual conductors of 18/4.

4. Screw 4 wires into 4-pin loop connector following wire scheme below.



5. Once both ends of cable have 4-pin loop connectors terminated, plug one end into either of the green terminal plugs on the back of the Call Commander, then plug the other end onto port L1A on the BOSS. See page 3 for detailed port labels on the BOSS.

Call Box Wiring

1. Run an 18/4 cable from the BOSS to the first Call Box.

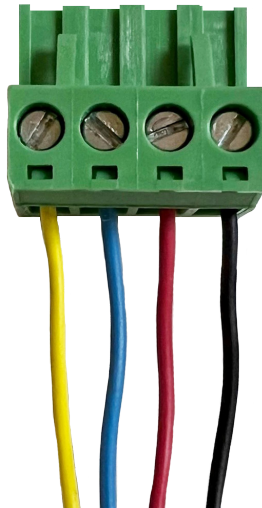
Note: This cable provides communication and power. No additional power is needed.

Note: Maximum wire length to the first Call Box is 500 feet.

Note: Only one Call Commander can be used with the system.

2. On both ends of the 18/4 cable, strip back and expose 1/4" of wire on individual conductors of 18/4.

3. Screw four wires into 4-pin loop connector following wire scheme below.



4. Once both ends of the cable have 4-pin loop connectors terminated, plug 1 end into either of the green terminal plugs onto the first Call Box, then plug the other end into port L2A on the BOSS. See page 3 for detailed port labels on the BOSS.
5. Run an 18/4 cable from the first Call Box to the next in line Call Box. Strip back and expose ¼" of wire on individual conductors and screw into provided 4-pin loop connectors following same pin out as above. Plug one end into remaining open port on the first Call Box, then plug other end into either port on the next Call Box. Repeat for each call box.

Note: Maximum wire run length between each Call Box is 500 feet.

Note: A maximum of 24 Call Boxes can be connected on a single loop.

Phone Line Wiring (Optional)

1. Connect the BOSS unit analog phone line or equivalent connection (cable modem, fiber modem, or cellular device) to 2-pin screw terminal connector on phone line. Polarity does not matter.



2. Once all connections are made, power on the BOSS using the power switch on the back of the unit. The Call Commander should power on. The BOSS should display the correct number of connected Call Boxes and one Call Commander.

System Programming

1. Connect laptop to the BOSS via provided USB cable. The USB port on the BOSS is located directly under the display on the front of the unit.
2. Plug provided USB flash drive into laptop.
3. Verify Call Commander has fully booted.
4. Open the Configuration Software.
5. Log into Configurator Software.
Username: admin **Password:** password
6. After opening the Configuration Software, the system will take you to the **Quick Start** screen to give an overview of the Configurator. Click **Begin** after reading. After clicking **Begin**, click **Connect** to connect to the BOSS unit. Connection may take a few minutes to complete. After connecting, the Configurator should show the correct number of connected Call Boxes, Call Commanders, and phone lines.
7. Click on the **Configuration** tab in the menu on the left-hand side.
8. Click **System Information**, then **Edit Device**, type in connected number of Call Boxes, Call Commanders, and phone lines, click **Finish Edit**. A box will pop up asking you to confirm the information just entered.
Note: If what was entered does not match what is on the display of the BOSS, go back to **Edit Device** and correct. The two must match.
9. Click **Address Information**, then **Edit Device**, enter address of the system, then click **Finish Edit**.
10. Click **Telephone Information**, then **Edit Device**, enter the telephone number that the system will call out to if not answered at Call Commander. Up to two numbers can be programmed, one in the Number 1 slot, one in the Number 2 slot. Enter in the amount of time Call Boxes will ring Call Commanders (in seconds) next to **Ring Time**, then click **Finish Edit**.

11. Click on **Call Boxes** in the **Configuration** tab.
12. Click on first Call Box listed, then **Edit Device**, enter in location or desired name of Call Box in **Location**, then click **Finish Edit**.
13. Repeat above steps for all Call Boxes until all show **Set** under status.
14. Click the **Outbound Message** tab in the menu on the left-hand side.
15. Click drop down next to **Message Voice** to change from male voice to female if desired.
16. In table below, check boxes next to all call stations that the message needs to be uploaded to.
Note: If uploading messages for the first time, make sure the first six boxes are checked for address information and operating instructions.
17. To change pronunciation of text, under **Update Audio** on the left, type in corrected text, then click **Test**. Once proper text is determined, click **Generate New** to save.
18. After selecting all call stations, click **Upload** button. Upload will take roughly two minutes per message. Wait until all messages upload before clicking out of message tab.
19. Close out of Configuration Software before testing.

Programming Date & Time

1. Connect laptop to the BOSS via provided USB cable. The USB port on the BOSS is located directly under the display on the front of the unit.
2. Plug provided USB flash drive into laptop.
3. Open the Configuration Software.
4. Log into Configurator Software.
Username: admin **Password:** password
5. After opening the Configuration Software, the system will take you to the **Quick Start** screen to give an overview of the Configurator. Click **Begin** after reading. After clicking **Begin**, click **Connect** to connect to the BOSS unit.
6. Click **Settings**.
7. Next to time, click **Sync Time**. This will sync the system time with the PCs.

Call Commander Operating Instructions

Answering Call at Call Commander

1. When the Call Commander is ringing, either lift the handset or press the **Hands-Free** button to answer the call.
2. If multiple calls are coming in, press the **Hold** button to put the original call on hold. After putting the original call on hold, use the **Scroll Down** button to scroll to desired call, then press the **Select** button. Repeat for any incoming calls.
3. To hang up call, press **Disconnect Internal** button, then scroll to next call or hang up by either hanging up the handset or pressing the **Hands-Free** button.

Joining a Call Already in Progress from Call Commander

1. Lift handset or press the **Hands-Free** button.
2. Scroll to desired call then press the **Select** button. Call Commander will automatically be in a three-way call with the Call Box and the external line.
3. Press the **Disconnect External** button to disconnect the external line.
4. Press the **Disconnect Internal** button to hang up Call Box, then scroll to next call or hang up by either hanging up the handset or pressing the **Hands-Free** button.

Calling to Call Box from Call Commander

1. Lift handset or press the **Hands-Free** button.
2. Press the **Directory** button.
3. Scroll to the desired call then press the **Select** button.
4. Press the **Disconnect Internal** button then hang up the handset or press the **Hands-Free** button to end the call.



Broadcast a Message to all Call Boxes using All Call Feature

1. With handset hung-up press **All Call** button.
2. Lift handset and press and hold the **Select** button. While pressing and holding the **Select** button, speak message (maximum 10 seconds), then release the **Select** button.
3. To review recorded message, press and release **Select** button.
4. To broadcast message, hang up the handset and press the **Select** button.
5. Message will broadcast to four Call Boxes at a time until message has been sent to all Call Boxes. Call Commander display will go back to its home screen when the broadcast is finished.
Note: During All Call, the Call Commander cannot answer an incoming call until message broadcast is complete.

Call Indicators:

WTG- Call Waiting to be Answered

ACT- Active Call

HLD- Call on Hold

EXT- Call Box using External Line

3WAY- Call Box in a Call with External Line and Call Commander

Fault Monitoring

By default, fault monitoring on the system is disabled. To enable, perform the following:

1. Connect laptop to the BOSS via provided USB cable. The USB port on the BOSS is located directly under the display on the front of the unit.
2. Plug provided USB flash drive into laptop.
3. Open the Configuration Software.
4. Log into Configurator Software.
Username: admin **Password:** password
5. After opening the Configuration Software, the system will take you to the **Quick Start** screen to give an overview of the Configurator. Click **Begin** after reading. After clicking **Begin**, click **Connect** to connect to the BOSS unit.
6. Click on the **Configuration** tab on the left.
7. In the **General Information** section, click on **System Fault Config**.
8. Click **Edit Device**.
9. Click drop-down next to **Supply Fault Input** and select desired option.
10. Click drop-down next to **System Fault Input** and select desired option.
11. Click **Finish Edit** to save.

After monitoring is enabled, if there is a fault one of the following error codes will be displayed on the BOSS Controller screen:

- **Relay 1 Fault** – Error signal detected on alarm input (currently “Battery Alarm”)
- **Relay 2 Fault** – Error signal detected on alarm input (currently “Power Supply”)
- **Ground Fault** – There is a grounding fault in the installation wiring
- **Sys Config CC** – The number of Call Commanders connected does not match the configuration set in the PC App
- **Sys Config CB** – The number of Call Boxes connected does not match the configuration set in the PC App
- **Sys Config EL** – The number of external lines connected does not match the configuration set in the PC App
- **Loc:XXX CRC**– messaging errors detected on loop XXX, indicative of possible connection issues on loop
- **Loc:XXX a-x-b** – Loop break detected on loop XXX
- **Loc:XXX Amps Hi** – Overcurrent event on loop XXX
- **Loc:XXX Volts Hi** – Overvoltage event on loop XXX
- **Loc:XXX Volts Lo** – Undervoltage event on loop XXX
- **Lox:XXX Ext. Line** – Fault on external phone line XXX

Troubleshooting

Problem	Possible Cause & Solutions
Can't connect to App:	• Make sure Call Commander is fully booted before attempting to open App. • Verify USB cable is plugged into a working USB port on PC and plugged in all the way on the BOSS. • Close the App and power cycle the BOSS. After Call Commander reboots, attempt to open the App again.
Call Commander won't power on:	• Verify Call Commander is connected to port L1A on the BOSS. • Verify Call Commander is on its own loop. The Call Commander cannot share wiring with any Call Boxes. • Verify outer pins of wiring on 4-pin loop connector. Pins should have 45vdc on pins 1 and 4.
Call Boxes won't call out:	• Verify phone line is connected to PSTN 1 on the BOSS. • Verify phone line has 48-52vdc on it as well as dial tone. • Verify an analog phone line can be connected to the line and place calls out to the number being entered into the BOSS. • Verify line doesn't require any special characters such as an 8 or 9 to dial out.
BOSS not displaying the correct amount of Call Boxes after booting:	• Verify Call Boxes have 44-48vdc on pins 1 and 4 of terminal connector. • Verify pin out of 4-pin terminal connector on both ends. • Verify wires are stripped back and fully seeded in connectors. • Go to the last Call Box in the loop that the BOSS has recognized and verify connector and pin out.
Can't clear fault notification:	• Refer to fault error code log on page 8 to verify error code. • If the fault is for the external line, verify the line has active dial tone and voltage and can place a call in and out. • If the fault is for a loop break, verify wiring and pin out between problematic locations listed on the screen. • If fault is for overcurrent or overvoltage, verify no more than 24 devices are connected to a single loop.



Specifications

Connections

- Power | Public Switched Telephone Network (PSTN) | Battery Management System (BMS) Relay In/Out| USB Type B

Power Requirements/Protection

- 120v, 8A | Short Circuit, Overload, Over Voltage

Supervision

- Primary Power | Secondary Power | Telephone Line | Loop Monitoring

Operating Temperature

- Call Boxes: -13°F to 131°F (-25°C to 55°C)
- Call Commander: 23°F to 131°F (-5°C to 55°C)
- BOSS: 23°F to 131°F (-5°C to 55°C)
- For Indoor Use Only

Product Dimensions (W x H x D)

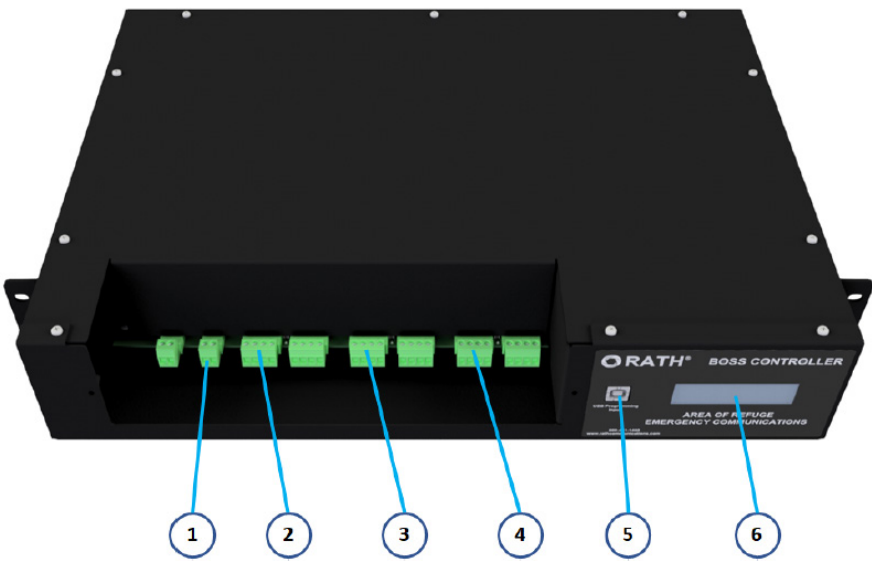
- BOSS: 17.20" x 12.59" x 3.46" (437 x 320 x 88mm)
- Call Commander: 7.95" x 9.84" x 2.91" (202 x 250 x 74mm)
- Surface Mount Call Box: 4.72" x 7.87" x 1.85" (120 x 200 x 47mm)
- Flush Mount Call Box: 5.11" x 8.66" x 3.62" (130 x 220 x 92mm)

Pending Certifications

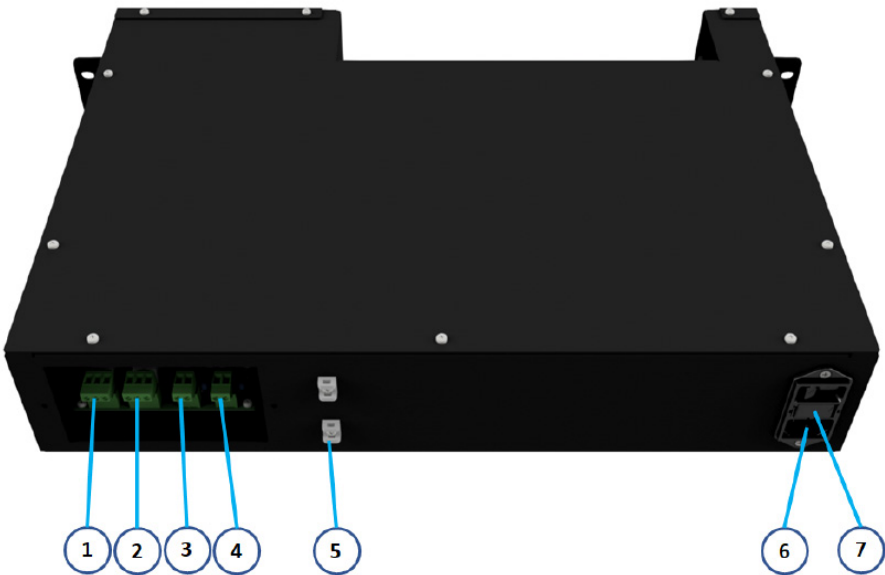
- FCC Part 15, FCC Part 68, UL 2525



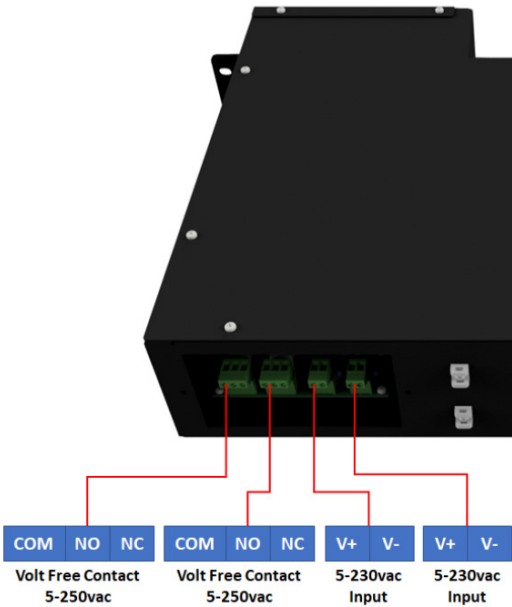
Appendix A – BOSS Detail and Mounting



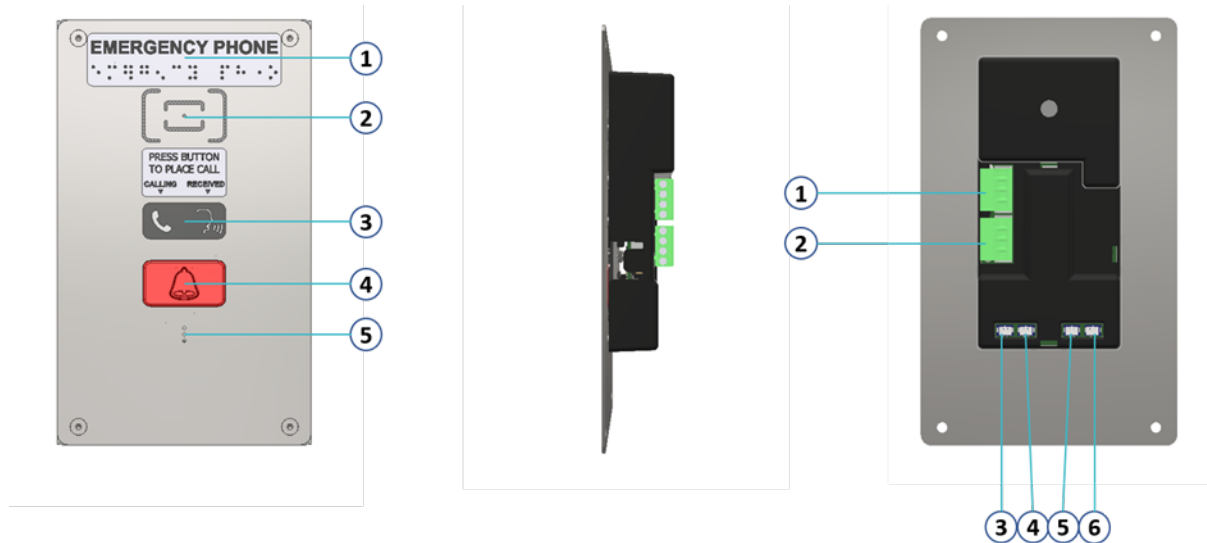
- Front Components**
- 1. PSTN connection
 - 2. Call Box loop 1
 - 3. Call Box loop 2
 - 4. Call Commander
 - 5. USB programming input
 - 6. System status display



- Back Components**
- 1. System fault relay output
 - 2. Call Box pressed relay output
 - 3. Power supply fault input
 - 4. Battery fault input
 - 5. Cable strain relief
 - 6. IEC power supply input
 - 7. Power supply fuse



Appendix B – Call Box Detail and Mounting



Call Box Front

1. Braille/emergency phone label
2. Speaker grille
3. Emergency call pictograms
4. Emergency call button
5. Microphone

Call Box Rear

1. Loop input/output 1
2. Loop input/output 2
3. External LED
4. External alarm button
5. 24vdc input
6. 24vdc output

Flush Mount

The flush mount Call Box is designed to be mounted on to a standard 4 gang wall box.

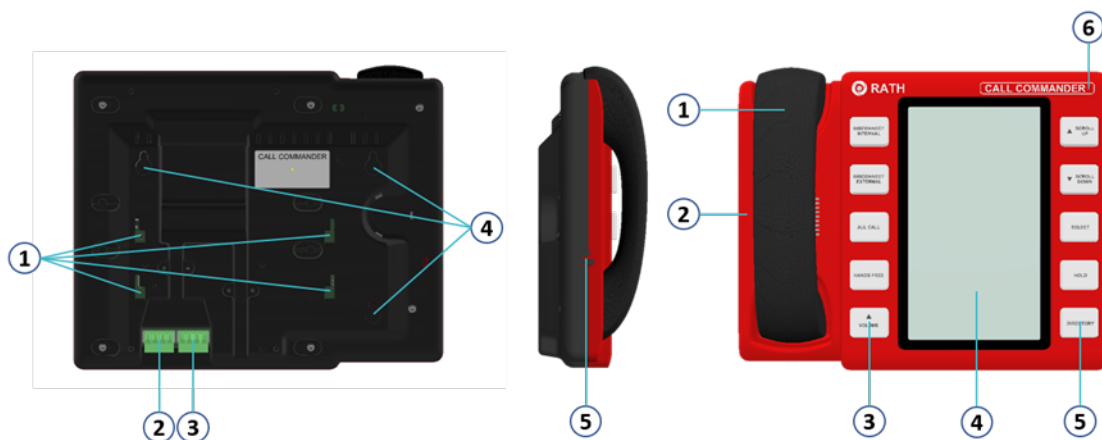


Surface Mount

The surface mount Call Box can be fixed to any wall using the 4 keyhole slots in the metal back box. Cable entry points are on the top, bottom, and back of the enclosure.



Appendix C – Call Commander Detail and Mounting



Rear & Side of Call Commander

- 1. Desk stand mounting clips
- 2. Call Commander input/output 1
- 3. Call Commander input/output 2
- 4. Wall mounting keyhole slots

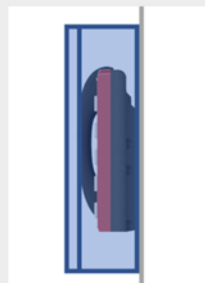
Front of Call Commander

- 1. Phone handset and hook switch
- 2. Hands-free speaker
- 3. Call management buttons
- 4. 7 inch display
- 5. Software navigation buttons
- 6. Hands-free microphone

Wall Installation



Cabinet Wall Installation



Desk Stand Installation

