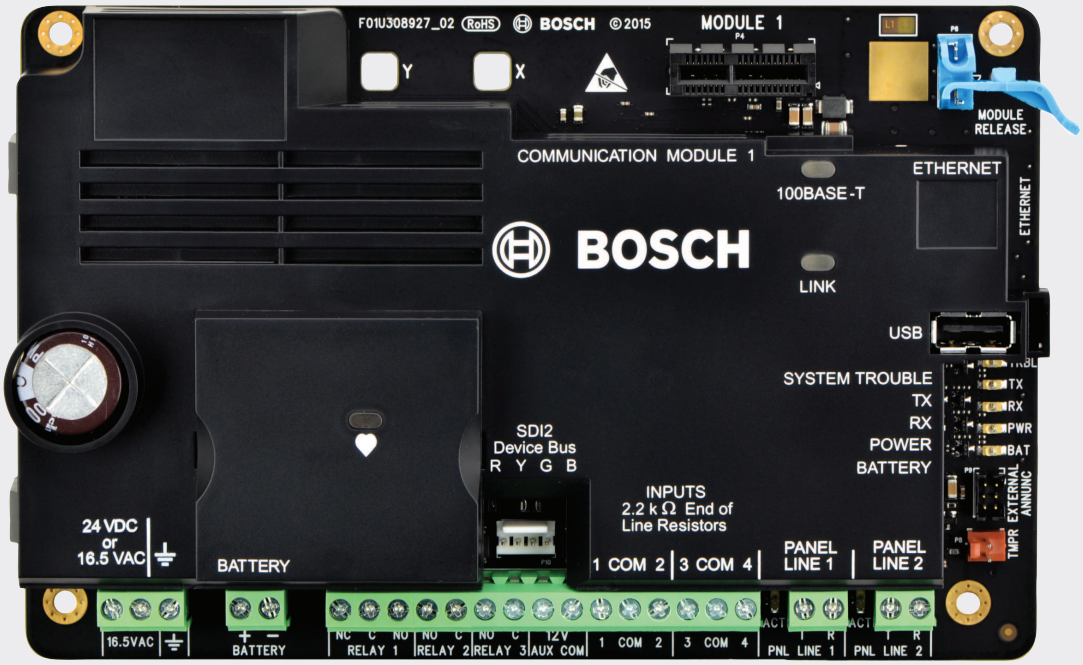


Conettix Universal Dual Path Communicator

B465

BOSCH

en Installation and Operation Manual

Table of contents

1 Safety

ESD precaution

Please note that the B465 Universal Dual Path Communicator and optional plug-in cellular modules come in a plastic bags, and are protected from ESD. All plug-in cellular communicator components may potentially be exposed to finger touches - therefore extra attention must be paid to ESD (electrostatic discharge) precaution. Make sure there is no static interference when using the board. Appropriate ESD protections must be taken and wearing electrostatic equipment is recommended, such as anti-static wrist strap.
ESD damage can range from subtle performance degradation to complete device failure. Precision integrated circuits may be more susceptible to damage because very small parametric changes could cause the device not to meet its published specifications.

Warning!
Failure to follow these instructions can result in a failure to initiate alarm conditions
Bosch Security Systems, Inc. is not responsible for improperly installed, tested, or maintained devices. Follow these instructions to avoid personal injury and damage to the equipment.

Notice!
Inform the operator and the local authority having jurisdiction (AHJ) before installing the module in an existing system.
Disconnect all power to the control panel before installing the module.

2 Introduction

The B465 Conettix Universal Dual Path Communicator (referred to as the B465) links the control panel PSTN digital dialer and/or dry contact inputs from a control panel to an IP connection (Ethernet or Cellular) to the D6600 or D6100i Communication Receiver/Gateway through an internet connection.

There is no need to change the control panel's reporting format for IP communications when the B465 is installed. The B465 embeds the reports from the control panel into Conettix IP reports. The embedded reports are in the same reporting format they were received in. The B465 sends its internal status in Contact ID reports embedded Conettix IP reports.

When the control panel's PSTN dialer sends a report, the B465 simulates a public switched telephone network (PSTN) to receive the report. The B465 decodes the control panel PSTN dialer report and then sends the decoded report to the Conettix D6600, D6100IPv6, or D6100i Communication Gateway/Receiver (referred to as the central station receiver) using an IP connection and the Bosch Conettix IP protocol. When the central station receiver receives the report, it sends back an acknowledgement report to the B465 through the Conettix IP protocol. The B465 sends the acknowledgement report to the connected control panel through the simulated PSTN connection. This process maintains true end-to-end security.

B465 connections:

- Ethernet connects to the network
- 4 programmable inputs
- 3 programmable outputs (dry contact relays) (use to transmit B465 status to the control panel, if required)
- control panel phone lines to B465 panel line 1 and panel line 2 terminals
- B44x Plug-in Cellular Communicator module (optional)
- B46 External Annunciator (optional)

2.1 About documentation

Copyright

Trademarks

All hardware and software product names used in this document are likely to be registered trademarks and must be treated accordingly.

2.2 Bosch Security Systems, Inc. product manufacturing dates

Use the serial number located on the product label and refer to the Bosch Security Systems, Inc. website at http://www.boschsecurity.com/datecodes/.

2.3 Installation workflow

To install and configure the B465, use the workflow below and follow in order from top to bottom.

Caution!

Always power down the B465 when making connections. To power down the B465, unplug the transformer and disconnect the battery.

Installation workflow checklist

☐ Plan the installation.

☐ Unpack the device contents

☐ Install the enclosure (Refer to *Mount the enclosure, page 15*)

☐ Mount the B465 into the enclosure (Refer to *Install the B465 in the enclosure, page 17*)

☐ Mount the B46 (module and cover) into the enclosure (Refer *Insert B46 LED cover (optional), page 16*)

☐ Insert the plug-in communicator into the B465 (if required) (Refer to *Install the cellular plug-in communicator module (optional), page 17*)

☐ Wire the B465 to a compatible control panel (Refer to *Wiring installation, page 19*)

☐ Wire the relays (outputs)

☐ Power up the system

☐ Install a communication program (if required) (Refer to Communications)

☐ Configure the communication module

☐ Verify LED activity (Refer to *B465 LED status indicators, page 80*)

☐ Review signal strength on the cellular communicator (if required). Refer to your cellular communicator Installation Guide for more information on signal strength.

☐ Installation is complete

3 System overview

Refer to the figure below for the complete B465 system configuration.

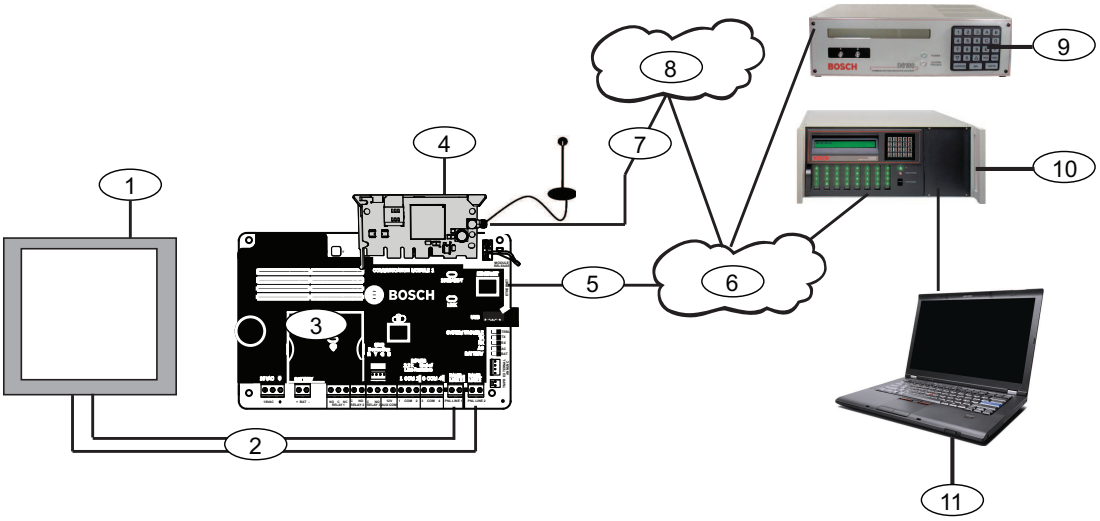


Figure 3.1: System connection overview

Callout — Description	Callout — Description
1 — Intrusion/fire control panel	7 — Cellular communication to cellular carrier
2 — Phone line connections (phone line 1 and phone line 2)	8 — Cellular carrier network
3 — B465 Conettix Universal Dual Path Communicator	9 — Conettix receiver/gateway (D6100IPv6 shown)
4 — B44x plug-in cellular communicator	10 —Conettix receiver/gateway (D6600 shown)
5 — Ethernet connection (RJ-45 cable connection to the LAN/WAN)	11 — Monitoring center automation (classified per UL 1981)
6 — Internet/Cloud	

3.1 B465 overview

The B465 allows any fire and intrusion control systems with PSTN dialers and/or dry contact inputs to communicate with Bosch central station receivers over Ethernet or cellular networks through IP. This allows customers using control panels developed before the introduction of networking and cellular to eliminate costly phone lines and gain some of the modern performance that IP networking enables.

The B465 is compatible with the following standard reporting formats:

- Modem II
- Modem IIe
- Modem IIIa[2]
- Ademco Contact ID (SIA DC-05) +10 digit account codes
- Pulse 3/1, 3/1 Checksum (2300 Hz ACK Tone)
- Pulse 3/1, 3/1 Checksum (1400 Hz ACK Tone)
- Pulse 4/2 (2300 Hz ACK Tone)

– Pulse 4/2 (1400 Hz ACK Tone)
– SIA (SIA8, SIA20)

The B465 links the control panel's PSTN dialer to the internet and then to one of the Bosch Conettix receivers. The B465:

– Connects with the control panel PSTN dialer (through the B465 panel line terminals) or the control panel relay outputs connected to the B465 inputs.
– Embeds alarm reports in Conettix IP reports and sends them to a Conettix D6600, D6100i or D6100IPv6 Communications Receiver/Gateway through an IP network.
– The Conettix receiver replies to the B465 with an acknowledgement report.
– The B465 sends an acknowledgement back to the control panel through the PSTN interface which completes the signal transmission

Refer to the following illustration for component locations on the B465.

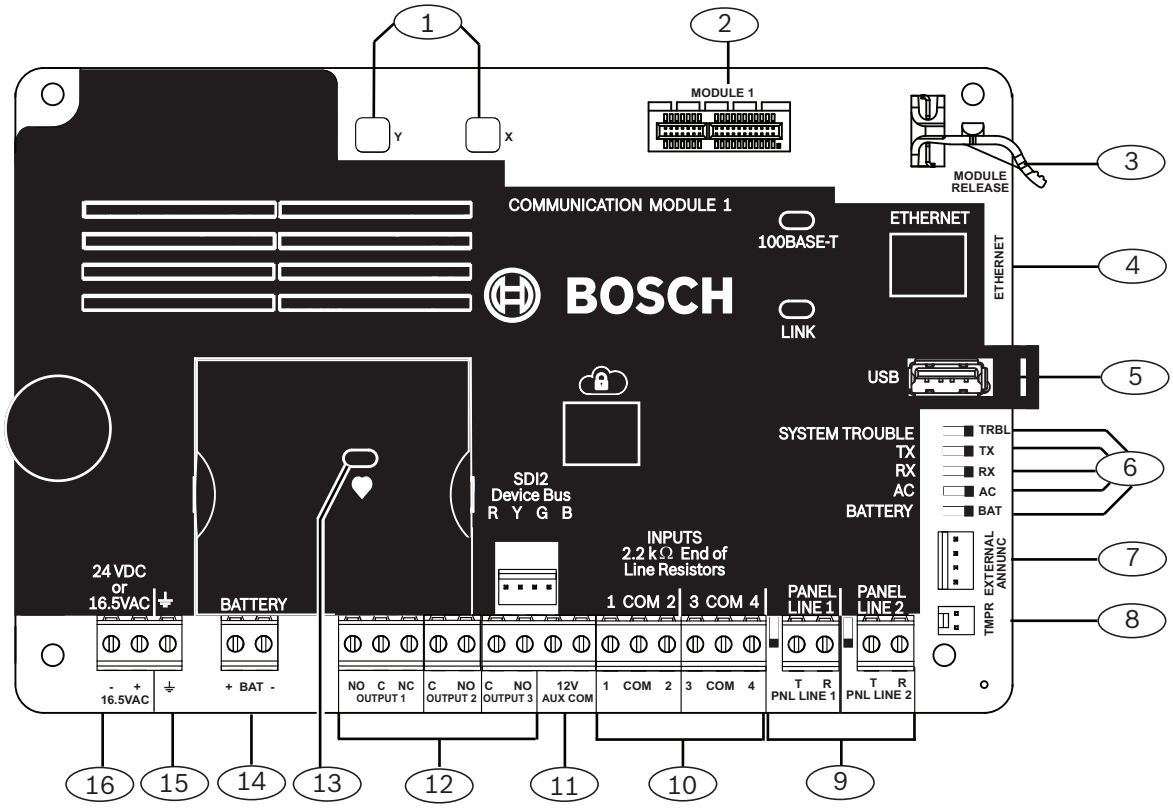


Figure 3.2: Module overview

Call out - description

(1) - Plug-in stabilizing holes (X,Y) - the plug-in cellular communicator modules compatible with the B465 use the X hole.

(2) - Plug-in module connector - for compatible plug-in cellular communicator modules.

(3) - Plug-in module retention clip - pull the tab towards you to install or release plug-in cellular communicator modules.

(4) - On-board Ethernet connector - for wired IP communication with D6600 or D6100IPv6 central station receiver.

(5) - USB connector - for temporary connection to a computer for B465 configuration, status, and diagnotics.

(6) - Status LEDs (SYSTEM TROUBLE, TX, RX, POWER, BATTERY) - these LEDs show system troubles, Ethernet transmit (TX) and receive (RX) traffic, and the status of the primary power source and the battery.

(7) - EXTERNAL ANNUNC connector - for the optional B46 External annunciator. The B46 uses LEDs to show System Trouble (TRBL), Power (PWR), and Battery (BAT). The B46 is compatible with the B10, and D8103 enclosures. The LEDs are visisble through a knockout in the enclosure door.
(8) - TMPR connector - for the ICP-EZTS Tamper Switch. Use this tamper switch on B10(R) and B11(R) enclosures. The default configuration for this connecter is disabled. Commercial Burger installations require an enclosure tamper.
(9) - PANEL LINE 1, PANEL LINE 2 terminals - for connection to the phone line terminals of supported control panels and fire control panels for the dialer capture function.
(10) - 1 COM 2, 3 COM 4 terminals - for inputs 1 to 4. Connect to dry contact outputs on the control panel to communicate alarm events and control panel status to the B465. The B465 sends an applicable report to the central station receiver.
(11) - 12V AUX/COM terminal - provides 0.5 A of power at 12 VDC for auxiliary devices (Special Application 9.9 - 13.8 V).
(12) - OUTPUT (RELAY) 1, OUTPUT (RELAY) 2, OUTPUT (RELAY) 3 terminals - Output 1 is a Form C dry contact relay rated at 30 VDC. 0.5 A. Output 2 and Output 3 are Form A dry contact relays rated at 30 VDC, 0.1 A. All three outputs are configurable.
(13) - Heartbeat LED - shows the operational status of the B465.
(14) - BATTERY terminals- connect a 12 V 7-18 Ah Lead Acid battery. The battery is the secondary (backup) power source for the B465.
(15) - Earth Ground terminal - Used for earth ground transient protection and reduced emissions.
(16) - 24 VDC or 16.5 VAC terminals - connect the primary power supply for the B465. You can use 24 VDC from a UL listed fire control panel or power supply. Or you can use a D1640 plug-in transformer, D1640-CA plug-in transformer, or D1640-120WI wired-in transformer. These transformers have a rating of 16.5 VAC, 40 VA.

Notice!
Commercial Fire requirement
Commercial Fire applications require that you install a D8004 Transformer Enclosure if you are using either the D1640 or D1640-CA plug-in transformers.

3.2 PSTN reporting format compatibility

The B465 is suitable for use with of the following standard digital dialer formats:
- Modem II
- Modem IIe
- Modem IIIa[2]
- Ademco Contact ID (SIA DC-05) +10 digit account codes
- Pulse 3/1, 3/1 Checksum (2300 Hz ACK Tone)
- Pulse 3/1, 3/1 Checksum (1400 Hz ACK Tone)
- Pulse 4/2 (2300 Hz ACK Tone)
- Pulse 4/2 (1400 Hz ACK Tone)
- SIA (SIA8, SIA20)

3.2.1 Phone line voltage

The B465 simulates conventional phone lines to the control panel. The B465 supplies a constant phone voltage of 28 VDC (control panel dialer on hook) to satisfy the control panel's phone line monitor. The B465 phone voltage is 3 to 8 VDC when the control panel attempts to communicate (off hook).

You can configure the B465 to remove the phone line voltage when there is a communication failure between the B465 and the central station receiver. Removing the phone line voltage causes a communication trouble (phone line trouble) to occur at the control panel.

3.3 IP communication

The B465 uses its built-in Ethernet connection, and a Conettix Plug-in cellular module (B44x) to send reports to the central station receiver. The system routes event reports to the primary and secondary destinations using Ethernet or cellular communication, depending on configuration.

3.4 B46 overview (optional)

The B46 is an optional module that provides external B465 LED and sounder status when installed in a supported enclosure. The module has 3 LEDs (System Trouble, Power, and Battery) which illuminate through the B46 LED cover. The LED cover snaps into a knockout in the enclosure door. The B46 fits in the B10/B10R, D8103 enclosure. Refer to the following figure for component locations.

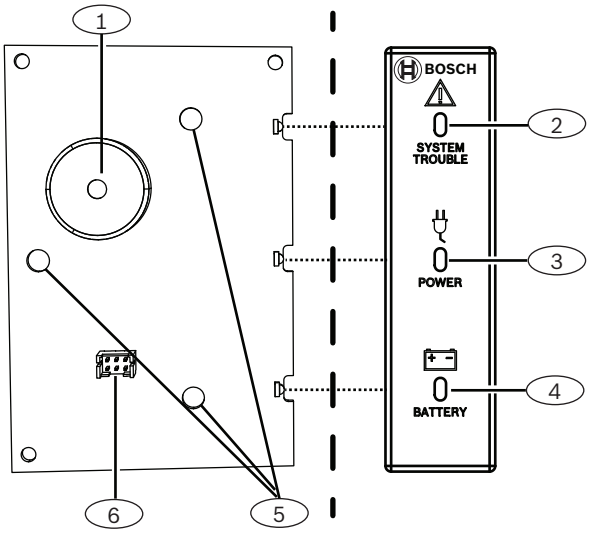


Figure 3.3: B46 module overview

Callout — Description
1 — Sounder
2 — SYSTEM TROUBLE LED
3 — POWER LED
4 — BATTERY LED
5 — 3-hole mounting pattern
6 — B46/B465 cable connection

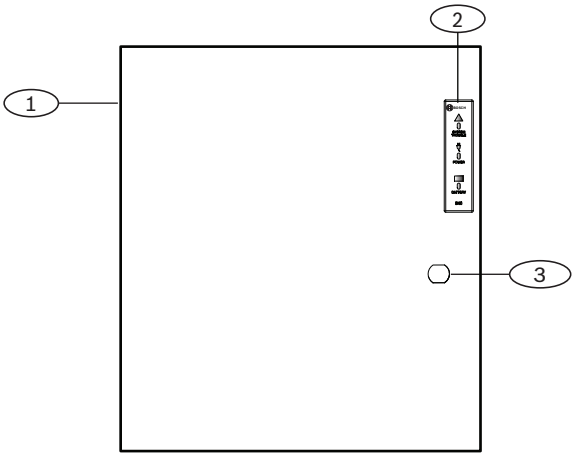


Figure 3.4: B46 LED cover (B10 enclosure shown)

Callout — Description
1 — B10 Medium Control Panel Enclosure, door closed
2 — B46 LED cover
3 —Enclosure lock (D101 supplied separately)

For LED patterns, refer to *B465 LED status indicators, page 80*.

4 Installation

Perform the following steps to install the module.

Notice!
B46 External Annunciator installation
Refer to the *B46 External Annunciator Installation Guide* (P/N: F01U312441) prior to installing the enclosure for B465 module. There is a specific installation sequence you must follow to avoid damaging the B46 module during the installation process.

4.1 Remove enclosure knockouts

Refer to Figure 4.1 below for knockout locations.

Caution!
Insert conduits into the enclosure knockout areas when running wire or cabling to reduce wire/cable damage.

4.2 Mount the enclosure

Mount one of the following enclosures in the desired location to meet desired UL requirements:

- B10 Medium Control Panel Enclosure (white)
- B10R Medium Control Panel Enclosure (red)
- B11 Small Control Panel Enclosure (white)
- B11R Small Control Panel Enclosure (red)
- D8103 Universal enclosure (this enclosure requires the B12 mounting plate)
- D8108A Attack Resistant Enclosure (this enclosure requires the B12 mounting plate)

Installing the enclosure:

1. Remove any knockouts prior to installing the module.
2. Mount the enclosure in the desired location. Use all enclosure mounting holes. Refer to the mounting instructions supplied with the selected enclosure.
3. Pull any necessary wires/phone lines into the enclosure.

Notice!
Electromagnetic interference (EMI) can cause problems on long wire runs

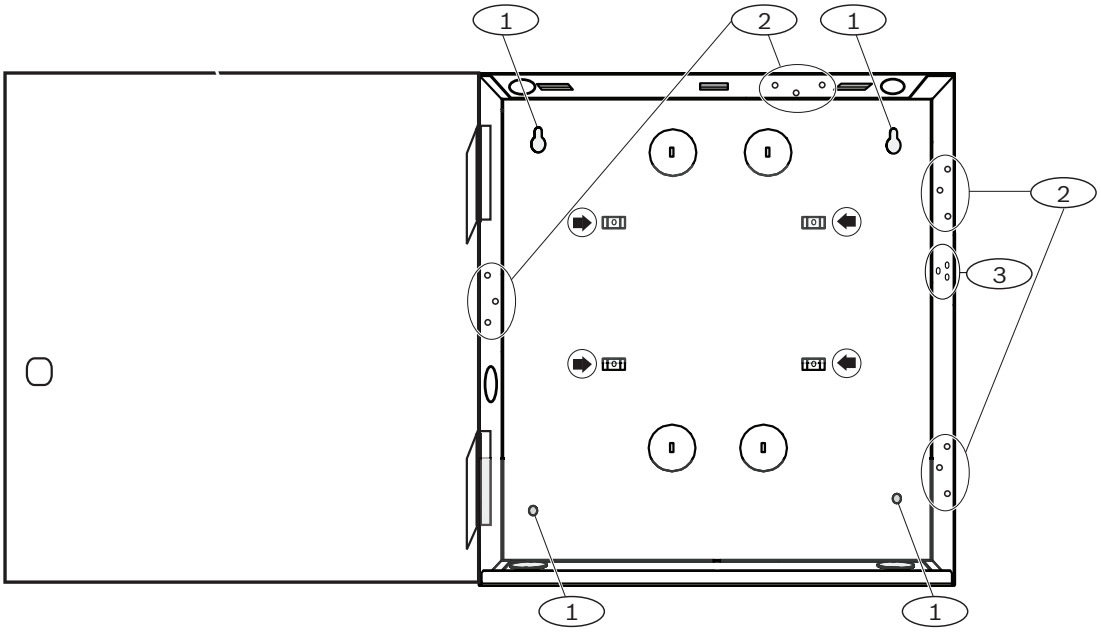


Figure 4.1: Enclosure mounting (B10 shown)

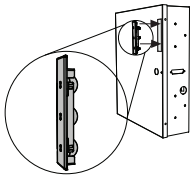
Callout — Description
1 — Enclosure mounting holes (4)
2 — 3-hole mounting locations (3)*
3 — Tamper switch mounting locations
*Use the upper, right-hand 3-hole mounting location for installing the optional B46 module in the enclosure so it lines up with the enclosure door hole.

4.3 Insert D101 lock (optional)

Refer to the instructions provided with the D101 for installation.

Notice!
Commercial fire requirement
The D101 lock is required for commercial fire installations.

4.4 Insert B46 LED cover (optional)



The B46 has an LED cover allowing users to view the B465 LED status indications outside the enclosure.

1. Punch out the enclosure knockout area.
2. Insert the plastic LED cover into the knockout.
3. Snap the cover into place.
4. Make sure the cover is secure.

For more information, refer to the B46 Install Guide for more information.

4.5 Install the B465 in the enclosure

Refer to the B465 Quick Start Guide for more information.
Perform the following to install the module.

Warning!
The module is static sensitive. Touch earth ground before handling the circuit board to discharge any static electricity from your body. Use a grounding strap while installing the circuit board.

4.5.1 Mount the B46 (optional)

Refer to the B46 Install Guide for more information.

4.5.2 Connect earth ground

To help prevent damage from electrostatic discharges or other transient electrical surges, connect the system to earth ground before making other connections. The ⏚ icon indicates the earth ground terminal. Use a recommended earth ground reference, such as a grounding rod or a metal cold water pipe. Make the connection using 14 AWG (1.8 mm) to 16 AWG (1.5 mm) wire.

Notice!
Do not use telephone or electrical ground for the earth ground connection. Do not connect other control panel terminals to earth ground.

Caution!
Avoid electrostatic discharge. Always touch the earth ground connection with the ⏚ icon first, before beginning work on the control panel.

Notice!
In ground fault enabled systems, you might cause a ground fault when connecting a computer to the B465 for programming.

4.6 Install the cellular plug-in communicator module (optional)

For cellular communication, use one of the following:
- B440 Conettix Plug-in Cellular Communicator (3G Verizon, US only)
- B441 Conettix Plug-in Cellular Communicator (Verizon, US only)
- B442 Conettix Plug-in GPRS Cellular Communicator (outside the USA where approved)
- B443 Conettix Plug-in HSPA+ Cellular Communicator (where approved)
- B444 Conettix Plug-in LTE Cellular Communicator (Verizon, US only)

Install the plug-in module

1. Power down the B465.
2. Insert the plug-in module into plug-in stabilizing hole X, and then into the plug-in module connector. Continue pressing the module into the connector until the retention clip engages. Refer to callouts 1, 2, and 3 in *B465 overview, page 10*.

3. Route the antenna cable through a wire knockout in the top of the enclosure.
4. Connect the antenna to the threaded connector on the plug-in module.
5. Secure the antenna cable to the outside of the enclosure.

Notice!

Mount antenna on metal surface to improve weak signal

If the signal to the plug-in cellular module is weak, place the antenna on top of a metal surface that has a radius of 10.16 cm (4 in.) or larger to improve performance.

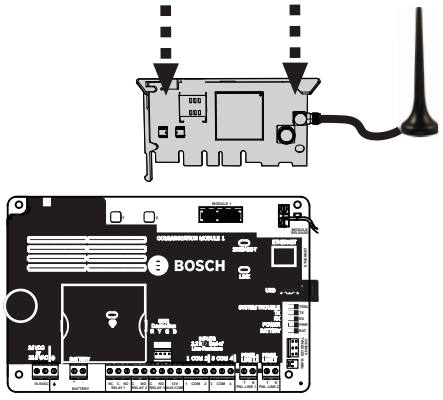


Figure 4.2: Cellular plug-in module

4.7 Wiring installation

Refer to the following sections for detailed wiring information.

4.7.1 System wiring

You can use the B465 with a variety of intrusion and fire control panels that support the B465's compatible protocols.

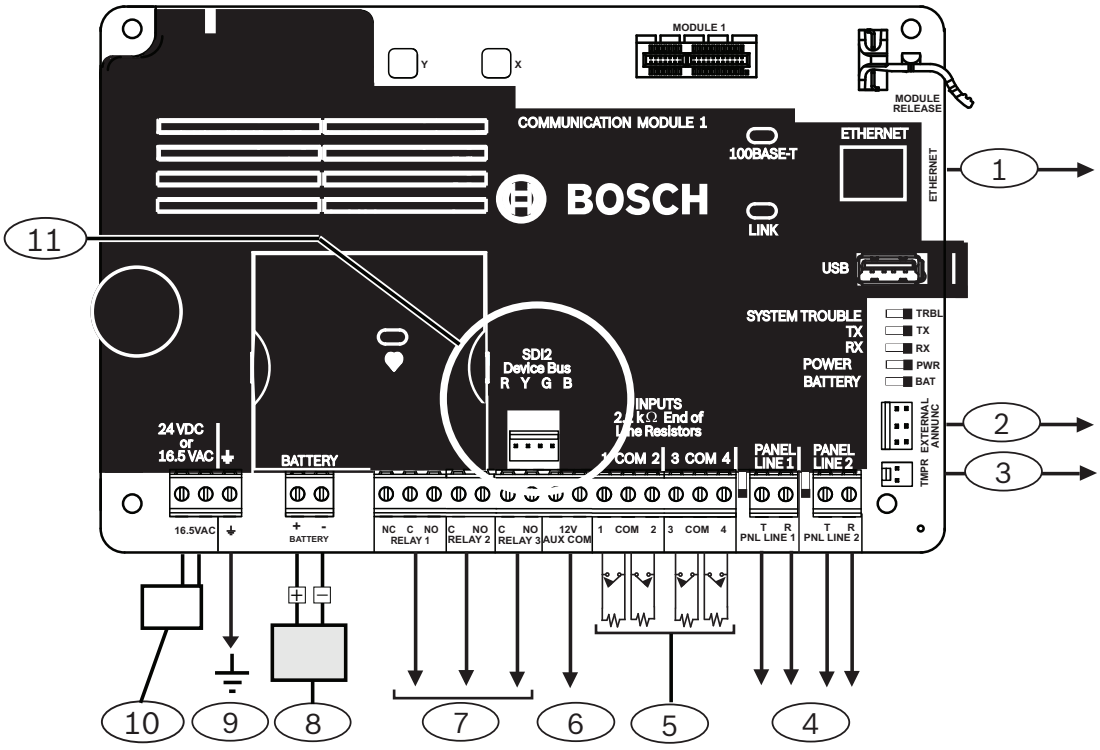


Figure 4.3: System wiring

Callout — Description	Callout — Description
1 — RJ-45 modular jack for Ethernet IP communications (optional)	7 —Programmable output relays (Relay 1, Relay 2, Relay 3)
2 — Connector for External Annunciator (connected to optional B46)	8 —12 VDC lead-acid battery (7 to 18 Ah)
3 — To tamper switch	9 —To earth ground
4 —Phone Line 1/2 (to control panel terminals if required)	10 —D1640 plug-in transformer, D1640-CA plug-in transformer, D1640-120WI wired-in transformer or optional 24 VDC from a UL listed fire control panel or power supply
5 —Four EOL input loops	11 —SDI2 device bus connector (for future use)
6 —12V AUX/COM terminals for 12 VDC auxiliary power (optional output power source, Special Application 9.9 to 13.8 V)	

Notice!

For ground fault detection, connect the common terminals of the FACP and the B465

Connect the common terminal of the FACP (Fire Alarm Control Panel) auxiliary power to the common (COM) terminal of the B465 auxiliary power. Do not connect to earth ground on the FACP or the B465.

SDI2 Device Bus connector

The SDI2 Device Bus terminal connector is for future use. Do not connect devices to it.

Notice!

SDI2 Device Bus connector not tested by UL

The SDI2 Device Bus terminal connector is for future.

4.7.2 Control panel to B465 wiring for dialer capture

Use the PANEL LINE 1 and PANEL LINE 2 terminals for the dialer capture function.

Both lines run at 28 VDC and support DTMF (Contact ID), Pulse 3/1, Pulse 4/2, and SIA reporting formats.

You can configure the B465 to remove power from the panel line terminals when there is a B465 communication failure event. This causes a trouble event at the connected control panels configured for supervised phone lines.

The connection of the phone lines for Commercial Fire applications must be within the same room, in conduit, and within 20 ft of the connected control panel for ULC-S559 installations.

Use 14-24AWG wire to connect the B465 PANEL LINE 1 and PANEL LINE 2 terminals to a fire control panel or intrusion control panel phone line terminals.

Refer to the following figure for wiring information.

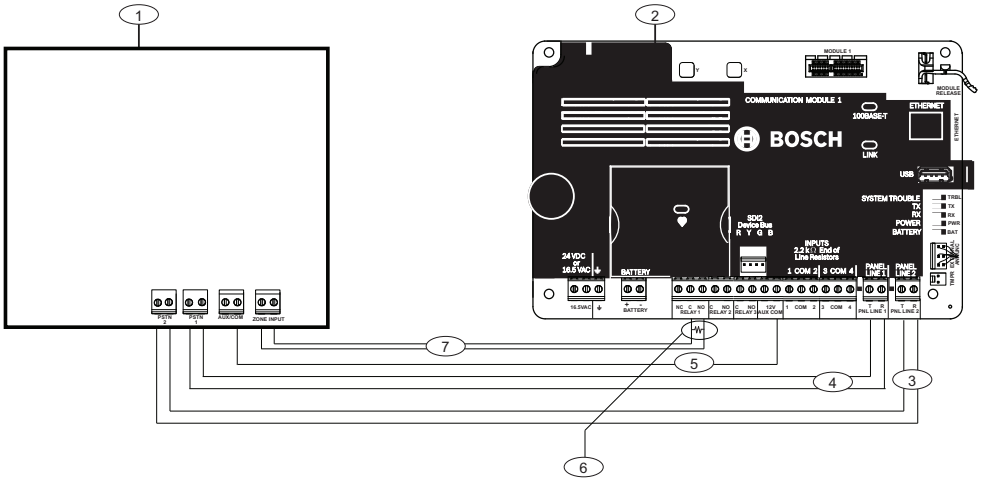


Figure 4.4: Panel to dialer capture wiring

Callout — Description
1 — Fire control panel or intrusion control panel
2 — B465
3 — Optional second panel phone connection depending on equipment (panel phone line 2)
4 — Primary phone connection (panel phone line 1)
5 — Internal Ground (AUX Power negative or internal Common) required for Commercial Fire
6 — Control panel EOL resistor (required for supervision with callout #7)
7 — Optional for local B465 troubles

4.7.3 Control panel to dry contact wiring

Use the correct wire gauge when connecting a B465 to an intrusion/fire control panel terminal (14-24AWG). Refer to the following figure for wiring information.

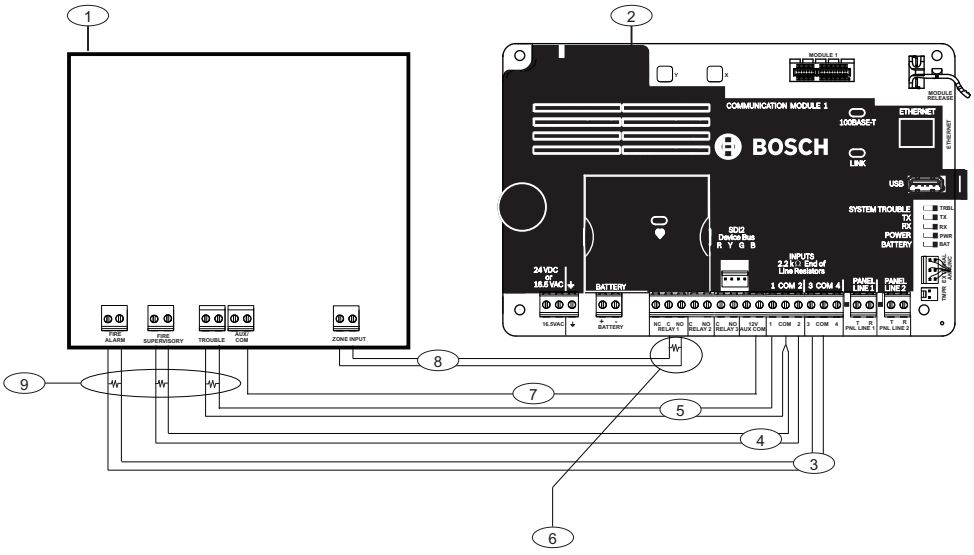


Figure 4.5: Panel to dry contact wiring

Callout — Description
1 — Fire/intrusion control panel
2 — B465
3 — Fire alarm connection
4 — Fire supervisory connection
5 — Trouble (AC Fail, Low Battery, etc)
6 — Control panel EOL resistor (required for supervision with callout #8)
7 — Internal Ground (AUX power negative or internal Common) required for Commercial Fire
8 — Optional panel inputs for B465 troubles
9 — B465 EOL resistors

4.7.4 B46 module wiring (optional)

Use the cable supplied with the B46 to connect to the B465 module. Refer to *System overview, page 10* section for component location. Refer to the figure below.

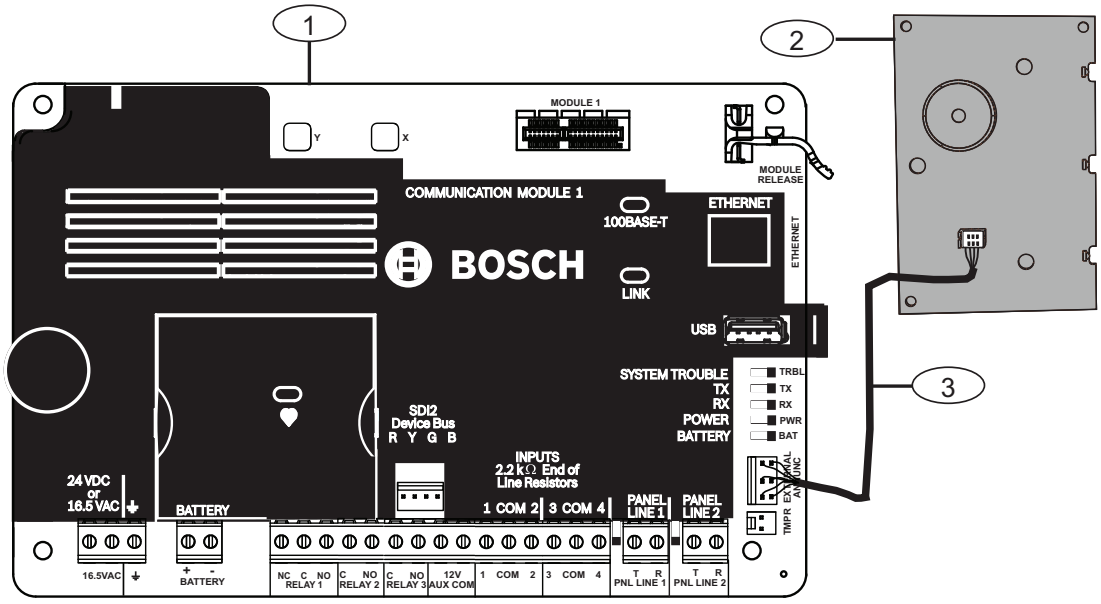


Figure 4.6: B46 cable connection

Callout — Description
1 — B465 module
2 — B46
3 — B46 Cable (P/N: F01U310747) included with the B46

Notice!
The B46 connector is keyed so it can plug in only one way.

Notice!
Ensure the placement of the B46 cable does not obstruct the LEDs of the B465 when inserting into the port of the B465.

4.7.5 Input loop wiring

The four inputs connect to dry contact outputs on the control panel to communicate alarm events and control panel status to the B465. The B465 sends an applicable report to the central station receiver. You can configure each input for the following control panel conditions and reports:

- Panel System Trouble
- Panel AC Fail
- Panel Battery Trouble
- Fire Alarm
- Fire Trouble
- Burg Alarm
- Burg Trouble
- Fire Supervisory

Input loops

The B465 monitors the input loops for normal, shorted, or open conditions between an input terminal and any of the input common terminals. The configuration for the input determines how the B465 responds to these conditions.

The B465 ignores input loops for 120 seconds after power up to ensure that the connections have stabilized.

Install a 2.21 kΩ resistor at the far end of the input loop when wiring the on-board inputs to provide a reference for supervision. The total resistance for the wire length and contacts, minus the end-of-line (EOL) resistor, must not exceed 100 Ω.

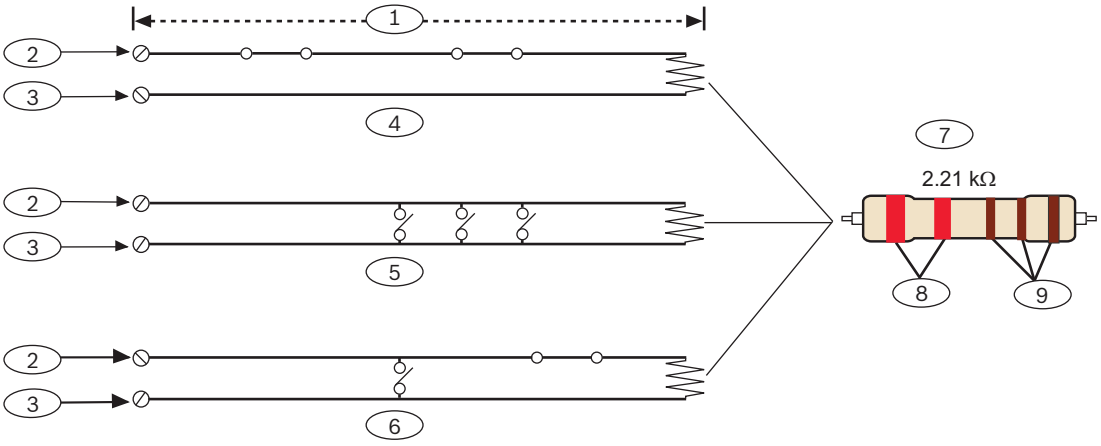


Figure 4.7: On-board input loop wiring

Callout — Description
1 — 100 Ω maximum (total wire out and back)
2 — Input terminal
3 — Common
4 — Normally closed contacts (NC)
5 — Normally open contacts (NO)
6 — Combination: Normally open contacts and normally closed contacts (NO/NC)
7 —2.21 kΩ EOL resistor (P/N: F01U034506)
8 — Red
9 — Brown

Notice!

No End of Line (EOL) resistor for unused inputs

You do not need to install an End of Line (EOL) resistor for unused inputs (inputs are disabled by default).

Notice!

UL commercial fire requirement

UL does not permit normally closed loops for commercial fire applications.

Input voltage parameters

You can determine the condition of on-board inputs 1 to 4 by measuring the voltage across the input terminal (1 to 4) and the COM terminal. The loop wiring must be connected and the 2.21 kΩ EOL resistor must be in place and the input function programmed.

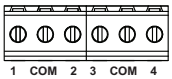


Figure 4.8: Input terminals

Loop	Voltage range
Open	Greater than 3.7 VDC, but less than 5.0 VDC
Normal	Greater than 2.0 VDC, but less than 3.0 VDC
Shorted	Greater than 0.0 VDC, but less than 1.3 VDC

Tab. 4.1: Input voltage parameters

Warning!
UL Commercial Fire requirement, do not connect multiple wires to any B465 terminal
If multiple wires are required, connect a single wire to the terminal then connect multiple wires to the single wire using a wire nut or other approved method.

The graphic below is an example of multiple wire connections to a terminal.

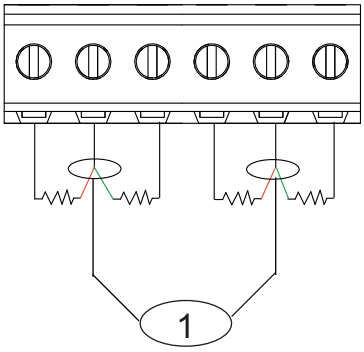


Figure 4.9: Multiple wire connections to a terminal example

Callout — Description
1 — Wire nut or other means required to tie wires together as UL only allows one wire in each terminal.

4.7.6 Output wiring

The module has three programmable outputs OUTPUT (RELAY) 1, OUTPUT (RELAY) 2, OUTPUT (RELAY) 3. The outputs can be connected to the control panel inputs (points or zones) to communicate the B465 status to the control panel.

Each output can be configured for one output function:

– System Trouble
– AC Fail

- Battery Trouble
- ALL Comm Fails
- Ethernet Comm Fail
- Cellular Comm Fail

OUTPUT 1 (RELAY 1)

Output 1 is a Form C dry contact relay rated at 30 VDC. 0.5 A.
Output 1 activates (energizes) when the B465 is powered and the microprocessor is operating correctly. If the microprocessor stops operating correctly or the B465 loses power, Ouput 1 de-energizes. The default output function is System Trouble. When the B465 has a system trouble event Output 1 de-energizes.
Using the default output function, System Trouble, Output 1 can be used to indicate a system trouble on one of the connected control panel's inputs (zone or point). Depending on the configuration required to create a system trouble on the control panel, use either the NO and COM or the NC and COM terminals on the B465. Refer to the control panel manual for the required configuration to obtain the proper response.

OUTPUT 2 (RELAY 2)

Output 2 is a Form A dry contact relay rated at 30 VDC, 0.1 A.
RELAY 2 is a normally open (NO) relay with contacts that close when the output function runs. The default output function is Primary Power Fail.

OUTPUT 3 (RELAY 3)

Output 3 is a Form A dry contact relay rated at 30 VDC, 0.1 A.
RELAY 2 is a normally open (NO) relay with contacts that close when the output function runs. The default output function is Battery Fail.

4.7.7 Primary power source wiring

You can configure the B465 to use 24 VDC from a UL listed fire control panel or power supply as the primary power source. The default configures the B465 to use AC as the primary power source. You can use a D1640 plug-in transformer, D1640-CA plug-in transformer, or D1640-120WI wired-in transformer. These transformers have a rating of 16.5 VAC, 40 VA.

Earth ground connection first

To help prevent damage from electrostatic discharges or other transient electrical surges, connect the system to earth ground before making other connections. The earth ground icon indentifies the earth ground terminal. Recommended earth ground references are a grounding rod or a cold water pipe. Make the connection using 14 AWG (1.8 mm) to 16 AWG (1.5 mm) wire.

AC operation

When the Primary Power Source is set to AC, the B465 makes an AC power failure event when the voltage at the primary power (24 VDC or 16.5 VAC) terminals is not sufficient.
The Primary Power Fail Delay parameter sets the number of minutes without power before B465 makes the AC power failure event. When power returns, the B465 uses the Primary Power Fail Delay parameter to delay the AC power restoral event.
For example, if the Primary Power Fail Delay parameter is set to 60 minutes, the B465 waits 60 minutes before it makes an AC power failure event. After AC power restores, the B465 waits 60 minutes before it make a restoral event.
Follow the steps below to install the 16.5 VAC transformer as the primary power source.

1. Use 18 AWG (1.02 mm) wire minimum (12 AWG [2 mm] maximum) to connect the transformer to the control panel. Make the wire length as short as possible. Do not exceed 50 ft. (15 m). Maximum wire resistance should not exceed 0.65 ohms.
2. Connect the wire to the control panel.

3. Connect the wire to the transformer.
4. Plug the transformer into an unswitched, 120 VAC, 60 Hz power outlet only.
5. Secure the transformer to the outlet with the screw provided.

Caution!
Do not short-circuit the terminals of the plug-in transformer
Shorting the terminals causes permanent failure. Connect the plug-in transformer to the 16.5 VAC terminals of the B465 before plugging it into the power source.

Notice!
AC wiring can induce noise and low level voltage into adjacent wiring
Route telephone and input loop wiring away from any AC conductors, including the transformer wire.

Notice!
Commercial Fire requirement
Commercial Fire application require that you install a D8004 Transformer Enclosure if you are using either the D1640 or D1640-CA plug-in transformers.

DC operation
When the Primary Power Source is set to DC, the B465 makes a DC power failure event when the voltage at the primary power (24 VDC or 16.5 VAC) terminals is not sufficient, or when the polarity of the DC power source is reversed.
The Primary Power Fail Delay parameter sets the number of minutes without power before B465 makes the DC power failure event. When power returns, the B465 uses the Primary Power Fail Delay parameter to delay the DC power restoral event.
For example, if the Primary Power Fail Delay parameter is set to 3 minutes, the B465 waits 3 minutes before it makes a DC power failure event. After DC power restores, the B465 waits 3 minutes before it make a restoral event.
Install the negative voltage lead on the leftmost terminal. Install the positive voltage lead on the terminal beween the the negative lead and the earth ground terminal.

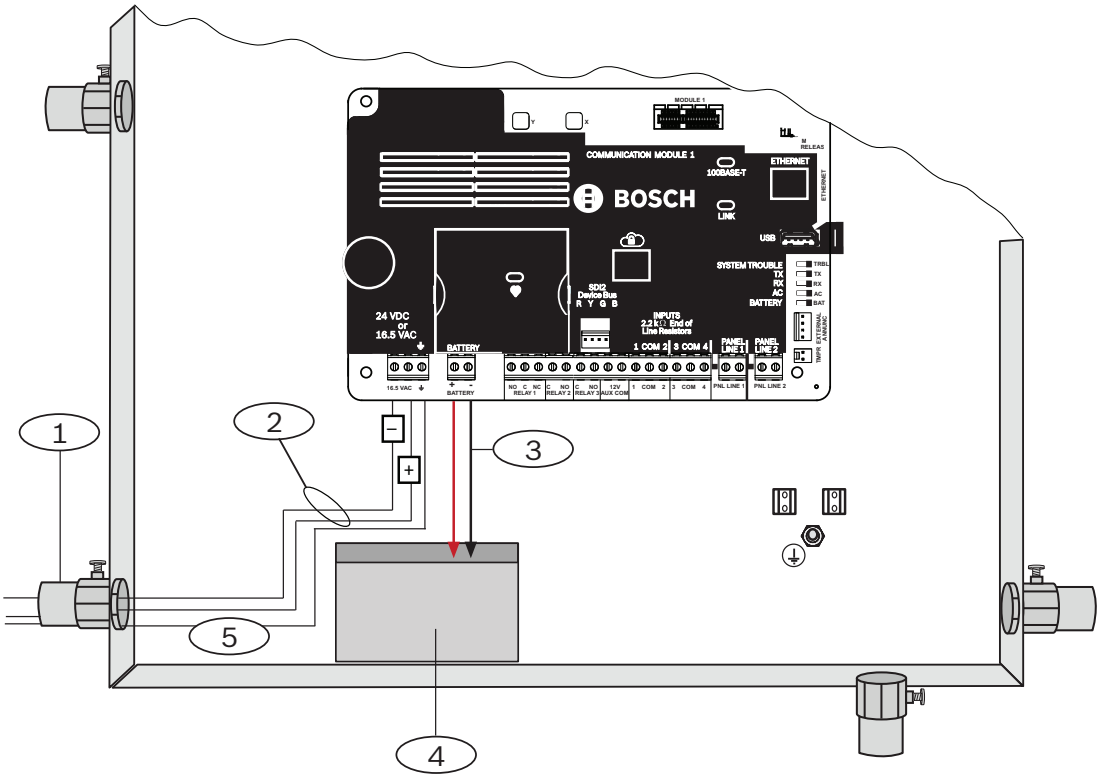


Figure 4.10: 24VDC wiring to a UL Listed fire control panel or UL Listed power supply

Callout - Description
1 - Conduit required for use with external wiring
2 - 24 VDC from UL Listed fire control panel wiring or UL Listed power supply wiring
3 - Battery wires (red and black)
4 - 12 V, 7-18 Ah sealed lead-acid rechargeable battery (D126/D1218)
5 - B465ground wire connection

Notice!

24 VDC primary power source is polarity sensitive.

If you reverse the polarity for the 24 VDC primary power source, the B465 runs, but shows a primary power failure.

Self diagnostics at power up and reset

The B465 completes self-diagnostic tests of hardware, software, and configuration at power up and at reset. The tests complete in 10 to 30 seconds. If the B465 fails a test, a System Trouble occurs. Trouble LED's turn on or outputs activate depending on configuration.

4.7.8 D1640-120WI transformer wiring (optional)

The D1640-120WI Transformer is a wired-in transformer that provides 16.5 VAC for the B465 and is installed in the B10 Medium Control Panel Enclosure/B10R Medium Control Panel Enclosure (Red) only.

4.7.9 12 VDC battery wiring

A 12 VDC, 7-18 Ah sealed lead-acid rechargeable battery (D126/D1218 supplied separately) supplies secondary power for auxiliary power output, and powers the system during interruptions in primary (AC or DC) power.

Caution!

Do not attach 24 VDC to the battery terminals

Connecting a 24 VDC source to the battery terminals permanently damages the B465.

Notice!

Use lead acid batteries only.

The charging circuit is calibrated for lead-acid batteries. Do not use gel-cell or nicad batteries.

D1218 Battery increase backup time

The D1218 is a 12 V, 18 Ah battery for use in applications requiring extended battery standby time. The module does not support more than 18 Ah.

Install the battery

1. Place the battery upright in the base of the enclosure.
2. Locate the red and black leads supplied within the packaging contents.
3. Connect the black battery lead to the B465 BATTERY (-) terminal, and then to the negative (-) side of the battery.
4. Connect the red battery lead to the B465 BATTERY (+) terminal, and then to the positive (+) side of the battery.

Warning!

High current arcs are possible

The positive (red) battery lead and the BATTERY+ terminal can create high current arcs if shorted to other terminals or the enclosure. Use caution when working with the positive lead and BATTERY+. Always disconnect the positive (red) lead from the battery before removing it from the B465 BATTERY+ terminal.

Caution!

Battery + terminal and wire are not power limited

Maintain a 0.250 in (6.4 mm) space between the battery terminals, battery wiring, and all other wiring. Battery wiring cannot share the same conduit, conduit fittings, or conduit knockouts with other wiring.

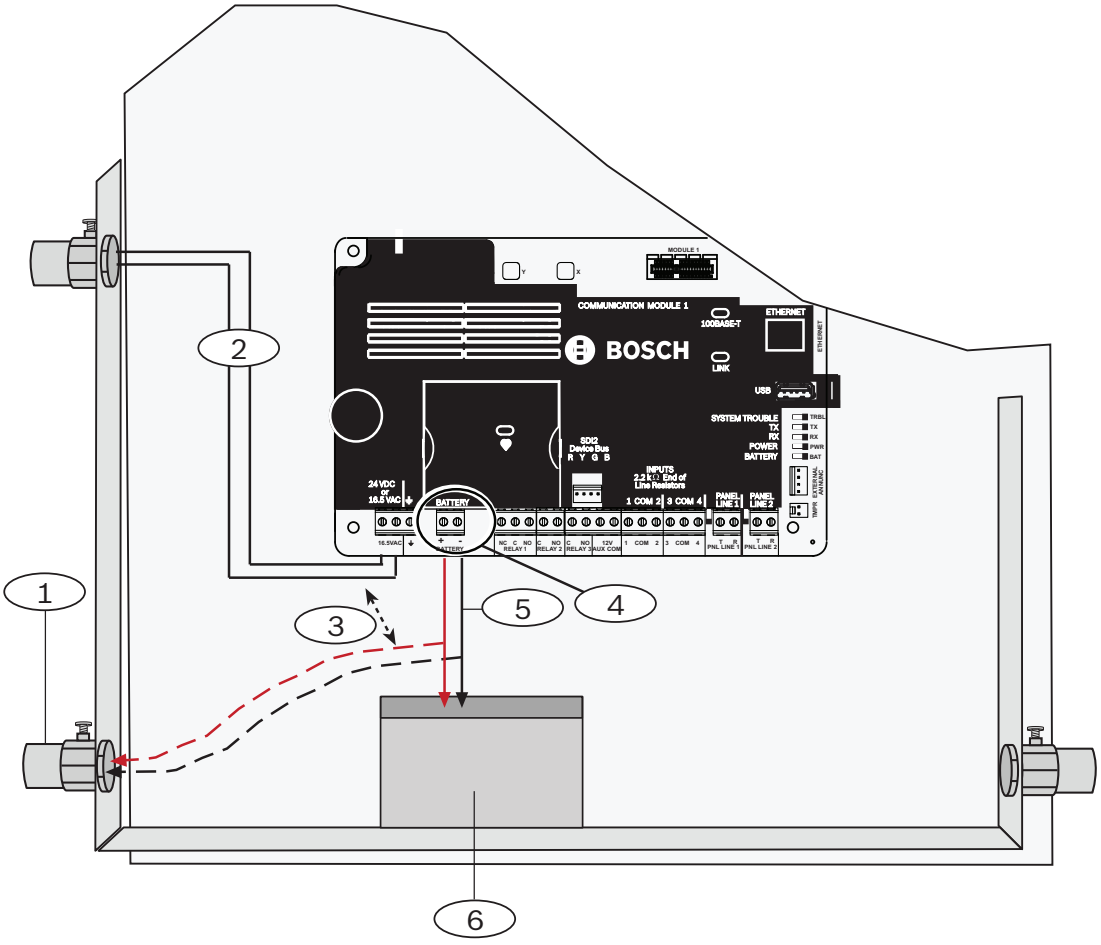


Figure 4.11: NON-power limited wiring for a plug-in transformer

Callout — Description
1 — Conduit required for use with external batteries
2 — D1640 UL Listed Class 2 Plug-in Transformer 16.5 VAC, 40 VA, 60 Hz
3 — 0.25 in (6.4 mm) minimum
4 — Battery terminals. BATTERY+ is non-power limited
5 — Battery wires (red and black)
6 — 12 VDC, 7-18 Ah sealed lead-acid rechargeable battery (D126/D1218)

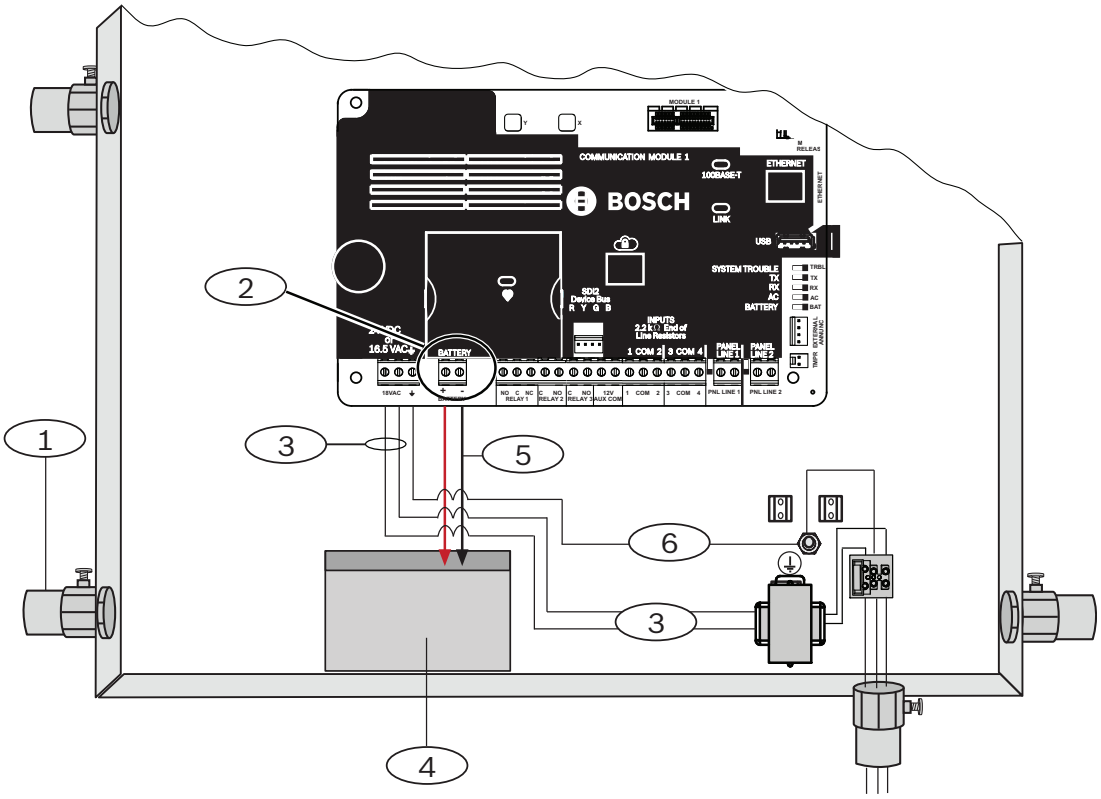


Figure 4.12: NON-power limited wiring for a wired transformer

Callout — Description
1 — Conduit required for use with external batteries
2 — Battery terminals. BATTERY+ is non-power limited
3 —D1640-120WI UL Listed Class 2 Wired Transformer 16.5 VAC, 40 VA, 60 Hz (tuck the wires behind the battery to ensure the proper clearance)
4 — 12 VDC sealed lead-acid rechargeable battery (D126/D1218)
5 — Battery wires (red and black)
6 — B465 ground wire connection (tuck the wires behind the battery to ensure the proper clearance)

Battery maintenance

Use sealed lead-acid rechargeable battery (12.0 VDC, 7 Ah to 12.0 VDC, 18 Ah). The B465 supports up to 18 Ah of battery. Replace the batteries every 3 to 5 years.
Record the date of installation directly on the battery.

Caution!
Exceeding the maximum output ratings or installing the transformer in an outlet that is routinely switched off causes heavy discharges. Routine heavy discharges can lead to premature battery failure.

Battery lead supervision

The battery charging float level occurs at 13.65 VDC. If the battery voltage drops below 12.1 VDC, the B465 sends a LOW BATTERY report, and indicate a Low Battery on the LED if programmed to do so. The B465 (if programmed for battery supervision) sends a Battery Low report. It sends a Low System Battery (302) report in the Contact ID format. It also lights the LOW BATTERY LED.

If programmed for battery supervision, the B465 adds a missing battery event to the event log. If programmed for battery fault reports, the control panel sends a BATTERY MISSING report, or Control Panel Battery Missing (311) report in the Contact ID format.

When battery voltage returns to 13.4 V or higher, the B465 turns the LOW BATTERY LED off. If the B465 is programmed for battery supervision, it sends a BATTERY RESTORAL report, or a Control Panel Battery Restored to Normal (302) report in the Contact ID format.

Investigate LOW BATTERY events immediately. If primary (AC or DC) power is off and the discharge continues, the B465 becomes inoperative when the battery voltage drops below 10.2 VDC, and the battery cutoff relay deactivated.

Battery discharge and recharge schedule

Discharge cycle

13.65 VDC - Charging float level.

12.1 VDC - Low Battery Report, if programmed.

10.2 VDC - Minimum operational voltage.

Recharge cycle

AC ON - Battery charging begins and AC Restoral Reports sent.

13.4 V - Battery Restoral Report sent. Battery float charged.

5 IP Communicators

The module uses the on-board Ethernet connector, and/or optional cellular communicators to communicate with a Conettix D6600, Conettix D6100i or a Conettix D6100IPv6 Communications Receiver/Gateway. Please refer to the Specifications section for supported cellular communicator modules. Using Conettix IP communication protocol offers a secure path that includes anti-replay/anti-substitution features and provides enhanced security with up to AES 256-bit encryption.
The module supports Domain Name System (DNS) for central station communication. DNS provides ease of use, eliminating the need to use static IP addresses as your reporting destination, and accommodates a simple solution for central station disaster recovery.

5.1 Onboard Ethernet

The built-in Ethernet port on the control panel allows for a network connection without the need for additional modules. The port supports both 10 Base-T (10 Mb) and 100 Base-TX (100 Mb) standards. The port supports full duplex, half duplex, and HP AUTO_MDIX communication, using a standard Ethernet cable.

Supervision

The B465 supervises its on-board Ethernet communicator when it is configured as either the preferred network technology or the alternate network technology. Supervision ensures reliable end to end network communications. If the on-board Ethernet communicator does not receive a response to supervision polls, the B465 creates a communication trouble event. The trouble shows on the trouble LED. You can configure the B465 to send a trouble report to a second receiver, or over an optional cellular network.

On-board Ethernet diagnostics LEDs

The B465 includes the following on-board LEDs to assist with troubleshooting the onboard Ethernet connection.

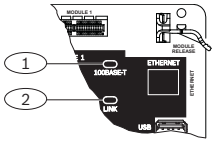


Figure 5.1: On-board Ethernet connector and LEDs

Callout — Description
1 — 100BASE-T LED (green)
2 — LINK LED (yellow)

Refer to *B465 LED status indicators, page 80* for information on the 100BASE-T and LINK LEDs.

5.2 Connettix Plug-in Cellular Communicator

Cellular plug-in communicators provide communication between the control panel and central monitoring stations using a cellular network. The B465 supports one plug-in cellular module.

Supervision

The B465 supervises the plug-in cellular communicator when it is configured as either the preferred network technology or the alternate network technology. Supervision ensures reliable end to end network communications. If the plug-in cellular communicator does not

receive a response to supervision polls, the B465 creates a communication trouble event. The trouble shows on the B465 trouble LED. You can configure the B465 to send a trouble report to a second receiver, or using the onboard Ethernet communicator.

Signal strength and diagnostics LEDs

Five LED patterns indicate that you correctly secured the module in the B465 plug-in slot and indicate the signal strength obtained by the module. Refer to *B465 LED status indicators, page 80*, Conettix Plug-in cellular module LEDs for more information on cellular module LEDs.

5.3 Report routing

The B465 has several configurations for sending reports to the central station receiver. Configuration options include sending reports to one or two central station receivers, using one or two network technologies (Cellular or Ethernet). Refer to the examples below.

Example 1: One receiver and one network technology

You are sending reports to one central station receiver using one network technology. In the Advanced Communication Configuration > Account Setup menu, the Number of Receivers parameter is set to 1 (in RPS the Secondary Receiver parameter is set to Disabled), and you are using one network technology (either Cellular or Ethernet).

Example 2: One receiver and two network technologies

You are sending reports to one central station receiver using two network technologies. The B465 uses the alternate network technology when the preferred network technology fails.
In the Advanced Communication Configuration > Account Setup menu, the Number of Receivers parameter is set to 1 (in RPS the Secondary Receiver parameter is set to Disabled),
In the Standard Communication Configuration menu, the Preferred Network Technology parameter is set to Ethernet or Cellular. The Alternate Network Technology parameter is set to Enabled. After two failed attempts to send a report using the Preferred Network Technology, the B465 uses the Alternate Network Technology.
For example, you select Cellular as your primary network technology making Ethernet the alternate network technology. The B465 loses communication with the central station receiver due to a power outage in the cellular tower. The B465 uses the alternate network technology, Ethernet, restoring the communication link to the central station.

Example 3: Two receivers and one network technology

In the Advanced Communication Configuration > Account Setup menu, the Number of Receivers parameter is set to 2, primary and secondary (in RPS the Secondary Receiver parameter is set to Enabled). You are using one network technology (either Cellular or Ethernet), and both the primary receiver and the secondary receiver are configured to receive the same network technology (either Cellular or Ethernet).
After two failed attempts to send a report to the primary receiver, the B465 sends the report to the secondary receiver.
This configuration is useful when the primary central station receiver has a hardware failure, or is down for maintenance. The B465 switches to the secondary receiver, maintaining the communication link to the central station.

Example 4: Two receivers and two network technologies

In the Advanced Communication Configuration > Account Setup menu, the Number of Receivers parameter is set to 2, primary and secondary (in RPS the Secondary Receiver parameter is set to Enabled). You are using two network technologies (Cellular and Ethernet), and both the primary receiver and the secondary receiver are configured to receive both network technologies (Cellular and Ethernet).

If the B465 fails to send a report to the primary receiver using the preferred network technology, it tries to send the report using the alternate network technology.
If it fails to send the report to the primary receiver using the alternate network technology, the B465 tries once to send the report to the secondary receiver using the preferred network technology. If it fails to send the report using the preferred network technology, it tries once to send the report to the secondary receiver using the alternate network technology.
If all attempts to both the primary and secondary receiver, using both the preferred and alternate network technologies fail, the B465 creates a communication failure event.

Cellular and Ethernet network technology communication paths

The figure below shows cellular and Ethernet network technology communication paths.

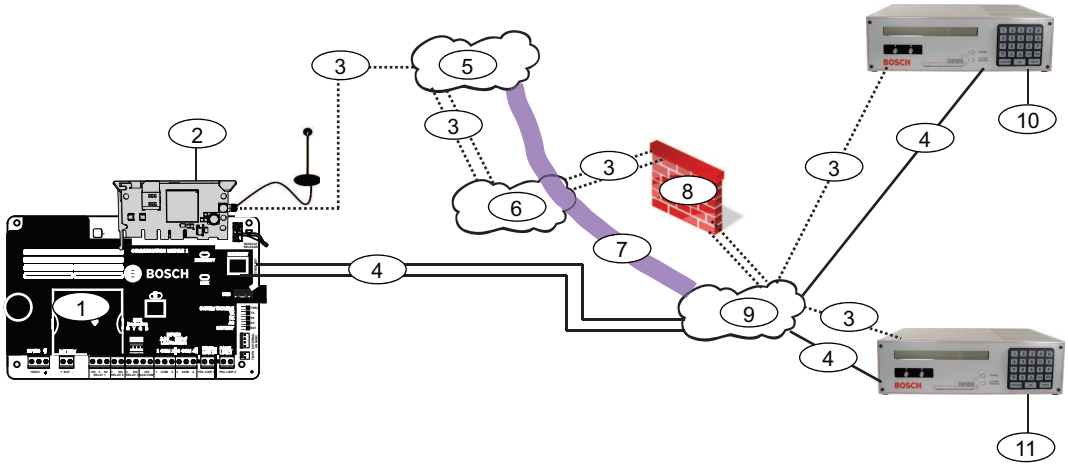


Figure 5.2: Network technology communication paths

Callout — Description
1 — B465 module
2 — Supported plug-in cellular module
3 — Cellular connection
4 — Ethernet connection
5 — Cellular Carrier
6 — Internet
7 — Optional VPN tunnel
8 — Router firewall
9 — Corporate network
10 — Primary Conettix receiver
11 — Secondary Conettix receiver

Notice!

NFPA Fire Application Note

Cellular sole path communications with supplementary Ethernet communications

When cellular communications are configured under NFPA 72 (2010 - 2016) requirements for a single communication technology, Ethernet can be used as a supplementary communication path without requiring the secondary power capacity requirements on the protected premises network equipment, where acceptable to the authority having jurisdiction. This makes it possible for fire signals to be transmitted over Ethernet to the central monitoring station when cellular communications are disrupted.

To enable encryption for IP network communications, refer to the AES Encryption parameters in *Primary Receiver, page 60* and *Secondary Receiver, page 63*.

5.4 Compatible central station receivers

Sending Conettix IP reports requires a Bosch central station receiver. The following receivers are compatible with B465:

– Conettix D6600 Communications Receiver/Gateway
– Conettix D6100IPv6 Communications Receiver/Gateway
– Conettix D6100i Communications Receiver/Gateway

Central Station information

Perform the following:

1. Verify the receiver is configured in NNC mode.
2. Select Integrated Device as the Network Device for the B465.
3. Enter the same NNC number that the B465 creates from the Account Number / NNC parameter.
4. Select the same supervision times as selected in the B465 Ethernet Supervision Time and Cellular Supervision Time parameters.

6 Configuration and Diagnostics

You can configure the B465 using an internal interface, a USB connection, and TerraTerm, or you can use RPS with a local or remote connection.

6.1 RPS

Before you can use RPS (Remote Programing Software) to configure the B465 you must download and install the software on your Windows computer. Refer to the RPS product page on the Bosch Security Systems website.
You can connect to the B465 with RPS on site or remotely.

6.2 USB and TeraTerm

You can use a USB connection from a laptop PC to the B465 to configure the B465 on-site.
The supported USB cable used to establish connection is a Male A to Male A cable.

Notice!
Use the Bosch B99 USB direct connect cable (F01U278853)
Failure to do so may result in communication failures between the B465 and your computer.

Notice!
USB connection is for configuration or diagnostics only
Disconnect when done.

Notice!
Driver supplied with B465 firmware v1.00 is not compatible with firmware v2.00
The B465 driver, RB_465.inf, is not compatible with B465 firmware v2.00.

Before you can access the USB user interface, you must install or browse to the RBUS1CP.inf file on the target PC or laptop.
The B465 USB driver (RBUS1CP.inf) file is available on the supplied user CD. You need to install this file only once on the target computer.
Installing the driver from the web:

1. From your Internet browser, go to**:** http://www.boschsecurity.com to open the Bosch Web site.
2. Select the web site for your region and country.
3. In the Online Catalogs section on the left, click the Intrusion Alarm Systems link.
4. Under the Intrusion Alarm Systems Products heading, scroll to the Conettix **-** Information Transport Solutions section. Click the Show product section link.
5. Click the Conettix IP link.
6. Scroll to the B465 Conettix Universal Dual Path Communicator section. Click the section title to open the product page.
7. Under the product image, click the Software tab.
8. Click OK to accept the license agreement.
9. To the right of the B465, click on the language link (for example, en).
   The File Download dialog box opens.
10. Click Save to save the file to the target computer. Perform this task to download the B465 USB driver file (RBUS1CP.inf file and RBUS1CP.cat files).
11. Supply power to the B465.

12. Connect the B465 to the target computer, using a USB Type A to A cable. A New Hardware Found window appears on the computer.
13. Browse to install the RBUS1CP.inf file found under the new hardware found on your computer. Verify through the device manager that the appropriate .inf installs properly, and is listed under the Ports (COMM & LPT) section. The correct .inf file is B465 Dual Path Communicator.
14. Install a communication program to configure the B465.

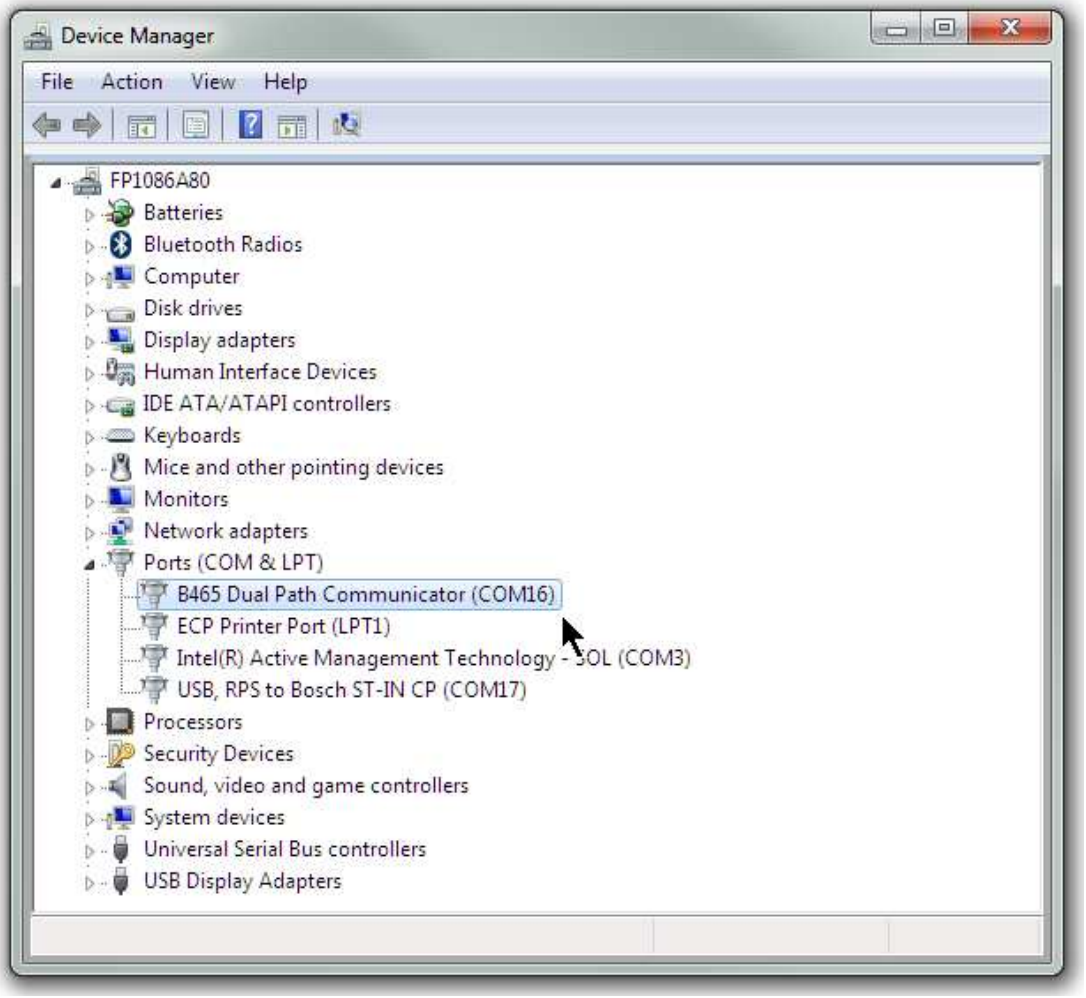


Figure 6.1: RB_B465.inf installed inside Device Manager

6.2.1 Install TeraTerm

Install a serial communication program to establish communication from a computer to the B465.

For your information

– Windows Vista and Windows 10/8/7 installations no longer include a serial communication program when the operating system installs. Install Tera Term from the B465 user CD.
– Windows XP. The Microsoft Windows XP installation automatically installs HyperTerminal, a Microsoft serial communication program, when Windows installs. If HyperTerminal is not installed, install it from the Windows XP installation disc, or install Tera Term from the B465 user CD.

Install the serial communication program that supports your configuration (Hyper Terminal or Tera Term), depending on your computer's operating system.

Notice!
Tera Term is preferred in all applications as its operation is understood by Bosch Technical Support if assistance is required.

Installing Tera Term

When you perform the Tera Term installation, follow the prompts in the installation wizard, but on the Select Components page of the wizard, select **Compact installation** from the drop-down list. Refer to the figure below.

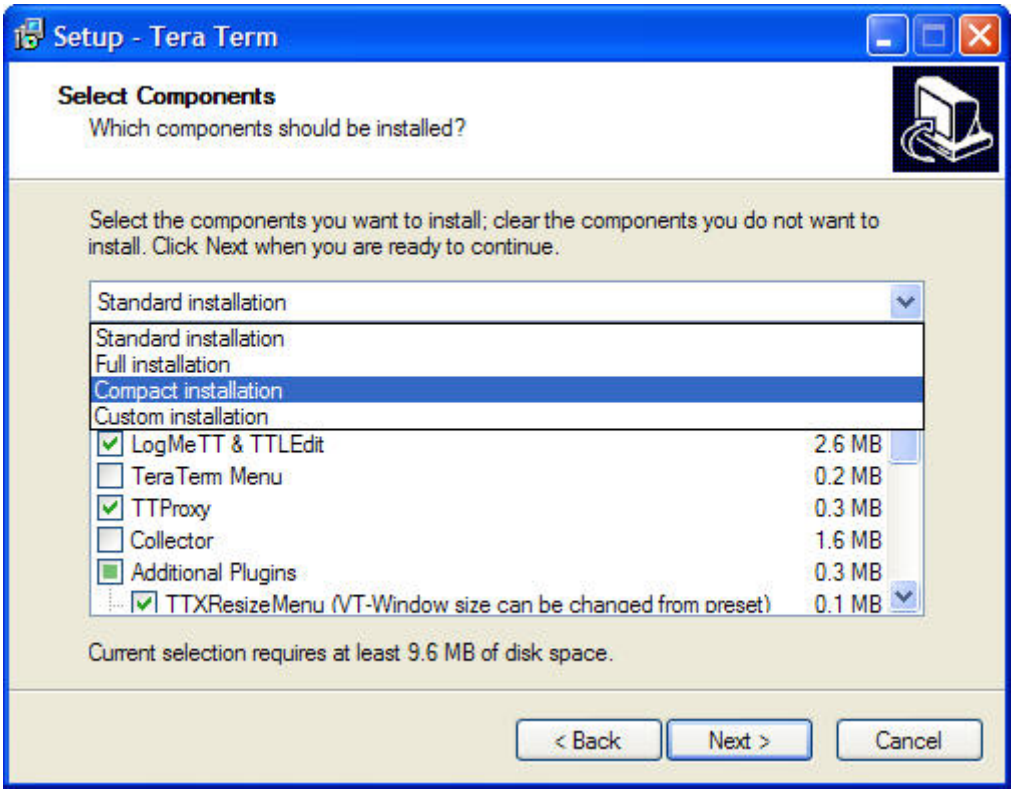


Figure 6.2: Setup - Tera Term wizard's Select Components window

Tera Term version interface

After installing the latest Tera Term version, double-click on Tera Term to launch the program. The Tera Term window opens. Refer to the illustrations below to set up Tera Term defaults.
Setting up Tera Term defaults:

1. Launch the application.
2. Click Setup => Terminal as shown below.

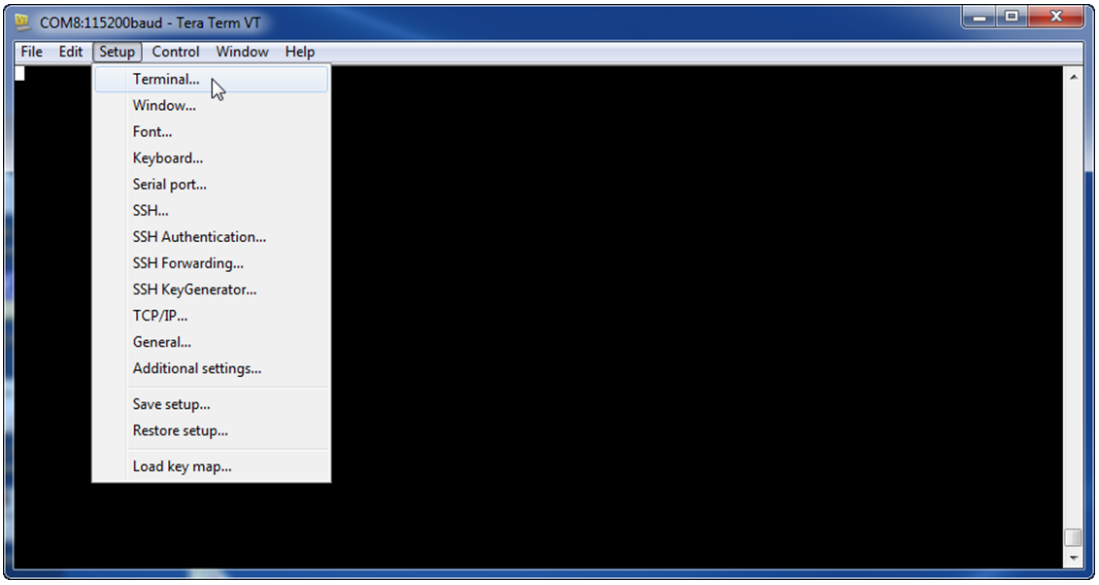


Figure 6.3: Selecting the Terminal Setup window

3. Change the default setting of CR to LF from the Receive drop-down menu and click OK.

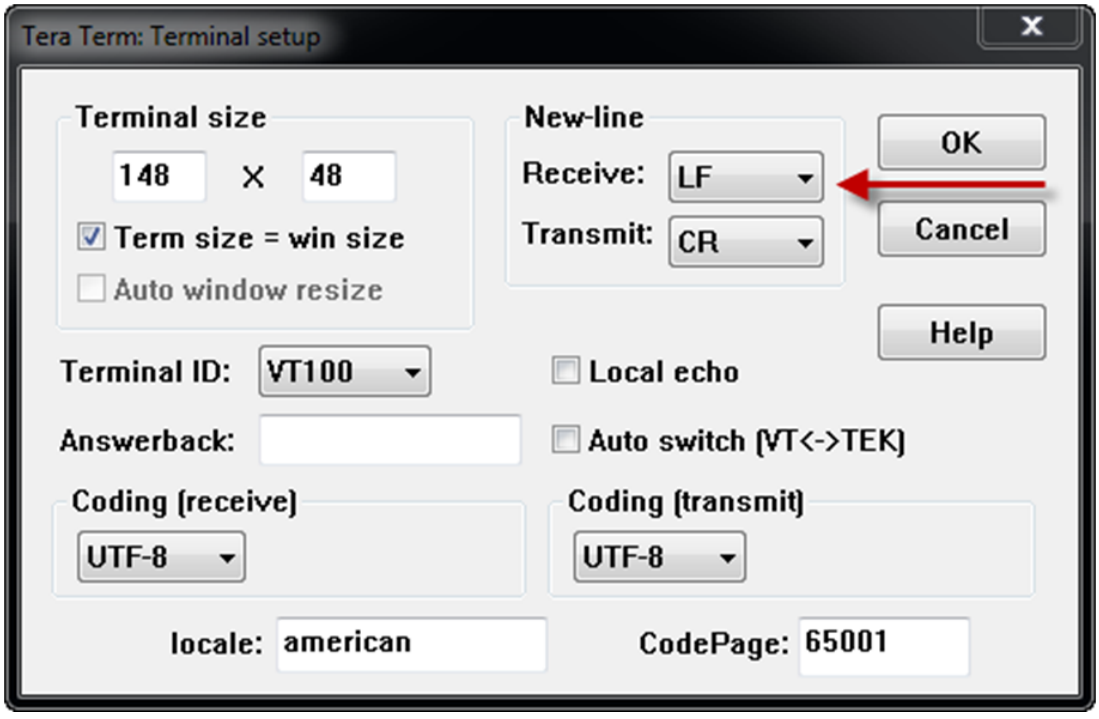


Figure 6.4: Changing the Receive: option to LF

4. Click Save setup.

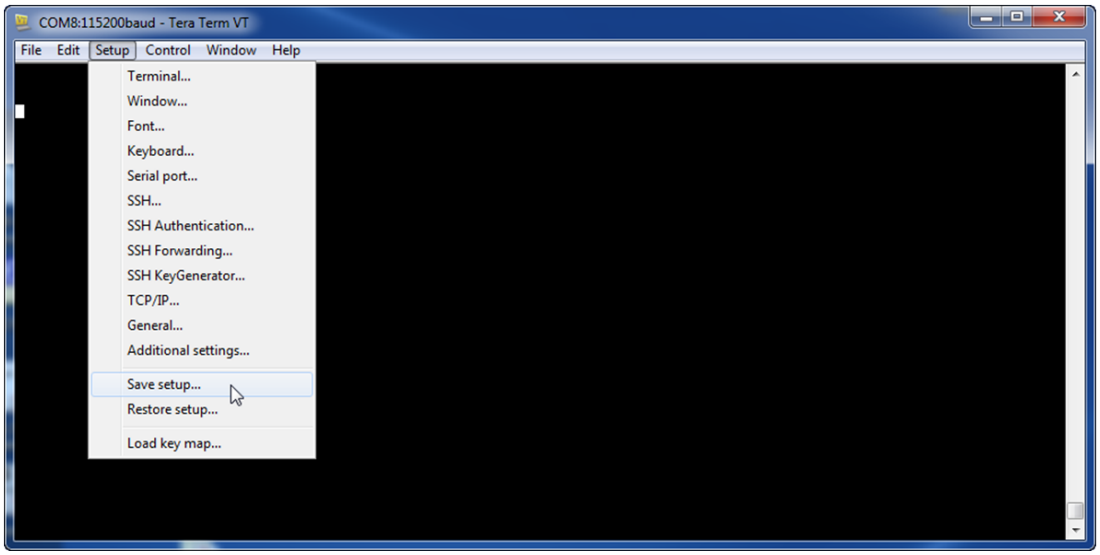


Figure 6.5: Saving the setup

5. Click Save to overwrite the existing TERETERM.INI file. This stores the new setting, and allows you to have the correct display settings when you launch Tera Term in future sessions.
6. Click the correct port option in the Port: drop-down menu for the B465.

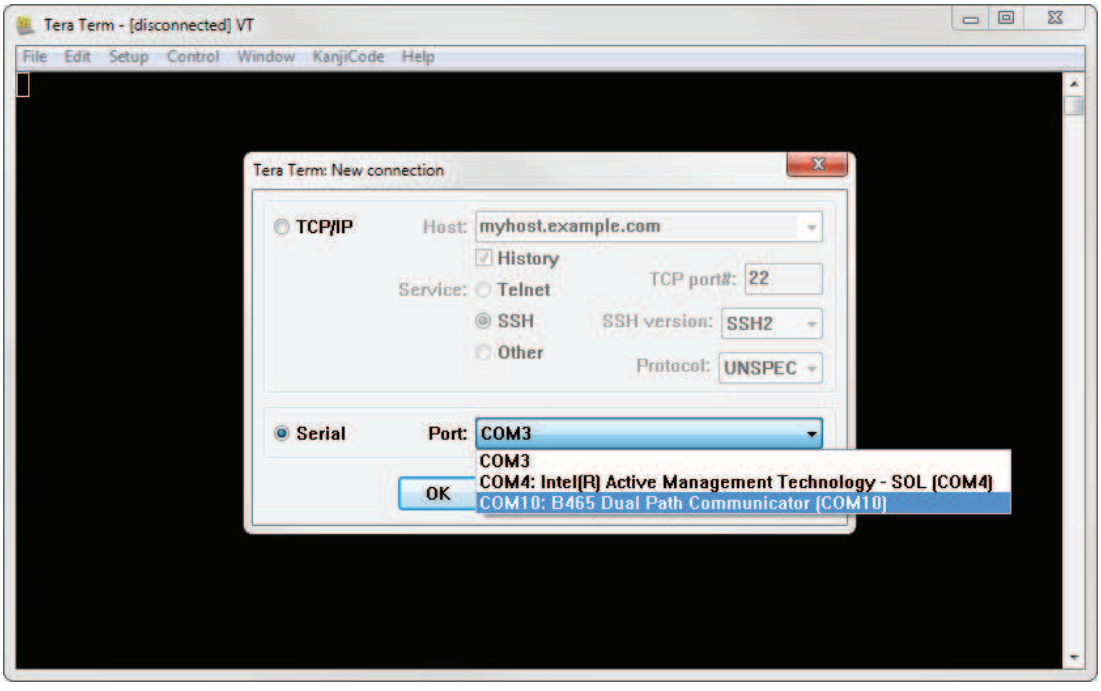


Figure 6.6: Tera Term Pro window shown

6.2.2 Log in

How to log in

1. Ensure that the USB-Type A male-to-male cable is connected to the B465 and the target computer.
2. From Windows, start a terminal session by launching Hyper Terminal on Windows Vista/ Windows 7/Windows 8 Windows, or launching Tera Term on Windows XP or earlier.

3. Set up a connection on the new virtual serial COM port (for example, Port: COM7: B465 [COM7]). If the B465 is not connected to the computer, or the USB driver is not installed, the B465 does not appear in the list.
4. After the connection is established, press [Enter].
   The B465 USB login window opens.

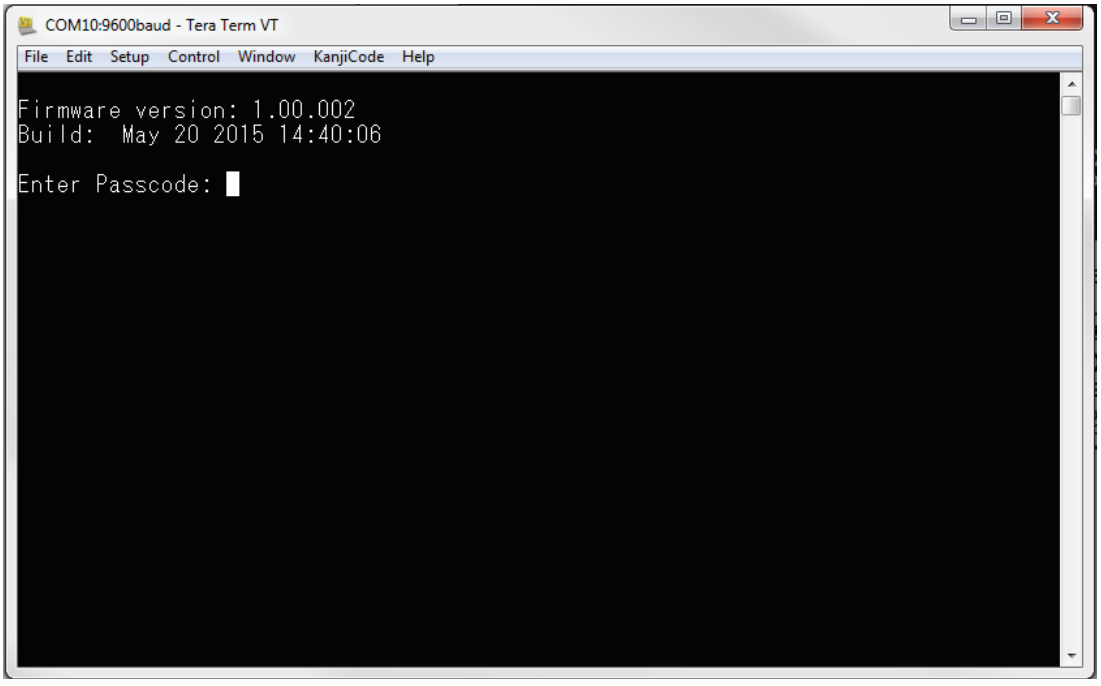


Figure 6.7: B465 USB login window

5. Enter the password to log on. The default password is B465.
   The user interface allows three attempts to enter the password correctly. After three failed attempts, the B465 shows a Too many attempts error message, and the USB interface enters into an idle state for 30 seconds. Repeat Steps 3 through 6 at the conclusion of 30 seconds.
6. Press [Enter] to continue. The USB main menu opens.

Notice!
Please write down the password. If you forget your password we can only default the module after it is returned and will not be able to help you restore the module in the field.

6.3 Main Menu

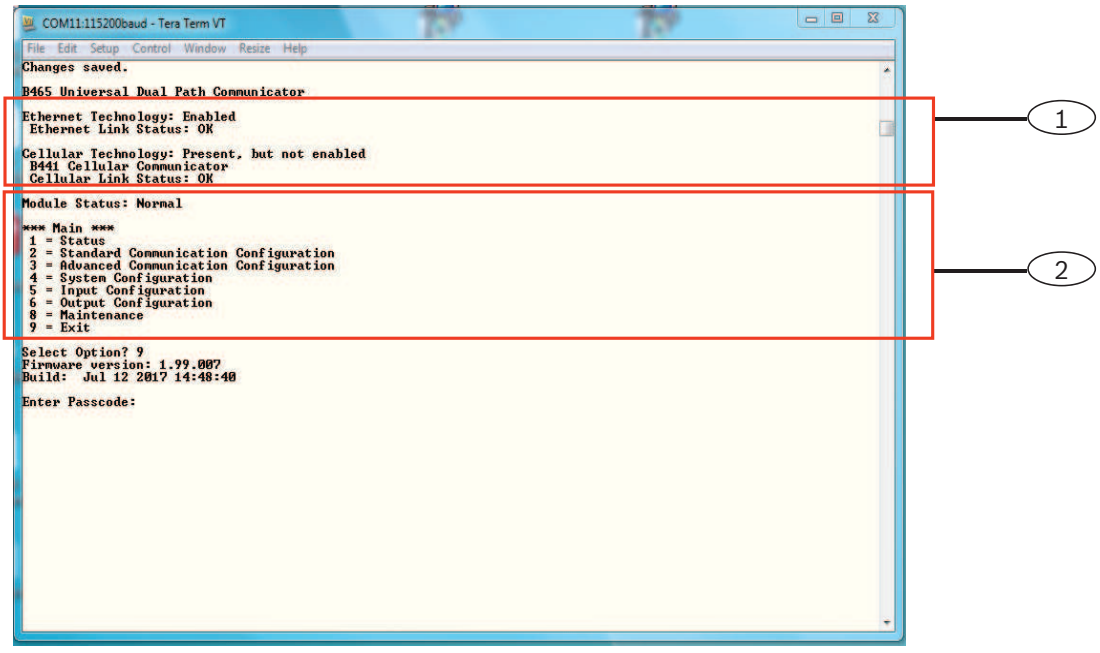


Figure 6.8: USB Main Menu

Callout — Description
1 — The status of the Ethernet and Cellular IP communication technologies
2 — Main menu options

The main menu shows:

- After entering the password.
- After pressing [Enter] without selecting an item from the main menu.
- After selecting Exit in a sub-menu.

Notice!

Use the Escape (Esc) key to exit without changes

Pressing the Escape (Esc) key returns you to the previous menu without making changes. Pressing the Escape key after entering data clears the data entered.

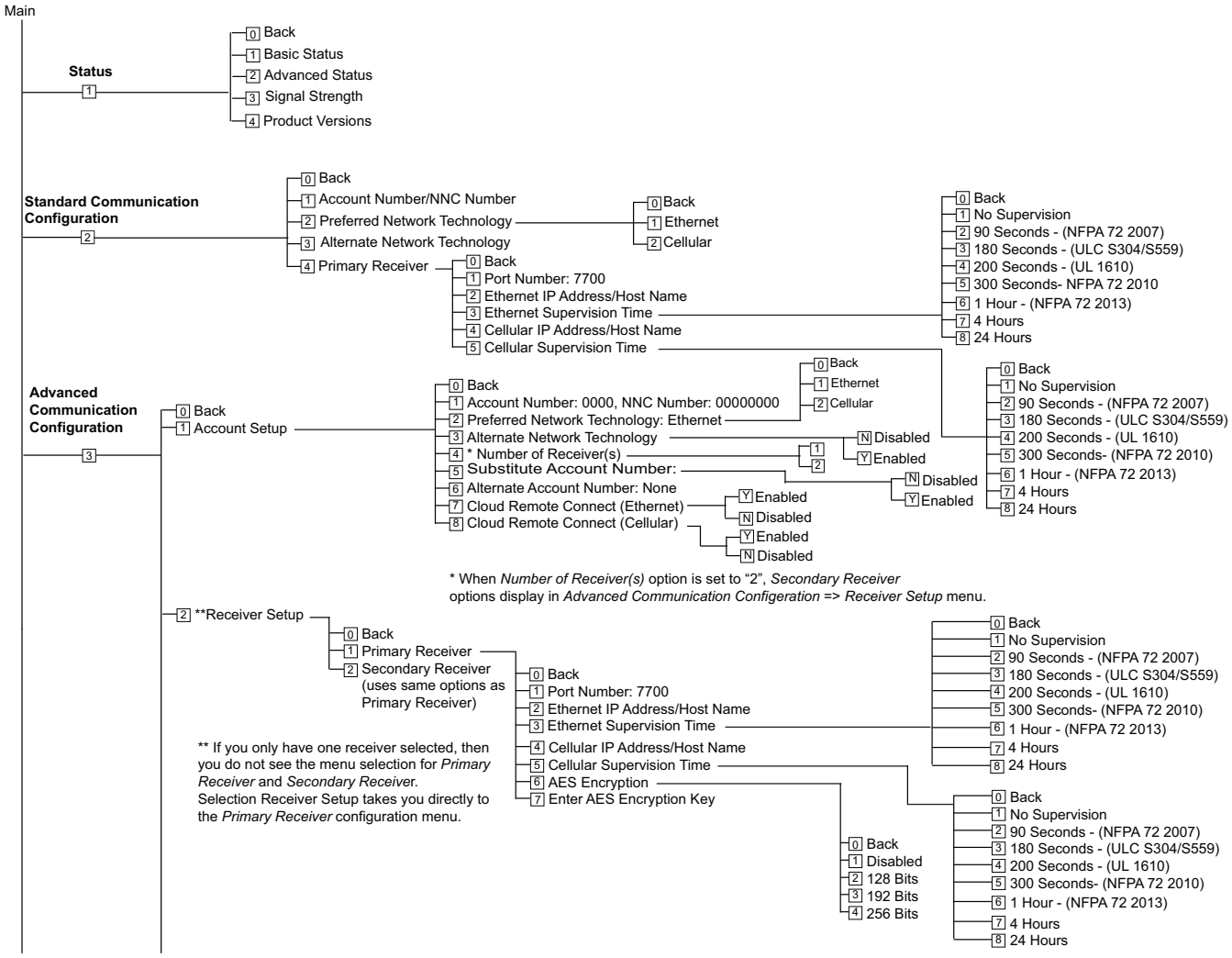
Notice!

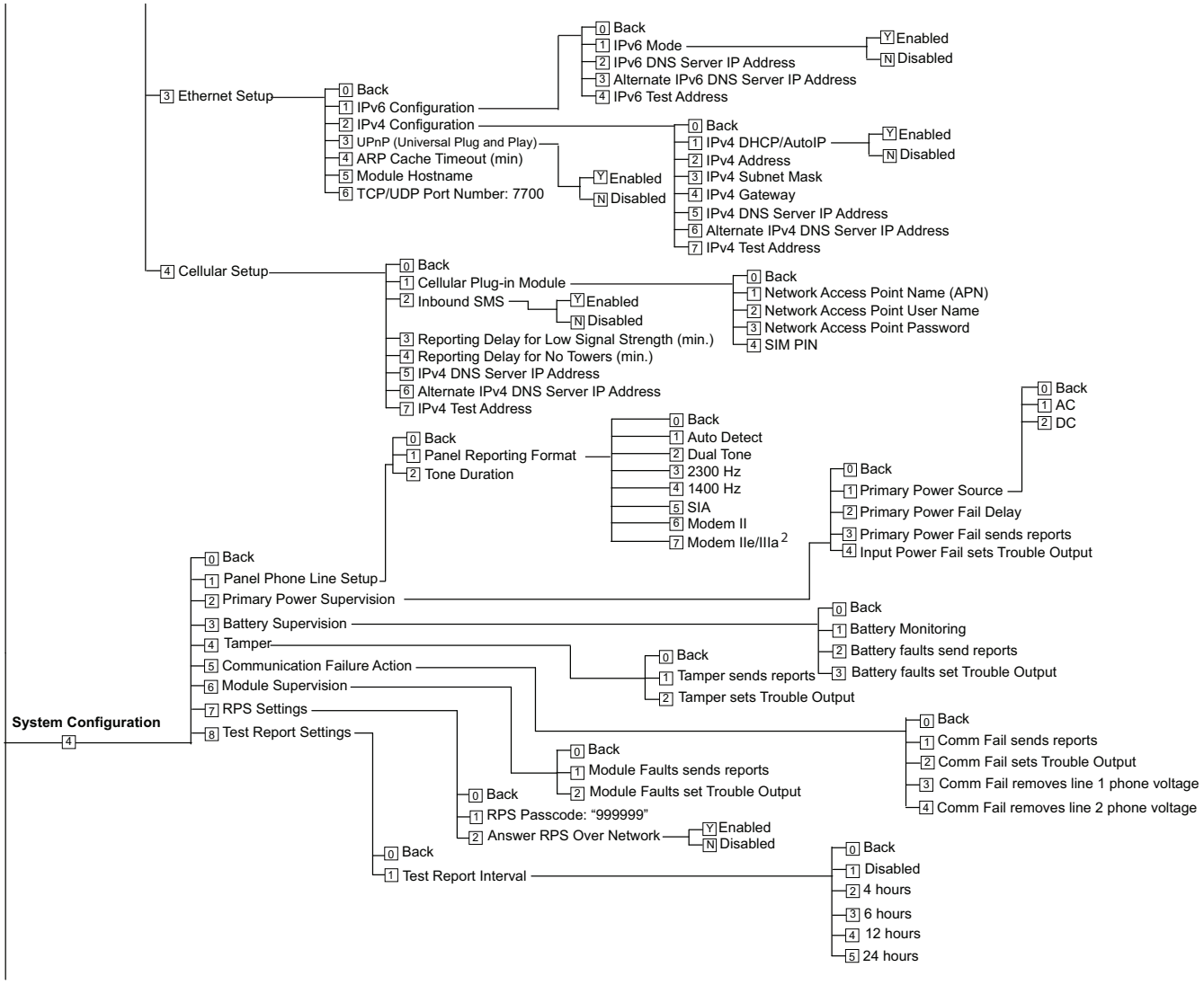
Automatic log out after 5 minutes of inactivity

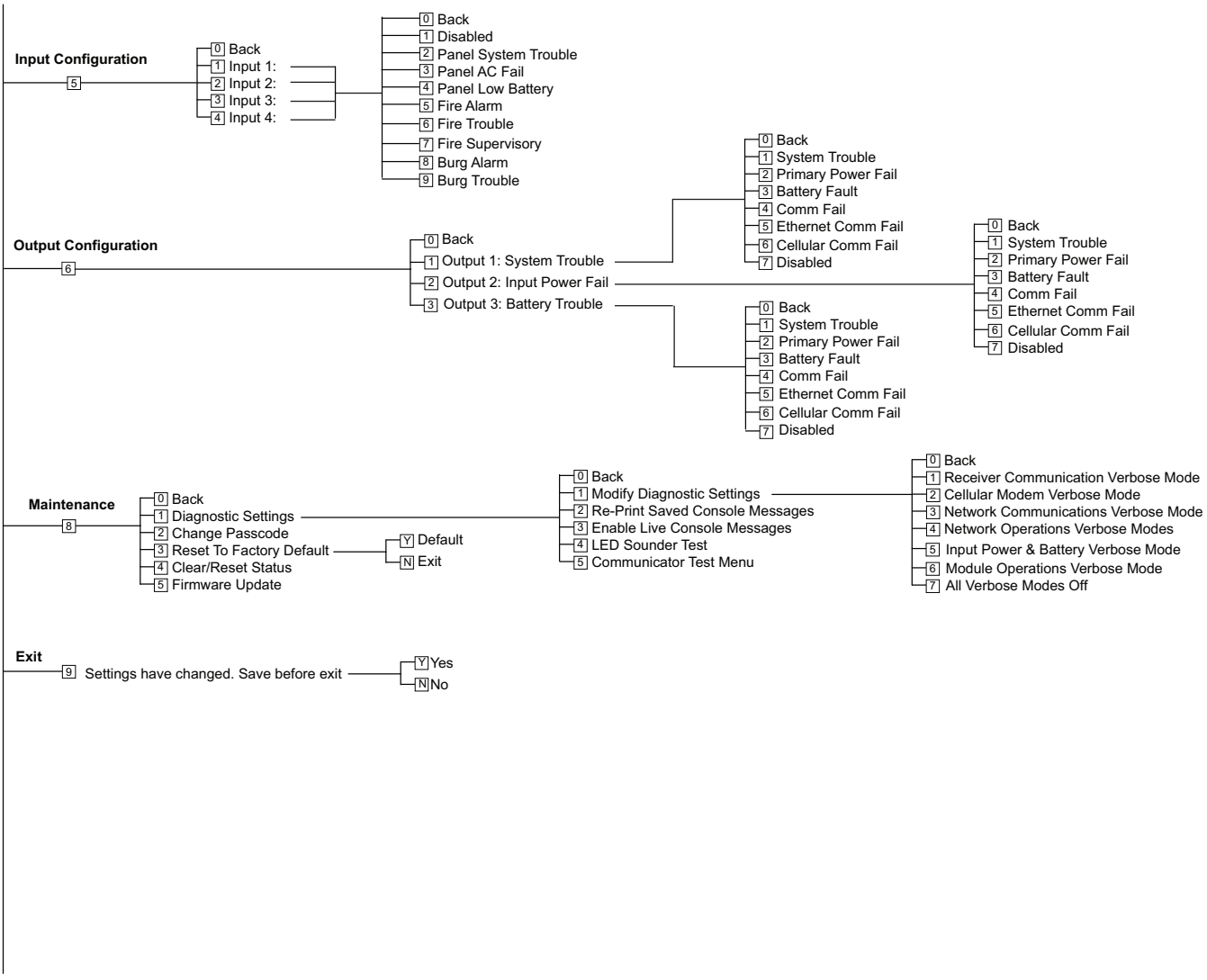
The B465 automatically logs out of the menus after 5 minutes of inactivity. All unsaved changes are lost. You must reenter the passcode to return to the main menu.

6.3.1 Menu Map

The map below show the complete USB menu structure.




System Configuration
4
0 Back
1 Panel Phone Line Setup
2 Primary Power Supervision
3 Battery Supervision
4 Tamper
5 Communication Failure Action
6 Module Supervision
7 RPS Settings
8 Test Report Settings
0 Back
1 Panel Reporting Format
2 Tone Duration
0 Back
1 Auto Detect
2 Dual Tone
3 2300 Hz
4 1400 Hz
5 SIA
6 Modem II
7 Modem IIe/IIIa2
0 Back
1 Primary Power Source
2 Primary Power Fail Delay
3 Primary Power Fail sends reports
4 Input Power Fail sets Trouble Output
0 Back
1 AC
2 DC
0 Back
1 Battery Monitoring
2 Battery faults send reports
3 Battery faults set Trouble Output
0 Back
1 Tamper sends reports
2 Tamper sets Trouble Output
0 Back
1 Comm Fail sends reports
2 Comm Fail sets Trouble Output
3 Comm Fail removes line 1 phone voltage
4 Comm Fail removes line 2 phone voltage
0 Back
1 Module Faults sends reports
2 Module Faults set Trouble Output
0 Back
1 RPS Passcode: “999999”
2 Answer RPS Over Network
Y Enabled
N Disabled
0 Back
1 Test Report Interval
0 Back
1 Disabled
2 4 hours
3 6 hours
4 12 hours
5 24 hours
3 Ethernet Setup
0 Back
1 IPv6 Configuration
2 IPv4 Configuration
3 UPnP (Universal Plug and Play)
4 ARP Cache Timeout (min)
5 Module Hostname
6 TCP/UDP Port Number: 7700
Y Enabled
N Disabled
0 Back
1 IPv6 Mode
2 IPv6 DNS Server IP Address
3 Alternate IPv6 DNS Server IP Address
4 IPv6 Test Address
Y Enabled
N Disabled
0 Back
1 IPv4 DHCP/AutoIP
2 IPv4 Address
3 IPv4 Subnet Mask
4 IPv4 Gateway
5 IPv4 DNS Server IP Address
6 Alternate IPv4 DNS Server IP Address
7 IPv4 Test Address
Y Enabled
N Disabled
4 Cellular Setup
0 Back
1 Cellular Plug-in Module
2 Inbound SMS
3 Reporting Delay for Low Signal Strength (min.)
4 Reporting Delay for No Towers (min.)
5 IPv4 DNS Server IP Address
6 Alternate IPv4 DNS Server IP Address
7 IPv4 Test Address
Y Enabled
N Disabled
0 Back
1 Network Access Point Name (APN)
2 Network Access Point User Name
3 Network Access Point Password
4 SIM PIN


Input Configuration
5
0 Back
1 Input 1:
2 Input 2:
3 Input 3:
4 Input 4:
0 Back
1 Disabled
2 Panel System Trouble
3 Panel AC Fail
4 Panel Low Battery
5 Fire Alarm
6 Fire Trouble
7 Fire Supervisory
8 Burg Alarm
9 Burg Trouble
Output Configuration
6
0 Back
1 Output 1: System Trouble
2 Output 2: Input Power Fail
3 Output 3: Battery Trouble
0 Back
1 System Trouble
2 Primary Power Fail
3 Battery Fault
4 Comm Fail
5 Ethernet Comm Fail
6 Cellular Comm Fail
7 Disabled
0 Back
1 System Trouble
2 Primary Power Fail
3 Battery Fault
4 Comm Fail
5 Ethernet Comm Fail
6 Cellular Comm Fail
7 Disabled
0 Back
1 System Trouble
2 Primary Power Fail
3 Battery Fault
4 Comm Fail
5 Ethernet Comm Fail
6 Cellular Comm Fail
7 Disabled
Maintenance
8
0 Back
1 Diagnostic Settings
2 Change Passcode
3 Reset To Factory Default
4 Clear/Reset Status
5 Firmware Update
Y Default
N Exit
0 Back
1 Modify Diagnostic Settings
2 Re-Print Saved Console Messages
3 Enable Live Console Messages
4 LED Sounder Test
5 Communicator Test Menu
0 Back
1 Receiver Communication Verbose Mode
2 Cellular Modem Verbose Mode
3 Network Communications Verbose Mode
4 Network Operations Verbose Modes
5 Input Power & Battery Verbose Mode
6 Module Operations Verbose Mode
7 All Verbose Modes Off
Exit
9 Settings have changed. Save before exit
Y Yes
N No

6.3.2 1 = Status

The Status Menu consists of:

- Basic Status
- Advanced Status
- Signal Strength
- Product Versions

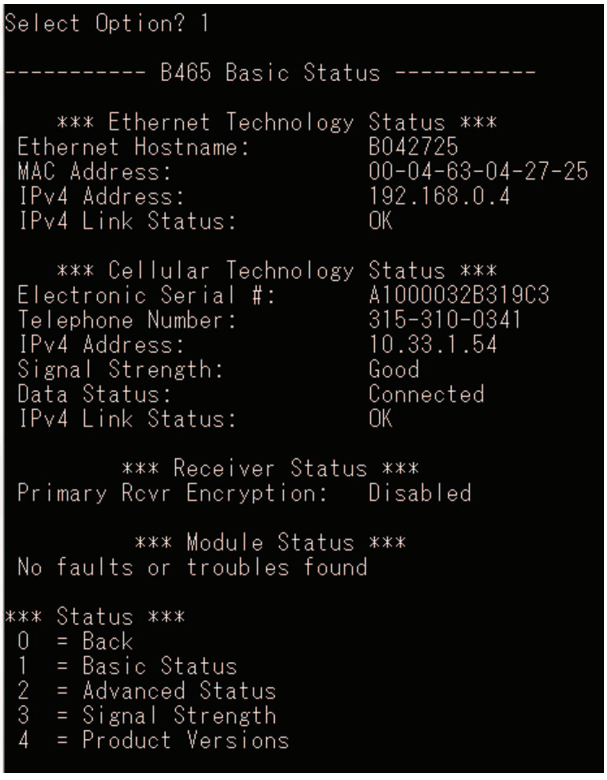


Figure 6.9: Basic Status screen

For a description of the Status sub-menu parameters, refer to the table below.

To go to a specific Status menu option (Basic Status, Advanced Status, Signal Strength, and Product Versions), make the desired selection.

Status Menu

Accessing the Status Menu:

1. Enter the B465 passcode
2. Press **[1] Status**.
3. Select the desired parameter (Basic Status, Advanced Status, Signal Strength, and Product Versions) from the table below.

Option	Press to select	Description
1. Basic Status Menu	1	This option shows the current Ethernet technology, IP address, link status, modem status, , and module status.
2. Advanced Status Menu	2	This option shows various parameters related to the cellular device such as UDP packets transmitted and received, the carrier name, available towers, and data class.

Option	Press to select	Description
3. Signal Strength	3	The current signal strength records every 15 minutes for up to 48 hours worth of data. When signal strength is selected, up to 192 values are displayed representing the signal strength values over the last 48 hours. If the B465 has been powered up less than 48 hours, the list shows only the samples taken so far. If it has been less than 15 minutes, “Signal Strength Not Available” shows. The screen shot below is an example of what you might see in the signal strength history. *** Signal Strength History *** (Oldest value (dB) is printed first in 15 minute intervals.) -60 -56 -57 -56 -58 -58 -57 -59 -58 -59 -59 -60 -60 -64 -60 -61 -60 -63 -62 -60 -60 -60 -61 -61 -61 -60 -59 -61 -61 -60 -59 -61 -64 -60 -63 -60 -60 -60 -61 -58 -59 -59 -59 -59 -60 -61 -59 -59 -60 -59 -59 -60 -59 -60 -59 -60 -59 -60 -60 -59 -63 -61 -60 -62 -61 -61 -59 -59 -61 -60 -58 -60 -58 -59 -59 -60 -59 -60 -61 -60 -60 -59 -60 -60 -59 -60 -62 -60 -57 -58 -58 -61 -58
4. Product Versions	4	This option shows the software version of all entities in the B465. The following list is an example of the versions shown: *** Product Versions *** B465 Product ID: #####.############ Cloud ID: ####### B465 Application: V 2.##.### B465 Boot Loader: V #.##.### B465 Hardware: V #.##.### RTOS: V #.##.### Fusion Stack: V #.##.#### Cellular Manager: V #.##.#### UPKI Encryption: V #.##.### AES Lib: V ##.##.### Modem Firmware: V ##.##.###

Tab. 6.2: Status sub-menu parameters

Link Status

Parameter	Description
IP Address	Cellular Network. This field displays the current Cellular Network IP Address. An IP address of 0.0.0.0 is listed when no IP address is found.
	Ethernet Network. This field displays the current Ethernet Network IP Address. An IP address of 0.0.0.0 is listed when no IP address is found.
Link Status	Cellular Network. This field displays the connection status to the cellular network. This field displays either OK, or Error.
	Ethernet Network. This field displays the connection status to the Ethernet network. This field displays either OK, or Error.
Encryption	This field displays either Normal, or Trouble:

Socket xx: Port Number	This field displays the current open Port Numbers and Data Types (up to 32).

Modem Status

The information below shows in the appropriate fields. If no modem status is detected, the following message appears: Modem status is not available.

Parameter	Description
Electrical Serial # (ESN)	This field displays the B44x radio modem serial number.
Data Status	This field displays one of the following; Disconnected, Connecting, or Connected.
Signal Strength	This field displays the current signal strength. One of the following appears; Very good, Good, Marginal, Unacceptable, or Unavailable.

Module Status

Module Status shows only when there is a trouble status.

- Primary power low or missing
- Battery missing
- Battery low voltage
- Battery failed to charge
- Battery charger failed
- B44x plug-in missing
- B44x plug-in invalid
- No cellular IP address
- Signal strength low
- No towers
- B44x not active
- B44x failure
- Configuration failure
- Invalid configuration
- Firmware checksum error
- Configuration checksum error
- SIM missing
- SIM PIN wrong
- SIM PIN not needed
- SIM PIN lockout
- Invalid access point
- No Ethernet IP address
- Tampered
- Ethernet DNS lookup error, primary receiver
- Cellular DNS lookup error, primary receiver
- Ethernet DNS lookup error, secondary receiver
- Cellular DNS lookup error, secondary receiver
- Ethernet DNS lookup error, IPv4 test address
- Ethernet DNS lookup error, IPv6 test address
- Cellular DNS lookup error, IPv4 test address
- Cellular DNS lookup error, IPv6 test address
- Supervision of primary receiver over Ethernet failed
- Supervision of primary receiver over cellular failed
- Supervision of secondary receiver over Ethernet failed
- Supervision of secondary receiver over cellular failed
- Communication failure
- Phone line 1 shorted
- Phone line 2 shorted
- Phone line 1 no data received
- Phone line 2 no data received
- Phone line 1 received data error
- Phone line 2 received data error

Advanced Status

You must enter the Status menu in order to get to Advanced Status.

Accessing the Advanced Status Menu parameters:

1. Enter the passcode to launch the USB menu.
2. Enter **[2] Advanced Status**. The Advanced Status option appears.

The following section describes the description of the Advanced Status menu information.

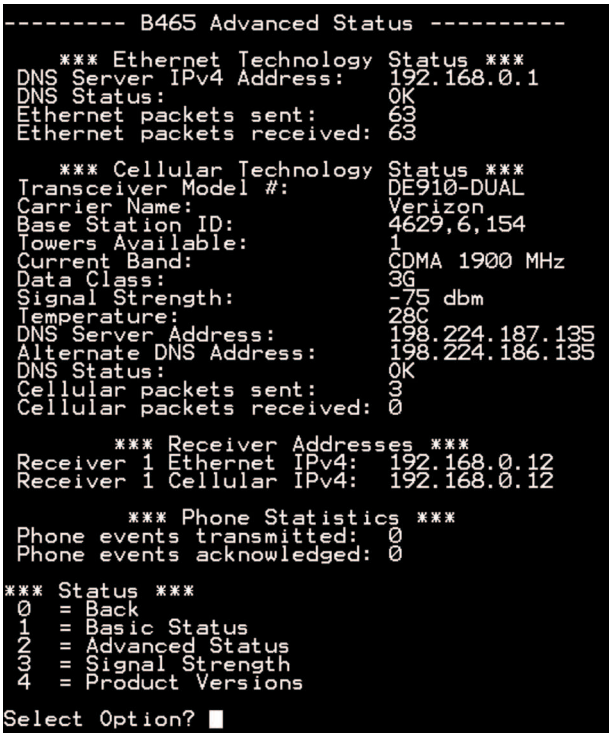


Figure 6.10: Advanced Status screen

Advanced Link Status

Parameter	Description
Internet (ping)	This field shows one of the following; OK, Error, No Status (no ping has been performed).
IPv4 DNS Server IP Address	This field shows the current IP sddress.
Alternate IPv4 DNS Server IP Address	This field shows an alternate IP address.
DNS Status	This field shows one of the following; OK, Error, No Status (no DNS lookup (has been performed).
UDP Packets Transmitted	This field shows the packets transmitted over the Ethernet or cellular reporting path from power up, or Option 3 (Reset Status).

Advanced Modem Status

Parameter	Description
Transceiver Model number	This field shows one of the following; DE910-DUAL, CE910-DUAL, GE910-QUAD, HE910-D.
Carrier Name	This field shows the carrier network providing service.
Data Status	This field shows one of the following; Disconnected, Connecting, or Connected.
Signal Strength	This field shows the current signal strength in dbm.

Parameter	Description
Towers Available	This field shows the number of towers that can be detected by the module.
Base Station ID	This field shows information about the tower you are currently connected to.
Current Band	This field shows the current band frequency.
Data Class	This field shows one of the following; 1xRTT, 3G, GPRS, EDGE, WCDMA, HSPA, 4G LTE.
Temperature	This field shows the internal temperature of the radio transceiver (in Celsius).

6.3.3 2 = Standard Communication Configuration, 3 = Advanced Communication Configuration

For information on the parameters in the Standard Communication Configuration menu and Advanced Communication Configuration menu refer to *Communication Configuration, page 58*.

6.3.4 4 = System Configuration

For information on the parameters in the System Configuration menu refer to *System Configuration, page 72*.

6.3.5 5 = Input Configuration, 6 = Output Configuration

For information on the parameters in the Input Configuration menu and Output Configuration menu refer to *Input Configuration, page 78* and *Output Configuration, page 79*.

6.3.6 8 = Maintenance

This option allows you to configure various maintenance-related activities to your B465 module. Various activities include changing the passcode, running diagnostics, resetting to factory default settings, perform firmware upgrades, clear/reset status, and other tests. For a full listing and parameter description, refer to the table below.

Setting the Maintenanceoption:

1. Enter the B465 passcode.
2. Select [8] Maintenance.
3. Enter the desired options.

Refer to the table below for Maintenance and Maintenance sub-menu descriptions.

Option	Press to start	Description

*1. Diagnostic	1	Select this option to run various diagnostic procedures. Available options include: – Modify Diagnostic Settings. Use this option to determine which type of messages display during diagnostics. This option is for use only under Bosch direction. A sub-menu of options includes: – Receiver Communications Verbose Mode – Cellular Modem Verbose Mode – Network Communications Verbose Mode – Network Operations Verbose Mode – Input Power & Battery Verbose Mode – Module Operations Verbose Mode – All Verbose Modes Off – Re-print Saved Console Message. Use this option to print any diagnostic messages that have already occurred and are stored in the B465's buffer. This can print what just happened if an issue occurs. – Enable Live Console Messages. Use this option to provide real time output of diagnostic messages. This allows the computer running TeraTerm to log what is occurring in the module and can log for longer periods of time. – LED/Sounder Test. Use this option to test the operation of the piezo sounder. – Communicator Test Menu. Use this option to test communication paths between the B465 and the connected receivers.
2. Change Passcode	2	Select this option to change the passcode used to enter in the USB menu. Enter a new passcode twice to change it. The second entry confirms the new passcode. Passcodes must be 4-10 characters long, and are case-sensitive. 0-9, A-Z, a-z, and special characters are allowed.
3. Reset to Factory Defaults	3	Select this option to reset all factory default values. All fields are cleared and the factory default values are restored.
4. Clear/ Reset Status	4	Select this option to reset the B465 status.
5. Firmware Update	5	Select this option to update the B465 firmware. For firmware update instructions, refer to *Firmware Update, page 53*.
*The Diagnostic parameter is used in troubleshooting communication issues with the B465. Use of the Diagnostic parameter is to be used only at the direction of TECHNICAL SUPPORT.		

6.4 Firmware Update

You can update the B465 firmware through the USB interface and a communication program such as Tera Term, or with RPS. For Tera Term installation instructions, refer to *USB and TeraTerm, page 37*.

Download firmware

Notice!
Down load the latest B465 firmware first
No changes to the firmware occur if the downloaded firmware version is the same version as the current version installed on the B465.

Notice!
B465 firmware v1.00.005 supports the latest versions of the B440 and B441 plug-in cellular modules (B440 v15.00.026 and B441 v18.02.022)
The latest B440/B441 firmware includes updated libraries to maintain Verizon certification. Before inserting the B440/B440-C or B441/B441-C cellular communication module that contains a Technical Service Note, verify your B465 is updated to the latest firmware version. If you plug **in B440 v15.00.026 and B441 v18.02.022** without having the **B465 firmware v1.00.005 or higher** installed, the B465 registers on the network but will not obtain an IP address or send data.

Update with the USB interface and Tera Term

To update the B465 using the USB interface and Tera Term, follow the steps below.

1. Ensure that the USB cable is connected to the B465 and the target PC or laptop.
2. From Windows, start a terminal session by launching Tera Term.
3. Log into the USB interface as described in Log into the USB interface, starting at *step 3*, and continuing through to *step 6*. The B465 USB login window appears, listing the current software version and build.

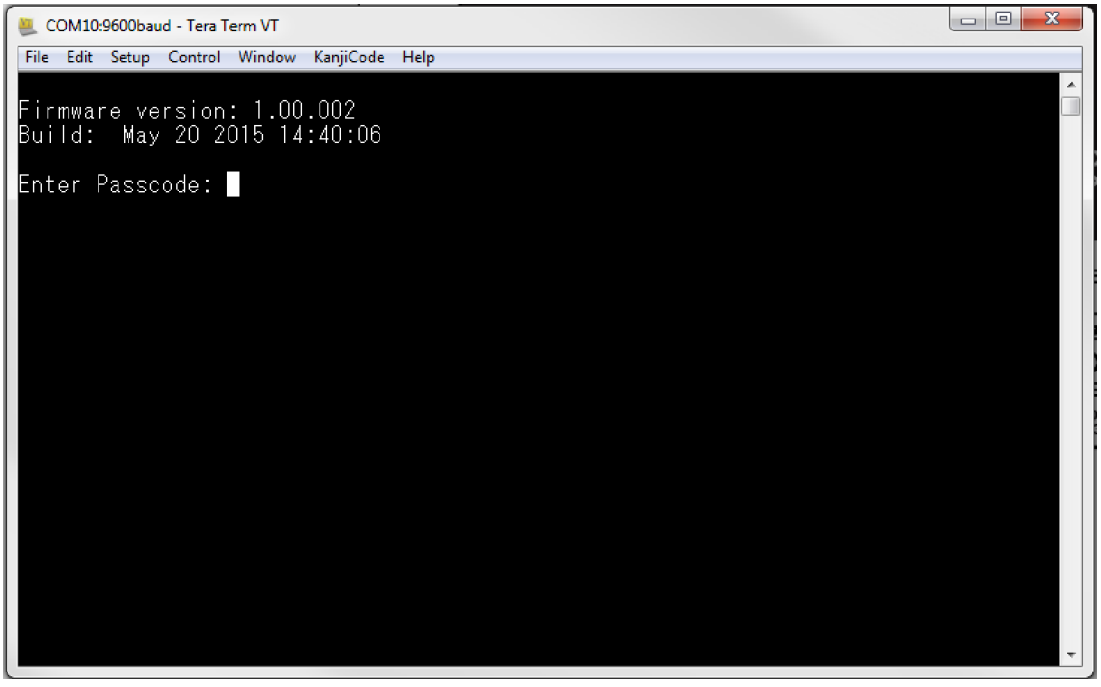
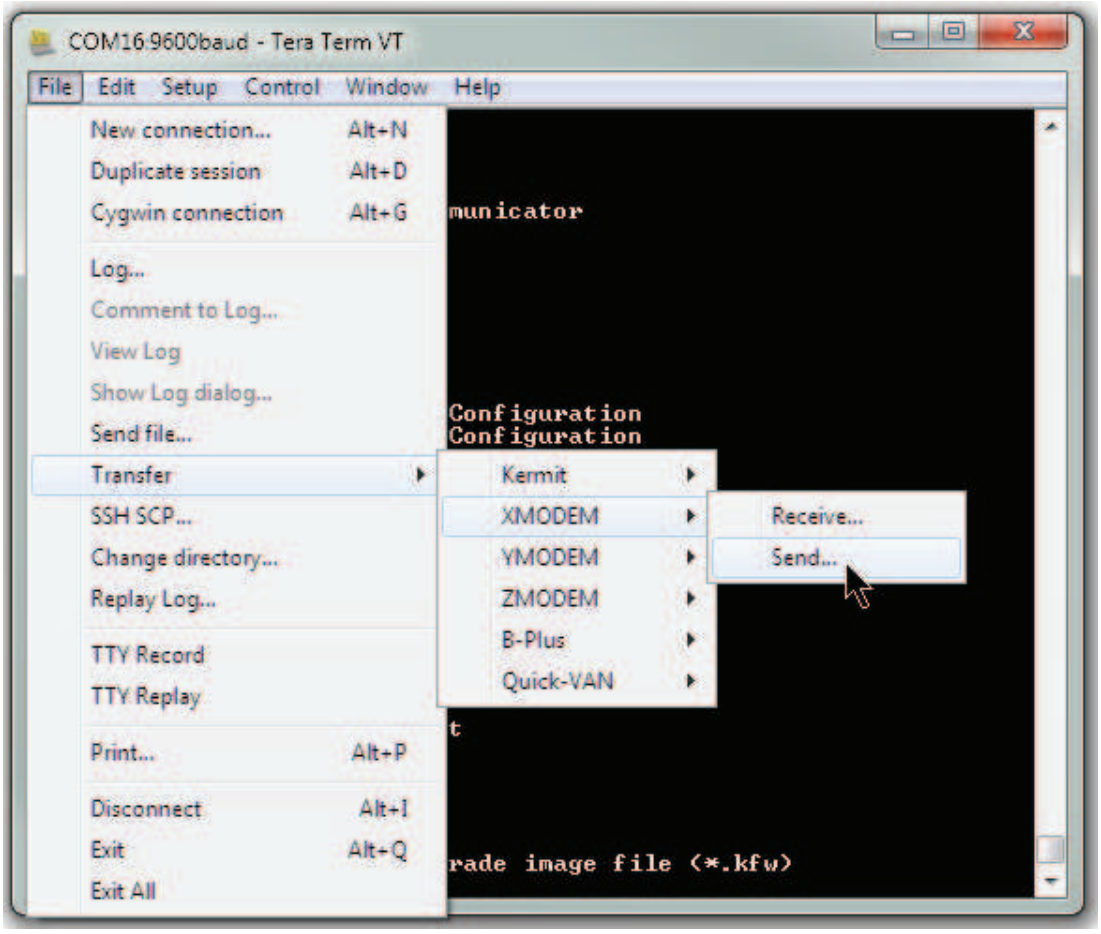


Figure 6.11: B465 USB login window

4. Select option 8 Maintenance.
5. Select option 5 Firmware Update and press [Enter].

Notice!
Once the Firmware Update menu item is selected, the B465 begins a 90 second timer as it waits for the firmware **File>Transfer>XMODEM>**Send process to begin. If the transfer process takes longer than 90 second to locate the file and begin the send process, the menu times out, and the user must begin the update process again.

6. From the Tera Term main menu, select File>Transfer>XMODEM>Send.



7. In the XMODEM Send dialog window, navigate to the folder location and select the firmware update software you downloaded. The file ends in *.kfw extension.

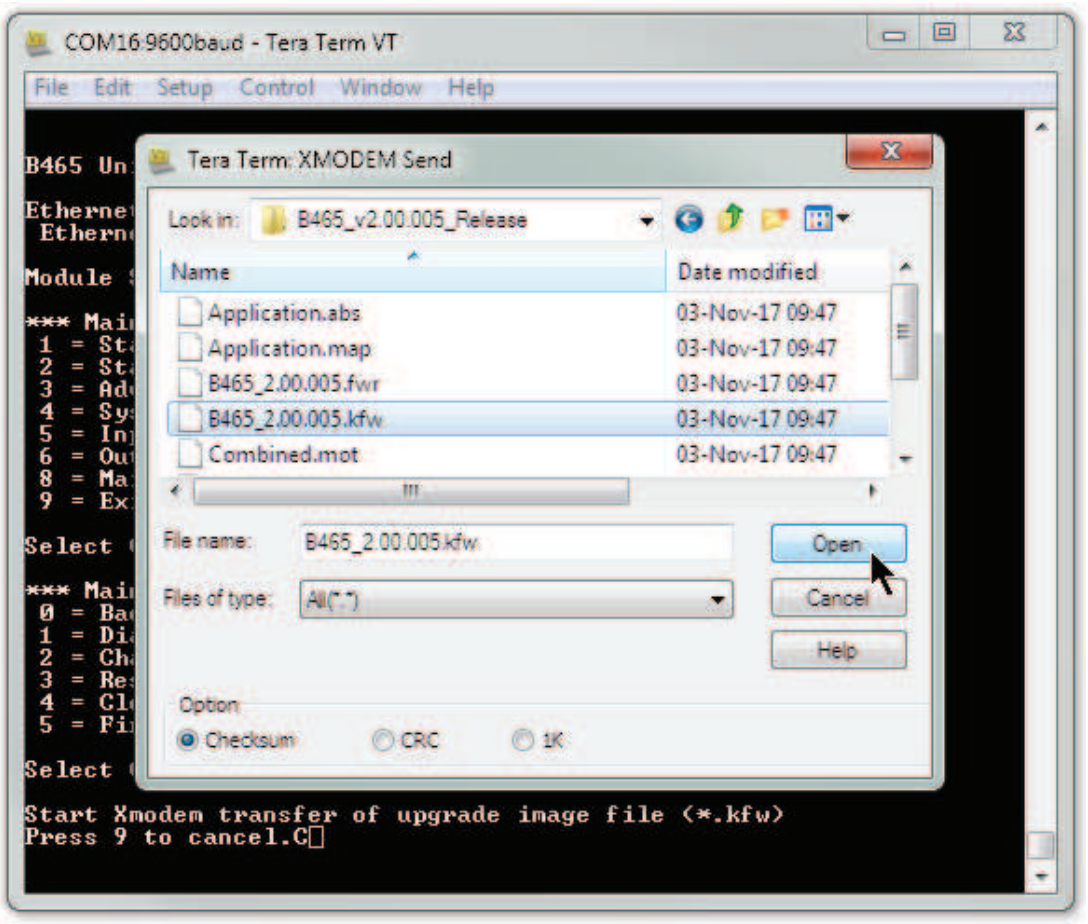


Figure 6.12: File navigation

8. Click Open to start the firmware update. The Tera Term: XMODEM Send dialog box opens and indicates the update process.

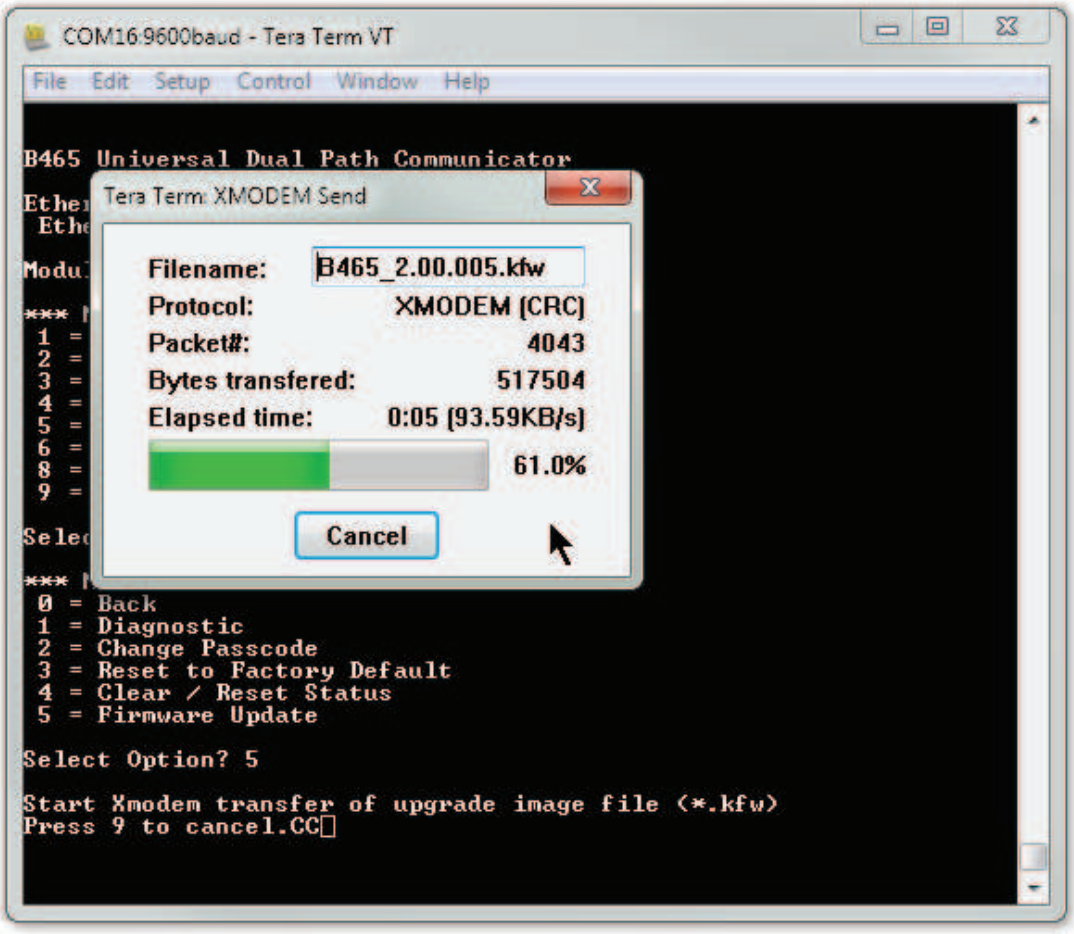


Figure 6.13: Tera Term XMODEM Send dialog box

9. When the file transfer completes, the Tera Term: XMODEM Send dialog box closes automatically. Within the Tera Term window, an updating to firmware version “x.xx.xxx” message displays, and the B465 automatically reboots.
10. Close the Tera Term session, and re-launch Tera Term.

Notice!
Do not power off the module during this phase
Powering off might cause permanent damage to the B465.

11. Log back into Tera Term as described previously to re-establish communication from your laptop to the B465 .

Communication between the B465, receiver(s), and the connected control panel is restored.

7 Communication Configuration

Use the parameters in this section to configure the B465 for communication to a central station receiver over an IP network.

7.1 Account Number / NNC Number

Default: [blank]
Selections: 0-9, A-F (up to 10 digits)
Enter a 1 to 10 digit account number.
The B465 uses the account number to make an 8 digit NNC Number for sending reports to the central station receiver. If you enter less than 8 digits the B465 adds zeroes to make the NNC number. For example if you enter 123 for the account number , the NNC number is 00000123. If you enter a 9 or 10 digit account number the B465 uses only 8 digits. For example, if you enter 1234567890 for the account number, the NNC number is 34567890.
USB Menu Location
[2] Standard Communication Configuration > [1] Account Number / NCC Number

7.2 Substitute Account Number

Default: Disabled
Selections:
– Enabled - Before the B465 sends the reports from the control panel to the central station receiver, it substitutes (replaces) the account number in the report with the Alternate Account Number.
– Disabled - the B465 does not replace the account number in reports.
USB Menu Location
[3] Advanced Communication Configuration > [1] Account Setup > [5} Substitute Account Number

7.3 Alternate Account Number

Default: [blank]
Selections: 0-9, A-F (up to 10 digits)
When the Substitute Account Number parameter is set to Enabled, the B465 replaces the account number in the report from the control panel with the Alternate Account Number.
Enter a 1 to 10 digit account number.
When the B465 replaces the account number, it modifies the Alternate Account Number to meet the requirements of the reporting format of the report from the panel. Refer to the table below.

Reporting format (report from panel)	Account number minimum length (digits)	Account number maximum length (digits)
Modem IIe / IIIa[2]	4	10
Modem II	4	4
Contact ID	4	10
Pulse 1400/2300 (3x1, 3x1e)	3	3
Pulse 1400/2300 (4x2)	4	4
SIA DC-03	2	6

Tab. 7.3: Reporting format / Account number length

For example, if the account number in the report from the panel is 1234, the reporting format for the report is SIA DC-03, and the Alternate Account Number is 1234567890, the B465 replaces 1234 with 567890. The maximum length for an account number in the SIA DC-03 reporting format is 6 digits.
A second example, if the account number in the report from the panel is 1234, the reporting format for the report is Modem II, and the Alternate Account Number is 8, the B465 replaces 1234 with 0008. The minimum length for an account number in the Modem II reporting format is 4 digits.

USB Menu Location

[3] Advanced Communication Configuration > [1] Account Setup > [6} Alternate Account Number

7.4 Preferred Network Technology

Default: Ethernet

Selections:

– Ethernet - the B465 uses the on-board Ethernet connector for network communication.
– Cellular - the B465 uses an optional plug-in cellular communicator for network communication.

The B465 uses the preferred network technology you select here for sending reports to the central station receiver. If communication to the central station receiver fails and the Alternate Network Technology is enabled, the B465 tries to send reports using the Alternate Network Technology.
If you set this parameter to Ethernet, Cellular is the Alternate Network Technology.
If you set this parameter to Cellular, Ethernet is the Alternate Network Technology.
Refer to *Alternate Network Technology, page 59*.

USB Menu Location

[2] Standard Communication Configuration > [2] Preferred Network Technology
- or -
[3] Advanced Communication Configuration > [1] Account Setup > [2} Preferred Network Technology

7.5 Alternate Network Technology

Default: Disabled

Selections:

– Enabled - when the Preferred Network Technology is not available, the B465 uses the Alternate Network Technology.
– Disabled - the B465 does not use the Alternate Network Technology.

If the Preferred Network Technology parameter is set to Ethernet, then Cellular is the Alternate Network Technology.
If Preferred Network Technology parameter is set to Cellular, then Ethernet is the Alternate Network Technology.
Refer to *Preferred Network Technology, page 59*.

USB Menu Location

[2] Standard Communication Configuration > [3] Preferred Network Technology
- or -
[3] Advanced Communication Configuration > [1] Account Setup > [3} Preferred Network Technology

7.6 Cloud (Remote Connect)

Use the parameters in this section to configure the B465 to connect to RPS using Remote Connect (Cloud) service for Ethernet IP or Cellular IP communication.

7.6.1 Cloud (Remote Connect) Ethernet

Default: Disabled

Selections:

– Enabled - use the on-board Ethernet connector for Cloud (Remote Connect) connections.

– Disabled - do not use the on-board Ethernet connector.

Remote Connect is a Bosch Cloud-based Service that allows RPS to connect to the B465 for programming and diagnostics.

Notice!

Bosch Installer Services, Remote Connect subscription required

Before you can use Remote Connect for RPS connections you need to visit https://installerservices.boschsecurity.com/ to sign up for Bosch Installer Services.

USB Menu Location

[3] Advanced Communication Configuration > [1] Account Setup > [7} Cloud (Remote Connect) Ethernet

7.6.2 Cloud (Remote Connect) Cellular

Default: Disabled

Selections:

– Enabled - use an optional plug-in cellular communicator for Cloud (Remote Connect) connections.

– Disabled - do not use an optional plug-in cellular communicator.

Remote Connect is a Bosch Cloud-based Service that allows RPS to connect to the B465 for programming and diagnostics.

Notice!

Bosch Installer Services, Remote Connect subscription required

Before you can use Remote Connect for RPS connections you need to visit https://installerservices.boschsecurity.com/ to sign up for Bosch Installer Services.

Notice!

Cellular is back up when both Cloud (Remote Connect) Ethernet and Cloud (Remote Connect) Celluar are enabled.

When both the Cloud (Remote Connect) Ethernet and Cloud (Remote Connect) Celluar parameters are set to Enabled, the B465 only uses the cellular cloud connection if the Ethernet cloud connection fails.

USB Menu Location

[3] Advanced Communication Configuration > [1] Account Setup > [8} Cloud (Remote Connect) Cellular

7.7 Primary Receiver

You can configure the B465 to send reports to one or two central station receivers (primary receiver, secondary receiver). Use the parameters in this section to configure for the primary receiver.

7.7.1 Ethernet IP Address / Host Name

Default: blank

Selections:

– IPv4 - 0.0.0.0 to 255.255.255.255

– IPv6 - 0000:0000:0000:0000:0000:0000:0000:0000 to FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF

Enter an IPv4 address, an IPv6 address, or host name.

The B465 uses this IP address to send reports to the central station receiver over Ethernet technology.

Further information

IP Address and Domain Name formats

USB Menu Location

[2] Standard Communication Configuration > [4] Primary Receiver > [2] Ethernet IP Address / Host Name

- or -

[3] Advanced Communication Configuration > [2] Receiver Setup > [1] Primary Receiver > [2] Ethernet IP Address / Host Name

7.7.2 Port Number

Default: 7700

Selections: 1 to 65,535

This is the port number the B465 uses for communication with the central station receiver.

USB Menu Location

[2] Standard Communication Configuration > [4] Primary Receiver > [1] Port Number

- or -

[3] Advanced Communication Configuration > [2] Receiver Setup > [1] Primary Receiver > [1] Port Number

7.7.3 Ethernet Supervision Time

Default: 1 hour

Selections:

– No polling

– 90 seconds

– 180 seconds

– 200 seconds

– 5 minutes

– 1 hour

– 4 hours

– 24 hours

The B465 must receive an ACK (acknowledgement) to a heartbeat poll within the time defined by the Ethernet Supervision Time parameter. To reduce network traffic, the B465 adjusts the heartbeat poll rate, ACK wait time, and Retry Count to support the Ethernet Supervision Time you select.

If the B465 does not receive an ACK to a heartbeat poll after the retry count is met, it creates a Communication Trouble event.

USB Menu Location

[2] Standard Communication Configuration > [4] Primary Receiver > [3] Ethernet Supervision Time

- or -

[3] Advanced Communication Configuration > [2] Receiver Setup > [1] Primary Receiver > [3] Ethernet Supervision Time

7.7.4 Cellular IP Address / Host Name

Default: blank

Selections:

– IPv4 - 0.0.0.0 to 255.255.255.255
– IPv6 - 0000:0000:0000:0000:0000:0000:0000:0000 to FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF

Enter an IPv4 address, an IPv6 address or host name.
The B465 uses this IP address to send reports to the central station receiver over Cellular technology.

Further information

IP Address and Domain Name formats

USB Menu Location

[2] Standard Communication Configuration > [4] Primary Receiver > [4] Cellular IP Address / Host Name
- or -
[3] Advanced Communication Configuration > [2] Receiver Setup > [1] Primary Receiver > [4] Cellular IP Address / Host Name

7.7.5 Cellular Supervision Time

Default: 1 hour

Selections:

– No polling
– 90 seconds
– 180 seconds
– 200 seconds
– 5 minutes
– 1 hour
– 4 hours
– 24 hours

The B465 must receive an ACK (acknowledgement) to a heartbeat poll within the time defined by the Cellular Supervision Time parameter. To reduce network traffic, the B465 adjusts the heartbeat poll rate, ACK wait time, and Retry Count to support the Cellular Supervision Time you select.
If the B465 does not receive an ACK to a heartbeat poll after the retry count is met, it creates a Communication Trouble event.

USB Menu Location

[2] Standard Communication Configuration > [4] Primary Receiver > [5] Cellular Supervision Time
- or -
[3] Advanced Communication Configuration > [2] Receiver Setup > [1] Primary Receiver > [5] Cellular Supervision Time

7.7.6 AES Encryption, Key Size

Default: No Encryption (Disabled)

Selections:

– No Encryption (Disabled)
– 128 bits - 16 bytes

– 192-bit - 24 bytes
– 256-bit - 32 bytes

Select the key size for AES encryption.

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [1] Primary Receiver > [6] AES Encryption

7.7.7 AES Encryption Key

Default: <Default> (not encrypted)

Selections: Thirty-two hexadecimal characters represented by an ID (01 to 100).

The AES Encryption Key is based on AES Key Size.

AES key strings are configured in Config > System > Encryption Key Tab

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [1] Primary Receiver > [7] AES Encryption Key

7.8 Number of Receivers

Default: 1

Selections: 1, 2

– 1 - the B465 uses only one receiver (primary).
– 2 - configure the B465 to use a secondary receiver.

You must set this parameter to 2, to configure the parameters for the secondary receiver.

USB Menu Location

[3] Advanced Communication Configuration > [1] Account Setup > [4} Number of Receivers

7.9 Secondary Receiver

You can configure the B465 to send reports to one or two central station receivers (primary receiver, secondary receiver). Use the parameters in this section to configure the secondary receiver.

To access these parameters for the secondary receiver, you must set the Number of Receivers parameter to 2.

[3] Advanced Communication Configuration > [1] Account Setup > [4} Number of Receivers

7.9.1 Ethernet IP Address / Host Name

Default: blank

Selections:

– IPv4 - 0.0.0.0 to 255.255.255.255
– IPv6 - 0000:0000:0000:0000:0000:0000:0000:0000 to FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF

Enter an IPv4 address, an IPv6 address, or host name.

The B465 uses this IP address to send reports to the central station receiver over Ethernet technology.

Further information

IP Address and Domain Name formats

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [2] Secondary Receiver > [2] Ethernet IP Address / Host Name

7.9.2 Port Number

Default: 7700

Selections: 1 to 65,535

This is the port number the B465 uses for communication with the central station receiver.

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [2] Secondary Receiver > [1] Port Number

7.9.3 Ethernet Supervision Time

Default: 1 hour

Selections:

- No polling
- 90 seconds
- 180 seconds
- 200 seconds
- 5 minutes
- 1 hour
- 4 hours
- 24 hours

The B465 must receive an ACK (acknowledgement) to a heartbeat poll within the time defined by the Ethernet Supervision Time parameter. To reduce network traffic, the B465 adjusts the heartbeat poll rate, ACK wait time, and Retry Count to support the Ethernet Supervision Time you select.

If the B465 does not receive an ACK to a heartbeat poll after the retry count is met, it creates a Communication Trouble event.

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [2] Secondary Receiver > [3] Ethernet Supervision Time

7.9.4 Cellular IP Address / Host Name

Default: blank

Selections:

- IPv4 - 0.0.0.0 to 255.255.255.255
- IPv6 - 0000:0000:0000:0000:0000:0000:0000:0000 to FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF

Enter an IPv4 address, an IPv6 address or host name.

The B465 uses this IP address to send reports to the central station receiver over Cellular technology.

Further information

IP Address and Domain Name formats

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [2] Secondary Receiver > [4] Cellular IP Address / Host Name

7.9.5 Cellular Supervision Time

Default: 1 hour

Selections:

- No polling
- 90 seconds
- 180 seconds

– 200 seconds
– 5 minutes
– 1 hour
– 4 hours
– 24 hours

The B465 must receive an ACK (acknowledgement) to a heartbeat poll within the time defined by the Cellular Supervision Time parameter. To reduce network traffic, the B465 adjusts the heartbeat poll rate, ACK wait time, and Retry Count to support the Cellular Supervision Time you select.

If the B465 does not receive an ACK to a heartbeat poll after the retry count is met, it creates a Communication Trouble event.

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [2] Secondary Receiver > [5] Cellular Supervision Time

7.9.6 AES Encryption, Key Size

Default: No Encryption (Disabled)

Selections:

– No Encryption (Disabled)
– 128 bits - 16 bytes
– 192-bit - 24 bytes
– 256-bit - 32 bytes

Select the key size for AES encryption.

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [2] Secondary Receiver > [6] AES Encryption

7.9.7 AES Encryption Key

Default: <Default> (not encrypted)

Selections: Thirty-two hexadecimal characters represented by an ID (01 to 100).

The AES Encryption Key is based on AES Key Size.

AES key strings are configured in Config > System > Encryption Key Tab

USB Menu Location

[3] Advanced Communication Configuration > [2] Receiver Setup > [21] Secondary Receiver > [7] AES Encryption Key

7.10 Ethernet Setup

Use the parameters in this section to configure the B465 for IPv6 or IPv4 communication.

7.10.1 IPv6 Mode

Default: Disabled

Selections:

– Enabled - use IPv6 mode (Internet Protocol version 6) for IP communications.
– Disabled - use IPv4 mode (Internet Protocol version 4) for IP communications.

USB Menu Location

[3] Advanced Communication Configuration > [3] Ethernet Setup > [1] IPv6 Configuration > [1] IPv6 Mode

7.10.2 IPv6 DNS Server IP Address

Default: blank

Selections: 0000:0000:0000:0000:0000:0000:0000:0000 to FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
This parameter sets the IPv6 DNS server address for Static IP mode.
When this address is set by the DHCP service, do not change it.
A Domain Name Server (DNS) converts internet domain names or hostnames to their corresponding IP addresses. In DHCP mode, the DHCP server's default DNS is used. To use a custom DNS server in DHCP mode, change the parameter to the custom DNS server's IP address.
This IPv6 DNS server address is the only IPv6 address entered as numbers.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [1] IPv6 Configuration > [2] IPv6 DNS Server IP Address

7.10.3 Alternate IPv6 DNS Server IP Address

Default: blank
Selections: 0000:0000:0000:0000:0000:0000:0000:0000 to FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF:FFFF
This parameter sets the IPv6 DNS server address for Static IP mode.
When this address is set by the DHCP service, do not change it.
A Domain Name Server (DNS) converts internet domain names or hostnames to their corresponding IP addresses. In DHCP mode, the DHCP server's default DNS is used. To use a custom DNS server in DHCP mode, change the parameter to the custom DNS server's IP address.
This IPv6 DNS server address is the only IPv6 address entered as numbers.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [1] IPv6 Configuration > [3] Alternate IPv6 DNS Server IP Address

7.10.4 IPv6 test address

Default: 2001:4860:4860::8888
Selections: IPv6 address or Domain Name
The B465 pings the IPv6 Test Address to verify the integrity of the network and the network configuration settings.
The default test address works for most networks.
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [1] IPv6 Configuration > [4] Alternate IPv6 Test Address

7.10.5 IPv4 DHCP/AutoIP

Default: Enabled
Selections:
– Enabled - DHCP automatically sets the IP Address, IP Default Gateway, and IP DNS Server Address. AutoIP enables dynamic IP addresses to be assigned to devices at start-up.
– Disabled - Set this parameter to Disabled if there is no DHCP service. Manually set the IP Address, IP Default Gateway, and IP DNS Server Address.

DHCP requires a DHCP server.

USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [2] IPv4 Configuration > [1] IPv4 DHCP/AutoIP

7.10.6 IPv4 Address

Default: 0.0.0.0
Selections: 0.0.0.0 to 255.255.255.255
If DHCP/Auto IP for IPv4 is set to Enabled, this parameter is grayed out (no access to it).
If DHCP/Auto IP for IPv4 is set to Disabled, enter the IPv4 address here.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [2] IPv4 Configuration > [2] IPv4 Address

7.10.7 IPv4 Subnet Mask

Default: 255.255.255.0
Selections: 0.0.0.0 to 255.255.255.255
If DHCP/Auto IP for IPv4 is set to Enabled, this parameter is grayed out (no access to it).
If DHCP/Auto IP for IPv4 is set to Disabled, enter the IPv4 sub-network mask here.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [2] IPv4 Configuration > [3] IPv4 Subnet Mask

7.10.8 IPv4 Default Gateway

Default: 0.0.0.0
Selections: 0.0.0.0 to 255.255.255.255
If DHCP/Auto IP for IPv4 is set to Enabled, this parameter is grayed out (no access to it).
If DHCP/Auto IP for IPv4 is set to Disabled, enter the Default Gateway address here.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [2] IPv4 Configuration > [4] IPv4 Gateway

7.10.9 IPv4 DNS Server IP Address

Default: 0.0.0.0
Selections: 0.0.0.0 to 255.255.255.255
A Domain Name Server (DNS) converts internet domain names or hostnames to their corresponding IP addresses. In DHCP mode, the DHCP server's default DNS is used. To use a custom DNS server in DHCP mode, enter the custom DNS server's IP address here.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [2] IPv4 Configuration > [5] IPv4 DNS Server IP Address

7.10.10 Alternate IPv4 DNS Server IP Address

Default: 0.0.0.0

Selections: 0.0.0.0 to 255.255.255.255

If the B465 fails to obtain an address from the primary server, it tries the alternate DNS server. Enter the IP address for the alternate IPv4 DNS server.

Further information

IP Address and Domain Name formats

USB Menu Location

[3] Advanced Communication Configuration > [3] Ethernet Setup > [2] IPv4 Configuration > [6] Alternate IPv4 DNS Server IP Address

7.10.11 IPv4 Test Address

Default: 8.8.8.8

Selections: IPv4 address or Domain Name

The B465 pings the IPv4 Test Address to verify the integrity of the network and the network configuration settings.

The default test address works for most networks.

Further information

IP Address and Domain Name formats

USB Menu Location

[3] Advanced Communication Configuration > [3] Ethernet Setup > [2] IPv4 Configuration > [7] IPv4 Test Address

7.10.12 UPnP (Universal Plug and Play)

Default: Enabled

Selections:

Enabled - use UPnP to open a port forwarder for inbound RPS connections

Disabled - do not use UPnP

The UPnP parameter has no effect on event reporting to a central station receiver.

When this parameter is set to Enabled, the B465 sends a request to the premises router to open a port forwarder. The port forward allows inbound RPS connections.

Notice!

UPnP requires IP Address / Host Name and Panel Port be configured

In the Panel Data - View, Network tab, verify that the IP Address / Host Name and Panel Port parameters are configured.

USB Menu Location

[3] Advanced Communication Configuration > [3] Ethernet Setup > [3] UPnP (Universal Plug and Play)

7.10.13 ARP cache timeout (minutes)

Default: 10

Selections: 2 to 20 (minutes)

This parameter specifies the time-out for ARP cache entries.

USB Menu Location

[3] Advanced Communication Configuration > [3] Ethernet Setup > [4] ARP cache timeout (min)

7.10.14 B465 Hostname

Default: [blank]

Selections: Up to sixty-three characters (letters, numbers, and dashes)
The hostname identifies the B465 on the network. Leave this parameter blank to use the factory default hostname, or enter a custom hostname.

Notice!
Leave this parameter blank to use factory default hostname
The factory default hostname begins with the letter B, followed by the last six digits of the modules MAC address.

Use the hostname on a local network using DHCP. To use the hostname externally, you must enter the hostname in the DNS server.
You can use the hostname to connect to the B465 with RPS for configuration and diagnostics.
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [5] Module Hostname

7.10.15 TCP/UDP Port Number

Default: 7700
Selections: 1 - 65535
For IP communications with RPS, in typical installations, keep the port number at the default.
USB Menu Location
[3] Advanced Communication Configuration > [3] Ethernet Setup > [6] TCP/UDP Port Number

7.11 Cellular Setup / Cellular Plug-in Module

Use the parameters in this section to configure the B465 for the cellular plug-in communicator module.

7.11.1 Network Access Point Name (APN)

Default: EAAA.BOSCH.VZWENTP
Selections: 0-99, A-Z, a-z, **-** , **:** , **.**
This parameter sets the network access point name (APN). Enter up to 99 characters. The field is case sensitive.

Notice!
The default APN, **EAAA.BOSCH.VZWENTP**, is new
The previous default, wyless.apn, is still valid. There is no need to change the APN for existing accounts.

USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [1] Cellular Plug-in Module > [1] Network Access Point Name (APN)

7.11.2 Network Access Point User Name

Default: Blank
Selections: 0-30 ASCII characters
Enter up to 30 ASCII characters for the Network Access Point user name.
The user name is case sensitive.
USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [1] Cellular Plug-in Module > [2] Network Access Point User Name

7.11.3 Network Access Point Password

Default: Blank

Selections: 0-30 ASCII characters
Enter up to 30 ASCII characters for the Network Access Point password.
The password is case sensitive.
USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [1] Cellular Plug-in Module > [3] Network Access Point Password

7.11.4 SIM PIN

Default: Blank
Selections: 4-8 numbers
Use this parameter only for SIM cards requiring a PIN.
If a SIM PIN is not required, leave the field blank.
The SIM PIN appears as asterisks (********) as you enter it. If you enter an invalid SIM PIN, an event is logged. A report is sent only if the report function is enabled.
USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [1] Cellular Plug-in Module > [4] SIM PIN

7.11.5 Inbound SMS

Default: Enabled
Selections:
– Enabled - the B465 processes inbound SMS text messages.
– Disabled - the B465 does not process inbound SMS text messages.
USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [2] Inbound SMS

7.11.6 Reporting Delay for Low Signal Strength (minutes)

Default: 0
Selections: 0 (disabled) - 60 (minutes)
Time in minutes of low signal strength (red LED on cellular communicator) before the control panel creates a Cellular Low Signal event.
Low signal is defined as 80% of the measurements taken during the time period are below the threshold).
The B465 creates a Cellular Low Signal Restoral event when the signal strength is good (green LED on cellular communicator) for the number of seconds this Reporting Delay for Low Signal Strength parameter.
Good signal is defined as 80% of the measurements taken during the time period are above the threshold.

Notice!
UL Requirement
To meet UL requirements, the entry for this parameter should not exceed 3 minutes.

USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [3] Reporting Delay for Low Signal Strength (min.)

7.11.7 Reporting Delay for No Towers (minutes)

Default: 0
Selections: 0 (disabled) - 60 (minutes)

When the cellular plug-in module hears no towers for the minutes set by this parameter the B465 creates a No Towers event and a No IP Address event.
The B465 creates a No Tower restoral event when the cellular plug-in module hears one or more towers for the minutes set by this parameter.
The B465 creates a No IP Address restoral event when the cellular plug-in module registers with one or more towers and receives an IP address within 1 minute.

Notice!
When one or more towers are available, 1 minute delay for No IP Address event
If the cellular plug-in module successfully registers with one or more towers, but does not receive an IP address within 1 minute, the B465 creates a No IP Address event.

USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [4] Reporting Delay for No Towers (min.)

7.11.8 IPv4 DNS Server IP Address

Default: 0.0.0.0
Selections: 0.0.0.0 to 255.255.255.255
A Domain Name Server (DNS) converts internet domain names or hostnames to their corresponding IP addresses. In DHCP mode, the DHCP server's default DNS is used. To use a custom DNS server in DHCP mode, enter the custom DNS server's IP address here.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [5] IPv4 DNS Server IP Address

7.11.9 Alternate IPv4 DNS Server IP Address

Default: 0.0.0.0
Selections: 0.0.0.0 to 255.255.255.255
If the B465 fails to obtain an address from the primary server, it tries the alternate DNS server. Enter the IP address for the alternate IPv4 DNS server.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [6] Alternate IPv4 DNS Server IP Address

7.11.10 IPv4 Test Address

Default: 8.8.8.8
Selections: IPv4 address or Domain Name
The B465 pings the IPv4 Test Address to verify the integrity of the network and the network configuration settings.
The default test address works for most networks.

Further information
IP Address and Domain Name formats
USB Menu Location
[3] Advanced Communication Configuration > [4] Cellular Setup > [5] IPv4 DNS Server IP Address

8 System Configuration

Use the parameters in this section to configure the B465 for the Panel Phone Line, for supervision of the primary power, battery, and enclosure tamper, and for RPS.

8.1 Panel Phone Line Setup

Use the parameters in this section to configure the B465 panel phone line connection.

8.1.1 Panel Reporting Format

Default: Auto Detect

Selections:

- Auto Detect - the B465 cycles through the handshake tones for each panel reporting format until the control panel responds. The order is: 2300 Hz, 1400 Hz, Dual Tone, SIA, Modem II, Modem IIe/IIIa^2
- Dual Tone - handshake tone for Contact ID (SIA DC-05) reporting format
- 2300 Hz - for pulse formats that require a 2300 Hz handshake tone
- 1400 Hz - for pulse formats that require a 1400 Hz handshake tone
- SIA - handshake tone for SIA DC-03 format
- Modem II - handshake tone for Bosch (Radionics) Modem II format
- Modem IIe/IIIa^2 - handshake tone for Bosch (Radionics) Modem IIe and Modem IIIa^2 formats

Select the handshake tone for the reporting format the control panel connected to the B465 uses.

Notice!

Connected control panel might need the correct handshake sent first

The connected control panel might require that the correct handshake tone is sent first or it will not send the report. If you selected Auto Detect and the control panel is not sending reports, select the handshake tone for the reporting format the control panel uses.

USB Menu Location

[4] System Configuration > [1] Panel Phone Line Setup > [1] Panel Reporting Format

8.1.2 Tone Duration (milliseconds)

Default: 1000 (milliseconds)

Selections: 200 to 1500 (milliseconds)

The B465 uses this duration for the handshake tones for all reporting formats.

USB Menu Location

[4] System Configuration > [1] Panel Phone Line Setup > [2] Tone Duration

8.2 Primary Power Supervision

8.2.1 Primary Power Source

Default: AC

Selections:

- AC - the primary power source for the B465 is 16.5 VAC (D1640 and D1640-CA plug-in transformers, D1640-120WI wire-in transformer)
- DC - the primary power source for the B465 is 24 VDC.

USB Menu Location

[4] System Configuration > [2] Primary Power Supervision > [1] Primary Power Source

8.2.2 Primary Power Fail Delay

Default: 60

Selections: 0 to 255 (minutes)

When primary power is missing or low (brownout condition), the B465 waits for the minutes you enter here to create a primary power fail event.

USB Menu Location

[4] System Configuration > [2] Primary Power Supervision > [2] Primary Power Fail Delay

8.2.3 Primary Power Fail sends reports

Default: Enabled

Selections:

– Enabled - the B465 sends primary power fail and primary power restoral reports

– Disabled - the B465 sends primary power fail and primary power restoral reports.

The B465 waits the time set in the Primary Power Fail Delay parameter before sending AC Fail reports.

Notice!

UL 864 requirement for commercial fire

To comply with UL864 requirements for commercial fire systems, set this parameter to **Enabled**.

USB Menu Location

[4] System Configuration > [2] Primary Power Supervision > [3] Primary Power Fail sends reports

8.2.4 Primary Power Fail sets Trouble Output

Default: Disabled

Selections:

– Enabled - when primary power fails, the B465 sets the trouble output.

– Disabled - the B465 does not set the trouble output when primary power fails.

The B465 waits the time set in the Primary Power Fail Delay parameter before setting the trouble output.

Notice!

UL 864 requirement for commercial fire

To comply with UL864 requirements for commercial fire systems, set this parameter to **Enabled**.

USB Menu Location

[4] System Configuration > [2] Primary Power Supervision > [4] Primary Power Fail sets Trouble Output

8.3 Battery Supervision

8.3.1 Battery Monitoring

Default: Enabled

Selections:

– Enabled - the B465 monitors the battery for low and missing conditions.

– Disable - the B465 does not monitor the battery.

The battery voltage must be below 12.1 volts for 16 seconds before the B465 creates a low battery event. It takes between 10 and 60 seconds to sense a missing battery.

Notice!
UL 864 requirement for commercial fire
To comply with UL864 requirements for commercial fire systems, set this parameter to **Enabled**.

USB Menu Location
[4] System Configuration > [3] Battery Supervision > [1] Battery Monitoring

8.3.2 Battery faults send reports

Default: Enabled
Selections:
– Enabled - the B465 sends reports for low and missing battery faults.
– Disabled - the B465 does not send reports for battery faults.

Notice!
UL 864 requirement for commercial fire
To comply with UL864 requirements for commercial fire systems, set this parameter to **Enabled**.

USB Menu Location
[4] System Configuration > [3] Battery Supervision > [2] Battery faults send reports

8.3.3 Battery faults set Trouble Output

Default: Disabled
Selections:
– Enabled - when there is a battery fault, the B465 sets the trouble output.
– Disabled - the B465 does not set the trouble output for battery faults.
USB Menu Location
[4] System Configuration > [3] Battery Supervision > [3] Battery faults set Trouble Output

8.4 Tamper

Use the parameters in this section to configure the B465 to monitor an enclosure tamper switch.

8.4.1 Tamper sends reports

Default: Disabled
Selections:
– Enabled - the B465 sends reports and sets the trouble LED for faults on the tamper circuit.
– Disabled - the B465 does not send reports or set the trouble LED for faults on the tamper circuit.

When an enclosure tamper switch is connected to the B465 tamper circuit (TMPR connector), opening the enclosure door is a fault.
USB Menu Location
[4] System Configuration > [4] Tamper > [1] Tamper sends reports

8.4.2 Tamper sets Trouble Output

Default: Disabled
Selections:
– Enabled - when there is a fault on the tamper circuit, the B465 sets the trouble output.
– Disabled - the B465 does not set the trouble output for faults on the tamper circuit.

When an enclosure tamper switch is connected to the B465 tamper circuit (TMPR connector), opening the enclosure door is a fault.

USB Menu Location

[4] System Configuration > [4] Tamper > [2] Tamper sets Trouble LED and Output

8.5 Communication Failure Action

8.5.1 Comm Fail sends reports

Default: Enabled

Selections:

– Enabled - when there is a communication failure event, the B465 inserts a FAILURE TO COMMUNICATE report (Contact-ID 354) at the top of the report queue. It is the first report sent when communication restores.

– Disabled - the B465 does not send FAILURE TO COMMUNICATE reports.

USB Menu Location

[4] System Configuration > [5] Communication Failure Action > [1] Comm Fail sends reports

8.5.2 Comm Failure sets Trouble Output

Default: Disabled

Selections:

– Enabled - when there is a communication failure event, the B465 sets the system trouble output.

– Disabled - the B465 does not set the system trouble output for communication failure events.

USB Menu Location

[4] System Configuration > [5] Communication Failure Action > [2] Comm Fail sets Trouble Output

8.5.3 Comm Failure removes Line 1 phone voltage

Default: Disabled

Selections:

– Enabled - when there is a communication failure event, the B465 removes voltage to the PNL LINE 1 terminals (terminals for panel phone line 1).

– Disabled - the B465 does not remove voltage to the PNL LINE 1 terminals for communication failure events.

When the B465 removes voltage from the PNL LINE 1 terminals (terminals for panel phone line 1), the control panel connected to the terminals creates a phone line failure event or a communication failure event.

USB Menu Location

[4] System Configuration > [5] Communication Failure Action > [3] Comm Fail removes line 1 phone voltage

8.5.4 Comm Failure removes Line 2 phone voltage

Default: Disabled

Selections:

– Enabled - when there is a communication failure event, the B465 removes voltage to the PNL LINE 2 terminals (terminals for panel phone line 2).

– Disabled - the B465 does not remove voltage to the PNL LINE 2 terminals for communication failure events.

When the B465 removes voltage from the PNL LINE 2 terminals (terminals for panel phone line 2), the control panel connected to the terminals creates a phone line failure event or a communication failure event.

USB Menu Location

[4] System Configuration > [5] Communication Failure Action > [4] Comm Fail removes line 2 phone voltage

8.6 Module Supervision

Use the parameters in this section to configure the B465 to send reports and set the Trouble LED and output when there is an internal fault (trouble).

8.6.1 Module Faults send reports

Default: Enabled

Selections:

– Enabled - the B465 sends trouble reports for module faults.
– Disabled - the B465 does not send trouble reports for module faults.

The B465 sends reports in the Contact ID (SIA DC-05) reporting format.

USB Menu Location

[4] System Configuration > [6] Module Supervision > [1] Module Faults send reports

8.6.2 Module Faults set Trouble Output

Default: Disabled

Selections:

– Enabled - when there is a module fault event, the B465 sets the system trouble output.
– Disabled - the B465 does not set the system trouble output for module fault events.

USB Menu Location

[4] System Configuration > [6] Module Supervision > [2] Module Faults set Trouble Output

8.7 RPS Settings

8.7.1 RPS Passcode

Default: 999999

Selections: 6 to 24 alphanumeric characters

RPS sends the RPS passcode to the control panel to establish a connection.

Enter a minimum of six characters. Do not use spaces in the passcode. The passcode is case-sensitive.

USB Menu Location

[4] System Configuration > [7] RPS Settings > [1] RPS Passcode

8.7.2 Answer RPS over Network

Default: Enabled

Selections:

– Enabled - enables automatic RPS initiated connections through the onboard Ethernet communicator or plug-in cellular communicator.
– Disabled - prevents automatic RPS initiated connections over the network.

USB Menu Location

[4] System Configuration > [7] RPS Settings > [2] Answer RPS over Network

8.8 USB Terminal Passcode

Default: B465

Selections: 4-23 ASCII characters (no spaces)

This is the passcode you need to access the B465 USB user interface using the Tera Term serial communication program.

8.9 Test Report

8.9.1 Test Report Interval

Default: Disabled
Selections:
– Disabled
– 4 hours
– 6 hours
– 12 hours
– 24 hours

The B465 sends a test report to the central station receiver at the interval you select here.
If the parameter *Module Faults set Trouble Output, page 76* is set to enabled and there is a module fault, the B465 sends a PERIODIC TEST (with system trouble present) report.
If the sensor loop for an enabled *Input 1 (to 4), page 78* is shorted or open, the B465 sends a PERIODIC TEST (with system trouble present) report.
If there are no module faults and sensor loops for all inputs are normal (not shorted or open) the B465 sends a PERIODIC TEST report.

Notice!
This parameter not available in RPS
To save your changes in RPS, connect the B465 with RPS. In the Panel Synchronization window, click Receive & Overwrite RPS Data.

USB Menu Location
[4] System Configuration > [8] Test Report Settings > [1] Test Report Interval

9 Input Configuration

9.1 Input 1 (to 4)

Default: Disabled

Selections:

– Disabled - no reports for short or open on this input.
– Panel System Trouble - when the sensor loop for this input is shorted, the B465 sends a Contact ID 300, System Trouble report. When the sensor loop is open, the B465 sends a Contact ID 371, Protection Loop Open report.
– Panel AC Fail - when the sensor loop for this input is shorted, the B465 sends a Contact ID 301, AC Loss report. When the sensor loop is open, the B465 sends a Contact ID 371, Protection Loop Open report.
– Panel Low Battery - when the sensor loop for this input is shorted, the B465 sends a Contact ID 302, Low System Battery report. When the sensor loop is open, the B465 sends a Contact ID 371, Protection Loop Open report.
– Fire Alarm - when the sensor loop for this input is shorted, the B465 sends a Contact ID 110, Fire alarm report. When the sensor loop is open, the B465 sends a Contact ID 373, Fire Trouble report.
– Fire Trouble - when the sensor loop for this input is shorted or open, the B465 sends a Contact ID 373, Fire Trouble report.
– Fire Supervisory - when the sensor loop for this input is shorted, the B465 sends a Contact ID 200, Fire Supervisory report. When the sensor loop is open, the B465 sends a Contact ID 373, Fire Trouble report.
– Burglary Alarm - when the sensor loop for this input is shorted, the B465 sends a Contact ID 130, Burglary alarm report. When the sensor loop is open, the B465 sends a Contact ID 371, Protection Loop Open report.
– Burglary Trouble - when the sensor loop for this input is shorted, the B465 sends a Contact ID 380, Sensor Trouble report. When the sensor loop is open, the B465 sends a Contact ID 371, Protection Loop Open report.

USB Menu Location

[5] Input Configuration > [1,2,3,4] Input 1 (to 4)

10 Output Configuration

10.1 Output 1 (to 3)

Default: Disabled

- Output 1 - System Trouble
- Output 2 - Primary Power Fail
- Output 3 - Battery Fault

Selections:

- System Trouble - the B465 activates this output for any failure or trouble condition configured to activate the trouble LED and output.
- Primary Power Fail - the B465 activates this output when the primary power source is failed.
- Panel AC Fail - when a B465 is input configured for Panel AC Fail is shorted, the B465 activates this output.
- Battery Fault - when there is a battery fault condition, the B465 activates this output.
- Comm Fail - when there is a communication fail condition, the B465 activates this output.
- Ethernet Comm Fail - when there is a communication fail condition using the onboard Ethernet device, the B465 activates this output.
- Cellular Comm Fail - when there is a communication fail condition using the a plug-in cellular device, the B465 activates this output.
- Disabled - the B465 does not activate this output.

USB Menu Location

[6] Output Configuration > [1,2,3] Input 1 (to 3)

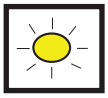
11 Maintenance and troubleshooting

Refer to the following for maintenance and troubleshooting information.

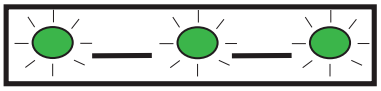
11.1 B465 LED status indicators

Refer to the following tables for LED status indicators.

On-board Ethernet LEDs

Flash pattern	Function
 On Steady	Communicating at 100 Mb.
 Off	Communicating at 10 Mb.

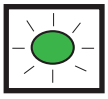
Tab. 11.4: 100BASE-T LED descriptions

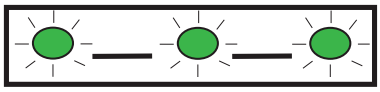
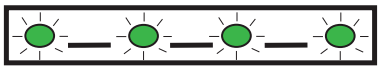
Flash pattern	Function
 On Steady	Plugged into an Ethernet network.
 Flashing	Communication in progress (flashes during communications, but remains on when not communicating).
 Off	Unplugged from an Ethernet network, or the Ethernet network is not available.

Tab. 11.5: LINK LED descriptions

Panel Phone Line 1 and Panel Phone Line 2 LEDs

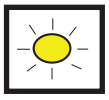
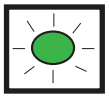
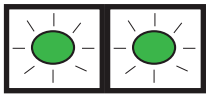
The LED for panel phone line 1 is located to the left of the PNL LINE 1 terminals.
The LED for panel phone line 2 is located to the left of the PNL LINE 2 terminals.

Flash pattern	Function
 On Steady	Phone line 1/Phone line 2 OFF-HOOK.
 Flashing	Phone line 1/Phone line 2 off the hook for more than 120 seconds.

Flash pattern	Function
 Flashing	No data received on Phone line 1/Phone line 2.
 Flashing	Data error on Phone line 1/Phone line 2.
 Off	Phone line 1/Phone line 2 ON-HOOK.

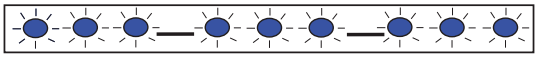
Tab. 11.6: Phone line 1 and 2 LED descriptions

Conettix Plug-in cellular module LEDs

LED	Function
 Blue	Indicates the overall status of the device.
 Red	Indicates an unacceptable signal strength level.
 Yellow	Indicates a marginal signal strength level.
 Green (1 light)*	Indicates a good signal strength level.
 Green (2 lights)	Indicates a very good signal strength level.
* One green LED indicates the minimum installation level.	

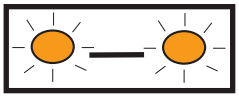
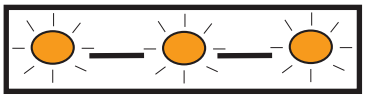
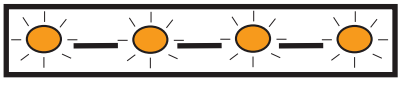
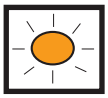
Tab. 11.7: Cellular module signal strength LED patterns

A single blue Status LED indicates the module status.

Flash pattern	Function
 Flashes once every 1 sec	Normal state. Indicates normal operation.
 3 quick flashes	Communication error state. Indicates the module is unable to communicate on the cellular network.
 Off	LED trouble state. Module is not powered, or some other trouble condition prohibits the module from controlling the heartbeat LED.

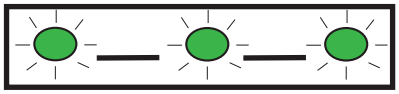
Tab. 11.8: Cellular module diagnostic LED patterns

SYSTEM TROUBLE LED patterns

Flash pattern	Function
 Off	Indicates normal operations.
 Flashing	Indicates Ethernet communication errors. Refer to SYSTEM TROUBLE Flashing (one flash) - Ethernet table for more information.
 Flashing	Indicates cellular communication errors. Refer to SYSTEM TROUBLE Flashing (two flashes) - Cellular table for more information.
 Flashing	Indicates a communication trouble or failure. Verify IP address and port numbers entered in the central station receiver. Make sure the account is enabled in the receiver. Make sure there is no IP network IP problem preventing the B465 from reaching the receiver.
 Flashing	Indicates multiple communication errors. Check the B465 USB status menu for additional information to help correct the problem.
 On Steady	Indicates all non IP communication troubles. For example low, or missing battery, phone lines are off the hook for more than 2 minutes, or there is a configuration issue.

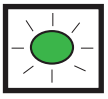
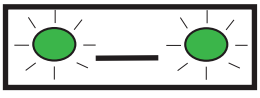
Tab. 11.9: SYSTEM TROUBLE LED descriptions

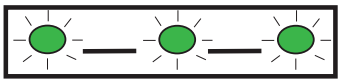
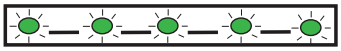
SYSTEM TROUBLE Flashing (one flash) - Ethernet Trouble

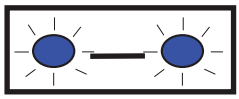
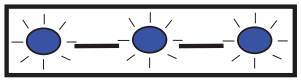
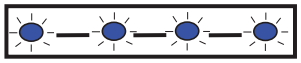
Flash pattern (TX)	Function
 Flashing	Indicates an Ethernet Network Cable open. Verify your Ethernet connection to the B465 is secure. Also verify the Ethernet connection is secure to your network.
 Flashing (two flashes)	Indicates an Ethernet IP Address error Verify that DHCP is enabled if your network is assigning the IP address or that your network administrator has setup your device correctly. Refer to USB menu options to change/edit your IP address.
 Flashing (three flashes)	Indicates an Ethernet DNS Lookup error. Make sure you have an Internet connection that has access to the world wide web.

Tab. 11.10: Ethernet LED descriptions

SYSTEM TROUBLE Flashing (two flashes) - Cellular Trouble

Heartbeat LED	RX LED	Plug-in Status LED	Function
 On Steady	 Flashing (one flash)	N/A	Indicates the plug-in module is missing. Verify the plug-in module is firmly inserted into the module connector.
 On Steady	 Flashing (two flashes)	 Off	Indicates the plug-in module is not recognized. Verify the correct plug-in module is firmly inserted into the module connector. Verify the latest firmware is installed to support the module you have.

Heartbeat LED	RX LED	Plug-in Status LED	Function
 On Steady	 Flashing (three flashes)	 Off	Indicates a cellular modem failure. Verify the plug-in module is firmly inserted into the module connector. If the problem still persists replace with another plug-in module to see if the problem is corrected.
 Flashing	 Flashing (four flashes)	 On Steady	Indicates a cellular DNS Lookup error. Check the name entered to verify it was entered correctly.
 Flashing	 Flashing (five flashes)	 On Steady	Indicates no activation. Check with your service provider to make sure the cellular module was activated.
 Flashing	 Flashing (six flashes)	 On Steady	Indicates an invalid access point. Check the APN against the APN required by your service provider.
 Flashing	 Off	 Flashing (one flash)	Indicates there are no towers available for the service provider. Try positioning the antenna in a different location. If that does not work, try changing to a different service provider or cellular plug-in module that using the other technology.

Heartbeat LED	RX LED	Plug-in Status LED	Function
 Flashing	 Off	 Flashing (two flashes)	Indicates a cellular IP address error. Check with your service provider to make sure the cellular module was setup correctly.
 Flashing	 Off	 Flashing (three flashes)	Indicates the SIM Card is missing. Verify the SIM card is inserted into the B442 or B443 cellular communication module. Refer to the *SIM card, page 90* troubleshooting section for more information.
 Flashing	 Off	 Flashing (four flashes)	Indicates a SIM Card lockout. This requires that the SIM PIN be used to unlock the SIM card.
 Flashing	 Off	 Flashing (five flashes)	Indicates an invalid SIM PIN. Verify the correct SIM PIN was entered. Refer to the *PIN code, page 90* troubleshooting section for more information.

Tab. 11.11: POWER LED descriptions

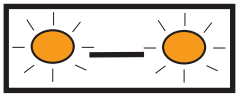
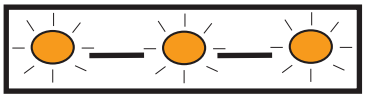
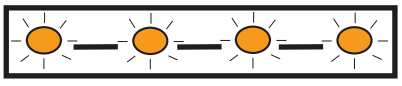
POWER LED

Flash pattern	Function
 On Steady	Indicates a good Input Power level.
 Flashing	Indicates Input Power is low (brownout) or failure.

Flash pattern	Function
 Off	Is in an off state during the power up sequence.

Tab. 11.12: POWER LED descriptions

BATTERY LED

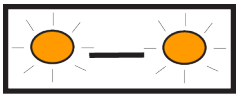
Flash pattern	Function
 Off	Indicates normal operations.
 Flashing (one flash)	Indicates low battery voltage.
 Flashing (two flashes)	Indicates a missing battery (below 12.1 V).
 Flashing (three flashes)	Indicates a bad battery (low for 72 hours). Replace the battery with a new one.
 Flashing (four flashes)	Indicates a battery charger failure. Failure can only be cleared by powering down the module and rebooting. If the problem continues the module will require a board replacement.

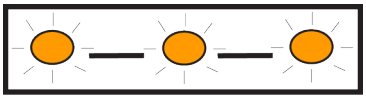
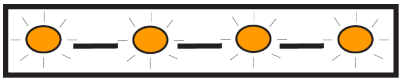
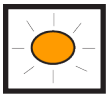
Tab. 11.13: BATTERY LED descriptions

11.2 B46 LED status and sounder

Refer to the following table for LED status indicators.

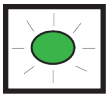
SYSTEM TROUBLE LED patterns

Flash pattern	Function
 Off	Indicates normal operations.
 Flashing	Indicates Ethernet communication errors. Refer to SYSTEM TROUBLE Flashing (one flash) - Ethernet table for more information.
 Flashing	Indicates cellular communication errors. Refer to SYSTEM TROUBLE Flashing (two flashes) - Cellular table for more information.

Flash pattern	Function
 Flashing	Indicates a communication trouble. Verify IP address and port numbers used by the central station. If it was running correctly and now shows this indication, check to make sure the account is enabled in the receiver or if there is an IP path problem preventing the B465 from reaching the receiver.
 Flashing	Indicates multiple communication errors. Check the B465 USB status menu for additional information to help correct the problem.
 On Steady	Indicates all non IP communication troubles. For example low, or missing battery, phone lines are off the hook for more than 2 minutes, or there is a configuration issue.

Tab. 11.14: SYSTEM TROUBLE LED descriptions

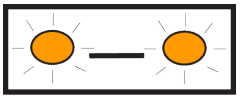
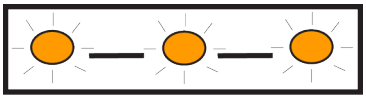
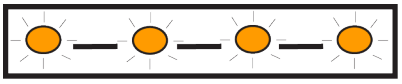
POWER LED

Flash pattern	Function
 On Steady	Indicates a good Input Power level.
 Flashing	Indicates Input Power is low (brownout) or failure.
 Off	Is in an off state during the power up sequence.

Tab. 11.15: POWER LED descriptions

BATTERY LED

Flash pattern	Function
 Off	Indicates normal operations.
 Flashing (one flash)	Indicates low battery voltage.

Flash pattern	Function
 Flashing (two flashes)	Indicates a missing battery (below 12.1 V).
 Flashing (three flashes)	Indicates a bad battery (low for 72 hours). Replace the battery with a new one.
 Flashing (four flashes)	Indicates a battery charger failure. Failure can only be cleared by powering down the module and rebooting. If the problem continues the module will require a board replacement.

Tab. 11.16: BATTERY LED descriptions

B46 sounder conditions

The B46 external annunciator uses a built-in audio sounder to produce an audio signal indicating to the user if there is a problem that needs user attention specific to the B465.

Condition	Sounder response
Low or missing Input power on the B465 module	The sounder emits an audio tone for once every ten seconds when the B465 module programming *for Input Power Supervision* is enabled. This pattern is repeated until the Input power issue is restored.
Low or missing battery voltage on the B465 module	The sounder emits an audio tone for once every ten seconds when the B465 module programming *for Battery Supervision* is enabled. This pattern is repeated until the battery power issue is restored.
Configuration errors	The sounder emits a double “beep” audio tone every 4 seconds when a configuration error is detected. The pattern is repeated until the configuration issue is resolved.
Firmware or hardware issues	The sounder emits a steady audio tone when there is a firmware or hardware issue with the B465. This pattern remains on steady until the issue is resolved.

Table 11.17: B46 Sounder conditions

11.3 Show the firmware version

To show the firmware version using an LED flash pattern:

– If the optional tamper switch is installed:
– With the enclosure door open, activate the tamper switch.
– If the optional tamper switch is NOT installed:
– Momentarily short the tamper pins.

When the tamper switch is activated (open to closed), the heartbeat LED stays Off for 3 sec before indicating the firmware version. The LED pulses the major, minor, and micro digits of the firmware version, with a 1 sec pause after each digit. The following is an example: The version 1.4.3 would show as LED flashes: [3 second pause] *_****_*** [3 second pause, then normal operation].

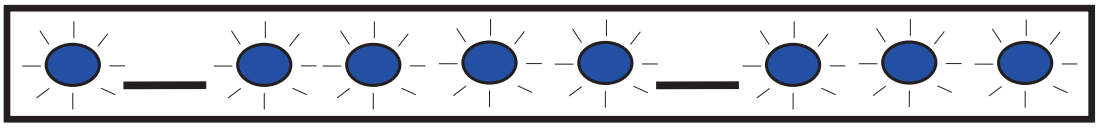


Figure 11.1: Firmware LED flash patterns example

11.4 Diagnostic log

The Diagnostic Log option is used in the event of an intermittent service outage, or communication error, in which a diagnostic log can be generated from the B465 menu options. The generated diagnostic log file is used by TECHNICAL SUPPORT to determine how often a persistent problem occurs, as well as detailed network configuration settings associated to the module during the time of the reported problem.
Generate the diagnostic log only when directed by TECHNICAL SUPPORT.

11.5 Understanding network polling

Plan carefully when programming the B465 supervision times, and D6x00 Receiver supervision time. Having the wrong or improper settings could cause trouble conditions when the network carrier performs maintenance, and increased network data traffic that could affect your monthly cost. Your settings for these parameters determine how the system works, but depend on the security level needed.
For more information regarding proper data plans and installation parameters related to network polling, refer to *Bosch Cellular Service User Guide* (P/N: F01U273558).

11.6 Troubleshooting procedures

Refer to the following section for troubleshooting hardware and software issues.

11.6.1 No power on the B465

Description:
The power wiring or power supply has a problem.

Solution:
1. Check the voltage at the Power input pins 16.5 VAC terminals on the B465. The voltage with a AC transformer attached should be between 16.5 VAC and 25 VAC depending on the loading. When using DC input, the voltage should be between 19 VDC and 29 VDC depending upon the loading.
2. Check the battery voltage when connected to the B465 . It should be between 10.2 VDC and 13.9 VDC.
3. If everything appears normal, replace the B465.

11.6.2 Initialization - cellular

Description:
STATUS LED double flashes until initialization is complete.

Solution:
1. If the device stays in this state for more than 120 seconds, reboot the system.
2. If the problem continues, verify with your service provider if cellular service for the selected service provider is available in your area, refer to *B465 LED status indicators, page 80*.
3. If the problem continues, replace the B465.

11.6.3 Hardware

Description:

General hardware problem.

Solution:

1. Reboot the system.
2. Check the wiring connections.
3. Check polarity of the 24 VDC. Reversed DC Polarity results in an Input Power Failure trouble even though it still operates correctly.
4. Check the voltage input for AC, if using the transformer, or DC if using the 24 VDC from the control panel. AC = 16 VAC to 25 VAC DC = 19 VDC to 29 VDC
5. If the problem continues, replace the B465.

11.6.4 Firmware

Description:

Corrupted flash or failed firmware upload.

Solution:

1. Perform the Reset to Factory Defaults procedure using the USB menu as described in USB menu options., Maintenance => Reset to Factory Defaults option.
2. Upgrade the firmware as described in Firmware Update page.
3. If the problem continues, replace the B465.

11.6.5 SIM card

Description:

SIM card problem. if you are experiencing problems with the SIM card. This is applicable to cellular communicators that have SIM cards (B442 and B443).

Solution:

1. Check for the presence of a SIM in the holder.
2. Install the SIM card and power up the module. Powering up Recognizes the SIM card.
3. Check for damage to the SIM card holder.
4. Remove and reseat the SIM card in the holder. Check to make sure the gold contact area on the SIM card is facing towards the board.
5. Reboot the system.
6. If the problem persists after rebooting the system, replace the SIM card. A new SIM card might require the B465 to be reconfigured to the new card's parameters (if using a different carrier or provider).

11.6.6 PIN code

Description:

Mismatched PIN code.

Solution:

– If the SIM card's PIN is unknown, review the information on the SIM card holder that the card was delivered in for additional information.
– If the SIM card's PIN is known, set the B465 PIN to match your SIM PIN. Set the SIM PIN using the USB cellular menu under Advanced Communication Configuration (refer to *USB Main Menu, page 29*).
– If the problem continues after rebooting the system, replace the SIM card with a different card. A new SIM card might require the B465 to be reconfigured to the new card's parameters (if using a different carrier or provider).

11.6.7 Cellular network registration

Description:

The B465 is attempting to register on the cellular network. This issue occurs if the registration never occurred, and can last up to 8 minutes. After 8 minutes, the LEDs change to the double-flash Radio Registration state. This condition can also happen if only one tower is within RF range and it has an outage. The module continues to attempt to establish communications.

Solution:

1. Refer to *Wireless Reception Issues* if the signal strength is unacceptable.
2. Replace the SIM card with a known good test card. If the signal strength is acceptable, confirm that the wireless service provider activated this account and the SIM card correctly.
3. If the problem continues, replace the B465.

11.6.8 USB COM port error

Description:

COM error occurs when trying to connect to the B465 using the USB serial program. The following screen shows.

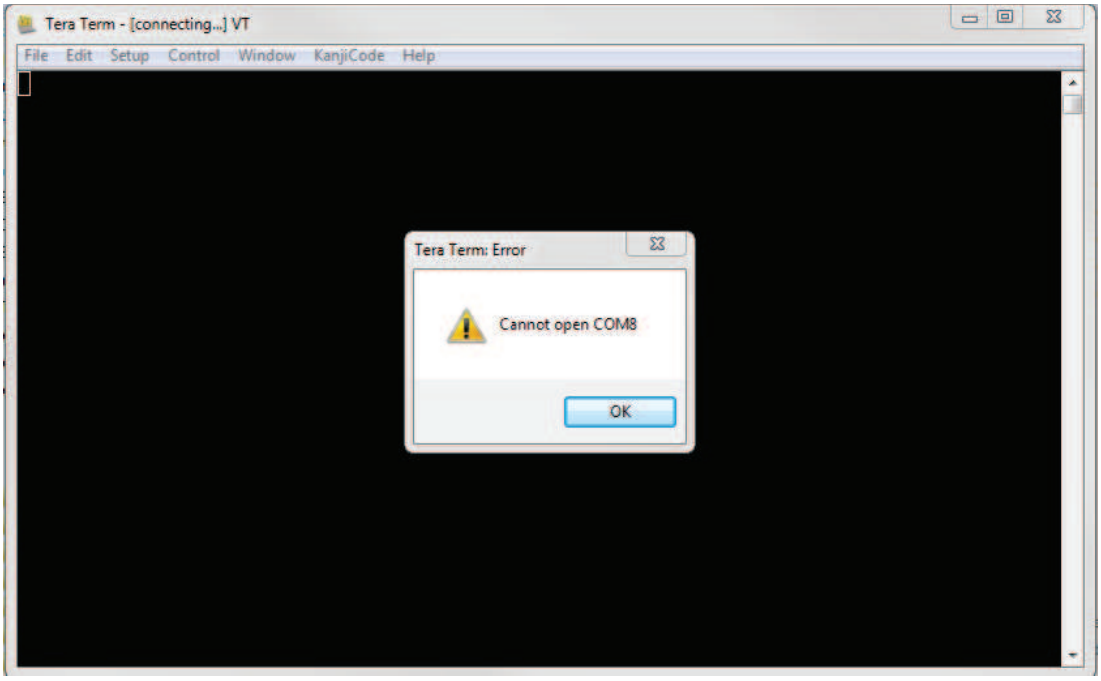
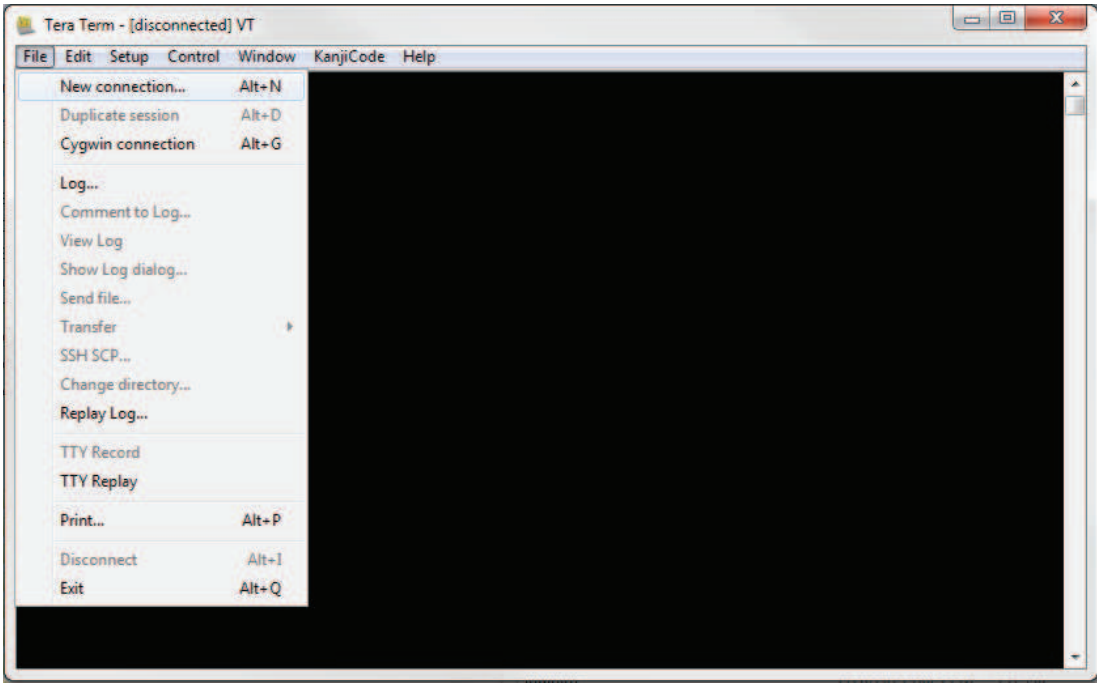


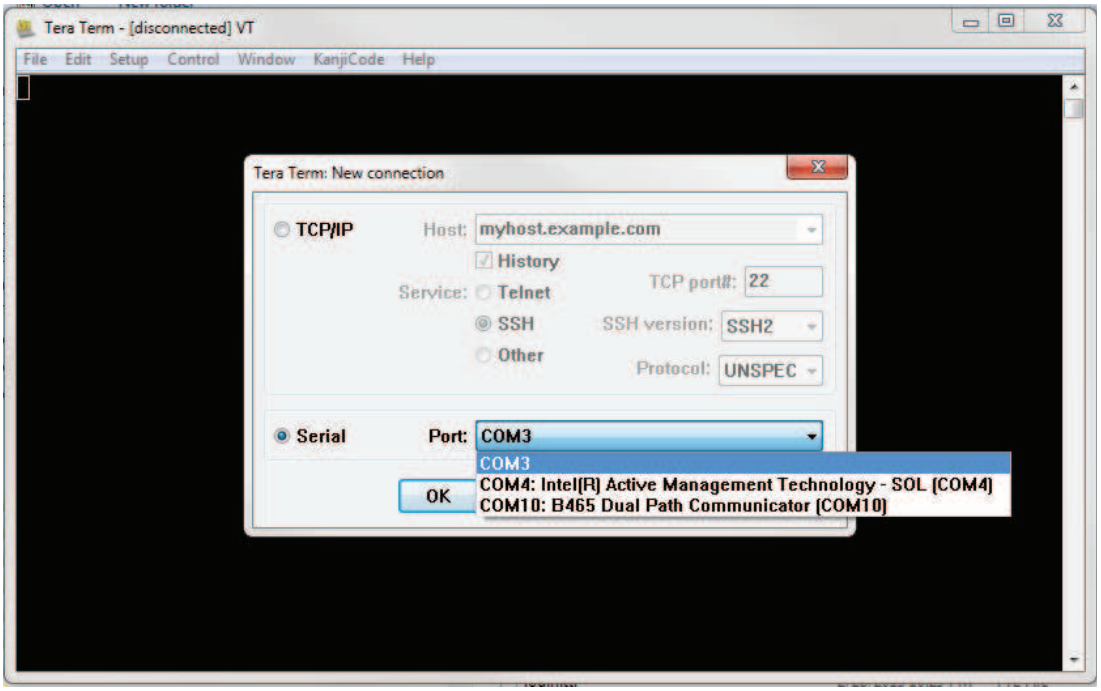
Figure 11.2: COM port error

Solution:

1. Click OK.
2. Click File -> New Connection.



3. Click the port that has the B465 Dual Path Communicator option.



4. Click Ok.
5. Press the Enter key and login.

11.7 Testing the system

Test the system completely after installing and programming the B465. Test the B465, the control panel and all devices once a week for proper operation.

Notice!
After system installation and any B465 programming, perform a complete system test (UL 864 requirement). A complete system test includes testing the control panel, B465,all devices, and communication paths for proper operation.

12 Specifications and certifications

Refer to the following for specification and certification information.

12.1 Technical specifications

Environmental considerations

Relative humidity	Up to 93% non-condensing
Temperature (operating)	0˚ to +49˚ C (+32˚ to 120˚ F)

Properties

Dimensions (HxWxD)	79 mm x 128 mm x 38 mm (3.11 in. x 5.03 in. x 1.50 in.)

Wiring

USB cable	Use a Bosch supported Type A male-to-male USB cable such as the B99 cable (F01U278853).

Compatible enclosures

B10R Medium Control Panel Enclosure - 35.6 cm x 31.8 cm x 7.6 cm (14 in. x 12.5 in. x 3 in.)
B10 Medium Control Panel Enclosure - 35.6 cm x 31.8 cm x 7.6 cm (14 in x 12.5 in x 3 in)
B11R Small Control Panel Enclosure - 27.8 cm x 25.9 cm x 8.32 cm (10.9 in x 10.2 in x 3.3 in)
B11 Small Control Panel Enclosure - 27.8 cm x 25.9 cm x 8.32 cm (10.9 in x 10.2 in x 3.3 in)
D8103 Universal Enclosure - 41 cm x 41 cm x 9 cm (16 in x 16 in x 3.5 in)
B12 Mounting Plate for D8103 Enclosure - 23.5 cm x 21.92 cm x 1.27 cm (9.25 in x 8.63 in x 0.5 in)
D8108A Attack Resistant Enclosure - 41 cm x 41 cm x 9 cm (16 in x 16 in x 3.5 in)

Compatible transformers

D1640, 120 VAC input, 16.5 VAC, 40 VA output Class 2 plug-in
D1640-CA 120 VAC input, 16.5 VAC, 40 VA output Class 2 plug-in
D1640-120WI, 120 VAC input, 16.5 VAC, 40 VA output Class 2 wire-in

Compatible central station receivers

(Bosch) Conettix D6600 Communications Receiver/Gateway
(Bosch) Conettix D6100IPv6 Communications Receiver/Gateway
(Bosch) Conettix D6100i Communications Receiver/Gateway

Supported reporting formats for control panel phone lines

Modem IIIa[2]
Modem IIe
Modem
Ademco Contact ID (SIA DC-05) +10 digit account codes
Pulse 3/1, 3/1 Checksum (2300 Hz ACK Tone)
Pulse 3/1, 3/1 Checksum (1400 Hz ACK Tone)
Pulse 4/2 (2300 Hz ACK Tone)
Pulse 4/2 (1400 Hz ACK Tone)
SIA (SIA8, SIA 20) 110 and 300 baud

Compatible cellular modules

B440 Conettix Plug-in Communicator, Cellular (3G)
B441 Conettix Plug-in CDMA Cellular Communicator
B442 Conettix Plug-in GPRS Cellular Communicator
B443 Conettix Plug-in HSPA+ Cellular Communicator (SIM card required)
B444 Conettix Plug-in LTE Cellular Communicator (Verizon)

12.1.1 B465 power supply specifications

Voltage input (power supply)	Primary	16.5 VAC terminals	16.5 VAC 40 VA Class 2 transformer (D1640/D1640-CA, D1640-120WI))
	Secondary	BAT terminals	12 Volt Sealed Lead Acid Rechargeable Battery (D126 or D1218)
Standby battery requirements	Battery input: B465: Idle 150 mA: Alarm 230 mA Refer to the *Standby battery requirements and calculations* section in the B465 *Installation and Operation Guide* for the current draw requirements of other system components.		
24 VDC input current requirements	24 VDC input: B465: Idle 120 mA: Alarm 160 mA Refer to the 24 VDC Input Power Refer to the *Standby battery requirements and calculations* section in the B465 *Installation and Operation Guide* for the current draw requirements of other system components.		
Power outputs	All external connections are power limited. The battery terminals are not power limited.		
Ethernet connection (optional)	10BASE-T 100BASE-TX Maximum wiring distance: 100 m (328 ft) using cat 5e wire or better		
Battery discharge/ recharge schedule	Discharge cycle	13.65 VDC - Charging float level. 12.1 VDC - Low Battery Report, if programmed. 10.2 VDC - Minimum operational voltage.	
	Recharge Cycle	AC ON - Battery charging begins and AC Restoral Reports sent. 13.4 V - Battery Restoral Report sent. Battery float charged.	
Environmental	Temperature	0°C to +49°C (+32°F to 122°F)	
	Relative Humidity	5% to 93% at +32°C (+90°F) non-condensing	
Point thresholds	On-board points 1 to 4	Open - 3.7 to 5.0 VDC Normal - 2.0 to 3.0 VDC Short - 0.0 to 1.3 VDC Short circuit current - 2.5 mA	

12.1.2 Application environment

Application	Minimum Required Standby Time (hr)	Minimum Alarm Time (min)
Residential Burglary	4	4
Proprietary Burglary	4	N/A
Central Station (Bank)	72	N/A
Central Station (Mercantile)	4	N/A
Police Station Connected (Bank)	72	30 (CUL)/15 (UL)
Police Station Connected (Mercantile)	24	30 (CUL)/15 (UL)
Local Burglary (Bank)	72	30 (CUL)/15 (UL)
Local Burglary (Mercantile)	24	30 (CUL)/15 (UL)
Commercial Fire	24	30 (CUL)/5 (UL)
Residential Fire	24	5 (CUL)/4 (UL)

Table 12.18: Minimum standby and alarm times

Notice!
UL Commercial Burglary Application Requirements
Mount the module in the B465 enclosure. If the unit is used in a commercial burglar environment, and is enclosed in a commercial enclosure, that enclosure must be tampered. The B465 must be mounted inside an attack resistant enclosure (D8108A) if the installation is a local or police station connection. For Commercial Burglary applications, house all communicators in tampered enclosures. You must wire system troubles back to the control panel as the B46 can not be used in the D8108A enclosure.

12.1.3 Standby battery requirements and calculations

		B			C		
		Standby Power On Normal Current (mA)			Alarm Current (mA)		
Model Number	Qty Used	Each Unit	Qty	Total	Each Unit	Qty	Total
B465	1	150	x 1	= 150	230	x 1	= 230
B46	_____	23	x 1	= ___	23	x 1	= ___
B440	_____	35	x 1	= ___	150	x 1	= ___
B441	_____	35	x 1	= ___	150	x 1	= ___
B442	_____	35	x 1	= ___	150	x 1	= ___
B443	_____	35	x 1	= ___	150	x 1	= ___
B444	_____	35	x 1	= ___	150	x 1	= ___
Aux Power (0 - 500 mA)	_____	____	x Qty	= _____	_____	x Qty	= _____
___	_____	____	x Qty	= _____	_____	x Qty	= _____
___	_____	____	x Qty	= _____	_____	x Qty	= _____
			Total B = ___			Total C = ___	

Table 12.19: Current rating chart for standby battery calculations

Notice!
Maximum power supply current for Total B in the table above is 705 mA, and the maximum power supply current for Total C is 900 mA.

Total B		Hours[1]		Total C		Alarm Operation[2]		Contingency		Total Ah[3]
(_____ _	x	_____)	+	(_____	x	_____)	+	20%	=	_____

[1] Refer to the Application environment table.
[2] Value = Minutes of alarm operation/60 as per the Application environment table.
[3] Total Ah requirements must not exceed the Ah capacity of batteries:
– One D126 Battery = 7 Ah
– One D1218 Battery = 18 Ah

12.1.4 24 VDC Input power requirements

24 VDC applied to power supply input terminals

		B			C		
		Standby Power On Normal Current (mA)			Alarm Current (mA)		
Model Number	Qty Used	Each Unit	Qty	Total	Each Unit	Qty	Total
B465	1	120	x 1	= 120	160	x 1	= 160
B46	_____	23	x 1	= ___	23	x 1	= ___
B450							
B208							
B308							
B440	_____	35	x 1	= ___	150	x 1	= ___
B441	_____	35	x 1	= ___	150	x 1	= ___
B442	_____	35	x 1	= ___	150	x 1	= ___
B443	_____	35	x 1	= ___	150	x 1	= ___
B444	_____	35	x 1	= ___	150	x 1	= ___
Aux Power (0 - 500 mA	_____	____	x Qty	= _____	_____	x Qty	= _____
___	_____	____	x Qty	= _____	_____	x Qty	= _____
___	_____	____	x Qty	= _____	_____	x Qty	= _____
			Total B = ___			Total C = ___	

Tab. 12.20: Current rating chart for standby calculations

Notice!
Maximum power supply current for Total B in the table above is 675 mA, and the maximum power supply current for Total C is 830 mA.

12.1.5 Required programming to meet UL 864

This section identifies the programming requirements for UL 864 Commercial Fire applications.

Notice!

TO USERS, INSTALLERS, AUTHORITIES HAVING JURISDICTION, AND OTHER INVOLVED PARTIES

This product incorporates field-programmable software. In order for the product to comply with the requirements in the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864, you must limit certain programming features or options to specific values.

Parameter	Permitted in UL 864? (Yes/No)	Possible settings	Settings permitted in UL 864
Primary Power Source, page 72 (set to AC)	Yes	AC, DC	AC - when using transformer as source.
Primary Power Fail Delay, page 73	Yes	0 to 255 minutes	60 to 180 minutes
Primary Power Fail sends reports, page 73	Yes	Enabled/Disabled	Enabled - if sending report from B465, disabled if using relay outputs to control panel
Primary Power Source, page 72 (set to DC)	Yes	AC/DC	DC - when powering from UL listed control panel or power supply
Primary Power Fail Delay, page 73	Yes	0 to 255 minutes	0 to 3 minutes
Primary Power Fail sends reports, page 73	Yes	Enabled/Disabled	Enabled - if sending report from B465, disabled if using relay outputs to control panel
Battery Monitoring, page 73	Yes	Enabled/Disabled	Enabled
Battery faults send reports, page 74	Yes	Enabled/Disabled	Enabled - if sending report from B465, disabled if using relay outputs to control panel

Ethernet Supervision Time, page 61 *Cellular Supervision Time, page 62*	Yes	No Supervision, 90 seconds, 180 seconds, 200 seconds, 300 seconds, 1 hour, 4 hours, 24 hours	4 hour supervision can be used when dual technologies are used. Sole path times depends on the NFPA standard being used, always consult your local AHJ. 90 seconds, 180 seconds, 200 seconds, 300 seconds, 1 hour

12.1.6 Required programming to meet ULC-S304

This section identifies the programming requirements you must make in order to comply with ULC-S304 Signal Receiving Centre and Premise Alarm Control Units.

Requirement	Parameter
Supervision interval for IP communications	Ethernet Supervision Time, set to 180 seconds Cellular Supervision Time, set to 180 seconds
Communicators are not suitable for active *communication channel (IP)* security and medium or high risk applications unless such can be “on line” at all times, have a minimum 128 bit encryption scheme, have encryption enabled, network and domain security implemented and are in compliance with Subsection 15.2, Active Communication Channel Security.	AES Encryption, Key Size, set to 128, 192, or 256 bits
Mains power supply below 85% of rated supply shall be detected and transmitting to the receiving centre in not more than 3 hours	Primary Power Fail Delay, set to 0 - 180 minutes
If the signal receiving centre equipment is completely duplicated with standby equipment and a switchover can be accomplished in not more than 90 seconds with no loss of signals during this period, the capacity of the system is unlimited otherwise it shall be limited to 1000 alarm systems connected to the receiving centre	No special parameters need to be set in the B465, verify with central station

12.1.7 Required programming to meet ULC-S559

This section identifies the programming requirements you must make in order to comply with ULC-S559 Fire Signal Receiving Centres and Systems.

Requirement	Parameter
Mains power supply below 85% of rated supply shall be detected and transmitting to the receiving centre in not more than 3 hours	*Primary Power Fail Delay, page 73*, set to 0 - 180 minutes
Supervision interval for IP communications	*Ethernet Supervision Time, page 61*, set to 180 seconds *Cellular Supervision Time, page 62*, set to 180 seconds

12.1.8 Compatible UL listed components

	Household Burglary	Household Fire	Household Fire/Burglary Combined	Central Station Burglary	Police Connected Burglary	Holdup	Central Station Fire Combined	Central Station Fire/ Burglary	Central Station Fire/Burglary Combined	Central Station Fire
Minimum hours of standby battery	4	24	24	4	4	8	24	24	24	24
B10 Medium Control Panel Enclosure	Opt.	Opt.	Opt.	Opt.	No.	Opt.	Opt	Opt	Opt	Opt
B10R Medium Control Panel Enclosure (Red)	Opt.	Opt.	Opt.	Opt.	No	Opt.	Opt	Opt	Opt	Opt
B11 Small Control Panel Enclosure	Opt.	Opt.	Opt.	Opt.	No	Opt.	Opt	Opt	Opt	Opt
B11R Small Control Panel Enclosure (Red)	Opt.	Opt.	Opt.	Opt.	No	Opt.	Opt	Opt	Opt	Opt
B440 Conettix Plug-in Cellular Communicator	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt
B441 Conettix Plug-in Cellular Communicator	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt
B442 Conettix Plug-in GPRS Cellular Communicator	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt
B443 Conettix Plug-in Cellular Communicator	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt
B444 Conettix Plug-in Cellular Communicator	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt
Conettix D6600 Communications Receiver/ Gateway	N/A	N/A	N/A	Opt.	Opt.	N/A	Opt	Opt	Opt	Opt

Conettix D6100IPv6	N/A	N/A	N/A	Opt.	Opt.	N/A	Opt	Opt	Opt	Opt
Conettix D6100i Communications Receiver/ Gateway	N/A	N/A	N/A	Opt.	Opt.	N/A	Opt	Opt	Opt	Opt
D1640 Plug-in Transformer (16.5 VAC 40 VA 60 Hz)	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt
D1640-120WI Wired Transformer (16.5 VAC 40 VA 60 Hz	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt	Opt
D1640-CA Plug-in Transformer (16.5 VAC 40 VA 60 Hz)	Opt.	Opt.	Opt.	Opt.	Opt.	Opt.	Opt	Opt	Opt	Opt
D8004 Transformer Enclosure	Opt.	Opt.	Opt.	Opt.	No	Opt.	Opt	Opt	Opt	Opt
D8103 Universal Enclosure	Opt.	Opt.	Opt.	Opt.	No	Opt	Opt	Opt	Opt	Opt
D8108A Attack Resistant Enclosure	Opt.	Opt.	Opt.	Opt.	Req	Opt.	Opt	Opt	Opt	Opt

Key	**Description**
No	Not acceptable for this application
Req.	Required for this application.
Opt.	Optional for this application.
1+	1 or more required for this application. Consult the appropriate standard.

CTN	**Name**	**UL 864**	**UL 985**	**UL Intrusion**	**cUL**
B10/B10R	Medium Control Panel Enclosure	x	x	x	x
B11/B11R	Small Control Panel Enclosure	x	x	x	x
B12	Mounting Plate for D8103 Enclosure	x	*x	*x	*x
D8103	Universal Control Panel Enclosure	x	x	x	x
D8108A	Attack Resistant Enclosure	x	x	x	x

CTN	Name	UL 864	UL 985	UL Intrusion	cUL
D8004	Transformer Enclosure	*x			
D101	Lock and Key Set	x	x	x	x
B46	External Annunciator	x	x	x	x
B440	Conettix Plug-in Cellular Communicator	x	x	x	
B441	Conettix Plug-in Cellular Communicator	x	x	x	
B442	B442 Conettix Plug-in GPRS Cellular Communicator				
B443	B443 Conettix Plug-in HSPA+ Cellular Communicator	x	x	x	x
B444	B444 Conettix Plug-in Cellular Communicator	x	x	x	x
D126	Battery (12.0 VDC, 7 Ah)	x	x	x	x
D1218	Battery (12 V, 18 Ah)	x	x	x	x
D1640	UL Listed Class 2 Plug-in Transformer 16.5 VAC 40 VA 60 Hz	x	x	x	
D1640-120WI	UL Listed Class 2 Wired Transformer 16.5 VAC 40 VA 60 Hz	x	x	x	x
D1640-CA	UL Listed Class 2 Plug-in Transformer 120 VAC primary, 16.5 VAC 40 VA secondary				x
ICP-EZTS	Tamper Switch			x	x
*Required if using a plug-in transformer					

12.2 Certifications

Region	Certification
US	NIST FIPS 197
	FCC Part 15 Class B
	California State Fire Marshall (CSFM)
	UL 365 - Police Station Connected Burglar Alarm Units and Systems
	UL 609 - Local Burglar Alarm Units and Systems
	UL 864 - Control Units and Accessories for Fire Alarm Systems
	UL 985 - Household Fire Warning System Units
	UL 1023 - Household Burglar Alarm System Units
	UL 1076 - Proprietary Burglar Alarm Units and Systems
	UL 1610 - Central Station Burglar Alarm Units
Canada	CAN/ULC S303 - Local Burglar Alarm Units and Systems
	CAN/ULC S304 - Signal Receiving Centre and Premise Alarm Control Units
	ULC-545 - Residential Fire Warning Systems Control Units
	ULC-S559 - Fire Signal Receiving Centres and Systems
	ULC-ORD-C1023 - Household Burglar Alarm System Units
	ULC-ORD-C1076 - Proprietary Burglar Alarm Units and Systems
	ICES-003 - Digital Apparatus

12.3 B465 Event/Report Table

The B465 monitors the status of the primary power source, battery, and communication to the primary receiver and secondary receivers. The B465 sends the status in Contact ID reports as shown in the table below.

Contact ID report (i = input number, 001-004) (t = trouble type)	B465 Event	B465 Event #
1-110-99-iii FIRE	When a B465 input that is configured for Fire Alarm is shorted, the B465 makes a Panel Fire Alarm event and sends a FIRE report.	7
3-110-99-iii FIRE (restoral)	When a B465 input that is configured for Fire Alarm returns to normal after being shorted, the B465 makes a Panel Fire Alarm Restoral event and sends a, FIRE restoral report.	8
1-130-99-iii BURGLARY	When a B465 input that is configured for Burglary Alarm is shorted, the B465 makes a Panel Burglary Alarm event and sends a BURGLARY report.	13
3-130-99-iii BURGLARY (restoral)	When a B465 input that is configured for Burglary Alarm returns to normal after being shorted, the B465 makes a Panel BURGLARY Alarm Restoral event and sends a BURGLARY restoral report.	14
1-137-99-000 TAMPER	The B465 sends TAMPER reports for faults on the tamper circuit. When an enclosure tamper switch is connected to the B465 tamper circuit (TMPR connector), opening the enclosure door is a fault.	21
3-137-000 TAMPER (restoral)	The B465 sends TAMPER restoral reports when the tamper circuit returns to normal after a fault. When an enclosure tamper switch is connected to the B465 tamper circuit (TMPR connector), closing the enclosure door returns the tamper circuit to normal.	22
1-200-99-iii FIRE SUPERVISORY	When a B465 input that is configured for Fire Supervisory is shorted, the B465 makes a Panel Fire Supervisory event and sends a FIRE SUPERVISORY report.	7
3-200-99-iii FIRE SUPERVISORY (restoral)	When a B465 input that is configured for Fire Supervisory returns to normal after being shorted, the B465 creates a Panel Fire Supervisory Restoral event and sends a, FIRE FIRE SUPERVISORY Restoral report.	8

Contact ID report (i = input number, 001-004) (t = trouble type)	**B465 Event**	**B465 Event #**
1-300-99-iii SYSTEM TROUBLE	When a B465 input that is configured for Panel System Trouble is shorted, the B465 makes a Panel System Trouble event and sends a SYSTEM TROUBLE report.	1
3-300-99-iii SYSTEM TROUBLE (restoral)	When a B465 input that is configured for Panel System Trouble returns to normal after being shorted, the B465 makes a Panel System Trouble Restoral event and sends a, SYSTEM TROUBLE Restoral report.	2
1-301-99-iii AC LOSS	When a B465 input that is configured for Panel AC Fail is shorted, the B465 makes a Panel AC Fail event and sends an AC LOSS report. When the primary power source for the B465 fails, the B465 makes a Primary Power Fail event and sends an AC LOSS report (iii = 000).	3
3-301-99-iii AC LOSS (restoral)	When a B465 input that is configured for Panel AC Fail returns to normal after being shorted, the B465 makes a Panel AC Fail Restoral event and sends an, AC LOSS restoral report. When the primary power source for the B465 returns to normal after failing, the B465 makes a primary power restoral event and sends an AC LOSS Restoral report (iii = 000).	4
1-302-99-iii LOW SYSTEM BATT	When a B465 input that is configured for Panel Low / missing Battery is shorted, the B465 makes a Panel Low / missing Battery event and sends a LOW SYSTEM BATT report. When the battery voltage for the B465 is low, the B465 makes a low battery event and sends an LOW SYSTEM BATT report (iii = 000).	5

Contact ID report (i = input number, 001-004) (t = trouble type)	B465 Event	B465 Event #
3-302-99-iii LOW SYSTEM BATT (restoral)	When a B465 input that is configured for Panel Low / missing Battery returns to normal after being shorted, the B465 makes a Panel Low / missing Battery Restoral event and sends a, LOW SYSTEM BATT restoral report. When the battery voltage for the B465 returns to normal after being low, the B465 makes a battery restoral event and sends a LOW SYSTEM BATT Restoral report (iii = 000).	6
1-303-99-000 RAM CHECKSUM BAD	When the checksum for the B465 configuration parameters is incorrect, the B465 makes a Configuration Checksum Failure event and sends a RAM CHECKSUM BAD report.	31
3-303-99-000 RAM CHECKSUM BAD (restoral)	When the checksum for the B465 configuration parameters is corrected, the B465 makes a Configuration Checksum Restoral event and sends a RAM CHECKSUM BAD restoral report.	32
1-304-99-000 ROM CHECKSUM BAD	When the checksum for the B465 firmware is incorrect, the B465 makes a Firmware Checksum Failure event and sends a ROM CHECKSUM BAD report.	30
1-305-99-000 SYSTEM RESET	When the B465 resets (restarts), it makes a reset event and sends a SYSTEM RESET report.	27
1-306-99-000 PANEL PROG CHANGE	When the B465 configuration parameters are changed by RPS or by the USB interface, the B465 sends a PANEL PROGRAMMING CHANGED report.	35
1-311-99-000 BATTERY MISSING	When the battery for the B465 is missing (or dead), the B465 makes a battery missing event and sends an BATTERY MISSING report (iii = 000).	19
3-311-99-000 BATTERY MISSING (restoral)	When the battery voltage for the B465 returns to normal after a battery missing event, the B465 makes a battery restoral event and sends a BATTERY MISSING Restoral report (iii = 000).	20

Contact ID report (i = input number, 001-004) (t = trouble type)	**B465 Event**	**B465 Event #**
1-330-99-000 SYSTEM PERIPHERAL TROUBLE	When the B465 detects any of the fault conditions below it creates a generic trouble event and sends a SYSTEM PERIPHERAL TROUBLE report. – Ethernet cable open – Ethernet IP address error – Plug-in cellular module not recognized – Plug-in cellular module, modem failed – Plug-in cellular module, SIM card missing – Plug-in cellular module, SIM PIN wrong – Plug-in cellular module, SIM PIN locked out – Plug-in cellular module, SIM PIN not needed – Cellular, configuration incorrect – Cellular, not registered for Bosch Cellular Service – Cellular, invalid access point – Cellular IP address incorrect – Cellular, low signal – Cellular, one or no cellular towers detected	28
3-330-99-000 SYSTEM PERIPHERAL TROUBLE (restoral)	When the B465 detects all of the fault conditions above are cleared, it creates a generic trouble restoral event and sends a SYSTEM PERIPHERAL TROUBLE Restoral report.	29
1-333-99-000 EXPANSION MODULE FAILURE	When the B465 detects a cellular plug-in module is not plugged in, it creates a plug-in module missing event and sends an EXPANSION MODULE FAILURE report.	33
3-333-99-000 EXPANSION MODULE FAILURE (restoral)	When the B465 detects a cellular plug-in module after a plug-in module failure event, it creates a plug-in module restoral event and sends an EXPANSION MODULE FAILURE Restoral report.	34

Contact ID report (i = input number, 001-004) (t = trouble type)	B465 Event	B465 Event #
1-350-99-ttt COMMUNICATION TROUBLE	When there is a communication trouble event, the B465 sends a COMMUNICATION TROUBLE report. It uses the ttt segment of the report to identify the technology and receiver. – ttt = 000, Ethernet IP or Cellular IP to Primary or Secondary Receiver (B465 with firmware version 1.##.### only) – ttt = 001, Ethernet IP to primary receiver – ttt = 002, Cellular IP to primary receiver – ttt = 003, Ethernet IP to secondary receiver – ttt = 004, Cellular IP to secondary receiver – ttt = 010, DNS failure using Ethernet IP or Cellular IP (B465 with firmware version 1.##.### only) – ttt = 011, DNS failure using Ethernet IP – ttt = 012, DNS failure using Cellular IP	28
3-350-99-ttt COMMUNICATION TROUBLE (restoral)	When any of the communication trouble events shown above clears, the B465 sends a COMMUNICATION TROUBLE Restoral report.	24
1-354-99-000 FAILURE TO COMMUNICATE	When there is a communication failure event, the B465 inserts a FAILURE TO COMMUNICATE report (Contact-ID 354) at the top of the report queue. It is the first report sent when communication restores.	25
3-354-99-000 FAILURE TO COMMUNICATE (restoral)	When a report is successfully sent to the central station receiver (after a communication failure event), the B465 adds a FAILURE TO COMMUNICATE Restoral report (Contact-ID 354) to the report queue.	26
1-371-99-iii PROTECTION LOOP OPEN	When a B465 input is open, the B465 makes an input open trouble event and sends a PROTECTION LOOP OPEN report.	17
3-371-99-iii PROTECTION LOOP OPEN (restoral)	When a B465 input returns to normal after being open, the B465 makes an input open trouble event and sends a, PROTECTION LOOP OPEN Restoral report.	18

Contact ID report (i = input number, 001-004) (t = trouble type)	**B465 Event**	**B465 Event #**
1-373-99-iii FIRE TROUBLE	When a B465 input that is configured for Fire Trouble is shorted, the B465 makes a Panel Fire Trouble event and sends a FIRE TROUBLE report.	9
3-373-99-iii FIRE TROUBLE (restoral)	When a B465 input that is configured for Fire Trouble returns to normal after being shorted, the B465 makes a Panel Fire Trouble Restoral event and sends a, FIRE TROUBLE Restoral report.	10
1-380-99-iii BURGLARY TROUBLE	When a B465 input that is configured for Burglary Trouble is shorted, the B465 makes a Panel Burglary Trouble event and sends a BURGLARY TROUBLE report.	9
3-380-99-iii BURGLARY TROUBLE (restoral)	When a B465 input that is configured for Burglary Trouble returns to normal after being shorted, the B465 makes a Panel Burglary Trouble Restoral event and sends a, BURGLARY TROUBLE Restoral report.	10
1-602-99-000 PERIODIC TEST	When the B465 is configured to send test reports it sends a PERIODIC TEST report.	36
1-608-99-000 PERIODIC TEST (system trouble present)	When the B465 is configured to send test reports and there is a module or input fault it sends a PERIODIC TEST (system trouble present) report.	37

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