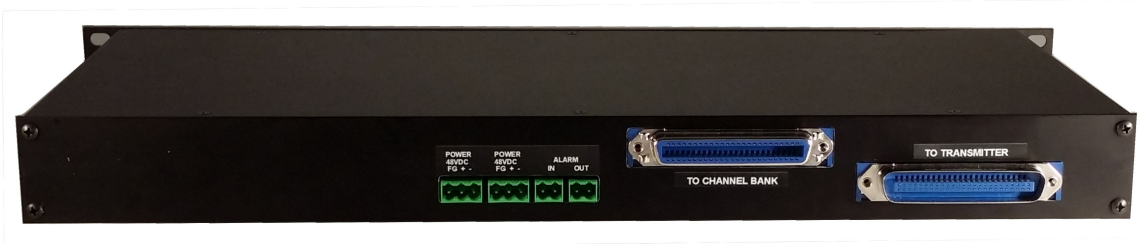# PTT24

Manual

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Manual version 1.0, Firmware version 1.0

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Manual Version 1.0, Firmware 1.0

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Chapter 1

Introduction

This chapter provides an overview of features and capabilities.

The PTT24 is a Push-to-Talk lockout device. It is used with multiple E&M circuits linked to radio transmitters, PBXs, etc. The PTT-24 solves the problem of E&M leads being locked into a Transmit ON state when a T1 circuit fails. Many T1 trunk lines will go into a busy condition when the T1 trunk fails. This causes the E&M leads to lock in an ON state, which causes radio transmitters to lock in the ON state, tie lines to go off hook, etc.

12 or 24 E&M ports are wired through the PTT Lockout unit. A front panel toggle switch is used to select 12 or 24 port operation. A 2 digit push button switch is used to select the E&M DS0 control channel. The Power LED flashes if an invalid control channel number is selected.

Based on the selected E&M DS0 control channel (via the front panel) the PTT Lockout device will detect a closure to ground on that channel and de-assert all the other channels. E&M Type III is not supported.

In the PTT-24 12 channel mode, selecting control channel 1 through 12 will select one of the even numbered leads 26 though 48 as the control channel. The other 11 even numbered leads will be de-asserted if the control channel is asserted. All other leads are passed straight through.

In the PTT-24 24 channel mode, selecting control channel 1 through 24 will select one of the leads 26 though 49 as the control channel. The other 23 leads will be de-asserted if the control channel is asserted. All other leads are passed straight through.

If the PTT-24 were to lose power, the E-leads will be in a pass through mode as though the PTT-24 is only a "lump in the cable".

Lockout can be triggered by the E&M control channel being activated or the alarm input. For both the control channel and the alarm input, there is a delay of 20 milliseconds before the lockout occurs. The de-activation delay is 5 seconds. The de-activation delay eliminates lockout "chattering" on/off/on/off, etc.

Leads 1 through 24 and 50 of the 50 pin Amphenol telco connectors are passed straight through from the channel bank to the transmitter. The PTT24 does not impact these leads in any way.

Package Contents

You should find the following items packaged with your PTT24:
- The PTT24 rack mount unit with power and alarm connectors
- 4 plastic cable tie mounts and 4 4-40 x 1/4" screws
- 2 filler spacers used under the 4 #10-32 x 3/8" panel mount fasteners
- Manual
- Optional: 1 - 9802012 PC Direct adapter, 1 – 9500023 green network management cable

Software Requirements

Except for testing there is no need for any software to configure or operate the PTT24. Using the PTT24 RS232 port requires removing the top cover to access the management port located inside the unit. Except for testing it should never be necessary to access this port in the field.

To use the RS232 port, use the supplied green network management cable (6500023) and the PC direct adapter (9802012) to connect to a terminal or PC. The management port is 9600 bps, 8 data bits, no parity. No special terminal type is required. Either a "dumb terminal mode" or a VT terminal type should suffice. Hypterterm, TeraTerm, Putty are examples of suitable terminal software.
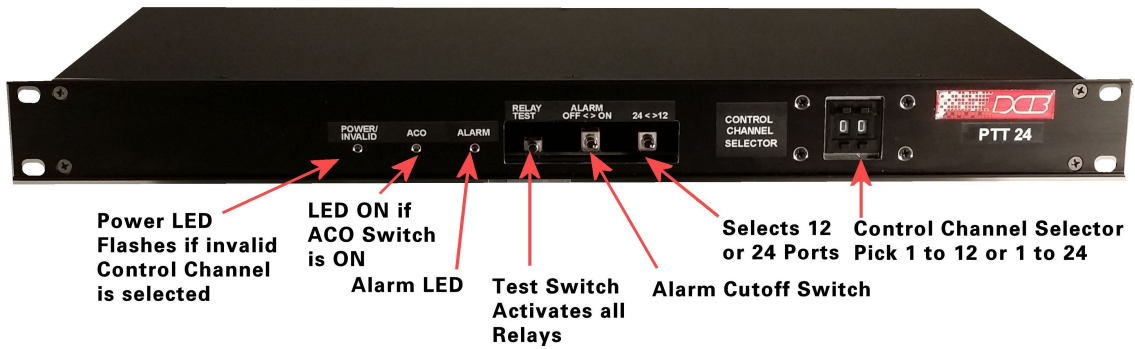
Chapter 2

Installation
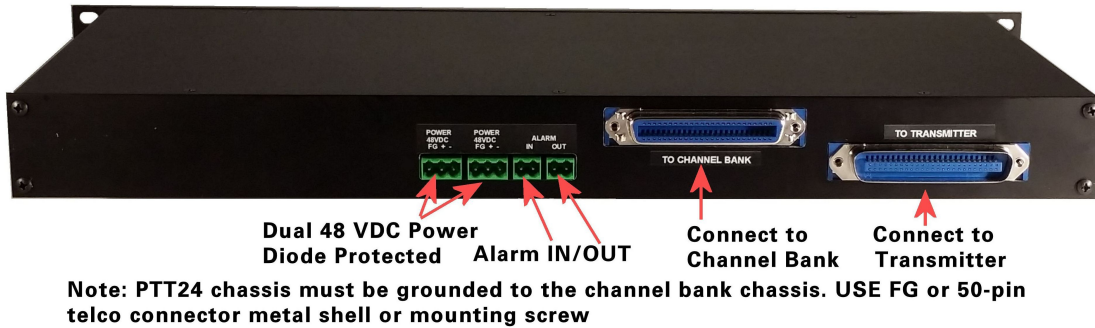
This Chapter details the installation process .

Overview

The PTT24 is a 1U high by 19" rack mount unit. Installation and configuration of the PTT24

PTT24 Front Panel

Power LED
Flashes if invalid
Control Channel
is selected

LED ON if
ACO Switch
is ON

Alarm LED

Test Switch
Activates all
Relays

Alarm Cutoff Switch

Selects 12
or 24 Ports

Control Channel Selector
Pick 1 to 12 or 1 to 24

PTT24 Rear Panel

Dual 48 VDC Power
Diode Protected

Alarm IN/OUT

Connect to
Channel Bank

Connect to
Transmitter

Note: PTT24 chassis must be grounded to the channel bank chassis. USE FG or 50-pin
telco connector metal shell or mounting screw

Installation: Channel Bank, Transmitter, Power, Alarm, Ground

1. Rack mount the PTT24

The PTT24 is shipped with 4 mounting screws and 2 rectangular spacers. The spacers protect front panel from being bent or scratched by the mounting screws.

2. Cable the Channel Bank to the PTT24

Standard straight through 50-pin male to female telco cables are used to connect to the PTT24. The PTT24 wiring path is designed to work with the Charles Industries 360 series channel banks. Wiring charts for 12 and 24 ports are shown below on the follow page for reference.

Connect to Channel Bank   **Connect to Transmitter**

Controlled and Pass Thru Channels for the 12 and 24 Channel Selections

Pin(s)	12 Channels	24 Channels
1	No Connection	No Connection
2 to 25	Pass Thru	Pass Thru
26	**Controlled**	**Controlled**
27	Pass Thru	**Controlled**
28	**Controlled**	**Controlled**
29	Pass Thru	**Controlled**
30	**Controlled**	**Controlled**
31	Pass Thru	**Controlled**
32	**Controlled**	**Controlled**
33	Pass Thru	**Controlled**
34	**Controlled**	**Controlled**
35	Pass Thru	**Controlled**
36	**Controlled**	**Controlled**
37	Pass Thru	**Controlled**
38	**Controlled**	**Controlled**
39	Pass Thru	**Controlled**
40	**Controlled**	**Controlled**
42	Pass Thru	**Controlled**
42	**Controlled**	**Controlled**
43	Pass Thru	**Controlled**
44	**Controlled**	**Controlled**
45	Pass Thru	**Controlled**
46	**Controlled**	**Controlled**
47	Pass Thru	**Controlled**
48	**Controlled**	**Controlled**
49	Pass Thru	**Controlled**
50	No Connection	No Connection

3. Select 12 or 24 Channel Operation

The toggle switch "24< >12" selects either 12 or 24 channels of E&M leads to be controlled by the PTT24. The left position selects 24 channels, the right position selects 12 channels.
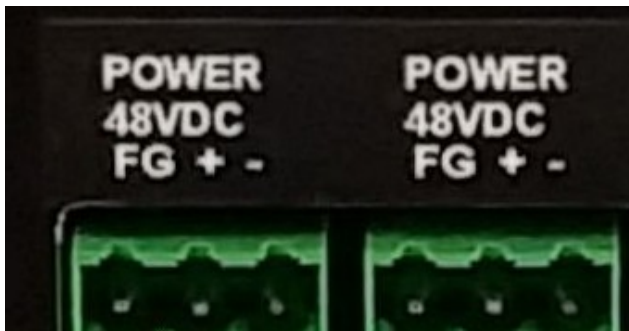

Selects 12 or 24 Ports

### 4. Connect the PTT24 Frame/Chassis Ground

Frame ground is on the 48 VDC power connectors, on the 50-pin telco connector shells and cable tie down screws.

5. Connect the PTT24 to 48 VDC Power

Each PTT24 has 2 diode protected power connectors. The power connectors are 3 position Phoenix type connectors. Each connector has Frame Ground, positive and negative power connections.
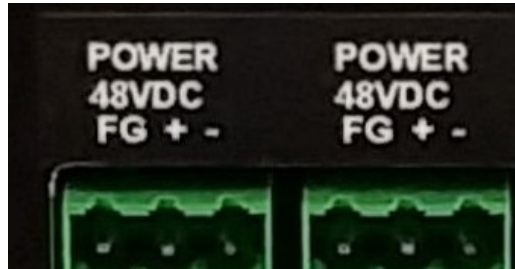
6. Connect the Alarm IN and Alarm Out

The Alarm In can come from another PTT24 or from the channel bank. The Alarm Out can be connected to another PTT24, to a SCADA system for remote reporting, to some local external alarm signal device, etc. The Alarm In and Alarm out are contact closures. Alarm Off is open, Alarm On is a closed relay connection. The PTT24 will operate with or without the Alarm In or Alarm Out connected.

7. Select the Control Channel

Select the Control Channel to be monitored by the PTT24. For 12 channel operation the channel must be from 1 to 12. For 24 channel operation the channel must be from 1 to 24. The Power LED will flash if an invalid channel is selected. .
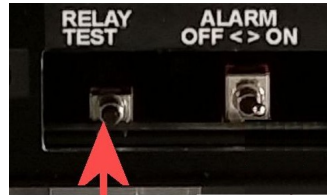

**Control Channel Selector
Pick 1 to 12 or 1 to 24**

8. Relay Test Push Button Switch

The PTT24 Relay Test switch can be pressed for a quick test. The audible alarm should sound, relays should click, the Alarm LED should light, the Alarm Out relay should operate. The alarm will sound only when the ALARM toggle switch is in the ON position.

Test Switch Activates all Relays

Chapter 3

Testing

Overview

The PTT24 has a front panel test switch, Channel Selector Switch for the Guard Channel, Audible Alarm, and LEDs. The PTT24 has rear panel Alarm IN and Alarm OUT connectors. The PTT24 has an internal RS232 test port. A factory test assembly is used during manufacturing for final testing of the PTT24. Most of the PTT24 functionality can be checked in the field. The following outlines the testing that can be done in the field. The factory test procedures are also noted. The factory test assembly can be purchased for customer field use.

Field Testing

Front Panel Test Switch

Pressing the front panel test switch will enable all the relays, sound the audible alarm, light the Alarm LED, cause the Alarm Out leads to close and all the relays will operate. The sound of the relays operating can be heard as a low level clicking sound. The alarm will sound only when the ALARM toggle switch is in the ON position.

Alarm In and Alarm Out

To test the Alarm In, the 2 leads on the Alarm In connector can be shorted together. When shorted, the ALARM LED will light, the audible alarm will sound (if not disabled by the front panel switch) and all the relays will operate. The Alarm Out can be checked with a VOM. When the the Relay Test button is pushed the Alarm Out leads will be closed.

Channel Selector Switch and Power LED

The channel selector switch can be set to an invalid channel number. This will cause the Power LED to flash.

Audible Alarm

With the Alarm Cutoff Switch set to ON, pressing the Test Switch will cause the audible alarm to sound. Also, shorting the Alarm In leads will cause the audible alarm to sound. If the alarm is activated with the Alarm Cutoff Switch set to OFF, no audible alarm will sound.

LEDs

The LEDs are Power/Invalid Channel, ACO and Alarm. The Power LED is on when power is applied to the PTT24. The Power LED will flash if an invalid control channel is selected. An invalid channel is any except 1 through 12 when 12 channels are selected via the front panel switch. An invalid channel is any except 1 through 24 when the 24 channels are selected via the front panel switch.

RS232 Port

The PTT24 has an internal RS232 port located on the right hand side of the PC board when viewed from the front. To access the RS232 port the cover of the PTT24 must be removed. The RS232 port is an RJ45 connector. A special Network Management cable and RJ45 to DE-9 female connector is available for using this RS232 port. See the next section for details on the operation of the RS232 port.

Appendix A
Specifications

PTT24 Push-to-Talk Lockout Device Specifications

General

- **Front Panel** (these are approximate placements, subject to relocation):
  - Toggle switch to select 12 or 24 E&M ports
  - Push button switch to select port 1 to 24 for PTT Lockout control

- - Test switch, momentary, to test lockout function
  - Front panel switch to kill an audio alarm that will sound when/if the control port activates
  - Green Power LED (flashes if an invalid control port number is selected, i.e. 00, 25, etc.)
  - Red "ALARM" LED to indicate the PTT Lockout switch is activated

- - Yellow "ACO" LED to indicate the ALARM CUT OFF is on

- **Rear Panel**

- - 2 rear panel power inputs for -48 VDC power, diode protected between the 2 power inputs to avoid power feed back

- - Alarm Input (dry contact closure) to externally activate the PTT Lockout function and/or test the unit

- - Alarm output dry contact

- - Female 50 pin telco connector from the channel bank, screw connection and cable tie type of cable cable fasteners

- - Male 50 pin telco from the PTT lockout to Transmitter side of the circuit, screw connection and cable tie type of cable fasteners

Physical/Electrical

- Standalone or rack mounting

- Power requirements: -48 VDC

- 19" W x 10" D x 1 ¾" H

- 3 pounds

Environmental

- Operational Temperature: -40 to +70 C

- Storage Temperature: -50 to +75 C

- Humidity: <95% Non-condensing