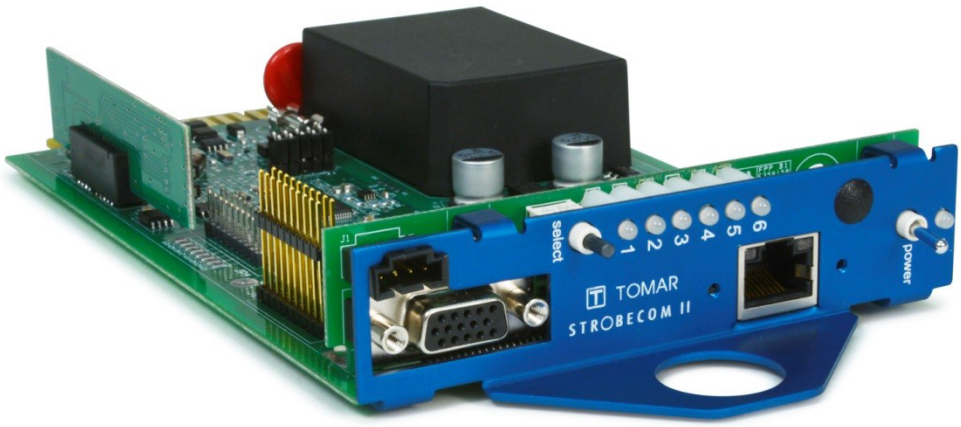
TOMAR

Instruction



Strobecom II 4140 and OSPOC: Front Panel User Guide

The front panel of the 4140 and OSPOC provide feedback on system status and allow user access to a command set. This document will focus on the front panel command set.

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Applies to firmware versions:
4140 v4.1.8 and higher
OSPOC v5.1.9 and higher

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ATTENTION

THE STROBECOM II SYSTEM IS DESIGNED TO AID IN THE TRANSIT OF DESIGNATED VEHICLES THROUGH THE TRAFFIC CONTROL SYSTEM, TO THEIR DESTINATIONS.

IT IS IMPERATIVE THAT THE DRIVERS OF EACH TYPE OF VEHICLE THAT USES THE STROBECOM II SYSTEM BE MADE AWARE OF THE RESPONSE HE CAN EXPECT FROM THE TRAFFIC CONTROL SYSTEM.

IT IS THE RESPONSIBILITY OF THE CUSTOMER TO CONFIGURE THE SYSTEM'S RESPONSE TO EACH VEHICLE TYPE AND TO EDUCATE EACH DRIVER TO EXPECT THE APPROPRIATE RESPONSE FROM THE SYSTEM.

AT NO TIME SHOULD A DRIVER OF A VEHICLE EXPECT THAT HE IS GUARANTEED TO RECEIVE PROTECTED RIGHT-OF-WAY THROUGH TRAFFIC INTERSECTIONS. DRIVERS OF VEHICLES THAT WILL OPERATE OUTSIDE OF THE NORMAL TRAFFIC LAWS AND CONVENTIONS MUST ALWAYS TAKE RESPONSIBILITY FOR ENSURING THE SAFE PASSAGE OF HIS VEHICLE THROUGH AN INTERSECTION REGARDLESS OF THE OPERATION OR NON-OPERATION OF THE STROBECOM II SYSTEM.

April 2013

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Front Panel Guide

The front panel of the Strobecom 4140 and OSPOC provide the user with feedback on the system status as well as Ethernet communications. A single pushbutton on the front panel is also provided to select actions specific to on-site installation and verification operations. The user may enable or disable channels, enable or disable transit on channels, test channels using either transit or emergency band, and activate the ranging process. The user may also reset the system to the default configuration. A timeout is provided such that after 30 seconds of inactivity, the menu idles.

1 Front Panel Overview

The front panel of the 4140 and OSPOC is one of the interfaces available on the Strobecom 4140 and OSPOC. This allows certain actions that may be performed. It also provides basic information on the system status.

1.1 Components

1.1.1 On Indicator LED

This LED provides information on the health of the system. When the system is powered, this LED will pulse at a 2 second rate, called a heartbeat. Upon a power-up, a red heartbeat is used to indicate the system is initializing. Once initialized, a green heartbeat will appear. The green heartbeat indicates the system is operating normally.

Note: The heartbeat indicator LED is labeled as 'on'.

1.1.2 Power Switch

The power switch is used to turn power on or off to the Strobecom II 4140 and OSPOC.

1.1.3 Channel LED Display

These LEDs are numbered 1 to 6, indicating the respective channel for preemption. Under normal operations these LEDs indicate the status of any preemption events. These LEDs are also used in a menu system for access to the commands available from the front panel. They are also used to provide basic status information regarding the installed SPM, detector faults, and configuration corruption.

1.1.4 Select Pushbutton

The pushbutton is used to access and navigate the front panel command menu.

1.1.5 Power-up Display

Upon power-up, the front panel will first cycle through each LED color for all channels. Afterwards, the front panel will display the number of channels supported by the installed SPM. Each channel that is supported will display solid green briefly at power-up.

Note: During the power-up display period, the heartbeat will be red.

1.1.6 Ethernet Connector

The RJ45 Ethernet connector provides Ethernet connectivity to the Strobecom II 4140 and OSPOC.

2 Front Panel Command Menu

The front panel menu allows access to a set of commands. Once the menu is active, each channel provides a single command as illustrated in the figure below.

- Channel 6: Blinks to indicate the front panel menu system is active
- Channel 5: Transit Enable/Disable
- Channel 4: Channel Enable/Disable
- Channel 3: Ranging
- Channel 2: Transit Band Test
- Channel 1: Emergency Band Test

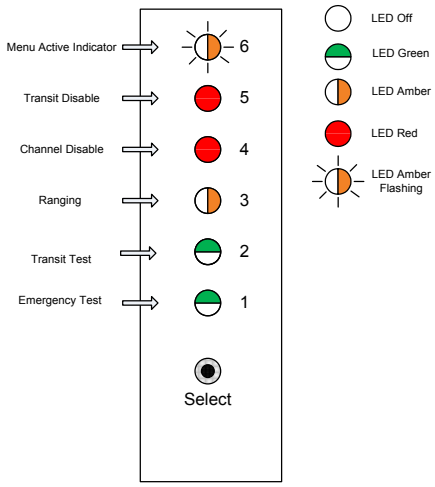

Figure 1: Front Panel Command Menu

Use of the front panel entails the process of first selecting the desired command, then selecting the channel(s) on which to apply the command, and finally activation of the command. Brief pushbutton presses (less than 2 seconds) are used in the selection of either the command or the channel. Holding the pushbutton press (longer than 2 seconds) is used to either choose a command or activate the command on the selected channels.

Note: In the event that all front panel LED indicators are solid red (a configuration corruption has been detected), the user must reset the system to defaults. Press and hold the pushbutton for at least 12 seconds to reset the system to defaults.

Note: LED 6 is used to indicate that the menu system is active

Note: During active preemption, the front panel menu system is overridden. The user should not use the front panel pushbutton during preemption events.

Note: Log entries are created when enabling or disabling a channel and channel tests for either band

2.1 Entering the Front Panel Menu

By default after a power-up, the front panel menu is inactive. To active the front panel menu, press and hold the pushbutton for at least 6 seconds. The channel 6 LED will slowly blink amber when the menu becomes active. Channel 1 will also turn solid green.

Note: Upon the initial entry into the front panel menu system, the LED display will provide information on which channels are disabled or have transit band disabled. First, the channel status will be displayed as solid LED colors. If a channel is enabled, it will be solid green. If a channel is disabled, it will be solid red. After about 2 seconds, the transit band status will be displayed as flashing LED colors. If transit is enabled on a channel, it will be blinking green. If transit is disabled on a channel, it will be blinking red. The LED display will only light for the number of channels as supported by the installed SPM module.

2.2 Front Panel Commands

Each channel LED position provides a single command, as shown in the previous figure (Figure 1). To select a command, briefly press and release the pushbutton until the desired command is illuminated. To utilize the command, press and hold the pushbutton for at least 2 seconds. The LED will briefly blink when the command has been activated.

The channel selection process is now active for the selected command. To select a channel, briefly press and release the pushbutton until the desired channel is illuminated.

Note: The menu system will remain at the channel selection level. To exit back to the command selection level, either wait 30 seconds for the menu to revert to an idle state or cycle the system power.

To activate the command on the selected channel, press and hold the pushbutton for at least 2 seconds. The LED will briefly blink when the command has been applied to the channel.

The following command descriptions assume the front panel menu system has been entered from an idle state.

2.2.1 Emergency Band Test

Emergency band test is associated with LED channel 1. It is solid green at this level. This will issue an emergency band test on the selected channel. During channel selection, the LED will be a solid green color.

2.2.2 Transit Band Test

Transit band test is associated with LED channel 2. It is solid green at this level. This will issue a transit band test on the selected channel. During channel selection, the LED will be a blinking green color.

2.2.3 Ranging

Ranging is associated with LED channel 3. It is solid amber at this level. This will arm the selected channel or channels for range setting operations.

During channel selection, the LED will be a solid amber color. Once the command has been activated on the channel, the applicable channels will be a blinking amber color.

Note: The ranging process allows the user to select all channels as well as individual channels.

Note: Once armed, a single channel will have a timeout of 10 minutes. If all channels are armed, the timeout will be 20 minutes for a 2 channel SPM or 40 minutes for a 4 channel SPM.

2.2.4 Channel Enable/Disable

Channel enable or disable is associated with LED channel 4. It is solid red at this level. This allows toggling a channel between enabled or disabled. A disabled channel will not produce a preemption event.

During channel selection, the channel LED color will indicate the current status of the channel. A solid green LED indicates the channel is currently enabled. A solid red LED indicates the channel is currently disabled.

2.2.5 Transit Enable/Disable

Transit enable or disable is associated with LED channel 5. It is solid red at this level. This allows toggling a transit band between enabled or disabled. A channel with transit disabled will not produce a preemption event for transit band signals.

During channel selection, the channel LED color will indicate the current status of the channel. A blinking green LED indicates transit is currently enabled for the channel. A blinking red LED indicates transit is currently disabled for the channel.

2.3 Resetting the System to Defaults

To reset the system to defaults, simply press and hold the pushbutton for at least 12 seconds.

Note: After 6 seconds, the menu system will become active and display channel status. Remain holding the pushbutton to continue on with the reset to defaults command.

Note: When the reset to defaults command has been activated, the front panel will display a pattern indicated the command is being applied to the system.

3 Front Panel Indicator Patterns and Troubleshooting

The front panel LED indicators are used to depict the status of optical events as well as other events detected within the system. These indications include some basic assistance in troubleshooting system problems, particularly regarding the SPM card and detector status.

3.1 Power Up

Upon power-up, all channel LED indicators are cycled through the various colors. This allows the user to visually verify that all LED indicators are working on all possible colors. The pattern will cycle from the outside channels toward the inner channels, changing colors.

After this sequence, the front panel LEDs will indicate the number of channels supported by the installed SPM module. Supported channels will turn steady green for around 3 seconds.

During power-up, the 'on' indicator LED will pulse red until the system has initialized. Once the system is ready, the 'on' indicator will pulse green.

3.2 Normal Operations

During normal system operations, the 'on' indicator will pulse green. All other indicators will display the status of current optical events. If using the front panel menu, the LED indicators will be used to navigate the menu.

3.3 SPM Card

The front panel LEDs are also used to indicate the status of the installed SPM module. If an incorrect SPM module is installed or there is a failure to detect an SPM module, the front panel will indicate this by sequentially turning each LED either amber or red, one at a time. The figure below shows this pattern for the case of a failure detecting an SPM module, with the LEDs red. An incorrect SPM module will follow the same pattern, but with all LEDs amber.

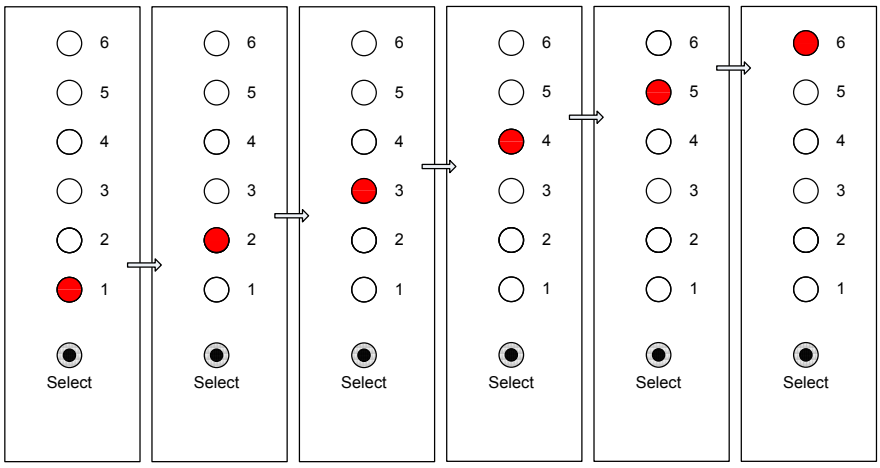

Figure 2: LED Pattern for SPM Detection Failure

The 'on' indicator will pulse amber, indicating a system error.

3.4 Detector Fault Detect

When excess current is drawn from the SPM of the 4140 or OSPOC, a detector fault condition will be triggered. Typically, a short between power and either ground or the signal wire will cause a detector fault. This condition will be indicated by all LED channels constantly alternating amber and red.

The 'on' indicator will pulse amber, indicating a system error.

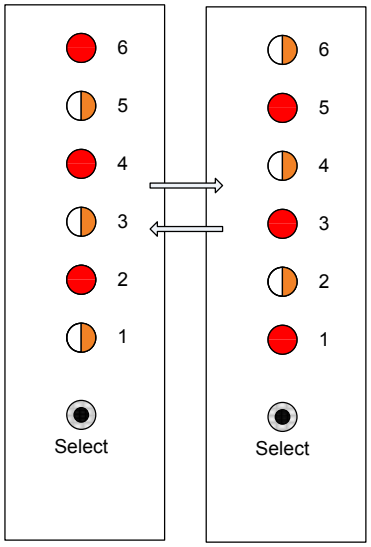

Figure 3: LED Pattern for Detector Fault

Note: Optical preemption is not possible in the event of detector fault. A single detector fault affects all detector channels.

3.5 Corrupt Configuration Data

When a corruption of the system configuration data is detected, this will be indicated on the front panel. In this state, all 6 LED channels will display a solid red.

The 'on' indicator will pulse green.

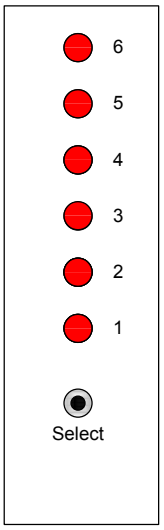

Figure 4: LED Pattern for Corrupt Configuration

Note: Optical preemption is disabled in the event of corrupt configuration data.

3.6 Channels(s) Disabled

From either the front panel menu operations or OSPSoft, it is possible to disable preemption on some channels. Disabled channels will be indicated on the front panel. A solid red LED indicates that channel has been disabled. At most, channels 1 to 4 will be solid red in this mode.

The example to the right shows all 4 channels disabled.

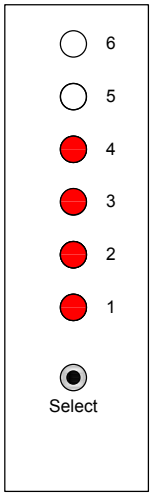

Figure 5: LED Pattern for Disabled Channels

3.7 Detector Self-Test Failure

For systems utilizing detectors which incorporate the self-test feature, the status of the self-test events are displayed on the front panel. Failure to detect self-test signals from a detector after a period of time will raise a self-test failure event. This is indicated by the applicable channel flashing red.

Note: Log entries are created when a self-test failure event is raised. When self-test signals from the detector are again detected, a log entry is created indicating the failure event has been cleared, resuming normal operations.

Note: A self-test failure is indicative of either a noisy channel or possible detector failure.

3.8 Reset to Defaults

When the reset to defaults command is activated from the front panel menu, the front panel LEDs will display a pattern indicating this operation.

The 'on' indicator will pulse amber during the operation. Once the system has been reset to defaults, the 'on' indicator will pulse green.

4 Command Menu – Operation Reference

A quick reference is provided for the menu operations. The table represents the actions performed on the pushbutton to achieve the desired operations.

Table 1: Front Panel Command Reference

Command	Description	Pushbutton
Emergency Band Test	Select emergency test Utilize emergency channel test Select channel Apply operation	Select LED 1 (solid green) using short presses Utilize command by pressing button for > 2 s Select channel using short presses Activate command by pressing button for > 2 s
Transit Band Test	Select transit test Utilize transit channel test Select channel Apply operation	Select LED 2 (solid green) using short presses Utilize command by pressing button for > 2 s Select channel using short presses Activate command by pressing button for > 2 s
Ranging	Select ranging Utilize ranging Select channel(s) Apply operation	Select LED 3 (solid amber) using short presses Utilize command by pressing button for > 2 s Select channel(s) using short presses Activate command by pressing button for > 2 s
Channel Disable	Select channel disable Utilize channel disable Select channel Apply operation	Select LED 4 (solid red) using short presses Utilize command by pressing button for > 2 s Select channel using short presses Activate command by pressing button for > 2 s
Transit Disable	Select transit disable Utilize transit disable Select channel Apply operation	Select LED 5 (solid red) using short presses Utilize command by pressing button for > 2 s Select channel using short presses Activate command by pressing button for > 2 s