Ocelot GPIO Control Panel

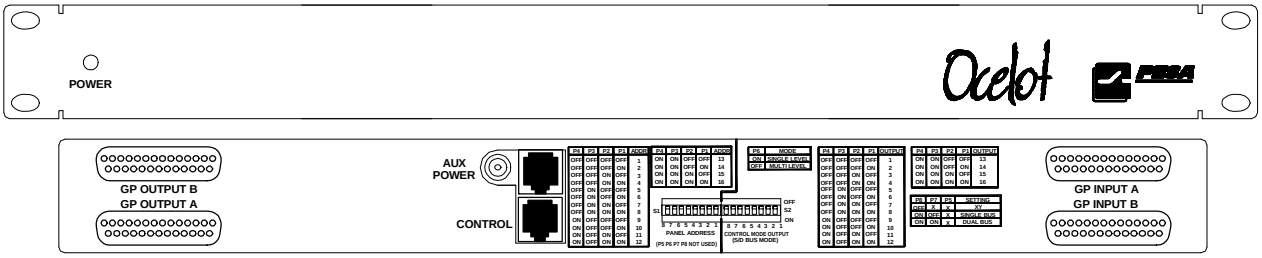

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Table of Contents

Ocelot GPIO Control Panel

Table of Contents

Ocelot GPIO Control Panel

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Introduction

This manual contains the installation, switch settings, and operation instructions for the Ocelot GPIO Control Panel. Please refer to this manual and the Ocelot Manual (P/N 81905903900) prior to installing or operating the Ocelot GPIO Control Panel.

General

The Ocelot GPIO Control Panel, Figure 1, is a specialized control panel that can take electrical switch closure inputs and generate electrical switch closure outputs to interface with external electronic equipment. This panel, emulates other Ocelot control panels, thus it works as a gateway between regular GPIO devices and the Ocelot System Controller. There are six different types of Ocelot control panels. The Ocelot GPIO Control Panel can emulate all of them.

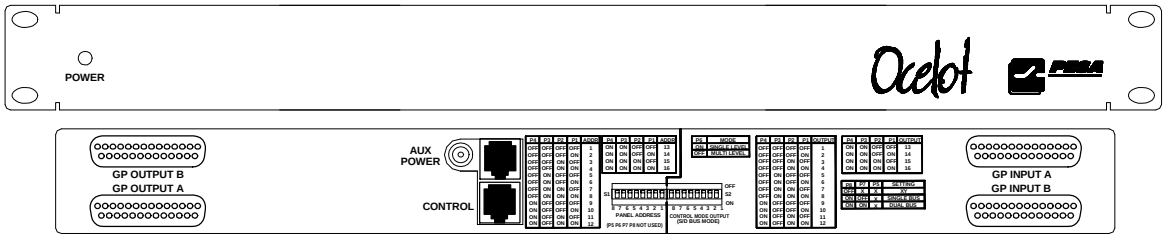


Figure 1 Ocelot GPIO Panel

Up to 16 control panels may be configured for use in controlling the Ocelot Routing Switcher System. Communication between the System Controller and the control panels takes place over an addressable communications bus. The identifying address of each control panel is set by an 8-position dip switch (4 positions unused) and is user-selectable.

Installation

The Ocelot GPIO Control Panel is installed in a standard 19" equipment rack as discussed in the following paragraphs:

The Ocelot GPIO Control Panel is designed to be rack mounted in a standard 19” equipment rack. Sufficient space must be provided behind the equipment rack to allow for control and power cables. All mounting holes should be utilized and mounting hardware tightened securely. As with all equipment installed in a rack, the bottom screw on each side should be installed before proceeding with the remainder of the screws. Then all screws should be securely tightened.

Support the Ocelot GPIO Control Panel's bottom while installing it in the rack. Figure 2 illustrates chassis installation in the equipment rack.

To install a Ocelot GPIO Control Panel in an equipment rack follow these steps:

1. Align the chassis with the slotted opening in the rack.

2. Install the bottom screws first.

3. Install the two top screws

4. Tighten all four screws securely.

Cabling

All cables should be strained relieved and secured to racks or other supporting structures. Failure to provide adequate cable support can result in cables separating from connectors. If cable runs are to be stored under an elevated floor, they should be tied to the racks as a guide. If cables are run along the floor, do not allow them to lay in the work area behind the racks. Stepping or tripping on the cables may result in connections being pulled free or wire breakage inside the insulation. The Ocelot GPIO Remote Control Panel should be installed in the equipment rack prior to attaching cables.

Use the following rules when cabling the Ocelot GPIO Remote Control Panel:

1. Lay all cables in their intended positions, separating signal from power cables wherever possible.

2. Provide proper support for each cable during the cabling process. The use of tie-wraps is recommended, as shown in Figure 3.

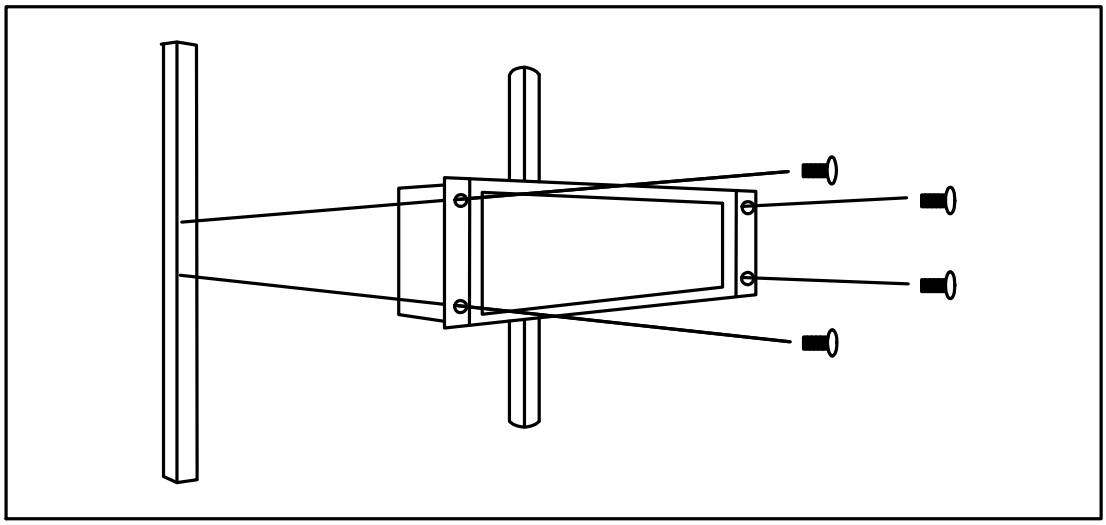


Figure 2 Chassis Installation

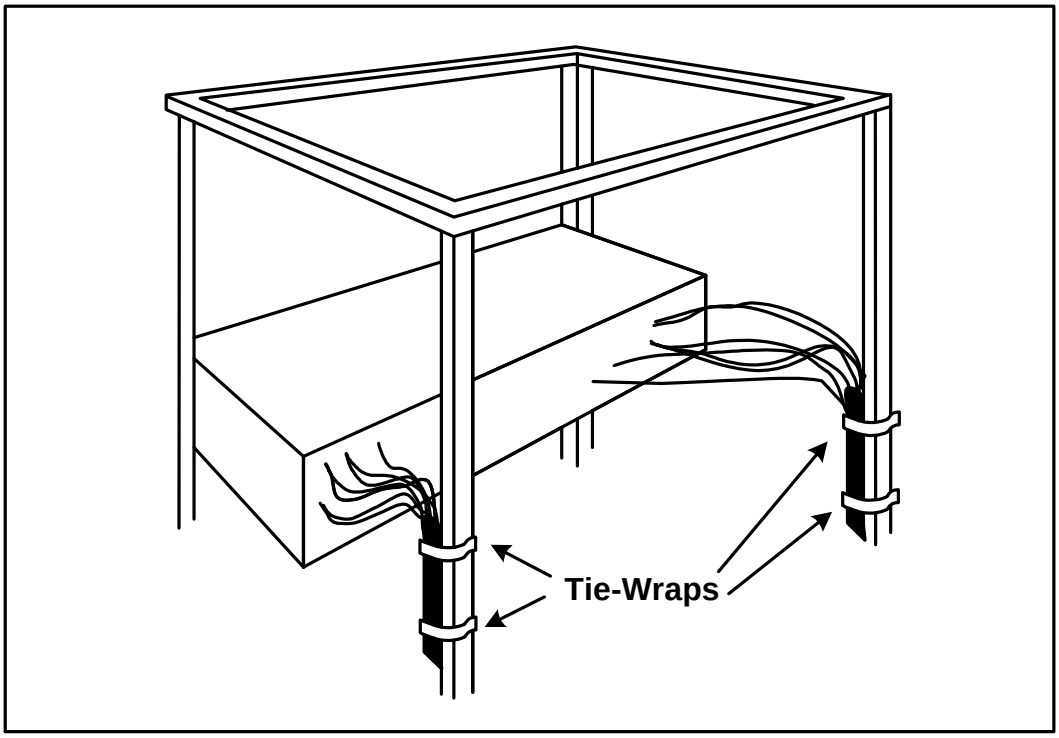


Figure 3 Cabling

System Connections

Control panels remotely installed in the Ocelot Routing Switcher System are daisy-chained to the communications port on the backplane of the system controller, as shown in Figures 5 and 6, using 8-conductor control cables.

Input/Output Connections

Signal Characteristics

The signals to the Ocelot GPIO Remote Control Panel are both input and output signals. An input signal to one of the GP INPUT ports A or B emulates a panel pushbutton in the pushed position. This is accomplished by applying a ground to the appropriate input port (Figure 4). The ports are internally limited to 5mA so an open collector or a switch connected to ground will be enough to activate the circuit. The output signal from the GP OUTPUT ports A and B indicates what would be the panel pushbutton LED status. When a specific pushbutton LED would be in ON state, the associated OUTPUT pin is driven to ground (Figure 4). **NOTE:** The load on this signal must be less than 5mA and less than 30 V to guarantee proper function. The user must be careful to avoid driving higher profile signals or the panel may malfunction and could be damaged.

Pinout

There are six different types of Ocelot control panels. The Ocelot GPIO Remote Control Panel can emulate all of them. For each panel type, the GP INPUT and OUTPUT ports are configured differently. The two DB25 connectors in the rear of the panel labelled GP INPUT A and B are for inputs, (i.e.; push button emulation), and the two DB25 connectors labelled GP OUTPUT A and B are for the LED state. The "A" connectors handle the signals for matrix inputs, levels, and locks, and the "B" connectors handle the output signals or second bus matrix inputs in dual bus mode. Thus, 8X1, and 16X1 configurations only use the "A" connectors. See pinout in Table 1.

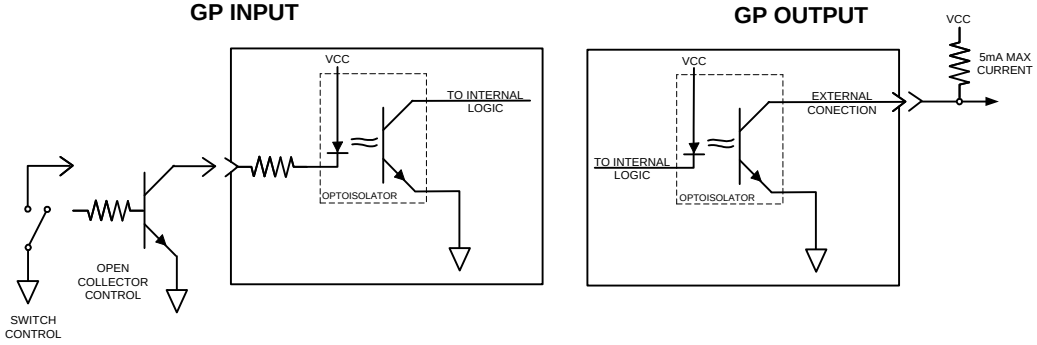


Figure 4 Typical Input and Output Circuits

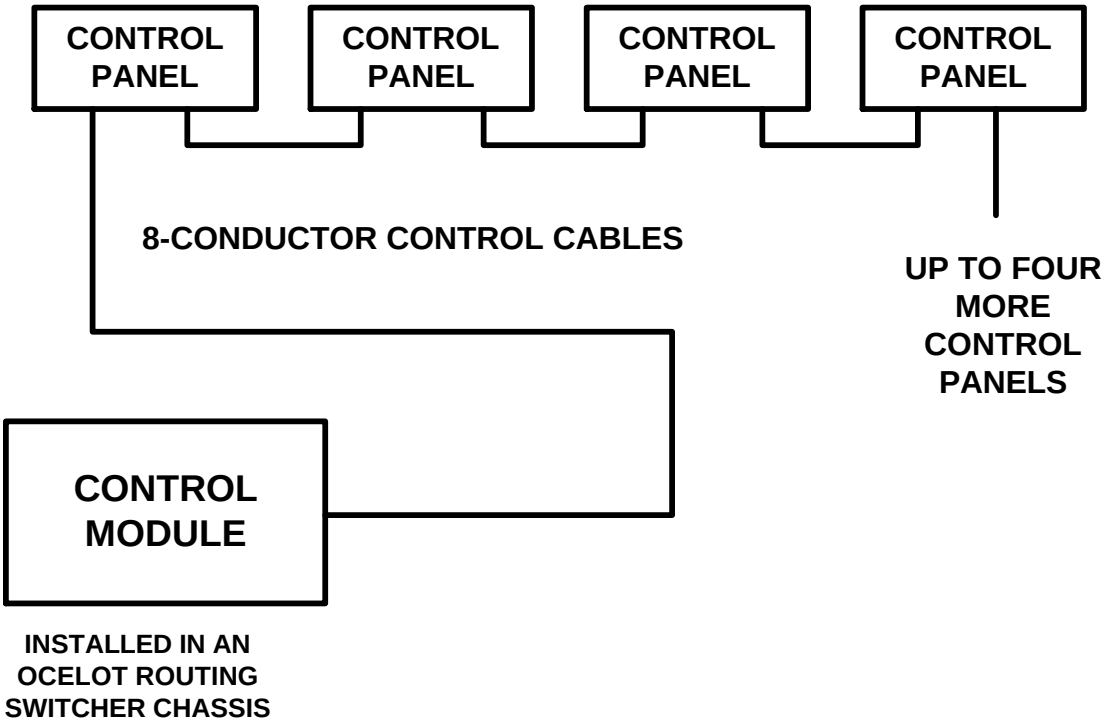


Figure 5 System Control Connections

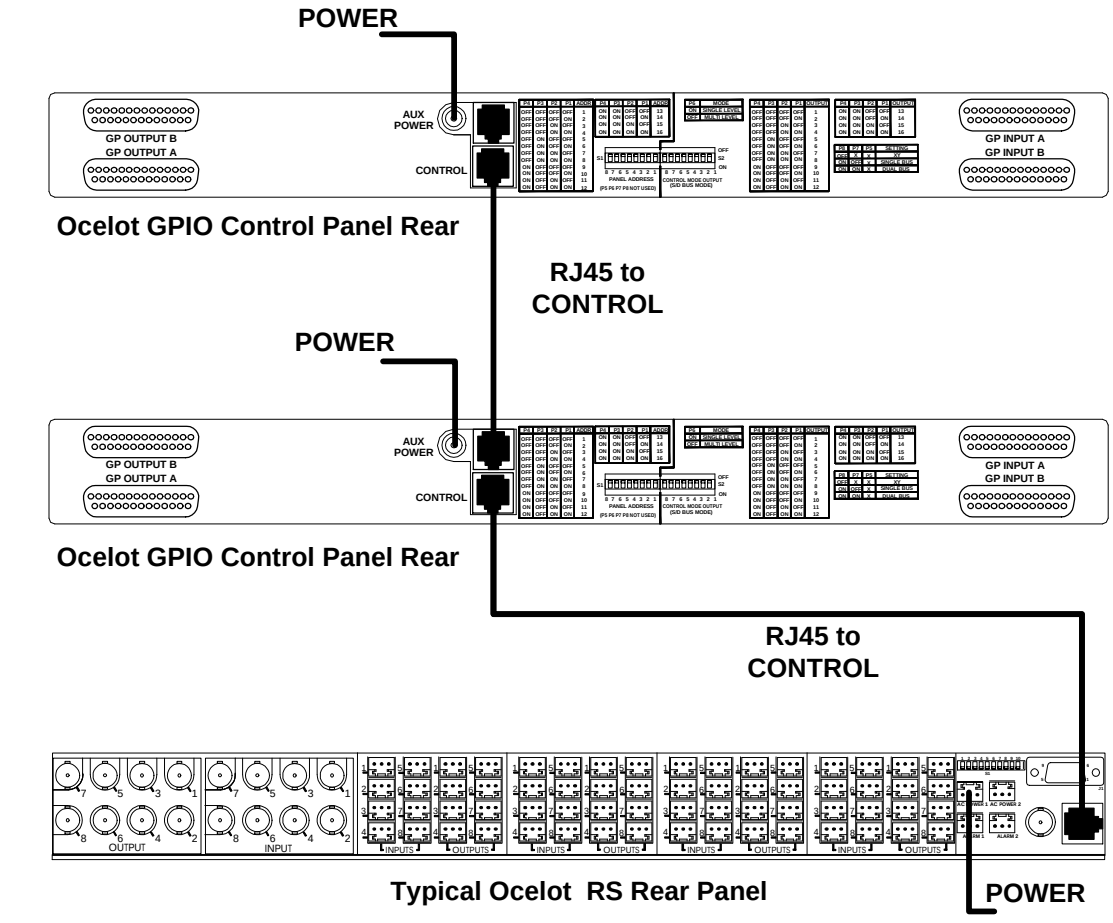


Figure 6 Typical Multiple Ocelot GPIO Control Panel Hookup

Table 1. Ocelot GPIO Remote Panel Configurations

GP INPUTS A and B

A Pins	16X16	16X2	16X1	8X8	8X2	8X1	B Pins	16X16	16X2	16X1	8X8	8X2	8X1
1	IN1	IN1-1	IN1	IN1	IN1-1	IN1	1	OUT1	IN1-2		OUT1	IN1-2	
2	IN2	IN2-1	IN2	IN2	IN2-1	IN2	2	OUT2	IN2-2		OUT2	IN2-2	
3	IN3	IN3-1	IN3	IN3	IN3-1	IN3	3	OUT3	IN3-2		OUT3	IN3-2	
4	IN4	IN4-1	IN4	IN4	IN4-1	IN4	4	OUT4	IN4-2		OUT4	IN4-2	
5	IN5	IN5-1	IN5	IN5	IN5-1	IN5	5	OUT5	IN5-2		OUT5	IN5-2	
6	IN6	IN6-1	IN6	IN6	IN6-1	IN6	6	OUT6	IN6-2		OUT6	IN6-2	
7	IN7	IN7-1	IN7	IN7	IN7-1	IN7	7	OUT7	IN7-2		OUT7	IN7-2	
8	IN8	IN8-1	IN8	IN8	IN8-1	IN8	8	OUT8	IN8-2		OUT8	IN8-2	
9	IN9	IN9-1	IN9				9	OUT9	IN9-2				
10	IN10	IN10-1	IN10				10	OUT10	IN10-2				
11	IN11	IN11-1	IN11				11	OUT11	IN11-2				
12	IN12	IN12-1	IN12				12	OUT12	IN12-2				
13	IN13	IN13-1	IN13				13	OUT13	IN13-2				
14	IN14	IN14-1	IN14				14	OUT14	IN14-2				
15	IN15	IN15-1	IN15				15	OUT15	IN15-2				
16	IN16	IN16-1	IN16				16	OUT16	IN16-2				
17	LEV1	LEV1	LEV1	LEV1	LEV1	LEV1	17						
18	LEV2	LEV2	LEV2	LEV2	LEV2	LEV2	18						
19	LEV3	LEV3	LEV3	LEV3	LEV3	LEV3	19						
20	LEV4	LEV4	LEV4	LEV4	LEV4	LEV4	20						
21	LCK1	LCK1	LCK1	LCK1	LCK1	LCK1	21						
22		LCK2			LCK2		22						
23	GND	GND	GND	GND	GND	GND	23	GND	GND	GND	GND	GND	GND
24	GND	GND	GND	GND	GND	GND	24	GND	GND	GND	GND	GND	GND
25	GND	GND	GND	GND	GND	GND	25	GND	GND	GND	GND	GND	GND

Table 1. Ocelot GPIO Remote Panel Configurations - Continued

GP OUTPUTS A and B

A Pins	**16X16**	**16X2**	**16X1**	**8X8**	**8X2**	**8X1**	**B** Pins	**16X16**	**16X2**	**16X1**	**8X8**	**8X2**	**8X1**
1	IN1	IN1-1	IN1	IN1	IN1-1	IN1	1	OUT1	IN1-2		OUT1	IN1-2	
2	IN2	IN2-1	IN2	IN2	IN2-1	IN2	2	OUT2	IN2-2		OUT2	IN2-2	
3	IN3	IN3-1	IN3	IN3	IN3-1	IN3	3	OUT3	IN3-2		OUT3	IN3-2	
4	IN4	IN4-1	IN4	IN4	IN4-1	IN4	4	OUT4	IN4-2		OUT4	IN4-2	
5	IN5	IN5-1	IN5	IN5	IN5-1	IN5	5	OUT5	IN5-2		OUT5	IN5-2	
6	IN6	IN6-1	IN6	IN6	IN6-1	IN6	6	OUT6	IN6-2		OUT6	IN6-2	
7	IN7	IN7-1	IN7	IN7	IN7-1	IN7	7	OUT7	IN7-2		OUT7	IN7-2	
8	IN8	IN8-1	IN8	IN8	IN8-1	IN8	8	OUT8	IN8-2		OUT8	IN8-2	
9	IN9	IN9-1	IN9				9	OUT9	IN9-2				
10	IN10	IN10-1	IN10				10	OUT10	IN10-2				
11	IN11	IN11-1	IN11				11	OUT11	IN11-2				
12	IN12	IN12-1	IN12				12	OUT12	IN12-2				
13	IN13	IN13-1	IN13				13	OUT13	IN13-2				
14	IN14	IN14-1	IN14				14	OUT14	IN14-2				
15	IN15	IN15-1	IN15				15	OUT15	IN15-2				
16	IN16	IN16-1	IN16				16	OUT16	IN16-2				
17	LEV1	LEV1	LEV1	LEV1	LEV1	LEV1	17						
18	LEV2	LEV2	LEV2	LEV2	LEV2	LEV2	18						
19	LEV3	LEV3	LEV3	LEV3	LEV3	LEV3	19						
20	LEV4	LEV4	LEV4	LEV4	LEV4	LEV4	20						
21	LCK1	LCK1	LCK1	LCK1	LCK1	LCK1	21						
22		LCK2			LCK2		22						
23	GND	GND	GND	GND	GND	GND	23	GND	GND	GND	GND	GND	GND
24	GND	GND	GND	GND	GND	GND	24	GND	GND	GND	GND	GND	GND
25	6.3V	6.3V	6.3V	6.3V	6.3V	6.3V	25	6.3V	6.3V	6.3V	6.3V	6.3V	6.3V

Switch Settings

PANEL ADDRESS (S1)

For the system controller to identify a particular control panel, a specific device number or polling address must be assigned to each panel. Sequential binary numbers (1 thorough 16) are used for this purpose. The appropriate binary number is entered into the control panel by setting an internal 8-position DIP switch to the selected binary number (only the first 4 positions are used), Figure 7. The DIP switch is accessible from the rear of the unit, Figure 8. The panel address is normally assigned and entered at the factory if the panel is purchased as part of a system and a design guide has been completed by the user. If the panel is purchased separately, the user may be required to set the panel address.

EXAMPLE: To select polling address 9, set switch 4 to the "ON" or "1" position and switches 1, 2, and 3 to the "OFF" or "0" position. See Figure 7.

CONTROL MODE OUTPUT (S/D BUS MODE) (S2)

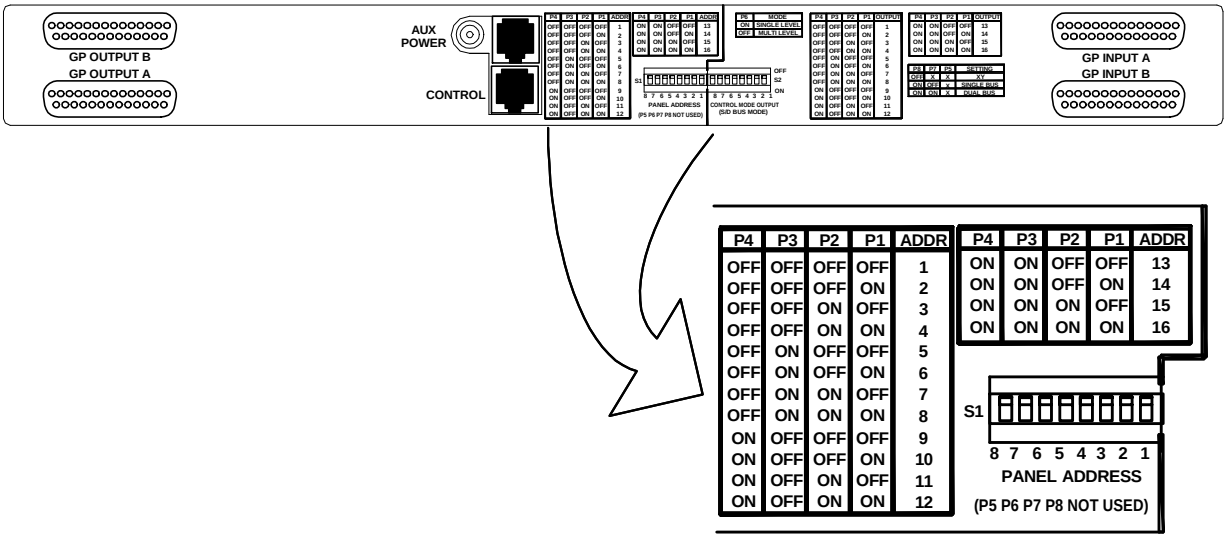
There are six different types of Ocelot control panels. The CONTROL MODE OUTPUT (S/D BUS MODE) switch (S2), Figure 9, is used to configure the Ocelot GPIO Control Panel for specific input/output configurations. See Table 1 for S2 settings and control panel configurations.

Determine the panel address for the Ocelot GPIO Remote Control Panel.
(0 = Off, 1=On)

4	3	2	1	
Off	Off	Off	Off	- Address #1
Off	Off	Off	On	- Address #2
Off	Off	On	Off	- Address #3
Off	Off	On	On	- Address #4
Off	On	Off	Off	- Address #5
Off	On	Off	On	- Address #6
Off	On	On	Off	- Address #7
Off	On	On	On	- Address #8

4	3	2	1	
On	Off	Off	Off	- Address #9
On	Off	Off	On	- Address #10
On	Off	On	Off	- Address #11
On	Off	On	On	- Address #12
On	On	Off	Off	- Address #13
On	On	Off	On	- Address #14
On	On	On	Off	- Address #15
On	On	On	On	- Address #16

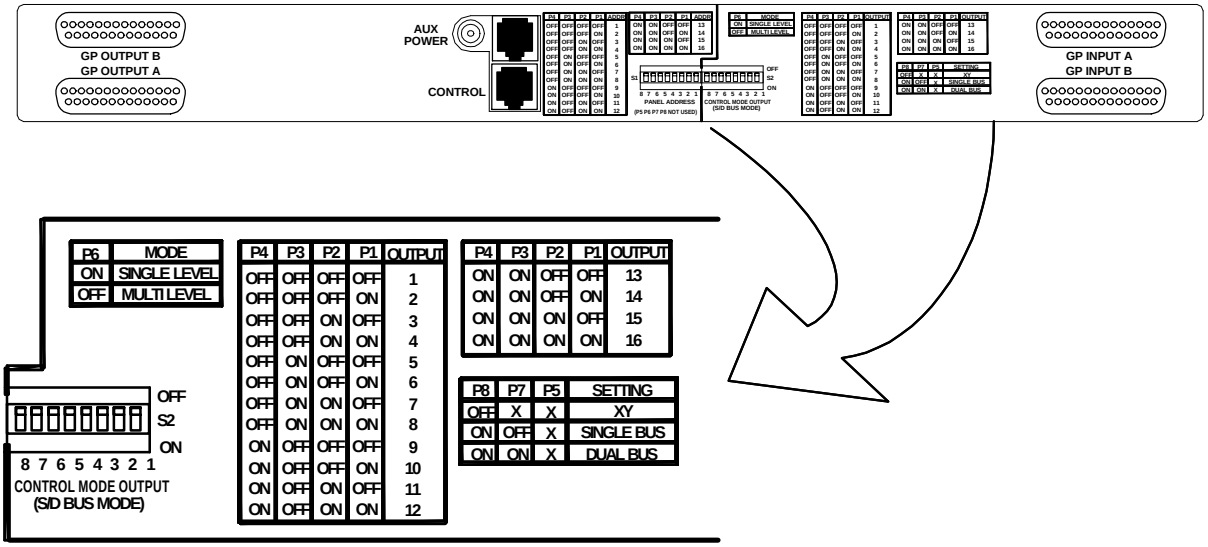
Figure 7 Address Switch Configuration Information (S1)



P4	P3	P2	P1	ADDR
OFF	OFF	OFF	OFF	1
OFF	OFF	OFF	ON	2
OFF	OFF	ON	OFF	3
OFF	OFF	ON	ON	4
OFF	ON	OFF	OFF	5
OFF	ON	OFF	ON	6
OFF	ON	ON	OFF	7
OFF	ON	ON	ON	8
ON	OFF	OFF	OFF	9
ON	OFF	OFF	ON	10
ON	OFF	ON	OFF	11
ON	OFF	ON	ON	12

P4	P3	P2	P1	ADDR
ON	ON	OFF	OFF	13
ON	ON	OFF	ON	14
ON	ON	ON	OFF	15
ON	ON	ON	ON	16

Figure 8 Ocelot GPIO Remote Control Panel Address Switches



P6	MODE
ON	SINGLE LEVEL
OFF	MULTI LEVEL

P4	P3	P2	P1	OUTPUT
OFF	OFF	OFF	OFF	1
OFF	OFF	OFF	ON	2
OFF	OFF	ON	OFF	3
OFF	OFF	ON	ON	4
OFF	ON	OFF	OFF	5
OFF	ON	OFF	ON	6
OFF	ON	ON	OFF	7
OFF	ON	ON	ON	8
ON	OFF	OFF	OFF	9
ON	OFF	OFF	ON	10
ON	OFF	ON	OFF	11
ON	OFF	ON	ON	12

P4	P3	P2	P1	OUTPUT
ON	ON	OFF	OFF	13
ON	ON	OFF	ON	14
ON	ON	ON	OFF	15
ON	ON	ON	ON	16

P8	P7	P5	SETTING
OFF	X	X	XY
ON	OFF	X	SINGLE BUS
ON	ON	X	DUAL BUS

Figure 9 Ocelot GPIO Remote Control Panel Control Mode Switches

Power

Power for the Ocelot GPIO Remote Control Panel is supplied by an external power supply.

Remove the power supply from the box it was shipped in and check to insure that no damage has occurred in shipping. Verify that the power supply is rated for the proper AC voltage (i.e. 115 VAC or 230 VAC) before connection to the AC line voltage. The power connector can now be plugged into the **AUX POWER** connector on the rear of the control panel. The power supply will immediately power the unit upon connection to the AC line voltage. See Figure 10.

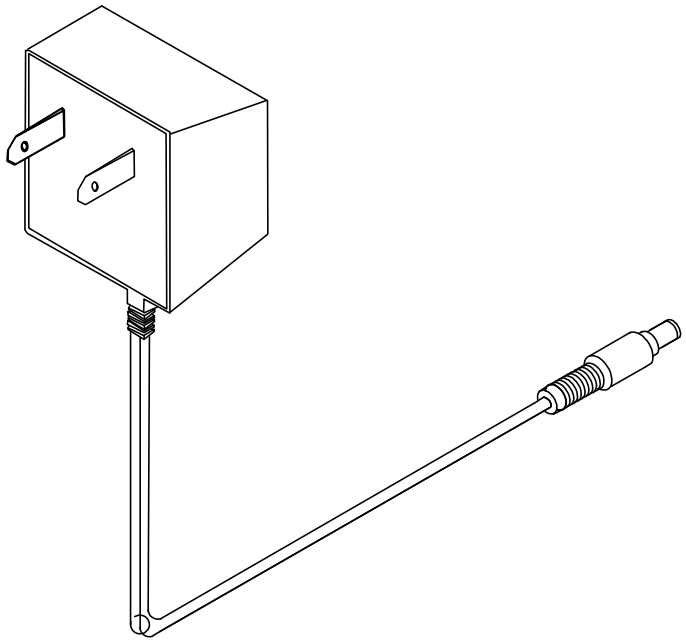


Figure 10 Power Supply

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