



sitePORTAL Lite

**Network Management, Monitoring
& System Control**

Firmware Version 4.7

User Manual

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PREFACE

This document describes the installation, configuration and operation of TASC Systems' *sitePORTAL Lite (Network Management, Monitoring & Control System)*.

Hardware and software described in this document are subject to ongoing development and improvement. Consequently there may be minor discrepancies between the information in this document and the performance and design of the hardware and software.

Refer to the glossary in the Appendices for the definition of any uncommon acronyms or terminology encountered while reading this document.

Additional documentation that is directly related to this manual includes:

- SPCU sitePORTAL Configuration Utility – Installation and User Manual (document number 050-015-0013) for detailed instructions and examples of use of the SPCU software
- siteWRX Centralized Alarm Monitoring Software (document number 050-015-0025) for detailed instructions and examples of use of the site monitoring and reporting interface software.



Before connecting any equipment to any sitePORTAL Lite product, the user is advised to read this document in its entirety. Application of voltages in excess of the built-in protection could seriously damage the sitePORTAL Lite and/or the equipment it is connected to.

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REVISION HISTORY

Revision	Date	Changes
R01	July 2004	<ul style="list-style-type: none"> • Original Document, not formatted • Configurations graphics added
R02	October 2004	<ul style="list-style-type: none"> • Troubleshooting section added • Page numbering, headers and footers updated
R03	April 2005	<ul style="list-style-type: none"> • Content revisions and firmware update (Firmware Version 4.1)
R04	July 2005	<ul style="list-style-type: none"> • Updated for TRIO 1200 R01 Mainboard • Content revisions and firmware update (Firmware Version 4.2)
R05	July 2007	<ul style="list-style-type: none"> • Added reference to USB port • Added reference to an AMP/CHAMP connector option • Added reference to I/O expansion options
R06	August 2007	<ul style="list-style-type: none"> • Added details on TA-SPL32-R48 Rack Mount Model
R07	September 2007	<ul style="list-style-type: none"> • Correction to references and J1 & J2 Pin outs

1. PRODUCT OVERVIEW

1.1. System Elements

A complete system has three main elements:

The Field Hardware - sitePORTAL Lite (sPL)

- a logical device that is attached to the equipment to be monitored via a wide variety of industry standard analog and digital sensors.

The Craftsperson Software - sitePORTAL Configuration Utility (SPCU)

- the technician's tool to configure sPL and to query reported alarms
- allows RS-232 remote access to monitored components.

The Network Server - siteWRX

- a PC based program that receives alarms from the field hardware
- polls the field hardware for status information
- relays alarms to the NOCC by generating SNMP traps

A remote site may also have:

Peripheral equipment – user-supplied Ancillary Equipment

- other equipment that may be located at a site (e.g. repeater controller) to which remote Craftsperson access is desired.

The diagram below shows these building blocks and their interconnection:

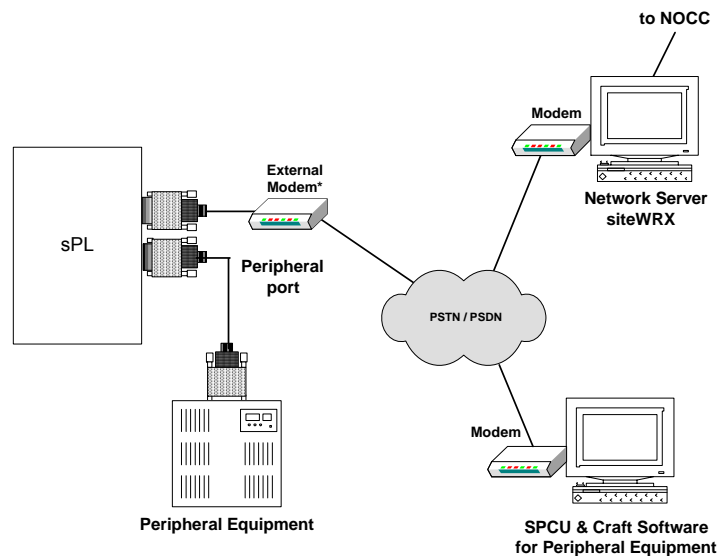


Figure 1 - sitePORTAL Lite Building Blocks and Interconnection

* sPL may have a built-in modem.

1.2. Basic System Transactions

The basic types of transactions in the system are:

1. **Alarm reporting:** Any alarm report initiated by the Field Hardware (sPL) is sent to the Network Server (siteWRX). The alarm is then relayed to the NOCC via SNMP traps.
2. **Status Reporting:** Field hardware will report status whenever the IP address changes and can optionally report status at periodic intervals of no connection activity.
3. **Automatic polling of Field Hardware:** Regular scanning of all Field Hardware (sPL units) by the Network Server (siteWRX). Alarms are then relayed to the NOCC via SNMP traps. Alarm histories can be displayed in siteWRX.
4. **Local Craftsperson connection to the Field Hardware:** A field unit (sPL) can be configured and queried via a Local connection by connecting an RS-232 cable directly from a laptop running the SPCU Configuration utility.
5. **Remote Craftsperson connection to the Field Hardware:** As above, except the connection is made remotely via dialup or IP modem.
6. **Craftsperson access to Peripheral Equipment:** Allows a Craftsperson to remotely access ancillary equipment at the site through a RS-232 port on the sPL. Requires Craftsperson software for the peripheral equipment.

Each of these functions are explained in later sections.

1.3. Special I/O Modes

At a site, two special modes of input monitoring and output control may be used:

1. **Automatic output (local I/O mapping):** An sPL input can be configured to automatically control an output on the same board.
2. **Qualified input:** An sPL input can be configured so that it is “gated” by another input. A qualified input is not read unless the “gating” input is active.

1.4. The Field Hardware – sitePORTAL Lite

The sitePORTAL Lite is a logic device that connects to the equipment that is to be monitored and controlled. It monitors on-site equipment through analog and digital inputs and can activate equipment through its digital outputs. It consists of a main board and optional expansion boards. The main and expansion boards are packaged in a wide variety of ways to meet different customer requirements. Refer to the appendix for specific information on your model. Detailed below is the main board of the sitePORTAL Lite

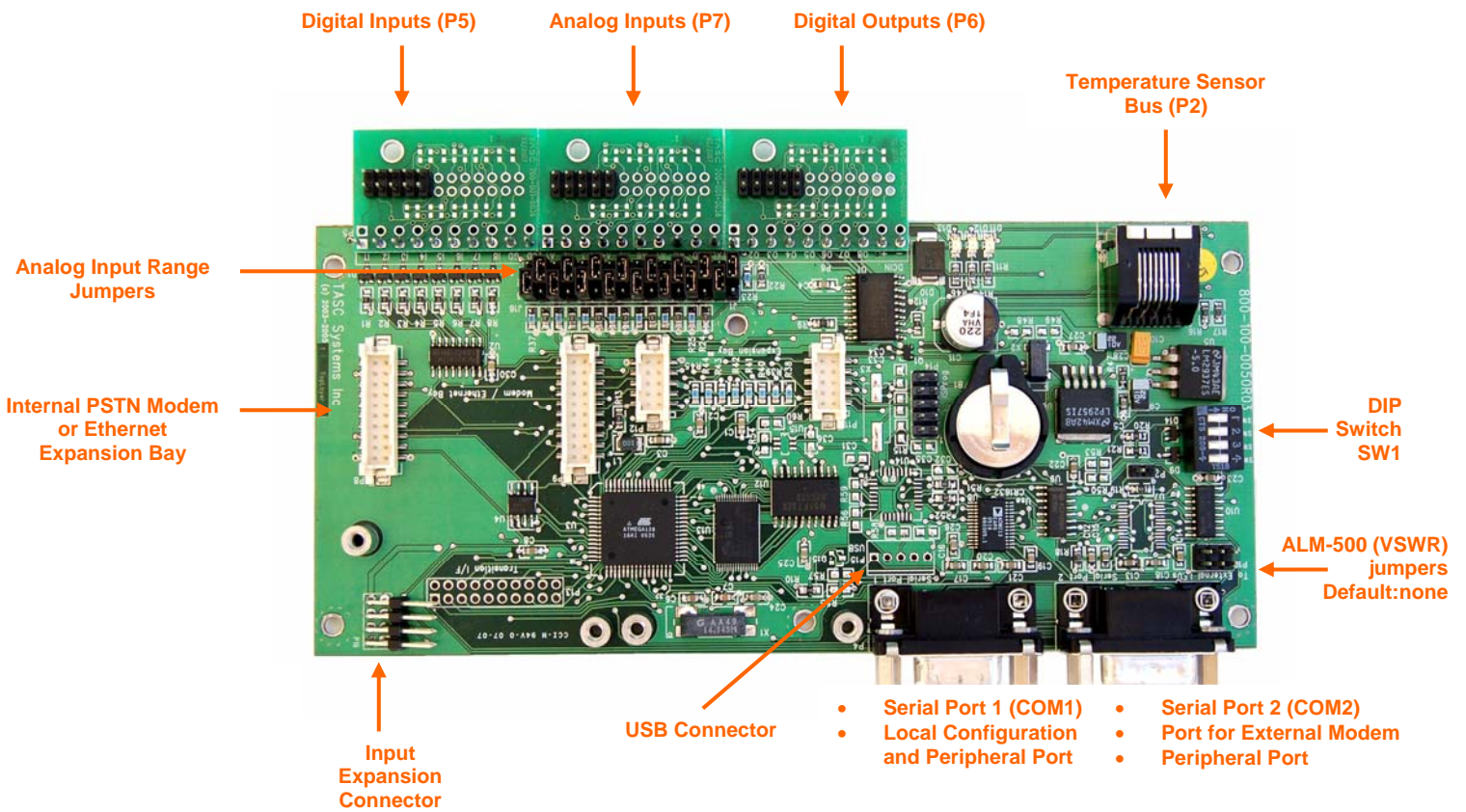


Figure 2 - sitePORTAL Lite Main Board Connectors

sitePORTAL Lite SPECIFICATIONS

sitePORTAL Lite specifications can be found in the Appendix.

1.5. The Craftsperson Software - SPCU

The sitePORTAL Lite Configuration Utility (SPCU) is the GUI configuration software for the sitePORTAL Lite. SPCU is designed to be used by technicians on-site ('locally') or from a remote location ('remotely').

Technicians can configure all of the site-specific information including the site identifier, alarm information severity, as well as what condition(s) constitutes an alarm. SPCU is a Windows™ based program that enables the functionality of the sPL system.

When put into "Pass-through" mode using SPCU, the sPL facilitates access to 3rd party devices connected to the sPL's RS-232 serial ports at the site. A second, similar method of RS-232 serial port access, called "Switch-through" mode, is available to access TASC manufactured devices, such as the Antenna Line Monitor (TA-ALM-500).

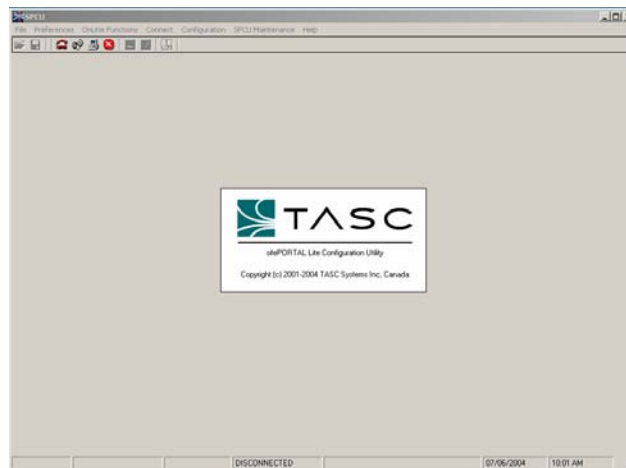


Figure 3 - SPCU Start up Window

1.6. The Network Server - siteWRX

The siteWRX Server is used to manage the communications, logging, and alarm reporting of sitePORTAL Lite (sPL) modules. The siteWRX server gathers alarm information from remote sitePORTAL Lite modules that are located in different regions and sends SNMP traps to the Network Operations Control Centre (NOCC).

siteWRX communicates with the remote sitePORTAL Lite modules by means of a modem(s) through the server computer COM Port(s) or Ethernet connectivity. As many modems can be connected as there are COM Ports available. Additional modems allow for simultaneous communication to multiple sPLs.

siteWRX features:

- Web Browser Client Interface
- Logging and Graphing of monitored data
- Various Levels of User Permissions
- SNMP Trap Notification to a 3rd Party Manager (NOCC)
- Modem Pool or TCP/IP Configuration
- Error Logging

1.7. Hardware Options

Hardware options are as follows:

- Power Supply Variants
- Chassis options (rack mount or NEMA 4)
- Temperature Sensor
- Expansion Options
- Modem Options (PSTN, Ethernet, Circuit Switch, and Cellular)
- Battery Back-up
- Input Expansion (Analog, Digital)

2. SOFTWARE AND SYSTEM INTEGRATION OVERVIEW

The location of the connectors referred to in this section can be found in figure 2 and/or in the appendix depending on the model.

2.1. SPCU Local Connection to sitePORTAL Lite

The sitePORTAL Lite is accessed locally using the sitePORTAL Configuration Utility (SPCU) running on a Windows™ PC or laptop as shown below.

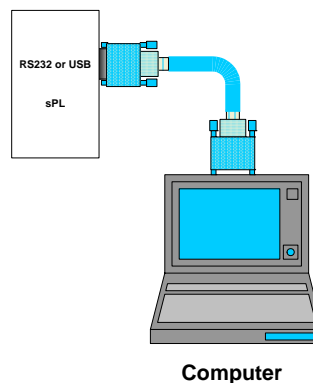


Figure 4 - sitePORTAL Lite Local Connection

'Local' connection is used for technician access on-site or to pre-configure units in a shop prior to deployment. Local access is possible using any COM or USB port on a PC running SPCU. In some cases, the technician may need to set the DIP switches on the sPL main board for local access and then restore them for normal system operation. The local USB connector is connected on the front of the chassis.



WARNING! When connected locally via a USB connection, serial port 1 ('COM1 peripheral port ') is disabled until the USB connection is removed.

Local connection is initiated from the connection toolbar in SPCU (as shown below) or from the "Connect" menu.



Figure 5 - Connection Toolbar – Local Connect

2.2. SPCU Remote Connection to sitePORTAL Lite

sitePORTAL Lite can be accessed remotely by SPCU via Ethernet, Wireless IP modem or dial-up modem. sitePORTAL Lite supports an internal or external PSTN modem, external cellular modem or internal Ethernet module.

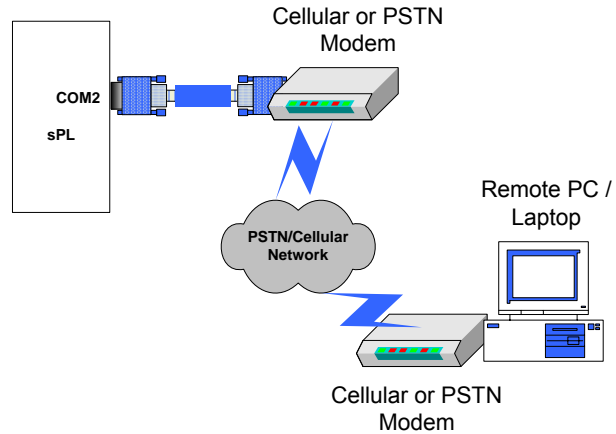


Figure 6 - sitePORTAL Lite Remote Connection via External Modem

When an internal plug-in modem or Ethernet module is used, Serial Port 2 is available as a second peripheral port.

Remote connection is initiated from the connection toolbar in SPCU (as shown below) or from the “Connect” menu.



Figure 7 – Connection Toolbar – Remote Connect

2.3. Connection to Peripherals

Through SPCU sitePORTAL Lite can provide remote connection to peripheral equipment co-located at the site via Pass-through or Switch-through mode.

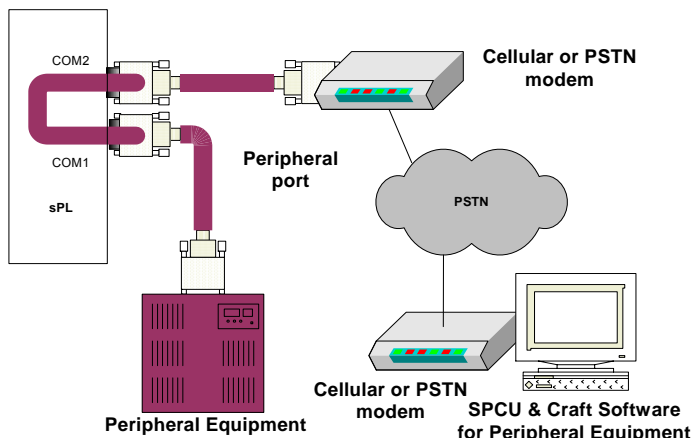


Figure 8 – Access to Peripheral Equipment via sPL (external modem) Pass-through

Pass-through or Switch-through access is initiated from SPCU by pressing the peripheral access button for the sPL serial port that is connected to the remote peripheral (as shown below).



Figure 9 – Peripheral Access Toolbar

Note: Peripheral access buttons appear only for serial ports set up for peripheral access and when SPCU is in a state that such access is allowed. If an internal modem (Ethernet, PSTN) is used, both COM1 and COM2 are available as peripheral ports.

For a Pass-through mode connection, when the "peripheral access" button in SPCU is pressed, SPCU notifies the sitePORTAL Lite that it is time to switch to Pass-through. The sitePORTAL Lite prepares the connection and then waits for data. The sitePORTAL and SPCU do not disconnect. SPCU then creates a new virtual communication port on the computer that will be used by the 3rd party application to connect to locally. Any data the 3rd party application sends to the virtual communication port is then forwarded by SPCU to the sitePORTAL Lite. The sitePORTAL Lite then forwards the data it receives on to the peripheral device. The connection between the sitePORTAL Lite and SPCU remains open until the user presses Cancel on the SPCU. The SPCU Cancel button is only visible while no application is connected to the virtual communication port.

Note: Switch-through works only with compatible TASC products.

3. INSTALLATION

The sitePORTAL Lite is interfaced to sources for the digital and analog inputs and destinations for the digital outputs using either 10-pin connectors or two 50-pin AMP connectors (depending on model). Refer to the appendix for model specific details.



Consult the installation guide specific to the system's package option.

3.1. Connecting the Digital Inputs

3.1.1. Diode Isolated Inputs

The sitePORTAL Lite has 8 diode isolated digital inputs (expandable to 40) that are capable of accepting voltages up to +50V DC. Any voltage on an input below +2.0V DC is considered to be logically low (Closed). Any voltage on an input above +2.1V DC is considered to be logically high (Open). When an input is not terminated or it is left floating, then the input to the module is logically high. Many types of devices, as shown below, may drive the digital inputs:

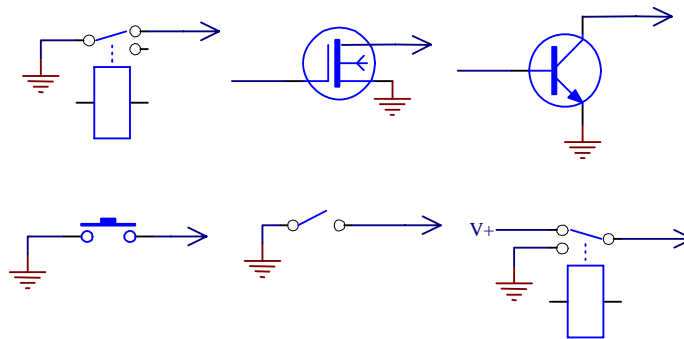


Figure 10 - sitePORTAL Lite Input Devices

Refer to the appendix for model specific details.

3.1.2. Opto-Isolated Inputs

The sitePORTAL Lite has the ability of adding up to 32 opto-isolated digital inputs to go along with the standard 8 diode isolated inputs. The bipolar inputs designated with an A and B (ie Input 8-A and Input 8-B). A voltage of 10V DC to 60 V DC may be applied to activate an input. Any voltage on an input below 5 V DC is considered to be logically high (Open). Any voltage on an input above 10V DC is considered to be logically low (Closed). When an input is not terminated or it is left floating, then the input to the module is logically high. Refer to the appendix for model specific details.

3.2. Connecting the Analog Inputs

The sitePORTAL Lite has eight analog inputs (expandable to 24) for external voltage measurement. The first eight analog inputs are jumper configurable on the sitePORTAL Lite main board (see figure 2) with ranges of up to 25V DC input while the optional 16 expansion analog inputs provide fixed input ranges of 0-5V, 0-25V, and 4-20mA. The analog inputs have the ability to be optionally customized to a fixed range. Refer to the appendix for model specific details.



WARNING! Analog Input Range jumpers should be set before applying any voltage or current.



WARNING! Applying negative voltages to the analog and diode isolated digital inputs will damage the sitePORTAL Lite module.

Analog Input Range Jumper Selection (see figure 2)

Each pair of jumpers configures the input to one of the four ranges below:

Analog Input	0-5V	0-25V
1	J16-1 to J16-2, J15 Out	J16-3 to J16-2, J15-1 to J15-2
2	J14-1 to J14-2, J13 Out	J14-3 to J14-2, J13-1 to J13-2
3	J12-1 to J12-2, J11 Out	J12-3 to J12-2, J11-1 to J11-2
4	J10-1 to J10-2, J9 Out	J10-3 to J10-2, J9-1 to J9-2
5	J8-1 to J8-2, J7 Out	J8-3 to J8-2, J7-1 to J7-2
6	J6-1 to J6-2, J5 Out	J6-3 to J6-2, J5-1 to J5-2
7	J4-1 to J4-2, J3 Out	J4-3 to J4-2, J3-1 to J3-2
8	J2-1 to J2-2, J1 Out	J2-3 to J2-2, J1-1 to J1-2
Analog Input	4-20mA	
1	J16-1 to J16-2, J15-2 to J15-3	
2	J14-1 to J14-2, J13-2 to J13-3	
3	J12-1 to J12-2, J11-2 to J11-3	
4	J10-1 to J10-2, J9-2 to J9-3	
5	J8-1 to J8-2, J7-2 to J7-3	
6	J6-1 to J6-2, J5-2 to J7-3	
7	J4-1 to J4-2, J3-2 to J3-3	
8	J2-1 to J2-2, J1-2 to J1-3	

Table 1- Analog Jumper Configuration



When a range is selected via jumpers, it must also be programmed into the sitePORTAL Lite using the SPCU Software.

Extended Range Selection (sitePORTAL Lite main board)

One of four extended analog ranges may be selected by connecting an external 'potential divider' resistor network. 1% tolerance resistors should be used. To configure an analog input for an externally supplied resistor network, set the jumpers as shown below:

Analog Input	Settings for Extended Range
1	J16-1 to J16-2, J15 Out
2	J14-1 to J14-2, J13 Out
3	J12-1 to J12-2, J11 Out
4	J10-1 to J10-2, J9 Out
5	J8-1 to J8-2, J7 Out
6	J6-1 to J6-2, J5 Out
7	J4-1 to J4-2, J3 Out
8	J2-1 to J2-2, J1 Out

Table 2 - Extended Range Selection

Each of the range multipliers is based on a 5V voltage reference. The suggested resistor network is shown below

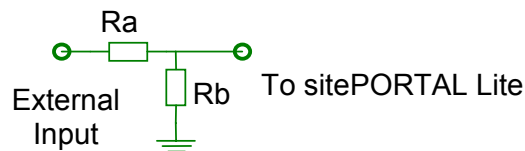


Figure 11 - External Resistor Network

2X	4X	10X	20X
Ra = 10kΩ	Ra = 30kΩ	Ra = 90kΩ	Ra = 190kΩ
Rb = 10kΩ	Rb = 10kΩ	Rb = 10kΩ	Rb = 10kΩ

Table 3 - Resistor Network Table

3.3. Connecting the Digital Outputs

The sitePORTAL Lite has 8 'open drain' (FET) or relay (form c) outputs that can be connected to peripheral equipment. Each 'open drain' output is capable of sinking up to 150mA at voltages up to +50V DC and is set up using the SPCU software. Each relay output is rated for 30V DC at 1A or 125V AC at 0.3A. Refer to the appendix for model specific details.

3.4. Serial Ports/USB

The sitePORTAL Lite is equipped with two serial RS-232 ports with a DB-9 connector and one USB type B port. Each port has designated use as follows:

Serial Port 1 – Local programming, diagnostics or peripheral use based on DIP switch settings and/or setup from SPCU.

Serial Port 2 – External modem, or peripheral access based on setup from SPCU.

USB – Local programming and diagnostics. Note serial port 1 is deactivated when the USB port is connected to a PC.



WARNING! Serial Port 1 is deactivated when the USB port is connected to a PC. If a pass through session is in progress on serial port 1, it will be disconnected.

3.4.1. Serial Port 1

Serial Port 1 is configured as DCE accessed via a female DB-9 connector located on the sPL Main printed circuit board. A standard PC compatible cable can be used to connect from the sitePORTAL Lite Port to a PC running SPCU.

Serial Port 1		
Pin	Legend	Function
1	DCD	OUT from sitePORTAL Lite (DCE)
2	RXD	OUT from sitePORTAL Lite (DCE)
3	TXD	IN from PC or peripheral (DTE)
4	DTR	IN from PC or peripheral (DTE)
5	GND	
6	DSR	OUT from sitePORTAL Lite (DCE)
7	RTS	IN from PC or peripheral (DTE)
8	CTS	OUT from sitePORTAL Lite (DCE)
9	RI	OUT from sitePORTAL Lite (DCE)

Table 4- Serial Port 1 Connection



Note: A cable between serial port 1 and a peripheral equipped with the same type pseudo DCE connector arrangement must have null modem wiring with male DB-9 connectors on both ends if not provided with your model. See appendix for your model.

3.4.2. Serial Port 2

Serial Port 2 is configured as DTE accessed via a male DB-9 connector located on the sPL Main printed circuit board. A standard PC compatible cable can be used to connect from sitePORTAL Lite – Serial Port 2 to a compatible external modem or peripheral implementing a pseudo DCE. If you are attaching a TASC peripheral to serial port 2, the jumper (P2) needs to be configured (refer to the respective TASC peripheral installation guide).

Serial Port 2		
Pin	Legend	Function
1	DCD	IN from modem or peripheral (DCE)
2	RXD	IN from modem or peripheral (DCE)
3	TXD	OUT from sitePORTAL Lite (DTE)
4	DTR	OUT from sitePORTAL Lite (DTE)
5	GND	
6	DSR	IN from modem or peripheral (DCE)
7	RTS	OUT from sitePORTAL Lite (DTE)
8	CTS	IN from modem or peripheral (DCE)
9	RI	IN from modem or peripheral (DCE)

Table 5- Serial Port 2 Connection



Note: If a standard PC compatible cable can be used between a PC and a peripheral for local access, then the same cable can be used between that port on the peripheral and serial port 2 on the sitePORTAL Lite.

3.4.3. USB

The USB port is accessed via a female USB Type B connector located on the panel of an sPL. A standard USB PC compatible cable can be used to connect from the sitePORTAL Lite USB Port to a PC running SPCU.

3.5. Temperature Sensor Bus

The sitePORTAL Lite is equipped with a port that can be used to connect temperature sensors and/or other future compatible options. Depending on the model, either an RJ45 connector or a 50-pin AMP may be used to connect up to 8 temperature sensors and/or other future compatible options. Refer to the appendix for model specific details.

3.5.1. P1 Pin Description

Connector P1 (see figure 2) is used to connect optional temperature sensors. P1 performs no other function in the sitePORTAL Lite configuration. The signal pins are shown below.

Expansion Ports	
Pin	Legend
1	+12 VDC
2	N/C
3	N/C
4	GROUND
5	SDATA
6	GROUND
7	SCLOCK
8	N/C

Table 6- Expansion Port Connection

3.6. Display Connectors

3.6.1. LED Indicator Port – P10 Pin Description

Connector P10 is used only when the sitePORTAL Lite is supplied in a 19” rack configuration. The signal pins are shown below:

LED Indicator Port	
Pin	Legend
1	+5 VDC
2	AMBER LED
3	GREEN LED
4	RED LED
5	GROUND
6	N.C.

Table 7- External LED Indicator Port

4. LEDES AND DIP SWITCHES

Upon power up the sPL Main Board will launch the bootloader, which will perform a self-test. If successful, the application will then be launched after 2 seconds. If it fails it will enter an error mode and retry a few seconds later.

The sitePORTAL Lite Main Board has LEDs and DIP switches for status, diagnostics and mode selection. The behavior depends on which firmware is running and hence will be different when the boot-loader is starting up the hardware from power up.

4.1.1. Normal sitePORTAL Lite LED and DIP Switch Functionality

During normal sitePORTAL Lite operation, the LEDs are designated as follows:

- Green → Mode – indicates the sitePORTAL Lite’s operating mode.
 - Short flash once per second → Normal mode
 - On / off toggle per second (1/2 Hz flash) → PWM tone generation mode
- Amber → Access – indicates the type of user access that is under way.
 - Off → No access, (or non-authenticated connection during siteCOMMANDER Lite interoperability mode).
 - On solid → local session or authenticated remote session active.
 - Short flash once per second → waiting for call-back as part of pass-through.
 - Rapid flash (2 Hz) → pass-through connection in progress.
 - Slow flash (1/2 Hz) → local escape to CLI diagnostics (Factory use only).
- Red → Alarm – indicates the presence of alarm conditions.
 - Off → No outstanding alarm reports and no alarm conditions present.
 - On → No outstanding alarm reports but alarm conditions present.
 - Flashing → Outstanding (unacknowledged) alarm reports.

DIP switches SW1-1 and SW1-2 are used to specify the usage of Serial Port 1 as follows (see Figure 2 – sitePORTAL Lite Main Board Connectors):

SW1-1	SW1-2	Serial Port 1
Off	Off	TASC BNMAP protocol (this always ensures SPCU local access is possible).
On	Off	Peripheral use (depending on the peripheral settings and operating mode, it may still be possible to gain SPCU local access without changing the DIP switches).
Off	On	TASC CLI diagnostics local access (not documented nor is customer use supported). Factory Only
On	On	Modem diagnostics local pass-through (use terminal emulation program to manually type in AT commands to the modem – especially useful for access to an internal modem).

Table 8- sitePORTAL Lite DIP Switch Settings

The sitePORTAL Lite application firmware makes use of DIP switches SW1-1 and SW1-2 and leaves DIP switches SW1-3 and SW1-4 as reserved for sPL Main Board boot-loader use.



WARNING! Improper setting of DIP switch SW1-4 may result in erasing all system settings or even the sitePORTAL Lite firmware itself. If this happens, use SPCU to reprogram the unit and then restore or reload the settings.

4.1.2. Boot-loader LED and DIP Switch Functionality

During boot loader operation, the LEDs are designated as follows (also see Figure 2: sitePORTAL Lite Main Board Connector):

- Alternating red / green → Boot-loader is active.
- Alternating red / green, amber on solid → Boot-loader is active but application firmware launch was suspended by DIP switch settings.
- Flashing together red / green → Application firmware flash upload in progress.
- Flash together all LEDs → Hardware integrity check failure, watchdog timer reboot pending.
- Amber and green on, red toggles → EEPROM erase in progress (from DIP switch settings).
- Amber and red on, green toggles – Application firmware flash erase in progress (from DIP switch settings).

DIP switches SW1-3 and SW1-4 are used to specify the boot-loader operational mode:

SW1-3	SW1-4	Boot-loader Operational Mode
Off	Off	Normal – perform startup integrity check and then if OK, launch the application firmware.
On	Off	Suspend launch of the application firmware (used for recovery from catastrophic application firmware failure).
Off	On	Erase the EEPROM (including all system settings), perform startup integrity check and then if OK, launch the application firmware. <i>Use with caution!</i>
On	On	Erase the application firmware flash memory and the EEPROM (used to erase all memory – except the boot-loader itself). <i>Use with caution!</i>

Table 9- sPL Main Board Boot-loader DIP Switch Settings

The boot-loader firmware makes use of DIP switches SW1-3 and SW1-4 and leaves DIP switches SW1-1 and SW1-2 as reserved for application firmware use.

5. CONFIGURING THE I/O

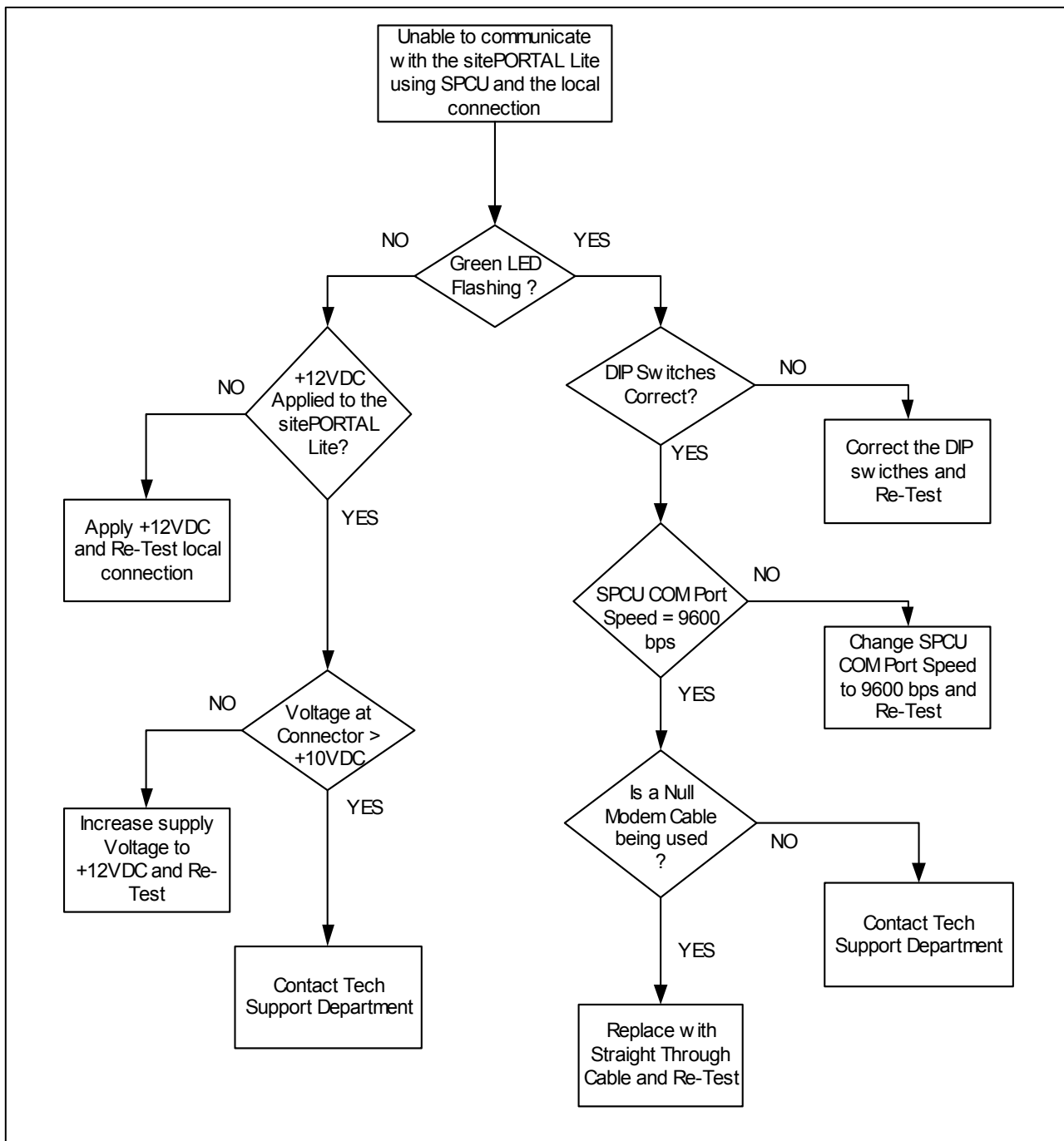
5.1. **sitePORTAL Lite Configuration Utility User Manual**

To configure the sitePORTAL Lite utilizing the sitePORTAL Configuration Utility (SPCU), refer to the User Manual (document number: 050-015-0012) for detailed instructions.

6. TROUBLESHOOTING

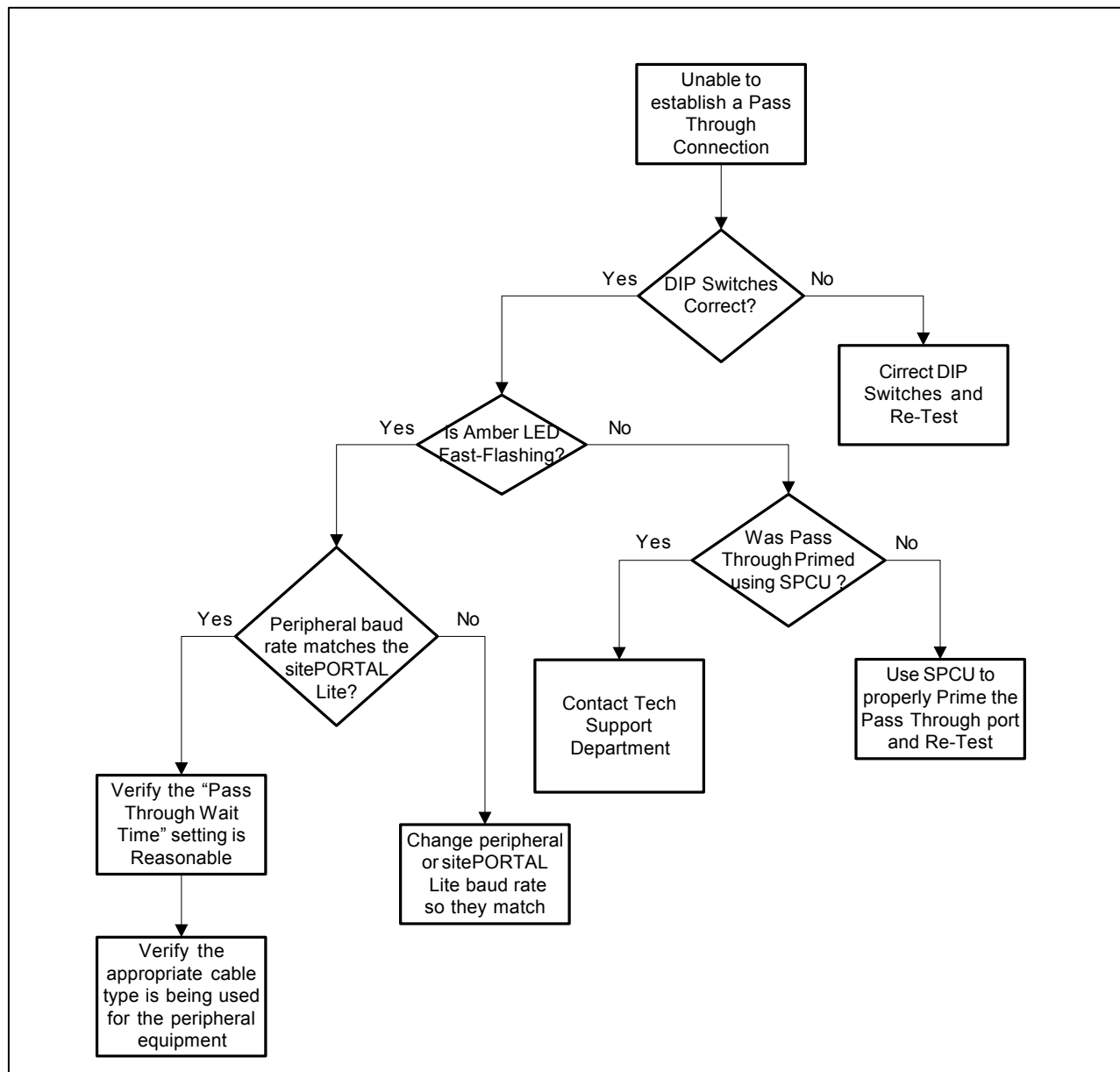
6.1. Troubleshooting Local Communication

The following flowchart will help with troubleshooting when the user is unable to communicate with the sitePORTAL Lite locally.



6.2. Troubleshooting Pass-through Operation

The following flowchart will help with troubleshooting when the user is unable to utilize the Pass-through functionality.



7. APPENDICES

7.1. Specifications

Main/Expansion Boards	
Voltage	+11.0 to +25.0 VDC
Current Consumption	Maximum 85 mA (without options included)
Weight	Less than 500 g
Operating Temperature	-40 to +65°C
Input Monitoring/Sensing Digital Input Capacity	8 (expandable to 40) contact closures, switches, open collector or Voltage inputs (0 to +60 VDC input) with hold timers and high/low trigger set points per input. Expandable inputs can be converted to opto-isolated inputs with a 0 - +/- 60 VDC range.
Output Control Capacity	8 'open drain' FET outputs, voltage switching up to +50 VDC @ 150 mA current sink each. Optional 8 form c relay outputs, voltage switching up to 30 VDC @ 1A or 125 VAC @ 0.3A.
Analog Monitoring Capacity	8 x 10-bit A/D with 0 to 2.56 V, 0 to 5.0 V, 0 to 25.0 V and 4 to 20 mA span with hold timers and high/low trigger set points per input. Expandable to 24 with 16 analog inputs configured to a fixed range.
Temperature Monitoring	Single port temperature bus. Supports up to 8 TASC Temperature Sensor Modules.
Ports	Two RS-232 asynchronous ports with full modem control, One USB port
Data Rate	Up to 230,400 bps
SPCU (sitePORTAL Configuration Utility)	The SPCU is the GUI configuration software for the sitePORTAL Lite. SPCU is designed to be used by technicians on a laptops or from within the Network Management Center. It gives an easy method of remotely and locally configuring sitePORTAL Lite.
siteWRX (System Controller)	The siteWRX is the sitePORTAL Lite system controller. The siteWRX is responsible for maintaining communication with each sitePORTAL Lite in the network. It intercepts individual alarms from sitePORTAL Lite field units and is responsible for health checking field units. Alarms and other data are presented as SNMP traps to the customer's back-end monitoring system (NOCC etc.). The siteWRX provides a link between the customer's system and sitePORTAL Lite units in the field.
Rack Mount Chassis	
Voltage	Model Dependant (Option for any input voltage to be accommodated)
Current Consumption	Depends on input voltage
Module Size	2 RU 19 inch Rack
Weight	Less than 2 kg

7.2. Glossary

FET	- Field Effect Transistor
NOCC	- Network Operations Control Center
PSTN	- Public Switched Telephone Network
SNMP	- Simple Network Management Protocol
SPCU	- sitePORTAL Configuration Utility
SPL	- sitePORTAL Lite
GUI	- Graphical User Interface
sitePORTAL Main Board	- TRIO-1200

7.3. Model Information

7.3.1. Standard Model - Direct Connection to sPL Main Board

Referring to figure 2:

Connector P5 – Digital Inputs / Ground		
Panel Display	Circuit B	Function
1	I1	Digital Input 1
2	I2	Digital Input 2
3	I3	Digital Input 3
4	I4	Digital Input 4
5	I5	Digital Input 5
6	I6	Digital Input 6
7	I7	Digital Input 7
8	I8	Digital Input 8
GND	GND	Ground
GND	GND	Ground

Connector P7 – Analog Inputs / Common Alarm Output / Ground		
Pin	Legend	Function
1	A1	Analog Input 1
2	A2	Analog Input 2
3	A3	Analog Input 3
4	A4	Analog Input 4
5	A5	Analog Input 5
6	A6	Analog Input 6
7	A7	Analog Input 7
8	A8	Analog Input 8
9	GD	Ground
10	AL	Common Alarm Output

Connector P6 – Outputs and Power Supply		
Pin	Legend	Function
1	1	Digital Output 1
2	2	Digital Output 2
3	3	Digital Output 3
4	4	Digital Output 4
5	5	Digital Output 5
6	6	Digital Output 6
7	7	Digital Output 7
8	8	Digital Output 8
9	+	DC In - Positive Power Source (11-25VDC)
10	-	DC In - Ground

7.3.2. TA-SPL32-R48 Model – Rack Mount

The TA-SPL32-R48 is a 19 inch, 2 RU rack mountable sitePORTAL Lite (sPL). It comes with 8 analog inputs, 8 temperature inputs (sensors sold separately), 32 digital inputs (24 Diode Isolated, 8 Opto-Isolated), 8 Form-C relay outputs, Ethernet interface, and 2 peripheral ports. This guide will take the user through a quick step by step process of installing and configuring the TA-SPL32-R48.

Shown below is the front panel which consists of:

1. Illuminated alarm status of each input
2. System status indication
3. USB Local connection

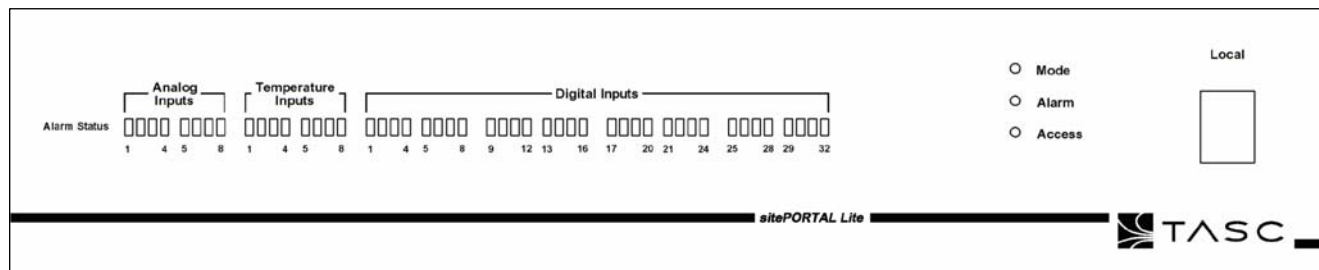


Figure 12 – TA-SPL32-R48 Front Panel

Shown below is the back panel which consists of:

1. Two 50 pin AMP/Champ Input/Output Connectors (J1 & J2)
2. Two DB9 Peripheral Connectors (COM1 & COM2)
3. 36-72 VDC Isolated Power Connector
4. N-Type RF Antenna Modem Connector
5. Earth Ground Lug

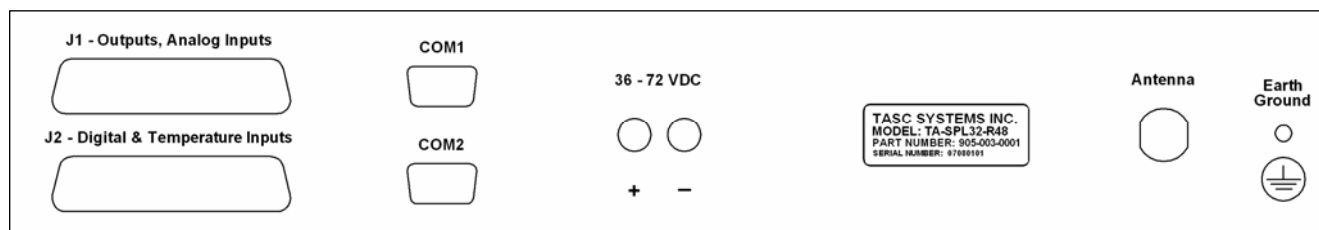
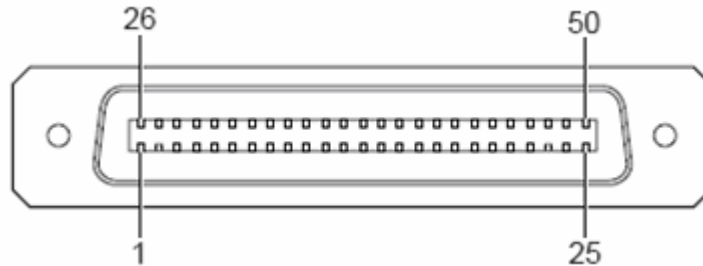


Figure 13 – TA-SPL32-R48 Back Panel

J1 – Outputs, Analog Inputs

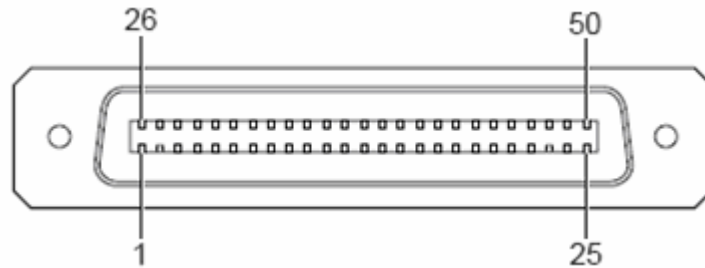
J1 is a female RJ-21 (Champ) connector that interfaces the relay Form-C outputs and the Analog Inputs. The analog inputs can take only a positive voltage that must be referenced to the GND provided. The relay outputs are rated for 30V DC at 1A or 125V AC at 0.3A. For interfacing instructions refer to pages 10-13.



Pin	Description	Pin	Description
1	Output 1 NO	26	Output 1 NC
2	Output 1 C	27	Output 2 NO
3	Output 2 NC	28	Output 2 C
4	Output 3 NO	29	Output 3 NC
5	Output 3 C	30	Output 4 NO
6	Output 4 NC	31	Output 4 C
7	Output 5 NO	32	Output 5 NC
8	Output 5 C	33	Output 6 NO
9	Output 6 NC	34	Output 6 C
10	Output 7 NO	35	Output 7 NC
11	Output 7 C	36	Output 8 NO
12	Output 8 NC	37	Output 8 C
13	AL	38	GND
14	Analog Input 8	39	Analog Input 7
15	Analog Input 6	40	Analog Input 5
16	Analog Input 4	41	Analog Input 3
17	Analog Input 2	42	Analog Input 1
18	Not Used	43	Not Used
19	Not Used	44	Not Used
20	Not Used	45	Not Used
21	Not Used	46	Not Used
22	Not Used	47	Not Used
23	Not Used	48	Not Used
24	Not Used	49	Not Used
25	Not Used	50	Not Used

J2 – Digital & Temperature Inputs

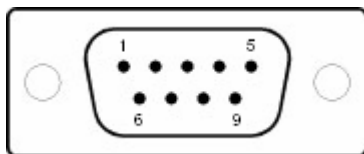
J2 is a female RJ-21 (Champ) connector that interfaces the digital and temperature inputs. The temperature sensors have four connections that can be brought out to a length of 12 feet max. Digital Inputs 1-24 are diode isolated and referenced to the GND provided while inputs 25-32 are opto-isolated. For interfacing instructions refer to pages 9 & 15.



Pin	Description	Pin	Description
1	Temp Sensor - 12 VDC	26	Temp Sensor - GND
2	Temp Sensor - SDA	27	Temp Sensor - SCL
3	GND	28	GND
4	Digital Input 8	29	Digital Input 7
5	Digital Input 6	30	Digital Input 5
6	Digital Input 4	31	Digital Input 3
7	Digital Input 2	32	Digital Input 1
8	GND	33	GND
9	Digital Input 16	34	Digital Input 15
10	Digital Input 14	35	Digital Input 13
11	Digital Input 12	36	Digital Input 11
12	Digital Input 10	37	Digital Input 9
13	GND	38	GND
14	Digital Input 24	39	Digital Input 23
15	Digital Input 22	40	Digital Input 21
16	Digital Input 20	41	Digital Input 19
17	Digital Input 18	42	Digital Input 17
18	Digital Input 25-A	43	Digital Input 25-B
19	Digital Input 26-A	44	Digital Input 26-B
20	Digital Input 27-A	45	Digital Input 27-B
21	Digital Input 28-A	46	Digital Input 28-B
22	Digital Input 29-A	47	Digital Input 29-B
23	Digital Input 30-A	48	Digital Input 30-B
24	Digital Input 31-A	49	Digital Input 31-B
25	Digital Input 32-A	50	Digital Input 32-B

COM1/COM2 Peripheral Connectors

COM1 and COM2 are two Male DB9 connectors that act as a DTE device. They can be connected to the peripheral equipment with a standard DB9 cable for Pass-through/Switch-through functionality.



COM1/COM2 Peripheral Ports		
Pin	Legend	Function
1	DCD	IN from modem or peripheral (DCE)
2	RXD	IN from modem or peripheral (DCE)
3	TXD	OUT from sitePORTAL Lite (DTE)
4	DTR	OUT from sitePORTAL Lite (DTE)
5	GND	
6	DSR	IN from modem or peripheral (DCE)
7	RTS	OUT from sitePORTAL Lite (DTE)
8	CTS	IN from modem or peripheral (DCE)
9	RI	IN from modem or peripheral (DCE)

Power Connector

The input voltage to the sPL is isolated from GND providing the ability to have a positive or negative input. The voltage input range is 36-72 VDC (48 VDC nom @ 0.8A max).

Antenna

The antenna connector is a 50 Ohm RF N-type connector provided for a wireless modem (mounted internally). Connect the appropriate antenna to this connector.

Earth Ground

An earth ground connection is provided.