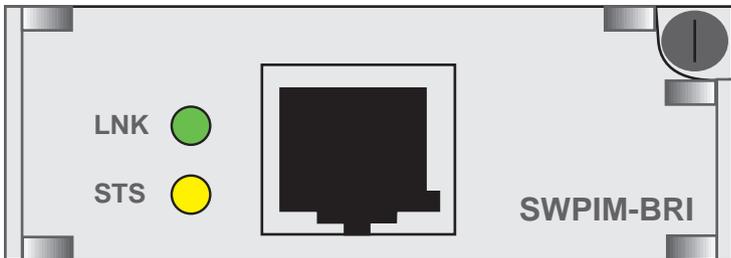


# SWPIM-BRI

## Installation Guide







Only qualified personnel should perform installation procedures.

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Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la class A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

**NOTICE:** The Industry Canada label identifies certified equipment. This certification means that the equipment meets telecommunications network protective, operational and safety requirements as prescribed in the appropriate Terminal Equipment Technical Requirements documents (s). The department does not guarantee the equipment will operate to the user's satisfaction.

Before installing this equipment, users should ensure that it is permissible to be connected to the facilities of the local telecommunications company. The equipment must also be installed using an acceptable method of connection. The customer should be aware that compliance with the above conditions may not prevent degradation of service in some situations.

Repairs to certified equipment should be coordinated by a representative designated by the supplier. Any repairs or alterations made by the user to this equipment, or equipment malfunctions, may give the telecommunications company cause to request the user to disconnect the equipment.

Users should ensure for their own protection that the electrical ground connections of the power utility, telephone lines and internal metallic water pipe system, if present, are connected together. This precaution may be particularly important in rural areas. **Caution:** Users should not attempt to make such connections themselves, but should contact the appropriate electric inspection authority, or electrician, as appropriate.

**NOTICE:** The Ringer Equivalence Number (REN) assigned to each terminal device provides an indication of the maximum number of terminals allowed to be connected to a telephone interface. The termination on an interface may consist of any combination of devices subject only to the requirement that the sum of the ringer equivalence Numbers of all the devices does not exceed 5.

### AUSTRALIAN TELECOM



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### VCCI NOTICE

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Manufacturer's Name: **Cabletron Systems, Inc.**

Manufacturer's Address: **35 Industrial Way  
PO Box 5005  
Rochester, NH 03867**

European Representative Name: **Mr. Jim Sims**

European Representative Address: **Cabletron Systems Limited  
Nexus House, Newbury Business Park  
London Road, Newbury  
Berkshire RG14 2PZ, England**

Conformance to Directive(s)/Product Standards: **EC Directive 89/336/EEC  
EC Directive 73/23/EEC  
EN 55022  
EN 55024  
EN 60950  
EN 60825**

Equipment Type/Environment: **Networking Equipment, for use in a  
Commercial or Light Industrial  
Environment.**

We the undersigned, hereby declare, under our sole responsibility, that the equipment packaged with this notice conforms to the above directives.

Manufacturer

Mr. Thomas R. Whissel

Full Name

Compliance Engineering Manager

Title

Rochester, NH, USA

Location

Legal Representative in Europe

Mr. Jim Sims

Full Name

President - E.M.E.A.

Title

Newbury, Berkshire, England

Location



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# INTRODUCTION



Only qualified personnel should perform installation procedures.

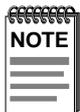
Welcome to the Cabletron Systems *SWPIM-BRI Installation Guide*. This manual gives an introduction to the SWPIM-BRI, lists features and capabilities, details the cabling pinouts, and explains how to install the SWPIM-BRI.

The SWPIM-BRI provides S/T-interface (digital) functionality or U-interface (analog) functionality for a host platform designed to receive the SWPIM (Sliding WAN Physical Interface Module) architecture.

## USING THIS GUIDE

Read through this guide completely to understand the features and capabilities of the SWPIM-BRI.

A general working knowledge of WAN and Ethernet and IEEE 802.3 data communications networks and their physical layer components is helpful before using the SWPIM-BRI.



The term “host platform” will be used to indicate the device or module, such as the SSR-600 or the HSIM-SSR-600, into which the SWPIM-BRI is installed.

### **STRUCTURE OF THIS GUIDE**

This guide is organized as follows:

This **Introduction** provides preliminary information that will aid in using this manual, lists technology and user's guides that may help the user to set up and manage the SWPIM-BRI, gives an overview of the SWPIM-BRI and its features, and information on how to get help from Cabletron Systems.

Chapter 1, **Installation**, provides instructions on how to install the device into a host platform, and gives the LED indications.

Appendix A, **Specifications**, contains information on functionality and operating specifications, connector pinouts for the SWPIM-BRI, environmental requirements, and physical properties.

Appendix B, **FCC Part 68 - User's Information**, explains the FCC rules for the SWPIM-BRI.

### **SWPIM-BRI FEATURES**

The SWPIM-BRI is installed into any Cabletron Systems product that supports the SWPIM architecture, such as the SSR-600, or the HSIM-SSR-600.

The SWPIM-BRI uses a single RJ48 connector supporting the S/T-interface and the U-interface. There are two different pin assignments and cables for the two interfaces. Refer to Appendix A for the Cabletron Systems part numbers and pin assignments for these cables.

The S/T-interface is provided via a four-wire Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI), while the U-interface is provided via a two-wire ISDN BRI.

The SWPIM-BRI provides support for the transportation of two 64 Kbps Bearer (B) channels and one 16 Kbps Data (D) channel for a total of 144 Kbps. The SWPIM-BRI can be configured by software to select the S/T-interface for terminal equipment (TE) mode or the U-interface for network termination (NT) mode. Refer to the host platform software user's manual for information on how to configure the SWPIM-BRI using software.

The SWPIM-BRI has two LEDs, to indicate link and status conditions. Refer to Chapter 1 for more details.

## **RELATED MANUALS**

The following Cabletron Systems manuals may help the user to set up and manage the SWPIM-BRI:

*SSR-600 Installation Guide*

*HSIM-SSR-600 Installation Guide*

*6C105 SmartSwitch 6000 Overview and Setup Guide*

*Ethernet Technology Guide*

*Cabling Guide*

The manuals referenced above can be obtained on the World Wide Web in Adobe Acrobat Portable Document Format (PDF) at the following site:

**<http://www.cabletron.com/>**

Cabletron Systems applicable software manuals for the SSR-600 and the HSIM-SSR-600 host platforms (Cabletron Routing Software Manuals):

*Bridging Configuration Guide*

*Event Logging System Message Guide*

*Network Interface Operations Guide*

*Routing Protocols Reference Guide*

*Routing Protocols User's Guide*

*System Software Guide*

*ClearVISN Routing Configurator User's Guide*

*Systems Network Architecture Guide*

*Quick Reference Guide*

*DTF (Data Trace Facility) User Guide*

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The following conventions may be used in this document:



**Note** symbol. Calls the reader's attention to any item of information that may be of special importance.



**Tip** symbol. Conveys helpful hints concerning procedures or actions.



**Caution** symbol. Contains information essential to avoid damage to the equipment.



**Electrical Hazard Warning** symbol. Warns against an action that could result in personal injury or death due to an electrical hazard.

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Internet mail	<a href="mailto:support@cabletron.com">support@cabletron.com</a>
FTP	<a href="ftp://ftp.cabletron.com/">ftp://ftp.cabletron.com/</a>
Login	<i>anonymous</i>
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<p>To send comments or suggestions concerning this document, contact the Cabletron Systems Technical Writing Department via the following email address: <b>TechWriting@cabletron.com</b>  <i>Make sure to include the document Part Number in the email message.</i></p>	

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- A description of the failure
- A description of any action(s) already taken to resolve the problem (e.g., changing mode switches, rebooting the unit, etc.)
- The serial and revision numbers of all involved Cabletron Systems products in the network
- A description of your network environment (layout, cable type, etc.)
- Network load and frame size at the time of trouble (if known)
- The device history (i.e., have you returned the device before, is this a recurring problem, etc.)
- Any previous Return Material Authorization (RMA) numbers



# CHAPTER 1

## INSTALLATION



Only qualified personnel should install the SWPIM-BRI.

This chapter covers the following items:

- Unpacking the SWPIM-BRI (Section 1.1)
- Installing the SWPIM-BRI into the host platform (Section 1.2)
- A description of the LANVIEW LED indications (Section 1.3)
- Connecting the SWPIM-BRI to the network (Section 1.4)
- What to do once the SWPIM-BRI is installed (Section 1.5)

### 1.1 UNPACKING THE SWPIM-BRI

Use static electricity precautions when handling the SWPIM-BRI.



Failure to observe static safety precautions could cause damage to the SWPIM-BRI. Follow static safety handling rules and wear the antistatic wrist strap shipped with the SWPIM-BRI.

1. Open the packing box and remove the SWPIM-BRI.



Do not cut the non-conductive bag to remove the device. Damage could result from sharp objects contacting the device or components.

2. Attach the antistatic strap (refer to the instructions in the wrist strap package) before removing the SWPIM-BRI from the antistatic packaging.
3. Verify that the SWPIM-BRI is undamaged. Refer to Getting Help if there is any damage to the device. Do not attempt to install the SWPIM-BRI if it is damaged.

## **1.2 INSTALLING THE SWPIM-BRI**

The SWPIM-BRI can be installed in any available open slot in the host platform. To install the SWPIM-BRI, proceed as follows:

1. You do not need to power down the host platform to install the SWPIM-BRI. Check the host platform software manual to see if desired parameters would be lost from memory upon power down of the host platform.
2. Remove the blank panel covering the slot in the host platform in which the SWPIM-BRI will be installed, by prying it off the faceplate.
3. Ensure that the antistatic wrist strap is attached and employed as recommended.



Observe all precautions to prevent damage from Electrostatic Discharge (ESD).

4. Remove the SWPIM-BRI from the antistatic bag. (Save this bag in the event the device must be removed from the host platform).
5. Hold the SWPIM-BRI with the faceplate facing away (right side up) from the host platform. The 40-pin connector should be facing towards the empty slot, with the wide part of the connector oriented down. See Figure 1-1.
6. Locate the rail guides inside the slot in which the SWPIM-BRI will be installed, as shown in Figure 1-1.
7. Install the SWPIM-BRI in the host platform by aligning the SWPIM-BRI with the rail guides in the host platform and sliding it in. Take care that the SWPIM-BRI slides in straight and properly engages the backplane host connector. Do not force the device.

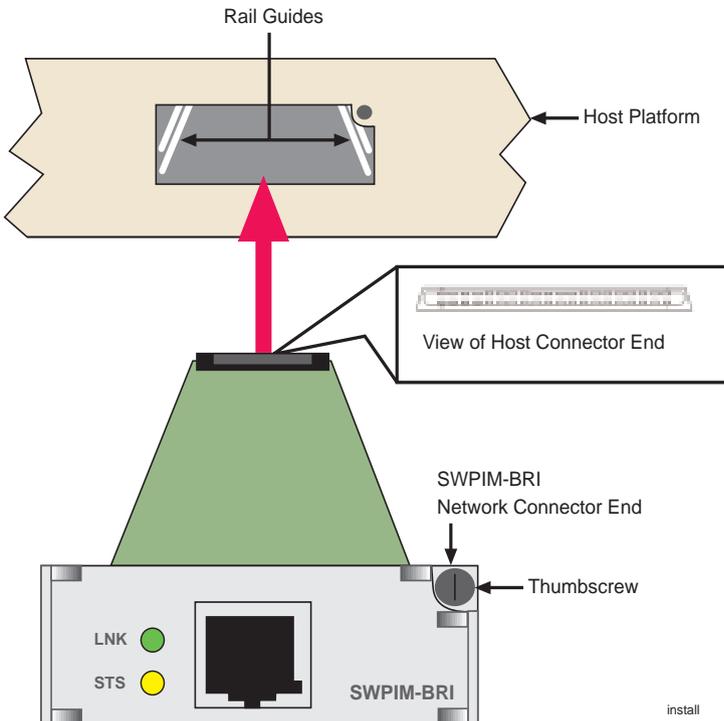


Figure 1-1 Installing the SWPIM-BRI into the Host Platform

8. Fasten the SWPIM-BRI with the thumbscrew.
9. Replace power to the host platform, if necessary. Check to see that the host platform LED indicators go to their normal configuration. If they do not, remove the SWPIM-BRI from the host platform and contact Cabletron Systems.



Do not connect any WAN cables until the SWPIM-BRI has been configured in software. The phone company can shut down a line that has an unconfigured connection on it.

10. The SWPIM-BRI must be configured before the WAN connection is made. Once the SWPIM-BRI has been configured, the host platform must undergo a soft or hard restart in order for the SWPIM-BRI to be recognized and for traffic to pass. Refer to the appropriate software manual to configure the SWPIM-BRI.

### **1.3 LANVIEW LED INDICATIONS**

Refer to Table 1-1 for the link LED indications for the SWPIM-BRI.

**Table 1-1 Link LED**

<b>Color</b>	<b>Indication</b>
Off	Disabled or Not Configured
Red	No Link
Blinking Red	Failure
Blinking Amber	Transmit or Receive Traffic
Green	Port is Active

Refer to Table 1-2 for the status LED indications for the SWPIM-BRI.

**Table 1-2 Status LED**

<b>Color</b>	<b>Indication</b>
Off	Normal or Disabled
Blinking Amber	Port in Loopback Test Mode
Green	Active Call (B1 and/or B2 is Active)
Blinking Green	Failure due to Framing Errors

## 1.4 CONNECTING TO THE NETWORK

Figure 1-2 depicts a typical configuration for the SWPIM-BRI. The Cabletron Systems part number for the cable is 9360005-x, where x is the length of the cable.

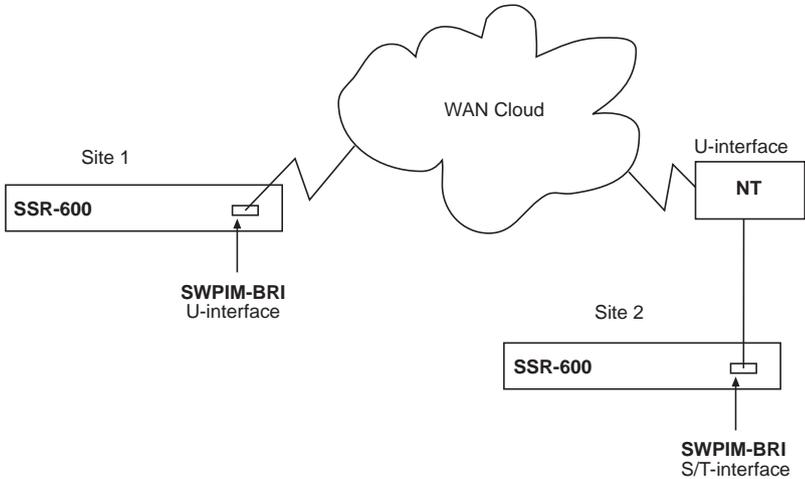


Figure 1-2 Typical Configurations

## 1.5 COMPLETING THE INSTALLATION

After installing the SWPIM-BRI, the SWPIM-BRI will need to be configured for the network. Refer to the host platform software documentation in order to set up and manage the SWPIM-BRI using the software.



# APPENDIX A

## SPECIFICATIONS

This section describes the environmental specifications and safety and approval requirements for the SWPIM-BRI. Cabletron Systems reserves the right to change these specifications at any time without notice.

### A.1 PHYSICAL PROPERTIES

Dimensions:	1.91 H x 5.40 W x 19.05 D (cm) 0.75 H x 2.125 W x 7.50 D (in)
Weight (Unit):	90.7 g (3.2 oz)
Nominal current draw on +5V supply from host platform:	U-interface: 126.5 mA passing traffic S/T-interface: 135 mA passing traffic
MTBF (Predicted):	3,874,392 hours

## **A.2 NETWORK INTERFACE**

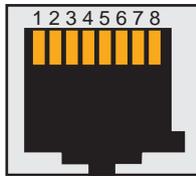
The SWPIM-BRI uses an RJ48 connector for the network port, with two separate pinouts, one for the S/T-interface and the other for the U-interface. The Cabletron Systems Part Number for the cable for both the S/T-interface and the U-interface is 9360005-x, where x is the length of the cable.

### **A.2.1 Pinout for the S/T-Interface Connector**

**Table A-1 Pinouts for the S/T-Interface Connection**

<b>Pin</b>	<b>Function</b>		<b>Polarity</b>
	<b>Terminal Equipment (TE)</b>	<b>Network Equipment (NE)</b>	
1	No Connection	No Connection	
2	No Connection	No Connection	
3	Transmit	Receive	+
4	Receive	Transmit	+
5	Receive	Transmit	-
6	Transmit	Receive	-
7	No Connection	No Connection	
8	No Connection	No Connection	

The connector for the S/T-interface can be seen in Figure A-1:



strj45

**Figure A-1 S/T-Interface RJ48 Pinout**

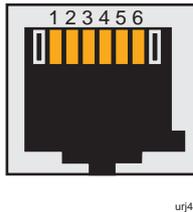
## **A.2.2 Pinout for the U-Interface Connector**

The network interface pin assignments for the U-interface network connector are listed in Table A-2.

**Table A-2 Pinouts for the U-Interface Connection**

<b>Pin</b>	<b>Signal</b>	<b>Direction</b>
1	No Connection	
2	No Connection	
3	Uline	I/O
4	Uline	I/O
5	No Connection	
6	No Connection	

The connector for the U-interface is shown in Figure A-2:



**Figure A-2 U-Interface RJ48 Pinout**

## **A.3 ENVIRONMENTAL REQUIREMENTS**

- Operating Temperature: +5° to +40°C (41° to 104°F)
- Non-operating Temperature: -30° to +90°C (-22° to 194°F)
- Operating Humidity: 5% to 90% (Non-condensing)

## **A.4 REGULATORY COMPLIANCE**

This equipment meets the following safety and electromagnetic compatibility (EMC) requirements:

<b>Safety</b>	UL 1950, CSA C22.2 No. 950, 73/23/EEC, EN 60950, IEC 950, EN 60825
<b>Electromagnetic Compatibility (EMC)</b>	FCC Part 15, CSA C108.8, 89/336/EEC, EN 55022, EN 61000-3-2, EN 61000-3-3, EN 55024, AS/NZS 3548, VCCI V-3
<b>Telecommunications</b>	FCC CFR47 Part 68, CS-03

# APPENDIX B

## FCC PART 68 - USER'S INFORMATION

The following instructions are provided to ensure compliance with the Federal Communications Commission (FCC) Rules, Part 68.

1. This device must only be connected to the ISDN Basic Rate network behind an FCC Part 68 registered channel service unit. Direct connection is not allowed.
2. Before connecting your unit, you must inform the telephone company of the following information:

Port ID	REN/SOC	FIC	USOC
SWPIM-BRI	6.0P	N/A (XD)	N/A (XD)

3. If the unit appears to be malfunctioning, it should be disconnected from the telephone lines until you learn if your equipment or the telephone line is the source of the trouble. If your equipment needs repair, it should not be reconnected until it is repaired.
4. If the telephone company finds that the equipment is exceeding tolerable parameters, the telephone company can temporarily disconnect service, although they will attempt to give you advance notice if possible.
5. Under the FCC Rules, no customer is authorized to repair this equipment. This restriction applies regardless of whether the equipment is in or out of warranty.
6. If the telephone company alters their equipment in a manner that will affect use of this device, they must give you advance warning so as to give you the opportunity for uninterrupted service. You will be advised of your right to file a complaint with the FCC.
7. The attached affidavit must be completed by the installer.

8. In the event of equipment malfunction, all repairs should be performed by our Company or an authorized agent. It is the responsibility of the users requiring service to report the need for service to our Company or to one of our authorized agents.

Service can be obtained at Cabletron Systems Technical Support:

Address: Cabletron Systems, Inc.  
35 Industrial Way  
Rochester, NH 03867-0505

Phone: (603) 332-9400

Internet mail: [support@cabletron.com](mailto:support@cabletron.com)

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**AFFIDAVIT FOR THE CONNECTION OF  
CUSTOMER EQUIPMENT TO 1.544 MBPS AND/OR  
SUBRATE DIGITAL SERVICES**

For the work to be performed in the certified territory of

Telco's name: \_\_\_\_\_

State of: \_\_\_\_\_

Country of: \_\_\_\_\_

I, \_\_\_\_\_, of \_\_\_\_\_  
(Name of Authorized Representative) (Customer Name)

\_\_\_\_\_, \_\_\_\_\_  
(Customer's Address) (Telephone Number)

being duly sworn, state:

I have responsibility for the operation and maintenance of the terminal equipment to be connected to \_\_\_\_\_ Subrate digital services. The terminal equipment to be connected complies with Part 68 of the Commission's rules except for the encoded analog content and billing protection specifications. With respect to encoded analog content and billing protection:

- I attest that all operations associated with the establishment, maintenance and adjustment of the digital CPE with respect to encoded analog content and encoded billing information continuously complies with Part 68 of the FCC's Rules and Regulations.
- The digital CPE does not transmit digital signals containing encoded analog or billing information which is intended to be decoded within the telecommunications network.
- The encoded analog and billing protection is factory set and is not under the control of the customer.

**Appendix B: FCC Part 68 - User's Information**

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I attest that the operator(s) maintainer(s) of the digital CPE responsible for the establishment, maintenance and adjustment of the encoded analog content and billing information has (have) been trained to perform these functions by successfully completing one of the following: Check appropriate one(s).

- a. A training course provided by the manufacturer/grantee of the equipment used to encode analog signals; or
- b. A training course provided by the customer or authorized representative, using training materials and instructions provided by the manufacturer/grantee of the equipment used to encode analog signals; or
- c. An independent training course (e.g. trade school or technical institution) recognized by the manufacturer/grantee of the equipment used to encode analog signals; or
- d. In lieu of the proceeding training requirements, the operator(s) maintainer(s) is (are) under the control of a supervisor trained in accordance with \_\_\_\_\_ above.

I agree to provide \_\_\_\_\_ with proper documentation  
(Telco's Name)

to demonstrate compliance with the information as provided in the proceeding paragraph, if so requested.

\_\_\_\_\_ (Signature)

\_\_\_\_\_ (Title)

\_\_\_\_\_ (Date)

Subscribed and sworn to me this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_  
(Notary Public)

My commission expires: \_\_\_\_\_