



The BradCommunications™ SST communications module connects your Rockwell Automation ControlLogix® controller with up to 1 Ethernet Modbus TCP and 2 Serial Modbus networks.

04 May. 10  
DW2007211

# 1 Ethernet + 2 Serial Channels

For the Allen-Bradley® ControlLogix® Controller

## Features

- **Save money!**  
1 Ethernet and 2 RS232/RS485 Serial Modbus channels on a single slot - 1756 backplane compatible
- **Save time!**  
No ladder logic to write for configuration and data transfer between module and ControlLogix processor
- Boot user configuration and update firmware module through integrated USB port
- **Data format: Bit, Byte, Word, Dword, Float**
- **RLL feature : configure and diagnose Modbus network remotely via A-B RSLinx®**
- **Advanced Windows configuration and diagnostics tools**
- **Up to 8 SST™ modules can be used in one ControlLogix rack**
- **Support local and remote chassis**

## Protocols

- **Modbus TCP Client /Server**
- **Modbus Serial Master or Slave (RTU / ASCII)**

## Typical Applications

- **SCADA / supervisory communication**
- **Integration of legacy Modbus devices**
- **Bridge Rockwell networks to Modbus compatible devices**



Class I, Div 2



## Overview

The BradCommunications™ SST™ Ethernet / Serial module connects Rockwell Automation® ControlLogix® controllers to Modbus networks. Each module has 1 Ethernet and 2 Serial communication channels that act as independent Modbus TCP Client/Server and Modbus Master or Slave protocols to exchange data with other Modbus compatible devices.

The SST module acts as a 1756 input/output module between the Modbus network and the ControlLogix backplane. The data transfer from the SST™ module to the ControlLogix processor supports 2 modes; a direct mode allowing mapping of Modbus data in I/O processor image (496 inputs bytes / 496 output bytes) and a messaging mode (based on CIP transaction) allowing access to Modbus data images stored in 32K registers of the SST™ module's memory.

The SST module has a USB port on the front panel which can be used for the startup of the module when the user configuration is stored to a USB key. This can also be beneficial if a breakdown occurs, allowing a very quick startup to occur with a new SST module.

## Configuration and Diagnostics

Save your time, the SST module doesn't require any ladder logic programming to be used. The configuration is created using a PC-based Windows console software connected via RLL (Remote Link Library) functionality allowing a remote access to the SST module for the configuration and the diagnostics through Rockwell network architectures (Ethernet/ControlNet/DeviceNet™).

The SST console allows the user to define the network parameters, Modbus devices and the cyclic data exchanges. The console includes a user configuration manager offering services for download, upload, copy, and rename of user configurations. With this, a user can very easily and quickly create a new configuration to initialize and start a SST module.

The SST console includes diagnostic tools to help with the commissioning and monitoring of the Modbus connection. These tools allow access in read and write modes to the Modbus slaves or to monitor and modify the module's internal data shared bound for a Modbus Master. Thus, the user-friendly tools are available for controlling the communication in commissioning phase (PROG mode). This same information is also available in production (RUN mode) through status words making it possible for the user to manage the execution of the control application in its ladder logic.

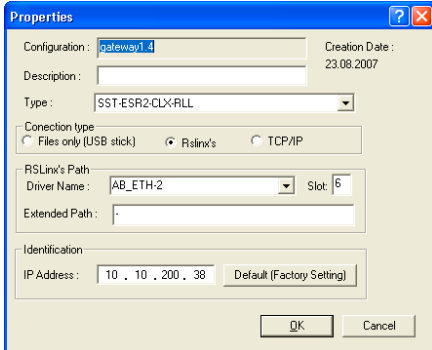
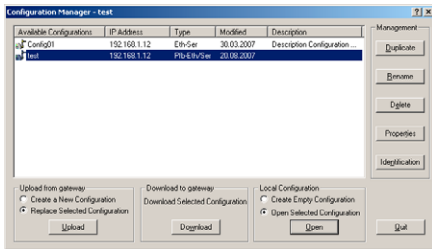


**BradCommunications™**

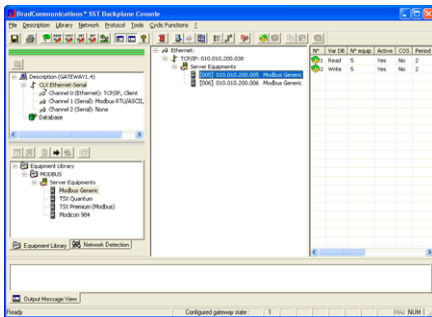
# 1 Ethernet + 2 Serial Channels



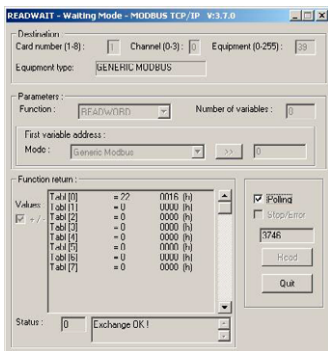
## Dagnostic & Software Tools



- User Configuration Manager -



- Configuration Console -



- Modbus Read/Write Data Diagnostic Tool -

## Hardware Specifications

<b>Bus Interface</b>	<ul style="list-style-type: none"> <li>Allen-Bradley® 1756 ControlLogix®</li> <li>Support multiple modules in a chassis</li> <li>Local and remote rack</li> </ul>
<b>Memory</b>	<ul style="list-style-type: none"> <li>128 MB of onboard shared memory</li> <li>8 MB of flash memory (user configuration and firmware)</li> </ul>
<b>Diagnostics</b>	<ul style="list-style-type: none"> <li>4 characters display</li> <li>3 LEDs indicator:                     <ul style="list-style-type: none"> <li>1 - health of the network (COMM)</li> <li>2 - communication status (SYS)</li> <li>3 - initialization complete and module is ok (OK)</li> </ul> </li> </ul>
<b>USB Port (pending)</b>	<ul style="list-style-type: none"> <li>Type A, USB 2 and 1.1 compatible</li> <li>User configuration boot</li> <li>Module firmware upgrade</li> </ul>
<b>Current Consumption</b>	850 mA @ 5V or 1.75 mA @ 24V
<b>Operating Temperature</b>	0°C (32°F) up to +60°C (140°F)
<b>Storage Temperature</b>	-40°C (-40°F) up to +85°C (185°F)
<b>Regulatory Approvals</b>	<ul style="list-style-type: none"> <li>CE</li> <li>Class 1, Div 2, Groups A,B,C &amp; D Hazardous (Classified) locations</li> </ul>
<b>I/O Mapping (for ControlLogix)</b>	<ul style="list-style-type: none"> <li>Maximum 496 bytes input data</li> <li>Maximum 496 bytes output data</li> <li>Maximum 250 words status data</li> <li>Maximum 41 bytes configuration data</li> </ul>
<b>Shared Memory (for ControlLogix)</b>	<ul style="list-style-type: none"> <li>32K words and 32K bits</li> <li>Read/Write access</li> <li>Ladder logic based on CIP messaging</li> </ul>
<b>Configuration/Diagnostics</b>	Windows-based software tools through A-B RSLinx™ and Remote TCP

## Network Specifications

Serial Communication Port	Ethernet Communication Port
<b>Port:</b> 2 distinct Serial ports <b>Speed:</b> 110 to 115200 bps <b>Parity:</b> none, even, and odd <b>Data bits:</b> 5, 6, 7, or 8 <b>Stop bits:</b> 1 or 2 <b>Connector:</b> RJ45 (DB9 male supplied cable) <b>Electrical interface:</b> RS232, RS422 and RS485, 500V galvanic insulation <b>Protocol:</b> <u>Master</u> RTU or ASCII Mode Maximum slave: 127 slaves devices Function code: 0, 1, 2, 3, 4, 5, 6, 15, 16 Data format: Intel® / Motorola® <u>Slave</u> RTU or ASCII Mode 32K words / 32K bits shared memory Function Code: 0, 1, 3, 5, 6, 15, 16	<b>Port:</b> 1 distinct Ethernet port <b>Speed:</b> 10/100 Mbps, auto-negotiation <b>Connector:</b> BaseT (RJ45) <b>Protocol:</b> Support client/server modes simultaneously Support TCP and UDP connection <u>Client mode</u> Up to 128 Modbus server devices Support up to 4 simultaneous requests Function code: 0, 1, 2, 3, 4, 15, 16 Data format: Intel / Motorola <u>Server mode</u> 32K words / 32K bits shared memory Function Code: 0, 1, 3, 15, 16

## Ordering Information

Part Number	Description
<b>SST-ESR2-CLX-RLL</b>	SST™ 1 Ethernet and 2 Serial ports PLC communications module for Allen-Bradley ControlLogix, includes Remote Link Library
<b>Also available: SST-SR4-CLX-RLL</b>	SST™ 4 Serial ports PLC communications module for Allen-Bradley ControlLogix, includes Remote Link Library

More Serial and Ethernet protocols available for Altus (AL2000 series), Alstom (Alspa C80-35 & C80-75), GE Fanuc (GE90-30 & 90-70), Mitsubishi (AnA, AnU, AnS, QnA, QnAS), Omron (Sysmac C, CV and CS1), Schneider (Premium, Micro, TSX/PMX), Siemens (S7-200/300/400, S5, TI-505). Please contact us for more information.

To contact us: [www.woodhead.com](http://www.woodhead.com)

North America: US: +1 (630) 969-4550 – Canada: +1 519 725 5136  
 Europe: France: +33 2 32 96 04 20 – Germany: +49 7252 94 96 0 – Italy: +39 (02) 950551 – UK: +44 (1252) 720720  
 Asia: China: +86 21-5048-0889 Singapore: +65 6-268-6868 – Japan: +81 46-265-2325 – Korea: +82 31-492-9000

Brad is a registered trademark and BradControl, BradCommunications, applicom, Direct-Link and SST are trademarks of Molex Incorporated. © 2010 Molex

PLC Network Interface