

# BusPro-S™

High Speed Multi-IO SPI Host, Debugger, and Programmer



Revolutionize the way you think about test

## Features

- High-performance SPI controller with multi-IO interface.
- Four IO modes including standard, 3-wire, dual, and quad.
- User-programmable SCK rate up to 60 MHz in enhanced mode.
- Up to 200 Mb/s throughput in enhanced mode for fast programming speed.
- Selectable interface voltage of 1.8V, 2.5V, and 3.3V.
- Configurable bit order, slave select polarity, and SPI mode.
- Eight independent slave select signals for designs with multiple slave devices.
- Powerful debugger with command script editor.
- In-System Programming (ISP) of SPI serial Flash and EEPROMs.
- Detailed transaction log with time stamp and data recording.
- High-speed USB 2.0 interface.
- Robust and portable bus-powered USB device, no external power supply required.
- Royalty-free software application programming interface (API).
- SPI Exerciser software works with Windows Vista, Windows 7, Windows 8/8.1, and Windows 10.

## Benefits

- **Save time** debugging hardware and software by using a versatile, high speed SPI host.
- **Increase programming rates** for in-system-programmable devices with the BusPro-S's advanced architecture.

Serial Peripheral Interface (SPI) bus applications can be deceptively complex due an ever-growing number of modes and increasing performance requirements. New serial bus designs require debug equipment with multi-IO support and high speed capabilities at an affordable price.

The **BusPro-S High-Speed Multi-IO SPI Host** is designed with speed, versatility, and value in mind. Featuring a 60 MHz clock rate with up to 200 Mb/s throughput and support for standard, dual, quad, and 3-wire modes, the BusPro-S is the right tool for all SPI debugging applications—present and beyond.

## Applications

### Hardware Debug

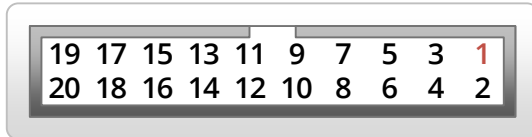
Generate SPI bus traffic and interface with peripheral components.

### In-System Programming

Read, erase, program, and verify SPI Flash Memories and EEPROMs within the system using the SPI interface.

## High Speed SPI Debugger and Programmer

The **BusPro-S** is a value-oriented, high speed Serial Peripheral Interface (SPI) debugging and programming tool. The USB-based desktop instrument allows engineers to save precious development time by providing low level control of SPI buses for the generation of SPI traffic and for programming SPI memory. The BusPro-S includes two modes of operation: standard mode for simple SPI buses and enhanced/multi-I/O mode for interfacing with the latest high-speed SPI Flash and peripheral devices.



BusPro-S 20-pin Connector Pin Definitions

## BusPro-S Pin Assignments

Pin	Name	Description
1	SCK	Serial Clock
3	MOSI, IO0	Master Output Slave Input, Input/Output (3-wire, Dual, and Quad Modes)
5	MISO, IO1	Master Input Slave Output, Input/Output (Dual and Quad Modes)
7	IO2	Input/Output (Quad Mode Only)
9	IO3	Input/Output (Quad Mode Only)
2, 4, 6, 8, 10, 12	GND	Ground
13-20	SS0-SS7	Slave Select
11	NC	Not Connected

## BusPro-S Hardware Specifications

### General

Mechanical Dimensions	2.30 inches x 3.25 inches x 0.80 inches
Certifications	RoHS Compliant

### USB Interface

USB Transfer Rate	High-speed USB 2.0
USB Cable	Ships with a 6 foot USB 2.0 A to B cable

### SPI Interface

SPI Connector	20-pin (2x10) header (0.100 x 0.100 inches) 10 Female to Female jumper wires included
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### SPI Specifications

	Standard Mode	Enhanced Mode
Maximum Clock Rate	30 MHz	60 MHz
Supported Slave Selects	8	8
Output Voltage	1.8V, 2.5V, 3.3V	1.8V, 2.5V, 3.3V
SPI Mode	Mode 0-3	Mode 0 only
IO Modes	Standard (4-wire)	Standard (4-wire), 3-wire,

## Intuitive Software Interface

The included **SPI Exerciser** software features two modules.

The **Debugger** module features a command script interface with individual tabs for maintaining multiple command sessions. The transaction log maintains a list of all activity performed by the BusPro-S. The debugger interface features easy access to both standard and enhanced modes for maximum flexibility when debugging complex systems.

The **Programmer** module features a library of common Flash and EEPROM device models for fast, convenient in-system erase, program, verify, and read operations for both standard and multi-I/O components.

## Powerful API

The BusPro-S includes an application programming interface (API) in the form of a 32-bit Windows DLL. All major host functions are available through the API for convenient integration into third party applications and for use with popular lab and test executive software suites.

## Ordering Information

### Part Number—90200

- BusPro-S with SPI Exerciser software. Includes USB 2.0 cable and 10 premium 6" jumper wires

For more information, or to order online, please visit the JTAG Interrogator web page at:

<http://www.corelis.com/BusPro-S>