



# SD



## SD/SDIO/SPI/MMC PROTOCOL ANALYZER

The ComProbe® SD Protocol Analyzer allows developers and engineers to thoroughly analyze SD, SDIO, MMC and SPI communications, as well as *Bluetooth*® data carried over the SDIO physical layer, by simultaneously capturing, decoding, displaying, filtering, and detecting errors - *all live*.

Powered by USB, this small form-factor analyzer provides non-intrusive analysis without any compromises; the ComProbe SD comes loaded with support for SPI and MMC specification, and captures data at High-Speed 480 Mbps - it's the ideal field or bench tool for developers of SD/SDIO/MMC-equipped devices or *Bluetooth* devices that use SDIO technology.

The ComProbe SD Protocol Analyzer includes powerful ComProbe software and the SD/SDIO/SPI/MMC hardware interface.

### Key Features and Benefits

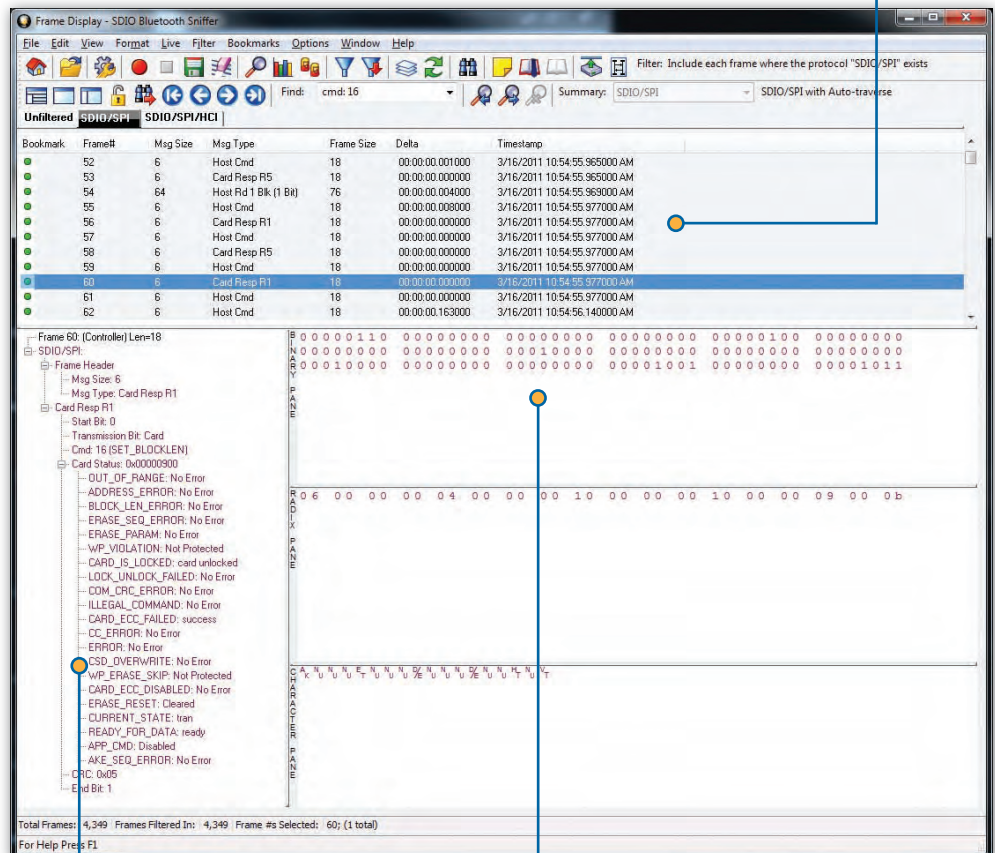
- Data You Can Trust**  
 Non-intrusive in-line capture and analysis provides uncontaminated views of the data you need
- Current and Compatible**  
 Support for 1 and 4-bit modes makes sure you're compatible with current SD, SDIO and MMC specifications
- Compact unit delivers big features** to developers of SD, SDIO, SPI and MMC technologies, in the field or at the bench
- Comprehensive Protocol Analysis**  
 Can be used in conjunction with other ComProbe devices for interoperability analysis over multiple bus types
- Full SPI Bus Support**  
 Allows developers of full-duplex technologies to capture and analyze SPI bus data
- Faster to Market**  
 Reduces debug time with simultaneous live capture, display, decode, filtering and detection of protocol errors

### Big Window into a Small Format

The ComProbe SD provides developers and engineers with one compact and portable point of access to multiple bus types, including SD, SDIO, MMC and SPI, and supports 1 and 4-bit modes ensuring compatibility with current specifications. Not only does the device provide a non-intrusive window into native-format bus performance and command and response tokens, but also allows *Bluetooth* developers to capture *Bluetooth* data as it's transported over the SDIO bus.

Once captured, data can be viewed, debugged and target-searched for errors with the powerful and mature ComProbe software. The ComProbe SD can significantly reduce the time you spend debugging SD/SDIO device protocol and timing issues, and help to bring your SD, SDIO, MMC, SPI or *Bluetooth* product to market faster.

**Summary Pane** displays a one line overview of each data frame/message. Click on any line to reveal detail in multiple panes below.



**Decode Pane** shows comprehensive layered decoders of each frame/message with clear, concise descriptions.

**Logical Data Pane** shows data in binary, hex and character format.

ComProbe is a registered trademark of Frontline Test Equipment, Inc.



## Specifications

- Supports SD specification v2.0, Part 1 & 2
- Supports Security commands, SD specification v2.0, Part 3
- Supports SDIO Specification v2.0
- Supports SPI transfer mode
- Supports SD/SDHC/SDIO 1-bit & 4-bit modes
- Captures CMD, DATA0, DATA1, DATA2, DATA3
- Debug SD/SDIO device protocol and timing issues
- Compatible with MMC devices
- Non-intrusive capture and analysis
- Use with both standard SD form factor connection and embedded applications
- Runs on USB power - no external power supply needed
- Timestamping with 1 msec resolution
- Single-click export
- Packets with protocol violations are flagged in red
- Data captured to PC hard disk
- Session notes and annotated bookmarks allow for quick identification of questionable packets
- Free viewer - anyone can view and analyze captured information
- Portable - main unit size (mm) is 130 x 79 x 28

## The ComProbe SD Hardware Interface

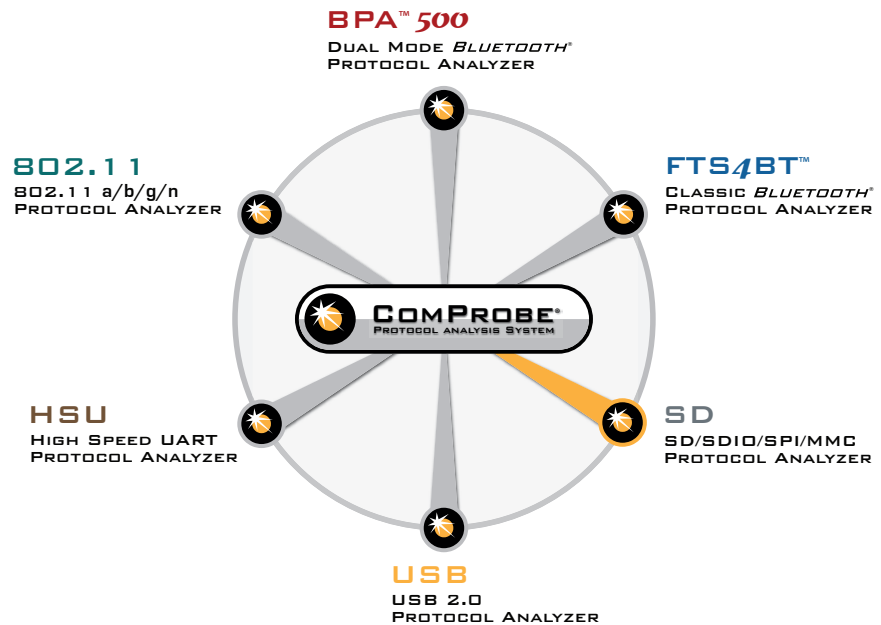
The ComProbe SD Protocol Analyzer includes the portable and robust SD/SDIO/SPI/MMC hardware interface, which supports connectivity to SD, SDIO, SPI and MMC-equipped devices.

The SD/SDIO/SPI/MMC interface is one member of an extensive arsenal of technology-specific hardware interfaces, all functioning with the powerful ComProbe software. This modular approach allows greater flexibility in protocol analysis and debugging, and provides comprehensive coexistence views over virtually any combination of protocols.



## Minimum PC Requirements

- Pentium PC 1Ghz or faster
- Windows XP (32-bit or 64-bit) or Windows 7 (32-bit or 64-bit)
- 1GB of RAM
- 50MB free disk space
- USB 2.0 port



## The ComProbe Modular Approach

ComProbe software is at the core of Frontline protocol analysis, allowing technology-specific hardware interfaces to work individually or in combination with other hardware interfaces. This modular approach gives the developer or analyst the widest possible range of scenarios for debugging complex communications.

To order or for more information:

**Brandt-Data GmbH**

Messtechnik • Protokollanalyse • Datenanalyse

Friedrich-Hayn-Str. 4

D-24582 Bordesholm / Germany

Tel.: +49 (0) 43 22 - 699-657 • Fax - 658

info@brandt-data.de • www.brandt-data.de



**frontline®**  
Debug Communications Faster<sup>SM</sup>