



### Target Applications:

- Verification and validation of SPI slave devices
- Timing and Voltage characterization
- Device robustness tests (timing, voltage and protocol)
- Regression test

### Hardware Features

- 1.2V to 5.5V IO operation
- Up to 100Mbit SPI communication
- 2.5ns timing resolution (update to 2ns planned)
- Simultaneous testing and tracing
- Digital and analog stimulation of the four SPI signals
  - Control of all timing parameters
  - Control of rise and false time (analog mode)
  - Outputs configurable as Push-Pull, Open-Drain or Open-Source
  - Variable IO Voltage able to supply SPI device

- Variable high and low levels (analog mode)
- Free waveform control (analog mode)
- Variable Pull-Up and Pull-Down resistors
- Main supply switch for customer SPI board (max. 12V/1A)
- Digital and analog tracing of the four SPI signals
  - All send and received information can be recorded including supply state, trigger connectors, ...
  - Independent from testing
  - Recording with time stamps at maximum timing resolution
- USB interface for easy control from PC
- 512MB of memory
- Two trigger connectors (in and out)
- Measure connector for regular scope

### Software Features

- DLL to control most of the hardware features
- Full support of all digital hardware features (analog features are planned)
- Control from signal level up to messages

- Creation of timing true Bitmaps from captured data
- FPGA (hardware) configuration part of SW package
- Programmers guide available
- Example program available
- More under development...

### **Delivery Content (Hardware)**

- TestAndTrace SPI Box
- Main Supply Adapter
- USB Cable
- CD
  - Windows Driver
  - SPI API DLL Software
  - SPI API DLL Documentation
  - Small Example Program

### **System Requirements**

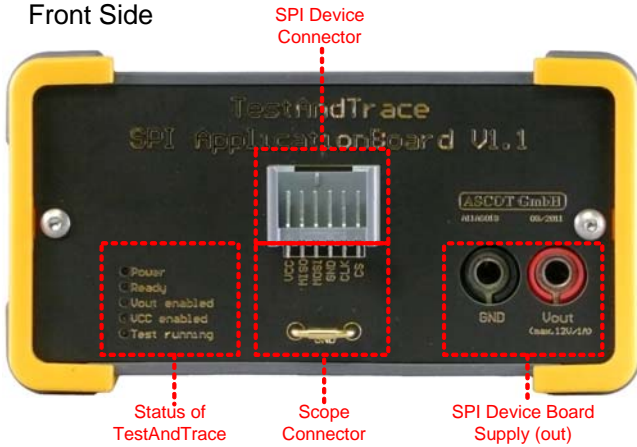
- PC running Windows XP or Windows 7 64bit

# Data Sheet

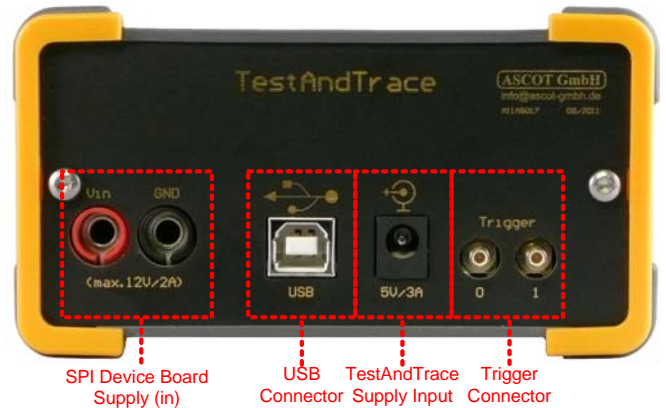
## TestAndTrace - SPI (rev. 0.1)

### Connectors

Front Side



Rear Side



### Technical Specification (typical values)

Height	63mm	SPI Board Supply	0 - 12V
Width	115mm	SPI Board Current	0 - 1A
Length	180mm	Digital timing resolution	2.5ns
Weight	454g	Digital sampling rate	400MHz
HS-Code		Digital bandwidth (3.3V)	>125MHz
ECCN - European	NLR	Digital bandwidth (1.8V)	>80MHz
Supply	5V / 3A	Analog timing resolution	10ns
Mains Adapter	100V - 240V/ 15W	Analog sampling rate	100MHz
PC Interface	USB 2.0 High Speed	Analog bandwidth (3.3V)	>50MHz
Buffer size	2x 256MB DDR3	Analog bandwidth (1.8V)	>50MHz
Internal Frequencies	12, 48, 50, 60, 100, 250, 400, 533, 1066 MHz	Rise/Fall time 5V (30/70%)	<2.0ns
VCC Supply (out)	1.2 – 4.95V	Rise/Fall time 3.3V (30/70%)	<2.0ns
VCC Current (out)	0 – 500mA	Rise/Fall time 2.5V (30/70%)	<2.5ns
IO Swing (digital, 0mA)	0.1 – 4.70V	Rise/Fall time 1.8V (30/70%)	<3.5ns
IO Swing (analog, 0mA)	0.0 – 5.50V	Rise/Fall time 1.5V (30/70%)	<5.0ns
IO Current	0 – 20mA	Rise/Fall time 1.2V (30/70%)	<10ns
Input resistance	>500k Ohm		
Input capacity	<40pF		

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