Overview

XJTAG Expert is the world's first portable Boundary Scan test solution that comes with digital oscilloscope, waveform and function generator, spectrum analyser and serial protocols analyser. Its USB 2.0 to JTAG adapter provides a high speed interface to the JTAG chain while the advanced features make it easier to test, debug and repair a wide range of circuit boards. The portable design means the XJTAG Expert ADF-2 can easily be taken to the Unit Under Test (UUT).

Powerful test tools where you want them

XJTAG Expert ADF-2 contains the licence for your XJTAG system, allowing you conveniently to use its capabilities wherever they are needed. You aren't tied to one PC and you even have the flexibility to take the unit off-site to your customers, contract manufacturers...

Even with its advanced digital features, XJTAG Expert ADF-2, requiring just two USB connections, can be used with a laptop PC. The unit can also supply power to small target boards enabling them to be tested without a source of mains power.
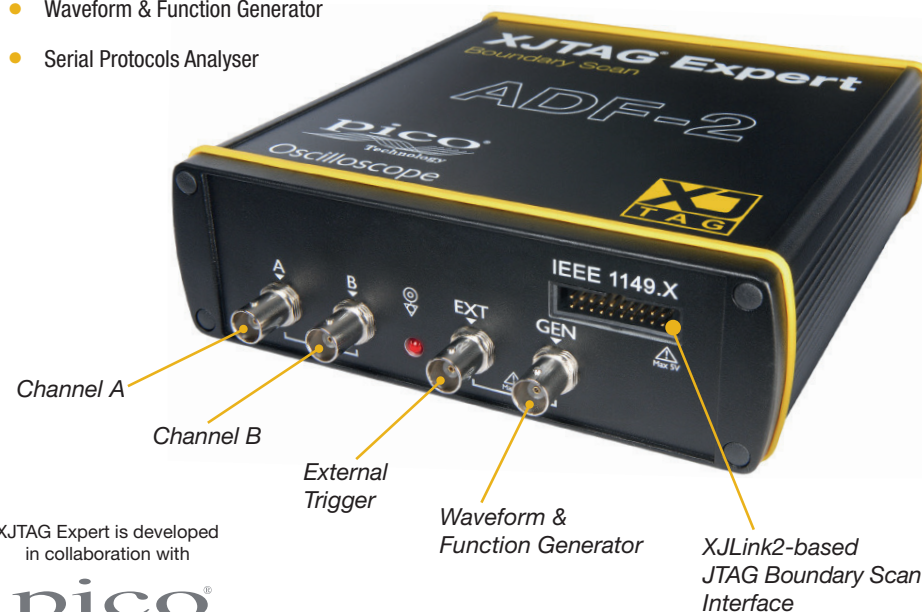
- Digital Oscilloscope, 200 MHz
- Spectrum Analyser, 200 MHz
- Waveform & Function Generator
- Serial Protocols Analyser

Configurable JTAG interface

You only need a simple cable assembly to connect XJTAG Expert to up to four TAPs on your target board. The configurable 20-way connector simplifies the process of connecting your XJTAG test system to the UUT.

Flexible connectivity

XJTAG Expert ADF-2 can be configured to work in the best way with your board. If there are signal termination issues, they can be overcome by selecting an appropriate drive strength and slew rate. Configurable voltage levels allow you to connect directly to most TAPs while the advanced automatic skew control enables you to get the maximum frequency out of your JTAG chain and cable.

Channel A

Channel B

External Trigger

Waveform & Function Generator

XJLink2-based JTAG Boundary Scan Interface

XJTAG Expert is developed in collaboration with

pico
Technology

Key Benefits

- Portable design: ideal for lab & field work
- Self-contained licence allowing you to use XJTAG on multiple PCs
- Re-configurable unit for multiple UUTs saving costs
- Advanced digital features for debug, test and repair:
  – 200 MHz digital oscilloscope
  – 200 MHz spectrum analyser
  – Waveform & function generator
  – Serial protocols analyser
    CAN, I^2C, SPI, RS232, UART

Boundary Scan Features

- XJLink2 compatible
- Up to 4 TAP connections to UUT
- Handles different cable and board configurations
- USB bus-powered (no external PSU)
- TCK clock frequencies up to 166 MHz
- Two different voltages can be configured, from 1.1 V to 3.3 V in 0.1 V steps
- High speed USB 2.0 interface, backwards compatible with USB 1.0 & 1.1
- Adjustable JTAG signal termination
- Spare pins on the JTAG connector can be used to indicate the test status
- Pins can also be used as general purpose I/O during testing, for example for fast Flash programming
- Automatic signal skew control
- Can supply power to the target board (3.3 V, <100 mA)
- Built in voltmeter on all I/O pins Voltage input: Min 0 V, Max 5 V
- Frequency counter on all I/O pins Frequency input: Min 1 Hz, Max 200 MHz Selectable measurement period of 1 ms, 10 ms, 100 ms, 1 s, 10 s
- JTAG signals are +5 V tolerant

Digital Oscilloscope
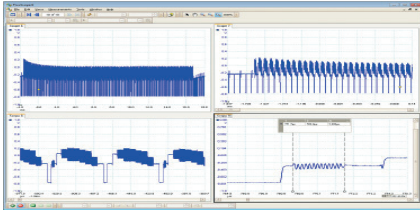
The digital oscilloscope has high bandwidth and high sampling rate. The ETS mode boosts the maximum effective sampling rate further to 10 GSample/s, allowing more detailed display of repetitive signals. Buffer memory depth is 128 MSample. The maximum zoom factor is 100 million, with a choice of two zoom methods and zoom controls. Each captured waveform is stored in the buffer; you can review thousands of previous waveforms. A class-leading set of advanced triggers including pulse width, windowed and dropout triggers helps you capture the data you need.

Spectrum Analyser
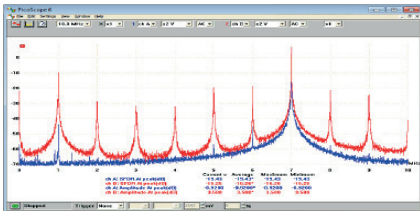
The spectrum analyser allows signals up to 200 MHz to be viewed in the frequency domain. A full range of settings give you control over the number of spectrum bands, window types and display modes: average, instantaneous, or peak-hold. You can display multiple spectrum views with different channel selections and zoom factors allowing you to see these alongside time-domain waveforms of the same data. A comprehensive set of automatic frequency-domain measurements, including THD, THD+N, SNR, SINAD and intermodulation distortion can be added to the display.

Waveform & Function Generator
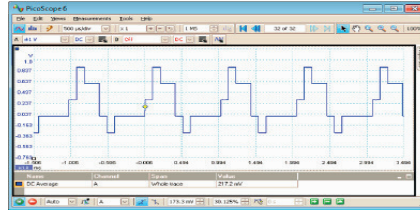
The built-in function generator produces signals such as sine, square, triangle, DC level, etc. Basic controls set level, offset and frequency whilst advanced controls allow you to sweep over a range of frequencies. Combined with the spectrum peak hold option this makes a powerful tool for testing amplifier and filter responses. Using the built-in full arbitrary waveform generator (AWG) editor, waveforms can be created or edited, imported from oscilloscope traces, or loaded from a spreadsheet.

Serial Protocols Analyser

With its deep memory, the serial protocols analyser can capture thousands of frames of uninterrupted data. Protocols currently included are CAN bus, I²C, SPI, RS232 and UART. The decoded data is displayed in the format of your choice: "in view", "in window", or both at once. You can zoom in on these frames to look for noise or distortion on the waveform. The "in window" format shows a list of the decoded frames, including the data and all flags and identifiers. You can set up filtering conditions to display only the frames you are interested in, search for frames with specified properties, or define a start pattern that the program will wait for before listing the data. You can also create a spreadsheet to fully decode the hex data into plain text.

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Advanced Digital Features

Digital Oscilloscope

- 2 channels, 200 MHz bandwidth each
- 128 MSample buffer memory
- 8 bits resolution
- 500 MSample/s real time sampling
- 10 GSample/s repetitive sampling
- Input range ±50 mV to ±20 V
- Timebase accuracy ±50 ppm
- Sample jitter < 5 ps RMS
- Overload protection ±100 V (peak)
- Multiple advanced digital trigger modes
- External trigger input

Spectrum Analyser

- Frequency DC to 200 MHz
- Display modes:
  — Magnitude, average, peak hold
- Windowing functions: Rectangular, Gaussian, triangular, flat-top, Blackman, Blackman-Harris, Hamming, Hann
- FFT points: Selectable from 128 to 1 million, in powers of 2
- Multiple spectrum views
- Frequency-domain measurements: THD, THD+N, SNR, SINAD, etc.

Waveform & Function Generator

Function Generator

- Signals: sine, square, triangle, ramp, sinc, DC, Gaussian, half-sine, white noise, PRBS
- Frequency: DC to 1 MHz
- Accuracy: ±50 ppm
- Resolution: < 0.01 Hz
- Overvoltage protection ±100 V
- SFDR > 60 dB, 10 KHz full scale sine wave

Arbitrary Waveform Generator

- 8 KSample buffer size
- 20 MHz update rate; Bandwidth > 1 MHz
- 12 bits resolution
- Rise time (10-90%): < 100 ns

Serial Protocols Analyser

- CAN bus, I²C, SPI, RS232, UART
- Multiple format views
- Frame filtering and search options
- Hex data to text export capability

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