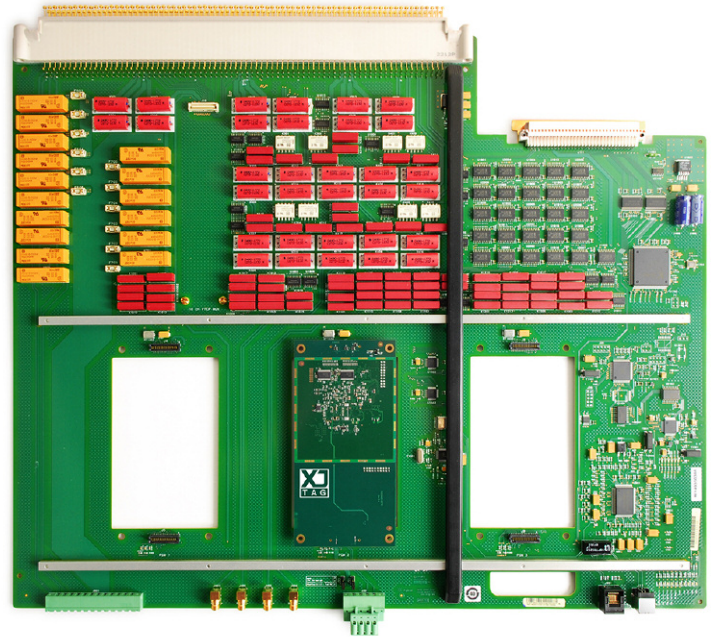


Technical Specifications

XJLink2-3070 is a plug-in JTAG and programming controller for the Keysight Utility Card on Keysight (Agilent) Medalist i3070. The XJLink2-3070 is used to link PC hosted XJTAG test software to the UUT (Unit Under Test). The XJTAG software is controllable directly from BT-BASIC as an External Device allowing for fully integrated operation.

Connecting XJLink2-3070 to the UUT

The connection from the XJLink2-3070 to the UUT is made via the Keysight Utility Card MINT pins. The XJLink2-3070 has 18 configurable interface pins. The function of the interface pins can be configured from the XJTAG software. The options available as well as the location of the signal on the MINT connector are listed in table 1.



| Pins | Settings | | | | | | | | | | |
|-----------|-------------------------|---------------------|---------------------|---------------------|------------------|-----|-------|------|-------------|--------------------------|--------------------------|
| | XJLink2-3070 Pin / Name | Utility Card Slot 1 | Utility Card Slot 2 | Utility Card Slot 3 | JTAG TAP Signals | PIO | Power | Vref | Soft Ground | Configurable I/O Voltage | Configurable Termination |
| GND | Pin 10 | 139 | 39 | 59 | | | | | | | |
| GND | Pin 20 | 140 | 40 | 60 | | | | | | | |
| Signal 1 | Pin 1 | 141 | 41 | 61 | x | x | x | x | x | x | XJLink Bank 1 |
| Signal 2 | Pin 2 | 142 | 42 | 62 | x | x | | x | x | x | |
| Signal 3 | Pin 3 | 143 | 43 | 63 | x | x | | x | | x | |
| Signal 4 | Pin 4 | 144 | 44 | 64 | x | x | | x | x | x | |
| Signal 5 | Pin 5 | 145 | 45 | 65 | x | x | | x | | x | |
| Signal 6 | Pin 6 | 146 | 46 | 66 | x | x | | x | x | x | |
| Signal 7 | Pin 7 | 147 | 47 | 67 | x | x | | x | | x | |
| Signal 8 | Pin 8 | 148 | 48 | 68 | x | x | | x | x | x | |
| Signal 9 | Pin 9 | 149 | 49 | 69 | x | x | | x | | x | |
| Signal 10 | Pin 11 | 150 | 50 | 70 | x | x | | x | | x | XJLink Bank 2 |
| Signal 11 | Pin 12 | 151 | 51 | 71 | x | x | | x | x | x | |
| Signal 12 | Pin 13 | 152 | 52 | 72 | x | x | | x | | x | |
| Signal 13 | Pin 14 | 153 | 53 | 73 | x | x | | x | x | x | |
| Signal 14 | Pin 15 | 154 | 54 | 74 | x | x | | x | | x | |
| Signal 15 | Pin 16 | 155 | 55 | 75 | x | x | | x | x | x | |
| Signal 16 | Pin 17 | 156 | 56 | 76 | x | x | | x | | x | |
| Signal 17 | Pin 18 | 157 | 57 | 77 | x | x | | x | x | x | |
| Signal 18 | Pin 19 | 158 | 58 | 78 | x | x | | x | | x | |

Table 1: TAP and PIO signals of the XJLink2-3070 and corresponding MINT Pins on the Keysight (Agilent) i3070 Utility Card.

JTAG TAP Signals

Each of the 18 interface pins can be configured to be any one of the JTAG signals that make up the IEEE 1149.1 TAP controller interface. The XJLink2-3070 can support up to 4 independent TAPs.

TCK: 10 kHz to 166 MHz in steps of 0.05 MHz

PIO

Each of the 18 interface pins on the XJLink2-3070 can be configured as a Programmable I/O pin. PIO functionality allows the XJLink2-3070 to connect to a UUT for test or programming operations using any digital interface that requires less than 18 signals. Multiple instances of a digital interface can be defined to allow test and programming of multiple devices concurrently.

Voltage Configuration

The 18 interface pins are divided into two banks of nine; pins 1 to 9 make up XJLink Bank 1 and pins 11 to 19 make up XJLink Bank 2. The output voltage on each bank can be set independently between 1.1 V and 3.5 V in 0.1 V steps.

Output voltage tolerance: $\pm 5\%$ of set value, typically $\pm 3\%$

| Bank | V_{IL} | V_{IH} | V_{OL} | V_{OH} | Load conditions |
|---------|----------|----------|----------|----------|-----------------|
| Voltage | Max | Min | Max | Min | |
| 3.3 | 0.8 | 2.0 | 0.4 | 2.4 | 100 Ω |
| 2.5 | 0.7 | 1.7 | 0.4 | 2.0 | 100 Ω |
| 1.8 | 0.4 | 0.9 | 0.4 | 1.35 | 100 Ω |
| 1.5 | 0.4 | 0.85 | 0.4 | 1.0 | 100 Ω |
| 1.2 | 0.4 | 0.75 | 0.4 | 0.8 | 133 Ω |

The output voltage levels can also be set to mirror a value read from the UUT; this is achieved by setting a pin within the bank to be of type VREF. The voltage driven onto that pin from the UUT is then used to derive the bank voltage.

Variable Input threshold:

$$V_{IL} (\text{Max}) = V_{\text{THRESH}} - 0.14 \text{ V}$$

$$V_{IH} (\text{Min}) = V_{\text{THRESH}} + 0.14 \text{ V}$$

External V_{REF} :

$$V_{IL} (\text{Max}) = \frac{V_{\text{REF}}}{2} - 0.14 \text{ V}$$

$$V_{IH} (\text{Min}) = \frac{V_{\text{REF}}}{2} + 0.14 \text{ V}$$

Output Configuration

The drive strength and slew rate of any pin being used as an output from the XJLink2-3070 can be configured to allow high speed, high quality signals.

Slew rate – Each output pin can have one of three slew rates to adjust the rise and fall times of the signals from XJLink2-3070. This setting can be configured on a pin-by-pin basis.

Drive strength options – A drive strength can be set for each output pin individually. Drive strength is defined by the series termination impedance of the signal net being driven. The minimum impedance is 68 Ω .

Powering the UUT from XJLink2-3070

The XJLink Bank 1 voltage can be output to power the UUT via Pin 1. Up to 50 mA is available.

Measuring UUT Frequencies

The frequency on any general purpose pin can be read using XJLink2-3070, irrespective of its type.

Frequency Counter

| | |
|--------------------------------|--------------------------------|
| Frequency Input | Min. 1 Hz ; Max. 200 MHz |
| Accuracy | ± 10 ppm |
| Selectable measurement period: | 1 ms, 10 ms, 100 ms, 1 s, 10 s |

Measuring UUT Voltages

The voltage on any general purpose pin can be read using XJLink2-3070, irrespective of its type.

Voltage Measurement

| | |
|-----------------|---|
| Voltage Input | Min. 0 V ; Max. 5 V |
| Accuracy | $\pm (0.2\% + 10 \text{ mV}) @ 15^\circ \text{C to } 35^\circ \text{C}$ |
| Input impedance | $> 900 \Omega$ |

PC Interface

USB 2.0 High speed (480 Mbps) via the Keysight Utility Card. Compatible with USB 1.1. XJLink2-3070 USB load current: voltage sense only.

Power Input

7-18 V, 12V nominal, $< 500 \text{ mA}$
(from Keysight Utility Card +12V supply)

Absolute Maximum Ratings

| | |
|------------------------------|---|
| DC input voltage (MINT pins) | -0.5 V to 5.5 V |
| DC input current (MINT pins) | $\pm 10 \text{ mA}$ |
| DC output current | (Pin 1 with power on) +50 mA (NB capacitors $> 10 \mu\text{F}$ connected to MINT pins should have current-limiting circuitry fitted) |
| DC output current | -50 mA, +50 mA including power and ground pins |
| Temperature Range | $+5^\circ \text{C to } +45^\circ \text{C}$ (operational) |
| Humidity | $< 95\%$ (non-condensing) |

Dimensions

Size: 75 mm x 152.5 mm x 10 mm