

JT 5705/USB - Mixed signal JTAG Controller

2-TAP USB controller integrated with mixed signal IO functionality



Key features

- 2 TAP ports (15 MHz)
- 64 I/O channels
- 56 digital
 - 16 with frequency counter;
 - 1 with programmable clock generator;
 - 1 with pulse width measurement
- 8 digital or analog, programmable per channel
- custom programmable FPGA
- capability to synchronize multiple controllers

The JT 5705/USB is a powerful self-contained JTAG instrument. It combines a 15 MHz JTAG/Boundary-scan controller with 64 mixed signal I/O channels plus custom programmable functions. This compact unit was designed for desktop use in hardware validation, (small-scale) production testing as well as (field) service and repair.

Through the I/O channels both digital and analog signals on the connectors and/or test points of a Unit Under Test (UUT) can be measured and driven as part of a JTAG/Boundary-scan test. Thanks to the mixed signal I/O channels of the JT 5705 the test coverage is increased for both the digital and the analog parts of a UUT.

From the total of 64 I/O channels, 8 can be selected as digital or analog channels that can measure or source voltages up to 30 Volts (unipolar) or ± 15 Volts (bipolar). The other 56 channels are digital only. Of these digital channels 16 have a frequency counter, 1 can be used as a programmable clock generator and 1 can be used for pulse width measurements.

In addition to their usage as boundary-scan I/O signals, the I/O channels can also be controlled via application specific digital functions that can be programmed in the reconfigurable FPGA (Altera Cyclone type) of the JT 5705.

Examples of such functions include CAN bus (excl Phy), E-net(excl Phy), SPI, DDR memory interfaces etc.

Multiple units can be "linked and sync'd" to provide higher I/O and TAP port counts. The unit is fully supported by JTAG Technologies application development tools (ProVizion and JTAG Live) plus the full suite of run-time software options such as PIP/LV (drivers for NI LabView), PIP/TS (drivers for TestStand), etc.

Voltage levels

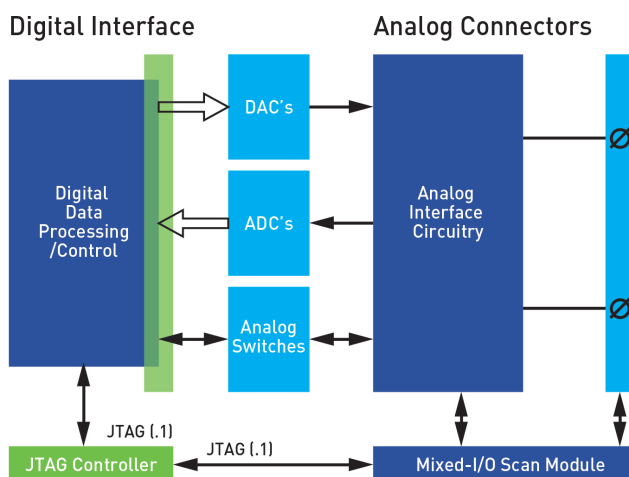
TAPs:	1.05 to 3.6 V; 5 V tolerant
Digital I/O:	1.05 to 3.6 V; 5 V tolerant
Analog I/O:	0 to 30 V or -15 to +15 V

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ELECTRICAL			
Power		Analog I/O	
From USB		Voltage range	0 V to 30 V or -15 V to +15 V @ 5 mA max
External	9-15 V, 0,8 A	Resolution	16 bit (0.5 mV)
TAP		Relative fault	± 0,7% full scale
TCK	15 MHz max (single box configuration)	Input impedance	1 Mohm parallel with 100 pF
Voltage range	Programmable 1.05 V to 3.6V (5V tolerant)	Output impedance	100 Ohm.
Threshold	@ 50% of selected voltage	Sample rate	15kS/s
Digital I/O		Slew rate	0.5V/µs
Voltage range	1.05 V to 3.6 V	Over Voltage Protection for Digital I/O	
Output current	max ±8 mA @ 3.3 V	Isolation threshold	VCC + 0.6 V
Other		Isolation voltage protection	- 0.5 V to +15 V
Frequency counter	0 to 200 MHz	Overshoot rejection	Overshoots less than 400 ns will not result in OVP isolation
Clock generator	0 to 62.5 MHz; step 0.0582 Hz		
Pulse width measurement	4-8192 ns; accuracy 4 ns, resolution 1ns	Pull-up resistor	20 - 50 Kohm
ENVIRONMENTAL MIL-T-28800E Class5 Style E			
Temperature		Vibration	
Rated range of use	0 °C to 60 °C (boxed); 0 °C to 70 °C (unboxed)	Swept sine resonance search	5 - 55 Hz, 2 g (0.33 mm p-p), 15 min per axis 10 min resonance dwell
Storage and transport	-5 °C to 60 °C (boxed); -40 °C to 70 °C (unboxed)	Dimensions	
Relative Humidity		Weight	320 grams
Operating	15% to 90% non-condensing	Size (L x W x H)	175 x 105 x 19 mm
Storage and transport	5% to 95% non-condensing		

Increasing test coverage



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