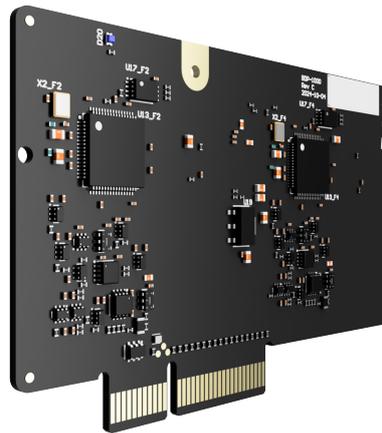


AtoMik® PRG Instrument



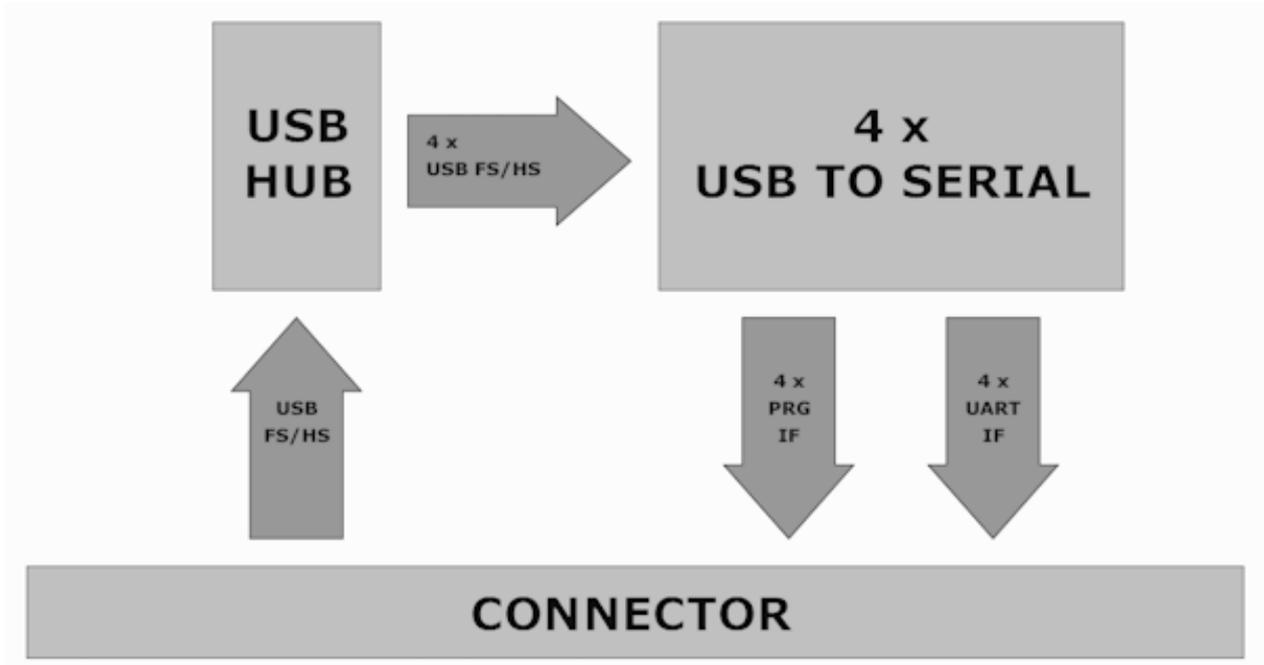
Key Features

- x4 JTAG/SWD Programming & debugging interfaces
- x4 UART interfaces
- OpenOCD compatible
- Powered by +24V/+5V

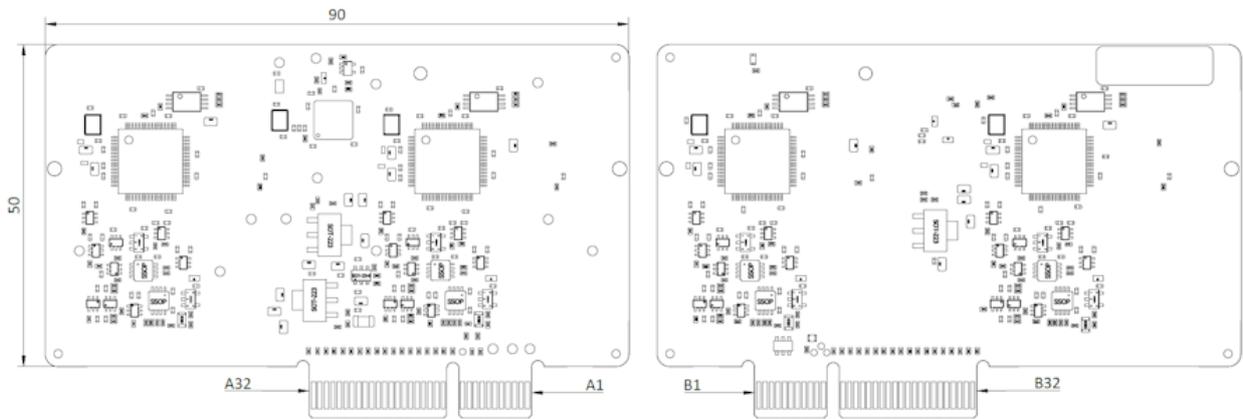
Description

The PRG Instrument offers JTAG/SWD interfaces that act as bridges between the host and targets where the host communicate with targets utilizing the well-known open source OpenOCD software. It implements a USB hub for expanding an incoming USB 2.0 channel to four USB 2.0 channels supporting four independent classic JTAG/SWD programming and debugging interfaces.

The PRG Instrument also contains four separate UART interfaces for e.g. communication with the test object from the host PC.



PRG Instrument Block Diagram



PRG Instrument Layout

Pinout

Pin	Name	Description	Pin	Name	Description

A 1	+24V_IN	+24V Input Power Supply	B 1	USB_N	USB D- signal
A 2	+24V_IN	+24V Input Power Supply	B 2	USB_P	USB D+ signal
A 3	+24V_IN	+24V Input Power Supply	B 3	GND	Ground
A 4	+24V_IN	+24V Input Power Supply	B 4	GND	Ground
A 5	+5V_IN	+5V Input Power Supply	B 5	GND	Ground
A 6	+5V_IN	+5V Input Power Supply	B 6	GND	Ground
A 7	+5V_IN	+5V Input Power Supply	B 7	GND	Ground
A 8	+5V_IN	+5V Input Power Supply	B 8	GND	Ground
A 9	RST_N	Reset signal	B 9	RSV	Reserved
A 10	PWR_EN	Power enable of the instrument	B 10	RSV	Reserved
A 11	RSV	Reserved	B 11	RSV	Reserved
A 12	GND	Ground	B 12	GND	Ground
A 13	PRG1_VTR EF_IN	Programmer 1 Reference voltage in	B 13	PRG2_VTR EF_IN	Programmer 2 Reference voltage in
A 14	PRG1_CTR L	Programmer 1 TXD Enable	B 14	PRG2_CTR L	Programmer 2 TXD Enable
A 15	PRG1_RES ET_N	Programmer 1 Reset active low out	B 15	PRG2_RES ET_N	Programmer 2 Reset active low out

A 1 6	PRG1_TDI	Programmer 1 Test Data In	B 1 6	PRG2_TDI	Programmer 2 Test Data In
A 1 7	PRG1_SW O/TDO	Programmer 1 Optional trace/Test Data Out	B 1 7	PRG2_SW O/TDO	Programmer 2 Optional trace/Test Data Out
A 1 8	PRG1_SWC LK/TCK	Programmer 1 Clock/Test Clock out	B 1 8	PRG2_SWC LK/TCK	Programmer 2 Clock/Test Clock out
A 1 9	PRG1_SW DIO/TMS	Programmer 1 Data I/O/Test Mode State	B 1 9	PRG2_SW DIO/TMS	Programmer 2 Data I/O/Test Mode State
A 2 0	PRG1_TXD	Programmer 1 UART Transmit Out	B 2 0	PRG2_TXD	Programmer 2 UART Transmit Out
A 2 1	PRG1_RXD	Programmer 1 UART Receive In	B 2 1	PRG2_RXD	Programmer 2 UART Receive In
A 2 2	GND	Ground	B 2 2	GND	Ground
A 2 3	PRG3_VTR EF_IN	Programmer 3 Reference voltage in	B 2 3	PRG4_VTR EF_IN	Programmer 4 Reference voltage in
A 2 4	PRG3_CTR L	Programmer 3 TXD Enable	B 2 4	PRG4_CTR L	Programmer 4 TXD Enable
A 2 5	PRG3_RES ET_N	Programmer 3 Reset active low out	B 2 5	PRG4_RES ET_N	Programmer 4 Reset active low out
A 2 6	PRG3_TDI	Programmer 3 Test Data In	B 2 6	PRG4_TDI	Programmer 4 Test Data In
A 2 7	PRG3_SW O/TDO	Programmer 3 Optional trace/Test Data Out	B 2 7	PRG4_SW O/TDO	Programmer 4 Optional trace/Test Data Out

A 2 8	PRG3_SWC LK/TCK	Programmer 3 Clock/Test Clock out	B 2 8	PRG4_SWC LK/TCK	Programmer 4 Clock/Test Clock out
A 2 9	PRG3_SW DIO/TMS	Programmer 3 Data I/O/Test Mode State	B 2 9	PRG4_SW DIO/TMS	Programmer 4 Data I/O/Test Mode State
A 3 0	PRG3_TXD	Programmer 3 UART Transmit Out	B 3 0	PRG4_TXD	Programmer 4 UART Transmit Out
A 3 1	PRG3_RXD	Programmer 3 UART Receive In	B 3 1	PRG4_RXD	Programmer 4 UART Receive In
A 3 2	GND	Ground	B 3 2	GND	Ground

Absolute Maximum Ratings

Exceeding ABSOLUTE MAXIMUM RATINGS can cause permanent damage to the device.

	Min	Max
USB_P, USB_N	-0.5 V	+5.5 V
+24V Input Power Supply	-0.3 V	+25.5 V
+5V Input Power Supply	-0.3 V	+5.2 V
Digital input	-0.3 V	+3.6 V

Recommended Operating Conditions

Specifications are valid at 25°C unless otherwise noted and with a warm-up time of >10min.

	Conditions	Min	Typ	Max
+24V Input Power Supply		+23.0 V	+24.0 V	+25.0 V

+5V Input Power Supply		+4.8 V	+5.0 V	+5.2 V
Digital Input High Voltage		2.5 V		
Digital Input Low Voltage				0.7 V
PRGx VTREF Input Voltage		1.7 V		5.0 V
PRGx Digital Output High Voltage	Load = +2 mA	VTREF-0.2 V		
PRGx Digital Output Low Voltage	Load = -2 mA			+0.1 V
PRGx Digital Input High Voltage		VTREF*0.7 V		
PRGx Digital Input Low Voltage				VTREF*0.3V

Environmental

The PRG Instrument is designed for following environmental conditions and for indoor use only.

	Min	Max
Operating Temperature	0°C	+55°C
Operating Humidity	10% RH	90% RH
Storage Temperature	0 °C	+70 °C
Storage humidity	5% RH	95% RH
Pollution Degree		2

Attachment

[3D Model](#)

Ordering information

Item	Part Number



AtoMik® PRG Instrument

AtoMik® Programmer (PRG) Instrument	IDP-1000-C1
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