USB 2.0 RG2300 Core Series
Embedded USB 2.0 Extender Modules

The USB 2.0 RG2300 Core Series of extenders is Icron's latest in USB 2.0 extension technology. They are available in an easy-to-integrate pluggable SO-DIMM form factor and support extension of up to 100m over Cat 5e (or better), up to 500m over multimode fiber, and up to 10km over singlemode fiber. This series has the ability to perform USB extension across a Local Area Network (LAN) and provide extension only when both sides are from the same manufacturer using the vendor specific pairing feature.

Sold as SO-DIMM daughterboard form factor

Features

Building and expanding on the previous generations of USB 2.0 embedded extenders, the RG2300 Core Series provides unparalled device and controller support, as well as new modes of operation and control. Key features include:

- USB 2.0 throughputs up to 480Mbps
- USB Extension over copper, fiber and LAN
- Software integration to third-party systems via the SwitchableUSB™ protocol
- Interoperability with the RG2304 extender series
- Optional advanced capabilities: device filtering, vendor specific pairing and virtual hub support (1 local to 4 remote extenders)
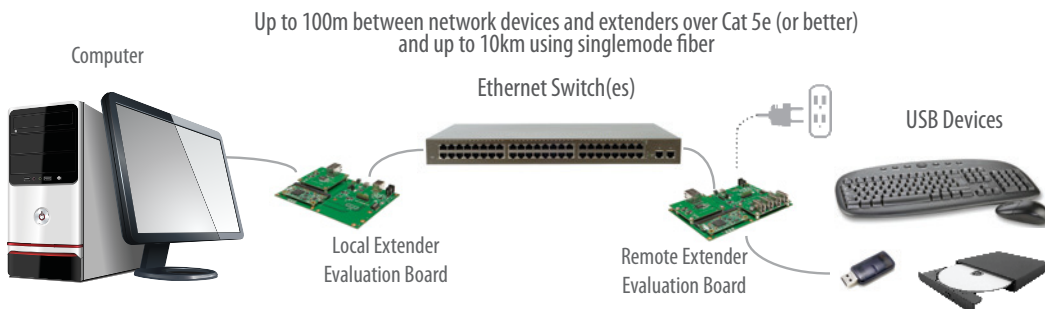
    Ask your sales representative for additional features that may meet your specific requirements.

Includes the ExtremeUSB® suite of features:

- Transparent USB extension
- True plug and play; no software drivers required
- Works with all major operating systems: Windows®, Mac OS X®, and Linux®

Applications

- Medical devices
- Interactive video matrices

- KVM extension
- Networked educational kiosks

Up to 100m between network devices and extenders over Cat 5e (or better)
and up to 10km using singlemode fiber

Computer

Ethernet Switch(es)

USB Devices

Local Extender
Evaluation Board

Remote Extender
Evaluation Board

USB 2.0 RG2300 Core Series Models

The USB 2.0 RG2300 Core Series incorporates ExtremeUSB® technology, continuing the tradition of being the most robust and reliable embedded USB 2.0 extender available in the market. It provides for direct connectivity over copper or fiber using MII, GMII, RGMII or TBI modes, and is optimized for fast mass storage throughput performance.
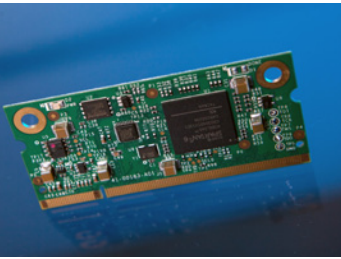
The RG2310 Core offers additional capabilities including the ability to extend USB 2.0 over a LAN, remotely managing the pairing of local and remote extenders with the SwitchableUSB™ protocol, custom MAC address, device filtering, and the ability to prevent extenders by other manufacturers from working with your extenders.

MODEL	MII	GMII	RGMII	TBI	LAN	Custom MAC	Vendor Pairing	SwitchableUSB™
RG2300 Core	X	X	X	X				
RG2310 Core	X	X	X	X	X	X	X	X

USB 2.0 RG2300 Core Series Specifications

Mounting Hole
D = 4.00 mm
2 locations

31.75

67.60
62.60

5.00

Module Dimensions
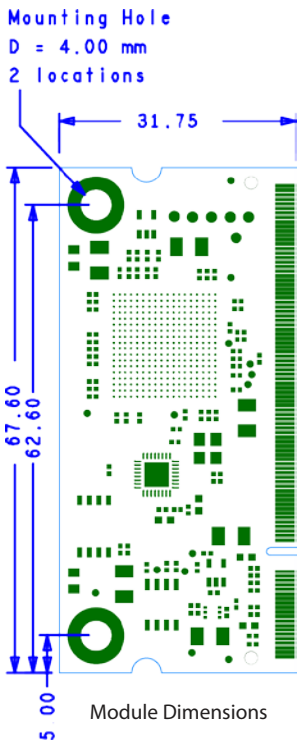
MAXIMUM RANGE

Cat 5e (or better):	100m
Local Area Network (LAN):	100m between nodes
Fiber:	500m (multimode) and 10km (singlemode)

PHYSICAL

PCB Dimensions:	67.60mm x 31.75mm x 1.00mm (+/- 0.10mm)
Max PCBA Height:	Top: 2.50mm (+/- 0.2mm), Bottom: 1.10mm (+/- 0.10mm)
Mounting Holes:	Diameter: 4.00mm (+/- 0.10mm)
Connector:	1.8V Standard Keyed 200-pin SO-DIMM

ENVIRONMENTAL

Temperature:	Operating: 0°C to 50°C (32°F to 122°F) Storage: -20°C to 70°C (-4°F to 158°F)
Humidity (non-condensing):	Operating: 20% to 80% Relative Humidity Storage: 10% to 90% Relative Humidity

POWER

Power Supply:	3.3V and 1.2V (Ask your sales representative for full product specifications)

USB SUPPORT

USB Speeds:	Low-speed, Full-speed, High-speed
Max Throughput:	Up to 480Mbps
Device Compatibility:	All device types and hubs
Host Compatibility:	OHCI, UHCI, EHCI, xHCI

CONNECTIVITY

Link Interfaces:	IEEE 802.3-2000 (MII, GMII, RGMII), Ten-Bit Interface (TBI)
Network (RG2310 Core):	Ethernet (USB link only), UDP/IP (SwitchableUSB)

INTERFACES

Interface PHYs:	Broadcom BCM5481, BCM54616 (GMII), Realtek RTL8211(GMII, RGMII), Texas Instruments TLK1221 (TBI)
USB Hub:	SMSC 251x, 251xB

SUPPORT

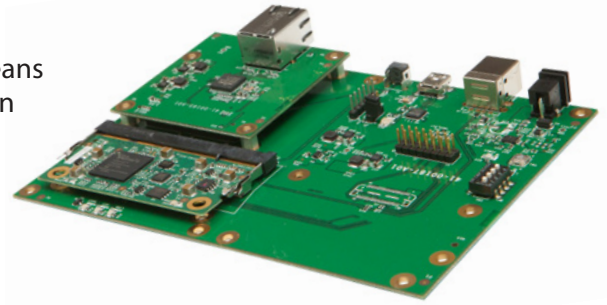|	
Warranty:	2-year

EXTREME
USB®

Features

The USB 2.0 RG2300 Core Series Developer Kits provide a rapid means to evaluate the RG2300 Core Series of extenders in your application and to prototype custom solutions. This kit comes with:
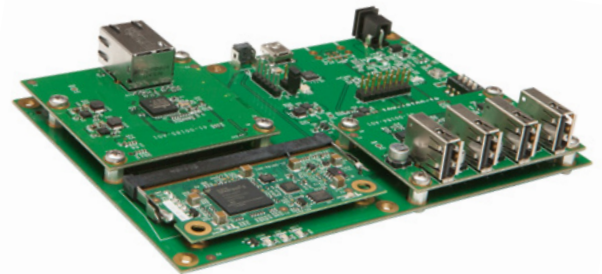
- Two evaluation boards
- USB hub module
- Choice of one set of RG2300 Core Series modules
- Choice of link interface modules (GMII, RGMII, TBI-MMF, or TBI-SMF)
- Full documentation and instructions (specifications, drawings, schematics, etc.) provided on a USB stick

Local Extender Evaluation Board with GMII and Core Modules

The modular design of the evaluation board allows you to test your preferred USB or PHY chipsets with the RG2300 Core Series of extenders, while facilitating easy reversion to supported modules for testing and technical support. Added benefits include:

- Test multiple interface modules for different product configurations
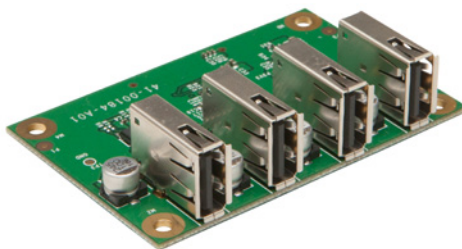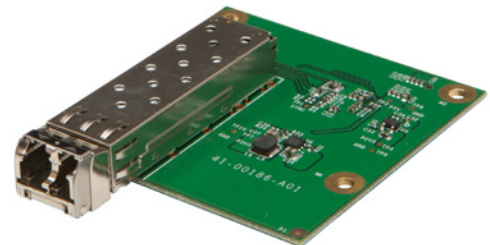- Quickly prototype alternate interfaces or hub modules

Remote Extender Evaluation Board with GMII, USB Hub and Core Modules
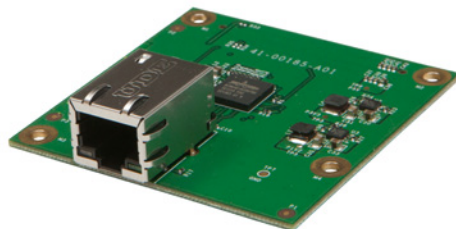
USB 2.0 RG2300 Core Series Developer Kit Modules

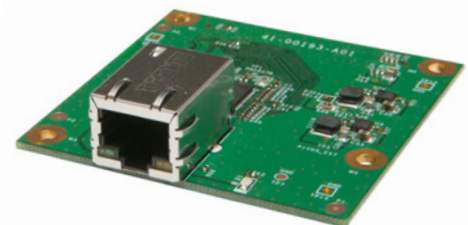*4-port USB Hub Module*

TBI Link Interface Modules

GMII Link Interface Module

RGMII Link Interface Module

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All USB 2.0 RG2300 Core Series embedded modules and related products feature a 2-year warranty.
For more information email sales@icron.com or call +1 604 638 3920.

PART #	NAME	DESCRIPTION
CORE MODULES		
02-00042	USB 2.0 RG2300 Core Local Extender Module	USB 2.0 local extender core daughterboard module (SO-DIMM) for MII, GMII, RGMII, and TBI modes over Cat X or fiber optics.
02-00043	USB 2.0 RG2300 Core Remote Extender Module	USB 2.0 remote extender core daughterboard module (SO-DIMM) for MII, GMII, RGMII, and TBI modes over Cat X or fiber optics.
02-00044	USB 2.0 RG2310 Core Local Extender Module	USB 2.0 local extender core daughterboard module (SO-DIMM) for LAN/SwitchableUSB™ over MII, GMII or RGMII, and direct connect over MII, GMII, RGMII or TBI using Cat X or fiber optics.
02-00046	USB 2.0 RG2310 Core Remote Extender Module	USB 2.0 remote extender core daughterboard module (SO-DIMM) for LAN/SwitchableUSB™ over MII, GMII or RGMII, and direct connect over MII, GMII, RGMII or TBI using Cat X or fiber optics.
DEVELOPER KITS		
00-00352	USB 2.0 RG2300 Core Developer Kit	Base developer kit for RG2300 core modules. Includes: 1 RG2300 core series local extender evaluation board, 1 RG2300 core series remote extender evaluation board, 1 RG2300 core local extender module, 1 RG2300 core remote extender module, 1 USB hub module, 2 international power supplies, 1 USB A to B cable, 1 USB A to Mini B programming cable, USB stick with documentation and instructions. ***Requires:*** *2 matching link interface modules, 2 power cords.*
00-00356	USB 2.0 RG2310 Core Developer Kit	Base developer kit for RG2310 core modules. Includes: 1 RG2300 core series local extender evaluation board, 1 RG2300 core series remote extender evaluation board, 1 RG2310 core local extender module, 1 RG2310 core remote extender module, 1 USB hub module, 2 international power supplies, 1 USB A to B cable, 1 USB A to Mini B programming cable, USB stick with documentation and instructions. ***Requires:*** *2 matching link interface modules, 2 power cords.*
DEVELOPER KIT MODULES		
02-00049	USB Hub Module	Modular component for evaluating the specified supported USB hub chipset *(see specification for list of chipset(s) supported).*
02-00050	Link Interface Module: GMII	Modular component for evaluating the specified supported GMII chipset *(see specification for list of chipset(s) supported).*
02-00051	Link Interface Module: RGMII	Modular component for evaluating the specified supported RGMII chipset *(see specification for list of chipset(s) supported).*
02-00052	Link Interface Module: TBI-MMF	Modular component for evaluating TBI mode over multimode fiber *(see specification for list of chipset(s) supported).*
02-00063	Link Interface Module: TBI-SMF	Modular component for evaluating TBI mode over singlemode fiber *(see specification for list of chipset(s) supported).*
DEVELOPER KIT ACCESSORIES		
21-00002	USB A to B Cable	USB 2.0/1.1 A to B, 2.0m, 24AWG
21-00102	USB A to Mini B Programming Cable	USB 2.0/1.1 A to Mini B, 1.8m, 26/28 AWG
21-00053	5V 3A International Power Supply	5V 3A DC output, 100-240VAC input power supply with 1.7mm (ID) plug, and IEC320-C7/C8 2-pin connector
21-00055	NA Power Cord	IEC320-C7/C8 2-pin power cord for United States
21-00056	EU Power Cord	IEC320-C7/C8 2-pin power cord for European Union
21-00057	UK Power Cord	IEC320-C7/C8 2-pin power cord for United Kingdom
21-00058	AU Power Cord	IEC320-C7/C8 2-pin power cord for Australia
10-00393	Test Enclosure	Aluminum enclosure for evaluating emissions and immunity with standard developer kit. Includes: top and bottom enclosures with faceplates matching configurations ordered.
DEVELOPER KIT REPLACEMENT EVALUATION BOARDS		
02-00053	USB 2.0 RG2300 Core Series Local Extender Evaluation Board	Local extender evaluation motherboard for RG2300 core series modules.
02-00054	USB 2.0 RG2300 Core Series Remote Extender Evaluation Board	Remote extender evaluation motherboard for RG2300 core series modules.