



## *iPort/USB™*

**iPort/USB** brings I<sup>2</sup>C directly to your Windows PC. Just load our free software, plug the **iPort/USB** into your computer's USB port, and you will be sending and receiving I<sup>2</sup>C messages in seconds.

### PRODUCT HIGHLIGHTS

- Add I2C to **ANY** Windows XP, 2000, ME, or 98se PC.
- Supports 7-bit addressing Standard (100k) and Fast (400k) Mode I2C Bus Activity.
- **High Performance I2C Bus Co-Processor.**
- **Maximum I2C Bus Throughput with Low Overhead.**
- **Supports Bus Master and Slave, Transmit and Receive, and /INT Signaling.**
- **Supports Multi-Master systems with Arbitration Loss Detection.**
- **Compatible with 3v and above I2C, or 1.5v and above with our iVoLT.**
- **Includes our FREE I2C Message Manager and Message Center software.**
- **Simple ASCII commands make building custom I2C applications EASY.**
- **Virtual Com Port based driver eliminates USB complications.**
- **Compatible with existing iPort/AI and iPort/AFM applications.**
- **Compatible with our LabVIEW Driver Library.**
- **Extended Commands support 2-Wire, "I2C-Like" and low level signaling.**
- **Philips' microcontroller-based. Fully licensed to use the I2C Bus technology.**



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The **iPort/USB** is our fastest and most powerful I2C Bus host adapter. Certified USB compatible, the iPort/USB will operate with any Windows XP, 2000, ME, or 98se PC. Typical applications include product development and testing, EEPROM programming, device control and sensor networking.

Over the past few years, the I2C Bus has expanded from simple control to data intensive applications. As new uses arise, bus bandwidth and message overhead have become key issues in product design and testing. The iPort/USB, our fourth generation adapter for the I2C Bus, addresses these issues by supporting several I2C bus speeds, including fast mode (400kbit/s), and USB transfer rates up to 12 Mb/s. Implemented using a high-performance bus co-processor with optimized instruction set, the adapter also includes large message buffers (256 bytes) to reduce host computer and bus overhead. In addition to operating as a bus master or slave in a multi-master system, a built-in bi-directional /INT signal line allows the device to receive or generate "slave only" device notifications.

Thanks to its USB-based Virtual Communications Port (VCP) driver, the iPort/USB will work with RS-232 based applications written for our iPort/AFM or iPort/AI I2C host adapters. When operating with new application software that uses advanced features, speed increases up to 100X faster are possible.

Master and Slave, Transmit and Receive, iPort/USB supports I2C message modes including Multi-Master, Arbitration Loss Detection, with messages from 1 to 32K bytes in length.

Start sending I2C messages in minutes using our Message Manager or Message Center applications included with each adapter. You can also use your computer's terminal emulation software (like Windows' Hyperterminal Program), or create your own custom I2C applications using any programming tool that can access your computer's (virtual) serial port.

<b>iPort/USB ASCII Text Interface Commands</b>	
<b><u>Command</u></b>	<b><u>Description</u></b>
	<b>Note: [CR] = Carriage Return Code or Enter Key. Syntax: [Select], (Optional), xx = [00..FE], n = [1..32767]</b>
Ctrl/R, Ctrl/R, Ctrl/R	<b>iPort/USB Reset</b> This command resets the iPort/USB to its default state.
//[CR]	<b>Status Display</b> Display iPort/USB status information.
/B[0 1 2][CR]	<b>Virtual Com Port Baud Rate Control</b> Set the Virtual Com Port Baud Rate (0=19.2, 1=57.6, 2=115.2k)
/C[CR]	<b>Close I2C Connection</b> Disconnect from the I2C Bus.
/Dxx[CR]	<b>Set Destination I2C Slave Address</b> Set the destination I2C Slave Address for subsequent Master Transmit or Receive operations.
/E[0 1][CR]	<b>Echo/Prompt Control [0 = Disable, 1 = Enable]</b> Enable/Disable data entry echo and prompts.
/F[0 1][CR]	<b>Virtual Com Port Flow Control [0 = XON/XOFF, 1 = RTS/CTS]</b> Select serial communication handshaking protocol.
/G[0 1][CR]	<b>I2C General Call Control [0 = Disabled, 1 = Enabled]</b> Enables/Disables iPort/USB response to I2C Bus General Call (00) messages.
/H[0 1][CR]	<b>Hex Only Display Control [0 = Disabled, 1 = Enabled]</b> Controls display format of received message data.
/Ixx[CR]	<b>Set iPort/USB's Own I2C Slave Address</b> Sets iPort/USB's own I2C Slave Address. iPort/USB will respond to I2C Bus messages sent to this address.
/K[0 1 2 3][CR]	<b>I2C Bus Clock Rate Control</b> Set I2C Bus Clock Rate Control (0=23, 1=86, 2=100, 3=400 KHz)
/M[CR]	<b>Command Menu Display</b> Display iPort/USB's Command Menu
/N[0 1 A R][CR]	<b>iNterrupt Signal Monitor/Control Status</b> Sets Monitor/Control/Status /INT Line. [0=Disable, 1=Enable, A=Assert, R=Release, [CR] = Status]
/O[CR]	<b>Open I2C Connection</b> Activates iPort/USB as an I2C device attached to the bus.

/*Rn[CR]	<b>Master Read Message</b> Read the specified number of data bytes from the current Destination I2C Slave device. * = No Stop for Repeated Start
/Stext[CR]	<b>Slave Transmit Message</b> Write the specified data bytes to a requesting I2C Master Receiver device.
/*Ttext[CR]	<b>Master Transmit Message</b> Master Transmit the specified data bytes to the current Destination I2C Slave device. * = No Stop for Repeated Start
/Un[CR]	<b>I2C Bus Time-oUt</b> Set the I2C Bus Time-oUt in msec (0=Disable)
/V[CR]	<b>Display iPort/USB Firmware Version</b> (Major XX.XX Minor)
/X[CR]	<b>eXtended Commands</b> Direct control of I2C Clock (SCL) and Data (SDA) lines. See User's Guide for details.
/Y[CR]	<b>Display Tx bYte Count</b> How many bytes did slave acknowledge.

## TYPICAL APPLICATIONS

- **Product Development:** Software/Hardware Testing and Troubleshooting.
- **Manufacturing:** Testing and Debugging, EEPROM Programming, Quality Control.
- **Field Service:** Field diagnosis, Repair service and Verification, Product Updates.

## Included Parts List

- iPort/USB Host Adapter.(#MIIC-204)
- USB Interface Cable (6 Ft.)
- I2C Clip Lead Cable (2 Ft.) (#CABCL)
- I2C Interface Cable (4 Ft.) (iPort I<sup>2</sup>C Connector Information).(#CAB4)
- /INT-Trigger Cable (1 Ft.) (# AXM-12G)
- Power Supply (#MWT-5VAG)
- iPort I2C Utility Pack for Windows.
- User's Guide. (MIIC-204-UG.pdf)
- FREE Technical Support (via phone, fax. Or email)

## Optional Add-On Parts

- I2C ESD and Over-current Protection Device. (#IPROTX)
- I2C Low Voltage Level Translator. (#IVOLT)
- I2C Interface Cables 4, 8, 16 Ft.(#CAB4 , #CAB8 , or #CAB16).
- I2C Clip Lead Cable (#CABCL)
- I2C Prototyping Board (#IP-101).
- 4 Channel I2C Multiplexer Board (#IP-201).
- LabVIEW Driver Library (#202-SDKW-LV)