



The I<sup>2</sup>C Bus Monitor Plus is our laboratory grade troubleshooting instrument for the Inter-Integrated Circuit (I<sup>2</sup>C) Bus, SMBus, and other derived protocols. When connected to an I<sup>2</sup>C or derived protocol bus and a host computer, the I<sup>2</sup>C Bus Monitor Plus captures, filters, and displays bus message data and timing information.

## PRODUCT HIGHLIGHTS

- **Microsecond Timestamping of Bits, Bytes and Messages.**
- **Non-intrusive capture of bus traffic to 400KHz.**
- **Software controlled SCL and SDA Logic Voltage Levels.**
- **Display Filtering on message Slave Address, R/W, Ack/Nack, Data Bytes, and Smart Battery System Protocol Violations.**

If your designs include heavy I<sup>2</sup>C Bus, SMBus, or derived protocol content, the I<sup>2</sup>C Bus Monitor Plus will give you the bus monitoring power you need, including data timestamping, variable logic voltage thresholds, and flexible triggering. Whether you're testing designs with a single master and slave, such as programming configuration EEPROMs, or monitoring multiple masters and slaves in a server maintenance system, the information packed screens help you get your debug and verification done faster.

## ADDITIONAL FEATURES

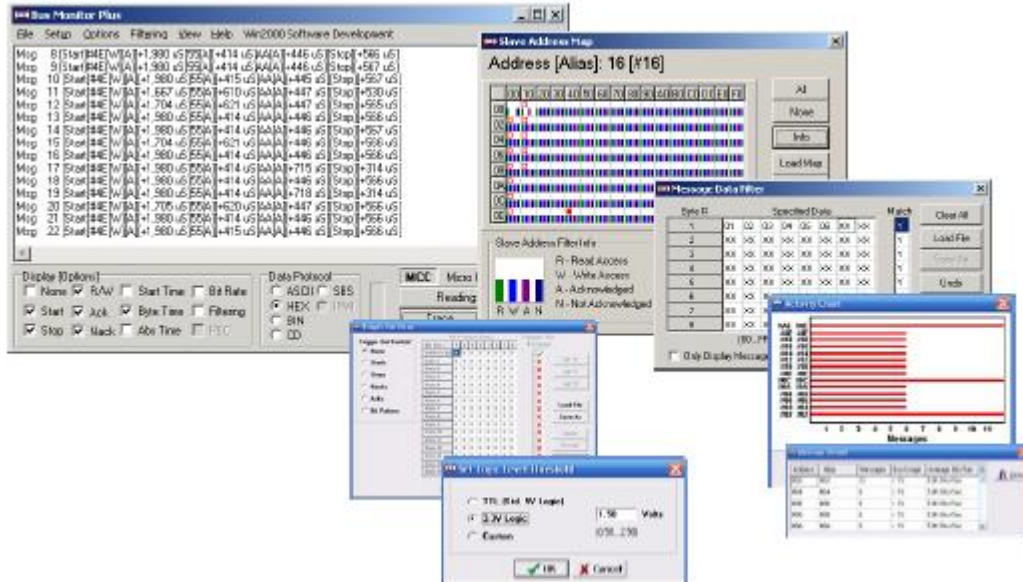
- **I<sup>2</sup>C Bus, SMBus, SSI, and IPMI Development Tool.**
- **256K byte Data Recording Memory.**
- **Supports General Calls, and Multi-Master/Multi-Slave Addressing.**
- **Displays Start/Stop Events, Device Addresses, Read/Write Requests, Acknowledgements, Data, and Bit, Byte, and Message timing.**



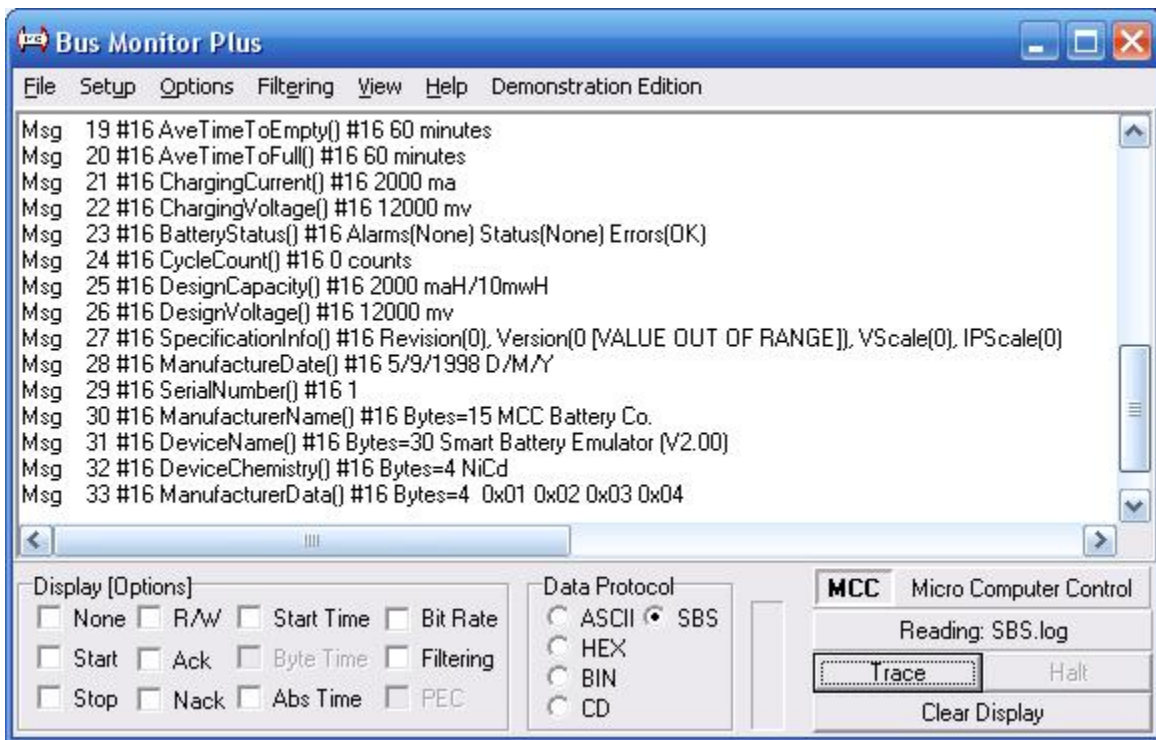
- **Trigger Input** for synchronization with external events.
- **Trigger Output** on bus events or pattern match for triggering external test equipment.

## TYPICAL APPLICATIONS

- **Product Development:** Software/Hardware Development, Testing, and Troubleshooting.
- **Manufacturing:** Manufacturing Tests, Inspection, Quality Control.



The I<sup>2</sup>C Bus Monitor Plus includes an extensive array of message monitoring capabilities, and can time-stamp bits, bytes, or messages.



The I<sup>2</sup>C Bus Monitor Plus can display Smart Battery Data in engineering units, and can detect, filter, and display protocol violations.

## PRODUCT SPECIFICATIONS (Version 2)

#MIIC-102

### PORTS

#### I2C Bus

A test cable provides connection to the network under test. Test clips are provided for:

SCL Clock Line (with Variable Threshold)  
SDA Data Line (with Variable Threshold)  
GND Ground Line  
Target System VCC (Optional)

#### Trigger Input (BNC)

TTL signal input to synchronize data collection with external events.

#### Trigger Output (BNC)

TTL signal output to synchronize external equipment with I2C Bus Start, Stop, Ack, Nack, and Bit Pattern matching events.

#### Utility Port (DB-9)

Use to attach optional external equipment in automatic test environments. Signals include:

SDA, SCL Input  
SDA, SCL Output (TTL)  
Trigger Input, Trigger Output (TTL)

### INTERFACE OPTIONS

#MIIC-102/ISA - ISA interface.  
#MIIC-102/PCI - PCI interface.  
#MIIC-102/PCC - PC Card interface. (Not compatible with NT4.0)

Optional Add-On Interface kits available separately.

### CONTROL SOFTWARE

The I2C Bus Monitor Plus includes an extensive array of message monitoring capabilities. These include:

#### Display Options

I2C Bus Events (Start/Stop, R/W, Ack/Nack)  
Bit, Byte, and Message Timing (uS)  
Message Bit Rate (Bits/Sec)  
Absolute or Relative Time Measurement

#### Protocols Supported

I2C Hex - Displays all data in hexadecimal.  
I2C ASCII - Displays data in printable ASCII or hexadecimal.

SBS - Displays Smart Battery System (SBS V1.0, V1.1) data in engineering units with protocol revision selection (Host, Battery, Charger, and Selector) and violation detection.

#### Message Filtering

Bus activity can be monitored on a selective or non-selective basis. Filter displayed messages on Slave Address, up to 8 Data bytes, and SBS protocol violation only.

#### SDA/SCL Logic Threshold Control

Software controlled 0.7V to 2.5V.

#### Software Requirements

32-bit Windows (95/98/2000/ME/NT4.0/XP).

### POWER

Includes 100-240VAC, 50-60Hz, Global AC Plug Set (#MWT-5VAG).

### Included Parts List:

- I2C Bus Monitor Plus External Pod. (#MIIC-102)
- I2C Bus Monitor Plus Software for Windows (95/98/2000/ME/NT4.0/XP).
- Computer Interface Card (PCI, PC Card. or ISA).
- Computer Interface Cable.
- Interface Card Driver CD.
- I2C Bus Clip Lead Cable, 2 Ft. (#CABCL).
- I2C Interface Cable, 4 Ft. (#CAB4).
- BNC to Clip Lead Trigger Cable.
- Power Supply (#MWT-5VAG).
- User's Guide. (#MIIC-102-UG.pdf)
- FREE Technical Support (via phone, fax, email)

## Optional Add-On Parts

- Add-On Pod Interface Kits. Use a PCI interface in your lab. Get a PC Card Add-On for your laptop.
  - PCI Interface Kit (#MIIC-102/PCIH).
  - PC Card Interface Kit (#MIIC-102/PCCH).
  - ISA Interface Kit (#MIIC-102/ISAH).
- I2C Bus Monitor Plus Software Development Kit (#102-SDKW-VC).
- I2C ESD and Over-current Protection Device (#IPROTX)
- I2C Interface Cable, 4, 8, 16 Ft. (#CAB4,CAB8,CAB16).
- 7 Port I2C Distribution Board. (#IP-202).