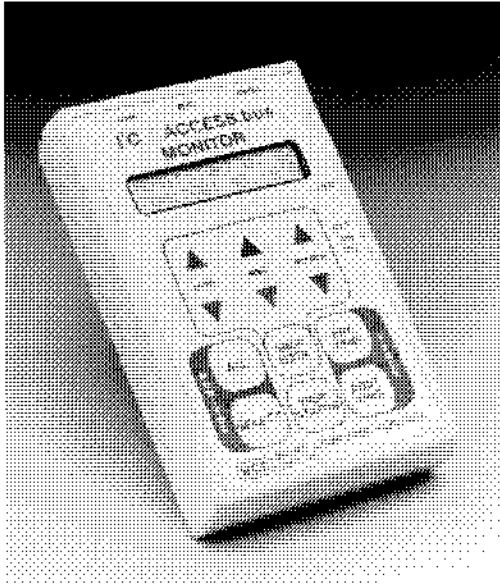


MCC *I²C Bus/SMBus Monitor*

Small Area Network Specialists

Part #MIIC-101



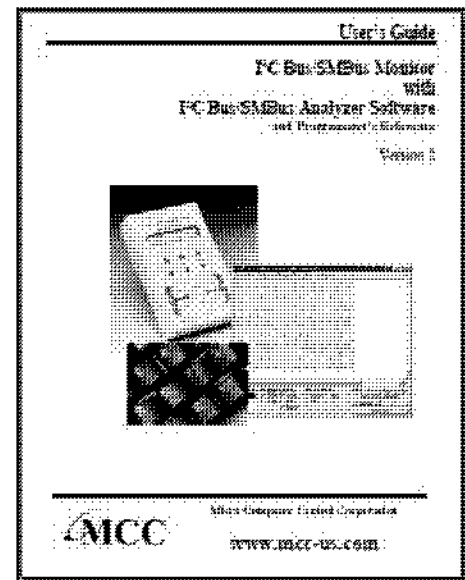
The MIIC-101 Bus Monitor is a Stand-Alone and Remote Troubleshooting Tool for the I2C (Inter Integrated Circuit) serial bus developed by Philips Semiconductor, or the System Management Bus (SMBus) developed by Intel, and other derived protocols.

When connected to an I2C Bus, or SMBus network, the MIIC-101 Bus Monitor can collect, display or upload information on all bus activity.

For additional selection information, see our "[Which I2C Bus Monitor is Right For Me](#)" FAQ.

PRODUCT HIGHLIGHTS

- Stand Alone or Remote I2C Bus, and SMBus Troubleshooting Tool.
- Real Time Trace to 100 kbit/s.
- Supports General Calls, and Multi-Master/Multi-Slave Addressing.
- Displays Start/Stop Events, Device Addresses, Read/Write Requests, Acknowledgements, and Data.
- Optional I2C Analyzer Software Package.



KEY FEATURES

- I2C and SMBus Compatible.
- Operating Modes include: Line Status, Forward/Backward Trace, View and Remote.
- Monitor ALL or SELECTED Bus Address.
- Stores up to 2700 messages Stand-alone. Unlimited storage in Remote Mode.
- Real-Time Trace to 100Kbit/s.
- Supports General Calls, and 7 bit Addressing.
- Displays Start/Stop Events, Device Addresses, Read/Write Requests.
- Built-in Alphanumeric Display and Keypad supports Byte, Message and Buffer Scrolling for

stand-alone handheld portable operation.

- Optional Windows-based I2C Analyzer Software Package lets you see message traffic on your PC's screen, provides extended message filtering, and can record messages to disk.
- Powered by internal Battery, external Supply, or Bus Power.
- Compatible with 3.3v to 5v.

TYPICAL APPLICATIONS

- Development: Software/Hardware Troubleshooting.
- Manufacturing: Testing and Debugging, Quality Control.
- Field Service: Field diagnosis, Repair Service, Verification.

| PRODUCT SPECIFICATIONS | MIIC-101 | | | | | | | | | | | | | | |
|--|---|------------------|----------------------|-----------------|-------------------------|------------------|-------------------|------------|---------------------|----------------|---------------|---------------|--------------------|-----|------------------------------|
| I/O PORTS | View Mode | | | | | | | | | | | | | | |
| I2C Bus/SMBus | View Mode displays captured bus activity on the built-in display. Displayed information includes: | | | | | | | | | | | | | | |
| A test cable provides connection to the network under test. Test clips are provided for: | <ul style="list-style-type: none"> Start/Stop Events Message and Byte Number Destination Addresses Read/Write Requests Receiver Acknowledgements Transmitted Data in Hex and ASCII | | | | | | | | | | | | | | |
| <ul style="list-style-type: none"> SCL Clock Line GND Ground Line SDA Data Line +5 External Supply | Both forward and reverse scrolling of captured data bytes or messages is supported. | | | | | | | | | | | | | | |
| RS 232 Port | Display syntax: | | | | | | | | | | | | | | |
| An RS-232 port connector and cable provides connection to PC Host system. | <table border="0"> <thead> <tr> <th data-bbox="813 1230 1003 1262">I2C Event</th> <th data-bbox="1008 1230 1468 1262">Display</th> </tr> </thead> <tbody> <tr> <td data-bbox="813 1268 1003 1299">Start of Buffer</td> <td data-bbox="1008 1268 1468 1299">-START OF TRACE-</td> </tr> <tr> <td data-bbox="813 1306 1003 1337">Start Read w/Ack</td> <td data-bbox="1008 1306 1468 1337">MMMM: START AA RA</td> </tr> <tr> <td data-bbox="813 1373 1003 1404">Data w/Ack</td> <td data-bbox="1008 1373 1468 1404">MMMM: NNN DD 'C'A</td> </tr> <tr> <td data-bbox="813 1411 1003 1442">Stop Condition</td> <td data-bbox="1008 1411 1468 1442">MMMM: STOP</td> </tr> <tr> <td data-bbox="813 1449 1003 1480">End of Buffer</td> <td data-bbox="1008 1449 1468 1480">-END OF TRACE--</td> </tr> </tbody> </table> | I2C Event | Display | Start of Buffer | -START OF TRACE- | Start Read w/Ack | MMMM: START AA RA | Data w/Ack | MMMM: NNN DD 'C'A | Stop Condition | MMMM: STOP | End of Buffer | -END OF TRACE-- | | |
| I2C Event | Display | | | | | | | | | | | | | | |
| Start of Buffer | -START OF TRACE- | | | | | | | | | | | | | | |
| Start Read w/Ack | MMMM: START AA RA | | | | | | | | | | | | | | |
| Data w/Ack | MMMM: NNN DD 'C'A | | | | | | | | | | | | | | |
| Stop Condition | MMMM: STOP | | | | | | | | | | | | | | |
| End of Buffer | -END OF TRACE-- | | | | | | | | | | | | | | |
| ADDRESS SELECTION | where: | | | | | | | | | | | | | | |
| Bus activity can be monitored on a selective or non selective basis. Messages to all or a specified bus address can be captured in the trace buffer. | <table border="0"> <tbody> <tr> <td data-bbox="813 1593 911 1625">MMMM</td> <td data-bbox="915 1593 1468 1625">Trace Message Number</td> </tr> <tr> <td data-bbox="813 1646 911 1677">NNN</td> <td data-bbox="915 1646 1468 1677">Transaction Byte Number</td> </tr> <tr> <td data-bbox="813 1684 911 1715">AA</td> <td data-bbox="915 1684 1468 1715">Device Address</td> </tr> <tr> <td data-bbox="813 1722 911 1753">DD</td> <td data-bbox="915 1722 1468 1753">Data in Hexadecimal</td> </tr> <tr> <td data-bbox="813 1759 911 1791">C</td> <td data-bbox="915 1759 1468 1791">Data in ASCII</td> </tr> <tr> <td data-bbox="813 1797 911 1829">R/W</td> <td data-bbox="915 1797 1468 1829">Read/Write Request</td> </tr> <tr> <td data-bbox="813 1835 911 1866">N/A</td> <td data-bbox="915 1835 1468 1866">Receiver Non/Acknowledgement</td> </tr> </tbody> </table> | MMMM | Trace Message Number | NNN | Transaction Byte Number | AA | Device Address | DD | Data in Hexadecimal | C | Data in ASCII | R/W | Read/Write Request | N/A | Receiver Non/Acknowledgement |
| MMMM | Trace Message Number | | | | | | | | | | | | | | |
| NNN | Transaction Byte Number | | | | | | | | | | | | | | |
| AA | Device Address | | | | | | | | | | | | | | |
| DD | Data in Hexadecimal | | | | | | | | | | | | | | |
| C | Data in ASCII | | | | | | | | | | | | | | |
| R/W | Read/Write Request | | | | | | | | | | | | | | |
| N/A | Receiver Non/Acknowledgement | | | | | | | | | | | | | | |
| OPERATING MODES | Optional Windows-based I2C Analyzer Software Package. | | | | | | | | | | | | | | |
| View Status Mode | | | | | | | | | | | | | | | |
| In View Status Mode, the unit displays bus line levels. Displayed information includes: | | | | | | | | | | | | | | | |
| <table border="0"> <tbody> <tr> <td data-bbox="147 1724 261 1755">A..bV</td> <td data-bbox="266 1724 808 1755">+5v</td> </tr> <tr> <td data-bbox="147 1761 261 1793">SCL</td> <td data-bbox="266 1761 808 1793">I2C Clock</td> </tr> <tr> <td data-bbox="147 1799 261 1831">SDA</td> <td data-bbox="266 1799 808 1831">I2C Data</td> </tr> <tr> <td data-bbox="147 1837 261 1869">TRIG</td> <td data-bbox="266 1837 808 1869">Trigger</td> </tr> </tbody> </table> | A..bV | +5v | SCL | I2C Clock | SDA | I2C Data | TRIG | Trigger | | | | | | | |
| A..bV | +5v | | | | | | | | | | | | | | |
| SCL | I2C Clock | | | | | | | | | | | | | | |
| SDA | I2C Data | | | | | | | | | | | | | | |
| TRIG | Trigger | | | | | | | | | | | | | | |

| | |
|--|---|
| <p>Forward Trace Mode</p> <p>Forward Trace collects a trace of up to 2700 bus messages with optional Pre Trigger.</p> <p>Backward Trace Mode</p> <p>Backward Trace maintains a trace of up to the last 2700 bus messages with optional Post Trigger.</p> | <p>available.</p> <p>POWER</p> <p>Internal 9V battery, +5V bus power, or external power supply (included).</p> |
|--|---|

Included Parts List:

- I2C/SMBus Monitor. ([#MIIC-101](#))
- I2C Bus Clip Lead Cable, 2 Ft. ([#CABCL](#))
- I2C Interface Cable, 4 Ft. ([#CAB4](#)).
- External Trigger Cable, 1 Ft. ([#AXM-12G](#))
- RS-232 Serial Cable, 7Ft. ([#MEE-PS](#)).
- DB-9 Serial Port Adapter Cable. ([#C9F25M1](#))
- Global Power Supply. ([#MWT-5VAG](#)).
- User's Guide. ([MIIC-101-UG.PDF](#))
- FREE Technical Support (via phone, fax, or email)

Optional Add-On Parts:

- I2C/SMBus Analyzer Software ([#SMB-SW](#)).
- I2C ESD and Over-current Protection Device ([#IPROTX](#))
- I2C Low Voltage Level Translator ([#IVOLT](#))
- I2C Interface Cable, 4, 8, 16 Ft. ([#CAB4, CAB8, CAB16](#)).
- 7 Port I2C Distribution Board. ([#IP-202](#)).

Product Environmental Specifications: See [Environmental Specifications FAQ](#)

See our Bus Monitor FAQ for answers to your technical questions, or our Online Catalog for ordering information.

I²C is just a mouse click away™

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