User's Guide

iProTx™

I²C Bus/SMBus
ESD / Current Limiting Protection Device

For 1.5 V to 5 V Applications

MCC
Micro Computer Control
Small Area Network Specialists

www.mcc-us.com

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Printed in the United States of America

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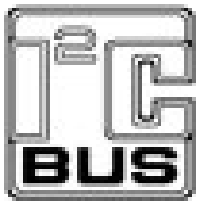

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iProTx

I²C Bus/SMBus
ESD / Current Limiting
Protection Device

Features

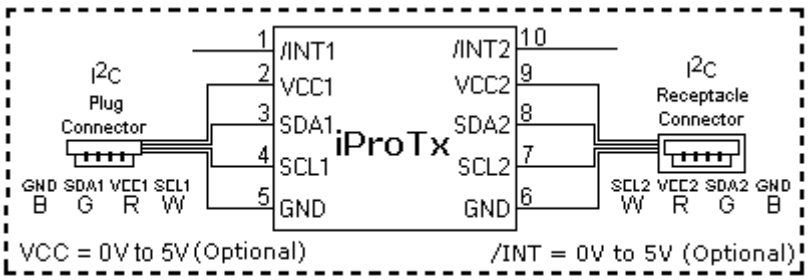
- Protects I²C and SMBus devices in Lab or Factory Environments.
- Inserts In-Line between I²C/SMBus devices.
- Protects SCL, SDA, Interrupt, Power, and Ground.
- 5 Volt Tolerant.
- Transient Voltage Suppression and Auto-Resetting Fuses.
- Compatible with bus speeds up to 400 kHz.
- Plug-Compatible with MCC I²C Products and Connectors.

Typical Applications

- Product development, manufacturing, system testing.
- Any application requiring I²C Bus ESD protection.

Description

The **iProTx** (pronounced “i-pro-tex”) is an ESD (Electrostatic Discharge) and Current Limiting protection module for I²C/SMBus circuit protection in testing and manufacturing environments. Based on transient voltage suppression (TVS) technology created for hot-plug USB devices, and automatic resetting fuses for current limiting protection, the iProTx gives I²C/SMBus devices protection in automatic insertion applications typically found in factory automation, testing, and plug-and-play environments.



Pin Configuration

Pin Number	Symbol	Description
1, 10	/INT	Interrupt Signal
2, 9	VCC	Voltage Reference
3, 8	SDA	Serial Data
4, 7	SCL	Serial Clock
5, 6	GND	Signal Ground

Interconnects

I^2C Interface Connector

One side of the iProTx I^2C/SMBus interface uses a short two-inch cable terminating in a modular plug compatible with most MCC I^2C products. The other side I^2C/SMBus interface uses a modular receptacle, also compatible with most MCC I^2C products. See Appendix A for more information on these connectors.

/INTerrupt Interface Connector

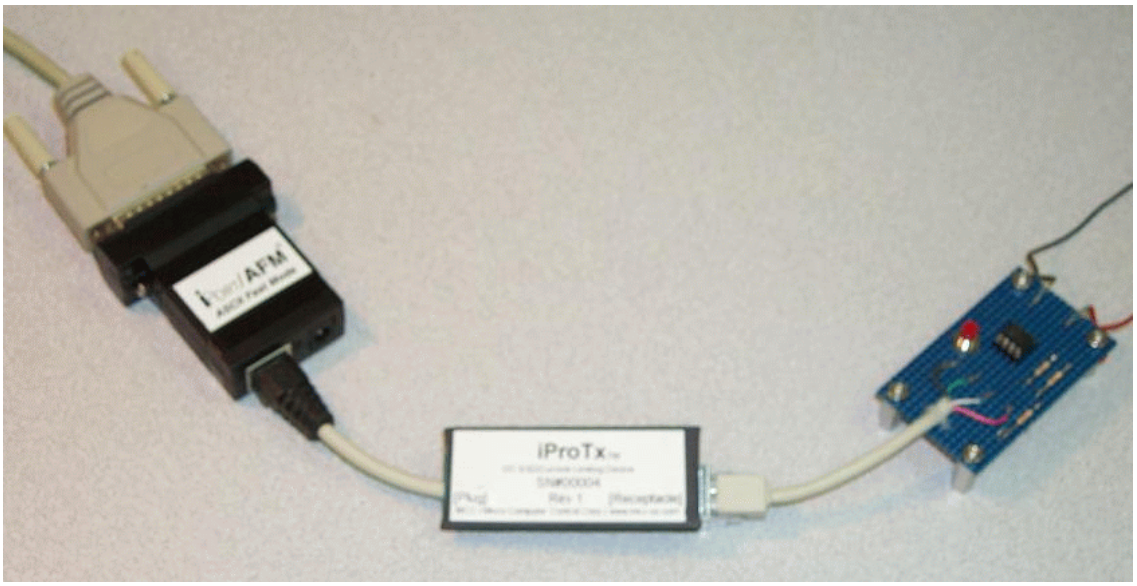
/INTerrupt is an optional signal used on some I^2C Bus devices. It is primarily used on slave-only devices to get the attention of a bus master. MCC I^2C products that support the /INTerrupt signal use a 0.090" (2.03mm) pin/receptacle connector. The iProTx includes a pin to pin wire for connecting the /INTerrupt signal to external devices such as the iPort/AFM I^2C adapter.

Application

The iProTx is inserted into the I^2C/SMBus cable between the devices to be protected.

Installation

Insert the iProTx into the I^2C/SMBus cable between the devices. Optionally connect the /INTerrupt line if used.



Typical Application

iProTx Protection Specification	
Protection	Description
Signal ESD	• 15KV Human Body Model • 2KV Machine Model. • IEC-1.2/50uS waveform is 10V @ 5A; -7V @ -7A. Peak Power is 60W.
Signal Current Limiting	• PTC protected @ 0.4A trip. Peak Power 60W.
Power and Ground	• 100A 8.3mS surge. • PTC protected with 1A trip.

References:

1. SN75240 Universal TVS.
2. 1206L020/1206L050 Resettable PTC from Littlefuse.
3. SMBJ5.0C 600W Surface Mount TVS.

Appendix A - I²C Connector Information

Interface Connector and Plug Information

MCC uses two (2) different connectors and plug assemblies. We have found these parts to be compatible.

I²C Receptacle Connectors

Molex SEMCONN ACCESS.bus Receptacle Connector

Molex Part # 15-83-0064

AMP SDL (Shielded Data Link) Connectors for ACCESS.bus

AMP Part # 4-943197-1

I²C Plug Connectors

Molex SEMCONN ACCESS.bus Plug

Molex Part # 15-83-1564

AMP SDL (Shielded Data Link) Plug for ACCESS.bus

Bush	Amp Part # 520851-1
Ferrule	Amp Part # 520433-1
SDL (Shell)	Amp Part # 520461-1
SDL (Shell)	Amp Part # 520460-1
SDL	Amp Part # 4-520424-1

The following I²C Cables are available from MCC

MCC Part #	CAB4	I²C Interface Cable, 48inches (4ft)
MCC Part #	CAB8	I²C Interface Cable, 96 inches (8ft)
MCC Part #	CAB16	I²C Interface Cable, 192 inches (16ft)
MCC Part #	CABCL	I²C and SMBus Clip Lead Cable

Declaration of Conformity

This Declaration of Conformity is issued by the indicated company which is solely responsible for the declared compliance.

Product(s): iProTx
Product Part Number(s): IPROTX
Product Description: I2C Bus Electrostatic Discharge and Current-Limiting Protection Module

Applicable Directive(s): EC Directive 89/336/EEC

Compliant Standards:
EN 55022 : 1998
Emissions Standard
Conducted Emissions (Class B)
Radiated Emissions (Class B)

EN 55024 : 1998
Immunity Standard
Immunity to Radiated Electromagnetic Fields
Immunity to Fast Transient Bursts - AC Power Lines
Immunity to Conducted Field - AC Power Lines
Immunity to Voltage Dips - AC Power Lines
Immunity to Electrostatic Discharge

Test Laboratory Information:
Cass Industries Ltd., Blackbrook Trading Estate, Weybrook Road, Manchester M19 2QD, ENGLAND.
Test Report Number: CI02570a
Test Report Date: August 19th, 2005
Technical file held by: Micro Computer Control Corporation, 17 Model Avenue / PO Box 275, Hopewell, New Jersey 08525 USA, or its applicable authorized distributor or representative.

Responsible Company: Micro Computer Control Corporation, 17 Model Avenue / PO Box 275, Hopewell, New Jersey 08525 USA, or its applicable authorized distributor or representative.

Signature of Authorized Representative:

Edward Thompson

Name: Edward Thompson
Title: President, Micro Computer Control Corporation
Date: 09-JAN-07