

User's Guide

SMBus Smart Battery Tester

Version 1

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This file contains information on the SMBus Smart Battery Tester Software including equipment setup and usage.

Reference Specifications:

System Management Bus Specification Revision 1.0

Smart Battery Data Specification Revision 1.0

The SMBus Smart Battery Tester Software is designed to test, exercise, and log SMBus Smart Battery communications. The software works with the MCC iPort (Part# MIIC-201) Windows to I²C Bus Host Adapter.

System Requirements:

1. MCC iPort (Part# MIIC-201) Windows to I²C Bus Host Adapter.
2. SMBus Smart Battery with interfacing cable.
3. Windows (3.1 or above).
4. One serial communications port.

Installation:

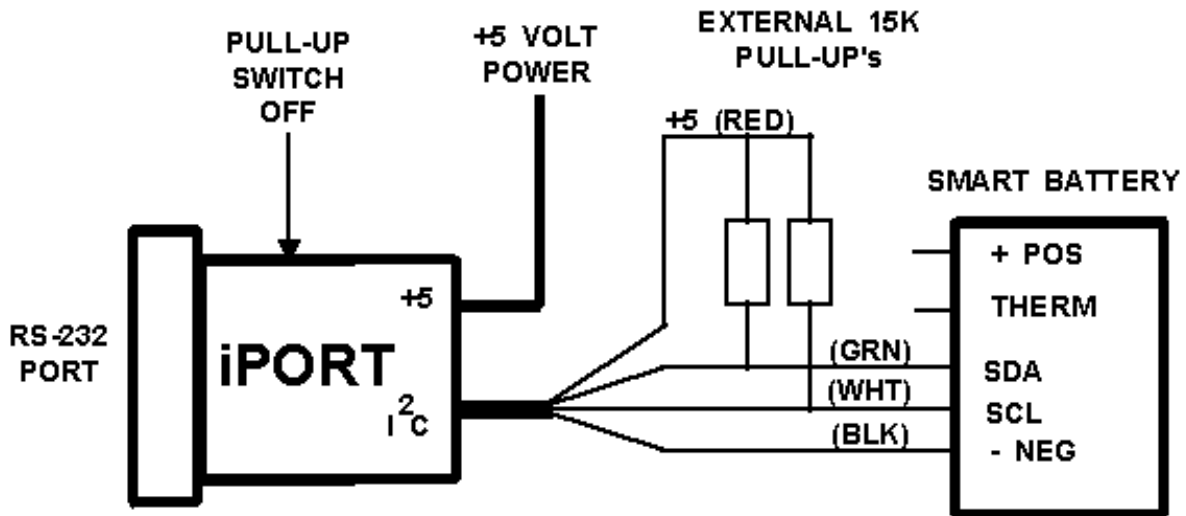
1. Insert diskette into floppy drive.
2. Select File/Run "a:setup".
3. Follow instructions on screen.

Equipment Setup:

1. Connect iPort Host Adapter to a COM port (COM:1,...9).
2. Connect iPort Host Adapter to target SMBus Smart Battery.

Note:

When connected to an SMBus Smart Battery, the Pull-Up switch on the iPort Host Adapter should be OFF, and external Pull-Up resistors (approximately 15K Ohm) should be applied to the I²C Clock and Data lines.



3. Apply power to the iPort Host Adapter. (See iPort User's Guide)

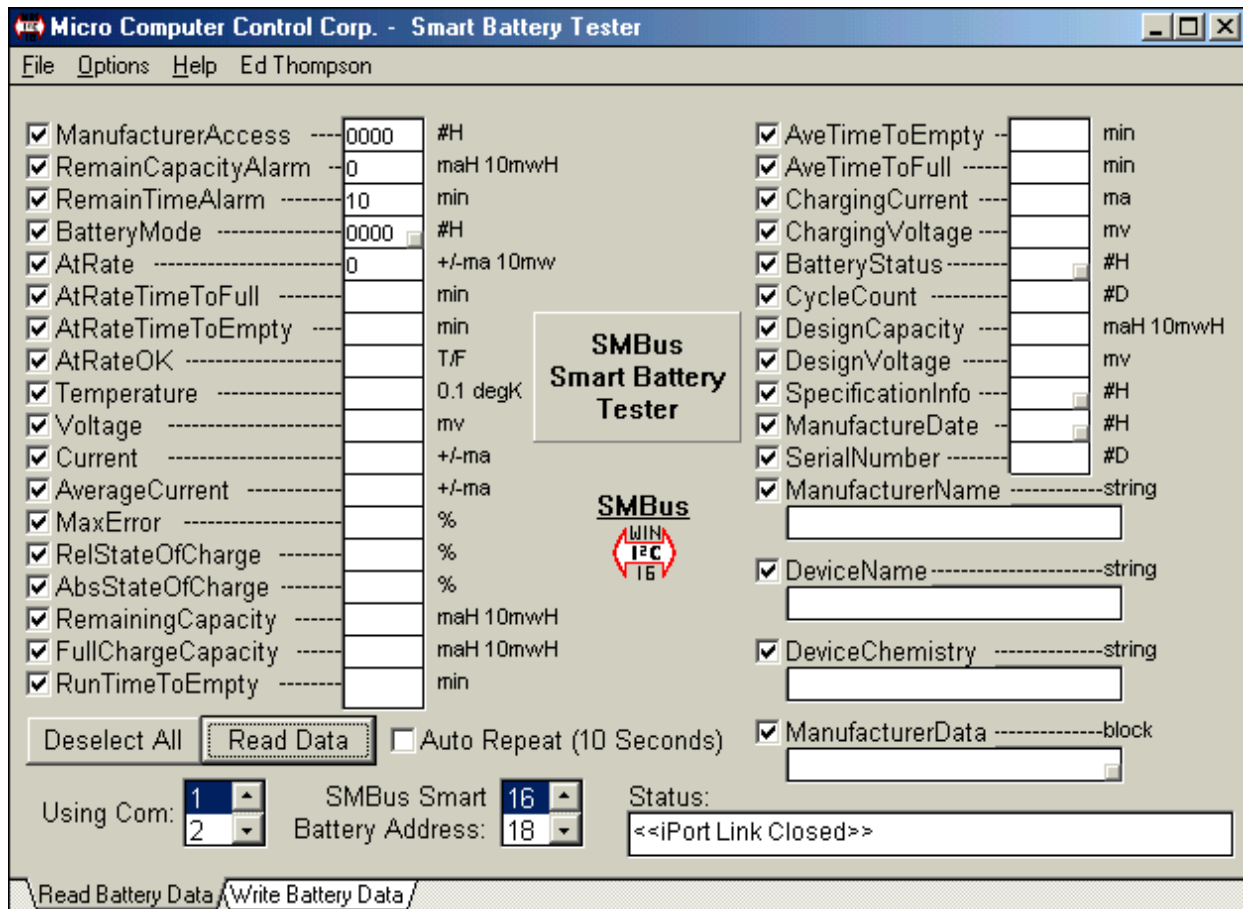
To Start Program:

Windows 3.1

1. From Program Manager double click on the Smart Battery Tester Program Group.
2. In the Smart Battery Tester Program Group double click on Smart Battery Tester.

Windows 95/98/ME/NT/2000

1. Click on the Start button, then point to Programs, Smart Battery Tester.
2. In the Smart Battery Tester Program Group click on Smart Battery Tester.



To communicate with an SMBus Smart Battery:

1. Select the COM port connected to the iPort Host Adapter.
2. Select "Read Battery Data", or "Write Battery Data".
3. Select the Smart Battery parameters to be accessed.
4. If "Write Battery Data" is selected, enter or edit Smart Battery parameters to be written to battery.
5. Click the "Read Data" or "Write Data" button to access Smart Battery Data.

Program Controls:

Select/Deselect All Button

Select or Deselect all SMBus Smart Battery parameters. Only selected parameters will be subsequently read or written.

Using Com List

Select the communications port connected to the iPort Host Adapter.

SMBus Smart Battery Address List

Select the Smart Battery I²C address. This is usually 0x16, the default selection.

Read/Write Data Button

Initiates reading or writing of selected Smart Battery parameters.

Auto Repeat Check Box

Controls auto repeat reading or writing of Smart Battery parameters. When checked, Read or Write operations will repeat at the currently selected repeat rate.

Status Text Box

Displays status information.

Menu Controls:

File|Open Log File

Opens a comma delimited ASCII text log file for recording date, time, and value of Smart Battery parameters access during read operations. This file can be read into most spreadsheet programs for display and plotting of Smart Battery Data over time.

File|Close Log File

Close the current log file.

File|Exit

Exit the program.

Options|Show Hints

Enables/Disables display of Smart Battery parameter information.

Options|Auto Repeat Continuous

Options|Auto Repeat every 10 Seconds

Options|Auto Repeat every Minute

Options|Auto Repeat every 5 Minutes

Options|Auto Repeat every 10 Minutes

Options|Auto Repeat every Hour

Controls auto repeat reading and writing of Smart Battery parameter data.

Viewing the battery data after collection

After you “Read Data”, you can view the hexadecimal data on the main screen, or by clicking on the small buttons you can view selected data in more specific smart battery language.

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File Options Help

- ManufacturerAccess ----- 0000 #I
- RemainCapacityAlarm ----- 0 mA 10mWh
- RemainTimeAlarm ----- 10
- BatteryMode ----- 0000 **1**
- AtRate ----- 0 0mV
- AtRateTimeToFull ----- min
- AtRateTimeToEmpty ----- min
- AtRateOK ----- T/F
- Temperature ----- 0.1 degK
- Voltage ----- mV
- Current ----- +/-mA
- AverageCurrent ----- +/-mA
- MaxFrrmr ----- %
- RelStateOfCharge ----- %
- AbsStateOfCharge ----- %
- RemainingCapacity ----- mA 10mWh
- FullChargeCapacity ----- mA 10mWh
- RunTimeToEmpty ----- min

SMBus Smart Battery Tester

SMBus
with ITC

- AveTimeToEmpty ----- min
- AveTimeToFull ----- min
- ChargingCurrent ----- mA **2**
- ChargingVoltage -----
- BatteryStatus -----
- CycleCount -----
- DesignCapacity ----- mA 10mWh
- DesignVoltage ----- mV **3**
- SpecificationInfo ----- #H
- ManufactureDate ----- **4**
- SerialNumber -----
- ManufacturerName -----
- DeviceName -----string
- DeviceChemistry -----string
- ManufacturerData -----blo **5**

Deselect All [Read Data] Auto Repeat (10 Seconds)

Using Com: 1 SMBus Smart 10 Status: <<IPort Link Closed>>

Battery Address: 18

[Read Battery Data] [Write Battery Data]

1

Battery Mode

- INTERNAL_CHARGE_CONTROLLER
- PRIMARY_BATTERY_SUPPORT
- SECONDARY_BAT
- CHARGE_CONTROLLER_MAINT_MAINT
- PRIMARY_BATTERY
- CHARGER_MODE
- CAPACITY_MODE

OK Cancel

2

Battery Status

Alarms:

- OVERCHARGED_ALARM(1)
- MINIMAL_CAPACITY_ALARM(1)
- OVERTEMP_ALARM(1)
- MINIMAL_DISCHARGE_DEPTH_ALARM(1)
- REMAINING_CAPACITY_ALARM(2)
- REMAINING_TIME_ALARM(2)

Status:

- INITIALIZED
- BATTERY_WARNING
- FULLY_CHARGED
- HILLY_CHARGE_ALARM(1)

Manufacturer Data:

- OK
- Easy
- Reserved Command
- Unsupported Command
- Access Denied
- Low Power Indicator
- Bad Size
- Non-whomr

*) Send AlarmWarning() to SMBus Host and Smart Battery Charger.
*) Send AlarmWarning() to SMBus Host only.

OK Cancel

3

Specification Info

Scaling Information

HiScale: 0 1
VScale: 0 1

SMBus Specification Supported

Version: 1 0
Revision: 1 1

OK Cancel

4

Manufacture Date

Manufacture Date

Year: 1980 1991
Month: 1 2
Day: 1 2

OK Cancel

5

Manufacturer Data

Manufacturer Data

Length: 0C 31
Data: 11 22 33 44 00 00 00 00 00 00 00 00 00 00 00 00 00 00

OK Cancel

1

Battery Mode

- INTERNAL_CHARGE_CONTROLLER
- PRIMARY_BATTERY_SUPPORT
- CONDITION_FLAG
- CHARGE_CONTROLLER_ENABLED
- PRIMARY_BATTERY
- CHARGER_MODE
- CAPACITY_MODE

OK Cancel

2

Battery Status

Alarms

- OVER_CHARGED_ALARM (1)
- TERMINATE_CHARGE_ALARM (1)
- OVER_TEMP_ALARM (1)
- TERMINATE_DISCHARGE_ALARM (1)
- REMAINING_CAPACITY_ALARM (2)
- REMAINING_TIME_ALARM (2)

1) Sends Alarm/Warning() to SMBus Host and Smart Battery Charger.
2) Sends Alarm/Warning() to SMBus Host Only.

Status

- INITIALIZED
- DISCHARGING
- FULLY_CHARGED
- FULLY_DISCHARGED

Error Codes

- OK
- Busy
- ReservedCommand
- UnsupportedCommand
- AccessDenied
- Overflow/Underflow
- BadSize
- UnknownError

OK Cancel

Revision Report:

<u>Date</u>	<u>Description</u>
09/29/1998	Add Y2K Compliance. SBTEST Log File now includes a 4 digit year field.
09/29/1998	Release SBTEST V1.20
02/18/1999	Add 5 and 10 minute repeat rate.
02/18/1999	Release SBTEST V1.30

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