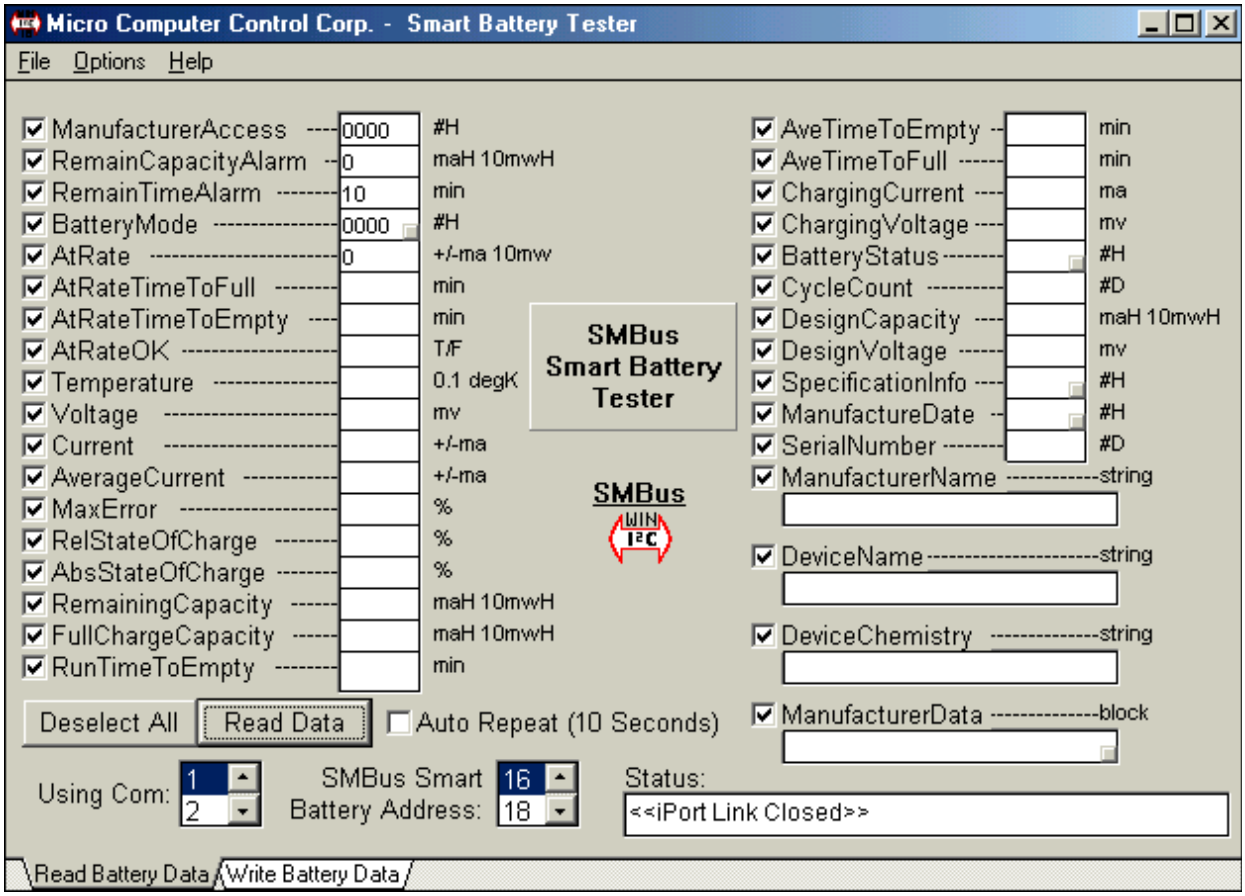
User's Guide
SMBus Smart Battery Tester
Version 2



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

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WARNING - Life Support Applications: MCC products are not designed for use in life support appliances, devices, or systems where the malfunction of the product can reasonably be expected to result in a personal injury.

WARNING - Radio Frequency Emissions: This equipment can radiate levels of radio frequency energy that may cause interference to communications equipment. Operation of this equipment may cause interference with radio, television, or other communications equipment. The user is responsible for correcting such interference at the expense of the user.

WARNING - Electrostatic Discharge (ESD) Precautions: Any damage caused by Electrostatic Discharge (ESD) through inadequate earth grounding is NOT covered under the warranty of this product. See the “Electrostatic (ESD) Precautions” section of this guide for more information.

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10-NOV-06

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. This software works with the MCC iPort (Part# MIIC-201) and iPort DLL/USB (#MIIC-201D/U) Windows to I^2C Bus Host Adapters.

System Requirements:

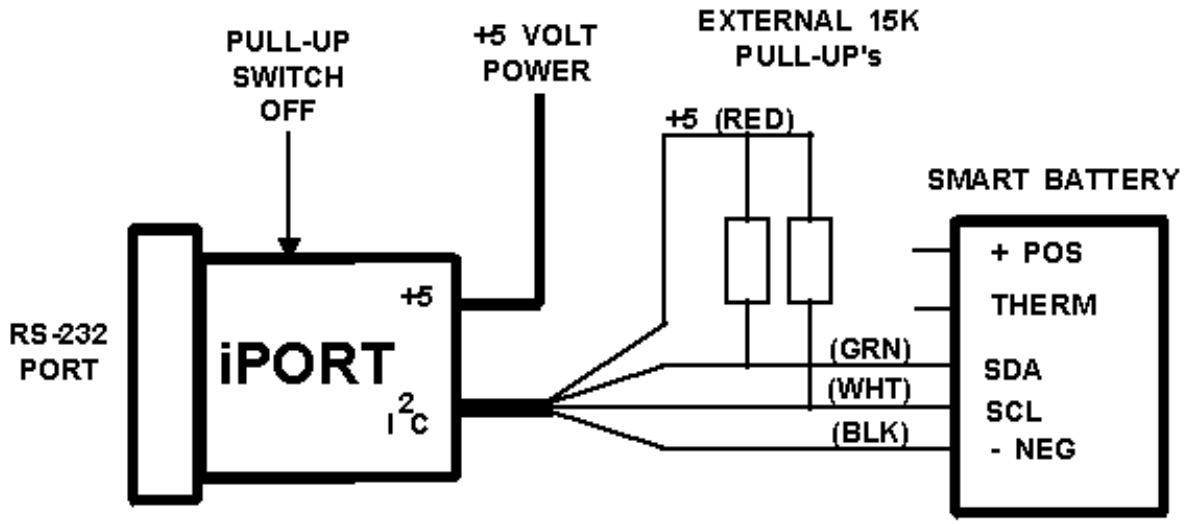
1. MCC iPort (# MIIC-201) or iPort DLL/USB (#MIIC-201D/U) Windows to I^2C Bus Host Adapter.
2. SMBus Smart Battery with interfacing cable.
3. Windows 95 or above for RS-232 support. Win2K, XP or above for USB support.
4. One serial communications port (RS-232 or USB).

Software Installation:

1. Insert the installation CD.
2. If installation does not automatically start, run setup.exe.
3. Follow instructions on screen.

Equipment Setup:

1. Connect iPort Host Adapter to a ComPort or USB port.



2. Connect iPort Host Adapter to target SMBus Smart Battery. (See suggested setup above)

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 I^2C Clock and Data lines.

3. If using an RS-232 to I2C adapter, apply power to the adapter. (See iPort User's Guide)

To Start Program:

Click Start | Programs | Smart Battery Tester 2.0 | 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 I^2C 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.

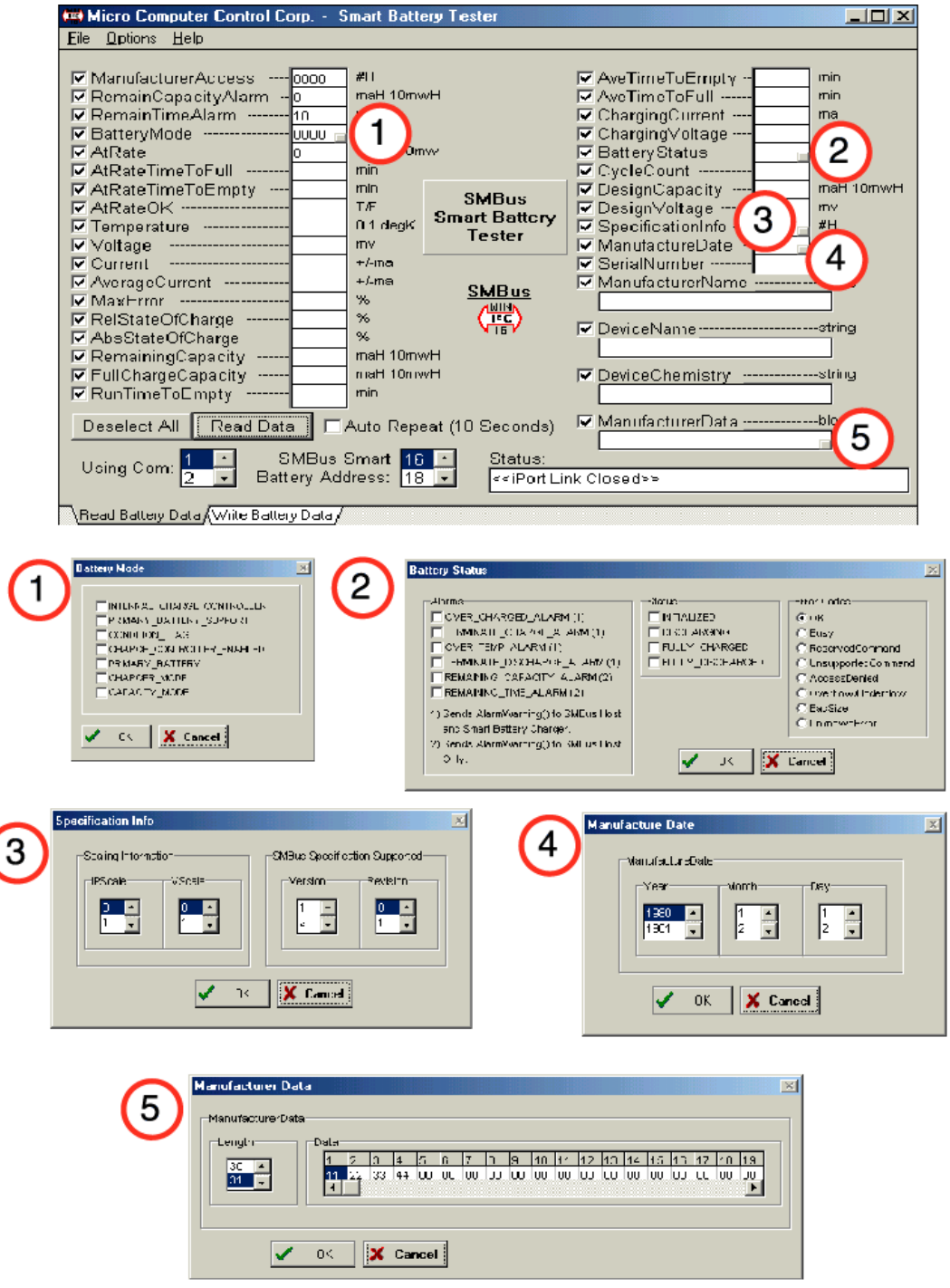
Options|Show Hints

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

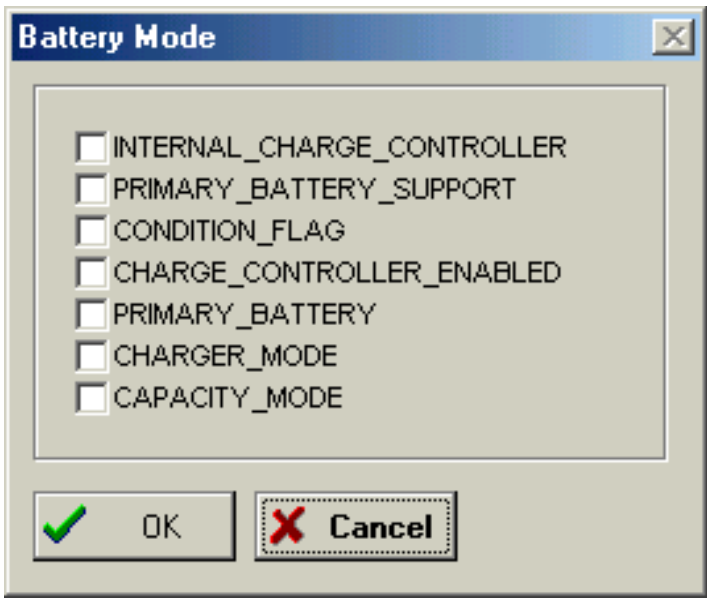
Controls auto repeat reading and writing of Smart Battery parameter data.

Viewing the battery data after collection

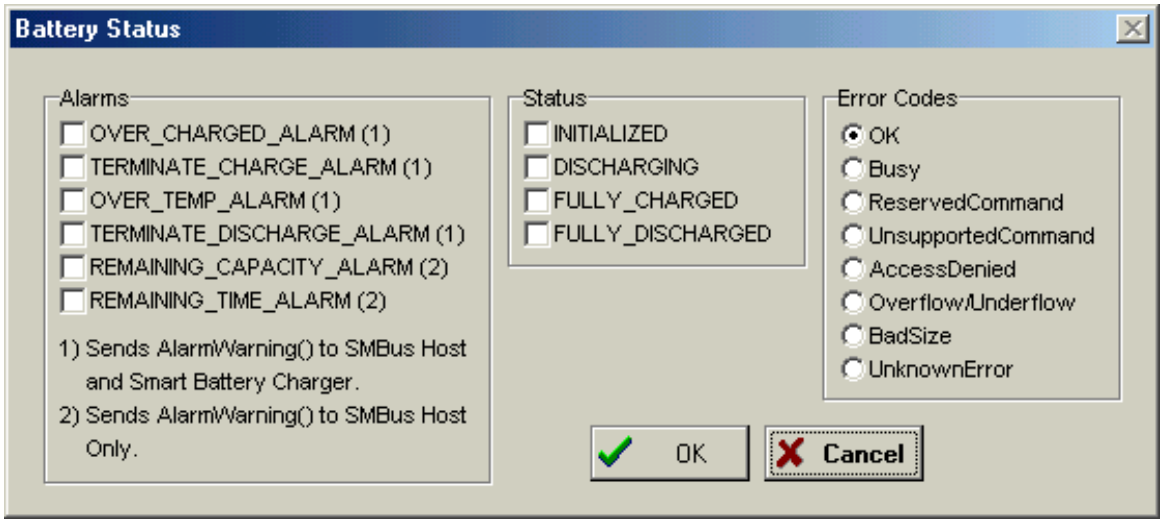


After you “Read Data”, you can view the hexadecimal data on the main screen, or by clicking on the small buttons you can view selected data in more specific smart battery language.

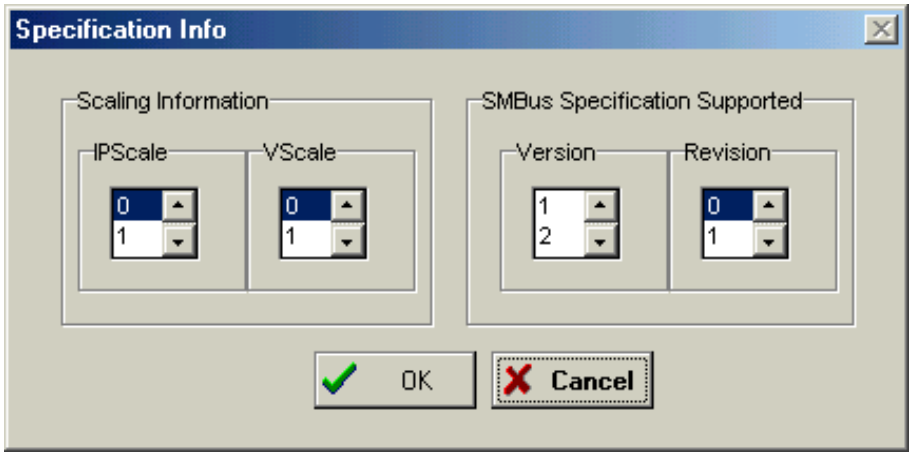
1


Battery Mode
INTERNAL_CHARGE_CONTROLLER
PRIMARY_BATTERY_SUPPORT
CONDITION_FLAG
CHARGE_CONTROLLER_ENABLED
PRIMARY_BATTERY
CHARGER_MODE
CAPACITY_MODE
OK
Cancel

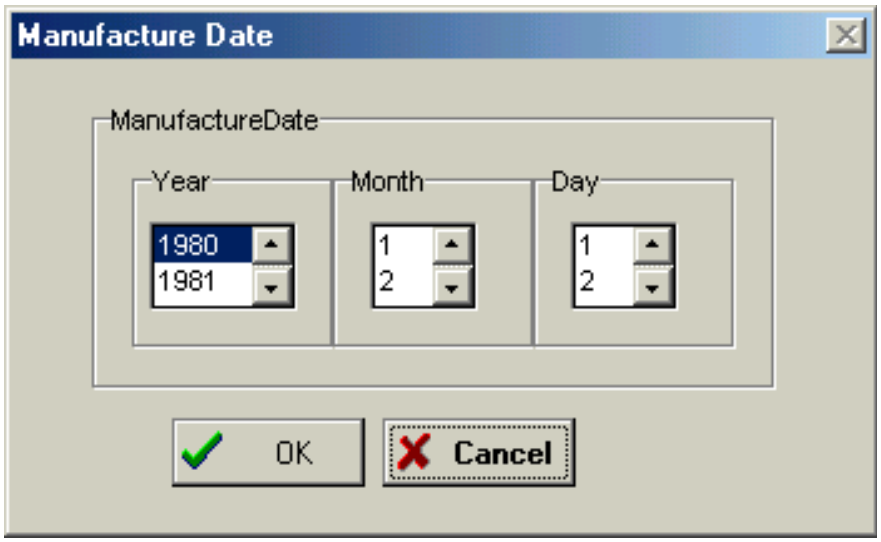
2


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 AlarmWarning() to SMBus Host and Smart Battery Charger.
2) Sends AlarmWarning() to SMBus Host Only.
Status
INITIALIZED
DISCHARGING
FULLY_CHARGED
FULLY_DISCHARGED
Error Codes
OK
Busy
ReservedCommand
UnsupportedCommand
AccessDenied
Overflow/Underflow
BadSize
UnknownError
OK
Cancel

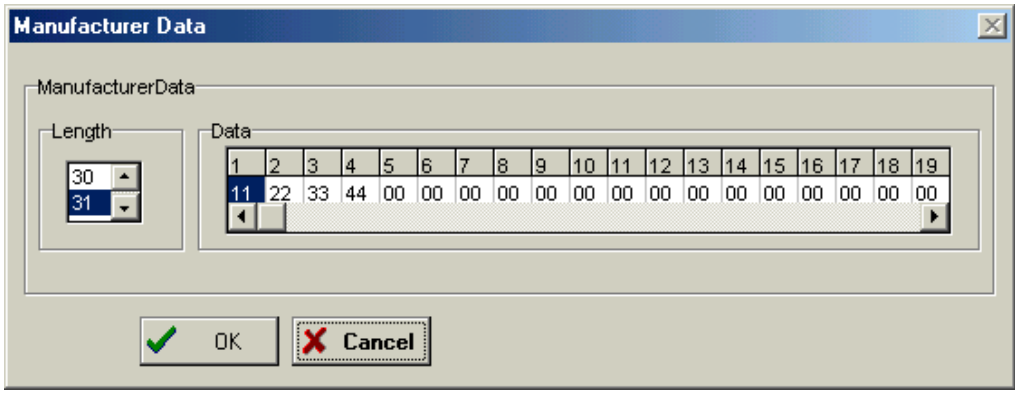
3


Specification Info
Scaling Information
IPScale
VScale
0
1
0
1
SMBus Specification Supported
Version
Revision
1
2
0
1
OK
Cancel

4


Manufacture Date
ManufactureDate
Year
Month
Day
1980
1981
1
2
1
2
OK
Cancel

5


Manufacturer Data
ManufacturerData
Length
Data
30
31
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19
11 22 33 44 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
OK
Cancel

Revision Report:

Date	Description
10-NOV-06	Release SBTEST V2.0.0
10-NOV-06	Add ComPort discovery.
10-NOV-06	Convert to Win32 to support USB-based adapters.
01-AUG-03	Release SBTEST V1.30
01-AUG-03	Correct log file processing on: a. Battery not acknowledging address. b. iPort bus arbitration loss. c. iPort bus error detection. Log 0, or "" if battery not responding.
18-FEB-99	Release SBTEST V1.30
18-FEB-99	Add 5 and 10 minute repeat rate.
29-SEP-98	Release SBTEST V1.20
29-SEP-98	Add Y2K Compliance. SBTEST Log File now includes a 4 digit year field.

Direct Comments/Feedback to:

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