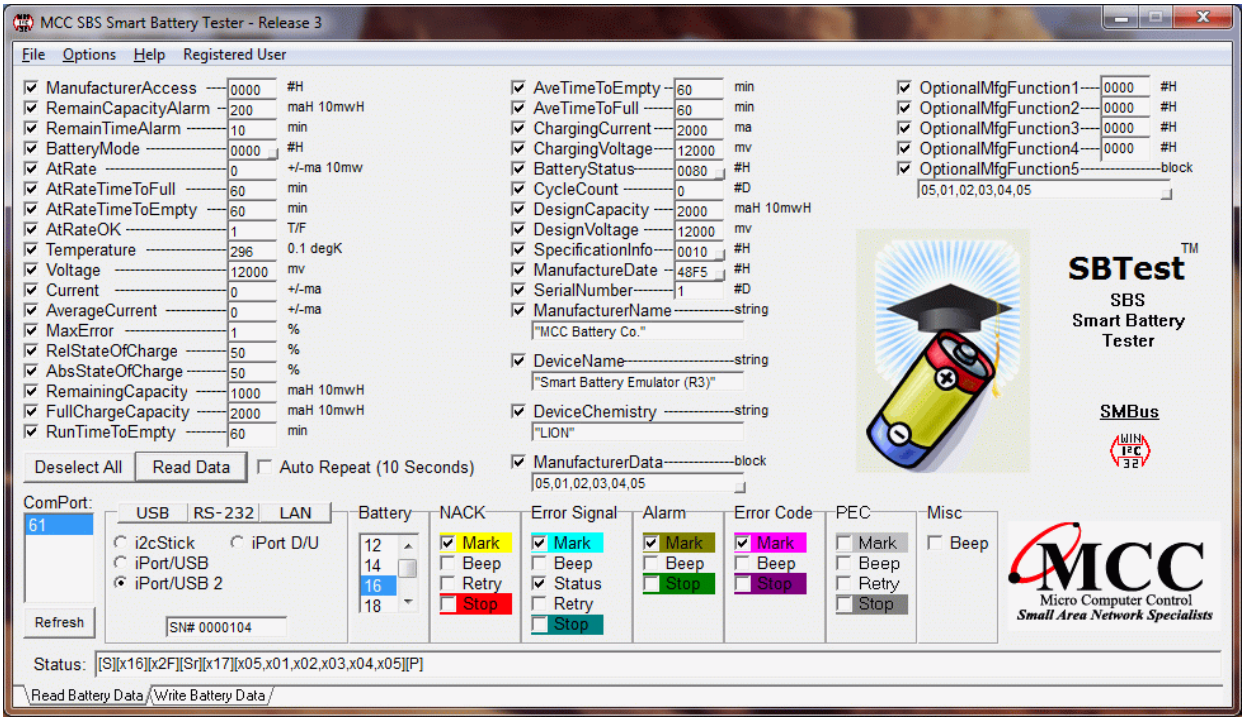
User's Guide

Smart Battery Tester
SBTest

Release 3 SP2



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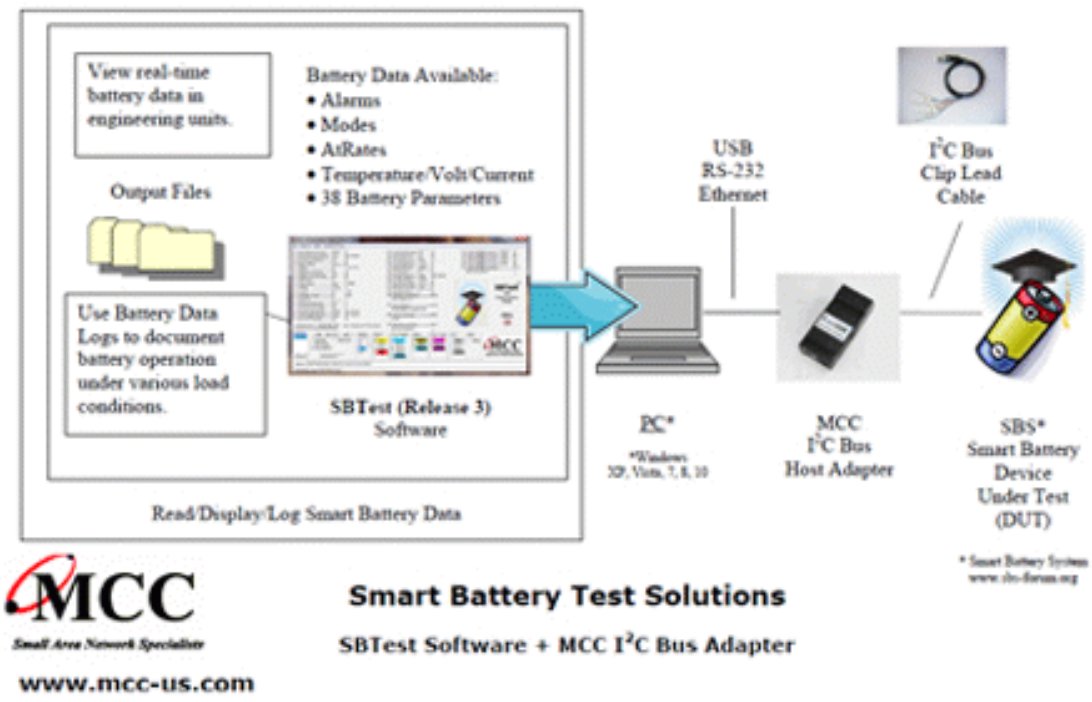
WARNING - Life Support Applications: MCC products are not designed for use in life support appliances, devices, or systems where the malfunction of the product can reasonably be expected to result in a personal injury.

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.

Printed in the United States of America

27-DEC-16



Smart Battery Test (SBTest) software is designed to test, exercise, and log Smart Battery System (SBS) Smart Battery communications. This software can write data to, and read data from, an SBS Smart Battery using a supported MCC I^2C Bus Host Adapter.

This document contains information on the MCC SBS Smart Battery Tester Software Release 3 Service Pack 2, including equipment setup and usage.

System Requirements:

1. One of the following MCC I^2C Bus Host Adapters:
   - iPort (# MIIC-201)
   - iPort DLL/USB (#MIIC-201D/U)
   - iPort/AI (#MIIC-202)
   - iPort/AFM (#MIIC-203)
   - iPort/USB (#MIIC-204)
   - iPort/LAN (#MIIC-205)
   - i2cStick (#MIIC-207)
   - iPort/USB 2 (#MIIC-208)
   - iPort/AI 2 (#MIIC-212)
   - iPort/AFM 2 (#MIIC-213)
2. SBS Smart Battery with interfacing cable.
3. Windows XP, Vista, 7, 8, or 10.
4. One USB, RS-232, or Ethernet communications port.

Reference Specifications:

System Management Bus Specification Revision 1.1

Smart Battery Data Specification Revision 1.1

For additional information see: www.sbs-forum.org

Software Installation (CD):

1. Administrative Privilege May Be Required.
2. Insert the installation CD.
3. If AutoRun does not start, double-click Setup.exe of CD.
4. Follow instructions on screen.

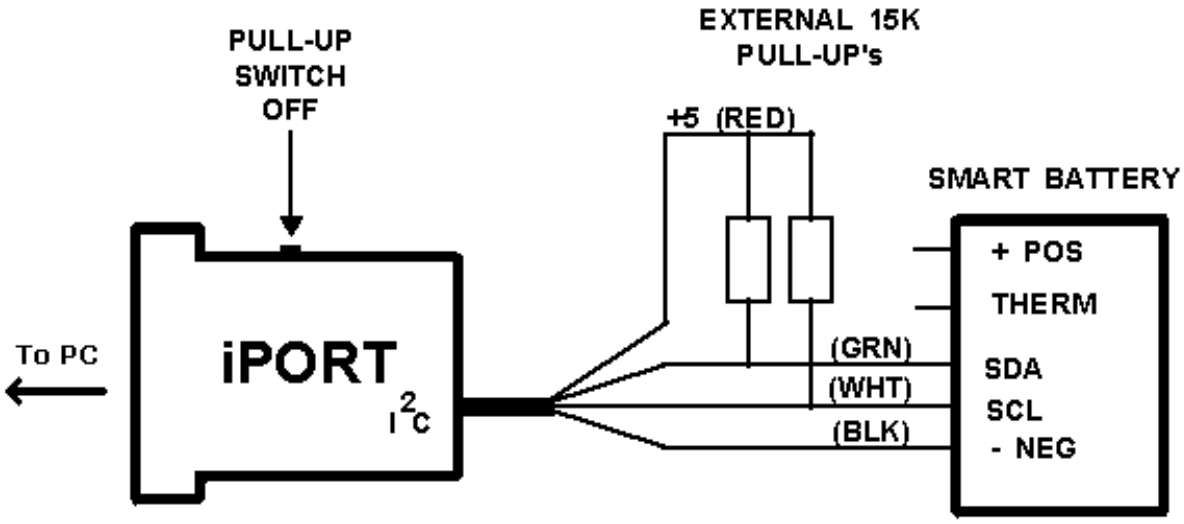
Software Installation (Download):

1. Administrative Privilege May Be Required.
2. Follow web page instructions to download and install.

Equipment Setup:

1. Follow the installation instruction for MCC Adapter.

2. Connect the MCC Adapter to target SBS Smart Battery. (See suggested setup below).



Suggested SBS Smart Battery Setup

Note:

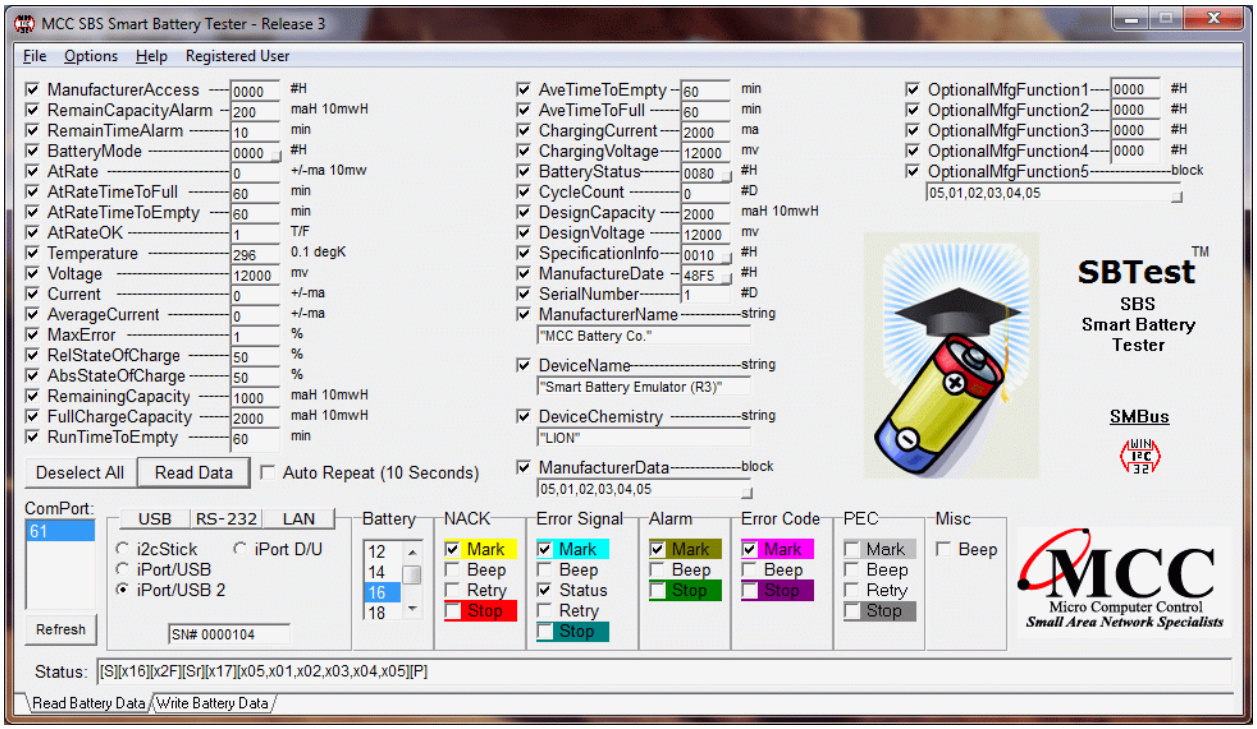
When connected to an SBS Smart Battery, the Pull-Up switch on the iPort Host Adapter should be OFF, and external Pull-Up resistors (approximately 15K Ohm) should be applied to the I^2C Bus Clock and Data lines.

To Start Program:

Click Start | Programs | Smart Battery Tester 3.0 | Smart Battery Tester.

To communicate with an SBS Smart Battery:

1. Select the I^2C Bus Adapter type.
2. Select the ComPort connected to the selected I^2C Bus Adapter.
3. Select "Read Battery Data", or "Write Battery Data".
4. Select the Smart Battery parameters to be accessed.
5. Select the communication conditions to monitor.
6. If "Write Battery Data" is selected, enter or edit Smart Battery parameters to be written to battery.
7. Click the "Read Data" or Write Data" button to access Smart Battery Data.



Program Controls:

Configuration Controls:

I^2C Bus Adapter/ComPort Select

Select the adapter type and port of adapter connected to the SBS Smart Battery.

SBS Smart Battery Address

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

Communication Monitor Controls:

NACK

Select Mark, Beep, Retry, or Stop on Smart Battery Negative Acknowledgment of it's slave address.

Error Signal

Select Mark, Beep, Status, Retry, or Stop on Smart Battery Error Signal detect (Negative Acknowledgment on data byte).

Alarm

Select Mark, Beep, or Stop on Smart Battery Battery Status Alarm detect.

Error Code

Select Mark, Beep, or Stop on Smart Battery Battery Status Error Code detect.

PEC

Select Mark, Beep, Retry, or Stop on Packet Error Check (PEC) Error detect. Any selection will cause SBTest to generate a PEC byte on Write operations and check the PEC byte on Read operations.

Misc

Select Beep on any Communication Monitor Stop condition.

Battery Data Read/Write Controls:

Select/Deselect All Button

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

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 (See Menu Controls for Optional Repeat Rates).

Status Text Box

Displays Smart Battery communications 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.

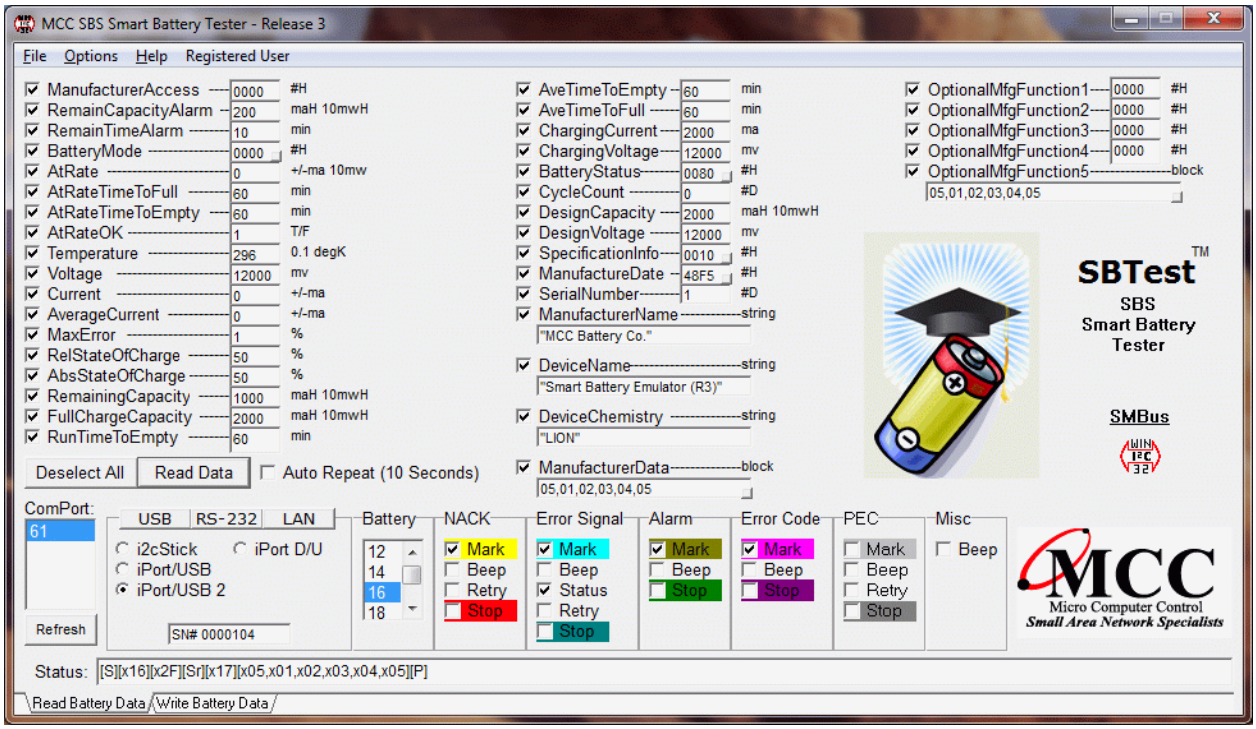
Options|Show Hints

Enables/Disables display of Smart Battery parameter information**.**

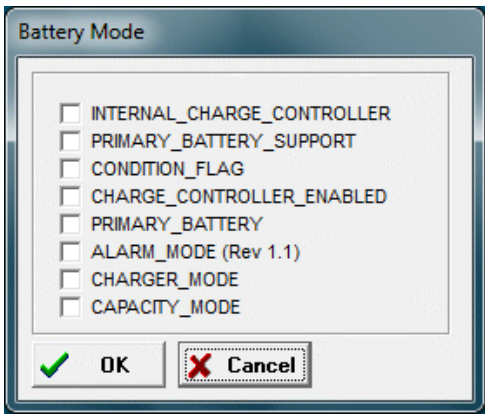
Options|Auto Repeat Continuous
Options|Auto Repeat every 10 Seconds
Options|Auto Repeat every Minute
Options|Auto Repeat every 5 Minutes
Options|Auto Repeat every 10 Minutes
Options|Auto Repeat every Hour

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

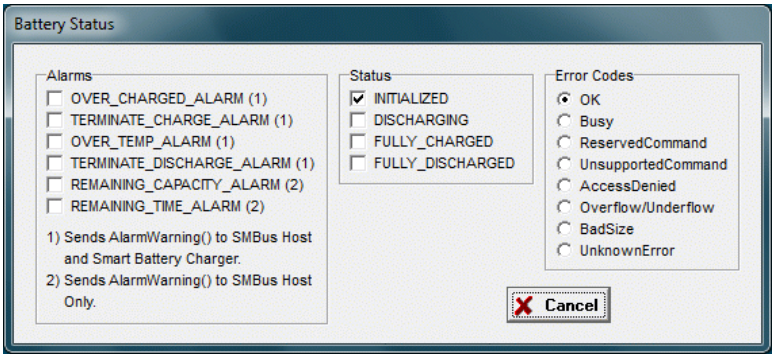
View/Enter/Edit Smart Battery Data



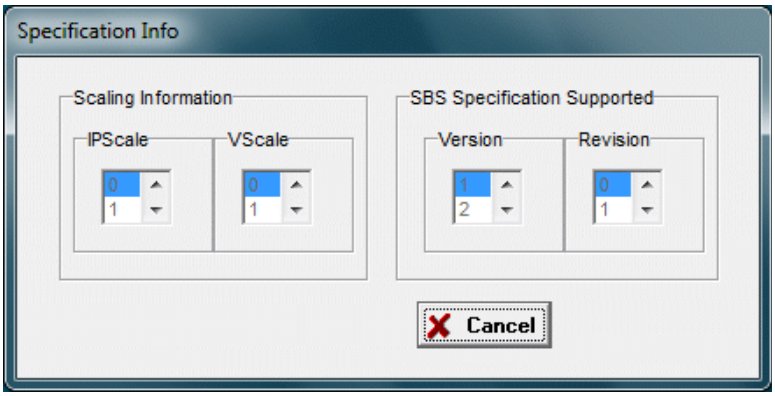
Smart Battery Data parameters can be viewed, entered, and edited on-screen. The following parameters can also be viewed and edited by clicking on the pop-up button next to the parameter display:



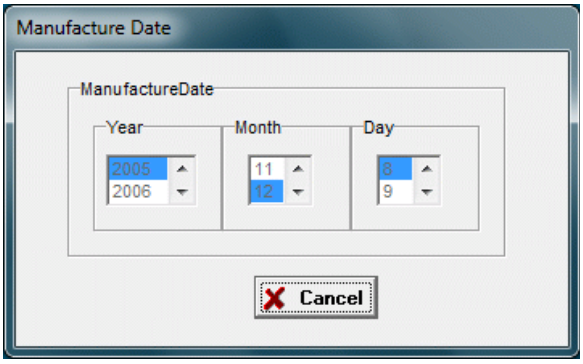
Battery Mode



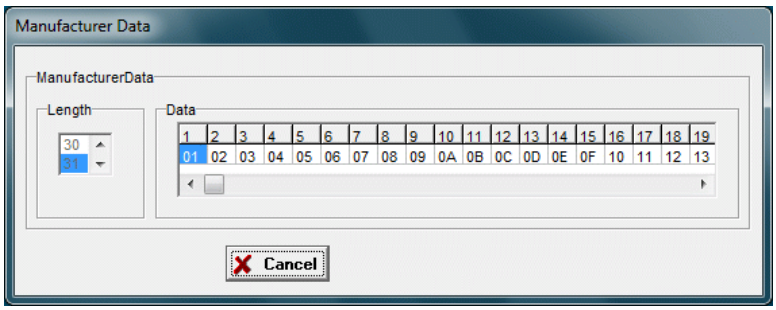
Battery Status



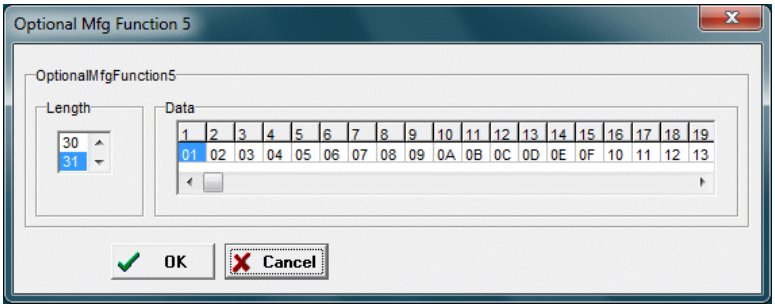
Specification Info



Manufacture Date



Manufacturer Data



Optional Mfg Function 5

Revision Report:

Date	Description
24-DEC-16	Release 3, Service Pack 2. Add support for additional MCC I^2C Bus adapters.
25-JUL-12	Release 3, Service Pack 1. Correct display of negative numbers.
16-APR-12	Release 3. New Features: - PEC Error Mark, Beep, Retry, and Stop. - BatteryStatus Error Code Mark, Beep, and Stop. - BatteryStatus Alarm Mark, Beep, and Stop. - Battery Error Signal Mark, Beep, and Stop. - Battery NACK Mark, Beep, Retry, and Stops. - Packet Error Check (PEC) Generate/Test support. - Smart Battery System v1.1 support. - Parameter Access Flash indicator. - MCC ASCII Interface (AI) adapter support.
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:

Micro Computer Control Corporation
P.O. Box 275
Hopewell, NJ 08525 USA
www.mcc-us.com
support@mcc-us.com