AN49503A Evaluation kit
Quick Start Guide

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Ver2.00

1st Business Development Center

Semiconductor Business Unit

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AN49503A Evaluation kit for Quick Start

Please perform this evaluation kit by the administrator mode of Windows.
1. Connect AN49503A Evaluation kit to MM-FT232H module with provided cable .
2. Plug in USB cable from PC to MM-FT232H module.(install FTDI D2xx driver from http://www.ftdichip.com/Drivers/D2XX.htm if not already done)

Currently Supported D2XX Drivers:

Operating System	Release Date	x86 (32-bit)	x64 (64-bit)	PPC	ARM	MIPSII	MIPSIV	SH4	Comments
Windows*	2014-09-29	Available as setup executable Contact support1@ftdichip.com if looking to create cusomised drivers		-	-	-	-	-	2.12.00 WHQL Certified Available as setup executable Release Notes
Windows RT	2014-07-04	1.0	-	-	1.0	-	-	-	A guide to support the driver (AN_271) is available here
Linux	2012-06-29	1.1.12	1.1.12	-	1.1.12 Suitable for Raspberry Pi	-	-	-	ReadMe
Mac OS X	2012-10-30	1.2.2	1.2.2	1.2.2	-	-	-	-	Requires Mac OS X 10.4 (Tiger) or later ReadMe
Windows CE 4.2-5.2**	2014-22-04	1.0.1.10	-	-	1.0.1.10	1.0.1.6	1.0.1.6	1.0.1.6	
Windows CE 6.0/7.0	2014-22-04	1.0.1.10 CE 6.0 CAT CE 7.0 CAT	-	-	1.0.1.10 CE 6.0 CAT CE 7.0 CAT	1.0.1.6	1.0.1.6	1.0.1.6	For use of the CAT files supplied for ARM and x86 builds refer to AN_319
Android (Java D2XX)	2013-02-13				Java Driver				Rooting of Android device is not required. Refer to technical note TN_147 TN_147 sample download

*Includes the following version of of the Windows operating system: Windows 7, Windows Server 2008 R2 and Windows 8, 8.1, Windows server 2012 R2. Also, as Windows 8 RT is a closed system not allowing for 3rd party driver installation our Windows 8 driver will not support this variant of the OS. You must use the Windows RT build for this platform.

3. Install "BMS_AN49503A" from CD drive.
＊**When a procedure is not followed, GUI Application does not operate normally.**
4. Connect AN49503A Evaluation kit as follow and power up
5. After supplying voltage to the VBAT side, if voltage is supplied to VPACK+, 5V will be supplied to a microcomputer, LED lights up.
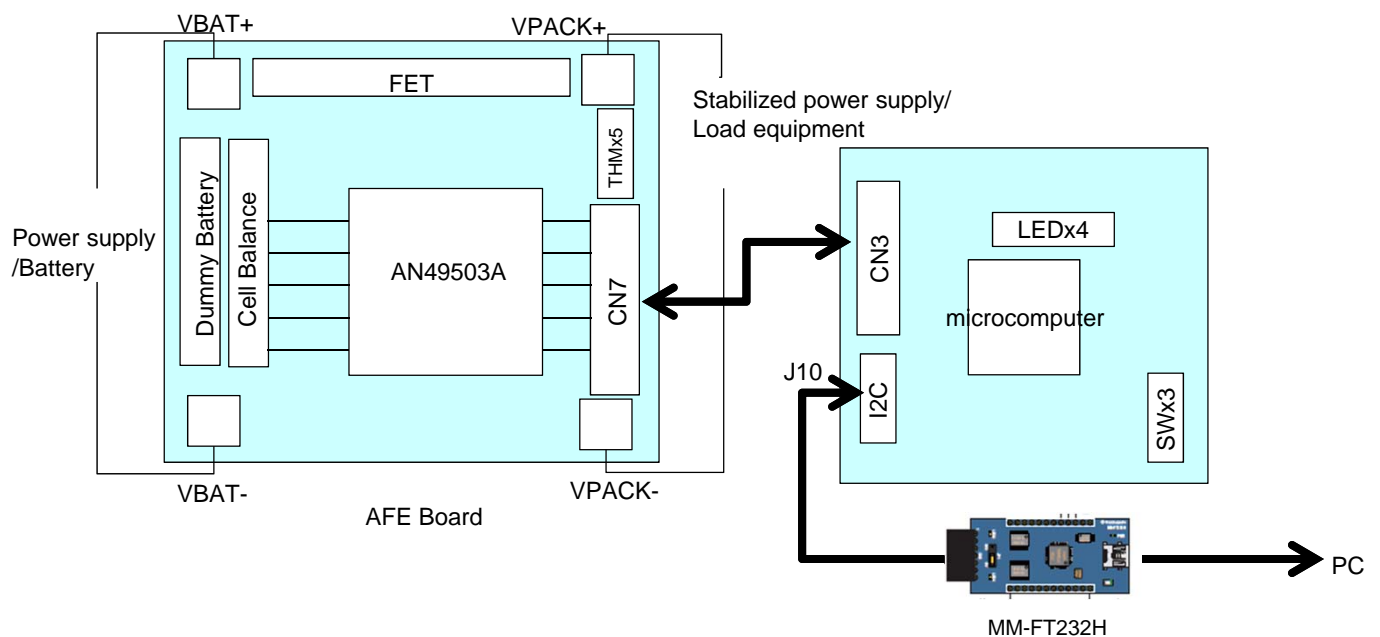
4. GUI Application is performed where state of the evaluation kit is carried out (GUI version and FW Version will be displayed on the upper-right of the window).
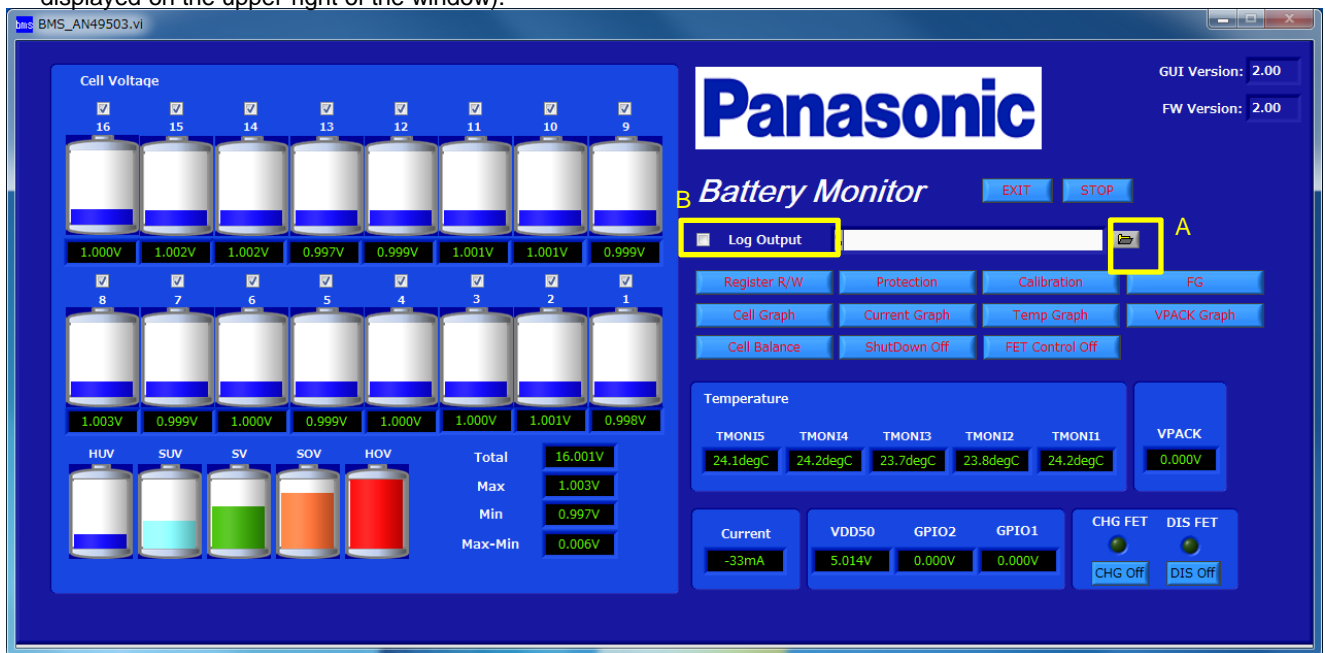

5. Chooses preservation place. When a check is put into "Log Output", "Log" is taken while putting in the check.
   CSV file is created.
   - A. Click icon and it specifies a preservation place.
   - B. When a check is put into "Log Output", Writing is performed.（It will end, if it removes.）
     Please do not open the CSV file under write-in execution in tools, such as an editor.

1.2 GUI Application Main Screen
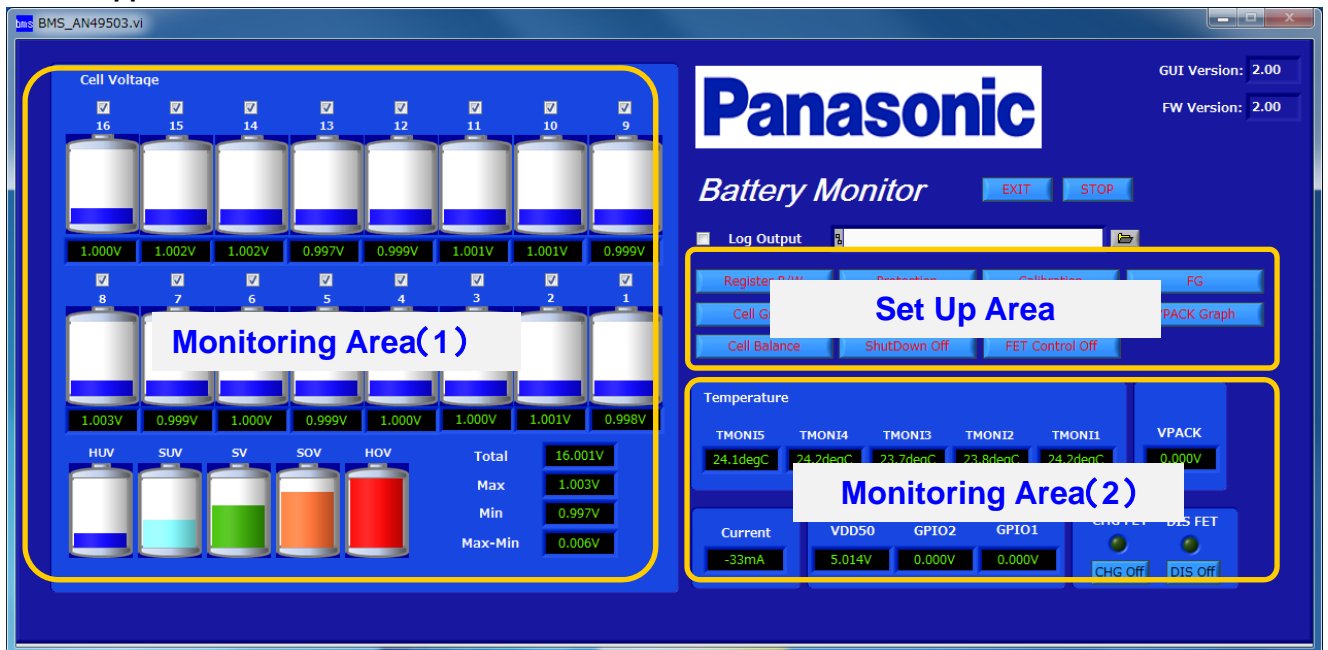
1.4 Operation of GUI Application

Monitoring Area (**1**)

difference for the maximum and minimum of cell voltage are displayed. In accordance with protection value, the state of voltage is expressed as color.

Monitoring Area (**2**)

The state of temperature, current, and FET is displayed. Result of TMONI1~5 is displayed.
TMONI1~3 are supposed to be used as cell temperature. TMONI4 as FET temperature and TMONI5 as Current Sensing Resistor temperature.
Note: TMONI1~5 should be connected to thermistor. Or else the temperature protection will do the abnormal protection.
When FET Control On/Off is off, the ON/OFF of charge FET and Discharge FET can be controlled by using button CHG/DIS.

Set Up Area

The following setup can be performed.
・Register Read/Write：Read/Write of a register are performed.
・Protection：A protection setup of voltage, current, and temperature is performed.
・Calibration：An error of measurement is set up.
・FG：A setup is displayed for the charge state of a battery, and an electric discharge state.
・Cell Graph：Cell voltage is displayed in a graph.
・Current Graph：Current is displayed in a graph.
・Temp Graph：Cell temperature is displayed in a graph.
・VPACK Graph：positive going voltage of battery pack is displayed in a graph.
・Cell Balance：Cell balance is set up.
・ShutDown On/Off：In On, terminal control of a shutdown is performed and Off does not control.
・FET Control On/Off：In On, FET is controlled and Off does not control.

Jumper setup of an evaluation kit

Setup of an MCU board

Switch/ Jumper	Description	Default
S1	AN49503A is reset.	-
SW1	Please do not change to ON with Default.	(1)OFF
SW2	OFF(1) : Status ON (0) : Battery gauge Function : LED display changeover switch	(1)OFF
SW3	Please do not change to ON with Default.	(1)OFF
J10	Jumper Terminal 1 : GND 2 : TXD1 3 : RXD2 4 : CVDD UART is not used by this evaluation kit.	Open
J11	Jumper Terminal MM-FT232H 1 : GND 2 : GND 2 : DATA 3 : CLOCK 3 : DATA 4 : DATA 4 : CLOCK 5 : DATA Function : It connects with MM-FT 232H.（I2C-USB conversion module） *Since the turn of MM-FT 232H and a cable differs, please be careful of connection.	Open
J12	Please do not change Jumper from Default(Short 2,3).	1:Open 2:Short 3.Short
J13	Please do not change Jumper from Default(Short).	Short
J14	Please do not change Jumper from Default(Short).	Short
J15	Please do not change Jumper from Default(Short).	Short

Jumper setup of an evaluation kit

Setup of an AFE board

Jumper	Description	Default
J1	Please do not change Jumper from Default(Short).	Short
J2-J6	Jumper Terminal 1 : TMONI1~5 pins 2 : GND Possible connection: Open : TMONI1~5 pins open Short : TMONI1~5 pins shorted to GND Connection : TMONI1-3:Battery, TMONI4:FET, TMONI5:Current sensing resistor	Open
J7-J37 (Odd number)	J7 – cell 16, J9 – cell 15 and so on … (no effect if J8-J38 (even number) open)) Short : correspond cell shorted Open : correspond cell use resistor to imitate battery cell. Function : Jumper which performs cell balance should connect according to J8~J38 (even number).	Open
J8-J38 (Even number)	J8 – cell 16, J10 – cell 15 and so on … Short : correspond cell use on board resistor to imitate battery cell or shorted Open :correspond cell opened on-board Function : Jumper which performs cell balance should connect according to J7~J37 (odd number).	Short
J39-J44	Jumper Terminal 1 : GPIO1~6 pins 2 : GND Function :GPIO is used.	Open
J45-J60	Short : Please use Short, when you use external cell balance. Open :Please use Open, when you use internal cell balance. Function: It is used for Internal cell balance and external cell balance.	Short
J61	Please do not change Jumper from Default(Short).	Short
J62	Please do not change Jumper from Default(Short).	Short
J63	Please do not change Jumper from Default(Short).	Short
J64	Please do not change Jumper from Default(Short).	Short
J65	Short : Q5,Q6 of FET is used. Open : Q4,Q1 of FET is used.	Open

Note: The jumper setting here is a possible setting provided for quick start. Please adjust accordingly to meet your requirement after understanding the EVB configuration.

1.4 EVB View

The following figures show the MCU board, the AFE board, and the conversion module by a diagram.

MCU EVA Board

MM-FT232H

AFE EVA Board