

Set up evaluation GUI

The MCU board hardware provides CAN bus interface and embedded software integration with CAN communication protocol. Using a Graphical User Interface (GUI) on a PC workstation can help users perform functions more clearly and more easily than using a debug tool (S32 Design Studio IDE).

The provided GUI is following the communication protocol and with the help of the third party PEAK-CAN USB Pro tool and PyQt5 GUI development library. The CAN communication protocol is shown in [Table 1](#).

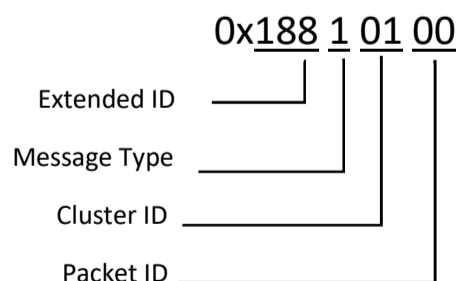
Notes:

- Host is the device that sends the CAN message.
- All voltage, current and temperature data are raw values from MC33771 registers. The GUI convert them to physical values by multiplying by the resolution, which can be found in the MC33771 product data sheet.

Table 1. CAN communication protocol

Host	Extended ID	Data							
		Byte0	Byte1	Byte2	Byte3	Byte4	Byte5	Byte6	Byte7
Evaluation board	0x18810100	Stack voltage measurement		Cell14 voltage measurement		Cell13 voltage measurement		Cell12 voltage measurement	
Evaluation board	0x18810104	Cell11 voltage measurement		Cell10 voltage measurement		Cell9 voltage measurement		Cell8 voltage measurement	
Evaluation board	0x18810108	Cell7 voltage measurement		Cell6 voltage measurement		Cell5 voltage measurement		Cell4 voltage measurement	
Evaluation board	0x1881010C	Cell3 voltage measurement		Cell2 voltage measurement		Cell1 voltage measurement		AN6 voltage measurement	
Evaluation board	0x18810110	AN5 voltage measurement		AN4 voltage measurement		AN3 voltage measurement		AN2 voltage measurement	
Evaluation board	0x18810114	AN1 voltage measurement		AN0 voltage measurement		IC temperature measurement		ADCIA voltage reference measurement	
Evaluation board	0x18810118	ADCIB voltage reference measurement		N/A	N/A	N/A	N/A	N/A	N/A
Evaluation board	0x18820100	Current measurement				N/A	N/A	N/A	N/A
Evaluation board	0x18830100	MC33771 Error phase	MC33771 Error code	N/A	N/A	N/A	N/A	N/A	N/A
Evaluation board	0x18840100	Number of CRC error counted		Fault1 status		Fault2 status		Fault3 status	
Evaluation board	0x18870000	MCU SW Version: SDK (0x00) MCAL(0x01)	BCC Interface: TPL(0x00) SPI(0x01)	BCC Type: MC33771B(0x00) MC33771C(0x01) MC33772 (0x02)					
PC GUI	0x18800000	0xC1 Global Reset							
		0xC2 BMS Reset							

CAN Message ID Information



Message Type :

- 1 = BCC ADC measurement for voltage, such as cell voltage
- 2 = BCC ADC measurement for current
- 3 = Error code for BCC operations
- 4 = BCC Status
- 7 = System information, MCU software type (SDK or MCAL), BCC interface (TPL or SPI), BCC type (MC33771B/C)

Cluster ID :

Cluster Identifier, B version is up to 15 in daisy chain while C version is up to 63 nodes.

Packet ID:

Used to differentiate BCC ADC measurement packages for voltage.