

MITSUMI Fuel Gauge Interface Box

This document describes how to use MITSUMI Fuel Gauge Interface Box. (MITSUMI Fuel Gauge Interface Box is described as Interface Box in the text hereafter.)

Interface Box changes I2C signal of MM8118 and USB signal in both directions and communicates to PC.

By connecting MM8118 (or the user system) and Interface Box with the communication cable, and connecting PC and USB connector with USB cable (A-B type), the status of MM8118 can be monitored on the PC.

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1. Specification

1.1 Communication method of Interface Box

Table 1. Communication method

Name	I/F	Pull-up resistor	Pull-up voltage
Interface Box	I2C	1k Ω	1.8V

1.2 Preparation to use

Before starting to use Interface Box, the user needs to download the latest VCP Driver of FTDI Chip and to install it to the target PC. And please confirm that the installation was successful.

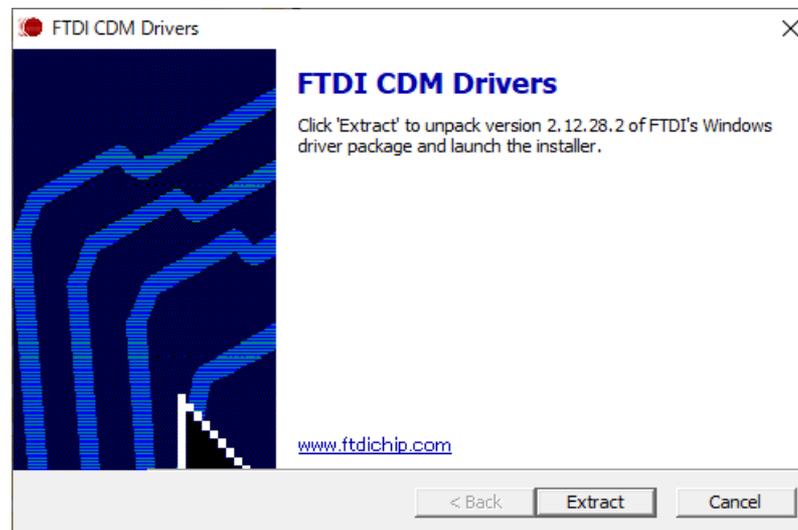


Figure 1. Installation of VCP Driver

2. Interface Box Connections

2.1 Connection example to Interface Box

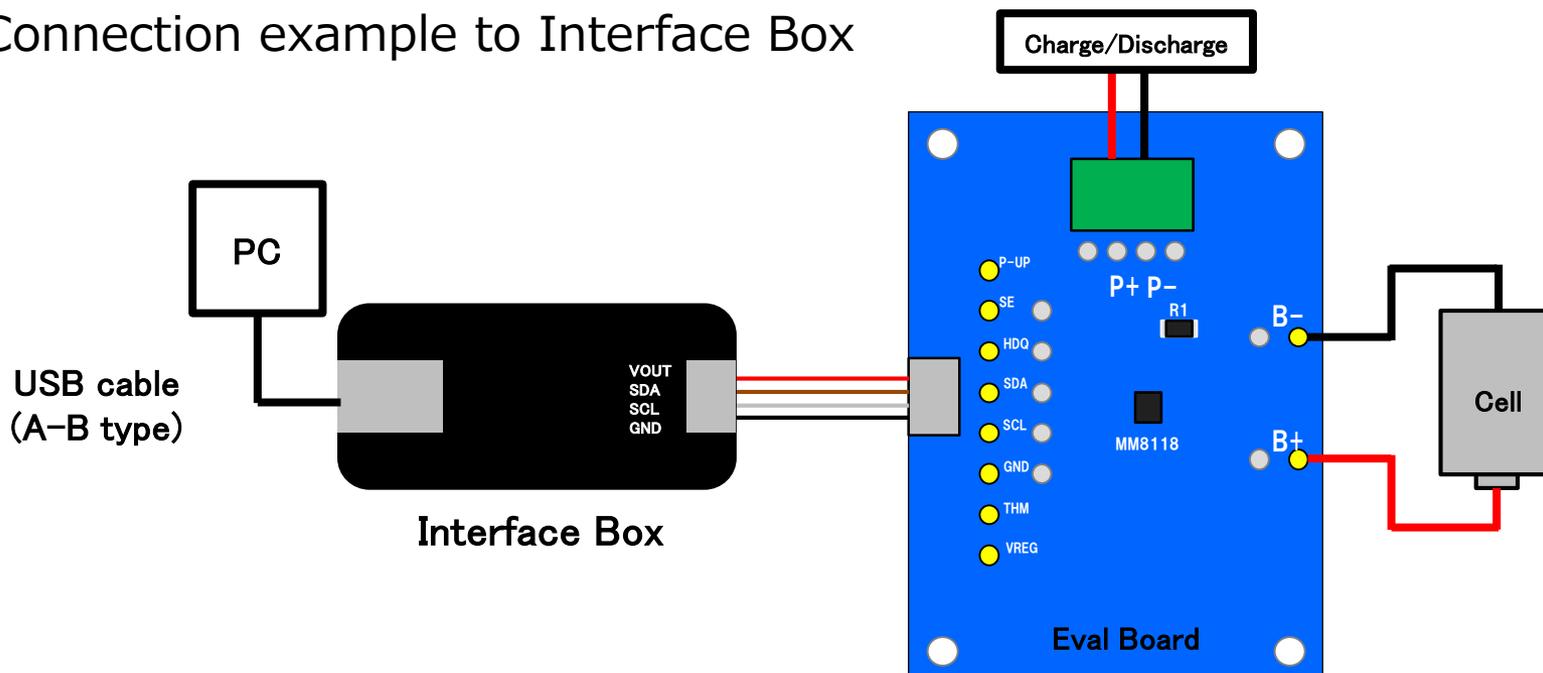


Figure 2. Connection example to Interface Box

2.2 Pin Descriptions

Table 2. Interface Box Pin

Name	Description
VOUT	1.8V output terminal
SDA	I2C data input/output terminal Pull up to 1.8V with 1k Ω resistor
SCL	I2C clock input/output terminal Pull up to 1.8V with 1k Ω resistor
GND	GND terminal

3. Interface Box Layout 3.1 Layout

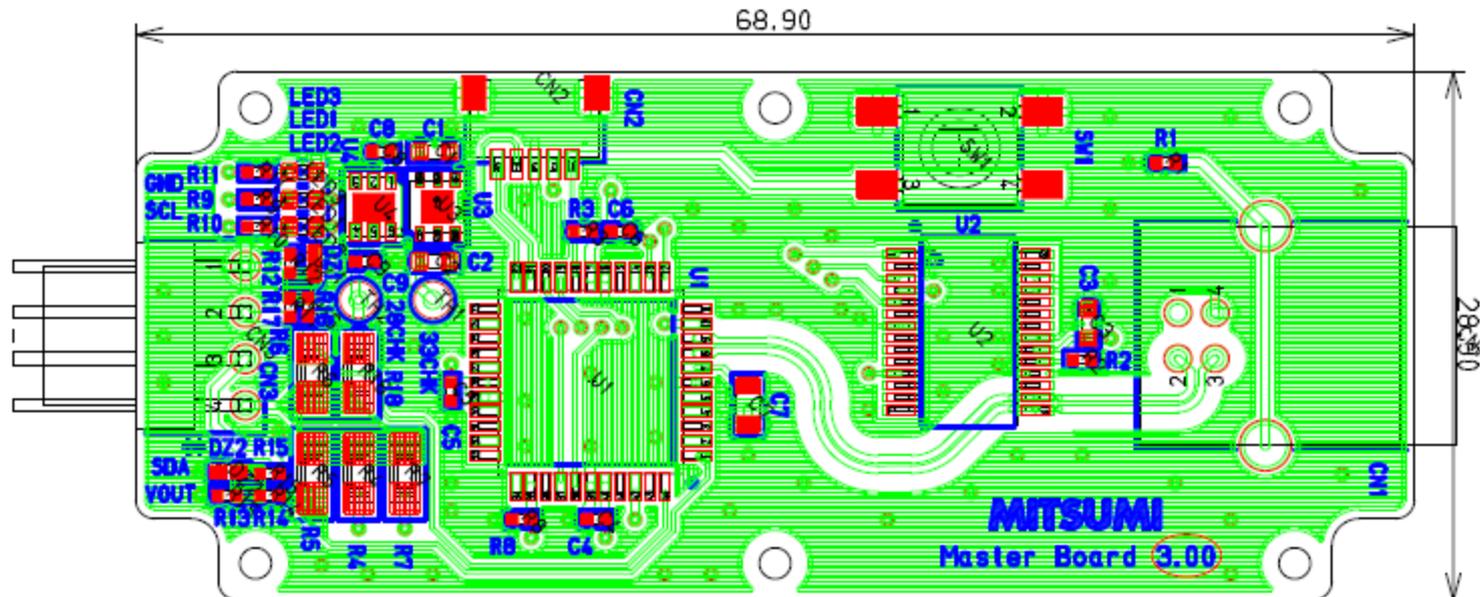


Figure 3. Interface Box Layout

3.2 Bill of Materials

Table 3. Bill of Materials

Symbol	Value
U1	PIC24FJ32GB004
U2	FT232RL
U3	NCP694DSAN33T1G
U4	NCP605MN18T2G
C1,C2,C3	4.7 μ F
C4,C5,C6	0.1 μ F
C7	10 μ F
C8,C9	1.0 μ F
R1,R18	0 Ω
R2	51k Ω
R3	10k Ω
R5,R6	1k Ω

Symbol	Value
R8,R12,R13	1M Ω
R9,R10	2.4k Ω
R11	5.6k Ω
R14,R15,R16,R17	100 Ω
DZ1,DZ2	Breakdown Voltage Min.5.8V
LED1	SML-512MWT86
LED2	SML-512DWT86
LED3	SML-512UWT86

3.3 Interface Box Schematic

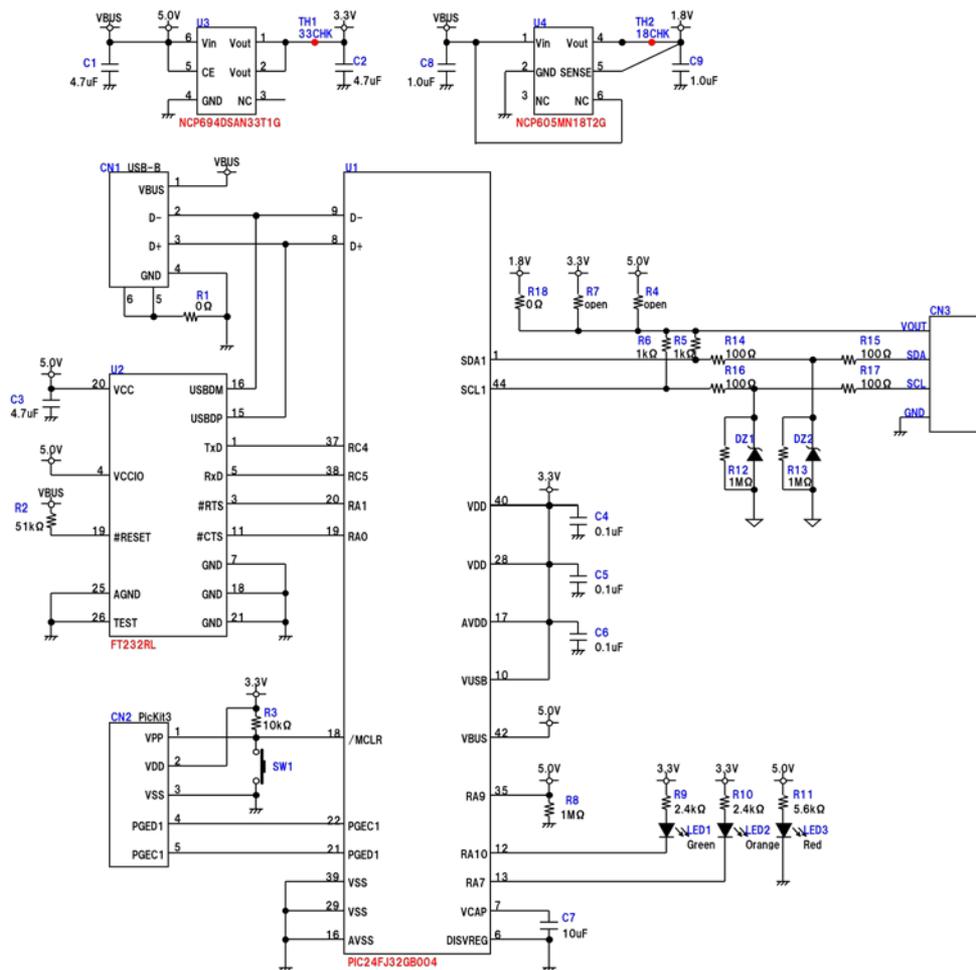


Figure 4. Interface Box Schematic

【Safety Precautions】

• Though Mitsumi Electric Co., Ltd. (hereinafter referred to as "Mitsumi") works continually to improve our product's quality and reliability, semiconductor products may generally malfunction or fail. Customers are responsible for complying with safety standards and for providing adequate designs and safeguards for their hardware, software and systems which minimize risk and avoid situations in which a malfunction or failure of this product could cause loss of human life, bodily injury, or damage to property, including data loss or corruption. Before customers use this product, create designs including this product, or incorporate this product into their own applications, customers must also refer to and comply with (a) the latest versions or all of our relevant information, including without limitation, product specifications, data sheets and application notes for this product and (b) the user's manual, handling instructions or all relevant information for any products which is to be used, or combined with this products. Customers are solely responsible for all aspects of their own product design or applications, including but not limited to (a) determining the appropriateness of the use of this product in such design or applications; (b) evaluating and determining the applicability of any information contained in this document, or in charts, diagrams, programs, algorithms, sample application circuits, or any other referenced documents; and (c) validating all operating parameters for such designs and applications. Mitsumi assumes no liability for customers' product design or applications.

• This product is intended for applying to computers, OA units, communication units, instrumentation units, machine tools, industrial robots, AV units, household electrical appliances, and other general electronic units.

【Precautions for Product Liability Act】

• No responsibility is assumed by us for any consequence resulting from any wrong or improper use or operation, etc. of this product.

【ATTENTION】

• This product is designed and manufactured with the intention of normal use in general electronics. No special circumstance as described below is considered for the use of it when it is designed. With this reason, any use and storage under the circumstances below may affect the performance of this product. Prior confirmation of performance and reliability is requested to customers.

Environment with strong static electricity or electromagnetic wave

Environment with high temperature or high humidity where dew condensation may occur

• This product is not designed to withstand radioactivity, and must avoid using in a radioactive environment.

• This specification is written in Japanese and English. The English text is faithfully translated into the Japanese. However, if any question arises, Japanese text shall prevail.