

Continental Engineering Services GmbH



## User Manual

### Honda 4G TCU

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## Document Revision History

Revision	Date	Change Author	Change Summary
0.1	22.11.2023	Tomasz Szolc	Initial bring up of the document
1.0	23.11.2023	Tobias Mrowietz	Update table of content Update FCC-ID
1.1	09.02.2024	Tobias Mrowietz	Update FCC-ID chapter
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## Introduction

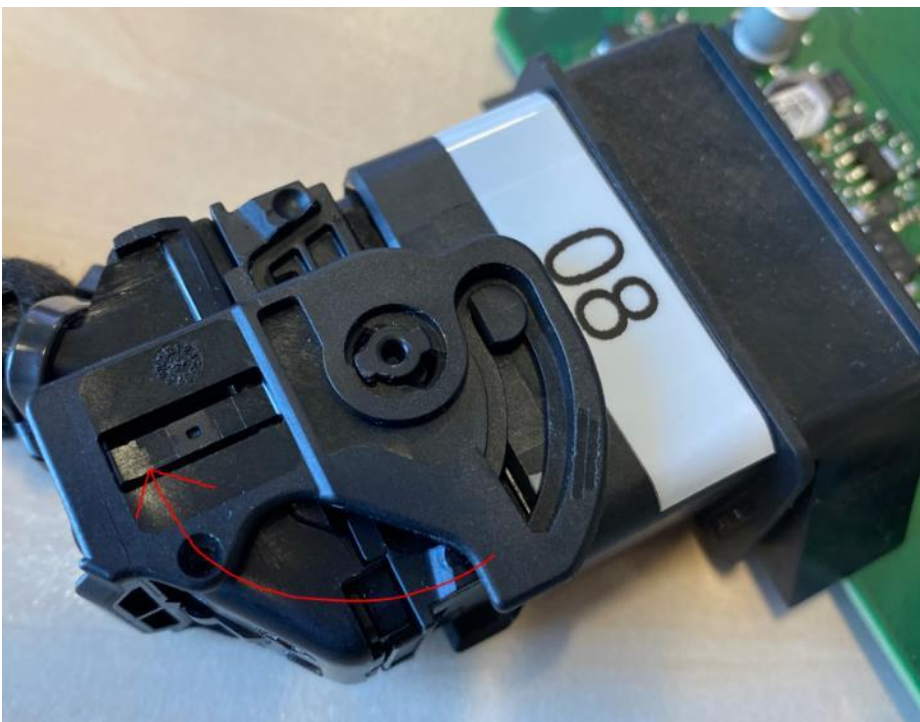
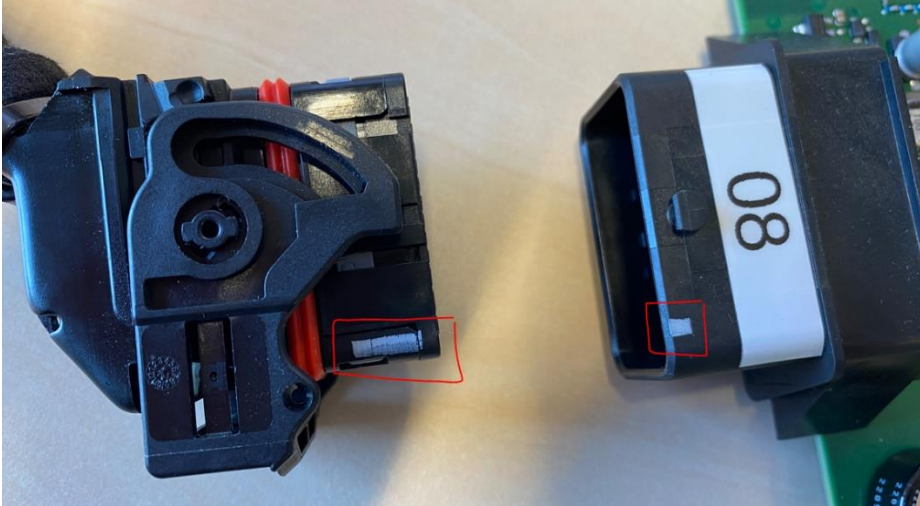
### 1.1. Document scope

This document describes the Honda 4G TCU device. The description contains a step-by-step connection guide as well as a description of connections. A detailed description of LED behavior and mounting instructions are provided to ensure correct usage of the device.

## 2. Hardware overview

### 2.1. TCU connection

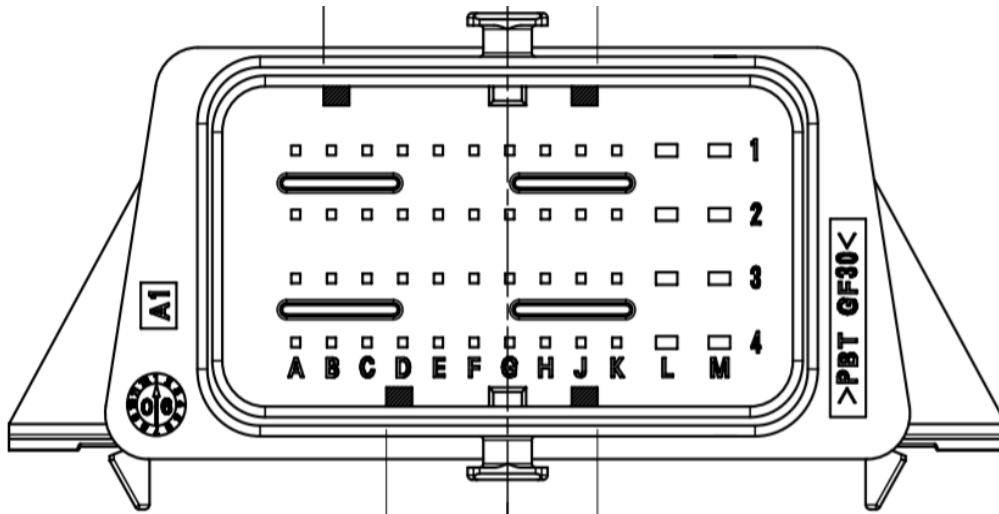
Connecting the harness to the TCU.



For powering up:

- ➔ Connect KL31 to ground of power supply
- ➔ Connect KL30 to 12V power supply
- ➔ Connect KL15 to KL30 (Ignition Pin)
- ➔ Connect USB to the computer for debugging purposes

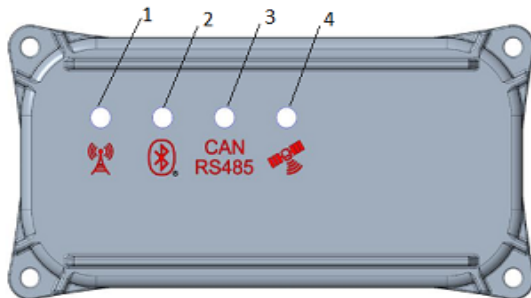
## 2.2. Pinout overview



### Relevant PINs

Pin number	Signal type
M2	KL31
M1	KL30
L1	KL15
B1	CAN1 L
A1	CAN1 H
E1	BRR DM
F1	BRR DP
H1	USB DP
J1	USB DM
K1	GND
K2	WR Disable

## 2.3. LED behavior



Position	LEDs Color
1	Yellow
2	White
3	Blue
4	Orange

The LEDs on the TCU are used to signal different information, depending on their state.

General TCU state:

- All LEDs on for 1 second = TCU is started
- All LEDs on for approx. 10 seconds = TCU is going into suspend
- All LEDs flicker (250 ms on, 250 ms off) = Configuration (config.json) missing or invalid (wrong format or values)

Individual feature state:

LED 1 (yellow) = LTE:

- Off = LTE not connected
- Blinking = Establishing LTE connection
- On = LTE connected

LED 2 (white) = Wi-Fi:

- Off = Wi-Fi not connected
- Blinking = Establishing Wi-Fi connection
- On = Wi-Fi connected

LED 3 (blue) = AWS:

- Off = AWS not connected
- Blinking = Establishing AWS connection
- On = AWS connected

LED 4 (orange) = GPS:

- Off = no GPS fix
- On = GPS fix

### **3. Mounting position of the TCU**

To have a good signal reception consider the following points for mounting:

- clear view to the sky
- avoid metallized windshields
- minimum 3 cm clearance on every side of the TCU
- the TCU shall not be „boxed-in“ by metal objects
- no harness routing over or next to the antennas / the TCU
- Other devices which may cause harmful interference must be placed as far away from the TCU as possible



## 4. 3<sup>rd</sup> party code and licensing

This section lists possible foreign code parts (libraries, reused components etc.) that the concept suggests. This is restricted to the application only. The platform software uses many FOSS and proprietary foreign code components that are not considered here.

### 4.1. FOSS Components

#### 4.1.1. MQTT Library

Mosquitto, an open source MQTT library, is used by the MosquittoClient component. Mosquitto is BSD licensed (<http://mosquitto.org/COPYING.txt>)

#### 4.1.2. Logging framework

A logging framework is included for better debugging and diagnostics. SPDLOG was integrated to that purpose, which is licensed under MIT License.

#### 4.1.3. JSON library

For creating and parsing JSON objects RapidJSON is used. RapidJSON is licensed under MIT License.

#### 4.1.4. AWS IoT Core SDK

For connection to the AWS IoT Core Backend the SDK v2 for cpp was added. It is licensed under Apache 2.0 license.

### 4.2. Proprietary Components

At this time, no proprietary licensed code parts are part of the concept for the application.

## 5. Certification

### 5.1. Japan

The EU variant is pre-certified by DSPR

Model Name: STP-MID EU A3C1203560000

Vendor Name: Continental Engineering Services GmbH

Certified Number: 003-220347

Certified Date: March 17, 2023



### 5.2. USA FCC

FCC ID 2BDLN-STPMIDNA

The device must be installed to provide a separation distance of at least 20 cm from all persons.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

**NOTICE: Changes or modifications made to this equipment not expressly approved by Continental may void the FCC authorization to operate this equipment.**

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