Description File

No.1
Revision B

EN, FCC and ISED Approval for:

Telematics Unit Gen.2 (TUGen2) HW003.1
HUF Project No.: 0891.003

Created by:

M.Eng. Markus Mehlich
Hardware Developer

Huf Secure Mobile GmbH
Steeger Straße 17
42551 Velbert

Phone.: +49(0)2051 272-6048

Mail: markus.mehlich@huf-group.com
www.huf-group.com

Created: 2017-03-10

Changed: 2017-08-01

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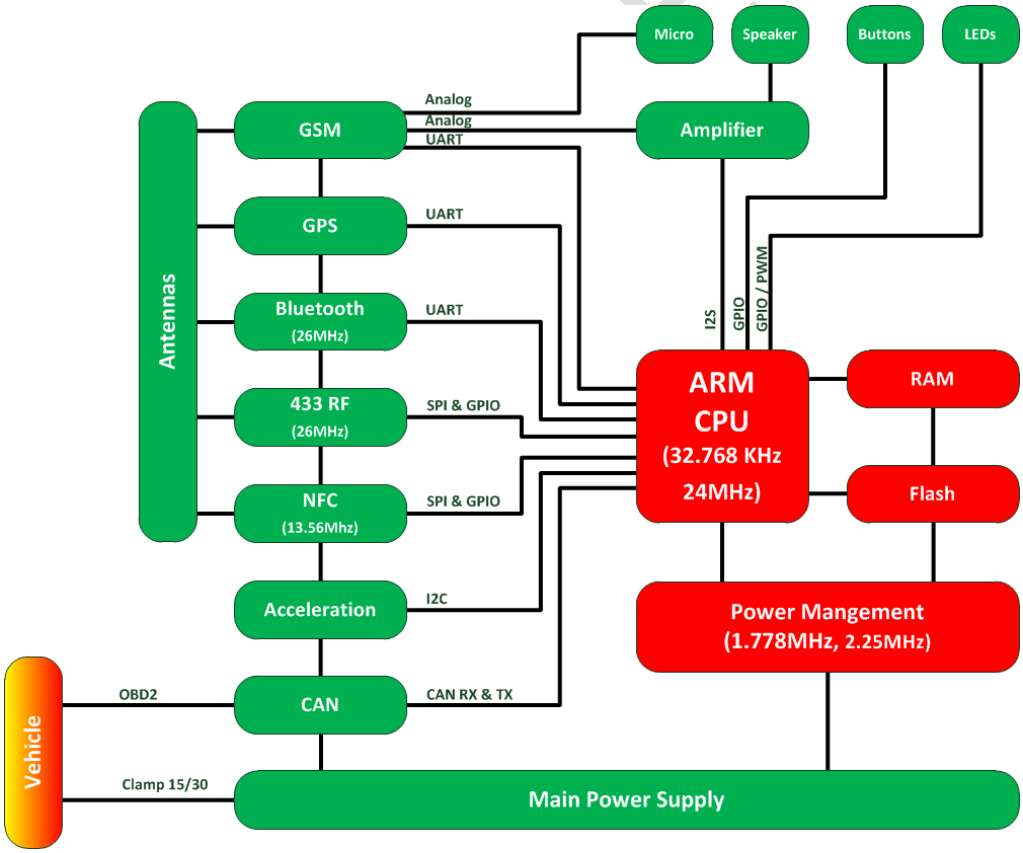
1 Product Description

1.1 General and Function:

The Telematics Unit Gen.2 is used for determining detailed information about movement of fleet vehicles and sending that information to appropriate servers. The information is illustrated to a fleet manager by a resource management software to make an optimized use of the vehicles possible.

The electronic control unit (ECU) is an independent unit, which is able to determine GPS coordinates, acceleration values, states of vehicle equipment and CAN information. All that information can be sent to a resource management server or a smartphone via an mobile communication network.

1.2 System Overview



1.3 Module Description

The Telematics Unit Gen2 has 5 wireless interfaces: Bluetooth, GSM, GPS, NFC and RF (433MHz, Receive Only).

Maximum Output Power:

1. Bluetooth: **10 dBm**
2. GSM:
   a. GSM 850 / E-GSM 900: **32.2 dBm**
   b. DCS 1800 / PCS 1900: **29.2 dBm**
3. NFC: **23 dBm**

Antennas:

1. Bluetooth: Panasonic PAN1326 with Chip Antenna: **0.9 dBi**
2. GSM: Molex Cellular Antenna **2.3 dBi @ 824M, 3.1 dBi @ 1710M**
3. RF: PCB Antenna
4. GPS: **4.0 dBi**

1.4 Interfaces

Clamp 30:

The ECU is permanently connected to clamp 30.

Clamp 15:

Clamp 15 can be used for setting the ECU into the Run Mode. When clamp 15 is detected as active, the ECU starts collecting data and sending these to the server.

CAN Bus:

The CAN Bus is used for a connection to the on-board diagnostic interface OBDII.

The Baud rate can be selected between 250kBaud or 500kBaud. The ECU get some information via OBDII interface e.g. the velocity signal.

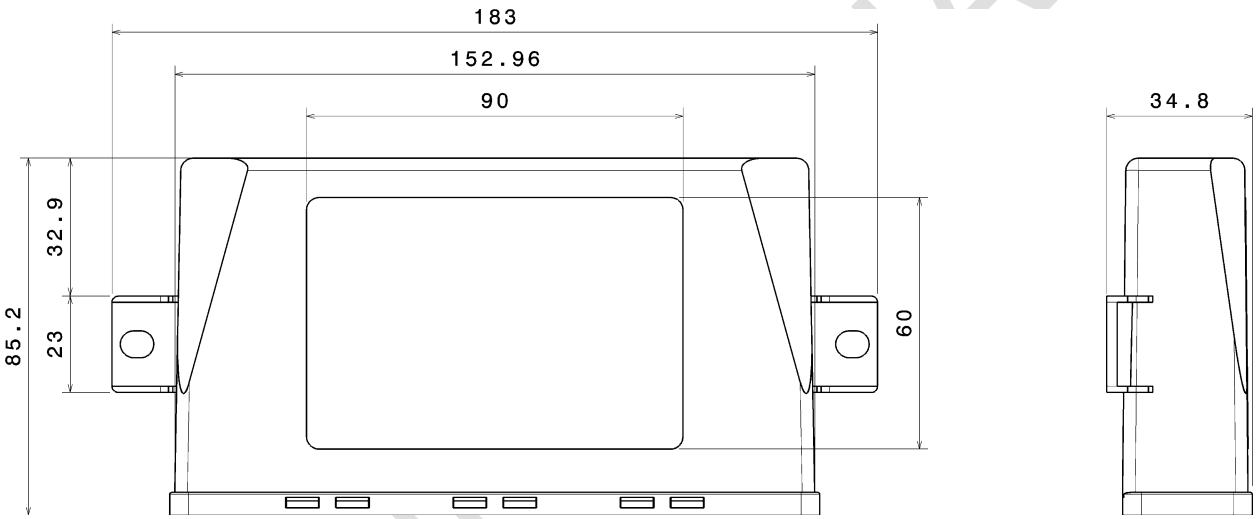
1.5 Technical Data

Temperature: -40 °C up to 70 °C

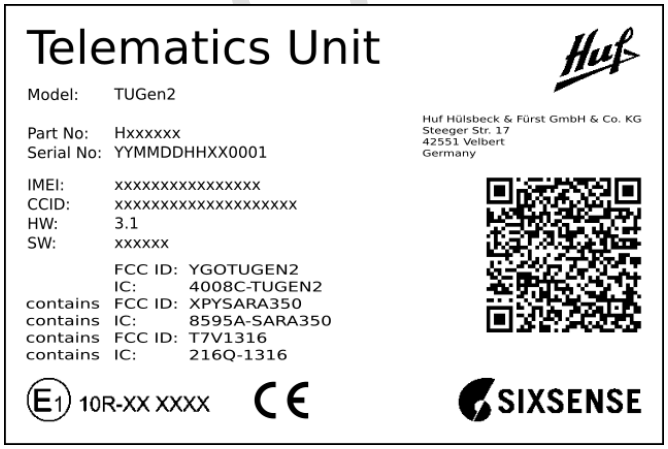
Power Supply: Typ: +12 V Min: 8 V Max: 16 V

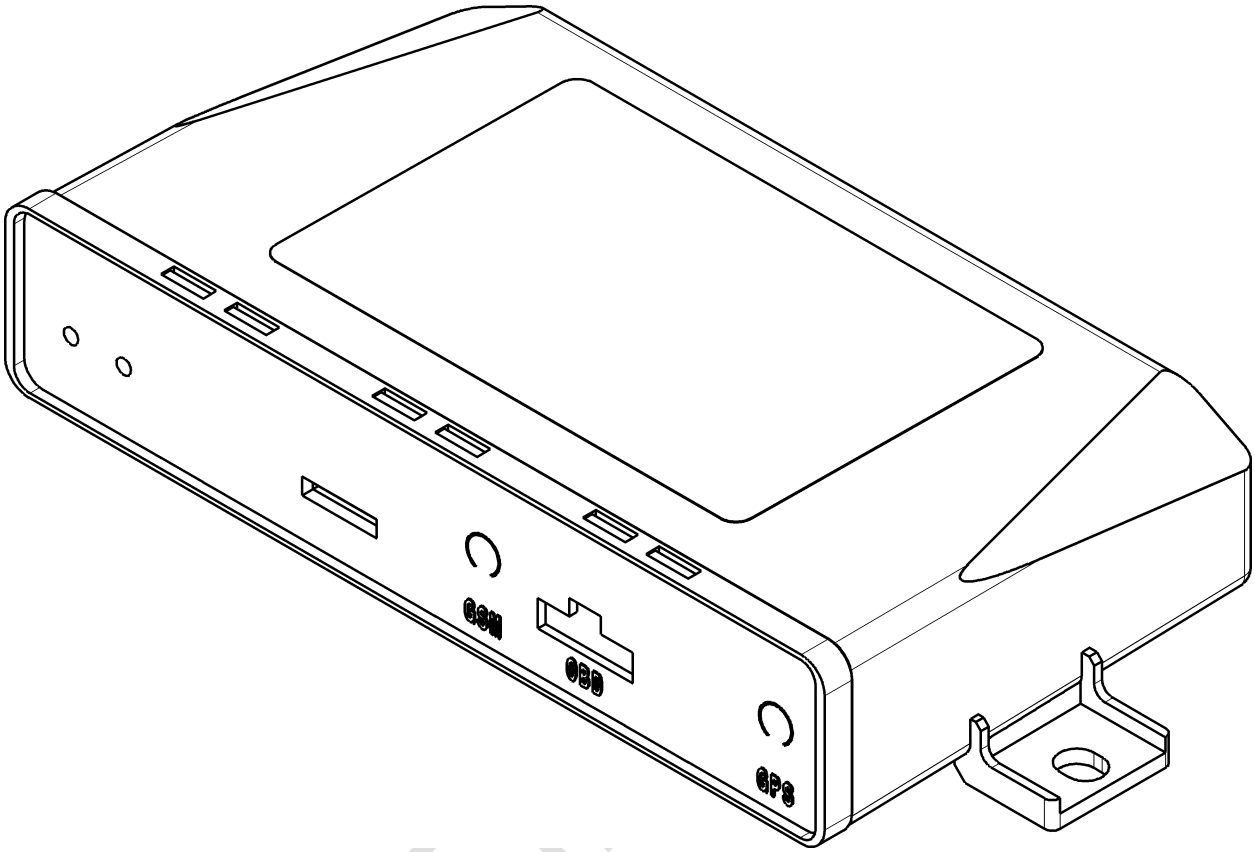
Nominal current in RUN mode (GSM Module is sending): ca. 0.5 A

Dimensions: 155.4 x 85.2 x 34.8 mm (LxWxH)



Current Label 60 mm x 90 mm





2 Description of Variants

It will be checked the HUF Part Number H000001. The Part Number is shown on the label as follows Hxxxxxx.

The tested part number is the fully populated variant of the hardware. It is possible to manufacture partly populated variants. These variants are marked with their own Huf part number.

3 Housing

Material: plastic PA6GF30

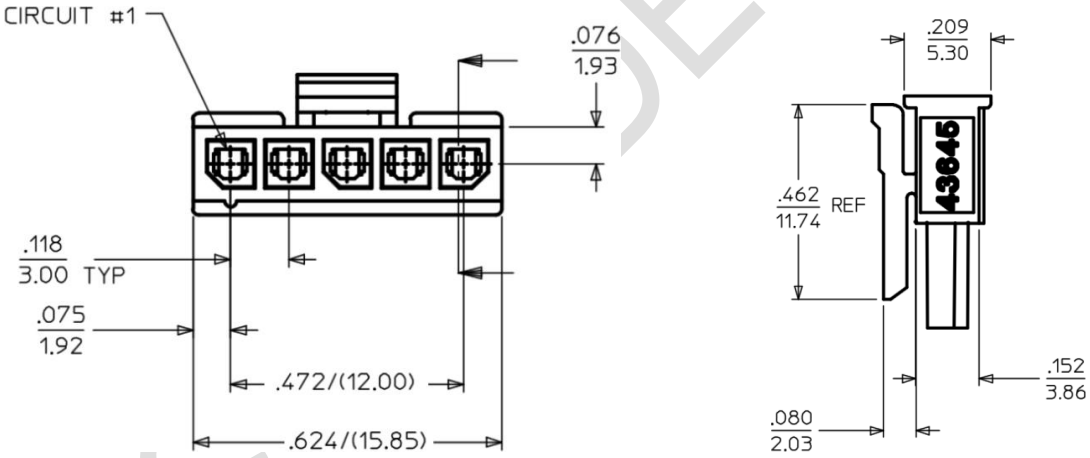
4 Assembly Instructions

The housing has 2 eyes on two sides of the box. The ECU will be mounted into vehicle interior.

Mounting into the car will be made by an authorized garage.

5 Connector

The connector is a 5 pin TE Connectivity of the MICRO MATE N- LOK™ series with the manufacturer part number 1445054-5.



The cable length is 1.8 m. It is planned to use the 24AWG PLTD PVC WH OD1.16 UL1061 type as wire. The wiring harness is completely coated with a hose.

Pin Assignment:

Pin-No.	Function	Description
1	Supply (GND) clamp 31	Supply (GND)
2	CAN-H	CAN (twisted with pin 2)
3	CAN-L	CAN (twisted with pin 3)
4	Ignition clamp 15	Ignition
5	Supply (Ubat) clamp 30	Supply (Ubat)

Declaration of Conformity, Product Label, Compliance Statements

Radio equipment authorization to FCC in USA

FCC ID: YGOTUGEN2

According to 47 CFR 15.19 (labeling requirements) the car manufacturer will print the following text in the appropriate User's Manual of the car:

> 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 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.
>
> 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.
>
> Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.
>
> This device complies with FCC and Industry Canada RF radiation exposure limits set forth for general population (uncontrolled exposure). This device must not be collocated or operating in conjunction with any other antenna or transmitter.

Radio euipment authorization to RSS-210 in Canada

IC ID: 4008C-TUGEN2

According to RSS-210 (labeling requirements) the car manufacturer will print the following text in the appropriate User's Manual of the car:

> This device complies with Industry Canada licence-exempt RSS standard(s). 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.
>
> Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
> (1) l'appareil ne doit pas produire de brouillage, et
> (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, mêmesi le brouillage est susceptible d'en compromettre le fonctionnement.
>
> Usually this is followed by the following RSS caution:
> Any changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

Location of product label