



## DATASHEET

# Telematics Connect Hub

## iW-RainboW-G62H

The Telematics Connect Hub is a powerful compact device that supports 2 CAN-FD ports, an integrated hardware secure element, LTE Cat-1 bis cellular connectivity and Bluetooth Connectivity. The hub is an ideal solution for electric vehicles, 2 Wheelers, racing motorbikes, passenger cars and industrial machinery, enabling next generation telematics and edge intelligence.

### Software flexibility and Security

Powered by a powerful processor, The Telematics Connect is equipped with Linux 6.1.28 BSP and APIs available for the various peripherals, sensors and connectivity modems. The software provides consumers the flexibility to build their custom application and integrate with various cloud and analytics platforms.

Functions such as power management, network management, Data Routing, OTA and custom algorithms can be easily integrated by customers.



### Key Features

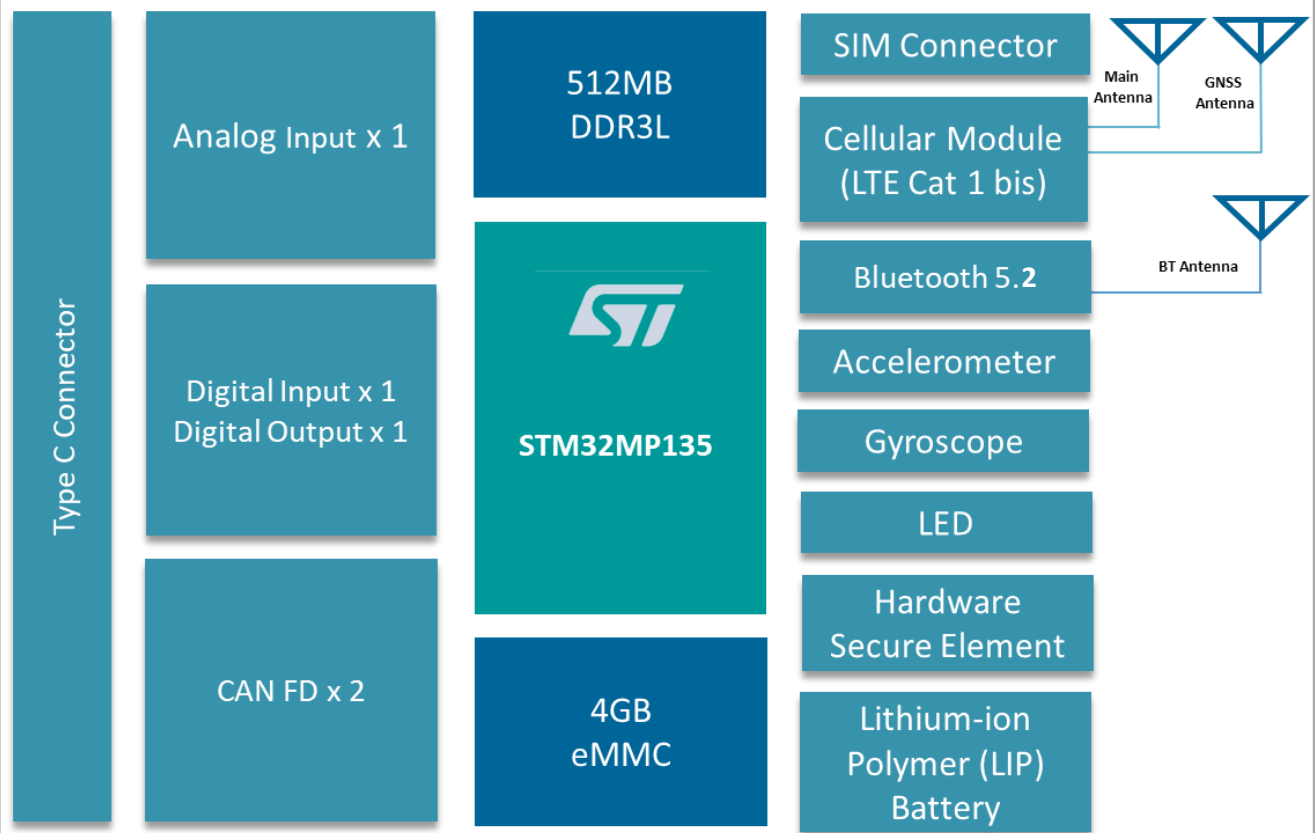
- Arm Cortex A7 Core MPU
- 2 CAN-FD Ports
- Integrated Hardware Secure Element
- LTE Cat-1 bis and BT
- GNSS, Accelerometer and Gyroscope
- Linux 6.1.28 BSP and peripheral API
- IP67 Protection Class with internal antennas
- Compact and Miniaturized Solution

### Cost Effective, Compact and Rugged

The Connect Hub is a powerful and cost-optimized solution for new generation telematics requirements in 2 wheelers and electric vehicles. The compact IP67 solution provides the required ruggedness for installation in varying environments and vehicle architectures.

The Connect Hub enables applications such as fleet management, predictive maintenance, EV intelligence, battery management; all enabling an intelligent connected platform.

**Functional Block Diagram**



**Note:** Standard delivery varies with respect to the few sections of this block diagram, depending on the ordered configuration

Ordering Part Numbers	
Part number	Description
iW-G62HTB-512-04G-EIX-XX-11-IM-LI1BXX	Telematics Connect Hub (Internal Antenna) EMEA_Standard Config
iW-G62HTB-512-04G-EIB-SX-12-IM-LI1BXX	Telematics Connect Hub (Internal Antenna) EMEA_Full Config
iW-G62HTB-512-04G-NIX-XX-11-IM-LI1BXX	Telematics Connect Hub (Internal Antenna) NA_Standard Config
iW-G62HTB-512-04G-NIB-SX-12-IM-LI1BXX	Telematics Connect Hub (Internal Antenna) NA_Full Config

**Note:**

- In production, The Telematics Connect Hub can be configured as per the required features
- For more details on the configurations, please contact iWave sales team at [mktg@iwavesystems.com](mailto:mktg@iwavesystems.com)

## Processor Core and Storage

CPU	STM32MP135 Arm® Cortex®-A7 Micro-Processor
RAM	512MB DDR3L (Expandable Up to 1GB)
FLASH	4GB eMMC Flash ( Expandable Up to 16GB )

## Wireless Connectivity

Cellular Connectivity	LTE Cat 1 LTE-FDD B1/2/3/4/5/7/8/12/13/18/19/20/25/26/28/66 LTE-TDD B34/38/39/40/41
Bluetooth	BT v5.2 BR/EDR/LE

## Interfaces and Peripherals

CAN FD	2 Ports
	Data rate up to 5Mbps
	Identifier Support: 11 and 29 bit
	Classic CAN backwards compatible
Digital Inputs	1 Port (Max 32V)
Digital Outputs	1 Port (5V- 24V, Sink Current: 200mA)
Analog Input	1 Port (0-32V)
Ignition Input	1 Port

## Security

Security Module <sup>1</sup>	Integrated Hardware Secure Element Crypto-Automotive Security IC Microchip TA100
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## Connector

Connector	USB – C
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## SIM Provision

SIM connector	Micro SIM Connector eSIM <sup>1</sup>
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## Power Characteristics

Power Input	9 - 32V
Power Consumption	Current consumption at normal mode: 250mA at 12V
Power saving modes	Stand-by Mode: 10mA Power down mode <sup>1</sup> : <1mA

## Positioning

GNSS	GPS/GLONASS/BeiDou/Galileo
Receiving Channel <sup>2</sup>	72 Channel
Time to update position <sup>2</sup>	1s
Receiver sensitivity <sup>2</sup>	Acquisition: –145 dBm
	Re-Acquisition: –160 dBm
	Tracking: –159 dBm
Time to First Fix <sup>2</sup>	Cold starts: 28s
	Hot starts: 4s
	Warm starts: 28s

## Sensors

Accelerometer	Function: 3 Axis
	Sensitivity Range: ±2/ ±4/ ±8/ ±16 g full scale
Gyroscope	Function: 3 Axis
	Sensitivity Range: ±125/±250/±500/±1000/±2000 dps

## Environmental Conditions

Operating Temperature	-40°C to +70°C <sup>3</sup>
Storage Temperature	-40°C to +85°C <sup>3</sup>

<sup>1</sup> Optional features: For more information please contact iWave sales team at [mktg@iwavesystems.com](mailto:mktg@iwavesystems.com)<sup>2</sup> Above table gives information about satellite positioning as per the module specification<sup>3</sup> Temperature range subject to use case and operational functionality

## Telematics Connect Hub

## Internal Battery

Capacity	Lithium-ion Polymer (LIP) 230mAh
Temperature Support	Battery when discharging: -20°C to +60°C Battery when charging: 0°C to 50°C
Certification	Certified with UN38.3 and IEC 62133-2

## Antenna

Internal Antenna	LTE, GNSS, Bluetooth
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## LED

LED 1	Red: Power
LED 2	Green: Status Indication

## Software Specifications

Board support package (BSP)	Linux version: 6.1.28
API Support	<ul style="list-style-type: none"><li>• Sensors / Cellular Connectivity / Bluetooth</li><li>• Interface peripherals: CAN Data</li><li>• Wake-Up based on Ignition / CAN / Accelerometer</li><li>• LED</li></ul>
Time Synchronization	GNSS and NTP
Wake-Up Modes	Ignition, Accelerometer
Power-Saving Modes	Stand-By Mode / Power-down mode <sup>1</sup>
CAN Protocol <sup>1</sup>	Socket CAN, ISO 15765-4, CANopen, J1939, UDSonCAN
Security <sup>1</sup>	Secure boot, Secure storage
Software Modules <sup>1</sup>	<ul style="list-style-type: none"><li>• OTA Update</li><li>• Power Management</li><li>• Data collection application on the device</li><li>• Cloud Platform SDK Integration</li></ul>

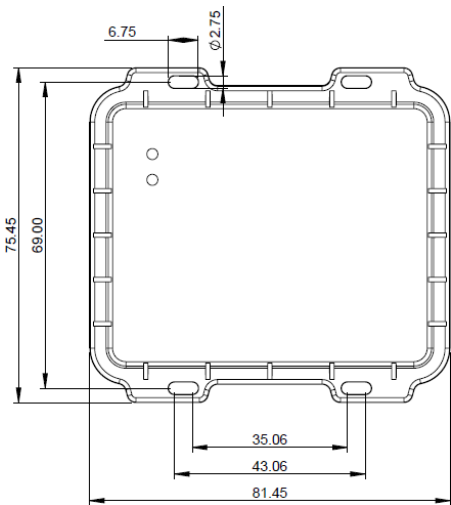
<sup>1</sup> Optional features: For more information please contact iWave sales team at [mktg@iwavesystems.com](mailto:mktg@iwavesystems.com)<sup>2</sup> Varies depending on ordering Configuration

Connector Specifications			
Description	Connector on Device : Type C Connector		
Connector Pinout	Pin No	Signal Name	Description
	A1,A12,B1,B12	OBD_GND	Ground
	A2,B2	FD_CAN1_H	Flexible Data rate CAN1 High
	A3,B3	FD_CAN1_L	Flexible Data rate CAN1 Low
	A4,A9,B4,B9	VCC_OBD_IN	Power Input (12V Typical)
	A5,B5	IGN_DET	Ignition Detection Input
	A6,B6	FD_CAN2_H/USB_A_D_P <sup>1</sup>	Flexible Data rate CAN2 High/USB D+ <sup>1</sup>
	A7,B7	FD_CAN2_L/USB_A_D_N <sup>1</sup>	Flexible Data rate CAN2 Low/USB D- <sup>1</sup>
	A8,B8	AIN1/USB_5V <sup>1</sup> /VCC_3V3 <sup>1</sup> / DOUT2 <sup>1</sup>	Analog Input 1/USB Power <sup>1</sup> /3.3V Power out <sup>1</sup> /Digital Output 2 <sup>1</sup>
	A10,B10	DIN1/UART_CON_RX <sup>1</sup>	Digital Input 1/Debug UART RX <sup>1</sup>
	A11,B11	DOUT1/UART_CON_TX <sup>1</sup>	Digital Output 1/Debug UART TX <sup>1</sup>

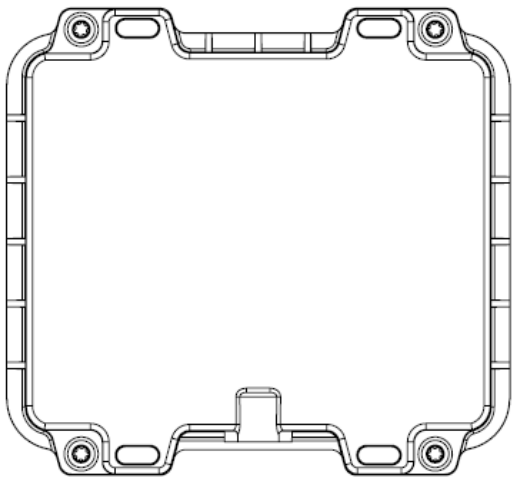
<sup>1</sup> Marked one are optional features, in standard delivery these features are not supported by default.

Mechanical	
Dimensions (H x W x D)	82 x 76 x 19.3 mm
Enclosure Material	Polycarbonate
Manufacturing Process	Injection Molding
Assembly Type	Screw Type
Colour of Enclosure	Black
Enclosure Surface Finish	VDI-36
Protection Class	IP67
Mounting Options	Screw and Cable
Number of Enclosure Parts	3
Enclosure Certification	UL 94 V0

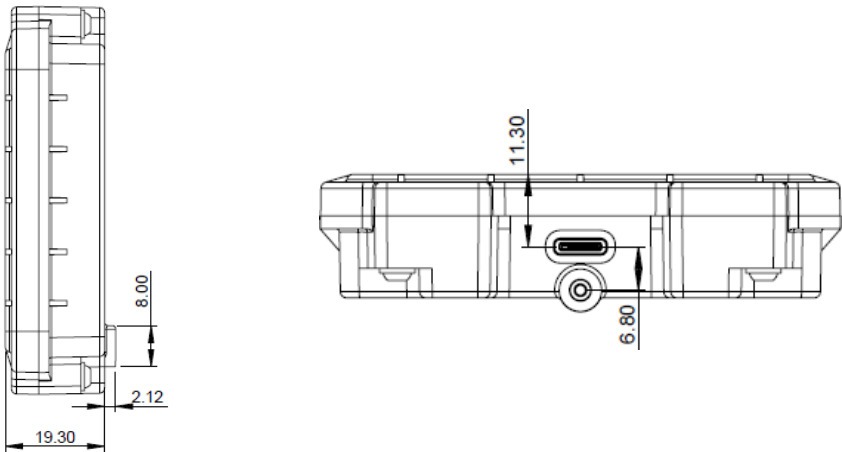
**Top View**



**Bottom View**



**Side View & Front View**



Related Products



Telematics Control Unit

Telematics Control Unit is built to power your connected mobility and telematics applications across a range of connected vehicles. It is integrated with multiple CAN ports, a wide range of protocol support and a multitude of wireless connectivity options.



Telematics Gateway

The i.MX 8XLite powered Telematics Gateway is built with extensive interfaces: 4 CAN Interfaces, RS232, RS485, Analog Inputs and Digital Inputs. With the support for multiple protocols and powerful edge firmware, the gateway is suitable for wide range of applications.



Rugged Telematics Device

The Rugged Telematics Device with IP67 protection class is integrated with 3 CAN Ports, RS232 and RS485 Ports, with various wireless connectivity options such as 4G, Wi-Fi and Bluetooth. Rugged device is built to track your vehicles even in tough conditions.



V2X Connectivity Hub

Integrated with C-V2X and DSRC technologies, the hybrid V2X Connectivity Hub provides as a scalable and modular platform. Designed to serve a plethora of V2X Applications, the V2X Gateway can be positioned as an On-Board Unit (OBU) or as a Road-Side Unit (RSU).

Document Revision History

Document Number	iW-PRGTT-DS-01-REL1.1	
Release	Date	Description
1.0	18 <sup>th</sup> Oct, 2023	Initial Release
1.1	9 <sup>th</sup> Feb, 2024	Block Diagram, Part number, Mechanical Features, Connector Pinouts are updated

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