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.
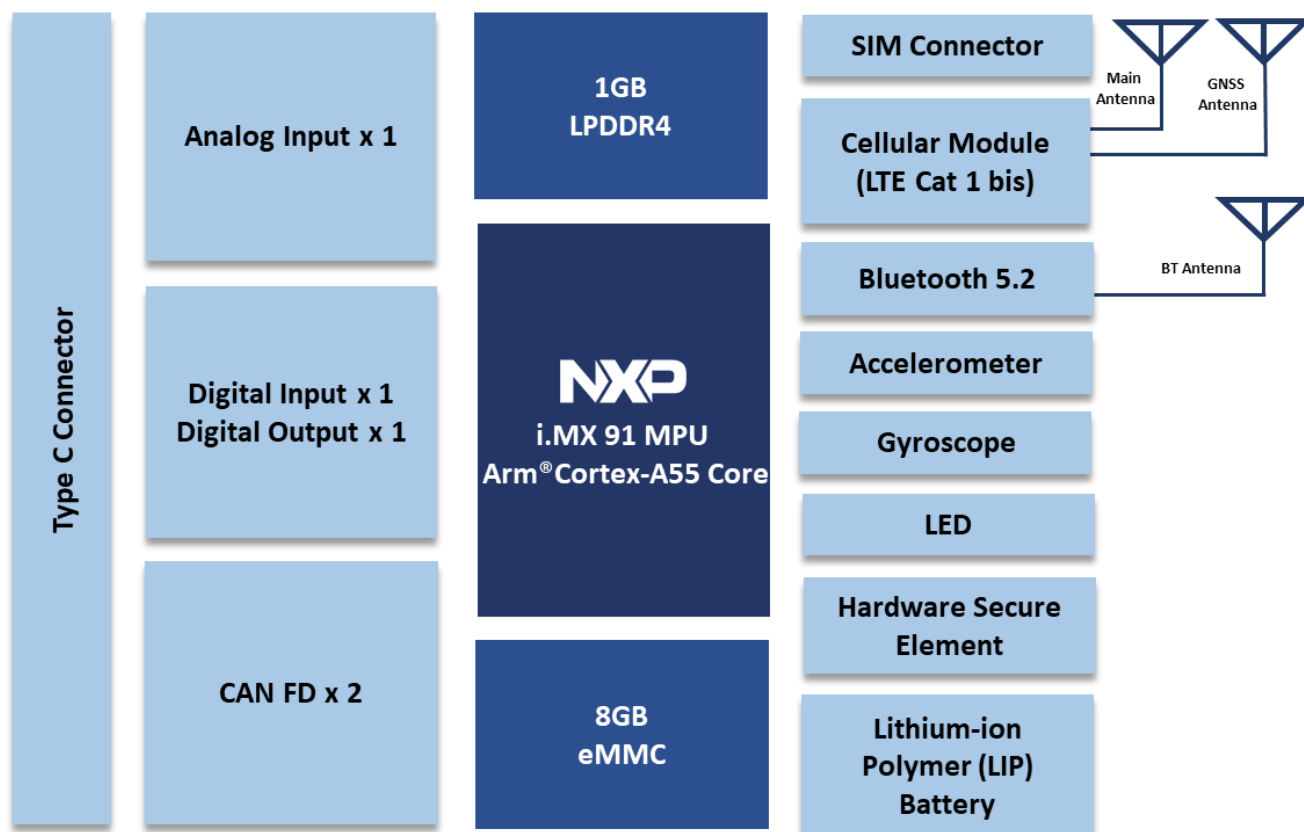
Key Features

- NXP i.MX 91 Micro-Processor (Cortex A55)
- 2 CAN-FD Ports
- Integrated Hardware Secure Element
- LTE Cat-1 bis and Bluetooth 5.2 Connectivity
- GNSS, Accelerometer and Gyroscope
- Linux 6.6.52 BSP and peripheral API
- IP67 Protection Class with internal antennas
- Compact and Miniaturized Solution

Software flexibility and Security

Powered by a powerful processor, The Telematics Connect is equipped with Linux 6.6.52 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.

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.

Telematics Connect Hub

Functional Block Diagram

Analog Input x 1

Digital Input x 1
Digital Output x 1

CAN FD x 2

Type C Connector

1GB LPDDR4

NXP
i.MX 91 MPU
Arm®Cortex-A55 Core

8GB eMMC

SIM Connector

Cellular Module (LTE Cat 1 bis)

Bluetooth 5.2

Accelerometer

Gyroscope

LED

Hardware Secure Element

Lithium-ion Polymer (LIP) Battery

Main Antenna

GNSS Antenna

BT Antenna

Note: Depending on the ordering part number, supported features vary

Ordering Part Numbers

Part number	Description
iW-G62HTC-01G-08G-EIM-SX-13-IM-LI1CXX-D	Telematics Connect Hub Evaluation Kit (CAN-FD, Cat-1 bis Connectivity – EMEA / APAC, Bluetooth, Secure Element)
iW-G62HTC-01G-08G-NIM-SX-13-IM-LI1CXX-D	Telematics Connect Hub Evaluation Kit (CAN-FD, Cat-1 bis Connectivity – NA / Canada, Bluetooth, Secure Element)
iW-G62HTC-01G-08G-EIM-SX-13-IM-LI1CXX	Telematics Connect Hub (CAN-FD, Cat-1 bis Connectivity – EMEA / APAC, Bluetooth, Secure Element)
iW-G62HTC-01G-08G-NIM-SX-13-IM-LI1CXX	Telematics Connect Hub (CAN-FD, Cat-1 bis Connectivity – NA / Canada, Bluetooth, Secure Element)
iW-G62HTC-01G-08G-NIX-XX-13-IM-LI1CXX	Telematics Connect Hub (CAN-FD, Cat-1 bis Connectivity – NA, Debug Serial UART)
iW-G62HTC-01G-08G-EIX-XX-13-IM-LI1CXX	Telematics Connect Hub (CAN-FD, Cat-1 bis Connectivity – EMEA / APAC, Debug Serial UART)

Note:

- *Product Features and configuration may vary depending on the ordering part number*

- *For more details on the configurations, please contact iWave sales team at mktg@iwave-global.com*

Telematics Connect Hub

Processor Core and Storage

CPU	NXP i.MX 91 Micro-Processor Arm® Cortex®-A55 Core
RAM	1GB LPDDR (Expandable Up to 2GB)
FLASH	8GB eMMC Flash

Wireless Connectivity

Cellular Connectivity	**LTE Cat 1 bis (EMEA / APAC / Latin America)** LTE-FDD : B1/2/3/4/5/7/8/12/13/17/18/19/20/25/26/28/ 66 LTE-TDD : B34/38/39/40/41 GSM : B2/3/5/8 **LTE Cat 1 bis (NA / CANADA)** LTE-FDD: B2/4/5/12/13/66
Bluetooth	Bluetooth v5.0 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
Ignition Input	1 Port
Digital Inputs	1 Port (Max 32V) [1]
Digital Outputs	1 Port (5V- 24V, Sink Current: 200mA) [1]
Analog Input	1 Port (0-32V) [1]

Positioning

	EMEA APAC	NA / CANADA
GNSS	GPS/GLONASS/BeiDou/Galileo	
Receiver sensitivity[2]	Acquisition: −145 dBm	Acquisition: −145 dBm
	Re-Acquisition: −160 dBm	Re-Acquisition: −157 dBm
	Tracking: −159 dBm	Tracking: −160 dBm
Time to First Fix[2]	Cold start: 28s	Cold start: 27.43s
	Hot start: 4s	Hot start: 2.56s
	Warm start: 28s	Warm start: 27.37s

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	

Antenna

Internal Antenna Connectors	LTE, GNSS, Bluetooth

Security

Security Module	Integrated Hardware Secure Element Crypto-Automotive Security IC Microchip TA100

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 : ≤2.2mA

Internal Battery

Capacity	800mAh Lithium-ion Polymer (LIP)
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

Environmental Conditions

Temperature Range	Operating Temperature: -40°C to +70°C [3] Storage Temperature: -40°C to +85°C [3]

SIM Provision

SIM connector	Micro SIM Connector eSIM[1]

LED

LED 1	Red: Power
LED 2	Green: Software configurable

[1] Product features may vary based on ordering part number, please contact iWave sales team at mktg@iwave-global.com

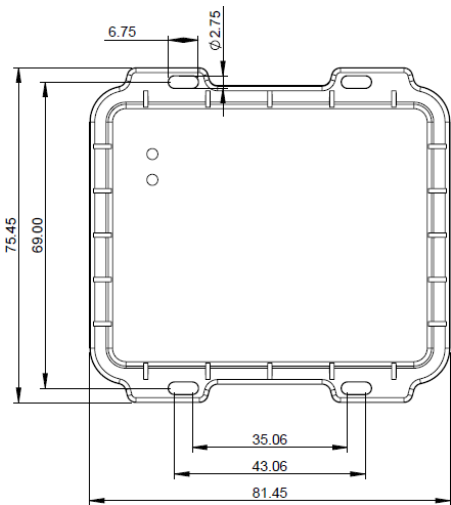[2] Above table gives information about satellite positioning as per the module specification

[3] Temperature range subject to use case and operational functionality

Software Specifications

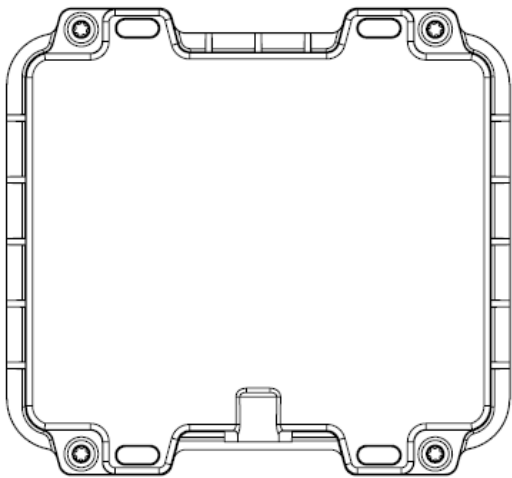|	
Board support package (BSP)	Linux version: 6.6.52
API Support	• Sensors / Cellular Connectivity / Bluetooth[1] • Interface peripherals: CAN Data • Wake-Up based on Ignition / Accelerometer • LED
Time Synchronization	GNSS and NTP
Power Saving and Wake-Up Modes	• Stand-By Mode; Wake-Up Sources: Ignition / CAN / Timer / Accelerometer/ RTC[1] • Deep Power Down Mode[1]; Wake-Up Sources: Ignition / Accelerometer/ RTC
CAN Protocol[1]	Socket CAN, ISO 15765-4, CANopen, J1939, UDSonCAN
Security[1]	Secure boot, Secure storage, Filesystem Encryption and Decryption, OS Hardening
Software Modules[1]	• OTA Update • Power Management • Data collection application on the device • Cloud Platform SDK Integration

[1] *Optional features: For more information please contact iWave sales team at* mktg@iwave-global.com

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
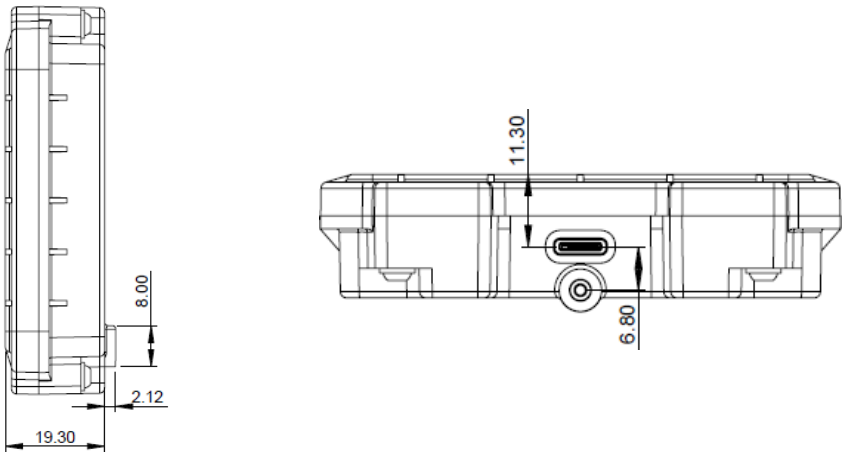
Compliance Test Standards and Certifications*	
Test Cases	**Standards**
Regulatory Test	
FCC	47 CFR Part 15 Subpart B ANSI C63.4-2014 47 CFR Part 2 47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E 47 CFR Part 27 ANSI C63.4-2014 KDB 971168 D01 v03 47 CFR Part 15 Subpart C ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02 47 CFR Part 2.1091 KDB 447498 D04 v01
ISED	ICES-003 RSS-133 RSS-Gen RSS-139 RSS-130 RSS-247 RSS-132 RSS-102
Electrical Test	
Direct current supply voltage	ISO 16750-2
Overvoltage	ISO 16750-2
Reverse voltage	ISO 16750-2
Short circuit protection	ISO 16750-2
Pulse 1	ISO 7637-2
Pulse 2a	ISO 7637-2
Pulse 3a	ISO 7637-2
Pulse 3b	ISO 7637-2
Pulse 4	ISO 16750-2
Pulse 5b	ISO 16750-2
Jump start	ISO 16750-2
Momentary Drop in Supply Voltage	ISO 16750-2
Mechanical Test	
Mechanical shock	IEC 60068-2
Random Vibration Test	IEC 60068-2-64
Sinusoidal vibration Test	IEC 60068-2-6
Environmental Test	
Ingress Protection test	ISO 20653
Humidity test	ISO 16750-4
Temperature Storage test	ISO 16750-4
High temperature operating	ISO 16750-4
Low temperature operating	ISO 16750-4
Temperature Cyclic	ISO 16750-4
Immunity and Emission Test	
Radiated Emission test	ISO 13766-1
Radiated Immunity (BCI)	ISO 11452-4
Radiated Immunity (ALSE)	ISO 11452-2
Conducted Emissions (CE Test)	CISPR 25

Connector Specifications

Description	Connector on Device : Type C Connector (Part Number: DX07WH24JA3R1200 or Equivalent)		
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	Flexible Data rate CAN2 High
	A7,B7	FD_CAN2_L	Flexible Data rate CAN2 Low
	A8,B8	AIN1*/VCC_3V3	Analog Input 1*/3V3 debug UART power
	A10,B10	DIN1*/UART_CON_RX	Digital Input 1*/Debug UART RX
	A11,B11	DOUT1*/UART_CON_TX	Digital Output 1*/Debug UART TX

Note: VCC_3V3 power output is to be used only for debug UART purpose and not to be used for other applications

Depending on the ordering part number, supported features & pinouts would vary

Related Products

Telematics EdgePrime

Telematics EdgePrime, powered by the i.MX 93 processor, features 4 CAN-FD ports, automotive Ethernet, LTE Cat-4, Wi-Fi, and Bluetooth. Its IP67 enclosure supports external antennas for rugged use. The device includes a secure element, onboard RTC, lithium-polymer battery, and super capacitor support for reliable power backup.

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-REL1.4	

Release	Date	Description
1.0	18th Oct, 2023	Initial Release
1.1	9th Feb, 2024	Updated Block Diagram, Part number, Mechanical Features, Connector Pinouts
1.2	30th July, 2024	Updated Product part number, Battery Capacity, Positioning and wakeup modes
1.3	6th Feb, 2025	Updated Product part number, Processor, block diagram, Connector specifications
1.4	4th July, 2025	Updated Product part number and Certification Details

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Beyond our robust product ecosystem, we provide comprehensive ODM support with specialized custom design and manufacturing capabilities, enabling customers to accelerate and optimize their product development roadmaps. With a strategic focus on industrial, automotive, medical, and avionics markets, we deliver innovative technology solutions to global clients.

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