



DATASHEET

Telematics EdgePrime

iG-RainboW-G76P



The Telematics EdgePrime, powered by the i.MX 93 processor, features 4 CAN-FD ports, an automotive Ethernet interface, and a wide range of wireless connectivity options including LTE Cat-4, Wi-Fi, and Bluetooth. Housed in an IP67-rated enclosure, the device is designed for rugged environments and includes provisions for external antennas. To ensure robust security, it integrates a hardware secure element, along with an onboard RTC, a rechargeable lithium-polymer battery, and support for a super capacitor for power backup.

Software flexibility and Security

Powered by the high-performance i.MX 93 processor featuring an Arm Cortex-A55 core, the solution is supported by a robust Linux BSP with available APIs for peripherals, sensors, and connectivity modems. The BSP offers developers complete flexibility to build custom applications and seamlessly integrate with various cloud platforms and analytics solutions. It also supports advanced features such as power management, network management, data routing, and over-the-air (OTA) updates.

Key Features

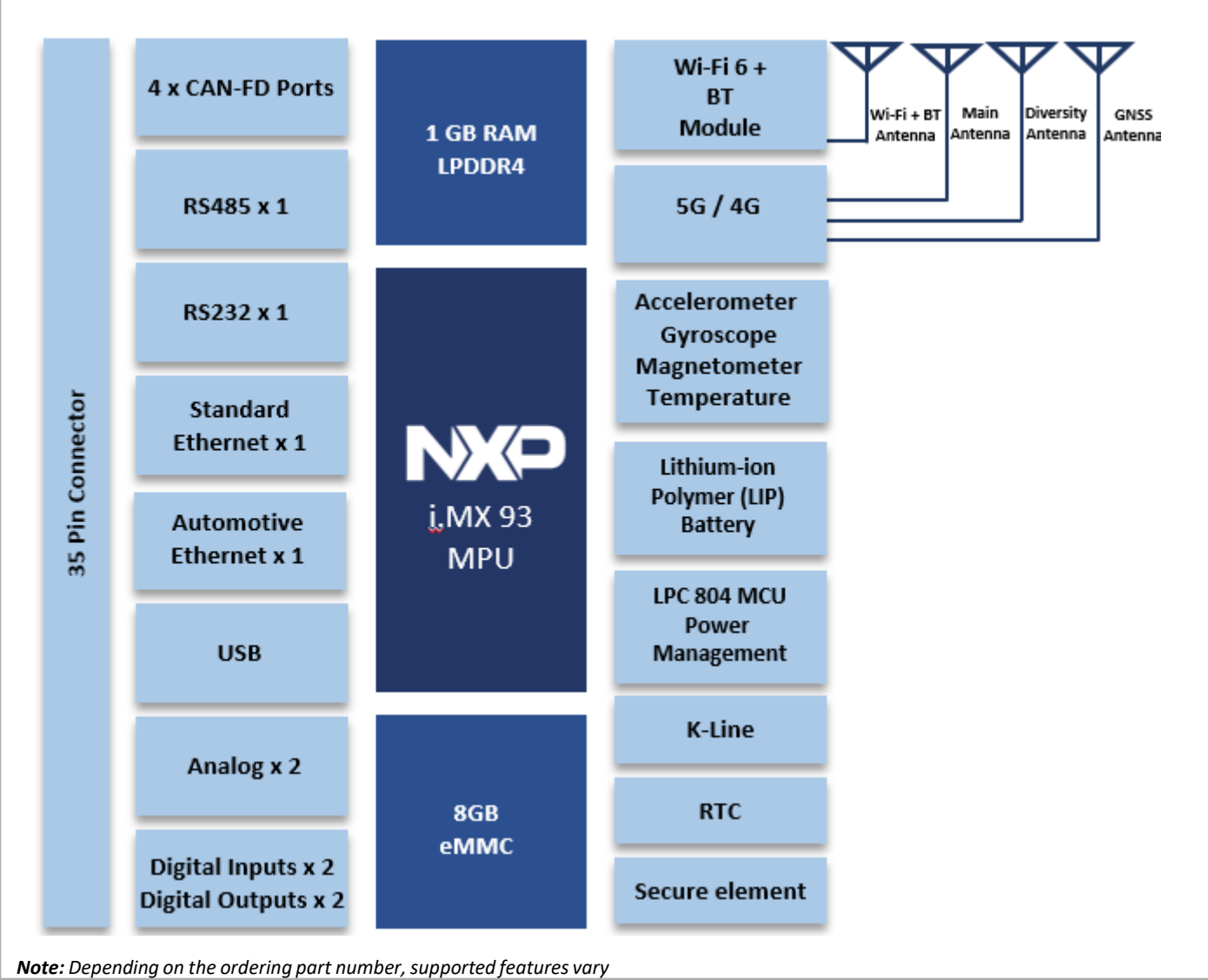
- NXP i.MX 93 Micro-Processor
- 4 CAN-FD Ports
- Automotive and Standard Ethernet Ports
- LTE Cat-4, Wi-Fi and Bluetooth Connectivity
- Integrated Hardware Secure Element
- GNSS, Accelerometer and Gyroscope
- Dedicated Real time clock
- External antennas
- IP67 Protection Class

Rugged, Secure and Powerful

The Telematics EdgePrime Solution is a high-performance platform equipped with a wide range of interfaces, including CAN-FD, standard and automotive Ethernet, as well as RS232 and RS485 ports. Housed in a compact IP67-rated enclosure, it is engineered to withstand harsh environments, making it ideal for deployment across diverse vehicle architectures.

This robust solution supports a variety of applications such as fleet management, off-highway telematics, EV intelligence, and predictive analytics.

Functional Block Diagram



Ordering Part Numbers – Standard SKU

Part number	Description
iG-G76PVA-01G-08G-WIW-SM-11-EM-LI1BXX-D	Telematics EdgePrime Development Kit (Global LTE Cat-4 Connectivity, Wi-Fi and Bluetooth, Secure Element)
iG-G76PVA-01G-08G-WIW-SM-11-EM-LI1BXX	Telematics EdgePrime (Global LTE Cat-4 Connectivity, Wi-Fi and Bluetooth, Secure Element)

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 EdgePrime

Processor Core and Storage

CPU	NXP i.MX 93 Micro-Processor 2 x Arm® Cortex®-A55 Cores
MCU	LPC 804 Micro-Controller Power Management Block
RAM	1GB LPDDR4X (Expandable Up to 2GB)
FLASH	8GB eMMC Flash (Expandable Up to 64GB)

Wireless Connectivity

Cellular Connectivity	Global LTE Cat -4 Connectivity 4G bands : B1, B2, B3, B4, B5, B7, B8, B8_US B9, B12, B13, B14, B18, B19, B20, B25, B26, B28. 3G bands: B1, B2, B4, B5, B6, B8, B19. 2G bands : B2, B3, B5, B8
5G ¹	Upgrade Option to 5G RedCap (3GPP R17)
Wi-Fi	802.11 a/b/g/n/ac/ax Client Mode and Hotspot Mode
Bluetooth	BT v5.3 BR/EDR/LE

Interfaces and Peripherals

CAN FD	4 Ports
	Data rate up to 5Mbps
	Identifier Support: 11 and 29 bit
	Classic CAN backwards compatible
Ethernet	100Mbps x 1 port (100BASE-TX)
Automotive Ethernet	100Mbps x 1 port (100BASE-T1)
Digital Inputs	2 Ports (Max 32V)
Digital Outputs	2 Ports (5V- 36V, Sink Current: 300mA)
Analog Input	2 Ports (0-32V)
Ignition Input	1 Port
RS232	1 Port
RS485 ¹	1 Port

Positioning

GNSS	GPS/GLONASS/BeiDou/Galileo
Receiver sensitivity ²	Cold Start Sensitivity : -145 dBm
	Tracking: -160dBm
Time to First Fix ²	Cold start: 29.94 s
	Hot start: 1.1s
	Warm start: 22.1s

Sensors

Accelerometer	Function: 3 Axis
	Sensitivity Range: $\pm 2/ \pm 4/ \pm 8/ \pm 16$ g full scale
Gyroscope	Function: 3 Axis
	Sensitivity Range: $\pm 125/ \pm 250/ \pm 500/ \pm 1000/ \pm 2000$ dps
Magnetometer	Function: 3 Axis
	Sensitivity Range: Up to ± 50 gauss magnetic dynamic range
Time Synchronization	Dedicated Real time clock. Through the internal Lithium Polymer Battery.

Antenna

External Antenna Connectors	SMA: 1 x LTE Primary, LTE Diversity, GNSS RP-SMA: 1 x Wi-Fi
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Security

Security Module	Integrated Hardware Secure Element Crypto-Automotive Security IC Microchip TA100
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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 Deep Power Down Mode : <1.5mA

SIM Provision

SIM Connector	Micro SIM Connector & eSIM
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¹ Product features may vary based on ordering part number, please contact iWave sales team at mkta@iwave-global.com

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

Internal Battery

Capacity	1500mAh Lithium-ion Polymer (LIP)
Temperature Support	Battery when discharging: -20°C to +60°C Battery when charging: 0°C to 50°C
Certification	UN38.3 Certificate ³ and IEC 62133-2 Certificate ³

Environmental Conditions

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

LED 1	Red: Power
LED 2	Green: Software configurable

Software Specifications

Board support package (BSP)	Linux version: 6.6.52
API Support	<ul style="list-style-type: none"> Sensors / Cellular Connectivity /Wi-Fi/Bluetooth Interface peripherals: CAN Data Wake-Up based on Ignition /CAN/ Accelerometer/RTC LED
Time Synchronization	GNSS and NTP
Wake-Up Modes	Ignition, CAN, Accelerometer, RTC
Power-Saving Modes	Stand-By Mode / Deep Power down mode
CAN Protocol ¹	Socket CAN, ISO 15765-4, CANopen, J1939, UDSONCAN
Security ¹	Secure boot, Secure storage
Software Modules ¹	<ul style="list-style-type: none"> OTA Update Power Management Data collection application on the device Cloud Platform SDK Integration

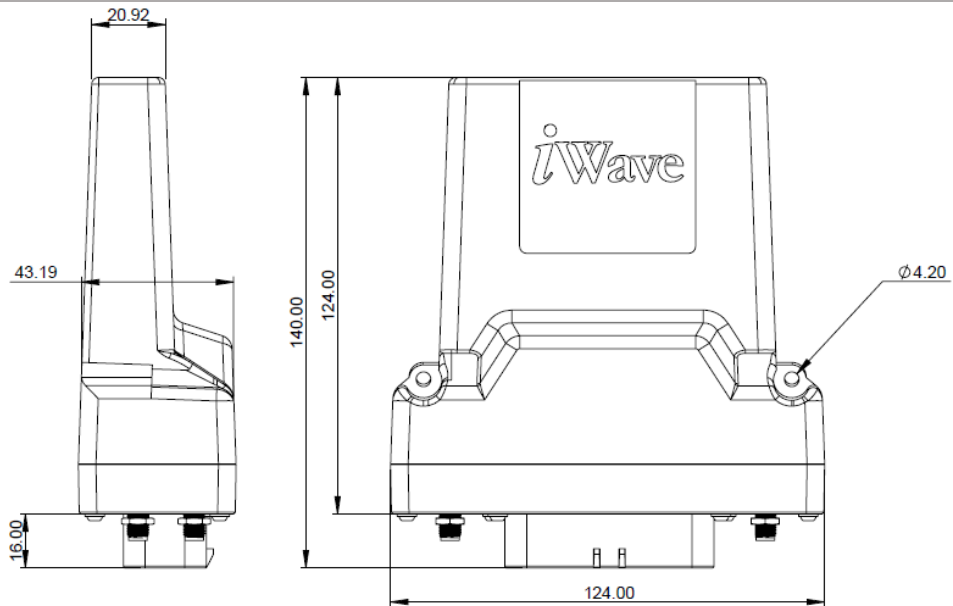
¹ Optional features: For more information please contact iWave sales team at mktg@iwave-global.com

³ Temperature range subject to use case and operational functionality

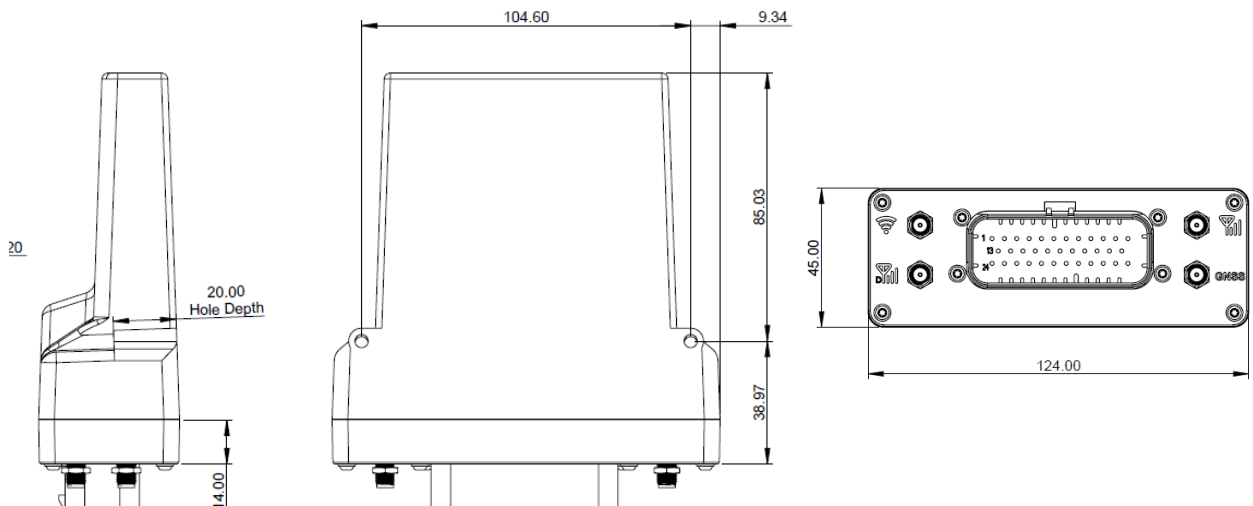
Mechanical

Dimensions (H x W x D)	140 x 124 x 45 mm
Enclosure Material	Bayblend FR3010
Manufacturing Process	Injection Moulding
Colour of Enclosure	Black (RAL 9005)
Enclosure Surface Finish	Textured Finish
Protection Class	IP67
Mounting Options	Panel mount
Number of Enclosure Parts	2
Enclosure Certification	Flammability rating, UL94-V0

Top View



Bottom View



Connector Specifications

Description			
Connector on Device: 35 Pin Ampseal Connector Tin Plated (Part Number: 776163-1) Mating Connector : 35 Pin Ampseal Connector Housing (Part Number: 776164-1)			
Connector Pinout	Pin No	Signal Name	Description
	1	ETH_MAG_A_RXP	Automotive ethernet positive
	2	ANALOG_IN1	Analog Input 1
	3	DIN2	Digital Input 2
	4	FD_CAN2_H	High Speed CAN2 High
	5	FD_CAN2_L	High Speed CAN2 Low
	6	FD_CAN1_H	Flexible Data Rate CAN High
	7	FD_CAN1_L	Flexible Data Rate CAN Low
	8	IGN_DET	Ignition Detection Input
	9	NC/Reserved	Reserved
	10	RS232_RXD1	RS232 RXD1
	11	ETH_MAG_RXP	Ethernet RXP
	12	ETH_MAG_RXM	Ethernet RXM
	13	ETH_MAG_A_RXM	Automotive ethernet negative
	14	USB_OTG_ID	USB_OTG_ID
	15	DOUT2	Digital Output 2
	16	DOUT1	Digital Output 1
	17	FD_CAN3_H	High Speed CAN1 High
	18	FD_CAN3_L	High Speed CAN1 Low
	19	Analog_IN2	Analog Input 2
	20	RS232_TXD1	RS232 TXD1
	21	NC/Reserved	Reserved
	22	ETH1_MAG_TXP	Ethernet TXP
	23	ETH1_MAG_TXM	Ethernet TXM
	24	MAIN_VCC_OBD_IN	Power Input (12V Typical)
	25	GND_OBD	Ground
	26	DIN1	Digital Input 1
	27	UART_CON_TX_3V3	Debug UART_TX
	28	UART_CON_RX_3V3	Debug UART_RX
	29	FD_CAN4_H	Reserved
	30	FD_CAN4_L	Reserved
	31	VCC_3V3	3.3V Power Out
	32	5V_USB	USB Power
	33	USB_OTG_D+_CONN	USB_OTG_D+
	34	USB_OTG_D-_CONN	USB_OTG_D-
	35	USB_GND	USB_GND
	<i>¹ Marked one are optional features which are not supported by the standard configuration .. For example, pin 3 is DIN2 / ETH_ACTIVATE¹, per standard delivery DIN2 is supported and ETH_ACTIVATE¹ is an optional feature. For optional features support, contact your representative at iWave.</i>		

Related Products



Telematics Connect Hub

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, enabling next generation telematics and edge intelligence.



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.

Document Revision History

Document Number	iG-PRGVT-DS-01-REL1.0	
Release	Date	Description
1.0	25 th July, 2025	Official Release

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