WIOT

Wiot AI Gateway

Model: WG2100LX2

The WIOT AI Gateway is a state-of-the-art intelligent vehicle tracking, monitoring and reporting device designed for managing vehicle fleets. Along with GPS, sensor management, and video surveillance capabilities, the gateway is also equipped with advanced edge processing (via a GPU) designed for artificial intelligence and machine learning.

All processing of vehicle inputs, data, including advanced machine learning, is done on the gateway in real-time, and valuable data and information is transmitted real-time via 4G to enterprise systems and applications for fleet administrators as well as written locally on the gateway storage.

KEY FEATURES

- Edge processing capabilities (e.g., artificial intelligence and machine learning) via on-board NVIDIA GPU

- Wireless Communication with Wifi/hotspot, GSM network, 3G/4G LTE and Bluetooth

- Communication Interfaces for HDMI, USB, RS485 and RS232

- Identity, attendance and gate management capabilities through on-board RFID and NFC reader

- High-precision location-based tracking with on-board GPS

- Video surveillance capabilities with on-board mobile network video recorder (MNVR)

- Wireless/Wired Sensor Management & Integration with on-board temperature/humidity, fire/smoke, door open/close,

- IR motion detection and vehicle sensors for Tire Pressure, Engine, AC, etc.

- On-Board Diagnostics (OBD) interface for general alerting, e.g., engine, battery, radiator, tire, air conditioning, etc.e.g., engine, battery, radiator, tire, air conditioning, etc.

USE CASES

Given the processing power and features of the WIOT AI Gateway, there are many potential real-life use cases that can easily be executed based on the on-board capabilities of the gateway.

GPU
- Automatic License Plate Recognition (ALPR) capability with Artificial Intelligence and Optical Character Recognition (OCR) features
- Driver Fatigue Detection
- Facial Recognition
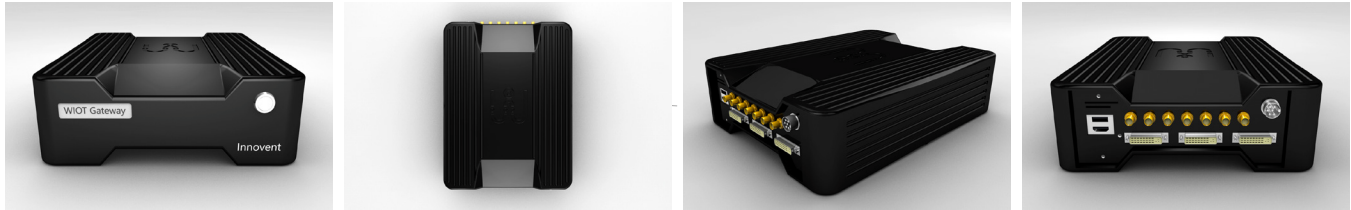- Smoking and Mobile Usage Detection
- ADAS

GPS and G-Sensor
- Driver behavior detection and alerts
- Geo-Fencing restrictions capability for vehicles

RFID/NFC
- Card or mobile phone-based attendance management and tracking

Mobile Network Video Recorder
- Vehicle surveillance and live video streams

SOFTWARE OVERVIEW

The WIOT AI Gateway is part of the larger WIOT Fleet Management Solution. The WIOT Fleet Management Solution is designed to handle large vehicle fleets from order fulfillment, to route scheduling, to dispatching drivers, and the way to fleet cost reduction.

Here is an overview of the key features of the Fleet Management Solution

• Real-time Dashboard of vehicles, including alerts and notification on individual vehicles

• Live and recorded video surveillance streaming

• Management of Vehicles, Drivers, and Stations/Depots

• Vehicle Route Planning and Optimization

• Vehicle Dispatching and Telematics

• Vehicle Service, Maintenance & Cost Reports

• Cost Optimization Plan

• Driver Behavior and Performance Reports

• Fleet Analytics Reporting Dashboard

For more information on how WIOT can help improve and manage your fleet, please contact:
sales@innoventintegrated.com

TECHNICAL SPECIFICATION

WIRELESS CONNECTIVITY	
WiFi	IEEE 802.11a/b/g/n/ac WLANs 2.4G /5G ITIR mode With support of 433Mbps PHY rate IEEE 802.11e QoS Enhancement(WLAN) LTE Band 28

433MHz	High sensitivity
	    116 dBm at 0.6 kBaud, 433 MHz,
	    1% packet error rate
	    112 dBm at 1.2 kBaud, 868 MHz,
	    1% packet error rate
	Low current consumption (14.7 mA in RX, 1.2 kBaud, 868 MHz)
	Programmable output power up to +12 dBm for all supported frequencies
	Excellent receiver selectivity and blocking Performance

4G Routing	GPRS: UL 85.6 kbit/s; DL 85.6 kbit/s EDGE: UL 236.8 kbit/s; DL 236.8 kbit/s WCDMA PS: UL 384 kbit/s; DL 384 kbit/s DC-HSPA+: UL 5.76 Mbit/s; DL 42 Mbit/s TD-HSPA: UL 2.2 Mbit/s; DL 2.8 Mbit/s TD-SCDMA PS: UL 384 kbit/s; DL 384 kbit/s LTE FDD: UL 50 Mbit/s; DL 150 Mbit/s @20M BW cat4 LTE TDD: UL 10 Mbit/s; DL 112 Mbit/s @20M BW cat4
Bluetooth	Bluetooth 4.0

SWITCHES / INTERFACES	
OFF/ON	Support
POE/LAN1	Ethernet interface 1X1000M
LAN2	Ethernet interface 10x100M
485	4 groups
SOS/MIC	Microphone and Speaker
PWR/ACC/OIL	PWR:DC9~36V ACC:DC9~36V OIL:2

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RFID	Worldwide 2.4GHz ISM band operation
	Up to 2 Mbps on-air data rate
	Ultra low power operation and advanced power arrangement
GSM	Support

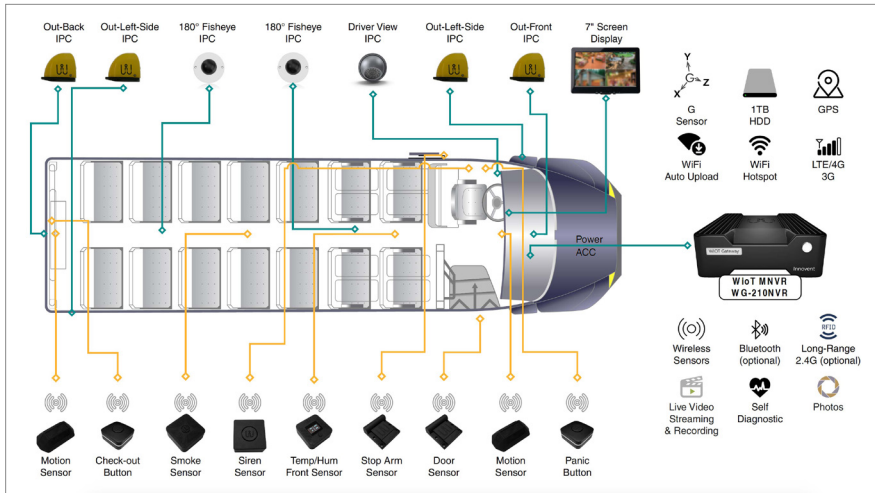| DATA INPUTS	
GPS	L1 C/A code, 167-channel Venus 8 engine
	GPS or GPS/Beidou or GPS/GLONASS, depending on model selection
	QZSS, WAAS, EGNOS, MSAS, GAGAN
I/O	Four groups

NETWORKING, HARDWARE & PERIPHERALS	
Networking	The RTL8382L-VB-CG is a new generation Gigabit switches supporting Energy Efficient Ethernet (EEE). It is a 26-port 10/100/1000M switch controller which has an 8-port 10/100/1000M Ethernet PHY Embedded.
Speaker	Support
Audio Subsystem	Support intercom
Video Resolution	1080p HD video
Video Compression Format	MPEG-4, H.264/H.265

CONNECTORS	
WiFi/BT antenna	2400MHZ-2500MHZ 50 ohm nominal

STORAGE, PROCESSOR & OPERATING SYSTEM	
Memory	8GB 128-bit LPDDR4 Memory
Storage	32GB eMMC 5.1
GPU	256-core NVIDIA Pascal™ GPU
CPU	Dual-Core NVIDIA Denver 2 64-Bit CPU Quad-Core ARM® Cortex®-A57 MPCore
Operating Systems	Linux

POWER SUPPLY	
Operating voltage	DC9~36V
Power rating	5W(Minimum)

ENCLOSURE	
Device dimension	246*190*65mm (No fixed feet included)
Shell material	Aluminium
Storage temperature	-25°C~105°C
Max. Humidity	5% ~ 95% (No frost)
Mini. Operating Temperature	-20°C
Max. Operating Temperature	85°C

DEPLOYMENT ILLUSTRATION

Sensors, Cameras, Display, and Cabling are not included with the WIOT AI Gateway.

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