Industrial IoT Gateway
IOT-GATE-iMX8

Datasheet v.1.3

IOT-GATE-iMX8 is a powerful Industrial IoT Gateway PC based on the NXP i.MX8M Mini processor designed for industrial control and monitoring.

Designed for reliability and with 24/7 operation in mind, IOT-GATE-iMX8 features extensive wireless and wired connectivity including LTE modem, WiFi 802.11ax, Bluetooth 5.1, 2x Ethernet, 3x USB2, RS485 / RS232, and CAN-FD. I/O options can also be expanded via Custom I/O boards - get in touch at info@andersdx.com to learn more.

This impressive Gateway PC has an extended temperature range of -40°C to 80°C and a wide input voltage range of 8V to 36V. It also features a fanless design in aluminum with rugged housing, and it supports DIN-rail and wall mounting, making it ideal for industrial and harsh environment.

Also available as a System-on-Module and Single Board Computer.

Key Features:

- NXP i.MX8M-Mini CPU, quad-core Cortex-A53
- Up-to 4GB RAM and 64GB eMMC
- LTE modem, WiFi 802.11ax, Bluetooth 5.1
- 2x Ethernet, 3x USB2, RS485 / RS232, CAN-FD
- Custom I/O expansion boards

IOT-GATE-iMX8

CPU Core, Memory and Network

Note:
- "Option" column specifies the configuration code required to have the particular feature.
- "+" means that the feature is always available

Feature	Specification	Option
CPU	NXP i.MX8M Mini, quad-core ARM Cortex-A53, 1.8GHz	+
Real-Time Coprocessor	ARM Cortex-M4	+
RAM	1GB – 4GB, LPDDR4	D
Primary Storage	4GB – 64GB eMMC flash, soldered on-board	NA
Secondary Storage	16GB - 64GB eMMC flash, optional module	NB
LAN	1000Mbps Ethernet port, RJ45 connector	+
	100Mbps Ethernet port, RJ45 connector	+
WiFi	802.11ax WiFi interface Intel WiFi 6 AX200 module	WB
Bluetooth	Bluetooth 5.1 BLE Intel WiFi 6 AX200 module	
Cellular	4G/LTE CAT1 cellular module, Simcom SIM7600G* * via mini-PCIe socket	JS7600G
	On-board micro-SIM card socket	+
GNSS	GPS / GLONASS Implemented with Simcom SIM7600G module	JS7600G

I/O

PCI Express	Primary mini-PCIe socket, full-size * used for WiFi/BT module when "WB" option is present	not WB
	Secondary mini-PCIe socket, USB only, full-size * used for cellular modem when "JS7600G" option is present	not JS7600G
USB	3x USB2.0 ports, type-A connectors	+
Debug	1x serial console via UART-to-USB bridge, micro-USB connector	+
Serial	1x RS485 (2-wire) / RS232 port, terminal-block	+
Interface Add-on	Up-to 2x CAN-FD / RS485 / RS232 ports Isolated, terminal-block connector	Fxx
	Up-to 2x analog 4–20mA input	
Digital I/O add-on	4x digital outputs + 4x digital inputs Compliant with EN 61131-2, isolated, terminal-block connector	FCDIO

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Feature	Specification	Option
PoE add-on	Additional 100Mbps Ethernet port with PoE capability (powered device) * Precludes all other add-on boards ** Mutually exclusive with one of USB2.0 ports	FPOE
Expansion Connector	Expansion connector for add-on boards 2x SPI, 2x UART, I2C, 12x GPIO	not Fxx

System

Security	Secure boot, implemented with i.MX8M Mini HAB module	+
	TPM 2.0, implemented with Infineon SLB9670	FATPM
RTC	Real time clock operated from on-board coin-cell battery	+

Electrical, Mechanical and Environmental Specifications

Supply Voltage	Unregulated 8V to 36V
Power Consuption	2W - 7W, depending on system load and configuration
Dimensions	112 x 84 x 25 mm
Enclosure Material	Aluminum housing
Cooling	Passive cooling, fanless design
Weight	450 gram
MTTF	> 200,000 hours
Operating temperature	Commercial: 0° to 60° C Extended: -20° to 60° C Industrial: -40° to 80° C.
Storage temperature	-40° to 85° C
Relative humidity	10% to 90% (operating) 05% to 95% (storage)

Software

BSP	Full Board Support Package and ready-to-run images
OS Support	Debian Linux, Yocto Project and U-Boot Support for Docker and Microsoft Azure IoT Support for OTA updates with Mender

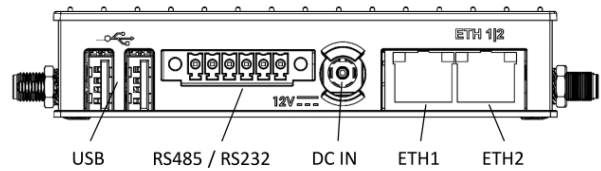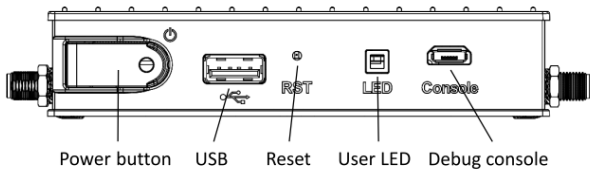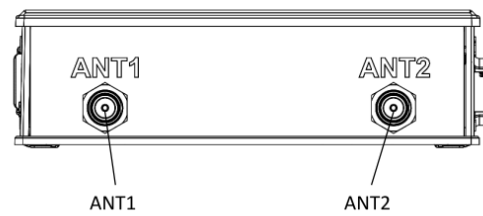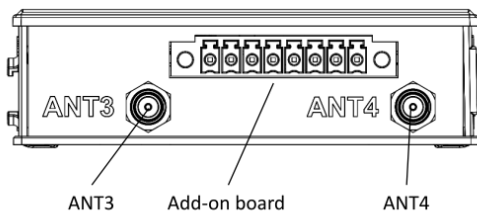# IOT-GATE-iMX8

Compliance

Regulatory	CE, FCC
EMC	EN 55032/5, EN 61000-6-2, EN 61000-6-3
Safety	EN/UL/IEC 62368-1
Cellular	PTCRB * with SIM7600A modem

IOT-GATE-iMX8

Front and Rear Panels

Power button   USB   Reset   User LED   Debug console

USB   RS485 / RS232   DC IN   ETH1   ETH2

Left and Right panels

ANT3   Add-on board   ANT4

ANT1   ANT2

Service bay

Add-on I/O board   Mini-PCIe socket #1   Mini-PCIe socket #2
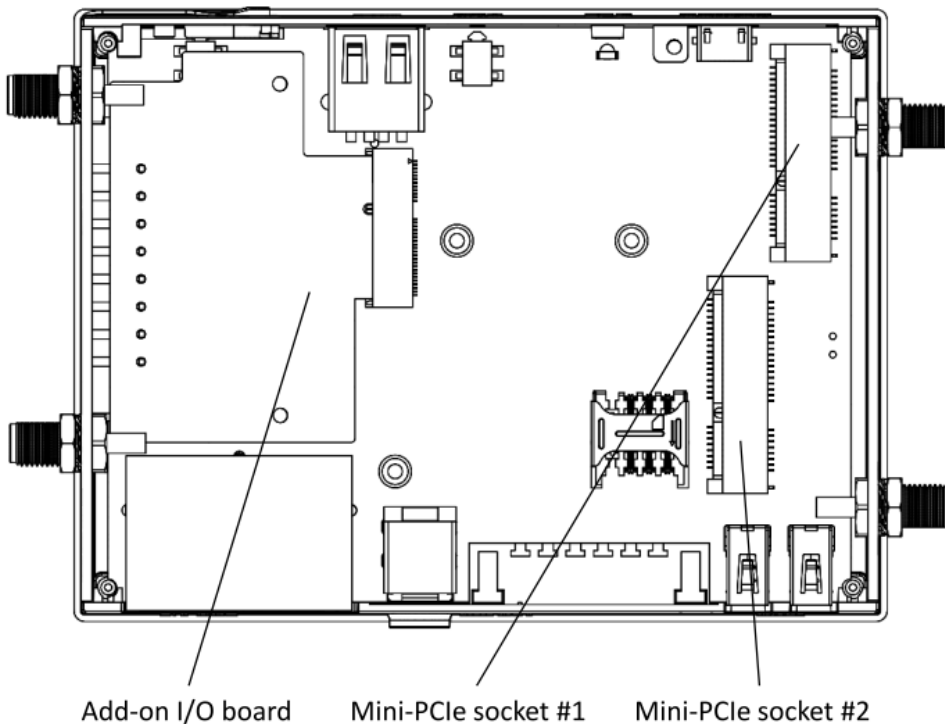
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IOT-GATE-iMX8 Add-on boards

IOT-GATE-iMX8 can be optionally assembled with the industrial I/O add-on board installed into the I/O expansion socket. The industrial I/O add-on features up-to three separate I/O modules (A, B and C) which allow to implement different combinations of isolated CAN, RS485, RS232, digital outputs and inputs. The following table shows the supported I/O combinations and ordering codes.

I/O Module	Function	Ordering Code
A	RS232	FARS2
	RS485	FARS4
	CAN-FD	FACAN
B (2nd port, in addition to A)	RS232	FBRS2
	RS485	FBRS4
	CAN-FD	FBCAN
C	4x DI + 4x DO	FCDIO

Examples of valid combinations:

- For 2x RS485 the ordering code will be IOTG-IMX8-…-FARS4-FBRS4-…
- For RS485 + CAN + 4xDI+4xDO the ordering code will be IOTG-IMX8-…-FARS4-FBCAN-FCDIO-…
- For only 4xDI+4xDO the ordering code will be IOTG-IMX8-…-FCDIO-…

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Mounting Options

Option	Description
	Wall / VESA mounting bracket A highly versatile bracket for mounting IOT-GATE-iMX8 on a surface
	DIN-rail mounting kit Snap-on DIN-rail mounting bracket for installing IOT-GATE-iMX8 in equipment racks and cabinets

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IOT-GATE-iMX8 Evaluation Kit

Hardware

- IOTG-IMX8-D4-NA32-WB-JS7600G-FARS4-FBCAN-PS-XL-TIC
- 2x WiFi antenna
- Cellular antenna
- IOTG-ACC-M2SD SD card adapter
- Extra RS232 add-on module
- Extra RS485 add-on module
- DC Y-cable
- USB cable
- DIN-rail mounting bracket
- Wall mounting bracket

Technical Support

- Technical support for 12 months.
- 45-day trial period. Evaluation Kit will be accepted for refund if the user finds the product not suitable for their needs.