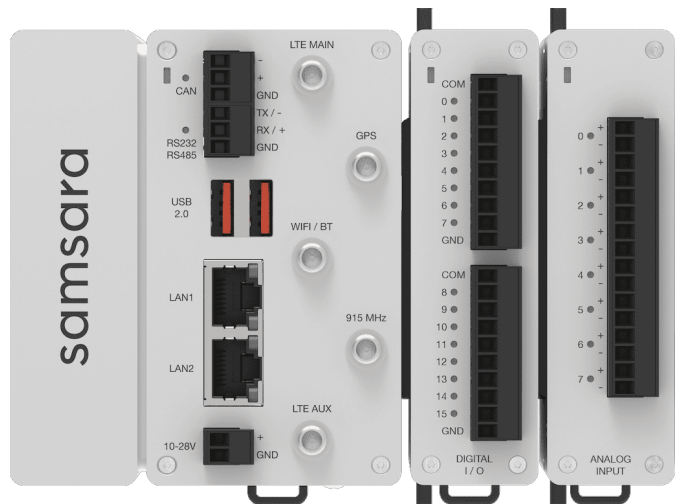


# Industrial Gateway

## IG41 Datasheet



### OVERVIEW

Samsara Industrial Gateways provide a direct link between your equipment and the cloud-based remote monitoring platform. This seamless integration of hardware and software gives you out-of-the-box visibility, so you can monitor and control industrial equipment in the most remote locations. With built-in connectivity, modular and wireless I/O, data storage and processing, the IG41 can be deployed in a fraction of the time compared to traditional solutions.

Get immediate visibility of your data with custom dashboards, alerts, and reports. View real-time data down to the second and track key performance indicators over time, whether you're in the control room, board room, or out in the field.

### HIGHLIGHTS

- |                              |  |
|------------------------------|--|
| <b>Modular design</b>        | Up to 4 stackable modules supporting up to 32 analog inputs and 64 digital inputs or outputs |
| <b>Wireless IO</b>           | Out-of-the-box support for long range wireless IO module WM11 to connect remote assets       |
| <b>Flexible connectivity</b> | Dual SIM for AT&T and Verizon, built in Ethernet, RS-485/232, USB, CAN, and more             |
| <b>Oboard processing</b>     | Low latency data transmission and onboard data storage                                       |

# IG41 Industrial Gateway

## ENCLOSURE

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Dimensions (WxHxD) 100 mm x 86 mm x 102 mm

Weight 0.68 kg (1.5 lbs)

Mounting DIN-rail, Wall mount

System LED

LED State	Indicates
Blinking White	Device is starting up
Blinking Green	Establishing connectivity
Solid Green	Connected to the Samsara Cloud
Solid Yellow	Reboot system
Solid Red	Error - contact Samsara support

RS-232/RS-485 LED

LED State	Indicates
Solid Orange	RS232 device configured
Solid Blue	RS485 device configured

CAN LED

LED State	Indicates
Solid Blue	CAN configured

## ENVIRONMENTAL

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Operating temperature -30°C to +70°C (-22°F to +158°F)

Storage temperature -40°C to +85°C (-40°F to +185°F)

Operating humidity 10% RH to 90% RH, noncondensing

Storage humidity 5% RH to 95% RH, noncondensing

Ingress protection IP20

# IG41 Industrial Gateway

## POWER

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Power requirement	10-28 VDC
Typical power consumption	8 W nominal
Maximum power consumption	36 W

## SHOCK & VIBRATION

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Free fall	IEC 60068-2-32 (Freefall)
Operating shock	IEC 60068-2-27, half-sine wave, 30G 11ms, 18 shocks
	IEC 60068-2-27, half-sine wave, 50G 3ms, 18 shocks
Operating vibration	IEC 60068-2-64, 5~500 Hz, 5Grms, 30 min/axis, total 90 min
	IEC 60068-2-6, 10~500 Hz, 5G, 30 min/axis, total 90 min

## SAFETY, HAZARDOUS LOCATIONS, & COMPLIANCE

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Hazardous locations	US (UL)	
	<ul style="list-style-type: none"><li>· Class I, Division 2, Groups A, B, C, D, Temperature Class T4</li><li>· Class I, Zone 2, Group IIC</li></ul>	
Safety & hazardous locations standards	<ul style="list-style-type: none"><li>· UL/IEC 61010-1 (Safety)</li><li>· UL/IEC 61010-2-201 (Safety)</li><li>· UL 121201, CSA C22.2#213 (Hazardous Locations)</li></ul>	
	Electromagnetic compatibility	<ul style="list-style-type: none"><li>· FCC 47 CFR Part 15B, Class A</li><li>· ICES-003 (ITE)</li></ul>

*Note: In the United States (per FCC 47 CFR), Class A equipment is intended for use in commercial, light-industrial, and heavy-industrial locations. In Europe, Canada, Australia and New Zealand (per CISPR 11) Class A equipment is intended for use only in heavy-industrial locations.*

*For use in hazardous locations, device needs to be installed in a tool secured NEMA 4X enclosure.*

# IG41 Industrial Gateway

## STORAGE

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**Data storage** Stores 1 week of data across 50 registers sampling on a per second basis and transmits data to the cloud for unlimited cloud storage within duration of contract.

## NETWORK/ETHERNET

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**Number of ports** 2

**Network interface** 10Base-T, 100Base-TX, and 1000Base-T Ethernet

**Compatibility** IEEE 802.3

**Communication rates** 10 Mbps, 100 Mbps, 1000 Mbps auto-negotiated

**Connector** RJ45

**Ethernet protocols** EthernetIP, Modbus TCP, ROC TCP

## WIFI

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**WAN connectivity** WiFi: 802.11 a/b/g/n/ac WiFi/WLAN client for remote connection

**Frequencies supported** 1x1 2.4/5 GHz

**Security** WPA2, WPA

**Antenna connector** RP-SMA male connector

## CELLULAR

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**3G Frequencies** WCDMA B2/B5

**4G Frequencies** CAT 4 LTE B2/4/5/12/13

**Carrier support** AT&T, Verizon (coming soon)

**Antenna connector** 2x SMA female connector

# IG41 Industrial Gateway

## LORAWAN SUPPORT\*

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Frequency	915 MHz
Antenna connector	1x SMA female connector

\*For connection to Samsara Wireless IO Module (WM11) only

## LOW ENERGY WIRELESS

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Compatibility	Works with up to 12 Samsara proprietary low-energy wireless sensors
Range	2.4GHz: 30m (line of sight)

## RS-232

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Number of ports	1 configurable between 232/485
Port type	3-pin screw terminal
Maximum baud rate	115,200 bps
Data bits	5, 6, 7, 8
Stop bits	1, 2
Parity	Odd, Even, None
Flow control	XON/XOFF
Voltage level	±9 V
Serial protocols	Modbus RTU, Modbus ASCII, ROC RTU

## RS-485

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Number of ports	1 configurable between 232/485
Port type	3-pin screw terminal
Maximum baud rate	115,200 bps
Data bits	5, 6, 7, 8

# IG41 Industrial Gateway

Stop bits	1, 2
Parity	Odd, Even, None
Flow control	XON/XOFF
Wire mode	2-wire, Half-duplex
Voltage level	0-5 V
Serial protocols	Modbus RTU, Modbus ASCII, ROC RTU

## **CAN**

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Max baud rate	500 kbps
CAN termination	Software configurable 120 Ohm termination
Standard compatibility	ISO 11898-2

## **USB**

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Number of ports	2
Type	USB 2.0 Type A
Max current per port	1.5 A

## **GPS**

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GNSS	Supports GPS L1, GLONASS L1, and Galileo
Antenna connection	1x SMA - female external active antenna required

# IG41 Industrial Gateway

## FEDERAL COMMUNICATION COMMISSION INTERFERENCE STATEMENT

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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

**FCC Caution:** Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

### FCC Radiation Exposure Statement

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

# IG41 Industrial Gateway

## INDUSTRY CANADA STATEMENT

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This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference
- (2) This device must accept any interference, including interference that may cause undesired operation of the device

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) L'appareil ne doit pas produire de brouillage;
- (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This radio transmitter [IC: 21492-1041] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Le présent émetteur radio [IC: 21492-1041] a été approuvé par Innovation, Sciences et Développement économique Canada pour fonctionner avec les types d'antenne énumérés ci dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué pour tout type figurant sur la liste, sont strictement interdits pour l'exploitation de l'émetteur.



# IG41 Industrial Gateway

**INDUSTRY CANADA STATEMENT**

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<b>TYPE</b>	<b>CONNECTOR</b>	<b>GAIN</b>	<b>REMARK</b>
Dipole	R-SMA	2.2dBi	For BT
Dipole	R-SMA	2.2dBi (2400~2483.5MHz) 6.2dBi (5150~5250MHz) 6.2dBi (5725~5850MHz)	For Wi Fi
PIFA	R-SMA	4.8dBi (2400~2483.5MHz) 9.6dBi (5150~5250MHz) 9.6dBi (5725~5850MHz)	For Wi Fi
Dipole	SMA	0.7dBi	For Lora
PIFA	SMA	3.5dBi	For Lora
Dipole	SMA	2.5dBi (1850~1910MHz / 1710~1755MHz) 0.9dBi (824~849MHz / 699~716MHz / 777~787MHz)	For LTE
Array	N Jack	10dBi (1850~1910MHz / 1710~1755MHz) 7dBi (824~849MHz) 8dBi (699~716MHz / 777~787MHz)	For LTE
PIFA	SMA	5.6dBi (1850~1910MHz / 1710~1755MHz) 0.5dBi (824~849MHz / 699~716MHz / 777~787MHz)	For LTE

# IG41 Industrial Gateway

## **INDUSTRY CANADA STATEMENT**

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Caution:

the device for operation in the band 5150–5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

Avertissement:

les dispositifs fonctionnant dans la bande de 5150 à 5250MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux;

Radiation Exposure Statement:

This equipment complies with Canada radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20 cm between the radiator & your body.

Déclaration d'exposition aux radiations:

Cet équipement est conforme Canada limites d'exposition aux radiations dans un environnement non contrôlé. Cet équipement doit être installé et utilisé à distance minimum de 20 cm entre le radiateur et votre corps.

# IG41 Industrial Gateway

## PROFESSIONAL INSTALLATION INSTRUCTIONS

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Please be advised that due to the unique function supplied by this product, the product will be distributed through controlled distribution channels and installed by trained professional and will not be sold directly to the general public through retail stores.

1. Installation personal: This product is designed for specific applications and needs to be installed by qualified personal who has RF and related rule knowledge. A general user shall not attempt to install the product or change the settings.
2. Installation location: The product shall be installed at a location where the radiating antenna can be kept 40 cm from nearby persons in normal operation conditions to meet regulatory RF exposure requirement.
3. External antennas: Use only the antennas which have been approved by Samsara. Non-approved antenna(s) may produce unwanted spurious or excessive RF transmitting power which may lead to the violation of FCC/IC limits and is prohibited.
4. Installation procedure: Please refer to user's manual for details.
5. Warning: Please carefully select the installation position and make sure that the final output power does not exceed the limit set in FCC/IC regulations. The violation of this rule could lead to serious federal penalty.

### Instructions d'installation professionnelle

Veillez noter que l'appareil etant dedie a une fonction unique, il doit etre utilise avec notre logiciel propriétaire de divertissement interactif . Ce produit sera propose par un reseau de distribution controle et installe par des professionnels; il ne sera pas propose au grand public par le reseau de la grande distribution.

1. Installation: Ce produit est destine a un usage specifique et doit etre installe par un personnel qualifie maitrisant les radiofrequences et les regles s'y rapportant. L'installation et les réglages ne doivent pas etre modifies par l'utilisateur final.
2. Emplacement d'installation: En usage normal, afin de respecter les exigences reglementaires concernant l'exposition aux radiofrequences, ce produit doit etre installe de facon a respecter une distance de XXcm entre l'antenne emettrice et les personnes.
3. Antenn externe: Utiliser uniiquement les antennes approuvees par le fabricant. L'utilisation d'autres antennes peut conduire a un niveau de rayonnement essentiel ou non essentiel depassant les niveaux limites definis par FCC/IC, ce qui est interdit.
4. Procedure d'installation: Consulter le manuel d'utilisation.
5. Avertissement: Choisir avec soin la position d'installation et s'assurer que la puissance de sortie ne depasse pas les limites en vigueur. La violation de cette regle peut conduire a de serieuses penalites federales.