

Cellular Gateways

General Description

Don't have an existing network connection where you need it most? Cellular Gateways allow your ICARE Wireless Sensors to communicate with the ICARE Online Wireless Sensor Monitoring and Notification System via cellular transmission. They are the perfect solution for remote locations, or where an existing internet connection is not an option.

The Cellular Gateways are based on the latest Dual-band CDMA or 3G wireless protocols and come integrated with ICARE's wireless access point network (WAN) for use with all ICARE wireless sensors.

The Cellular Gateway is an advanced all wireless M2M gateway that enables fast time-to-market solutions for a wide range of M2M and partner applications as well. ICARE's Cellular Gateway is specifically designed to respond to the increasing market need for global technology that accommodates a variety of vertical M2M application segments and remote wireless sensor management solutions.

Example Applications

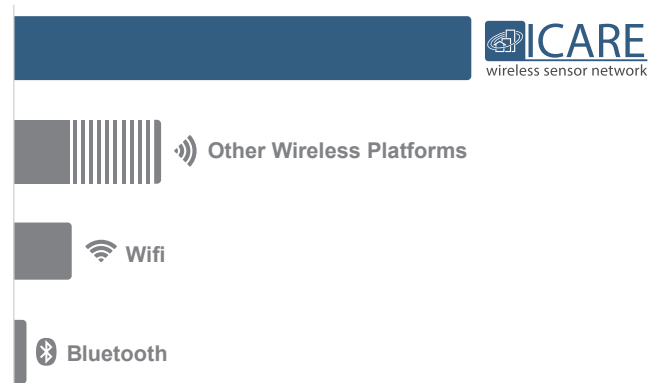
- Remote Location Monitoring
- Shipping and Transportation
- Agricultural Monitoring
- Vacant Property Management
- Vacation Home Property Management
- Construction Site Monitoring
- Data Center Monitoring

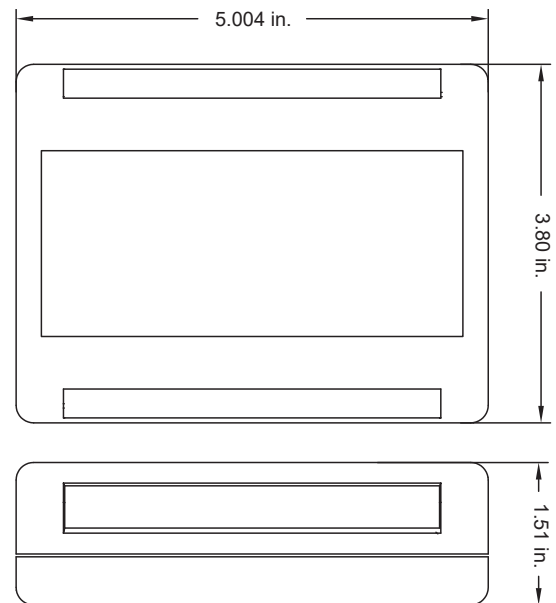
Cellular Gateway Features

- Wireless range of 1,200+ feet through 12+ walls *
- Frequency Hopping Spread Spectrum (FHSS)
- Improved interference immunity
- Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)
- 50,000 sensor message memory
- Over the air updates (future proof)
- True plug & play, no hassles for internet configuration set-up
- No PC required for operation
- Low-cost cellular service packages
- Local status LEDs with transmission and online status indicators
- AC power supply
- Optional 24 hour battery backup in event of power outage

* Actual range may vary depending on environment.

Wireless Range Comparison





4G LTE Cellular Gateway Specifications

Cellular

Cellular Technology	LTE CAT-M1 LTE-only module for global use (AT&T, T-Mobile USA, Telstra, Verizon) Cat M1/NB1 deployed bands 2, 3, 4, 5, 8, 12, 13, 20, 28
SIM Card Compatibility	Micro-SIM (3FF) 15 mm x 12 mm x 0.76 mm

Power

Input Power	5 VDC @ 1 A
Battery Backup	Battery Type: Rechargeable Lithium Polymer
	Battery Duration: Up to 24 hours
	Battery Cycle Life: 500 times
	Battery Safety: IEC62133

Mechanical

LEDs	Connectivity, Server, Network Status
Device Memory	Up to 50,000 sensor messages (Sensor messages will be stored in the event of Internet outage and transferred when connection is restored)
Enclosure	ABS
Dimensions	5.004 x 3.8 x 1.51 in.
Weight	7 ounces

Environmental

Operating Temperature	+5 to +45°C (41 to 113°F)
Storage Temperature	-20 to +60°C (-4 to 140°F)

Wireless

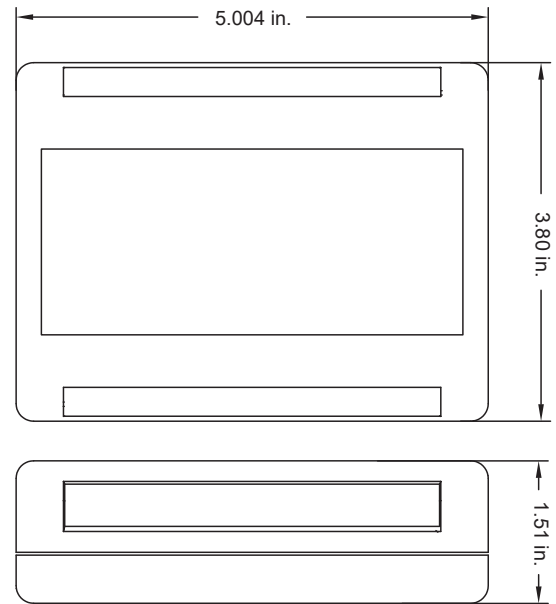
Transmit Power (EIRP)	50 mW (900 MHz)
Antenna Type	Connector: SMA Gain: 4.0 dBi
Wireless Range	1,200+ ft. non-line-of-sight *
Security	256-bit key exchange and AES-128 CTR

Certifications



Safety: IEC 60950-1 and IEC 62368-1; EMC: IEC 55024, IEC 55032, IEC 301489-1, -3, -A, -52, FCC 47 CFR Part 15, subpart B and ICES - 001 Issue 6; RF: 900 MHz product includes model FCC ID: ZTL-G2SC1 / IC: 9794A-G2SC1 and FCCID: XPY-2AGQN4NNN / IC: 8595A-2AGQN4NNN

* Actual range may vary depending on environment.



3G Cellular Gateway Specifications

Cellular

Cellular Technology	UMTS (North America) Frequency Range: 850 / 1700 / 1900 MHz	UMTS (International) Frequency Range: 850/900/2100 MHz
Antenna	Connector: SMA Gain (dBi): 1.5	
SIM Card Compatibility	Mini-SIM (2FF) 25 mm x 15 mm x 0.76 mm	

Power

Input Power	5.5 VDC @ 2.5 A	
Optional Battery Backup	Battery Type: Rechargeable Lithium Polymer	
	Battery Duration: Up to 24 hours	
	Battery Cycle Life: 500 times	

Mechanical

LEDs	Cellular Status LED, Online Status LED, Sensor Network Status LED
Device Memory	Up to 50,000 sensor messages (Sensor messages will be stored in the event of Internet outage and transferred when connection is restored)

Enclosure

Enclosure	ABS
Dimensions	5.004 x 3.8 x 1.51 in.
Weight	7 ounces

Environmental

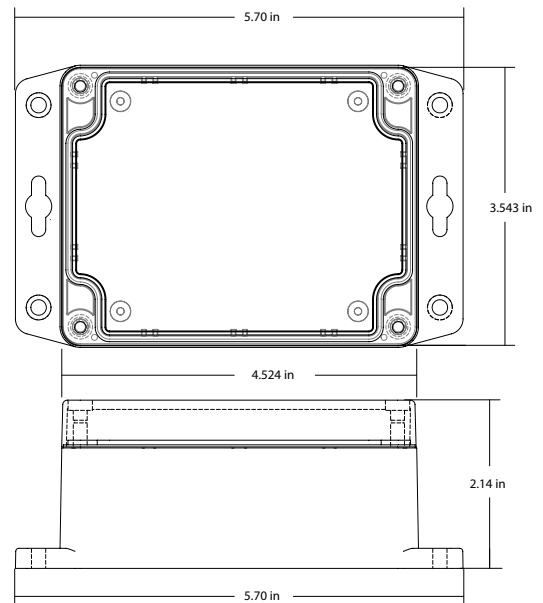
Operating Temperature	-10 to +45°C (14 to 113°F)
Storage Temperature	-20 to +60°C (-4 to 140°F)

Wireless

Wireless Range	1,200+ ft. non-line-of-sight *
Security	256-bit key exchange and AES-128 CTR

Certifications		
	FCC: ZTL- G2SC1, FCC: RI7HE910	IC: 9794A-G2SC1 and IC: 5131A-HE910

* Actual range may vary depending on environment.



4G LTE Cellular Gateway Specifications

Cellular

Cellular Technology	LTE CAT-M1 LTE-only module for global use (AT&T, T-Mobile USA, Telstra, Verizon) Cat M1/NB1 deployed bands 2, 3, 4, 5, 8, 12, 13, 20, 28
SIM Card Compatibility	Micro-SIM (3FF) 15 mm x 12 mm x 0.76 mm

Power

Input Power	90-240 VAC @ 0.2A max (15W), 5.9VDC @ 2500mA max
Battery Backup	Battery Type: Rechargeable Lithium Polymer
	Battery Duration: Up to 24 hours
	Battery Cycle Life: 500 times
	Battery Safety: IEC62133

Mechanical

LEDs	Connectivity, Server, Network Status
Device Memory	Up to 50,000 sensor messages (Sensor messages will be stored in the event of Internet outage and transferred when connection is restored)
Enclosure	NEMA 1, 2, 4, 4x, 12 and 13 rated, sealed and weather proof
Dimensions	5.70 x 3.543 x 2.14 in.
Weight	12 ounces

Environmental

Operating Temperature	+5 to +45°C (41 to 113°F)
Storage Temperature	-20 to +60°C (-4 to 140°F)

Wireless

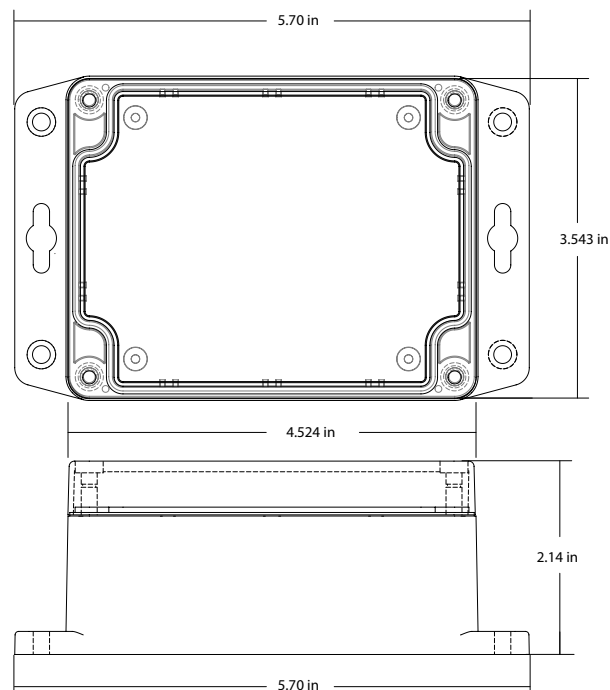
Transmit Power (EIRP)	50 mW (900 MHz)
Antenna Type	Connector: SMA Gain: 4.0 dBi
Wireless Range	1,200+ ft. non-line-of-sight *
Security	256-bit key exchange and AES-128 CTR

Certifications




Safety: IEC 60950-1 and IEC 62368-1; EMC: IEC 55024, IEC 55032, IEC 301489-1, -3, -A, -52, FCC 47 CFR Part 15, subpart B and ICES - 001 Issue 6; RF: 900 MHz product includes model FCC ID: ZTL-G2SC1 / IC: 9794A-G2SC1 and FCCID: XPY-2AGQN4NNN / IC: 8595A-2AGQN4NNN

* Actual range may vary depending on environment.



Industrial 3G Cellular Gateway Specifications

Cellular		
Cellular Technology	UMTS (North America) Frequency Range: 850 / 1700 / 1900 MHz	UMTS (International) Frequency Range: 850/900/2100 MHz
Antenna	Connector: SMA Gain (dBi): 1.5	
SIM Card Compatibility	Mini-SIM (2FF) 25 mm x 15 mm x 0.76 mm	
Power		
Input Power	5.5 VDC @ 2.5 A (rated for outdoor use)	
Mechanical		
LEDs	Cellular Status LED, Online Status LED, Sensor Network Status LED	
Device Memory	Up to 50,000 sensor messages (messages will be stored in the event of Internet outage and transferred when connection is restored)	
Enclosure		
Dimensions	5.70 x 3.543 x 2.14 in.	
Weight	12 ounces	
Environmental		
Operating Temperature	-10 to +45°C (14 to 113°F)	
Storage Temperature	-20 to +60°C (-4 to 140°F)	
Wireless		
Wireless Range	1,200+ ft. non-line-of-sight *	
Security	256-bit key exchange and AES-128 CTR	
Certifications	 FCC: ZTL- G2SC1, FCC: RI7HE910 IC: 9794A-G2SC1 and IC: 5131A-HE910	

* Actual range may vary depending on environment.

Commercial Grade Cellular Gateways:

ICARE commercial grade cellular gateways are designed for applications in ordinary environments (normal room temperature, humidity and atmospheric pressure). Do not use these gateways under the following conditions as these factors can deteriorate the product characteristics and cause failures and burn-out.

- Corrosive gas or deoxidizing gas - chlorine gas, hydrogen sulfide gas, ammonia gas, sulfuric acid gas, nitric oxides gas, etc.).
- Volatile or flammable gas.
- Dusty conditions.
- Under low or high pressure.
- Wet or excessively humid locations.
- Places with salt water, oils chemical liquids or organic solvents.
- Where there are excessively strong vibrations.
- Other places where similar hazardous conditions exist.

Use these product within the specified temperature range. Higher temperature may cause deterioration of the characteristics or the material quality.

Industrial Grade Cellular Gateways - Type 1, 2, 4, 4X, 12 and 13 NEMA Rated Enclosure:

ICARE's Industrial cellular gateways are enclosed in reliable, weatherproof NEMA rated enclosures. Our NEMA rated enclosures are constructed for both indoor or outdoor use and protect the sensor circuitry against the ingress of solid foreign objects like dust as well as the damaging effects of water (rain, sleet, snow, splashing water, and hose directed water).

- Safe from falling dirt.
- Protects against wind blown dust.
- Protects against rain, sleet, snow, splashing water, and hose directed water
- Increased level of corrosion resistance
- Will remain undamaged by ice formation on the enclosure



For more information about our products or to place an order, please contact our sales department at 586-899-1150.

Visit us on the web at www.icaremonitoring.com.

ICARE Monitoring
Saint Clair Shores, MI 48082
586-899-1150
www.icaremonitoring.com