

# Intwine Connected Gateway - (ICG)



## PRODUCT FEATURES

- **Multi-Protocol LAN**
- **Wired & Wireless Expansion Capabilities**
- **Powerful Application Processor**
- **Flexible Linux Development Environment**
- **Customizable Application Code**
- **Verizon 4G LTE Certification**
- **AT&T 4G LTE and 3G (GSM) Certifications**
- **FCC, UL, IC, CE, PTCRB certifications**
- **Wide Operating Temperature (-40 to +55 °C)**
- **5-24 VDC Power**
- **Customer Defined Branding**



The Intwine Connected Gateway (ICG) is a networking product that provides lower-level, physical-layer gateway functionality and upper-level application functionality. The platform was designed with a wide array of physical interfaces and a powerful application processor to enable customers to seamlessly add Machine-to-Machine (M2M) communications to their products and support a wide range of connected applications. The ability to deploy, monitor, control, and automate heterogeneous networks becomes a reality using the ICG. The features of the ICG separate it from other single purpose networking devices that only provide routing and basic connectivity.

## STANDARD HARDWARE

With applications across multiple industries, the ICG is built for plug and play simplicity and is used to connect local devices to the Internet and/or an intranet. Standard configuration includes an 800 MHz Cortex-A8 processor, 10/100/1000 Ethernet port, Verizon 4G LTE cellular radio, USB host port, as well as integrated 802.15.4 LAN, 802.11bgn, and Bluetooth Low Energy radio technologies.

A locally hosted configuration page allows customization of the LAN and WAN interfaces, as the 4G LTE WAN can be configured as the primary WAN or as a network backup to an existing infrastructure. The integrated 802.11bgn solution allows the gateway to serve as a Wi-Fi access point (AP) or as a client to an existing Wi-Fi infrastructure.

## HARDWARE EXPANDABILITY

The ICG can be customized with additional wired and wireless interfaces through the use of two expansion module options. The expansion module options include a USNAP (CEA 2045 DC) form factor and 16pin mSATA header or a daughter board that utilizes a board-to-board 30pin connector and form factor. Each expansion module option allows Intwine or its customers to create solutions that can meet the connectivity needs of nearly any network of end devices. Example modules could include 6LoWPAN or Z-wave USNAP modules or additional physical ports that may include additional Ethernet, CAN, or RS-485 ports.

## ORDERING INFORMATION

Prefix	4G LTE	Memory Expansion	Expansion Module	Enclosure
ICG -	0 None	None (00 -)	None (NA -)	Residential (R)
	1 Verizon	4 GB (04 -)	Debug (DB -)	Commercial (C)
	2 AT&T	16GB (16 -)	USNAP (US -)	
	3 Canada	64GB (64 -)	Custom (CU -)	

\*Standard Model: ICG-100-NA-R

## SOFTWARE

The ICG offers a flexible development environment that enables the creation of a platform customized to your products' specific requirements. In order to provide long-term viability and feature availability, the ICG Board Support Package (BSP) is based on the TI SDK 8.0, which utilizes the 3.14 Linux kernel with Flattened Device Tree architecture.

Some Development environment features include:

- Built in support for configuration and application development
  - Standard Linux utilities
  - Python
  - Bash/Shell scripting
- Low level customization through Arago
- Python based application framework with support for cloud based monitoring and control.

# Intwine Connected Gateway - (ICG)



## SPECIFICATIONS

Platform	
Processor	Cortex A8 (800 MHz)
Flash Memory	eMMC (4GB)
DRAM Memory	DDR3 (0.5GB@800 MHz)
Interfaces	
Ethernet	10/100/1000 Mbps
USB	2.0 Type - A host
SIM	Micro SIM
Expansion Options	
USNAP	See app notes
Board-to-board	See app notes
Cellular Radio (Gemalto PLS8-X)	
Penta Band LTE	700/700/850/AWS (1700/2100)/1900 MHz; FDD-Band (13,17,5,4,2)
Tri Band UMTS (WCDMA)	850/AWS (1700/2100)/1900 MHz; FDD-Band (5,4,2);
Quad Band GSM/GPRS/EDGE	850/900/1800/1900 MHz
Standard Antennas - Cellular/Wi-Fi/ZigBee	
SMA	50 Ohms
LTE (2)	2dBi, ultra-wide band, right angle dipole
Wi-Fi (1)	1.8 dBi right angle dipole
ZigBee (1)	1.8 dBi right angle dipole
Power	
Source	12 VDC
Consumption	210mA @ 19.2 VDC- Typical 380mA @ 19.2 VDC- Peak
Mechanical – Residential	
Dimensions	189.5 x 115 x 42 mm
Enclosure	Plastic
Temperature	0 to +40°C operating
Certifications	FCC Part 15B and C, UL 60950, IC, Verizon 4G LTE, PTCRB, AT&T 4G LTE and 3G
Mechanical – Commercial	
Dimensions	189.5 x 115 x 42 mm
Enclosure	Metal
Temperature	-40 to +55°C operating
Certifications	FCC Part 15B and C, UL 60950, IC, Verizon 4G LTE, PTCRB, AT&T 4G LTE and 3G

## ACCESSORIES

**Custom expansion modules** – See app note

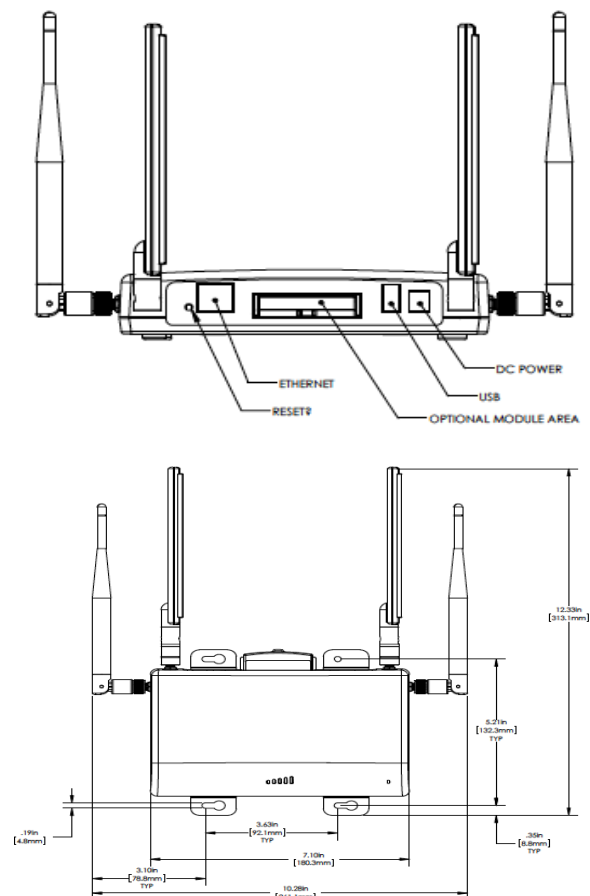
**Antennas** – See app note

**Mounting options** - See app note

## ON BOARD LAN RADIO SPECS

Wi-Fi	802.11bgn – 2.4 GHz
TX power	17.3 dBm – max
RX sensitivity	-96.3 dBm – max
Channels	1-11 - N.A 20/40 MHz
Bluetooth (4.0 + BLE)	2.4 GHz
TX Power	12.7 dBm – max
RX Sensitivity	-92.2 dBm – max
802.15.4	2.4 GHz
TX Power	Configurable up to 20dBm
RX Sensitivity	-100 dBm - max

## DIMENSIONAL DRAWINGS



For more information, contact your representative or Intwine Connect, LCC at (844) 259-3384 or [sales@intwineconnect.com](mailto:sales@intwineconnect.com).