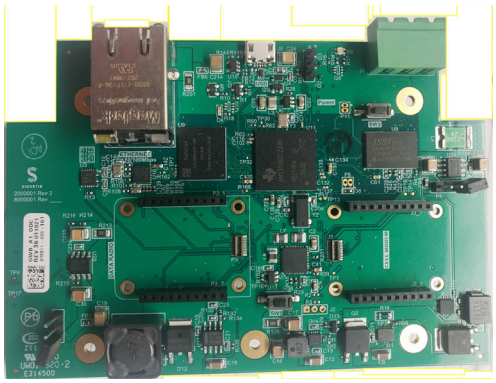
SigGate IoT Gateway
GWB-A1-ODC

Overview

- Provides bridging of LoRa / Cell / Wi-Fi / BT
- Small size (120 x 83 mm)
- Dual connectors for two radio modules
- Secure over the air updates for application, modems
- Integrated network stack, including security protocols
- Edge computing with CPU+BSD



General Description

Based on the TI AM3352, and equipped with Ethernet, USB, as well as dual twin-connectors and dual low profile connectors, SigGate allows for rapid design of custom gateways requiring one or more radio modules along with Ethernet. LoRaWAN to Cellular, BT to Wi-Fi, Wi-Fi to Ethernet, are among many combinations that can be achieved with SigGate. The Gateway is powered by 12VDC and designed for outdoors.

SigGate is ready for operation out of the box. Built in drivers and applications ensure that the modem add-ons are configured and setup properly. Applications can interact with modems directly, create connections, and monitor status.

SigGate is IoT ready and communicates securely over TLS/DTLS. The extended temperature ensures robust performance outdoors.

Key Features

SigGate provides a modular design to create a gateway to suit your needs. The option of adding up to two add-on modules provides a variety of network connectivity options, apart from the Ethernet built into the Gateway base.

SigGate comes with drivers for the various modules and is ready to work out of the box, without the need for any coding.

The combination of a powerful CPU and a robust BSD OS enables versatile applications.

SigGate is highly suitable for Edge Computing applications that seek to provide highly responsive local intelligence.

Highlights

- LoRa to Ethernet
- LoRa to Cellular
- Bluetooth to Ethernet
- Bluetooth to Cellular
- Wi-Fi to Ethernet
- Wi-Fi to Cellular
- USB-UART
- USB - micro B USB 2.0
- 2x Twin connectors (2 x 10)
- 2x low profile connectors
- Robust BSD OS
- RGB LED for application use
- Firmware OTA (FOTA) updates
- Integrated network stack
- Configuration tools
- Add-on Radios with u.FL antennas
- IP67
- FCC tested
- Reliable support channels

Legal

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Support

Users of Signetik products may receive assistance through the following channels:

- Symmetry Electronics - 1-866-506-8829
- Escalated to Signetik Technical Support
- Email: support@signetik.com

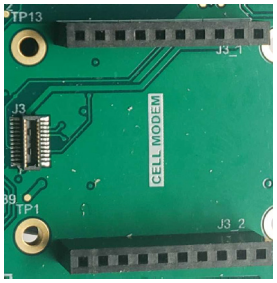
Customers should contact their distributor for support.

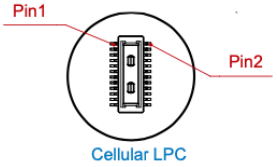
Warranty

Warranty information is available at www.signetik.com/legal

Hardware

Cellular Modem receptacle





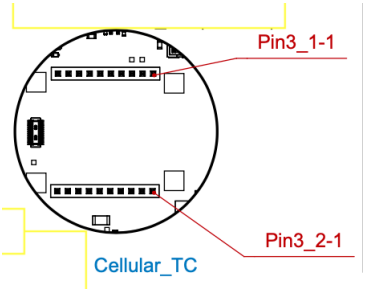


Table 1 - Cellular LPC Pin Description (J3)

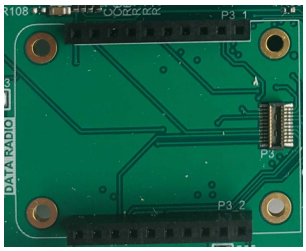
Number	Name	Direction	Description
1	3.3VDC	Out	Power for radio addon board
2	3.3VDC	Out	Power for radio addon board
3	NC		
4	GND		
5	RXD	In	UART Receive
6	TXD	Out	UART Transmit
7	RTS	Out	UART RTS
8	Cell_EN	Out	Enable Cellular addon board power
9	CTS	In	UART CTS
10	NC		
11	NC		
12	NC		
13	nRESET	Out	Reset Cellular addon board
14	NC		
15	DTR	Out	UART DTR
16	NC		
17	NC		
18	NC		
19	NC		
20	GND		

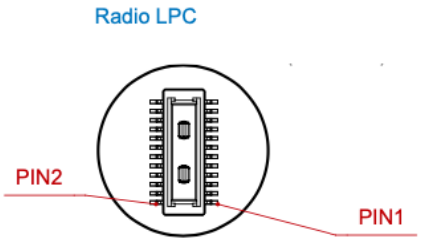
Table 2 - Cellular TC Pin Description (J3_1, J3_2)

Number	Name	Direction	Description
J3_1.1	3.3VDC	Out	Power for radio addon board
J3_1.2	RXD	In	UART Receive
J3_1.3	TXD	Out	UART Transmit
J3_1.4	NC		
J3_1.5	nRESET	Out	Reset cellular addon board
J3_1.6	NC		
J3_1.7	NC		
J3_1.8	NC		
J3_1.9	DTR	Out	UART DTR
J3_1.10	GND		
J3_2.1	CELL_EN	Out	Enable cellular addon board power
J3_2.2	NC		
J3_2.3	NC		
J3_2.4	NC		
J3_2.5	RTS	Out	UART RTS
J3_2.6	NC		
J3_2.7	GND or NC		GND if R114 is populated. NC if R114 is not populated
J3_2.8	NC		
J3_2.9	CTS	In	UART CTS
J3_2.10	GND		

Hardware

Radio receptacle





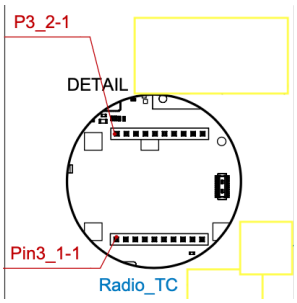


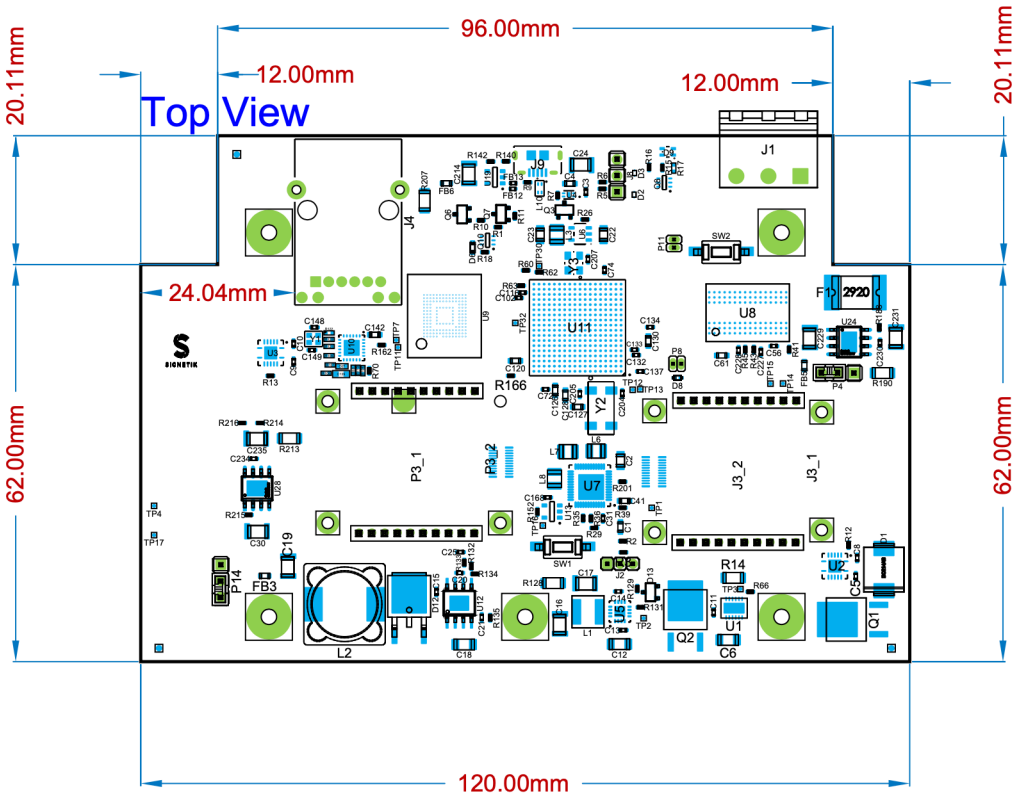
Table 3 - Radio LPC Pin Description (P3)

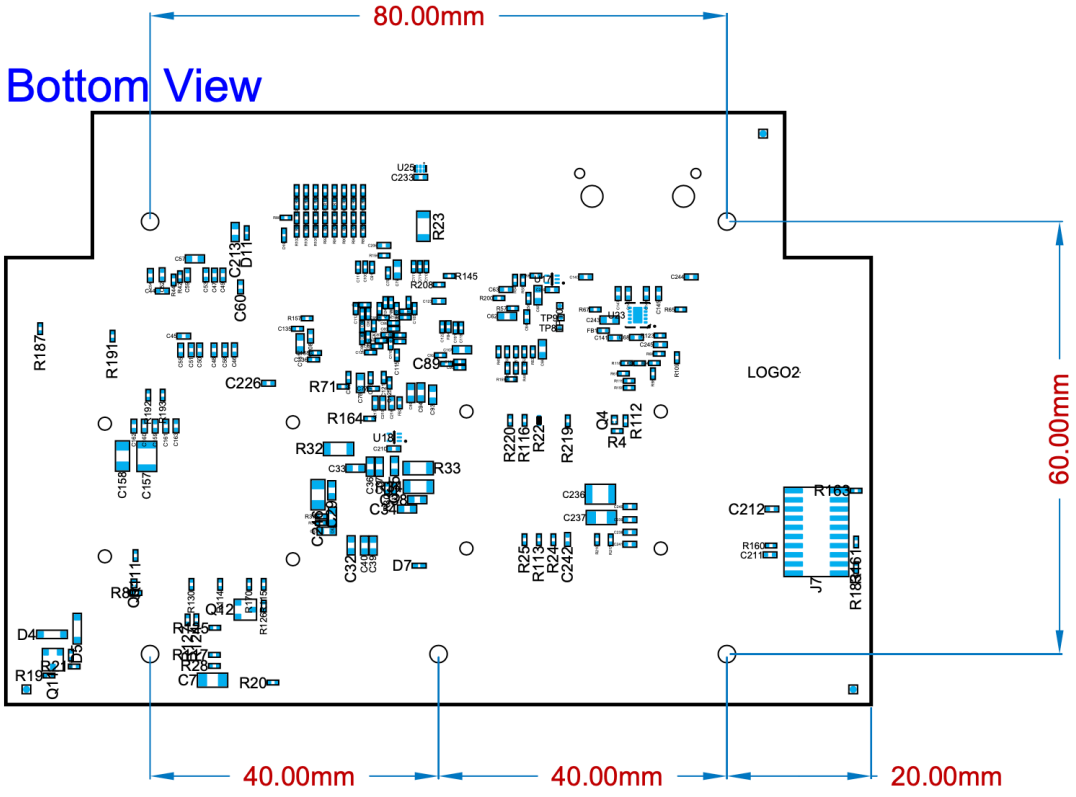
Number	Name	Direction	Description
1	3.3VDC	Out	Power for radio addon board
2	3.3VDC	Out	Power for radio addon board
3	NC		
4	GND		
5	RXD	In	UART Receive
6	TXD	Out	UART Transmit
7	RTS	Out	UART RTS
8	Radio_EN	Out	Enable radio addon board power
9	CTS	In	UART CTS
10	NC		
11	NC		
12	NC		
13	nRESET	Out	Reset radio addon board
14	NC		
15	DTR	Out	UART DTR
16	SPI0_CS	Out	SPI_CS
17	SPI0_CLK	Out	SPI_CLK
18	SPI0_MOSI	Out	SPI_MOSI
19	SPI0_MISO	In	SPI_MISO
20	GND		

Table 4 - Radio TC Pin Description (P3_1, P3_2)

Number	Name	Direction	Description
P3_1.1	3.3VDC	Out	Power for radio addon board
P3_1.2	RXD	In	UART Receive (from addon booard)
P3_1.3	TXD	Out	UART Transmit (to addon booard)
P3_1.4	NC		
P3_1.5	nRESET	Out	Reset radio addon board
P3_1.6	SPI0_MOSI	Out	SPI_MOSI
P3_1.7	SPI0_MISO	In	SPI_MISO
P3_1.8	SPI0_CS	Out	SPI_CS
P3_1.9	DTR	Out	UART DTR
P3_1.10	GND		
P3_2.1	Radio_EN	Out	Enable radio addon board power
P3_2.2	NC		
P3_2.3	NC		
P3_2.4	NC		
P3_2.5	RTS	Out	UART RTS
P3_2.6	NC		
P3_2.7	SPI0_CLK	Out	SPI_CLK
P3_2.8	GND or NC		GND if R116 is populated. NC if R116 is not populated
P3_2.9	CTS	In	UART CTS
P3_2.10	GND		

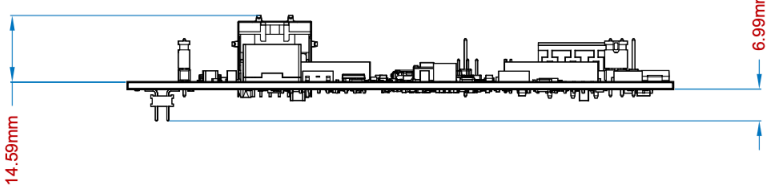
Mechanical Data



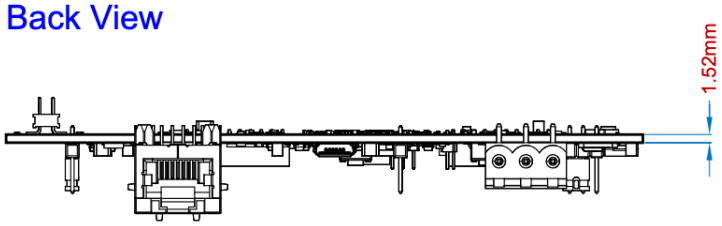


Mechanical Data

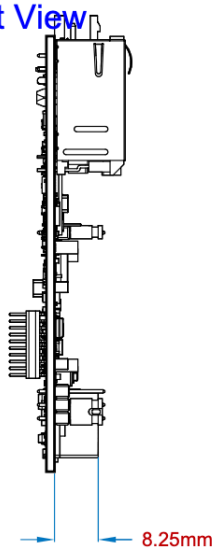
Front View



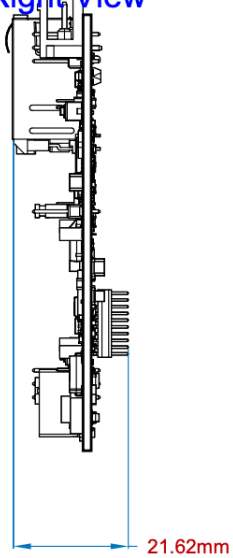
Back View



Left View



Right View



Connectors

SigGate support a low-profile connector (LPC) and twin-connectors (TC). The connectors on SigGate are as follows.

LPC: Hirose DF40C-20DP-0.4V(51)

TC: Harwin M22-7131042

The mating connectors are as follows.

LPC: Hirose DF40HC(2.5)-20DS-0.4V(51)

TC: Harwin M22-2511005

IMPORTANT: SigGate must be ordered using part number suffix -LPC or -TC to select the populated connector.

Specifications

General

Processor	ARM® Cortex®-A8 MPU, 32-Bit 800MHz
Memory	4Gbit DDR3 SDRAM 8GB eMMC NEON™ SIMD Coprocessor 32KB of L1 Instruction and 32KB of Data Cache With Single-Error Detection (Parity) 256KB L2 Cache With Error Correcting Code (ECC) 176KB On-Chip Boot ROM 64KB Dedicated RAM

Electrical

Symbol	Parameter	Min	Typ	Max	Unit
V_{CC}	Voltage Input	7	12	14	VDC
I_{CC}	Current Input		1.6		A

Interfaces

Power	Barrel Connector Jack
ETH	RJ45 10/100 Base-T
Cellular Modem	LPC or TC
Data Modem[1]	LPC ot TC

1 LoRa, BT, etc.

Specifications

Mechanical

Dimensions (L x W x H)	120 x 83 x 21mm
Weight	1.85 lb

Environmental

Parameter	Min	Max	Unit
Operating temperature	-30	70	°C
Storing temperature	-40	85	°C
Non-condensing relative humidity	20	90	%

Certification

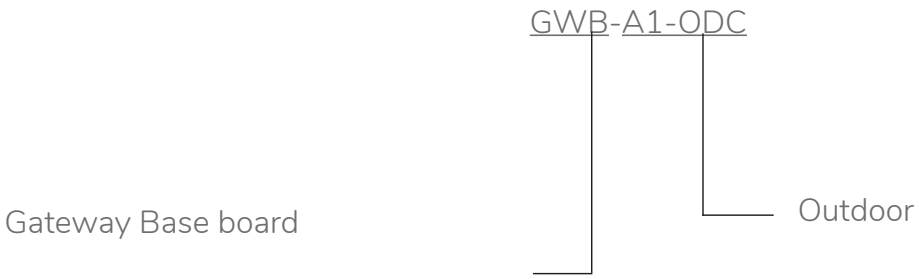
EMC	FCC Part 15 Class B

Specifications

LED

Designation	Color	Function
D9	RGB	Gateway Power RGB for application
D6	Green	Application controlled

Device Ordering Information



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