

TECHNICAL SPECIFICATION

Programmable OpenWRT LTE IoT Gateway with RS485 and digital inputs

AG-207



Features

- OpenWRT system
- Fully programmable Linux environment
- Additional 512MB memory as overlay
- 4G LTE, GSM, WiFi and Ethernet
- GNSS
- 2 opto-isolated digital inputs
- Interface RS485
- USB host with storage support
- Wide power supply range
- Aluminium enclosure
- DIN rail mounting

AG-207 is a RS485 4G LTE cellular Gateway with 2 digital inputs and WiFi. By using the OpenWRT system has a huge programming and functional potential. With range of advanced functions and support of many

protocol it is perfect for IoT or M2M applications. USB host provides the ability to connect many types of extensions. AG-207 also support MQTT.

Description	Specification
Processor	
Type	MIPS24KEc
Clock	580MHz
RAM Memory	
Memory size	256MB DDR2
Memory speed	1066max
Storage	
Internal flash	64MB+512MB ExtRoot support (overlay)
USB	
USB port number	1
USB type	USB 2.0, host with storage support
Connector	USB type A
Protection	IEC 61000-4-2 level 4: – 15 kV (air discharge) – 8 kV (contact discharge)
USB overload	500mA

Description	Specification
Serial Interface RS485	
Port number	1
Interface Type	RS485
Data Rate	600 – 460800 bps
Signals	A and B
Connector	Pluggable screw terminal
Protection	IEC 61000-4-2 level 4: – 15 kV (air discharge) – 8 kV (contact discharge) Fail-safe receiver for bus open, short and idle
Ethernet	
Port number	1
Type	10/100M port
PoE	PoE (spare pare on one connector)
Ethernet connector	RJ45 with LED indicators
PoE	Spare pare on ETH-1 (8-36V)

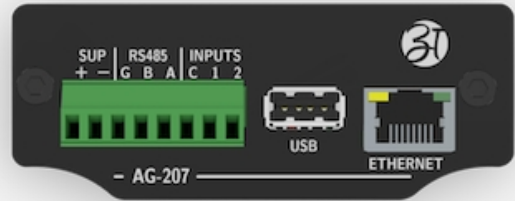
Description	Specification
WiFi	
WiFi type	2.4GHz
WiFi standard	IEEE 802.11/a/b/g/n, Access Points
Antenna connector	SMA female
LTE/GSM Interface¹	
Band	Please refer table of cellular network
SIM card	microSIM 3V/1.8V
Antenna connector	SMA female
GNSS²	
GNSS systems	GPS, BDS, Galileo, GLONASS, QZSS
Antenna connector	SMA female
Digital Inputs	
Input number	2
Input type	Opto-isolated 2.5kV
Configuration	Common IN-GND
Connector	Pluggable screw terminal
Max v_{in}	30V DC
Logic 1 Voltage	3.5V to max v_{in}
System Functions Indicators	
Indicators	ACT – activity
	Custom use
	Cellular
	WiFi
	IN-1 and IN-2
System	
Operating systems	OpenWRT 23.05, Kernel 5.15.71, Atreyo Environment V1.01.02
Booting source	Flash memory
Power Supply	
Power supply	8-36V DC
Power consumption	1.6W (24V without cellular on)
Connector	Pluggable screw terminal
PoE	Passive PoE over spare pairs. Not compatible with IEEE802.3af, 802.3at and 802.3bt standards
Protection	Reverse polarity, over voltage
Physical Characteristics	
Installation	DIN-Rail, clamp
Housing	Aluminium
Weight	215g
Dimensions	88mm x 65mm x 35mm
Environmental Specification	

¹ Apply to LT models. Refer model selection chart. LTE/GSM Bands are mentioned for in Cellular table section on page 3 and 4.

² Apply to LT models. Refer ordering chart.

Description	Specification
Operating temp.	-20 ~ 65°C (-4 ~ 149°F)
Storage temp.	-40 ~ 85°C (-40 ~ 185°F)
Ambient RH	5% ~ 95% (non-condensing)

Gateway



Cellular modem specification of IN (India) version

IN version of gateway		Cellular network modem details
Band LTE FTD	B1/ 3/ 5/ 8	
Band LTE TDD	B34/ 38/ 39/ 40/ 41	
Band GSM	B3/ 8 (900/1800MHz)	
GPRS slot	Multi-slot class 12/10	
Bandwidth	1.4/ 3/ 5/ 10/ 15/ 20 MHz	
Output power	LTE-FDD	Class 3 (23 dBm ±2 dB)
	LTE-TDD	Class 3 (23 dBm ±2 dB)
	EGSM900	Class 4 (33 dBm ±2 dB)
	DCS1800	Class 1 (30 dBm ±2 dB)
Maximum data rate	LTE-FDD	10 Mbps (DL)/ 5 Mbps (UL)
	LTE-TDD	8.96 Mbps (DL)/ 3.1 Mbps (UL)
	GPRS	85.6 kbps (DL)/ 85.6 kbps (UL)

Cellular modem specification of EU (Europe and India) version

EU version of gateway	Cellular network modem details	
Band LTE FTD	B1/3/5/7/8/20/28	
Band LTE TDD	B38/ 40/ 41	
Band GSM	B2/3/5/8 (900/1800MHz)	
GPRS slot	Multi-slot class 12/10	
Bandwidth	1.4/ 3/ 5/ 10/ 15/ 20 MHz	
Output power	LTE-FDD	Class 3 (23 dBm ±2 dB)
	LTE-TDD	Class 3 (23 dBm ±2 dB)
	EGSM900	Class 4 (33 dBm ±2 dB)
	DCS1800	Class 1 (30 dBm ±2 dB)
Maximum data rate	LTE-FDD	10 Mbps (DL)/ 5 Mbps (UL)
	LTE-TDD	8.96 Mbps (DL)/ 3.1 Mbps (UL)
	GSM	85.6 kbps (DL)/ 85.6 kbps (UL)
Power	Compliant to GSM phase 2/2+	
	– Class 4 (2 W 900MHz)	
	– Class 1 (1 W 1800MHz)	

Cellular modem specification of GL (global) version

GL version of gateway	Cellular network modem details	
Band LTE FTD	B1/B2/B3/B4/B5/B7/B8/B12/B13/B18/B19/B20/B25/B26/B28	
Band LTE TDD	B38/B39/B40/B41	
Band WCDMA	B1/B2/B4/B5/B6/B8/B19	
Band GSM	B2/B3/B5/B8	
Output power	GSM850	Class 4 (33 dBm ±2 dB)
	EGSM900	Class 4 (33 dBm ±2 dB)
	DCS1800	Class 1 (30 dBm ±2 dB)
	PCS1900	Class 1 (30 dBm ±2 dB)
	GSM850 8-PSK	Class E2 (27 dBm ±3 dB)
	EGSM900 8-PSK	Class E2 (27 dBm ±3 dB)
	DCS1800 8-PSK	Class E2 (26 dBm ±3 dB)
	PCS1900 8-PSK	Class E2 (26 dBm ±3 dB)
	WCDMA	Class 3 (24 dBm +1/-3 dB)
	LTE-FDD	Class 3 (23 dBm ±2 dB)
	LTE-TDD	Class 3 (23 dBm ±2 dB)
Maximum data rate LTE	LTE-FDD	150 Mbps (DL)/Max. 50 Mbps (UL)
	LTE-TDD	130 Mbps (DL)/Max. 30 Mbps (UL)
Maximum data rate UMTS	DC-HSDPA	42 Mbps (DL)
	HSUPA	5.76 Mbps (UL)
	WCDMA	384 kbps (DL)/Max. 384 kbps (UL)
Maximum data rate GSM	EDGE	296 kbps (DL)/Max. 236.8 kbps (UL)
	GPRS	107 kbps (DL)/Max. 85.6 kbps (UL)

Standard model list

Model	Hardware Options			GNSS	More information
	Cellular Network				
AG-207	GPRS	3G	LTE		
AG-207					Without cellular modem
AG-207-LT-IN	✓		✓	✓	Model for India
AG-207-LT-EU	✓	✓	✓	✓	Model for India and EU
AG-207-LT-GL					Global model

Table with model structure for ordering

Model Structure	
Model structure example	AG-207-LT-EU
Base model name	
AG-207	
Cellular communication modem	
LT (cellular communication modem present)	
LTE/GSM module regional information	
IN (cellular modem for India)	
EU (cellular modem for India and Europe)	
GL (global cellular modem)	

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**Atreyo Research
& Development LLP**

**+91 9727741417
info@atreyo.in**

414, Sunrise Mall, Mansi Circle,
Ahmedabad, Gujarat, India