TECHNICAL SPECIFICATION

ATREYO®
SOLUTIONS THAT SIMPLIFY

4G LTE 4 Ethernet port Router with RS485

AG-743



Features

- **OpenWRT system**
- **Fully programmable Linux environment**
- **Additional 512MB memory as overlay**
- **4 Ethernet ports**
- **4G LTE, GSM, WiFi**
- **GNSS**
- **1 opto-isolated input, 1 output**
- **Opto-isolated RS485**
- **USB host with storage support**
- **Wide power supply range**
- **Aluminium enclosure**
- **DIN rail mounting**

AG-743 is a 4G LTE cellular Router/Gateway with 4 Ethernet ports, WiFi, RS485 and digital I/O working on OpenWRT system. It can connect in multiple ways to the internet with dual SIM capability and a range of advanced functions for mission critical IoT or M2M applications. AG-743 also support MQTT protocol for cloud application and Modbus TCP/IP or RTU for industrial applications.

Description	Parameter
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:

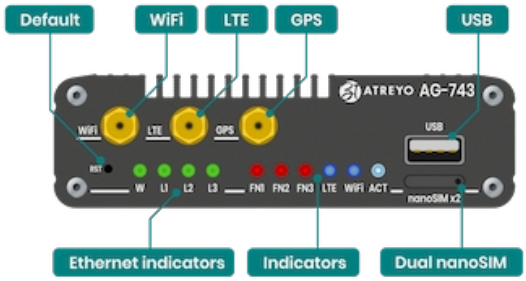
Description	Parameter
	– 15 kV (air discharge) – 8 kV (contact discharge)
USB overload	500mA
Serial RS485	
Port number	1
Interface Type	RS485
Data Rate	600 – 460800 bps
Signals	A and B
Connector	Pluggable push-in
Protection	Opto-isolated 2.5 kV RMS per UL 1577 IEC 61000-4-2 level 4: – 15 kV (air discharge) – 8 kV (contact discharge) Fail-safe receiver for bus open,

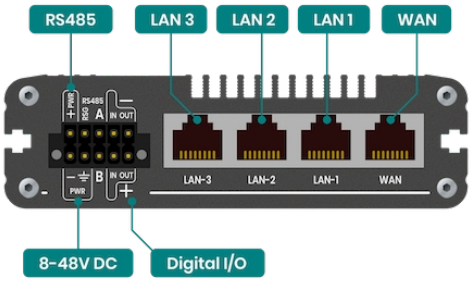
Description	Parameter
	short and idle
Ethernet	
Number	4
Type	10/100M port, WAN + 3x LAN
Connector	RJ45 (indicators on front)
WiFi	
WiFi type	2.4GHz
WiFi standard	IEEE 802.11/a/b/g/n, Access Points
Antenna connector	SMA female
Cellular modem[1]	
Band	Please refer table of cellular network on page 3 and 4.
SIM card	Dual nanoSIM, tray type anti-loss holder
	3V/1.8V
Antenna connector	SMA female
GNSS[2]	
GNSS systems	GPS, BDS, Galileo, GLONASS, QZSS
Antenna connector	SMA female
Digital inputs	
Input number	1
Input type	Opto-isolated 2.5kV
Configuration	Separate IN-GND
Connector	Pluggable push-in
Max $_{Vin}$	30V DC
Logic 1 Voltage	3.5V to max $_{Vin}$
Digital outputs	
Output number	1
Output type	Opto-mosfet NO (normal open) 2.5kV

Description	Parameter
Load$_{max}$	700mA DC up to 30V
Connector	Pluggable push-in
System functions indicators	
Indicators	ACT – activity
	WiFi
	LTE
	Fun-1, custom use
	Fun-2, custom use
	Fun-3 custom use
	4x Ethernet activity
System	
Operating systems	OpenWRT 23.05, kernel 5.15.71, Atreyo Environment V1.01.07
Booting source	Flash memory
Power supply	
Power supply	8-48V
Power consumption	1.6W (24V without LTE) TBD
Connector	Pluggable push-in (+, -, earthing)
Protection	Reverse polarity, over voltage
Physical characteristics	
Installation	DIN-Rail, clamp
Housing	Aluminium
Weight	TBD
Dimensions	114mm x 84mm x 32mm
Environmental specification	
Operating temp.	-20 ~ 65°C (-4 ~ 149°F)
Storage temp.	-40 ~ 85°C (-40 ~ 185°F)
Ambient RH	5% ~ 95% (non-condensing)

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.

Router





Cellular modem specification of LT1-IN (India CAT1) 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 LT1-EU (Europe and India CAT1) 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 LT4-IN (India CAT4) version

IN version of Gateway	Cellular network modem details	
Band LTE FTD	B1/B3/B5/B8	
Band LTE TDD	B34/B38/B39/B40/B41	
Band WCDMA	B1/B5/B8	
Band GSM	EGSM900/DCS1800	
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	41 Mbps (DL)
	HSUPA	5.76 Mbps (UL)
	WCDMA	384 kbps (DL), Max. 384 kbps (UL)
Maximum data rate GSM	EDGE	236.8 kbps (DL), Max. 236.8 kbps (UL)
	GPRS	85.6 kbps (DL), Max. 85.6 kbps (UL)

Cellular modem specification of LT4-GL (Global CAT4) 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

These are models in regular production. Other models are only made on order with a minimum order quantity. Please contact us if you require a custom order.

Model	Hardware Options					
	Cellular Network					More information
AG-743	GPRS	3G	LTE CAT1	LTE CAT4	GNSS	
AG-743						Without cellular modem
AG-743-LT1-EU	✓		✓		✓	Model for India and EU
AG-743-LT4-GL	✓	✓		✓	✓	Global model
AG-743-LT4-EU	✓	✓		✓		

Table with model structure for ordering

Model Structure			
Model structure example	**AG-743-**	**LT1-**	**EU**

Base model name

AG-743

Cellular communication modem

LT1/LT4 (cellular communication modem CAT1 / CAT4

Cellular modem regional information

IN (cellular modem for India)
EU (cellular modem for India and Europe)
GL (global cellular modem)

Standard package list

1	AG-743 Router	
2	Cellular antenna[1]	Magnet with 2 or 3m cable
3	WiFi antenna	Magnet with 1.5m cable
4	GNSS antenna[2]	Magnet with 3m cable
5	DIN rail clamp with screws	
6	SIM tray pin	
7	Female main connector without cable	

Please note: The set does not include a power supply.

1 Models without a cellular modem will also not include cellular and GNSS antennas.
2 Model 4IN will not include GNSS antenna.

For more details scan or click on QR code

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