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 otput**
- **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)
PoE	Spare pair on ETH-1
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
Load$_{max}$	700mA DC up to 30V

Description	Parameter
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	7-48V
Power consumption	1.6W (24V without LTE) TBD
Connector	Pluggable push-in (+, -, earthing)
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	TBD
Dimensions	114mm x 84mm x 32mm
Environmental specification	
Operating temp.	-20 ~ 65ºC (-4 ~ 149ºF)
Storage temp.	-40 ~ 85ºC (-40 ~ 185ºF)
Ambient RH	5% ~ 95% (non-condensing)

Router

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.
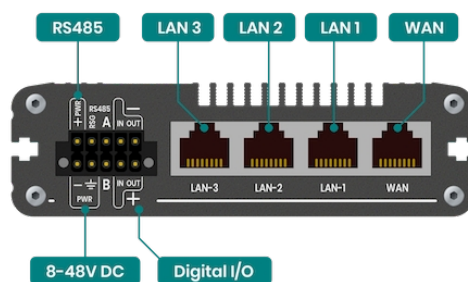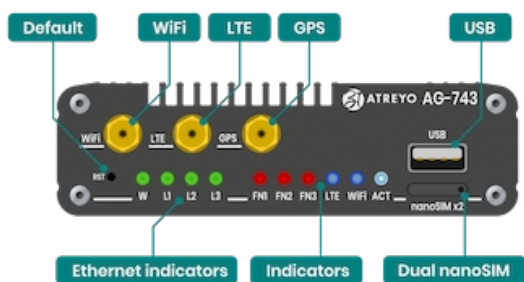
Cellular modem specification of IN (India) version

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

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			More information
AG-743	Cellular Network			
	GPRS	3G	LTE	
AG-743				Without cellular modem
AG-743-LT-EU	✓		✓	Model for India and EU
AG-743-LT-GL	✓	✓	✓	Global model

Table with model structure for ordering

Model Structure		
Model structure example	AG-743-	LT- EU

Base model name

AG-743

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)

For more details scan or click on QR code

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