TECHNICAL SPECIFICATION

A T R E Y O®
SOLUTIONS THAT SIMPLIFY

Industrial IoT Gateway / Industrial Computer	AG-1612

Features

- **Cortex-A7 quad core**
- **LTE, LAN and WiFi connectivity**
- **Support of Linux: Debian, Ubuntu, Yocto etc.**
- **2 opto-isolated digital inputs**
- **1 potential free outputs NO outputs**
- **Opto-isolated RS485 and RS232**
- **2 USB**
- **HDMI display support**
- **2 native Ethernet with separate MAC addresses**
- **Wide power supply range up to 65V**
- **DIN rail mounting**
- **Aluminium enclosure**

The AG-1612 is multipurpose Industrial IoT Gateway / Industrial Computer based on four core ARM processor. Support many distribution of Linux systems. It consumes less power and has many interfaces. LTE/GSM, WiFi, dual Ethernet The internal memory can be easily extended by microSD card.

AG-1612 has opto-isolated RS485, RS232, two digital inputs and one relay output.

This gateway can run Rassberian, Debian, Yokto Linux and many other Linux distributions. The powerful processor, wide power supply range up to 65V, internal battery backup and extended temperature range from -25℃ up to +75℃ is perfect choice for industrial control systems.

Description	Parameter
Processor	
ARM	Cortex-A7 quad core
L1 cache	32KB for data, 32KB for instruction
L2 cache	512KB, 8 ways
Target frequency	960MHz
Multimedia processing	NEON engine with SIMDv2/VFPv4 ISA support
RAM	
Memory size	512MB DDR3
Memory speed	1066max
Graphics	
HDMI	TX 1.4, resolution up to 720P
Storage	
MicroSD card	Up to 356Gb
eMMC	8Gb (optional 16 and 32Gb)

Description	Parameter
USB	
USB port number	1
USB	2x USB 2.0
UVC	Support USB video class (UVC)
Connector	USB type A (vertical)
Protection	IEC 61000-4-2 level 4: – 15 kV (air discharge) – 8 kV (contact discharge)
USB overload	1.6A common to 2 port.
Serial RS232	
Port number	1
Data Rate	1200bps ~ 921600bps
Signals	RX, TX, RTS, CTS
Type	Opto-isolated (common with RS485)

Description	Parameter
Connector	Pluggable screw socket
Protection	Opto-isolated 2.5kV RMS per UL 1577
Serial RS485	
Port number	1
Interface Type	RS485
Data Rate	1200bps ~ 921600bps
Signals	A and B
Connector	Pluggable screw socket
Protection	Opto-isolated 2.5kV RMS per UL 1577
	IEC 61000-4-2 level 4: – 15 kV (air discharge) – 8 kV (contact discharge) MIL STD 883C-Method 3015-6: class 3. (human body model)
	Fail-safe receiver for bus open, short and idle
LTE/GSM Interface	
Band LTE FTD	B1/B3/B5/B8
Band LTE TDD	B34/B38/B39/B40/B41
Band GSM	900/1800MHz
GPRS Slot	Multi-slot class 12/10
Link	GPRS class 12: max. 85.6 kbps (downlink/uplink)
Power	Compliant to GSM phase 2/2+ – Class 4 (2 W 900MHz) – Class 1 (1 W 1800MHz)
SIM card	MicroSIM, push-pull type holder 3V/1.8V
Antenna Connector	SMA female
GNSS	
GNSS Systems	GPS, BAIDOU
Antenna Connector	SMA female
Ethernet	
Number	2
Type	10/100M port
PoE	PoE (spare pare)
Ethernet Connector	RJ45 with LED indicators
WiFi	
Data speed	Up to150Mbps
Bands	2.4 GHz ISM
Standards	802.11 b/g/n, 802.3, 802.3u 802.11e-compatible bursting and I standards

Description	Parameter
Modulation schemes	BPSK, QPSK, 16 QAM, 64 QAM
Security	WEP, TKIP, and AES, WPA, WPA2
Digital Inputs	
Input number	2
Input type	Opto-isolated 2.5kV
Configuration	Common IN-GND
Connector	Pluggable screw socket
Max Vin	30V DC
Logic 1 Voltage range	3.5V to max $_{Vin}$
Relay Outputs	
Output number	1
Output type	NO
Load$_{max}$	3A 230V AC or 3A 30V DC
Connector	Pluggable screw socket
System Functions Indicators	
Indicators	ACT – activity – dual colour
	LTE/GSM signal 4 – yellow
	Internet connection – blue
	LTE modem activity – green
	WiFi ON – red
	Data Activity – red
	Digital output indicator – red
	Digital input indicators – green
	RS485 data – yellow
	RS232 data – yellow
System	
Operating systems	Debian Linux, Rassberian, Yokto Linux, Ubuntu Linux etc.
Booting source	eMMC, microSD
Power Supply	
Power Voltage range	12-65V DC
Power consumption	6W average
Connector	3 pin (+, -, earthing) pluggable screw socket
Protection	Reverse polarity
	Over voltage
Battery backup[1]	
Battery type	LiOn
Battery voltage	7.4V
Backup time	3-4h (approx)
Charging type	DC/DC system with current control
Battery protection	Over voltage, over temperature, low battery

1 Selected BAT models only

Description	Parameter		Description	Parameter
Physical Characteristics			**Environmental Specification**	
Installation	DIN-Rail, clamp		Operating Temp.	-25 ~ 80°C (-13 ~ 158°F)
Housing	Aluminium		Storage Temp.	-40 ~ 85°C (-40 ~ 176°F)
Dimensions	135 x 38 x 136mm (W x H x D)		Ambient RH	5% to 95% (non-condensing)
Weight	700g			

Ordering information

Models	Hardware Options							
Model	Cellular Network			GNSS	Internal Memory		Battery
AG-1612	GPRS	3G	LTE		8GB	16GB	
AG-1612	√		√	√	√		√
AG-1612-16GB	√		√	√		√	√
AG-1612-NB	√		√	√	√		

Atreyo Research & Development LLP	+91 9727741417 info@atreyo.in	414, Sunrise Mall, Mansi Circle, Vastrapur Ahmedabad 380015, India