TECHNICAL SPECIFICATION

ATREYO
SOLUTIONS THAT SIMPLIFY

Advanced Industrial Computer / IoT Gateway | **AG-1651**

Features

- ARM Cortex-A7 quad core processor
- LTE, GSM, LAN, BLE and WiFi connectivity
- Support of Linux: Debian, Ubuntu, etc.
- 6 opto-isolated digital inputs
- 4 potential free outputs NO/NC outputs
- Two isolated RS485
- Four isolated RS232
- Five 24bit isolated ADC
- 3 USB host
- HDMI display support
- 2 Ethernet
- MicroSD card
- Wide power supply range up to 70V
- Internal battery backup

Multipurpose Advanced Industrial Computer / IoT Gateway based on four core powerful ARM processor. Very rich in wired and wireless interfaces. For Edge AI computing and supports multiple distributions of Linux systems like Raspberry Pi OS, Debian and many other Linux distributions. Compact design make more space saving in control panels.

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 (SD 2.0)
eMMC	8Gb (optional 16 and 32Gb)
LTE/GSM Interface	

Description	Parameter
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
SIM card slots	2 with the possibility of sealing
Antenna Connector	SMA female for LTE and one for DIV
WiFi	
Data speed	Up to 150Mbps
Bands	2.4 GHz ISM
Standards	IEEE 802.11a/b/g/n

Description	Parameter
Modulation schemes	DSSS, DBPSK, DQPSK, CCK, OFDM, BPSK, QPSK, 16QAM, 640QAM
Security	WEP, TKIP, and AES, WPA, WPA2
Bluetooth	
Standard	V4.2+EDR, 2.1/3.0, BLE dual mode
Antenna	Simultaneous BT/WLAN
GNSS	
GNSS Systems	GPS, BAIDOU
Antenna Connector	SMA female
USB	
USB port number	3
USB type	2.0
USB overload	2A common to 2 port and separate for one port
USB boot	Support boot from USB-0
UVC	Support USB video class (UVC)
Serial RS232	
RS232 port number	4
Type	Opto-isolated
Signals	RX TX
Baud rate max	921600 bps. Support nonstandard baud-rate.
Connector type	RJ12
Serial RS485	
RS485 port number	2
Type	Opto-isolated
Baud rate max	921600 bps. Support nonstandard baud-rate.
Connector type	RJ45
Analogue Inputs	
Input number	5
ADC resolution	24 Bits
Type	Opto-isolated, common ground to all analogue inputs
Connector type	Pluggable screw connector
Digital Inputs	
Input number	6
Input type	Opto-isolated 2.5kV
Configuration	Separate IN-GND for all inputs
Max V_{in}	30V DC
Logic 1 Voltage range	3.5V to max Vin
Connector type	Pluggable screw connector
Potential free digital outputs	
Output number	×4
Type	Potential free, relay NO/NC

Description	Parameter
V_{max}	240V AC
A_{max}	3A continues
Connector type	Pluggable screw connector
Ethernet	
Number	2
Type	10/100M ports
Technology Support	Support full and half duplex
	Support Daisy Chain and NIC mode for different application scenarios
	Support MAC clone and MAC security
	Support 4 traffic classes (compatible with IEEE802.1D-2004)
PoE	PoE class A (15-60V DC)
Connector type	RJ45 with LED indicators
Security	
Boot	External boot image verified by ED25519 algorithm
	External boot image will be signature-verified by internal ROM code and private/public key before loaded.
Crypto Engines	PKA Engine (RSA)
	Hash Engine (SHA3, MD5)
	Bulk Encryption/decryption Engine (AES)
Indicators	
Working	1 LED
Battery functions	Yellow
RS232	RX green and TX yellow x 4
RS485	RX green and TX yellow x2
LTE level indicator	4 red LED
Digital inputs	6 green LED
Low battery	1 red LED
230V input	1 red LED
Internet	1 blue LED
LTE	1 green LED
LTE ON	1 red LED
WiFi ON	1 red LED
Software	
OS support	Ubuntu Linux, Kail Linux, Debian Linux, CentOS linux, Fedora-Mate, Mozilla IoT gateway, Yocto Linux
Power supply	
Power	12-70V DC
Connector type	3 pin screw connector
Protection	Surge protection, reverse polarity

Description	Parameter
	protection
Power consumption	Up to 8W without battery charging ON (average 5W)
Battery	Battery 7.4V lithium 2200mAh
Backup time	Approx 3 hour continuos working and 12 hour in sleep mode.
Battery backup	
Battery type	Li-Ion
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
Physical Characteristics	
Installation	Clamp, DIN-Rail Mounting
Housing	Aluminium
Cooling	Passive
Dimensions	137mm x 88mm x 90mm (WxHxD)
Weight	
Environmental Specification	
Operating Temp.	-25 ~ 70°C (-13 ~ 158°F)
Storage Temp.	-40 ~ 85°C (-40 ~ 176°F)
Ambient RH	5% to 95% (non-condensing)

Disclaimer

- All dimensions mentioned in the drawings are not to scale and may vary/differ due to construction contingencies and site conditions which are subject to change as may be decided by the company.
- The specifications and amenities mentioned in this document and promotional documents are only representational and informative. The descriptions in this specification are based on the default configuration of your device.
- Images used in this specification may differ in appearance from the actual product.
- The Atreyo Research and Development LLP reserves rights to make additions, deletions, alterations or amendments as and when it deems fit and proper, without any prior notice.

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