

AIG-101 系列

2 埠 Modbus RTU/ASCII/TCP 轉 MQTT/Azure/AWS 雲端就緒閘道器



特色與優點

- 支援通用 MQTT 用戶端
- 支援針對 Azure/AWS Cloud 使用內建裝置 SDK 的 MQTT 連接
- 支援 Modbus RTU/ASCII/TCP 主控裝置/用戶端
- 支援 Modbus TCP 伺服器
- 內建網路流量監控與診斷工具，可輕鬆進行疑難排解
- 支援 Store-and-Forward 與資料記錄器 (Datalogger) 進行資料緩衝
- 與 Moxa ioLogik /UPort 裝置無縫整合以輕鬆延伸 I/O 與串列介面
- 內建資料處理功能，可降低 / 免除程式撰寫需求
- -40°C 至 70°C 操作溫度範圍
- 提供 LTE Cat.1 US、EU 與 APAC 型號

認證



簡介

AIG-101 系列閘道器是入門級 IIoT 閘道器，可將 Modbus RTU/ASCII/TCP 裝置連接至雲端平台與應用程式，例如 Azure、AWS 與 MQTT。AIG-101 作為 Modbus 的主控裝置，可以整合現有 Modbus 裝置與雲端平台，輕鬆收集資料並將資料傳輸至 Azure 與 AWS 雲端。此外，閘道器也支援 Modbus TCP 從屬模式，可將資料同時傳輸至雲端平台與本機 SCADA 系統。

輕鬆延伸 I/O 與序列介面

隨著現場數目的增加，需要額外的 I/O 或序列介面來連接裝置，例如感測器、儀錶和逆變器，來收集和處理所產生的大量資料。典型的方法是安裝遠端 I/O 與裝置伺服器以延伸介面，但對大多數使用者而言，相關的設定與配置可能相當繁瑣。為了為介面延伸提供極度簡單的配置流程，AIG-101 閘道器進行了更完善的整合，並提供直覺設定工具，可透過幾次點擊即可完成 Moxa ioLogik 與 UPort 的設定。

內建即用型資料預先處理功能，無需編寫程式碼

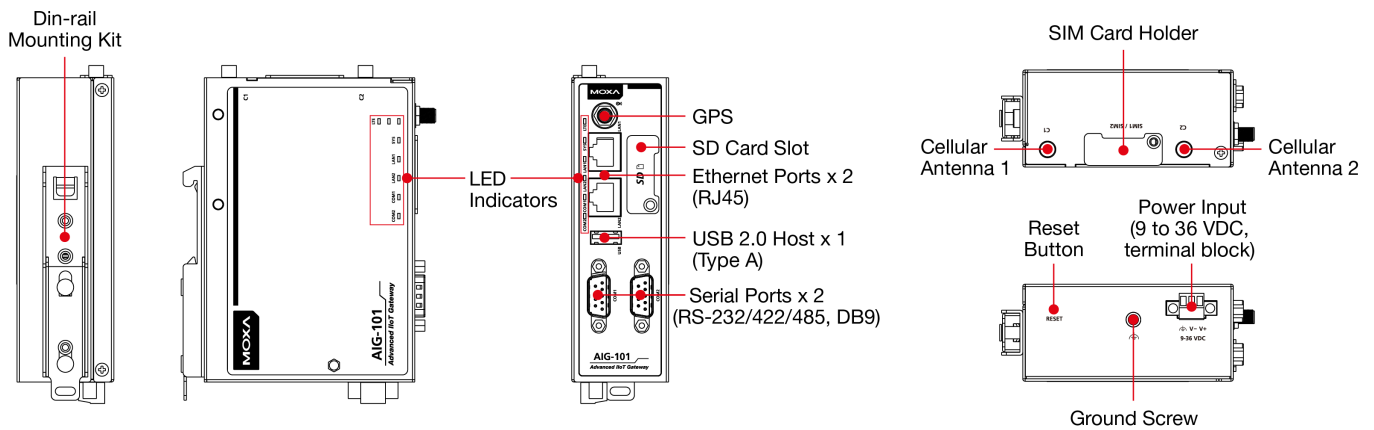
能源管理系統主要收集能源資料，例如平均發電與能源效率。之後此資料會用於顯示現場條件、觀察能源趨勢，及最佳化能源使用情況。大多數邊緣系統需要額外編寫程式來處理能源管理系統所需的資料。AIG-101 可以預先處理邊緣資料並將有意義的資料直接傳送至能源管理系統。直覺性 UI 可便於輕鬆進行 IIoT 閘道設定以收集和處理資料。

安全遠端存取可降低維護成本

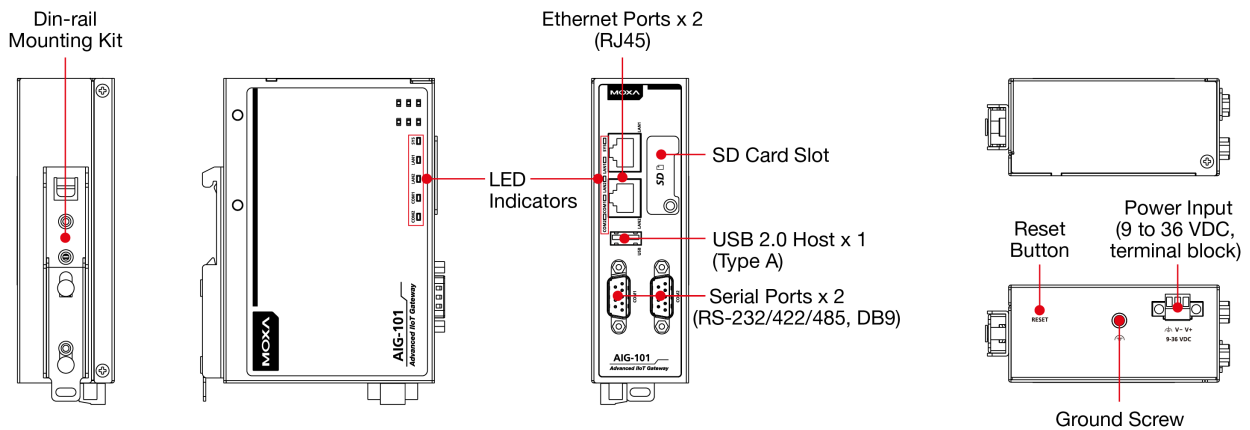
AIG-101 內建強大的疑難排解工具，可診斷通訊協定狀態並擷取/分析網路封包流量，協助工程師遠端找出問題根因，並快速使系統恢復正常運作。這些工具亦提供對 AIG-101 的安全遠端存取能力，使維護工程師可直接存取裝置進行處置，節省大量時間與人力，並降低能源管理系統的停機時間。

外觀

AIG-101-T-AP/EU/US



AIG-101-T



規格

Computer

CPU	Armv7 Cortex-A8 1 GHz
DRAM	1 GB DDR3
Storage Slot	microSD slots x 1 SD 2.0 interface (SDHC/SDXC)
Storage Pre-installed	8 GB eMMC
No. of Tags Supported	1500

Computer Interface

Ethernet Ports	Auto-sensing 10/100 Mbps ports (RJ45 connector) x 2 MDI/MDI-X connection
Serial Channels	RS-232/422/485 ports x 2 (software-selectable, DB9 male connector)
USB 2.0	USB 2.0 hosts x 1, type-A connectors
Cellular Antenna Connector	SMA x 2
Number of SIMs	2

SIM Format	Nano
GPS Antenna Connector	SMA x 1
Ethernet Interface	
10/100BaseT(X) Ports (RJ45 connector)	2, Auto MDI/MDI-X connection
Magnetic Isolation Protection	1.5 kV (built-in)
Ethernet Software Features	
Industrial Protocols	Modbus TCP Client (Master) / Server (Slave) Generic MQTT Azure IoT Device AWS IoT Core FTP/SFTP
Configuration Options	Web Console (HTTP/HTTPS) AIG QuickON
Time Management	NTP Client GPS
Serial Interface	
No. of Ports	2
Connector	DB9 male
Serial Standards	RS-232/422/485
Baudrate	300 bps to 921.6 kbps
Data Bits	5, 6, 7, 8
Stop Bits	1, 2
Parity	None, Even, Odd, Space, Mark
Flow Control	RTS/CTS, XON/XOFF
Serial Signals	
RS-232	TxD, RxD, RTS, CTS, DTR, DSR, DCD, GND
RS-422	Tx+, Tx-, Rx+, Rx-, GND
RS-485-2w	Data+, Data-, GND
Serial Software Features	
Industrial Protocols	Modbus RTU/ASCII Master
Cellular Interface	
Cellular Standards	LTE Cat. 1
Band Options (US)	LTE Bands: Band 2 (1900 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz) / Band 12 (700 MHz) / Band 13 (700 MHz) / Band 14 (700 MHz) / Band 66 (1700 MHz) / Band 71 (600 MHz) UMTS Bands: 2 (1900 MHz) / Band 4 (1700 MHz) / Band 5 (850 MHz) Carrier Approval: Verizon, AT&T

Band Options (EU)	LTE Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 7 (2600 MHz) / Band 8 (900 MHz) / Band 20 (800 MHz) / Band 28 (700 MHz) UMTS Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) Band 8 (900 MHz)
Band Option (APAC)	LTE Bands: Band 1 (2100 MHz) / Band 3 (1800 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz) / Band 28 (700 MHz) UMTS Bands: Band 1 (2100 MHz) / Band 5 (850 MHz) / Band 8 (900 MHz)

Generic MQTT Client

Versions Supported	v3.1.1 v3.1
QoS Levels	0, 1, 2
Authentication Methods	Username and password
Secure Transmission	TLS 1.0 TLS 1.1 TLS 1.2
Native Capabilities	Keep Alive Retain Message Clean Session Will and Testament
Moxa Functions	Store and Forward Custom Payload Remote API Invocation

Azure IoT Device

Connection Protocols Supported	MQTT MQTT over WebSockets AMQP AMQP over WebSockets
Authentication Methods	Symmetric Key X.509 Certificate
Azure Direct Methods	Reboot Software Upgrade Remote API Invocation
Moxa Functions	Store and Forward Custom Payload

AWS IoT Core

QoS Levels	0,1
Authentication Methods	X.509 Certificate Private Key Trusted Root CA
Native Capabilities	Keep Alive
Moxa Functions	Store and Forward Custom Payload
Commands Invokable Via Jobs	Reboot Software Upgrade Remote API Invocation

Modbus RTU/ASCII

Mode	Client (Master)
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23

Max. No. of Commands	256 per port
Max. No of Connected Devices	62
Modbus TCP	
Mode	Server (Slave) Client (Master)
Functions Supported	1, 2, 3, 4, 5, 6, 15, 16, 23
Max. No. of Client Connections	4
Max. No. of Server Connections	64
Max. No. of Commands	1500
Power Parameters	
Input Voltage	9 to 36 VDC
Power Consumption	8 W (max.)
Power Connector	Screw-fastened Euroblock terminal
Physical Characteristics	
Housing	Metal
Dimensions	128.5 x 89.1 x 41 mm (5.06 x 3.51 x 1.61 in)
Weight	AIG-101-T: 492 g (1.08 lb) AIG-101-T-AP/EU/US: 512 g (1.13 lb)
Installation	DIN-rail mounting Wall mounting (with optional kit)
Environmental Limits	
Operating Temperature	-40 to 70°C (-40 to 158°F)
Storage Temperature (package included)	-40 to 85°C (-40 to 185°F)
Ambient Relative Humidity	5 to 95% (non-condensing)
Standards and Certifications	
EMC	EN 55032/35
EMI	CISPR 32, FCC Part 15B Class A
EMS	IEC 61000-4-2 ESD: Contact: 4 kV; Air: 8 kV IEC 61000-4-3 RS: 80 MHz to 1 GHz: 10 V/m IEC 61000-4-4 EFT: Power: 2 kV; Signal: 1 kV IEC 61000-4-5 Surge: Power: 1 kV; Signal: 1 kV IEC 61000-4-6 CS: 10 V IEC 61000-4-8 PFMF
Cybersecurity	EN 18031-1
Safety	IEC 62368-1 UL 62368-1 EN 62368-1
Radio Frequency	FCC PTCRB RCM
Shock	IEC 60068-2-27

Vibration	IEC 60068-2-64 5 Grms @ 5 to 500 Hz, random wave, 1 hr per axis (without USB devices attached)
Cellular Standards	EN 301 908-1 (WCDMA/LTE) EN 301 908-2/-13 (WCDMA/LTE) EN 301 489-1/-19 (GPS) EN 301 489-1/-52 (WCDMA/LTE) EN 303 413 (GPS) EN 62311
Carrier Approvals	Verizon AT&T
Green Product	RoHS, CRoHS, WEEE

MTBF

Time	566,458 hrs
Standards	Telcordia Standard SR-332

Warranty

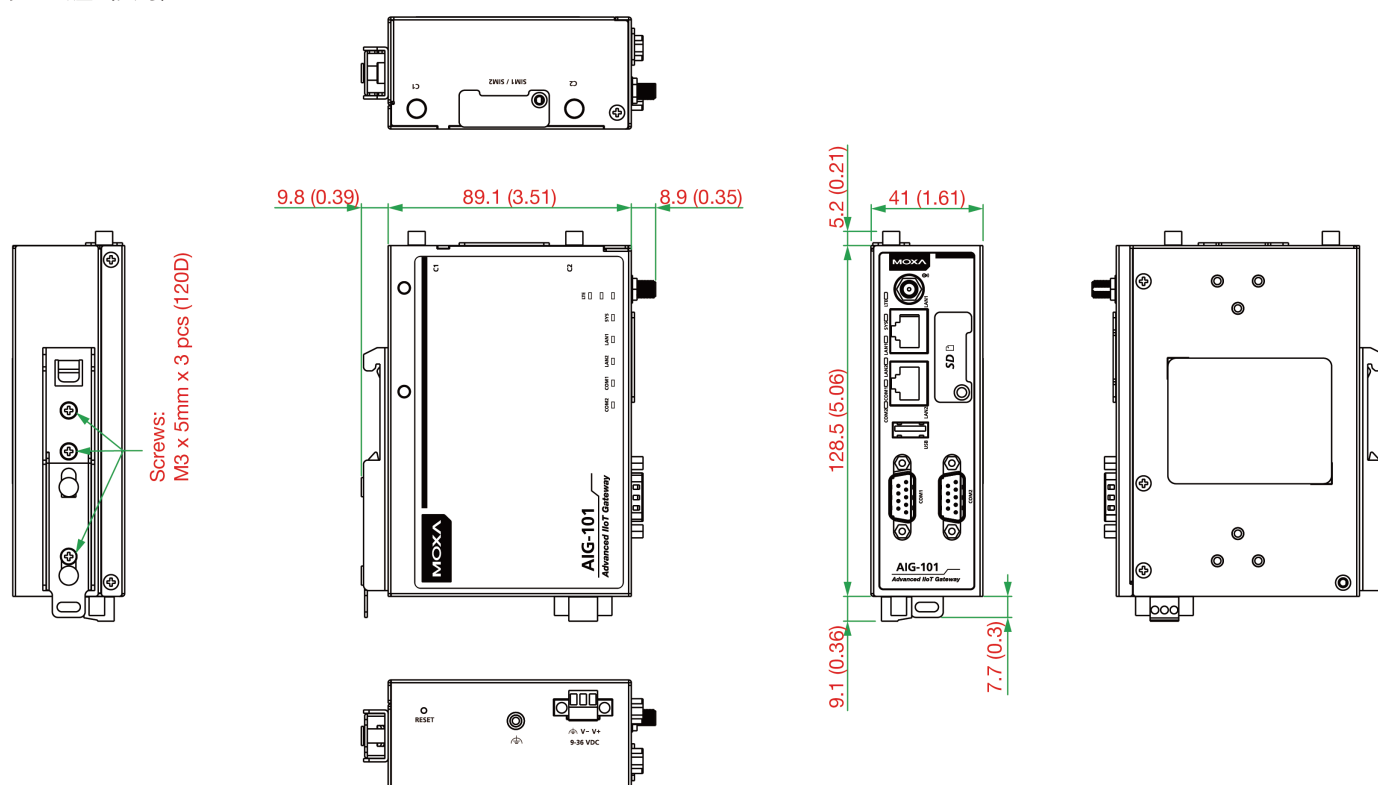
Warranty Period	5 years
Details	See www.moxa.com/tw/warranty

Package Contents

Device	1 x AIG-101 Series gateway
Cable	1 x terminal block to power jack converter
Installation Kit	1 x DIN-rail kit
Documentation	1 x quick installation guide 1 x warranty card

尺寸

單位：公釐（英吋）



訂購資訊

Model Name	LTE	Band
AIG-101-T	-	-
AIG-101-T-AP	Cat. 1	AP
AIG-101-T-EU	Cat. 1	EU
AIG-101-T-US	Cat. 1	US

配件（選購）

Power Adapters

PWR-12150-AU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, AU plug, -40 to 75°C operating temperature
PWR-12150-CN-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, CN plug, -40 to 75°C operating temperature
PWR-12150-EU-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, EU plug, -40 to 75°C operating temperature
PWR-12150-UK-SA-T	Locking barrel plug, 12 VDC, 1.5 A, 100 to 240 VAC, UK plug, -40 to 75°C operating temperature
PWR-12150-USJP-SA-T	Locking barrel plug, 12 VDC 1.5 A, 100 to 240 VAC, US/JP plug, -40 to 75°C operating temperature

Antennas

ANT-LTE-ASM-02	GPRS/EDGE/UMTS/HSPA/LTE, 2 dBi, omnidirectional rubber-duck antenna
ANT-LTEUS-ASM-01	GSM/GPRS/EDGE/UMTS/HSPA/LTE, 1 dBi, omnidirectional rubber-duck antenna

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