



## LPWA IIoT RTU IOG500-1M112

### Location Free Telemetry at Instant

IOG500-1M112 is Cat.M1/NB-IoT based remote terminal unit (RTU) for machine telemetry of SCADA system. With both Ethernet and serial interfaces, It can connect to both IP based network equipment and legacy serial device. With Cellular WAN, it is non-geographic limit and can install at instant. Three are rich functions capable of performing Intelligent protocol conversion and secure data transfer. Data logging function can store field devices data for non-broken or scheduling transfer. Smart event handling allow administrator to manage system or initiate event to trigger action remotely. It can also action and notify staff when system status change.

### Secure Transfer

To achieve secure transfer inside SCADA system, there are rich protocol inside RTU. Built in both IPv4/IPv6 and routing protocol are compatible with most ISP network. Cellular toolkit simplifies setting, utilizes ISP service and monitoring data usage. Capable of various VPN technologies, it can build tunnel with famous VPN server for scenario requirement. Friendly setting with Web UI for basic, CLI and Script window for advance requirement. Built-inTR-069 can work with AMIT-NMS and SNMP work with popular network tools for multi-site management.

### Intelligent Protocol Conversion

Built-in multiple interface, it connect to not only modern IP based equipment but also acquired legacy serial devices. It can performs intelligent protocol conversion between Modbus/TCP and Modbus/RTU/ASCII among RT/OT/IT sides. Besides to be Modbus gateway, it can also be slave for configuration or Modbus master to access device when perform data logging function.

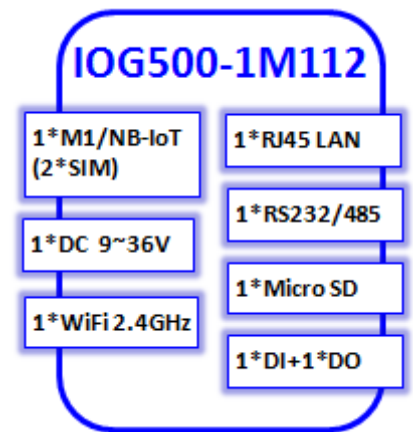
### Multi-Mode Data Logging

There is Micro SD of storage expansion for Data Logging and configuration recovery. Multi-mode data logging function can record real time data transaction of serial and I/O devices. It can be downloaded by FTP or Web UI. It enables non-broken data transfer and data history for Administrator's further data analysis and statistics.

### Smart Event Handling

According to pre-defined rule lists, Administrator can change gateway setting or trigger event action remotely by SMS, SNMP trap. When there is new input or behavior change of RTU, it will be new event to trigger action, and also can notify administrator or related devices by SMS or SNMP traps. It will be useful function to work as automatic process when setting one event to trigger consecutive events for special purpose within gateway or more remote devices.

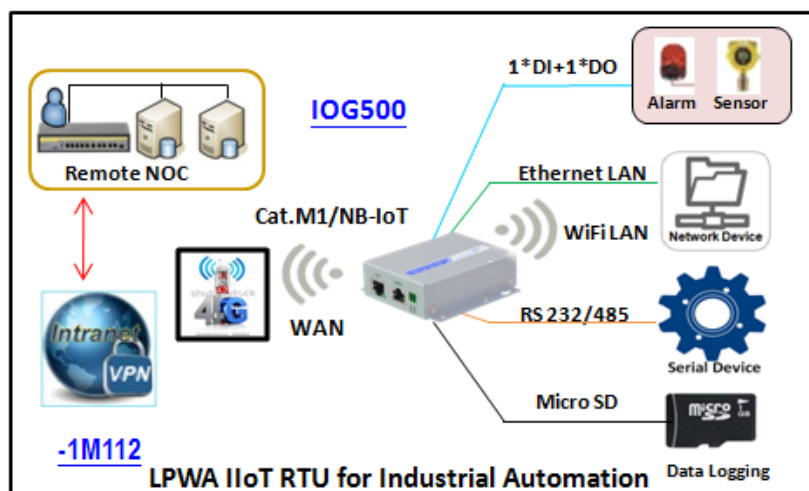
### Block Diagram:



### Application:

- Infrastructure: ITS, Utility, AMR, Lighting, Station
- Security: Surveillance, Environment, Disaster
- Industry: Livestock, Agriculture, Heavy, Factory
- Device SCADA: PLC, IED, Generator, Sensor, Pipe
- Building: Security, Energy, Waste, Facility, Lighting

### Connection Diagram:



-1M112

LPWA IIoT RTU for Industrial Automation

Data Logging

# Specification Summary

## Device Interface

- **4G Module:** 1\*LTE Cat.M1/NB-IoT, 2\*Micro-SIM (3FF)
- **Ethernet:** 1\*RJ 45 FE
- **WiFi:** 1\*11n 1T1R
- **Field Bus:** 1\*TB RS232/485
- **Log Storage:** 1\*Micro SD
- **I/O:** 1\*DI (“Logic 0”: 0~2V, “Logic 1”: 5V~30V), 1\*DO (Non-Relay mode : 24V/300mA)
- **Power Input :** 1\* DC 9V ~ 36V (Terminal Block)
- **Antenna Con.:** 2\*SMA (F)-LTE , 1\*SMA(M)-WiFi

## WAN & Uplink

- **WAN:** Cellular
- **Cellular:** Cat.M1/NB-IoT, IP Pass-through
- **Network Monitor:** ICMP/DNS Query

## WiFi

- **Standard:** 802.11 Industry Compliance
- **Mode:** AP Router
- **Security:** WEP, WPA,WPA2, WPA-PSK, WPA2-PSK, 802.1x

## Protocol

- **LAN & VLAN:** DHCP Server/Relay
- **Port Forward:** NAT 1-1, 1-many, transversal, DMZ, Virtual Server & Computer, VPN Pass-through
- **Routing:** Static, Dynamic - RIP1/RIP2, OSPF, BGP

## Field Comm.

- **Virtual COM:** RFC2217, TCP Client, TCP Server, UDP
- **Modbus:** Gateway for Modbus TCP/RTU/ASCII Master/Slave Access; Slave for Device Status/Information Access
- **Data Logging:** Sniffer, Off-line / Full-time Proxy, mixed modes

## Object

- **Scheduling:** Time Schedule List
- **Grouping:** Host Grouping List
- **Ext. Server:** Email, Syslog, RADIUS, SCEP, FTP, DDNS, IGMP
- **Certificate:** My Certificate, Trusted Certificate, Issue Certificate

## Security

- **VPN Tunneling:** IPSec, OpenVPN, PPTP, L2TP, GRE
- **Scenario:** Site/Host to Site/host; Hub and Spoke; Dynamic VPN
- **VPN Capability:** IPSec: up to 3 tunnels
- **Firewall:** SPI Firewall with Stealth Mode, IPS
- **Access Control:** Packet Filter, MAC Filter

## Administration

- **Configuration:** Web UI, CLI, Command Script
- **Management:** SNMPv3 Std. & AMIT MIB, TR069
- **System:** Upgrade, Backup & Restore, Reboot & Reset, SysLog
- **FTP:** FTP Server, User Account
- **Diagnostic:** Diagnostic Tools

## Service

- **Cellular Toolkit:** Data Usage, SMS, SIM PIN, USSD, Network Scan
- **Event Handling:** User Defined Manage/Notify Event; Action & Trigger by SMS, Mail, Syslog, SNMP Trap, Modbus, I/O

## Environment

- **OP/Storage Temp.:** -30°C ~ 70°C ; -40°C ~ 85°C
- **Humidity:** 10%~95% (non-condensing)
- **Enclosure:** Metal, Bracket, DIN-Rail
- **Dimension:** 93x90x27mm (with mounting brackets)

## Certificate - CE

- Standards & Regulation
- EMI: EN 55032: 2015 +AC: 2016 Class B
- EMS: EN 55024, IEC 61000,
- Radio: EN 301 489, EN 300 328 ,EN 301 893, EN50385
- Safety: EN 60950-1

## Package Accessory

- 1\*Device
- 1\*Power Adapter DC 12V/1A
- 2\*Cellular Antenna (3dBi), 1\*WiFi Antenna (5dBi)
- 1\*RJ45 Cable
- 1\*Terminal Block (10-pin for DC Power & DI/DO & Serial)
- 1\*DIN Rail Kit, 1\*Screw Bag
- 4\*Rubber feet

## SKU Information:

**IOG500-1M112 -00-yy : LTE Cat.M1/NB1**

'yy': Area Variant. As below table

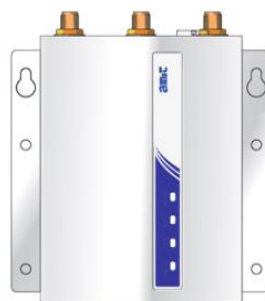
yy	SKU	Cellular Band	Module Cert.	System Cert.	GNSS
<b>E0</b>	EU	B1/3/7/8/20	CE, GCF	CE	-
<b>R0</b>	Russia	B3/7/20	-	EAC	-
<b>U0</b>	US	B2/4	PTCRB, AT&T	TBC	-
<b>J0</b>	Japan	B1/9/18/19/21	Telec, NTT, KDDI	Telec	-
<b>J1</b>	Japan	B1/8/41	Telec, Softbank	Telec	-
<b>T0</b>	Taiwan	B3/7/8/28	NCC	TBC	-
<b>C0</b>	China	B3/8/39/40/41	MII, SRRC	TBC	-
<b>A0</b>	Australia	B1/3/5/7/28/40	RCM	TBC	-

### Comment:

- Specifications are subject to change without prior notice.
- Besides CE, other regional certification needs to be checked for availability.

## Mechanic Drawing

### • Top View



### • Rear View



### • Front View



## AMIT Wireless Inc.

TEL: +886 (0)6 505 8026 FAX: +886 (0)6 505 8068

Web: <http://www.amitwireless.com> Email: [sales@amit.com.tw](mailto:sales@amit.com.tw)

No. 28, Lane 31, Huandong Rd., Sec. 1, Xinsi Dist., Tainan City 74146, Taiwan (R.O.C.)