M2M INDUSTRIAL ROUTER 2 DCU MBUS

Advanced industrial router with high-end DCU features

The robust DCU device features an Ethernet port, an RS485 port, an MBus port, a cellular module, and compact industrial design. It is currently available with either LTE Cat.1 or LTE Cat.M/NB modules, offering improved coverage. The device has undergone a complete redesign, providing improved processing speed with an eMMC chip for secure boot and encrypted data storage.

It also features an OTP-enabled memory chip, an option for a Chip SIM (MFF2), and supercapacitor protection along with the latest security protocols and features for maximum security.

Reliable and Rugged Communication Device for Metering and Industrial Applications. This device is designed for use in various metering and M2M / IoT industrial applications, including Automated Metering Infrastructure (AMI) and industrial automation projects.

The DCU is capable of reading registers from connected PLCs and sensors on RS485 (via Modbus RTU), on Ethernet (via Modbus TCP), and also receive data from up to 256 MBus meters. The DCU transmits valuable data to the data center through the MQTT protocol, providing a cost-effective solution for industrial automation and smart metering connectivity.

The device utilizes the open-source OpenWRT® operating system, allowing clients to compile their own applications to the firmware. It features a user-friendly web admin interface for easy access and configuration.

The product can also be managed with the state-of-the-art Device Manager® platform, providing clients with the ability to perform OTA firmware updates, mass deployments and reconfiguration of devices more efficiently.

MAIN FEATURES

- Power / Current: 12V, 1.25A (for 30 Mbus devices) / 24V, 1.25A (for 256 Mbus devices)
- Enclosure: rugged, robust, IP51 aluminum casing
- Cellular module order options:
    - LTE Cat.1 / 450MHz module with 2G „fallback" feature
    - LTE Cat.M / Cat.NB / 450MHz module with 2G „fallback" feature
- mini SIM (2FF) / Chip SIM option (MFF2)
- eMMC chip for Secure boot and Secure Key Storage features
- Interfaces: Ethernet (RJ45, LAN), RS485, Mbus, micro-USB port
- Secure wireless data transmission
- Data Acquisition: reading PLC registers using Modbus, reading meter data using the MBus (up to 30 or 256 slave devices) - by order
- Protocols: DHCP, DynDNS, IP Route, IPv4/IPv6, (S)FTP, (S)NTP, SSHv2, HTTPS, IPsec, OpenVPN, TLS v1.2, Modbus, MBus, MQTT
- Customized OpenWRT operation system
- User Interfaces: WebGUI / LuCi, Linux command line, UCI
- Device Management platform (order option)

APPLICATION

- SMART METERING
- INDUSTRIAL AUTOMATION
- CORPORATE PARTNERS

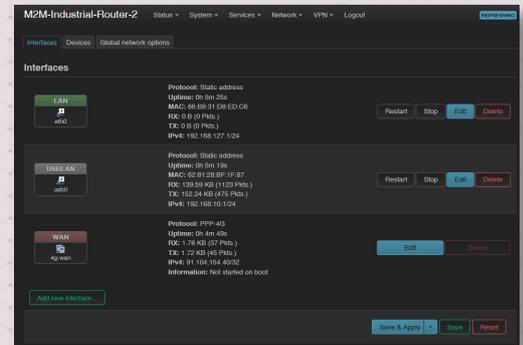# M2M Industrial Router 2 DCU MBUS

DESIGN AND OUTFIT

· IP51 aluminum enclosure designed to mount on DIN-rail

SECURITY FEATURES

· Encrypted eMMC memory chip for Secure boot, Secure Key Storage

· Monitoring of operation parameters, detection of network interface connection / disconnection with an alarm event sending to the management platform, unique passwords, firewall, IPSec, and TLS v1.2

· Remote management of routers using Device Manager® software (order option) via a secure TLS v1.2 connection

· Supercapacitor with LastGASP feature for the immediate notification of power outage to the Device Manager® platform

SOFTWARE SYSTEM

· Customized OpenWRT® operation system with web user interface, Linux-based command line, UCI

· Protocols: DHCP, DynDNS, IP route, NAT, IPv4/IPv6, (S)FTP, (S)NTP, HTTP(S), SSHv2, VPN, Modbus RTU/TCP, MBus, MQTT

M2M INDUSTRIAL ROUTER 2 DCU MBUS®		LTE Cat.1	LTE Cat.M / Cat.NB
Power	Voltage / Current	· For 30 Mbus devices: 12V DC, 1.25A (15W), microfit 4-pin power input connection / For 256 Mbus devices: 24V DC, 1.25A (30W), microfit 4-pin power input connection	
	Total consumption	· Min. (DCU only): 10W · Average (DCU with 30 Mbus slaves): 15W@12V · Max. (DCU with 256 Mbus slaves): 30W@24V	
System	Performance	· Cortex ARM Thumb® 600MHz processor · 128MB memory	
	Storage	· 4GB or 8GB eMMC memory chip (size by order option) with hardware protected Secure boot, secure storage features	
Communication module	Cellular technology	· LTE Cat.1 / 450MHz - 2G "fallback"	· LTE Cat.M / Cat.NB / 450MHz - 2G "fallback"
	Internet module	· SIMCom A7676E	· SIMCom SIM7070E
	Bands / Frequency (MHz)	· LTE: B1(2100) / B3(1800) / B8(900) / B20(800) / B28(700) / B31(450) / B72(450) · GSM/GPRS/EDGE: B3(1800) / B8(900)	· LTE Cat.M: B1(2100) / B2(1900) / B3(1800) / B4(1700) / B5(850) / B8(900) / B12(700) / B13(700) / B14(700) / B18(850) / B19(850) / B20(800) / B25(1900) / B26(850) / B27(850) / B28(700) / B31(450) / B66(1700) / B72(450) / B85(700) · LTE Cat.NB: B1(2100) / B2(1900) / B3(1800) / B4(1700) / B5(850) / B8(900) / B12(700) / B13(700) / B18(850) / B19(850) / B20(800) / B25(1900) / B26(850) / B28(700) / B31(450) / B66(1700) / B85(700) · GSM/GPRS/EDGE: B2(1900) / B3(1800) / B5(850) / B8(900)
	Speed (DL/UL)	· LTE: 10/5 Mbps · GSM/GPRS/EDGE: 236.8/236.8 kbps	· LTE Cat.M: 1119/589 kbps · LTE Cat.NB: 158.5/127 kbps · GSM/GPRS/EDGE: 236.8/296 kbps
	SIM card slot	· mini SIM card (type 2FF) · optional chip SIM (type MFF2)	
	Antenna connector	· 1x antenna connector (SMA, 50 Ohm) for LTE antenna	
Interface connectors	Ethernet	· RJ45 (10/100 Mbit, Ethernet LAN)	
	Industrial ports	· RS485 (half duplex, 9 600 - 115 200 baud, Modbus) · Mbus (up to 30 or 256 Mbus slaves, from 1200 to 9600 baud) - by order	
	microUSB	· USB Ethernet interface	
User interface	System / Services	· Operation system: OpenWrt®, Linux command line, UCI user interface · WebGUI / LuCi® interface · Protocols: DHCP, DynDNS, IP route, NAT, IPv4/IPv6, (S)FTP, SNTP time handlink, NTP time service, HTTP(S), SSHv2, VPN · Data Acquisition: reading registers of connected PLCs and sensors on RS485 (via Modbus RTU), on Ethernet (via Modbus TCP), reading meter data using the MBus (of up to 256 slave devices), sending data to the data center through MQTT	
	Security features	· Secure Boot, Secure Key Storage (by eMMC memory chip) · Monitoring of operation parameters, detection of network interface connection / disconnection with an alarm event sending to the management platform, unique passwords, firewall, IPSec, and TLS v1.2 · Management: Device Manager connection (TLS encryption between the router- and the remote management software) - order option · Supercapacitor with LastGASP feature (in case of a power outage, an immediate notification will be sended from the event to the management platform)	
	Configuration	· WebGUI / LuCi® web interface (local/remote access) · Device Manager® software (firmware/software refresh, parameter modification, reboot, etc.) - order option	
	Indication	· Status LEDs: 3 bi-color, reconfigurable	
Construction	Temperature range	· Operation: -40°C to +75°C / Storage: -40°C to +80°C at 0 to 95 relative humidity	
	Enclosure	· IP51 industrial aluminum case, mountable to DIN-rail/wall	
	Dimensions/Weight	· 92.5 x 85 x 35mm / 175 gr. (without antenna and power adapter)	

CE

WM Systems LLC   8 Villa str., Budapest, H-1222 HUNGARY   Phone: +36 (1) 310 7075   Support: +36 (20) 333 1111
Our website: **www.wmsystems.hu**   Sales inquiry: **intersales@wmsystems.hu**   Support: **support@wmsystems.hu**