M2M INDUSTRIAL ROUTER 2 DCU

WM SYSTEMS

Reliable and Rugged Communication Device for Smart Grid and Industrial Applications

The robust DCU device features an Ethernet port, RS485 port, cellular module, and compact industrial design. It is currently available with either LTE Cat.1 or LTE Cat.M/Cat.NB modules, offering improved coverage.

The Data Concentrator 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.

This device is designed for use in various smart grid and industrial M2M / IoT applications, including industrial automation projects.
The Data Concentrator can read registers of connected PLCs and sensors on RS485 (via Modbus RTU), on Ethernet (via Modbus TCP), and transmit data to the data center via the MQTT protocol, providing a cost-effective solution for industrial automation and smart grid connectivity.
The DCU 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: 12V, 1.25A (12-32V) / Supercapacitor
- 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, 10/100 Mbit, LAN), RS485, micro-USB port
- Secure wireless data transmission
- Data Acquisition: Reading PLC registers using Modbus, sending data to the data center through MQTT
- Protocols: DHCP, DynDNS, IP Route, IPv4/IPv6, (S)FTP, (S)NTP, SSHv2, HTTPS, IPsec, OpenVPN, TLS v1.2, Modbus, MQTT
- Customized OpenWRT operation system
- User Interfaces: WebGUI / LuCi, Linux command line, UCI
- Device Management platform (order option)

APPLICATION

- INDUSTRIAL AUTOMATION
- SMART GRID
- CORPORATE PARTNERS

M2M Industrial Router 2 DCU

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 (by option)
- Supercapacitor with LastGASP feature for the immediate notification of power outage to the Device Manager® platform
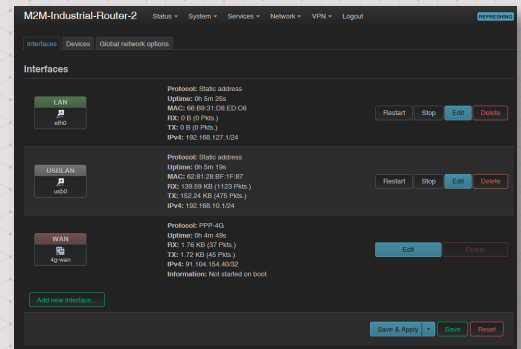
SOFTWARE SYSTEM

- 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, MQTT

M2M INDUSTRIAL ROUTER 2 DCU®		LTE Cat.1	LTE Cat.M / Cat.NB
Power	Voltage / Current	· 12V DC, 1.25A (12-32VDC), microfit 4-pin power input connection	
	Consumption	· Min. Consumption: 3W, 12VDC · Max. Consumption: 10W, 12VDC	
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 port (half duplex, 9 600 to 115 200 baud)	
	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, IP passthrough, VPN · Data Acquisition: reading registers from connected PLCs and sensors on RS485 (via Modbus RTU), on Ethernet (via Modbus TCP), 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

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