

RAM[®] 6000 3G Cellular RTUs

Sixnet[®] Networking Series



▶▶▶ Rugged Cellular RTUs with Local Control

Red Lion's Sixnet series RAM 6000 cellular RTUs with 3G network support, provide advanced control and communication for monitoring and controlling remote assets and processes in extreme conditions.

RAM 6000 industrial cellular RTUs seamlessly connect Modbus and DNP3 enabled SCADA equipment via 3G connectivity to remote networks or select Industrial Internet of Things (IIoT) Cloud platforms. Featuring a web-based event engine that can trigger I/O or send SMS text messages based on real-time operational data, RAM cellular RTUs can perform advanced local edge control and alert personnel of critical events. A built-in I/O concentrator allows the RAM to collect local sensor data and can optimize cellular bandwidth by optionally reporting only on an exception. With built-in Ethernet, serial and I/O, RAM RTUs easily integrate with existing equipment enabling remote monitoring and control for M2M applications in industries including oil and gas, water/wastewater, utility, transportation and mining.



APPLICATIONS

- > Mining
- > Oil & Gas
- > Transportation
- > Utility
- > Water/Wastewater

PRODUCT HIGHLIGHTS

- > Reliable 3G Cellular Connectivity
- > Natively Supports Modbus & DNP3 Protocols
- > Cloud Connectivity to IIoT Cloud Platforms
- > Routing Capabilities Provide Secure, Reliable Communication
- > Event Engine can Trigger I/O or Send SMS Messages
- > Optional PoE (Powered Device) Support

FEATURES & BENEFITS

- > Multiple Communication Ports
 - One RS-232 serial port and up to five Ethernet ports provide seamless connectivity to remote devices
- > Rugged, Industrial Design
 - Reliable operation in extreme environments
 - -40° to 75°C operating temperature*
 - DIN-rail and panel mounting options
- > Modbus and DNP3 Support
 - Easily communicates with SCADA equipment with native protocols
- > Cloud Connectivity to IIoT Cloud Platforms
 - Allows for seamless communication with leading IIoT cloud platforms
- Integrates with deviceWISE, Fusion Connect, IPwebcontrol, IQ Web SCADA and Skynet platforms
- > Out-Of Band Management (OOBM)
 - Secure remote CLI access via serial port
 - Pre-loaded with many console port configurations
- > Secure Ethernet Connectivity
 - Routing capabilities for reliable communication
 - Stateful firewall, SSL, GRE and VPN services reduce the risk of unwanted access
- > Advanced Event Engine Functionality
 - Easily configure control engine via drop-down menus
 - Trigger I/O, alarms and send SMS messages based on operational data

industrial
networking



▶▶▶ RAM 6000 3G Specifications

WIRELESS INTERFACE

AT&T HSPA+ with fallback to GSM
 Bell Mobility HSPA+ with fallback to GSM
 Generic HSPA+ with fallback to GSM
 Rogers HSPA+ with fallback to GSM
 TELUS HSPA+ with fallback to GSM
 Verizon EVDO with fallback to GSM

SELECTABLE IIOT CLOUD PLATFORMS**

deviceWISE
 Fusion Connect
 IPwebcontrol
 IQ Web SCADA
 Skkynet

PROGRAMMABLE PLATFORM

Configurable Events: up to 99 events can be triggered by over 200 system variable which in turn can send text messages or control I/O
 Software Development Kit (SDK)
 C/C++/Perl

SYSTEM PERFORMANCE

32-bit ARM9 400 MHz CPU
 512 MB NAND
 128 MB RAM

TUNNELING

IPsec, GRE, OpenVPN

ROUTING PROTOCOLS

OSPF, BGP, RIP

CLUSTERING

VRRP

IP

NAT, Port Forwarding, Dynamic DNS, DHCP
 Stateful Inspection Firewall, IP Transparency

CONNECTORS

Ethernet: One (1) or five (5) 10/100Base-T RJ-45 ports
 WAN capability on port 5
 Serial: One (1) RS-232 (DB9) 115,200bps
 USB: One (1) USB 2.0 (mini)
 Antennas: Two (2) SMA connectors (antenna, diversity)

INPUTS & OUTPUTS

Input: One (1) digital/analog
 Output: One (1) digital (open-collector)

POWER INPUT

Input Voltage: 8-30 VDC (12 or 24 VDC nominal)
 Standby Power: 1.4W - 4.0W (typical)
 Transmitting:
 660x: 2.0W - 2.9W
 6621: 3.6W - 4.5W
 680x: 2.6W - 5.0W
 6821: 4.2W - 6.6W
 PoE Operation (EB models only)
 IEEE 802.3af compliant
 Powered Device (PD)
 PoE Input: 37-57 VDC (48 VDC nominal)
 Heat dissipation: 30 BTU/hour max

MECHANICAL

RAM-6x0x
 Dimensions: 120 x 96 x 32 mm (4.7" x 3.77" x 1.25")
 Weight: 453g (1 lb)
 RAM-6x21
 Dimensions: 120 x 96 x 51 mm (4.7" x 3.77" x 2.0")
 Weight: 500g (1.1 lbs)

ENVIRONMENTAL

Operating Temperature: -40° to +75°C*
 Shock: IEC60068-2-27
 Vibration: IEC60068-2-6
 Humidity: 5 to 95% non-condensing
 Ingress: IP30 protection

CERTIFICATION

EMI/EMC:
 Emissions: FCC, Part 15 and Industry Canada, ICES-003; Class A;
 EN55022, IEC61000-6-4
 Immunity: IEC61000-6-2 (EN61000-4-2,3,4,5,6,8)
 Hazardous Locations: Class I, Div. 2, Groups A, B, C, D, ISA 12.12.01
 Electrical safety: UL508/CSA22.2/14 (CUL); IEC61010-1
 Carrier Specific Approvals
 RoHS compliant

WARRANTY

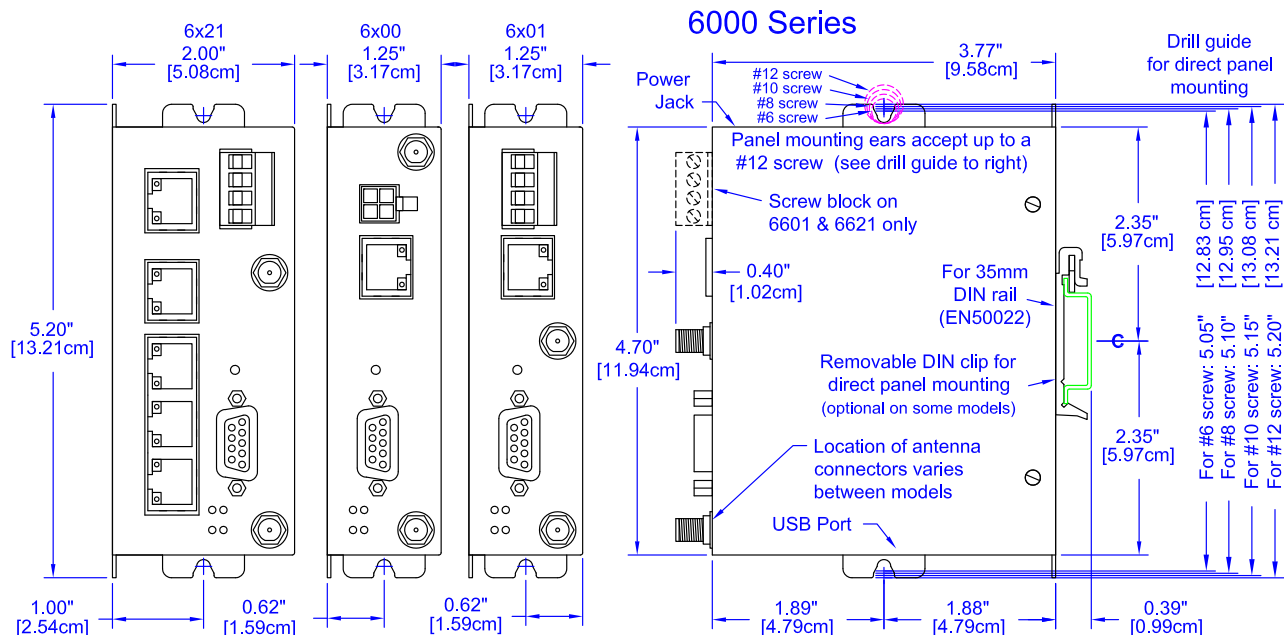
3 years on design and manufacturing defects

Specifications are subject to change. Visit www.redlion.net for more information.

* See Hardware Manual for thermal considerations.

** Monthly service fees may be required for cloud platform access, not all platforms client are preloaded.

DIMENSIONS



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ORDER GUIDE

PART NUMBER	PRODUCT LINE	SERIAL RS-232	ETHERNET 10/100	CELLULAR	POWER CONNECTOR	DEFAULT CARRIERS
RAM-6600-(Carrier Code)	RAM	1	1	3G/CDMA	Molex end connector cable	(VZ) Verizon
RAM-6600-(Carrier Code)-AC	RAM	1	1	3G/CDMA	AC adapter	
RAM-6600-(Carrier Code)-MX	RAM	1	1	3G/CDMA	AC adapter/Molex end connector	
RAM-6601-(Carrier Code)	RAM	1	1	3G/CDMA	DC powered	
RAM-6601-(Carrier Code)-AC	RAM	1	1	3G/CDMA	AC adapter	
RAM-6601EB-(Carrier Code)	RAM	1	1	3G/CDMA	PoE (Power Over Ethernet)	
RAM-6621-(Carrier Code)	RAM	1	5	3G/CDMA	DC powered	
RAM-6621-(Carrier Code)-AC	RAM	1	5	3G/CDMA	AC adapter	
RAM-6800-(Carrier Code)	RAM	1	1	3G/GSM	Molex end connector cable	(AT) AT&T; (BM) Bell Mobility; (GE) Generic*; (MTS) Manitoba; (RO) Rogers; (TE) TELUS
RAM-6800-(Carrier Code)-AC	RAM	1	1	3G/GSM	AC adapter	
RAM-6800-(Carrier Code)-MX	RAM	1	1	3G/GSM	AC adapter/Molex end connector	
RAM-6801-(Carrier Code)	RAM	1	1	3G/GSM	DC powered	
RAM-6801-(Carrier Code)-AC	RAM	1	1	3G/GSM	AC adapter	
RAM-6801EB-(Carrier Code)	RAM	1	1	3G/GSM	PoE (Power Over Ethernet)	
RAM-6821-(Carrier Code)	RAM	1	5	3G/GSM	DC powered	
RAM-6821-(Carrier Code)-AC	RAM	1	5	3G/GSM	AC adapter	

* See Band/Frequency table for compatability

FREQUENCY SPECIFICATIONS

PART NUMBER	BANDS/FREQUENCIES
RAM-66XX-VZ	EVDO: 800/1900 MHz CDMA: 800/1900 MHz
RAM-68XX-AT/BM/GE/MTS/RO/TE	HSPA: Bands 1, 2, 5, 6, 8; Frequencies 800/850/900/1900/2100 MHz GSM: 850/900/1800/1900 MHz

