

# RAM® 6000 3GS 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, and are software upgradeable to 4G LTE.

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, Upgradeable to 4G LTE via Software License
- > 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

### SUPPORTED IIOT PLATFORMS\*

- Amazon®—AWS™ IoT
- AT&T®—M2X
- Autodesk®—Fusion Connect
- Cumulocity
- Inductive Automation's Ignition SCADA
- LEC—IQ Web SCADA
- Microsoft—Azure®
- Nokia—IMPACT
- Set-Point Control—IPwebcontrol
- Skkynt®—SkkyHub™
- Telenor—Connexion Cloud Connect
- Telit®—deviceWISE®

### 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 70°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
- > 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) HSPA+ with fallback to GSM
- (GE) HSPA+ with fallback to GSM
- (EU) HSPA+ with fallback to GSM
- 4G LTE can be unlocked via software license key

## SELECTABLE IIOT CLOUD PLATFORMS\*

- Amazon®—AWS™ IoT
- AT&T®—M2X
- Autodesk®—Fusion Connect
- Cumulocity
- Inductive Automation's Ignition SCADA
- LEC—IQ Web SCADA
- Microsoft—Azure®
- Nokia—IMPACT
- Set-Point Control—IPwebcontrol
- Skkyne®—SkkyHub™
- Telenor—Connexion Cloud Connect
- Telit®—deviceWISE®

## 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

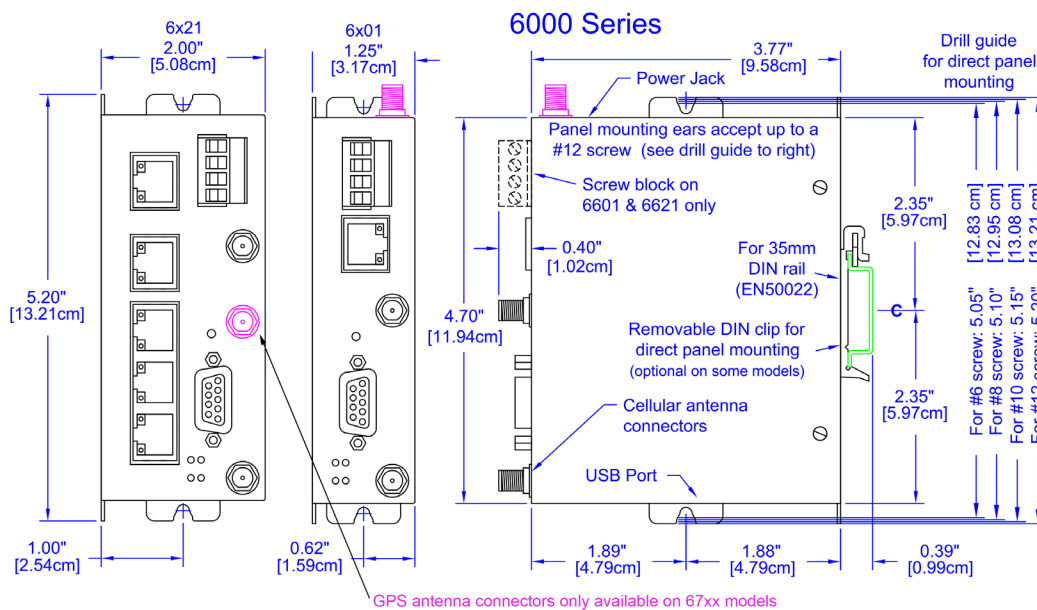
## IP

- 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: Three (3) SMA connectors (antenna, diversity, GPS [only available on 69xx model])

## DIMENSIONS in inches (cm)



## 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:
  - 6701: 2.6W - 6.9W
  - 6721: 4.3W - 8.7W
  - 6901: 2.6W - 6.9W
  - 6921: 4.3W - 8.7W
- Heat dissipation: 30 BTU/hour max

## MECHANICAL

- RAM-6x01
  - 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 +70°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](http://www.redlion.net) for more information.

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

\*\*See Hardware Manual for thermal considerations.

# RAM 6000 3G Specifications

## ORDERING GUIDE

PART NUMBER	SERIAL RS-232	ETHERNET 10/100	CELLULAR	POWER CONNECTOR	DEFAULT CARRIERS
RAM-6701-AT-3G	1	1	3G GSM	4-Pin Terminal Block	(AT) AT&T America
RAM-6721-AT-3G	1	5	3G GSM	4-Pin Terminal Block	
RAM-6701-GE-3G	1	1	3G GSM	4-Pin Terminal Block	(GE) Generic America
RAM-6721-GE-3G	1	5	3G GSM	4-Pin Terminal Block	
RAM-6901-EU-3G	1	1	3G GSM	4-Pin Terminal Block	(EU) Europe and Asia
RAM-6921-EU-3G	1	5	3G GSM	4-Pin Terminal Block	

- Notes: 1. See Frequency Specifications table for compatibility.  
 2. AT only for use with AT&T.  
 3. AT/GE models are for use in the Americas only.  
 4. EU (Europe/Asia) model is not supported in the Americas.

## FREQUENCY SPECIFICATIONS

### Americas Models (AT/GE)

PART NUMBER	BANDS	FREQUENCIES	ANTENNA CONFIGURATION
HSPA+	1,2,5,6	800/850/1900/2100 MHz	Diversity Support
Fallback GSM/GPRS/EDGE	-	850/900 MHz	-

### Europe and Asia

PART NUMBER	BANDS	FREQUENCIES	ANTENNA CONFIGURATION
HSPA+	1,2,5,8	850/900/1900/2100 MHz	Diversity Support
Fallback GSM/GPRS/EDGE	-	850/900/1800/1900 MHz	-

## ACCESSORIES

PART NUMBER	DESCRIPTION
<b>Antennas</b>	
ANT-G30B108111	2G/3G/4G Low-Profile Direct Perm. Mount, 1 SMA Antenna
ANT-GA110101111	2G/3G/4G LTE 13" Whip Magnetic Mount, IP65, 1 SMA Antenna
ANT-MA710AABI001	Antenna 2G/3G/4G LTE MIMO plus GPS direct permanent mount, IP67 with 3 SMA connectors
ANT-MA741ABI001	2G/3G/4G MIMO Direct Permanent Mount, IP67, 2 SMA Antenna
<b>Power Supplies and Adapters</b>	
NTPS-24-1-3	NTPS-24-1-3 Power Supply
FPSALACADAPTER2	12V 18W 1.5A AC-DC Power Supply Adapter

