RAM® 6000 3G Cellular RTUs

Sixnet® Networking Series

red lion®

►►► Rugged Cellular RTUs with Local Control

Red Lion's Sixnet series RAM 6000 cellular RTUs with 3G network support, provide advanced control and communication in IIoT applications for 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 sensor data and optimize cellular data consumption by optionally reporting only on an exception or only transmitting relevant data points. 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

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
- Skkynet®—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 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 using MQTT messaging protocol

- Integrates with deviceWISE, Fusion Connect, IPwebcontrol, IQ Web SCADA and Skkynet 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

CE FC cULus LISTED RoHS compliant

WIRELESS INTERFACE
Verizon EVDO with fallback to GSM

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
Skkynet® – 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: 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
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
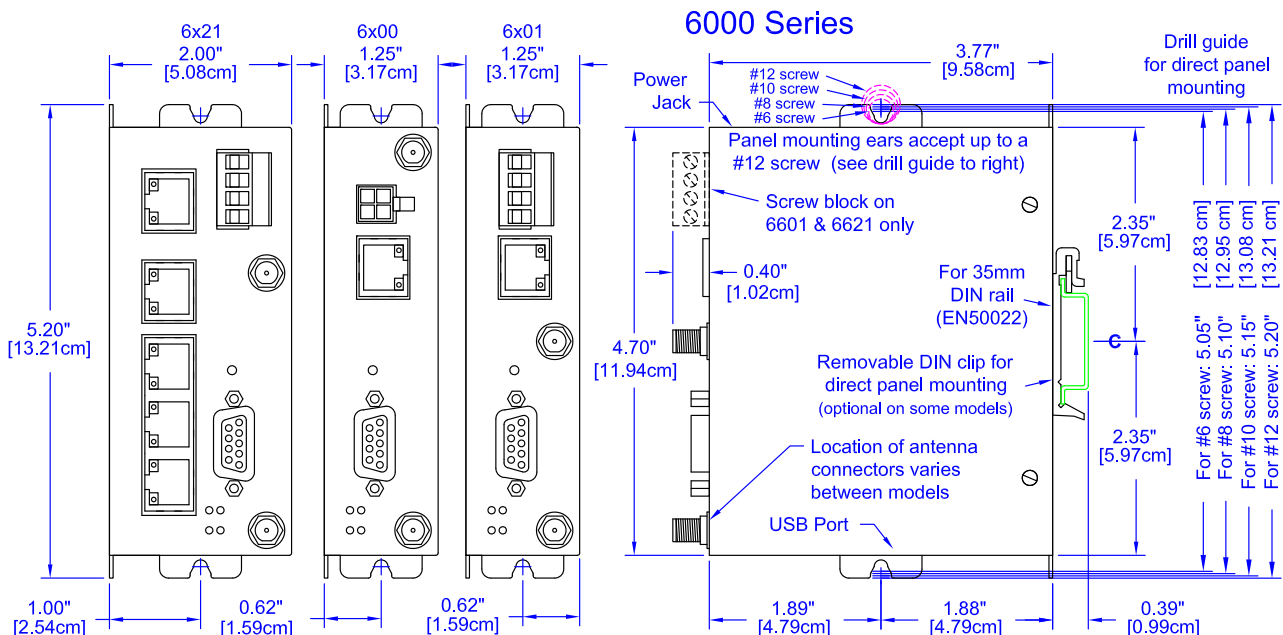RoHS compliant

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 every platform client is preloaded.

DIMENSIONS

6x21
2.00"
[5.08cm]

6x00
1.25"
[3.17cm]

6x01
1.25"
[3.17cm]

6000 Series

3.77"
[9.58cm]

Drill guide
for direct panel
mounting

Power
Jack

#12 screw
#10 screw
#8 screw
#6 screw

Panel mounting ears accept up to a
#12 screw (see drill guide to right)

Screw block on
6601 & 6621 only

0.40"
[1.02cm]

For 35mm
DIN rail
(EN50022)

2.35"
[5.97cm]

5.20"
[13.21cm]

4.70"
[11.94cm]

Removable DIN clip for
direct panel mounting
(optional on some models)

2.35"
[5.97cm]

Location of antenna
connectors varies
between models

USB Port

For #6 screw: 5.05"   [12.83 cm]
For #8 screw: 5.10"   [12.95 cm]
For #10 screw: 5.15"   [13.08 cm]
For #12 screw: 5.20"   [13.21 cm]

1.00"
[2.54cm]

0.62"
[1.59cm]

0.62"
[1.59cm]

1.89"
[4.79cm]

1.88"
[4.79cm]

0.39"
[0.99cm]

ORDER GUIDE

PART NUMBER	PRODUCT LINE	SERIAL RS-232	ETHERNET 10/100	CELLULAR	POWER CONNECTOR	CARRIER CODES
RAM-6600-(Carrier Code)	RAM	1	1	3G/CDMA	Molex end connector cable	
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	(VZ) Verizon
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	

Note: See Band/Frequency table for compatibility

FREQUENCY SPECIFICATIONS

PART NUMBER	BANDS/FREQUENCIES
RAM-66XX-VZ	EVDO: 800/1900 MHz CDMA: 800/1900 MHz

As the global experts in communication, monitoring and control for industrial automation and networking, Red Lion has been delivering innovative solutions for over forty years. Our automation, Ethernet and cellular M2M technology enables companies worldwide to gain real-time data visibility that drives productivity. Product brands include Red Lion, N-Tron and Sixnet. With headquarters in York, Pennsylvania, the company has offices across the Americas, Asia-Pacific and Europe. Red Lion is part of Spectris plc, the productivity-enhancing instrumentation and controls company. For more information, please visit www.redlion.net.