



Cellular RTU & Routers Update

Paul Bunnell | July 2015

Cellular RTU & Routers

- **New Feature Review**
 - Multi-Carrier Support
 - Event Engine
 - Advanced Diagnostics
- **Part Number Update**
- **Competition Overview**
- **All-in-One Platform Benefits**
- **Launch Details**



Cellular RTU & Routers

All-in-one platform for remote monitoring and control

- Multi-carrier support for the latest 4G LTE networks with 3G/2G fallback
- Combines built-in I/O* and an active GPS* receiver with multiple serial and Ethernet ports to securely monitor remote devices
- Delivers secure communications to remote locations regardless of environmental conditions
- Seamlessly connects to remote field devices such as SCADA systems, PLCs, remote I/O and other automation equipment
- Leverages Event Engine to drive control to the edge device, which can reduce data usage



**Not available with IndustrialPro® SN 6000 products*

New Feature: Multi-Carrier Support

- **Supports numerous cellular carriers**
 - Verizon Wireless and AT&T in USA
 - Bell Mobility, TELUS and Rogers in Canada
- **User selectable carrier through intuitive web-based user interface**
- **Requires specific carrier Subscriber Identification Module (SIM)**
- **Switching carriers only requires a new SIM**
 - No need to replace hardware
- **Helps reduce inventory**
 - Only one SKU needed for multiple carriers



New Feature: Multi-Carrier Support

- User web-based configuration

The screenshot displays the 'Manage Module Firmware' web interface. At the top, it shows 'Active: Verizon 06/2015'. Below this is a 'Select Carrier' dropdown menu currently set to 'Verizon 06/2015'. A mouse cursor is hovering over the dropdown, which has opened to show a list of options: 'None Selected...', 'AT&T 06/2015', 'Bell Mobility 06/2015', 'Generic 06/2015', 'Rogers 06/2015', 'Telus 06/2015', and 'Verizon 06/2015'. The 'Verizon 06/2015' option is highlighted in blue. To the right of the dropdown is a help icon (question mark). Below the dropdown, there are labels for 'Details:', 'Firmware Version:', and 'Profile Version:', each followed by a text input field. The 'Also update APN (optional)' label is followed by a text input field containing 'ne01.vzwstatic' and a help icon. At the bottom of the form are two buttons: 'Update Module' and 'Delete'. A blue note on the left side of the form reads: 'Note: If you recently installed or reflashed a carrier firmware package, you may need to refresh the carrier list by clicking Refresh below'.

All five carrier files are pre-loaded on each device so switching carriers only takes approximately 3 to 5 minutes.

New Feature: Event Engine

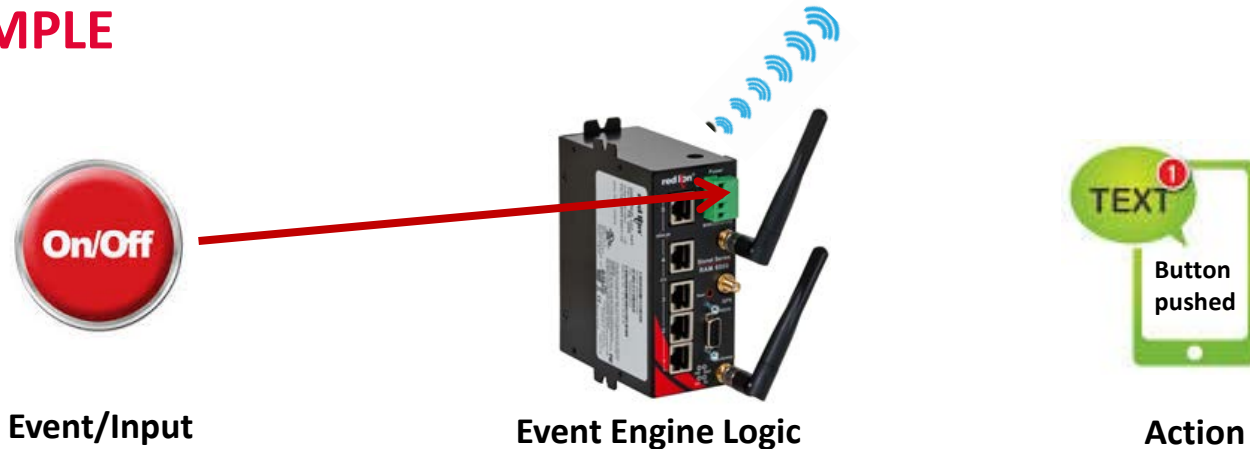
- **Web-based, user-configurable logic controller**
 - Triggers specific actions based on real-time operational data
 - Based upon a data location value vs. setpoint or limit comparisons
- **Operational data or register values**
 - Supports built-in I/O*
 - Works with system variables and user-defined internal registers
- **Configure up to 99 events**
- **Actions include:**
 - Send an SMS message
 - Write a value to a specific register
 - Run a command script (i.e. reboot device)
 - Send an alert to SixView Manager® software platform

**Not available with IndustrialPro® SN 6000 products*



New Feature: Event Engine

EXAMPLE



- A simple on/off push button connected to an external RAM[®] discrete input or DI1 can be configured to trigger an event when pushed
- The register value associated with the push button/DI1 is the actual trigger for the event, which then sends an SMS message to a user as the action, in this case “Button pushed”

New Feature: Event Engine

- Event Setup

Event Configuration

Action Type ?

Recipient ? Required

Message Format ?

Custom Active Message ? Required

Custom Inactive Message ?

Edge Triggering ?

Level Triggering ?

New Feature: Event Engine

- Events can be triggered by an expression based on other events

Event Configuration ✕

Event Name ⓘ Required

Enable Event ▼ ⓘ

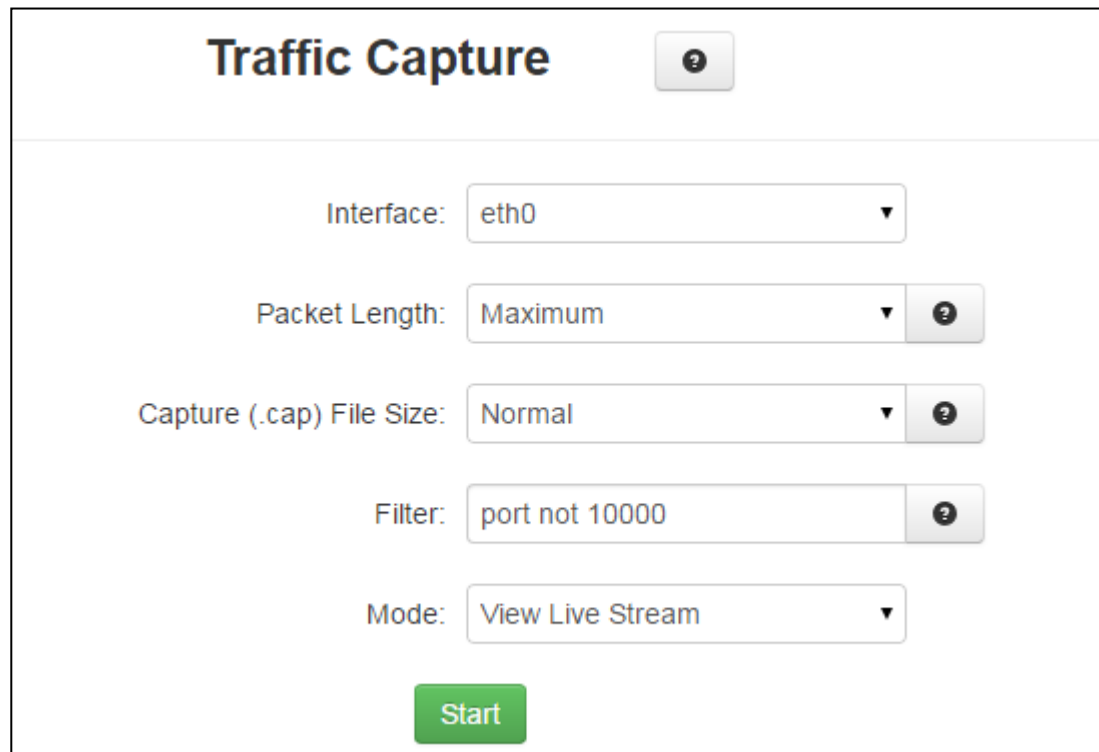
Data Source ▼ ⓘ

Event Expression ⓘ Required

So, Event 1 is true only when Event 2 and Event 3 are true

New Feature: Advanced Diagnostics

- Traffic Capture can capture network data on any port



The screenshot shows a web interface titled "Traffic Capture" with a help icon. It contains several configuration fields:

- Interface: eth0
- Packet Length: Maximum
- Capture (.cap) File Size: Normal
- Filter: port not 10000
- Mode: View Live Stream

A green "Start" button is located at the bottom of the form.

An all-in-one place to monitor and analyze network traffic, thereby helping to enable quick diagnostics and fix

RAM® 9000 Part Number Update

- The 4G LTE part number for the RAM 9000 is changing with old “7” 4G LTE designator becoming “9” for 4G LTE multi-carrier

Old Part Number	New Part Number	Description	Default Carrier*
RAM-9711-XX	RAM-9911-XX	DC terminal version	AT - AT&T
RAM-9731-XX	RAM-9931-XX	Wi-Fi included	VZ - Verizon AM - Generic

**Note all new models support multi-carrier operation, default carrier represents software that unit will boot up with*



RAM® 6000 Part Number Update

- The 4G LTE part number for the RAM 6000 is changing with old “7” 4G LTE designator becoming “9” for 4G LTE multi-carrier
- GPS is standard in all RAM 69XX units only

Old Part Number	New Part Number	Description	Default Carrier*
RAM-6700-XX	RAM-6900-XX	Molex connector version	Replace XX: AT - AT&T VZ - Verizon AM - Generic
RAM-6701-XX	RAM-6901-XX	DC terminal version	
RAM-6701EB-XX	RAM-6901EB-XX	Power over Ethernet	
RAM-6721-XX	RAM-6921-XX	5 Ethernet port version	

**Note all new models support multi-carrier operation, default carrier represents software that unit will boot up with*



SN 6000 Part Number Update

- The 4G LTE part number for the SN 6000 is changing with old “7” 4G LTE designator becoming “9” for 4G LTE multi-carrier

Old Part Number	New Part Number	Description	Default Carrier*
SN-6700-XX	SN-6900-XX	Molex connector version	Replace XX: AT - AT&T VZ - Verizon AM - Generic
SN-6701-XX	SN-6901-XX	DC terminal version	
SN-6701EB-XX	SN-6901EB-XX	Power over Ethernet	
SN-6721-XX	SN-6921-XX	5 Ethernet port version	

**Note all new models support multi-carrier operation, default carrier represents software that unit will boot up with*



Cellular Product Comparison

	RAM 9900	RAM 6900	RAM 6600/6800	SN 6900	SN 6600/6800
Network Speed	4G LTE	4G LTE	CDMA/3G	4G LTE	CDMA/3G
Multi-Carrier Support	✓	✓	✗	✓	✗
Built-in I/O	8	1	1	-	-
Event Engine	Yes – 99 Events				
RS-232 Serial	1	1	1	1	1
RS-485 Serial	1	-	-	-	-
USB Device Port	1	1	1	1	1
USB Host Port	1	-	-	-	-
Ethernet Port(s)	2	1 or 5	1 or 5	1 or 5	1 or 5
Wi-Fi	Optional	✗	✗	✗	✗
GPS	✓	✓	✓	✗	✗
Network Protocols	Modbus RTU, Modbus TCP/IP, DNP3 slave			-	-
Operating Temperature	-40°C to +75°C				



Market Competitive Landscape



	AVL/Fleet Mgmt	ATMs/Enterprise	Industrial
Red Lion Controls	x	x	✓
Sierra Wireless	✓	✓	✓
B&B Electronics	x	x	✓
Digi International	✓	✓	✓
Calamp	✓	x	✓
Moxa	x	x	✓
Cradlepoint	✓	✓	✓

Market Features Landscape



	AVL/Fleet Mgmt	ATMs/Enterprise	Industrial
Cost	Very Low	Low	High
Multi-Carrier	Maybe	Maybe	Yes
Security	No	Yes	Yes
Accessible Location	Yes	Yes	No
Wide Environmental	Yes	No	Yes
Modbus/DNP3 Support	No	No	Yes
Events	No	No	Yes
Management Platform	Yes	Yes	Yes

All-in-One Platform Benefits

- **Comprehensive Solution**
 - Works with your existing equipment to provide a more complete remote monitoring and control solution
- **Seamless Integration**
 - Work with multiple cellular carriers without the need for specific hardware other than specific carrier SIMs
- **Improves Operations**
 - RAM® 6000/9000 on-board I/O can turn on/off equipment based on real-time operational data without the need for add-on controllers
- **Reduces Site Visits**
 - Better diagnostics to monitor and analyze network traffic helps eliminate need for field personnel to visit remote sites

Connect, monitor and control industrial devices at ANY location.



Launch Details

PRESS RELEASE DATE: July 21, 2015

News Impact: Product Update

■ Products

- RAM 99XX
- RAM 69XX
- SN 69XX

■ Materials

- Distributor Briefing
- Product Notice
- Press Release
- Email Notification
- Literature
- Manuals
- Data Sheets

RAM® 9000 Industrial Cellular RTUs
Sinet® Networking Series

High-Density I/O RTUs with GPS and Local Control

Red Lion's Sinet series RAM 9000 high-density I/O cellular RTUs with multi-carrier 4G LTE support provide advanced control and communication for monitoring and controlling remote assets and processes in extreme conditions.

RAM 9000 industrial cellular RTUs seamlessly connect Modbus and DNP3 enabled SCADA equipment via software selectable multi-carrier 4G LTE with fallback to 3G networks. Featuring a web-based event engine that can trigger built in I/O or send SMS text messages based on real time operational data, RAM cellular RTUs can perform advanced knowledge control and alert personnel of critical events. A built in I/O concentrator allows the RAM to collect local sensor data and can operate cellular bandwidth by optionally reporting only on an exception. With built in Ethernet, serial, I/O and GPS, RAM RTUs easily integrate with existing equipment enabling remote monitoring and control for MOM applications in industries including oil and gas, water/wastewater, utility, transportation and mining.

PRODUCT HIGHLIGHTS

- > High-Performance Multi-Carrier 4G LTE Connectivity
- > Built-in I/O Lowers Total System Cost
- > Multiple Communication Ports
- > Active GPS Receiver Automatically Tracks Device Location
- > Routing Capabilities Provide Secure, Reliable Communication
- > Event Engine that can Send SMS Messages or Control I/O Based on Operational Data


IEEE802.11b/g/n Wi-Fi Compliant

- Supports local client access to communicate with network assets
- Configure and update firmware without physically connecting to RAM

Secure Ethernet Connectivity

- Routing capabilities for reliable communication
- StatuS (Secure, SSL, GRE and VPN) services and deep packet inspection 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

CE FC RoHS



RAM® 6000 Cellular RTUs
Sinet® Networking Series

Multi-Carrier RTUs with GPS and Local Control

Red Lion's Sinet series RAM 6000 cellular RTUs with multi-carrier 4G LTE 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 software selectable multi-carrier 4G LTE connectivity with fallback to 3G networks. 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 knowledge control and alert personnel of critical events. A built in I/O concentrator allows the RAM to collect local sensor data and can operate cellular bandwidth by optionally reporting only on an exception. With built in Ethernet, serial, I/O and GPS, RAM RTUs easily integrate with existing equipment enabling remote monitoring and control for MOM applications in industries including oil and gas, water/wastewater, utility, transportation and mining.

APPLICATIONS

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

PRODUCT HIGHLIGHTS

- > Multi-Carrier 4G LTE Connectivity
- > Natively Supports Modbus & DNP3 Protocols
- > Multiple Communication Ports
- > Routing Capabilities Provide Secure, Reliable Communication
- > Active GPS Receiver Tracks Device Location
- > Event Engine can Trigger I/O or Send SMS Messages
- > Optional PoE (Powered Device) Support

FEATURES & BENEFITS


- > Multi-Carrier 4G LTE Connectivity
 - Select the best carrier during or post deployment via software configuration
- > Multiple Communication Ports
 - One RS-232 serial port, and up to five Ethernet ports provide wireless connectivity to remote devices
- > Rugged, Industrial Design
 - Reliable operation in extreme environments
 - -40° to 75°C operating temperature*
- > Modbus and DNP3 Support
 - Easily communicates with SCADA equipment with native protocols
- > Out-Of-Band Management (OOBM)
 - Secure remote CLI access via serial port
 - Pre-installed with many console port configurations
- > Secure Ethernet Connectivity
 - Routing capabilities for reliable communication
 - StatuS (Secure, 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 RoHS




Integrated Marketing Campaign

Remote Assets. Local Control.
Simpler control from smarter cellular RTUs




Remote monitoring and control with RAM® industrial cellular RTUs.
Managing remote assets and ensuring smooth operations when you are at a distance has never been easier. Red Lion's Sixnet® series RAM industrial cellular RTUs provide users an intuitive, web-based interface to easily configure event parameters and define alarm states that trigger I/O or send SMS text messages based on real-time operational data.
With connectivity options such as I/O, serial, Ethernet and optional Wi-Fi, our rugged RAM RTUs provide a secure all-in-one platform that seamlessly integrates with existing equipment to enable data visibility, control and real-time notifications for field-deployed assets. Visit www.redlion.net/control to learn more.




+1 (717) 767-6511 | info@redlion.net | www.redlion.net
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WTF: Water Tank Full
The new language of SMS for the IIoT



RAM® industrial cellular RTUs keep you in control of remote assets.
Businesses need visibility to make the rapid changes that can be the difference between cashing in and missing out. Red Lion's Sixnet® series RAM industrial cellular RTUs bring remote monitoring to the Industrial Internet of Things (IIoT), delivering the insight you need to remain in control of remote assets regardless of location.
Using an intuitive web-based interface and a variety of connectivity options, our rugged RAM RTUs provide a secure all-in-one platform that seamlessly integrates with existing equipment to enable data visibility. Whether a tank level is too high or valve pressure out of range, the RAM event engine will take action and send you an SMS text notification to keep you in the know. Visit www.redlion.net/control to learn more.



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- **Vertical print and digital advertising**
 - *Water Environment & Technology* and *Water & Waste Digest*
 - *PowerGrid International*
 - *Oil & Gas Engineering*
 - *Automation World IIoT* and *Control Smart Industry* supplements
- **Vertical events**
 - **WEFTEC** | September 28-30 | Booth 202 | Chicago, IL
 - **PACK Expo** | September 28-30 | Booth S-7358 | Vegas





Cellular RTU & Routers

- All-in-one platform for monitoring and control
- Multi-carrier support, easy-to-use event engine and advanced diagnostics
- Provides reliable visibility of field assets

Call your local representative to learn more!

Questions?

For more information

20 Willow Springs Circle | York, PA 17406 USA

+1 (717) 767-6511 | www.redlion.net | info@redlion.net