Industrial Cellular

Product Guide

Cellular M2M Routers & RTUs

A Message from the President

"As we brought Red Lion®, N-Tron® and Sixnet® together, we have become a better company, not just a bigger one."

Mike Granby
President, Red Lion Controls

Please allow me to start by saying thank you to the thousands of customers all over the world who place their trust in the products and reputation of Red Lion, N-Tron and Sixnet. We appreciate your business and look forward to serving you at even higher levels in the future.

We have recently gone through some exciting changes, merging N-Tron and Sixnet together into a bigger, better Red Lion. Each company had its own legacy and its own strengths, and together we now offer an industry-leading portfolio of industrial automation and networking products. The long and trusted history of Red Lion and Sixnet in the automation market is a perfect complement to N-Tron's mastery of industrial networking, and to Sixnet's recent developments in the fields of cellular and machine-to-machine communications.

As we brought Red Lion, N-Tron and Sixnet together, we have become a better company, not just a bigger one. We recognize that you, the customer, is what matters, and that any merger only makes sense if it is able to put better solutions and products in your hands. We are dedicated to being your global experts in communication, monitoring and control for industrial automation and networking—and to doing so with the exceptional levels of service for which Red Lion is well known.

Over the last year, we have launched a bigger and better product portfolio. In addition to the panel meters, HMIs and other industrial automation products that Red Lion customers have always trusted, we now offer a broad selection of communication technologies, ranging from industrial Ethernet, through Wi-Fi to complete cellular M2M solutions.

The end result? A comprehensive set of products that enables you to connect, monitor and control anything. From one device to a thousand devices. Connecting serially, via Ethernet, or over high-speed wireless networks. Speaking one protocol, or hundreds of protocols. On a single machine, across your factory, or spanning multiple sites all over the globe.

Thank you again, and we look forward to further supporting you as we continue our journey as one unified Red Lion.

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Cellular M2M Solutions

Red Lion offers a broad range of cellular M2M RTUs and routers that feature standards-based, enterprise-class functionality to enable secure, reliable cellular data access – anywhere, anytime. These rugged industrial solutions provide the ability to remotely monitor sites across a range of applications.

RAM® 9000 Industrial Cellular RTUs

> High-density I/O reduces need for external equipment

> Multi-carrier operation in a single device

> Built-in active GPS mobile for semi-mobile applications

> Secure, reliable Modbus concentrator for remote site monitoring

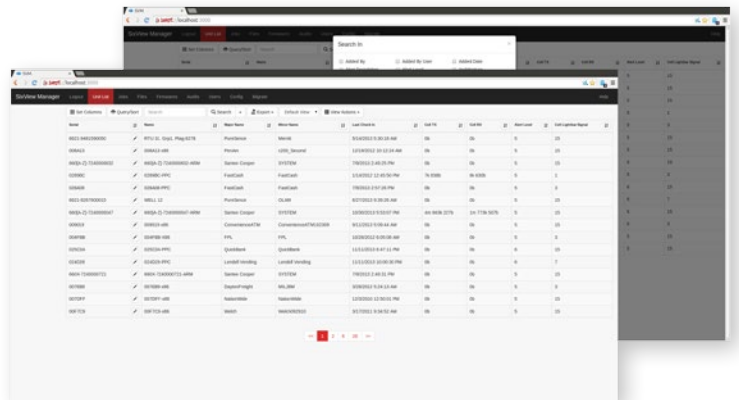> Event Engine that can send SMS messages or control I/O based upon operational data

| MODEL NUMBER | SERIAL | | ETHERNET | | | | | |
	RS-232	RS-485	10/100 COPPER	WI-FI	GPS	CELLULAR	MULTI-CARRIER	DEFAULT CARRIER
RAM-9911-(Default Carrier)	1	1	2 (LAN/WAN)	N	Y	4G LTE	Y	AT (AT&T); VZ (Verizon); AM (Generic); EU (Europe/Asia)
RAM-9931-(Default Carrier)	1	1	2 (LAN/WAN)	Y	Y	4G LTE	Y	

AM (Generic) model includes Bell Mobility, TELUS and Rogers carriers or other North American carriers.
EU (Europe) model is not supported in North America.

SixView Manager®

This remote device management software is designed to increase productivity and reduce cost for organizations using Sixnet series cellular RTUs and routers. A web-based console and customized dashboard provide users the ability to remotely access, configure and manage critical device information for several, even thousands of RAM cellular RTUs and IndustrialPro® cellular routers from a central location.

RAM 6000 Industrial Cellular RTUs

> Supports 4G LTE with fallback to 3G
> LTE multi-carrier operation in single device
> Real-time access to mission-critical data through built-in Modbus gateway
> Split WAN/LAN on multi-Ethernet port models
> Fully configurable router with firewall
> Event Engine can trigger I/O or send SMS messages
> Optional PoE Powered Device (PD) support

	MODEL NUMBER	RS-232	10/100 COPPER	POWER CONNECTOR	GPS	CELLULAR	MULTI CARRIER	DEFAULT CARRIER
69XX	RAM-6900-(Carrier Code)	1	1	Molex	Y	4G LTE	Y	(AT) AT&T; (VZ) Verizon; (AM) Generic; (EU) Europe/Asia
	RAM-6901-(Carrier Code)	1	1	DC powered	Y	4G LTE	Y	
	RAM-6921-(Carrier Code)	1	5	DC powered	Y	4G LTE	Y	
	RAM-6901EB-(Carrier Code)	1	1	PoE	Y	4G LTE	Y	
66XX	RAM-6600-(Carrier Code)	1	1	Molex	N	3G/CDMA	N	(SP) Sprint; (VZ) Verizon
	RAM-6601-(Carrier Code)	1	1	DC powered	N	3G/CDMA	N	
	RAM-6601EB-(Carrier Code)	1	1	PoE	N	3G/CDMA	N	
	RAM-6621-(Carrier Code)	1	5	DC powered	N	3G/CDMA	N	
68XX	RAM-6800-(Carrier Code)	1	1	Molex	N	3G/GSM	N	(AT) AT&T; (BM) Bell Mobility; (GE) Generic*; (MTS) Manitoba; (RO) Rogers; (TE) TELUS
	RAM-6801-(Carrier Code)	1	1	DC powered	N	3G/GSM	N	
	RAM-6801EB-(Carrier Code)	1	1	PoE	N	3G/GSM	N	
	RAM-6821-(Carrier Code)	1	5	DC powered	N	3G/GSM	N	

AM (Generic) model includes Bell Mobility, TELUS and Rogers carriers or other North American carriers.
EU (Europe) model is not supported in North America.

IndustrialPro SN 6000 Cellular Routers

> Supports 4G LTE with fallback to 3G
> LTE multi-carrier operation in a single device
> Rugged, compact industrial design
> Secure Out-of-Band Management (OOBM) solution for remote assets
> Fully configurable router with firewall

	MODEL NUMBER	RS-232	10/100 COPPER	POWER CONNECTOR	GPS	CELLULAR	MULTI CARRIER	DEFAULT CARRIER
69XX	SN-6900-(Carrier Code)	1	1	Molex	N	4G LTE	Y	(AT) AT&T; (VZ) Verizon; (AM) Generic
	SN-6901-(Carrier Code)	1	1	DC powered	N	4G LTE	Y	
	SN-6921-(Carrier Code)	1	5	DC powered	N	4G LTE	Y	
	SN-6901EB-(Carrier Code)	1	1	PoE	N	4G LTE	Y	
66XX	SN-6600-(Carrier Code)	1	1	Molex	N	3G/CDMA	N	(SP) Sprint; (VZ) Verizon
	SN-6601-(Carrier Code)	1	1	DC powered	N	3G/CDMA	N	
	SN-6601EB-(Carrier Code)	1	1	PoE	N	3G/CDMA	N	
	SN-6621-(Carrier Code)	1	5	DC powered	N	3G/CDMA	N	
68XX	SN-6800-(Carrier Code)	1	1	Molex	N	3G/GSM	N	(AT) AT&T; (BM) Bell Mobility; (GE) Generic*; (MTS) Manitoba; (RO) Rogers; (TE) TELUS
	SN-6801-(Carrier Code)	1	1	DC powered	N	3G/GSM	N	
	SN-6801EB-(Carrier Code)	1	1	PoE	N	3G/GSM	N	
	SN-6821-(Carrier Code)	1	5	DC powered	N	3G/GSM	N	

AM (Generic) model includes Bell Mobility, TELUS and Rogers carriers or other North American carriers.

Accessories

3G Antennas

> Support for 3G and 2G cellular frequencies
> Mounting options include magnetic or bolt-through options
> Available with GPS and/or Wi-Fi built-in
> Two antennas recommended for optimal performance

MODEL NUMBER	DESCRIPTION	CONNECTOR & CABLE TYPE	WHERE USED
ANT-TG090113	2G/3G 3" hinged antenna	SMA male, no cable	SN 6000, RAM 6000, RAM 9000
ANT-GA107201111	2G/3G 4.5" whip magnetic mount antenna, IP65 rated	SMA male, RG-174 (2 meter)	SN 6000, RAM 6000, RAM 9000
ANT-G21B301111	2G/3G low profile direct permanent mount antenna, IP65 rated	SMA male, RG-174 (3 meter)	SN 6000, RAM 6000, RAM 9000
ANT-MA301AAB001	2G/3G plus GPS, low profile magnetic mount antenna, IP67 rated	(2) SMA male, RG-174 (3 meter)	RAM 9000
ANT-MA104CAB015	2G/3G plus GPS, low profile direct permanent mount, IP67 rated	(2) SMA male, RG-174 (3 meter) both cables	RAM 9000
ANT-MA520ABC008	2G/3G low profile direct permanent mount, dual band Wi-Fi, IP67 rated	SMA male - cellular and RPSMA male - Wi-Fi both cables RG-316 (2 meter)	RAM 9000

4G Antennas

> Support for 4G LTE, 3G and 2G cellular frequencies
> Mounting options include direct, magnetic or bolt-through options
> Available with built-in GPS and/or Wi-Fi
> MIMO configuration requires two antennas for optimal performance

MODEL NUMBER	DESCRIPTION	CONNECTOR & CABLE TYPE	WHERE USED
FANWAND721SMA	2G/3G/4G LTE paddle antenna	SMA male, no cable	SN 6000, RAM 6000, RAM 9000
ANT-GA110101111	2G/3G/4G LTE 13" whip antenna, IP65 rated	SMA male, RG-174 (1 meter)	SN 6000, RAM 6000, RAM 9000
ANT-G30B108111	2G/3G/4G LTE low profile direct permanent mount antenna, IP67 rated	SMA male, RG-316 (1 meter)	SN-6, RAM 6000, RAM 9000
ANT-MA741ABI001	2G/3G/4G LTE MIMO direct permanent mount antenna, IP67 rated	LTE + Cell (both lines) SMA male, CFD-200 Low loss cable (3 meters)	SN-67XX, RAM-67XX, RAM 9000
ANT-MA710AABI001	2G/3G/4G LTE MIMO plus GPS direct permanent mount antenna, IP67 rated	LTE and cellular (both lines) have SMA male; CFD-200 low loss cable (3 meters) GPS has SMA male RG-174 (3 meters)	RAM 9000
ANT-MA760AABIC003	2G/3G/4G LTE MIMO plus GPS and dual band Wi-Fi permanent mount antenna, IP67 rated	LTE and cellular (both lines) have SMA male; CFD-200 low loss cable (3 meters) GPS has SMA male RG-174 (3 meters)	RAM 9000

Cellular Wi-Fi Antennas

> 2.4 GHz band Wi-Fi
> RPSMA male antenna connector
> Small size for tight spaces
> High-gain models for longer distance connectivity

MODEL NUMBER	DESCRIPTION	CONNECTOR & CABLE TYPE	WHERE USED
ANT-GW11A153	Wi-Fi antenna, standard 2 dbi WLAN 2.4 GHz, 4" hinged	RPSMA male, no cable	RAM 9000
ANT-GW260152	Wi-Fi antenna, WLAN 2.4 GHz, 1" fixed right angle	RPSMA male, no cable	RAM 9000
ANT-GW715153	Wi-Fi antenna, high gain dual band, 7" hinged	RPSMA male, no cable	RAM 9000

Cellular Cables & Mounts

> Industrial-grade accessories
> Power adapters, cables and mounts

MODEL NUMBER	PRODUCT	DESCRIPTION	WHERE USED
FPSALACadapter	Power Supply AC/DC Adapter Molex	Power supply AC adapter (AC-DC), 4 pin Molex and 6 ft. cable	Cellular routers and RTUs with molex option
FPSALACadapter2	Power Supply AC/DC Adapter Barrel	Power supply AC adapter (AC-DC), AC adapter with 12mm barrel and 6 ft. cable	Cellular routers and RTUs with AC adapter barrel connector option
FCATAFUSEAUTO	Cigarette Lighter Adapter	Car adapter 6 ft. 12V DC 3 Amps, 250V fuse automobile adapter	Cellular routers and RTUs with DC power option
FCATAFUSECABLE	Direct Current Fused Power Cable	Direct current fused power cable 15ft. DC 2 Amps, 250V fuse power cable	BT-6600, BT-6800, BT-5000
FCASTMXT100	Serial Cable (RS-232-DB9)	Serial cable (RS-232-DB9), 6 ft. DB9 male to DB9 female	All cellular routers and RTUs with DB9 serial port
FCAALUSBAMBM	USB Cable	USB cable 3 ft. cable type A mail/type B male	BT-5000
FCAALUSBMINI	USB Mini Cable	USB type A male/mini B male cable, 5 pin, black, 6ft.	All cellular routers and RTUs
FWH1010FTMolex	I/O Wire Harness	I/O wire harness 10 ft. wire harness 10-pin Molex	BT-5000
DIN-CLIP-1	DIN-Rail Clip 1"	1 inch aluminum DIN-rail clip with two screws	BT 6000, SN 6000, RAM 6000
DIN-CLIP-1.5	DIN-Rail Clip 1.5"	1.5 inch aluminum DIN-rail clip with three screws	BT 6000, SN 6000, RAM 6000 5 Ethernet port versions
DIN-CLIP-2.3	DIN-Rail Clip 2.3"	2.3 inch aluminum DIN-rail clip with three screws	RAM 9000
F-CO-ST-4pin	Screw Terminal	Connector terminal, 4-pin plug with screws	BT 6000, SN 6000, RAM 6000 DC input versions

Connecting, monitoring and controlling remote sites is easy when you leverage the power of cellular communication equipment. Cellular RTUs, routers and gateways provide high-speed reliable two-way data communication via 4G LTE or 3G cellular carrier networks. The benefits of deploying a cellular-based remote monitoring and control network include ease of deployment, security and reliability.

Cellular equipment connects new or existing field devices to a secure, high-speed IP network. By connecting I/O, serial, USB, Wi-Fi or Ethernet enabled equipment to a cellular router, organizations can remotely access equipment, monitor status or receive critical notifications when processes are not performing. This real-time communication helps to reduce costs by eliminating site visits and providing more actionable intelligence.
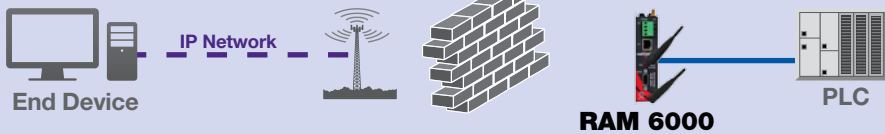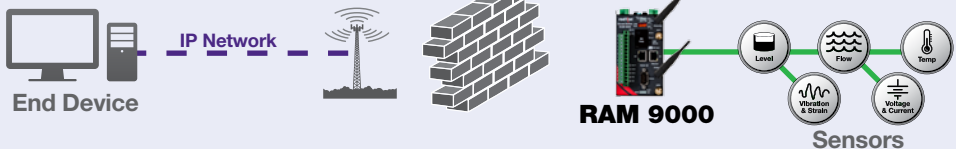
Cellular Modem

PLC — RAM 6000 — RAM 6000 — PLC

Cellular Gateway

End Device — IP Network — RAM 6000 — PLC

Cellular Router

End Device — IP Network — RAM 6000 — PLC

Cellular RTU

End Device — IP Network — RAM 9000 — Sensors (Level, Flow, Temp, Vibration & Strain, Voltage & Current)

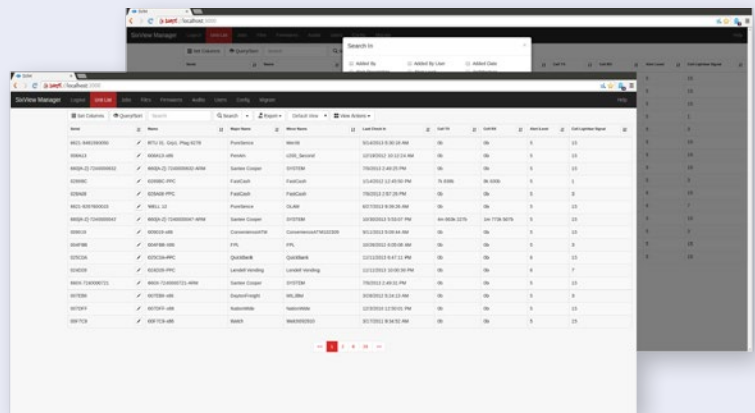## Common Industry Terminology

Cellular Modem is a device that transmits a native protocol across a cellular network to another cellular modem which outputs the native protocol.

Cellular Gateway is a device that converts a native protocol to TCP/IP for transmission across a cellular network. Cellular gateways are designed to simply pass data, with limited security capabilities.

Cellular Router is a device that includes cellular gateway functionality along with additional security and packet-level routing capabilities. Cellular routers often include firewalls, Access Control Lists and VPN capabilities to ensure critical data stays protected.

Cellular RTU is a device that encompasses RTU and I/O functionality with a cellular routers capability. Cellular RTUs combine the functionality of multiple devices into a single unit, which reduces remote equipment, power consumption and maintenance costs.

Monitoring cellular devices is easy with Red Lion's SixView Manager software. An intuitive dashboard provides network equipment status to help troubleshoot connectivity issues. Managing and updating devices is quick with built-in mass-update and reporting tools.

A comprehensive portfolio of industrial solutions.
Automation. Ethernet. Cellular M2M.

Industrial solutions, reliable performance and unwavering support.

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.

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