COURIER® MODEMULATOR™ & M2M CELLULAR GATEWAY
ANALOG TO CELLULAR MODEM EMULATOR

The new USRobotics® Courier® Modemulator™ and Cellular M2M Gateway is a drop-in cellular replacement for legacy analog systems that require peer-to-peer connectivity†. Emulating a dial-up modem allows equipment to seamlessly connect over a cellular network instead of over the PSTN in legacy M2M applications. Existing legacy hardware and software systems remain untouched when used with the Modemulator — providing extended product life and simplified cellular deployments. Compatibility with both the PSTN and packet switched data networks provides network flexibility that allows an open ended transition plan and eliminates the need for a system overhaul — saving both time and money. By providing a 2-in-1 device, analog customers can transition select sites to cellular in the most efficient and cost-effective way while utilizing the network that is right for the situation. USR's Modemulator & Cellular Gateway provides reliable, secure connections for mission critical M2M applications.

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Easy Conversion of Legacy Dial-up or Leased Line Solutions to the Cellular Network

Multiple Modes	• Peer-to-Peer mode† provides true drop-in replacement • Single ended mode for connecting with traditional TCP Client or Server • Bypass mode for serial gateway operation • Send commands to the remote Modemulator with remote command mode
Simplified Conversion	• No need to install middleware or upgrade legacy communications software that expects analog modem & PSTN • With an optional serial modem, initiate and answer connections over the PSTN to sites with analog modems • Support for a "mixed network" of both analog and cellular devices allows gradual modem replacement • Unified interface and protocol for connecting both cellular and analog sites • Continue to use the USR M2M Cellular Gateway after transition complete
Modem Emulation	• Compatible with common Hayes modem AT commands • Generates modem result codes including RING, RINGING, CONNECT, NO CARRIER, NO DIALTONE, and BUSY • Outbound and inbound calling • Supports baud rates from 300 to 115.2k bps • Peer-to-peer connections • Stores up to 7,200 phone numbers/IP addresses • Direct IP dialing • Emulate leased line operation‡ • RS-232 break signal handling‡

Wireless	• Cellular Gateway features include:
	  • 3G UMTS or CDMA2000/UMTS *
	  • 2G GSM or CDMA/GSM *
	  • Configure locally with intuitive embedded GUI
	  • Manage remote device's software and configuration with USR Universe - a free cloud application
	  • Secured internal SIM slot
	  • Persistent connectivity and auto reboot and recovery

Security & Reliability	• Required private cellular network ensures continued secure connections • Login banner and security warning banner • Prompted password access • Caller ID screening • Dialback security‡
Easy Setup	• Fast implementation and deployment in analog based solutions • Easy configuration using familiar AT commands in the CLI
Advanced Features	• Auto-switchover to an attached dial-up modem for PSTN connections

Benefits

• Peer-to-Peer Cellular Connections
• Simplified Analog to Cellular Conversion
• Mixed Networks
• Emulate Modem and Convert a Phone Number to an IP Address
• Extend Product Life of Legacy Systems
• Leased line compatibility

Applications

• Automation
• ATMs
• Digital Signage
• Home Healthcare
• Point of Sale
• Remote Management
• SCADA Kiosks
• Security Systems
• Utilities

* Dual radio is not available on USR803520.
† Wireless Master Service, peer-to-peer routing, or device-to-device routing service is required for the peer-to-peer functionality.
‡ Features available on firmware version 1.0.02 and higher. Available for download at support.usr.com/support/3520.

Courier® Modemulator™ & M2M Cellular Gateway

Gateway PTCRB Approved, CDMA*/EV-DO*/GSM/GPRS/EDGE/HSPA+ Speeds

The USRobotics® Courier® Modemulator and M2M Cellular Gateway provides LAN to WWAN routing and GPS functionality in a single device certified on all major 3G cellular networks (CDMA/EVDO and WCDMA/HSPA+). An embedded serial port allows quick implementation for a wide variety of serial based systems already out in the field making it ideal for M2M Serial applications including remote maintenance and control, Point of Sale, monitoring, and automation. The Courier Cellular Gateway is simple to configure locally or remotely from your PC, tablet or smartphone with the cloud based management system allowing fast implementation — reducing customer costs significantly and lowering the entry barriers to a wide range of M2M solutions and an easier transition from analog to cellular. USRobotics' Courier Modemulator & M2M Cellular Gateways continue to offer reliable, secure connections for mission critical applications — for both GSM and CDMA networks allowing more flexible and cost-effective global solutions.

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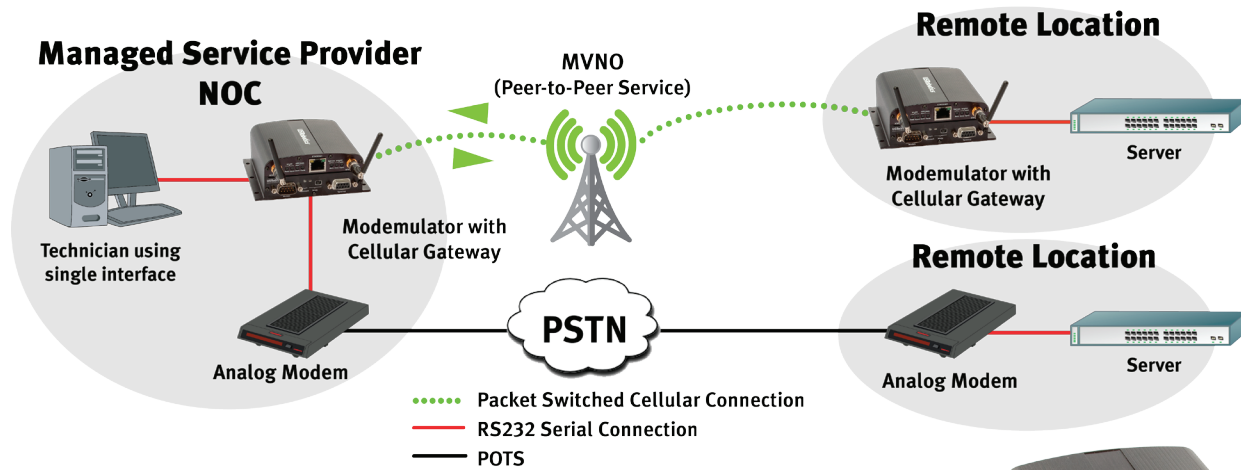|	
M2M Partnerships for a Complete Solution	• Access to MVNOs with no volume restrictions offering worldwide SIMs and data plans • Provisioned SIMs available for immediate drop ship for qualified customers§ • Dedicated Sales and Engineering staff available to help plan M2M solutions
Courier Brand	• Reliable modems trusted by IT admins for over 30 years • Business class, rock solid quality you can depend on for mission critical applications
Security & Reliability	• Encrypted cellular connections when combined with a network operator's secure tunnel prevent eavesdropping and block unauthorized access§ • All software and configuration images are protected with digital signatures with rollback safety • Built in software and hardware watchdogs monitor the device automatically resolving common problems including persistent connectivity and automatic reboot ideal for remote management solutions • Certificate and password based security mechanisms protect all management functions; all management actions use hardware assisted encrypted links • Wired LAN connectivity facilitates compliance with strict medical safety requirements
Easy Configuration and Management	• User friendly GUI for configuring SIMs, firewalls, and port filtering • Change network carriers in less than a minute • Wirelessly upgrade firmware and duplicate configurations with the free cloud based USR Universe
Industrial Quality Design	• Compact design ideal for branch offices with small IT closets or small off-site locations in need of remote management • Rugged aluminum housing for use in harsh conditions • Concealed SIM slot discourages unauthorized removal of SIM • Versatile mounting options to increase stability and security
Cellular Networks	• HSPA+, HSUPA, HSDPA, UMTS, EDGE/GSM/GPRS • CDMA 1xRTT/EV-DO • AWS Band
Regulatory Approvals	• PTCRB (USR3520) • GCF compliant (USR803520) • FCC, IC (USR3520) • CE, R&TTE (USR803520)
Multiple interfaces	• RS-232 (DB9) Serial interface for easy communication with console ports, ATMs, digital signage, and meters • 10/100 RJ45 Ethernet to connect to LANs, ATMs, and POS systems
Embedded GPS	• Asset Tracking capability
Advanced Features	• Web based remote configuration capability via dynamic DNS or static IP • Embedded modem emulation

* Dual radio is not available on USR803520.
§ Services dependent on MVNO partnership for qualified customers, subscriptions may be required.

Modemulator M2M Analog & Cellular Out of Band Solution

Managed Service Provider NOC

Technician using single interface

Modemulator with Cellular Gateway

Analog Modem

MVNO (Peer-to-Peer Service)

PSTN

Remote Location

Modemulator with Cellular Gateway

Server

Remote Location

Analog Modem

Server

•••••• Packet Switched Cellular Connection
——— RS232 Serial Connection
——— POTS

USR3520, USR803520
COURIER MODEMULATOR & M2M CELLULAR GATEWAY

SPECIFICATIONS & STANDARDS

PHYSICAL
- 1 Main Antenna Connection: 50 Ohm SMA female (WWAN Main)
- 1 Diversity Antenna/GPS Connection: 50 Ohm SMA female (WWAN Div / GPS)
- 1 10/100 Mbps RJ45 Connector
- 1 Power connector: 4 pin Micro-Fit™ 3.0, dual row, 2 circuits
- 7 3-color LEDs showing system status and signal strength
- 1 reset switch
- 1 internal SIM slot (1.8V/3V) - USIM/SIM Class B and Class C
- DTE interface: 1 RS-232 DB9 Male connector
- DCE interface: 1 RS-232 DB9 Female connector
- 2 LED indicators: system connect status, operating mode
- 1 mode switch: Modemulator/Gateway

SERIAL PORT RATINGS
- Terminal Port RS-232C DCE: Auto-baud detection of 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200, and 300 bps
- Modem Port RS-232C DTE: 115200, 57600, 38400, 19200, 9600, 4800, 2400, 1200, and 300 bps

POWER
- DC Power in 9-33 V DC
- Attached to 3G network, no Ethernet, 3G call @ 2100MHz (band I): 361mA**

RADIO TECHNOLOGY & FREQUENCY BANDS
- 3G UMTS/HSDPA/HSUPA/HSPA+: 800-850/900/1900/2100 MHz and AWS band (1700/2100MHz) (B1, B2, B4, B5, B6, B8)
- 2G GSM/GPRS/EDGE: 850/900/1800/1900 MHz
- CDMA 1xRTT/EV-DO rev0/EV-DO revA (GTM689 only): 800/1900MHz (BC0, BC1)

MAX. CONNECTIVITY SPEEDS
- HSPA+: 14.4Mbps (Cat 10) down, 5.76 (Cat 6) up
- EV-DO RevA mode: 3.1Mbps FL / 1.8Mbps RL
- HSPA+ Rel 7 SW features CPC (DTX/DRX), Enhanced L2, EF-DPCH

GPS
- Assisted/Standalone GPS
  - Standalone GPS, Assisted GPS, gps OneXTRA™
  - Wideband GPS processing (20MHz) for improved measurement accuracy

- Embedded Standalone GPS
  - Tracking sensitivity: -159 dBm
  - Cold start sensitivity: -145 dBm
  - Hot start sensitivity: -159 dBm
  - Open sky TTFF: cold start: 40 seconds
  - Open sky TTFF: super hot start: 1 second
  - Open sky accuracy: < 3M CEP -50
- NMEA sentences: GGA, GSA, GSV, RMC, VTG

SECURITY
- Modemulator
  - Connects over a secure private network
  - Support for 1 Administrator account and 9 User accounts
  - Password login
  - Caller ID screening
  - Dialback security‡
  - Configurable security warning banner (up to 256 characters)
  - Configurable login banner (up to 64 characters)
- IPsec VPN
  - Encryption: 3DES, AES128, AES 256
  - Authentication: MD5, SHA1, SHA256
  - Key Group: DH1, DH2, DH5, DH14
- Firewall
  - DMZ
  - Inbound Port Forwarding
  - Outbound Port Filtering
  - Outbound Trusted IPs

MINIMUM SYSTEM REQUIREMENTS
- Peripheral hardware: RS-232 serial analog modem with access to PSTN
- Cellular device-to-device routing (for peer-to-peer operation)
- Computer hardware/software:
  - Ethernet port/web browser (for Gateway set-up)
  - RS-232 DTE port/terminal software (for Modemulator set-up)

COMMAND-LINE INTERFACE
- Compatible with common Hayes modem AT commands

GRAPHICAL USER INTERFACE
- HTML configuration is supported by most web browsers

ENVIRONMENTAL
- **Temperature conditions:** Operating: -30 to 70° C, Non-Operating: -40 to 85° C
- **Humidity operational:** 5%-95% non-condensing

REGULATORY & APPROVALS
- UL/CSA 60950-1
- ICES-003
- CE
- FCC Part 15 Class A
- RoHS Compliant
- REACH
- Network PTCRB
- Network GCF compliant

CARRIER APPROVALS
- Aeris
- AT&T
- Bell Mobility
- Sprint
- Telus
- T-Mobile
- US Cellular
- Verizon

ENCLOSURE TYPE
- Industrial Grade Aluminum

MOUNTING
- 6 through holes for M4 bolts - 2 x 2 compatible with VESA Mount MIS-D 75 (optional standard DIN rail mounting interface)

PACKAGE DIMENSIONS/WEIGHT
- 8.5 x 5.55 x 2.5 in. (21.6 x 14.1 x 6.35 cm)
- 1.38 lb (.63 kg)

PRODUCT DIMENSIONS/WEIGHT
- 4.53 x 4.13 x 1.77 in. (11.5 x 10.5 x 4.5 cm)
- .77 lb (.35 kg)

PACKAGE CONTENTS
- USRobotics Courier Modemulator & M2M Cellular Gateway
- Two (2) 2db SMA Penta-band Antennas
- AC Power Supply (5 ft/1.5 m)
- Quick Start Guide

PRODUCT NUMBERS
- USR3520 - North America GSM/CDMA
- USR803520 - Europe GSM Only

WARRANTY
- Two-year limited manufacturer warranty from date of purchase

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www.usr.com

**All measurements at 12V DC
‡ Features available on firmware version 1.0.02 and higher. Available for download at support.usr.com/support/3520

IC Approved
Approuvé par IC