NetCommWireless

4G M2M Router

The NetComm Wireless 4G M2M Router enables highly complex M2M and industrial IoT deployments and ensures always-on connectivity with 4G failover.

NTC-140-02

Specification Sheet

4G M2M Router
Overview

Wireless Machine-to-Machine (M2M) communications is used to connect and manage an ever increasing number of mission-critical business assets across the entire organisation. As the cost of downtime escalates, the need to maintain a fail-proof connection is essential. Whether used as a primary or complimentary solution, the industrial-grade 4G M2M Router (NTC-140) ensures a fast, powerful and constant connection.

QUICK FACTS

- Fast and reliable cellular connectivity supporting 4G (LTE) up to 100Mbps/50Mbps (downlink/uplink), 3G (DC-HSPA+) up to 42Mbps/5.76Mbps and 2G (EDGE)
- Flexible WAN setup (use any interface as WAN), ideal for business continuity applications
- Two Gigabit Ethernet ports for networking flexibility
- Powerful processor and flash memory storage
- Rugged enclosure, wide operating temperature range, wall mount options and a flexible range of input power options making it ideal for use in harsh industrial environments
- USB-OTG for additional interfaces or extra storage
- Integrated standalone GPS for precise and accurate asset tracking
- Configurable power save mode with minimum current draw when in sleep mode

The NetComm Wireless 4G M2M Router (NTC-140) provides uninterrupted real-time data connectivity for diverse mission-critical applications, and is an ideal business continuity device. The feature rich and user friendly NTC-140 creates reliable point-to-point or point-to-multi-point WAN connectivity and offers automatic failover to ensure reliable connectivity when outages occur.

DEPENDABLE AUTOMATIC-FAILOVER

Business continuity and continuous connectivity is assured with automatic failover to 3G when outside of 4G coverage areas, and instant fall-back to 4G when the Gigabit Ethernet ports are used as an alternate Internet connection.

CUSTOM PERFORMANCE

The NTC-140 is a complementary solution that integrates seamlessly with the existing network. The powerful processor delivers optimal performance and its embedded NetComm Linux OS and Software Development Kit (SDK) enables the installation of custom software applications to the on-board memory.

SIMPLE AND COST-EFFECTIVE

Designed for ease of use, the NTC-140 has a user-friendly web interface and 8 tri-colour LED indicators for easy setup and ongoing management. The device can be managed using any browser, and text messages (SMS) can be used to securely access the current status, change configurations or execute commands. .

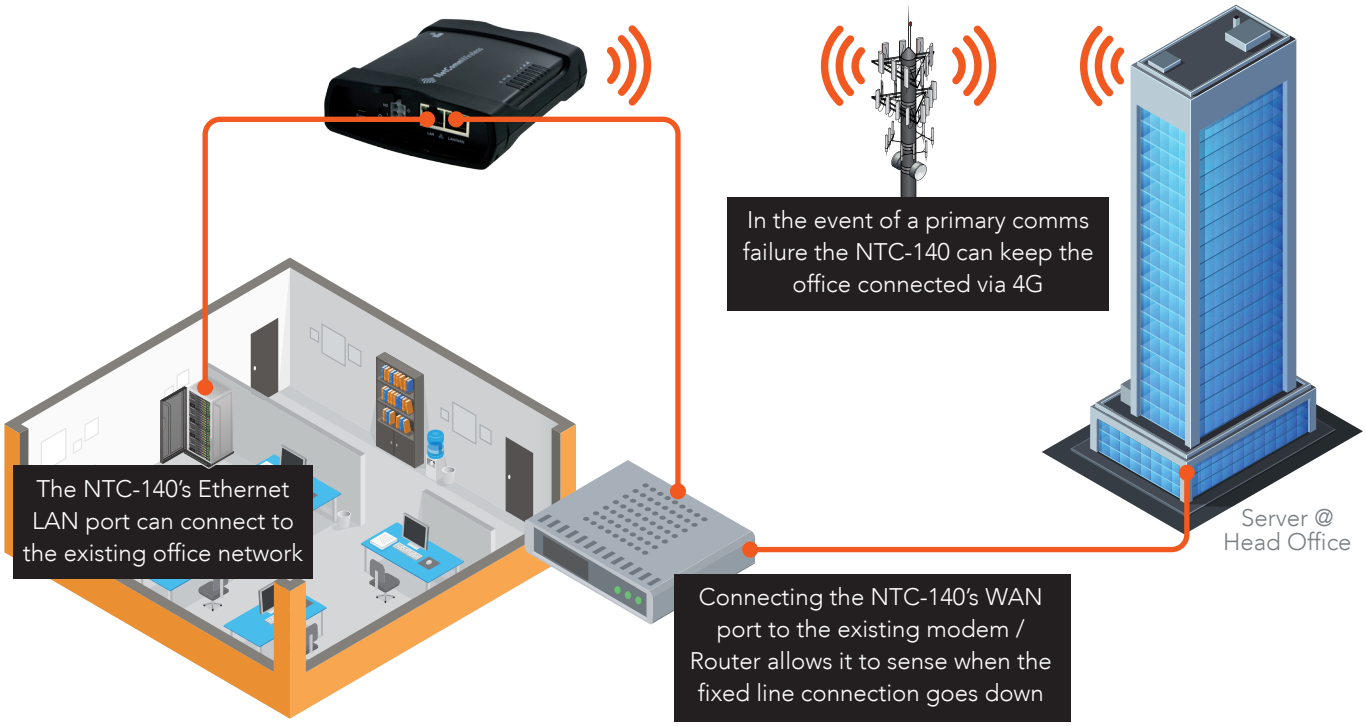
FUTURE-PROOF REMOTE ASSET MANAGEMENT

The NTC-140 enables carrier grade remote management with support for protocols such as LWM2M, TR-069 and SNMP to allow quick and easy integration with a wide range of remote management platforms. The NTC-140 is a future-proof 4G device that is ideal for long-term deployments, ensuring a low total cost of ownership and a high rate of return as networks advance. Designed to ensure a quick response to events requiring human intervention, the built-in event notification engine, which sends alarms and notifications via email or SMS, allows an automated layer of self-monitoring.

INDUSTRIAL GRADE DESIGN

Ideal for remote and industrial environments, the NTC-140 is easily mountable and features a hard wearing polycarbonate and rubber enclosure. Electrical components have been carefully selected to allow the NTC-140 to operate at extreme temperatures; and extensive environmental testing ensures that the device continues to operate under extreme conditions of temperature, shock and vibration.

Application Example
Wireless 4G failover



Device Features
At a glance

1. MAIN Cellular antenna connector
2. MicroSD card slot (up to 32GB MicroSD cards)
3. GPS antenna connector
4. AUX Cellular antenna connector
5. SIM card slot (for USIM/SIM 2FF format)
6. SIM tray eject button
7. Micro USB 2.0 OTG port (host or device mode)
8. Reset button
9. Molex Mini-Fit 4 pin connector (power, ignition input and I/O port)
10. Gigabit Ethernet LAN port
11. Gigabit Ethernet LAN/WAN port

Package Contents
What's in the box?*

1 x NetComm Wireless 4G M2M Router (NTC-140-02)

2 x Cellular antennas

1 x DIN rail mounting bracket

1 x Quick start guide

1 x 1.5m black Ethernet cable

1 x Power supply cable with fitted Molex connector

* GPS Antenna sold as optional accessory

Technical Specifications

PROCESSOR & STORAGE
- Powerful 720Mhz ARM Cortex A8 processor with 128MByte DDR2 RAM
- 256MByte Flash memory storage (~120MB available on board space for user storage)
- MicroSD card slot for additional storage

OPERATING SYSTEM
- Embedded Linux & Software Development Kit (SDK)

CELLULAR BANDS
- LTE:
  - • Band 1 (2100 MHz)
  - • Band 3 (1800 MHz)
  - • Band 7 (2600 MHz)
  - • Band 8 (900 MHz)
  - • Band 20 (800 MHz)
- UMTS/HSDPA/HSUPA/HSPA+/DC-HSPA+:
  - • Band 1 (2100 MHz)
  - • Band 2 (1900 MHz)
  - • Band 5 (850 MHz)
  - • Band 8 (900 MHz)
- GSM/GPRS/EDGE:
  - • GSM 850 (850 MHz)
  - • EGSM 900 (900 MHz)
  - • DCS 1800 (1800 MHz)
  - • PCS 1900 (1900 MHz)

PEAK DATA SPEED
- LTE: Category 3:
  - 100 Mbps / 50 Mbps (Downlink/Uplink) (20Mhz bandwidth)
  - 50 Mbps / 25 Mbps (Downlink/Uplink) (10Mhz bandwidth)
- HSPA+:
  - 42 Mbps downlink (Category 24)
  - 5.76 Mbps uplink (Category 6)
- EDGE
  - 236 kbps throughput

CONNECTIVITY
- 2 x 10/100/1000 Base-T Ethernet RJ45 ports with Auto MDIX
- Micro USB 2.0 OTG interface with 0.5A supply capability
- 1 x multipurpose I/O pin

SIM CARD READER
- Lockable Tray Reader with Push-Button-to-Release
  - optional soldered-down SIM (ETSI MFF2 DFN-8 USIM)
- Supports Mini USIM/SIM Format (2FF)

RESET BUTTON
- Reset button (recessed, requiring pen/paperclip) with three functions: Reboot, reboot into recovery mode, and reset unit to factory defaults

ANTENNA CONNECTORS
- 2x SMA connectors for 3G/4G
- 1x SMA connector for GPS

LED INDICATORS
- Tri-colour (Red/Amber/Green) LEDs. Power, Mobile Broadband, Service Type and Signal Strength indicators
- Easy and clear LED status display for connection status, connected network type, and connection errors

CELLULAR
- Profile managed packet data connections
- NAT Disable for framed route configuration
- Transparent bridge mode using PPPoE to allow the router to transparently forward Public WAN IP address to a downstream device
- SIM Security Management (PIN configuration, enable and disable)
- Automatic and manual cellular band selection
- Automatic and manual operator selection

GPS
- Embedded GPS receiver (1575.42Mhz)
- SMA Connector for external passive or active GPS Antenna
- Active antenna voltage: 3.05V
- Maximum current: 50mA
- Tracking sensitivity under open sky: -161dBm
- Acquisition sensitivity under open sky: -145dBm
- Cold start sensitivity: -145dBm
- Time to first fix (TTFF): Cold 32s, Warm 29s, Hot 1s

NETWORK & ROUTING
- Static Routing, RIP (v1/v2), Port Forwarding and DMZ
- Dynamic DNS
- VRRP for redundant router failover
- DHCP Server, including :
  - Address reservation by MAC address
  - Custom DNS server definitions
  - DHCP Relay
  - DHCP list display in Web-UI
  - Advanced DHCP Option configuration (Option 42 NTP, Option 66 TFTP, Option 150, Option 160)
- Data Stream Manager providing ability to create mappings between input and output ports (e.g. Serial Port, SMS, GPS, USB) and perform required translation or data processing by each virtual tunnel.
- Modbus Server TCP/IP Gateway and Client TCP/IP Agent with up to 247 slaves connected to the Serial TCP/IP Gateway.
- Modbus RTU/ASCII frames support.

VPN
- PPTP Client for VPN connectivity to remote PPTP VPN Server
- IPSec tunnel termination (for up to 5 tunnels)
- GRE Tunnelling
- OpenVPN (Client, Server and P2P)

ADMIN & CONFIGURATION
- Web-based User Interface (HTTP/HTTPS) for full device status and configuration
- Password protected configuration file backup and restore for quick device configuration and device cloning
- Telnet Command Line Interface for status monitoring, configuration and control
- SNMP v1/v2 including cellular specific MIB, config and firmware download
- TR-069 Client for remote device configuration, configuration backup and restore, and firmware upgrade
- SMS messaging (Send/Receive) including inbox, outbox
- Ping monitor watchdog (Reset connection on repeated ping failure)
- Diagnostic Log Viewer (remote and local)
- System Status and Security Logs
- NTP Server Support for network time sync of device's system clock
- Device User Guide stored on the device and accessible via the Web-based User Interface (HTTP/HTTPS)
- Advanced Diagnostics and Control via SMS
  - Query status information – such as Signal Strength, WAN IP, Uptime, and many more
  - Configure device remotely via SMS – such as APN, authentication settings, and many more
  - Execute commands via SMS – such as reboot, reset to defaults, go offline, and many more
  - Secure SMS management using sender whitelisting and password management
  - SMS acknowledgement replies for queries and commands

FIRMWARE MANAGEMENT
- Firmware upgrade locally via LAN or remotely Over-The-Air (HTTP/ HTTPS, SNMP, TR-069)
- Multiple firmware image storage on device and dynamic install
- Triggered firmware upgrade via SMS (initiate download & install from HTTP/HTTPS)

SOFTWARE DEVELOPMENT KIT
- Develop and install custom software applications
- Open Linux standard development environment
- Develop applications/scripting in standard ANSI C/Shell script and LUA
- Package manager built into Web-UI for Application installation/removal
- API (C, LUA and Shell libraries) to the unit's internal Runtime Database to allow full status monitoring configuration and control of the device from custom applications

TEMPERATURE
- Module Manufacturer's Recommended Operating Temperature: -40°C to +85°C
- Storage Temperature: -40°C to +85°C

POWER SUPPLY
- AC Power supply available as an optional accessory
- Power input and I/O via 4 way Molex mini-fit connector
- DC Power (8 - 40V DC)
- 1x dedicated ignition input on 4 way connector
- Minimum power input rating of 6W via 4 way mini-fit connector. Recommended power input 12V 1.5A.
- Vehicle compatible protection on DC Input Jack. (ISO7637 standard)

DIMENSIONS & WEIGHT
- Device dimensions (excluding external antenna): 143mm (L) x 107mm (W) x 34mm (D) / ~235g

MOUNTING OPTIONS
- Wall mount support in multiple orientations via embedded mounting holes
- DIN Rail mount support via plastic bracket included in box (Top hat section rail TH 35 IEC60715)

CERTIFICATIONS
- CE (Europe)
- RCM (Australia)
- RoHS
- WEEE

CARRIER APPROVALS
- Telstra

NTC-140-02_R2

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