

4G M2M Router

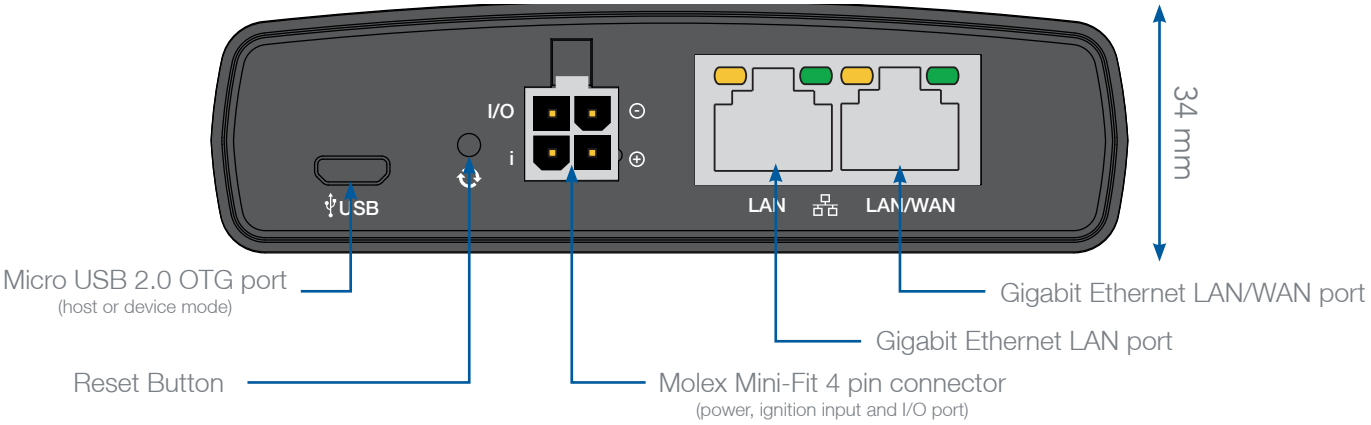
NTC-140

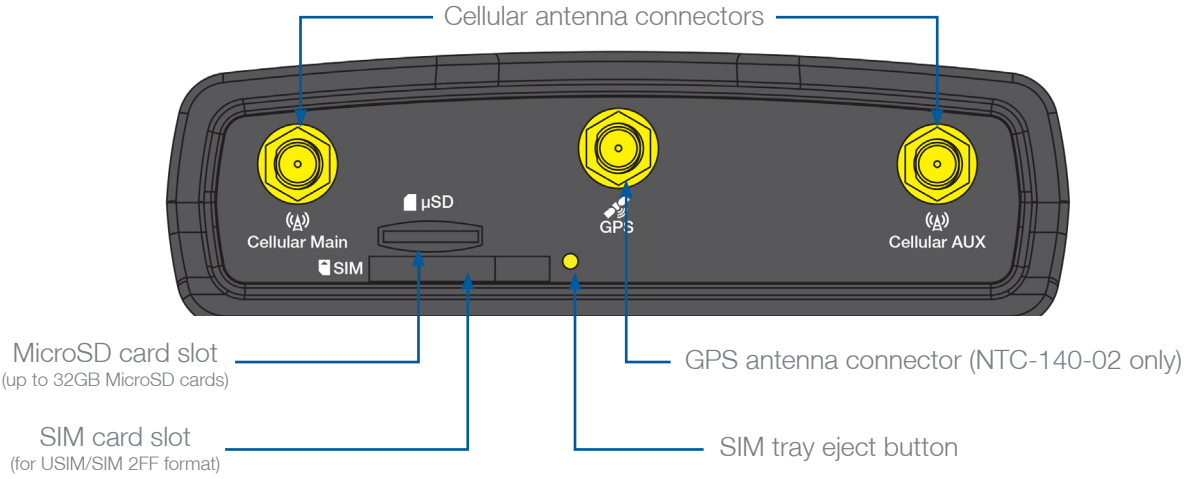
Device Features



Key Features

- 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
- Tested for vehicular applications (IEC Class 5M2, MIL-STD-810 method 516.5, ISO 7637-2)
- Powerful cellular connectivity supporting 4G (LTE) up to 100Mbps/50Mbps (downlink/uplink), 3G (DC-HSPA+ and 1xEV-DO Rel. A) up to 42Mbps/5.76Mbps and 2G (EDGE)
- Two Gigabit Ethernet ports for networking flexibility
- USB-OTG for additional interfaces or extra storage
- Flexible WAN setup (use any interface as WAN), ideal for business continuity applications
- Integrated standalone GPS for precise and accurate asset tracking (NTC-140-02 only)
- Ignition sense capability for graceful shutdown and startup in vehicle applications
- Configurable power save mode with minimum current draw when in sleep mode





What's in the box*



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



2 x Cellular antennas



1 x 1.5m black Ethernet cable



1 x DIN rail mounting bracket



1 x Power supply cable with fitted Molex connector



1 x Quick start guide

* GPS is only available on the NTC-140-02. GPS Antenna sold as optional accessory.

Optional Accessories



GPS Active Patch Antenna

ANT-0038 - SPECIFICATIONS

- Frequency range: 1575.42 MHz
- Gain: 28 dBi (GPS)
- VSWR: 1.92:1 MAX
- Polarization: R.H.C.P.
- Cable: RG174
- Cable length: 3 m
- Impedance: 50 Ω
- Voltage: 3.3-5.5 V
- Connector: SMA male
- Radome colour: Black
- Radome material: ABS



12V DC Power Supply

PSU-0067 - SPECIFICATIONS

- International Efficiency Level VI Power supply
- No-Load Power Consumption: 0.1W (115VAC 60Hz)
- Average Efficiency in Active Mode: 85% (115VAC 60Hz)
- Maximum input voltage range: 90 - 264 V AC (100 - 240 V AC Normal)
- Maximum input frequency range: 47 - 63 Hz (50/60Hz Normal)
- Output voltage range: 11.4 - 12.6 V DC (Typical 12 V DC)
- Maximum output current: 1.5 A
- Maximum ripple and noise: 150 mV peak to peak
- Maximum output overshoot: 10%
- Protection against Over-Voltage, Over-Current and Short-Circuit
- Temperature range: 0°C – 40°C (Operating), -30°C – 70°C (Storage)
- Relative humidity range: 10% - 90%
- Altitude range: Sea level to 2,000 m
- Suitable regions: US/UK/EU/AU/SA/TW/CH/JP
- Safety certifications: UL60950-1, CSA C22.2 NO.60950-1, EN60950-1, AS/NZS 60950, GB4943, J60950, IEC 60950-1
- Lead length: 1.5 m

Technical Specifications

PROCESSOR & STORAGE

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

OPERATING SYSTEM

- Embedded Linux & Software Development Kit (SDK)

CELLULAR BANDS

NTC-140-01

- LTE:
  - Band 2 (1900 MHz)
  - Band 4 (AWS) (1700 / 2100 MHz)
  - Band 5 (850 MHz)
  - Band 13 (700 MHz)
  - Band 17 (700 MHz)
  - Band 25 (1900 MHz G Block)
- CDMA (EVDO Release 0 and EVDO Release A):
  - BC0 (Cellular 800 MHz)
  - BC1 (PCS 1900 MHz)
  - BC10 (Secondary 800 MHz)
- UMTS/HSDPA/HSUPA/HSPA+/DC-HSPA+:
  - Band 1 (2100 MHz)
  - Band 2 (1900 MHz)
  - Band 4 (AWS 1700/2100 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)

NTC-140-02

- 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) (20 MHz bandwidth)
  - 50 Mbps / 25 Mbps (Downlink/Uplink) (10 MHz bandwidth)
- HSPA+:
  - 42 Mbps downlink (Category 24)
  - 5.76 Mbps uplink (Category 6)
- EDGE
  - 236 kbps throughput

NTC-140-01 only

- CDMA 1xEV-DO Rev. A:
  - 3.1 Mbps (forward channel)
  - 1.8 Mbps (reverse channel)
- CDMA 1x:
  - 153 kbps (forward channel)
  - 153 kbps (reverse channel)
  - 14.4 kbps (circuit-switched data bearers)

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
  - Customizable LED
  - Mobile Broadband
  - Service Type
  - Signal Strength indicators
- Easy and clear LED status display for connection status, connected network type, and connection errors

* GPS is only available on the NTC-140-02.

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 (NTC-140-02 only)

- Embedded GPS receiver (1575.42 MHz)
- 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

NTC-140-01

- FCC, PTCRB, UL (USA)
- IC (Canada)

NTC-140-02

- RCM (Australia and New Zealand),
- CE (Europe)
- TRA (United Arab Emirates)
- RoHS
- WEEE

CARRIER APPROVALS

NTC-140-01

- AT&T (*NTC-140-01-ATT*)
- Verizon (*NTC-140-01-VZW*)

NTC-140-02

- Telstra

Listen.
Innovate.
Solve.

For over 35 years, NetComm has engineered new generations of first to market technologies and helped to change the way that the world communicates.

Innovation comes from our people. Working together, from all parts of the globe, we listen to our customers and achieve innovation through a unique understanding of the challenges and opportunities of a connected world.

No matter the challenge, we look at the world through the eyes of our operator partners and customers and innovate solutions engineered to deliver lasting results in line with specific business needs.

Whether transforming rural and regional communities with superfast Fixed Wireless; optimising business efficiencies with smart wireless Machine-to-Machine (M2M) solutions, or extending network infrastructure with Fibre or Cable to the distribution point – NetComm is backed by the experience, expertise and capabilities needed to optimise outcomes.

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