LANTRONIX®

4G M2M Router

NTC-140

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

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.

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TECHNICAL SPECIFICATIONS

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

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TECHNICAL SPECIFICATIONS

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, IC, EC

NTC-140-02

- RCM (Australia and New Zealand)

TEMPERATURE

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

CARRIER APPROVALS

NTC-140-01

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

NTC-140-02

- Telstra

GPS Active Patch Antenna

ANT-0038

12V DC Power Supply

PSU-0067

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