



5G INDUSTRIAL IOT ROUTER

NTC-500

The **NTC-500** router is a high-end high-speed industrial-grade 5G router. Designed with critical and complex applications in mind, it provides ultra-reliable, high bandwidth throughput even in extremely harsh environments.



RELIABLE CONNECTIVITY

The **NTC-500** supports the latest 3GPP Release 16 5G features including 5G Non-standalone (NSA), 5G Standalone (SA) and Dynamic 5G Slicing which enables complex end-to-end, on-demand quality of service solutions in partnership with leading carrier networks.



REMOTE MANAGEMENT

IoT deployments in isolated locations can be managed remotely in real time to reduce site visits and manual maintenance costs. Technicians can receive status alerts, extract and analyse data, upgrade firmware over the air, configure and update the **NTC-500** from headquarters or any other location using a wide range of management protocols, including OMA LWM2M, TR-069, SNMP, HTTP/HTTPS, Telnet/CLI and SMS.



PRIVATE 5G NETWORK COMPATIBLE

The **NTC-500** is an ideal and cost-effective solution for Private 5G Networks deployed in industrial, mining or construction settings.

DEVICE OVERVIEW



PERFECT FOR

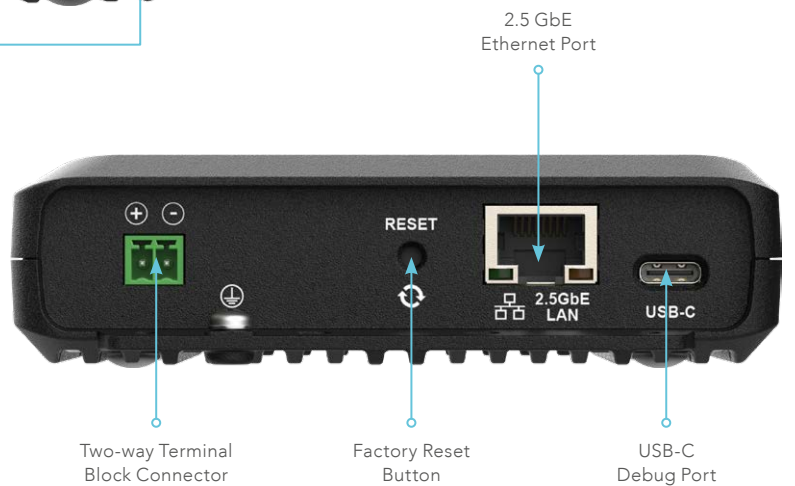
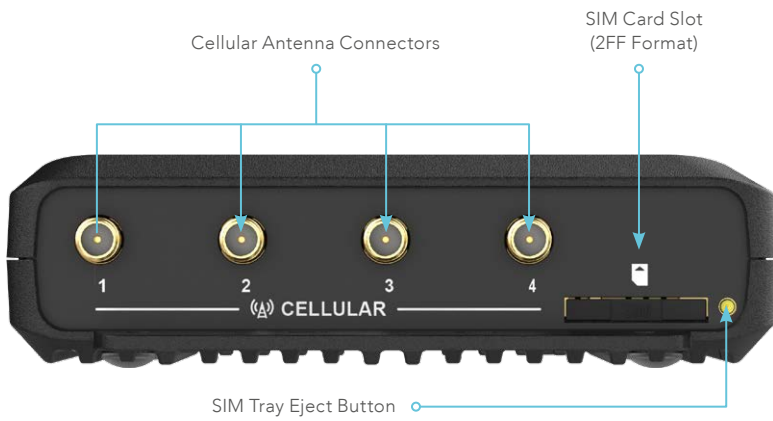
- › Connected elevators and escalators
- › Vending and ticketing machines
- › Digital signs
- › Access control systems
- › Surveillance cameras
- › Traffic lights control

FEATURES AT A GLANCE

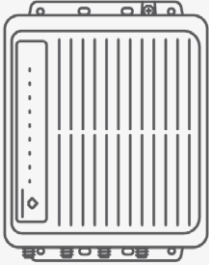
- › 5G Standalone (SA)
- › 5G Non-Standalone (NSA) with failover to 4G
- › 2.5 Gbps Ethernet Port
- › Robust ruggedised industrial-grade metal housing with multiple mounting options
- › Wide operating temperature range
- › Designed, assembled and tested for unmanned locations in extreme environments
- › Easy and clear LED status display for connection status and network type as well as two user-customisable LEDs.

DEVICE FEATURES

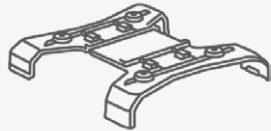
MEASUREMENTS
in millimeters



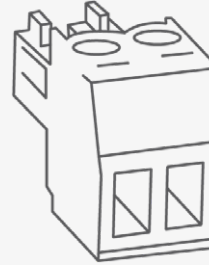
WHAT'S IN THE BOX



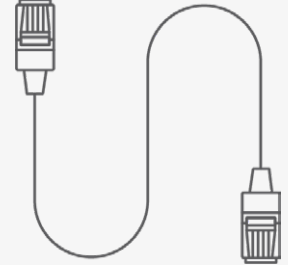
1x NTC-500 Router



1x DIN Rail
Mounting Bracket



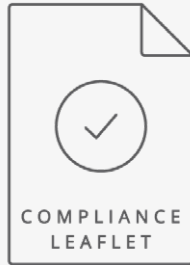
1x Two-way
Terminal Block



1x 1m
Ethernet Cable



1x Welcome Card



1x Compliance Leaflet

DIN MOUNTING BRACKET

The **DIN mounting bracket** is a multi-purpose mount for installing your **NTC-500**.

The mounting bracket allows the **NTC-500** to be installed in a variety of locations without installing screws in the router itself. Just install the mount and clip the **NTC-500** into place.



OPTIONAL ACCESSORIES



12 V DC POWER SUPPLY PSU-0079 - SPECIFICATIONS

- › International Efficiency Level VI Power Supply
- › No-Load Power Consumption (115 V AC 60 Hz): 0.07 W
- › No-Load Power Consumption (230 V AC 50 Hz): 0.1 W
- › Maximum input voltage range:
90 - 264 V AC (100 - 240 V AC Normal)
- › Maximum input frequency range:
47 - 63 Hz (50/60 Hz Normal)
- › Output voltage range:
11.92 - 12.21 V DC (Typical 12 V DC)
- › Maximum output current: 1.5 A
- › Maximum ripple and noise: 83 mV peak-to-peak
- › Maximum output overshoot: 2.7%
- › Protection against overvoltage, overcurrent
and short circuit
- › Temperature range: 0°C to 40°C (Operating),
-30°C to 70°C (Storage)
- › Relative humidity range: 10% to 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



LTE/5G PADDLE ANTENNA ANT-0100 - SPECIFICATIONS

- › Code: ANT-0100
- › Frequency (MHz): 617-960 / 1710-6000
- › Maximum Gain (dBi): 1/3
- › VSWR: ≤ 3.5
- › Connector: SMA
- › Height (mm): 171



TECHNICAL SPECIFICATIONS

CELLULAR BANDS (NTC-501)

5G NR Bands

- › n2, n5, n7, n12, n13, n14, n25, n26, n29, n30, n38, n41, n48, n66, n71, n77, n78

4G LTE Bands

- › B2, B4, B5, B7, B12, B13, B14, B17, B25, B26, B29, B30, B38, B41, B42, B43, B46, B48, B66, B71

CELLULAR BANDS (NTC-502)

5G NR Bands

- › n1, n3, n5, n7, n8, n20, n28, n38, n40, n41, n75, n76, n77, n78

4G LTE Bands

- › B1, B3, B5, B7, B8, B20, B28, B32, B38, B40, B41, B42, B43

DEVICE CATEGORY

4G LTE

- › Uplink: Cat 18, 2CA Single TX, 256QAM
- › Downlink: Cat 19, 5CA MIMO 4x4, 256QAM

5G NR

- › Uplink: MIMO 2x2 Single Carrier up to 100MHz, 256QAM
- › Downlink: MIMO 4x4 Dual Carrier up to 120MHz, 256QAM

PEAK DATA SPEEDS*

5G NR SA Sub-6

- › 2.4 Gbps (DL) / 900 Mbps (UL)

5G NR NSA Sub-6

- › 2.5 Gbps (DL) / 550 Mbps (UL)

4G LTE

- › 1.6 Gbps (DL) / 200 Mbps (UL)

ANTENNA CONNECTORS

SMA connectors

- › 4 x Cellular ports for external cellular antennas

INTERFACES

- › 1 x 2.5 Gbps LAN port
- › 1 x USB-C port

LED INDICATORS

- › 1 x Power
- › 1 x SIM
- › 1 x 4G
- › 1 x 5G
- › 3 x Signal strength
- › 2 x Custom indicators

SIM CARD READER

- › 1 x Mini USIM/SIM Format (2FF) SIM card slot
- › Optional soldered-down SIM (ETSI MFF2 DFN-8 USIM)

CELLULAR

- › Profile managed packet data connections
- › Profile Routing
- › Data Profile IP Passthrough
- › SIM Security Management (PIN configuration, enable and disable)
- › Automatic and manual cellular band selection
- › Automatic and manual operator selection
- › Configurable automatic SIM switching between external and optional internal SIM
- › 5G and LTE Cell Lock
- › Up to 6 APN configurations
- › Up to 8 Bearers and Traffic Classes

NETWORK AND ROUTING

- › Static Routing, RIP (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)
- › VLAN Management
- › IPS Firewall to protect against DoS attacks
- › Network Service Assurance
- › 5G Dynamic Slicing

VPN

- › IPsec tunnel termination (for up to 5 tunnels)
- › GRE Tunnelling
- › OpenVPN (Client, Server and P2P)

ADMINISTRATION AND CONFIGURATION

- › Secure web-based user interface (HTTPS) for full device status and configuration
- › Password protected configuration file backup and restore for quick device configuration and device cloning
- › SSH Command Line Interface for status monitoring, configuration and control
- › SNMP v3 including cellular specific MIB, config and firmware download
- › TR-069 and LWM2M for remote device configuration, configuration backup and restore, and firmware upgrade
- › 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
- › Site and location settings
- › Field test information for LTE and 5G

- › MQTT client for device data reporting to Microsoft Azure & AWS cloud services
- › Cumulocity support
- › Advanced Diagnostics and Control via SMS
 - › SMS over SGS supported
 - › SMS Client (Send/Receive) including inbox, outbox
 - › Query status information via SMS - 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 (HTTPS, SNMP, TR-069, LWM2M)
- › Triggered firmware upgrade via SMS (initiate download & install from HTTPS)

TEMPERATURES

- › **Operating Temperature Range:** -30°C to +70°C
- › **Storage Temperature Range:** -30°C to +85°C
- › **Operating Humidity Range:** 0-95%

POWER SUPPLY

- › Power input via 2-way termination block receptacle
- › Field terminable power input via screw type terminal block included
- › DC Power (8 - 40V DC)
- › Recommended DC supply via terminal block (12V 1.5A)

DIMENSIONS, WEIGHT AND MOUNTING

- › **Device dimensions** (excluding external antennas): 143.5mm (D) x 110.5mm (W) x 30mm (H) / 445g
- › Wall mount support in multiple orientations via embedded mounting holes
- › DIN Rail mount support via plastic bracket included in the box

ENCLOSURE

- › IP41 rated

* Theoretical only - actual values depend on network conditions

TECHNICAL SPECIFICATIONS

MODEL VARIANTS

MODEL	NTC-501	NTC-502
REGION / CARRIER	<ul style="list-style-type: none"> › North America 	<ul style="list-style-type: none"> › Europe › Asia › Africa › Oceania › South America
REGULATORY CERTIFICATIONS	<ul style="list-style-type: none"> › FCC (USA) › IC (Canada) › PTCRB (USA and Canada) › UL - Planned 	<ul style="list-style-type: none"> › CE (Europe) › RCM (Australia and New Zealand) › GCF (Europe) - Planned
CARRIER APPROVALS	<ul style="list-style-type: none"> › Bell - In Progress › UScellular › AT&T › AT&T FirstNet Capable › AT&T Firstnet Trusted - In Progress › T-Mobile › Rogers- Planned › Verizon - In Progress › Telus- Planned 	<ul style="list-style-type: none"> › Telstra - In Progress › Optus - Planned › TPG Telecom Australia - Planned › Orange - In Progress › Vodafone - Planned › Telefonica - Planned › Deutsche Telekom - Planned › Spark 1 - In Progress › One NZ - Planned



NetComm Spec Sheet Rev 6

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