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.

PRODUCT
INTERFACES

Connected
Elevators &
Escalators

Access
Control
Systems

Vending &
Ticketing
Machines

Surveillance
Cameras
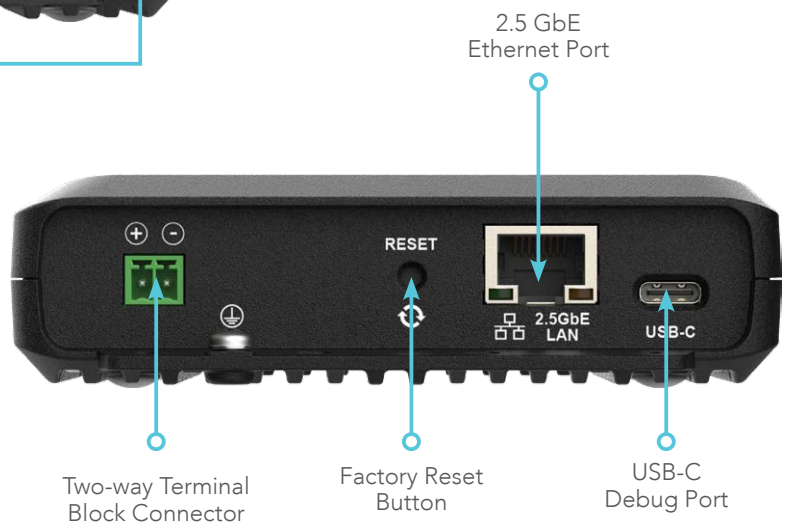
Digital
Signage

Traffic
Lights
Control

PERFECT FOR
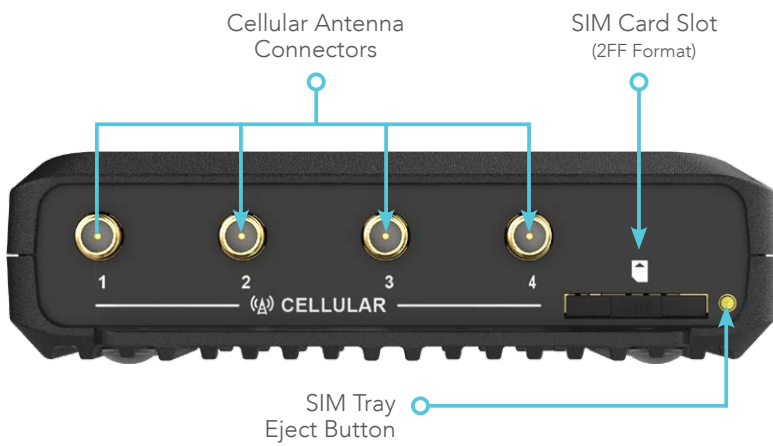
› Connected elevators
  and escalators

› Vending and ticketing
  machines

› Digital signs

› Access control systems

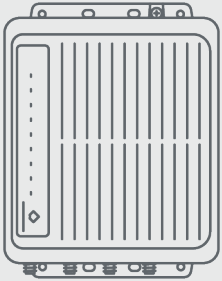› Surveillance cameras

› 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
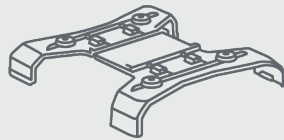 network type as well as two user-customisable LEDs.

DEVICE FEATURES

30

143.5

110.5

Cellular Antenna Connectors

SIM Card Slot
(2FF Format)

1   2   3   4   (A) CELLULAR

SIM Tray Eject Button

2.5 GbE Ethernet Port

RESET   2.5GbE LAN   USB-C

Two-way Terminal Block Connector
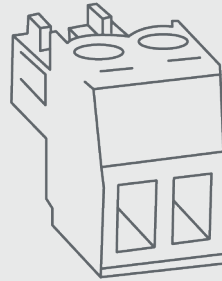
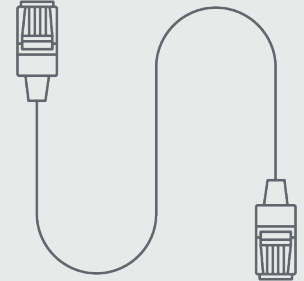Factory Reset Button

USB-C Debug Port
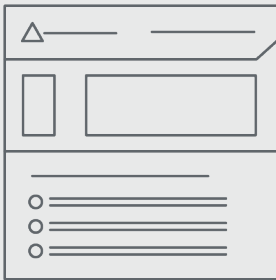
WHAT'S
IN THE BOX

1x NTC-500 Router

1x DIN Rail
Mounting Bracket

1x Two-way
Terminal Block

1x 1m
Ethernet Cable

1x Welcome Card

COMPLIANCE
LEAFLET

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: 2CA Single TX, 256QAM
› Downlink: 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 SA Sub-6
› 2.4 Gbps (DL) / 900 Mbps (UL)
5G 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 SIM card slot
› Supports Mini USIM/SIM Format (2FF)
› Optional soldered-down SIM (ETSI MFF2 DFN-8 USIM)

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

NETWORK AND ROUTING
› Static Routing, 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
› SMS Client (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 deviceís system clock
› Advanced Diagnostics and Control via SMS
› Query status information via SMS ñ such as Signal Strength, WAN IP, Uptime, and many more
› Configure device remotely via SMS ñ such as APN, authentication settings, and many more
› Execute commands via SMS ñ 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
› Site and location settings
› Field test information for LTE and 5G

REMOTE 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)
› MQTT client for data reporting to Microsoft Azure and AWS cloud services**

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

*Theoretical only - actual values depend on network conditions   **Feature under development

TECHNICAL SPECIFICATIONS

MODEL VARIANTS

MODEL	NTC-501	NTC-502
REGION / CARRIER	› North America	› Europe › Africa › Asia › Oceania › South America
REGULATORY CERTIFICATIONS	› FCC (USA) › IC (Canada) › PTCRB (USA and Canada) › UL - Planned	› CE (Europe) › RCM (Australia and New Zealand) › GCF (Europe) - Planned
CARRIER APPROVALS	› Bell - Planned › UScellular - Planned › AT&T - Planned › T-Mobile - Planned	› Telstra - Planned › Optus - Planned › TPG Telecom Australia - Planned › Orange - Planned › Vodafone - Planned › Telefonica - Planned › Deutsche Telekom - Planned › Spark - Planned › One NZ - Planned

SPECIFICATIONS SUBJECT TO CHANGE

| NTC-500 Data Sheet Rev4

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