Preliminary

NTC-550 Series

IoT Gateway

5G INDUSTRIAL IOT GATEWAY

The NTC-550 ruggedized Industrial IoT Gateway combines ultra-fast 5G connectivity with the robust performance of Wi-Fi 6 and serial interfaces. It delivers intelligent, high-speed, low-latency connectivity, perfectly suited to meet the stringent demands of modern industrial applications. Ideal for environments such as smart factories, industrial automation, and remote monitoring, ensuring seamless connectivity and integration into data platforms. With features like multiple antennas, full Gigabit network interfaces, and advanced security and routing protocols, built to withstand harsh conditions and provide stable operation around the clock.

RELIABLE CONNECTIVITY

The NTC-550 Series leverages cutting-edge 3GPP 5G Release 16 features, including 5G Non-standalone (NSA), 5G Standalone (SA), and Dynamic 5G Slicing. These technologies enable sophisticated end-to-end, on-demand quality of service solutions in collaboration with leading carrier networks, with seamless fallback to 4G-LTE. Additionally, Wi-Fi 6 enhances security, delivers faster speeds, and increases capacity for a superior connectivity experience.

REMOTE MANAGEMENT

IoT deployments in remote locations can be managed in real time, minimizing the need for site visits and reducing manual maintenance costs. Technicians can receive status alerts, extract and analyze data, upgrade firmware over the air, and configure and update the NTC-550 Series from headquarters or any other location. This is facilitated by a wide range of management protocols, including OMA LWM2M, TR-069, SNMP, HTTP/HTTPS, Telnet/CLI, and SMS..

PRIVATE 5G NETWORK COMPATIBLE

The NTC-550 Series is an ideal and cost-effective solution for Private 5G Networks deployed in industrial, energy or logistics settings incl support for CBRS band n48 for USA and n77 & n78 for ANZ, EMEA & LATAM.

Feature Highlights:

- 5G NR Release 16 SA/NSA with failover to 4G-LTE
- Wi-Fi 6 and Bluetooth support
- 2.5Gbps WAN & Multiple gigabit LAN Ethernet ports
- Built-in GNSS, multiple Serial ports, I/Os and Ignition sensing
- Advanced routing, firewall and security protocols
- Robust ruggedized industrial-grade metal housing
- Wide operating temperature range
- Ideal for use in emergency vehicles, trucks, and buses
- Designed, assembled and tested for unmanned locations in demanding environments

Markets:

Manufacturing

Utilities & Energy

Warehousing & Logistics

Transportation

LANTRONIX

NTC-550 Series

Technical Specifications

CELLULAR BANDS (NTC-551)

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-552)

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

FAKRA connectors
- 4x Cellular (Claret Violet) connectors for external cellular antennas
- 1x GPS (Signal Blue) connector for active external antenna
- 2x Wi-Fi (Beige) connectors for external Wi-Fi antennas

INTERFACES
- 1 x 2.5 Gbps LAN/WAN port
- 4 x 1 Gbps LAN ports
- 1 x USB-C port
- 1 x Ignition sensing port
- 3 x Configurable GPIOs
- 1 x Configurable serial port (RS232/RS422/RS485)
- 1 x microSD card slot

LED INDICATORS
- 1 x Power
- 1 x SIM
- 1 x 4G
- 1 x 5G
- 3 x Signal strength
- 1 x Wi-Fi
- 1 x Bluetooth
- 1 x GPS
- 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)

GPS
- GPS
- GLONASS

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

WI-FI FUNCTIONS
- WLAN Protocol: IEEE 802.11a/b/g/n/ac/ax
- Wi-Fi Frequency: 2.4 GHz / 5 GHz
- Supported channel bandwidths:
  - 20/40 MHz at 2.4 GHz
  - 20/40/80 MHz at 5 GHz
- 2 × 2 Multi-User Multiple-Input Multiple-Output (MU-MIMO)
- Dual Band Simultaneous (DBS)
- Wi-Fi Modulation Mode: CCK/BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM
- Encryption Mode: WPA3
- Wi-Fi Operating Mode: AP, STA, AP + STA

NETWORK & 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 list display in Web-UI
- Advanced DHCP Option configuration (Option 42 NTP, Option 66 TFTP)
- WAN Failover (Cellular, Ethernet, Wi-Fi Client)
- Data Stream Manager providing ability to create mappings between input and output ports (e.g. Serial Port, Ethernet) and perform required translation or data processing by each virtual tunnel
- Modbus Server TCP/IP Gateway, Client TCP/IP Agent and Serial TCP/IP Gateway
- Modbus RTU/ASCII frames support
- VLAN Management
- IPS Firewall to protect against DoS attacks
- 5G Dynamic Slicing
- Network Service Assurance

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

ADMINISTRATION & 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 (remote and local)
- System Status and Security Logs
- NTP Server Support for network time sync of device's system clock
- Site and location settings
- MQTT client for device data reporting to Microsoft Azure & AWS cloud services
- Cumulocity support
- Field test information for LTE and 5G
- 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
  - Configure device remotely via SMS – such as APN, authentication settings
  - Execute commands via SMS – such as reboot, reset to defaults
  - 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%

DIMENSIONS, WEIGHT & MOUNTING
- Device dimensions (excluding external antennas): 193.3mm (D) x 175mm (W) x 51.7mm (H) / 1.050 kg
- Wall mount support in multiple orientations via embedded mounting holes
- DIN Rail mount support via DIN Rail clips included in the box

ENCLOSURE
- IP41 rated

** Theoretical only - actual values depend on network conditions*

Model Variants

MODEL	NTC-551	NTC-552	
Region / Carrier	• North America	• Europe • Asia • Africa	• Oceania • South America
Regulatory Certifications	• FCC (USA) - In Progress • IC (Canada) - In Progress • PTCRB (USA and Canada) - In Progress • UL - Planned	• CE (Europe) • RCM (Australia and New Zealand) • GCF (Europe) - Planned	
Carrier Approvals	• Bell - 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 1 - Planned • One NZ - Planned

Learn more at Lantronix.com/ntc-550

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