

## 5G - Powering the Future

# TRITOM GX500G 5G IoT Modem

**TRITOM GX500G Industrial IoT 5G and 4G/LTE Modem:** Connecting Machines, Applications and any indoor/outdoor access point for 5G enterprise AI IoT. The needs of TRITOM GX500G IoT modem include seamlessly transitioning wired factories to wireless with solutions capable of supporting both LTE and 5G connectivity. The modem is designed with industrial and enterprise applications in mind, built with premium gigabit class performance, low-power, and thermal-efficient capabilities to enable a new generation of fast, powerful and high-performing IoT solutions.

**TRITOM GX500G** is a global 5G, 4G/LTE bands networking device using 5G cellular Internet connections to Ethernet providing high-speed internet connectivity without needing wired cabling. It connects and routes communications between devices, applications, and cloud services for various applications such as business enterprises, industrial settings, and transportation. GX500G connects with any access point or routers offer faster, cheaper, and more reliable connections than traditional wired routers, with the added benefit of backup connectivity to ensure business continuity. They are equipped with secure edge computing capabilities and support mission-critical needs with rapid deployment and robust security features.

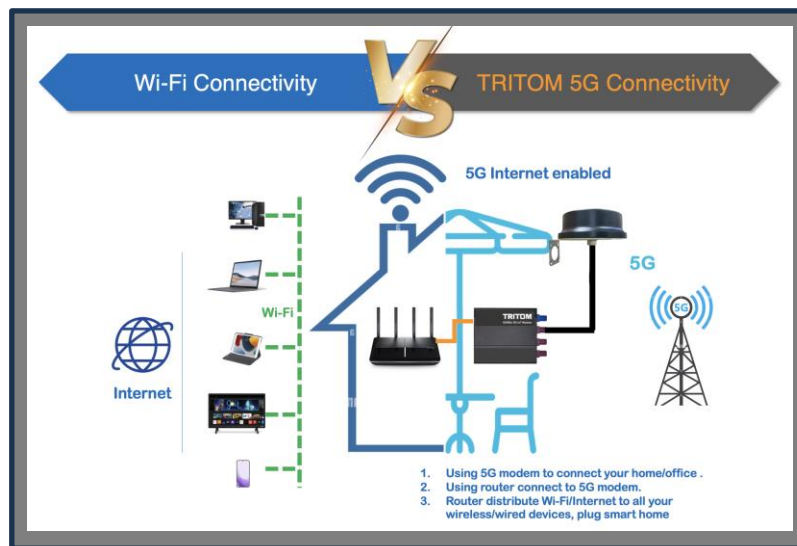


FAKRA connector  
for external antenna  
Option: SMA  
connector



**5G Outdoor  
Antenna**

**GX500G**



TRITOM GX500G is equipped with Qualcomm Snapdragon X62 5G Modem, The world's first 10 Gigabit 5G and first 3GPP Release 16 modem-to-antenna solution, designed with an upgradable architecture to rapidly commercialize 5G Release 16 and extend 5G in mobile broadband, fixed wireless, industrial IoT and 5G private network applications. Tri Cascade TRITOM GX500G IoT Modem is at the forefront enabling the Smart IoT ecosystem with high-speed 5G to update existing IoT systems and make 5G for IoT a reality.



**Enabling The Performance That You Need.**



# Specifications

**TRITOM GX500g**

## Applications

- Smart Farm
- Smart Factory
- Smart City
- Automated Warehousing
- Marina
- Yacht
- RV and RV park
- Public Hotspot
- Traveling Exhibition
- Seminar
- Digital Signage.
- Fleet Management
- Construction Site Internet
- Additional 5G Failover Operation

5G data plans and Cloud Platform are included with the service

| GX500g HW Specification                 |   |
|---|---|
| <b>Network Processor</b>                | MediaTek 7621A, Dual-core 880Mhz network processor  |
| <b>RAM</b>                              | 128MB   |
| <b>Flash</b>                            | 16MB  |
| <b>User storage</b>                     | 1MB (Internal)<br>32GB with SD card socket (Order number: GX500gx)  |
| <b>5G processor</b>                     | Qualcomm SDX62  |
| <b>Support Bands</b>                    | Frequency Bands & MIMO & GNSS Systems   |
| <b>5G NR SA</b>                         | n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79<br>DL 4 x 4 MIMO: n1/n2/n3/n7/n25/n30/n38/n40/n41/n48/n66/n70/n77/n78/n79<br>UL 2 x 2 MIMO: n38/n41/n48/n77/n78/n79 |
| <b>5G NR NSA</b>                        | n1/n2/n3/n5/n7/n8/n12/n13/n14/n18/n20/n25/n26/n28/n29/n30/n38/n40/n41/n48/n66/n70/n71/n75/n76/n77/n78/n79<br>DL 4 x 4 MIMO: n1/n2/n3/n7/n25/n30/n38/n40/n41/n48/n66/n70/n77/n78/n79   |
| <b>LTE</b>                              | FDD: B1/B2/B3/B4/B5/B7/B8/B12/B13/B14/B17/B18/B19/B20/B25/B26/B28/B29/B30/B32/B66/B71<br>TDD: B34/B38/B39/B40/B41/B42/B43/B46(LAA)/B48<br>DL 4 x 4 MIMO: B1/B2/B3/B4/B7/B25/B30/B38/B40/B41/B42/B43/B48/B66                   |
| <b>WCDMA</b>                            | B1/B2/B4/B5/B8/B19  |
| <b>GNSS</b>                             | GPS/GLONASS/BDS/Galileo/QZSS  |
| <b>Interface</b>                        |   |
| <b>Ethernet interface</b>               | 2* 10/100/1000Mbps Fast Ethernet interface,<br>WAN/LAN self-adjustment (2 LANs in 4G/5G mode)   |
| <b>PIN terminal</b>                     | Industrial serial interface<br>RS232/RS485 x 2 industrial terminals<br>RS232 signal: TXD, RXD, GND<br>RS485 signal: A, B  |
| <b>SIM card holder</b>                  | Drawer card holder x 1  |
| <b>Antenna connector</b>                | FAKRA/SMA external rotation inner hole:<br>3G/4G/5G network: FAKRA x4 or SMA x 4 (option)   |
| <b>Reset button</b>                     | 1   |
| <b>Mechanical Properties</b>            |   |
| <b>Installation method</b>              | Guide rail, wall mount  |
| <b>Dimensions</b>                       | Length, width and height: 70*80*26mm (excluding antenna interface)  |
| <b>shell</b>                            | Aluminum alloy  |
| <b>Protection level</b>                 | IP30  |
| <b>cooling method</b>                   | Thermal cotton shell heat dissipation   |
| <b>Weight(g)</b>                        | 145g  |
| <b>Power Supply</b>                     |   |
| <b>Power interface</b>                  | DC Jack 5.5/2.1mm   |
| <b>power input</b>                      | DC 5-40V, anti-reverse connection protection  |
| <b>Reverse polarity protection</b>      | Support   |
| <b>Ambient Temperature and Humidity</b> |   |
| <b>Environment humidity</b>             | 5 ~ 95% (no condensation)   |
| <b>storage temperature</b>              | -40~85°C  |
| <b>Operating temperature</b>            | -20°C ~ +75°C   |

# ONENET Essential

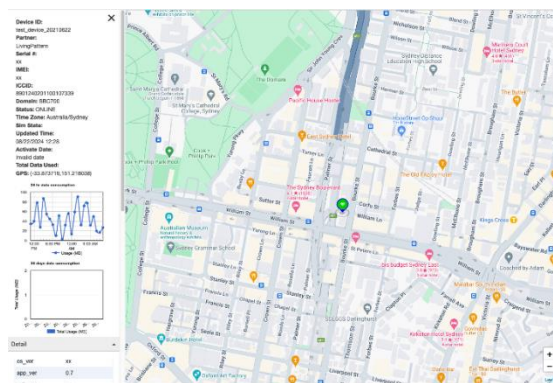
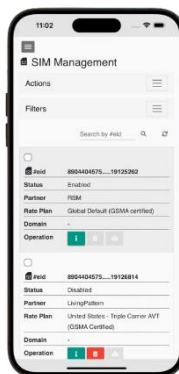
As the next 10 billion IoT devices come online, the industry will face some formidable challenges, such as ensuring the security of its devices, powering billions of sensors, and handling all the resulting e-waste. Despite those issues, Evans isn't bashful about anticipating an even bigger future. "I could see trillions of connected things, ultimately,"

The ONENET Essential is designed for managing the near coming billions of IoT devices and data. It leverages the power of Microsoft Azure IoT infrastructure and develops the most sophisticated IoT device and SIM data management platform, in order to fulfill the coming massive IoT devices management operation, manage every of your IoT SIM device and monitor the data usage.

| ID                   | Status   | Partner       | Rate Plan   | Domain | Operation       |
|----------------------|----------|---------------|---|--------|-----------------|
| 890404675...1912612  | Enabled  | RSM           | Global Default (GSMA certified)                     |        | [i] [d] [r] [a] |
| 890404675...1912614  | Disabled | LivingPattern | United States - Triple Carrier AVT (GSMA Certified) |        | [i] [d] [r] [a] |
| 890404675...1912620  | Enabled  | LivingPattern | United States - Triple Carrier AVT (GSMA Certified) | SBC700 | [i] [d] [r] [a] |
| 890404675...1912641  | Enabled  | LivingPattern | United States - Triple Carrier AVT (GSMA Certified) | SBC720 | [i] [d] [r] [a] |
| 890404675...1912603B | Enabled  | TriCascade    | Global Default (GSMA certified)                     |        | [i] [d] [r] [a] |
| 890404675...1912613S | Enabled  | LivingPattern | Global Default (GSMA certified)                     |        | [i] [d] [r] [a] |
| 890404675...1912623Z | Enabled  | TriCascade    | AT&T Native Core (5G Enabled)                       |        | [i] [d] [r] [a] |
| 890404675...1912642B | Enabled  | LivingPattern | United States - Triple Carrier AVT (GSMA Certified) |        | [i] [d] [r] [a] |
| 890404675...1912622Z | Enabled  | LivingPattern | United States - Triple Carrier AVT (GSMA Certified) |        | [i] [d] [r] [a] |

<SIM Management>

## SIM Management



<Live Map>

## Device Management

- Easy SIM import (single ICCID or bulk CSV file import supported)
- Easy Search (by partner, domain, SIM state, time range and SIM number)
- Bulk Operation (Active, Deactivate, Suspend, Restore, Reactivate)
- Email notification on SIM operation result (Success, Failure, Timeout statistic and Reasoning)
- SIM detail information retrieval and data usage
- Easy bulk SIM information export
- SIM operation event history storage, tracking and easy retrieval
- Location based SIM signal strength detection for installer configuration

- View device detail information
- Search device by domain
- Show/Move/Hide device on map
- Download device's last 24 hours data log
- Device dashboard embedded HTML code for 3rd party usage
- Bulk real-time device control by SMS
- Device history data export
- Send commands from cloud to device
- FW upgrade from Cloud to device

# ONENET Essential

## Making Our World Smart Together

The ONENET Essential enables bi-directional communication between cloud and devices, for sending command and receiving data. The enterprise scale and integration allow enterprise users to scale up and down, depends on the numbers of end user and device. And batch upload SIM information to activate data plans, single or batch deactivate, IP whitelist and blacklist for security purpose. Billing system allows partners to download the auto generated invoices based on monthly streaming usage.

### Bi-Directional Communication

- Millions of devices
- Multi-language, open source
- SDKs
- HTTPS/AMQPS/MQTT
- Send telemetry
- Receive commands
- Device management
- Device Twins
- Queries & jobs

### Enterprise Scale and Integration

- Billions of messages
- Scale up and down
- Declarative message routes
- File upload
- Web Sockets and multiplexing
- Azure monitor
- Azure Resource Health
- Configuration management

### End-to-End Security

- Per device certificates
- Per device enable/disable
- TLS security
- X.509 support
- IP whitelisting/blacklisting
- Shared access polices
- Firmware/Software updates
- Azure Security Center Support

### IoT-Scale Automated Provisioning

- Zero-touch provisioning
- Centralize your provisioning workflow
- Load balance across multiple IoT Hubs
- Re-provisioning support
- Supports TPM'+ X.509

IoT-scale automated provisioning grants end users to access to the platform and applications based on users' role and permission levels. The centralized provisioning workflow helps enterprise to prevent inappropriate access, excess permission to its end users, and to avoid unnecessary security risks.

The ONENET™ platform is the most robust and sophisticate IoT management platform for customers choice, and the documented RESTful API enables customers avoid costly and time-consuming process of data management platform development.

## ONENET Essential Data Plan

| Allotment             | MRC | Overage per GB | Overage per MB |
|-----------------------|-----|----------------|----------------|
| 10GB FW Pooling Plan  | 35  | 5              | 0.005          |
| 25GB FW Pooling Plan  | 55  | 5              | 0.005          |
| 300GB FW Pooling Plan | 85  | 3              | 0.003          |

# 5G Outdoor Antenna

**5GRFA-F**

Wall Mount



Vertical Pole Mount



Horizontal Pole Mount

**TRITOM 5GRFA-F 5G outdoor antenna** includes three 4G/LTE/5G antennas and one GPS antenna. It is crucial for extending 5G network coverage, especially in urban and suburban areas. It is designed to handle various environmental challenges while delivering high-speed, low-latency connectivity.

- 1. 4 Cables:** 4G/LTE/5G and GPS
- 2. Omni-directional:** TRITOM 5GRFA-F enables to capture signals from all directions, offering a wider and longer coverage area.
- 3. Easy Installation:** Provides various mounting options available to suit different environments and integrated into existing structures like streetlights or buildings, reduce the need for new infrastructure, lowering deployment costs.
- 4. Weather Resistance:** Built to withstand harsh conditions, IP67-rated standard enables to dust and waterproof, and this durability makes TRITOM 5GRFA-F ideal for outdoor use, industrial settings, or environments where the device may be exposed to challenging conditions.
- 5. Robust Performance in Challenging Environments:** Whether deployed in a dense urban area or a remote location, TRITOM 5GRFA-F is built to deliver strong performance in various conditions.
- 6. Fakra Connector:** Designed high-frequency signal connections in demanding environments, particularly in the automotive and telecommunications applications.

# TRITOM<sup>®</sup>



## Signal Strength No Matter the Distance

### Specification

|              |                    |               |               |               |               |               |
|--------------|--------------------|---------------|---------------|---------------|---------------|---------------|
| Frequency    | 617-960 MHz        | 1166-1610 MHz | 1710-2200 MHz | 2300-2690 MHz | 3300-5000 MHz | 5150-5925 MHz |
| Peak gain    | -0.21 dBi          | 1.44 dBi      | 1.16 dBi      | 2.63 dBi      | -0.21 dBi     | -0.44 dBi     |
| Average gain | -5.03 dBi          | -4.93 dBi     | -4.75 dBi     | -4.92 dBi     | -7.04 dBi     | -8.15 dBi     |
| Efficiency   | 32.28 %            | 33.71 %       | 35.53 %       | 32.22 %       | 20.04 %       | 15.72 %       |
| VSWR         | 3.5 : 1 Max        | 3.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.0 : 1 Max   |
| Connector    | FAKRA C (Blue)     |               |               |               |               |               |
| Frequency    | 617-960 MHz        | 1166-1610 MHz | 1710-2200 MHz | 2300-2690 MHz | 3300-5000 MHz | 5150-5925 MHz |
| Peak gain    | 0.1 dBi            | 1.25 dBi      | 0.75 dBi      | 3.36 dBi      | -0.61 dBi     | -0.61 dBi     |
| Average gain | -4.91 dBi          | -5.09 dBi     | -5.17 dBi     | -4.89 dBi     | -7.66 dBi     | -8.43 dBi     |
| Efficiency   | 33.36 %            | 32.88 %       | 30.45 %       | 32.43 %       | 17.34 %       | 14.79 %       |
| VSWR         | 3.5 : 1 Max        | 3.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.0 : 1 Max   |
| Connector    | FAKRA D (Bordeaux) |               |               |               |               |               |
| Frequency    | 617-960 MHz        | 1166-1610 MHz | 1710-2200 MHz | 2300-2690 MHz | 3300-5000 MHz | 5150-5925 MHz |
| Peak gain    | 1.02 dBi           | 0.64 dBi      | 1.36 dBi      | 3.29 dBi      | -0.15 dBi     | -0.59 dBi     |
| Average gain | -4.85 dBi          | -5.29 dBi     | -5.16 dBi     | -4.76 dBi     | -7.57 dBi     | -8.49 dBi     |
| Efficiency   | 33.61 %            | 31.19 %       | 30.54 %       | 33.44 %       | 17.75 %       | 14.61 %       |
| VSWR         | 3.5 : 1 Max        | 3.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.0 : 1 Max   |
| Connector    | FAKRA D (Bordeaux) |               |               |               |               |               |
| Frequency    | 617-960 MHz        | 1166-1610 MHz | 1710-2200 MHz | 2300-2690 MHz | 3300-5000 MHz | 5150-5925 MHz |
| Peak gain    | -0.47 dBi          | 1.1 dBi       | 0.76 dBi      | 2.98 dBi      | -0.05 dBi     | -0.29 dBi     |
| Average gain | -5.16 dBi          | -4.8 dBi      | -4.85 dBi     | -4.94 dBi     | -7.11 dBi     | -7.88 dBi     |
| Efficiency   | 31.53 %            | 35.41 %       | 32.79 %       | 32.1 %        | 19.71 %       | 16.66 %       |
| VSWR         | 3.5 : 1 Max        | 3.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.5 : 1 Max   | 2.0 : 1 Max   |
| Connector    | FAKRA D (Bordeaux) |               |               |               |               |               |