

The **GEOBLUE iCell TRINITY** is a smart all-in-one indoor connectivity solution, combining a powerful **5G NR gNodeB** and a **LoRaWAN® gateway** in a single compact device. It **delivers connectivity** for **high-speed broadband applications** and **low-power wide-area network (LPWAN) use cases**, making it the ideal choice for healthcare facilities, campuses, hotels, retail stores, smart buildings, and other IoT-intensive indoor environments.

At its core, TRINITY features a **fully software-defined radio architecture**, combining the Radio Unit (RU), Distributed Unit (DU), and Central Unit (CU) in a single, integrated platform. Supporting frequency ranges from **70 MHz to 6 GHz**, including **5G band n78 (3.5 GHz)** with up to **30 dBm transmit power**, it enables highly flexible deployment for private networks, testbeds, and edge applications.

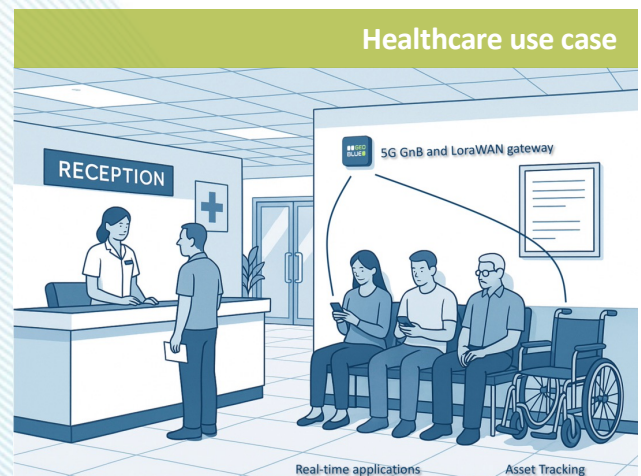
Equipped with an **SX1303-based LoRaWAN gateway**, TRINITY supports a wide range of frequency bands: EU868, IN865, US915, AS923, enabling seamless IoT connectivity alongside high-speed 5G coverage.

With 16GB RAM, 1TB eMMC storage, and a 2.5GbE RJ45 port, TRINITY is built for **high-throughput applications** and powerful edge processing. It supports **zero-touch provisioning** and **connects effortlessly with market-leading LoRaWAN Network Servers**, while the N2 interface enables seamless integration with external **5G Core Networks**.



iCell TRINITY 

All-inclusive indoor solution
Full Software Defined GNode



GEOBLUE's Software-Defined gNodeB is the key to an agile, cost-effective, and future-proof 5G network.

Flexibility and Upgradability:

Stay ahead of the competition by rapidly deploying new features and functionality without hardware modifications.

Adaptable solutions that respond to evolving use cases and technologies.

Minimize network disruption while maximizing your network's potential.

Cost-Efficiency:

Reduce upfront investment with our cost-effective software-defined gNodeBs.

Optimize resource utilization and extend the life of your hardware.

Easily manage and update software remotely, lowering maintenance costs and streamlining operations.

Network Slicing:

Perfectly tailor your network to various applications with ease.

Dynamic resource allocation ensures superior quality of service.

Provide the performance required for diverse network slices.

KEY FEATURES

- Integrated **5G NR gNodeB (RU+DU+CU)** and **LoRaWAN® gateway**
- SDR chipset supporting **70MHz - 6GHz**
- Supports multiple **5G bands: n40, n41, n48, n77 and n78**, with up to **30 dBm RF Tx power**
- **SX1303** LoRaWAN® with EU863-870, IN865 867, US902-928, AU915-928, AS923 regional band support
- Built-in antennas
- **Intel® Core™ Ultra 7, 16GB RAM, 1TB eMMC**
- High-speed **2.5GbE port**
- **N2 interface** for external 5G Core connectivity

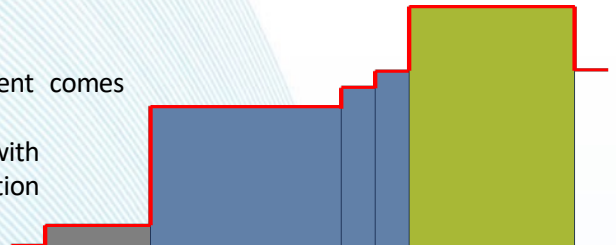
5G NR FEATURES

Standard	3GPP R15/R16
Number of Cells	1 x 2T2R
Cell Capacity	200 RRC users per cell
Cell Throughput	DL 634 Mbps, UL 209 Mbps (DDDSU) DL 293 Mbps, UL 574 Mbps (DSUUU)
Operating Frequency Band*	N40:2300-2400MHz; N41:2496-2690MHz; N48(CBRS): 3550-3700MHz; N77/N78: 3400-3800MHz; N77: 3800-4100MHz
Channel Bandwidth	5MHz/10MHz/20MHz/40MHz/50MHz
Max RF Output Power	1W
Duplex Mode	TDD
Subcarrier	30 kHz
Clock Synchronization Method	1588V2 clock synchronization

*Versatile through Varied Hardware RF Front Ends

GEOBLUE's state-of-the-art Software-Defined Radio (SDR) equipment comes equipped with an array of distinct hardware RF front ends.

This versatility empowers you to implement Block Edge Masks with precision, for example providing crucial protection for Radiolocation services operating in the 3.1-3.4 GHz band.



LoRaWAN® FEATURES

Semtech Radios	2x SX1250 and 1x SX1261
Operating Frequency	863 to 870MHz or 915 to 928MHz
Max RF Output Power	Up to +27dBm
Sensitivity	less or equal than -125dBm at SF7, BW 125KHz less or equal than -140dBm at SF12, BW 125KHz
Fine Time Stamping	Enabling Time Difference of Arrival (TDoA) network-based geolocation
Listen Before Talk	Prevent collisions while accessing the spectrum