Introducing emnify IoT SuperNetwork SatPlus

Converged cellular and satellite IoT connectivity now available with the emnify IoT SuperNetwork

As IoT expands exponentially, more businesses are relying on continuous data streams from devices deployed all over the globe, mobile and stationary, often in areas outside of the range of terrestrial cellular networks. SuperNetwork SatPlus offers converged cellular and satellite connectivity for uninterrupted connectivity enabling, new use cases in new geographies for IoT businesses.

What is SuperNetwork SatPlus?

- Converged cellular and satellite connectivity on a single eSIM for uninterrupted IoT connectivity
- Managed through a single provider, service, and platform, across cellular and satellite networks for lowered operational costs and increased operational efficiency
- Compatible with 3GPP 5G Release 17 compliant cellular and satellite hybrid radio modules to enable reduced hardware costs
- Flexible data plans for your IoT use cases, including data pooling across SIMs

How does SuperNetwork SatPlus work?

Easy setup and management

1. Insert the emnify satellite IoT eSIM into your hybrid cellular and NTN module equipped IoT device
2. Configure your devices via your IoT applications for seamless network switching
3. Manage cellular and satellite connectivity within the emnify connectivity management portal, or integrate into your systems via API

SuperNetwork SatPlus technical specifications

Coverage: USA and selected European countries

Complies with 5G NTN 3GPP Release 17 for NB-IoT over NTN connectivity with sleep mode support

Radio frequencies: Satellite bands 255, 256 and band 23. Min. SINR ≥ -10 dB, Min. RSRP ≥ -138 dBm

Transport layer: Low-bandwidth, message-based IPv4 data transport via UDP

Throughput and latency:
Up to 5.12Kbps in UL/DL for satellite communication with maintained latency of 541.46ms

Converged satellite eSIM: Single emnify Satellite IoT eSIM, facilitating converged cellular and satellite coverage
SuperNetwork SatPlus in action

Satellite Constellation
3GPP NTN Compliant

Feeder Link

NTN Gateway

Public Land Mobile Network

Core Network – Skylo Partner

emnify Global Core Network & BSS

emnify Connectivity Management Portal/Your IoT Application

Connected Vehicle with TN/NTN Compatible Radio User Equipment

IP Data Network

SuperNetwork SatPlus opens up new markets and use cases

Asset tracking and monitoring
Assets such as vehicles and heavy equipment do not recognize the boundaries of traditional cellular networks and therefore leverage satellite to stay connected when outside of cellular range.

Remote operations management
In industries where facilities are periodically unmanned, satellite connectivity can play a role in enabling continuous, real-time monitoring and adjustment. Mining and Oil & Gas are great examples where operations often take place in remote or hazardous locations.

Agriculture
Used in agriculture for optimizing crop yield, satellite connectivity enables farmers to monitor key parameters like soil moisture and crop health remotely.

Environmental monitoring
Satellite is important for a multitude of environmental monitoring use cases, including monitoring climate and pollution and predicting weather patterns. For example, utility companies often monitor weather patterns to predict their impact on the power grid.

Livestock and wildlife tracking
Satellite connectivity is increasingly employed in livestock and wildlife conservation for tracking animal movements and health. It allows for efficient management of livestock and monitoring of wildlife in remote areas with limited terrestrial network coverage.
SuperNetwork SatPlus Data Plans

Flexible, affordable converged cellular and satellite data plans

<table>
<thead>
<tr>
<th>SatPlus 10</th>
<th>SatPlus 30</th>
<th>SatPlus 60</th>
</tr>
</thead>
<tbody>
<tr>
<td>10MB cellular data per SIM per month</td>
<td>10MB cellular data per SIM per month</td>
<td>10MB cellular data per SIM per month</td>
</tr>
<tr>
<td>10 satellite messages per SIM per month</td>
<td>30 satellite messages per SIM per month</td>
<td>60 satellite messages per SIM per month</td>
</tr>
<tr>
<td>Data pooling across SIMs</td>
<td>Data pooling across SIMs</td>
<td>Data pooling across SIMs</td>
</tr>
</tbody>
</table>

Simply choose the best plan for your use case.

Compatible Radio Modules

<table>
<thead>
<tr>
<th>Technical Specifications</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency bands</td>
<td>Cellular RAN: LTE and 2G bands; Satellite RAN: B25S, B256, B23</td>
</tr>
<tr>
<td>NTN / NB-IoT / LTE-M</td>
<td>Dual Mode LTE Cat-M1/NB2 (Release 14); 5G NB-IoT over NTN (Release 17)</td>
</tr>
<tr>
<td>2G/EDGE</td>
<td>Enhanced GPRS</td>
</tr>
<tr>
<td>Power saving</td>
<td>PSM, eDRX</td>
</tr>
<tr>
<td>GNSS</td>
<td>GPS</td>
</tr>
<tr>
<td>Transport Layer Protocol</td>
<td>UDP for satellite NTN connectivity</td>
</tr>
<tr>
<td>Output power</td>
<td>LTE Class 3: 23 dBm</td>
</tr>
<tr>
<td>Antenna gain</td>
<td>3 to 5 dBi</td>
</tr>
<tr>
<td>Carrier Certification</td>
<td>Skyla</td>
</tr>
<tr>
<td>Compatible hybrid modules available in 2024</td>
<td>Murata Type 1SC, Fibocom MA510-GL-33, Telit Clinterion ME910G1 / ME310G1 Questel BG770A-SN / BG85-S5, Sierra HL7800 / HL7812, Simcom 7070G-HP-S</td>
</tr>
</tbody>
</table>

Customers interested in getting started with SuperNetwork SatPlus can learn more here or by scanning the QR code