

VELOX Network SCALABLE INDOOR AND OUTDOOR PORTABLE PRIVATE 5G NETWORK



Set up a temporary private 5G network in a wink

VELOX Pop-Up can be easily transported to bring reliable and secure wireless connectivity where it is most needed. It is perfect for connecting assets during a temporary event or on a temporary location such as a construction site, a festival, a concert in the countryside, or a pop-up warehouse during peak season.



Enable seamless connection at temporary event sites for your personnel, such as festivals and outdoor sports events. Securely connect cash registers, barcode scanners, smartphones, and PCs, whatever the crowd concentration



Secure construction sites with wireless cameras, connect vehicles, and connect your staff even in the most remote locations



Easily connect temporary warehouses during peak periods in minutes to enable seamless WMS connection and tracking by your team



Connect civil security personnel during natural disaster events in the most remote areas when public networks are down. Connect smartphones, drones, and tablets in a very secure and robust manner in all terrain



Ensure reliable communication for research expedition teams, collect and transmit data, collaborate in real-time with colleagues, and upload research data quickly, even in the most remote locations (requires a backhaul network, e.g. satellite)

VELOX Wave Pop-Up

Mobile outdoor and large indoor up to 100 MHz private 5G network with a smartphone and a SIM card, for temporary wireless connectivity

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VELOX Pop-Up can be used to connect smartphones, tablets, industrial routers, cameras, smart tools, barcode readers, AGVs / AMRs and any other 5G devices in your warehouse, your factory or in a campus.

It is offered in 3 different flavors: low power, mid-power or high power, according to your coverage needs.

What you get

VELOX Wave Pop-Up is composed of:

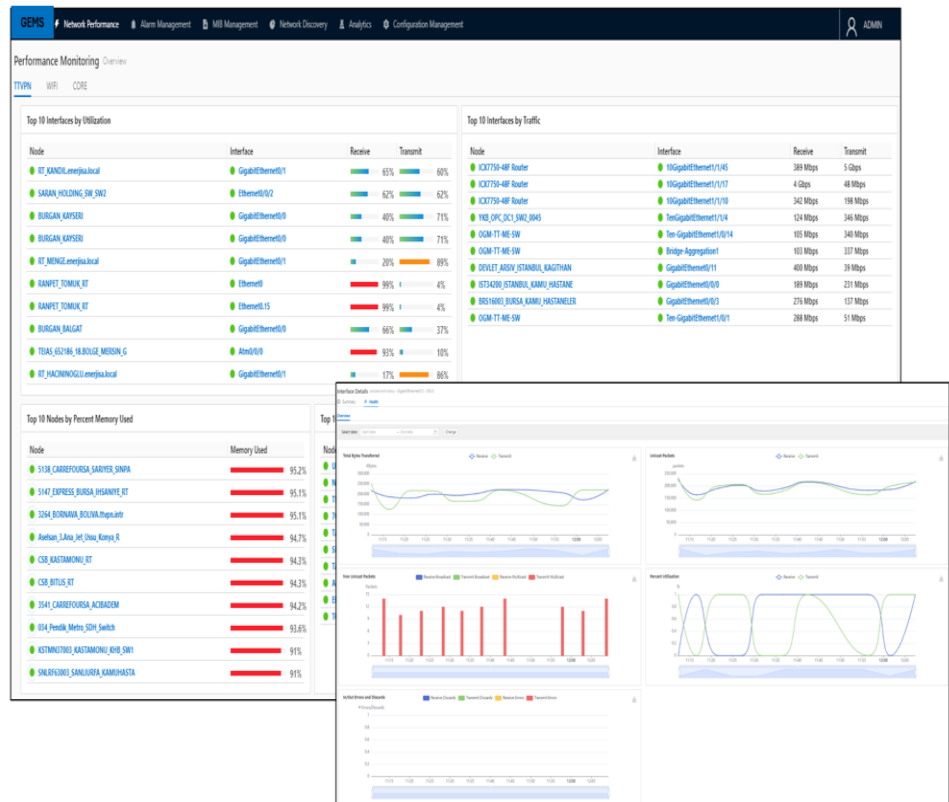
- 5G Core Network Server with TTG Int.LTD Network Management System
- Low-Power, Mid-Power or High-power gNodeB
- High-gain omnidirectional or sector antenna
- Telescopic mast
- GPS antenna for time synchronization
- Inverter, to cope with temporary power shortage
- Robust fight case on wheels

Support with guaranteed response time

VELOX Wave Pop-Up comes with support & maintenance from TTG Int.LTD's team of experts, that you can access from your own dedicated support page. Quarterly releases TTG Int.LTD publishes software releases 4 times a year, with new features, enhancements and bug corrections. You can upgrade your software version from TTG Int.LTD's online repository using a simple command.

As long as you are subscribed to TTG Int.LTD's Support & Maintenance, you will get access to TTG Int.LTD's latest software releases. Manage your 5G network as an IT administrator TTG Int.LTD Network Management System is an intuitive role-based user interface that enables IT administrators to operate their Private 5G network without requiring deep knowledge of 5G. They can view the status of their

VELOX Wave Pop-Up, the downlink and uplink bitrate, the number of connected devices. TTG Int.LTD Network Management System also allows you to provision SIM and e-SIM cards for your devices and configure the Quality of Service (QoS) required for each type of stream.



Pop-Up flavors

Pegasus Pop-Up is available in the following flavours:

POP-UP MODEL	POWER	BIT RATE	COUNTRIES	COVERAGE
LOW POWER N48/N77/N78	2 x 250mW	DL : 800 Mbps UL : 80 Mbps	USA, Brasil, Netherlands, Sweden, Australia, France, UK, Belgium, Norway, Canada	30 - 100 m
LOW POWER N79	2 x 250mW	DL : 800 Mbps UL : 80 Mbps	Japan, South Korea, Taiwan	30 - 100 m
MID POWER N38	4 x 5W	DL : 320 Mbps UL : 32 Mbps	France (40 MHz)	300 - 1000 m
MID POWER N40	4 x 5W	DL : 160 Mbps UL : 16 Mbps	Finland (20 MHz), Spain (20 MHz)	300 - 1000 m
MID POWER N77	4 x 2W	DL : 800 Mbps UL : 80 Mbps	Australia, France, UK, Belgium, Norway, Canada	300 - 1000 m
MID POWER N78	4 x 2W or 4 x 5W	DL : 800 Mbps UL : 80 Mbps	Netherlands, Croatia, Poland, Germany, Sweden, Netherlands, Switzerland	300 - 1000 m
HIGH POWER N38	2 x 20W	DL: 320 Mbps UL : 32 Mbps	Germany, Sweden, Netherlands	1 - 5 km

Note: 5G spectrum usage rights must be acquired from the country's frequency regulator.

Technical Specifications

Hardware

5G Core Network Server	
Dimensions H x W x D / weight	1U half-depth chassis (44 x 482 x 540.5 mm) / 7 kg
CPU	Intel Core i9 2.4 GHz
RAM	64 GB
Storage	SSD 500 GB
Network connectivity	1 x 2.5 GbE Intel NIC 710 with 4x SFP+ 10 GbE slots
Power supply voltage input	100 – 240V AC
Operating system	Linux Ubuntu 20.04 LTS with 5.4.0-126-lowlatency kernel

5G Radio Access Network Server	
Dimensions H x W x D / weight	1U half-depth chassis (44 x 482 x 540.5 mm) / 7 kg
CPU	Intel Core i9 2.4 GHz
RAM	64 GB
Storage	SSD 500 GB
Network connectivity	1 x 2.5 GbE, 4x SFP+ 10 GbE Intel NIC 710 with 4x SFP+ 10 GbE slots SFP+ CPRI interface with embedded GPS receiver 1x 10GbE SFP+ multimode transceiver
Power supply voltage input	100 – 240V AC
Operating system	Linux Ubuntu 20.04 LTS with 5.4.0-126-lowlatency kernel
Synchronisation	GPS
Active Users	32

Low Power all-in-one Radio Unit	
Dimensions H x W x D / weight	250 mm x 250 mm x 65 mm / 2.5 kg
Frequency bands	n77 (3550-4200 MHz), n78 (3550-3800 MHz) or n48 (3550-3700 MHz)
Bandwidth	N48: 20/30/40MHz N77: 40/50/60/70/80/90/100MHz N78: 20/30/40/50/60/70/80/90/100MHz
Max transmitted power	2 x 250 mW
Operating temperature range	-5 °C to +50 °C
IP rating	IP 50
Regulatory	CE (Europe), RoHS, WEEE, REACH (UK)
Antenna	2x integrated omnidirectional antennas / 2 ports for external antennas
Power supply	DC 12V or POE++
Power consumption	< 40 W
Active users	32
3GPP release	Release 15
Features	All-in-One BBU + Radio Unit, NG/Xn Handover
Installation	Wall/Ceiling mount
Synchronisation	GPS or PTP

Mid Power Radio Unit (Panther)

Dimensions H x W x D / weight	370 mm x 369.2 mm x 91.3 mm / 15 kg
Frequency bands	n78 (3400–3800 MHz)
Bandwidth	100 MHz
Transmission Modes (downlink)	SISO, MIMO 2x2, MIMO 4x4
Typical consumption	250W
Max transmitted power	4 x 2W
Operating Temperature Range	-40 °C to +55 °C
IP Rating	IP 66
Regulatory	CE (Europe), RoHS, WEEE, REACH (UK)
Antenna Ports	4x N Female

Mid Power Radio Unit (Neo)

Dimensions H x W x D / weight	72.5 mm x 369.2 mm x 404.6 mm / 7 kg
Frequency bands	n38 (2575–2615 MHz), n40 (2300–2400 MHz) n77 (3800–4100 MHz) or n78 (3400–3800 MHz)
Bandwidth	40/60/80/100 MHz
Transmission Modes (downlink)	SISO, MIMO 2x2, MIMO 4x4
Typical consumption	100W
Max transmitted power	4 x 5W (n38, n40, n78), 4 x 2W (n77)
Operating Temperature Range	-40 °C to +55 °C
IP Rating	IP 65
Regulatory	CE (Europe), RoHS, WEEE, REACH (UK)
Antenna ports	4x 4.3/10 DIN Female

High Power Radio Unit

Dimensions H x W x D / weight	148 mm x 200mm x 295 mm / 12 kg
Frequency bands	n38 (2570–2620 MHz)
Bandwidth	up to 50 MHz SISO 1x1 and MIMO 2x2
Max transmitted power	2 x 20W
Operating Temperature Range	-40 °C to +55 °C
IP Rating	IP 67
Regulatory	CE (Europe), RoHS, WEEE, REACH (UK)
Antenna ports	2x 4.3/10 DIN Female

Antenna - omni (bands n78, n79)

Dimensions / weight	850 mm (33.5") x 220 mm (8.6") x 40 mm (1.57") / 6.5 kg
Band / Gain	3300-4200MHz : 11dBi
Type	omnidirectional
Capability	MIMO 4x4
Operating Temperature Range	-40 °C to +70 °C
Fixing	Mounting bracket (included)
Ports	4x 4.3-10 Female

Antenna - sector (bands n78, n79)

Dimensions / weight	750 mm (29.5") x 280 mm (11") x 85 mm (3.3") / 4.3 kg
Band / Gain	3300-4200MHz : 18dBi
Type	sector (beamwidth : 65°)
Capability	MIMO 4x4
Operating Temperature Range	-40 °C to +70 °C
Fixing	Mounting bracket with variable tilt (included)
Ports	4x 4.3-10 Female

Antenna - omni (bands n38, n40)

Dimensions H x diameter / weight	500 mm x Ø70mm / 1.6 kg
Band / Gain	1425 - 2700MHz : 4dBi
Type	omnidirectional
Capability	MIMO 2x2
Operating Temperature Range	-40 °C to +65 °C
Fixing	Mounting bracket (included)
Ports	2x 4.3-10 Female

Software

5G Core Network software

Network functions	SMF, AUSF, UDM, UDR, AMF, UPF, NSSRF, NRF, PCF
Container platform	Docker

5G Radio Access Network software

Frequency bands	n38 (2600MHz) / n40 (2300MHz) / n77 (3700MHz) / n78 (3500MHz) / n79 (4800 MHz)
Bandwidth	40/100 MHz
Transmission Modes (downlink)	SISO, MIMO 2x2
Modulation schemes	Up to 256 QAM
Subcarrier spacing	30 kHz
Active users	32

5G Network Management System software

Dashboard	Core & Cell status, global number of active / connected devices, global downlink & uplink bit rate / resource consumption, detailed list of cells
Cell metrics	Downlink & uplink bit rate / resource consumption, number of connected devices
SIM management	Add SIM, device status (online, offline)
User management	Add, remove, manage user profiles (Standard, Expert, Admin)
QoS management	Priority configuration of streams (IP / port range)
Logs	User connections