firecell

Pegasus

SCALABLE PRIVATE 5G NETWORK

FOR INDOOR AND OUTDOOR DEPLOYMENTS

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Firecell Pegasus

Firecell Pegasus is a scalable private 5G network, for indoor and outdoor deployments

Fit for all use cases

Firecell Pegasus is perfect for bringing reliable and secure wireless connectivity for smart manufacturing, university campuses, logistics applications such as picking and automatic warehouses, both indoor and outdoor.

Firecell Pegasus is used to connect reliably smartphones, tablets, robots, AGVs, industrial routers, cameras, smart tools, barcode readers and any other 5G devices inside your warehouse, factory and campuses.

What you get

Firecell Pegasus is composed of :

- 1 Core Network server with :
  - Firecell 5G Core software
  - Firecell Network Management System for Mid and High power radios
- Radio units :
  - Mid to high power radios + high-gain omnidirectional antennas + server containing Firecell gNodeB software
  - Low power all-in-one radio
- network and power cables, GPS antennas for time synchronisation

Support with guaranteed response time

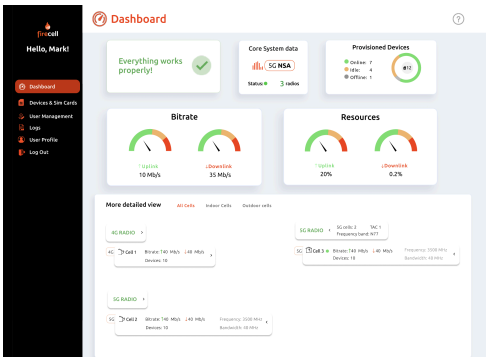
Firecell Pegasus comes with support & maintenance, with your dedicated support page. The response time of Firecell's support team is guaranteed according to the priority level you select when you submit your ticket.

Quarterly releases

Firecell publishes new software releases 4 times a year. They contain features, enhancements and bug corrections. Software upgrade can be done using a simple command.
As long as you subscribe to Firecell's support & maintenance, you get access to Firecell's latest software release.

Manage your network without technical knowledge

Firecell 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 each radio unit, the number of connected devices (active or idle), the total throughput, and the percentage of allocated resources.



Firecell Network Management System also allows you to provision SIM cards for your devices.

Pegasus radios

Pegasus can combine multiple radios to set up a full 5G network :

- **High Power Radios** : 2x20W up to 50 MHz in 2x2 MIMO, a server gNodeB and a high gain omni antenna. Available for the following frequency bands : **n38**, **n40**, **n78 low** and **n78 high**.

- **Mid Power Radios** : 2x2W up to 100 MHz in 2x2 MIMO[1], a server gNodeB and a high gain omni antenna. Available for the following frequency bands : **n77** and **n78**.

- **Low Power Radios** : 250 mW up to 100 MHz in 2x2 MIMO. This all-in-one radio unit integrates the gNodeB and supports QoS. Available for the following frequency bands : **n48**, **n77** and **n78**.

[1] 4x4 MIMO planned in 2024

Pegasus radio performance

Radio model	power	Throughput UL / DL	Countries	Coverage
High Power n38	2 x 20W	300 Mbps / 50 Mbps	France (40 MHz)	1000 - 5000 metres
High Power n40	2 x 20W	300 Mbps / 50 Mbps	Finland, Spain	1000 - 5000 metres
High Power n78 low	2 x 20W	300 Mbps / 50 Mbps	Netherlands, Croatia, Poland Switzerland	1000 - 5000 metres
High Power n78 high	2 x 20W	300 Mbps / 50 Mbps	Germany, Sweden, Netherlands	1000 - 5000 metres
Mid Power n77	4 x 2W	600 Mbps / 100 Mbps (> 1 Gbps in 2024)	France (100 MHz), UK, Belgium, Norway, Canada	300 - 1000 metres
Mid Power n78	4 x 2W	600 Mbps / 100 Mbps (> 1 Gbps in 2024)	Netherlands, Croatia, Poland, Germany, Sweden, Netherlands Switzerland	300 - 1000 metres
Low Power n48	2x250 mW	700 Mbps / 100 Mbps	USA	30-100 metres
Low Power n77	2x250 mW	700 Mbps / 100 Mbps	France, UK, Belgium, Norway, Canada	30-100 metres
Low Power n78	2x250 mW	700 Mbps / 100 Mbps	Netherlands, Croatia, Poland, Germany, Sweden, Netherlands	30-100 metres

Firecell Pegasus supports most available 5G private network frequency bands. Simply choose the frequency band according to your country's private 5G network's regulations and the spectrum usage rights that you have acquired or plan to acquire.

Multiple radio units of different models and different types of antennas (omni or sector) can be combined to deploy large 5G networks.

Pegasus Demo Kit

Firecell Pegasus is also available as a compact indoor demo kit, including a mini Core server, a low power radio, a 5G device with a SIM card. The **Pegasus Demo Kit** is perfect for quickly setting up an indoor 5G network for demonstration purposes.

Pricing

Pegasus can be purchased or leased, and comes with Firecell's Service Level Agreement.

Technical Specifications

Hardware

Core Network Server	
Dimensions H × W × D / weight	1U half-depth chassis (44 x 482 x 540.5 mm)
CPU	Intel Core i9 2.4 GHz
RAM	32 GB
Storage	SSD 500 GB
Network connectivity	1 x 2.5 GbE, 2x SFP+ 10 GbE
Power supply voltage input	100 - 240V AC
Operating system	Linux Ubuntu 20.04 LTS with 5.4.0-126-lowlatency kernel

gNodeB Server for High or Mid Power Radio Unit	
Dimensions H × W × D / weight	1U half-depth chassis (44 x 482 x 540.5 mm)
CPU	Intel Core i9 2.4 GHz
RAM	32 GB
Storage	SSD 500 GB
Network connectivity	1 x 2.5 GbE, 4x SFP+ 10 GbE
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	16

High Power Radio Unit	
Dimensions H × W × D / weight	148 mm x 200mm x 295 mm / 12 kg
Frequency bands	n38 (2570-2620 MHz), n40 (2300-2400 MHz), n78 (3400-3600 MHz) or n78 (3600-3800 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)

Mid Power Radio Unit	
Dimensions H × W × D / weight	370 mm x 369.2 mm x 91.3 mm / 15 kg
Frequency bands	n77 (3800-4000 MHz) or n78 (3400-3800 MHz)
Bandwidth	up to 100 MHz SISO 1x1, MIMO 2x2 and MIMO 4x4
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 for High or Mid Power Radio Unit n77 & n78	
Dimensions H × diameter / weight	850 mm (33.5") x 220 mm (8.6") x 40 mm (1.57") / 6.5 kg
Gain	3300-4200MHz : 11dBi
Type	omnidirectional
Capability	MIMO 4x4
Operating Temperature Range	-40 °C to +70 °C
Fixing	Mounting bracket (included)

Low Power Radio Unit	
Dimensions H × W × 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	Omnidirectional, 2x MIMO
Power supply	DC 12V/POE++
Power consumption	<40 W
Active Users	32
3GPP Release	Rel. 15
Features	All-in-One Product, NG/Xn Handover
Installation	Wall/Ceiling mount
Synchronisation	GPS or PTP
QoS	5Qi # 1, 2, 3, 4, 5, 6, 7, 8, 9

Software

Core Network software	5G
3GPP release	Release 16
Modules	SMF, AUSF, UDM, AMF, UPF
Container	Docker

Radio Access Network software	5G
3GPP release	Release 16
Frequency bands	All FR1 (< 6 GHz) FDD & TDD bands
Bandwidth	up to 100 MHz
Transmission Modes	SISO 1x1 and MIMO 2x2 (Downlink)
Modulation schemes	Up to 64QAM in DL and 16QAM in UL
Subcarrier spacing	30 kHz

Network Management System software	
Capability	5G SA
Global network info	status, nb radios, total bit rate (UL/DL), % bandwidth used, nb of devices (online, offline, idle)
Radio info	location, bit rate (UL/DL), % bandwidth used, nb of devices (online, offline, idle)
SIM management	add, remove SIM, status (online, offline, idle)
NMS User management	add, remove, manage user profiles (Standard, Expert, Admin)
Logs	user logs, network logs