

Nutaq The Pico5G Series

Portable Desktop Solution for Cellular Device and Network Testing

PRODUCT SHEET



The Nutaq Pico5G Series

The Pico5G Series of products provide advanced 4G and 5G cellular network testing in a fully portable desktop form factor. Pre-configured test cases and an intuitive interface get users started quickly, while advanced measurements, automation, and scripting support flexible, end-to-end testing.



Pico5G IoT



Pico5G Lite



Pico5G Pro

Pico5G Plus

Pico5G Ultra

Key Capabilities

Pico5G Copilot

On-box AI that diagnoses faults with cited evidence, runs tests from plain-language requests, and answers from 8,000+ documentation sections.

Scenario Simulation

Create and playback scenarios, such as an IoT device moving between cells or countries.

Greater Flexibility and Features

Offers virtually the same functionality and ability as the next leading network emulator platform, but in a portable

Certified Device Testing

Run standardized test cases for cellular end devices, such as TRP and TRS, according to ETSI specifications, and pass

Satellite & NTN Testing

Fly real LEO, MEO, and GEO passes over live 5G NR or NB-IoT cell - up to 36kHz live Doppler swing, 1-second re-sync, and time-compressed up to X10.

Multi-Network Testing

Test multiple devices on 4G (LTE, LTE-M, NB-IoT) and 5G networks concurrently.

Battery Life Analysis

Characterize cellular IoT device battery life by recording power consumption and battery

Tailored Support and Training

Offering on-site, remote or combination training, and support packages that meet your needs spanning months or even years.

Early Access to 3GPP Features

Have early access to 3GPP features to rapidly validate features under development (3GPP release 17 currently

End-to-End Connectivity

Test end-to-end connections between your cellular devices, applications, and services.

User-Friendly Interface and

Completely portable and compact platform, offering a desktop environment with user a friendly

Supports Commercial UEs

Flexibility to use preferred UEs, even with the tailored and customized network profiles.

All Models Include:

- SIM cards (5-pack) pre-programmed to the onboard core user database
- SMA antennas included with each unit
- EPC/5GC & eNodeB/gNodeB software (Linux)
- Support & Maintenance Plan and Training available separately

The Nutaq Pico5G Series

Beyond the Network: The Pico5G Software Platform

Every Pico5G is more than a test network — it's a complete software platform, from the license tier you run to the AI engineer diagnosing your bench at 2 a.m. Here's what's underneath the hardware.

Software License Tiers

Every Pico5G ships with the complete network-in-a-box software stack. Perpetual licenses (sold with a support term) unlock progressively more capability, and every tier is a superset of the one before it:

FREE

The full network-in-a-box: network profiles, GUI, CLI, and REST/WebSocket API. Everything needed to stand up a network and start testing.

PRO

Everything in Free, plus the deterministic test-case layer: one-click test cases, evidence reports, and headless bench automation via CLI/REST.

COPILOT

Everything in Pro, plus the on-box AI test engineer: cited diagnosis, plain-language test campaigns, the accuracy benchmark, and the MCP agent surface.

Interfaces & Automation

Connect via GUI, CLI, REST/WebSocket API, or MCP — four doors into the same engine. Whatever you click in the lab is exactly what your CI pipeline runs at 2 a.m.

42 Preloaded Network Profiles

Tailored, customizable configurations so testing starts in minutes, not days.

One-Click Test Cases

Catalog of deterministic tests each ending in a pass/fail verdict with the measurement curve behind it.

Live Dashboard & Signaling View

Selective logging of the full 3GPP LTE and NR stacks, with graphs and analytics as the test runs. MCP agent surface.

Reports

Every run produces a shareable report with per-sample data, ready for a design review or a certification dossier.

Automation Built In

The same test cases run headless through the CLI and REST API — no separate scripting layer to maintain.

Pico5G Copilot

Ask in plain language and the Copilot drives the unit's own tools, checks a fault library built from real bench incidents, and answers with a citation to the exact tool result, trace line, or documentation section behind it. Diagnose failures and results with evidence, compose and run tests, investigate root-causes, and much more, help streamline testing.

Satellite & NTN Testing

Pico5G Satellite turns the same bench into a satellite-link test environment — no additional hardware required. It emulates satellite link conditions (delay, Doppler, orbital motion) on the existing Pico5G hardware, while the RF, protocol stack, SIB19, RACH, RRC, and device timing stay real — testing runs against a real device attached over the air. Available on Lite, Plus, Pro, and Ultra. The Pico5G IoT is 4G-only and does not support NTN.

The Nutaq Pico5G IoT

The Pico5G IoT is the entry-level platform in the Pico5G family — a compact, fully portable 4G network emulator purpose-built for LTE device testing. It operates as a complete 3GPP Release 17 compliant eNodeB and EPC, supporting LTE, LTE-M, and NB-IoT in a single-cell configuration. Ideal for teams that need reliable LTE connectivity validation without the additional complexity of 5G.

Capabilities

- LTE, LTE-M (CAT-M1), NB-IoT (NB1/NB2) — 4G only
- Standalone, in-band, and guard-band NB-IoT support
- VoLTE via embedded IMS server (P-CSCF, I-CSCF, S-CSCF)
- Up to 500 concurrent active UEs
- Single-cell operation; max 40 MHz (BW × MIMO layers)
- FDD and TDD frequency band support, including custom bands
- GUI, CLI, REST/WebSocket API, and MCP — four ways into the same test engine
- 42 preloaded, customizable network profiles — JSON config for scripted scenarios

Release 17

3GPP Release

1× PCIe 2×2

SDR Card

50 MHz

Max BW / Channel

2×2

MIMO

180 Mbps

Max Download

75 Mbps

Max Upload

8 Cores / 16 GB RAM

CPU

1 TB NVMe SSD

Storage

45 - 120 W

Power



RAN Configuration Example

Single-cell operation (LTE, LTE-M, or NB-IoT). Max: cell bandwidth × MIMO layers, max 40 MHz.

Mode	Example
4G LTE	1 cell, 20 MHz 2×2 or 1 cell, 40 MHz SISO
NB-IoT	1 cell in standalone, in-band, or guard-band mode
LTE-M	1 LTE cell with CAT-M1 support

The Nutaq Pico5G Lite

A compact, fully portable 4G/5G network emulator for IoT and single-cell testing. Supports LTE, LTE-M, NB-IoT and 5G SA — ideal for device connectivity validation and power profiling. The lightweight chassis can be moved between locations easily, enabling realistic field condition replication from virtually anywhere.

Capabilities

- 5G SA (gNB + 5GC), LTE, LTE-M (CAT-M1), NB-IoT NB1/NB2
- NR-NTN and NB-IoT-NTN — GEO, MEO, LEO orbit support
- Regenerative and transparent NTN modes
- VoLTE, VoNR, VoWiFi via embedded IMS server and N3IWF
- Up to 500 concurrent active UEs
- Channel simulator per 3GPP 36.101 and 38.141
- GUI, CLI, REST/WebSocket API, and MCP — four ways into the same test engine
- 42 preloaded, customizable network profiles — JSON config for scripted scenarios
- Supports Pico5G Copilot (Copilot license tier)

Release 19

3GPP Release

1× PCIe 2×2

SDR Card

50 MHz

Max BW / Channel

2×2

MIMO

200 Mbps

Max Download

75 Mbps

Max Upload

8 Cores / 16 GB RAM

CPU

1 TB NVMe SSD

Storage

45 - 120 W

Power



RAN Configuration Example

Single-cell operation only (NB-IoT, LTE, LTE-M or 5G FR1).
Max: cell bandwidth × MIMO layers max 40 MHz.

Mode	Example
4G LTE	1 cell, 20 MHz 2×2
NB-IoT	1 cell in standalone, in-band, or guard-band mode
LTE-M	1 LTE cell with CAT-M1 support
5G NR SA	1 cell, 20 MHz 2×2 or 1 cell, 40 MHz SISO

The Nutaq Pico5G Plus

The first multi-cell platform in the Pico5G family. Supports 5G SA and NSA, intra-gNB handover, and carrier aggregation across up to 3 concurrent cells. Three PCIe 2x2 SDR cards deliver up to 600 Mbps downlink. A built-in monitor and keyboard make it a fully self-contained desktop testing platform deployable from

Capabilities

- 5G SA & NSA, LTE, LTE-M (CAT-M1), NB-IoT, (e)RedCap
- NR-NTN and NB-IoT-NTN — all orbit types
- Regenerative and transparent NTN modes
- VoLTE, VoNR, VoWiFi via embedded IMS server and N3IWF
- Up to 1,000 concurrent active UEs
- Intra-gNB handover on a single unit
- Carrier aggregation across TDD and FDD LTE and NR FR1
- License cap: 120 MHz (cell BW × MIMO layers)
- Supports Pico5G Copilot (Copilot license tier)

Release 19

3GPP Release

3× PCIe 2×2

SDR Cards

50 MHz

Max BW / Channel

2×2 (4×4 via 2× SDR)

MIMO

600 Mbps

Max Download

200 Mbps

Max Upload

8 Cores / 16 GB RAM

CPU

1 TB NVMe SSD

Storage

45 – 120 W

Power

Built-in Monitor + Keyboard

Display



RAN Configuration Example

Three SDRs; each supports SISO or 2x2 MIMO at up to 56 MHz. Two SDRs can be combined for 4x4 MIMO. License cap: 120 MHz total.

Mode	Example
4G LTE	3 cells 20 MHz 2x2 or 1 cell 20 MHz 4x4 + 1 cell 20 MHz 2x2
NB-IoT	3 standalone cells or in-band/guard-band per LTE cell
LTE-M	3 LTE cells with CAT-M1 support
5G NR SA	1 cell 50 MHz 2x2 or 3 cells 20 MHz 2x2
5G NR NSA	1 NR 50 MHz 2x2 + 1 LTE 10 MHz 2x2

The Nutaq Pico5G Pro

A high-performance 5G FR1 platform with native 100 MHz bandwidth and MIMO 4x4. Two PCIe 4x4 SDR cards deliver up to 4 Gbps downlink. Supports 5G SA/NSA, LTE, LTE-M, NB-IoT, NTN, and carrier aggregation. An optional FR2 hardware package adds mmWave capability. Includes built-in monitor and keyboard.

Capabilities

- 5G SA & NSA FR1, LTE, LTE-M (CAT-M1), NB-IoT, (e)RedCap
- NR-NTN and NB-IoT-NTN — all orbit types
- Optional FR2: 1 cell 100 MHz 2x2 (24-30 GHz or 37-40 GHz)
- VoLTE, VoNR, VoWiFi via embedded IMS
- Up to 1,000 concurrent active UEs
- Intra-gNB handover on single unit; inter across two units
- Carrier aggregation across TDD/FDD LTE and NR FR1 + FR2
- License cap: 800 MHz (cell BW × MIMO)
- Supports Pico5G Copilot (Copilot license tier)

Release 19

3GPP Release

2× PCIe 4×4

SDR Cards

100 MHz

Max BW / Channel

4×4

MIMO

4 Gbps

Max Download

2 Gbps

Max Upload

16 cores / 32 GB RAM

CPU

1 TB NVMe SSD

Storage

45 - 120 W

Power

Built-in Monitor + Keyboard

Display



RAN Configuration Example

Two PCIe 4x4 SDR cards; each supports two 2x2 MIMO 100 MHz channels or one 4x4 MIMO channel. License cap: 800 MHz. Max 1 FR2 cell (optional package).

Mode	Example
4G LTE	4 cells 20 MHz 2x2 or 2 cells 20 MHz
NB-IoT	4 standalone cells or in-band/guard-band per LTE cell
LTE-M	4 LTE cells with CAT-M1 support
5G NR SA	4 FR1 cells 100 MHz 2x2 or 2 FR1 cells 100 MHz 4x4
5G NR NSA	1 NR 100 MHz 4x4 + 1 LTE 20 MHz 4x4
5G NR SA + FR2	1 FR1 100 MHz 4x4 + 1 FR2 100 MHz 2x2 (optional)

The Nutaq Pico5G Ultra

The most capable platform in the Pico5G family. Four PCIe 4×4 SDR cards provide up to eight independent 100 MHz RF channels and 6 Gbps downlink. Supports high-density multi-cell 5G SA/NSA, optional dual FR2 mmWave, and the highest UE count in the series. Includes built-in monitor and keyboard for fully portable

Capabilities

- 5G SA & NSA FR1, LTE, LTE-M (CAT-M1), NB-IoT, (e)RedCap
- NR-NTN and NB-IoT-NTN — all orbit types
- Optional FR2: up to 2 cells 100 MHz 2×2 (mmWave package)
- VoLTE, VoNR, VoWiFi via embedded IMS
- Up to 1,000 concurrent active UEs
- Up to 8 independent 100 MHz RF channels
- Carrier aggregation across LTE, NR FR1, and NR FR2
- License cap: 1,600 MHz (cell BW × MIMO layers)
- Supports Pico5G Copilot (Copilot license tier)

Release 19

3GPP Release

2× PCIe 4×4

SDR Cards

100 MHz

Max BW / Channel

4×4

MIMO

6 Gbps

Max Download

2 Gbps

Max Upload

32 cores / 32 GB RAM

CPU

1 TB NVMe SSD

Storage

45 - 120 W

Power

Built-in Monitor + Keyboard

Display



RAN Configuration Example

Four PCIe 4×4 SDR cards; up to eight 2×2 MIMO 100 MHz channels or four 4×4 channels. License cap: 1,600 MHz. Max 2 FR2 cells (optional)

Mode	Example
4G LTE	8 cells 20 MHz 2×2 or 4 cells 20 MHz
NB-IoT	8 standalone cells or in-band/guard-band per LTE cell
LTE-M	8 LTE cells with CAT-M1 support
5G NR SA	8 FR1 cells 100 MHz 2×2 or 4 FR1 cells 100 MHz 4×4
5G NR NSA	3 NR 100 MHz 4×4 + 1 LTE 20 MHz 4×4
5G NR SA + FR2	2 FR1 100 MHz 4×4 + 2 FR2 100 MHz 2×2 (optional)

The Nutaq Pico5G Series

Use the table below to select the right Pico5G platform for your testing requirements. The Pico5G IoT is 3GPP Release 17 compliant; all other models are Release 19. All models include the complete software stack (eNB/gNB, EPC/5GC, IMS Server, and Channel Simulator).

	Pico5G IoT 	Pico5G Lite 	Pico5G Plus 	Pico5G Pro 	Pico5G Ultra 
Support LTE, LTE-A, LTE-M, and NB-IoT (including NTN)	✓	✓	✓	✓	✓
Fully Portable	✓	✓	✓	✓	✓
Pico5G Copilot		✓	✓	✓	✓
Satellite NTN Testing		✓	✓	✓	✓
Supports LTE EPC & eNode B	✓	✓	✓	✓	✓
Compact Chassis	✓	✓			
3GPP Compliance	Release 17	Release 19	Release 19	Release 19	Release 19
Supports 5G SA&NSA		✓	✓	✓	✓
Physical RF Channels	2 X 2	2 X 2	2 X 2	4 X 4	4 X 4
Channel Bandwidth	Up to 50 MHz	Up to 50 MHz	Up to 50 MHz	Up to 100 MHz	Up to 100 MHz
CPU and Core Specs	Intel CPU, 8 cores, 16GB RAM, 1TB SSD	Intel CPU, 8 cores, 16GB RAM, 1TB SSD	Intel CPU, 8 cores, 16GB RAM, 1TB SSD	Intel CPU, 16 cores, 32GB RAM, 1TB SSD	Intel CPU, 32 cores, 32GB RAM, 1TB SSD
Network Throughput	Up to 180Mbps in DL, 75Mbps in UL	Up to 200Mbps in DL, 75Mbps in UL	Up to 600Mbps in DL, 200Mbps in UL	Up to 4Gbps in DL, 2Gbps in UL	Up to 4Gbps in DL, 2Gbps in UL
Dimensions	175mm x 132mm x 65mm	175mm x 132mm x 65mm	390mm x 290mm x 66mm	390mm x 290mm x 130mm	430mm x 230mm x 330mm



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