Nutaq
The Pico5G Series

Portable Desktop Solution for Cellular Device and Network Testing

PRODUCT SHEET

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nutaq.com

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 Plus

Pico5G Pro | Pico5G Ultra

Key Capabilities

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

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

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

Battery Life Analysis
Characterize cellular IoT device battery life by recording power consumption and battery

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

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

User-Friendly Interface and
Completely portable and compact platform, offering a desktop environment with user a friendly

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

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

Supports Commercial UEs
Flexibility to use prefered UEs, even with the tailored and customized network profiles.

Budget Friendly Options
Pico5G IoT and Pico5G Lite offer affordable solutions without compromizing on vital

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 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
- WebSocket API for test automation and remote commands
- JSON config with pre-loaded customizable test 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
- WebSocket API for test automation and remote commands
- JSON config with pre-loaded customizable scenarios

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 2×2 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)

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 2×2 MIMO at up to 56 MHz. Two SDRs can be combined for 4×4 MIMO. License cap: 120 MHz total.

Mode	Example
4G LTE	3 cells 20 MHz 2×2 or 1 cell 20 MHz 4×4 + 1 cell 20 MHz 2×2
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 2×2 or 3 cells 20 MHz 2×2
5G NR NSA	1 NR 50 MHz 2×2 + 1 LTE 10 MHz 2×2

The Nutaq Pico5G Pro

A high-performance 5G FR1 platform with native 100 MHz bandwidth and MIMO 4×4. Two PCIe 4×4 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 2×2 (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

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

Mode	Example
4G LTE	4 cells 20 MHz 2×2 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 2×2 or 2 FR1 cells 100 MHz 4×4
5G NR NSA	1 NR 100 MHz 4×4 + 1 LTE 20 MHz 4×4
5G NR SA + FR2	1 FR1 100 MHz 4×4 + 1 FR2 100 MHz 2×2 (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)

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	✓	✓	✓	✓	✓
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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