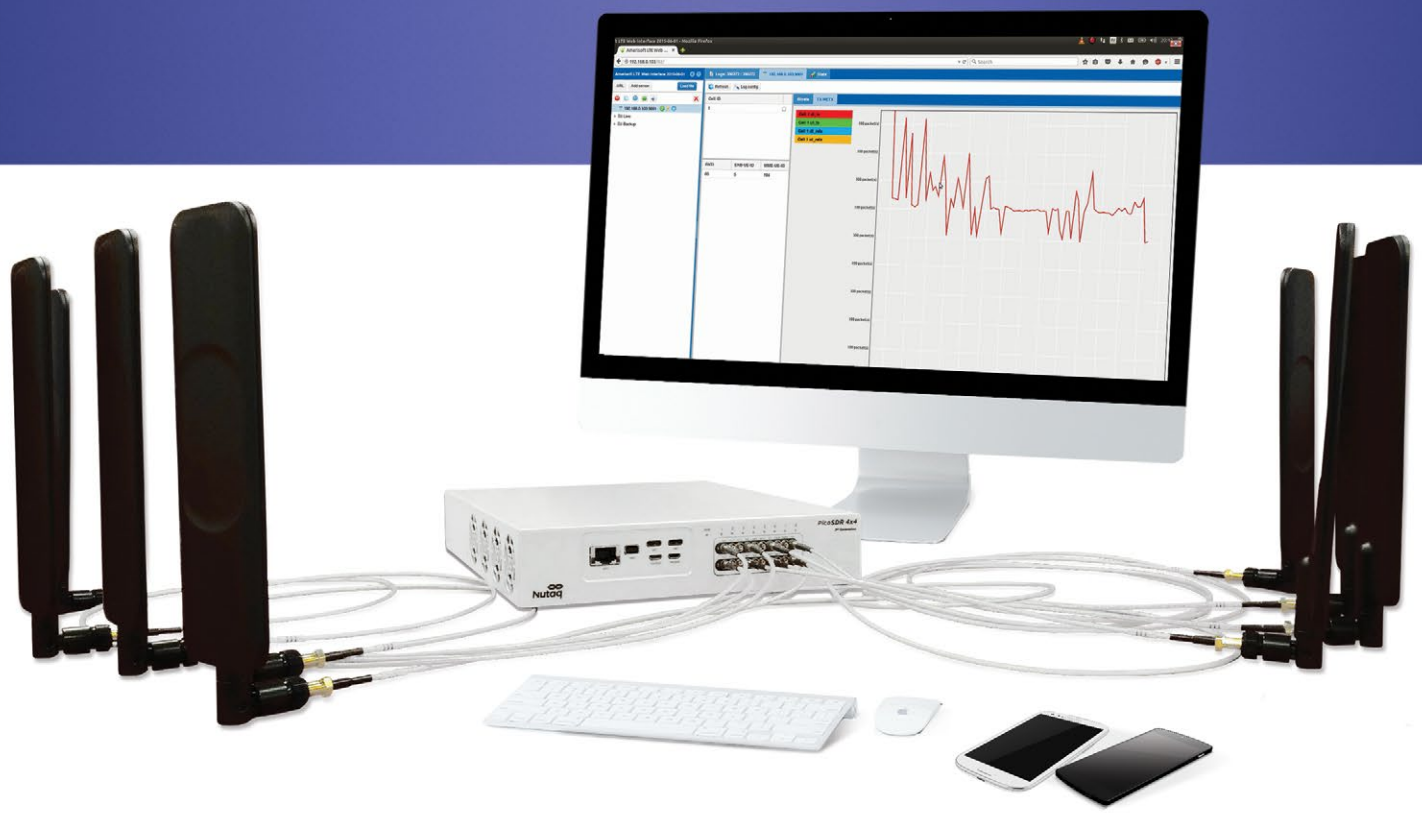
Nutaq
Pico LTE
2nd Generation

Software-Defined Radio
Network in-a-box

PRODUCT SHEET



Nutaq® *INNOVATION TODAY FOR TOMORROW®*

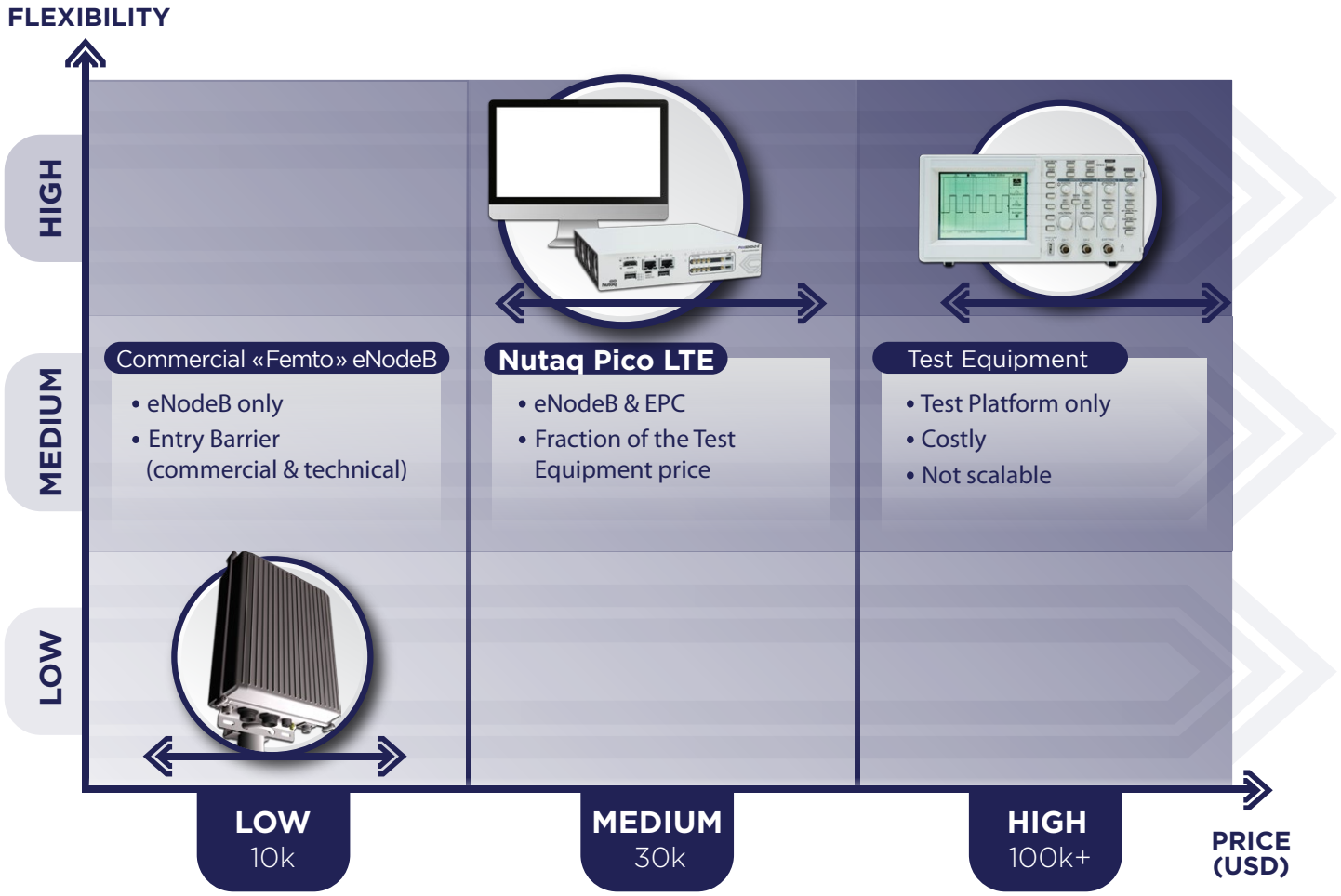
nutaq.com

Nutaq **Pico LTE** 2nd Generation

- **Real-time LTE eNodeB and EPC**
- **All-integrated in a single compact & portable box**
- **3GPP compliant LTE PHY - Rel. 13 and beyond**
- **Cost effective & affordable**
- **Access to over 100 PHY & MAC Layer parameters**
- **Supports Commercial UEs (tested with Samsung S4 & S5, Nexus 5, HTC One M9)**
- **Supports MIMO + the following FDD LTE bands : 2, 3, 5 & 20. For other bands, contact Nutaq sales.**
- **Starter kit available – Get an LTE Network up & running in < 10 minutes**
- **Typical 2 x 15 dBm of power built-in (OP1dB) & support for external power amplifier (external GPIOs)**
- **Record & Playback LTE test vectors (OTA)**
- **Onsite and online training available**

COST-EFFECTIVE AND AFFORDABLE

Nutaq's Pico LTE is the perfect alternative to generate LTE waveforms over-the-air, test LTE devices for operation within the PicoLTE supported indoor small ranges, or use as LTE eNodeB in a private network. It offers you the full flexibility and access to PHY and MAC parameters without any commercial entry barrier or requiring high budgets.

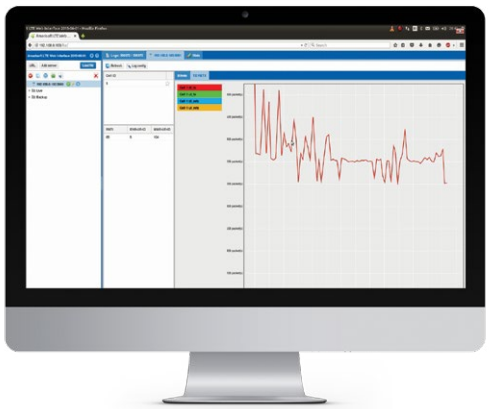


ALL-INTEGRATED SOLUTION INCLUDING:

- LTE eNodeB and EPC running on embedded PC
- RF frontend supporting main UMTS frequency bands
- 3GPP compliant LTE PHY – Rel.13 and beyond
- LTE UEs, antennas & SIM cards included

FULLY CONFIGURABLE FOR MAXIMUM FLEXIBILITY

- Exhaustive access to all PHY layer parameters & messaging flow
- Real-Time LTE Signal Validation
- Record & Playback LTE test vectors (OTA)
- Records in Matlab & SystemVue compatible format



Examples of configurable parameters:

- Antenna configuration (SISO / MIMO). Contact Nutaq for details.
- Downlink Carrier Frequency (The LTE software stack supports all LTE frequency bands and possibility to setup custom bands). Pico LTE supported bands are 2, 3, 5 and 20. For other bands, contact Nutaq sales.
- The LTE software stack supports the following bandwidths 1.4, 3, 5, 10, 15 and 20 MHz. Contact Nutaq sales for Pico LTE supported bandwidths. It is defined in terms of Number of DL Resource Blocks.
- Cyclic Prefix: Normal or Extended
- Transmission Mode (TM1 and TM3). Contact Nutaq sales for other Transmission Modes.
- Time advance for external RF devices like repeaters.

Contact Nutaq sales for exhaustive configurable parameters list

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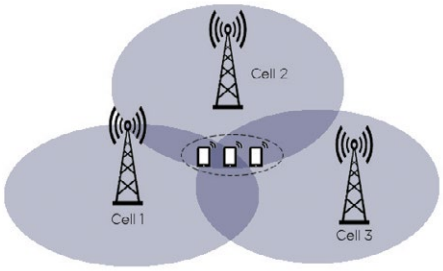
FROM THE LAB TO THE FIELD TESTS

Expand coverage significantly by adding external Power Amplifier (PA) and Low Noise Amplifier (LNA), allowing you to test outside the lab.



ONSITE AND ONLINE TRAINING

Time is money. Request our support in getting you up to speed with the Pico LTE in order to achieve your goals fast and in an effective manner.

Nutaq **Pico LTE** 2nd Generation

SPECIFICATIONS

- RF 2x2 transceiver with integrated 12-DACs and ADCs
- 70 MHz to 6 GHz frequency range with integrated fractional-N synthesizers (2.4 Hz maximum LO step size)
- Supports TDD and FDD operation
- Tunable channel bandwidth: 200 kHz to 56 MHz
- Receiver sensitivity with a typical noise figure of 7 dB from 200MHz to 4 GHz and 10dB from 70MHz to 5.5 GHz
- 100dB RX gain control with real-time monitor and control signals for manual gain
- Independent automatic gain control
- TX OP1dB: +15dBm from 200-3500MHz and +5dBm from 70-5500MHz
- 100dB+ TX gain control with 31dB external gain control

PICO LTE MECHANICAL SPECIFICATIONS

Dimensions & Weight

Pico LTE			
Width (mm)	Height (mm)	Depth (mm)	Mass (kg)
215.00	48.05	290.00	2.75

Power Consumption

Typical	Maximum
60 watts	90 watts

LIST OF CONFIGURABLE PARAMETERS

Layer	Parameter
LAYER 1 (PHY)	Number of DL/UL antennas)
	Down Link Carrier Frequency
	LTE BW: 1.4 , 3, 5, 10, 15 and 20 MHz
	Set the DL transmission mode: TM1 (SISO), TM1 to TM10 (MIMO)
	Set the DL cyclic prefix: Normal or Extended
	Time offset / time advance (in samples)
	Configurable maximum MCS allocated by the eNodeB for PUSCH.
	Support for Downlink 256-QAM modulation for the UE supporting this feature (release 12).
	System Information Block 1: Filename of the textual ASN.1 content (GSER syntax) for SIB1.
	System Information Block ,2,3...: Filenames of the other SIBs in the same order as the scheduling list in SIB1.
	Non standard LTE frequency band.
LAYER 2 (MAC/RLC/PDCP)	Maximum number of HARQ transmissions for uplink.
	Maximum number of HARQ transmissions for downlink.
LAYER 3 (RRC)	RRC and User Plane encryption - 0 EEA0 (no encryption) - 1 EEA1 (Snow 3G) - 2 EEA2 (128 bit AES)
	RRC integrity check - 0 EIA0 (no integrity check) - 1 EIA1 (Snow 3G) - 2 EIA2 (128 bit AES)
	Send RRC connection release after this time (in ms) of network inactivity.

PICO LTE STARTER KIT, INCLUDING:

- PicoLTE Network in-a-Box
- LTE EPC & eNodeB (Linux Binaries)
- Samsung Galaxy S5 (Unlocked)
- 4x4 LTE 5 dBi Omni Antenna kit
- SIM cards (5-pack)

ALL THESE ITEMS CAN ALSO BE ORDERED SEPARATELY:

PicoLTE Network in-a-Box
LTE EPC & eNodeB (Linux Binaries)
LTE 5 dBi Omni Antenna kit
Support & Maintenance Plan
Full day Onsite or Online Training Session
GPS time reference module

Nutaq®

INNOVATION TODAY
FOR TOMORROW®

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