NE7500 5G NR Network Emulator
Most Affordable NSA/SA Test Solution

The ALifecom NE7500 is a test system designed to simulate various aspects of a cellular network for the purpose of testing the performance and functionality of user equipment (UE), such as smartphones, tablets, and other wireless devices. It includes 3GPP compliant components such as a gNodeB and a 5G Core (5GC).
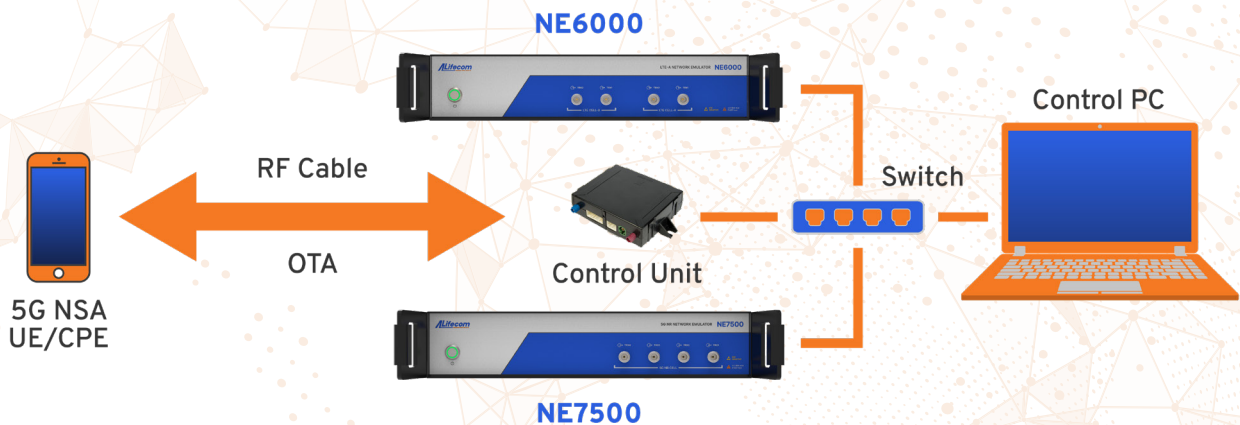
The system is used for a variety of purposes, including R&D regression testing, stability testing, and end-of-production line verification. It can be used to perform RF measurements, IP/MAC throughput tests, MIMO tests, inter- and intra-cell handover tests, and user experience tests. These tests can help ensure that the UE is functioning properly and meets the performance standards required for use in a cellular network.
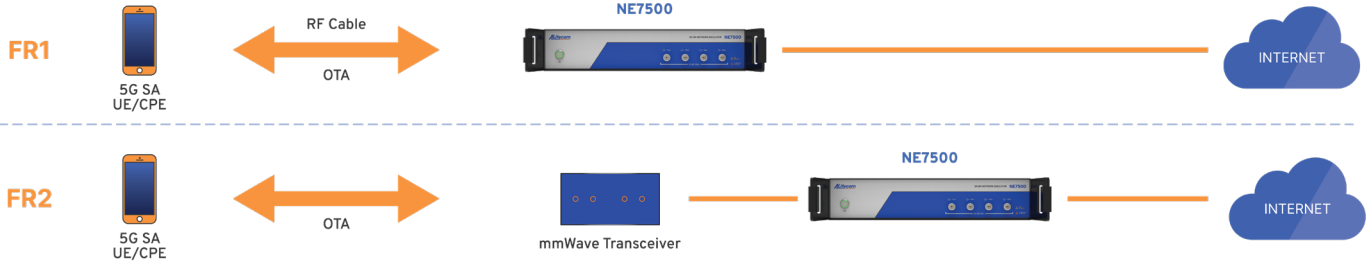
4G/5G Test Items

■ Attach/Detach	■ RSSI
■ IMEI	■ Handover (FDD/TDD)
■ Band List	■ VoLTE/VoNR
■ APN	■ Protocol Analyzer
■ MAC Throughput	■ SMS Test
■ IP Throughput	■ PWS
■ TX Power	■ NB-IOT PSM/eDRX Test
■ Sensitivity	■ eMTC PSM/eDRX Test

5G NSA (NE6000+NE7500)

5G SA (NE7500)

FR1

5G SA
UE/CPE — RF Cable / OTA — NE7500 — INTERNET

FR2

5G SA
UE/CPE — OTA — mmWave Transceiver — NE7500 — INTERNET

5G NSA Mode Key Features

- Compliant with 3GPP 5G NR Release 16

- Primary Cell: 4G LTE-A (NE6000)

- Secondary Cell: 5G NR (NE7500)

- DL 2x2 MIMO for 4G LTE-A and DL 4x4 MIMO for 5G NR

- Frequency Range
  FR1: 400MHz – 6GHz
  FR2: 24 – 30 GHz / 37 – 44 GHz

- Up to 20 MHz Frequency BW for 4G LTE-A and 100 MHz Frequency BW for 5G NR

5G SA Mode Key Features

- Compliant with 3GPP 5G NR Release 16

- 5G NR FDD/TDD Dual Mode (NE7500)

- DL 4x4 MIMO

- Frequency Range
  FR1: 400MHz – 6GHz
  FR2: 24 – 30 GHz / 37 – 44 GHz

- Up to 100 MHz Frequency BW

- Modulation Scheme Up to 256QAM in DL and 64QAM in UL

FRIENDLY GUI AND USEFUL SW TOOLS

ALifecom provides a range of software tools (CTS, MTS and ATS) that can be used to cover various testing scenarios and segments in the development and integration of 5G NR SA/NSA devices as well as LTE devices.

- TX Power
- TX EVM
- RSSI
- DNN (APN)
- DL/UL MAC Throughput

- UE Status
- Band List
- ENDC
- Link Status
- RRC/NSA
- Protocol Message
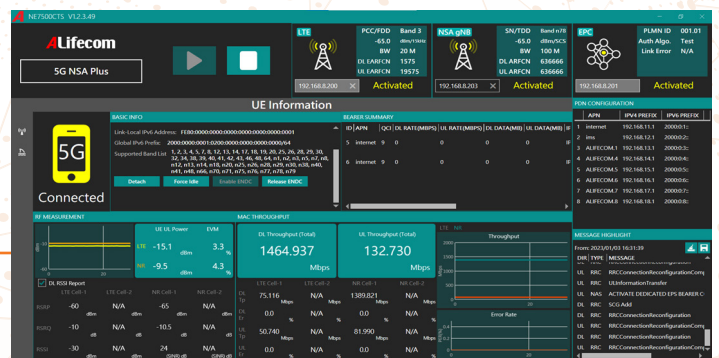
NE7500 Specifications

Mobile Carrier		5G NR Rel.16
Frequency Range	FR1	400MHz – 6GHz
	FR2	24 – 30 GHz / 37 – 44 GHz
Frequency Bandwidth		Up to 100 MHz Frequency BW
Antenna Mode		Up to 4x4 DL MIMO
Number of RF Port		4
Networking		AMF/SMF/UPF full function
Frequency Resolution		1 MHz
Reference Frequency		10 MHz
Signal Bandwidth		Up to 100 MHz
RF Input/Output Impedance		50 Ω
Power Consumption		<150 W
Calibration Cycle		12 months (recommended)
Warranty		12 months hardware with software updates

Transmission Signal

Maximum Level	-35 dBm
Output Level Range	-100 to -35 dBm
Output Level Accuracy	Level ≥–60 dBm ±1 dB, Level <–60 dBm ±1.5 dB
Output Level Resolution	0.1 dB
Output EVM Accuracy	<2 %
Access Method	OFDMA
Modulation Method	QPSK/16QAM/64QAM/256QAM

Received Signal

Maximum Input Level	+30 dBm
Input Power Level	-40 to +30 dBm
Input Level Accuracy	±1.0 dB
Access Method	CP-OFDM
Modulation Method	QPSK/16QAM/64QAM

ORDER OPTIONS

Model	Type	Description	SW Tools Included
NE7500P	Production	5G NR SA (FDD/TDD) FR1: 400MHz to 6 GHz FR2: 24 to 30 GHz / 37 to 44 GHz 100 MHz BW DL 4x4 MIMO UL 2x2 MIMO 256QAM DL / 64QAM UL RF Ports x 4	ATS+iATS+CTS-Lite
NE7500R	R&D	5G NR SA (FDD/TDD) FR1: 400MHz to 6 GHz FR2: 24 to 30 GHz / 37 to 44 GHz 100 MHz BW DL 4x4 MIMO UL 2x2 MIMO 256QAM DL / 64QAM UL RF Ports x 4	ATS+iATS+CTS
NE7500NSA	Production	NE7500P x1 NE6000P x1	ATS+iATS+CTS-Lite
NE7500NSA+	R&D	NE7500R x1 NE6000R x1 Control Unit (EPC) x1	ATS+iATS+CTS

NOTE:

SW Tools

ATS = 1-DUT production test SW

iATS = multi-DUT (max. 4 UE's) for production test

CTS-Lite = Generic GUI for NE7500

CTS = Advanced GUI with applications test function and protocol analyzer for NE6000/NE7500

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