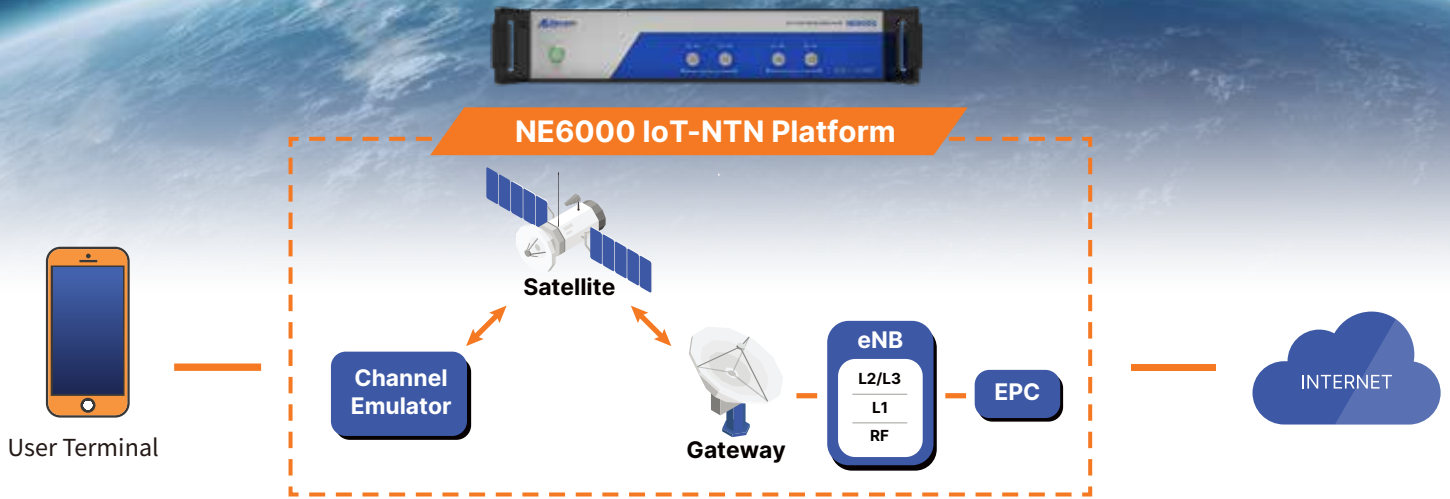


Non-Terrestrial Networks IoT Platform



The **ALifecom NE6000 Network Emulator** has been upgraded with the latest 3GPP release 17 standard to support IoT over NTN. This platform combines a channel emulator, eNodeB, and EPC in a comprehensive test solution. This solution accurately replicates real-world signal propagation conditions for advanced testing and validation of IoT-NTN devices.

Embedded Channel Emulator

Features

- FPGA-based integrated solution
- Doppler shift
- Path loss
- Fading
- Multipath propagation

Advantages

- Compact and integrated design
- Cost-effective solution
- Real-world testing in a controlled environment
- Seamless integration with NB-IoT
- Reduced setup and configuration time

Test Cases

Functional Test		Application Test	RF Measurement
■ Attach/Detach	■ IP Throughput	■ IMEI	■ EVM
■ Band List	■ Protocol Analysis		■ Spectrum Emission Mask
■ MAC Throughput / Block Error Rate	■ Multi-PDN Functional Test	■ End-to-end test	■ Tx Power
			■ Rx Sensitivity

Settings & Specifications

Parameter Settings

- Satellite Type: GEO, MEO, LEO
- RF
 - Band Selection: B255, B256
 - PCI
 - DL / UL EARFCN
 - UL Subcarrier Spacing
- MAC
 - DL / UL MCS and Subcarrier Configuration
 - No. of DL Subframes
 - Resource Unit (RU)

- Power Settings
 - DL Channel and Reference Power
 - DL / UL Cable Loss
- NTN Related
 - Common TA
 - $K_{\text{offset}} / K_{\text{mac}}$
 - Ephemeris

Software

- Comprehensive Test Suite
- Automated Test Suite

NE6000 RF Specifications

Frequency Range	400-3800 MHz
Band Support	B255, B256
Frequency Bandwidth	200 kHz
RF Ports	1
Frequency Resolution	0.1 MHz
Reference Frequency	10 MHz
RF Input/Output Impedance	50Ω
Transmission (DL)	
Maximum Level	-35 dBm
Output Level Range	-100 to -35 dBm
Output Accuracy	≥-60 dBm: ±1 dB <-60 dBm: ±1.5 dB
Output Level Resolution	0.1 dB
Receive (UL)	
Maximum Input Level	+27 dBm
Input Power Level	-40 to +27 dBm
Input Level Accuracy	±1.0 dB

Embedded Channel Emulator

Center Frequency	L/S band
Bandwidth	200 kHz
Doppler Shift Range / Resolution	±100 kHz / 1 Hz
Time Delay Range / Resolution	0 - 250 ms / 1 us
Attenuation Range / Step	0 - 60 dB / 0.5 dB
Fading Profile	Constant, AWGN Pure Doppler, Rayleigh, Rician
Channel Profiles	NTN TDL-C, NTN TDL-D
Path Loss and Delay	Static, Dynamic

Supported IoT-NTN features (R17 compliant)

Operation Mode	Standalone
Data Transfer Scheme	Control Plane CIoT EPS optimization
Subcarrier Spacing	DL OFDMA: 15 kHz
	UL FDMA: 3.75 / 15 kHz SC-FDMA: 15 kHz
IoT-NTN System Information	SIB1-NB, SIB31-NB, SIB32-NB
Ephemeris Info Type	State Vectors / Orbital Parameters
IoT-NTN Extensions	Timing Advance, Timer Extensions, Scheduling Delays

CONTACT US

11F., No. 79-1, Zhouzi St., Neihu Dist.,
Taipei City 114688, Taiwan
sales@alifecom.com



Website