

BSE X · SUTP 5014

BASE STATION EMULATOR

PRIVATE MOBILE NETWORKS FROM 2G TO 5G
TERRESTRIAL AND NON-TERRESTRIAL



PRODUCT

Applications:

Applications: Cellular Signaling Test for Validation, Production and Endurance Testing



Front



Rear

NOFFZ BSE X with SMA Connectors for 8x8 MIMO RF and Ethernet for Remote Control

FEATURES AND HIGHLIGHTS

Bring a complete mobile network into your lab or production line. The NOFFZ BSE X is a software-based mobile network emulator on SDR hardware. It recreates a private 2G-5G cellular network, now including satellite (NTN) links, with full control of signal conditions. No carrier network or subscription is needed.

- Fraction of the cost of traditional callboxes
- Single box, full coverage: GSM, WCDMA, LTE, 5G NR (SA/NSA), all sub-6 GHz bands
- Following 3GPP releases (currently Rel-19)
- Up to 8x8 MIMO with MU-MIMO
- NTN included: IoT NTN and Direct-to-Cell; NR NTN optional
- Up to 32 DUTs in parallel, multi-day endurance runs
- Web UI and REST API: no installation, runs on any device

SATELLITE CONNECTIVITY IN THE LAB

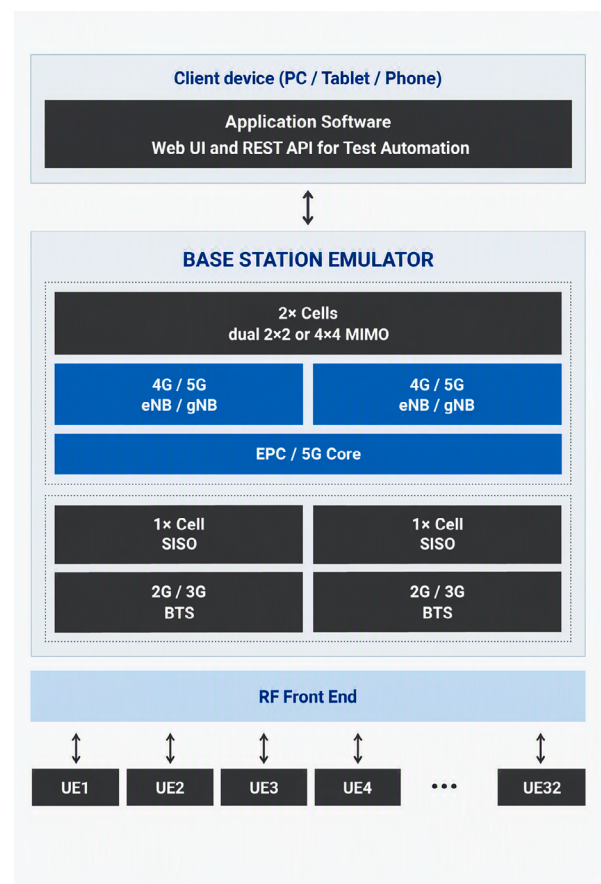
A live satellite constellation cannot be used for regression testing. The BSE X reproduces LEO, MEO and GEO scenarios exactly, with the same pass and the same conditions every time.

APPLICATION AREAS

- Automated validation test
- R&D application development
- Endurance / run-in testing
- HIL simulation
- Field return analysis
- EMC lab
- Education

TYPICAL DUTS

- TCUs
- V2X modules
- Smartphones
- IoT/M2M modems
- e-charging stations
- Smart meters
- Medical devices
- Humanoid robots



WHAT YOU CAN TEST

Mobility & Networks

4+ independent cells; handover 5G-5G SA, 4G-5G SA, 4G-5G NSA, 4G-4G, 2G-2G; Dual-MME, Dual-MNO

Data & Connectivity

Max throughput, Wi-Fi hotspot, internet gateway, NB-IoT, LTE-M, RedCap, GPRS, EDGE

Voice & Emergency

Voice calls, VoIP, SMS, eCall and NG eCall with MSD decoding, IoT-NTN

Multi-DUT & endurance

32 DUTs, DSDA modules, test SIM/ eSIM, live monitoring: UE power, data throughput, BLER, SNR, RSSI

Easy to Use

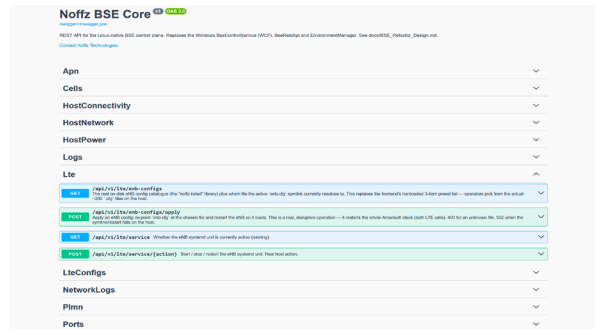
Web UI on any device, no 3GPP expertise needed to configure and operate

Cost-efficient

SDR architecture, 2G-5G in one box, up to 32 devices in parallel



Web UI to configure the network and monitor every UE



Automate test cases via REST API

TECHNICAL DATA

Cellular Network

5G NR	Rel-19; SA and NSA; FR1 all sub-6 GHz bands; up to 8x8 MIMO, MU-MIMO; handover
LTE	LTE-M, NB-IoT; handover 4G-4G, 4G-5G SA
NTN	IoT NTN (up to Rel-19), Direct-to-Cell (pre-Rel-17 devices); NR NTN optional (Rel-18); LEO / MEO / GEO
GSM / WCDMA	2G GSM, 3G WCDMA Rel-99; eCall MSD, CS voice
Network configs	SA, NSA, Dual-MME / Dual-MNO; 4 cells, extensible; 32 UEs
Authentication	Milenage, XOR, TUAK, COMP128v1
Reported metrics	4G/5G: CQI, RI, UE power, throughput, MCS, BLER, SNR, NG eCall MSD · 2G/3G: MS power, SNR, RSSI, BER, eCall MSD

Physical Specifications

Control	Web UI + REST API, platform independent
Integration	UTP 7033 rack; GNSS, Wi-Fi, Bluetooth®, V2X / C-V2X
Dimensions	W 480 x H 177 x D 500 mm (20 kg)
Interfaces	4-8x SMA RF 2x Ethernet, 2x USB 3.0, 1x HDMI AC power: 100-240 V, 50-60 Hz
RF performance	Max. Tx output power: +3.3 dBm @ 900 MHz Max. Rx input power: +5 dBm Frequency accuracy: +/- 2.5 ppm EVM (20 MHz BW, 64QAM): < 2 % @ 2.6 GHz; < 4 % @ 3.5 GHz Phase noise (1.8 GHz): -80 dBc/Hz @ 10 kHz; -100 dBc/Hz @ 100 kHz
Temperature	Maximum operating temperature range of 0 °C to 65 °C; maximum environmental temperature is 35 °C

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