

Base Station Emulator



Validating automotive telematic control units (TCUs) requires recreating cellular networks and complex RF testing scenarios on your workbench. The Noffz Base Station Emulator makes this possible by creating a custom cellular environment to serve these testing and characterization needs. Using high power, real-time computing and software defined radio (SDR), you can create custom mobile networks for testing in a compact and cost-effective way.

Application Challenges

- Manage multiple TCU and dual SIM module validation testing in parallel
- Test voice call, texting, eCall, high-speed data traffic, VoIP, Wi-Fi hotspot, connected gateway, and other wireless capabilities from 2G to 5G
- Scale up to 4X independent cells, intra radio access technology handover, and different MIMO scenarios; data throughput of up to 600 Mb/s

The Noffz Advantage

- Save test time with parallel user equipment (UE) connection, as multiple UEs can go through environmental exercising and other endurance testing at once.
- Minimize cost with a full 2G/3G/4G/5G protocol stack support with increased flexibility at a fraction of the price of traditional callbox solutions.
- Quickly adapt to changing specs with minimal system changes with software defined architecture and modular hardware.

Noffz BSE Solution

Switch from a traditional box instrument to a software-defined radio (SDR) platform.

Switch from single-DUT validation to a multi-DUT system.

Scale to complete infotainment validation from GNSS to wireless.

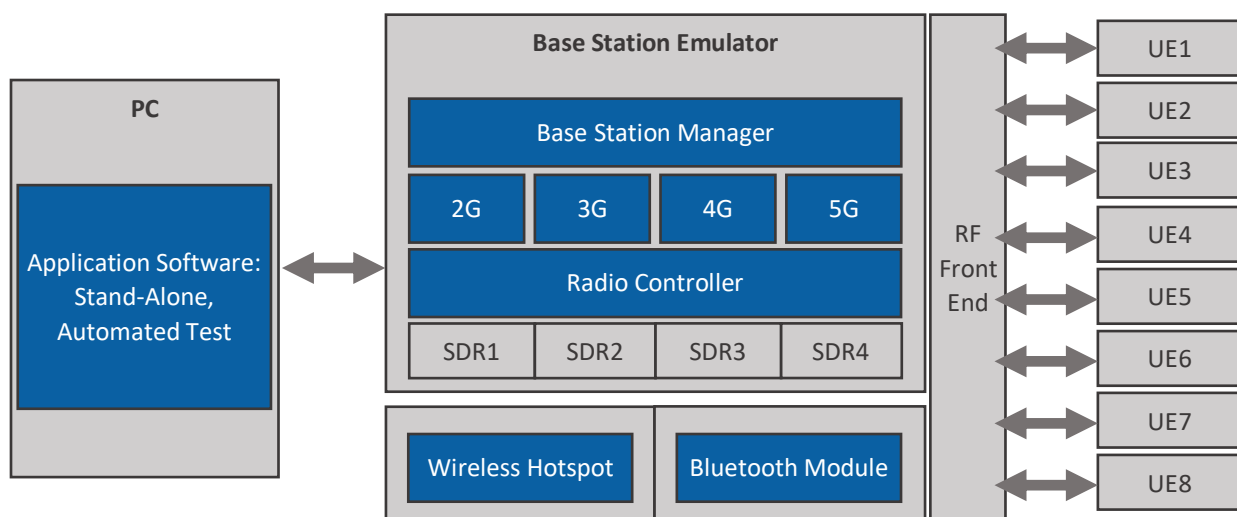
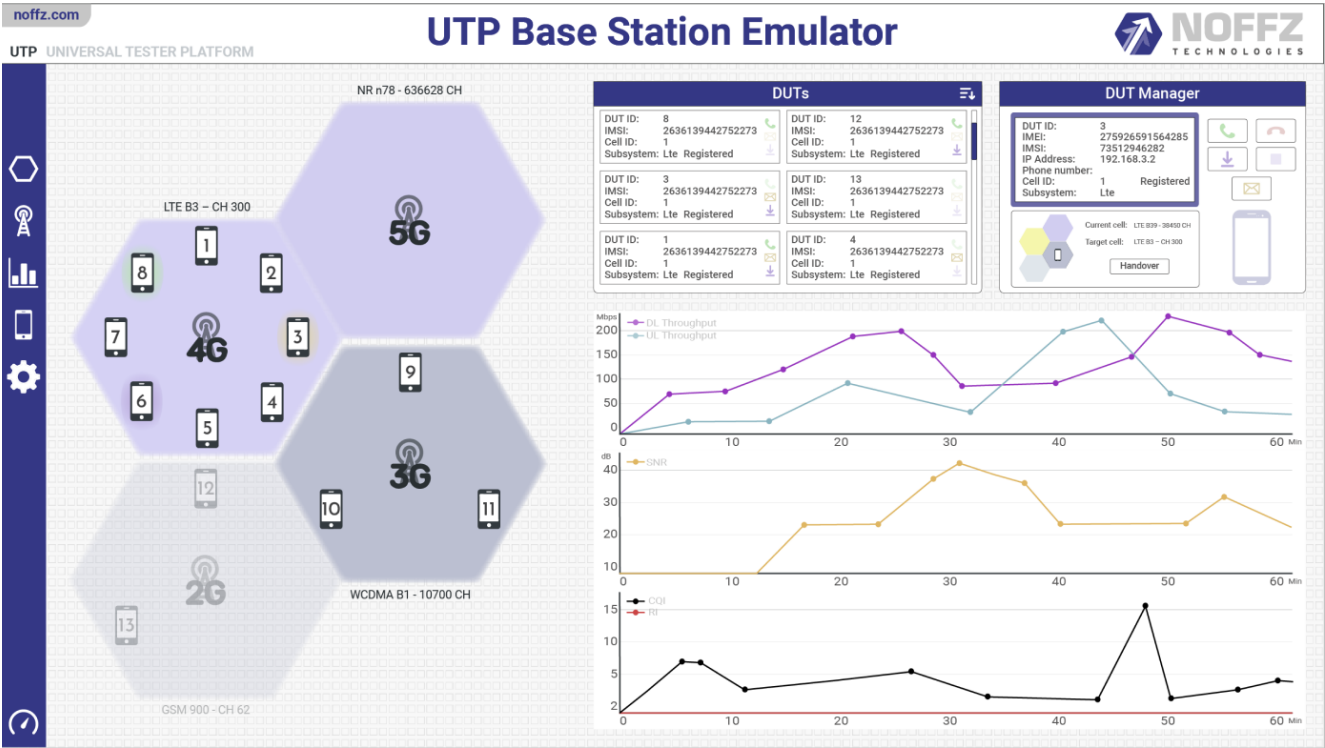


Figure 1. Noffz Base Station Emulator system diagram

Software Front Panel



Base Station Emulator Software Front Panel



Figure 2. Noffz Base Station Emulator

Figure 3. TCU Validation Racks with Thermal Chamber

Key Specifications

	4G/5G		2G/3G	
	NR NSA/SA ¹	LTE	GSM/EDGE	WCDMA
3GPP	Rel-15	Rel-14	Rel-1999	Rel-1999
MIMO	4x4	4x4	-	-
Voice and eCall	VoLTE	VoLTE	Voice, eCall, MSD ²	Voice, eCall ²
Data	Up to Cat26 ¹	Cat21	GPRS/EDGE	Up to Release 1999, no HSPA/HSPA+ support
Carrier Aggregation	3xCC ¹	Downlink 3xCC, 5CC ¹ , FDD-TDD aggregation	-	-
Bandwidth	50 MHz, 256 QAM downlink, 64 QAM uplink	20 MHz, 256 QAM downlink, 64 QAM uplink	-	-
Bands	Sub-6 GHz, FDD/TDD	All bands, FDD/TDD	All bands	All bands
Handover	Only in SA mode ¹	Yes, intra-eNodeB, S1, or X2 handovers	Yes	²

¹ Preliminary data, 5G SA release Q2 2020

² Under development and/or optional

System Integration on Your Terms

NI offers a variety of solution integration options customized to your application-specific requirements. You can use your own internal integration teams for full system control or leverage the expertise of our worldwide network of NI Partners to obtain a turnkey system. To learn how you can increase product quality and shorten test timelines, contact your account manager or NI at (888) 280-7645 or info@ni.com.

Contact your NI account manager or Noffz Technologies to learn more about how NI + Noffz can help you increase product quality and accelerate testing timelines.

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