



nanoCBRS Lab™

Mobile network lab solution

Modular small cell based mobile network lab solution for OnGo certified CBRS Basestation Devices (CBSDs)

End-to-end network

The nanoCBRS Lab solution provides all of the elements necessary to create an OnGo mobile phone network, in effect providing a private network that has myriad uses in and out of the laboratory.

Application flexibility

The nanoCBRS Lab solution can be applied to a wide range of use cases. Here is a sample of possible applications for nanoCBRS Lab:

- EUD and LTE device testing
- Mobile app testing
- Equipment interoperability testing
- Hardware and/or software product functionality testing and verification
- Customer technology demonstrations
- Vulnerability and intrusion testing
- Forensic analysis

Carrier grade CBSDs

The ip.access carrier grade small cell solution is deployed commercially by over 100 service providers and in many private networks worldwide. Hence the nanoCBRS Lab solution provides a highly accurate and realistic environment of a mobile network.

Requiring only Ethernet and power connections, APs provide the air interfaces in the newly available 3.5GHz Citizen's Broadband.

www.ipaccess.com

Modular and Scalable

The elements of the nanoCBRS Lab solution are:

- Carrier grade 4G Access Points from ip.access, including the OnGo certified nanoCBRS™ E61 CBSD
- A fully featured mobile core switching system, including an HSS, MME, S-GW and P-GW, plus SeGW and HeNB-GW
- A powerful management system, provided by the ip.access Network Orchestration System and/or TR-069 ACS
- A Domain Proxy that enables the CBSDs to connect to the SAS and obtain their operating frequencies
- SIM cards for handsets and terminals (EUDs) connecting to the system

For portability, the mobile core and management VMs run on a laptop. This can be server based for static deployments and/or for serving large numbers of Access Points.

As a modular solution, there can be any number of Access Points. For example, one or two APs for small scale requirements or hundreds or thousands of APs for large scale network emulation.



Virtualised mobile network for laboratory, test and demonstration environments.

nanoCBRSLab™ features

Band support

The nanoCBRSLab solution is designed for Band 48 CBRS/OnGo network operation, as typically used for LTE private networks. In particular, it is an ideal environment for testing handsets and other End User Devices (EUDs) intended for the OnGo market.

The OnGo certified nanoCBRS™ E61 CBSD is available now for use in the nanoCBRSLab solution.

Optionally, use the unbanded multi-RAT S60z AP integration module that can be configured to operate in any valid band/frequency combination from 425MHz to 3.8GHz, including Band 48. The S60z AP module is a low power device that, for high power applications, simply needs an RF front end module to support the required band of operation.

Mobility

All ip.access CBSDs have idle mode and connected mode mobility to and from other CBSDs, including VoLTE only, PS only and VoLTE+PS handover.

Virtualized network elements

The core network functionality is provided by a set of software services running on a virtual machine. This includes all the functionality needed for CBSD connectivity and switching. It also includes the SeGW and HeNB-GW functionality.

A TR-069 ACS such as the ip.access NOS is required for 4G AP management. The ip.access NOS includes other features such as performance management, including KPI generation, managed CBSD software updates and fault management.

The Domain Proxy is required to enable the CBSDs to connect to the SAS without needing per-CBSD certificates for the link to the SAS.

The nanoCBRSLab architecture provides maximum flexibility

