CORNING

E-RAN FirstNet System Support

Capabilities, Technology, and Deployment

Simple Installation. Quick Deployment. Unmatched Capabilities.

Reliable Public Safety LTE coverage is becoming a requirement for most governments, enterprises, and venues, with service demands increasing every day. Now, the connectivity needs of all types of first responders in buildings of all sizes can be cost-efficiently addressed.

The SpiderCloud® enterprise radio access network (E-RAN), with an approved Band 14 (B14) radio, updated operating system, flexible deployment topology, and IP/Ethernet transport, is the key to delivering FirstNet LTE to the wide variety of locations demanding it. The radio nodes provide the necessary B14 support, while the operating system manages FirstNet connections, devices, and preemption on B14 and all other AT&T commercial frequencies supported on E-RAN. Plus, the E-RAN system's flexible deployment modes are enabled by IP/IPSec data connections over readily available Ethernet and internet services.

You can help protect both citizens and first responders with E-RAN FirstNet support. Learn more at corning.com/eran.

What is an enterprise radio access network (E-RAN)?

An E-RAN system is made up of one services node that manages the attached dual-carrier LTE radio nodes that incorporate FirstNet support. All of the radio nodes are powered by Ethernet, which makes them easy and quick to install.

How does the E-RAN system work?

- PoE+ powered radio nodes install on ceiling or wall
- Radio nodes connect to services node over Ethernet LAN and internet
- Services node connects to AT&T FirstNet and commercial networks over internet
- Reliable cellular coverage and capacity inside buildings

E-RAN Platform

An E-RAN system is made up of one rack-unit-sized services node that manages multiple single-carrier or dual-carrier radio nodes operating in LTE and unlicensed spectrum.

Services Node

The services node lies at the heart of the SpiderCloud® E-RAN solution. It ensures that the E-RAN system is easy to deploy and manage and that it delivers the performance mobile operators expect. The services node orchestrates the self-organizing network (SON) process, controls the operation of different radio nodes during neighbor discovery, gathers information from different radio nodes, and creates optimized neighbor lists based on information received from the neighbor scans. It also maintains connections to the AT&T commercial and FirstNet core networks and manages all attached devices.

The SpiderCloud operating system (SCOS) includes the following features that are required for FirstNet-capable systems:

- A multiple operator core network (MOCN) that enables dual-evolved packet core (EPC) connectivity, offering FirstNet and consumer services simultaneously.
- Access class barring that can be used to limit access to FirstNet users only.
- QPP/preemption that automatically redirects connected consumer devices to allow FirstNet access.
- Seamless mobility to and from the B14 macro network for FirstNet users.

- Prioritized paging for FirstNet users
- Mission-critical, push-to-talk services enabled via Rel 12 QCIs (65,66,69,70).
- Subscriber profile ID (SPID) that uses operator-specific SPID values to prioritize FirstNet users on B14 and redirect commercial users to other prioritized LTE high-, medium-, and low-frequency bands.
- KPIs per PLMN that offer separate performance monitoring for FirstNet and consumer devices.
- Differentiated throughput for FirstNet non-GBR bearers.
- Dynamic QCI and ARP modification.

FirstNet Radio Nodes

Like Wi-Fi access points, radio nodes are small with low profiles. The E-RAN platform offers a wide range of radio nodes for many different applications and mobile operator configurations. All models are powered by PoE+ (802.11at) Ethernet switch ports.

RAPID INSTALLATION

Installation is quick and easy using commonly available PoE+.

1. Pull a structured cable (CAT 5e or greater).
2. Attach the radio to wall or ceiling.
3. Connect Ethernet patch cords at both ends.

SCRN-340

This radio node is dual-carrier LTE that supports B2(25) or B4(66) on one carrier and B14 on the other. In some areas where the B14 macro-network has not been delivered, the B14 carrier can be disabled by operations, if desired.

Additionally, where older AT&T network-capable devices are in use by first responders, the commercial frequency can support these devices on FirstNet.

Simply replace the commercial SIM with a FirstNet SIM. Regardless of what network the first responder is connected to, when the network is under stress due to an event, first responders with FirstNet SIMs are treated as full FirstNet-enabled devices by the E-RAN system.

Capabilities	SCRN-340
Available models	Band 2(25)/4(66) & 14
Carrier aggregation	No
Peak speed (Mbps)	150 Mbps
Number of active users	128/band (256 for dual band)
Number of VoLTE users (subset of number of actives)	128 (64/band)
Support for CAT-M1	Yes
Transmit power	500 mW
Coverage	10,000 – 13,000
Antennas	Internal external as option

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