

Corning SpiderCloud SCRN-320 Radio Node for Enterprise Radio Access Network (E-RAN)



Features and Benefits

Supported service	LTE-U and LTE-LAA capable small cell
Supported bands/channels	Licensed LTE channel aggregated with unlicensed 5 GHz supplemental downlink
LTE capacity	64 active LTE users
UMTS performance	300/50 Mbps peak DL/UL LTE throughput (with 20 MHz licensed channel)
LTE performance	Built-in SON and Wi-Fi coexistence capabilities
Fronthaul network	Deployable over existing Ethernet switching infrastructure (VLAN)
Power source	Power-over-Ethernet (PoE+)
Installation	Wall and ceiling mountable
Authentication	Certificate-based authentication with SpiderCloud services node

High-performance LTE-U and LTE-LAA small cell for scalable indoor and venue deployments

The SCRN-320 is an LTE-U and LTE-LAA capable small cell that operates in a licensed LTE frequency carrier, aggregated with license-exempt 5 GHz spectrum, to deliver higher capacity and enhanced user experience without the need for new network elements or complexity.

The SpiderCloud® scalable small-cell system, called an enterprise radio access network (E-RAN), hides the complexity of radio management and mobility and provides operators with a single touchpoint to aggregate and manage a large network of small cells. The SCRN-320 builds upon the LTE-advanced functionalities of the E-RAN system and leverages CA and self-organizing networks (SON) capabilities to support LTE-U and LTE-LAA operation.



SCRN-320 | Figure 1

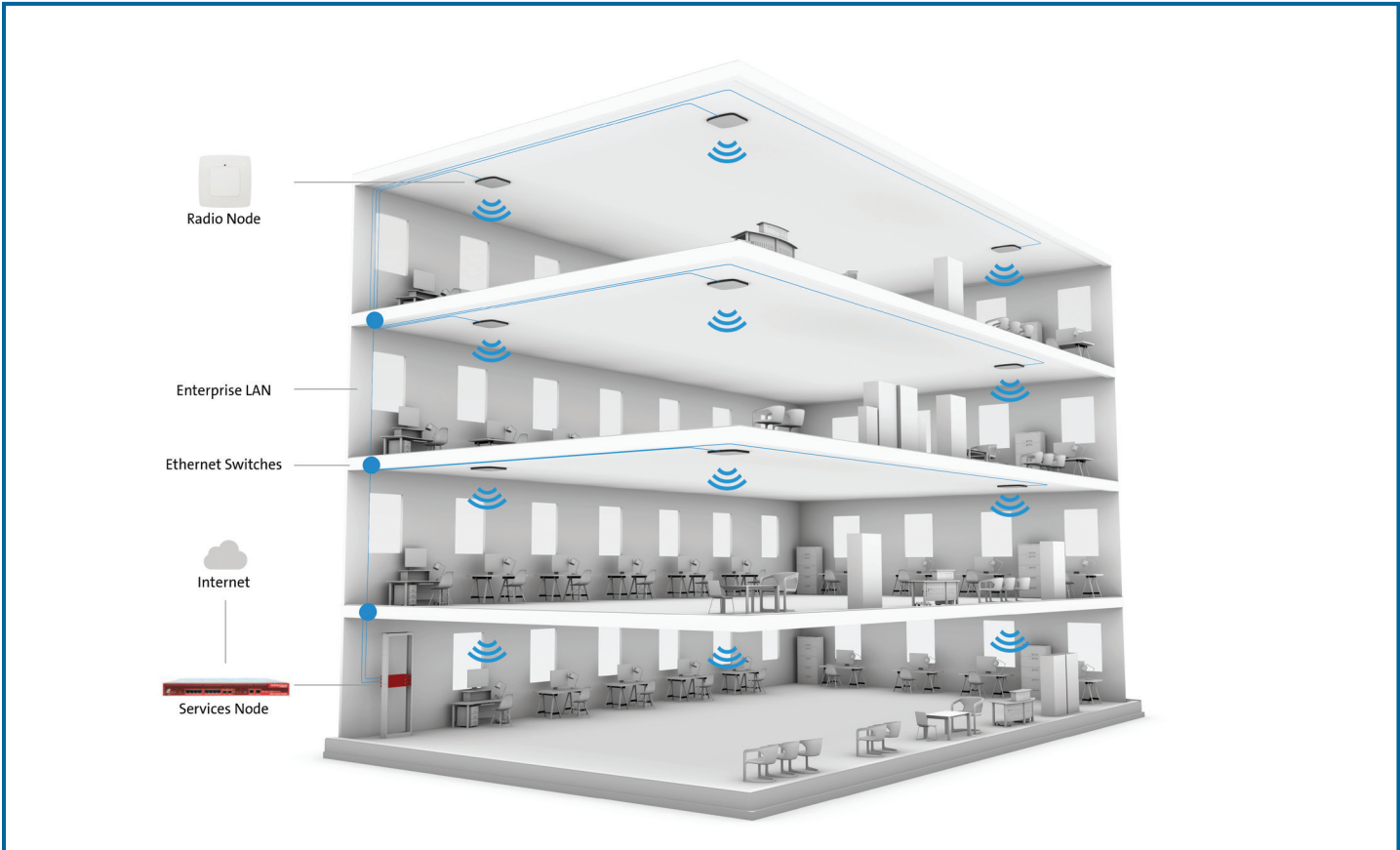
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Functional Overview

Radio Capabilities	Each SCRN-320 radio node supports a licensed LTE carrier paired with a supplemental downlink (SDL) 5 GHz carrier operating in UNII-1 (5150-5250 MHz) or UNII-3 (5725-5850 MHz) bands. Both licensed and unlicensed radios support 2x2 MIMO operation, enabling higher-user capacity and average data rates per radio node coverage footprint. When the unlicensed channel is paired with a 20 MHz licensed LTE channel, each SCRN-320 supports a peak downlink rate of 300 Mbps and a peak uplink rate of 50 Mbps.
Self-Organizing Networks	SpiderCloud® radio nodes implement SON capability by listening to other radio nodes within the E-RAN and neighboring macro cells in multiple frequency bands, and performing continuous self-optimization to provide high-quality radio coverage and mobility. The SCRN-320 includes Wi-Fi baseband and RF chipset to support coexistence with other Wi-Fi systems or LTE-U/LAA devices.
Easy to Install	SpiderCloud radio nodes can be installed on walls or ceilings. Both network connectivity and power are provided over Ethernet. The radio node has no fans and is completely convection cooled. Antennas are built in for both LTE bands, with an orderable option for SMA connectors for use with external antennas.
Secure	SCRN-320 utilizes on-chip trusted platform module (TPM) functions to implement secure boot, and establish certificate-based IPsec tunnel to SpiderCloud services node for all LTE traffic. There is no management or console port on the radio node, and the radio node can be physically locked to prevent theft.

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Building Diagram | Figure 2

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System Specifications

Security	Secure boot and secure key storage using trusted platform module (TPM) functions IPsec tunneling to services node X.509 certificate-based authentication
Timing and Synchronization	IEEE 1588v2-based (PTP) synchronization to services node Cellular network listen for phase synchronization to LTE macro eNodeBs
Ciphering	SNOW 3G and AES air interface encryption

Radio Specifications

Performance	Peak rates: 300/50 Mbps DL/UL (with 20 MHz) 64 active users 128 RRC_connected users
Licensed Radio	Multiple-band class options (see product SKUs) Channel sizes: 5, 10, 15, 20 MHz 2 x 2 MIMO Maximum transmit power: 2 x 250 mW (27 dBm)
Unlicensed Radio	Band class 252 (UNII-1) or 255 (UNII-3) Channel size: 20 MHz 2 x 2 MIMO Maximum transmit power: 2 x 400 mW (29 dBm)
Mobility	Inter radio node handover anchored at the services node Inter-frequency S1 handover to/from macro Intra-frequency S1 handover to/from macro Dual-band idle-mode UE load balancing

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Radio Specifications (cont.)

RF Management	LTE network listen Wi-Fi and LTE-U network listen Inter- and intra-frequency neighbor cell detection Auto assignment of physical cell identities (PCI) Automatic neighbor relation (ANR) management
QoS Features	Support for all LTE QCI Guaranteed bit rate (GBR) Maximum bit rate (MBR) Aggregate maximum bit rate (AMBR)
Voice Services	VoLTE Four data radio bearers (DRB) per UE

Physical Specifications

Enterprise Installation	Wall and ceiling mountable Mounting hardware included Padlock option Power-over-Ethernet: 802.3at Power consumption: 18 W
LED Indication	1 x tri-color LED (RGB) Status indications: boot, normal, disabled, fault, emergency call, radio node tracking
Antenna Options	Four internal Tx/Rx antennas (peak gain 5 dBi) One internal network listen antenna Option for four antenna connectors (SMA straight) for use with external antennas. Orderable as separate SKU.
Physical and Environmental	Dimensions: 183 x 183 x 36 mm (7.2 x 7.2 x 1.4 in) Weight: 1.23 kg (2.7 lbs) 1 x 1000 Mbps Ethernet (RJ45) Operating temperature: 0 to 40°C Storage temperature: 0 to 85°C Operating humidity: 0 to 90% noncondensing Storage humidity: 0 to 90% noncondensing Ingress protection rating: IP30

Corning SpiderCloud SCRN-320 Radio Node for Enterprise Radio Access Network (E-RAN)

The logo consists of a solid blue square with the word "CORNING" in white, uppercase, sans-serif font centered within it.

Regulatory Compliance and Certification

Certifications	Safety EN 60950, CB certification (IEC 60950, UL 60950-1)
	FCC Part 15, Class A
	FCC Part 24 and 27
	Materials: Directive 2011/65/EU on RoHS
	General CE and NRTL marking

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Ordering Information

Part Number	Description
SCRN-320-0446	Licensed Band 4 (LTE) Unlicensed Band 252 (5150-5250 MHz) or 255 (5725-5850 MHz) Monitors LTE 700/1900/2100 MHz and 5 GHz

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Notes:

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