Corning SpiderCloud SCRN-330 Radio Node for Enterprise Radio Access Network (E-RAN)

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Features and Benefits

Supported service	LTE-TDD small cell
Supported bands/channels	Supports LTE band 41 (2.5 GHz) and band 48 (3.5 GHz or CBRS)
LTE capacity	128 active LTE users
LTE performance	100/50 Mbps peak DL/UL LTE throughput (with 20 MHz IBW)
Fronthaul network	Deployable over existing Ethernet switching infrastructure (VLAN)
Power source	Power over Ethernet plus (PoE+)
Installation	Wall and ceiling mountable
Authentication	Certificate-based authentication with SpiderCloud services node

High-Performance LTE-TDD Small Cell for Scalable Indoor and Venue Deployments

The SCRN-330 is an LTE-TDD small cell with self-organizing network (SON) capability. The SpiderCloud® enterprise radio access network (E-RAN) is part of the scalable small cell system. 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.

SCRN-330 | Figure 1

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Functional Overview

Radio Capabilities	The SCRN-330 is a dual-band LTE-TDD small cell. It supports one 10 MHz or one 20 MHz wide LTE-TDD channel in a 2x2 MIMO configuration with a peak transmit power of 500 mw (27 dBm) in Band 41 and 250 mW (24 dBm) in Band 48. The band used is software configurable. The TDD frame configurations that can be used depends upon the software installed on the SCRN-330.
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.
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 QMA connectors for use with external antennas.
Secure	SCRN-330 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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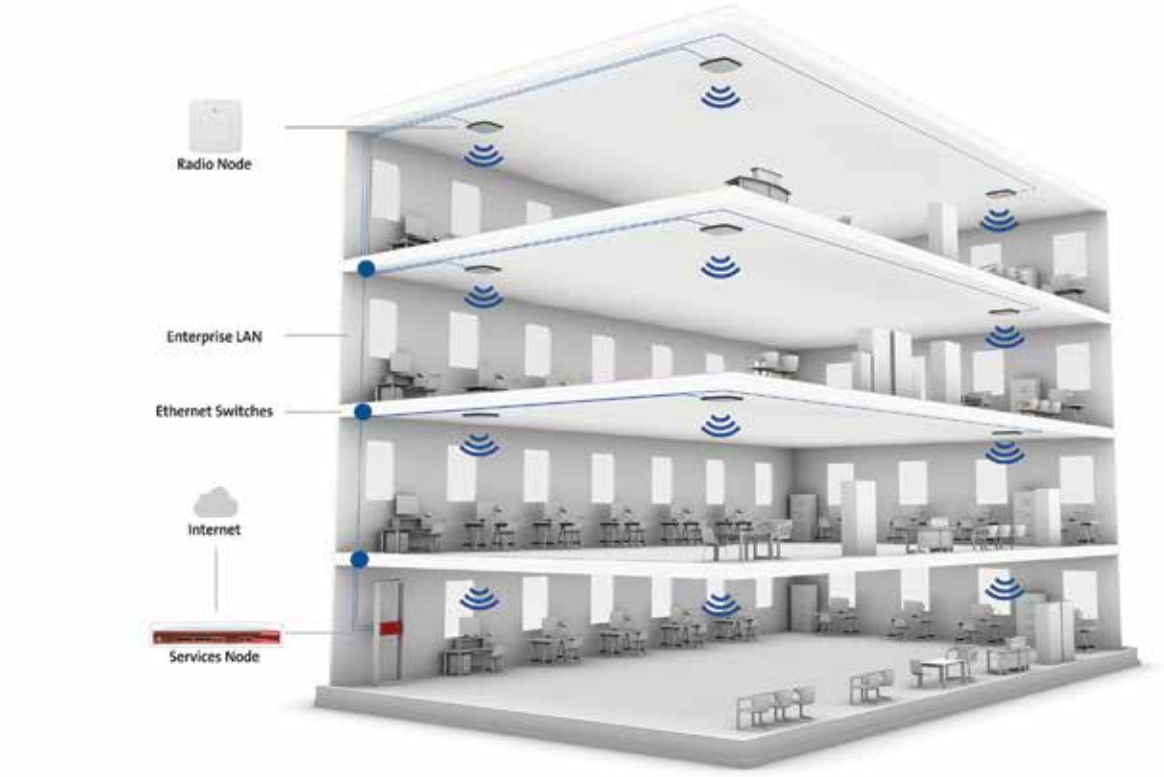

Building Diagram | Figure 2

Corning SpiderCloud SCRN-330 Radio Node for Enterprise Radio Access Network (E-RAN)

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) phase and frequency synchronization to services node
Ciphering	SNOW 3G and AES air interface encryption

Radio Specifications

Performance	LTE-TDD only Frame configurations (FC): 1, 2, 3, and 4 Special subframe configurations: 0-9 Peak DL rate of 100 Mbps with FC2 128 active users per LTE carrier 64 VoLTE users (subset of 128 total active users)
Radio	Channel sizes: 10 and 20 MHz per carrier 2x2 MIMO Maximum transmit power: 2x250 mW (27 dBm) per carrier Band 41 and 2x125 mW (24 dBm) per carrier Band 48
Mobility	Inter-radio node handover anchored at the services node Inter-frequency S1 handover to/from macro Intra-frequency S1 handover to/from macro

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Radio Specifications (cont.)

RF Management	LTE 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 QCIs
	Guaranteed bit rate (GBR)
	Maximum bit rate (MBR)
	Aggregate maximum bit rate (AMBR)
Voice Services	Voice over LTE (VoLTE)
	Eight data radio bearers (DRB) per UE

Physical Specifications

Enterprise Installation	Ceiling or wall mount
	Mounting hardware included
	Padlock option
	Power over Ethernet: 802.3at
	Power consumption: 30 W (single-band operation)
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
	Separate SKU with four QMA antenna connectors for use with external antennas
Physical Specifications	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

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Regulatory Compliance and Certification

Certifications	Safety EN 60950, CB certification (IEC 60950, UL 60950-1)
	FCC Part 15, Class A
	FCC Part 27 (for Band 41)
	FCC Part 96 (CBRS)
	Materials: Directive 2011/65/EU on RoHS
	General CE and NRTL marking

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Ordering Information

Part Number	Description
SCRN-330-4148	Band 41 (2496-2690 MHz) Band 48 (3550-3700 MHz) Monitors LTE bands 41, 48, 5, 26, B25, B66
SCRN-330-4148-EQ	Band 41 (2496-2690 MHz) Band 48 (3550-3700 MHz) Monitors LTE bands 41, 48, 5, 26, B25, B66 External antenna connectors (QMA)

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