

# Corning SpiderCloud SCRN-220 Radio Node for Enterprise Radio Access Network (E-RAN)



## Features and Benefits

<b>Supported service</b>	LTE small cell with support for Rel 13 IOT features
<b>Supported bands/channels</b>	Software-configurable LTE radio bands
<b>Capacity</b>	128 active users
<b>Performance</b>	150/50 Mbps peak DL/UL LTE throughput (with 20 MHz licensed channel)
<b>SON</b>	Built-in self-organizing networks (SON) features for ease of deployment for seamless mobility with macro network
<b>Fronthaul network</b>	Deployable over existing Ethernet switching infrastructure (VLAN)
<b>Power source</b>	Power-over-Ethernet (PoE+)
<b>Installation</b>	Wall and ceiling mountable
<b>Authentication</b>	Certificate-based authentication with SpiderCloud services node

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

The SCRN-220 is an integrated LTE small cell with support for Rel13 IOT devices.

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 LTE small cells.



SCRN-220 | Figure 1

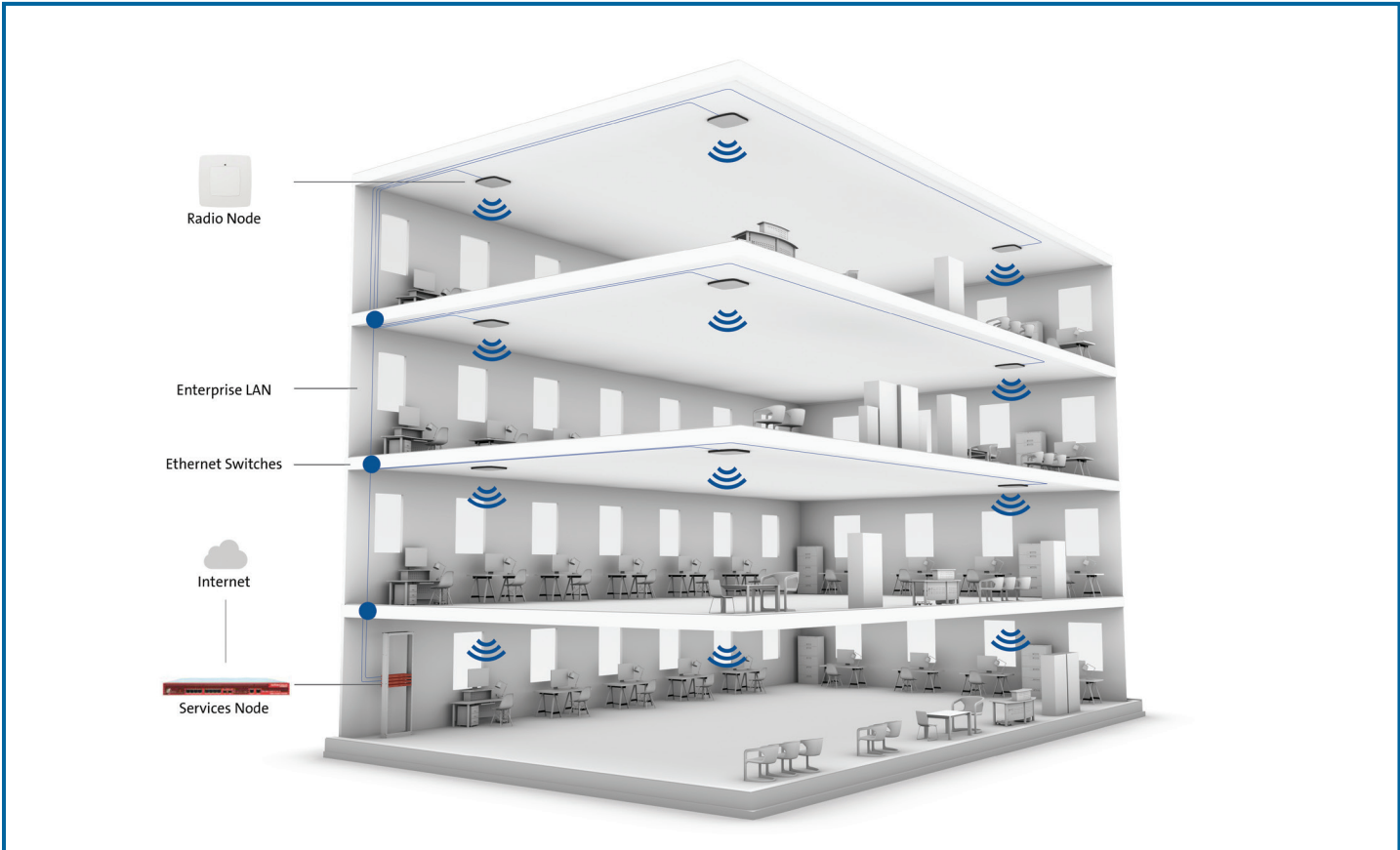
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## Functional Overview

Radio Capabilities	Each SCRN-220 supports 2 x 2 MIMO operation on configurable LTE bands, enabling higher-user capacity and average data rates per radio node coverage footprint. Each LTE carrier supports 128 active LTE users, of which 64 can be VoLTE users. When used with 20 MHz channel bandwidth, an LTE carrier supports a peak downlink rate of 150 Mbps and a peak uplink rate of 50 Mbps.
Self-Organizing Networks	The radio node implements SON capability by listening to other radio nodes within the E-RAN and neighboring LTE 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-220 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-220 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) synchronization to services node
Ciphering	SNOW 3G and AES air interface encryption

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## Radio Specifications

Performance

- Peak rates: 150/50 Mbps DL/UL (with 20 MHz)
- 128 active users, of which 64 can be VoLTE
- Support for Rel 13 IOT features

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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)

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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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RF Management

- LTE network listen
- Inter- and intra-frequency neighbor cell detection
- Auto assignment of physical cell identities (PCI)
- Automatic neighbor relation (ANR) management

## Radio Specifications (cont.)

QoS Features

- Support for all LTE QCI
- Guaranteed bit rate (GBR)
- Maximum bit rate (MBR)
- Aggregate maximum bit rate (AMBR)

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Voice Services

- VoLTE
- Eight data radio bearers (DRB) per UE

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## Physical Specifications (cont.)

Enterprise Installation    Wall and ceiling mountable  
   Mounting hardware included  
   Padlock option  
   Power-over-Ethernet: 802.3at  
   Power consumption: 18 W

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LED Indication            1 x tri-color LED (RGB)  
  
   Status indications: boot, normal,  
   disabled, fault, emergency call,  
   radio node tracking

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Antenna Options            Two internal Tx/Rx antennas  
   (peak gain 5 dBi)  
  
   Option for QMA antenna connectors  
   for use with external antennas.  
   Orderable as separate SKU.

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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

## 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  
  
   General CE and NRTL marking  
  
   MPE: FCC 47 CFR 1.1307(b)



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## Ordering Information

Part Number	Description
SCRN-220-020412	Configurable single-mode LTE cell  SW configurable licensed band with support for Band 4, Band 2, or Band 12  Monitors LTE 700/1900/2100 MHz
SCRN-220-020412-EQ	Same as SCRN-220-020412 with QMA antenna connectors for external antennas
SCRN-220-020413	Configurable single-mode LTE Cell  SW configurable licensed band with support for Band 4, Band 2, or Band 13  Monitors LTE 700/1900/2100 MHz
SCRN-220-020413-EQ	Same as SCRN-220-020413 with QMA antenna connectors for external antennas

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Notes:

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