

Corning SpiderCloud SCRN-310 Radio Node for Enterprise Radio Access Network (E-RAN)

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Features and Benefits

| | |
|---------------------------------|---|
| Supported service | Multiaccess small cell supporting concurrent UMTS and LTE operation |
| Supported bands/channels | Available in multiple FDD band combinations |
| UMTS capacity | 32 UMTS channels |
| LTE capacity | 64 active LTE users and up to 128 LTE RRC connections |
| UMTS performance | 21/5 Mbps peak DL/UL UMTS throughput |
| LTE performance | 150/50 Mbps peak DL/UL LTE throughput |
| Fronthaul network | Deployable over new or existing ethernet switching infrastructure |
| Power source | Power-over-Ethernet (PoE+) |
| Installation | Wall and ceiling mountable |
| Authentication | Certificate-based authentication with SpiderCloud services node |

High-performance multiaccess 3G and 4G small cell for scalable indoor and venue deployments

The SCRN-310 is an integrated multiaccess UMTS and LTE small cell with self-organizing networks (SON) capability.

As the demand for mobile broadband accelerates, mobile network operators need to efficiently utilize both UMTS and LTE technologies, without creating new network 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 UMTS, LTE, and multiaccess (UMTS and LTE) small cells.



SCRN-310 | Figure 1

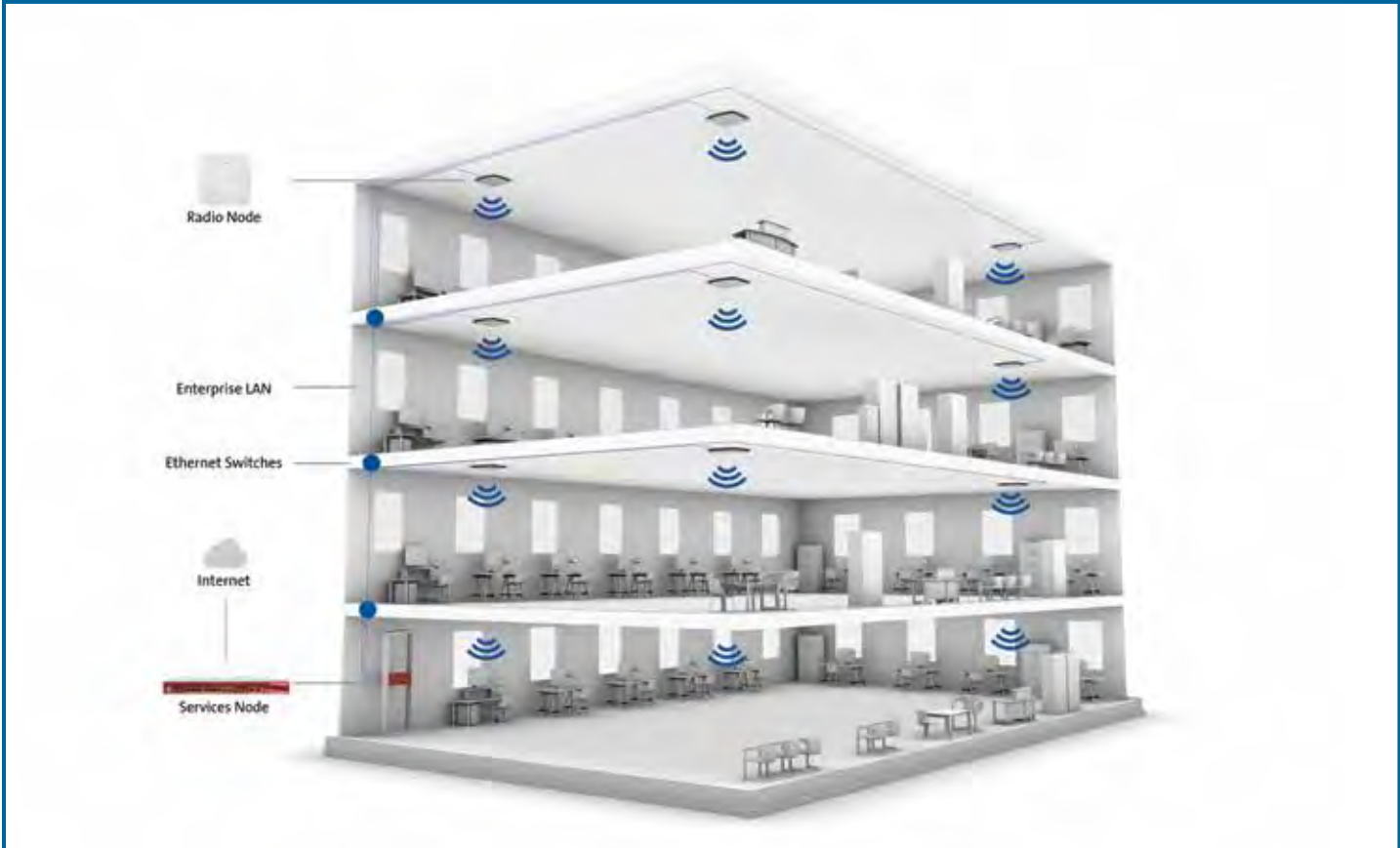
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Functional Overview

| | |
|--------------------------|--|
| UMTS Radio | Each SCRN-310 supports up to 32 simultaneous UMTS voice and data channels; a peak downlink rate of 21 Mbps and a peak uplink rate of 5 Mbps. SpiderCloud implements receive diversity for superior uplink performance and implements soft handovers. |
| LTE Radio | Each SCRN-310 supports up to 64 active LTE users and 128 RRC connections per band. When used with 20 MHz channel bandwidth, it supports a peak downlink rate of 150 Mbps and a peak uplink rate of 50 Mbps. Both SCRN-310 bands can be used for LTE operation, and for carrier aggregation. |
| Self-Organizing Networks | The radio node implements self-organizing networks (SON) capability by listening to other radio nodes within the E-RAN and neighboring LTE, UMTS, and GSM macrocells 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 UMTS and LTE with an orderable option for four SMA connectors for use with external antennas. |
| Secure | SCRN-310 utilizes on-chip trusted platform module (TPM) functions to implement secure boot and establish certificate-based IPsec tunnel to SpiderCloud services node for all UMTS and 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-310 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 Cellular network listen for phase synchronization to LTE macro eNodeBs |

UMTS Radio Specifications

| | |
|---------------|--|
| Performance | Up to 32 simultaneous voice and data channels Peak rates: 21 Mbps DL, 5 Mbps UL |
| Radio Antenna | Peak transmit power: 1 x 250 mW (24 dBm) Receive diversity |
| RF Management | UMTS and GSM network monitor Inter- and intra-frequency neighbor cell detection Auto detection of primary scrambling codes |
| Mobility | Inter small-cell soft handover Handover from small-cell to/from macro (inter-RAT, inter-frequency) |
| RAB Support | CS: 12.2 kbps AMR, WB-AMR R99 PS: 64 kbps, 384 kbps HSPA+: Rel 7, all categories Multi-RAB: 1 X CS, up to 3 X PS |
| Ciphering | 3G KASUMI |

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LTE Radio Specifications

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|----------------|--|
| Performance | Peak rates: 150 Mbps DL, 50 Mbps UL (with 20 MHz) 64 active users 128 RRC_connections |
| Radio | Channel sizes: 3, 5, 10, 15, 20 MHz 2 x 2 MIMO Maximum transmit power: 2 x 125 mW (24 dBm) |
| RF Management | LTE, UMTS, and GSM network monitor Inter- and intra-frequency neighbor cell detection Auto detection of physical cell identities (PCI) Automatic neighbor relation (ANR) management |
| Mobility | Inter radio node handover anchored at services node Handover to/from macro (inter-frequency, intra-frequency) CSFB to GSM, CDMA, or UMTS SRVCC to UMTS or GSM |
| Ciphering | SNOW 3G and AES air interface encryption |
| Voice Services | VoLTE Circuit-switched fallback |
| QoS Features | Support for all LTE QoS class identifiers (QCIs) (1-9) Four data radio bearers (DRB) per UE Guaranteed bit rate (GBR) Maximum bit rate (MBR) Aggregate maximum bit rate (AMBR) |

Physical Specifications

| | |
|----------------------------|---|
| Enterprise Installation | Wall and ceiling mountable Mounting hardware included Padlock option Power-over-Ethernet: 802.3 at maximum power consumption: 30 W |
| LED Indication | 1 x tri-color LED (RGB) Status indications: boot, normal, disabled, fault, emergency call, radio node tracking |
| Antenna Options | Four internal antennas (gain 2 dBi each) Option for four antenna connectors (SMA straight) for use with external antennas. Orderable as separate SKU. |
| Physical and Environmental | Dimensions: 239 x 206 x 53 mm (9.4 x 8.1 x 2.1 in) Weight: 1.37 kg (3.0 lbs) 1 x 100/1000 Mbps Ethernet (RJ45) Operating temperature: 0 to 50°C (vertically mounted) Operating temperature: 0 to 40°C (horizontally mounted) 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, CAN/CSA-C22.2 No.60950-1) |
| | R&TTE Directive 1999/5/EC: |
| | EN 301 489-1, 301 489-23 |
| | EN 301 908-1, 301 908-3, 301 908-14 |
| | EN 50385 and EN 62311 (SAR) |
| | FCC Part 15, Class A |
| | Industry Canada: ICES-003 (Class A) |
| | Materials: Directive 2011/65/EU on RoHS |
| | General CE and NRTL marking |
| | FCC Part 24 (Band 2) and Part 27 (Band 4) |
| | Industry Canada: RSS-133, RSS-139 |
| | IFETEL Mexico |
| | Anatel Brazil |

Corning SpiderCloud SCRN-310 Radio Node for Enterprise Radio Access Network (E-RAN)



Ordering Information | MxU Assembly Configurations

| Part Number | Description |
|---------------------|---|
| SCRN-310-04L2 | Operates in Band 4 (LTE) and Band 2 (UMTS or LTE) Monitors LTE B2/B4, UMTS B2/B4/B5, GSM 850/1900 |
| SCRN-310-04L2-E | Same as SCRN-310-04L2 with four SMA antenna connectors |
| SCRN-310-0205 | Operates in Band 2 (LTE) and Band 5 (UMTS or LTE) Monitors LTE B2/B4/B5, UMTS B2/B5, GSM 850/1900 |
| SCRN-310-0205-E | Same as SCRN-310-0205 with four SMA antenna connectors |
| SCRN-310-0701 | Operates in Band 7 (LTE) and Band 1 (UMTS or LTE) Monitors LTE B3/B7/B20, UMTS B1/B8, GSM 900/1800 |
| SCRN-310-0701-E | Same as SCRN-310-0701 with four SMA antenna connectors |
| SCRN-310-0703 | Operates in Band 7 (LTE) and Band 3 (LTE) Monitors LTE B3/B7/B20, UMTS B1/B8, GSM 900/1800 |
| SCRN-310-0703-E | Same as SCRN-310-0703 with four SMA antenna connectors |
| SCRN-310-0301 | Operates in Band 3 (LTE) and Band 1 (UMTS or LTE) Monitors LTE B3/B7/B20, UMTS B1/B8, GSM 900/1800 |
| SCRN-310-0301-E | Same as SCRN-310-0301 with four SMA antenna connectors |
| SCRN-310-0702 | Operates in Band 7 (LTE) and Band 2 (UMTS) Monitors LTE B7, UMTS B2/B5, GSM 850/1900 |
| SCRN-310-0702-E | Same as SCRN-310-0702 with four SMA antenna connectors |
| SCRN-310-0413-2XL | Operates in Band 4 (LTE) and Band 13 (LTE) Monitors LTE B4/B13 |
| SCRN-310-0413-E-2XL | Same as SCRN-310-0413-2XL with four SMA antenna connectors |

Corning SpiderCloud SCRN-310 Radio Node for Enterprise Radio Access Network (E-RAN)

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

Notes:

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