

The product

Small Cell

Model: SCE5151C-B261

Quick Installation Guide



Manufacture By:

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Chapter 1

Introduction



The product is an indoor, self-configuring Small Cell device that will be used to public network and 5G NR coverage at the operator's retail store. The product will be installed in Verizon's retail store and will not be sold to end users. The product is a pure 28GHz 5G mmWave Femto Cell based on QCA FSM10055 and QCA mmWave module QTM10028. Its band is n261. The femto cell is an integration of CU, DU, and RU into one box.

Package Contents

Package will include following items:

- 1 x SCE5151C-B261 Device
- 1 x AC/DC Power Supply Adapter
- 1 x Power cord
- 1 x Cat 7 Ethernet cable
- 1 x GPS cable/antenna
- 1 x Mounting bracket

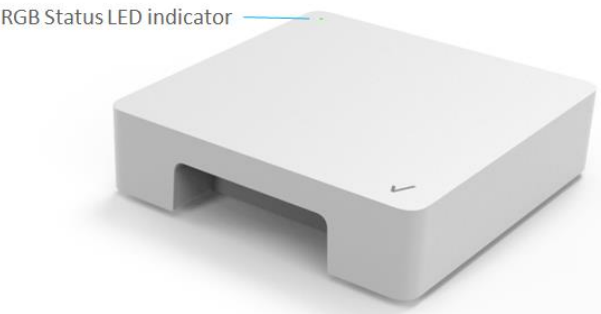
If any of the above items are damaged or missing, please contact your dealer immediately.

Key Feature

- Designed for indoor/Small Office Retention
- 5G NR Femto Cell Access up to 16 active users
- 3GPP Rel 15. Mar 2019
- 5G N261 band
- Support 4 x 100 MHz bandwidth
- Integrated CU, DU, and RU in one box
- Synchronization with GPS
- Max. 48.05 dbm EIRP hardware Tx output power
- Device Mac address for provision and authentication
- Qualcomm mmWAVE module QTM10028 including antennae inside
- Support 10G Ethernet for 5G NR Backhaul
- 1 x LED status display and Info Button

LEDs

The product has 1 LED indicators. Table below describes the definition of LED:



Installation Mode	Boot	Booting Up	LED - Solid: Green	
	WAN	Connecting to Internet	LED - Blinking: Green	
	Sync	GPS Positioning and Time Synchronizing	LED - Fast Blinking: Green	
	Initial VPN	Establishing IPSec Tunnel to Initial Security GW	LED - Blink: Yellow	
	Initial HeMS	Establishing TR069 Connection to Initial HeMS	LED - Fast Blinking: Yellow	
	Serving VPN	Establishing IPSec Tunnel to Serving Security GW	LED - Blinking: Blue	
	Serving HeMS	Establishing TR069 Connection to Serving HeMS	LED - Fast Blinking: Blue	
Regular usage mode	X2	Waiting for X2 Connection from 4G Femto	LED - Solid: Blue	
	In Service	5G Femto is Up and Running	LED - Solid: White	
	Error	Critical alarm happens	LED - Blinking: Red	
FW Update / Reset		2 Seconds before rebooting	LED - Fast Blink: White	

Front & Rear Panel

Front Panel



Interface Panel



GPS	External GPS antenna connector
Reset	Factory reset button
DC	Input: 12 Vdc, 2A, Power Jack to Power Adaptor
TO 4G	LAN port input or 5G DUT configuration
WAN	WAN port for backhaul connect (10G Ethernet)
1PPS	External 1PPS signal input connector

Chapter 2

Initial Installation

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SCE5151C-B261 is designed for Plug-n-Play (PnP) and self-configure which not require any software installation to use. When device power on the device, it will start to connect to back-haul and begin the device Plug PnP and provision processes. The PnP and provision process will take approximate 6~7 min. to bring up and activate the device service.

Please see the following mounting procedure to install the device on the ceiling.

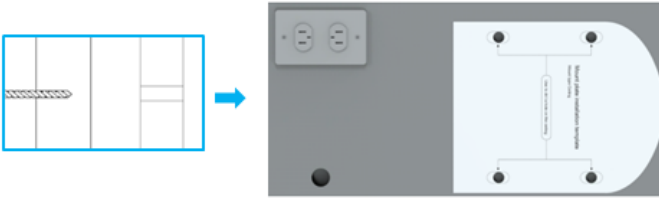
Note: Installing the device requires professional training. The device must be professionally installed by a qualified engineer familiar with system. Failure to properly install this product may result in physical injury and/or damage to property.

Mounting Procedure

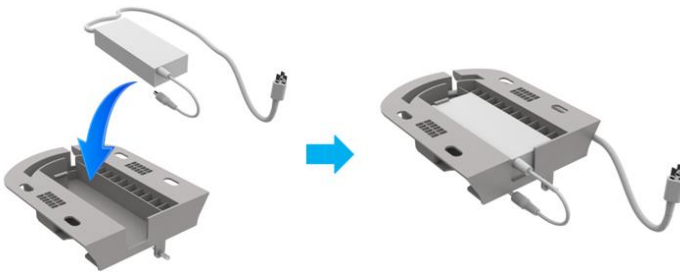
The package contains screws for drop, open, and drywall ceiling mounting.

Mounting Steps:

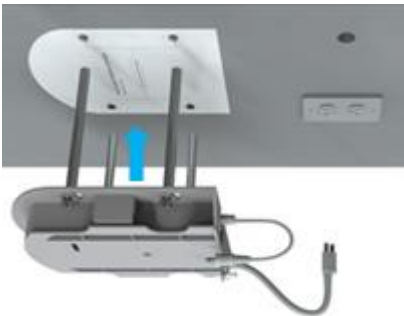
1. Determine the mounting location and verify that no wires, pipes, etc., are at the point of mounting.
2. Stick the Mounting Guiding sticker on the ceiling location.
3. Drill holes on the ceiling by follow drill guiding template.



4. Place the Power Adapter connected with the power cord into the bracket.

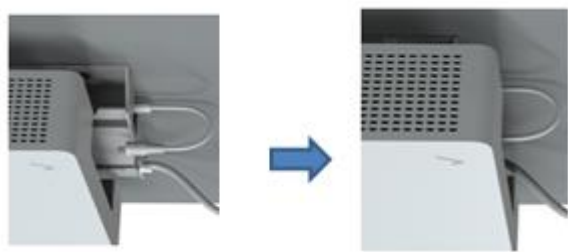


5. Place the bracket and threaded rod then lock the screws to fix the bracket on the ceiling.



Note: One rod with 3 screws. First screw is to lock the bracket with the nut. The other two are to fix the rod between the ceiling.

6. Slide the femto box into the bracket

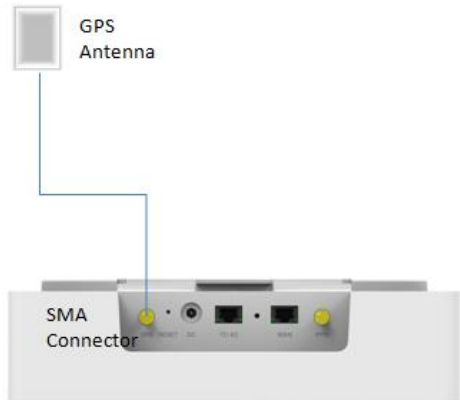


7. Tighten the screw by hand and Plug the power cord



Connecting GPS Antenna, Ethernet and Power Cable

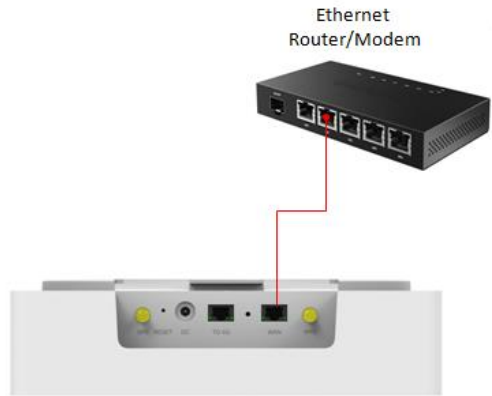
1. Connect the GPS antenna cable (indoor use only) to the GPS port of the device.



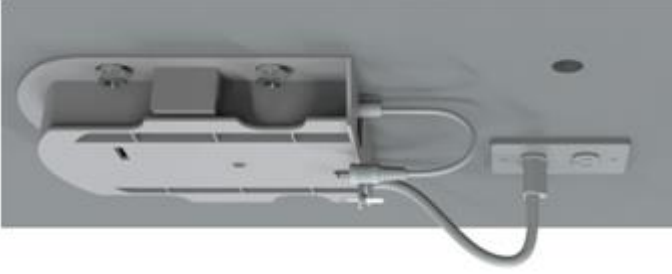
Note:

The GPS antenna must stay connected to the device at all times for operation. The initial GPS fix can take up to 60 minutes and may require an external outdoor GPS antenna(not supplied).

2. Attach the supplied Ethernet (Cat 7) cable from your router or modem LAN port to the device WAN port for network connectivity.



3. Plug the power cord into the power socket. Automatic power up will begin.



POWER ON

At Startup, the device will conduct self-configuration. This may take between 30-60 minutes the first time the device is turned on.

Chapter 3

Specifications



General Specification

Connectivity	- Ethernet wired connections to backhaul and 4G Femto - External GPS antennas
Power Supply	External Power Adapter: Input: AC100~240V, 50Hz/60Hz, 2A Max. Output: 19 Vdc, 6A
Operating Requirement	Operating Temp. 0°C to 40°C Storage Temp. -5°C to 45°C Operating Humidity 5% to 90% Non-Condensing Storage Humidity 5% to 95% Non-Condensing
Reset button	Reset & Info Button
LED	1 LED for Status.
Housing	300mm(W)x 300mm(D)x 81mm(H)

RF Characteristics

5G NR Access RF	mmWave Module	QCA FSM10028
	Working 5G frequency	FR2: n261 (28GHz)
	Technology	2DL, 2UL
	Anenna array	8 x 8 dual-pol antenna array
	QAM	64QAM uplink/downlink
	Tx Power	Max. 48.05dbm EIRP (Hardware)
	Bandwidth	4x 100 Mhz

Regulatory Requirements

FCC Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 72cm between the radiator & your body.

Note: The country code selection is for non-US model only and is not available to all US model. Per FCC regulation, all WiFi product marketed in US must fixed to US operation channels only.

Professional installation instruction

1. Installation personal

This product is designed for specific application and needs to be installed by a qualified personal who has RF and related rule knowledge. The general user shall not attempt to install or change the setting.

2. Installation location

The product shall be installed at a location where the radiating antenna can be kept 72cm from nearby person in normal operation condition to meet regulatory RF exposure requirement.

3. Installation procedure

Please refer to user's manual for the detail.

4. Warning

Please carefully select the installation position and make sure that the final output power does not exceed the limit set force in relevant rules. The violation of the rule could lead to serious federal penalty.

Safety Information

All instructions, warning and caution statements that accompany this equipment must be strictly followed at all times to ensure its safe use. Observe all warning and caution symbols that are fixed to this equipment. This electrical equipment is designed with the utmost care for the safety of those who install and use it. However, when using this device, basic safety precautions should always be followed to reduce the risk of fire and injury to persons, and the dangers of electric shock and static electricity. Do not cover the device or block the airflow to the device with any other objects. This product was qualified under test conditions that included the use of the supplied cables between system components. To be in compliance with regulations, the user must use the cables supplied with the unit and install them properly. This includes the power adapter that is provided. Place the unit to allow for easy access when disconnecting the power adapter from the mains wall outlet. Operate this product only with the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your home, consult your dealer or local electricity company. Do not use this product near water, for example a swimming pool or a bathroom. Keep the device away from excessive heat and humidity and keep the device free from vibration and dust. Wipe the unit with a clean, dry cloth. Never use cleaning fluid or similar chemicals. Do not spray cleaners directly on the unit or use forced air to remove dust. Avoid installing or using this product during an electrical storm. There may be remote risk of electric shock from lightning. During a lightning storm for added protection please unplug it from the wall outlet and disconnect all cables. This will prevent damage due to lightning and power surges. For safety reasons, only authorized service technicians should open the device. If the device is opened the warranty will become void. The device may affect medical equipment and so please take account of any technology restrictions with this equipment. This device, like other radio devices, emits radio frequency electromagnetic energy, but operates within the guidelines found in radio frequency safety standards and recommendations. It is recommended that the minimum operating distance from the installed Access Point to persons is 72cm.

General Hazard Statement

Safety notes are marked with symbols. Ignoring the safety notes may lead to personal injury, damage to the instrument and malfunctions.

Signal Words identify the hazard severity level as follow:

Signal word	Meaning
DANGER	Indicates an extremely hazardous situation which, if not avoided, will result in death or serious injury.
WARNING	Indicates a hazardous situation which, if not avoided, could result in death or serious injury.
CAUTION	Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.
NOTICE	Indicates a hazardous situation not related to personal injury.



Contact with energized parts can cause serious injury.

At least one other trained person must be in attendance, who can immediately and safely disconnect the system if necessary.

This second person must be trained in first aid for emergency purposes



Some parts of all electrical installations are energized. Failure to follow safe work

Practices and the safety warnings may lead to bodily injury and property damage.

For this reason, only trained and qualified personnel (electrical workers as defined in

IEC 60215 or EN 60215 + A1 or in the National Electrical Code or in ANSI/NFPA No. 10) may install or service the installation.



Risk of electric shock

- a) Do not open the AC adaptor housing. Make sure that the AC adapter does not come in contact with liquids.
- b) Use Only the 3-pin power cord with equipment grounding conductor which was supplied with your instrument and only on 3-pin grounded outlet must be used.



The Cooling vents at the right & left of the enclosure can become obstructed, preventing ventilation of the enclosure.

Make sure that the air vent is not obstructed and remains clear at all times.

Device Surface Cleaning

You may clean the device case using a cloth dampened with mild liquid detergent (such as Dawn) and water.



WARNING

Electric-shock hazard

Always unplug/disconnect power before apply any cleaning to Device.

Warning Do not submerge the Device or its accessories in water or allow water to enter into the case; this may lead to electrical shock and/or damage

Accessories

Item	Description	P/N
Power adapter	AC/DC Adapter (without power core) AC100~240V~0.7A, 50Hz/60Hz auto switching, 12 V DC, 2A	910202125LD
Power cord	1.5M 125V/7A WH LUX	4590001LLU
GPS antenna	10m white GPS cable with 1.6db/m loss; One end has a GPS receiver and the other end is a male SMA connector	617202KPIQ
Ethernet cable	1.5m length white cat7 Ethernet cable with RJ45 connectors	455015ANRK
Bracket	Mounting bracket to mount the device on ceiling	940DGD20GJ