

**Q710 – LTE Access Point****Ruckus Wireless Inc., an ARRIS Company****Federal Communications Commission Notices**

This product 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.

Warning: Changes or modifications to this equipment that have not been approved by Ruckus Wireless may void the user's authority to operate this equipment.

For Class B Equipment:

Note: 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 or more of the following measures:

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

This device meets all requirements specified in the FCC Part 96 Rules. This transmitter must not be co-located or operate 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 **20 cm** between the radiator & your body.

**Safety Notices and National Restrictions**

This product is intended to be installed at a restricted access location and is marked with a visible warning



that the surface may be hot

**Professionally Installed Products**

The product is to be installed according to the installation instructions. The User/Operator does not have access to the device once the device is installed and in use. Provisions for permanent grounding are provided.

1. Installation personnel: This product is designed for a specific application and is to be installed by qualified personnel with knowledge of RF and applicable rules. General users are not to attempt installation or changing settings.
2. Installation location: The product is to be installed at a location where the radiating antenna can be kept at least 20 cm from any nearby persons in normal operation conditions to meet regulatory RF exposure requirement.
3. Installation procedure: Please refer to installation instructions for details.
4. Warning: Please carefully select the installation position and make sure that the final output power does not exceed the limit set forth in US CFR 47 Part 96. Violation of the rule could lead to serious federal penalty.

**Products intended to be powered by an external power supply:**

Warning –This product is intended to be supplied by a Listed Direct Plug-In Power Unit marked Class 2 or LPS (sub-clause 2.5 of standard EN 60950-1). Available Ruckus power supplies intended for product operation are identified in the product datasheet. The last two digits of the power supply part number represent the country code. For additional applicable power supplies/options, see user instructions and product datasheet.

**Medical Statement**

Ruckus Wireless Access Points shall only be used in ME systems where the intended EM ENVIRONMENT does NOT rely on the Wireless radio link for BASIC SAFETY or ESSENTIAL PERFORMANCE of the ME SYSTEM.

# Q710

## High Capacity Indoor LTE Access Point for the 3.5GHz CBRS Band



### DATA SHEET



## BENEFITS

### STUNNING PERFORMANCE

The Ruckus Q710 offers the highest capacity available in the US CBRS band. Aggregating up to four CBRS channels, Q710 can offer over 200Mbps of combined throughput to users in high-density areas such as stadiums, hotels and enterprise environments.

### MULTIPLE APPLICATIONS

From mobile coverage and capacity, to Private LTE and neutral host networks, Q710 covers a broad gamut of CBRS use cases.

### ADVANCED TECHNOLOGY

Q710 is packed with advanced 3GPP and proprietary technology, such as LTE-Advanced Carrier Aggregation, Self-Organizing Networks (SON), Self-Organizing Timing and Zero-Touch Provisioning™ that make the solution both extremely powerful as well as easy to deploy.

### WI-FI -LIKE SIMPLICITY

Q710 is ideal for in-building LTE wireless networks that deploy with the economics and simplicity of Wi-Fi.

### ATTRACTIVE DESIGN

Q710 looks and feels like a Wi-Fi access point. Its attractive design is ideal for hospitality, education, large office, MTU/MDU, retail, public venues and similar environments. It can even be hidden above ceiling tiles or painted to virtually disappear into the environment.

## OVERVIEW

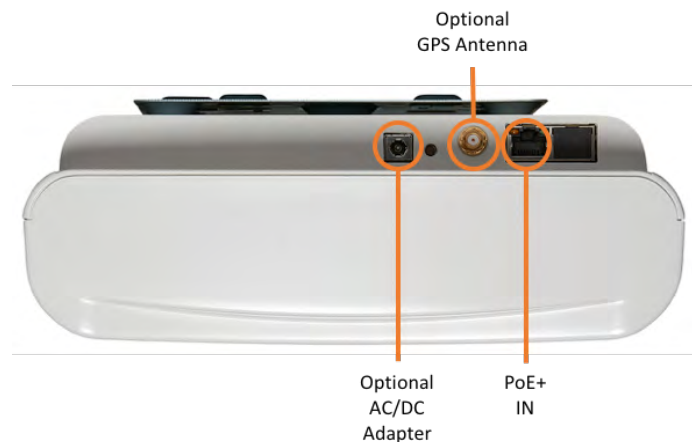
Ruckus Networks, an ARRIS Company, offers a broad portfolio of CBRS-capable LTE access points under the OpenG™ brand. OpenG LTE access points include indoor, outdoor and plug-ins to existing Ruckus Wi-Fi access points.

The Ruckus Q710 is an indoor, ceiling or wall -mounted LTE Access Point for CBRS. Q710 offers the highest CBRS capacity available in an attractive, Enterprise-friendly design.

## KEY FEATURES AND BENEFITS

- CBRS Alliance OnGo™ Certified for trusted interoperability with all CBRS equipment
- Aggregates up to 4 available CBRS channels for best-in-class capacity and performance
- CBRS Category A compliant - No professional installation required!
- PoE+ and internal BeamFlex™ antennas for Wi-Fi like deployment simplicity
- Attractive design ideal for public venues and private enterprise environments

## PORT DETAIL



# Q710

## High Capacity Indoor LTE Access Point for the 3.5GHz CBRS Band

## DATA SHEET

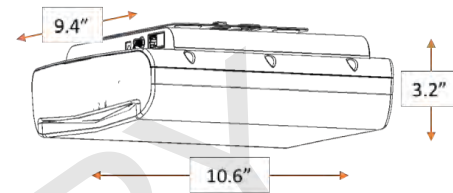
### SPECIFICATIONS

| Model                                               | Q710                                                                                                                                                                                                        |
|-----------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Type                                                | Indoor High Capacity                                                                                                                                                                                        |
| Technology                                          | 3GPP Release 11 TD-LTE Small Cell (eNodeB)                                                                                                                                                                  |
| Frequency Band                                      | CBRS B48 (3500-3700 MHz)                                                                                                                                                                                    |
| Output Power                                        | 4 ports at 24dBm per port                                                                                                                                                                                   |
| MIMO Configuration                                  | Dual 2x2 MIMO                                                                                                                                                                                               |
| Antennas                                            | 4 Internal BeamFlex™ antennas                                                                                                                                                                               |
| Max Antenna Gain                                    | 3 dBi per antenna                                                                                                                                                                                           |
| Max EIRP                                            | 1 W per RF Carrier                                                                                                                                                                                          |
| Max Bandwidth                                       | Up to two 20 MHz Carriers (40 MHz total)                                                                                                                                                                    |
| Bandwidth Configurations (MHz) <sup>1</sup>         | Non-contiguous 10, 20, 10+20, and 20+20                                                                                                                                                                     |
| Max Throughput <sup>1,2</sup>                       | 200 Mbps                                                                                                                                                                                                    |
| Max Simultaneous (RRC Connected) Users <sup>1</sup> | 128                                                                                                                                                                                                         |
| Timing Interface                                    | Built-in GPS, IEEE 1588v2 PTP                                                                                                                                                                               |
| Data Interface                                      | 1Gb Ethernet                                                                                                                                                                                                |
| Power Interface                                     | PoE+ In (IEEE 802.3at) or 12VDC@2A                                                                                                                                                                          |
| Networking Protocols                                | IPv4/IPv6, VLAN, IPSec                                                                                                                                                                                      |
| Max Power Consumption                               | 20W                                                                                                                                                                                                         |
| EPC Support                                         | Standard 3GPP S1 Interface                                                                                                                                                                                  |
| SAS Support                                         | WINN Forum TS1.0                                                                                                                                                                                            |
| EMS Support                                         | Ruckus Cloud EMS (cEMS)                                                                                                                                                                                     |
| Certifications                                      | OnGo™, FCC Part 96, UL                                                                                                                                                                                      |
| Physical Ports                                      | 2x1GbE RJ-45, 12VDC In, SMA for GPS antenna                                                                                                                                                                 |
| Size (H x W x L)                                    | 3.2 x 9.4 x 10.6"                                                                                                                                                                                           |
| Weight                                              | 4.34 lbs                                                                                                                                                                                                    |
| Operating Temperature                               | 0 C (32°F) to +40 C (104°F)                                                                                                                                                                                 |
| Indicator Lights                                    | <b>PWR:</b> PoE+ or 12VDC on<br><b>EMS:</b> Connected to Ruckus Cloud EMS<br><b>EPC:</b> Connected to LTE controller (EPC)<br><b>SYNC:</b> Timing sync to GPS or IEEE1588<br><b>LTE:</b> LTE service active |
| Box Contents                                        | Q710, mounting bracket, AC/DC adapter                                                                                                                                                                       |
| Ordering Information                                | P01-Q710-US02                                                                                                                                                                                               |

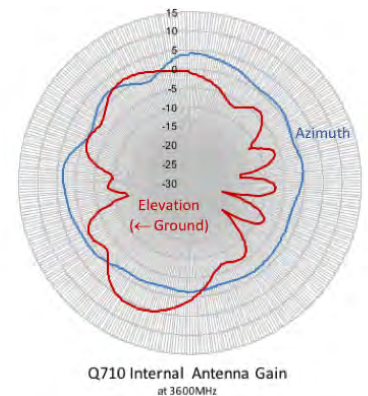
<sup>1</sup>May require future software features

<sup>2</sup>Approximate maximum aggregate application layer uplink and downlink throughput, 4 CBRS channels (40MHz), TDD Config 2, Cat 6 and above UE client

### DIMENSIONS



### ANTENNA PATTERNS



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# Ruckus Q710 LTE Access Point Quick Setup Guide

This Quick Setup Guide provides step-by-step instructions on how to set up your Ruckus Q710 LTE Access Point (AP). After completing the steps described in this guide, you will be able to place Q710 at your site and provide LTE wireless network access to users.

**FIGURE 1** Ruckus Q710 LTE Access Point



## Before You Begin

Before deploying Ruckus Wireless products, please check for the latest information and release documentation at

<http://support.ruckuswireless.com/documents>

Software License and Limited Warranty are available at

<http://support.ruckuswireless.com/warranty>

## Package Contents

Check the package contents as follows:

- Ruckus Q710 LTE Access Point (AP)
- Plastic bracket and 4 shoulder screws pre-installed on AP
- Unit removal pin
- 4 Wall Mounting screws (Phillips #2)
- 4 Wall Anchors
- US AC/DC Adapter
- Regulatory Flyer
- Warranty Information
- This Quick Setup Guide

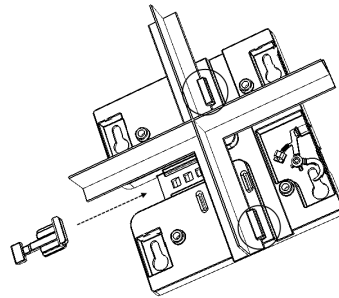
## Mounting Instructions

The Q710 Access Point (AP) can be mounted to a drop-ceiling T-bar or flat surface.

### Mounting on a Drop-Ceiling T-Bar

1. Remove the bracket by inserting unit removal pin into the hole in the bracket to release the locking hook, then slide the bracket free from the shoulder screws.
2. Attach the bracket to T-bar using T-Bar clasps and slide the T-bar clip to lock the bracket in place.

**FIGURE 2** Slide T-bar clip to lock the bracket onto the T-bar



3. Place the AP against the mounting bracket so that the shoulder screws go into the mounting keyholes of the bracket, and gently slide the AP until it locks.

**FIGURE 3** Locking the AP to the bracket

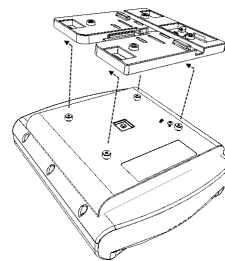
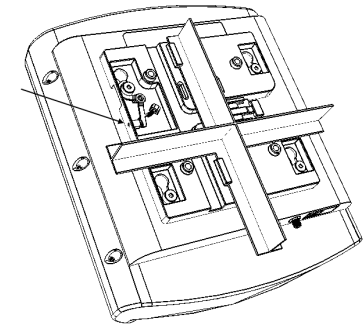


**FIGURE 4** Release the locking hook



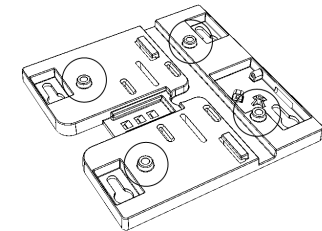
### Mounting on a Flat Surface

The factory-supplied mounting screws and plastic wall anchors allow you to attach the AP to a wall or ceiling.

1. Remove the bracket by inserting unit removal pin into the hole in the bracket to release the locking hook, then slide the bracket free from the shoulder screws.
2. Use the bracket to mark the locations for drill holes on the mounting surface.

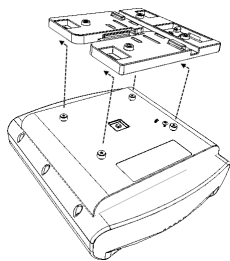
**NOTE:** Be sure to use the wall mount holes - not the AP mounting keyholes - to mark the locations.

**FIGURE 5** Wall mount holes



3. Use a 4.75 mm (3/16") drill bit to drill holes approximately 25 mm (1") deep into the mounting surface.
4. Insert the four wall mount anchors into the holes.
5. Attach the bracket to the mounting surface using the four wall mounting screws.
6. Place the AP against the mounting bracket so that the shoulder screws go into the mounting keyholes of the bracket, and gently slide the AP until it locks.

**FIGURE 6** Attach the AP to the bracket mounted on a flat surface



**Making the Connections**

Be sure to use a Cat 5e or better Ethernet cable with non-booted connectors.

**FIGURE 7** Non-booted Ethernet Connector



If using PoE, attach one of the Ethernet cable to an 802.3at Type 2-certified switch or PoE injector (sold separately). Attach the other end of the Ethernet cable to the PoE in Ethernet port [E] on the AP as shown in the Figure below. If using an AC/DC adapter, connect it to the power port [F] and to an electrical outlet.

**FIGURE 8** Port Locations



**Checking the LED Lights**

LED lights verify the installation of APs. Once connected, the AP will power on and automatically connect to the Ruckus Cloud over the Internet to configure itself. You will

see some activity and after 5-10 minutes all lights should turn solid Green or solid Amber (LTE LED) . If any light is off or flashing, see the following table to help you troubleshoot an issue:

| Light | Troubleshooting Action                                                                      |
|-------|---------------------------------------------------------------------------------------------|
| PWR   | Check Power, Ethernet connections and PoE (802.3at Type-2 (PoE+) Certified) switch.         |
| EMS   | Check Internet connection and network/firewall settings.                                    |
| EPC   | Check Internet connection and network/firewall settings.                                    |
| SYNC  | Ensure at least one AP in the network is near an unobstructed window for a good GPS signal. |
| LTE   | For additional guidance, use the Ruckus cloud or contact Customer Care.                     |

**For More Information**

The AP is now operational and can be further managed by the Ruckus Cloud service. For more information, refer to the appropriate Ruckus Wireless Cloud documentation or visit <http://support.ruckuswireless.com>

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