



CFSA69594P / CFSA69594P1

5G Ceiling Mount DAS Antennas Assembly and Installation Instructions

CFSA69594P and CFSA69594P1 are low-PIM, indoor, wideband, omnidirectional low-profile ceiling mount DAS antennas. Designed to provide pattern coverage that is optimized for indoor coverage requirements at 698-960 MHz and 1690-5925 MHz for 5G, 4G/LTE and older cellular networks. Applicable for environments where wide-angle coverage is necessary for a successful wireless deployment, while maintaining desired in-building aesthetics.

FEATURES AND BENEFITS

- 5G sub-6 GHz networks including C-Band, CBRS, LAA
- Ultra-low profile
- Ultra-low and optimized PIM rating less than -163 dBc
- Mounts directly and easily to ceiling tile or hard ceilings
- Radome is paintable using commonly available spray paints (must not contain metal)
- UL94-V0 flammability rating
- Plenum-rated cable

ELECTRICAL SPECIFICATION

Operating Frequency (MHz)	698-824	824-894	880-960	1350-1550	1690-1880	1850-1990	1910-2200	2300-2700	3300-4000	4000-4200	5150-5925
Peak Gain - Average (dBi)	3.2	3.0	2.6	3.8	5.2	5.4	5.3	5.2	3.7	3.8	4.4
Peak Gain (dBi)	3.7	3.4	3.2	4.5	5.4	5.6	5.6	5.6	4.3	4.1	4.9
PIM - 2x20W - Ave (dBc)	<-166							<-163	<-164		-
PIM - 2x20W - Max (dBc)	< -150										-
Nominal Impedance (Ohms)	-50										
Polarization	Linear - Horizontal										
Azimuth Beamwidth	360°, Omnidirectional										

MECHANICAL SPECIFICATION

Ports	1
Cable Length / Connector (cm)	Standard 30 cm, available Type N (female) and 4.3-10 (female)
Radome	PC, UL94-V0 (White)
Mounting	Ceiling mount (flush mount with screws or anchors)

SAFETY

The CFSA69594P/CFSA69594P1 and all associated equipment should be installed in accordance with all applicable local and national electrical code guidelines to ensure safe operation.

APPLICATION

These antennas are designed to provide simultaneous omnidirectional coverage in 698-960/1350-1550/1690-4200/5150-5925 MHz bands for indoor applications. All bands may be transmitted or received without interference from the other and the antenna requires only one connection.

LOCATION

For best results, mount the antenna above exterior obstructions in a location near the center of the coverage area. A line-of-sight path between the antenna and active locations generally works best. Frequency signals penetrate cubical dividers, partitions, and interior walls with little attenuation. However, reinforced block walls, metal surfaces, and steel shelving may attenuate signals or cause multipath, a condition where reflected signals interfere with the primary signal path. Avoid mounting next to a column or vertical support that could create a “shadow zone” of reduced coverage to one portion of the room.

Avoid installing antenna on a metal backed ceiling or metal structure for best performance. Any metal structure may detune the antenna. If installation below metal structure is unavoidable, a minimum distance of 75mm (2.95”) or more from the metal surface is recommended.

MOUNTING

For a hard ceiling installation, the CFSA69594P1 model is recommended. Two sets of mounting screws and anchors can be used to secure the antenna onto the ceiling (Figure 1).

For a ceiling tile mount or when access is available to both sides of the mounting surface, the CFSA69594P1 model is recommended. A threaded post on the back of the antenna and a supplied mounting nut is supplied for this mounting method. Mark the desired mounting location on the tile and cut a Ø30 mm (1.18”) hole for the threaded post. Feed the cables through the hole and secure the antenna with the mounting nut and gasket if necessary (see Figure 2).

MECHANICAL DRAWINGS

FIGURE 1 - HARD CEILING MOUNT

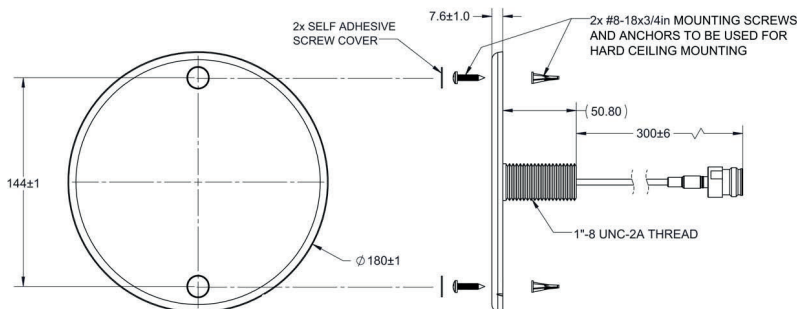
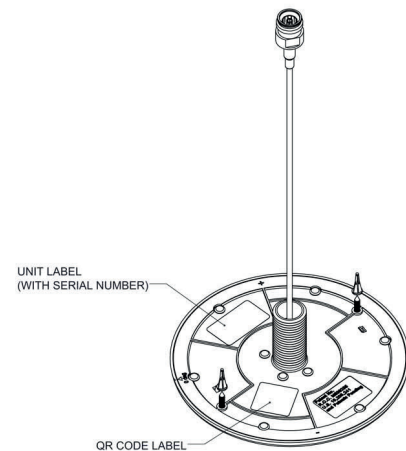
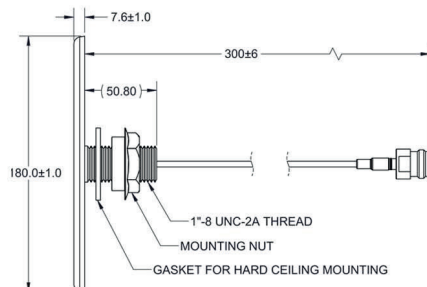
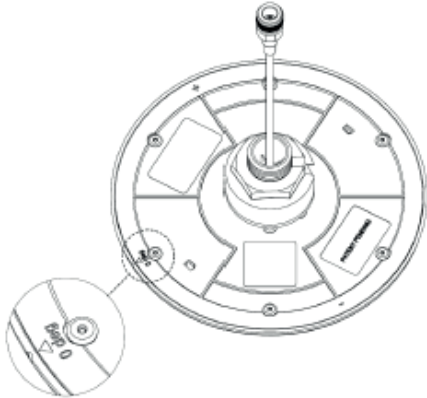


FIGURE 2 - CEILING TILE MOUNT



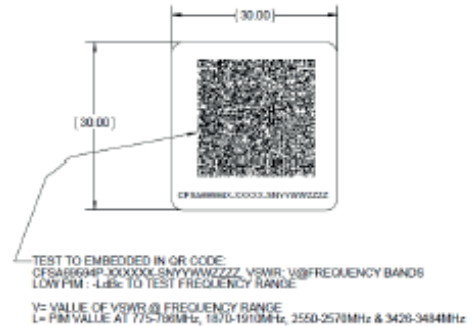
ANGLE MARKING

0° Δ marking below the antenna base plate indicates a zero-degree angle of azimuth plane radiation pattern.



QR CODE

There is a unique QR Code placed on the back of each antenna. Your system manager can simply scan the code with a smartphone and see all of the required performance data of the antenna. This solution provides fast and accurate data which allows customers to track more information than they could previously.



PRECAUTION

To avoid damage of the connector joint, use the correct size of wrench to hold the connector female body shell properly during tightening. Use a 14-mm wrench for the N connector or 18 mm wrench for the 4.3-10 connector.

For best PIM results, do the following:

1. Make sure the connectors are clean and free from any metal flakes or dirt.
2. Tighten the connector using a torque wrench. Follow the torque specified below:

4.3-10 Type	N-Type
44.3 lbs in (5 Nm)	25 lbs in (2.82 Nm)

3. Avoid extreme bending of the cables.
4. Do not remove the dust cap from the connector when not in use.

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