

Antenna report

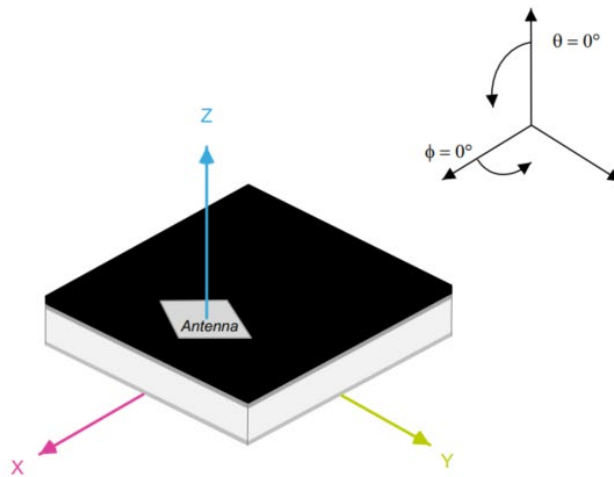


6 Integrated antenna characteristics

The package embeds an aperture coupled patch single antenna, with dual-linear polarization and 45° tilt, which allows the use of the same device for both sides of the link. It operates in Half-Duplex mode and features a weak back-radiation on the PCB.

Nevertheless, particular care must be taken for the PCB implementation. This is especially the case for the ST60A3H1 grounding on the board, as the antenna radiated performance can vary for different PCB implementations.

Figure 28. Antenna positioning (3D view)



The antenna's directivity is optimized along the Z axis, with an aperture opening that accommodates +/- 2 mm alignment, considering an operating range of 30 mm. Both 180° relative orientations are supported as shown in Figure 29.

Figure 29. Supported ST60A3H1 180° relative orientations



The integrated antenna broadside radiation pattern is described in Figure 30.

Figure 30. EIRP - measured 3D radiation pattern

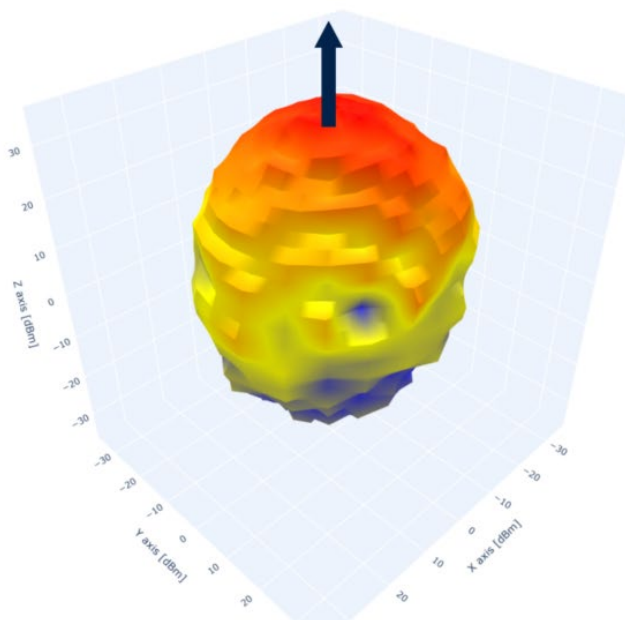


Table 36. Antenna-in-package key features

Parameter ⁽¹⁾	Value
Center frequency	60.5 GHz
Operational bandwidth	From 60 GHz to 61 GHz (1 GHz)
Polarization	Dual linear
Antenna number	Single antenna
Tx gain ⁽²⁾	4 dBi along the Z axis
Rx gain ⁽²⁾	4 dBi along the Z axis
3 dB aperture	E-Plane: +/- 55° H-Plane: +/- 45°
PCB immunity	10 dB minimum front to back ratio
XY offset	+/- 2 mm

1. These can vary with PCB implementation.

2. Far-field gain established when the distance between antennas is at least 15 mm.