

R770 Antenna Gains

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This document provides the azimuth cuts containing the maximum antenna gain at the listed frequencies

Frequency Bands

No	Operational Band	Center Freq.	Designator
1	2400 - 2483.5 MHz	2.45 GHz	ISM
2	5150 - 5250 MHz	5.15 GHz	UNII-1
3	5250 – 5725 MHz	5.5 GHz	UNII-2
4	5725 – 5850 MHz	5.8 GHz	UNII-3
5		5.9 GHz	UNII-4 (Not used; data not provided)
6	5925 – 6425 MHz	6.2 GHz	UNII-5
7	6425 – 6525 MHz	6.5 GHz	UNII-6
8	6525 – 6875 MHz	6.65 GHz	UNII-7
9	6875 – 7125 MHz	7 GHz	UNII-8

All antennas of access point R770 were measured in a Satimo Stargate quasi-nearfield range with Jim Jervis as operator. Each antenna was measured over the 2.4 GHz band and over each of the UNII bands. The maximum gain was taken from the measurements and is listed in the table on the following page. All antennas are omni-directional and are integrated within the product. The product is in development and therefore the test unit has no serial number.

The product has 8 transmitting antennas: a horizontally polarized dual-band 2.4/6 GHz antenna, two horizontally polarized 5 GHz antennas, two vertically polarized 5 GHz antennas, a vertically polarized dual-band antenna for 2.4/6 GHz, and two 2.4 GHz IOT antennas, mostly vertically polarized.

Location of antennas are shown below:

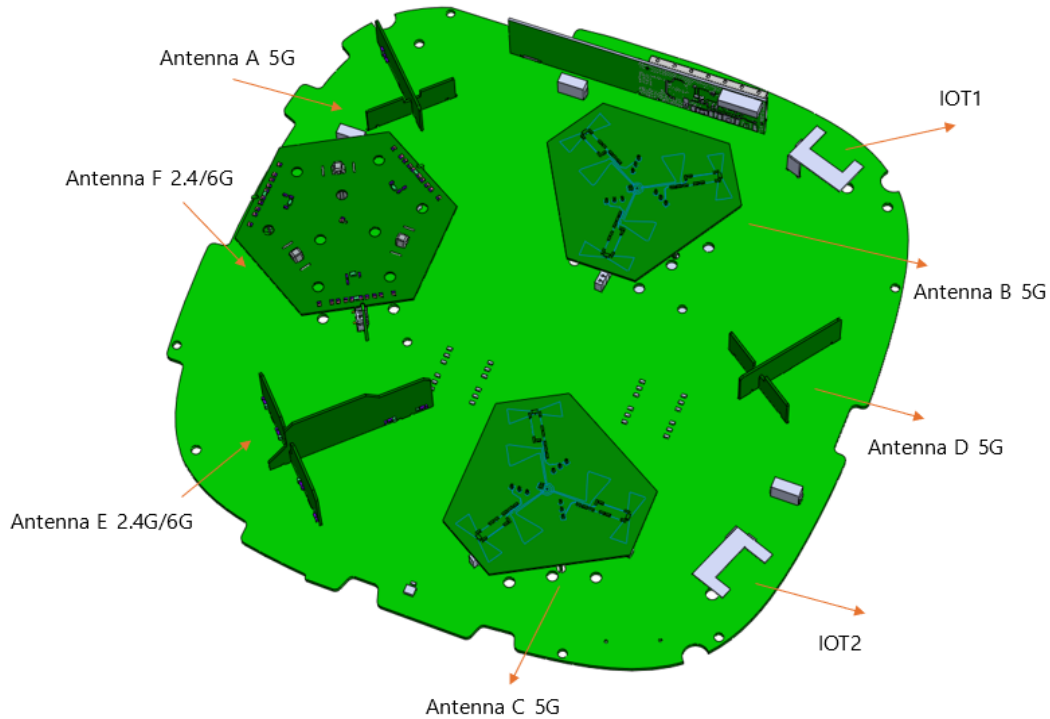


Fig. 1. Antenna Locations on the Antenna Support Board

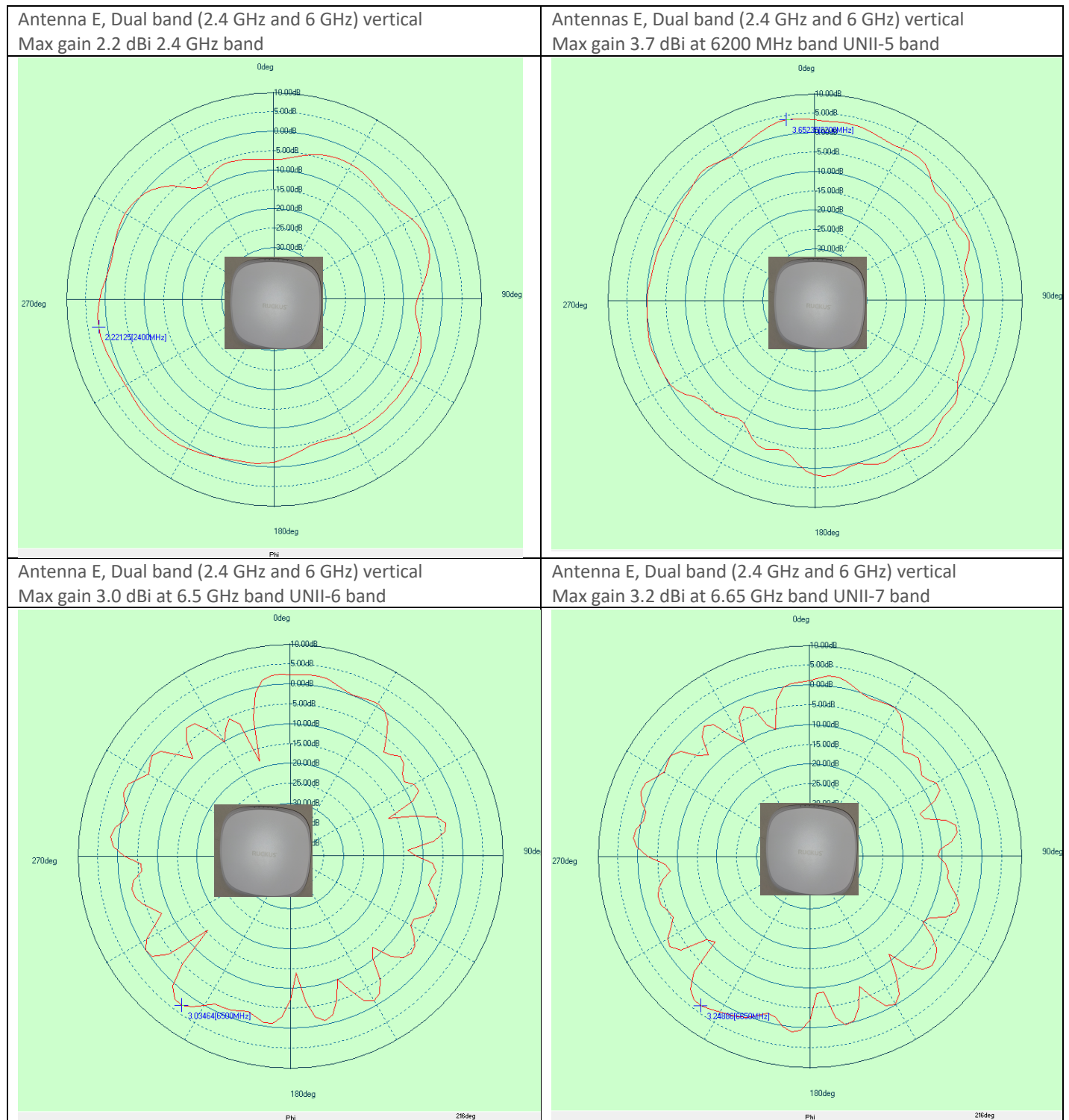
This Product deploy distinct MIMO system where dual RF outputs for each WiFi radio are connected each to linearly cross polarized antennas which are mounted on Main board as indicated in Exhibits - Internal pictures.

Horizontal and Vertical internal antennas are cross-polarized to ensure transmitting outputs are orthogonally polarized replicas of each other and the phase centers of the two antennas are co-located.

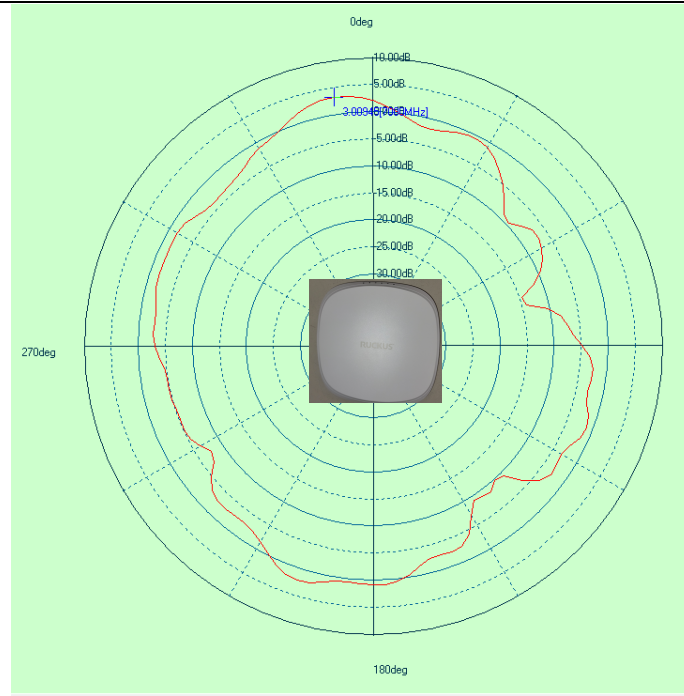
Antenna Gain Table		
Antenna	Frequency band	Max Gain (dBi)
Dual-band vertical	2.4 GHz	2.2
Dual-band vertical	UNII-5	3.7
Dual-band vertical	UNII-6	3.0
Dual-band vertical	UNII-7	3.2
Dual-band vertical	UNII-8	3.0
Dual-band horizontal	2.4 GHz	2.1
Dual-band horizontal	UNII-5	3.0

Dual-band horizontal	UNII-6	3.5
Dual-band horizontal	UNII-7	4.1
Dual-band horizontal	UNII-8	3.1
5 GHz verticals	UNII-1	3.6
5 GHz verticals	UNII-2	3.2
5 GHz verticals	UNII-3	3.2
5 GHz horizontals	UNII-1	3.1
5 GHz horizontals	UNII-2	3.2
5 GHz horizontals	UNII-3	2.9
IOT antennas	2.4 GHz	1.8

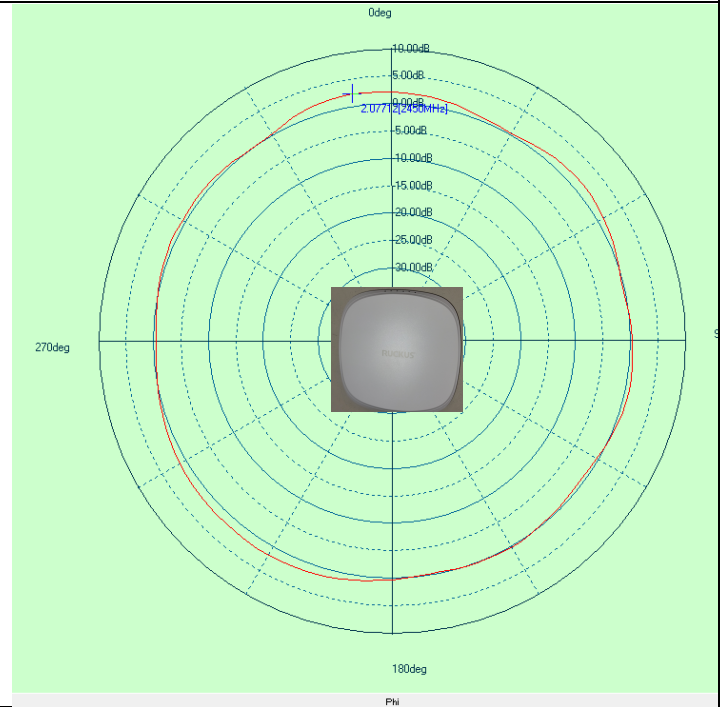
Antenna Patterns:



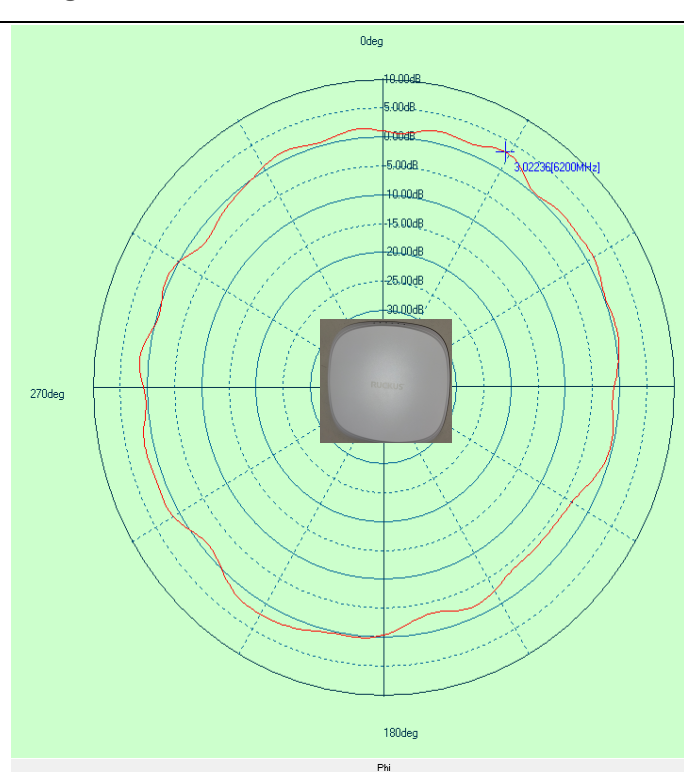
Antenna E Dual band (2.4 GHz and 6 GHz) vertical
Max gain 3.0 dBi at 7.0 GHz band UNII-8 band



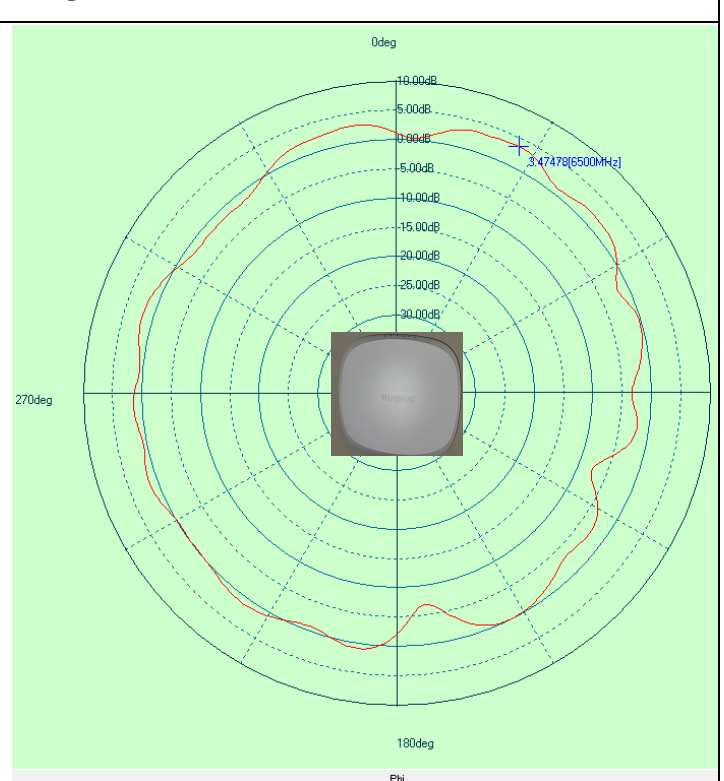
Antenna F, Dual band (2.4 GHz and 6 GHz) horizontal
Max gain 2.1 dBi 2.4 GHz band



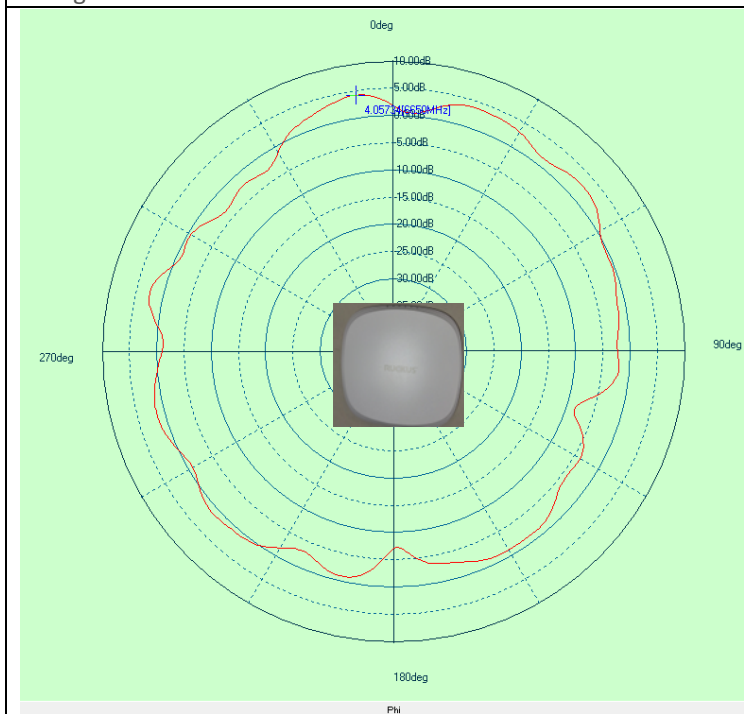
Antenna F, Dual band (2.4 GHz and 6 GHz) horizontal
Max gain 3.0 dBi in 6.2 GHz UNII-5 band



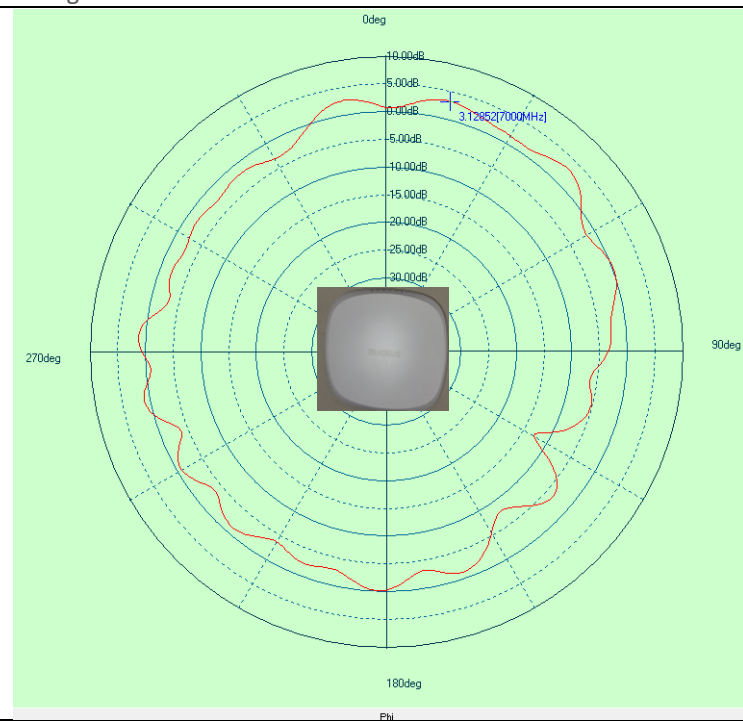
Antenna F, Dual band (2.4 GHz and 6 GHz) horizontal
Max gain 3.5 dBi in 6.5 GHz UNII-6 band



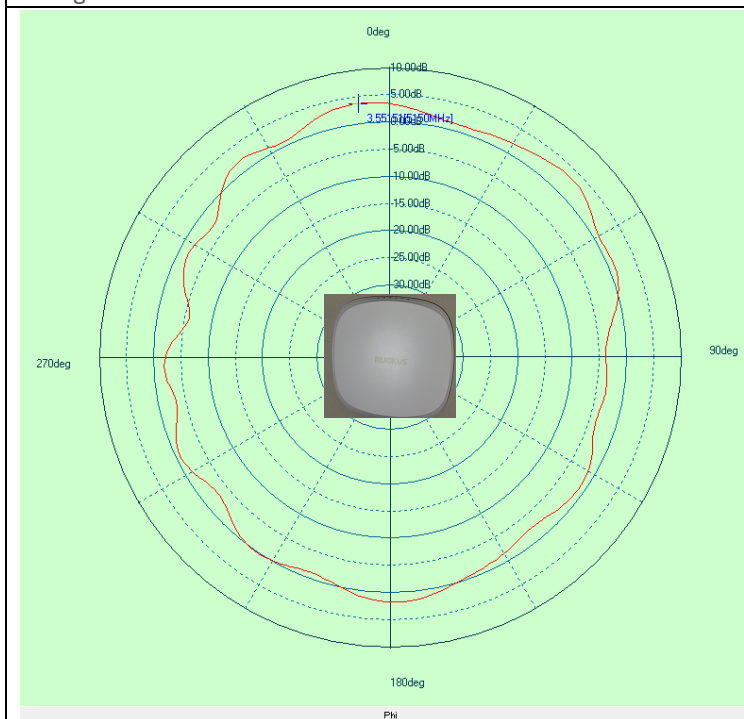
Antenna F, 6 GHz vertical
Max gain 4.1 dBi in 6.65 GHz UNII-7 band



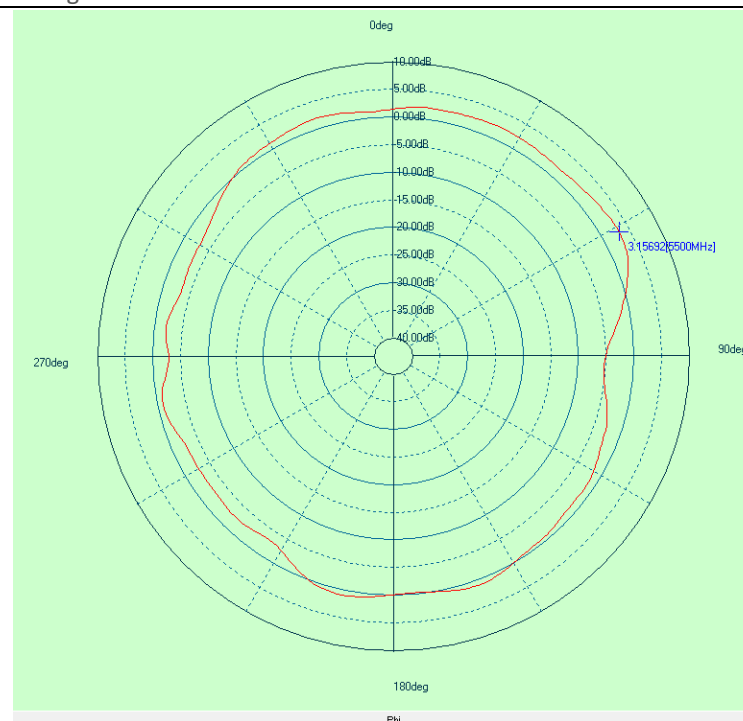
Antennas F, 6 GHz vertical
Max gain 3.1 dBi in 7.0 GHz UNII-8 band



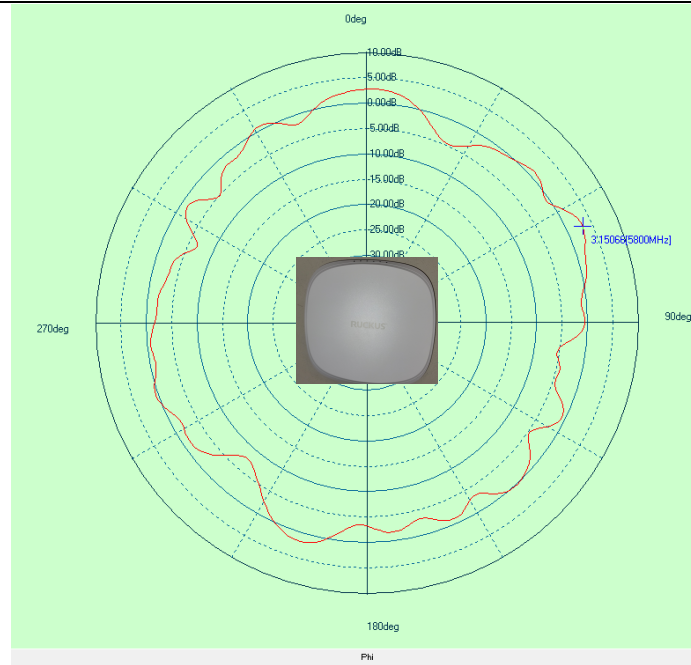
Antennas A and D, 5 GHz vertical
Max gain 3.6 dBi in 5.15 GHz UNII-1 band



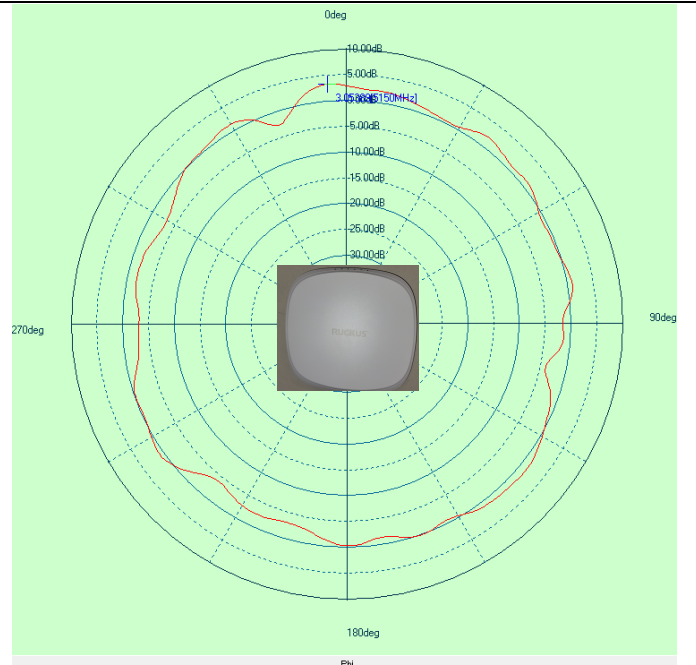
Antennas A and D, 5 GHz vertical
Max gain 3.2 dBi in 5.5 GHz UNII-2 band



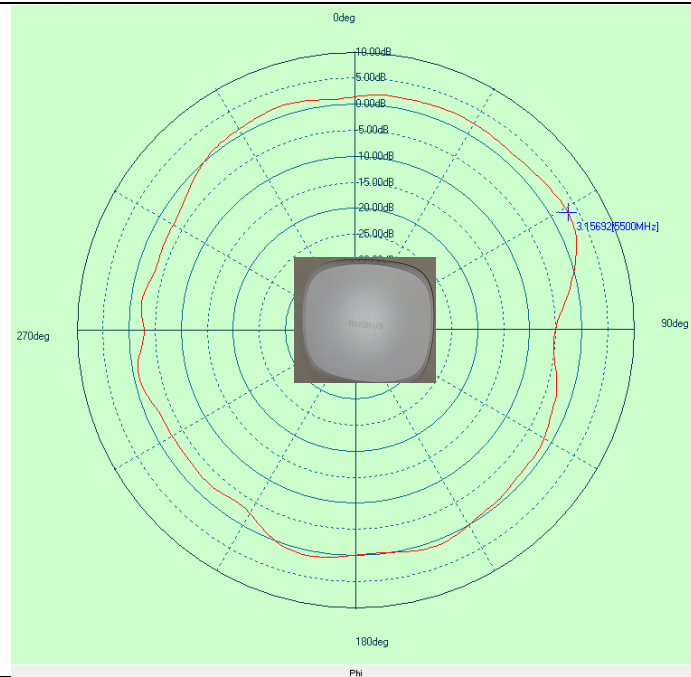
Antennas A and D, 5 GHz vertical
Max gain 3.2 dBi in 5.8 GHz UNII-3 band



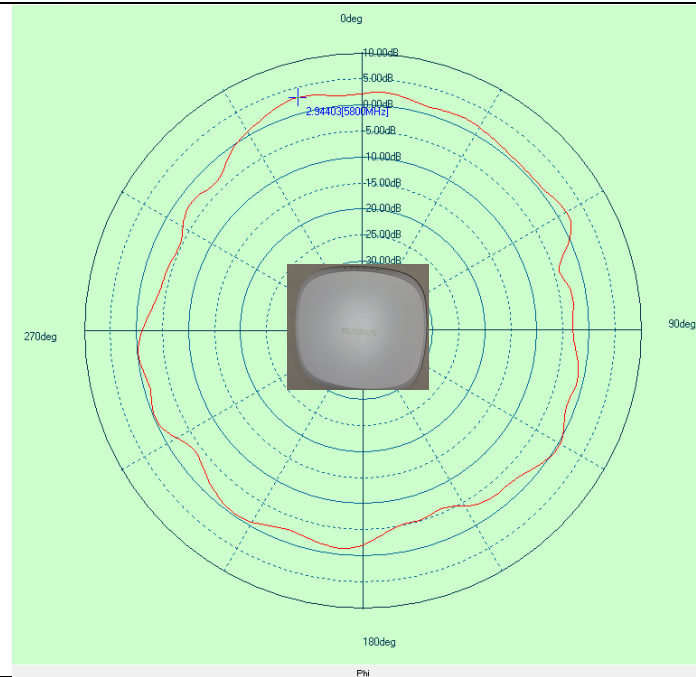
Antennas B and C, 5 GHz horizontal
Max gain 3.1 dBi in 5.15 GHz UNII-1 band

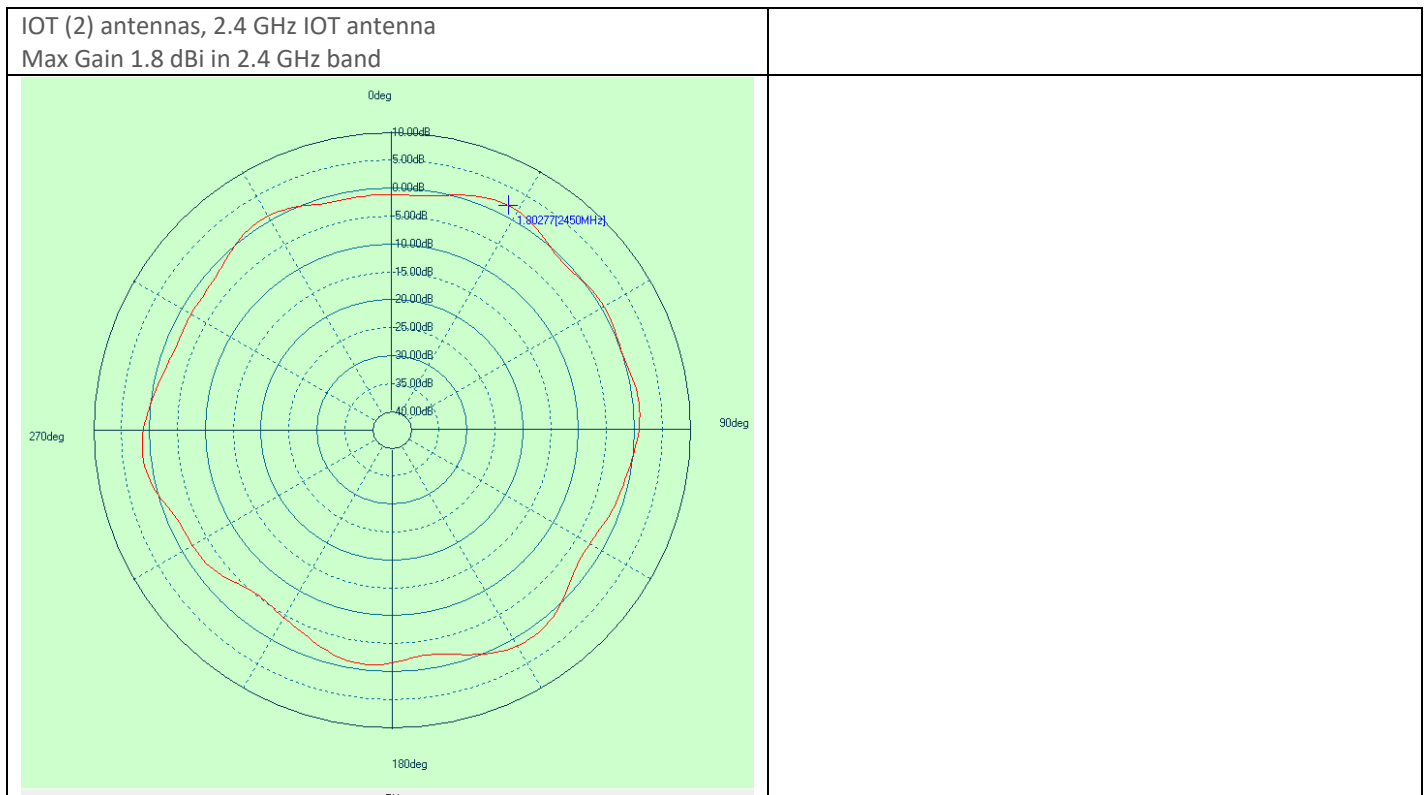


Antennas B and C, 5 GHz horizontal
Max gain 3.2 dBi in 5.5 GHz UNII-2 band



Antennas B and C, 5 GHz horizontal
Max gain 2.9 dBi in 5.8 GHz UNII-3 band





Test Setup Photos

