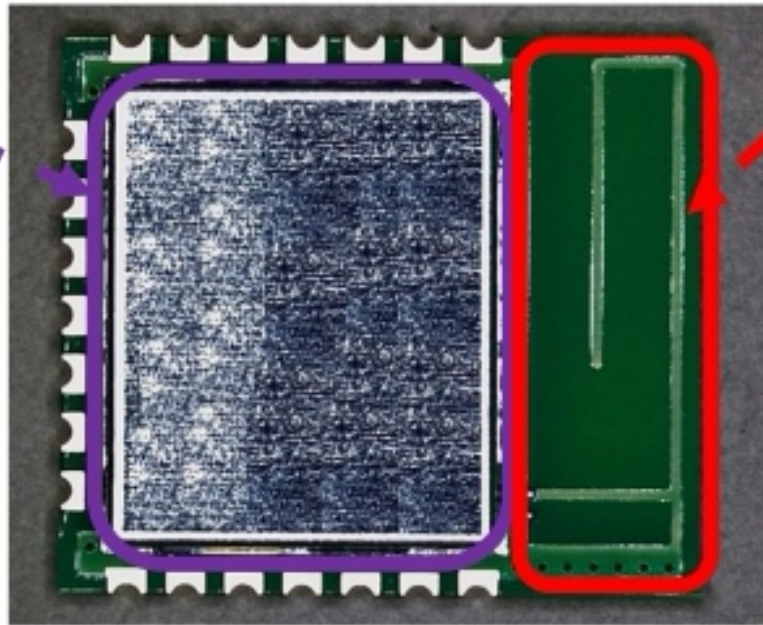
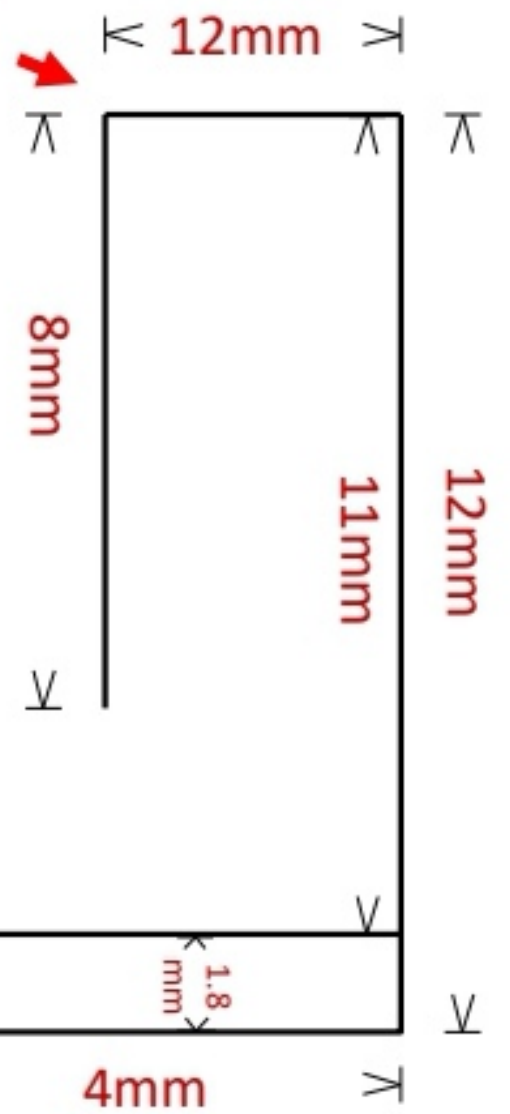


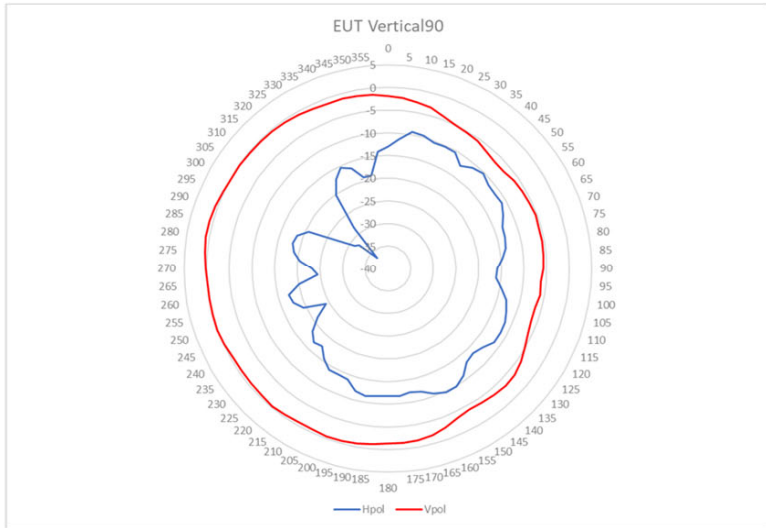
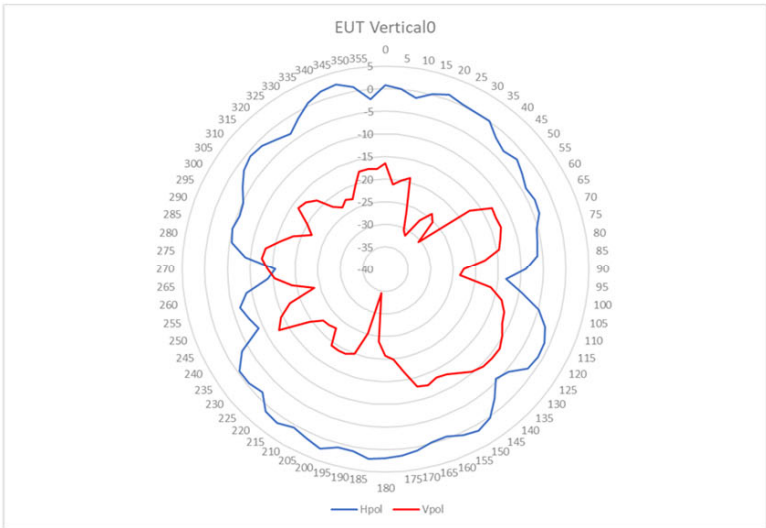
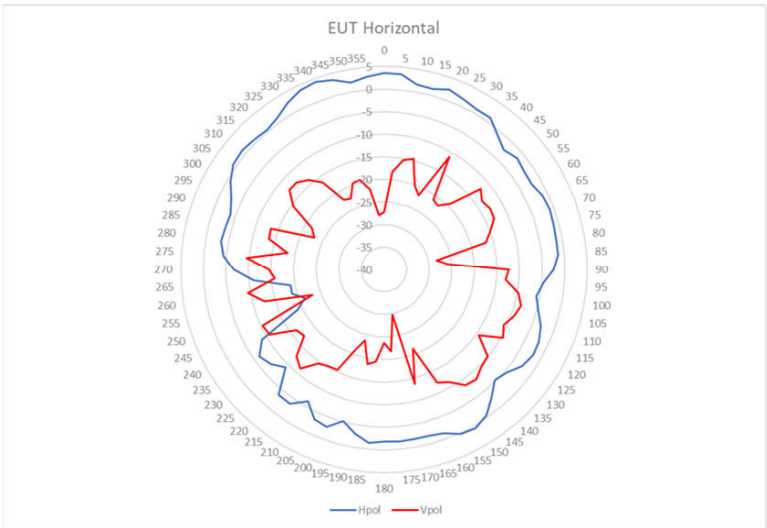
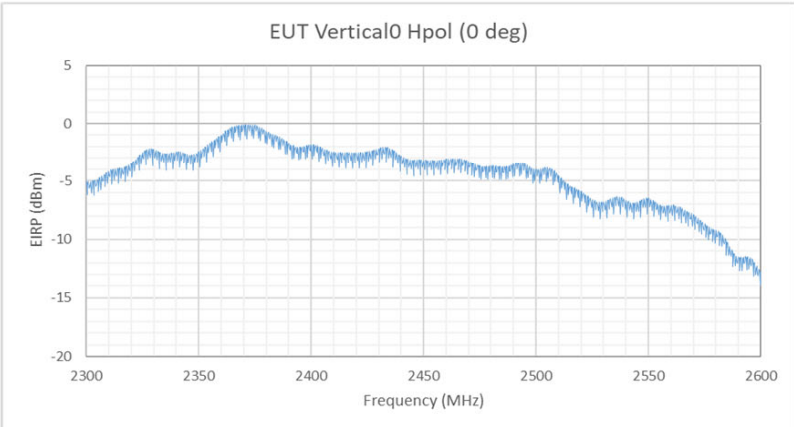
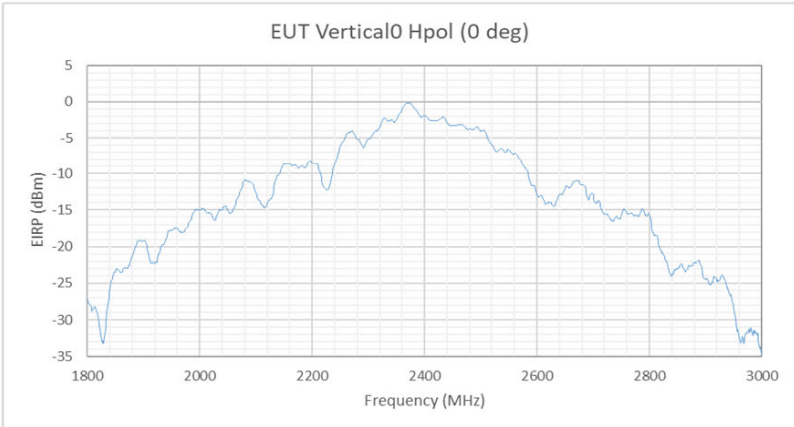
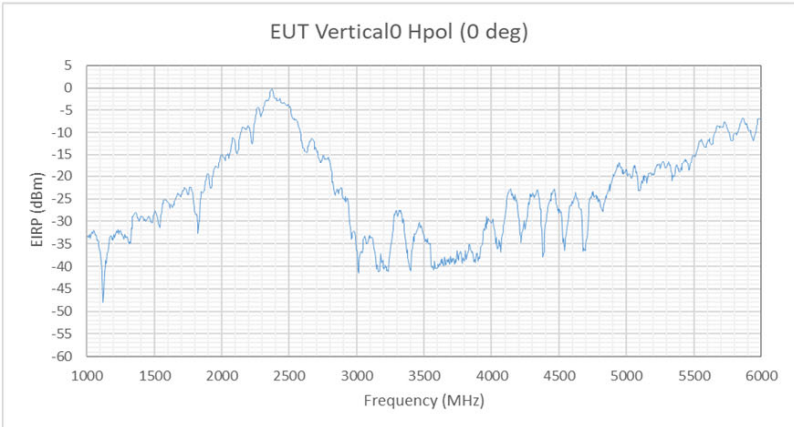
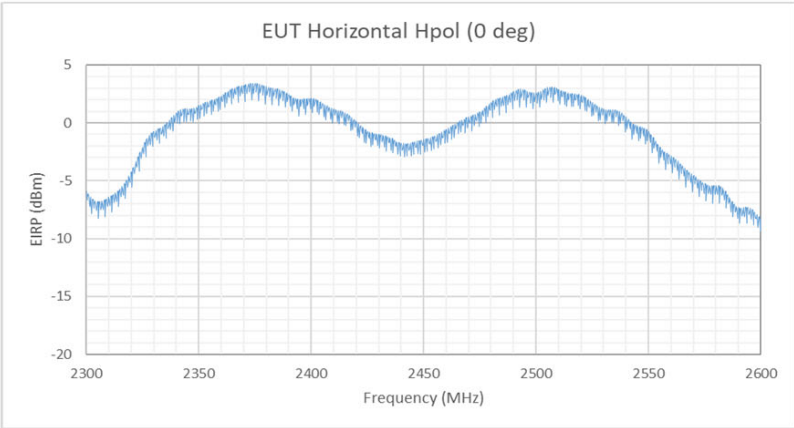
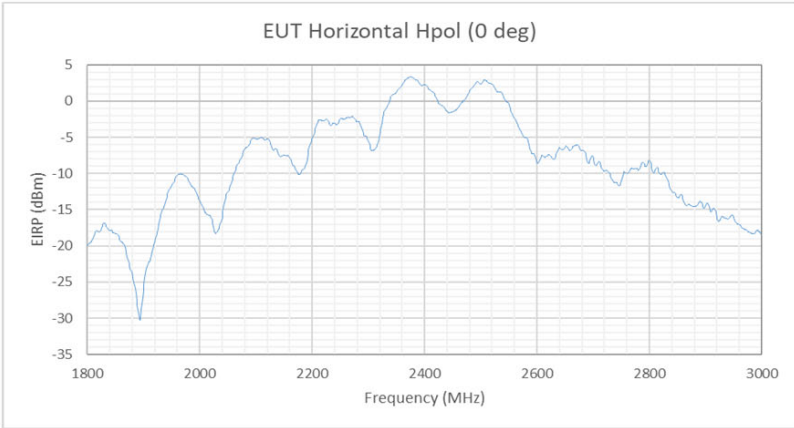
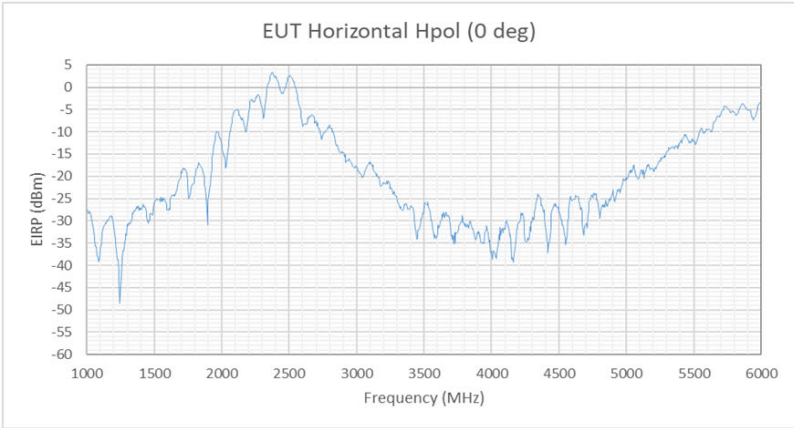
CYW43439KUBG
WiFi & BT Radio
Chip



PCB Trace
Antenna

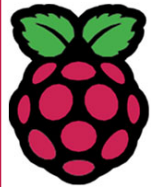
CYW43439KUBG
WiFi & BT Radio
Chip





RMC2GW4B52 Antenna Details

Maximum Gain = 4.2dBi
Operating Frequency = 2400MHz to 2483.5MHz
Antenna Type = Integral (PCB Substrate)



Raspberry Pi LTD
194 Cambridge Science Park
Milton Road
Cambridge
CB4 0AB
United Kingdom
raspberrypi.com

Raspberry Pi RMC2GW4B52 Antenna Description

Showing the Radiated Pattern and Frequency Response of the Antenna Circuitry

Laboratory testing results showing the radiation pattern of the Raspberry Pi RMC2GW4B52 Antenna in the vertical and horizontal polarisation.



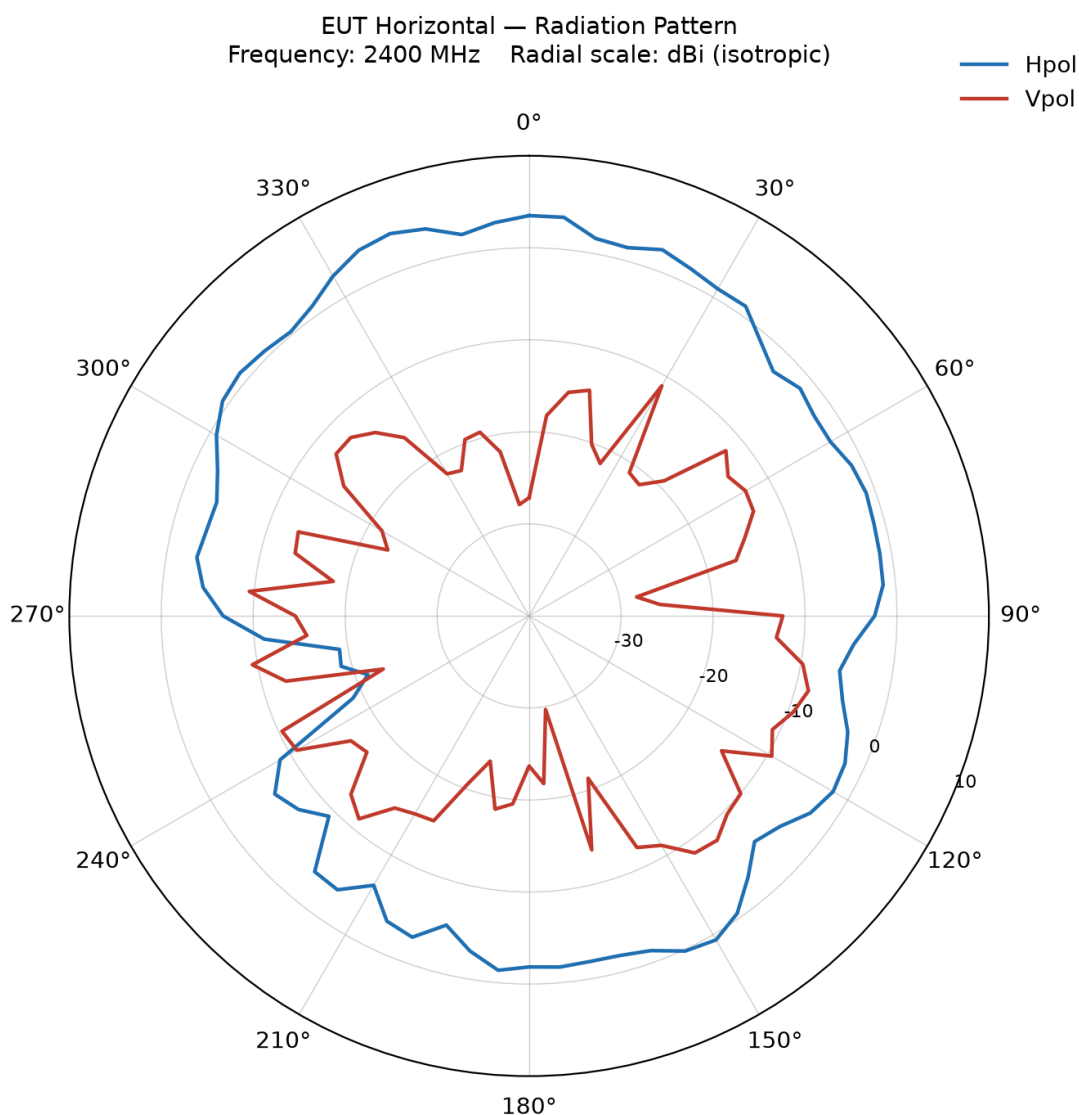
Raspberry Pi RMC2GW4B52 Antenna

Description

Frequency: 2400 MHz. Radial scale: dBi (gain relative to an isotropic radiator). The EUT conducted input power was 0 dBm throughout, so the plotted EIRP (dBm) values are numerically equal to gain (dBi). Each chart shows both the horizontally-polarised (Hpol) and vertically-polarised (Vpol) receive traces at every azimuth angle.

Figure 1.

EUT Horizontal orientation, 2400 MHz. Peak: 4.2 dBi (Hpol) at 340°.

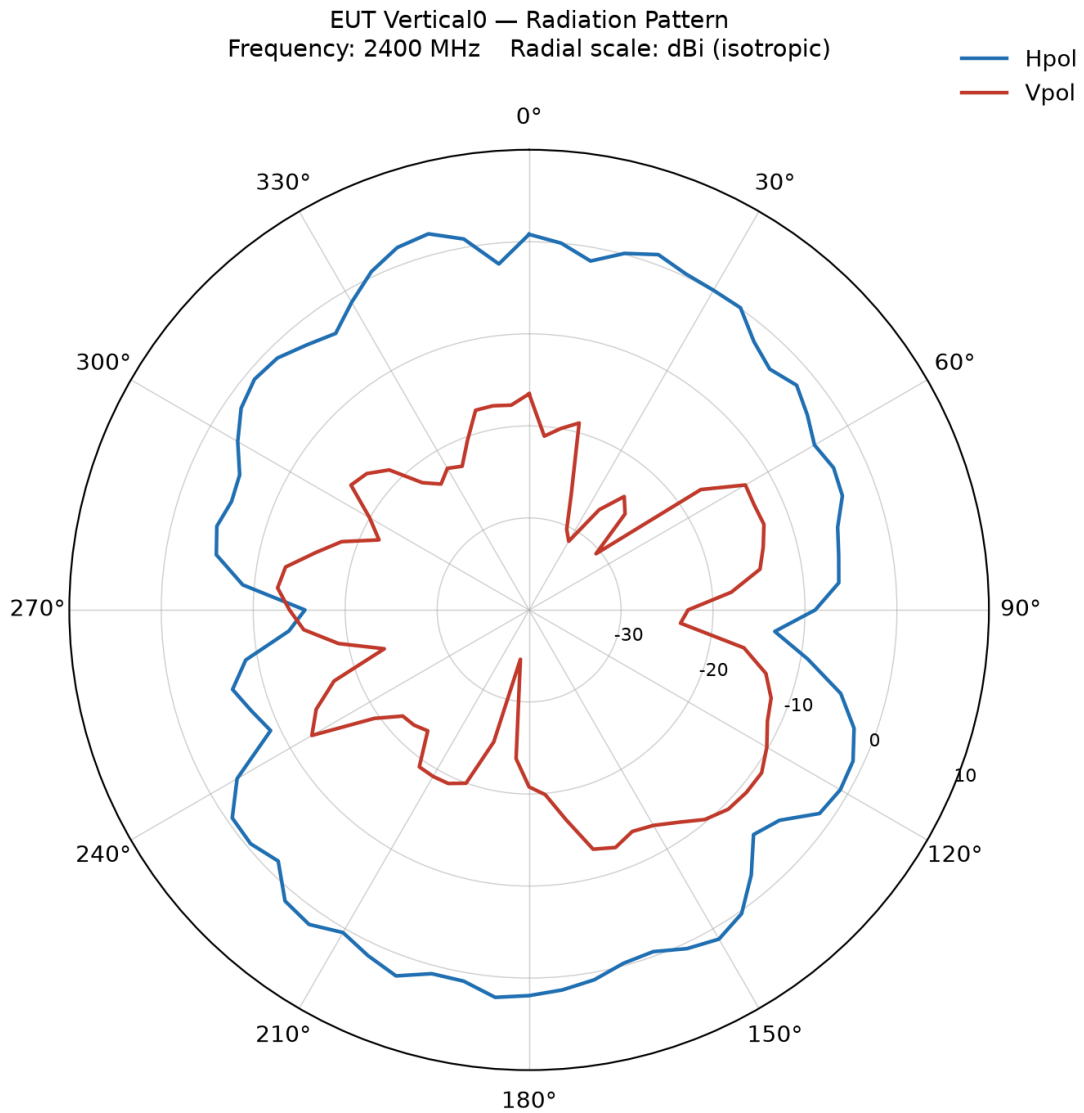


Peak gain: 4.2 dBi (Hpol) at 340° | Conducted input power: 0 dBm | RMC2GW4B52, Eurofins E&E, Oct 2023



Figure 2.

EUT Vertical0 orientation, 2400 MHz. Peak: 2.3 dBi (Hpol) at 200°.

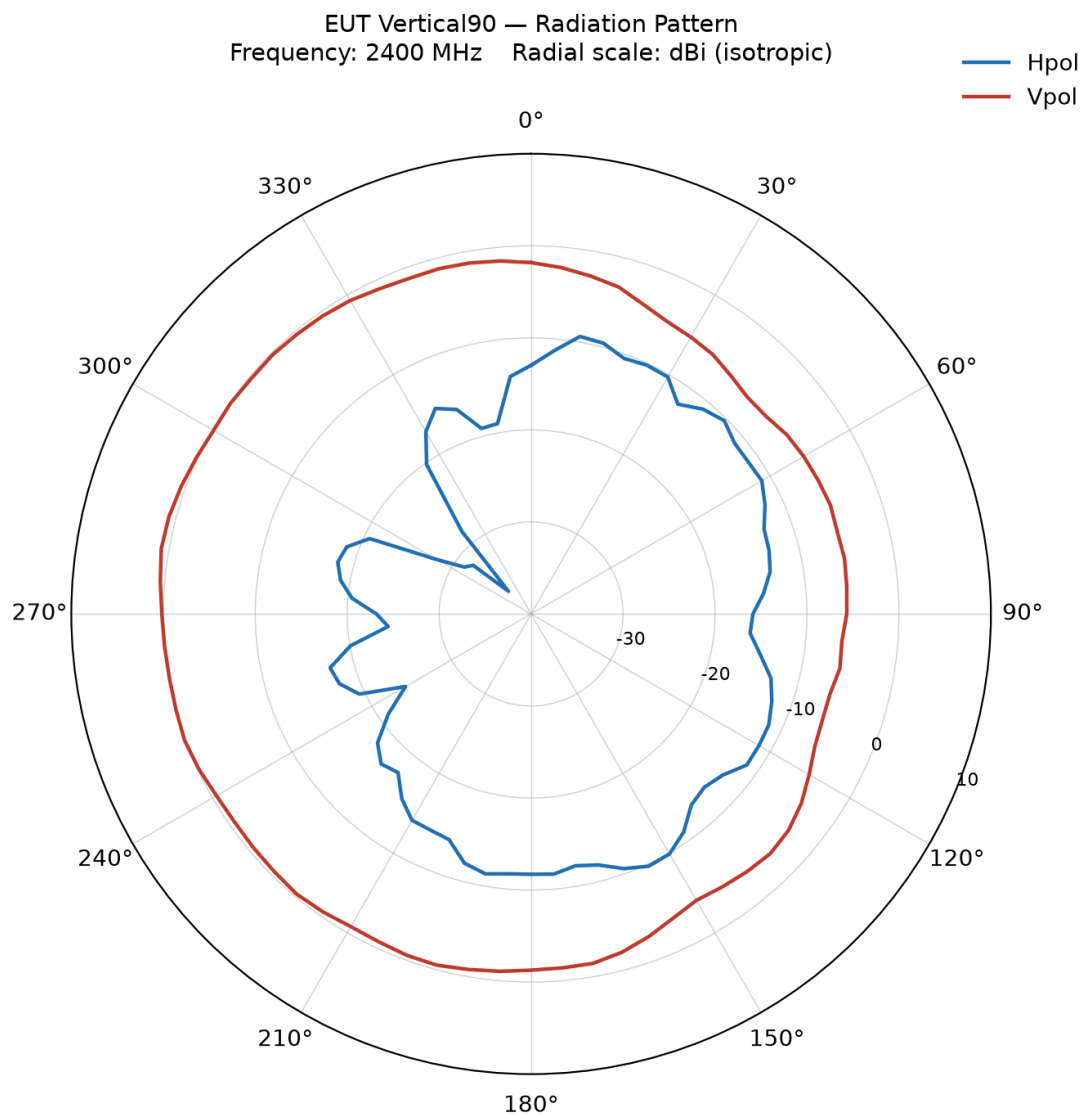


Peak gain: 2.3 dBi (Hpol) at 200° | Conducted input power: 0 dBm | RMC2GW4B52, Eurofins E&E, Oct 2023



Figure 3.

EUT Vertical90 orientation, 2400 MHz. Peak: 0.8 dBi (Vpol) at 280°.



Peak gain: 0.8 dBi (Vpol) at 280° | Conducted input power: 0 dBm | RMC2GW4B52, Eurofins E&E, Oct 2023



Maximum Gain

Peak EIRP recorded for each orientation and receive polarisation across the full 360° angular sweep at 2400 MHz:

EUT orientation	Rx polarisation	Peak azimuth angle	Peak EIRP = Gain (dBi)
Horizontal	Hpol	340°	4.2
Horizontal	Vpol	140°	-8.2
Vertical0	Hpol	200°	2.3
Vertical0	Vpol	125°	-9.1
Vertical90	Hpol	10°	-9.4
Vertical90	Vpol	280°	0.8

The overall maximum occurs with the EUT in the Horizontal orientation, Hpol receive, at azimuth 340°:

Gain = 4.2 dBi

Gain vs. Frequency

EIRP vs. frequency, turntable fixed at 0°, Hpol receive, 0 dBm conducted input. The antenna's resonance is centred close to 2.4 GHz, consistent with the peak found in the angular sweep.

Figure 4.

EIRP vs. frequency, EUT Horizontal and Vertical0, turntable at 0°, Hpol receive, 0 dBm conducted input.

