

# Comparison of POYNTING XPOL-1-5G V2 vs V3

## Contents

Summary of Technical and Performance Differences .....	1
Gain across Frequency Bands .....	2
Expected Performance in Different Environments .....	2
Summary of Improvements in XPOL-1-5G+ .....	3
Conclusion .....	3

## Summary of Technical and Performance Differences

Feature	XPOL-1-5G (V2)	XPOL-1-5G+ (V3)	V3 Improvements
<b>Frequency Range</b>	617–3800 MHz	<b>410–6000 MHz</b>	<b>Much wider band coverage</b> (adds sub-500 MHz support and extended 6 GHz range)
<b>Peak Gain</b>	3.5 dBi	<b>7 dBi</b>	<b>Double the peak gain</b> — better signal strength and range
<b>Peak Gain by Band</b>	0.5 → 3.5 dBi	–4 → 7 dBi	Higher gain across frequency bands
<b>Radiation Pattern</b>	More uniform with better omnidirectionality	Higher gain causes more variations in the radiation patterns	
<b>MIMO Configuration</b>	2×2 or 4×4 MIMO	2×2 or 4×4 MIMO	Same options
<b>Polarisation</b>	Cross-polarised (Vertical and Horizontal)	<b>Cross-polarised (+45°, –45°, Vertical, Horizontal)</b>	<b>Better isolation and spatial diversity</b>
<b>VSWR</b>	≤ 2.5 : 1	≤ 2.5 : 1 (across 90% of bands)	Similar efficiency
<b>Coax Cable</b>	HDF 195 (5 m)	HDF 195 (5 m)	No changes

<b>Connectors</b>	SMA (M)	SMA (M)	No changes
<b>Mechanical Design</b>	IP65 ASA enclosure	IP65 ASA enclosure	Same enclosure
<b>Mounting Options</b>	Wall, pole, or window	Wall, pole, or window	No changes
<b>Weight (4x4)</b>	1.24 kg (1.34 kg packaged)	1.05 kg (1.45 kg packaged)	Slightly lighter device; similar overall shipping weight
<b>Dimensions</b>	246 × 157 × 88 mm	246 × 157 × 88 mm	Same enclosure

## Gain across Frequency Bands

Frequency Bands	XPOL-1-5G (V2)	XPOL-1-5G+ (V3)
410 – 470 MHz	NA	-4 dBi
617 – 960 MHz	0.5 dBi	1.5 dBi
1427 – 1517 MHz	2 dBi	2 dBi
1710 – 2700 MHz	3 dBi	6 dBi
3300 – 4200 MHz	3.5 dBi	7 dBi
4400 – 6000 MHz	NA	5 dBi

## Expected Performance in Different Environments

Environment	XPOL-1-5G (V2)	XPOL-1-5G+ (V3)	Summary
<b>Urban</b>	Excellent	Excellent	Both suitable, but V2's lower gain prevents overshoot and might be a more cost-effective solution.
<b>Suburban</b>	Good	Excellent	V3's higher gain extends reach to suburban or edge-of-coverage zones
<b>Rural / Remote</b>	Fair	Good	V3 presents a peak gain of around 2 dBi @ 610-960 MHz, making it better suited for rural areas
<b>Low-frequency (700 MHz or below)</b>	Supported down to 617 MHz	<b>Supports 410-470 MHz</b>	V3 future-proof for countries/carriers using sub-600 MHz bands (e.g. 450 MHz, 470 MHz)

High-frequency (5G mmWave)	Not supported (> 3800 MHz)	Up to 6000 MHz	V3 ready for extended 5G bands and CBRS+ ranges
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## Summary of Improvements in XPOL-1-5G+

### Main Performance Upgrades:

- **Peak Gain doubled** (3.5 → 7 dBi)
- **Frequency range expanded** (617–3800 → 410–6000 MHz)
- **Enhanced polarization** (adds +45 and -45 ° polarizations)
- **More future-proof** for emerging sub-1GHz and 5–6 GHz 5G bands
- **Broader use cases:** urban, suburban **and** rural

## Conclusion

The conclusion is that the **XPOL-1-5G+ (V3)**, with its higher gain on the lower frequencies, is a better option in rural areas. It is also a great option for suburban or even some urban areas, namely when a directional antenna may not be the best option (due to higher reliability/omni-directionality requirements or when obstructions directly impact the line of sight).

In contrast, the **XPOL-1-5G (V2)**, with its lower gain, is generally better suited for urban applications. The reduced gain provides better pattern control and a wider vertical aperture, improving signal capture in areas with obstructions and more challenging environments. In these areas, reflected signals can arrive from any horizontal or vertical directions, and a wider vertical aperture will be beneficial. Additionally, the V2 is a more cost-effective solution when cell towers are closer to the antenna installation location.