# Inbuilding

# CMMG-7-60-NJ

## Wideband MiMo Ceiling Antenna

08/04/2016 v6





Discreet ceiling mount design 2x ultra-wideband elements Concealed screw fixings Low PIM and SAR tested to EN50385:2002

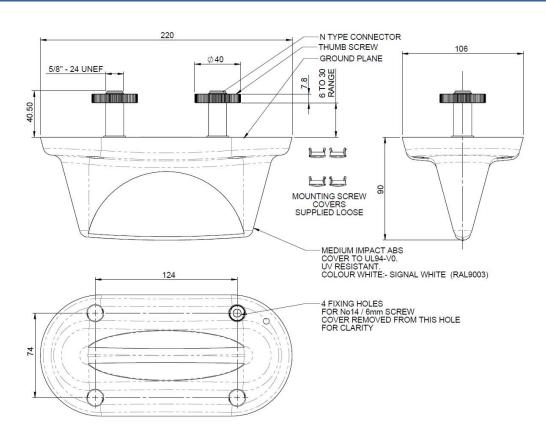
The CMMG-7-60-NJ ceiling antenna offers low PIM 2x2 MiMo coverage across 2G/3G & 4G frequencies (698-6000MHz) for inbuilding and DAS installations.

The antenna only requires two mounting holes for installation via the fitted low PIM N connectors but offers additional screw fixing holes disguised beneath press-fit caps. The antenna is ground plane independent and can be fitted onto both thick and thin ceiling tiles.



This product features Panorama Antennas' PIM Guard Technology and will typically meet or exceed a third order intermodulation level of -150dBC.\*

### Technical Specification

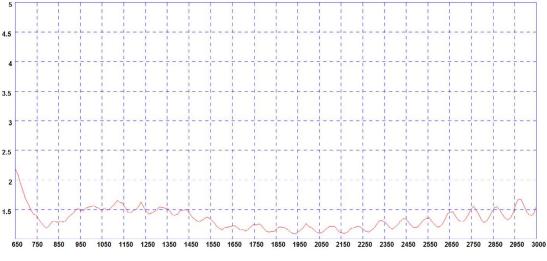


Typical 3D Gain Plot (800 MHz) Typical 3D Gain Plot (900MHz) Typical 3D Gain Plot (18/1900MHz) 2.73 2.39 2.85 1.71 1.82 8.3411 8.341 8.341 8.341 8.341 8.341 8.341 8.341 8.341 8.34 2.19 1.92 1.64 1.37 1.1 0.822 0.548 8.274 9.45 -14.73 -9.45 -14.2 -18.9 -23.6 -28.4 -33.1 -37.8 4.69 4.11 3.52 2.93 2.35 1.76 1.17 0.587 6 -4.41 -8.63 -13.2 -17.7 -22.1 -26.5 -38.9 -35.3 Typical 3D Gain Plot (2100MHz) Typical 3D Gain Plot (2600MHz) Typical 3D Gain Plot (5800MHz) 6.27 5.49 4.7 3.92 3.14 2.35 1.57 8.784 6 -4.22 -8.43 -12.6 -16.9 -21.1 -25.3 -29.5 -33.7 5.4 4.73 3.38 2.7 2.03 1.35 8.675 -4.32 -8.65 -13 -17.3 -21.6 -25.9 -30.3 -34.6 5.94 4.95 3.96 2.97 1.98 8.99 **Correlation Co-efficient** 0.5 0.4 0.3 0.2 0.1 0 0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3 3.2 3.4 3.6 3.8 4 4.2 4.4 4.6 4.8 5 5.2 5.4 5.6 5.8 6 Frequency / GHz \* Measured across connectors without cable. Total Efficiency 1 0.95 0.9 0.85 0.8 0.75 0.7 0.65 0.6 0.55 0.5

0.6 0.8 1 1.2 1.4 1.6 1.8 2 2.2 2.4 2.6 2.8 3 3.2 3.4 3.6 3.8 4 4.2 4.4 4.6 4.8 5 5.2 5.4 5.6 5.8 6 Frequency / GHz

\* Measured at connector without cable.

#### Typical Element VSWR (650MHz to 3GHz)\*



\*VSWR measured with 1m of CS29 (double shielded RG58) coaxial cable

Part No.		
		CMMG-7-60-NJ
Electrical Data (both	elements)	
Frequency Range (MHz)		698-960 / 1710-6000
Operational bands		2G/3G/4G/WLAN/WIMAX
Radiation pattern		Omni-directional
Typical VSWR		<2.5:1
Correlation Co-efficient		<0.1
Isolation (across connectors)		>15dB
Peak Gain (both elements fed)	698-960MHz	2dBi
	1710-2170MHz	5dBi
	2200-6000MHz	7dBi
Typical Passive intermod. (2x20W, 3rd ord.) dBc *		<-150
SAR and 'Touch Safe' Test Data		According to 50385:2002 (Bands: 850, 900, 1800, 2100, 2600MHz)
Max input power (W)		50 Watts
Impedance		50Ω
Mechanical Data		
Dimensions (mm)	Height	90 (3.5")
	Length	220 (8.66″)
	Width	106 (4.17")
Operating temp (°C)		-30° / +70°C (-22° /158°F)
Material		U.V. Stabilised flame retardant ABS, aluminium base plate
Colour		White
Mounting Data		
Fixing		4 x 6mm screw fixing holes and/or 2x N socket lock wheel
Diameter (mm)		6 (0.24") / 15.9 (5/8")
Depth (mm)		41 (1.6")
Termination		2x N Socket

\*Typical Range PIM performance verified @ 1900MHz under controlled conditions by Anritsu PIM Master test equipment.



Panorama Antennas Ltd Frogmore, London, SW18 1HF, United Kingdom T: +44 (0)20 8877 4444 F: +44 (0)20 8877 4477 E: sales@panorama-antennas.com www.panorama-antennas.com

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