

5985308NG

7-Band, 14-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 1497 mm

- Hepta band antenna, dual polarisation, 14 connectors
- Independent, continuously adjustable tilt on each band 2-12° / 2-12° / 2-12° / 2-12° / 2-12° / 2-12° / 2-12°
- RET version, 3GPP/AISG2.0 with seven integrated RCUs

ACCESS PORT DESCRIPTION (CONNECTORS)

The antenna has 14 colour-coded connectors located at the bottom face.

Frequency Designation	R1	R2	Y1	Y2	Y3	Y4	Y5
Frequency Range	694-960 MHz	694-960 MHz	1710-2690 MHz	1710-2690 MHz	1710-2690 MHz	1710-2690 MHz	1710-2690 MHz
Polarisation	Xpol	Xpol	Xpol	Xpol	Xpol	Xpol	Xpol
Horizontal Beamwidth	65°	65°	65°	65°	65°	65°	65°
Electrical Downtilt Range	2-12°	2-12°	2-12°	2-12°	2-12°	2-12°	2-12°
Connector Type	(2x) 4.3-10 Female	(2x) 4.3-10 Female	(2x) 4.3-10 Female	(2x) 4.3-10 Female	(2x) 4.3-10 Female	(2x) 4.3-10 Female	(2x) 4.3-10 Female

ELECTRICAL CHARACTERISTICS

ELECTRICAL CHARACTERISTICS		R1			
Frequency Bands		694-960 MHz			
		694-824 MHz	806-896 MHz	880-960 MHz	
Gain	at Mid Tilt	13.6 dBi	14.1 dBi	14.6 dBi	
	Over All Tilts	13.6 ± 0.5 dBi	14.0 ± 0.5 dBi	14.5 ± 0.4 dBi	
Input Impedance		50Ω			
VSWR		< 1.5			
Polarisation		±45°			
Horizontal Beamwidth (-3 dB)		68° ± 4.5°	65° ± 4.5°	60° ± 4.5°	
Vertical Beamwidth (-3 dB)		15.9° ± 1.1°	14.4° ± 0.9°	13.7° ± 0.8°	
Electrical Downtilt Range		2-12°			
Cross-Polar Isolation		> 25 dB			
Port-to-Port Isolation		> 28 dB (R1, R2//Y1, Y2, Y3, Y4, Y5); > 25 dB (R1//R2)			
Upper Sidelobe Suppression	Typical	> 15 dB	> 15 dB	> 15 dB	
	Peak to 20°	> 15 dB	> 15 dB	> 15 dB	
Front-to-Back Ratio (@ 180° ± 30°)		> 22 dB	> 24 dB	> 25 dB	
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 18 dB	> 18 dB	
	Sector Edges (±60°)	> 9 dB	> 7 dB	> 5.5 dB	
Maximum Average Power Per Port (at 50° C ambient temperature)		350 W			
Intermodulation 3rd Order, 2 x 43 dBm carrier		< -150 dBc			



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7-Band, 14-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 1497 mm

ELECTRICAL CHARACTERISTICS		R2		
Frequency Bands		694-960 MHz		
		694-824 MHz	806-896 MHz	880-960 MHz
Gain	at Mid Tilt	13.6 dBi	14.1 dBi	14.6 dBi
	Over All Tilts	13.6 ± 0.5 dBi	14.0 ± 0.5 dBi	14.5 ± 0.4 dBi
Input Impedance		50Ω		
VSWR		< 1.5		
Polarisation		±45°		
Horizontal Beamwidth (-3 dB)		68° ± 4.5°	65° ± 4.5°	60° ± 4.5°
Vertical Beamwidth (-3 dB)		15.9° ± 1.1°	14.4° ± 0.9°	13.7° ± 0.8°
Electrical Downtilt Range		2-12°		
Cross-Polar Isolation		> 25 dB		
Port-to-Port Isolation		> 28 dB (R1, R2//Y1, Y2, Y3, Y4, Y5); > 25 dB (R1//R2)		
Upper Sidelobe Suppression	Typical	> 15 dB	> 15 dB	> 15 dB
	Peak to 20°	> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		> 22 dB	> 24 dB	> 25 dB
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 9 dB	> 7 dB	> 5.5 dB
Maximum Average Power Per Port (at 50° C ambient temperature)		350 W		
Intermodulation 3rd Order, 2 x 43 dBm carrier		< -150 dBc		

ELECTRICAL CHARACTERISTICS		Y1				
Frequency Bands		1710-2690 MHz				
		1710-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.2 dBi	14.5 dBi	14.8 dBi	15.0 dBi	14.8 dBi
	Over All Tilts	14.0 ± 0.6 dBi	14.3 ± 0.5 dBi	14.6 ± 0.5 dBi	14.8 ± 0.5 dBi	14.6 ± 0.6
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 7.0°	65° ± 7.0°	65° ± 7.0°	61° ± 7.0°	62° ± 7.0°
Vertical Beamwidth (-3 dB)		15.0° ± 1.0°	14.0° ± 0.8°	13.1° ± 0.8°	11.4° ± 0.6°	10.5° ± 0.6°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Upper Sidelobe Suppression	Typical	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
	Peak to 20°	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		≥ 25 dB	≥ 25 dB	> 25 dB	≥ 26 dB	≥ 26 dB
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 19 dB	> 19 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 10 dB	> 9 dB	> 9 dB	> 7.5 dB	> 5.2 dB
Maximum Average Power Per Port (at 50° C ambient temperature)		250 W				
Intermodulation 3rd Order, 2 x 43 dBm carrier		< -150 dBc				

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ELECTRICAL CHARACTERISTICS		Y2				
Frequency Bands		1710-2690 MHz				
		1710-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.0 dBi	14.3 dBi	14.6 dBi	14.9 dBi	14.6 dBi
	Over All Tilts	13.8 ± 0.6 dBi	14.1 ± 0.5 dBi	14.4 ± 0.5 dBi	14.7 ± 0.5 dBi	14.4 ± 0.6
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 7.0°	65° ± 7.0°	65° ± 7.0°	61° ± 7.0°	62° ± 7.0°
Vertical Beamwidth (-3 dB)		14.0° ± 1.0°	12.8° ± 0.8°	12.0° ± 0.8°	10.5° ± 0.6°	9.5° ± 0.6°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Upper Sidelobe Suppression	Typical	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
	Peak to 20°	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		> 25 dB	> 25 dB	> 25 dB	> 26 dB	> 26 dB
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 20 dB	> 20 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 10 dB	> 9 dB	> 9 dB	> 8 dB	> 5 dB
Maximum Average Power Per Port (at 50° C ambient temperature)		250 W				
Intermodulation 3rd Order, 2 x 43 dBm carrier		< -150 dBc				

ELECTRICAL CHARACTERISTICS		Y3				
Frequency Bands		1710-2690 MHz				
		1710-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	17.0 dBi	17.3 dBi	17.5 dBi	17.7 dBi	17.6 dBi
	Over All Tilts	16.8 ± 0.6 dBi	17.1 ± 0.5 dBi	17.3 ± 0.5 dBi	17.5 ± 0.5 dBi	17.4 ± 0.6
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		67° ± 4.6°	64° ± 3.2°	63° ± 3.5°	61° ± 4.4°	58° ± 6.2°
Vertical Beamwidth (-3 dB)		7.2° ± 0.6°	6.7° ± 0.6°	6.2° ± 0.6°	5.7° ± 0.6°	5.2° ± 0.6°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 26 dB				
Port-to-Port Isolation		> 28 dB				
Upper Sidelobe Suppression	Typical	> 16 dB	> 16 dB	> 16 dB	> 15 dB	> 15 dB
	Peak to 20°	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		> 26 dB	> 26 dB	> 27 dB	> 27 dB	> 27 dB
Cross Polar Ratio	Main Direction (0°)	> 16 dB	> 16 dB	> 17 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 10 dB	> 9 dB	> 9 dB	> 8 dB	> 5 dB
Maximum Average Power Per Port (at 50° C ambient temperature)		250 W				
Intermodulation 3rd Order, 2 x 43 dBm carrier		< -150 dBc				

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ELECTRICAL CHARACTERISTICS		Y4				
Frequency Bands		1710-2690 MHz				
		1710-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.2 dBi	14.5 dBi	14.8 dBi	15.0 dBi	14.8 dBi
	Over All Tilts	14.0 ± 0.6 dBi	14.3 ± 0.5 dBi	14.6 ± 0.5 dBi	14.8 ± 0.5 dBi	14.6 ± 0.6
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 7.0°	65° ± 7.0°	65° ± 7.0°	61° ± 7.0°	62° ± 7.0°
Vertical Beamwidth (-3 dB)		15.0° ± 1.0°	14.0° ± 0.8°	13.1° ± 0.8°	11.4° ± 0.6°	10.5° ± 0.6°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Upper Sidelobe Suppression	Typical	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
	Peak to 20°	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		≥ 25 dB	≥ 25 dB	> 25 dB	≥ 26 dB	≥ 26 dB
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 19 dB	> 19 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 10 dB	> 9 dB	> 9 dB	> 7.5 dB	> 5.2 dB
Maximum Average Power Per Port (at 50° C ambient temperature)		250 W				
Intermodulation 3rd Order, 2 x 43 dBm carrier		< -150 dBc				

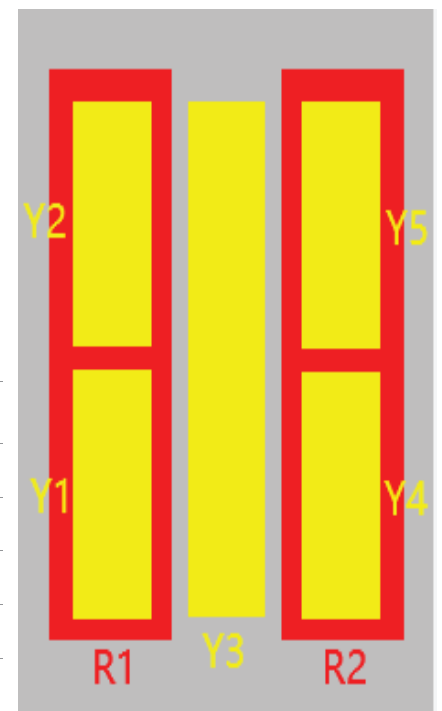
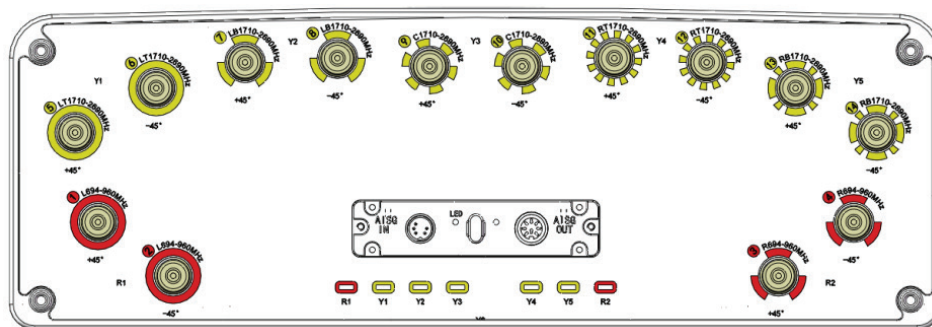
ELECTRICAL CHARACTERISTICS		Y5				
Frequency Bands		1710-2690 MHz				
		1710-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.0 dBi	14.3 dBi	14.6 dBi	14.9 dBi	14.6 dBi
	Over All Tilts	13.8 ± 0.6 dBi	14.1 ± 0.5 dBi	14.4 ± 0.5 dBi	14.7 ± 0.5 dBi	14.4 ± 0.6
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 7.0°	65° ± 7.0°	65° ± 7.0°	61° ± 7.0°	62° ± 7.0°
Vertical Beamwidth (-3 dB)		14.0° ± 1.0°	12.8° ± 0.8°	12.0° ± 0.8°	10.5° ± 0.6°	9.5° ± 0.6°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Upper Sidelobe Suppression	Typical	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
	Peak to 20°	> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		> 25 dB	> 25 dB	> 25 dB	> 26 dB	> 26 dB
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 20 dB	> 20 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 10 dB	> 9 dB	> 9 dB	> 8 dB	> 5 dB
Maximum Average Power Per Port (at 50° C ambient temperature)		250 W				
Intermodulation 3rd Order, 2 x 43 dBm carrier		< -150 dBc				

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INTEGRATED RET PROPERTIES	
Protocol	Compliant with 3GPP/AISGv2.0
Power Supply	10-30VDC
Adjustment Time (Full Range)	≤ 90 sec (typical, depending on antenna type)
Power Consumption	< 2 W (Idle); < 10 W (In Motion)
Accuracy	≤ 0.5°
Hardware Interface	RS485 and Power
Safety Standard	Compliant to EN 60950/UL 60950/ RoHS, CE
Adjustment Cycles	> 20,000
Torque Max	≥ 160 mN.m
Remote Control	Can manage from OMC, BTS/NodeB
Lightning Protection Rating	IEC 61000-4-5 Current Pulse Profile, 8/20 μs 10 Repetitions Min. @ 8 kA
Connectors	(2x) 8-Pin Circle Connector According to IEC 60130-9 and AISG Daisy Chain In: Male; Daisy Chain Out: Female Pin3: RS485+; Pin5: RS485-; Pin6: 10-30V; Pin7: GND



ARRAY LAYOUT	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	R1	694-960	1-2	4.3-10 Female
	R2	694-960	3-4	4.3-10 Female
	Y1	1710-2690	5-6	4.3-10 Female
	Y2	1710-2690	7-8	4.3-10 Female
	Y3	1710-2690	9-10	4.3-10 Female
	Y4	1710-2690	11-12	4.3-10 Female
	Y5	1710-2690	13-14	4.3-10 Female

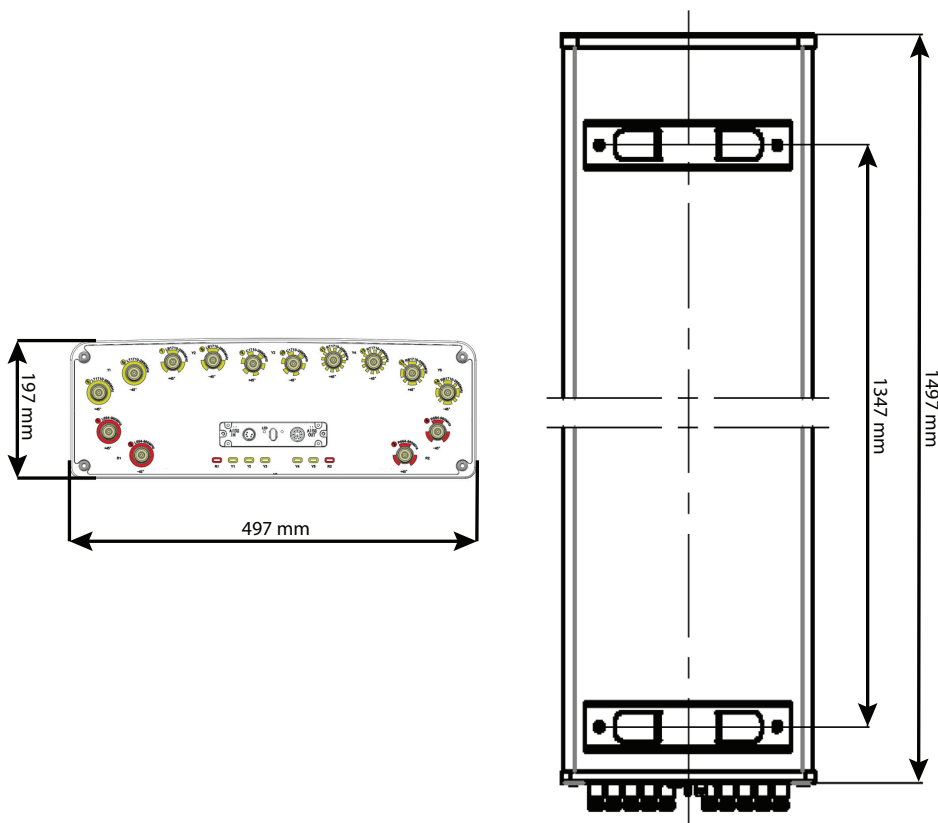
Diagram shown at right depicts the view from the front of the antenna. The illustration is not shown to scale.

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ENVIRONMENTAL CHARACTERISTICS		PACKAGING		
Lightning Protection		DC Ground		
Operating Temperature		-40°C to +60°C		
MECHANICAL CHARACTERISTICS		Carton Box 1.697 x 0.592 x 0.317 m (66.8 x 23.3 x 12.5 in)		
Dimensions (Height x Width x Depth)				1497 x 497 x 197 mm (58.9 x 19.6 x 7.8 in)
Weight (excluding mounting accessory)				32 kg (70.5 lbs)
Weight with mounting accessory				36.5 kg (80.4 lbs)
Radome Material				Fiberglass
Maximum Wind Speed				200 km/h (124.3 mph)
Wind Load at 150 km/h	Frontal			
	Rear		770 N (173.1 lbf)	
	Lateral		290 N (65.1 lbf)	
MOUNTING KIT OPTIONS		POLE DIAMETER	MECHANICAL TILT	
All mounting bracket kits are ordered separately unless otherwise indicated.				
Mounting and Downtilt Bracket Kit (Included)		Ø50-Ø125 mm (Ø2.0-Ø4.9 mm)	0-12°	



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