

5976308NG

6-Band, 12-Port, 65°, XPOL, Panel Antenna, Variable Tilt, 1497 mm

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

ACCESS PORT DESCRIPTION (CONNECTORS)						
The antenna has 12 colour-coded connectors located at the bottom face.						
Frequency Designation	R1	R2	Y1	Y2	Y3	Y4
Frequency Range	690-960 MHz	690-960 MHz	1695-2690 MHz	1695-2690 MHz	1695-2690 MHz	1695-2690 MHz
Polarisation	Xpol	Xpol	Xpol	Xpol	Xpol	Xpol
Horizontal Beamwidth	65°	65°	65°	65°	65°	65°
Electrical Downtilt Range	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

ELECTRICAL CHARACTERISTICS		R1		
Frequency Bands		690-960 MHz		
		690-824 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		
Inter Band Isolation		> 25 dB		
First Upper Sidelobe Suppression		> 15 dB	> 15 dB	> 15 dB
Upper Sidelobe Suppression (peak to 20°)		> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		> 22dB	> 24 dB	> 25 dB
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 9.0 dB	> 7.0 dB	> 5.5 dB
Maximum Average Input Power (at 50°C Ambient Temperature)		350 W		
Intermodulation 3rd Order for 2 x 43 dBm carrier		< -153 dBc		



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ELECTRICAL CHARACTERISTICS		R2		
Frequency Bands		690-960 MHz		
		690-824 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		
Inter Band Isolation		> 25 dB		
First Upper Sidelobe Suppression		> 15 dB	> 15 dB	> 15 dB
Upper Sidelobe Suppression (peak to 20°)		> 15 dB	> 15 dB	> 15 dB
Front-to-Back Ratio (@ 180° ± 30°)		> 22dB	> 24 dB	> 25 dB
Cross Polar Ratio	Main Direction (0°)	> 18 dB	> 18 dB	> 18 dB
	Sector Edges (±60°)	> 9.0 dB	> 7.0 dB	> 5.5 dB
Maximum Average Input Power (at 50°C Ambient Temperature)		350 W		
Intermodulation 3rd Order for 2 x 43 dBm carrier		< -153 dBc		

ELECTRICAL CHARACTERISTICS		Y1				
Frequency Bands		1695-2690 MHz				
		1695-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.2 dBi	14.4 dBi	14.8 dBi	15.1 dBi	15.0 dBi
	Over All Tilts	14.0 ± 0.6 dBi	14.2 ± 0.5 dBi	14.6 ± 0.5 dBi	14.9 ± 0.4 dBi	14.8 ± 0.5 dBi
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 4.6°	64° ± 3.2°	67° ± 3.5°	61° ± 4.4°	60° ± 5.2°
Vertical Beamwidth (-3 dB)		14.0° ± 1.0°	13.0° ± 0.8°	12.1° ± 0.8°	10.4° ± 0.5°	9.5° ± 0.5°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Inter Band Isolation		> 25 dB				
First Upper Sidelobe Suppression		> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Upper Sidelobe Suppression (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 Input Power (at 50°C Ambient Temperature)		250 W				
Intermodulation 3rd Order for 2 x 43 dBm carrier		< -153 dBc				

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ELECTRICAL CHARACTERISTICS		Y2				
Frequency Bands		1695-2690 MHz				
		1695-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.4 dBi	14.6 dBi	15.0 dBi	15.3 dBi	15.2 dBi
	Over All Tilts	14.2 ± 0.6 dBi	14.4 ± 0.5 dBi	14.8 ± 0.5 dBi	15.1 ± 0.4 dBi	15.0 ± 0.5 dBi
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 4.6°	64° ± 3.2°	67° ± 3.5°	61° ± 4.4°	60° ± 5.2°
Vertical Beamwidth (-3 dB)		15° ± 1.0°	13.6° ± 0.8°	13.0° ± 0.8°	11.5° ± 0.5°	10.3° ± 0.5°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Inter/Intra Band Isolation		> 25 dB				
First Upper Sidelobe Suppression		> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Upper Sidelobe Suppression (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 Input Power (at 50°C Ambient Temperature)		250 W				
Intermodulation 3rd Order for 2 x 43 dBm carrier		< -153 dBc				

ELECTRICAL CHARACTERISTICS		Y3				
Frequency Bands		1695-2690 MHz				
		1695-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.2 dBi	14.4 dBi	14.8 dBi	15.1 dBi	15.0 dBi
	Over All Tilts	14.0 ± 0.6 dBi	14.2 ± 0.5 dBi	14.6 ± 0.5 dBi	14.9 ± 0.4 dBi	14.8 ± 0.5 dBi
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 4.6°	64° ± 3.2°	67° ± 3.5°	61° ± 4.4°	60° ± 5.2°
Vertical Beamwidth (-3 dB)		14.0° ± 1.0°	13.0° ± 0.8°	12.1° ± 0.8°	10.4° ± 0.5°	9.5° ± 0.5°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Inter Band Isolation		> 25 dB				
First Upper Sidelobe Suppression		> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Upper Sidelobe Suppression (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 Input Power (at 50°C Ambient Temperature)		250 W				
Intermodulation 3rd Order for 2 x 43 dBm carrier		< -153 dBc				

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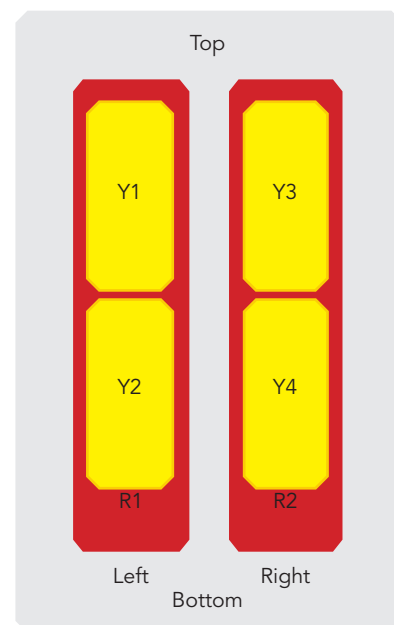
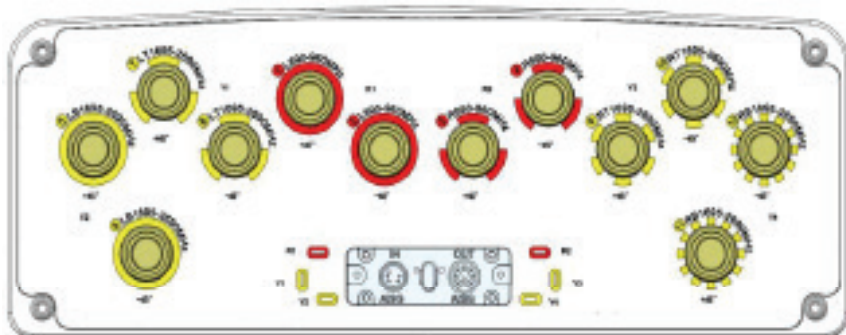
ELECTRICAL CHARACTERISTICS		Y4				
Frequency Bands		1695-2690 MHz				
		1695-1880 MHz	1850-1990 MHz	1920-2170 MHz	2300-2400 MHz	2500-2690 MHz
Gain	at Mid Tilt	14.4 dBi	14.6 dBi	15.0 dBi	15.3 dBi	15.2 dBi
	Over All Tilts	14.2 ± 0.6 dBi	14.4 ± 0.5 dBi	14.8 ± 0.5 dBi	15.1 ± 0.4 dBi	15.0 ± 0.5 dBi
Input Impedance		50Ω				
VSWR		< 1.5				
Polarisation		±45°				
Horizontal Beamwidth (-3 dB)		68° ± 4.6°	64° ± 3.2°	67° ± 3.5°	61° ± 4.4°	60° ± 5.2°
Vertical Beamwidth (-3 dB)		15° ± 1.0°	13.6° ± 0.8°	13.0° ± 0.8°	11.5° ± 0.5°	10.3° ± 0.5°
Electrical Downtilt Range		2-12°				
Cross-Polar Isolation		> 25 dB				
Port-to-Port Isolation		> 28 dB				
Inter/Intra Band Isolation		> 25 dB				
First Upper Sidelobe Suppression		> 15 dB	> 15 dB	> 15 dB	> 15 dB	> 15 dB
Upper Sidelobe Suppression (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 Input Power (at 50°C Ambient Temperature)		250 W				
Intermodulation 3rd Order for 2 x 43 dBm carrier		< -153 dBc				

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	< 1 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	> 10,000
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 Female Connector: 8 PINs; Male Connector: 5 PINs

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ARRAY LAYOUT	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	R1	690-960	1-2	4.3-10 Female
	R2	690-960	3-4	4.3-10 Female
	Y1	1695-2690	5-6	4.3-10 Female
	Y2	1695-2690	7-8	4.3-10 Female
	Y3	1695-2690	9-10	4.3-10 Female
	Y4	1695-2690	11-12	4.3-10 Female

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

ENVIRONMENTAL CHARACTERISTICS		
Lightning Protection	DC Ground	
Operating Temperature	-40° to +60° C (-40° to +140° F)	
MECHANICAL CHARACTERISTICS		
Dimensions (Height x Width x Depth)	1497 x 467 x 167 mm (58.9 x 18.4 x 6.6 in)	
Weight (excluding mounting accessory)	27 kg (59.5 lbs)	
Shroud	Fiberglass	
Wind Speed	Survival: 200 km/h (124.3 mph)	
Wind Load (at 150 km/h)	Frontal	645 N (145.0 lbf)
	Rear	720 N (161.8 lbf)
	Lateral	285 N (64.0 lbf)
MOUNTING KIT OPTIONS		
All mounting bracket kits are ordered separately unless otherwise indicated.		
Mounting and Downtilt Bracket Kit (Included)	POLE DIAMETER: Ø50-Ø125 mm (Ø2.0-Ø4.9 in) DOWNTILT: 0-12°	

PACKAGING

Carton Box
1.697 x 0.562 x 0.287 m
(66.8 x 22.1 x 11.3 in)

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