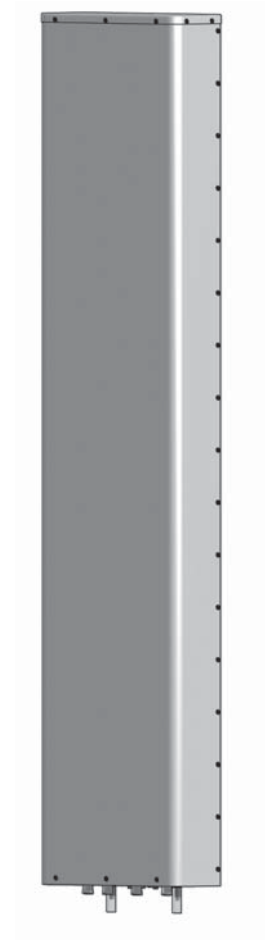


TWIN658CU000x

TWIN DUAL BAND | 8-PORT | PANEL ANTENNA | (2x) XX-POL | 65° | VARIABLE TILT | 2462 mm (96.9 in)

- Twin dual band, oct-port panel antenna with variable electrical tilt
- Ultra-wideband frequency
- 4x4 MIMO low band and high band compatible
- Patented internal RET actuator adds no additional length to the antenna
- Can be ordered with a Multi-Device Dual Unit (MDDU) with two separate inputs for independent control of each band. Ideal for antenna sharing.

PRODUCT OVERVIEW	Frequency Range (MHz)	696-960	696-960	1695-2400	1695-2400
	Array	■ R1	■ R2	■ Y1	■ Y2
	Connector	1-2	3-4	5-6	7-8
	Polarization	XPOL	XPOL	XPOL	XPOL
	Azimuth Beamwidth (avg)	65°	65°	65°	65°
	Electrical Downtilt	0-10°	0-10°	0-10°	0-10°
	Dimensions	2462 x 520 x 178 mm (96.9 x 20.5 x 7.0 in)			



ORDERING OPTIONS

Select from the different options listed below

SELECT ELECTRICAL DOWNTILT CONTROL & AISG PROTOCOL	SELECT ACTUATOR	SELECT CONNECTOR TYPE	ANTENNA MODEL NUMBER
Manual Electrical Tilt (MET)	---	7/16-DIN Female	TWIN658CU000M
Remote Electrical Tilt (RET) AISG v2.0 / 3GPP	Multi-Device Control Unit (MDCU)	7/16-DIN Female	TWIN658CU000G
	Multi-Device Dual Unit (MDDU)	7/16-DIN Female	TWIN658CU000L



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TWIN DUAL BAND | 8-PORT | PANEL ANTENNA | (2x) XX-POL | 65° | VARIABLE TILT | 2462 mm (96.9 in)

ELECTRICAL SPECIFICATIONS Low Band

■ R1

Frequency Range		MHz	696-960	
		MHz	696-806	806-960
Polarization		---	±45°	
Gain	at 0°	dBi	14.7	15.5
	at 5°	dBi	14.7	15.5
	at 10°	dBi	14.6	15.3
	Over all Tilts	dBi	14.6 ± 0.8	15.4 ± 0.4
Azimuth Beamwidth		degrees	79.9° ± 6.8°	68.0° ± 4.7°
Elevation Beamwidth		degrees	10.0° ± 0.5°	8.5° ± 0.5°
Electrical Downtilt		degrees	0°-10°	
Impedance		Ohms	50	
VSWR		---	< 1.5	
Passive Intermodulation 3rd Order for 2 x 20W Carriers		dBc	< -153	
Front-to-Back Ratio, Total Power, ±30°		dB	> 21.6	> 21.7
Upper Sidelobe Suppression, Peak to 20°		dB	> 14.0	> 13.0
Cross Polar Ratio	Main Direction (0°)	dB	> 19.3	> 18.6
	Sector Edges (±60°)	dB	> 9.3	> 5.6
Maximum Effective Power Per Port		Watts	500	
Inter/Intra Band Isolation		dB	> 23	

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

ELECTRICAL SPECIFICATIONS Low Band

■ R2

Frequency Range		MHz	696-960	
		MHz	696-806	806-960
Polarization		---	±45°	
Gain	at 0°	dBi	14.9	15.6
	at 5°	dBi	14.9	15.6
	at 10°	dBi	14.8	15.4
	Over all Tilts	dBi	14.8 ± 0.9	15.5 ± 0.4
Azimuth Beamwidth		degrees	78.0° ± 5.6°	67.6° ± 4.4°
Elevation Beamwidth		degrees	10.0° ± 0.4°	8.5° ± 0.5°
Electrical Downtilt		degrees	0°-10°	
Impedance		Ohms	50	
VSWR		---	< 1.5	
Passive Intermodulation 3rd Order for 2 x 20W Carriers		dBc	< -153	
Front-to-Back Ratio, Total Power, ±30°		dB	> 22.1	> 21.7
Upper Sidelobe Suppression, Peak to 20°		dB	> 14.2	> 13.5
Cross Polar Ratio	Main Direction (0°)	dB	> 19.4	> 18.7
	Sector Edges (±60°)	dB	> 9.0	> 5.3
Maximum Effective Power Per Port		Watts	500	
Inter/Intra Band Isolation		dB	> 23	

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

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TWIN658CU000x

TWIN DUAL BAND | 8-PORT | PANEL ANTENNA | (2x) XX-POL | 65° | VARIABLE TILT | 2462 mm (96.9 in)

ELECTRICAL SPECIFICATIONS Mid Band

■ Y1

Frequency Range		MHz	1695-2400			
		MHz	1695-1850	1850-1990	2100-2180	2200-2400
Polarization		---	±45°			
Gain	at 0°	dBi	15.9	16.4	16.6	15.5
	at 5°	dBi	15.9	16.2	16.4	15.2
	at 10°	dBi	15.4	15.7	15.3	14.5
	Over all Tilts	dBi	15.9 ± 0.7	16.2 ± 0.6	16.1 ± 0.9	15.2 ± 0.8
Azimuth Beamwidth		degrees	61.4° ± 13.0°	59.8° ± 11.4°	55.2° ± 14.7°	50.3° ± 8.8°
Elevation Beamwidth		degrees	5.9° ± 0.4°	5.6° ± 0.3°	5.5° ± 0.8°	4.6° ± 0.3°
Electrical Downtilt		degrees	0°-10°			
Impedance		Ohms	50			
VSWR		---	< 1.5			
Passive Intermodulation 3rd Order for 2 x 20W Carriers		dBc	< -153			
Front-to-Back Ratio, Total Power, ±30°		dB	> 23.1	> 25.5	> 23.1	> 24.0
Upper Sidelobe Suppression, Peak to 20°		dB	> 14.0	> 13.0	> 12.1	> 8.8
Cross Polar Ratio	Main Direction (0°)	dB	> 17.2	> 14.4	> 12.6	> 10.4
	Sector Edges (±60°)	dB	> 4.6	> 2.6	> 0.2	> -0.1
Maximum Effective Power Per Port		Watts	250			
Inter/Intra Band Isolation		dB	> 25			

Standard values based on NGMN-P-BASTA version 9.6 recommendation.

ELECTRICAL SPECIFICATIONS Mid Band

■ Y2

Frequency Range		MHz	1695-2400			
		MHz	1695-1850	1850-1990	2100-2180	2200-2400
Polarization		---	±45°			
Gain	at 0°	dBi	15.7	16.3	16.5	15.6
	at 5°	dBi	15.7	16.2	16.4	15.4
	at 10°	dBi	15.3	15.7	15.5	14.7
	Over all Tilts	dBi	15.7 ± 0.8	16.1 ± 0.6	16.0 ± 1.0	15.3 ± 0.7
Azimuth Beamwidth		degrees	61.2° ± 11.4°	60.4° ± 10.0°	55.6° ± 14.5°	50.9° ± 6.2°
Elevation Beamwidth		degrees	5.9° ± 0.4°	5.6° ± 0.3°	5.4° ± 0.7°	4.6° ± 0.3°
Electrical Downtilt		degrees	0°-10°			
Impedance		Ohms	50			
VSWR		---	< 1.5			
Passive Intermodulation 3rd Order for 2 x 20W Carriers		dBc	< -153			
Front-to-Back Ratio, Total Power, ±30°		dB	> 22.8	> 24.4	> 23.3	> 24.0
Upper Sidelobe Suppression, Peak to 20°		dB	> 14.1	> 13.6	> 12.7	> 9.7
Cross Polar Ratio	Main Direction (0°)	dB	> 18.8	> 14.6	> 12.0	> 11.7
	Sector Edges (±60°)	dB	> 3.5	> 1.4	> -0.0	> -0.5
Maximum Effective Power Per Port		Watts	250			
Inter/Intra Band Isolation		dB	> 25			

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ELECTRICAL DOWNTILT CONTROL

For multiband antennas, electrical downtilt for each band can be controlled separately.

Manual Electrical Tilt (MET) Control	A colored knob at the end of the tilt indicator allows change of the tilt without need of a tool. The knob color is identical to the corresponding connector color. The manual tilt 'override' function is always available with no need to remove the physical RET motor.
Remote Electrical Tilt (RET) Control	The remote control of the electrical tilt is managed by a Multi-Device Control Unit (MDCU) or a Multi-Device Dual Unit (MDDU) inserted in the bottom of the antenna. <i>See details below and refer to the ordering options to see which actuators are available with this particular antenna.</i> A single actuator individually controls the tilt of each band (no need for daisy chain cables between the bands). This module does not add any additional length to the antenna.

RET ACTUATOR

Amphenol's **RET-READY** antennas are delivered with the RET Actuator already installed and pre-commissioned with all antenna parameters. Every RET device is factory configured and calibrated so the antenna is ready to be used once delivered to the site which means that there is no need for further installation of RET devices or for programming their configuration or for running a calibration process.

RET-READY ACTUATORS	Multi-Device Control Unit (MDCU). The MDCU is an electronic module that allows the remote control of the electrical downtilt (RET) in Amphenol antennas with factory embedded motors. The MDCU is factory installed and has one pair of AISG Male and Female connectors (type IEC60130-9). <i>Refer to the ORDERING OPTIONS for availability with this model.</i>	
	Multi-Device Dual Unit (MDDU). The MDDU allows two separate RET Controllers to independently drive the RETs in antennas with factory embedded motors (for antenna sharing or two technologies). The MDDU is factory installed and has two male AISG 8 pin connectors (type IEC60130-9 Ed 3.0). <i>Refer to the ORDERING OPTIONS for availability with this model.</i>	
Number of RET-READY Actuators		One per antenna
Input Voltage		+10 to +30 V
Power Consumption	Idle State (AISG P1)	0.5 W
	High Power Mode (AISG P2)	3 W
Protocol		3GPP/AISG 2.0
Tilt Change Duration		Less than 15 seconds, typical (may vary dependent on antenna type and outdoor temperature)
Precision		±0.5°
Tilt Change Capability		50,000 minimum
Field Replaceable Unit		Yes

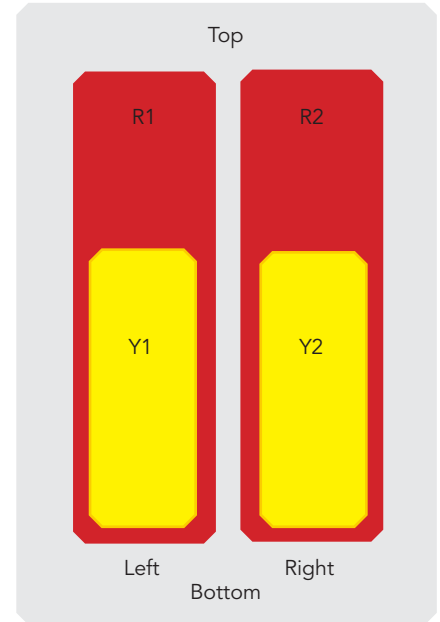
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**NO
IMAGE
AVAILABLE**

**COMING
SOON**



ARRAY LAYOUT	ARRAY	FREQUENCY	CONNECTOR	CONNECTOR TYPE
	■ R1	696-960	1-2	7/16-DIN Female
	■ R2	696-960	3-4	7/16-DIN Female
	■ Y1	1695-2400	5-6	7/16-DIN Female
	■ Y2	1695-2400	7-8	7/16-DIN Female

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

MECHANICAL SPECIFICATIONS

Length	mm (in)	2462 (96.9)	
Width	mm (in)	521 (20.5)	
Depth	mm (in)	178 (7.0)	
Net Weight - Antenna Only	kg (lbs)	37 (82)	
Windload	Calculation	km/h (mph)	160 (100)
	Frontal	N (lbf)	1717 (386)
	Rearside	N (lbf)	535 (120)
Survival Wind Speed	km/h (mph)	241 (150)	
Radome Color	---	Gray RAL7035	
Radome Material	---	Outdoor Fibreglass	
Lightning Protection	---	Direct Ground	
Shipping	Shipping Dimensions (Length x Width x Depth)	mm (in)	3035 x 648 x 305 (119.5 x 25.5 x 12.0)
	Shipping Weight	kg (lbs)	53.5 (118)
	Shipping Volume	m ³ (ft ³)	0.48 (17.0)

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ENVIRONMENTAL SPECIFICATIONS

Environmental	---	ETS 300 019
Operating Temperature	° C (° F)	-40° to +60° (-40° to +140°)
Product Environmental Compliance	---	Product is RoHs Compliant

ACCESSORIES All accessories are ordered separately unless otherwise indicated

ITEM	MODEL NUMBER	WEIGHT
3-Point Mounting & Downtilt Bracket Kit for pole Ø40 to Ø115 mm (Ø1.6 to Ø4.5 in) <i>delivered as standard</i>	36210008	6.9 kg (15.2 lbs)

INSTALLATION Please read all installation notes before installing this product.

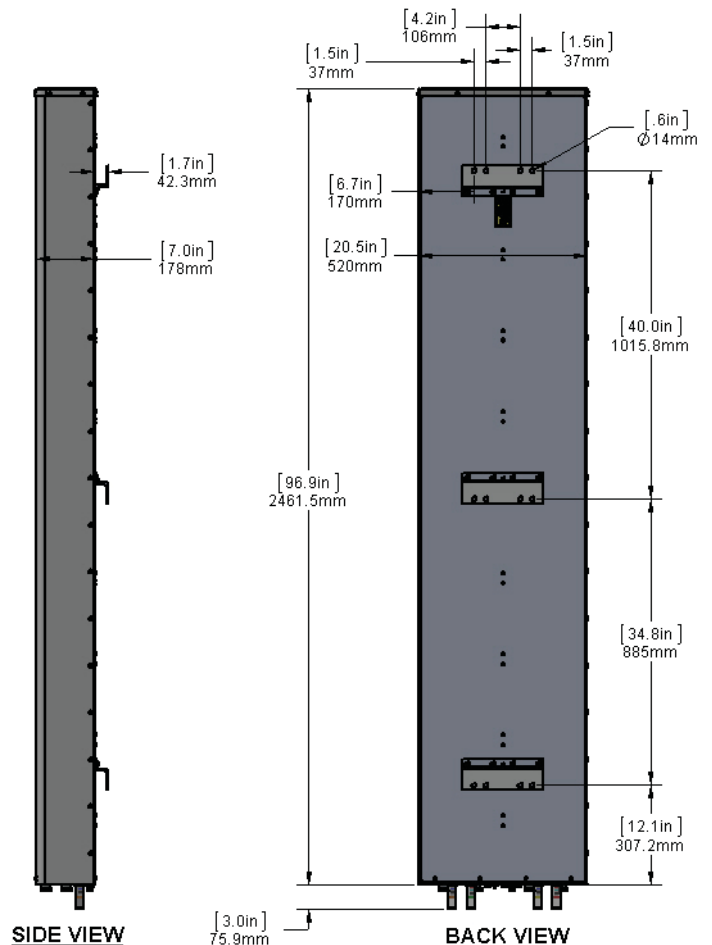


Always attach the antenna by all mounting points.

Do not install the antenna with the connectors facing upwards.

Do not cut the tethered transparent cap(s) that cover the antenna's tilt adjustment indicators.

In order to operate the RET control, the transparent caps covering the tilt adjustment indicators must be engaged and locked.



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