



- Provides 6 antenna Ports in a slim-line form factor
- Optimized Azimuth patterns for Min Inter-Sector Interference
- Industry leading Minimal Wind-Load design

- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal remote electrical tilt (RET)

The Quintel MultiServ™ Multiband 6 Port Antenna with patented QTilt™ technology uniquely delivers three independent services in a single slim-line antenna. This enables existing antenna network sites to be upgraded constraint free to add new services such as LTE for 700, 850, PCS, AWS and WCS bands with the replacement of one antenna. The QS6656-3 also provides 4x 1710-2400MHz ports as two side-by-side (CLA-2X) arrays, each array having independent tilt to support independent service, or for connection to 2T4R/4T4R service.

Electrical Characteristics	2x Ports 1&2		2x Ports 3&4 2x Ports 5&6			
Operating Frequency (MHz)	<b>698-894</b>		<b>1710-2400</b> <b>1710-2400</b>			
	698-806	814-894	1710-1780	1850-1990	2110-2180	2300-2400
Azimuth beamwidth <sup>1</sup>	69°	63°	70°	70°	62°	58°
Elevation beamwidth <sup>1</sup>	12.5°	10.5°	6.2°	5.9°	5.2°	4.8°
Gain <sup>1</sup> (dBi)	13.5	14.0	17.0	16.8	17.5	18
Polarization	±45°		±45° ±45°			
Electrical down-tilt range	2°-10°		2° – 10° 2° – 10°			
Upper SLL (20° > mainbeam) <sup>1</sup>	-18dB	-18dB	-16dB	-16dB	-16dB	-16dB
Front to Back Ratio(180°±10°) <sup>1</sup>	≥30dB	≥28dB	≥30dB	≥30dB	≥30dB	≥30dB
Port to Port isolation <sup>1</sup>	≥28dB	≥28dB	≥28dB	≥30dB	≥30dB	≥30dB
Return loss (VSWR)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)	14dB(1.5)
Squint <sup>1</sup>	<±2°	<±2°	<±3°	<±3°	<±3°	<±3°
Tracking <sup>1</sup>	<±2dB	<±3dB	<±3dB	<±3dB	<±3dB	<±3dB
X Polar Discrimination (at 0°)	>18dB	>20dB	>20dB	>16dB	>20dB	>20dB
Power handling (per port)	500 watts		250 watts			
PIM (3 <sup>rd</sup> Order) (2x43dBm)	>153dBc		>153dBc			

<sup>1</sup> Typical Performance across frequency and Downtilt.



Mechanical Characteristics	
Dimensions	L 72"(1828mm) x W 12"(304mm) x D 9.6"(245mm)
Weight (excl mounting brackets)	65lbs (29.4kg)
No. of Connectors	6x 7/16 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Projected Area <sup>2</sup>	Front: 2.6ft <sup>2</sup> (0.24m <sup>2</sup> ) Side: 5.0ft <sup>2</sup> (0.46m <sup>2</sup> )
Wind Load <sup>2</sup> @160km/h (45m/s)	Front: 284.7N (64 lbs), Side: 535.5N (120.4 lbs)
Operating Temperature	-40°C to +65°C

<sup>2</sup> Equivalent Projected Area and Wind Load derived from windtunnel measurements.  
Equivalent Projected Area assumed C<sub>d</sub>=1

Fully Integrated RET Characteristics	
AISG Standards	V1.1, V 2.0 and 3GPP
Factory Default	AISG 2.0
Surge immunity	IEC 61000-4-5:2005 4KV(AISG PIN)
Device Type	SRET Type 1
AISG Data rate	9.6 kbps
No of connectors	1in, 1out
Connector type	IEC 60130-9 (Ed 3.0)
MTBF	36,000 Operational moves



**All specifications are subject to change without notice. Please contact your Quintel representative for complete information.**



## RET Configuration

The Quintel MultiServ™ Multiband 6 Port Antenna has the following Array, RF Port and AISG I/O Configurations.

The 6-Port array topology consists of 3 radiating arrays:

R1 – 698-894MHz  
Y1 – 1710-2400MHz  
Y2 – 1710-2400MHz

RF Connector Port Configuration

	Ports	Freq (MHz)
R1	1-2	698-894
Y1	3-4	1710-2400
Y2	5-6	1710-2400



The RET Devices can be communicated with either via the designated external AISG connector as shown below.



AISG I/O Configuration

RET Device	Band	RF Ports
1	698-894	1-2
2	1710-2400	3-4
3	1710-2400	5-6

## Multiband Optimization

The Quintel MultiServ™ Multiband 6 Port Antenna is an ideal solution for independently optimizing multiple services when rapidly introducing new technologies. Technology agnostic, each pair of ports provides flexibility for existing and future technologies such as CDMA/EVDO, GSM/EDGE, UMTS/HSPA, and LTE and advanced 2T4R and 4T4R MIMO implementations at high-bands.

The tilt of each service is controlled independently via internal RET actuators compliant to AISG1.1, AISG2.0 and 3GPP protocols. The QS6656-3 provides a total of 2 independent tilts:

- 1x(698-894MHz)
- 1x Left & Right Array (1710-2400MHz)

## Design Optimization

All Quintel antennas use the same mechanical mounting brackets thus making maintenance swaps easy and future proof. All Quintel Antennas also have Azimuth patterns optimized with network design and deployment in mind. The 3dB Azimuth beamwidth is ~65° as with most Antennas, but we have optimized how the pattern rolls-off and where the sidelobes emerge such that there is minimal Inter-Sector Interference when 3x sectors are deployed. For interference limited networks, we can deliver 25% more capacity.

## About Quintel

Quintel is a leading innovator in the design, development, and delivery of network-efficient antenna solutions for wireless operators worldwide. The company's products enable global wireless operators to independently deploy and optimize multiple air interfaces or services on a single standard antenna platform. Quintel is the only antenna maker whose products can increase a wireless network's capacity and provide additional services, without increasing the number or size of antennas. Quintel is headquartered in Rochester, New York with additional offices throughout North America and Europe. More information about Quintel is available at

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