



- Provides 12 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)
- AWS & PCS Cross band PIM >159dBc

The Quintel MultiServ™ Multiband 12 Port Antenna with patented QTilt™ technology uniquely delivers four 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 QS86512-2 also provides 4x1695-1780+2110-2400MHz & 4x1850-1990MHz ports as two side-by-side (CLA-2X) arrays, each set of 4x ports having independent tilt, or for connection to 2T4R/4T4R services.

Electrical Characteristics	2x Ports 1&2	2x Ports 3&4	4x Ports 5-8			4x Ports 9-12
Operating Frequency (MHz)	<b>698-806</b>	<b>824-894</b>	<b>1695-1780 and 2110-2400</b>			<b>1850-1990</b>
	698-806	824-894	1695-1780	2110-2180	2300-2400	1850-1990
Azimuth beamwidth <sup>1</sup>	63°	60°	68°	63°	60°	69°
Elevation beamwidth <sup>1</sup>	10.0°	8.5°	6.5°	5.5°	4.5°	5.5°
Gain <sup>1</sup> (dBi)	14.0	14.2	16.2	16.7	16.8	16.0
Polarization	±45°	±45°	±45°		±45°	
Electrical down-tilt range	2°-10°	2°-10°	2° – 7°		2° – 7°	
Upper SLL (20° > mainbeam) <sup>1</sup>	-18dB	-16dB	-18dB	-18dB	-18dB	-17dB
Front to Back Ratio(180°±10°) <sup>1</sup>	≥26dB	≥28dB	≥28dB	≥30dB	≥30dB	≥27dB
Port to Port isolation <sup>1</sup>	≥30dB	≥29dB	≥30dB	≥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>	<±3°	<±3°	<±3°	<±3°	<±4°	<±3°
Tracking <sup>1</sup>	<±3dB	<±3dB	<±3dB	<±3dB	<±3dB	<±4dB
X Polar Discrimination (at 0°)	>15dB	>15dB	>20dB	>17dB	>18dB	>16dB
Max Power handling (per any port)	500 watts	500 watts	250 watts			250 watts
Total Composite Power (all ports)	1750 watts					
PIM (3 <sup>rd</sup> Order) (2x43dBm)	>153dBc	>153dBc	>153dBc			>153dBc
XBand PIM (3 <sup>rd</sup> Order) (2x43dBm)	>159dBc					

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



Mechanical Characteristics	
Dimensions	L 96"(2438mm) x W 12"(304mm) x D 9.6"(245mm)
Weight (excl mounting brackets)	135 lbs (61.2 kg)
No. of Connectors	12x 4.3-10.0 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Projected Area <sup>2</sup>	Front: 3.2ft <sup>2</sup> (0.39m <sup>2</sup> ) Side: 6.1ft <sup>2</sup> (0.57m <sup>2</sup> )
Wind Load <sup>2</sup> @160km/h (45m/s)	Front: 352N (79.2 lbs), Side: 680N (153 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	RET1 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

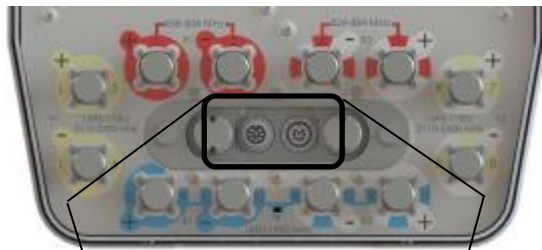
The Quintel MultiServ™ Multiband 12 Port Antenna has the following Array, RF Port and AISG I/O Configurations.

The 12-Port array topology consists of 3 radiating arrays:

R1/R2 – 698-894MHz  
Y1/B1 – 1695-2400MHz  
Y2/B2 – 1695-2400MHz

RF Connector Port Configuration

	Ports	Freq (MHz)
R1	1-2	698-806
R2	3-4	824-894
Y1	5-6	1695-1780+ 2110-2400
Y2	7-8	1695-1780+ 2110-2400
B1	9-10	1850-1990
B2	11-12	1850-1990



AISG I/O Configuration

RET Device	Band	RF Ports
1	698-806	1-2
2	824-894	3-4
3	AWS/WCS	5-8
4	PCS	9-12

## 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 [www.quintelsolutions.com](http://www.quintelsolutions.com).

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## Multiband Optimization

The Quintel MultiServ™ Multiband 12 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 QS86512-2 provides a total of 4 independent tilts:

- 1x(698-806MHz)
- 1x(824-894MHz)
- 1x Left & Right Array (1695-1780 and 2110-2400MHz)
- 1x Left & Right Array (1850-1990MHz)

## 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.

The QS86512-2 12-Port antenna has been designed for delivering best in class, maximum PIM performance. This includes using 4.3-10.0 connectors externally and internally for all array diplexing filters used with our QTilt™ technology.