



- Unique Performance Gains for LTE Uplink – ideal for VoLTE
- Optimized Azimuth patterns for Min Inter-Sector Interference
- Industry leading Min Wind-Load design

- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal remote electrical tilt (RET)
- Provides 8 antenna Ports in a slim-line form factor

The Quintel SONWav™ Multi-band 8 Port Antenna with patented QTilt™ technology uniquely provides 4x ports at 698-894MHz (presented as 2x Tx/Rx and 2x Rx Ports) for connection to a 2T4R Radio, for example at LTE700, to exploit 4-branch Rx MRC/IRC which then effectively delivers an adaptive uplink elevation beamforming capability. The QW6658-3 also provides 4x conventional 1695-2400MHz 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 Ports1&2 (Tx/Rx) 2x Ports 3&4 (Rx)		4x Ports 5-8			
	698-894		1695-2400			
Operating Frequency (MHz)	698-806	814-894	1710-1780	1850-1990	2110-2180	2300-2400
Azimuth beamwidth <sup>1</sup>	68°	63°	70°	70°	62°	58°
Elevation beamwidth <sup>1</sup>	12.2°	10.5°	6.2°	5.9°	5.2°	4.8°
Gain <sup>1</sup> (dBi)	14.1	14.1	17.0	16.8	17.5	18
Polarization	±45°		±45°			
Electrical down-tilt range	2°-10°		2° – 10°			
Upper SLL (20° > mainbeam) <sup>1</sup>	-15dB	-18dB	-16dB	-16dB	-16dB	-16dB
Front to Back Ratio(180°±10°) <sup>1</sup>	≥28dB	≥28dB	≥30dB	≥30dB	≥30dB	≥30dB
Port to Port isolation <sup>1</sup>	≥30dB	≥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)
X Polar Discrimination (at 0°)	>22dB	>20dB	>20dB	>16dB	>20dB	>20dB
Max Power handling (per any port)	500 watts (Tx/Rx Ports)		250 watts			
Total Composite Power (all ports)	1750 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)	77lbs (35kg)
No. of Connectors	8x 7/16 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Flat Plate Area	2.96ft <sup>2</sup> (0.275m <sup>2</sup> )
Wind Load @ 160km/h (45m/s)	Front: 587N (132 lbs), Side: 382N (86 lbs)
Operating Temperature	-40°C to +65°C

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 SONWav™ Multiband 8 Port Antenna has the following Array, RF Port and AISG I/O Configurations. The 8-Port array topology consists of 3 radiating arrays:

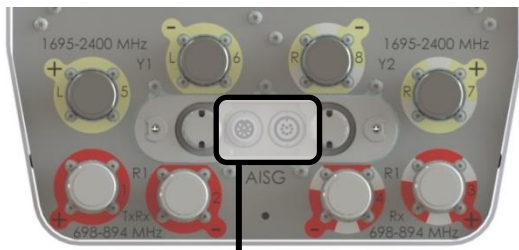
R1 – 698-894MHz  
Y1 – 1695-2400MHz  
Y2 – 1695-2400MHz

RF Connector Port Configuration

	Ports	Freq (MHz)	
R1	1-2	698-894 (Tx/Rx)	
R1	3-4	698-894 (Rx)	
Y1	5-6	1695-2400	
Y2	7-8	1695-2400	



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



AISG I/O Configuration

RET Device	Band	RF Ports
1	698-894	1-2
2	1695-2400	5-6
3	1695-2400	7-8

## 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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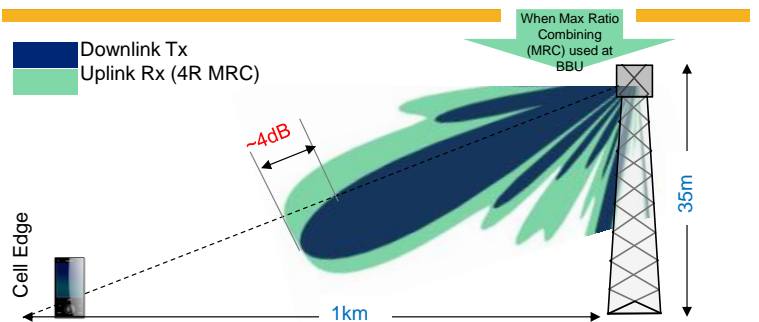
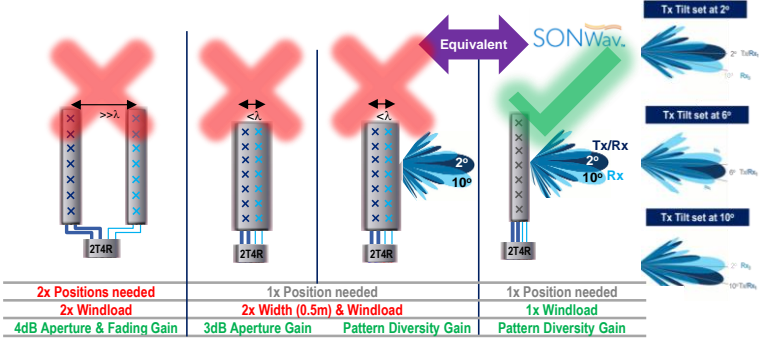
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## SONWav Application

SONWav provides a powerful, practical solution for delivering 4-branch Rx at Low-Band spectrum, where traditional four branch solutions would be too large, or challenge zoning, rentals and windloading. SONWav provides variable RET with elevation pattern diversity for Low-Band services in a conventional sized multi-band antenna.

### Key features and benefits:

- Designed for Low-Band Services 700, 800, 850MHz
- Allows Downlink to be Tilt optimized,
- Ideal for Power Limited Uplink such as VoLTE
- Mitigating Uplink Interference when using IRC in BBU
- Maximizing Uplink MCS, SINR, CQI and Throughput
- SONWav also has 4x1695-2400MHz Ports (2x Tilts)
- Optimized Azimuth Patterns as per MultiServ™ Family
- Optimized Radome & Windload as MultiServ™ Family



Example Above: Conventional 2m Antenna with Tx Tilt at 8° would mean cell edge UE is received 4dB off boresight. SONWav would allow Uplink Gain to be fully recovered.

