

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

- 800, 900, 1800, 2100 & 2300 bands in one antenna
- AISG & 3GPP compliant internal remote electrical tilt (RET)
- Provides 8 antenna Ports in a slim-line form factor

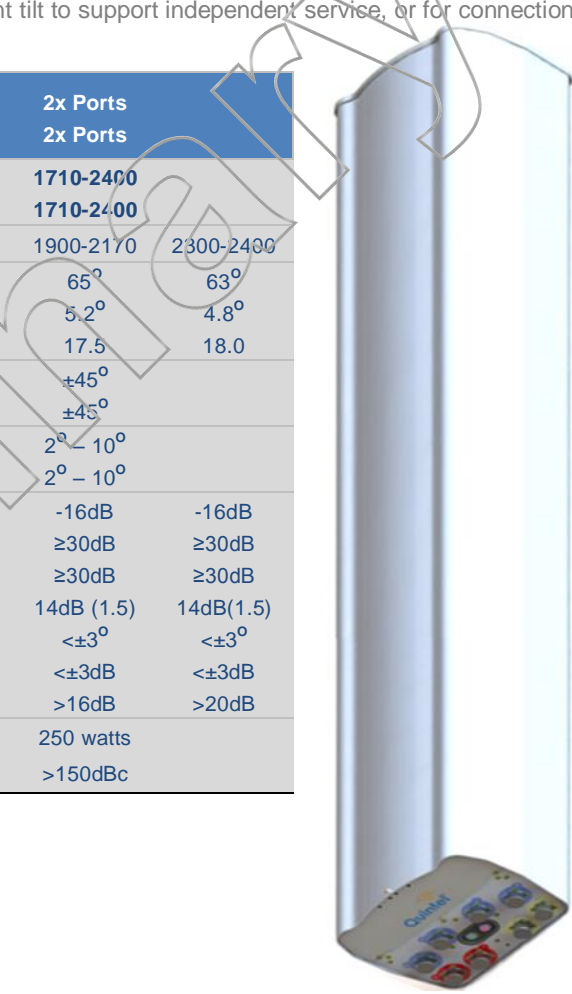
The Quintel SONWav™ Multi-band 8 Port Antenna with patented QTilt™ technology uniquely provides 4x ports at 698-960MHz (presented as 2x Tx/Rx and 2x Rx Ports) for connection to a 2T4R Radio, for example at LTE800, to exploit 4-branch Rx MRC/IRC which then effectively delivers an adaptive uplink elevation beamforming capability. The QW18658-3 also provides 4x conventional 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 (Tx/Rx)			2x Ports		
	2x Ports (Rx)			2x Ports		
Operating Frequency (MHz)	698-960 (Tx/Rx) 698-960 (Rx only)			1710-2400 1710-2400		
	698-790	790-880	880-960	1710-1880	1900-2170	2300-2400
Azimuth beamwidth ¹	69°	63°	63°	70°	65°	63°
Elevation beamwidth ¹	12.5°	10.5°	10°	6.2°	5.2°	4.8°
Gain ¹ (dBi)	13.1	14.1	14.2	17.0	17.5	18.0
Polarization	±45°			±45°		
	±45°			±45°		
Electrical down-tilt range	2°-10°			2°-10°		
	2°-10°			2°-10°		
Upper SLL (20° > mainbeam) ¹	-18dB	-18dB	-16dB	-16dB	-16dB	-16dB
Front to Back Ratio(180°±10°) ¹	≥30dB	≥28dB	≥28dB	≥30dB	≥30dB	≥30dB
Port to Port isolation ¹	≥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 ¹	<±2°	<±2°	<±2°	<±3°	<±3°	<±3°
Tracking ¹	<±2dB	<±3dB	<±3dB	<±3dB	<±3dB	<±3dB
X Polar Discrimination (at 0°)	>18dB	>20dB	>20dB	>20dB	>16dB	>20dB
Power handling (per port)	500 watts (Tx/Rx Ports)			250 watts		
PIM (3 rd Order) (2x43dBm)	>150dBc			>150dBc		

¹ Typical Performance across frequency and DownTilt.

Mechanical Characteristics	
Dimensions	1828(L) x 304(W) x 245(D) mm
Weight (excl mounting bracket)	29.4kg
No. of Connectors	8x 7/16 DIN Female Long Neck
Max Wind Speed	67m/s (150mph)
Equivalent Flat Plate Area	0.275m ²
Wind Load @ 150km/h (45m/s)	Front: 587N (132 lbs), Side: 382N (86 lbs)
Operating Temperature	-40°C to +65°C

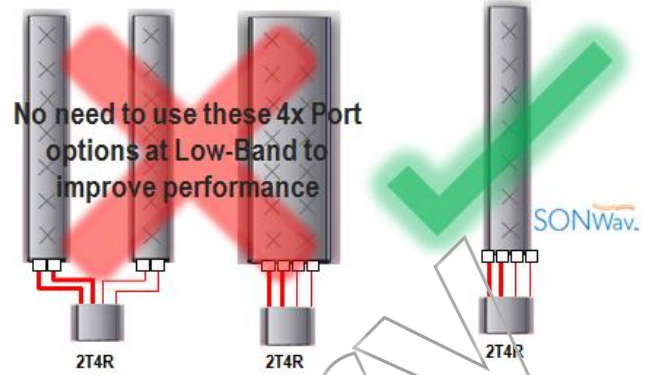
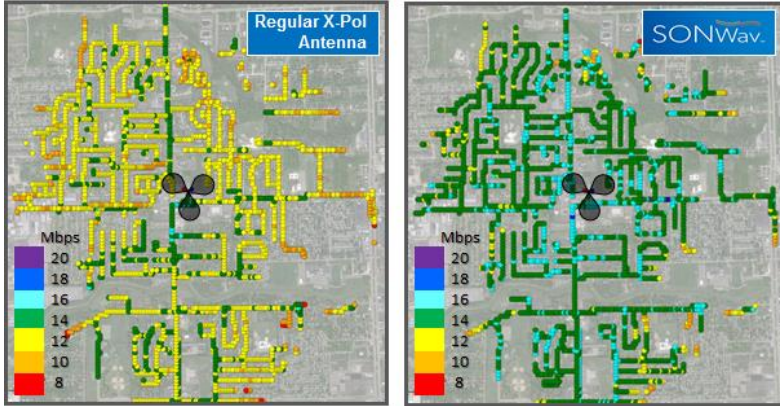
Fully Integrated RET Characteristics	
AISG Standards	V1.1, V 2.0 and 3GPP
Factory Default	AISG 2.0
Surge immunity	IEC 61000-4-5:2005 4KV(AISG PIN)
Device Type	SRET Type 1
AISG Data rate	9.6 kbps
No of connectors	1in, 1out
Connector type	IEC 60130-9 (Ed 3.0)
MTBF	36,000 Operational moves



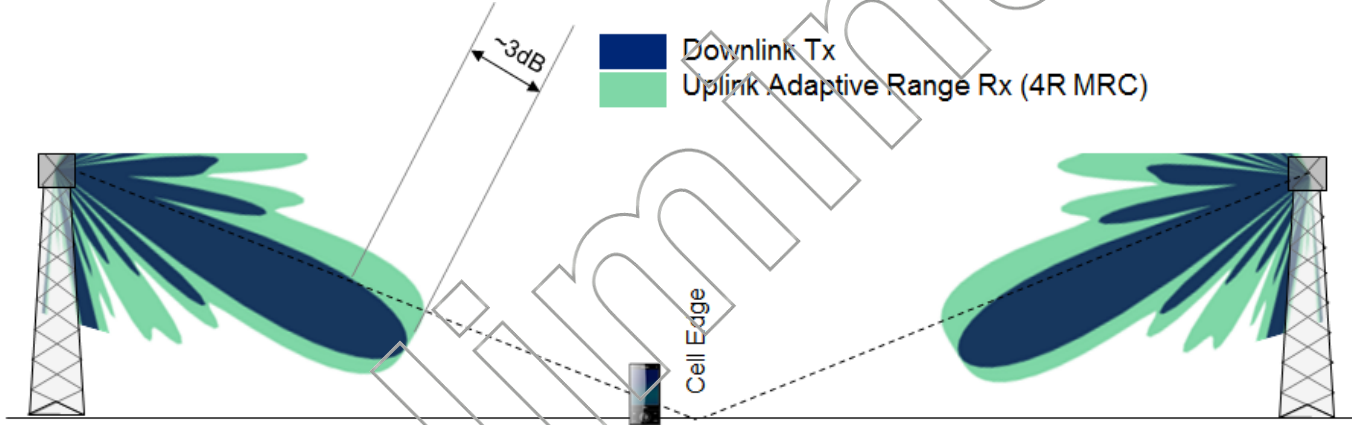
All specifications are subject to change without notice. Please contact your Quintel representative for complete information.



When the **SONWav™** antenna Low-band ports are connected to a **LTE 2T4R** Radio (e.g. at 800MHz band), up to 50% spectral efficiency gains or up to 3dB effective Gain on Uplink can be achieved, without an increase in antenna aperture. The benefits are similar to those achieved using two X-Pol antennas as shown. 900MHz services can be simply hosted via external combining onto the 2xTx/Rx ports.



A particularly powerful application for the **SONWav™** antenna is use at cells which have aggressive down-tilts. Such down-tilting may be needed for Downlink for capacity management and optimization but this may constrain the Uplink Link Budget. **SONWav™** allows LTE Downlink to be optimized for capacity without worrying about LTE Uplink. The image below illustrates this; two 35m sites at 2km separation with 8° Antenna Tilt means that the cell edge (at 2° inclination) may be 3dB off boresight. **SONWav** ensures this gain is recovered via its Uplink Adaptive beamforming action (its range indicated in green below) when connected to a 4-branch Rx radio. The application maximizes the QoS for VoLTE.



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.

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