

- Unique 4x Ports for 4T4R at Low-Band in 12" form factor
- Delivers "Per UE Tilting" by action of eNodeB 4T Precoding
- Optimized Azimuth patterns for Min Inter-Sector Interference

- 700, 850, PCS, AWS & WCS bands in one antenna
- AISG & 3GPP compliant internal remote electrical tilt (RET)
- Industry leading Min Wind-Load design

The Quintel 4T4R SONWav™ Multi-band 8 Port Antenna with patented QTilt™ technology uniquely provides 4x ports at 698-894MHz for connection to a 4T4R Radio and LTE Baseband Precoding, which effectively delivers an adaptive elevation beamforming capability, or "Per User Tilting" feature. The QW6658-4 also provides 4x1695-2400MHz ports as two conventional side-by-side (CLA-2X) arrays for connection to a 4T4R service, the arrays can be independently tilted if required.

Electrical Characteristics	4x Ports 1-4		2x Ports 5&6 2x Ports 7&8			
	698-806	814-894	1695-1780	1850-1990	2110-2180	2300-2400
Operating Frequency (MHz)	698-894		1695-2400 1695-2400			
Azimuth beamwidth ¹	69°	63°	70°	70°	62°	58°
Elevation beamwidth ¹	12.5°	10.5°	6.2°	5.9°	5.2°	4.8°
Gain ¹ (dBi)	13.1	14.1	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) ¹	-18dB	-18dB	-16dB	-16dB	-16dB	-16dB
Front to Back Ratio(180°±10°) ¹	≥30dB	≥28dB	≥30dB	≥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°	<±3°	<±3°	<±3°	<±3°
Tracking ¹	<±2dB	<±3dB	<±3dB	<±3dB	<±3dB	<±3dB
X Polar Discrimination (at 0°)	>18dB	>20dB	>20dB	>16dB	>20dB	>20dB
Power handling (per port)	500 watts (Tx/Rx Ports)		250 watts			
PIM (3 rd Order) (2x43dBm)	>153dBc		>153dBc			

¹ 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	8x 7/16 DIN Female Long Neck
Max Wind Speed	150mph (67m/s)
Equivalent Flat Plate Area	2.6ft ² (0.24m ²)
Wind Load @ 160km/h (45m/s)	Front: 285N (64 lbs), Side: 536N (120 lbs)
Operating Temperature	-40°C to +65°C

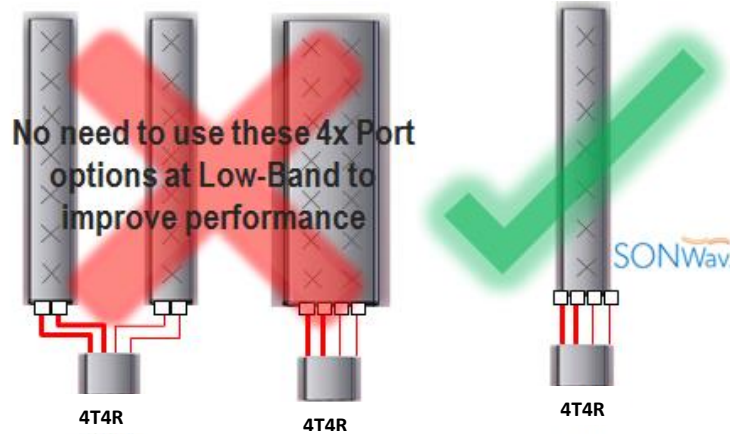
Fully Integrated RET Characteristics

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

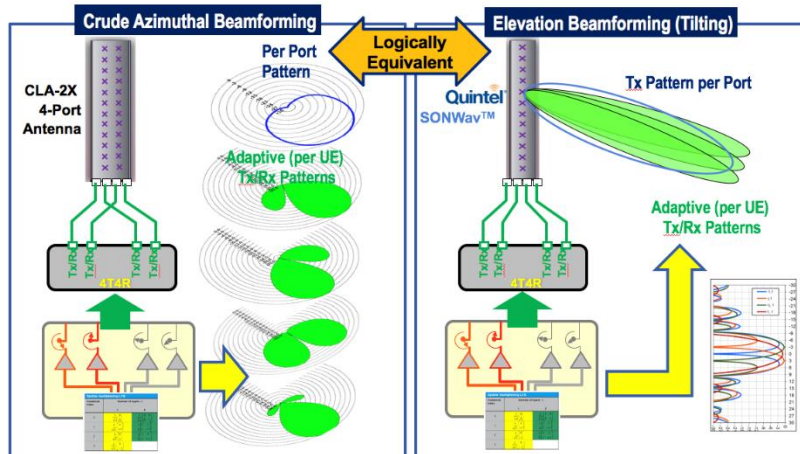




When the SONWav™ antenna Low-band ports are connected to a LTE 4T4R Radio (e.g. at 700MHz band), up to 50% spectral efficiency gains or up to 3dB effective Gain can be achieved, without an increase in antenna aperture. The benefits are similar to those achieved using two X-Pol antennas as shown. 850MHz services can be simply hosted via external combining onto the 4x 698-894MHz ports.



The intended application of the SONWav™ antenna is to give 4T4R functionality using a single and hence slimline Low-Band array when deploying conventional dual array (as 2 antennas or a double-wide antenna) is impractical or impossible. When the SONWav 4T4R antenna is connected to an LTE eNodeB Basestation, the baseband precoding results in Elevation beamforming or “Per UE Tilting”. This beamforming can be viewed as being logically the same as the crude Azimuthal beamforming effect which baseband precoding would create using a 4T4R radio with two arrays in side-by-side configuration – see illustration below.



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, Europe, and Asia. More information about Quintel available at www.quintelsolutions.com.

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