

JMA Wireless 8T8R beamforming small-cell antenna

OVERVIEW

Improve Capital Efficiency in small-cell deployments with beamforming technology.

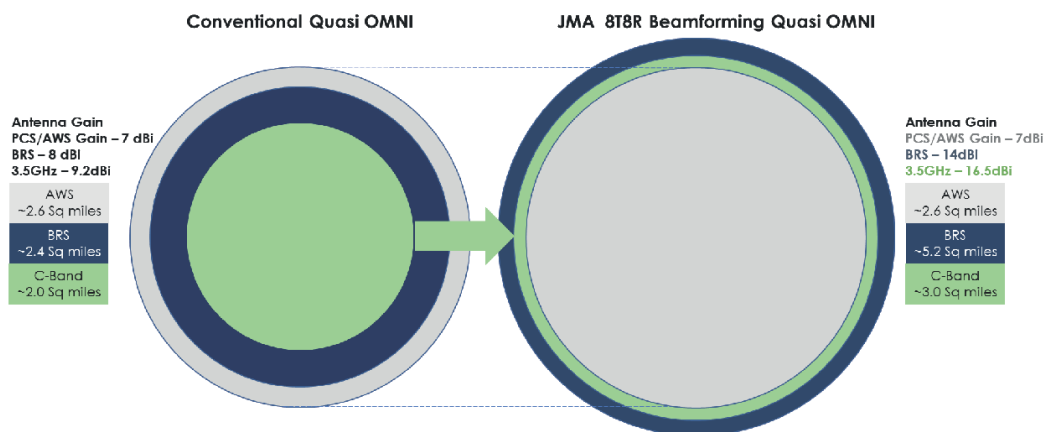
In the past decade, carriers have increasingly been deploying small-cells where it isn't feasible to deploy traditional macro sites. Small-cells are often preferred over traditional macros for capacity hotspots, coverage in residential areas or where base station equipment space is limited.

Initially thought to be low-cost solutions, small-cells have increasingly become more costly with the proliferation of band requirements to offer coverage and capacity as well as support non-standalone 5G. Unfortunately, the return on investment can also be lower because small-cells tend to have reduced coverage footprints due to typically low height below clutter which challenges radio propagation in any band. The reduced footprint problem is

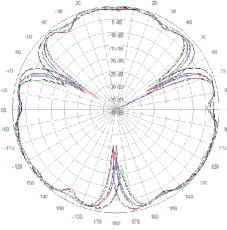
exacerbated in the BRS (n41) and C-band's (n77) where RF coverage is more influenced by low height and high clutter than the coverage of the longer wavelength PCS/AWS bands. This often leads to limited capacity due to low utilization in the BRS (n41) and C-band (n77).

JMA's 8T8R beamforming small-cell antenna offers higher gain and delivers 50% more coverage in n41 (BRS) & n77 (C-band), matching PCS/AWS coverage footprint. JMA's 8T8R beamforming small-cell antenna performance is equivalent to a 16T16R antenna with 60% less capital expense, allowing carriers to offload their lower band LTE traffic to the higher bandwidth 5G BRS or C-band spectrum.

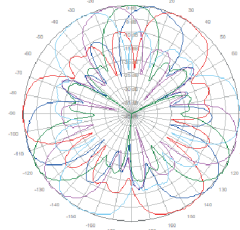
8T8R beamforming small-cell antenna characteristics



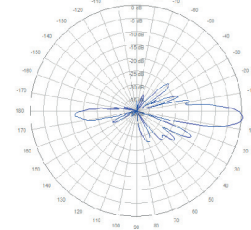
AWS, BRS & C-band Radio 40W per port, Rad Center 36ft, Cell Edge -105dBm



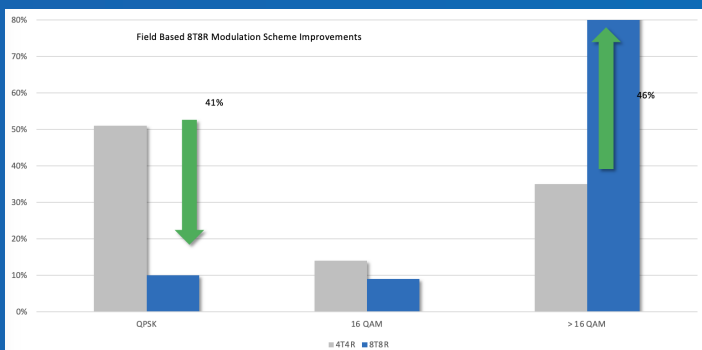
Conventional non beam forming horizontal beamwidth pattern with a broad OMNI footprint over a wide coverage area.



8T8R horizontal beamwidth pattern forms discrete narrow higher gain patterns, with high beam isolation increasing UE experience.



Vertical Beamwidth pattern: Low side lobe energy, reduces intercell interference, improved SINR, better KPI performance.



Field measurement of the JMA 8T8R beamforming configuration shows the utilization of higher-order modulation schemes, which helps with throughput improvement. 64-256QAM MCS proportion increased from 35% to 81% for 8T8R beamforming configuration compared to 4T4R.



FEATURES

- 6.5dBi higher antenna gain vs. traditional 4T4R on the n41-n77 band.
- 8T8R MIMO beamforming on BRS & C-band
- Superior XPOL performance and pattern symmetry across all bands.
- Low PIM and high power-rated components.
- 8T8R beamforming allows more traffic with a higher-order modulation coding scheme (MCS).
- It has the same form factor canister as the 4T4R.

BENEFITS

- 8T8R beamforming array offers 50% more coverage in n41 & n77, matching 1900/AWS.
- 40% capacity and 30% uplink throughput improvement.
- Offers 16T16R equivalent coverage with 60% cost less capital.
- Superior in-building penetration that offloads traffic from mid-band to n77.
- Low VBW with controlled sidelobes offers enhanced SINR, delivering improved throughput.
- High-power radio support.
- Easy to deploy.
- Higher ROI and low CAPEX per bps/Hz.

About JMA Wireless

Wireless technology now impacts nearly every aspect of daily life around the world. As the fastest-growing global tech company, JMA designs and delivers cutting-edge wireless technology solutions that modernize how people learn, work, live and play, like never imagined.

We power today's leading industries through next-generation software-based 5G, private wireless networks, 5G-ready antennas and connectors, and advanced indoor 5G capabilities — all manufactured in the U.S. Our headquarters, along with the first-of-its-kind 5G campus are located in Syracuse, NY, with innovative tech hubs around the world.

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