MATSING®

The MatSing® Family of

Multi-Beam Cylindrical (MBC) Lens Antennas

Less Infrastructure. More Impact.

For decades, traditional phased array panel antennas have served the mobile industry well; but today's challenges are unlike anything the industry has faced. Fueled by rapid AI adoption, legacy 4G and 5G sites are reaching saturation with more demanding 6G technologies on the way. The need for a new level of RF pattern performance, multi-beam coverage and cost-efficiency has never been greater.

Solving these challenges requires more than new antennas. It demands a new line of future-focused technology. MatSing is ready.

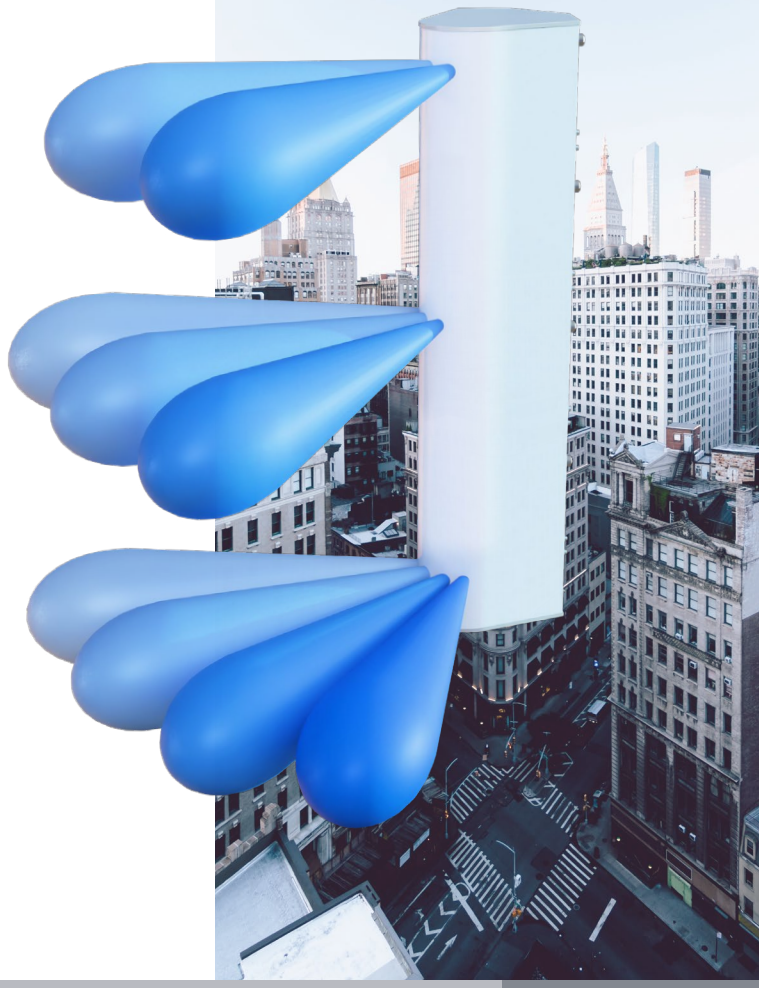
The power of RF lens antenna technology

Pioneered by MatSing, today's lens-enabled base station antennas provide hyper-focused, high-capacity, multi-beam coverage where traditional antennas fail. The difference is our technology.

Like an optical lens that focuses light, a lens antenna concentrates RF waves into tight, high-gain beams. The lens' symmetry enables multiple radiating elements to be positioned across its surface, creating multiple simultaneous beams from one antenna.

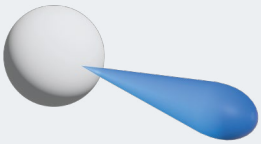
Mobile network operators can now deliver unprecedented capacity across a wider coverage area while using less power and eliminating interference in neighboring zones. This powerful combination enables operators to reduce antenna counts, power consumption, and their network's total cost of ownership.

MatSing is now proud to introduce the latest breakthrough in RF lens technology: The multi-beam cylindrical (MBC) family of antennas.

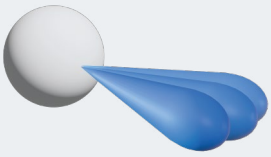


How Our Lens Technology Works

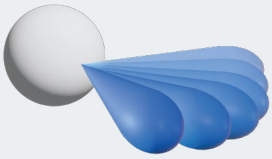
Multiple layers of patented dielectric meta-material



Lens focuses a cross-polarized signal to create a single beam



Multiple individual, high isolation, broadband beams created using the same lens



Up to 48 individual beams can be created with high isolation between beams

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MatSing MBC Cylindrical Lens Antennas

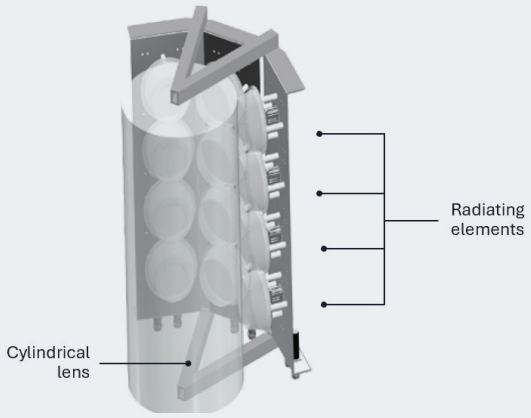
MBC cylindrical lens antennas are designed to deliver a high-capacity, highly cost-effective solution for mobile network operators (MNOs) and carriers.

The new MBC cylindrical portfolio enhances network performance, scale, capacity, and spectral efficiency while offering higher gain and narrow vertical beamwidth, making it the optimal solution for dense urban, suburban, and rural environments worldwide.

The MBC portfolio enables MNOs and carriers to immediately address the global demand for more capacity while significantly streamlining the infrastructure for macro tower and rooftop sites.

Each cylindrical lens antenna delivers 120-degree coverage with high gain, narrow vertical beamwidth and electrical beam tilt. This ensures maximum capacity and flexibility while maintaining high signal quality and minimal interference — even in the most challenging rural and urban deployment scenarios.

MatSing's new cylindrical lens antennas offer single, dual and tri-band options covering the low and mid frequency bands, C-band, F-band and T-band. With independent electrical beam tilt and two, three, four, six or ten beam options, the MBC family offers a solution for most macro layer environments.



Key Benefits

- Up to ten individual beams per antenna
- High-gain, narrow vertical beamwidth
- Improved signal strength over long distances
- 2x2 and 4x4 MIMO support, 2X or 4X more capacity
- Minimal cross-sector interference (>30 dB isolation)
- Ideal for sector splitting
- Extreme operating temperatures, -40°C to +70°C
- Independent beam-specific remote electrical tilt
- More coverage and capacity with fewer antennas

Enhanced Performance, Documented Results

By improving key performance metrics such as coverage, capacity, throughput, individual beam tilt and signal strength, MatSing MBC antennas help reduce the number of cell sites. Thus, they enable immediate CapEx and OpEx savings and a high degree of design flexibility. Their performance benefits have been consistently documented across a variety of locations and environments.

Scenario #1

Customer
European operator

Antenna trialed
MatSing MS-MBC-4.2-H4-12-L4-20

Documented results

- 30% average improvement in site desaturation
- 45% average increase in PDCP DL traffic capture
- 3dB average improved in 4G coverage
- 200% average increase in 4G speeds

Scenario #2

Customer
Major MNO in Asia

Antenna trialed
MatSing MS-MBC-4-H4-12

Documented results

- 13% increase in hourly average DL data volume
- 30% hourly average increase in UL
- 102% increase in average DL throughput
- 37% improvement in DL PRB utilization
- 31% improvement in UL PRB utilization
- 26% increase in average number of supported users

Scenario #3

Customer
Multiple major MNOs in the Middle East

Antenna trialed
MatSing MS-MBC-4.2-H4-12-L4-20

Documented results

- 52% average increase in 5G traffic
- 58% average increase in 4G LTE traffic
- 53% average increase in VoLTE traffic
- 6% improvement in average DL latency
- 52% increase in average throughput per user
- 20% improvement in average DL PRB utilization
- 39% improvement in average UL PRB utilization
- 71% increase in average number of supported users

The MBC Antenna Family at a Glance

	Antenna SKU	Frequency (MHz)	Beams (Band)	MIMO	Max Gain
MBC Tri Band	MS-MBC-442-C2H2L2	698-960 1695-2690 3700-4200	2 (low) 4 (high) 4 (C)	2x2	22.0 dBi
	MS-MBC-442-F2H2L2	698-960 1695-2690 3300-4200	2 (low) 4 (high) 4 (F)	2x2	22.0 dBi
	MS-MBC-442-C4H4L4	698-960 1695-2690 3700-4200	2 (low) 4 (high) 4 (C)	4x4	22.0 dBi
	MS-MBC-442-F4H4L4	698-960 1695-2690 3300-4200	2 (low) 4 (high) 4 (F)	4x4	22.0 dBi
MBC Dual Band	MS-MBC-4.2-H4-8-T4-16	617-896 1695-2690	2 (T) 4 (high)	4x4	21 dBi
	MS-MBC-4.2-H4-12-T4-20	617-896 1695-2690	2 (T) 4 (high)	4x4	20.5 dBi
	MS-MBC-4.2-H4-8-L4-16	698-960 1695-2690	2 (low) 4 (high)	2x2	21 dBi
	MS-MBC-4.2-H4-12-L4-20	698-960 1695-2690	2 (low) 4 (high)	4x4	20.5 dBi
MBC Single Band	MS-MBC-2-L2-15	698-960	2 (low)	2x2	16.5 dBi
	MS-MBC-2-L4-15	698-960	2 (low)	4x4	16.5 dBi
	MS-MBC-3-T4-16	617-896	3 (low)	4x4	17 dBi
	MS-MBC-3-L2-16	698-960	3 (low)	2X2	18.0 dBi
	MS-MBC-3-L4-16	698-960	3 (low)	4x4	18.0 dBi
	MS-MBC-3-H2-12	1695-2690	3 (high)	2x2	18.5 dBi
	MS-MBC-3-H4-12	1695-2690	3 (high)	4x4	18.5 dBi
	MS-MBC-4-H2-12	1695-2690	4 (high)	2x2	20.0 dBi
	MS-MBC-4-H4-12	1695-2690	4 (high)	4x4	20.0 dBi
	MS-MBC-6-C4-6	3700 – 4200	3 (low)	4x4	23.8 dBi
	MS-MBC-4-F4-6	3300-4200	4 (F)	4x4	22.0 dBi
	MS-MBC-4-C4-6	3700-4200	4 (C)	4x4	22.0 dBi

The MBC Technology Roadmap

As the mobile landscape continues to evolve, MatSing MBC multi-beam cylindrical lens antennas will continue to advance. The MBC technology roadmap includes the addition 3-, 8- and 12-beam antennas as well as the ability to support 8x8 MIMO. Greater beam control, capacity and coverage options for your toughest macro challenges.

For more information on the MBC family of cylindrical lens antennas, or any of our 150+ other lens antenna solutions and seven product families, contact your MatSing representative.