miot wireless solutions

Design. Connect. Thrive

2024

Antenna Catalog V9.0

CELLULAR | LPWA | POSITIONING | SHORT RANGE | OTHERS

5G/4G/3G/2G | NB-IoT/LoRA/Sigfox | GNSS/Multi-GNSS | WiFi/Bluetooth | Combination

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Who we are?

Our diverse team, hailing from various corners of the world, consists of visionary thinkers, skilled creators, and innovative developers. They are the heartbeat of our company, driving its success and vibrancy. The wealth of patents, profound understanding of client-specific needs, strong ecosystem partnerships, and comprehensive device-to-cloud offerings stem from our team's commitment, expertise, and inventive approach.
We stand distinct in our ability to offer clients a range of products, services, and solutions that open doors to novel problem-solving methods and market possibilities.

Why We Do This Our steadfast vision in the evolving IoT landscape is to empower organizations to redefine their future in a connected world, facilitating transformation and prosperity in the connected economy. The potential of what lies ahead excites us, as we play a pivotal role in driving not only business transformation but also reshaping entire industries

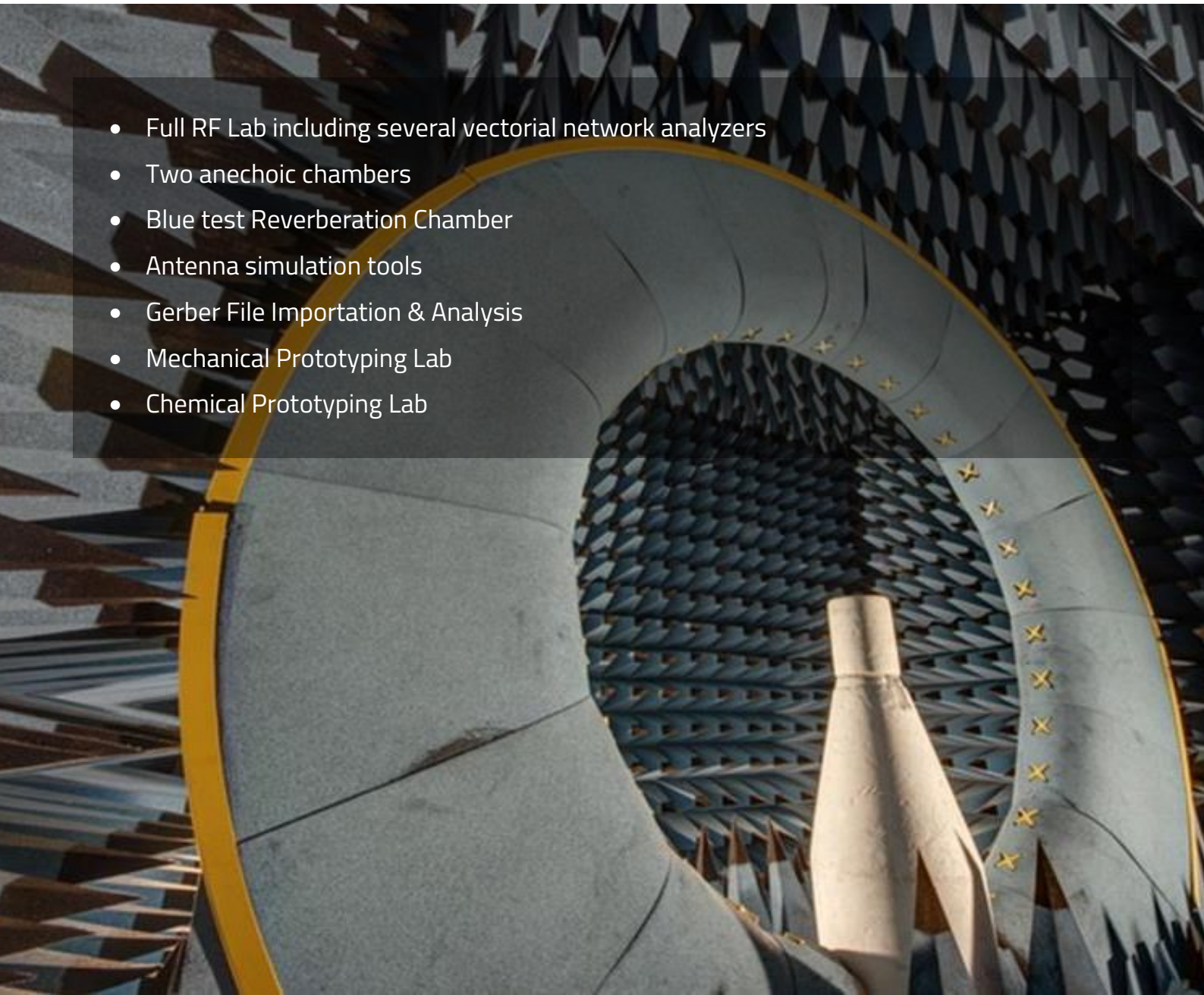
Wireless Experts Our leadership team comes with a combined experience of 100+ years in the wireless industry. At MIOT, our innovative products and solutions have already connected thousands of devices for critical applications. Our customers trust us to develop products and services that get them to the market faster and, in turn, improve the lives of people who use those products. Start with MIOT to build new technology solutions, streamline your deployments, and take advantage of everything that IoT promises. Join us and build your future in the Internet of Things.

Our Team The team at MIOT Solutions consists of experienced professionals in IoT, design, and manufacturing. With decades of combined experience, our team has the skills and knowledge to tackle any project in the electronics manufacturing industry. We are committed to delivering exceptional results and quality products to our clients.

Antenna Optimization Service
Multiband 5G / LTE / WiFi

Obtain Optimal Power, Gain, and Range

MIOT offers in-system tuning services for main and diversity antennas. By characterizing the antenna performance in the end system or product, this service takes the guesswork out of RF verification while offering corrective measures that re-tune the system for center frequency and impedance mismatch. This provides maximum system efficiency, delivering many benefits, including extended RF range, improved sensitivity, and can reduce the required power consumption for a given level of transmit range.



- Full RF Lab including several vectorial network analyzers
- Two anechoic chambers
- Blue test Reverberation Chamber
- Antenna simulation tools
- Gerber File Importation & Analysis
- Mechanical Prototyping Lab
- Chemical Prototyping Lab

MIOT Antennas

5G External / Internal Antennas

Product	L-5RA3	L-5RA4	L-5RA6	L-5RS5	L-5RB1	L-5MA1
						
Frequency Bands (MHz)	698~960, 1710~5000	698~960, 1710~5000	699~960, 1710~5850	690~960, 1710~2700	600~960, 1710~5850	700~960, 1710~2700, 3400~3800
Technology	5G, LTE, 2.4G WIFI	5G, LTE, 2.4G WIFI	5G, LTE	5G, LTE, 2.4G WIFI	5G, LTE	5G, LTE, WCDMA & WIFI
Peak Gain	<6 dBi	<9 dBi	7.7 DBi	3.0 DBi	5.0 DBi	4.0 DBi
VSWR	1.8	2	2.0	2.0	2	4.0
Connector Type	SMA Male (center pin)	-	SMA	SMA Male (center pin)	SMA	SMA
Dimensions (mm)	195*25	297*210*65	158*13	190*16	193*37	25 * 7 * 3
Cable Length (mm)	-	-	-	-	-	-
IP Rate	-	-	-	-	-	-

LTE / 4G External Antennas

Product	L-1RA3	L-1RA4	L-1RA6	L-1RA7	L-1RA8	L-1RA10
						
Frequency Bands (MHz)	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2500-2700, 2400-2500	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2500-2700
Technology	LTE(4G)	LTE(4G)	LTE(4G)	LTE(4G)	LTE(4G)	LTE(4G)
Peak Gain	＜3 dBi	＜5 dBi	＜3 dBi	6 dBi	＜5 dBi	＜6 dBi
VSWR	1.5	1.5	1.5	1.7	1.5	2.1
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Female (center pin)	SMA Male (center pin)	SMA Male (center pin)
Dimensions (mm)	194*13	184*13	168*13	115*11	154*13	115*11
Cable Length (mm)	-	-	-	-	-	-
IP Rate	55	55	55	66	55	-

MIOT Antennas

LTE / 4G External Antennas

Product	L-1RB1	L-1RB3	L-1RB4	L-1RB5	L-1RB6	L-1RB7
						
Frequency Bands (MHz)	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2400-2700	698-960, 1710-2170, 2400-2700	698-960, 1710-2170, 2400-2700	698-960, 1710-2170, 2500-2700, 2400-2500
Technology	LTE(4G)	LTE(4G)+2.4G	LTE(4G)+2.4G	LTE(4G)+2.4G	LTE(4G)+2.4G	LTE (4G) + 2.4G
Peak Gain	＜6 dBi	＜6 dBi	＜6 dBi	＜2 dBi	＜4 dBi	<8 dBi
VSWR	2.1	1.7	1.4	1.6	1.2	1.7
Connector Type	SMA Male (center pin)	SMA Female (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Dimensions (mm)	115*11	115*11	80*12	116*22	318*30	175*20
Cable Length (mm)	-	-	NA	3000	1500	-
IP Rate	-	-	66	55	55	-

LTE / 4G External Antennas

Product	L-1RC3	L-1RC6	L-1RS5	L-1RW5	L-1RW8	
						
Frequency Bands (MHz)	824~2690	698-960, 1710-2690	698-960,1710-2170	698-960, 1710-2170, 2500-2700, 2400-2500	698-960, 1710-2170, 2500-2700, 2400-2500	
Technology	LTE(4G)+2.4G	LTE(4G)+2.4G	LTE(4G)	LTE(4G)+2.4G	LTE(4G)+2.4G	
Peak Gain	＜3 dBi	＜3 dBi	＜3 dBi	＜5 dBi	＜8 dBi	
VSWR	1.5	1.3	1.2	1.5	2.5	
Connector Type	SMA Male	SMA Male	SMA Male (center pin)	N Male	N Male	
Dimensions (mm)	88*30	190*10	190*10	320*23	1100*22.8	
Cable Length (mm)	1000	-	-	-	-	
IP Rate	66	55	55	66	66	

MIOT Antennas

LTE / 4G Internal Antennas

Product	L-2FA6	L-2FA8	L-2FB4	L-2FB7	L-5MA2	L-5MA3
						
Frequency Bands (MHz)	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2500-2700	698-960, 1710-2170	698-960, 1710-2690	700~960, 1710~2700	700~960, 1710~2700
Technology	LTE(4G)	LTE(4G)	LTE(4G)	LTE(4G)	4G/3G	4G/3G
Peak Gain	＜5 dBi	＜4 dBi	＜2 dBi	＜5 dBi	4.0 DBi	4.0 DBi
VSWR	1.4	1.5	1.4	1.5	4.0	2.8
Connector Type	IPEX I	IPEX I	IPEX I	IPEX I	SMD	SMD
Dimensions (mm)	99*22	40*15	70*20	96*21	36 *7*3	42* 10*3
Cable Length (mm)	180	120	115	100	-	-
IP Rate	-	-	-	-	-	-

GSM, ISM External Antennas

Product	M-1RA1	M-1RA2	M-1RA3	M-1RB5G	S-1RA4B	S-1RW5	S-1RW8
							
Frequency Bands (MHz)	900-930	824-960, 1710-1990	915	900-930	433	868~930	915
Technology	ISM	GSM, ISM	Sigfox 915	Sigfox 915	Lora 433	Sigfox868/915	Sigfox 915
Peak Gain	＜3 dBi	＜3 dBi	＜8 dBi	＜3 dBi	3 dBi	2.5 dBi	8 dBi
VSWR	1.7	3.7	1.5	1.6	1.7	1.5	1.2
Connector Type	SMA Male (center pin)	SMA Male (center pin)	SMA	IPEX1	SMA Male (center pin)	N Male	N Male
Dimensions (mm)	208*12	50*8	20	116*22	177*30	380*23	1100*28
Cable Length (mm)	-	-	-	RG316-400mm	-	-	-
IP Rate	55	55	67	-	-	66	67

MIOT Antennas

GSM, ISM Internal Antennas

Product	M-2FA4	M-2FA5	S-2RA1	S-2RA2	S-2RA4	
						
Frequency Bands (MHz)	746-798 (B13)	900-930	433	433	868	
Technology	GSM	ISM	ISM	Lora 433	ISM	
Peak Gain	＜2 dBi	＜2 dBi	＜2 dBi	＜2 dBi	＜2 dBi	
VSWR	2	1.8	2	1.8	2	
Connector Type	IPEX I	IPEX I	DIP	DIP	DIP	
Dimensions (mm)	49*15	45*10	41*3	18*5	18*5	
Cable Length (mm)	50	85	-	-	-	
IP Rate	-	-	-	-	-	

Bluetooth / Wi-Fi External Antennas

Product	W-1RA1	W-1RA3	W-1RA5	W-1RA6	W-1RB5	
						
Frequency Bands (MHz)	2410-2490, 4920-5925	2400-2500, 5150-5850	2400-2500	2410-2490, 4920-5925	2400-2500	
Technology	(2.4G + 5.8G) x 2	2.4G + 5.8G	2.4G	2.4G + 5.8G	WIFI	
Peak Gain	＜6 dBi	＜6 dBi	＜1 dBi	＜2 dBi	＜1 dBi	
VSWR	1.1	1.2	1.8	1.2	1.8	
Connector Type	IPEX I	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA-RP	
Dimensions (mm)	172*13	18*47	88*10	168*13	88*10	
Cable Length (mm)	2100	1000	-	-	-	
IP Rate	55	66	55	55	-	

MIOT Antennas

Bluetooth / Wi-Fi Internal Antennas

Product	W-2FA1	W-2GA1	W-2RD1			
						
Frequency Bands (MHz)	2410-2490, 5749-5900	WIFI :2400 ~2500, 5000~5900 GNSS :1561 ~1602MHz	2410-2490, 5150-7125			
Technology	2.4G + 5.8G	2.4G/5.8G/GPS/GLONASS/BD	2.4 G+ 5.8 G+6E			
Peak Gain	＜2 dBi	＜4DBi	＜4DBi			
VSWR	1.5	2.0	1.5			
Connector Type	IPEX I	IPEX I	IPEX I			
Dimensions (mm)	51*13	50*20	41* 13			
Cable Length (mm)	-	250	85			
IP Rate	55	-	-			

GNSS External Antennas

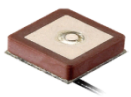
	G-1RE8	G-1RK1	G-1RK2	G-1RK5			
							
Frequency Bands (MHz)	1616-1627 ,1575.42	1616-1627 ,1575.42,1172	1616-1627 ,1575.42,1172	1616-1627 ,1575.42,1172			
Technology	GPS + GLONASS	GPS+GLONASS(3.3V)	GPS+GLONASS(3.3V)	GPS+GLONASS(3.3V)			
Peak Gain	28±2 dBi	28±2 dBi	＜3 dBi	28±2 dBi			
VSWR	1.5	2	≤2.0	2			
Connector Type	SMA Male (center pin)	SMA	FAKAR-C	SMA			
Dimensions (mm)	45*35*15	50*50*18	48*48*19	67*67*21			
Cable Length (mm)	300	-	3000	1000			
IP Rate	66	67	66	67			

MIOT Antennas

GNSS Internal Antennas

Product	G-2RE1	G-2RE2	G-2RE3	G-2RE4	G-2RE5	G-2RE6
						
Frequency Bands (MHz)	1616-1627, 1575.42	1616-1627, 1575.42	1616-1627, 1575.42	1616-1627, 1575.42	1616-1627 / 1575.42	1575.42
Technology	GPS + GLONASS	GPS + GLONASS	GPS + GLONASS	GPS + GLONASS	GPS + GLONASS	GPS
Peak Gain	＜3 dBi	＜3 dBi	＜5 dBi	＜4 dBi	＜5 dBi	22±2 dBi
VSWR	1.3	1.3	1.3	1.3	1.3	1.5
Connector Type	DIP	DIP	DIP	SMD	SMD	IPEX I
Dimensions (mm)	13*13*4	18*18*4	25*25*4	18*18*4	25*25*4	15*15*7
Cable Length (mm)	-	-	-	-	-	-
IP Rate	-	-	-	-	-	-

GNSS Internal Antennas

	G-2RE7	G-2RE8	G-2RE9	G-2RF1	G-2RW3	
						
Frequency Bands (MHz)	1575.42	1616-1627 / 1575.42	1575.42	1561~1602	1561~1602	
Technology	GPS	GPS + GLONASS	GPS	GPS+BD+GLONASS	GPS+BD+GLONASS	
Peak Gain	22±2 dBi	28±2 dBi	28±2 dBi	4 dBi	2 dBi	
VSWR	1.5	1.5	2	1.5	1.5	
Connector Type	IPEX I	IPEX I	IPEX I	IPEX1	SMD	
Dimensions (mm)	13*13*7	25*25*9	18*18*7	38.5*6*1	12*4*3	
Cable Length (mm)	-	-	-	120	-	
IP Rate	-	-	-	-	-	

Combo External & Internal Antennas

Product	L-5RA3	L-5RA4	L-5MA1	L-5MA2	L-5RS5	D-1RC3
						
Frequency Bands (MHz)	698~960, 1710~5000	698~960, 1710~5000	700~960, 1710~2700, 3400~3800	700~960, 1710~2700	690~960, 1710~2700	1574-1577, 698-960, 1710-2170, 2500-2700
Technology	5G, LTE, 2.4G WIFI	5G, LTE, 2.4G WIFI	5G, LTE, WCDMA & WIFI	5G, LTE, 2.4G WIFI	5G, LTE, 2.4G WIFI	LTE (4G) + GPS
Peak Gain	<6 dBi	<9 dBi	4.0 DBi	4.0 DBi	3 DBi	＜4 dBi
VSWR	1.8	2	4.0	4.0	2.0	2.1
Connector Type	SMA Male (center pin)	-	SMA	SMD	SMA Male (center pin)	SMA Male (center pin)
Dimensions (mm)	195*25	297*210*65	25 x 7 x 3	36 x 7 x 3	190x16	48*50
Cable Length (mm)	-	-	-	-	-	1500
IP Rate	-	-	-	-	-	66

MIOT Antennas

Combo External & Internal Antennas

Product	D-1RC4	D-1RS5U	L-1RB3	L-1RB4	L-1RB5	L-1RB7
						
Frequency Bands (MHz)	698-960 , 1710-2700, 1561~1602	698-960 , 1710-2700, 1561~1602	698-960, 1710-2170, 2500-2700	698-960, 1710-2170, 2400-2700	698-960, 1710-2170, 2400-2700	698-960, 1710-2170, 2500-2700, 2400-2500
Technology	LTE/GPS+GLONASS	LTE+GPS	LTE(4G)+2.4G	LTE(4G)+2.4G	LTE(4G)+2.4G	LTE (4G) + 2.4G
Peak Gain	＜3 dBi	-	＜6 dBi	＜6 dBi	＜2 dBi	<8 dBi
VSWR	＜3.0	-	1.7	1.4	1.6	1.7
Connector Type	SMA Male (center pin)	SMA	SMA Female (center pin)	SMA Male (center pin)	SMA Male (center pin)	SMA Male (center pin)
Dimensions (mm)	84*16	85*25	115*11	80*12	116*22	175*20
Cable Length (mm)	-	2440	-	-	3000	-
IP Rate	65~67	-	-	66	55	-

Applications

MIOT Wireless Solutions can be your gateway to a world of possibilities powered by our IoT antennas. Myriad applications come to life through seamless connectivity. From enhancing urban living to optimizing industrial processes, from enabling efficient logistics to transforming healthcare, our IoT antennas are designed to pave the way for a smarter, interconnected future.

Smart City & Infrastructure

IoT antennas enable smart city solutions like smart lighting, waste management, and traffic control. They connect devices to central systems for efficient management.

e.g. Smart streetlights, waste bins, parking meters, pedestrian safety, traffic control

Industrial Automation

Antennas are essential in industrial environments for real-time monitoring, asset tracking, and predictive maintenance, enhancing productivity and safety.

e.g. Manufacturing robots, remote machinery, sensor-equipped machinery.

Agriculture & Precision Farming

IoT antennas enable precision agriculture, facilitating remote monitoring of crops, soil conditions, and irrigation systems, leading to optimized yield.

e.g. Soil moisture sensors, crop health monitoring devices.

Healthcare & Remote Monitoring

Antennas enable remote patient monitoring, wearable health devices, and telemedicine applications, enhancing healthcare accessibility and patient care.

e.g. Wearable fitness trackers, medical monitoring devices, remote patient care

Transportation & Fleet Management

IoT antennas facilitate real-time tracking and communication in transportation, managing vehicle fleets, optimizing routes, and enhancing logistics.

e.g. GPS trackers, vehicle telematics devices, Smart toll,

Enviromental Monitoring

Antennas are crucial for monitoring environmental parameters such as air quality, pollution levels, and weather conditions for research and public safety.

e.g. Air quality sensors, weather stations, pet trackers

Retail & Inventory Management

IoT antennas facilitate inventory tracking, enabling retailers to manage stock levels, reduce wastage, and enhance customer experiences.

e.g. Smart tags, POS devices, smart shelves, contactless payment.

Energy Management

IoT antennas enable energy monitoring and management, optimizing consumption patterns, and reducing costs for both residential and commercial users.

e.g. Smart thermostats, smart appliances, energy consumption meters.

Asset Tracking & Logistics

IoT antennas enable real-time tracking of assets throughout the supply chain, ensuring transparency, security, and efficient logistics.

e.g. Shipping containers, package tracking devices, inventory management

wireless solutions

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