RFID Antenna Family

RFID antennas for fixed readers

Comprehensive RFID antenna portfolio for diverse application needs

Motorola's family of Radio Frequency Identification (RFID) Antennas offers the versatility and performance required to meet diverse environmental and application needs — including customer-facing areas, warehouses and outdoors. When used in conjunction with Motorola's Fixed RFID Readers, communication with Electronic Product Code (EPC™)-compliant RFID tags is accurate, fast and efficient. Vital components in reader-tag communications, our family of efficient, high-performance antennas can meet the needs of any RFID solution.

AN700 Series: Compact antennas for customer facing environments

The AN700 Series antennas offer all the features required for carpeted and customer-facing environments. A perfect complement to Motorola's FX7400 RFID Reader, the AN700 Series antennas are extremely compact, offering the aesthetics required for the most discreet installation in the most space constrained areas — for example, under the point of sale (POS) counter. The integrated mounting bracket enables easy installation in minutes. The AN710 is designed for inside the four walls. The rugged AN720 is designed to withstand exposure to rain, snow and extreme temperatures — ideal for the receiving dock doors or outdoor shopping areas.

AN480: wide band antenna for worldwide use

The AN480 single port antenna offers maximum performance and flexibility. The low axial ratio is nearly 50 percent lower than typical competitive devices, delivering a more uniform gain — and better performance. The wide frequency range enables this antenna to be utilized in worldwide deployments, providing cost-efficiencies and a simplified RFID infrastructure. The AN480 can be installed throughout the enterprise in manufacturing and warehouse floor environments, or any dock door receiving application. As with all Motorola antennas, the AN480 uses Motorola's standard mounting bracket — mounting the antenna for the first time or upgrading an existing Motorola antenna with the AN480 is fast and easy.

AN400: High-performance area antenna for high-capacity, high throughput environments

Get the capacity and range you need to enable RFID tag reading in large areas with the AN400 high-performance area antenna. This general-purpose area antenna is optimized to perform in all environments. Easy to mount on ceilings and walls, the AN400 enables the easy creation of superior read zones around shelves, doorways and dock doors — anywhere boxes and pallets are moving into and out of a facility.

These packaged, rectangular antenna arrays offer a wide read field and high-speed RF signal conversion for fast and optimal communication of EPC-compliant passive tag data. High-performance area antennas are typically used in applications requiring the longest read ranges and highest levels of performance. They meet standard technical requirements for any RFID implementation and are deployment-ready with Motorola RFID fixed readers.

AN200: general purpose antenna for indoor or outdoor application

Get the convenience of a versatile antenna that can be utilized throughout your enterprise, from the warehouse floor and production line to outside the dock door. Able to withstand extreme heat and cold as well as moisture and vibration, the AN200 is ideal for nearly any application, including retail, manufacturing, wholesale distribution, healthcare, government and more.

This all-purpose antenna can be used in standard RFID applications with power levels up to one watt, as well as custom high-power applications requiring up to 20 watts. The antenna is traditionally used in pairs, with right and left hand polarization.

Motorola RFID antennas — A vital RFID system component

RFID Antennas complement the portfolio of Motorola enterprise mobility solutions that enable organizations to capture, move and manage critical information to and from every point of business activity. In combination with Motorola's fixed readers, these efficient antennas deliver high-throughput, high capacity communication of EPC-compliant RFID tag data.

Services complete the solution

To help you seamlessly and successfully integrate your RFID Antennas into your environment, Motorola offers a complete suite of services that span the entire solution lifecycle — from initial planning and assessment through ongoing training and support.

For more information about Motorola RFID antennas for fixed readers and how Motorola's enterprise mobility solutions can give your organization a competitive advantage, access our global contact directory at www.motorola.com/enterprise/contactus, or visit us on the web at www.motorola.com/rfid

AN710

Compact General Purpose Indoor Antenna

Physical Characteristics	
Dimensions:	5.75 in. L x 5.75 in. W x 0.69 in. D 146.05 mm L x 146.05 mm W x 17.53 mm D
Weight:	1.1 lbs./0.5 kg
User Environment	
Frequency Range:	900-928 MHz and 867-870 MHz
Gain:	3 dBiL
Bandwidth @ 2:1	SWR: 30 MHz
Beam Width:	80° elevation; 80° azimuth
Nominal Impedence:	50 Ohm
Maximum Power:	10 watts
Operating Temperature:	-22° to +176° F/-30° to +80° C
Connector:	Type 'N' female
Mounting:	Integrated articulating mount
Antenna Randome:	White ABS plastic

AN720

Compact Rugged Indoor-Outdoor Antenna

Physical Characteristics	
Dimensions:	5.2 in. L x 5.2 in. W x 0.7 in. D 132.8 mm L x 132.8 mm W x 18.1 mm D
Weight:	0.8 lbs./0.37 kg
User Environment	
Frequency Range:	US and Canada: 900-928 MHz Europe: 865-868 MHz
Operating Temperature:	-22° to +158° F/-30° to +70° C
Storage Temperature:	-40° to +185° F/-40° to +85° C
Connector:	Type "N" female
Gain:	US/Canada: 3dBiL Europe: 3.5 dBiL
Return Loss (VSWR):	1.5:1
Front to Back Ratio:	8 db
Nominal Impedence:	50 Ohm
Beam Width:	100°
Polarization:	Circular (L) left
Power:	10 watts
Axial Ratio:	2 dB
Mounting:	2 threaded studs (rack mount); includes articulating mount
Enclosure rating:	IP67
Impact Resistance:	1.0 lbs./0.46 kg; Ball drop — 24 in./60.96 cm
Vibration	MIL-STD-810
Shock:	IEC-68-2-27
Humidity:	IEC-68-2-30
Lightning Protection:	DC grounded

AN480

High-Performance Worldwide Indoor Wide Band Antenna

Physical Characteristics	
Dimensions:	Without mounting screws: 10.2 in. L x 10.2 in. W x 1.32 in. D 25.91 cm L x 25.91 cm W x 3.35 cm D With mounting screws: 10.2 in. L x 10.2 in. W x 1.98 in. D 25.91 cm L x 25.91 cm W x 5.03 cm D
Weight:	2.5 lbs./1.13 kg
Polarization:	LHCP and RHCP
User Environment	
Frequency:	865-956 MHz
Operating Temperature:	-13° to +158° F/-25° to +70° C
Environmental Sealing:	IP54
Connectors:	Type "N" female
Max. VSWR Free Space:	1.22:1
Max. VSW Ground at .15 Meter:	1.3:1
Nominal Impedance:	50 Ohm
Horizontal 3 dB Beam Width:	65°
Vertical 3 dB Beam Width:	65°
Gain:	6 dBil max.
Axial Ratio:	1.5 dB max.
DC Resistance:	10K Ohm
Front to Back Ratio:	18 dB
Power:	2 Watts
Transport Vibration:	IEC-68 series
UV Rating:	F2 per UL 746C

AN400

High-Performance Area Antenna

Physical Characteristics	
Dimensions:	28.3 in. L x 12.5 in. W x 1.5 in. D 71.7 cm L x 31.7 cm W x 3.8 cm D
Weight:	8 lbs./3.6 Kg
Casing:	Aluminum with polycarbonate cover
Polarization:	Two circular polarized patch array
User Environment	
Frequency Range:	900-928 MHz
Operating Temperature:	+32° to +122° F/0° to +50° C
Storage Temperature:	-4° to +158° F/-20° to +70° C
Connectors:	2 type "N" female connectors
Voltage Standing Wave Ratio (VSWR):	1.25
Isolation:	-37 db
3db Beam Width:	60°
Gain:	6.0 dBi linear

AN200

General Purpose Indoor-Outdoor Antenna

Physical Characteristics	
Dimensions:	11.1 in. L x 11.1 in. W x 1.9 in. D 28.19 cm L x 28.19 cm W x 4.83 cm D
Weight:	3 lbs./1.26 kg
User Environment	
Frequency Range:	900-928 MHz
Operating Temperature:	-40° to +149° F/-40° to +65° C
Connector:	Type "N" female
Connector Position:	Rear
Return Loss (VSWR):	20 dB (1.22)
Cold Test:	IEC-68-2-1 (-40° F/-40° C for 24 hours)
Heat Test:	IEC-68-2-2 (158° F/70° C for 24 hours)
Temperature Shock Test:	IEC-68-2-14 (-40° F rising to 158° F/-40° Crising to 70° C in 10 cycles of 60 minutes each)
Humidity Test:	IEC-68-2-30 (77° to 104° F/-25° to 40° C 24 hour cycles of 90% relative humidity
Rain Test:	IEC-68-2-18 (8 hr min in rain chamber at 43 psi)
Salt Fog Test:	IEC-68-2-11 (96 hours, repetitive cycling)
Random Vibration Test:	IEC-68-2-6 (10 to 150 Hz, 05 g, 1 hour in each of 2 axes)
Nominal Impedence:	50 Ohm
Gain in dBi linear:	6.0
Impedence, DC:	10 kOhm +/- 5%
Polarization:	RHCP or LHCP
Axial Ratio at Boresight:	< 3 db AZ, EL BW: 60°
Front to Back Ratio:	<10 db
Max Input Power:	20 watts

Choose the right antenna for your application

Motorola's complete family of RFID antennas meets the needs of virtually any RFID application. Choose the antenna that is designed for your environment — carpeted, industrial or outdoors, delivers the right level of performance, meets mounting requirements and fits in your budget.

Antenna		AN200	AN400	AN480	AN710	AN720
						
Environment	Business-class			●	●	●
	Industrial-class – Indoor	●	●	●		●
	Industrial-class – Outdoor	●				●
Value Solution				●	●	
Compact					●	●
High Performance/High Gain (dB)		●	●	●		
Polarization		R & L Circular	R & L Circular/ Dual	R & L Circular	L Circular	L Circular

Notices:
Repairs of Motorola RFID antennas for fixed readers may require the use of Motorola proprietary parts (and/or Motorola proprietary information). Motorola will sell these parts (and provide this proprietary information) only to end-user customers for self-service. Applicable in the U.S. For all other countries, please contact your Motorola account manager or the local Motorola Customer Service representative in your area for further details.

The antenna frequency specification and label is a characteristic trait of the antenna's peak frequency response. The RFID reader, when professionally installed and selected for a country of operation, dictates the actual frequency of transmission/reception to ensure regulatory compliance for operation in a designated country. The actual frequency specification of the antenna is not material to regulatory compliance.

The AN400 and AN200 will perform reasonably well in EU frequency in most applications.

SPECIFICATION SHEET

RFID ANTENNA FAMILY
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MOTOROLA

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