COMPREHENSIVE RFID ANTENNA PORTFOLIO FOR DIVERSE APPLICATION NEEDS

MOTOROLA RFID ANTENNA FAMILY

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 outdoor environments. 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.

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.

VERSATILITY AND PERFORMANCE TO MEET YOUR DIVERSE APPLICATION NEEDS

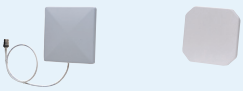
ON THE FLOOR ...

IN THE FIELD ...

IN THE WAREHOUSE ...

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.

	GENERAL PURPOSE			SLIM LINE		COMPACT	
							
ANTENNA	**AN200**	**AN400**	**AN480**	**AN610**	**AN620**	**AN710**	**AN720**
ENVIRONMENT							
Business-class			•	•	•	•	•
Industrial-class – Indoor	•	•	•	•	•		•
Industrial-class – Outdoor	•	•	•				•
VALUE SOLUTION			•			•	
COMPACT				**SLIM**	**SLIM**	•	•
HIGH PERFORMANCE/HIGH GAIN (DB)	•	•	•				
POLARIZATION	R & L Circular	R & L Circular/Dual	R & L Circular	L Circular	L Circular	L Circular	L Circular

NOTES:

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.

GENERAL PURPOSE

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.

FEATURES	Supports drain holes for use in direct rain, snow or high humidity environments
APPLICATIONS	Dock doors, portals, outdoor gates

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.

FEATURES	• Dual-element, ideal for bi-static operation. • Can be used as two separate mono-static antennas in one package.
APPLICATIONS	• Ceilings and walls to create superior read zones around shelves • Doorways and chokepoints where boxes and pallets are moving through • Portals, outdoor gates and conveyors • RF-challenging environments

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.

FEATURES	• Excellent wide frequency band antenna response covering 865 Mhz ~ 956 Mhz , ideally suited for global deployments • Available in right and left hand polarization.
APPLICATIONS	• Ceilings and walls to create superior read zones around shelves • Doorways and chokepoints where boxes and pallets are moving through • Portals, outdoor gates and conveyors • Indoor and outdoor applications

SPECIFICATIONS

	AN200	AN400	AN480
PHYSICAL			
Dimensions without mounting screws:	11.1 in. L x 11.1 in. W x 1.9 in. D 281.9 mm L x 281.9 mm W x 48.3 mm D	28.3 in. L x 12.5 in. W x 1.5 in. D 717 mm L x 317 mm W x 38 mm D	10.2 in. L x 10.2 in. W x 1.32 in. D 259.1 mm L x 259.1 mm W x 33.5 mm D
Dimensions with mounting screws:	11.1 in. L x 11.1 in. W x 1.9 in. D 281.9 mm L x 281.9 mm W x 48.3 mm D	28.3 in. L x 12.5 in. W x 2.25 in. D 717 mm L x 317 mm W x 57.15 mm D	10.2 in. L x 10.2 in. W x 1.98 in. D 259.1 mm L x 259.1 mm W x 50.3 mm D
Connector	Type "N" female	Type "N" female (2 qty)	Type 'N' female
Connector Position	Rear		Pig-tail
Mounting bracket	Available separately		
Weight	3 lbs./1.36 kg	7 lbs./3.2 Kg	2.5 lbs./1.13 kg
Casing	Aluminum with plastic cover	Aluminum with polycarbonate cover	Aluminium with white plastic cover
OPERATIONAL			
Freq. Range	900-928 MHz		865-956 MHz
Gain	6.0 dBiL		6.0 dBiL
VSWR (Return Loss)	1.22 : 1(20 dB)		1.3 : 1
Front to Back Ratio	> 10dB		18 dB
Polarization	LHCP or RHCP	Port1- RHCP; Port2- LHCP	LHCP or RHCP
3db Beam Width	60°	60°	65°
Max Power	20 watts	10 Watts	2 watts
Axial Ratio	< 3 db	3.5 dB	1.5 dB
ENVIRONMENTAL			
Oper. Temps	-40° F to +149° F, -40° C to +65° C		-13° F to +158° F, -25° C to +70° C
Environmental Sealing	Weep holes		IP54
Storage Temperature	-40°F to +158° F, -40°C to +70° C		
Vibration	IEC-68-2-6 (10 to 150 Hz, 0.5 g, one hour in each of two axes) (Random Vibration)		IEC-68 series
Humidity	IEC-68-2-30 (77° to 104° F/-25° to 40° C) 24 hour cycles of 90% relative humidity		IEC 68-2-30
COMPLIANCE			
TAA Compliant	YES		NO
Port to Port Isolation	38dB		

SLIM LINE

AN600 SERIES: SLIM LINE, ULTRA-LOW PROFILE ANTENNA

When your application calls for a "picture-frame" aesthetic antenna deployment, look to the newest ultra-low profile members of the Motorola family – the AN610 and AN620 Slimline Antennas. The AN610 and AN620 feature a simple, integrated mounting system that lets them stand just under one-half inch (12mm) from horizontal or vertical mounting surfaces. Space-saving and stylish, the outer housing is designed to be sleek and discreet enough to be at home in any business setting but rugged enough for indoor industrial environments. A perfect complement to the FX7400 RFID reader, the AN600 series antennas are ideally suited for use in wall mount, doorways, under counter, above counter as an RFID pad, on shelves, POS or end-cap displays like jewelry counter applications.

FEATURES	Flat panel, slim line antennas
APPLICATIONS	Suitable for use in indoor environments: wall mount, doorways, under counter, above counter as an RFID pad, on shelves, on end-cap displays, POS etc.

SPECIFICATIONS

	AN610	AN620
PHYSICAL		
Dimensions:	10.8 in. L x 8.42 in. W x 0.47 in. D 275 mm L x 214 mm W x 12 mm D	15.39 in. L x 10.82 in. W x 0.47 in. D 391 mm L x 275 mm W x 12 mm D
Connector	Type "N" female	
Connector Position	Side	
Mounting bracket	Integrated mounting holes	
Weight	1.3 lbs./ 0.6 kg	2.2 lbs./ 1.0 Kg
Casing	Superior Kydex	
OPERATIONAL		
Freq. Range	864-868 MHz (EU Version) 902-928 MHz (US Version)	
Gain	1.0 dBiL	4.0 dBiL
VSWR (Return Loss)	1.4 : 1	
Front to Back Ratio	18 dB	22 dB
Polarization	LHCP	
3db Beam Width	80° in both phases	75° horizontal , 48° vertical
Max Power	6 watts	
Axial Ratio	< 2 dB	
ENVIRONMENTAL		
Oper. Temps	-22° F to +149° F, -30° C to +65° C	
Environmental Sealing	IP-65	
Storage Temperature	-40°F to +158° F, -40°C to +70° C	
Vibration	IEC-68-2-6 (10 to 150 Hz, 0.5 g, one hour in each of two axes) (Random Vibration)	
Humidity	IEC-68-2-30 (77° to 104° F/-25° to 40° C) 24 hour cycles of 90% relative humidity	

COMPACT

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.

FEATURES	• Thin profile • Low gain (~3dB) antenna for short range applications to create targeted zone	**FEATURES**	• Industrial class, IP 67 rated • Wide beam-width of 100 degree for wider coverage • Ideal for short range applications to create targeted zones
APPLICATIONS	Suitable for use in Indoor environments: in doorways, on shelves, on end-cap displays, on conveyors, or POS etc.	**APPLICATIONS**	• Suitable for use in Indoor and outdoor environments • Indoors: In doorways, shelves, end-cap displays • Outdoors: Doorways, small conveyors

SPECIFICATIONS

	AN710	AN720
PHYSICAL		
Dimensions without mounting screws:	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	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
Dimensions with mounting screws:	N/A	
Connector	Type 'N' female	
Connector Position	Pig-tail	Rear
Mounting bracket	includes articulating mount	
Weight	1.1 lbs/0.5 kg	0.8 lbs/0.37 kg
Casing	White ABS plastic	Aluminium with white plastic cover
OPERATIONAL		
Freq. Range	900-928 MHz (US) & 867-870 MHz (EU)	900-928 MHz (US) & 865-868 MHz (EU)
Gain	3.0 dBiL	US/Canada: 3.0 dBiL; Europe: 3.5 dBiL
VSWR (Return Loss)	2 : 1	1.5 : 1
Front to Back Ratio	> 10dB	8db
Polarization	LHCP	
3db Beam Width	80°	100°
Max Power	10 watts	
Axial Ratio	< 3 db	2 dB
ENVIRONMENTAL		
Oper. Temps	-22° F to +158° F, -30° C to 70° C	-13° F to +158° F, -25° C to +70° C
Environmental Sealing	IP 65 Vented	IP67
Storage Temperature	-40° F to +158° F, -40° C to +70° C	-40° F to +158° F, -40°C to +70° C
Vibration	EN 61373, IEEE 1478, Mil-810G	MIL-STD-810
Humidity	Not Spec'd	IEC-68-2-30
COMPLIANCE		
TAA Compliant	YES	

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

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.

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