PRODUCT SPEC SHEET
ZEBRA RFID ANTENNA FAMILY

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COMPREHENSIVE RFID ANTENNA PORTFOLIO FOR DIVERSE APPLICATION NEEDS

Zebra'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 Zebra'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.

ZEBRA RFID ANTENNAS— A VITAL RFID SYSTEM COMPONENT

RFID Antennas complement the portfolio of Zebra enterprise mobility solutions that enable organizations to capture, move and manage critical information to and from every point of business activity. In combination with Zebra'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, Zebra 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 Zebra 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.zebra.com/antennas** or access our global directory at **www.zebra.com/contact**.

VERSATILITY AND PERFORMANCE TO MEET YOUR DIVERSE APPLICATION NEEDS

ON THE FLOOR ...

IN THE FIELD ...

ZEBRA

FEATURES AND APPLICATIONS

AN200:

FEATURES

Supports drain holes for use in direct rain, snow or high humidity environments

APPLICATIONS

Dock doors, portals, outdoor gates

AN440:

FEATURES

- Dual-element, ideal for bi-static operation
- Can be used as two separate mono-static antennas in one package
- Rugged design suitable for industrial applications, IP-67 rated

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:

FEATURES

- Excellent wide frequency band antenna response covering 865 Mhz ~ 956 Mhz , ideally suited for global deployments
- Available in right and left hand polarization.

IN THE WAREHOUSE ...

CHOOSE THE RIGHT ANTENNA FOR YOUR APPLICATION

Zebra'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

AN200: GENERAL PURPOSE ANTENNA FOR INDOOR OR OUTDOOR APPLICATION

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

AN600 SERIES:

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.

AN700 Series

FEATURES

- Thin profile
- Low gain (~3dB) antenna for short range applications to create targeted zone

APPLICATIONS

Suitable for use in Indoor environments: in doorways, on shelves, on end-cap displays, on conveyors, or POS etc.

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 and outdoor environments
- Indoors: In doorways, shelves, end-cap displays

- Outdoors: Doorways, small conveyors

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.

AN440: LARGE AREA COVERAGE FOR HIGH-CAPACITY, HIGH THROUGHPUT ENVIRONMENTS

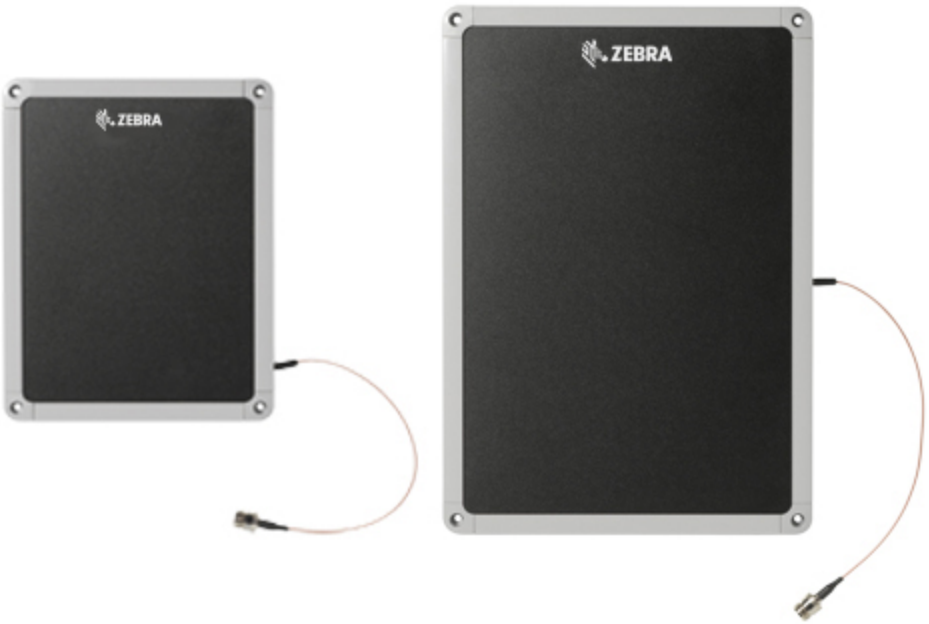
Need to keep track of thousands of assets? High product density and heavy traffic across a large area? Get the capacity and range you demand for reliable RFID tag reading with the AN440 high-performance RFID area antenna. A good-looking, rugged general-purpose area antenna, the AN440 is designed to perform exceptionally in all environments, customer-facing or industrial, indoors and out.
The AN440 RFID Antenna gives you a wide read field and high-speed RF signal conversion, so data capture is fast and accurate, even in expansive, high-demand environments. The AN440 is easy to mount on ceilings and walls, and its rugged white housing is at home in both customer-facing and industrial settings. So you can achieve superior read zones around stockroom shelves, warehouse doorways and dock platforms – anywhere boxes and pallets are moving into and out of your facility. Your workflow keeps flowing, your inventory count stays accurate and your productivity can reach new heights.

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 Zebra antennas, the AN480 uses Zebra's standard mounting bracket — mounting the antenna for the first time or upgrading an existing Zebra antenna with the AN480 is fast and easy.

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 Zebra 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.

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 Zebra'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.

	GENERAL PURPOSE			SLIM LINE
				

ANTENNA ENVIRONMENT	AN200	AN440	AN480	AN610
BUSINESS-CLASS		•	•	•
INDUSTRIAL-CLASS – INDOOR	•	•	•	•
INDUSTRIAL-CLASS – OUTDOOR	•	•	•	
VALUE SOLUTION			•	
COMPACT				SLIM
HIGH PERFORMANCE/ HIGH GAIN (DB	•	•	•	
POLARIZATION	R & L Circular	R & L Circular/ Dual	R & L Circular	L Circular

SPECIFICATIONS

	AN200	AN440
		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	22.6 in. L x 10.2 in. W x 1.32 in. D 575.1 mm L x 259.1 mm W x 33.52 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	22.6 in. L x 10.2 in. W x 1.32 in. D 575.1 mm L x 259.1 mm W x 33.52 mm D
CONNECTOR	Type “N” female	Type “N” female (2 qty)
CONNECTOR POSITION		Rear
MOUNTING BRACKET		Integrated mount
WEIGHT	3 lbs./1.36 kg	7 lbs./3.2 Kg
CASING	Aluminum with plastic cover	UV Stable ASA, White
		OPERATIONAL
FREQ. RANGE	900-928MHz	EU: 865-868MHz; US*: 902-928MHz (AN440 optimized for US)
GAIN		6.0 dBiL
VSWR (RETURN LOSS)		1.22 : 1(20 dB)
FRONT TO BACK RATIO	> 10dB	20dB
POLARIZATION	LHCP or RHCP	1 x LHCP / 1 x RHCP
3DB BEAM WIDTH	60°	70° in both phases
MAX POWER	20 watts	10 Watts
AXIAL RATIO	< 3 db	1dB typical
		ENVIRONMENTAL
OPER. TEMPS	-40° F to +149° F, -40° C to + 65° C	-22°F to +158°F , -30°C to +70°C
ENVIRONMENTAL SEALING	Weep holes	IP-67
STORAGE TEMPERATURE	-40°F to +158° F, -40°C to + 70° C	-40°F to +185°F, -40°C to +85°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 (-13° F to 104° F, -25° C to 40° C) 24 hour cycles of 90% relative humidity	MIL-Std 810G, METHOD 507.5, Procedure II - Aggravated
		COMPLIANCE
TAA COMPLIANT		YES
PORT TO PORT ISOLATION		38dB
		SPECIFICATIONS
		AN610
		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	
CONNECTOR		Type “N” fer
CONNECTOR POSITION		Side

MOUNTING BRACKET		Integrated mount
WEIGHT	1.3 lbs./ 0.6 kg	
CASING		Superior Ky
		OPERATIONAL
FREQ. RANGE		864-868 MHz (EU 902-928 MHz (US
GAIN	1.0 dBiL	
VSWR (RETURN LOSS)		1.4 : 1
FRONT TO BACK RATIO	18 dB	
POLARIZATION		LHCP
3DB BEAM WIDTH	80° in both phases	
MAX POWER		6 watts
AXIAL RATIO		< 2 dB
		ENVIRONMENTAL
OPER. TEMPS		-22° F to +149° F, -30
STORAGE TEMPERATURE		-40° F to +158° F, -40
VIBRATION		IEC-68-2-6 (10 to 150 Hz, each of two axes) (Ran
HUMIDITY		IEC-68-2-30 (-13° F to 104° 24 hour cycles of 90% r
	AN710	
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	
DIMENSIONS WITH MOUNTING SCREWS:		N/A
CONNECTOR		Type 'N' fer
CONNECTOR POSITION	Pig-tail	
MOUNTING BRACKET		includes articulati
WEIGHT	1.1 lbs/0.5 kg	
CASING	White ABS plastic	
		OPERATIONAL
FREQ. RANGE	900-928 MHz (US) & 867-870 MHz (EU)	
GAIN	3.0 dBiL	
VSWR (RETURN LOSS)	2 : 1	

FRONT TO BACK RATIO	> 10dB	
POLARIZATION		LHCP
3DB BEAM WIDTH	80°	
MAX POWER		10 watts
AXIAL RATIO	< 3 db	
		ENVIRONMENTAL
OPER. TEMPS	-22° F to +158° F, -30° C to 70° C	
ENVIRONMENTAL SEALING	IP 65 Vented	
STORAGE TEMPERATURE	-40° F to +158° F, -40° C to +70° C	
VIBRATION	EN 61373, IEEE 1478, Mil-810G	
HUMIDITY	Not Spec'd	
		COMPLIANCE
TAA COMPLIANT		YES

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 AN200 will perform reasonably well in EU frequency in most applications.

ZEBRA

Repairs of Zebra RFID antennas for fixed readers may require the use of Zebra proprietary parts (and/or Zebra proprietary information). Zebra 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 Zebra account manager or the local Zebra Customer Service representative in your area for further detail