SERIES 2000 ANTENNAS

Check for Samples: RI-ANT-G01E, RI-ANT-G02E, RI-ANT-S01C, RI-ANT-S02C

FEATURES

- **Best in Class Performance Through Patented HDX Technology**
- **Protection Class IP 65 and Higher**
- **Four Form Factors Available**
- **Proven in Harsh Industrial Environments**
- **Easy to Install and Use**

APPLICATIONS

- **Access Control**
- **Vehicle Identification**
- **Container Tracking**
- **Asset Management**
- **Waste Management**

DESCRIPTION

These antenna products connect to radio frequency modules (RFM) and reader/writers to form the interface to the low-frequency (LF) 134.2-kHz Texas Instruments transponders. In combination with a reader/writer, they transmit energy and signals to the transponder and receive the response from the tag. There are two standard gate antennas and two standard stick antennas with 1-meter or 3-meter cable length. Each antenna generates a specific size and shape of read zone to meet the requirements of the target application. In general, the gate antennas generate a large read zone with greater read distance, while the stick antennas provide a more focused read zone and an ability to discriminate between transponders.

The antennas are well suited for use in a broad range of applications including access control, vehicle identification, container tracking, asset management, and waste management applications.

Gate Antennas – Specifications

Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)

	RI-ANT-G01E	RI-ANT-G02E	UNIT
Operating Temperature	–30 to +60	–30 to +60	°C
Storage Temperature	–40 to +70	–40 to +70	°C

Operating Characteristics

over operating free-air temperature range (unless otherwise noted)

PARAMETER	RI-ANT-G01E	RI-ANT-G02E	UNIT
Inductance (typical), at 134.2 kHz	27	27	µH
Protection Class	IP 65	IP 65	
Vibration	Mil-Std-810E, Test 514.4 (Category 1, Procedure 1; Basic transportation)		
Case Material	UVSHIPS (UV-Stabilized High Impact Polystyrol)		
Dimensions	715 ± 5 × 270 ± 3 × 25 ± 1	200 ± 3 × 200 ± 3 × 25 ± 1	mm
Weight (typical)	745	425	g
Cable Length	1	1	m
Connection Terminals	Spade and tongue, stud hole 3.5 mm, width 7.5 mm		
Mounting	Use nonmetallic clamps, standard screws, and washers through 6.5-mm predrilled holes, so that the screw hole is flush with the mounting. Mounting material is not supplied with the antenna.		

Stick Antennas – Specifications

Absolute Maximum Ratings

over operating free-air temperature range (unless otherwise noted)

	RI-ANT-S01C	RI-ANT-S02C	UNIT
Operating Temperature	–30 to +70	–30 to +70	°C
Storage Temperature	–40 to +85	–40 to +85	°C

Operating Characteristics

over operating free-air temperature range (unless otherwise noted)

PARAMETER	RI-ANT-S01C	RI-ANT-S02C	UNIT
Inductance (typical), at 134.2 kHz	27	27	µH
Protection Class	IP 66	IP 66	
Vibration	Mil-Std-810E, Test 514.4 (Category 1, Procedure 1; Basic transportation)		
Case Material	Glass reinforced epoxy (gray)		
Dimensions	140 ± 2 × 21 ± 2 (dia.)	140 ± 2 × 21 ± 2 (dia.)	mm
Weight (typical)	134	185	g
Cable Length	1	3	m
Connection Terminals	Ring lugs: 3.5-mm inside diameter 7.5-mm outside diameter	Ring lugs: 3.5-mm inside diameter 7.5-mm outside diameter	
Mounting	Use nonmetal clamps. Mounting material is not supplied with the antenna.		

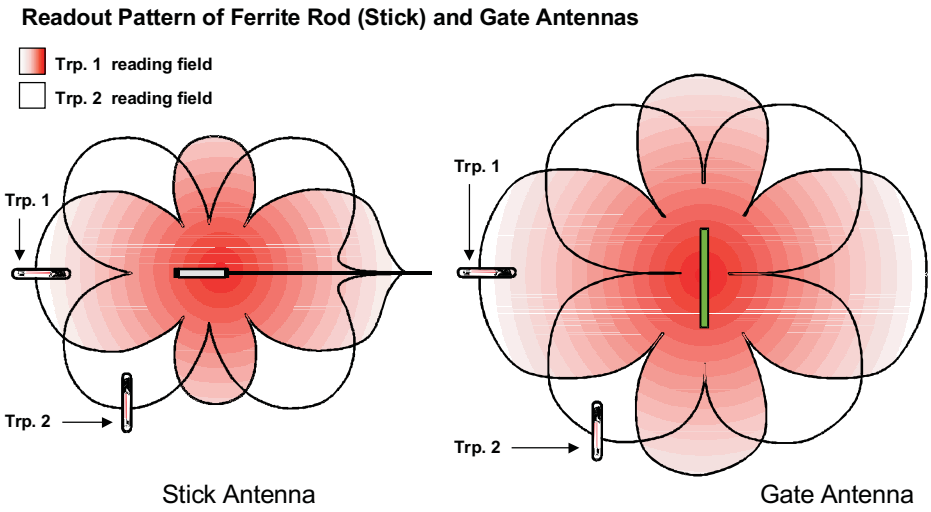

Figure 1. Readout Pattern of Antennas

REVISION HISTORY

REVISION	CHANGES
SCBS845	First release
SCBS845A	Removed all information about RI-ANT-G04E and RI-ANT-P02A (obsolete)

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
RI-ANT-G01E-30	ACTIVE			0	1	TBD	Call TI	Call TI	-30 to 60		Samples
RI-ANT-G02E-30	ACTIVE			0	1	TBD	Call TI	Call TI	-30 to 60		Samples
RI-ANT-S02C-30	ACTIVE			0	1	TBD	Call TI	Call TI	-30 to 70		Samples
TRPGP40TGC	ACTIVE	RFIDT	TGC	0		TBD	Call TI	Call TI	-25 to 70		Samples
TRPGR30ATGA	ACTIVE	RFIDT	TGA	0	2000	Pb-Free (RoHS)	Call TI	N / A for Pkg Type	-25 to 70		Samples
TRPGR30ATGB	ACTIVE	RFIDT	TGB	0	2000	Pb-Free (RoHS)	Call TI	N / A for Pkg Type	-25 to 70		Samples
TRPGR30ENATGA	ACTIVE	RFIDT	TGA	0	2000	Pb-Free (RoHS)	Call TI	N / A for Pkg Type	-25 to 70		Samples
TRPGR30ENATGB	ACTIVE	RFIDT	TGB	0	2000	Pb-Free (RoHS)	Call TI	N / A for Pkg Type	-25 to 70		Samples
TRPGR30TGC	ACTIVE	RFIDT	TGC	0		TBD	Call TI	Call TI	-25 to 85		Samples

(1) The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

(2) Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

(3) MSL, Peak Temp. - The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

(6) Lead/Ball Finish - Orderable Devices may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead/Ball Finish values may wrap to two lines if the finish value exceeds the maximum column width.

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