

# RI-TRP-R9UR, RI-TRP-W9UR

SCBS839-SEPTEMBER 2001

# 85mm DISK TRANSPONDER

#### **FEATURES**

- Best in Class Performance Through Patented HDX Technology
- Patented Transponder Tuning Provides Stable and High Read/Write Performance
- 64 Bit Read Only, 80 Bit Read/Write
- ISO 11784/11785 Compliant
- Insensitive to Almost All Non Metallic Materials

### **APPLICATIONS**

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



### **DESCRIPTION**

Texas Instruments' 85 mm disk transponders are providing superior performance and operate at a resonance frequency of 134.2 kHz. Specific products are compliant to ISO/IEC 11784/11785 global open standards. Texas Instruments LF transponders are manufactured with TI's patented tuning process to provide consistent read and write performance. Prior to delivery, the transponders undergo complete functional and parametric testing, in order to provide the high quality customers have come to expect from TI. The transponder is well suited for usage in a broad range of applications including, but not limited to, access control, vehicle identification, container tracking, asset management and waste management applications.

## ABSOLUTE MAXIMUM RATINGS(1)

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

	RI-TRP-R9UR	RI-TRP-W9UR	UNIT	
Operating Temperature	−25 to +85	-25 to +70	°C	
Storage Temperature	-40 to +85			

(1) Stresses beyond those listed under Absolute Maximum Ratings may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under Recommended Operating Conditions is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability.



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

TI-RFid is a trademark of Texas Instruments.

### **Obsolete Devices**

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### **OPERATING CHARACTERISTICS**

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

DADAMETED	PART NUMBER						
PARAMETER	RI-TRP-R9UR	RI-TRP-W9UR	UNIT				
Functionality	Read Only	Read/Write					
Memory (Bits)	64	80 <sup>(1)</sup>					
Memory (Pages)	1	1					
Operating Frequency	134.2	134.2					
Modulation	FSK (Frequency Shift Keying) 13	FSK (Frequency Shift Keying) 134.2 kHz / 123.2 kHz					
Transmission Principle	HDX (Half Duplex)	HDX (Half Duplex)					
Power Source	Powered from the reader signal	Powered from the reader signal (batteryless)					
Typical Reading Range	≤ 150 <sup>(2)</sup>	≤ 150 <sup>(2)</sup>					
Typical Programming Range	_	— 30% of specified reading range					
Typical Reading Time	70	70					
Typical Programming Time	_	309	ms				
Typical Programming Cycles	_	100,000					
Case Material	Acrylate-Styrene-Acrylonitrile (A	Acrylate-Styrene-Acrylonitrile (ASA), black					
Protection Class	IP 53	IP 53					
EMC	Programmed code is not affected x-rays	Programmed code is not affected by normal electromagnetic interference or x-rays					
Signal Penetration	Transponder can be read throug	Transponder can be read through virtually all non-metallic material					
Mechanical Shock	IEC 68-2-27, Test Ea; 15 g, 18 r	IEC 68-2-27, Test Ea; 15 g, 18 ms, half sine, 2 axes, 5 shocks per axis					
Vibration	IEC 68-2-6, Test Fc; 10 g, 20 -	IEC 68-2-6, Test Fc; 10 g, 20 - 500 Hz, 2 axes, 10 cycles per axis					
Dimensions	Ø 85.5 mm $\pm$ 0.5 mm $ imes$ 5.5 mm :	Ø 85.5 mm $\pm$ 0.5 mm $\times$ 5.5 mm $\pm$ 0.5 mm					
Weight	35						

 <sup>(1)</sup> We recommend that you split each 80 bit page into 64 user programmable bits plus a 16 bit wide CRC CCITT Block Check Character as is done by TI-RFid™ LF readers.
(2) Depending on RF regulation in country of use, the Reader Antenna configuration used, and the environmental conditions.



# PACKAGE OPTION ADDENDUM

4-Apr-2014

#### **PACKAGING INFORMATION**

Orderable Device	Status	Package Type	Package	Pins	Package	Eco Plan	Lead/Ball Finish	MSL Peak Temp	Op Temp (°C)	Device Marking	Samples
	(1)		Drawing		Qty	(2)	(6)	(3)		(4/5)	
RI-TRP-R9UR-30	OBSOLETE	RFIDP	TEE	0		Pb-Free (RoHS)	Call TI	N / A for Pkg Type	-25 to 85		
RI-TRP-W9UR	OBSOLETE	RFIDP	TEE	0		TBD	Call TI	Call TI	-25 to 70		
RI-TRP-W9UR-30	OBSOLETE	RFIDP	TEE	0		Pb-Free (RoHS)	Call TI	N / A for Pkg Type	-25 to 70		

(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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# **PACKAGE OPTION ADDENDUM**

4-Apr-2014

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