

13.56 MHz Vicinity Card Transponder



Key features:

- ISO/IEC 15693 compliant
- 13.56MHz Operating Frequency
- Read/Write capability with data locking option
- 2k bit user memory
- Simultaneous Identification

The Vicinity Card Transponder from Texas Instruments is compliant with the ISO/IEC 15693 global standard for contactless integrated circuit cards operating at 13.56MHz. The card is based on TI's Tag-it™ Smart Label technology and allows interoperability of products from multiple manufacturers. With a user memory of 2K bits organized in 64 blocks, the 13.56 MHz card enables advanced solutions in a variety of markets, including access control, security, ticketing, public transportation, production control, warehouse management etc.. This card can be easily customized and personalized using standard thermo transfer printers. In applications where the card needs to be used with a clip, we recommend a pouch since punching a hole would destroy the product. In addition to the functionality defined in the ISO/IEC 15693 standard, the Vicinity Card Transponder also supports an extended set of command options, providing more system flexibility.

Specifications:

Part Number	RI-TH1-CB1A
Supported Standard	ISO 15693
Operating frequency	13.56 MHz
Typ. required activation field strength read (at +25°C)	94 dBμA/m
Typ. required activation field strength write (at +25°C)	97 dBμA/m
Factory programmed Read Only Number	64 bits
Memory (user programmable)	2k bits organized in 64 x 32-bit blocks
Typical programming cycles (at +25°C)	100,000
Data retention time (at +55°C)	> 10 years
Simultaneous Identification of Tags	Up to 50 tags per second (reader/antenna dependent)
Dimensions	85.6 mm x 54 mm x 0.76mm (according ISO 7810)
Weight	5 grams
Case material	PVC (Polyvinylchloride), white
Product Identifier	3mm from the edge, TI Logo + 4 digit number (2 mm x 8 mm)
Surface finish	Glossy
Printability	Thermotransfer, Tampon, Silkscreen
Mechanical Stability (Bending, Torsion)	According to ISO 10373
Operating temperature	-25°C to +50°C (according to ISO7810)
Storage temperature	-25°C to +50°C (according to ISO 7810)
Packing quantity	250 unit

Note: For highest possible read-out coverage we recommend to operate readers at a modulation depth of 20% or higher

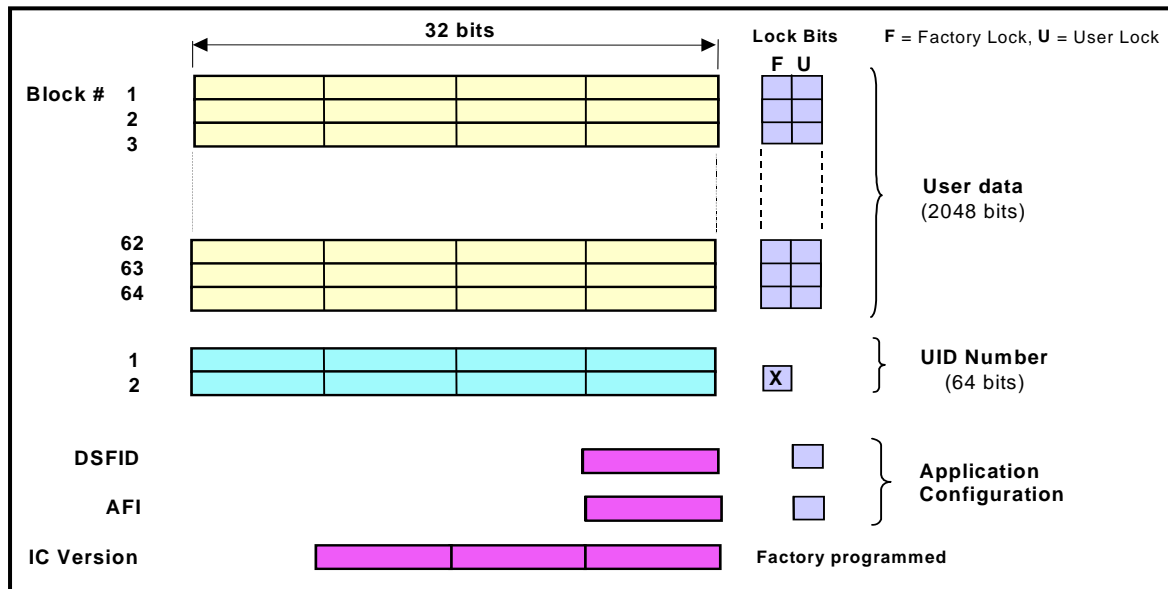
For more information, contact the sales office or distributor nearest you. This contact information can be found on our web site at: <http://www.ti-rfid.com>

Supported Command Set

Request	Request Code	Request Mode				
		Inventory	Addressed	Non-Addressed	Select	AFI
ISO 15693 Mandatory and Optional Commands						
Inventory	0x01	✓	-	-	-	✓
Stay Quiet	0x02	-	✓	-	-	-
Read_Single_Block	0x20	✓	✓	✓	✓	✓
Write_Single_Block	0x21	-	✓	✓	✓	-
Lock_Block	0x22	-	✓	✓	✓	-
Read_Multi_Blocks	0x23	✓	✓	✓	✓	✓
Write_Multi_Blocks	0x24	-	-	-	-	-
Select Tag	0x25	-	✓	-	-	-
Reset to Ready	0x26	-	✓	✓	✓	-
Write_AFI	0x27	-	✓	✓	✓	-
Lock_AFI	0x28	-	✓	✓	✓	-
Write_DSFIID	0x29	-	✓	✓	✓	-
Lock_DSFIID	0x2A	-	✓	✓	✓	-
Get_System_info	0x2B	✓	✓	✓	✓	✓
Get_M_Blkc_Sec_St	0x2C	✓	✓	✓	✓	✓
TI Custom Commands						
Write_2_Blocks	0xA2	-	✓	✓	✓	-
Lock_2_Blocks	0xA3	-	✓	✓	✓	-

✓: Implemented
 -: Not applicable

Memory Organization



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PACKAGING INFORMATION

Orderable Device	Status ⁽¹⁾	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/Ball Finish	MSL Peak Temp ⁽³⁾
RI-TH1-CB1A-00	ACTIVE	RFIDP	TEH	0	250	TBD	Call TI	Call TI

⁽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.

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