

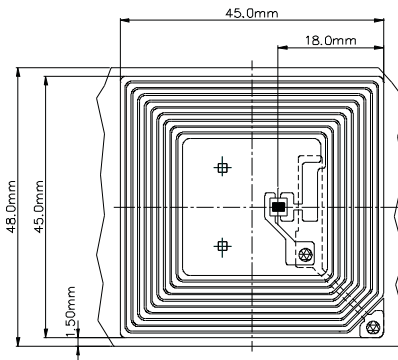
## Tag-it™ HF TRANSPONDER INLAYS SQUARE RECTANGLE

### FEATURES

- 13.56 MHz Operating Frequency
- 256 Bit User Memory in 8 × 32-bit Blocks
- User and Factory Lock per Block
- Simultaneous Identification (Anti-collision)

### APPLICATIONS

- Library Applications
- Product Authentication
- Ticketing
- Stored Value



### DESCRIPTION

Texas Instruments' Tag-it™ HF Transponder Inlays are the first generation of 'smart' inlays consist of 13.56 MHz high frequency (HF) transponders. These products offer a user accessible memory of 256 bits, organized in 8 blocks available in three different antenna shapes with frequency offset for integration into paper, PVC or other substrates.

Tag-it HF Transponder Inlays are manufactured with TI's patented laser tuning process to provide consistent read performance. And prior to delivery, the transponders undergo complete functional and parametric testing in order to provide the high quality that customers have come to expect from TI.

The Tag-it HF Transponder Inlays are well suited for a variety of applications including but not limited to: product authentication, library applications, supply chain management, asset management, and ticketing/stored value applications.

### ORDERING INFORMATION

PACKAGE <sup>(1)</sup>	
Typical quantity of good units per reel	5,000

(1) Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at [www.ti.com/sc/package](http://www.ti.com/sc/package).



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**ABSOLUTE MAXIMUM RATINGS**

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

	VALUE	UNIT
Operating Temperature	–25 to +70	°C
Storage Temperature (single inlay)	–40 to +85 (warpage may occur at upper temperature range)	°C
Storage temperature (on reel)	–40 to +40	°C

**OPERATING CHARACTERISTICS**

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

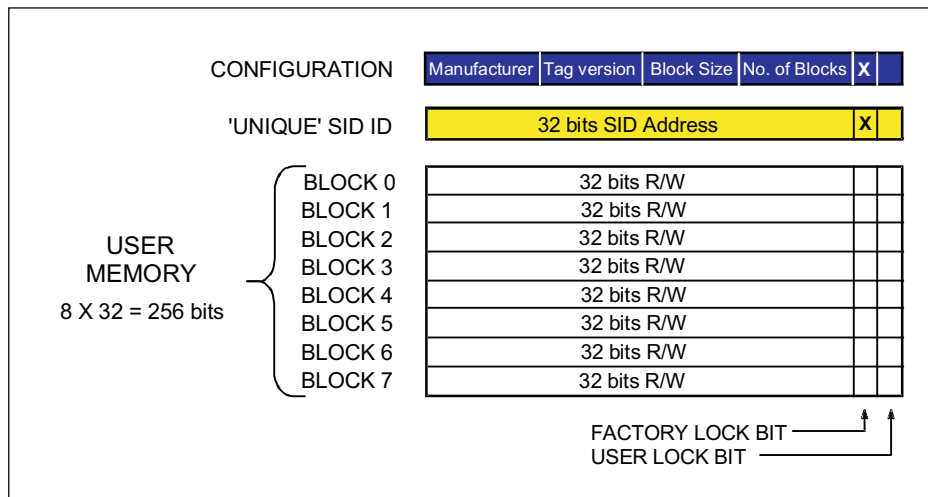
PARAMETER	PART NUMBER	UNIT
	RI-I110A-01	
Recommended Operating frequency	13.56	MHz
Passive Resonance Frequency (at +25°C)	14.26 MHz ± 400 kHz (includes frequency offset to compensate further integration into paper or PVC lamination; drops down to operating frequency when exposed to activation field strength)	
Typ. required activation field strength to read (at +25°C)	103 dB $\mu$ A/m <sup>(1)</sup>	
Typ. required activation field strength to write (at +25°C)	108 dB $\mu$ A/m <sup>(1)</sup>	
Factory programmed Read Only Number	32 bits	
Memory (user programmable)	256 bits organized in 8 × 32-bit blocks	
Uplink / downlink data rates	26.7 kBd / 6.2 and 9 kBd	
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)	
Antenna size	45 mm × 45mm (~1.77 in × ~1.77 in)	
Foil width	48 mm ± 0.5 mm (1.89 in ± 0.02 in)	
Foil pitch	50.8 mm +0.1mm/–0.4mm (~3.78 in)	
Base material	Substrate: PET (Polyethylenetherephtalate) Antenna: Aluminum	
Delivery	Single row tape wound on cardboard reel with 500 mm diameter Reel outer width: approx. 60 mm (~2.36 in) Reel inner width: approx. 50 mm (~1.97 in) Hub diameter: 76.2 mm (3 in)	

(1) After integration into paper or PVC Lamination

**SUPPORTED COMMAND SET**

REQUEST	ADDRESSED	NON-ADDRESSED
Get_Version	√	√
Get_Block	√	√
Put_Block	√	√
Put&Lock_Block	√	√
Lock_Block	√	√
SID_Poll		√
Quiet	√	√

√ : Implementaed  
 – : Not applicable



**Figure 1. Memory Organization**

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