

## Tag-it™ HF-I PRO TRANSPONDER INLAYS MINIATURE RECTANGLE

**FEATURES**

- **ISO/IEC 15693-2,-3; ISO/IEC 18000-3 Compliant**
- **13.56 MHz Operating Frequency**
- **256 Bit User Memory in 8x32-bit Blocks**
- **User and Factory Lock per Block**
- **Application Family Identifier (AFI)**
- **Fast Simultaneous Identification (Anti-collision)**
- **Password Protected Write Command**
- **Command to Disable IC Functionality**

**APPLICATIONS**

- **Product Authentication**
- **Ticketing**
- **Stored Value**

**DESCRIPTION**

Texas Instruments' Tag-it HF-I Pro Transponder Inlays consist of 13.56 MHz high frequency (HF) transponders that are compliant with the ISO/IEC 15693 and ISO/IEC 18000-3 global open standards. These products offer a user accessible memory of 256 bits, organized in 8 blocks and an extended command set including Password Protect Write available in five different antenna shapes with frequency offset for integration into paper, PVC or other substrates.

Tag-it HF-I Pro 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-I Pro 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.

**SPECIFICATIONS**

PART NUMBER	RI-I03-114A-S1
Supported Standard	ISO/IEC 15693-2,-3; ISO/IEC 18000-3
Recommended Operating frequency	13.56 MHz
Passive Resonance Frequency (at +25°C)	13.86 MHz ± 200kHz (includes frequency offset to compensate further integration into paper or PVC lamination)
Typ. required activation field strength to read (at +25°C)	107 dBμA/m #
Typ. required activation field strength to write (at +25°C)	111 dBμA/m #
Factory programmed Read Only Number	64 bits
Memory (user programmable)	256 bits organized in 8 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)
Antenna size	22.5 mm x 38 mm (~0.89 in x ~1.5 in)
Foil width	48 mm ± 0.5 mm (1.89 in ± 0.02 in)
Foil pitch	48 mm +0.1mm/-0.4mm (~1.89 in)
Base material	Substrate: PET (Polyethylenetherephtalate) Antenna: Aluminum
Operating temperature	-25°C to +70°C

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Storage temperature (single inlay)	-40°C to +85°C (warpage may occur at upper temperature range)
Storage temperature (on reel)	-40°C to +40°C
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)
Typical quantity of good units per reel	5,000

Note: For highest possible read-out coverage we recommend to operate readers at a modulation depth of 20% or higher  
# After integration into paper; \* After PVC Lamination

## SUPPORTED COMMAND SET

Request	Request Mode					
	Request Code	Inventory	Addressed	Non-Addressed	AFI	Opt. Flag
<b>ISO 15693 Mandatory and Optional Commands</b>						
Inventory	0x01	✓	-	-	✓	0/-
Stay Quiet	0x02	-	✓	-	-	0/-
Read_Single_Block	0x20	-	✓	✓	-	-/1
Write_Single_Block	0x21	-	✓	✓	-	-/1
Lock_Block	0x22	-	✓	✓	-	-/1
TI Custom Commands						
Kill	0xA4	-	✓	-	-	-/1
WriteSingleBlockPwd	0xA5	-	✓	-	-	-/1

- ✓ : Implemented
- : Not applicable

## MEMORY ORGANIZATION



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