Tag-it™ HF-I PLUS TRANSPONDER INLAYS SQUARE

FEATURES

- **ISO/IEC 15693-2,-3; ISO/IEC 18000-3 Compliant**
- **13.56 MHz Operating Frequency**
- **2048 Bit User Memory in 64x32-bit Blocks**
- **User and Factory Lock per Block**
- **Application Family Identifier (AFI)**
- **Data Storage Format Identifier (DSFID)**
- **Combined Inventory Read Block**

APPLICATIONS

- **Product Authentication**
- **Library Applications**
- **Supply Chain Management**
- **Asset Management**
- **Ticketing/ Stored Value**

DESCRIPTION

Texas Instruments' Tag-it HF-I Plus 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 2048 bits, organized in 64 blocks and an extensive command set available in six different antenna shapes with frequency offset for integration into paper, PVC or other substrates.

Tag-it HF-I Plus 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 Plus 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-I11-112A-03	RI-I11-112B-03
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)	14.4 MHz ± 200kHz (includes frequency offset to compensate PVC lamination)
Typ. required activation field strength to read (at +25°C)	98 dBμA/m #	98 dBμA/m *
Typ. required activation field strength to write (at +25°C)	101 dBμA/m #	101 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)	
Antenna size	45 mm x 45 mm (~1.77 in x ~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 (2 in)	
Thickness	Chip area: 0.355 mm (~0.014 in) Antenna area: 0.085 mm (~0.0033 in)	

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Base material	Substrate: PET (Polyethylenetherephtalate) Antenna: Aluminum
Smallest bending radius allowed	18 mm (~0.71 in)
Operating temperature	-25°C to +70°C
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

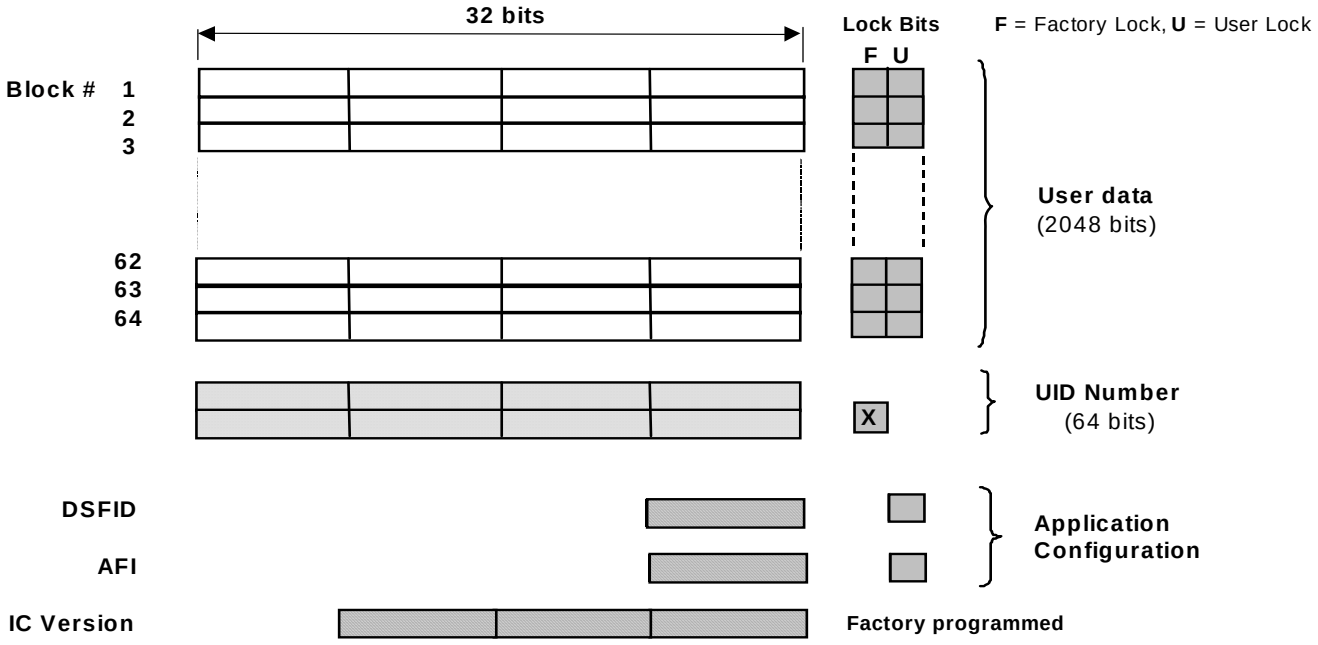
Note: For highest possible read-out coverage we recommend to operate readers at a modulation depth of 20% or higher
After integration into paper; * After PVC Lamination

SUPPORTED COMMAND SET

		Request Mode				
Request	**Request Code**	**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 DSFID	0x29	-	✓	✓	✓	-
Lock DSFID	0x2A	-	✓	✓	✓	-
Get_System_info	0x2B	✓	✓	✓	✓	✓
Get_M_BLK_Sec_St	0x2C	✓	✓	✓	✓	✓
TI Custom Commands						
Write_2_Blocks	0xA2	-	✓	✓	✓	-
Lock_2_Blocks	0xA3	-	✓	✓	✓	-

1. ✓ : Implemented
2. - : Not applicable

MEMORY ORGANIZATION



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