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Tag-it™ HF-I PRO TRANSPONDER INLAYS SQUARE

FEATURES

- **ISO/IEC 15693-2, -3; ISO/IEC 18000-3 Compliant**
- **13.56-MHz Operating Frequency**
- **256-Bit User Memory in 8-Bit × 32-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 eight 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.

The Tag-it HF-I Pro transponder inlays are manufactured with TI's patented laser tuning process to provide consistent read performance. 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, supply-chain management, asset management, and ticketing/stored value applications.

SPECIFICATIONS[1]

	PART NUMBER	
	RI-I11-114A-S1	RI-I11-114B-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 ± 200 kHz (includes frequency offset to compensate further integration into paper)	14.4 MHz ± 200 kHz (includes frequency offset to compensate PVC lamination)
Typical required activation field strength to read (at 25°C)	98 dBµA/m[2]	98 dBµA/m[3]
Typical required activation field strength to write (at 25°C)	101 dBµA/m[2]	101 dBµA/m[3]
Factory-programmed read-only number	64 bits	
Memory (user programmable)	256 bits organized in 8-bit × 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 × 45 mm (~1.77 in × ~1.77 in)	
Foil width	48 mm ± 0.5 mm (1.89 in ± 0.02 in)	
Foil pitch	50.8 mm +0.1 mm/–0.4 mm (2 in)	
Base material	Substrate: PET (polyethylenetherephtalate); Antenna: aluminum	
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: approximately 60 mm (~2.36 in) Reel inner width: approximately 50 mm (~1.97 in) Hub diameter: 76.2 mm (3 in)	
Typical quantity of good units per reel	5,000	

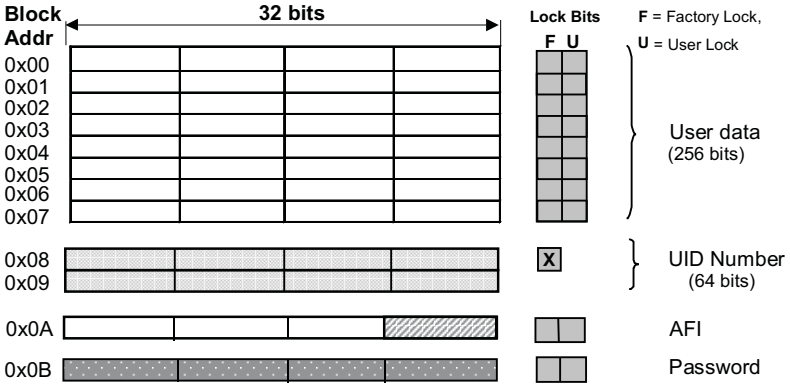
(1) For highest possible read-out coverage, operate readers at a modulation depth of 20% or higher.
(2) After integration into paper
(3) After PVC lamination

SUPPORTED COMMAND SET

REQUEST	REQUEST MODE[1]					
	REQUEST CODE	INVENTORY	ADDRESSED	NON-ADDRESSED	AFI	OPT. FLAG
ISO 15693 Mandatory and Optional Commands						
Inventory	0x01	ü	–	–	ü	0/–
Stay Quiet	0x02	–	ü	–	–	0/–
Read_Single_Block	0x20	–	ü	ü	–	–/1
Write_Single_Block	0x21	–	ü	ü	–	–/1
Lock_Block	0x22	–	ü	ü	–	–/1
TI Custom Commands						
Kill	0xA4	–	ü	–	–	–/1
WriteSingleBlockPwd	0xA5	–	ü	–	–	–/1

(1) ü = Implemented, – = Not applicable

MEMORY ORGANIZATION



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