
13.56 MHz ENCAPSULATED STANDARD TRANSPONDER

FEATURES

- ISO/IEC 15693-2,-3; ISO/IEC 18000-3 Compliant
- 13.56 MHz Operating Frequency
- 256-Bit User Memory in 8 × 32-Bit Blocks
- User and Factory Lock Per Block
- Application Family Identifier (AFI)
- Fast Simultaneous Identification (Anti-Collision)

APPLICATIONS

- Laundry
- Process Automation
- Product Authentication
- Asset Management

DESCRIPTION

Texas Instruments' 13.56 MHz encapsulated standard transponder is compliant with the ISO/IEC 15693 and ISO/IEC 18000-3 global open standards. This product offers a user accessible memory of 256 bits, organized in 8 blocks and an optimized command set.

Designed for harsh environments, such as garment tracking in laundries, each transponder has a 64-bit factory programmed Read Only Number, which is also laser engraved on the transponder housing. Prior to delivery, transponders undergo complete functional and parametric testing to provide the high quality that customers have come to expect from TI.

The 13.56 MHz encapsulated standard transponders are well suited for a variety of applications including, but not limited to, laundry garment tracking, process automation, product authentication, and asset management.



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ABSOLUTE MAXIMUM RATINGS

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

		UNIT
Operating temperature	-25 to 90	°C
Storage temperature	-40 to 120 (130°C for total 50 hours, 220°C for total 30 s)	°C

OPERATING CHARACTERISTICS

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

PARAMETER	RF-HDT-DBE-N0 ⁽¹⁾	UNIT
Supported standard	ISO/IEC 15693-2,-3; ISO/IEC 18000-3	
Resonance frequency (at 25°C)	13.56 MHz ± 300 kHz	
Typ. required activation field strength to read (at 25°C)	112	dBμA/m
Typ. required activation field strength to write (at 25°C)	115	dBμA/m
Factory programmed read only number	64	bits
Memory (user programmable)	256 bits organized in 8 × 32-bit blocks	
Typical programming cycles (at 25°C)	100,000	
Data retention time (at 25°C)	> 10 years	
Simultaneous identification of tags	Up to 50 tags per second (reader/antenna dependent)	
Dimensions	∅ 22 ± 0.2 mm × 3 ± 0.2 mm	
Weight	2.1 ± 0.2	grams
Case material	PPS, black	
Protection class	IP 68	
Vibration	ISO/IEC 68.2.6 (10 g, 10..2000 Hz, 3 axis, 2.5 h)	
Mechanical shock	ISO/IEC 68.2.27 (100 g, 6 ms, 6 axis, 20 times per axis)	
Mechanical stability	Axial compression strength: 1000N (10 s, static) Radial compression strength: 500N (10 s, static) Isostatic water pressure: 45 bar (10 h)	
Chemical resistance	Typical chemicals used in laundry and dry-cleaning processes	
Delivery	1000 units in bulk	

(1) For highest possible read-out coverage we recommend to operate readers at a modulation depth of 20% or higher.

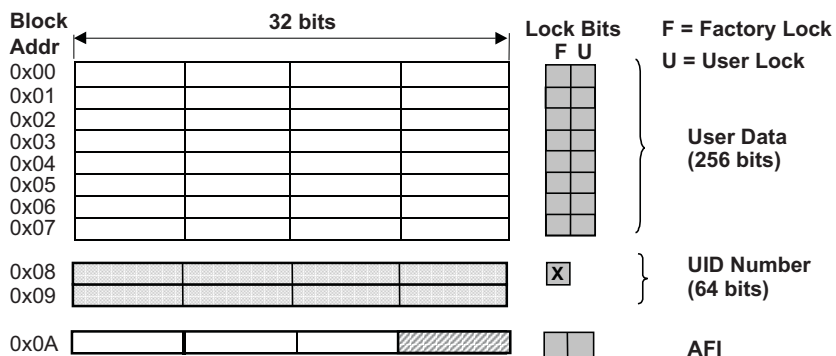
SUPPORTED COMMAND SET

REQUEST	REQUEST MODE ⁽¹⁾⁽²⁾					
	REQUEST CODE	INVENTORY	ADDRESSED	NON-ADDRESSED	AFI	OPTIONAL FLAG
ISO 15693 Mandatory and Optional Commands						
Inventory	0x01	✓	-	-	✓	0/-
Stay Quiet	0x02	-	✓	-	-	0/-
Read_Single_Block	0x20	-	✓	✓	-	-/1
Write_Single_Block	0x21	-	✓	✓	-	-/1
Lock_Block	0x22	-	✓	✓	-	-/1

(1) ✓: Implemented

(2) -: Not applicable

MEMORY ORGANIZATION



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