

Texas Instruments Gen 2 Inlay

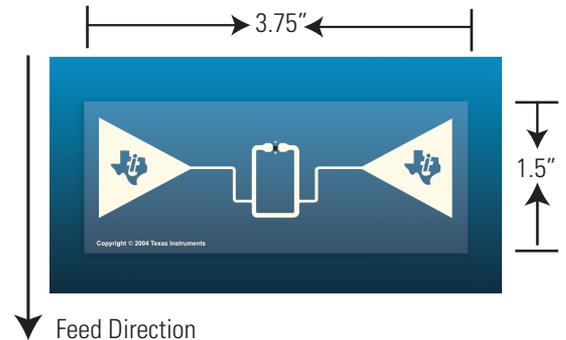
Description

Texas Instruments' Gen 2 Inlay is designed for ease of integration in the smart label conversion process. These inlays feature an innovative design to drive optimal performance across a wide range of SKU's. The Gen 2 inlay provides for a universal form factor that is delivered on reels to enable ease of scalability in high volume conversion and end-user application environments.

TI Gen 2 products are based on the EPCglobal™ Generation 2 specification with 96 bits of user programmable EPC™ memory field with Read, Write, and Lock capabilities.

Key features:

- Innovative aluminum etched antenna design for optimal performance on wide ranging SKU's
- 100 % tested inlays
- Fit in most standard label form factors
- EPC Gen 2- read/write and lock
- 96 bits EPC user memory



Specifications:

Part Number	RI-UHF-00C02-04
Supported SKU types	UHF friendly SKU's*
IC Supported Standard	EPC UHF Gen 2
Operating frequency	860- 960 MHz
EPC Memory	96 bits EPC user programmable
TID Memory	32 bits factory pre-programmed
Data retention	10 years at + 65°C
Write/erase cycle	100,000 at + 65°C
Operating temperature	-20°C to + 65°C
Storage temperature (single)	-40°C to + 85°C
Storage temperature (on reel)	-40°C to + 45°C
Bending radius	15 mm (0.59")
Antenna Size	3.5" X 1" [88.90mm X 25.40mm]
Inlay pitch	1.5" [38.1mm (± 0.5mm)]
Width of inlay	3.75" [95.25mm (± 0.5mm)]
Die Height	~11 mils (270 micron)
Material/ thickness	50 micron (~2.0 mils) PET substrate
Antenna Material	Aluminum etched
Reel diameter	ID: 3" core (76.2mm); OD: Max 15" (381mm)
Delivery	Single row inlay wound on cardboard reel
Quantity	10K per reel

* This inlay works with the majority of UHF friendly products. It may also work with some UHF unfriendly (UHF absorbing and reflecting) products.

Non-volatile (NVM) EPC User Memory Configuration*:

Memory Bank	Memory Bank Name	Memory Bank Bit Address	Bit Number															
			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
01 ₂	EPC	70 _h -7F _h	EPC[15:0]															
		60 _h -6F _h	EPC[31:16]															
		50 _h -5F _h	EPC[47:32]															
		40 _h -4F _h	EPC[63:48]															
		30 _h -3F _h	EPC[79:64]															
		20 _h -2F _h	EPC[95:80]															
		10 _h -1F _h	PROTOCOL CONTROL BITS															
		00 _h -0F _h	CRC-16															
00 ₂	RESERVED	40 _h -4F _h	LOCK_BITS[9:0]										KILL	Reserved				
		30 _h -3F _h	ACCESS PASSWORD[15:0]															
		20 _h -2F _h	ACCESS PASSWORD[31:16]															
		10 _h -1F _h	KILL PASSWORD[15:0]															
		00 _h -0F _h	KILL PASSWORD[31:16]															

* 96 bit read/write/lock EPC user memory configuration according to EPC Gen 2 (v1.0.9)

List of Commands*:

Command	Code	Length (bits)	Supported?	Protection
QueryRep	00	4	Yes	Unique command length
ACK	01	18	Yes	Unique command length
Query	1000	22	Yes	Unique command length and a CRC-5
QueryAdjust	1001	9	Yes	Unique command length
Select	1010	> 44	Yes	CRC-16
Reserved for future use	1011	-	-	-
NAK	11000000	8	Yes	Unique command length
Req_RN	11000001	40	Yes	CRC-16
Read	11000010	> 57	Yes	CRC-16
Write	11000011	> 58	Yes	CRC-16
Kill	11000100	59	Yes	CRC-16
Lock	11000101	60	Yes	CRC-16
Access	11000110	56	Yes	CRC-16
BlockWrite	11000111	> 57	No	CRC-16
BlockErase	11001000	> 57	No	CRC-16

* according to EPC Gen 2 (v1.0.9)

For more information, contact the sales office or distributor nearest you. This contact information, and the most up-to-date specifications for this data sheet can be found on our website at: <http://www.ti-rfid.com>

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