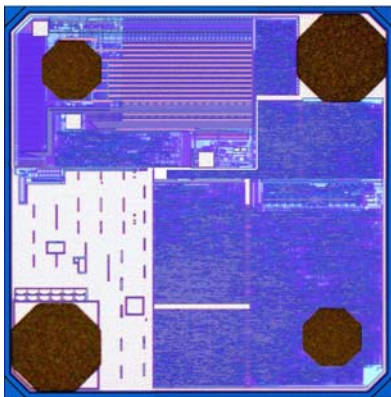




Higgs™ 4

EPC Class 1 Gen 2 RFID Tag IC

Higgs™ 4 is a highly integrated single chip UHF RFID Tag IC. The chip conforms to the EPCglobal Class 1 Gen 2 specifications and provides state-of-the-art performance for a broad range of UHF RFID tagging applications.



Features

- > Meets EPCglobal Gen2 (V 1.2.0) as well as ISO/IEC 18000-6C
- > Worldwide operation in the RFID UHF bands (860-960 MHz)
- > 512-Bits of Memory
 - 128-EPC Bits
 - 128 User Bits
 - 64 Bit Unique TID
 - 32 Bit Access and 32 bit Kill Passwords
- > Pre-Programmed with a unique, unalterable 64-bit serial number
- > User Memory can be Block Perma-Locked as well as read password protected in 32 Bit Blocks
- > Supports all Mandatory and Optional Commands including Item Level Commands
- > High speed programming using Block Write 30 tags per second for the 96-bit EPC number
- > Low power operation for both read and program
- > Exceptional operating range, up to 11m with appropriate antenna.

Higgs™ 4 operates at extremely low power levels yet still provides sufficient backscatter signal to read tags at extended range. It can also be programmed at low RF power and, in conjunction with Block Write command can be programmed at high speed. **Higgs™ 4** is implemented in a low cost CMOS process and **uses proven and cost effective EEPROM technology.**

Higgs™ 4 offers a flexible memory architecture that provides for the **optimum allocation of EPC and User memory** for different use cases such as legacy part numbering systems and service history. User memory can also be read and or write locked on 32-bit boundaries, supporting a variety of public/private usage models.

The IC also features factory programmed **64-bit serial number** that cannot be altered. In conjunction with the **EPC code**, this provides **a unique "fingerprint" for the tagged item.**

Applications

- > **Supply Chain Management**
- > **Distribution Logistics**
- > **Product Authentication**
- > **Asset Inventory and Tracking**
- > **Baggage Handling and Tracking**
- > **Item Level Tagging**

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Operating Conditions & Electrical Characteristics

Symbol	Parameter	Conditions / Capability	Min	Typ	Max	Units
Operating Conditions						
T_A	Operating Temperature		-50		+85	°C
f_{in}	Operating Frequency		860		960	MHz
Electrical Characteristics						
S_R	Sensitivity during Read	Reading		-18.5		dBm
I_s	Interference Signal Suppression			-4		dB
R_p	Equivalent input parallel resistance	At -15 dBm input power		1500		Ohms
C_p	Equivalent input parallel	At -15 dBm input power		0.85		pF
D_{ret}	Data Retention			10		Years
P_{cycl}	Programming Cycles			10,000		Cycles

Memory Map

Bank	Address	Description	Memory	Bits
User	00h – 7Fh	User	NVM	128
TID	60h – BFh	Device Configuration	ROM-NVM	96
	20h – 5Fh	Unique Tag ID Unalterable	NVM	64
	00h – 1Fh	TID EPC/TMD/TMDID/TMN	ROM	32
EPC	20h – 9Fh	EPC #	NVM	128
	10h – 1Fh	EPC-PC	NVM	16
	00h – 0Fh	EPC-CRC	RAM	16
Reserved	20h – 3Fh	RES-Access Pwd, EPC optional	NVM	32
	00h – 1Fh	RES-Kill Pwd	NVM	32

Ordering Information

Part	Model Number	Description
Higgs™ 4 IC	ALC-370-FW	Bumped, Tested, Ground & Sawn Wafer (8 inch) on UV Tape Mounted on Disco Metal Film Frame

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HANDLING PRECAUTIONS Observe standard handling practices to minimize ESD.

DISCLAIMER Application recommendations are guidelines only - actual results may vary and should be confirmed. This is a general purpose product not designed or intended for any specific application.



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