



## Qstar-5A

### Overview:

Up to 64Kbits user memory with access control flexibility, perfectly for storing digital pictures, processing product life cycle data 3D Omni-directional signal coverage is realized by differential RF input design , to minimize the orientation sensitivity, eliminate the signal dead zone.

Offer contactless RF interface and wire interface, both MCU and RF able to access tag memory.

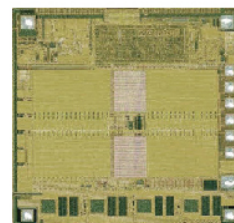
Flexible and secure memory access control.

### Features

- Read sensitivity of up to -17 dBm [1]
- Write sensitivity of up to -11dBm [1]
- Extended storage temperature range (-55℃ ~ +150 ℃)
- Operation temperature range (-40℃ ~ +85 ℃)
- Electronic Article Surveillance (EAS) capability integrated
- EPCglobal Gen 2(V1.2.0) and ISO/IEC 18000-6C Compatible
- Up to 496 bits of EPC area (Except CRC, PC).
- Up to 208 bits of TID area
- Up to 64K bits of USER memory(32Kbits, 16Kbits, 8Kbits available)
- Up to 30 years of data retention
- time in 85℃( Qstar-5AE[1] only)
- Support BlockPermaLock:
- minimum lock size is 4 words
- Support BlockWrite: 1-8 words
- Supplying form: wafer, tape&reel in WLCSP, SOP8L, QFN8L

### Key Applications

- Aerospace/Railway
- Logistics/supply chain management
- Warehouse management
- Intelligent Manufacturing
- Industrial Asset management
- Identification
- MRO



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### Operating conditions & electrical characteristics

Parameter	Conditions	Min	Typ	Max	Unit
Operating Temperature		-40		85	° C
Operating Frequency		840		960	MHz
Data Rate		40		640	kbits/s
Read sensitivity	Reading		-17 【1】 【2】		dBm
Equivalent input parallel resistance			2300 【3】 【4】		Ω
Equivalent input parallel capacitance			1 【3】 【4】		pF
Data retention	55° C	15			year
Data retention(SAE)	85° C	30			year
Endurance		100,000			cycle

### Memory Map

Bank	Address	Description	Memory	Bits
USER	0000h-FFFFh	USER	NVM	64K
TID	00h-CFh	UID and Manufacturer Data Block	ROM-NVM	208
EPC	00h-0Fh	cCRC-16 <sub>SAE</sub>	RAM	16
	10h-1Fh	PC	NVM	16
	20h-20Fh	EPC	NVM	496
Reserved	00h-1Fh	Kill Password	NVM	32
	20h-3Fh	Access Password	NVM	32

- [1] Sensitivity on a 2dBi dipole antenna  
[2] Measure the tag sensitivity using the query command  
[3] At minimum operating power  
[4] Antenna mount parasitic capacitance is included

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