UHF Large Memory Tag Chip

Quanray Electronics

Shanghai Quanray Electronics CO.,LTD

Connecting Anything Secure

Qstar-5U（5Z/51）

Overview:

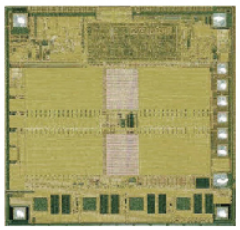
Qstar-5U UHF RFID tag chip is optimized for cost sensitive item level tagging applications such as apparel, tobacco, food, valuable goods, air baggage, warehouse management, vehicle identification, etc. Conforming to EPC global Class 1 Gen 2 protocol 1.2.0 and ISO/IEC 18000-6C, it is well regarded as one of the most cost effective tag chips in the industry even with 128bit user memory as well as superior sensitivity, broad frequency band and robustness.

Features

- Superior read sensitivity of up to -19 dBm
- Industry leading write sensitivity of up to-11dBm
- Storage temperature range -55 ° C ~ +150 ° C
- Operation temperature range -40 ° C ~ +85 ° C
- Electronic Article Surveillance (EAS) capability integrated
- EPCglobal Gen 2(V1.2.0) and ISO/IEC 18000-6C Compatible
- Up to 128bits of EPC area
- Up to 128bits of TID area
- Up to 128bits of USER memory
- support BlockWrite: 2words
- support BlockErase: 2words
- Up to 30 years of data retention time in 85℃(Qstar-5U-E only)
- Supplying form: wafer

Key Applications

- Item Level Tagging (Apparel tagging)
- Logistics/supply chain management
- Retailing tagging
- Tobacco Identifying
- Stuff/Vehicle Access Control
- Air baggage tagging
- Pallet/Case tracking
- Anti-counterfeit



chip

Operating conditions and electrical characteristics

	Parameter	Conditions	Min	Typ	Max	Unit
Operation Conditions	Operating frequency		840MHz		960MHz	
	Data Rate		40kbits/s		640kbits/s	[1][2]
	Read sensitivity			-19dBm		
	Write sensitivity			-11dBm		[1]
Electronical Characteristics	Maximum Operating power				20dBm	[1][2]
	Equivalent input parallel resistance			1400Ohm		[3][4]
	Equivalent input parallel capacitance			1.0pF		[3][4]
Data retention	Qstar-5U-E	85C°	30 years			
	Qstar-5U	55C°	15 years			
Endurance			10000 cycles			

Memory Map

Bank	Address	Description	Memory	Bits
TID	00h-7Fh	UID and Manufacturer Data Block	ROM-NVM	128
EPC	00h-0Fh	CRC-16	RAM	16
	10h-1Fh	PC	NVM	16
	20h-9Fh	EPC	NVM	128
Reserved	00h-1Fh	Kill Password	NVM	32
	20h-3Fh	Access Password	NVM	32
USER(Qstar-51)	00h-7hF	USER bank	NVM	128
USER(Qstar-5Z)		USER bank	NVM	0

[1] Sensitivity on a dipole antenna
[2] At minimum operating power
[3] Both intrinsic capacitance and antenna mount parasitic capacitance are included.
[4] Measure by Network Analyzer on straps.
[5]Qstar-5U-E is the extended version of Qstar-5U.

Quanray Electronics CO.,LTD
Tel: 86-21-68795432
Email: marketing@quanray.com sales@quanray.com
Web: http//www.quanray.com
ADD: 10-01 Building 1387 Zhangdong Road. Pudong District,Shanghai (201203)