



Qstar-6S

Overview:

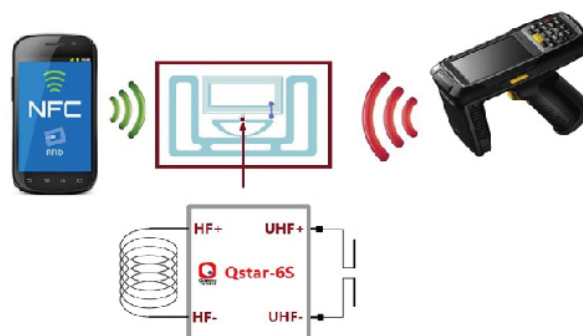
As the first generation of HF&UHF dual frequency tag chip, Qstar-6S brings the revolutionary RFID application experience, with superior long range identification in UHF and convenient mobile identification in HF together with the state-of-the-art crypto-graphic security protection to the RFID world for the first time, which could be widely adopted in fields of retailing, anti-counterfeiting, air baggage tagging, logistics, etc. Qstar-6S is designed fully compatible to ISO/IEC18000-6C, EPC Global GEN2 V2 and ISO/IEC 14443 TYPE A, NFC FORUM TYPE 2, featuring 2kbit-user memory in GEN2 shared with HF, special authentication and unparalleled reliability in the harsh environment.

Features

- -19 dBm typical read sensitivity when using UHF RF antenna port
- Industry leading UHF write sensitivity up to -11dBm
- UHF Maximum operation power 20dBm
- HF read magnetic field strength 0.08A/m
- Working temperature range -40 °C ~ +85 °C
- ISO/IEC18000-6C, EPC Global GEN2 V2 and ISO/IEC 14443 TYPE A, NFC
- FORUM TYPE 2 compliant
- Up to 2K bits USER memory shared in UHF and HF
- UHF data rate: forward link:40 - 160 kbits/s; reverse link:40 - 640 kbits/s
- Up to 30 years of data retention time in 85°C
- Up to 100K cycles erasable endurance
- Support EAS function (optional)
- Mutual authentication with customized crypto engine (optional)
- Support UHF open/short detection (optional)
- Support HF field detection
- 4 antenna pads on chip(2 UHF pads; 2 HF pads)
- ESD: HBM $\pm 2kV$

Key Applications

- Anti-counterfeiting(Liquor and luxury)
- IT asset management
- Item Level Tagging (Apparel tagging)
- Air Baggage tagging
- Logistics/supply chain management
- Access Control



Operating conditions & electrical characteristics

Frequency Range	Parameter	Condition	Min	Typ	Max	Unit Comments
UHF	Operation frequency		840MHz		960MHz	
	Data rate		40kbits/s		640kbits/s	
HF	Operation frequency			13.56MHz		
UHF	Read sensitivity			-19dBm		[1] [2]
	Write sensitivity			-11dBm		[1]
	Maximum operation power				20dBm	[1] [2]
	Equivalent input parallel resistance			2.3kOhm		[3] [4]
	Equivalent input parallel capacitance			0.5pF		[3] [4]
HF	Read magnetic field strength			0.08A/m		[5]
	Write magnetic field strength			0.11A/m		
	Equivalent input parallel capacitance			50pF/17pF		
	Data Retention	55 °C	15years			
	Endurance		100,000 cycles			

- [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 excluded.
[5] with ID-1 size HF antenna

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