

ST25RU3993 UHF RAIN[®] RFID



High Performance Reader Chip



UHF Rain[®] RFID Reader IC for EPC Class1 Gen2 ideal for battery operated handheld devices

The ST25RU3993 UHF Rain[®] RFID reader from ST combines optimal performance with lowest power consumption and follows EPC Class1 Gen2. The ST25RU3993 offers high sensitivity, while being robust against antenna reflections or self-jamming. This is essential for battery powered mobile or embedded applications, where antenna design is challenging and long battery lifetimes are critical.

The ST25RU3993 offers a flexible feature set, being a market proven solution from the handheld consumer up to the industrial reader space.

KEY FEATURES

- High chip sensitivity -90dBm
- DRM compliant
- Carrier cancellation
- Frequency hopping support
- Automatic I/Q selection
- Outstanding read range >10m
- Read Speeds above 760 tags/s
- Detection of 354 unique tags/s
- Two switchable antenna ports:
 - 20 dBm internal power amplifier
 - 0 dBm output for external amplifier
- Protocol support for:
 - ISO 18000-6C (EPC Class1 Gen2)
 - ISO 29143 (Air interface for mobile RFID)
 - ISO 18000-6A/B through direct mode
 - QFN 7x7mm 48pin package

KEY BENEFITS

- Outstanding analog performance
- Fast and painless product design
- Futureproof transparent mode option
- Offers up to 80% longer battery lifetimes than competitors

MAIN APPLICATIONS

- Consumer, industrial and medical applications
- Authentication, Counterfeiting
- Hand-held readers
- Mobile UHF RFID readers
- Stationary readers

Device summary

Part number	Mode	RF interface	Speed performance	Serial interface	Advanced features	Output power	Temperature range	Package	Applications
ST25RU3993	Reader/Writer	ISO18000-6c/b EPC Gen 2	Read Speed: 760tags/s Bulk read: 354 unique tags/s	SPI	Dense Reader Mode, Internal VCO, Linear RSSI & Phase Bit, Automatic PSRR regulation, Auto ACK	0dBm 20dBm	-40 °C to +85 °C	48-pin QFN (7x7 mm)	Retail/Stationary Readers, Industrial PDA's, Mobile phones/Handheld Consumer, Industrial and Medical Applications Portable Data Capture, Gaming

Reference design kits

- ST25RU3993 reader IC evaluation board (order code: ST25RU3993-EVAL)



Support eco-system



e2e community



PC SW tools



MCU drivers (FW)



Documentation



Evaluation board

Technical support

The ST25RU reader family offers a simple and cost-effective implementation. ST can provide supporting material for integrating the antenna into your application: application notes, reference designs, antenna computation tools, presentations and e-learning. Visit www.st.com/st25ru



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