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Product Number: AS3992BQFP

UHF RFID Single Chip Reader with Dense Reader Mode EPC Class 1 Gen 2 Compatible and Integrated PA

Description:

The AS3992 UHF Gen 2 Reader chip is an integrated analog frontend and provides protocol handling for ISO180006c/b 900MHz RFID reader systems. Equipped with multiple built-in programming options, the device is suitable for a wide range of UHF RFID applications.

The AS3992 is pin to pin compatible with the previous AS3990/91 IC's. It offers improved receive sensitivity to -86dB, fully programmable Rx DRM filters on chip and pre-distortion. Fully scalable, the AS3992 is ideal for longer range and higher power applications.

Offering DRM compliance on chip, combined with improved sensitivity and pre-distortion allows the AS3992 to be the only true world wide shippable IC. The reader configuration is achieved through setting control registers allowing fine tuning of different reader parameters.

Key Features:

- ISO18000-6C (EPC Gen2) full protocol support
- ISO18000-6A,B compatibility in direct mode
- Full DRM compliance on chip allowing a true World Wide Shippable device
- Improved receive sensitivity to -86dBm
- On chip pre-distortion meaning improved external PA efficiency
- Integrated low level transmission coding, Integrated low level decoders
- Integrated data framing, Integrated CRC checking
- Parallel 8-bit or serial 4-pin SPI interface to MCU using 24 bytes FIFO
- Voltage range for communication to MCU between 1.8V and 5.5V
- Selectable clock output for MCU
- Integrated supply voltage regulator (20mA), which can be used to supply MCU and other external circuitry
- Integrated supply voltage regulator for the RF output stage, providing rejection to supply noise
- Internal power amplifier (20dBm) for short range applications
- Modulator using ASK or PR-ASK modulation
- Adjustable ASK modulation index
- AM & PM demodulation ensuring no “communication holes” with automatic I/Q selection
- Built-in reception low-pass and high-pass filters having selectable corner frequencies
- Selectable reception gain, Reception automatic gain control

- AD converter for measuring TX power using external RF power detector
- DA converter for controlling external power amplifier
- Frequency hopping support
- On-board VCO and PLL covering complete RFID frequency range 840MHz to 960MHz
- Oscillator using 20MHz crystal
- Power down, standby and active mode, Can be powered by USB with no need for step conversion