

SIC 7888

## UFDX – The Best LF RFID IC

The new Silicon Craft Ultra FDX (UFDX) multi-standard LF transponder IC sets the new benchmark in its class. This feature rich OTP RFID IC not only delivers the industry's highest read distance but also features anti-collision, secure R/W memory, and air-tunable on-chip 210pF resonant capacitor for unparalleled performance.

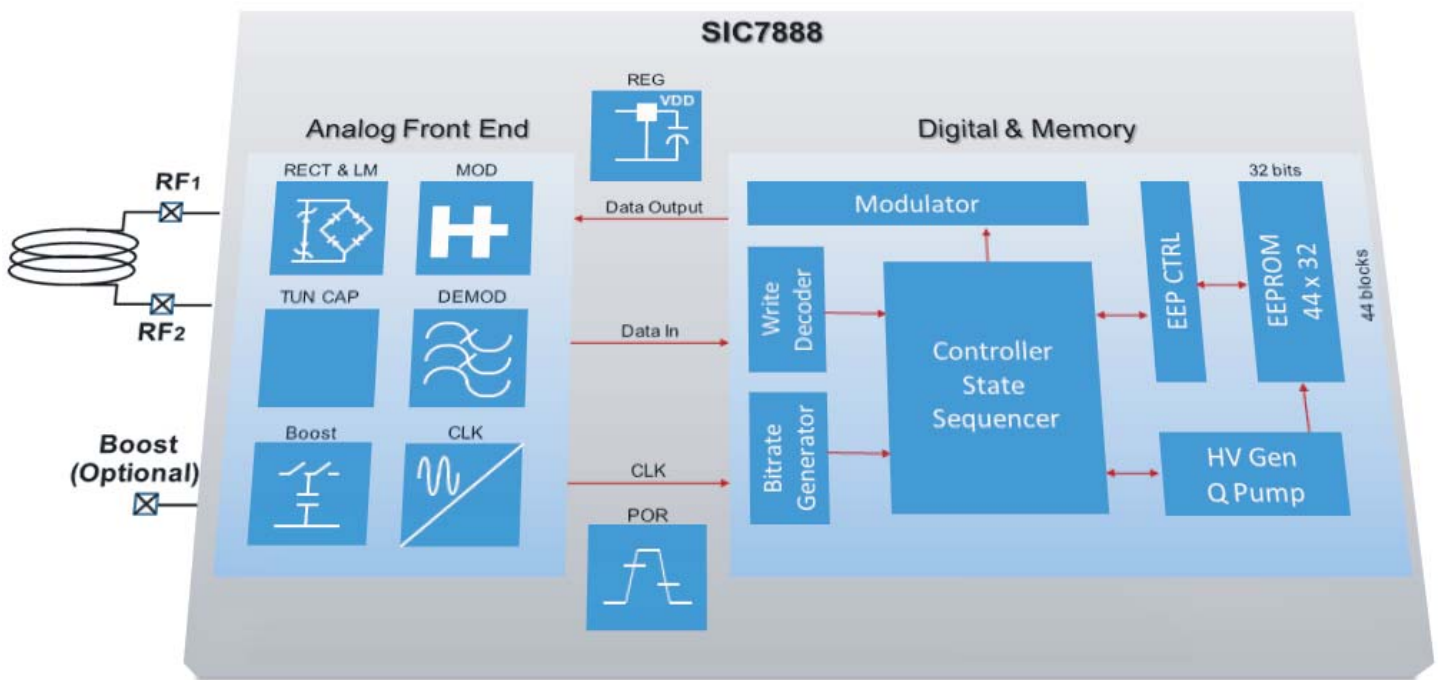
### General Description

The UFDX (SIC7888) is the most advanced first-in-class air-tune-on-transponder integrated circuit targeted for ISO11784/11785 FDX-B protocol. Ideally suited for mass production, the RFID tags built with the UFDX IC consistently outperform other tags with the same inlay design and dimensions. Perfect for offline database applications, the UFDX features an R/W password protected 1184-bit EEPROM user memory, 64-bit traceability data, and a 32-bit UID for anti-collision of up to 30 tags/ second. The UFDX guarantees a minimum 10 year non-volatile data retention and utilizes a special CRC data integrity check.

These features establish the UFDX (SIC7888) as the best choice for applications such as identifications of small animals, aquatic lives, industrial automation, and a series of other applications. Not only does UFDX possess the longest individual transponder read range in the market, but each IC is intrinsically optimized for achieving the best performance individually and across a production lot via the air tunable 210pF on-chip resonant capacitor. This unique patented design establishes consistent high read performance even after the inlay-to-tag conversion process.

UFDX's versatility means it can also be configured to a wide range of standards such as FDX-A, FECAVA, 64-bit EM format, and customized user defined proprietary formats.

Supplied in all popular IC packages such as DIT, HOA2/4, and the SLGA module or in wafer forms, the UFDX offers the best in class robustness, reliable performance, and superior flexibility in large scale production of high quality tags.



SIC 7888 — UFDX Block Diagram

## Applications

- o Animal Identification
- o Logistic Management
- o Sports / Entertainment
- o Access control/ Vending machine
- o Automation in industry / Item tracking
- o Livestock Management / Breeding control

## Highlight Features

- o The best in class performance read range by SIC's boost-up technique compliant with ISO11784/85
- o Integrated resonant capacitor of  $210\text{pF} \pm 0.5\%$
- o Air tunable resonant capacitor for maximum read range
- o Compatibility with HITAG-5 air protocol infrastructure (no authentication)
- o Sub-microwatt power consumption in read mode
- o Two Level of password authorization (Read and Read/Write)

## Standards

- o FDX-A, FECAVA
- o FDX-B, ISO 11784/85 Animal ID
- o 64-bit EM format, data rate 2/4 kBit/s

## Protocols

- o Downlink, 100% ASK, 5.2 kbps pulse interval coding
- o Uplink, deep ASK modulation with anti-collision Manchester, DBP, and FSK (Fecava) coding
- o Selectable uplink data rate 2, 4, 8 kbps (RF/16, RF/32, RF/64)
- o Compatible Anti-collision (upto 30 tags/s) with any other ISO11784/11785 IC Tag
- o CRC for data integrity check
- o Transponder talk first mode (TTF) with configurable data length block up to 256 bits

## Memory

- o 1408 bits (44 x 32) EEPROM
- o 1184 bits (37 x 32) in user memory area
- o More than 100,000 erase/write cycles
- o 10 years non-volatile data retention
- o Secure memory lock functionality
- o 32 Bit Unique Identification Number (UID)
- o 64 bit Traceability data

## Operating Conditions

- o Frequency range 100 - 150kHz
- o Operating temperature -40 to 85 °C

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