Features

- Carrier Frequency f_{RF}: UHF (800 - 1000 MHz)
- Compliant with Current and Upcoming World-wide Radio Regulations (FCC Part 15 Subpart C; EN 300 220; Draft EN 302 208-1, SRD Targeting ETSI Recommendation, Japan)
- The IC is Supporting a Data Rate Adaptation Possibility which Enables Optimal Data Rate Adjustments Considering Different RF Regulations
  - The Data Rate can be Adjusted Between 5 kbit/s to 80 kbit/s
  - The Data Rate of the Return Link is Independent of the Data Rate of the Forward Link
- Lowest RF Input Power Requirement Typically 10 µW
- 1344-bit EEPPROM Memory
  - 1024-bit User Memory
  - 320-bit System Memory (128-bit ID Page, 128-bit User System Information, 64-bit Manufacturer Information, etc.)
  - Programming of Virgin Tags Possible
  - Single Programming Does not Require Arbitration Selection
  - Anonymous Read Functions of Non-unique Data Structures
- Deterministic (Binary Tree) and Slotted Based Anti-collision Function
  - Detection Rate, e.g., in Europe up to 460 Tags/s (Based on Synchronous Mode, Full-duplex, 64 Bit ID + 40 kbit Forward/Return Link)
  - Mixture of Both Anti-collision Procedures is Possible
  - For Both Anti-collision Methods, no UID is Required
  - Pointer Based Anti-collision in Combination with the Tree Walking Possibility
- Forward Link (Interrogator to Tag)
  - DSBM as well as ASK
  - Adaptive PWM Coding; Supports Adaptive Functionality Based on Close Loop Concepts (Data Rate, Encoding Adjustments)
- Return Link (Tag to Interrogator)
  - ASK Modulation
  - PSK Modulation (to Achieve Best SNR, BER and Power Transfer Possibilities, and Best Performance in Noisy and/or Multi-reader Environments)
  - 4 Kinds of Coding: FM0, Two Kind of NRZI, 3phase1 and Subcarrier
  - Synchronous and Asynchronous Return Link Protocol
  - Link Can Be Stopped/Interrupted at Any Time
  - Full-duplex Link Mechanism (Higher Throughput and Increased Data Robustness)
- Supports a Selectable EAS Mechanism
- Operating Range of > 4 m (TX Power 500 mW ERP/869 MHz) Possible

Typical Applications

- Supply Chain Management
- Asset Control
- Toll Collection
- Pallet Tracking
- Gas Cylinder Tracking

Benefits

- Meets User Requirements of GTAG
- Supports ISO 18000-6 FDIS Data Structures (AFI/ASF, DSFID, UID)
- Different UID Structure Handling Possible (such as AutoID Centre ePC)
- Derivative and Therefore Compatible to the Open Platform Concept AIDU

1-kbit UHF R/W IDIC® with Anti-collision Function

ATA5590
TAGIDU

Summary

Preliminary

Rev. 4817AS–RFID–09/04

Note: This is a summary document. A complete document is available under NDA. For more information, please contact your local Atmel sales office.

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