



RangeMaster™ Solution For RFID Tag Readers

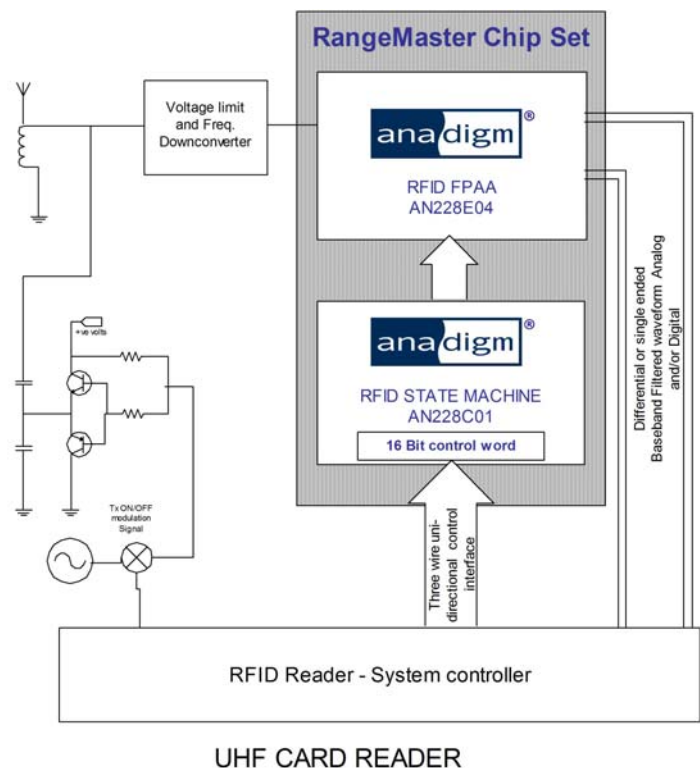
Anadigm's RangeMaster™ is the first in a family of RFID reader solutions for Universal UHF RFID Tag Reader Systems. It's the industry's first solution that allows system vendors to design and maintain a single "universal" reader that can be customized to read different radio frequency identification (RFID) tag types, with different modulation schemes and frequencies. RangeMaster™ fully supports EPC Global Gen 1 and Gen 2 (class 0, 1, 2) and ISO18000-6 standards.

RangeMaster™ is a two-chip solution that uses a customized Field Programmable Analog Array (FPAA) in conjunction with an RFID State Machine, enabling system designers to develop a universal RFID tag reader that can support multiple protocols and frequencies for Universal Fixed Readers, Portable/Handheld Readers, Combination Bar Code and RFID Reader/Scanners. By allowing standardization around a single printed circuit board to support multiple end products and markets, RangeMaster™ simplifies and improves product development. This allows customers building RFID tag readers to greatly reduce their time to market, and offer a lower total cost of ownership.

RangeMaster™ Features

- Complete solution for a Universal RFID tag reader system
- Full support for EPC Global Gen 1/Gen 2 (Class 0, 1, 2) and ISO 18000-6 protocols
- Selectable sub-carrier frequency
- Read range and sensitivity optimization with variable gain
- Ability to calibrate reader to filter out background interference (i.e. fluorescent lighting)
- Programmable Standby Power Mode
- User-customizable signal processing:
 - Choice of two different baseband analog signal processing circuits
 - Choose between a universal and a EPC Gen 2 baseband processing circuit
 - Select from 3 predefined background frequency filter values
 - Select the gain of the analog circuit to optimize the range and sensitivity of your reader
 - Select from 15 predefined values of the upper and the lower sub-carrier frequencies
 - Digital or analog output

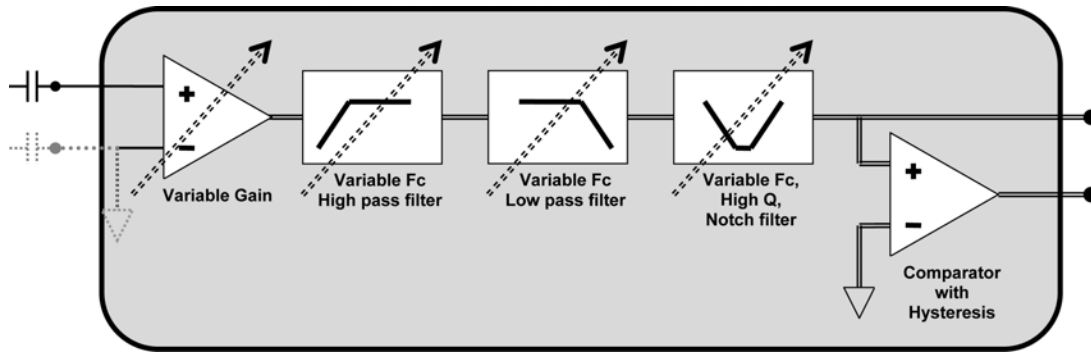
System-Level Overview



RangeMaster™ Benefits

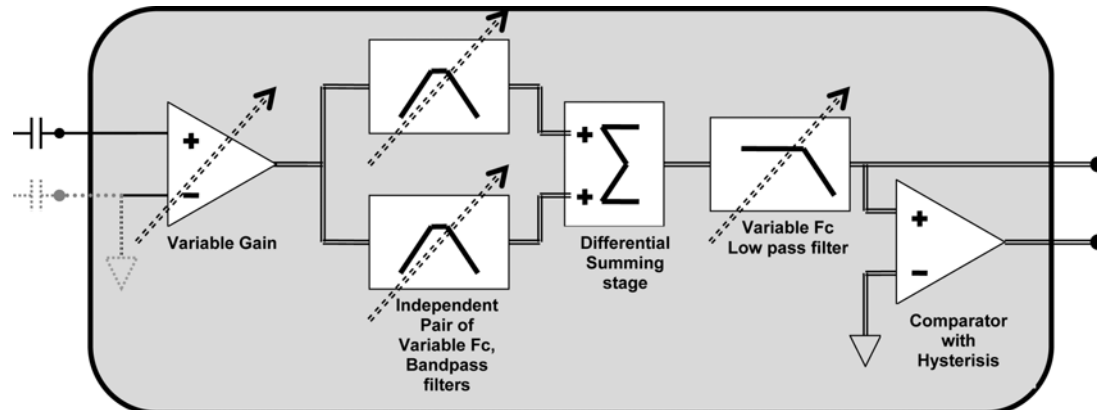
- Design and maintain ONE reader that can be customized to read different tag types, with different modulation schemes and frequencies
- Standardize around a single PCB to support multiple end products and markets
- Chipset can be dynamically controlled to produce a truly intelligent and fully flexible card reader
- Calibrate the reader at customer site to account for background interference
- Adjust the gain of the analog front-end to optimize for read range
- Reduce the total number of system components and lower your bill of materials

Universal Baseband Analog Signal Processing Circuit



- Enables extraction of all data frequencies (DC to 820KHz)
- User-selectable notch filter for rejecting background interference (i.e. fluorescent lighting)
- Variable gain to adjust for reader range/sensitivity
- User-selectable analog or digital output
- Differential input allows easy interface to 900MHz down converter

EPC Gen 2 Baseband Analog Signal Processing Circuit



- Enables extraction of all data frequency pairs - i.e. 2KHz & 4KHz, 32KHz & 64KHz, 312KHz & 625KHz (All other frequency pairs possible)
- Supports extraction of data at 2.2MHz/3.3MHz for Class 0
- Variable gain to adjust for reader range/sensitivity, as well as to balance between extracted frequencies
- User-selectable analog or digital output
- Differential input allows easy interface to 900MHz down converter

RangeMaster™ User-Selectable Parameters¹

Center frequency of the notch filter (in KHz):	0, 48, 50, 52
Variable gain settings:	0dB, 6dB, 12dB, 18dB, 24dB, 30dB
Lower sub-carrier frequency (in KHz):	1, 2, 4, 8, 16, 20, 32, 40, 64, 80, 128, 160, 320
Upper sub-carrier frequency (in KHz):	2, 4, 8, 16, 32, 40, 64, 80, 128, 160, 256, 320, 640

¹Contact Anadigm if you need further customization to fit your system needs



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