

## Summary



This is a tech brief to discuss the design changes of the HFA3860B over the HFA3860A.

## New Functions

- Selection of MBOK or CCK Waveform for 5.5MBPS or 11MBPS Operation
- Programmable I and Q Cover Codes for CCK Waveform
- Programmable Straight or Pingpong Differential Encoding
- Signal Quality Metric for CCK Waveform

## Enhancements

- Schmitt inputs on SCLK, AS, CS, R/W#
- Signal Quality Metrics RSSI, SQ1, and SQ2/3 are latched to allow reading during and after packet. MBOK and CCK signal quality metrics have always been latched.
- Sleep Mode Power is Reduced from 4mA to 0.6mA
- Standby Mode Power is Reduced from 11mA to 7mA

## Operation

The HFA3860B was designed to drop into existing HFA3860A boards and operate in MBOK mode without hardware or software modifications. The pinout is identical. By using reserved bits and shadow registers, the HFA3860B can be programmed with the same register setting as the HFA3860A for MBOK operation.

Test Bus Addresses 0Dh thru 14h represent the same types of signal quality information about CCK waveform as was available for MBOK.

## Invoking CCK

To invoke the CCK waveform the user can simply add 4 register loads at the end of existing configuration file. The suggested values are:

CR5 ACh  
CR16 48h  
CR17 48h  
CR31 18h

In the event the user is writing the register loading program from scratch, CR 31 will get loaded once with 18h. But the loading of CR5, CR16, and CR17 must occur twice with the respective values of ACh, 48h, 48h and 2Ch, 0Ah, 14h.

## Performance

Preliminary data shows that 11Mbps CCK modulation with the suggested cover codes provides improved packet error rate performance in the presence of multipath as compared to MBOK. At 5.5Mbps the packet error rate performance is better with MBOK due to nonoptimized carrier tracking in the HFA3860B.