The duty cycle is calculated as below. There are 1000 bit intervals in a .1 second period. A 50% duty cycle (500 high bits) was assumed to insure worst case scenario as the testing was done before the actual duty cycle was calculated.

Sounds to me that the part recommended by RFM to help the receiver sensitivity may be a viable solution. I look forward to seeing if there is any improvement.

Here are some snap shots from my data scope (real world).

Looking at the short message lengths being used...73 bytes. Almost 30% of the .1 second interval we are quiet (nice for an emission average).

Rough calculation

~1000 bit intervals in .1 second period (9600 baud)

73 Start bits (high)
4 STX (high)
~210 (high) Data typ..

~300 high bits

~%30 of the .1 interval

Longest message: 73 BYTES

55 5E 04 06 01 3C 01 01 0B 57 09 45 52 43 4F 4D 20 20 58 10 89 FF 03 30 01
58 10 89 FF 03 30 01 58 10 89 FF 03 30 01 58 10 89 FF 01 30 01
85 00 04 01 35 37 30 38 82 30 0A 31 31 32 33 34 35 36 37 38 39 30 84 20 00
19 A7

Message format

55 = STX
5E = MESSAGE SEQ NUMBER
04 = PACKET SEQ NUMBER
06 = CONTROL (ACK REQ...ETC)
01 = PACKET TYPE (01 = DATA, 02 = ACK, ETC)
3C = MESSAGE LENGTH
01 = MESSAGE ID

01 0B = DESTINATION ADDRESS
57 09 = SOURCE ADDRESS

09 52 43 .....>>>>>DATA<<<<<<

LAST TWO BYTES 19 A7 -- CRC16

Shortest message (ACK) 13 BYTES

55 5E 04 00 02 00 00 57 09 01 0B 83 4F

Message format

55 = STX
5E = MESSAGE SEQ NUMBER
04 = PACKET SEQ NUMBER
00 = CONTROL (ACK REQ...ETC)
02 = PACKET TYPE (01 = DATA, 02 = ACK, ETC)
00 = MESSAGE LENGTH
00 = MESSAGE ID

57 09 = DESTINATION ADDRESS
01 0B = SOURCE ADDRESS

19 A7 = CRC16