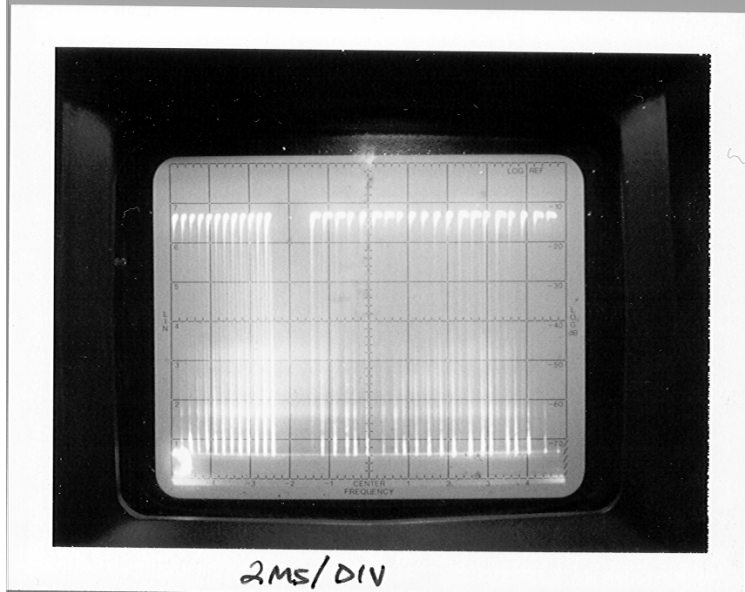
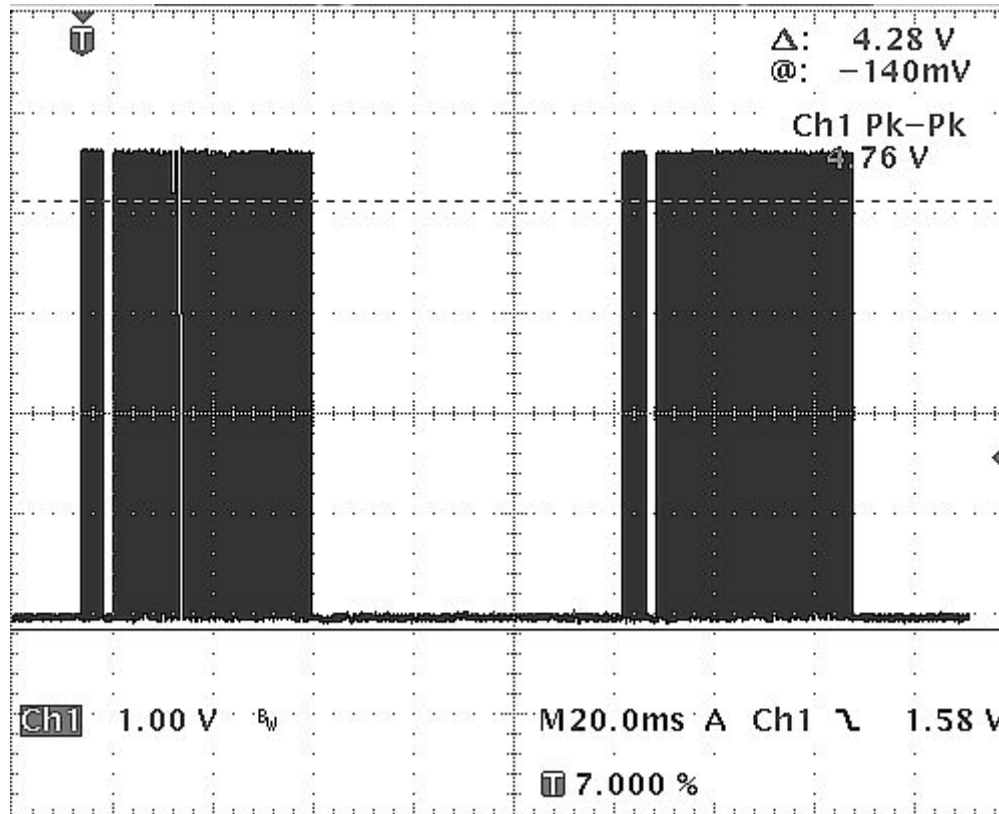


Zero span Spectrum Analyzer  
Photograph – Unable to Distinguish  
Data pulses. Used Tektronix TDS 3032  
oscilloscope with floppy disk recording  
feature for data squence.

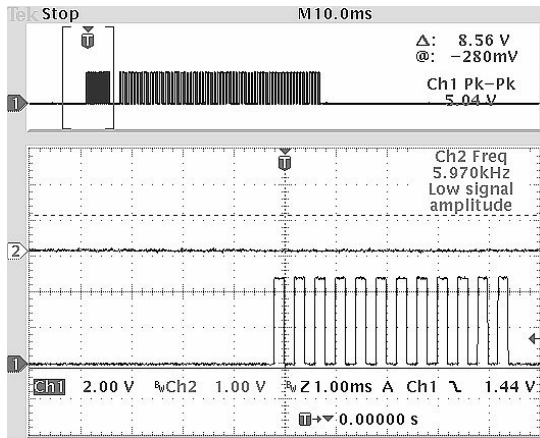




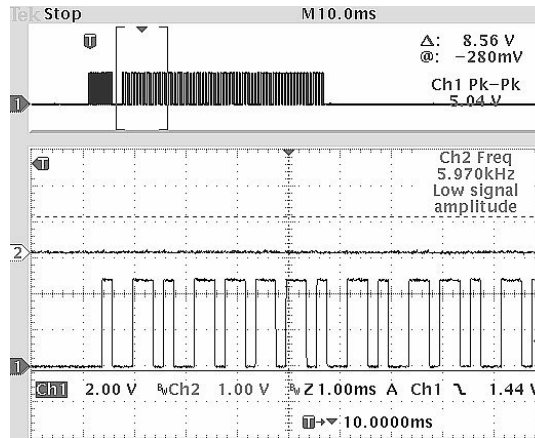
Rolling Code Format – SHA24711  
 Interword Timing, 62 mSec.

Total Data Word length = 110 mSec.

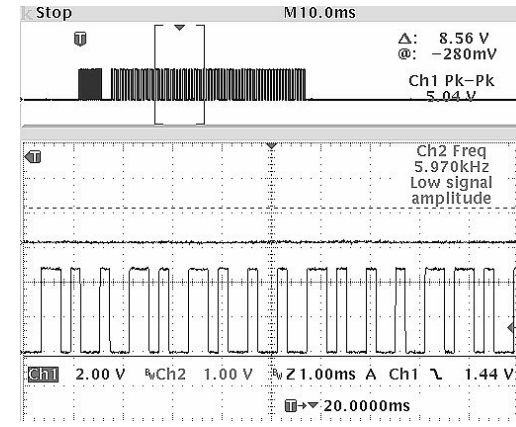
20 mSec. / Division for Timing Diagram



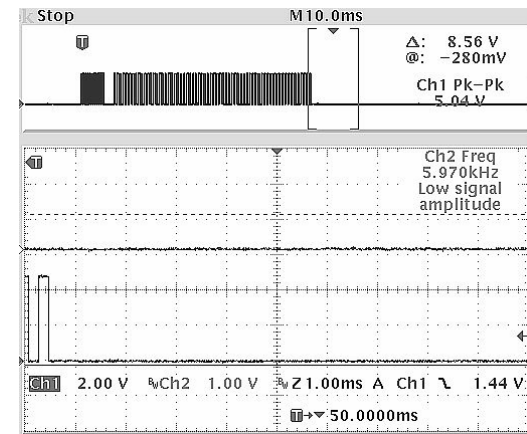
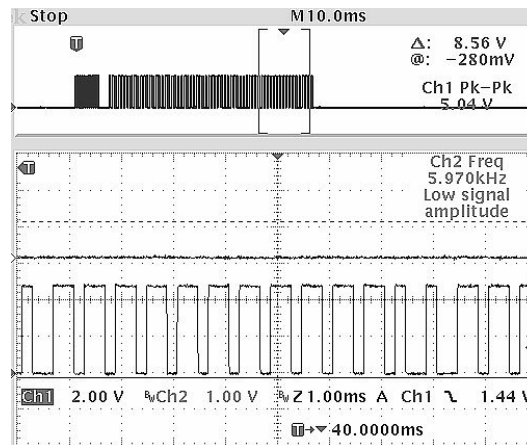
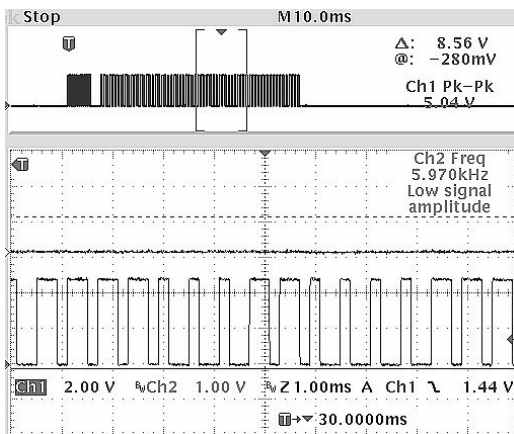
PREAMBLE, 50% DUTY CYCLE



PREAMBLE = 4.8 mSec., GAP = 2 mSec.



DATA WORD, 1 = 200 uSec, 0 = 400 uSec.



29 "Ones" X 200 uSec. = 5.8 mSec + 37 "Zeroes" X 400 uSec. = 14.8 mSec = Total Data On Time of 20.6 mSec.

GAP BETWEEN WORDS = 62 mSec.

ROLLING CODE DATA STREAM, DUTY CYCLE ---- ON TIMES = Preamble 2.4 mSec + Data 20.6 mSec. = 23 mSec. ---- Total Time of Data Stream from First Data Pulse = 48 mSec + 60 mSec interword gap. NOTE: FCC Rules limit duty cycle calculations to 100 mSec.

23 mSec / 100 mSec. = 0.23 FCC Duty Cycle =  $20 \log(0.23) = -12.7 \text{ dB}$