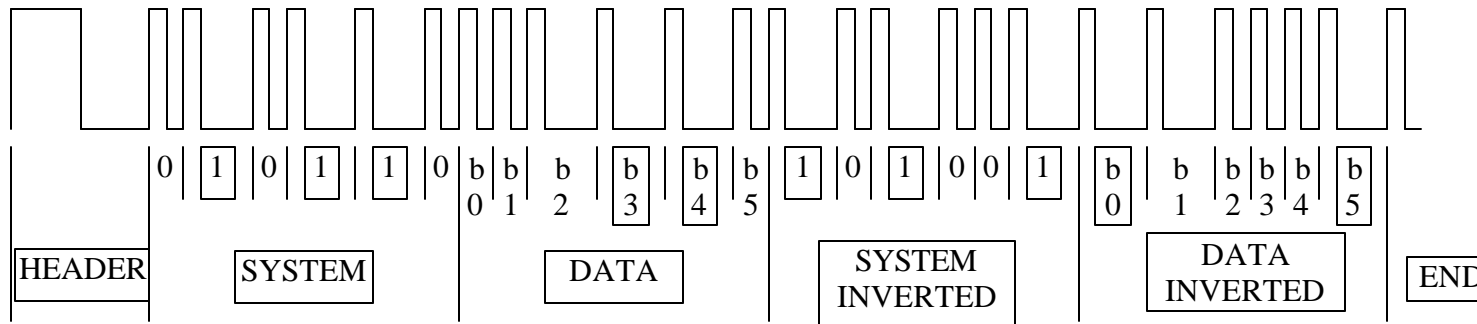


**Purpose:**

This document is to show the infrared pulse train format used by the Antex handheld remotes shipped with the SRX-3, XM-3000, and XM-100 satellite receivers, for purposes of programming other IR devices to work with the Antex satellite receivers. Also see “ESP0295 XM-3000 Touchpad IR Codes” and “ESP0296 SRX-3 Touchpad IR Codes” for additional codes those two receivers will respond to.

**Pulse Train Format:**



Example of “Power Toggle”

**Notes:**

1. Carrier frequency is 56.9 KHz.
2. High going pulses represent carrier on time.
3. TTL level signals at the IR receiver will look exactly inverted from this.
4. Logic “0” bit is 840 uS carrier on followed by 840 uS carrier off.
5. Logic “1” bit is 840 uS carrier on followed by 2540 uS carrier off.
6. The header is 3380 uS carrier on followed by 3380 uS carrier off.
7. System code is always 010110 for both Sirius and XM.
8. In the above example, the data sent is 001110.

9. The entire pulse train is 68 mS, regardless of the command sent, since all complete pulse trains are half “1’s” and half “0’s”.
10. The handheld remote sends the pulse train twice, with a 32 mS space in between. The receiver will consider the command valid if the first pulse train is valid. The second pulse train is redundant. The receiver will ignore any pulses for 100 mS after receiving a valid pulse train, so as to ignore the redundant pulse train. Other devices mimicking the handheld remote may send the pulse train only once for each command, however, there must be a minimum of 100 mS between concatenated commands.

**Handheld Remote IR Commands:**

<b>IR command</b>	<b>Binary Data</b>	<b>Comment</b>
Zone 1, “CH”	000100	“ZONE” for Triple Zone remotes, “CH” for XM-100 remote
Zone 2, “CAT”	100100	“ZONE” for Triple Zone remotes, “CAT” for XM-100 remote
Zone 3, “SETUP”	010100	“ZONE” for Triple Zone remotes, “SETUP” for XM-100 remote
1	000010	
2	100010	
3	010010	
4	110010	
5	001010	
6	101010	
7	011010	
8	111010	
9	000110	
0	100110	
PRESET	111100	
SELECT	110001	
UP ARROW	101110	
DOWN ARROW	011110	
LEFT ARROW	100001	
RIGHT ARROW	010001	
POWER TOGGLE	001110	