

**Step 2: Vertical Rate Equal To ZERO Verification**

The input for this field shall initially be set to represent a Vertical Rate of ZERO feet per minute.

Verify that the ADS-B transmission device generates Airborne Velocity Messages with TYPE “19” and that the VERTICAL RATE subfield in each such message contains the value “1” (binary 0 0000 0001).

**Step 3: Vertical Rate Verification – Discrete Values**

Increase the value of the Vertical Rate Data input so that it assumes each discrete decimal coding value from Table 2-97.

Verify that for each discrete decimal coding input value, the VERTICAL RATE subfield in subsequent Airborne Velocity Messages of TYPE “19” matches identically the corresponding Binary Coding value from Table 2-97.

**Table 2-97: Vertical Rate Discrete Values**

VERTICAL RATE		
Coding (binary)	Coding (decimal)	Meaning (VERTICAL RATE in feet / minute)
0 0000 0101	5	Vertical Rate= 256 feet / minute
0 0000 1010	10	Vertical Rate= 576 feet / minute
0 0000 1111	15	Vertical Rate= 896 feet / minute
0 0101 0000	80	Vertical Rate= 5,056 feet / minute
0 0101 1111	95	Vertical Rate= 6,016 feet / minute
0 1010 0000	160	Vertical Rate= 10,176 feet / minute
0 1010 1111	175	Vertical Rate= 11,136 feet / minute
0 1111 1111	255	Vertical Rate= 16,256 feet / minute
1 0000 0000	256	Vertical Rate= 16,320 feet / minute
1 0101 0101	341	Vertical Rate= 21,760 feet / minute
1 1010 1010	426	Vertical Rate= 27,200 feet / minute
1 1111 1110	510	Vertical Rate= 32,576 feet / minute

Verify that the VERTICAL RATE subfield in the output message is not incremented until the input value reaches a number corresponding to an **even integer** multiple of 64 feet/minute; **with an accuracy of +/- 32 feet/minute.**

**Step 4: Vertical Rate Verification – Out of Bounds Test**

Continue to increase the value of the Vertical Rate Data input.

Verify that for values greater than 32,576 feet per minute but less than or equal to 32,608 feet per minute, the VERTICAL RATE subfield continues to be set to “510” (binary 1 1111 1110).

Continue to increase the value of the vertical rate input.

Verify that for values representing a vertical rate greater than 32,608 feet per minute, up to the maximum possible input value, that the transmitter continues