

**Table 2-70: Performance Test Requirements During Environmental Testing**

PERFORMANCE TEST REQUIREMENTS DURING ENVIRONMENTAL TESTING							
Test Procedure Paragraph	TEST PROCEDURE DESCRIPTION	Required Environmental Test Groups (See <a href="#">Table 2-69</a> )					
		1	2	3	4	5	
		<b>TEST GROUPS</b>					<b>NO TESTS</b>
2.3.2.1	Transmission Frequency (§2.2.2.1)	Y	Y	Y			
2.3.2.2	Modulation Type (§2.2.2.3)	Y					
2.3.2.3	Modulation Rate and Distortion (§2.2.2.2 & §2.2.2.4)	Y					
2.3.2.4	Transmitter Power Output (§2.2.2.5)	Y	Y	Y			
2.3.2.5	In Band Transmission Spectrum (§2.2.2.6)	Y	Y				
2.3.2.6	Message Transmission Cycle (Transmitter Diversity) (§2.2.6.1.3)	Y					
2.3.2.7	Message Start Opportunity (MSO) (§2.2.6.2.1)	Y					
2.3.2.8	Relationship of the MSO to the Modulated Data (§2.2.6.2.2)	Y					
2.3.2.9	Report Assembly on Transmission of Ownship ADS-B Message (§2.2.6.3 & §2.2.7.1)	Y	Y	Y			
2.3.2.10	Receiving Diversity (§2.2.8.1)	Y					
2.3.2.11	Long ADS-B Message <del>is</del> <u>As</u> Desired Signal (§2.2.8.2.1.1)	Y	Y				
<del>2.3.2.12</del>	<del>Basic ADS-B Message As Desired Signal (§2.2.8.2.1.2)</del>	<del>Y</del>	<del>Y</del>				
<del>2.3.2.12</del>	<del>Ground Uplink Message <del>is</del> <u>As</u> Desired Signal (§2.2.8.2.1.2.2.2.8.2.1.3)</del>	<del>Y</del>	<del>Y</del>				
<del>2.3.2.13</del>	<del>Receiver Desired Signal Dynamic Range (§2.2.8.2.2)</del>	<del>Y</del>	<del>Y</del>				
<del>2.3.2.14</del>	<del>Receiver Selectivity (§2.2.8.2.3)</del>	<del>Y</del>	<del>Y</del>				
<del>2.3.2.15</del>	<del>Report Assembly on Receipt of ADS-B Message (§2.2.9.1)</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>			
<del>2.3.2.16</del>	<del>Report Assembly on Receipt of Ground Uplink Message (§2.2.9.2)</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>			
<del>2.3.2.17</del>	<del>Address Verification (§2.2.13.3, §2.2.13.5.1, and §2.2.13.5.3)</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>		
<del>2.3.2.18</del>	<del>Receiver Self Test Capability (§2.2.13.4, §2.2.13.5.2, §2.2.13.5.3)</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>		
<del>2.3.2.19</del>	<del>Transmission Device Failure Annunciation (§2.2.13.5.1)</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>	<del>Y</del>		
<del>2.3.2.20</del>	<del>Power Interruption for ADS-B Transmitting Subsystem (§2.2.16)</del>	<del>Y</del>				<del>Y</del>	
<del>2.3.2.20.1</del>	<del>Power Interruption for ADS-B Receiving Subsystem (§2.2.16)</del>	<del>Y</del>				<del>Y</del>	

**Note:** “Y” in the above table denotes that the test procedure identified in the far left column is required to be performed when performing the group of tests indicated by the column under which “Y” is indicated.

### 2.3.2 Detailed Environmental Test Procedures

The test procedures set forth below are considered satisfactory for use in determining equipment performance under environmental conditions. Although specific test procedures are cited, it is recognized that other methods may be preferred. These alternative procedures may be used if the manufacturer can show that such procedures provide at least equivalent information. In such cases, the procedures cited herein should be used as one criterion in evaluating the acceptability of the alternative procedures. The

of the receiver over the 100 second time interval. Verify that the ADS-B Message is received exactly 100 times over the 100 second interval.

**2.3.2.11 Long ADS-B Message ~~is-As~~ Desired Signal (§2.2.8.2.1.1)**

Perform the entire procedure provided in §2.4.8.2.1.1.

**2.3.2.12 Basic ADS-B Message As Desired Signal (§2.2.8.2.1.2)**

Perform the entire procedure provided in §2.4.8.2.1.2.

**2.3.2.122.3.2.13 Ground Uplink Message ~~is-As~~ Desired Signal (§2.2.8.2.1.22.2.8.2.1.3)**

Perform the entire procedure provided in §~~2.4.8.2.1.22.4.8.2.1.3~~.

**2.3.2.132.3.2.14 Receiver Desired Signal Dynamic Range (§2.2.8.2.2)**

Perform the entire procedure provided in §2.4.8.2.2.

**2.3.2.142.3.2.15 Receiver Selectivity (§2.2.8.2.3)**

Perform the entire procedure provided in §2.4.8.2.3.

**2.3.2.152.3.2.16 Report Assembly on Receipt of ADS-B Message (§2.2.9.1)**

Perform the entire procedure provided in §2.4.9.1.

**2.3.2.162.3.2.17 Report Assembly on Receipt of Ground Uplink Message (§2.2.9.2)**

Perform the entire procedure provided in §2.4.9.2.

**2.3.2.172.3.2.18 Address Verification (§2.2.13.3)**

*Note: This procedure applies only to ADS-B Transmitting Subsystems.*

Perform the entire procedure provided in §2.4.13.3.

**2.3.2.182.3.2.19 Receiver Self Test Capability (§2.2.13.4)**

*Note: This procedure applies only to ADS-B Receiving Subsystems.*

Perform the entire procedure provided in §2.4.13.4.

**2.3.2.192.3.2.20 Transmission Device Failure Annunciation (§2.2.13.5.1)**

*Note: This procedure applies only to ADS-B Transmitting Subsystems.*

Perform the entire procedure provided in §2.4.13.5.1.

### 2.3.2.20.2.3.2.21 Power Interruption (§2.2.16)

#### 2.3.2.20.12.3.2.21.1 Power Interruption for ADS-B Transmitting Subsystems (§2.2.16)

Perform the entire procedure provided in §2.4.16.1.

#### 2.3.2.20.22.3.2.21.2 Power Interruption for ADS-B Receiving Subsystems (§2.2.16)

Perform the entire procedure provided in §2.4.16.2.

## 2.4 Equipment Test Procedures

The test procedures set forth in the following subparagraphs are considered satisfactory for use in determining required performance under standard and stressed conditions. Although specific test procedures are cited, it is recognized that other methods may be preferred by the testing facility. These alternate procedures may be used if the equipment manufacturer can show that they provide at least equivalent information. In such cases, the procedures cited herein should be used as one criterion in evaluating the acceptability of the alternate procedures.

### 2.4.1 Definition of Standard Conditions of Test

The following definitions of terms and conditions of tests are applicable to the equipment tests specified herein commencing at §2.4.2:

- a. Power Input Voltage – Unless otherwise specified, all tests shall be conducted with the power input voltage adjusted to design voltage +/- 2 percent. The input voltage shall be measured at the input terminals of the equipment under test.
- b. Power Input Frequency
  - (1). In the case of equipment designed for operation from an AC source of essentially constant frequency (e.g., 400 Hz), the input frequency shall be adjusted to design frequency +/- 2 percent.
  - (2). If the equipment is designed for operation from an AC source of variable frequency (e.g., 300 to 1000 Hz), tests shall be conducted with the input frequency adjusted to within five percent of a selected frequency and, unless otherwise specified, within the range for which the equipment is designed.
- c. Accuracy of Test Equipment – Throughout this section, the accuracy of the test equipment is not addressed in detail, but rather is left to the calibration process prescribed by the agency that certifies the testing facility.
- d. Adjustment of Equipment – The circuits of the equipment under test shall be properly aligned and otherwise adjusted in accordance with the manufacturer's recommended practices prior to application of the specified tests. Unless otherwise specified, adjustments may not be made once the test procedures have started.
- e. Test Instrument Precautions – During the tests, precautions shall be taken to prevent the introduction of errors resulting from the connection of voltmeters, oscilloscopes and other test instruments, across the input and output terminals of the equipment under test.