

#### 2.4.11.2 Verification of Receive-Transmit Turnaround Time (§2.2.11.2)

Appropriate test procedures required to validate the requirements of §2.2.11.2 are included in §2.4.11.1.

#### 2.4.12 Verification of ~~Response to~~ Mutual Suppression Pulses (§2.2.12)

##### Purpose/Introduction:

UAT equipment shall provide an output signal suitable for sending suppression signals. The UAT equipment shall provide a mutual suppression signal whenever the transmitter output power exceeds  $-20$  dBm. In addition, the suppression signal shall not become active prior to 5 microseconds before the start of the ADS-B Message Transmission Interval defined in §2.2.2.5, and the suppression signal shall not remain active later than 5 microseconds after the end of the ADS-B Message Transmission Interval defined in §2.2.2.5.

UAT equipment shall not respond to suppression signals.

*Note:* UAT equipment is not to inhibit or delay its transmissions based on suppression signals. There is no need to desensitize the UAT Receiver based on suppression signals.

##### Equipment:

Provide an oscilloscope, an RF detector that provides a trigger output when the input level exceeds  $-20$  dBm, and a load for the suppression output signal that is characteristic of the intended application.

##### Measurement Procedures:

##### Step 1: ADS-B Basic Message Suppression Interval

Configure the UAT equipment to transmit valid ADS-B Basic Messages. Connect the suppression output signal to the load. Connect the oscilloscope to the RF detector (trigger input) and the suppression signal (scope Channel A). Verify that the rising and falling edges of the suppression output signal occur within 5 microseconds of the RF detector trigger points.

##### Step 2: ADS-B Long Message Suppression Interval

Configure the UAT equipment to transmit valid ADS-B Long Messages. Verify that the rising and falling edges of the suppression output signal occur within 5 microseconds of the RF detector trigger points.

No specific test procedure is required to validate §2.2.12.

#### 2.4.13 Verification of Self Test and Monitors (§2.2.13)

No specific test procedure is required to validate §2.2.13.

- c. Measured at an operating frequency of 978 MHz.

### 3.2.1.8 Receive Pattern Gain

The gain of the receive antenna subsystem **shall** not be less than the gain of a matched quarter-wave stub minus 3 dB, under the following conditions:

- a. Over 90 percent of a coverage volume from 0 to 360 degrees in azimuth and from 5 to 30 degrees above the ground plane,
- b. When installed at center of 1.2 meter (4 feet) diameter (or larger) flat circular ground plane,
- c. Measured at an operating frequency of 978 MHz.

### 3.2.1.9 Dynamic Response

The antenna(s) shall be located such that operation of the equipment is not adversely affected by aircraft maneuvering or changes in attitude encountered in normal flight operations.

**Note:** *Class A0 installations are not required to install multiple (e.g. top fuselage and bottom fuselage) antennas.*

## 3.2.2 Mutual Suppression Bus

This test verifies that the UAT equipment and the on-board SSR transponder and TCAS, if applicable, operate properly on the mutual suppression bus.

Demonstrate that the UAT transmission does not cause the SSR transponder to generate spurious signals during a UAT transmission, as defined by the ADS-B Message Transmission Interval in §2.2.2.5.

Demonstrate that the UAT transmission does not cause TCAS to generate spurious signals during a UAT transmission, as defined by the ADS-B Message Transmission Interval in §2.2.2.5.

## 3.3 Conditions of Test

The following subparagraphs define conditions under which tests, specified in §3.4, shall be conducted.

### 3.3.1 Safety Precautions

Comply with any specific safety precautions that are recommended by the equipment manufacturer.

### 3.3.2 Power Input

Unless otherwise specified, all aircraft electrically operated equipment and systems shall be turned ON before conducting interference testing.