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Minimum Operational Performance Standards for Global Navigation Satellite System (GNSS) Airborne Antenna Equipment

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Foreword

This document was prepared by RTCA Special Committee 159 (SC-159) and approved by the RTCA Technical Management Committee on October 20, 1995.

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- analyzing and recommending solutions to the system technical issues that aviation faces as it continues to pursue increased safety, system capacity and efficiency;

- developing consensus on the application of pertinent technology to fulfill user and provider requirements, including development of minimum operational performance standards for electronic systems and equipment that support aviation; and

- assisting in developing the appropriate technical material upon which positions for the International Civil Aviation Organization and the International Telecommunication Union and other appropriate international organizations can be based.

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Table of Contents

1.0 PURPOSE AND SCOPE 1
1.1 Introduction 1
1.2 System Characteristics 2
1.3 Operational Applications 2
1.4 Operational Goals 2
1.5 Assumptions 2
1.6 Test Procedures 3
1.7 Definition of Terms 4

2.0 EQUIPMENT PERFORMANCE REQUIREMENTS AND TEST PROCEDURES 5
2.1 General Requirements 5
2.1.1 Airworthiness 5
2.1.2 Intended Function 5
2.1.3 Federal Communications Commission Rules 5
2.1.4 Fire Protection 5
2.1.5 Effects of a Test 5
2.2 Equipment Performance Standard Conditions 5
2.2.1 GNSS Antenna - Passive 6
2.2.1.1 GPS Operating Frequency 6
2.2.1.2 GLONASS Operating Frequency (optional) 6
2.2.1.3 Passive Antenna VSWR and Impedance 6
2.2.1.4 Antenna Gain 6
2.2.1.5 Axial Ratio 7
2.2.1.6 Polarization 7
2.2.2 GNSS Antenna - With Integrated Preamplifier (optional) 7
2.2.2.1 Preamplifier Gain and Noise Figure 8
2.2.2.2 Preamplifier Gain Compression 8
2.2.2.3 Preamplifier Stability 9
2.2.2.4 Preamplifier Selectivity 9
2.2.2.5 Burnout Protection 9
2.2.2.6 Pulse Power Operation 10
2.3 Equipment Performance - Environmental Conditions 10
2.3.1 Specific Environmental Test Conditions 11
2.3.2 Temperature and Altitude Tests (DO-160C, Section 4.0) 12
2.3.2.1 Low Operating Temperature Test 12
2.3.2.2 High Short-Time Operating Temperature Test 13
2.3.2.3 High Operating Temperature Test 13
2.3.2.4 Altitude Test 13
2.3.3 Temperature Variation Test (DO-160C, Section 5.0) 14

2.3.4 Humidity Test (DO-160C, Section 6.0) 14
2.3.5 Shock Tests (DO-160C, Section 7.0) 14
2.3.5.1 Operational Shocks 14
2.3.5.2 Crash Safety Shocks 14
2.3.6 Vibration Test (DO-160C, Section 8.0) 15
2.3.7 Explosion Test (DO-160C, Section 9.0) (When Required) . 15
2.3.8 Waterproofness Tests (DO-160C, Section 10.0) 15
2.3.8.1 Drip Proof Test (When Required) 15
2.3.8.2 Spray Proof Test (When Required) 15
2.3.8.3 Continuous Stream Proof Test (When Required) 16
2.3.9 Fluids Susceptibility Tests (DO-160C, Section 11.0) 16
2.3.9.1 Spray Test 16
2.3.9.2 Immersion Test (When Required) 16
2.3.10 Sand and Dust Test (DO-160C, Section 12.0) (When Required) 17
2.3.11 Fungus Resistance Test (DO-160C, Section 13.0) (When Required) 17
2.3.12 Salt Spray Test (DO-160C, Section 14.0) (When Required) 17
2.3.13 Magnetic Effect Test (DO-160C, Section 15.0) 18
2.3.14 Power Input Tests (DO-160C, Section 16.0) 18
2.3.14.1 Normal Operating Conditions 18
2.3.14.2 Abnormal Operating Conditions 18
2.3.15 Voltage Spike Conducted Test (DO-160C, Section 17.0) . . 18
2.3.15.1 Category A Requirements (If Applicable) 18
2.3.15.2 Category B Requirements (If Applicable) 19
2.3.16 Audio Frequency Conducted Susceptibility Test (DO-160C, Section 18.0) 19
2.3.17 Induced Signal Susceptibility Test (DO-160C, Section 19.0) 19
2.3.18 Radio Frequency Susceptibility Test (Radiated and Conducted) (DO-160C, Section 20.0) 19
2.3.19 Emission of Radio Frequency Energy Test (DO-160C, Section 21.0) 19
2.3.20 Lightning Induced Transient Susceptibility (DO-160C, Section 22.O) 20
2.3.21 Lightning Direct Effects (DO-160C, Section 23.0) 20
2.3.22 Icing (DO-160C, Section 24.0) 20
2.4 Equipment Test Procedures 20
2.4.1 Test Conditions 21
2.4.1.1 Power Input Voltage 21
2.4.1.2 Power Frequency 22
2.4.1.3 Antenna Installation 22

2.4.1.4 Ambient Conditions 22
2.4.1.5 Warm-Up Period 22
2.4.1.6 Connected Loads 22
2.4.1.7 Antenna Ground Plane 22
2.4.1.8 Antenna Measurement Range 22
2.4.1.9 Test Frequencies 23
2.4.2 GNSS Antenna - Passive 24
2.4.2.1 GPS Operating Frequencies (Section 2.2.1.1) . . 24
2.4.2.2 GLONASS Operating Frequencies (Optional Section 2.2.1.2) 24
2.4.2.3 Passive Antenna VSWR and Impedance Test (Section 2.2.1.3) 25
2.4.2.4 Gain Test (Section 2.2.1.4) 25
2.4.2.5 Axial Ratio Test (Section 2.2.1.5) 26
2.4.2.6 Polarization Test (Section 2.2.1.6) 26
2.4.3 GNSS Antenna - With Preamplifier (optional tests) 27
2.4.3.1 RF Gain and Noise Figure Test (Section 2.2.2.1) 27
2.4.3.2 Preamplifier Gain Compression Test (Section 2.2.2.2) 28
2.4.3.3 Preamplifier Stability Test (Section 2.2.2.3) 28
2.4.3.4 Preamplifier Selectivity Test (Section 2.2.2.4) . 30
2.4.3.5 Burnout Protection Test (Section 2.2.2.5) 30
2.4.3.6 Pulse Power Operation Test (Section 2.2.2.6) . . 31

3.0 INSTALLED EQUIPMENT PERFORMANCE 35

4.0 EQUIPMENT OPERATIONAL PERFORMANCE CHARACTERISTICS 37

MEMBERSHIP 39

Table of Figures

Figure 2-1 Antenna Configurations 7
Figure 2-2 Interference Levels at the Antenna Port 9
Figure 2-3 Frequency Selectivity Requirements 10
Figure 2-4 Antenna Measurement Range 24
Figure 2-5 Voltage Standing Wave Ratio (VSWR) 25
Figure 2-6 Pulse Power Operation Setup 33

1.0 PURPOSE AND SCOPE

1.1 Introduction

This document contains minimum operational performance standards (MOPS) for GNSS airborne antenna equipment designed to use GPS or GLONASS augmented by other systems/equipment/techniques as appropriate to meet the performance requirements for primary means of navigation for en route, terminal, non-precision, and precision approach phases of flight.

The airborne navigation system can be used as a primary means navigation system in an aircraft when approved and an operational GNSS navigation satellite system is available. Incorporated within these standards are equipment characteristics that should be useful to users, designers, manufacturers, and installers of the equipment. This document defines the antenna performance for antennas that will be used with GNSS receiver equipment.

Section 1.0 of this document provides information and assumptions needed to understand the rationale for equipment characteristics and requirements stated in the remaining sections. It describes typical equipment applications and operational goals, and forms the basis for the standards stated in Sections 2.0 through 4.0.

Section 2.0 contains the minimum performance standards for the equipment. These standards define required performance under standard operating conditions and stressed physical environmental conditions. It also details the recommended bench test procedures necessary to demonstrate compliance.

Section 3.0 describes the performance required of the installed equipment. Tests for the installed equipment are included when performance cannot be adequately determined through bench testing.

Section 4.0 describes the operational characteristics for equipment installations, and defines conditions that will assure the operator that operations can be conducted safely and reliably in the expected operational environment.

Compliance with these standards by manufacturers, installers, and users is recommended as one means of assuring that the equipment will satisfactorily perform its intended function(s) under conditions normally encountered in routine aeronautical operations.

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