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USA

Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS)

RTCA DO-262F Change 1
September 15, 2022

Prepared by: SC-222
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FOREWORD

This document was originally prepared jointly by Special Committee 222 (SC-222) and EUROCAE Working Group 82 and approved by the RTCA Program Management Committee (PMC) and EUROCAE Council on June 17, 2021. Change 1 was approved by the RTCA Program Management Committee (PMC) and EUROCAE Council on September 15, 2022.

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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

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Technical Summary of Changes Required

Iridium, in working with aviation Value Added Manufacturers (VAMs), has identified several errors in the published version of DO-262E/ED-243C Minimum Operational Performance Specification (MOPS). Given the scope of the changes, Iridium lead the development of this document. A summary of the changes are listed below with additional details following for each item covering both the needed change and also the reason behind the change.

Any added text will be highlighted in gray. Deleted text is ~~struck through in red~~.

Changes include:

1. Changes to Section F.2.3.5 for Lightning Induced Transient Testing required in DO-160 – missing note and table F-32 update
2. Changes to Receiver Susceptibility requirements and test in Sections F.2.2.3.1.3.2.6. and F.2.4.3.1.2.2.6
3. Changes to Harmonic, Spurious and Noise Requirements Table F-18 and associated Notes in Section F.2.2.3.1.3.1.4).
4. Changes to fmax/fmin frequency range calculation in Section F.2.4.3.1.2.1.4
5. Changes to fmax/fmin frequency range calculation in Section F.2.4.3.1.2.1.8
6. Change to Rejection of Signals Outside the NGSS Receive Band Test in Section F.2.4.3.1.2.2.3
7. Changes to Receiver Operation in Moving Aircraft requirement in Section F.2.2.3.1.3.2.5
8. Changes to Receiver Operation in Moving Aircraft Test in Section F.2.4.3.1.2.2.5
9. Change in Transmitter Operation in Moving Aircraft Requirement in Section F.2.2.3.1.3.1.9
10. Change in Transmitter Operation in Moving Aircraft Test in Section F.2.4.3.1.2.1.9
11. Change in Error Vector Magnitude Requirement in Section F.2.2.3.1.3.1.10

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1. CHANGES TO F.2.3.5 FOR LIGHTNING INDUCED TRANSIENT TESTING REQUIRED IN DO-160 – MISSING NOTE and Table F-32 update

F.2.3.5 PERFORMANCE VS. ENVIRONMENTAL REQUIREMENTS MATRIX

Table F-32: DO-160G / ED-14G Performance vs. Environmental Requirements Matrix

ANTENNA SUBSYSTEM		DO-160G / ED-14G Section																						
Section	Title	4 TEMPERATURE / ALTITUDE	5 TEMP VARIATION	6 HUMIDITY	7 OPERATIONAL SHOCKS /CRASH SAFETY	8 VIBRATION	9 EXPLOSIVE ATMOSPHERE	10 WATERPROOFNESS	11 FLUIDS SUSCEPTIBILTY	12 SAND AND DUST	13 FUNGUS RESISTANCE	14 SALT FOG	15 MAGNETIC EFFECT	16 POWER INPUT	17 VOLTAGE SPIKE	18 AUDIO FREQ. CONDUCTED SUSC.	19 INDUCED SIGNAL SUSCEPTIBILITY	20 RADIO FREQ. SUSC. (COND. & RAD)	21 EMISSION OF RADIO FREQUENCY ENERGY	22 LIGHTNING INDUCED TRANSIENT SUSC.	23 LIGHTNING DIRECT EFFECTS	24 ICING	25 ESD	26 FIRE/FLAMMABILITY
L / M / H Class Antennas																								
F.2.2.3.1.2.1.1	G/T (Coverage Volume)	1 14	1 23	2	2 4	1	-	2	2	2	2	2	-	-	-	-	-	2	-	-	2 16	2	2	-
F.2.2.3.1.2.1.2	EIRP (Coverage Volume)	1 14	1 23	2	2 4	1	-	2	2	2	2	2	-	-	-	-	-	2	-	-	2 16	2	2	-
F.2.2.3.1.2.1.3	Polarization (Coverage Volume)	1 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.2.2.3.1.2.2	Axial Ratio	1 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.2.4.3.1.1.5	Power Handling Capabilities	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.2.2.3.1.2.4	Passband	1 14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
F.2.2.3.1.2.9.2	Switching Time	1 14 21	-	-	-	-	-	-	-	-	-	-	-	1 21 ~~22~~	1 21 ~~22~~	1 21 ~~22~~	1 21 ~~22~~	1 21 ~~22~~	-	1 21 22	-	-	-	-

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