

ED-243C Change 2

MINIMUM OPERATIONAL PERFORMANCE STANDARDS FOR AVIONICS SUPPORTING NEXT GENERATION SATELLITE SYSTEMS (NGSS)

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FOREWORD

1. This document was developed jointly by EUROCAE Working Group 82 “New Air-Ground Data Link Technologies” and RTCA SC-222 “INMARSAT AMS(R)S”, and was approved by the Council of EUROCAE on 27 October 2023.
2. This document completes ED-243C Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS) (2021). Change 1 was approved by the Council of EUROCAE on 15 September 2022.

Several issues have been identified that require Change 2 documentation to the Appendix F Iridium Certus MOPS. The modifications are listed in Technical Summary of Changes Required. Change 2 was approved by the Council of EUROCAE on 27 October 2023.
3. This document is technically identical to RTCA DO-262F Change 2 Minimum Operational Performance Standards for Avionics Supporting Next Generation Satellite Systems (NGSS).
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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 Change 1 version of DO-262F/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 is listed below with additional details following for each item covering both the needed change and also the reason behind the change.

This Change 2 document makes changes to some of the content in Change 1 and also to DO-262F/ED-243C Table of Tables.

The changes are summarized as follows:

Change Table of Tables DO-262F/ED-243C

1. Change Table F-33 number to F-33a in DO-262F/ED-243C.
2. Add in *Table F-33b: Adjacent Channel Frequency Testing* which was missing from Table of Tables in DO-262F/ED-243C.

Change to F.2.3.5 DO-262F/ED-243C

1. Change Table F-33 number to F-33a in DO-262F/ED-243C page F-66.

Change to Change 1 Technical Summary of Changes Required

1. Reference to the DO-262E/ED-243C is incorrect in the Change 1 opening paragraph – must change to DO-262F/ED-243C.

Changes to F.2.2.3.1.3.2.6 Receiver Susceptibility Requirements in Change 1

1. Change to Table F-28 in Section F.2.2.3.1.3.2.6 for Receiver Susceptibility values from dBW to dBW/m².
2. Change to Section F.2.2.3.1.3.2.6 for Receiver Susceptibility Step 6 to add in PFD test levels required.
3. Change to Section F.2.2.3.1.3.2.6 Receiver Susceptibility, edit the language in first paragraph to change “receiver power level” to “receiver flux density.”

Changes to F.2.4.3.1.2.2.6 Receiver Susceptibility Test Procedure in Change 1

1. Change to Section F.2.4.3.1.2.2.6 Receiver Susceptibility, Step 3d, the test states to confirm compliance with Section F.2.2.3.1.3.2.6. This Section reference should be F.2.2.3.1.2.1.1.
2. Change to Section F.2.4.3.1.2.2.6 Receiver Susceptibility, Step 5d, the test states to confirm compliance with Section F.2.2.3.1.3.2.6. This Section reference should be F.2.2.3.1.2.1.1.
3. Change to Section F.2.4.3.1.2.2.6 Receiver Susceptibility, Step 4b, the table reference is listed as Table F-1 (added C-1). This table reference should be Table F-33b: Adjacent Channel Frequency Testing.

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1. CHANGES TO DO-262F/ED-243C

In the Table of Tables change the number for Table F-33 to F-33a

Add into the Table of Tables the following:

Table F-33b: Adjacent Channel Frequency Testing Page # TBD
Section F.2.3.5

Change Table F-33 number to F-33a in DO-262F/ED-243C page F-66.

1.1. RATIONALE FOR CHANGE

A new table from Change 1 was mis-numbered and did not appear in the Table of Tables in the document. To keep all other table numbering the same, the previous table (F-33) is being designated as "F-33a" and this new table was just given the "b" suffix so it would follow existing table numbering structure in the remainder of the document. The specific page number for F-33b is not yet known as these edits have not been incorporated into the master document at this time.

2. CHANGES TO CHANGE 1 TECHNICAL SUMMARY OF CHANGES REQUIRED

The first paragraph on Page ii of Change 1 references the DO-262E/ED-243C which is incorrect. Replace this with the DO-262F/ED-243C.

2.1. RATIONALE FOR CHANGE

This reference to DO-262E/ED-243C was incorrect. It is actually DO-262F/ED-243C.

3. CHANGES TO RECEIVER SUSCEPTIBILITY REQUIREMENTS SECTION F.2.2.3.1.3.2.6

Replace the first paragraph and Table F-28 in Change 1 with the following (NOTE: see number item 5 discussed below for clarification on changes to Table F-28):

The AES shall meet the performance of TABLE F-24 with no more than 1 dB degradation in the presence of a wideband interference across the entire AES receive band of -164.5 dBW/m²/Hz for AES8/9 and -170.4 dBW/m²/Hz for AES 10/11 (SUW in TABLE F-11) at A' in FIGURE F-9 with the receiver power flux density for each waveform listed in the TABLE F-28 below.

TABLE F-28: RECEIVER POWER FLUX DENSITY (PFD) LEVEL AT A'

AES	C1 Q Receiver PFD at A' (dBW/m ²)	C2 Q Receiver PFD at A' (dBW/m ²)	C8 Q Receiver PFD at A' (dBW/m ²)	C8 16A Receiver PFD at A' (dBW/m ²)
AES8 & AES9	-108.7	-109.2	-103.3	--
AES10 & AES11	-114.1	-114.6	--	-102.0
Noise Equivalent Bandwidth	36kHz	72kHz	288kHz	288kHz

3.1. RATIONALE FOR CHANGE

The changes to this section are needed to address errors in the declared test values as well as to correct several editorial changes. In DO-262F/ED-243C Change 1, we changed Table F-28 to reference dBW/m². However the values in the table were not changed. Therefore we need to change all of the stated EIRP power levels to Power Flux Density. For editorial changes the term "power level" was changed to "power flux density."