



AIRWORTHINESS DIRECTIVE

This Airworthiness Directive (AD) is issued pursuant to Canadian Aviation Regulation (CAR) 521.427. No person shall conduct a take-off or permit a take-off to be conducted in an aircraft that is in their legal custody and control, unless the requirements of CAR 605.84 pertaining to ADs are met. Standard 625 - Aircraft Equipment and Maintenance Standards Appendix H provides information concerning alternative means of compliance (AMOC) with ADs.

Number:

CF-2023-45

Effective Date:

30 June 2023

ATA:

34

Type Certificate:

A-177

Subject:

Navigation – Minimum Equipment List (MEL) Item Prohibitions in the Presence of 5G C-Band Wireless Broadband Interference

Replacement:

Supersedes AD CF-2022-61, issued 4 November 2022.

Applicability:

Bombardier Inc. model BD-700-2A12 aeroplanes, all serial numbers.

Compliance:

As indicated below, unless already accomplished.

Background:

Transport Canada Civil Aviation (TCCA) issued AD CF-2021-52 to prohibit certain flight operations requiring radio altimeter data when operating in the contiguous United States of America (U.S.) airspace affected by 5G C-Band wireless signals, as identified by Notice to Airmen/Air Missions (NOTAM) and in accordance with Federal Aviation Administration (FAA) AD 2021-23-12.

AD CF-2022-61 was issued to require an amendment of the AFM with new limitations and to prohibit dispatch under certain MEL items to mitigate identified hazards due to harmful 5G C-Band broadband interference, when operating at airports where 5G is deployed as identified by NOTAM.

Since AD CF-2022-61 was issued, we have determined that although anomalies with the automatic flight control system (AFCS) and autothrottle remain possible in the presence of harmful interference, there are sufficient mitigating factors such that this is no longer considered an unsafe condition. This AD is issued to remove the requirement for AFM amendment to limit certain use of the AFCS and autothrottle. This AD retains the prohibition of dispatch under certain MEL items which, in combination with 5G interference and an additional failure, could result in inadvertent ground spoiler deployment in flight, reversion to ground mode control laws in the air, or air mode control laws on the ground.

In addition, the FAA has issued AD 2023-10-02 which explains that NOTAMs are no longer practical because the 5G environment is expected to cover most of the contiguous U.S. This AD modifies the conditions in which the MEL prohibitions are applicable, based on the configuration of the aeroplane and 5G environment at an airport, to be compatible with the new U.S. 5G environment.

Corrective Actions:

A. For the purposes of this AD, the following definitions apply:

- a. A **5G C-Band mitigated airport (5G CMA)** is an airport at which the telecommunications companies have agreed to voluntarily limit their 5G deployment at the request of the FAA, as identified by an FAA Domestic Notice.

- b. A **radio altimeter tolerant airplane** is one for which the radio altimeter, as installed, demonstrates the tolerances specified in paragraphs A.b.i and A.b.ii. of this AD, using a method approved by the FAA or Transport Canada.
- i. Tolerance to radio altimeter interference, for the fundamental emissions (3.7–3.98 GHz), at or above the power spectral density (PSD) curve threshold specified in Figure 1 of this AD.
 - ii. Tolerance to radio altimeter interference, for the spurious emissions (4.2–4.4 GHz), at or above the PSD curve threshold specified in Figure 2 of this AD.
- c. A **non-radio altimeter tolerant airplane** is one for which the radio altimeter, as installed, does not demonstrate the tolerances specified in paragraphs A.b.i and A.b.ii. of this AD.
- d. **Applicable MEL Items** refers to the following MEL items:
- i. Section 1 Line Replaceable Unit (LRU) Component Relief:
 1. 32-43-33 – MAIN WHEEL AXLE-INTERFACE-MODULE/WHEEL SPEED TRANSDUCER 1) WHEEL SPEED TRANSDUCER
 2. 32-61-09 – MAIN LANDING GEAR WEIGHT ON WHEELS PROXIMITY SWITCHES
 3. 34-44-00 – RADIO ALTIMETER SYSTEM
 - ii. Section 2 Crew Alerting System (CAS) Message Relief:
 1. 27-0645 – 27 FLT CTRL – PFCC BCU INPUT REDUND LOSS
 2. 27-0660 – 27 FLT CTRL – PFCC LGSCU INPUT REDUND LOSS
 3. 27-0665 – 27 FLT CTRL – PFCC RAD ALT INPUT REDUND LOSS
 4. 32-0048 – 32 GEAR – GEAR WOW / WOFFW REDUND LOSS
 5. 32-1005 – ANTISKID DEGRADED (CAUTION)
 6. 34-1200 – RAD ALT 1 FAIL (Advisory)

Figure 1 - Fundamental Effective Isotropic PSD at Outside Interface of Aircraft Antenna

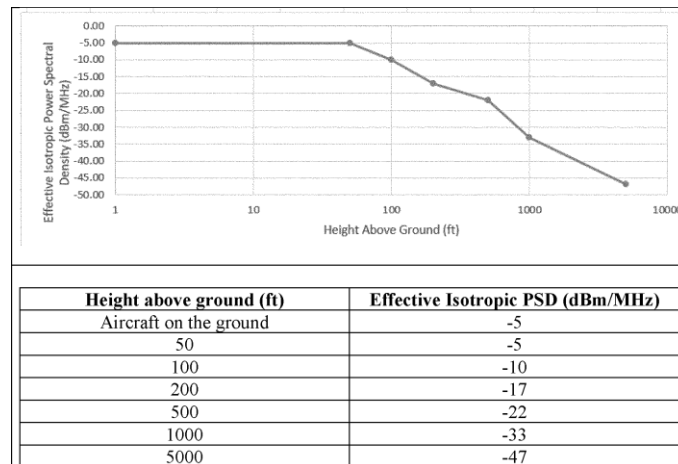
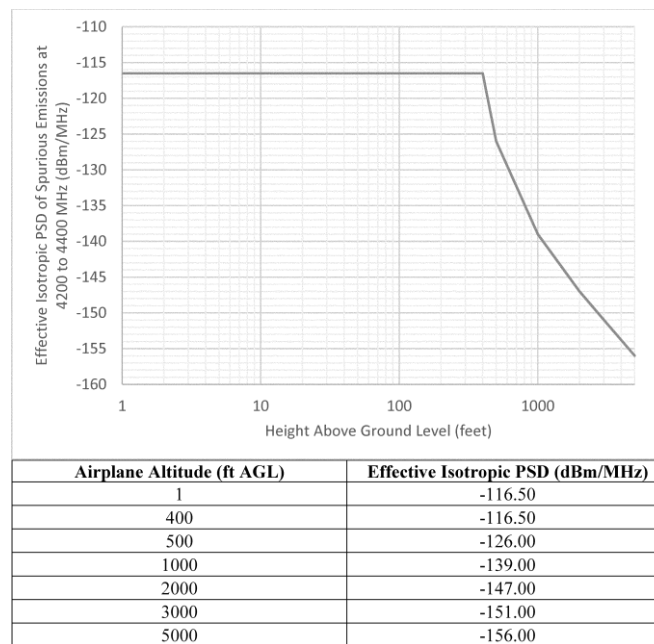


Figure 2 - Spurious Effective Isotropic PSD at Outside Interface of Airplane Antenna**Part I – Requirement Retained from AD CF-2022-61**

Within 30 days from 18 November 2022, the effective date of AD CF-2022-61, and until 30 June 2023:

- A. It is prohibited to dispatch or release into or out of airports in the U.S. airspace in the presence of 5G C-Band wireless broadband interference as identified by NOTAM (NOTAMs will be issued to state the specific airports where the radio altimeter is unreliable due to the presence of 5G C-Band wireless broadband interference) under the applicable MEL items defined in this AD.

Part II – New Requirements for This AD

Effective 1 July 2023:

- A. For Non-Radio Altimeter Tolerant Aeroplanes: it is prohibited to dispatch or release into or out of airports in the contiguous U.S. airspace under the applicable MEL items defined in this AD.
- B. For Radio Altimeter Tolerant Aeroplanes: it is prohibited to dispatch or release into or out of airports in the contiguous U.S. airspace under the applicable MEL items defined in this AD unless operating at a 5G C-Band mitigated airport as identified in an FAA *Domestic Notice*.

Part III – Alternative Means of Compliance

- A. AMOCs approved for AD CF-2021-52 or FAA AD 2021-23-12, providing relief for specific radio altimeter installations, are also approved as AMOCs for the provisions of Part I and Part II of this AD until 30 June 2023.

Authorization:

For the Minister of Transport,

ORIGINAL SIGNED BY

Jenny Young
Chief, Continuing Airworthiness
Issued on 26 June 2023

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