



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2026-4659; Project Identifier MCAI-2025-00826-A,T;
Amendment 39-23384; AD 2026-13-02]

RIN 2120-AA64

Airworthiness Directives; Transport and Commuter Category Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule; request for comments.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all transport and commuter category airplanes equipped with a radio (also known as radar) altimeter. This AD was prompted by the determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 3.7-3.98 GHz frequency band (5G Lower C-Band) while operating in Canadian airspace. This AD requires revising the existing airplane flight manual (AFM) to incorporate limitations prohibiting certain operations requiring radio altimeter data when operating within the Canadian airspace. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective July 1, 2026.

The FAA must receive comments on this AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to [regulations.gov](https://www.regulations.gov). Follow the instructions for submitting comments.

- Fax: 202-493-2251.

- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

AD Docket: You may examine the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2026-4659; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The street address for Docket Operations is listed above.

FOR FURTHER INFORMATION CONTACT: Ken Fairhurst, Continued Operational Safety Technical Advisor, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 817-222-5390; email: operationalsafety@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

The FAA invites you to send any written relevant data, views, or arguments about this final rule. Send your comments using a method listed under the ADDRESSES section. Include “Docket No. FAA-2026-4659; Project Identifier MCAI-2025-00826-A,T” at the beginning of your comments. The most helpful comments reference a specific portion of the final rule, explain the reason for any recommended change, and include supporting data. The FAA will consider all comments received by the closing date and may amend this final rule because of those comments.

Except for Confidential Business Information (CBI) as described in the following paragraph, and other information as described in 14 CFR 11.35, the FAA will post all comments received, without change, to [regulations.gov](https://www.regulations.gov), including any personal

information you provide. The agency will also post a report summarizing each substantive verbal contact received about this final rule.

Confidential Business Information

CBI is commercial or financial information that is both customarily and actually treated as private by its owner. Under the Freedom of Information Act (FOIA) (5 U.S.C. 552), CBI is exempt from public disclosure. If your comments responsive to this AD contain commercial or financial information that is customarily treated as private, that you actually treat as private, and that is relevant or responsive to this AD, it is important that you clearly designate the submitted comments as CBI. Please mark each page of your submission containing CBI as “PROPIN.” The FAA will treat such marked submissions as confidential under the FOIA, and they will not be placed in the public docket of this AD. Submissions containing CBI should be sent to Ken Fairhurst, Continued Operational Safety Technical Advisor, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 817-222-5390; email: operationalsafety@faa.gov. Any commentary that the FAA receives which is not specifically designated as CBI will be placed in the public docket for this rulemaking.

Background

The FAA issued AD 2021-23-12, Amendment 39-21810 (86 FR 69984, December 9, 2021) (AD 2021-23-12), for all transport and commuter category airplanes equipped with a radio altimeter. AD 2021-23-12 was prompted by a determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 5G Lower C-Band, which is close to the frequency bands used by radio altimeters (4.2-4.4 GHz). AD 2021-23-12 required revising the limitations section of the existing AFM to incorporate limitations prohibiting certain operations requiring radio altimeter data when in the presence of 5G Lower C-Band interference as identified by Notices to Air Missions

(NOTAMs). The agency issued AD 2021-23-12 because radio altimeter anomalies that are undetected by the automation or pilot, particularly close to the ground (e.g., landing flare), could lead to loss of continued safe flight and landing.

After the FAA issued AD 2021-23-12, the agency determined that additional limitations were needed due to the continued deployment of new 5G Lower C-Band base stations whose signals were expected to cover most of the contiguous U.S. at transmission frequencies between 3.7-3.98 GHz. Additionally, the FAA found that radio altimeter anomalies could lead to increased flightcrew workload and flightcrew desensitization to warnings. Therefore, the FAA issued AD 2023-10-02, Amendment 39-22438 (88 FR 34065, May 26, 2023) (AD 2023-10-02), to supersede AD 2021-23-12. For non-radio altimeter tolerant airplanes, AD 2023-10-02 maintains the AFM limitations imposed by AD 2021-23-12 in areas identified by NOTAM until June 30, 2023. After June 30, 2023, for non-radio altimeter tolerant airplanes, AD 2023-10-02 requires revising the AFM to incorporate the same limitations but in the entire contiguous U.S. airspace instead of only in areas identified by NOTAM. AD 2023-10-02 also requires modifying a non-radio altimeter tolerant airplane to a radio altimeter tolerant airplane in order to operate under 14 CFR part 121 in the contiguous U.S. as of February 1, 2024.

Actions Since AD 2023-10-02 Was Issued

Since the FAA issued AD 2023-10-02, Transport Canada, which is the aviation authority for Canada, issued AD CF-2024-14, dated May 15, 2024 (the MCAI), to correct an unsafe condition for all transport and commuter category airplanes with a radio altimeter. The MCAI states that in July 2023, Innovation, Science and Economic Development Canada (ISED), Canada's spectrum regulator, published Standard Radio System Plans (SRSP)-520 Issue 3¹ and Radio Standard Specifications (RSS)-192 Issue

¹ <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/devices-and-equipment/standard-radio-system-plans/srsp-520-technical-requirements-fixed-andor-mobile-systems-including-flexible-use-broadband-systems>.

5², which define the spectrum environment for the 3.45-3.90 GHz frequency band in Canada. The MCAI further states that spectrum auctions for the 3.45-3.65 GHz and the 3.65-3.9 GHz band were completed in 2021 and 2023, respectively.

In July 2023, ISED implemented measures to mitigate Lower C-band interference to radio altimeters, which provide the Canadian airspace greater protection from 5G Lower C-band interference to radio altimeters as compared to the Lower C-band environment in the contiguous U.S. airspace. These measures include exclusion and protection zones and airport effective isotropic radiated power (EIRP) elevation mask (a restriction that requires nearby cell tower signals to be angled downward so they do not interfere with aircraft altimeters) at certain airport runways covering the majority of air traffic in Canada, as well as nationwide reduced fundamental power emissions based on the degree of antenna uptilt above the horizon to minimize emissions from 5G base stations toward aircraft.

In late March 2026, Transport Canada notified the FAA that, beginning July 1, 2026, changes in the 5G Lower C-band protection mitigations established by ISED in 2023 would result in a more severe 5G interference environment in the Canadian airspace. Exclusion and protection zones at airports will no longer exist and updates to the airport EIRP elevation mask, nationwide tilt restriction, emitter height limitation and reduced spurious emissions will only protect airplanes that are radio altimeter tolerant. The change in mitigations will result in an unsafe condition in the Canadian 5G interference environment.

Transport Canada determined that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 3.45-3.98 GHz frequency band. Transport Canada based its

² <https://ised-isde.canada.ca/site/spectrum-management-telecommunications/en/devices-and-equipment/radio-equipment-standards/radio-standards-specifications-rss/rss-192-flexible-use-broadband-equipment-operating-band-3450-3900-mhz>.

determination on the same unsafe condition found by the FAA in AD 2023-10-02. As a result, the MCAI requires revising the limitations section of the existing AFM to incorporate limitations prohibiting certain operations requiring radio altimeter data, due to the presence of 5G Lower C-Band interference, while operating in Canadian airspace.

The MCAI does not contain the prohibition on the use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a) that is in AD 2023-10-02, as those operations are not yet approved in Canada. As terminating action for the operating limitations, the MCAI provides that operators may upgrade their radio altimeters to demonstrate the tolerances for emissions as specified in the MCAI. The FAA is issuing this AD to address the unsafe condition on these products. You may examine the MCAI in the AD docket at [regulations.gov](https://www.regulations.gov) under Docket No. FAA-2026-4659.

FAA's Determination

The FAA is issuing this AD because the agency has determined the unsafe condition described previously is likely to exist or develop on other products of the same type design.

AD Requirements

For non-radio altimeter tolerant airplanes, this AD requires, before further flight in Canadian airspace, revising the existing AFM to incorporate limitations prohibiting the following when operating in Canadian airspace:

- Instrument Landing System (ILS) Instrument Approach Procedures (IAP) special authorization (SA) category (CAT) I, SA CAT II, CAT II, and CAT III
- Automatic Landing operations
- Manual Flight Control Guidance System operations to landing/head-up display (HUD) to touchdown operation
- Use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a).

This AD also requires that airplanes operating under 14 CFR part 121 in Canadian airspace be modified from a non-radio altimeter tolerant airplane to a radio altimeter tolerant airplane.

This AD provides that modifying the airplane from a non-radio altimeter tolerant airplane to a radio altimeter tolerant airplane terminates the AFM operating limitations.

An airplane that is a radio altimeter tolerant airplane using a method approved by the FAA for AD 2023-10-02 is also a radio altimeter tolerant airplane for the purposes of paragraph (g)(1) of this AD. Alternative methods of compliance (AMOC) listed in paragraph (j)(3) of this AD are approved for this AD.

Differences Between this AD and the MCAI

The AFM revision required by this AD includes a prohibition for non-radio altimeter tolerant airplanes for the use of EFVS to touchdown under 14 CFR 91.176(a), which is the same prohibition specified in AD 2023-10-02. The Transport Canada does not include this prohibition since the use of EFVS has not been approved for use in Canada. The FAA has included this prohibition because Transport Canada is in the process of approving the use of EFVS.

This AD requires airplanes operating under 14 CFR part 121 in Canadian airspace to be modified to a radio altimeter tolerant airplane, and the MCAI does not. As the FAA explained in AD 2023-10-02, this equipage requirement addresses the accumulating risk for systems that are less hazardous than low-visibility landings (for example, repeated false warnings from the collision avoidance system from erroneous radio altimeter data). The FAA determined that this accumulating risk was unacceptable for part 121 operations after February 1, 2024. The MCAI states that Transport Canada is reviewing whether to prohibit operation in Canadian airspace based on type of operation and that further Canadian AD action may follow.

The MCAI specifies the fundamental emissions are in the 3.45-3.98 GHz frequency band, while this AD specifies the 3.7-3.98 GHz frequency band. AD 2023-10-02 identified an unsafe condition from wireless broadband transmissions in the 3.7-3.98 GHz frequency band and this AD is based on that same determination. In addition, an airplane determined to be a radio altimeter tolerant airplane for purposes of AD 2023-10-02, which has demonstrated the performance tolerances for fundamental emissions within the 3.7-3.98 GHz frequency band, would also be a radio altimeter tolerant airplane for purposes of this AD. Frequencies less than 3.7 GHz are further away from the frequency bands used by radio altimeters (4.2 to 4.4 GHz), so an airplane determined to be tolerant in the range of 3.7-3.98 GHz is also tolerant to emissions less than 3.7 GHz.

Interim Action

The FAA considers this AD to be an interim action. The FAA may consider further rulemaking if the Canadian 5G C-band interference environment changes or if Canada issues an operational rule to address 5G C-band interference with radio altimeters.

Justification for Immediate Adoption and Determination of the Effective Date

Section 553(b) of the Administrative Procedure Act (APA) (5 U.S.C. 551 *et seq.*) authorizes agencies to dispense with notice and comment procedures for rules when the agency, for “good cause,” finds that those procedures are “impracticable, unnecessary, or contrary to the public interest.” Under this section, an agency, upon finding good cause, may issue a final rule without providing notice and seeking comment prior to issuance. Further, section 553(d) of the APA authorizes agencies to make rules effective in less than thirty days, upon a finding of good cause.

An unsafe condition exists that requires the immediate adoption of this AD without providing an opportunity for public comments prior to adoption. The FAA has

found that the risk to the flying public justifies forgoing notice and comment prior to adoption of this rule because radio altimeter anomalies that are undetected by the automation or pilot, particularly close to the ground (e.g., landing flare), could lead to loss of continued safe flight and landing. Additionally, radio altimeter anomalies could lead to increased flightcrew workload and flightcrew desensitization to warnings. The urgency is based on a change in the 5G Lower C-band environment in Canada, which is scheduled to occur on July 1, 2026. Accordingly, notice and opportunity for prior public comment are impracticable and contrary to the public interest pursuant to 5 U.S.C. 553(b).

In addition, the FAA finds that good cause exists pursuant to 5 U.S.C. 553(d) for making this amendment effective in less than 30 days, for the same reasons the FAA found good cause to forgo notice and comment.

Regulatory Flexibility Act

The requirements of the Regulatory Flexibility Act (RFA) do not apply when an agency finds good cause pursuant to 5 U.S.C. 553 to adopt a rule without prior notice and comment. Because the FAA has determined that it has good cause to adopt this rule without prior notice and comment, RFA analysis is not required.

Costs of Compliance

The FAA notes that since operators must comply with this AD before further flight in Canadian airspace, airplanes that do not operate in Canada will not have to comply and therefore will have no costs under this AD.

The FAA estimates that this AD affects approximately 1,000 airplanes of U.S. registry. When the FAA issued AD 2023-10-02, it estimated that out of the approximately 8,000 transport and commuter category airplanes of U.S. registry, almost 7,000 airplanes on the U.S. registry had already equipped or retrofitted to address radio altimeter interference tolerance. While the FAA expects that many of the affected

airplanes have upgraded their radio altimeters, the FAA does not have definitive data on how many airplanes have been modified to a radio altimeter tolerant airplane since July 2023, and therefore this AD retains the estimates from AD 2023-10-02.

Some operators will comply with the modification requirement by replacing the radio altimeter with a new upgraded or modified radio altimeter, and others will comply by installing an externally mounted filter. The FAA estimates that approximately 180 airplanes may modify by replacing the radio altimeters and approximately 820 airplanes may modify by adding radio altimeter filters. As such, the FAA estimates the following costs to comply with this AD, for a total U.S. fleet cost of compliance of up to \$50,382,000.

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
AFM revision (if no airplanes are modified)	1 work-hour X \$85 per hour = \$85	\$0	\$85	\$85,000 for 1,000 affected airplanes
Modification (radio altimeter replacement option)			Up to \$120,000 (includes parts and labor)	Up to \$21,600,000 for 180 affected airplanes
Modification (filter addition option)	24 work-hours x \$85 per hour = \$2,040 per filter	\$12,000 per filter	Up to \$14,040 (includes parts and labor)	Up to \$28,782,000 for 820 affected airplanes with 2 or 3 filters per airplane

The benefits of this AD include the value of reducing aviation accident risks that are mitigated by Terrain Awareness and Warning System (TAWS), Traffic Collision Avoidance System (TCAS), and airborne windshear warning and flight guidance systems (windshear systems), all of which rely on proper performance of radio altimeters to perform their intended function. TAWS, TCAS, and windshear systems are examples of safety-enhancing systems required for operation under 14 CFR part 121. The FAA

required these systems to address hazards that have caused accidents and fatalities during commercial air transportation. This AD will maintain the same level of safety afforded by these and other safety systems before the use of the Lower C-Band by 5G broadband networks. This AD will also minimize erroneous system messages and the unsafe condition they produce.

Authority for This Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866, and
- (2) Will not affect intrastate aviation in Alaska.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2026-13-02 Transport and Commuter Category Airplanes: Amendment 39-23384;

Docket No. FAA-2026-4659; Project Identifier MCAI-2025-00826-A,T.

(a) Effective Date

This airworthiness directive (AD) is effective July 1, 2026.

(b) Affected ADs

None.

(c) Applicability

This AD applies to all transport and commuter category airplanes equipped with a radio (also known as radar) altimeter. These radio altimeters are installed on various transport and commuter category airplanes including, but not limited to, the airplanes for which the design approval holder is identified in paragraphs (c)(1) through (18) of this AD.

(1) Airbus Canada Limited Partnership

(2) Airbus SAS

(3) ATR-GIE Avions de Transport Régional

(4) BAE Systems (Operations) Limited

- (5) Bombardier Inc.
- (6) Dassault Aviation
- (7) De Havilland Aircraft of Canada Limited
- (8) Embraer S.A. (including type certificates previously held by Yaborã Indústria Aeronáutica S.A., which are now held by Embraer S.A.)
- (9) Fokker Services B.V.
- (10) Gulfstream Aerospace Corporation
- (11) Gulfstream Aerospace LP
- (12) Lockheed Martin Corporation/Lockheed Martin Aeronautics Company
- (13) MHI RJ Aviation ULC
- (14) Pilatus Aircraft Limited
- (15) Saab AB, Support and Services
- (16) Textron Aviation Inc.
- (17) The Boeing Company
- (18) Viking Air Limited

(d) Subject

Air Transport Association (ATA) of America Code 31, Indicating/Recording System; 34, Navigation.

(e) Unsafe Condition

This AD was prompted by the determination that radio altimeters cannot be relied upon to perform their intended function if they experience interference from wireless broadband operations in the 3.7-3.98 GHz frequency band (5G Lower C-Band), when operating in Canadian airspace. The FAA is issuing this AD because radio altimeter anomalies that are undetected by the automation or pilot, particularly close to the ground (e.g., landing flare), could lead to loss of continued safe flight and landing. Additionally,

radio altimeter anomalies could lead to increased flightcrew workload and flightcrew desensitization to warnings.

(f) Compliance

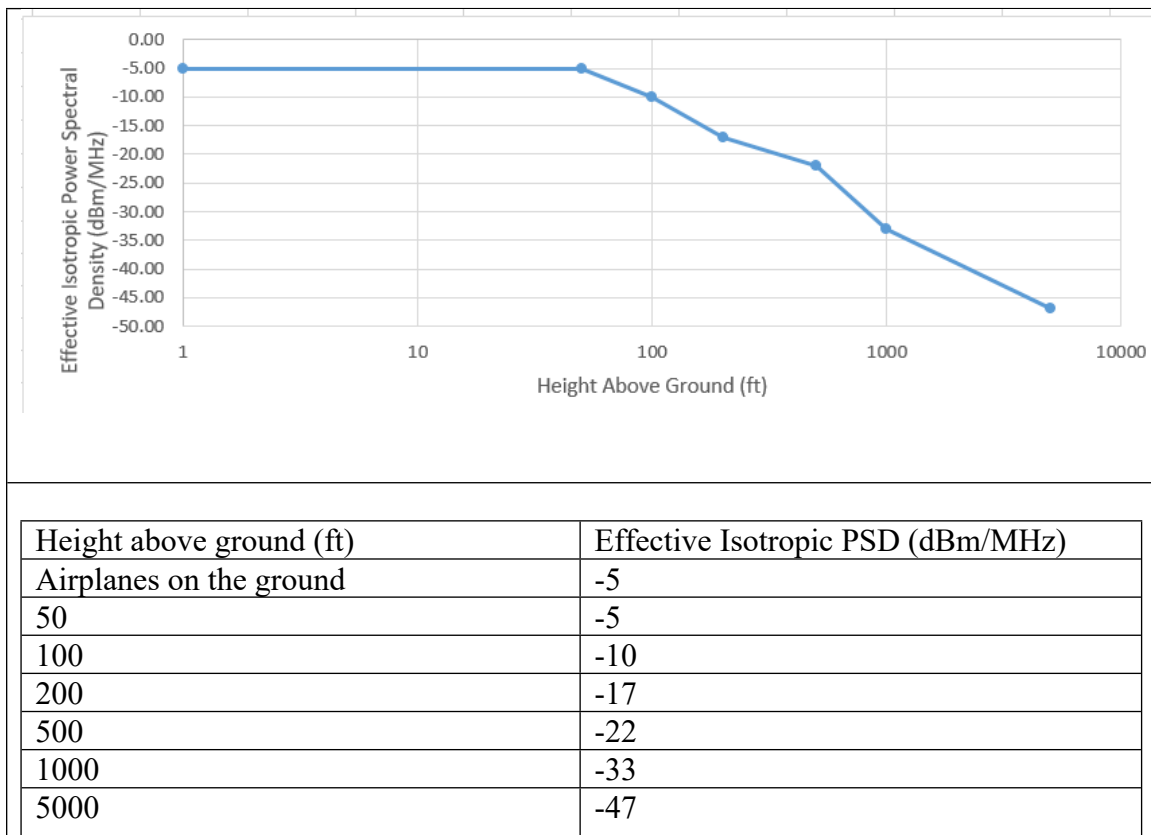
Comply with this AD within the compliance times specified, unless already done.

(g) Definitions

(1) For purposes of this AD, a “radio altimeter tolerant airplane” is one for which the radio altimeter, as installed, demonstrates the tolerances specified in paragraphs (g)(1)(i) and (ii) of this AD, using a method approved by the FAA. No actions are required by this AD for radio altimeter tolerant airplanes.

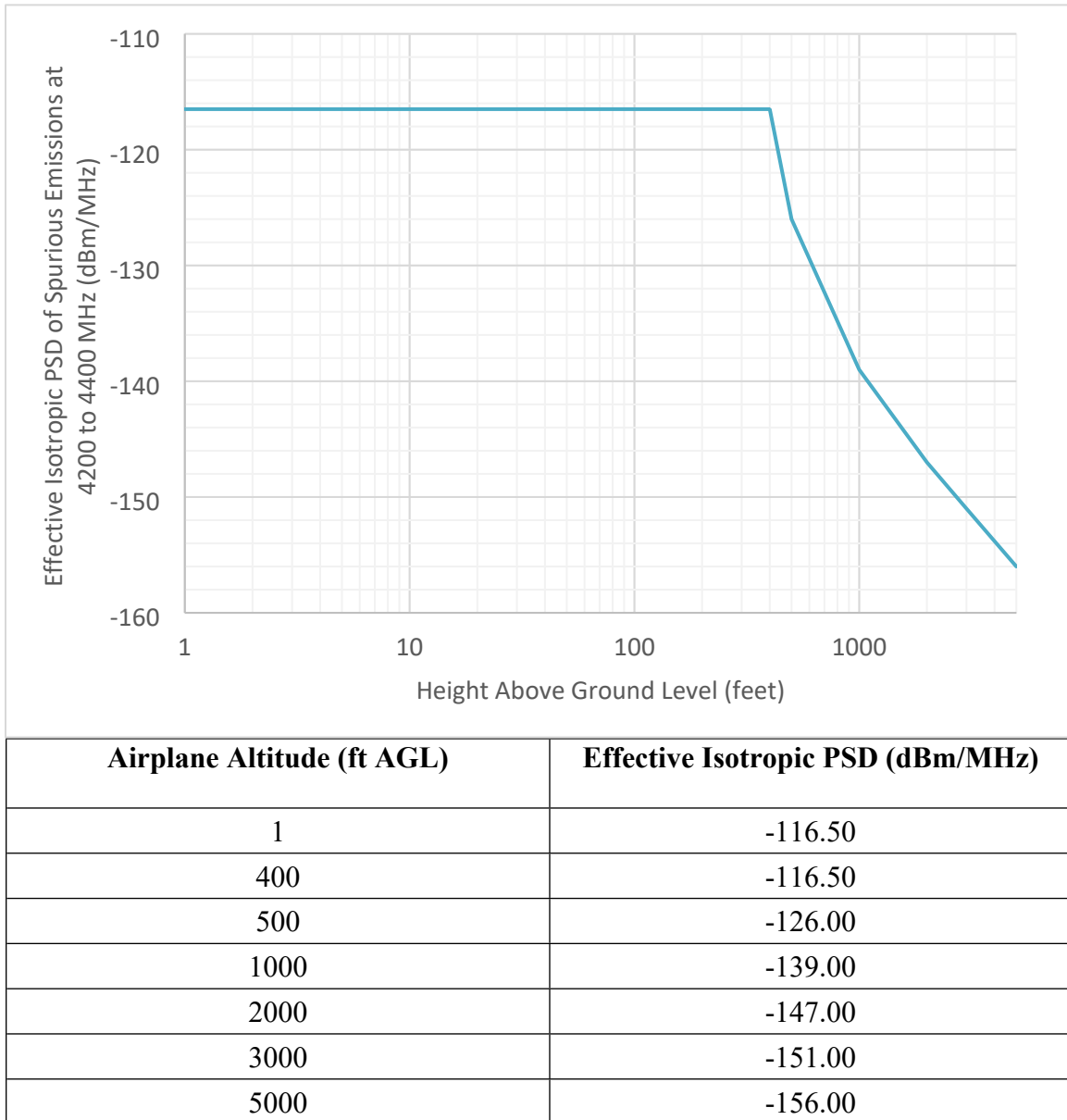
(i) Tolerance to radio altimeter interference, for the fundamental emissions (3.7-3.98 GHz), at or above the power spectral density (PSD) curve threshold specified in figure 1 to paragraph (g)(1)(i) of this AD.

Figure 1 to paragraph (g)(1)(i) - Fundamental Effective Isotropic PSD at Outside Interface of Airplane Antenna



(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 to paragraph (g)(1)(ii) of this AD.

Figure 2 to paragraph (g)(1)(ii): Spurious Effective Isotropic PSD at Outside Interface of Airplane Antenna



(2) For purposes of this AD, a “non-radio altimeter tolerant airplane” is one for which the radio altimeter, as installed, does not demonstrate the tolerances specified in paragraphs (g)(1)(i) and (ii) of this AD.

(h) Airplane Flight Manual (AFM) Revision

For non-radio altimeter tolerant airplanes: Before further flight in Canadian airspace, revise the Limitations Section of the existing AFM to include the information specified in figure 3 to paragraph (h) of this AD. This may be done by inserting a copy of figure 3 to paragraph (h) of this AD into the existing AFM.

Figure 3 to paragraph (h) - AFM Revision for Non-Radio Altimeter Tolerant Airplanes in Canadian Airspace

(As Required by AD 2026-13-02)

Radio Altimeter Flight Restrictions (Canadian Airspace)

Due to the presence of 5G Lower C-Band wireless broadband interference, when operating in Canadian airspace, the following operations requiring radio altimeter are prohibited:

- Instrument Landing System (ILS) Instrument Approach Procedures (IAP), SA CAT I, SA CAT II, CAT II, and CAT III
- Automatic Landing operations
- Manual Flight Control Guidance System operations to landing/head-up display (HUD) to touchdown operation
- Use of Enhanced Flight Vision System (EFVS) to touchdown under 14 CFR 91.176(a).

This airplane must not operate under 14 CFR part 121 in Canadian airspace.

(i) Terminating Action for AFM Limitations

(1) Modifying the airplane from a non-radio altimeter tolerant airplane to a radio altimeter tolerant airplane terminates the limitations in paragraph (h) of this AD for that airplane.

(2) After modifying the airplane to a radio altimeter tolerant airplane, the limitations specified by paragraph (h) of this AD may be removed from the AFM.

(j) Alternative Methods of Compliance (AMOCs)

(1) The Manager, AIR-720, Operational Safety Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19.

In accordance with 14 CFR 39.19, send your request to your principal inspector or responsible Flight Standards Office, as appropriate. If sending information directly to the

manager of AIR-720, Operational Safety Branch, send it to the attention of the person identified in paragraph (k) of this AD and email to: AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the responsible Flight Standards Office.

(3) The following AMOCs approved previously for AD 2023-10-02, Amendment 39-22438 (88 FR 34065, May 26, 2023) are approved as AMOCs for paragraph (g)(1) of this AD: FAA AMOC letters 720-23-00133, 720-23-00137, 720-23-00138, 720-23-00155, 720-23-00158, 720-23-00169, 720-23-00191, 720-23-00192, 720-24-00012, 720-25-00025, 720-25-00031, 720-26-00009, 722-23-00073, 722-23-00076, and 756-25-00100.

(k) Additional Information

For more information about this AD, contact Ken Fairhurst, Continued Operational Safety Technical Advisor, FAA, 2200 South 216th St., Des Moines, WA 98198; phone: 817-222-5390; email: operationalsafety@faa.gov.

(l) Material Incorporated by Reference

None.

Issued on June 23, 2026.

Christopher R. Parker,
Acting Deputy Director, Compliance & Airworthiness Division,
Aircraft Certification Service.
[FR Doc. 2026-13162 Filed: 6/26/2026 4:15 pm; Publication Date: 6/30/2026]