

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554**

In the Matter of

Panasonic Avionics Corporation

Application to Modify its Earth Stations

Aboard Aircraft (“ESAA”) Blanket License

Call Sign E100089

File No. SES-MOD-_____

MODIFICATION APPLICATION

By this application, Panasonic Avionics Corporation (“Panasonic”) seeks to modify its existing earth stations aboard aircraft (“ESAA”) blanket license, Call Sign E100089 (“*ESAA Blanket License*”),¹ by adding three new satellite points of communication for its previously licensed ESAA terminals. The modification sought herein will strengthen Panasonic’s global coverage by allowing access to an additional spacecraft and generally improving its ability to provide in-flight broadband connectivity to U.S. airline passengers and crew members. Pursuant to Section 25.117(c) of the Commission's rules,² Panasonic includes an FCC Form 312 Schedule B and Technical Appendix to provide the required technical information pertaining to the proposed modification. The remaining information submitted in support of its *ESAA Blanket License* has not changed.

¹ See Panasonic Avionics Corporation, IBFS File No. SES-LIC-20100805-00992, Call Sign E100089, and subsequent filings and modifications (“*ESAA Blanket License*”). ESAAAs are now included in a broader category of broadband satellite mobility terminals called earth stations in motion (“ESIMs”) and governed by Section 25.228 of the Commission’s rules, 47 C.F.R. § 25.228.

² 47 C.F.R. § 25.117(c).

I. BACKGROUND

Panasonic provides advanced aeronautical broadband satellite services that enable in-flight communications connectivity to passengers and crew using Ku-band ESAA terminals and a global network of U.S. and foreign satellites and gateway earth stations. Panasonic has fully described its system in prior submissions and hereby incorporates by reference the technical showings regarding the control functions and other operational characteristics submitted in connection with such prior applications.³ Panasonic's *ESAA Blanket License*, which supports its global ESAA operations on U.S.-registered aircraft (and non-U.S.-registered aircraft traversing U.S. airspace), must be regularly modified to reflect adjustments to Panasonic's global network resulting from technological developments and changes in customer demand. Most recently, it was modified to add a satellite as an authorized point of communication.⁴

The license modifications proposed herein are consistent with the coordinated parameters of the proposed new satellites and the Commission's rules governing Ku-Band ESAAs.⁵ They also will allow Panasonic to further optimize the ESAA system by making available additional satellite capacity to support its operations.

II. DISCUSSION

Panasonic hereby seeks to modify its *ESAA Blanket License* to add three (3) new satellite points of communications for its Single Panel Antenna ("SPA") and Panasonic Phased Array ("PPA") terminals, as provided in Table 1, below.

³ See *ESAA Blanket License*.

⁴ See Panasonic Avionics Corporation, IBFS File Nos. SES-MFS-20200513-00528, SES-AFS-20210225-00404, Call Sign E100089 (granted May 18, 2021) (the "*Prior Modification*").

⁵ See 47 C.F.R. § 25.228; see also Technical Appendix, § I.

A. Proposed New Satellite Points of Communication

The following table provides an overview of the basic parameters of ESAA operations with the new SES satellite points of communication (the “SES satellites”). Both the SES-4 and SES-10 satellites are included on the Commission’s Approved Space Station List.⁶ The SES-9 satellite is licensed by the United Kingdom, a member of the World Trade Organization (“WTO”), for services covered under the WTO Basic Telecommunications Agreement.⁷ Panasonic seeks to operate the SPA and PPA terminals with the foregoing SES satellites outside the United States only.⁸

Table 1 - Proposed Satellite Points of Communication⁹

Satellite	License Admin.	Orbital Location	Downlink Freq. (GHz)	ITU Satellite Network	ITU Region	Serves U.S.
SES-4	Netherlands	22° W	11.45-12.2	NSS-16	2	No
SES-9	United Kingdom	108.3° E	12.25-12.75	GIBSAT-108.2E	3	No
SES-10	Colombia	67° W	11.7-12.75	SIMON BOLIVAR 2	2	No

⁶ See New Skies Satellites B.V., IBFS File Nos. SAT-MPL-2012040600065, SAT-MPL-20170108-00002, Call Signs S2828, S2950; See also Approved Space Station List, available at <https://www.fcc.gov/approved-space-station-list>.

⁷ See 47 C.F.R. § 25.137(a)(2); see also *Amendment of the Commission’s Regulatory Policies to Allow Non-U.S. Licensed satellites Providing Domestic and International Service in the United States*, Report and Order, IB Docket No. 96-111, 12 FCC Rcd 24094, ¶ 39 (1997) (“We adopt our proposal to apply a presumption in favor of entry in considering applications to access non-U.S. satellites licensed by WTO members to provide services covered by the ... WTO Basic Telecom Agreement.”); *Id.*, ¶ 64 (“[W]e will not evaluate the effective competitive opportunities in the route market for non-U.S. satellites licensed by a WTO member providing WTO covered services. Thus, we will not perform an ECO-Sat test on any route, whether a WTO route market or a non-WTO route market.”).

⁸ Although the SES-4 and SES-10 satellites may provide coverage of the United States as indicated in the attached Technical Appendix, Panasonic ESAA terminals will communicate with those SES satellites from U.S. territory.

⁹ The ESAA terminals will operate in the uplink direction within the 14.0-14.5 GHz band consistent with satellite coordination agreements, the Commission’s rules, and applicable international requirements. See attached FCC Form 312 Schedule B for an overview of Panasonic’s ESAA transmit operations.

The SES-9 satellite has not previously been authorized to communicate with U.S.-licensed ESAA terminals. Panasonic will operate PPA and SPA terminals with SES-9 outside of U.S. territory only (*i.e.*, the satellite is neither providing service in U.S. airspace nor communicating with a U.S.-licensed gateway earth station). Consistent with Commission precedent,¹⁰ Panasonic provides relevant operational parameters, along with orbital debris mitigation and satellite end-of-life information, rather than a full U.S. market access demonstration under Section 25.137(d) of the Commission's rules. Panasonic also provides a coverage map and link budgets for the satellite in the attached Technical Appendix.¹¹

Section 25.228 of the Commission's rules requires that ESAA transmissions comply with the applicable EIRP density limits in §25.218, unless coordinated pursuant to Section 25.220.¹² Panasonic will communicate with the SES satellites at EIRP spectral density ("ESD") levels that are at 3 dB above the limit when communicating with SES-4, and at 2 dB above the limit when communicating with SES-10. As noted above, such operations will occur outside of the United States only. These off-axis ESD levels are consistent with its satellite coordination agreements with all adjacent satellite networks within six degrees of orbital separation from the SES satellites.¹³

Panasonic provides information regarding the operational characteristics of the ESAA terminals in the FCC Form 312 Schedule B and incorporates by reference the performance

¹⁰ *See Prior Modification* (granting access permission to communicate with the GSAT-14 satellite under identical conditions); *see also* AC BidCo LLC, File No. SES-MFS-20151022-00735, Call Sign E120106; *see* 47 C.F.R. § 25.137(d).

¹¹ Panasonic notes that the power levels provided in the example link budgets are maximums and Panasonic will operate the terminals at or below the levels provided in the Schedule B at all times.

¹² *See* C.F.R. § 25.228(a).

¹³ *See* C.F.R. §§ 25.220(d)(1); Technical Appendix at I (Engineering Certification of SES).

information and off-axis ESD data previously submitted for the SPA and PPA.¹⁴ Accordingly, Panasonic will operate its terminals at all times consistent with the provisions governing Ku-band ESAA operations.

B. Remote Control Point

Network control and monitoring of the ESAAs in the Panasonic system will continue to be provided by the Panasonic Customer Performance Center (“CPC”) in Irvine, California, on a 24/7 basis. The CPC makes use of a network management system (“NMS”) to provide complete control and visibility to all components the Panasonic system. The NMS system has the capability of shutting down any component in the system that is malfunctioning. The primary points of contact at Panasonic’s CPC facility are provided below and in the FCC Form 312, Schedule B.

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Irvine, CA 92612 USA
E: cpc@panasonic.aero
T: +1 949 462 1395
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C. Non-Conforming ESAA Receive Operations

The Commission’s Table of Frequency Allocations (“Table of Allocations”) contemplates use of the 11.45-11.7 GHz (space-to-Earth) bands by ESAA terminals on an unprotected basis only and permits such operations in the 11.7-12.2 GHz (space-to-earth) and

¹⁴ See Panasonic Avionics Corporation, File No. SES-MFS-20120913-00818, Call Sign E100089 at Technical Appendix (off-axis ESD plots for the PPA terminal) and File No. SES-MFS-20160819-00730, Call Sign E100089 at Technical Appendix (off-axis ESD plots for the SPA terminal).

14-14.5 GHz (Earth-to-space) bands on a primary basis.¹⁵ As described in Table 1 the SES-9 and SES-10 satellites also support operations in the 12.2-12.75 GHz downlink band.

Consistent with its existing authority in the *ESAA Blanket License*, Panasonic will operate in the 12.2-12.75 GHz bands on an unprotected, non-harmful interference basis outside the United States only. In addition, the SES satellites will operate consistent with ITU regulations and there is no potential for interference from Panasonic's receive-only operations in the subject bands. Use of this available Ku-band downlink spectrum is essential to Panasonic's in-flight broadband connectivity offering. Accordingly, Panasonic requests that the Commission permit ESAA operations with the new satellites in these bands consistent with its practice of permitting ESAA terminals to operate outside the United States on a non-conforming, non-interference basis.¹⁶

D. Public Interest Statement

Grant of the requested modification, including this amendment, will serve the public interest by ensuring access to satellite capacity across the globe and improving the operational capabilities of the Panasonic ESAA system through the addition of the SES satellites as points of communication. This will provide a direct benefit to U.S. consumers who will be able to access improved in-flight broadband applications and will further enhance competition and U.S. leadership in aeronautical broadband services. These benefits will be achieved consistent with the Commission's rules and policies for ESAA operations.

¹⁵ See 47 C.F.R. § 2.106, n. NG52 and n. NG527A; 47 C.F.R. § 25.228.

¹⁶ See *ESAA Blanket License*.

III. CONCLUSION

Based on the foregoing, Panasonic respectfully requests that the Commission grant this request to modify its *ESAA Blanket License*, Call Sign E100089, by adding the SES-4, SES-9, and SES-10 satellites as authorized points communication for its previously licensed PPA and SPA terminals.