

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

In the Matter of
Application of Panasonic Avionics Corporation for a 180-Day Special Temporary Authorization To Operate Up to 25 Technically Identical Earth Stations Aboard Aircraft (“ESAAs”) Terminals in the Ku-Band)
Call Sign E100089)
File No.)

APPLICATION FOR SPECIAL TEMPORARY AUTHORIZATION

Panasonic Avionics Corporation (“Panasonic”), pursuant to Section 25.120(b)(2) of the Commission’s Rules, 47 C.F.R. § 25.120(b)(2), seeks a 180-day special temporary authorization (“STA”) to permit certain earth stations aboard aircraft (“ESAAs”) terminal operations with the licensed “eXConnect” System.¹ This request supplements Panasonic’s concurrently filed 60-day STA application and will support its associated application for regular blanket license authority that will be filed shortly.²

Panasonic seeks limited, near-term authority to operate up to 25 technically identical next-generation ESAA terminals, the Panasonic Single-Panel Antenna (“SPA”), onboard Canadian-based WestJet Airlines when such aircraft are present within the United States. In addition, Panasonic seeks authority to operate its previously licensed Panasonic Phased Array

¹ See Panasonic Avionics Corporation, Radio Station Authorization, Call Sign E100089, File No. SES-MFS-20130930-00845 and other associated file numbers (“*Panasonic ESAA License*”); *Panasonic Avionics Corporation Application for Authority to Operate Up to 50 Technically Identical Aeronautical Mobile-Satellite Service Aircraft Earth Stations in the 14.0-14.4 GHz and 11.7-12.2 GHz Frequency Bands, Order and Authorization*, DA 11-1480 (rel. Aug. 31, 2011) (“*Panasonic Order*”).

² See Application of Panasonic Avionics Corporation for 60-Day Special Temporary Authority To Operate Up to 25 Technically Identical Earth Stations Aboard Aircraft (“ESAA”) in the Ku-Band, Call Sign E100089 (filed February 18, 2016) (“*60-Day STA Application*”).

Antenna (“PPA”) terminal onboard U.S.-registered aircraft with the Telstar 12 Vantage satellite (“Telstar 12V”).

The SPA terminal, which is fully certified for operation on the subject commercial aircraft, is a single-panel variant of the previously licensed PPA terminal and will operate in accordance with the terms of the Panasonic Order, the Panasonic ESAA License, and Section 25.227 of the Commission’s rules. In addition, proposed ESAA operations with Telstar 12V will enhance the in-flight broadband connectivity services available to U.S.-registered aircraft flying within the relevant service area of the satellite. As discussed herein, grant of this STA application is consistent with Commission precedent and will strongly serve the public interest.

I. BACKGROUND

Panasonic is the world leader in in-flight entertainment and connectivity (“IFEC”) systems and services. Panasonic operates the Ku-band PPA and MELCO terminals with the eXConnect System as part of Panasonic’s Global Communication Suite (“GCS”) offering for U.S. and foreign airlines to provide broadband connectivity to passengers and crew on both short-haul domestic and long-haul international routes. In this application, Panasonic seeks to operate its next-generation SPA terminal in the United States while communicating with certain U.S.-licensed satellites currently authorized as satellite points of communication for the PPA terminal under the ESAA License, and add the Telstar 12V satellite as an authorized point of communication for the PPA terminal.

II. DISCUSSION

A. SPA Terminal Operations

1. The SPA Terminal and the eXConnect System

The SPA terminal is a single-panel variant of the dual-panel PPA terminal and utilizes the same proven antenna and positioner technologies. Panasonic has developed the SPA terminal as

a lighter, less-costly ESAA terminal that can be installed on smaller aircraft that has performance characteristics equal to or better than the PPA terminal. The SPA terminal has been tested extensively pursuant to experimental authority granted by the Commission.³

As set forth in the enclosed application materials, the SPA terminal transmits within the same operational envelope as the PPA terminal and complies with the requirements set forth in 25.227 of the Commission's rules. In particular, the SPA terminal operates in accordance with the coordination agreements of proposed satellite points of communications, complies with the Commission's two-degree spacing policies, has a pointing accuracy of 0.2° and will automatically cease transmissions if point offset is 0.5° or greater, and otherwise will comply with the Panasonic ESAA license. Thus, grant of STA authority will not increase the potential for interference from eXConnect System operations in the United States.

Panasonic has fully described the eXConnect System in prior submissions and hereby incorporates by reference the technical showing regarding the control functionality and other operational characteristics submitted in connection with prior applications.⁴ The Technical Appendix contains relevant information relating to the technical parameters, antenna performance information, satellite operator certifications, radiation hazard analysis and general antenna specifications for the SPA terminal.⁵ Furthermore, the attached draft FCC Form 312 and

³ See, e.g., Panasonic Avionics Corporation, Experimental Radio Station License, Call Sign WF2XMD, File No. 0184-EX-ML-2013; see also Letter from Carlos Nalda, Legal Counsel, Panasonic Avionics Corporation, to Nnake Nweke, Chief, Experimental Licensing Branch (March 6, 2014).

⁴ See, e.g., Panasonic Avionics Corporation, Radio Station Authorization, Call Sign E100089, File No. SES-LIC-20100805-00992 (granted August 31, 2011) and subsequent applications.

⁵ Panasonic would note that because it is relying on satellite operator certifications to demonstrate compatibility with other Ku-band operations, it need not submit the full range of technical data required in the absence of such certifications under Section 25.227. Nonetheless,

Schedule B demonstrates that SPA operations will be consistent with the terms, conditions and operational parameters that are currently authorized under Panasonic’s ESAA License.

Panasonic seeks to operate the SPA terminal on foreign-registered aircraft only. Thus, authority is sought for SPA terminal communications with the AMC-16, Galaxy 16, Galaxy 17 and Eutelsat 172A satellites serving U.S. territory.⁶

2. Satellite Points of Communication

In the instant STA request, Panasonic seeks authority for the SPA terminals to communicate with the following four (4) satellite points of communication and downlink frequency ranges.⁷

Table 1. Satellites and Downlink Frequencies (SPA)

Satellite	Orbital Location	Downlink Frequencies	ITU Region	Service To U.S.
AMC-16	85° W	11.7-12.2 GHz	2	Yes
Galaxy 16	99° W	11.7-12.2 GHz	2	Yes
Galaxy 17	91° W	11.7-12.2 GHz	2	Yes
Eutelsat 172A	172° E	10.95-11.2 GHz; 11.45-11.7 GHz	2	Yes

Because Panasonic requests authority for the SPA terminal onboard foreign aircraft, only those satellites with U.S. coverage that will be accessed by WestJet aircraft are included in this STA application. All of these proposed satellite points of communication are U.S.-licensed

Panasonic is submitting substantial technical detail that provides the Commission and interested parties with a comprehensive understanding of the operational characteristics of the SPA terminal.

⁶ Authority to operate the SPA terminal with other satellites in Panasonic’s ESAA License is not sought at this time.

⁷ Panasonic SPA terminals will operate in the uplink direction within the 14.0-14.5 GHz band and consistent with its coordination agreements with co-frequency users, the Commission’s rules and applicable international requirements.

satellites with technical parameters that are well known to the Commission. The operators of each satellite identified above have reviewed the technical characteristics of Panasonic's SPA ESAA terminal operations and confirmed that such operations are consistent with their coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of the subject satellite. Attached hereto are letters confirming that the power levels associated with Panasonic's SPA ESAA terminal operations have been coordinated with operators of adjacent satellites.⁸

3. SPA Terminal Performance

The SPA terminal fully complies with the provisions governing Ku-band AMSS operations embodied in Recommendation ITU-R M.1643, as well as applicable FCC rules and policies governing ESAA operations. Interference will be avoided principally by controlling off-axis EIRP spectral density of emissions along the GSO arc to protect adjacent FSS satellites. As noted, Panasonic's serving satellite operators have confirmed that the proposed operations are consistent with the coordinated parameters of their satellites.

In addition, the SPA terminal operates in a manner that avoids interference to other co-frequency systems and services, and complies with the coordination agreements Panasonic has entered into with the National Science Foundation to protect radio astronomy operations and with NASA to protect TDRSS operations. The transmission and other principal operational characteristics of the SPA terminal are described more fully in the attached Technical Appendix.

It is important to note that Panasonic's ESAA terminals transmit on individually assigned frequencies and time slots such that, regardless of the number of authorized terminals, only one terminal transmits at a time (*i.e.*, there is no aggregation). Thus, operation of the new SPA

⁸ See Technical Appendix, II (Operator Certification Letters).

terminal will not increase the potential for interference from ESAAs communicating with the eXConnect System. The attached Technical Appendix provides a detailed description and test data on the operational characteristics of the SPA terminal.

4. Concurrent Application for 60-Day STA, Future Modification Application and FCC Precedent

Contemporaneous with this STA application, Panasonic has filed a request for a 60-day STA to operate the SPA terminal and communicate with certain satellites that will support in-flight broadband connectivity to WestJet aircraft while present in the United States.⁹ Panasonic has requested interim 60-day operating authority to afford the Commission time to place on public notice and consider the merits of this longer-term STA request.

In addition, although Panasonic plans to add the SPA terminal to its ESAA blanket license in a future modification application, the pendency of a separate modification application to add satellite points of communication to the global eXConnect System effectively precludes such a filing at this time.¹⁰ Accordingly, pursuant to consultations with the Commission staff, Panasonic proposes to operate the SPA terminal under STA authority until such time as the FCC can accept and process a new modification application to add the SPA terminal to Panasonic's ESAA license.¹¹

⁹ *See 60-day STA Application.*

¹⁰ *See File Nos. SES-MFS-20150609-00349, SES-AFS-20150820-00538 and SES-AFS-20160107-00003, Call Sign E100089.*

¹¹ Panasonic has attached a draft modification application with a scope similar to that of the 180-day STA request as evidence of its intent to file for such a license modification at the earliest practicable time. Panasonic notes, however, that it may expand the scope of the contemplated modification application to include additional satellite points of communication for the SPA terminal depending on planned use of the terminal by U.S. airline customers.

The Commission has previously granted ESAA licensees authority to operate on STA authority in anticipation of a request for regular authority. For example, Panasonic was granted STA authority to operate the PPA terminal (then also known as the Aura LE) in advance of receiving permanent license authority.¹² More recently, Row 44 was granted STA authority to communicate with new satellite points of communication during the pendency of an application for regular authority.¹³ Thus, grant of the instant application for STA authority in anticipation of permanent authority is fully consistent with prior Commission precedent.

B. Adding Telstar 12V as Point of Communication for PPA Terminal

Panasonic also seeks authority to access the Telstar 12V satellite as a satellite point of communication for its previously licensed PPA terminal. The technical characteristics of PPA terminal operations with Telstar 12V are provided in the associated modification application FCC Form 312 and Schedule B. Panasonic certifies the remaining information in support of its ESAA License, including the technical information previously submitted for the PPA terminal, has not changed.

1. PPA Terminal Satellite Point of Communication

Panasonic seeks to operate the PPA terminal with Telstar 12V (Call Sign S2933), a U.S.-licensed satellite operated by Skynet Satellite Corporation (“Skynet”).¹⁴ A summary of PPA operations with Telstar 12V are set for the below.¹⁵

¹² See Panasonic Avionics Corporation, Special Temporary Authority, Call Sign E100089, File No. SES-STA-20130516-00395 (granted July 24, 2013).

¹³ See Row 44, Inc., Special Temporary Authority, Call Sign E080100, File Nos. SES-STA-20150928-00639 (granted October 7, 2015) and SES-STA-20150319-00172 (granted March 24, 2015). In both cases, the Commission expeditiously granted Row 44’s request for 60-day special temporary authority to allow for near-term commencement of operations.

¹⁴ See Skynet Satellite Corporation, File No. SAT-LOA-20141010-00107 (Call Sign S2933) (granted Oct. 29, 2015).

Table 2. Satellite and Downlink Frequencies (PPA)

Satellite	Orbital Location	Downlink Frequencies	ITU Region	Service To U.S.
Telstar 12V	15° W	10.95-12.2 GHz	1	No

Although the Telstar 12V satellite is capable of providing service to large areas of Regions 1 and 2, including the United States, Panasonic notes that it seeks to access certain satellite beams located in Region 1 only. Utilizing Telstar 12V capacity, Panasonic will provide the “very latest in inflight Wi-Fi to carriers across the region.”¹⁶

Telesat Canada, a company related to Skynet for Telstar 12V coordination and operation, has reviewed the technical characteristics of Panasonic’s PPA ESAA terminal operations and confirmed that such operations are consistent with its coordination agreements and will not result in unacceptable interference to other satellites within +/- 6 degrees of Telstar 12V. Attached hereto is a letter confirming that the power levels associated with Panasonic’s ESAA terminal operations with Telstar 12V have been coordinated with operators of adjacent satellites.¹⁷

III. GRANT OF THE REQUESTED STA WILL SERVE THE PUBLIC INTEREST

Grant of the requested 180-day STA will serve the public interest by enabling near-term introduction of the SPA terminal onboard WestJet Airlines, which serves many U.S.-Canada routes, and thus expanding availability of Panasonic’s GCS offering to U.S.-based passengers.

¹⁵ Panasonic PPA terminals will operate in the uplink direction within the 14.0-14.5 GHz band and consistent with its coordination agreements with co-frequency users, the Commission’s rules and applicable international requirements.

¹⁶ See Panasonic Press Release, *Panasonic Signs Multi-year Contract for High Throughput Capacity on Telesat’s New Telstar 12 VANTAGE Satellite*, <http://www.panasonic.aero/News/Articles/PanasonicSignsMultiyearContractforHighThrou.aspx> (posted on February 15, 2016).

¹⁷ See Technical Appendix, II (Operator Certification Letters).

Grant of the STA will also serve the public interest by allowing the PPA terminal to access Telstar 12V, thereby improving and expanding coverage of the eXConnect System. Panasonic's commitment to file a modification application to operate the SPA terminal and to add Telstar 12V as an authorized point of communication for the PPA terminal under its ESAA blanket license will enable U.S. and other foreign airlines to access the eXConnect System with these next-generation technologies.

A. SPA Terminal Public Interest Considerations

Although SPA terminal operations will affect a limited number of foreign aircraft temporarily located in U.S. territory, it will provide direct benefits to U.S. consumers that will be able to access new in-flight mobile broad applications and will further enhance U.S. leadership in in-flight mobile broadband services. This, in turn, will enhance competition in the mobile broadband market by enabling additional commercial aircraft equipped with the eXConnect System to better compete with other carriers offering terrestrial-based services and with other airlines offering satellite-based connectivity. Interim authority for the SPA terminal also will enable early implementation of service onboard U.S.-Canada routes by allowing Panasonic and WestJet to work through technical issues during interim operations, which will allow the airline to improve the passenger experience and enable Panasonic to enhance its in-flight connectivity offerings to other airlines.

Authorizing the new SPA terminal also will facilitate the introduction of this new ESAA terminal for more regularized commercial operations. Because the terminal is lighter-weight and lower-cost, it will strengthen the demand for in-flight connectivity services and will enhance their prospects for long-term success.

B. PPA Terminal Public Interest Considerations

Grant of this modification to add the Telstar 12V as an authorized point of communication for the PPA terminal on U.S.-registered aircraft will serve the public interest by extending the coverage and increasing the capacity of the global eXConnect network for U.S. airlines and their passengers. Telstar 12V will provide additional bandwidth for the eXConnect System and ensure that Panasonic has sufficient bandwidth to meet increasing demand and enhance the in-flight user experience within the relevant service area of the satellite.

C. Pending Commercial Modification Application

Panasonic would also note that it has consulted with Commission staff and concluded, as a result of processing limitations within the International Bureau Filing System (IBFS), it is necessary to file requests for STA authority to support near-term SPA and Telstar 12V operations. In particular, the pendency of a separate modification application to add satellite points of communication to the Panasonic ESAA License effectively precludes filing a new modification for the herein proposed operations at this time. Although Panasonic anticipated Commission action on the pending modification application before SPA and Telstar 12V operating authority would be needed, application processing issues (including a recent amendment filed by Panasonic) have necessitated the requests for STA authority.

Panasonic acknowledges that any action on the requested STA will not affect the Commission's determination with respect to the contemplated modification application. Panasonic also acknowledges and accepts that any authorization granted by the Commission will be conditioned upon compliance with relevant requirements in Section 25.227 of the Commission's rules.

Finally, as previously noted, the Commission has granted ESAA proponents authority to operate on STA authority during the pendency of permanent authorization requests. In addition

to prior grants to Panasonic for operation of the PPA terminal, Row 44 has been granted several STAs during the pendency of applications for regular authority.¹⁸ Thus, grant of the instant application for STA authority is consistent with prior Commission precedent.

IV. CONCLUSION

The long-term STA authority requested herein will ensure that the proposed SPA terminal and Telstar 12V operations can be conducted until such time as the Commission can accept and process a modification application for appropriate long-term commercial authority. Early introduction of the SPA terminal in the United States will enhance competition in the U.S. broadband services market and better position Panasonic, a U.S. ESAA licensee, to compete domestically and internationally. In addition, enabling U.S. airlines to access Telstar 12V will improve their in-flight connectivity offering and enhance their ability to compete with their foreign counterparts. In view of the foregoing, the public interest will be served by a grant of the requested 180-day STA for the above-described operations until such time as the Commission can grant regular commercial operating authority.

¹⁸ See Row 44, Inc., Special Temporary Authority, Call Sign E080100, File Nos. SES-STA-20150928-00639 (granted October 7, 2015) and SES-STA-20150319-00172 (granted March 24, 2015).