

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

In the Matter of)
)
Application of UltiSat, Inc. To Modify its) Call Sign E181298
Existing Ku-band ESAA License To Add) File No. _____
a New Terminal)

APPLICATION FOR ESAA BLANKET LICENSE MODIFICATION

By this application, UltiSat, Inc. (“UltiSat”) seeks modification of its existing Ku-band earth stations aboard aircraft (“ESAA”) blanket license, Call Sign E181298,¹ by adding authority to operate up to 250 SkyTech Model BB30Ku terminals (the “BB30”) to provide intelligence, surveillance, and reconnaissance (“ISR”) services supporting United States Government (“USG”) security operations. UltiSat seeks to operate the subject terminal in Ku-band frequencies – the 14.0-14.5 GHz (Earth-to-space) and 10.95-11.2 GHz, 11.45-11.7 GHz and 11.7-12.2 GHz (space-to-Earth) bands – to deliver mission-critical ISR support for USG customers. Pursuant to Section 25.117(c) of the Commission’s rules,² UltiSat provides in the FCC Form 312 Schedule B and Technical Appendix information pertaining to the proposed operation of the new terminal.

Grant of the requested modification would be consistent with Section 25.227 of the Commission’s rules,³ governing ESAA operations and would serve the public interest by enhancing competition in the in-flight connectivity market and extending U.S. leadership in satellite-based mobility services.

¹ See UltiSat, Inc., Radio Station Authorization, File No. SES-LIC-20180726-02089, Call Sign E181298 (November 21, 2018) (“*ESAA Blanket License*”).

² 47 C.F.R. § 25.117(c).

³ 47 C.F.R. § 25.227.

I. BACKGROUND

UltiSat, an existing FCC licensee that provides diverse satellite services for government and commercial customers, has received blanket license authority to operate the SkyTech Model BB45Ku (“BB45”) terminal in the Ku-band with U.S.-licensed satellites and non-U.S. licensed satellites on the Commission’s Permitted Space Station List (“Permitted List”).⁴ UltiSat has previously operated the BB30, a smaller ESAA terminal that is similar in design and operates within the same technical envelope as the BB45, pursuant to the Commission’s experimental licensing rules.⁵ There have been no reported cases of interference as a result of BB30 operations. The commercial operations proposed herein are essentially identical to those previously approved by the Commission.

UltiSat provides the FCC Form 312 Schedule B and Technical Appendix for information relating to the proposed ESAA operations. As demonstrated in these materials, UltiSat will operate the BB30 terminal consistent with Section 25.227 of the Commission’s rules⁶ and other Commission rules and policies. Grant of this modification application will allow UltiSat to provide long-term support for important USG national security missions and other in-flight connectivity customers.

⁴ *See supra* n.1.

⁵ *See* UltiSat Inc., File No. 1930-EX-ST-2018, Call Sign WN9XQQ; *see also* UltiSat Inc., File No. 0201-EX-ST-2018, Call Sign WM9XHN and Section 5.77 Letter to Anthony Serafini, Addition of New Antenna Type for Experimental Testing and Demonstration (dated June 5, 2018). UltiSat incorporates by reference the technical information previously submitted to the Commission regarding the BB30 terminal.

⁶ *See* 47 C.F.R. § 25.227.

II. DISCUSSION

A. BB30 Terminal Operations

The BB30 terminal is an airborne stabilized antenna system that provides high-quality broadband satellite communications for aeronautical applications and is designed to operate in Ku-band frequencies to provide mission-critical delivery of voice, video, and data communications. The antenna is mechanically steerable and is intended for tail or fuselage-mounting. UltiSat seeks to operate the BB30 ESAA terminal on certain U.S.-registered aircraft for ISR and similar national security applications. Addition of the BB30 to the ESAA Blanket License will allow UltiSat to pursue full commercial integration of this terminal into multiple aircraft and to support long-term services for U.S. government national security, border protection and related operations.

At all times, UltiSat will operate the BB30 terminal within the off-axis EIRP spectral density (“ESD”) limits set forth in Section 25.227 of the Commission’s rules.⁷ These off-axis ESD levels are consistent with the Commission’s two-degree spacing policy and protect co-frequency satellite operations from harmful interference.⁸ The BB30 terminal has a pointing accuracy of 0.2°,⁹ ceases transmissions within 100 milliseconds if the angle between the orbital location of the target satellite and the axis of the main lobe of the ESAA antenna exceeds 0.5°, and transmission will not resume until such angle is less than or equal to 0.2°.¹⁰

UltiSat has already operated the BB30 terminal pursuant to Commission authority

⁷ 47 C.F.R. § 25.227(a)(1).

⁸ In the Technical Appendix, UltiSat provides off-axis ESD plots demonstrating compliance with the ESD mask in Section 25.227(a)(1) of the Commission’s rules.

⁹ 47 C.F.R. § 25.227(a)(1)(ii)(A).

¹⁰ 47 C.F.R. § 25.227(a)(1)(iii)(A).

without any reported interference and in compliance with the ESAA rules embodied in Section 25.227.¹¹ UltiSat incorporates the technical information previously presented to the Commission by reference, including the network control functionality associated with the UltiSat network that supported initial grant of the ESAA Blanket License.¹² The Technical Appendix and Form 312 Schedule B provide additional exhibits and information documenting the characteristics of the BB30 terminal, providing a radiofrequency radiation hazard assessment, and demonstrating that the BB30 terminal will operate in compliance with the Commission's ESAA rules and policies.¹³

B. Permitted List Authority

UltiSat seeks authority to operate the BB30 terminal with U.S.-licensed satellites and non-U.S. licensed satellites on the Permitted List. Permitted List authority is appropriate here because UltiSat will operate the ESAA terminal at all times within the relevant off-axis ESD limits in Section 25.227(a)(1) of the Commission's rules¹⁴ and the frequencies available for Permitted List operations.¹⁵ Off-axis EIRP spectral density plots have been included in the attached Technical Appendix.¹⁶

C. Ground Segment

UltiSat will use only approved gateway earth stations to communicate with the Ku-band FSS satellites that support its ESAA system. Because UltiSat seeks Permitted List authority and

¹¹ *See supra* n.5.

¹² *See supra* n.1. Pursuant to Section 25.117(c), which requires information that changes as a result of the proposed modification to be submitted to the Commission, this application focuses on the operational characteristics of the BB30 terminal.

¹³ UltiSat respectfully reserves the right to supplement this ESAA application with additional compliance information deemed necessary by the Commission.

¹⁴ *See* 47 C.F.R. § 25.227(a)(1).

¹⁵ *See* 47 C.F.R. §25.115(k)(1).

¹⁶ *See* 47 C.F.R. §§ 25.115(g)(1) and 25.227(a)(12); *see also* Technical Appendix.

a range of gateways may be utilized to communicate with each of these satellites, UltiSat is not including a definitive list of satellites and gateway earth stations in this application.

At this time, UltiSat only seeks to utilize gateway earth stations located in the United States, will maintain control of all transmissions through its network operations center, and will cease transmissions immediately upon notice of harmful interference. The UltiSat 24/7 point of contact with control over the ESAA network is:

UltiSat Network Operations Center
Attn: Tim Wiegand
708 Quince Orchard Rd., Suite 120
Gaithersburg, MD, 20878, USA
NOC@ultisat.com
+1.240.243.5138 (Office)
+1 240.949.6011 (Skype)

III. PUBLIC INTEREST STATEMENT

In this modification application, including this narrative, FCC Form 312, Technical Appendix and related information, UltiSat has demonstrated the BB30 terminal will operate in compliance with Section 25.227 of the Commission's rules governing ESAA operations.

Additionally, UltiSat has operated the BB30 terminal through without interference pursuant to other Commission authority for many months.

UltiSat seeks to add the BB30 terminal to its ESAA Blanket License to support critical USG national security and safety operations. UltiSat's proposed operations will serve the public interest by permitting long-term support for U.S. national security missions. In addition, grant of the requested modification will permit UltiSat and its government partners to fully transition their operations to regular commercial authority, and allow integration of UltiSat's service and equipment with long-term government missions.

IV. CONCLUSION

For the foregoing reasons, UltiSat requests that the Commission grant this modification application to add the BB30 terminal to its ESAA Blanket License as described herein.

Technical Certification

I, David Bryant, hereby certify that I am the technically qualified person responsible for the preparation of the technical information contained in the ESAA blanket license modification application of UltiSat Inc. and the accompanying Technical Appendix, that I am familiar with Part 25 of the Commission's Rules (47 C.F.R. Part 25), and that I have either prepared or reviewed the technical information submitted in this application and found it to be complete and accurate to the best of my knowledge and belief.

By: s/ David Bryant

David Bryant
UltiSat Inc.

December 9, 2018