

Raysat Antenna Systems, LLC
Application for Modification of Experimental License
Call Sign WE2XTX
ELS File No. 0160-EX-ML-2010

Raysat Antenna Systems, LLC (“Raysat”), through its attorneys, hereby submit this application to modify its current experimental authorization (Call Sign WE2XTX; File No. 0160-EX-ML-2010) to add two additional satellite points-of-communications: the EchoStar-9 satellite at 121.0° W.L., and the Amazons-2 satellite at 61.0 W.L. No other changes are requested to the current experimental license.

I. BACKGROUND

The current experimental license (Call Sign WE2XTX, File No. 0160-EX-ML-2010) authorizes testing and demonstration of up to 100 land mobile-satellite service (“LMSS”) remote earth station terminals: 25 units of the Stealthray™ 3000/40 terminal and 75 units of its Stealthray™ 2000 antenna.¹ The Stealthray™ 3000/40 terminal uses the same antenna as the Stealthray™ 2000 antenna, but is paired with a larger block upconverter (“BUC”), which increases the maximum EIRP of the Stealthray™ 3000/40 antenna to 24,547 Watts (14,997W ERP). The Stealthray™ 2000 antenna transmits over a 512 kHz bandwidth, but Raysat spreads the Stealthray™ 3000/40 transmissions over a wider band (15.7 MHz) to maintain the transmitted power density at or below the authorized -18.1 dBW/4kHz value.²

¹ The current authorization is the latest in a series of experimental licenses for the Stealthray™ model of antennas, starting in 2008, under Call Sign WE2XTX. See File Nos. 0203-EX-PL-2008, 0033-EX-ST-2009, 0002-EX-TU-2010, 0235-EX-RR-2010. Because no further technical changes to the authorized antennas’ operations are proposed, Raysat hereby incorporates by reference the technical information submitted in support of the earlier applications. To the extent the Commission believes that prior or any other technical other information is necessary for grant of the instant application for modification, Raysat respectfully requests an opportunity to supplement the record.

² This ensures that the input power spectral density is consistent with that currently permitted under Call Sign WE2XTX and consistent with the Commission’s two-degree spacing policies.

As Raysat has previously informed the Commission, the company has been engaged with the U.S. Government and Department to conduct over-the-air testing to evaluate its Stealthray™ 2000 and Stealthray™ 3000/40 antennas' performance as well as conduct technology demonstrations. The direct and substantial public benefits of the services provided under Raysat's experimental authority are profound. Continued experimental authority will afford U.S. government agencies and the U.S. military opportunity to further evaluate Raysat's broadband LMSS systems and services and to utilize these advanced communications in the context of homeland security, public safety, military training and other critical government and military applications.

II. NEW SATELLITE POINTS-OF-COMMUNICATION

Raysat requests authority to communicate with the EchoStar-9 satellite at 121.0° W.L., and the Amazonas-2 satellite at 61.0 W.L. Raysat has a pressing need to communicate with these additional satellites to refine the operational characteristics of its network and to facilitate the provision of service pursuant to the government contracts. Specifically, tests to be conducted by the U.S Army require authority to operate on the two requested satellites.

Raysat's proposed operations with the EchoStar-9 and Amazonas-2 satellites will not cause in interference to adjacent Ku-band FSS satellite operations. EchoStar-9 is a U.S. licensed satellite and Amazonas-2 is on the U.S. Permitted List. As such, they are consistent with the required two-degree spacing requirements. In addition, Raysat will take steps to ensure that terminals that operate with the EchoStar-9 and Amazonas-2 satellites will experience skew angles of no more than 50°.

Figures 1 and 2, below, illustrate the 50° skew angle boundary for each of the EchoStar-9 and Amazonas-2 satellites, respectively: EchoStar-9 -- the 50° skew angle boundary is located

across mid-Central Florida; Amazonas-2 -- the 50° skew angle boundary is located across the Southern portion of the Western United States (Southern California, Arizona, and parts of Southern New Mexico and Texas). No operations will occur in those areas where the skew angle exceeds 50°.

In addition, Raysat will ensure that operation of the terminals will remain within the maximum emissions envelope currently authorized by the Commission, and be fully compliant with the Commission's requirements for Ku-band land mobile terminals (*see* 47 C.F.R. § 25.226, for vehicle-mounted earth stations, or "VMES" rules) to protect adjacent satellites from interference. Finally, Raysat acknowledges, and will fully comply with, the Special Conditions imposed on Call Sign WE2XTX and analogous requirements in the Commission's VMES Rules.

III. CONCLUSION

In view of the foregoing, Raysat respectfully requests grant of the modification to add the EchoStar-9 satellite at 121.0° W.L., and the Amazonas-2 satellite at 61.0 W.L. as points-of-communication to Call Sign WE2XTX; File No. 0160-EX-ML-2010. The requested modification would serve the public interest by enabling Raysat to expand the scope of its testing and demonstration of its low-profile "comms-on-the-move" antennas to the U.S. Government. No other changes in the current experimental license are requested.

50° Skew Angle Boundary

Skew Angles Less Than 50°

Skew Angles Greater Than 50°

Map of the United States showing the 50° Skew Angle Boundary. The boundary is a red line running diagonally from the bottom left to the top right. The region to the left of the line is labeled "Skew Angles Less Than 50°" and the region to the right is labeled "Skew Angles Greater Than 50°". The boundary is labeled "50° Skew Angle Boundary" with an arrow pointing to the line. Major cities are marked with dots and state abbreviations are labeled within their respective states.