

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

In the Matter of	)	
	)	
Application of RBC Signals LLC	)	Call Sign: E220057
for 30-Day Extension of its Special	)	
Temporary Authorization to Operate with	)	File No.:
a Non-Geostationary Orbit Spacecraft	)	
	)	

**REQUEST FOR SPECIAL TEMPORARY AUTHORIZATION
(Deadhorse, Alaska | S-band)**

RBC Signals LLC (“RBC Signals”), pursuant to Section 25.120 of the Commission’s rules,¹ respectfully requests a 30-day extension of the special temporary authorization (“STA”) previously granted by the Commission to operate a fixed 4.5 meter S-band earth station in Deadhorse, Alaska to conduct telemetry, tracking, and command (“TT&C”) operations in the 2025-2110 MHz band (Earth-to-space; center frequencies requested: 2046 MHz, 2048 MHz, 2050 MHz, 2053 MHz, 2056 MHz, and 2075 MHz)² to support a non-geostationary orbit (“NGSO”) deployment vehicle, the Sherpa-AC1 spacecraft, operated by Spaceflight, Inc. (“Spaceflight”),³ which was deployed from a Space Exploration Technologies Corporation (“SpaceX”) Falcon 9 on May 25, 2022. RBC Signals has also requested regular authority to support the Sherpa-AC1 in its application for a fixed earth station license.⁴ RBC Signals seeks this 30-day extension to continue providing essential TT&C support to the Sherpa AC1 while

¹ 47 C.F.R. § 25.120.

² See RBC Signals LLC, File No. SES-STA-20220509-00470, granted May 25, 2022, (“*Deadhorse S-band STA*”).

³ See Spaceflight, Inc., File No. SAT-LOA-20220111-00007 (“*Sherpa-AC1 Grant*”). To the extent applicable, RBC Signals incorporates by reference relevant satellite technical and operational information authorized in the *Sherpa-AC1 Grant* and provided in the associated application (“*Sherpa-AC1 Application*”).

⁴ See RBC Signals LLC, File No. SES-LIC-20220509-00468, Call Sign E220057, filed May 9, 2022, (“*Deadhorse S-band Application*”).

also affording the Commission sufficient time to review and process its application for longer-term authority. Grant of this request will serve the public interest and is consistent with the Commission's rules.

I. DISCUSSION

RBC Signals is a Seattle, Washington-based company that provides earth station services around the world. With this application, RBC Signals seeks additional temporary authority to support the Sherpa-AC1 spacecraft from Deadhorse, Alaska in the 2025-2110 MHz band (Earth-to-space; 300 kilohertz carriers with center frequencies at 2046 MHz, 2048 MHz, 2050 MHz, 2053 MHz, 2056 MHz, and 2075 MHz). RBC Signals will continue to work to ensure that these operations will not cause harmful interference to current or future co-frequency operations and that the interests of the United States are accommodated.

A. Sherpa-AC1 Satellite Overview

RBC Signals incorporates by reference the Sherpa-AC1 mission information and payload specifications provided in the *Sherpa-AC1 Application*. Spaceflight hosts two payloads that are permanently affixed to the Sherpa-AC1 spacecraft: NearSpace Launch's TROOP-3 payload and Xona Space System's navigational payload. In addition, there were seven customer spacecraft being carried by Sherpa-AC1. TT&C support for these important space operations is plainly in the public interest.

B. Frequency Use

a. TT&C Uplink — 2025-2110 MHz band (Earth-to-space)

The United States Table of Frequency Allocations Section 2.106 of the Commission's Rules, 47 C.F.R. §2.106, provides that the 2025-2110 MHz band is allocated on a primary basis to space operations and Earth-exploration satellite services ("EESS"), *inter alia*, in all ITU

regions. In the United States, space operations are limited to federal operators, and EESS use by commercial operators is subject to conditions as may be applied on a case-by-case basis and the limitation that any use may not cause harmful interference to authorized operations.⁵

RBC Signals proposes to operate 300 kilohertz carriers on 2046 MHz, 2048 MHz, 2050 MHz, 2053 MHz, 2056 MHz, and 2075 MHz center frequencies (Earth-to-space) to provide TT&C for the Sherpa-AC1 consistent with the Commission's Table of Allocations.⁶ RBC Signals understands that there are certain U.S. government operations conducted in the 2025-2110 MHz band, including use by the National Aeronautics and Space Administration ("NASA").⁷ RBC Signals will continue to support Sherpa-AC1 in its coordination efforts with NASA and other government agencies to ensure compatibility of the proposed operations.

Given that RBS signals only seeks to perform transmit operations using a 300 kilohertz carrier bandwidth around each of the designated center frequencies, and given the remote location of the Deadhorse facility in the North Slope of Alaska, RBC Signals believes that the proposed operations will not present a potential for interference to other spectrum users of the band and has not identified any conflicting Federal operations. RBC Signals will operate on an unprotected, non-interference basis and, if it learns that its operations are causing harmful interference to other operations, it will suspend or modify its operations to resolve such interference.

Although RBC Signals previously coordinated its uplink operations in the 2025-2110 MHz band at the Deadhorse facility (in 2021 with no concerns or objections), before filing for the first 30-day STA for these operations, it engaged Micronet to perform a new frequency coordination on behalf of RBC Signals that considers all existing, proposed, and prior-

⁵ See 47 C.F.R. § 2.106, fn. US 347.

⁶ See 47 C.F.R. § 2.1 (defining "space research service" as "a radio communication service in which spacecraft or other objects in space are used for scientific or technological research purposes.")

⁷ See https://www.ntia.doc.gov/files/ntia/publications/compendium/2025.00-2110.00_01MAR14.pdf.

coordinated terrestrial microwave facilities within the contours of the 4.5m earth station.

Micronet circulated the expedited prior coordination notice to potentially affected carriers on April 13, 2022, requesting responses by April 27, 2022, and there were no unresolved interference objections. The final coordination report from Micronet is attached.⁸

RBC Signals is confident that there is no potential for interference between other users of this spectrum and the operations of the 4.5m earth station at the Deadhorse facility.⁹ In addition, RBC Signals understands that Sherpa-AC1 has coordinated access to the subject spectrum as it relates to its operations.

To the extent necessary, RBC Signals requests waiver of the U.S. Table of Frequency Allocations, 47 C.F.R. §2.106, to permit the proposed TT&C transmit operations in the 2025-2110 MHz band. Given the limited use of the specified frequencies during the brief one-year mission of Sherpa-AC1, RBC Signals' commitment to coordinating use of the band with Micronet well beyond its actual operational limits, and the public interest justification supporting the mission, RBC Signals submits that a limited waiver is justified in this instance. RBC Signals will support Sherpa-AC1 and Commission staff to ensure that its temporary Earth-to-space operations do not increase the interference into current or future government or commercial users.

D. Public Interest Considerations

Grant of this STA extension will further the public interest by enabling continuing TT&C support for the Sherpa-AC1 mission during near-term operations during the pendency of RBC Signals' previously filed earth station license application. RBC Signals is at the forefront of reinventing TT&C and earth station support solutions and granting the requested extension

⁸ See Coordination Report, April 2022 (in attached Technical Appendix).

⁹ Out of an abundance of caution, RBC Signals coordinated worst-case scenario power levels across the entire frequency band. In reality, RBC Signals will only use 6 300 kHz carrier bandwidth frequencies.

would further the advancement of satellite and earth station services in the United States, . enhance the commercial viability of novel small satellite communications systems, and ensure continued support for the in-orbit Sherpa-AC1 spacecraft.

III. CONCLUSION

Based on the foregoing, RBC Signals respectfully requests that the Commission grant this request for a 30-day extension of its STA during the pendency of its application for long-term authority, so that RBC Signals can continue to provide essential TT&C services for the Sherpa-AC1 spacecraft from its Deadhorse, Alaska facility.