

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

In the Matter of

Application of RBC Signals, LLC for	)	Call Sign: E220056
Special Temporary Approval for Earth	)	
Station License to Operate with a Non-	)	File No.:
Geostationary Orbit Spacecraft		

**APPLICATION FOR STA TO OPERATE FIXED EARTH STATION
(RBC Signals | Deadhorse, AK)**

RBC Signals, LLC (“RBC Signals”), pursuant to Section 25.115 of the Commission’s rules, 47 C.F.R. § 25.115, respectfully seeks special temporary approval (STA) ahead of a license modification to operate the fixed 400 MHz Yagi earth station in Deadhorse, Alaska to conduct telemetry, tracking, and command (“TT&C”) operations for space-to-Earth with a center frequency 400.8 MHz and for the Earth-to-space band a center frequency of 401.9 MHz to support the non-geostationary orbit (“NGSO”) spacecraft Phobos, operated by Aethero Space.¹ As demonstrated in this application, grant of the requested authority will serve the public interest because it will allow RBC Signals to support Aethero Phobos as well as several receive only operations and further facilitate U.S. leadership in the advancement of novel satellite technologies.

RBC Signals respectfully requests that the Commission consider and authorize the proposed operations (as appropriately conditioned). After discussion with OET, RBC Signals was informed that all TTC and LEOP support provided and not directly involved in the validation of the experiment associated with the authorization of the PHOBOS system through the OET office should be filed through the FCC Part 25 office given the commercial nature of the arrangement between Aethero Space and RBC Signals.

¹ See Aethero Space, File No. 0780-EX-CN-2025 (“*Aethero Phobos Application*”), Granted Feb 9 2026. To the extent applicable, RBC Signals incorporates by reference relevant satellite technical and operational information provided in said application associate with callsign WQ2XDL via the OET.

I. BACKGROUND

RBC Signals is a Seattle, Washington-based company that provides earth station services around the world. With this application, RBC Signals seeks earth station license authority to operate in Deadhorse, Alaska to support the Aethero Phobos mission.

Aethero Phobos will be placed in sun synchronous orbit (“SSO”) at an altitude between $510 \text{ km} \pm 25 \text{ km}^4$ at an inclination of 97.4 degrees. Phobos will carry a total of two (EO) Electro-Optical sensors for the purpose of remote sensing and remote onboard edge computing, specifically weather observation by mapping cloud coverage, land cover mapping and potential resource exploration with insights produced onboard from the edge computing module. Aethero will also simulate rendezvous and proximity operations (“RPO”) to stress test a more powerful onboard processor. Phobos will not actually conduct RPO maneuvers with any on-orbit spacecraft. Aethero has been granted authority to operate Phobos from February 1, 2026 to February 1, 2028. During the mission, RBC Signals’ TT&C operations will be conducted on an unprotected and non-interference basis intermittently when the spacecraft passes over the earth station (approximately seven times per day).

RBC will conduct all operations in accordance with the Commission’s rules and requirements governing fixed earth station operations in the subject bands.³

³ RBC requests leave to update the technical or operational data associated with this license request should the Commission seek any clarifying or supplemental information in considering this request.

II. DISCUSSION

The purpose of the transmit request is to provide TT&C support to the Aethero Phobos spacecraft from Deadhorse, Alaska in the 401-402 MHz band (Earth-to-space; center frequency 401.9 MHz) and to conduct receive TTC at 400.8 MHz band (space-to-Earth) for PHOBOS. RBC Signals will 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.⁴

A. Aethero Phobos Satellite Overview

RBC Signals incorporates by reference the Aethero Phobos mission information and payload specifications provided in the *Aethero Phobos Application*. TT&C support for these important space operations is plainly in the public interest. RBC Signals has received feedback that due to the non-experimental and commercial nature of the support RBC Signals is providing that a Part 25 application should be filed to permit this TTC support of the experimental mission, rather than a Part 5 experimental license.

B. Frequency Use

a. TT&C Downlink – 400.15-401 MHz (space-to-Earth)

The United States Table of Frequency Allocations (“Table of Allocations”), Section 2.106 of the Commission’s rules, 47 C.F.R. § 2.106, provides that the 400.15-401 MHz band is shared between meteorological aids (Earth-to-space), mobile satellite (space-to-Earth), space research (space-to-Earth) and space operation services (space-to-Earth). RBC Signals seeks to perform

⁴ Aethero Space will have a camera onboard for the purpose of mission assurance and to confirm customer deployments. Aethero Space will obtain appropriate NOAA licensing, as appropriate.

TT&C downlink operations consistent with the co-primary space operations allocation in this band.⁶

RBC Signals seeks to perform TT&C downlink operations using the 400 MHz Yagi with Space-to-Earth signals at center frequency 400.8 MHz consistent with the secondary allocation for space operations in this band. RBC Signals is not currently aware of any use of the subject frequency bands by incumbent operators near the Deadhorse, Alaska facility and will coordinate as needed to ensure its TT&C operations do not cause interference with primary mobile satellite or meteorological-aid services.

Satellite	Emission Bandwidth KHz	Center Frequency MHz	Direction
PHOBOS	25, 12.5, 6.25, 1.6	400.8	Space to Earth

b. TT&C Uplink – 401-402 MHz band (Earth-to-space)

The Table of Allocations provides that “in the band 401-403 MHz, the non-federal Earth exploration-satellite (Earth-to-space) and meteorological-satellite (Earth-to-space) services are limited to earth stations transmitting to Federal space stations.”⁷ RBC Signals acknowledges that there are certain U.S. government meteorological aids and Earth exploration operations conducted in the 402-403 MHz band.⁸

Transmit Center Frequency MHz	Emissions Designator	Transmit Power at Antenna Flange Watts	Antenna Gain dBi	Polarization	EIRP dBW	Density dBw/4khz
401.9	25K0G1D	.32	16.2	RHCP	11.25	3.29
401.9	12K5G1D	.32	16.2	RHCP	11.25	6.3
401.9	6K25G1D	.32	16.2	RHCP	11.25	9.3
401.9	1K60G1D	.32	16.2	RHCP	11.25	15.23

⁶ See 47 C.F.R. § 2.106 (defining “space operations” as “radiocommunication service concerned exclusively with the operation of spacecraft, in particularly space tracking, space telemetry, and space telecommand.”).

⁷ 47 C.F.R. §2.106, fn. US384.

⁸ See https://www.ntia.doc.gov/files/ntia/publications/compendium/0402.00-0403.00_01MAR14.pdf.

C. Waiver Request

The Commission may waive its rules for “good cause shown.”⁹ RBC Signals respectfully seeks a waiver of Section 2.106 of the Commission’s rules, 47 C.F.R. § 2.106, to the extent necessary to operate the 400 MHz Yagi and perform TT&C in the 401-402 MHz band using a 401.5 MHz center frequency. Good cause exists to grant a waiver in this case to permit RBC Signals to perform critical TT&C functions for the Aethero Phobos mission and this waiver would not undermine the purpose of the rules. The waiver is also consistent with the Commission precedent previously granting such a waiver to operate in this band in a previous satellite authorization.¹⁰ RBC Signals acknowledges that the authority to conduct earth station operations in this band is associated with a similar grant of the *Aethero Phobos Application*.

The Table of Allocations provides that the 402-403 band is allocated on a primary basis to non-federal meteorological-aid services and on secondary basis to EESS (Earth-to-space). Moreover, “in the band 401-403 MHz, the non-federal Earth exploration-satellite (Earth-to-space) and meteorological-satellite (Earth-to-space) services are limited to earth stations transmitting to Federal space stations.”¹¹ Thus, RBC Signals seeks a waiver of this footnote to permit it to provide TT&C uplink support for the Aethero Phobos mission, which will facilitate the development and evaluation of an innovative U.S.-licensed satellite.

Acknowledging the connect between the *Aethero Phobos Application* and this earth station application, a waiver is warranted here because it will provide RBC Signals with the ability to dependably provide critical satellite support for the Aethero Phobos mission.

⁹ See 47 C.F.R. §1.3 (“Any provision of the rules may be waived by the Commission on its own motion or petition if good cause therefor is shown.”).

¹⁰ See Astro Digital U.S., Inc., File No. SAT-LOA-20170508-00071 (grant stamp Oct. 9, 2020) (the “*Astro Digital License*”), Condition 9.

¹¹ *Supra* n. 7.

Further, a waiver will serve the public interest as RBC Signals will support novel space technologies that bridge traditional launch deployment services. Finally, given the limited nature of the proposed operations and the coordination performed in support of the *Aethero Phobos Application* to ensure the proposed operations will not cause harmful interference to co-frequency operations, grant of the waiver will not undermine the purposes of the rule. Thus, there is good cause to grant the requested waiver to permit the limited earth station operations proposed herein.

D. Public Interest Considerations

Grant of this earth station STA and future license will further the public interest by enabling TT&C support for the Aethero Phobos mission. It will also further position the United States as a leader in the development and encouragement of pioneering satellite technologies.

RBC Signals is at the forefront of reinventing TT&C and earth station support solutions and grant of a license would further cement the United States' dedication to the advancement of satellite services. Grant of this temporary authorization will enable the continued operation and realization of the significant benefits and commercial viability of novel small satellite communications systems. The grant of this application also will regularize RBC Signals' operations in Deadhorse, Alaska and provide long-term authority for this earth station facility. Grant of an updated earth station license will afford RBC Signals an earth station authorization that can facilitate communications with other satellite points of communication through appropriate license modifications.

III. CONCLUSION

Based on the foregoing, RBC Signals respectfully requests that the Commission grant its earth station license modification application to provide TT&C uplink services for the Aethero Phobos spacecraft, and downlink services for PHOBOS from its Deadhorse, Alaska facility while we awaiting grant of SES-MOD-20241203-02561 for longer term operations.