



Narrative

Pursuant to the Federal Communications Commission (“FCC”) rules, 47 C.F.R. §§ 5.3(a), (e), (f) and (j); 5.51; 5.54(a)(1); 5.59(a)(1); and 5.71(a), Anduril Industries, Inc. (“Anduril”) respectfully requests experimental authority so that it may support government contract related testing of communications between unmanned aerial systems (“UAS”) and a radio frequency (RF) receiving system. This application is limited to a request for authority to test radiocommunication systems.

In support of Anduril’s request, the following is shown:

1) Company Background:

Anduril Industries, Inc. is headquartered in Irvine, California. Its address and FCC Registration Number (“FRN”) are provided below:

Anduril Industries, Inc.
2722 Michelson Dr
Irvine, CA 92612
FRN: 0028824514

Anduril is a private, for-profit engineering company devoted to technology development for security and defense applications by the U.S. Government. Approximately 80% of Anduril’s business is for the U.S Government.

2) Need for Experimental Authority:

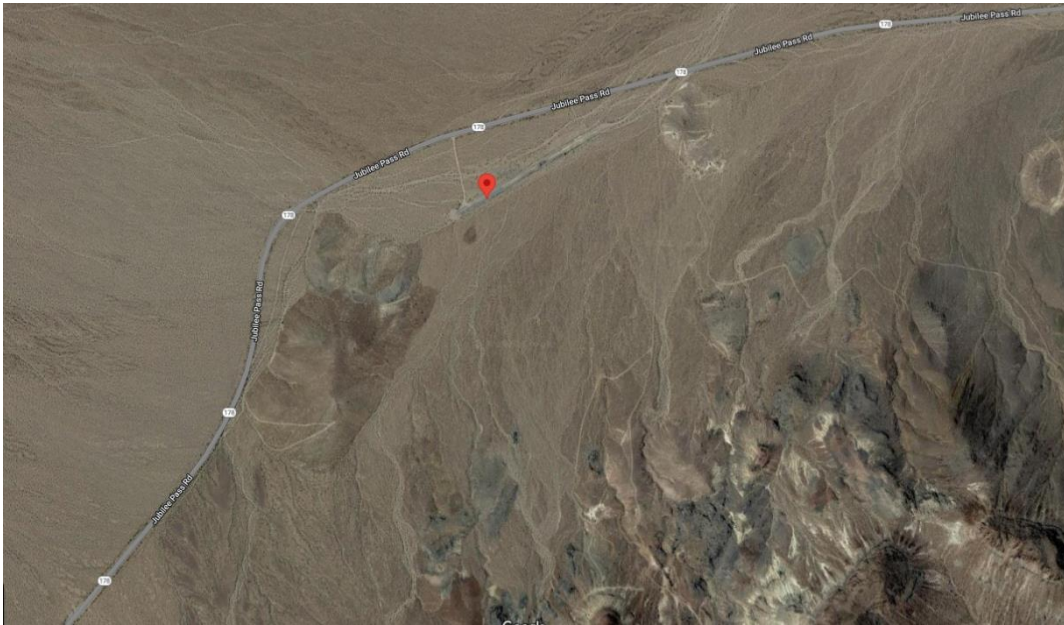
As noted above, Anduril seeks experimental authority so that it may temporarily support third-party government contract related testing. Anduril seeks to conduct tests on a temporary, non-interference, non-protected basis at remote, rural sites in Shoshone, California and the Nevada National Security Site which have the capability to support needed testing while meeting the safeguards designed to prevent potential telecommunications disruptions by virtue of their rural locations. Specifically, Anduril requests authority for its StreamCaster 4200 Enhanced Plus (“StreamCaster 4200EP”) radio, located at a fixed site in Shoshone, California, to transmit frequencies to—and receive transmissions from—another StreamCaster 4200EP radio that is mounted on a mobile unmanned aircraft system in flight above the Nevada National Security Site.

The experimental authority requested by this application would allow Anduril to support testing (observation, monitoring, and evaluation of the below-described devices within the requested bandwidths) for the duration of the experimental authority. Anduril has requested experimental authority for a term of 24 months (from June 30, 2022 to June 30, 2024) to provide flexibility should variations in government and contractor COVID travel requirements or issues with inclement weather arise.

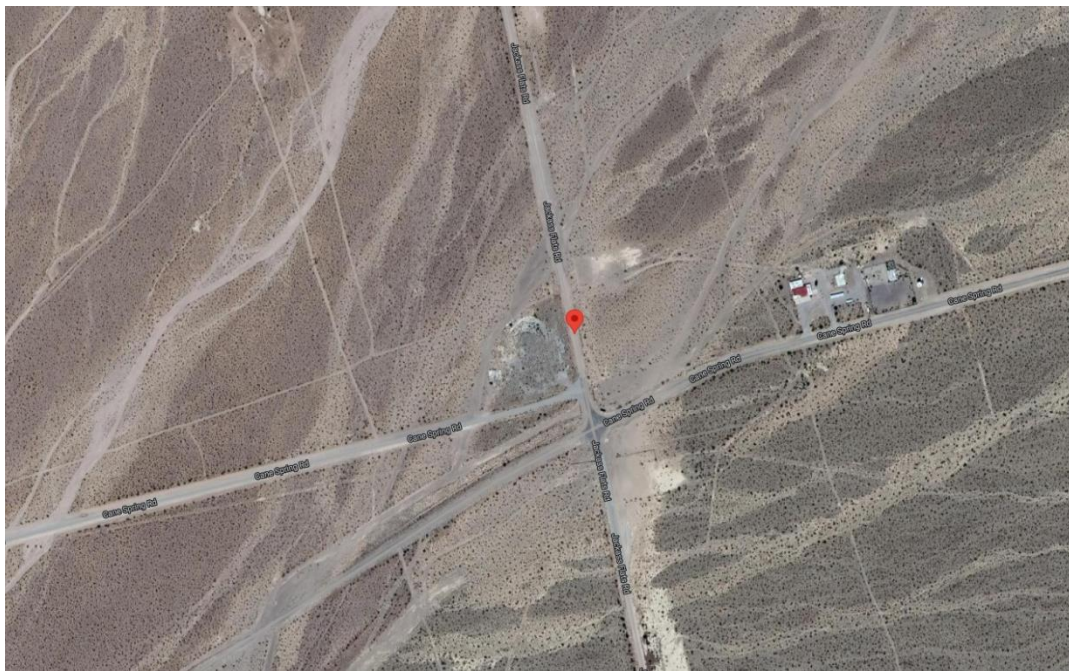
3) Location of Test Site:

After completing a careful site selection process, Anduril proposes to conduct experimental testing in Shoshone, California (35.9912064° N, 116.3255472° W) and will transmit north of Shoshone into the Nevada National Security Site (36.7895462° N, 116.2671059° W). Both locations have little to no population density. As a result, Anduril’s operations will not cause harmful interference to any other neighboring operations or individuals.

See image of Shoshone, California site below.



See image of Nevada National Security Site below.



4) Frequencies Desired:

Anduril seeks authority to operate on a subset of frequencies listed in Form 442 and reproduced in Attachment A.

Anduril acknowledges that it must operate on a secondary, non-interference basis and that the selection of different frequencies may be necessary to avoid the potential for interference. If, during testing, Anduril determines that there is a potential to cause interference by using a frequency within the bands listed in the Attachment A, it will operate on another frequency, provided such frequency is not within the restricted frequencies set forth in 47 C.F.R. § 15.205.

Anduril also recognizes that its proposed experimentation will require coordination not only with the Interdepartment Radio Advisory Committee (“IRAC”) of the National Telecommunications and Information Administration (“NTIA”), but also with existing non-Federal government licensees authorized on the requested frequencies. Anduril will fully coordinate and operate on a non-interference, non-protected basis with anyone affected or reasonably likely to be affected.

5) Power Levels:

Anduril will operate with the minimum necessary power to conduct its research and evaluations, but it will not exceed the power levels specified in the application and in Attachment A.

6) Type of Emission, Modulation Technique, and Bandwidth Required:

Operations will be conducted primarily with the emissions and modulation techniques specified in the application and in Attachment A. If other emission modes and modulation techniques are utilized, in no event will the emissions extend beyond the frequency bandwidths or bands requested.

Anduril does not propose to supply station identification as set forth in 47 C.F.R. § 5.115.

7) Equipment and Duty Cycle to Be Used:

Anduril proposes to deploy not more than a total of one (1) temporary fixed base station units during the experimentation. Anduril proposes to operate the StreamCaster 4200EP (for communication between the unmanned aircraft system and a video transceiver).

The testing to be conducted under the requested authority will be generally intermittent. Testing of the StreamCaster will not be continuous and will occur for a period of 10 hours or less during any 24-hour period.

8) Antenna Information and Compliance with Human Exposure Limits:

Anduril clarifies the antenna information in Form 442, as follows.

Shoshone, California – Directional Antenna

The antenna is mounted to a transmitter that will be transmitting at a fixed location in Shoshone, California. This antenna will not extend more than six meters above ground.

Width of beam in degrees at the half-power point: 20 degrees

Orientation in horizontal plane (degrees from True North): 3.42 degrees

Orientation in vertical plane (degrees from horizontal): 0.93 degrees

Nevada National Security Site – Omni-Directional Antenna

The antenna at the Nevada National Security Site is mounted to a mobile unmanned aircraft system that will be transmitting while in flight. The antenna is omni-directional and can provide 360-degree coverage. This antenna will extend more than six meters above the ground because it will be transmitting while in flight at approximately 1,219 meters above ground level.



Anduril will comply with all Federal Aviation Administration (“FAA”) and FCC rules and regulations regarding the installation and operation of antennas and their support structures. All power levels will comply with the limits set forth in the FCC’s rules, including those relating to human exposure to radiation. In addition, all personnel who will operate the equipment are knowledgeable as to the effects of radiofrequency energy and will have the ability to control their exposure.

9) Restrictions on Operation:

Anduril understands that other stations may be licensed on the channels it has requested and that, if any interference occurs, it may be required to discontinue its operations immediately. Anduril does not expect such interference to occur, however, as its tests will be conducted only on a limited basis as described above in remote rural areas. Further, the mountain ranges of Skull Mountain provide additional shielding at the Nevada National Security Site.

Anduril also recognizes that permission to operate under FCC experimental authority confers no long-term rights and is subject to the condition that Anduril not cause harmful interference.

Moreover, Anduril does not propose to market, sell, or lease unapproved equipment to end users or conduct a market study in conjunction with this test. After the completion of the tests, Anduril will recall and recover all devices that do not comply with FCC regulations. If any different treatment becomes necessary during its experimentation, Anduril will seek separate and additional authority from the agency.

10) Interference Protection/Stop Buzzer Contact Information:

As noted above, Anduril recognizes that the operation of any equipment under experimental authority must not cause harmful interference to authorized facilities and that this application may need to be coordinated by the FCC with IRAC/NTIA. Should interference occur, Anduril will take immediate steps to resolve the interference, including if necessary, arranging for the discontinuance of operation. Notwithstanding these precautions, Anduril believes that its experimental operations are unlikely to cause interference. It proposes to limit the power and transmitting times of the proposed tests to the minimum necessary to conduct its evaluations and the operations will be limited to temporary fixed locations within a 0.5 kilometer radius of the center coordinates specified in the application.

Anduril advises the FCC that Troy Brown is the technical contact for this request and that he will serve as the “stop buzzer” if operations must be terminated because of any interference concerns. He can be reached by telephone at 949-690-6342 or email at tbrown@anduril.com.

11) Contact Information:

Technical and “Stop Buzzer” Contact:

Troy Brown
Senior RF Systems Engineer
Anduril Industries, Inc.
2722 Michelson Dr, Irvine, CA 92612
Telephone: 949-690-6342; [Email: tbrown@anduril.com](mailto:tbrown@anduril.com)



Attachment A

Proposed Frequencies

As noted in the accompanying “Narrative,” Anduril, in the instant request, seeks authority to operate on a subset of frequencies listed in the table below on a temporary, non-protected, non-interference basis at the remote sites in Shoshone, California and at the Nevada National Security Site.

Anduril acknowledges that it must operate on a secondary, non-interference basis and that the selection of different frequencies may be necessary to avoid the potential for interference. If during testing Anduril determines that there is a potential to cause interference by using one or more of the frequencies listed in Attachment A, it will operate on other channels, provided such channels are not within the restricted frequencies set forth in 47 C.F.R. § 15.205.

Anduril also recognizes that its proposed experimentation may require coordination not only with Interdepartment Radio Advisory Committee of the National Telecommunications and Information Administration, but also with existing non-Federal government licensees authorized on the requested frequencies. Anduril will fully coordinate and operate on a non-interference, non-protected basis with anyone affected or reasonably likely to be affected.

Station Location	Equipment	Frequencies (MHz)	Emission Designators	Modulation Signal	ERP (mean)
Nevada National Security Site	StreamCaster 4200EP	2260-2290	5M64D7W 11M3D7W 22M6D7W	OFDM	15.3 watts
Shoshone, California	StreamCaster 4200EP	2260-2290	5M64D7W 11M3D7W 22M6D7W	OFDM	193 watts