

## 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); and 5.71(a), Anduril Industries, Inc. (“Anduril”) respectfully requests experimental authority so that it may support government contract related testing of a radar signature system. The proposed experiment, frequency bands, and equipment resemble recently granted and renewed experimental authority for call sign WJ2XWP (see file numbers 0269-EX-CM-2020 (application) and 0160-EX-CR-2021 (renewal)).

Specifically, Anduril seeks to conduct tests on a temporary, non-interference, non-protected basis at its remote, rural sites near Capistrano, California and Apple Valley, California, which have the capability to support needed testing while meeting the safeguards designed to prevent potential telecommunications disruptions by virtue of their rural locations. Anduril will fully coordinate and operate on a non-interference, non-protected basis with anyone affected or reasonably likely to be affected.

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. Specifically, Anduril seeks to conduct tests on a temporary basis at its facilities located at remote, rural sites near Capistrano, California and Apple Valley, California, which have the capability to support needed testing while meeting the safeguards designed to prevent potential telecommunications disruptions by virtue of their rural locations.

The experimental authority requested by this application would allow Anduril to support testing (observation, monitoring, and evaluation of a radar signature system within the requested bandwidths) for the duration of the experimental authority. Anduril has requested experimental authority for a term of 24 months (from September 15, 2021 to September 15, 2023) 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 at two facilities in rural areas of Southern California with little to no population density. As a result, Anduril’s operations will not cause harmful interference to any other neighboring operations or individuals.

- Capistrano Test Site (“CTS”) – This 2700 acre property is located in rural Southern California at 33°27'43.3"N 117°33'31.1"W.
- Apple Valley (“AV”) – This 3500 acre property is located in rural Southern California at 34°27'8.514"N, 117°6'21.1031"W.

The operations to be conducted under the requested experimental authority will be limited to a radius of 2 km from the center of these coordinates. From the center of the test range, the distance to the properties’ borders is greater than 2 km. Moreover, higher terrain surrounding the test site would serve to shield these urban areas from the proposed operations. See images below.

#### CTS



AV



**4) Frequencies Desired:**

Anduril seeks authority to operate on a subset of frequencies listed in Form 442 and reproduced here 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. Accordingly, if a particular frequency or set of frequencies in any band Anduril has requested is not available due to Federal government or non-Federal government use, Anduril would be agreeable to a restriction on, or carve out of, that frequency or frequencies as suggested by spectrum coordinators.

**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 unit during the experimentation. Currently, it proposes to operate the PFCR Radar (a radiolocation system that will not be used for radio navigation).

Testing of the PFCR Radar may be continuous during a 24-hour period but will be generally intermittent.

**8) Antenna Information and Compliance with Human Exposure Limits:**

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. The antennas to be deployed under the authority requested will typically not extend more than six meters above ground or more than six meters above a building, but in no case will they extend more than ten meters above ground level.

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 RF 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 a remote rural area that is shielded by surrounding terrain.

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 the course of 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 2 km radius of the center coordinates specified in the application.

Anduril advises the FCC that Sam El-Akkad is the technical contact for this request and that he will serve as the “stop buzzer” in the event that operations must be terminated because of any interference concerns. He can be reached at telephone: 480-242-0980; email: [selakkad@anduril.com](mailto:selakkad@anduril.com).

## 11) Contact Information:

### **Technical and “Stop Buzzer” Contact:**

Sam El-Akkad  
Principal Electrical Engineer  
Anduril Industries, Inc.

2722 Michelson Dr, Irvine, CA 92612  
Telephone: 480-242-0980; Email: [selakkad@anduril.com](mailto:selakkad@anduril.com)



## Attachment A

### Proposed Frequencies

As noted in the accompanying “Narrative,” Anduril, in the instant request, seeking authority to operate on a subset of frequencies listed in the table below on a temporary, non-protected, non-interference basis at its remote, rural test sites near Capistrano, California and Apple Valley, California.

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. Accordingly, if a particular frequency or set of frequencies in any band Anduril has requested is not available due to Federal government or non-Federal government use, Anduril would be agreeable to a restriction on, or carve out of, that frequency or frequencies as suggested by spectrum coordinators.

Equipment	Frequencies (MHz)	Emission Designators	Modulation Technique	Peak output power (watts)
PFCR Radar	9300-9800	10M0Q3N 1M00F1D 4M93Q3N 9M16Q3N	Coded Pulse Radar	1255