

L3Harris, CS-W
Special Temporary Authorization
Date: 06/29/2020
STA Conf. No.: EL547909
STA File No.: 1030-EX-ST-2020
License: ??????

Description of Special Temporary Authorization Request

Application Background:

The purpose of this project is to conduct over the air transmit antenna pattern and EIRP measurements between a turn table mounted directional transmit antenna and fixed receive antenna.

Concept of Operations:

The concept of operation is the classic line of sight measurement from a directional transmit antenna to receive antenna across free space.

For the NGJ-LB experiment the transmit antenna will be located inside an RF transparent dome on a turntable and elevated above the ground approximately 12 feet. A continuous wave signal will be transmitted from the transmit antenna to a receive antenna mounted on a 15 foot mast located 250 feet from the transmit antenna. The turntable will be rotated while the transmit antenna is transmitting, signal strength will be captured at the receive antenna, thus capturing an azimuth antenna pattern. The initial transmit power will start at lower levels and gradually be increased to the maximum power of 500 watts.

NGJ-LB Transmitter, L3Harris

Max Transmit Antenna gain:	+10.0 dBi
3 dB Transmit beamwidth:	30°
Transmitter/exciter output power:	500 watts
EIRP Maximum:	+37dBW, 5000 Watts

Spectrum Requirements:

The transmit antenna will transmit to the receive antenna in several different bands. Each frequency band would have multiple frequencies assigned. The transmitter has the ability to tune in 1MHz steps so any frequencies in the below listed bands could be made to work. The frequency bands would be the following:

- 175MHz – 200MHz (3 frequencies: low, mid, high) [i.e. 175, 182.5, 200 MHz]
- 450MHz – 460 MHz (3 frequencies: low, mid, high) [i.e. 450, 455, 460 MHz]
- 475MHz – 525MHz (3 frequencies: low, mid, high) [i.e. 475, 500, 525 MHz]
- 800MHz – 900MHz (5 frequencies: low, low mid, mid, mid high, high) [i.e. 800, 825, 850, 875, 900 MHz]

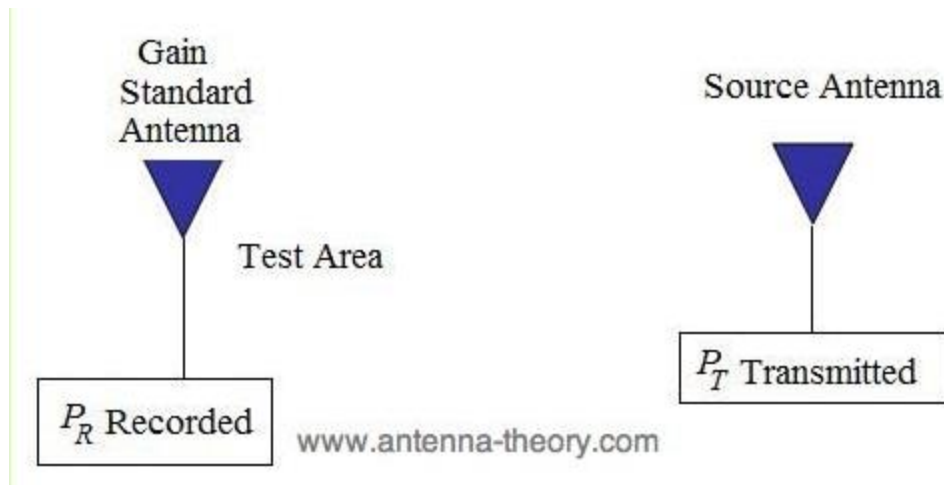


Figure 1 NGJ-LB Concept of Operations

Location of Testing:

All testing will take place at DNB Engineering in Coalville Utah. This facility is located within a canyon approximately 3 miles outside the town of Coalville. It is located in depression created by steep canyon walls and a curve in the road. Between the steep canyon walls and this curve in the road there is 360 degree azimuth blockage.

DNB Engineering
 1100 E Chalk Creek Road
 Coalville, UT 84017

40°55'2.35"N, 111°19'55.48"W

The transmit antenna will be located on a turntable inside a large RF transparent dome. The transmit antenna will transmit a continuous wave signal to a receive antenna mounted on an elevating mast 250 feet away from the transmit antenna. The turntable will be rotated while the transmit antenna is transmitting, signal strength will be captured at the receive antenna, thus capturing an azimuth antenna pattern.

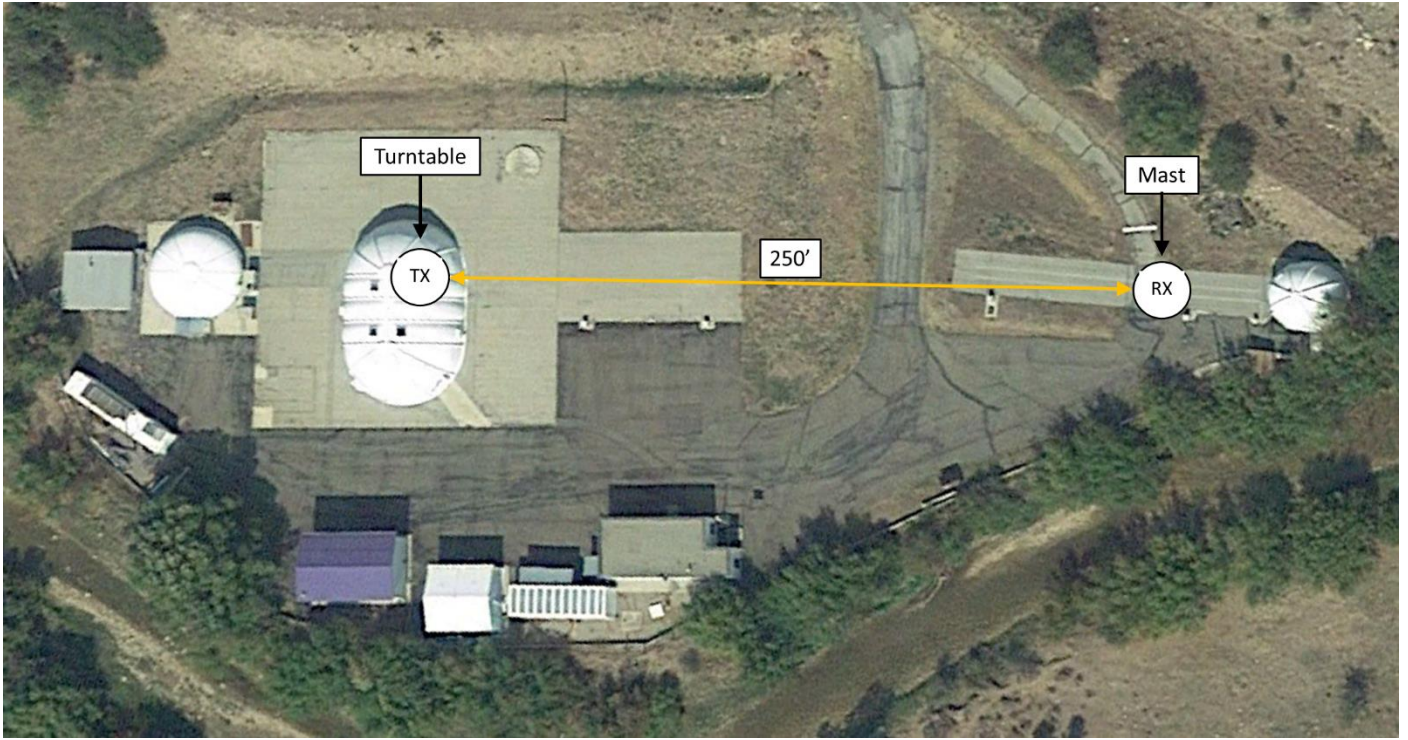


Figure 2 Location of Testing