

L3Harris, CS-W
Special Temporary Authorization
Date: 07/06/2020
STA Conf. No.: EL973140
STA File No.: 1055-EX-ST-2020
License: ??????

Description of Special Temporary Authorization Request

Application Background:

The purpose of this project is to ground test with multipoint data links for application to mobile communications with hotspots for military applications. This application is very similar to Confirmation No. EL745412; STA File No.: 0824-EX-ST-2016; Call Sign WJ9XYK.

Concept of Operations

There will be three (3) test stations operating in a mesh network, each node establishing a link to the other 2 nodes using omni antennas. Max EIRP for each test station will be approximately 40.4 dBm. The test stations are all ground based.

Figure 1 illustrates the concept of operations for mesh network testing where the lightning bolts represent the data links. All testing will include ground-to-ground tests.

The test stations and associated data links are defined below:

- Station #1 will be ground based
- Station #2 will be ground based
- Station #3 will be ground based

Spectrum Requirements

The data links used will operate in Ku-Band, between 14400-14830 MHz and between 15150-15350 MHz. The radio is an L3Harris product designed for these bands. A variety of data rates will be used, between 50 kbps and 11 Mbps.

The data link is comprised of the Apache MUMT-X Modem, with the Apache MUMT-X RFE (amplifier), and an omni antenna. The data links will operate in Ku-band 14400-14830 MHz or 15150-15350 MHz. The radios are all connected to omni antennas. The waveform used will vary in data rate and is a direct sequence spread spectrum waveform, with a necessary bandwidth of 59 MHz.

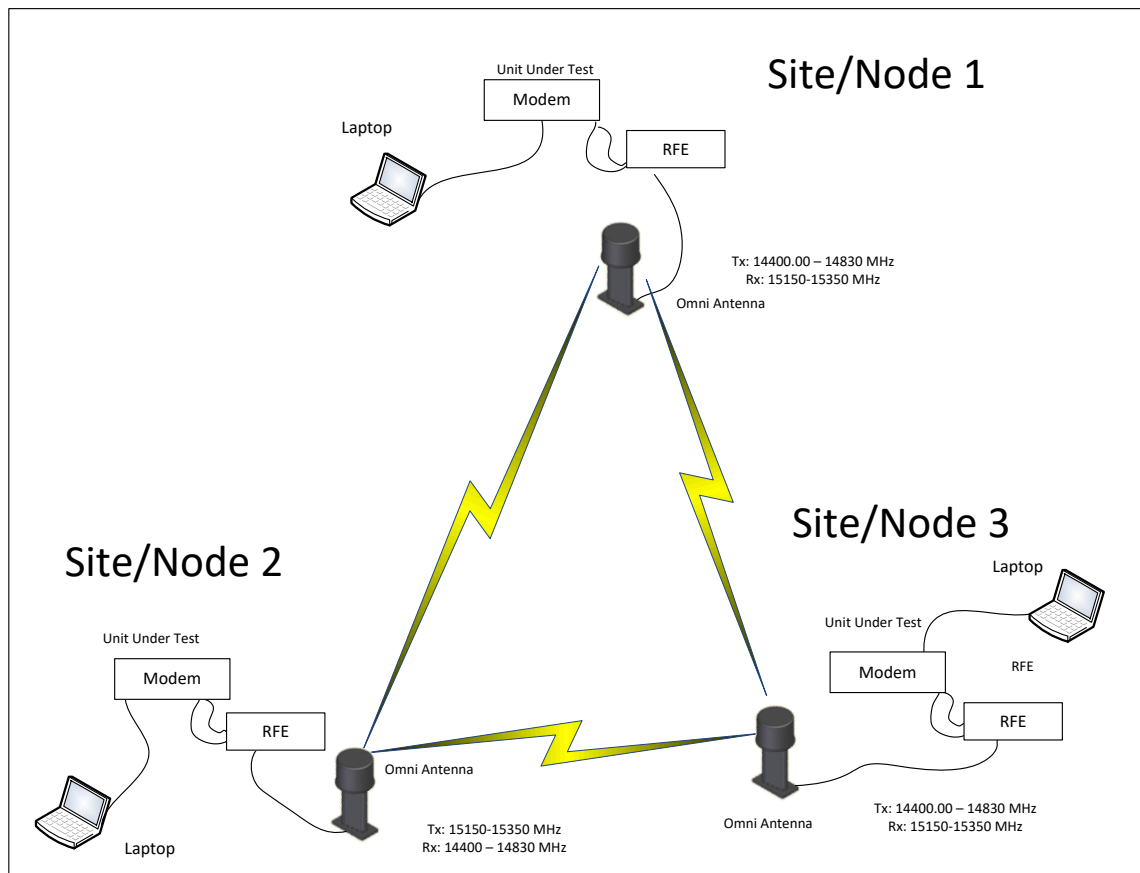


Figure 1: Datalink System Configuration

Ground Testing Summary

Location of Ground Equipment:

The approximate locations of the ground stations are shown in Figure 2.

- Ground station #1, approximate location:
Lat: N 40° 47' 02.69", Long: W 111° 53' 34.29" (Salt Lake City Capital area)
- Ground station #2, approximate location:
Lat: N 40° 47' 02.07", Long: W 111° 57' 04.91" (Bldg E tower on the L-3 CSW campus)
- Ground station #3, approximate location:
Lat: N 40° 46' 52.92", Long: W 111° 57' 01.87" (Bldg X rooftop on the L-3 CSW campus)



Figure 2: Location of Test Equipment