

L-3Harris Technologies, Inc.
Special Temporary Authorization
Date: 29 March 2021
STA File No.: 0466-EX-ST-2021

Application Background:

The purpose of this project is to ground test and experiment with an antenna and modem with SATCOM data links for application to SATCOM communications for military applications.

Concept of Operations:

The concept of operation is the classic SATCOM terminal thru the satellite to another SATCOM terminal. This terminal, Terminal #1 in Figure 1 below, will be used in a government test facility by a contracted, commercial entity transmitting either in loopback or to another terminal, Terminal #2 in Figure 1 below, over a geostationary satellite. The 2nd Terminal, Terminal #2, will be at fixed ground locations currently authorized and being serviced by the satellite(s) being used at various government or commercial ground sites. The Hawkeye terminal will act as a surrogate operational ground site used for test existing and new functionality as well as troubleshooting. X-band and Ka-band satellite services nominally will be over WGS. Ku-band satellite services are anticipated, at this time, to be over commercial satellites.

Spectrum Requirements:

The Terminal for which this STA is requested will utilize the following frequencies:

Transmit	ERP
5.85 – 6.425 GHz	84.10 dBm
7.90 – 8.40 GHz	88.65 dBm
13.75 – 14.5 GHz	91.65 dBm
28.0 – 31.0 GHz	79.45 dBm
30.0 – 31.0 GHz	97.35 dBm

Specific frequencies within each band will be assigned by the local frequency manager.

Uplink: 5.85 – 6.425 GHz;
 7.90 – 8.40 GHz;
 18.75 – 14.50 GHz;
 28.31 – 31.0 GHz
 Bandwidth: 72.183 MHz max
 QPSK/8-PSK,
 TPC ½ - TPC 19/20;
 RRC: 0.20



Representative Satellite:
 WGS Satellite

Uplink: 28.5 – 31.0 GHz;
 Bandwidth: 2.66 MHz max
 QPSK,
 LDPC 1/2;
 RRC: 0.33



Terminal #1: Hawkey III
 2.4 m Parabolic Reflector Antenna
 C-band EIRP: 57.3 dBW
 X-band EIRP: 60.8 dBW
 Ku-band EIRP: 63.8 dBW
 Ka-band EIRP: 65.2 dBW (commercial)
 Ka-band EIRP: 69.5 dBW (U.S. Military)

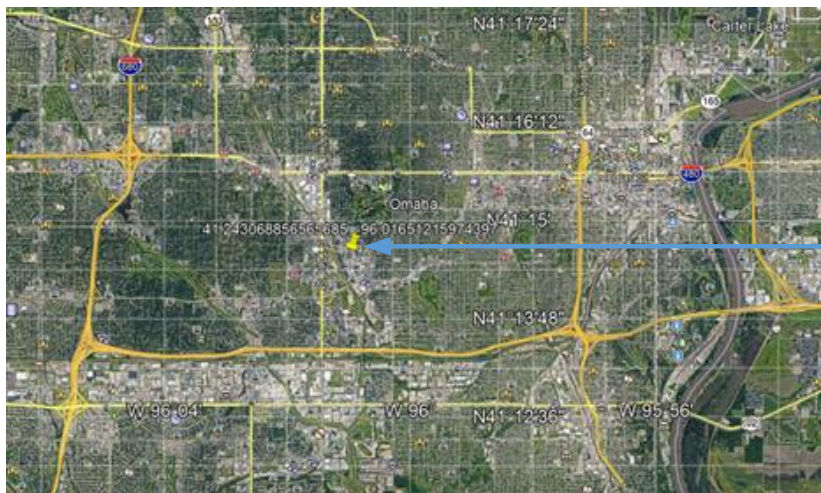


Representative Terminal #2
 DMSC AN/TXC-160
 1.59 m Parabolic Reflector
 Antenna
 50.8 dBi, 60 dBW EIRP

Figure 1 Concept of Operations

Location of Testing:

The Terminal will be fixed at 41 deg 14' 15.05" North 96 deg 0' 59.44" West in Omaha, Nebraska.



Terminal
 41 deg 14' 15.05" North
 96 deg 0' 59.44" West

Figure 2 Location of Testing Terminal