

L3 Technologies, Communication Systems-West  
Special Temporary Authorization  
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**Application Background:**

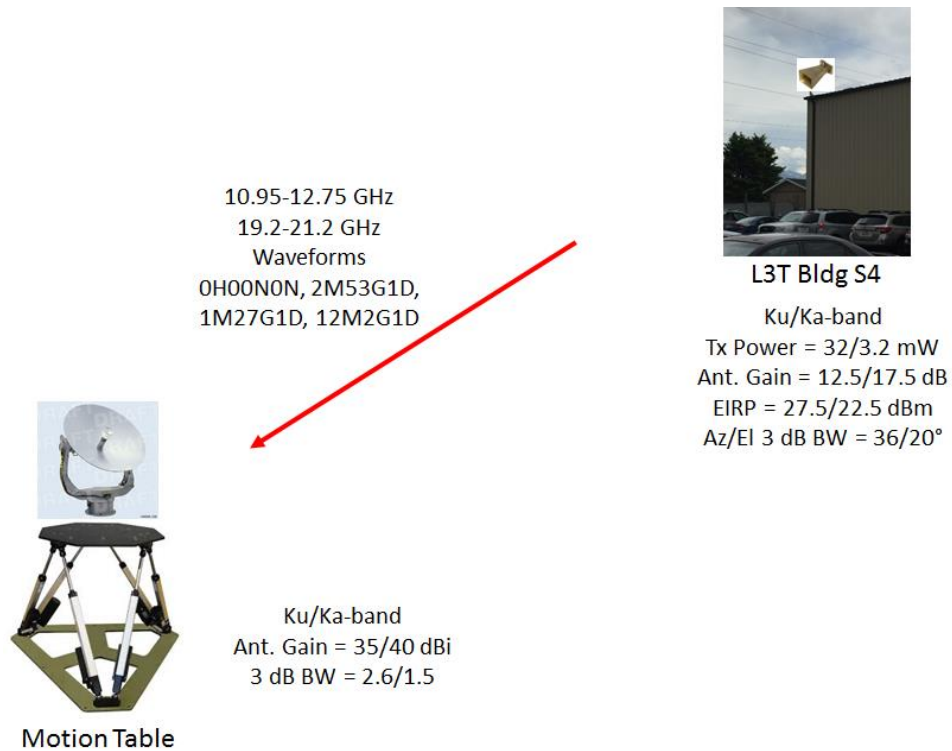
The purpose of this project is to perform antenna pointing and tracking tests while on a motion table moving randomly in 3 axis.

**Concept of Operations:**

The antenna-under-test (AUT) will be mounted to a 3-axis motion table located in a courtyard (40°47'1.07"N 111°57'6.33"W) between L3T buildings E/F with an open side facing eastward. The AUT will be in a receive only mode and pointed towards a horn antenna located on the northeast corner of L3T building S4 (40°46'57.09"N 111°57'1.36"W). The fixed horn antenna will be pointed 5° downward and at a heading of 316.6° to align it with the motion table. The horn antenna power will be minimized to allow tracking but reduce the likelihood for interference. The AUT will then be tested to verify that it automatically compensates for the motion of the table, maintaining its pointing towards the source antenna. Upon successful pointing and tracking tests, modulated waveforms will be exchanged for the CW signal to again verify proper tracking and pointing of the AUT.

**Spectrum Requirements:**

AUT testing can occur anywhere in the band as needed for interference mitigation. The AUT will receive in 10.95-12.75 and 19.2-21.2 GHz bands. The waveforms to be used are CW (0H00N0N), 2M53G1D, 1M27G1D, and 12M2G1D. Testing will occur in the commercial Ku Satcom band (10.95-12.75 GHz), commercial Ka Satcom band (19.2-20.2 GHz), and the military Ka Satcom band (20.2-21.2 GHz)



**Figure 1 Concept of Operations Location of Testing**

The location of the antenna testing is at L3T building E/F courtyard. The transmitting antenna will be located on the north east corner of L3T building S4 pointing directly towards the motion table. See Figure 2 and 3 for test location.



**Figure 2 Test Location L3T Campus**



**Figure 3 Test Location Expanded View**