

This experiment consists of transmitting a narrowband chirp from the MITRE campus softball fields:

- MITRE: Fields  
202 Burlington Rd.  
Bedford Ma. 01730  
North 42 30 14 West 71 14 5

Towards a receive location on top of MITRE building 'E':

- MITRE: Building E  
202 Burlington Rd.  
Bedford Ma. 01730  
North 42 30 19 West 71 14 5

The transmit waveform consists of a 50 MHz wide BPSK/OQPSK modulated experimental waveform with up to 45Mb data rate similar to Common Data Link (CDL) waveforms.

Exhibit 1: Transmit Path

- Map overlay of the range of transmitter locations for the mobile transmitter.  
Note that:
  - o The transmitter will always be aimed at the center of the receive location on top of E-building
  - o The transmitter may be fixed on a tripod or mini-tower up to 10 meters tall
  - o The transmitter may be fixed to a drone at elevation no higher than 31 meters from the ground (FAA approval previously granted)
  - o Minimum and maximum potential pointing angles shown with regard to true north
  - o

Exhibit 2: Zoomed out view of transmit directions outlined in Exhibit 1. Two closest airports shown.

Exhibit 3: Spectral Mask

- This is the shape of the transmit source waveform in the spectral domain shown with the transmit mask for maximum ERP.

Exhibit 4: Antenna beam pattern for various frequencies

- The widest 3dB beamwidth is conveyed in the application: 90 degree (3dB) @ 2.5GHz
- Highest gain of antenna beam is conveyed in link budget for maximum ERP

Exhibit 5: Specification summary for transmit antenna LX-20180-FR