FCC Experimental Authority Request

February 2021

Rob Reis
Higher Ground LLC
Palo Alto, CA 94303

Higher Ground is developing a very small Ku band transceiver [SatPaq 2k] that will communicate to GEO satellites. We would like to do testing from the locations shown below to Intelsat's G3c satellite [95 W).

Test Location #1

NASA Research Park, Mountain View, CA ; 37°, 24, 54.82; -122°, 03, 45; with a radius of 30 miles. The azimuth from Mountain View, CA to the Intelsat satellite at 97 W is 142.4 degrees, and the elevation is 39.3 degrees.

Test Location #2

Centreville, VA; 38° 50 25; -77°, 25, 44; with a radius of 50 miles. The azimuth from Centreville, VA to the Intelsat satellite at 97 W is 209.5 degrees, and the elevation is 40.6 degrees.

Technical Specifications

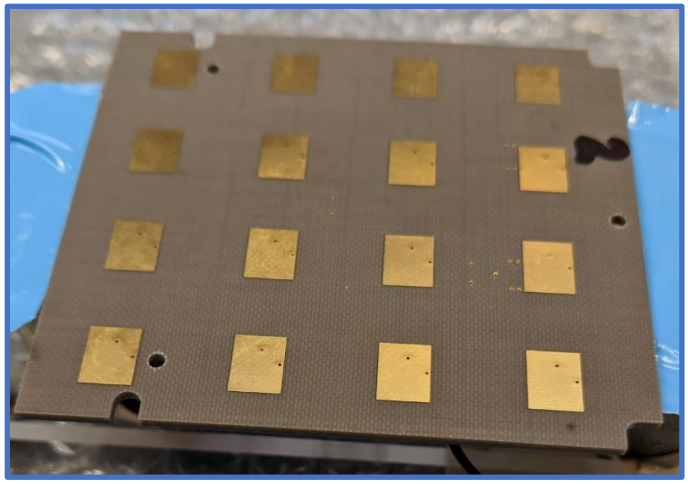
RF Power [max.]	33 dBm max
Frequency	14.000 to 14.500 GHz
Bandwidth	4 MHz
Spread	30 to 33 dB of spreading

Antennas [two types]

[1] 23 dBi Medium horn For Initial testing

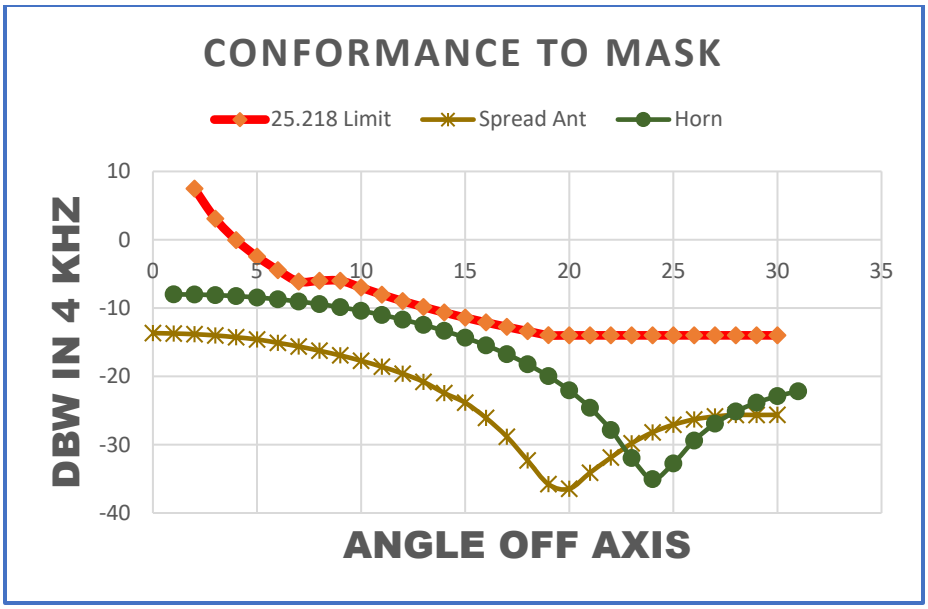
[2] 4x4 patch array 'Our spread antenna'

- 18 dBi gain
- 3 dB frequency bandwidth is 1000 MHz
- 3 dB spatial half angle is 8 degrees
- Vertical polarization
- About 5 square inches



Conformance to the Antenna Mask

Due to the extreme amount of spreading, both antennas will operate below the 25.218 Mask


CONFORMANCE TO MASK
25.218 Limit
Spread Ant
Horn
DBW IN 4 KHZ
10
0
-10
-20
-30
-40
0
5
10
15
20
25
30
35
ANGLE OFF AXIS