Mimosa Networks

Application for Experimental License

to Operate in the 10 GHz Band

Narrative Statement

(1) Name, address, phone number (also e-mail address and facsimile number, if available) of the applicant.

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(2) Description of why an STA is needed.

The FCC is considering Mimosa's proposal to allocate the 10.00 – 10.45 GHz band for terrestrial fixed wireless services in RM-11715. Mimosa seeks to test equipment in that band in order to collect, and then provide to the FCC and other government agencies, real-world information about the utility of that band for fixed services and the ability to use that band on a shared basis with incumbent users, including government radiolocation services. Grant of the license will allow Mimosa to test its technology in the 10.00 – 10.45 GHz band.

(3) Description of the operation to be conducted and its purpose.

The operation will involve field deployment and continued testing of Mimosa Network's new 10 GHz radio technology. The deployment will be a series of short back-to-back point-to-point links, stating from a data center in Santa Clara, CA, relayed at an intermediate building in San Jose in Santa Clara County, CA and then transmitted to another building in Los Gatos in Santa Clara County, CA.

The back-to-back nature of the field deployment will evaluate the spectrum re-use model, achieved through timing synchronization across multiple radios.

(4) Time and dates of proposed operation.

Authorization is requested for three (3) years, from June 6, 2017 to June 6, 2020. Mimosa will notify the Department of Defense at least one week prior to any testing. In the event that interference is reported, Mimosa will immediately cease transmissions.

(5) Class(es) of station (fixed, mobile, fixed and mobile) and call sign of station (if applicable).

The transmitting station will operate in fixed mode.

(6) Description of the location(s) and, if applicable, geographical coordinates of the proposed operation.

The transmitters will be located at:

Private Property #1, Los Gatos, CA: 37° 22' 52.04" / -121° 48' 26.15"
Equinix Data Center, Santa Clara, CA: 37° 22' 41.75" / -121° 57' 17.94"
Private Property #2, San Jose, CA: 37° 13' 31.53" / -121° 59' 15.01"

The links will be as follows:

Private Property #1 to Equinix Data Center: 269 degrees (orientation in the horizontal plane).
Private Property #1 to Private Property #2: 223 degrees

(7) Equipment to be used, including name of manufacturer, model and number of units.

Experimental Equipment:

Mimosa Networks experimental 10 GHz radio. Architecture consists of 5 GHz 802.11ac (WiFi), dual 80 MHz channels, and dual polarizations, with the radio up- converted to 10 GHz using discrete RF circuits.

Other Equipment:

Jirous JRMB-900-10/11: 37 dBi parabolic dish antenna. Beam width at half power: 2.3. Jirous JRMB-650-10/11: 34 dBi parabolic dish antenna. Beam width at half power: 3.4

(7) Frequency(ies) desired.

Transmit and receive: 10.0 – 10.45 GHz

(8) Maximum effective radiated power (ERP) or equivalent isotropically radiated power (EIRP).

Input power will be 0.1 watt; the maximum transmitted EIRP will be 2 kW; maximum ERP will be 33 dBW. [63 dBm EIRP: 20 dBm conducted + 43 dBi antenna gain].

(9) Emission designator(s) (see §2.201 of this chapter) or describe emission (bandwidth, modulation, etc.)

TDD system, time duplex transmit and receive. Dual 80 MHz channels. Both sides of the link will occupy both 80 MHz channels. OFDM Modulation, ranging from BPSK up to 256-QAM rate.
Emission Designator: D7D

(10) Overall height of antenna structure above the ground (if greater than 6 meters above the ground or an existing structure, see part 17 of this Chapter concerning notification to the FAA).

Under 6 m above roof height at Equinix Data Center.
Under 6 m above roof height at Private Property #1
Under 6 m on existing tower at Private Property #2

(11) Frequency Tolerance

0.0000005%