

Kymeta Corporation
Application for STA for Experimental Authority

u8 Antenna/Fixed/40 Watts

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 experimental authorization is needed.

Kymeta is developing a second-generation electronically steerable flat panel antenna technology with improved transmit and receive antenna gain. Kymeta's second-generation technology improves performance and expands use cases. Grant of the STA for experimental authorization will allow Kymeta to test and demonstrate its second-generation technology with Ku-band satellite systems.

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

Kymeta will test and demonstrate its antenna technology from fixed locations in the United States. Kymeta requests authority to operate up to 25 units with any Ku-band GSO satellite that is authorized to operate in the United States. The purpose of the testing is to refine the ability of the assembled RF technology to both transmit and receive a Ku-band digitally modulated transmission. The purpose of the demonstrations is to show the technology to prospective partners and customers.

The parameters are identical for transmission to all of the satellites.

(4) Time and dates of proposed operation.

Kymeta requests an STA for a period of 6 months, commencing August 15, 2019.

(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.

United States

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

Kymeta u8 (experimental Ku-band antenna)

(8) Frequencies desired.

Transmit: 14.0 – 14.50 GHz
Receive: 10.70 – 12.75 GHz

Although communications will be in both directions, the application for an experimental license does not seek authorization to receive in the space-to-earth downlink bands.

(9) Maximum output power and maximum effective radiated power (ERP) or equivalent isotropically radiated power (EIRP).

40 W output power; 50.5 dBW (68.74 kW) EIRP; 48.35 dBW (112.74 kW) ERP

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

Transmit: 100KG7W to 50M0G7W (channel bandwidth: 100 kHz to 50 MHz)

(11) 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).

The overall height of the antenna above ground level (or roof top level) will not exceed 6 meters.

(12) Additional Technical Information

Size of the antenna: 82 centimeters diameter (circular antenna)
Width of beam of transmit antenna in degrees at half-power point: 1.50
Width of beam of receive antenna in degrees at half-power point: 2.00
Satellite coverage: narrow beam (NB) and earth coverage (EC)
Transmit antenna gain: 34.5 dBi
Receive antenna gain: 35.5 dBi

The antenna will transmit and receive in linear polarization.
Frequency tolerance: 0.001%.

Transmit antenna azimuth: Various. The application seeks authority for the earth terminals to operate anywhere in the U.S. Thus, the azimuth will vary.
Elevation of transmit antenna MSL (in meters): Various. It will depend on the location of the earth terminal.
Elevation of transmit antenna AGL (in meters): Various. It will depend on the location of the earth terminal.

Stop buzzer POC:

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(13) RF Radiation Study

The purpose of the STA is to test the antenna in a real-world environment and to refine the technology. After the testing is complete, Kymeta will complete an RF study on a production prototype antenna. Kymeta notes that the terminal will only be tested in a fixed mode, and only in areas that can be secured from access by the general public.

(14) Points of Communication

Authorized GSO Ku-band satellites. On February 8, 2019, Kymeta provided a list of each of the satellites in response to reference number 45817. Kymeta does not seek authority to communicate with any NGSO satellite system.

(15) Certification re: Coordination

Kymeta certifies that its proposed operations are in compliance with all existing coordination agreements between the proposed satellite operators and other GSO and NGSO networks.