

O3b Networks
Application for Experimental License to Operate Earth Stations Manufactured by Orbit on Board a Maritime Vessel

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 experimental license is needed

O3b is a satellite startup with a unique non-geostationary satellite system¹ that orbits the earth in a medium earth orbit 8,062 km above the earth. The system uses high powered spot beams to transmit between earth station terminals and O3b's satellites. Because O3b's system architecture differs from that of other satellite operators, O3b and potential customers are in the process of determining which applications the system may be able to support.

One of O3b's current maritime customers is interested in using multiple stationary O3b spot beams to provide seamless connectivity to several ships operating within the Caribbean region. The benefit of this concept of operations is that the customer would be able to provide service to more ships with fewer beams by using the available bandwidth more efficiently. O3b and its customer need to test this service scheme prior to putting it into commercial operation. O3b seeks temporary experimental authority to test how its maritime terminals operate under this arrangement and to identify and troubleshoot any issues that may arise.

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

O3b will install two antennas on board one of its customer's ships. The ship will disembark and proceed along its normal commercial route. As the ship moves along its itinerary, it will enter and exit O3b spots beams that are already deployed along the route. O3b and its customer will evaluate how the O3b maritime terminals respond to this new service delivery method and troubleshoot any complications that may arise. The O3b terminals and service will not be used to provide connectivity to passengers aboard the ship at any time during this test.

¹ The FCC has granted market access to the O3b 12 satellite constellation. See O3b Limited, Call Sign S2935, File No. SAT-LOI-20141029-00118 (granted Jan. 22, 2015).

(4) Time and dates of proposed operation

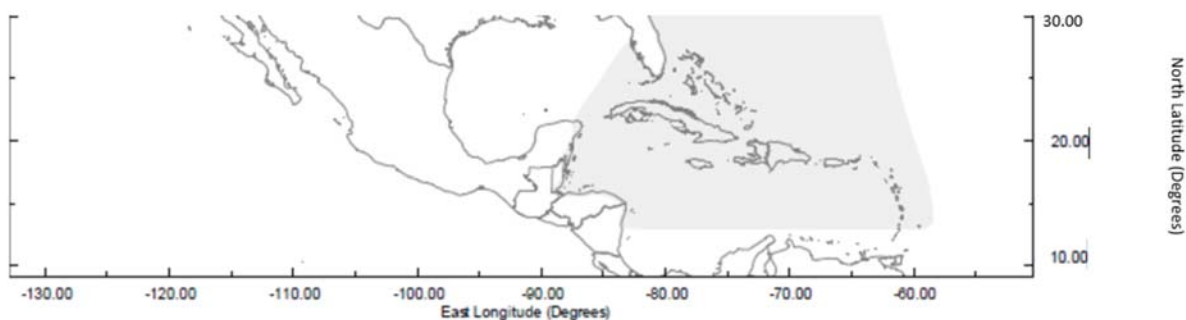
O3b requests temporary authority for 6 months, from August 15, 2015 to February 15, 2016. O3b will notify ViaSat, Inc., Hughes/EchoStar, Inmarsat, SES and any other U.S. authorized co-channel Ka-band satellite operators at least one week prior to any transmit testing, and provide emergency contact information. In the event that there is harmful interference, O3b will immediately cease transmissions. In addition, when the earth stations will transmit in spectrum bands shared with terrestrial operators, O3b will complete frequency coordination prior to testing.

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

The transmitting stations will operate in fixed mode.

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

The ship's itinerary during the testing will include visits to Port Canaveral in Florida, as well as stops at a number of Caribbean islands, travelling as far east as Phillipsburg, St. Maarten, as far south as Falmouth, Jamaica and as far west as Cozumel, Mexico. Please see below for a graphical representation of the area of operation.



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

Orbit AL-7103-Ka 1.2 meter, 5 units

Orbit AL-7107-Ka 2.2 meter, 5 units

Please note that each earth station terminal unit will include two (2) active technically identical antennas and one inactive spare.

(8) Frequencies desired.

Transmit:

27.6 – 28.4 GHz

28.6 – 29.1 GHz

Receive:

17.8 – 18.6 GHz

18.8 – 19.3 GHz

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

The maximum transmitted ERP will be:

Orbit 1.2m	63.5 dBW
Orbit 2.2m	69.5 dBW

For all operations, O3b will comply with the radiofrequency radiation exposure limits in 47 C.F.R. 1.1310 and apply the measures recommended in the FCC's OET Bulletin 65 to ensure compliance.

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

1M00G7D to 216MG7D

(11) Overall height of antenna 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 antennas above existing structures will not exceed 6 meters.

Exhibit 1: Directional Antenna Information

	Orbit 1.2m	Orbit 2.2m
Is a directional antenna (other than radar) used?	Yes	Yes
Width of the beam in degrees at the half power point	0.93° @ 18 GHz 0.60° @ 28 GHz	0.51° @ 18 GHz 0.33° @ 28 GHz
Orientation in horizontal plane (degrees)	TX = RHCP/LHCP RX = RHCP/LHCP	TX = RHCP/LHCP RX = RHCP/LHCP
Orientation in vertical plane (degrees)	TX = RHCP/LHCP RX = RHCP/LHCP	TX = RHCP/LHCP RX = RHCP/LHCP