

Behnam Ghaffari

From: Joseph A. Godles <JGodles@g2w2.com>
Sent: Friday, August 19, 2016 10:41 AM
To: Behnam Ghaffari
Cc: Michael Lehmkuhl; Thomas S. Tycz
Subject: RE: FCC File No. 0540-EX-PL-2016 Reference No. 22456

Ben,

See below for our answers. Should we upload these answers to the OET file as well?

Joe

Please provide the following information with respect to the satellite(s):

1. Receive antenna gain. There are three rings of L-band beams. We selected the beam in each ring that has the highest gain. The highest gain for the first ring is 19.739 dBi. The highest gain for the second ring is 21.022 dBi. The highest gain for the third ring is 23.612 dBi. These same values apply to the transmit beams.
2. Beamwidth of the receive antenna at the half power points. The beam patterns are not symmetrical, so we derived the maximum beamwidths of the receive antenna at the half power points based on the widest parts of the 2 dB and 4 dB beam contours for the three highest-gain beams identified in the response above to question #1. The 3dB beamwidth for the beam in the first ring is 27°. The 3dB beamwidth for the beam in the second ring is 25°. The 3dB beamwidth for the beam in the third ring is 16°.

Please provide the following information with respect the transceiver ground-station antenna(s):

1. Transmit antenna gain (dbi). The transmit antenna gain for the high gain antenna, which is directional, varies with the elevation angle and ranges from 40.4 dBi at elevation angles of 10° or less to 41.2 dBi at an elevation angle of 90°. The transmit antenna gain for the low gain antenna, which is omnidirectional, is 3 dBi.
2. Beamwidth of transmit antenna at the half-power points. For the high gain antenna, the typical beamwidth of the transmit antenna at the half-power points is 40°. Please note that the 40°-figure is a correction from the 60°-figure that was used in the application. For the low gain antenna, the typical beamwidth of the transmit antenna is omnidirectional from 8.2° above the horizon to zenith.
3. Elevation of transmit antenna MSL (in meters). Iridium has requested authority for three locations: its satellite network operations center ("SNOC"), its headquarters ("HQ"), and its Arizona teleport ("Arizona"). The elevation of the transmit antenna above mean sea level at these locations is 91.75 meters at the SNOC, 168.44 meters at HQ, and 366.73 meters at Arizona.
4. Elevation of transmit antenna AGL (in meters): The elevation of the transmit antenna above ground level at the three locations is 9.75 meters at the SNOC, 93.44 meters at HQ, and 9.73 meters at Arizona.

From: Behnam Ghaffari [mailto:Behnam.Ghaffari@fcc.gov]
Sent: Tuesday, August 09, 2016 9:52 AM
To: Michael Lehmkuhl
Cc: Joseph A. Godles
Subject: RE: FCC File No. 0540-EX-PL-2016 Reference No. 22456

Michael,

We'll need to submit the following parameters to NTIA for coordination.

Please provide the following information with respect to the satellite(s):

1. Receive antenna gain
2. Beamwidth of the receive antenna at the half power points

Please provide the following information with respect the transceiver ground-station antenna(s):

1. Transmit antenna gain (dbi)
2. Beamwidth of transmit antenna at the half-power points
3. Elevation of transmit antenna MSL (in meters)
4. Elevation of transmit antenna AGL (in meters)

Ben Ghaffari
Electronics Engineer
Experimental Licensing Branch
Office of Engineering and Technology
Federal Communications Commission

From: Michael Lehmkuhl [<mailto:MLehmkuhl@g2w2.com>]
Sent: Monday, August 08, 2016 4:51 PM
To: Behnam Ghaffari <Behnam.Ghaffari@fcc.gov>
Cc: Joseph A. Godles <JGodles@g2w2.com>
Subject: FCC File No. 0540-EX-PL-2016 Reference No. 22456

Ben,
Joe Godles asked me to forward to you this response in response to your question regarding the above referenced application.

“There will be two-way communication between Iridium’s fixed ground stations and its non-geostationary space station constellation (call sign S2110) during the testing/demonstrations. Iridium is seeking experimental authority only for the fixed ground stations to transmit to and receive from its space stations. Iridium is not seeking experimental authority for its space stations to transmit to and receive from its ground stations, which will occur under the authority of Iridium’s Part 25 license for its space station constellation.”

Please let me know if you have any questions.
Regards,

Michael Lehmkuhl
Goldberg, Godles, Wiener & Wright LLP

To: Joseph A. Godles
E-Mail: jgodles@g2w2.com
From: Behnam Ghaffari
Date: August 08, 2016
Subject: FCC File No. 0540-EX-PL-2016

Message:

Will there be 2-way communication between the fixed ground stations and the non-geo satellite(s) during testing/demo? If yes, please provide the name.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of August 08, 2016 may result in application dismissal pursuant to Section 5.67 and forfeiture of the filing fee pursuant to Section 1.1108.

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Responses to this correspondence must contain the Reference number : 33456