



April 4, 2019

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Swarm Technologies' FCC Part 5 Application File No. 0943-EX-CN-2018

Dear Ms. Dortch:

Swarm Technologies would like to confirm that it has an agreement with Orbcomm for non-protected, non-interference use of one 20 kHz uplink channel to be operated within the range of 148.30 - 148.42 MHz with peak ERP power of 11.5 watts using emission designator 20K8F1D, and use of one 20 kHz downlink channel to be operated within the range of 137.88 - 138 MHz with peak ERP power of 0.91 watts using emission designator 20K8F1D. (See attached email from Orbcomm.)

Swarm continues to note that one carrier is not sufficient to conduct the desired experiments necessary to test Swarm's satellite and ground network, and will continue to negotiate for an agreement consenting to Swarm's operation of up to four carriers within each of the frequency ranges, as requested in its application.

To the extent that you have questions or concerns, please feel free to contact the undersigned.

Sincerely,

Kalpak Gude
General Counsel, Head of Regulatory, and Compliance Officer
Swarm Technologies

+1-202-630-3848
kalpak@swarm.space

ATTACHMENT

From: Walter Sonnenfeldt <Sonnenfeldt.Walter@orbcomm.com>
Date: March 21, 2019 at 4:51:46 PM EDT
To: Kalpak Gude <kalpak@swarm.space>
Cc: "Anthony Serafini (anthony.serafini@fcc.gov)" <anthony.serafini@fcc.gov>,
"douglas.young@fcc.gov" <douglas.young@fcc.gov>, Jose Albuquerque <Jose.Albuquerque@fcc.gov>,
Karl Kensinger <Karl.Kensinger@fcc.gov>, Sara Spangelo <sara@swarm-technologies.com>
Subject: ORBCOMM Response - FCC Part 5 Application File No. 0943-EX-CN-2018

TO: Kalpak Gude, General Counsel, Swarm Technologies, Inc.

Mr. Gude:

Please send a reply E-Mail to sonnenfeldt.walter@orbcomm.com to confirm that you have received this message.

This is in response to the request of Swarm Technologies, Inc. ("Swarm") for ORBCOMM's consent to the proposed experimental use of VHF-Band spectrum as specifically set forth in Swarm's pending FCC Experimental License Application File No. 0943-EX-CN-2018, FCC Call Sign WJ2XXG (the "Application").

Although the exhibits to the Application are heavily redacted, from the available unredacted information in the Application, ORBCOMM understands that the Application proposes a maximum two (2) year duration program of FCC Rule Part 5 experimentation comprised of:

- **Launch and operation of two (2) non-geostationary experimental spacecraft;**
- **Installation and operation of three (3) associated experimental fixed earth stations at specific locations in California, Georgia, and Utah;**
- **Part 5 non-protected non-interference use of ONE (1) 20 kHz bandwidth uplink channel to be operated within the range of 148.30 – 148.42 MHz with peak ERP power of 11.5 watts, and use of ONE (1) 20 kHz bandwidth downlink channel to be operated within the range of 137.88 - 138 MHz, with peak ERP power of 0.91 watts.**

As represented in the Application and Swarm's associated correspondence with us, ORBCOMM understands that the program of experimentation proposed in the

Application will be conducted in full accordance with the technical parameters specified in the redacted public version of the Application, and of course, in full accordance with all applicable FCC Rules and policies, including but not limited to, Part 5 of the FCC Rules, and the out of band and spurious emissions limits set forth in Part 25 of the FCC Rules.

Based on the information stated above, subject to the following conditions, ORBCOMM has no objection to grant of the Application:

- **ORBCOMM's consent provided herein is for ONE (1) maximum two (2) year Part 5 Experimental license term in connection with the Application, NOT any renewal or modification license;**
- **Swarm must conduct its proposed program of experimentation on a non-protected non-interference basis, and otherwise in full accordance with Parts 2, 5, 25, and all other applicable provisions of the Commission's Rules;**
- **Swarm must designate a point of contact available on a 24-hour-per-day 7-day-per-week basis that ORBCOMM can contact to resolve any interference received by ORBCOMM that can be attributed at ORBCOMM's sole discretion to Swarm Part 5 operations**
- **ORBCOMM'S CONSENT HEREIN TO TEMPORARY FCC PART 5 EXPERIMENTAL USE OF SPECTRUM AS PROPOSED IN THE APPLICATION SHALL IN NO WAY BE CONSTRUED AS ORBCOMM'S CONSENT TO COORDINATION OF SHARED USE OF SPECTRUM UNDER:**
 - **any other FCC Experimental license (N.B., FOR AVOIDANCE OF ANY DOUBT, DESPITE SUBMISSIONS BY SWARM IN THE RECORD OF OTHER CURRENTLY PENDING SWARM PART 5 APPLICATIONS APPEARING TO IMPLY OTHERWISE, ORBCOMM HAS NOT CONSENTED TO ANY OTHER CURRENTLY PENDING SWARM FCC PART 5 LICENSE APPLICATION);**
 - **Swarm's pending FCC Part 25 NVNG MSS space segment license application (File No. SAT-LOA-20181221-00094 – which raises various material questions and concerns that are being addressed in separate Commission proceedings relating to that application); or**
 - **any other regulatory regime, including but not limited to, any other authorization of spectrum use under Part 25 of the Commission's Rules, international coordination of spectrum by the United States, or use of spectrum under any form of authorization in any country other than the United States**
- **ORBCOMM's consent to temporary FCC Part 5 experimental use of any spectrum by Swarm is also specifically conditioned upon the spacecraft Swarm launches under any FCC Part 5 license not being used for commercial operations of any kind at any time, by any party, in any location in the world.**

Should ORBCOMM become aware that any of the above-stated conditions of its consent are not abided by or that any program of FCC Part 5 experimentation or other activity conducted by Swarm is otherwise not in accordance with the Commission's Rules, ORBCOMM reserves the right to revoke its consent to the Application, and pursue whatever measures are necessary to resolve any such matters.

ORBCOMM has no other comments or objections to the Application at this time.

Very truly yours,

Walter Sonnenfeldt

Vice President, Regulatory Affairs

ORBCOMM Inc.

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