

NARRATIVE STATEMENT

SatCom Direct, Inc. (“SatCom”) requests an Experimental FCC license consistent with 47 CFR Part 5 for the purpose of product development and testing of an airborne GSM picocell operating in the GSM 1800 band.¹ Associated with the GSM 1800 voice communications, authorization for emissions in other cellular bands of low level band-limited noise is also required to prevent reception of ground based cellular base stations by mobile handsets used in the proposed experimental operations.

Background

SatCom seeks an experimental license to perform lab testing at its Melbourne, Florida lab simulating an airborne GSM picocell and also to conduct product demonstrations at the same location to evaluate acceptability to potential customers.² GSM picocells are not authorized in US airspace. However, GSM picocells on board aircraft in high altitude flight – operating at 10,000 feet or higher – have been authorized by the European Conference of Postal and Telecommunications Administration (“CEPT”) ECC Decision 06(07)³ as well as other national telecommunications bodies in the GSM 1800 band. TrueNorth Avionics manufactures aircraft telecommunications systems that utilize various satellite communications links, including from Inmarsat, Viasat, and Iridium.⁴ In 2016 SatCom acquired TrueNorth Avionics which operated GSM picocells pursuant to Experimental Authorizations at its former New Jersey lab.⁵ SatCom now seeks to perform similar experimental operations in Florida.

GSM Picocell System Details

The TrueNorth Avionics GSM picocell is comprised of two major components:

- 1) Base Transceiver Station (“BTS”): The GSM BTS will operate in the GSM 1800 band, and will transmit in the 1805-1880 MHz frequency band and receive in the 1710-1785

¹ 47 C.F.R. § 5.54(a)(1).

² 47 CFR 5.3(h).

³ CEPT Electronic Communications Committee, ECC Decision of 18 November 2016 on the harmonised use of airborne GSM and LTE systems in the frequency bands 1710-1785 MHz and 1805-1880 MHz, and airborne UMTS systems in the frequency bands 1920-1980 MHz and 2110-2170 MHz, Approved 1 December 2006, Amended 18 November 2016, Updated 30 June 2017.

⁴ In 2016, SatCom Direct acquired TrueNorth Avionics.

⁵ TrueNorth Avionics, ELS File No. 0039-EX-PL-2015 (granted Apr. 17, 2014); TrueNorth Avionics, ELS File No. 0167-EX-RR-2016 (granted Mar. 16, 2016).

MHz frequency band. The mobile handsets associated with the BTS will transmit in the 1710-1785 MHz band and receive in the 1805-1880 MHz band. The handsets will be controlled by the BTS to a power level of 1 mW (0 dBm).

- 2) Network Control Unit (“NCU”): The NCU transmits a low level of band-limited white noise in the cellular bands that could be received by an airborne mobile handset if the system is deployed in aircraft. The purpose of the NCU is to raise the noise floor of any mobile handsets on board the aircraft to prevent the handsets from receiving transmissions from ground based cellular base stations. This prevents the mobile handset from attempting to associate with the ground networks and prevents the mobile handset from generating any emissions higher than 1 mW (0 dBm) which will prevent any interference with onboard aircraft systems. The NCU transmission is only enabled above 10,000 feet when in use in the aircraft, and transmits in the following bands by consulting a geographical database of cellular frequencies in use: 460-470 MHz, 921-960 MHz, 1805-1880 MHz, 2110-2170 MHz, 2500-2690 MHz. The NCU transmits white noise only in the aforementioned bands at a level no greater than the 0 dBm/band (1 mW).

Operational Information

SatCom anticipates that most development and testing activities will be conducted with RF dummy loads on the BTS and NCU, with no RF transmissions. However, testing with actual mobile handsets will be needed to test system performance, and occasional demonstrations conducted for visiting customers. In all cases the minimum transmit power needed to establish communications within the laboratory environment will be used. Additionally, the BTS will appear to any mobile handsets in the vicinity as a roaming carrier, and only test mobile handsets that have been enabled to roam onto the test network in the lab environment will connect to the BTS. Other mobile handsets outside the lab environment will not communicate with the BTS. In other words, mobile handsets that are not part of the experiment will not be adversely affected.

Non-Interference Basis

SatCom is aware that its operations pursuant to an experimental license must be conducted on a non-interference basis.⁶ Consistent with conditions imposed under the previous experimental authorizations, SatCom will seek consents from the affected Advanced Wireless Service licensees prior to accessing the 1710-1785 MHz and 2110-2170 MHz bands and consents from the affected Educational Broadcast Service/Broadcast Radio Service licensees prior to operation in the 2500-2690 MHz band. SatCom will accept any harmful interference received from the operations of authorized stations and will ensure that authorized stations do not receive harmful interference from SatCom’s operations. Should any harmful interference occur, SatCom

⁶ 47 C.F.R. § 5.84.

recognizes that it is responsible for mitigating the interference, including ceasing operations if necessary.⁷

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⁷ Consistent with conditions placed on the experimental authorizations issued to True North Avionics, SatCom will obtain the consent of PCS licenses in the immediate area of the testing.