Panasonic Avionics Corporation
Experimental Special Temporary Authorization ("STA")
eXPhone Testing at:
Grant County International Airport, Moses Lake, WA

EXPERIMENTAL SPECIAL TEMPORARY AUTHORIZATION APPLICATION

Pursuant to Section 5.61 of the rules of the Federal Communications Commission ("FCC"), 47 C.F.R. § 5.61, Panasonic Avionics Corporation ("Panasonic") respectfully requests experimental special temporary authorization ("STA") for a period of six (6) months, commencing on May 20th, 2021, or as soon as practicable thereafter, to conduct stationary, ground-based testing of certain components of Panasonic's eXPhone system, which provides in-flight connectivity for mobile devices onboard aircraft. Authorization is sought to conduct limited testing of eXPhone picocell functionality in the 2110-2170 MHz band at the Grant County International Airport in Moses Lake, Washington. Grant of this STA request will serve the public interest by allowing Panasonic to further test and develop the 3G capabilities of its eXPhone system for wide-scale commercialization.

I. Background

The experimental operations proposed in this application are fully consistent with Panasonic's existing two-year experimental license to conduct airworthiness testing at over 20 commercial airports under Call Sign WH2XCJ,[1] including the authority to transmit in the 2110-2170 MHz band at multiple locations with no reported cases of interference. Moreover, the operations proposed herein are identical to Panasonic's experimental STA operations for eXPhone testing that was granted March 9, 2020,[2] and will occur in fully controlled environments within aircraft cabins to allow Panasonic and its partners to confirm eXPhone component performance for installation and operation onboard foreign aircraft.

The eXPhone system, designed in conjunction with AeroMobile Limited ("AeroMobile," a wholly-owned subsidiary of Panasonic), enables passengers to use their

[1] *See* Panasonic Avionics Corporation, File No. 0398-EX-CR-2019and subsequent modifications and renewals, Call Sign WH2XCJ ("*Experimental License*").

[2] *See* Panasonic Avionics Corporation, File No. 0357-EX-ST-2020, Call Sign WQ9XEB (expired on June 10, 2020). Panasonic has completed its testing under this STA.

own mobile devices for text, data, and voice communications as if they were roaming internationally. The instant request seeks authority to further examine and gather data on the functionality and performance of the system for 3G mobile communications. This data will be used to inform Panasonic's next-generation implementation strategy for the eXPhone system for use by its foreign airline customers.

II. Description of Test

This STA request seeks authority to test the functionality of the eXPhone picocell (a low-power base transceiver station or "BTS" designed to operate with mobile devices within the aircraft cabin only) in the 2110-2170 MHz band at the following location:

- Grant County International Airport, Moses Lake, Washington
  (geographic coordinates: 47° 11' 20.4" N, 119° 18' 54.8" W)

Specifically, Panasonic only seeks to test the BTS component of the eXPhone system to evaluate the RF connection to mobile devices that would operate in-flight in the 2110-2170 MHz band. In support of this request, Panasonic provides the attached FCC Form 442 for information related to the technical specifics of the proposed testing, including modulation, maximum ERP, emission designator, and frequency tolerance. Panasonic will test using a single 1 MHz test frequency – at 2140 MHz – and, at all times, will conduct operations on an unprotected, non-interference basis, and will immediately cease operations if it learns it is causing interference into licensed operations in the 2110-2170 MHz band.[3]

Panasonic acknowledges that there are certain "Special Conditions" in the *Experimental License* that require coordination with licensees in various frequency bands. Specifically, as is relevant to this application, Panasonic has identified a few Advanced Wireless Service ("AWS") licensees operating in the 2110-2170 MHz band within a one-kilometer radius of its operations at the Grant County International Airport, however, there is *de minimis* potential for interference because Panasonic will use a single 1 MHz test frequency and operate at all times on an unprotected basis (i.e., Panasonic would be the subject of any interference). In any event, given Panasonic's limited testing (*i.e.*, short duration in a fully controlled environment) and low power (*i.e.*, limited to maximum ERP

[3] *See* 47 C.F.R. § 5.84.

of 1.8 watts) in the 2110-2170 MHz band, there is no potential for interference into the local AWS licensees at the proposed Moses Lake location. Testing in the proposed frequency range will be conducted intermittently at scheduled intervals during the periods that the airplanes are available within the authorized testing period.

III. Expedited Processing and Public Interest

Panasonic respectfully requests expedited processing of this application. There is extensive Commission precedent to allow Panasonic to conduct the proposed tests, including the fact Panasonic is currently authorized under the *Experimental License* for broader frequency testing, including for the herein proposed 2110-2170 MHz band. The Commission has previously reviewed and approved identical ground-based testing operations at similarly situated airfield locations across the United States and, being very familiar with Panasonic's testing procedure, may expeditiously grant this application. Applications filed less than 10 days prior to the proposed operation date will be accepted only upon a showing of good cause.[4] Good cause exists here, because, as Panasonic has explained in its previous applications, its access to aircraft is dependent upon the manufacturer, airline or other owner making the airplane available at a time convenient for them. Panasonic has only a short window – in most cases only a few days – once an airplane is available to conduct the testing before the airplane must be returned to the owner.

Grant of the requested authority will serve the public interest by allowing Panasonic to continue development of the 3G-enabled eXPhone system for in-flight mobile connectivity to passengers and crew on international airlines outside the United States. The planned testing will provide important information to Panasonic and its customers regarding the functionality, performance and effect of next-generation eXPhone deployments. In addition, Panasonic has demonstrated that its proposed experimental operations raise no concern regarding potential interference to co-frequency terrestrial mobile services. Of course, Panasonic's operations will be conducted on an unprotected, non-interference basis and will otherwise comply with Part 5 of the FCC rules.

IV. Conclusion

[4] *See* 47 C.F.R. § 5.61(2).

Based on the foregoing, Panasonic respectfully requests that the Commission grant this request for experimental STA for a period of six (6) months to permit Panasonic to test 3G functionality of eXPhone BTS in the 211-2170 MHz band at Grant County International Airport, commencing on May 20th, 2021 or as soon as practicable thereafter.