

**Panasonic Avionics Corporation**  
**Application for 180-Day Experimental Special Temporary Authority**

**NARRATIVE DESCRIPTION**

Panasonic Avionics Corporation (“Panasonic”) requests experimental Special Temporary Authority (“STA”), for a period of 180 days, commencing on or about October 15, 2012, to conduct ground testing in support of Panasonic’s Global Communications Suite (“GCS”) featuring the “eXConnect” Ku-band aeronautical mobile-satellite service (“AMSS”) system to provide broadband connectivity onboard aircraft in flight. It is requested that the experimental authority be granted to conduct the testing onboard parked aircraft at the George Bush Intercontinental Airport in Houston, Texas.

**Background**

On November 2, 2010, the FCC granted a two-year experimental license (Call Sign WF2XLF), effective until November 1, 2012, to conduct two types of testing: (1) electromagnetic interference (“EMI”) ground testing of multiple, simulated transmit portable electronic devices (“T-PEDs”); RF transmissions in the aircraft cabin in multiple frequency bands: GSM, cellular, Wi-Fi and others; and (2) picocell system operations in the aircraft cabin for enabling GSM phone communications for passengers and crew. Call Sign WF2XLF authorizes testing onboard parked aircraft at four sites: (1) Southern California Logistics Airport, Victorville, CA; (2) Paine Field Airport, Everett, WA; (3) Piedmont-Triad International Airport, Greensboro, NC; and (4) TSTC Waco Airport, Waco, TX.<sup>1</sup>

Subsequent to the grant of Call Sign WF2XLF, Panasonic has sought and obtained a series of separate, but related experimental STAs or two-year experimental licensees at additional airfields: (1) Call Sign WE9XMG, granted August 1, 2010, to conduct T-PED EMI testing in certain Wi-Fi bands at the Hartsfield-Jackson International Airport in Atlanta, GA; (2) Call Sign WE9XVM, granted April 18, 2011, to conduct T-PED EMI and picocell testing at the Roswell Industrial Air Center, Roswell, NM; (3) Call Sign WF9XCS, granted September 10, 2011, to conduct T-PED EMI testing in certain Wi-Fi bands at Paine Field Airport, Everett, WA; (4) Call Sign WF9XGL, granted on December 1, 2011, to conduct T-PED EMI testing in multiple frequencies at the Melbourne, FL International Airport; (5) Call Sign WF9XNT, granted on March 20, 2012, to conduct T-PED EMI testing at the Griffis International Airfield in Rome, NY (at the same frequencies as authorized under Call Sign WF9XGL); and (6) Call Sign WG2XEE, granted on May 24, 2012, to conduct T-PED EMI testing in multiple frequencies at five sites: San Francisco International Airport; Denver International Airport; Chicago O’Hare International Airport; as well as the Melbourne, FL International Airport and Griffis

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<sup>1</sup>Prior to the application for and grant of Call Sign WF2XLF, in November 2009, the FCC granted an experimental STA for the same frequencies at these four sites (Call Sign WE9XDS). The application materials for Call Sign WE9XDS included a more detailed description of the proposed T-PED EMI and picocell testing, which Panasonic respectfully requests be incorporated by reference in the instant application.

International Airfield in Rome, NY (at the same frequencies as authorized under WF9XGL and WF9XNT).

In addition, currently pending is an application (ELS File No. 0234-EX-PL-2012) for a two-year experimental license to conduct T-PED EMI testing at two sites: Lake City, Florida and Tampa, Florida. The proposed test frequencies in this pending application are the same as in the previously granted STA for Call Signs WF9XGL and WG2XEE. Finally, also currently pending is an application (ELS File No. 0655-EX-ST-2012) for an STA to conduct the picocell system operational and EMI testing in GSM frequencies at the Melbourne, FL International Airport and Griffiss International Airfield, Rome, NY.

### **Request for Experimental Special Temporary Authorization**

Panasonic is seeking the requested 180-day STA to conduct T-PED EMI ground testing at the George Bush Intercontinental Airport (IAH), Houston, TX 77066 (Geographic Coordinates: 29 59 15 N/ 95 20 01 W). Authority is sought beginning October 15, 2012. In addition, Panasonic has pre-coordinated the 5150-5250 MHz test frequency band at this site with the FAA, which has provided the following non-governmental tracking number: FAA NG T120337.

### **Testing and Frequencies**

Panasonic will conduct T-PED EMI testing in the identified frequencies (see below) using a signal generator to simulate the operation of multiple T-PEDs. Picocell system operations will not be tested and no authorization is sought in the requested experimental STA for this type of testing. The proposed testing will be conducted onboard aircraft parked at remote locations, various Airbus and Boeing Aircraft, including: Airbus 319 and 320; and Boeing 747, 757 and 777.

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. Testing and re-testing in the authorized frequencies will be conducted at scheduled intervals during the periods that the airplanes are available within the authorized testing period.

Consistent with other previous experimental authorizations,, the proposed tests will be performed in accordance with FAA and industry developed guidelines for T-PED operation in airplanes: RTCA/DO-294C – Guidance on Allowing Transmitting Portable Electronic Devices (T-PEDs) on Aircraft.<sup>2</sup>

Table 1 (Attachment 1) lists the proposed test frequency bands. Also listed on the table are the proposed wireless standards and associated technical information for each test band, including: modulation (pulse or continuous wave), maximum EIRP, maximum ERP, and

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<sup>2</sup> A copy of this document is available from RTCA: [www.rtca.org](http://www.rtca.org).

emission designators. A single 1 MHz test frequency in each uplink band, also identified, will be used for testing. The proposed test bands and associated technical information are the same as the proposed test bands in several previously granted experimental authorizations, including Call Sign WF9XGL (Melbourne, FL International Airport) and Call Sign WF9XNT (Griffis International Airport, Rome, NY). Panasonic is not seeking any changes in the other technical aspects of proposed tests in these bands as previously authorized.

Panasonic acknowledges and accepts that the Special Conditions previously attached to the experimental STAs and licenses for T-PED EMI testing (including Call Signs WF9XGL and WF9XNT) would apply to the requested experimental STA.

Finally, included as Attachment 2 is the “Stop Buzzer” contact for the proposed tests.<sup>3</sup>

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For the reasons described above, Panasonic respectfully requests the grant of a 180 day STA at the George Bush Intercontinental Airport, commencing on October 15, 2012.

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<sup>3</sup> Panasonic will update the “Stop Buzzer” contact as may be necessary upon grant of the requested 180 day experimental STA and prior to the scheduled start of any tests.

## **ATTACHMENT 1**

### **Table 1 – Test Frequency Bands and Technical Information**

**Table 1 - T-PED EMI Test Frequencies / Transmit Power Requirements**

**Panasonic Avionics**

**Test Frequencies – George Bush Intercontinental Airport (IAH)**

<b>Wireless Standard</b>	<b>Frequency start of band (MHz)</b>	<b>Frequency end of band (MHz)</b>	<b>Test Frequency (MHz)</b>	<b>Modulation</b>	<b>Test Waveform</b>	<b>Target EIRP (dBm)</b>	<b>Target EIRP (W)</b>	<b>Target ERP (W) ②</b>	<b>Emission Code</b>
CDMA 2000	410	420	415	CW	2	42.0	15.8	13.7	N0N
GSM 400	450.4	457.6	454	Pulse	1	45.0	31.7	29.5	P0N
CDMA 2000	450	460	455	CW	2	42.0	15.8	13.7	N0N
CDMA 2000	479	484	482	CW	2	42.0	15.8	13.7	N0N
CDMA 2000	776	794	785	CW	2	42.0	15.8	13.7	N0N
CDMA 2000	806	849	828	CW	2	42.0	15.8	13.7	N0N
CDMAone	824	849	828	CW	2	42.0	15.8	13.7	N0N
UMTS FDD	824	849	828	CW	2	42.0	15.8	13.7	N0N
GSM 850	824	849	828	Pulse	1	45.0	31.7	29.5	P0N
IS-136	824	849	828	Pulse	1	45.0	31.7	29.5	P0N
UMTS TDD	824	849	828	Pulse	1	45.0	31.7	29.5	P0N
CDMA 2000	870	925	898	CW	2	42.0	15.8	13.7	N0N
GSM 900	876	915	913	Pulse	1	45.0	31.7	29.5	P0N
Mobile Sat	1613.8	1626.5	1626	Pulse	1	42.0	15.8	13.7	P0N
CDMA 2000	1710	1785	1748	CW	2	42.0	15.8	13.7	N0N
DCS 1800	1710	1785	1748	Pulse	1	42.0	15.8	13.7	P0N
CDMA 2000	1850	1910	1884	CW	2	42.0	15.8	13.7	N0N
UMTS FDD	1850	1910	1884	CW	2	42.0	15.8	13.7	N0N
CDMAone	1850	1910	1884	CW	2	42.0	15.8	13.7	N0N
UMTS TDD	1850	1910	1884	Pulse	1	42.0	15.8	13.7	P0N
PCS 1900	1850	1910	1884	Pulse	1	42.0	15.8	13.7	P0N
IS-136	1850	1910	1884	Pulse	1	42.0	15.8	13.7	P0N
UMTS TDD	1900	1920	1910	Pulse	1	36.0	4.0	1.8	P0N
CDMA 2000	1920	1980	1949	CW	2	42.0	15.8	13.7	N0N
UMTS FDD	1920	1980	1949	CW	2	42.0	15.8	13.7	N0N

<b>Wireless Standard</b>	<b>Frequency start of band (MHz)</b>	<b>Frequency end of band (MHz)</b>	<b>Test Frequency (MHz)</b>	<b>Modulation</b>	<b>Test Waveform</b>	<b>Target EIRP (dBm)</b>	<b>Target EIRP (W)</b>	<b>Target ERP (W) ②</b>	<b>Emission Code</b>
UMTS TDD	2010	2025	2018	Pulse	1	36.0	4.0	1.8	P0N
UMTS/3G/PCN	2110	2170	2140	CW	2	36.0	4.0	1.8	N0N
802.11b/g	2400	2497	2412	Pulse	1	37.0	5.0	2.9	P0N
802.11b/g	2400	2497	2437	Pulse	1	37.0	5.0	2.9	P0N
802.11b/g	2400	2497	2462	Pulse	1	37.0	5.0	2.9	P0N
FDD LTE	2500	2685	2595	Pulse	1	42.0	15.8	13.7	P0N
FDD LTE	2500	2685	2595	CW	2	42.0	15.8	13.7	N0N
Wi-Max	3400	3600	3450	Pulse	1	42.0	15.8	13.7	P0N
Wi-Max	3400	3600	3450	CW	2	42.0	15.8	13.7	N0N
802.11a/n	5150	5250	5170	Pulse	1	37.0	5.0	2.9	P0N
802.11a/n	5250	5350	5300	Pulse	1	37.0	5.0	2.9	P0N
802.11a	5470	5725	5580	Pulse	1	37.0	5.0	2.9	P0N
802/11a/n	5725	5825	5825	Pulse	1	37.0	5.0	2.9	P0N

**ATTACHMENT 2**  
**“Stop Buzzer” Contact**

## **STOP BUZZER’ CONTACTS**

The follow Panasonic personnel will be present and have “stop buzzer” authority to order the immediate cessation of all test activities should report(s) of interference be reported at the test site: the George Bush Intercontinental Airport, Houston, TX:

<b>Name</b>	<b>Email</b>	<b>Mobile Number</b>
Bassam Chamas – Lead	Bassam.Chamas@panasonic.aero	(949) 505-3084