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# 15 Frequency Stability

Test Requirement: FCC 47CFR Part 15 Section 15.407(g)

Test Method: ANSI C63.10:2013

Test Limit: Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the

band of operation under all conditions of normal operation as

specified in the users manual or 20ppm.

Test Result: PASS

#### 15.1 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer. EUT have transmitted absence of unmodulation signal and fixed channelise. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 106 ppm and the limit is less than ±20ppm The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value.

2. Extreme temperature rule is -15°C~ 45°C.

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# 15.2 Test Result

U-NII-1 Test Frequency:5180MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
45	220	-0.0005	-0.09	20
30		-0.0008	-0.15	20
20		0.0000	0.00	20
10		-0.0020	-0.38	20
0		-0.0031	-0.60	20
-10		0.0071	1.37	20
-15		0.0093	1.79	20
20	198	0.0057	1.10	20
20	242	0.0084	1.62	20

U-NII-2A Test Frequency:5260MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
45	220	0.0049	0.92	20
30		-0.0011	-0.22	20
20		-0.0041	-0.78	20
10		0.0039	0.75	20
0		0.0051	0.97	20
-10		-0.0072	-1.37	20
-15		-0.0015	-0.28	20
20	198	-0.0018	-0.34	20
20	242	0.0031	0.59	20

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U-NII-2C Test Frequency:5500MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
45	220	-0.0010	-0.17	20
30		0.0000	0.00	20
20		0.0094	1.71	20
10		-0.0042	-0.76	20
0		-0.0019	-0.34	20
-10		0.0047	0.85	20
-15		-0.0030	-0.55	20
20	198	0.0045	0.82	20
20	242	-0.0030	-0.54	20

U-NII-3 Test Frequency:5785MHz				
Temperature (°C)	Power Supply (VAC)	Frequency Error (MHz)	Frequency Error (ppm)	Limit (ppm)
45		-0.0021	-0.36	20
30		0.0048	0.83	20
20		-0.0008	-0.14	20
10	220	0.0015	0.25	20
0		-0.0081	-1.40	20
-10		-0.0018	-0.32	20
-15		0.0041	0.72	20
20	198	0.0067	1.15	20
20	242	0.0000	-0.01	20

### 16 Antenna Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of §15.211, §15.213, §15.217, §15.219, or §15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with §15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.

This device uses of an External antenna that uses a specified coupling to the intentional radiator. Antenna connectors complied with the requirement.

## 17 RF Exposure

Note: Please refer to RF Exposure Report: WTX24D10230381W004.

# 18 Photographs of test setup and EUT.

Note: Please refer to appendix: Appendix-OMNI01-Photos.

====End of Report=====