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Test Report

Prepared for: Panasonic Corporation of North America

Model: WJ-VPU4000

Description: Network Recorder

FCC ID: ACJ9TAWJ-VPU4000
IC: 216A-WJVPU4000

To

FCC Part 1.1310

Date of Issue: March 5th 2021

On the behalf of the applicant:	**Panasonic i-PRO Sensing Solutions Corporation of America** **1701 Golf Rd., Suite 3-600** **Rolling Meadows, IL 60008**
Attention of:	**Michael Baumann, Product Manager** **Ph: 636-751-2469** **E-mail: michael.baumann@us.panasonic.com**

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Project No: p14a0019

Alex Macon
Project Test Engineer

Test Report Revision History

Revision	Date	Revised By	Reason for Revision
1.0	March 5, 2021	Alex Macon	Original Document

ANAB

Compliance Testing, LLC, has been accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to the joint ISO-ILAC-IAF Communiqué dated January 2009).

The tests results contained within this test report all fall within our scope of accreditation, unless noted below.

Please refer to http://www.compliancetesting.com/labscope.html for current scope of accreditation.

FCC Site Reg. #349717

IC Site Reg. #2044A-2

Non-accredited tests contained in this report:

N/A

EUT Description

Model: WJ-VPU4000

Description: Network Recorder

Firmware: N/A

Software: N/A

Serial Number: 2S47

Additional Information:

The EUT was tested conducted mode with RF connectors mounted on the EUT at the antenna input.

The EUT is comprised of two identical 2x2 WiFi modules and a BLE radio. The modules are utilized in separate modes, with different clients and are completely uncorrelated. The module that operates in “Station” mode utilizes 2.4 GHz, 5250 – 5350, 5470 – 5725 and 5725 – 5850. The module that operates in “AP” mode utilizes 2.4 GHz and 5725 – 5850 MHz

The EUT is intended to be mounted in a vehicle and is powered by the vehicles DC voltage.

The different data rates were evaluated and the worst case data rate was chosen for all the testing.

As the modules are identical and operate in separate, non-summing modes, the data below is taken on 1 of the modules.

Source Based Time Averaged Power Calculation

Average Power calculations

Average Power = Peak Power * duty-cycle%

Tuned Frequency (MHz)	Conducted Peak Output Power (mW)	Duty Cycle %	Average Power (mW)
5755	63.09	100	63.09
5300	31.62	100	31.62
5550	28.18	100	28.18
2437	100	100	100
2442	4.74	100	4.74

MPE Evaluation
Only WiFi bands can be utilized at the same time. The worst case for MPE would be both WiFi modules operating on 2.4 WiFi simultaneously. The below calculations reflect this
This is a **fixed/mobile** device used in uncontrolled /general population exposure environment.

Limits Uncontrolled Exposure 47 CFR 1.1310 Table 1, (B)		
	0.3-1.234 MHz:	Limit [mW/cm²] = 100
	1.34-30 MHz:	Limit [mW/cm²] = (180/f²)
	30-300 MHz:	Limit [mW/cm²] = 0.2
	300-1500 MHz:	Limit [mW/cm²] = f/1500
	1500-100,000 MHz	Limit [mW/cm²] = 1.0

Test Data

Test Frequency, MHz	2437
Power, Conducted, mW (P)	100
Antenna Gain Isotropic	2.5 dBi
Antenna Gain Numeric (G)	1.74
Antenna Type	Omni
Distance (R)	20 cm

$$S = \frac{P * G}{4\pi r^2}$$

Power Density (S) mw/cm²	Power mW (P)	Numeric Gain (G)	Distance (r^2) cm
0.0346	100	1.74	20
0.0346	100	1.74	20

Power Density (S) =0.06926
Limit =(from above table) = 1.0

END OF TEST REPORT