



MPE TEST REPORT

The product

Equipment Under Test	: Vehicle Video Recorder
Model Number	: VVH-MDE204
Product Series	: N/A
Report Number	: HA140465-RA
Issue Date	: 15-Oct-2014
Test Result	: Compliance

is produced by

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Test Result Certification

Applicant	: FUHO TECHNOLOGY CO., LTD.
Address of Applicant	: No. 30, Lane 726, Jinma Rd, Sec. 3, Chang Hua City, Taiwan 500
Manufacturer	: FUHO TECHNOLOGY CO., LTD.
Address of Manufacturer	: No. 30, Lane 726, Jinma Rd, Sec. 3, Chang Hua City, Taiwan 500
Trade Name	: Vacron
Equipment Under Test	: Vehicle Video Recorder
Model Number	: VVH-MDE204
Product Series	: N/A
FCC ID	: 2ADF5-VVH-MDE204
Filing Type	: Certification
Sample Received Date	: 17-Sep-2014
Test Standard	:

☒ 47 CFR § 2.1091; 47 CFR § 1.1310; ANSI/ IEEE Std.C95.1-1992

Deviations from standard test methods & any other specifications : NONE

Remark:

1. This report details the results of the test carried out on one sample.
2. This report applies to the above sample only and shall not be reproduced in part without written approval of HongAn Technology Co., Ltd..

Documented by:**Kay Wang/ ADM. Dept Staff****2014-10-13****Tested by:****Kidd Liao / ENG. Dept. Staff****2014-10-08****Approved by:****Peter Chin / Section Manager****Date: 2014-10-15**

1 General Description

1.1 Description of EUT

Equipment Under Test	:	Vehicle Video Recorder										
Model Number of EUT	:	VVH-MDE204										
Product Series	:	N/A										
Power Supply	:	DC : Input <u>24</u> Vdc										
Frequency Range	:	802.11 b/ g/ n(20M) : 2412~2462 MHz 802.11n(40M) : 2422~2452 MHz										
Number of Channels	:	11 Channels										
Carrier Frequency of Each Channel	:	Ch.	Fre. (MHz)	Ch.	Fre. (MHz)	Ch.	Fre. (MHz)	Ch.	Fre. (MHz)	Ch.	Fre. (MHz)	
		01	2412	02	2417	03	2422	04	2427	05	2432	
		06	2437	07	2442	08	2447	09	2452	10	2457	
		11	2462									
Antenna Specification	:	Dipole Antenna/ Gain: 2.15 dBi										
Modulation Technique	:	802.11b : DSSS (Type: CCK, DQPSK, DBPSK) 802.11g : OFDM 802.11n : OFDM (Type: 64QAM, 16QAM, QPSK, BPSK)										
Transmit Data Rate	:	802.11b : 11/5.5/2/1 Mbps 802.11g : 54/48/36/24/18/12/9/6 Mbps 802.11n : up to 135Mbps										
Specification	:	Dimensions : 115 mm (L) X 150 mm (W) X 30 mm (H) Weight : 420g Function : The EUT is a Vehicle Video Recorder using WIFI to make data transmission. ※For more detail specification, please refer to the User Manual.										



2 Human Exposure Assessment

2.1 Limit

Due to the design and installation of this product, it is not possible to conduct SAR evaluation. This is because client either manufactures or supplies the antenna(s) that will be used in the installation of this product. Therefore, this product will be evaluated as a mobile device per 47 CFR § 1.1310 titled “Radiofrequency radiation exposure limits”. Generally referred to as MPE limits.

In 47 CFR § 2.1091, paragraph (b) defines a mobile device as “a transmitting device designed to be used in other than fixed locations and to generally be used in such a way that a separation distance of at least 20 cm is normally maintained between the transmitter’s radiating structure(s) and the body of the user or nearby persons. “This product is intended to be installed into a vehicle such that the unit is physically secured at one location. In the installation guide supplied with the product.

Client has made the following statement: “IMPORTANT: To meet the FCC’s RF Exposure Guidelines, the antenna should be installed so there is at least 20 cm of separation between the body of the user and nearby persons and the antenna”. Based on the installation of the transceiver and the antenna, the transmitters radiating structure is more than 20 cm from the user. Thus, this product is a “mobile device” as defined in section § 2.1091 paragraph (b).

Exposure evaluation
Equation from page 18 of OET Bulletin 65, Edition 97-01
$S = \frac{PG}{4\pi R^2}$
Where
S: power density
P: power input to the antenna
G: power gain of the antenna in the direction of interest relative to an isotropic radiator
R: distance to the center of radiation of the antenna.

2.2 Test Result

Pass

Please refer to the next page for detailed information.

Maximum Output Power:

Temperature : 26.4℃

Humidity : 35%

Test Date : 08-Oct-2014

Tested by : Kidd Liao

Test Mode : 802.11 b

Test Channel	Frequency (MHz)	Test Result		Worst Case
		(dBm)	(W)	
01	2412	17.54	0.0568	<input checked="" type="checkbox"/>
06	2437	17.42	0.0552	<input type="checkbox"/>
11	2462	17.20	0.0525	<input type="checkbox"/>

Test Mode : 802.11 g

Test Channel	Frequency (MHz)	Test Result		Worst Case
		(dBm)	(W)	
01	2412	19.25	0.0841	<input type="checkbox"/>
06	2437	19.37	0.0865	<input checked="" type="checkbox"/>
11	2462	19.32	0.0855	<input type="checkbox"/>

Test Mode : 802.11 n (20M)

Test Channel	Frequency (MHz)	Test Result		Worst Case
		(dBm)	(W)	
01	2412	18.64	0.0731	<input type="checkbox"/>
06	2437	18.80	0.0759	<input checked="" type="checkbox"/>
11	2462	18.69	0.0740	<input type="checkbox"/>

Test Mode : 802.11n (40M)

Test Channel	Frequency (MHz)	Test Result		Worst Case
		(dBm)	(W)	
03	2422	19.62	0.0916	<input type="checkbox"/>
06	2437	19.59	0.091	<input type="checkbox"/>
09	2452	19.63	0.0918	<input checked="" type="checkbox"/>

MPE Value:

Test mode : 802.11 b

Test Channel	Frequency (MHz)	Output power (dBm)	Antenna Gain (dBi)	MPE (mW/cm ²)	Limit (mW/cm ²)
01	2412	17.54	2.15	0.01852	1.0
06	2437	17.42	2.15	0.01802	1.0
11	2462	17.20	2.15	0.01713	1.0

$$MPE = (\text{Output power} + \text{Antenna Gain}) / 4\pi(20 \text{ cm})^2$$

Test mode : 802.11 g

Test Channel	Frequency (MHz)	Output power (dBm)	Antenna Gain (dBi)	MPE (mW/cm ²)	Limit (mW/cm ²)
01	2412	19.25	2.15	0.02746	1.0
06	2437	19.37	2.15	0.02823	1.0
11	2462	19.32	2.15	0.02791	1.0

$$MPE = (\text{Output power} + \text{Antenna Gain}) / 4\pi(20 \text{ cm})^2$$

Test mode : 802.11 n (20M)

Test Channel	Frequency (MHz)	Output power (dBm)	Antenna Gain (dBi)	MPE (mW/cm ²)	Limit (mW/cm ²)
01	2412	18.64	2.15	0.02386	1.0
06	2437	18.80	2.15	0.02476	1.0
11	2462	18.69	2.15	0.02414	1.0

$$MPE = (\text{Output power} + \text{Antenna Gain}) / 4\pi(20 \text{ cm})^2$$

Test mode : 802.11 n (40M)

Test Channel	Frequency (MHz)	Output power (dBm)	Antenna Gain (dBi)	MPE (mW/cm ²)	Limit (mW/cm ²)
03	2422	19.62	2.15	0.0299	1.0
06	2437	19.59	2.15	0.0297	1.0
09	2452	19.63	2.15	0.02997	1.0

$$MPE = (\text{Output power} + \text{Antenna Gain}) / 4\pi(20 \text{ cm})^2$$