

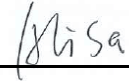
## RF Exposure Evaluation Report

**Report Reference No.....: MTWC21110894-H**

**FCC ID.....: 2AOT9-NBDVR422GW-B**

Compiled by

( position+printed name+signature)..: File administrators Alisa Luo



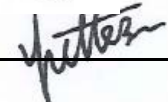
Supervised by

( position+printed name+signature)..: Test Engineer Sunny Deng



Approved by

( position+printed name+signature)..: Manager Yvette Zhou



Date of issue.....: **December 24, 2021**

**Representative Laboratory Name.: Shenzhen Most Technology Service Co., Ltd.**

Address .....: No.5, 2nd Langshan Road, North District, Hi-tech Industrial Park,  
Nanshan, Shenzhen, Guangdong, China.

**Applicant's name.....: Portable Multimedia Limited**

Address .....: Unit 2, Caerphilly Business Park, Caerphilly, Mid Glamorgan  
CF83 3FD. United Kingdom

**Test specification/ Standard .....: 47 CFR Part 1.1307  
47 CFR Part 1.1310  
KDB447498D01 General RF Exposure Guidance v06**

TRF Originator.....: Shenzhen Most Technology Service Co., Ltd.

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**Test item description .....: Dash Cam**

Trade Mark .....: Nextbase and Voyager

Manufacturer .....: **Shenzhen Samoon Technology Co., Ltd.**

Model/Type reference.....: NBDVR422GW

Listed Models .....: FE-NBDVR422GW, NBDVR422GW-WHT,  
FE-NBDVR422GW-WHT, VYDVR422GW, FE-VYDVR422GW,  
NBDVR423GW, FE-NBDVR423GW, NBDVR424GW,  
FE-NBDVR424GW, NBDVR422GWL, FE-NBDVR422GWL

Modulation Type .....: GFSK,  $\pi/4$ DQPSK, 8DPSK  
CCK/DSSS/ OFDM

Operation Frequency.....: From 2402MHz to 2480MHz for BT  
From 2412 - 2462MHz for Wifi

Hardware Version.....: A8

Software Version .....: R21.5

Rating .....: DC 3.7V by Battery  
DC 5V(by USB)  
DC5V(by Carcharger)

Result.....: **PASS**

**TEST REPORT**

Equipment under Test : Dash Cam

Model /Type : NBDVR422GW

Listed Models : FE-NBDVR422GW, NBDVR422GW-WHT,  
FE-NBDVR422GW-WHT, VYDVR422GW, FE-VYDVR422GW,  
NBDVR423GW, FE-NBDVR423GW, NBDVR424GW,  
FE-NBDVR424GW, NBDVR422GWL, FE-NBDVR422GWL

Remark : Only different in model name .

Applicant : **Portable Multimedia Ltd.**

Address : Unit 2, Caerphilly Business Park, Caerphilly, Mid Glamorgan  
CF83 3ED, United Kingdom

Manufacturer : **Shenzhen Samoon Technology Co., Ltd.**

Address : Floor 5-6&9, Building 7, Zhongyuntai Ind. Park, Yingrenshi Road  
Crossing,Shiyan Town, Bao'an District, Shenzhen,  
Guangdong,China. Post code: 518108.

<b>Test Result:</b>	<b>PASS</b>
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The test report merely corresponds to the test sample.  
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

## 1. Revision History

Revision	Issue Date	Revisions	Revised By
00	2021.12.24	Initial Issue	Alisa Luo

## 2. SAR Evaluation

### RF Exposure Compliance Requirement

#### Standard Requirement

According to KDB447498D01 General RF Exposure Guidance v06

#### 4.3.1. Standalone SAR test exclusion considerations

Unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition, listed below, is satisfied.

#### Limits

According to FCC Part1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in part1.1307(b)

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposures</b>				
0.3–3.0 .....	614	1.63	*(100)	6
3.0–30 .....	1842/f	4.89/f	*(900/f <sup>2</sup> )	6
30–300 .....	61.4	0.163	1.0	6
300–1500 .....	.....	.....	f/300	6
1500–100,000 .....	.....	.....	5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
0.3–1.34 .....	614	1.63	*(100)	30
1.34–30 .....	824/f	2.19/f	*(180/f <sup>2</sup> )	30
30–300 .....	27.5	0.073	0.2	30
300–1500 .....	.....	.....	f/1500	30
1500–100,000 .....	.....	.....	1.0	30

F= Frequency in MHz

Friis Formula

Friis transmission formula:  $P_d = (P_{out} * G) / (4 * \pi * R^2)$  Where

$P_d$  = power density in mW/cm<sup>2</sup>

$P_{out}$  = output power to antenna in mW

G = gain of antenna in linear scale

$\pi$  = 3.1416

R = distance between observation point and center of the radiator in cm

$P_d$  is the limit of MPE, 1 mW/cm<sup>2</sup>. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

**EUT RF Exposure**

Antenna Gain: 0dBi

Antenna Gain: The maximum Gain measured in fully anechoic chamber is 2.4 in linear scale. Output Power Into Antenna &amp; RF Exposure Evaluation Distance:

BT classic

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	2.65	$2.65 \pm 1$	3.65
Middle(2441MHz)	4.64	$4.64 \pm 1$	5.64
Highest(2480MHz)	6.23	$6.23 \pm 1$	7.23

$\pi/4$ DQPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	1.56	$1.56 \pm 1$	2.56
Middle(2441MHz)	3.23	$3.23 \pm 1$	4.23
Highest(2480MHz)	5.26	$5.26 \pm 1$	6.26

8DPSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	1.89	$1.89 \pm 1$	2.89
Middle(2441MHz)	3.56	$3.56 \pm 1$	4.56
Highest(2480MHz)	5.46	$5.46 \pm 1$	6.46

BLE

GFSK			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2402MHz)	2.05	2.05 ± 1	3.05
Middle(2440MHz)	4.23	4.23 ± 1	5.23
Highest(2480MHz)	5.65	5.65 ± 1	6.65

WIFI2.4G

802.11b			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	13.32	13.32	14.32
Middle(2437MHz)	13.54	13.54	14.54
Highest(2462MHz)	13.62	13.62	14.62

802.11g			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	8.85	8.85	9.85
Middle(2437MHz)	10.11	10.11	11.11
Highest(2462MHz)	9.26	9.26	10.26

802.11n			
Test channel	Peak Output Power (dBm)	Tune up tolerance (dBm)	Maximum tune-up Power
			(dBm)
Lowest(2412MHz)	8.85	8.85	9.85
Middle(2437MHz)	9.53	9.53	10.53
Highest(2462MHz)	9.57	9.57	10.57

BT classic

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2480MHz)	6.23	4.63	0	0.001	1.0	Pass

Note: 1) Refer to report **MTWC21120930-R1** for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (4.63 * 1) / (4 * 3.1416 * 20^2) = 0.001$

BLE

Worst case: GFSK						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2480MHz)	5.65	5.15	0	0.001	1.0	Pass

Note: 1) Refer to report **MTWC21120930-R2** for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (5.15 * 1) / (4 * 3.1416 * 20^2) = 0.001$

WIFI2.4G

Worst case: 802.11b						
Channel	Maximum Peak Conducted Output Power (dBm)	Maximum Peak Conducted Output Power (MW)	Antenna Gain (dBi)	Power Density at R = 20 cm (mW/cm2)	Limit	Result
Highest(2440MHz)	13.62	27.797	0	0.006	1.0	Pass

Note: 1) Refer to report **MTWC21120930-R3** for EUT test Max Conducted average Output Power value.

Note: 2)  $P_d = (P_{out} * G) / (4 * \pi * R^2) = (27.797 * 1) / (4 * 3.1416 * 20^2) = 0.006$

.....THE END OF REPORT.....