



# RF EXPOSURE REPORT

**Report Reference No.**..... : **TRE1607020504** R/C.....: 19566

**FCC ID**..... : **2AJE3TM101**

**Applicant's name** ..... : **Tmax Digital, Inc.**

**Address**..... : 4401 Eucalyptus Ave., #120, Chino, CA 91710, USA

**Manufacturer**..... : Shenzhen Alldocube technology and science Co., Ltd.

**Address**..... : Building No.1, Suwang Industrial Park, Xiahenglang Dalang, Longhua District, Shenzhen, China.

**Test item description** ..... : **Tablet PC**

**Trade Mark** ..... : NUVISION

**Model/Type reference**..... : TM101W625L

**Listed Model(s)** ..... : VT4-HD

**Standard** ..... : **FCC Per 47 CFR 2.1093(d)**

**Date of receipt of test sample**..... : Jul.29, 2016

**Date of testing**..... : Jul.30, 2016- Aug.15, 2016

**Date of issue**..... : Aug.16, 2016

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

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**Testing Laboratory Name** ..... : **Shenzhen Huatongwei International Inspection Co., Ltd**

**Address**..... : 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

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## Contents

<b><u>1.</u></b>	<b><u>SUMMARY .....</u></b>	<b><u>3</u></b>
1.1.	Client Information	3
1.2.	Product Description	3
1.3.	EUT operation mode	4
1.4.	EUT configuration	4
1.5.	Modifications	5
<b><u>2.</u></b>	<b><u>TEST ENVIRONMENT .....</u></b>	<b><u>6</u></b>
2.1.	Address of the test laboratory	6
2.2.	Test Facility	6
2.3.	Environmental conditions	7
2.4.	Statement of the measurement uncertainty	7
<b><u>3.</u></b>	<b><u>METHOD OF MEASUREMENT .....</u></b>	<b><u>8</u></b>
3.1.	Applicable Standard	8
3.2.	Limit	8
3.3.	RF Exposure	8
<b><u>4.</u></b>	<b><u>CONCLUSION .....</u></b>	<b><u>9</u></b>

## 1. SUMMARY

### 1.1. Client Information

Applicant:	Tmax Digital, Inc.
Address:	4401 Eucalyptus Ave., #120,Chino, CA 91710,USA
Manufacturer:	Shenzhen Alldocube technology and science Co.,Ltd.
Address:	Building No.1,Suwang Industrial Park,Xiahenglang Dalang,Longhua District,Shenzhen,China.

### 1.2. Product Description

Name of EUT	Tablet PC
Trade Mark:	NUVISION
Model No.:	TM101W625L
Listed Model(s):	VT4-HD
Power supply:	DC 3.7V From internal battery
Adapter information :	Model:FJ-SW1260502000UU Input: AC 100-240V 50/60Hz 0.4A Max Output: 5Vd.c., 2000mA
<b>WIFI</b>	
Supported type:	802.11b/802.11g/802.11n(H20)/802.11n(H40)
Modulation:	802.11b: DSSS 802.11g/802.11n(H20)/802.11n(H40):OFDM
Operation frequency:	802.11b/802.11g/802.11n(H20): 2412MHz~2462MHz 802.11n(H40): 2422MHz~2452MHz
Channel number:	802.11b/802.11g/802.11n(H20): 11 802.11n(H40): 7
Channel separation:	5MHz
Antenna type:	FPC
Antenna gain:	2.2dBi
<b>Bluetooth</b>	
Version:	Supported BT4.0+ EDR
Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Antenna type:	FPC
Antenna gain:	2.2 dBi
Version:	Supported BT4.0+BLE
Modulation:	GFSK
Operation frequency:	2402MHz~2480MHz
Channel number:	40
Channel separation:	2MHz

Operation Frequency List:

## WIFI

Channel	Frequency (MHz)
01	2412
02	2417
⋮	⋮
06	2437
⋮	⋮
10	2452
11	2462

## BT4.0+EDR

Channel	Frequency (MHz)
0	2402
1	2403
⋮	⋮
39	2441
⋮	⋮
77	2479
78	2480

## BT4.0+BLE

Channel	Frequency (MHz)
00	2402
02	2404
⋮	⋮
19	2440
⋮	⋮
38	2478
39	2480

Note: In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, please see the above gray bottom.

### 1.3. EUT operation mode

The EUT has been tested under test mode condition. The Applicant provides software to control the EUT for staying in continuous transmitting and receiving mode for testing.

Test mode: GFSK Modulation

### 1.4. EUT configuration

The following peripheral devices and interface cables were connected during the measurement:

- - supplied by the manufacturer

○ - supplied by the lab

<input type="radio"/>	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
<input type="radio"/>	Multimeter	Manufacturer :	/
		Model No. :	/

### 1.5. Modifications

No modifications were implemented to meet testing criteria.

## **2. TEST ENVIRONMENT**

### **2.1. Address of the test laboratory**

Laboratory: Shenzhen Huatongwei International Inspection Co., Ltd.

Address: 1/F, Bldg 3, Hongfa Hi-tech Industrial Park, Genyu Road, Tianliao, Gongming, Shenzhen, China

Phone: 86-755-26748019 Fax: 86-755-26748089

### **2.2. Test Facility**

The test facility is recognized, certified, or accredited by the following organizations:

#### **CNAS-Lab Code: L1225**

Shenzhen Huatongwei International Inspection Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories, Date of Registration: February 28, 2015. Valid time is until February 27, 2018.

#### **A2LA-Lab Cert. No. 3902.01**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing. Valid time is until December 31, 2016.

#### **FCC-Registration No.: 317478**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 317478, Renewal date Jul. 18, 2014, valid time is until Jul. 18, 2017.

#### **IC-Registration No.: 5377A&5377B**

The 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377A on Dec. 31, 2013, valid time is until Dec. 31, 2016.

Two 3m Alternate Test Site of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 5377B on Dec.03, 2014, valid time is until Dec.03, 2017.

#### **ACA**

Shenzhen Huatongwei International Inspection Co., Ltd. EMC Laboratory can also perform testing for the Australian C-Tick mark as a result of our A2LA accreditation.

#### **VCCI**

Radiated disturbance above 1GHz measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-292. Date of Registration: Dec. 24, 2013. Valid time is until Dec. 23, 2016.

Telecommunication Ports Conducted Interference Measurement of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-1837. Date of Registration: May 07, 2013. Valid time is until May 06, 2016.

#### **DNV**

Shenzhen Huatongwei International Inspection Co., Ltd. has been found to comply with the requirements of DNV towards subcontractor of EMC and safety testing services in conjunction with the EMC and Low voltage Directives and in the voluntary field. The acceptance is based on a formal quality Audit and follow-ups according to relevant parts of ISO/IEC Guide 17025 (2005), in accordance with the requirements of the DNV Laboratory Quality Manual towards subcontractors. Valid time is until Aug. 24, 2016.

### 2.3. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35°C
Relative Humidity:	30~60 %
Air Pressure:	950~1050mba

### 2.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to TR-100028-01 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1" and TR-100028-02 "Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 2" and is documented in the Shenzhen Huatongwei International Inspection Co., Ltd quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for Shenzhen Huatongwei laboratory is reported:

Test Items	Measurement Uncertainty	Notes
Transmitter power conducted	0.57 dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of  $k=1.96$ .

### 3. METHOD OF MEASUREMENT

#### 3.1. Applicable Standard

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

According to §1.1310, KDB447498 and §2.1093 RF exposure is required.

OET Bulletin 65 Supplement C [June 2001]: Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields

#### 3.2. Limit

According to 447498 D01 General RF Exposure Guidance v06, exclusion threshold values at selected frequencies and distances table as following.

MHz	5	10	15	20	25	mm
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

#### 3.3. RF Exposure

##### TEST RESULTS

Calculation Value=  $\left[ \frac{\text{(max. power of channel, including tune-up tolerance, mW)}}{\text{(min. test separation distance, mm)}} \right] \cdot \sqrt{f(\text{GHz})}$

f(GHz) is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation

The result is rounded to one decimal place for comparison

The Threshold values is 3.0



Mode	type	Frequency (GHz)	Max output power(dBm)	Max output power(mW)	Test distances (mm)	Calculation Value	Threshold value	Result
WIFI	802.11b	2.462	9.800	9.550	5	2.997	3	Pass
	802.11g	2.462	7.600	5.754	5	1.806	3	Pass
	802.11n(H20)	2.462	7.100	5.129	5	1.609	3	Pass
	802.11n(H40)	2.462	6.100	4.074	5	1.278	3	Pass
Bluetooth	EDR-GFSK	2.480	4.200	2.630	5	0.828	3	Pass
	EDR- $\pi/4$ DQPSK	2.480	5.300	3.388	5	1.067	3	Pass
	EDR-8DPSK	2.480	5.400	3.467	5	1.092	3	Pass
	BLE	2.480	-6.000	0.251	5	0.079	3	Pass

Note: the tune up for RF output power is below:

Mode	Type	Tune up (dBm)
WIFI	802.11b	9.0dBm~9.8dBm
	802.11g	7.0dBm~7.6dBm
	802.11n(H20)	6.2dBm~7.1dBm
	802.11n(H40)	5.4dBm~6.1dBm
Bluetooth	EDR-GFSK	3.5dBm~4.2dBm
	EDR- $\pi/4$ DQPSK	4.5dBm~5.3dBm
	EDR-8DPSK	4.7dBm~5.4dBm
	BLE	-10.0dBm~-6.0dBm

#### 4. CONCLUSION

So standalone SAR measurements are not required for both head and body.

.....End of Report.....