



RF EXPOSURE REPORT

Report Reference No..... : TRE1405010304 R/C.....:11274
FCC ID..... : 2ACILBR77
Applicant's name..... : DD Ship LLC
Address..... : 30 Bridge Street, Rouses Point NY 20979,USA
Manufacturer..... : CETRIX Technologies Limited
Address..... : 13A/F South Tower,World Finance Center Harbour City,17 Canton Road,TST KLN,Hong Kong
Test item description : Tablet pc
Trade Mark : MilkBox7
Model/Type reference..... : BR77
List Model : /
Standard : FCC Per 47 CFR 2.1093(d)
Date of receipt of test sample..... : May 17, 2014
Date of testing : May 17 ~ Jun 4, 2014
Date of issue..... : Jun 4, 2014
Result..... : PASS

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1. SUMMARY

1.1. Client Information

Applicant:	DD Ship LLC
Address:	30 Bridge Street, Rouses Point NY 20979,USA
Manufacturer:	CETRIX Technologies Limited
Address:	13A/F South Tower,World Finance Center Harbour City,17 Canton Road,TST KLN,Hong Kong

1.2. Product Description

Name of EUT	Tablet pc
Trade Mark:	MilkBox7
Model No.:	BR77
List Model:	/
Power supply:	DC 3.7V From Internal Battery
Adapter information:	Model No.:WKB0502-002 Input: AC 100~240V, 50/60Hz, 0.3A Output: DC 5.0V 2A
WIFI	
Supported type:	802.11b/802.11g/802.11n(H20)
Modulation:	802.11b: DSSS 802.11g/802.11n(H20)
Operation frequency:	2412MHz~2462MHz
Bit Rate:	802.11b: 1/2/5.5/11Mbps 802.11g: 6/9/12/18/24/36/48/54Mbps 802.11n(H20): MCS0~MCS7: 6.5/13/19.5/26/39/52/58.5/65Mbps MCS8~MCS15: 13/26/39/52/78/104/117/130Mbps
Channel number:	802.11b/802.11g/802.11n(H20): 11
Channel separation:	5MHz
Antenna type:	Internal Antenna
Antenna gain:	1.56dBi
Bluetooth	
Version:	Supported BT2.1+EDR
Modulation:	GFSK, $\pi/4$ DQPSK, 8DPSK
Operation frequency:	2402MHz~2480MHz
Channel number:	79
Channel separation:	1MHz
Antenna type:	Internal Antenna
Antenna gain:	1.56dBi

Operation Frequency List:

802.11b/g/n(H20)	
Channel	Frequency (MHz)
01	2412
02	2417
⋮	⋮
06	2437
⋮	⋮
10	2457
11	2462

Supported BT2.1+EDR, GFSK, $\pi/4$ DQPSK, 8DPSK	
Channel	Frequency (MHz)
1	2402
2	2403
⋮	⋮
39	2440
40	2441
41	2442
⋮	⋮
78	2479
79	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.

And found which the below bit rate is worst case mode, so only show data which it is a worst case mode.

Mode	Bit rate (worst mode)
802.11b	11Mbps
802.11g	54Mbps
802.11n(H20)	130Mbps

1.4. EUT configuration

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

● - supplied by the manufacturer

○ - supplied by the lab

○	Power Cable	Length (m) :	/
		Shield :	/
		Detachable :	/
○	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

Shenzhen Huatongwei International Inspection Co., Ltd.
Keji Nan No.12 Road, Hi-tech Park, 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: Mar. 01, 2012. Valid time is until February 28, 2015.

A2LA-Lab Cert. No. 2243.01

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 Sept 30, 2015.

FCC-Registration No.: 662850

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 662850, Renewal date Jul. 01, 2012, valid time is until Jun. 01, 2015.

IC-Registration No.: 5377A

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.

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

The 3m Semi-anechoic chamber (12.2m×7.95m×6.7m) of Shenzhen Huatongwei International Inspection Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.:R-2484. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 29, 2015.

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.

Main 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.: C-2726. Date of Registration: Dec. 20, 2012. Valid time is until Dec. 19, 2015.

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)
Transmitter power Radiated	2.20 dB	(1)
Conducted spurious emission 9KHz-40 GHz	1.60 dB	(1)
Radiated spurious emission 9KHz-40 GHz	2.20 dB	(1)
Conducted Emission 9KHz-30MHz	3.39 dB	(1)
Radiated Emission 30~1000MHz	4.24 dB	(1)
Radiated Emission 1~18GHz	5.16 dB	(1)
Radiated Emission 18-40GHz	5.54 dB	(1)
Occupied Bandwidth	-----	(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 §RSS-102, Devices that have a radiating element normally operating at separation distances greater than 20 cm between the user and the device shall undergo an RF exposure evaluation. SAR evaluation may be performed in lieu of an RF exposure evaluation for devices operating below 6 GHz with a separation distance of greater than 20 cm between the user and the device.

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 KDB447498 D01 General RF Exposure Guidance v05r01 Appendix A:SAR Test Exclusion Thresholds for 100 MHz – 6 GHz and ≤ 50 mm, Approximate SAR Test Exclusion Power Thresholds at Selected Frequencies and Test Separation Distances are illustrated in the following Table.

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

From the peak EUT RF output power and power drift from Tune-up Procedure provide by manufacturer as following states:

802.11b					
Channel Number	Frequency (MHz)	Power Drift	Channel Number	Frequency (MHz)	Power Drift
1	2412	9.0dBm \pm 1.0dB	7	2442	9.0dBm \pm 1.0dB
2	2417	9.0dBm \pm 1.0dB	8	2447	9.0dBm \pm 1.0dB
3	2422	9.0dBm \pm 1.0dB	9	2452	9.0dBm \pm 1.0dB
4	2427	9.0dBm \pm 1.0dB	10	2457	9.0dBm \pm 1.0dB
5	2432	9.0dBm \pm 1.0dB	11	2462	9.0dBm \pm 1.0dB
6	2437	9.0dBm \pm 1.0dB			
802.11g					
1	2412	9.0dBm \pm 1.0dB	7	2442	9.0dBm \pm 1.0dB
2	2417	9.0dBm \pm 1.0dB	8	2447	9.0dBm \pm 1.0dB
3	2422	9.0dBm \pm 1.0dB	9	2452	9.0dBm \pm 1.0dB
4	2427	9.0dBm \pm 1.0dB	10	2457	9.0dBm \pm 1.0dB
5	2432	9.0dBm \pm 1.0dB	11	2462	9.0dBm \pm 1.0dB
6	2437	9.0dBm \pm 1.0dB			
802.11n(20MHz)					
1	2412	9.0dBm \pm 1.0dB	7	2442	9.0dBm \pm 1.0dB
2	2417	9.0dBm \pm 1.0dB	8	2447	9.0dBm \pm 1.0dB
3	2422	9.0dBm \pm 1.0dB	9	2452	9.0dBm \pm 1.0dB
4	2427	9.0dBm \pm 1.0dB	10	2457	9.0dBm \pm 1.0dB
5	2432	9.0dBm \pm 1.0dB	11	2462	9.0dBm \pm 1.0dB
6	2437	9.0dBm \pm 1.0dB			

The device has a standalone transmission.

According to KDB 447498 section 4.3.1, the 1-g SAR test exclusion thresholds at test separation distances ≤ 50 mm are determined by:

$$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$$

Mode	CH	Max output power(dBm)	Max output power(mW)	Calculation Value	Threshold Value
GFSK	2402	1.22	1.32	0.26	3.0
	2441	1.54	1.43	0.29	3.0
	2480	1.57	1.44	0.29	3.0
Pi/4 DQPSK	2402	-0.67	0.86	0.17	3.0
	2441	-0.73	0.85	0.17	3.0
	2480	-0.27	0.94	0.19	3.0
	2402	-1.40	0.72	0.14	3.0
8-DPSK	2441	-0.58	0.87	0.17	3.0
	2480	-0.12	0.97	0.19	3.0
Mode	CH	Max output power(dBm)	Max output power(mW)	Calculation Value	Threshold Value
802.11b	2412	10.00	10.00	2.00	3.0
	2437	10.00	10.00	2.00	3.0
	2462	10.00	10.00	2.00	3.0
802.11g	2412	10.00	10.00	2.00	3.0
	2437	10.00	10.00	2.00	3.0
	2462	10.00	10.00	2.00	3.0
802.11n 20	2412	10.00	10.00	2.00	3.0
	2437	10.00	10.00	2.00	3.0
	2462	10.00	10.00	2.00	3.0

4. Conclusion

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

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