

# Global United Technology Services Co., Ltd.

Report No.: GTSE14020013504

# TEST REPORT

Applicant: Dongguan Yuanfeng Technology Co., Ltd

**Address of Applicant:** No.18, Industrial East Road, Songshan Lake Hi-Tech Industrial

Development Zone, Dongguan, Guangdong, 523808, China

**Equipment Under Test (EUT)** 

**Product Name:** Tablet PC

Model No.: MP83-8031, MP83-8032, MP83-8033, MP83-8034,

MP83-8035, MP83-8036, MP83-8037, MP83-8038,

MP83-8039

FCC ID: YNGMP83-8031

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart B:2013

Date of sample receipt: February 17, 2014

**Date of Test:** February 17-27, 2014

Date of report issue: February 27, 2014

PASS \* **Test Result:** 

Authorized Signature:

Robinson Lo **Laboratory Manager** 

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

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<sup>\*</sup> In the configuration tested, the EUT complied with the standards specified above.



### 2 Version

Version No.	Date	Description
00	February 27, 2014	Original

Prepared By:	hank. yan	Date:	February 27, 2014
	Project Engineer		
Check By:	Hams. Hu	Date:	February 27, 2014
	Reviewer		



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# 4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	PASS
Radiated Emissions	Part15.109	PASS

PASS: The EUT complies with the essential requirements in the standard.



Project No.: GTSE140200135RF

### 5 General Information

#### 5.1 Client Information

Applicant:	Dongguan Yuanfeng Technology Co., Ltd	
Address of Applicant:	No.18, Industrial East Road, Songshan Lake Hi-Tech Industrial	
	Development Zone, Dongguan, Guangdong, 523808, China	
Manufacturer/Factory:	Dongguan Yuanfeng Technology Co., Ltd	
Address of Manufacturer/	No.18, Industrial East Road, Songshan Lake Hi-Tech Industrial	
Factory:	Development Zone, Dongguan, Guangdong, 523808, China	

# 5.2 General Description of EUT

Product Name:	Tablet PC
Model No.:	MP83-8031, MP83-8032, MP83-8033, MP83-8034, MP83-8035,
	MP83-8036, MP83-8037, MP83-8038, MP83-8039
Power supply:	Model No.: ADS-10B-06 05010G
	Input: AC 100-240V, 50/60Hz, 0.3A MAX
	Output: DC 5.0V, 2A
	DC 3.7V Li-ion Battery

#### 5.3 Test mode

Test mode:				
Playing mode	Keep the EUT in video playing mode			
Video Record mode	Keep the EUT in video Recording mode			
HDMI mode	Keep the EUT in video playing with HDMI ouput mode.			
PC mode	Keep the EUT in data exchanging wit PC mode.			



#### 5.4 Test Facility

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

#### • CNAS —Registration No.: CNAS L5775

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### • FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 600491, June 28, 2013.

#### • Industry Canada (IC) —Registration No.: 9079A-2

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-2, June 26, 2013.

#### 5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen,

China

Tel: 0755-27798480 Fax: 0755-27798960

#### 5.6 Description of Support Units

Manufacturer	Description	Model	Serial Number	FCC Approval
HP	Printer	CB495A	05257893	DoC
Lenovo	PC Host	M6900	EA05257893	DoC
DELL	KEYBOARD	SK-8115	N/A	DoC
DELL	MOUSE	MOC5UO	N/A	DoC

#### 5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna. Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

#### 5.8 Abnormalities from Standard Conditions

None.

#### 5.9 Other Information Requested by the Customer

None.

Global United Technology Services Co., Ltd.

2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District,

Shenzhen, China 518102



# 6 Test Instruments list

Radia	Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.0(L)*6.0(W)* 6.0(H)	GTS250	Mar. 29 2013	Mar. 28 2014	
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A	
3	ESU EMI Test Receiver	R&S	ESU26	GTS203	Jul. 06 2013	Jul. 05 2014	
4	BiConiLog Antenna	SCHWARZBECK	VULB9163	GTS214	Jul. 02 2013	Jul. 01 2014	
5	Double -ridged waveguide horn	SCHWARZBECK	9120D	GTS208	Mar. 09 2013	Mar. 08 2014	
6	RF Amplifier	HP	8347A	GTS204	Jul. 06 2013	Jul. 05 2014	
7	Preamplifier	HP	8349B	GTS206	Jul. 06 2013	Jul. 05 2014	
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	
9	Coaxial cable	GTS	N/A	GTS210	Jul. 06 2013	Jul. 05 2014	
10	Coaxial Cable	GTS	N/A	GTS211	Jul. 06 2013	Jul. 05 2014	
11	Thermo meter	N/A	N/A	GTS256	Jul. 06 2013	Jul. 05 2014	

Cond	Conducted Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)	
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	Sep. 07 2013	Sep. 06 2015	
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	Jul. 02 2013	Jul. 01 2014	
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	Jul. 02 2013	Jul. 01 2014	
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	Jul. 02 2013	Jul. 01 2014	
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	Jul. 02 2013	Jul. 01 2014	
6	Coaxial Cable	GTS	N/A	GTS227	Jul. 02 2013	Jul. 01 2014	
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A	

Gene	General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date	Cal.Due date	
1	Barometer	ChangChun	DYM3	GTS257	July 09 2013	July 08 2014	

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

Project No.: GTSE140200135RF

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# 7 Test Results and Measurement Data

#### 7.1 Conducted Emissions

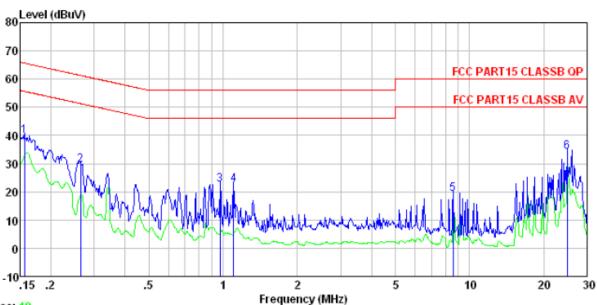
Test Requirement:	FCC Part15 B Section 15.107				
Test Method:	ANSI C63.4:2003				
Test Frequency Range:	150KHz to 30MHz				
Class / Severity:	Class B				
Receiver setup:	RBW=9KHz, VBW=30KHz, Sv	weep time=auto			
Limit:	[ [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [	Limit (c	lBuV)		
	Frequency range (MHz)	Quasi-peak	Average		
	0.15-0.5	66 to 56*	56 to 46*		
	0.5-5	56	46		
	5-30	60	50		
	* Decreases with the logarithm	n of the frequency.			
Test setup:	Reference Plane		•		
Total	Remark: E.U.T Equipment Under Test LISN Line Impedence Stabilization Network Test table height=0.8m				
Test procedure:	The E.U.T and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50ohm/50uH coupling impedance for the measuring equipment.				
	<ol> <li>The peripheral devices are also connected to the main power through a LISN that provides a 50ohm/50uH coupling impedance with 50ohm termination. (Please refer to the block diagram of the test setup and photographs).</li> <li>Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2003 on conducted measurement.</li> </ol>				
Test Instruments:	Refer to section 6 for details				
Test mode:	Pre-scan all modes in section 5.3, and found the PC mode which is the worst mode, so only the data of worst mode was show on the test report.				
Test results:	Pass				

Shenzhen, China 518102



#### **Measurement Data**

#### Line:



Trace: 18

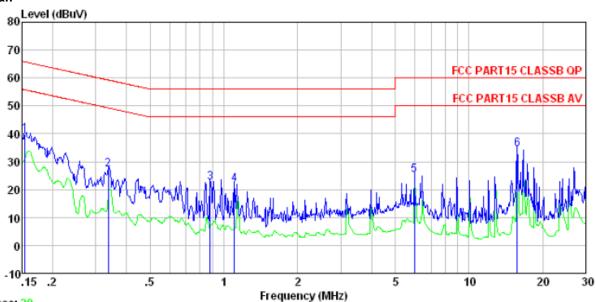
: FCC PART15 CLASSB QP LISN-2013 LINE : 0135RF Condition

Job No. Test mode : PC mode Test Engineer: Liu

	Freq		LISN Factor					Remark
	MHz	dBuV	d₿	dB	dBuV	dBuV	dB	
1 2 3 4 5 6	0. 264 0. 974 1. 106	22. 41 22. 21 18. 67	0.15 0.11 0.14 0.13 0.28 1.14	0.11 0.13 0.13 0.18	29.60 22.68 22.47 19.13	61.29 56.00 56.00 60.00	-31.69 -33.32 -33.53 -40.87	QP QP QP QP



#### Neutral:



Trace: 20

: FCC PART15 CLASSB QP LISN-2013 NEUTRAL Condition

Job No. Test mode : 0135RF : PC mode Test Engineer: Liu

	Freq	Read	LISN Factor				Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1 2		27.11	0.06		27.27	59.27	-32.00	QP
3 4 5		21.54	0.07 0.08 0.16	0.13	21.75	56.00	-34.25	QP
6			0.34					

#### Notes:

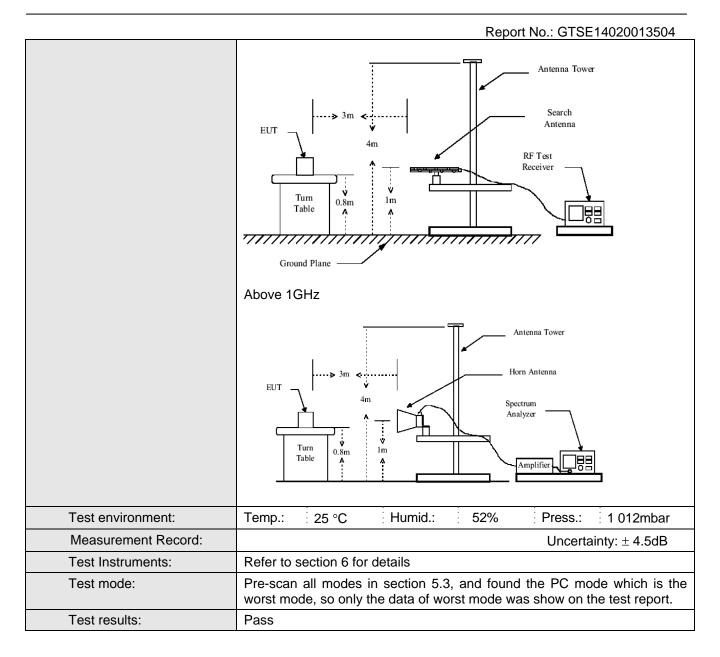
- 1. An initial pre-scan was performed on the line and neutral lines with peak detector.
- 2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.
- 3. Final Level =Receiver Read level + LISN Factor + Cable Loss
- 4. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits and measurement with the average detector receiver is unnecessary.



#### 7.2 Radiated Emission

1.2	Radiated Ellission								
	Test Requirement:	FCC Part15 B Section 15.109							
	Test Method:	ANSI C63.4:200	03						
	Test Frequency Range:	30MHz to 6GHz	7						
	Test site:	Measurement D	Distance: 3m	(Semi-Anecho	ic Chambe	r)			
	Receiver setup:								
		Frequency 30MHz-	Detector	RBW k 120kHz	VBW 300kHz	Remark			
		1GHz	Quasi-peal	K 120KHZ	SUUKHZ	Quasi-peak Value			
		Above 1GHz	Peak	1MHz	3MHz	Peak Value			
		Above 10112	Peak	1MHz	10Hz	Average Value			
	Limit:								
		Frequency 30MHz-88MHz		Limit (dBuV	/m @3m)	Remark			
				40.0	0	Quasi-peak Value			
		88MHz-2	16MHz	43.5	0	Quasi-peak Value			
		216MHz-9	60MHz	46.0	0	Quasi-peak Value			
		960MHz-	-1GHz	54.0	0	Quasi-peak Value			
		Above 1	IGH <sub>7</sub>	54.0	0	Average Value			
		7,0000	10112	74.0	0	Peak Value			
	Test Procedure:	<ol> <li>The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation.</li> <li>The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.</li> <li>The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li> <li>For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading.</li> </ol>							
		<ul> <li>5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.</li> <li>6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.</li> </ul>							
	Test setup:	Below 1GHz							
_		·	· · · · · · · · · · · · · · · · · · ·	·	· · · · · · · · · · · · · · · · · · ·				





#### Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

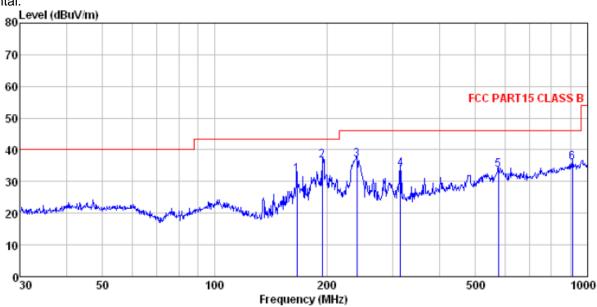
Final Test Level = Receiver Reading + Antenna Factor + Cable Factor - Preamplifier Factor



#### **Measurement Data**

Below 1GHz

Horizontal:



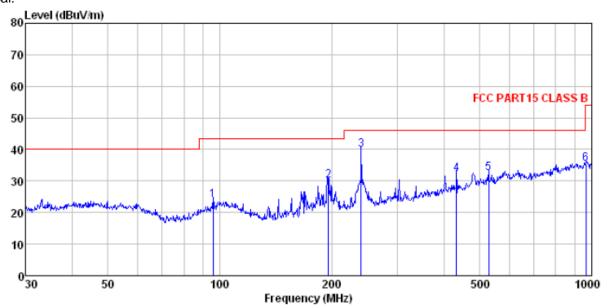
: 3m chamber : FCC PART15 CLASS B 3m VULB9163-2013M HORIZONTAL : 0135RF Site Condition

Job No. : 0135RF
Test Mode : PC mode
Test Engineer: Yang

cst	rugineer.	rang							
		Read	Ant enna	Cable	Preamo		Limit	Over	
	Fred		Factor					Limit	Remark
	rrcq	LCCCI	1 40001	Loss	1 40 (01	LCCCI	Line	LIMI	Komark
						75-77-	75-77-		
	MHz	dBu∀	dB/m	dB	dВ	dBuV/m	dBu√/m	dB	
1	166.068	51.60	10.85	1.66	32.04	32.07	43.50	-11.43	QP
2	194.453	54.43	12.56	1.81	32.12	36.68	43.50	-6.82	ΩP
3	240.830	53.00	14.09	2.08	32.16	37.01	46.00	-8.99	QP
4	314.377	48.42	15.26	2.44	32.13	33.99	46.00	-12.01	QP
5	576.644	41.18	20.03		31.15				
6									-
ю	909.667	J9. U4	23.10	4.00	31.19	JO. 00	40.00	-10.12	QF



#### Vertical:



Site

: 3m chamber : FCC\_PART15 CLASS B 3m VULB9163-2013M VERTICAL Condition

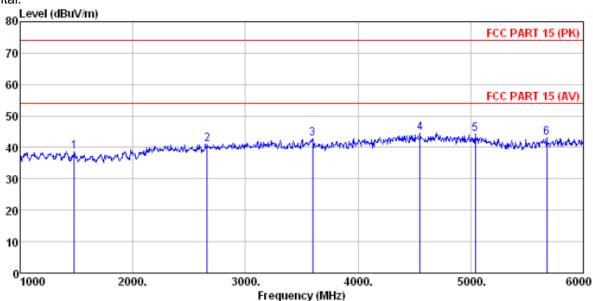
Job No. : 0135RF Test Mode : PC mode

rugineer.								
	Read	Ant enna	Cable	Preamp		Limit	Over	
Fred	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
rrcq	LCCCI	1 accor	LOSS	ractor	LCVCI	LINC	Limit	Komark
		=			-=	-=-=-		
MHz	dBu∀	dB/m	dB	dB	dBuV/m	dBuV/m	dВ	
05 762	30 56	14 00	1 16	31 74	23 88	43 E0	-10 62	OΡ
195.822	47.82	12.57	1.82	32.13	30.08	43.50	-13.42	QP
239 987	55 79	14 09	2 07	32 16	30 70	46 00	-6 21	OP
432.546	43.51	17.53	3.01	31.78	32.27	46.00	-13.73	QP
528, 246	41.39	19, 15	3, 43	31.41	32, 56	46.00	-13.44	ΩP
965.542	38.04	23.52	5.09	31.22	35.43	54.00	-18.57	QP
	Freq MHz 95.762 195.822 239.987 432.546 528.246	Freq Level  MHz dBuV  95.762 39.56 195.822 47.82 239.987 55.79 432.546 43.51 528.246 41.39	ReadAntenna Freq Level Factor  MHz dBuV dB/m  95.762 39.56 14.90 195.822 47.82 12.57 239.987 55.79 14.09 432.546 43.51 17.53 528.246 41.39 19.15	ReadAntenna Cable Freq Level Factor Loss  MHz dBuV dB/m dB  95.762 39.56 14.90 1.16 195.822 47.82 12.57 1.82 239.987 55.79 14.09 2.07 432.546 43.51 17.53 3.01 528.246 41.39 19.15 3.43	ReadAntenna Cable Preamp Freq Level Factor Loss Factor  MHz dBuV dB/m dB dB  95.762 39.56 14.90 1.16 31.74 195.822 47.82 12.57 1.82 32.13 239.987 55.79 14.09 2.07 32.16 432.546 43.51 17.53 3.01 31.78 528.246 41.39 19.15 3.43 31.41	ReadAntenna Cable Preamp Freq Level Factor Loss Factor Level  MHz dBuV dB/m dB dB dBuV/m  95.762 39.56 14.90 1.16 31.74 23.88 195.822 47.82 12.57 1.82 32.13 30.08 239.987 55.79 14.09 2.07 32.16 39.79 432.546 43.51 17.53 3.01 31.78 32.27 528.246 41.39 19.15 3.43 31.41 32.56	ReadAntenna   Cable Preamp   Limit	ReadAntenna   Cable Preamp   Limit   Over   Level Factor   Loss Factor   Level   Line   Limit



#### Above 1GHz

#### Horizontal:



Site

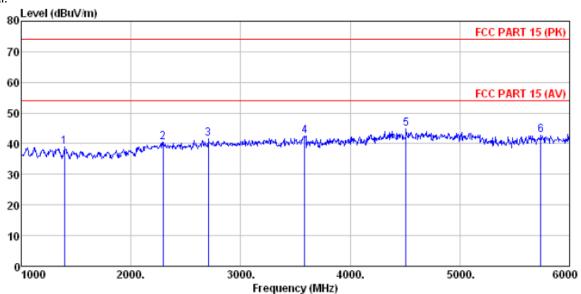
: 3m chamber : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) HORIZONTAL : 0135RF Condition

Job No. Test Mode : PC m Test Engineer: Yang : PC mode

DIETHOOF.								
	Read	Ant enna	Cable	Preamp		Limit	Over	
Frea	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
	3BV	3B7-	JB	JB	JB., 77-	JB., 77-		
JiLTZ	abuv	ш/ ж	ш	ш	and a / m	and a / m	ш	
								_
1480.000	42.42	25.27	4.67	33.56	38.80	74.00	-35.20	Peak
2660.000	41.06	27.96	5.63	33.70	40.95	74.00	-33.05	Peak
3595,000	39.24	29.13	7.15	32.64	42.88	74.00	-31.12	Peak
5675.000	33.22	32.44	9.77	32.33	43.10	74.00	-30.90	Peak
	Freq MHz 1480.000 2660.000 3595.000 4550.000 5040.000	Freq Level  MHz dBuV  1480.000 42.42 2660.000 41.06 3595.000 39.24 4550.000 36.74 5040.000 35.54	ReadAntenna Freq Level Factor MHz dBuV dB/m 1480.000 42.42 25.27 2660.000 41.06 27.96 3595.000 39.24 29.13	ReadAntenna Cable Level Factor Loss  MHz dBuV dB/m dB  1480.000 42.42 25.27 4.67 2660.000 41.06 27.96 5.63 3595.000 39.24 29.13 7.15 4550.000 36.74 31.42 8.38 5040.000 35.54 31.98 8.83	ReadAntenna Cable Preamp Loss Factor  MHz dBuV dB/m dB dB  1480.000 42.42 25.27 4.67 33.56 2660.000 41.06 27.96 5.63 33.70 3595.000 39.24 29.13 7.15 32.64 4550.000 36.74 31.42 8.38 31.96 5040.000 35.54 31.98 8.83 32.21	ReadAntenna Cable Preamp Level Factor Loss Factor Level  MHz dBuV dB/m dB dB dBuV/m  1480.000 42.42 25.27 4.67 33.56 38.80 2660.000 41.06 27.96 5.63 33.70 40.95 3595.000 39.24 29.13 7.15 32.64 42.88 4550.000 36.74 31.42 8.38 31.96 44.58 5040.000 35.54 31.98 8.83 32.21 44.14	ReadAntenna   Cable Preamp   Limit   Level Factor   Level Line   Level Factor   Level Factor   Level Line   Level Factor   Level	ReadAntenna   Cable Preamp   Limit   Over   Level Factor   Loss Factor   Level   Line   Limit



#### Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120D ANT(>1GHZ) VERTICAL Condition

Job No. : 0135RF Test Mode : PC mode

est	Engineer:		Antenna	Cabla	Droomn		Limit	Over	
	Freq		Factor						Remark
	MHz	dBu∜	<u>d</u> B/m	dB	dB	dBuV/m	dBuV/m	<u>dB</u>	
1 2 3 4 5	1395.000 2295.000 2705.000 3585.000 4510.000 5740.000	42.24 41.35 41.31 39.04 37.00 32.76	25. 59 27. 97 28. 17 29. 12 31. 34 32. 56		33. 42 34. 13 33. 66 32. 66 31. 94 32. 28	41.49 42.63 44.74	74.00 74.00 74.00 74.00	-34.98 -33.53 -32.51 -31.37 -29.26 -31.10	Peak Peak Peak Peak

#### Remark:

- 1. The EUT was test at 3m in field chamber.
- 2. If the average limit is met when using a Peak detector, the EUT shall be deemed to meet both peak and average limits. And measurement with the average detector is unnecessary.