# FCC RADIO TEST REPORT FCC ID: 2ACV2A100

Product: Tablet PC

**Trade Name:** N/A

Model Name: A100

Serial Model: XP10

# **Prepared for**

advanced digital solution corporation limited

UNIT 04 , 7/F,BRIGHT WAY TOWER,NO,33 MONG KOK ROAD,KOWLOON,HK

# **Prepared by**

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# **TEST RESULT CERTIFICATION**

Applicant's name			corporation limited	
Address	UNIT 04,7	7/F,		
	BRIGHT W	'AY TOWER,I	NO,33 MONG KOK RO	AD,KOWLOON,HK
Manufacture's Name		•	corporation limited	
Address				
Dan deset de contrations	BRIGHT W	AY TOWER,	NO,33 MONG KOK RO	AD,KOWLOON,HK
Product description	<b>T.I.</b> ( <b>D</b> 0			
Product name				
Model and/or type reference	A100			
Serial Model:	XP10			
Standards	FCC Part15	5.247		
Test procedure	ANSI C63.4	4-2003		
	(EUT) is in compl	liance with the	S, and the test results are FCC requirements. A	
•	ered or revised by	•	thout the written approval	
Date (s) of performance	ce of tests J	ul. 24, 2014 ~ /	Aug. 12, 2014	
Date of Issue				
Test Result				
Test Result	Р	rass		
Test	ing Engineer	:	Jones Song	
			Assistant	
Tech	ınical Manager	:	Don'd Lia	
			Supervisor	
Auth	orized Signatory	:	Jackey En	

Jacky Ou / Manager



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# 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

FCC Part15 (15.247) , Subpart C					
Standard Section	Test Item	Judgment	Remark		
15.207	Conducted Emission	PASS			
15.247(a)(1)	Hopping Channel Separation	PASS			
15.247(b)(1)	Peak Output Power	PASS			
15.247(c)	Radiated Spurious Emission	PASS			
15.247(a)(iii)	Number of Hopping Frequency	PASS			
15.247(a)(iii)	Dwell Time	PASS			
15.247(a)(1)	Bandwidth	PASS			
15.205	Band Edge Emission	PASS			
15.203	Antenna Requirement	PASS			

# NOTE:

(1)" N/A" denotes test is not applicable in this Test Report

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#### 1.1 TEST FACILITY

NTEK Testing Technology Co., Ltd

Add.: 1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District,

Shenzhen P.R. China.

FCC Registration No.:238937; IC Registration No.:9270A-1

# 1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement  $\mathbf{y} \pm \mathbf{U}$ , where expended uncertainty  $\mathbf{U}$  is based on a standard uncertainty multiplied by a coverage factor of  $\mathbf{k=2}$ , providing a level of confidence of approximately 95 %  $^{\circ}$ 

No.	Item	Uncertainty
1	Conducted Emission Test	±1.38dB
2	RF power,conducted	±0.16dB
3	Spurious emissions,conducted	±0.21dB
4	All emissions,radiated(<1G)	±4.68dB
5	All emissions,radiated(>1G)	±4.89dB
6	Temperature	±0.5°C
7	Humidity	±2%



# 2. GENERAL INFORMATION

# 2.1 GENERAL DESCRIPTION OF EUT

Equipment	Tablet PC		
Trade Name	N/A		
Model Name	A100		
Serial Model	XP10		
Model Difference	Material difference in the rear housing cover (A100:ABS+PC; XP100:Metal).		
	The EUT is a Tablet Po	C.	
	Operation Frequency:	2402~2480 MHz	
	Modulation Type:	GFSK, ∏/4-DQPSK, 8-DPSK	
Product Description	Bluetooth version:	BT2.1+EDR	
	Number Of Channel	79CH	
	Bit Rate of Transmitter	1Mbps/2Mbps/3Mbps	
	Antenna Designation:	Please see Note 3.	
	Antenna Gain(Peak)	2.41dBi	
Channel List	Please refer to the Note 2.		
Ratings	DC 5.0V from adapter.		
Adapter	MODEL: JY12200 INPUT: AC 100-240V , 50/60Hz 0.5A Max OUTPUT: 12V===2A		
Battery	DC 3.7V 4050mAh rechargeable battery x 2		
Connecting I/O Port(s)	Please refer to the User's Manual		

#### Note:

- 1.1 For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
- 1.2 All modes were tested accordingly, and only the worst mode data were shown in this report.

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2.

Channel List					
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
00	2402	27	2429	54	2456
01	2403	28	2430	55	2457
02	2404	29	2431	56	2458
03	2405	30	2432	57	2459
04	2406	31	2433	58	2460
05	2407	32	2434	59	2461
06	2408	33	2435	60	2462
07	2409	34	2436	61	2463
80	2410	35	2437	62	2464
09	2411	36	2438	63	2465
10	2412	37	2439	64	2466
11	2413	38	2440	65	2467
12	2414	39	2441	66	2468
13	2415	40	2442	67	2469
14	2416	41	2443	68	2470
15	2417	42	2444	69	2471
16	2418	43	2445	70	2472
17	2419	44	2446	71	2473
18	2420	45	2447	72	2474
19	2421	46	2448	73	2475
20	2422	47	2449	74	2476
21	2423	48	2450	75	2477
22	2424	49	2451	76	2478
23	2425	50	2452	77	2479
24	2426	51	2453	78	2480
25	2427	52	2454		
26	2428	53	2455		

# 3. Table for Filed Antenna

Ant	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	FPCB Antenna	A "ipex connector " is as an antenna connector.	2.41	N/A



2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system
was pre-scanning tested base on the consideration of following EUT operation mode or test
configuration mode which possible have effect on EMI emission level. Each of these EUT
operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH00
Mode 2	CH39
Mode 3	CH78
Mode 4	TX Mode

For Conducted Emission		
Final Test Mode	Description	
Mode 4	TX Mode	

For Radiated Emission					
Final Test Mode	Description				
Mode 1	CH00				
Mode 2	CH39				
Mode 3	CH78				

#### Note:

- (1) The measurements are performed at the highest, middle, lowest available channels.
- (2) The data rate was set in 3Mbps for radiated emission due to the highest RF output power.

#### 2.3 TABLE OF PARAMETERS OF TEXT SOFTWARE SETTING

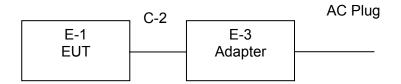
During testing channel & power controlling software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product power parameters of FHSS

Test software Version	Test program: Broadcom				
Frequency	2402 MHz	2441 MHz	2480 MHz		
Parameters(1/2/3Mbps)	DEF	DEF	DEF		

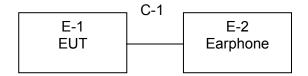


# 2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

For conducted emission test:



For radiated emission test:



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# 2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Brand	Model/Type No.	Series No.	Note
E-1	Tablet PC	N/A	A100	N/A	EUT
E-2	Earphone	DELI	DELI-001	N/A	N/A
E-3	Adapter	N/A	SWI10-W0502000A	N/A	N/A

Item	Shielded Type	Ferrite Core	Length	Note
C-1	NO	NO	1.5m	
C-2	NO	NO	0.85m	

#### Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in <code>[Length\_]</code> column.
- (3) "YES" is means "shielded" "with core"; "NO" is means "unshielded" "without core".



# 2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Radiation Test equipment

Tadio	ation rest equi	JITICITE				0 11 ( )	0 111 11
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibratio n period
1	Spectrum Analyzer	Agilent	E4407B	MY45108040	2014.07.06	2015.07.05	1 year
2	Test Receiver	R&S	ESPI	101318	2014.06.07	2015.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2014.07.06	2015.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2014.06.07	2015.06.06	1 year
5	Spectrum Analyzer	ADVANTEST	R3132	150900201	2014.06.07	2015.06.06	1 year
6	Horn Antenna	EM	EM-AH-101 80	2011071402	2014.07.06	2015.07.05	1 year
7	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2014.07.06	2015.07.05	1 year
8	Amplifier	EM	EM-30180	060538	2013.12.22	2014.12.21	1 year
9	Loop Antenna	ARA	PLA-1030/B	1029	2014.06.08	2015.06.07	1 year
10	Power Meter	R&S	NRVS	100696	2014.07.06	2015.07.05	1 year
11	Power Sensor	R&S	URV5-Z4	0395.1619.05	2014.07.06	2015.07.05	1 year
12	Spectrum Analyzer	R&S	FSP	1165.439141	2014.05.13	2015.05.12	1 year
13	RF cable	PTS	40 CM	N/A	2014.07.01	2015.06.30	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufactu rer	Type No.	Serial No.	Last calibration	Calibrated until	Calibratio n period
1	Test Receiver	R&S	ESCI	101160	2014.06.06	2015.06.05	1 year
2	LISN	R&S	ENV216	101313	2013.08.24	2014.08.23	1 year
3	LISN	EMCO	3816/2	00042990	2013.08.24	2014.08.23	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	620026441 7	2014.06.07	2015.06.06	1 year
5	Passive Voltage Probe	R&S	ESH2-Z3	100196	2014.06.07	2015.06.06	1 year
6	Absorbing clamp	R&S	MOS-21	100423	2014.06.08	2015.06.07	1 year
7	Coaxial cable	PTS	200 CM	N/A	2014.07.01	2015.06.30	1 year



# 3. EMC EMISSION TEST

#### 3.1 CONDUCTED EMISSION MEASUREMENT

# 3.1.1 POWER LINE CONDUCTED EMISSION Limits (Frequency Range 150KHz-30MHz)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)		Standard	
TREQUENCT (MITZ)	Quasi-peak	Average	Quasi-peak	Average	Stariuaru	
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	CISPR	
0.50 -5.0	73.00	60.00	56.00	46.00	CISPR	
5.0 -30.0	73.00	60.00	60.00	50.00	CISPR	

0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *	FCC
0.50 -5.0	73.00	60.00	56.00	46.00	FCC
5.0 -30.0	73.00	60.00	60.00	50.00	FCC

#### Note:

- (1) The tighter limit applies at the band edges.
- (2) The limit of " \* " marked band means the limitation decreases linearly with the logarithm of the frequency in the range.

The following table is the setting of the receiver

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz



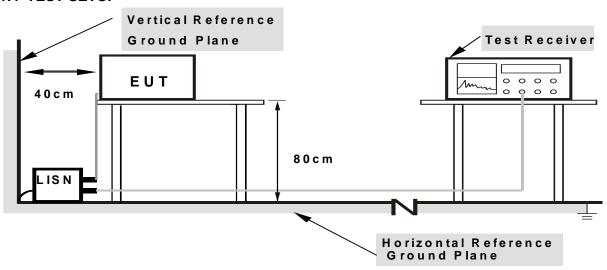
#### 3.1.2 TEST PROCEDURE

- a. The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- c. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- d. LISN at least 80 cm from nearest part of EUT chassis.
- e. For the actual test configuration, please refer to the related Item –EUT Test Photos.

#### 3.1.3 DEVIATION FROM TEST STANDARD

No deviation

#### 3.1.4 TEST SETUP



Note: 1.Support units were connected to second LISN.

2.Both of LISNs (AMN) are 80 cm from EUT and at least 80 from other units and other metal planes

#### 3.1.5 EUT OPERATING CONDITIONS

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

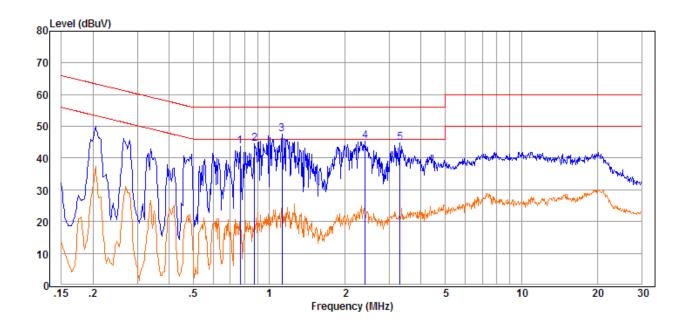


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# 3.1.6 TEST RESULTS

EUT:	Tablet PC	Model Name. :	A100
Temperature :	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010hPa	Phase :	L
Test Voltage :	DC 5V From Adapter AC 120/60Hz	Test Mode :	Mode 4

Freq MHz	Reading dBuV	<b>Factor</b> dB	Result dBuV/m	Limit dBuV/m	Over Limit dB	Remark	Phase
0.77	42.41	1.31	43.72	56.00	-12.28	Peak	LINE
0.88	43.32	1.31	44.63	56.00	-11.37	Peak	LINE
1.12	46.18	1.32	47.50	56.00	-8.50	Peak	LINE
2.41	44.00	1.34	45.34	56.00	-10.66	Peak	LINE
3.31	43.37	1.35	44.72	56.00	-11.28	Peak	LINE

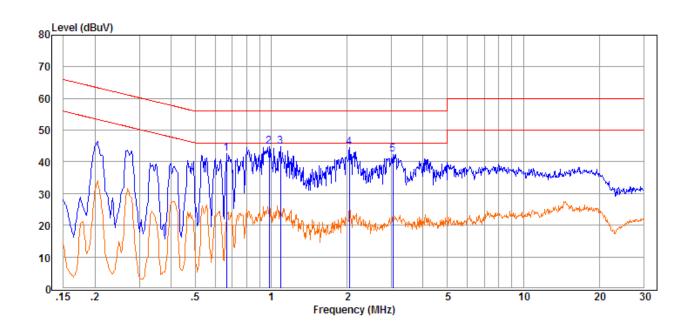




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EUT:	Tablet PC	Model Name. :	A100
Temperature :	<b>26</b> ℃	Relative Humidity:	56%
Pressure:	1010hPa	Phase :	N
TIEST VOIDAGE .	DC 5V form Adapter AC 120V/60Hz	Test Mode:	Mode 4

Freq MHz	Reading dBuV	<b>Factor</b> dB	Result dBuV/m	Limit dBuV/m	Over Limit dB	Remark	Phase
0.66	41.34	1.31	42.65	56.00	-13.35	Peak	NEUTRAL
0.98	43.51	1.32	44.83	56.00	-11.17	Peak	NEUTRAL
1.09	43.57	1.32	44.89	56.00	-11.11	Peak	NEUTRAL
2.04	43.20	1.33	44.53	56.00	-11.47	Peak	NEUTRAL
3.04	41.04	1.34	42.38	56.00	-13.62	Peak	NEUTRAL





3.2 RADIATED EMISSION MEASUREMENT

# 3.2.1 RADIATED EMISSION LIMITS (Frequency Range 9kHz-1000MHz)

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies	Field Strength	Measurement Distance
(MHz)	(micorvolts/meter)	(meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

# LIMITS OF RADIATED EMISSION MEASUREMENT (Above 1000MHz)

FREQUENCY (MHz)	Class A (dBu	ıV/m) (at 3M)	Class B (dBuV/m) (at 3M)		
PREQUENCY (MIDZ)	PEAK	AVERAGE	PEAK	AVERAGE	
Above 1000	80	60	74	54	

#### Notes:

- (1) The limit for radiated test was performed according to FCC PART 15C.
- (2) The tighter limit applies at the band edges.
- (3) Emission level (dBuV/m)=20log Emission level (uV/m).

# FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

Highest frequency generated or Upper frequency of measurement used in the device or on which the device operates or tunes (MHz)	Range (MHz)
Below 1.705	30
1.705 – 108	1000
108 – 500	2000
500 – 1000	5000
Above 1000	5 <sup>th</sup> harmonic of the highest frequency or 40 GHz, whichever is lower

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Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (emission in restricted	1 MHz / 1 MHz for Dook, 1 MHz / 10Hz for Average
band)	1 MHz / 1 MHz for Peak, 1 MHz / 10Hz for Average

Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

#### 3.2.2 TEST PROCEDURE

- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos. Note:

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

# 3.2.3 DEVIATION FROM TEST STANDARD

No deviation

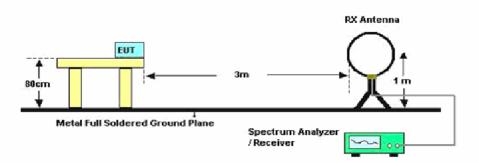


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# 3.2.4 TEST SETUP

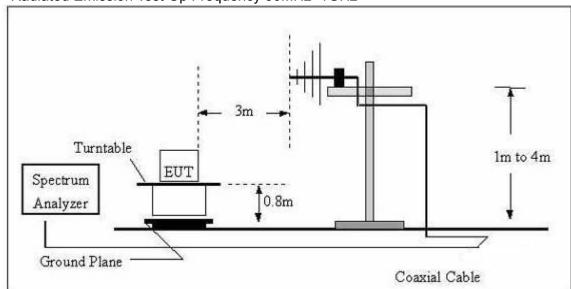
# (A) Radiated Emission Test-Up Frequency Below 30MHz

# 5.2 Block Diagram of Test Setup



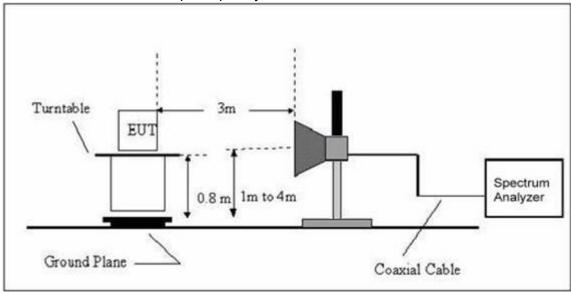
Below 30MHz

(B) Radiated Emission Test-Up Frequency 30MHz~1GHz





# (C) Radiated Emission Test-Up Frequency Above 1GHz



# 3.2.5 EUT OPERATING CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

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# 3.2.6 TEST RESULTS (BELOW 30 MHZ)

EUT:	Tablet PC	Model Name. :	A100
Temperature:	<b>20</b> ℃	Relative Humidtity:	48%
Pressure:	1010 hPa	Test Voltage:	DC 3.7V FROM BATTERY
Test Mode :	Mode 4	Polarization :	

Freq.	Reading	Limit	Margin	State
(MHz)	(dBuV/m)	(dBuV/m)	(dB)	P/F
				Р
				Р

# NOTE:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Distance extrapolation factor =20 log (specific distance/test distance)(dB);

Limit line = specific limits(dBuv) + distance extrapolation factor.

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# 3.2.7 TEST RESULTS (BETWEEN 30M - 1000 MHZ)

A100 Worst case: GFSK DH5 CHANNEL 39

EUT: Tablet PC Model Name. : A100

Temperature: 25 °C Relative Humidity: 48%

Pressure: 1010hPa Test Mode: Mode 4

Test Voltage: DC 3.7V FROM BATTERY

Polar	Frequen cy	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
Vertical	36.21	19.41	14.80	34.21	40	-5.79	QP
Vertical	48.54	21.62	10.55	32.17	40	-7.83	QP
Vertical	64.18	30.22	5.39	35.61	40	-4.39	QP
Vertical	99.37	23.69	10.51	34.20	43.5	-9.30	QP
Vertical	174.44	25.21	10.84	36.05	43.5	-7.45	QP
Vertical	601.25	17.64	23.53	41.17	46	-4.83	QP
Horizontal	33.29	15.45	18.04	33.49	40	-6.51	QP
Horizontal	61.07	22.96	5.98	28.94	40	-11.06	QP
Horizontal	165.22	24.11	11.76	35.87	43.5	-7.63	QP
Horizontal	200.15	23.56	8.97	32.53	43.5	-10.97	QP
Horizontal	271.23	27.87	14.59	42.46	46	-3.54	QP
Horizontal	577.51	15.54	23.14	38.68	46	-7.32	QP



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XP10 Worst case: GFSK DH5 CHANNEL 01

711 10 110101 0001	74 10 11010t 0000t 01 01t D110 011 1111122 01							
EUT:	Tablet PC	Model Name. :	XP10					
Temperature :	<b>25</b> ℃	Relative Humidity:	48%					
Pressure :	1010hPa	Test Mode:	Mode 4					
Test Voltage :	DC 3.7V FROM BATTERY							

Polar	Frequen cy	Meter Reading	Factor	Emission Level	Limits	Margin	Detector
(H/V)	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	Туре
Vertical	16.36	13.22	14.82	28.04	40	-11.96	QP
Vertical	18.12	14.68	10.55	25.23	40	-14.77	QP
Vertical	19.48	15.41	5.39	20.80	40	-19.20	QP
Vertical	20.11	17.69	10.51	28.20	43.5	-15.30	QP
Vertical	18.39	10.85	10.84	21.69	43.5	-21.81	QP
Vertical	13.52	12.54	23.53	36.07	46	-9.93	QP
Horizontal	15.47	14.08	18.04	32.12	40	-7.88	QP
Horizontal	13.55	6.01	5.98	11.99	40	-28.01	QP
Horizontal	18.28	11.78	11.76	23.54	43.5	-19.96	QP
Horizontal	21.65	8.99	8.97	17.96	43.5	-25.54	QP
Horizontal	19.78	14.62	14.59	29.21	46	-16.79	QP
Horizontal	15.41	13.31	23.14	36.45	46	-9.55	QP

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# 3.2.8 TEST RESULTS (ABOVE 1000 MHZ)

Worst case: A100(With ABS+PC rear housing)

	(		
EUT:	Tablet PC	Model Name. :	A100
Temperature :	<b>25</b> ℃	Relative Humidity:	55%
Pressure :	1010hPa	Test Mode:	Mode 4
Test Mode :	DC 3.7V FROM BATTERY		

Polar (H/V)	Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector Type
	(MHz)	(dBuV)	(dB)	(dBuV/m)	(dBuV/m)	(dB)	
			Frequency	/:2402MHz			
V	4804.50	57.36	-3.64	53.72	74	-20.28	Pk
V	4804.50	47.73	-3.64	44.09	54	-9.91	Av
Н	4852.15	56.91	-3.68	53.23	74	-20.77	Pk
Н	4852.50	43.39	-3.67	39.72	54	-14.28	Av
Н	7323.50	46.24	-0.82	45.42	74	-28.58	Pk
			Frequency	/:2441MHz			
V	4882.15	65.1	-3.68	61.42	74	-12.58	Pk
V	4882.15	47.35	-3.68	43.67	54	-10.33	Av
Н	4882.15	63.06	-3.68	59.38	74	-14.62	Pk
Н	4882.15	46.37	-3.68	42.69	54	-11.31	Av
			Frequency	/:2480MHz			
V	4960.15	62.6	-3.59	59.01	74	-14.99	Pk
V	4960.15	46.93	-3.59	43.34	54	-10.66	Av
Н	4960.15	62.25	-3.59	58.66	74	-15.34	Pk
Н	4960.15	46.67	-3.59	43.08	54	-10.92	Av

Absolute Level= ReadingLevel+ Factor, Margin= Absolute Level - Limit

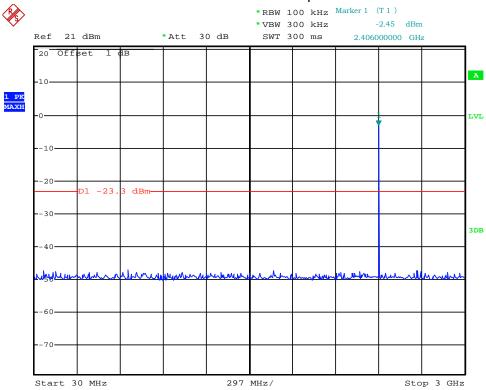
Note: Mode 3Mbps is the worst mode.



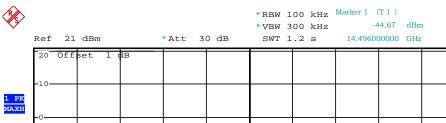
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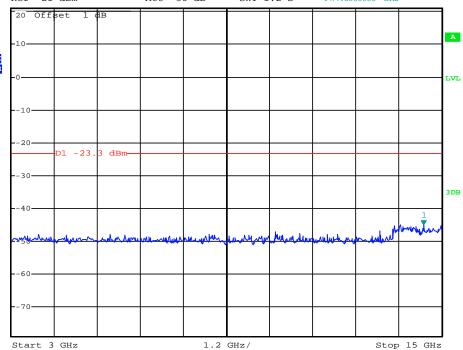
# Conducted Spurious Emissions at Antenna Port:

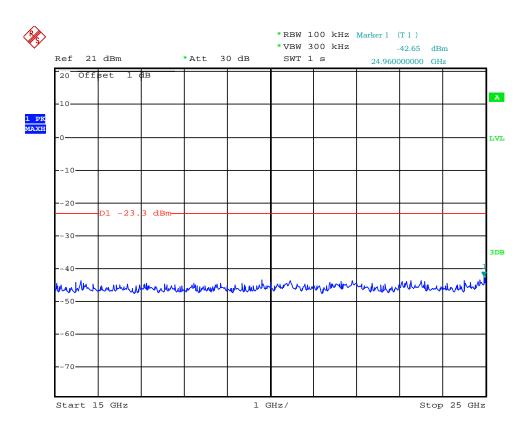
# CH00 -1Mbps



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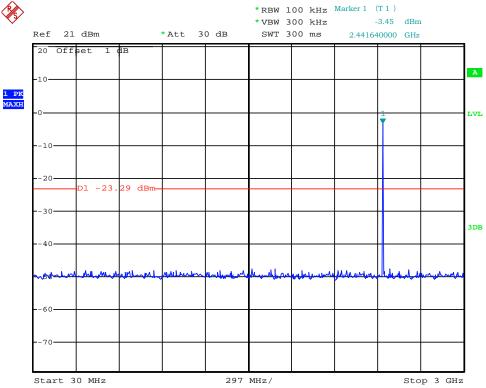




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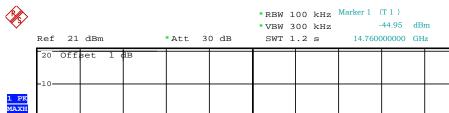
# CH39 -1Mbps

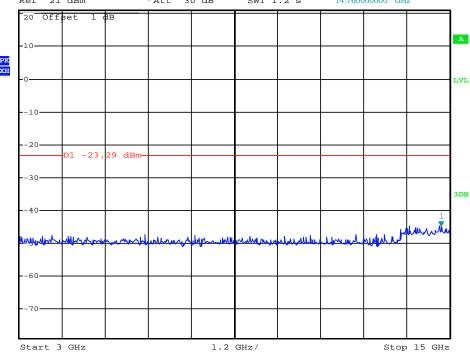


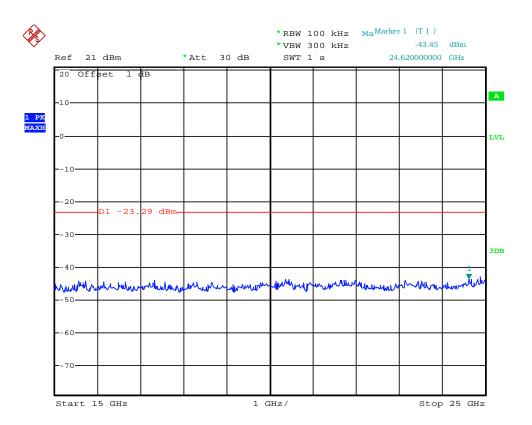




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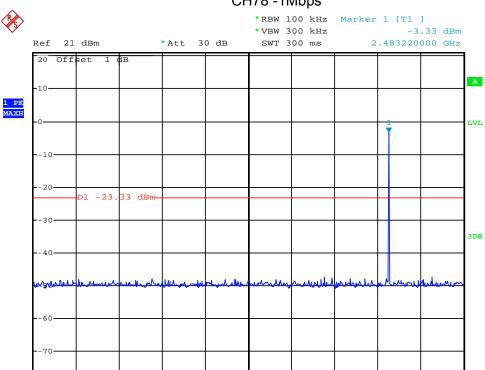


Start 30 MHz

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Stop 3 GHz

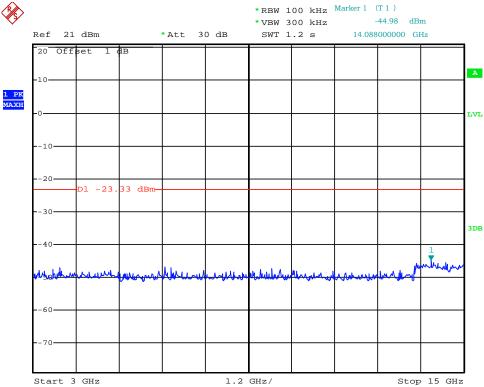
# CH78 -1Mbps

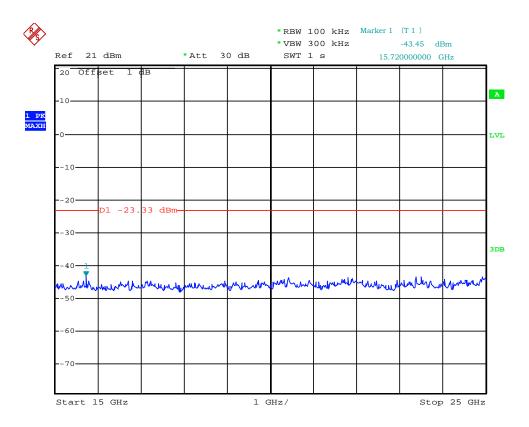


297 MHz/

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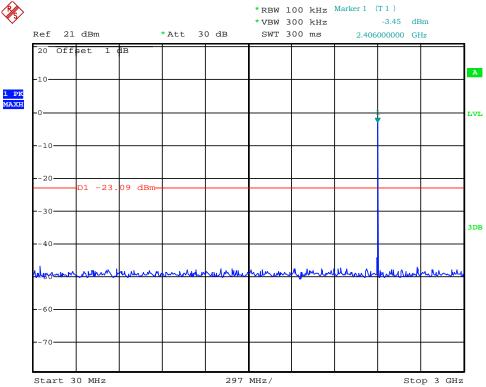




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# CH00 -2Mbps



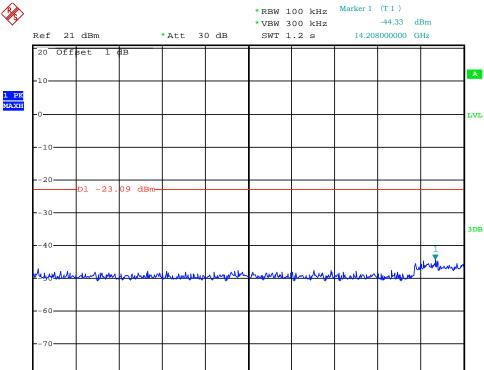


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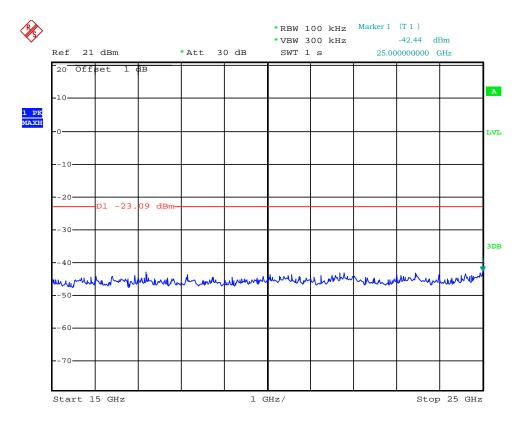
Stop 15 GHz



Start 3 GHz



1.2 GHz/

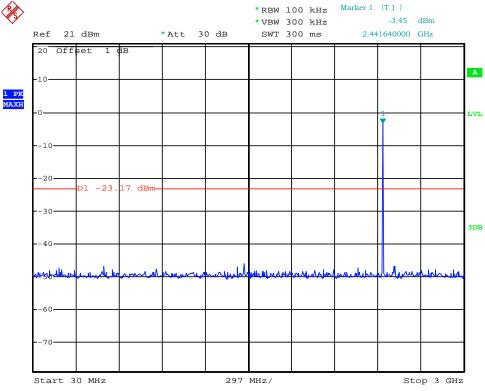




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# CH39 -2Mbps

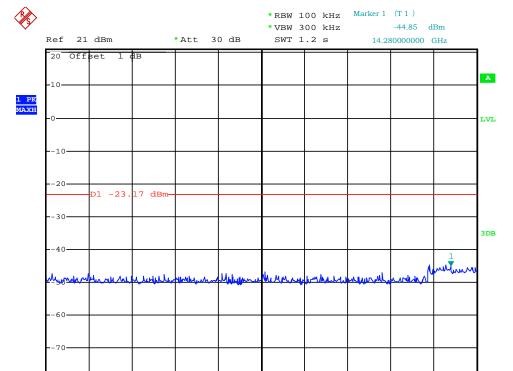




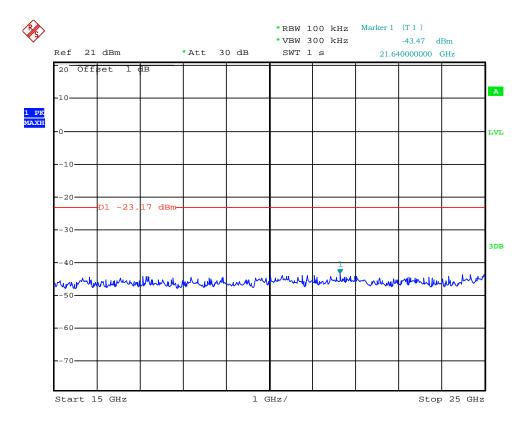
Start 3 GHz

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Stop 15 GHz



1.2 GHz/

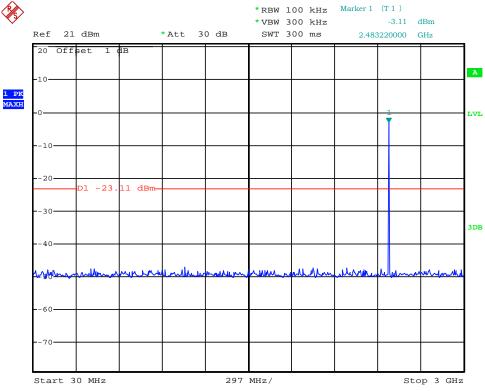




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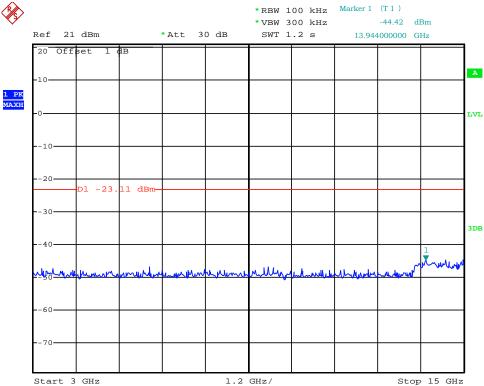
# CH78 -2Mbps

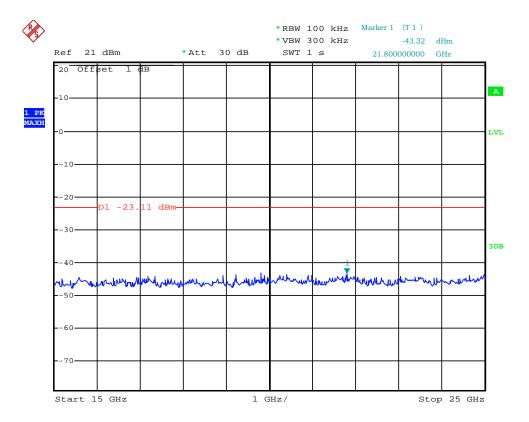




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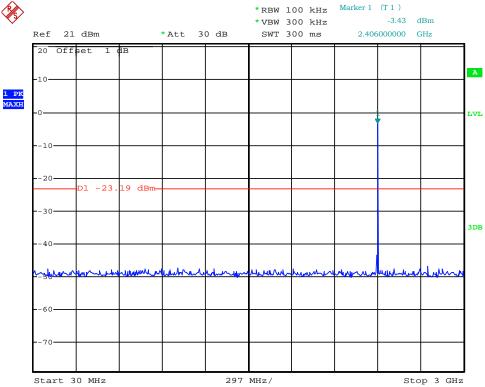








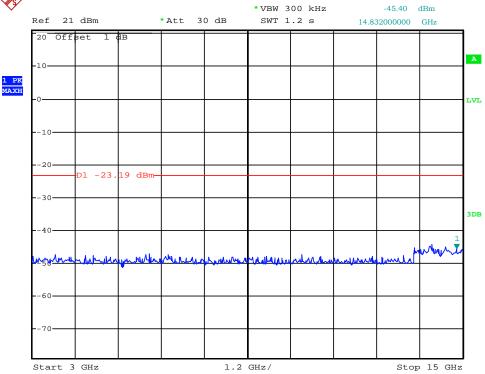
# CH00 -3Mbps

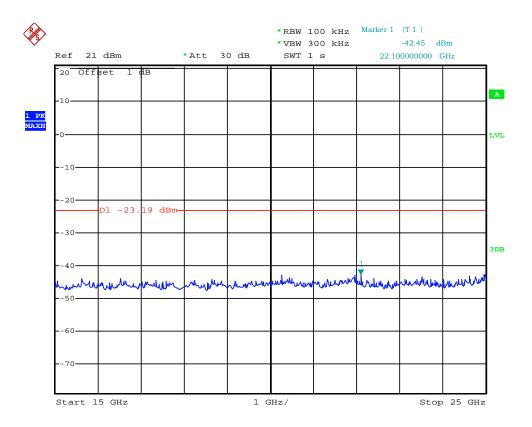


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\*RBW 100 kHz Marker 1 (T 1 )



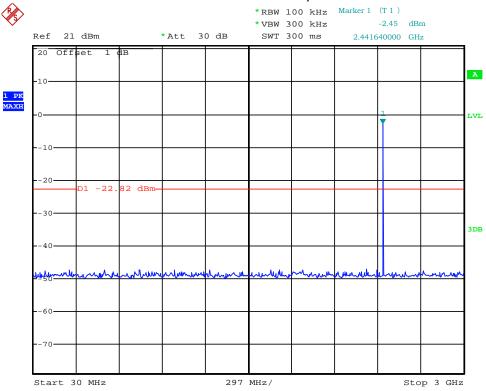




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## CH39 -3Mbps

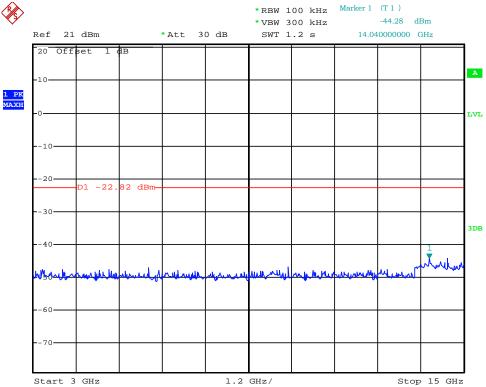


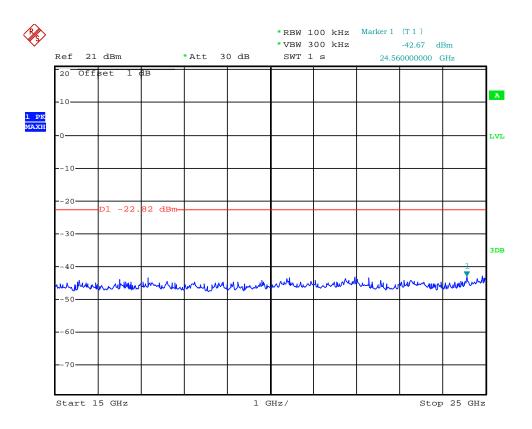




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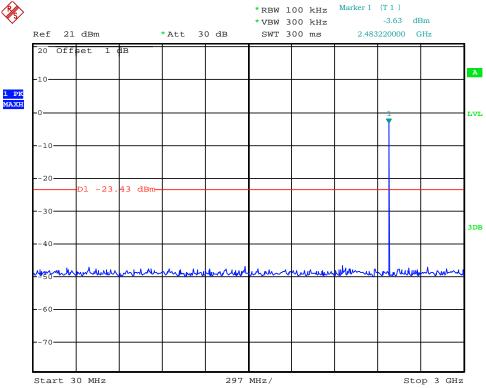




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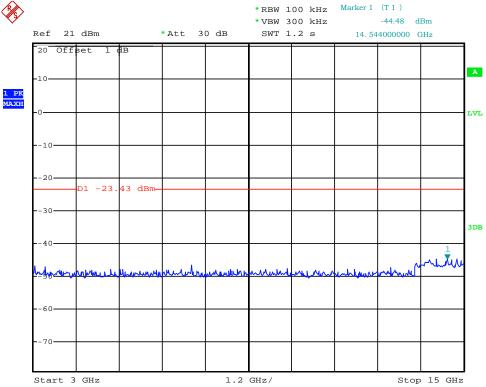
## CH78 -3Mbps

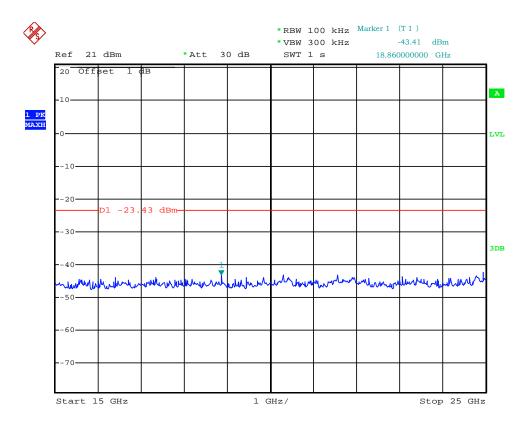




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#### 4. NUMBER OF HOPPING CHANNEL

#### 4.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)(iii)	Number of Hopping Channel	≥15	2400-2483.5	PASS

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	= the frequency band of operation
RB	RBW =100kHz
VB	VBW ≥ RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

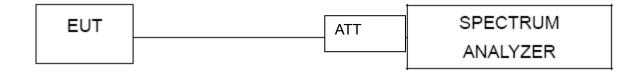
#### 4.1.1 TEST PROCEDURE

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW= 100kHz, VBW=300kHz, Sweep time = Auto.

## 4.1.2 DEVIATION FROM STANDARD

No deviation.

## 4.1.3 TEST SETUP



## 4.1.4 EUT OPERATION CONDITIONS

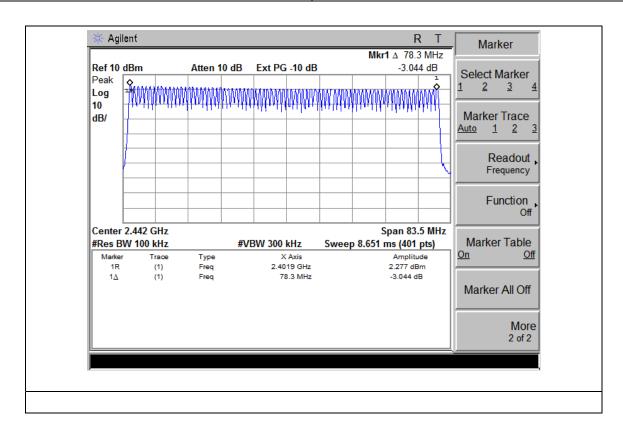
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.



4.1.5 TEST RESULTS

EUT:	Tablet PC	Model Name :	A100
Temperature:	<b>25</b> ℃	Relative Humidity:	56%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	Hopping Mode		

Number of Hopping Channel	79
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#### 5. AVERAGE TIME OF OCCUPANCY

#### 5.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C				
Section	Test Item	Limit	Frequency Range (MHz)	Result
15.247 (a)(1)(iii)	Average Time of Occupancy	0.4sec	2400-2483.5	PASS

#### **5.1.1 TEST PROCEDURE**

- a. The transmitter output (antenna port) was connected to the spectrum analyzer
- b. Set RBW of spectrum analyzer to 1MHz and VBW to 1MHz.
- c. Use a video trigger with the trigger level set to enable triggering only on full pulses.
- d. Sweep Time is more than once pulse time.
- e. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
- f. Measure the maximum time duration of one single pulse.
- g. Set the EUT for DH5, DH3 and DH1 packet transmitting.
- h. Measure the maximum time duration of one single pulse.
- i. A Period Time = (channel number)\*0.4
  - DH1 Time Slot: Reading \* (1600/2)\*31.6/(channel number) DH3 Time Slot: Reading \* (1600/4)\*31.6/(channel number)

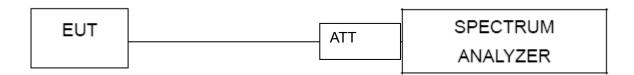
  - DH5 Time Slot: Reading \* (1600/6)\*31.6/(channel number)

#### 5.1.2 DEVIATION FROM STANDARD

No deviation.

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## 5.1.3 TEST SETUP



## **5.1.4 EUT OPERATION CONDITIONS**

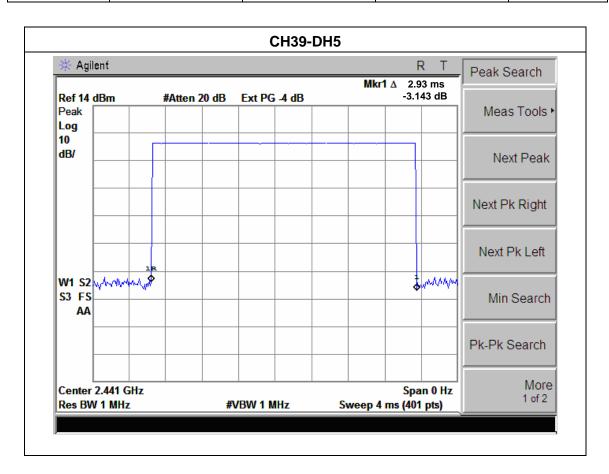
The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.



**5.1.5 TEST RESULTS** 

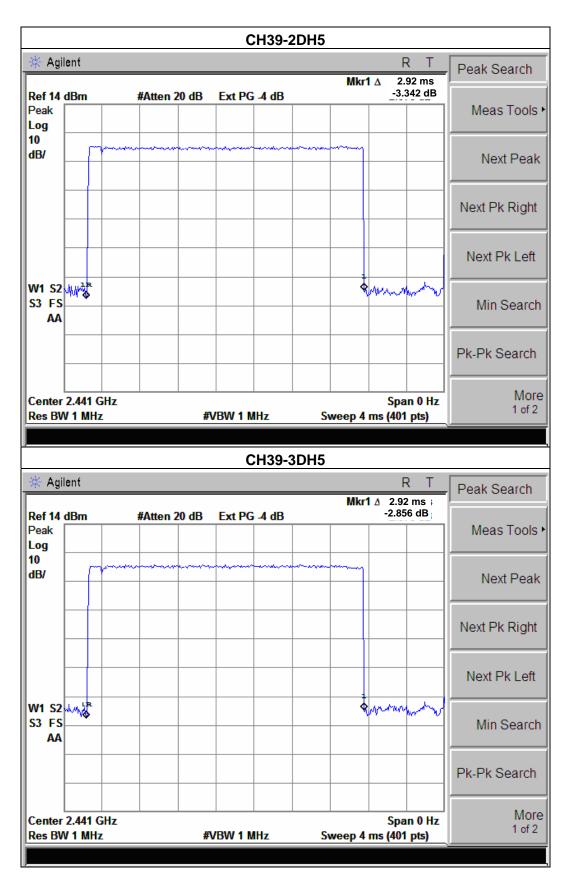
EUT:	Tablet PC	Model Name :	A100
Temperature:	25.5 ℃	Relative Humidity:	56%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH39-DH5,2DH5,3DH5		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH5	2441 MHz	2.93	0.315	0.4000
2DH5	2441 MHz	2.92	0.313	0.4000
3DH5	2441 MHz	2.92	0.313	0.4000





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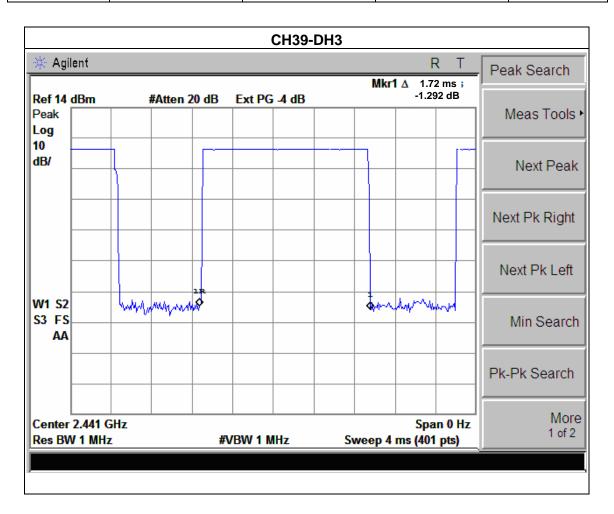




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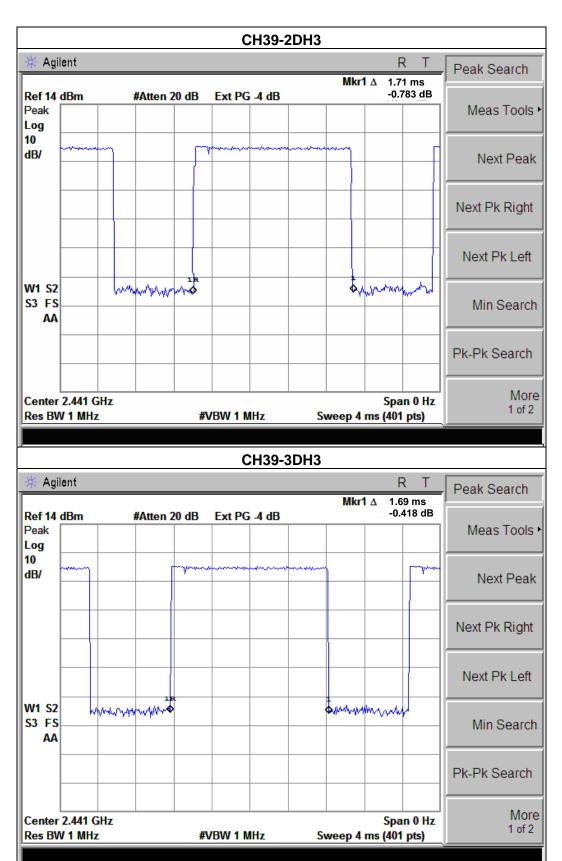
EUT:	Tablet PC	Model Name :	A100
Temperature :	<b>26.3</b> ℃	Relative Humidity:	56%
Pressure:	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH39-DH3,2DH3,3DH3		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH3	2441 MHz	1.72	0.277	0.4000
2DH3	2441 MHz	1.71	0.276	0.4000
3DH3	2441 MHz	1.69	0.276	0.4000





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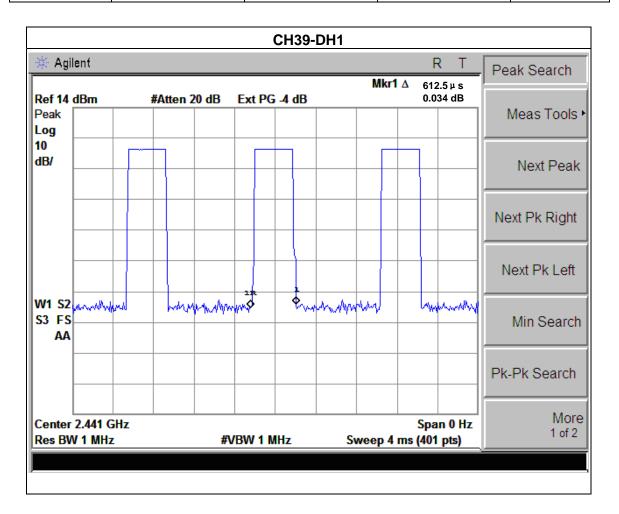




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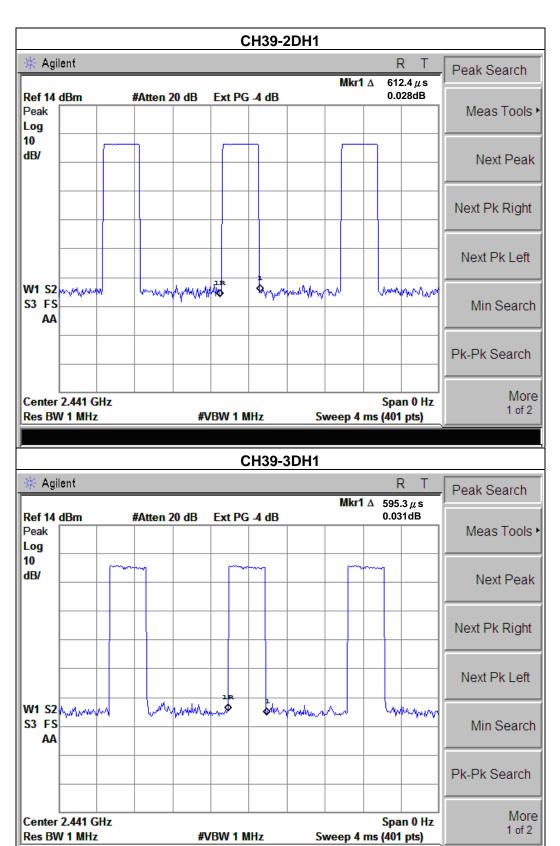
EUT:	Tablet PC	Model Name :	A100
Temperature:	<b>26</b> ℃	Relative Humidity:	55.5%
Pressure:	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH39-DH1,2DH1,3DH1		

Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)
DH1	2441 MHz	0.6125	0.138	0.4000
2DH1	2441 MHz	0.6124	0.138	0.4000
3DH1	2441 MHz	0.5953	0.135	0.4000





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6. HOPPING CHANNEL SEPARATION MEASUREMENT

#### **6.1 APPLIED PROCEDURES / LIMIT**

Frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

Spectrum Parameter	Setting	
Attenuation	Auto	
Span Frequency	> Measurement Bandwidth or Channel Separation	
RB	30 kHz	
VB	100 kHz	
Detector	Peak	
Trace	Max Hold	
Sweep Time	Auto	

## **6.1.1 TEST PROCEDURE**

- a. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
- b. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for channel separation measurement.

## 6.1.2 DEVIATION FROM STANDARD

No deviation.

## 6.1.3 TEST SETUP



## **6.1.4 EUT OPERATION CONDITIONS**

The EUT was programmed to be in continuously transmitting mode.

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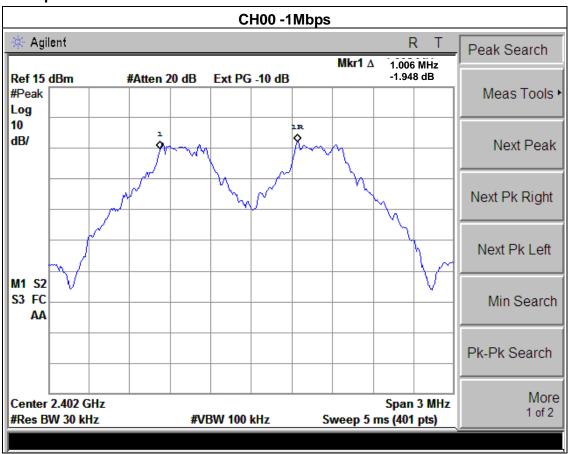


## 6.1.5 TEST RESULTS

EUT:	Tablet PC	Model Name :	A100
Temperature:	<b>26.3</b> ℃	Relative Humidity:	55.6%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH00 / CH39 /CH78 (1Mbps Mode)		

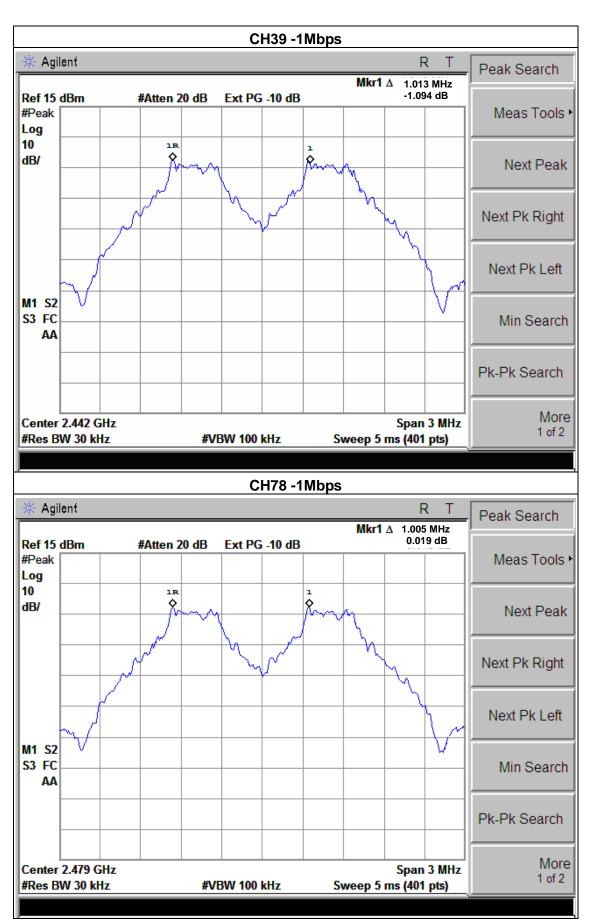
Frequency	Ch. Separation (MHz)	Result
2402 MHz	1.006	Complies
2441 MHz	1.013	Complies
2480 MHz	1.005	Complies

## Ch. Separation Limits: >20dB bandwidth





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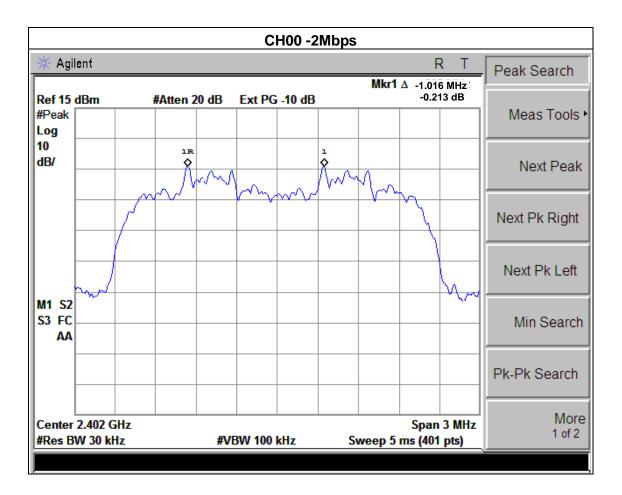


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EUT:	Tablet PC	Model Name :	A100
Temperature:	<b>26.2</b> ℃	Relative Humidity:	56.5%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH00 / CH39 /CH78 (2Mbps Mode)		

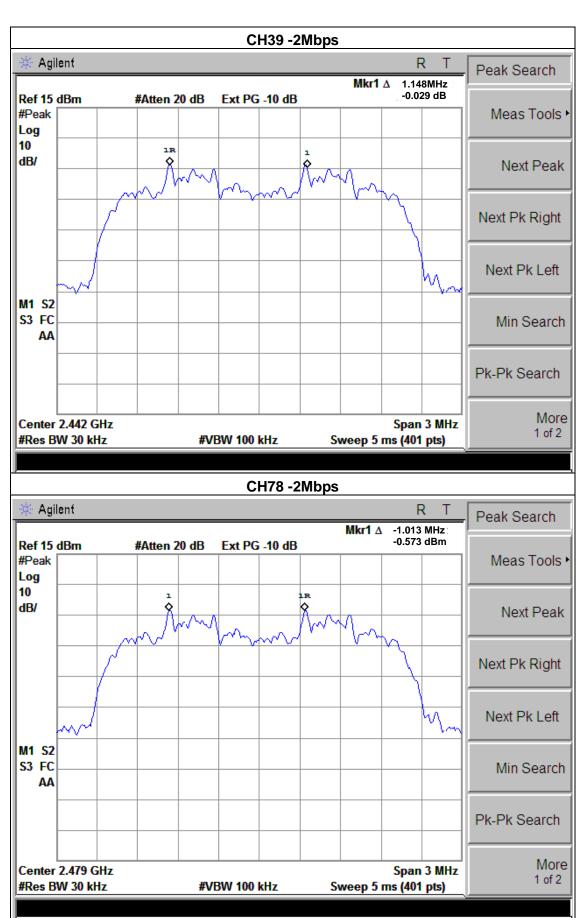
Frequency	Ch. Separation (MHz)	Result
2402 MHz	1.016	Complies
2441 MHz	1.148	Complies
2480 MHz	1.013	Complies

## Ch. Separation Limits: >2/3 of 20dB bandwidth





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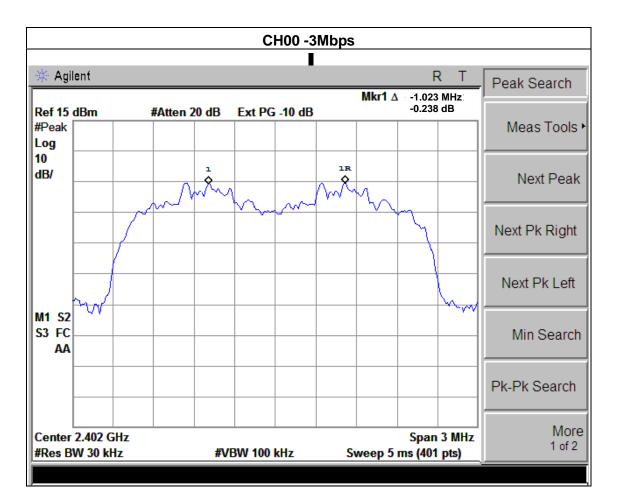


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EUT:	Tablet PC	Model Name :	A100
Temperature :	<b>25.9</b> ℃	Relative Humidity:	56.5%
Pressure:	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH00 / CH39 /CH78 (3Mbps Mode)		

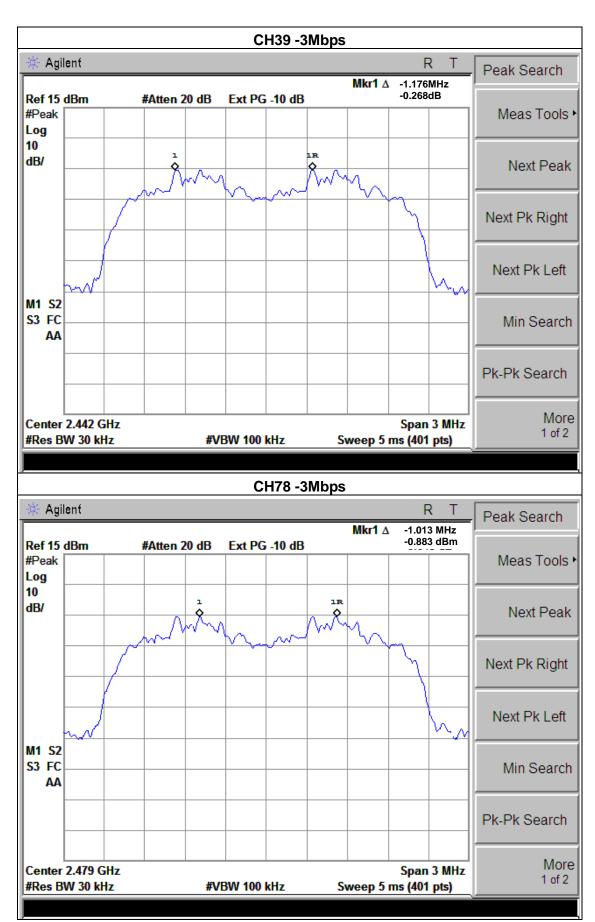
Frequency	Ch. Separation (MHz)	Result
2402 MHz	1.023	Complies
2441 MHz	1.176	Complies
2480 MHz	1.013	Complies

## Ch. Separation Limits: >2/3 of 20dB bandwidth





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7. BANDWIDTH TEST

#### 7.1 APPLIED PROCEDURES / LIMIT

,				
FCC Part15 (15.247) , Subpart C				
Section Test Item Limit Frequency Range (MHz) Result				
15.247 (a)(1)	Bandwidth	(20dB bandwidth)	2400-2483.5	PASS

Spectrum Parameter	Setting	
Attenuation	Auto	
Span Frequency	> Measurement Bandwidth or Channel Separation	
RB	30 kHz	
VB	100 kHz	
Detector	Peak	
Trace	Max Hold	
Sweep Time	Auto	

#### 7.1.1 TEST PROCEDURE

#### 7.1.2 DEVIATION FROM STANDARD

No deviation.

## **7.1.3 TEST SETUP**



## 7.1.4 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,

b. Spectrum Setting: RBW= 30KHz, VBW=100KHz, Sweep time = Auto.

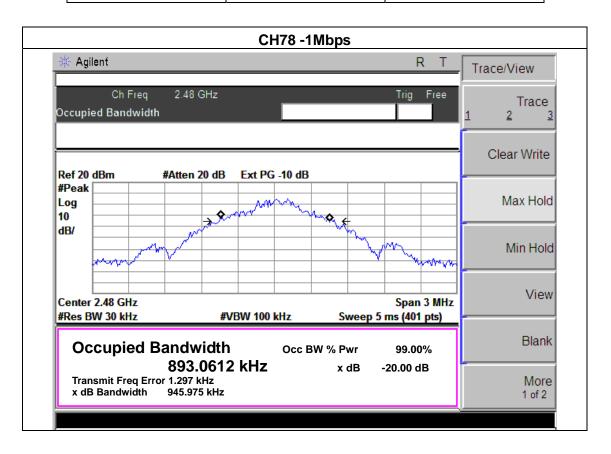


ISE TESTING

## 7.1.5 TEST RESULTS

EUT:	Tablet PC	Model Name :	A100
Temperature :	<b>25.6</b> ℃	Relative Humidity:	55.8%
Pressure:	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH00 / CH39 /C78(1Mbps)		

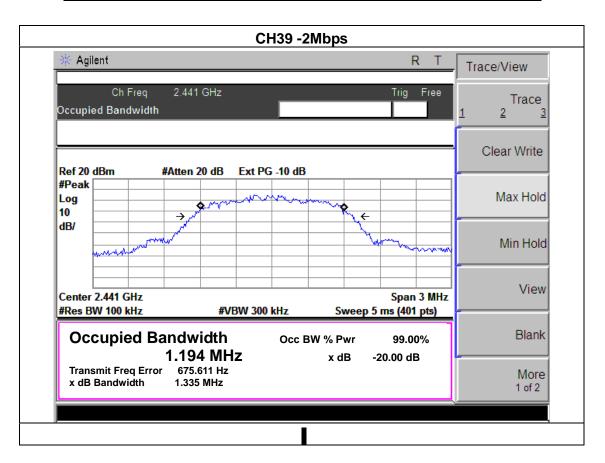
Frequency	20dB Bandwidth (kHz)	Result
2402 MHz	887.453	PASS
2441 MHz	934.362	PASS
2480 MHz	945.975	PASS



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EUT:	Tablet PC	Model Name :	A100
Temperature :	<b>25</b> ℃	Relative Humidity:	56%
Pressure :	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH00 / CH39 /C78(2Mbps)		

Frequency	20dB Bandwidth (MHz)	Result
2402 MHz	1.334	PASS
2441 MHz	1.335	PASS
2480 MHz	1.229	PASS





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EUT:	Tablet PC	Model Name :	A100
Temperature:	<b>25</b> ℃	Relative Humidity:	56%
Pressure:	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY
Test Mode :	CH00 / CH39 /C78(3Mbps)		

Frequency	20dB Bandwidth (MHz)	Result
2402 MHz	1.266	PASS
2441 MHz	1.217	PASS
2480 MHz	1.264	PASS



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#### 8. PEAK OUTPUT POWER TEST

#### 8.1 APPLIED PROCEDURES / LIMIT

FCC Part15 (15.247) , Subpart C					
Section Test Item Limit		Frequency Range (MHz)	Result		
15.247 (b)(i)	Peak Output Power	0.125 w or 1w	2400-2483.5	PASS	

## **8.1.1 TEST PROCEDURE**

- a. The EUT was directly connected to the spectrum analyzer and antenna output port as show in the block diagram below,
- b. Spectrum Setting: RBW > the 20 dB bandwidth of the emission being measured

Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel

 $VBW \geq RBW$ 

Sweep = auto

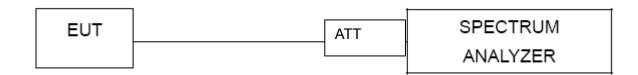
Detector function = peak

Trace = max hold

#### 8.1.2 DEVIATION FROM STANDARD

No deviation.

#### 8.1.3 TEST SETUP



## **8.1.4 EUT OPERATION CONDITIONS**

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

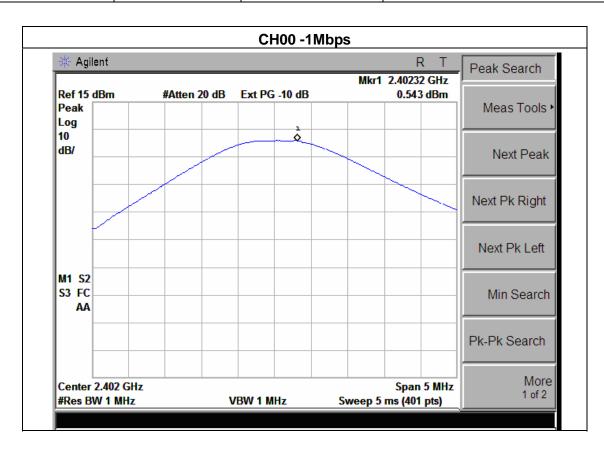


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## 8.1.5 TEST RESULTS

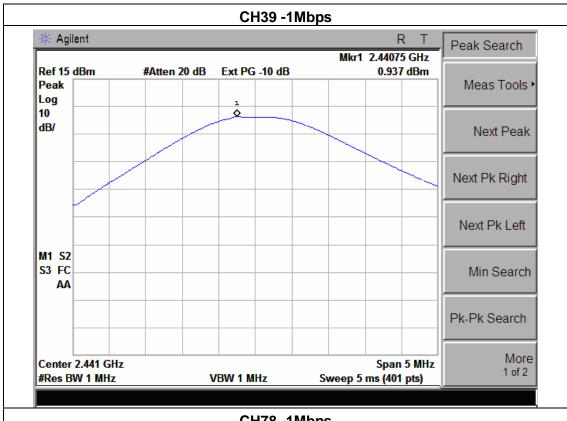
EUT:	Tablet PC	Model Name :	A100	
Temperature:	<b>25.3</b> ℃	Relative Humidity:	55.6%	
Pressure :	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY	
Test Mode :	CH00/ CH39 /CH78 (1M/2M/3Mbps Mode)			

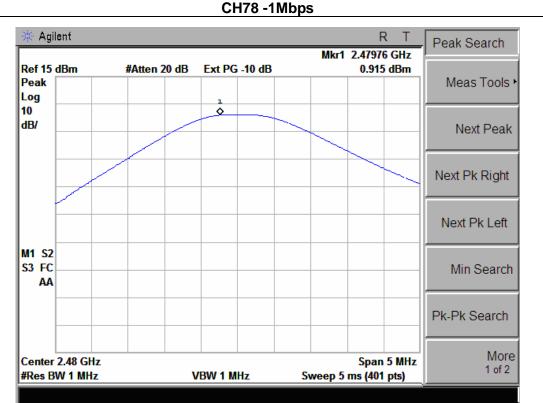
1Mbps					
Test Channel	Frequency	Peak Output Power	LIMIT		
rest orialine	(MHz)	(dBm)	(dBm)		
CH00	2402	0.543	30		
CH39	2441	0.937	30		
CH78	2480	0.915	30		
	2Mbps				
CH00	2402	-0.212	20.96		
CH39	2441	-0.070	20.96		
CH78	2480	-0.298	20.96		
	3Mbps				
CH00	2402	0.408	20.96		
CH39	2441	0.935	20.96		
CH78	2480	0.598	20.96		





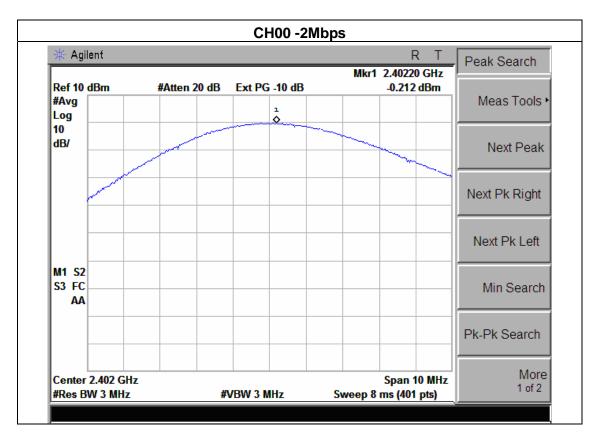
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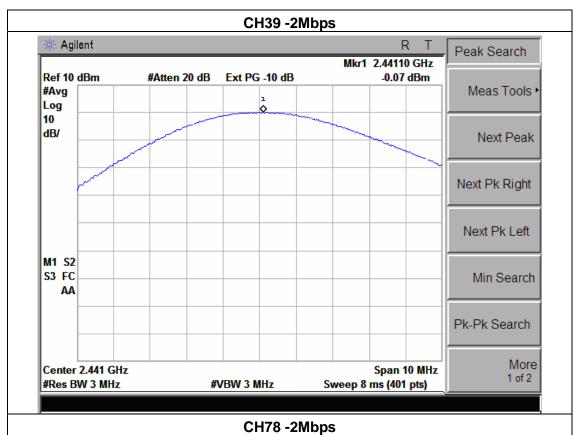
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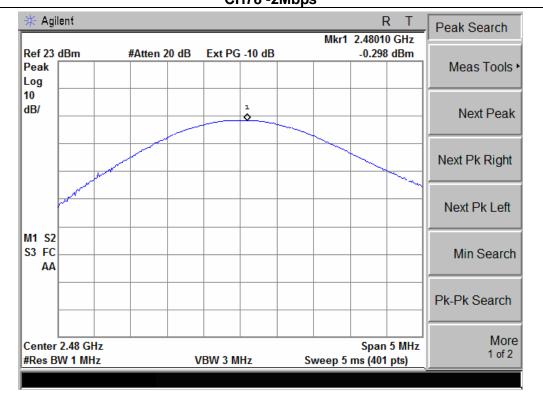




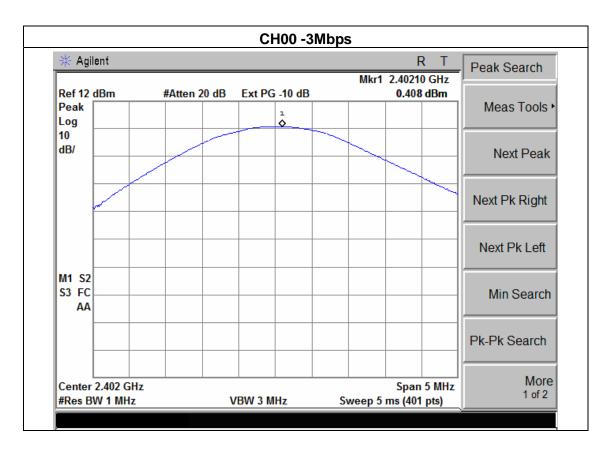


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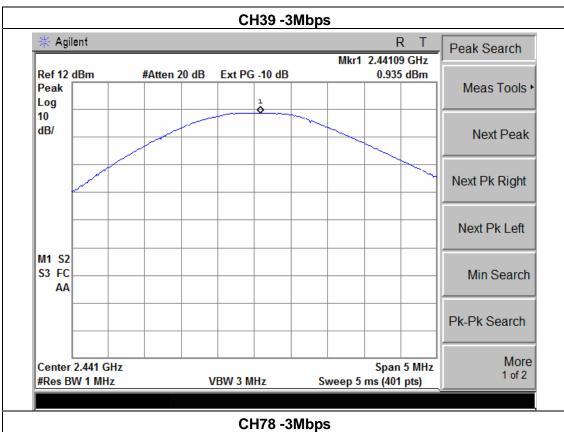


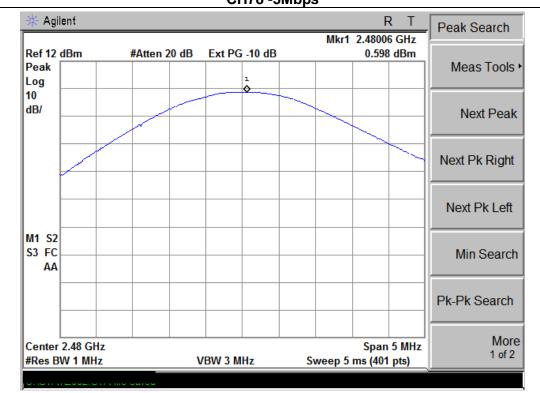






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9. 100 KHZ BANDWIDTH OF FREQUENCY BAND EDGE 9.1 APPLICABLE STANDARD

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

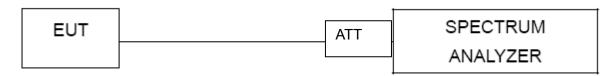
#### 9.2 TEST PROCEDURE

- a) Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b) Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c) Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- d) Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- e) Repeat above procedures until all measured frequencies were complete.

#### 9.2.1 DEVIATION FROM STANDARD

No deviation.

#### **TEST SETUP**



### 9.2.2 EUT OPERATION CONDITIONS

The EUT tested system was configured as the statements of 2.4 Unless otherwise a special operating condition is specified in the follows during the testing.

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## 9.2.3 TEST RESULTS

EUT:	Tablet PC	Model Name :	A100
Temperature:	<b>24.8</b> ℃	Relative Humidity:	55.6%
Pressure:	1015 hPa	Test Voltage :	DC 3.7V FROM BATTERY

Frequency Band	Delta Peak to band emission(Non-FHSS) (dBc)	Delta Peak to band emission(FHSS) (dBc)	>Limit (dBc)	Result		
	11	Mbps				
Left-band	53.81	55.96	20	Pass		
Right-band	Right-band 50.16		49.26 20			
2Mbps						
Left-band	50.90	52.37	20	Pass		
Right-band	48.78	48.79	20	Pass		
3Mbps						
Left-band	50.83	51.93	20	Pass		
Right-band	51.54	51.27	20	Pass		

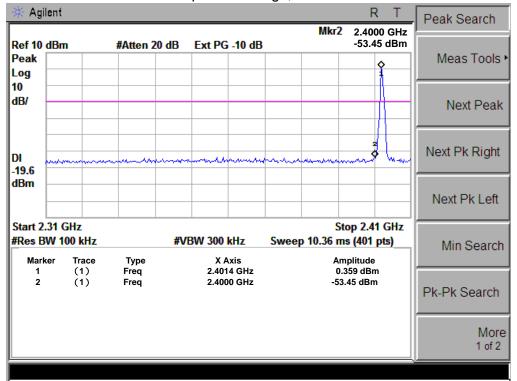
Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	
. ,					_	Type	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBµV/m)	(dB)	.,,,,,	
		1	Mbps(Non-FHS	S)			
2390	57.42	-13.06	44.36	74	-29.64	peak	Vertical
2390	58.11	-13.06	45.05	74	-28.95	peak	Horizontal
2483.5	59.23	-12.78	46.45	74	-27.55	peak	Vertical
2483.5	57.79	-12.78	45.01	74	-28.99	peak	Horizontal
	2Mbps(Non-FHSS)						
2390	57.99	-13.06	44.93	74	-29.07	peak	Vertical
2390	58.76	-13.06	45.70	74	-28.30	peak	Horizontal
2483.5	58.53	-12.78	45.75	74	-28.25	peak	Vertical
2483.5	57.86	-12.78	45.08	74	-28.92	peak	Horizontal
	3Mbps(Non-FHSS)						
2390	59.66	-13.06	46.60	74	-27.40	peak	Vertical
2390	61.84	-13.06	48.78	74	-25.22	peak	Horizontal
2483.5	60.09	-12.78	47.31	74	-26.69	peak	Vertical
2483.5	59.37	-12.78	46.59	74	-27.41	peak	Horizontal

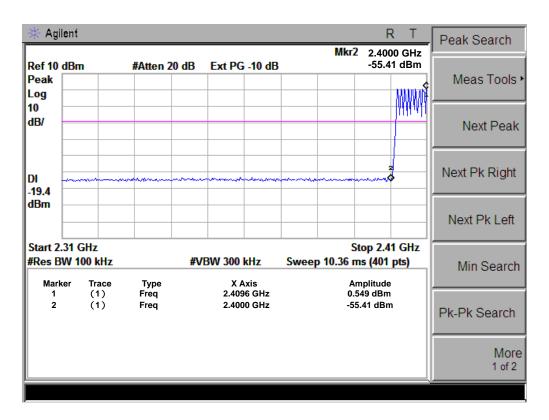
Note: Test method to see chapter 3.2 . When PK value is lower than the Average value limit, average didn't record.



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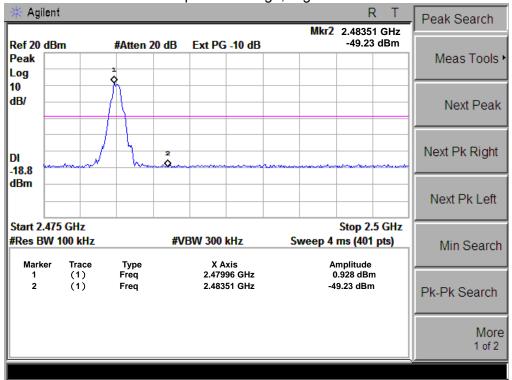


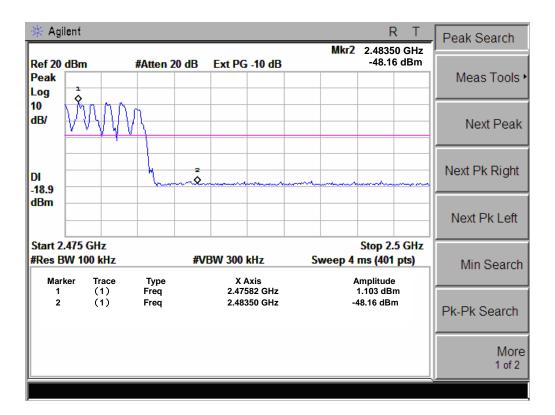


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1Mbps: Band Edge, Right Side

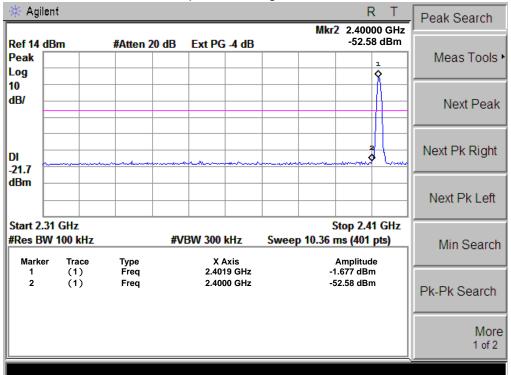


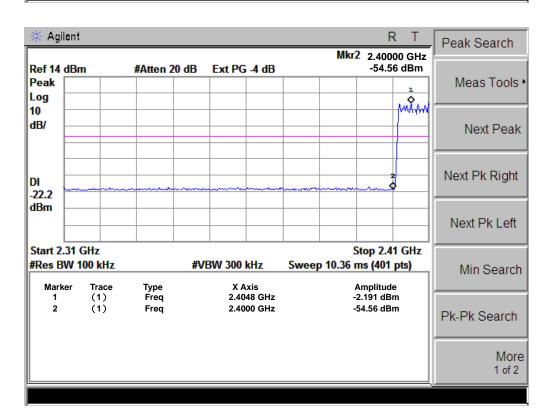




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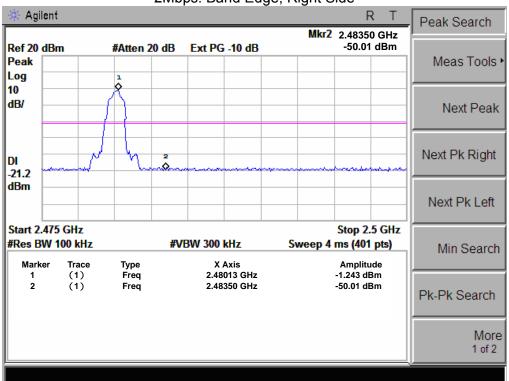


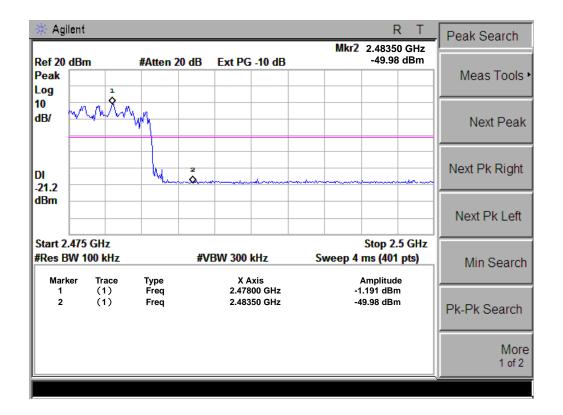






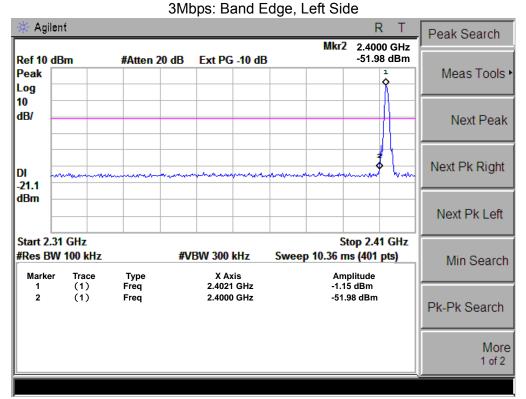
2Mbps: Band Edge, Right Side

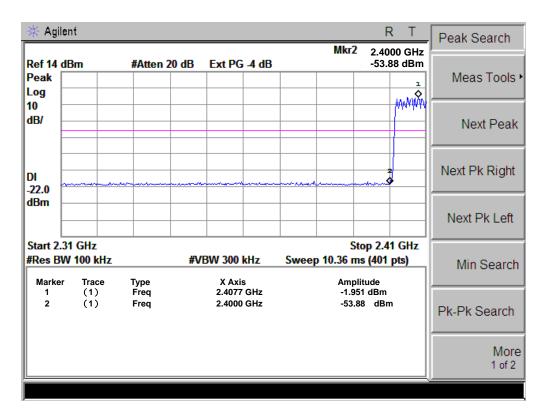






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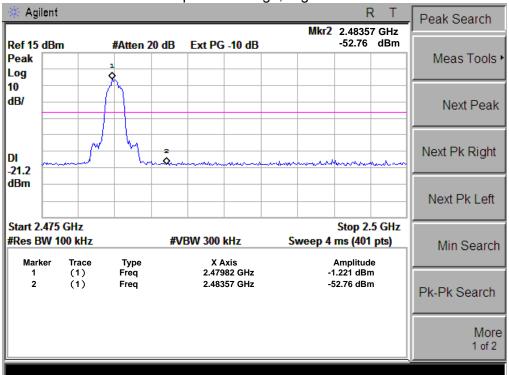


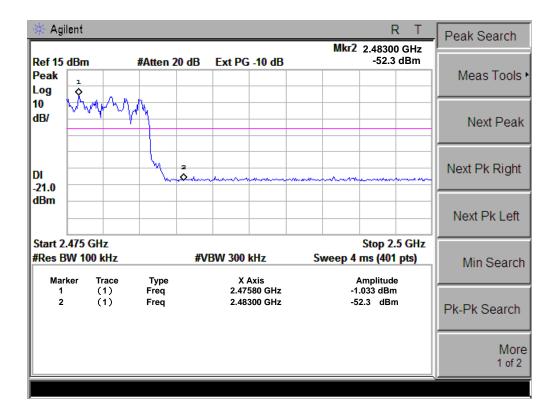




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## 10. ANTENNA REQUIREMENT

## **10.1 STANDARD REQUIREMENT**

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

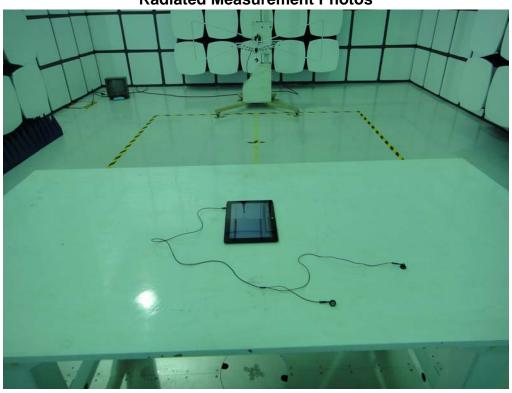
## **10.2 EUT ANTENNA**

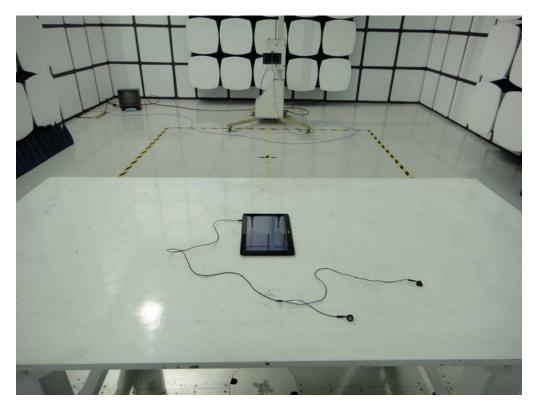
The EUT antenna is Built-in antenna. It comply with the standard requirement.



11. EUT TEST PHOTO

## **Radiated Measurement Photos**

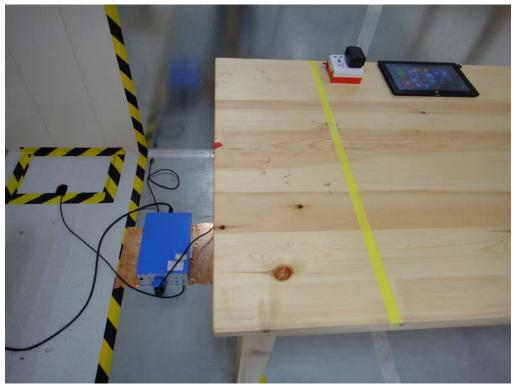












**END OF REPORT**