EUROFINS TESTING TECHNOLOGY(SHENZHEN)CO., LTD.

FCC PART 15 RULES
TEST REPORT

TEST REPORT NUMBER: EFSN13060712E-6

eurofins
Eurofins Testing Technology (Shenzhen) Co., Ltd.Phone: +86-755-83585700
3A, F1.6, Tianfa Building, Tian'an Cyber Park, Fax: +86-755-83585701
Futian District, Shenzhen City, GD, Page1of41
PRC 518040

General Information

Notes

The results of this test report relate exclusively to the item tested as specified in chapter “Description of test item” and are not transferable to any other test items.
EurofinsTesting Technology(Shenzhen) Co., Ltd. is not responsible for any generalisations and conclusions drawn from this report. Any modification of the test item can lead to invalidity of test results and this test report may therefore be not applicable to the modified test item.
The test report may only be reproduced or published in full. Reproducing or publishing extracts of the report requires the prior written approval of the EurofinsTesting Technology(Shenzhen) Co., Ltd.
This document is subject to the General Terms and Conditions and the Testing and Certification System of EurofinsTesting Technology(Shenzhen) Co., Ltd., available on request or accessible atwww.pt.eurofins.com

Operator:

2013-7-17		Lody Guo	
Date	Eurofins	Name	Signature

Technical responsibility for area of testing:

2013-7-17		Tom Tian	
Date	Eurofins	Name	Signature

Testing laboratory

Eurofins Testing Technology (Shenzhen) Co., Ltd.
3A, F1.6, Tianfa Building, Tian'an Cyber Park, Futian District, Shenzhen City, GD, PRC 518040
Telephone : +86-755-83585700
Fax : +86-755-83585701

Test location, where different:

Name : Attestation of Global Compliance(Shenzhen)Co., Ltd.
Address : 1~2F, No.2 Bldg, Huafeng No.1 Technical Industrial Park, Sanwei, Xixiang St., Baoan District, Shenzhen, Guangdong, P.R.China
Telephone : +86-0755-29081955
Fax : +86-0755-26008484
All items were performed by Lody Guo at AGC.

TABLE OF CONTENTS

1. VERIFICATION OF CONFORMITY

Applicant	ARCHOS SA
Address	12 rue Ampère 91430 Igny, France
Manufacturer	ARCHOS SA
Address	12 rue Ampère 91430 Igny, France
Product Designation	10.1” platinum
Brand Name	ARCHOS
Test Model	AC101PL
Date of test	Jul.03 ~Jul.10, 2013
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BR/RF (2013-03-01)

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is a **10.1"platinum** designed as a "Communication Device". It is designed by way of utilizing the FHSS technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.402 GHz to 2.480GHz
RF Output Power	4.31dBm
Bluetooth Version	V2.1 with EDR
Modulation	GFSK, π /4-DQPSK, 8DPSK
Number of channels	79
Antenna Designation	Integrated Antenna
Antenna Gain	2.0dBi
Power Supply	DC 4.2V by Battery
Note: The EUT can be Operated during charging via USB (Adaptor or PC connecting).	

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	0	2402MHZ
	1	2403MHZ
	:	:
	38	2440 MHZ
	39	2441 MHZ
	40	2442 MHZ
	:	:
	77	2479 MHZ
	78	2480 MHZ

2.3. RECEIVER INPUT BANDWIDTH

The input bandwidth of the receiver is 1.3MHZ,In every connection one Bluetooth device is the master and the other one is slave. The master determines the hopping sequence. The slave follows this sequence. Both devices shift between RX and TX time slot according to the clock of the master. Additionally the type of connection(e.g. single of multislot packet) is set up at the beginning of the connection. The master adapts its hopping frequency and its TX/RX timing according to the packet type of the connection. Also the slave of the connection will use these settings.
Repeating of a packet has no influence on the hopping sequence. The hopping sequence generated by the master of the connection will be followed in any case. That means, a repeated packet will not be send on the same frequency, it is send on the next frequency of the hopping sequence.

2.4. EXAMPLE OF A HOPPING SEQUENCY IN DATA MODE

Example of a 79 hopping sequence in data mode:
40,21,44,23,42,53,46,55,48,33,52,35,50,65,54,67
56,37,60,39,58,69,62,71,64,25,68,27,66,57,70,59
72,29,76,31,74,61,78,63,01,41,05,43,03,73,07,75
09,45,13,47,11,77,15,00,64,49,66,53,68,02,70,06
01, 51, 03, 55, 05, 04

2.5. EQUALLY AVERAGE USE OF FREQUENCIES AND BEHAVIOUR

The generation of the hopping sequence in connection mode depends essentially on two input values:
1. LAP/UAP of the master of the connection.
2. Internal master clock

The LAP(lower address part) are the 24 LSB's of the 48 BD_ADDRESS. The BD_ADDRESS is an unambiguous number of every Bluetooth unit. The UAP(upper address part) are the 24MSB's of the 48BD_ADDRESS

The internal clock of a Bluetooth unit is derived from a free running clock which is never adjusted and is never turned off. For ehavior zation with other units only offset are used. It has no relation to the time of the day. Its resolution is at least half the RX/TX slot length of 312.5us.The clock has a cycle of about one day(23h30).In most case it is implemented as 28 bit counter. For the deriving of the hopping sequence the entire. LAP(24 bits),4LSB's(4bits)(Input 1) and the 27MSB's of the clock(Input 2) are used. With this input values different mathematical procedures(permutations, additions, XOR-operations)are performed to generate te Sequence. This will be done at the beginning of every new transmission.

Regarding short transmissions the Bluetooth system has the following8ehavior:

The first connection between the two devices is established, a hopping sequence was generated. For Transmitting the wanted data the complete hopping sequence was not used. The connection ended. The second connection will be established. A new hopping sequence is generated. Due to the fact the Bluetooth clock has a different value, because the period between the two transmission is longer(and it Cannot be shorter) than the minimum resolution of the clock(312.5us).The hopping sequence will always

Differ from the first one.

2.6. RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID:** SOVAC101PL filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules.

2.7. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

2.8. SPECIAL ACCESSORIES

Refer to section 5.2.

2.9. EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

3. MEASUREMENT UNCERTAINTY

Conducted measurement: +/- 2.75dB
Radiated measurement: +/- 3.2dB

4. DESCRIPTION OF TEST MODES

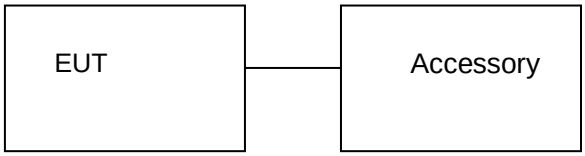
TEST MODE DESCRIPTION		
NO.	**TEST MODE DESCRIPTION**	**WORST**
1	Low channel TX	
2	Middle channel TX	
3	High channel TX	
4	Normal Hopping	V

Note:
1. V means EMI worst mode.
2. All the test modes can be supply by Built-in Li-ion battery and adapter, only the result of the worst case was recorded in the report, if no other cases.
3. For Radiated Emission, 3axis were chosen for testing for each applicable mode.

5. SYSTEM TEST CONFIGURATION

5.1. CONFIGURATION OF EUT SYSTEM

Configure:



5.2. EQUIPMENT USED IN EUT SYSTEM

Item	Equipment	Mfr/Brand	Model/Type No.	Remark
1	Table pc	ARCHOS	AC101PL	EUT
2	Battery	N/A	PL3669110P*2S	Accessory
3	Adapter	ARCHOS	THX-05200KDV	Accessory

Note: the following “EUT” in setup diagram means EUT system.

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Peak Output Power	Compliant
§15.247	20 dB Bandwidth	Compliant
§15.247	Spurious Emission	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Conduction Emission	Compliant
§15.247	Number of Hopping Frequency	Compliant
§15.247	Time of Occupancy	Compliant
§15.247	Frequency Separation	Compliant

6. TEST FACILITY

Site	Attestation of Global Compliance (Shenzhen) Co., Ltd
Location	2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2003.

ALL TEST EQUIPMENT LIST

Description	Manufacturer	Model	S/N	Cal. Date	Cal. Due
Power Probe	R&S	NRP-Z23	100323	07/18/2012	07/17/2013
RF attenuator	N/A	RFA20db	68	N/A	N/A
Spectrum Analyzer	Agilent	E4440A	US41421290	07/18/2012	07/17/2013
Amplifier	EM	EM30180	0607030	02/28/2013	02/27/2014
Horn Antenna	EM	EM-AH-10180	67	04/21/2012	04/20/2014
Horn Antenna	A.H. Systems Inc.	SAS-574	--	06/08/2013	06/07/2014
EMI Test Receiver	Rohde & Schwarz	ESCI	100694	07/18/2012	07/17/2013
Bilogical Antenna	A.H. Systems Inc.	SAS-521-4	26	06/08/2013	06/07/2014
Loop Antenna	Daze	ZN30900N	SEL0097	07/18/2012	07/17/2013
Isolation Transformer	LETEAC	LTBK	--	07/18/2012	07/17/2013

7. PEAK OUTPUT POWER

7.1. MEASUREMENT PROCEDURE

For peak power test:

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3. Set the EUT Work on the top, middle and the bottom operation frequency individually.
4. RBW > the 20 dB bandwidth of the emission being measured
5. Record the maximum power from the Spectrum Analyzer.

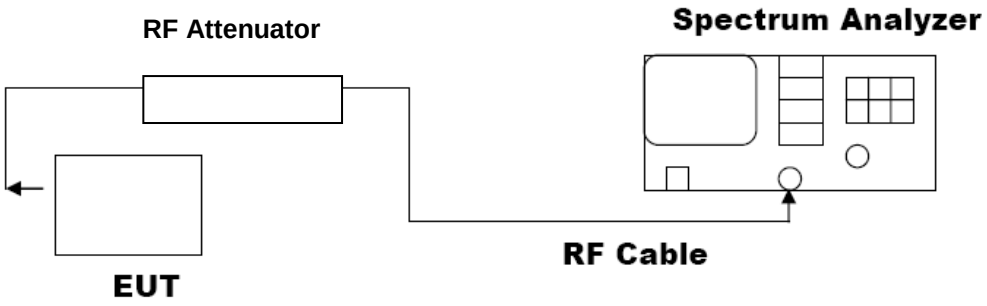
For average power test:

1. The EUT was placed on a table which is 0.8m above ground plane.
2. Connect EUT RF output port to power probe through an RF attenuator.
3. Connect the power probe to the PC.
3. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Record the maximum power from the software.
5. The maximum peak power shall be less 1 Watt (30dBm).

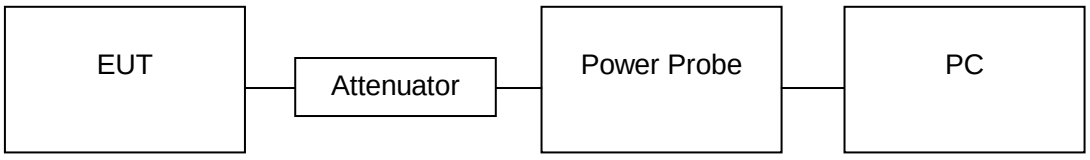
Note： The EUT was tested according to KDBDA000705 for compliance to FCC 47CFR 15.247 requirements.

7.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

PEAK POWER TEST SETUP



AVERAGE POWER SETUP



7.3. LIMITS AND MEASUREMENT RESULT

PEAK OUTPUT POWER MEASUREMENT RESULT FOR GFSK MOUDULATION				
Frequency (GHz)	**Average Power (dBm)**	**Peak Power (dBm)**	**Applicable Limits (dBm)**	**Pass or Fail**
2.402	-4.04	-2.09	30	Pass
2.441	-3.72	-1.86	30	Pass
2.480	-3.92	-2.01	30	Pass

PEAK OUTPUT POWER MEASUREMENT RESULT FOR Π /4-DQPSK MODULATION				
Frequency (GHz)	**Average Power (dBm)**	**Peak Power (dBm)**	**Applicable Limits (dBm)**	**Pass or Fail**
2.402	-3.78	-1.83	30	Pass
2.441	-3.32	-1.41	30	Pass
2.480	-3.51	-1.58	30	Pass

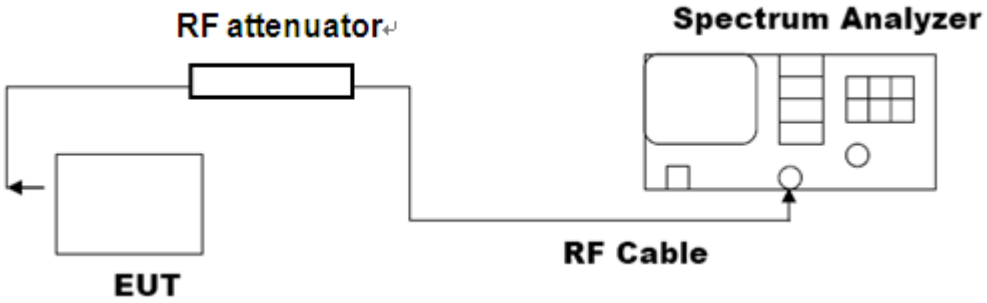
PEAK OUTPUT POWER MEASUREMENT RESULT FOR 8-DPSK MODULATION				
Frequency (GHz)	**Average Power (dBm)**	**Peak Power (dBm)**	**Applicable Limits (dBm)**	**Pass or Fail**
2.402	-4.31	-2.37	30	Pass
2.441	-3.82	-1.89	30	Pass
2.480	-3.97	-2.08	30	Pass

8. 20DB BANDWIDTH

8.1. MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
4. Set Span = approximately 2 to 3 times the 20 dB bandwidth, centered on a hoping channel
   RBW ≥ 1% of the 20 dB bandwidth, VBW ≥ RBW; Sweep = auto; Detector function = peak
5. Set SPA Trace 1 Max hold, then View.

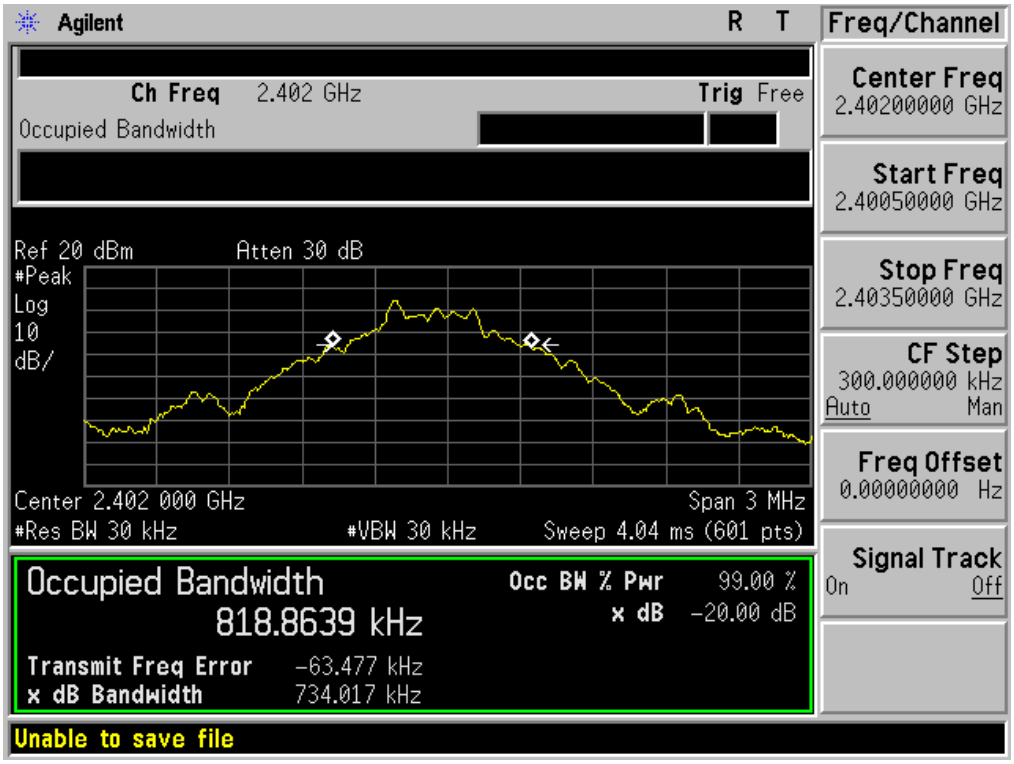
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)



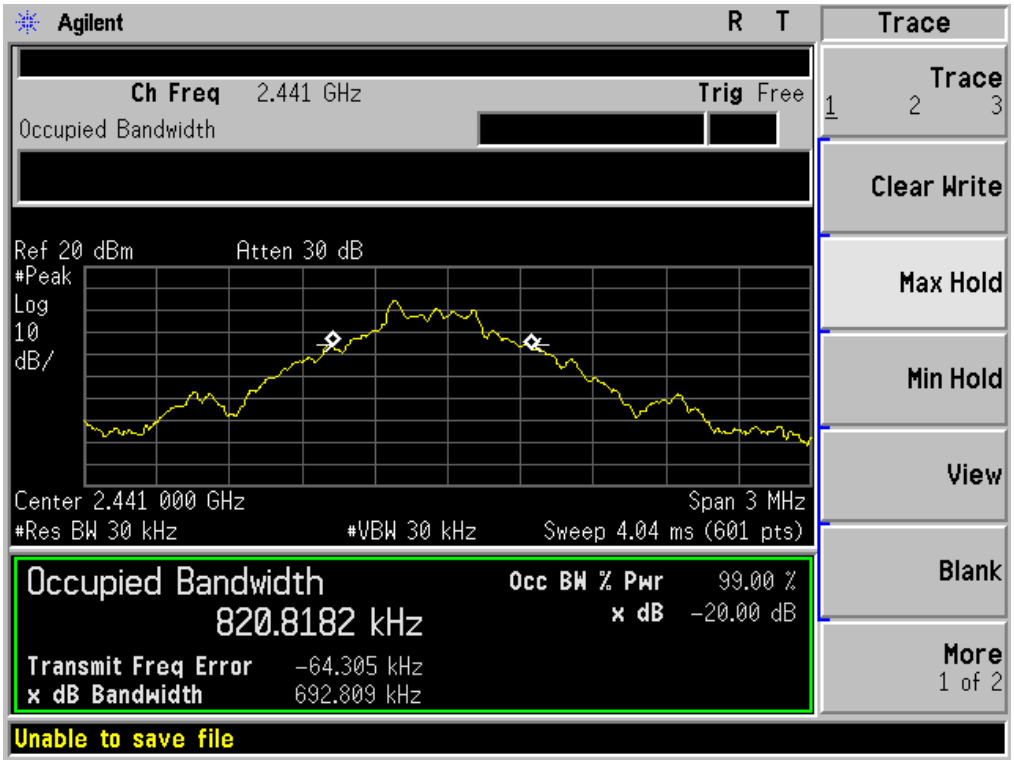
8.3. LIMITS AND MEASUREMENT RESULTS

BLUETOOTH 1MBPS LIMITS AND MEASUREMENT RESUL			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	0.734	PASS
	Middle Channel	0.693	PASS
	High Channel	0.697	PASS

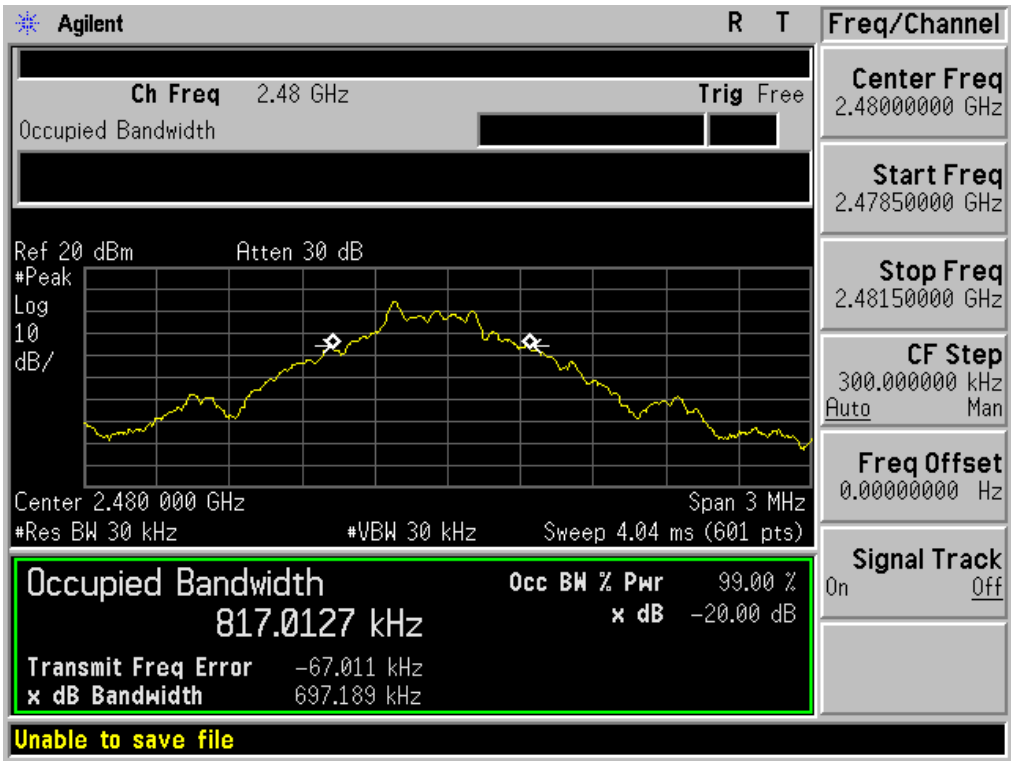
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

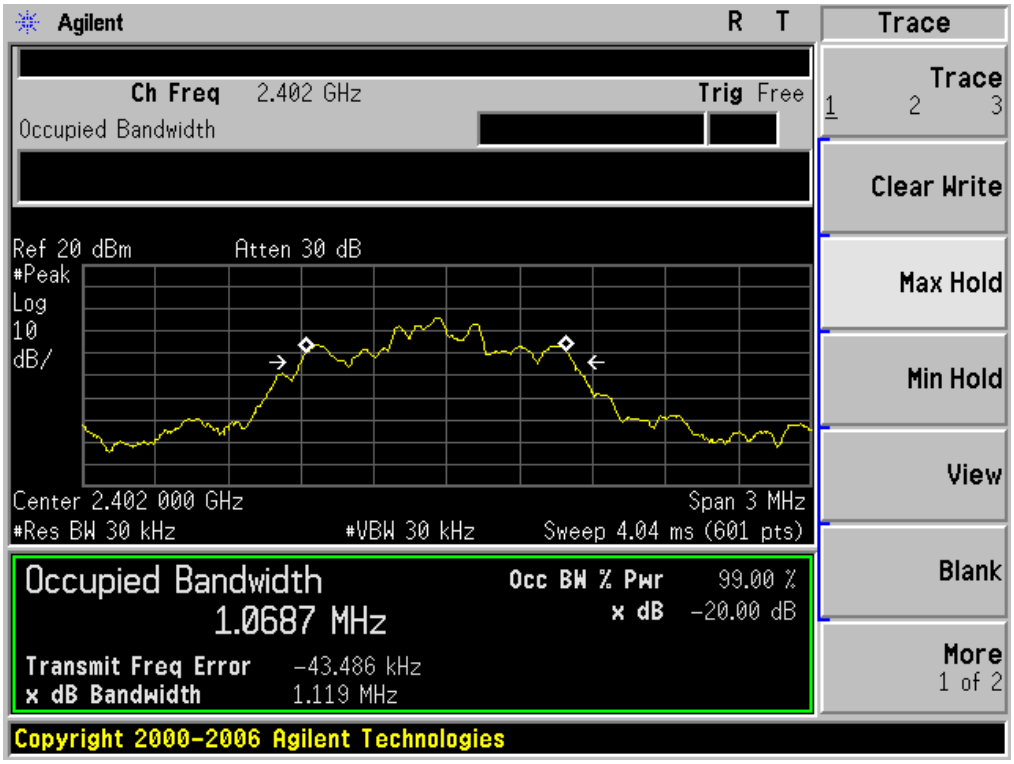


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

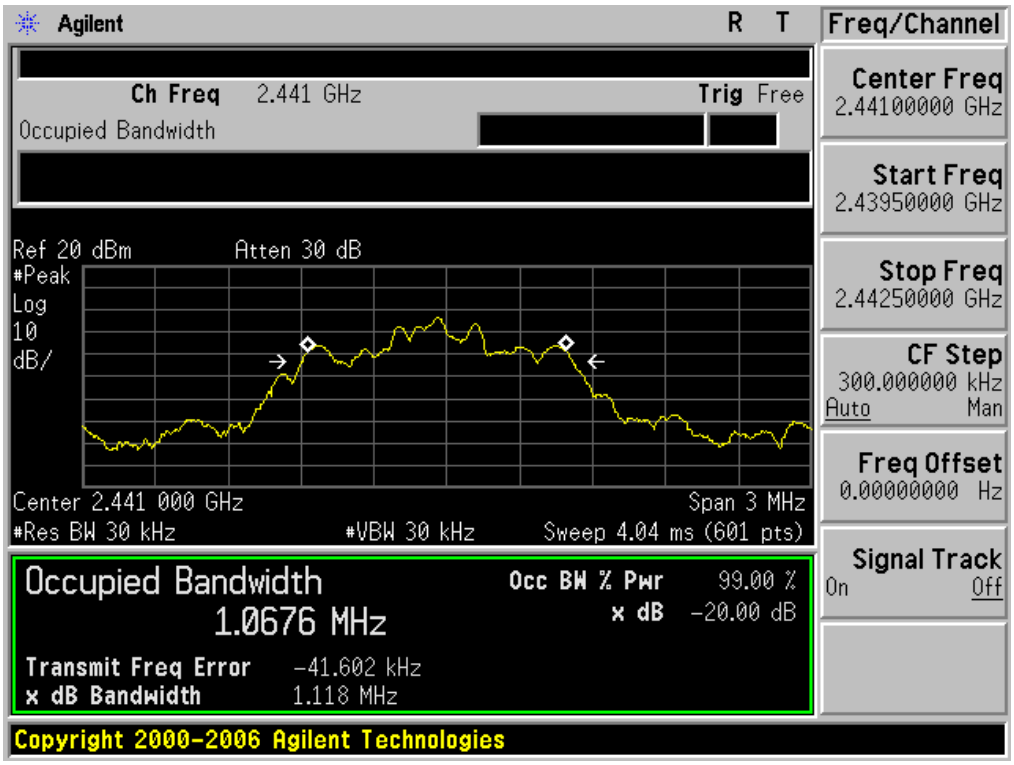


BLUETOOTH 2MBPS LIMITS AND MEASUREMENT RESUL			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	1.119	PASS
	Middle Channel	1.118	PASS
	High Channel	1.117	PASS

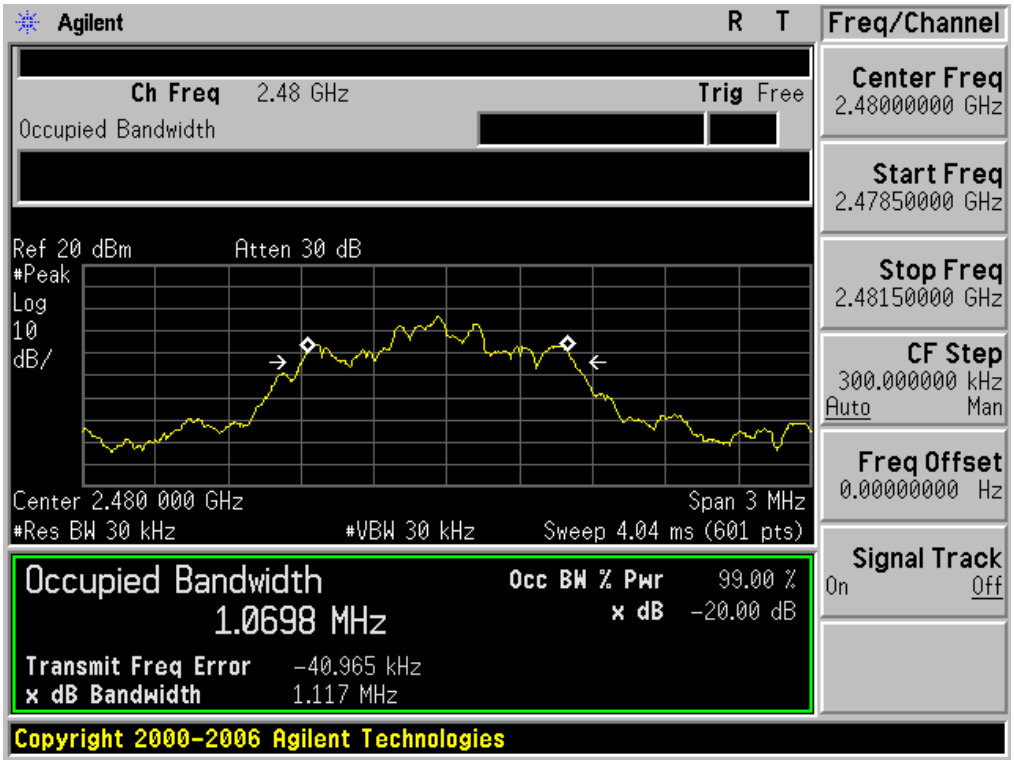
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL

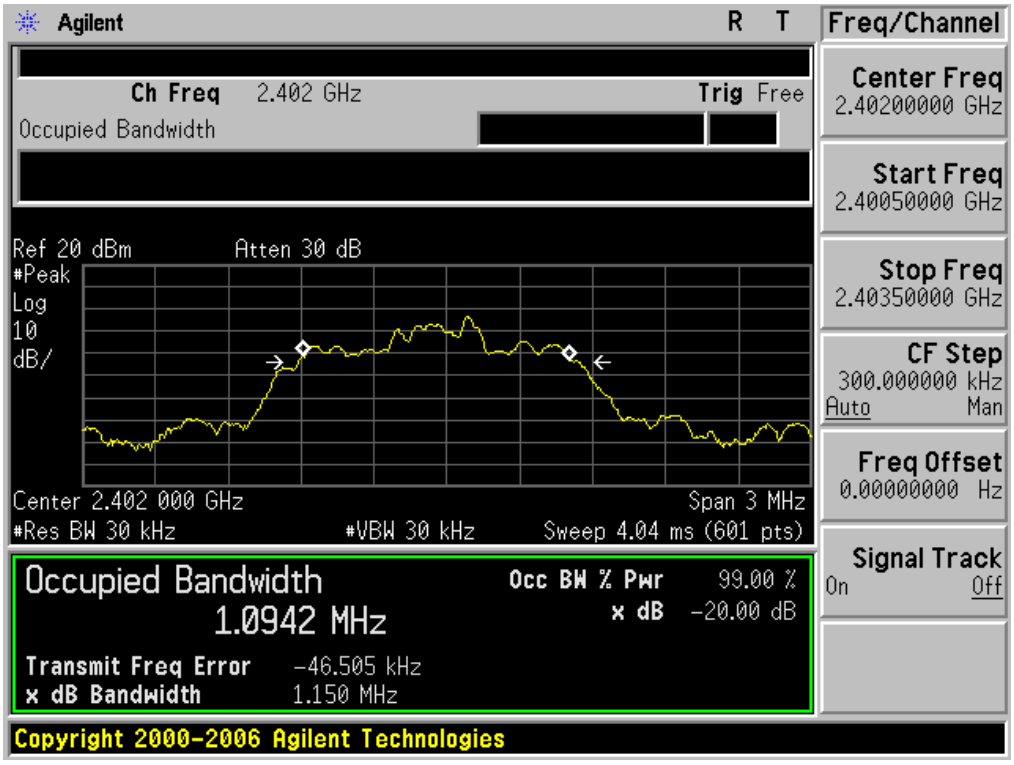


TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL

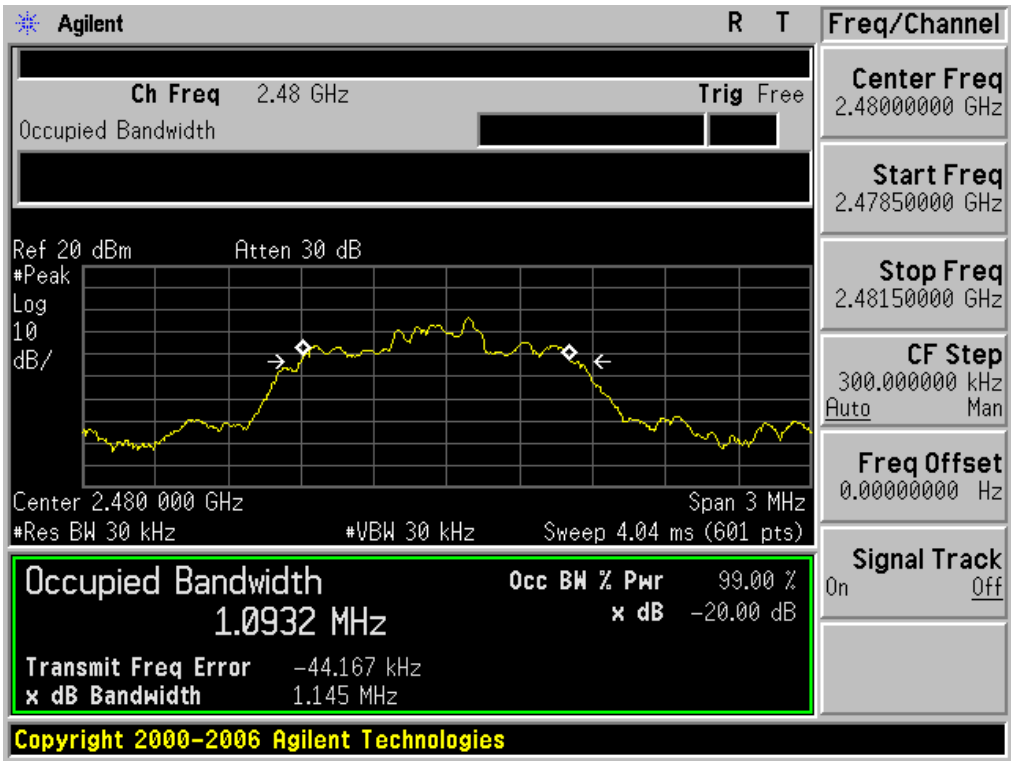


BLUETOOTH 3MBPS LIMITS AND MEASUREMENT RESUL			
Applicable Limits	Measurement Result		
	Test Data (MHz)		Criteria
N/A	Low Channel	1.150	PASS
	Middle Channel	1.145	PASS
	High Channel	1.145	PASS

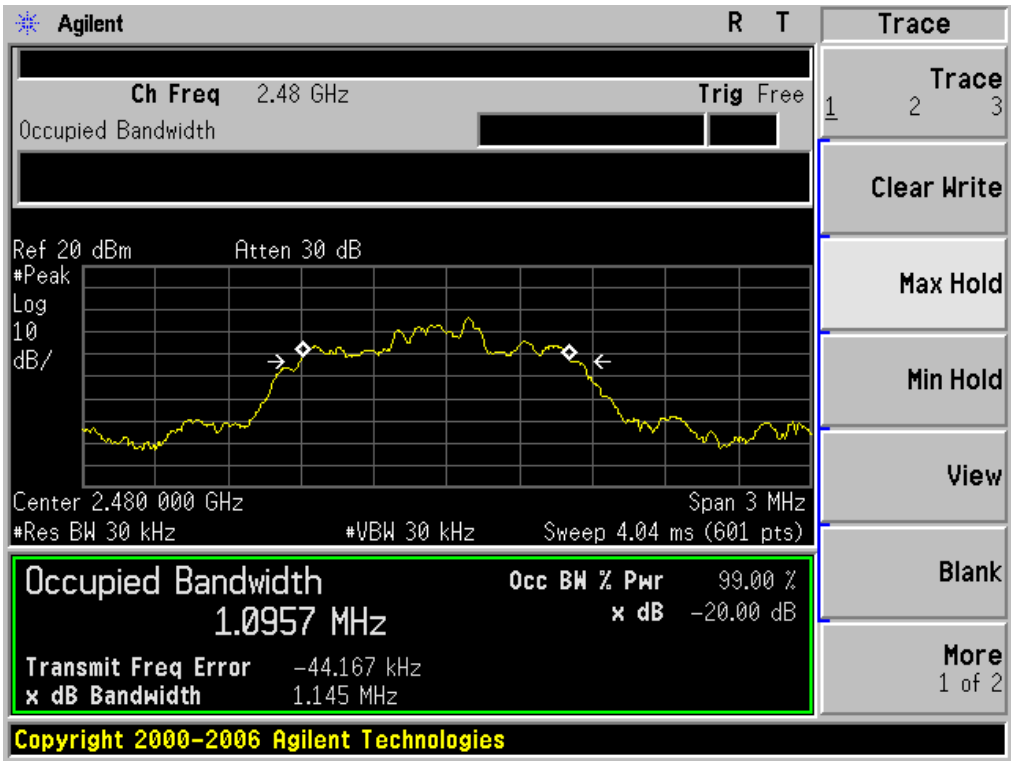
TEST PLOT OF BANDWIDTH FOR LOW CHANNEL



TEST PLOT OF BANDWIDTH FOR MIDDLE CHANNEL



TEST PLOT OF BANDWIDTH FOR HIGH CHANNEL



9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

1. The EUT was placed on a turn table which is 0.8m above ground plane.
2. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
3. Set the EUT Work on the top, the Middle and the bottom operation frequency individually.
4. Set the Span = wide enough to capture the peak level of the in-band emission and all spurious emissions from the lowest frequency generated in the EUT up through the 10th harmonic. RBW = 100 kHz; VBW ≥ RBW; Sweep = auto; Detector function = peak.
5. Set SPA Trace 1 Max hold, then View.

9.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

The same as described in section 8.2

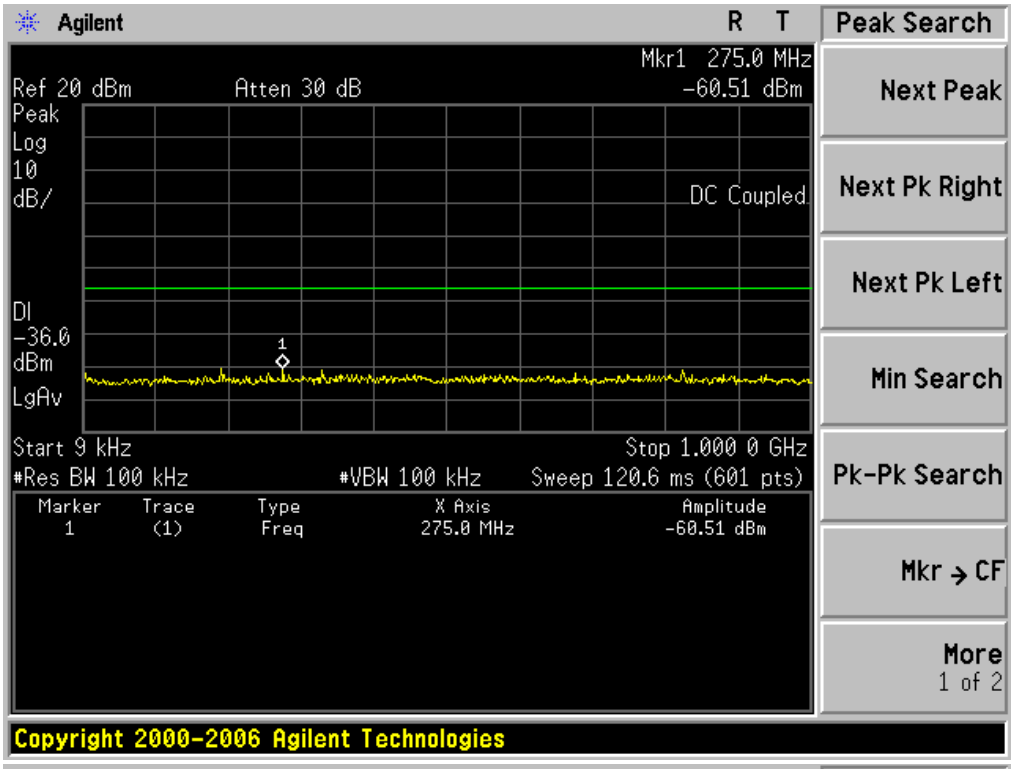
9.3. MEASUREMENT EQUIPMENT USED

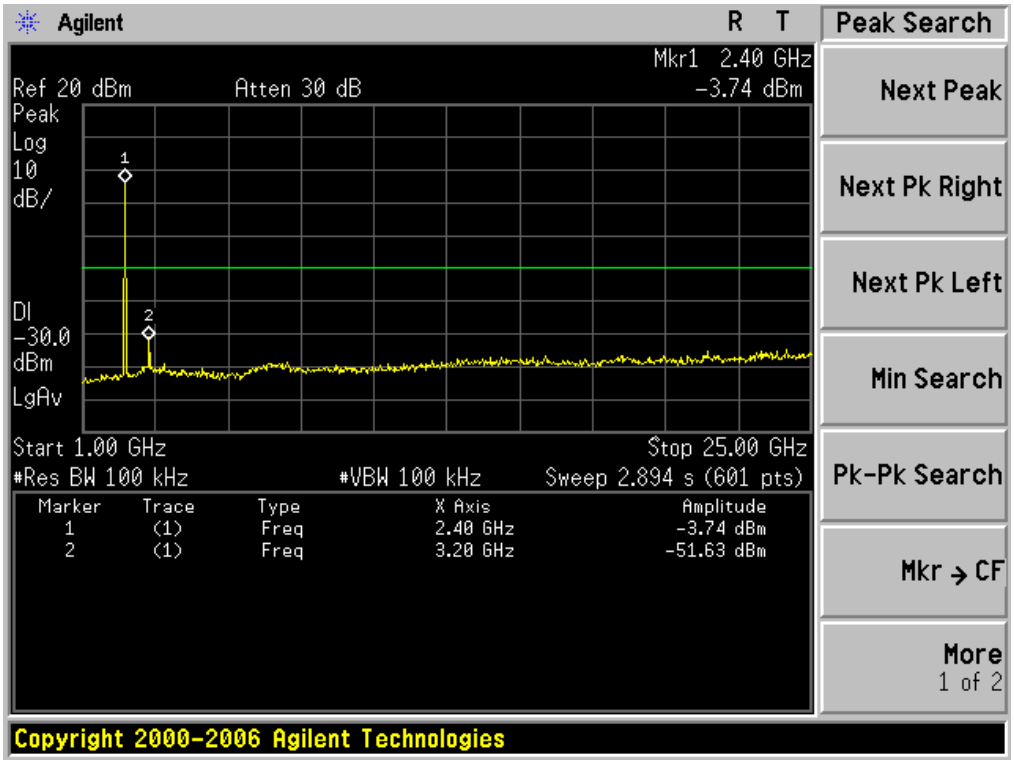
The same as described in section 6

9.4. LIMITS AND MEASUREMENT RESULT

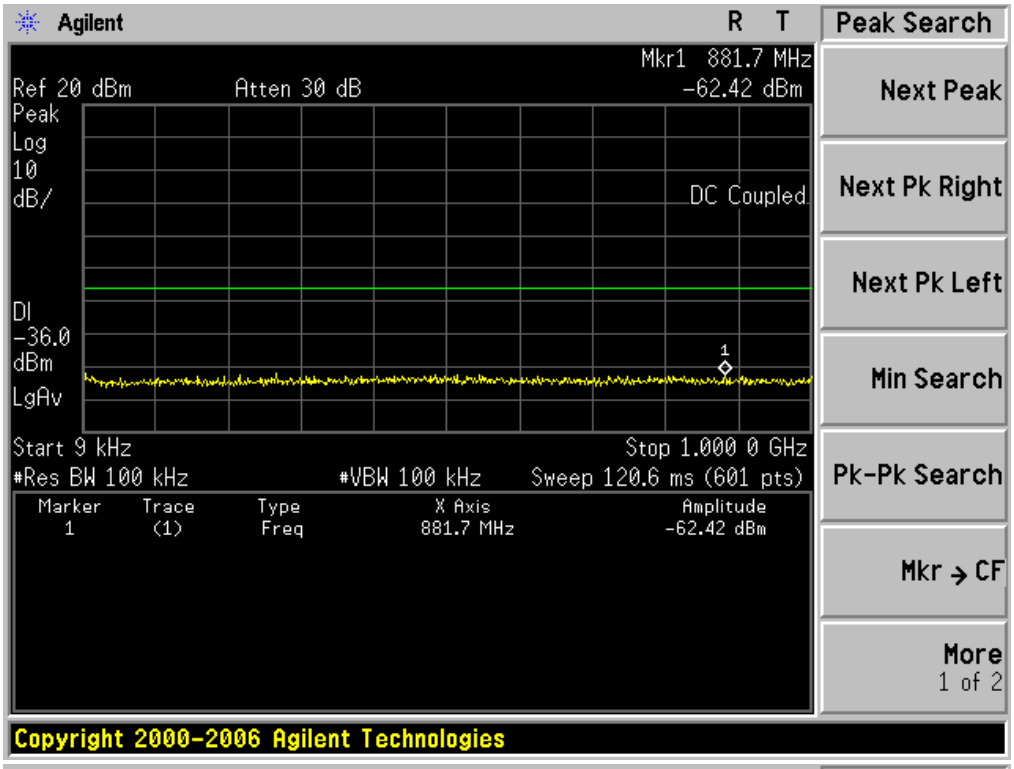
LIMITS AND MEASUREMENT RESULT		
Applicable Limits	**Measurement Result**	
	Test Data	**Criteria**
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 20 dB below that in 100KHz bandwidth within the band that contains the highest level of the desired power. In addition, radiation 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))	At least -20dBc than the limit Specified on the BOTTOM Channel	PASS
	At least -20dBc than the limit Specified on the TOP Channel	PASS

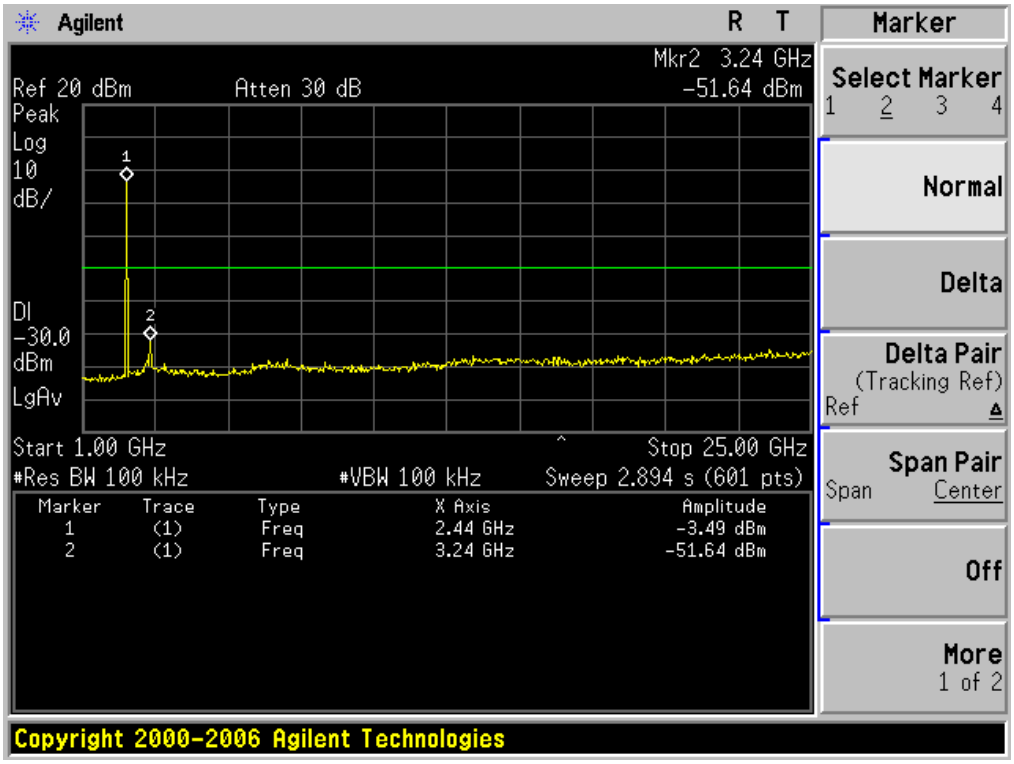
TEST PLOT OF OUT OF BAND EMISSIONS WITH THE WORST CASE OF GFSK MODULATION IN LOW CHANNEL



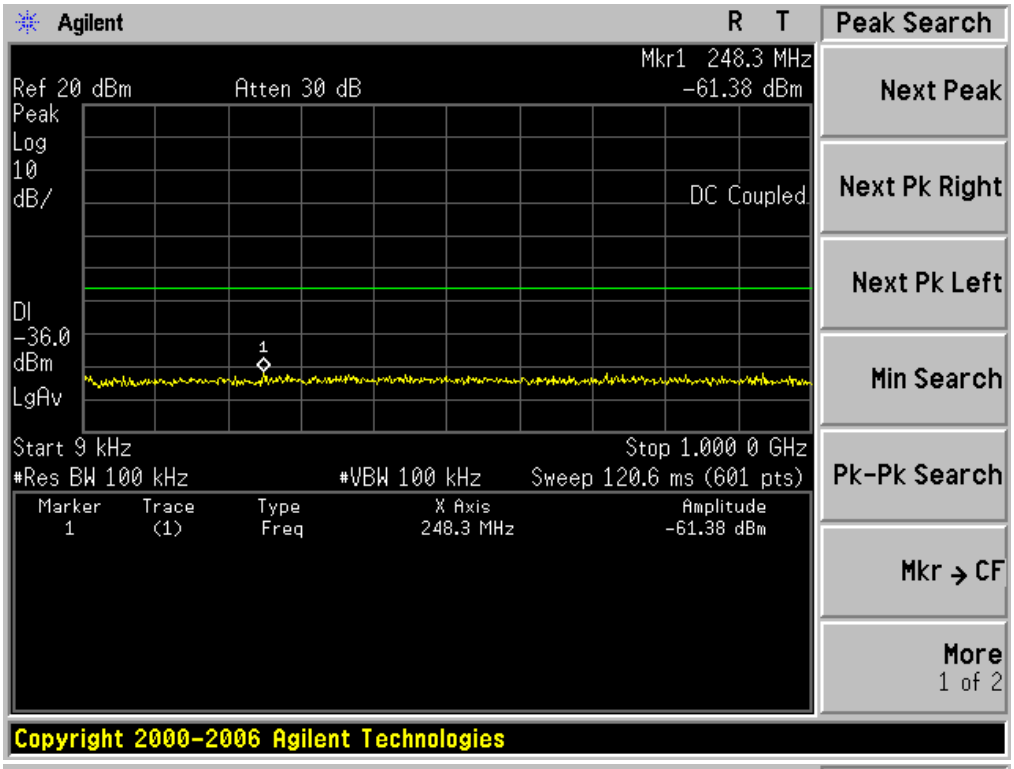


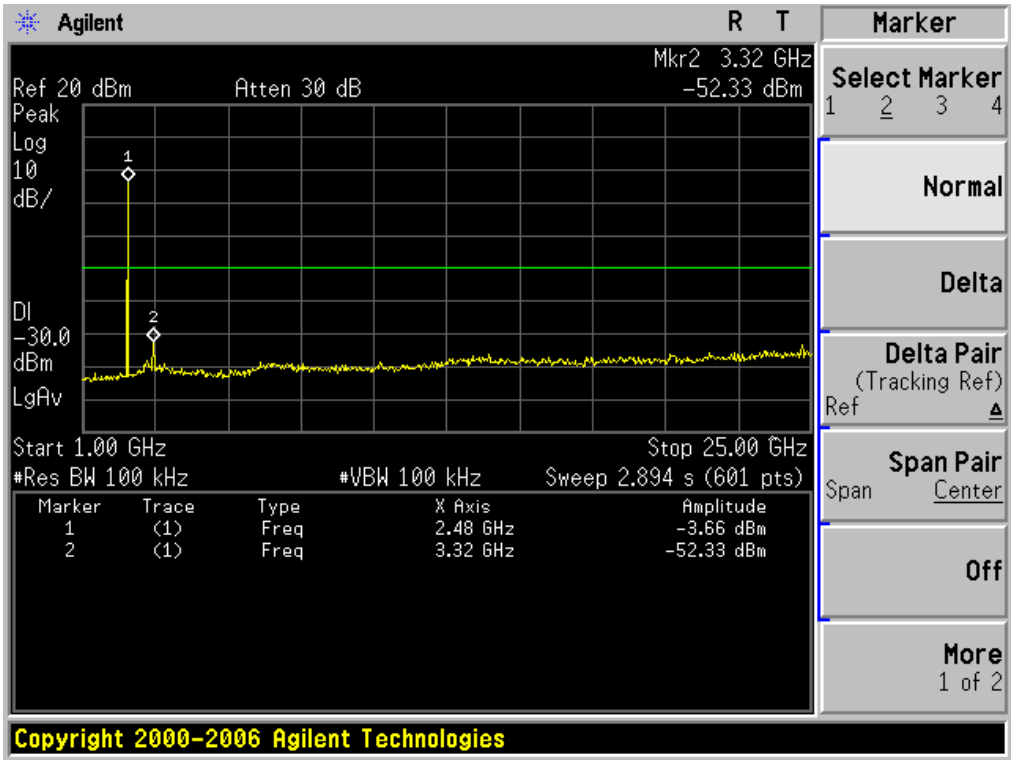
TEST PLOT OF OUT OF BAND EMISSIONS
OF GFSK MODULATION IN MIDDLE CHANNEL





TEST PLOT OF OUT OF BAND EMISSIONS
OF GFSK MODULATION IN HIGH CHANNEL





10. RADIATED EMISSION

10.1. MEASUREMENT PROCEDURE

1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum values.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High - Low scan is not required in this case.

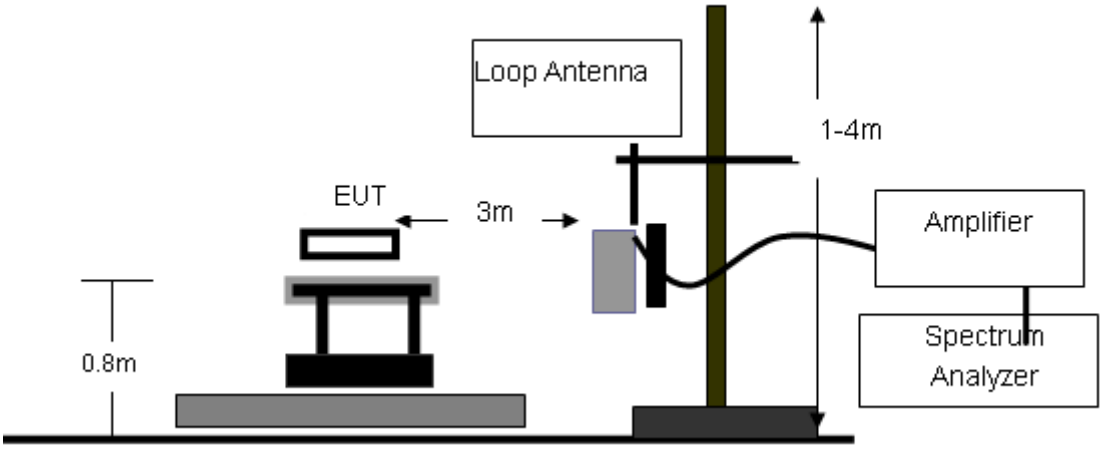
The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
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
Start ~Stop Frequency	1GHz~26.5GHz 1MHz/1MHz for Peak, 1MHz/10Hz for Average

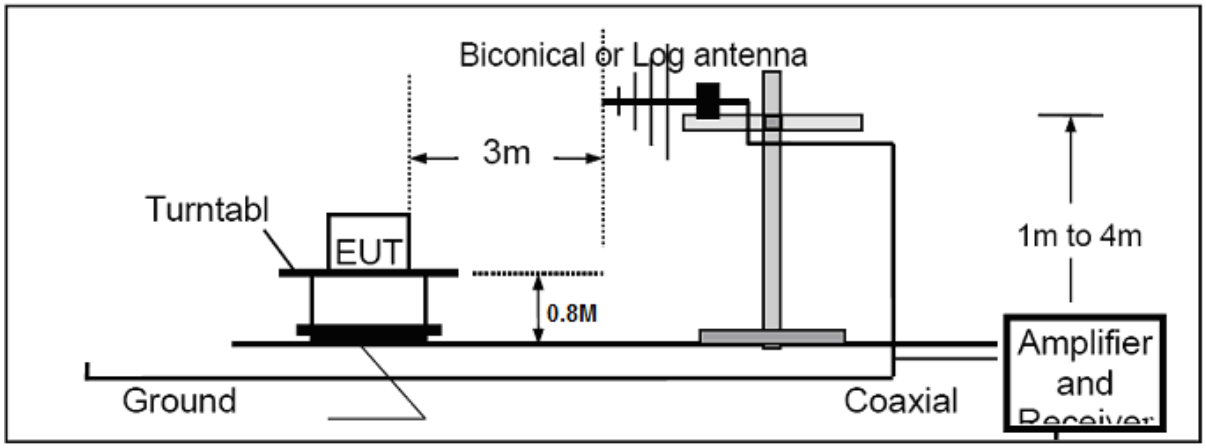
Receiver Parameter	Setting
Start ~Stop Frequency	9KHz~150KHz/RB 200Hz for QP
Start ~Stop Frequency	150KHz~30MHz/RB 9KHz for QP
Start ~Stop Frequency	30MHz~1000MHz/RB 120KHz for QP

10.2. TEST SETUP

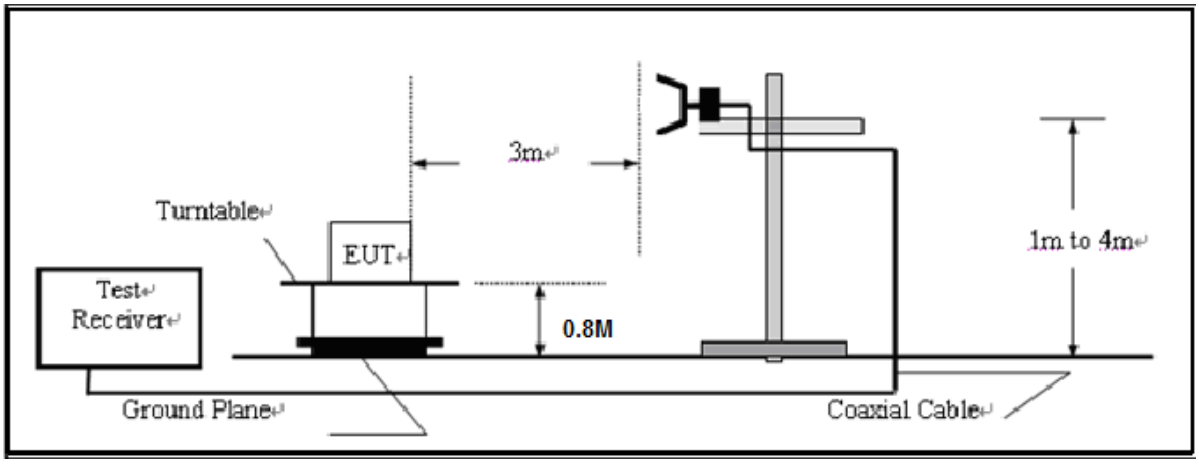
RADIATED EMISSION TEST SETUP BELOW 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz

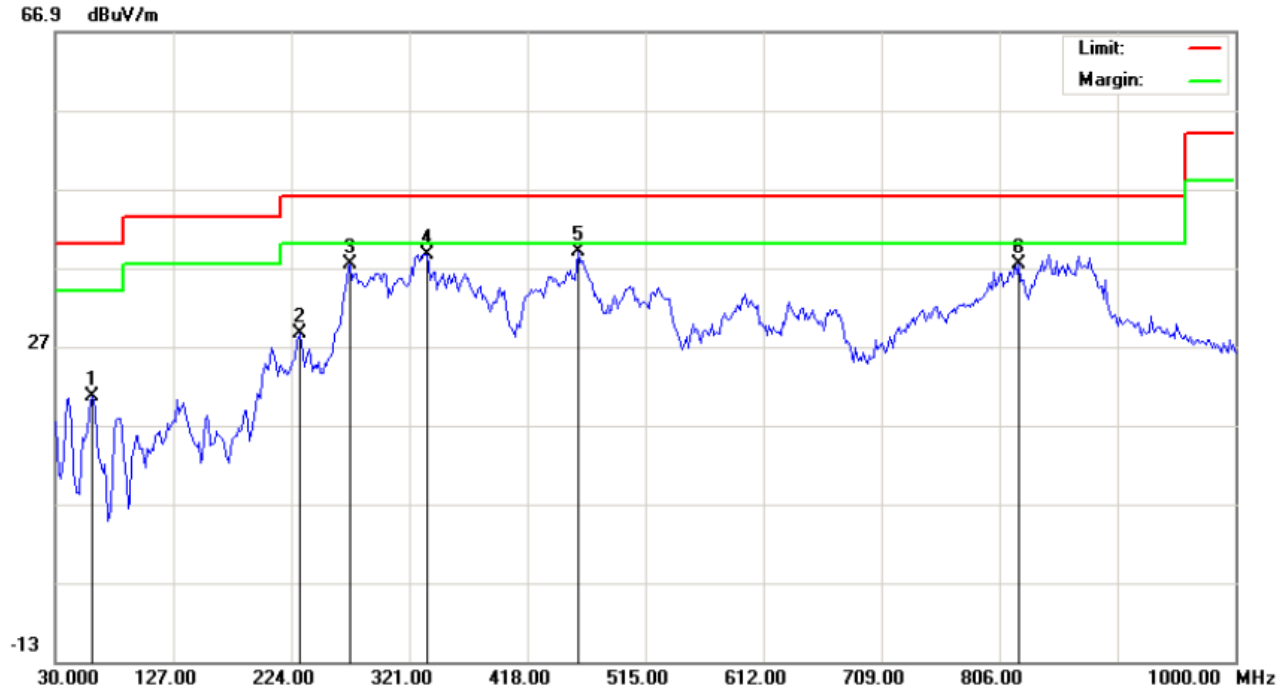


10.3. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

No emission found between lowest internal used/generated frequencies to 30MHz.

RADIATED EMISSION BELOW 1GHZ-Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: 10.1" platinum
M/N: AC101PL
Mode: Normal Hopping
Note:

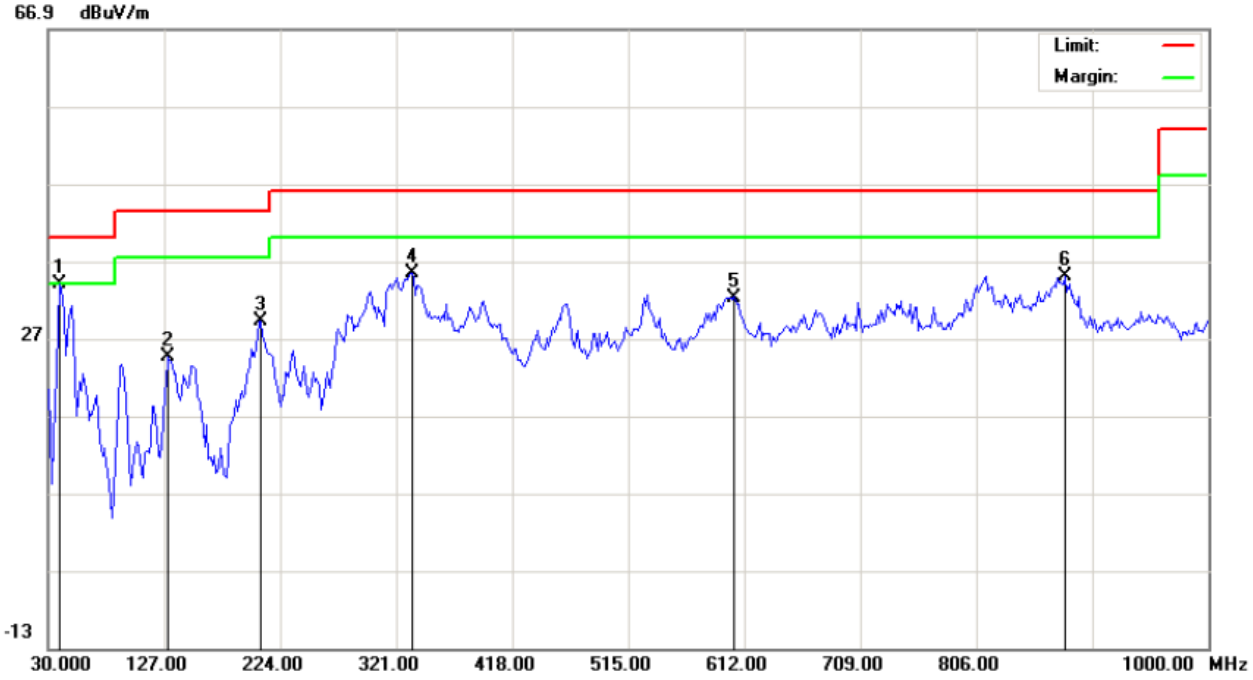
Polarization: ***Horizontal***
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		60.7167	15.68	4.92	20.60	40.00	-19.40	peak			
2		230.4667	16.26	12.39	28.65	46.00	-17.35	peak			
3		272.5000	20.39	17.06	37.45	46.00	-8.55	peak			
4		335.5500	18.64	20.04	38.68	46.00	-7.32	peak			
5	*	460.0333	17.35	21.62	38.97	46.00	-7.03	peak			
6		822.1667	7.48	30.00	37.48	46.00	-8.52	peak			

RESULT: PASS

RADIATED EMISSION BELOW 1GHZ-Vertical



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: 10.1" platinum
M/N: AC101PL
Mode: Normal Hopping
Note:

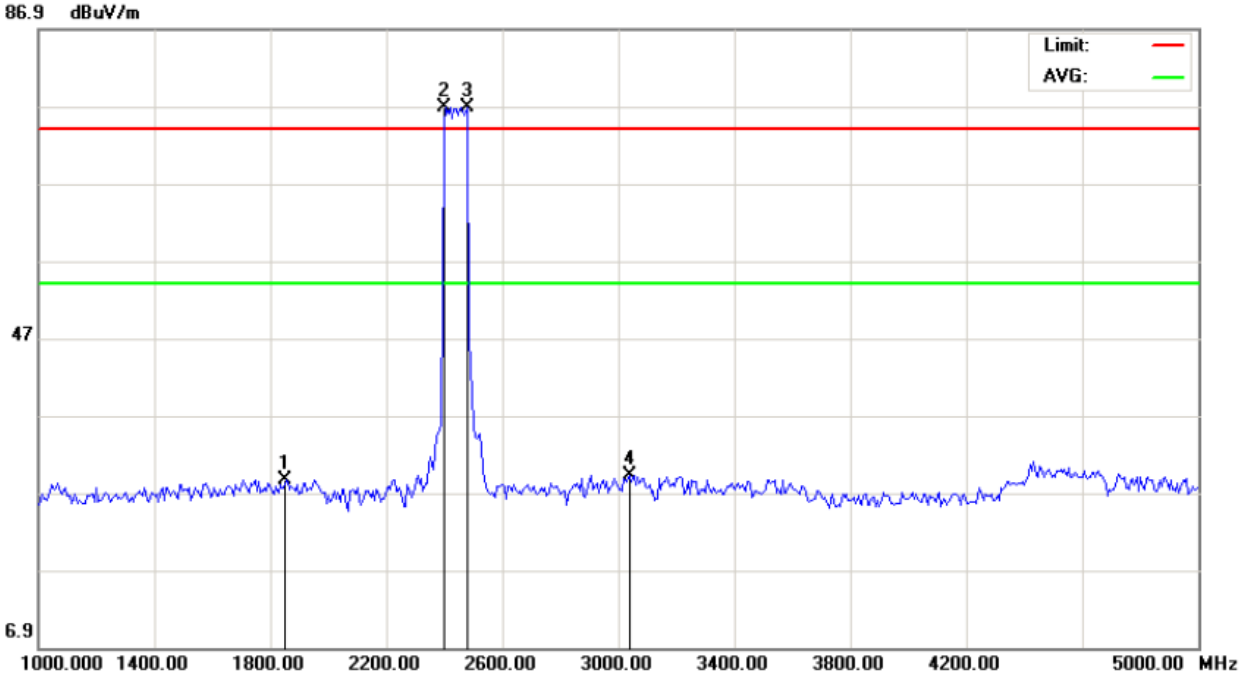
Polarization: ***Vertical***
Power:
Distance:

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	39.7000	26.40	7.64	34.04	40.00	-5.96	peak			
2		130.2332	23.33	1.22	24.55	43.50	-18.95	peak			
3		207.8333	21.97	7.32	29.29	43.50	-14.21	peak			
4		333.9333	15.48	19.96	35.44	46.00	-10.56	peak			
5		603.9167	7.18	25.12	32.30	46.00	-13.70	peak			
6		880.3667	3.21	31.74	34.95	46.00	-11.05	peak			

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) -Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: 10.1" platinum
M/N: AC101PL
Mode: Normal Hopping
Note:

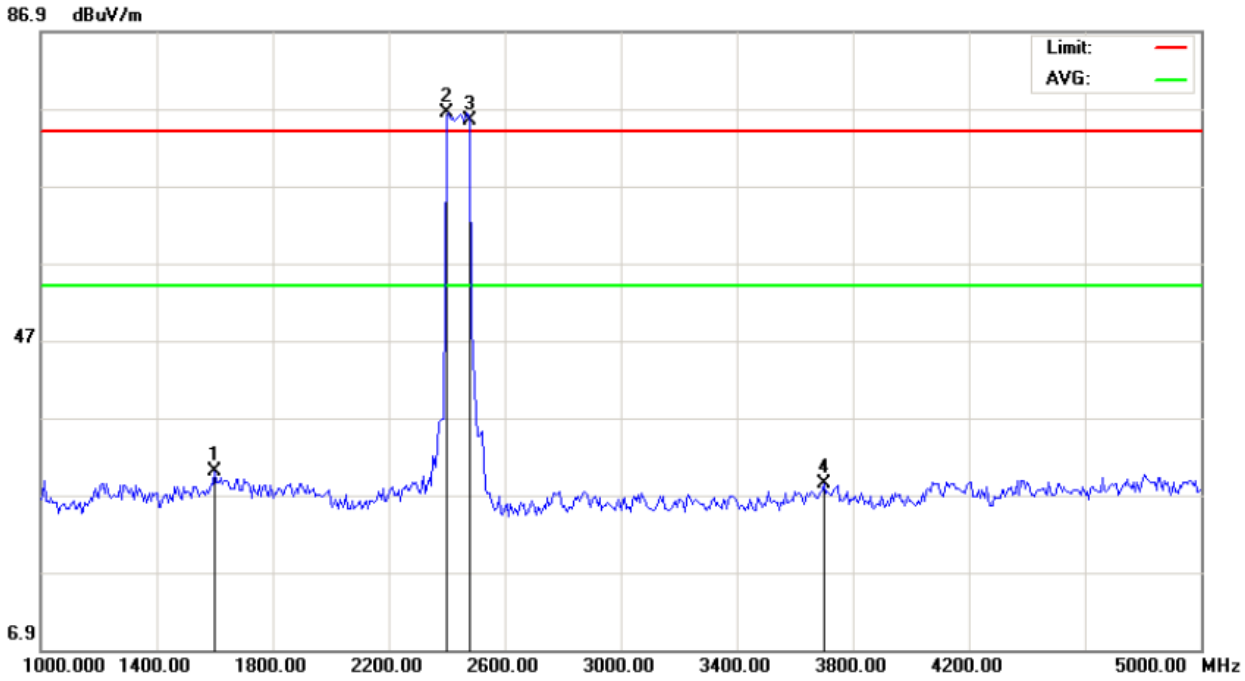
Polarization: ***Horizontal***
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1853.333	38.74	-10.14	28.60	74.00	-45.40	peak			
2	*	2402.000	85.21	-8.39	76.82	74.00	2.82	peak			
3	X	2480.000	84.89	-8.08	76.81	74.00	2.81	peak			
4		3040.000	37.92	-8.66	29.26	74.00	-44.74	peak			

RESULT: PASS

RADIATED EMISSION ABOVE 1GHZ (1-10th Harmonics) -Vertical



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: 10.1" platinum
M/N: AC101PL
Mode: Normal Hopping
Note:

Polarization: ***Vertical***
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1600.000	40.49	-10.39	30.10	74.00	-43.90	peak			
2	*	2402.000	84.71	-8.39	76.32	74.00	2.32	peak			
3	X	2480.000	83.39	-8.08	75.31	74.00	1.31	peak			
4		3700.000	35.78	-7.41	28.37	74.00	-45.63	peak			

RESULT: PASS

Note: 5~25GHz at least have 20dB margin. No recording in the test report.

Factor=Antenna Factor+ Cable loss-Amplifier gain, Margin=Measurement-Limit.

11. BAND EDGE EMISSION

11.1. MEASUREMENT PROCEDURE

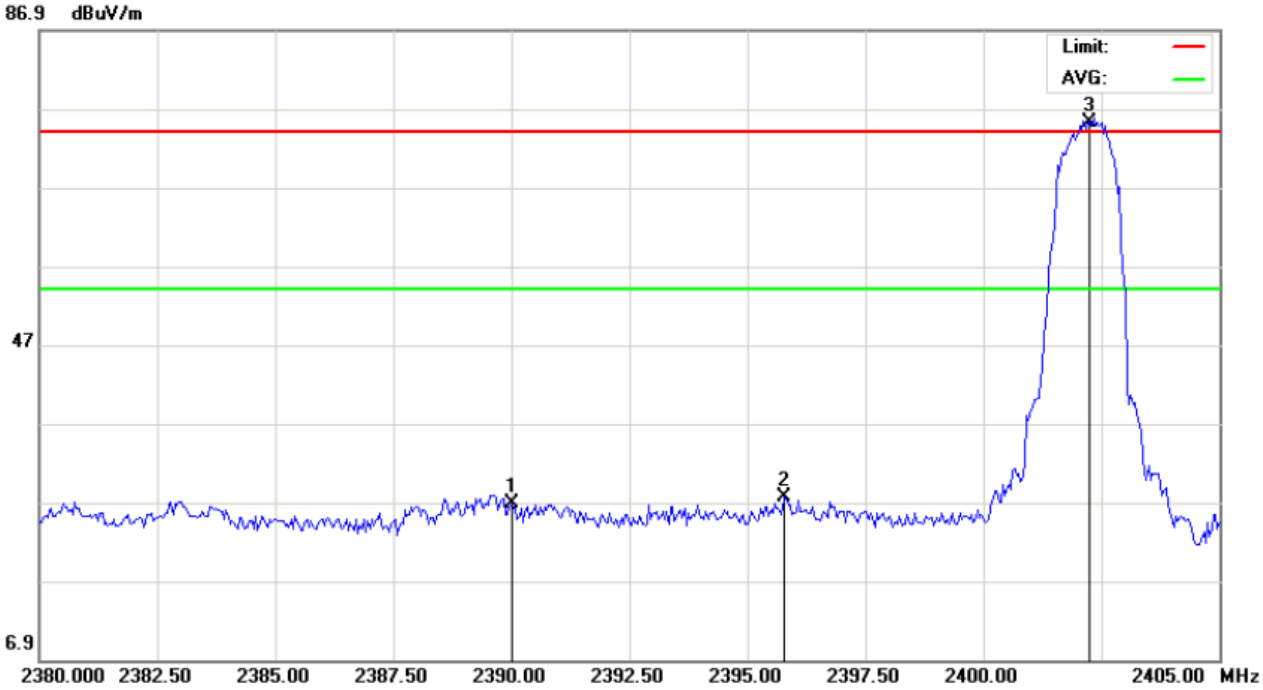
1. Set the EUT Work on the top, the bottom operation frequency individually.
2. Set SPA Start or Stop Frequency = Operation Frequency, RBW>=1%span, VBW>=RBW
3. The band edges was measured and recorded.

11.2. TEST SET-UP

Radiated same as 10.2

11.3. TEST RESULT

TEST PLOT OF BAND EDGE FOR LOW CHANNEL (3Mbps)-Horizontal

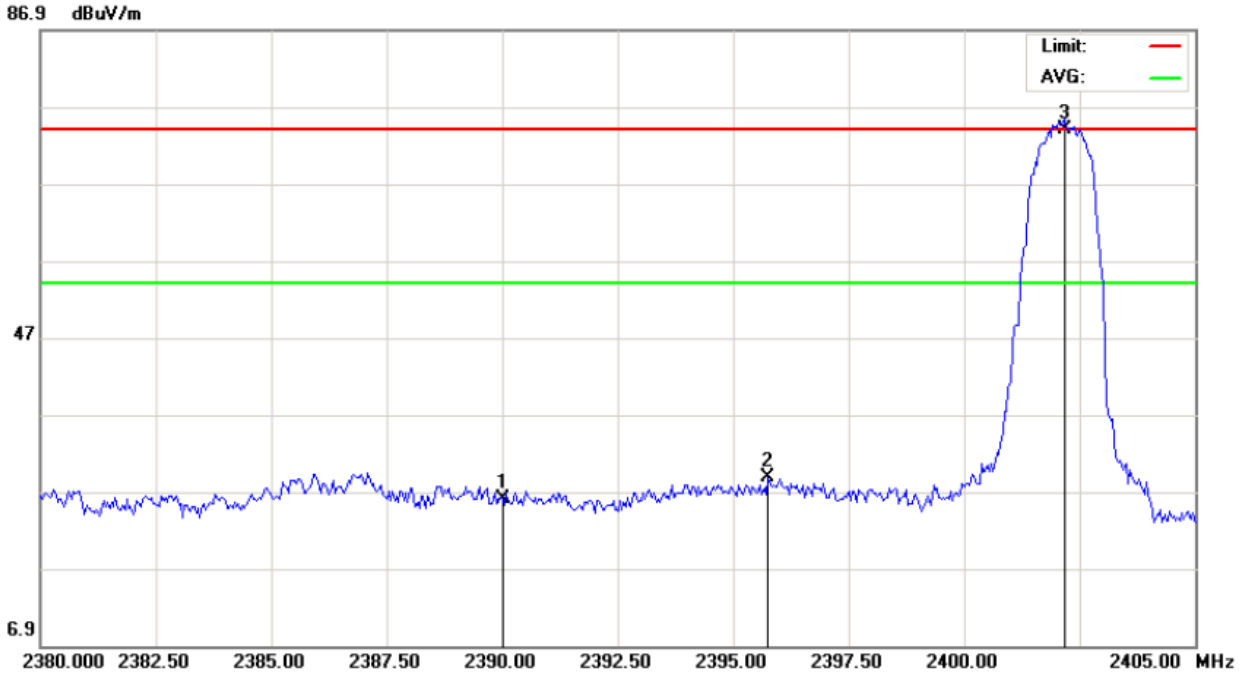


Site: site #1	Polarization: ***Horizontal***	Temperature: 26
Limit: FCC Class B 3M Radiation above 1GHZ(PK)	Power:	Humidity: 60 %
EUT: 10.1" platinum	Distance: 3m	
M/N: AC101PL		
Mode: Low Channel TX		
Note:		

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2390.000	35.18	-8.44	26.74	74.00	-47.26	peak			
2		2395.792	35.97	-8.42	27.55	74.00	-46.45	peak			
3	*	2402.250	83.67	-8.39	75.28	74.00	1.28	peak			

RESULT: PASS

TEST PLOT OF BAND EDGE FOR LOW CHANNEL (3Mbps)-Vertical



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: 10.1" platinum
M/N: AC101PL
Mode: Low Channel TX
Note:

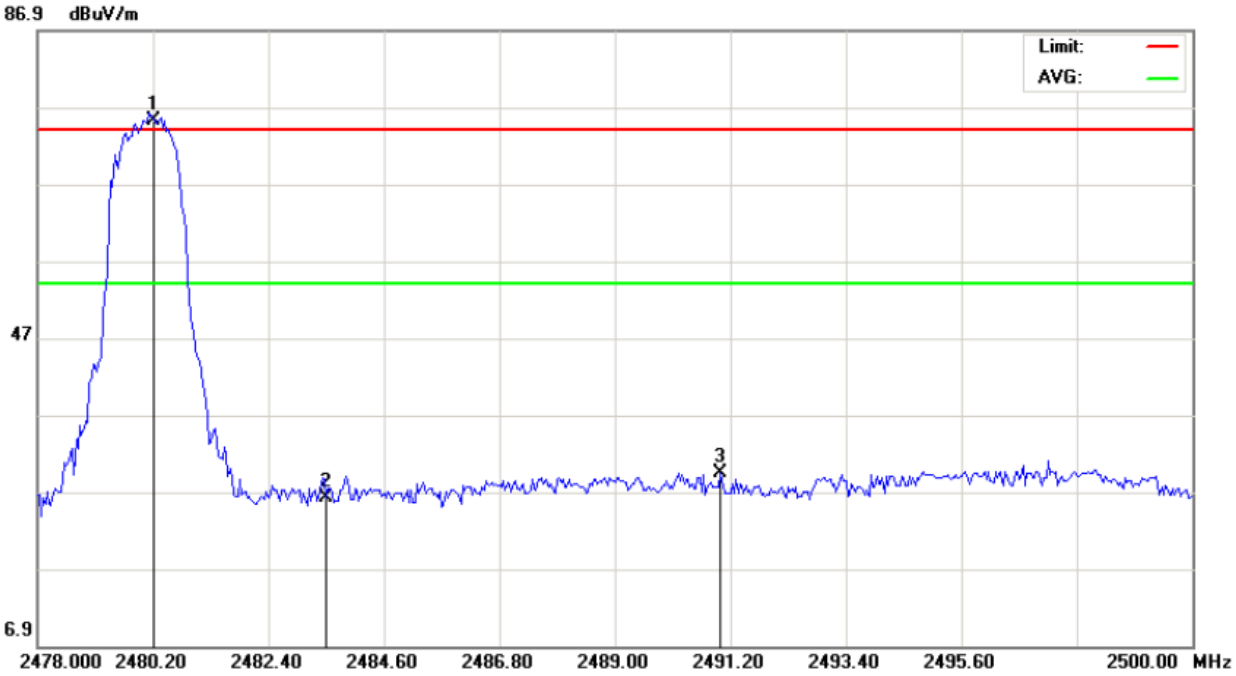
Polarization: ***Vertical***
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		2390.000	34.49	-8.44	26.05	74.00	-47.95	peak			
2		2395.750	37.28	-8.42	28.86	74.00	-45.14	peak			
3	*	2402.180	82.36	-8.39	73.97	74.00	-0.03	peak			

RESULT: PASS

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL (3Mbps)-Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: 10.1" platinum
M/N: AC101PL
Mode: High Channel TX
Note:

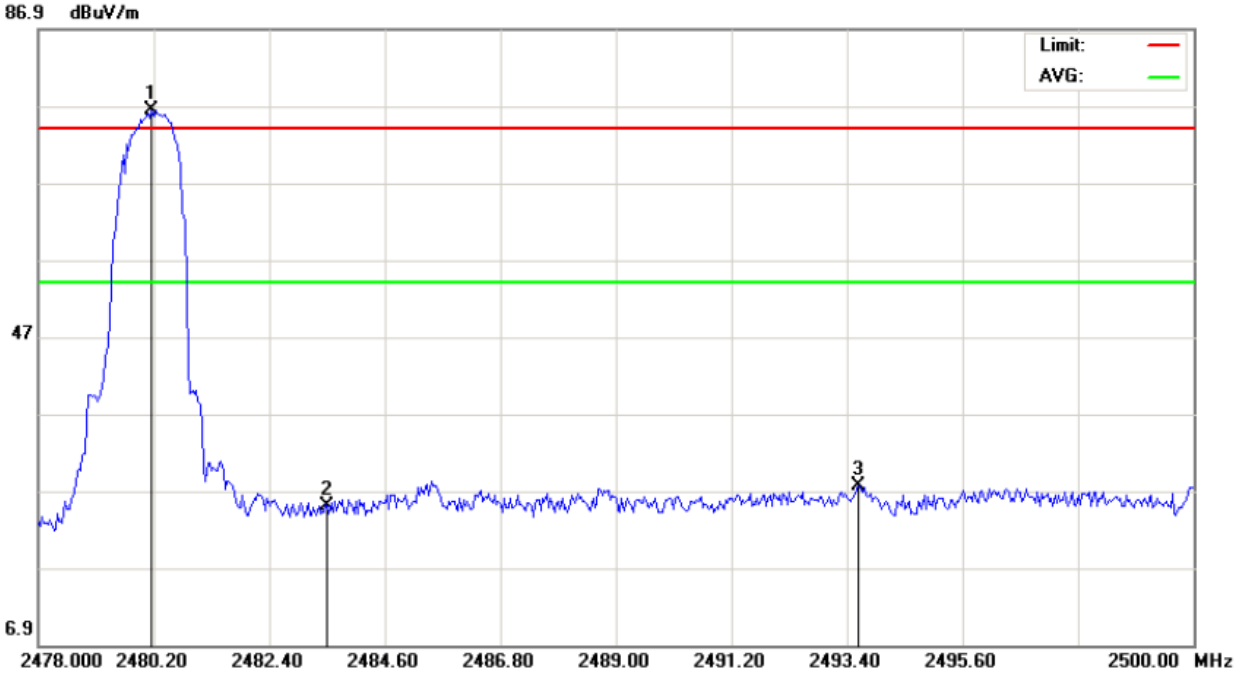
Polarization: ***Horizontal***
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.220	83.23	-8.08	75.15	74.00	1.15	peak			
2		2483.500	34.24	-8.07	26.17	74.00	-47.83	peak			
3		2491.017	37.43	-8.04	29.39	74.00	-44.61	peak			

RESULT: PASS

TEST PLOT OF BAND EDGE FOR HIGH CHANNEL (3Mbps)-Vertical



Site: site #1
Limit: FCC Class B 3M Radiation above 1GHZ(PK)
EUT: 10.1" platinum
M/N: AC101PL
Mode: High Channel TX
Note:

Polarization: ***Vertical***
Power:
Distance: 3m

Temperature: 26
Humidity: 60 %

No.	Mk.	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.150	84.42	-8.08	76.34	74.00	2.34	peak			
2		2483.500	33.11	-8.07	25.04	74.00	-48.96	peak			
3		2493.620	35.58	-8.03	27.55	74.00	-46.45	peak			

RESULT: PASS

12. NUMBER OF HOPPING FREQUENCY

12.1. MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
3. Set the spectrum analyzer Start = 2.4GHz Stop = 2.4835GHz
4. Set the Spectrum Analyzer as RBW>=1%span, VBW>=RBW.

12.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 8.2

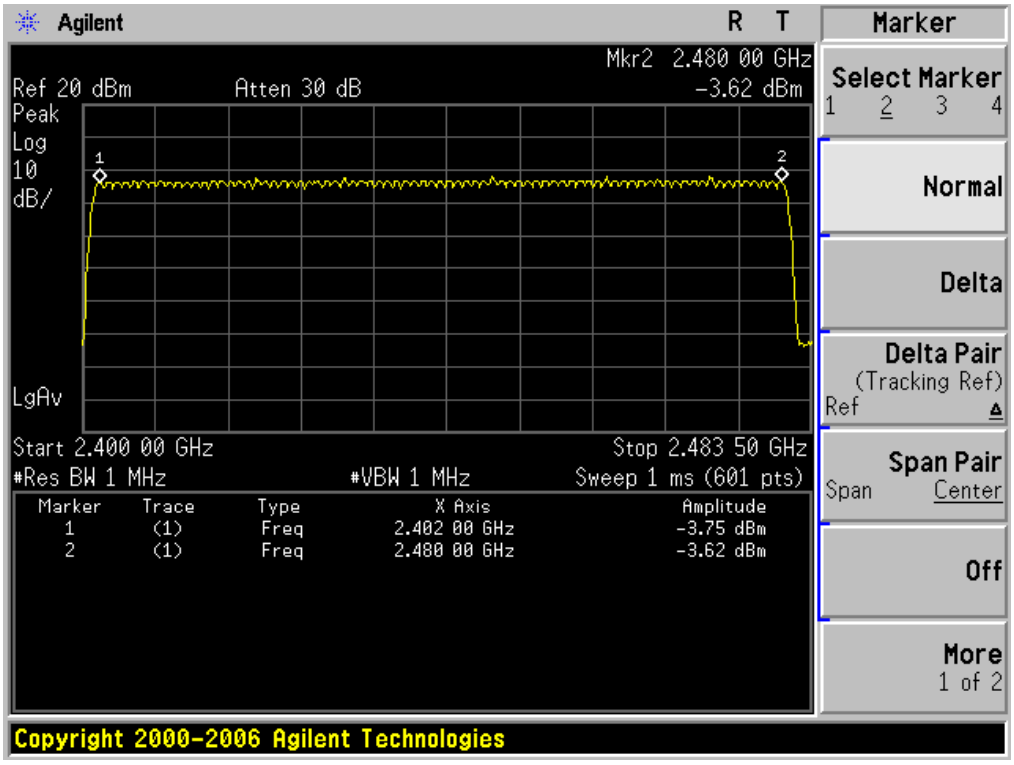
12.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

12.4. LIMITS AND MEASUREMENT RESULT

TOTAL NO. OF HOPPING CHANNEL	LIMIT (NO. OF CH)	MEASUREMENT (NO. OF CH)	RESULT
	>=15	79	PASS

TEST PLOT FOR NO. OF TOTAL CHANNELS



13. TIME OF OCCUPANCY (DWELL TIME)

13.1. MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer.
3. Set Span = zero span, centered on a hoping channel
4. Set the spectrum analyzer as RBW=1MHz, VBW>=RBW, Span = 0 Hz

13.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 8.2

13.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6

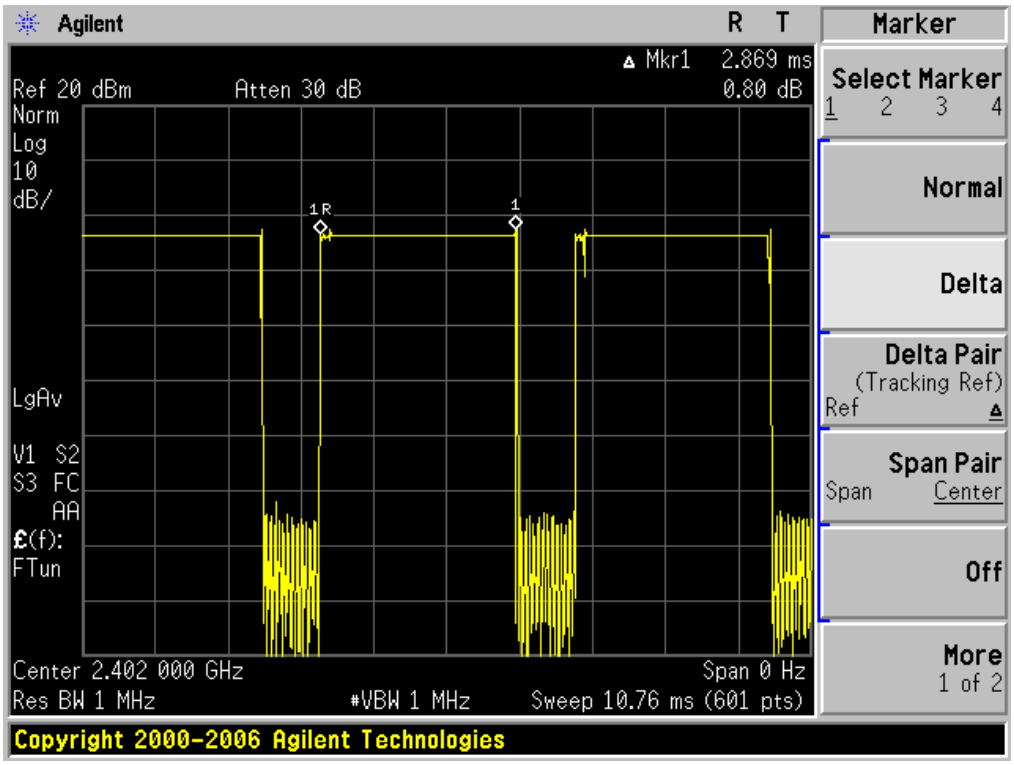
13.4. LIMITS AND MEASUREMENT RESULT

The Worst Case (3Mbps)

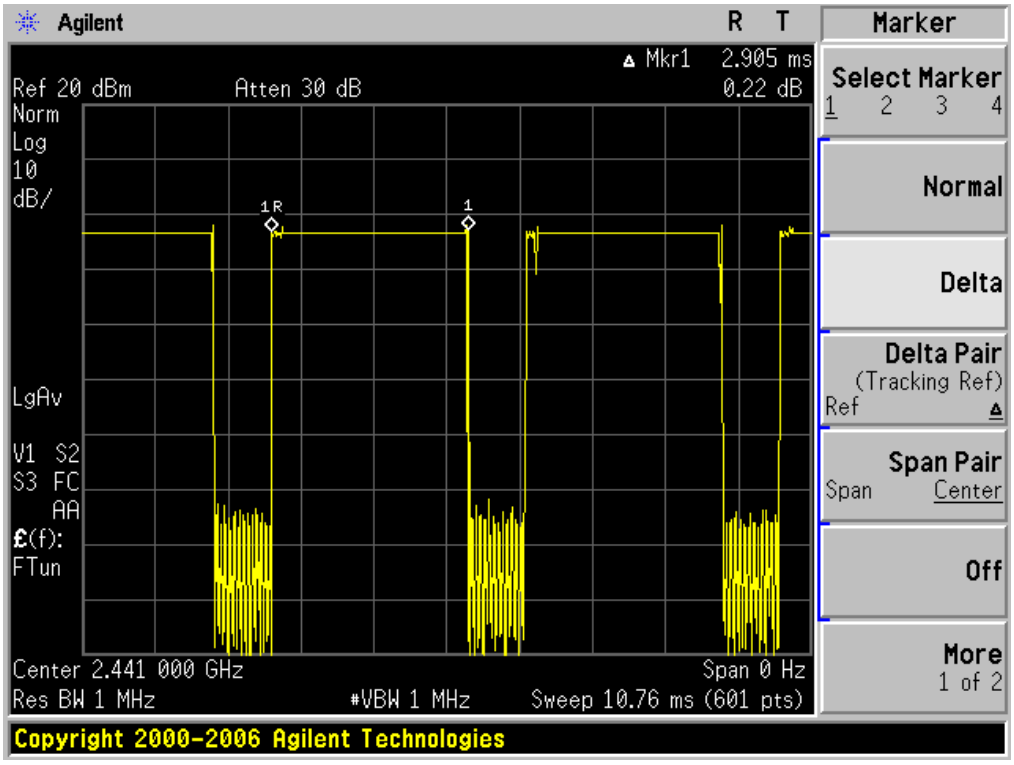
Channel	Time of Pulse for DH5 (ms)	Period Time (s)	Sweep Time (ms)	Limit (ms)
Low	2.869	31.6	306.03	400
Middle	2.905	31.6	309.87	400
High	2.905	31.6	309.87	400

Low Channel Time
2.869*(1600/6)/79*31.6=306.03 ms
Middle Channel Time
2.905*(1600/6)/79*31.6=309.87 ms
High Channel Time
2.905*(1600/6)/79*31.6=309.87 ms

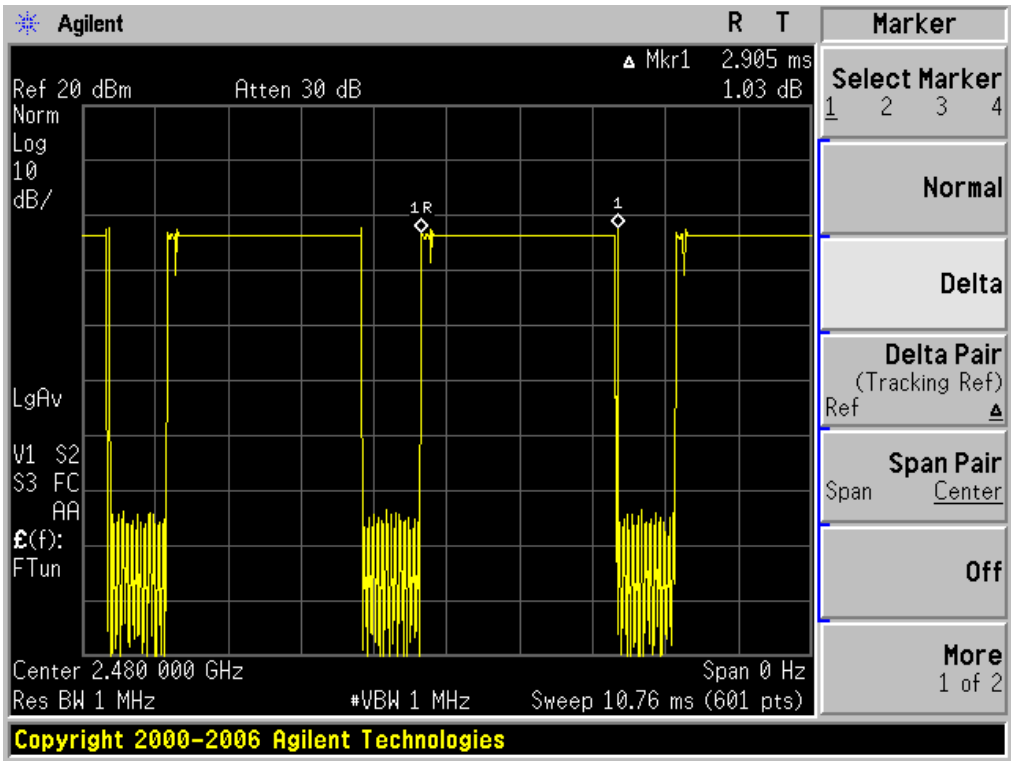
TEST PLOT OF LOW CHANNEL



TEST PLOT OF MIDDLE CHANNEL



TEST PLOT OF HIGH CHANNEL



14. FREQUENCY SEPARATION

14.1. MEASUREMENT PROCEDURE

1. Place the EUT on the table and set it in transmitting mode
2. Remove the antenna from the EUT and then connect a low RF cable from the antenna port to the spectrum analyzer
3. Set Span = wide enough to capture the peaks of two adjacent channels Resolution (or IF) Bandwidth (RBW) ≥ 1% of the span Video (or Average) Bandwidth (VBW) ≥ RBW; Sweep = auto; Detector function = peak; Trace = max hold

14.2. TEST SETUP (BLOCK DIAGRAM OF CONFIGURATION)

Same as described in section 6.2

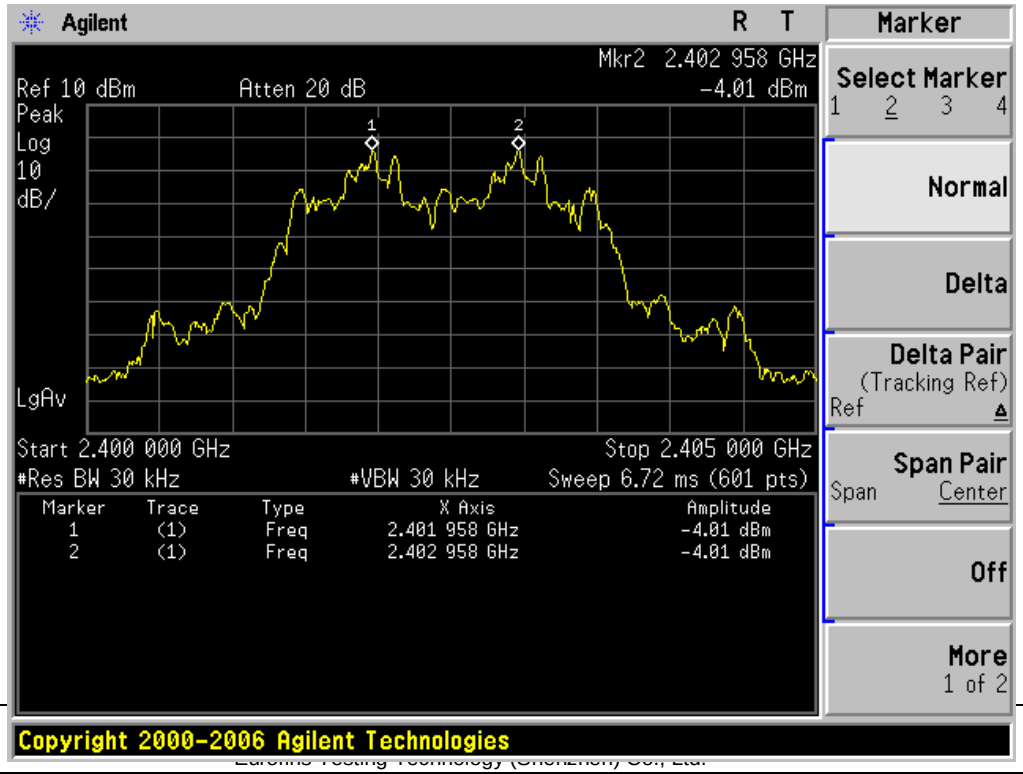
14.3. MEASUREMENT EQUIPMENT USED

The same as described in section 6.3

14.4. LIMITS AND MEASUREMENT RESULT

CHANNEL	CHANNEL SEPARATION	LIMIT	RESULT
	KHz	KHz	Pass
CH00-CH01	1000	>=25 KHz or 2/3 20 dB BW	

TEST PLOT FOR FREQUENCY SEPARATION（3Mbps）



15. FCC LINE CONDUCTED EMISSION TEST

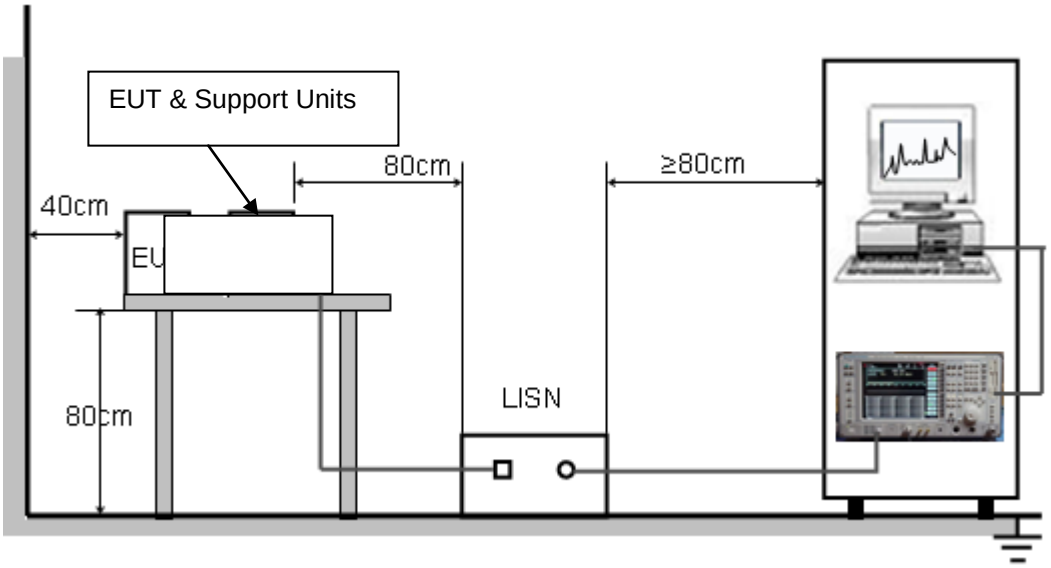
15.1. LIMITS OF LINE CONDUCTED EMISSION TEST

Frequency	Maximum RF Line Voltage	
	Q.P.(dBuV)	Average(dBuV)
150kHz~500kHz	66-56	56-46
500kHz~5MHz	56	46
5MHz~30MHz	60	50

Note:

1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.

15.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



15.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. When the EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.4 (see Test Facility for the dimensions of the ground plane used). When the EUT is a floor-standing equipment, it is placed on the ground plane which has a 3-12 mm non-conductive covering to insulate the EUT from the ground plane.
2. Support equipment, if needed, was placed as per ANSI C63.4.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.4.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received DC5V charging voltage by adapter which received 120V/60Hzpower by a LISN..
6. The test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7. Analyzer / Receiver scanned from 150 kHz to 30MHz for emissions in each of the test modes.
8. During the above scans, the emissions were maximized by cable manipulation.
9. The test mode(s) were scanned during the preliminary test.

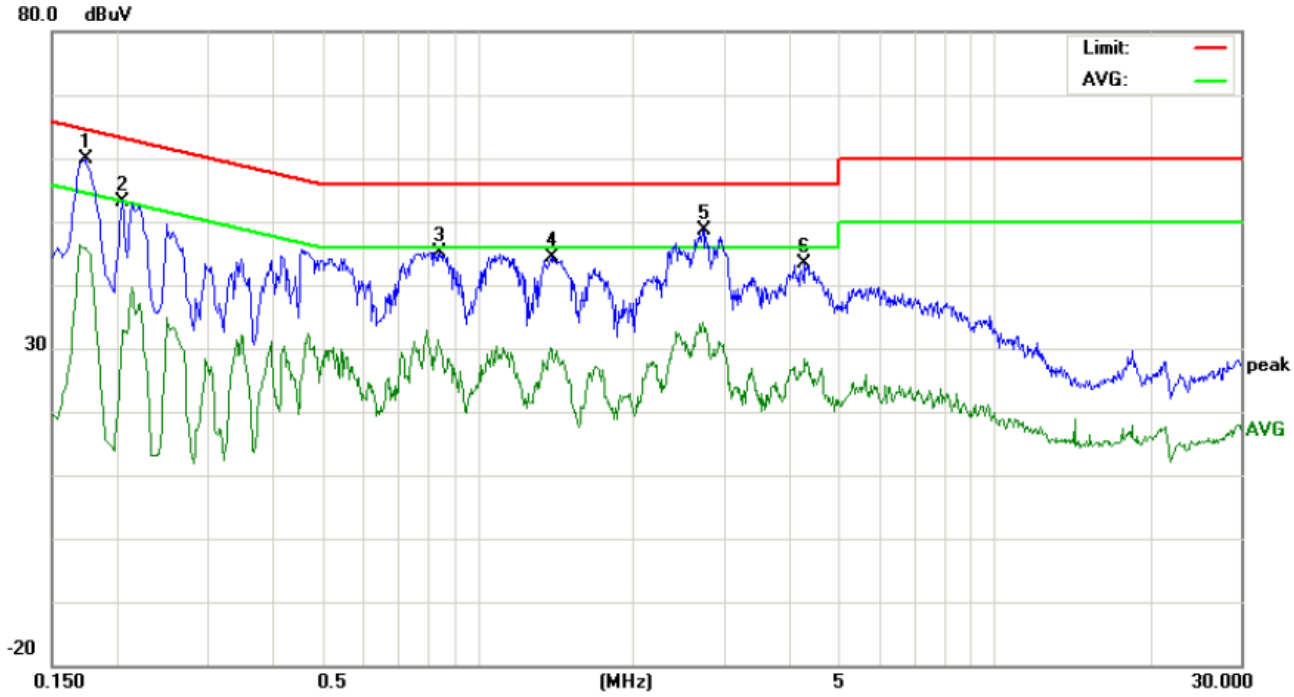
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

15.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
2. A scan was taken on both power lines, Line 1 and Line 2, recording at least the six highest emissions. Emission frequency and amplitude were recorded into a computer in which correction factors were used to calculate the emission level and compare reading to the applicable limit. If EUT emission level was less –2dB to the A.V. limit in Peak mode, then the emission signal was re-checked using Q.P and Average detector.
3. The test data of the worst case condition(s) was reported on the Summary Data page.

15.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

Line Conducted Emission Test Line 1-L



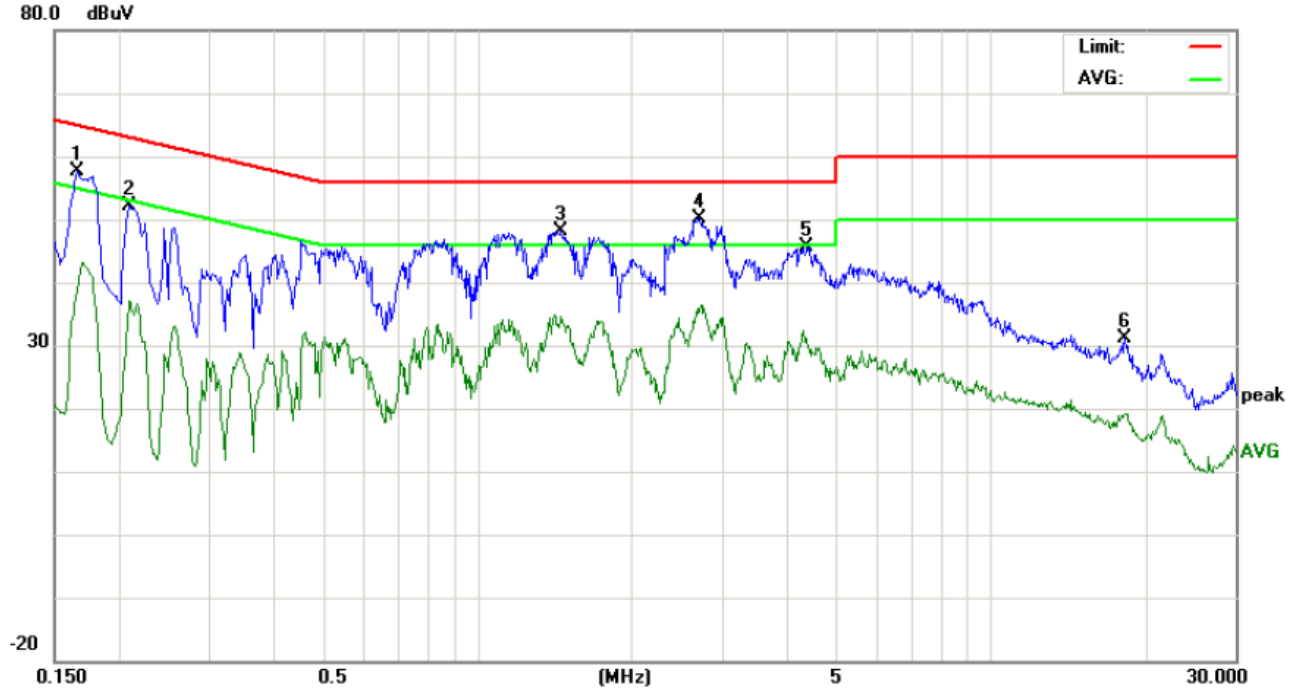
Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: 10.1" platinum
M/N: AC101PL
Mode: Normal Hopping
Note:

Phase: *L1*
Power:

Temperature: 26
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1740	49.62		35.58	10.19	59.81		45.77	64.76	54.76	-4.95	-8.99	P	
2	0.2060	42.83		22.64	10.22	53.05		32.86	63.36	53.36	-10.31	-20.50	P	
3	0.8460	34.83		19.71	10.34	45.17		30.05	56.00	46.00	-10.83	-15.95	P	
4	1.3980	33.91		18.15	10.38	44.29		28.53	56.00	46.00	-11.71	-17.47	P	
5	2.7380	38.12		22.33	10.49	48.61		32.82	56.00	46.00	-7.39	-13.18	P	
6	4.3019	33.06		18.15	10.30	43.36		28.45	56.00	46.00	-12.64	-17.55	P	

Line Conducted Emission Test Line 2-N



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: 10.1" platinum
M/N: AC101PL
Mode: Normal Hopping
Note:

Phase: *N*
Power:

Temperature: 26
Humidity: 60 %

No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1660	47.35		28.72	10.18	57.53		38.90	65.15	55.15	-7.62	-16.25	P	
2	0.2100	41.94		26.92	10.23	52.17		37.15	63.20	53.20	-11.03	-16.05	P	
3	1.4580	37.69		24.23	10.38	48.07		34.61	56.00	46.00	-7.93	-11.39	P	
4	2.7180	39.63		24.93	10.48	50.11		35.41	56.00	46.00	-5.89	-10.59	P	
5	4.3900	35.45		20.35	10.26	45.71		30.61	56.00	46.00	-10.29	-15.39	P	
6	18.3140	21.02		8.88	10.12	31.14		19.00	60.00	50.00	-28.86	-31.00	P	

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

Please refer to the document of Test Setup Photos.

APPENDIX B: PHOTOGRAPHS OF EUT

Please refer to the document of External Photos and Internal Photos.

----END OF REPORT----