FCC Test Report

Report No.: AGC06352160301FE04

FCC ID	:	2ADJEHXI6150CT
APPLICATION PURPOSE	:	Original Equipment
PRODUCT DESIGNATION	:	Hisign Handheld Multi-biometric Device
BRAND NAME	:	Hisign MBioCheck
MODEL NAME	:	HX-I6150CT
CLIENT	:	Beijing Hisign Technology Co., Ltd.
DATE OF ISSUE	:	Mar.29, 2016
STANDARD(S) **TEST PROCEDURE(S)**	:	FCC Part 15.247 KDB 558074 v03r02
REPORT VERSION	:	V1.0

***A**ttestation of **G**lobal **C**ompliance (Shenzhen) Co., Ltd*

Report Revise Record

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	Mar.29, 2016	Valid	Original Report

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1. VERIFICATION OF CONFORMITY

Applicant	Beijing Hisign Technology Co., Ltd.
Address	2F-6F, Tower4, Hanwei International Square, Area4, No.186, West Road, 4th South Ring Road, Fengtai District, Beijing
Manufacturer	Beijing Hisign Technology Co., Ltd.
Address	2F-6F, Tower4, Hanwei International Square, Area4, No.186, West Road, 4th South Ring Road, Fengtai District, Beijing
Product Designation	Hisign Handheld Multi-biometric Device
Brand Name	Hisign MBioCheck
Test Model	HX-I6150CT
Date of test	Mar.14, 2016 to Mar.28, 2016
Deviation	None
Condition of Test Sample	Normal
Report Template	AGCRT-US-BGN/RF

We hereby certify that:
The above equipment was tested by Dongguan Precise Testing Service Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10 (2013) and the energy emitted by the sample EUT tested as described in this report is in compliance with requirement of FCC Part 15 Rules requirement.

Tested By	Dota Zhang	
	Dota Zhang(Zhang Jianfeng)	Mar.29, 2016
Reviewed By	Bart Xie	
	Bart Xie(Xie Xiaobin)	Mar.29, 2016
Approved By	Solger Zhang	
	Solger Zhang(Zhang Hongyi) Authorized Officer	Mar.29, 2016

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION

The EUT is designed as “Hisign Handheld Multi-biometric Device”. It is designed by way of utilizing the DSSS and OFDM technology to achieve the system operation.

A major technical description of EUT is described as following

Operation Frequency	2.412 GHz～2.462GHz
Output Power	IEEE 802.11b:11.24dBm; IEEE 802.11g:10.53dBm; IEEE 802.11n(20):10.21dBm; IEEE 802.11n(40):7.89dBm
Modulation	DSSS(DBPSK/DQPSK/CCK);OFDM(BPSK/QPSK/16-QAM/64-QAM)
Number of channels	11
Hardware Version	P60-MB-V3.0
Software Version	P60-S00C_HISGEN_V23_160106
Antenna Designation	PIFA Antenna
Antenna Gain	0.5dBi
Power Supply	DC3.7V by Built-in Li-ion Battery

2.2. TABLE OF CARRIER FREQUENCYS

Frequency Band	Channel Number	Frequency
2400~2483.5MHZ	1	2412 MHZ
	2	2417 MHZ
	3	2422 MHZ
	4	2427 MHZ
	5	2432 MHZ
	6	2437 MHZ
	7	2442 MHZ
	8	2447 MHZ
	9	2452 MHZ
	10	2457 MHZ
	11	2462 MHZ

Note: For 20MHZ bandwidth system use Channel 1 to Channel 11
For 40MHZ bandwidth system use Channel 3 to Channel 9

2.3. IEEE 802.11N MODULATION SCHEME

MCS Index	Nss	Modulation	R	NBPSC	NCBPS		NDBPS		Data rate(Mbps)	
									800nsGI	
					20MHz	40MHz	20MHz	40MHz	20MHz	40MHz
0	1	BPSK	1/2	1	52	108	26	54	6.5	13.5
1	1	QPSK	1/2	2	104	216	52	108	13.0	27.0
2	1	QPSK	3/4	2	104	216	78	162	19.5	40.5
3	1	16-QAM	1/2	4	208	432	104	216	26.0	54.0
4	1	16-QAM	3/4	4	208	432	156	324	39.0	81.0
5	1	64-QAM	2/3	6	312	648	208	432	52.0	108.0
6	1	64-QAM	3/4	6	312	648	234	489	58.5	121.5
7	1	64-QAM	5/6	6	312	648	260	540	65.0	135.0

Symbol	Explanation
NSS	Number of spatial streams
R	Code rate
NBPSC	Number of coded bits per single carrier
NCBPS	Number of coded bits per symbol
NDBPS	Number of data bits per symbol
GI	Guard interval

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

This submittal(s) (test report) is intended for **FCC ID: 2ADJEHXI6150CT** filing to comply with the FCC Part 15 requirements.

2.5. TEST METHODOLOGY

Both conducted and radiated testing was performed according to the procedures in ANSI C63.10 (2013).
Radiated testing was performed at an antenna to EUT distance 3 meters.
Others testing (listed at item 5.3) was performed according to the procedures in FCC Part 15.247 rules KDB 558074 D01 DTS Meas Guidance v03r02.

2.6. SPECIAL ACCESSORIES

Refer to section 5.2.

2.7. 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

NO.	TEST MODE DESCRIPTION
1	Low channel TX
2	Middle channel TX
3	High channel TX
4	Normal operating
Note: Transmit by 802.11b with Date rate (1/2/5.5/11) Transmit by 802.11g with Date rate (6/9/12/18/24/36/48/54) Transmit by 802.11n (20MHz) with Date rate (6.5/13/19.5/26/39/52/58.5/65) Transmit by 802.11n (40MHz) with Date rate (13.5/27/40.5/54/81/108/121.5/135)	

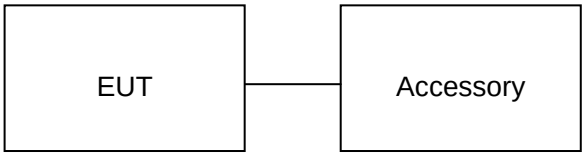
Note:

1. The EUT has been set to operate continuously on the lowest, middle and highest operation frequency Individually, and the eut is operating at its maximum duty cycle>or equal 98%
2. All modes under which configure applicable have been tested and the worst mode test data recording in the test report, if no other mode data.
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	Model No.	ID or Specification	Note
1	Mobile Phone	HX-I6150CT	FCC ID: 2ADJEHXI6150CT	EUT
2	Adapter	8395-UW01-1070	DC5.3V, 2000mA	Accessory
3	Battery	P125656-4600mAh	DC3.7V/ 4600 mAh	Accessory
4	Earphone	N/A	N/A	Accessory
5	USB Cable	N/A	N/A	Accessory

Note: All the accessories have been used during the test in conduction emission test.

5.3. SUMMARY OF TEST RESULTS

FCC RULES	DESCRIPTION OF TEST	RESULT
§15.247	Output Power	Compliant
§15.247	6 dB Bandwidth	Compliant
§15.247	Conducted Spurious Emission	Compliant
§15.247	Maximum Conducted Output Power SPECTRAL Density	Compliant
§15.209	Radiated Emission	Compliant
§15.247	Band Edges	Compliant
§15.207	Line Conduction Emission	Compliant

Note: The EUT received power from DC3.7V lithium battery.

6. TEST FACILITY

Site	Dongguan Precise Testing Service Co., Ltd.
Location	Building D,Baoding Technology Park,Guangming Road2,Dongcheng District, Dongguan, Guangdong, China,
FCC Registration No.	371540
Description	The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.10:2013.

ALL TEST EQUIPMENT LIST

FOR RADIATED EMISSION TEST (BELOW 1GHZ)

Radiated Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Trilog Broadband Antenna (25M-1GHz)	SCHWARZBECK	VULB9160	9160-3355	July 4, 2015	July 3, 2016
Signal Amplifier	SCHWARZBECK	BBV 9475	9745-0013	July 4, 2015	July 3, 2016
RF Cable	SCHWARZBECK	AK9515E	96221	July 4, 2015	July 3, 2016
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2015	June 5, 2016
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A
Active loop antenna (9K-30MHz)	Schwarzbeck	FMZB1519	1519-038	June 6, 2015	June 5, 2016
Spectrum analyzer	Agilent	E4407B	MY46185649	June 6, 2015	June 5, 2016
Power Probe	R&S	NRP-Z23	100323	July 25,2015	July 24,2016
RF attenuator	N/A	RFA20db	68	N/A	N/A

FOR RADIATED EMISSION TEST (1GHZ ABOVE)

Radiated Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Horn Antenna (1G-18GHz)	SCHWARZBECK	BBHA9120D	9120D-1246	July 11, 2015	July 10, 2016
Spectrum Analyzer	Agilent	E4411B	MY4511453	July 4, 2015	July 3, 2016
Signal Amplifier	SCHWARZBECK	BBV 9718	9718-269	July 7, 2015	July 6, 2016
RF Cable	SCHWARZBECK	AK9515H	96220	July 8, 2015	July 7, 2016
3m Anechoic Chamber	CHENGYU	966	PTS-001	June 6, 2015	June 5, 2016
MULTI-DEVICE Positioning Controller	Max-Full	MF-7802	MF780208339	N/A	N/A

Horn Ant (18G-40GHz)	Schwarzbeck	BBHA 9170	9170-181	June 6, 2015	June 5, 2016
Power Probe	R&S	NRP-Z23	100323	July 25,2015	July 24,2016
RF attenuator	N/A	RFA20db	68	N/A	N/A

Conducted Emission Test Site					
Name of Equipment	**Manufacturer**	**Model Number**	**Serial Number**	**Last Calibration**	**Due Calibration**
EMI Test Receiver	Rohde & Schwarz	ESCI	101417	July 4, 2015	July 3, 2016
Artificial Mains Network	Narda	L2-16B	000WX31025	July 8, 2015	July 7, 2016
Artificial Mains Network (AUX)	Narda	L2-16B	000WX31026	July 8, 2015	July 7, 2016
RF Cable	SCHWARZBECK	AK9515E	96222	July 4, 2015	July 3, 2016
Shielded Room	CHENGYU	843	PTS-002	June 6,2015	June 5,2016

7. OUTPUT POWER

7.1. MEASUREMENT PROCEDURE

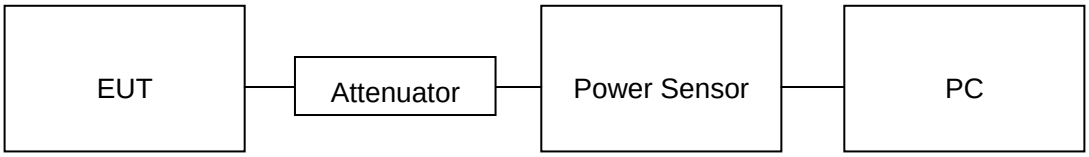
For max average conducted output power test:

1. Connect EUT RF output port to power probe through an RF attenuator.
2. 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.

Note：The EUT was tested according to KDB 558074v03r02 for compliance to FCC 47CFR 15.247 requirements.

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

AVERAGE POWER SETUP



7.3. LIMITS AND MEASUREMENT RESULT

TEST ITEM	OUTPUT POWER
TEST MODE	802.11b with data rate 1

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	11.24	30	Pass
2.437	11.08	30	Pass
2.462	11.17	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11g with data rate 6

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	10.48	30	Pass
2.437	10.53	30	Pass
2.462	10.42	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11n 20 with data rate 6.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.412	10.21	30	Pass
2.437	10.19	30	Pass
2.462	10.16	30	Pass

TEST ITEM	OUTPUT POWER
TEST MODE	802.11n 40 with data rate 13.5

Frequency (GHz)	Average Power (dBm)	Applicable Limits (dBm)	Pass or Fail
2.422	7.86	30	Pass
2.437	7.85	30	Pass
2.452	7.89	30	Pass

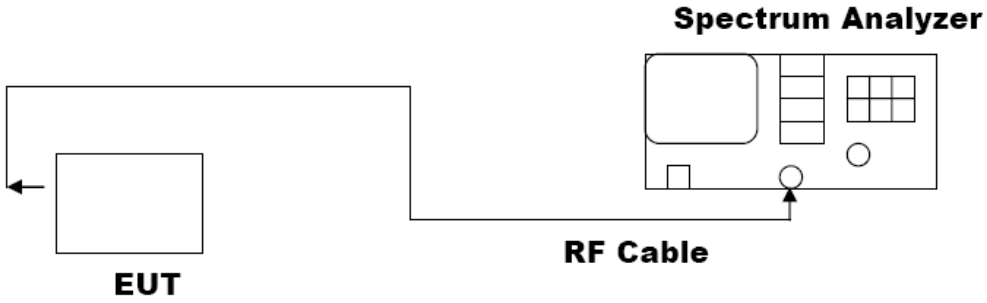
8. 6DB BANDWIDTH

8.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2. Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Centre Frequency = Operation Frequency, RBW= 100 KHz, VBW≥3×RBW.
4. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements.

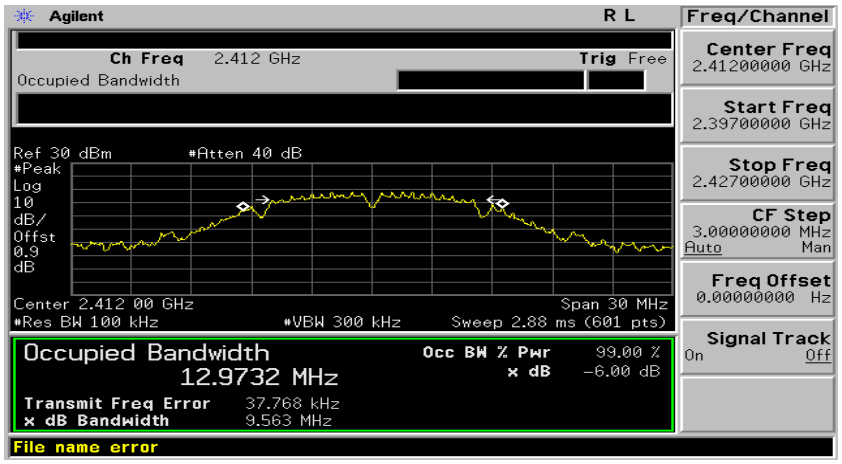
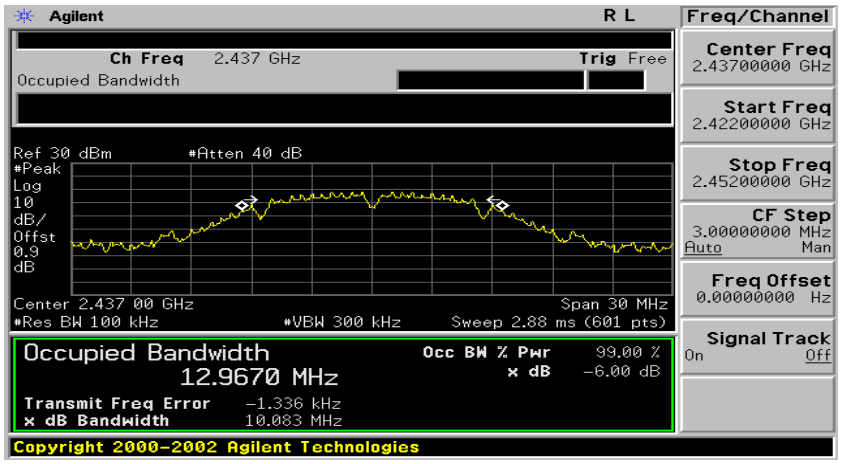
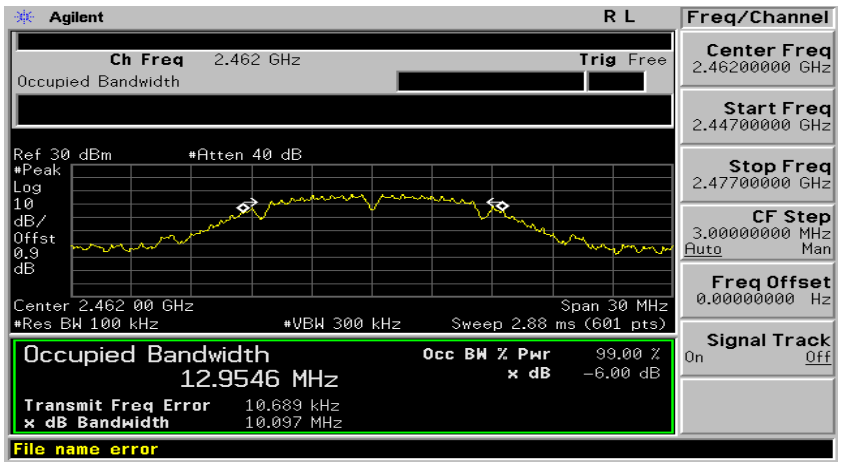
8.2. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

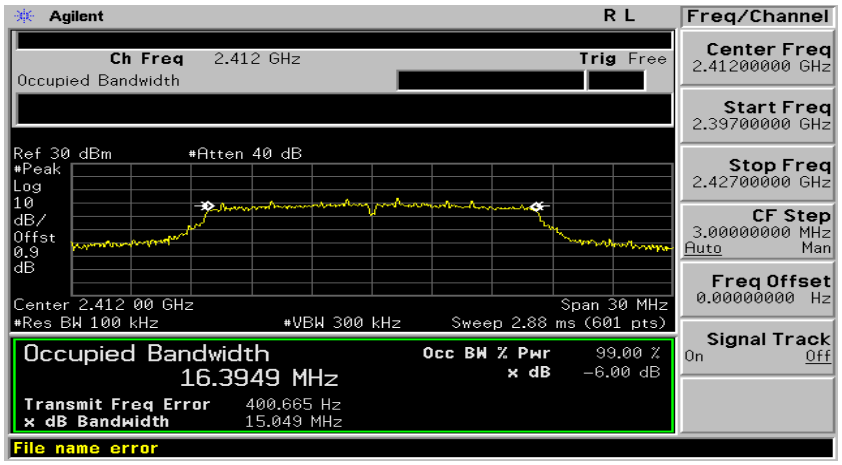
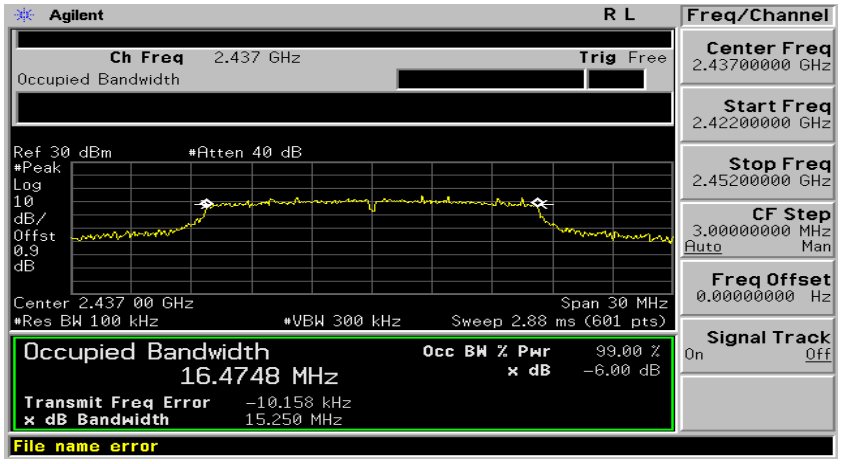
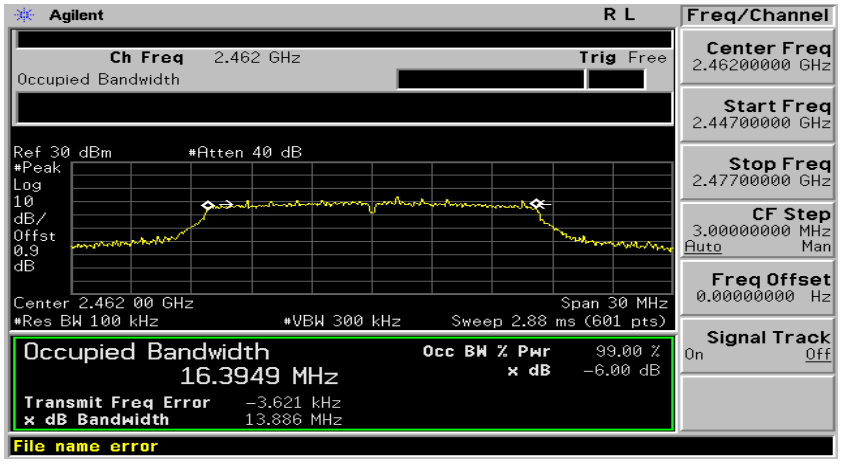


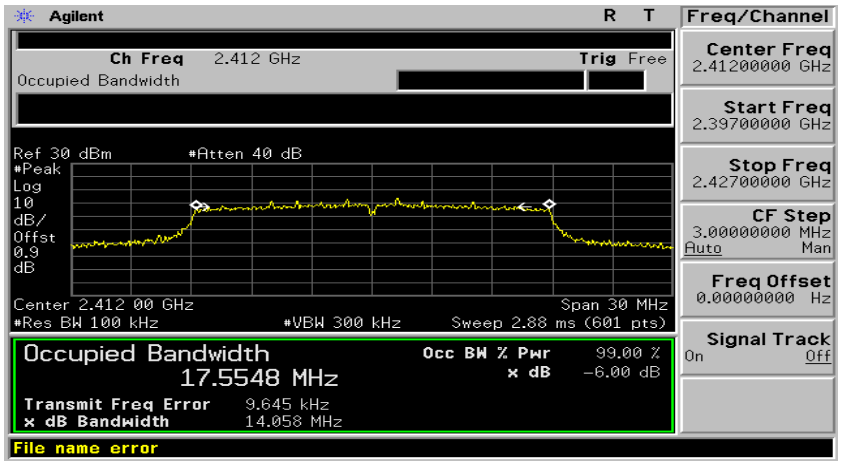
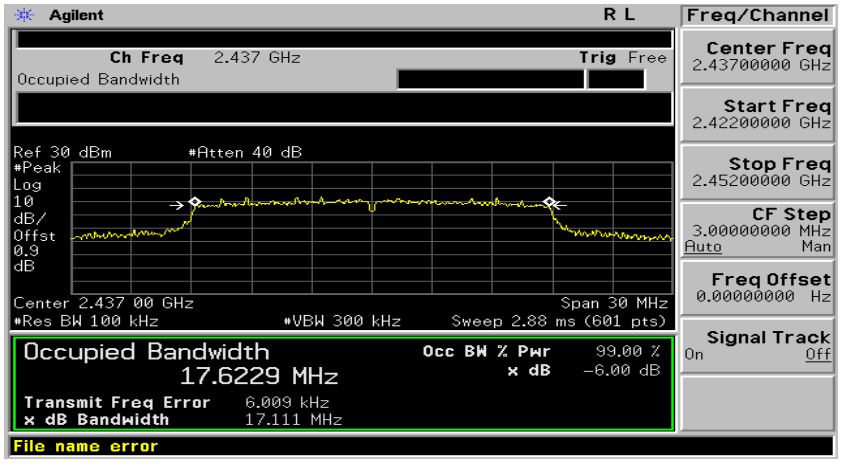
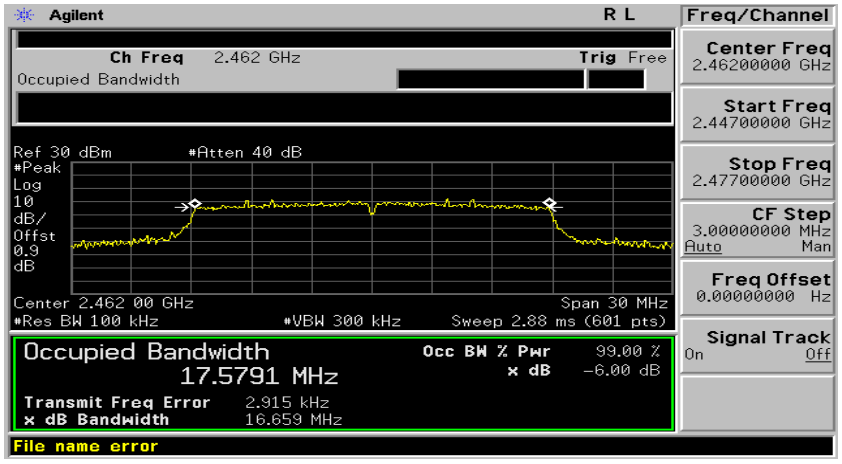
8.3. LIMITS AND MEASUREMENT RESULTS

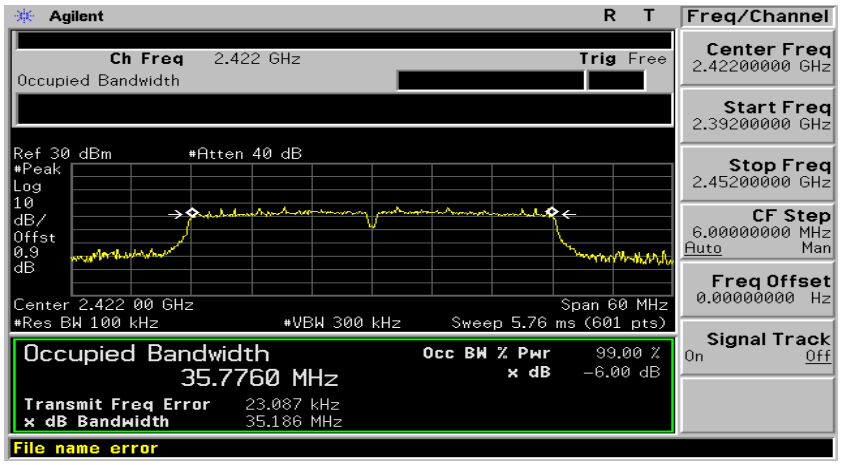
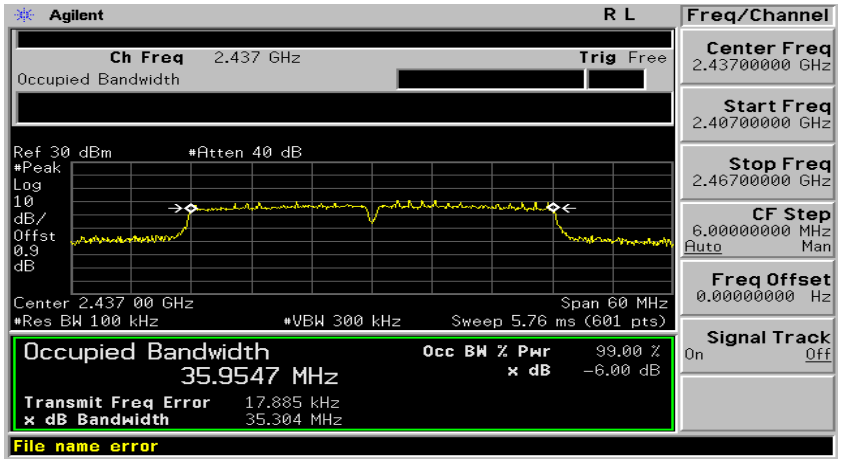
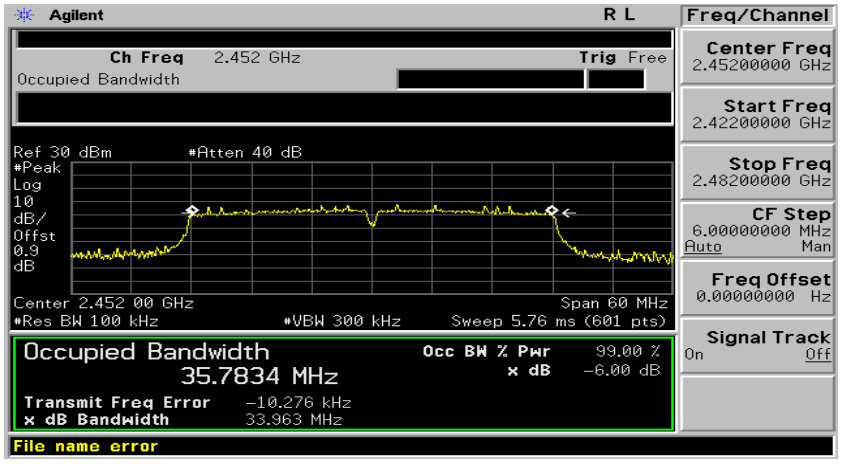
Mode	Channel	6dB Bandwidth [MHz]	OBW [MHz]	Verdict
11B	LCH	9.56	12.97	PASS
11B	MCH	10.08	12.97	PASS
11B	HCH	10.10	12.95	PASS
11G	LCH	15.05	16.39	PASS
11G	MCH	15.25	16.47	PASS
11G	HCH	13.89	16.39	PASS
11N20SISO	LCH	14.06	17.55	PASS
11N20SISO	MCH	17.11	17.62	PASS
11N20SISO	HCH	16.66	17.58	PASS
11N40SISO	LCH	35.19	35.78	PASS
11N40SISO	MCH	35.30	35.95	PASS
11N40SISO	HCH	33.96	35.78	PASS

Test Graph

Graphs	
11B/LCH	
11B/MCH	
11B/HCH	

11G/LCH	
11G/MCH	
11G/HCH	

11N20SISO/LCH	
11N20SISO/MCH	
11N20SISO/HCH	

11N40SISO/LCH	
11N40SISO/MCH	
11N40SISO/HCH	

9. CONDUCTED SPURIOUS EMISSION

9.1. MEASUREMENT PROCEDURE

1. Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator
2, Set the EUT Work on the top, the middle and the bottom operation frequency individually.
3. Set SPA Trace 1 Max hold, then View.

Note: The EUT was tested according to KDB 558074 for compliance to FCC 47CFR 15.247 requirements. Owing to satisfy the requirements of the number of measurement points, we set the RBW=1MHz, VBW＞RBW, scan up through 10th harmonic, and consider the tested results as the worst case, if the tested results conform to the requirement, we can deem that the real tested results(set the RBW=100KHz, VBW＞RBW) are conform to the requirement.

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

The same as described in section 8.2.

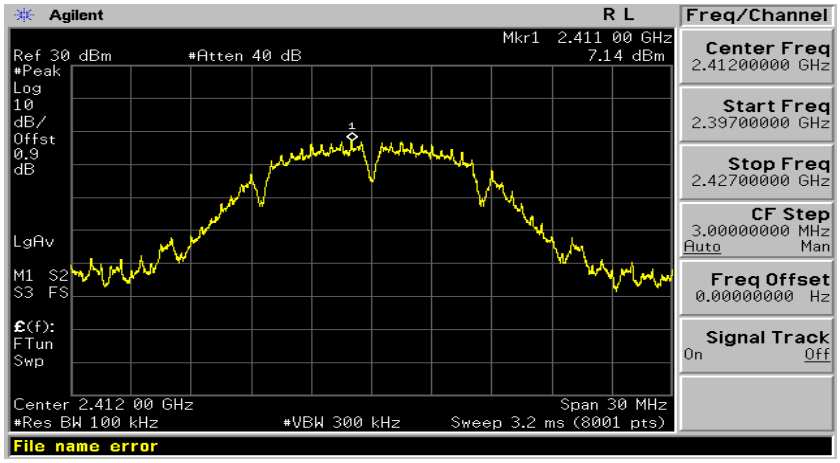
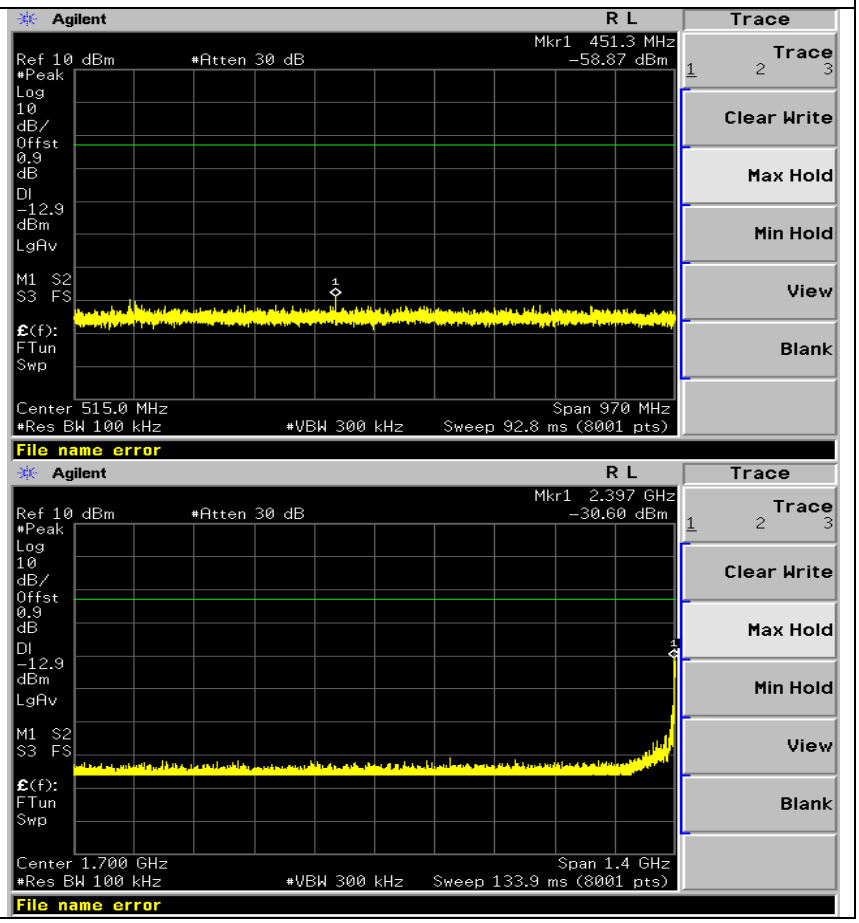
9.3. MEASUREMENT EQUIPMENT USED

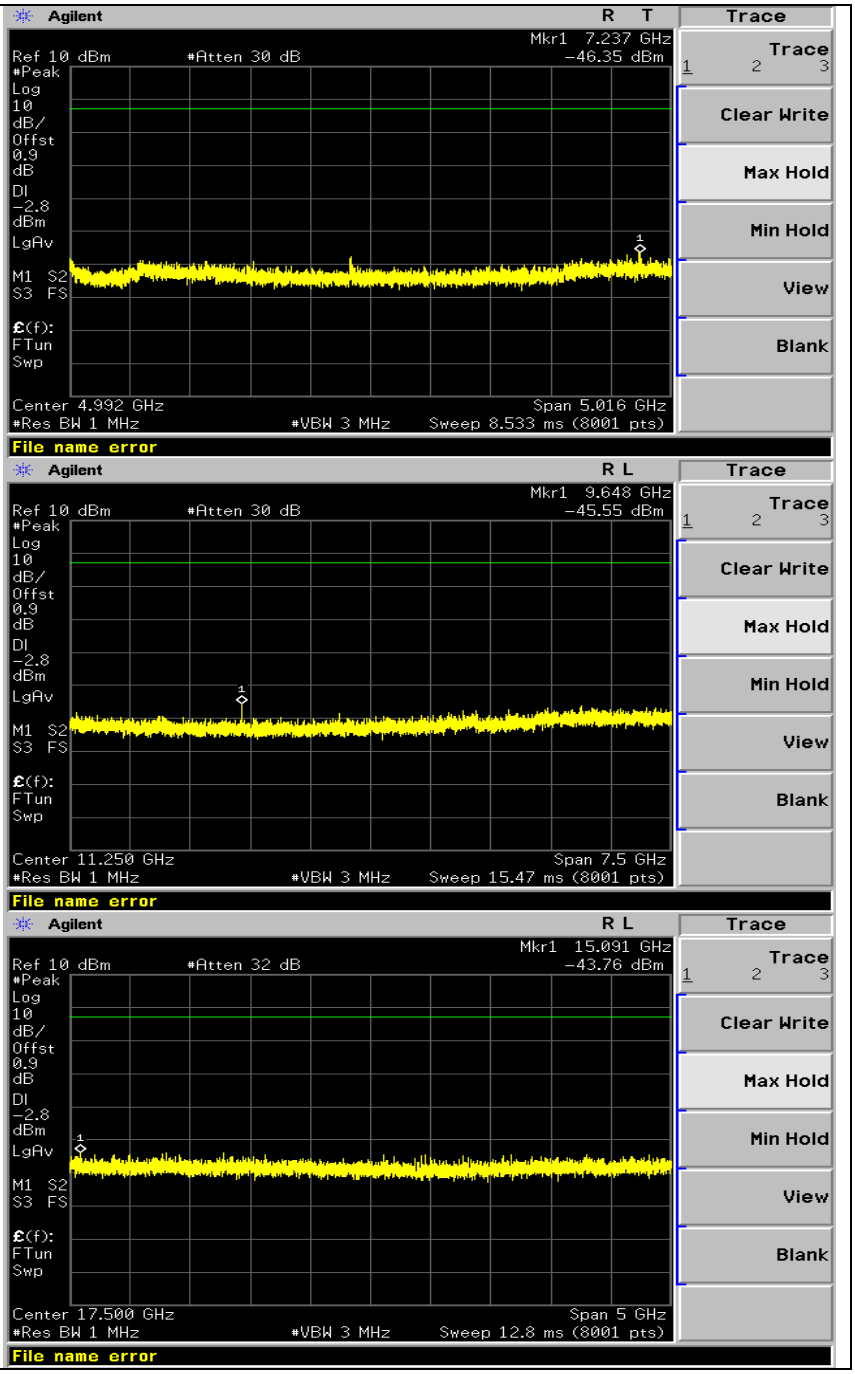
The same as described in section 6.

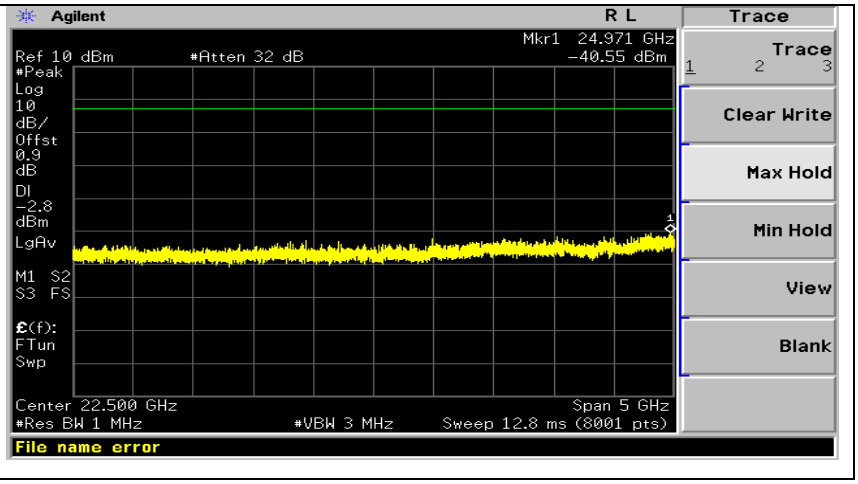
9.4. LIMITS AND MEASUREMENT RESULT

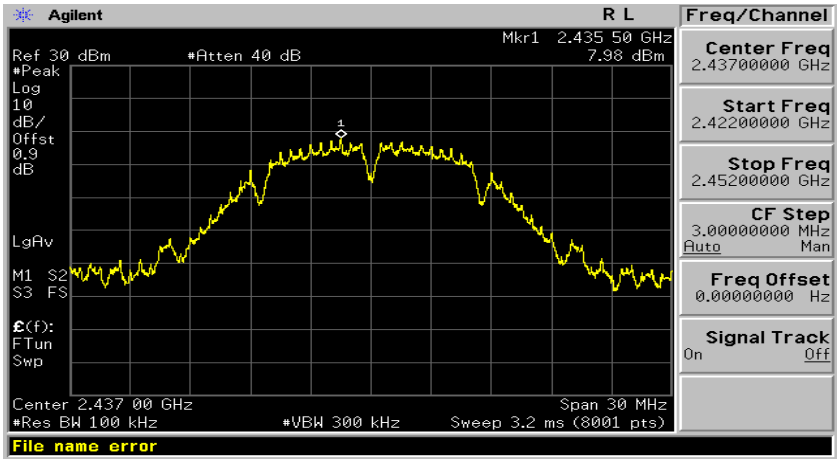
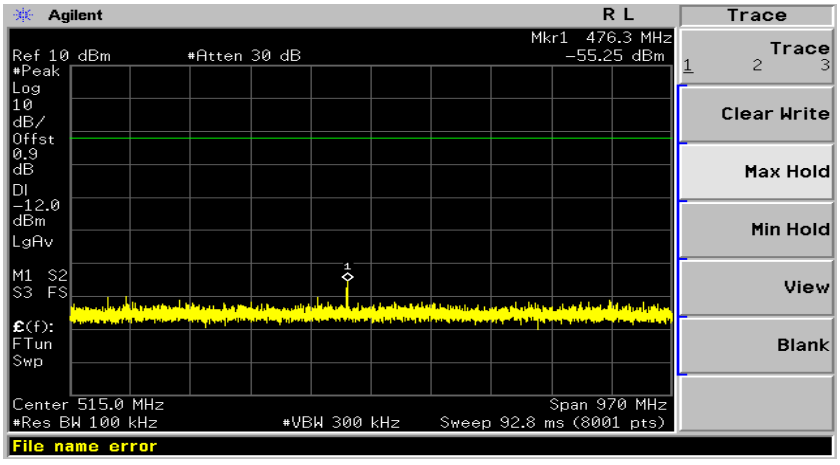
LIMITS AND MEASUREMENT RESULT		
Applicable Limits	**Measurement Result**	
	Test Data	**Criteria**
In any 100 KHz Bandwidth Outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produce by the intentional radiator shall be at least 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

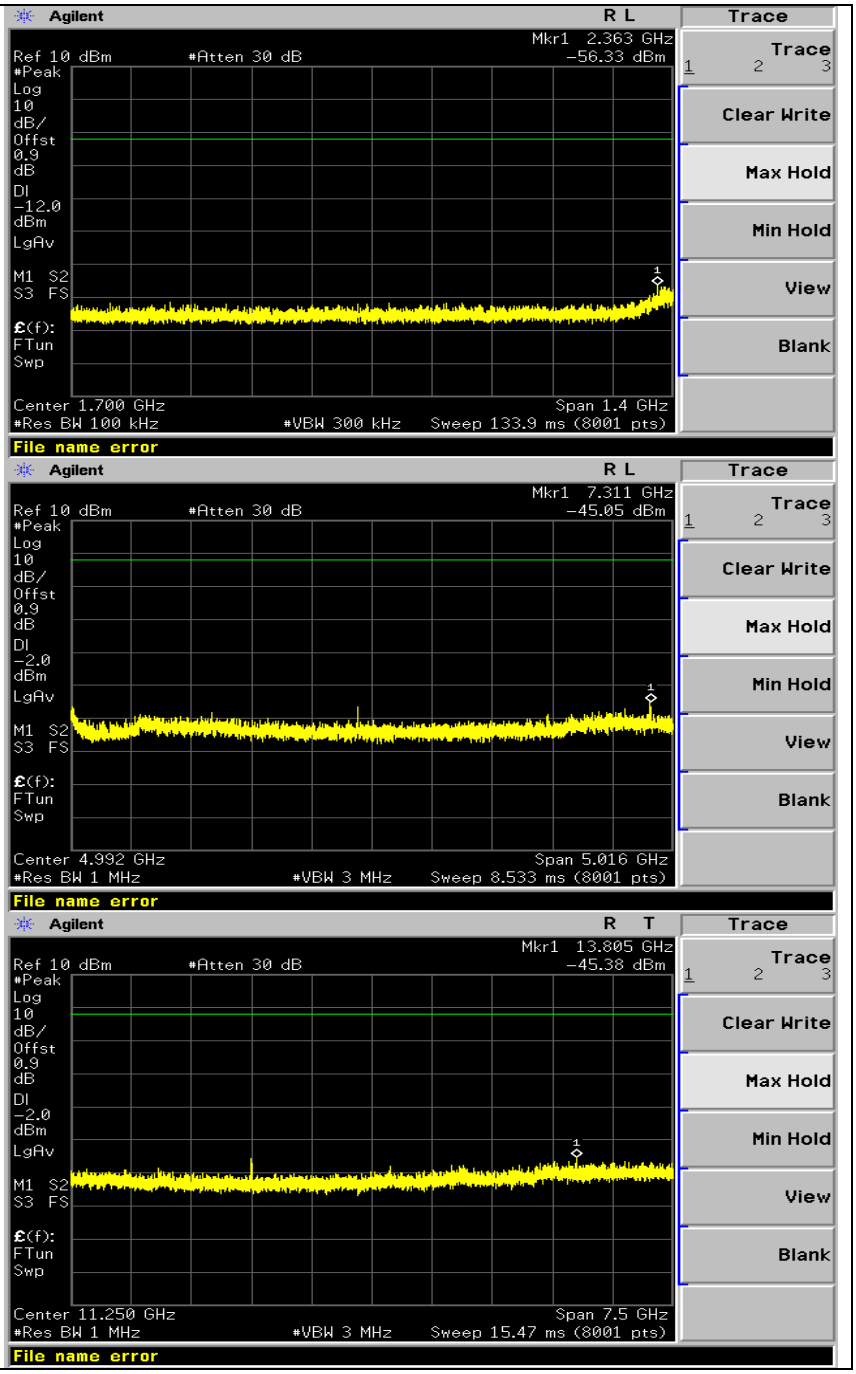
Test Graph

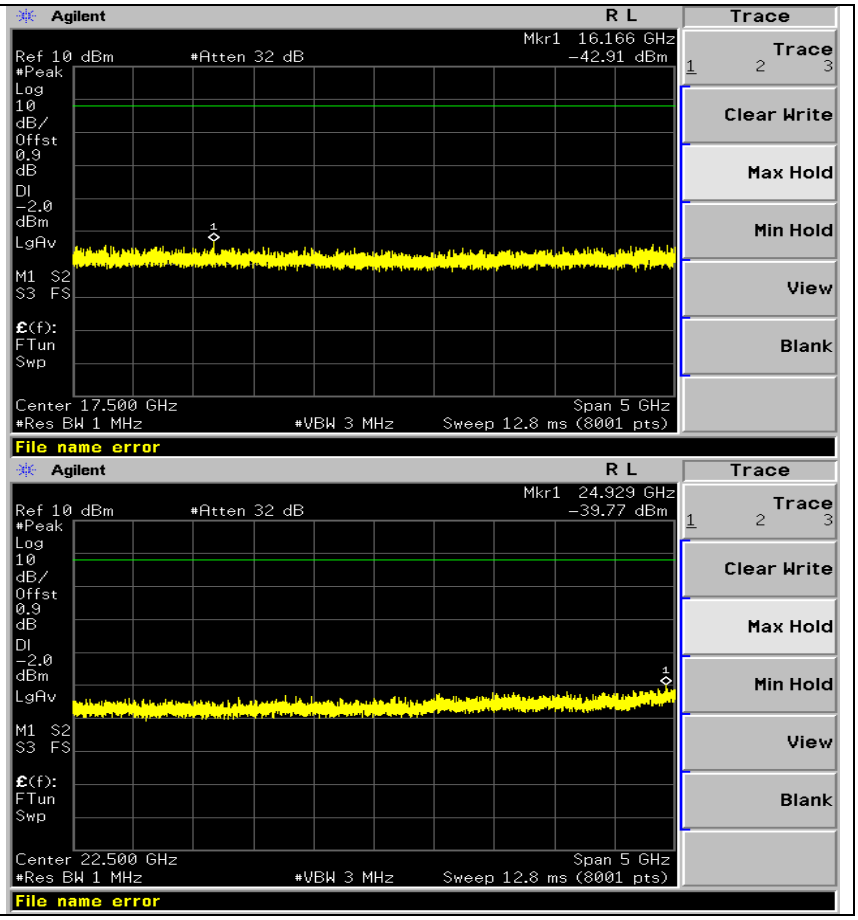
11B_LCH_Graphs	
Pref/11B/LCH	
Puw/11B/LCH	

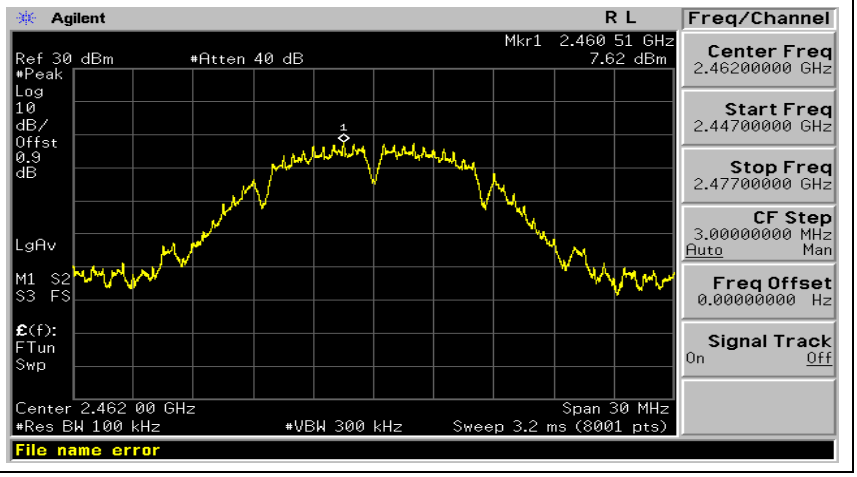

Agilent
R T
Trace
Mkr1 7.237 GHz
Ref 10 dBm
#Atten 30 dB
-46.35 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 4.992 GHz
Span 5.016 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 8.533 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 9.648 GHz
Ref 10 dBm
#Atten 30 dB
-45.55 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 11.250 GHz
Span 7.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 15.47 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 15.091 GHz
Ref 10 dBm
#Atten 32 dB
-43.76 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 17.500 GHz
Span 5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 12.8 ms (8001 pts)
File name error

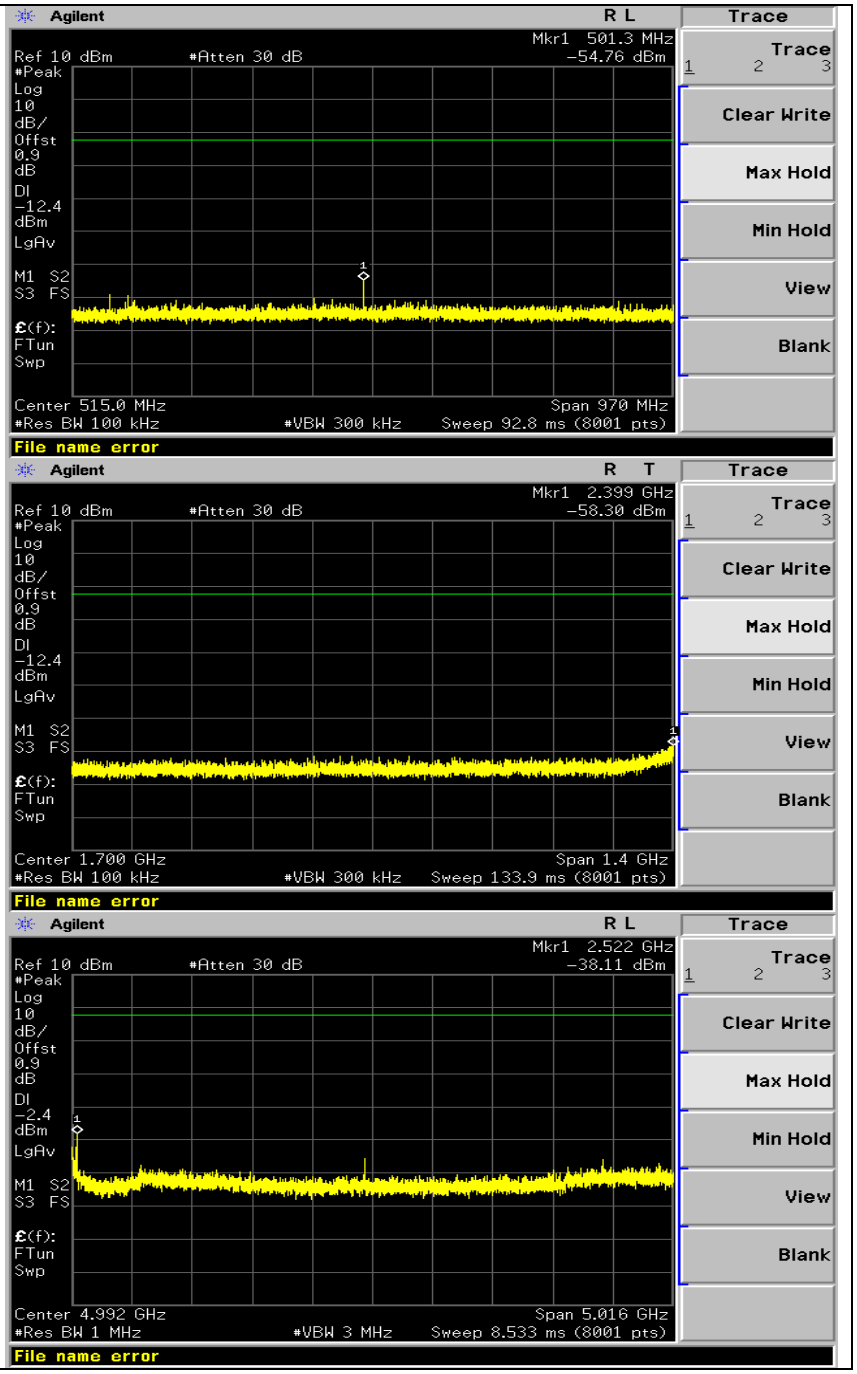
	

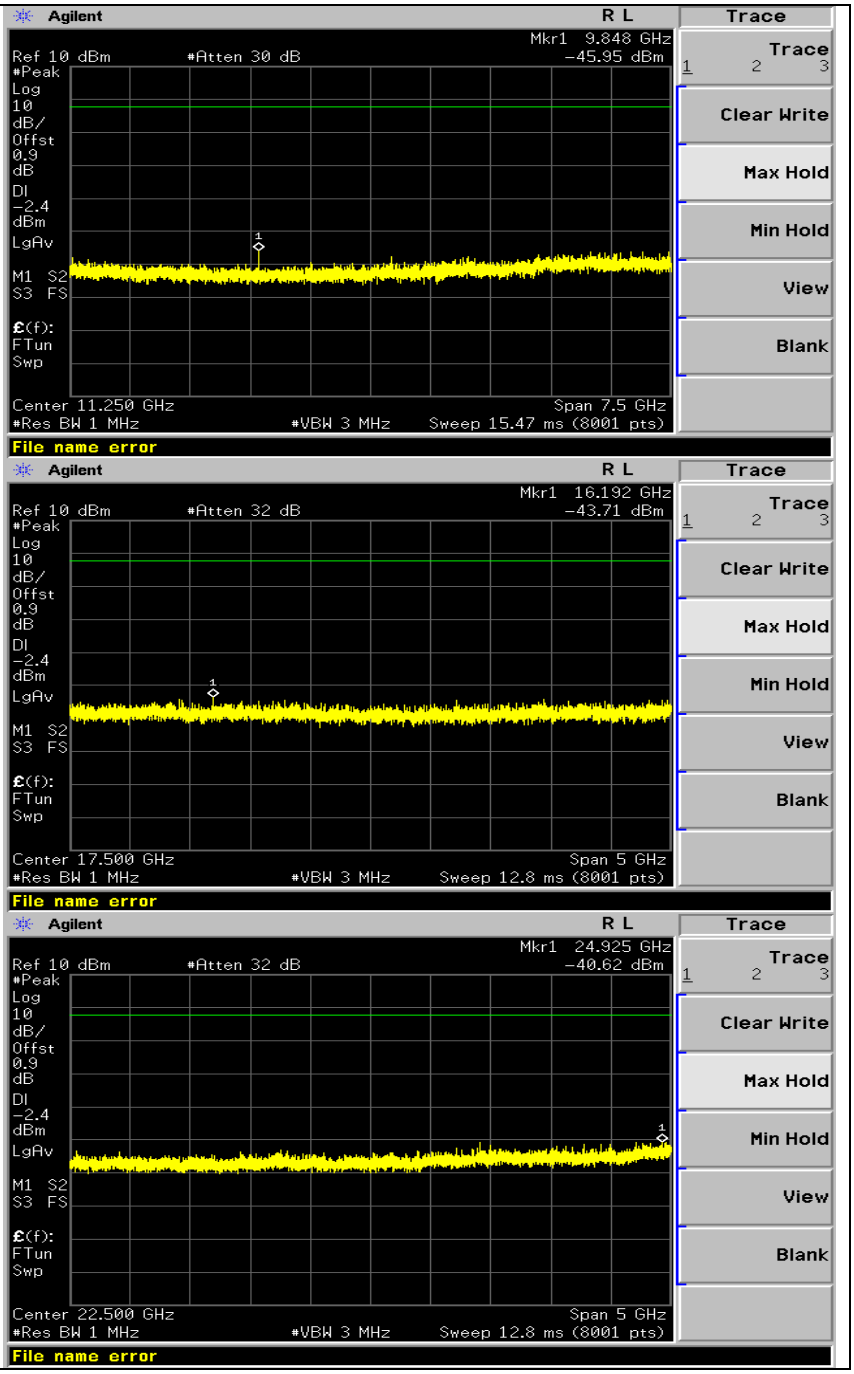
11B_MCH_Graphs	
Pref/11B/MCH	
Puw/11B/MCH	

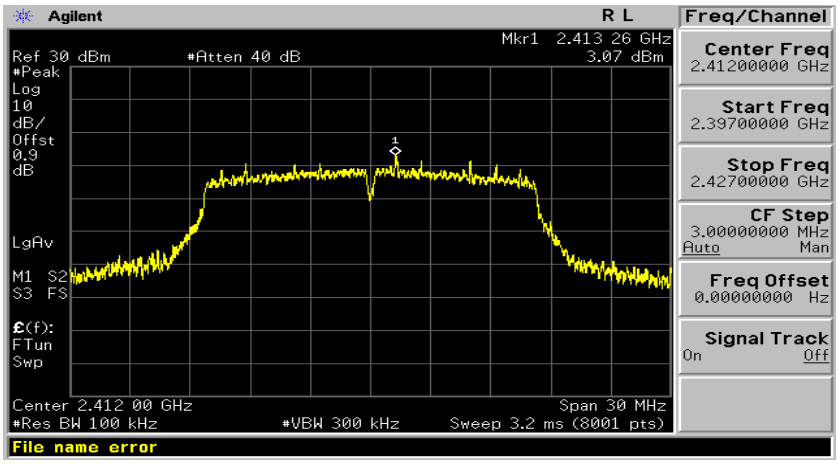
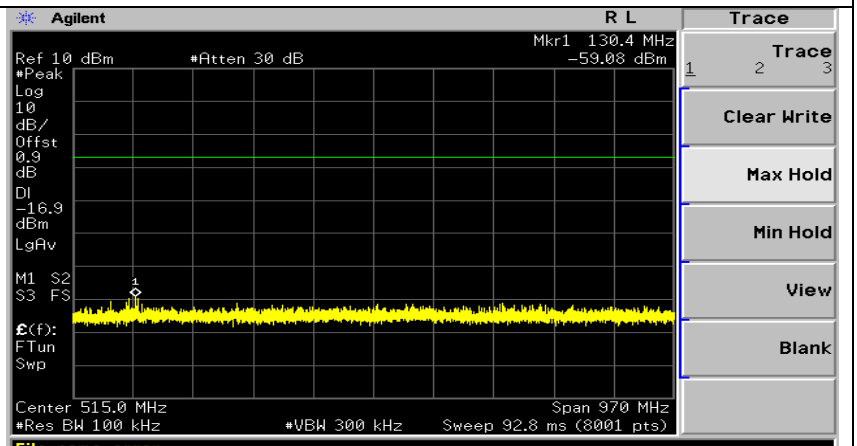
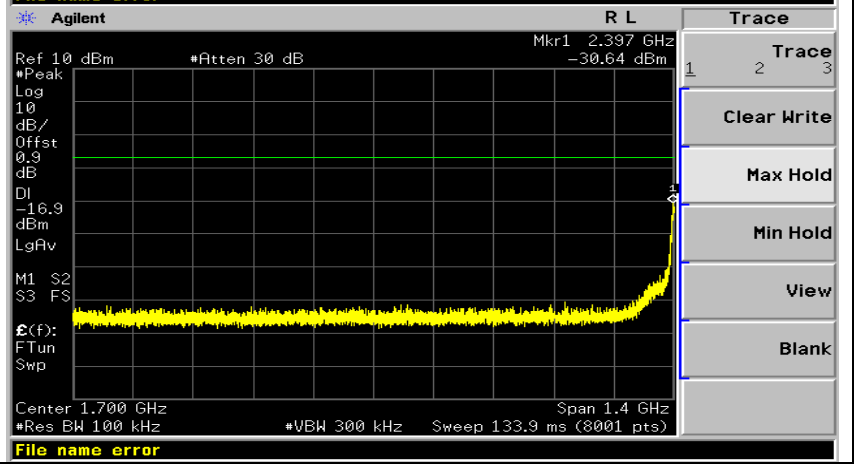

Agilent
R L
Trace
Mkr1 2.363 GHz
Ref 10 dBm
#Atten 30 dB
-56.33 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-12.0
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 1.700 GHz
Span 1.4 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 133.9 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 7.311 GHz
Ref 10 dBm
#Atten 30 dB
-45.05 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.0
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 4.992 GHz
Span 5.016 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 8.533 ms (8001 pts)
File name error
Agilent
R T
Trace
Mkr1 13.805 GHz
Ref 10 dBm
#Atten 30 dB
-45.38 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.0
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 11.250 GHz
Span 7.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 15.47 ms (8001 pts)
File name error

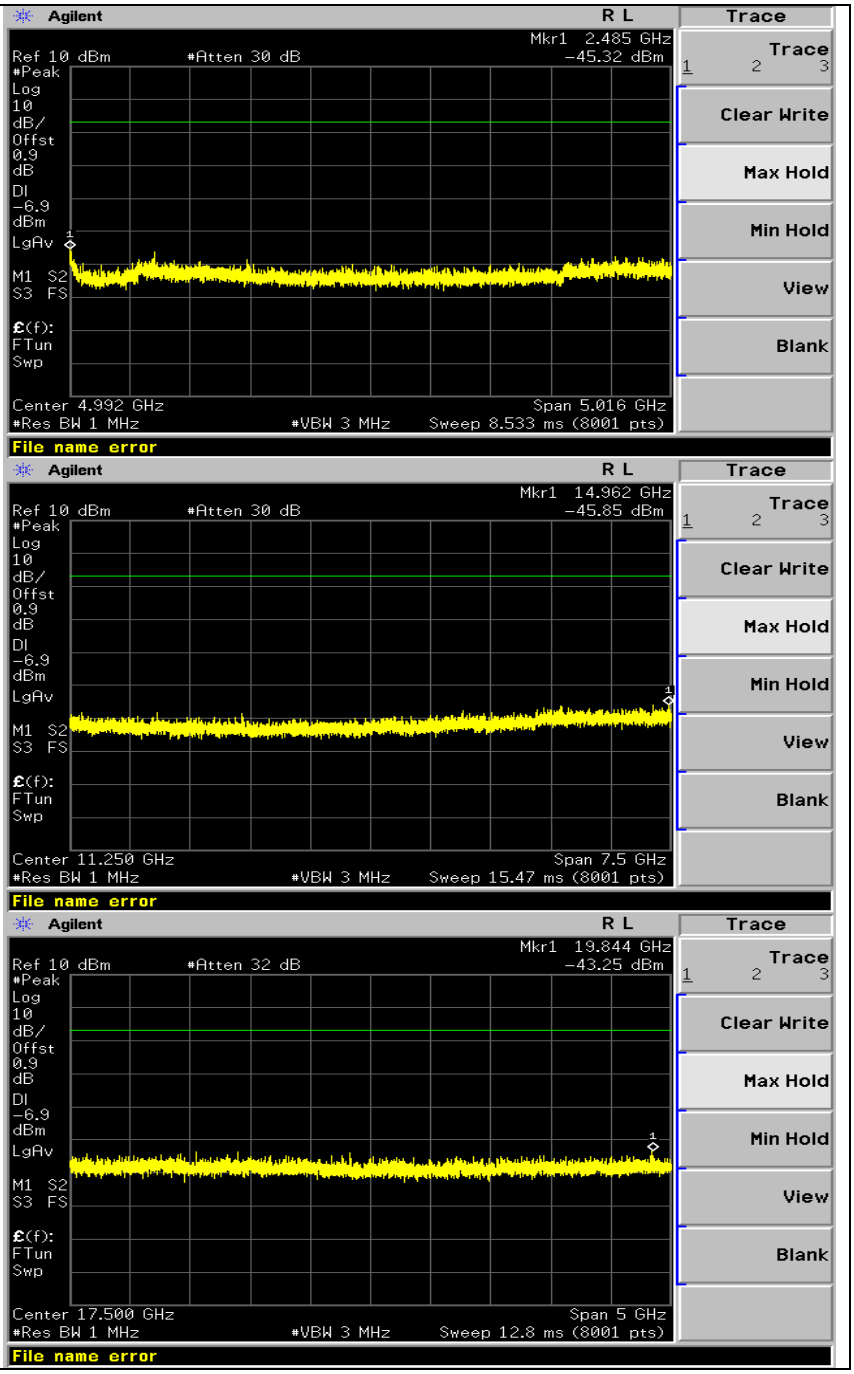


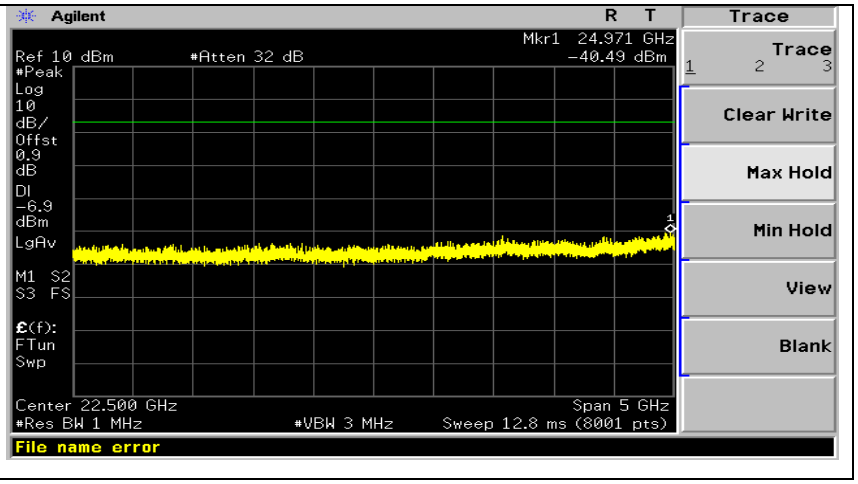
11B_HCH_Graphs	
Pref/11B/HCH	

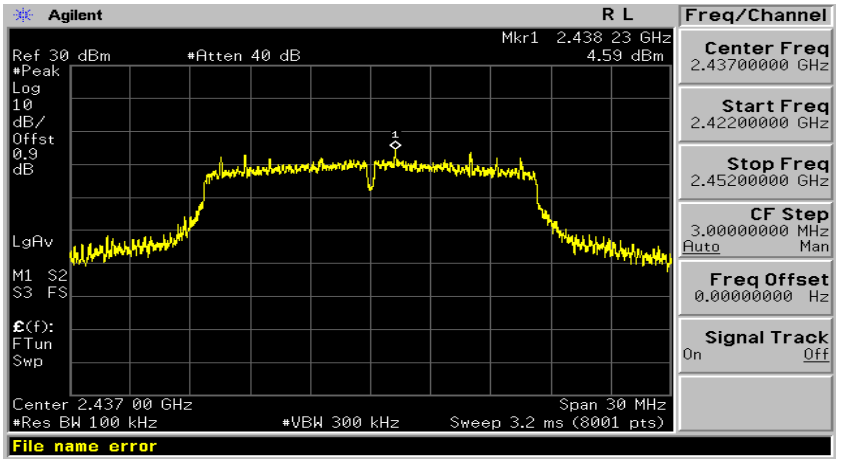
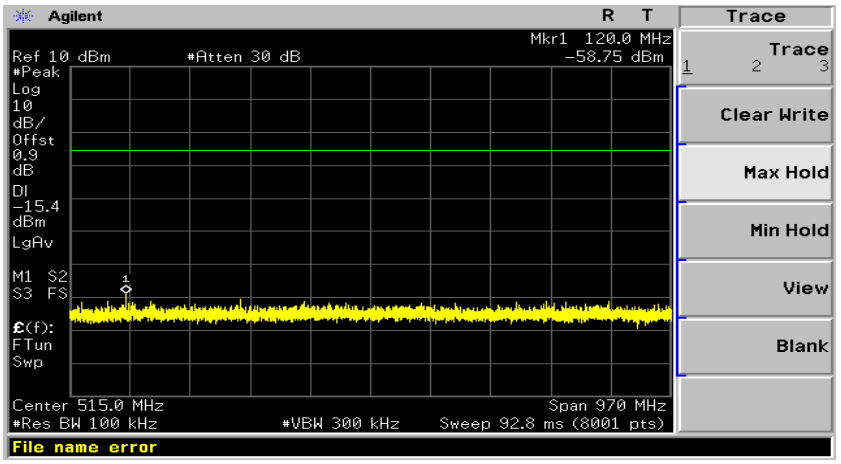
Puw/11B/HCH	 Agilent R L Trace Mkr1 501.3 MHz Ref 10 dBm #Atten 30 dB -54.76 dBm #Peak Log 10 dB/ Offst 0.9 dB Dl -12.4 dBm LgAv M1 S2 S3 FS £(f): FTun Swp Center 515.0 MHz Span 970 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 92.8 ms (8001 pts) Trace 1 2 3 Clear Write Max Hold Min Hold View Blank File name error Agilent R T Trace Mkr1 2.399 GHz Ref 10 dBm #Atten 30 dB -58.30 dBm #Peak Log 10 dB/ Offst 0.9 dB Dl -12.4 dBm LgAv M1 S2 S3 FS £(f): FTun Swp Center 1.700 GHz Span 1.4 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 133.9 ms (8001 pts) Trace 1 2 3 Clear Write Max Hold Min Hold View Blank File name error Agilent R L Trace Mkr1 2.522 GHz Ref 10 dBm #Atten 30 dB -38.11 dBm #Peak Log 10 dB/ Offst 0.9 dB Dl -2.4 dBm LgAv M1 S2 S3 FS £(f): FTun Swp Center 4.992 GHz Span 5.016 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 8.533 ms (8001 pts) Trace 1 2 3 Clear Write Max Hold Min Hold View Blank File name error

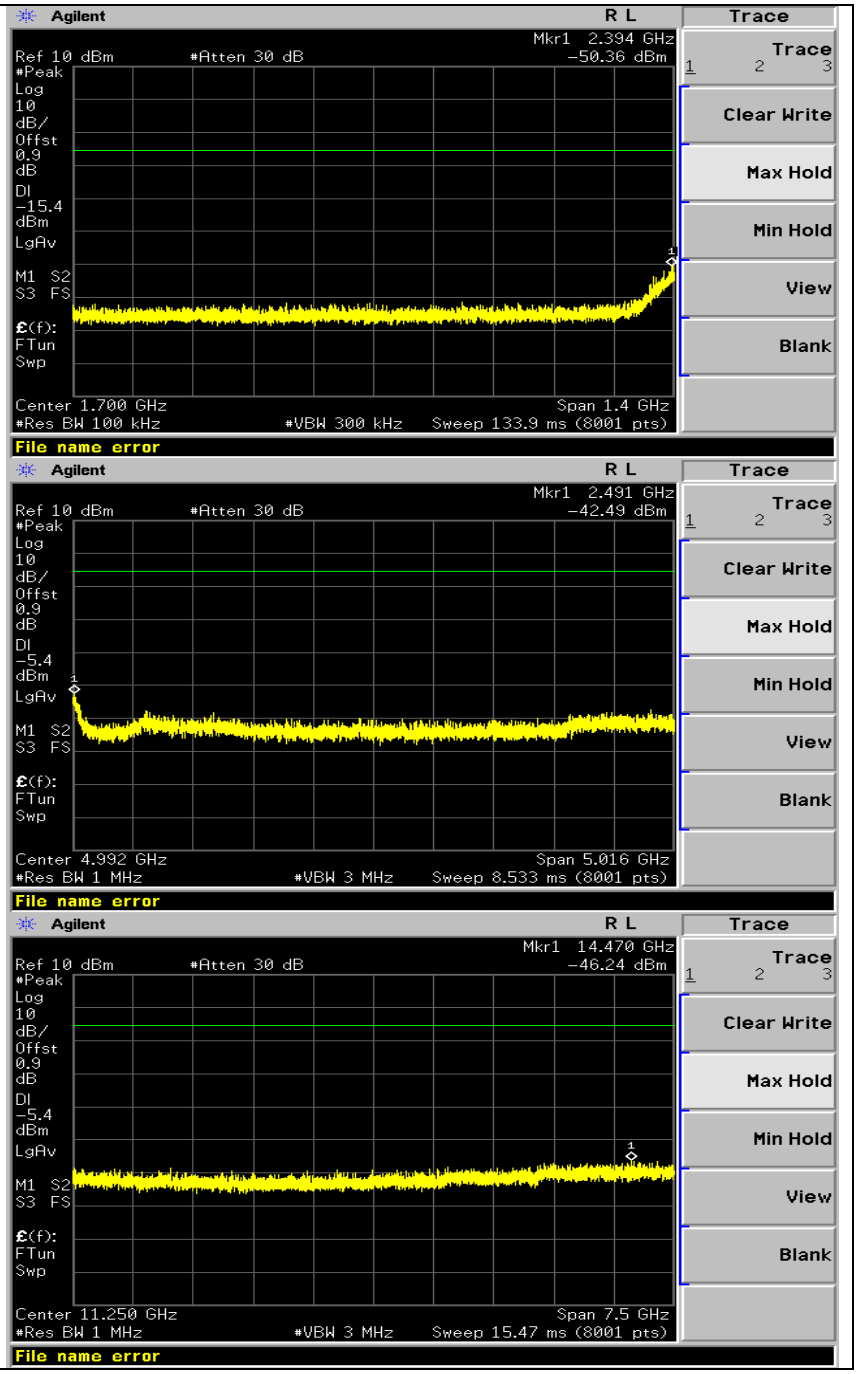

Agilent
R L
Trace
Mkr1 9.848 GHz
Ref 10 dBm
#Atten 30 dB
-45.95 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.4
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 11.250 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 7.5 GHz
Sweep 15.47 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 16.192 GHz
Ref 10 dBm
#Atten 32 dB
-43.71 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.4
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 17.500 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5 GHz
Sweep 12.8 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 24.925 GHz
Ref 10 dBm
#Atten 32 dB
-40.62 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-2.4
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 22.500 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5 GHz
Sweep 12.8 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error

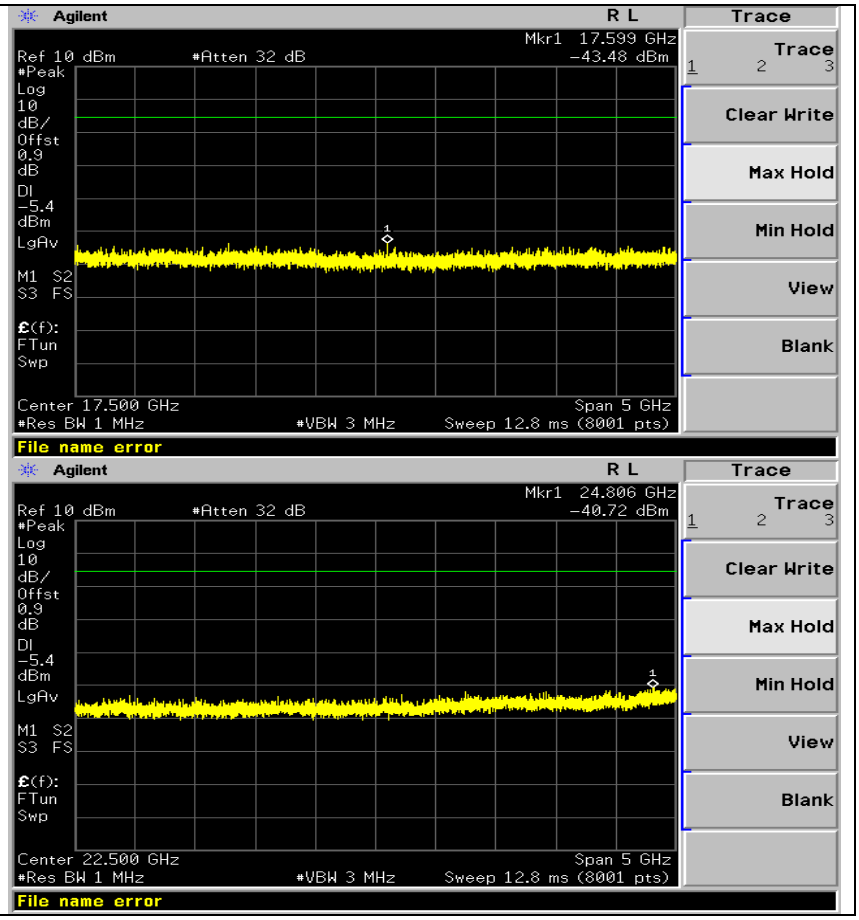
11G_LCH_Graphs	
Pref/11G/LCH	
Puw/11G/LCH	 

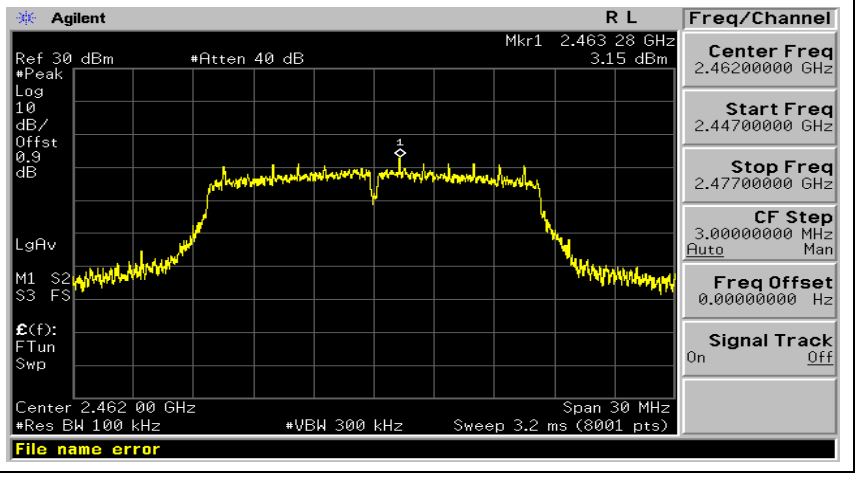

Agilent
R L
Trace
Mkr1 2.485 GHz
Ref 10 dBm
#Atten 30 dB
-45.32 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.9
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 4.992 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5.016 GHz
Sweep 8.533 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 14.962 GHz
Ref 10 dBm
#Atten 30 dB
-45.85 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.9
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 11.250 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 7.5 GHz
Sweep 15.47 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 19.844 GHz
Ref 10 dBm
#Atten 32 dB
-43.25 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.9
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 17.500 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5 GHz
Sweep 12.8 ms (8001 pts)
File name error

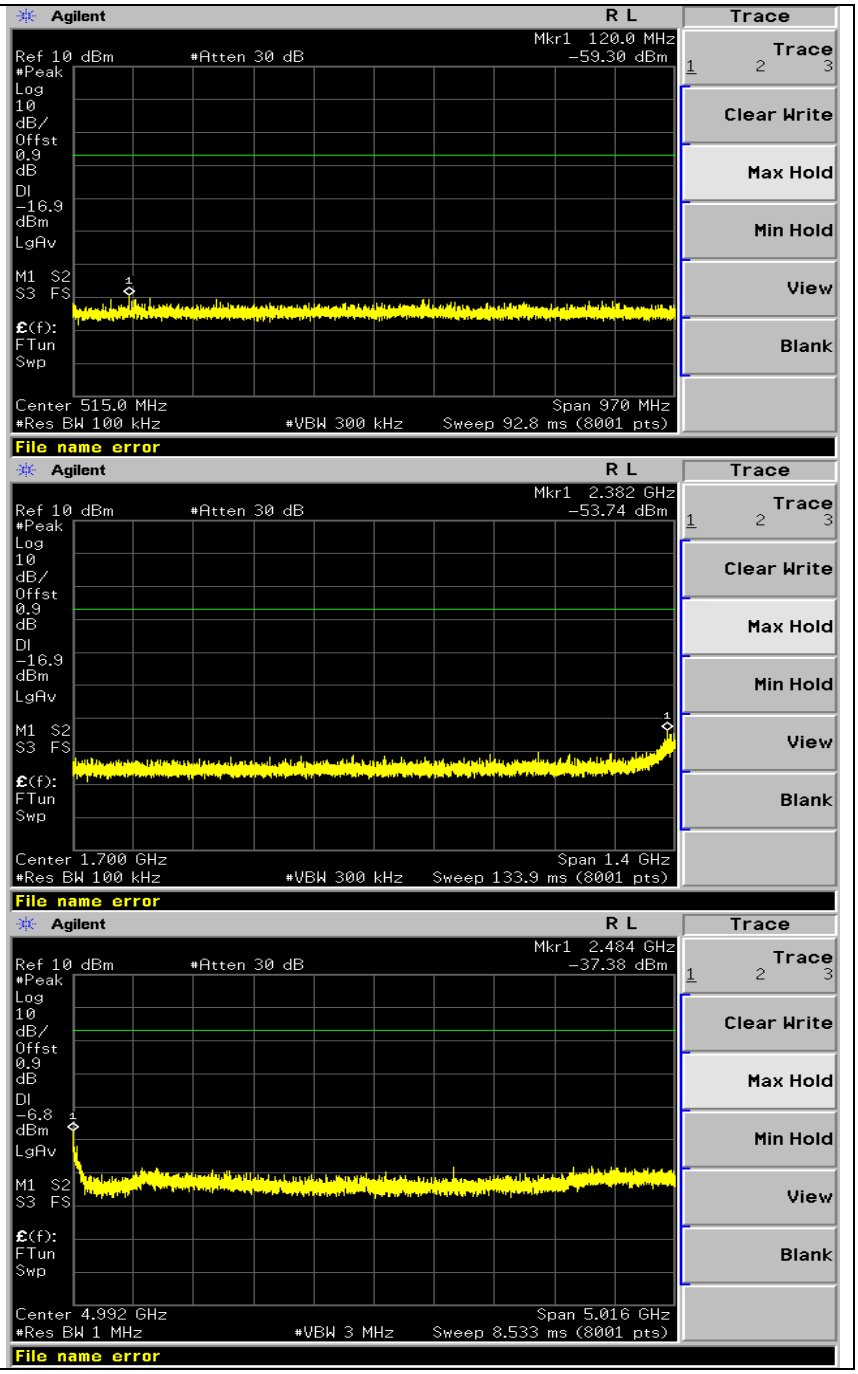
	

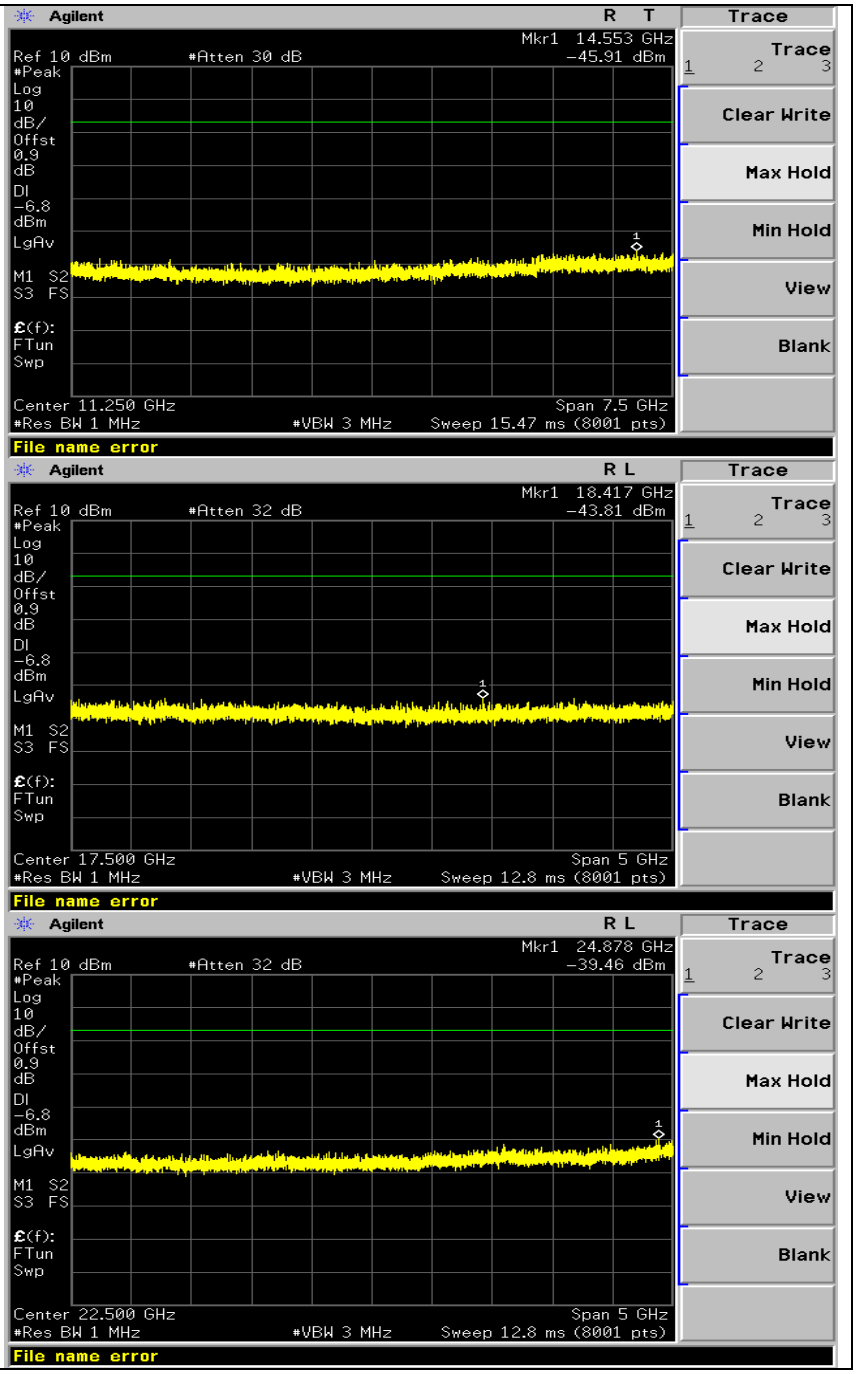
11G_MCH_Graphs	
Pref/11G/MCH	
Puw/11G/MCH	

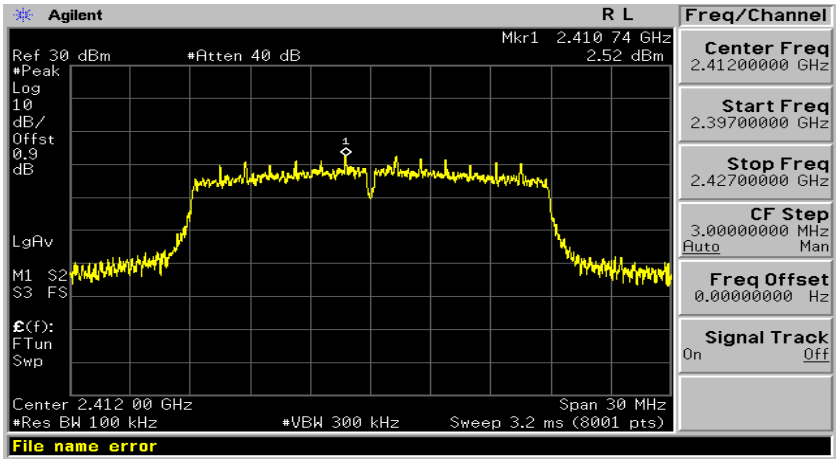
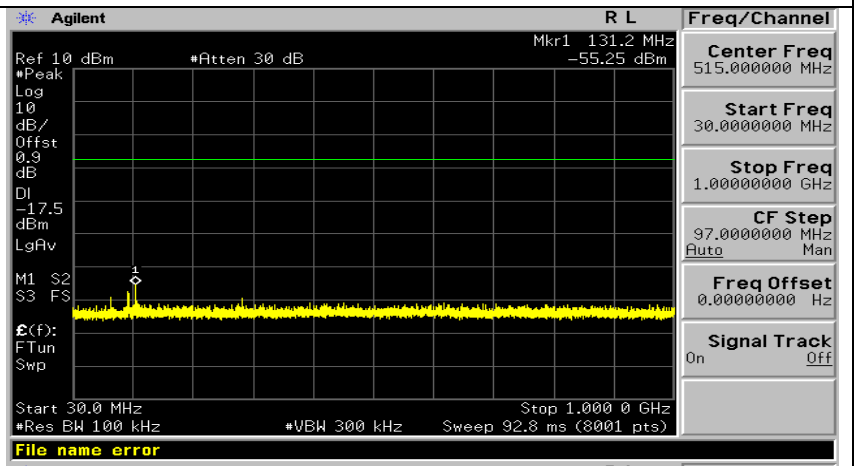
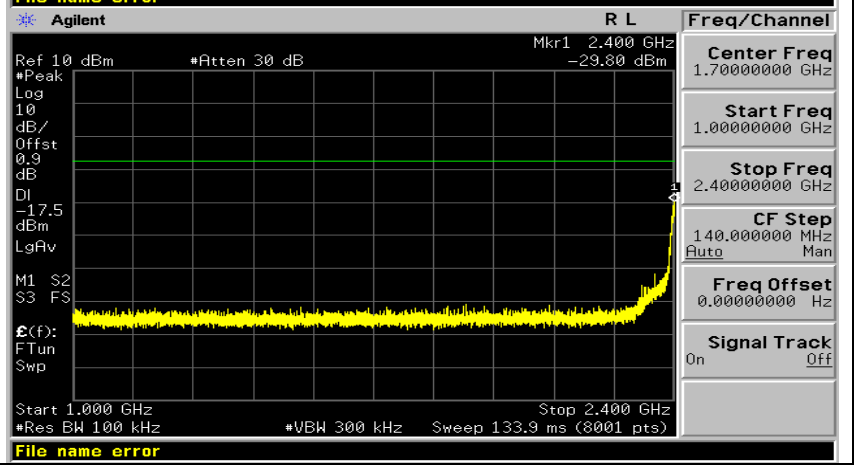

Agilent
R L
Trace
Mkr1 2.394 GHz
Ref 10 dBm
#Atten 30 dB
-50.36 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-15.4
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 1.700 GHz
#Res BW 100 kHz
#VBW 300 kHz
Span 1.4 GHz
Sweep 133.9 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 2.491 GHz
Ref 10 dBm
#Atten 30 dB
-42.49 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-5.4
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 4.992 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5.016 GHz
Sweep 8.533 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 14.470 GHz
Ref 10 dBm
#Atten 30 dB
-46.24 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-5.4
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 11.250 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 7.5 GHz
Sweep 15.47 ms (8001 pts)
File name error

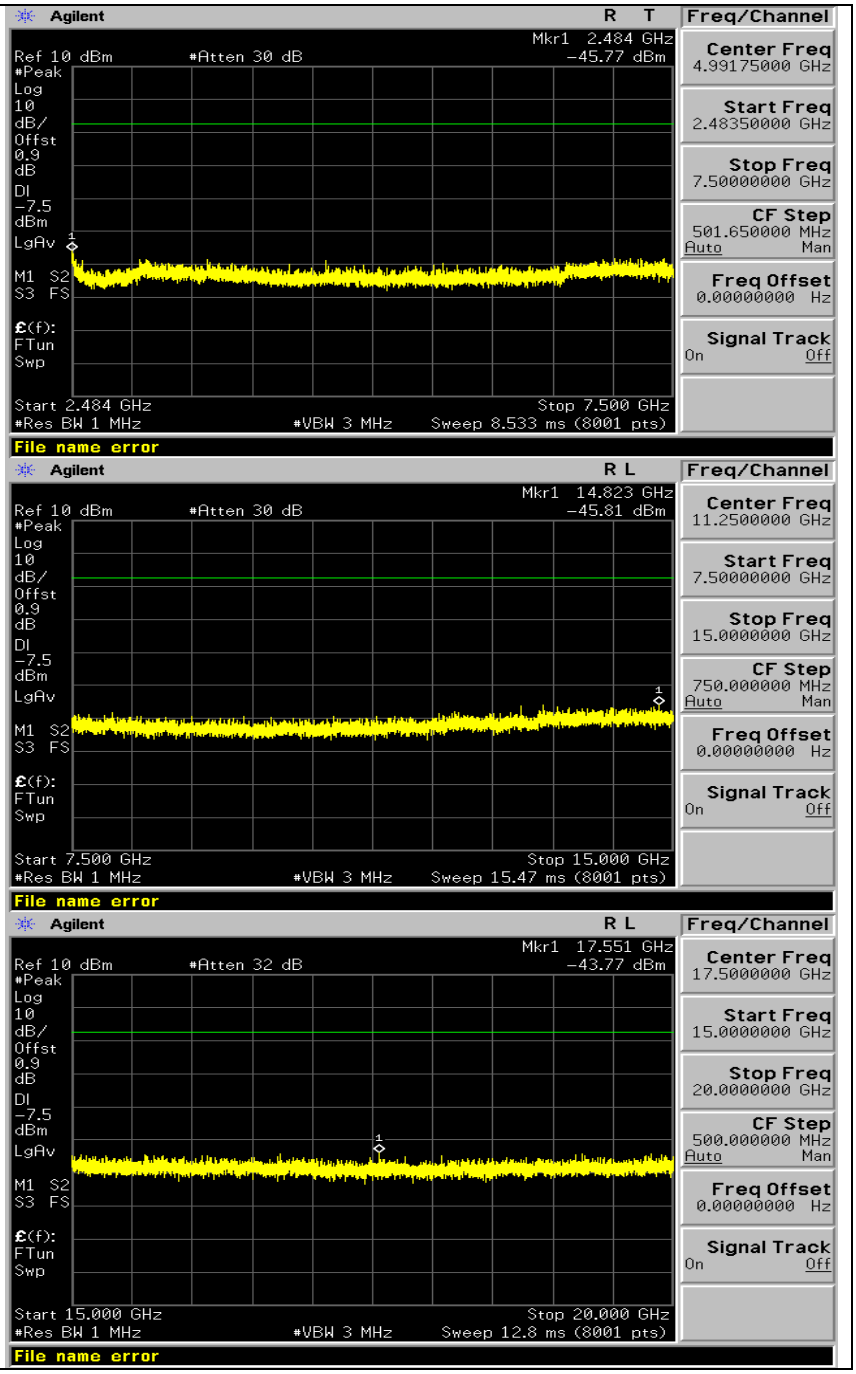


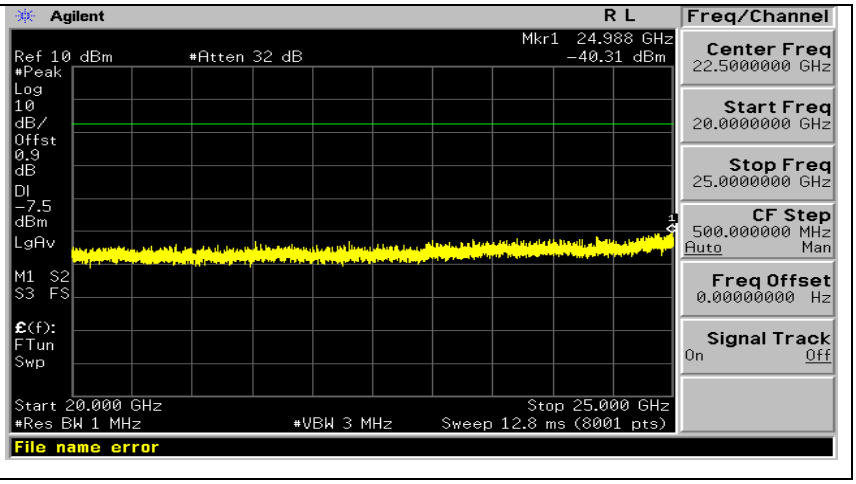
11G_HCH_Graphs	
Pref/11G/HCH	

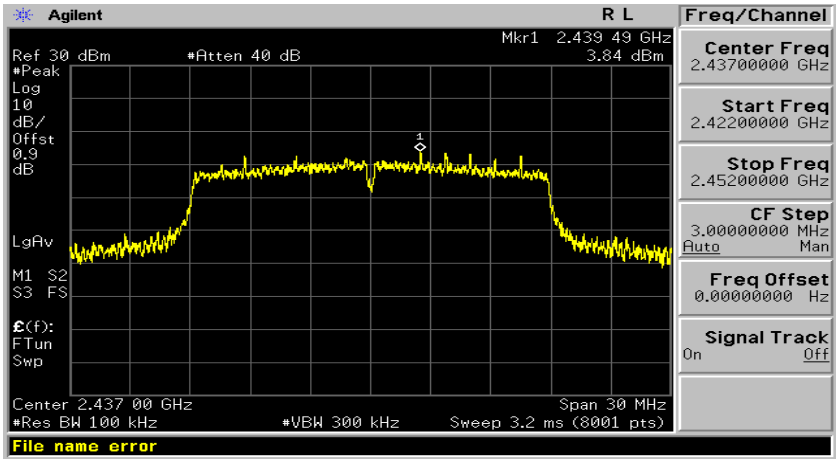
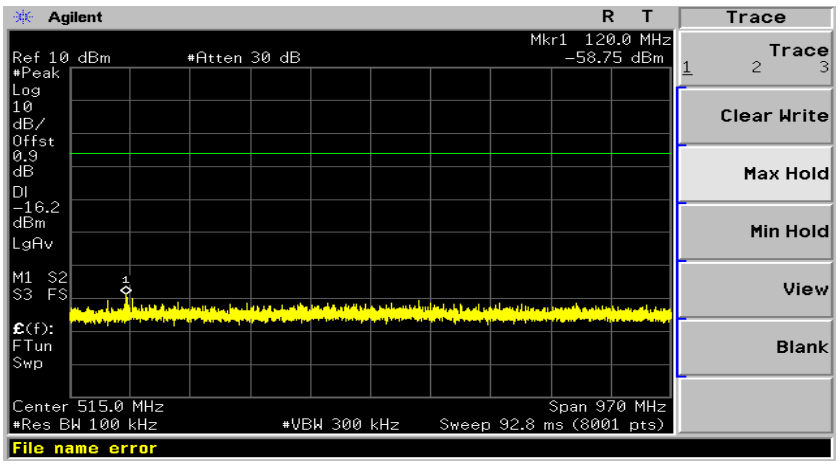
Puw/11G/HCH	 Agilent R L Trace Mkr1 120.0 MHz Ref 10 dBm #Atten 30 dB -59.30 dBm #Peak Log 10 dB/ Offst 0.9 dB Dl -16.9 dBm LgAv M1 S2 S3 FS £(f): FTun Swp Center 515.0 MHz Span 970 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 92.8 ms (8001 pts) Trace 1 2 3 Clear Write Max Hold Min Hold View Blank File name error Agilent R L Trace Mkr1 2.382 GHz Ref 10 dBm #Atten 30 dB -53.74 dBm #Peak Log 10 dB/ Offst 0.9 dB Dl -16.9 dBm LgAv M1 S2 S3 FS £(f): FTun Swp Center 1.700 GHz Span 1.4 GHz #Res BW 100 kHz #VBW 300 kHz Sweep 133.9 ms (8001 pts) Trace 1 2 3 Clear Write Max Hold Min Hold View Blank File name error Agilent R L Trace Mkr1 2.484 GHz Ref 10 dBm #Atten 30 dB -37.38 dBm #Peak Log 10 dB/ Offst 0.9 dB Dl -6.8 dBm LgAv M1 S2 S3 FS £(f): FTun Swp Center 4.992 GHz Span 5.016 GHz #Res BW 1 MHz #VBW 3 MHz Sweep 8.533 ms (8001 pts) Trace 1 2 3 Clear Write Max Hold Min Hold View Blank File name error

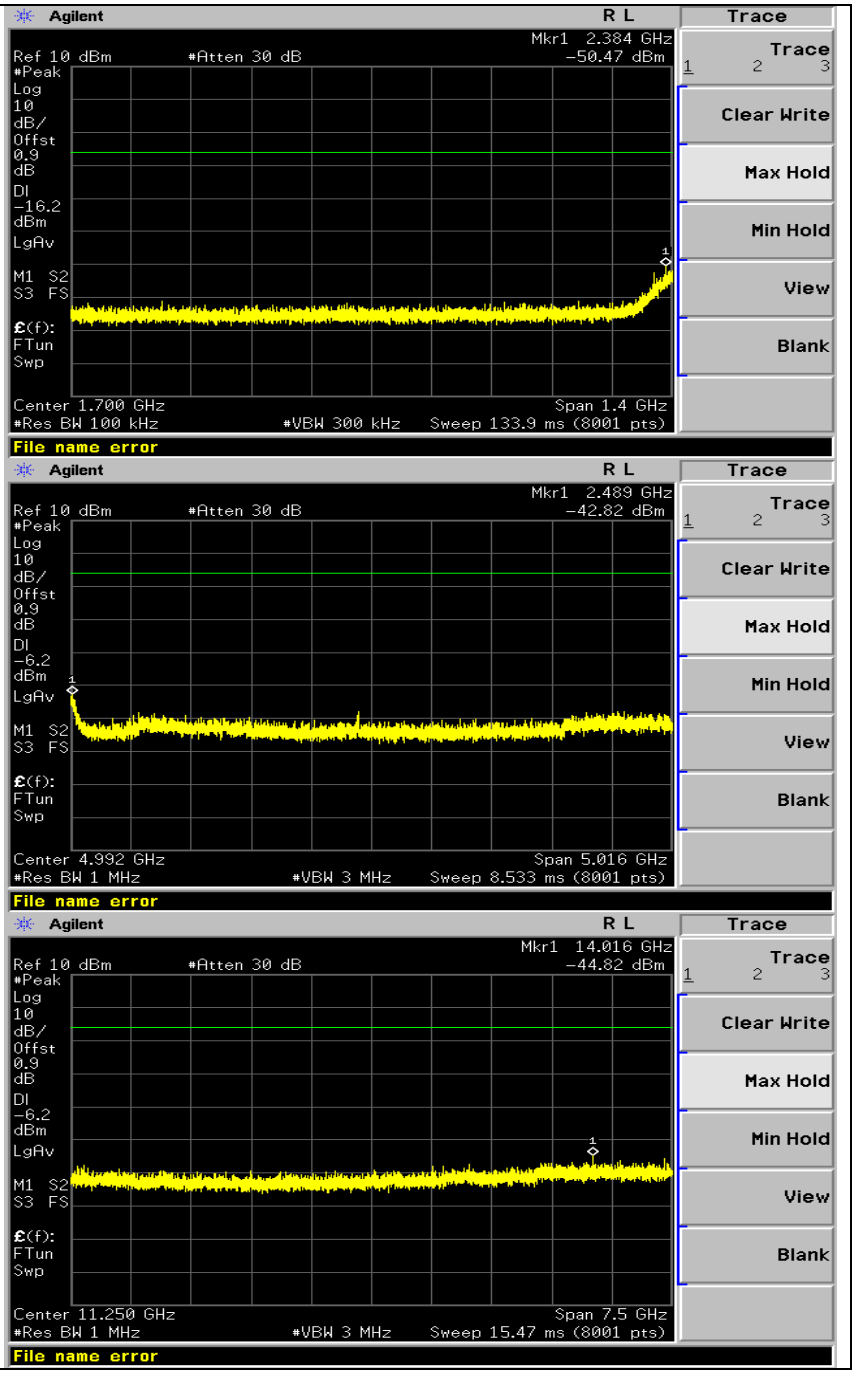

Agilent
R T
Trace
Mkr1 14.553 GHz
Ref 10 dBm
#Atten 30 dB
-45.91 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 11.250 GHz
Span 7.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 15.47 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 18.417 GHz
Ref 10 dBm
#Atten 32 dB
-43.81 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 17.500 GHz
Span 5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 12.8 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 24.878 GHz
Ref 10 dBm
#Atten 32 dB
-39.46 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 22.500 GHz
Span 5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 12.8 ms (8001 pts)
File name error

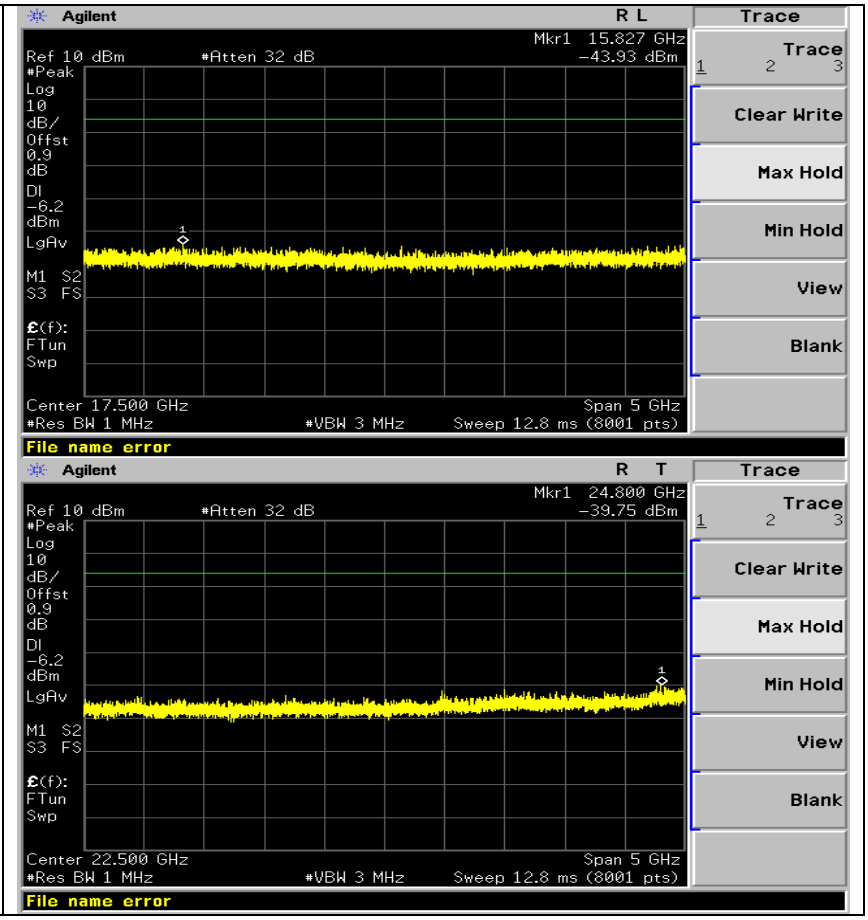
11N20SISO_LCH_Graphs	
Pref/11N20SISO/LCH	
/11N20SISO/LCH	 

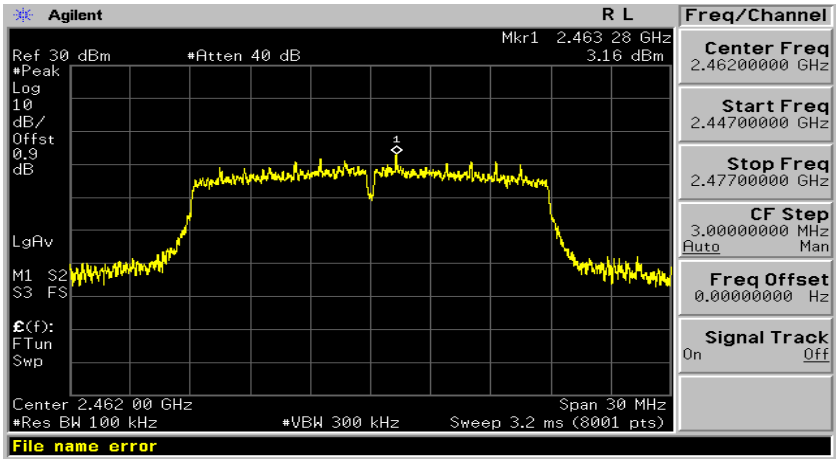

Agilent
R T
Freq/Channel
Mkr1 2.484 GHz
Ref 10 dBm
#Atten 30 dB
-45.77 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-7.5
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center Freq
4.99175000 GHz
Start Freq
2.48350000 GHz
Stop Freq
7.50000000 GHz
CF Step
501.650000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Start 2.484 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 7.500 GHz
Sweep 8.533 ms (8001 pts)
File name error
Agilent
R L
Freq/Channel
Mkr1 14.823 GHz
Ref 10 dBm
#Atten 30 dB
-45.81 dBm
Center Freq
11.2500000 GHz
Start Freq
7.50000000 GHz
Stop Freq
15.0000000 GHz
CF Step
750.000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Start 7.500 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 15.000 GHz
Sweep 15.47 ms (8001 pts)
File name error
Agilent
R L
Freq/Channel
Mkr1 17.551 GHz
Ref 10 dBm
#Atten 32 dB
-43.77 dBm
Center Freq
17.5000000 GHz
Start Freq
15.0000000 GHz
Stop Freq
20.0000000 GHz
CF Step
500.000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Start 15.000 GHz
#Res BW 1 MHz
#VBW 3 MHz
Stop 20.000 GHz
Sweep 12.8 ms (8001 pts)
File name error

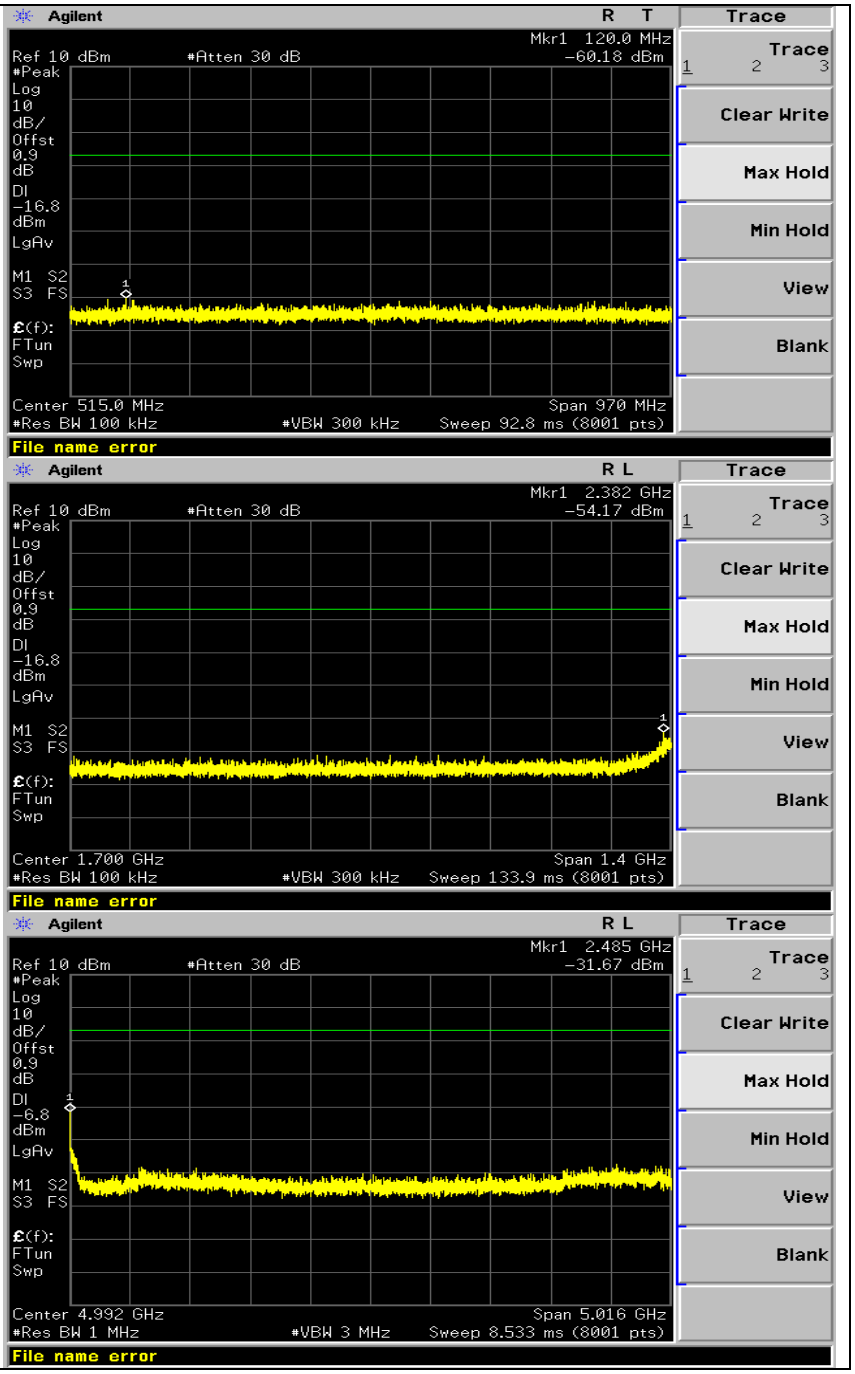
	

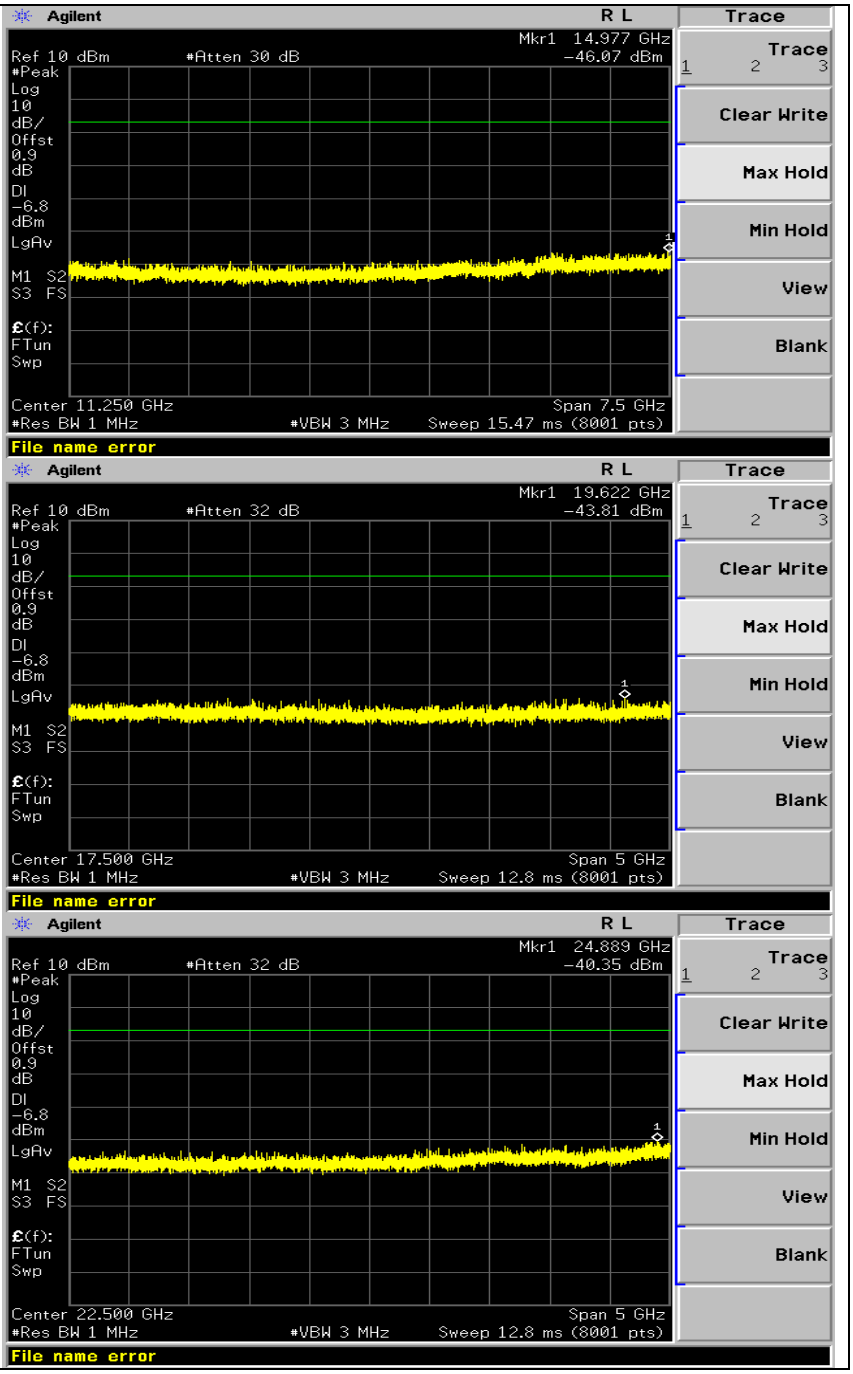
11N20SISO_MCH_Graphs	
Pref/11N20SISO/MCH	
Puw/11N20SISO/MCH	

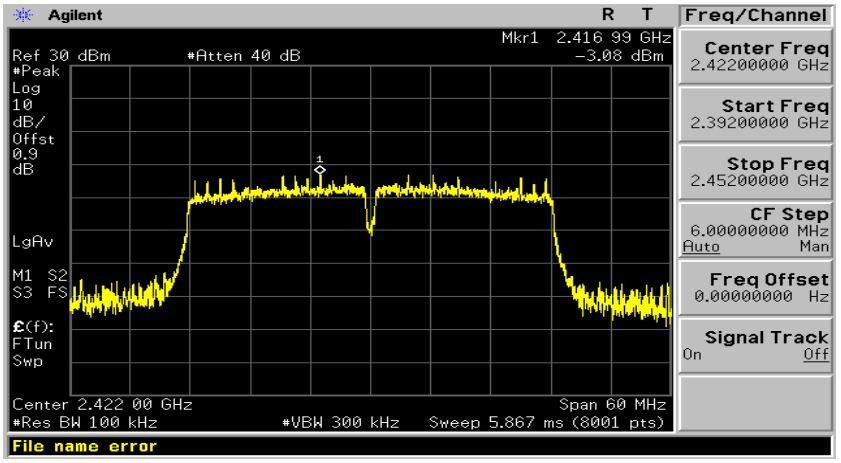
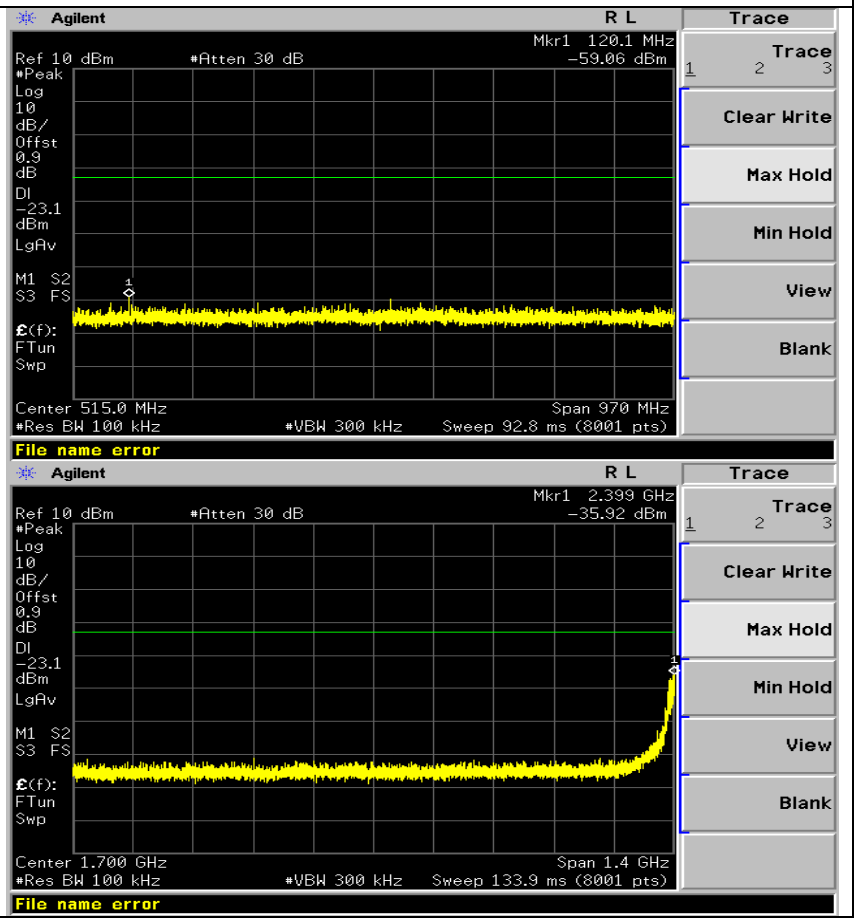

Agilent
R L
Trace
Mkr1 2.384 GHz
Ref 10 dBm
#Atten 30 dB
-50.47 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-16.2
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 1.700 GHz
Span 1.4 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 133.9 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 2.489 GHz
Ref 10 dBm
#Atten 30 dB
-42.82 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.2
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 4.992 GHz
Span 5.016 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 8.533 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 14.016 GHz
Ref 10 dBm
#Atten 30 dB
-44.82 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.2
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 11.250 GHz
Span 7.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 15.47 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error

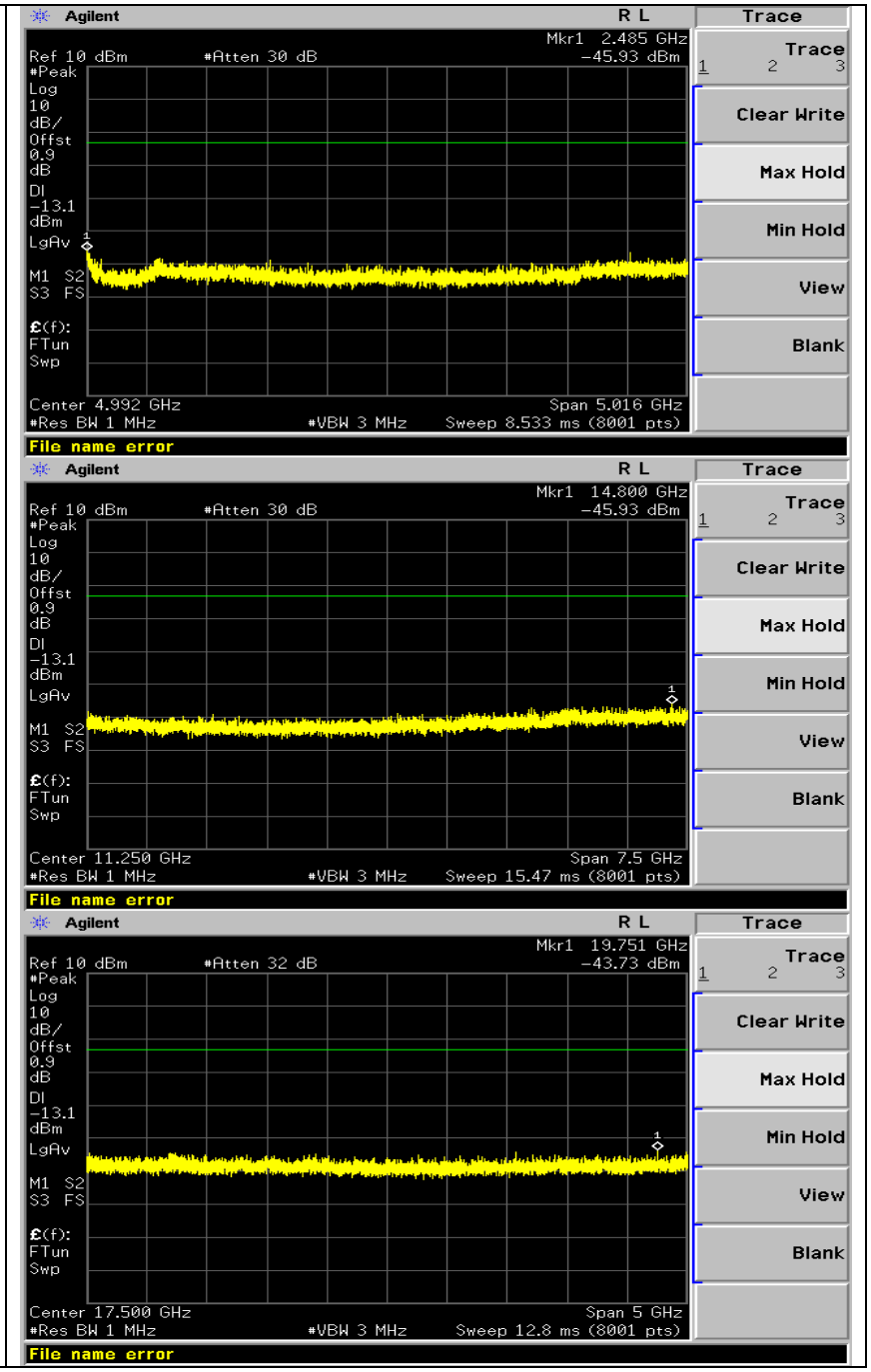


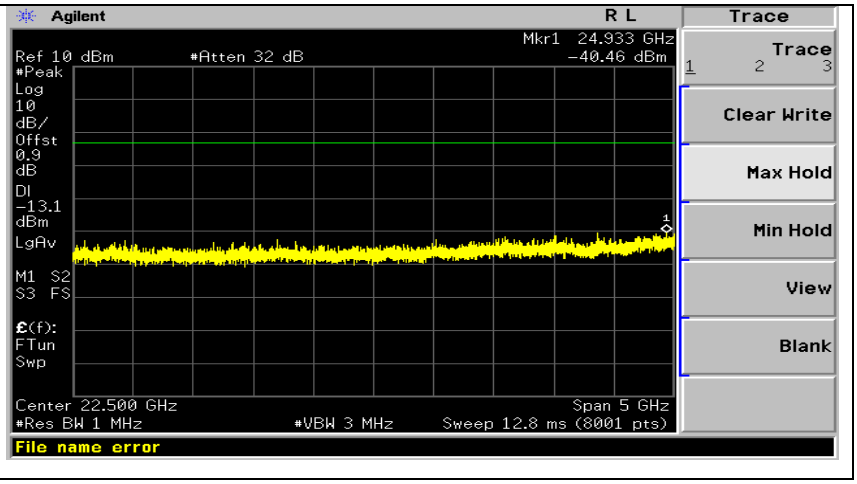
11N20SISO_HCH_Graphs	
Pref/11N20SISO/HCH	

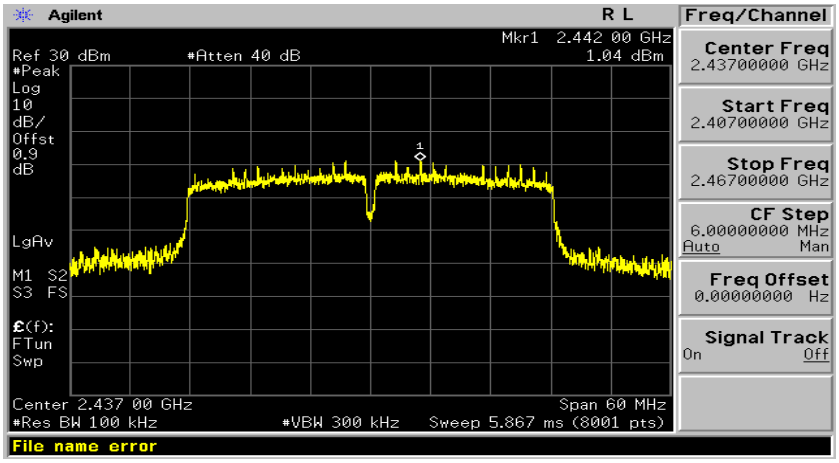
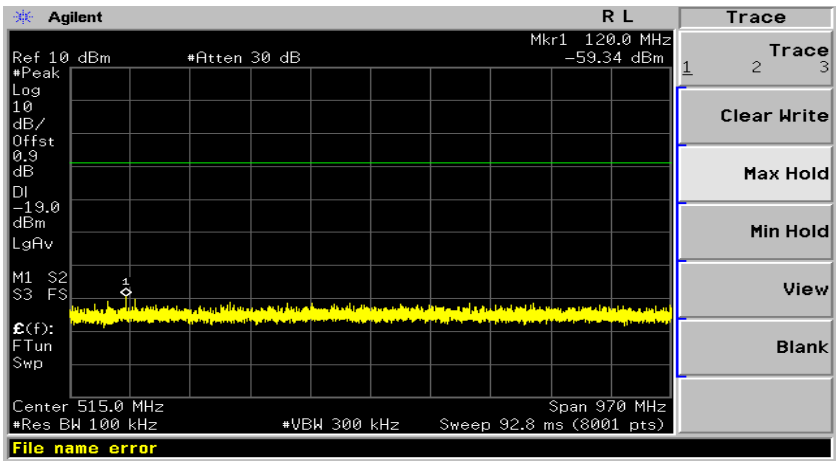
Puw/11N20SISO/HCH	

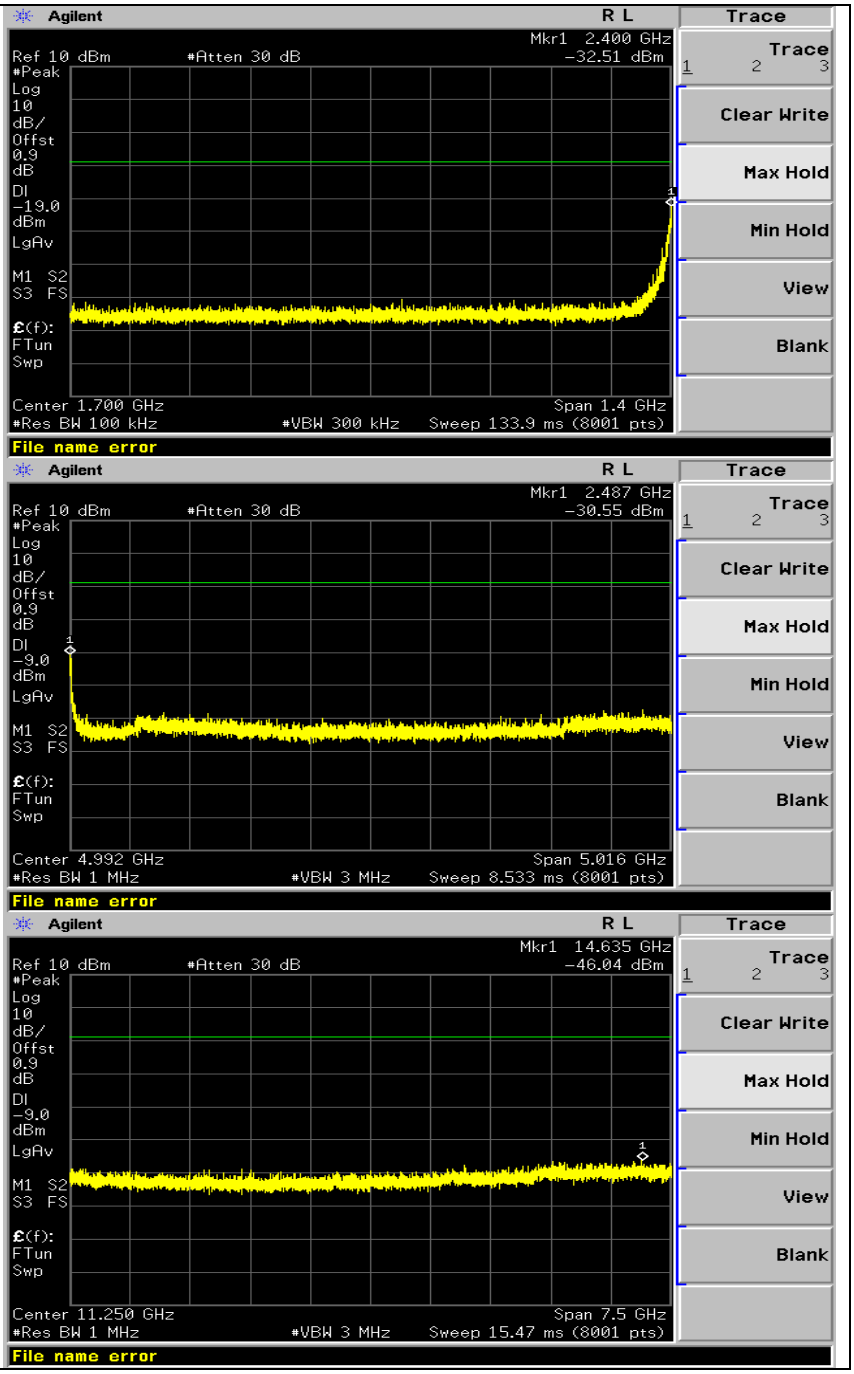

Agilent
R L
Trace
Mkr1 14.977 GHz
Ref 10 dBm
#Atten 30 dB
-46.07 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 11.250 GHz
Span 7.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 15.47 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 19.622 GHz
Ref 10 dBm
#Atten 32 dB
-43.81 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 17.500 GHz
Span 5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 12.8 ms (8001 pts)
File name error
Agilent
R L
Trace
Mkr1 24.889 GHz
Ref 10 dBm
#Atten 32 dB
-40.35 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-6.8
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
Center 22.500 GHz
Span 5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 12.8 ms (8001 pts)
File name error

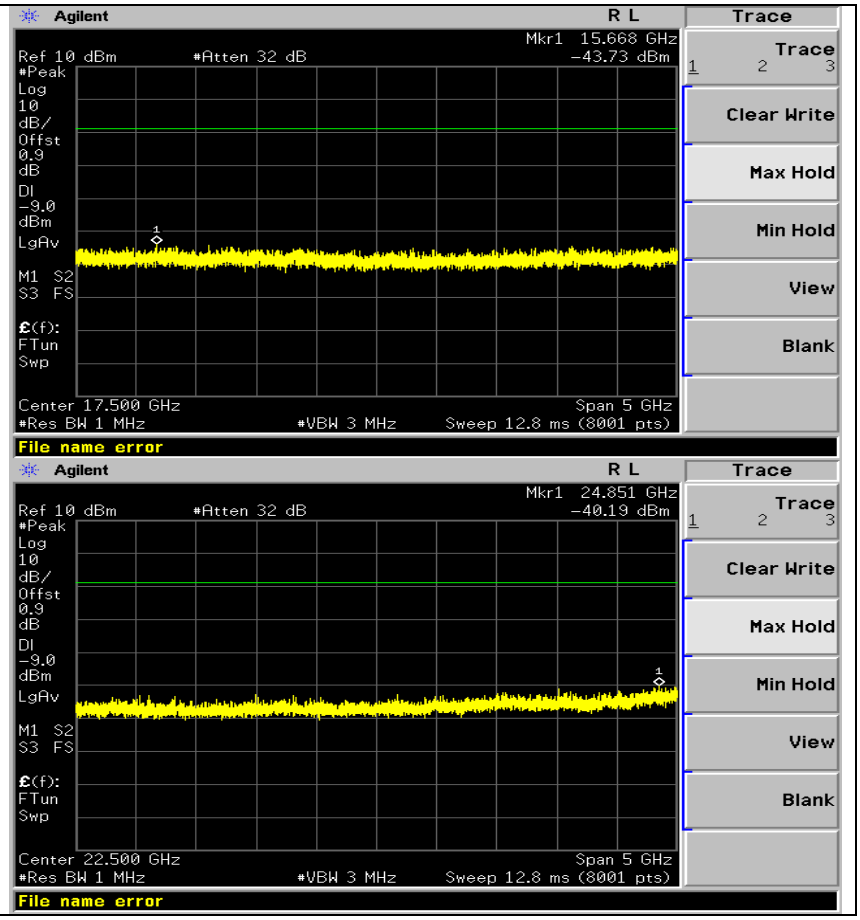
11N40SISO_LCH_Graphs	
Pref/11N40SISO/LCH	
Puw/11N40SISO/LCH	

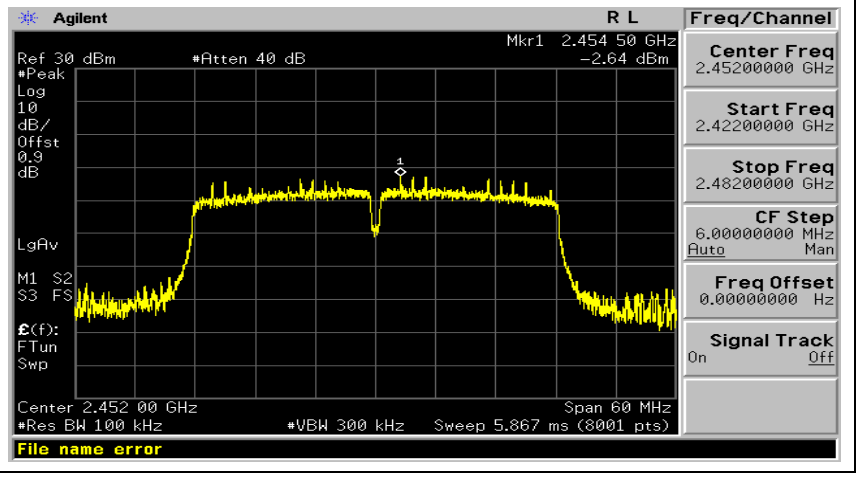

Agilent
R L
Trace
Mkr1 2.485 GHz
Ref 10 dBm
#Atten 30 dB
-45.93 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-13.1
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 4.992 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5.016 GHz
Sweep 8.533 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 14.800 GHz
Ref 10 dBm
#Atten 30 dB
-45.93 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-13.1
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 11.250 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 7.5 GHz
Sweep 15.47 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 19.751 GHz
Ref 10 dBm
#Atten 32 dB
-43.73 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-13.1
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 17.500 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5 GHz
Sweep 12.8 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error

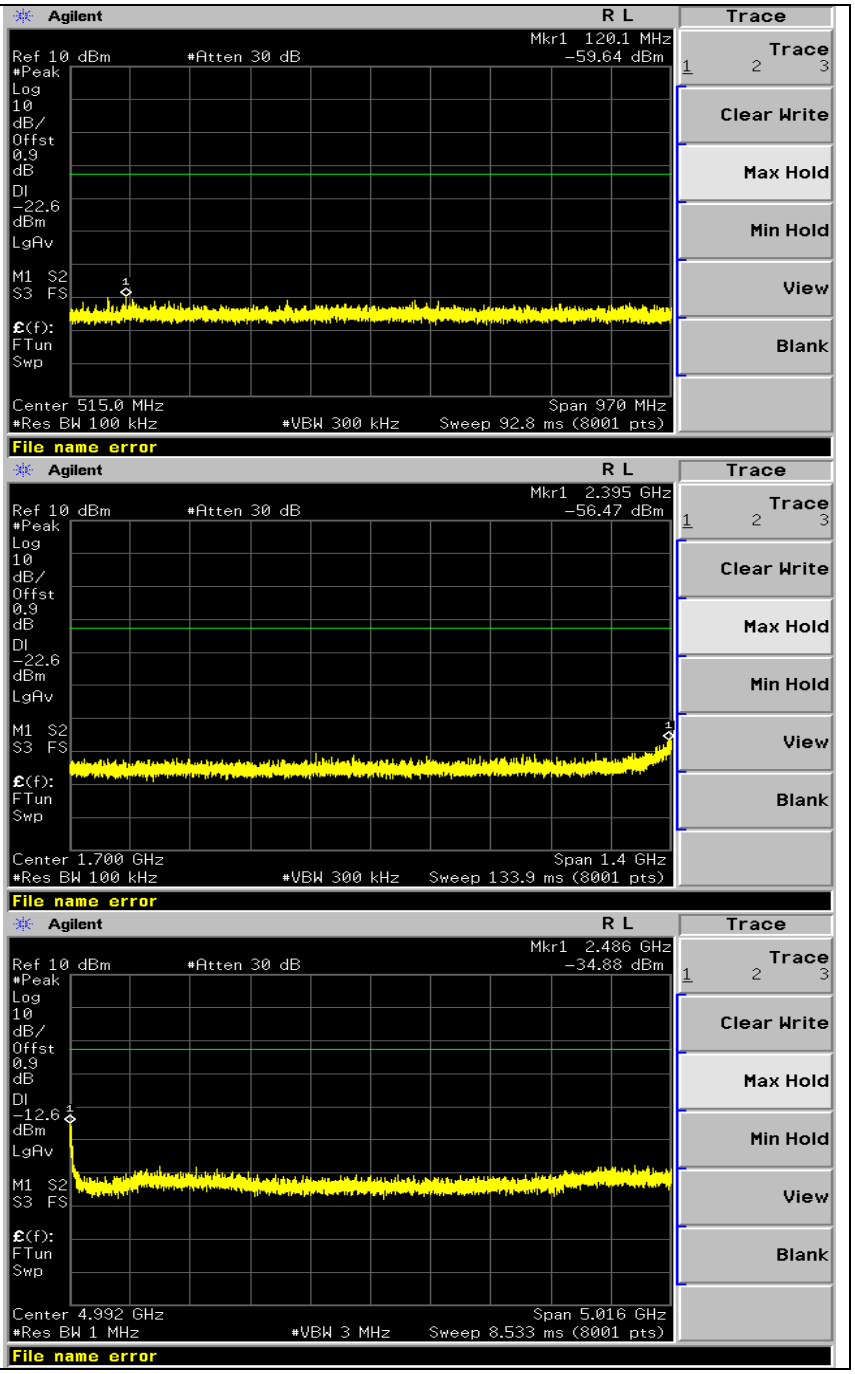
	

11N40SISO_MCH_Graphs	
Pref/11N40SISO/MCH	
Puw/11N40SISO/MCH	


Agilent
R L
Trace
Mkr1 2.400 GHz
Ref 10 dBm
#Atten 30 dB
-32.51 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-19.0
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 1.700 GHz
Span 1.4 GHz
#Res BW 100 kHz
#VBW 300 kHz
Sweep 133.9 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 2.487 GHz
Ref 10 dBm
#Atten 30 dB
-30.55 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-9.0
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 4.992 GHz
Span 5.016 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 8.533 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 14.635 GHz
Ref 10 dBm
#Atten 30 dB
-46.04 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-9.0
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 11.250 GHz
Span 7.5 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 15.47 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error



11N40SISO_HCH_Graphs	
Pref/11N40SISO/HCH	

Puw/11N40SISO/HCH	


Agilent
R L
Trace
Mkr1 14.256 GHz
Ref 10 dBm
#Atten 30 dB
-46.48 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-12.6
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 11.250 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 7.5 GHz
Sweep 15.47 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 16.081 GHz
Ref 10 dBm
#Atten 32 dB
-43.75 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-12.6
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 17.500 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5 GHz
Sweep 12.8 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error
Agilent
R L
Trace
Mkr1 24.439 GHz
Ref 10 dBm
#Atten 32 dB
-40.10 dBm
#Peak
Log
10
dB/
Offst
0.9
dB
Dl
-12.6
dBm
LgAv
M1 S2
S3 FS
£(f):
FTun
Swp
Center 22.500 GHz
#Res BW 1 MHz
#VBW 3 MHz
Span 5 GHz
Sweep 12.8 ms (8001 pts)
Trace
1 2 3
Clear Write
Max Hold
Min Hold
View
Blank
File name error

10. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

10.1 MEASUREMENT PROCEDURE

(1). Connect EUT RF output port to the Spectrum Analyzer through an RF attenuator

(2). Set the EUT Work on the top, the middle and the bottom operation frequency individually.

(3). Set SPA Trace 1 Max hold, then View.

Note: The method of AVGPSD in the KDB 558074 item 10.3 was used in this testing.

10.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 8.2.

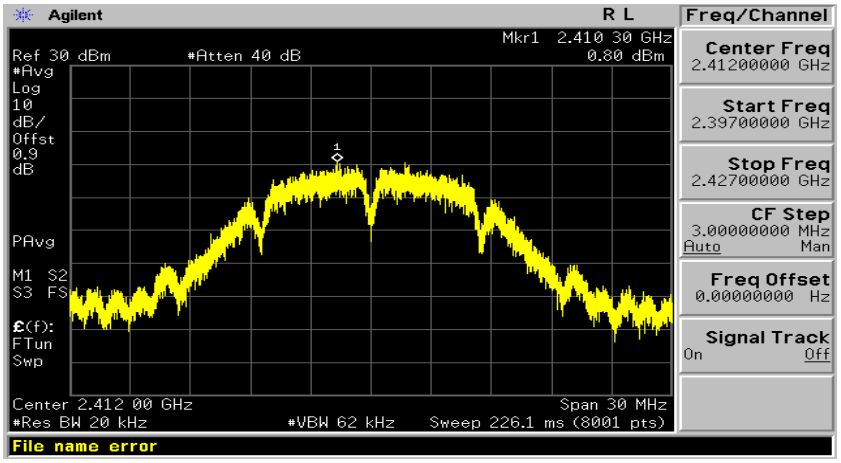
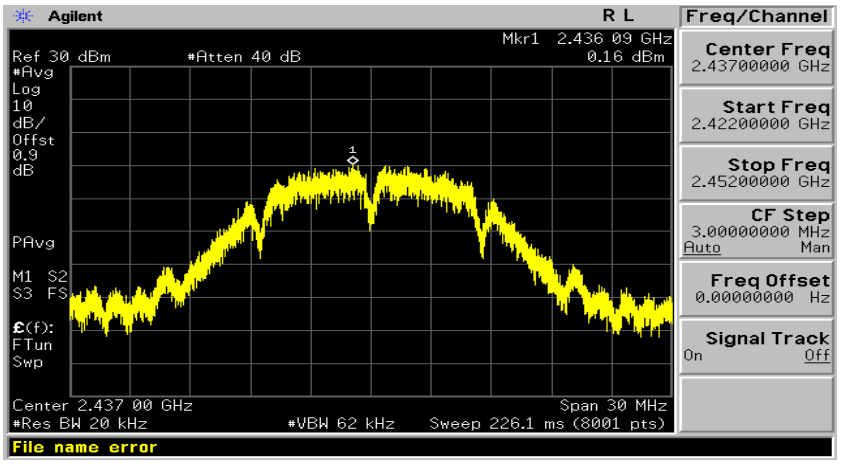
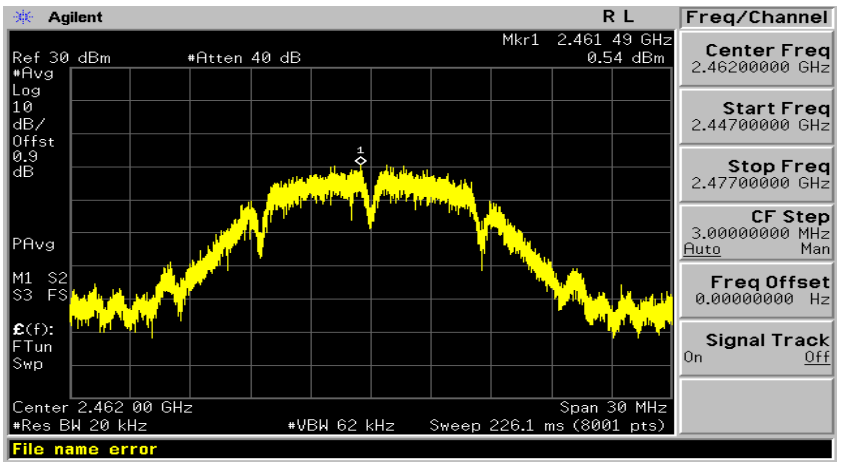
10.3 MEASUREMENT EQUIPMENT USED

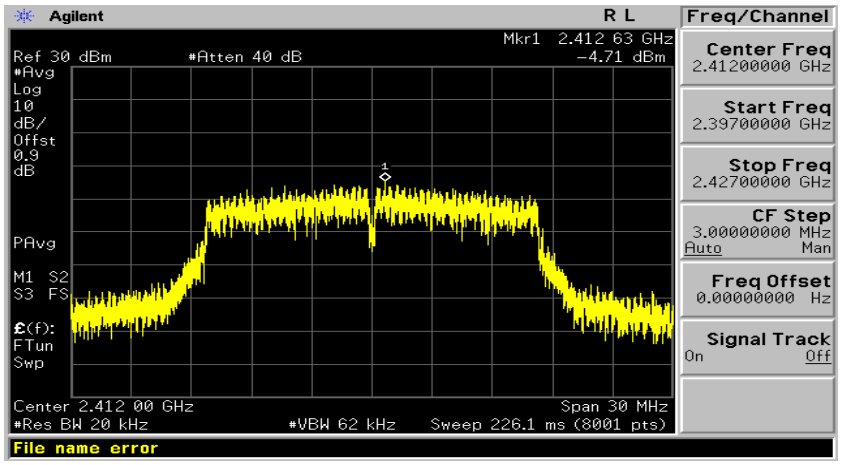
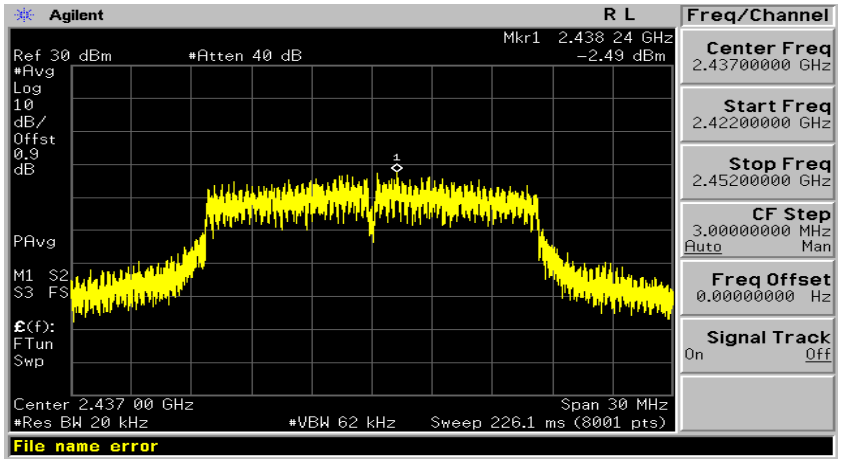
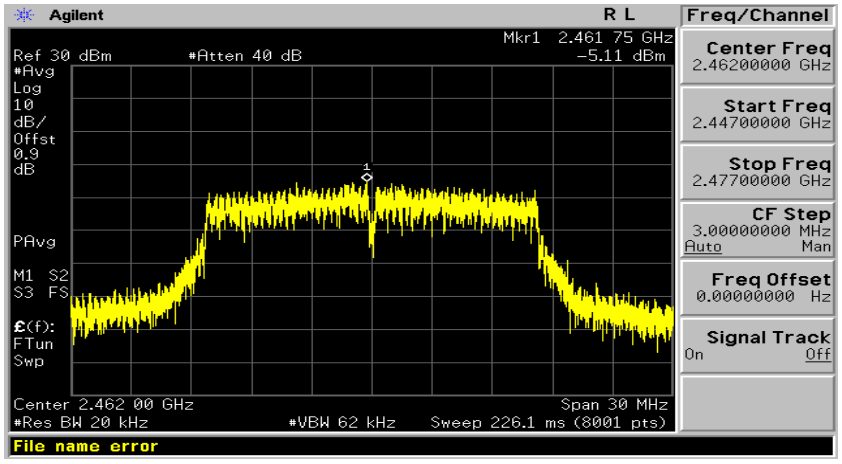
Refer To Section 6.

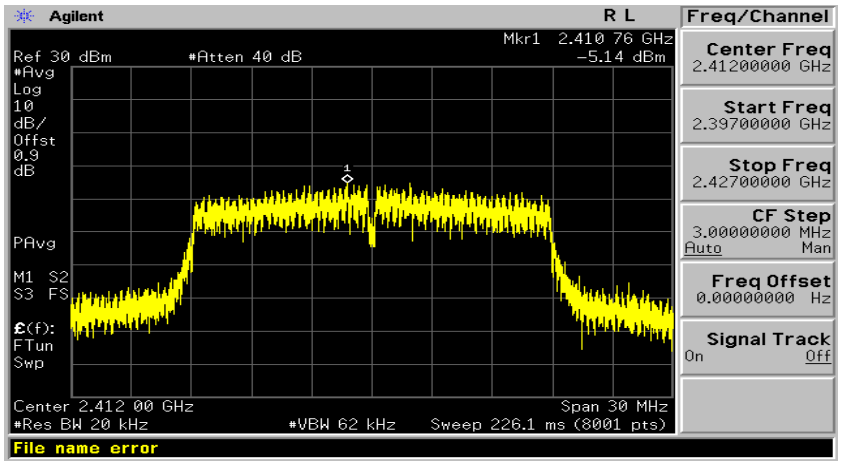
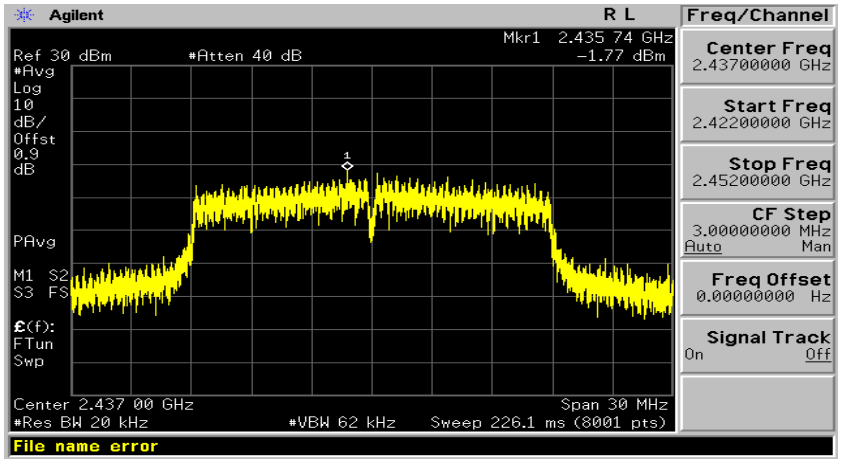
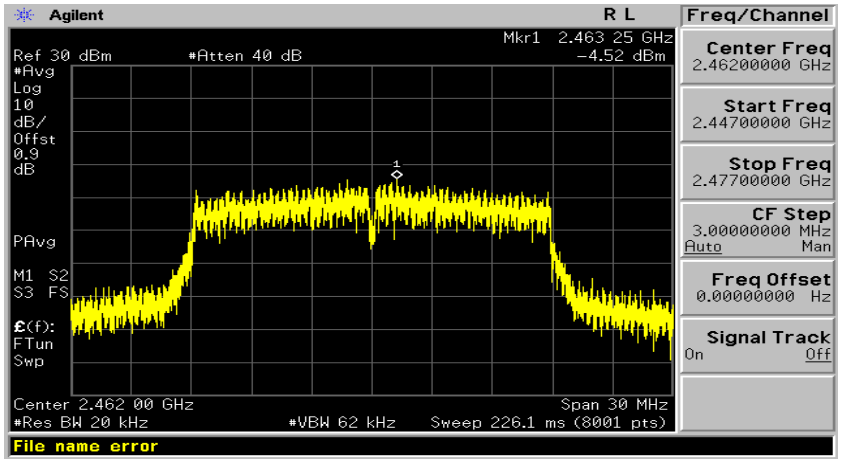
10.4 LIMITS AND MEASUREMENT RESULT

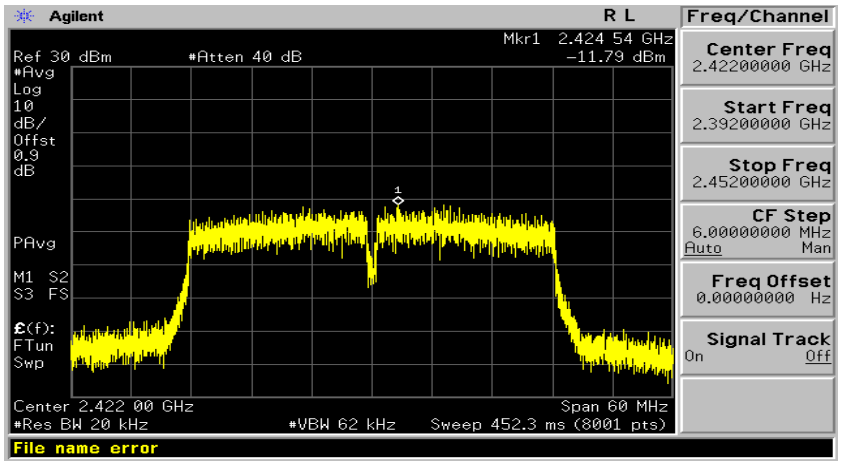
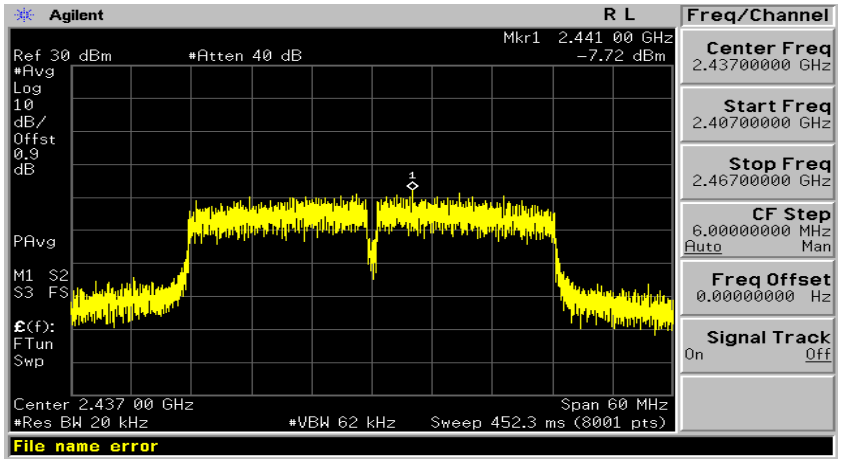
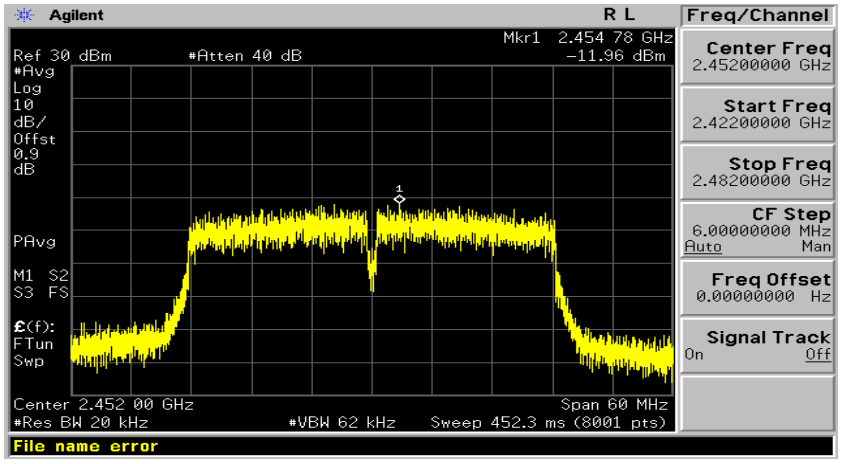
Mode	Channel	Av.PSD [dBm/20kHz]	Limit[dBm/3kHz]	Verdict
11B	LCH	0.8	8	PASS
11B	MCH	0.16	8	PASS
11B	HCH	0.54	8	PASS
11G	LCH	-4.71	8	PASS
11G	MCH	-2.49	8	PASS
11G	HCH	-5.11	8	PASS
11N20SISO	LCH	-5.14	8	PASS
11N20SISO	MCH	-1.77	8	PASS
11N20SISO	HCH	-4.52	8	PASS
11N40SISO	LCH	-11.79	8	PASS
11N40SISO	MCH	-7.72	8	PASS
11N40SISO	HCH	-11.96	8	PASS

Test Graph

Graphs	
11B/LCH	
11B/MCH	
11B/HCH	

11G/LCH	
11G/MCH	
11G/HCH	

11N20SISO/LCH	
11N20SISO/MCH	
11N20SISO/HCH	

11N40SISO/LCH	
11N40SISO/MCH	
11N40SISO/HCH	

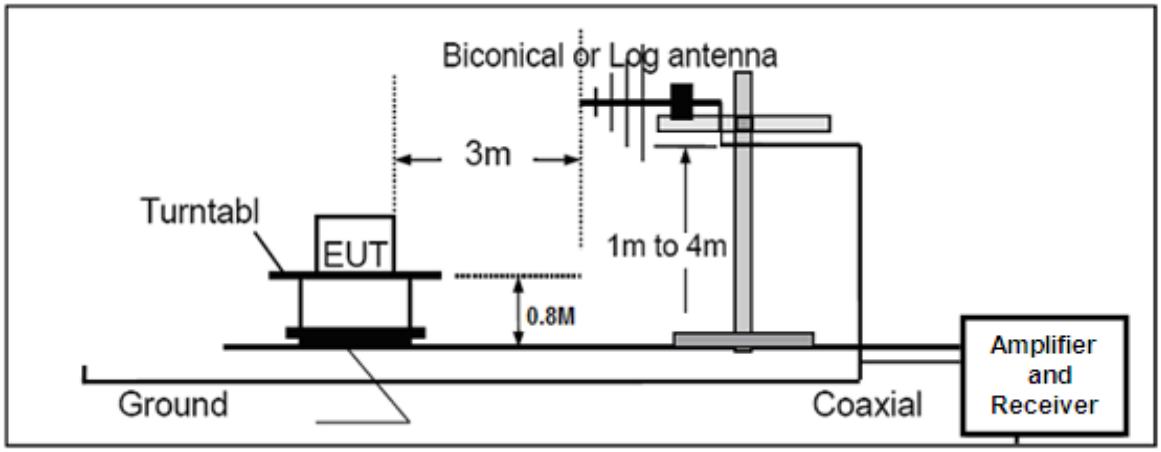
11. RADIATED EMISSION

11.1. MEASUREMENT PROCEDURE

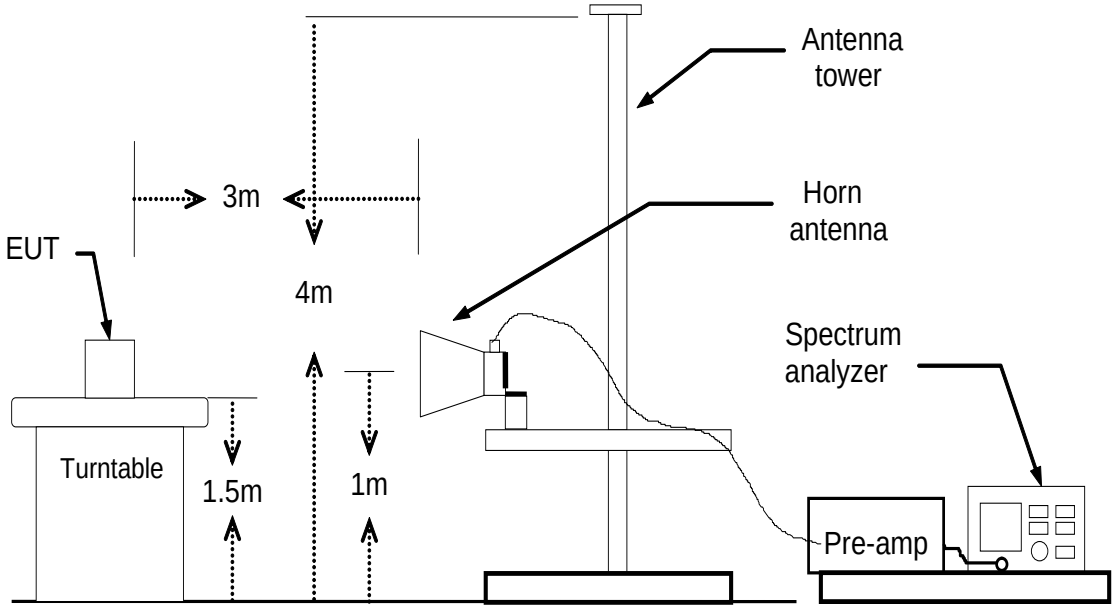
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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 RBW and 3MHz VBW for peak reading. Then 1MHz RBW and 3MHz VBW for average reading in spectrum analyzer. The EUT was placed on the top of the turntable 1.5 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.
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. If the emission level of the EUT in peak mode was 10 dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10 dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet.
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.

11.2. TEST SETUP

RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz



11.3. LIMITS AND MEASUREMENT RESULT

15.209(a) Limit in the below table has to be followed

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (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

Note: All modes were tested For restricted band radiated emission,
the test records reported below are the worst result compared to other modes.

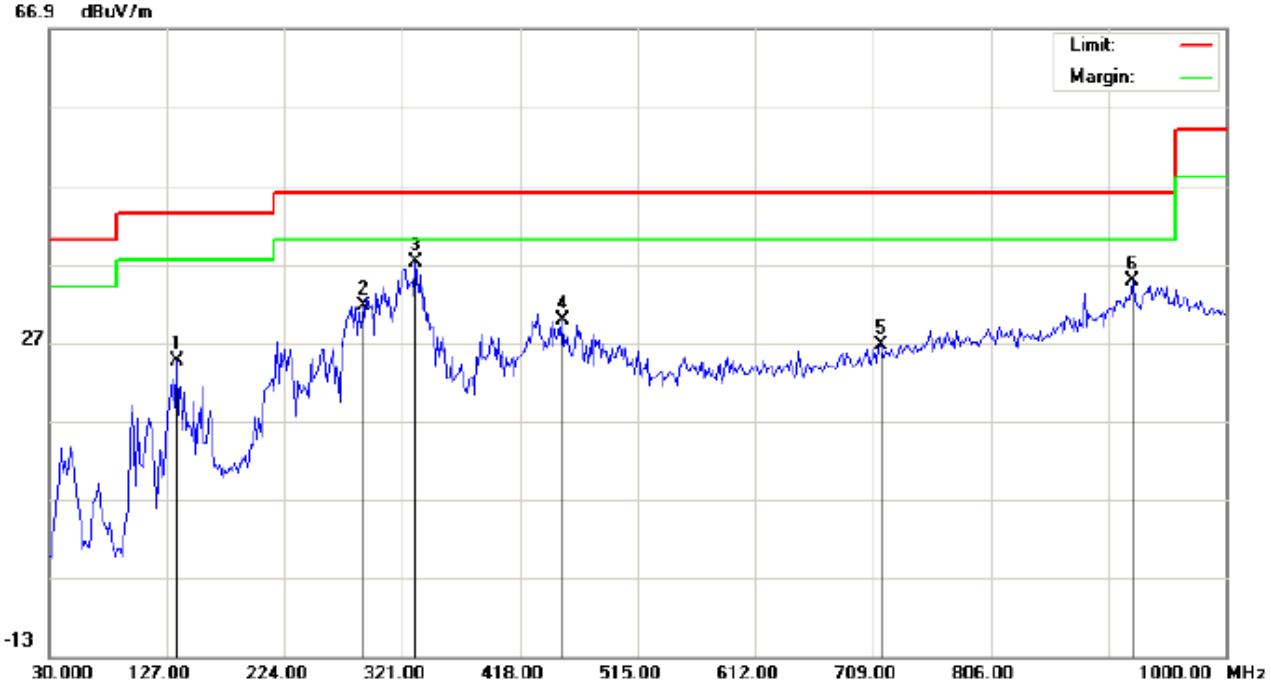
11.4. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

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

RADIATED EMISSION BELOW 1GHZ

EUT	Hisign Handheld Multi-biometric Device	Model Name	HX-I6150CT
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: Low Channel TX
Note:

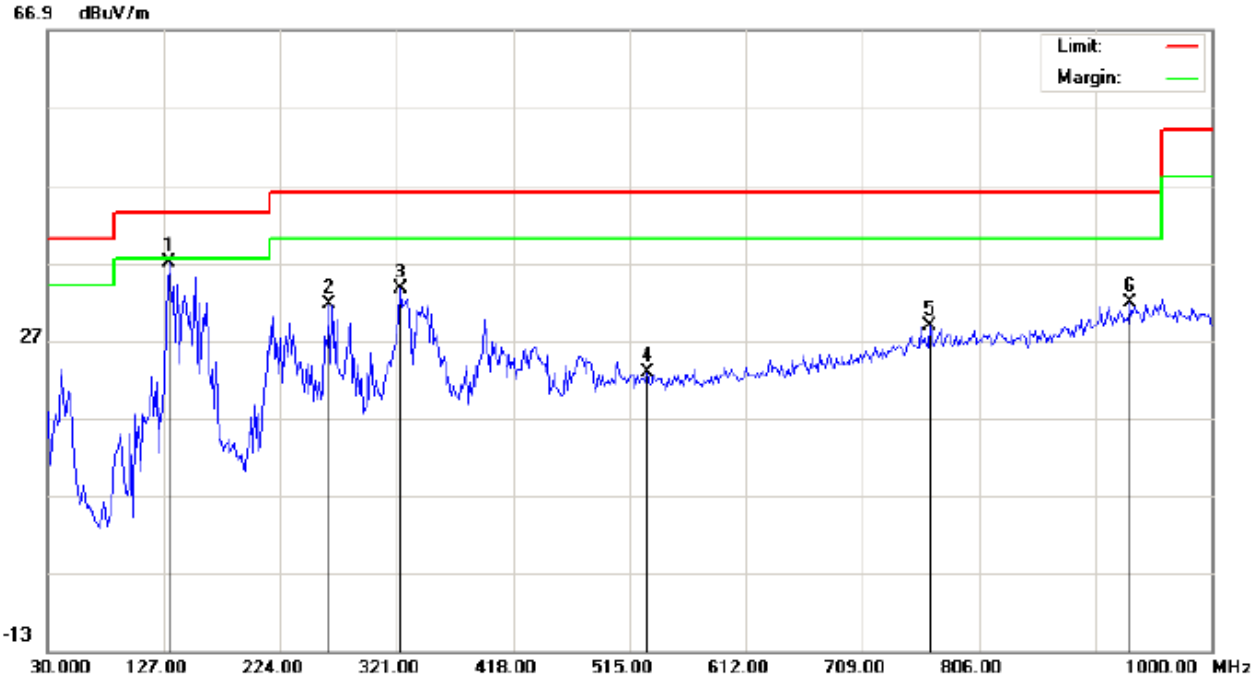
Polarization: *Horizontal*
Power: AC 120V/60Hz
Distance: 3m

Temperature: 23.2
Humidity: 55.5 %

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		135.0833	11.64	12.90	24.54	43.50	-18.96	peak			
2		288.6667	18.14	13.48	31.62	46.00	-14.38	peak			
3	*	332.3167	19.55	17.56	37.11	46.00	-8.89	peak			
4		453.5667	9.14	20.63	29.77	46.00	-16.23	peak			
5		715.4667	0.92	25.64	26.56	46.00	-19.44	peak			
6		922.4000	5.56	29.23	34.79	46.00	-11.21	peak			

RESULT: PASS

EUT	Hisign Handheld Multi-biometric Device	Model Name	HX-I6150CT
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: Low Channel TX
Note:

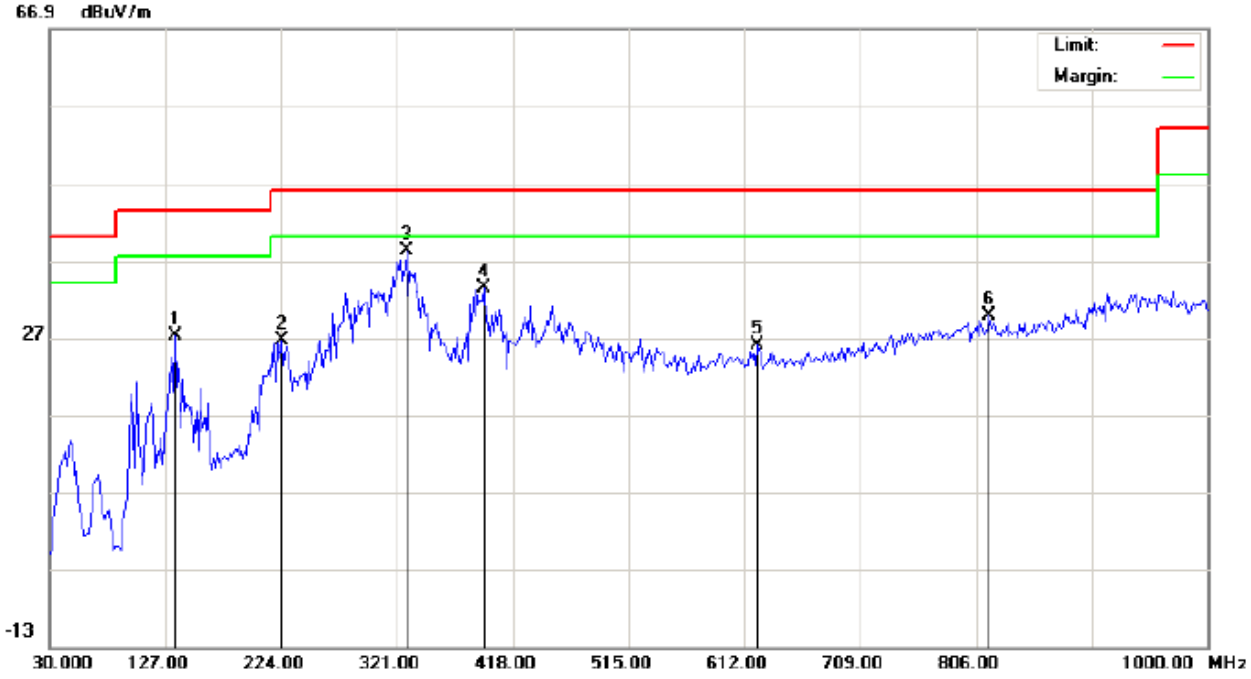
Polarization: *Vertical*
Power: AC 120V/60Hz
Distance: 3m

Temperature: 23.2
Humidity: 55.5 %

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	*	131.8500	25.11	11.80	36.91	43.50	-6.59	peak			
2		264.4167	17.18	14.34	31.52	46.00	-14.48	peak			
3		324.2333	16.61	17.02	33.63	46.00	-12.37	peak			
4		529.5500	0.87	21.93	22.80	46.00	-23.20	peak			
5		765.5833	2.00	26.85	28.85	46.00	-17.15	peak			
6		932.1000	2.33	29.50	31.83	46.00	-14.17	peak			

RESULT: PASS

EUT	Hisign Handheld Multi-biometric Device	Model Name	HX-I6150CT
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: Middle Channel TX
Note:

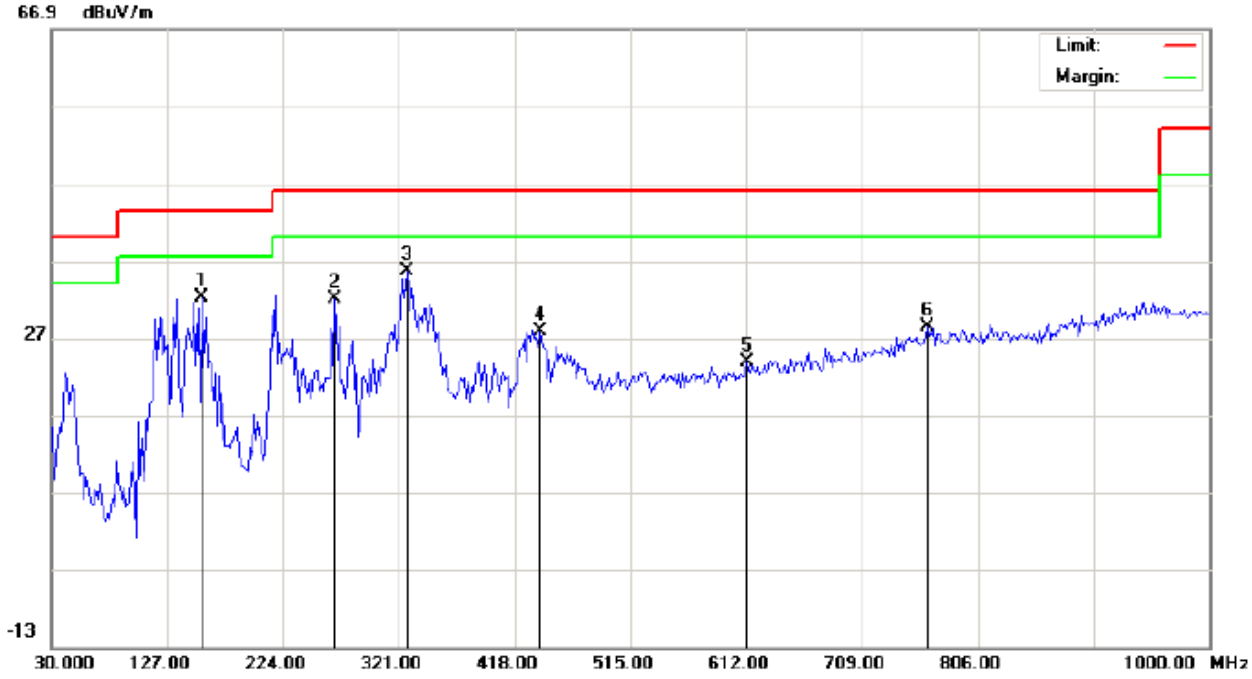
Polarization: *Horizontal*
Power: AC 120V/60Hz
Distance: 3m

Temperature: 23.2
Humidity: 55.5 %

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		135.0833	14.30	12.90	27.20	43.50	-16.30	peak			
2		224.0000	17.05	9.55	26.60	46.00	-19.40	peak			
3	*	329.0833	20.87	17.35	38.22	46.00	-7.78	peak			
4		393.7500	14.28	19.03	33.31	46.00	-12.69	peak			
5		623.3167	2.21	23.79	26.00	46.00	-20.00	peak			
6		817.3167	2.40	27.32	29.72	46.00	-16.28	peak			

RESULT: PASS

EUT	Hisign Handheld Multi-biometric Device	Model Name	HX-I6150CT
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Vertical



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: Middle Channel TX
Note:

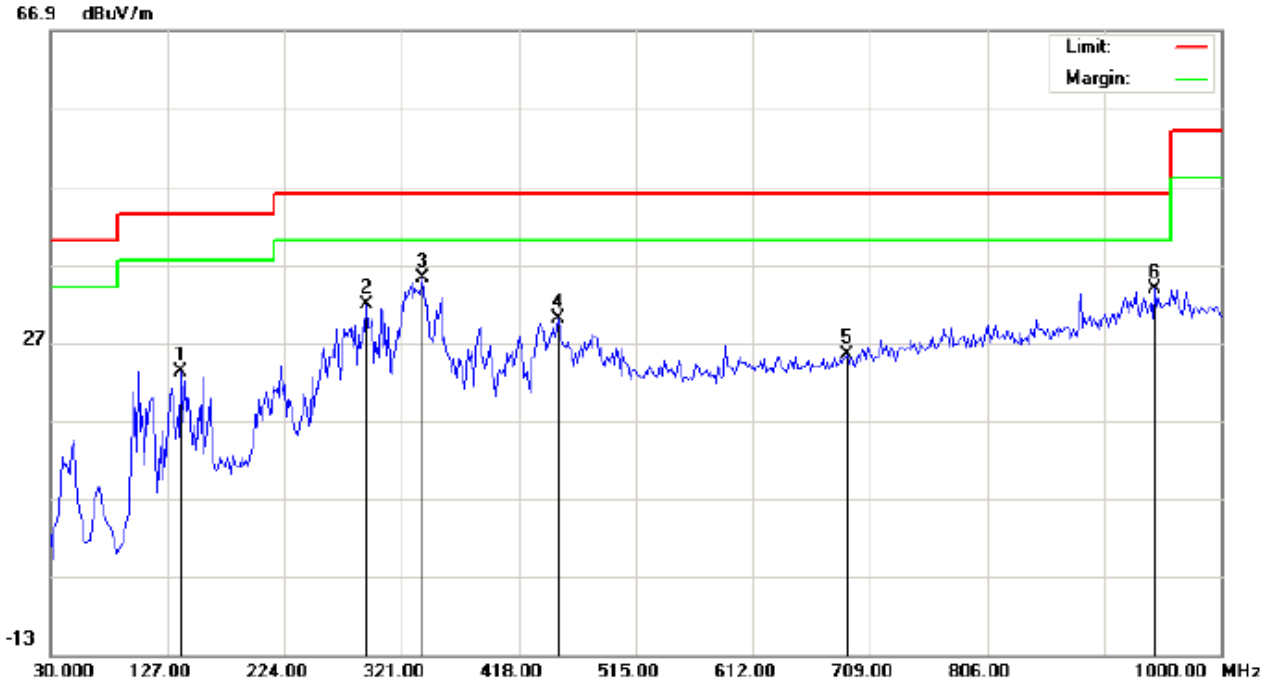
Polarization: *Vertical*
Power: AC 120V/60Hz
Distance: 3m

Temperature: 23.2
Humidity: 55.5 %

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		156.1000	16.89	15.30	32.19	43.50	-11.31	peak			
2		267.6500	17.53	14.43	31.96	46.00	-14.04	peak			
3	*	327.4667	18.41	17.24	35.65	46.00	-10.35	peak			
4		439.0167	7.64	20.26	27.90	46.00	-18.10	peak			
5		612.0000	0.76	23.00	23.76	46.00	-22.24	peak			
6		763.9667	1.56	26.82	28.38	46.00	-17.62	peak			

RESULT: PASS

EUT	Hisign Handheld Multi-biometric Device	Model Name	HX-I6150CT
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Horizontal



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: High Channel TX
Note:

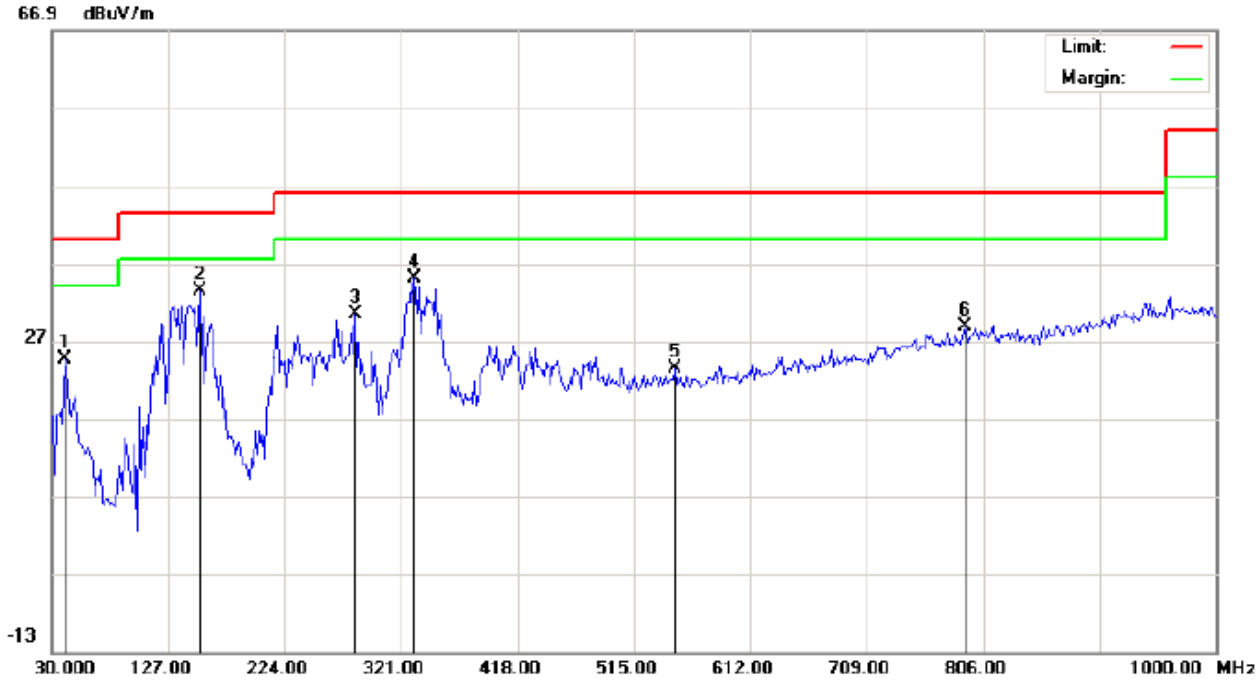
Polarization: *Horizontal*
Power: AC 120V/60Hz
Distance: 3m

Temperature: 23.2
Humidity: 55.5 %

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		138.3167	8.74	14.41	23.15	43.50	-20.35	peak			
2		291.9000	17.84	14.03	31.87	46.00	-14.13	peak			
3	*	338.7833	17.20	17.99	35.19	46.00	-10.81	peak			
4		450.3333	9.45	20.59	30.04	46.00	-15.96	peak			
5		689.6000	0.41	24.91	25.32	46.00	-20.68	peak			
6		945.0333	3.92	29.86	33.78	46.00	-12.22	peak			

RESULT: PASS

EUT	Hisign Handheld Multi-biometric Device	Model Name	HX-I6150CT
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Vertical



Site: site #1
Limit: FCC Class B 3M Radiation
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: High Channel TX
Note:

Polarization: *Vertical*
Power: AC 120V/60Hz
Distance:

Temperature: 23.2
Humidity: 55.5 %

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		41.3167	15.77	8.81	24.58	40.00	-15.42	peak			
2	*	152.8667	18.17	15.28	33.45	43.50	-10.05	peak			
3		282.2000	15.50	14.87	30.37	46.00	-15.63	peak			
4		332.3167	17.41	17.56	34.97	46.00	-11.03	peak			
5		548.9500	1.04	22.45	23.49	46.00	-22.51	peak			
6		791.4500	1.51	27.20	28.71	46.00	-17.29	peak			

RESULT: PASS

Note: 1. Factor=Antenna Factor + Cable loss, Margin= Result -Limit.

2. The “Factor” value can be calculated automatically by software of measurement system.

3. 30MHz~1GHz:(Scan with 11b,11g,11n, the worst case is 11b Mode)

RADIATED EMISSION ABOVE 1GHZ

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
TX 11b 2412MHz							
4824.092	46.13	10.44	56.57	74	-17.43	Pk	Horizontal
4824.092	31.28	10.44	41.72	54	-12.28	AV	Horizontal
7236.127	43.69	10.39	54.08	74	-19.92	pk	Horizontal
7236.127	33.46	10.39	43.85	54	-10.15	AV	Horizontal
4824.098	49.87	10.39	60.26	74	-13.74	Pk	Vertical
4824.082	33.63	10.39	44.02	54	-9.98	AV	Vertical
7236.110	48.19	10.68	58.87	74	-15.13	Pk	Vertical
7236.054	30.12	10.68	40.8	54	-13.2	AV	Vertical
TX 11b 2437MHz							
4874.072	49.54	10.39	59.93	74	-14.07	Pk	Horizontal
4874.108	33.82	10.39	44.21	54	-9.79	AV	Horizontal
7311.092	48.36	12.68	61.04	74	-12.96	Pk	Horizontal
7311.131	30.12	12.68	42.8	54	-11.2	AV	Horizontal
4874.098	49.43	10.39	59.82	74	-14.18	Pk	Vertical
4874.044	33.29	10.39	43.68	54	-10.32	AV	Vertical
7311.145	48.42	12.68	61.1	74	-12.9	Pk	Vertical
7311.104	30.31	12.68	42.99	54	-11.01	AV	Vertical
TX 11b 2462MHz							
4924.128	49.17	10.39	59.56	74	-14.44	pk	Horizontal
4924.083	33.26	10.39	43.65	54	-10.35	AV	Horizontal
7386.071	48.57	12.68	61.25	74	-12.75	pk	Horizontal
7386.134	30.19	12.68	42.87	54	-11.13	AV	Horizontal
4924.042	49.25	10.39	59.64	74	-14.36	pk	Vertical
4924.060	33.55	10.39	43.94	54	-10.06	AV	Vertical
7386.051	48.41	12.68	61.09	74	-12.91	pk	Vertical
7386.054	30.52	12.68	43.2	54	-10.8	AV	Vertical

RESULT: PASS

Note: 1~25GHz scan with 11b. No recording in the test report at least have 20dB margin.

Factor = Antenna Factor + Cable Loss – Pre-amplifier.

Emission Level = Meter Reading + Factor

Margin = Emission Leve - Limit

12. BAND EDGE EMISSION

12.1. MEASUREMENT PROCEDURE

1)Radiated restricted band edge measurements

The radiated restricted band edge measurements are measured with an EMI test receiver connected to the receive antenna while the EUT is transmitting

2)Conducted Emissions at the bang edge

a)The transmitter output was connected to the spectrum analyzer

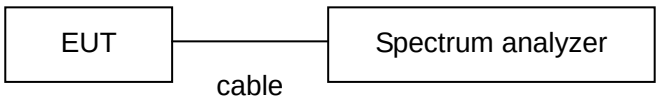
b)Set RBW=100kHz,VBW=300kHz

c)Suitable frequency span including 100kHz bandwidth from band edge

12.2. TEST SET-UP

Radiated same as 11.2

Conducted set up



12.3. Radiated Test Result

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Detector	Comment
(MHz)	(dBμV)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	Type	
TX 11b 2412MHz							
2399.9	78.16	-13	65.16	74	-8.84	peak	Horizontal
2399.9	59.25	-13	46.25	54	-7.75	AVG	Horizontal
2400	79.16	-12.99	66.17	74	-7.83	peak	Horizontal
2400	58.79	-12.99	45.8	54	-8.2	AVG	Horizontal
2399.9	79.53	-12.97	66.56	74	-7.44	peak	Vertical
2399.9	59.03	-12.97	46.06	54	-7.94	AVG	Vertical
2400	79.06	-12.94	66.12	74	-7.88	peak	Vertical
2400	59.12	-12.94	46.18	54	-7.82	AVG	Vertical
TX 11b 2462MHz							
2483.5	78.64	-12.78	65.86	74	-8.14	peak	Horizontal
2483.5	58.32	-12.78	45.54	54	-8.46	AVG	Horizontal
2483.6	78.18	-12.77	65.41	74	-8.59	peak	Horizontal
2483.6	58.63	-12.77	45.86	54	-8.14	AVG	Horizontal
2483.5	79.42	-12.76	66.66	74	-7.34	peak	Vertical
2483.5	57.59	-12.76	44.83	54	-9.17	AVG	Vertical
2483.6	78.31	-12.72	65.59	74	-8.41	peak	Vertical
2483.6	58.76	-12.72	46.04	54	-7.96	AVG	Vertical

RESULT: PASS

Note: Scan with 11b,11g,11n, the worst casw is 11b Mode

Factor=Antenna Factor + Cable loss - Amplifier gain,

Emission Level = Meter Reading + Factor

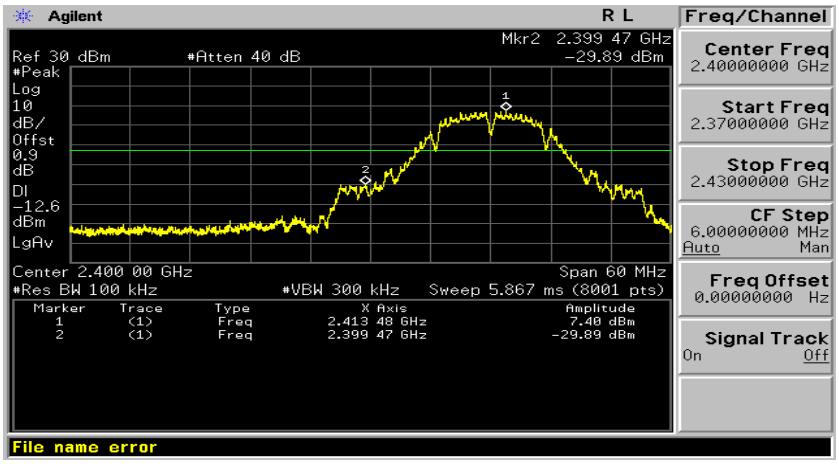
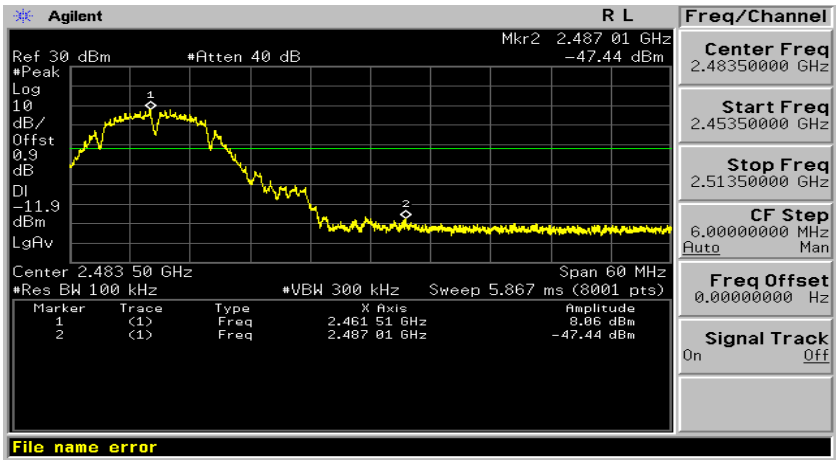
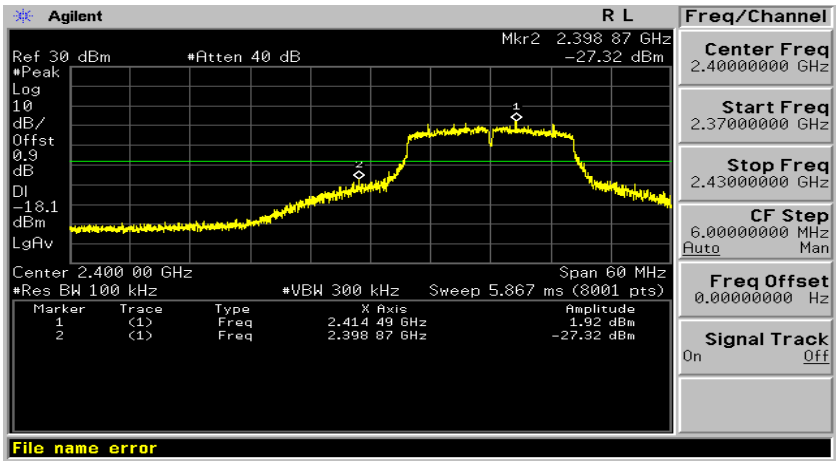
Margin= Emission Level -Limit.

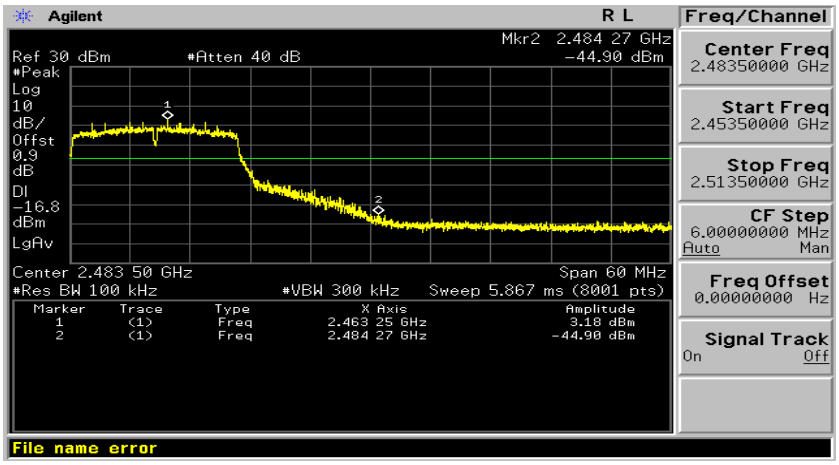
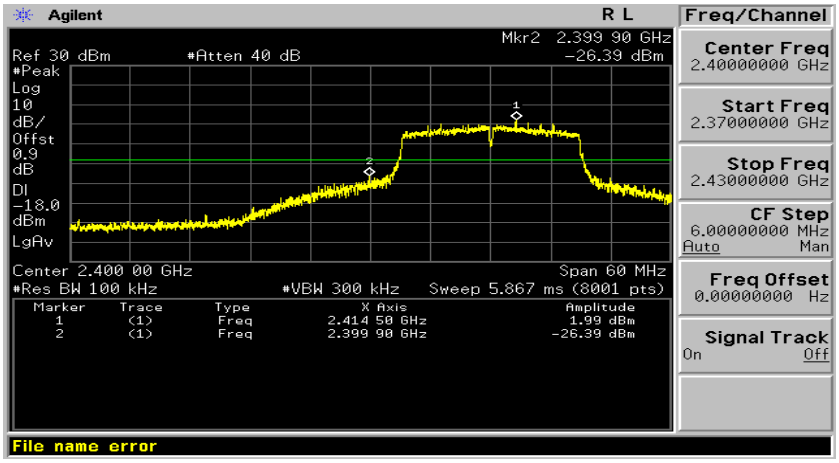
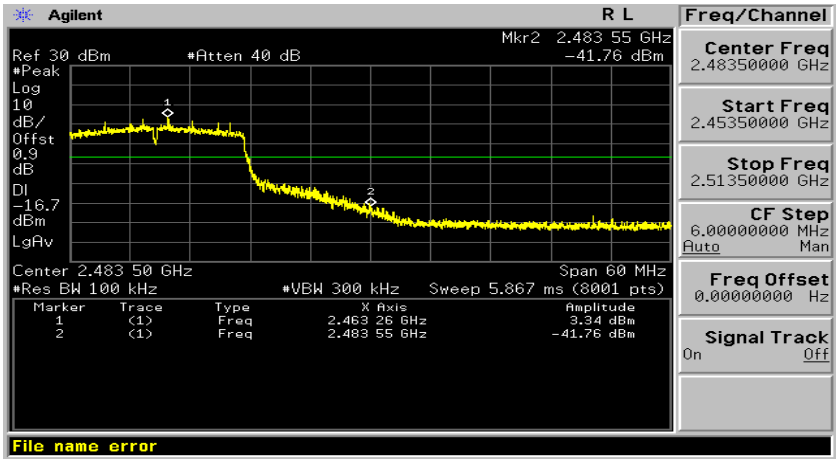
The “Factor” value can be calculated automatically by software of measurement system.

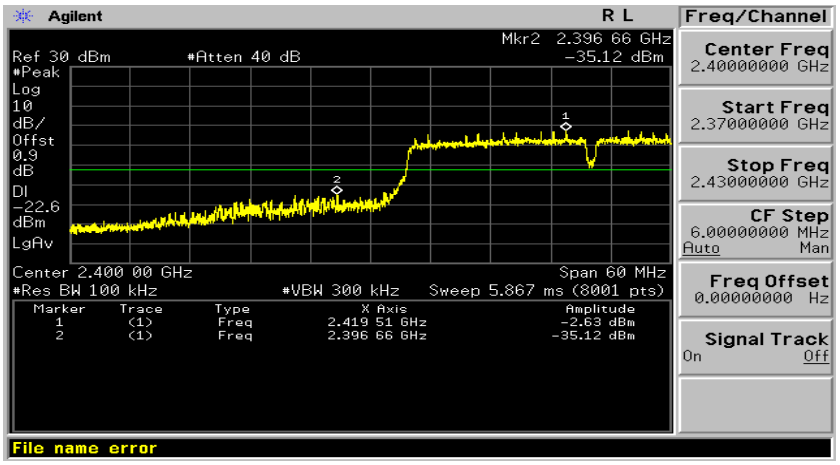
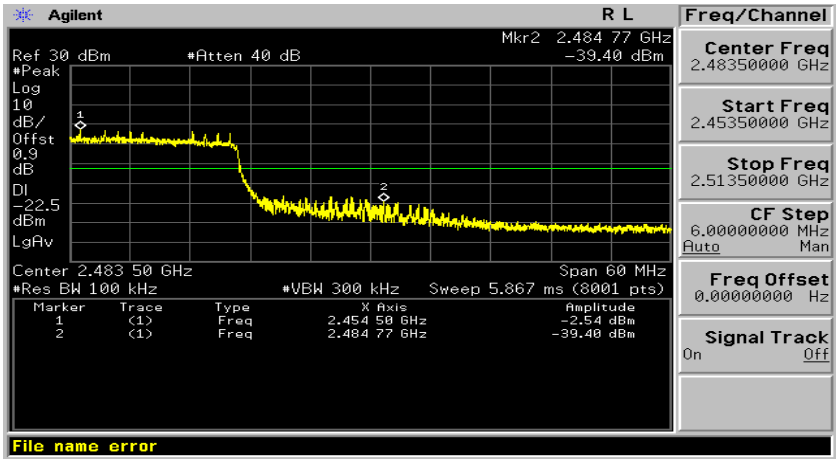
12.4. Conducted Test Result

Mode	Channel	Carrier Power[dBm]	Max.Spurious Level [dBm]	Limit [dBm]	Verdict
11B	LCH	7.4	-29.89	-12.6	PASS
11B	HCH	8.06	-47.44	-11.94	PASS
11G	LCH	1.92	-27.32	-18.08	PASS
11G	HCH	3.18	-44.9	-16.82	PASS
11N20SISO	LCH	1.99	-26.39	-18.01	PASS
11N20SISO	HCH	3.34	-41.76	-16.66	PASS
11N40SISO	LCH	-2.64	-35.12	-22.64	PASS
11N40SISO	HCH	-2.54	-39.4	-22.54	PASS

Test Graph

Graphs	
11B/LCH	
11B/HCH	
11G/LCH	

11G/HCH	
11N20SISO/LCH	
11N20SISO/HCH	

11N40SISO/LCH	
11N40SISO/HCH	

13. FCC LINE CONDUCTED EMISSION TEST

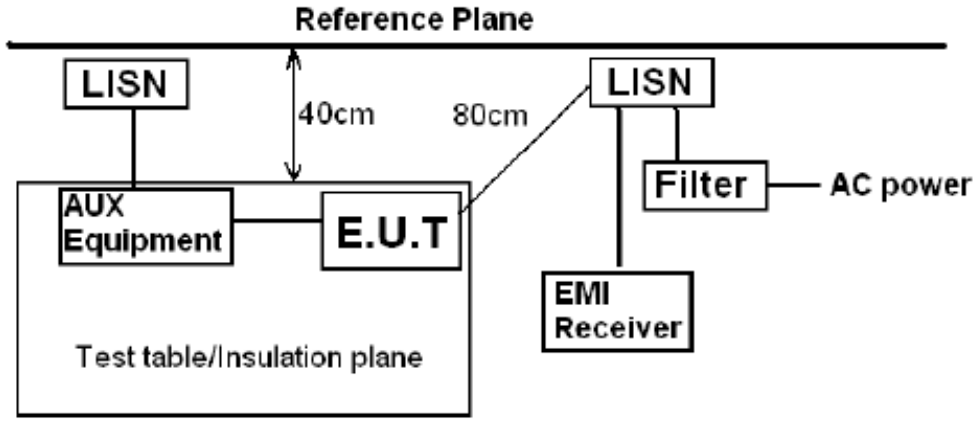
13.1. LIMITS OF LINE CONDUCTED EMISSION TEST

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.

13.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST



Remark
E.U.T: Equipment Under Test
LISN: Line Impedance Stabilization Network
Test table height=0.8m

13.3. 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 C63.10 (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 C63.10.
3. All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4. All support equipments received AC120V/60Hz power from a LISN, if any.
5. The EUT received 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.

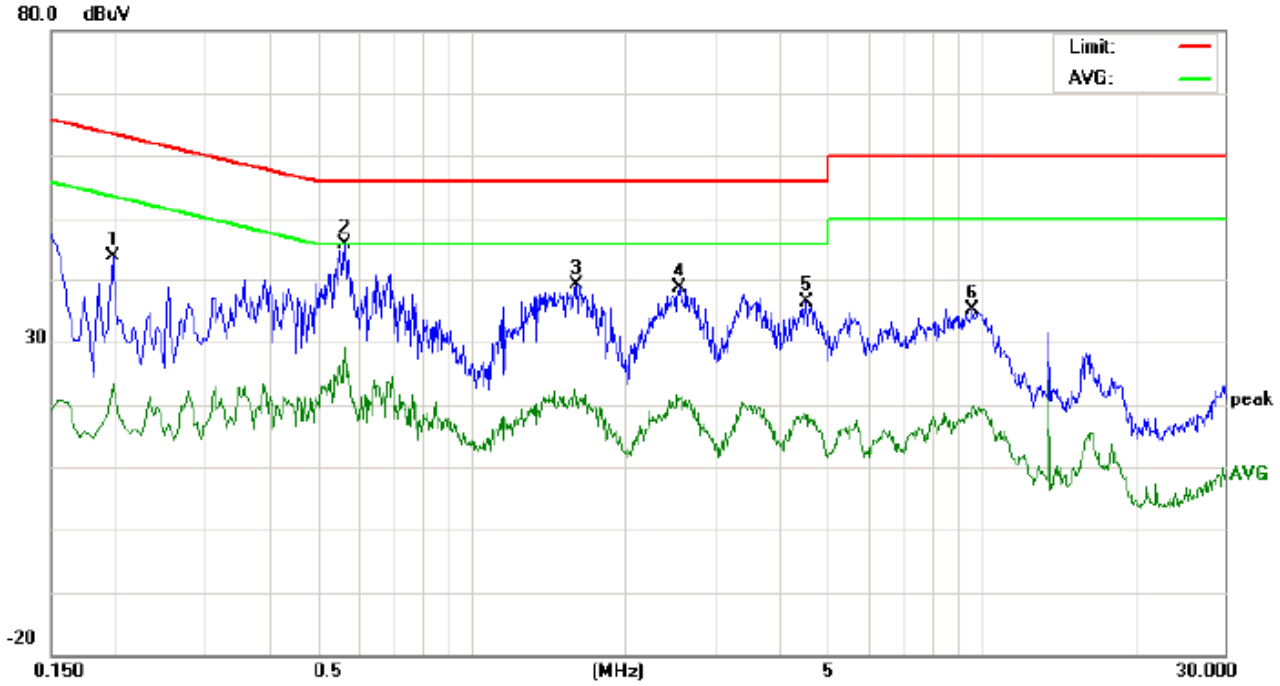
Then, the EUT configuration and cable configuration of the above highest emission level were recorded for reference of final testing.

13.4. 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.

13.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

LINE CONDUCTED EMISSION TEST LINE 1-L



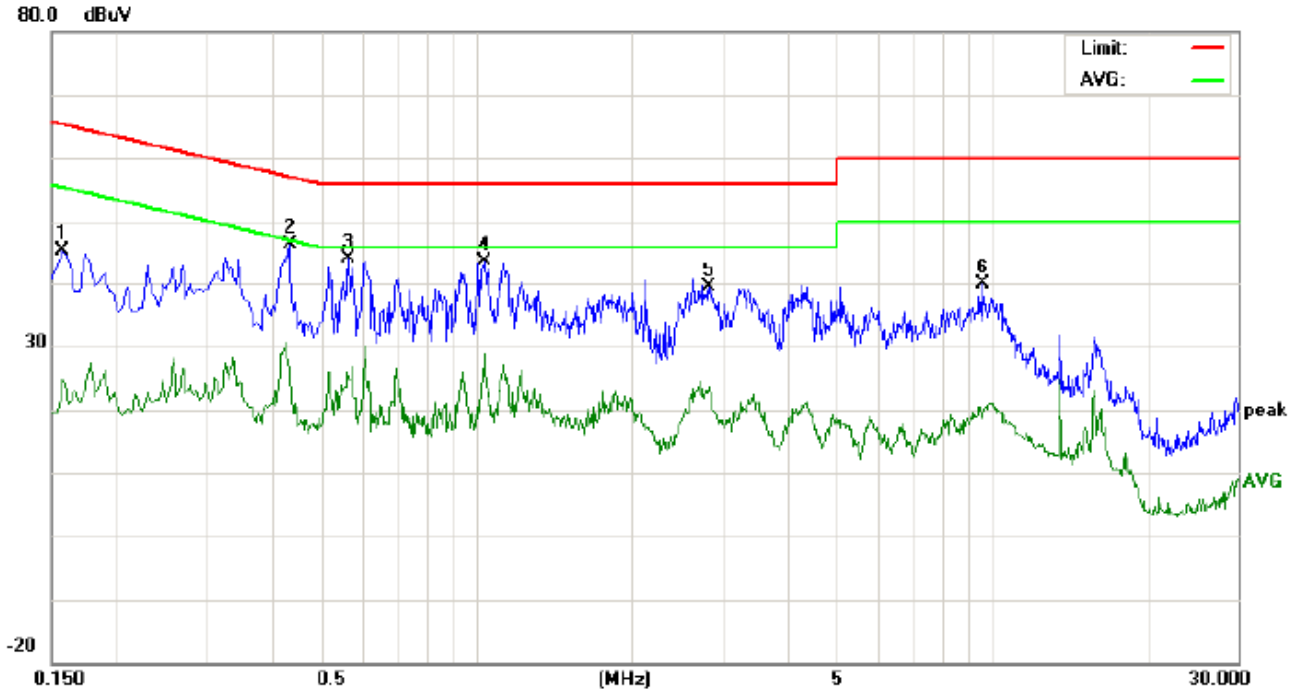
Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: Normal Operation(WIFI)
Note:

Phase: *L1*
Power: AC 120V/60Hz

Temperature: 22.5
Humidity: 54.8 %

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	0.1980	33.60		13.12	10.21	43.81		23.33	63.69	53.69	-19.88	-30.36	P	
2	0.5660	35.58		18.90	10.34	45.92		29.24	56.00	46.00	-10.08	-16.76	P	
3	1.6060	28.83		10.24	10.35	39.18		20.59	56.00	46.00	-16.82	-25.41	P	
4	2.5579	28.19		10.34	10.44	38.63		20.78	56.00	46.00	-17.37	-25.22	P	
5	4.5300	26.08		8.14	10.21	36.29		18.35	56.00	46.00	-19.71	-27.65	P	
6	9.6340	24.90		8.98	10.30	35.20		19.28	60.00	50.00	-24.80	-30.72	P	

Line Conducted Emission Test Line 2-N



Site: Conduction
Limit: FCC Class B Conduction(QP)
EUT: Hisign Biometric Mobile Device
M/N: HX-I6150CT
Mode: Normal Operation(WIFI)
Note:

Phase: *N*
Power: AC 120V/60Hz

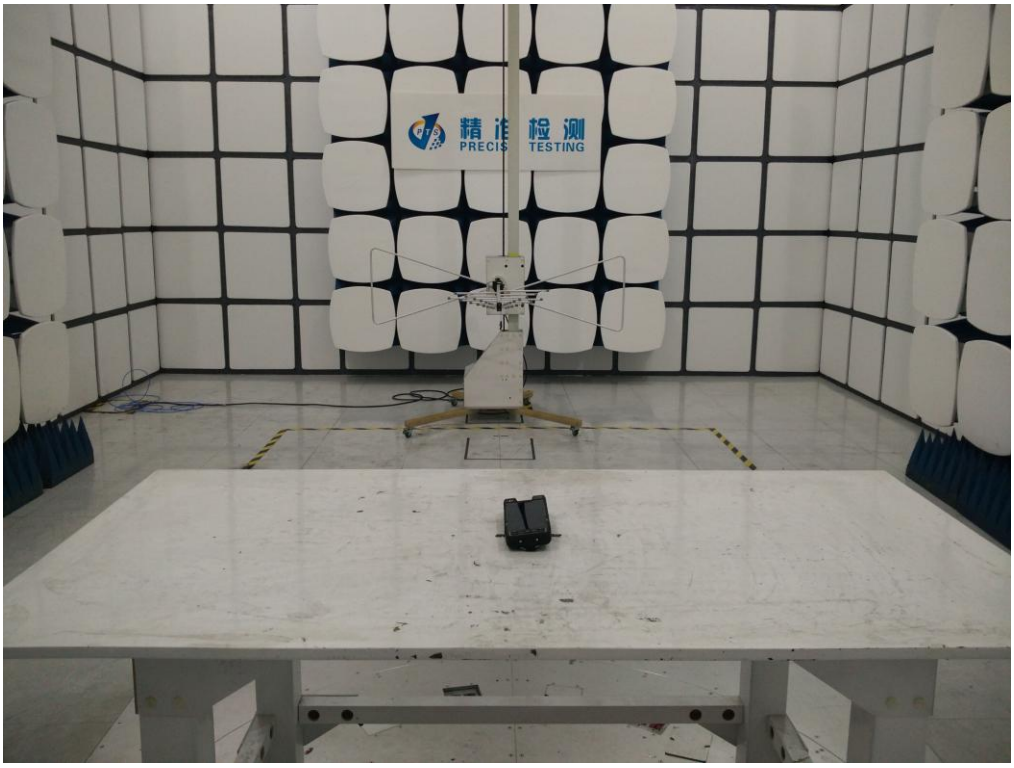
Temperature: 22.5
Humidity: 54.8 %

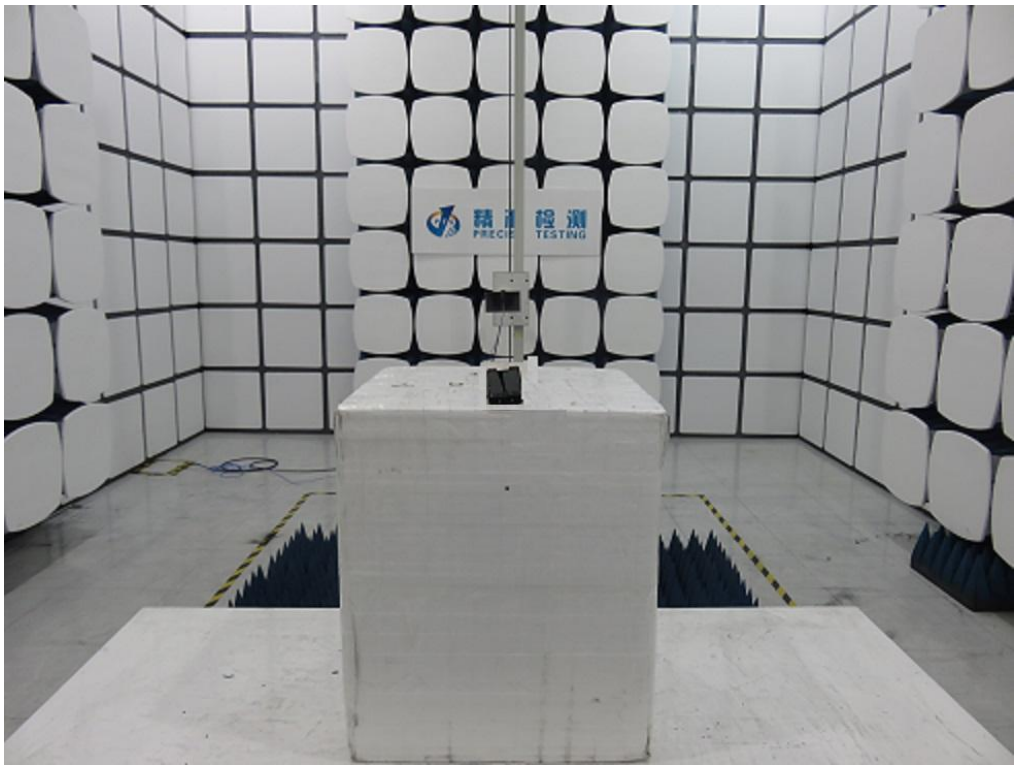
No.	Freq. (MHz)	Reading_Level (dBuV)			Correct Factor	Measurement (dBuV)			Limit (dBuV)		Margin (dB)		P/F	Comment
		Peak	QP	AVG	dB	Peak	QP	AVG	QP	AVG	QP	AVG		
1	0.1590	30.38		9.47	10.17	40.55		19.64	65.51	55.51	-24.96	-35.87	P	
2	0.4340	35.92		15.80	10.35	46.27		26.15	57.18	47.18	-10.91	-21.03	P	
3	0.5660	33.70		14.84	10.34	44.04		25.18	56.00	46.00	-11.96	-20.82	P	
4	1.0420	33.37		16.25	10.37	43.74		26.62	56.00	46.00	-12.26	-19.38	P	
5	2.8340	28.86		13.17	10.51	39.37		23.68	56.00	46.00	-16.63	-22.32	P	
6	9.5700	29.47		8.20	10.34	39.81		18.54	60.00	50.00	-20.19	-31.46	P	

APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC LINE CONDUCTED EMISSION TEST SETUP

FCC RADIATED EMISSION TEST SETUP




TESTING

APPENDIX B: PHOTOGRAPHS OF EUT

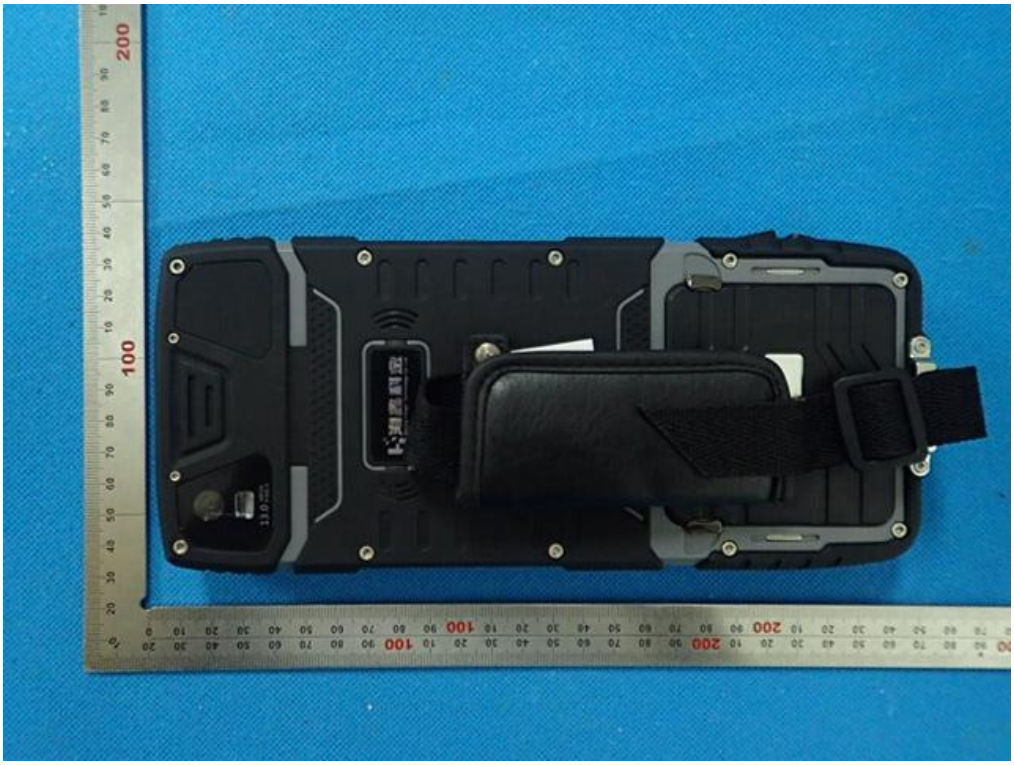
All VIEW OF EUT

TOP VIEW OF EUT

BOTTOM VIEW OF EUT

FRONT VIEW OF EUT

BACK VIEW OF EUT

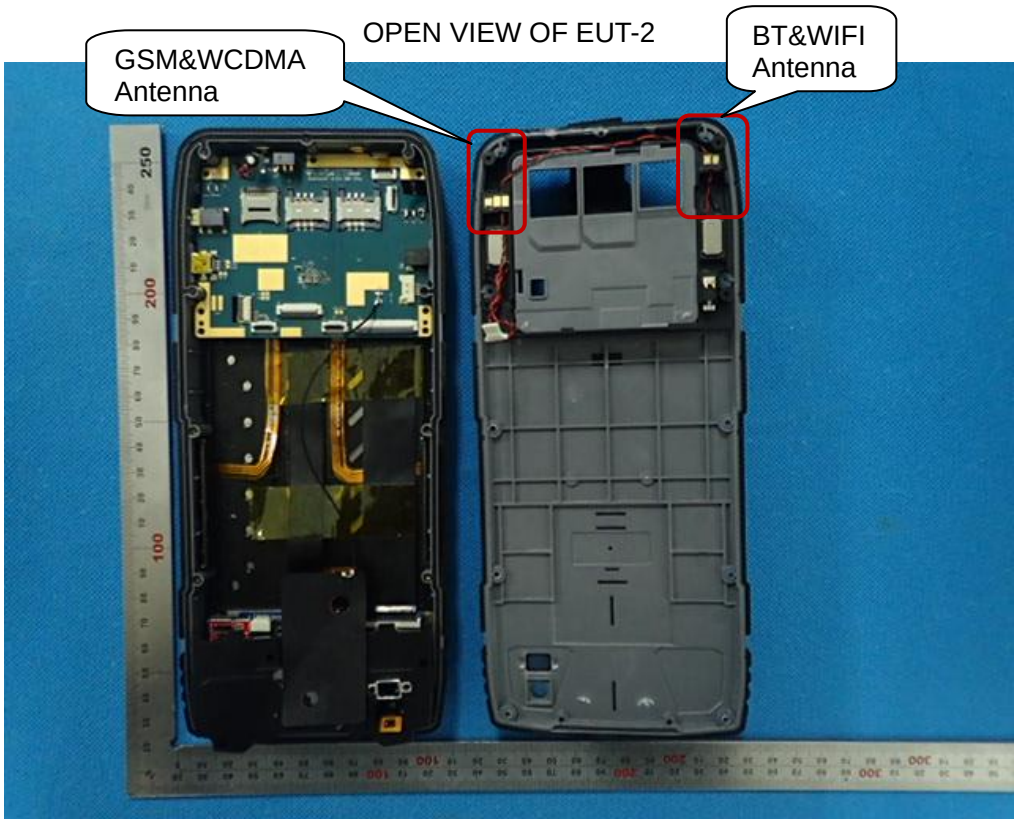


LEFT VIEW OF EUT

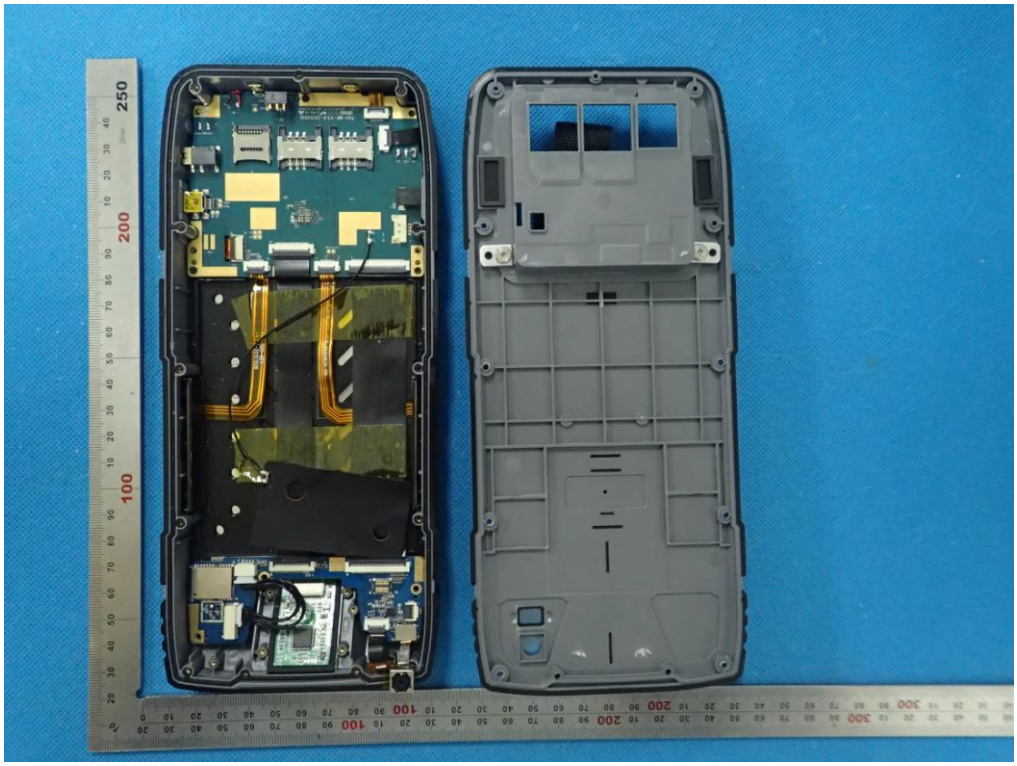
RIGHT VIEW OF EUT

OPEN VIEW OF EUT-1

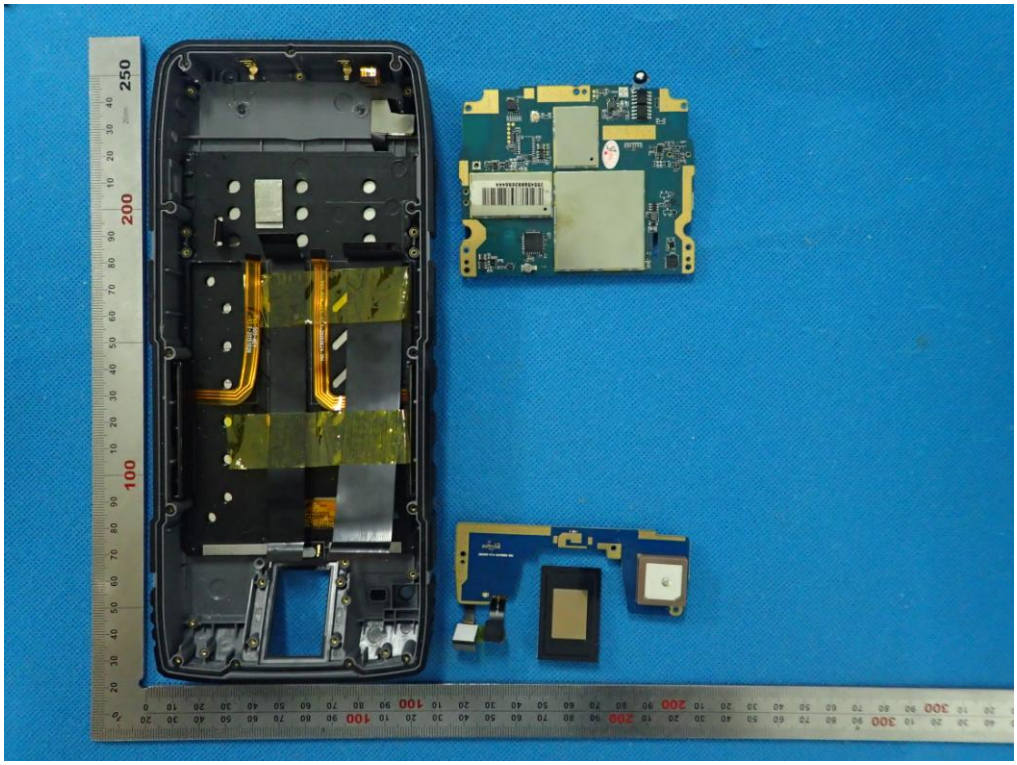
OPEN VIEW OF EUT-2



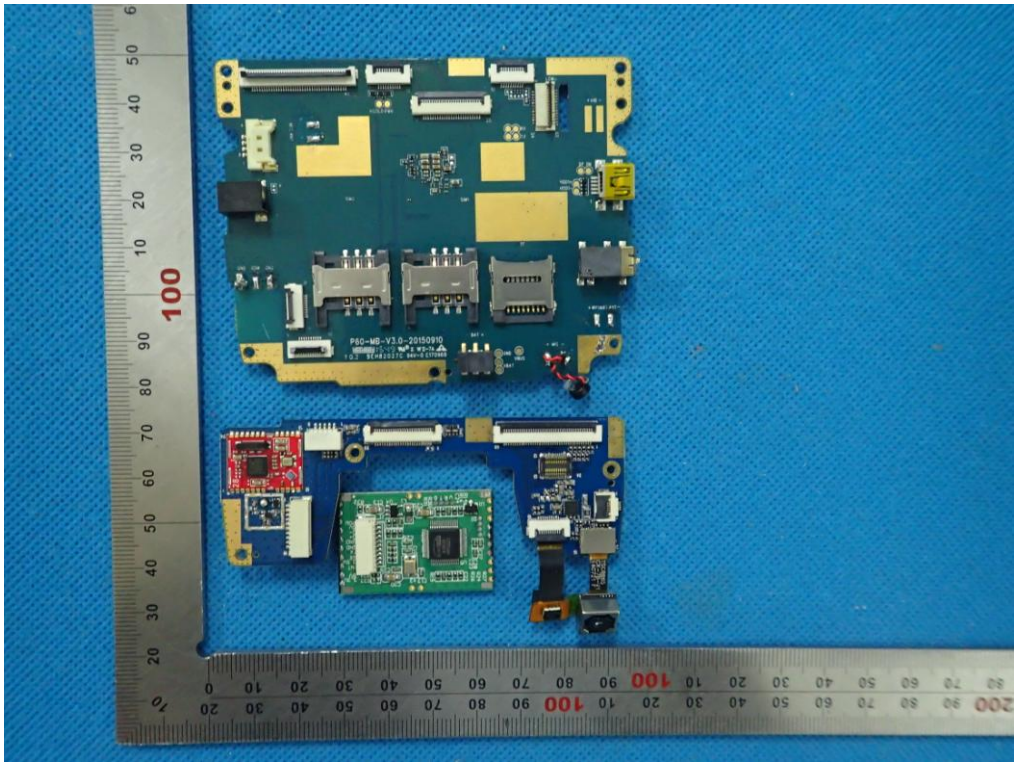
OPEN VIEW OF EUT-3



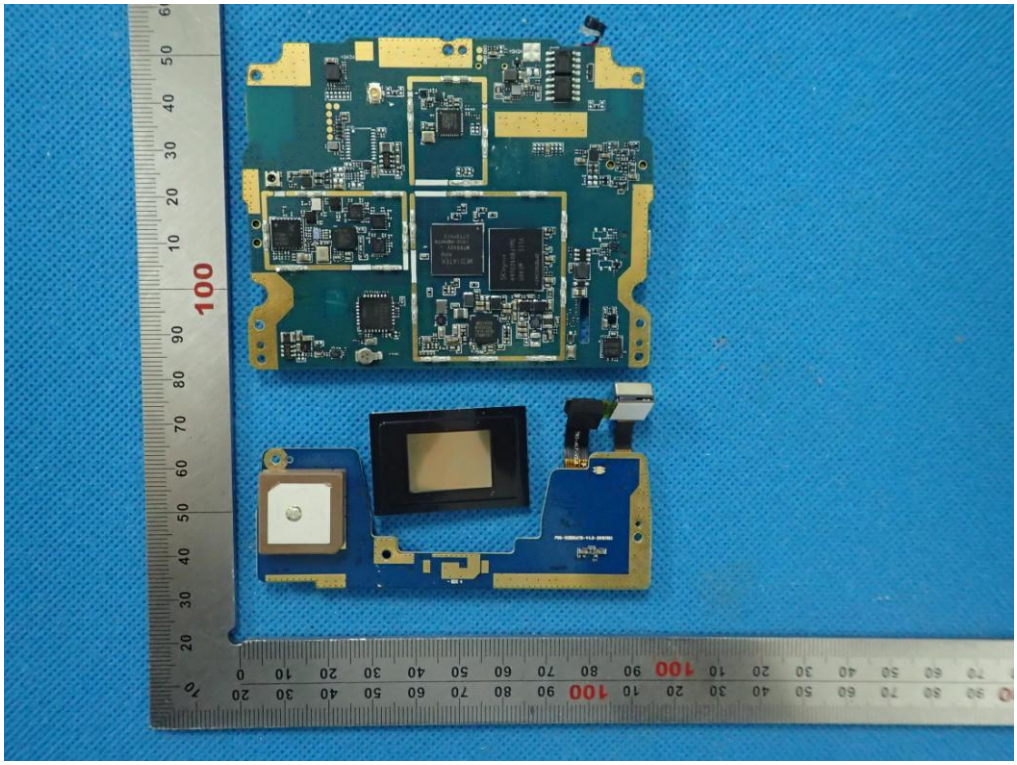
OPEN VIEW OF EUT-4



INTERNAL VIEW OF EUT-1



INTERNAL VIEW OF EUT-2



----END OF REPORT----