

6. MAXIMUM CONDUCTED OUTPUT POWER SPECTRAL DENSITY

6.1 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-1 in the ANSI C63.10 (2013) item 11.10 was used in this testing.

6.2 TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

Refer To Section 4.2.

6.3 LIMITS AND MEASUREMENT RESULT

TEST ITEM	POWER SPECTRAL DENSITY			
TEST MODE	802.11b with data rate 1			

Chain 0

Channel No.	Power density (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	5.994	8	Pass
Middle Channel	5.566	8	Pass
High Channel	6.035	8	Pass

Chain 1

Channel No.	Power density (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	5.647	8	Pass
Middle Channel	5.469	8	Pass
High Channel	5.578	8	Pass



TEST ITEM	POWER SPECTRAL DENSITY				
TEST MODE	802.11g with data rate 6				

Chain 0

Channel No.	Power density (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	1.239	8	Pass
Middle Channel	1.242	8	Pass
High Channel	1.335	8	Pass

Chain 1

Channel No.	Power density (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	1.083	8	Pass
Middle Channel	1.100	8	Pass
High Channel	1.187	8	Pass

TEST ITEM	POWER SPECTRAL DENSITY			
TEST MODE	802.11n 20 with data rate 6.5			

Channel No.	Power density Chain 0 (dBm/20kHz)	Power density Chain 1 (dBm/20kHz)	Power density Total (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	1.885	1.578	4.745	8	Pass
Middle Channel	1.671	1.498	4.596	8	Pass
High Channel	1.631	1.525	4.589	8	Pass

TEST ITEM	POWER SPECTRAL DENSITY
TEST MODE	802.11n 40 with data rate 13.5

Channel No.	Power density Chain 0 (dBm/20kHz)	Power density Chain 1 (dBm/20kHz)	Power density Total (dBm/20kHz)	Limit (dBm/3kHz)	Result
Low Channel	-1.550	-1.803	1.336	8	Pass
Middle Channel	-1.322	-1.587	1.558	8	Pass
High Channel	-1.515	-2.045	1.238	8	Pass





802.11b TEST RESULT AT CHAIN 0 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL







TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

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802.11b TEST RESULT AT CHAIN 1 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL







TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

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Keysight Spectrum Analyzer - Swept SA TYPE NNNN Peak Search Avg Type: RMS Avg|Hold:>100/100 Trig: Free Run Atten: 30 dB Mkr1 2.461 434 9 GHz 5.578 dBm Ref 20.00 dBm

TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



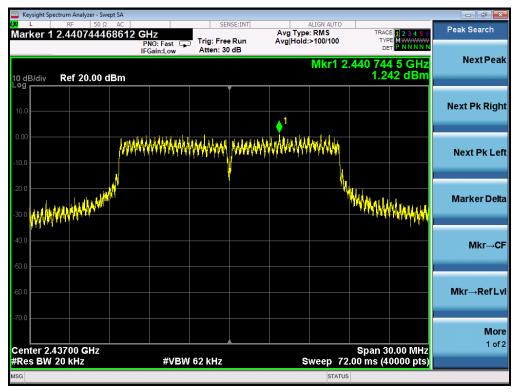




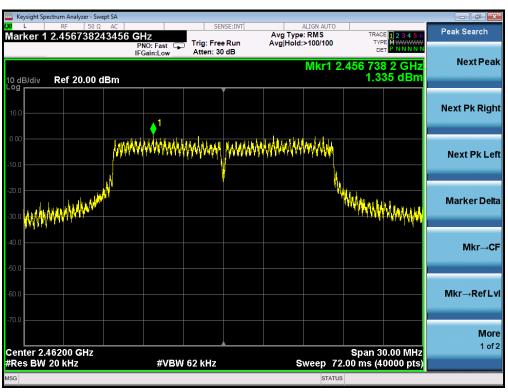
802.11g TEST RESULT AT CHAIN 0 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



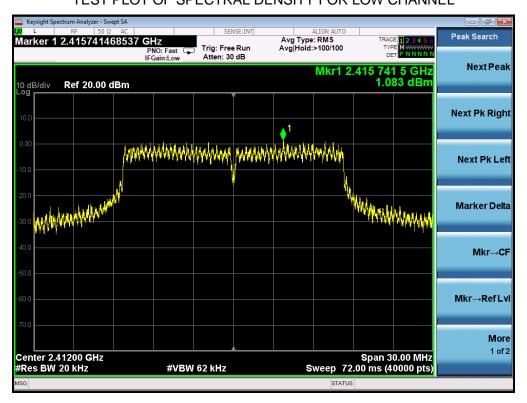




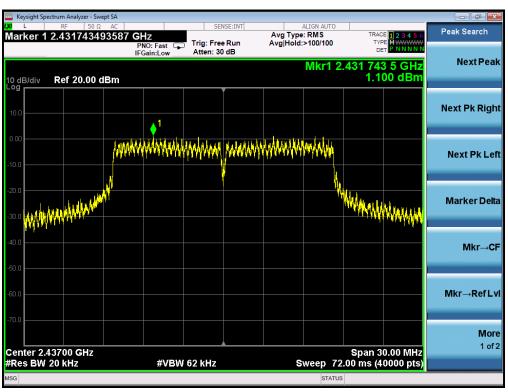
TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

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802.11g TEST RESULT AT CHAIN 1 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



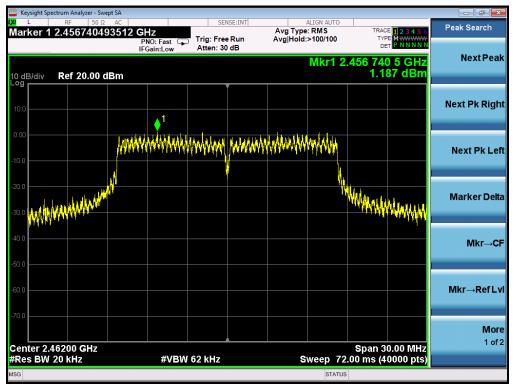




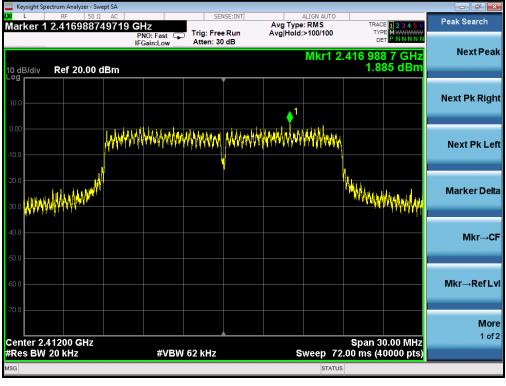
TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



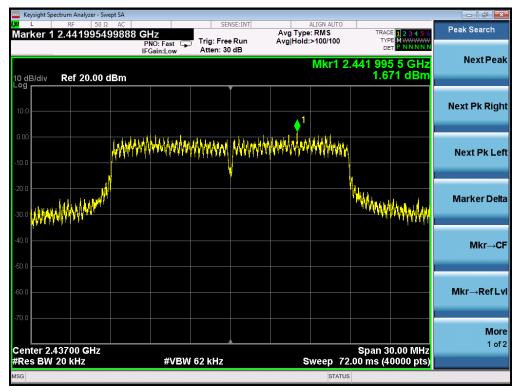




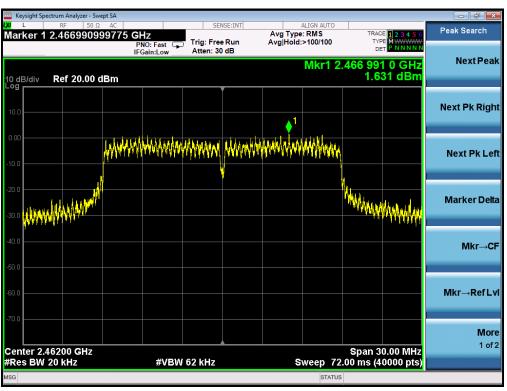
802.11n 20 TEST RESULT AT CHAIN 0 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



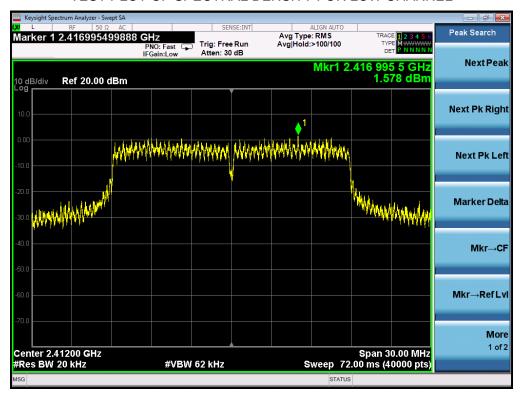




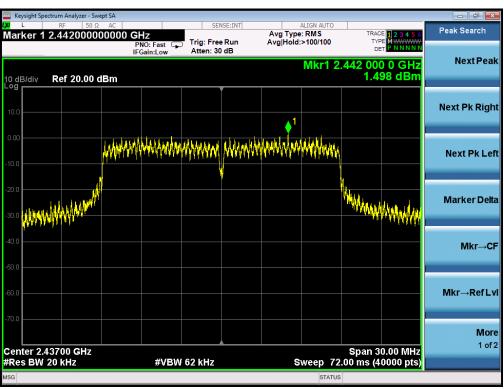
TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

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802.11n 20 TEST RESULT AT CHAIN 1 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL



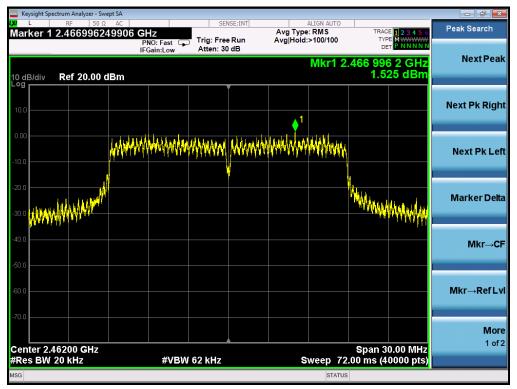




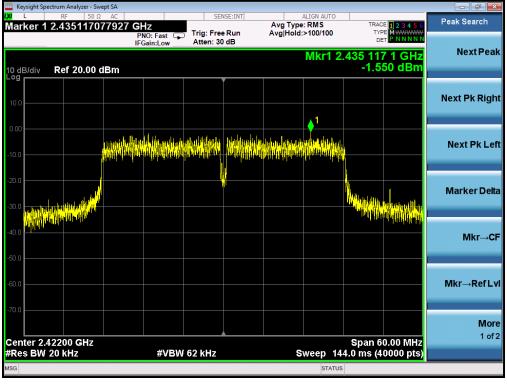
TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL



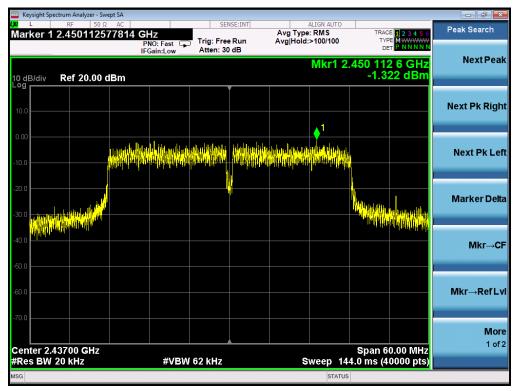




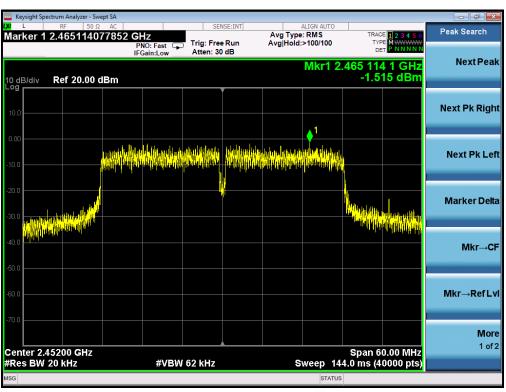
802.11n 40 TEST RESULT AT CHAIN 0 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL



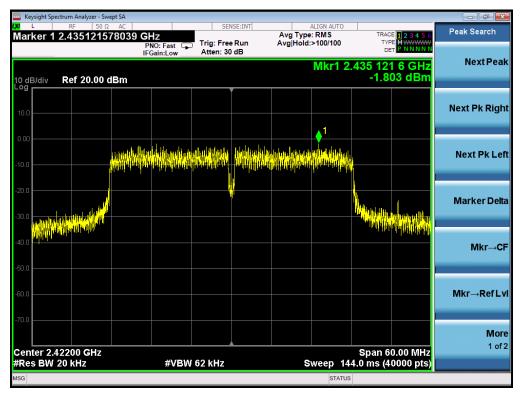




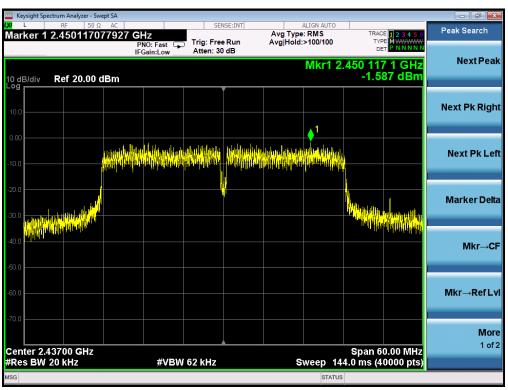
TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

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802.11n 40 TEST RESULT AT CHAIN 1 TEST PLOT OF SPECTRAL DENSITY FOR LOW CHANNEL







TEST PLOT OF SPECTRAL DENSITY FOR MIDDLE CHANNEL

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TEST PLOT OF SPECTRAL DENSITY FOR HIGH CHANNEL

🔤 Keysight Spe	ectrum Analyzer - Swept SA								
<mark>x</mark> ⊿ Marker 1	RF 50 Ω AC			SE:INT	Avg Type		TRAC	E 1 2 3 4 5 6	Peak Search
		PNO: Fast 🖵 IFGain:Low	Trig: Free Atten: 30		Avg Hold:	>100/100	TYP		
						Mkr1 2	.465 118	36GHz	Next Peak
10 dB/div Log	Ref 20.00 dBn	n					-2.04	45 dBm	
10.0									Next Pk Right
						<u>, 1</u>			
0.00		an da a				•			
-10.0	1010	n hain dhin dhu dhu an bh	in di Ma						Next Pk Left
-10.0	14th	ala di manthalatata	linanktati. n. l	la tultihised	AN A	for a suboli s			
-20.0	<mark> </mark>								
							n Milles du	1	Marker Delta
-30.0	a hulling a dia m								
-40.0							in 1940		
40.0									Mkr→CF
-50.0									
-60.0									Mkr→RefLvi
-70.0									
									More
Center 2/	15200 GHz						Snan 6	0.00 MHz	1 of 2
#Res BW		#VBW	62 kHz*		S	weep 18	6.7 ms (4	0000 pts)	
MSG						STATUS			



7. RADIATED EMISSION

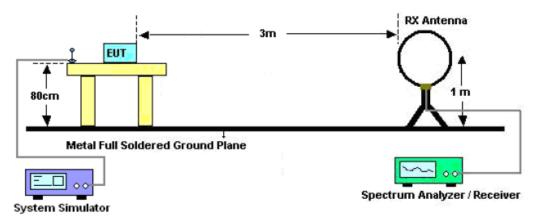
7.1. MEASUREMENT PROCEDURE

- 1. The EUT was placed on the top of the turntable 0.8 or 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.
- 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. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- 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.

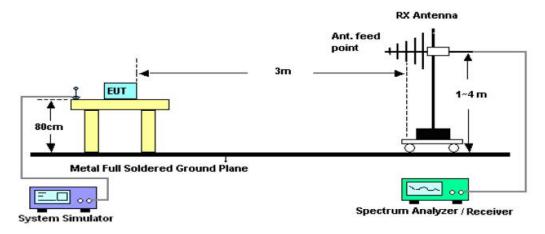


7.2. TEST SETUP

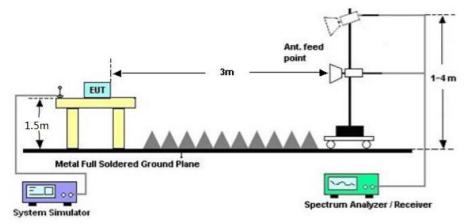
Radiated Emission Test-Setup Frequency Below 30MHz



RADIATED EMISSION TEST SETUP 30MHz-1000MHz



RADIATED EMISSION TEST SETUP ABOVE 1000MHz





7.3. 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.

7.4. TEST RESULT

RADIATED EMISSION BELOW 30MHZ

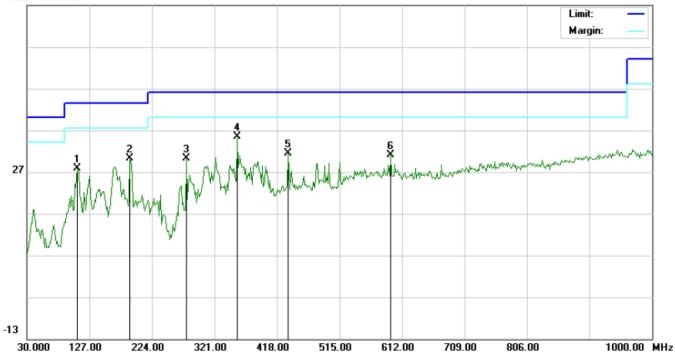
No emission found between lowest internal used/generated frequencies to 30MHz.



RADIATED EMISSION BELOW 1GHZ

EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal





No.	Mk.	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		107.5999	19.05	8.72	27.77	43.50	-15.73	peak	
2		190.0500	18.64	11.54	30.18	43.50	-13.32	peak	
3		277.3500	18.57	11.55	30.12	46.00	-15.88	peak	
4	*	356.5667	16.57	18.78	35.35	46.00	-10.65	peak	
5		435.7832	11.25	20.16	31.41	46.00	-14.59	peak	
6		594.2166	7.43	23.59	31.02	46.00	-14.98	peak	



EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical

66.9 dBuV/m



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Over		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1	*	118.9167	28.41	6.32	34.73	43.50	-8.77	peak	
2		154.4832	19.06	15.29	34.35	43.50	-9.15	peak	
3		356.5667	18.08	18.78	36.86	46.00	-9.14	peak	
4		388.8999	18.19	19.00	37.19	46.00	-8.81	peak	
5		515.0000	9.39	21.53	30.92	46.00	-15.08	peak	
6		945.0333	1.13	29.86	30.99	46.00	-15.01	peak	

RESULT: PASS

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

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

3. All test modes had been pre-tested. The 802.11b at low channel is the worst case and recorded in the report.



RADIATED EMISSION ABOVE 1GHZ

EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type				
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value rype				
4824.119	44.26	3.72	47.98	74	-26.02	peak				
4824.104	41.41	3.72	45.13	54	-8.87	AVG				
7236.116	43.52	8.15	51.67	74	-22.33	peak				
7236.109	40.29	8.15	48.44	54	-5.56	AVG				
Remark:	Remark:									
Factor = Ante	enna Factor + Ca	able Loss – Pr	e-amplifier.							

EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2412MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value rype
4824.118	45.11	3.72	48.83	74	-25.17	peak
4824.043	40.35	3.72	44.07	54	-9.93	AVG
7236.079	44.64	8.15	52.79	74	-21.21	peak
7236.023	39.81	8.15	47.96	54	-6.04	AVG
Remark:						
actor = Ante	enna Factor + Ca	able Loss – I	Pre-amplifier.			



EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type				
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type				
4874.082	44.11	3.75	47.86	74	-26.14	peak				
4874.111	40.83	3.75	44.58	54	-9.42	AVG				
7311.060	42.86	8.16	51.02	74	-22.98	peak				
7311.114	39.5	8.16	47.66	54	-6.34	AVG				
Remark:										
actor = Ante	enna Factor + Ca	able Loss – F	Pre-amplifier.							

EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2437MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4874.051	47.12	3.75	50.87	74	-23.13	peak
4874.053	42.23	3.75	45.98	54	-8.02	AVG
7311.119	43.34	8.16	51.5	74	-22.5	peak
7311.041	37.81	8.16	45.97	54	-8.03	AVG
Remark:						
-actor = Ante	enna Factor + Ca	able Loss – I	Pre-amplifier.			



EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Horizontal

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value rype
4924.086	46.86	3.81	50.67	74	-23.33	peak
4924.071	42.52	3.81	46.33	54	-7.67	AVG
7386.050	45.37	8.19	53.56	74	-20.44	peak
7386.110	40.19	8.19	48.38	54	-5.62	AVG
Remark:						
Factor = Ante	enna Factor + C	able Loss – P	re-amplifier.			

EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with date rate 1 2462MHZ	Antenna	Vertical

Frequency	Meter Reading	Factor	Emission Level	Limits	Margin	Value Type
(MHz)	(dBµV)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	value Type
4924.073	44.83	3.81	48.64	74	-25.36	peak
4924.089	40.54	3.81	44.35	54	-9.65	AVG
7386.033	42.84	8.19	51.03	74	-22.97	peak
7386.035	36.39	8.19	44.58	54	-9.42	AVG
Remark:						
Factor = Ante	enna Factor + Ca	able Loss – I	Pre-amplifier.			

RESULT: PASS

Note:

Other emissions from 1G to 25 GHz are considered as ambient noise. No recording in the test report. Factor = Antenna Factor + Cable loss - Amplifier gain, Over=Measure-Limit.

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

All test modes had been pre-tested. The 802.11b mode is the worst case and recorded in the report.



8. BAND EDGE EMISSION

8.1. MEASUREMENT PROCEDURE

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

8.2. TEST SET-UP

same as 7.2

Note:

1. Factor=Antenna Factor + Cable loss - Amplifier gain. Field Strength=Factor + Reading level

2. The factor had been edited in the "Input Correction" of the Spectrum Analyzer. So the Amplitude of test plots is equal to Reading level plus the Factor in dB. Use the A dB(μ V) to represent the Amplitude. Use the F dB(μ V/m) to represent the Field Strength. So A=F.



8.3. TEST RESULT

EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Horizontal



ΡK

AV

arker 1 2.4	50 Ω AC 13065000000	GHz PNO: Fast IFGain:Low	Trig: Free Ru #Atten: 20 dB	Avg n Avg	ALIGN AUTO Type: RMS Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE A WWWW DET A N N N N N	Peak Search
0 dB/div Re	f 106.00 dBµV				Mkr1	2.413 065 GHz 100.695 dBµV	Next Pea
96.0 86.0					1		Next Pk Righ
66.0 56.0 46.0		\$ ²					Next Pk Le
36.0							Marker Del
tart 2.37000 Res BW 1.0 I	VIHz	#VB	W 3.0 MHz*	FUNCTION	Sweep 1.	Stop 2.42500 GHz 000 ms (1001 pts)	Mkr→C
1 N 1 f 2 N 1 f 3 - - - 4 - - - 5 - - -	2.413	065 GHz 000 GHz	100.683 dBµV 39.099 dBµV				Mkr→RefL
6 7 8 9 0							Мо 1 от



EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2412MHZ	Antenna	Vertical



AV





EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Horizontal



AV





EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11b with data rate 1 2462MHZ	Antenna	Vertical



AV





EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Horizontal

ght Spectrum Analyzer - Swept S Marker 1 2.413285000000 GHz PN0: Fest IFGaint.ow #Atten: 20 dB Aug Type: Log-Pwr Avg Hold:>100/100 Peak Search TYPE NNNN NextPeal Mkr1 2.413 285 GHz 105.015 dBµ\ Ref 106.00 dBµV dBidi Next Pk Right \Diamond^2 Next Pk Left Marker Delta Stop 2.42500 GHz Sweep 1.000 ms (1001 pts) Start 2.37000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Mkr→CF 105.015 dBµV 56.404 dBµV 2.413 285 GHz 2.390 000 GHz Mkr→RefLv More 1 of 2 STATUS

ΡK







EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2412MHZ	Antenna	Vertical

ght Spectrum Analyzer - Swept S Reyalght Spectrum rumuyas of AC RF 50 0 AC Marker 1 2.413340000000 GHz PNO: Fast IFGainLow #Atten: 20 dB Aug Type: Log-Pwr Avg Hold:>100/100 Peak Search TYPE MWWWW DET PNNNN NextPeal Mkr1 2.413 340 GHz 103.236 dBµ\ Ref 106.00 dBµV dBidi Next Pk Right Next Pk Left Marker Delta Stop 2.42500 GHz Sweep 1.000 ms (1001 pts) Start 2.37000 GHz #Res BW 1.0 MHz #VBW 3.0 MHz Mkr→CF 2.413 340 GHz 2.390 000 GHz 103.236 dBµV 55.418 dBµV Mkr→RefLv More 1 of 2 STATUS

ΡK







EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Horizontal



AV





EUT	300M Mini Router	Model Name VIXMINI	
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11g with data rate 6 2462MHZ	Antenna	Vertical



AV





EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Horizontal

PK









EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2412MHZ	Antenna	Vertical



AV





EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Horizontal



AV





EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 20 with data rate 6.5 2462MHZ	Antenna	Vertical









EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40with data rate 13.5 2422MHZ	Antenna	Horizontal



AV





EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2422MHZ	Antenna	Vertical

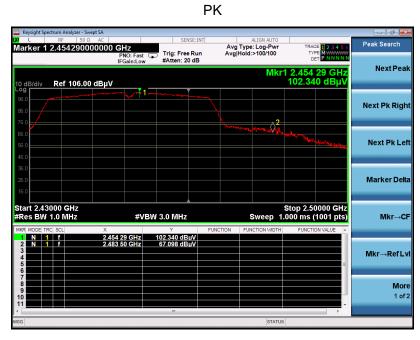


AV

Keysight Spectrum Analyzer - Sw					_ 0 <mark>×</mark>
Marker 1 2.4242250	00000 GHz	SENSE:INT	ALIGN AUTO Avg Type: RMS Avg Hold:>100/100	TRACE 1 2 3 4 5 6	Peak Search
10 dB/div Ref 106.00	PNO: Fast IFGain:Low	#Atten: 20 dB		2.424 225 GHz 91.495 dBµV	NextPeak
86.0 76.0			1		Next Pk Righ
66.0	2 				Next Pk Let
36.0 26.0 16.0					Marker Delt
Start 2.37000 GHz #Res BW 1.0 MHz	х		Sweep 1	Stop 2.44500 GHz .000 ms (1001 pts)	Mkr→C
1 N 1 f 2 N 1 f 3 4 5 6	2.424 225 GHz 2.390 000 GHz	91.508 dBµV 50.680 dBµV		=	Mkr→RefLv
7 8 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9					Mor 1 of
MSG		m	STATUS	3	



EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40with data rate 13.5 2452MHZ	Antenna	Horizontal





	000000 GHz PNO: Fast IFGain:Low	Trig: Free Run #Atten: 20 dB	Avg Type: RMS Avg Hold:>100/100	TRACE 1 2 3 4 5 6 TYPE A WWWWW DET A NNNNN	Peak Search
0 dB/div Ref 106.0	0 dBµV		Mkr	2.454 01 GHz 89.383 dBµV	NextPea
og 96.0 86.0	1				Next Pk Rig
76.0 36.0 56.0			2 ²		Next Pk Lo
26.0					Marker De
tart 2.43000 GHz Res BW 1.0 MHz		BW 3.0 MHz*	Sweep 1.	Stop 2.50000 GHz 000 ms (1001 pts)	Mkr→0
	× 2.454 01 GHz	Y FL 89.373 dBµV 52.323 dBµV	JNCTION FUNCTION WIDTH	FUNCTION VALUE	
KR MODE TRC SCL 1 N 1 f 2 N 1 f 3 4 5 5 6 6 6 6	2.483 50 GHz			E	Mkr→RefL



EUT	300M Mini Router	Model Name	VIXMINI
Temperature	25°C	Relative Humidity	55.4%
Pressure	960hPa	Test Voltage	Normal Voltage
Test Mode	802.11n 40 with data rate 13.5 2452MHZ	Antenna	Vertical



AV





9. FCC LINE CONDUCTED EMISSION TEST

9.1. LIMITS OF LINE CONDUCTED EMISSION TEST

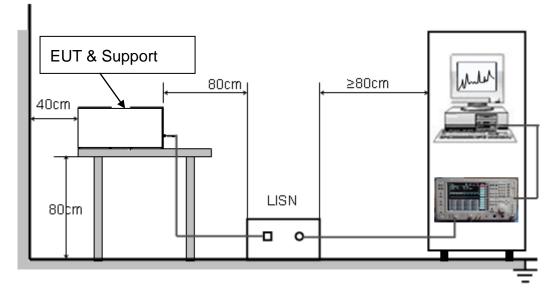
Frequency	Maximum RF Line Voltage		
Frequency	Q.P.(dBuV)	Average(dBuV)	
150kHz~500kHz	66-56	56-46	
500kHz~5MHz	56	46	
5MHz~30MHz	60	50	

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.

9.2. BLOCK DIAGRAM OF LINE CONDUCTED EMISSION TEST





9.3. PRELIMINARY PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 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 DC 5V power from adapter which received AC120V/60Hz power from 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.

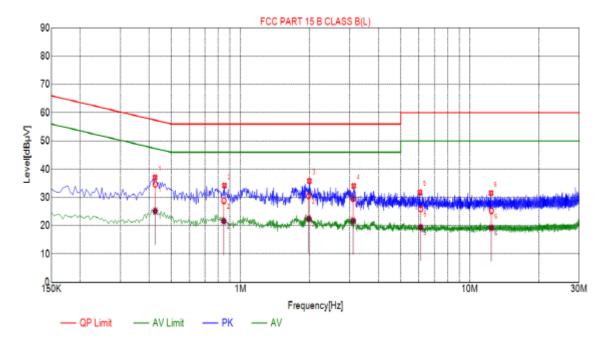
9.4. FINAL PROCEDURE OF LINE CONDUCTED EMISSION TEST

- 1. EUT and support equipment was set up on the test bench as per step 2 of the preliminary test.
- 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.



9.5. TEST RESULT OF LINE CONDUCTED EMISSION TEST

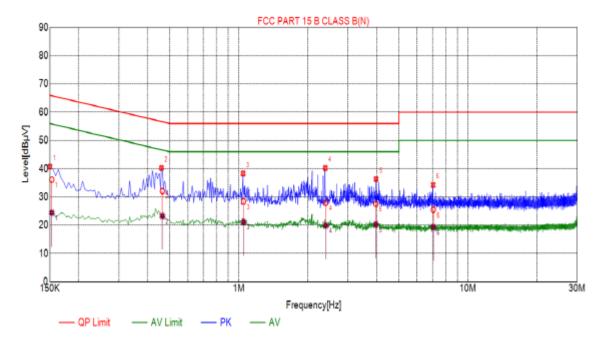
Line Conducted Emission Test Line 1-L



Suspected List									
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Detector			
1	0.4245	37.06	10.04	57.36	20.30	PK			
2	0.8520	34.18	10.06	56.00	21.82	PK			
3	1.9995	35.80	10.14	56.00	20.20	PK			
4	3.1200	34.05	10.23	56.00	21.95	PK			
5	6.0630	31.84	10.23	60.00	28.16	PK			
6	12.3810	31.57	9.98	60.00	28.43	PK			

Final Data List									
NO.	Freq. [MHz]	Factor (dB)	QP Value (dByV)	QP Limit (d8µV)	QP Margin (dB)	AV Value [dBµV]	AV Limit (dBy/V)	AV Margin (dB)	
1	0.4255	10.04	34.66	57.34	22.68	25.21	47.34	22.13	
2	0.8471	10.06	28.83	56.00	27.17	21.63	46.00	24.37	
3	1.9831	10.14	30.47	56.00	25.53	22.43	46.00	23.57	
4	3.0966	10.22	29.51	56.00	26.49	21.82	46.00	24.18	
5	6.1053	10.23	25.89	60.00	34.11	19.48	50.00	30.52	
6	12.4308	9.98	25.26	60.00	34.74	19.27	50.00	30.73	





Line Conducted Emission Test Line 2-N

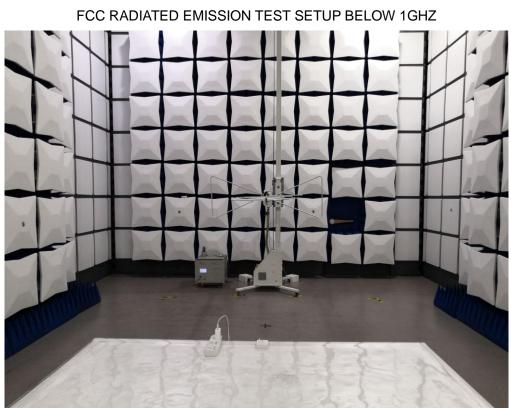
Suspected List								
NO.	Freq. [MHz]	Level [dBµV]	Factor [dB]	Limit [dBµV]	Margin [dB]	Detector		
1	0.1500	40.68	10.03	66.00	25.32	PK		
2	0.4605	40.22	10.04	56.68	16.46	PK		
3	1.0455	38.33	10.07	56.00	17.67	PK		
4	2.3865	40.21	10.18	56.00	15.79	PK		
5	3.9750	36.35	10.25	56.00	19.65	PK		
6	7.0530	34.22	10.20	60.00	25.78	PK		

Final Data List									
ND.	Freq. [MHz]	Factor (dB)	QP Value (dBµV)	QP Limit [d8µV]	QP Margin (dB)	AV Value [dBµV]	AV Limit [dBµV]	AV Margin (dB)	
1	0.1530	10.03	36.13	65.84	29.71	24.42	55.84	31.42	
2	0.4647	10.04	32.07	56.61	24.54	23.26	46.61	23.35	
3	1.0502	10.07	28.45	56.00	27.55	21.16	46.00	24.84	
4	2.4008	10.18	27.94	56.00	28.06	19.93	46.00	26.07	
5	3.9667	10.25	27.54	56.00	28.46	20.25	46.00	25.75	
6	7.0650	10.19	25.45	60.00	34.55	19.30	50.00	30.70	

RESULT: PASS

Note: All the test modes had been tested, the mode 1 was the worst case. Only the data of the worst case would be record in this test report.



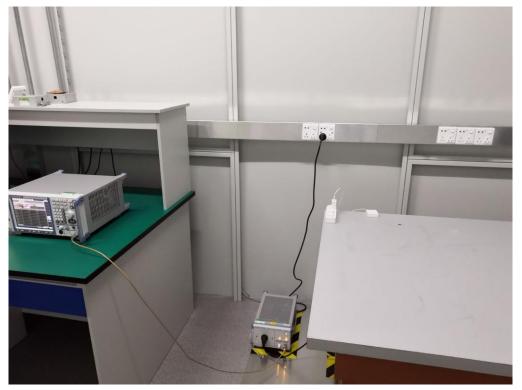


APPENDIX A: PHOTOGRAPHS OF TEST SETUP

FCC RADIATED EMISSION TEST SETUP ABOVE 1GHZ







FCC LINE CONDUCTED EMISSION TEST SETUP

----END OF REPORT----