IEEE 802.11b: CH Low :



CH Mid :







IEEE 802.11g: CH Low :



CH Mid:



CH Hig:

Agilent Spectrum Analyzer - Occupied BW				
Center Freq 2.462000000 GHz #IFGain:Low	Center Freq: 2.462000000 GHz Trig: Free Run Avg Hold: #Atten: 30 dB	ALIGNAUTO Radio S >10/10 Radio E	itd: None Device: BTS	Trace/Detector
Ref Offset 1 dB 10 dB/div Ref 20.00 dBm				
0.00	Amorton purtageating of a of the	- A B		Clear Write
-10.0		W WARAJ LA.		Average
-30.0		لمديمو	www.www.	, in a light
-50.0				Max Hold
Center 2.462 GHz #Res BW 100 kHz	#VBW 300 kHz	S Swee	pan 30 MHz p 2.933 ms	Min Hold
Occupied Bandwidth 16.433 MHz	Total Power	19.1 dBm		Detector Peak▶ Auto <u>Man</u>
Transmit Freq Error -73.672 kHz x dB Bandwidth 15.75 MHz	2 OBW Power 2 x dB	99.00 % -6.00 dB		
MSG		STATUS		

IEEE 802.11n HT20:

CH Low :



CH Mid :



CH High :



IEEE 802.11n/HT40:

CH Low :



CH Mid:

Agilent Spec	trum Analyzer - Occ	upied BW									
Contor	RF 50 Ω		1-7	SEI Center Fi	NSE:INT	0000 GHz	ALIGN AUTO	Radio Std	None	Trac	e/Detector
Center	Freq 2.45700	0000 GF	12 G	Trig: Fre	e Run	Avg Hold:	> 10/10				
		#IF	Gain:Low	#Atten: 3	DdB			Radio Dev	ice: BTS		
10 dB/div	Ref Offset Ref 20.00	1 dB 0 dBm									
Log											
10.0											Clear Write
0.00											
-10.0		tratententent	Manullahal	whentertown	progleybarty	malynnorth	utenhalanherty				
-20.0	/			\	d -						Average
-30.0	/							٩			Average
-40.0								<u> </u>			
-50.0 Ankall e l	and a water of							werty Probably	ha da .		
-60.0	Ame MACA . D. a.							· · · · ·	"HIM MARTING		Max Hold
-70.0											_
Center #Res BV	2.437 GHz V 100 kHz			#VE	3W 300 k	Hz		Spa Swee	n 60 MHz p 5.8 ms		Min Hold
Οςςι	ipied Band	width		т	otal Pow	er	13.7 dBr	n			Detector
		36.05	9 MHz	Z						Auto	Peak▶ <u>Man</u>
Trans	smit Freq Err	or –	2.888 kH	z O	BW Pow	/er	99.00 ⁽	%			
x dB	Bandwidth	3	6.36 MH	z x	dB		-6.00 d	в			
MSG							STATUS				
	the same									_	-

CH High :



10 Band Edge Check

10.1 Test limit

Please refer section15.247

All the lower and upper band-edges emissions appearing within 2310MHz to 2390MHz and 2483.5MHz to 2500MHz restricted frequency bands shall not exceed the limits shown in 15.209, all the other emissions outside operation frequency band 2400MHz to 2483.5MHz and 5725MHz to 5850MHz shall be at least 20dB below the fundamental emissions, or comply with 15.209 limits.

- 10.2 Test Procedure
- 12.2.1 Put the EUT on a 0.8m high table, power on the EUT. Emissions were scanned and measured rotating the EUT to 360 degrees, Find the maximum Emission
- 12.2.2 Check the spurious emissions out of band.
- 12.2.3 RBW 1MHz ,VBW 3MHz ,peak detector for peak value , RBW 1MHz ,VBW 3MHz , RMS detector for AV value.
- 10.3 Test Setup Same as 5.2.2.
- 10.4 Test Result

PASS.

Detailed information please see the following page.

Radiated Method:

Site LAB	Polarization: Vertical	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11b low channel		
Note:		
Engineer Signature:		



No.	Mk.	Freq.	Level	Factor	ment	Limit	wargin		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		2335.070	47.09	-3.34	43.75	74.00	-30.25	peak			
2		2390.000	47.39	-3.40	43.99	74.00	-30.01	peak			
3		2400.000	56.28	-3.41	52.87	74.00	-21.13	peak			
4		2400.000	53.51	-3.41	50.10	54.00	-3.90	AVG			
5	*	2413.500	103.44	-3.41	100.03	74.00	26.03	peak			

- Note:1. *:Maximum data; x:Over limit; !:over margin. 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

Site LAB	Polarization: Horizontal	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11b low channel		
Note:		
Engineer Signature:		



- Note:1. *:Maximum data; x:Over limit; !:over margin.
 - 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

IEEE 802.11b CH High

Site LAB	Polarization: Vertical	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11b high channel		
Note:		
Engineer Signature:		



74.00

74.00

-29.95

-31.90

peak

peak

44.05

42.10

47.43

45.48

-3.38

-3.38

2486.240

2500.000

3

4

Note:1. *:Maximum data; x:Over limit; !:over margin.

 Site LAB
 Polarization:
 Horizontal
 Temperature:
 23.9

 Limit: FCC Part 15_Above 1G_Peak
 Power:
 Humidity:
 46 %

 EUT:
 Distance:
 3m

 M/N:
 Mode:802.11b high channel
 Vote:

 Engineer Signature:
 Vote:
 Vote:



Note:1. *:Maximum data; x:Over limit; !:over margin.

47.42

45.09

-3.39

-3.38

44.03

41.71

74.00

74.00

-29.97

-32.29

peak

peak

3

4

2487.200

2500.000

IEEE 802.11g CH LOW

Site LAB	Polarization: Vertical	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11g low channel		
Note:		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; I:over margin.

 Site LAB
 Polarization:
 Horizontal
 Temperature:
 23.9

 Limit: FCC Part 15_Above 1G_Peak
 Power:
 Humidity:
 46 %

 EUT:
 Distance:
 3m

 M/N:
 Mode:802.11g low channel
 Vote:

 Note:
 Engineer Signature:



Note:1. *:Maximum data; x:Over limit; !:over margin.

Note:1. *:Maximum data; x:Over limit; !:over margin. 2.Measurement=Reading Level+Correct Factor; Correct Factor=Antenna Factor+Cable Loss.

IE.

4

2500.000

Site LAB	Polarization: Horizontal	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11g high channel		
Note:		
Engineer Signature:		



46.88

-3.38

43.50

74.00

-30.50

peak

Note:1. *:Maximum data; x:Over limit; !:over margin.

Site LAB Polarization: Vertical Temperature: 23.9 Limit: FCC Part 15_Above 1G_Peak Humidity: 46 % Power: EUT: Distance: 3m M/N: Mode:802.11g high channel Note: Engineer Signature:



peak

peak

Note:1. *:Maximum data; x:Over limit; I:over margin.

44.87

-3.38

41.49

74.00

-32.51

2500.000

4

IEEE 802.11n HT20 CH Low

Site LAB	Polarization: Vertical	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11n HT20 low channel		
Note:		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.

 Site LAB
 Polarization:
 Horizontal
 Temperature:
 23.9

 Limit: FCC Part 15_Above 1G_Peak
 Power:
 Humidity:
 46 %

 EUT:
 Distance:
 3m

 M/N:
 Mode:802.11n HT20 low channel
 Vote:

 Engineer Signature:
 Vote:
 Vote:



Note:1. *:Maximum data; x:Over limit; !:over margin.

102.25

-3.40

98.85

74.00

24.85

peak

5

*

2410.625

IEEE 802.11n HT20 CH High

_		
Site LAB	Polarization: Vertical	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11n HT20 high channel		
Note:		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.

Page 59 of 81

EUT: M/N: Mode:802.11n HT20 high channel Note: Engineer Signature:



Note:1. *:Maximum data; x:Over limit; !:over margin.

IEEE 802.11n HT40 CH Low

Site LAB	Polarization: Vertical	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11n HT40 low channel		
Note:		
Engineer Signature:		



Note:1. *:Maximum data; x:Over limit; !:over margin.

 Site LAB
 Polarization:
 Horizontal
 Temperature:
 23.9

 Limit: FCC Part 15_Above 1G_Peak
 Power:
 Humidity:
 46 %

 EUT:
 Distance:
 3m

 M/N:
 Mode:802.11n HT40 low channel
 Image: Signature:

 Note:
 Engineer Signature:
 Image: Signature:



-3.06

11.68

54.00

74.00

AVG

peak

Note:1. *:Maximum data; x:Over limit; !:over margin.

54.35

89.09

-3.41

-3.41

50.94

85.68

2400.000

2413.180

5

6 *

IEEE 802.11n HT40 CH High

Site LAB	Polarization: Vertical	Temperature: 23.9
Limit: FCC Part 15_Above 1G_Peak	Power:	Humidity: 46 %
EUT:	Distance: 3m	
M/N:		
Mode:802.11n HT40 high channel		
Note:		
Engineer Signature:		



No.	Mk	. Freq.	Reading Level	Correct Factor	Measure- ment	Limit	Margin		Antenna Height	l able Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	2459.850	87.10	-3.39	83.71	74.00	9.71	peak			
2		2483.500	61.54	-3.38	58.16	74.00	-15.84	peak			
3		2483.500	53.48	-3.38	50.10	54.00	-3.90	AVG			
4		2488.920	58.90	-3.39	55.51	74.00	-18.49	peak			
5		2488.920	52.79	-3.39	49.40	54.00	-4.60	AVG			
6		2500.000	37.82	-3.38	34.44	74.00	-39.56	peak			
6		2500.000	37.82	-3.38	34.44	74.00	-39.56	peak			

Note:1. *:Maximum data; x:Over limit; I:over margin.

Site LAB Limit: FCC Part 15_Above 1G_Peak EUT: M/N: Mode:802.11n HT40 high channel Note: Polarization: *Horizontal* Power: Distance: 3m

Temperature: 23.9 Humidity: 46 %

Engineer Signature:



Note:1. *:Maximum data; x:Over limit; !:over margin.

802.11b

Agiler	nt Spectr	um An	alyzer - Sv	wept SA								
<mark>IXI</mark> Stai	rt Ere	RF	50 :		17	SEI	NSE:INT	Ava	ALIGNAUTO Type: Log-Pwi	r TRA	CE 1 2 3 4 5 6	Frequency
Citta		4 2			PNO: Fast IFGain:Low	Trig: Free #Atten: 3	eRun)dB	Avg	Hóid:>100/100	T) [PE MUUUUUUUU DET PNNNNN	Auto Tur
10 d	B/div	Ref Rei	Offset 1 7 20.00	dB dBm					Mk	r2 2.400 -44.1	00 GHz 44 dBm	AutoTun
Log 10.0 0.00 -10.0										Å	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Center Fre 2.365000000 GH
-20.0 -30.0 -40.0										2		Start Free 2.310000000 GH
-50.0 -60.0 -70.0		من يك انه	¢	nana-disertification	net-trai-states	Unudrasner Hands	and the second	enter and	mondearthalt			Stop Fre 2.420000000 GH
Sta #Re	rt 2.31 s BW	000 100	GHz kHz		#VI	3W 300 kHz			Sweep	Stop 2.4 10.53 ms	2000 GHz (1001 pts)	CF Step 11.000000 MH
MKR 1 2	MODE TR	C SCL		× 2.41: 2.40	2 96 GHz 0 00 GHz	ץ 5.283 d -44.144 d	FU 3m 3m	NCTION	FUNCTION WIDT	H FUNCT	ON VALUE	<u>Auto</u> Mai
3 4 5 6 7 8 9												Freq Offse 0 H
10									r]. Jozer		>	
WIGG										03		

Agilent Spectrum Analyzer - Swept SA							
Start Freg 2.450000000 0	GHz	SENSE:IN	T Avg Typ	ALIGN AUTO	TRACE 12	3456	Frequency
Ref Offset 1 dB	PNO: Fast 🖵 IFGain:Low	* Trig: Free Run #Atten: 30 dB	n Avg Hold	d⇒100/100 Mk	r2 2.483 5 (SHZ	Auto Tune
10 dB/div Ref 20.00 dBm					-53.588 a	Bm	Center Freq 2.500000000 GHz
-20.0 -30.0 -40.0 -50.0	Ptr 2						Start Freq 2.450000000 GHz
-60.0 -70.0	Munich	nhoteskynftynitaelydiadau	งสรุงขณะหน่าง =m))≱ายปุ่มางเปล		Stop 2 55000		Stop Freq 2.550000000 GHz
#Res BW 100 kHz MKR MODE TRC SCL X 1 N 1 f 2	#VBW	300 kHz 4.983 dBm	FUNCTION FL	Sweep 9.	600 ms (1001 FUNCTION VALU	pts)	CF Step 10.000000 MHz <u>Auto</u> Man
2 N 1 7 2 3 4 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -	.483 5 GHz	-531,588 dBm					Freq Offset 0 Hz
MSG				I STATUS			



Agilent S	pectrur	n Ana	lyzer - Sv	wept SA											
<mark>IXI</mark> Start	Fred	RF 22	50 :		Ц .,		SEN	ISE:INT	Ava	AL Type:	.IGN AUTO	TR/	CE 1 2 3 4 5 6		Frequency
Start	rieq	2.53		5000 G	PNO: Fa	ast 🖵 .ow	Trig: Free #Atten: 30	e Run) dB	Avg	Hold>	100/100	т			
10 dB/c	div	Ref Ref	Offset 1 20.00	dB dBm							Mkr	2 2.400 -42.3	00 GHz 48 dBm		Auto Tune
Log - 10.0 - -10.0 -												الماليالم	1 Legender		Center Freq 2.365000000 GHz
-20.0											Junar	22			Start Freq 2.31000000 GHz
-60.0	مرالم رساره		le Anatorie	allow of the state		attat Adaba	adaqlaasofaasood	namanlaytura	ale man-	an low	and the second				Stop Freq 2.420000000 GHz
Start : #Res	2.310 BW 1	00 0 00 I	GHZ KHZ		#	¢VB₩	300 kHz			S	weep 1	Stop 2.4 0.53 ms	2000 GHz (1001 pts)		CF Step
MKR MO	DE TRC	SCL f		× 2.4 2.4	1 <u>3 18 GH</u> 00 00 GH	z	Y -0.773 dE -42.348 dF	FUN Sm	NCTION	FUNC	TION WIDTH	FUNCT	ION VALUE	A	uto Man
3 4 5 6 7 8 9 10				2.4			-42.040 dE								Freq Offset 0 Hz
KSG		_					IIII					3	>		

Agilent Spect	trum An	alyzer - Swept S	A									
XX Start Fre	RF eq 2.4	50 Ω A	c) GHz		SEN	ISE:INT	Avg	AL Type:	LIGN AUTO	TRA	^{CE} 123456	Frequency
	Ref	Offset 1 dB	PN IFG	0: Fast ain:Low	Atten: 30	dB	Avg	Hold:>	100/100 Mk	r2 2.48	3 5 GHz	Auto Tune
10 dB/div 10.0 0.00	Rei	f 20.00 dBr	n							-37.7	79 aBm	Center Freq 2.500000000 GHz
-20.0 77 -30.0			at When	**************************************	mall Walden and appelled	115-Candapay	un an Irain an Arag	- leton	relationed		tu metritu Agramatus	Start Freq 2.45000000 GHz
-60.0	5000	CH7								Stop 2.5	5000 CH7	Stop Freq 2.550000000 GHz
#Res BW	1.0 I	VIHz	× 2.460 6	#VE GHz	3W 1.0 MHz Y 8.772 dE	F Bm	UNCTION	FUNC	weep 1.	000 ms ((1001 pts)	CF Step 10.000000 MHz <u>Auto</u> Man
3 4 5 6 7 8 9 10			2.483 6	GHZ	-37.//9 dE	3m						Freq Offset 0 Hz
MSG	-											

802.11n HT20

Agile	nt Spe	ctrun	1 Ana	ılyzer - Sv	wept SA													
IXI Oʻra			RF	50 :	Ω AC				SEI	VSE:INT		Ανα Τ	ALI	GN AUTO	TR			Frequency
SIZ		eq	2.3	10000	0000	GHZ P IF	NO: Fast Gain:Lov		Trig: Free Atten: 30	e Run dB		Avg H	iold:>1	00/100	т		J N	
10 (dB/div	,	Ref Ref	Offset 1 20.00	dB dBm	1								Mkr	2 2.400 -47.8	00 GH 355 dBr	z n	Auto Tune
Log 10. 0.0 -10.																1 Mary Mark	, 1	Center Freq 2.36500000 GHz
-20.1 -30.1 -40.1 -50.1														المرور	2			Start Freq 2.310000000 GHz
-60. -70.		240				n, a gefaal	ا بكانور في العالم.	a Photogra	Selonado Galilion	ال اود رساند.	staling er gir fr	Jegenmente		A A A A A A A A A A A A A A A A A A A	D tam 2 4			Stop Freq 2.420000000 GHz
#R	es Bl	W 1	00	GHZ KHZ			#V	/BW	300 kHz				Sv	veep 1	0.53 ms	(1001 pt	2 5)	CF Step 11.000000 MHz
мкғ 1 2	MODE N	TRC 1 1	SCL f f		2	× 2.413 2 2.400 0	9 GHz 0 GHz		Y -3.876 df -47.855 df	3m 3m	FUNCT	ION	FUNCTI	ION WIDTH	FUNCT	ION VALUE	^	<u>Auto</u> Man
3456789																	11	Freq Offset 0 Hz
10 C MSG									Ш						3		•	



802.11n HT40

Agilent Spectru	ım Analyzer -	Swept SA								
	RF 5	50Ω AC	1_	SEN	ISE:INT	Aug	ALIGNAUTO	TRA		Frequency
Start Fred	q 2.3100	00000 GP	PNO: Fast IFGain:Low	Trig: Free Atten: 30	Run dB	Avgji	Hold:>100/100	TY		
10 dB/div	Ref Offse Ref 20.0	t1 dB 00 dBm					Mkr	2 2.400 -51.9	00 GHz 42 dBm	Auto Tune
Log 10.0 0.00 -10.0								المرايار	1. المعادل المساور	Center Freq 2.365000000 GHz
-20.0 -30.0 -40.0 -50.0								2 ²		Start Freq 2.310000000 GHz
-60.0 -70.0		n Jennangelon soluti	alles availate	anth-factorities and the second states and the second states and the second states and the second states and the	land had any disp	tolenon-allet	son when the source of the sou			Stop Freq 2.420000000 GHz
#Res BW	000 GHZ 100 kHz		#VE	3W 300 kHz			Sweep 1	Stop 2.4: 0.53 ms (2000 GHZ 1001 pts)	CF Step
MKR MODE TR	C SCL f f	× 2.41 2.40	9 45 GHz 0 00 GHz	Y -7.131 dE -51.942 dE	FUI 3m	NCTION	FUNCTION WIDTH	FUNCTI	ON VALUE	11.000000 MHz <u>Auto</u> Man
3 4 5 6 7 8										Freq Offset 0 Hz
9 10 ×							Co STATU:	s	>	

Agilent Spectr	rum Analyzer - Swept Si	٨					
X Start Fre	RF 50 Ω AC	GHz	SENSE:	NT Avg	ALIGNAUTO Type: Log-Pwr	TRACE 1234	5 6 Frequency
		PNO: Fast ⊂ IFGain:Low	Atten: 30 dB	ın Avg	Hold:>100/100		Auto Tun
10 dB/div	Ref Offset 1 dB Ref 20.00 dBn	n			IVINI.	-55.093 dBi	m
10.0 0.00 -10.0		1 موسد میلاند.	Mindeller				Center Free 2.475000000 GH
-20.0	et. marth ll and			2			Start Free 2.400000000 GH
-60.0	AANU AANU AANU AANU AANU AANU AANU AANU			When the second	Ang a Baran an a	aio-manaan-selfangtumadaan-m	2.55000000 GH
Start 2.40 #Res BW	0000 GHz 100 kHz	#VB	W 300 kHz		Sweep 1	Stop 2.55000 GH 4.40 ms (1001 pt	lz s) CF Stej
MKR MODE TI	RC SCL	× 2.449 50 GHz 2.483 50 GHz	Y -6.483 dBm -55 093 dBm	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	Auto Mai
3 4 5 6 7 8							Freq Offse 0 H
9 10			110		n or ma	>	
MSG							

11 Antenna Requirement

11.1 Standard Requirement

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

11.2 Antenna Connected Construction

The antenna connector is PIFA antenna and no consideration of replacement. Please see EUT photo for details.

11.3 Result

The EUT antenna is PIFA antenna. It comply with the standard requirement.

12 Test setup photo12.1 Photos of Radiated emission





12.2 Photos of Conducted Emission test

13 Photographs of EUT





























-----END OF THE REPORT------