

7. Test of Conducted Spurious Emission

7.1 Test Limit

Below –20dB of the highest emission level of operating band (In 100 kHz Resolution Bandwidth)

7.2 Test Procedure

- a. The transmitter output was connected to the spectrum analyzer via a low lose cable.
- b. Set RBW of spectrum analyzer to 100 KHz and VBW of spectrum analyzer to 300 KHz with convenient frequency span including 100 KHz bandwidth from band edge.
- c. Peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20dB relative to the maximum measured in-band peak PSD level.
- d. The band edges was measured and recorded.

7.3 Test Setup Layout



7.4 Test Result and Data

Test Result	: PASS	Temperature	: 23℃
Test Date	: Sep. 27, 2018	Humidity	: 64%

Note: Test plots refers to the following pages.

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Modulation Type: 802.11b, CH 01



er 2 2.399575000000 GHz ALIGN AUTO Avg Type: Log-Pw Peak Search Trig: Free Run NextPe Ref Offset 10.5 dB Ref 20.50 dBm Next Pk Ric Next Pk Lo Marker Del Span 100.0 N 10.67 ms (40001 r ter 2.40000 GHz s BW 100 kHz Mkr→C 2.411 452 5 GHz 2.399 575 0 GHz 8.38 dBm -41.61 dBm Mkr→RefLv More 1 of 2

Peak Search	21,2018	06:17:17 PM Sep 21 TRACE	ALIGN AUTO	Avg	ENSE:IN	SE	SHz	DC 50000	50 s	⊮ 2.39	ker 1
Next Pea	GHz dBm	2.396 39 0 -53.86 d	Mkr		ee Run 20 dB	#Atten: :	PNO: Fast G IFGain:Low).5 dB dBm	Offset 10	Ref Ref	B/div
Next Pk Rig											
Next Pk Le	12.42.034										
Marker De											
Mkr→0	0 GHz 1 pts)	Stop 2.400 6.7 ms (40001	Sweep 22	FUNCTION	z	/ 300 kH:	#VB\	×	kHz	/IHz 100	t 30 N s BW
Mkr→RefL					Bm	-53.86 d	39 GHz	2.39		f	N 1
M o 1 o											
	F		STATUS								

Modulation Type: 802.11b, CH 06



- 0 ×								Swept SA	ctrum Analyzer	Keysight Spe
Peak Search	Sep 21, 2018	06:15:58 PM TRAC TYP	aLIGN AUTO E: Log-Pwr	Avg T	Run	SET	HZ PNO: Fast G	Ω DC 500000 G	[№] 5	arker 1
NextPeak	8 GHz 73 dBm	r1 7.236 -50.7	Mk		0 dB	#Atten: 2	FGain:Low	10.5 dB 0 dBm	Ref Offset Ref 20.5	dB/div
Next Pk Righ										
Next Pk Lef										9.5
Marker Delta	e la part d'Anna d' Na stàite anna de anna d	agaga (integrati) antaga di integration								9.5
Mkr→Cl	5.00 GHz 0001 pts)	Stop 2: 2.152 s (4)	Sweep 2		1 510	/ 300 kHz	#VBW	×	GHz 100 kHz	tart 2.50 Res BW
Mkr→RefLv	E E	PONCINC			3m	-50.73 dE	8 GHz	7.236	f	1 N 1 2 3 4 5
Mon 1 of:										6 7 7 8 9 9
			STATUS							

📕 Keysight Spe	ectrum Analyzer - S	wept SA								
Marker 1	7.3105000	000000 G	HZ NO: Fast	SENS	Run	Avg Type	ALIGN AUTO E: Log-Pwr	06:17:41 PN TRACI TYP	Sep 21, 2018	Peak Search
10 dB/div	Ref Offset 1 Ref 20.50	0.5 dB dBm	Gain:Low	#Atten: 20	dB		Mk	r1 7.310 -51.7	5 GHz 5 dBm	Next Peak
10.5 0.500									12.42.07	Next Pk Right
-19.5									1242031	Next Pk Left
-49.5 -59.5					ر این موجود به مراجع این این موجود به مراجع این این موانا دور این این این	rangya yan sa a		در میروند کمپریسی مکار میراند. مالک میراند. میراند.	(410.00) (410.00)	Marker Delta
Start 2.50 #Res BW	GHz 100 kHz	×	#VBV	/ 300 kHz Y	FUNCT	ON FU	Sweep 2	Stop 2: 2.152 s (40 FUNCTIO	5.00 GHz 0001 pts) N VALUE	Mkr→CF
1 N 1 2 3 4 5	1	7.310	5 GHz	-51.75 dB	m					Mkr→RefLvi
6 7 8 9 10										More 1 of 2
K MSG				m			STATUS			

nam Akalyan - Senget SA. 8 90 0 0 - SONSE LIVI ALION AUTO (861558 PM - 236361 - 2000000 GHz - Arg Type: Log-Pwr Trucc



Modulation Type: 802.11b, CH 11

🐹 Keysight Spectrum Analyzer - Swept SA				
Marker 1 2.33328450000	00 GHz Trig: Free F	Avg Type: Log-Pwr	06:19:39 PM Sep 21, 2018 TRACE 1 2 3 4 5 6 TYPE	Peak Search
Ref Offset 10.5 dB 10 dB/div Ref 20.50 dBm	IFGain:Low #Atten: 20 o	IB Mk	r1 2.333 28 GHz -55.17 dBm	NextPeak
10.5 0.500			12.90.000	Next Pk Right
.19.5				Next Pk Left
-49.5		a den plat a plat en parte parte La constitución de la constitución d	1	Marker Delta
Start 30 MHz #Res BW 100 kHz	#VBW 300 kHz	Sweep 2	Stop 2.400 GHz 26.7 ms (40001 pts)	Mkr→CF
1 N 1 f 2 3 4 5 6	.333 28 GHz -55.17 dBn		E CONTRACTOR	Mkr→RefLvl
7 8 9 10 11	17			More 1 of 2
MSG		STATL	IS	



🎉 Keysigh	it Spectrum Analyzer - Sv	rept SA								- 0
Marke	RF 50 S	00000 G	Hz	SEN	SE:INT	Avg Type	LIGN AUTO	06:20:59 PI TRAC	M Sep 21, 2018	Peak Search
Internet			PNO: Fast G FGain:Low	Trig: Free #Atten: 20	Run dB			TYI D		Next Peak
10 dB/d	Ref Offset 1 iv Ref 20.50	0.5 dB dBm					Mk	r1 7.38 -51.	64 GHz 60 dBm	Heart cur
10.5										Next Pk Right
-9.50 -19.5 -29.5									-12:08 UBn	Next Pk Left
-49.5 -59.5 -69.6							and a standard			Marker Delta
Start 2 #Res E	.50 GHz SW 100 kHz	X	#VBV	V 300 kHz Y	FUNCT	ION FUN	Sweep 2	Stop 2 2.152 s (4 FUNCTI	5.00 GHz 0001 pts)	Mkr→CF
1 N 2 3 4 5 6		7.38	54 GHz	-51.60 dB	m					Mkr→RefLvi
7 8 9 10 11									-	More 1 of 2
MSG				IT			STATUS		,	



Modulation Type: 802.11g, CH 01



er 2 2.399930000000 GHz ALIGN AUT Avg Type: Log-Pw Peak Search Trig: Free Ru NextPe Ref Offset 10.5 dB Ref 20.50 dBm Next Pk Ric Next Pk Lo Marker Del ter 2.40000 GHz s BW 100 kHz Span 100.0 M Mkr→C 2.413 225 0 GHz 2.399 930 0 GHz 3.15 dBm -36.13 dBm Mkr→RefLv More 1 of 2

RL Marker 1	№ 50 Ω 2.36486475	0000 GHz	SENSE:IN	Avg	ALIGN AUTO Type: Log-Pwr	05:59:49 PM Sep 21, 2018 TRACE 1 2 3 4 5	Peak Search
10 dB/div	Ref Offset 10. Ref 20.50 d	PNO: Fast (IFGain:Low 5 dB Bm	#Atten: 20 dB	1	Mkr	1 2.364 86 GHz -53.38 dBm	Next Peak
10.5							Next Pk Right
-9.50 -19.5 -29.5 -39.5						-17.24 dBr	Next Pk Left
-49.5 -59.5 -69.5							Marker Delta
Start 30 N #Res BW	IHz 100 kHz	# V B ×	W 300 kHz Y	FUNCTION	Sweep 22	Stop 2.400 GHz 6.7 ms (40001 pts FUNCTION VALUE	Mkr→CF
1 N 1 2 3 4 5 6	f	2.364 86 GHz	-53.38 dBm				Mkr→RefLvl
7 8 9 10 11							More 1 of 2
4SG					STATUS		

Modulation Type: 802.11g, CH 06



🇯 Keysight Spi	ectrum Analyzer -	Swept SA								- P 🐱
Marker 1	≥ 50 23.98075	0000000	GHz	SEN	SE:INT	ALIGN Avg Type: Log	AUTO -Pwr	05:58:19 PI TRAC	4 Sep 21, 2018 E 1 2 3 4 5	Peak Search
10 dB/div	Ref Offset Ref 20.5	10.5 dB 0 dBm	PNO: Fast C FGain:Low	#Atten: 20	dB		Mkr1	23.98 -52.	9 NNNN 36 dBm	Next Peak
- 0g 10.5										Next Pk Righ
29.5									-16.85 dBr	Next Pk Lef
49.5										Marker Delt
Start 2.50 Res BW	GHz 100 kHz	×	#VB	W 300 kHz	FUNCTIO	Swe	eep 2	Stop 2 .152 s (4	5.00 GHz 0001 pts	Mkr→Cl
1 N 1 2 3 4 5	1	23.980	0 8 GHz	-52.36 dB	m					Mkr→RefLv
6 7 8 9 10										Mon 1 of:
				m			STATUS			

 Keysigini spe 	ctrum An	atyzer - Swe	pt SA								
RL arkor 1	24.07	50 Ω	DC	0 647		SENSE:INT	Ave	ALIGN AUTO	06:00:17 PM TRACE	Sep 21, 2018	Peak Search
larker 1	24.01	41250	0000	PNO: Fast IFGain:Low	Trig: F #Atter	ree Run : 20 dB	~~~	Type: cogn m	TYPE	PNNNN	
0 dB/div	Ref C Ref	ffset 10. 2 0.50 d	5 dB IBm					Mkr	1 24.074 -53.7	1 GHz 6 dBm	NextPea
0.5											Next Pk Righ
.50											
3.5										-17.24 091	Next Pk Le
9.5											
9.5								and the second			Marker Del
3.5											
tart 2.50 Res BW	GHz 100 k	Hz		#V	BW 300 kl	Hz		Sweep 2	Stop 25 2.152 s (40	.00 GHz 1001 pts)	Mkr→C
R MODE TF	IC SCL		× 24.0	74 1 GHz	Y -53.76	dBm	FUNCTION	FUNCTION WIDTH	FUNCTIO	N VALUE	
3											Mkr→RefL
6											
9											Mor 1 of
G			-					STATUS			



Modulation Type: 802.11g, CH 11

🐹 Keysight Spectrum Ana	ilyzer - Swept SA				- 0 ×
Marker 1 2.319	50 Ω DC 953250000 GHz	SENSE:INT	ALIGN AUTO Avg Type: Log-Pwr	06:06:26 PM Sep 21, 2018 TRACE 1 2 3 4 5 6 TYPE	Peak Search
Ref O	ffset 10.5 dB 20.50 dBm	#Atten: 20 dB	Mkr	1 2.319 95 GHz -53.19 dBm	NextPeak
10.5 0.500					Next Pk Right
-19.5				-17.26 dbn	Next Pk Left
-49.5 -59.5 -69.5					Marker Delta
Start 30 MHz #Res BW 100 kl	Hz #V	BW 300 kHz	Sweep 22	Stop 2.400 GHz 6.7 ms (40001 pts)	Mkr→CF
1 N 1 f 2 3 4 5 6	2.319 95 GHz	-53.19 dBm		F	Mkr→RefLvl
7 8 9 10 11				-	More 1 of 2
MSG			STATUS	3	

ht Spectrum Analyzer - Swept SA				- 8
r 2 2.50197250000	D GHz PNO: Fast Trig: Free Run	Avg Type: Log-Pwr	TRACE 1 2 3 4 5 6 TYPE N WWW	Marker
Ref Offset 10.5 dB	IFGain:Low #Atten: 20 dB	Mkr2 2.	501 972 5 GHz -55.06 dBm	Select Mark
	1 Liter John Liter			Nor
			-17.26 dBn	D
antipant and a second	halphyliphietory)	2 Well-utopic and a state of the state of th	induction of the state of the s	Fix
r 2.48350 GHz 3W 100 kHz	#VBW 300 kHz	Sweep 10.	Span 100.0 MHz 67 ms (40001 pts)	
DE TRC SCL X 1 1 2.463 1 1 2.501	3 227 5 GHz 2.74 dBm 1 972 5 GHz -55.06 dBm	FUNCTION FUNCTION WIDTH	FUNCTION VALUE	
			2	Propert
				N 1

🎉 Keysight	t Spectrum	Analyzer - Sw	ept SA										e	- # =×=
00 RL Markor	R - 1 21	F 50 Ω	DC 50000r			SEN	ISE:INT	Ave	Type	LIGN AUTO	06:08:09 PI	M Sep 21, 2018	Peak	Search
Marker	121.	731302	500000	PNO: Fast IFGain:Low	÷	Trig: Free #Atten: 20	Run dB		.,,		TYI D			
10 dB/di	Re v R e	of Offset 10	0.5 dB dBm							Mkr	1 21.75 -52.	16 GHz 89 dBm		Next Peak
10.5													Nex	t Pk Right
-9.50												-17.26 dBn		
-19.5													Ne	xt Pk Left
-39.5 -49.5											1			
-59.6 🐸	a Canada												Ма	rker Delta
Start 2. #Res B	.50 GH W 100	lz) kHz		#V	BW 3	100 kHz				Sweep 2	Stop 2 2.152 s (4	5.00 GHz 0001 pts)		Mkr→CF
MKR MODE	E TRC SC	.L.	X 24.7	51.6 CH7		Y 52 99 dE	FU	NCTION	FUN	CTION WIDTH	FUNCTI	ON VALUE ·		
2 3 4 5 6						-02.03 01						=	Mk	r→RefLvl
7 8 9 10														More 1 of 2
MSG						п				STATUS				

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Modulation Type: 802.11n HT20, CH01







Modulation Type: 802.11n HT20, CH06







RL	RF 50 S	DC DC		SE	NSE:INT		ALIGN AUTO	05:50:42	PM Sep
Marker 1	21.753812	500000	GHZ PNO: Fast G IFGain:Low	Trig: Fre #Atten: 2	e Run 10 dB	Avg T	ype: Log-Pwr	TRJ T	NCE 1 VPE M DET P
10 dB/div	Ref Offset 10 Ref 20.50	0.5 dB dBm					Mkr	1 21.75 -51	3 8 .87
Log									
10.5									
0.500									
-9.50									
-19.5									
.29.5									
-39.5								<u>1</u>	
-49.5									



Modulation Type: 802.11n HT20, CH011









8. On Time, Duty Cycle and Measurement methods

8.1 Test Limit

None; for reporting purposes only.

8.2 Test Procedure

KDB 558074 Zero-Span Spectrum Analyzer Method.

8.3 Test Setup Layout



8.4 Test Result and Data

Temperature	: 23℃	Humidity	: 64%
Test Date	: Sep. 27, 2018		

Modulation Type	On Time (msec)	Period Time (msec)	Duty Cycle (%)	1/T Minimum VBW(Hz)	Duty Cycle correction Factor (dB)
802.11b	12.48	12.54	99.52%	80.13	0.02
802.11g	2.07	2.19	94.52%	483.09	0.24
802.11n HT20	1.93	2.05	94.15%	518.13	0.26

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Modulation Standard: 802.11b



Modulation Type: 802.11n HT20

Keysight Spectrum Analyzer - Swept SA			- d 💌
(X) RL RF 50 Ω DC	SENSE:INT	ALIGN AUTO 06:26:25 PM Sep 21, 2018	Marker
Marker 3 & 2.05000 ms PNO: Fast IFGain:Lov Ref Offset 10.5 dB	Trig: Free Run w #Atten: 30 dB	ΔMkr3 2.050 ms	Select Marker
20.5 vindi, vinjunititilariturationaliti	llastationale when all polling from a species	www.mallinguitedant arrivatedale	Normal
9.500 -9.50 -19.5			Delta
395 		н ү	Fixed⊳
Center 2.412000000 GHz Res BW 8 MHz #V	IBW 8.0 MHz S	Span 0 Hz Sweep 5.000 ms (1001 pts)	Off
1 N 1 t 380.0 μs 2 Δ1 1 t (Δ) 1.930 ms 3 Δ1 1 t (Δ) 2.050 ms 4 - - - - 5 - - - - 6 - - - -	-36.60 dBm (Δ) 2.58 dB (Δ) 1.58 dB	в	Properties►
7 8 9 10 11			More 1 of 2
MSG		STATUS	

Modulation Standard: 802.11g





9. 6dB Bandwidth Measurement Data

9.1 Test Limit

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

9.2 Test Procedures

- a. The transmitter output was connected to the spectrum analyzer.
- b. Set RBW of spectrum analyzer to $1 \sim 5\%$ of the emission bandwidth and VBW $\ge 3x$ RBW.
- c. The 6 dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6 dB.

Humidity

: 64%

d. The 6dB Bandwidth was measured and recorded.

9.3 Test Setup Layout



9.4 Test Result and Data

Temperature : 23 ℃ Test Date : Sep. 27, 2018

Modulation Type	Channel	Frequency (MHz)	6dB Bandwidth (MHz)	Limit (MHz)
	01	2412	9.05	0.5
	06	2437	9.05	0.5
(Tivips)	11	2462	9.00	0.5
	01	2412	16.30	0.5
IEEE 802.11g	06	2437	16.30	0.5
(equivies)	11	2462	16.30	0.5
	01	2412	17.30	0.5
	06	2437	17.30	0.5
	11	2462	17.30	0.5



Modulation Type: 802.11b CH01



Modulation Type: 802.11g CH01



CH06

🚺 Keysight Sp	ectrum Analyzer - Swept SA						- # *
Marker 2	RF 50 Ω DC	MHz PNO: Fast G	Trig: Free Run #Atten: 20 dB	Avg Ty	ALIGN AUTO pe: Log-Pwr	04:01:15 PM Sep 21, 20 TRACE 2 3 4 TYPE 000000 DET 0000000	18 Marker
10 dB/div	Ref Offset 10.5 dB Ref 20.50 dBm				Δ	Mkr2 9.05 MH -0.21 d	B
10.5 0.500		١٩٩	Junna Mu	Δ <u>Α.</u> ΔΔ1		2.47 d	a Normal
-19.5		al a					Delta
-49.5 -59.5	half markey half have here				Minister Contraction	my my marking	e Fixed⊳
Center 2. #Res BW	43700 GHz 100 kHz	#VBV	V 300 kHz	FUNCTION 1	Sweep 4	Span 50.00 MH 800 ms (1001 pt	1z s) Off
1 N 2 A1 3 N 4 5	f 2. f (Δ)	432 45 GHz 9.05 MHz (Δ) 437 45 GHz	2.72 dBm -0.21 dB 8.47 dBm	TORCHON 1		TONC NOW WEDE	Properties►
7 8 9 10 11							More 1 of 2
isa 📣 Aligi	nment Completed				STATUS	•	

CH06

Marker	04:05:35 PM Sep 21, 2018 TRACE 2 3 4 5 6 TYPE MUNNINN DET PINNNNN	ALIGN AUTO g Type: Log-Pwr	SE:INT	SENS	Hz NO: Fast 🕞	vept SA 2 DC 00000 MI	um Analyzer - Si RF 50 S 16.3000	ker 2 /
Select Marke	kr2 16.30 MHz -0.70 dB	ΔN	40	WAttern 20	Gain:Low	0.5 dB dBm	Ref Offset 1 Ref 20.50	B/div
Norm	-3.00 mBm	A 2Δ1	A ³	had and and have for	- finder			
De								
Fixe	Manufacture Landson and San	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				4044 ⁷⁸⁴	and shown	Naghan Part
	Span 50.00 MHz 800 ms (1001 pts)	Sweep 4.		300 kHz	#VBW		700 GHz 00 kHz	nter 2.4 Is BW 1
Propertie	FUNCTION VALUE	FUNCTION WIDTH	m IB m	-1.76 dB -0.70 d 3.00 dB	30 GHz 30 MHz (Δ) 20 GHz	× 2.428 8 16.3 2.438 2	f f f (Δ) f	
M i 1 (ļ							
	,	STATIS		IT.				

CH11







Modulation Type: 802.11n HT20 CH01



CH06

rsight Spectrum Analyzer - Swept SA					
ker 2 Δ 17.300000000	MHz	Trig: Free Pup	Avg Type: Log-Pwr	104:08:54 PM Sep 21, 2018 TRACE 1 2 3 4 5 6 TVPF MUMANANANA	Marker
Ref Offset 10.5 dB	IFGain:Low	#Atten: 20 dB	ΔΜ	kr2 17.30 MHz	Select Marke
3/div Ref 20.50 dBm	Starten	almohed a palashade	adeshdax 2∆1	-3.72 dBm	Norm
					De
nesentetetetetetetetetetetetetetetetetet			hyni ⁿ	elalanan unitedanan	Fixe
ter 2.43700 GHz s BW 100 kHz	#VBW	300 kHz	Sweep 4.	Span 50.00 MHz 800 ms (1001 pts)	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	28 20 GHz 17.30 MHz (Δ) 30 70 GHz	-3.35 dBm 0.31 dB 2.28 dBm	NETER PORCHORWEIT		Propertie
					. M i 1 :





10. Maximum Peak and Average Output Power

10.1 Test Limit

The Maximum Peak Output Power Measurement is 30dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

10.2 Test Procedures

The antenna port (RF output) of the EUT was connected to the input (RF input) of a power meter. Power was read directly from the meter and cable loss connection was added to the reading to obtain power at the EUT antenna terminal. The EUT Output Power was set to maximum to produce the worse case test result.

10.3 Test Setup Layout



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10.4 Test Result and Data

Temperature Test Date	:	23 <i>°</i> C Sep. 27, 2018	Н	umidity : 6	4%
Madulation		F	Peak Power	Total Peak	т.

Modulation Type	Channel	Frequency (MHz)	Peak Power Output (dBm)	Total Peak Power (dBm)	Total Peak Power (mW)	Limit (dBm)
	01	2412	18.52	18.52	71.121	30.00
IEEE 802.11b (1Mbps)	06	2437	18.16	18.16	65.464	30.00
(11	2462	17.84	17.84	60.814	30.00
	01	2412	21.91	21.91	155.239	30.00
IEEE 802.11g (6Mbps)	06	2437	21.61	21.61	144.877	30.00
	11	2462	21.74	21.74	149.279	30.00
IEEE 802 11n	01	2412	22.36	22.36	172.187	30.00
HT20	06	2437	21.88	21.88	154.170	30.00
(6.5Mbps)	11	2462	21.61	21.61	144.877	30.00

Modulation Type	Channel	Frequency (MHz)	Avg. Power Output (dBm)	Total Avg. Power (dBm)	Total Avg. Power (mW)
	01	2412	15.75	15.75	37.584
(1Mbps)	06	2437	15.42	15.42	34.834
(11	2462	15.09	15.09	32.285
	01	2412	13.51	13.51	22.439
(6Mbps)	06	2437	13.21	13.21	20.941
	11	2462	13.31	13.31	21.429
IEEE 802.11n	01	2412	12.89	12.89	19.454
HT20	06	2437	12.49	12.49	17.742
(6.5Mbps)	11	2462	12.32	12.32	17.061

Note: Average power is for reference only.



11. Power Spectral Density

11.1 Test Limit

The Maximum of Power Spectral Density Measurement is 8dBm.

If transmitting antennas of directional gain greater than 6 dBi are used, the power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi

11.2 Test Procedures

- a. The transmitter output was connected to spectrum analyzer.
- b. The spectrum analyzer's resolution bandwidth were set at 3kHz RBW and 30KHz VBW as that of the fundamental frequency. Set the sweep time=auto couple.
- c. The power spectral density was measured and recorded.

11.3 Test Setup Layout



11.4 Test Result and Data

Temperature	:	23℃	Humidity	:	64%	
Test Date	:	Sep. 27, 2018				

Modulation Type	СН	Freq. (MHz)	Maximum Power Density of 3 kHz Bandwidth (dBm)	Sum chain (dBm)	Duty Cycle CF(dB)	Total PSD (dBm)	Limit (dBm)
IEEE	01	2412	-7.9	-7.90	0.00	-7.90	8.00
802.11b	06	2437	-8.26	-8.26	0.00	-8.26	8.00
(1Mbps)	11	2462	-9.22	-9.22	0.00	-9.22	8.00
IEEE	01	2412	-12.49	-12.49	0.00	-12.49	8.00
802.11g	06	2437	-11.86	-11.86	0.00	-11.86	8.00
(6Mbps)	11	2462	-12.53	-12.53	0.00	-12.53	8.00
IEEE	01	2412	-14.09	-14.09	0.00	-14.09	8.00
802.11n HT20	06	2437	-14.51	-14.51	0.00	-14.51	8.00
(6.5Mbps)	11	2462	-14.05	-14.05	0.00	-14.05	8.00



Modulation Type: 802.11b CH01



Modulation Type: 802.11g CH01



CH06



CH06











Modulation Type: 802.11n HT20 CH01



CH06







12. Radio Frequency Exposure

12.1 Applicable Standards

The measurements shown in this test report were made in accordance with the procedures given in

FCC Part 2 (Section 2.1091) KDB 447498 IEEE C95.1:2005

12.2 EUT Specification

	🔀 WLAN: 2412MHz ~ 2462MHz
	🗌 WLAN: 5150MHz ~ 5250MHz
Frequency band	🗌 WLAN: 5250MHz ~ 5350MHz
(Operating)	🗌 WLAN: 5470MHz ~ 5725MHz
	🗌 WLAN: 5725MHz ~ 5850MHz
	Bluetooth: 2402MHz ~ 2480MHz
Device estanom	Portable (<20cm separation)
Device category	Mobile (>20cm separation)
Exposuro	\Box Occupational/Controlled exposure (S = 5mW/cm ²)
clossification	General Population/Uncontrolled exposure
classification	(S=1mW/cm ²)
	Single antenna
	Multiple antennas
Antenna diversity	Tx diversity
	Rx diversity
	Tx/Rx diversity
	MPE Evaluation*
Evaluation applied	SAR Evaluation
	🗍 N/A
	1

Remark:

- 1. The maximum output power is <u>22.36dBm (172.187mW)</u> at 2412<u>MHz</u> (with <u>numeric 4.17</u> <u>antenna gain</u>.)
- 2. DTS device is not subject to routine RF evaluation; MPE estimate is used to justify the compliance.
- 3. For mobile or fixed location transmitters, no SAR consideration applied. The maximum power density is 1.0 mW/cm² even if the calculation indicates that the power density would be larger.



12.3 Test Results

No non-compliance noted.

12.4 Calculation

Given $E = \frac{\sqrt{30 \times P \times G}}{d}$ & $S = \frac{E^2}{3770}$

Where *E* = Field strength in Volts / meter

P = Power in Watts G = Numeric antenna gain

d = Distance in meters

S = Power density in milliwatts / square centimeter

Combining equations and re-arranging the terms to express the distance as a function of the remaining variables yields:

Equation 1

$$S = \frac{30 \times P \times G}{3770d^2}$$

Changing to units of mW and cm, using:

P(mW) = P(W) / 1000 and d(cm) = d(m) / 100

Yields

$$S = \frac{30 \times (P/1000) \times G}{3770 \times (d/100)^2} = 0.0796 \times \frac{P \times G}{d^2}$$

Where d = Distance in cm P = Power in mW G = Numeric antenna gain S = Power density in mW / cm²

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12.5 Maximum Permissible Exposure

Maximum Permissible Exposure

Modulation	Frequency band	Max. Conducted	Antenna	Distance	Power Density	Limit
Mode	(MHz)	output power(dBm)	Gain(dBi)	(cm)	(mW/cm ²)	(mW/cm ²)
802.11n HT20	2412-2462	22.36	4.17	20	0.0895	1