

APPENDIX I

Conducted Test set up Diagram & Path loss Information

Conducted Measurement



Path loss information

Frequency (GHz)	Path Loss (dB)	Frequency (GHz)	Path Loss (dB)
0.03	3.37	15	4.72
1	3.46	20	4.98
2.412 & 2.422 & 2.437 & 2.452 & 2462	3.79	25	5.29
5	3.93	-	-
10	4.45	-	-

Note. 1: The path loss from EUT to Spectrum analyzer was measured and used for test.

Path loss (S/A's correction factor) = Cable A (Attenuator, Applied only when it was used externally)



APPENDIX II

Duty cycle plots

TEST PROCEDURE

Duty Cycle measured using section 6.0 b) of KDB558074

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal.

Set the center frequency of the instrument to the center frequency of the transmission. Set RBW \geq OBW if possible; otherwise, set RBW to the largest available value. Set VBW \geq RBW. Set detector = peak or average.

The zero-span measurement method shall not be used unless both RBW and VBW are > 50/T and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if T \leq 16.7 microseconds.)

Test Plots :

Duty Cycle

Test Mode: 802.11b & 1 Mbps & 2437 MHz

Agil	ent Spe	ectrun	n Ana	alyzer	- Swe	pt SA															
lx/ Ce	^{RL} nter	Fre	RF q 2	2.43	50 Ω 700	AC 000	0 G	RREC Z		Tria: Er	SENSE	INT		Avg T	ype	ALIGNAUTO : Log-Pwr	12:53:1 TF	.1 PM Jan 1 RACE 1 2	2, 2016 3 4 5 6		Frequency
		_					P IF	NO: Fa Gain:L	ast 🔸 .ow	Atten: 4	40 dE	3						DET P P	PPP		Auto Tur
10	dB/di	v	Ref	30.0	00 d	IBm										Δ	Mkr3	8.880 1.51	ms dB		Auto Tul
Lōj												∕ <mark>∕∫</mark> 3	Δ4								
10			X	/ \ <mark>4</mark>							-	Ť								2.4	Center Fre 437000000 GH
0.0																					
-10.																				2.4	Start Fre 437000000 G⊦
-30.												W							4		
-40. -50. -60.																				2.4	Stop Fre 437000000 G⊦
Ce Re	nter s BW	2.43 / 8 M	370 VIHz	0000 z	00 G	Hz		<u>ا</u>	/BW :	8.0 MHz					ş	Sweep 2	0.00 ms	Span 5 (1001	0 Hz pts)		CF Ste 8.000000 M⊦
MKF	MODE	TRC	SCL			×	0.5			Y		F	UNCT	ION	FUN	ICTION WIDTH	FUNC	TION VALU	E	Auto	<u>)</u> Ma
1 2 3 4 5	Δ2 F Δ4 F	1 1 1 1	t t t	(Δ) (Δ)			8.6 2.1 8.6 2.1	80 m 40 m 80 m 40 m	is (∆) is is (∆) is	0.9 16.26 1.5 16.26	6 dB dBm 1 dB dBm	5 1 3 1									Freq Offs 0 H
6 7 8																					
9 10 11																					
12 MSG																STATUS					



Duty Cycle

Test Mode: 802.11g & 6 Mbps & 2437 MHz



Duty Cycle

Test Mode: 802.11n (HT20) & MCS 0 & 2437 MHz

Agiler	Agilent Spectrum Analyzer - Swept SA															
Cer	∟ nter	Fre	RF PG	50 Ω 2.43700	ac co 00000 G I	RREC		SE	NSE:INT	Avg	Туре	ALIGN AUTO : Log-Pwr	12:57:31 F	M Jan 12, 201 E <mark>1 2 3 4 5</mark>	.6 6	Frequency
10 d	B/div	v	Re	f 30.00 (P IF dBm	NO: Fas Gain:Lo	st ↔ w	Atten: 40	dB			Δ	.Mkr3 1.	550 ms 0.51 dE	P S	Auto Tune
Log 20.0 10.0 0.00	inhain		X1	ng ang the state of the state o	gaba strate balt balt	10tz-14p-1	\ 1∆`	304 MProjekasi	nd Manan day	h.A.	Į	hudentalanta	uthuhataana	ent-Indjäl		Center Freq 2.437000000 GHz
-10.0 -20.0 -30.0		Mpr-	n				May 10 ⁻¹ an				~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			~,,,	7	Start Freq 2.437000000 GHz
-40.0 -50.0 -60.0																Stop Freq 2.437000000 GHz
Cen Res	ter BW	2.4: / 8	370 MH	00000 C	GHz	V	BW	8.0 MHz			ş	Sweep 5.	S .000 ms (pan 0 H: 1001 pts	Z i)	CF Step 8.000000 MHz
MKR 1	MODE	TRC	SCL	(A)	× 1.3	850 ms	(A)	Y 1.69	dB FUN	CTION	FUN	ICTION WIDTH	FUNCTIO)n value	A	<u>uto</u> Man
2 3 4 5 6	F ∆4 F	1 1	t t t	<u>(Δ)</u>	4' 1.5 4'	10.0 μs 550 ms 10.0 μs	(Δ)	11.94 dl -0.51 11.94 dl	dB dB Bm							Freq Offset 0 Hz
7 8 9 10 11																
MSG												STATUS	5			



Duty Cycle

Test Mode: 802.11n (HT40) & MCS 0 & 2437 MHz

Agile	nt Spe	ctrur	n An	alyzer - Sw	ept SA											
l,XI R	L		RF	50 Ω	AC	CORREC			SENSE:IN	Т		ALIGN AUTO	12:58:30 F	M Jan 12, 2016	E.	
Cer	nter	Fre	eq 2	2.43700	00000	GHz			_		Avg T	ype: Log-Pwr	TRAC	E 123456	FI	equency
						PNO:	Fast ↔	Trig: Fr	ee Run				IY			
		_				IFGain	:Low	Atten: 4	10 dB							
													AMkr3 8	70.0 us		Auto Tune
			-										_	0 33 dB		
10 d	Bidiv	/	Re	1 30.00 0	uвт			_						0.00 ab		
209																
20.L							$^{\Lambda}1\Delta2$									Center Freq
10.0	Aller	uh -		ALIMANU	MAN THE	in work	¥—	34	nat-Ann	Howkey	tions.	Josephilippin	mound	lyn -	2.43	7000000 GHz
0.00				Xa				M. The state	-44			1		1 1		
0.00	ĺ		_													
-10.0																04
-20 O																StartFreq
2010	1														2.43	7000000 GHz
-30.0		Lyng !	4 Augusta				WHAT	M			WAMP.	1		a Markey		
-40.0												-				
70.0																Ston Fred
-50.0																Stopfreq
-60.0															2.43	7000000 GHz
Cer	nter	2.4	370	00000 0	SHz								\$	pan 0 Hz		
Res	BW	8	VIH;	z			VBW	8.0 MHz				Sweep	3.000 ms (1001 pts)		CF Step
															8	3.000000 MHz
MKR	MODE	TRC	SCL		×			Y		FUNC	TION	FUNCTION WIDT	H FUNCTIO	IN VALUE	Auto	Man
1	<u>A2</u>	1	t	(Δ)		666.0	<u>μs (Δ</u>	4.8	<u>9 dB</u>							
2	-	1	t	(0)		348.0	us (A)	3.55								
	<u>74</u>	1	÷			3/8.0		3.55	dBm							Freq Offset
5						040.0	<u>µ3</u>	0.00								0 Hz
6																
7																
8																
9																
11																
12																
MSG												STATU	JS			



APPENDIX III

Restricted band edge(Test plot of radiated)

Note: The offset was not include in test plot. (Reading value). The results refer to the clause 8.5.

802.11b & Lowest

Detector Mode : AV



802.11b & Highest

Agilent Spectrum Analyzer - Swept SA								
LXI RL RF 50Ω AC		SEN	ISE:INT	Aug Turne	ALIGN AUTO	12:33:35 AM	4 Jan 07, 2016	Frequency
Center Freq 2.483500000	PNO: Fast +++ IFGain:Low	Trig: Free Atten: 20	Run dB	Avg Hold:	300/300	TYPE	A P N N N N	
10 dB/div Ref 116.99 dBµV					Mkr1	2.485 18 39.468	80 GHz 3 dBµV	Auto Tune
107								Center Freq 2.483500000 GHz
87.0								Start Freq 2.448500000 GHz
67.0								Stop Freq 2.518500000 GHz
47.0		\	4					CF Step 2.412000000 GHz Auto <u>Man</u>
37.0		han					~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Freq Offset
27.0								0 Hz
						0		
#Res BW 1.0 MHz	VBW 3	.0 MHz*			Sweep	5pan 70 1.07 ms (2	2001 pts)	
MSG					STATU	s		



802.11g & Lowest

Detector Mode : AV



802.11g & Highest





802.11n (HT20) & Lowest

Detector Mode : AV



802.11n (HT20) & Highest





802.11n (HT40) & Lowest

Detector Mode : AV



802.11n (HT40) & Highest





Spurious emission.(Test plot of radiated)

Note: Attached plot of worst data.

The offset was not include in test plot.(Reading value) The results refer to the clause 8.5.

802.11b & Lowest





802.11g & Highest

Detector Mode : QP

Receiver	Spectrum	x		
F	RBW (QPK) 120 kHz	MT 100 ms		· · ·
Input 1 AC • A	Att 10 dB	Preamp OFF Ste	p TD Scan	
Level	dBµV		Frequency 120	.0018700 MHz
Quasipeal	k 52.79	(53.0	120).0018700 MHz)
0	20	40	60	80 100
Scan 😑 1Pk Clr	rw			j
	1 MHz	10 MH	z 100 M	1Hz
90 dBµV				
eo deux				
80 UBDV				
70 dBµV				
60 dBuV				
50 dBµV				
40 dBµV				
зо авµv				
20 dBµV				
10 dBuV				
10 0000				
Start 150.0 kH	i i i i i i i i i i i i i i i i i i i			Stop 1.0 GHz
			Measuring	22.12.2015 15:34:46

Date: 22.DEC.2015 15:34:46



802.11n(HT20) & Middle

Detector Mode : QP

Receiver	Spectrum (X			
R Input 1 AC = A	BW (QPK) 120 kHz	MT 100 ms Preamn OFF Sten T	D Scan		
Level	dBuV		Frequency	119,99950	00 MHz
Quasineal	52.17	(52.4		119,999500	00 MHz)
0	20	40	60	80	100
Scan 👴 1 Pk Clr	W				
	1 MHz	10 MHz		100 MHz	
90 dBµV					
80 dBµV					
70 dBµV					
60 dBuV					
EQ dBud/					
50 UBµV					
40 dBµV					
30 dBµV					
20 dBµV					
10 dBuV					
				TF	
Start 150.0 kH	z		· · · · ·		Stop 1.0 GHz
			Measuring	••••	22.12.2015 15:46:19



802.11n(HT40) & Lowest

Detector Mode : QP

Receiver	Spectrum	x			
F	RBW (QPK) 120 kHz	MT 100 ms			
Input 1 AC - 4	Att 10 dB	Preamp OFF St	ep ID Scan	(
Level	dBµV		Frequency	120.00375	500 MHz
Quasipeal	k 52.29	(52.3		120.00375	500 MHz)
0	20	40	60	80	100
Scan O1Pk Cli	rw				
	1 MHz	10 M	Hz	100 MHz	
90 dBµV					
80 dBµV					
70 dBµV					
60 dBµV					
50 dBµV					
40 dBμV					
30 dBµV					
20 dBµV					
10 dBµV				TF	
Start 150.0 kH	iz			1.1.1.9	Stop 1.0 GHz
			Measuring	••••	22.12.2015 15:52:51