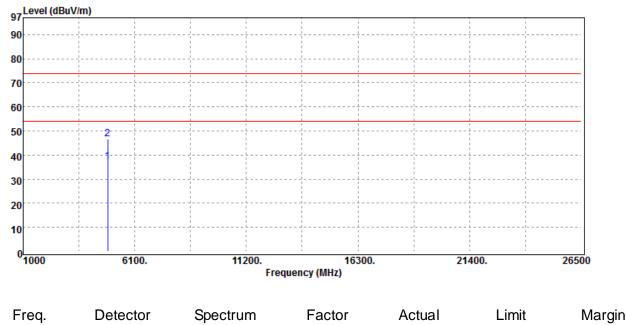


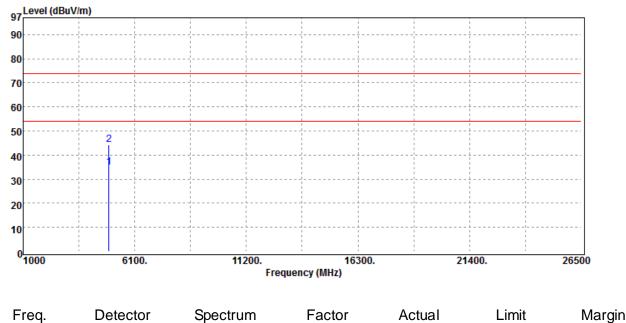
:802.11n20 :2437 MHz :Tx CH MID :E1 Plane	Test Date Temp./Humi. Engineer Measurement Antenna Pol.	:2018-07-16 :21 deg_C / 62 RH :Kane :HORIZONTAL
	Measurement Antenna i Ol.	INCRIZONIAL
	:2437 MHz :Tx CH MID	:2437 MHz Temp./Humi. :Tx CH MID Engineer



•	Mode	Reading Level		FS	@3m	5
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4874.00	Average	31.47	5.85	37.32	54.00	-16.68
4874.00	Peak	40.94	5.85	46.79	74.00	-27.21



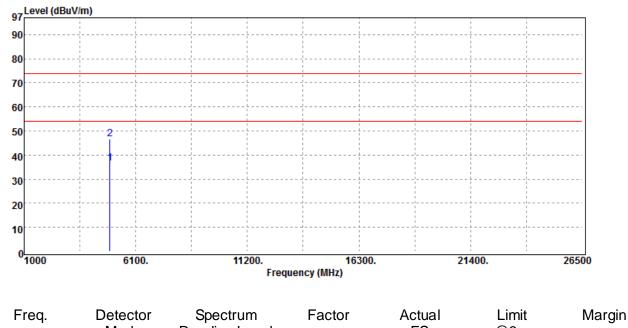
Operation Band	:802.11n20	Test Date	:2018-07-16
Fundamental Frequency	:2462 MHz	Temp./Humi.	:21 deg_C / 62 RH
Operation Mode	:Tx CH HIGH	Engineer	:Kane
EUT Pol.	:E1 Plane	Measurement Antenna Pol.	:VERTICAL



Mode	Reading Level	1 40101	FS	@3m	Margin	
PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
Average	28.93	5.82	34.75	54.00	-19.25	-
Peak	38.63	5.82	44.45	74.00	-29.55	
	Mode PK/QP/AV Average	ModeReading LevelPK/QP/AVdBμVAverage28.93	ModeReading LevelPK/QP/AVdBμVdBAverage28.935.82	$\begin{tabular}{ c c c c c c c } \hline Mode & Reading Level & FS \\ \hline PK/QP/AV & dB\mu V & dB & dB\mu V/m \\ \hline Average & 28.93 & 5.82 & 34.75 \end{tabular}$	ModeReading LevelFS@3mPK/QP/AV $dB\mu V$ dB $dB\mu V/m$ $dB\mu V/m$ Average28.935.8234.7554.00	Mode Reading Level FS @3m PK/QP/AV dBμV dB dBμV/m dBμV/m dB Average 28.93 5.82 34.75 54.00 -19.25



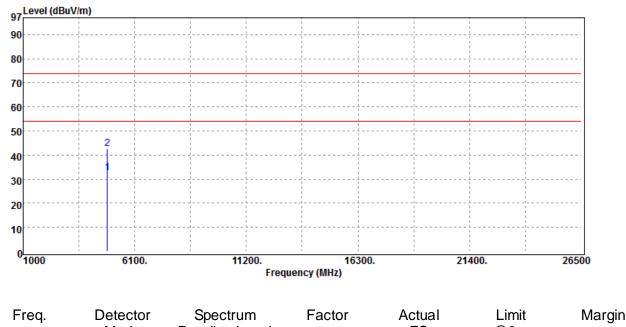
Operation Band:802.11n20Fundamental Frequency:2462 MHzOperation Mode:Tx CH HIGHEUT Pol.:E1 Plane	Test Date Temp./Humi. Engineer Measurement Antenna Pol.	:2018-07-16 :21 deg_C / 62 RH :Kane :HORIZONTAL
--	--	--



	Mode	Reading Level		FS	@3m	C
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4924.00	Average	30.79	5.82	36.61	54.00	-17.39
4924.00	Peak	40.74	5.82	46.56	74.00	-27.44



Operation Band:802.11n40Test DateFundamental Frequency:2422 MHzTemp./HunOperation Mode:Tx CH LOWEngineerEUT Pol.:E1 PlaneMeasurem	i. :2018-07-16 :21 deg_C / 62 RH :Kane ent Antenna Pol. :VERTICAL
---	--

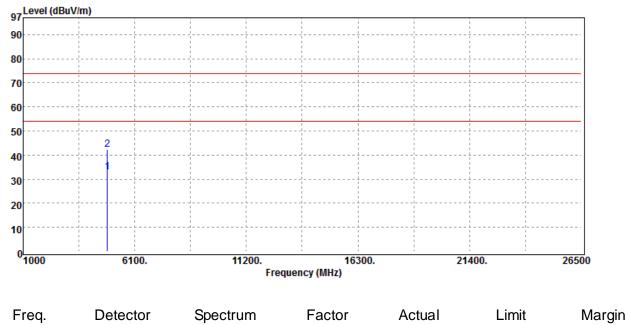


	Mode	Reading Level		FS	@3m	Jine giri
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4844.00	Average	27.03	5.60	32.63	54.00	-21.37
4844.00	Peak	36.92	5.60	42.52	74.00	-31.48



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Fundamental Frequency:2422 MHzTemOperation Mode:Tx CH LOWEng	np./Humi. :2	2018-07-16 21 deg_C / 62 RH Kane HORIZONTAL
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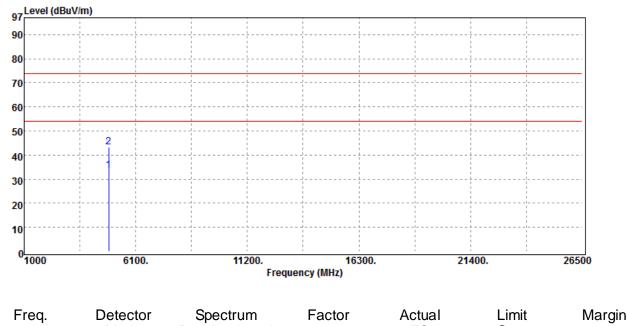


	Mode	Reading Level		FS	@3m	margin	
 MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	
4844.00	Average	27.34	5.60	32.94	54.00	-21.06	_
4844.00	Peak	36.85	5.60	42.45	74.00	-31.55	
4044.00	reak	30.00	5.00	42.45	74.00	-31.55	

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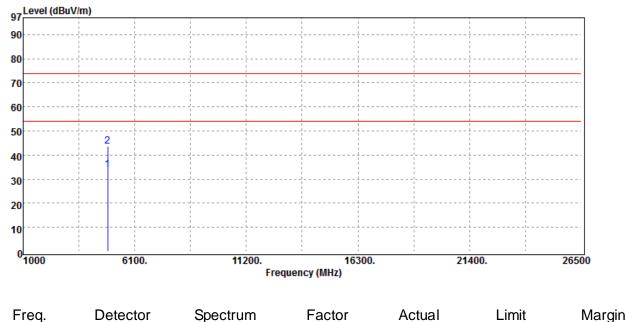
Report No.:ER/2018/60110 Page 113 of 124



·	Mode	Reading Level		FS	@3m	0
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4874.00	Average	27.69	5.85	33.54	54.00	-20.46
4874.00	Peak	37.52	5.85	43.37	74.00	-30.63

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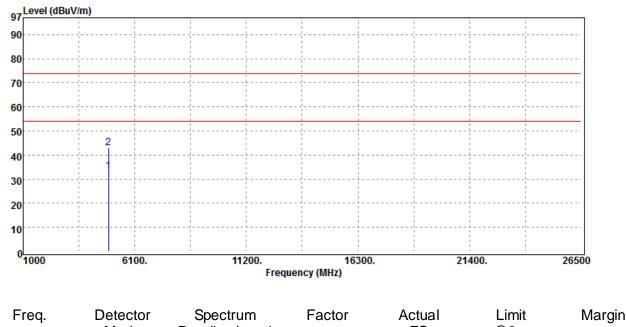




1104.	Mode	Reading Level	1 40101	FS	@3m	Margin
MHz	PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
4874.00	Average	27.88	5.85	33.73	54.00	-20.27
4874.00	Peak	37.71	5.85	43.56	74.00	-30.44



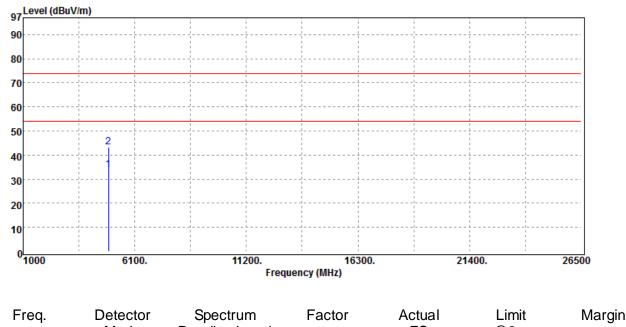
Fundamental Frequency:2452 MHzOperation Mode:Tx CH HIGH	Engineer	:2018-07-16 :21 deg_C / 62 RH :Kane :VERTICAL
---	----------	--



Mode	Reading Level		FS	@3m	indi giri
PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB
Average	27.46	5.85	33.31	54.00	-20.69
Peak	37.25	5.85	43.10	74.00	-30.90
	PK/QP/AV Average	PK/QP/AVdBµVAverage27.46	PK/QP/AV dBμV dB Average 27.46 5.85	$\begin{tabular}{ c c c c c c c } \hline Mode & Reading Level & FS \\ \hline PK/QP/AV & dB\mu V & dB & dB\mu V/m \\ \hline Average & 27.46 & 5.85 & 33.31 \\ \hline \end{tabular}$	$\begin{array}{c c c c c c c c c c c c c c c c c c c $



Operation Band:802.11n40Test DateFundamental Frequency:2452 MHzTemp./Operation Mode:Tx CH HIGHEngineEUT Pol.:E1 PlaneMeasure	1umi. :21 deg_C / 62 RH
--	-------------------------



Mode	Reading Level		FS	@3m	ina gir	
PK/QP/AV	dBµV	dB	dBµV/m	dBµV/m	dB	_
Average	27.89	5.85	33.74	54.00	-20.26	
Peak	37.50	5.85	43.35	74.00	-30.65	
	Mode PK/QP/AV Average	ModeReading LevelPK/QP/AVdBμVAverage27.89	ModeReading LevelPK/QP/AVdBμVdBAverage27.895.85	$\begin{tabular}{ c c c c c c } \hline Mode & Reading Level & FS \\ \hline PK/QP/AV & dB\mu V & dB & dB\mu V/m \\ \hline Average & 27.89 & 5.85 & 33.74 \end{tabular}$	$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	ModeReading LevelFS@3mPK/QP/AV $dB\mu V$ dB $dB\mu V/m$ $dB\mu V/m$ dB Average27.895.8533.7454.00-20.26



12 MAXIMUM POWER SPECTRAL DENSITY

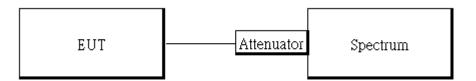
12.1 Standard Applicable

The power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

12.2 Measurement Equipment Used

Conducted Emission Test Site							
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL	LAST CAL.	CAL DUE.		
		NUMBER	NUMBER	CAL.			
EXA Spectrum An-	Agilent	N9010A	MY5042019	2018/05/03	2018/08/28		
alyzer	rightin	110010/1	5	2010/00/00	2010/00/20		
Attenuator	Mini-Circuit	BW-S10W2+	2	2017/11/29	2018/11/28		
DC Block	Mini-Circuits	BLK-18-S+	1	2018/01/04	2019/01/03		
Coaxial Cables	N/A	WK CE Ca-	N/A	2017/12/20	2019/12/10		
Cuaxiai Cables	IN/A	ble	IN/A	2017/12/20	2010/12/19		
Notebook	Lenovo	L420	LR-7HXZA	2017/12/29	2018/12/28		

12.3 Test Set-up



12.4 Measurement Procedure

- 1. Set analyzer center frequency to DTS channel center frequency.
- 2. The testing follows the Measurement Procedure of FCC KDB 558074 D01 DTS Meas. Guidance .
- **3.** Set the span to 1.5 times the DTS channel bandwidth.
- 4. Set the RBW = 3 kHz & VBW = 10 kHz.
- 5. For defining Restricted Band Edge Limit: Set the RBW = 100kHz & VBW = 300 kHz
- 6. Detector = peak.
- 7. Sweep time = auto couple.
- 8. Trace mode = max hold.
- 9. Allow trace to fully stabilize.
- **10.** Use the peak marker function to determine the maximum amplitude level.
- 11.802.11n MIMO mode: offset is set following "measure and add 10 Log (N)" on spectrum to measure the PSD for MIMO mode. Offset = cable loss + 10 log (N), where N is number of transmitting antenna. N=2 for this given application.

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As per FCC KDB 662911 D01

Unequal antenna gains, with equal transmit powers. For antenna gains given by G1, G2, ..., GN dBi.

(i) If transmit signals are correlated, then Directional gain

= 10 log[(10G1 /20 + 10G2 /20 + ... + 10GN /20) 2 /NANT] dBi

[Note the "20"s in the denominator of each exponent and the square of the sum of terms; the object is to combine the signal levels coherently.]

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12.5 Measurement Result

	POWER DENSITY 802.11b						
Freq.	PPSD	Limit	Result				
(MHz)	(dBm)	(dBm)	Result				
2412	-2.78	8.00	PASS				
2437	-2.15	8.00	PASS				
2462	-3.12	8.00	PASS				
	POWER DENSITY 80)2.11g					
Freq.	PPSD	Limit	Result				
(MHz)	(dBm)	(dBm)	Result				
2412	-7.23	8.00	PASS				
2417	-6.68	8.00	PASS				
2437	-5.65	8.00	PASS				
2457	-6.48	8.00	PASS				
2462	-7.67	8.00	PASS				
	POWER DENSITY 802.1	1n HT2	0				
Freq.	PPSD	Limit	Result				
(MHz)	(dBm)	(dBm)	Result				
2412	-9.46	8.00	PASS				
2417	-6.83	8.00	PASS				
2437	-5.80	8.00	PASS				
2457	-5.56	8.00	PASS				
2462	-7.98	8.00	PASS				
POWER DENSITY 802.11n HT40							
Freq.	PPSD	Limit	Result				
(MHz)	(dBm)	(dBm)	rtcourt				
2422	-14.49	8.00	PASS				
2427	-14.67	8.00	PASS				
2432	-13.92	8.00	PASS				
2437	-13.07	8.00	PASS				
2442	-11.98	8.00	PASS				
2447	-11.91	8.00	PASS				
2452	-11.32	8.00	PASS				

12.26 offset

dB for MIMO mode

*Refer to next page for plots

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802.11b PSD(CH-Low) (2412MHz)



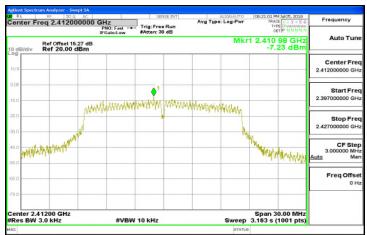
802.11b PSD (CH-Mid) (2437MHz)



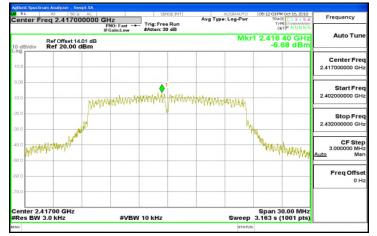
802.11b PSD (CH-High) (2462MHz)



802.11g PSD(CH-Low) (2412MHz)



802.11g PSD(CH-Low) (2417MHz)



802.11g PSD (CH-Mid) (2437MHz)



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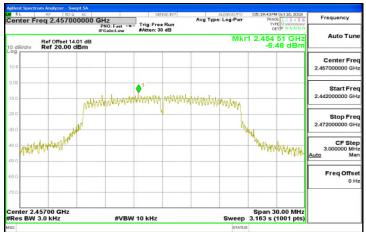
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www.tw.sqs.com

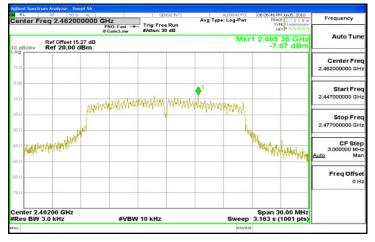
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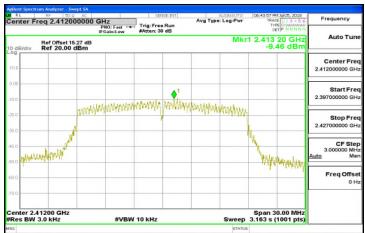
802.11g PSD (CH-High) (2457MHz)



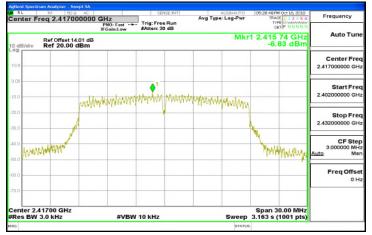
P802.11g PSD (CH-High) (2462MHz)



802.11n_HT20 PSD (CH-Low) (2412MHz)



802.11n_HT20 PSD (CH-Low) (2417MHz)



802.11n_HT20 PSD (CH-Low) (2437MHz)



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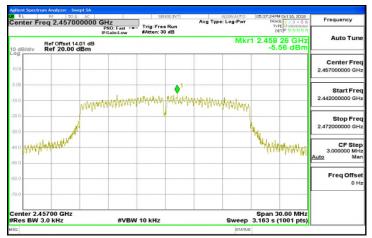
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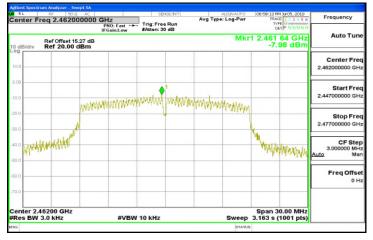
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802.11n_HT20 PSD (CH-High) (2457MHz)



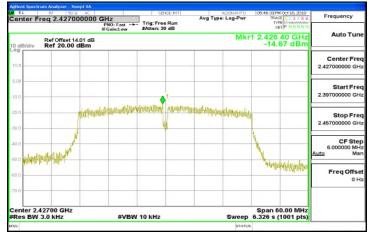
802.11n_HT20 PSD (CH-High) (2462MHz)



802.11n_HT40 PSD (CH-Low) (2422MHz)



802.11n_HT40 PSD (CH-Low) (2427MHz)



802.11n_HT40 PSD (CH-Low) (2432MHz)



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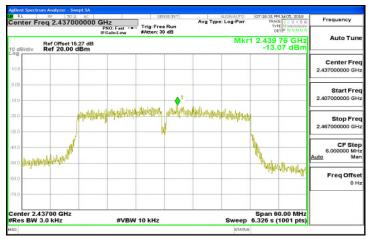
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f (886-2) 2298-0488

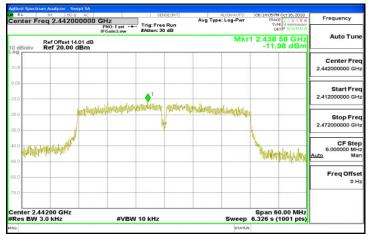
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802.11n_HT40 PSD (CH-Mid) (2437MHz)



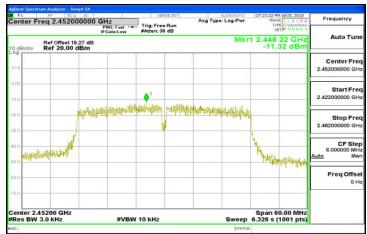
802.11n_HT20 PSD (CH-High) (2442MHz)



802.11n_HT20 PSD (CH-High) (2447MHz)

0 GHz PNO: Fast ++- IFGainLow #Atten: 30 dB	Avg Type: Log-Pwr	06:27:23 PM Oct 16, 2018 TRACE 1 2 3 4 5 6 TYPE // WANNAN DET P N N N N N	Frequency
В	Mkr1	2.450 72 GHz -11.91 dBm	Auto Tuno
			Center Free 2.447000000 GH
			Start Free 2.417000000 GH
heinen	And Direct Long Direction		Stop Free 2.477000000 GH
		Marth and	CF Stej 6.000000 MH Auto Ma
			Freq Offse 0 H
		Span 60.00 MHz 6.326 s (1001 pts)	
	Piloi: tast Ing: Pres Run #Galactew #Acten: 30 dB B	PN0: Fast Trig: Free Run IFGain:Low #Atten: 30 dB B Mkr1	Microsoft Microsoft Bit Microsoft <

802.11n_HT20 PSD (CH-High) (2452MHz)



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13 ANTENNA REQUIREMENT

13.1 Standard Applicable

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than furnished by the responsible party shall be used with the device. If the transmitting antenna is greater than 6dBi, the power shall be reduced by the same level in dB comparing to gain minus 6dBi.

13.2 Antenna Connected Construction

The antenna is designed as permanently attached and no consideration of replacement. Please see EUT phot

~ End of Report ~

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