



Report No.: FR882303-01AC



FCC Test Report

FCC ID : 2AKWYXBP202

Equipment : Digital Transmission System

Brand Name : DynaScan Technology Corp.

Model Name : XBP202

Applicant : DYNASCAN TECHNOLOGY CORP.

7F, 66 Huaya 1st Road, Guishan Taoyuan 33383, Taiwan

Manufacturer : DYNASCAN TECHNOLOGY CORP.

7F, 66 Huaya 1st Road, Guishan Taoyuan 33383, Taiwan

Standard : 47 CFR FCC Part 15.247

This report was evaluated for permissive change. The product was received on Aug. 27, 2018, and testing was started from Aug. 27, 2018 and completed on Oct. 29, 2018. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2013 and shown compliance with the applicable technical standards.

The report must not be used by the client to claim product certification, approval, or endorsement by TAF or any agency of government.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Approved by: Allen Lin

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)

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History of this test report

Report No.	Version	Description	Issued Date
FR882303-01AC	01	Initial issue of report	Nov. 28, 2018

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Summary of Test Result

Report Clause	Ref. Std. Clause	Test Items	Result (PASS/FAIL)	Remark
1.1.2	15.203	Antenna Requirement	PASS	FCC 15.203
3.1	15.207	AC Power-line Conducted Emissions	PASS	FCC 15.207
3.2	15.247(a)	DTS Bandwidth	PASS	≥500kHz
3.3	15.247(b)	Maximum Conducted Output Power	PASS	Power [dBm]: 30
3.4	15.247(e)	Power Spectral Density	PASS	PSD [dBm/3kHz]: 8
3.5	15.247(d)	Emissions in Non-restricted Frequency Bands	PASS	Non-Restricted Bands: > 30 dBc
3.6	15.247(d)	Emissions in Restricted Frequency Bands	PASS	Restricted Bands: FCC 15.209

Declaration of Conformity:

The judgment of conformity in the report is based on the measurement results excluding the measurement uncertainty.

Comments and explanations:

None

Reviewed by: Sam Tsai

Report Producer: Jenny Yang

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1 General Description

1.1 Information

1.1.1 RF General Information

Frequency Range (MHz)	IEEE Std. 802.11	Ch. Frequency (MHz)	Channel Number
2400-2483.5	b, g, n (HT20)	2412-2462	1-11 [11]

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Band	Mode	BWch (MHz)	Nant
2.4-2.4835GHz	802.11b	20	1TX
2.4-2.4835GHz	802.11g	20	1TX
2.4-2.4835GHz	802.11n HT20	20	1TX

Note:

- 11b mode uses a combination of DSSS-DBPSK, DQPSK, CCK modulation.
- ◆ 11g, HT20 use a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- BWch is the nominal channel bandwidth.

1.1.2 Antenna Information

Ant.	Port	Brand	Model Name	Antenna Type	Connector	Gain (dBi)
1	1	-	-	Dipole antenna	Reverse SMA	2

For 2.4GHz function:

For IEEE 802.11 b/g/n mode (1TX/1RX)

Only Ant. 1 (port 1) can be used as transmitting/receiving antenna.

1.1.3 EUT Information

	Operational Condition						
EUT Power Type From Switching Power Supply							
EU	Γ Functio	1	\boxtimes	Point-to-multipoi	int [Point-to-point
Bea	ımforminç	g Function		With beamforming	ng [\boxtimes	Without beamforming
				7	Type of	EU	т
	Stand-alo	ne					
	Combine	d (EUT where	e the	radio part is fully	integra	atec	within another device)
	Combine	d Equipment	- Bra	and Name / Mode	l No.:		
\boxtimes	Plug-in ra	idio (EUT inte	ende	d for a variety of	host sy	ster	ms)
	Host System - Brand Name: DynaScan						
	Host System - Model No.:				DO552	LR	4, DO552LR5, DO552LT4, DO552LT5
	Other:	Other:					

Note. All the host system models are identical, the difference model for difference brand served as marketing strategy.

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1.1.4 Mode Test Duty Cycle

Mode	DC	DCF(dB)	T(s)	VBW(Hz) ≥ 1/T
802.11b	0.996	0.017	n/a (DC>=0.98)	n/a (DC>=0.98)
802.11g	0.962	0.168	1.397m	1k
802.11n HT20	0.97	0.132	1.31m	1k

1.1.5 Table for Permissive Change

This product is an extension of original one reported under Sporton project number: FR882303AC Below is the table for the change of the product with respect to the original one.

Modifications	Performance Checking
	DTS bandwidth,
1. The dipole Antenna was added.	Maximum Conducted Output Power,
2. Host System were added	Power Spectral Density,
(DO552LR4, DO552LR5, DO552LT4, DO552LT5)	Emissions in Non-restricted Frequency Bands,
	Emissions in Restricted Frequency Bands

1.2 Testing Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- 47 CFR FCC Part 15
- ANSI C63.10-2013
- KDB 558074 D01 v05

1.3 Testing Location Information

	Testing Location						
\boxtimes	HWA YA	ADD :	No. 52, Huaya 1st Rd.,	No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)			
		TEL :	886-3-327-3456	886-3-327-3456 FAX : 886-3-327-0973			
			Test site Designation	on No. TW1190 with FCC.			
	JHUBEI	ADD :	No.8, Ln. 724, Bo'ai St	., Zhubei City, Hsinchu County, Taiwan (R.O.C.)			
	TEL: 886-3-656-9065 FAX: 886-3-656-9085						
	Test site Designation No. TW0006 with FCC.						

Test Condition	Test Site No.	Test Engineer	Test Environment	Test Date
RF Conducted	TH01-HY	Andy	24.5°C / 65%	29/Oct/2018
Radiated	03CH03-HY	Justin	22.5°C / 58%	29/Oct/2018
AC Conduction	CO01-HY	Sam	23.5°C / 65%	27/Aug/2017

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1.4 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Test Items	Uncertainty	Remark
Conducted Emission (150kHz ~ 30MHz)	3.6 dB	Confidence levels of 95%
Radiated Emission (9kHz ~ 30MHz)	3.0 dB	Confidence levels of 95%
Radiated Emission (30MHz ~ 1,000MHz)	4.3 dB	Confidence levels of 95%
Radiated Emission (1GHz ~ 18GHz)	3.9 dB	Confidence levels of 95%
Radiated Emission (18GHz ~ 40GHz)	3.5 dB	Confidence levels of 95%
Conducted Emission	1.3 dB	Confidence levels of 95%
Temperature	0.7 ℃	Confidence levels of 95%
Humidity	4 %	Confidence levels of 95%

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2 Test Configuration of EUT

2.1 Test Condition

RF Conducted	Abbreviation	Remark
TnomVnom	Tnom	20°C
-	Vnom	120V

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2.2 Test Channel Mode

Test Software	RFTestTool
---------------	------------

Mode	Power Setting
802.11b_Nss1,(1Mbps)_1TX	-
2412MHz	69
2417MHz	69
2422MHz	80
2437MHz	80
2452MHz	80
2457MHz	72
2462MHz	72
802.11g_Nss1,(6Mbps)_1TX	-
2412MHz	64
2417MHz	80
2437MHz	80
2457MHz	80
2462MHz	67
802.11n HT20_Nss1,(MCS0)_1TX	-
2412MHz	64
2417MHz	80
2437MHz	80
2457MHz	80
2462MHz	67

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2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests		
Tests Item AC power-line conducted emissions		
Condition AC power-line conducted measurement for line and neutral		
Operating Mode	CTX	
1	Switching Power Supply mode	

The Worst Case Mode for Following Conformance Tests	
Tests Item	DTS Bandwidth Maximum Conducted Output Power Power Spectral Density Emissions in Non-restricted Frequency Bands
Test Condition	Conducted measurement at transmit chains

Th	The Worst Case Mode for Following Conformance Tests		
Tests Item	Emissions in Restricted Frequency Bands		
Test Condition	Radiated measurement If EUT consist of multiple antenna assembly (multiple antenna are used in EUT regardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.		
Operating Mode < 1GHz	CTX		
1	Switching Power Supply mode		
Operating Mode > 1GHz	CTX		
	Y Plane		
Orthogonal Planes of EUT			
Worst Planes of EUT	V		

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2.4 Support Equipment

	Support Equipment - RF Conducted				
No.	Equipment	Brand Name	Model Name	FCC ID	
1	Notebook	DELL	E5410	R33002 / DOC	
2	Adapter for NB	DELL	HA65NM130	R35737 / DOC	
3	AC Power Source	GW	APS-9102	-	
4	Fixture	-	-	-	

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Note: Support equipment No.4 was provided by customer.

	Support Equipment – Radiated Emission				
No.	Equipment	Brand Name	Model Name	FCC ID	
1	Host	DynaScan	DS851LR4-1	-	

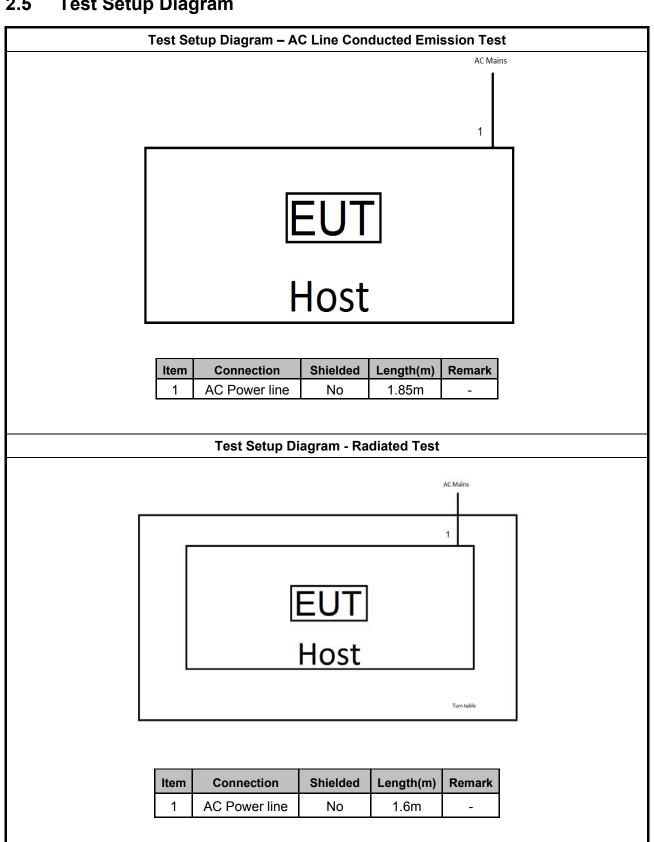
	Support Equipment – AC Conduction				
No.	Equipment	Brand Name	Model Name	FCC ID	
1	Host	DynaScan	DI100ST2	-	

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Test Setup Diagram 2.5



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3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit		
Frequency Emission (MHz)	Quasi-Peak	Average
0.15-0.5	66 - 56 *	56 - 46 *
0.5-5	56	46
5-30	60	50

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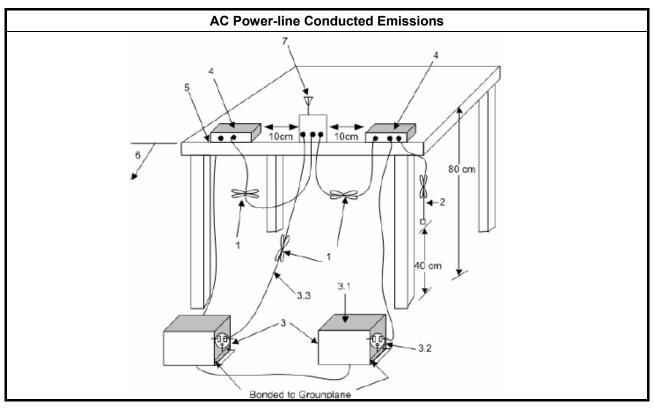
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

Ī	Test Method
I	Refer as ANSI C63.10-2013, clause 6.2 for AC power-line conducted emissions.

3.1.4 Test Setup



3.1.5 Test Result of AC Power-line Conducted Emissions

Refer as Appendix A

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3.2 DTS Bandwidth

3.2.1 6dB Bandwidth Limit

6dB Bandwidth Limit
Systems using digital modulation techniques:
■ 6 dB bandwidth ≥ 500 kHz.

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3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.2.3 Test Procedures

	Test Method					
•	For the emission bandwidth shall be measured using one of the options below:					
	Refer as KDB 558074. clause 8.2 (11.9.2.2 of ANSI C63.10) DTS bandwidth measurement.					
	Refer as RSS-Gen, clause 6.7 for occupied bandwidth testing.					
	Refer as ANSI C63.10, clause 6.9.3 for occupied bandwidth testing.					

3.2.4 Test Setup

Emission Bandwidth					
Spectrum Analyzer					

3.2.5 Test Result of Emission Bandwidth

Refer as Appendix B

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3.3 Maximum Conducted Output Power

3.3.1 Maximum Conducted Output Power Limit

Max	Maximum Conducted Output Power Limit							
	•	If $G_{TX} \le 6$ dBi, then $P_{Out} \le 30$ dBm (1 W)						
	■ Point-to-multipoint systems (P2M): If G _{TX} > 6 dBi, then P _{Out} = 30 – (G _{TX} – 6) dBm							
	■ Point-to-point systems (P2P): If G _{TX} > 6 dBi, then P _{Out} = 30 – (G _{TX} – 6)/3 dBm							
	•	Smart antenna system (SAS):						
		- Single beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm						
		- Overlap beam: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3$ dBm						
		- Aggregate power on all beams: If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)/3 + 8$ dB dBm						
e.i.r	.p. P	ower Limit:						
•	240	0-2483.5 MHz Band						
	•	Point-to-multipoint systems (P2M): P _{eirp} ≤ 36 dBm (4 W)						
	•	Point-to-point systems (P2P): $P_{eirp} \le MAX(36, [P_{Out} + G_{TX}]) dBm$						
	•	Smart antenna system (SAS)						
		- Single beam: P _{eirp} ≤ MAX(36, P _{Out} + G _{TX}) dBm						
		- Overlap beam: $P_{eirp} \le MAX(36, P_{Out} + G_{TX}) dBm$						
		- Aggregate power on all beams: $P_{eirp} \le MAX(36, [P_{Out} + G_{TX} + 8]) dBm$						
		aximum peak conducted output power or maximum conducted output power in dBm, e maximum transmitting antenna directional gain in dBi.						

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3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

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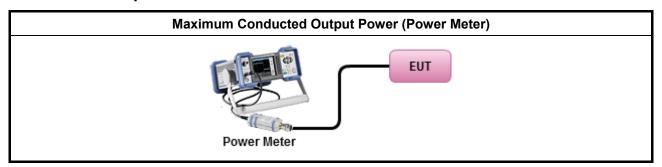
3.3.3 Test Procedures

	Test Method					
•	Maximum Peak Conducted Output Power					
	☐ Refer as KDB 558074, clause 8.3.1.1 (11.9.1.1 of ANSI C63.10) RBW ≥ EBW method.					
	Refer as KDB 558074, clause 8.3.1.2 (11.9.1.2 of ANSI C63.10) integrated band power method.					
	Refer as KDB 558074, clause 8.3.1.3 (11.9.1.3 of ANSI C63.10) peak power meter.					
•	Maximum Average Conducted Output Power					
	Refer as KDB 558074, clause 8.3.2.2 (11.9.2.2 of ANSI C63.10) using a spectrum analyzer.					
	Refer as KDB 558074, clause 8.3.2.3 (11.9.2.3 of ANSI C63.10) using a power meter.					
•	For conducted measurement.					
	If the EUT supports multiple transmit chains using options given below: Refer as KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.					
	■ If multiple transmit chains, EIRP calculation could be following as methods: P _{total} = P ₁ + P ₂ + + P _n (calculated in linear unit [mW] and transfer to log unit [dBm]) EIRP _{total} = P _{total} + DG					

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3.3.4 Test Setup



3.3.5 Test Result of Maximum Conducted Output Power

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3.4 Power Spectral Density

3.4.1 Power Spectral Density Limit

Power Spectral Density Limit

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Power Spectral Density (PSD) ≤ 8 dBm/3kHz

3.4.2 Measuring Instruments

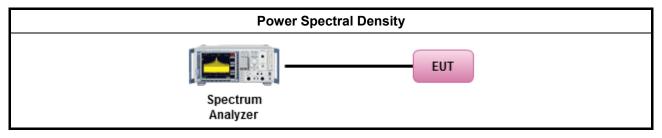
Refer a test equipment and calibration data table in this test report.

3.4.3 Test Procedures

Test Method

- Peak power spectral density procedures that the same method as used to determine the conducted output power. If maximum peak conducted output power was measured to demonstrate compliance to the output power limit, then the peak PSD procedure below (Method PKPSD) shall be used. If maximum conducted output power was measured to demonstrate compliance to the output power limit, then one of the average PSD procedures shall be used, as applicable based on the following criteria (the peak PSD procedure is also an acceptable option).
 - Refer as KDB 558074, clause 8.4 (11.10 of ANSI C63.10) Method PKPSD.
- For conducted measurement.
 - If The EUT supports multiple transmit chains using options given below:
 - Measure and sum the spectra across the outputs. Refer as KDB 662911, In-band power spectral density (PSD). Sample all transmit ports simultaneously using a spectrum analyzer for each transmit port. Where the trace bin-by-bin of each transmit port summing can be performed. (i.e., in the first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3, and so on up to the NTX output to obtain the value for the first frequency bin of the summed spectrum.). Add up the amplitude (power) values for the different transmit chains and use this as the new data trace.

3.4.4 Test Setup



3.4.5 Test Result of Power Spectral Density

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3.5 Emissions in Non-restricted Frequency Bands

3.5.1 Emissions in Non-restricted Frequency Bands Limit

Un-restricted Band Emissions Limit				
RF output power procedure	Limit (dB)			
Peak output power procedure	20			
Average output power procedure	30			

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- Note 1: If the peak output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the peak conducted output power measured within any 100 kHz outside the authorized frequency band shall be attenuated by at least 20 dB relative to the maximum measured in-band peak PSD level.
- Note 2: If the average output power procedure is used to measure the fundamental emission power to demonstrate compliance to requirements, then the power in any 100 kHz outside of the authorized frequency band shall be attenuated by at least 30 dB relative to the maximum measured in-band average PSD level.

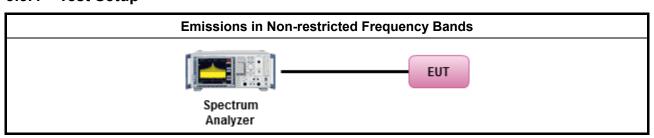
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

Test Method ■ Refer as KDB 558074, clause 8.5 (11.11 of ANSI C63.10) for non-restricted frequency bands.

3.5.4 Test Setup



3.5.5 Test Result of Emissions in Non-restricted Frequency Bands

Refer as Appendix E

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3.6 Emissions in Restricted Frequency Bands

3.6.1 Emissions in Restricted Frequency Bands Limit

Restricted Band Emissions Limit							
Frequency Range (MHz)	Measure Distance (m)						
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300				
0.490~1.705	24000/F(kHz)	33.8 - 23	30				
1.705~30.0	30	29	30				
30~88	100	40	3				
88~216	150	43.5	3				
216~960	200	46	3				
Above 960	500	54	3				

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- Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).
- Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.
- Note 3: Using the distance of 1m during the test for above 18 GHz, and the test value to correct for the distance factor at 3m.

3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

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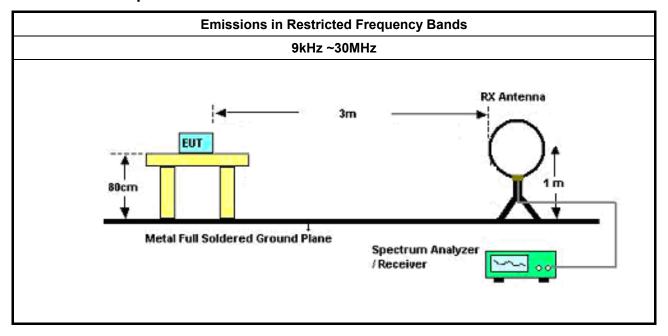
3.6.3 Test Procedures

Test Method

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- The average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
- Refer as ANSI C63.10, clause 6.10.3 band-edge testing shall be performed at the lowest frequency channel and highest frequency channel within the allowed operating band.
- For the transmitter unwanted emissions shall be measured using following options below:
 - Refer as KDB 558074, clause 8.6 (11.12 of ANSI C63.10) for restricted frequency bands.
- For the transmitter band-edge emissions shall be measured using following options below:
 - Refer as KDB 558074 clause 8.7.1, When the performing peak or average radiated measurements, emissions within 2 MHz of the authorized band edge may be measured using the marker-delta method described below.
 - Refer as KDB 558074, clause 8.7.2 (6.10.6 of ANSI C63.10) for marker-delta method for band-edge measurements.
 - Refer as KDB 558074, clause 8.7.3 for narrower resolution bandwidth (100kHz) using the band power and summing the spectral levels (i.e., 1 MHz).

3.6.4 Test Setup



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30MHz~1GHz **RX Antenna** Ant. feed EUT point 80cm Metal Full Soldered Ground Plane Spectrum Analyzer /Receiver **Above 1GHz** 4M 3M & 1M 1.5M

3.6.5 Test Result of Emissions in Restricted Frequency Bands (Below 30MHz)

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Spectrum Analyzer

3.6.6 Test Result of Emissions in Restricted Frequency Bands

Refer as Appendix F

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4 Test Equipment and Calibration Data

Instrument for AC Conduction

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
EMC Receiver	R&S	ESR3	102052	9KHz ~ 3.6GHz	12/Jun/2018	11/Jun/2019
RF Cable-CON	HUBER+SUHNER	RG213/U	07611832020001	9kHz ~ 30MHz	06/Oct/2017	05/Oct/2018
AC POWER	APC	AFC-11005G	F310050055	47Hz~63Hz 5~300V	NCR	NCR
Impuls Begrenzer Pulse Limiter	SCHWARZBECK	VTSD 9561-F	9561-F041	9 kHz ~ 30 MHz	12/Oct/2017	11/Oct/2018
LISN	R&S	ENV216	101295	9kHz ~ 30MHz	17/Nov/2017	16/Nov/2018

NCR : Non-Calibration Require

Instrument for Conducted Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
Power Sensor	Anritsu	MA2411B	1339407	300MHz ~ 40GHz	06/Nov/2017	05/Nov/2018
Power Meter	Anritsu	ML2495A	1517010	300MHz ~ 40GHz	06/Nov/2017	05/Nov/2018
RF Cable-1m	HUBER+ SUHNER	MY37332/4	RF Cable - 44	30MHz~1GHz	26/Jan/2018	25/Jan/2019
RF Cable-0.2m	HUBER+ SUHNER	SUCOFLEX_104	MY10710/4	30MHz ~ 26.5GHz	26/Jan/2018	25/Jan/2019
RF Cable-0.2m	HUBER+ SUHNER	SUCOFLEX_104	MY10709/4	30MHz ~ 26.5GHz	26/Jan/2018	25/Jan/2019
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	26/Jul/2018	25/Jul/2019

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FCC Test Report

Instrument for Radiated Test

Instrument	Manufacturer	Model No.	Serial No.	Spec.	Calibration Date	Calibration Due Date
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	27/Oct/2017	26/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	30MHz ~ 1GHz 3m	17/Oct/2018	16/Oct/2019
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	27/Oct/2017	26/Oct/2018
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH02-HY	1GHz ~ 18GHz 3m	17/Oct/2018	16/Oct/2019
Amplifier	HP	8447D	2944A08033	10kHz ~ 1.3GHz	23/Apr/2018	19/Apr/2019
Microwave System Preamplifier	KEYSIGHT	83017A	MY53270196	1GHz ~ 26.5GHz	05/Sep/2018	04/Sep/2019
Signal Analyzer	R&S	FSV40	101500	10Hz ~ 40GHz	18/Jul/2018	17/Jul/2019
RF Cable-R03m	Jye Bao	RG142	CB021	9kHz ~ 1GHz	29/Jan/2018	28/Jan/2019
RF Cable-high	SUHNER	SUCOFLEX 106	CB222	1GHz ~ 40GHz	29/Jan/2018	28/Jan/2019
Bilog Antenna & 5db Attenuator	SCHAFFNER/MTJ	CBL6112D / MTJ6102-05	2678 / 001	30MHz ~ 2GHz	07/Jul/2018	06/Jul/2019
Broadband Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA 9170154	18GHz ~ 40GHz	06/Feb/ 2018	05/Feb/2019
EMC Receiver	R&S	ESR	102051	9KHz ~ 3.6GHz	03/May/2018	02/May/2019
Double Ridged Guide Horn Antenna	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1531	1GHz ~ 18GHz	18/Apr/ 2018	17/Apr/2019
Preamplifier	MITEQ	TTA1840-35-HG	1864481	18GHz ~ 40GHz	24/Aug/2018	23/Aug/2019
Loop Antenna	TESEQ	HLA 6120	31244	9k-30MHz	29/Mar/2018	28/Mar/2019

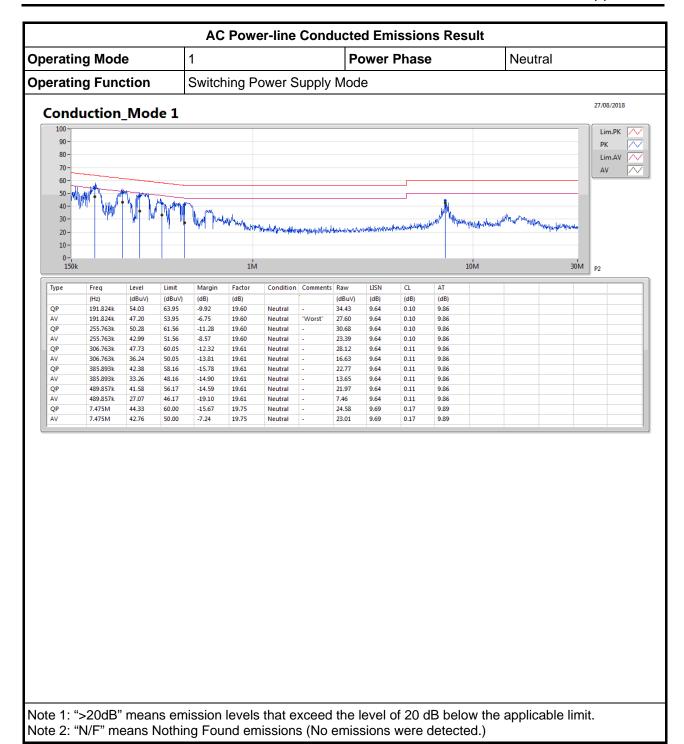
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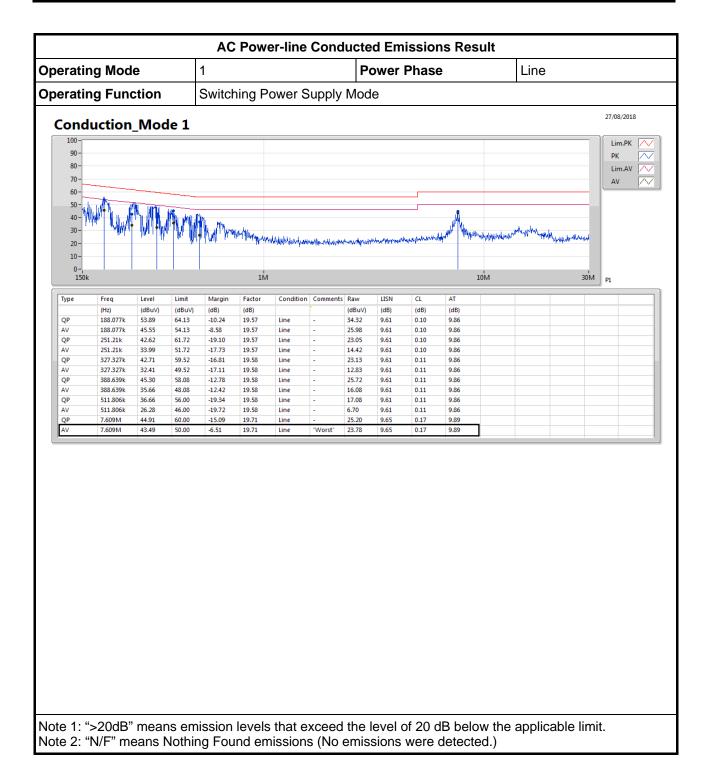
AC Power-line Conducted Emissions



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EBW Result Appendix B

Summary

Mode	Max-N dB	Max-OBW	ITU-Code	Min-N dB	Min-OBW
	(Hz)	(Hz)		(Hz)	(Hz)
2.4-2.4835GHz	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	9.5M	15.092M	15M1G1D	8.975M	14.043M
802.11g_Nss1,(6Mbps)_1TX	15.125M	16.567M	16M6D1D	14.975M	16.342M
802.11n HT20_Nss1,(MCS0)_1TX	15.1M	17.616M	17M6D1D	14.075M	17.491M

Max-N dB = Maximum 6dB down bandwidth; **Max-OBW** = Maximum 99% occupied bandwidth; **Min-N dB** = Minimum 6dB down bandwidth; **Min-OBW** = Minimum 99% occupied bandwidth;

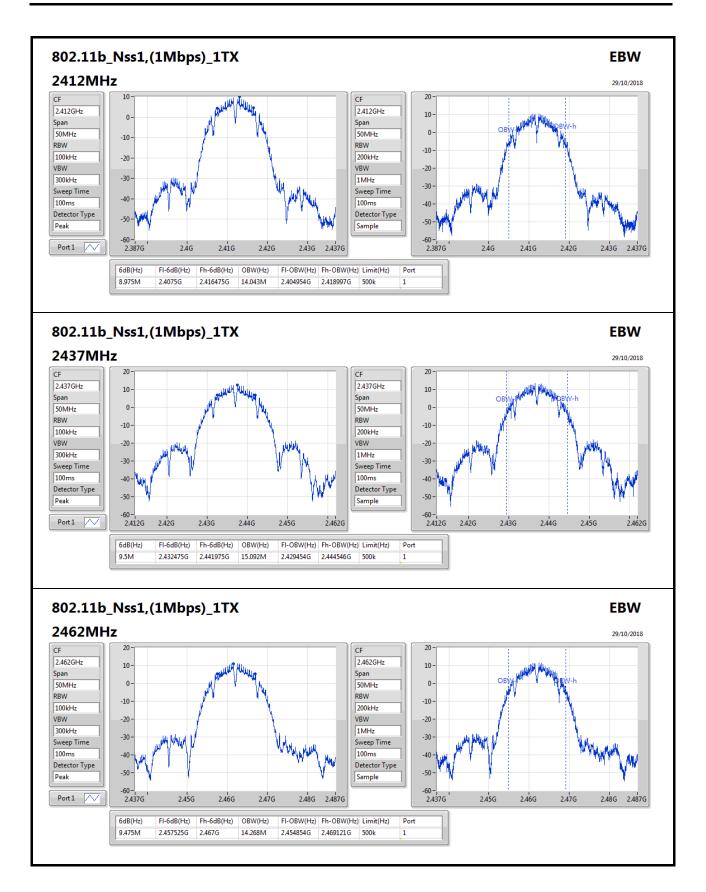
Result

Mode	Result	Limit	Port 1-N dB	Port 1-OBW
		(Hz)	(Hz)	(Hz)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	8.975M	14.043M
2437MHz_TnomVnom	Pass	500k	9.5M	15.092M
2462MHz_TnomVnom	Pass	500k	9.475M	14.268M
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	15.125M	16.342M
2437MHz_TnomVnom	Pass	500k	15.025M	16.567M
2462MHz_TnomVnom	Pass	500k	14.975M	16.367M
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-
2412MHz_TnomVnom	Pass	500k	14.075M	17.491M
2437MHz_TnomVnom	Pass	500k	15M	17.616M
2462MHz_TnomVnom	Pass	500k	15.1M	17.566M

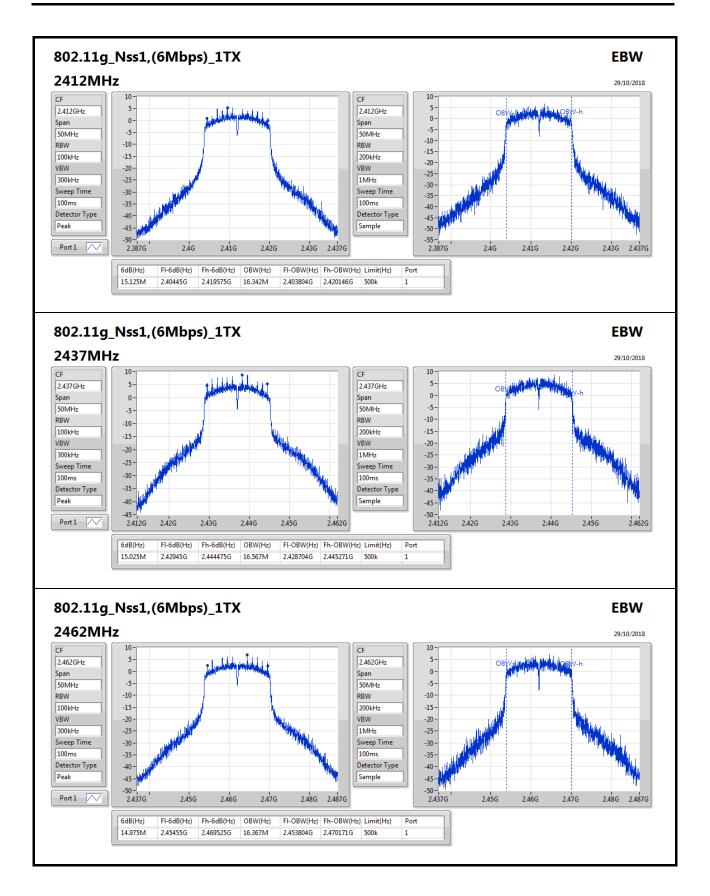
Port X-N dB = Port X 6dB down bandwidth; Port X-OBW = Port X 99% occupied bandwidth;

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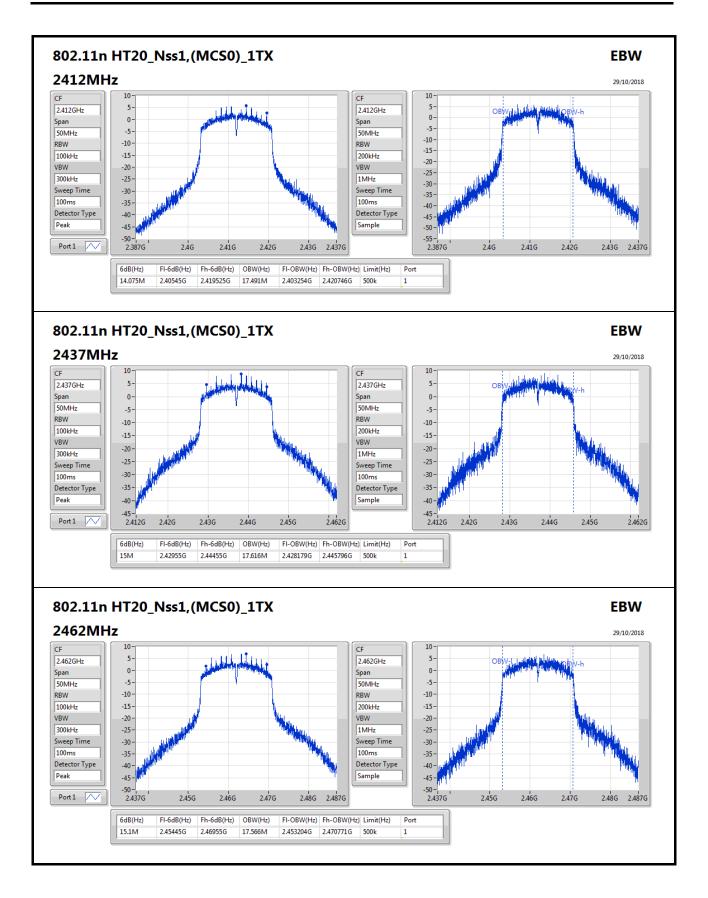














AV Power Result Appendix C

Summary

Mode	Total Power	Total Power
	(dBm)	(W)
2.4-2.4835GHz	-	-
802.11b_Nss1,(1Mbps)_1TX	21.65	0.14622
802.11g_Nss1,(6Mbps)_1TX	18.90	0.07762
802.11n HT20_Nss1,(MCS0)_1TX	18.80	0.07586

Result

Mode	Result	DG	Port 1	Total Power	Power Limit
		(dBi)	(dBm)	(dBm)	(dBm)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.00	18.16	18.16	30.00
2417MHz_TnomVnom	Pass	2.00	18.16	18.16	30.00
2422MHz_TnomVnom	Pass	2.00	21.65	21.65	30.00
2437MHz_TnomVnom	Pass	2.00	21.39	21.39	30.00
2452MHz_TnomVnom	Pass	2.00	21.48	21.48	30.00
2457MHz_TnomVnom	Pass	2.00	19.73	19.73	30.00
2462MHz_TnomVnom	Pass	2.00	19.53	19.53	30.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	=	-
2412MHz_TnomVnom	Pass	2.00	16.15	16.15	30.00
2417MHz_TnomVnom	Pass	2.00	18.90	18.90	30.00
2437MHz_TnomVnom	Pass	2.00	18.62	18.62	30.00
2457MHz_TnomVnom	Pass	2.00	18.69	18.69	30.00
2462MHz_TnomVnom	Pass	2.00	16.98	16.98	30.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	=	-
2412MHz_TnomVnom	Pass	2.00	16.13	16.13	30.00
2417MHz_TnomVnom	Pass	2.00	18.80	18.80	30.00
2437MHz_TnomVnom	Pass	2.00	18.46	18.46	30.00
2457MHz_TnomVnom	Pass	2.00	18.60	18.60	30.00
2462MHz_TnomVnom	Pass	2.00	17.02	17.02	30.00

DG = Directional Gain; **Port X** = Port X output power

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Appendix D **PSD** Result

Summary

Mode	PD
	(dBm/RBW)
2.4-2.4835GHz	
802.11b_Nss1,(1Mbps)_1TX	-3.20
802.11g_Nss1,(6Mbps)_1TX	-6.17
802.11n HT20_Nss1,(MCS0)_1TX	-5.73

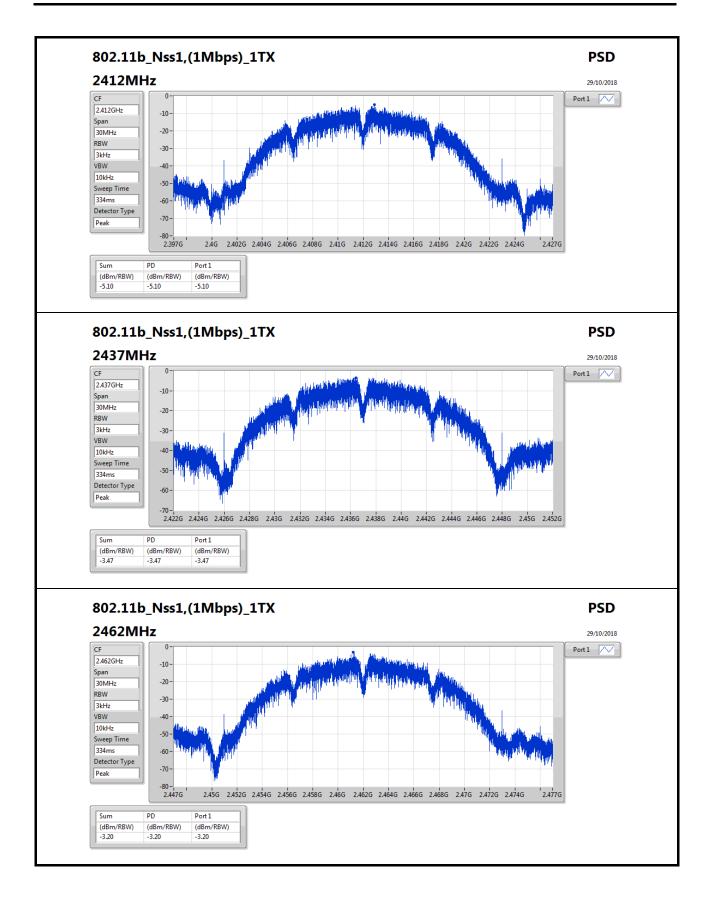
RBW=3kHz.

Result

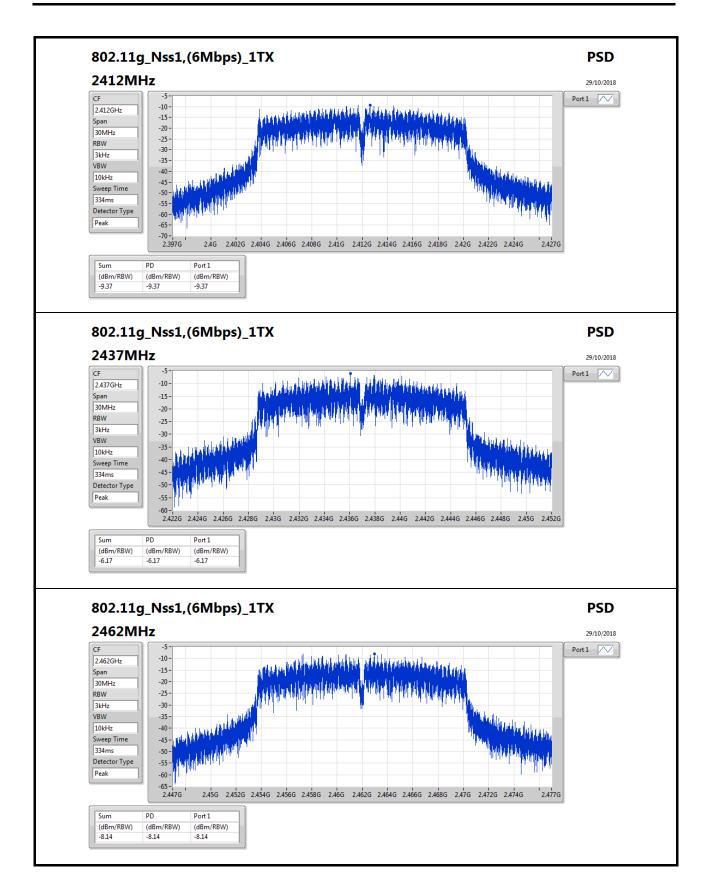
Mode	Result	DG	Port 1	PD	PD Limit
		(dBi)	(dBm/RBW)	(dBm/RBW)	(dBm/RBW)
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.00	-5.10	-5.10	8.00
2437MHz_TnomVnom	Pass	2.00	-3.47	-3.47	8.00
2462MHz_TnomVnom	Pass	2.00	-3.20	-3.20	8.00
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.00	-9.37	-9.37	8.00
2437MHz_TnomVnom	Pass	2.00	-6.17	-6.17	8.00
2462MHz_TnomVnom	Pass	2.00	-8.14	-8.14	8.00
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.00	-8.87	-8.87	8.00
2437MHz_TnomVnom	Pass	2.00	-5.73	-5.73	8.00
2462MHz_TnomVnom	Pass	2.00	-8.20	-8.20	8.00

DG = Directional Gain; RBW=3kHz;
PD = trace bin-by-bin of each transmits port summing can be performed maximum power density; Port X = Port Xpower density;

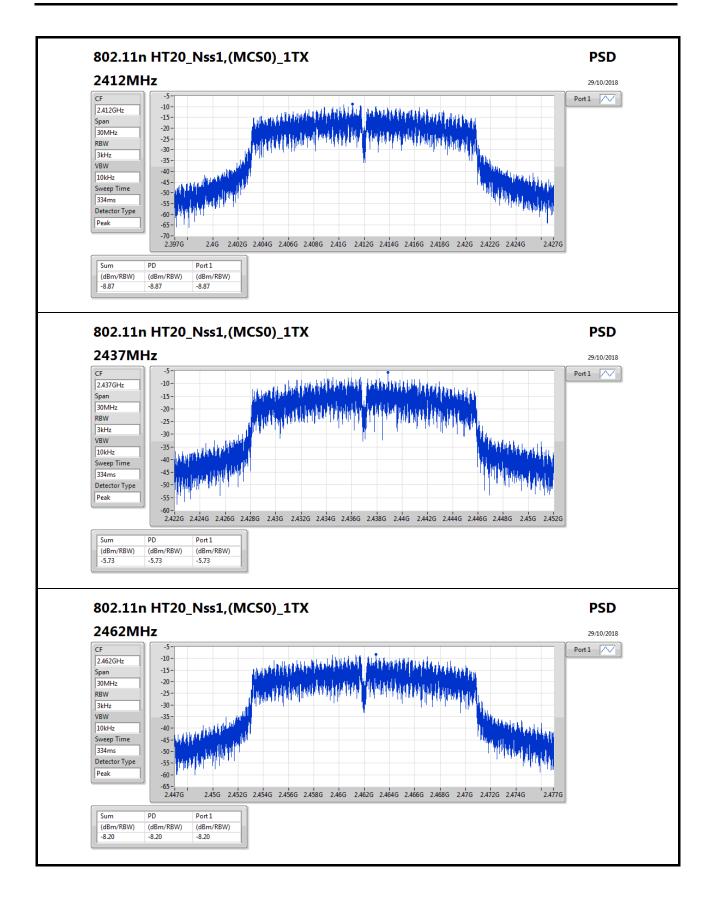














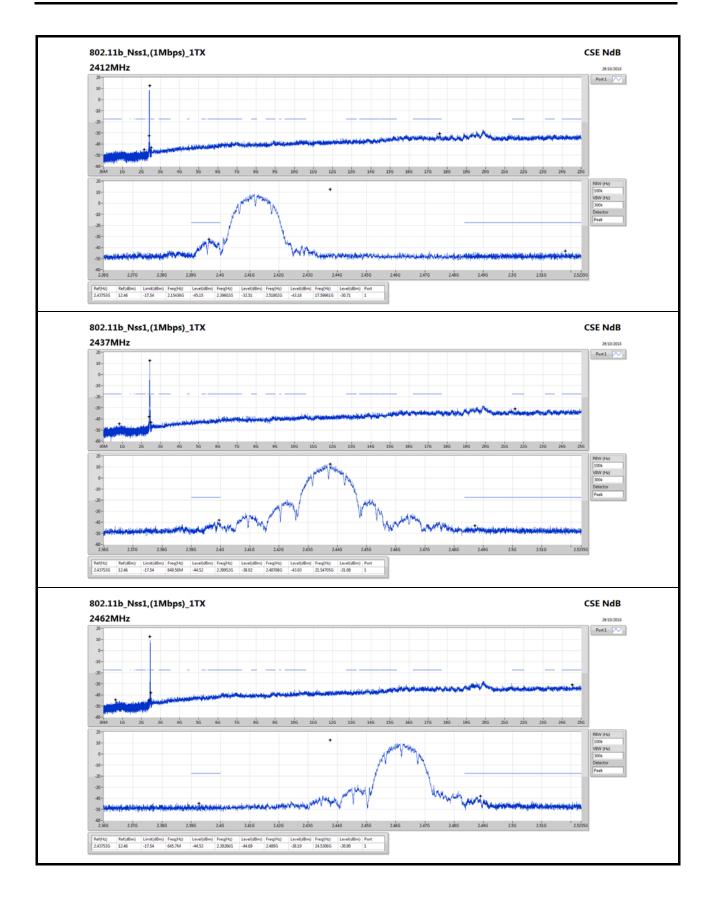
Appendix E

Summary													
Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
2.4-2.4835GHz	-	-	-		-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	2.43753G	12.46	-17.54	2.15438G	-45.15	2.39602G	-32.51	2.51802G	-43.18	17.59961G	-30.71	1
802.11g_Nss1,(6Mbps)_1TX	Pass	2.43198G	7.38	-22.62	2.11797G	-45.05	2.39914G	-26.20	2.52104G	-43.80	24.90447G	-31.03	1
802.11n HT20_Nss1,(MCS0)_1TX	Pass	2.442G	7.59	-22.41	822.2M	-45.40	2.39984G	-23.76	2.50262G	-43.57	24.96348G	-30.97	1

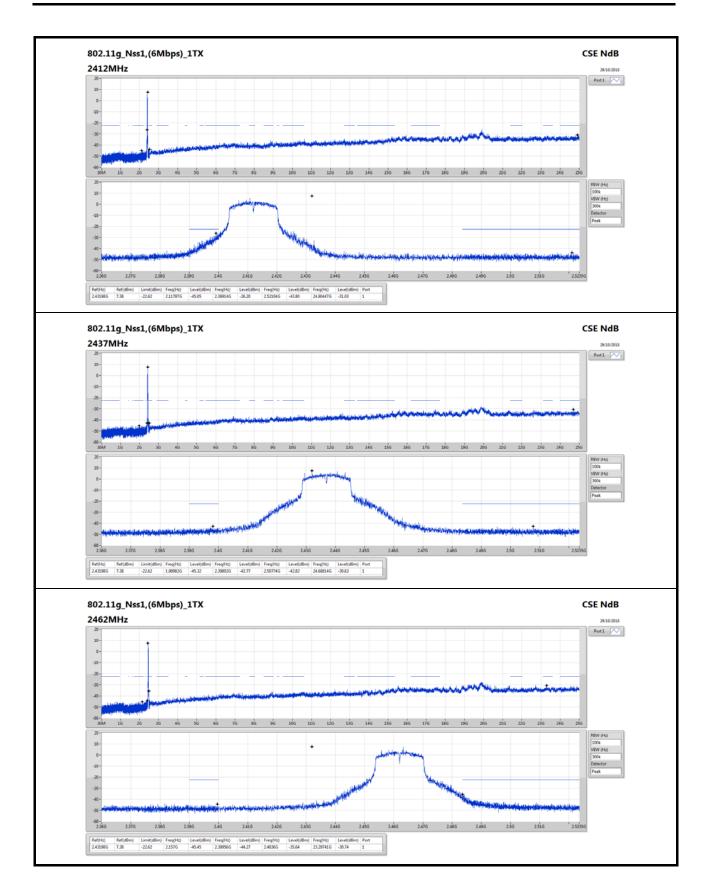
Result

Mode	Result	Ref	Ref	Limit	Freq	Level	Freq	Level	Freq	Level	Freq	Level	Port
		(Hz)	(dBm)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	(Hz)	(dBm)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-		-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.43753G	12.46	-17.54	2.15438G	-45.15	2.39602G	-32.51	2.51802G	-43.18	17.59961G	-30.71	1
2437MHz_TnomVnom	Pass	2.43753G	12.46	-17.54	849.58M	-44.52	2.39952G	-38.02	2.48708G	-43.03	21.54705G	-31.08	1
2462MHz_TnomVnom	Pass	2.43753G	12.46	-17.54	645.7M	-44.53	2.39266G	-44.69	2.489G	-38.19	24.5308G	-30.90	1
802.11g_Nss1,(6Mbps)_1TX		-	-	-	-		-	-	-	-	-		-
2412MHz_TnomVnom	Pass	2.43198G	7.38	-22.62	2.11797G	-45.05	2.39914G	-26.20	2.52104G	-43.80	24.90447G	-31.03	1
2437MHz_TnomVnom	Pass	2.43198G	7.38	-22.62	1.98982G	-45.32	2.39802G	-42.77	2.50774G	-42.82	24.68814G	-30.63	1
2462MHz_TnomVnom	Pass	2.43198G	7.38	-22.62	2.157G	-45.45	2.39956G	-44.27	2.4836G	-35.64	23.29741G	-30.74	1
802.11n HT20_Nss1,(MCS0)_1TX		-	-	-	-	-	-	-	-	-	-	-	-
2412MHz_TnomVnom	Pass	2.442G	7.59	-22.41	822.2M	-45.40	2.39984G	-23.76	2.50262G	-43.57	24.96348G	-30.97	1
2437MHz_TnomVnom	Pass	2.442G	7.59	-22.41	2.15904G	-45.12	2.39824G	-43.31	2.48904G	-43.27	24.5308G	-30.49	1
2462MHz_TnomVnom	Pass	2.442G	7.59	-22.41	2.30787G	-45.15	2.3922G	-43.98	2.4839G	-33.62	24.95786G	-30.48	1

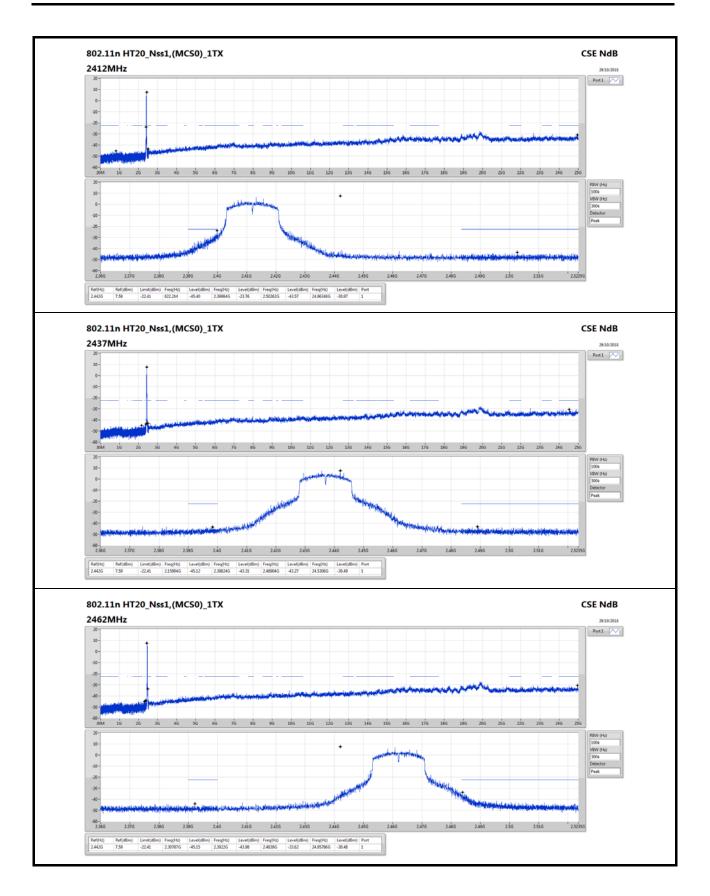












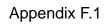


Appendix F.1

Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	QP	518.88M	45.31	46.00	-0.69	-1.53	3	Vertical	34	1.31	-

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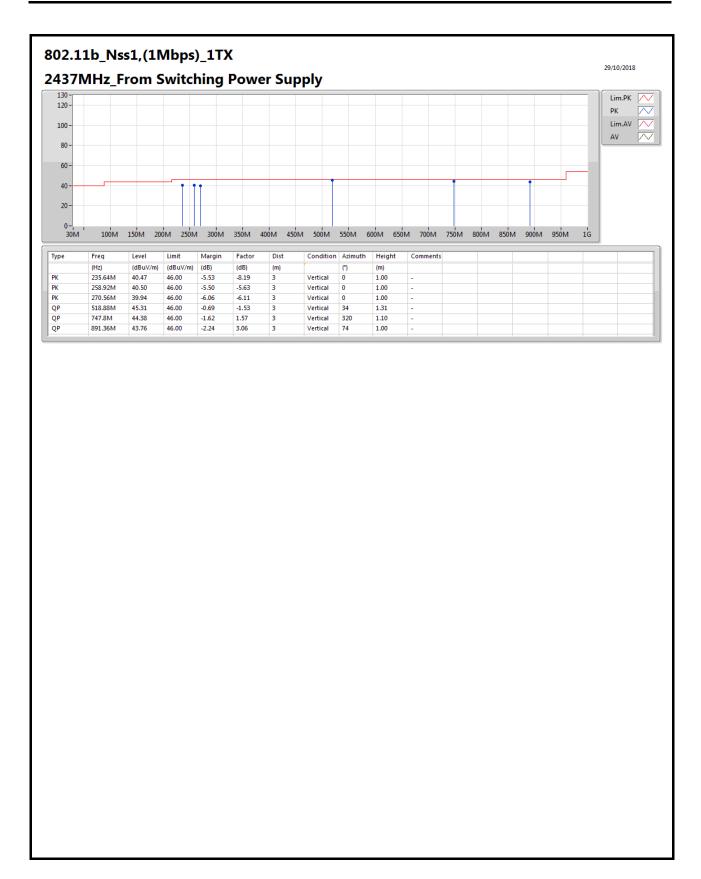


RSE TX below 1GHz Result

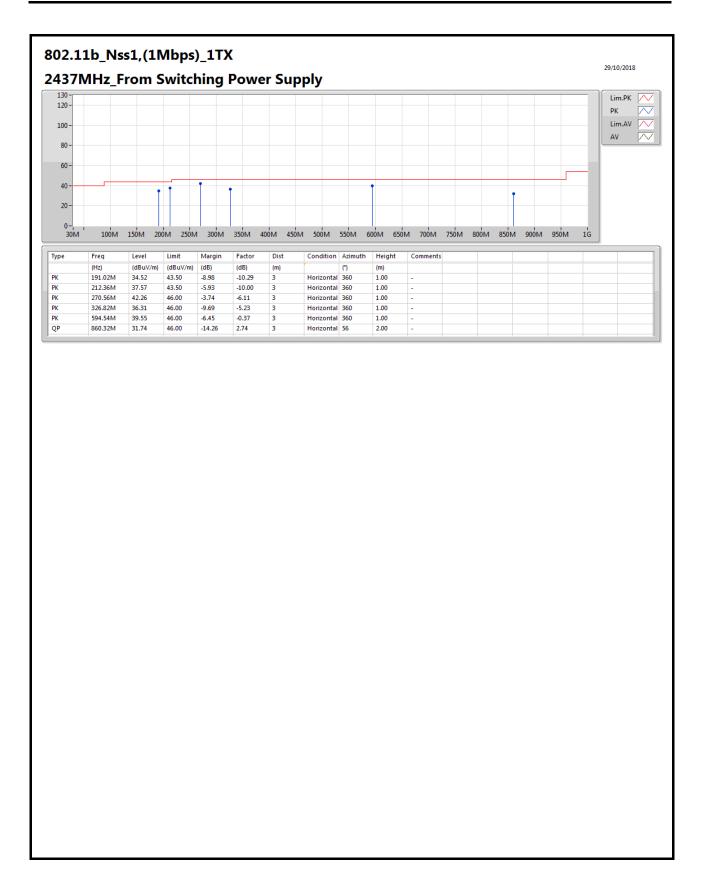
Result

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2437MHz	Pass	PK	235.64M	40.47	46.00	-5.53	-8.19	3	Vertical	0	1.00	-
2437MHz	Pass	PK	258.92M	40.50	46.00	-5.50	-5.63	3	Vertical	0	1.00	-
2437MHz	Pass	PK	270.56M	39.94	46.00	-6.06	-6.11	3	Vertical	0	1.00	-
2437MHz	Pass	QP	518.88M	45.31	46.00	-0.69	-1.53	3	Vertical	34	1.31	-
2437MHz	Pass	QP	747.8M	44.38	46.00	-1.62	1.57	3	Vertical	320	1.10	-
2437MHz	Pass	QP	891.36M	43.76	46.00	-2.24	3.06	3	Vertical	74	1.00	-
2437MHz	Pass	PK	191.02M	34.52	43.50	-8.98	-10.29	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	212.36M	37.57	43.50	-5.93	-10.00	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	270.56M	42.26	46.00	-3.74	-6.11	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	326.82M	36.31	46.00	-9.69	-5.23	3	Horizontal	360	1.00	-
2437MHz	Pass	PK	594.54M	39.55	46.00	-6.45	-0.37	3	Horizontal	360	1.00	-
2437MHz	Pass	QP	860.32M	31.74	46.00	-14.26	2.74	3	Horizontal	56	2.00	-













Summary

Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2.4-2.4835GHz	-	-	-	-	-	-	-	-	-	-	-	-
802.11b_Nss1,(1Mbps)_1TX	Pass	AV	2.3826G	53.28	54.00	-0.72	32.25	3	Vertical	179	1.49	-
802.11g_Nss1,(6Mbps)_1TX	Pass	AV	2.39G	53.85	54.00	-0.15	32.28	3	Vertical	169	1.71	-
802.11n HT20_Nss1,(MCS0)_1TX	Pass	AV	2.39G	53.85	54.00	-0.15	32.28	3	Vertical	175	1.50	-



Result

ult	Dec. II	Typo	Frog	Laurel	Limit	Morgin	Engle:	Diat	Condist	A 71	الماماليا	Comme
Mode	Result	Type	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comme
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
802.11b_Nss1,(1Mbps)_1TX	-	-	-	-	-	-	-	-	-	-	-	-
2412MHz	Pass	AV	2.3852G	52.73	54.00	-1.27	32.25	3	Vertical	177	1.50	-
2412MHz	Pass	AV	2.4112G	96.78	Inf	-Inf	32.35	3	Vertical	177	1.50	-
2412MHz	Pass	PK	2.3888G	61.59	74.00	-12.41	32.27	3	Vertical	177	1.50	-
2412MHz	Pass	PK	2.411G	98.74	Inf	-Inf	32.35	3	Vertical	177	1.50	-
2412MHz	Pass	AV	2.3856G	51.19	54.00	-2.81	32.26	3	Horizontal	244	3.13	-
2412MHz	Pass	AV	2.4112G	96.87	Inf	-Inf	32.35	3	Horizontal	244	3.13	-
2412MHz	Pass	PK	2.3868G	60.93	74.00	-13.07	32.26	3	Horizontal	244	3.13	-
2412MHz	Pass	PK	2.4112G	98.83	Inf	-Inf	32.35	3	Horizontal	244	3.13	-
2412MHz	Pass	AV	4.82394G	35.70	54.00	-18.30	3.02	3	Vertical	131	1.31	-
2412MHz	Pass	PK	4.82418G	45.67	74.00	-28.33	3.02	3	Vertical	131	1.31	-
2412MHz	Pass	AV	4.82394G	36.42	54.00	-17.58	3.02	3	Horizontal	120	1.01	
2412MHz	Pass	PK	4.82418G	45.81	74.00	-28.19	3.02	3	Horizontal	120	1.01	-
2437MHz	Pass	AV	2.3866G	49.99	54.00	-4.01	32.26	3	Vertical	166	1.69	-
2437MHz	Pass	AV	2.4362G	99.11	Inf	-Inf	32.44	3	Vertical	166	1.69	
2437MHz	Pass	AV	2.4858G	48.91	54.00	-5.09	32.62	3	Vertical	166	1.69	
2437MHz	Pass	PK	2.3838G	59.97	74.00	-14.03	32.25	3	Vertical	166	1.69	
2437MHz	Pass	PK	2.4362G	101.06	Inf	-Inf	32.44	3	Vertical	166	1.69	
2437MHz	Pass	PK	2.4998G	60.23	74.00	-13.77	32.67	3	Vertical	166	1.69	
2437MHz	Pass	AV	2.3866G	48.32	54.00	-5.68	32.26	3	Horizontal	181	1.38	
2437MHz	Pass	AV	2.4378G	98.88	Inf	-Inf	32.45	3	Horizontal	181	1.38	
2437MHz	Pass	AV	2.4982G	48.68	54.00	-5.32	32.67	3	Horizontal	181	1.38	
2437MHz	Pass	PK	2.3854G	59.30	74.00	-14.70	32.25	3	Horizontal	181	1.38	
2437MHz	Pass	PK	2.4378G	100.81	Inf	-Inf	32.45	3	Horizontal	181	1.38	
2437MHz	Pass	PK	2.4874G	60.10	74.00	-13.90	32.62	3	Horizontal	181	1.38	
2437MHz	Pass	AV	4.87388G	36.51	54.00	-17.49	3.13	3	Vertical	180	2.04	
2437MHz	Pass	PK	4.87412G	46.11	74.00	-27.89	3.13	3	Vertical	180	2.04	
2437MHz	Pass	AV	4.874G	38.05	54.00	-15.95	3.13	3	Horizontal	110	2.39	
2437MHz	Pass	PK	4.87388G	47.11	74.00	-26.89	3.13	3	Horizontal	110	2.39	
2462MHz	Pass	AV	2.4612G	98.10	Inf	-Inf	32.53	3	Vertical	206	1.65	
2462MHz	Pass	AV	2.4888G	53.24	54.00	-0.76	32.63	3	Vertical	206	1.65	
2462MHz	Pass	PK	2.4612G	100.09	Inf	-Inf	32.53	3	Vertical	206	1.65	
2462MHz	Pass	PK	2.4892G	62.53	74.00	-11.47	32.63	3	Vertical	206	1.65	
2462MHz	Pass	AV	2.4612G	98.91	Inf	-Inf	32.53	3	Horizontal	183	1.40	
2462MHz	Pass	AV	2.4888G	52.53	54.00	-1.47	32.63	3	Horizontal	183	1.40	<u>.</u>
2462MHz	Pass	PK	2.4612G	100.85	Inf	-Inf	32.53	3	Horizontal	183	1.40	<u> </u>
2462MHz	Pass	PK	2.4882G	61.96	74.00	-12.04	32.63	3	Horizontal	183	1.40	
2462MHz	Pass	AV	4.924G	34.17	54.00	-19.83	3.24	3	Vertical	223	1.50	
2462MHz	Pass	PK	4.92442G	45.50	74.00	-28.50	3.24		Vertical	223	1.50	
	+	AV	4.92442G 4.92388G		54.00			3				
2462MHz	Pass			36.96		-17.04	3.24		Horizontal	164	2.71	
2462MHz	Pass	PK av	4.92376G	46.08	74.00	-27.92	3.24	3	Horizontal	164	2.71	
2417MHz	Pass	AV	2.39G	53.22	54.00	-0.78	32.28	3	Vertical	184	1.50	-
2417MHz	Pass	AV	2.4162G	97.55	Inf	-Inf	32.37	3	Vertical	184	1.50	
2417MHz	Pass	PK	2.39G	61.79	74.00	-12.21	32.28	3	Vertical	184	1.50	-
2417MHz	Pass	PK	2.4162G	99.57	Inf	-Inf	32.37	3	Vertical	184	1.50	
2417MHz	Pass	AV	2.39G	51.28	54.00	-2.72	32.28	3	Horizontal	242	1.95	
2417MHz	Pass	AV	2.4162G	97.40	Inf	-Inf	32.37	3	Horizontal	242	1.95	-
2417MHz	Pass	PK	2.388G	60.78	74.00	-13.22	32.27	3	Horizontal	242	1.95	-



Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2417MHz	Pass	PK	2.416G	99.23	Inf	-Inf	32.37	3	Horizontal	242	1.95	-
2422MHz	Pass	AV	2.3826G	53.28	54.00	-0.72	32.25	3	Vertical	179	1.49	-
2422MHz	Pass	AV	2.4212G	99.37	Inf	-Inf	32.39	3	Vertical	179	1.49	-
2422MHz	Pass	PK	2.3846G	62.25	74.00	-11.75	32.25	3	Vertical	179	1.49	-
2422MHz	Pass	PK	2.421G	101.33	Inf	-Inf	32.39	3	Vertical	179	1.49	-
2422MHz	Pass	AV	2.3842G	50.44	54.00	-3.56	32.25	3	Horizontal	246	2.41	-
2422MHz	Pass	AV	2.4212G	98.95	Inf	-Inf	32.39	3	Horizontal	246	2.41	-
2422MHz	Pass	PK	2.385G	59.56	74.00	-14.44	32.25	3	Horizontal	246	2.41	-
2422MHz	Pass	PK	2.421G	100.89	Inf	-Inf	32.39	3	Horizontal	246	2.41	-
2452MHz	Pass	AV	2.4528G	95.92	Inf	-Inf	32.50	3	Vertical	176	1.50	-
2452MHz	Pass	AV	2.4835G	49.84	54.00	-4.16	32.61	3	Vertical	176	1.50	-
2452MHz	Pass	PK	2.4528G	97.88	Inf	-Inf	32.50	3	Vertical	176	1.50	-
2452MHz	Pass	PK	2.4898G	59.98	74.00	-14.02	32.64	3	Vertical	176	1.50	-
2452MHz	Pass	AV	2.4512G	96.86	Inf	-Inf	32.49	3	Horizontal	180	1.49	-
2452MHz	Pass	AV	2.4835G	50.08	54.00	-3.92	32.61	3	Horizontal	180	1.49	-
2452MHz	Pass	PK	2.451G	98.87	Inf	-Inf	32.49	3	Horizontal	180	1.49	-
2452MHz	Pass	PK	2.4835G	59.80	74.00	-14.20	32.61	3	Horizontal	180	1.49	-
2457MHz	Pass	AV	2.4578G	96.57	Inf	-Inf	32.52	3	Vertical	175	1.49	-
2457MHz	Pass	AV	2.4838G	51.97	54.00	-2.03	32.61	3	Vertical	175	1.49	-
2457MHz	Pass	PK	2.4578G	98.51	Inf	-Inf	32.52	3	Vertical	175	1.49	-
2457MHz	Pass	PK	2.4842G	62.10	74.00	-11.90	32.61	3	Vertical	175	1.49	-
2457MHz	Pass	AV	2.4578G	97.88	Inf	-Inf	32.52	3	Horizontal	187	1.56	-
2457MHz	Pass	AV	2.4836G	52.87	54.00	-1.13	32.61	3	Horizontal	187	1.56	-
2457MHz	Pass	PK	2.4578G	99.84	Inf	-Inf	32.52	3	Horizontal	187	1.56	-
2457MHz	Pass	PK	2.4838G	61.28	74.00	-12.72	32.61	3	Horizontal	187	1.56	-
802.11g_Nss1,(6Mbps)_1TX	-	-	-	-	-	-	-	-	-	_	-	-
2412MHz	Pass	AV	2.39G	53.85	54.00	-0.15	32.28	3	Vertical	169	1.71	_
2412MHz	Pass	AV	2.4108G	94.37	Inf	-Inf	32.35	3	Vertical	169	1.71	
2412MHz	Pass	PK	2.3896G	66.80	74.00	-7.20	32.28	3	Vertical	169	1.71	
2412MHz	Pass	PK	2.4104G	103.38	Inf	-Inf	32.34	3	Vertical	169	1.71	
2412MHz	Pass	AV	2.3898G	50.26	54.00	-3.74	32.28	3	Horizontal	188	1.46	_
	Pass	AV		91.51	Inf	-Inf		3		188	1.46	
2412MHz 2412MHz	Pass	PK	2.4092G 2.39G	63.82	74.00	-10.18	32.34 32.28	3	Horizontal Horizontal	188	1.46	-
2412MHz	Pass	PK	2.4118G	101.34	Inf	-10.16 -Inf	32.35	3	Horizontal	188	1.46	-
2412MHz		AV							-			-
	Pass	PK	4.81504G	33.57	54.00	-20.43	3.01	3	Vertical	155	2.19	-
2412MHz	Pass		4.81876G	44.91	74.00	-29.09	3.01	3	Vertical	155	2.19	-
2412MHz	Pass	AV	4.82204G	33.55	54.00	-20.45	3.02	3	Horizontal	207	1.43	-
2412MHz	Pass	PK	4.8158G	44.97	74.00	-29.03	3.01	3	Horizontal	207	1.43	-
2437MHz	Pass	AV	2.389G	48.36	54.00	-5.64	32.27	3	Vertical	166	1.77	-
2437MHz	Pass	AV	2.4358G	93.26	Inf	-Inf	32.44	3	Vertical	166	1.77	-
2437MHz	Pass	AV	2.4998G	48.97	54.00	-5.03	32.67	3	Vertical	166	1.77	-
2437MHz	Pass	PK	2.3886G	60.23	74.00	-13.77	32.27	3	Vertical	166	1.77	-
2437MHz	Pass	PK	2.435G	101.29	Inf	-Inf	32.43	3	Vertical	166	1.77	-
2437MHz	Pass	PK	2.4842G	60.01	74.00	-13.99	32.61	3	Vertical	166	1.77	-
2437MHz	Pass	AV	2.3878G	48.08	54.00	-5.92	32.27	3	Horizontal	181	1.41	-
2437MHz	Pass	AV	2.4382G	93.33	Inf	-Inf	32.45	3	Horizontal	181	1.41	-
2437MHz	Pass	AV	2.497G	49.23	54.00	-4.77	32.66	3	Horizontal	181	1.41	-
2437MHz	Pass	PK	2.3894G	58.93	74.00	-15.07	32.27	3	Horizontal	181	1.41	-
2437MHz	Pass	PK	2.4354G	101.90	Inf	-Inf	32.43	3	Horizontal	181	1.41	-



Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2437MHz	Pass	PK	2.495G	60.20	74.00	-13.80	32.65	3	Horizontal	181	1.41	-
2437MHz	Pass	AV	4.87094G	33.97	54.00	-20.03	3.13	3	Vertical	187	2.87	-
2437MHz	Pass	PK	4.87136G	45.12	74.00	-28.88	3.13	3	Vertical	187	2.87	-
2437MHz	Pass	AV	4.8743G	33.99	54.00	-20.01	3.13	3	Horizontal	111	2.45	-
2437MHz	Pass	PK	4.87436G	45.83	74.00	-28.17	3.13	3	Horizontal	111	2.45	-
2462MHz	Pass	AV	2.461G	91.29	Inf	-Inf	32.53	3	Vertical	172	1.64	-
2462MHz	Pass	AV	2.4835G	51.33	54.00	-2.67	32.61	3	Vertical	172	1.64	-
2462MHz	Pass	PK	2.4598G	100.53	Inf	-Inf	32.52	3	Vertical	172	1.64	-
2462MHz	Pass	PK	2.4835G	66.21	74.00	-7.79	32.61	3	Vertical	172	1.64	-
2462MHz	Pass	AV	2.4606G	93.41	Inf	-Inf	32.53	3	Horizontal	187	1.41	-
2462MHz	Pass	AV	2.4835G	52.87	54.00	-1.13	32.61	3	Horizontal	187	1.41	-
2462MHz	Pass	PK	2.4606G	102.48	Inf	-Inf	32.53	3	Horizontal	187	1.41	-
2462MHz	Pass	PK	2.4835G	67.86	74.00	-6.14	32.61	3	Horizontal	187	1.41	-
2462MHz	Pass	AV	4.93324G	33.65	54.00	-20.35	3.27	3	Vertical	258	1.39	-
2462MHz	Pass	PK	4.91698G	45.46	74.00	-28.54	3.23	3	Vertical	258	1.39	-
2462MHz	Pass	AV	4.939G	33.73	54.00	-20.27	3.28	3	Horizontal	149	1.91	-
2462MHz	Pass	PK	4.93486G	44.99	74.00	-29.01	3.27	3	Horizontal	149	1.91	-
2417MHz	Pass	AV	2.3898G	51.27	54.00	-2.73	32.28	3	Vertical	178	1.50	-
2417MHz	Pass	AV	2.4156G	92.66	Inf	-Inf	32.37	3	Vertical	178	1.50	-
2417MHz	Pass	PK	2.3898G	66.23	74.00	-7.77	32.28	3	Vertical	178	1.50	-
2417MHz	Pass	PK	2.4138G	101.39	Inf	-Inf	32.36	3	Vertical	178	1.50	-
2417MHz	Pass	AV	2.3898G	49.47	54.00	-4.53	32.28	3	Horizontal	247	2.40	-
2417MHz	Pass	AV	2.4182G	92.38	Inf	-Inf	32.37	3	Horizontal	247	2.40	-
2417MHz	Pass	PK	2.3886G	62.06	74.00	-11.94	32.27	3	Horizontal	247	2.40	-
2417MHz	Pass	PK	2.4182G	101.68	Inf	-Inf	32.37	3	Horizontal	247	2.40	-
2457MHz	Pass	AV	2.4582G	90.67	Inf	-Inf	32.52	3	Vertical	175	1.50	-
2457MHz	Pass	AV	2.4836G	49.60	54.00	-4.40	32.61	3	Vertical	175	1.50	-
2457MHz	Pass	PK	2.4552G	99.19	Inf	-Inf	32.51	3	Vertical	175	1.50	-
2457MHz	Pass	PK	2.4864G	62.05	74.00	-11.95	32.62	3	Vertical	175	1.50	-
2457MHz	Pass	AV	2.4584G	91.77	Inf	-Inf	32.52	3	Horizontal	227	2.85	-
2457MHz	Pass	AV	2.4835G	50.08	54.00	-3.92	32.61	3	Horizontal	227	2.85	-
2457MHz	Pass	PK	2.46G	100.41	Inf	-Inf	32.52	3	Horizontal	227	2.85	_
2457MHz	Pass	PK	2.4846G	62.70	74.00	-11.30	32.61	3	Horizontal	227	2.85	-
802.11n HT20_Nss1,(MCS0)_1TX	-	-	-		-	-	-	-	-		-	-
2412MHz	Pass	AV	2.39G	53.85	54.00	-0.15	32.28	3	Vertical	175	1.50	-
2412MHz	Pass	AV	2.41G	92.19	Inf	-Inf	32.34	3	Vertical	175	1.50	_
2412MHz	Pass	PK	2.3892G	68.35	74.00	-5.65	32.27	3	Vertical	175	1.50	-
2412MHz	Pass	PK	2.4098G	100.83	Inf	-J.05	32.34	3	Vertical	175	1.50	-
2412MHz	Pass	AV	2.39G	50.88	54.00	-3.12	32.28	3	Horizontal	189	1.45	-
2412MHz	Pass	AV	2.4102G	90.66	Inf	-J.12	32.34	3	Horizontal	189	1.45	-
2412MHz	Pass	PK	2.3898G	62.24	74.00	-11.76	32.28	3	Horizontal	189	1.45	_
2412MHz	Pass	PK	2.409G	99.94	Inf	-Inf	32.34	3	Horizontal	189	1.45	_
2412MHz	Pass	AV	4.82694G	33.73	54.00	-20.27	3.05	3	Vertical	190	1.43	
2412MHz	Pass	PK	4.82994G	45.52	74.00	-28.48	3.05	3	Vertical	190	1.67	-
2412MHz	Pass	AV	4.81446G	33.50	54.00	-20.50	3.01	3	Horizontal	227	2.01	-
2412MHz	Pass	PK	4.8249G	45.41	74.00	-28.59	3.02	3	Horizontal	227	2.01	
2412MHz 2437MHz	Pass	AV	4.8249G 2.389G	48.62	54.00	-5.38	32.27	3	Vertical	164	1.77	
2437MHz	Pass	AV	2.389G 2.4358G	92.70	54.00 Inf	-5.38 -Inf	32.27	3	Vertical	164	1.77	_
	1		2.4358G 2.4982G									-
2437MHz	Pass	AV	2.4982G	48.96	54.00	-5.04	32.67	3	Vertical	164	1.77	-



Mode	Result	Туре	Freq	Level	Limit	Margin	Factor	Dist	Condition	Azimuth	Height	Comments
			(Hz)	(dBuV/m)	(dBuV/m)	(dB)	(dB)	(m)		(°)	(m)	
2437MHz	Pass	PK	2.3886G	59.70	74.00	-14.30	32.27	3	Vertical	164	1.77	-
2437MHz	Pass	PK	2.4382G	101.34	Inf	-Inf	32.45	3	Vertical	164	1.77	-
2437MHz	Pass	PK	2.4974G	60.14	74.00	-13.86	32.66	3	Vertical	164	1.77	-
2437MHz	Pass	AV	2.3898G	48.11	54.00	-5.89	32.28	3	Horizontal	186	1.41	-
2437MHz	Pass	AV	2.4346G	92.68	Inf	-Inf	32.43	3	Horizontal	186	1.41	-
2437MHz	Pass	AV	2.4938G	49.22	54.00	-4.78	32.65	3	Horizontal	186	1.41	-
2437MHz	Pass	PK	2.3822G	58.93	74.00	-15.07	32.25	3	Horizontal	186	1.41	-
2437MHz	Pass	PK	2.4354G	101.51	Inf	-Inf	32.43	3	Horizontal	186	1.41	-
2437MHz	Pass	PK	2.4942G	60.35	74.00	-13.65	32.65	3	Horizontal	186	1.41	-
2437MHz	Pass	AV	4.86806G	33.74	54.00	-20.26	3.12	3	Vertical	173	3.06	-
2437MHz	Pass	PK	4.86884G	45.27	74.00	-28.73	3.12	3	Vertical	173	3.06	-
2437MHz	Pass	AV	4.87196G	33.55	54.00	-20.45	3.13	3	Horizontal	232	1.50	-
2437MHz	Pass	PK	4.8599G	44.89	74.00	-29.11	3.11	3	Horizontal	232	1.50	-
2462MHz	Pass	AV	2.4608G	90.90	Inf	-Inf	32.53	3	Vertical	170	1.61	-
2462MHz	Pass	AV	2.4835G	52.69	54.00	-1.31	32.61	3	Vertical	170	1.61	-
2462MHz	Pass	PK	2.4606G	99.51	Inf	-Inf	32.53	3	Vertical	170	1.61	-
2462MHz	Pass	PK	2.4835G	66.67	74.00	-7.33	32.61	3	Vertical	170	1.61	-
2462MHz	Pass	AV	2.4632G	92.88	Inf	-Inf	32.54	3	Horizontal	180	1.36	-
2462MHz	Pass	AV	2.4835G	53.72	54.00	-0.28	32.61	3	Horizontal	180	1.36	-
2462MHz	Pass	PK	2.4598G	102.59	Inf	-Inf	32.52	3	Horizontal	180	1.36	-
2462MHz	Pass	PK	2.4836G	67.77	74.00	-6.23	32.61	3	Horizontal	180	1.36	-
2462MHz	Pass	AV	4.93696G	33.63	54.00	-20.37	3.28	3	Vertical	74	2.37	-
2462MHz	Pass	PK	4.91488G	45.11	74.00	-28.89	3.23	3	Vertical	74	2.37	-
2462MHz	Pass	AV	4.93414G	33.67	54.00	-20.33	3.27	3	Horizontal	27	1.50	-
2462MHz	Pass	PK	4.93222G	45.63	74.00	-28.37	3.27	3	Horizontal	27	1.50	-
2417MHz	Pass	AV	2.39G	51.46	54.00	-2.54	32.28	3	Vertical	183	1.50	-
2417MHz	Pass	AV	2.414G	93.06	Inf	-Inf	32.36	3	Vertical	183	1.50	-
2417MHz	Pass	PK	2.3898G	65.29	74.00	-8.71	32.28	3	Vertical	183	1.50	-
2417MHz	Pass	PK	2.41G	101.92	Inf	-Inf	32.34	3	Vertical	183	1.50	-
2417MHz	Pass	AV	2.3896G	49.69	54.00	-4.31	32.28	3	Horizontal	240	1.95	-
2417MHz	Pass	AV	2.4156G	92.73	Inf	-Inf	32.37	3	Horizontal	240	1.95	-
2417MHz	Pass	PK	2.3878G	61.60	74.00	-12.40	32.27	3	Horizontal	240	1.95	-
2417MHz	Pass	PK	2.4142G	101.79	Inf	-Inf	32.36	3	Horizontal	240	1.95	-
2457MHz	Pass	AV	2.4584G	92.18	Inf	-Inf	32.52	3	Vertical	240	1.95	-
2457MHz	Pass	AV	2.4835G	49.84	54.00	-4.16	32.61	3	Vertical	240	1.95	-
2457MHz	Pass	PK	2.4606G	100.85	Inf	-Inf	32.53	3	Vertical	240	1.95	-
2457MHz	Pass	PK	2.4838G	63.59	74.00	-10.41	32.61	3	Vertical	240	1.95	-
2457MHz	Pass	AV	2.458G	91.60	Inf	-Inf	32.52	3	Horizontal	182	1.50	-
2457MHz	Pass	AV	2.4835G	50.31	54.00	-3.69	32.61	3	Horizontal	182	1.50	-
2457MHz	Pass	PK	2.4552G	100.29	Inf	-Inf	32.51	3	Horizontal	182	1.50	-
2457MHz	Pass	PK	2.4835G	65.53	74.00	-8.47	32.61	3	Horizontal	182	1.50	-



