RF TEST REPORT

SIEMIC
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Report No.: FCC IC_RF_SL15121101-AVE-044_DTS
Supersede Report No.:

Applicant	:	Avery Dennison Retail Information Services LLC
Product Name	:	802.11abgn (1X1) + Bluetooth (2.1) module
Model No.	:	SDC-SSD40NBT
Test Standard	:	47 CFR 15.247 RSS-247 Issue 1, May 2015
Test Method	:	ANSI C63.10: 2013 RSS-Gen Issue 4, Nov 2014 558074 D01 DTS Meas Guidance v03r04
FCC ID		GU6-SDC-SSD40NBT
IC ID		1502A-SDC-SSD40NBT
Dates of test	:	02/04/2015 to 02/25/2015
Issue Date	:	01/26/2016
Test Result	:	☒ Pass ☐ Fail
Equipment complied with the specification [X] Equipment did not comply with the specification [ ]		

This Test Report is Issued Under the Authority of:	
Teody Manansala	**David Zhang**
Test Engineer	Engineer Reviewer
This test report may be reproduced in full only **Test result presented in this test report is applicable to the tested sample only**	

Issued By:
SIEMIC Laboratories
775 Montague Expressway, Milpitas, CA 95035

ilac-MRA
ACCREDITED
TESTING CERT # 2742-01

Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.

In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC, RF/Wireless, Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless, Telecom
Taiwan	BSMI, NCC, NIST	EMC, RF, Telecom, Safety
Hong Kong	OFTA, NIST	RF/Wireless, Telecom
Australia	NATA, NIST	EMC, RF, Telecom, Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF, Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom,
Mexico	NOM, COFETEL, Caniety	EMC, RF/Wireless, Telecom, Safety
Europe	A2LA, NIST	EMC, RF, Telecom, Safety
Israel	MOC, NIST	EMC, RF, Telecom, Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC, RF, Telecom
Canada	IC FCB, NIST	EMC, RF, Telecom
Singapore	iDA, NIST	EMC, RF, Telecom
EU	NB	EMC & R&TTE Directive
Japan	MIC (RCB 208)	RF, Telecom
Hong Kong	OFTA (US002)	RF, Telecom

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
FCC IC_RF_SL15121101-AVE-044_DTS	None	Original	01/26/2016

2 Executive Summary

The purpose of this test program was to demonstrate compliance of following product

Company: Avery Dennison Retail Information Service LLC
Product: 802.11abgn (1X1) + Bluetooth (2.1) module
Model: SDC-SSD40NBT

against the current Stipulated Standards. The specified model product stated above has demonstrated compliance with the Stipulated Standard listed on 1st page.

3 Customer information

Applicant Name	:	Avery Dennison Retail Information Service LLC
Applicant Address	:	170 Monarch Lane, Miamisburg, OH 45342 USA
Manufacturer Name	:	Avery Dennison Retail Information Service LLC
Manufacturer Address	:	170 Monarch Lane, Miamisburg, OH 45342 USA

4 Test site information

Lab performing tests	SIEMIC Laboratories
Lab Address	775 Montague Expressway, Milpitas, CA 95035
FCC Test Site No.	881796
IC Test Site No.	4842D-2
VCCI Test Site No.	A0133

5 Modification

Index	Item	Description	Note
-	-	-	-

6 EUT Information

6.1 EUT Description

Product Name	802.11abgn (1X1) + Bluetooth (2.1) module
Model No.	SDC-SSD40NBT
Trade Name	Avery Dennison
Serial No.	N/A
Host Name	Handheld Scan-Print-Apply thermal barcode printer
Host Model	Pathfinder® 6052
DC Input Power	7.4V Lithium-Ion
Adapter Input Power	N/A
Power Adapter SN	N/A
Product Hardware version	Rev. 12
Product Software version	3.03.11
Radio Hardware version	Rev. 12
Radio Software version	3.03.11
Test Software version	3.5.0.11
Date of EUT received	01/10/2015
Equipment Class/ Category	DTS, UNII
Operating Frequencies	2412-2462MHz, 5180-5320MHz, 5500-5700MHz, 5745-5805MHz
Port/Connectors	x3USB, RJ45, x2Serial, Mini-Din

6.2 Radio Description

Spec for Radio

Radio Type	802.11b	802.11g	802.11a	802.11n-20M
Operating Frequency	2412-2462MHz	2412-2462MHz	5180-5320MHz 5500-5700MHz 5745-5805MHz	2412-2462MHz 5180-5320MHz 5500-5700MHz 5745-5805MHz
Modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing	5MHz	5MHz	20MHz	5MHz(2.4GHz), 20MHz (5GHz)
Number of Channels	11	11	23	11(2.4GH) 23(5GHz)
Antenna Type	BlackChip Antenna			
Antenna Gain	1.7dBi (for 2.4GHz), 3dBi (for 5GHz)			
Antenna Connector Type	U. FL connector			

EUT Power Level Settings

Mode	Frequency	Power Setting
802.11-b	2412	15 dBm
802.11-b	2437	15 dBm
802.11-b	2462	15 dBm
802.11-g	2412	15 dBm
802.11-g	2437	15 dBm
802.11-g	2462	15 dBm
802.11-n-20	2412	15 dBm
802.11-n-20	2437	15 dBm
802.11-n-20	2462	15 dBm

6.3 Host Photos – External

Model 6052:

Top View

Bottom View

Front View

Rear View

Left Side View

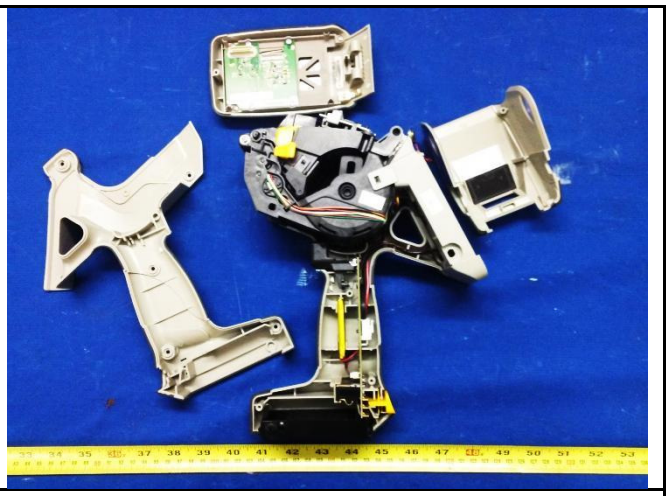
Right Side View

Battery –Top View	**Battery –Bottom View**

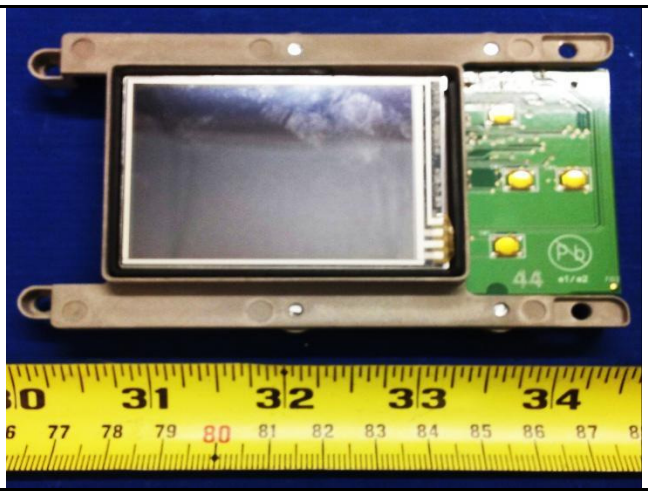
6.4 Host Photos – Internal

Model 6052:

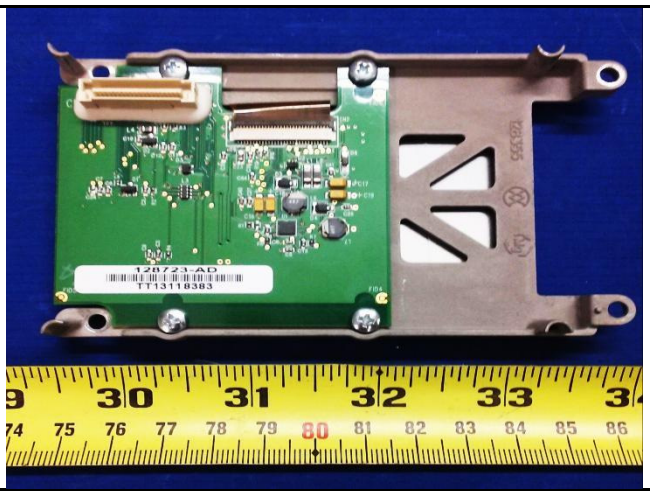
Host – With Cover



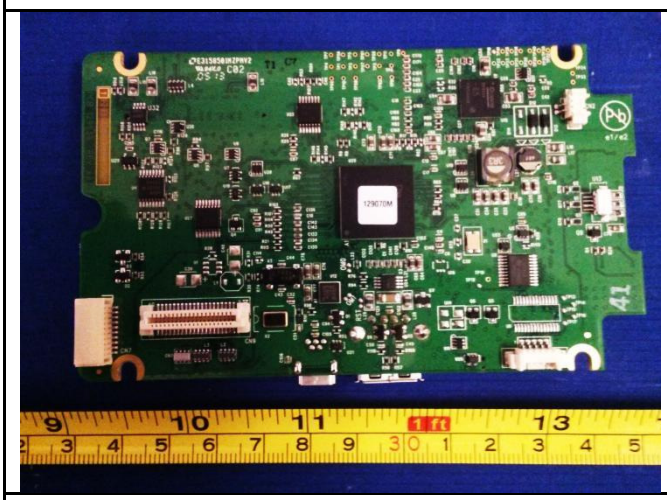
Host – Without Cover



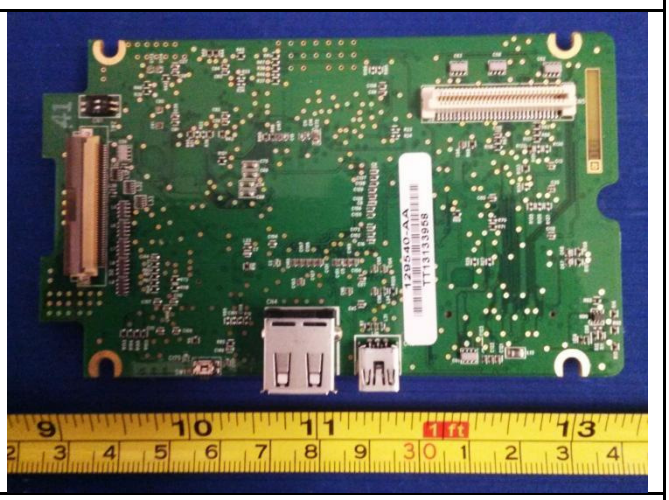
LCD Display - Front View



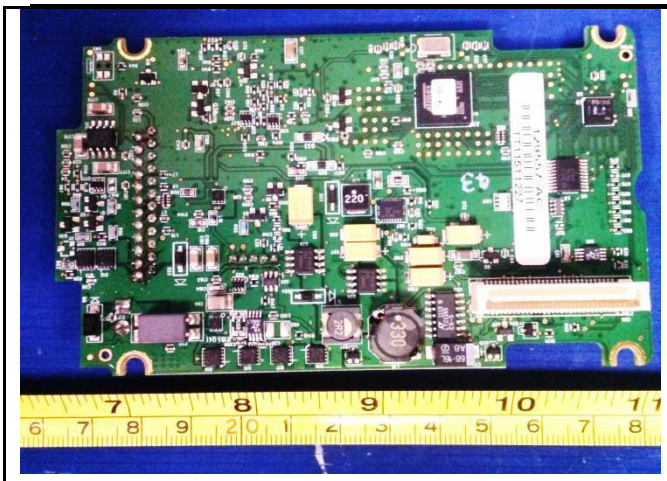
LCD Display - Rear View



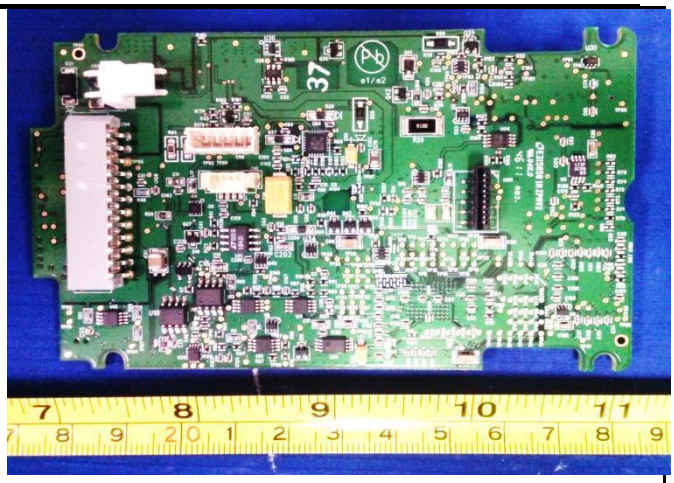
PCBA1 - Front View



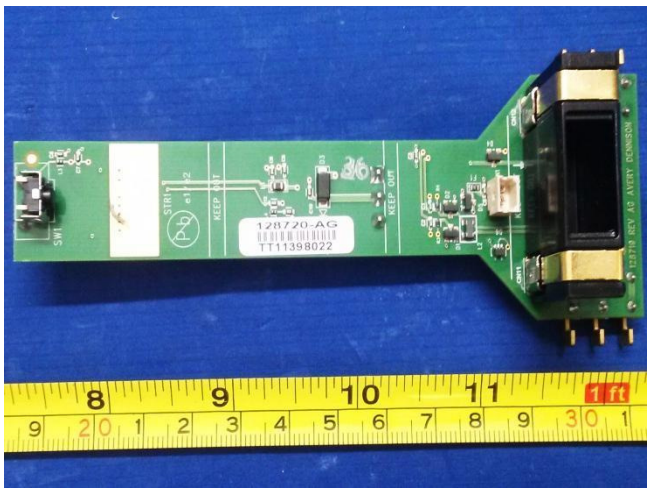
PCBA1 - Front View



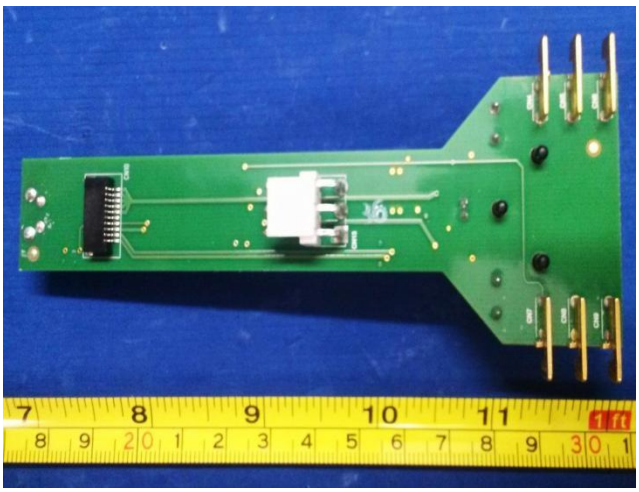
PCBA2 - Front View



PCBA2 - Front View

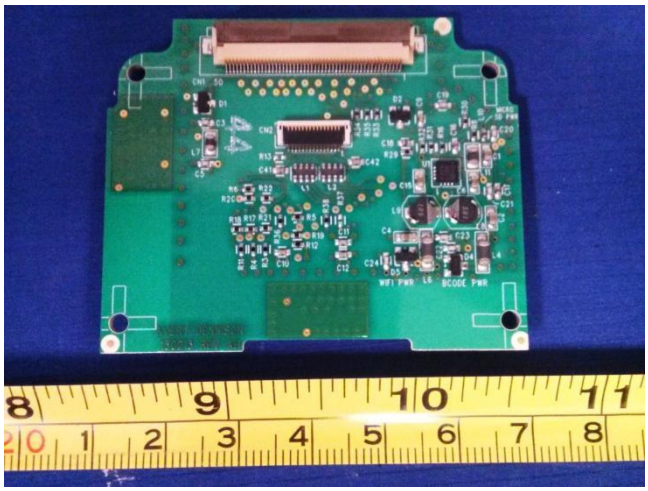


PCBA3 - Front View



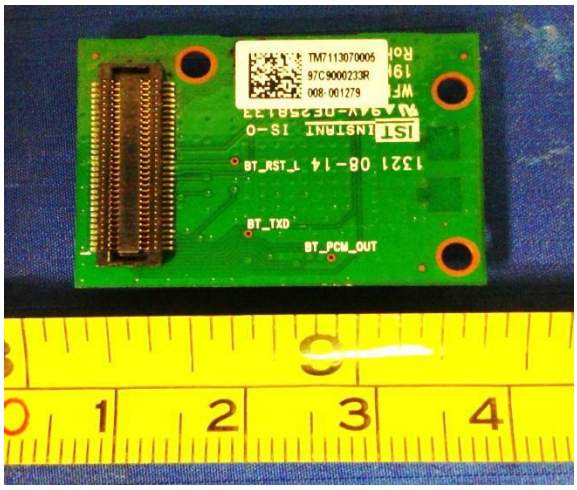
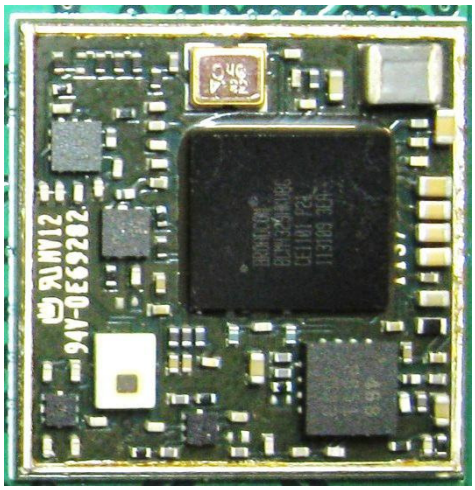
PCBA3 - Front View

PCBA3 - Front View

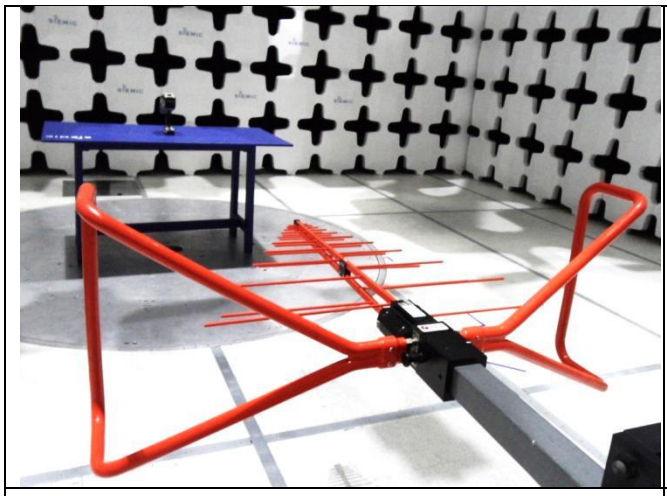


PCBA3 - Front View

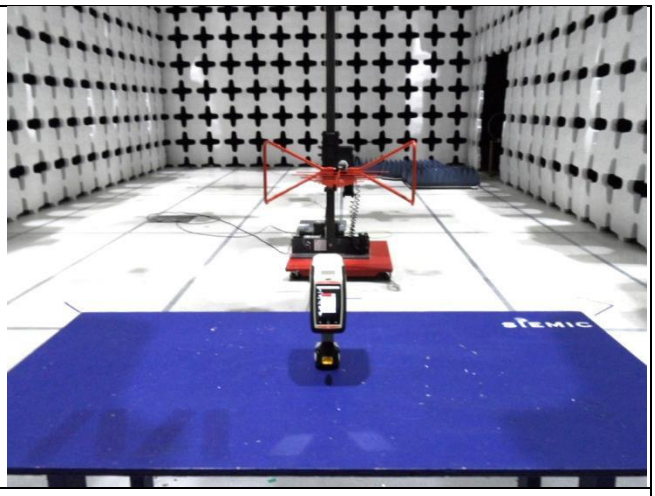
6.5 EUT Photos

	
EUT – Top View	**EUT – Bottom View**
	
EUT – Top View without shielding	

6.6 Test Setup Photos



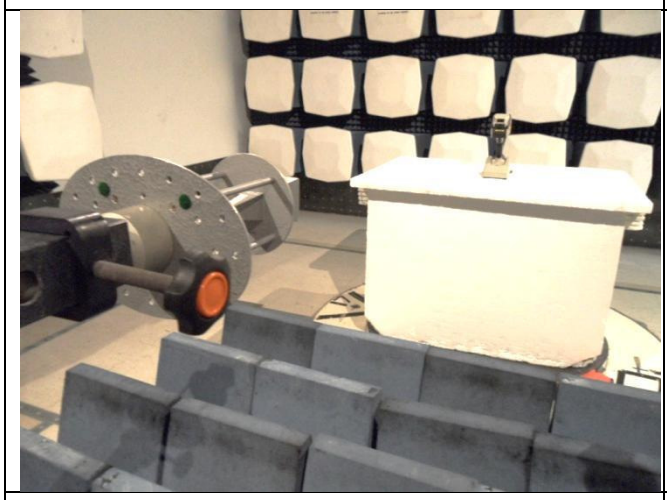
Radiated Emissions (<1GHz) – Front View



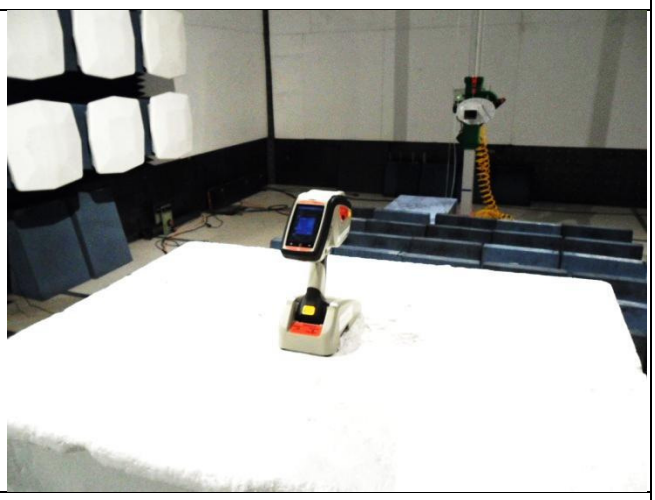
Radiated Emissions (<1GHz) – Rear View

Radiated Emissions (>1GHz) – Front View

Radiated Emissions (>1GHz) – Rear View



Radiated Emissions (>18GHz) – Front View



Radiated Emissions (>18GHz) – Rear View

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
-	-	-	-	-	-

7.2 Cabling Description

Name	Connection Start		Connection Stop		Length / shielding Info		Note
	From	I/O Port	To	I/O Port	Length (m)	Shielding	
-	-	-	-	-	-	-	-

7.3 Test Software Description

Test Item	Software	Description
RF Testing	SRU software	Set the EUT to transmit continuously in diferent test mode

8 Test Summary

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Restricted Band of Operation	FCC	15.205	FCC	ANSI C63.10: 2013 558074 D01 DTS Meas Guidance v03r04	☒ Pass ☐ N/A
AC Conducted Emissions Voltage	FCC	15.207(a)	FCC	ANSI C63.10: 2013	☐ Pass ☒ N/A

DTS band Requirement

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Channel Separation	FCC	15.247 (a)(1)	FCC	-	☐ Pass ☒ N/A
	IC	RSS247 (A5.1)	IC	-	
99% Occupied Bandwidth	IC	RSS Gen (6.6)	IC	RSS Gen (6.6)	☐ Pass ☒ N/A
6db Bandwidth	FCC	15.247(a)(2)	FCC	558074 D01 DTS Meas Guidance v03r04	☐ Pass ☒ N/A
	IC	RSS247 (A5.2)	IC	-	
Number of Hopping Channels	FCC	15.247(a)(1)	FCC	-	☐ Pass ☒ N/A
	IC	RSS247(A5.1)	IC	-	
Band Edge and Radiated Spurious Emissions	FCC	15.247(d)	FCC	ANSI C63.10: 2013 558074 D01 DTS Meas Guidance v03r04	☒ Pass ☐ N/A
	IC	RSS247(A8.5)	IC	-	
Time of Occupancy	FCC	15.247(a)(1)	FCC	-	☐ Pass ☒ N/A
	IC	RSS247(A5.1)	IC	-	
Output Power	FCC	15.247(b)	FCC	558074 D01 DTS Meas Guidance v03r04	☐ Pass ☒ N/A
	IC	RSS247 (A5.4)	IC	-	
Receiver Spurious Emissions	IC	RSS Gen (7.1)	IC	RSS Gen (7.1)	☐ Pass ☒ N/A
Antenna Gain > 6 dBi	FCC	15.247(e)	FCC	-	☐ Pass ☒ N/A
	IC	RSS247(A5.4)	IC	-	
Power Spectral Density	FCC	15.247(e)	FCC	558074 D01 DTS Meas Guidance v03r04	☐ Pass ☒ N/A
	IC	RSS247(A5.3)	IC	-	
Hybrid System Requirement	FCC	15.247(f)	FCC	-	☐ Pass ☒ N/A
	IC	RSS247(A5.3)	IC	-	
Hopping Capability	FCC	15.247(g)	FCC	-	☐ Pass ☒ N/A
	IC	RSS247(A5.1)	IC	-	
Hopping Coordination Requirement	FCC	15.247(h)	FCC	-	☐ Pass ☒ N/A
	IC	RSS247(A5.1)	IC	-	
RF Exposure requirement	FCC	15.247(i)	FCC	-	☐ Pass ☒ N/A
	IC	RSS Gen(3.2)	IC	-	
Remark	1. All measurement uncertainties do not take into consideration for all presented test results. 2. The applicant shall ensure frequency stability by showing that an emission is maintained within the band of operation under all normal operating conditions as specified in the user's manual. 3. N/A: Please refer to the following original radio reports under FCC ID: TWG-SDCMSD40NBT 1. Test Report No. R86482				

9 Measurement Uncertainty

Emissions			
Test Item	**Frequency Range**	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	30MHz – 1GHz	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
Band Edge and Radiated Spurious Emissions	1GHz – 40GHz	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+4.3dB/-4.1dB

10 Measurements, Examination and Derived Results

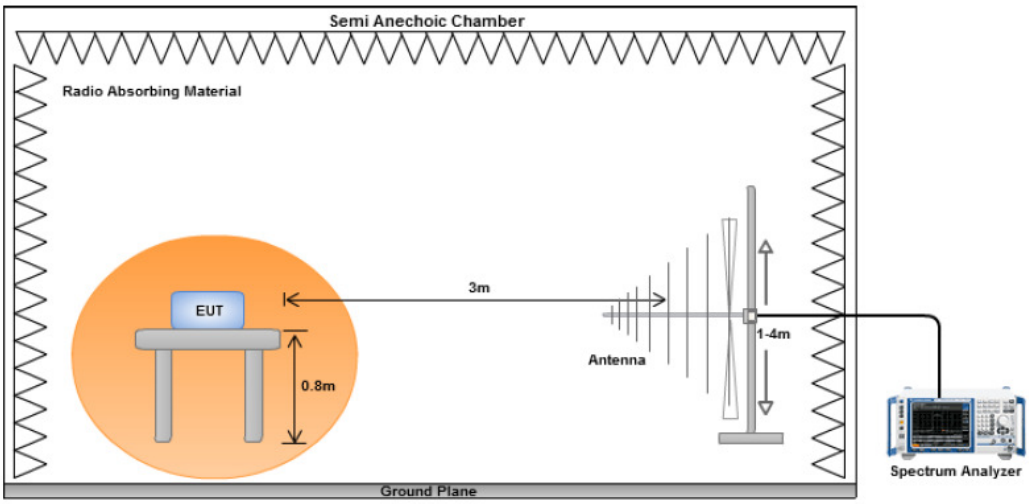
10.1 Radiated Emissions below 1GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.247(d), RSS247(A8.5)	a)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges	☒

Frequency range (MHz)	Field Strength (uV/m)
30 – 88	100
88 – 216	150
216 960	200
Above 960	500

Test Setup



Procedure

1. The EUT was switched on and allowed to warm up to its normal operating condition.
2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner:
   a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen.
   b. The EUT was then rotated to the direction that gave the maximum emission.
   c. Finally, the antenna height was adjusted to the height that gave the maximum emission.
3. A Quasi-peak measurement was then made for that frequency point.
4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.

Remark

The EUT was scanned up to 1GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.

Result

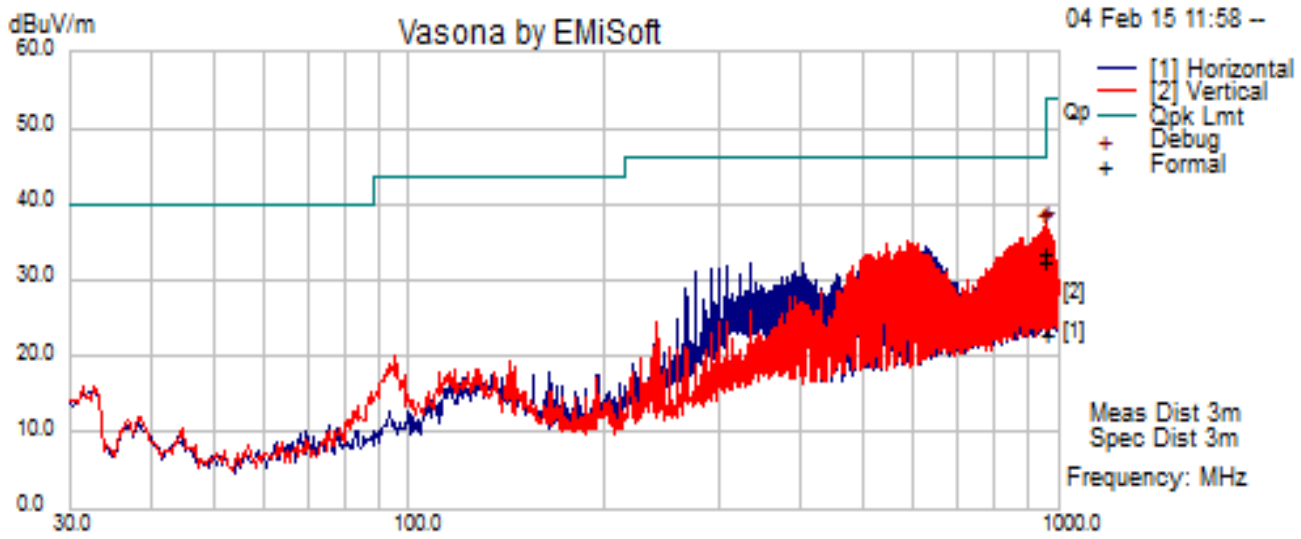
☒ Pass ☐ Fail

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Radiated Emission Test Results (Below 1GHz)

Test specification	below 1GHz			
Environmental Conditions:	Temp (°C):	26.1	Result	Pass
	Humidity (%)	47.5		
	Atmospheric (mbar):	1020		
Mains Power:	120VAC, 60Hz			
Tested by:	Teody Manansala			
Test Date:	February 4. 2015			
Remarks:	2.4GHz 802.11b - 2437MHz			

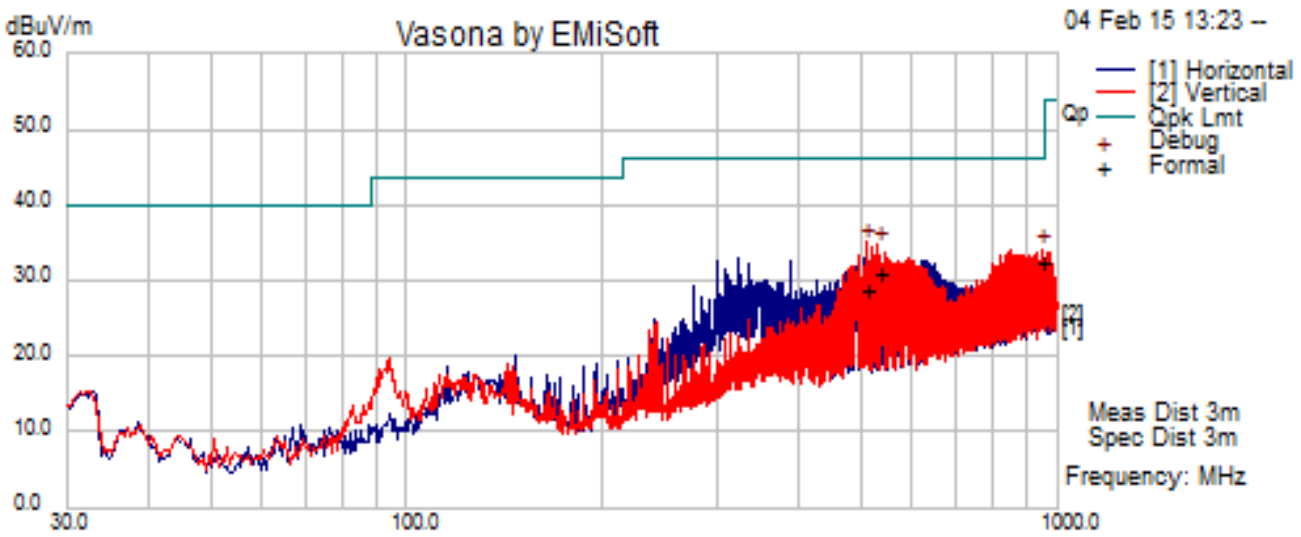


Quasi Max Measurement

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
958.22	33.82	5.10	-16.00	22.92	Quasi Max	V	361.00	58.00	46.00	-23.08	Pass
947.94	43.48	5.08	-16.06	32.50	Quasi Max	V	152.00	164.00	46.00	-13.50	Pass
949.96	44.44	5.09	-16.01	33.52	Quasi Max	V	100.00	181.00	46.00	-12.48	Pass

Note: Both horizontal and vertical polarities were investigated. The results above show only the worst case.

Test specification	below 1GHz			
Environmental Conditions:	Temp (°C):	26.1	Result	Pass
	Humidity (%)	47.5		
	Atmospheric (mbar):	1020		
Mains Power:	120VAC, 60Hz			
Tested by:	Teody Manansala			
Test Date:	February 4. 2015			
Remarks:	2.4GHz 802.11g - 2437MHz			

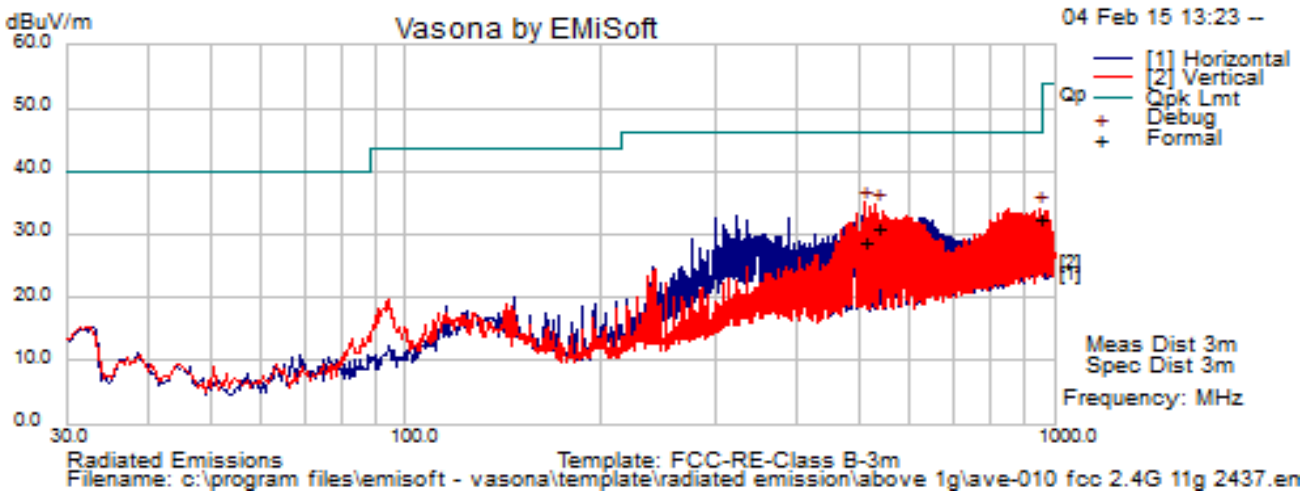


Quasi Max Measurement

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
512.00	46.43	4.16	-21.90	28.69	Quasi Max	V	247.00	194.00	46.00	-17.31	Pass
531.99	48.46	4.16	-21.66	30.96	Quasi Max	V	100.00	198.00	46.00	-15.04	Pass
951.97	43.46	5.09	-16.01	32.55	Quasi Max	V	100.00	195.00	46.00	-13.45	Pass

Note: Both horizontal and vertical polarities were investigated. The results above show only the worst case.

Test specification	below 1GHz			
Environmental Conditions:	Temp (°C):	26.1	Result	Pass
	Humidity (%)	47.5		
	Atmospheric (mbar):	1020		
Mains Power:	110VAC, 60Hz			
Tested by:	Teody Manansala			
Test Date:	February 4. 2015			
Remarks:	2.4GHz 802.11n20 - 2437MHz			



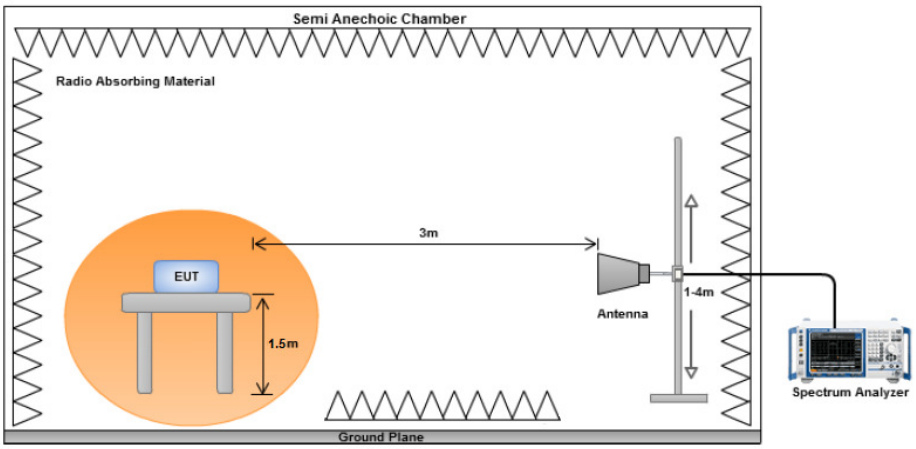
Quasi Max Measurement

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
627.96	50.28	4.27	-20.17	34.37	Quasi Max	H	207.00	96.00	46.00	-11.63	Pass
524.00	48.82	4.16	-21.82	31.17	Quasi Max	V	126.00	227.00	46.00	-14.83	Pass
633.97	49.91	4.29	-19.96	34.23	Quasi Max	H	199.00	97.00	46.00	-11.77	Pass

Note: Both horizontal and vertical polarities were investigated. The results above show only the worst case.

10.2 Radiated Spurious Emissions Above 1GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.247(d), RSS247(A8.5)	a)	For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required ☒ 20 dB down ☐ 30 dB down	☒
	b)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	☒
Test Setup			
Procedure	1. The EUT was switched on and allowed to warm up to its normal operating condition. 2. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. b. The EUT was then rotated to the direction that gave the maximum emission. c. Finally, the antenna height was adjusted to the height that gave the maximum emission. 3. An average measurement was then made for that frequency point. 4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.		
Remark	The EUT was scanned up to 25GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Radiated Emission Test Results (Above 1GHz)

Above 1GHz-25GHz – 802.11b – 2412MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1000.93	46.02	2.44	9.68	58.14	Peak Max	V	212.00	38.00	74.00	-15.86	Pass
2014.53	42.98	3.39	11.43	57.80	Peak Max	V	301.00	278.00	74.00	-16.20	Pass
4193.80	39.40	5.99	11.38	56.78	Peak Max	H	267.00	80.00	74.00	-17.22	Pass
1000.93	32.58	2.44	9.68	44.69	Average Max	V	212.00	38.00	54.00	-9.31	Pass
2014.53	29.59	3.39	11.43	44.41	Average Max	V	301.00	278.00	54.00	-9.59	Pass
4193.80	25.80	5.99	11.38	43.18	Average Max	H	267.00	80.00	54.00	-10.82	Pass

Above 1GHz-25GHz- 802.11b – 2437MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17692.69	40.51	13.00	10.60	64.10	Peak Max	H	235.00	329.00	74.00	-9.90	Pass
14558.31	42.38	13.20	8.26	63.85	Peak Max	H	138.00	321.00	74.00	-10.15	Pass
6985.91	46.64	8.25	7.92	62.81	Peak Max	H	183.00	79.00	74.00	-11.19	Pass
17692.69	27.26	13.00	10.60	50.86	Average Max	H	235.00	329.00	54.00	-3.14	Pass
14558.31	29.50	13.20	8.26	50.96	Average Max	H	138.00	321.00	54.00	-3.04	Pass
6985.91	33.76	8.25	7.92	49.94	Average Max	H	183.00	79.00	54.00	-4.06	Pass

Above 1GHz-25GHz- 802.11b – 2462MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1015.11	45.10	2.45	9.65	57.21	Peak Max	V	238.00	105.00	74.00	-16.79	Pass
4038.68	40.32	5.86	12.06	58.24	Peak Max	V	253.00	182.00	74.00	-15.76	Pass
6323.94	45.18	7.86	10.29	63.33	Peak Max	V	245.00	226.00	74.00	-10.67	Pass
1015.11	32.38	2.45	9.65	44.48	Average Max	V	238.00	105.00	54.00	-9.52	Pass
4038.68	27.25	5.86	12.06	45.17	Average Max	V	253.00	182.00	54.00	-8.83	Pass
6323.94	31.90	7.86	10.29	50.05	Average Max	V	245.00	226.00	54.00	-3.95	Pass

Above 1GHz-25GHz – 802.11g – 2412MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1017.44	45.63	2.45	9.65	57.73	Peak Max	H	286.00	2.00	74.00	-16.27	Pass
4201.05	40.40	6.00	11.35	57.75	Peak Max	V	293.00	150.00	74.00	-16.25	Pass
17957.99	40.19	13.00	10.87	64.06	Peak Max	H	113.00	6.00	74.00	-9.94	Pass
1017.44	32.46	2.45	9.65	44.56	Average Max	H	286.00	2.00	54.00	-9.44	Pass
4201.05	27.27	6.00	11.35	44.62	Average Max	V	293.00	150.00	54.00	-9.38	Pass
17957.99	27.10	13.00	10.87	50.96	Average Max	H	113.00	6.00	54.00	-3.04	Pass

Above 1GHz-25GHz- 802.11g - 2437MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
17711.57	40.23	13.00	10.62	63.85	Peak Max	V	272.00	7.00	74.00	-10.15	Pass
1000.94	46.28	2.44	9.68	58.40	Peak Max	V	245.00	84.00	74.00	-15.60	Pass
4159.64	40.71	5.97	11.53	58.20	Peak Max	H	245.00	106.00	74.00	-15.80	Pass
17711.57	27.50	13.00	10.62	51.12	Average Max	V	272.00	7.00	54.00	-2.88	Pass
1000.94	32.95	2.44	9.68	45.06	Average Max	V	245.00	84.00	54.00	-8.94	Pass
4159.64	27.55	5.97	11.53	45.05	Average Max	H	245.00	106.00	54.00	-8.95	Pass

Above 1GHz-25GHz- 802.11g - 2462MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4067.67	39.59	5.89	11.93	57.41	Peak Max	H	202.00	15.00	74.00	-16.59	Pass
1007.70	45.24	2.44	9.67	57.35	Peak Max	H	142.00	139.00	74.00	-16.65	Pass
2003.80	42.07	3.35	11.47	56.88	Peak Max	H	289.00	46.00	74.00	-17.12	Pass
4067.67	27.01	5.89	11.93	44.83	Average Max	H	202.00	15.00	54.00	-9.17	Pass
1007.70	32.53	2.44	9.67	44.64	Average Max	H	142.00	139.00	54.00	-9.36	Pass
2003.80	29.60	3.35	11.47	44.41	Average Max	H	289.00	46.00	54.00	-9.59	Pass

Above 1GHz-25GHz – 802.11n20 – 2412MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4150.02	40.85	5.96	11.57	58.38	Peak Max	H	282.00	234.00	74.00	-15.62	Pass
17795.63	40.49	13.00	10.70	64.19	Peak Max	V	100.00	195.00	74.00	-9.81	Pass
1007.00	45.50	2.44	9.67	57.61	Peak Max	V	193.00	101.00	74.00	-16.39	Pass
4150.02	27.36	5.96	11.57	44.89	Average Max	H	282.00	234.00	54.00	-9.11	Pass
17795.63	27.03	13.00	10.70	50.74	Average Max	H	172.00	327.00	54.00	-3.26	Pass
1007.00	32.64	2.44	9.67	44.75	Average Max	V	193.00	101.00	54.00	-9.25	Pass

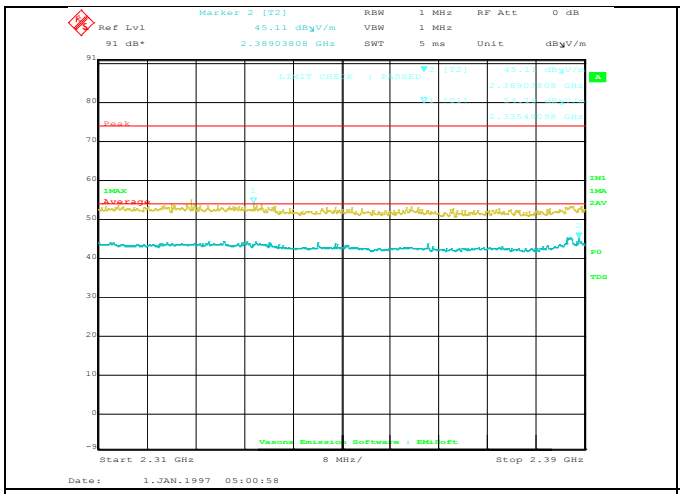
Above 1GHz-25GHz- 802.11n20 – 2437MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1006.54	45.63	2.44	9.67	57.74	Peak Max	H	209.00	179.00	74.00	-16.26	Pass
4152.12	40.58	5.96	11.56	58.10	Peak Max	V	107.00	239.00	74.00	-15.90	Pass
17694.10	40.37	13.00	10.60	63.97	Peak Max	H	247.00	243.00	74.00	-10.03	Pass
1006.54	32.54	2.44	9.67	44.66	Average Max	H	209.00	179.00	54.00	-9.34	Pass
4152.12	27.21	5.96	11.56	44.73	Average Max	V	107.00	239.00	54.00	-9.27	Pass
17694.10	27.34	13.00	10.60	50.94	Average Max	H	247.00	243.00	54.00	-3.06	Pass

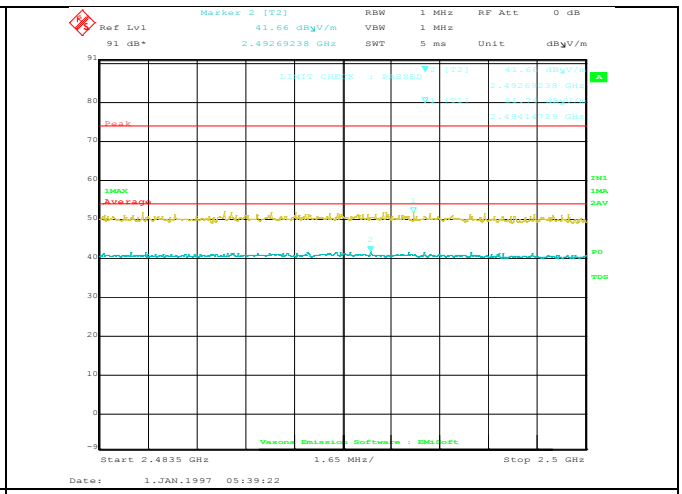
Above 1GHz-25GHz- 802.11n20 – 2462MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6322.35	44.35	7.85	10.30	62.50	Peak Max	V	153.00	276.00	74.00	-11.50	Pass
17737.95	40.23	13.00	10.64	63.87	Peak Max	V	289.00	180.00	74.00	-10.13	Pass
1035.66	44.42	2.46	9.62	56.50	Peak Max	H	113.00	316.00	74.00	-17.50	Pass
6322.35	31.72	7.85	10.30	49.87	Average Max	V	153.00	276.00	54.00	-4.13	Pass
17737.95	27.26	13.00	10.64	50.90	Average Max	V	289.00	180.00	54.00	-3.10	Pass
1035.66	31.86	2.46	9.62	43.94	Average Max	H	113.00	316.00	54.00	-10.06	Pass

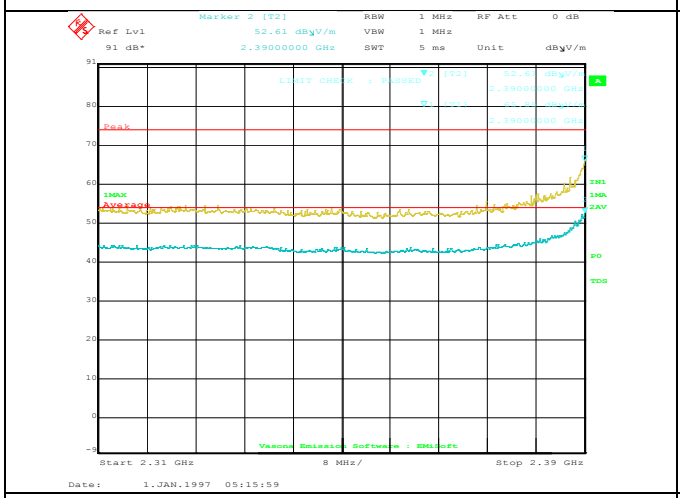
Restricted Band Test Result (Above 1G)



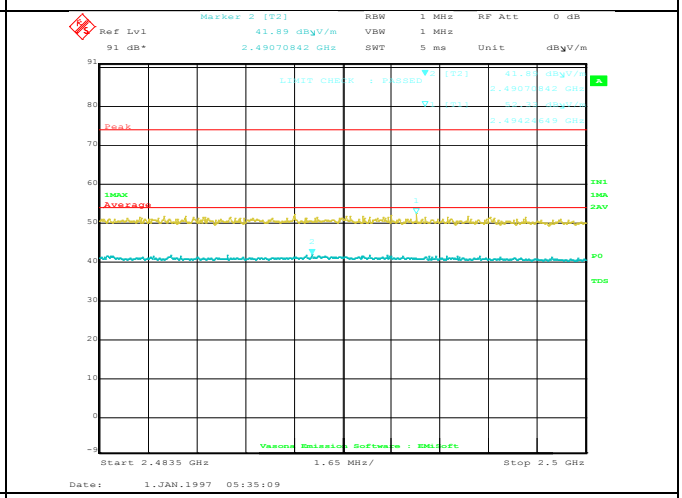
Lower Band (802.11b-2412MHz)



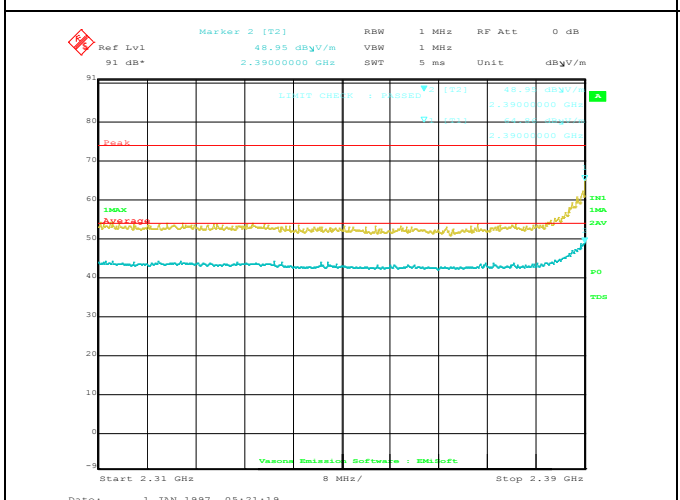
Higher Band (802.11b-2462MHz)



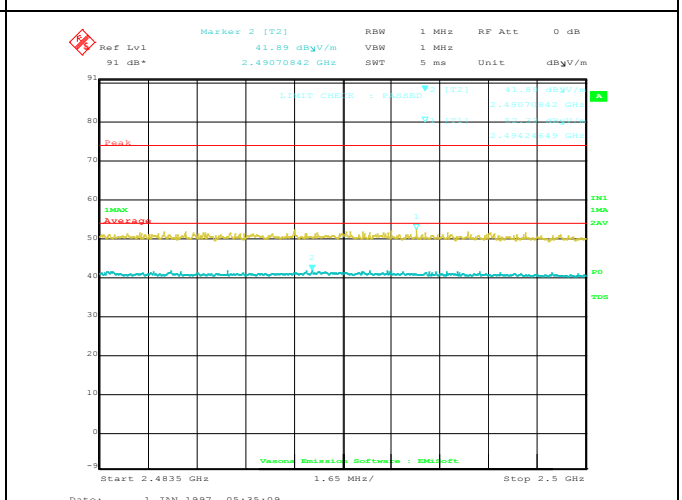
Lower Band (802.11g-2412MHz)



Higher Band (802.11g-2462MHz)



Lower Band (802.11n20 2412MHz)



Higher Band (802.11n20-2462MHz)

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions						
R & S Receiver	ESHS10	830223/0009	04/08/2014	1 Year	04/08/2015	☐
Spectrum Analyzer	FSIQ7	825555/013	05/31/2014	1 Year	04/08/2015	☐
Schwarzbeck LISN	NNLK 8129	8129-190	08/11/2014	1 Year	08/11/2015	☐
CHASE LISN	MN2050B	1018	07/31/2014	1 Year	07/31/2015	☐
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2014	1 Year	05/25/2015	
Radiated Emissions						
R & S Receiver	ESIB 40	100179	05/24/2014	1 Year	05/24/2015	☑
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	08/12/2014	1 Year	08/12/2015	☑
Horn Antenna (1-26.5GHz)	3115	10SL0059	08/11/2014	1 Year	08/11/2015	☑
Horn Antenna (18-40 GHz)	AH-840	101013	08/11/2014	1 Year	08/11/2015	☑
Pre-Amplifier (100KHz-7GHz)	LPA-6-30	11140711	02/19/2015	1 Year	02/19/2016	☑
Microwave Preamplifier (18-40 GHz)	PA-840	181251	02/19/2015	1 Year	02/19/2016	☑
3 Meters SAC	3M	N/A	08/29/2014	1 Year	08/29/2015	☑
10 Meters SAC	10M	N/A	09/05/2014	1 Year	09/05/2015	☑
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2014	1 Year	05/25/2015	☑
RF Conducted Measurement						
Spectrum Analyzer	N9010A	MY50210206	05/30/2014	1 Year	05/30/2015	☐
Spectrum Analyzer	E4407B	US88441016	05/31/2014	1 Year	05/31/2015	☐
R & S Receiver	ESIB 40	100179	04/20/2014	1 Year	04/20/2015	☐

Test Software Version

Test Item	Vendor	Software	Version
Radiated Emission	EMISoft	EMISoft Vasona	V5.0

Annex B. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)		Please see the documents for the detailed scope
ISO Guide 65 (A2LA)		Please see the documents for the detailed scope
TCB Designation		A1, A2, A3, A4, B1, B2, B3, B4, C
FCC DoC Accreditation		FCC Declaration of Conformity Accreditation
FCC Site Registration		3 meter site
FCC Site Registration		10 meter site
IC Site Registration		3 meter site
IC Site Registration		10 meter site
EU NB		**Radio & Telecommunications Terminal Equipment:** EN45001 – EN ISO/IEC 17025
		Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)		Phase I, Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
Hong Kong OFCA		**(Phase II)** OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		**Radio:** Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII
Japan Recognized Certification Body Designation		**Radio**: A1. Terminal equipment for purpose of calling **Telecom**: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item 1 of the Radio Law

Korea CAB Accreditation		**EMI:** KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI **EMS:** KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS
		Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21, RRL Notice 2007-80, RRL Notice 2004-68
		Telecom: President Notice 20664, RRL Notice 2007-30, RRL Notice 2008-7 with attachments 1, 3, 5, 6; President Notice 20664, RRL Notice 2008-7 with attachment 4
Taiwan NCC CAB Recognition		LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition		CNS 13438
Japan VCCI		R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measurement
Australia CAB Recognition		**EMC:** AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4
		Radio communications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771
		Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06 AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/ACIF S60950.1
Australia NATA Recognition		AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016,AS/ACIF S031, AS/ACIF S038, AS/ACIF S040, AS/ACIF S041, AS/ACIF S043.2