

RF TEST REPORT



Report No.: FCC_RF_SL13110101-ZBR-051_WLAN

Supersede Report No.: NONE

Applicant	Zebra Technologies Corp.
Product Name	N Radio module with 802.11a/b/g/n and BT
Model No.	WYSBMVGXB
Test Standard	47CFR15.247: 2012, 47CFR15.407: 2012 RSS 210 Issue 8: 2010
Test Method	ANSI C63.4 – 2009 RSS-Gen Issue 3: 2010 558074 D01 DTS Meas Guidance v03r01, 789033 D01 General UNII Test Procedures v01r03
FCC ID	I28MD-EXLAN11N
IC ID	3798B-EXLAN11N
Date of test	12/02/2013
Issue Date	12/16/2013
Test Result	<u>Pass</u> Fail
Equipment complied with the specification	[x]
Equipment did not comply with the specification	[]
	
David Zhang	Choon Sian Ooi
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, 95035 CA



775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088

Visit us at: www.siemic.com; Follow us at:



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/RRR, NIST	EMI, EMS, RF , Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	Safety, EMC , RF/Wireless, Telecom
Europe	A2LA, 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
HongKong	OFTA (US002)	RF , Telecom

CONTENTS

1	REPORT REVISION HISTORY	4
2	EXECUTIVE SUMMARY	5
3	CUSTOMER INFORMATION	5
4	TEST SITE INFORMATION	5
5	MODIFICATION	5
6	EUT INFORMATION	6
6.1	EUT Description	6
6.2	Radio Description	7
6.3	EUT test modes/configuration Description.....	9
6.4	EUT Photos - External	10
6.5	EUT Photos - Internal	11
6.6	Host Printer	12
6.7	EUT Test Setup Photos	14
7	SUPPORTING EQUIPMENT/SOFTWARE AND CABLING DESCRIPTION.....	16
7.1	Supporting Equipment	16
7.2	Test Software Description	16
8	TEST SUMMARY	17
9	MEASUREMENT UNCERTAINTY	18
10	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	19
10.1	Radiated Emissions below 1GHz	19
10.2	Radiated Spurious Emissions above 1GHz.....	22
ANNEX A. TEST INSTRUMENT		24
ANNEX B. USER MANUAL, BLOCK & CIRCUIT DIAGRAM		25
ANNEX C. SIEMIC ACCREDITATION		26

1 Report Revision History

Report No.	Report Version	Description	Issue Date
FCC_RF_SL13110101-ZBR-051_WLAN	None	Original	12/16/2013

2 Executive Summary

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

Company: Zebra Technologies Corp.
Product: N Radio module with 802.11a/b/g/n and BT
Model: WYSBMVGXB

, which is FCC certified radio module (FCC ID: 128MD-EXLAN11N, IC ID: 3798B-EXLAN11N), to be installed into a printer host (Printer Model: ZT410, ZT420) and simultaneously transmission with FCC certified BT radio module (FCC ID: 128MD-ZBR5QLN, IC ID: 3798B-ZBR5QLN) and UHF RFID (FCC ID: I28-RFIDM6EMTT, IC ID: 3798B-RFIDM6EMTT), 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	Zebra Technologies Corp.
Applicant Address	333 Corporate Woods Pkwy. Vernon Hills, IL 60061, USA
Manufacturer Name	Zebra Technologies Corp.
Manufacturer Address	333 Corporate Woods Pkwy. Vernon Hills, IL 60061, 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	N Radio module with 802.11a/b/g/n and BT
Model No.	WYSBMVGXB
Trade Name	Zebra
Host Serial No.	18J131600052 (ZT410),18J131600164 (ZT420)
Input Power	3.3VDC
Power Adapter Manu/Model	N/A
Power Adapter SN	-
Hardware version	N/A
Software version	N/A
Date of EUT received	11/25/2013
Equipment Class/ Category	DSS
Clock Frequencies	-
Port/Connectors	RJ45, USB, RS232, Parallel
Remark	

6.2 Radio Description

Spec for Radio -

Radio Type	802.11b	802.11g	802.11a	802.11n-20M	802.11n-40M
Operating Frequency	2412-2462MHz	2412-2462MHz	5180-5320MHz 5500-5700MHz 5745-5825MHz	2412-2462MHz 5180-5320MHz 5500-5700MHz 5745-5825MHz	5190-5310MHz 5510-5670MHz 5755-5795MHz
Modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing	5MHz	5MHz	20MHz	5MHz(2.4GHz), 20MHz (5GHz)	40MHz
Number of Channels	11	11	21	11(2.4GH) 21 (5GHz)	7 (2.4GH) 9 (5GHz)
Antenna Type	Omnidirectional antenna				
Antenna Gain	2.2 dBi (2.4GHz), 5.0 dBi (5GHz)				
Antenna Connector Type	Reversed SMA				

Channel List

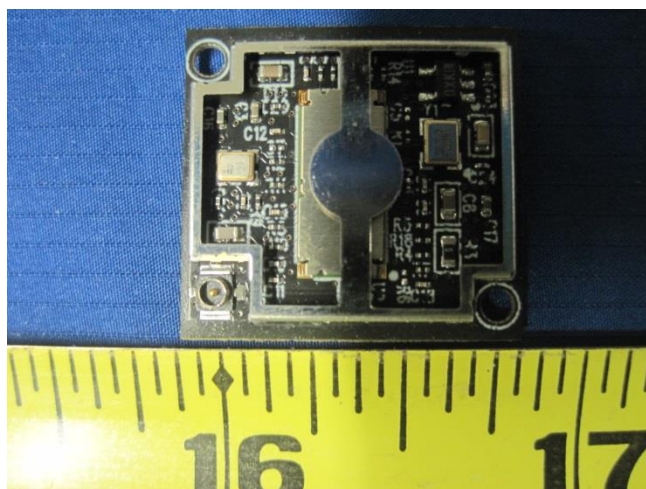
Type		Channel No.	Frequency (MHz)	Available (Y/N)
802.11b/g/n-HT20	2412-2462	1	2412	Y
		2	2417	Y
		3	2422	Y
		4	2427	Y
		5	2432	Y
		6	2437	Y
		7	2442	Y
		8	2447	Y
		9	2452	Y
		10	2457	Y
		11	2462	Y
	2467-2472	12	2467	-
		13	2472	-
	2484	14	2484	-
802.11a/n-HT20	5150-5250MHz	36	5180	Y
		40	5200	Y
		44	5220	Y
		48	5240	Y
	5250-5350MHz	52	5260	Y
		56	5280	Y
		60	5300	Y
		64	5320	Y
	5470-5725MHz	100	5500	Y
		104	5520	Y
		108	5540	Y
		112	5560	Y
		116	5580	Y
		132	5660	Y
		136	5680	Y
		140	5700	Y
	5725-5825MHz	149	5745	Y
		153	5765	Y
		157	5785	Y
		161	5805	Y
		165	5825	Y
802.11n-HT40	5150-5250MHz	36,40	5190	Y
		40,44	5210	Y
		44,48	5230	Y
	5250-5350MHz	52,56	5270	Y
		56,60	5290	Y
		60,64	5310	Y
	5470-5725MHz	100,104	5510	Y
		104,108	5530	Y
		108,112	5550	Y
		112,116	5570	Y
		132,136	5670	Y
		149,153	5755	Y
	5725-5825MHz	153,157	5775	Y
		157,161	5795	Y

6.3 EUT test modes/configuration Description

Test mode

Test Mode		Note
Test_mode_1	Below 1GHz-Mode1: RFID Mid (915.25MHz) + BT at GFSK (2441MHz) + N radio at 802.11b (2437MHz) all transmit simultaneously on ZT410	-
Test_mode_2	Below 1GHz-Mode2: RFID Mid (915.25MHz) + BT at GFSK (2441MHz) + N radio at 802.11b (2437MHz) all transmit simultaneously on ZT420	-
Test_mode_3	Above 1GHz-40G-Mode1: RFID Mid (915.25MHz) + BT hopping at GFSK + N radio at 802.11b (2462MHz) all transmit simultaneously on ZT410 printer	-
Test_mode_4	Above 1GHz-40G-Mode1: RFID Mid (915.25MHz) + BT hopping at GFSK + N radio at 802.11b (2462MHz) all transmit simultaneously on ZT420 printer	-
Test_mode_5		-
Test_mode_6		-
Test_mode_7		-
Test_mode_8		-
Test_mode_9		-
Test_mode_10		
Test_mode_11		
Test_mode_12		
Test_mode_13		
Test_mode_14		
Remark:		

6.4 EUT Photos - External



N Radio Top View



N Radio Bottom View

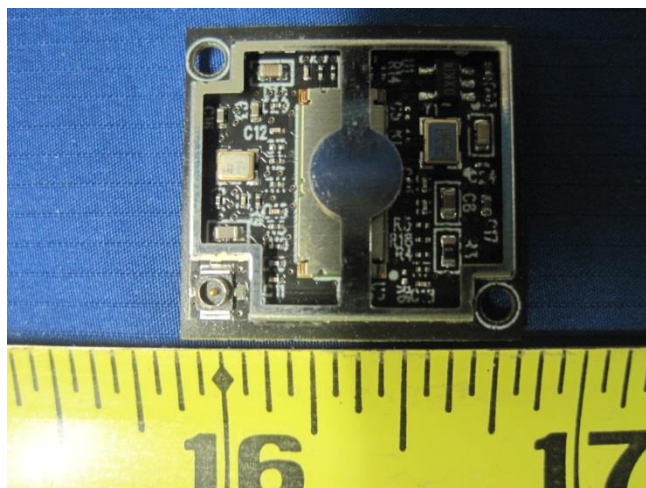


WLAN antenna Top View

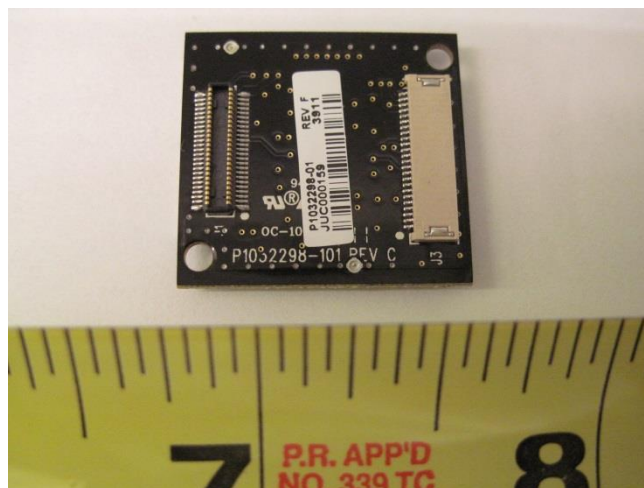


WLAN antenna Front View

6.5 EUT Photos - Internal

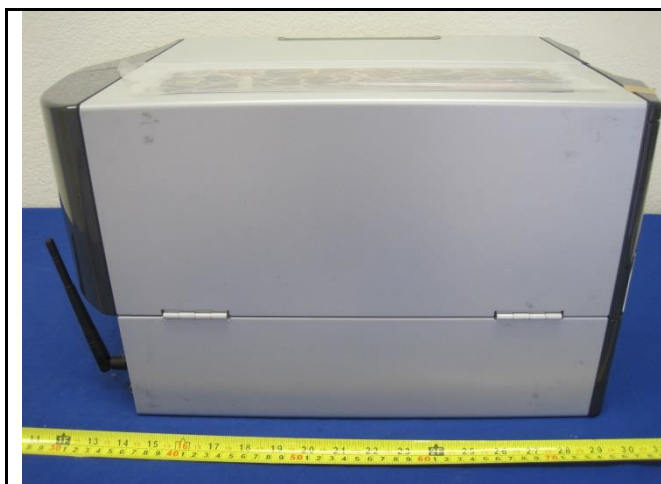


N Radio Top View

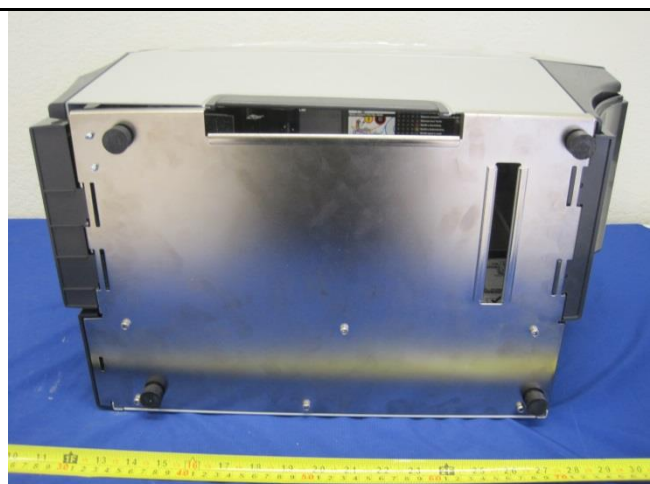


N Radio Bottom View

6.6 Host Printer



Top – ZT410



Bottom – ZT410



Front – ZT410



Rear – ZT410



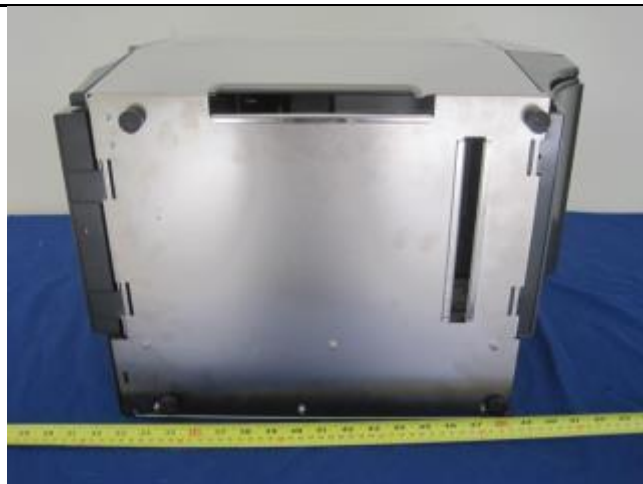
Left Side – ZT410



Right Side – ZT410



Top – ZT420



Bottom – ZT420



Front – ZT420



Rear – ZT420

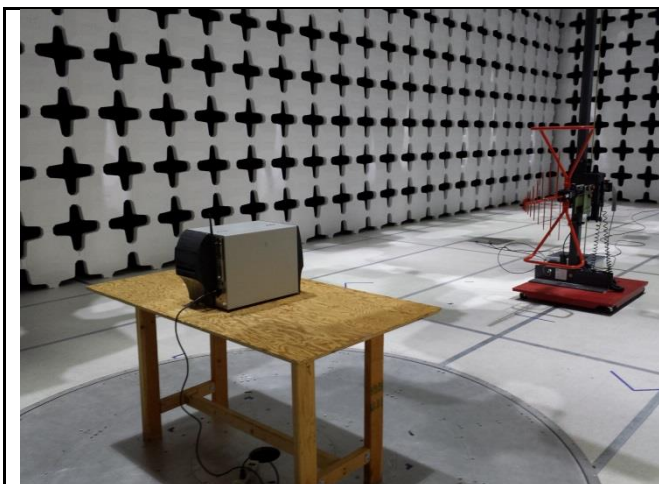


Left Side – ZT420



Right Side – ZT420

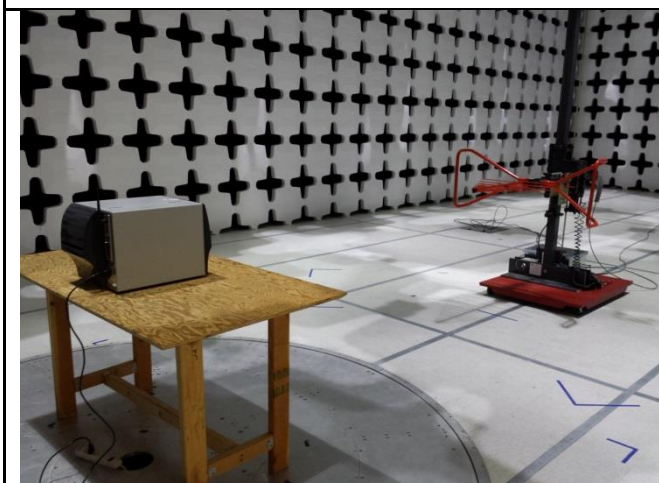
6.7 EUT Test Setup Photos



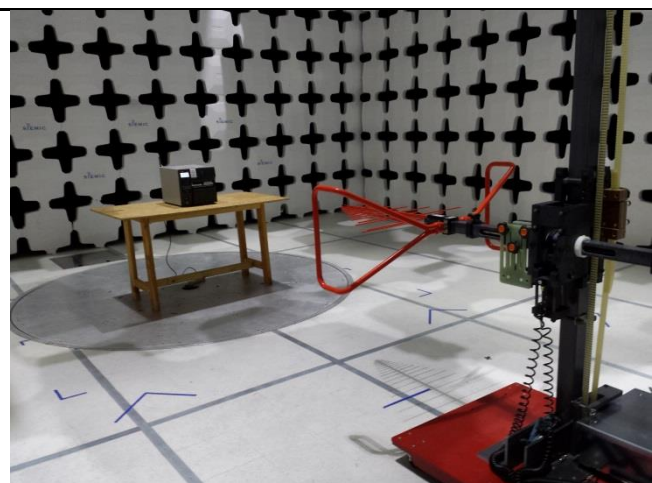
Radiated Emission below 1GHz – ZT410 (Front)



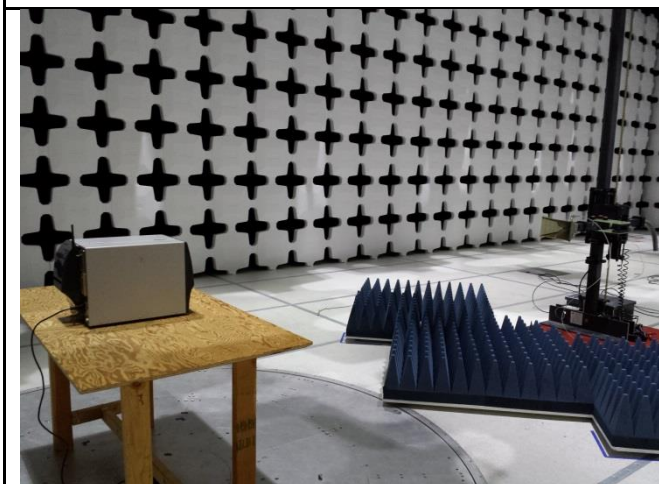
Radiated Emission below 1GHz – ZT410 (Rear)



Radiated Emission below 1GHz – ZT420 (Front)



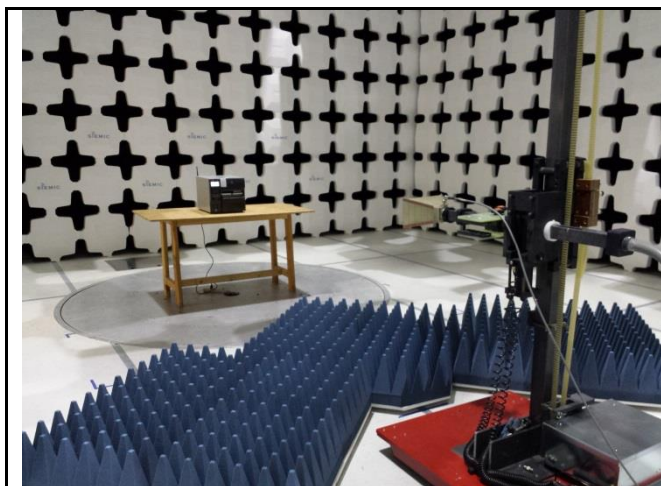
Radiated Emission below 1GHz – ZT420 (Rear)



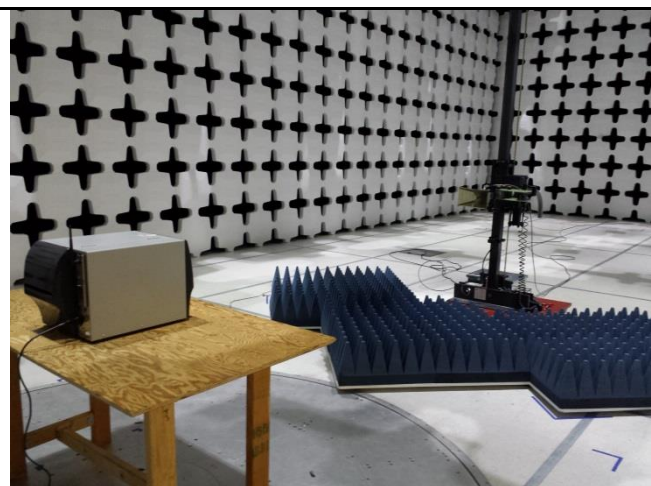
Radiated Emission above 1GHz – ZT410 (Front)



Radiated Emission above 1GHz – ZT410 (Rear)



Radiated Emission above 1GHz – ZT420 (Front)



Radiated Emission above 1GHz – ZT420 (Rear)

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
1	D600	Laptop PC	9444352681	Dell	
2	PA-1650-05D2	AC Power Adapter	F7970	Dell	

7.2 Test Software Description

Test Item	Software	Description
Spurious Emission	Zebra toolbox	Enable RF Test mode for WLAN

8 Test Summary

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Radiated Spurious Emissions	FCC	15.209; 15.247(d)	FCC	ANSI C63.4 – 2009 558074 D01 DTS Meas Guidance v03r01	☒ Pass ☐ N/A
	IC	RSS210(A8.5)	IC	-	
Radiated Spurious Emissions	FCC	15.407(b)(2), 15.407(b)(6)	FCC	ANSI C63.4 – 2009 789033 D01 General UNII Test Procedures v01r03	☒ Pass ☐ N/A
	IC	RSS210(A9.3)(1)	IC	-	

Note:

This report is C2PC report for the N radio module to be installed into the printer host. Only the spurious emission measurement was required to be made. Please refer to following original FCC test report for other test results,

SL11042701-ZBR-026 (WLAN_15.247) Rev1.0

SL11042701-ZBR-026 (WLAN_15.407)_non DFS Rev1.0

SL11042701-ZBR-026 (DFS)

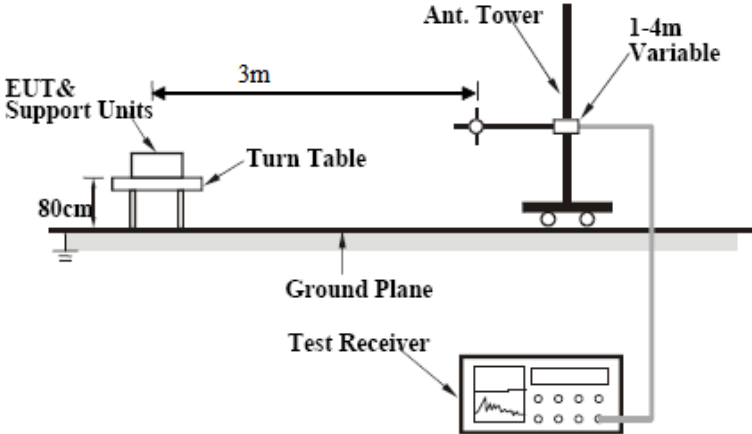
9 Measurement Uncertainty

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	1Hz – 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):

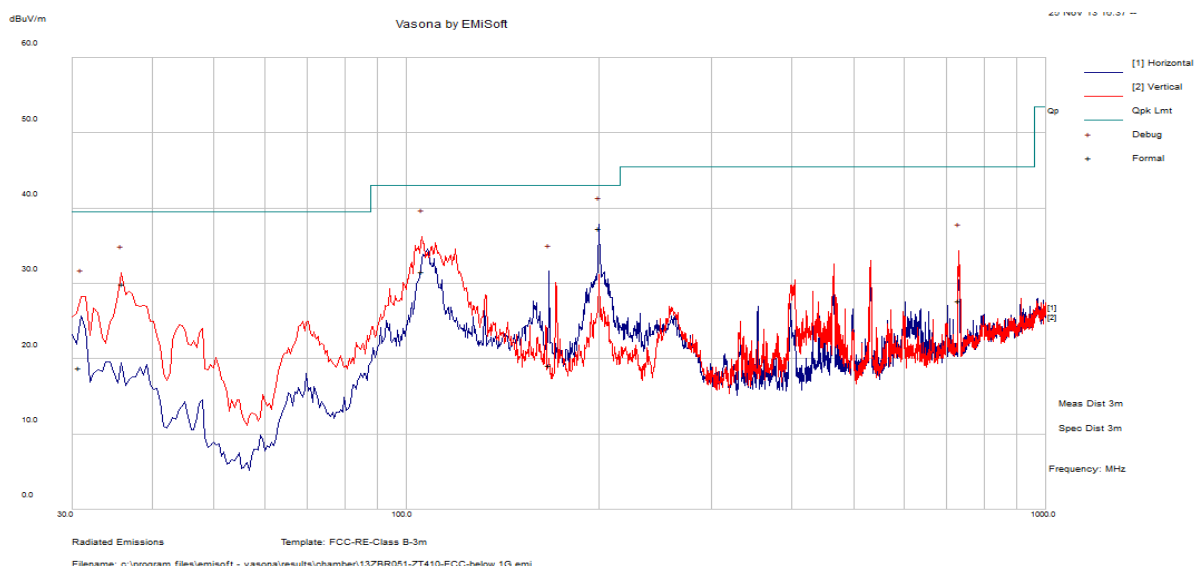
Spec	Item	Requirement	Applicable										
47CFR§15.247(d), RSS210(A8.5)	a)	Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges	☒										
		<table><tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></table>		Frequency range (MHz)	Field Strength (uV/m)	30 – 88	100	88 – 216	150	216 960	200	Above 960	500
		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		NONE											
Result		☒ Pass ☐ Fail											

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

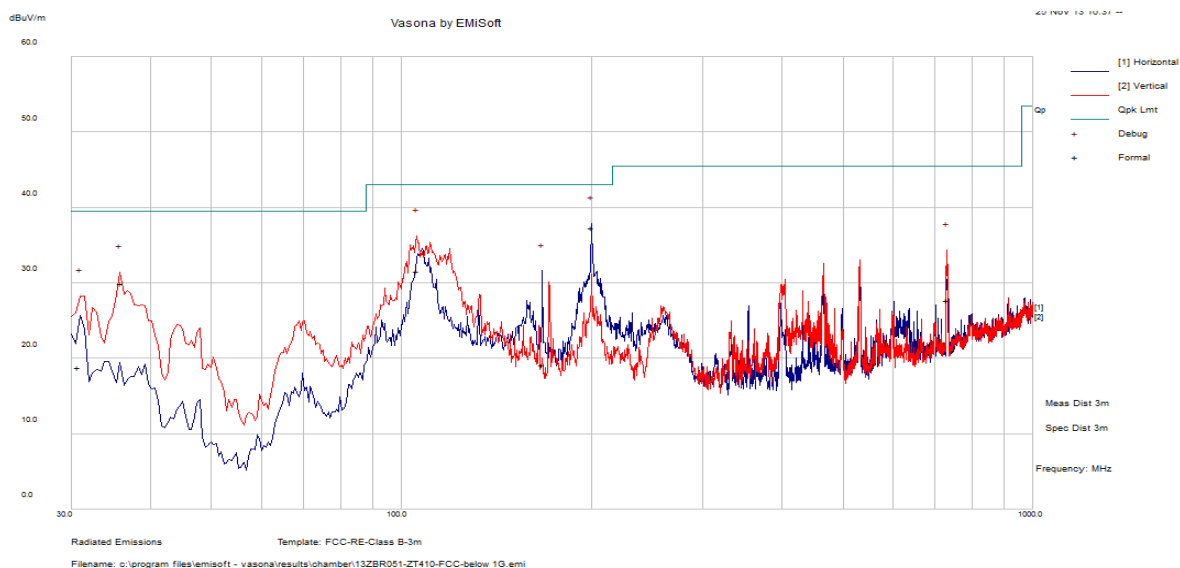
Radiated Emission Test Results (Below 1GHz)

Test specification	below 1GHz		Result	Pass
Environmental Conditions:	Temp (°C):	21		
	Humidity (%)	56		
	Atmospheric (mbar):	1008		
Mains Power:	110VAC,60Hz			
Tested by:	Teody Manansala			
Test Date:	2-Dec-13			
Remarks:	RFID Mid (915.25MHz) + BT at GFSK (2441MHz) + N radio at 802.11b (2437MHz) all transmit simultaneously on ZT410			



Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Polarization	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass/Fail
200.18	49.09	2.46	-14.26	37.29	Quasi Max	H	116.00	118.00	43.00	-5.71	Pass
105.86	44.52	1.73	-14.70	31.55	Quasi Max	V	100.00	73.00	43.00	-11.45	Pass
35.99	38.92	0.70	-9.66	29.96	Quasi Max	V	100.00	136.00	39.50	-9.54	Pass
730.16	30.02	4.79	-7.13	27.68	Quasi Max	H	150.00	89.00	45.50	-17.82	Pass
30.80	24.09	0.65	-5.97	18.77	Quasi Max	V	100.00	194.00	39.50	-20.73	Pass
167.41	31.79	2.25	-14.94	19.10	Quasi Max	H	125.00	131.00	43.00	-23.90	Pass

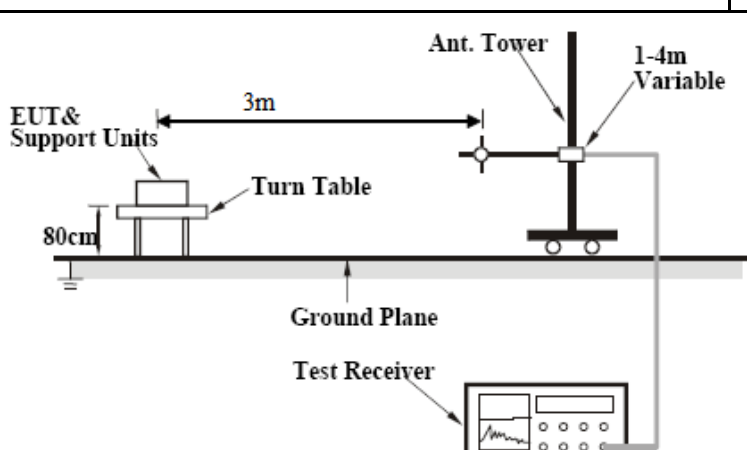
Test specification	below 1GHz		Result	Pass
Environmental Conditions:	Temp (°C):	21		
	Humidity (%)	56		
	Atmospheric (mbar):	1008		
Mains Power:	110VAC,60Hz			
Tested by:	Teody Manansala			
Test Date:	2-Dec-13			
Remarks:	RFID Mid (915.25MHz) + BT at GFSK (2441MHz) + N radio at 802.11b (2437MHz) all transmit simultaneously on ZT420 printer			



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
221.11	38.38	2.58	-16.16	24.79	Quasi Max	H	151.00	57.00	45.50	-20.71	Pass
116.56	42.54	1.84	-12.83	31.55	Quasi Max	V	133.00	159.00	43.00	-11.45	Pass
781.39	19.81	4.98	-6.05	18.74	Quasi Max	H	162.00	76.00	45.50	-26.76	Pass
200.18	48.17	2.46	-14.26	36.37	Quasi Max	H	100.00	89.00	43.00	-6.63	Pass
30.79	27.01	0.65	-5.96	21.69	Quasi Max	H	110.00	319.00	39.50	-17.81	Pass
211.05	40.55	2.52	-16.41	26.66	Quasi Max	H	100.00	106.00	43.00	-16.34	Pass

10.2 Radiated Spurious Emissions above 1GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.247(d), RSS210(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 2.8	☒
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	None		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Radiated Emission Test Results (Above 1GHz)

Test Result with UHF RFID, N radio and ZBR5 BT radio module all transmitting simultaneously in Printer host: ZT410

Above 1GHz-40G-Mode1: RFID Mid (915.25MHz) + BT hopping at GFSK + N radio at 802.11b (2462MHz) all transmit simultaneously on ZT410 printer

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
15486.82	46.06	5.5	10.18	61.75	Peak Max	V	352	112	74	-12.25	Pass
1420.62	41.64	1.09	-6.4	36.33	Peak Max	H	362	236	74	-37.67	Pass
1057.58	46.23	0.8	-7.06	39.96	Peak Max	V	109	197	74	-34.04	Pass
1340.78	44.23	1.03	-6.53	38.73	Peak Max	V	163	93	74	-35.28	Pass
15486.82	33.47	5.5	10.18	49.16	Average Max	V	352	112	54	-4.84	Pass
1420.62	29.94	1.09	-6.4	24.62	Average Max	V	395	283	54	-29.38	Pass
1057.58	33.59	0.8	-7.06	27.32	Average Max	V	109	197	54	-26.68	Pass
1340.78	31.75	1.03	-6.53	26.24	Average Max	V	163	93	54	-27.76	Pass

Test Result with UHF RFID, N radio and ZBR5 BT radio module all transmitting simultaneously in Printer host: ZT420

Above 1GHz-40G-Mode2: RFID Mid (915.25MHz) + BT hopping at GFSK + N radio at 802.11b (2462MHz) all transmit simultaneously on ZT420 printer

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
3660	48.56	2.15	-0.84	49.87	Peak Max	H	123	113	74	-24.13	Pass
1597.5	51.12	1.23	-5.9	46.45	Peak Max	V	201	150	74	-27.55	Pass
1385	49.07	1.06	-6.46	43.67	Peak Max	H	102	250	74	-30.33	Pass
3660	34.27	2.15	-0.84	35.58	Average Max	H	123	113	54	-18.42	Pass
1597.5	39.43	1.23	-5.9	34.76	Average Max	V	201	150	54	-19.24	Pass
1385	41.34	1.06	-6.46	35.94	Average Max	H	102	250	54	-18.06	Pass

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions						
R & S Receiver	ESIB 40	100179	04/20/2013	1 Year	04/20/2014	☐
R&S LISN	ESH2-Z5	861741/013	05/18/2013	1 Year	05/18/2014	☐
CHASE LISN	MN2050B	1018	07/24/2013	1 Year	07/24/2014	☐
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2013	1 Year	05/25/2014	☐
Radiated Emissions						
R & S Receiver	ESL6	100178	03/01/2013	1 Year	03/01/2014	☒
R & S Receiver	ESIB 40	100179	04/20/2013	1 Year	04/20/2014	☒
ETS-Lingren Loop Antenna	6512	00049120	05/13/2013	1 Year	05/13/2014	☒
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	02/09/2013	1 Year	02/09/2014	☒
Horn Antenna (1-26.5GHz)	3115	10SL0059	04/26/2013	1 Year	04/26/2014	☒
Horn Antenna (18-40 GHz)	AH-840	101013	04/23/2013	1 Year	04/23/2014	☒
Pre-Amplifier (1-26.5GHz)	8449B	3008A00715	05/30/2013	1 Year	05/30/2014	☒
Microwave Preamplifier (18-40 GHz)	PA-840	181251	05/30/2013	1 Year	05/30/2014	☒
3 Meters SAC	3M	N/A	10/13/2013	1 Year	10/13/2014	☐
10 Meters SAC	10M	N/A	06/05/2013	1 Year	06/05/2014	☒
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2013	1 Year	05/25/2014	☒
RF Conducted Measurement						
Spectrum Analyzer	N9010A	MY50210206	05/30/2013	1 Year	05/30/2014	☐
Spectrum Analyzer	E4407B	US88441016	05/31/2013	1 Year	05/31/2014	☐
R & S Receiver	ESIB 40	100179	04/20/2013	1 Year	04/20/2014	☐

Annex B. USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

Annex C. 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
HongKong 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 Radiocommunications : 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