RF TEST REPORT



Report No.: FCC_IC_RF_SL16112301-ZBR-017R3-Colocation Supersede Report No.:

Applicant	:	Zebra Technologies Corporation	
Product Name	:	ZT610, ZT620 front panel	
Model No.	:	UZ7211486030B	
Test Standard		47 CFR 15.247	
Test Standard	•	RSS 247 lss 2: Feb 2017	
		ANSI C63.10: 2013	
Test Method	:	RSS Gen Iss 4: Nov 2014	
		558074 D01 DTS Meas Guidance v04	
FCC ID		UZ7211486030B	
	:	I28-RFIDM6EMTT	
		I28MD-ZBR7BTLE	
IC ID		109AN-211486030B	
	:	RFIDM6EMTT	
		3798B-ZBR7BTLE	
Dates of test	:	05/22/2017 – 05/26/2017	
Issue Date	:	06/17/2017	
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:	
Shuo Zhang	Clan Ge
Shuo Zhang	Chen Ge
Test Engineer	Engineer Reviewer

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





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	2 of 26

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	Safety, EMC, RF/Wireless, Telecom
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

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





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	3 of 26

CONTENTS

1	RI	EPORT REVISION HISTORY	4
2	E	XECUTIVE SUMMARY	5
3	CI	USTOMER INFORMATION	5
4	TE	EST SITE INFORMATION	5
5	M	IODIFICATION	5
6	El	UT INFORMATION	6
	6.1	EUT Description	6
	6.2	Spec for Radio	6
	6.3	EUT test modes/configuration Description	7
	6.4	EUT Photos - External	8
	6.5	EUT Photos – Internal	10
	6.6	EUT Test Setup Photos	15
7	SI	UPPORTING EQUIPMENT/SOFTWARE AND CABLING DESCRIPTION	16
	7.1	Supporting Equipment	16
	7.2	Cabling Description	16
	7.3	Test Software Description	16
8	TE	EST SUMMARY	17
9	M	IEASUREMENT UNCERTAINTY	18
	9.1	Conducted Emissions	18
	9.2	Radiated Emissions (30MHz to 1GHz)	18
	9.3	Radiated Emissions (1GHz to 40GHz)	19
	9.4	RF conducted measurement	19
1	0	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	20
	10.1	Radiated Spurious Emissions below 1GHz	20
	10.2	Radiated Spurious Emissions between 1GHz – 25GHz	22
Α	NNEX	(A. TEST INSTRUMENT	24
Α	NNEX	(B. SIEMIC ACCREDITATION	25



Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	4 of 26

Report Revision History

Report No.	Report Version	Description	Issue Date
FCC_IC_RF_SL16112301-ZBR-017R3-Colocation	None	Original	06/17/2017





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	5 of 26

2 **Executive Summary**

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

Company:Zebra Technologies Corp.Product:ZT610, ZT620 front panelModel:UZ7211486030B

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	3 Overlook Point Lincolnshire, IL 60069, USA
Manufacturer Name	Zebra Technologies Corp.
Manufacturer Address	3 Overlook Point Lincolnshire, IL 60069, 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
<u>-</u>	-	-	-

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





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	6 of 26

6 **EUT Information**

6.1 **EUT Description**

Product Name	:	ZT610, ZT620 front panel
Model No.	:	UZ7211486030B
Trade Name	:	Zebra Technologies Corp.
Serial No.	:	N/A
Input Power	:	100-240VAC,50/60Hz
Power Adapter Manu/Model	:	N/A
Power Adapter SN	:	N/A
Product Hardware version	:	N/A
Product Software version	:	N/A
Radio Hardware version	:	N/A
Radio Software version	:	N/A
Date of EUT received	:	05/20/2017
Equipment Class/ Category	:	DTS
Port/Connectors	:	None

6.2 Spec for Radio

Radio Type	Bluetooth
Operating Frequency	2402MHz-2480MHz
Modulation	GFSK (LE)
Channel Spacing	2MHz (LE)
Antenna Type	PiFA antenna
Antenna Gain	-0.55 dBi
Antenna Connector Type	U.FL connector

Radio Type	802.11b	802.11g	802.11a	802.11n-20M
Operating Frequency	2412- 2462MHz	2412- 2462MHz	5180-5240MHz 5260-5320MHz 5500-5700MHz 5725-5825MHz	2412-2462MHz 5180-5240MHz 5240-5320MHz 5500-5700MHz 5725-5825MHz
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	22	11(2.4GHz) 22 (5GHz)
Antenna Type		PiFA	Antenna	
Antenna Gain		2.25 dBi	(for 2.4GHz)	
(Peak)	3.7 dBi (5GHz)			
Antenna Connector Type		U.FL	connector	

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:





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	7 of 26

Туре	Channel No.	Frequency (MHz)	Power Setting
Bluetooth(BLE) 2402-2480MHz	0	2402	Default
	19	2440	Default
2402-2400IVITZ	39	2480	Default

6.3 EUT test modes/configuration Description

Mode	Note
Bluetooth	BLE (GFSK)

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





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation	
Page	8 of 26	

6.4 EUT Photos - External

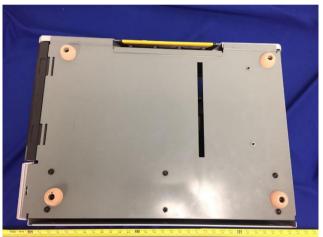




EUT – Front View

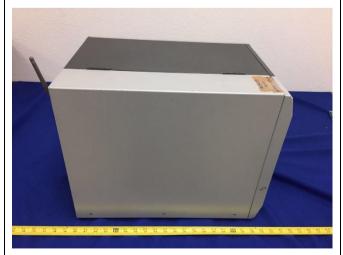


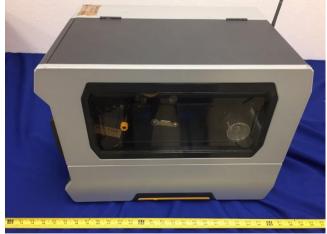




EUT – Top View

EUT – Bottom View





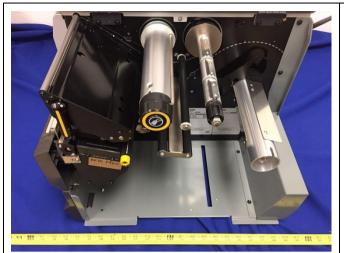
EUT – Left Side View

EUT – Right Side View



 Test report No.
 FCC_IC_RF_SL16112301-ZBR-017R3-Colocation

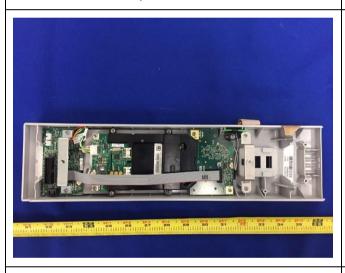
 Page
 9 of 26





Open Case View

MC40 Panel Front



MC40 Panel Front

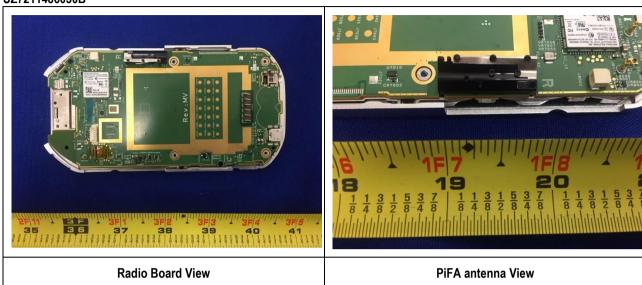




Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	10 of 26

6.5 EUT Photos – Internal

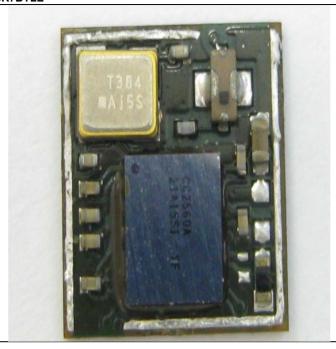
UZ7211486030B



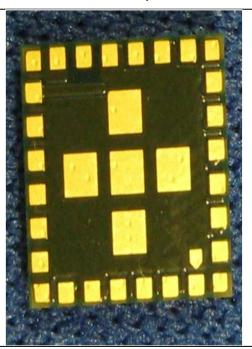


Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	11 of 26

I28-RFIDM6EMTT & I28MD-ZBR7BTLE



BT module Top View



BT module Bottom View



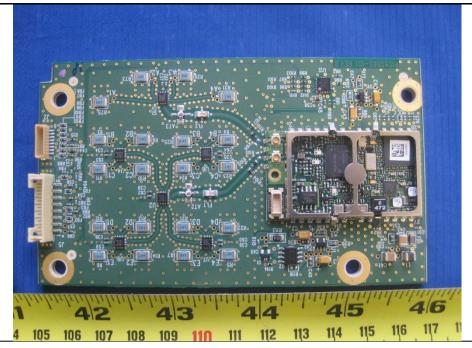




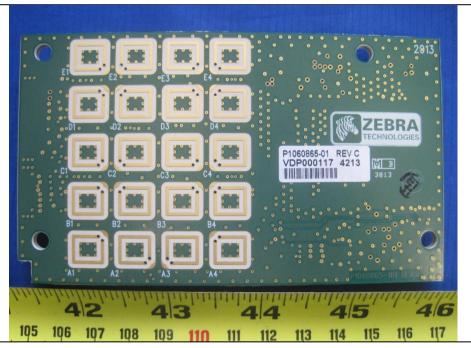




Test report No. FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page 12 of 26



RFID module Top View



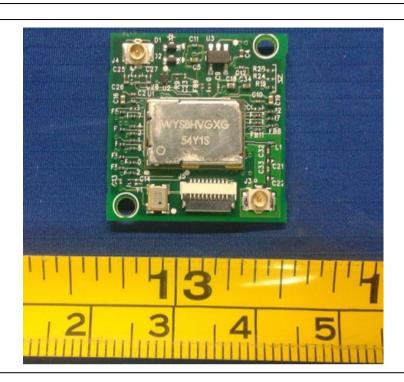
RFID module Bottom View



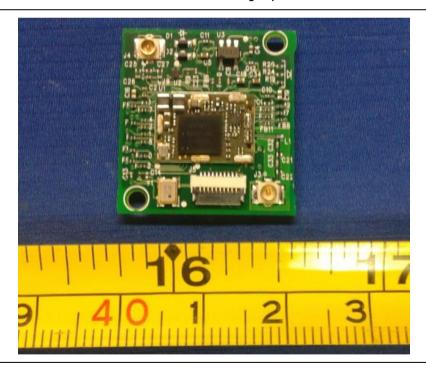


 Test report No.
 FCC_IC_RF_SL16112301-ZBR-017R3-Colocation

 Page
 13 of 26



EUT Radio with Shielding Top View



EUT Radio without Shielding Top View

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

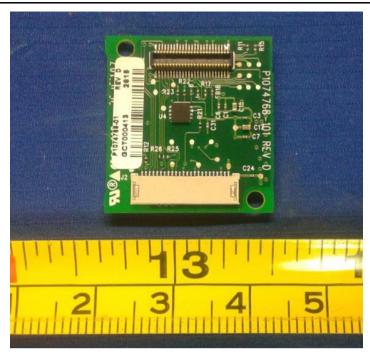








Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	14 of 26



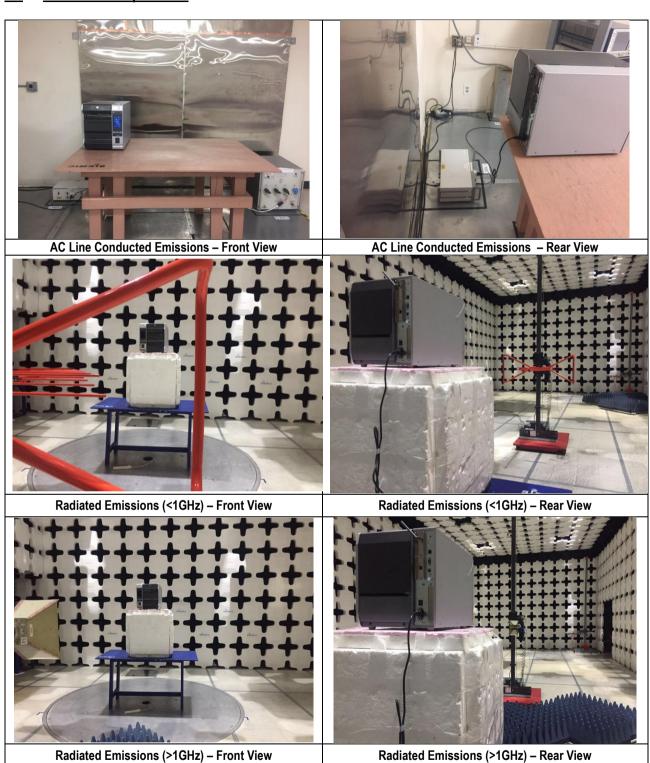
EUT Radio Bottom View





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	15 of 26

6.6 EUT Test Setup Photos





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	16 of 26

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
1	Laptop	N/A	3YZQ162	Dell	1

7.2 Cabling Description

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

7.3 Test Software Description

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

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





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	17 of 26

8 **Test Summary**

Test Item	1	Test standard		Pass / Fail	
Restricted Band of FCC		15.205	FCC	ANSI C63.10:2013	⊠ Pass
Operation	IC	RSS Gen 8.10	IC	558074 D01 DTS Meas Guidance v04	□ N/A
	FCC	15.207(a)	FCC	ANSI C63.10:2013	□ Pass
AC Conducted Emissions	IC	RSS Gen 8.8	IC	RSS Gen Issue 4: 2014	≥ N/A

DTS Band Requirement

Те	est Item		Test standard		Test Method/Procedure	Pass / Fai
99% Occupied Bandwidth		-	-	-	-	□ Pass
99% Occu	pied Bandwidth	IC	RSS Gen 6.6	IC	RSS Gen Issue 4: 2014 -	ĭ N/A
0.10	D 1 : 111	FCC	15.247(a)(2)	FCC	550074 P04 PT0 M	□ Pass
6 0 B	Bandwidth	IC	RSS247 (5.2.1)	IC	558074 D01 DTS Meas Guidance v04	☑ N/A
Band Edge and Radiated Spurious Emissions		FCC	15.247(d)	FCC	ANSI C63.10:2013	
		IC	RSS247 (5.5)	IC	558074 D01 DTS Meas Guidance v04	□ N/A
0.4	t D	FCC	15.247(b)	FCC	550074 D04 DT0 Mars Ovidence 04	□ Pass
Output Power		IC	RSS247 (5.4.4)	IC	558074 D01 DTS Meas Guidance v04	▼ N/A
Receiver Spurious Emissions		IC	RSS Gen (4.8)	IC	RSS Gen Issue 4: 2014	☐ Pass ☒ N/A
Antonna	Gain > 6 dBi	FCC	15.247(e)	FCC	-	□ Pass
Antenna	Gaill > 0 ubi	IC	-	IC	-	⊠ N/A
Dawas Cs	and Donait.	FCC	15.247(e)	FCC	558074 D01 DTS Meas Guidance v04	□ Pass
Power Sp	ower Spectral Density		RSS247 (5.2.2)	IC	558074 DOT DTS Meas Guidance V04	☑ N/A
DE Evens	ura raquirament	FCC	15.247(i)	FCC	-	☐ Pass
KF Exposi	ure requirement	IC	RSS Gen(5.5)	IC	RSS Gen Issue 4: 2014	⊠ N/A
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 wit under all normal operating conditions as specified in the user's manual. 3. The device is operating at near 98% duty cycle.				wing that an emission is maintained within the band	of operation	
Note Only Radiated Spurious Emission was tested. Please refer to report no. : FCC_IC_RF_SL16112301-ZBR-017R3 for rest of the items.						

items.





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	18 of 26

9 Measurement Uncertainty

9.1 Conducted Emissions

The test is to measure the conducted emissions to the mains port of the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the LISN
- Uncertainty of cables
- Uncertainty due to the mismatches
- Etc, see the below table for details

Source of Uncertainty	Value	Probability	Division	Sensitivity	Expanded
•	(dB)	Distribution		Coefficient	Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Filter Insertion Loss	0.25	Normal	2	1	0.125
LISN Insertion Loss	0.40	Normal	2	1	0.20
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude	1.5	Rectangular	1.732	1	0.86605081
Response					
PRF Response	1.5	Rectangular	1.732	1	0.86605081
Mismatch LISN -	0.25	U-Shape	1.414	1	0.1768033
Receiver					
LISN Impedance	2.5	Triangular	2.449	1	1.0208248
Combined Standard Unce	1.928133				
Expanded Uncertainty (F	3.856266				

The total derived measurement uncertainty is +/- 3.86 dB.

9.2 Radiated Emissions (30MHz to 1GHz)

The test is to measure the radiated emissions of the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the antenna
- Uncertainty of cables
- Uncertainty due to the mismatches
- NSA Calibration
- Etc., details see the below table

Source of Uncertainty	Value	Probability	Division	Sensitivity	Expanded
Source of Officertainty	(dB)	Distribution		Coefficient	Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Filter Insertion Loss	0.25	Normal	2	1	0.125
Antenna Factor	0.65	Normal	2	1	0.325
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.86605081
PRF Response	1.5	Rectangular	1.732	1	0.86605081
Mismatch Filter - Receiver	0.25	U-Shape	1.414	1	0.1768033
NSA Calibration	4.0	U-Shape	1.414	1	2.8288543
Combined Standard Uncertaint	3.0059131				
Expanded Uncertainty (K=2) 6.0118262					
: I					

The total derived measurement uncertainty is +/- 6.00 dB.

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



Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	19 of 26

9.3 Radiated Emissions (1GHz to 40GHz)

The test is to measure the radiated emissions of the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the antenna
- Uncertainty of cables
- Uncertainty due to the mismatches
- VSWR Calibration
- Etc., details see the below table

Source of Uncertainty	Value	Probability	Division	Sensitivity	Expanded				
Source of Officertainty	(dB)	Distribution	DIVISION	Coefficient	Uncertainty				
Receiver Reading	0.12	Rectangular	1.732	1	0.0692840				
Cable Insertion Loss	0.21	Normal	2	1	0.1050000				
Filter Insertion Loss	0.25	Normal	2	1	0.1250000				
Antenna Factor	0.65	Normal	2	1	0.3250000				
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836				
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.8660508				
PRF Response	1.5	Rectangular	1.732	1	0.8660508				
Mismatch Filter - Receiver	0.25	U-Shape	1.414	1	0.1768033				
VSWR Calibration	2.0	U-Shape	1.414	1	1.4144272				
Combined Standard Uncertain	4.2363								
Expanded Uncertainty (K=2	Expanded Uncertainty (K=2)								

The total derived measurement uncertainty is +/- 8.47 dB.

9.4 RF conducted measurement

The test is to measure the RF output power from the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the Reference Level Uncertainty
- Uncertainty of variable attenuators
- Uncertainty of cables
- Uncertainty due to the mismatches

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Reference Level	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Attenuator	0.25	Normal	2	1	0.125
Mismatch	0.25	U-Shape	1.414	1	0.1768033
Combined Standard Unce	0.476087				
Expanded Uncertainty (I	K=2)	_			0.952174

The total derived measurement uncertainty is +/- 0.95 dB.



Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	20 of 26

10 Measurements, Examination and Derived Results

10.1 Radiated Spurious Emissions below 1GHz

Requirement(s):

Test Plot

Spec	Item	Requirement		Applicable
47CFR§15.247(d)	a)	Except higher limit as specified elsewhere in low-power radio-frequency devices shall no specified in the following table and the level exceed the level of the fundamental emission edges	×	
RSS247 (5.5)	a)	Frequency range (MHz)	Field Strength (uV/m)	
		30 – 88	100	
		88 – 216	150	
		216 960 Above 960	200 500	
		Above 960	500	
Test Setup		Semi Anechoic Char Radio Absorbing Material But 1 Ground Plane	Antenna 1-4m	pectrum Analyzer
Procedure	1. 2. 3. 4.	rotation of the EUT) was chosen b. The EUT was then rotated to the	quency points obtained from the EUT cha lout by rotating the EUT, changing the an ght in the following manner: (whichever gave the higher emission level) direction that gave the maximum emission adjusted to the height that gave the maximale for that frequency point.	racterisation. tenna el over a full on. num emission.
Remark		JT was scanned up to 1GHz. Both horizontal only the worst case.	and vertical polarities were investigated.	The results
Result	⊠ Pas	ss 🗆 Fail		

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

□ N/A

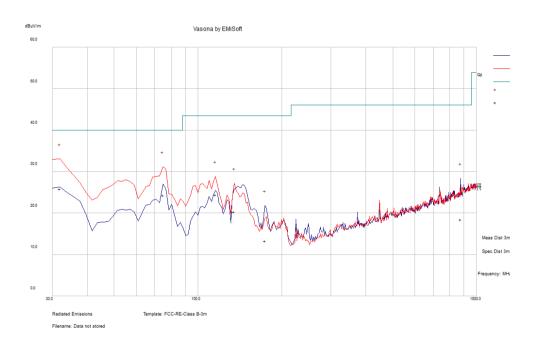


Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation					
Page	21 of 26					

Test was done by Shuo Zhang at 10m chamber.

Radiated Emission Test Results (Below 1GHz)

Test specification	below 1GHz				
	Temp (°C): 22				
Environmental Conditions:	Humidity (%)	47.5	1		
	Atmospheric (mbar):	Result	Pass		
Mains Power:	120VAC, 60Hz				
Tested by:	Shuo Zhang	Shuo Zhang			
Test Date:	02/15/2017				
Remarks:	Three modules transmit simultaneously	Three modules transmit simultaneously			



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
31.85	41.1	0.82	-16.09	25.82	Quasi Max	V	104	148	40	-14.18	Pass
74.94	53.25	1.37	-30.35	24.27	Quasi Max	V	122	220	40	-15.73	Pass
115.58	47.83	1.76	-25.13	24.47	Quasi Max	V	110	175	43.52	-19.05	Pass
134.85	43.29	1.92	-24.88	20.32	Quasi Max	V	133	213	43.52	-23.2	Pass
875.37	29.55	5.33	-16.39	18.49	Quasi Max	Н	197	344	46.02	-27.53	Pass
173.75	38.4	2.24	-27.37	13.26	Quasi Max	Н	129	67	43.52	-30.26	Pass

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

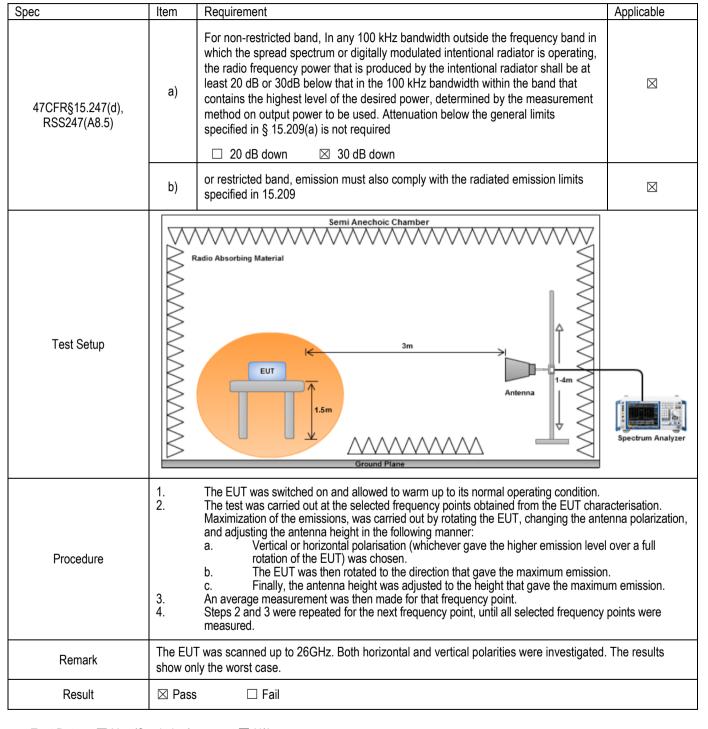
775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088



Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	22 of 26

10.2 Radiated Spurious Emissions between 1GHz - 25GHz

Requirement(s):



Test Data ⊠ Yes (See below) □ N/A

Test Plot ☐ Yes (See below) ☐ N/A

Test was done by Shuo Zhang at 10m chamber.

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



Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	23 of 26

Radiated Emission Test Results (Above 1GHz)

LMA UZ7211486030B Module, FMA ZBR7BTLE Module and FMA UHF RFIDM6EMTT transmit simultaneously

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
4261.74	37.12	9.15	14.62	60.89	Peak Max	Н	197	75	74	-13.11	Pass
6130.92	36.93	10.64	14.27	61.85	Peak Max	V	166	0	74	-12.15	Pass
2124.31	39.8	4.38	14.61	58.79	Peak Max	V	149	350	74	-15.21	Pass
4261.74	25.49	9.15	14.62	49.26	Average Max	Н	197	75	54	-4.74	Pass
6130.92	24.55	10.64	14.27	49.47	Average Max	V	166	0	54	-4.53	Pass
2124.31	27.89	4.38	14.61	46.88	Average Max	V	149	350	54	-7.12	Pass

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







Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	24 of 26

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions			1			
R & S Receiver	ESIB 40	100179	06/08/2017	1 Year	06/08/2018	~
CHASE LISN	MN2050B	1018	08/16/2016	1 Year	08/16/2017	>
Radiated Emissions				,	,	
R & S Receiver	ESIB 40	1018	06/08/2017	1 Year	06/08/2018	~
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	01/13/2017	1 Year	01/13/2018	>
Horn Antenna (1GHz~26GHz)	3115	100059	08/11/2016	1 Year	08/11/2017	>
Pre-Amplifier (1-26.5GHz)	8449B	3008A00715	03/30/2017	1 Year	03/30/2018	>
Preamplifier (100KHz-7GHz)	LPA-6-30	11140711	02/09/2017	1 Year	02/09/2018	>
10 Meters SAC	10M	N/A	07/06/2016	1 Year	07/06/2017	>
RF Conducted Measurement						
Spectrum Analyzer	N9010A	10SL0219	11/16/2016	1 Year	11/16/2017	>





Test report No.	FCC_IC_RF_SL16112301-ZBR-017R3-Colocation
Page	25 of 26

Annex B. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)	7	Please see the documents for the detailed scope
ISO Guide 65 (A2LA)	7	Please see the documents for the detailed scope
TCB Designation		A1, A2, A3, A4, B1, B2, B3, B4, C
FCC DoC Accreditation	7	FCC Declaration of Conformity Accreditation
FCC Site Registration		3 meter site
FCC Site Registration		10 meter site
IC Site Registration	7	3 meter site
IC Site Registration	7	10 meter site
	1	Radio & Telecommunications Terminal Equipment: EN45001 – EN ISO/IEC 17025
EU NB	1	Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)	包包	Phase I, Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
	7	(Phase II) OFCA Foreign Certification Body for Radio and Telecom
Hong Kong OFCA	7	(Phase I) Conformity Assessment Body for Radio and Telecom
	7	Radio: Scope A – All Radio Standard Specification in Category I
Industry Canada CAB	7	Telecom: CS-03 Part I, II, V, VI, VII, VIII





Test report No. FCC_IC_RF_SL16112301-ZBR-017R3-Colocation Page 26 of 26

Japan Recognized Certification Body Designation	包包	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
	72	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
Korea CAB Accreditation		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
	12	EMC: AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4
Australia CAB Recognition		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