

FCC/ISED RF TEST REPORT



Vista Labs
TEST • CERTIFY • COMPLY

Test Report Number.....	NSC-19042303-LC-FCC-IC-Cellular
Applicant.....	Nortek Security & Control LLC
Applicant Address.....	5919 Sea Otter Place, Carlsbad, CA 92010 USA
Product Name.....	Mobile Personal Emergency Reporting System
Model Number.....	Libris 2.0
Family Product/Model.....	N/A
FCC ID.....	EF400167
ISED ID.....	1078A-00167
Date of EUT received.....	05/20/2019
Date of Test.....	05/20/2019 – 05/24/2019
Report Issue Date.....	05/31/2019
Test Standards.....	47CFR Part 22: 2019 47CFR Part 24: 2019 47CFR Part 27: 2019 RSS-130 Issue 2: Feb 2019 RSS-132 Issue 3: Jan 2013 RSS-133 Issue 6: Jan 2018 RSS-139 Issue 3: Jul 2015
Test Result.....	Pass

Issued By:

Vista Laboratories

1261 Puerta Del Sol, San Clemente, CA 92673 USA

www.vista-compliance.com

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Tested by:

Sherwin Lee/Test Engineer

Approved By:

David Zhang/Technical Manager

Report Number:	NSC-19042303-LC-FCC-IC-Cellular
Product:	Mobile Personal Emergency Reporting System
Model Number:	Libris 2.0



Laboratory Introduction

Vista Labs is an A2LA accredited 17025 compliant regulatory compliance testing laboratories (Cert. number: 4848-01) strategically located in Orange County, providing services in the electrical and telecommunication industries. Vista labs is also recognized testing facility for Australia (ACMA), Chinese Taipei (BSMI), Chinese Taipei (NCC), Hong Kong (OFCA), Israel (MOC), Korea (RRA), Singapore (IMDA), Vietnam (MIC), etc.

Our comprehensive testing services include safety testing, EMC emission and susceptibility testing, RF and wireless testing (including DFS).

As your partner, Vista investigates appropriate test standards, develops test plans, performs troubleshooting & failure analysis, reviews documentation, and provides test reports for a complete compliance testing and certification package.



17025 Product Testing Accreditation Certificate



17065 Product Certification Accreditation Certificate



Electromagnetic Compatibility
Radio Frequency
Product Certification
International Approval

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TABLE OF CONTENTS

1 GENERAL INFORMATION5

1.1 Applicant5

1.2 Product information5

1.3 Test standard and method6

1.4 Test Purpose and statement6

2 TEST SITE INFORMATION7

3 MODIFICATION OF EUT.....7

4 TEST CONFIGURATION AND OPERATION.....7

4.1 EUT test configuration.....7

4.2 Supporting Equipment7

4.3 EUT setup diagram8

4.4 EUT operation8

4.5 Test software.....8

5 EUT AND TEST SETUP PICTURES9

5.1 EUT pictures9

5.2 EUT test setup pictures11

6 TEST SUMMARY13

7 UNCERTAINTY OF MEASUREMENT14

8 TEST SUMMARY AND RESULT15

8.1 Field Strength of Spurious Radiation.....15

9 TEST INSTRUMENT LIST28



Report Number:	NSC-19042303-LC-FCC-IC-Cellular
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REVISION HISTORY

Revision	Issue Date	Description	Note
Original	05/31/2019	Original release	N/A

Report Number:	NSC-19042303-LC-FCC-IC-Cellular
Product:	Mobile Personal Emergency Reporting System
Model Number:	Libris 2.0



1 General Information

1.1 Applicant

Applicant:	Nortek Security & Control LLC
Applicant address:	5919 Sea Otter Place, Carlsbad, CA 92010 USA
Manufacturer:	Nortek Security & Control LLC
Manufacturer Address:	5919 Sea Otter Place, Carlsbad, CA 92010 USA

1.2 Product information

Product Name	Mobile Personal Emergency Reporting System
Model Number	Libris 2.0
Serial Number	N/A
Frequency Band	2.4GHz Wi-Fi: 802.11b/g/n-20MHz: 2412-2462MHz 2.4GHz BLE: 2402-2480MHz WCDMA Band II: 1852.4 – 1907.6 MHz WCDMA Band IV: 1712.4 – 1752.6 MHz WCDMA Band V: 826.4 – 846.6 MHz LTE Cat-1 Band 2: 1850.7-1909.3MHz LTE Cat-1 Band 4: 1710.7-1754.3MHz LTE Cat-1 Band 5: 824.7-848.3MHz LTE Cat-1 Band 12: 699.7-715.3MHz LTE Cat-1 Band 13: 779.5-784.5MHz
Type of modulation	802.11b: DSSS (CCK, DQPSK, DBPSK) 802.11g: OFDM-CCK (BPSK, QPSK, 16QAM, 64QAM) 802.11n: OFDM (BPSK, QPSK, 16QAM, 64QAM) BLE: GFSK QPSK (WCDMA), QPSK/16QAM (LTE Cat-1)
Equipment Class/ Category	DTS, PCB
Maximum output power	Wi-Fi: 18.68 dBm; BLE: 7.373 dBm WCDMA Band II: 24.00 dBm WCDMA Band IV: 24.11 dBm WCDMA Band V: 21.81 dBm LTE Cat-1 Band 2: 26.29 dBm LTE Cat-1 Band 4: 25.23 dBm LTE Cat-1 Band 5: 22.07 dBm LTE Cat-1 Band 12: 19.44 dBm LTE Cat-1 Band 13: 22.55 dBm
Antenna Information	Wi-Fi/BLE: Internal antenna, 2.2 dBi Gain. WCDMA/LTE: PCB antenna, 4.0 dBi for 1700-2200MHz; 2.4 dBi for 700-900MHz
Clock Frequencies	N/A
Port/Connectors	Charging interface
Input Power	5VDC, 1.0A
Power Adapter Manu/Model	Shenzhen aquilstar / ASUC69a-050100
Power Adapter SN	N/A
Hardware version	N/A
Software version	N/A
Simultaneous Transmission	BLE, WLAN and WCDMA/LTE can transmit simultaneously
Additional Info	N/A



Report Number:	NSC-19042303-LC-FCC-IC-Cellular
Product:	Mobile Personal Emergency Reporting System
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1.3 Test standard and method

Test standard	47CFR Part 22: 2019 47CFR Part 24: 2019 47CFR Part 27: 2019 RSS-130 Issue 2: Feb 2019 RSS-132 Issue 3: Jan 2013 RSS-133 Issue 6: Jan 2018 RSS-139 Issue 3: Jul 2015 SRSP-510 Issue 5: Feb 2009 RSS-Gen Issue 5: Apr 2018
Test method	ANSI C63.26: 2015 KDB 971168 D01 Power Meas License Digital Systems v03r01 KDB 412172 D01 Determining ERP and EIRP v01r01

1.4 Test Purpose and statement

The purpose of this test report is intended to demonstrate the compliance of product listed in section 1.2, received from company listed in section 1.1, to the requirements of standard and method listed in section 1.3. Based on our test results, we conclude that the product tested complies with the requirements of the standards indicated.

2 Test site information

Lab performing tests	Vista Laboratories
Lab Address	1261 Puerta Del Sol, San Clemente, CA 92673 USA
Phone Number	+1 (949) 393-1123
Website	www. Vista-compliance.com

Test condition	Test Engineer	Test Environment	Test Date
Radiated	David Zhang	21.5°C / 58.2%/996 mbar	05/15/2019 – 05/17/2019

3 Modification of EUT

N/A

4 Test configuration and operation

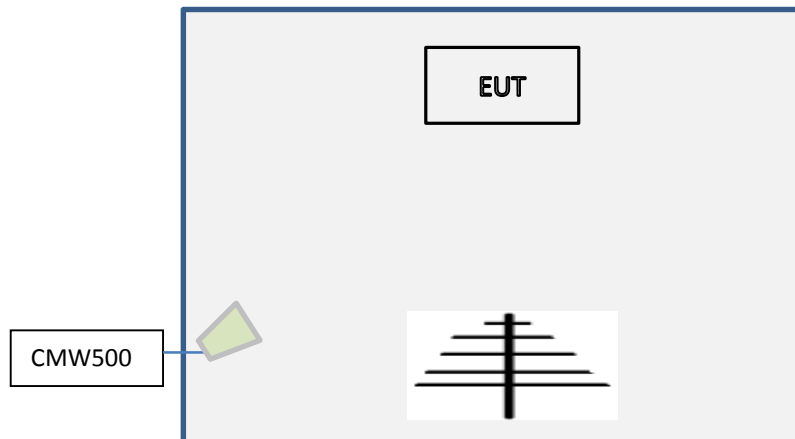
4.1 EUT test configuration

The cellular radio of EUT is connected to and controlled by CMW500, the base station emulator, communicate continuously in different modulation, test channel and data rate. The radio of BLE is set to transmit continuously by using mobile application.

4.2 Supporting Equipment

Index	Description	Model	S/N	Brand	Remark
-	-	-	-	-	-

4.3 EUT setup diagram



4.4 EUT operation

The radio can be set to transmit continuously in different modulation, test channel and data rate.

4.5 Test software

Index	Description	Remark
1	EMISoft Vasona 6.0049	EMC/Spurious emission test software used during testing
2	ESP_RF test tool v1.1.0	WLAN test software to enable test mode
3	nRFgo Studio 1.21.12.10	BLE test software to enable test mode

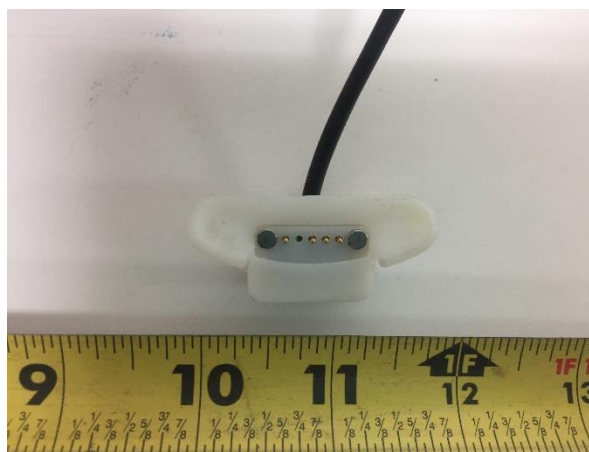
5 EUT and test setup pictures

5.1 EUT pictures





Charging Cable/interface Top View



Charging Cable/interface Front View



Power Adapter Front View

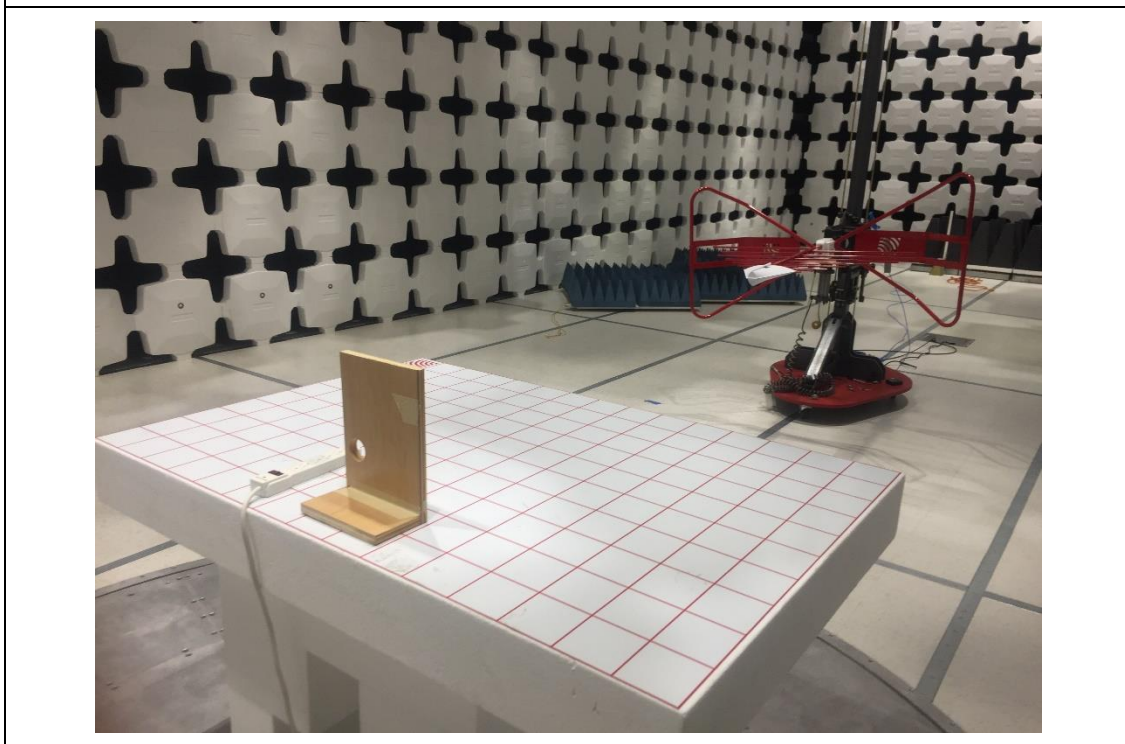


Power Adapter Rear View

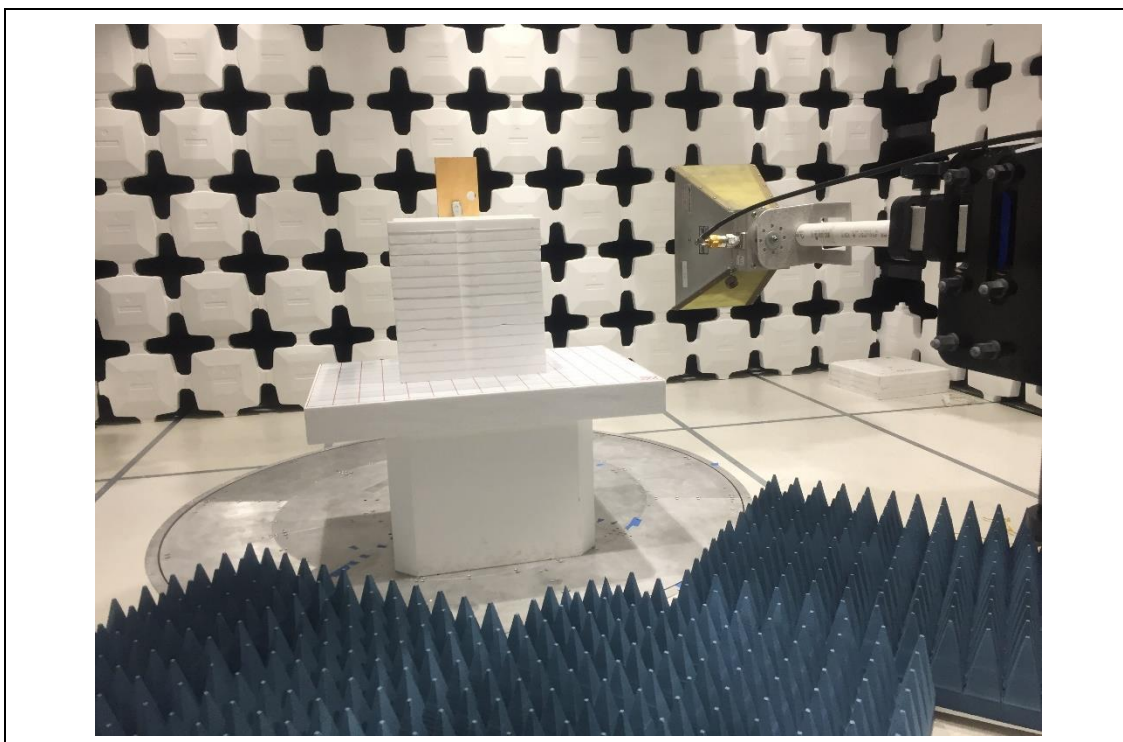
5.2 EUT test setup pictures



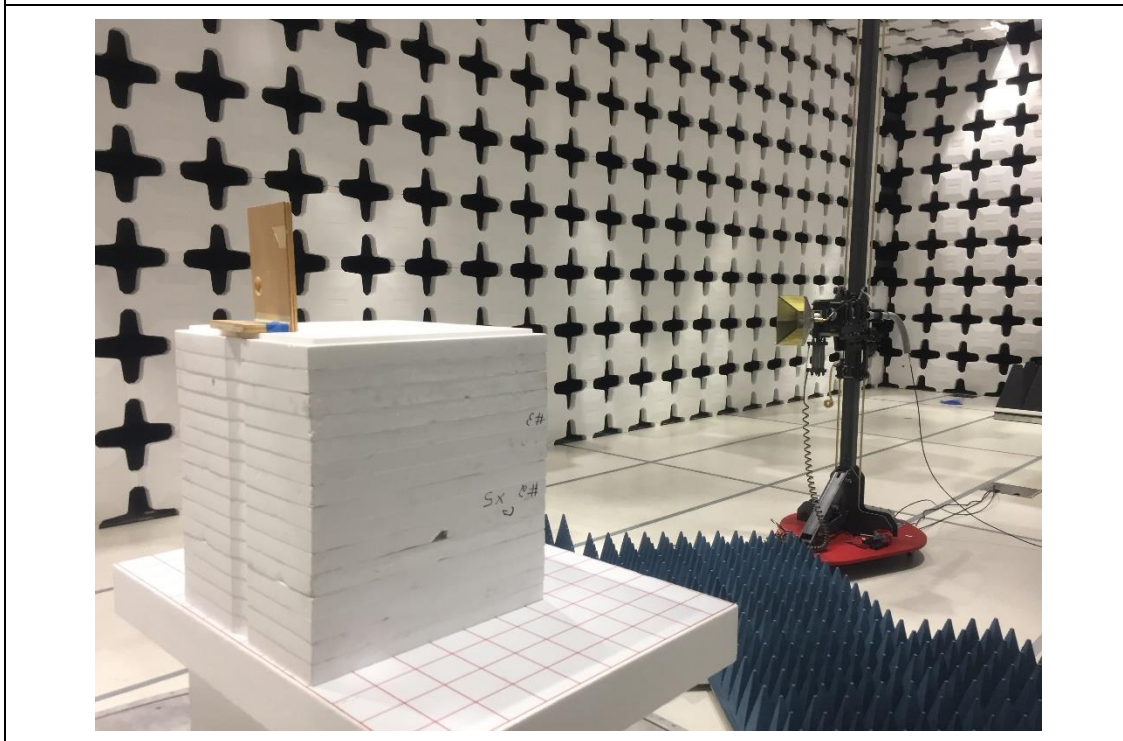
Radiated Emissions Below 1GHz setup – Front



Radiated Emissions Below 1GHz setup – Rear



Radiated Emissions Above 1GHz setup – Front



Radiated Emissions Above 1GHz setup – Rear



6 Test Summary

FCC Rules	ISED Rules	Test Item	Section	Verdict
2.1046 22.917 (a), 24.238 (a), 27.53 (f), (g), (h), (c)(2) and (5)	RSS-130(4.7.1) and (4.7.2) RSS-132 (5.5) RSS-133 (6.5) RSS-139 (6.6) SRSP-510(5.1.2)	Field Strength of Spurious Radiation (licensed band)	8.1	Pass



7 Uncertainty of Measurement

Test item	Measurement Uncertainty (dB)
Radiated Emission (9KHz-30MHz)	±3.5 dB
Radiated Emission (30MHz-1GHz)	±4.6 dB
Radiated Emission (1-18GHz)	±4.9 dB
Radiated Emission (18-40GHz)	±3.5 dB

8 Test summary and result

8.1 Field Strength of Spurious Radiation

8.1.1 Requirement

§ 2.1051, 22.917(a), 24.238(a), 27.53 (f), (g), (h) and (c)(2) and (5)

RSS-130(4.7.1) and (4.7.2), RSS-132(5.5), RSS-133(6.5), RSS-139(6.6)

FCC 47 CFR Part 22, Clause 22.917 (a) and FCC 47 CFR Part 24, Clause 24.238 (a)

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

FCC 47 CFR Part 27, Clause 27.53 (c)(2) and (5)

(c) For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed;

FCC 47 CFR Part 27, Clause 27.53 (f)

(f) For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC 47 CFR Part 27, Clause 27.53 (g)

(g) For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC 47 CFR Part 27, Clause 27.53 (h)

(h) AWS emission limits — (1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

(3) Measurement procedure. (i) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

RSS-130, Clause 4.7.1 and 4.7.2

The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

In addition to the limit outlined in section 4.7.1 above, equipment operating in the frequency bands 746- 756 MHz and 777-787 MHz shall also comply with the following restrictions:

a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

- (i) $76 + 10 \log_{10} p$ (watts), dB, for base and fixed equipment, and
- (ii) $65 + 10 \log_{10} p$ (watts), dB, for mobile and portable equipment.

b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed -70 dBW/MHz for wideband signal and 80 dBW for discrete emission with bandwidth less than 700 Hz.

RSS-132, Clause 5.5

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

Report Number:	NSC-19042303-LC-FCC-IC-Cellular
Product:	Mobile Personal Emergency Reporting System
Model Number:	Libris 2.0



RSS-133, Clause 6.5.1

Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts).

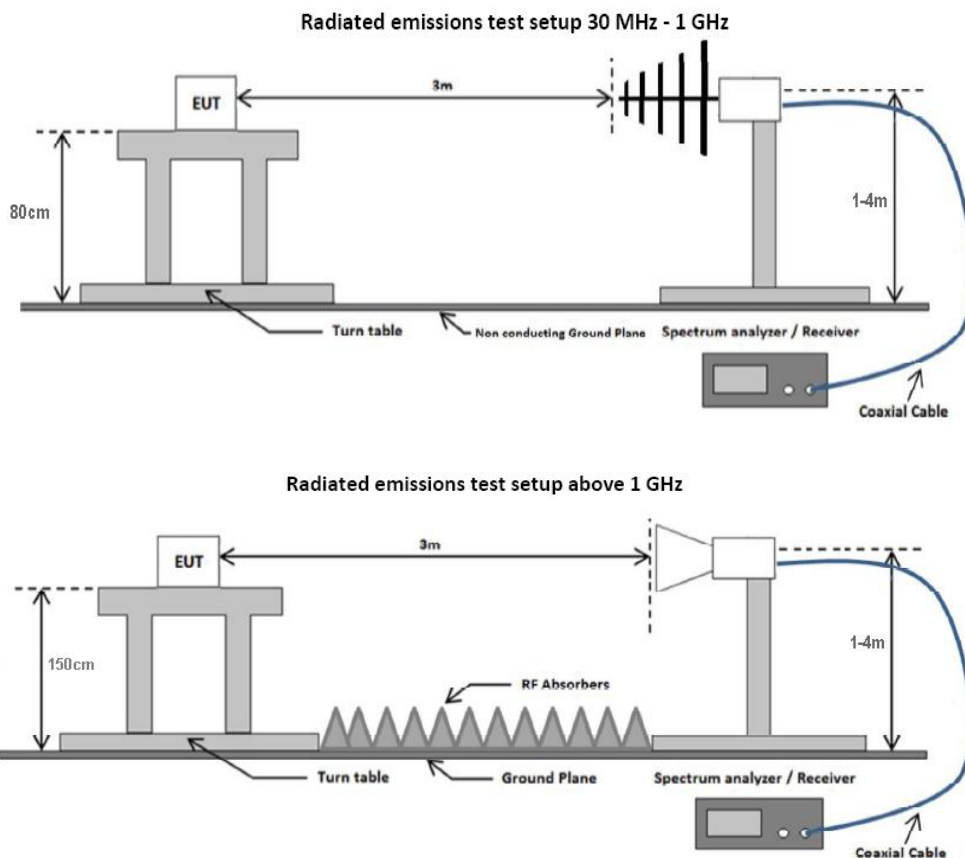
(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

RSS-139, Clause 6.6

(i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB.

(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least $43 + 10 \log_{10} p$ (watts) dB.

8.1.2 Test setup



8.1.3 Test Procedure

ANSI C63.26: 2015 section 5.5

KDB 971168 D01 Power Meas License Digital Systems v03r01 section 7

Boresight antenna mast was used during the scanning to point to EUT to maximize the emission. The process will be repeated in 3 EUT orientations.

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 characterization. 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 polarization (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. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 300 Hz for frequency below 150KHz.

Report Number:	NSC-19042303-LC-FCC-IC-Cellular
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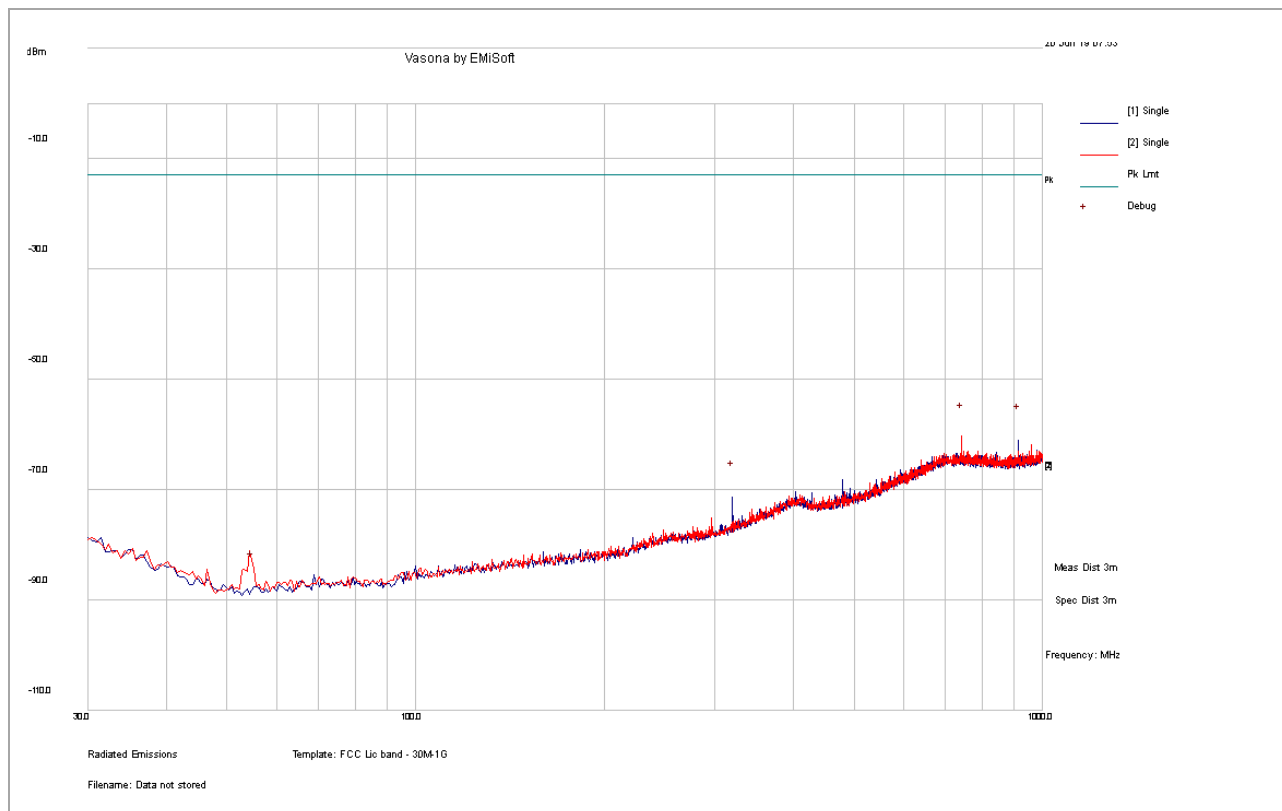


4. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 10 kHz for frequency between 150KHz – 30MHz.
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 120 kHz for Quasi-Peak detection at frequency between 30MHz - 1GHz.
6. The resolution bandwidth of test receiver/spectrum analyzer is 1MHz and video bandwidth is 3MHz with Peak detection for Peak and average measurement at frequency above 1GHz.
7. Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter.
8. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized, and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained.
9. Steps 2 - 8 were repeated for the next frequency point, until all selected frequency points were measured



8.1.4 Test Result

Test Standard:	Part 24E & RSS 133	Mode:	Wi-Fi + BT + LTE B2
Frequency Range:	30-1000MHz	Test Date:	05/22/2019
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Sherwin Lee
Remark:	N/A	Test Result:	Pass



Frequency MHz	Raw dB	Cable dB	AF dB	Level dBm	Det	Pol deg	Height cm	Table deg	Limit dBm	Margin dB
54.93	-77.93	14.67	-24.73	-87.99	RMS	H	103	260	-13	-74.99
320.03	-71.39	17.60	-17.64	-71.42	RMS	H	308	265	-13	-58.42
480.11	-73.16	17.90	-13.26	-68.52	RMS	H	235	102	-13	-55.52
741.99	-73.55	19.05	-6.58	-61.07	RMS	H	226	357	-13	-48.07

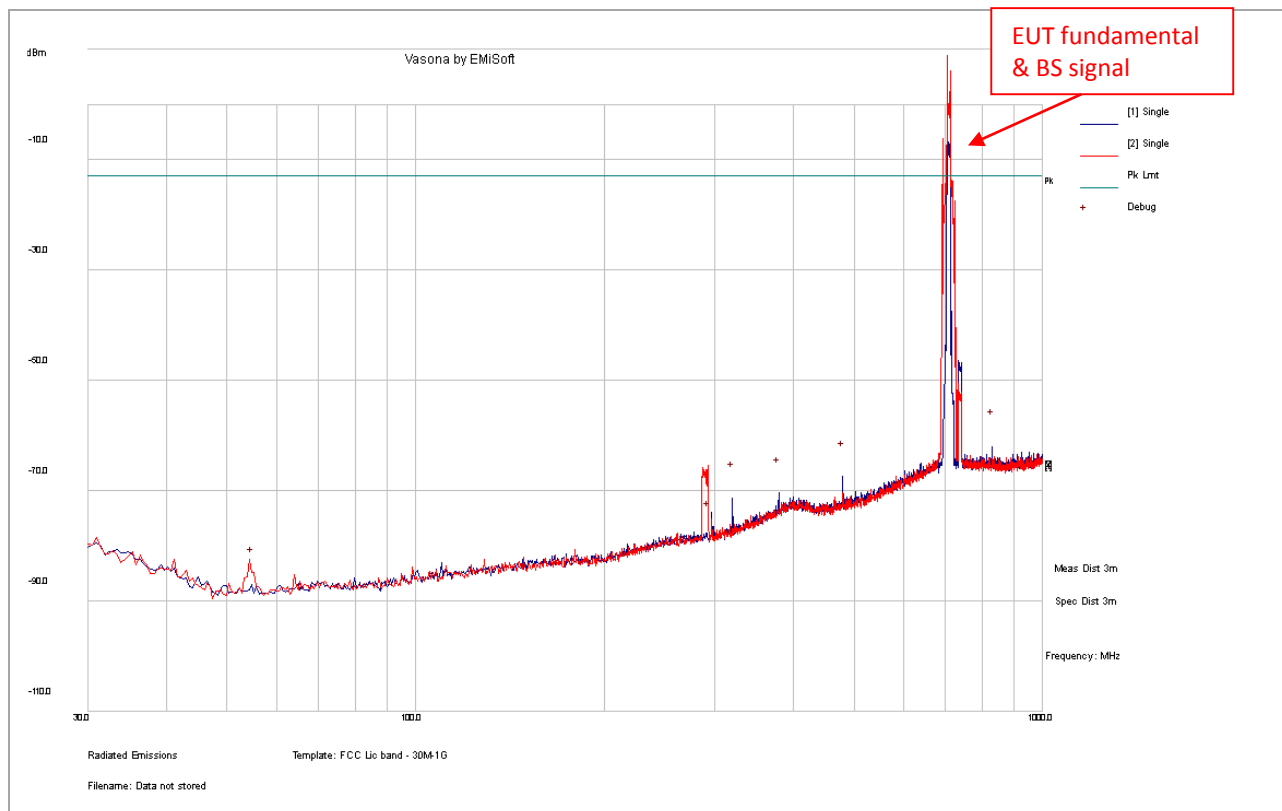
Note:

- 1) All different channel and modes were verified but only the worst case result is shown here.
- 2) All different modes have been verified and the worst case result is presented here.
- 3) EUT was tested in 3 orientations.
- 4) Final substitution measurement is not necessary as margin is over 20 dB.





Test Standard:	Part 27 & RSS 130	Mode:	Wi-Fi + BT + LTE B12
Frequency Range:	30-1000MHz	Test Date:	05/22/2019
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Sherwin Lee
Remark:	N/A	Test Result:	Pass



Frequency MHz	Raw dB	Cable dB	AF dB	Level dBm	Det	Pol deg	Height cm	Table deg	Limit dBm	Margin dB
54.74	-76.98	14.66	-24.73	-87.05	RMS	H	103	260	-13	-74.05
320.02	-71.56	17.60	-17.64	-71.59	RMS	H	308	265	-13	-58.59
292.57	-77.37	17.39	-18.80	-78.78	RMS	H	235	102	-13	-65.78
379.25	-74.27	18.01	-14.50	-70.76	RMS	H	162	132	-13	-57.76
480.05	-72.34	17.90	-13.26	-67.70	RMS	H	179	82	-13	-54.70
829.782	-74.36	19.13	-6.91	-62.14	RMS	H	192	88	-13	-49.14

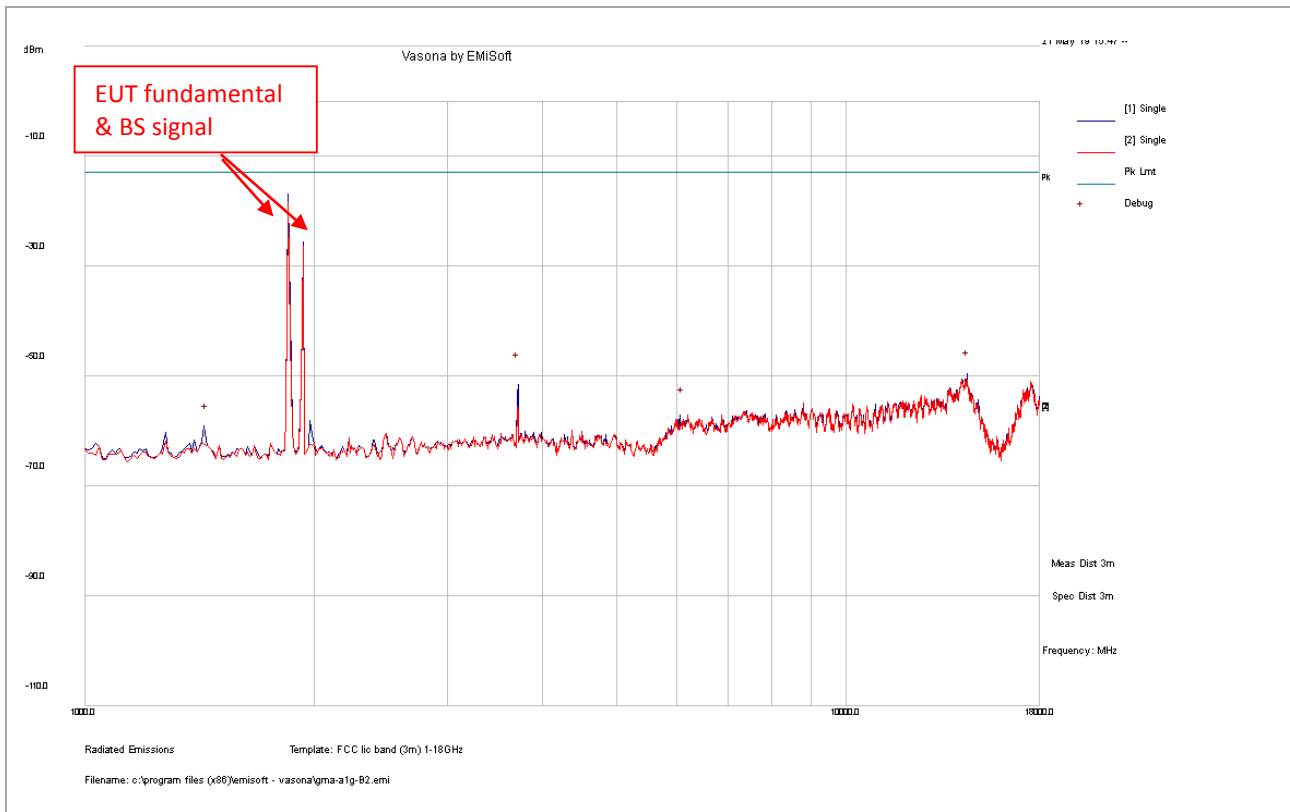
Note:

- 1) All different channel and modes were verified but only the worst case result is shown here.
- 2) All different modes have been verified and the worst case result is presented here.
- 3) EUT was tested in 3 orientations.
- 4) Final substitution measurement is not necessary as margin is over 20 dB.





Test Standard:	Part 24E & RSS 133	Mode:	Wi-Fi + BT + LTE B2
Frequency Range:	1GHz -18GH	Test Date:	05/22/2019
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Sherwin Lee
Remark:	N/A	Test Result:	Pass



Frequency MHz	Raw dB	Cable dB	AF dB	Level dBm	Det	Pol deg	Height cm	Table deg	Limit dBm	Margin dB
1443.51	-54.44	4.37	-11.69	-61.76	RMS	H	162	132	-13	-48.76
3703.72	-51.73	6.11	-6.84	-52.46	RMS	H	179	82	-13	-39.46
6097.80	-64.21	7.87	-2.52	-58.86	RMS	H	192	88	-13	-45.86
10244.59	-68.43	11.6	1.12	-55.71	RMS	V	182	109	-13	-42.71
14491.96	-74.6	14.86	7.63	-52.11	RMS	V	167	118	-13	-39.11

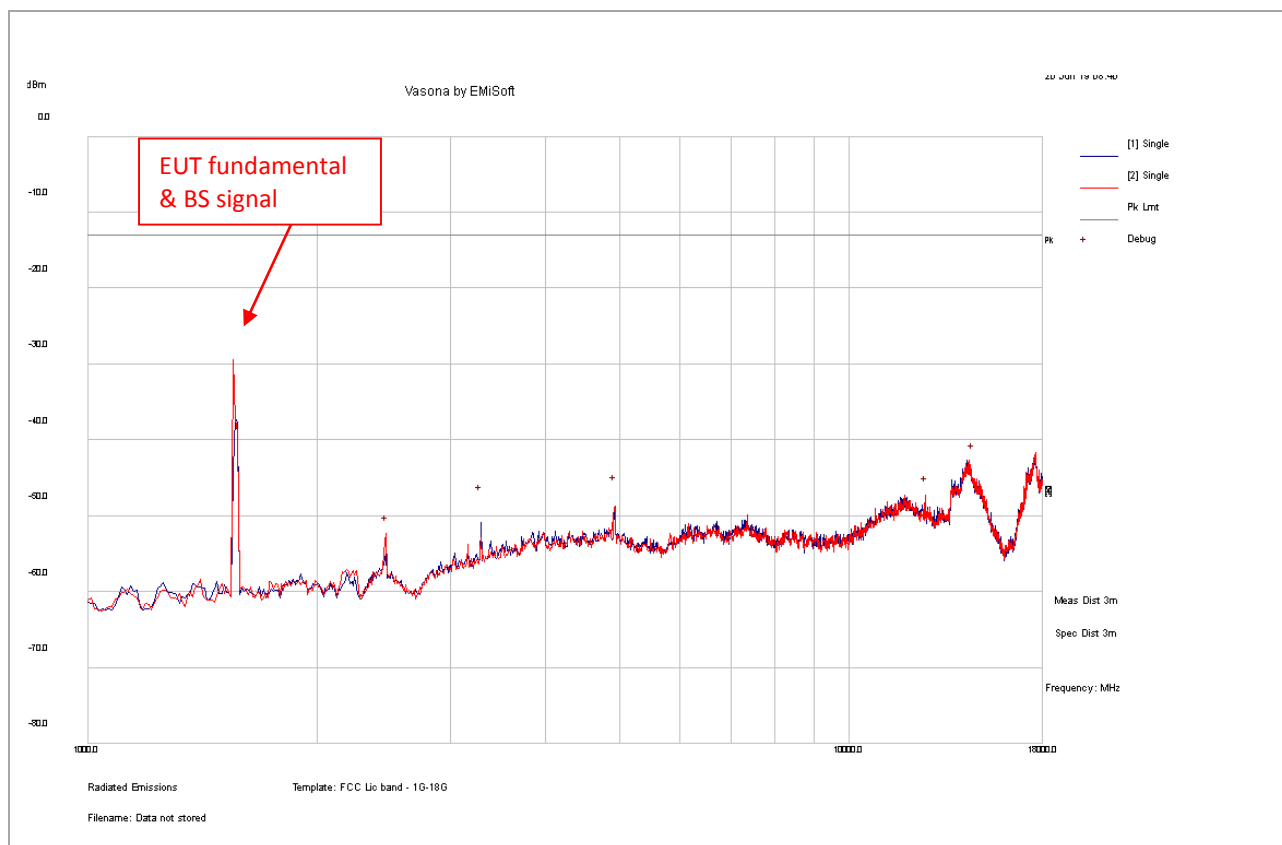
Note:

- 1) All different channel and modes were verified but only the worst case result is shown here.
- 2) All different modes have been verified and the worst case result is presented here.
- 3) EUT was tested in 3 orientations.
- 4) Final substitution measurement is not necessary as margin is over 20 dB.





Test Standard:	Part 27 & RSS 139	Mode:	Wi-Fi + BT + LTE B4
Frequency Range:	1GHz -18GH	Test Date:	05/22/2019
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Sherwin Lee
Remark:	N/A	Test Result:	Pass



Frequency MHz	Raw dB	Cable dB	AF dB	Level dBm	Det	Pol deg	Height cm	Table deg	Limit dBm	Margin dB
2465.50	-63.74	14.04	-5.24	-54.94	RMS	V	101	143	-13	-41.94
3284.24	-59.82	14.42	-5.50	-50.90	RMS	H	204	113	-13	-37.90
4928.02	-60.33	15.03	-4.36	-49.65	RMS	V	326	41	-13	-36.65
12626.67	-70.22	17.14	3.27	-49.80	RMS	V	101	143	-13	-36.80

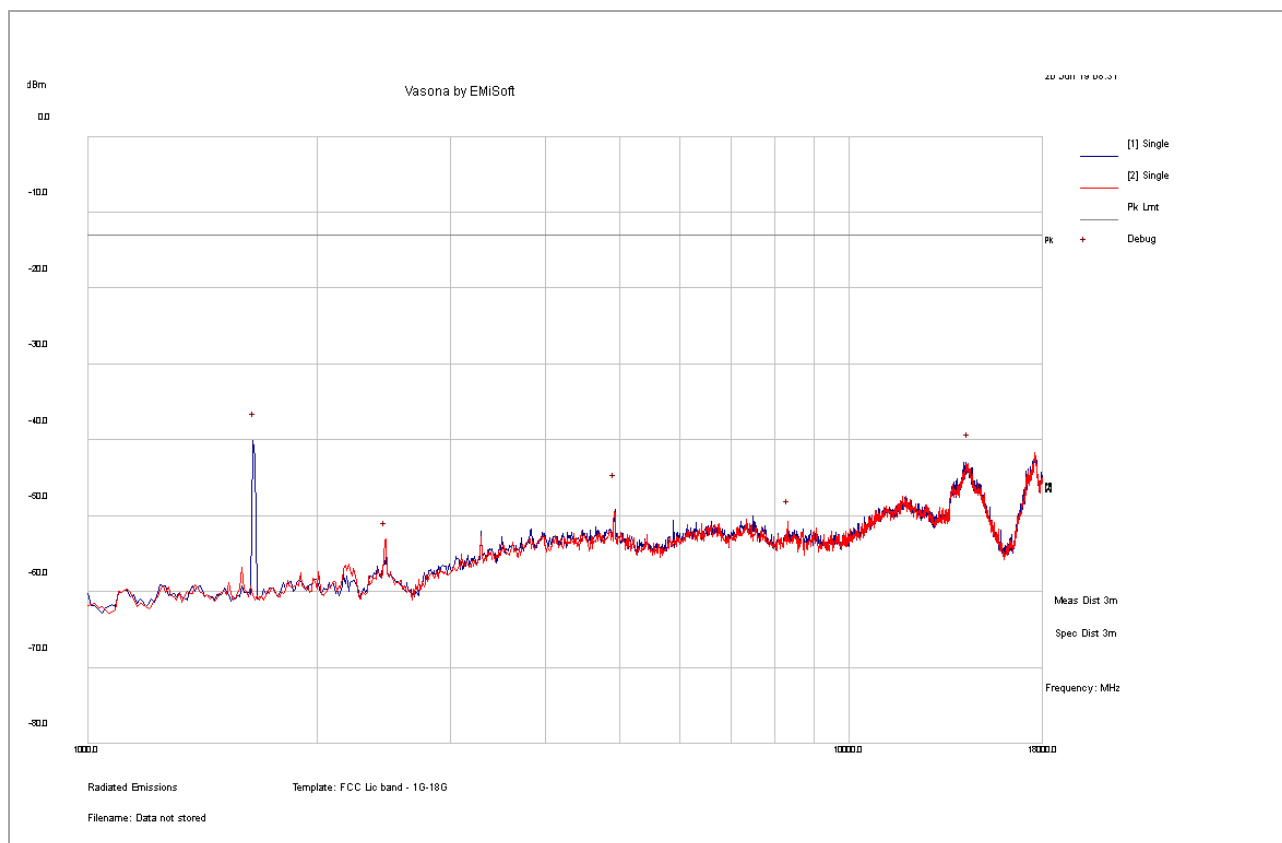
Note:

- 1) All different channel and modes were verified but only the worst case result is shown here.
- 2) All different modes have been verified and the worst case result is presented here.
- 3) EUT was tested in 3 orientations.
- 4) Final substitution measurement is not necessary as margin is over 20 dB.





Test Standard:	Part 24E & RSS 133	Mode:	Wi-Fi + BT + WCDMA B5
Frequency Range:	1GHz -18GH	Test Date:	05/22/2019
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Sherwin Lee
Remark:	N/A	Test Result:	Pass

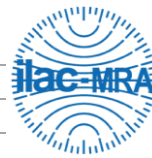


Frequency MHz	Raw dB	Cable dB	AF dB	Level dBm	Det	Pol deg	Height cm	Table deg	Limit dBm	Margin dB
1653.55	-46.08	13.60	-8.78	-41.26	RMS	H	162	132	-13	-28.26
2464.02	-64.41	14.04	-5.24	-55.62	RMS	H	179	82	-13	-42.62
4930.02	-59.92	15.04	-4.36	-49.24	RMS	H	192	88	-13	-36.24
8343.92	-67.16	16.01	-1.64	-52.79	RMS	V	182	109	-13	-39.79
14366.84	-54.08	5.68	4.36	-44.04	RMS	V	167	118	-13	-31.04

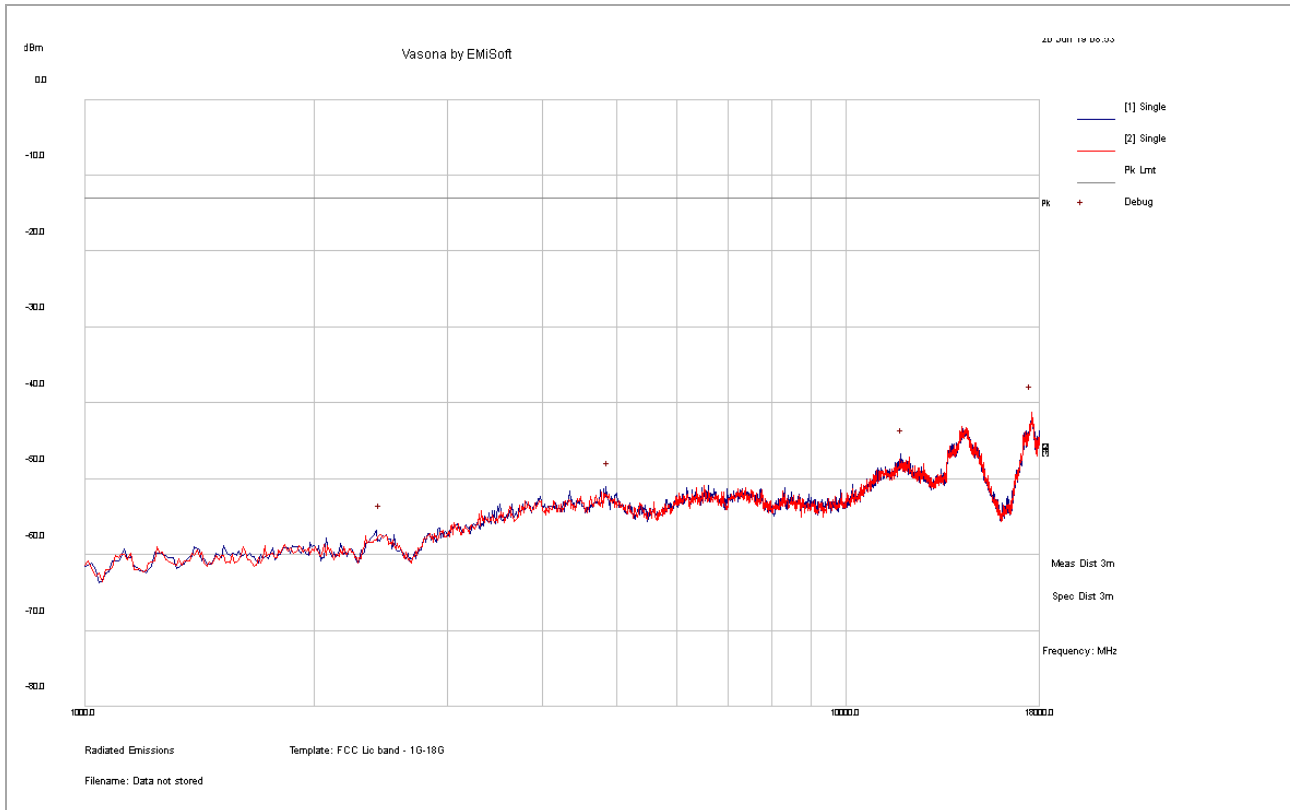
Note:

- 5) All different channel and modes were verified but only the worst case result is shown here.
- 6) All different modes have been verified and the worst case result is presented here.
- 7) EUT was tested in 3 orientations.
- 8) Final substitution measurement is not necessary as margin is over 20 dB.





Test Standard:	Part 27 & RSS 130	Mode:	Wi-Fi + BT + LTE B12
Frequency Range:	1GHz -18GH	Test Date:	05/22/2019
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Sherwin Lee
Remark:	N/A	Test Result:	Pass



Frequency MHz	Raw dB	Cable dB	AF dB	Level dBm	Det	Pol deg	Height cm	Table deg	Limit dBm	Margin dB
2442.75	-66.86	14.03	-5.37	-58.20	RMS	V	155	116	-13	-45.20
4874.04	-63.34	15.03	-4.35	-52.66	RMS	V	251	98	-13	-39.66
11854.57	-67.29	17.07	1.90	-48.32	RMS	H	214	5	-13	-35.32
17512.47	-57.67	6.56	8.64	-42.47	RMS	V	155	116	-13	-29.47

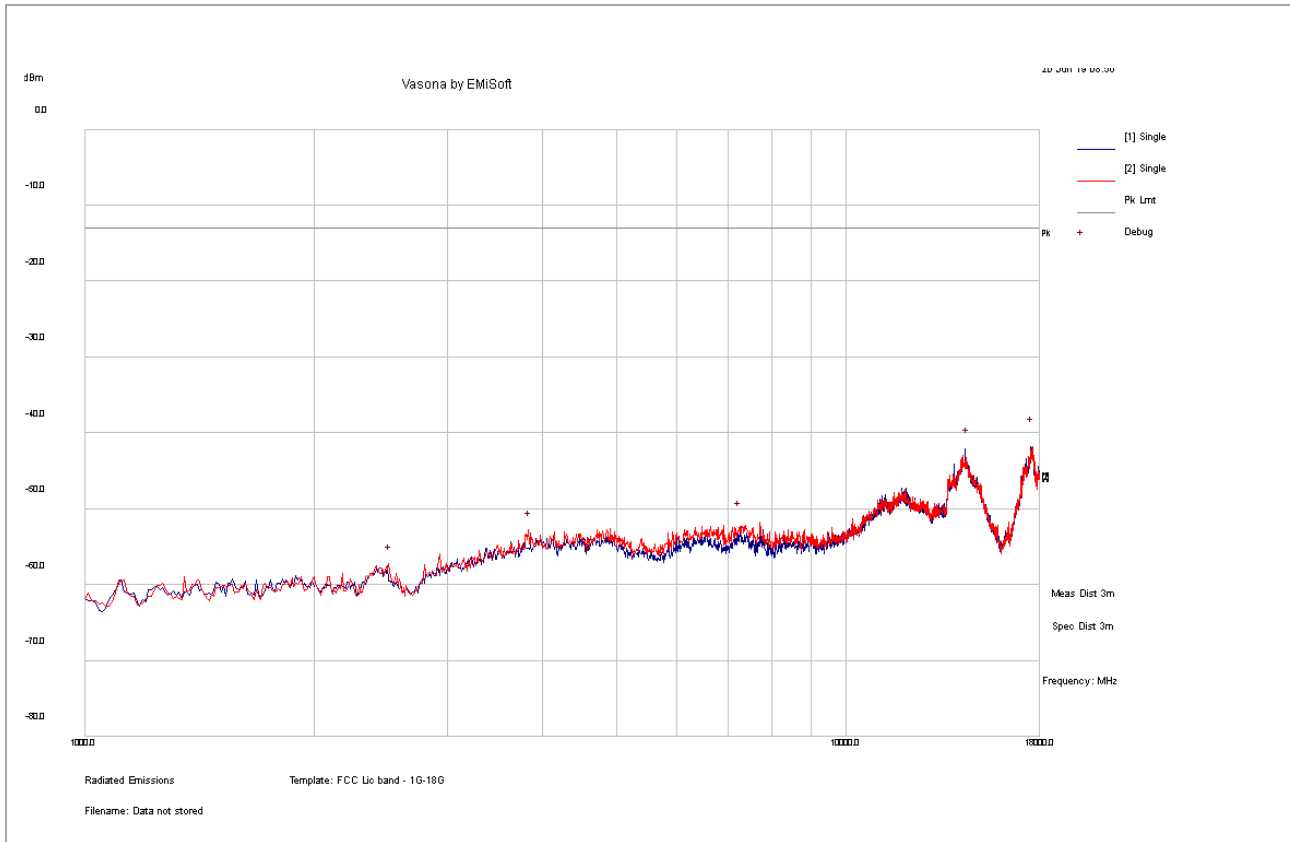
Note:

- 1) All different channel and modes were verified but only the worst case result is shown here.
- 2) All different modes have been verified and the worst case result is presented here.
- 3) EUT was tested in 3 orientations.
- 4) Final substitution measurement is not necessary as margin is over 20 dB.





Test Standard:	Part 27 & RSS 130	Mode:	Wi-Fi + BT + LTE B13
Frequency Range:	1GHz -18GH	Test Date:	05/22/2019
Antenna Type/Polarity:	Bi-Log/Hor & Ver	Test Personnel:	Sherwin Lee
Remark:	N/A	Test Result:	Pass



Frequency MHz	Raw dB	Cable dB	AF dB	Level dBm	Det	Pol deg	Height cm	Table deg	Limit dBm	Margin dB
2521.66	-68.68	14.05	-5.06	-59.68	RMS	H	192	13	-13	-46.68
3839.98	-64.89	14.58	-4.96	-55.26	RMS	V	273	182	-13	-42.26
7242.05	-67.82	15.83	-1.98	-53.97	RMS	H	141	98	-13	-40.97
14491.96	-54.77	5.70	4.85	-44.22	RMS	H	112	109	-13	-31.22
17563.16	-57.94	6.55	8.60	-42.79	RMS	V	308	188	-13	-29.79

Note:

- 1) All different channel and modes were verified but only the worst case result is shown here.
- 2) All different modes have been verified and the worst case result is presented here.
- 3) EUT was tested in 3 orientations.
- 4) Final substitution measurement is not necessary as margin is over 20 dB.

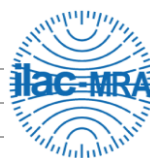


Report Number:	NSC-19042303-LC-FCC-IC-Cellular
Product:	Mobile Personal Emergency Reporting System
Model Number:	Libris 2.0



18GHz – 25GHz test result

Note: no substantial emission is found other than the noise floor.
Different modes have been verified.



9 Test instrument list

Equipment	Manufacturer	Model	Serial Number	Cal. Date	Cal. Due
Semi-Anechoic Chamber	ETS-Lindgren	10M	VL001	5/11/2019	5/11/2020
Shielding Control Room	ETS-Lindgren	Series 81	VL006	N/A	N/A
Spectrum Analyzer	Keysight	N9020A	MY50110074	5/4/2019	5/4/2020
EMC Test Receiver	R&S	ESL6	100230	5/7/2019	5/7/2020
LISN (9KHz – 30MHz)	EMCO	3816/2	9705-1066	5/4/2019	5/4/2020
Bi-Log Antenna	ETS-Lindgren	3142E	217921	11/15/2018	11/15/2019
Horn Antenna (1-18GHz)	Electro-Metrics	EM-6961	6292	5/2/2019	5/2/2020
Horn Antenna (18-40GHz)	Com-Power	AH-840	101109	5/2/2019	5/2/2020
Preamplifier	RF Bay, Inc.	LPA-10-20	11180621	5/10/2019	5/10/2020
True RMS Multi-meter	UNI-T	UT181A	C173014829	5/10/2019	5/10/2020
Temp / Humidity / Pressure Meter	PCE Instruments	PCE-THB 40	R062028	5/9/2019	5/9/2020
RF Attenuator	Pasternack	PE7005-3	VL061	5/10/2019	5/10/2020
Preamplifier 100KHz - 40GHz	Aeroflex	33711-392- 77150-11	064	5/10/2019	5/10/2020
EM Center Control	ETS-Lindgren	7006-001	160136	N/A	N/A
Turn Table	ETS-Lindgren	2181-3.03	VL002	N/A	N/A
Boresight Antenna Tower	ETS-Lindgren	2171B	VL003	N/A	N/A
Loop Antenna (9k-30MHz)	Com-Power	AL-130	121012	5/9/2019	5/9/2020
RE test cable(below 6GHz)	Vista	RE-6GHz-01	RE-6GHz-01	5/10/2019	5/10/2020
RE test cable (1-18GHz)	PhaseTrack	II-240	RE-18GHz-01	5/10/2019	5/10/2020
RE test cable (>18GHz)	Sucoflex	104	344903/4	5/10/2019	5/10/2020
Pulse limiter	Com-Power	LIT-930A	531727	5/15/2019	5/15/2020
CE test cable #1	FIRST RF	FRF-C-1002-001	CE-6GHz-01	5/10/2019	5/10/2020
CE test cable#2	FIRST RF	FRF-C-1002-001	CE-6GHz-02	5/9/2019	5/9/2020