FCC RF Test Report

APPLICANT	: Inseego Corp.
EQUIPMENT	: wireless device
BRAND NAME	: Inseego
MODEL NAME	: FG2000-3, FG2000e-3
FCC ID	: PKRISGFG20003
STANDARD	: 47 CFR Part 2, 22, 24
CLASSIFICATION	: PCS Licensed Transmitter (PCB)
TEST DATE(S)	: Aug. 28, 2020 ~ Oct. 31, 2021

We, Sporton International (Kunshan) Inc., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.26-2015 and shown compliance with the applicable technical standards.

This product installed a RF module (Brand Name: Inseego, Model Name: MD2000, FCC ID: PKRISGMD2000) during the test, only ERP/EIRP and RSE test items are tested in this report, all the other test results are quoted on module RF report.

The test results in this report apply exclusively to the tested model / sample. Without written approval of Sporton International (Kunshan) Inc., the test report shall not be reproduced except in full.

Jason Jia

Reviewed by: Jason Jia / Supervisor

Alex Wang

Approved by: Alex Wang / Manager

ACCREDITED Cert #5145.02

Sporton International (Kunshan) Inc.

No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300

People's Republic of China

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FG082811-03H	Rev. 01	Initial issue of report	Nov. 08, 2021

SUMMARY OF TEST RESULT

Report Section	FCC Rule	Description	Limit	Result	Remark
3.1	§2.1046	Conducted Output Power	Reporting Only	PASS	-
	§22.913(a)(5)	Effective Radiated Power (5G NR n5)	ERP < 7 Watt		
	§24.232(c)	Equivalent Isotropic Radiated Power (5G NR n2) (5G NR n25)	EIRP < 2Watt		
-	§24.232(d)	Peak-to-Average Ratio	<13 dB	PASS	1
-	§2.1049	Occupied Bandwidth	Reporting Only	PASS	1
-	§2.1051 §22.917(a) §24.238(a)	Conducted Band Edge Measurement (5G NR n2) (5G NR n5) (5G NR n25)	< 43+10log10(P[Watts])	PASS	1
-	§2.1051 §22.917(a) §24.238(a)	Conducted Spurious Emission (5G NR n2) (5G NR n5) (5G NR n25)	< 43+10log10(P[Watts])	PASS	1
-	§2.1055 §22.355	Frequency Stability Temperature & Voltage	< 2.5 ppm for Part 22	PASS	1
	§2.1055 §24.235		Within Authorized Band		
4.4	§2.1053 §22.917(a) §24.238(a)	Radiated Spurious Emission (5G NR n2) (5G NR n5) (5G NR n25)	< 43+10log$_{10}$(P[Watts])	PASS	Under limit 23.38 dB at 3741.00 MHz

Remark 1:
All conducted test items were leveraged from module RF report which can refer to Report No. “FG090125C”(for n2&n25.) & “FG090125-01B”(for n5) & “FG090125-02B”(for EN-DC 14A_n2A, EN-DC 30A_n2A and EN-DC 30A_n5A).

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Applicant

Inseego Corp.
9710 Scranton Road, Suite 200 San Diego, CA 92121

1.2 Manufacturer

MeiG Smart Technology Co., Ltd
Floor 2, Office Building No.5, Lingxia Road, Fenghuang Community, Fuyong Street, Bao 'an District, Shenzhen

1.3 Product Feature of Equipment Under Test

Product Feature	
Equipment	wireless device
Brand Name	Inseego
Model Name	FG2000-3, FG2000e-3
FCC ID	PKRISGFG20003
EUT supports Radios application	WCDMA/LTE/5G NR/GNSS WLAN 2.4GHz 802.11b/g/n HT20/HT40 WLAN 2.4GHz 802.11ax HE20/HE40 WLAN 5GHz 802.11a/n HT20/HT40 WLAN 5GHz 802.11ac VHT20/VHT40/VHT80 WLAN 5GHz 802.11ax HE20/HE40/HE80 Bluetooth LE
IMEI Code	Radiation : 990016260002868/990016260002744
HW Version	FG20003_SRT860H_V2.1
SW Version	2.52
EUT Stage	Identical Prototype

Remark:

1. Only 5G NR bands are tested in this report, all the other RF bands are tested in the other reports separately.
2. 5G NR bands support NSA mode only.
3. 5G NR supports CP-OFDM and DFT-s-OFDM modulation, DFT-s-OFDM power is higher than CP-OFDM, thus only DFT-s-OFDM modulation is reported.
4. The maximum ERP/EIRP is calculated from max output power, only the maximum ERP/EIRP is shown on the report.
5. This is a variant report for FG2000-3, FG2000e-3. The change note could be referred to FG2000-3, FG2000e-3_Class II Permissive Change letter which is exhibit separately. Based on the similarity between current and previous project, only the RSE of ENDC Band 14A_n2A & 30A_n2A & 30A_n5A were tested, all the other test results are leveraged from original report which can be referred to Sporton Report Number FG082811H.

1.4 Product Specification of Equipment Under Test

Standards-related Product Specification	
Tx Frequency	5G NR n2: 1852.5 MHz ~ 1907.5 MHz 5G NR n5: 826.5 MHz ~ 846.5 MHz 5G NR n25: 1852.5 MHz ~ 1912.5 MHz
Rx Frequency	5G NR n2: 1932.5 MHz ~ 1987.5 MHz 5G NR n5: 871.5 MHz ~ 891.5 MHz 5G NR n25: 1932.5 MHz ~ 1992.5 MHz
Bandwidth	n2, n5, n25: 5MHz / 10MHz / 15MHz / 20MHz
SCS	n2, n5, n25: 15kHz
Antenna Gain	5G NR n2: 1.7 dBi 5G NR n5: 2.5 dBi 5G NR n25: 1.7 dBi
Type of Modulation	CP-OFDM: QPSK / 16QAM / 64QAM / 256QAM DFT-s-OFDM: PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM

1.5 Modification of EUT

No modifications are made to the EUT during all test items.

1.6 Maximum ERP/EIRP Power

5G NR n2		PI/2 BPSK	QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)	Maximum EIRP(W)
5	1852.5 ~ 1907.5	0.3381	0.3468	0.3244
10	1855.0 ~ 1905.0	0.3436	0.3266	0.3141
15	1857.5 ~ 1902.5	0.3366	0.3484	0.3405
20	1860.0 ~ 1900.0	0.3420	0.3266	0.3405

5G NR n2		64QAM	256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
5	1852.5 ~ 1907.5	0.2852	0.1656
10	1855.0 ~ 1905.0	0.2911	0.1652
15	1857.5 ~ 1902.5	0.2945	0.175
20	1860.0 ~ 1900.0	0.2832	0.1683

5G NR n5		PI/2 BPSK	QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)	Maximum ERP(W)
5	826.5 ~ 846.5	0.2577	0.2577	0.2518
10	829.0 ~ 844.0	0.2577	0.2577	0.2350
15	831.5 ~ 841.5	0.2577	0.2577	0.2461
20	834.0 ~ 839.0	0.2589	0.2577	0.2350

5G NR n5		64QAM	256QAM
BW (MHz)	Frequency Range (MHz)	Maximum ERP(W)	Maximum ERP(W)
5	826.5 ~ 846.5	0.1783	0.1206
10	829.0 ~ 844.0	0.1783	0.1234
15	831.5 ~ 841.5	0.1742	0.1234
20	834.0 ~ 839.0	0.1703	0.1234

5G NR n25		PI/2 BPSK	QPSK	16QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)	Maximum EIRP(W)
5	1852.5 ~ 1912.5	0.3500	0.3420	0.3342
10	1855.0 ~ 1910.0	0.3420	0.3420	0.3420
15	1857.5 ~ 1907.5	0.3420	0.3581	0.3342
20	1860.0 ~ 1905.0	0.3342	0.3342	0.3266

5G NR n25		64QAM	256QAM
BW (MHz)	Frequency Range (MHz)	Maximum EIRP(W)	Maximum EIRP(W)
5	1852.5 ~ 1912.5	0.2845	0.1754
10	1855.0 ~ 1910.0	0.2911	0.1754
15	1857.5 ~ 1907.5	0.2979	0.1754
20	1860.0 ~ 1905.0	0.2845	0.1714

1.7 Testing Location

Sporton International (Kunshan) Inc. is accredited to ISO/IEC 17025:2017 by American Association for Laboratory Accreditation with Certificate Number 5145.02.

Test Firm	Sporton International (Kunshan) Inc.		
Test Site Location	No. 1098, Pengxi North Road, Kunshan Economic Development Zone Jiangsu Province 215300 People's Republic of China TEL : +86-512-57900158 FAX : +86-512-57900958		
Test Site No.	**Sporton Site No.**	**FCC Designation No.**	**FCC Test Firm Registration No.**
	03CH04-KS TH01-KS	CN1257	314309

1.8 Test Software

Item	Site	Manufacture	Name	Version
1.	03CH04-KS	AUDIX	E3	6.2009-8-24a

1.9 Applicable Standards

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

- 47 CFR Part 2, 22, 24
- ANSI C63.26-2015
- FCC KDB 971168 D01 Power Meas License Digital Systems v03r01
- FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items are performed according to KDB 971168 D01 Power Meas License Digital Systems v03r01 with maximum output power.

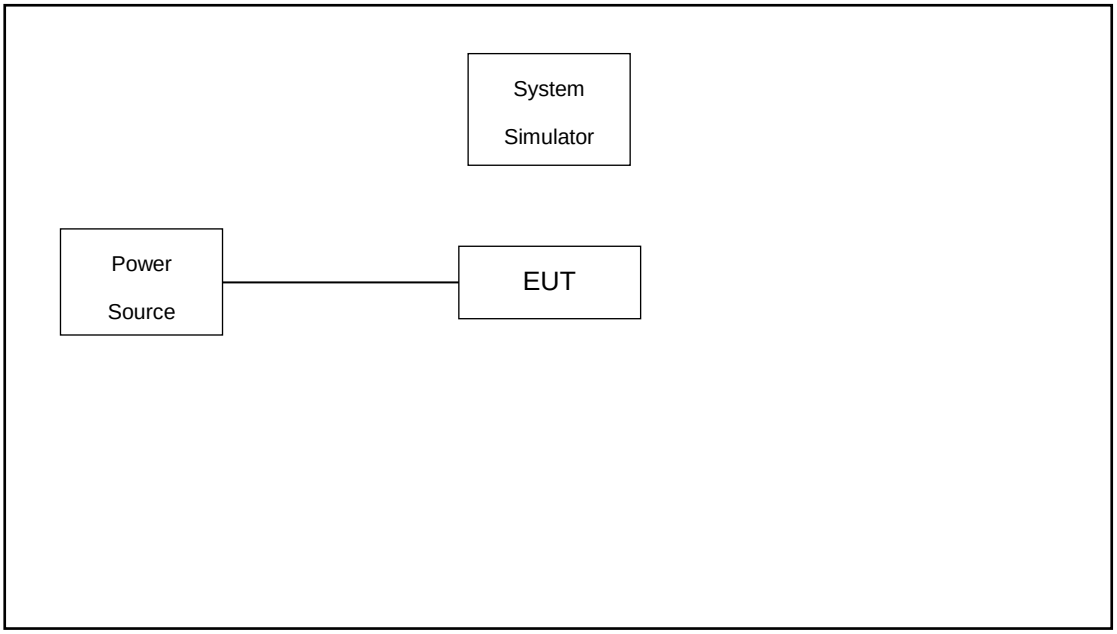
For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (Y plane) were recorded in this report.

The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.

	X Plane	Y Plane	Z Plane
Orthogonal Planes of EUT			

Test Items	Band	Bandwidth (MHz)						Modulation					RB #			Test Channel		
		5	10	15	20	60	100	PI/2 BPSK	QPSK	16QAM	64QAM	256QAM	1	Half	Full	L	M	H
E.R.P / E.I.R.P	n2	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v	v
	n5	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v	v
	n25	v	v	v	v	-	-	v	v	v	v	v	v	v	v	v	v	v
Radiated Spurious Emission	n2	Worst Case															v	
	n5	Worst Case															v	
	n25	Worst Case															v	
Note	1. The mark "**v** " means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported. 3. The device is investigated from 30MHz to 10 times of fundamental signal for radiated spurious emission test under different RB size/offset and modulations in exploratory test. Subsequently, only the worst case emissions are reported.																	

2.2 Connection Diagram of Test System



2.3 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model No.	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPS-3030D	N/A	N/A	Unshielded, 1.8 m
2.	LTE Base Station	Anritsu	MT8821C	N/A	N/A	Unshielded, 1.8 m
3.	NR Base Station	Anritsu	MT8000A	N/A	N/A	Unshielded, 1.8 m

2.4 Frequency List of Low/Middle/High Channels

5G NR n2 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	372000	376000	380000
	Frequency	1860	1880	1900
15	Channel	371500	376000	380500
	Frequency	1857.5	1880	1902.5
10	Channel	371000	376000	381000
	Frequency	1855	1880	1905
5	Channel	370500	376000	381500
	Frequency	1852.5	1880	1907.5

5G NR n5 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	166800	167300	167800
	Frequency	834	836.5	839
15	Channel	166300	167300	168300
	Frequency	831.5	836.5	841.5
10	Channel	165800	167300	168800
	Frequency	829	836.5	844
5	Channel	165300	167300	169300
	Frequency	826.5	836.5	846.5

5G NR n25 Channel and Frequency List				
BW [MHz]	**Channel/Frequency(MHz)**	**Lowest**	**Middle**	**Highest**
20	Channel	372000	376500	381000
	Frequency	1860	1882.5	1905
15	Channel	371500	376500	381500
	Frequency	1857.5	1882.5	1907.5
10	Channel	371000	376500	382000
	Frequency	1855	1882.5	1910
5	Channel	370500	376500	382500
	Frequency	1852.5	1882.5	1912.5

3 Conducted Test Items

3.1 ERP/EIRP

3.1.1 Description of the ERP/EIRP Measurement

A system simulator was used to establish communication with the EUT. Its parameters were set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The ERP of transmitters must not exceed 7 Watts for 5G NR n5.

The EIRP of transmitters must not exceed 2 Watts for 5G NR n2, n25.

According to KDB 412172 D01 Power Approach,

EIRP = $P_T + G_T – L_C$, ERP = EIRP -2.15, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.1.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.2
2. The transmitter output port was connected to the system simulator.
3. Set EUT at maximum power through the system simulator.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure and record the power level from the system simulator.

3.1.3 Test Result of Conducted Test

Please refer to Appendix A.

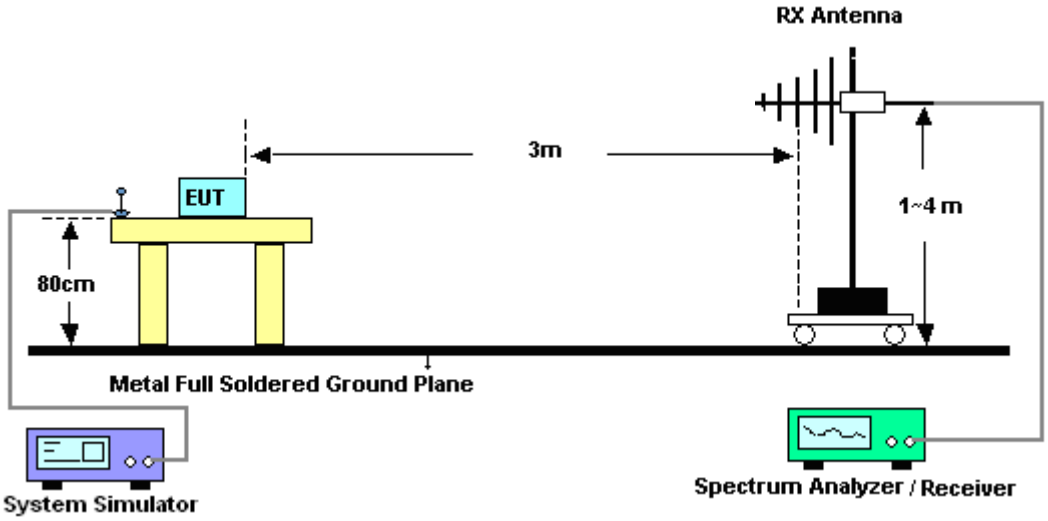
4 Radiated Test Items

4.1 Measuring Instruments

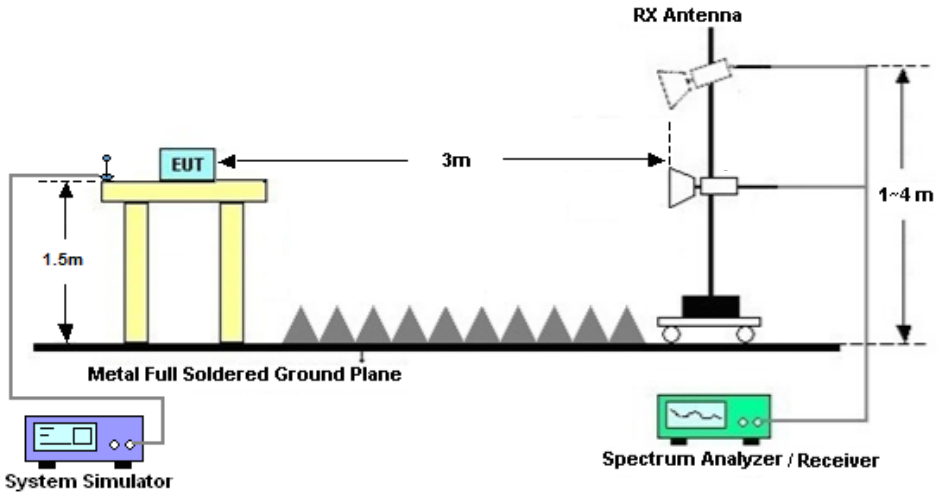
See list of measuring instruments of this test report.

4.2 Test Setup

4.2.1 For radiated test from 30MHz to 1GHz



4.2.2 For radiated test above 1GHz



4.3 Test Result of Radiated Test

Please refer to Appendix B.

4.4 Radiated Spurious Emission

4.4.1 Description of Radiated Spurious Emission

The radiated spurious emission was measured by substitution method according to ANSI C63.26. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

4.4.2 Test Procedures

1. The testing follows ANSI C63.26 Section 5.5
2. The EUT was placed on a turntable with 0.8 meter height for frequency below 1GHz and 1.5 meter height for frequency above 1GHz respectively above ground.
3. The EUT was set 3 meters from the receiving antenna mounted on the antenna tower.
4. The table was rotated 360 degrees to determine the position of the highest spurious emission.
5. The height of the receiving antenna is varied between 1m to 4m to search the maximum spurious emission for both horizontal and vertical polarizations.
6. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power.
7. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking the record of maximum spurious emission.
8. A horn antenna was substituted in place of the EUT and was driven by a signal generator.
9. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.
10. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain
11. ERP (dBm) = EIRP - 2.15
12. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
    The limit line is derived from 43 + 10log(P)dB below the transmitter power P(Watts)
    = P(W)- [43 + 10log(P)] (dB)
    = [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
    = -13dBm.

5 List of Measuring Equipment

For original report(FG082811H):

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
NR Base Station	Anritsu	MT8000A	6261867347	5G	Nov. 01, 2020	Nov. 19, 2020	Oct. 31, 2021	Conducted (TH01-KS)
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 15, 2020	Oct. 02, 2020	Apr. 14, 2021	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	Jan. 03, 2020	Oct. 02, 2020	Jan. 02, 2021	Radiation (03CH04-KS)
Double Ridge Horn Antenna	ETS-Lindgren	3117	75957	1GHz~18GHz	Nov. 10, 2019	Oct. 02, 2020	Nov. 09, 2020	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101115	18GHz~40GHz	Nov. 10, 2019	Oct. 02, 2020	Nov. 09, 2020	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 03, 2020	Oct. 02, 2020	Jan. 02, 2021	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 08, 2020	Oct. 02, 2020	Jan. 07, 2021	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jan. 03, 2020	Oct. 02, 2020	Jan. 02, 2021	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 15, 2019	Oct. 02, 2020	Oct. 14, 2020	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 02, 2020	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 02, 2020	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 02, 2020	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

For present report(FG082811-03H):

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
EXA Spectrum Analyzer	Keysight	N9010A	MY55150244	10Hz-44G,MAX 30dB	Apr. 13, 2021	Oct. 31, 2021	Apr. 12, 2022	Radiation (03CH04-KS)
Bilog Antenna	TeseQ	CBL6111D	49922	30MHz-1GHz	May 30, 2021	Oct. 31, 2021	May 29, 2022	Radiation (03CH04-KS)
Horn Antenna	Schwarzbeck	BBHA9120D	1356	1GHz~18GHz	Apr. 18, 2021	Oct. 31, 2021	Apr. 17, 2022	Radiation (03CH04-KS)
SHF-EHF Horn	Com-power	AH-840	101070	18GHz~40GHz	Jan. 06, 2021	Oct. 31, 2021	Jan. 05, 2022	Radiation (03CH04-KS)
Amplifier	SONOMA	310N	187289	9KHz-1GHz	Jan. 06, 2021	Oct. 31, 2021	Jan. 05, 2022	Radiation (03CH04-KS)
Amplifier	MITEQ	EM18G40GGA	060728	18~40GHz	Jan. 07, 2021	Oct. 31, 2021	Jan. 06, 2022	Radiation (03CH04-KS)
high gain Amplifier	MITEQ	AMF-7D-00101800-30-10P	2025788	1Ghz-18Ghz	Jan. 06, 2021	Oct. 31, 2021	Jan. 05, 2022	Radiation (03CH04-KS)
Amplifier	Keysight	83017A	MY57280106	500MHz~26.5GHz	Oct. 13, 2021	Oct. 31, 2021	Oct. 12, 2022	Radiation (03CH04-KS)
AC Power Source	Chroma	61601	F104090004	N/A	NCR	Oct. 31, 2021	NCR	Radiation (03CH04-KS)
Turn Table	ChamPro	EM 1000-T	060762-T	0~360 degree	NCR	Oct. 31, 2021	NCR	Radiation (03CH04-KS)
Antenna Mast	ChamPro	EM 1000-A	060762-A	1 m~4 m	NCR	Oct. 31, 2021	NCR	Radiation (03CH04-KS)

NCR: No Calibration Required

6 Uncertainty of Evaluation

The measurement uncertainties shown below were calculated in accordance with the requirements of ANSI 63.26-2015. All the measurement uncertainty value were shown with a coverage K=2 to indicate 95% level of confidence. The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**3.3dB**

Uncertainty of Radiated Emission Measurement (1 GHz ~ 18 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.8dB**

Uncertainty of Radiated Emission Measurement (18 GHz ~ 40 GHz)

Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	**2.8dB**

Appendix A. Test Results of Conducted Test

ERP/EIRP

NR n2 / 5MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	0	23.59	0.2286	25.29	0.3381
Middle		1	0	23.24	0.2109	24.94	0.3119
Highest		1	0	23.14	0.2061	24.84	0.3048
Lowest	QPSK	1	0	23.70	0.2345	25.40	0.3468
Middle		1	0	23.24	0.2109	24.94	0.3119
Highest		1	0	23.14	0.2061	24.84	0.3048
Lowest	16QAM	1	1	23.41	0.2193	25.11	0.3244
Middle		1	1	23.04	0.2014	24.74	0.2979
Highest		1	1	22.94	0.1968	24.64	0.2911
Lowest	64QAM	1	1	22.85	0.1928	24.55	0.2852
Middle		1	1	22.04	0.1600	23.74	0.2366
Highest		1	1	21.94	0.1564	23.64	0.2313
Lowest	256QAM	1	1	20.49	0.1120	22.19	0.1656
Middle		1	1	19.87	0.0971	21.57	0.1436
Highest		1	1	19.74	0.0942	21.44	0.1394
Limit	EIRP < 2W			Result		PASS	

NR n2 / 10MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	1	23.66	0.2323	25.36	0.3436
Middle		1	1	23.24	0.2109	24.94	0.3119
Highest		1	1	23.34	0.2158	25.04	0.3192
Lowest	QPSK	25	12	23.29	0.2134	24.99	0.3156
Middle		25	12	23.44	0.2209	25.14	0.3266
Highest		25	12	23.34	0.2158	25.04	0.3192
Lowest	16QAM	1	1	23.27	0.2124	24.97	0.3141
Middle		1	1	23.04	0.2014	24.74	0.2979
Highest		1	1	23.04	0.2014	24.74	0.2979
Lowest	64QAM	1	1	22.94	0.1968	24.64	0.2911
Middle		1	1	22.04	0.1600	23.74	0.2366
Highest		1	1	22.14	0.1637	23.84	0.2422
Lowest	256QAM	1	1	20.48	0.1117	22.18	0.1652
Middle		1	1	19.84	0.0964	21.54	0.1426
Highest		1	1	19.94	0.0987	21.64	0.1459
Limit	EIRP < 2W			Result		PASS	

NR n2 / 15MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	0	23.57	0.2276	25.27	0.3366
Middle		1	0	23.34	0.2158	25.04	0.3192
Highest		1	0	23.24	0.2109	24.94	0.3119
Lowest	QPSK	1	0	23.72	0.2356	25.42	0.3484
Middle		1	0	23.34	0.2158	25.04	0.3192
Highest		1	0	23.24	0.2109	24.94	0.3119
Lowest	16QAM	1	1	23.62	0.2302	25.32	0.3405
Middle		1	1	23.14	0.2061	24.84	0.3048
Highest		1	1	22.94	0.1968	24.64	0.2911
Lowest	64QAM	1	1	22.99	0.1991	24.69	0.2945
Middle		1	1	22.24	0.1675	23.94	0.2478
Highest		1	1	22.14	0.1637	23.84	0.2422
Lowest	256QAM	1	1	20.73	0.1184	22.43	0.1750
Middle		1	1	19.94	0.0987	21.64	0.1459
Highest		1	1	19.84	0.0964	21.54	0.1426
Limit	EIRP < 2W			Result		PASS	

NR n2 / 20MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	1	23.64	0.2313	25.34	0.3420
Middle		1	1	23.54	0.2260	25.24	0.3342
Highest		1	1	23.24	0.2109	24.94	0.3119
Lowest	QPSK	50	25	23.17	0.2075	24.87	0.3070
Middle		50	25	23.44	0.2209	25.14	0.3266
Highest		50	25	23.34	0.2158	25.04	0.3192
Lowest	16QAM	1	1	23.62	0.2302	25.32	0.3405
Middle		1	1	23.44	0.2209	25.14	0.3266
Highest		1	1	23.24	0.2109	24.94	0.3119
Lowest	64QAM	1	1	22.82	0.1915	24.52	0.2832
Middle		1	1	22.04	0.1600	23.74	0.2366
Highest		1	1	21.74	0.1493	23.44	0.2209
Lowest	256QAM	1	1	20.56	0.1138	22.26	0.1683
Middle		1	1	20.14	0.1033	21.84	0.1528
Highest		1	1	19.84	0.0964	21.54	0.1426
Limit	EIRP < 2W			Result		PASS	

NR n5 / 5MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	PI/2 BPSK	1	1	23.76	0.2377	24.11	0.2577
Middle		1	1	23.76	0.2377	24.11	0.2577
Highest		1	1	23.46	0.2219	23.81	0.2405
Lowest	QPSK	1	1	23.76	0.2377	24.11	0.2577
Middle		1	1	23.76	0.2377	24.11	0.2577
Highest		1	1	23.16	0.2071	23.51	0.2244
Lowest	16QAM	1	1	23.26	0.2119	23.61	0.2297
Middle		1	1	23.66	0.2323	24.01	0.2518
Highest		1	1	22.26	0.1683	22.61	0.1824
Lowest	64QAM	1	1	21.86	0.1535	22.21	0.1664
Middle		1	1	22.16	0.1645	22.51	0.1783
Highest		1	1	20.76	0.1192	21.11	0.1292
Lowest	256QAM	1	1	20.46	0.1112	20.81	0.1206
Middle		1	1	20.36	0.1087	20.71	0.1178
Highest		1	1	19.46	0.0884	19.81	0.0958
Limit	ERP < 7W			Result		PASS	

NR n5 / 10MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	PI/2 BPSK	1	1	23.76	0.2377	24.11	0.2577
Middle		1	1	23.76	0.2377	24.11	0.2577
Highest		1	1	23.56	0.2270	23.91	0.2461
Lowest	QPSK	1	1	23.76	0.2377	24.11	0.2577
Middle		1	1	23.66	0.2323	24.01	0.2518
Highest		1	1	23.56	0.2270	23.91	0.2461
Lowest	16QAM	1	1	22.96	0.1977	23.31	0.2143
Middle		1	1	23.16	0.2071	23.51	0.2244
Highest		1	1	23.36	0.2168	23.71	0.2350
Lowest	64QAM	1	1	22.16	0.1645	22.51	0.1783
Middle		1	1	22.06	0.1607	22.41	0.1742
Highest		1	1	22.06	0.1607	22.41	0.1742
Lowest	256QAM	1	1	20.56	0.1138	20.91	0.1234
Middle		1	1	20.26	0.1062	20.61	0.1151
Highest		1	1	20.36	0.1087	20.71	0.1178
Limit	ERP < 7W			Result		PASS	

NR n5 / 15MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	PI/2 BPSK	1	1	23.76	0.2377	24.11	0.2577
Middle		1	1	23.76	0.2377	24.11	0.2577
Highest		1	1	23.76	0.2377	24.11	0.2577
Lowest	QPSK	1	1	23.76	0.2377	24.11	0.2577
Middle		1	1	23.66	0.2323	24.01	0.2518
Highest		1	1	23.76	0.2377	24.11	0.2577
Lowest	16QAM	1	1	23.46	0.2219	23.81	0.2405
Middle		1	1	23.16	0.2071	23.51	0.2244
Highest		1	1	23.56	0.2270	23.91	0.2461
Lowest	64QAM	1	1	22.06	0.1607	22.41	0.1742
Middle		1	1	21.96	0.1571	22.31	0.1703
Highest		1	1	21.96	0.1571	22.31	0.1703
Lowest	256QAM	1	1	20.56	0.1138	20.91	0.1234
Middle		1	1	20.46	0.1112	20.81	0.1206
Highest		1	1	20.46	0.1112	20.81	0.1206
Limit	ERP < 7W			Result		PASS	

NR n5 / 20MHz (Average) (GT - LC = 2.5 dB)							
Channel	Mode	RB		Conducted		ERP	
		Size	Offset	Power (dBm)	Power (Watts)	ERP(dBm)	ERP(W)
Lowest	PI/2 BPSK	1	1	23.76	0.2377	24.11	0.2577
Middle		1	1	23.78	0.2388	24.13	0.2589
Highest		1	1	23.76	0.2377	24.11	0.2577
Lowest	QPSK	50	25	23.56	0.2270	23.91	0.2461
Middle		50	25	23.66	0.2323	24.01	0.2518
Highest		50	25	23.76	0.2377	24.11	0.2577
Lowest	16QAM	1	1	23.36	0.2168	23.71	0.2350
Middle		1	1	22.76	0.1888	23.11	0.2047
Highest		1	1	22.76	0.1888	23.11	0.2047
Lowest	64QAM	1	1	21.96	0.1571	22.31	0.1703
Middle		1	1	21.96	0.1571	22.31	0.1703
Highest		1	1	21.96	0.1571	22.31	0.1703
Lowest	256QAM	1	1	20.46	0.1112	20.81	0.1206
Middle		1	1	20.46	0.1112	20.81	0.1206
Highest		1	1	20.56	0.1138	20.91	0.1234
Limit	ERP < 7W			Result		PASS	

NR n25 / 5MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	0	23.74	0.2366	25.44	0.3500
Middle		1	0	23.34	0.2158	25.04	0.3192
Highest		1	0	23.14	0.2061	24.84	0.3048
Lowest	QPSK	1	1	23.64	0.2313	25.34	0.3420
Middle		1	1	23.34	0.2158	25.04	0.3192
Highest		1	1	23.04	0.2014	24.74	0.2979
Lowest	16QAM	1	1	23.54	0.2260	25.24	0.3342
Middle		1	1	23.34	0.2158	25.04	0.3192
Highest		1	1	23.14	0.2061	24.84	0.3048
Lowest	64QAM	1	1	22.84	0.1924	24.54	0.2845
Middle		1	1	22.64	0.1837	24.34	0.2717
Highest		1	1	22.34	0.1714	24.04	0.2536
Lowest	256QAM	1	1	20.74	0.1186	22.44	0.1754
Middle		1	1	20.44	0.1107	22.14	0.1637
Highest		1	1	20.14	0.1033	21.84	0.1528
Limit	EIRP < 2W			Result		PASS	

NR n25 / 10MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	1	23.64	0.2313	25.34	0.3420
Middle		1	1	23.44	0.2209	25.14	0.3266
Highest		1	1	23.14	0.2061	24.84	0.3048
Lowest	QPSK	1	1	23.64	0.2313	25.34	0.3420
Middle		1	1	23.44	0.2209	25.14	0.3266
Highest		1	1	23.14	0.2061	24.84	0.3048
Lowest	16QAM	1	1	23.64	0.2313	25.34	0.3420
Middle		1	1	23.44	0.2209	25.14	0.3266
Highest		1	1	23.04	0.2014	24.74	0.2979
Lowest	64QAM	1	1	22.94	0.1968	24.64	0.2911
Middle		1	1	22.74	0.1880	24.44	0.2780
Highest		1	1	22.34	0.1714	24.04	0.2536
Lowest	256QAM	1	1	20.74	0.1186	22.44	0.1754
Middle		1	1	20.54	0.1133	22.24	0.1675
Highest		1	1	20.24	0.1057	21.94	0.1564
Limit	EIRP < 2W			Result		PASS	

NR n25 / 15MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	1	23.64	0.2313	25.34	0.3420
Middle		1	1	23.44	0.2209	25.14	0.3266
Highest		1	1	22.94	0.1968	24.64	0.2911
Lowest	QPSK	1	78	23.24	0.2109	24.94	0.3119
Middle		1	78	23.84	0.2422	25.54	0.3581
Highest		1	78	22.94	0.1968	24.64	0.2911
Lowest	16QAM	1	1	23.54	0.2260	25.24	0.3342
Middle		1	1	23.44	0.2209	25.14	0.3266
Highest		1	1	22.84	0.1924	24.54	0.2845
Lowest	64QAM	1	1	23.04	0.2014	24.74	0.2979
Middle		1	1	22.64	0.1837	24.34	0.2717
Highest		1	1	22.24	0.1675	23.94	0.2478
Lowest	256QAM	1	1	20.74	0.1186	22.44	0.1754
Middle		1	1	20.44	0.1107	22.14	0.1637
Highest		1	1	19.84	0.0964	21.54	0.1426
Limit	EIRP < 2W			Result		PASS	

NR n25 / 20MHz (Average) (GT - LC = 1.7 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	PI/2 BPSK	1	1	23.54	0.2260	25.24	0.3342
Middle		1	1	23.24	0.2109	24.94	0.3119
Highest		1	1	22.94	0.1968	24.64	0.2911
Lowest	QPSK	1	0	23.54	0.2260	25.24	0.3342
Middle		1	0	23.34	0.2158	25.04	0.3192
Highest		1	0	22.84	0.1924	24.54	0.2845
Lowest	16QAM	1	1	23.44	0.2209	25.14	0.3266
Middle		1	1	23.24	0.2109	24.94	0.3119
Highest		1	1	22.74	0.1880	24.44	0.2780
Lowest	64QAM	1	1	22.84	0.1924	24.54	0.2845
Middle		1	1	22.54	0.1795	24.24	0.2655
Highest		1	1	22.04	0.1600	23.74	0.2366
Lowest	256QAM	1	1	20.64	0.1159	22.34	0.1714
Middle		1	1	20.24	0.1057	21.94	0.1564
Highest		1	1	19.64	0.0921	21.34	0.1362
Limit	EIRP < 2W			Result		PASS	

Appendix B. Test Results of Radiated Test

Radiated Spurious Emission

For original report (FG082811H):

EN-DC_5A_n2A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3741	-40.27	-13	-27.27	-52.53	2.64	14.90	H
	5613	-48.84	-13	-35.84	-60.70	2.94	14.80	H
	7488	-52.18	-13	-39.18	-61.95	3.39	13.16	H
	3741	-42.14	-13	-29.14	-54.40	2.64	14.90	V
	5613	-49.39	-13	-36.39	-61.25	2.94	14.80	V
	7488	-51.70	-13	-38.70	-61.47	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_12A_n2A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3741	-39.53	-13	-26.53	-51.79	2.64	14.90	H
	5613	-46.62	-13	-33.62	-58.48	2.94	14.80	H
	7488	-52.07	-13	-39.07	-61.84	3.39	13.16	H
	3741	-36.38	-13	-23.38	-48.64	2.64	14.90	V
	5613	-46.90	-13	-33.90	-58.76	2.94	14.80	V
	7488	-51.71	-13	-38.71	-61.48	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_13A_n2A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3741	-39.44	-13	-26.44	-51.70	2.64	14.90	H
	5613	-48.14	-13	-35.14	-60.00	2.94	14.80	H
	7488	-51.99	-13	-38.99	-61.76	3.39	13.16	H
	3741	-37.09	-13	-24.09	-49.35	2.64	14.90	V
	5613	-46.66	-13	-33.66	-58.52	2.94	14.80	V
	7488	-51.42	-13	-38.42	-61.19	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_66A_n2A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3741	-38.95	-13	-25.95	-51.21	2.64	14.90	H
	5613	-48.17	-13	-35.17	-60.03	2.94	14.80	H
	7488	-52.33	-13	-39.33	-62.10	3.39	13.16	H
	3741	-36.50	-13	-23.50	-48.76	2.64	14.90	V
	5613	-44.84	-13	-31.84	-56.70	2.94	14.80	V
	7488	-52.91	-13	-39.91	-62.68	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_2A_n5A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1656	-67.96	-13	-54.96	-74.93	1.58	10.70	H
	2482	-66.75	-13	-53.75	-75.00	2.102	12.50	H
	3312	-64.79	-13	-51.79	-73.68	2.856	13.90	H
	1656	-67.75	-13	-54.75	-74.72	1.58	10.70	V
	2482	-66.40	-13	-53.40	-74.65	2.10	12.50	V
	3312	-64.73	-13	-51.73	-73.62	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_66A_n5A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1656	-68.68	-13	-55.68	-75.65	1.58	10.70	H
	2482	-66.55	-13	-53.55	-74.80	2.102	12.50	H
	3312	-65.15	-13	-52.15	-74.04	2.856	13.90	H
	1656	-68.13	-13	-55.13	-75.10	1.58	10.70	V
	2482	-66.17	-13	-53.17	-74.42	2.10	12.50	V
	3312	-65.06	-13	-52.06	-73.95	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_48A_n5A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1656	-68.08	-13	-55.08	-75.05	1.58	10.70	H
	2482	-66.86	-13	-53.86	-75.11	2.102	12.50	H
	3312	-64.65	-13	-51.65	-73.54	2.856	13.90	H
	1656	-68.11	-13	-55.11	-75.08	1.58	10.70	V
	2482	-66.29	-13	-53.29	-74.54	2.10	12.50	V
	3312	-65.05	-13	-52.05	-73.94	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_66A_n25A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3747	-42.57	-13	-29.57	-54.83	2.64	14.90	H
	5619	-46.51	-13	-33.51	-58.37	2.94	14.80	H
	7500	-52.43	-13	-39.43	-62.20	3.39	13.16	H
	3747	-39.47	-13	-26.47	-51.73	2.64	14.90	V
	5619	-47.65	-13	-34.65	-59.51	2.94	14.80	V
	7500	-52.20	-13	-39.20	-61.97	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

For present report (FG082811-03H):

EN-DC_14A_n2A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3741	-58.41	-13	-45.41	-70.67	2.64	14.90	H
	5613	-55.36	-13	-42.36	-67.22	2.94	14.80	H
	7488	-54.35	-13	-41.35	-64.12	3.39	13.16	H
	3741	-57.85	-13	-44.85	-70.11	2.64	14.90	V
	5613	-57.76	-13	-44.76	-69.62	2.94	14.80	V
	7488	-54.05	-13	-41.05	-63.82	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_30A_n2A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	3741	-58.26	-13	-45.26	-70.52	2.64	14.90	H
	5613	-57.15	-13	-44.15	-69.01	2.94	14.80	H
	7488	-54.50	-13	-41.50	-64.27	3.39	13.16	H
	3741	-58.10	-13	-45.10	-70.36	2.64	14.90	V
	5613	-58.34	-13	-45.34	-70.20	2.94	14.80	V
	7488	-54.51	-13	-41.51	-64.28	3.39	13.16	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.

EN-DC_30A_n5A / LTE 10MHz + NR 20MHz / PI/2 BPSK DFT-s-OFDM								
Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	S.G. Power (dBm)	TX Cable loss (dB)	TX Antenna Gain (dBi)	Polarization (H/V)
Middle	1656	-66.97	-13	-53.97	-73.94	1.58	10.70	H
	2482	-61.93	-13	-48.93	-70.18	2.10	12.50	H
	3312	-60.52	-13	-47.52	-69.41	2.86	13.90	H
	1656	-66.03	-13	-53.03	-73.00	1.58	10.70	V
	2482	-60.00	-13	-47.00	-68.25	2.10	12.50	V
	3312	-59.42	-13	-46.42	-68.31	2.86	13.90	V

Remark: Spurious emissions within 30-1000MHz were found more than 20dB below limit line.