

TEST REPORT

of

FCC Part 2 Subpart J and Part 27 Subpart C

FCC ID: BEJTFGMEIBBCD1

Equipment Under Test : Telematics
Model Name : TFGMEIBBCD1
Variant Model Name(s) : Refer to the page 4
Applicant : LG Electronics USA
Manufacturer : LG Electronics Inc.
Date of Receipt : 2022.07.22
Date of Test(s) : 2022.07.25 ~ 2023.03.09
Date of Issue : 2023.03.13

In the configuration tested, the EUT complied with the standards specified above. This test report does not assure KOLAS accreditation.

- 1) The results of this test report are effective only to the items tested.
- 2) The SGS Korea is not responsible for the sampling, the results of this test report apply to the sample as received.
- 3) This test report cannot be reproduced, except in full, without prior written permission of the Company.
- 4) The data marked ※ in this report was provided by the customer and may affect the validity of the test results.

We are responsible for all the information of this test report except for the data(※) provided by the customer.

Tested by:



Teo Kim

Technical
Manager:



Jinhyoung Cho

SGS Korea Co., Ltd. Gunpo Laboratory

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1. General Information

1.1. Testing Laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)

- 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

- 4, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807

- Designation number: KR0150

All SGS services are rendered in accordance with the applicable SGS conditions of service available on request and accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>.

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1.2. Details of Applicant

Applicant : LG Electronics USA

Address : 111 Sylvan Avenue, North Building, Englewood Cliffs, New Jersey, United States, 07632

Contact Person : Cho, Hee-jae

Phone No. : +1 201 470 2696

1.3. Details of Manufacturer

Company : LG Electronics Inc.

Address : 10, Magokjungang 10-ro, Gangseo-gu, Seoul, Korea, 07796

1.4. Description of EUT

Kind of Product		Telematics
Model Name		TFGMEIBBCD1
Variant Model Names		TFGMEIBBCD2, TFGMEIBBCD3
Serial Number		Conducted: 351015130056680 Radiated: 351015130065751
Power Supply		DC 13.5 V
Rated Power		NR Band 77, 78: 25 dB m
Frequency Range	Port 1	NR Band 77: 3 450 MHz ~ 3 550 MHz NR Band 77: 3 700 MHz ~ 3 980 MHz NR Band 78: 3 450 MHz ~ 3 550 MHz NR Band 78: 3 700 MHz ~ 3 800 MHz
	Port 2	NR Band 77: 3 450 MHz ~ 3 550 MHz NR Band 77: 3 700 MHz ~ 3 980 MHz NR Band 78: 3 450 MHz ~ 3 550 MHz NR Band 78: 3 700 MHz ~ 3 800 MHz
Modulation Technique		BPSK, QPSK, 16QAM, 64QAM
Antenna Type		Internal: Planar Inverted F Antenna External: Metal Antenna
Antenna Gain*		Refer to the clause 1.19
H/W Version		REV.D
S/W Version		SW168
FVIN		N/A

1.5. Test Equipment List

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Signal Generator	R&S	SMA100B	106887	Oct. 13, 2022	Annual	Oct. 13, 2023
Signal Generator	R&S	SMBV100A	255834	May 25, 2022	Annual	May 25, 2023
Spectrum Analyzer	R&S	FSV30	103210	Dec. 07, 2022	Annual	Dec. 07, 2023
Spectrum Analyzer	R&S	FSV30	103211	Dec. 09, 2022	Annual	Dec. 09, 2023
Spectrum Analyzer	R&S	FSW67	103242	Aug. 26, 2022	Annual	Aug. 26, 2023
Spectrum Analyzer	Agilent	N9020A	MY53421758	Aug. 26, 2022	Annual	Aug. 26, 2023
Spectrum Analyzer	Agilent	N9030A	US51350132	Nov. 11, 2022	Annual	Nov. 11, 2023
Communication test station	Anritsu	MT8000A	6261949671	Oct. 12, 2022	Annual	Oct. 12, 2023
Communication Analyzer	Anritsu	MT8821C	6262192291	Oct. 11, 2022	Annual	Oct. 11, 2023
Power Meter	Anritsu	ML2495A	1223004	Nov. 29, 2022	Annual	Nov. 29, 2023
Power Sensor	Anritsu	MA2411B	1207272	May 27, 2022	Annual	May 27, 2023
Temperature Chamber	ESPEC CORP.	SH-662	93000533	Jun. 02, 2022	Annual	Jun. 02, 2023
Low Pass Filter	Mini-Circuits	NLP-1200+	V 8979400903-1	May 13, 2022	Annual	May 13, 2023
High Pass Filter	Wainwright Instrument GmbH	WHKX3.0/18G-6SS	21	Jun. 09, 2022	Annual	Jun. 09, 2023
High Pass Filter	Wainwright Instrument GmbH	WHNX7.5/26.5G-6SS	11	Oct. 24, 2022	Annual	Oct. 24, 2023
Power Splitter	Weinschel	1534	499	May 31, 2022	Annual	May 31, 2023
Power Splitter	Weinschel	1534	500	May 31, 2022	Annual	May 31, 2023
BRIDGE COUPLER	MARKI MICROWAVE INC	CBR16-0012	1542	May 06, 2022	Annual	May 06, 2023
Directional Coupler	KRYTAR	152613	122660	Jul. 06, 2022	Annual	Jul. 06, 2023
Directional Coupler	KRYTAR	152613	122661	Mar. 02, 2023	Annual	Mar. 02, 2024
DC Power Supply	Agilent	U8002A	MY49030063	Jan. 20, 2023	Annual	Jan. 20, 2024
Preamplifier	H.P.	8447F	2944A03909	Aug. 04, 2022	Annual	Aug. 04, 2023
Preamplifier	R&S	SCU 18	10117	Jun. 13, 2022	Annual	Jun. 13, 2023
Preamplifier	TESTEK	TK-PA1840H	130016	Jan. 11, 2023	Annual	Jan. 11, 2024
Test Receiver	R&S	ESCI 7	100911	Feb. 24, 2023	Annual	Feb. 24, 2024
Loop Antenna	Schwarzbeck Mess-Elektronik	FMZB 1519	1519-039	Aug. 23, 2021	Biennial	Aug. 23, 2023
Bilog Antenna	Schwarzbeck Mess-Elektronik	VULB9163	01126	Feb. 09, 2023	Annual	Feb. 09, 2024
Horn Antenna	R&S	HF906	100326	Feb. 28, 2023	Annual	Feb. 28, 2024
Horn Antenna	R&S	HF907	102270	Mar. 09, 2023	Annual	Mar. 09, 2024
Horn Antenna	Schwarzbeck Mess-Elektronik	BBHA 9170	9170-540	Nov. 30, 2022	Annual	Nov. 30, 2023
Antenna Master	Innco systems GmbH	MA4640-XP-ET	MA4640/536/383 30516/L	N.C.R.	N/A	N.C.R.
Turn Table	Innco systems GmbH	DS 1200S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/383 30516/L	N.C.R.	N/A	N.C.R.
Anechoic Chamber	SY Corporation	L x W x H (9.6 m x 6.4 m x 6.6 m)	N/A	N.C.R.	N/A	N.C.R.
Coaxial Cable	RFONE	MWX221-NMSNMS (4 m)	J1023142	Oct. 04, 2022	Semi-Annual	Apr. 04, 2023
Coaxial Cable	Qualwave Inc.	QA500-18-NN-10 (10 m)	22200114	Oct. 04, 2022	Semi-Annual	Apr. 04, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182287	Feb. 18, 2023	Semi-Annual	Aug. 18, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182288	Feb. 18, 2023	Semi-Annual	Aug. 18, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182291	Feb. 18, 2023	Semi-Annual	Aug. 18, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182284	Feb. 18, 2023	Semi-Annual	Aug. 18, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182292	Feb. 18, 2023	Semi-Annual	Aug. 18, 2023
Coaxial Cable	RADIALL	TESTPRO 3	182285	Feb. 18, 2023	Semi-Annual	Aug. 18, 2023

Note;

- For equipment listed above that has a calibration date or calibration due date that falls within the test date range, care was taken to ensure that this equipment was used after the calibration date and before the calibration due date.

1.6. Summary of Test Results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 2 and 27		
Section(s)	Test Item	Result
§2.1046 §27.50(j)(3) §27.50(k)(3)	Radiated Output Power	Complied ¹⁾
§27.53(l)(2) §27.53(n)(2)	Radiated Spurious Emissions	Complied ¹⁾
§2.1046	Conducted Output Power	Complied ²⁾
§2.1049	Occupied Bandwidth	Complied ²⁾
§27.50(j)(4) §27.50(k)(4)	Peak-Average Ratio	Complied ²⁾
§27.53(l)(2) §27.53(n)(2)	Spurious Emission at Antenna Terminal	Complied ²⁾
§27.53(l)(2) §27.53(n)(2)	Band Edge and Emission Mask	Complied ²⁾
§2.1055 §27.54	Frequency Stability	Complied ²⁾

Note;

- 1) The EUT has two antennas (external, internal) and each antenna operated by one module.
- 2) The EUT uses same module with TM05FNNAGM0, so only spot check was performed for radiated spurious emissions and the rule was satisfied.

1.7. Sample Calculation for Offset

Where relevant, the following sample calculation is provided:

1.7.1. Conducted Test

Offset value (dB) = Directional Coupler (dB) + Cable loss (dB)

1.7.2. Radiation Test

- E.I.R.P. (dB m) = Measured level (dB μ V) + Antenna factor (dB/m) + Cable loss (dB) + 20 Log D - 104.8;
 where D is the measurement distance in meters.
- E.R.P. (dB m) = E.I.R.P. (dB m) - 2.15 (dB)

1.8. Introduction of Test Data Reuse

This report referenced from the FCC ID: BEJTM05FNNAGM0 and IC Certification: 2703H-TM05FNNAGM0. The applicant takes full responsibility that the test data as referenced in this report represent compliance for this FCC ID and IC Certification.

1.9. Difference

Model name	Description
TM05FNNAGM0	- Reference model - Single modular
TFGMEIBBCD1	- Host equipment - Same to reference model except below - With external case - Internal antenna

1.10. Spot Check Data

After confirming through preliminary radiated emissions in worst frequency that the performance of the FCC ID: BEJTM05FNNAGM0 and IC Certification: 2703H-TM05FNNAGM0 remains representative of FCC ID: BEJTFGMEIBBCD1 and IC Certification: 2703H-TFGMEIBBCD1.
 The test data of FCC ID: BEJTM05FNNAGM0 and IC Certification: 2703H-TM05FNNAGM0 being submitted for this application to cover NR features.

Band	Test item	Frequency (MHz)	Limit	Original model	Spot check model	Deviation (dB)	Remark
				TM05FNNAGM0	TFGMEIBBCD1		
				FCC ID: BEJTM05FNNAGM0 IC Certification: 2703H-TM05FNNAGM0	FCC ID: BEJTFGMEIBBCD1 IC Certification: 2703H-TFGMEIBBCD1		
n77/78 Low Band SISO	Radiated Spurious Emissions	3510	-13 dB m	-53.69 dB m	-53.71 dB m	-0.02	Noise floor
n77/78 High Band SISO	Radiated Spurious Emissions	3740.01	-13 dB m	-53.10 dB m	-53.11 dB m	-0.01	Noise floor
n77/78 Low Band MIMO	Radiated Spurious Emissions	3500.01	-16.01 dB m	-53.66 dB m	-53.79 dB m	-0.13	Noise floor
n77/78 High Band MIMO	Radiated Spurious Emissions	3840	-16.01 dB m	-52.98 dB m	-53.12 dB m	-0.14	Noise floor

Note;

Comparison of two models, upper deviation is within 3 dB range and all test results are under FCC/IC technical limits.

1.11. Reference Detail

Reference applicant that contains the reused reference data in the individual test reports:

Equipment class	Reference FCC ID and IC Certification	Application type	Reference test report number	Exhibit type	Variant test report number	Data reuse
PCB	FCC ID: BEJTM05FNNAGM0 IC Certification: 2703H-TM05FNNAGM0	Original grant	F690501-RF-RTL003820-1 (LTE)	Test report	F690501-RF-RTL003895 (LTE)	All
			F690501-RF-RTL003821-1 (NR)		F690501-RF-RTL003896 (NR)	
			F690501-RF-RTL003822-1 (Inter CA)		F690501-RF-RTL003897 (Inter CA)	
			F690501-RF-RTL003823-1 (WCDMA)		F690501-RF-RTL003898 (WCDMA)	
			F690501-RF-RTL003824-1 (intra CA)		F690501-RF-RTL003899 (intra CA)	
			F690501-RF-RTL003825-1 (NR n41)		F690501-RF-RTL003900 (NR n41)	
			F690501-RF-RTL003827-1 (FCC_NR n77/78)		F690501-RF-RTL003902 (FCC_NR n77/78)	
			F690501-RF-RTL003828-1 (IC_NR n77/78)		F690501-RF-RTL003903 (IC_NR n77/78)	

1.12. Device Capabilities

This device contains the following capabilities.

5G NR Band 78 (3 450 MHz ~ 3 550 MHz) is covered by 5G NR Band 77 (3 450 MHz ~ 3 550 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth. Therefore test data provided in this report covers 5G NR Band 78 as well as Band 77.

5G NR Band 78 (3 700 MHz ~ 3 800 MHz) is covered by 5G NR Band 77 (3 700 MHz ~ 3 980 MHz) due to overlapping frequency range, same maximum tune-up limit and same channel bandwidth. Therefore test data provided in this report covers 5G NR Band 78 as well as Band 77.

1.13. Manufacturer Declaration

The EUT supports two ports and LTE, WCDMA and 5G NR FDD bands support only port 1.
 The 5G NR TDD (n41, n77, n78) band supports both port 1 and port 2.
 The EUT has two antennas (external, internal) and each antenna operated by one module.
 The EUT's internal and external antennas do not transmit simultaneously.

Port 1 supports 5G NR TDD bands only for MIMO mode with CP-OFDM Modulation only.

1.14. ENDC Configuration

NR Band	SCS (kHz)	Bandwidth (MHz)	Waveform	Modulation	ENDC LTE Band
n77	30	20, 30, 40, 50, 60, 70, 80, 90, 100	DFTS OFDM, CP OFDM	BPSK, QPSK, 16QAM, 64QAM	7
n78	30	20, 30, 40, 50, 60, 70, 80, 90, 100	DFTS OFDM, CP OFDM	BPSK, QPSK, 16QAM, 64QAM	2, 5, 7, 12, 66

Note;

- Only SISO mode support ENDC Mode.

1.15. Worst Case Configuration and Mode

The worst-case is based on the conducted output power measurement investigation results. All testing was performed using BPSK, QPSK, 16QAM and 64QAM modulations. If both SA and NSA were supported, SA was tested as worst case and NSA was tested only radiated spurious emission for worst conducted output power combination.

On ENDC mode, only radiated spurious emission were tested as worst case for worst conducted output power combination.

The radiated output power were tested in only one modulation with the worst case at the highest conducted power.

However, the radiated spurious emission and spurious at antenna terminal were only performed on bandwidth and RB offset (with RB size 1) with the highest conducted power.

The peak to average ratio were tested only 64QAM modulation as worst case.

The radiation test of the EUT was investigated in three orthogonal orientations X, Y, and Z, and the worst case data is reported.

1.16. Measurement Configuration

SISO Mode

Test Items	Band	Test Channel			Bandwidth (MHz)									Modulation DFTS-OFDM				Modulation CP-OFDM			RB #			
		Low	Mid	High	20	30	40	50	60	70	80	90	100	BPSK	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	1	Half	Full	
Conducted Output Power	n7778 Low Band	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
	n7778 High Band	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V
Frequency Stability	n7778 Low Band	-	V	-	-	-	-	V	-	-	-	-	-	V	-	-	-	-	-	-	-	-	-	V
	n7778 High Band	-	V	-	-	-	-	V	-	-	-	-	-	V	-	-	-	-	-	-	-	-	-	V
Occupied Bandwidth	n7778 Low Band	-	V	-	V	V	V	V	V	V	V	V	V	V	V	V	-	V	V	-	-	-	-	V
	n7778 High Band	-	V	-	V	V	V	V	V	V	V	V	V	V	V	V	-	V	V	-	-	-	-	V
Peak-to-Average Ratio	n7778 Low Band	V	V	V	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V	-	-	-	V
	n7778 High Band	V	V	V	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V	-	-	-	V
Band edge	n7778 Low Band	V	-	V	V	V	V	V	V	V	V	V	V	-	V	-	V	V	-	V	-	-	-	V
	n7778 High Band	V	-	V	V	V	V	V	V	V	V	V	V	-	V	-	V	V	-	V	-	-	-	V
E.I.R.P.	n7778 Low Band	V	V	V	Worst case																			
	n7778 High Band	V	V	V	Worst case																			
Spurious at antenna terminal & Radiated Spurious Emissions	n7778 Low Band	V	V	V	Worst case																			
	n7778 High Band	V	V	V	Worst case																			

MIMO Mode

Test Items	Band	Test Channel			Bandwidth (MHz)									Modulation CP-OFDM				RB #						
		Low	Mid	High	20	30	40	50	60	70	80	90	100	QPSK	16QAM	64QAM	1	Half	Full					
Conducted Output Power	n7778 Low Band	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	-	V	-	-	-	-	V	
	n7778 High Band	V	V	V	V	V	V	V	V	V	V	V	V	V	V	V	-	V	-	-	-	-	-	V
Frequency Stability	n7778 Low Band	-	V	-	-	-	-	V	-	-	-	-	-	-	V	-	-	-	-	-	-	-	-	V
	n7778 High Band	-	V	-	-	-	-	V	-	-	-	-	-	-	V	-	-	-	-	-	-	-	-	V
Occupied Bandwidth	n7778 Low Band	-	V	-	V	V	V	V	V	V	V	V	V	V	V	V	-	V	V	-	-	-	-	V
	n7778 High Band	-	V	-	V	V	V	V	V	V	V	V	V	V	V	V	-	V	V	-	-	-	-	V
Peak-to-Average Ratio	n7778 Low Band	V	V	V	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V	-	-	-	V
	n7778 High Band	V	V	V	V	V	V	V	V	V	V	V	V	-	-	-	V	-	-	V	-	-	-	V
Band edge	n7778 Low Band	V	-	V	V	V	V	V	V	V	V	V	V	-	V	-	V	V	-	V	-	-	-	V
	n7778 High Band	V	-	V	V	V	V	V	V	V	V	V	V	-	V	-	V	V	-	V	-	-	-	V
E.I.R.P.	n7778 Low Band	V	V	V	Worst case																			
	n7778 High Band	V	V	V	Worst case																			
Spurious at antenna terminal & Radiated Spurious Emissions	n7778 Low Band	V	V	V	Worst case																			
	n7778 High Band	V	V	V	Worst case																			

ENDC

Test Items	NR Band	Test Channel			Bandwidth (MHz)									Modulation DFTS-OFDM				Modulation CP-OFDM			RB #			
		Low	Mid	High	20	30	40	50	60	70	80	90	100	BPSK	QPSK	16QAM	64QAM	QPSK	16QAM	64QAM	1	Half	Full	
Conducted Output Power	n7778 Low Band	V	V	V	V	V	V	V	V	V	V	V	V	V	V	-	-	-	-	-	-	-	-	V
	n7778 High Band	V	V	V	V	V	V	V	V	V	V	V	V	V	V	-	-	-	-	-	-	-	-	V
Radiated Spurious Emissions	n7778 Low Band	V	V	V	Worst case																			
	n7778 High Band	V	V	V	Worst case																			

Note;

- All measurement was performed with 1RB or FULL RB or both, we chosen RB condition for each test items as worst case.

Radiated Emission Test

Ant.	NR Band	SCS (kHz)	Bandwidth (MHz)	Modulation	Resource Block Allocation
					RBs allocated
SISO	n77/78 Low Band	30	80	DFTS OFDM - QPSK	1
	n77/78 High Band	30	80	DFTS OFDM - QPSK	1
MIMO	n77/78 Low Band	30	90	CP OFDM - QPSK	1
	n77/78 High Band	30	60	CP OFDM - QPSK	1

ENDC

NR Band	SCS (kHz)	Bandwidth (MHz)	Modulation	Resource Block Allocation
				RBs allocated
7A-n77 Low Band	30	20-60	DFTS OFDM - BPSK	1
7A-n77 High Band	30	20-40	DFTS OFDM - BPSK	1
5A-n78 Low Band	30	5-20	DFTS OFDM - QPSK	1
5A-n78 High Band	30	5-60	DFTS OFDM - BPSK	1

1.17. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Parameter	Uncertainty	
RF Output Power	0.32 dB	
Occupied Bandwidth	3.90 kHz	
Conducted Spurious Emissions	0.61 dB	
Peak to Average Ratio	0.60 dB	
Frequency Stability	5.97 kHz	
Radiated Emission, 9 kHz to 30 MHz	H	3.40 dB
	V	3.40 dB
Radiated Emission, below 1 GHz	H	4.50 dB
	V	5.10 dB
Radiated Emission, above 1 GHz	H	3.70 dB
	V	3.90 dB

All measurement uncertainty values are shown with a coverage factor of $k=2$ to indicate a 95 % level of confidence.

1.18. Test Report Revision

Revision	Report Number	Date of Issue	Description
0	F690501-RF-RTL003902	2023.03.13	Initial

1.19. Antenna Information

- Internal Antenna

Band	Operating Frequency (MHz)	Antenna Peak Gain (dB i)		
		Ant. Gain		
		Port 1	Port 2	Port 1 + port 2 ¹⁾
NR 77 - Low	3 450 ~ 3 550	1.72	2.35	5.05
NR 77 - High	3 700 ~ 3 980	-0.61	1.86	3.72
NR 78 - Low	3 450 ~ 3 550	1.72	2.35	5.05
NR 78 - High	3 700 ~ 3 800	-0.61	1.86	3.72

- External Antenna

Band	Operating Frequency (MHz)	Antenna Peak Gain (dB i)		
		Ant. Gain		
		Port 1	Port 2	Port 1 + port 2 ¹⁾
NR 77 - Low	3 450 ~ 3 550	3.24	6.29	7.91
NR 77 - High	3 700 ~ 3 980	3.24	6.29	7.91
NR 78 - Low	3 450 ~ 3 550	3.24	6.29	7.91
NR 78 - High	3 700 ~ 3 800	3.24	6.29	7.91

Remark;

- Port 1 means secondary cell and Port 2 means primary cell.

1) According to KDB 662911 D01 Multiple Transmitter Output v02r01 F)2)d)(i),
 Port 1 + Port 2 Antenna Gain = $10 * \log[(10^{G_1/20} + 10^{G_2/20})^2 / N_{ANT}]$

Where,

- G₁ = antenna gain of port 1,
- G₂ = antenna gain of port 2,
- N_{ANT} = the number of antennas

1.20. Emission Designator and Conducted Average Power

NR Band	Band width (MHz)	Modulation		Low Freq. (MHz)	Upper Freq. (MHz)	Conducted Average Power (dB m)	Conducted Average Power (W)	Emission Designator
n77/78 Low Band SISO	20	DFTS-OFDM	BPSK	3 460.02	3 540	24.88	0.308	17M9G7D
			QPSK			24.92	0.310	17M9G7D
			16QAM			23.94	0.248	17M9D7D
		CP-OFDM	QPSK			23.41	0.219	18M2G7D
			16QAM			22.86	0.193	18M2D7D
			30			DFTS-OFDM	BPSK	3 465
	QPSK	25.30		0.339	26M9G7D			
	16QAM	24.24		0.265	26M7D7D			
	CP-OFDM	QPSK		23.75	0.237	27M8G7D		
		16QAM		23.34	0.216	27M8D7D		
		40		DFTS-OFDM	BPSK	3 470.01	3 529.98	
	QPSK		25.30		0.339			36M1G7D
	16QAM		24.23		0.265			36M0D7D
	CP-OFDM		QPSK	23.70	0.234			38M1G7D
			16QAM	23.28	0.213			38M3D7D
			50	DFTS-OFDM	BPSK			3 475.02
	QPSK	25.09			0.323	45M9G7D		
	16QAM	24.05			0.254	45M9D7D		
	CP-OFDM	QPSK		23.56	0.227	47M5G7D		
		16QAM		23.01	0.200	47M6D7D		
		60		DFTS-OFDM	BPSK	3 480	3 519.99	
	QPSK		25.04		0.319			57M9G7D
	16QAM		24.01		0.252			57M9D7D
	CP-OFDM		QPSK	23.51	0.224			58M0G7D
			16QAM	22.91	0.195			57M9D7D
			70	DFTS-OFDM	BPSK			3 485.01
	QPSK	24.99			0.316	64M2G7D		
	16QAM	23.88			0.244	64M5D7D		
	CP-OFDM	QPSK		23.45	0.221	67M6G7D		
		16QAM		22.88	0.194	67M6D7D		
		80		DFTS-OFDM	BPSK	3 490.02	3 510	
	QPSK		25.37		0.344			77M0G7D
	16QAM		23.78		0.239			76M9D7D
	CP-OFDM		QPSK	23.41	0.219			77M7G7D
			16QAM	22.89	0.195			77M4D7D
			90	DFTS-OFDM	BPSK			3 495
	QPSK	24.54			0.284	86M9G7D		
	16QAM	23.39			0.218	86M9D7D		
	CP-OFDM	QPSK		22.91	0.195	87M4G7D		
		16QAM		22.43	0.175	87M4D7D		
		100		DFTS-OFDM	BPSK	3 500.01	3 500.01	
	QPSK		24.42		0.277			96M3G7D
	16QAM		23.25		0.211			96M3D7D
	CP-OFDM		QPSK	22.83	0.192			97M3G7D
			16QAM	22.34	0.171			97M5D7D

NR Band	Band width (MHz)	Modulation		Low Freq. (MHz)	Upper Freq. (MHz)	Conducted Average Power (dB m)	Conducted Average Power (W)	Emission Designator
n77/78 High Band SISO	20	DFTS-OFDM	BPSK	3 710.01	3 969.99	24.72	0.296	17M9G7D
			QPSK			24.75	0.299	17M9G7D
			16QAM			23.59	0.229	18M0D7D
		CP-OFDM	QPSK			23.12	0.205	18M3G7D
			16QAM			22.73	0.187	18M3D7D
			30			DFTS-OFDM	BPSK	3 715.02
	QPSK	24.74		0.298	26M8G7D			
	16QAM	23.64		0.231	26M9D7D			
	CP-OFDM	QPSK		23.12	0.205	27M8G7D		
		16QAM		22.56	0.180	27M8D7D		
		40		DFTS-OFDM	BPSK	3 720	3 960	
	QPSK		24.79		0.301			36M0G7D
	16QAM		23.63		0.231			36M1D7D
	CP-OFDM		QPSK	23.29	0.213			38M1G7D
			16QAM	22.76	0.189			38M3D7D
			50	DFTS-OFDM	BPSK			3 725.01
	QPSK	24.66			0.292	46M0G7D		
	16QAM	23.49			0.223	45M9D7D		
	CP-OFDM	QPSK		23.10	0.204	47M7G7D		
		16QAM		22.69	0.186	47M7D7D		
		60		DFTS-OFDM	BPSK	3 730.02	3 949.98	
	QPSK		24.76		0.299			58M0G7D
	16QAM		23.62		0.230			58M0D7D
	CP-OFDM		QPSK	23.17	0.207			58M0G7D
			16QAM	22.75	0.188			57M9D7D
			70	DFTS-OFDM	BPSK			3 735
	QPSK	24.76			0.299	64M3G7D		
	16QAM	23.73			0.236	64M5D7D		
	CP-OFDM	QPSK		23.10	0.204	67M6G7D		
		16QAM		22.66	0.185	67M6D7D		
		80		DFTS-OFDM	BPSK	3 740.01	3 939.99	
	QPSK		24.80		0.302			77M0G7D
	16QAM		23.66		0.232			77M2D7D
	CP-OFDM		QPSK	23.04	0.201			77M7G7D
			16QAM	22.57	0.181			77M5D7D
			90	DFTS-OFDM	BPSK			3 745.02
	QPSK	24.66			0.292	86M7G7D		
	16QAM	23.63			0.231	86M9D7D		
	CP-OFDM	QPSK		22.99	0.199	87M6G7D		
		16QAM		22.64	0.184	87M6D7D		
		100		DFTS-OFDM	BPSK	3 750	3 930	
	QPSK		24.65		0.292			96M5G7D
	16QAM		23.67		0.233			96M3D7D
	CP-OFDM		QPSK	23.12	0.205			97M5G7D
			16QAM	22.69	0.186			97M3D7D

NR Band	Band width (MHz)	Modulation		Low Freq. (MHz)	Upper Freq. (MHz)	Conducted Average Power (dB m)	Conducted Average Power (W)	Emission Designator
n77/78 Low Band MIMO	20	QPSK	3 460.02	3 540	25.94	0.393	18M3G7D	
		16QAM					18M3D7D	
	30	QPSK	3 465	3 534.99	25.80	0.380	27M9G7D	
		16QAM					27M9D7D	
	40	QPSK	3 470.01	3 529.98	25.92	0.391	38M1G7D	
		16QAM					38M0D7D	
	50	QPSK	3 475.02	3 525	25.92	0.391	47M8G7D	
		16QAM					47M8D7D	
	60	QPSK	3 480	3 519.99	25.93	0.392	58M3G7D	
		16QAM					58M1D7D	
	70	QPSK	3 485.01	3 514.98	25.89	0.388	67M7G7D	
		16QAM					67M7D7D	
	80	QPSK	3 490.02	3 510	25.92	0.391	77M5G7D	
		16QAM					77M7D7D	
	90	QPSK	3 495	3 504.99	25.96	0.394	87M6G7D	
		16QAM					87M8D7D	
	100	QPSK	3 500.01	3 500.01	25.95	0.394	97M7G7D	
		16QAM					97M7D7D	

NR Band	Band width (MHz)	Modulation		Low Freq. (MHz)	Upper Freq. (MHz)	Conducted Average Power (dB m)	Conducted Average Power (W)	Emission Designator
n77/78 High Band MIMO	20	QPSK	3 710.01	3 969.99	25.95	0.394	18M3G7D	
		16QAM					18M3D7D	
	30	QPSK	3 715.02	3 964.98	25.93	0.392	27M9G7D	
		16QAM					27M9D7D	
	40	QPSK	3 720	3 960	25.92	0.391	38M3G7D	
		16QAM					38M0D7D	
	50	QPSK	3 725.01	3 954.99	25.93	0.392	47M8G7D	
		16QAM					47M7D7D	
	60	QPSK	3 730.02	3 949.98	25.97	0.395	58M1G7D	
		16QAM					58M0D7D	
	70	QPSK	3 735	3 945	25.88	0.387	67M7G7D	
		16QAM					67M8D7D	
	80	QPSK	3 740.01	3 939.99	25.95	0.394	77M5G7D	
		16QAM					77M7D7D	
	90	QPSK	3 745.02	3 934.98	25.96	0.394	87M8G7D	
		16QAM					87M8D7D	
	100	QPSK	3 750	3 930	25.95	0.394	97M7G7D	
		16QAM					97M5D7D	

1.21. Information of Variant Model

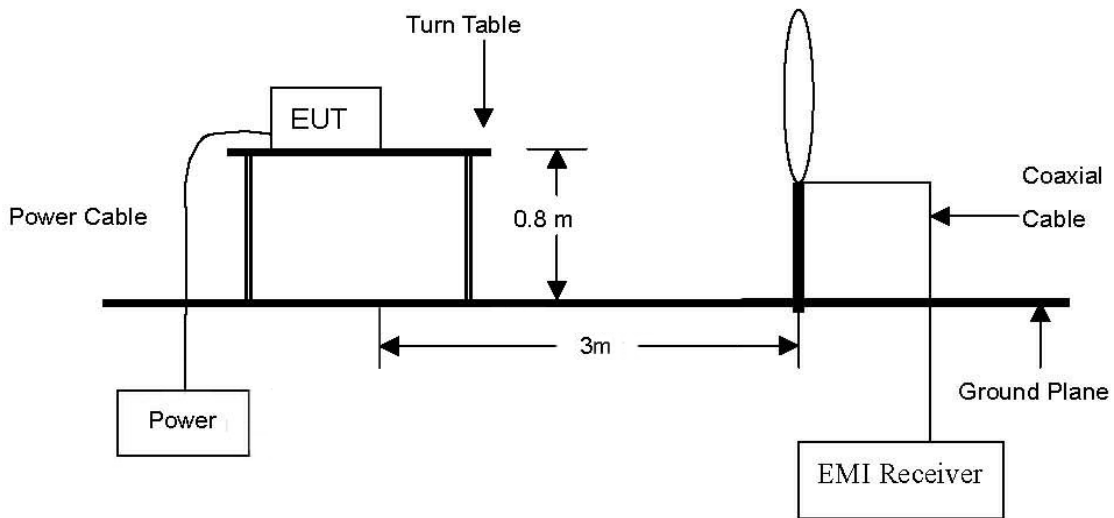
Model Name		Description
Basic Model	TFGMEIBBCD1	- Dual GNSS
Variant Models	TFGMEIBBCD2	- Same to RF module with basic model except following function - Single GNSS and Ultra-super cruise service doesn't supported
	TFGMEIBBCD3	- Same to RF module with basic model except following function - Single GNSS and Ultra-super cruise service doesn't supported - eUICC part is different with TFGMEIBBCD2

Note;
 The all test items performed with basic model.

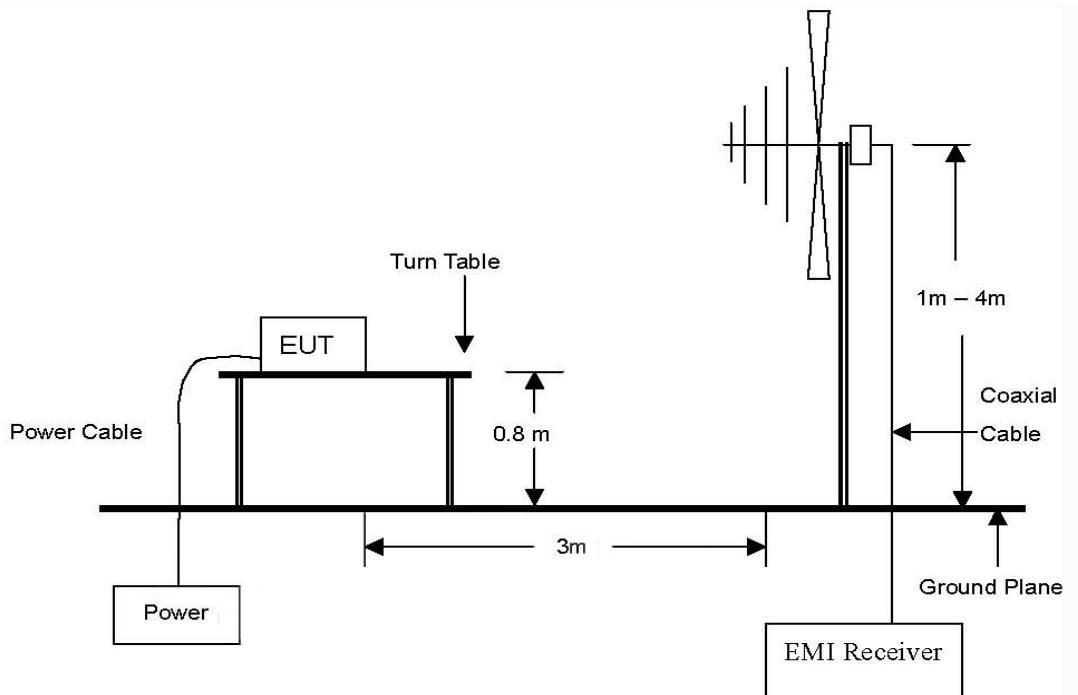
2. Radiated Output Power & Radiated Spurious Emissions

2.1. Test setup

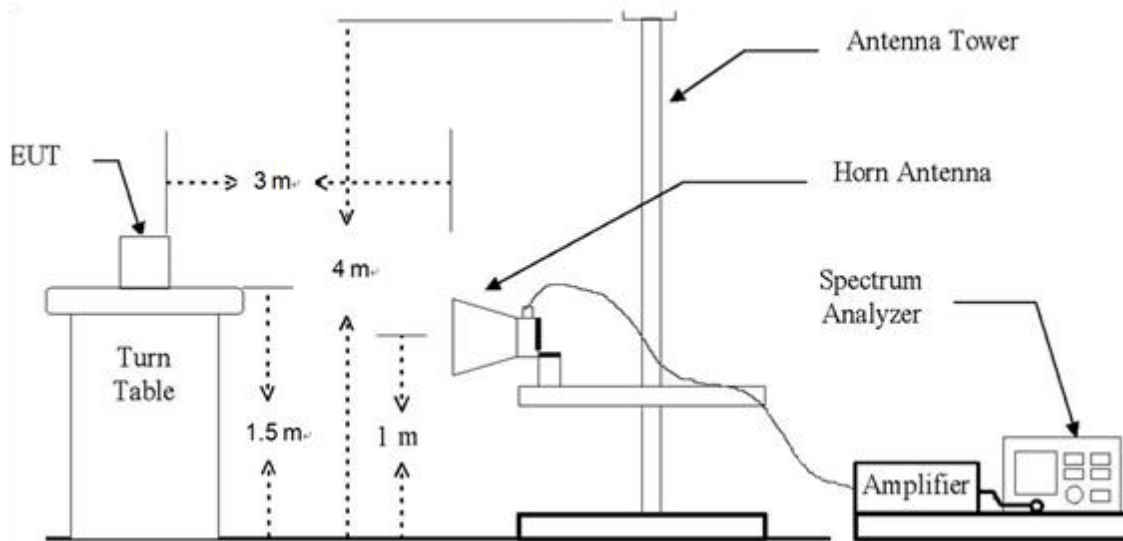
The diagram below shows the test setup that is utilized to make the measurements for emission from 9 kHz to 30 MHz.



The diagram below shows the test setup that is utilized to make the measurements for emission from 30 MHz to 1 GHz Emissions.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 GHz to 40 GHz Emissions.



2.2. Limit

2.2.1. Limit of E.I.R.P.

- §27.50(j)(3), Mobile and portable stations are limited to 1 Watt EIRP. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

- §27.50(k)(3), Mobile devices are limited to 1Watt (30 dBm) EIRP. Mobile devices operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

2.2.2. Limit of Radiated Spurious Emissions

- §27.53(l)(2), for mobile operations in the 3 700-3 980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm /MHz. Compliance with this paragraph (l)(2) 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, the minimum resolution bandwidth for the measurement shall be either one percent of the emission bandwidth of the fundamental emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. 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.

- §27.53(n)(2), for mobile operations in the 3 450-3 550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm /MHz.. Compliance with this paragraph (n)(2) 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, but limited to a maximum of 200 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. 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.

2.3. Test Procedure: Based on ANSI/TIA 603E: 2016 and ANSI C63.26-2015 and KDB 971168 D01 Power Meas License Digital Systems v03r01.

1. On a test site, the EUT shall be placed at 0.8 m or 1.5 m height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. The maximized power level is recorded using the spectrum analyzer "Channel Power" function with the integration band set to the emissions occupied bandwidth, RBW = 1-5 % of the OBW (not to exceed 1 MHz), VBW $\geq 3 \times$ RBW, Detector = power averaging (rms), sweep time = auto, trace average at least 100 traces in power averaging (rms) mode, per the guidelines of KDB 971168 D01 Power Meas License Digital Systems v03r01.
5. Radiated spurious emissions measurement method was set as follows:
RBW = 100 kHz for emissions below 1 GHz and 1 MHz for emissions above 1 GHz, VBW $\geq 3 \times$ RBW,
Detector = RMS, trace mode = max hold, per the guidelines of KDB 971168 D01 Power Meas License Digital Systems v03r01.
6. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
7. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
8. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
9. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
10. The maximum signal level detected by the measuring receiver shall be noted.
11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
13. The measurement shall be repeated with the test antenna orientated for horizontal polarization.

2.4. Test Results

Ambient temperature : (23 ± 1) °C
 Relative humidity : 47 % R.H.

2.4.1. Radiated Output Power

- Internal Antenna

SISO

NR 77/78 Low Band (3 450 ~ 3 550 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	DFT-S-OFDM BPSK	3 460.02	78.65	H	31.22	7.70	117.57	-95.26	22.31	0.170
		3 460.02	77.20	V	31.22	7.70	116.12	-95.26	20.86	0.122
		3 500.01	78.62	H	31.30	7.84	117.76	-95.26	22.50	0.178
		3 500.01	78.45	V	31.30	7.84	117.59	-95.26	22.33	0.171
		3 540.00	77.08	H	31.30	7.63	116.01	-95.26	20.75	0.119
		3 540.00	78.44	V	31.30	7.63	117.37	-95.26	22.11	0.163
30	DFT-S-OFDM BPSK	3 465.00	78.49	H	31.23	7.72	117.44	-95.26	22.18	0.165
		3 465.00	78.16	V	31.23	7.72	117.11	-95.26	21.85	0.153
		3 500.01	78.58	H	31.30	7.84	117.72	-95.26	22.46	0.176
		3 500.01	78.04	V	31.30	7.84	117.18	-95.26	21.92	0.156
		3 534.99	76.03	H	31.30	7.64	114.97	-95.26	19.71	0.094
		3 534.99	76.25	V	31.30	7.64	115.19	-95.26	19.93	0.098
40	DFT-S-OFDM BPSK	3 470.01	79.13	H	31.24	7.73	118.10	-95.26	22.84	0.192
		3 470.01	78.74	V	31.24	7.73	117.71	-95.26	22.45	0.176
		3 500.01	79.10	H	31.30	7.84	118.24	-95.26	22.98	0.199
		3 500.01	78.68	V	31.30	7.84	117.82	-95.26	22.56	0.180
		3 529.98	76.64	H	31.30	7.65	115.59	-95.26	20.33	0.108
		3 529.98	77.45	V	31.30	7.65	116.40	-95.26	21.14	0.130
50	DFT-S-OFDM BPSK	3 475.02	78.78	H	31.25	7.74	117.77	-95.26	22.51	0.178
		3 475.02	78.42	V	31.25	7.74	117.41	-95.26	22.15	0.164
		3 500.01	78.87	H	31.30	7.84	118.01	-95.26	22.75	0.188
		3 500.01	78.27	V	31.30	7.84	117.41	-95.26	22.15	0.164
		3 525.00	76.33	H	31.30	7.66	115.29	-95.26	20.03	0.101
		3 525.00	77.37	V	31.30	7.66	116.33	-95.26	21.07	0.128

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	DFT-S-OFDM BPSK	3 480.00	78.63	H	31.26	7.76	117.65	-95.26	22.39	0.173
		3 480.00	78.33	V	31.26	7.76	117.35	-95.26	22.09	0.162
		3 500.01	78.70	H	31.30	7.84	117.84	-95.26	22.58	0.181
		3 500.01	78.18	V	31.30	7.84	117.32	-95.26	22.06	0.161
		3 519.99	76.13	H	31.30	7.70	115.13	-95.26	19.87	0.097
		3 519.99	76.56	V	31.30	7.70	115.56	-95.26	20.30	0.107
70	DFT-S-OFDM BPSK	3 485.01	78.81	H	31.27	7.78	117.86	-95.26	22.60	0.182
		3 485.01	78.44	V	31.27	7.78	117.49	-95.26	22.23	0.167
		3 500.01	78.88	H	31.30	7.84	118.02	-95.26	22.76	0.189
		3 500.01	78.30	V	31.30	7.84	117.44	-95.26	22.18	0.165
		3 514.98	76.72	H	31.30	7.73	115.75	-95.26	20.49	0.112
		3 514.98	76.54	V	31.30	7.73	115.57	-95.26	20.31	0.107
80	DFT-S-OFDM BPSK	3 490.02	78.77	H	31.28	7.80	117.85	-95.26	22.59	0.182
		3 490.02	78.44	V	31.28	7.80	117.52	-95.26	22.26	0.168
		3 500.01	78.82	H	31.30	7.84	117.96	-95.26	22.70	0.186
		3 500.01	78.37	V	31.30	7.84	117.51	-95.26	22.25	0.168
		3 510.00	76.32	H	31.30	7.77	115.39	-95.26	20.13	0.103
		3 510.00	76.88	V	31.30	7.77	115.95	-95.26	20.69	0.117
90	DFT-S-OFDM BPSK	3 495.00	79.13	H	31.29	7.82	118.24	-95.26	22.98	0.199
		3 495.00	78.77	V	31.29	7.82	117.88	-95.26	22.62	0.183
		3 500.01	79.11	H	31.30	7.84	118.25	-95.26	22.99	0.199
		3 500.01	78.61	V	31.30	7.84	117.75	-95.26	22.49	0.178
		3 504.99	76.64	H	31.30	7.80	115.74	-95.26	20.48	0.112
		3 504.99	76.86	V	31.30	7.80	115.96	-95.26	20.70	0.118
100	DFT-S-OFDM BPSK	3 500.01	79.03	H	31.30	7.84	118.17	-95.26	22.91	0.196
		3 500.01	77.85	V	31.30	7.84	116.99	-95.26	21.73	0.149

NR 77/78 High Band (3 700 ~ 3 980 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	DFT-S-OFDM BPSK	3 710.01	77.46	H	32.24	7.96	117.66	-95.26	22.40	0.174
		3 710.01	75.99	V	32.24	7.96	116.19	-95.26	20.93	0.124
		3 840.00	77.48	H	32.32	8.23	118.03	-95.26	22.77	0.189
		3 840.00	77.24	V	32.32	8.23	117.79	-95.26	22.53	0.179
		3 969.99	75.90	H	32.20	8.18	116.28	-95.26	21.02	0.127
		3 969.99	77.30	V	32.20	8.18	117.68	-95.26	22.42	0.175
30	DFT-S-OFDM BPSK	3 715.02	77.32	H	32.26	7.96	117.54	-95.26	22.28	0.169
		3 715.02	76.97	V	32.26	7.96	117.19	-95.26	21.93	0.156
		3 840.00	77.43	H	32.32	8.23	117.98	-95.26	22.72	0.187
		3 840.00	76.85	V	32.32	8.23	117.40	-95.26	22.14	0.164
		3 964.98	74.84	H	32.20	8.25	115.29	-95.26	20.03	0.101
		3 964.98	75.04	V	32.20	8.25	115.49	-95.26	20.23	0.105
40	DFT-S-OFDM BPSK	3 720.00	77.92	H	32.28	7.95	118.15	-95.26	22.89	0.195
		3 720.00	77.58	V	32.28	7.95	117.81	-95.26	22.55	0.180
		3 840.00	77.60	H	32.32	8.23	118.15	-95.26	22.89	0.195
		3 840.00	77.47	V	32.32	8.23	118.02	-95.26	22.76	0.189
		3 960.00	75.41	H	32.20	8.32	115.93	-95.26	20.67	0.117
		3 960.00	76.25	V	32.20	8.32	116.77	-95.26	21.51	0.142
50	DFT-S-OFDM BPSK	3 725.01	77.60	H	32.30	7.95	117.85	-95.26	22.59	0.182
		3 725.01	77.20	V	32.30	7.95	117.45	-95.26	22.19	0.166
		3 840.00	77.68	H	32.32	8.23	118.23	-95.26	22.97	0.198
		3 840.00	77.13	V	32.32	8.23	117.68	-95.26	22.42	0.175
		3 954.99	75.15	H	32.20	8.40	115.75	-95.26	20.49	0.112
		3 954.99	76.19	V	32.20	8.40	116.79	-95.26	21.53	0.142

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dBμV)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dBμV/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	DFT-S-OFDM BPSK	3 730.02	77.46	H	32.32	7.90	117.68	-95.26	22.42	0.175
		3 730.02	77.11	V	32.32	7.90	117.33	-95.26	22.07	0.161
		3 840.00	77.49	H	32.32	8.23	118.04	-95.26	22.78	0.190
		3 840.00	76.98	V	32.32	8.23	117.53	-95.26	22.27	0.169
		3 949.98	74.96	H	32.20	8.47	115.63	-95.26	20.37	0.109
		3 949.98	75.37	V	32.20	8.47	116.04	-95.26	20.78	0.120
70	DFT-S-OFDM BPSK	3 735.00	77.58	H	32.34	7.85	117.77	-95.26	22.51	0.178
		3 735.00	77.27	V	32.34	7.85	117.46	-95.26	22.20	0.166
		3 840.00	77.69	H	32.32	8.23	118.24	-95.26	22.98	0.199
		3 840.00	77.11	V	32.32	8.23	117.66	-95.26	22.40	0.174
		3 945.00	75.50	H	32.21	8.48	116.19	-95.26	20.93	0.124
		3 945.00	75.35	V	32.21	8.48	116.04	-95.26	20.78	0.120
80	DFT-S-OFDM BPSK	3 740.01	77.61	H	32.36	7.80	117.77	-95.26	22.51	0.178
		3 740.01	77.26	V	32.36	7.80	117.42	-95.26	22.16	0.165
		3 840.00	77.63	H	32.32	8.23	118.18	-95.26	22.92	0.196
		3 840.00	77.15	V	32.32	8.23	117.70	-95.26	22.44	0.175
		3 939.99	75.13	H	32.22	8.49	115.84	-95.26	20.58	0.114
		3 939.99	75.68	V	32.22	8.49	116.39	-95.26	21.13	0.130
90	DFT-S-OFDM BPSK	3 745.02	77.92	H	32.38	7.76	118.06	-95.26	22.80	0.191
		3 745.02	77.57	V	32.38	7.76	117.71	-95.26	22.45	0.176
		3 840.00	77.64	H	32.32	8.23	118.19	-95.26	22.93	0.196
		3 840.00	77.42	V	32.32	8.23	117.97	-95.26	22.71	0.187
		3 934.98	75.47	H	32.23	8.49	116.19	-95.26	20.93	0.124
		3 934.98	75.69	V	32.23	8.49	116.41	-95.26	21.15	0.130
100	DFT-S-OFDM BPSK	3 750.00	77.49	H	32.40	7.71	117.60	-95.26	22.34	0.171
		3 750.00	77.77	V	32.40	7.71	117.88	-95.26	22.62	0.183
		3 840.00	77.18	H	32.32	8.23	117.73	-95.26	22.47	0.177
		3 840.00	76.30	V	32.32	8.23	116.85	-95.26	21.59	0.144
		3 930.00	75.47	H	32.24	8.50	116.21	-95.26	20.95	0.125
		3 930.00	76.10	V	32.24	8.50	116.84	-95.26	21.58	0.144

MIMO

NR 77/78 Low Band (3 450 ~ 3 550 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	CP-OFDM QPSK	3 460.02	78.45	H	31.22	7.70	117.37	-95.26	22.11	0.163
		3 460.02	76.96	V	31.22	7.70	115.88	-95.26	20.62	0.115
		3 500.01	78.41	H	31.30	7.84	117.55	-95.26	22.29	0.170
		3 500.01	78.24	V	31.30	7.84	117.38	-95.26	22.12	0.163
		3 540.00	76.85	H	31.30	7.63	115.78	-95.26	20.52	0.113
		3 540.00	78.21	V	31.30	7.63	117.14	-95.26	21.88	0.154
30	CP-OFDM QPSK	3 465.00	78.27	H	31.23	7.72	117.22	-95.26	21.96	0.157
		3 465.00	77.96	V	31.23	7.72	116.91	-95.26	21.65	0.146
		3 500.01	78.35	H	31.30	7.84	117.49	-95.26	22.23	0.167
		3 500.01	77.85	V	31.30	7.84	116.99	-95.26	21.73	0.149
		3 534.99	75.82	H	31.30	7.64	114.76	-95.26	19.50	0.089
		3 534.99	76.03	V	31.30	7.64	114.97	-95.26	19.71	0.094
40	CP-OFDM QPSK	3 470.01	78.91	H	31.24	7.73	117.88	-95.26	22.62	0.183
		3 470.01	78.52	V	31.24	7.73	117.49	-95.26	22.23	0.167
		3 500.01	78.88	H	31.30	7.84	118.02	-95.26	22.76	0.189
		3 500.01	78.45	V	31.30	7.84	117.59	-95.26	22.33	0.171
		3 529.98	76.44	H	31.30	7.65	115.39	-95.26	20.13	0.103
		3 529.98	77.22	V	31.30	7.65	116.17	-95.26	20.91	0.123
50	CP-OFDM QPSK	3 475.02	78.59	H	31.25	7.74	117.58	-95.26	22.32	0.171
		3 475.02	78.21	V	31.25	7.74	117.20	-95.26	21.94	0.156
		3 500.01	78.63	H	31.30	7.84	117.77	-95.26	22.51	0.178
		3 500.01	78.06	V	31.30	7.84	117.20	-95.26	21.94	0.156
		3 525.00	76.14	H	31.30	7.66	115.10	-95.26	19.84	0.096
		3 525.00	77.18	V	31.30	7.66	116.14	-95.26	20.88	0.123

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	CP-OFDM QPSK	3 480.00	78.42	H	31.26	7.76	117.44	-95.26	22.18	0.165
		3 480.00	78.09	V	31.26	7.76	117.11	-95.26	21.85	0.153
		3 500.01	78.51	H	31.30	7.84	117.65	-95.26	22.39	0.173
		3 500.01	77.97	V	31.30	7.84	117.11	-95.26	21.85	0.153
		3 519.99	75.89	H	31.30	7.70	114.89	-95.26	19.63	0.092
		3 519.99	76.36	V	31.30	7.70	115.36	-95.26	20.10	0.102
70	CP-OFDM QPSK	3 485.01	78.60	H	31.27	7.78	117.65	-95.26	22.39	0.173
		3 485.01	78.24	V	31.27	7.78	117.29	-95.26	22.03	0.160
		3 500.01	78.67	H	31.30	7.84	117.81	-95.26	22.55	0.180
		3 500.01	78.08	V	31.30	7.84	117.22	-95.26	21.96	0.157
		3 514.98	76.51	H	31.30	7.73	115.54	-95.26	20.28	0.107
		3 514.98	76.31	V	31.30	7.73	115.34	-95.26	20.08	0.102
80	CP-OFDM QPSK	3 490.02	78.56	H	31.28	7.80	117.64	-95.26	22.38	0.173
		3 490.02	78.21	V	31.28	7.80	117.29	-95.26	22.03	0.160
		3 500.01	78.62	H	31.30	7.84	117.76	-95.26	22.50	0.178
		3 500.01	78.14	V	31.30	7.84	117.28	-95.26	22.02	0.159
		3 510.00	76.10	H	31.30	7.77	115.17	-95.26	19.91	0.098
		3 510.00	76.66	V	31.30	7.77	115.73	-95.26	20.47	0.111
90	CP-OFDM QPSK	3 495.00	78.92	H	31.29	7.82	118.03	-95.26	22.77	0.189
		3 495.00	78.56	V	31.29	7.82	117.67	-95.26	22.41	0.174
		3 500.01	78.87	H	31.30	7.84	118.01	-95.26	22.75	0.188
		3 500.01	78.39	V	31.30	7.84	117.53	-95.26	22.27	0.169
		3 504.99	76.42	H	31.30	7.80	115.52	-95.26	20.26	0.106
		3 504.99	76.62	V	31.30	7.80	115.72	-95.26	20.46	0.111
100	CP-OFDM QPSK	3 500.01	78.83	H	31.30	7.84	117.97	-95.26	22.71	0.187
		3 500.01	77.62	V	31.30	7.84	116.76	-95.26	21.50	0.141

NR 77/78 High Band (3 700 ~ 3 980 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	CP-OFDM QPSK	3 710.01	77.59	H	32.24	7.96	117.79	-95.26	22.53	0.179
		3 710.01	76.08	V	32.24	7.96	116.28	-95.26	21.02	0.127
		3 840.00	77.57	H	32.32	8.23	118.12	-95.26	22.86	0.193
		3 840.00	77.33	V	32.32	8.23	117.88	-95.26	22.62	0.183
		3 969.99	76.02	H	32.20	8.18	116.40	-95.26	21.14	0.130
		3 969.99	77.42	V	32.20	8.18	117.80	-95.26	22.54	0.180
30	CP-OFDM QPSK	3 715.02	77.41	H	32.26	7.96	117.63	-95.26	22.37	0.173
		3 715.02	77.11	V	32.26	7.96	117.33	-95.26	22.07	0.161
		3 840.00	77.52	H	32.32	8.23	118.07	-95.26	22.81	0.191
		3 840.00	76.97	V	32.32	8.23	117.52	-95.26	22.26	0.168
		3 964.98	74.98	H	32.20	8.25	115.43	-95.26	20.17	0.104
		3 964.98	75.17	V	32.20	8.25	115.62	-95.26	20.36	0.109
40	CP-OFDM QPSK	3 720.00	78.01	H	32.28	7.95	118.24	-95.26	22.98	0.199
		3 720.00	77.70	V	32.28	7.95	117.93	-95.26	22.67	0.185
		3 840.00	77.69	H	32.32	8.23	118.24	-95.26	22.98	0.199
		3 840.00	77.61	V	32.32	8.23	118.16	-95.26	22.90	0.195
		3 960.00	75.50	H	32.20	8.32	116.02	-95.26	20.76	0.119
		3 960.00	76.38	V	32.20	8.32	116.90	-95.26	21.64	0.146
50	CP-OFDM QPSK	3 725.01	77.72	H	32.30	7.95	117.97	-95.26	22.71	0.187
		3 725.01	77.32	V	32.30	7.95	117.57	-95.26	22.31	0.170
		3 840.00	77.57	H	32.32	8.23	118.12	-95.26	22.86	0.193
		3 840.00	77.23	V	32.32	8.23	117.78	-95.26	22.52	0.179
		3 954.99	75.25	H	32.20	8.40	115.85	-95.26	20.59	0.115
		3 954.99	76.32	V	32.20	8.40	116.92	-95.26	21.66	0.147

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	CP-OFDM QPSK	3 730.02	77.60	H	32.32	7.90	117.82	-95.26	22.56	0.180
		3 730.02	77.21	V	32.32	7.90	117.43	-95.26	22.17	0.165
		3 840.00	77.61	H	32.32	8.23	118.16	-95.26	22.90	0.195
		3 840.00	77.11	V	32.32	8.23	117.66	-95.26	22.40	0.174
		3 949.98	75.07	H	32.20	8.47	115.74	-95.26	20.48	0.112
		3 949.98	75.49	V	32.20	8.47	116.16	-95.26	20.90	0.123
70	CP-OFDM QPSK	3 735.00	77.70	H	32.34	7.85	117.89	-95.26	22.63	0.183
		3 735.00	77.37	V	32.34	7.85	117.56	-95.26	22.30	0.170
		3 840.00	77.59	H	32.32	8.23	118.14	-95.26	22.88	0.194
		3 840.00	77.23	V	32.32	8.23	117.78	-95.26	22.52	0.179
		3 945.00	75.63	H	32.21	8.48	116.32	-95.26	21.06	0.128
		3 945.00	75.45	V	32.21	8.48	116.14	-95.26	20.88	0.123
80	CP-OFDM QPSK	3 740.01	77.75	H	32.36	7.80	117.91	-95.26	22.65	0.184
		3 740.01	77.39	V	32.36	7.80	117.55	-95.26	22.29	0.170
		3 840.00	77.60	H	32.32	8.23	118.15	-95.26	22.89	0.195
		3 840.00	77.25	V	32.32	8.23	117.80	-95.26	22.54	0.180
		3 939.99	75.27	H	32.22	8.49	115.98	-95.26	20.72	0.118
		3 939.99	75.78	V	32.22	8.49	116.49	-95.26	21.23	0.133
90	CP-OFDM QPSK	3 745.02	78.06	H	32.38	7.76	118.20	-95.26	22.94	0.197
		3 745.02	77.66	V	32.38	7.76	117.80	-95.26	22.54	0.180
		3 840.00	77.69	H	32.32	8.23	118.24	-95.26	22.98	0.199
		3 840.00	77.54	V	32.32	8.23	118.09	-95.26	22.83	0.192
		3 934.98	75.60	H	32.23	8.49	116.32	-95.26	21.06	0.128
		3 934.98	75.80	V	32.23	8.49	116.52	-95.26	21.26	0.134
100	CP-OFDM QPSK	3 750.00	77.59	H	32.40	7.71	117.70	-95.26	22.44	0.175
		3 750.00	77.89	V	32.40	7.71	118.00	-95.26	22.74	0.188
		3 840.00	77.29	H	32.32	8.23	117.84	-95.26	22.58	0.181
		3 840.00	76.41	V	32.32	8.23	116.96	-95.26	21.70	0.148
		3 930.00	75.57	H	32.24	8.50	116.31	-95.26	21.05	0.127
		3 930.00	76.21	V	32.24	8.50	116.95	-95.26	21.69	0.148

- External Antenna

SISO

NR 77/78 Low Band (3 450 ~ 3 550 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	DFT-S-OFDM BPSK	3 460.02	73.60	H	31.10	7.70	112.40	-95.26	17.14	0.052
		3 460.02	79.43	V	31.10	7.70	118.23	-95.26	22.97	0.198
		3 500.01	73.57	H	31.10	7.84	112.51	-95.26	17.25	0.053
		3 500.01	79.25	V	31.10	7.84	118.19	-95.26	22.93	0.196
		3 540.00	73.77	H	31.02	7.63	112.42	-95.26	17.16	0.052
		3 540.00	79.22	V	31.02	7.63	117.87	-95.26	22.61	0.182
30	DFT-S-OFDM BPSK	3 465.00	73.23	H	31.10	7.72	112.05	-95.26	16.79	0.048
		3 465.00	79.35	V	31.10	7.72	118.17	-95.26	22.91	0.196
		3 500.01	72.79	H	31.10	7.84	111.73	-95.26	16.47	0.044
		3 500.01	79.29	V	31.10	7.84	118.23	-95.26	22.97	0.198
		3 534.99	73.34	H	31.03	7.64	112.01	-95.26	16.75	0.047
		3 534.99	79.21	V	31.03	7.64	117.88	-95.26	22.62	0.183
40	DFT-S-OFDM BPSK	3 470.01	73.31	H	31.10	7.73	112.14	-95.26	16.88	0.049
		3 470.01	79.24	V	31.10	7.73	118.07	-95.26	22.81	0.191
		3 500.01	73.02	H	31.10	7.84	111.96	-95.26	16.70	0.047
		3 500.01	79.13	V	31.10	7.84	118.07	-95.26	22.81	0.191
		3 529.98	73.26	H	31.04	7.65	111.95	-95.26	16.69	0.047
		3 529.98	79.16	V	31.04	7.65	117.85	-95.26	22.59	0.182
50	DFT-S-OFDM BPSK	3 475.02	73.20	H	31.10	7.74	112.04	-95.26	16.78	0.048
		3 475.02	78.65	V	31.10	7.74	117.49	-95.26	22.23	0.167
		3 500.01	73.05	H	31.10	7.84	111.99	-95.26	16.73	0.047
		3 500.01	78.88	V	31.10	7.84	117.82	-95.26	22.56	0.180
		3 525.00	73.23	H	31.05	7.66	111.94	-95.26	16.68	0.047
		3 525.00	79.10	V	31.05	7.66	117.81	-95.26	22.55	0.180

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	DFT-S-OFDM BPSK	3 480.00	72.97	H	31.10	7.76	111.83	-95.26	16.57	0.045
		3 480.00	79.08	V	31.10	7.76	117.94	-95.26	22.68	0.185
		3 500.01	72.31	H	31.10	7.84	111.25	-95.26	15.99	0.040
		3 500.01	78.33	V	31.10	7.84	117.27	-95.26	22.01	0.159
		3 519.99	73.67	H	31.06	7.70	112.43	-95.26	17.17	0.052
		3 519.99	79.09	V	31.06	7.70	117.85	-95.26	22.59	0.182
70	DFT-S-OFDM BPSK	3 485.01	72.52	H	31.10	7.78	111.40	-95.26	16.14	0.041
		3 485.01	79.33	V	31.10	7.78	118.21	-95.26	22.95	0.197
		3 500.01	72.29	H	31.10	7.84	111.23	-95.26	15.97	0.040
		3 500.01	79.29	V	31.10	7.84	118.23	-95.26	22.97	0.198
		3 514.98	73.65	H	31.07	7.73	112.45	-95.26	17.19	0.052
		3 514.98	79.33	V	31.07	7.73	118.13	-95.26	22.87	0.194
80	DFT-S-OFDM BPSK	3 490.02	72.63	H	31.10	7.80	111.53	-95.26	16.27	0.042
		3 490.02	78.63	V	31.10	7.80	117.53	-95.26	22.27	0.169
		3 500.01	71.83	H	31.10	7.84	110.77	-95.26	15.51	0.036
		3 500.01	78.88	V	31.10	7.84	117.82	-95.26	22.56	0.180
		3 510.00	73.54	H	31.08	7.77	112.39	-95.26	17.13	0.052
		3 510.00	79.34	V	31.08	7.77	118.19	-95.26	22.93	0.196
90	DFT-S-OFDM BPSK	3 495.00	73.46	H	31.10	7.82	112.38	-95.26	17.12	0.052
		3 495.00	79.27	V	31.10	7.82	118.19	-95.26	22.93	0.196
		3 500.01	72.21	H	31.10	7.84	111.15	-95.26	15.89	0.039
		3 500.01	78.66	V	31.10	7.84	117.60	-95.26	22.34	0.171
		3 504.99	74.17	H	31.09	7.80	113.06	-95.26	17.80	0.060
		3 504.99	79.24	V	31.09	7.80	118.13	-95.26	22.87	0.194
100	DFT-S-OFDM BPSK	3 500.01	73.99	H	31.10	7.84	112.93	-95.26	17.67	0.059
		3 500.01	78.99	V	31.10	7.84	117.93	-95.26	22.67	0.185

NR 77/78 High Band (3 700 ~ 3 980 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	DFT-S-OFDM BPSK	3 710.01	72.13	H	32.12	7.96	112.21	-95.26	16.95	0.050
		3 710.01	77.85	V	32.12	7.96	117.93	-95.26	22.67	0.185
		3 840.00	72.11	H	32.08	8.23	112.42	-95.26	17.16	0.052
		3 840.00	77.85	V	32.08	8.23	118.16	-95.26	22.90	0.195
		3 969.99	72.44	H	32.06	8.18	112.68	-95.26	17.42	0.055
		3 969.99	77.92	V	32.06	8.18	118.16	-95.26	22.90	0.195
30	DFT-S-OFDM BPSK	3 715.02	72.00	H	32.13	7.96	112.09	-95.26	16.83	0.048
		3 715.02	77.73	V	32.13	7.96	117.82	-95.26	22.56	0.180
		3 840.00	71.96	H	32.08	8.23	112.27	-95.26	17.01	0.050
		3 840.00	77.69	V	32.08	8.23	118.00	-95.26	22.74	0.188
		3 964.98	72.30	H	32.07	8.25	112.62	-95.26	17.36	0.054
		3 964.98	77.76	V	32.07	8.25	118.08	-95.26	22.82	0.192
40	DFT-S-OFDM BPSK	3 720.00	73.00	H	32.14	7.95	113.09	-95.26	17.83	0.061
		3 720.00	77.90	V	32.14	7.95	117.99	-95.26	22.73	0.188
		3 840.00	72.69	H	32.08	8.23	113.00	-95.26	17.74	0.059
		3 840.00	77.84	V	32.08	8.23	118.15	-95.26	22.89	0.195
		3 960.00	72.92	H	32.08	8.32	113.32	-95.26	18.06	0.064
		3 960.00	77.83	V	32.08	8.32	118.23	-95.26	22.97	0.198
50	DFT-S-OFDM BPSK	3 725.01	72.40	H	32.15	7.95	112.50	-95.26	17.24	0.053
		3 725.01	78.08	V	32.15	7.95	118.18	-95.26	22.92	0.196
		3 840.00	72.35	H	32.08	8.23	112.66	-95.26	17.40	0.055
		3 840.00	77.93	V	32.08	8.23	118.24	-95.26	22.98	0.199
		3 954.99	72.71	H	32.09	8.40	113.20	-95.26	17.94	0.062
		3 954.99	77.45	V	32.09	8.40	117.94	-95.26	22.68	0.185

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	DFT-S-OFDM BPSK	3 730.02	72.13	H	32.16	7.90	112.19	-95.26	16.93	0.049
		3 730.02	77.78	V	32.16	7.90	117.84	-95.26	22.58	0.181
		3 840.00	72.04	H	32.08	8.23	112.35	-95.26	17.09	0.051
		3 840.00	77.66	V	32.08	8.23	117.97	-95.26	22.71	0.187
		3 949.98	72.41	H	32.10	8.47	112.98	-95.26	17.72	0.059
		3 949.98	77.19	V	32.10	8.47	117.76	-95.26	22.50	0.178
70	DFT-S-OFDM BPSK	3 735.00	72.31	H	32.17	7.85	112.33	-95.26	17.07	0.051
		3 735.00	77.98	V	32.17	7.85	118.00	-95.26	22.74	0.188
		3 840.00	72.24	H	32.08	8.23	112.55	-95.26	17.29	0.054
		3 840.00	77.85	V	32.08	8.23	118.16	-95.26	22.90	0.195
		3 945.00	72.58	H	32.11	8.48	113.17	-95.26	17.91	0.062
		3 945.00	77.32	V	32.11	8.48	117.91	-95.26	22.65	0.184
80	DFT-S-OFDM BPSK	3 740.01	71.99	H	32.18	7.80	111.97	-95.26	16.71	0.047
		3 740.01	77.63	V	32.18	7.80	117.61	-95.26	22.35	0.172
		3 840.00	71.91	H	32.08	8.23	112.22	-95.26	16.96	0.050
		3 840.00	77.52	V	32.08	8.23	117.83	-95.26	22.57	0.181
		3 939.99	72.27	H	32.12	8.49	112.88	-95.26	17.62	0.058
		3 939.99	77.05	V	32.12	8.49	117.66	-95.26	22.40	0.174
90	DFT-S-OFDM BPSK	3 745.02	72.13	H	32.19	7.76	112.08	-95.26	16.82	0.048
		3 745.02	77.82	V	32.19	7.76	117.77	-95.26	22.51	0.178
		3 840.00	72.05	H	32.08	8.23	112.36	-95.26	17.10	0.051
		3 840.00	77.65	V	32.08	8.23	117.96	-95.26	22.70	0.186
		3 934.98	72.40	H	32.13	8.49	113.02	-95.26	17.76	0.060
		3 934.98	77.16	V	32.13	8.49	117.78	-95.26	22.52	0.179
100	DFT-S-OFDM BPSK	3 750.00	71.89	H	32.20	7.71	111.80	-95.26	16.54	0.045
		3 750.00	77.54	V	32.20	7.71	117.45	-95.26	22.19	0.166
		3 840.00	71.82	H	32.08	8.23	112.13	-95.26	16.87	0.049
		3 840.00	77.39	V	32.08	8.23	117.70	-95.26	22.44	0.175
		3 930.00	72.18	H	32.14	8.50	112.82	-95.26	17.56	0.057
		3 930.00	76.94	V	32.14	8.50	117.58	-95.26	22.32	0.171

MIMO

NR 77/78 Low Band (3 450 ~ 3 550 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	CP-OFDM QPSK	3 460.02	73.20	H	31.10	7.70	112.00	-95.26	16.74	0.047
		3 460.02	79.17	V	31.10	7.70	117.97	-95.26	22.71	0.187
		3 500.01	73.13	H	31.10	7.84	112.07	-95.26	16.81	0.048
		3 500.01	79.23	V	31.10	7.84	118.17	-95.26	22.91	0.196
		3 540.00	73.35	H	31.02	7.63	112.00	-95.26	16.74	0.047
		3 540.00	78.79	V	31.02	7.63	117.44	-95.26	22.18	0.165
30	CP-OFDM QPSK	3 465.00	72.79	H	31.10	7.72	111.61	-95.26	16.35	0.043
		3 465.00	79.18	V	31.10	7.72	118.00	-95.26	22.74	0.188
		3 500.01	72.37	H	31.10	7.84	111.31	-95.26	16.05	0.040
		3 500.01	79.16	V	31.10	7.84	118.10	-95.26	22.84	0.192
		3 534.99	72.90	H	31.03	7.64	111.57	-95.26	16.31	0.043
		3 534.99	78.79	V	31.03	7.64	117.46	-95.26	22.20	0.166
40	CP-OFDM QPSK	3 470.01	72.88	H	31.10	7.73	111.71	-95.26	16.45	0.044
		3 470.01	78.83	V	31.10	7.73	117.66	-95.26	22.40	0.174
		3 500.01	72.60	H	31.10	7.84	111.54	-95.26	16.28	0.042
		3 500.01	78.70	V	31.10	7.84	117.64	-95.26	22.38	0.173
		3 529.98	72.85	H	31.04	7.65	111.54	-95.26	16.28	0.042
		3 529.98	78.74	V	31.04	7.65	117.43	-95.26	22.17	0.165
50	CP-OFDM QPSK	3 475.02	72.76	H	31.10	7.74	111.60	-95.26	16.34	0.043
		3 475.02	78.24	V	31.10	7.74	117.08	-95.26	21.82	0.152
		3 500.01	72.63	H	31.10	7.84	111.57	-95.26	16.31	0.043
		3 500.01	78.45	V	31.10	7.84	117.39	-95.26	22.13	0.163
		3 525.00	72.79	H	31.05	7.66	111.50	-95.26	16.24	0.042
		3 525.00	78.68	V	31.05	7.66	117.39	-95.26	22.13	0.163

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	CP-OFDM QPSK	3 480.00	72.53	H	31.10	7.76	111.39	-95.26	16.13	0.041
		3 480.00	78.67	V	31.10	7.76	117.53	-95.26	22.27	0.169
		3 500.01	71.90	H	31.10	7.84	110.84	-95.26	15.58	0.036
		3 500.01	77.92	V	31.10	7.84	116.86	-95.26	21.60	0.145
		3 519.99	73.25	H	31.06	7.70	112.01	-95.26	16.75	0.047
		3 519.99	78.65	V	31.06	7.70	117.41	-95.26	22.15	0.164
70	CP-OFDM QPSK	3 485.01	72.10	H	31.10	7.78	110.98	-95.26	15.72	0.037
		3 485.01	78.91	V	31.10	7.78	117.79	-95.26	22.53	0.179
		3 500.01	71.87	H	31.10	7.84	110.81	-95.26	15.55	0.036
		3 500.01	78.89	V	31.10	7.84	117.83	-95.26	22.57	0.181
		3 514.98	73.23	H	31.07	7.73	112.03	-95.26	16.77	0.048
		3 514.98	78.92	V	31.07	7.73	117.72	-95.26	22.46	0.176
80	CP-OFDM QPSK	3 490.02	72.21	H	31.10	7.80	111.11	-95.26	15.85	0.038
		3 490.02	78.19	V	31.10	7.80	117.09	-95.26	21.83	0.152
		3 500.01	71.40	H	31.10	7.84	110.34	-95.26	15.08	0.032
		3 500.01	78.48	V	31.10	7.84	117.42	-95.26	22.16	0.165
		3 510.00	73.12	H	31.08	7.77	111.97	-95.26	16.71	0.047
		3 510.00	78.90	V	31.08	7.77	117.75	-95.26	22.49	0.178
90	CP-OFDM QPSK	3 495.00	73.03	H	31.10	7.82	111.95	-95.26	16.69	0.047
		3 495.00	78.88	V	31.10	7.82	117.80	-95.26	22.54	0.180
		3 500.01	71.80	H	31.10	7.84	110.74	-95.26	15.48	0.035
		3 500.01	78.24	V	31.10	7.84	117.18	-95.26	21.92	0.156
		3 504.99	73.76	H	31.09	7.80	112.65	-95.26	17.39	0.055
		3 504.99	78.83	V	31.09	7.80	117.72	-95.26	22.46	0.176
100	CP-OFDM QPSK	3 500.01	73.57	H	31.10	7.84	112.51	-95.26	17.25	0.053
		3 500.01	78.55	V	31.10	7.84	117.49	-95.26	22.23	0.167

NR 77/78 High Band (3 700 ~ 3 980 MHz)

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
20	CP-OFDM QPSK	3 710.01	72.34	H	32.12	7.96	112.42	-95.26	17.16	0.052
		3 710.01	78.07	V	32.12	7.96	118.15	-95.26	22.89	0.195
		3 840.00	72.32	H	32.08	8.23	112.63	-95.26	17.37	0.055
		3 840.00	77.90	V	32.08	8.23	118.21	-95.26	22.95	0.197
		3 969.99	72.62	H	32.06	8.18	112.86	-95.26	17.60	0.058
		3 969.99	77.93	V	32.06	8.18	118.17	-95.26	22.91	0.196
30	CP-OFDM QPSK	3 715.02	72.17	H	32.13	7.96	112.26	-95.26	17.00	0.050
		3 715.02	77.91	V	32.13	7.96	118.00	-95.26	22.74	0.188
		3 840.00	72.15	H	32.08	8.23	112.46	-95.26	17.20	0.053
		3 840.00	77.89	V	32.08	8.23	118.20	-95.26	22.94	0.197
		3 964.98	72.52	H	32.07	8.25	112.84	-95.26	17.58	0.057
		3 964.98	77.80	V	32.07	8.25	118.12	-95.26	22.86	0.193
40	CP-OFDM QPSK	3 720.00	73.17	H	32.14	7.95	113.26	-95.26	18.00	0.063
		3 720.00	78.07	V	32.14	7.95	118.16	-95.26	22.90	0.195
		3 840.00	72.87	H	32.08	8.23	113.18	-95.26	17.92	0.062
		3 840.00	77.90	V	32.08	8.23	118.21	-95.26	22.95	0.197
		3 960.00	73.12	H	32.08	8.32	113.52	-95.26	18.26	0.067
		3 960.00	77.73	V	32.08	8.32	118.13	-95.26	22.87	0.194
50	CP-OFDM QPSK	3 725.01	72.61	H	32.15	7.95	112.71	-95.26	17.45	0.056
		3 725.01	77.89	V	32.15	7.95	117.99	-95.26	22.73	0.188
		3 840.00	72.55	H	32.08	8.23	112.86	-95.26	17.60	0.058
		3 840.00	77.90	V	32.08	8.23	118.21	-95.26	22.95	0.197
		3 954.99	72.89	H	32.09	8.40	113.38	-95.26	18.12	0.065
		3 954.99	77.62	V	32.15	7.95	112.71	-95.26	17.45	0.056

BW (MHz)	Modulation	Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P.	
									(dB m)	(W)
60	CP-OFDM QPSK	3 730.02	72.32	H	32.16	7.90	112.38	-95.26	17.12	0.052
		3 730.02	77.95	V	32.16	7.90	118.01	-95.26	22.75	0.188
		3 840.00	72.25	H	32.08	8.23	112.56	-95.26	17.30	0.054
		3 840.00	77.87	V	32.08	8.23	118.18	-95.26	22.92	0.196
		3 949.98	72.58	H	32.10	8.47	113.15	-95.26	17.89	0.062
		3 949.98	77.40	V	32.10	8.47	117.97	-95.26	22.71	0.187
70	CP-OFDM QPSK	3 735.00	72.49	H	32.17	7.85	112.51	-95.26	17.25	0.053
		3 735.00	78.19	V	32.17	7.85	118.21	-95.26	22.95	0.197
		3 840.00	72.43	H	32.08	8.23	112.74	-95.26	17.48	0.056
		3 840.00	77.89	V	32.08	8.23	118.20	-95.26	22.94	0.197
		3 945.00	72.78	H	32.11	8.48	113.37	-95.26	18.11	0.065
		3 945.00	77.50	V	32.11	8.48	118.09	-95.26	22.83	0.192
80	CP-OFDM QPSK	3 740.01	72.16	H	32.18	7.80	112.14	-95.26	16.88	0.049
		3 740.01	77.84	V	32.18	7.80	117.82	-95.26	22.56	0.180
		3 840.00	72.13	H	32.08	8.23	112.44	-95.26	17.18	0.052
		3 840.00	77.74	V	32.08	8.23	118.05	-95.26	22.79	0.190
		3 939.99	72.46	H	32.12	8.49	113.07	-95.26	17.81	0.060
		3 939.99	77.26	V	32.12	8.49	117.87	-95.26	22.61	0.182
90	CP-OFDM QPSK	3 745.02	72.34	H	32.19	7.76	112.29	-95.26	17.03	0.050
		3 745.02	78.04	V	32.19	7.76	117.99	-95.26	22.73	0.188
		3 840.00	72.25	H	32.08	8.23	112.56	-95.26	17.30	0.054
		3 840.00	77.85	V	32.08	8.23	118.16	-95.26	22.90	0.195
		3 934.98	72.57	H	32.13	8.49	113.19	-95.26	17.93	0.062
		3 934.98	77.37	V	32.13	8.49	117.99	-95.26	22.73	0.188
100	CP-OFDM QPSK	3 750.00	72.06	H	32.20	7.71	111.97	-95.26	16.71	0.047
		3 750.00	77.72	V	32.20	7.71	117.63	-95.26	22.37	0.173
		3 840.00	72.03	H	32.08	8.23	112.34	-95.26	17.08	0.051
		3 840.00	77.59	V	32.08	8.23	117.90	-95.26	22.64	0.184
		3 930.00	72.39	H	32.14	8.50	113.03	-95.26	17.77	0.060
		3 930.00	77.16	V	32.14	8.50	117.80	-95.26	22.54	0.180

2.4.2. Spurious Radiated Emissions

- Internal Antenna

SISO

Low Band (3 450 ~ 3 550 MHz)

NR Band 77/78 (80 MHz - DFTS-OFDM QPSK)

Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (3 490.02 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-
Middle Channel (3 500.01 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-
High Channel (3 510.00 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-

High Band (3 700 ~ 3 980 MHz)

NR Band 77/78 (80 MHz - DFTS-OFDM QPSK)

Frequency (MHz)	Measured Level (dB μ V)	Ant. Pol.	AF (dB/m)	AMP+CL (dB)	E (dB μ V/m)	CF (dB)	E.I.R.P. (dB m)	Limit (dB m)	Margin (dB)
Low Channel (3 740.01 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-
Middle Channel (3 840.00 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-
High Channel (3 939.99 MHz)									
Below 1 000.00	Not detected	-	-	-	-	-	-	-	-
Above 1 000.00	Not detected	-	-	-	-	-	-	-	-