TEST REPORT

No. I20Z70377-WMD03

for

Samsung Electronics Co., Ltd.

Smart Phone

Model Name: SM-A025U

FCC ID: ZCASMA025U

with

Hardware Version: REV1.0

Software Version: A025U.001

Issued Date: 2021-01-14

Note:

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REPORT HISTORY

Report Number	Revision	Description	Issue Date
I20Z70377-WMD03	Rev.0	1st edition	2021-01-14

Note: the latest revision of the test report supersedes all previous version.

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1. Test Laboratory

1.1. Introduction & Accreditation

Telecommunication Technology Labs, CAICT is an ISO/IEC 17025:2017 accredited test laboratory under NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP) with lab code 600118-0 and is also an FCC accredited test laboratory (CN5017), and ISED accredited test laboratory (CN0066). The detail accreditation scope can be found on NVLAP website.

1.2. Testing Location

Location 1: CTTL (huayuan North Road)

Address:	No. 52, Huayuan North Road, Haidian District, Beijing, P. R. China 100191

Location 2: CTTL (Shouxiang)

Address:	No. 51 Shouxiang Science Building, Xueyuan Road, Haidian District, Beijing, P. R. China 100191

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1.3. Testing Environment

Normal Temperature: 15-35℃

Relative Humidity: 20-75%

1.4. Project Data

Testing Start Date: 2020-11-19

Testing End Date: 2021-01-07

1.5. Signature

Dong Yuan

(Prepared this test report)

Zhou Yu

(Reviewed this test report)

Zhao Hui Lin

Deputy Director of the laboratory

(Approved this test report)

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2. Client Information

2.1. Applicant Information

Company Name:	Samsung Electronics Co., Ltd.
Address /Post:	19 Chapin Rd.,Building D Pine Brook, NJ 07058
Contact:	Jenni Chun
Email:	j1.chun@samsung.com
Telephone:	+1-201-937-4203

2.2. Manufacturer Information

Company Name:	Samsung Electronics Co., Ltd.
Address /Post:	Samsung R5, Maetan dong 129, Samsung ro Youngtong gu, Suwon city 443 742, Korea
Contact:	Sunghoon Cho
Email:	ggobi.cho@samsung.com
Telephone:	+82-10-2722-4159

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3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

Description	Smart Phone
Model Name	SM-A025U
FCC ID	ZCASMA025U
Antenna	Embedded
Output power	24.07dBm maximum EIRP measured for LTE Band 25
Extreme vol. Limits	3.6VDC to 4.2VDC (nominal: 3.85VDC)
Extreme temp. Tolerance	-10°C to +55°C

Note: Components list, please refer to documents of the manufacturer; it is also included in the original test record of CTTL.

3.2. Internal Identification of EUT used during the test

EUT ID*	SN	HW Version	SW Version	Date of receipt
UT10a	2070377UT10a	REV1.0	A025U.001	2020-11-19
UT05a	2070377UT05a	REV1.0	A025U.001	2020-11-23
UT42a	2070377UT42a	REV1.0	A025U.001	2020-12-24

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

AE ID*	Description
AE1	Battery

AE1

Model	HQ-50S
Manufacturer	SUCD(FUJIAN) Electronics Co.,Ltd
Capacitance	5000mAh

*AE ID: is used to identify the test sample in the lab internally.

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4. Reference Documents

4.1. Documents supplied by applicant

EUT parameters, referring to Annex A for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES	10-1-19 Edition
FCC Part 22	PUBLIC MOBILE SERVICES	10-1-19 Edition
FCC Part 27	MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES	10-1-19 Edition
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	10-1-19 Edition
ANSI/TIA-603-E	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards	2016
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015
KDB 971168 D01	MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS	v03r01

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5. Laboratory Environment

Control room / conducted chamber did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. =20 %, Max. = 80 %
Shielding effectiveness	> 110 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 0.5 Ω

Semi-anechoic chamber SAC-1 (23 meters×17meters×10meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 35 ˚C
Relative humidity	Min. = 15 %, Max. = 75 %
Shielding effectiveness	0.014MHz - 1MHz, >60dB; 1MHz - 1000MHz, >90dB.
Electrical insulation	> 2 MΩ
Ground system resistance	< 4Ω
Normalised site attenuation (NSA)	< ± 4 dB, 3m/10m distance, from 30 to 1000 MHz
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

Fully-anechoic chamber FAC-3 (8.6 meters×6.1 meters×3.85 meters) did not exceed following limits along the EMC testing:

Temperature	Min. = 15 ˚C, Max. = 30 ˚C
Relative humidity	Min. = 35 %, Max. = 60 %
Shielding effectiveness	> 110 dB
Electrical insulation	>2 MΩ
Ground system resistance	< 1 Ω
Site voltage standing-wave ratio (S_{VSWR})	Between 0 and 6 dB, from 1GHz to 18GHz
Uniformity of field strength	Between 0 and 6 dB, from 80 to 6000 MHz

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6. Summary Of Test Result

LTE Band 7

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

LTE Band 12

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

LTE Band 13

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

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LTE Band 25

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	24.232	P
2	Emission Limit	2.1051/24.238	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	24.238	P
6	Band Edge Compliance	24.238	P
7	Conducted Spurious Emission	24.238	P
8	Peak-to-Average Power Ratio	24.232	P

LTE Band 26(814MHz~824MHz)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	90.635	P
2	Emission Limit	2.1051/90.691	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	2.1049	P
6	Band Edge Compliance	90.691	P
7	Conducted Spurious Emission	90.691	P

LTE Band 26(824MHz~849MHz)

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	22.913	P
2	Emission Limit	2.1051/22.917	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	22.917	P
6	Band Edge Compliance	22.917	P
7	Conducted Spurious Emission	22.917	P

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LTE Band 41

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

LTE Band 66

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

LTE Band 71

Items	Test Name	Clause in FCC rules	Verdict
1	Output Power	27.50	P
2	Emission Limit	2.1051/27.53	P
3	Frequency Stability	2.1055	P
4	Occupied Bandwidth	2.1049	P
5	Emission Bandwidth	27.53	P
6	Band Edge Compliance	27.53	P
7	Conducted Spurious Emission	27.53	P
8	Peak-to-Average Power Ratio	27.50	P

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Terms used in Verdict column

P	Pass. The EUT complies with the essential requirements in the standard.
NP	Not Performed. The test was not performed by CTTL.
NA	Not Applicable.The test was not applicable.
BR	Re-use test data from basic model report.
F	Fail. The EUT does not comply with the essential requirements in the standard.

LTE Band 25, Band 66 and Band 26 overlaps the entire frequency range of LTE Band 2, Band 4 and Band 5. Therefore, test data provided in this report covers Band 2, Band 4, Band 5 as well as Band 25, Band 66, Band 26.
LTE Band 41 is tested by power class 2.

Explanation of worst-case configuration
The worst-case scenario for all measurements is based on the conducted output power measurement investigation results. Output power was measured on QPSK,16QAM and 64QAM modulations. It was found that QPSK was the worst case. All testing was performed using QPSK modulations to represent the worst case unless otherwise stated. The test results shown in the following sections represent the worst case emission.

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7. Test Equipment Utilized

Description	Type	Series Number	Manufacture	Cal Due Date	Calibration Interval
Wideband Radio Communication Tester	CMW500	159082	R&S	2021-12-17	1 year
Spectrum Analyzer	FSU	200030	R&S	2021-06-01	1 year
Radio Communication Analyzer	MT8821C	6201763159	Anritsu	2021-08-12	1 year
Climate Chamber	SH-242	93008556	ESPEC	2023-12-23	3 years
EMI Antenna	9117	167	Schwarzbeck	2021-08-19	1 year
EMI Antenna	3117	00119021	ETS-Lindgren	2021-02-06	1 year
EMI Antenna	3117	00119024	ETS-Lindgren	2021-05-08	1 year
Test Receiver	E4440A	MY48250642	Agilent	2021-03-12	1 year
Universal Radio Communication Tester	CMW500	143008	R&S	2022-01-01	1 year
EMI Antenna	VULB9163	9163-301	Schwarzbeck	2021-08-04	1 year
Signal Generator	N5183A	MY49060052	Agilent	2021-07-01	1 year
Power Amplifier	5S1G4	0341863	AR	/	/

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Annex A: Measurement Results

A.1 Output Power

A.1.1 Summary

During the process of testing, the EUT was controlled via communication tester to ensure max power transmission and proper modulation.

In all cases, output power is within the specified limits.

A.1.2 Conducted

A.1.2.1 Method of Measurements

The EUT was set up for the max output power with pseudo random data modulation.

These measurements were done at 3 frequencies (bottom, middle and top of operational frequency range) for each bandwidth.

A.1.2.2 Measurement Result

LTE band 7

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2567.5	23.12	22.27	21.33
		2535.0	23.25	22.29	21.44
		2502.5	23.31	22.75	21.52
	1 RB low	2567.5	23.24	22.30	21.44
		2535.0	23.34	22.38	21.63
		2502.5	23.45	22.87	21.69
	50% RB mid	2567.5	22.16	21.18	20.17
		2535.0	22.16	21.24	20.42
		2502.5	22.28	21.45	20.41
	100% RB	2567.5	22.11	21.07	20.16
		2535.0	22.20	21.23	20.35
		2502.5	22.31	21.35	20.01
10MHz	1 RB high	2565.0	23.19	22.17	21.45
		2535.0	23.32	22.19	21.61
		2505.0	23.32	22.73	21.81
	1 RB low	2565.0	23.36	22.37	21.60
		2535.0	23.43	22.38	21.99
		2505.0	23.58	22.82	21.92
	50% RB mid	2565.0	22.13	21.20	20.13
		2535.0	22.19	21.21	20.39
		2505.0	22.32	21.34	20.42
	100% RB	2565.0	22.19	21.17	20.13
		2535.0	22.19	21.16	20.35

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		2505.0	22.30	21.38	20.44
15MHz	1 RB high	2562.5	23.11	22.50	21.18
		2535.0	23.30	22.52	21.58
		2507.5	23.47	22.41	21.88
	1 RB low	2562.5	23.18	22.54	21.49
		2535.0	23.28	22.49	21.73
		2507.5	23.51	22.47	21.86
	50% RB mid	2562.5	22.21	21.28	20.11
		2535.0	22.40	21.34	20.62
		2507.5	22.62	21.65	20.85
	100% RB	2562.5	22.22	21.20	20.18
		2535.0	22.32	21.28	20.66
		2507.5	22.61	21.57	20.77
20MHz	1 RB high	2560.0	23.16	22.64	21.84
		2535.0	23.42	22.80	22.00
		2510.0	23.43	22.91	21.94
	1 RB low	2560.0	23.29	22.72	21.92
		2535.0	23.48	22.78	21.98
		2510.0	23.52	22.91	21.95
	50% RB mid	2560.0	22.41	21.39	20.59
		2535.0	22.55	21.54	20.74
		2510.0	22.75	21.77	20.97
	100% RB	2560.0	22.29	21.26	20.46
		2535.0	22.51	21.52	20.72
		2510.0	22.70	21.72	20.92

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LTE band 12

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	715.3	23.77	23.33	23.06
		707.5	23.73	23.32	22.80
		699.7	23.56	23.48	22.47
	1 RB low	715.3	23.66	23.29	23.12
		707.5	23.71	23.28	22.78
		699.7	23.55	23.46	22.62
	50% RB mid	715.3	23.76	23.47	22.93
		707.5	23.66	23.29	22.63
		699.7	23.52	23.25	22.60
	100% RB	715.3	23.42	22.56	21.75
		707.5	23.20	22.34	21.58
		699.7	22.98	21.96	21.41
3MHz	1 RB high	714.5	23.74	23.38	22.87
		707.5	23.78	23.14	22.72
		700.5	23.60	23.53	22.67
	1 RB low	714.5	23.78	23.45	22.96
		707.5	23.61	23.05	22.81
		700.5	23.56	23.49	22.58
	50% RB mid	714.5	23.41	22.49	21.90
		707.5	23.25	22.35	21.66
		700.5	23.14	22.29	21.48
	100% RB	714.5	23.38	22.38	22.01
		707.5	23.34	22.38	21.69
		700.5	23.12	22.17	21.51
5MHz	1 RB high	713.5	23.93	23.52	22.90
		707.5	23.78	23.38	22.79
		701.5	23.66	23.67	22.66
	1 RB low	713.5	23.87	23.46	22.98
		707.5	23.76	23.29	22.76
		701.5	23.64	23.61	22.68
	50% RB mid	713.5	23.38	22.44	21.79
		707.5	23.26	22.30	21.70
		701.5	23.24	22.47	21.69
	100% RB	713.5	23.38	22.32	21.88
		707.5	23.31	22.31	21.75
		701.5	23.30	22.35	21.56
10MHz	1 RB high	711.0	24.00	23.35	23.15
		707.5	23.81	23.25	22.84
		704.0	23.77	23.79	22.84
	1 RB low	711.0	23.99	23.45	23.08

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		707.5	23.98	23.34	23.04
		704.0	23.82	23.78	23.33
	50% RB mid	711.0	23.32	22.56	21.84
		707.5	23.36	22.28	21.71
		704.0	23.27	22.32	21.63
	100% RB	711.0	23.34	22.46	21.80
		707.5	23.32	22.24	21.74
		704.0	23.35	22.43	21.73

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LTE band 13

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	784.5	24.61	23.55	22.88
		782.0	24.39	23.43	22.73
		779.5	24.48	23.86	22.71
	1 RB low	784.5	24.59	23.63	23.17
		782.0	24.44	23.55	22.85
		779.5	24.57	23.69	22.68
	50% RB mid	784.5	23.63	22.69	21.93
		782.0	23.44	22.62	21.80
		779.5	23.42	22.61	21.68
	100% RB	784.5	23.62	22.59	21.91
		782.0	23.42	22.50	21.80
		779.5	23.39	22.49	21.63
10MHz	1 RB high	782.0	24.63	23.52	22.92
	1 RB low	782.0	24.73	23.51	22.99
	50% RB mid	782.0	23.48	22.52	21.72
	100% RB	782.0	23.52	22.51	21.90

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LTE band 25

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1914.3	24.41	23.51	23.08
		1882.5	24.40	23.58	23.11
		1850.7	24.57	23.68	23.13
	1 RB low	1914.3	24.33	23.42	23.08
		1882.5	24.42	23.46	22.91
		1850.7	24.59	23.70	23.05
	50% RB mid	1914.3	24.39	23.51	22.98
		1882.5	24.40	23.69	22.95
		1850.7	24.60	23.64	23.07
	100% RB	1914.3	23.43	22.49	21.97
		1882.5	23.47	22.63	22.35
		1850.7	23.59	22.70	21.93
3MHz	1 RB high	1913.5	24.32	23.45	23.22
		1882.5	24.52	23.35	23.12
		1851.5	24.54	23.95	23.10
	1 RB low	1913.5	24.46	23.55	23.28
		1882.5	24.65	23.53	23.32
		1851.5	24.66	24.08	23.27
	50% RB mid	1913.5	23.51	22.60	22.02
		1882.5	23.51	22.60	21.91
		1851.5	23.61	22.66	22.00
	100% RB	1913.5	23.44	22.41	21.97
		1882.5	23.48	22.50	21.87
		1851.5	23.58	22.65	21.98
5MHz	1 RB high	1912.5	24.57	23.90	23.28
		1882.5	24.56	23.71	23.14
		1852.5	24.50	23.65	22.92
	1 RB low	1912.5	24.74	24.02	23.26
		1882.5	24.69	23.81	23.21
		1852.5	24.72	23.77	23.20
	50% RB mid	1912.5	23.53	22.59	21.97
		1882.5	23.56	22.56	21.92
		1852.5	23.42	22.54	21.84
	100% RB	1912.5	23.53	22.66	22.18
		1882.5	23.51	22.50	21.92
		1852.5	23.44	22.49	21.82
10MHz	1 RB high	1910.0	24.58	23.65	23.32
		1882.5	24.70	23.60	23.11
		1855.0	24.67	24.07	23.10
	1 RB low	1910.0	24.61	23.60	23.35

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		1882.5	24.69	23.58	23.23
		1855.0	24.74	24.03	23.28
	50% RB mid	1910.0	23.41	22.54	22.00
		1882.5	23.51	22.54	21.94
		1855.0	23.46	22.53	21.80
	100% RB	1910.0	23.58	22.57	22.01
		1882.5	23.59	22.55	21.90
		1855.0	23.52	22.55	21.89
15MHz	1 RB high	1907.5	24.62	23.72	23.40
		1882.5	24.63	23.96	23.24
		1857.5	24.68	24.08	23.12
	1 RB low	1907.5	24.74	23.85	23.30
		1882.5	24.78	24.16	23.28
		1857.5	24.77	24.14	23.19
	50% RB mid	1907.5	23.67	23.00	22.42
		1882.5	23.69	22.70	22.07
		1857.5	23.70	22.73	22.04
	100% RB	1907.5	23.67	23.01	22.44
		1882.5	23.69	22.76	22.05
		1857.5	23.68	22.71	22.03
20MHz	1 RB high	1905.0	24.39	23.86	23.17
		1882.5	24.27	23.73	22.87
		1860.0	24.31	23.86	22.78
	1 RB low	1905.0	24.74	24.21	23.48
		1882.5	24.60	24.00	23.18
		1860.0	24.66	24.20	23.18
	50% RB mid	1905.0	23.80	22.87	22.29
		1882.5	23.56	22.60	21.95
		1860.0	23.59	22.68	22.00
	100% RB	1905.0	23.75	22.92	22.27
		1882.5	23.50	22.56	21.94
		1860.0	23.59	22.62	21.92

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LTE band 26(814MHz~824MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	823.3	23.97	23.06	21.95
		819.0	23.93	23.03	22.17
		814.7	23.81	22.84	21.84
	1 RB low	823.3	23.94	23.02	21.89
		819.0	23.81	22.89	21.83
		814.7	23.85	22.77	21.67
	50% RB mid	823.3	24.04	23.20	21.93
		819.0	23.95	23.12	21.71
		814.7	23.88	23.12	21.57
	100% RB	823.3	22.98	22.09	20.70
		819.0	22.84	22.07	20.75
		814.7	22.83	21.77	20.65
3MHz	1 RB high	822.5	23.98	22.95	21.79
		819.0	23.84	23.01	21.99
		815.5	23.86	22.98	21.54
	1 RB low	822.5	23.88	22.99	22.09
		819.0	23.77	22.90	22.00
		815.5	23.89	22.97	21.69
	50% RB mid	822.5	22.94	22.06	20.94
		819.0	22.82	21.91	20.95
		815.5	22.87	21.95	20.58
	100% RB	822.5	22.93	22.00	20.74
		819.0	22.80	21.84	20.72
		815.5	22.84	21.87	20.64
5MHz	1 RB high	821.5	23.90	23.03	21.74
		819.0	23.98	23.24	21.90
		816.5	23.92	23.07	21.69
	1 RB low	821.5	23.96	23.09	21.66
		819.0	23.87	23.15	21.89
		816.5	23.90	23.03	21.75
	50% RB mid	821.5	22.94	22.10	20.87
		819.0	22.85	22.00	20.88
		816.5	22.90	22.06	20.80
	100% RB	821.5	22.96	22.01	20.79
		819.0	22.86	21.91	20.75
		816.5	22.92	21.98	20.62
10MHz	1 RB high	819.0	24.17	23.33	21.33
	1 RB low	819.0	23.91	23.07	21.66
	50% RB mid	819.0	22.89	21.87	20.80
	100% RB	819.0	23.00	22.03	20.69

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LTE band 26(824MHz~849MHz)

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	848.3	24.21	23.28	22.09
		836.5	24.11	23.25	21.95
		824.7	24.09	23.10	22.30
	1 RB low	848.3	24.20	23.24	21.88
		836.5	24.09	23.16	22.14
		824.7	24.02	23.05	22.08
	50% RB mid	848.3	24.28	23.39	22.07
		836.5	24.18	23.36	21.97
		824.7	23.98	23.18	22.33
	100% RB	848.3	23.17	22.08	21.71
		836.5	23.05	22.28	21.15
		824.7	22.99	22.14	22.13
3MHz	1 RB high	847.5	24.18	23.23	21.42
		836.5	24.13	23.23	22.24
		825.5	23.96	23.02	22.21
	1 RB low	847.5	24.20	23.21	21.87
		836.5	24.07	23.19	21.92
		825.5	23.96	23.05	22.15
	50% RB mid	847.5	23.20	22.33	20.62
		836.5	23.14	22.25	21.05
		825.5	22.95	22.04	20.83
	100% RB	847.5	23.21	22.25	20.61
		836.5	23.09	22.17	20.96
		825.5	22.94	21.98	20.81
5MHz	1 RB high	846.5	24.10	23.40	21.22
		836.5	24.19	23.44	21.99
		826.5	24.00	23.12	21.69
	1 RB low	846.5	24.22	23.28	21.95
		836.5	24.16	23.39	21.95
		826.5	24.01	23.12	21.81
	50% RB mid	846.5	23.32	22.48	20.90
		836.5	23.09	22.27	21.08
		826.5	23.00	22.18	20.71
	100% RB	846.5	23.33	22.38	20.73
		836.5	23.16	22.22	21.00
		826.5	23.01	22.03	20.66
10MHz	1 RB high	844.0	24.45	23.69	21.06
		836.5	24.36	23.56	21.22
		829.0	24.31	23.38	21.54
	1 RB low	844.0	24.51	23.54	21.91

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		836.5	24.26	23.48	21.79
		829.0	24.31	23.35	21.62
	50% RB mid	844.0	23.41	22.38	20.98
		836.5	23.14	22.16	20.97
		829.0	23.13	22.19	20.71
	100% RB	844.0	23.40	22.41	20.80
		836.5	23.21	22.23	20.92
		829.0	23.08	22.14	20.64
15MHz	1 RB high	841.5	24.91	24.26	21.25
		836.5	24.74	24.02	21.57
		831.5	24.63	24.01	22.00
	1 RB low	841.5	24.80	24.14	22.13
		836.5	24.70	23.86	21.86
		831.5	24.35	23.76	21.94
	50% RB mid	841.5	23.66	22.70	20.94
		836.5	23.48	22.55	20.99
		831.5	23.28	22.36	20.75
	100% RB	841.5	23.72	22.74	20.91
		836.5	23.64	22.61	20.86
		831.5	23.39	22.39	20.83

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LTE band 41

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	2687.5	28.04	27.20	26.28
		2593.0	28.03	27.31	26.52
		2498.5	27.74	27.19	26.29
	1 RB low	2687.5	28.06	27.23	26.17
		2593.0	28.10	27.32	26.62
		2498.5	27.84	27.26	26.25
	50% RB mid	2687.5	26.94	25.96	25.39
		2593.0	27.17	26.10	25.60
		2498.5	26.74	25.92	25.43
	100% RB	2687.5	26.94	26.00	25.31
		2593.0	27.04	26.11	25.67
		2498.5	26.83	25.86	25.48
10MHz	1 RB high	2685.0	27.73	27.15	26.23
		2593.0	28.17	27.36	26.62
		2501.0	27.67	26.99	26.21
	1 RB low	2685.0	27.68	27.01	26.00
		2593.0	28.07	27.26	26.51
		2501.0	27.64	27.09	26.29
	50% RB mid	2685.0	26.95	25.98	25.30
		2593.0	27.15	26.12	25.58
		2501.0	26.88	25.96	25.57
	100% RB	2685.0	26.88	25.96	25.24
		2593.0	27.07	26.12	25.61
		2501.0	26.85	25.88	25.42
15MHz	1 RB high	2682.5	27.37	26.40	25.42
		2593.0	27.14	26.49	25.78
		2503.5	27.17	26.55	25.67
	1 RB low	2682.5	27.49	26.42	25.44
		2593.0	26.96	26.29	25.56
		2503.5	27.57	26.80	25.92
	50% RB mid	2682.5	26.96	25.96	25.26
		2593.0	26.82	25.90	25.34
		2503.5	26.89	26.04	25.60
	100% RB	2682.5	26.84	25.87	25.21
		2593.0	26.78	25.72	25.23
		2503.5	26.93	26.04	25.53
20MHz	1 RB high	2680.0	27.39	26.52	25.90
		2593.0	27.35	26.79	26.27
		2506.0	27.23	26.26	26.33
	1 RB low	2680.0	27.22	26.36	25.90

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		2593.0	27.32	26.88	26.51
		2506.0	27.83	26.86	26.64
	50% RB mid	2680.0	26.91	25.94	25.53
		2593.0	26.87	25.89	25.62
		2506.0	26.90	25.96	25.43
	100% RB	2680.0	26.75	25.75	25.70
		2593.0	26.70	25.75	25.42
		2506.0	26.79	25.88	25.47

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LTE band 66

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
1.4MHz	1 RB high	1779.3	24.38	23.59	22.95
		1745.0	24.53	23.63	23.15
		1710.7	24.50	23.90	23.14
	1 RB low	1779.3	24.43	23.65	23.06
		1745.0	24.50	23.61	23.14
		1710.7	24.51	23.91	23.22
	50% RB mid	1779.3	24.71	23.65	23.31
		1745.0	24.56	23.57	23.03
		1710.7	24.56	23.74	23.08
	100% RB	1779.3	23.47	22.61	21.91
		1745.0	23.51	22.63	21.93
		1710.7	23.51	22.42	22.06
3MHz	1 RB high	1778.5	24.35	23.56	23.37
		1745.0	24.63	23.41	23.23
		1711.5	24.47	23.86	23.10
	1 RB low	1778.5	24.41	23.62	23.16
		1745.0	24.63	23.54	23.32
		1711.5	24.58	24.03	23.27
	50% RB mid	1778.5	23.48	22.53	22.02
		1745.0	23.55	22.64	22.12
		1711.5	23.57	22.60	22.13
	100% RB	1778.5	23.44	22.45	21.99
		1745.0	23.55	22.55	22.25
		1711.5	23.54	22.59	22.07
5MHz	1 RB high	1777.5	24.59	23.64	23.24
		1745.0	24.68	23.81	23.20
		1712.5	24.67	24.08	23.16
	1 RB low	1777.5	24.64	23.69	23.24
		1745.0	24.85	23.90	23.31
		1712.5	24.83	24.16	23.38
	50% RB mid	1777.5	23.62	22.61	22.12
		1745.0	23.61	22.64	22.13
		1712.5	23.57	22.72	22.11
	100% RB	1777.5	23.61	22.46	21.99
		1745.0	23.59	22.58	22.08
		1712.5	23.50	22.59	22.04
10MHz	1 RB high	1775.0	25.02	24.30	23.47
		1745.0	24.99	24.04	23.44
		1715.0	25.10	23.95	23.46
	1 RB low	1775.0	23.91	23.30	22.48

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		1745.0	23.90	22.94	22.61
		1715.0	24.03	22.94	22.71
	50% RB mid	1775.0	23.62	22.65	22.08
		1745.0	23.66	22.74	22.03
		1715.0	23.60	22.61	22.13
	100% RB	1775.0	23.62	22.61	21.93
		1745.0	23.59	22.60	22.06
		1715.0	23.62	22.56	22.03
15MHz	1 RB high	1772.5	24.99	24.27	23.30
		1745.0	24.90	24.21	23.30
		1717.5	25.11	23.94	23.39
	1 RB low	1772.5	25.11	24.32	23.34
		1745.0	25.09	24.35	23.46
		1717.5	24.98	23.97	23.39
	50% RB mid	1772.5	23.64	22.63	21.87
		1745.0	23.59	22.58	22.05
		1717.5	23.83	22.79	22.13
	100% RB	1772.5	23.69	22.73	22.02
		1745.0	23.58	22.60	22.05
		1717.5	23.78	22.79	22.23
20MHz	1 RB high	1770.0	24.91	24.41	23.24
		1745.0	25.10	24.44	23.34
		1720.0	25.15	24.37	23.42
	1 RB low	1770.0	24.35	23.72	23.05
		1745.0	24.19	23.84	23.01
		1720.0	24.49	23.95	23.15
	50% RB mid	1770.0	23.60	22.58	22.10
		1745.0	23.55	22.56	21.97
		1720.0	23.74	22.85	22.24
	100% RB	1770.0	23.58	22.57	21.96
		1745.0	23.54	22.55	21.98
		1720.0	23.71	22.72	22.13

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LTE band 71

Bandwidth	RB size/offset	Frequency (MHz)	Power (dBm)		
			QPSK	16QAM	64QAM
5MHz	1 RB high	695.5	24.49	23.34	22.75
		680.5	24.18	23.27	22.40
		665.5	24.22	23.63	22.67
	1 RB low	695.5	24.41	23.41	22.57
		680.5	24.36	23.40	22.53
		665.5	24.32	23.72	22.43
	50% RB mid	695.5	23.17	22.23	21.50
		680.5	23.18	22.22	21.38
		665.5	23.28	22.41	21.53
	100% RB	695.5	23.23	22.15	21.40
		680.5	23.21	22.28	21.73
		665.5	23.21	22.26	21.44
10MHz	1 RB high	693.0	24.09	23.25	23.29
		680.5	24.22	23.16	23.08
		668.0	24.23	23.57	22.76
	1 RB low	693.0	24.13	23.28	22.30
		680.5	24.34	23.25	22.83
		668.0	24.72	23.81	22.74
	50% RB mid	693.0	23.15	22.35	21.89
		680.5	23.34	22.26	21.77
		668.0	23.19	22.34	21.82
	100% RB	693.0	23.19	22.11	21.75
		680.5	23.16	22.13	21.68
		668.0	23.18	22.07	21.72
15MHz	1 RB high	690.5	24.57	23.75	22.24
		680.5	24.31	23.10	22.15
		670.5	24.32	23.74	23.10
	1 RB low	690.5	24.57	23.85	22.59
		680.5	24.44	23.29	22.57
		670.5	24.55	23.88	23.44
	50% RB mid	690.5	23.39	22.32	20.87
		680.5	23.26	22.22	20.81
		670.5	23.39	22.43	21.96
	100% RB	690.5	23.34	22.28	20.83
		680.5	23.30	22.26	20.83
		670.5	23.43	22.45	21.94
20MHz	1 RB high	688.0	24.51	23.87	23.11
		680.5	24.41	24.07	22.14
		673.0	24.43	24.06	22.04
	1 RB low	688.0	24.56	23.97	23.29

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		680.5	24.60	24.37	22.37
		673.0	24.59	24.09	22.58
	50% RB mid	688.0	23.42	22.42	21.88
		680.5	23.34	22.46	20.79
		673.0	23.52	22.46	21.05
	100% RB	688.0	23.44	22.41	21.93
		680.5	23.46	22.53	21.03
		673.0	23.47	22.61	21.03

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A.1.3 Radiated

A.1.3.1 Description

This is the test for the maximum radiated power from the EUT.

Rule Part 22.913(a) specifies "Mobile stations are limited to 2.0 watts EIRP."

Rule Part 24.232(b) specifies, "Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power" and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage."

Rule Part 27.50(d) specifies " Fixed, mobile, and portable (handheld) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695–1710 MHz and 1755–1780 MHz bands are limited to 1 watt EIRP"Rule Part 27.50(h)(2) specifies "Mobile stations are limited to 2.0 watts EIRP."

Rule Part 27.50(c) specifies "Portable stations (hand-held de-vices) are limited to 3 watts ERP."

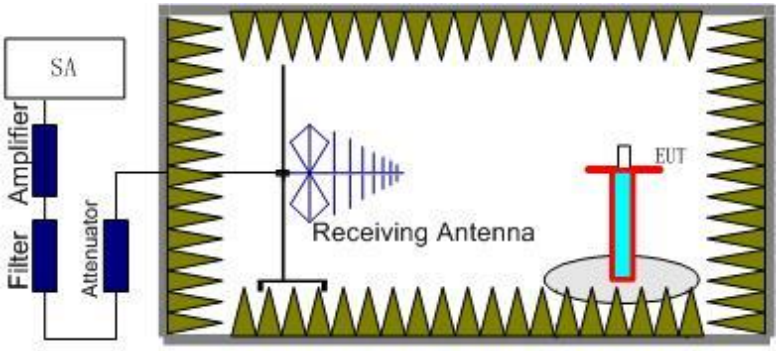
Rule Part 27.50(h)(2) specifies "Mobilestations are limited to 2.0 wattsEIRP."

Rule Part 90.635(b) specifies "The maximum output power of the transmitter for mobile stations is 100 watts(50dBm)".

A.1.3.2 Method of Measurement

The measurements procedures in TIA-603E-2016 are used.

1. EUT was placed on a 1.5-meter-high non-conductive stand at a 3-meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360 and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with rms detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.

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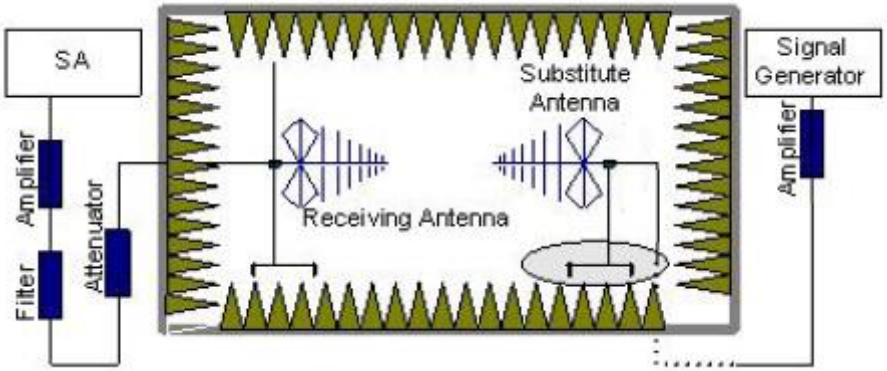

In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. An amplifier should be connected to the Signal Source output port. And the cable should be connected between the amplifier and the substitution antenna.
   The cable loss (P_{cl}), the substitution antenna Gain (G_a) and the amplifier Gain (P_{Ag}) should be recorded after test.
   The measurement results are obtained as described below:
   Power (EIRP) = $P_{Mea} + P_{Ag} - P_{cl} + G_a$
5. This value is EIRP since the measurement is calibrated using an antenna of known gain (unit dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP - 2.15.

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A.1.3.3 Measurement result

LTE Band 7- EIRP

Limits: ≤33 dBm (2W)

LTE Band 7_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2502.50	-26.34	3.58	45.68	6.10	21.86	33.00	11.14	H
2535.00	-24.49	3.63	44.82	6.16	22.86	33.00	10.14	H
2567.50	-24.42	3.65	44.92	6.22	23.07	33.00	9.93	H

LTE Band 7_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2505.00	-26.32	3.59	45.64	6.11	21.84	33.00	11.16	H
2535.00	-24.60	3.63	44.82	6.16	22.75	33.00	10.25	H
2565.00	-24.65	3.65	44.97	6.22	22.89	33.00	10.11	H

LTE Band 7_15MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2507.50	-25.34	3.59	44.92	6.11	22.10	33.00	10.90	H
2535.00	-24.47	3.63	44.82	6.16	22.88	33.00	10.12	H
2562.50	-25.04	3.65	45.67	6.21	23.19	33.00	9.81	H

LTE Band 7_20 MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2510.00	-25.76	3.58	45.36	6.12	22.14	33.00	10.86	H
2535.00	-24.44	3.63	44.82	6.16	22.91	33.00	10.09	H
2560.00	-25.56	3.64	45.98	6.21	22.99	33.00	10.01	H

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LTE Band 7_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2502.50	-27.15	3.58	45.68	6.10	21.05	33.00	11.95	H
2535.00	-25.28	3.63	44.82	6.16	22.07	33.00	10.93	H
2567.50	-25.06	3.65	44.92	6.22	22.43	33.00	10.57	H

LTE Band 7_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2505.00	-27.07	3.59	45.64	6.11	21.09	33.00	11.91	H
2535.00	-25.36	3.63	44.82	6.16	21.99	33.00	11.01	H
2565.00	-25.27	3.65	44.97	6.22	22.27	33.00	10.73	H

LTE Band 7_15MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2507.50	-26.01	3.59	44.92	6.11	21.43	33.00	11.57	H
2535.00	-25.31	3.63	44.82	6.16	22.04	33.00	10.96	H
2562.50	-25.74	3.65	45.67	6.21	22.49	33.00	10.51	H

LTE Band 7_20 MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2510.00	-26.34	3.58	45.36	6.12	21.56	33.00	11.44	H
2535.00	-25.27	3.63	44.82	6.16	22.08	33.00	10.92	H
2560.00	-26.10	3.64	45.98	6.21	22.45	33.00	10.55	H

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LTE Band 7_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2502.50	-28.22	3.58	45.68	6.10	19.98	33.00	13.02	H
2535.00	-26.32	3.63	44.82	6.16	21.03	33.00	11.97	H
2567.50	-26.14	3.65	44.92	6.22	21.35	33.00	11.65	H

LTE Band 7_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2505.00	-28.11	3.59	45.64	6.11	20.05	33.00	12.95	H
2535.00	-26.35	3.63	44.82	6.16	21.00	33.00	12.00	H
2565.00	-26.28	3.65	44.97	6.22	21.26	33.00	11.74	H

LTE Band 7_15MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2507.50	-27.06	3.59	44.92	6.11	20.38	33.00	12.62	H
2535.00	-26.19	3.63	44.82	6.16	21.16	33.00	11.84	H
2562.50	-26.80	3.65	45.67	6.21	21.43	33.00	11.57	H

LTE Band 7_20 MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2510.00	-27.45	3.58	45.36	6.12	20.45	33.00	12.55	H
2535.00	-26.15	3.63	44.82	6.16	21.20	33.00	11.80	H
2560.00	-27.24	3.64	45.98	6.21	21.31	33.00	11.69	H

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LTE Band 12 - ERP

Limits: ≤34.77dBm (3W)

LTE Band 12_1.4MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
699.70	-23.32	1.90	44.66	0.77	2.15	18.06	34.77	16.71	V
707.50	-21.37	1.91	44.94	0.62	2.15	20.13	34.77	14.64	V
715.30	-22.47	1.92	45.26	0.50	2.15	19.22	34.77	15.55	V

LTE Band 12_3MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
700.50	-23.41	1.90	44.68	0.76	2.15	17.98	34.77	16.79	V
707.50	-21.73	1.91	44.94	0.62	2.15	19.77	34.77	15.00	V
714.50	-22.82	1.92	45.26	0.50	2.15	18.87	34.77	15.90	V

LTE Band 12_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
701.50	-23.57	1.90	44.81	0.74	2.15	17.93	34.77	16.84	V
707.50	-21.86	1.91	44.94	0.62	2.15	19.64	34.77	15.13	V
713.50	-23.60	1.92	45.22	0.50	2.15	18.05	34.77	16.72	V

LTE Band 12_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
704.00	-23.45	1.91	44.93	0.70	2.15	18.12	34.77	16.65	V
707.50	-21.77	1.91	44.94	0.62	2.15	19.73	34.77	15.04	V
711.00	-23.44	1.92	45.19	0.53	2.15	18.21	34.77	16.56	V

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LTE Band 12_1.4MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
699.70	-23.92	1.90	44.66	0.77	2.15	17.46	34.77	17.31	V
707.50	-21.95	1.91	44.94	0.62	2.15	19.55	34.77	15.22	V
715.30	-23.05	1.92	45.26	0.50	2.15	18.64	34.77	16.13	V

LTE Band 12_3MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
700.50	-24.04	1.90	44.68	0.76	2.15	17.35	34.77	17.42	V
707.50	-21.98	1.91	44.94	0.62	2.15	19.52	34.77	15.25	V
714.50	-23.50	1.92	45.26	0.50	2.15	18.19	34.77	16.58	V

LTE Band 12_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
701.50	-24.20	1.90	44.81	0.74	2.15	17.30	34.77	17.47	V
707.50	-22.40	1.91	44.94	0.62	2.15	19.10	34.77	15.67	V
713.50	-24.24	1.92	45.22	0.50	2.15	17.41	34.77	17.36	V

LTE Band 12_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
704.00	-23.98	1.91	44.93	0.70	2.15	17.59	34.77	17.18	V
707.50	-22.56	1.91	44.94	0.62	2.15	18.94	34.77	15.83	V
711.00	-24.10	1.92	45.19	0.53	2.15	17.55	34.77	17.22	V

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LTE Band 12_1.4MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
699.70	-24.84	1.90	44.66	0.77	2.15	16.54	34.77	18.23	V
707.50	-23.04	1.91	44.94	0.62	2.15	18.46	34.77	16.31	H
715.30	-24.08	1.92	45.26	0.50	2.15	17.61	34.77	17.16	V

LTE Band 12_3MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
700.50	-25.06	1.90	44.68	0.76	2.15	16.33	34.77	18.44	V
707.50	-23.27	1.91	44.94	0.62	2.15	18.23	34.77	16.54	V
714.50	-24.51	1.92	45.26	0.50	2.15	17.18	34.77	17.59	V

LTE Band 12_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
701.50	-25.15	1.90	44.81	0.74	2.15	16.35	34.77	18.42	V
707.50	-23.42	1.91	44.94	0.62	2.15	18.08	34.77	16.69	V
713.50	-25.22	1.92	45.22	0.50	2.15	16.43	34.77	18.34	V

LTE Band 12_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
704.00	-25.05	1.91	44.93	0.70	2.15	16.52	34.77	18.25	V
707.50	-23.25	1.91	44.94	0.62	2.15	18.25	34.77	16.52	V
711.00	-25.02	1.92	45.19	0.53	2.15	16.63	34.77	18.14	V

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LTE Band 13- ERP

Limits: ≤34.77 dBm (3W)

LTE Band 13_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
779.50	-21.79	2.01	45.64	0.04	2.15	19.73	34.77	15.04	V
782.00	-21.90	2.01	45.65	0.09	2.15	19.68	34.77	15.09	V
784.50	-21.83	2.01	45.67	0.16	2.15	19.84	34.77	14.93	V

LTE Band 13_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
782.00	-21.81	2.01	45.65	0.09	2.15	19.77	34.77	15.00	V

LTE Band 13_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
779.50	-21.75	2.01	45.64	0.04	2.15	19.77	34.77	15.00	V
782.00	-21.62	2.01	45.65	0.09	2.15	19.96	34.77	14.81	V
784.50	-21.71	2.01	45.67	0.16	2.15	19.96	34.77	14.81	V

LTE Band 13_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
782.00	-21.73	2.01	45.65	0.09	2.15	19.85	34.77	14.92	V

LTE Band 13_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
779.50	-22.00	2.01	45.64	0.04	2.15	19.52	34.77	15.25	V
782.00	-21.93	2.01	45.65	0.09	2.15	19.65	34.77	15.12	V
784.50	-22.25	2.01	45.67	0.16	2.15	19.42	34.77	15.35	V

LTE Band 13_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
782.00	-21.99	2.01	45.65	0.09	2.15	19.59	34.77	15.18	V

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LTE Band 25- EIRP

Limits: ≤33dBm (2W)

LTE Band 25_1.4MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1850.70	-23.56	2.92	43.75	4.87	22.14	33.00	10.86	V
1882.50	-23.24	3.13	43.75	4.81	22.19	33.00	10.81	V
1914.30	-21.66	2.89	43.78	4.75	23.98	33.00	9.02	H

LTE Band 25_3MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1851.50	-23.66	2.87	43.75	4.87	22.09	33.00	10.91	V
1882.50	-23.09	3.13	43.75	4.81	22.34	33.00	10.66	H
1913.50	-21.59	2.88	43.78	4.76	24.07	33.00	8.93	H

LTE Band 25_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1852.50	-23.80	2.87	43.75	4.87	21.95	33.00	11.05	V
1882.50	-23.18	3.13	43.75	4.81	22.25	33.00	10.75	H
1912.50	-21.68	2.86	43.77	4.76	23.99	33.00	9.01	H

LTE Band 25_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1855.00	-23.90	2.88	43.74	4.86	21.82	33.00	11.18	V
1882.50	-23.23	3.13	43.75	4.81	22.20	33.00	10.80	V
1910.00	-21.98	2.88	43.77	4.76	23.67	33.00	9.33	H

LTE Band 25_15MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1857.50	-23.87	2.87	43.75	4.86	21.87	33.00	11.13	V
1882.50	-23.27	3.13	43.75	4.81	22.16	33.00	10.84	H
1907.50	-21.87	2.84	43.77	4.77	23.83	33.00	9.17	H

LTE Band 25_20 MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1860.00	-23.72	2.86	43.75	4.85	22.02	33.00	10.98	V
1882.50	-23.29	3.13	43.75	4.81	22.14	33.00	10.86	H
1905.00	-22.37	2.87	43.77	4.77	23.30	33.00	9.70	H

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LTE Band 25_1.4MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1850.70	-24.22	2.92	43.75	4.87	21.48	33.00	11.52	V
1882.50	-23.81	3.13	43.75	4.81	21.62	33.00	11.38	V
1914.30	-22.29	2.89	43.78	4.75	23.35	33.00	9.65	H

LTE Band 25_3MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1851.50	-24.37	2.87	43.75	4.87	21.38	33.00	11.62	V
1882.50	-23.75	3.13	43.75	4.81	21.68	33.00	11.32	H
1913.50	-22.09	2.88	43.78	4.76	23.57	33.00	9.43	H

LTE Band 25_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1852.50	-24.31	2.87	43.75	4.87	21.44	33.00	11.56	V
1882.50	-23.90	3.13	43.75	4.81	21.53	33.00	11.47	H
1912.50	-22.06	2.86	43.77	4.76	23.61	33.00	9.39	H

LTE Band 25_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1855.00	-24.66	2.88	43.74	4.86	21.06	33.00	11.94	V
1882.50	-23.86	3.13	43.75	4.81	21.57	33.00	11.43	V
1910.00	-22.70	2.88	43.77	4.76	22.95	33.00	10.05	H

LTE Band 25_15MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1857.50	-24.81	2.87	43.75	4.86	20.93	33.00	12.07	V
1882.50	-24.25	3.13	43.75	4.81	21.18	33.00	11.82	H
1907.50	-22.85	2.84	43.77	4.77	22.85	33.00	10.15	H

LTE Band 25_20 MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1860.00	-24.67	2.86	43.75	4.85	21.07	33.00	11.93	V
1882.50	-24.23	3.13	43.75	4.81	21.20	33.00	11.80	H
1905.00	-23.45	2.87	43.77	4.77	22.22	33.00	10.78	H

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LTE Band 25_1.4MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1850.70	-24.65	2.92	43.75	4.87	21.05	33.00	11.95	V
1882.50	-23.33	3.13	43.75	4.81	22.10	33.00	10.90	V
1914.30	-22.67	2.89	43.78	4.75	22.97	33.00	10.03	H

LTE Band 25_3MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1851.50	-24.56	2.87	43.75	4.87	21.19	33.00	11.81	V
1882.50	-24.03	3.13	43.75	4.81	21.40	33.00	11.60	H
1913.50	-22.70	2.88	43.78	4.76	22.96	33.00	10.04	H

LTE Band 25_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1852.50	-24.90	2.87	43.75	4.87	20.85	33.00	12.15	V
1882.50	-24.15	3.13	43.75	4.81	21.28	33.00	11.72	H
1912.50	-22.60	2.86	43.77	4.76	23.07	33.00	9.93	H

LTE Band 25_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1855.00	-24.87	2.88	43.74	4.86	20.85	33.00	12.15	V
1882.50	-24.09	3.13	43.75	4.81	21.34	33.00	11.66	V
1910.00	-22.89	2.88	43.77	4.76	22.76	33.00	10.24	H

LTE Band 25_15MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1857.50	-24.81	2.87	43.75	4.86	20.93	33.00	12.07	V
1882.50	-24.25	3.13	43.75	4.81	21.18	33.00	11.82	H
1907.50	-22.85	2.84	43.77	4.77	22.85	33.00	10.15	H

LTE Band 25_20 MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1860.00	-24.67	2.86	43.75	4.85	21.07	33.00	11.93	V
1882.50	-24.23	3.13	43.75	4.81	21.20	33.00	11.80	H
1905.00	-23.45	2.87	43.77	4.77	22.22	33.00	10.78	H

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LTE Band 26(814MHz~824MHz)- ERP

Limits: ≤50dBm (100W)

LTE Band 26_1.4MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
814.70	-21.01	2.13	45.86	0.89	2.15	21.46	50.00	28.54	H
819.00	-22.18	2.19	45.84	1.05	2.15	20.37	50.00	29.63	H
823.30	-22.55	2.24	45.79	0.55	2.15	19.40	50.00	30.60	H

LTE Band 26_3MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
815.50	-21.09	2.14	45.87	0.93	2.15	21.42	50.00	28.58	H
819.00	-22.38	2.19	45.84	1.05	2.15	20.17	50.00	29.83	H
822.50	-22.38	2.23	45.81	0.33	2.15	19.38	50.00	30.62	H

LTE Band 26_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
816.50	-21.43	2.16	45.88	0.98	2.15	21.12	50.00	28.88	H
819.00	-22.40	2.19	45.84	1.05	2.15	20.15	50.00	29.85	H
821.50	-22.76	2.22	45.82	0.71	2.15	19.40	50.00	30.60	H

LTE Band 26_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
819.00	-22.50	2.19	45.84	1.05	2.15	20.05	50.00	29.95	H

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LTE Band 26_1.4MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
814.70	-21.66	2.13	45.86	0.89	2.15	20.81	50.00	29.19	H
819.00	-22.87	2.19	45.84	1.05	2.15	19.68	50.00	30.32	H
823.30	-23.18	2.24	45.79	0.55	2.15	18.77	50.00	31.23	H

LTE Band 26_3MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
815.50	-21.70	2.14	45.87	0.93	2.15	20.81	50.00	29.19	H
819.00	-23.00	2.19	45.84	1.05	2.15	19.55	50.00	30.45	H
822.50	-23.00	2.23	45.81	0.33	2.15	18.76	50.00	31.24	H

LTE Band 26_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
816.50	-22.02	2.16	45.88	0.98	2.15	20.53	50.00	29.47	H
819.00	-23.02	2.19	45.84	1.05	2.15	19.53	50.00	30.47	H
821.50	-23.39	2.22	45.82	0.71	2.15	18.77	50.00	31.23	H

LTE Band 26_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
819.00	-23.12	2.19	45.84	1.05	2.15	19.43	50.00	30.57	H

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LTE Band 26_1.4MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
814.70	-22.51	2.13	45.86	0.89	2.15	19.96	50.00	30.04	H
819.00	-23.76	2.19	45.84	1.05	2.15	18.79	50.00	31.21	H
823.30	-24.17	2.24	45.79	0.55	2.15	17.78	50.00	32.22	H

LTE Band 26_3MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
815.50	-22.45	2.14	45.87	0.93	2.15	20.06	50.00	29.94	H
819.00	-23.86	2.19	45.84	1.05	2.15	18.69	50.00	31.31	H
822.50	-23.97	2.23	45.81	0.33	2.15	17.79	50.00	32.21	H

LTE Band 26_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
816.50	-22.77	2.16	45.88	0.98	2.15	19.78	50.00	30.22	H
819.00	-23.87	2.19	45.84	1.05	2.15	18.68	50.00	31.32	H
821.50	-24.34	2.22	45.82	0.71	2.15	17.82	50.00	32.18	H

LTE Band 26_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
819.00	-23.98	2.19	45.84	1.05	2.15	18.57	50.00	31.43	H

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LTE Band 26(824MHz~849MHz)- ERP

Limits: ≤38.45dBm (7W)

LTE Band 26_1.4MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
824.70	-22.70	2.26	45.79	0.95	2.15	19.63	38.45	18.82	H
836.50	-20.95	2.26	45.66	0.82	2.15	21.12	38.45	17.33	H
848.30	-23.59	2.27	45.55	0.80	2.15	18.34	38.45	20.11	H

LTE Band 26_3MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
825.50	-22.50	2.26	45.79	0.94	2.15	19.82	38.45	18.63	H
836.50	-20.99	2.26	45.66	0.82	2.15	21.08	38.45	17.37	H
847.50	-23.07	2.27	45.56	0.81	2.15	18.88	38.45	19.57	H

LTE Band 26_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
826.50	-22.07	2.25	45.77	0.93	2.15	20.23	38.45	18.22	H
836.50	-21.02	2.26	45.66	0.82	2.15	21.05	38.45	17.40	H
846.50	-22.45	2.26	45.56	0.82	2.15	19.52	38.45	18.93	H

LTE Band 26_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
829.00	-20.87	2.25	45.77	0.90	2.15	21.40	38.45	17.05	H
836.50	-21.08	2.26	45.66	0.82	2.15	20.99	38.45	17.46	H
844.00	-21.41	2.26	45.59	0.82	2.15	20.59	38.45	17.86	H

LTE Band 26_15MHz_ QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
831.50	-20.06	2.12	45.71	0.87	2.15	22.25	38.45	16.20	H
836.50	-21.13	2.26	45.66	0.82	2.15	20.94	38.45	17.51	H
841.50	-22.05	2.26	45.61	0.82	2.15	19.97	38.45	18.48	H

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LTE Band 26_1.4MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
824.70	-23.29	2.26	45.79	0.95	2.15	19.04	38.45	19.41	H
836.50	-21.58	2.26	45.66	0.82	2.15	20.49	38.45	17.96	H
848.30	-24.21	2.27	45.55	0.80	2.15	17.72	38.45	20.73	H

LTE Band 26_3MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
825.50	-23.09	2.26	45.79	0.94	2.15	19.23	38.45	19.22	H
836.50	-21.63	2.26	45.66	0.82	2.15	20.44	38.45	18.01	H
847.50	-23.69	2.27	45.56	0.81	2.15	18.26	38.45	20.19	H

LTE Band 26_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
826.50	-22.67	2.25	45.77	0.93	2.15	19.63	38.45	18.82	H
836.50	-21.65	2.26	45.66	0.82	2.15	20.42	38.45	18.03	H
846.50	-23.04	2.26	45.56	0.82	2.15	18.93	38.45	19.52	H

LTE Band 26_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
829.00	-21.53	2.25	45.77	0.90	2.15	20.74	38.45	17.71	H
836.50	-21.71	2.26	45.66	0.82	2.15	20.36	38.45	18.09	H
844.00	-22.36	2.26	45.59	0.82	2.15	19.64	38.45	18.81	H

LTE Band 26_15MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
831.50	-20.71	2.12	45.71	0.87	2.15	21.60	38.45	16.85	H
836.50	-21.76	2.26	45.66	0.82	2.15	20.31	38.45	18.14	H
841.50	-22.71	2.26	45.61	0.82	2.15	19.31	38.45	19.14	H

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LTE Band 26_1.4MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
824.70	-23.42	2.26	45.79	0.95	2.15	18.91	38.45	19.54	H
836.50	-21.65	2.26	45.66	0.82	2.15	20.42	38.45	18.03	H
848.30	-24.30	2.27	45.55	0.80	2.15	17.63	38.45	20.82	H

LTE Band 26_3MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
825.50	-23.20	2.26	45.79	0.94	2.15	19.12	38.45	19.33	H
836.50	-21.70	2.26	45.66	0.82	2.15	20.37	38.45	18.08	H
847.50	-23.77	2.27	45.56	0.81	2.15	18.18	38.45	20.27	H

LTE Band 26_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
826.50	-22.78	2.25	45.77	0.93	2.15	19.52	38.45	18.93	H
836.50	-21.72	2.26	45.66	0.82	2.15	20.35	38.45	18.10	H
846.50	-23.08	2.26	45.56	0.82	2.15	18.89	38.45	19.56	H

LTE Band 26_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
829.00	-21.64	2.25	45.77	0.90	2.15	20.63	38.45	17.82	H
836.50	-21.78	2.26	45.66	0.82	2.15	20.29	38.45	18.16	H
844.00	-22.41	2.26	45.59	0.82	2.15	19.59	38.45	18.86	H

LTE Band 26_15MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
831.50	-20.78	2.12	45.71	0.87	2.15	21.53	38.45	16.92	H
836.50	-21.83	2.26	45.66	0.82	2.15	20.24	38.45	18.21	H
841.50	-22.82	2.26	45.61	0.82	2.15	19.20	38.45	19.25	H

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LTE band 41-HPUE- EIRP

Limits: ≤33dBm (2W)

LTE Band 41_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2498.50	-25.89	3.58	45.59	6.10	22.22	33.00	10.78	H
2593.00	-24.62	3.69	44.93	6.27	22.89	33.00	10.11	H
2687.50	-24.35	3.73	44.98	6.44	23.34	33.00	9.66	H

LTE Band 41_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2501.00	-25.94	3.58	45.65	6.10	22.23	33.00	10.77	H
2593.00	-24.24	3.69	44.93	6.27	23.27	33.00	9.73	H
2685.00	-24.47	3.73	44.98	6.43	23.21	33.00	9.79	H

LTE Band 41_15MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2503.50	-25.92	3.58	45.65	6.11	22.26	33.00	10.74	H
2593.00	-24.16	3.69	44.93	6.27	23.35	33.00	9.65	H
2682.50	-24.46	3.73	44.98	6.43	23.22	33.00	9.78	H

LTE Band 41_20MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2506.00	-25.61	3.59	45.15	6.11	22.06	33.00	10.94	H
2593.00	-24.10	3.69	44.93	6.27	23.41	33.00	9.59	H
2680.00	-24.45	3.73	44.97	6.42	23.21	33.00	9.79	H

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LTE Band 41_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2498.50	-26.63	3.58	45.59	6.10	21.48	33.00	11.52	H
2593.00	-25.23	3.69	44.93	6.27	22.28	33.00	10.72	H
2687.50	-25.07	3.73	44.98	6.44	22.62	33.00	10.38	H

LTE Band 41_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2501.00	-26.70	3.58	45.65	6.10	21.47	33.00	11.53	H
2593.00	-24.91	3.69	44.93	6.27	22.60	33.00	10.40	H
2685.00	-25.25	3.73	44.98	6.43	22.43	33.00	10.57	H

LTE Band 41_15MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2503.50	-26.77	3.58	45.65	6.11	21.41	33.00	11.59	H
2593.00	-25.10	3.69	44.93	6.27	22.41	33.00	10.59	H
2682.50	-25.42	3.73	44.98	6.43	22.26	33.00	10.74	H

LTE Band 41_20MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2506.00	-26.20	3.59	45.15	6.11	21.47	33.00	11.53	H
2593.00	-24.88	3.69	44.93	6.27	22.63	33.00	10.37	H
2680.00	-25.24	3.73	44.97	6.42	22.42	33.00	10.58	H

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LTE Band 41_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2498.50	-27.47	3.58	45.59	6.10	20.64	33.00	12.36	H
2593.00	-26.35	3.69	44.93	6.27	21.16	33.00	11.84	H
2687.50	-25.94	3.73	44.98	6.44	21.75	33.00	11.25	H

LTE Band 41_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2501.00	-27.53	3.58	45.65	6.10	20.64	33.00	12.36	H
2593.00	-25.62	3.69	44.93	6.27	21.89	33.00	11.11	H
2685.00	-26.04	3.73	44.98	6.43	21.64	33.00	11.36	H

LTE Band 41_15MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2503.50	-27.53	3.58	45.65	6.11	20.65	33.00	12.35	H
2593.00	-25.68	3.69	44.93	6.27	21.83	33.00	11.17	H
2682.50	-26.16	3.73	44.98	6.43	21.52	33.00	11.48	H

LTE Band 41_20MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2506.00	-27.04	3.59	45.15	6.11	20.63	33.00	12.37	H
2593.00	-25.60	3.69	44.93	6.27	21.91	33.00	11.09	H
2680.00	-25.95	3.73	44.97	6.42	21.71	33.00	11.29	H

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LTE Band 66- EIRP

Limits: ≤30dBm (1W)

LTE Band 66_1.4MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1710.70	-30.56	3.17	44.10	5.12	21.83	30.00	8.17	H
1745.00	-30.16	3.68	44.16	5.06	22.74	30.00	7.26	V
1779.30	-28.69	3.04	44.03	5.00	23.38	30.00	6.62	H

LTE Band 66_3MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1711.50	-30.90	3.40	44.10	5.12	21.72	30.00	8.28	H
1745.00	-30.13	3.68	44.16	5.06	22.77	30.00	7.23	V
1778.50	-28.58	3.04	44.03	5.00	23.49	30.00	6.51	H

LTE Band 66_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1712.50	-23.92	3.66	44.10	5.12	21.64	30.00	8.36	H
1745.00	-22.83	3.68	44.16	5.06	22.71	30.00	7.29	V
1777.50	-22.44	3.04	44.04	5.00	23.56	30.00	6.44	H

LTE Band 66_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1715.00	-24.39	3.56	44.10	5.11	21.26	30.00	8.74	H
1745.00	-22.83	3.68	44.16	5.06	22.71	30.00	7.29	V
1775.00	-22.46	3.05	44.05	5.01	23.54	30.00	6.46	H

LTE Band 66_15MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1717.50	-24.41	3.47	44.11	5.11	21.34	30.00	8.66	V
1745.00	-22.76	3.68	44.16	5.06	22.78	30.00	7.22	V
1772.50	-22.69	3.05	44.06	5.01	23.33	30.00	6.67	H

LTE Band 66_20MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1720.00	-24.30	3.37	44.11	5.10	21.54	30.00	8.46	V
1745.00	-22.74	3.68	44.16	5.06	22.80	30.00	7.20	V
1770.00	-22.20	3.05	44.07	5.01	23.84	30.00	6.16	H

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LTE Band 66_1.4MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1710.70	-31.17	3.17	44.10	5.12	21.22	30.00	8.78	H
1745.00	-30.54	3.68	44.16	5.06	22.36	30.00	7.64	V
1779.30	-29.14	3.04	44.03	5.00	22.93	30.00	7.07	H

LTE Band 66_3MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1711.50	-31.53	3.40	44.10	5.12	21.09	30.00	8.91	H
1745.00	-30.77	3.68	44.16	5.06	22.13	30.00	7.87	V
1778.50	-29.17	3.04	44.03	5.00	22.90	30.00	7.10	H

LTE Band 66_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1712.50	-24.78	3.66	44.10	5.12	20.78	30.00	9.22	H
1745.00	-23.58	3.68	44.16	5.06	21.96	30.00	8.04	V
1777.50	-22.91	3.04	44.04	5.00	23.09	30.00	6.91	H

LTE Band 66_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1715.00	-25.21	3.56	44.10	5.11	20.44	30.00	9.56	H
1745.00	-23.72	3.68	44.16	5.06	21.82	30.00	8.18	V
1775.00	-23.36	3.05	44.05	5.01	22.64	30.00	7.36	H

LTE Band 66_15MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1717.50	-25.20	3.47	44.11	5.11	20.55	30.00	9.45	V
1745.00	-23.70	3.68	44.16	5.06	21.84	30.00	8.16	V
1772.50	-23.78	3.05	44.06	5.01	22.24	30.00	7.76	H

LTE Band 66_20MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1720.00	-25.14	3.37	44.11	5.10	20.70	30.00	9.30	V
1745.00	-23.77	3.68	44.16	5.06	21.77	30.00	8.23	V
1770.00	-23.84	3.05	44.07	5.01	22.20	30.00	7.80	H

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LTE Band 66_1.4MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1710.70	-32.49	3.17	44.10	5.12	19.90	30.00	10.10	H
1745.00	-31.83	3.68	44.16	5.06	21.07	30.00	8.93	V
1779.30	-29.92	3.04	44.03	5.00	22.15	30.00	7.85	H

LTE Band 66_3MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1711.50	-32.81	3.40	44.10	5.12	19.81	30.00	10.19	H
1745.00	-32.02	3.68	44.16	5.06	20.88	30.00	9.12	V
1778.50	-29.90	3.04	44.03	5.00	22.17	30.00	7.83	H

LTE Band 66_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1712.50	-25.86	3.66	44.10	5.12	19.70	30.00	10.30	H
1745.00	-24.67	3.68	44.16	5.06	20.87	30.00	9.13	V
1777.50	-23.82	3.04	44.04	5.00	22.18	30.00	7.82	H

LTE Band 66_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1715.00	-26.26	3.56	44.10	5.11	19.39	30.00	10.61	H
1745.00	-24.78	3.68	44.16	5.06	20.76	30.00	9.24	V
1775.00	-24.07	3.05	44.05	5.01	21.93	30.00	8.07	H

LTE Band 66_15MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1717.50	-26.32	3.47	44.11	5.11	19.43	30.00	10.57	V
1745.00	-24.74	3.68	44.16	5.06	20.80	30.00	9.20	V
1772.50	-24.64	3.05	44.06	5.01	21.38	30.00	8.62	H

LTE Band 66_20MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1720.00	-26.21	3.37	44.11	5.10	19.63	30.00	10.37	V
1745.00	-24.63	3.68	44.16	5.06	20.91	30.00	9.09	V
1770.00	-24.46	3.05	44.07	5.01	21.58	30.00	8.42	H

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LTE Band 71- ERP

Limits: ≤34.77 dBm (3W)

LTE Band 71_5MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
665.50	-23.30	1.87	44.73	0.78	2.15	18.19	34.77	16.58	V
680.50	-20.30	1.88	44.72	0.78	2.15	21.16	34.77	13.61	V
695.50	-20.48	1.89	44.67	0.77	2.15	20.92	34.77	13.85	V

LTE Band 71_10MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
668.00	-22.78	1.87	44.75	0.78	2.15	18.74	34.77	16.03	V
680.50	-20.64	1.88	44.72	0.78	2.15	20.82	34.77	13.95	V
693.00	-20.57	1.89	44.67	0.77	2.15	20.83	34.77	13.94	V

LTE Band 71_15MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
670.50	-21.54	1.88	44.75	0.78	2.15	19.96	34.77	14.81	V
680.50	-20.39	1.88	44.72	0.78	2.15	21.07	34.77	13.70	V
690.50	-20.05	1.89	44.73	0.77	2.15	21.42	34.77	13.35	V

LTE Band 71_20MHz_QPSK

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
673.00	-21.75	1.88	44.71	0.78	2.15	19.71	34.77	15.06	V
680.50	-20.67	1.88	44.72	0.78	2.15	20.79	34.77	13.98	V
688.00	-20.11	1.89	44.72	0.77	2.15	21.35	34.77	13.42	V

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LTE Band 71_5MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
665.50	-22.81	1.87	44.73	0.78	2.15	18.68	34.77	16.09	V
680.50	-20.03	1.88	44.72	0.78	2.15	21.43	34.77	13.34	V
695.50	-20.28	1.89	44.67	0.77	2.15	21.12	34.77	13.65	V

LTE Band 71_10MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
668.00	-22.36	1.87	44.75	0.78	2.15	19.16	34.77	15.61	V
680.50	-20.25	1.88	44.72	0.78	2.15	21.21	34.77	13.56	V
693.00	-19.89	1.89	44.67	0.77	2.15	21.51	34.77	13.26	V

LTE Band 71_15MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
670.50	-21.19	1.88	44.75	0.78	2.15	20.31	34.77	14.46	V
680.50	-20.02	1.88	44.72	0.78	2.15	21.44	34.77	13.33	V
690.50	-20.30	1.89	44.73	0.77	2.15	21.17	34.77	13.60	V

LTE Band 71_20MHz_16QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
673.00	-20.81	1.88	44.71	0.78	2.15	20.65	34.77	14.12	V
680.50	-20.09	1.88	44.72	0.78	2.15	21.37	34.77	13.40	V
688.00	-19.74	1.89	44.72	0.77	2.15	21.72	34.77	13.05	V

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LTE Band 71_5MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
665.50	-22.86	1.87	44.73	0.78	2.15	18.63	34.77	16.14	V
680.50	-20.11	1.88	44.72	0.78	2.15	21.35	34.77	13.42	V
695.50	-20.78	1.89	44.67	0.77	2.15	20.62	34.77	14.15	V

LTE Band 71_10MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
668.00	-22.55	1.87	44.75	0.78	2.15	18.97	34.77	15.80	V
680.50	-20.39	1.88	44.72	0.78	2.15	21.07	34.77	13.70	V
693.00	-20.93	1.89	44.67	0.77	2.15	20.47	34.77	14.30	V

LTE Band 71_15MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
670.50	-21.98	1.88	44.75	0.78	2.15	19.52	34.77	15.25	V
680.50	-20.12	1.88	44.72	0.78	2.15	21.34	34.77	13.43	V
690.50	-21.44	1.89	44.73	0.77	2.15	20.02	34.77	14.75	V

LTE Band 71_20MHz_64QAM

Frequency (MHz)	P_{Mea} (dBm)	P_{cl} (dB)	P_{Ag} (dB)	G_a (dBi)	Correction (dB)	ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
673.00	-21.75	1.88	44.71	0.78	2.15	19.71	34.77	15.06	V
680.50	-20.25	1.88	44.72	0.78	2.15	21.21	34.77	13.56	V
688.00	-20.73	1.89	44.72	0.77	2.15	20.73	34.77	14.04	V

Peak EIRP (dBm) = P_{Mea}(-20.73dBm) - G_a (-0.77dBi) - P_{Ag} (-44.72dB) - P_{cl} (1.89dB) = 20.73dBm

Note: Expanded measurement uncertainty is U = 2.84 dB, k = 2.

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A.2 Emission Limit

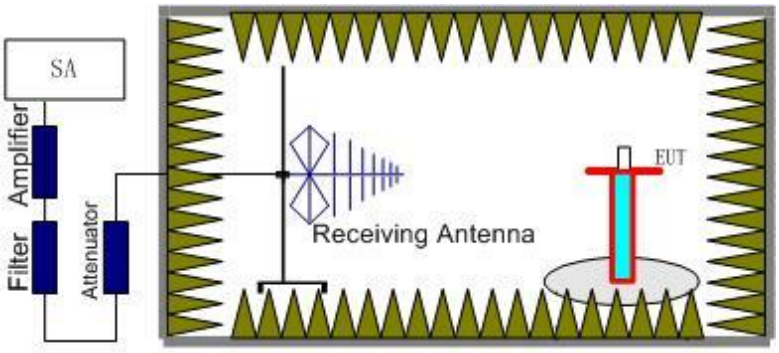
A.2.1 Measurement Method

The measurements procedures in TIA-603E-2016 are used. This measurement is carried out in fully anechoic chamber FAC-3.

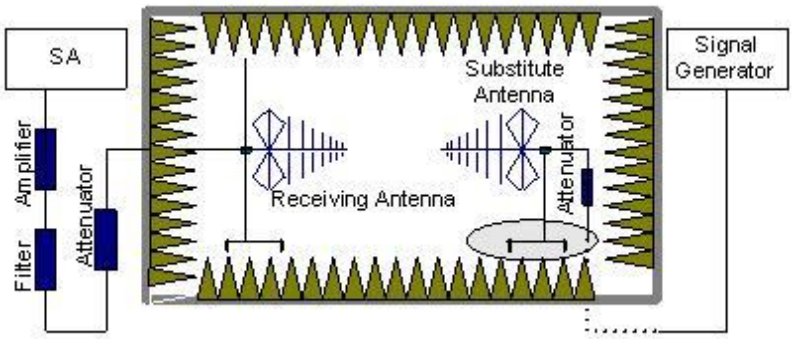
The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier. The resolution bandwidth is set 1MHz. The spectrum was scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of each LTE Band.

The procedure of radiated spurious emissions is as follows:

1. EUT was placed on a 1.5-meter-high non-conductive stand at a 3-meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.5m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the EUT through 360 and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector.



2. The EUT is then put into continuously transmitting mode at its maximum power level during the test. And the maximum value of the receiver should be recorded as (Pr).
3. The EUT shall be replaced by a substitution antenna. The test setup refers to figure below.



In the chamber, a substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere

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with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna. Adjust the level of the signal generator output until the value of the receiver reaches the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

4. The Path loss (P_{pl}) between the Signal Source with the Substitution Antenna and the Substitution Antenna Gain (G_a) should be recorded after test.
   An amplifier should be connected in for the test.
   The Path loss (P_{pl}) is the summation of the cable loss and the gain of the amplifier.
   The measurement results are obtained as described below:
   Power (EIRP)=P_{Mea} - P_{pl} + G_a
5. This value is EIRP since the measurement is calibrated using an antenna of known gain (unit: dBi) and known input power.
6. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP - 2.15dB.

A.2.2 Measurement Limit

Part 22.917, Part 24.238 and Part 27.53(h) specify that 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.

The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Part 27.53(m)(4) specifies for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Part 27.53(c) states 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:(1) On any frequency outside the 746-758 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;(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;(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

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Part 27.53(g) states 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.

Part 90.691 states that out-of-band emission requirement shall apply only to the ''outer'' channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $116Log_{10}(f/6.1)$ decibels or $50 + 10 Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz. For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10Log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

A.2.3 Measurement Results

Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of each LTE Band. It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of each LTE Band into any of the other blocks. The equipment must still, however, meet emissions requirements with the carrier at all frequencies over which it is capable of operating and it is the manufacturer's responsibility to verify this. The range of evaluated frequency is from 30MHz to 26GHz.

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LTE Band 7, 5 MHz, QPSK, Channel 20775

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5011.02	-51.30	6.58	9.92	-47.96	-25.00	22.96	H
7510.01	-53.98	8.35	12.21	-50.12	-25.00	25.12	H
10028.01	-52.42	9.26	12.91	-48.77	-25.00	23.77	H
12532.01	-48.67	10.27	13.22	-45.72	-25.00	20.72	V
15022.00	-45.89	11.24	13.99	-43.14	-25.00	18.14	V
17523.00	-44.31	12.81	14.93	-42.19	-25.00	17.19	V

LTE Band 7, 5 MHz, QPSK, Channel 21100

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5075.02	-52.26	6.70	10.01	-48.95	-25.00	23.95	H
7589.01	-53.24	8.02	12.27	-48.99	-25.00	23.99	H
10136.01	-52.09	9.40	12.95	-48.54	-25.00	23.54	V
12658.01	-48.23	10.37	13.29	-45.31	-25.00	20.31	V
15221.00	-45.01	11.37	13.87	-42.51	-25.00	17.51	H
17726.00	-44.11	12.33	15.22	-41.22	-25.00	16.22	V

LTE Band 7, 5 MHz, QPSK, Channel 21425

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5141.02	-51.22	6.87	10.10	-47.99	-25.00	22.99	H
7712.01	-54.04	8.41	12.37	-50.08	-25.00	25.08	V
10251.01	-51.92	9.48	13.00	-48.40	-25.00	23.40	V
12830.01	-48.05	10.69	13.40	-45.34	-25.00	20.34	H
15417.00	-44.44	11.42	13.75	-42.11	-25.00	17.11	V
17982.00	-43.35	12.90	15.57	-40.68	-25.00	15.68	V

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LTE Band 12, 1.4MHz, QPSK, Channel 23017

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1396.01	-59.89	3.23	4.96	2.15	-60.31	-13.00	47.31	V
2099.00	-53.97	4.19	4.90	2.15	-55.41	-13.00	42.41	V
2809.00	-52.62	4.93	6.66	2.15	-53.04	-13.00	40.04	H
3503.02	-55.03	5.53	8.20	2.15	-54.51	-13.00	41.51	H
4194.02	-54.11	6.19	9.09	2.15	-53.36	-13.00	40.36	H
4900.01	-54.69	6.73	9.80	2.15	-53.77	-13.00	40.77	V

LTE Band 12, 1.4MHz, QPSK, Channel 23095

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.01	-58.64	3.25	5.06	2.15	-58.98	-13.00	45.98	H
2123.00	-51.05	4.21	4.97	2.15	-52.44	-13.00	39.44	V
2843.00	-51.99	4.96	6.72	2.15	-52.38	-13.00	39.38	V
3529.02	-55.39	5.61	8.24	2.15	-54.91	-13.00	41.91	H
4239.02	-54.88	6.25	9.14	2.15	-54.14	-13.00	41.14	V
4945.01	-54.54	6.70	9.85	2.15	-53.54	-13.00	40.54	V

LTE Band 12, 1.4MHz, QPSK, Channel 23173

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1431.01	-55.64	3.28	5.14	2.15	-55.93	-13.00	42.93	H
2146.00	-51.50	4.24	5.04	2.15	-52.85	-13.00	39.85	V
2848.00	-52.18	4.96	6.73	2.15	-52.56	-13.00	39.56	V
3587.02	-53.85	6.20	8.32	2.15	-53.88	-13.00	40.88	V
4305.02	-53.38	6.19	9.21	2.15	-52.51	-13.00	39.51	V
5010.01	-53.92	6.59	9.91	2.15	-52.75	-13.00	39.75	V

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LTE Band 13, 5MHz, QPSK, Channel 23205

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1561.01	-45.49	3.47	5.39	2.15	-45.72	-13.00	32.72	H
2350.00	-54.34	4.46	5.65	2.15	-55.30	-13.00	42.30	V
3119.02	-53.38	5.38	7.29	2.15	-53.62	-13.00	40.62	V
3902.02	-54.51	6.11	8.76	2.15	-54.01	-13.00	41.01	V
4682.02	-54.06	6.49	9.58	2.15	-53.12	-13.00	40.12	V
5450.01	-54.49	6.87	10.53	2.15	-52.98	-13.00	39.98	V

LTE Band 13, 5MHz, QPSK, Channel 23230

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1559.01	-58.56	3.47	5.39	2.15	-58.79	-13.00	45.79	H
2351.00	-54.57	4.46	5.65	2.15	-55.53	-13.00	42.53	V
3142.02	-53.48	5.38	7.34	2.15	-53.67	-13.00	40.67	V
3906.02	-54.36	6.11	8.77	2.15	-53.85	-13.00	40.85	H
4679.02	-53.91	6.49	9.58	2.15	-52.97	-13.00	39.97	V
5482.01	-54.57	6.99	10.57	2.15	-53.14	-13.00	40.14	H

LTE Band 13, 5MHz, QPSK, Channel 23255

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1561.01	-59.69	3.47	5.39	2.15	-59.92	-13.00	46.92	H
2358.00	-54.29	4.47	5.67	2.15	-55.24	-13.00	42.24	V
3135.02	-51.40	5.39	7.32	2.15	-51.62	-13.00	38.62	H
3935.02	-54.73	6.12	8.81	2.15	-54.19	-13.00	41.19	H
4693.02	-54.73	6.50	9.59	2.15	-53.79	-13.00	40.79	H
5506.01	-54.46	7.08	10.60	2.15	-53.09	-13.00	40.09	V

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LTE Band 25, 1.4MHz, QPSK, Channel 26047

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
7957.01	-53.70	8.37	12.57	-49.50	-13.00	36.50	V
9471.01	-52.39	9.40	13.38	-48.41	-13.00	35.41	V
11244.01	-50.09	9.66	13.15	-46.60	-13.00	33.60	V
13579.01	-47.94	10.80	14.25	-44.49	-13.00	31.49	V
15424.00	-43.64	11.43	13.75	-41.32	-13.00	28.32	H
16692.00	-42.14	11.75	13.68	-40.21	-13.00	27.21	H

LTE Band 25, 1.4MHz, QPSK, Channel 26365

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
7566.01	-54.39	8.12	12.25	-50.26	-13.00	37.26	H
9423.01	-53.54	9.15	13.35	-49.34	-13.00	36.34	V
11279.01	-51.21	9.87	13.14	-47.94	-13.00	34.94	V
13179.01	-47.97	10.59	13.75	-44.81	-13.00	31.81	H
15015.00	-46.11	11.24	13.99	-43.36	-13.00	30.36	H
16948.00	-41.99	12.18	13.78	-40.39	-13.00	27.39	H

LTE Band 25, 1.4MHz, QPSK, Channel 26683

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
7626.01	-54.58	8.09	12.30	-50.37	-13.00	37.37	H
9564.01	-53.46	9.31	13.34	-49.43	-13.00	36.43	H
11515.01	-50.90	9.81	13.10	-47.61	-13.00	34.61	H
13382.01	-47.93	10.57	14.03	-44.47	-13.00	31.47	H
15360.00	-45.14	11.35	13.78	-42.71	-13.00	29.71	V
17210.00	-43.64	12.35	14.26	-41.73	-13.00	28.73	H

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LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26697

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5688.01	-53.42	7.29	10.56	2.15	-52.30	-13.00	39.30	V
6510.01	-51.81	7.51	11.01	2.15	-50.46	-13.00	37.46	H
7339.01	-51.90	8.11	12.01	2.15	-50.15	-13.00	37.15	V
8128.01	-52.43	8.37	12.70	2.15	-50.25	-13.00	37.25	V
8948.00	-51.44	9.02	13.09	2.15	-49.52	-13.00	36.52	V
9761.00	-51.38	8.95	13.14	2.15	-49.34	-13.00	36.34	V

LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26740

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1639.01	-60.23	3.56	5.25	2.15	-60.69	-13.00	47.69	H
2475.00	-53.50	4.60	6.03	2.15	-54.22	-13.00	41.22	H
3257.02	-54.26	5.28	7.62	2.15	-54.07	-13.00	41.07	V
4082.02	-54.84	6.04	8.98	2.15	-54.05	-13.00	41.05	H
4917.01	-54.32	6.73	9.82	2.15	-53.38	-13.00	40.38	H
5752.01	-53.69	7.26	10.55	2.15	-52.55	-13.00	39.55	V

LTE Band 26(814MHz~824MHz), 1.4MHz, QPSK, Channel 26783

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5131.01	-52.59	6.85	10.08	2.15	-51.51	-13.00	38.51	H
6656.01	-51.10	7.93	11.19	2.15	-49.99	-13.00	36.99	V
7449.01	-50.66	8.25	12.14	2.15	-48.92	-13.00	35.92	V
8352.00	-51.90	8.65	12.88	2.15	-49.82	-13.00	36.82	V
9067.00	-51.41	9.02	13.14	2.15	-49.44	-13.00	36.44	H
9981.00	-50.00	9.16	12.92	2.15	-48.39	-13.00	35.39	V

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LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 26797

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1663.01	-59.62	3.57	5.21	2.15	-60.13	-13.00	47.13	V
2470.00	-53.44	4.59	6.01	2.15	-54.17	-13.00	41.17	V
3283.02	-54.91	5.28	7.68	2.15	-54.66	-13.00	41.66	V
4114.02	-55.04	6.04	9.01	2.15	-54.22	-13.00	41.22	H
4946.01	-54.12	6.70	9.85	2.15	-53.12	-13.00	40.12	H
5779.01	-53.72	7.22	10.54	2.15	-52.55	-13.00	39.55	V

LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 26915

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1673.01	-56.54	3.58	5.19	2.15	-57.08	-13.00	44.08	H
2514.00	-52.68	4.64	6.13	2.15	-53.34	-13.00	40.34	H
3345.02	-54.54	5.31	7.83	2.15	-54.17	-13.00	41.17	V
4195.02	-54.68	6.19	9.10	2.15	-53.92	-13.00	40.92	V
5024.01	-54.12	6.56	9.93	2.15	-52.90	-13.00	39.90	V
5843.01	-52.73	7.21	10.53	2.15	-51.56	-13.00	38.56	V

LTE Band 26(824MHz~849MHz), 1.4MHz, QPSK, Channel 27033

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1701.01	-58.67	3.60	5.14	2.15	-59.28	-13.00	46.28	H
2558.00	-52.85	4.67	6.20	2.15	-53.47	-13.00	40.47	H
3395.02	-55.29	5.36	7.95	2.15	-54.85	-13.00	41.85	V
4225.02	-54.64	6.26	9.13	2.15	-53.92	-13.00	40.92	V
5073.01	-53.81	6.70	10.00	2.15	-52.66	-13.00	39.66	V
5948.01	-52.94	7.47	10.51	2.15	-52.05	-13.00	39.05	V

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LTE band 41-HPUE, 5MHz, QPSK, Channel 39675

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4999.02	-52.79	6.60	9.90	-49.49	-25.00	24.49	H
7499.01	-54.73	8.39	12.20	-50.92	-25.00	25.92	V
9993.01	-52.66	9.17	12.91	-48.92	-25.00	23.92	V
12488.01	-49.12	10.21	13.20	-46.13	-25.00	21.13	V
14987.00	-46.07	11.21	14.01	-43.27	-25.00	18.27	H
17487.00	-44.00	12.69	14.87	-41.82	-25.00	16.82	V

LTE band 41-HPUE, 5MHz, QPSK, Channel 40620

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5190.02	-50.47	6.94	10.17	-47.24	-25.00	22.24	H
7803.01	-54.09	8.29	12.44	-49.94	-25.00	24.94	V
10366.01	-51.22	9.75	13.05	-47.92	-25.00	22.92	V
12978.01	-48.23	10.48	13.49	-45.22	-25.00	20.22	H
15581.00	-43.88	11.49	13.70	-41.67	-25.00	16.67	H
16868.00	-41.97	12.03	13.75	-40.25	-25.00	15.25	H

LTE band 41-HPUE, 5MHz, QPSK, Channel 41565

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5387.02	-55.86	6.86	10.44	-52.28	-25.00	27.28	H
8077.01	-54.22	8.32	12.66	-49.88	-25.00	24.88	V
10771.01	-51.49	9.48	13.15	-47.82	-25.00	22.82	H
13433.01	-48.38	10.59	14.11	-44.86	-25.00	19.86	H
16138.00	-43.43	11.81	13.67	-41.57	-25.00	16.57	V
17451.00	-44.18	12.61	14.79	-42.00	-25.00	17.00	V

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LTE Band 66, 1.4MHz QPSK, Channel 131979

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3422.02	-59.04	5.38	8.01	-56.41	-13.00	43.41	V
5157.02	-65.96	6.89	10.12	-62.73	-13.00	49.73	V
6885.01	-64.66	7.78	11.46	-60.98	-13.00	47.98	V
8592.01	-64.89	8.51	13.02	-60.38	-13.00	47.38	V
10291.01	-62.04	9.61	13.02	-58.63	-13.00	45.63	V
12023.01	-60.13	10.12	13.01	-57.24	-13.00	44.24	V

LTE Band 66, 1.4MHz, QPSK, Channel 132322

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.02	-58.89	5.50	8.18	-56.21	-13.00	43.21	V
5282.02	-66.31	6.99	10.29	-63.01	-13.00	50.01	H
6965.01	-64.45	8.03	11.56	-60.92	-13.00	47.92	V
8670.01	-65.09	8.40	13.03	-60.46	-13.00	47.46	V
10490.01	-61.75	9.67	13.10	-58.32	-13.00	45.32	V
12193.01	-59.91	10.08	13.08	-56.91	-13.00	43.91	V

LTE Band 66, 1.4MHz, QPSK, Channel 132665

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3559.02	-55.16	5.92	8.28	-52.80	-13.00	39.80	V
5289.02	-66.34	6.99	10.30	-63.03	-13.00	50.03	V
7152.01	-64.50	8.18	11.78	-60.90	-13.00	47.90	V
8951.01	-64.11	9.03	13.09	-60.05	-13.00	47.05	V
10701.01	-61.83	9.31	13.14	-58.00	-13.00	45.00	V
12498.01	-59.71	10.18	13.20	-56.69	-13.00	43.69	V

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LTE Band 71, 5MHz, QPSK, Channel 133147

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1331.01	-55.05	3.15	4.62	2.15	-55.73	-13.00	42.73	H
1973.01	-54.64	3.98	4.65	2.15	-56.12	-13.00	43.12	H
2646.00	-52.04	4.74	6.36	2.15	-52.57	-13.00	39.57	V
3348.02	-54.27	5.32	7.84	2.15	-53.90	-13.00	40.90	V
4020.02	-54.28	6.05	8.92	2.15	-53.56	-13.00	40.56	V
4668.02	-53.35	6.48	9.57	2.15	-52.41	-13.00	39.41	V

LTE Band 71, 5MHz, QPSK, Channel 133297

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1361.01	-54.98	3.19	4.78	2.15	-55.54	-13.00	42.54	H
2042.00	-52.95	4.14	4.73	2.15	-54.51	-13.00	41.51	V
2734.00	-52.92	4.82	6.52	2.15	-53.37	-13.00	40.37	V
3415.02	-54.80	5.38	8.00	2.15	-54.33	-13.00	41.33	V
4087.02	-54.38	6.04	8.99	2.15	-53.58	-13.00	40.58	V
4761.01	-53.49	6.59	9.66	2.15	-52.57	-13.00	39.57	H

LTE Band 71, 5MHz, QPSK, Channel 133447

Frequency (MHz)	P_{Mea} (dBm)	Path Loss(dB)	Antenna Gain(dBi)	Correction (dB)	Peak ERP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1391.01	-55.46	3.22	4.93	2.15	-55.90	-13.00	42.90	H
2081.00	-55.90	4.17	4.84	2.15	-57.38	-13.00	44.38	H
2759.00	-52.52	4.86	6.57	2.15	-52.96	-13.00	39.96	H
3496.02	-53.92	5.51	8.19	2.15	-53.39	-13.00	40.39	H
4200.02	-54.50	6.21	9.10	2.15	-53.76	-13.00	40.76	V
4853.01	-53.31	6.72	9.75	2.15	-52.43	-13.00	39.43	H

Note: The maximum value of expanded measurement uncertainty for this test item is U = 5.16 dB, k = 2.

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A.3 Frequency Stability

A.3.1 Method of Measurement

Frequency stability is a measure of the frequency drift due to temperature and supply voltage variations, with reference to the frequency measured at +20 °C and rated supply voltage. Two reference points are established at the applicable unwanted emissions limit using a RBW equal to the RBW required by the unwanted emissions specification of the applicable regulatory standard. These reference points measured using the lowest and highest channel of operation shall be identified as F_L and F_H respectively.

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of CMW500.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30℃.
3. With the EUT, powered via nominal voltage, connected to the CMW500, and in a simulated call on middle channel for each LTE band, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10℃ increments from -30℃ to +50℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50℃.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the center channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 ℃increments from -30℃ to +50℃. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
9. At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of the lower, higher and nominal voltage. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress.

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A.3.2 Measurement results

LTE Band 7, 20MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	2500.897	2569.103		
50				-0.51	0.0002
40				-2.30	0.0009
30				-0.97	0.0004
10				1.12	0.0004
0				-1.65	0.0007
-10				-1.14	0.0004
-20				-0.24	0.0001
-30				0.43	0.0002

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2500.897	2569.103	-1.07	0.0004
4.2				0.72	0.0003

LTE Band 12, 10MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	699.481	715.519		
50				6.65	0.0094
40				5.91	0.0084
30				0.37	0.0005
10				0.36	0.0005
0				0.07	0.0001
-10				1.10	0.0016
-20				0.43	0.0006
-30				0.13	0.0002

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	699.481	715.519	-0.34	0.0005
4.2				0.16	0.0002

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LTE Band 13, 10MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	777.401	786.599		
50				-1.07	0.0014
40				6.64	0.0085
30				0.29	0.0004
10				-0.74	0.0009
0				6.51	0.0083
-10				-0.36	0.0005
-20				7.54	0.0096
-30				-0.20	0.0003

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	777.401	786.599	-1.17	0.0015
4.2				-0.34	0.0004

LTE Band 25, 20MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1850.801	1914.199		
50				-0.54	0.0003
40				-0.36	0.0002
30				-0.99	0.0005
10				0.13	0.0001
0				-2.00	0.0011
-10				2.13	0.0011
-20				-1.62	0.0009
-30				-0.23	0.0001

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1850.801	1914.199	-0.26	0.0001
4.2				-0.74	0.0004

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LTE Band 26(814MHz~824MHz), 10MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	814.389	823.611		
50				1.52	0.0019
40				-1.53	0.0019
30				1.43	0.0017
10				-1.65	0.0020
0				-0.44	0.0005
-10				6.47	0.0079
-20				0.90	0.0011
-30				-1.30	0.0016

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	814.389	823.611	-1.96	0.0024
4.2				-1.73	0.0021

LTE Band 26(824MHz~849MHz), 15MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	824.553	848.471		
50				0.84	0.0010
40				-0.99	0.0012
30				-0.34	0.0004
10				6.85	0.0082
0				6.87	0.0082
-10				0.60	0.0007
-20				-1.54	0.0018
-30				-1.37	0.0016

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	824.553	848.471	-0.66	0.0008
4.2				-0.40	0.0005

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LTE Band 41, 20MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	2495.936	2689.808		
50				-3.45	0.0013
40				-1.50	0.0006
30				-4.88	0.0019
10				-2.95	0.0011
0				-3.91	0.0015
-10				-4.21	0.0016
-20				-2.35	0.0009
-30				0.60	0.0002

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	2495.936	2689.808	-2.88	0.0011
4.2				-0.76	0.0003

LTE Band 66, 20MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	1710.801	1779.199		
50				0.70	0.0004
40				0.60	0.0003
30				1.47	0.0008
10				0.74	0.0004
0				1.96	0.0011
-10				1.22	0.0007
-20				1.60	0.0009
-30				1.23	0.0007

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	1710.801	1779.199	0.37	0.0002
4.2				0.87	0.0005

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LTE Band 71, 20MHz bandwidth QPSK (worst case of all bandwidths)

Frequency Error vs Temperature

Temperature(℃)	Voltage(V)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
20	3.85	663.994	697.006		
50				0.03	0.0000
40				-0.01	0.0000
30				0.54	0.0008
10				-0.21	0.0003
0				-1.03	0.0015
-10				0.16	0.0002
-20				-0.43	0.0006
-30				-0.10	0.0001

Frequency Error vs Voltage

Voltage(V)	Temperature(℃)	F_L(MHz)	F_H(MHz)	Offset(Hz)	Frequency error(ppm)
3.6	20	663.994	697.006	-0.69	0.0010
4.2				-0.09	0.0001

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A.4 Occupied Bandwidth

Occupied bandwidth measurements are only provided for selected frequencies in order to reduce the amount of submitted data. Data were taken at the mid frequencies frequency. The table below lists the measured 99% BW. Spectrum analyzer plots are included on the following pages.
The measurement method is from ANSI C63.26:
a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts.
b) The nominal IF filter 3 dB bandwidth (RBW) shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set ≥ 3 × RBW.
c) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding the maximum spectrum analyzer input mixer level for linear operation.
d) Set the detection mode to peak, and the trace mode to max-hold.

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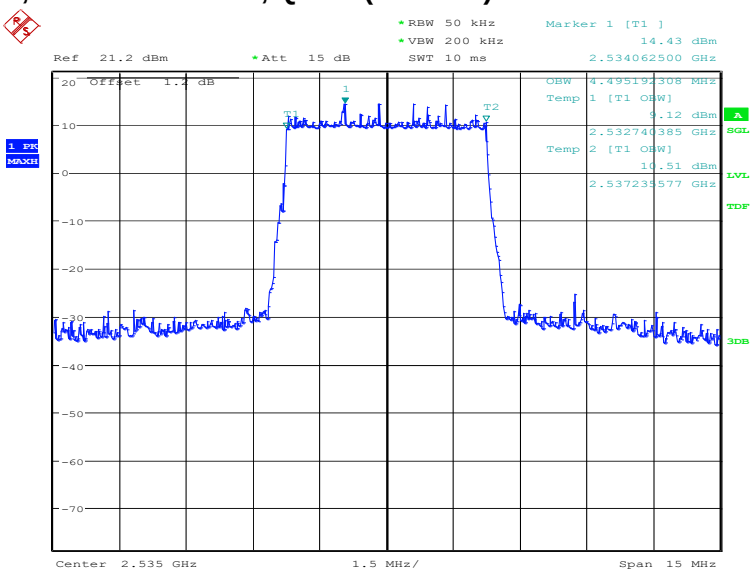
LTE band 7, 5MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
2535.0	QPSK	16QAM
	4495.19	4495.19

LTE band 7, 5MHz Bandwidth, QPSK (99% BW)



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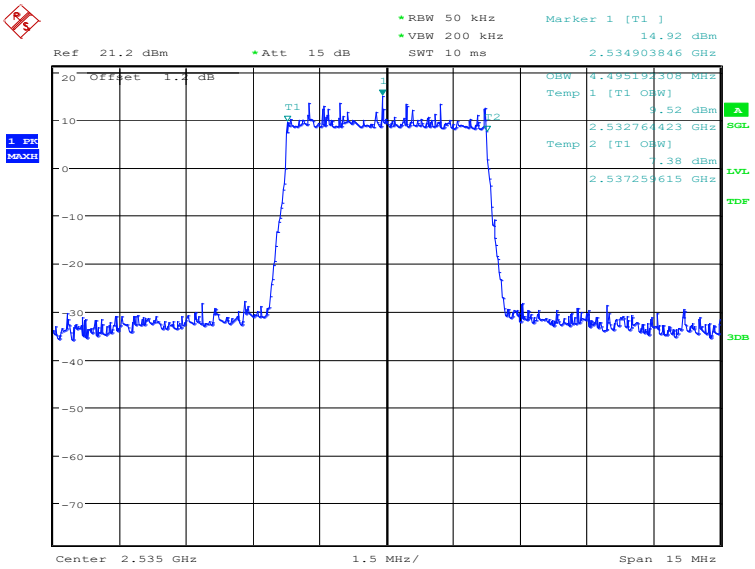
LTE band 7, 5MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 15:49:25

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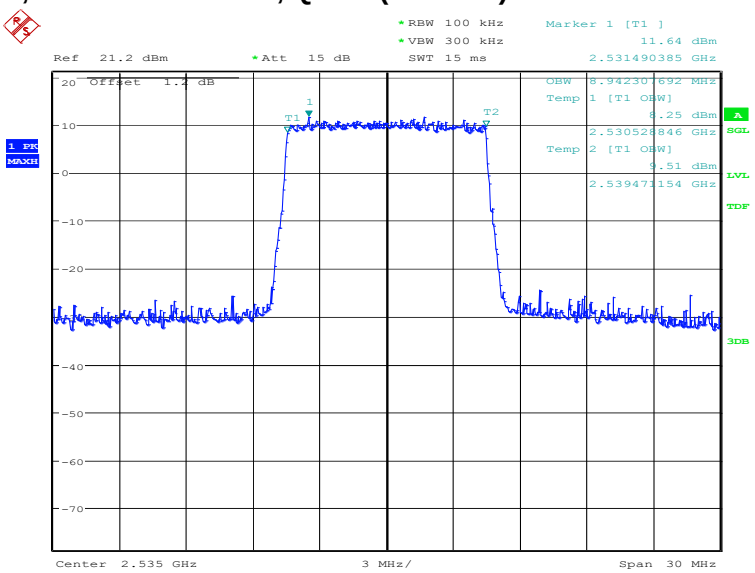
LTE band 7, 10MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
2535.0	QPSK	16QAM
	8942.31	8942.31

LTE band 7, 10MHz Bandwidth, QPSK (99% BW)



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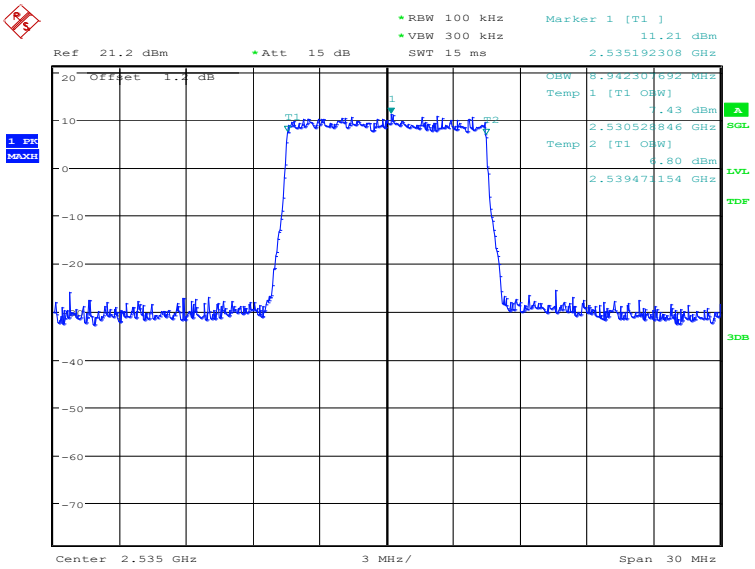
LTE band 7, 10MHz Bandwidth, 16QAM (99% BW)



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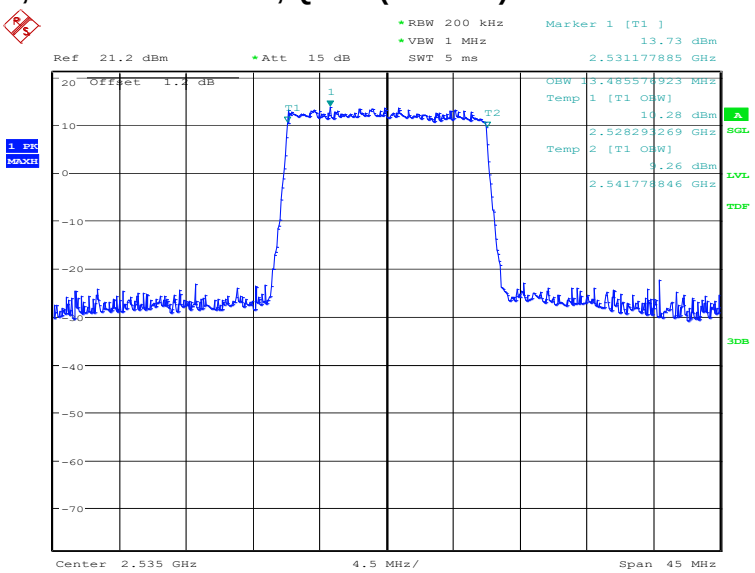
LTE band 7, 15MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
2535.0	QPSK	16QAM
	13485.58	13485.58

LTE band 7, 15MHz Bandwidth, QPSK (99% BW)



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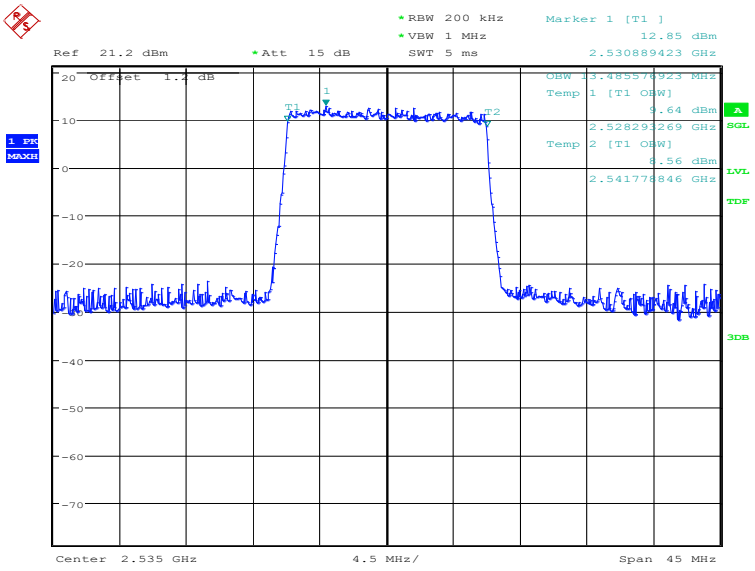
LTE band 7, 15MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 15:52:03

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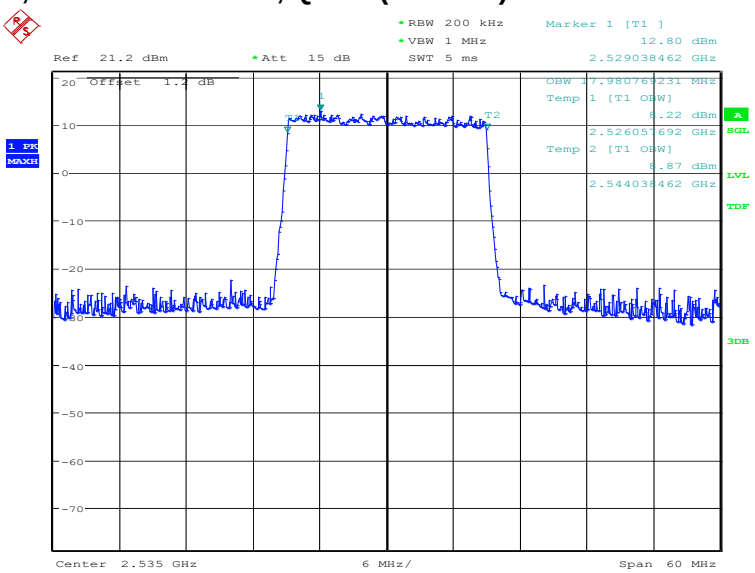
LTE band 7, 20MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
2535.0	QPSK	16QAM
	17980.77	17884.62

LTE band 7, 20MHz Bandwidth, QPSK (99% BW)



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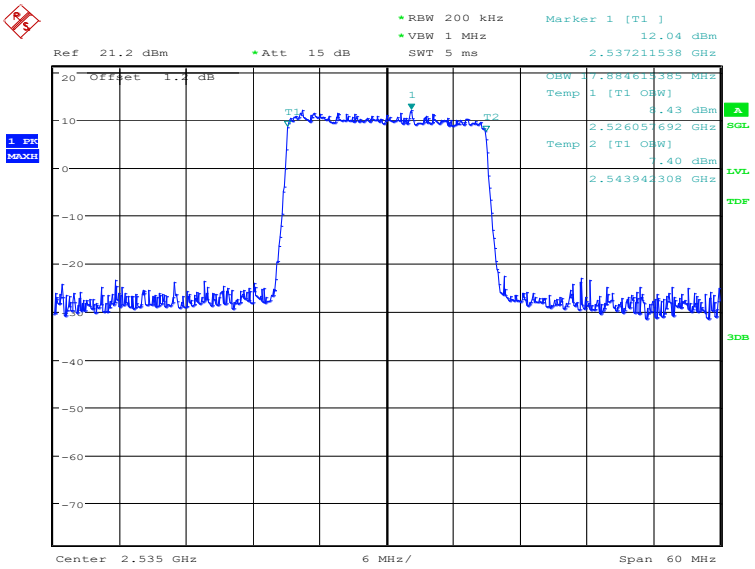
LTE band 7, 20MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 15:53:22

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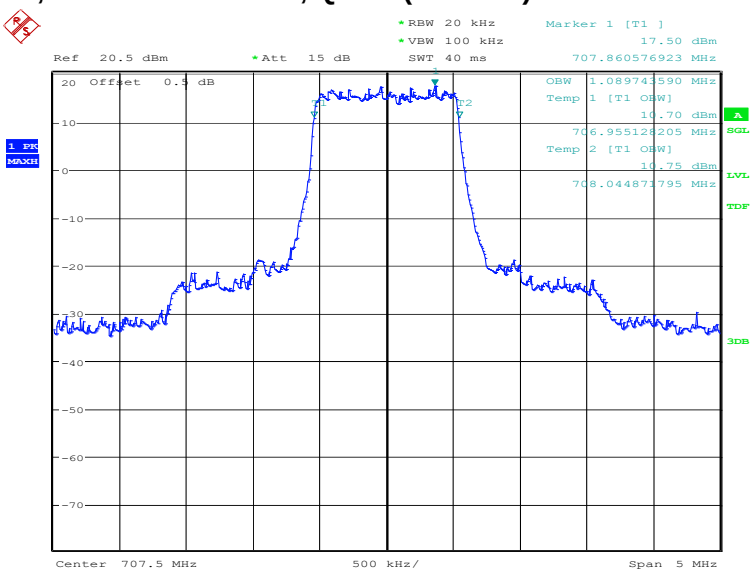
LTE band 12, 1.4MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
707.5	QPSK	16QAM
	1089.74	1105.77

LTE band 12, 1.4MHz Bandwidth, QPSK (99% BW)



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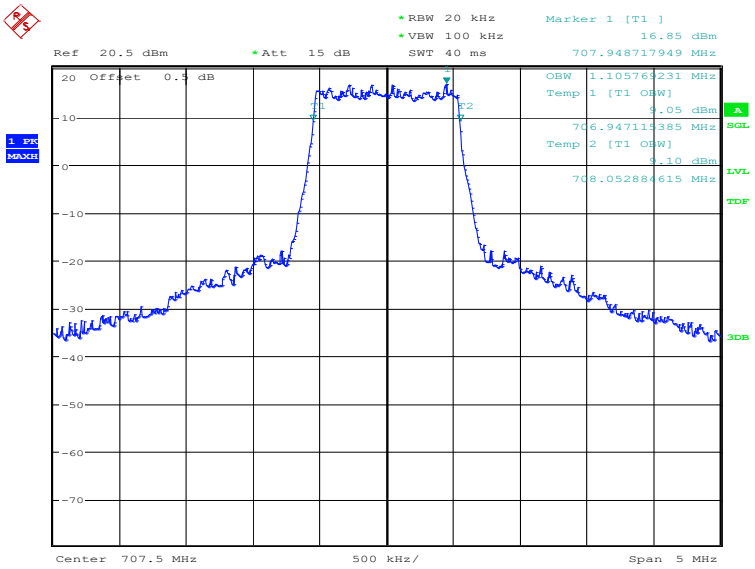
LTE band 12, 1.4MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 15:55:29

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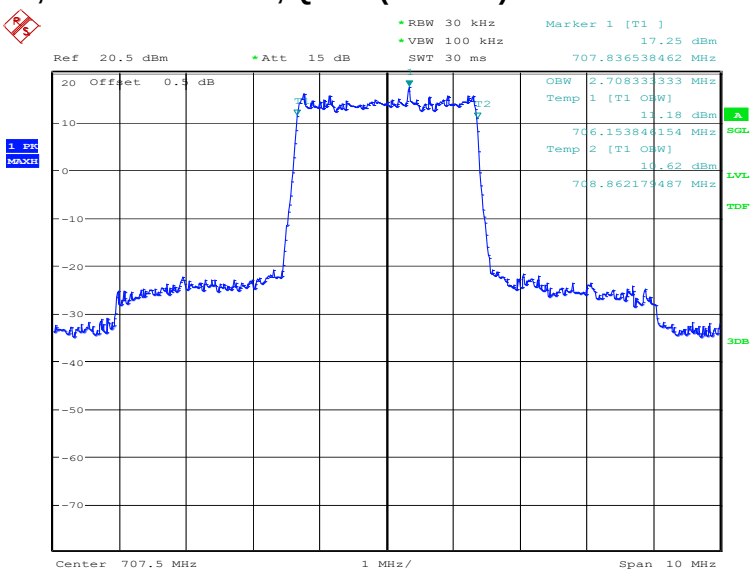
LTE band 12, 3MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
707.5	QPSK	16QAM
	2708.33	2692.31

LTE band 12, 3MHz Bandwidth, QPSK (99% BW)



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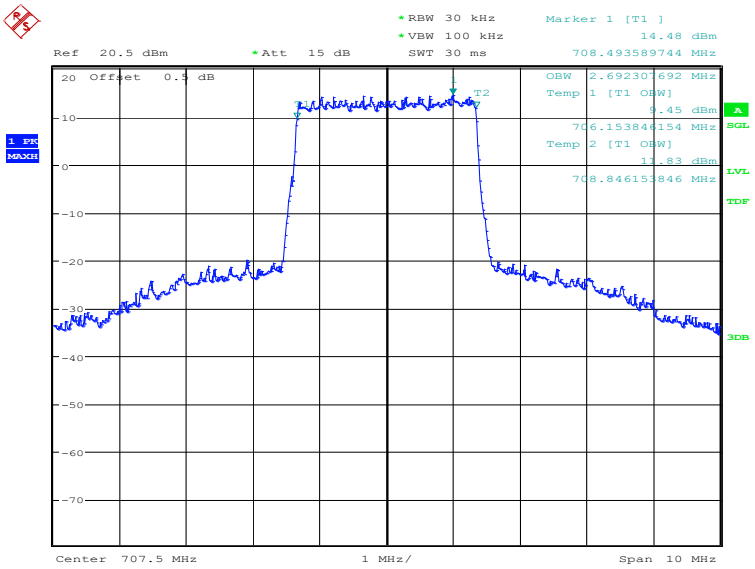
LTE band 12, 3MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 15:56:48

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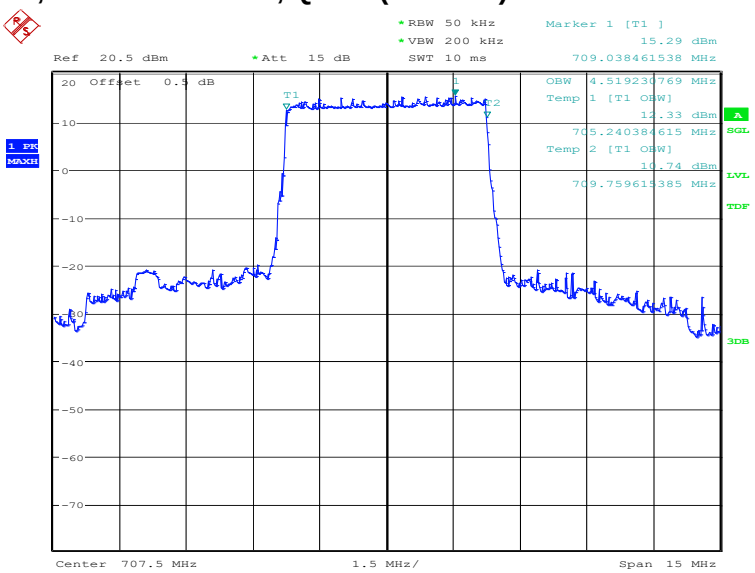
LTE band 12, 5MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
707.5	QPSK	16QAM
	4519.23	4495.19

LTE band 12, 5MHz Bandwidth, QPSK (99% BW)



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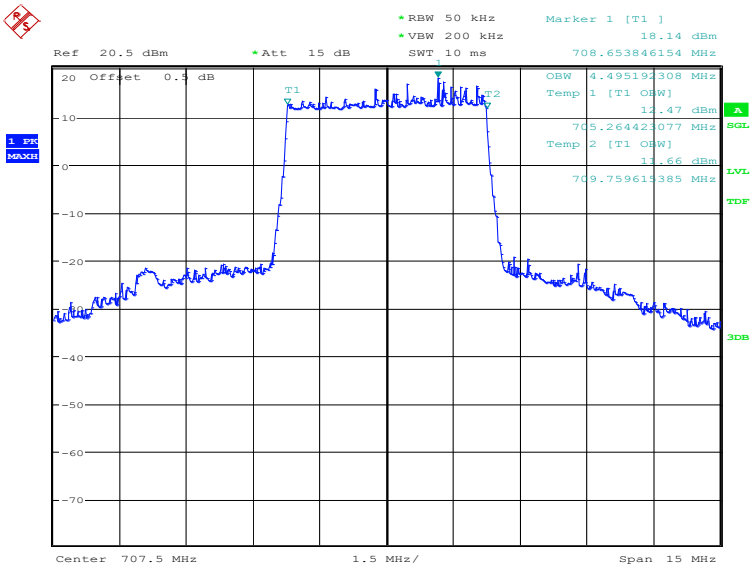
LTE band 12, 5MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 15:58:07

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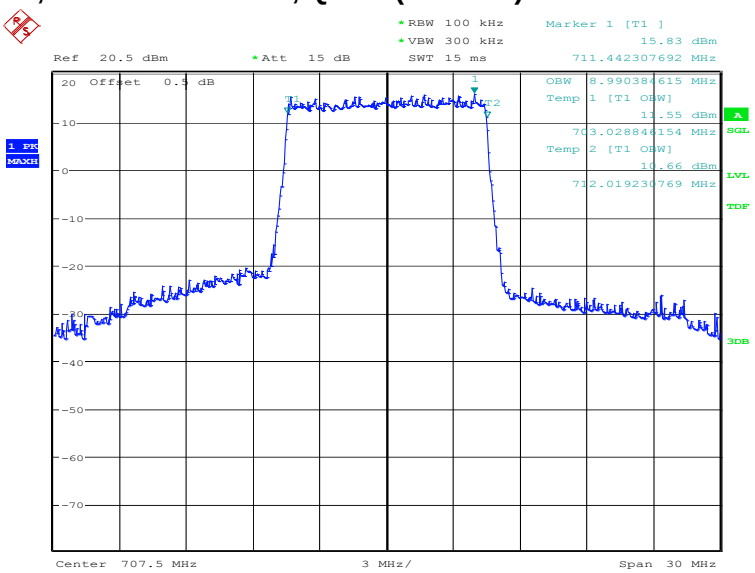
LTE band 12, 10MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
707.5	QPSK	16QAM
	8990.38	8942.31

LTE band 12, 10MHz Bandwidth, QPSK (99% BW)



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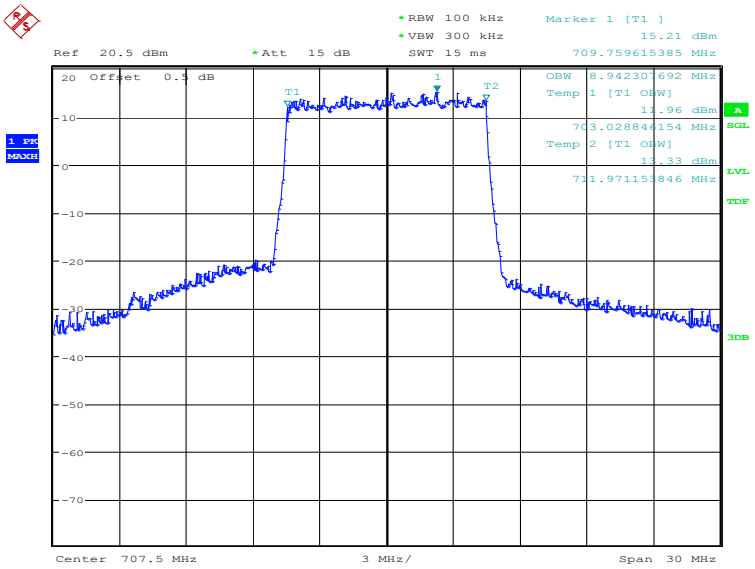
LTE band 12, 10MHz Bandwidth, 16QAM (99% BW)



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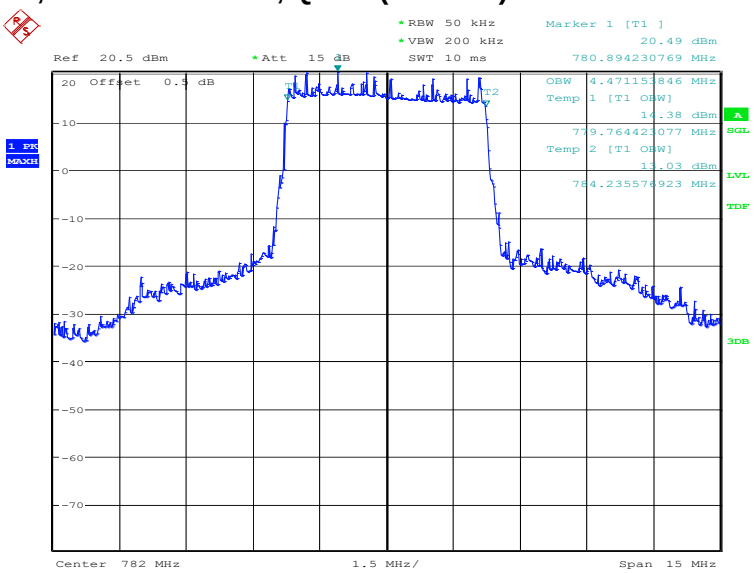
LTE band 13, 5MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
782.0	QPSK	16QAM
	4471.15	4471.15

LTE band 13, 5MHz Bandwidth, QPSK (99% BW)



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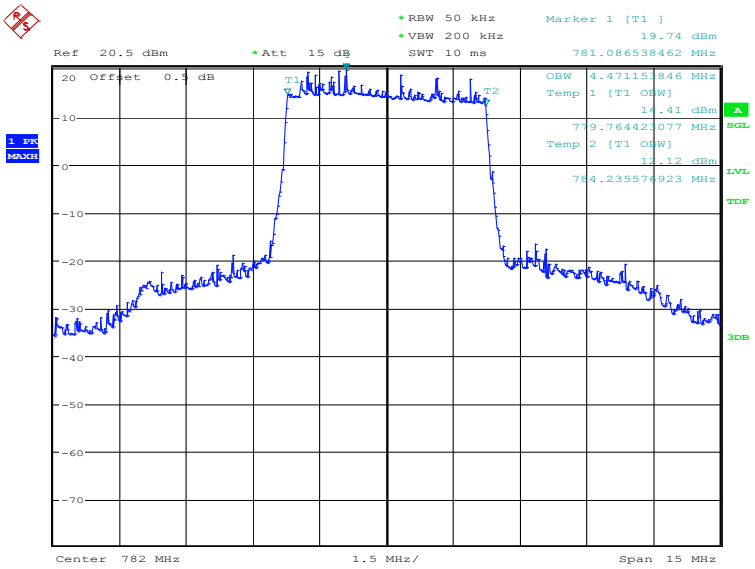
LTE band 13, 5MHz Bandwidth,16QAM (99% BW)



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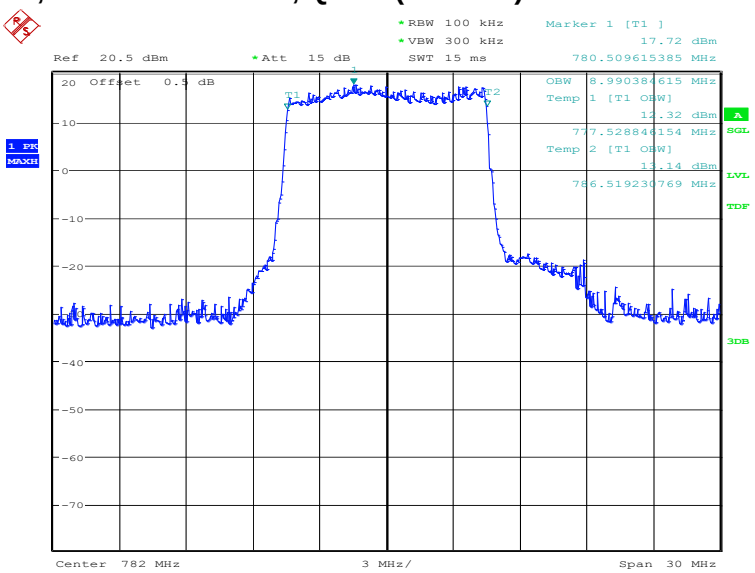
LTE band 13, 10MHz (99%)

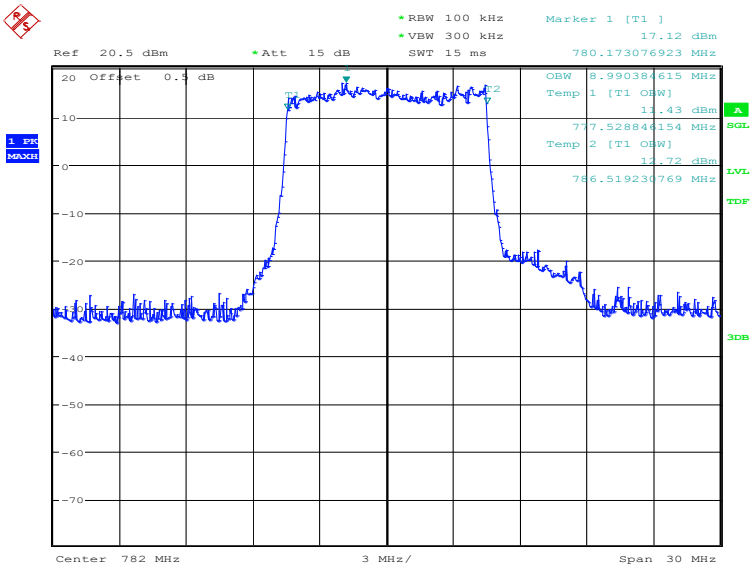
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
782.0	QPSK	16QAM
	8990.38	8990.38

LTE band 13, 10MHz Bandwidth, QPSK (99% BW)



Date: 19.NOV.2020 16:01:26

LTE band 13, 10MHz Bandwidth,16QAM (99% BW)



Date: 19.NOV.2020 16:02:05

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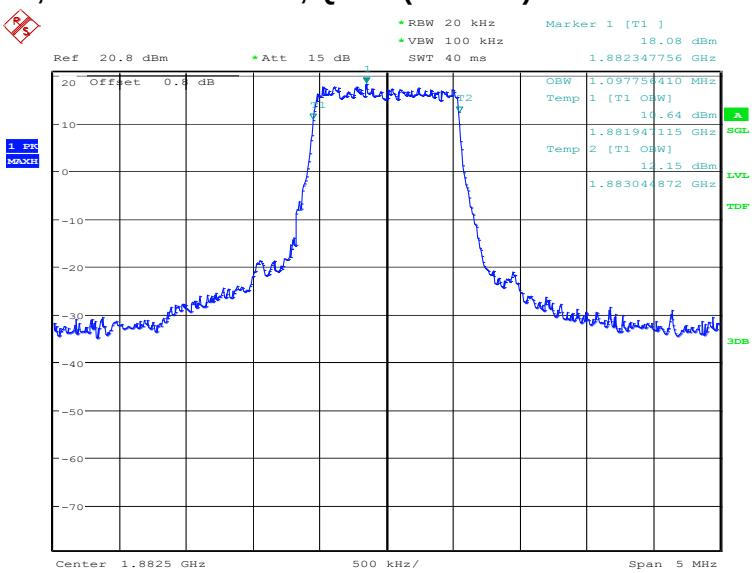
LTE band 25, 1.4MHz (99%)

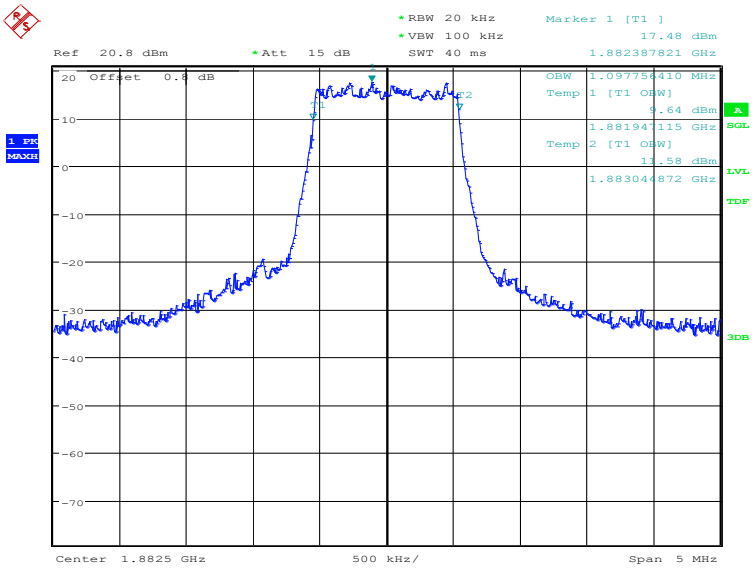
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
1882.5	QPSK	16QAM
	1097.76	1097.76

LTE band 25, 1.4MHz Bandwidth, QPSK (99% BW)



Date: 19.NOV.2020 16:02:52

LTE band 25, 1.4MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 16:03:30

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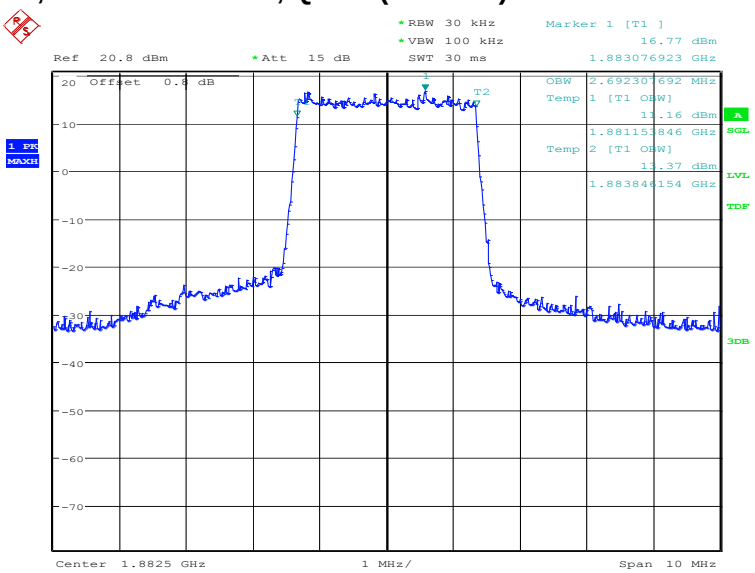
LTE band 25, 3MHz (99%)

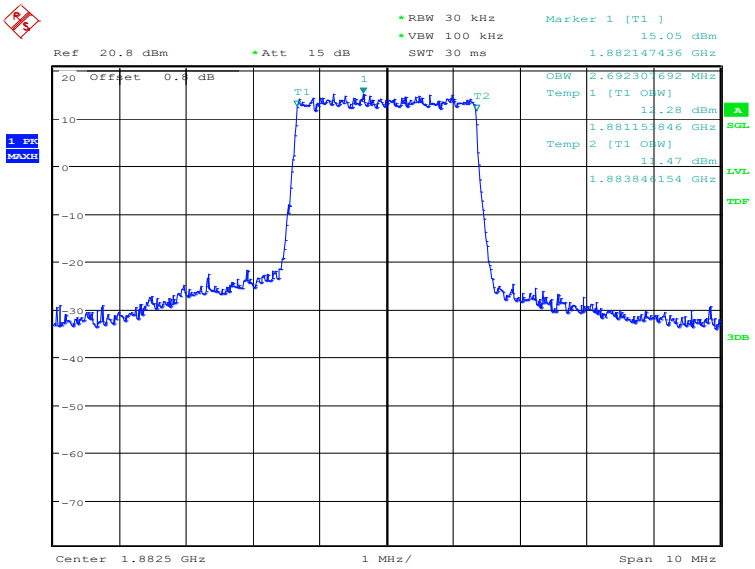
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
1882.5	QPSK	16QAM
	2692.31	2692.31

LTE band 25, 3MHz Bandwidth, QPSK (99% BW)



Date: 19.NOV.2020 16:04:11

LTE band 25, 3MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 16:04:49

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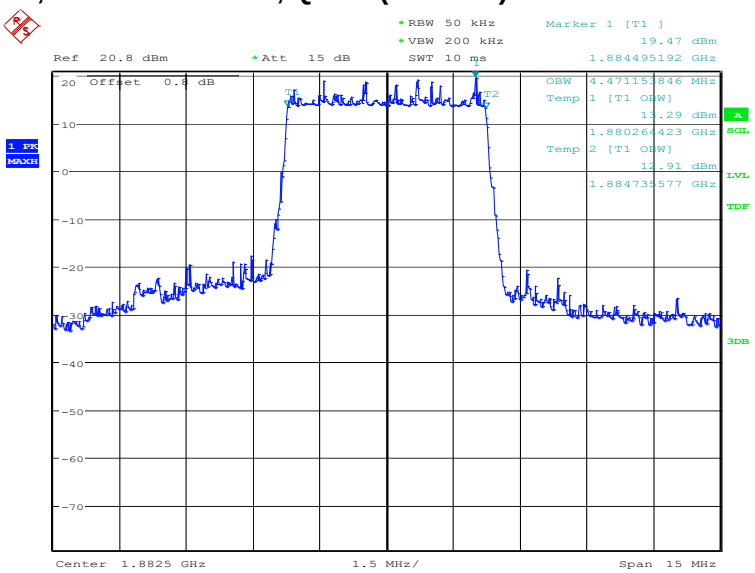
LTE band 25, 5MHz (99%)

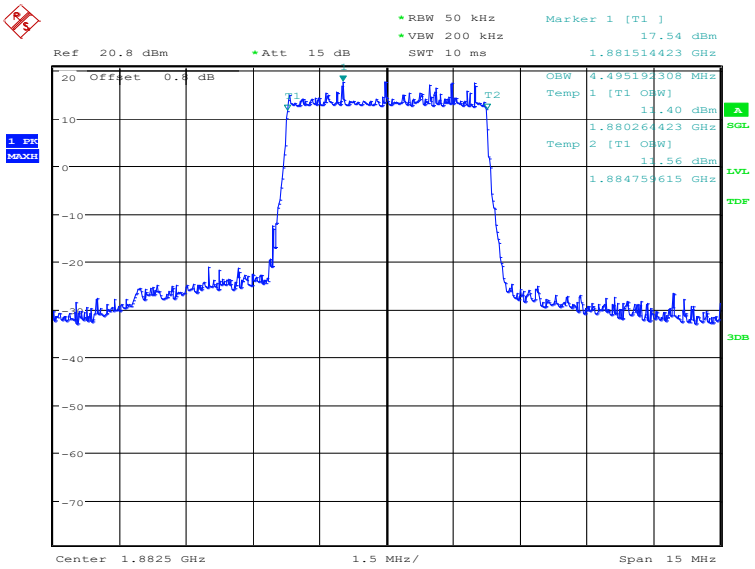
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
1882.5	QPSK	16QAM
	4471.15	4495.19

LTE band 25, 5MHz Bandwidth, QPSK (99% BW)



Date: 19.NOV.2020 16:05:30

LTE band 25, 5MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 16:06:08

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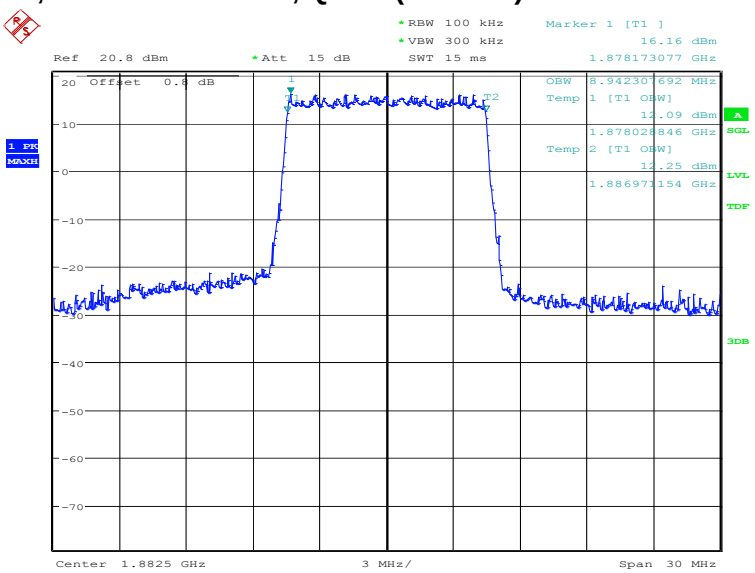
LTE band 25, 10MHz (99%)

Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
1882.5	QPSK	16QAM
	8942.31	8942.31

LTE band 25, 10MHz Bandwidth, QPSK (99% BW)



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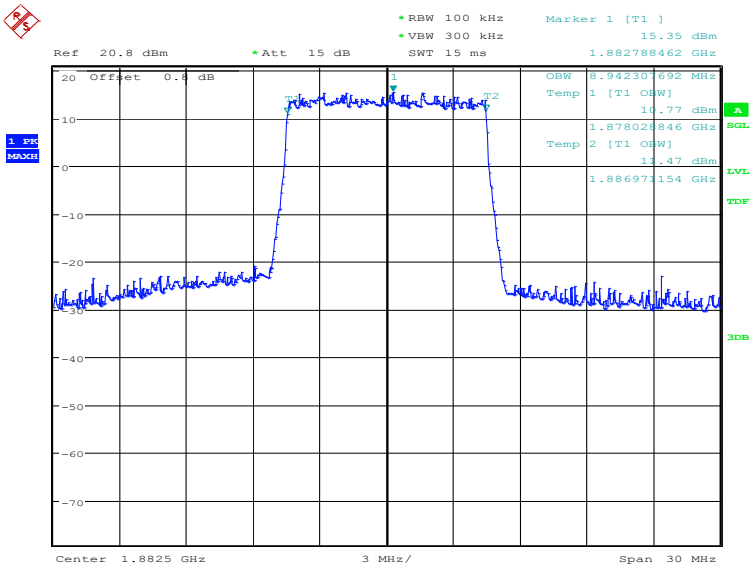
LTE band 25, 10MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 16:07:28

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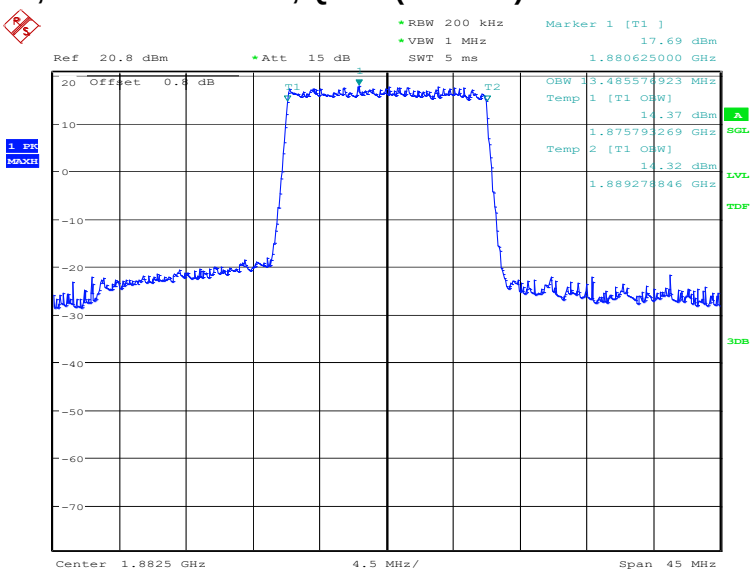
LTE band 25, 15MHz (99%)

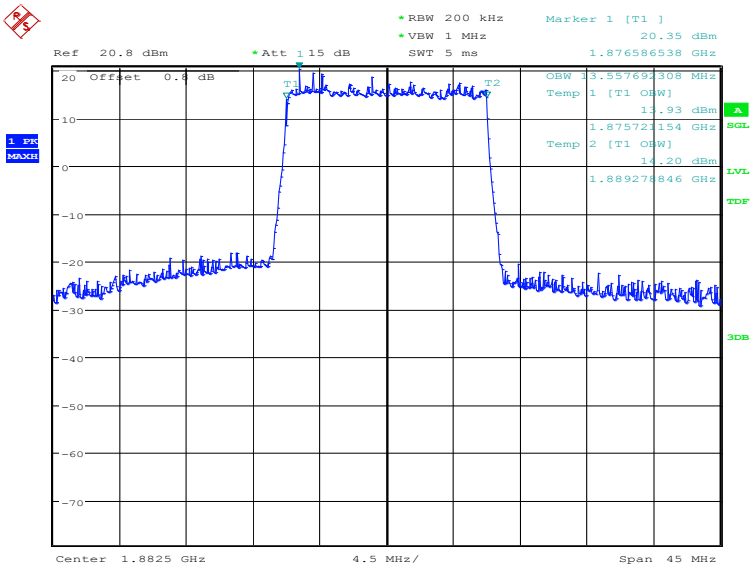
Frequency(MHz)	Occupied Bandwidth (99%) (kHz)	
1882.5	QPSK	16QAM
	13485.58	13557.69

LTE band 25, 15MHz Bandwidth, QPSK (99% BW)



Date: 19.NOV.2020 16:08:08

LTE band 25, 15MHz Bandwidth, 16QAM (99% BW)



Date: 19.NOV.2020 16:08:47

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