TEST REPORT

of

FCC Part 22 Subpart H, Part 24 Subpart E, Part 27 Subpart C/ L/ H
RSS-130 Issue 1, RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 3,
RSS-199 Issue 3 and RSS-Gen Issue 5

FCC ID: BEJTM13LNCAHK1
IC Certification: 2703H-TM13LNCAHK1

Equipment Under Test	:	LTE Module
Model Name	:	TM13LNCAHK1
Applicant	:	LG Electronics USA
Manufacturer	:	LG Electronics USA
Date of Receipt	:	2018.07.10
Date of Test(s)	:	2018.07.17 ~ 2018.11.12
Date of Issue	:	2018.11.19

In the configuration tested, the EUT complied with the standards specified above.

Tested By: **Date:** **2018.11.19**

Jinhyoung Cho

Technical Manager: **Date:** **2018.11.19**

Harim Lee

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1. General information

1.1. Testing laboratory

SGS Korea Co., Ltd. (Gunpo Laboratory)
- Wireless Div. 2FL, 10-2, LS-ro 182beon-gil, Gunpo-si, Gyeonggi-do, Korea, 15807
- Designation number: KR0150

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

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1.2. Details of applicant

Applicant : LG Electronics USA
Address : 1000 Sylvan Avenue, Englewood Cliffs, New Jersey, United States, 07632
Contact Person : Han, Kyung-su
Phone No. : +2 201 472 2623

1.3. Details of manufacturer

Company : LG Electronics Inc.
Address : 222 LG-ro, Jinwi-myeon, Pyeongtaek-si, Gyeonggi-do, Korea, 17709

1.4. Description of EUT

Kind of Product	LTE Module
Model Name	TM13LNCAHK1
Power Supply	DC 4.0 V
Rated Power	WCDMA 2, 5: 24 ㏈m LTE Band 2, 4, 5, 7, 12, 17: 23 ㏈m
Frequency Range	WCDMA 2: 1 850 ㎒ ~ 1 910 ㎒ WCDMA 5: 824 ㎒ ~ 849 ㎒ LTE Band 2: 1 850 ㎒ ~ 1 910 ㎒ LTE Band 4: 1 710 ㎒ ~ 1 755 ㎒ LTE Band 5: 824 ㎒ ~ 849 ㎒ LTE Band 7: 2 500 ㎒ ~ 2 570 ㎒ LTE Band 12: 699 ㎒ ~ 716 ㎒ LTE Band 17: 704 ㎒ ~ 716 ㎒
Emission Designator	WCDMA 2: 4M12F9W WCDMA 5: 4M14F9W LTE Band 2 (1.4 ㎒): 1M11G7D (QPSK) / 1M10W7D (16QAM) LTE Band 2 (3 ㎒): 2M69G7D (QPSK) / 2M69W7D (16QAM) LTE Band 2 (5 ㎒): 4M49G7D (QPSK) / 4M50W7D (16QAM) LTE Band 2 (10 ㎒): 8M94G7D (QPSK) / 8M97W7D (16QAM) LTE Band 2 (15 ㎒): 13M5G7D (QPSK) / 13M5W7D (16QAM) LTE Band 2 (20 ㎒): 17M9G7D (QPSK) / 17M9W7D (16QAM)

Emission Designator	LTE Band 4 (1.4 ㎒): 1M10G7D (QPSK) / 1M10W7D (16QAM) LTE Band 4 (3 ㎒): 2M70G7D (QPSK) / 2M69W7D (16QAM) LTE Band 4 (5 ㎒): 4M52G7D (QPSK) / 4M53W7D (16QAM) LTE Band 4 (10 ㎒): 8M94G7D (QPSK) / 8M94W7D (16QAM) LTE Band 4 (15 ㎒): 13M5G7D (QPSK) / 13M5W7D (16QAM) LTE Band 4 (20 ㎒): 17M9G7D (QPSK) / 17M9W7D (16QAM) LTE Band 5 (1.4 ㎒): 1M10G7D (QPSK) / 1M10W7D (16QAM) LTE Band 5 (3 ㎒): 2M69G7D (QPSK) / 2M69W7D (16QAM) LTE Band 5 (5 ㎒): 4M52G7D (QPSK) / 4M50W7D (16QAM) LTE Band 5 (10 ㎒): 8M92G7D (QPSK) / 8M94W7D (16QAM) LTE Band 7 (5 ㎒): 4M52G7D (QPSK) / 4M53W7D (16QAM) LTE Band 7 (10 ㎒): 8M94G7D (QPSK) / 8M94W7D (16QAM) LTE Band 7 (15 ㎒): 13M5G7D (QPSK) / 13M5W7D (16QAM) LTE Band 7 (20 ㎒): 17M9G7D (QPSK) / 17M9W7D (16QAM) LTE Band 12 (1.4 ㎒): 1M10G7D (QPSK) / 1M10W7D (16QAM) LTE Band 12 (3 ㎒): 2M69G7D (QPSK) / 2M68W7D (16QAM) LTE Band 12 (5 ㎒): 4M52G7D (QPSK) / 4M52W7D (16QAM) LTE Band 12 (10 ㎒): 8M94G7D (QPSK) / 8M94W7D (16QAM) LTE Band 17 (5 ㎒): 4M52G7D (QPSK) / 4M52W7D (16QAM) LTE Band 17 (10 ㎒): 8M97G7D (QPSK) / 8M97W7D (16QAM)
H/W Version	RevB3
S/W Version	HMC6PD07

1.5. Test equipment list

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Interval	Cal. Due
Signal Generator	Agilent	E8257D	MY51501169	Jul. 03, 2018	Annual	Jul. 03, 2019
Spectrum Analyzer	R&S	FSV30	103100	Jun. 21, 2018	Annual	Jun. 21, 2019
Mobile Test Unit	R&S	CMW500	144035	Feb. 22, 2018	Annual	Feb. 22, 2019
Power Meter	Anritsu	ML2495A	1223004	Jun. 12, 2018	Annual	Jun. 12, 2019
Power Sensor	Anritsu	MA2411B	1207272	Jun. 12, 2018	Annual	Jun. 12, 2019
Directional Coupler	KRYTAR	152613	127445	Jun. 14, 2018	Annual	Jun. 14, 2019
Temperature Chamber	ESPEC CORP.	PL-1J	15000796	Sep. 18, 2018	Annual	Sep. 18, 2019
High Pass Filter	Wainwright Instrument GmbH	WHKX10-900-1000-18000-40SS	7	Mar. 21, 2018	Annual	Mar. 21, 2019
High Pass Filter	Wainwright Instrument GmbH	WHK3.0/18G-10SS	344	May 27, 2018	Annual	May 27, 2019
High Pass Filter	Wainwright Instrument GmbH	WHKX2.2/12.75G-10SS	8	Mar. 21, 2018	Annual	Mar. 21, 2019
High Pass Filter	Wainwright Instrument GmbH	WHKX1.5/15G-6SS	4	Jun. 14, 2018	Annual	Jun. 14, 2019
DC Power Supply	Agilent	U8002A	MY50060028	Mar. 15, 2018	Annual	Mar. 15, 2019
Preamplifier	H.P.	8447F	2944A03909	Aug. 07, 2018	Annual	Aug. 07, 2019
Preamplifier	R&S	SCU 18	10117	Aug. 07, 2018	Annual	Aug. 07, 2019
Preamplifier	MITEQ Inc.	JS44-18004000-35-8P	1546891	May 13, 2018	Annual	May 13, 2019
Test Receiver	R&S	ESU26	100109	Feb. 07, 2018	Annual	Feb. 07, 2019
Bilog Antenna	SCHWARZBECK MESSELEKTRONIK	VULB9163	01126	Mar. 26, 2018	Biennial	Mar. 26, 2020
Horn Antenna	R&S	HF906	100326	Feb. 14, 2018	Biennial	Feb. 14, 2020
Horn Antenna	SCHWARZBECK MESSELEKTRONIK	BBHA9170	BBHA9170223	Sep. 10, 2018	Biennial	Sep. 10, 2020
Antenna Master	Innco systems GmbH	MM4000	N/A	N.C.R.	N/A	N.C.R.
Turn Table	Innco systems GmbH	DS 1200S	N/A	N.C.R.	N/A	N.C.R.
Controller	Innco systems GmbH	CONTROLLER CO3000-4P	CO3000/963/38330516/L	N.C.R.	N/A	N.C.R.
Anechoic Chamber	SY Corporation	L × W × H (9.6 m × 6.4 m × 6.4 m)	N/A	N.C.R.	N/A	N.C.R.
Coaxial Cable	SUCOFLEX	104 (3 m)	MY3258414	Jul. 04, 2018	Semi-annual	Jan. 04, 2019
Coaxial Cable	SUCOFLEX	104 (10 m)	MY3145814	Jul. 04, 2018	Semi-annual	Jan. 04, 2019

▶ Support equipment

Description	Manufacturer	Model	Serial Number
N/A	-	-	-

1.6. Summary of test results

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 2, 22, 24 and 27 / IC part RSS-130 Issue 1, RSS-132 Issue 3, RSS-133 Issue 6, RSS-139 Issue 3, RSS-199 Issue 3 and RSS-Gen Issue 5			
Section in FCC part	**Section in IC part**	**Test Item**	**Result**
§2.1046 §22.913(a)(5) §24.232(c) §27.50(b)(10) §27.50(c)(10) §27.50(d)(4) §27.50(h)(2)	RSS-130 Issue 1 4.4 RSS-132 Issue 3 5.4 RSS-133 Issue 6 6.4 RSS-139 Issue 3 6.5 RSS-199 Issue 3 4.4	RF Radiated Output Power	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)(1) §27.53(m)(4)	RSS-130 Issue 1 4.6 RSS-132 Issue 3 5.5 RSS-133 Issue 6 6.5 RSS-139 Issue 3 6.6 RSS-199 Issue 3 4.5	Spurious Radiated Emission	Complied
§2.1046	RSS-Gen Issue 5 6.12	Conducted Output Power	Complied
§2.1049	RSS-Gen Issue 5 6.7	Occupied Bandwidth	Complied
§22.913(d) §24.232(d) §27.50(d)(5)	RSS-130 Issue 1 4.4 RSS-132 Issue 3 5.4 RSS-133 Issue 6 6.4 RSS-139 Issue 3 6.5 RSS-199 Issue 3 4.4	Peak-Average Ratio	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)(1) §27.53(m)(4)	RSS-130 Issue 1 4.6 RSS-132 Issue 3 5.5 RSS-133 Issue 6 6.5 RSS-139 Issue 3 6.6 RSS-199 Issue 3 4.5	Spurious Emission at Antenna Terminal	Complied
§22.917(a) §24.238(a) §27.53(c)(2) §27.53(g) §27.53(h)(1) §27.53(m)(4)	RSS-130 Issue 1 4.6 RSS-132 Issue 3 5.5 RSS-133 Issue 6 6.5 RSS-139 Issue 3 6.6 RSS-199 Issue 3 4.5	Band Edge	Complied
§2.1055 §22.355 §24.235 §27.54	RSS-Gen Issue 5 6.11 RSS-130 Issue 1 4.3 RSS-132 Issue 3 5.3 RSS-133 Issue 6 6.3 RSS-139 Issue 3 6.4 RSS-199 Issue 3 4.3	Frequency Stability	Complied

1.7. Test report revision

Revision	Report number	Date of Issue	Description
0	F690501/RF-RTL013149	2018.11.19	Initial

1.8. Sample calculation for offset

Where relevant, the following sample calculation is provided:

1.8.1. Conducted test

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

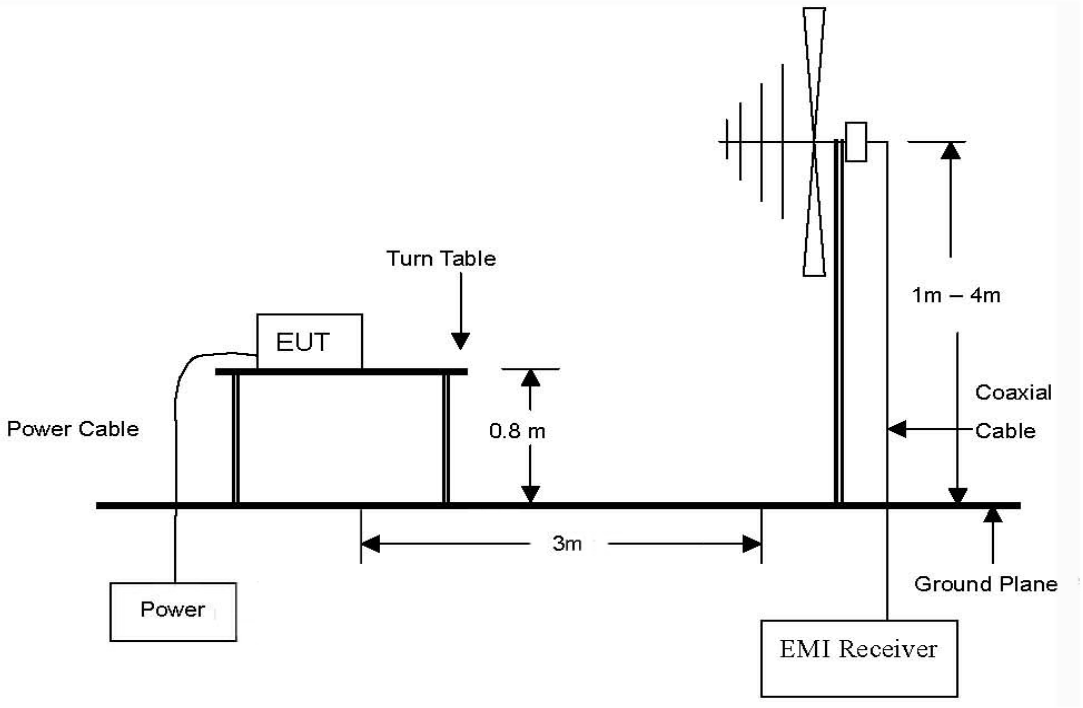
1.8.2. Radiation test

E.R.P. & E.I.R.P. = [S.G level + Amp.] (㏈m) - Cable loss (㏈) + Ant. gain (㏈d/㏈i)

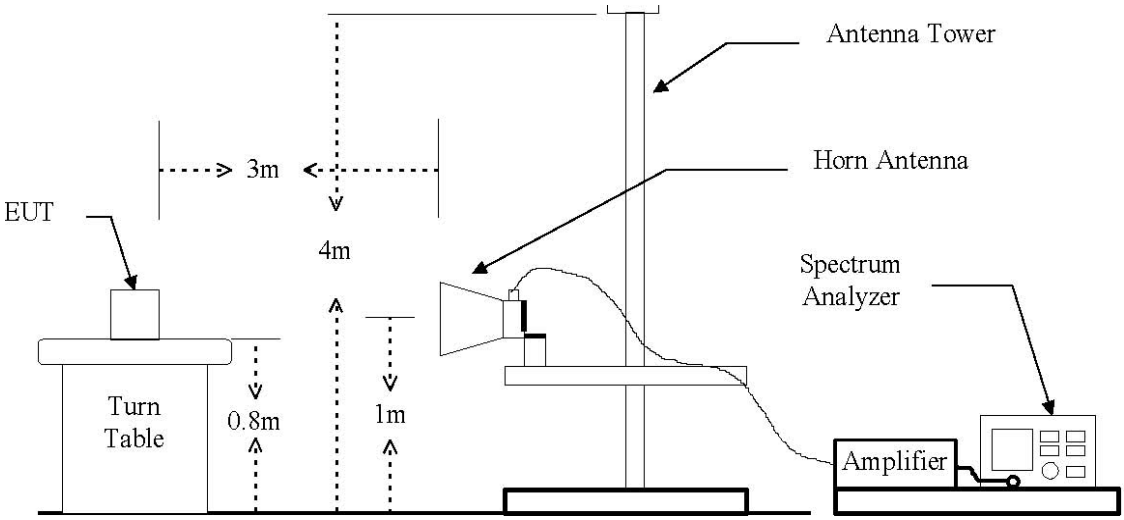
2. RF radiated output power & spurious radiated emission

2.1. Test setup

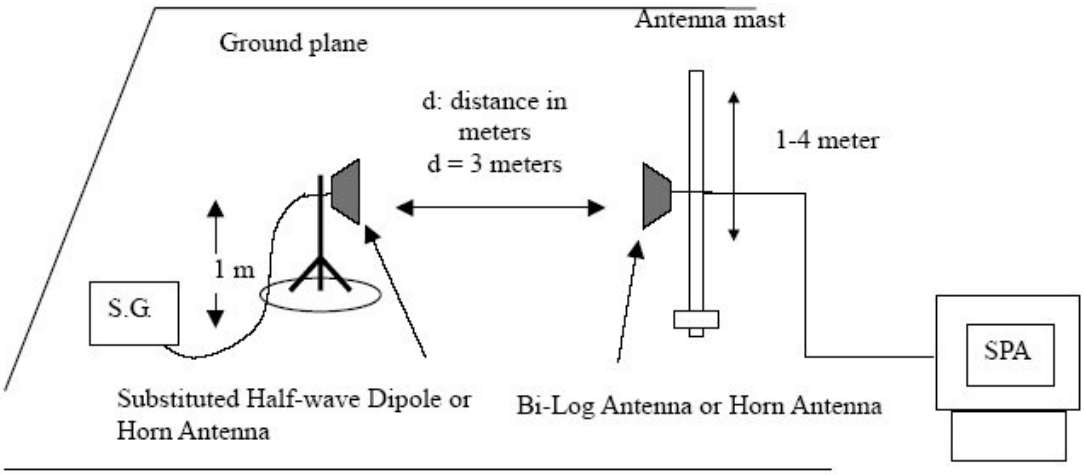
The diagram below shows the test setup that is utilized to make the measurements for emission from 30 ㎒ to 1 ㎓.



The diagram below shows the test setup that is utilized to make the measurements for emission from 1 ㎓ to 20 ㎓.



The diagram below shows the test setup for substituted method.



2.2. Limit

2.2.1. Limit of radiated output power

FCC

- §22.913(a)(5), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

- §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means to limiting power to the minimum necessary for successful communications.

- §27.50(c)(10), Portable stations (hand-held devices) in the 600 ㎒ uplink band and the 698-746 ㎒ band, and fixed and mobile stations in the 600 ㎒ uplink band are limited to 3 watts ERP.

- §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1 710-1 755 ㎒ band and mobile and portable stations operating in the 1 695-1 710 ㎒ and 1 755-1 780 ㎒ bands are limited to 1 watt EIRP.

- §27.50(h)(2), Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

IC

- RSS-130 Issue 1
4.4, the transmitter output power shall be measured in terms of average power.
For base and fixed equipment, refer to SRSP-518 for power limits.
The e.i.r.p. shall not exceed 50 watts for mobile equipment or for outdoor fixed subscriber equipment, nor shall it exceed 5 watts for portable equipment or for indoor fixed subscriber equipment.

- RSS-132 Issue 3
5.4, the transmitter output power shall be measured in terms of average power.
The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts.
Refer to SRSP-503 for base station e.i.r.p. limits.

- RSS-133 Issue 6
6.4, the equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Moreover, base station transmitters operating in the band 1 930-1 995 ㎒ shall not have output power exceeding 100 watts.

- RSS-139 Issue 3
6.5, the equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt. The e.i.r.p. for fixed and base stations in the band 1 710-1 780 ㎒ shall not exceed one watt.

- RSS-199 Issue 3
4.4, for mobile subscriber equipment, the e.i.r.p. shall not exceed 2 W. For fixed subscriber equipment, the transmitter output power shall not exceed 2 W and the e.i.r.p. shall be limited to 40 W.

2.2.2. Limit of spurious radiated emission

FCC

- §22.917(a), 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 + 10log(P) ㏈.

- §24.238(a), 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) ㏈.

- §27.53(g), 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) ㏈.

- §27.53(h)(1), for operations in the 1 695-1 710 ㎒, 1 710-1 755 ㎒, 1 755-1 780 ㎒, 1 915-1 920 ㎒, 1 995-2 000 ㎒, 2 000-2 020 ㎒, 2 110-2 155 ㎒, 2 155-2 180 ㎒, and 2 180-2 200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 $\log_{10}$ (P) ㏈.

- §27.53(m)(4), For mobile digital stations, the attenuation factor shall be not less than 40 + 10 $\log_{10}$ (P) ㏈ on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 $\log_{10}$ (P) ㏈ on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 $\log_{10}$ (P) ㏈ 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 $\log_{10}$ (P) ㏈ on all frequencies between 2490.5 ㎒ and 2496 ㎒ and 55 + 10 $\log_{10}$ (P) ㏈ at or below 2490.5 ㎒. Mobile Satellite Service licensees operating on frequencies below 2495 ㎒ 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.

IC

- RSS-130 Issue 1

4.6.1, the power of any unwanted emissions in any 100 ㎑ bandwidth on any frequency outside the frequency range(s) within which the equipment is designed to operate shall be attenuated below the transmitter power, P (㏈ W), by at least 43 + 10 $\log_{10}$ p (watts), ㏈. However, in the 100 ㎑ band immediately outside the equipment's operating frequency range, a resolution bandwidth of 30 ㎑ may be employed.

- RSS-132 Issue 3

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

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

- RSS-133 Issue 6

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

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

- RSS-139 Issue 3

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

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

- RSS-199 Issue 3

4.5, (b)
for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in ㏈) below the transmitter power, P (㏈W), by at least:

(i) 40 + 10 $\log_{10}$ p from the channel edges to 5 ㎒ away
(ii) 43 + 10 $\log_{10}$ p between 5 ㎒ and X ㎒ from the channel edges, and
(iii) 55 + 10 $\log_{10}$ p at X ㎒ and beyond from the channel edges
In addition, the attenuation shall not be less than 43 + 10 $\log_{10}$ p on all frequencies between 2490.5 ㎒ and 2496 ㎒, and 55 + 10 $\log_{10}$ p at or below 2490.5 ㎒.

2.3. Test procedure: Based on ANSI/TIA 603E: 2016

1. On a test site, the EUT shall be placed at 80 cm height on a turn table, and in the position close to normal use as declared by the applicant.
2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.
3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.
4. The maximized power level is recorded using the spectrum analyzer “Channel Power” function with the integration band set to the emissions occupied bandwidth, RBW = 1-5 % of the OBW (not to exceed 1 ㎒), VBW ≥ 3 x RBW, Detector = power averaging (rms), sweep time = auto, trace average at least 100 traces in power averaging (rms) mode, per the guidelines of KDB Publication 971168 D01 v03r01.
5. Radiated spurious emissions measurement method was set as follows:
   RBW = 100 ㎑ for emissions below 1 ㎓ and 1 ㎒ for emissions above 1 ㎓, VBW ≥ 3 x RBW,
   Detector = Peak, trace mode = max hold, per the guidelines of KDB Publication 971168 D01 v03r01.
6. The transmitter shall be switched on, the measuring receiver shall be tuned to the frequency of the transmitter under test.
7. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.
8. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
9. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.
10. The maximum signal level detected by the measuring receiver shall be noted.
11. The EUT was replaced by half-wave dipole (1 ㎓ below) or horn antenna (1 ㎓ above) connected to a signal generator.
12. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
13. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
14. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
15. The input level to the substitution antenna shall be recorded as power level in ㏈m, corrected for any change of input attenuator setting of the measuring receiver.
16. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

2.4. Test result for RF radiated output power

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

LTE band 2 (1.4 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 850.7	H	11.35	4.33	8.53	15.55	35.89
1 850.7	V	18.20	4.33	8.53	22.40	173.78
1 880.0	H	12.63	4.34	8.63	16.92	49.20
1 880.0	V	20.53	4.34	8.63	24.82	303.39
1 909.3	H	12.92	4.36	8.60	17.16	52.00
1 909.3	V	18.34	4.36	8.60	22.58	181.13

* 1.4 BW 1RB size / 0 Offset for B2

LTE band 2 (1.4 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 850.7	H	9.66	4.33	8.53	13.86	24.32
1 850.7	V	17.53	4.33	8.53	21.73	148.94
1 880.0	H	11.03	4.34	8.63	15.32	34.04
1 880.0	V	19.56	4.34	8.63	23.85	242.66
1 909.3	H	11.95	4.36	8.60	16.19	41.59
1 909.3	V	17.22	4.36	8.60	21.46	139.96

* 1.4 BW 1RB size / 0 Offset for B2

LTE band 2 (3 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 851.5	H	11.20	4.33	8.54	15.41	34.75
1 851.5	V	18.08	4.33	8.54	22.29	169.43
1 880.0	H	12.03	4.34	8.63	16.32	42.85
1 880.0	V	19.93	4.34	8.63	24.22	264.24
1 908.5	H	12.77	4.36	8.61	17.02	50.35
1 908.5	V	18.46	4.36	8.61	22.71	186.64

* 3 BW 1RB size / 0 Offset for B2

LTE band 2 (3 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 851.5	H	10.57	4.33	8.54	14.78	30.06
1 851.5	V	17.41	4.33	8.54	21.62	145.21
1 880.0	H	10.88	4.34	8.63	15.17	32.89
1 880.0	V	19.11	4.34	8.63	23.40	218.78
1 908.5	H	12.04	4.36	8.61	16.29	42.56
1 908.5	V	17.37	4.36	8.61	21.62	145.21

* 3 BW 1RB size / 0 Offset for B2

LTE band 2 (5 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 852.5	H	11.33	4.33	8.54	15.54	35.81
1 852.5	V	18.26	4.33	8.54	22.47	176.60
1 880.0	H	12.31	4.34	8.63	16.60	45.71
1 880.0	V	19.91	4.34	8.63	24.20	263.03
1 907.5	H	13.68	4.36	8.62	17.94	62.23
1 907.5	V	18.96	4.36	8.62	23.22	209.89

* 5 BW 1RB size / 0 Offset for B2

LTE band 2 (5 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 852.5	H	10.59	4.33	8.54	14.80	30.20
1 852.5	V	17.66	4.33	8.54	21.87	153.82
1 880.0	H	10.91	4.34	8.63	15.20	33.11
1 880.0	V	18.68	4.34	8.63	22.97	198.15
1 907.5	H	12.63	4.36	8.62	16.89	48.87
1 907.5	V	17.88	4.36	8.62	22.14	163.68

* 5 BW 1RB size / 0 Offset for B2

LTE band 2 (10 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 855.0	H	11.33	4.33	8.55	15.55	35.89
1 855.0	V	18.24	4.33	8.55	22.46	176.20
1 880.0	H	12.60	4.34	8.63	16.89	48.87
1 880.0	V	20.26	4.34	8.63	24.55	285.10
1 905.0	H	14.29	4.36	8.64	18.57	71.94
1 905.0	V	19.13	4.36	8.64	23.41	219.28

* 10 BW 1RB size / 0 Offset for B2

LTE band 2 (10 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 855.0	H	10.66	4.33	8.55	14.88	30.76
1 855.0	V	17.54	4.33	8.55	21.76	149.97
1 880.0	H	11.80	4.34	8.63	16.09	40.64
1 880.0	V	19.12	4.34	8.63	23.41	219.28
1 905.0	H	13.44	4.36	8.64	17.72	59.16
1 905.0	V	17.92	4.36	8.64	22.20	165.96

* 10 BW 1RB size / 0 Offset for B2

LTE band 2 (15 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 857.5	H	11.86	4.33	8.55	16.08	40.55
1 857.5	V	18.39	4.33	8.55	22.61	182.39
1 880.0	H	12.82	4.34	8.63	17.11	51.40
1 880.0	V	20.44	4.34	8.63	24.73	297.17
1 902.5	H	14.68	4.35	8.67	19.00	79.43
1 902.5	V	19.55	4.35	8.67	23.87	243.78

* 15 BW 1RB size / 0 Offset for B2

LTE band 2 (15 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 857.5	H	10.93	4.33	8.55	15.15	32.73
1 857.5	V	17.91	4.33	8.55	22.13	163.31
1 880.0	H	11.94	4.34	8.63	16.23	41.98
1 880.0	V	19.22	4.34	8.63	23.51	224.39
1 902.5	H	13.87	4.35	8.67	18.19	65.92
1 902.5	V	18.52	4.35	8.67	22.84	192.31

* 15 BW 1RB size / 0 Offset for B2

LTE band 2 (20 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 860.0	H	11.90	4.33	8.56	16.13	41.02
1 860.0	V	18.28	4.33	8.56	22.51	178.24
1 880.0	H	13.04	4.34	8.63	17.33	54.08
1 880.0	V	19.93	4.34	8.63	24.22	264.24
1 900.0	H	14.36	4.35	8.70	18.71	74.30
1 900.0	V	19.88	4.35	8.70	24.23	264.85

* 20 BW 1RB size / 0 Offset for B2

LTE band 2 (20 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 860.0	H	11.01	4.33	8.56	15.24	33.42
1 860.0	V	17.41	4.33	8.56	21.64	145.88
1 880.0	H	12.08	4.34	8.63	16.37	43.35
1 880.0	V	19.46	4.34	8.63	23.75	237.14
1 900.0	H	13.16	4.35	8.70	17.51	56.36
1 900.0	V	18.58	4.35	8.70	22.93	196.34

* 20 BW 1RB size / 0 Offset for B2

LTE band 4 (1.4 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 710.7	H	8.86	4.14	8.51	13.23	21.04
1 710.7	V	13.71	4.14	8.51	18.08	64.27
1 732.5	H	9.92	4.18	8.48	14.22	26.42
1 732.5	V	16.32	4.18	8.48	20.62	115.35
1 754.3	H	9.84	4.22	8.44	14.06	25.47
1 754.3	V	16.22	4.22	8.44	20.44	110.66

* 1.4 BW 1RB size / 0 Offset for B4

LTE band 4 (1.4 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 710.7	H	8.14	4.14	8.51	12.51	17.82
1 710.7	V	13.16	4.14	8.51	17.53	56.62
1 732.5	H	8.93	4.18	8.48	13.23	21.04
1 732.5	V	15.43	4.18	8.48	19.73	93.97
1 754.3	H	8.40	4.22	8.44	12.62	18.28
1 754.3	V	15.29	4.22	8.44	19.51	89.33

* 1.4 BW 1RB size / 0 Offset for B4

LTE band 4 (3 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 711.5	H	9.01	4.14	8.51	13.38	21.78
1 711.5	V	14.17	4.14	8.51	18.54	71.45
1 732.5	H	10.10	4.18	8.48	14.40	27.54
1 732.5	V	16.21	4.18	8.48	20.51	112.46
1 753.5	H	9.33	4.22	8.44	13.55	22.65
1 753.5	V	16.69	4.22	8.44	20.91	123.31

* 3 BW 1RB size / 0 Offset for B4

LTE band 4 (3 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 711.5	H	8.43	4.14	8.51	12.80	19.05
1 711.5	V	13.25	4.14	8.51	17.62	57.81
1 732.5	H	8.88	4.18	8.48	13.18	20.80
1 732.5	V	14.79	4.18	8.48	19.09	81.10
1 753.5	H	8.43	4.22	8.44	12.65	18.41
1 753.5	V	15.68	4.22	8.44	19.90	97.72

* 3 BW 1RB size / 0 Offset for B4

LTE band 4 (5 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 712.5	H	9.12	4.14	8.51	13.49	22.34
1 712.5	V	13.91	4.14	8.51	18.28	67.30
1 732.5	H	9.90	4.18	8.48	14.20	26.30
1 732.5	V	16.23	4.18	8.48	20.53	112.98
1 752.5	H	9.27	4.21	8.44	13.50	22.39
1 752.5	V	17.28	4.21	8.44	21.51	141.58

* 5 BW 1RB size / 0 Offset for B4

LTE band 4 (5 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 712.5	H	8.20	4.14	8.51	12.57	18.07
1 712.5	V	13.21	4.14	8.51	17.58	57.28
1 732.5	H	8.87	4.18	8.48	13.17	20.75
1 732.5	V	14.88	4.18	8.48	19.18	82.79
1 752.5	H	8.40	4.21	8.44	12.63	18.32
1 752.5	V	16.03	4.21	8.44	20.26	106.17

* 5 BW 1RB size / 0 Offset for B4

LTE band 4 (10 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 715.0	H	9.04	4.15	8.50	13.39	21.83
1 715.0	V	13.71	4.15	8.50	18.06	63.97
1 732.5	H	10.64	4.18	8.48	14.94	31.19
1 732.5	V	16.81	4.18	8.48	21.11	129.12
1 750.0	H	8.78	4.21	8.45	13.02	20.04
1 750.0	V	17.61	4.21	8.45	21.85	153.11

* 10 BW 1RB size / 0 Offset for B4

LTE band 4 (10 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 715.0	H	8.44	4.15	8.50	12.79	19.01
1 715.0	V	13.42	4.15	8.50	17.77	59.84
1 732.5	H	9.34	4.18	8.48	13.64	23.12
1 732.5	V	15.54	4.18	8.48	19.84	96.38
1 750.0	H	7.85	4.21	8.45	12.09	16.18
1 750.0	V	16.50	4.21	8.45	20.74	118.58

* 10 BW 1RB size / 0 Offset for B4

LTE band 4 (15 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 717.5	H	9.06	4.15	8.50	13.41	21.93
1 717.5	V	13.79	4.15	8.50	18.14	65.16
1 732.5	H	10.26	4.18	8.48	14.56	28.58
1 732.5	V	15.85	4.18	8.48	20.15	103.51
1 747.5	H	9.37	4.21	8.45	13.61	22.96
1 747.5	V	17.05	4.21	8.45	21.29	134.59

* 15 BW 1RB size / 0 Offset for B4

LTE band 4 (15 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 717.5	H	8.21	4.15	8.50	12.56	18.03
1 717.5	V	13.42	4.15	8.50	17.77	59.84
1 732.5	H	9.60	4.18	8.48	13.90	24.55
1 732.5	V	15.32	4.18	8.48	19.62	91.62
1 747.5	H	8.54	4.21	8.45	12.78	18.97
1 747.5	V	15.76	4.21	8.45	20.00	100.00

* 15 BW 1RB size / 0 Offset for B4

LTE band 4 (20 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 720.0	H	9.19	4.16	8.50	13.53	22.54
1 720.0	V	14.31	4.16	8.50	18.65	73.28
1 732.5	H	10.60	4.18	8.48	14.90	30.90
1 732.5	V	15.89	4.18	8.48	20.19	104.47
1 745.0	H	9.51	4.20	8.46	13.77	23.82
1 745.0	V	16.39	4.20	8.46	20.65	116.14

* 20 BW 1RB size / 0 Offset for B4

LTE band 4 (20 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
1 720.0	H	7.67	4.16	8.50	12.01	15.89
1 720.0	V	12.42	4.16	8.50	16.76	47.42
1 732.5	H	9.84	4.18	8.48	14.14	25.94
1 732.5	V	15.39	4.18	8.48	19.69	93.11
1 745.0	H	8.76	4.20	8.46	13.02	20.04
1 745.0	V	15.70	4.20	8.46	19.96	99.08

* 20 BW 1RB size / 0 Offset for B4

LTE band 5 (1.4 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
824.7	H	30.09	3.26	-4.93	21.90	154.88
824.7	V	26.96	3.26	-4.93	18.77	75.34
836.5	H	30.06	3.45	-5.15	21.46	139.96
836.5	V	28.25	3.45	-5.15	19.65	92.26
848.3	H	29.11	3.52	-4.09	21.50	141.25
848.3	V	26.20	3.52	-4.09	18.59	72.28

* 1.4 BW 1RB size / 0 Offset for B5

LTE band 5 (1.4 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
824.7	H	29.17	3.26	-4.93	20.98	125.31
824.7	V	25.76	3.26	-4.93	17.57	57.15
836.5	H	29.15	3.45	-5.15	20.55	113.50
836.5	V	26.97	3.45	-5.15	18.37	68.71
848.3	H	27.94	3.52	-4.09	20.33	107.89
848.3	V	25.48	3.52	-4.09	17.87	61.24

* 1.4 BW 1RB size / 0 Offset for B5

LTE band 5 (3 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
825.5	H	30.78	3.28	-5.05	22.45	175.79
825.5	V	27.36	3.28	-5.05	19.03	79.98
836.5	H	29.83	3.45	-5.15	21.23	132.74
836.5	V	28.27	3.45	-5.15	19.67	92.68
847.5	H	29.47	3.52	-4.16	21.79	151.01
847.5	V	26.52	3.52	-4.16	18.84	76.56

* 3 BW 1RB size / 0 Offset for B5

LTE band 5 (3 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
825.5	H	30.01	3.28	-5.05	21.68	147.23
825.5	V	26.44	3.28	-5.05	18.11	64.71
836.5	H	28.53	3.45	-5.15	19.93	98.40
836.5	V	26.69	3.45	-5.15	18.09	64.42
847.5	H	28.14	3.52	-4.16	20.46	111.17
847.5	V	25.01	3.52	-4.16	17.33	54.08

* 3 BW 1RB size / 0 Offset for B5

LTE band 5 (5 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
826.5	H	31.09	3.31	-5.20	22.58	181.13
826.5	V	27.88	3.31	-5.20	19.37	86.50
836.5	H	29.40	3.45	-5.15	20.80	120.23
836.5	V	28.13	3.45	-5.15	19.53	89.74
846.5	H	29.35	3.51	-4.25	21.59	144.21
846.5	V	26.95	3.51	-4.25	19.19	82.99

* 5 BW 1RB size / 0 Offset for B5

LTE band 5 (5 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
826.5	H	30.13	3.31	-5.20	21.62	145.21
826.5	V	26.25	3.31	-5.20	17.74	59.43
836.5	H	28.29	3.45	-5.15	19.69	93.11
836.5	V	26.25	3.45	-5.15	17.65	58.21
846.5	H	27.98	3.51	-4.25	20.22	105.20
846.5	V	25.50	3.51	-4.25	17.74	59.43

* 5 BW 1RB size / 0 Offset for B5

LTE band 5 (10 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
826.50	H	31.50	3.38	-5.58	22.54	179.47
826.50	V	29.01	3.38	-5.58	20.05	101.16
836.50	H	30.03	3.45	-5.15	21.43	139.00
836.50	V	28.36	3.45	-5.15	19.76	94.62
846.50	H	29.00	3.49	-4.48	21.03	126.77
846.50	V	26.80	3.49	-4.48	18.83	76.38

* 10 BW 1RB size / 0 Offset for B5

LTE band 5 (10 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
826.50	H	30.79	3.38	-5.58	21.83	152.41
826.50	V	28.00	3.38	-5.58	19.04	80.17
836.50	H	28.97	3.45	-5.15	20.37	108.89
836.50	V	26.90	3.45	-5.15	18.30	67.61
846.50	H	28.23	3.49	-4.48	20.26	106.17
846.50	V	25.91	3.49	-4.48	17.94	62.23

* 10 BW 1RB size / 0 Offset for B5

LTE band 7 (5 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 502.5	H	15.77	4.81	9.13	20.09	102.09
2 502.5	V	14.61	4.81	9.13	18.93	78.16
2 535.0	H	15.95	4.86	9.06	20.15	103.51
2 535.0	V	15.30	4.86	9.06	19.50	89.13
2 567.5	H	14.89	4.90	8.98	18.97	78.89
2 567.5	V	15.54	4.90	8.98	19.62	91.62

* 5 BW 1RB size / 0 Offset for B7

LTE band 7 (5 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 502.5	H	14.94	4.81	9.13	19.26	84.33
2 502.5	V	14.14	4.81	9.13	18.46	70.15
2 535.0	H	14.85	4.86	9.06	19.05	80.35
2 535.0	V	14.08	4.86	9.06	18.28	67.30
2 567.5	H	14.03	4.90	8.98	18.11	64.71
2 567.5	V	13.90	4.90	8.98	17.98	62.81

* 5 BW 1RB size / 0 Offset for B7

LTE band 7 (10 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 505.0	H	15.66	4.82	9.13	19.97	99.31
2 505.0	V	14.60	4.82	9.13	18.91	77.80
2 535.0	H	15.87	4.86	9.06	20.07	101.62
2 535.0	V	15.33	4.86	9.06	19.53	89.74
2 565.0	H	15.20	4.90	8.99	19.29	84.92
2 565.0	V	15.63	4.90	8.99	19.72	93.76

* 10 BW 1RB size / 0 Offset for B7

LTE band 7 (10 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 505.0	H	14.79	4.82	9.13	19.10	81.28
2 505.0	V	13.82	4.82	9.13	18.13	65.01
2 535.0	H	14.70	4.86	9.06	18.90	77.62
2 535.0	V	14.15	4.86	9.06	18.35	68.39
2 565.0	H	14.50	4.90	8.99	18.59	72.28
2 565.0	V	14.88	4.90	8.99	18.97	78.89

* 10 BW 1RB size / 0 Offset for B7

LTE band 7 (15 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 507.5	H	15.71	4.82	9.12	20.01	100.23
2 507.5	V	14.88	4.82	9.12	19.18	82.79
2 535.0	H	15.97	4.86	9.06	20.17	103.99
2 535.0	V	15.14	4.86	9.06	19.34	85.90
2 562.5	H	15.92	4.90	9.00	20.02	100.46
2 562.5	V	16.09	4.90	9.00	20.19	104.47

* 15 BW 1RB size / 0 Offset for B7

LTE band 7 (15 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 507.5	H	14.82	4.82	9.12	19.12	81.66
2 507.5	V	14.41	4.82	9.12	18.71	74.30
2 535.0	H	14.91	4.86	9.06	19.11	81.47
2 535.0	V	14.47	4.86	9.06	18.67	73.62
2 562.5	H	14.86	4.90	9.00	18.96	78.70
2 562.5	V	15.19	4.90	9.00	19.29	84.92

* 15 BW 1RB size / 0 Offset for B7

LTE band 7 (20 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 510.0	H	15.54	4.82	9.12	19.84	96.38
2 510.0	V	14.59	4.82	9.12	18.89	77.45
2 535.0	H	15.72	4.86	9.06	19.92	98.17
2 535.0	V	14.90	4.86	9.06	19.10	81.28
2 560.0	H	15.76	4.89	9.00	19.87	97.05
2 560.0	V	15.65	4.89	9.00	19.76	94.62

* 20 BW 1RB size / 0 Offset for B7

LTE band 7 (20 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB i)	E.I.R.P.	
					(dB m)	(㎽)
2 510.0	H	14.56	4.82	9.12	18.86	76.91
2 510.0	V	13.50	4.82	9.12	17.80	60.26
2 535.0	H	14.94	4.86	9.06	19.14	82.04
2 535.0	V	14.16	4.86	9.06	18.36	68.55
2 560.0	H	13.99	4.89	9.00	18.10	64.57
2 560.0	V	14.47	4.89	9.00	18.58	72.11

* 20 BW 1RB size / 0 Offset for B7

LTE band 12 (1.4 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
699.7	H	24.20	2.86	-4.00	17.34	54.20
699.7	V	28.44	2.86	-4.00	21.58	143.88
707.5	H	27.65	3.06	-4.53	20.06	101.39
707.5	V	29.31	3.06	-4.53	21.72	148.59
715.3	H	27.08	3.04	-4.31	19.73	93.97
715.3	V	27.55	3.04	-4.31	20.20	104.71

* 1.4 BW 1RB size / 0 Offset for B12

LTE band 12 (1.4 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
699.7	H	23.37	2.86	-4.00	16.51	44.77
699.7	V	27.67	2.86	-4.00	20.81	120.50
707.5	H	26.28	3.06	-4.53	18.69	73.96
707.5	V	28.42	3.06	-4.53	20.83	121.06
715.3	H	25.66	3.04	-4.31	18.31	67.76
715.3	V	26.45	3.04	-4.31	19.10	81.28

* 1.4 BW 1RB size / 0 Offset for B12

LTE band 12 (3 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
700.5	H	24.30	2.87	-4.05	17.38	54.70
700.5	V	28.25	2.87	-4.05	21.33	135.83
707.5	H	27.32	3.06	-4.53	19.73	93.97
707.5	V	29.36	3.06	-4.53	21.77	150.31
714.5	H	27.21	3.05	-4.37	19.79	95.28
714.5	V	27.96	3.05	-4.37	20.54	113.24

* 3 BW 1RB size / 0 Offset for B12

LTE band 12 (3 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
700.5	H	23.57	2.87	-4.05	16.65	46.24
700.5	V	27.37	2.87	-4.05	20.45	110.92
707.5	H	26.06	3.06	-4.53	18.47	70.31
707.5	V	29.01	3.06	-4.53	21.42	138.68
714.5	H	26.11	3.05	-4.37	18.69	73.96
714.5	V	27.05	3.05	-4.37	19.63	91.83

* 3 BW 1RB size / 0 Offset for B12

LTE band 12 (5 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
701.5	H	24.82	2.90	-4.12	17.80	60.26
701.5	V	28.42	2.90	-4.12	21.40	138.04
707.5	H	27.35	3.06	-4.53	19.76	94.62
707.5	V	29.37	3.06	-4.53	21.78	150.66
713.5	H	27.56	3.06	-4.44	20.06	101.39
713.5	V	28.65	3.06	-4.44	21.15	130.32

* 5 BW 1RB size / 0 Offset for B12

LTE band 12 (5 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
701.5	H	24.43	2.90	-4.12	17.41	55.08
701.5	V	27.45	2.90	-4.12	20.43	110.41
707.5	H	26.20	3.06	-4.53	18.61	72.61
707.5	V	28.12	3.06	-4.53	20.53	112.98
713.5	H	26.71	3.06	-4.44	19.21	83.37
713.5	V	28.05	3.06	-4.44	20.55	113.50

* 5 BW 1RB size / 0 Offset for B12

LTE band 12 (10 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
704.0	H	26.03	2.96	-4.29	18.78	75.51
704.0	V	29.26	2.96	-4.29	22.01	158.85
707.5	H	27.56	3.06	-4.53	19.97	99.31
707.5	V	29.51	3.06	-4.53	21.92	155.60
711.0	H	28.13	3.10	-4.63	20.40	109.65
711.0	V	29.17	3.10	-4.63	21.44	139.32

* 10 BW 1RB size / 0 Offset for B12

LTE band 12 (10 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
704.0	H	25.35	2.96	-4.29	18.10	64.57
704.0	V	28.29	2.96	-4.29	21.04	127.06
707.5	H	26.37	3.06	-4.53	18.78	75.51
707.5	V	27.69	3.06	-4.53	20.10	102.33
711.0	H	27.17	3.10	-4.63	19.44	87.90
711.0	V	28.11	3.10	-4.63	20.38	109.14

* 10 BW 1RB size / 0 Offset for B12

LTE band 17 (5 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
706.5	H	27.84	3.03	-4.46	20.35	108.39
706.5	V	29.41	3.03	-4.46	21.92	155.60
710.0	H	29.53	3.12	-4.70	21.71	148.25
710.0	V	29.59	3.12	-4.70	21.77	150.31
713.5	H	27.78	3.06	-4.44	20.28	106.66
713.5	V	28.71	3.06	-4.44	21.21	132.13

* 5 BW 1RB size / 0 Offset for B17

LTE band 17 (5 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
706.5	H	26.12	3.03	-4.46	18.63	72.95
706.5	V	28.94	3.03	-4.46	21.45	139.64
710.0	H	28.94	3.12	-4.70	21.12	129.42
710.0	V	28.33	3.12	-4.70	20.51	112.46
713.5	H	26.79	3.06	-4.44	19.29	84.92
713.5	V	27.54	3.06	-4.44	20.04	100.93

* 5 BW 1RB size / 0 Offset for B17

LTE band 17 (10 ㎒ – QPSK)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
709.0	H	29.55	3.09	-4.64	21.82	152.05
709.0	V	30.09	3.09	-4.64	22.36	172.19
710.0	H	29.46	3.12	-4.70	21.64	145.88
710.0	V	30.20	3.12	-4.70	22.38	172.98
711.0	H	28.91	3.10	-4.63	21.18	131.22
711.0	V	29.59	3.10	-4.63	21.86	153.46

* 10 BW 1RB size / 0 Offset for B17

LTE band 17 (10 ㎒ – 16QAM)

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (dB m)	Cable loss (dB)	Ant. gain (dB d)	E.R.P.	
					(dB m)	(㎽)
709.0	H	28.70	3.09	-4.64	20.97	125.03
709.0	V	29.27	3.09	-4.64	21.54	142.56
710.0	H	28.64	3.12	-4.70	20.82	120.78
710.0	V	29.06	3.12	-4.70	21.24	133.05
711.0	H	27.78	3.10	-4.63	20.05	101.16
711.0	V	28.94	3.10	-4.63	21.21	132.13

* 10 BW 1RB size / 0 Offset for B17

Remark;

1. E.R.P. & E.I.R.P. = [S.G level + Amp.] (dB m) - Cable loss (dB) + Ant. gain (dB d/dB i)
2. This device was tested under all bandwidths, RB configurations and modulations.
3. The data reported in the table above was measured in worst case.

2.5. Spurious radiated emission

- Measured output Power: 24.82 ㏈m = 0.303 4 W
- Modulation Signal: LTE band 2 (1.4 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10 $\log_{10}$(W) = 37.82 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈i)	E.I.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (1 850.7 ㎒)							
3 703.41	H	-48.87	5.98	9.07	-45.78	-13.00	-32.78
3 703.41	V	-40.87	5.98	9.07	-37.78	-13.00	-24.78
5 540.08	H	-49.63	7.54	10.62	-46.55	-13.00	-33.55
5 540.08	V	-49.34	7.54	10.62	-46.26	-13.00	-33.26
7 396.29	V	-50.74	9.29	12.03	-48.00	-13.00	-35.00
Middle Channel (1 880.0 ㎒)							
3 762.02	H	-53.09	6.27	9.13	-50.23	-13.00	-37.23
3 762.02	V	-44.45	6.27	9.13	-41.59	-13.00	-28.59
5 637.78	V	-48.25	7.64	10.89	-45.00	-13.00	-32.00
5 657.31	H	-50.86	7.70	11.01	-47.55	-13.00	-34.55
7 513.53	V	-50.42	9.05	11.84	-47.63	-13.00	-34.63
High Channel (1 909.3 ㎒)							
3 802.64	V	-44.07	6.47	9.16	-41.38	-13.00	-28.38
3 820.64	H	-51.80	6.52	9.15	-49.17	-13.00	-36.17
5 735.47	H	-43.70	7.87	11.27	-40.30	-13.00	-27.30
5 735.47	V	-38.92	7.87	11.27	-35.52	-13.00	-22.52
7 630.76	V	-45.83	9.03	11.75	-43.11	-13.00	-30.11

* 1.4 BW 1RB size / 0 Offset for B2

- Measured output Power: 24.22 dBm = 0.264 2 W
- Modulation Signal: LTE band 2 (3 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 37.22 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 851.5 MHz)							
3 703.41	H	-48.92	5.98	9.07	-45.83	-13.00	-32.83
3 703.41	V	-40.81	5.98	9.07	-37.72	-13.00	-24.72
5 540.08	H	-48.09	7.54	10.62	-45.01	-13.00	-32.01
5 540.08	V	-47.11	7.54	10.62	-44.03	-13.00	-31.03
7 396.29	V	-49.90	9.29	12.03	-47.16	-13.00	-34.16
Middle Channel (1 880.0 MHz)							
3 762.02	H	-53.30	6.27	9.13	-50.44	-13.00	-37.44
3 762.02	V	-45.60	6.27	9.13	-42.74	-13.00	-29.74
5 637.78	H	-49.70	7.64	10.89	-46.45	-13.00	-33.45
5 637.78	V	-46.56	7.64	10.89	-43.31	-13.00	-30.31
7 513.53	V	-50.29	9.05	11.84	-47.50	-13.00	-34.50
High Channel (1 908.5 MHz)							
3 801.10	H	-47.96	6.46	9.16	-45.26	-13.00	-32.26
3 801.10	V	-42.13	6.46	9.16	-39.43	-13.00	-26.43
5 696.39	H	-42.34	7.82	11.25	-38.91	-13.00	-25.91
5 696.39	V	-41.09	7.82	11.25	-37.66	-13.00	-24.66
7 611.22	H	-50.88	9.09	11.78	-48.19	-13.00	-35.19
7 611.22	V	-44.28	9.09	11.78	-41.59	-13.00	-28.59

* 3 BW 1RB size / 0 Offset for B2

- Measured output Power: 24.20 ㏈m = 0.263 0 W
- Modulation Signal : LTE band 2 (5 ㎒ - QPSK)
- Distance : 3 meters
- Limit : 43 + 10log$_{10}$(W) = 37.20 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈i)	E.I.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (1 852.5 ㎒)							
3 683.87	H	-49.08	5.93	9.12	-45.89	-13.00	-32.89
3 683.87	V	-41.21	5.93	9.12	-38.02	-13.00	-25.02
5 540.08	V	-47.45	7.54	10.62	-44.37	-13.00	-31.37
5 559.62	H	-50.22	7.53	10.64	-47.11	-13.00	-34.11
7 396.29	V	-50.71	9.29	12.03	-47.97	-13.00	-34.97
Middle Channel (1 880.0 ㎒)							
3 762.02	H	-52.87	6.27	9.13	-50.01	-13.00	-37.01
3 762.02	V	-43.98	6.27	9.13	-41.12	-13.00	-28.12
5 637.78	H	-50.99	7.64	10.89	-47.74	-13.00	-34.74
5 657.31	V	-48.14	7.70	11.01	-44.83	-13.00	-31.83
7 513.53	V	-49.38	9.05	11.84	-46.59	-13.00	-33.59
High Channel (1 907.5 ㎒)							
3 801.10	H	-49.00	6.46	9.16	-46.30	-13.00	-33.30
3 801.10	V	-43.11	6.46	9.16	-40.41	-13.00	-27.41
5 696.39	V	-40.72	7.82	11.25	-37.29	-13.00	-24.29
5 735.47	H	-45.83	7.87	11.27	-42.43	-13.00	-29.43
7 611.22	H	-50.50	9.09	11.78	-47.81	-13.00	-34.81
7 611.22	V	-45.37	9.09	11.78	-42.68	-13.00	-29.68

* 5 BW 1RB size / 0 Offset for B2

- Measured output Power: 24.55 dBm = 0.285 1 W
- Modulation Signal: LTE band 2 (10 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 37.55 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 855.0 MHz)							
3 703.41	H	-48.01	5.98	9.07	-44.92	-13.00	-31.92
3 703.41	V	-41.12	5.98	9.07	-38.03	-13.00	-25.03
5 540.08	V	-45.77	7.54	10.62	-42.69	-13.00	-29.69
Middle Channel (1 880.0 MHz)							
3 742.48	V	-42.38	6.17	9.11	-39.44	-13.00	-26.44
3 742.49	H	-50.81	6.17	9.11	-47.87	-13.00	-34.87
5 618.24	V	-49.70	7.58	10.77	-46.51	-13.00	-33.51
5 637.78	H	-52.78	7.64	10.89	-49.53	-13.00	-36.53
7 493.99	V	-50.19	9.06	11.85	-47.40	-13.00	-34.40
High Channel (1 905.0 MHz)							
3 801.10	V	-44.73	6.46	9.16	-42.03	-13.00	-29.03
3 820.64	H	-50.76	6.52	9.15	-48.13	-13.00	-35.13
5 676.85	H	-45.24	7.76	11.13	-41.87	-13.00	-28.87
5 676.85	V	-45.38	7.76	11.13	-42.01	-13.00	-29.01
7 591.68	V	-48.76	9.11	11.80	-46.07	-13.00	-33.07

* 10 BW 1RB size / 0 Offset for B2

- Measured output Power : 24.73 dBm = 0.297 2 W
- Modulation Signal : LTE band 2 (15 MHz - QPSK)
- Distance : 3 meters
- Limit : 43 + 10log$_{10}$(W) = 37.73 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 857.5 MHz)							
3 683.87	V	-42.35	5.93	9.12	-39.16	-13.00	-26.16
3 703.41	H	-48.60	5.98	9.07	-45.51	-13.00	-32.51
5 540.08	V	-46.84	7.54	10.62	-43.76	-13.00	-30.76
5 559.62	H	-53.10	7.53	10.64	-49.99	-13.00	-36.99
Middle Channel (1 880.0 MHz)							
3 742.48	H	-51.67	6.17	9.11	-48.73	-13.00	-35.73
3 742.48	V	-43.81	6.17	9.11	-40.87	-13.00	-27.87
5 618.24	H	-52.32	7.58	10.77	-49.13	-13.00	-36.13
5 637.78	V	-48.37	7.64	10.89	-45.12	-13.00	-32.12
7 493.99	V	-47.41	9.06	11.85	-44.62	-13.00	-31.62
High Channel (1 902.5 MHz)							
3 781.56	H	-51.49	6.37	9.15	-48.71	-13.00	-35.71
3 801.10	V	-44.43	6.46	9.16	-41.73	-13.00	-28.73
5 696.39	H	-47.71	7.82	11.25	-44.28	-13.00	-31.28
5 696.39	V	-48.08	7.82	11.25	-44.65	-13.00	-31.65
7 572.14	V	-47.87	9.10	11.81	-45.16	-13.00	-32.16

* 15 BW 1RB size / 0 Offset for B2

- Measured output Power: 24.23 dBm = 0.264 9 W
- Modulation Signal: LTE band 2 (20 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 37.23 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 860.0 MHz)							
3 703.41	H	-47.93	5.98	9.07	-44.84	-13.00	-31.84
3 703.41	V	-41.69	5.98	9.07	-38.60	-13.00	-25.60
5 540.08	V	-46.94	7.54	10.62	-43.86	-13.00	-30.86
5 559.62	H	-48.84	7.53	10.64	-45.73	-13.00	-32.73
Middle Channel (1 880.0 MHz)							
3 742.48	H	-51.41	6.17	9.11	-48.47	-13.00	-35.47
3 742.48	V	-45.24	6.17	9.11	-42.30	-13.00	-29.30
5 618.24	V	-48.70	7.58	10.77	-45.51	-13.00	-32.51
7 474.45	V	-49.84	9.10	11.89	-47.05	-13.00	-34.05
High Channel (1 900.0 MHz)							
3 762.02	V	-46.41	6.27	9.13	-43.55	-13.00	-30.55
3 781.56	H	-51.41	6.37	9.15	-48.63	-13.00	-35.63
5 657.31	H	-51.14	7.70	11.01	-47.83	-13.00	-34.83
5 657.31	V	-49.95	7.70	11.01	-46.64	-13.00	-33.64
7 552.61	V	-47.39	9.08	11.82	-44.65	-13.00	-31.65

* 20 BW 1RB size / 0 Offset for B2

- Measured output Power: 20.62 dBm = 0.115 3 W
- Modulation Signal: LTE band 4 (1.4 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 33.62 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 710.7 MHz)							
3 410.32	H	-50.75	5.87	9.27	-47.35	-13.00	-34.35
3 429.86	V	-42.72	5.89	9.26	-39.35	-13.00	-26.35
6 868.74	V	-49.69	8.77	11.67	-46.79	-13.00	-33.79
8 549.10	V	-48.79	9.83	12.39	-46.23	-13.00	-33.23
Middle Channel (1 732.5 MHz)							
3 449.40	H	-52.94	5.90	9.25	-49.59	-13.00	-36.59
3 449.40	V	-42.27	5.90	9.25	-38.92	-13.00	-25.92
5 188.38	H	-53.53	7.73	10.58	-50.68	-13.00	-37.68
5 207.92	V	-51.07	7.75	10.62	-48.20	-13.00	-35.20
6 927.35	V	-49.37	8.90	11.66	-46.61	-13.00	-33.61
8 666.33	V	-43.86	9.81	12.29	-41.38	-13.00	-28.38
High Channel (1 754.3 MHz)							
3 508.02	V	-41.41	5.93	9.23	-38.11	-13.00	-25.11
3 527.56	H	-51.49	5.90	9.26	-48.13	-13.00	-35.13
5 246.99	V	-52.76	7.70	10.69	-49.77	-13.00	-36.77
5 266.53	H	-52.78	7.67	10.72	-49.73	-13.00	-36.73
8 764.03	V	-47.80	9.83	12.20	-45.43	-13.00	-32.43

* 1.4 BW 1RB size / 0 Offset for B4

- Measured output Power: 20.91 dBm = 0.123 3 W
- Modulation Signal: LTE band 4 (3 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 33.91 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 711.5 MHz)							
3 429.86	H	-51.81	5.89	9.26	-48.44	-13.00	-35.44
3 429.86	V	-41.63	5.89	9.26	-38.26	-13.00	-25.26
8 549.10	V	-48.17	9.83	12.39	-45.61	-13.00	-32.61
Middle Channel (1 732.5 MHz)							
3 449.40	V	-41.73	5.90	9.25	-38.38	-13.00	-25.38
3 468.94	H	-51.06	5.92	9.23	-47.75	-13.00	-34.75
5 168.84	V	-49.30	7.69	10.54	-46.45	-13.00	-33.45
5 207.92	H	-50.61	7.75	10.62	-47.74	-13.00	-34.74
6 927.35	V	-49.87	8.90	11.66	-47.11	-13.00	-34.11
8 666.33	V	-43.64	9.81	12.29	-41.16	-13.00	-28.16
High Channel (1 753.5 MHz)							
3 488.48	H	-53.75	5.94	9.22	-50.47	-13.00	-37.47
3 508.02	V	-42.05	5.93	9.23	-38.75	-13.00	-25.75
5 246.99	V	-52.56	7.70	10.69	-49.57	-13.00	-36.57
6 985.97	V	-50.23	8.99	11.70	-47.52	-13.00	-34.52

* 3 BW 1RB size / 0 Offset for B4

- Measured output Power: 21.51 dBm = 0.141 6 W
- Modulation Signal: LTE band 4 (5 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.51 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 712.5 MHz)							
3 410.32	H	-51.59	5.87	9.27	-48.19	-13.00	-35.19
3 429.86	V	-43.44	5.89	9.26	-40.07	-13.00	-27.07
8 568.64	V	-48.89	9.82	12.35	-46.36	-13.00	-33.36
Middle Channel (1 732.5 MHz)							
3 449.40	H	-52.04	5.90	9.25	-48.69	-13.00	-35.69
3 449.40	V	-40.59	5.90	9.25	-37.24	-13.00	-24.24
5 168.84	V	-50.20	7.69	10.54	-47.35	-13.00	-34.35
5 207.92	H	-53.17	7.75	10.62	-50.30	-13.00	-37.30
8 646.79	V	-45.41	9.81	12.29	-42.93	-13.00	-29.93
High Channel (1 752.5 MHz)							
3 488.48	H	-54.12	5.94	9.22	-50.84	-13.00	-37.84
3 508.02	V	-44.22	5.93	9.23	-40.92	-13.00	-27.92
5 227.45	V	-47.51	7.72	10.66	-44.57	-13.00	-31.57
7 005.51	V	-48.48	9.00	11.70	-45.78	-13.00	-32.78

* 5 BW 1RB size / 0 Offset for B4

- Measured output Power: 21.85 dBm = 0.153 1 W
- Modulation Signal: LTE band 4 (10 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.85 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 715.0 MHz)							
3 410.32	V	-40.97	5.87	9.27	-37.57	-13.00	-24.57
3 429.86	H	-50.90	5.89	9.26	-47.53	-13.00	-34.53
8 549.10	V	-47.69	9.83	12.39	-45.13	-13.00	-32.13
Middle Channel (1 732.5 MHz)							
3 429.86	H	-50.15	5.89	9.26	-46.78	-13.00	-33.78
3 449.40	V	-40.72	5.90	9.25	-37.37	-13.00	-24.37
5 207.92	H	-52.66	7.75	10.62	-49.79	-13.00	-36.79
6 888.28	V	-49.82	8.83	11.66	-46.99	-13.00	-33.99
8 646.79	H	-49.25	9.81	12.29	-46.77	-13.00	-33.77
8 646.79	V	-44.57	9.81	12.29	-42.09	-13.00	-29.09
High Channel (1 750.0 MHz)							
3 468.94	H	-50.61	5.92	9.23	-47.30	-13.00	-34.30
3 468.94	V	-43.85	5.92	9.23	-40.54	-13.00	-27.54
5 246.99	V	-49.40	7.70	10.69	-46.41	-13.00	-33.41
6 985.97	V	-49.07	8.99	11.70	-46.36	-13.00	-33.36
8 724.95	V	-48.48	9.81	12.26	-46.03	-13.00	-33.03

* 10 BW 1RB size / 0 Offset for B4

- Measured output Power: 21.29 dBm = 0.134 6 W
- Modulation Signal: LTE band 4 (15 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.29 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 717.5 MHz)							
3 410.32	H	-48.84	5.87	9.27	-45.44	-13.00	-32.44
3 429.86	V	-44.76	5.89	9.26	-41.39	-13.00	-28.39
6 868.74	V	-47.70	8.77	11.67	-44.80	-13.00	-31.80
8 568.64	V	-47.80	9.82	12.35	-45.27	-13.00	-32.27
Middle Channel (1 732.5 MHz)							
3 449.40	H	-47.95	5.90	9.25	-44.60	-13.00	-31.60
3 468.94	V	-44.15	5.92	9.23	-40.84	-13.00	-27.84
5 168.84	H	-54.18	7.69	10.54	-51.33	-13.00	-38.33
6 888.28	V	-49.02	8.83	11.66	-46.19	-13.00	-33.19
8 627.25	V	-49.63	9.81	12.29	-47.15	-13.00	-34.15
High Channel (1 747.5 MHz)							
3 468.94	H	-51.44	5.92	9.23	-48.13	-13.00	-35.13
3 468.94	V	-47.28	5.92	9.23	-43.97	-13.00	-30.97
5 227.45	V	-51.90	7.72	10.66	-48.96	-13.00	-35.96
6 966.43	V	-51.25	8.96	11.69	-48.52	-13.00	-35.52

* 15 BW 1RB size / 0 Offset for B4

- Measured output Power: 20.65 dBm = 0.116 1 W
- Modulation Signal: LTE band 4 (20 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 33.65 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (1 720.0 MHz)							
3 410.32	H	-49.61	5.87	9.27	-46.21	-13.00	-33.21
3 410.32	V	-45.19	5.87	9.27	-41.79	-13.00	-28.79
6 849.20	V	-47.31	8.72	11.69	-44.34	-13.00	-31.34
8 568.64	V	-47.70	9.82	12.35	-45.17	-13.00	-32.17
Middle Channel (1 732.5 MHz)							
3 429.86	V	-44.04	5.89	9.26	-40.67	-13.00	-27.67
3 449.40	H	-48.97	5.90	9.25	-45.62	-13.00	-32.62
5 168.84	V	-53.84	7.69	10.54	-50.99	-13.00	-37.99
6 888.28	V	-50.57	8.83	11.66	-47.74	-13.00	-34.74
8 607.72	V	-48.62	9.82	12.28	-46.16	-13.00	-33.16
High Channel (1 745.0 MHz)							
3 449.40	V	-50.22	5.90	9.25	-46.87	-13.00	-33.87
3 468.94	H	-52.87	5.92	9.23	-49.56	-13.00	-36.56
5 188.38	V	-48.30	7.73	10.58	-45.45	-13.00	-32.45
5 227.45	H	-52.17	7.72	10.66	-49.23	-13.00	-36.23
8 685.87	H	-51.02	9.80	12.30	-48.52	-13.00	-35.52
8 685.87	V	-48.64	9.80	12.30	-46.14	-13.00	-33.14

* 20 BW 1RB size / 0 Offset for B4

- Measured output Power: 21.90 ㏈m = 0.154 9 W
- Modulation Signal: LTE band 5 (1.4 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.90 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (824.7 ㎒)							
3 293.09	V	-50.09	5.52	6.69	-48.92	-13.00	-35.92
Middle Channel (836.5 ㎒)							
1 671.14	V	-50.24	4.06	6.16	-48.14	-13.00	-35.14
2 505.01	H	-43.12	4.82	6.98	-40.96	-13.00	-27.96
3 351.70	V	-52.24	5.70	6.92	-51.02	-13.00	-38.02
4 191.88	V	-47.09	6.84	7.09	-46.84	-13.00	-33.84
High Channel (848.3 ㎒)							
2 505.01	H	-44.36	4.82	6.98	-42.20	-13.00	-29.20
2 505.01	V	-43.21	4.82	6.98	-41.05	-13.00	-28.05
3 390.78	V	-54.28	5.83	7.09	-53.02	-13.00	-40.02

* 1.4 BW 1RB size / 0 Offset for B5

- Measured output Power: 22.45 dBm = 0.175 8 W
- Modulation Signal: LTE band 5 (3 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 35.45 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBd)	E.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (825.5 MHz)							
1 648.30	V	-49.90	4.01	5.99	-47.92	-13.00	-34.92
2 474.55	H	-39.46	4.80	7.01	-37.25	-13.00	-24.25
2 474.55	V	-42.86	4.80	7.01	-40.65	-13.00	-27.65
3 293.09	V	-51.77	5.52	6.69	-50.60	-13.00	-37.60
3 312.63	H	-54.06	5.57	6.75	-52.88	-13.00	-39.88
Middle Channel (836.5 MHz)							
1 671.14	V	-50.30	4.06	6.16	-48.20	-13.00	-35.20
2 505.01	H	-37.46	4.82	6.98	-35.30	-13.00	-22.30
3 332.16	V	-52.14	5.64	6.84	-50.94	-13.00	-37.94
High Channel (847.5 MHz)							
2 539.28	H	-32.09	4.86	6.90	-30.05	-13.00	-17.05
2 539.28	V	-38.35	4.86	6.90	-36.31	-13.00	-23.31

* 3 BW 1RB size / 0 Offset for B5

- Measured output Power: 22.58 ㏈m = 0.181 1 W
- Modulation Signal: LTE band 5 (5 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 35.58 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (826.5 ㎒)							
3 312.63	V	-50.61	5.57	6.75	-49.43	-13.00	-36.43
Middle Channel (836.5 ㎒)							
2 505.01	H	-30.82	4.82	6.98	-28.66	-13.00	-15.66
2 543.09	V	-40.60	4.87	6.89	-38.58	-13.00	-25.58
3 312.63	V	-52.63	5.57	6.75	-51.45	-13.00	-38.45
High Channel (846.5 ㎒)							
2 550.70	V	-43.28	4.88	6.87	-41.29	-13.00	-28.29
3 312.63	V	-52.63	5.57	6.75	-51.45	-13.00	-38.45

* 5 BW 1RB size / 0 Offset for B5

- Measured output Power: 22.54 ㏈m = 0.179 5 W
- Modulation Signal: LTE band 5 (10 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 35.54 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (829.0 ㎒)							
1 648.30	V	-50.19	4.01	5.99	-48.21	-13.00	-35.21
2 546.89	H	-39.44	4.88	6.88	-37.44	-13.00	-24.44
2 546.89	V	-39.30	4.88	6.88	-37.30	-13.00	-24.30
3 293.09	H	-54.29	5.52	6.69	-53.12	-13.00	-40.12
3 312.63	V	-50.83	5.57	6.75	-49.65	-13.00	-36.65
Middle Channel (836.5 ㎒)							
1 663.53	V	-49.31	4.04	6.10	-47.25	-13.00	-34.25
3 312.63	V	-52.18	5.57	6.75	-51.00	-13.00	-38.00
High Channel (844.0 ㎒)							
2 543.09	H	-38.30	4.87	6.89	-36.28	-13.00	-23.28
2 550.70	V	-41.10	4.88	6.87	-39.11	-13.00	-26.11
3 351.70	V	-51.83	5.70	6.92	-50.61	-13.00	-37.61

* 10 BW 1RB size / 0 Offset for B5

- Measured output Power: 20.15 dBm = 0.103 5 W
- Modulation Signal: LTE band 7 (5 MHz - QPSK)
- Distance: 3 meters
- Limit: 55 + 10log$_{10}$(W) = 45.15 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2 502.5 MHz)							
4 992.99	H	-49.21	7.43	9.85	-46.79	-25.00	-21.79
5 032.06	V	-47.46	7.47	10.02	-44.91	-25.00	-19.91
7 493.99	V	-46.87	9.06	11.85	-44.08	-25.00	-19.08
10 014.53	V	-44.26	10.90	12.79	-42.37	-25.00	-17.37
Middle Channel (2 535.0 MHz)							
5 051.60	H	-51.55	7.49	10.12	-48.92	-25.00	-23.92
5 051.60	V	-48.36	7.49	10.12	-45.73	-25.00	-20.73
7 591.68	H	-49.59	9.11	11.80	-46.90	-25.00	-21.90
7 591.68	V	-45.00	9.11	11.80	-42.31	-25.00	-17.31
10 131.76	V	-45.58	10.86	13.12	-43.32	-25.00	-18.32
High Channel (2 567.5 MHz)							
5 110.22	V	-48.50	7.56	10.40	-45.66	-25.00	-20.66
5 129.76	H	-50.05	7.61	10.44	-47.22	-25.00	-22.22
7 708.92	H	-49.36	8.87	11.65	-46.58	-25.00	-21.58
7 708.92	V	-43.28	8.87	11.65	-40.50	-25.00	-15.50
10 249.00	H	-48.78	10.92	13.28	-46.42	-25.00	-21.42
10 249.00	V	-42.93	10.92	13.28	-40.57	-25.00	-15.57

* 5 BW 1RB size / 0 Offset for B7

- Measured output Power: 20.07 dBm = 0.101 6 W
- Modulation Signal: LTE band 7 (10 MHz - QPSK)
- Distance: 3 meters
- Limit: 55 + 10log$_{10}$(W) = 45.07 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2 505.0 MHz)							
4 992.99	H	-49.64	7.43	9.85	-47.22	-25.00	-22.22
4 992.99	V	-48.02	7.43	9.85	-45.60	-25.00	-20.60
7 493.99	V	-48.28	9.06	11.85	-45.49	-25.00	-20.49
9 994.99	V	-46.16	10.89	12.75	-44.30	-25.00	-19.30
Middle Channel (2 535.0 MHz)							
5 071.14	V	-50.89	7.51	10.22	-48.18	-25.00	-23.18
7 591.68	V	-48.59	9.11	11.80	-45.90	-25.00	-20.90
10 112.22	V	-43.97	10.86	13.09	-41.74	-25.00	-16.74
High Channel (2 565.0 MHz)							
5 110.22	V	-52.68	7.56	10.40	-49.84	-25.00	-24.84
7 689.38	H	-46.22	8.87	11.65	-43.44	-25.00	-18.44
7 689.38	V	-43.54	8.87	11.65	-40.76	-25.00	-15.76
10 249.00	V	-44.26	10.92	13.28	-41.90	-25.00	-16.90

* 10 BW 1RB size / 0 Offset for B7

- Measured output Power: 20.19 dBm = 0.104 5 W
- Modulation Signal: LTE band 7 (15 MHz - QPSK)
- Distance: 3 meters
- Limit: 55 + 10log$_{10}$(W) = 45.19 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2 507.5 MHz)							
4 992.99	V	-48.57	7.43	9.85	-46.15	-25.00	-21.15
5 012.53	H	-49.94	7.45	9.92	-47.47	-25.00	-22.47
7 493.99	V	-45.42	9.06	11.85	-42.63	-25.00	-17.63
10 014.53	V	-46.11	10.90	12.79	-44.22	-25.00	-19.22
Middle Channel (2 535.0 MHz)							
5 051.60	H	-53.55	7.49	10.12	-50.92	-25.00	-25.92
5 071.14	V	-50.19	7.51	10.22	-47.48	-25.00	-22.48
7 572.14	H	-47.77	9.10	11.81	-45.06	-25.00	-20.06
7 572.14	V	-48.22	9.10	11.81	-45.51	-25.00	-20.51
10 112.22	V	-45.34	10.86	13.09	-43.11	-25.00	-18.11
High Channel (2 562.5 MHz)							
5 110.22	H	-52.50	7.56	10.40	-49.66	-25.00	-24.66
5 110.22	V	-51.10	7.56	10.40	-48.26	-25.00	-23.26
7 650.30	H	-47.75	8.98	11.71	-45.02	-25.00	-20.02
7 650.30	V	-44.44	8.98	11.71	-41.71	-25.00	-16.71
10 249.00	V	-45.89	10.92	13.28	-43.53	-25.00	-18.53

* 15 BW 1RB size / 0 Offset for B7

- Measured output Power: 19.92 dBm = 0.098 2 W
- Modulation Signal: LTE band 7 (20 MHz - QPSK)
- Distance: 3 meters
- Limit: 55 + 10log$_{10}$(W) = 44.92 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBi)	E.I.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (2 510.0 MHz)							
5 012.53	H	-50.72	7.45	9.92	-48.25	-25.00	-23.25
5 032.06	V	-48.21	7.47	10.02	-45.66	-25.00	-20.66
7 493.99	H	-49.42	9.06	11.85	-46.63	-25.00	-21.63
7 493.99	V	-47.00	9.06	11.85	-44.21	-25.00	-19.21
9 994.99	V	-44.79	10.89	12.75	-42.93	-25.00	-17.93
Middle Channel (2 535.0 MHz)							
5 071.14	V	-50.57	7.51	10.22	-47.86	-25.00	-22.86
7 572.14	H	-49.97	9.10	11.81	-47.26	-25.00	-22.26
7 572.14	V	-48.64	9.10	11.81	-45.93	-25.00	-20.93
10 092.69	V	-44.14	10.86	13.04	-41.96	-25.00	-16.96
High Channel (2 560.0 MHz)							
5 110.22	H	-50.10	7.56	10.40	-47.26	-25.00	-22.26
5 110.22	V	-48.45	7.56	10.40	-45.61	-25.00	-20.61
7 650.30	H	-49.25	8.98	11.71	-46.52	-25.00	-21.52
7 650.30	V	-46.76	8.98	11.71	-44.03	-25.00	-19.03
10 209.92	V	-45.54	10.87	13.23	-43.18	-25.00	-18.18

* 20 BW 1RB size / 0 Offset for B7

- Measured output Power: 21.72 ㏈m = 0.148 6 W
- Modulation Signal: LTE band 12 (1.4 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.72 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (699.7 ㎒)							
1 396.99	V	-52.94	3.57	6.12	-50.39	-13.00	-37.39
2 543.09	H	-42.14	4.87	6.89	-40.12	-13.00	-27.12
Middle Channel (707.5 ㎒)							
1 412.22	H	-52.72	3.58	6.09	-50.21	-13.00	-37.21
2 550.70	V	-42.65	4.88	6.87	-40.66	-13.00	-27.66
High Channel (715.3 ㎒)							
1 427.45	H	-52.55	3.60	6.03	-50.12	-13.00	-37.12
1 427.45	V	-52.24	3.60	6.03	-49.81	-13.00	-36.81

* 1.4 BW 1RB size / 0 Offset for B12

- Measured output Power: 21.77 ㏈m = 0.150 3 W
- Modulation Signal: LTE band 12 (3 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.77 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (700.5 ㎒)							
1 396.99	H	-53.05	3.57	6.12	-50.50	-13.00	-37.50
Middle Channel (707.5 ㎒)							
1 412.22	H	-52.90	3.58	6.09	-50.39	-13.00	-37.39
1 412.22	V	-52.75	3.58	6.09	-50.24	-13.00	-37.24
2 546.89	V	-40.62	4.88	6.88	-38.62	-13.00	-25.62
High Channel (714.5 ㎒)							
1 423.65	H	-50.96	3.59	6.04	-48.51	-13.00	-35.51
1 427.45	V	-51.83	3.60	6.03	-49.40	-13.00	-36.40

* 3 BW 1RB size / 0 Offset for B12

- Measured output Power: 21.78 ㏈m = 0.150 7 W
- Modulation Signal: LTE band 12 (5 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.78 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (701.5 ㎒)							
1 396.99	H	-52.05	3.57	6.12	-49.50	-13.00	-36.50
1 396.99	V	-53.11	3.57	6.12	-50.56	-13.00	-37.56
Middle Channel (707.5 ㎒)							
1 408.42	V	-52.79	3.58	6.10	-50.27	-13.00	-37.27
2 550.70	V	-44.18	4.88	6.87	-42.19	-13.00	-29.19
High Channel (713.5 ㎒)							
1 423.65	H	-52.38	3.59	6.04	-49.93	-13.00	-36.93
1 423.65	V	-51.01	3.59	6.04	-48.56	-13.00	-35.56
2 546.89	H	-44.93	4.88	6.88	-42.93	-13.00	-29.93

* 5 BW 1RB size / 0 Offset for B12

- Measured output Power: 22.01 dBm = 0.158 9 W
- Modulation Signal: LTE band 12 (10 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 35.01 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBd)	E.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (704.0 MHz)							
1 396.99	H	-52.63	3.57	6.12	-50.08	-13.00	-37.08
1 396.99	V	-52.74	3.57	6.12	-50.19	-13.00	-37.19
Middle Channel (707.5 MHz)							
1 404.61	H	-51.69	3.57	6.12	-49.14	-13.00	-36.14
1 404.61	V	-51.17	3.57	6.12	-48.62	-13.00	-35.62
2 546.89	H	-36.90	4.88	6.88	-34.90	-13.00	-21.90
High Channel (711.0 MHz)							
1 412.22	V	-51.89	3.58	6.09	-49.38	-13.00	-36.38
2 543.09	H	-40.69	4.87	6.89	-38.67	-13.00	-25.67
2 543.09	V	-39.27	4.87	6.89	-37.25	-13.00	-24.25

* 10 BW 1RB size / 0 Offset for B12

- Measured output Power: 21.92 dBm = 0.155 6 W
- Modulation Signal: LTE band 17 (5 MHz - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 34.92 dBc

Frequency (MHz)	Ant. Pol. (H/V)	S.G level + Amp. (dBm)	Cable loss (dB)	Ant. gain (dBd)	E.R.P. (dBm)	Limit (dBm)	Margin (dB)
Low Channel (706.5 MHz)							
1 408.42	H	-52.66	3.58	6.10	-50.14	-13.00	-37.14
1 408.42	V	-51.41	3.58	6.10	-48.89	-13.00	-35.89
2 505.01	H	-43.91	4.82	6.98	-41.75	-13.00	-28.75
Middle Channel (710.0 MHz)							
Below 1 000.00	-	-	-	-	Not detected	-	-
Above 1 000.00	-	-	-	-	Not detected	-	-
High Channel (713.5 MHz)							
1 419.84	H	-52.58	3.59	6.06	-50.11	-13.00	-37.11
1 423.65	V	-52.07	3.59	6.04	-49.62	-13.00	-36.62

* 5 BW 1RB size / 0 Offset for B17

- Measured output Power: 22.38 ㏈m = 0.173 0 W
- Modulation Signal: LTE band 17 (10 ㎒ - QPSK)
- Distance: 3 meters
- Limit: 43 + 10log$_{10}$(W) = 35.38 ㏈c

Frequency (㎒)	Ant. Pol. (H/V)	S.G level + Amp. (㏈m)	Cable loss (㏈)	Ant. gain (㏈d)	E.R.P. (㏈m)	Limit (㏈m)	Margin (㏈)
Low Channel (709.0 ㎒)							
1 408.42	H	-51.99	3.58	6.10	-49.47	-13.00	-36.47
1 408.42	V	-51.50	3.58	6.10	-48.98	-13.00	-35.98
Middle Channel (710.0 ㎒)							
1 408.42	H	-53.27	3.58	6.10	-50.75	-13.00	-37.75
1 408.42	V	-51.96	3.58	6.10	-49.44	-13.00	-36.44
2 501.20	H	-44.29	4.81	6.99	-42.11	-13.00	-29.11
High Channel (711.0 ㎒)							
1 412.22	H	-52.65	3.58	6.09	-50.14	-13.00	-37.14
1 412.22	V	-52.51	3.58	6.09	-50.00	-13.00	-37.00

* 10 BW 1RB size / 0 Offset for B17

Remark;

1. E.R.P. & E.I.R.P. = S.G level (㏈m) - Cable loss (㏈) + Ant. gain (㏈d/㏈i)
2. This device was tested under all bandwidths, RB configurations, and modulations.
3. The data reported in the table above was measured in worst case.

3. Conducted Output Power

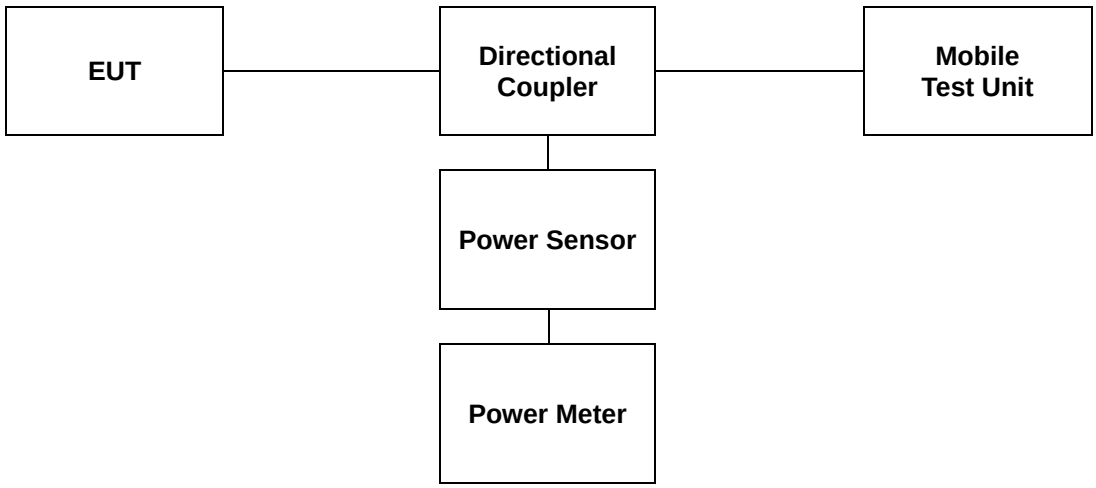
3.1. Limit

CFR 47, Section FCC §2.1046 and IC RSS-Gen Issue 5 6.12.

3.2. Test Procedure

Output power shall be measured at the RF output terminals for all configurations.

1. The RF output of the transmitter was connected to the input of the mobile test unit in order to establish communication with the EUT.
2. The EUT was set up for the max. output power with pseudo random data modulation by using mobile test unit parameters.
3. The measurement performed using a wideband RF power meter.
4. This EUT was tested under all configurations and the highest power was investigated and reported.



3.3. Test Result

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

Band	Bandwidth (㎒)	RB Size	RB Offset	QPSK			16QAM		
				18607	18900	19193	18607	18900	19193
				1 850.7	1 880.0	1 909.3	1 850.7	1 880.0	1 909.3
2	1.4	1	0	23.25	23.11	23.38	22.63	22.62	22.43
		1	3	23.32	23.22	23.44	22.78	22.71	22.49
		1	5	23.26	23.11	23.46	22.76	22.62	22.40
		3	0	23.02	23.30	23.24	22.45	22.38	22.30
		3	2	23.07	23.28	23.27	22.37	22.54	22.02
		3	3	23.08	23.29	23.36	22.43	22.26	22.13
		6	0	22.00	22.24	22.25	21.15	21.33	21.33
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**18615**	**18900**	**19185**	**18615**	**18900**	**19185**
				1 851.5	**1 880.0**	**1 908.5**	**1 851.5**	**1 880.0**	**1 908.5**
	3	1	0	22.73	23.10	23.12	21.59	22.36	22.22
		1	8	22.61	23.07	22.96	21.59	22.08	22.29
		1	14	22.83	23.05	22.99	21.75	22.02	22.08
		8	0	21.69	22.15	21.98	20.63	21.15	20.99
		8	4	21.78	22.17	21.99	20.72	21.18	21.01
		8	7	21.75	22.17	21.93	20.68	21.19	20.92
		15	0	21.70	22.29	22.08	20.76	21.30	21.08
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**18625**	**18900**	**19175**	**18625**	**18900**	**19175**
				1 852.5	**1 880.0**	**1 907.5**	**1 852.5**	**1 880.0**	**1 907.5**
	5	1	0	22.89	22.96	22.90	22.02	21.38	21.82
		1	12	23.21	23.27	23.22	21.81	21.53	21.84
		1	24	23.09	23.15	22.94	21.98	21.38	21.92
		12	0	22.12	22.01	22.04	20.87	20.98	20.84
		12	7	22.19	22.09	22.15	20.92	21.05	20.96
		12	13	22.06	22.02	22.00	20.97	20.99	21.00
		25	0	22.07	22.08	21.89	20.69	21.10	20.91
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**18650**	**18900**	**19150**	**18650**	**18900**	**19150**
				1 855.0	**1 880.0**	**1 905.0**	**1 855.0**	**1 880.0**	**1 905.0**
	10	1	0	22.80	22.74	23.06	21.93	22.00	21.68
		1	25	23.42	23.13	23.46	21.94	21.82	21.54
		1	49	23.04	22.85	23.07	21.96	22.02	22.07
		25	0	21.93	21.94	21.96	20.83	20.82	21.13
		25	12	22.07	21.97	21.94	20.62	21.07	21.32
		25	25	22.02	22.00	21.93	20.98	20.76	21.16
		50	0	21.96	21.85	22.06	20.95	21.02	20.98
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**18675**	**18900**	**19125**	**18675**	**18900**	**19125**
				1 857.5	**1 880.0**	**1 902.5**	**1 857.5**	**1 880.0**	**1 902.5**
	15	1	0	22.80	22.81	22.95	22.32	22.13	22.04
		1	37	23.16	22.99	23.02	22.22	22.19	21.93
		1	74	22.96	22.88	22.93	22.15	22.15	21.45
		36	0	22.00	21.96	22.01	21.14	20.94	20.92
		36	20	21.99	22.03	22.12	21.17	20.96	21.09
		36	39	22.18	22.15	22.16	21.15	20.92	20.90
		75	0	22.01	21.97	21.92	21.12	20.93	20.88
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**18700**	**18900**	**19100**	**18700**	**18900**	**19100**
				1 860.0	**1 880.0**	**1 900.0**	**1 860.0**	**1 880.0**	**1 900.0**
	20	1	0	22.86	22.79	22.87	21.16	21.83	22.19
		1	50	23.59	23.31	23.38	21.26	21.87	22.15
		1	99	23.00	22.81	22.81	21.35	22.04	22.11
		50	0	22.10	22.03	22.00	20.91	20.84	20.93
		50	25	22.11	22.04	22.07	21.02	21.08	20.88
		50	50	22.08	22.08	22.11	20.97	21.16	20.97
		100	0	22.11	21.96	22.03	20.98	20.94	21.05

Band	Bandwidth (㎒)	RB Size	RB Offset	QPSK			16QAM		
				19957	20175	20393	19957	20175	20393
				1 710.7	1 732.5	1 754.3	1 710.7	1 732.5	1 754.3
4	1.4	1	0	23.08	23.44	23.08	22.44	21.93	22.42
		1	3	23.22	23.43	23.22	22.69	21.99	22.64
		1	5	23.02	23.15	23.09	22.55	22.02	22.58
		3	0	23.11	23.20	23.19	22.29	22.24	22.45
		3	2	23.11	23.19	23.22	22.33	22.26	22.55
		3	3	23.10	23.17	23.23	22.17	22.25	22.47
		6	0	22.13	22.03	22.15	21.01	21.15	21.30
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**19965**	**20175**	**20385**	**19965**	**20175**	**20385**
				1 711.5	**1 732.5**	**1 753.5**	**1 711.5**	**1 732.5**	**1 753.5**
	3	1	0	23.30	23.38	23.06	22.65	22.26	22.51
		1	8	23.30	23.16	23.17	22.69	22.26	22.54
		1	14	23.22	23.33	23.05	22.64	22.30	22.41
		8	0	22.23	22.30	22.13	21.33	21.34	21.28
		8	4	22.25	22.40	22.13	21.37	21.42	21.21
		8	7	22.22	22.30	22.09	21.31	21.43	21.15
		15	0	22.22	22.38	22.05	21.29	21.32	21.22
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**19975**	**20175**	**20375**	**19975**	**20175**	**20375**
				1 712.5	**1 732.5**	**1 752.5**	**1 712.5**	**1 732.5**	**1 752.5**
	5	1	0	23.20	22.96	22.96	22.36	22.04	22.13
		1	12	23.17	23.11	23.15	22.45	22.18	22.14
		1	24	23.06	23.06	22.98	22.33	22.20	22.15
		12	0	22.19	22.10	22.19	21.19	21.15	21.34
		12	7	22.20	22.15	22.18	21.22	21.20	21.33
		12	13	22.10	22.10	22.09	21.11	21.13	21.17
		25	0	22.14	22.14	22.06	21.07	21.23	21.18
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20000**	**20175**	**20350**	**20000**	**20175**	**20350**
				1 715.0	**1 732.5**	**1 750.0**	**1 715.0**	**1 732.5**	**1 750.0**
	10	1	0	23.11	23.37	23.50	21.95	22.16	21.83
		1	25	23.43	23.53	23.20	22.07	22.14	22.05
		1	49	23.32	23.41	23.27	21.87	22.02	21.80
		25	0	22.07	22.08	22.12	21.12	21.11	21.14
		25	12	22.31	22.38	22.35	21.37	21.42	21.45
		25	25	21.96	22.13	22.10	21.01	21.16	21.13
		50	0	22.09	22.08	22.13	21.11	21.17	21.09
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20025**	**20175**	**20325**	**20025**	**20175**	**20325**
				1 717.5	**1 732.5**	**1 747.5**	**1 717.5**	**1 732.5**	**1 747.5**
	15	1	0	23.16	23.33	23.25	21.95	22.34	21.82
		1	37	23.31	23.39	23.32	22.07	22.45	22.74
		1	74	23.22	23.45	23.39	21.87	21.89	21.82
		36	0	22.18	22.02	21.93	21.27	21.01	21.03
		36	20	22.29	22.37	22.24	21.37	21.39	21.37
		36	39	21.92	22.11	21.94	20.97	21.13	21.04
		75	0	22.07	22.09	22.08	21.10	21.09	21.12
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20050**	**20175**	**20300**	**20050**	**20175**	**20300**
				1 720.0	**1 732.5**	**1 745.0**	**1 720.0**	**1 732.5**	**1 745.0**
	20	1	0	22.84	22.90	22.88	22.01	21.76	21.77
		1	50	23.48	23.55	23.48	22.16	22.05	22.07
		1	99	22.72	22.73	22.74	21.80	21.92	21.83
		50	0	22.20	22.27	22.02	21.32	21.15	21.03
		50	25	22.44	22.43	22.44	21.46	21.46	21.44
		50	50	22.07	22.10	22.17	21.10	21.13	21.17
		100	0	22.22	22.11	22.10	21.16	21.16	21.13

Band	Bandwidth (㎒)	RB Size	RB Offset	QPSK			16QAM		
				20407	20525	20643	20407	20525	20643
				824.7	836.5	848.3	824.7	836.5	848.3
5	1.4	1	0	23.19	23.22	23.34	22.66	22.30	22.39
		1	3	23.24	23.15	23.38	22.56	22.38	22.42
		1	5	23.09	23.12	23.31	22.46	22.35	22.38
		3	0	23.01	23.16	23.33	22.29	22.25	22.53
		3	2	23.21	23.21	23.37	22.37	22.31	22.56
		3	3	23.18	23.09	23.32	22.33	22.29	22.50
		6	0	22.12	22.10	22.29	21.10	21.38	21.48
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20415**	**20525**	**20635**	**20415**	**20525**	**20635**
				825.5	**836.5**	**847.5**	**825.5**	**836.5**	**847.5**
	3	1	0	23.14	23.09	23.14	22.18	22.06	22.22
		1	8	23.15	23.24	23.25	22.28	22.20	22.31
		1	14	23.02	23.22	23.05	22.16	22.13	22.11
		8	0	22.15	22.12	22.12	21.31	21.33	21.20
		8	4	22.06	22.19	22.20	21.25	21.39	21.25
		8	7	22.08	22.25	22.12	21.25	21.37	21.16
		15	0	22.11	22.25	22.17	21.14	21.28	21.13
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20425**	**20525**	**20625**	**20425**	**20525**	**20625**
				826.5	**836.5**	**846.5**	**826.5**	**836.5**	**846.5**
	5	1	0	23.15	22.98	23.11	22.26	22.03	22.90
		1	12	23.18	23.18	23.29	22.46	22.24	23.00
		1	24	22.86	23.12	22.91	22.13	22.19	22.69
		12	0	22.17	22.15	22.31	21.24	21.19	21.34
		12	7	22.15	22.27	22.18	21.22	21.29	21.31
		12	13	21.93	22.24	22.10	21.00	21.25	21.24
		25	0	22.15	22.20	22.12	21.13	21.29	21.14
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20450**	**20525**	**20600**	**20450**	**20525**	**20600**
				829.0	**836.5**	**844.0**	**829.0**	**836.5**	**844.0**
	10	1	0	23.05	22.88	22.83	22.09	22.05	21.96
		1	25	23.48	23.29	23.64	22.13	22.16	22.18
		1	49	22.85	22.82	22.71	21.70	21.79	21.72
		25	0	22.35	22.15	22.39	21.28	21.18	21.42
		25	12	22.48	22.38	22.57	21.40	21.39	21.61
		25	25	22.12	22.25	22.31	21.05	21.25	21.46
		50	0	22.19	22.19	22.30	21.20	21.18	21.32

Band	Bandwidth (㎒)	RB Size	RB Offset	QPSK			16QAM		
				20775	21100	21425	20775	21100	21425
				2 502.5	2 535.0	2 567.5	2 502.5	2 535.0	2 567.5
7	5	1	0	23.23	23.23	23.50	22.47	22.47	22.54
		1	12	23.59	23.43	23.55	22.42	22.49	22.55
		1	24	23.33	23.16	23.05	22.23	22.40	22.15
		12	0	22.31	22.56	22.65	21.66	21.65	21.66
		12	7	22.39	22.55	22.51	21.65	21.64	21.60
		12	13	22.28	22.43	22.28	21.44	21.52	21.38
		25	0	22.38	22.48	22.43	21.58	21.49	21.43
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20800**	**21100**	**21400**	**20800**	**21100**	**21400**
				2 505.0	**2 535.0**	**2 565.0**	**2 505.0**	**2 535.0**	**2 565.0**
	10	1	0	22.78	23.03	23.24	22.19	22.10	22.23
		1	25	23.64	23.84	23.83	22.30	22.40	22.42
		1	49	22.92	22.92	22.52	22.31	21.95	21.97
		25	0	22.55	22.70	22.73	21.61	21.73	21.85
		25	12	22.75	22.77	23.02	21.82	21.80	22.15
		25	25	22.60	22.58	22.50	21.65	21.61	21.57
		50	0	22.54	22.59	22.68	21.67	21.62	21.65
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20825**	**21100**	**21375**	**20825**	**21100**	**21375**
				2 507.5	**2 535.0**	**2 562.0**	**2 507.5**	**2 535.0**	**2 562.0**
	15	1	0	22.85	23.22	23.49	22.22	22.17	22.85
		1	37	23.70	23.58	23.77	22.59	22.51	22.30
		1	74	23.32	22.82	22.44	22.61	21.76	21.82
		36	0	22.40	22.67	22.92	21.48	21.68	21.93
		36	20	22.74	22.64	22.80	21.81	21.65	21.82
		36	39	22.70	22.40	22.42	21.77	21.41	21.42
		75	0	22.55	22.53	22.60	21.62	21.61	21.63
	Bandwidth (㎒)	**RB Size**	**RB Offset**	**20850**	**21100**	**21350**	**20850**	**21100**	**21350**
				2 510.0	**2 535.0**	**2 560.0**	**2 510.0**	**2 535.0**	**2 560.0**
	20	1	0	22.56	23.05	23.18	22.41	22.61	22.44
		1	50	23.78	23.74	23.85	22.22	22.51	22.64
		1	99	23.13	22.79	22.80	22.58	22.45	21.39
		50	0	22.50	22.77	22.91	21.55	21.81	21.92
		50	25	22.84	22.78	22.86	21.98	21.82	21.87
		50	50	22.82	22.54	22.29	21.95	21.57	21.29
		100	0	22.65	22.58	22.70	21.68	21.62	21.64

Band	Bandwidth (㎒)	RB Size	RB Offset	QPSK			16QAM		
				23017	23095	23173	23017	23095	23173
				699.7	707.5	715.3	699.7	707.5	715.3
12	1.4	1	0	22.82	23.11	22.83	22.16	22.12	21.88
		1	3	22.95	23.08	22.88	22.27	22.11	21.92
		1	5	22.83	23.11	22.80	22.23	22.08	21.77
		3	0	22.84	23.06	22.84	22.01	22.06	22.08
		3	2	22.90	23.01	22.88	22.05	22.02	22.07
		3	3	22.87	22.97	22.91	22.02	22.00	22.08
		6	0	21.79	21.95	21.73	20.68	21.05	21.02
	Bandwidth (㎒)	RB Size	RB Offset	23025	23095	23165	23025	23095	23165
				700.5	707.5	714.5	700.5	707.5	714.5
	3	1	0	22.72	22.91	22.82	21.97	21.93	21.79
		1	8	22.94	22.95	22.88	22.18	21.99	21.94
		1	14	22.83	22.85	22.73	22.08	21.87	21.79
		8	0	21.76	21.93	21.86	20.83	21.02	20.90
		8	4	21.81	21.95	21.89	20.89	21.04	20.93
		8	7	21.79	21.93	21.84	20.85	21.02	20.88
		15	0	21.77	21.89	21.85	20.79	20.90	20.91
	Bandwidth (㎒)	RB Size	RB Offset	23035	23095	23155	23035	23095	23155
				701.5	707.5	713.5	701.5	707.5	713.5
	5	1	0	22.47	22.85	22.67	22.06	22.02	21.74
		1	12	22.87	22.93	22.99	22.10	22.10	22.05
		1	24	22.72	22.68	22.70	22.10	21.85	21.78
		12	0	21.72	21.81	21.80	20.76	20.87	20.85
		12	7	21.83	21.83	21.95	20.78	20.89	21.00
		12	13	21.82	21.78	21.83	20.96	20.83	20.89
		25	0	21.79	21.84	21.75	20.83	20.81	20.80
	Bandwidth (㎒)	RB Size	RB Offset	23060	23095	23130	23060	23095	23130
				704.0	707.5	711.0	704.0	707.5	711.0
	10	1	0	22.24	22.31	22.45	21.53	21.25	21.58
		1	25	23.19	23.05	22.98	22.51	21.98	22.12
		1	49	22.25	22.03	22.17	21.57	20.94	21.20
		25	0	21.93	21.87	21.94	20.84	20.85	21.01
		25	12	22.08	22.03	22.05	20.91	21.02	21.13
		25	25	21.81	21.68	21.85	20.73	20.68	20.93
		50	0	21.92	21.79	21.79	20.85	20.74	20.92

Band	Bandwidth (㎒)	RB Size	RB Offset	QPSK			16QAM		
				23755	23790	23825	23755	23790	23825
				706.5	710.0	713.5	706.5	710.0	713.5
17	5	1	0	23.05	23.18	23.03	22.54	22.32	22.10
		1	12	23.13	23.23	23.33	22.65	22.41	22.40
		1	24	22.94	22.95	23.04	22.40	22.06	22.12
		12	0	22.13	22.27	22.16	21.24	21.34	21.22
		12	7	22.10	22.24	22.33	21.21	21.30	21.37
		12	13	22.10	22.09	22.20	21.13	21.16	21.26
		25	0	22.12	22.16	22.22	21.11	21.15	21.16
	Bandwidth (㎒)	RB Size	RB Offset	23780	23790	23800	23780	23790	23800
				709.0	710.0	711.0	709.0	710.0	711.0
	10	1	0	22.75	22.77	22.76	22.06	21.71	21.79
		1	25	23.49	23.41	23.16	22.12	22.35	22.40
		1	49	22.43	22.54	22.54	21.76	21.45	21.57
		25	0	22.27	22.14	22.24	21.28	21.23	21.31
		25	12	22.37	22.37	22.36	21.25	21.37	21.43
		25	25	22.09	22.16	22.15	21.11	21.17	21.22
		50	0	22.19	22.24	22.19	21.18	21.22	21.21

4. Occupied Bandwidth 99 %

4.1. Limit

CFR 47, Section FCC §2.1049 and IC RSS-Gen Issue 5 6.7.

4.2. Test Procedure

FCC

The test follows section 4.2 of FCC KDB Publication 971168 D01 v03r01.

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 (typically a span of 1.5 × OBW is sufficient).
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. See guidance provided in 4.2.3.
d. Set the detection mode to peak, and the trace mode to max-hold.
e. If the instrument does not have a 99 % OBW function, recover the trace data points and sum directly in linear power terms. Place the recovered amplitude data points, beginning at the lowest frequency, in a running sum until 0.5 % of the total is reached. Record that frequency as the lower OBW frequency. Repeat the process until 99.5 % of the total is reached and record that frequency as the upper OBW frequency. The 99 % power OBW can be determined by computing the difference these two frequencies.
f. The OBW shall be reported and plot(s) of the measuring instrument display shall be provided with the test report. The frequency and amplitude axis and scale shall be clearly labeled. Tabular data can be reported in addition to the plot(s).

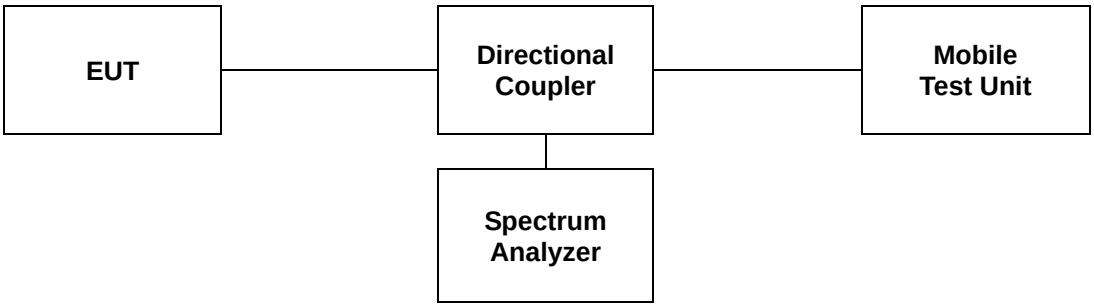
IC

The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

• The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
• The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
• The detector of the spectrum analyzer shall be set to “Sample”. However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or “Max Hold”) may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.
• The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).



4.3 Test Results

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

- LTE

Band	Mode	Frequency (㎒)	Occupied Bandwidth (㎒)	
			FCC	IC
2 (1.4 ㎒)	QPSK	1 850.7	1.098	1.098
		1 880.0	1.107	1.103
		1 909.3	1.098	1.098
2 (1.4 ㎒)	16QAM	1 850.7	1.098	1.094
		1 880.0	1.098	1.094
		1 909.3	1.098	1.098
2 (3 ㎒)	QPSK	1 851.5	2.683	2.692
		1 880.0	2.692	2.692
		1 908.5	2.692	2.683
2 (3 ㎒)	16QAM	1 851.5	2.683	2.683
		1 880.0	2.692	2.683
		1 908.5	2.683	2.674
2 (5 ㎒)	QPSK	1 852.5	4.472	4.486
		1 880.0	4.486	4.486
		1 907.5	4.486	4.457
2 (5 ㎒)	16QAM	1 852.5	4.472	4.472
		1 880.0	4.501	4.486
		1 907.5	4.472	4.457
2 (10 ㎒)	QPSK	1 855.0	8.944	8.915
		1 880.0	8.915	8.915
		1 905.0	8.944	8.944
2 (10 ㎒)	16QAM	1 855.0	8.944	8.915
		1 880.0	8.973	8.915
		1 905.0	8.944	8.915
2 (15 ㎒)	QPSK	1 857.5	13.459	13.415
		1 880.0	13.415	13.415
		1 902.5	13.459	13.415
2 (15 ㎒)	16QAM	1 857.5	13.459	13.415
		1 880.0	13.459	13.415
		1 902.5	13.502	13.459
2 (20 ㎒)	QPSK	1 860.0	17.829	17.771
		1 880.0	17.887	17.887
		1 900.0	17.945	17.887
2 (20 ㎒)	16QAM	1 860.0	17.829	17.829
		1 880.0	17.945	17.887
		1 900.0	17.887	17.887

Band	Mode	Frequency (㎒)	Occupied Bandwidth (㎒)	
			FCC	IC
4 (1.4 ㎒)	QPSK	1 710.7	1.103	1.098
		1 732.5	1.103	1.103
		1 754.3	1.098	1.103
4 (1.4 ㎒)	16QAM	1 710.7	1.098	1.103
		1 732.5	1.098	1.094
		1 754.3	1.098	1.094
4 (3 ㎒)	QPSK	1 711.5	2.700	2.692
		1 732.5	2.692	2.683
		1 753.5	2.692	2.683
4 (3 ㎒)	16QAM	1 711.5	2.692	2.683
		1 732.5	2.683	2.683
		1 753.5	2.683	2.683
4 (5 ㎒)	QPSK	1 712.5	4.515	4.486
		1 732.5	4.515	4.515
		1 752.5	4.515	4.501
4 (5 ㎒)	16QAM	1 712.5	4.515	4.515
		1 732.5	4.530	4.501
		1 752.5	4.530	4.515
4 (10 ㎒)	QPSK	1 715.0	8.915	8.915
		1 732.5	8.944	8.944
		1 750.0	8.944	8.944
4 (10 ㎒)	16QAM	1 715.0	8.915	8.915
		1 732.5	8.915	8.915
		1 750.0	8.944	8.944
4 (15 ㎒)	QPSK	1 717.5	13.415	13.372
		1 732.5	13.459	13.415
		1 747.5	13.415	13.415
4 (15 ㎒)	16QAM	1 717.5	13.502	13.459
		1 732.5	13.459	13.415
		1 747.5	13.459	13.415
4 (20 ㎒)	QPSK	1 720.0	17.887	17.887
		1 732.5	17.887	17.829
		1 745.0	17.945	17.887
4 (20 ㎒)	16QAM	1 720.0	17.887	17.887
		1 732.5	17.887	17.887
		1 745.0	17.887	17.829

Band	Mode	Frequency (㎒)	Occupied Bandwidth (㎒)	
			FCC	IC
5 (1.4 ㎒)	QPSK	824.7	1.094	1.098
		836.5	1.098	1.098
		848.3	1.103	1.103
5 (1.4 ㎒)	16QAM	824.7	1.098	1.098
		836.5	1.098	1.103
		848.3	1.094	1.098
5 (3 ㎒)	QPSK	825.5	2.683	2.692
		836.5	2.683	2.692
		847.5	2.692	2.683
5 (3 ㎒)	16QAM	825.5	2.692	2.674
		836.5	2.683	2.683
		847.5	2.683	2.683
5 (5 ㎒)	QPSK	826.5	4.515	4.501
		836.5	4.501	4.515
		846.5	4.515	4.501
5 (5 ㎒)	16QAM	826.5	4.501	4.501
		836.5	4.501	4.501
		846.5	4.501	4.515
5 (10 ㎒)	QPSK	829.0	8.915	8.944
		836.5	8.915	8.944
		844.0	8.915	8.915
5 (10 ㎒)	16QAM	829.0	8.915	8.915
		836.5	8.944	8.915
		844.0	8.915	8.915

Band	Mode	Frequency (㎒)	Occupied Bandwidth (㎒)	
			FCC	IC
7 (5 ㎒)	QPSK	2 502.5	4.515	4.515
		2 535.0	4.501	4.515
		2 567.5	4.515	4.501
7 (5 ㎒)	16QAM	2 502.5	4.515	4.515
		2 535.0	4.501	4.501
		2 567.5	4.530	4.501
7 (10 ㎒)	QPSK	2 505.0	8.944	8.915
		2 535.0	8.944	8.944
		2 565.0	8.915	8.915
7 (10 ㎒)	16QAM	2 505.0	8.944	8.915
		2 535.0	8.915	8.886
		2 565.0	8.944	8.915
7 (15 ㎒)	QPSK	2 507.5	13.415	13.372
		2 535.0	13.459	13.459
		2 562.5	13.459	13.415
7 (15 ㎒)	16QAM	2 507.5	13.502	13.459
		2 535.0	13.502	13.459
		2 562.5	13.459	13.415
7 (20 ㎒)	QPSK	2 510.0	17.887	17.887
		2 535.0	17.945	17.887
		2 560.0	17.887	17.829
7 (20 ㎒)	16QAM	2 510.0	17.887	17.829
		2 535.0	17.887	17.829
		2 560.0	17.829	17.829

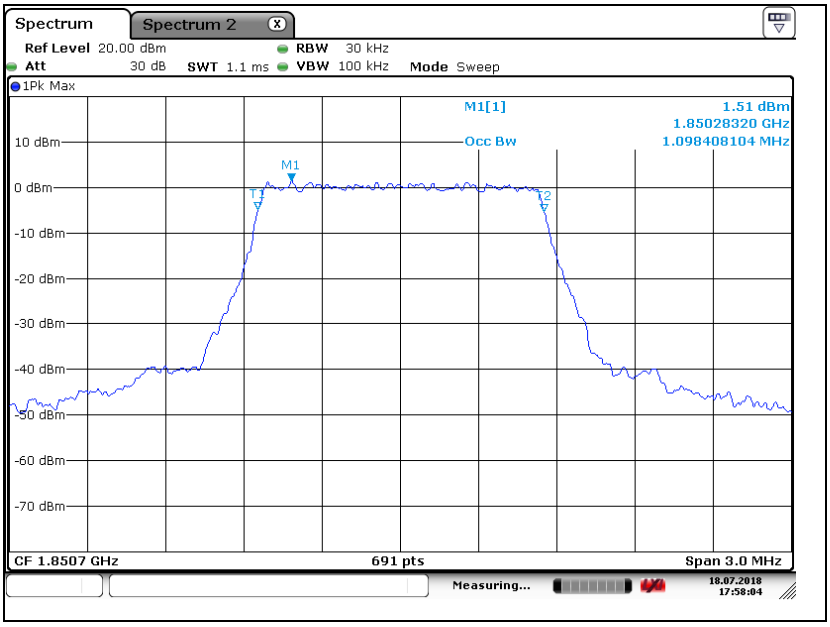
Band	Mode	Frequency (㎒)	Occupied Bandwidth (㎒)	
			FCC	IC
12 (1.4 ㎒)	QPSK	699.7	1.103	1.098
		707.5	1.098	1.098
		715.3	1.098	1.098
12 (1.4 ㎒)	16QAM	699.7	1.098	1.094
		707.5	1.098	1.103
		715.3	1.103	1.103
12 (3 ㎒)	QPSK	700.5	2.692	2.692
		707.5	2.683	2.692
		714.5	2.692	2.683
12 (3 ㎒)	16QAM	700.5	2.683	2.683
		707.5	2.683	2.683
		714.5	2.683	2.683
12 (5 ㎒)	QPSK	701.5	4.515	4.515
		707.5	4.501	4.501
		713.5	4.515	4.501
12 (5 ㎒)	16QAM	701.5	4.501	4.515
		707.5	4.501	4.501
		713.5	4.515	4.515
12 (10 ㎒)	QPSK	704.0	8.944	8.915
		707.5	8.944	8.915
		711.0	8.944	8.886
12 (10 ㎒)	16QAM	704.0	8.944	8.915
		707.5	8.944	8.915
		711.0	8.944	8.915

Band	Mode	Frequency (㎒)	Occupied Bandwidth (㎒)	
			FCC	IC
17 (5 ㎒)	QPSK	706.5	4.515	4.501
		710.0	4.501	4.501
		713.5	4.515	4.501
17 (5 ㎒)	16QAM	706.5	4.501	4.515
		710.0	4.515	4.501
		713.5	4.515	4.501
17 (10 ㎒)	QPSK	709.0	8.944	8.915
		710.0	8.973	8.944
		711.0	8.973	8.973
17 (10 ㎒)	16QAM	709.0	8.973	8.944
		710.0	8.973	8.973
		711.0	8.973	8.944

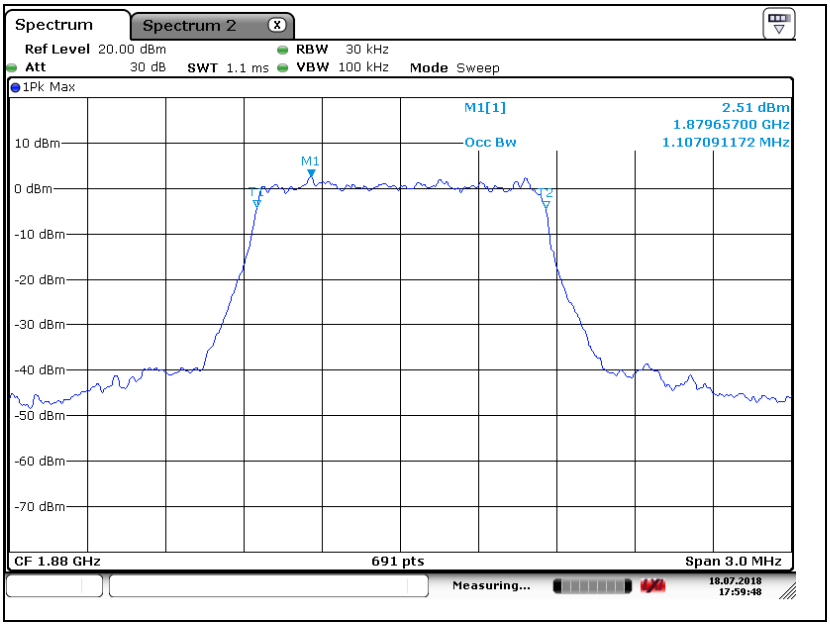
FCC

LTE band 2 (1.4 ㎒ - QPSK)

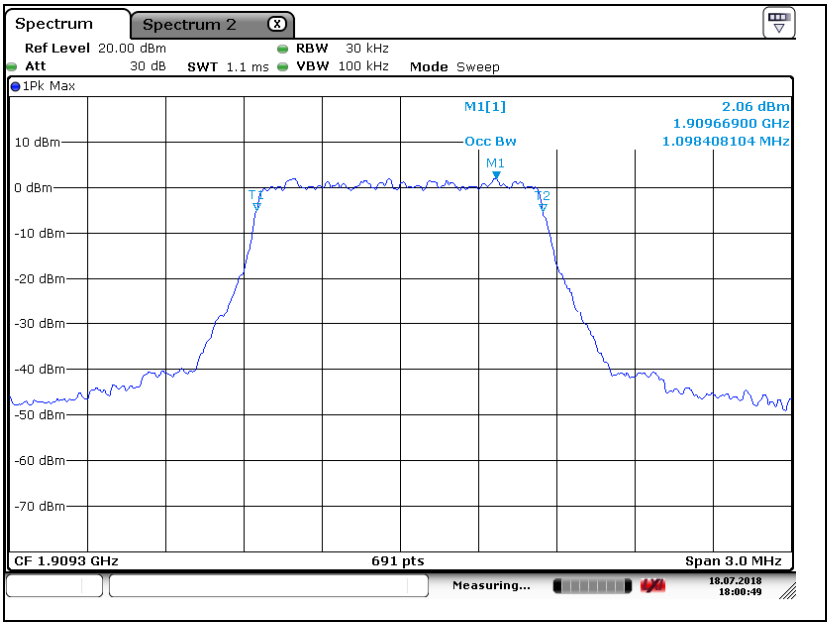
Low Channel



Middle Channel

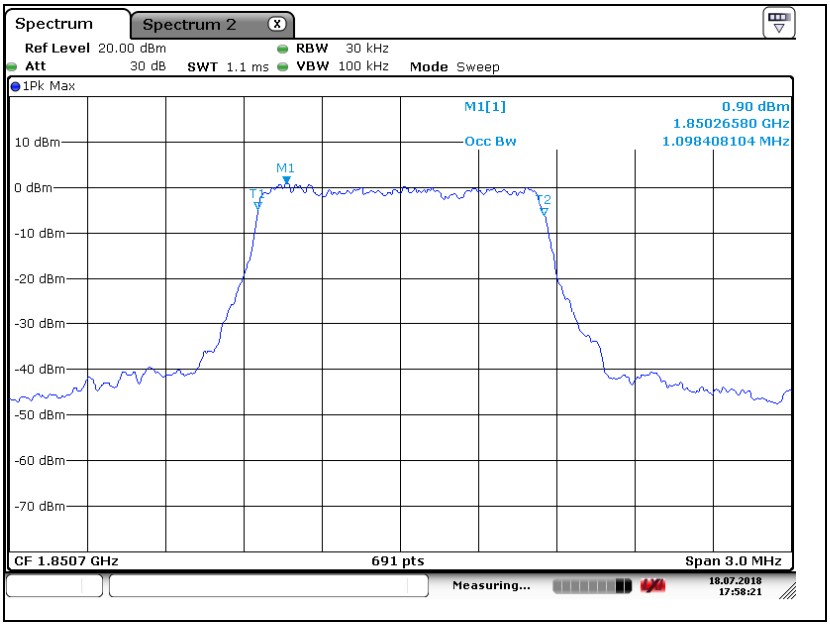


High Channel

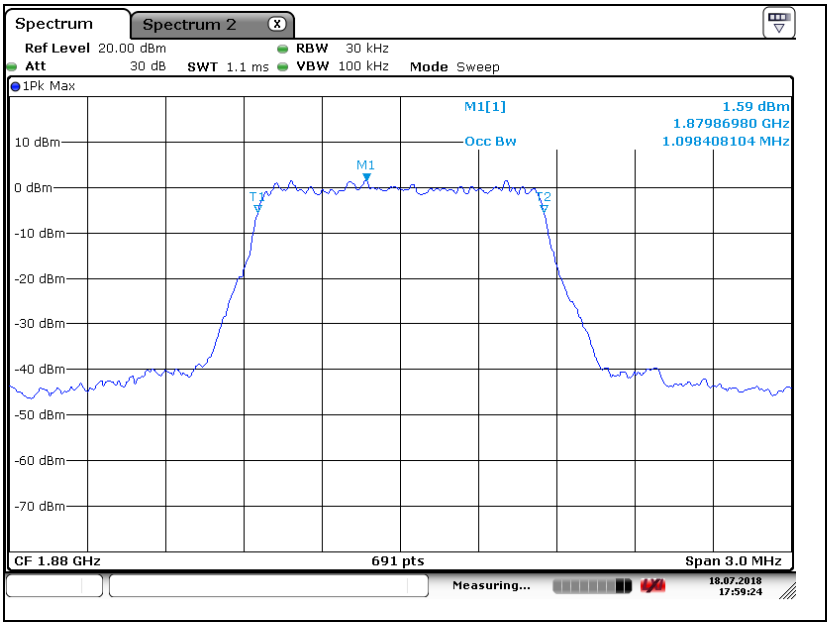


LTE band 2 (1.4 ㎒ - 16QAM)

Low Channel



Middle Channel



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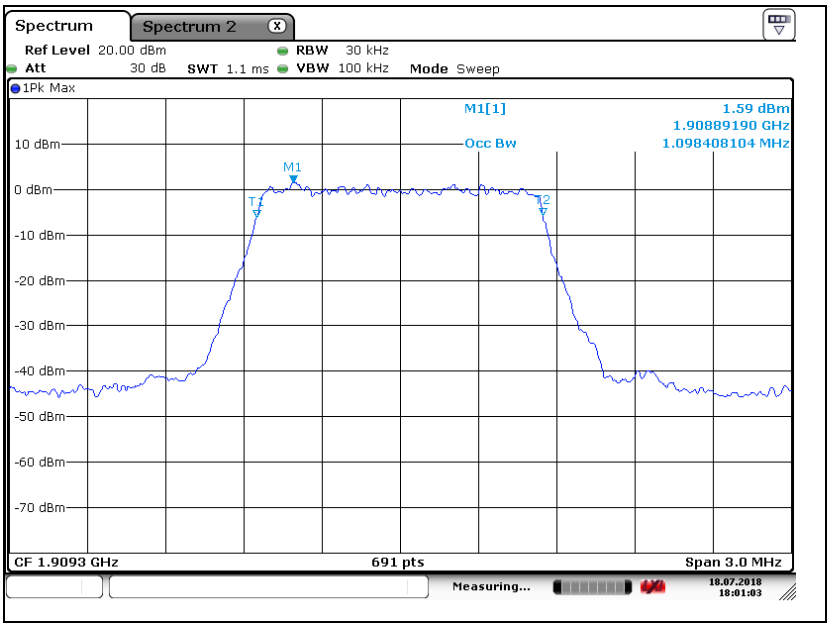
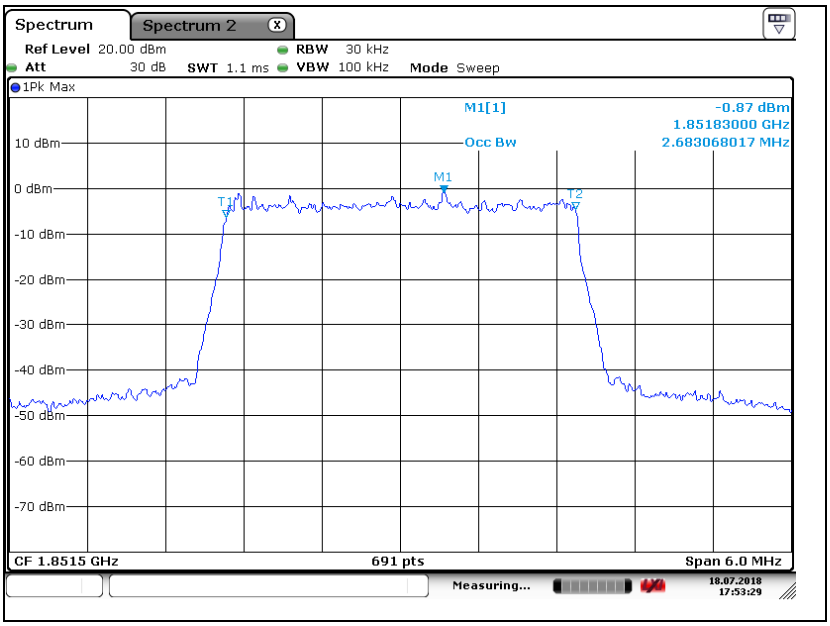


LTE band 2 (3 ㎒ - QPSK)

Low Channel



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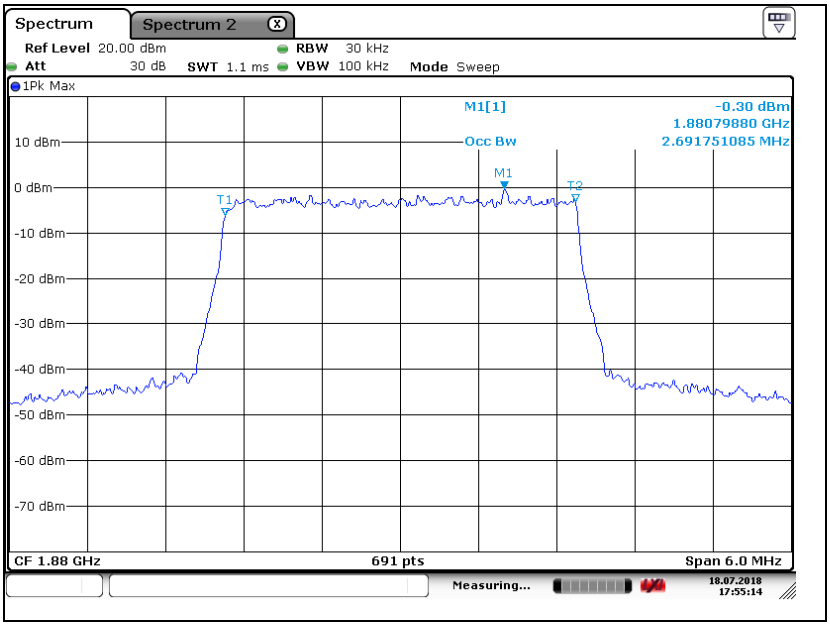

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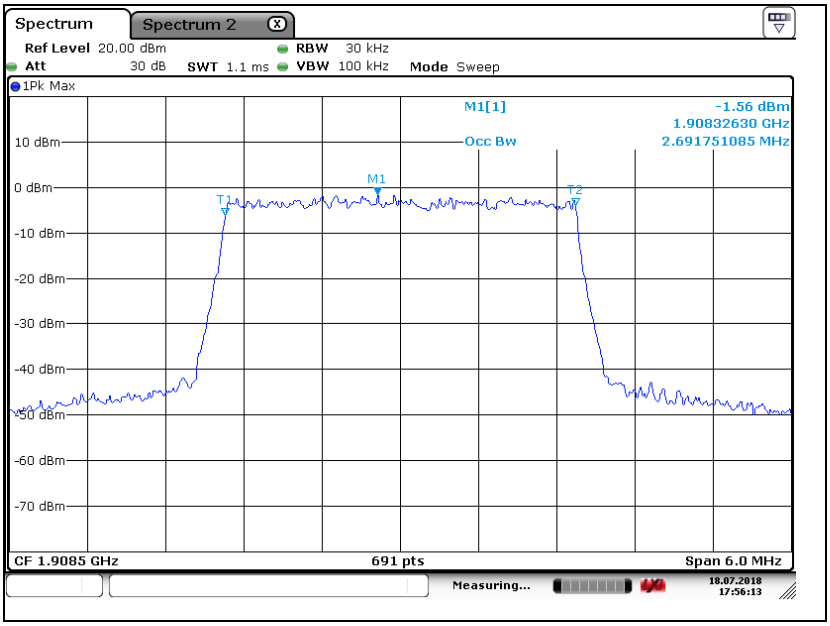
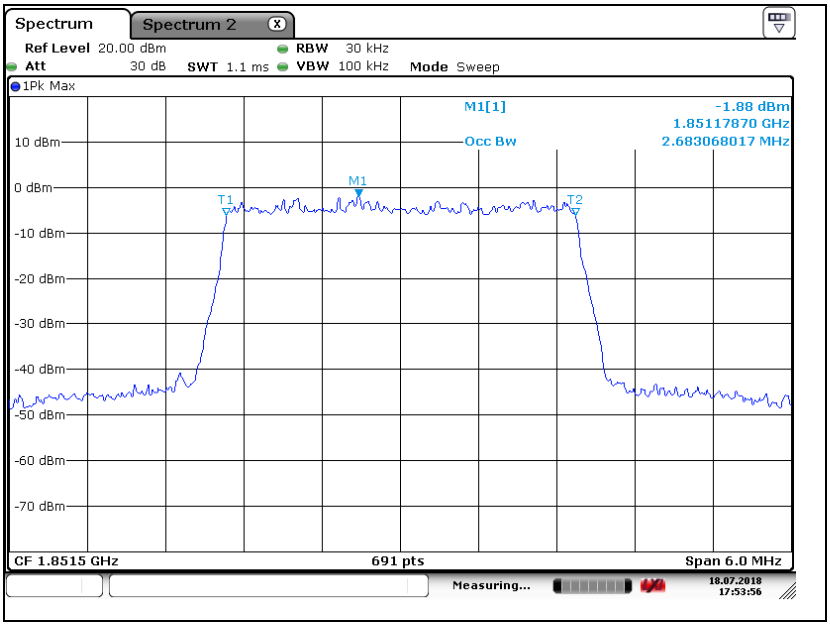


LTE band 2 (3 ㎒ - 16QAM)

Low Channel



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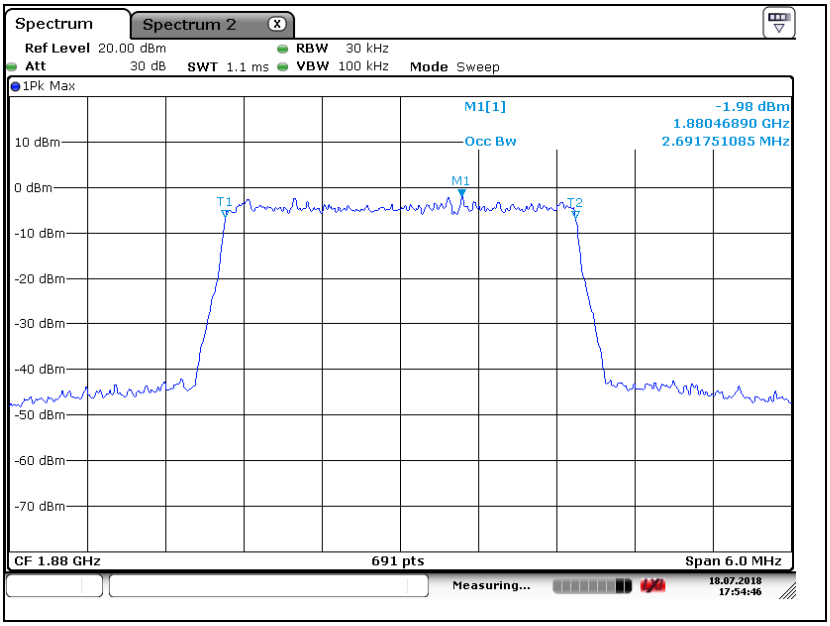

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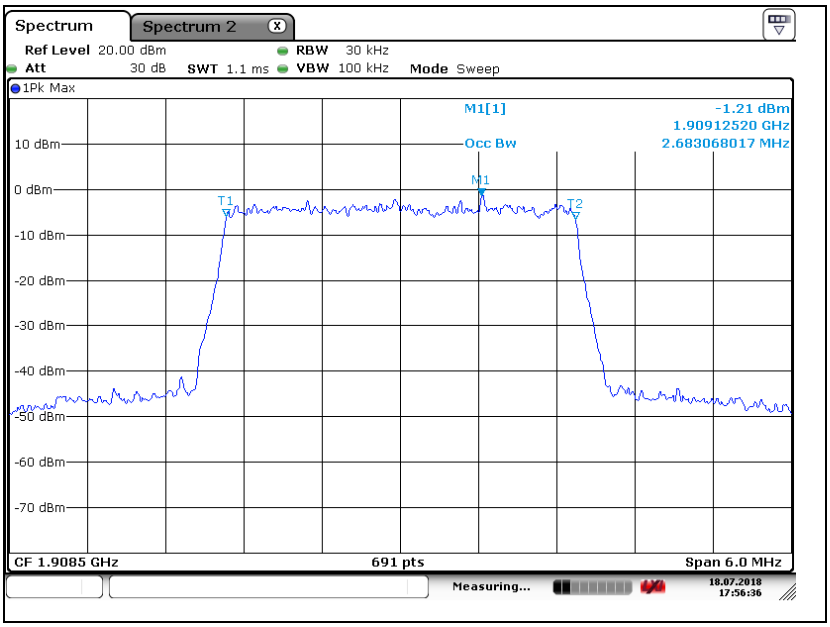
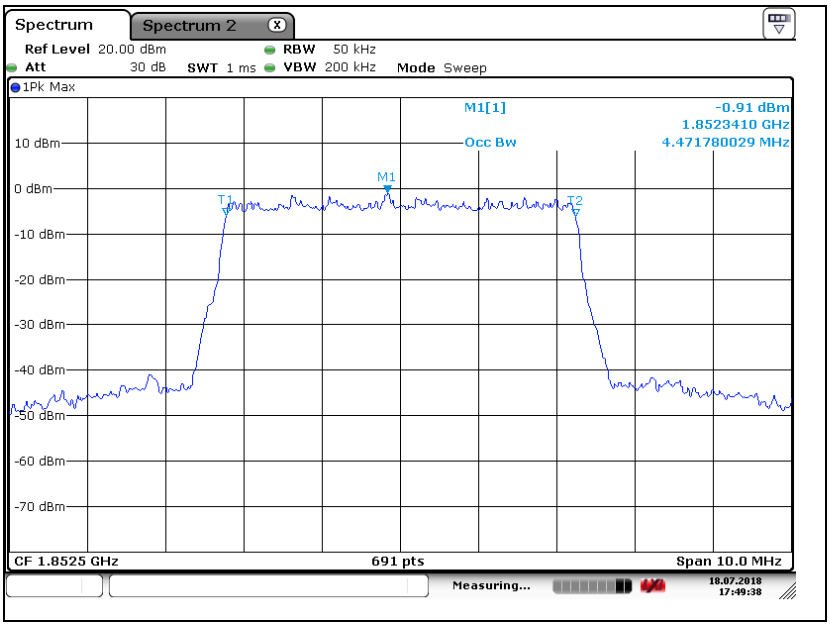


LTE band 2 (5 ㎒ - QPSK)

Low Channel



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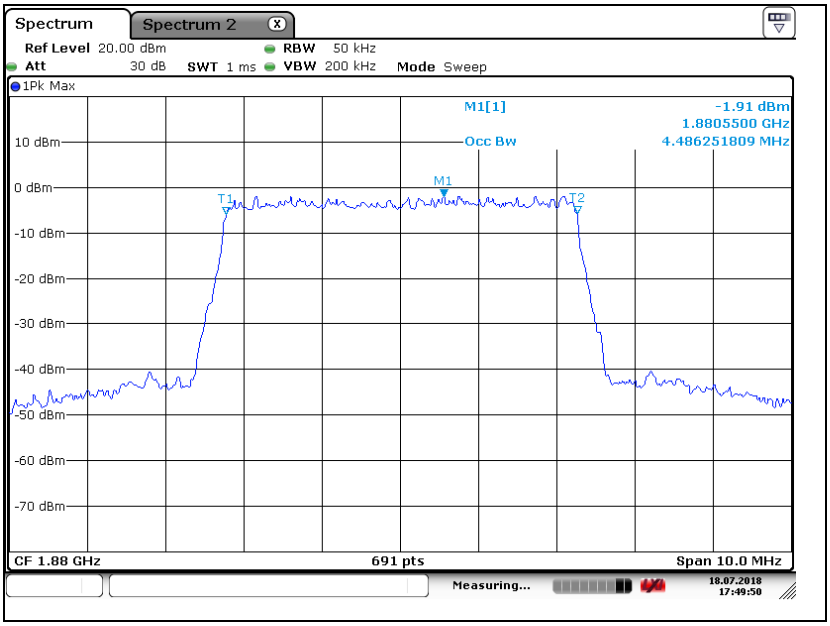

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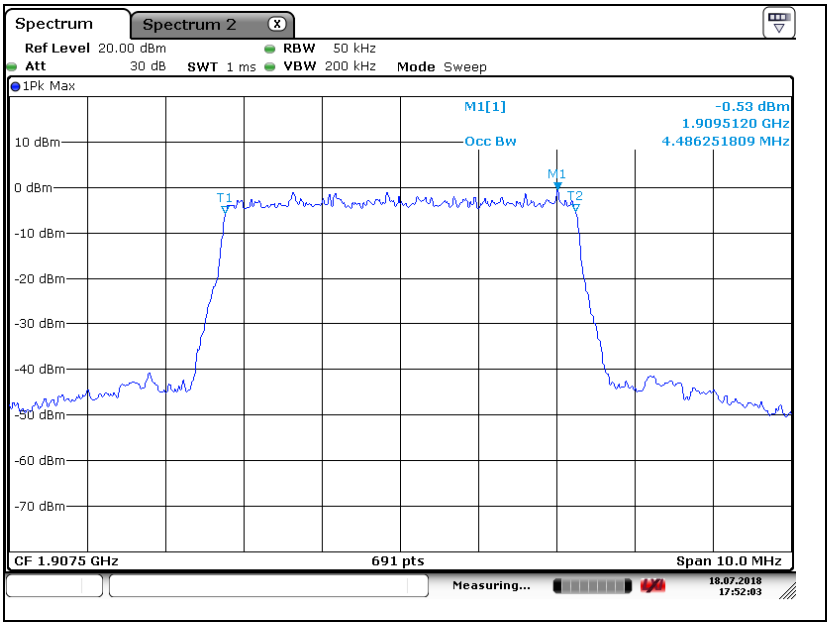
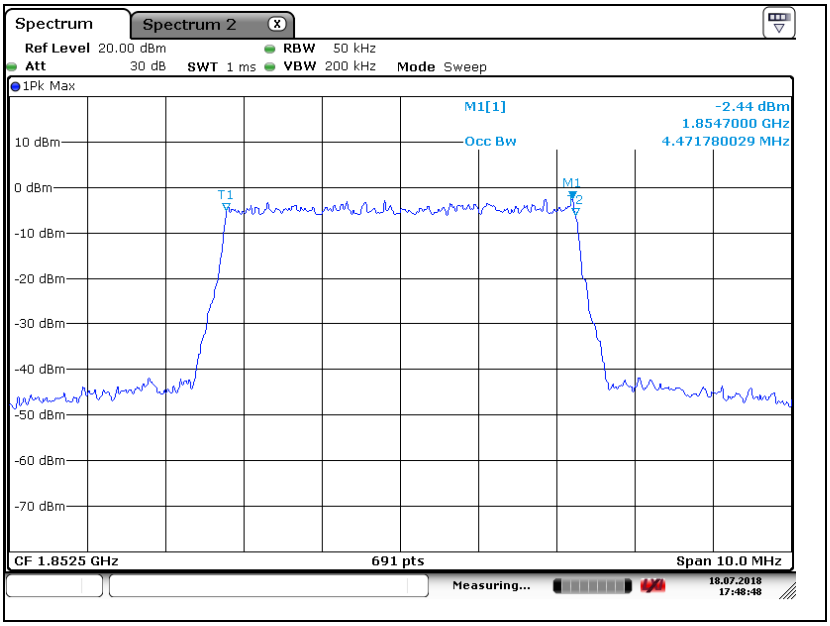


LTE band 2 (5 ㎒ - 16QAM)

Low Channel



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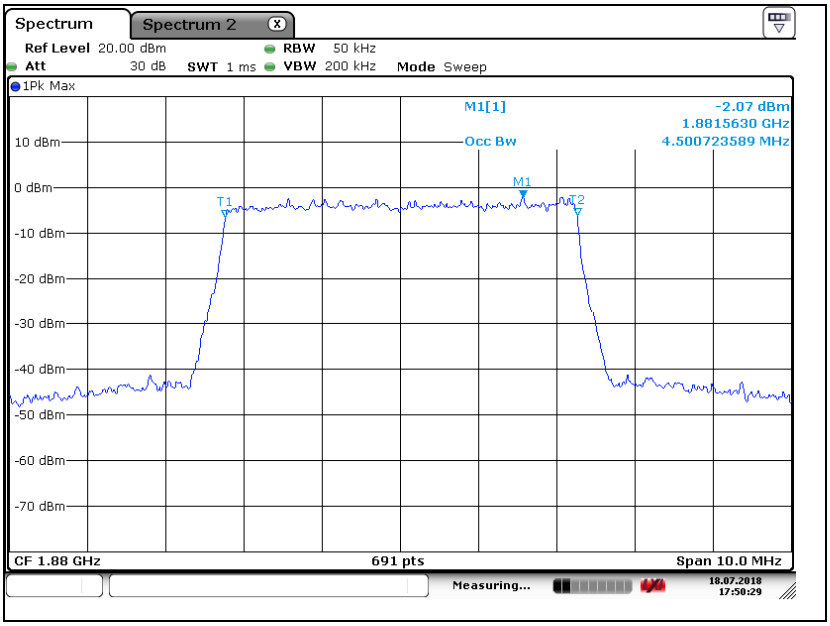

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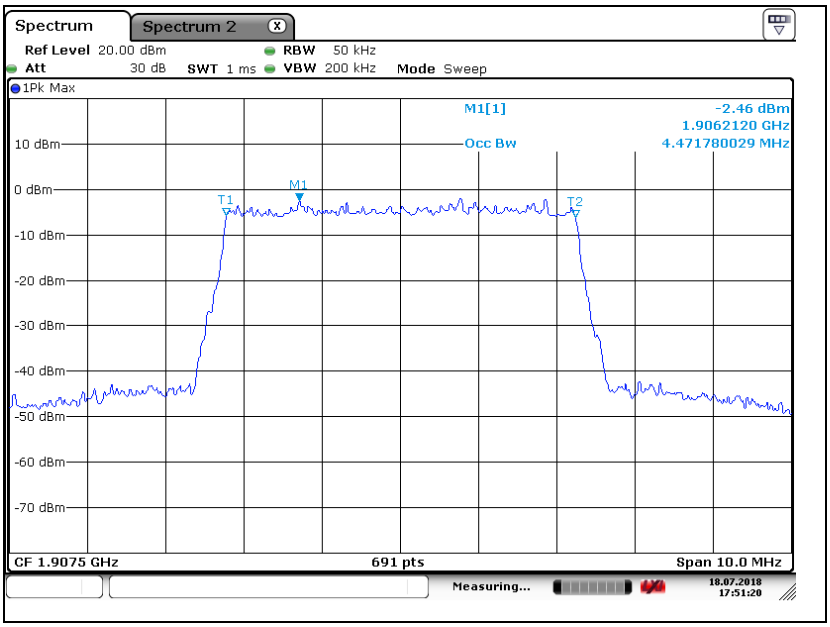
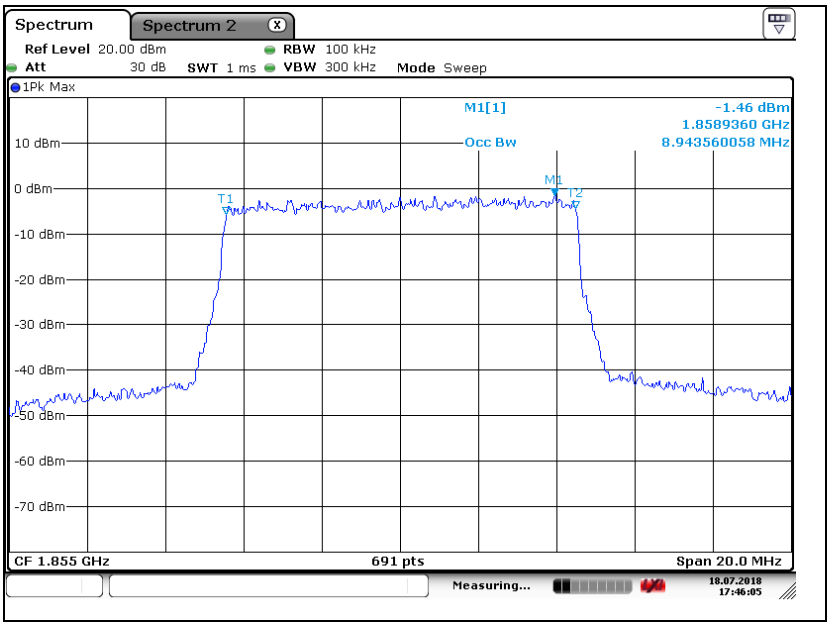


LTE band 2 (10 ㎒ - QPSK)

Low Channel



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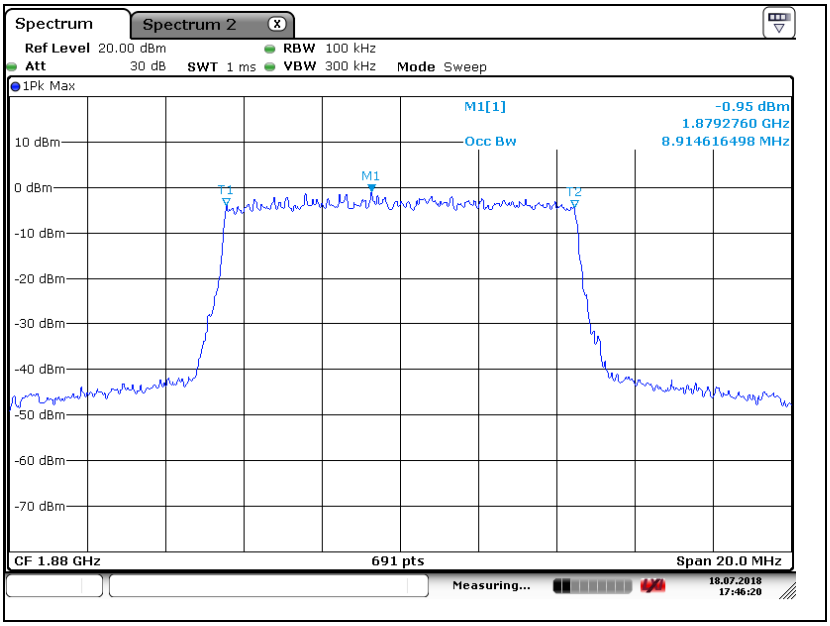

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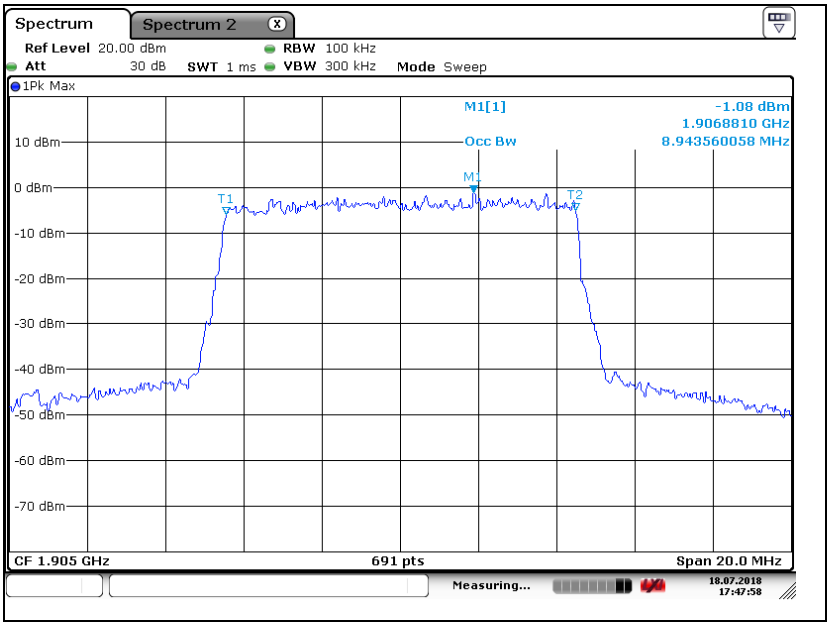
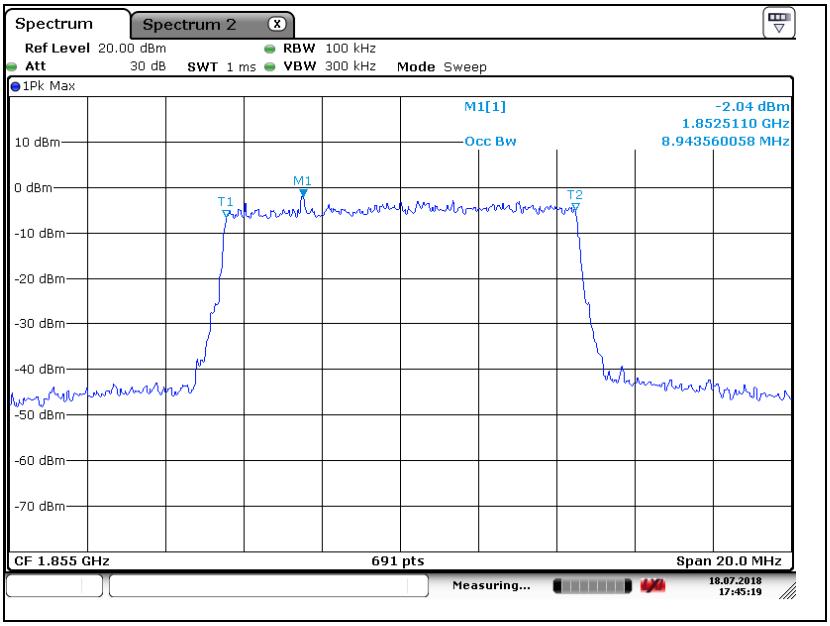


LTE band 2 (10 ㎒ - 16QAM)

Low Channel



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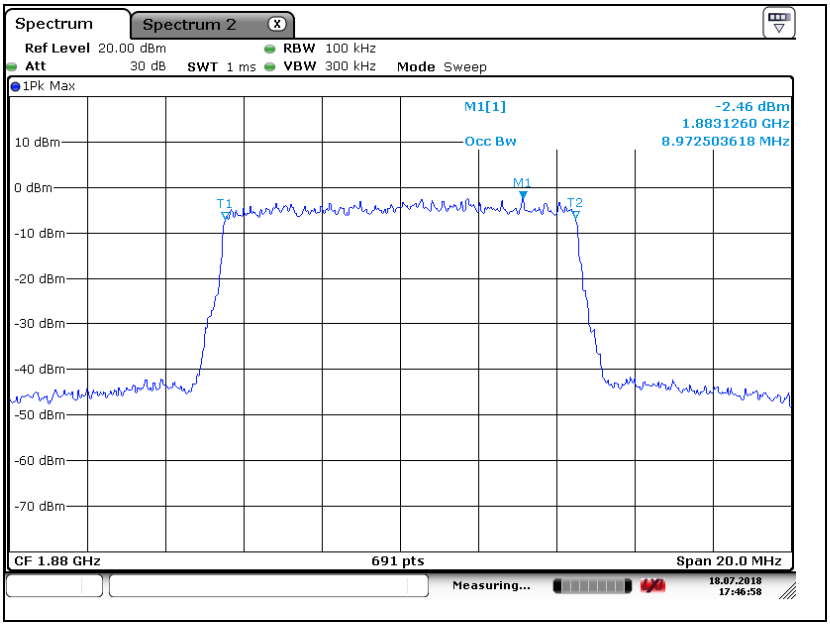

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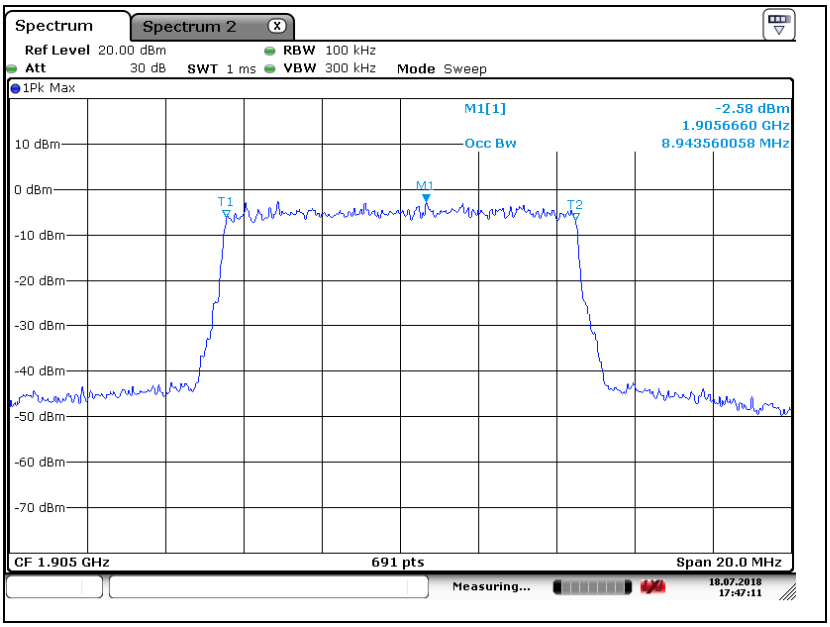
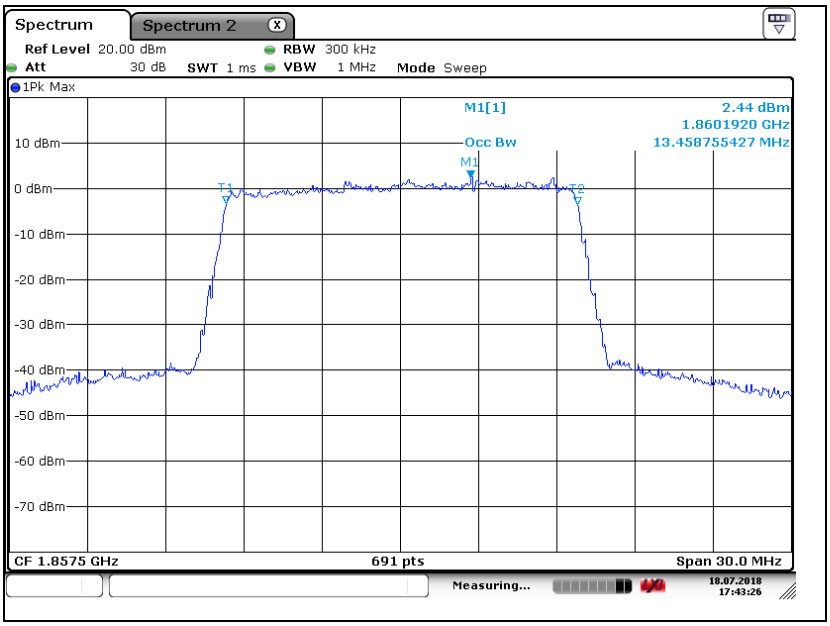


LTE band 2 (15 ㎒ - QPSK)

Low Channel



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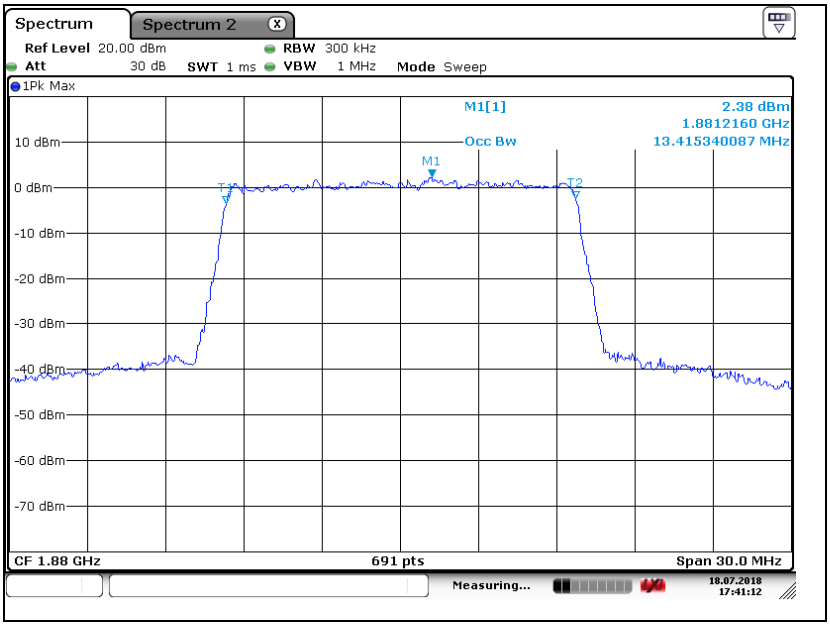

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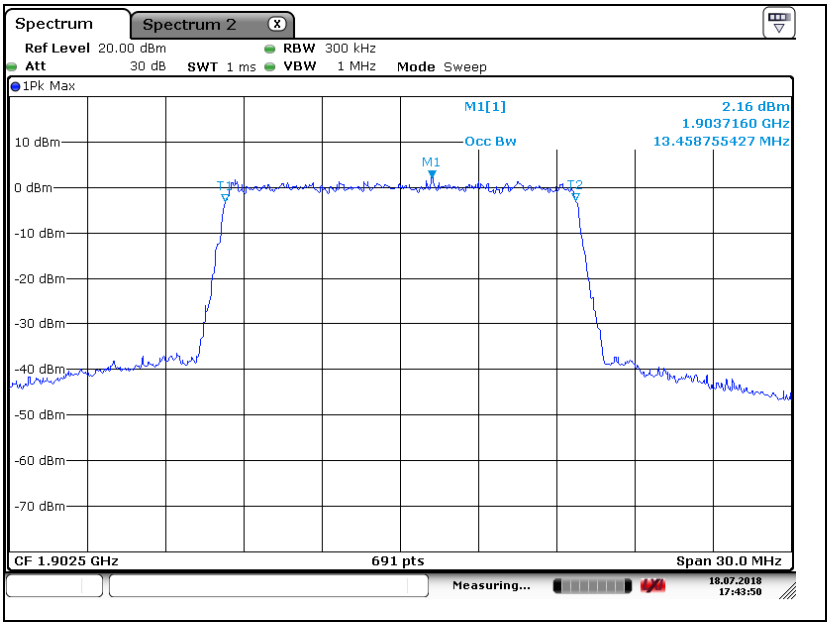
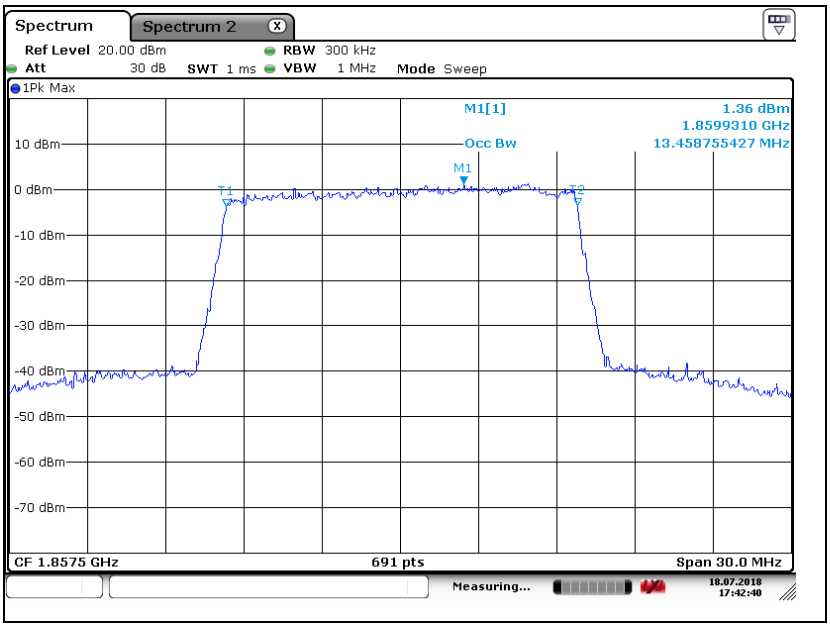


LTE band 2 (15 ㎒ - 16QAM)

Low Channel



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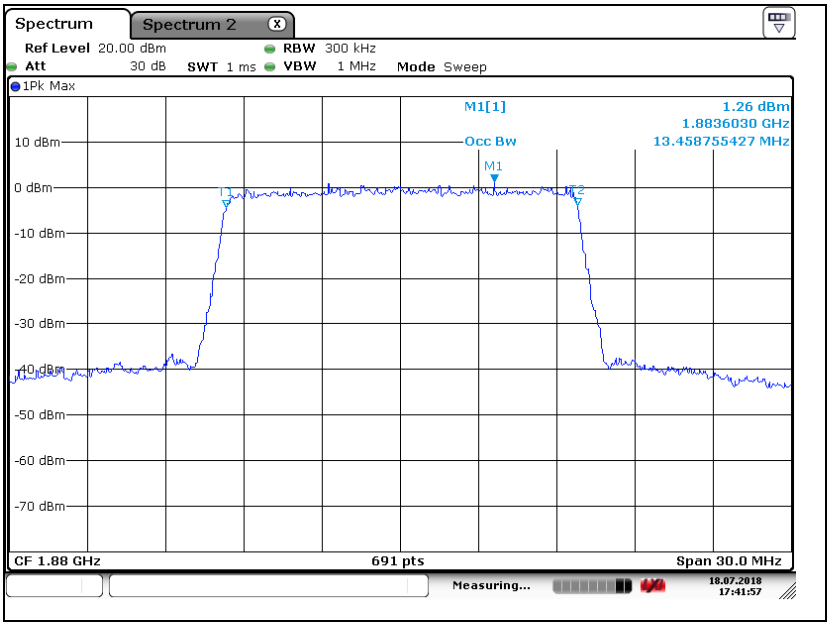
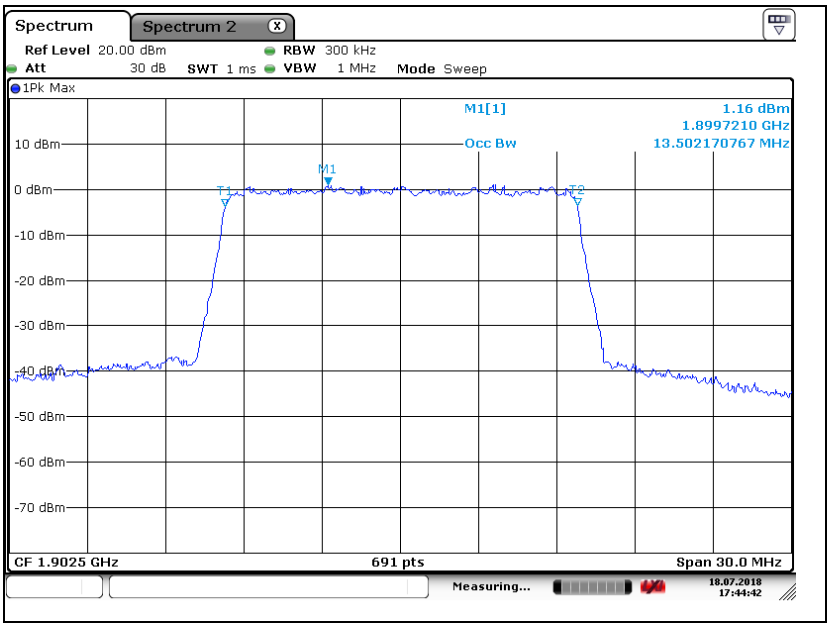
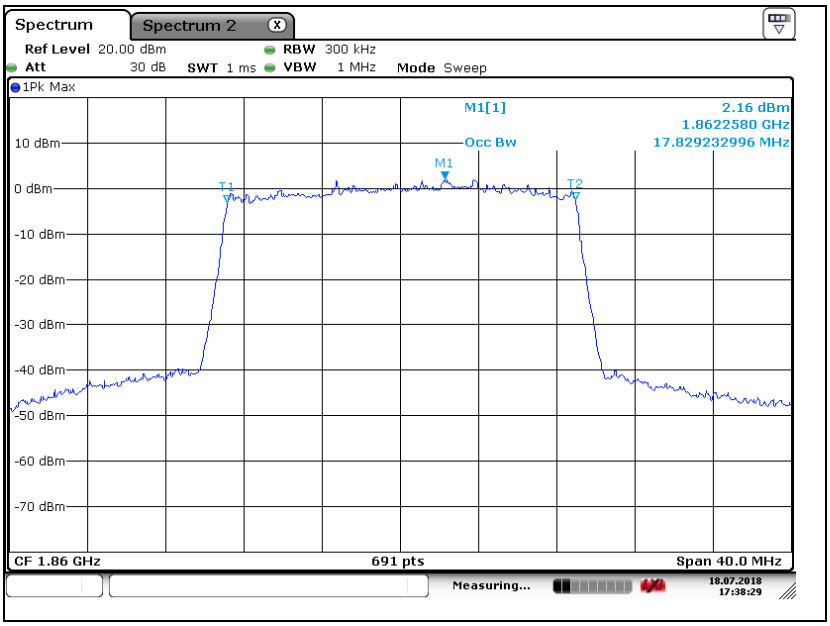


High Channel



LTE band 2 (20 ㎒ - QPSK)

Low Channel



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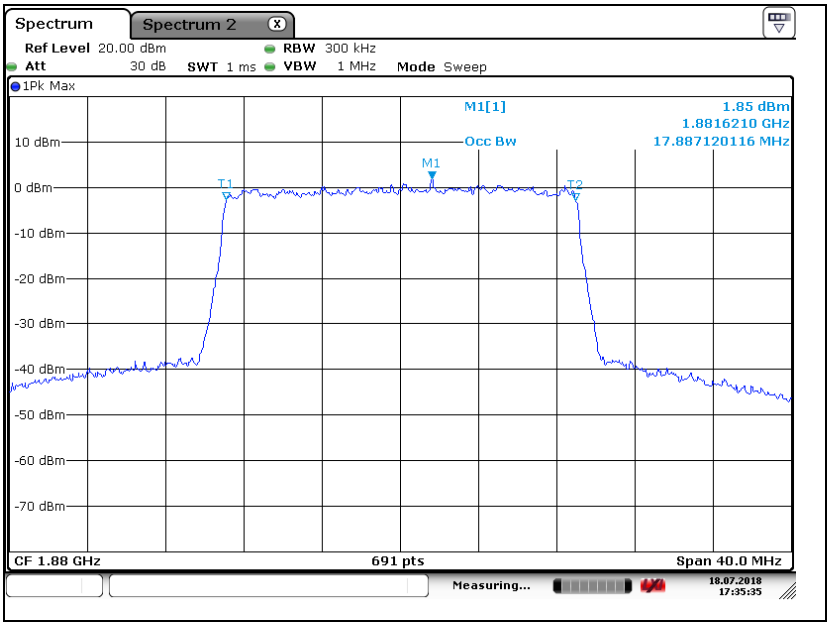
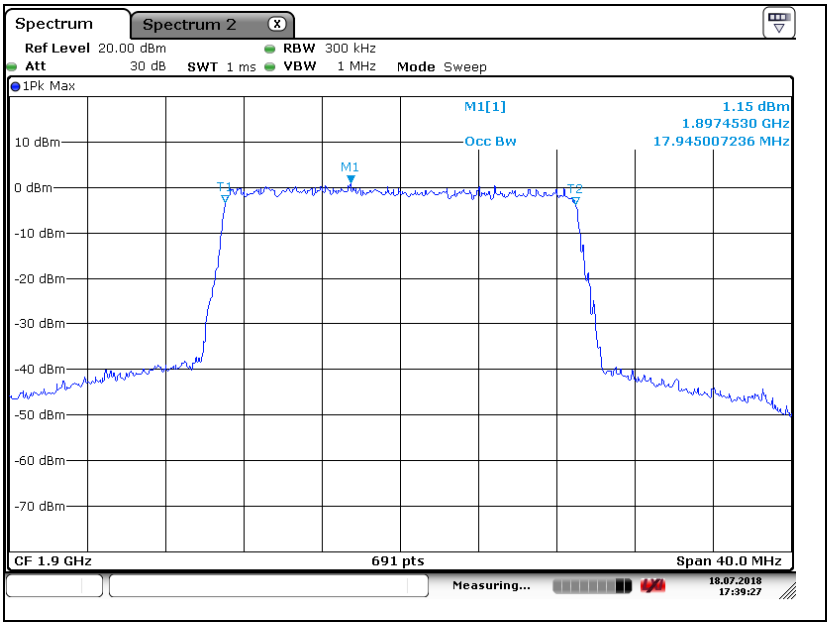
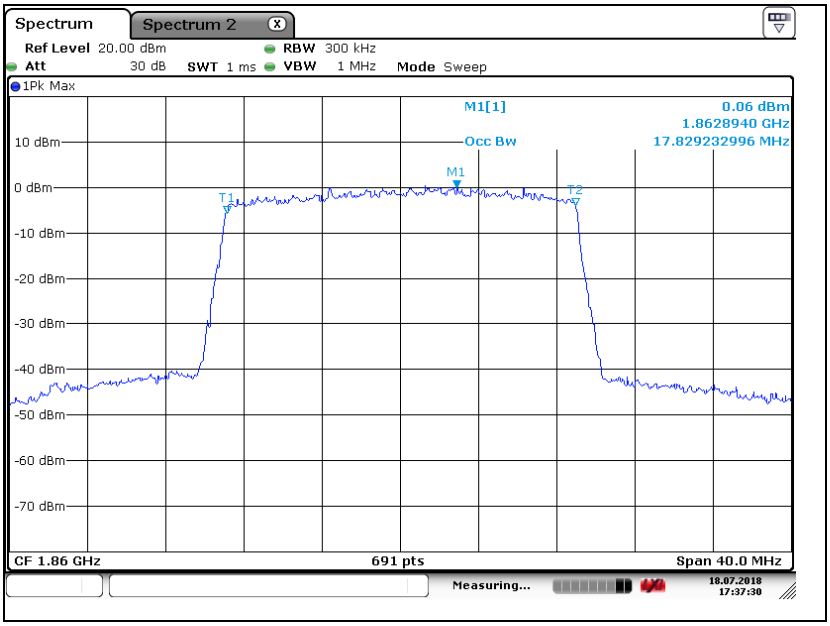


High Channel



LTE band 2 (20 ㎒ - 16QAM)

Low Channel



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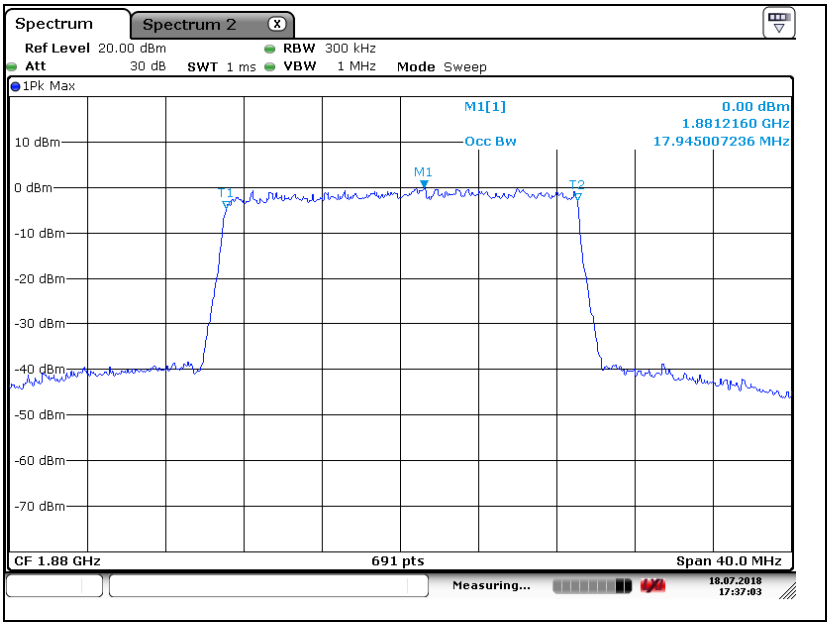

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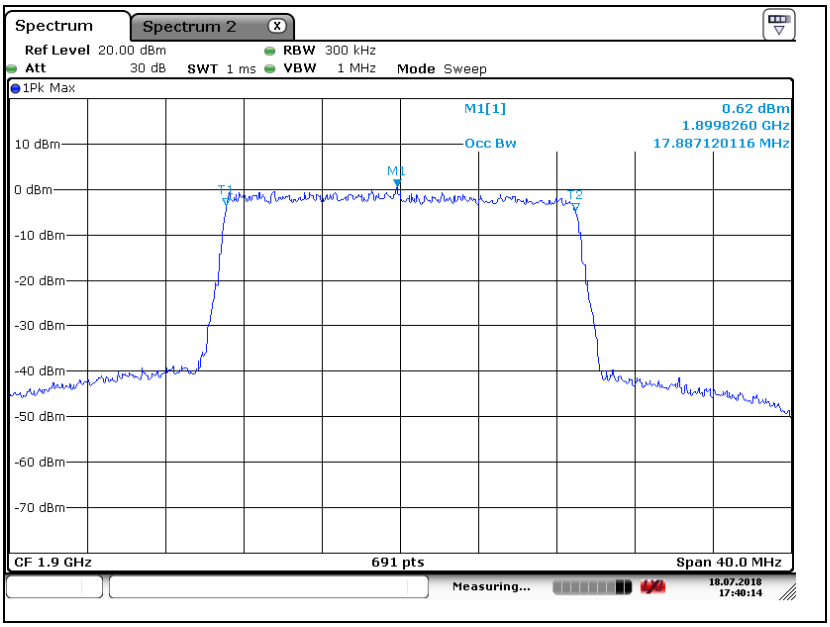
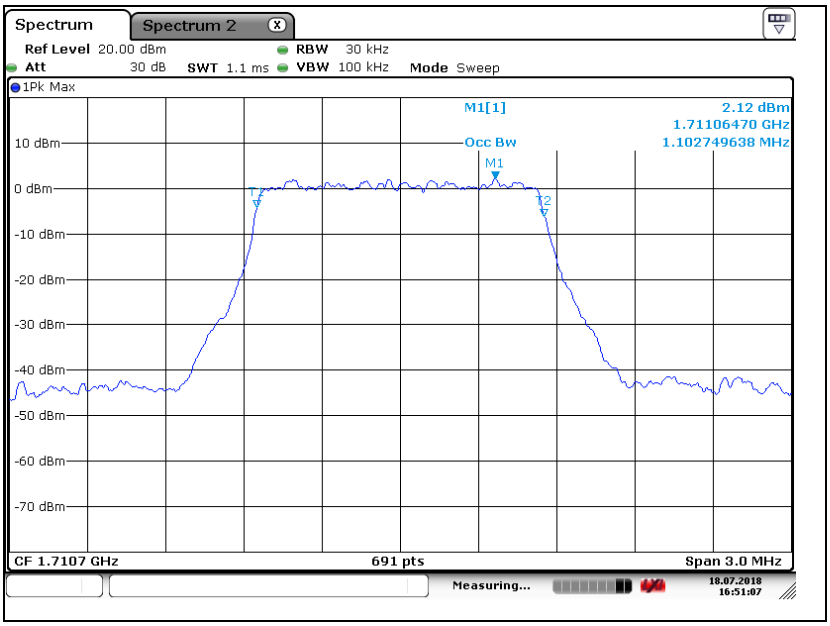
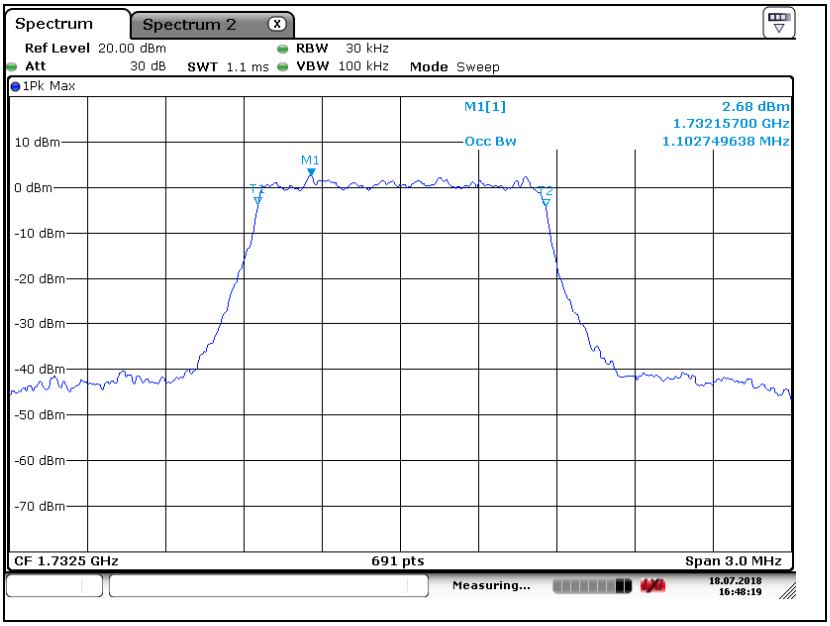


LTE band 4 (1.4 ㎒ - QPSK)

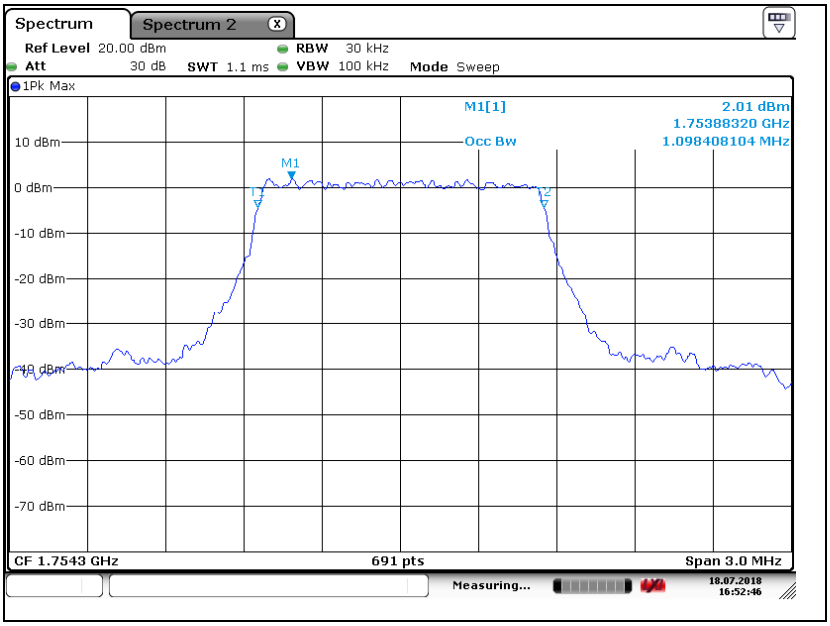
Low Channel



Middle Channel

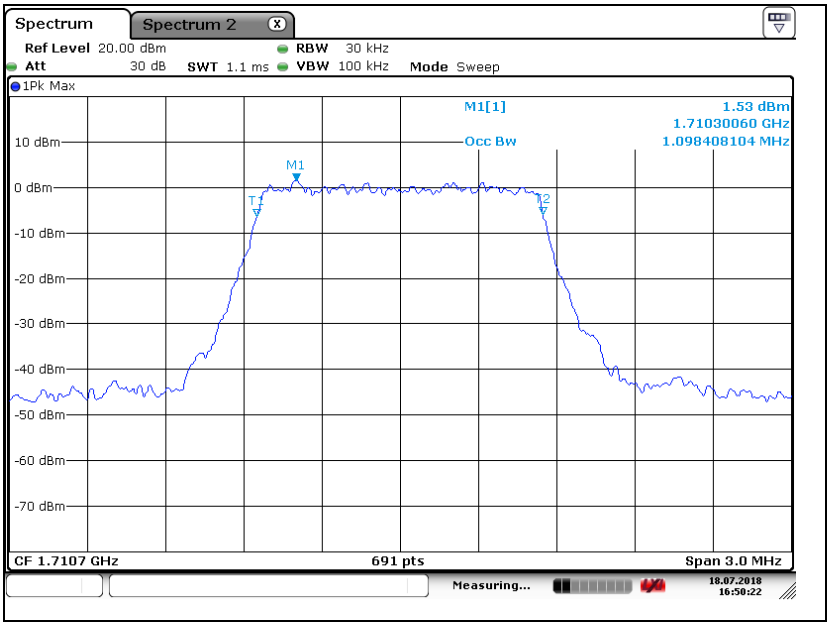


High Channel

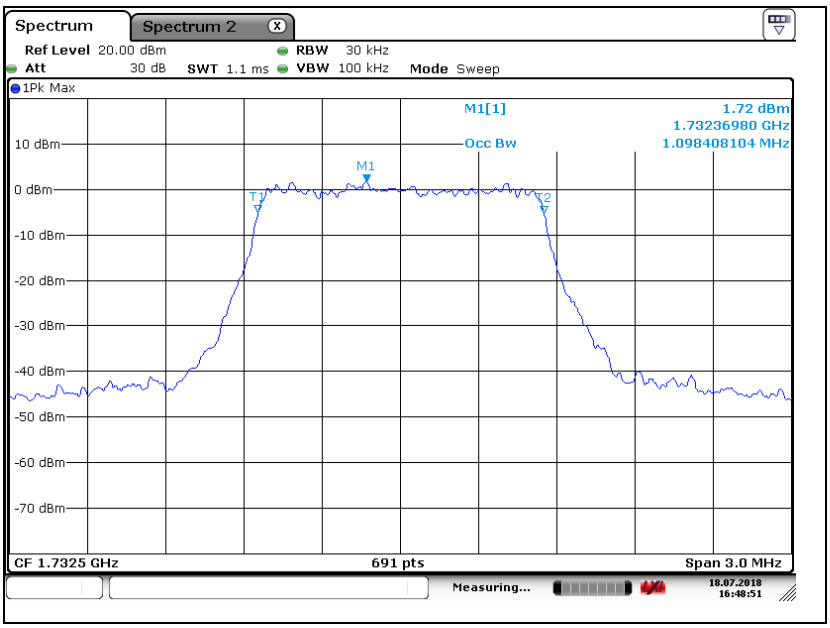


LTE band 4 (1.4 ㎒ - 16QAM)

Low Channel



Middle Channel



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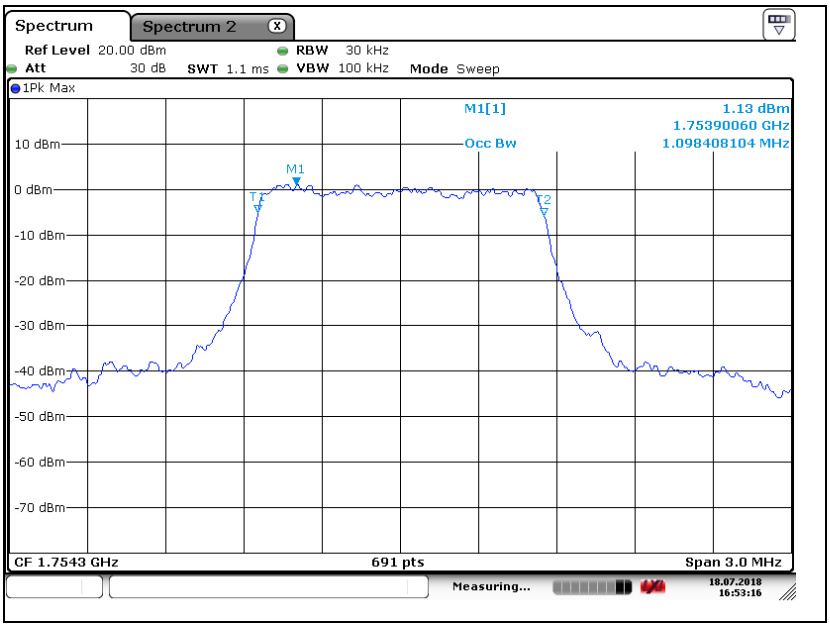
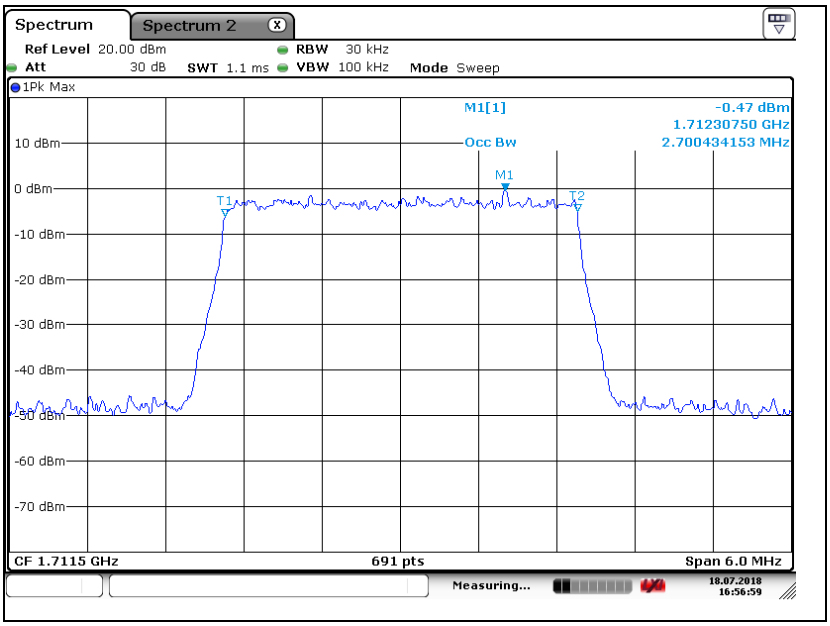
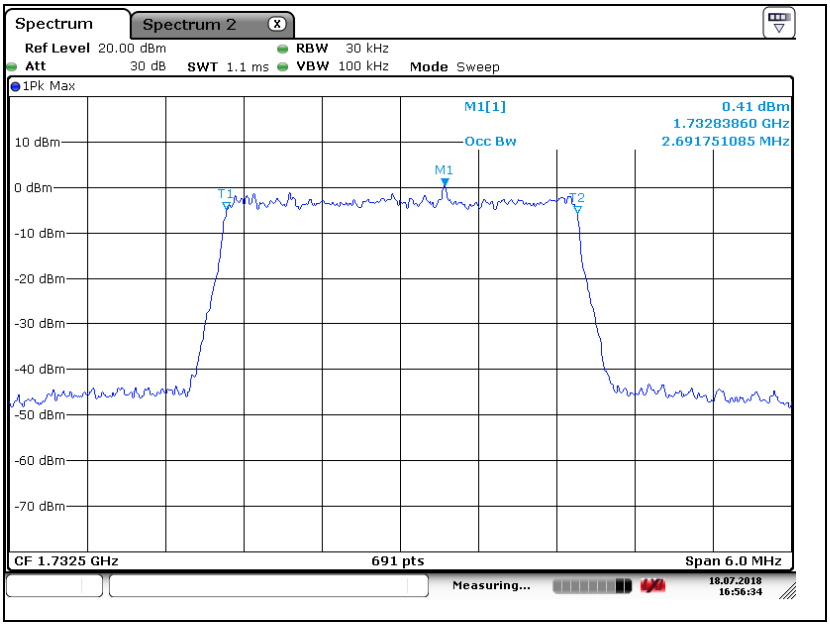


LTE band 4 (3 ㎒ - QPSK)

Low Channel



Middle Channel



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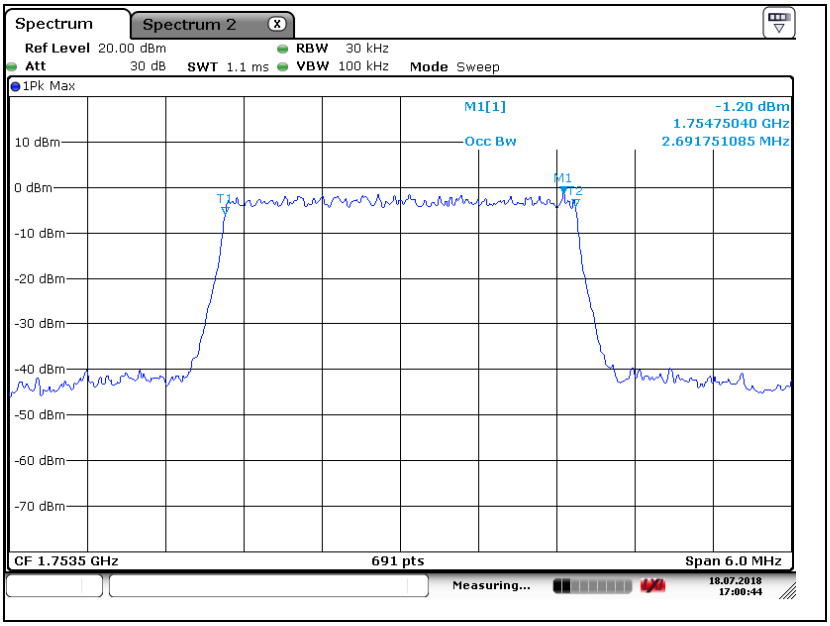
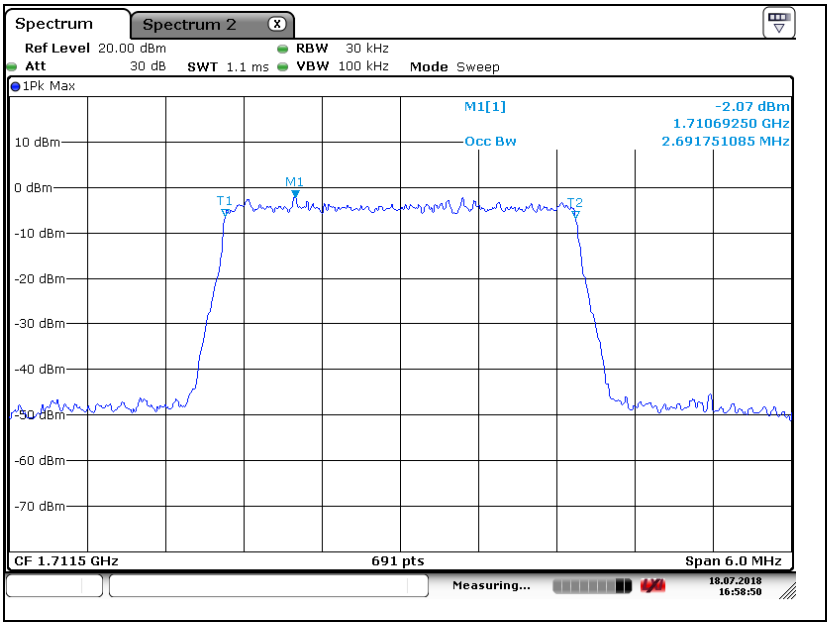
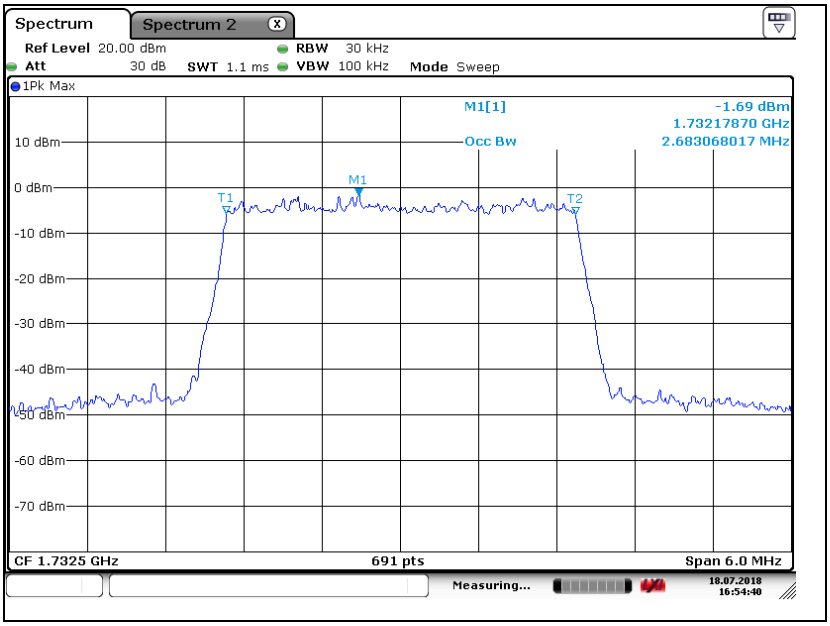


LTE band 4 (3 ㎒ - 16QAM)

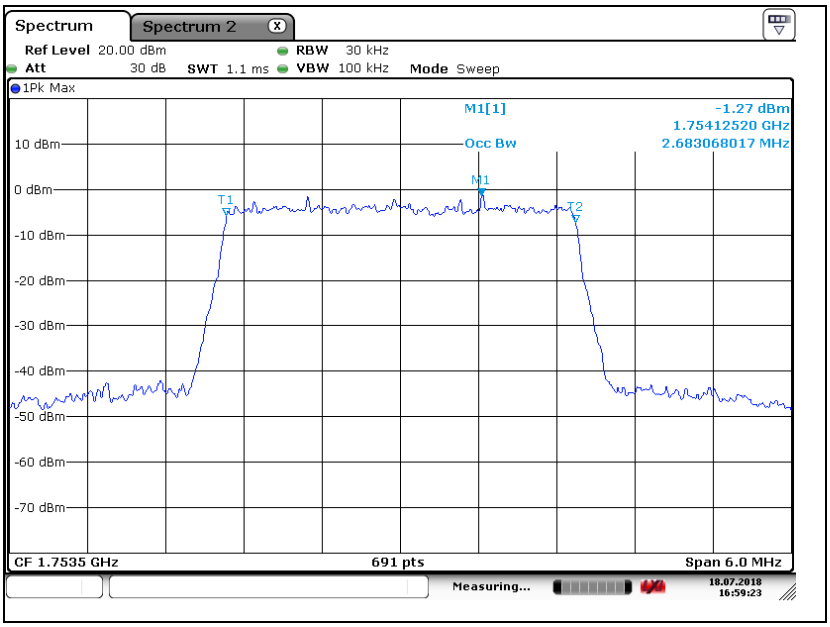
Low Channel



Middle Channel

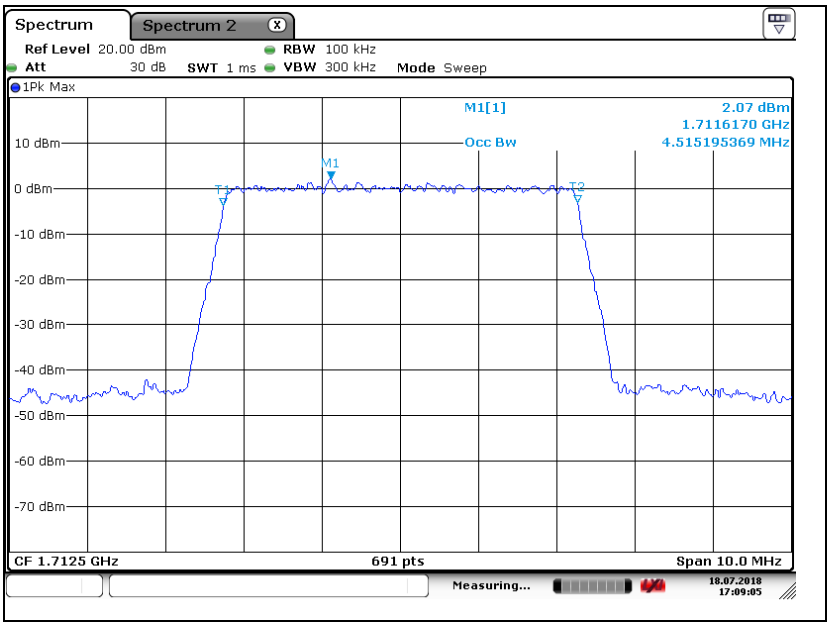


High Channel

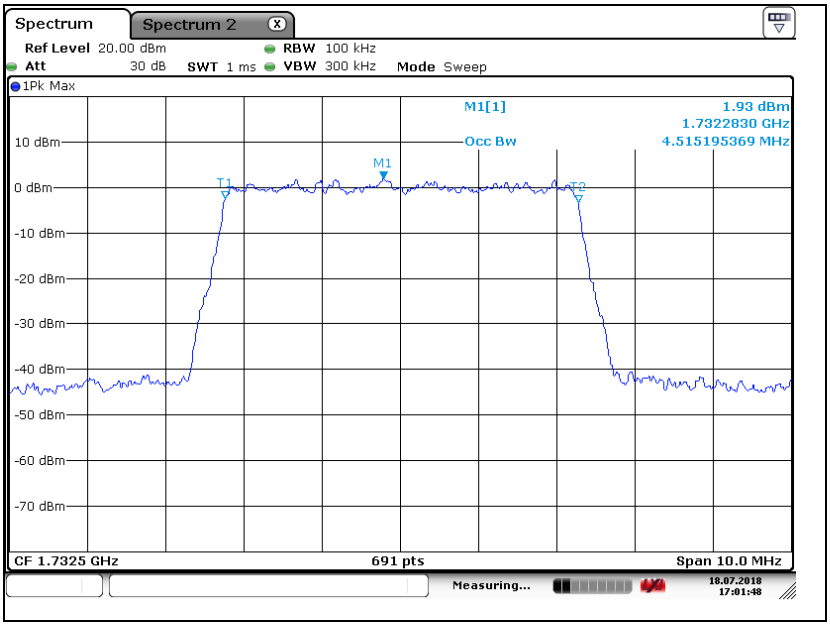


LTE band 4 (5 ㎒ - QPSK)

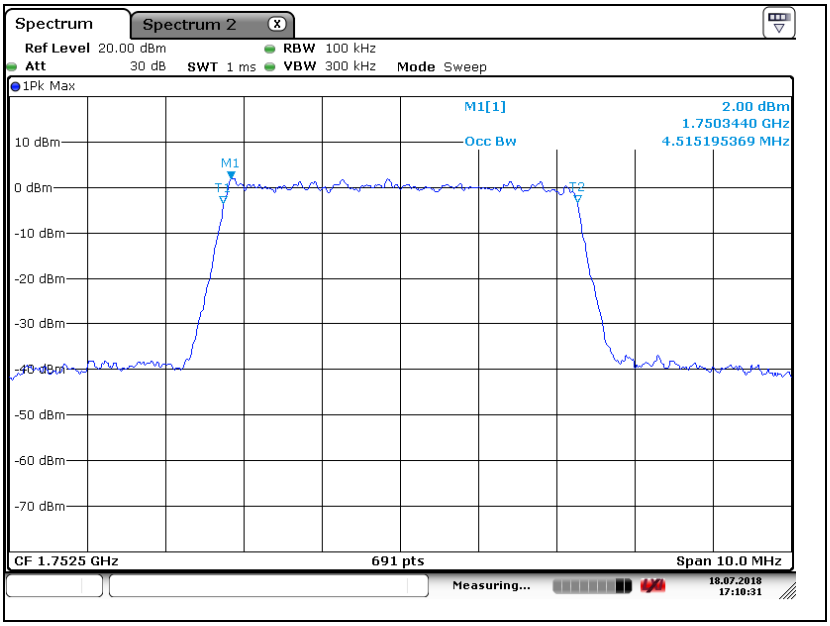
Low Channel



Middle Channel

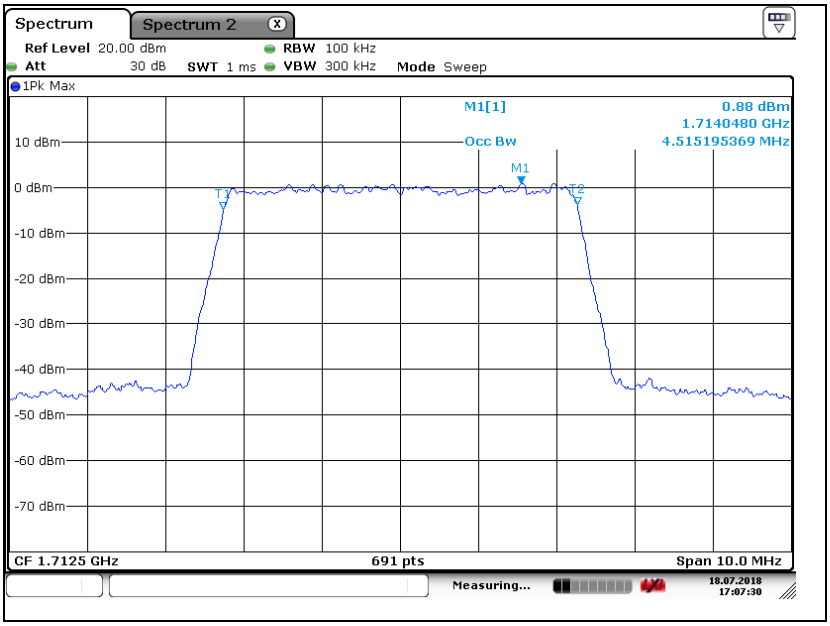


High Channel

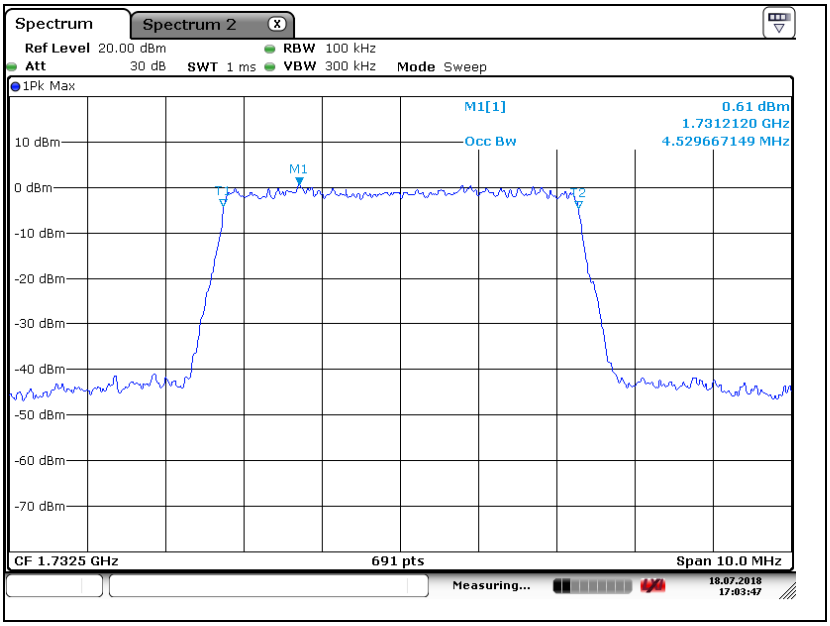


LTE band 4 (5 ㎒ - 16QAM)

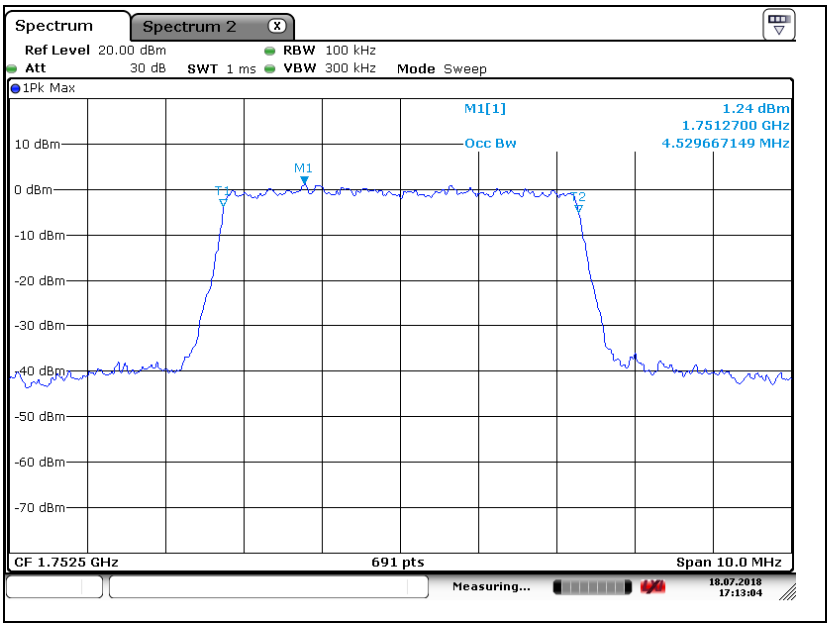
Low Channel



Middle Channel

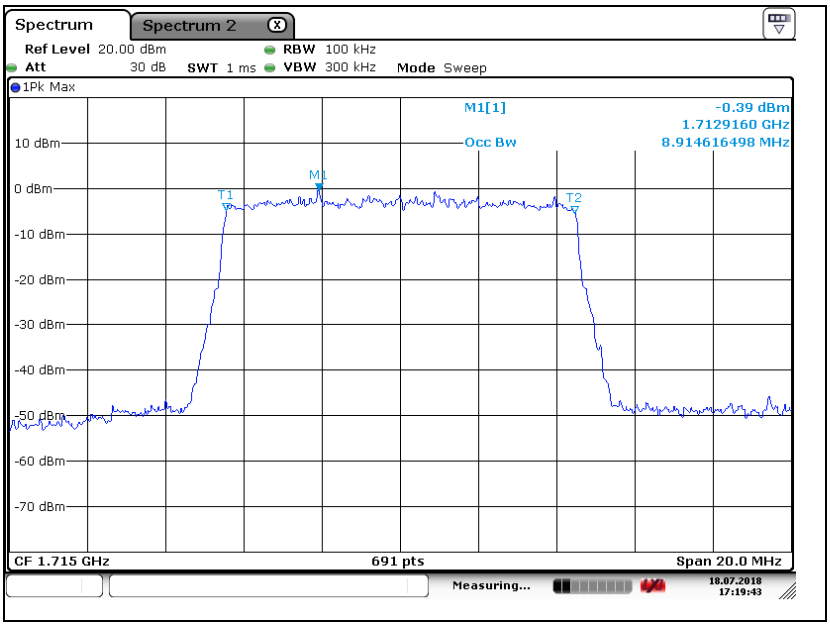


High Channel

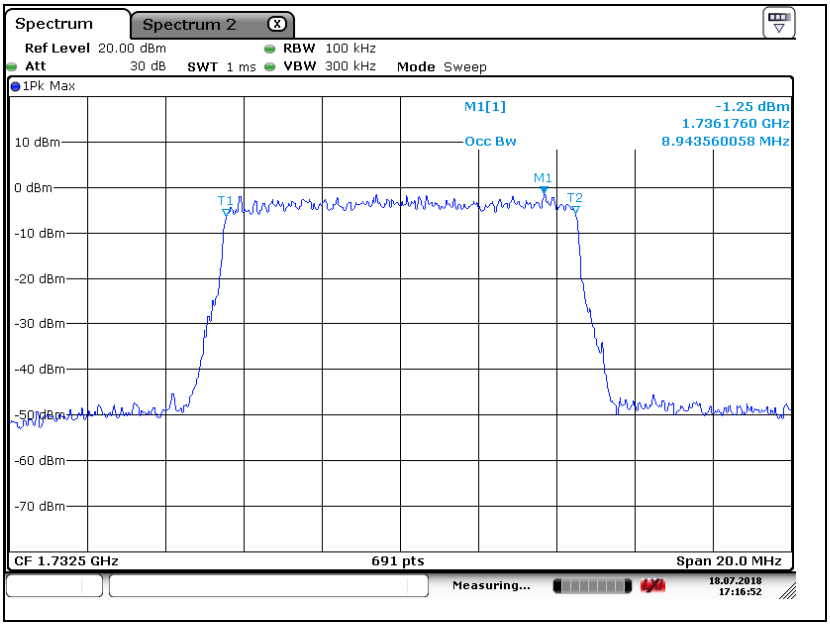


LTE band 4 (10 ㎒ - QPSK)

Low Channel



Middle Channel



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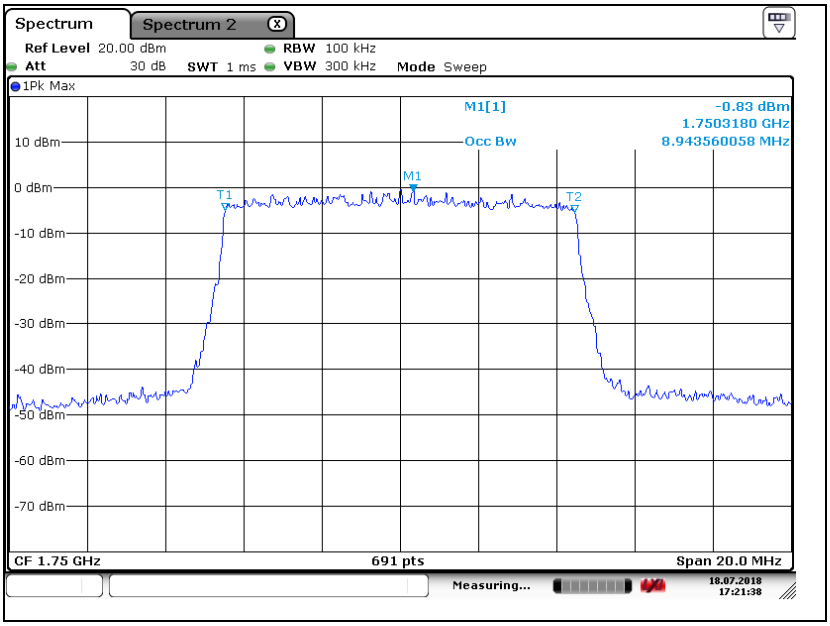

LTE band 4 (10 ㎒ - 16QAM)

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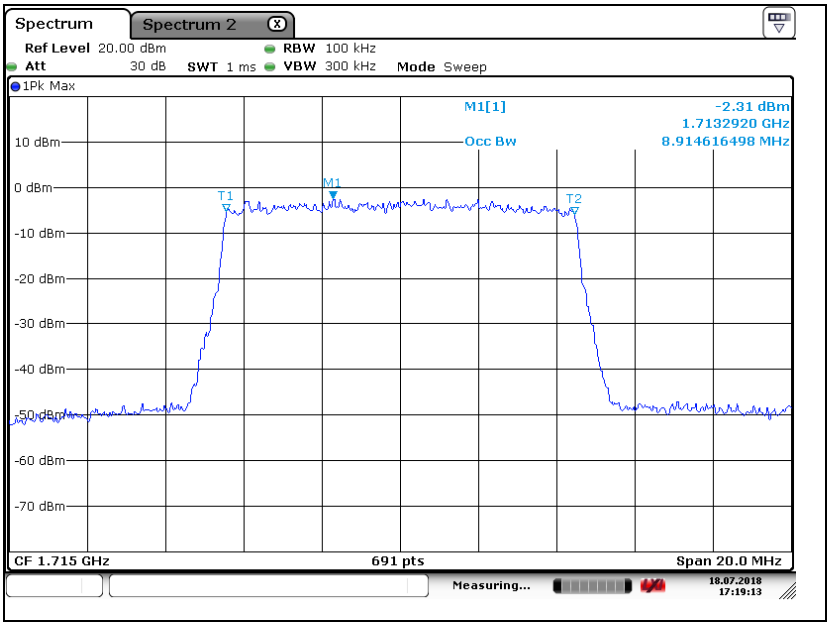

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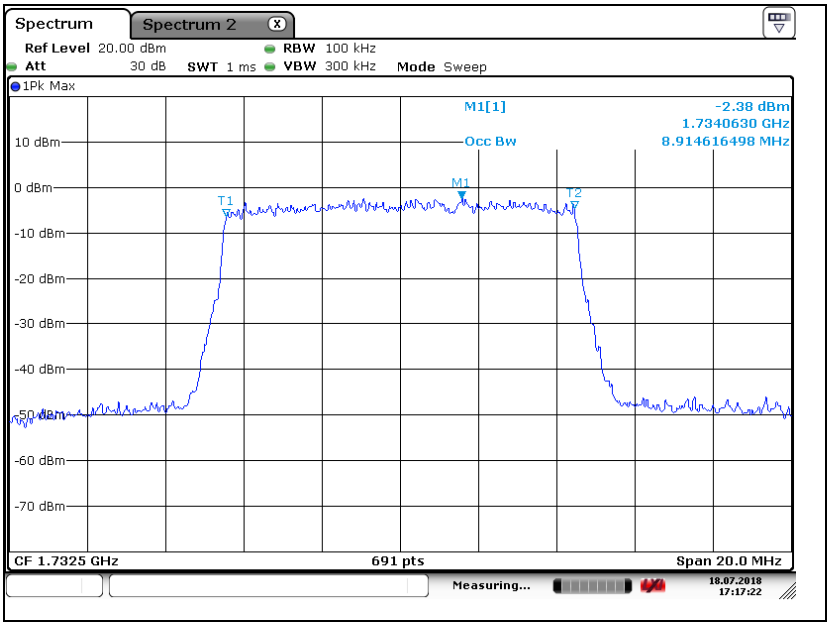

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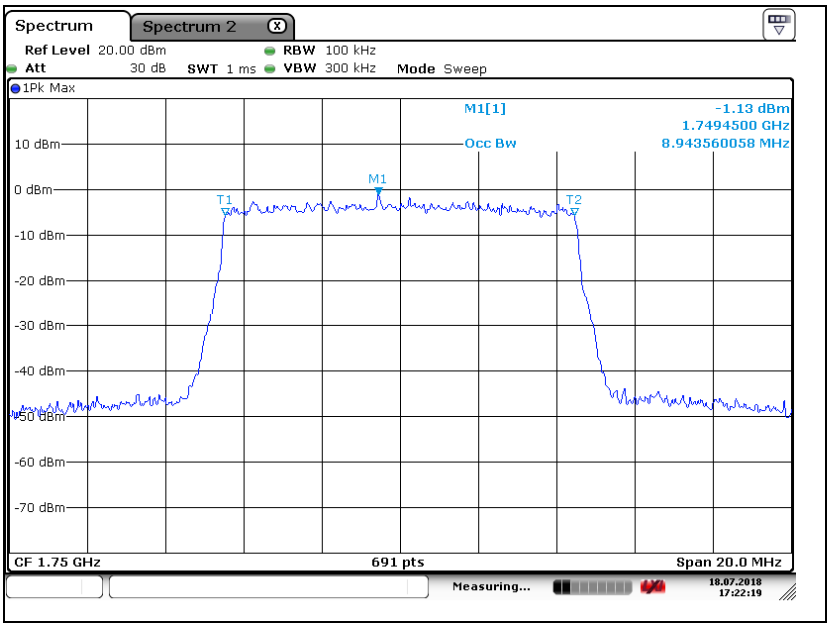
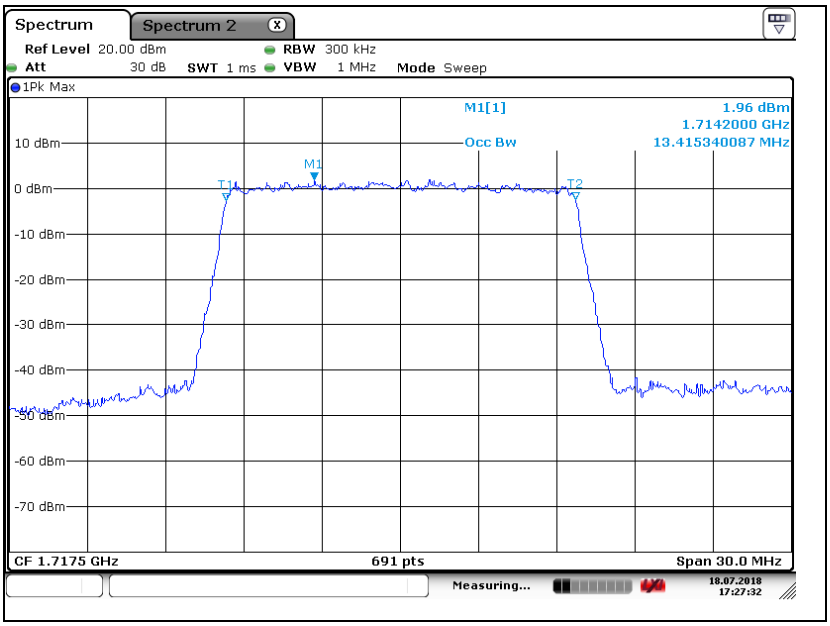


LTE band 4 (15 ㎒ - QPSK)

Low Channel



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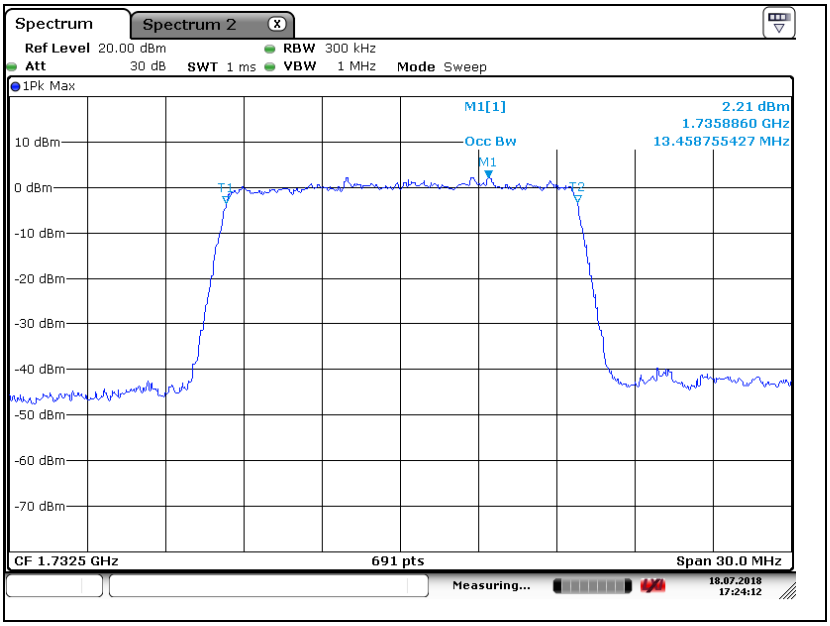

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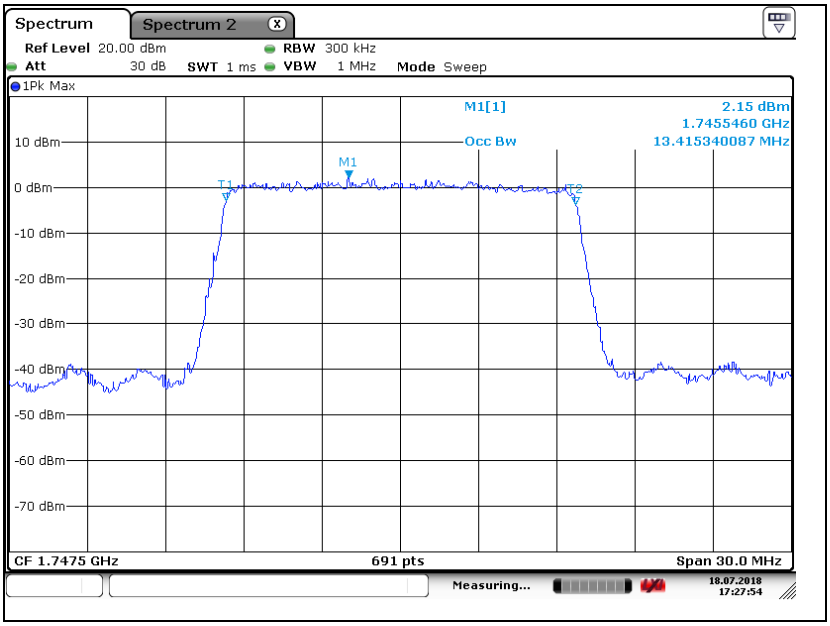

LTE band 4 (15 ㎒ - 16QAM)

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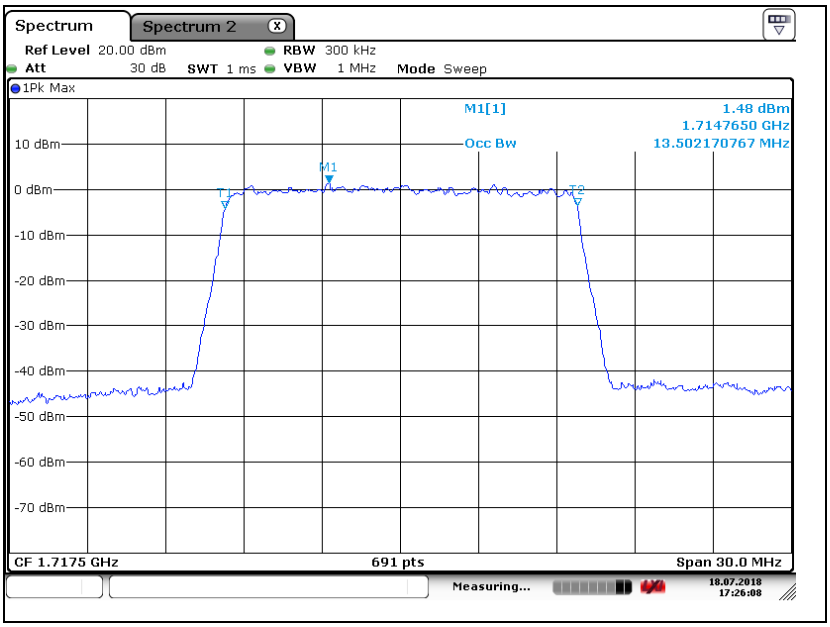

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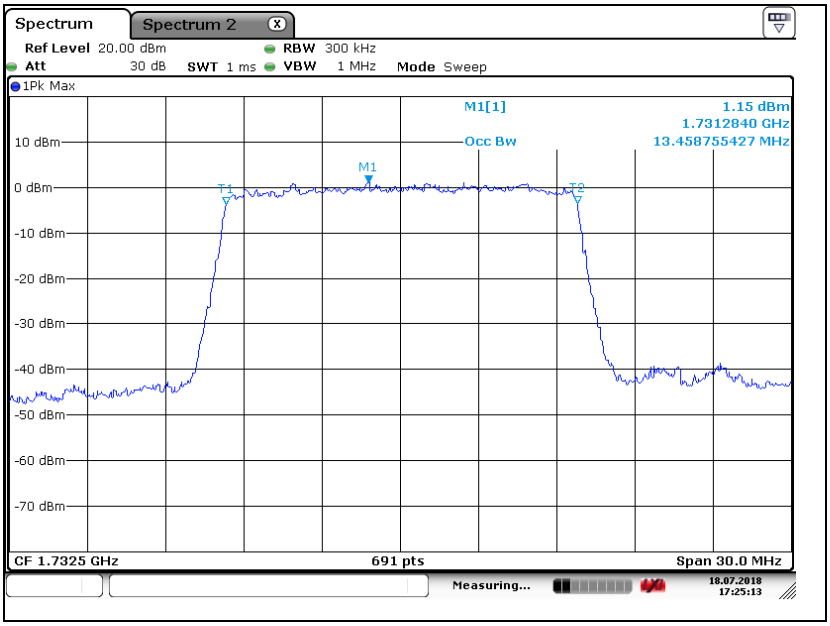

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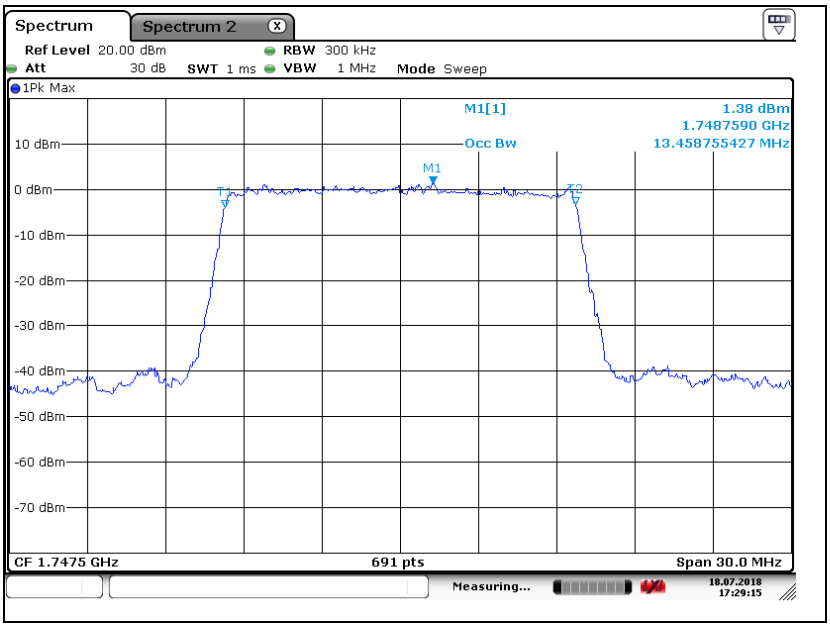

LTE band 4 (20 ㎒ - QPSK)

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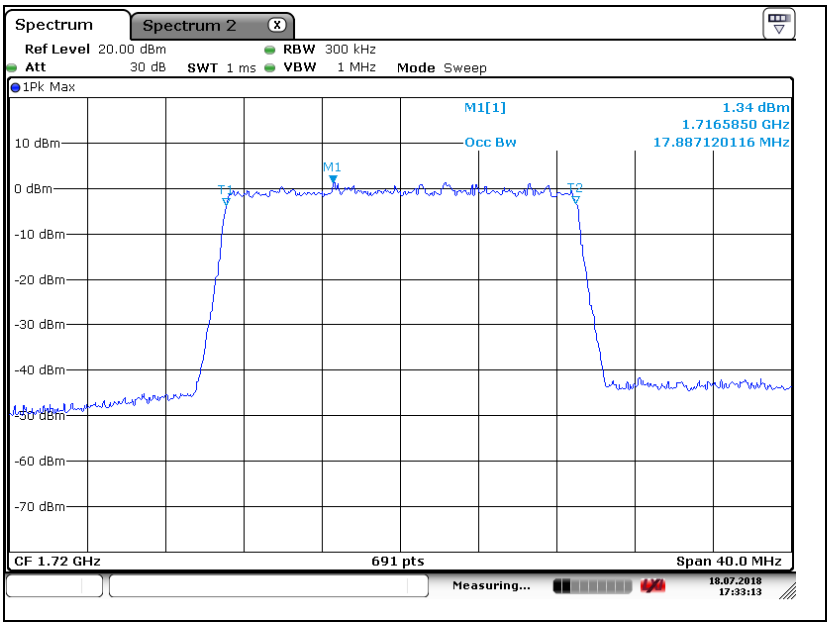

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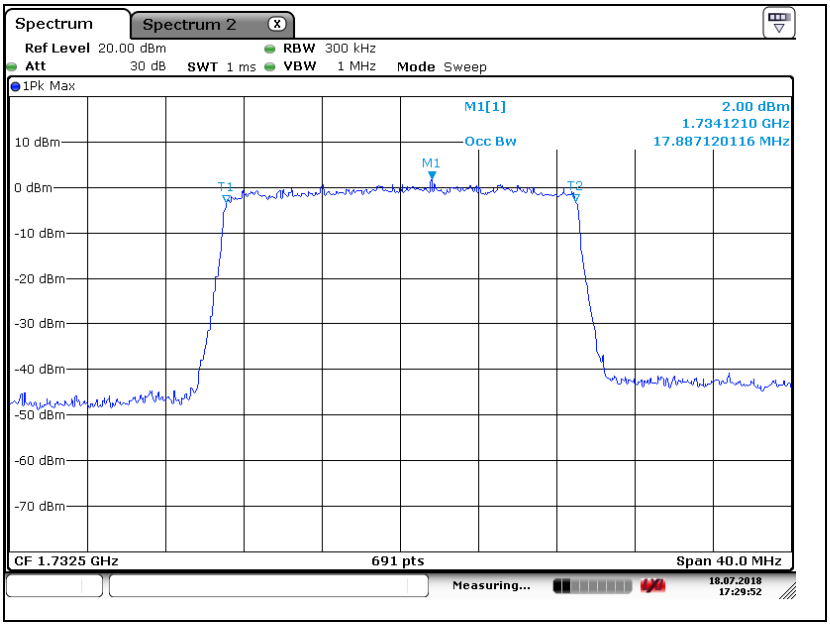

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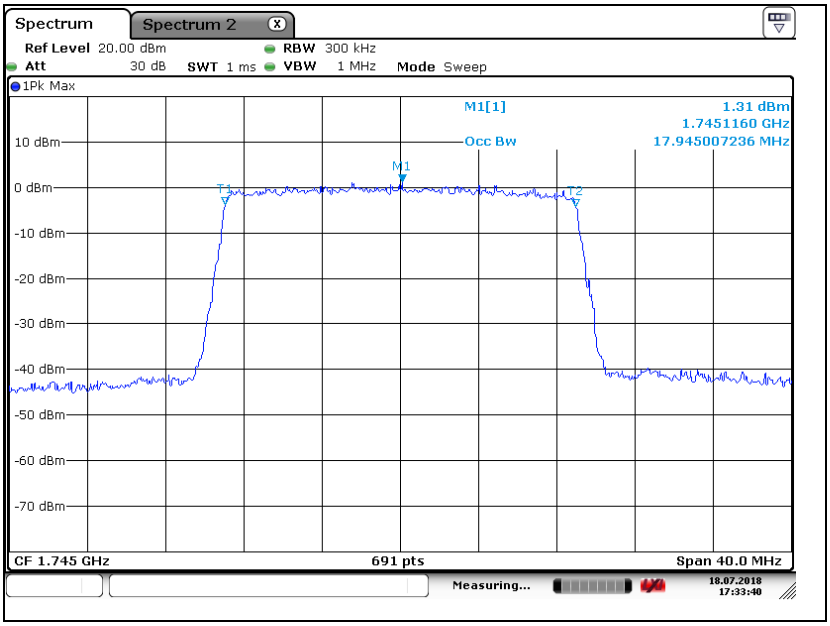

LTE band 4 (20 ㎒ - 16QAM)

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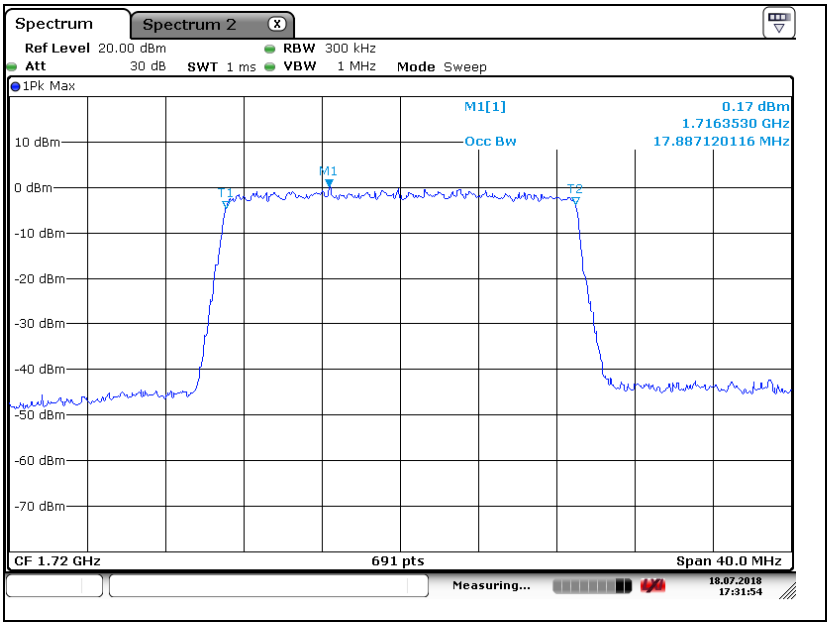

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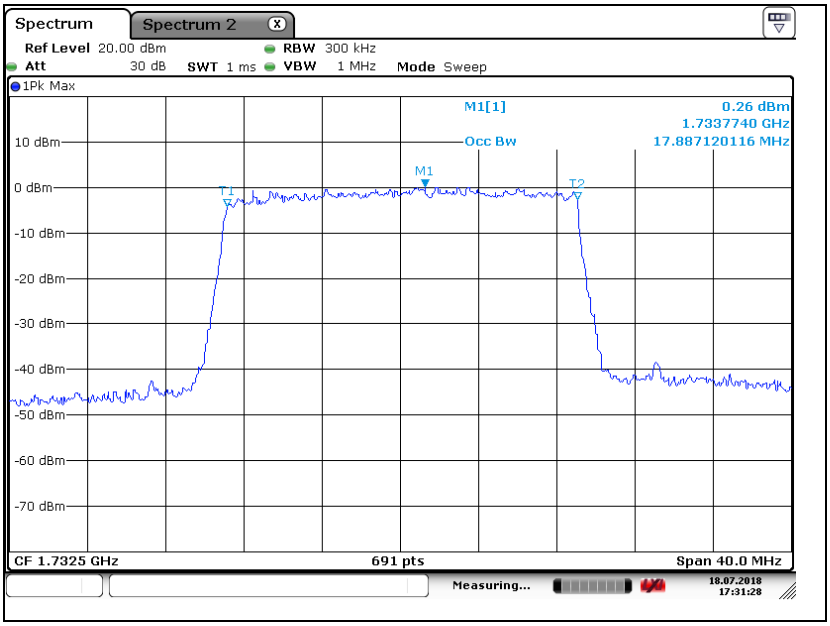

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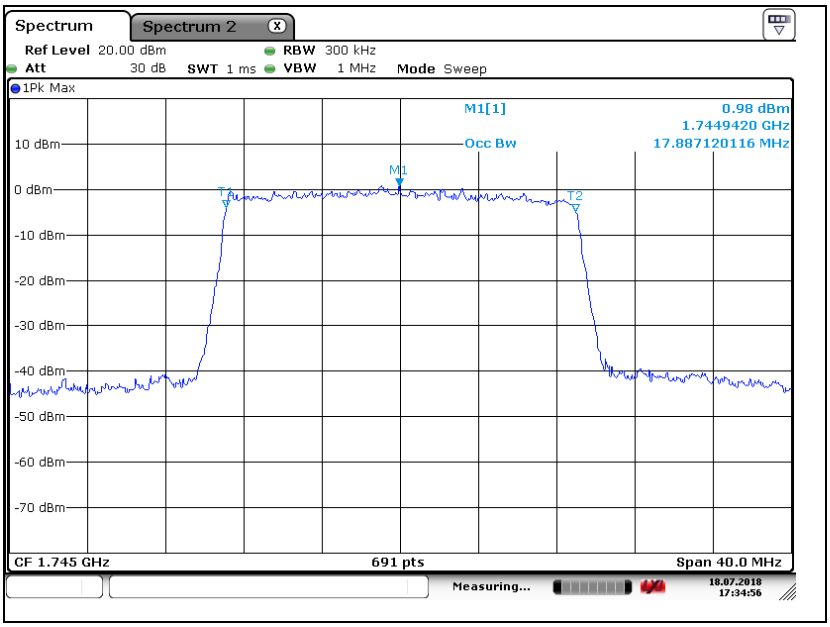
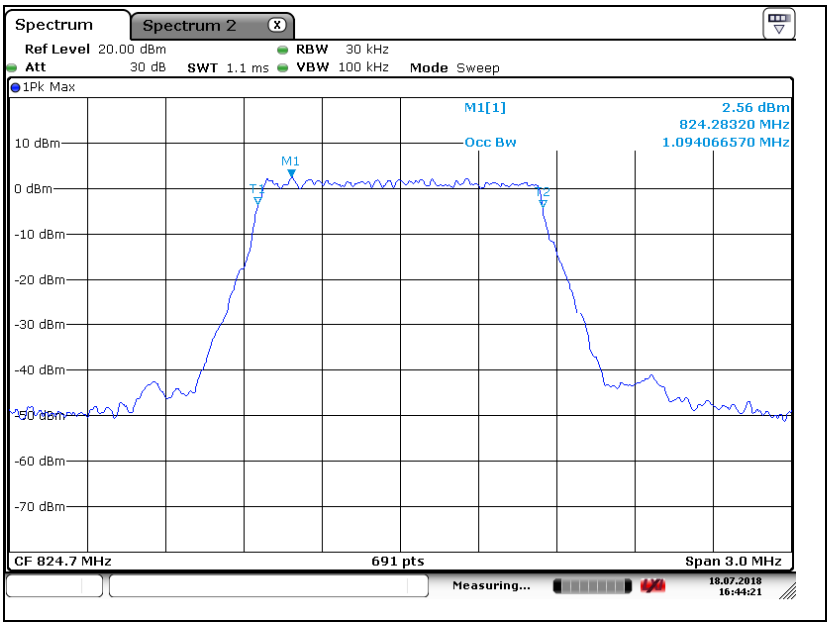


LTE band 5 (1.4 ㎒ - QPSK)

Low Channel



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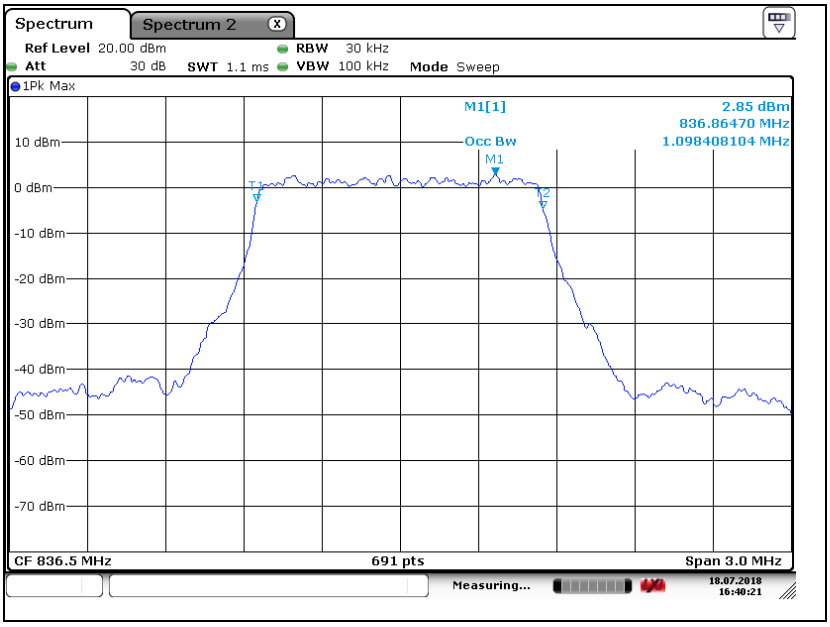

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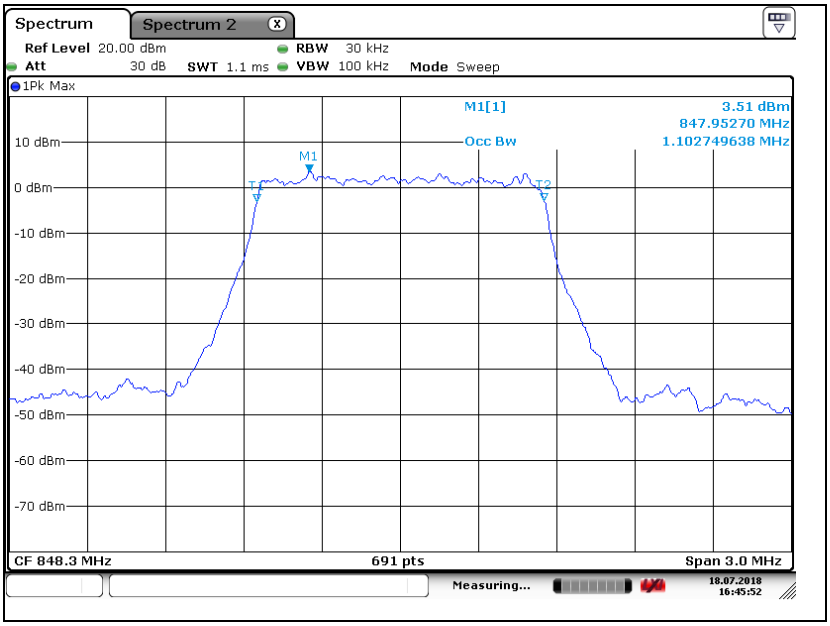
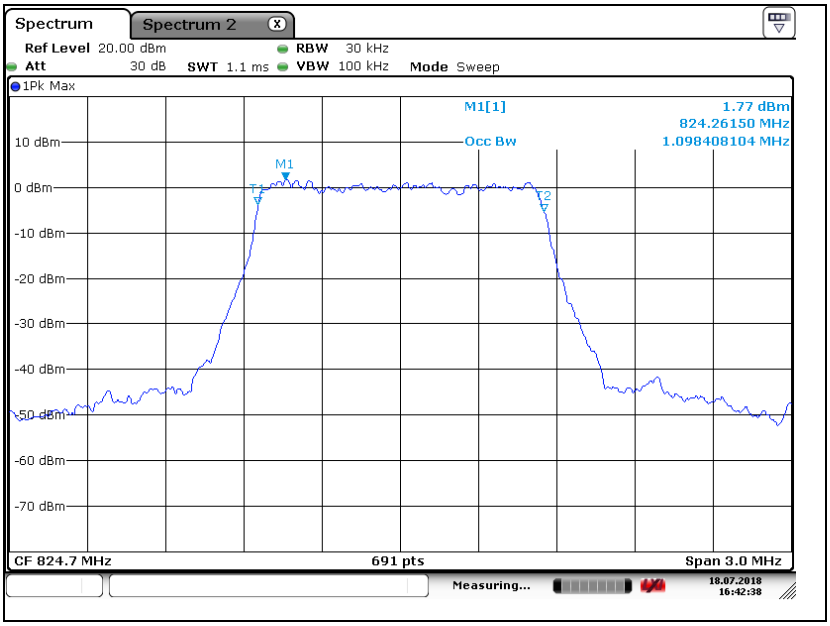


LTE band 5 (1.4 ㎒ - 16QAM)

Low Channel



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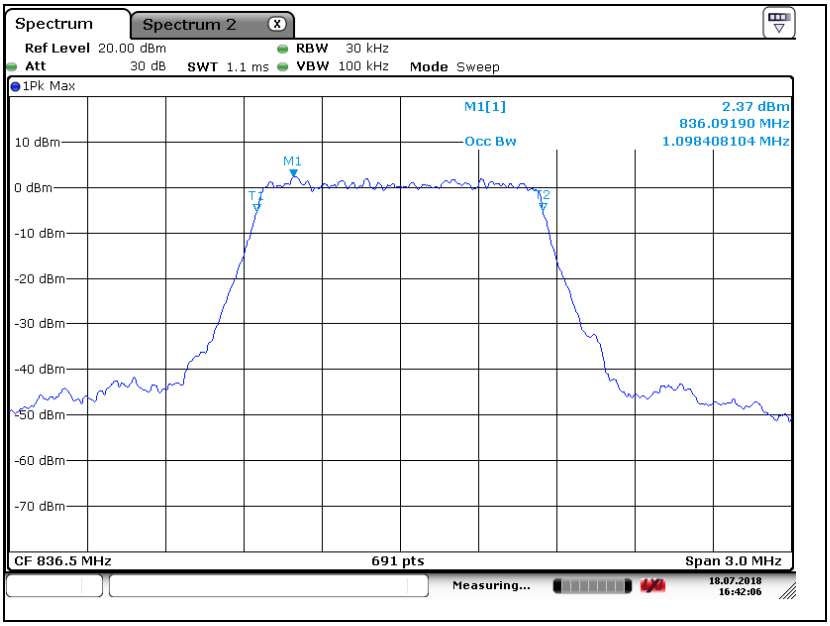

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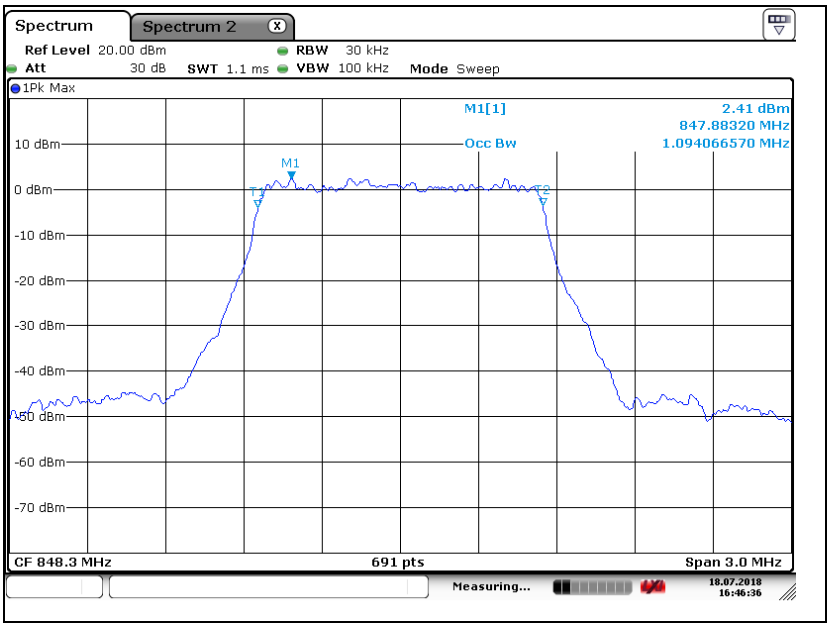
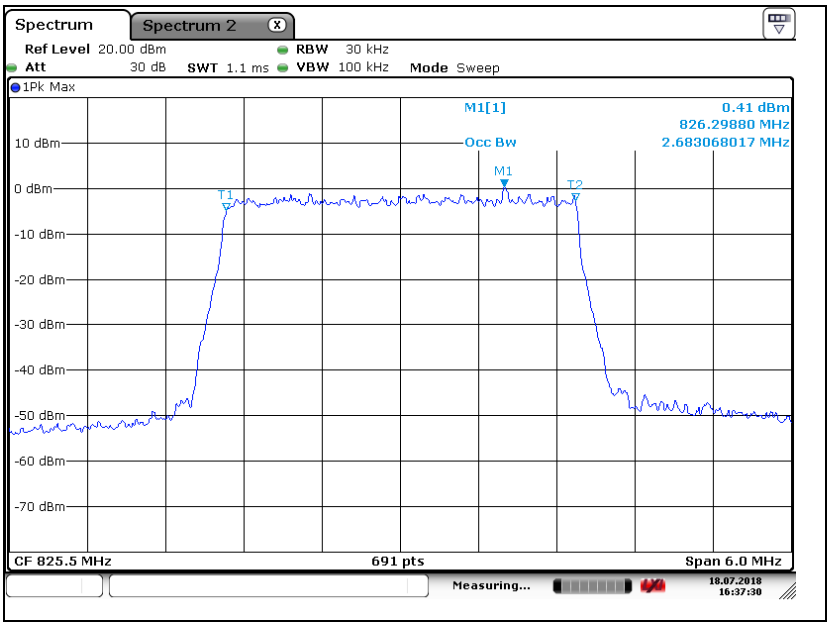


LTE band 5 (3 ㎒ - QPSK)

Low Channel



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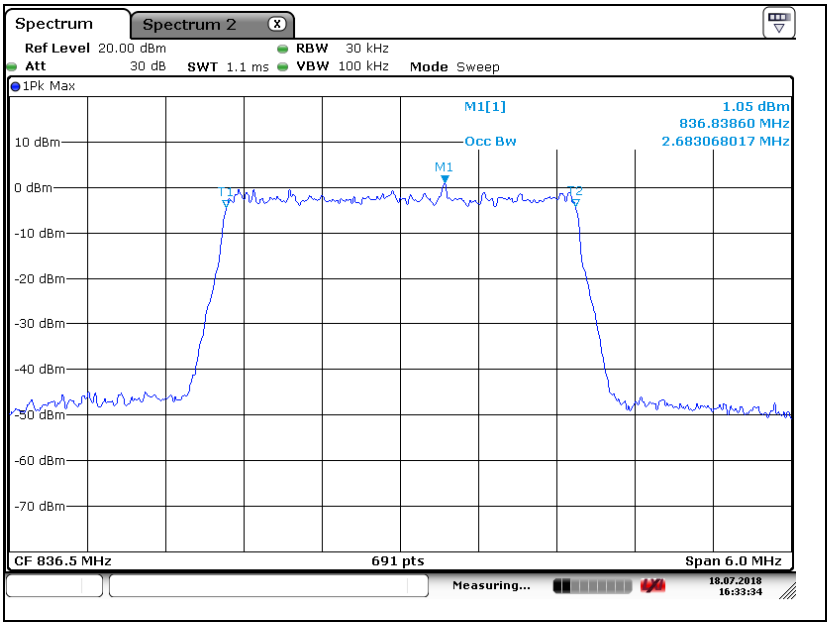

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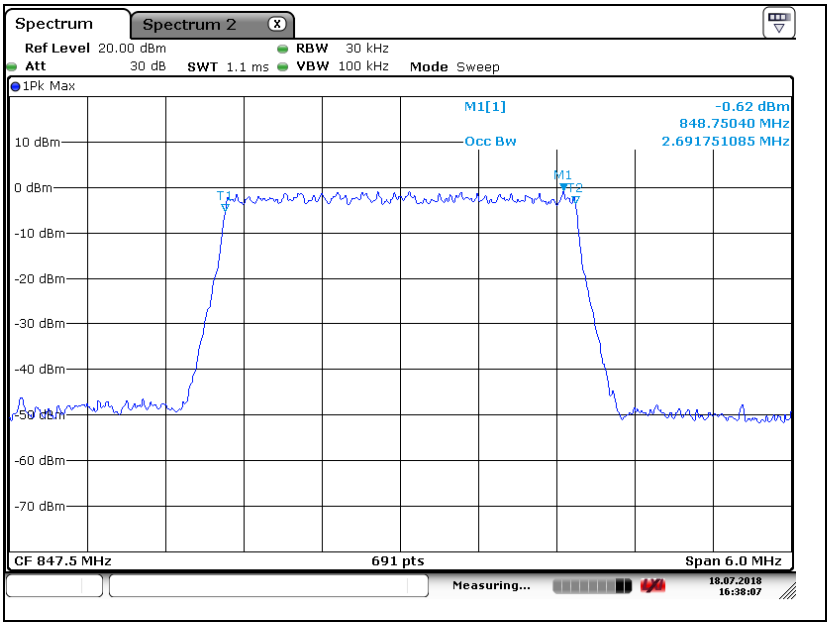
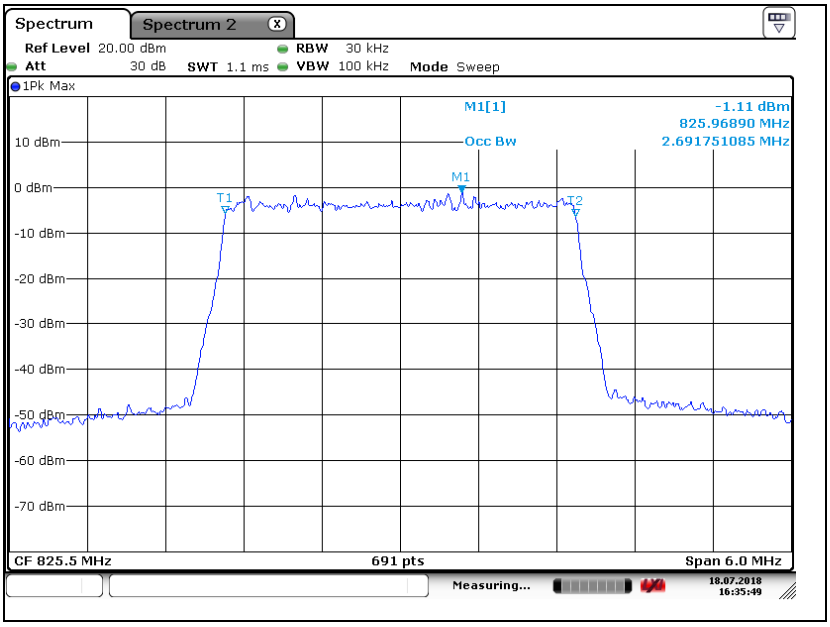


LTE band 5 (3 ㎒ - 16QAM)

Low Channel



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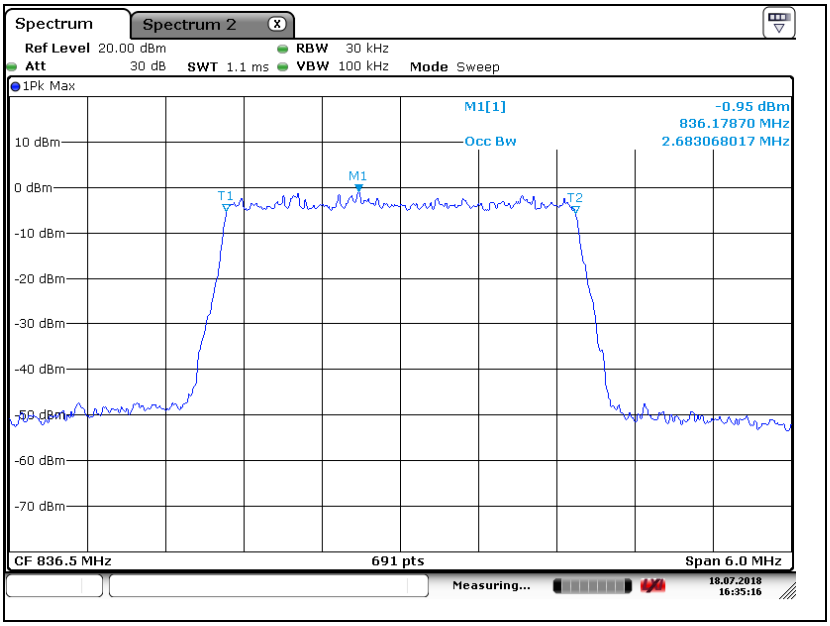

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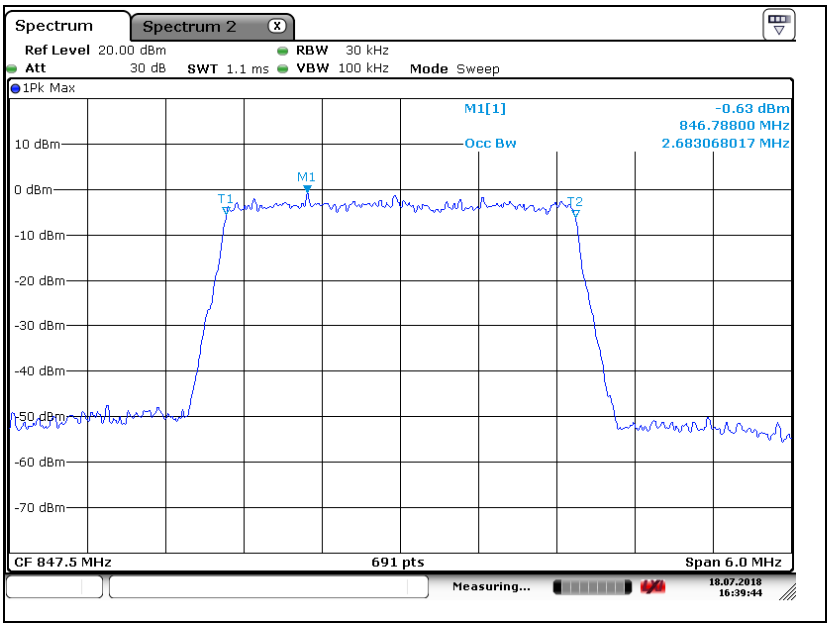
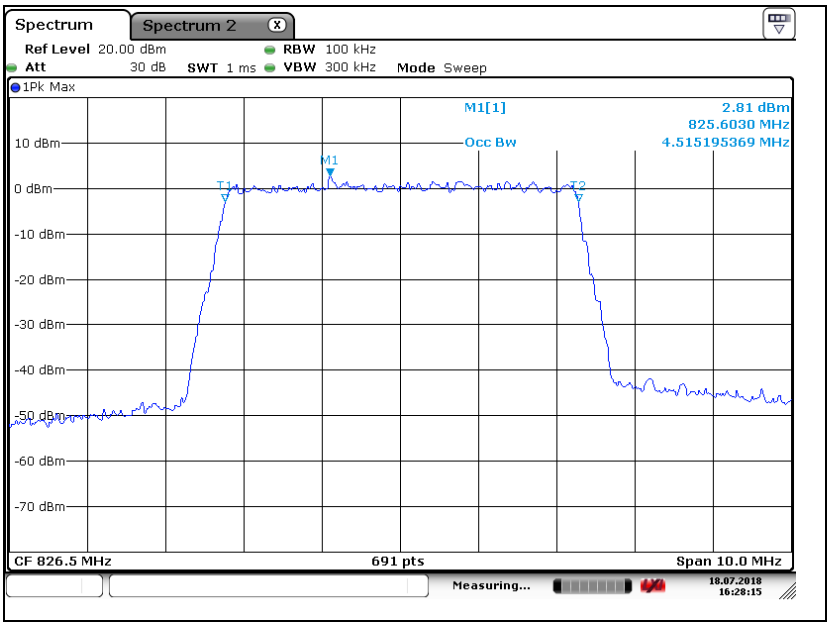


LTE band 5 (5 ㎒ - QPSK)

Low Channel



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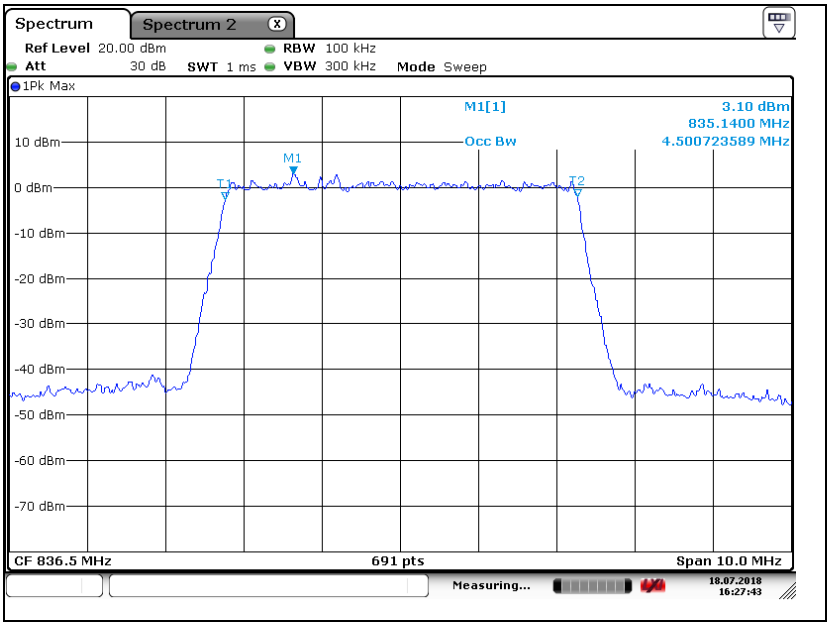

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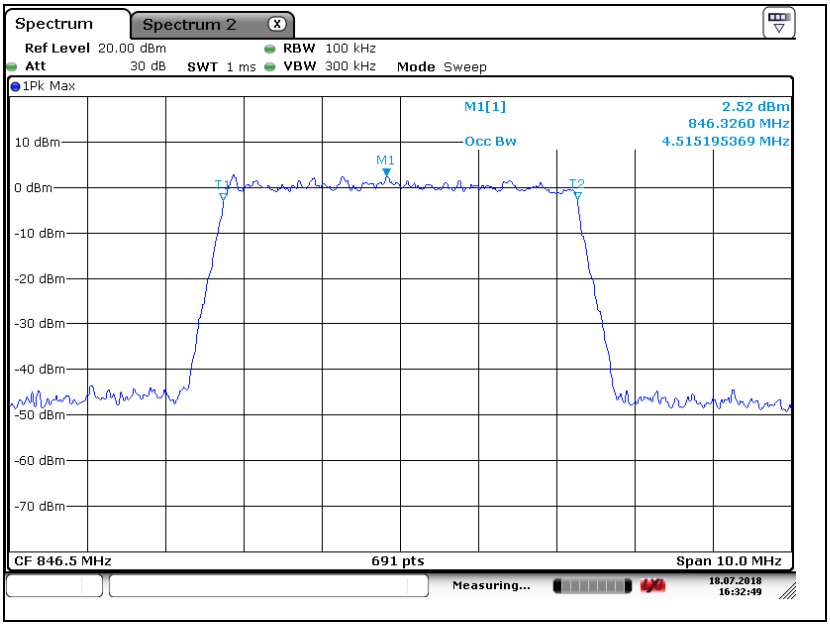
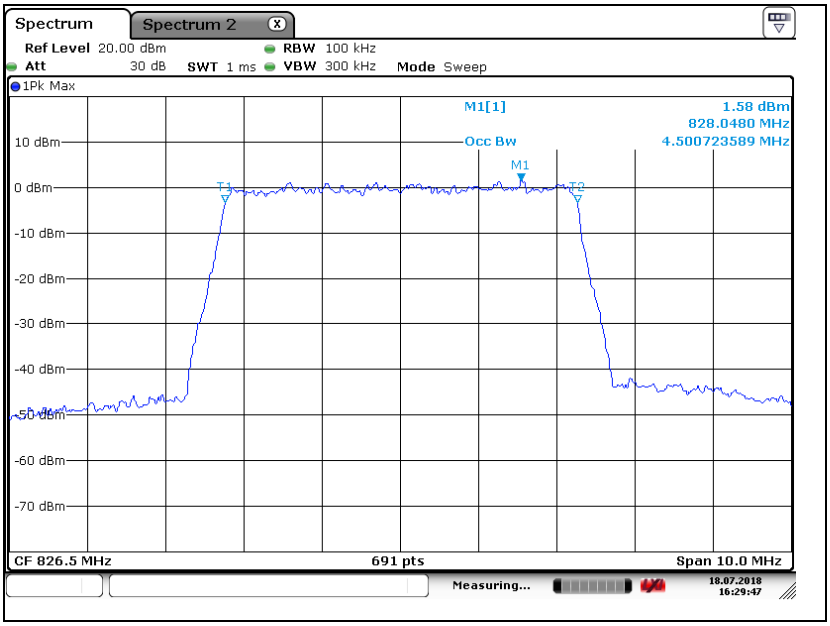


LTE band 5 (5 ㎒ - 16QAM)

Low Channel



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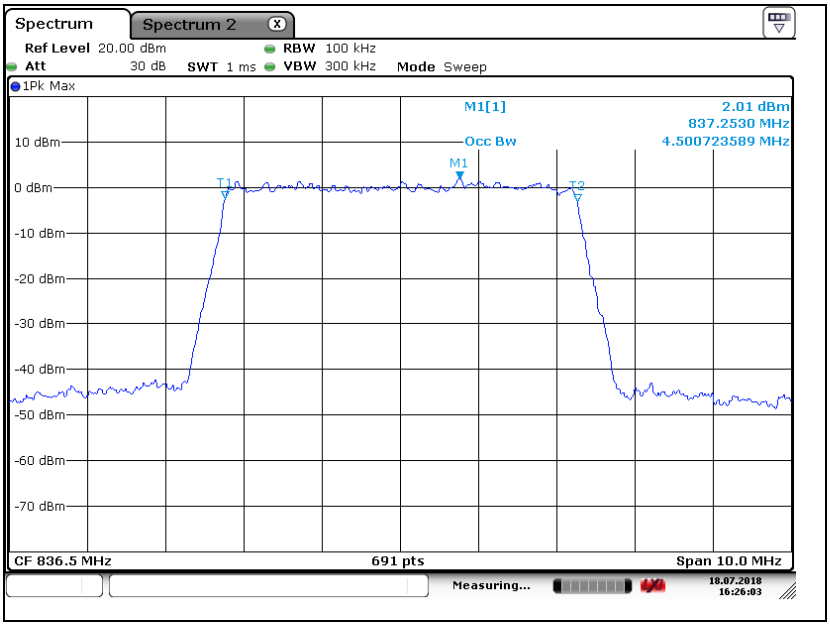

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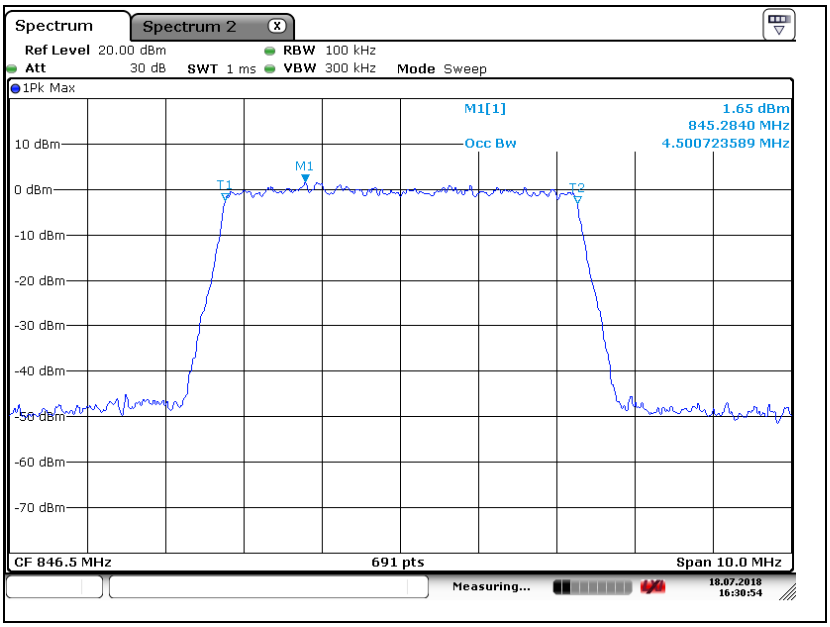
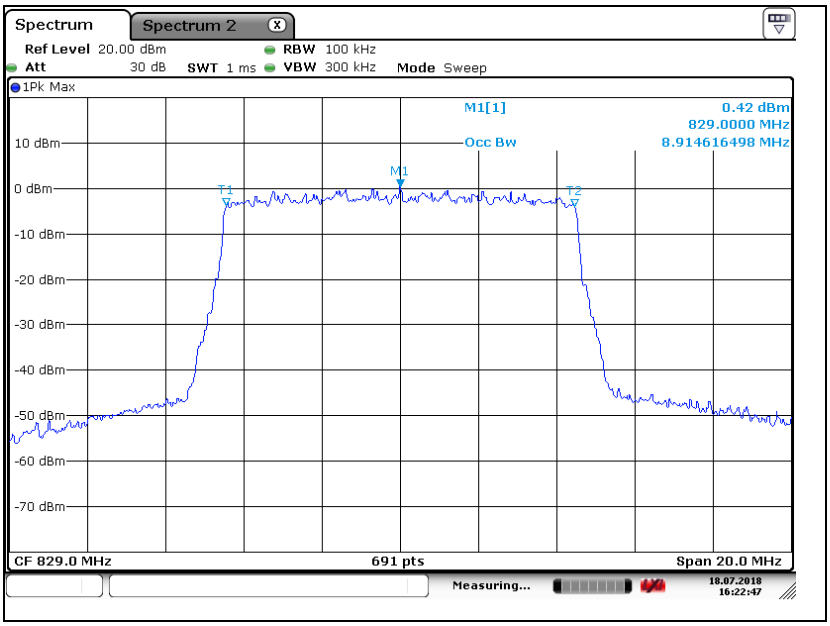


LTE band 5 (10 ㎒ - QPSK)

Low Channel



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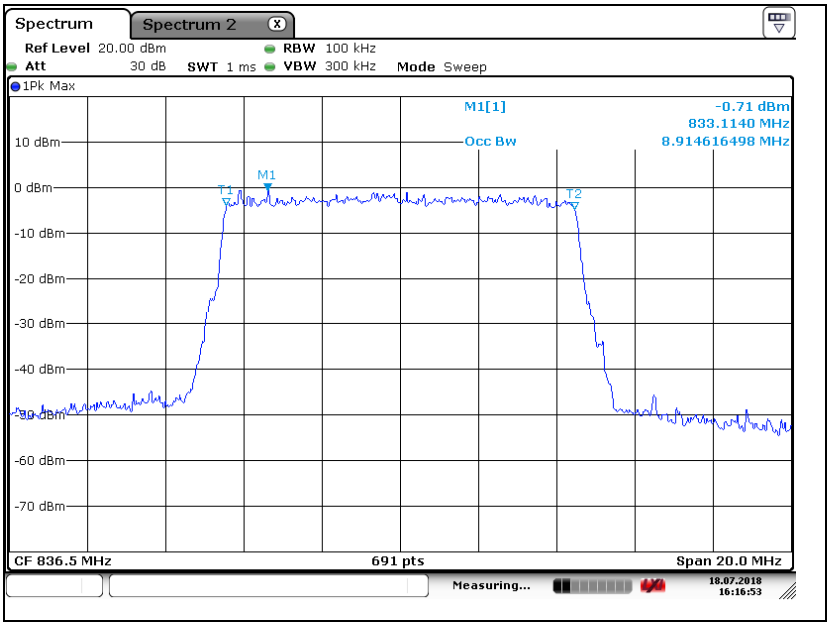

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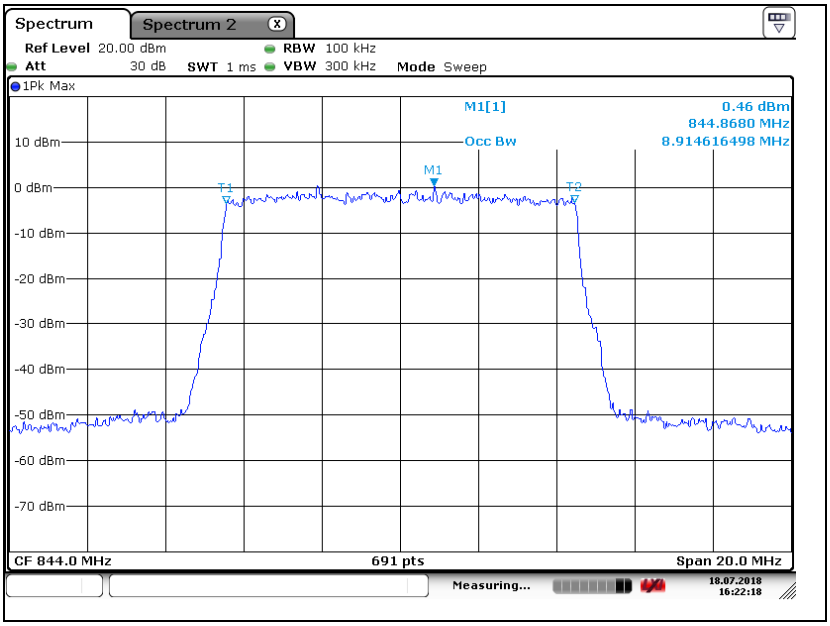
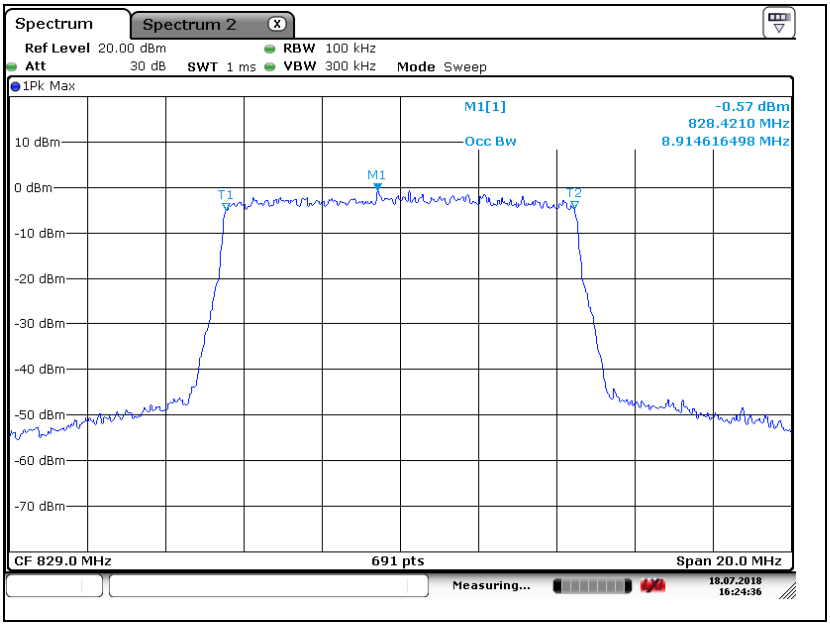


LTE band 5 (10 ㎒ - 16QAM)

Low Channel



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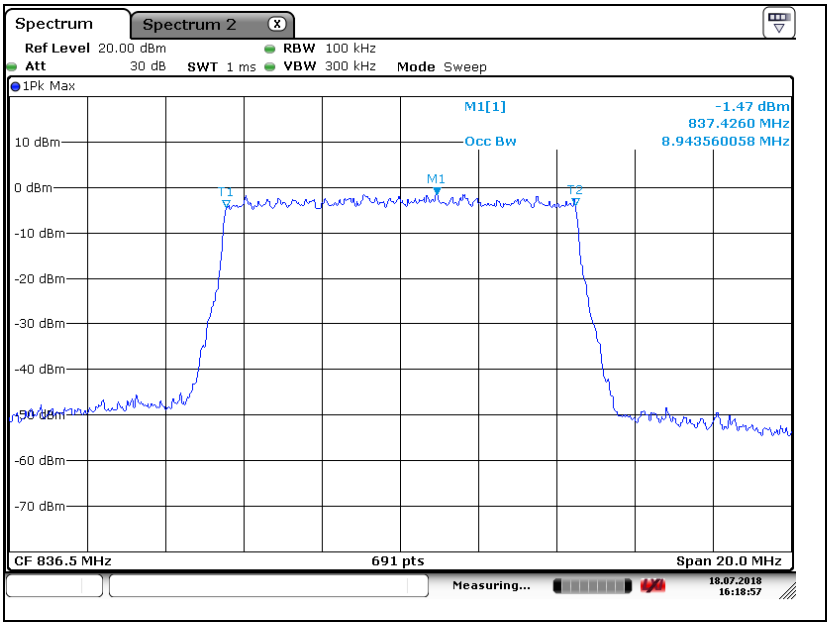

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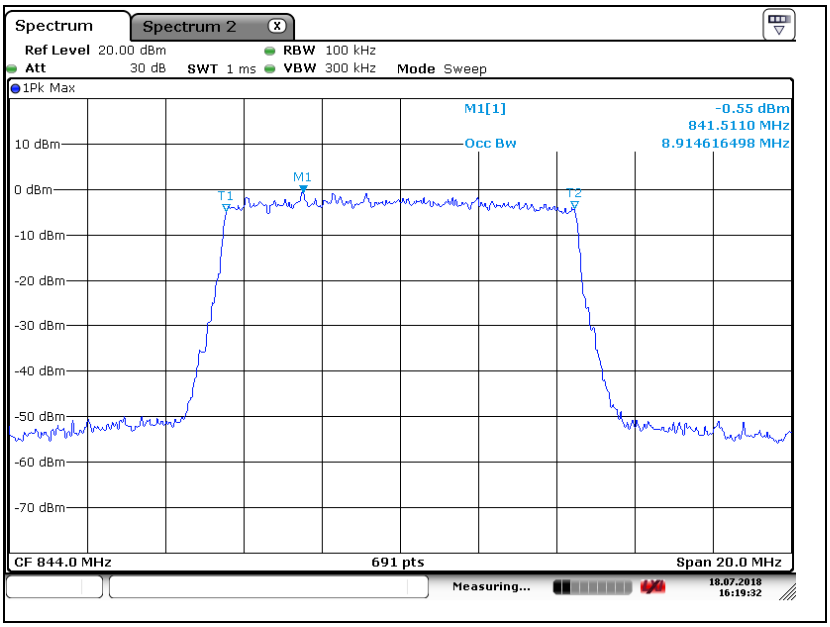
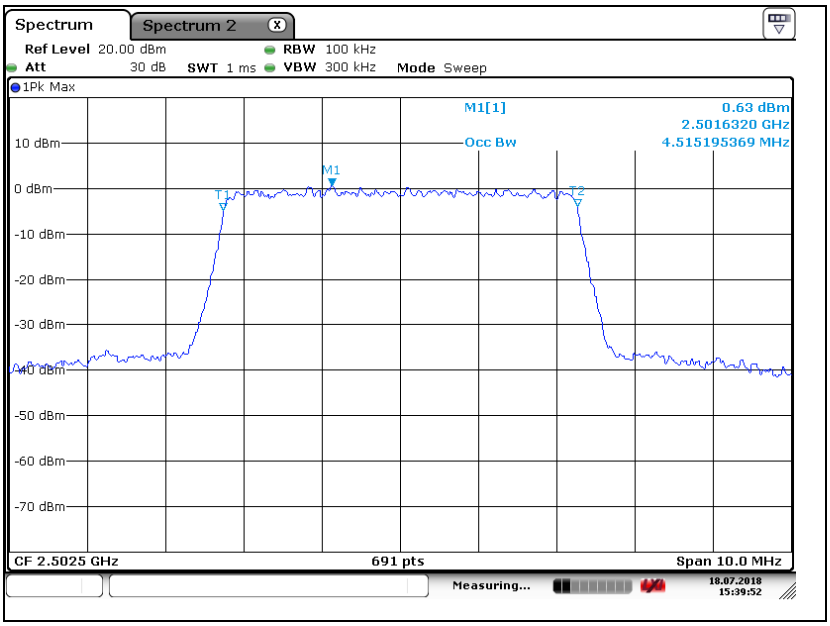


LTE band 7 (5 ㎒ - QPSK)

Low Channel



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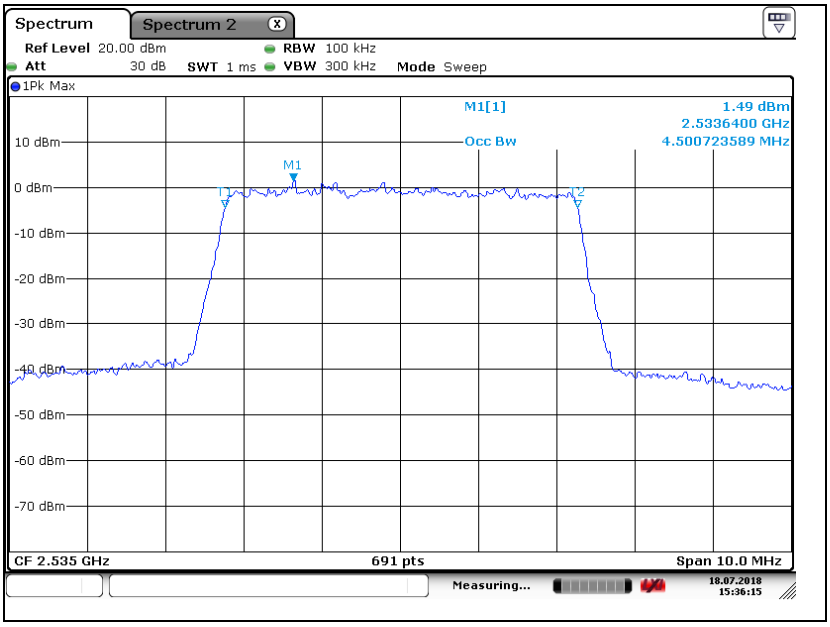

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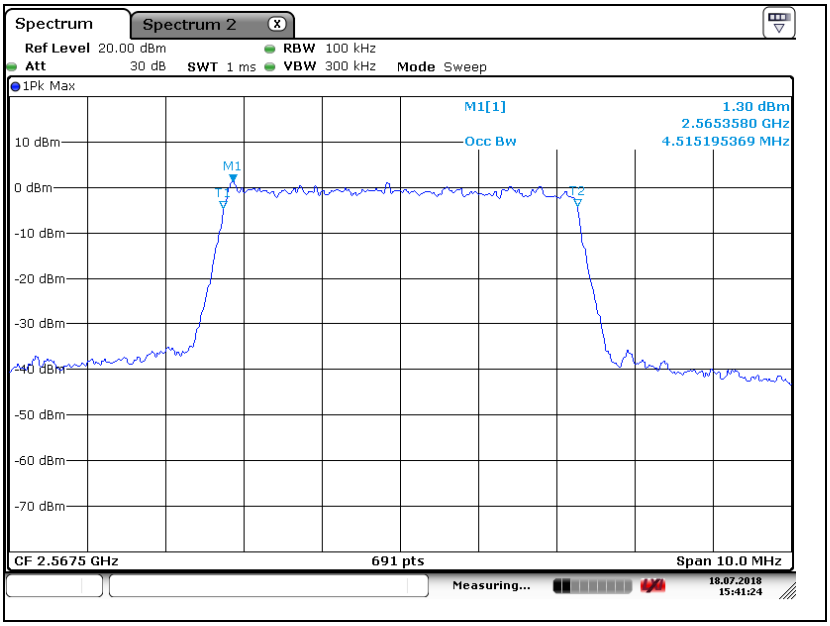
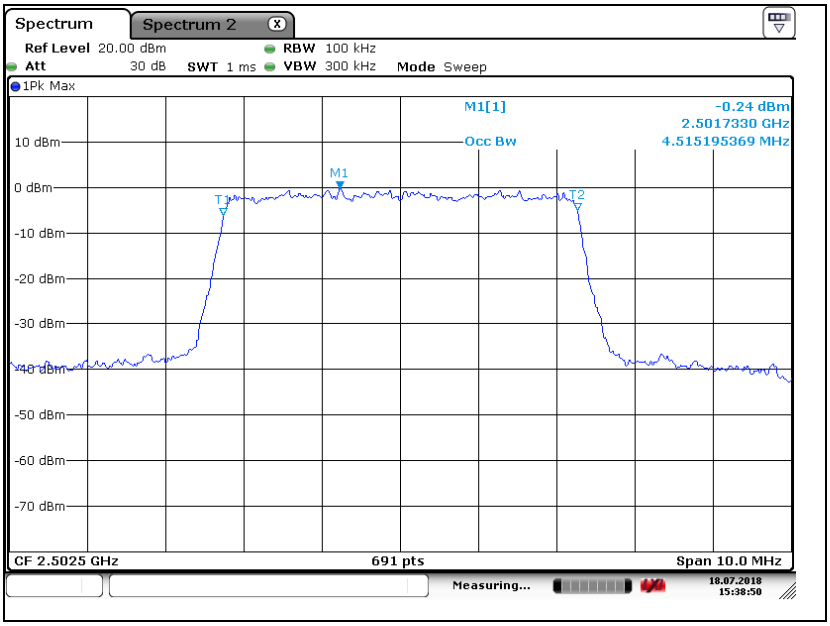


LTE band 7 (5 ㎒ - 16QAM)

Low Channel



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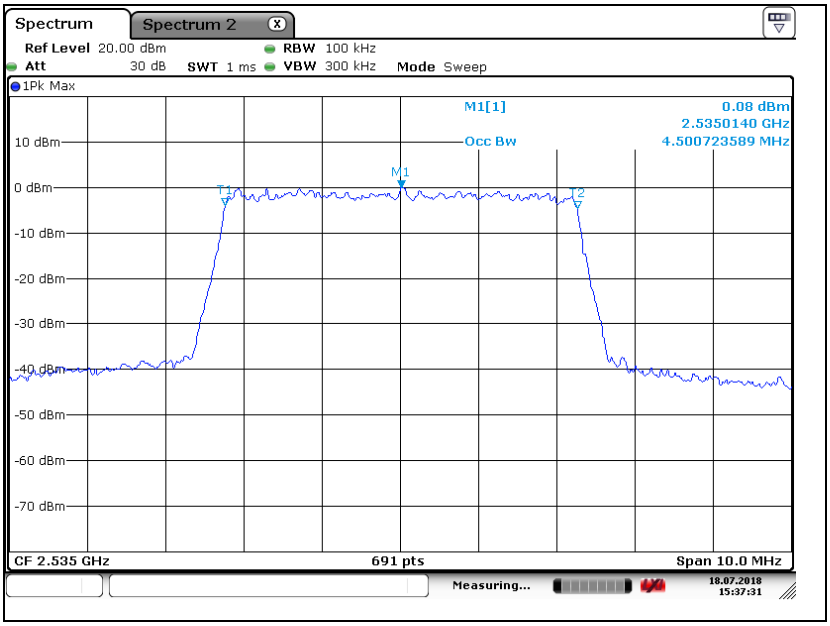

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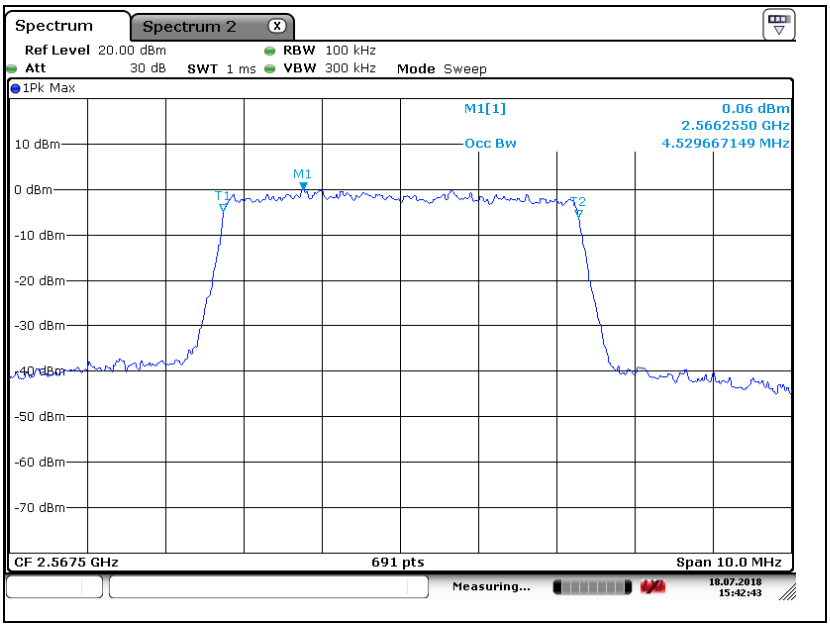
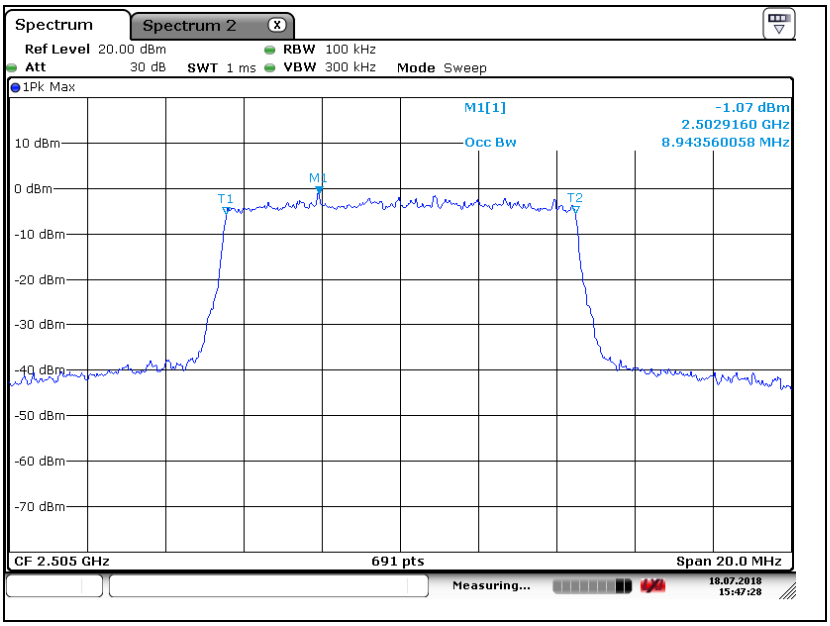


LTE band 7 (10 ㎒ - QPSK)

Low Channel



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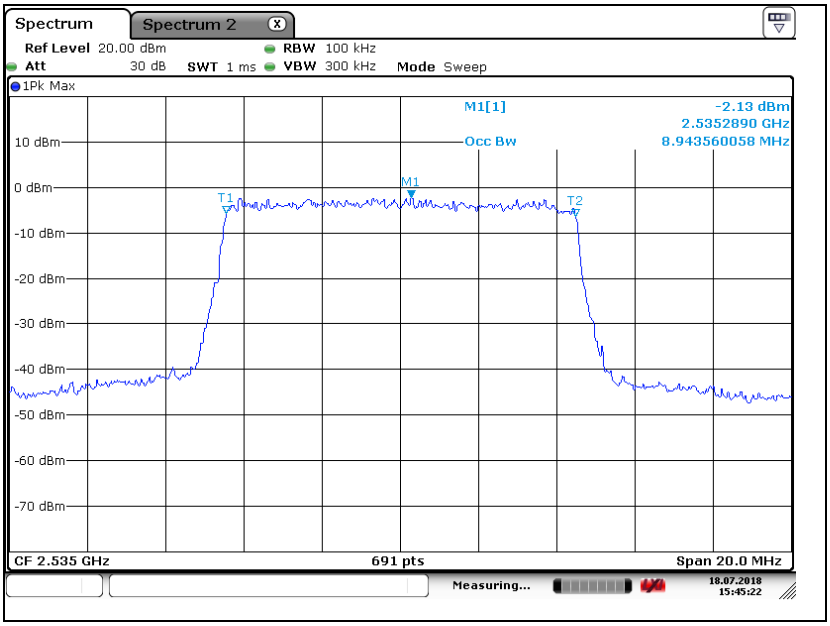

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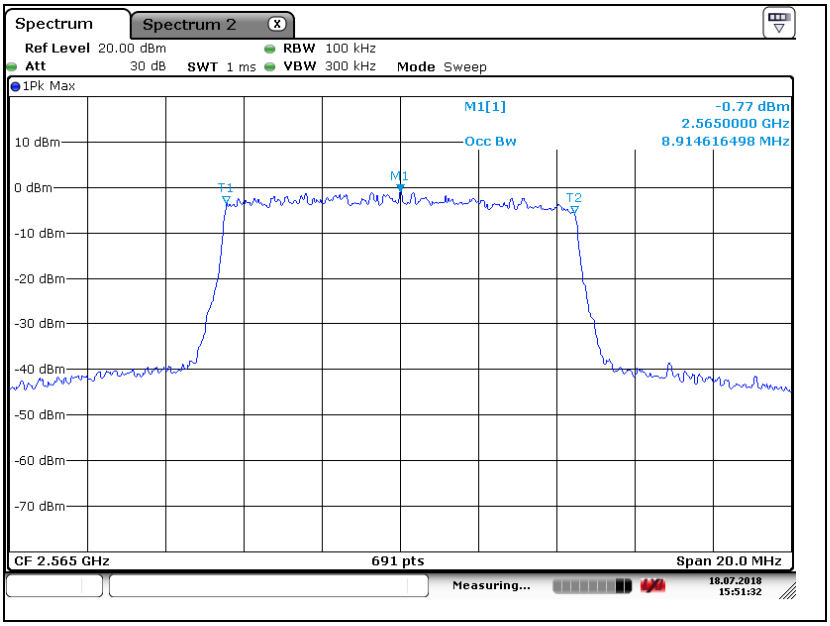
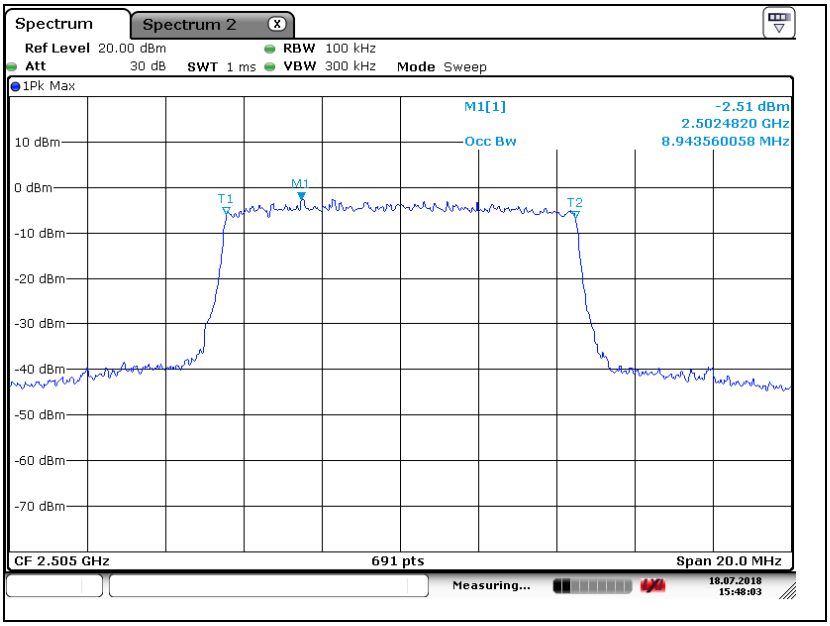


LTE band 7 (10 ㎒ - 16QAM)

Low Channel



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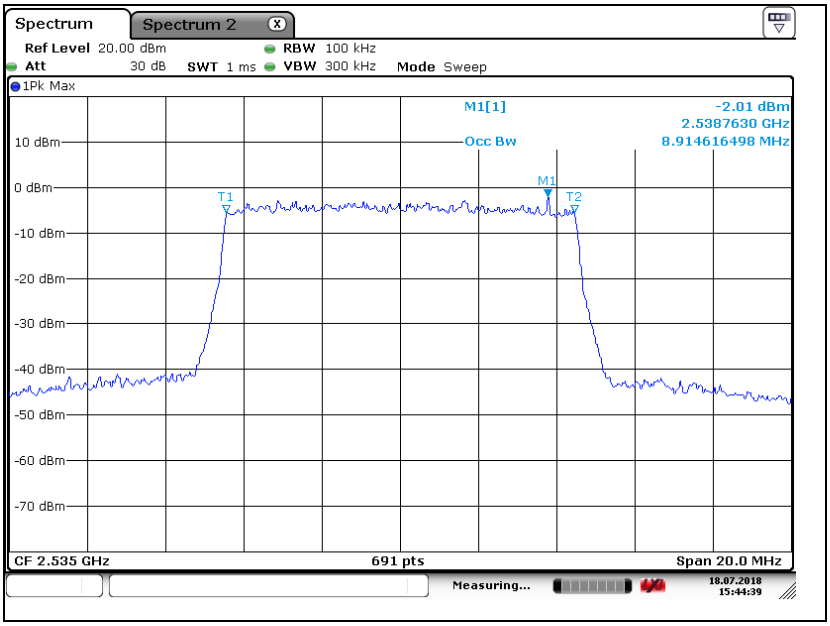

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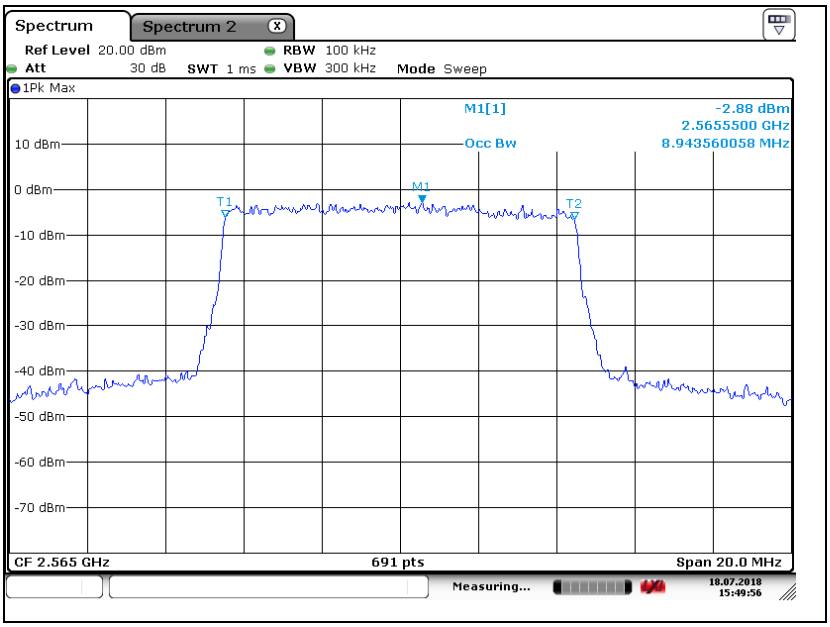
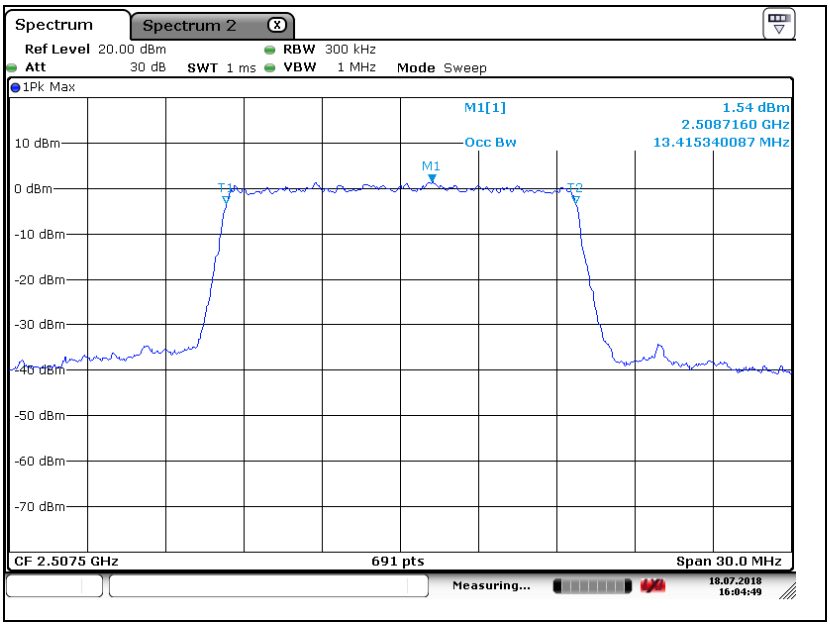
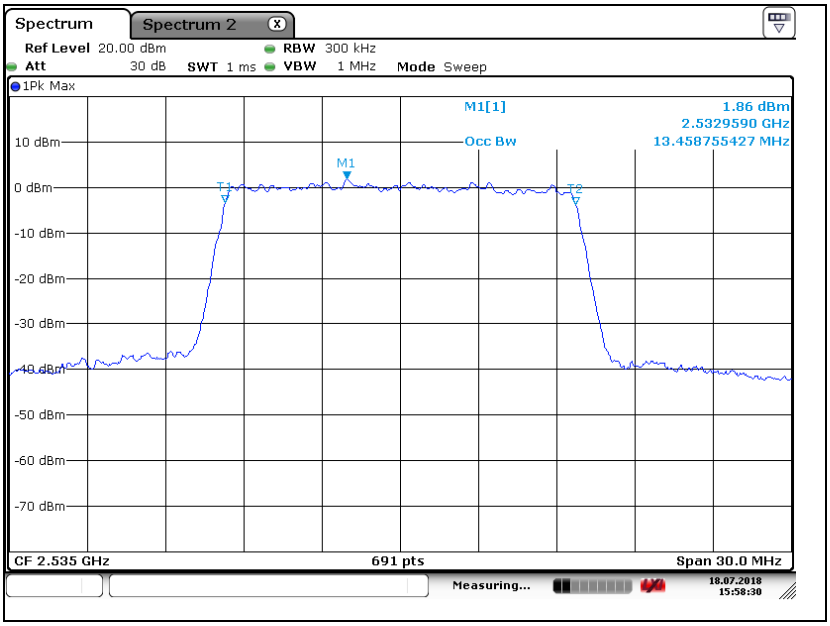


LTE band 7 (15 ㎒ - QPSK)

Low Channel



Middle Channel



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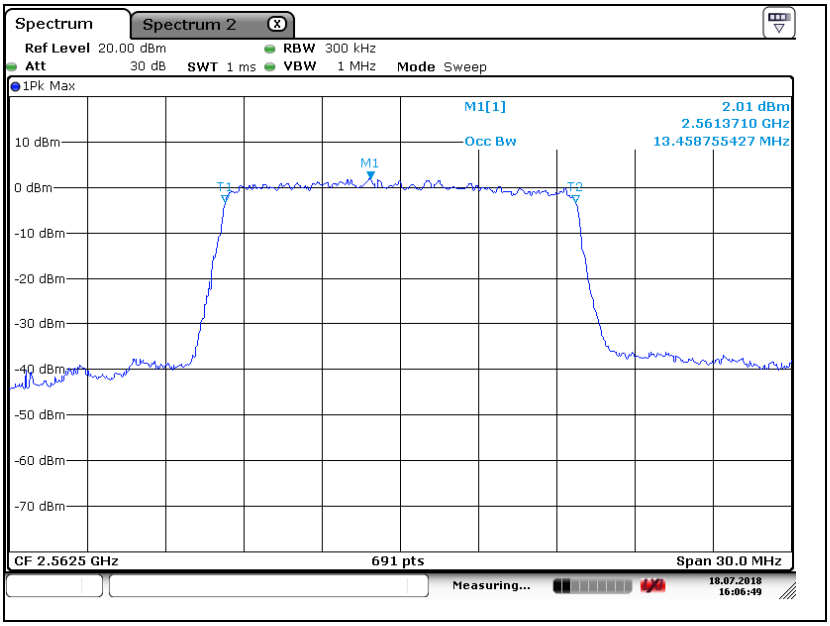

LTE band 7 (15 ㎒ - 16QAM)

Low Channel