

# TEST REPORT

EUT Description	<b>GSM, WCDMA and LTE Module</b>
Brand Name	<b>Intel</b>
Model Name	<b>7272LGANA</b>
FCC/IC ID	<b>FCC ID: PD97272NA/IC ID: 1000M-7272NA</b>
Date of Test Start/End	<b>2016-10-17 / 2016-12-08</b>
Features	<b>2G: GSM/GPRS/EDGE 850 / 1900 3G: WCDMA/HSPA/DC-HSDPA FDD II / IV / V 4G: Band 2/4/5(19)/7/12(17)/13/29 (see section 5)</b>

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Reference Standards	<b>FCC CFR Title 47 Part 2, 22, 24, 27 RSS-Gen issue 4, RSS 130 issue 1, RSS 132 issue 3, RSS 133 issue 6, RSS 139 issue 3, RSS-195 issue 2, RSS 199 issue 3 (see section 1)</b>
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Test Report identification	<b>160912-04.TR02</b>
Revision Control	<b>Rev. 01 This test report revision replaces any previous test report revision (see section 8)</b>

The test results relate only to the samples tested.  
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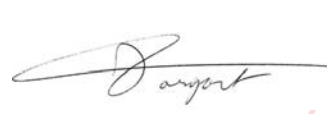
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## 1. Standards, reference documents and applicable test methods

1. FCC 47 CFR part 2 - Subpart J - EQUIPMENT AUTHORIZATION PROCEDURES.
2. FCC 47 CFR part 22 - Subpart H - Cellular Radiotelephone Service.
3. FCC 47 CFR part 24 – Subpart E - Broadband PCS.
4. FCC 47 CFR part 27 – Subpart C - Technical Standards.
5. FCC 47 CFR part 27 – Subpart L - 1695-1710, 1710-1755 MHz, 1755-1780 MHz, 2110-2155 MHz, 2155-2180 MHz, 2180-2200 MHz Bands.
6. FCC OET KDB 971168 D01 v02r02 Measurement guidance for certification of licensed digital transmitters.
7. RSS-Gen issue 4 - General Requirements for Compliance of Radio Apparatus.
8. RSS 130 issue 1 - Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz.
9. RSS 132 issue 3 - Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz.
10. RSS 133 issue 6 - 2 GHz Personal Communications Services.
11. RSS 139 issue 3 - Advanced Wireless Services Equipment Operating in the Bands 1710–1755 MHz and 2110–2155 MHz.
12. RSS-195 issue 2 - Wireless Communication Service (WCS) Equipment Operating in the Bands 2305-2320 MHz and 2345-2360 MHz.
13. RSS-199 issue 3 - Broadband Radio Services (BRS) Equipment Operating in the Bands 2500-2690 MHz
14. TIA 603 - D June 2010 Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.
15. C63.26-2015 - IEEE/ANSI Standard for Compliance Testing of Transmitters Used in Licensed Radio Services.

## 2. General conditions, competences and guarantees

- ✓ Intel Mobile Communications France SAS Wireless RF Lab (Intel WRF Lab) is an ISO/IEC 17025:2005 testing laboratory accredited by the American Association for Laboratory Accreditation (A2LA) with the certificate number 3478.01.
- ✓ Intel Mobile Communications France SAS Wireless RF Lab (Intel WRF Lab) is an Accredited Test Firm recognized by the FCC, with Designation Number FR0011.
- ✓ Intel Mobile Communications France SAS Wireless RF Lab (Intel WRF Lab) is a Registered Test Site listed by IC, with IC Assigned Code 1000Y.
- ✓ Intel WRF Lab only provides testing services and is committed to providing reliable, unbiased test results and interpretations.
- ✓ Intel WRF Lab is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.
- ✓ Intel WRF Lab has developed calibration and proficiency programs for its measurement equipment to ensure correlated and reliable results to its customers.
- ✓ This report is only referred to the item that has undergone the test.
- ✓ This report does not imply an approval of the product by the Certification Bodies or competent Authorities.

## 3. Environmental Conditions

- ✓ At the site where the measurements were performed the following limits were not exceeded during the tests:

Temperature	22°C ± 2°C
Humidity	45% ± 20%

#### 4. Test samples

Sample	Control #	Description	Model	Serial #	Date of receipt	Note
#01	160912-04.S06	Mod Carrier board with Module	MOD_7272 NA+	0431.3.2.085	2016-10-17	Used for conducted test
	160912-04.S03	AC Adapter	HNP18-050	N/A	2016-09-15	
#02	160912-04.S07	Carrier board with Module	MOD_7272 NA+	0431.3.2.086	2016-10-17	Used for radiated test
	160912-04.S04	AC Adapter	HNP18-050	N/A	2016-09-15	
	14112408.S08	Antenna	Dipole Pulse SPDA 24700/2700	N/A	2014-11-24	

#### 5. EUT Features

Brand Name	Intel	
Model Name	7272LGANA	
FCC/IC ID	FCC ID: PD97272NA/IC ID: 1000M-7272NA	
Software Version	XMM7272_2016-09-22_0008.UTC	
Driver Version	4.38.0	
Prototype / Production	Production	
Supported Radios	GSM / GPRS / EDGE GSM 850 (824.0 – 849.0 MHz) PCS 1900 (1850.0 – 1910.0 MHz)	
	WCDMA / HSPA+ FDD II (1850.0 – 1910.0 MHz) FDD IV (1710.0 – 1755.0 MHz) FDD V (824.0 – 849.0 MHz)	
Supported Radios	LTE FDD Band 2 (1850.0 – 1910.0 MHz) Band 4 (1710.0 – 1755.0 MHz) Band 5 (824.0 – 849.0 MHz) Band 7 (2500.0 – 2570.0 MHz) Band 12 (699.0 – 716.0 MHz) Band 13 (777.0 – 787.0 MHz) Band 17 (704.0 – 716.0 MHz) Band 19 (830.0 – 845.0 MHz)	
	LTE TDD Band 29 ( Downlink 717.0 – 728.0 MHz)	
	Antenna Information	LTE Dipole Pulse Part number SPDA 24700/2700

#### 5.1. Emission designator for IC cert

Band	Type of modulation	
	QPSK	16QAM
LTE Band 2, Bandwidth 1.4MHz	1M11G7D	1M11W7D
LTE Band 2, Bandwidth 3MHz	2M75G7D	2M75W7D
LTE Band 2, Bandwidth 5MHz	4M51G7D	4M53W7D
LTE Band 2, Bandwidth 10MHz	9M02G7D	9M02W7D
LTE Band 2, Bandwidth 15MHz	13M5G7D	13M4W7D
LTE Band 2, Bandwidth 20MHz	17M94G7D	17M98W7D
LTE Band 4, Bandwidth 1.4MHz	1M11G7D	1M11W7D
LTE Band 4, Bandwidth 3MHz	2M74G7D	2M75W7D
LTE Band 4, Bandwidth 5MHz	4M54G7D	4M54W7D
LTE Band 4, Bandwidth 10MHz	9M05G7D	9M05W7D
LTE Band 4, Bandwidth 15MHz	13M5G7D	13M42W7D

Band	Type of modulation	
	QPSK	16QAM
LTE Band 4, Bandwidth 20MHz	17M98G7D	17M93W7D
LTE Band 5(19), Bandwidth 1.4MHz	1M10G7D	1M10W7D
LTE Band 5(19), Bandwidth 3MHz	2M74G7D	2M74W7D
LTE Band 5(19), Bandwidth 5MHz	4M51G7D	4M53W7D
LTE Band 5(19), Bandwidth 10MHz	9M02G7D	9M02W7D
LTE Band 7, Bandwidth 5MHz	4M53G7D	4M53W7D
LTE Band 7, Bandwidth 10MHz	9M05G7D	9M05W7D
LTE Band 7, Bandwidth 15MHz	13M54G7D	13M46W7D
LTE Band 7, Bandwidth 20MHz	18M03G7D	18M03W7D
LTE Band 12(17), Bandwidth 1.4MHz	1M11G7D	1M10W7D
LTE Band 12(17), Bandwidth 3MHz	2M74G7D	2M75W7D
LTE Band 12(17), Bandwidth 5MHz	4M53G7D	4M54W7D
LTE Band 12(17), Bandwidth 10MHz	9M08G7D	9M05W7D
LTE Band 13, Bandwidth 5MHz	4M54G7D	4M53W7D
LTE Band 13, Bandwidth 10MHz	8M96G7D	8M96W7D

## 6. Remarks and comments

## 7. LTE Test Verdicts summary

Band	FCC part	RSS part	Test name	Verdict
LTE2	2.1046	-	Conducted output power	P
	24.238	-	Emission bandwidth 26dB	P
	24.232	133-ch6.4	Equivalent isotropic radiated power	P
	2.1049	RSS-Gen-ch.6.6	Occupied bandwidth (99%)	P
	24.232	133-ch6.4	Peak to average ratio	P
	24.235, 2.1055	133-ch.6.3	Frequency Stability	P
	24.238	133-ch.6.5.1	Conducted band-edge	P
	24.238	133-ch.6.5.1	Conducted spurious emission	P
	24.238	133-ch.6.5.1	Radiated spurious emission	P
LTE4	2.1046	-	Conducted output power	P
	27.53	139-ch2.3	Emission bandwidth 26dB	P
	27.50	139-ch.6.4	Effective radiated power	P
	2.1049	RSS-Gen-ch.6.6	Occupied bandwidth (99%)	P
	27.50	139-ch.6.4	Peak to average ratio	P
	27.54, 2.1055	139-ch.6.3	Frequency Stability	P
	27.53, 2.1051	139-ch.6.5	Conducted band-edge	P
	27.53	139-ch.6.5,	Conducted spurious emission	P
	27.53, 2.1053	139-ch.6.5	Radiated spurious emission	P

Band	FCC part	RSS part	Test name	Verdict
LTE5(19)	2.1046	RSS-132-ch.5.3	Conducted output power	P
	2.1049	RSS-Gen-ch.6.6	Occupied bandwidth (99%)	P
	22.917	-	Emission bandwidth 26dB	P
	22.355, 2.1055	RSS-132-ch.5.3	Frequency Stability	P
	22.917, 2.1051	RSS-132-ch.5.5	Band Edge conducted emission	P
	22.917, 2.1051	RSS-132-ch.5.5	Conducted spurious emission	P
	22.913	RSS-132-ch.5.4	Effective radiated power	P
	22.917, 2.1053	RSS.132-ch.5.5	Radiated spurious emission	P
		RSS-132-ch.5.4	Peak-to-average power ratio	P
LTE7	2.1046	RSS-Gen-ch.6.12	Conducted output power	P
	27.50 (h)	199-ch.4.4	Effective radiated power	P
	27.53 (m)	199-ch.4.2	Emission bandwidth 26dB	P
	2.1049	RSS-Gen-ch.6.6	Occupied bandwidth (99%)	P
	27.50	-	Peak to average ratio	P
	27.54, 2.1055	199-ch.4.3	Frequency Stability	P
	27.53 (m), 2.1051	199-ch.4.6	Conducted band-edge	P
	27.53 (m)	199-ch.4.6	Conducted spurious emission	P
	27.53 (m), 2.1053	199-ch.4.6	Radiated spurious emission	P
LTE12(17)	2.1046	RSS-Gen-ch.6.12	Conducted output power	P
	27.50 (c)(10)	130-ch.4.4	Effective radiated power	P
	27.53 (g)	-	Emission bandwidth 26dB	P
	2.1049	RSS-Gen-ch.6.6	Occupied bandwidth (99%)	P
		130-ch.4.4	Peak to average ratio	P
	27.54, 2.1055	130-ch.4.3	Frequency Stability	P
	27.53 (g), 2.1051	130-ch.4.6	Conducted band-edge	P
	27.53 (g)	130-ch.4.6	Conducted spurious emission	P
	27.53 (g), 2.1053	130-ch.4.6	Radiated spurious emission	P
LTE13	2.1046	RSS-Gen-ch.6.12	Conducted output power	P
	27.50 (b)(10)	130-ch.4.4	Effective radiated power	P
	27.53 (c)	-	Emission bandwidth 26dB	P
	2.1049	RSS-Gen-ch.6.6	Occupied bandwidth (99%)	P
	-	130-ch.4.4	Peak to average ratio	P
	27.54, 2.1055	130-ch.4.3	Frequency Stability	P
	27.53 (c), 2.1051	130-ch.4.6	Conducted band-edge	P
	27.53 (c)	130-ch.4.6	Conducted spurious emission	P
	27.53 (c), 2.1053	130-ch.4.6	Radiated spurious emission	P

P: Pass  
 F: Fail  
 NM: Not Measured  
 NA: Not Applicable

## 8. Document Revision History

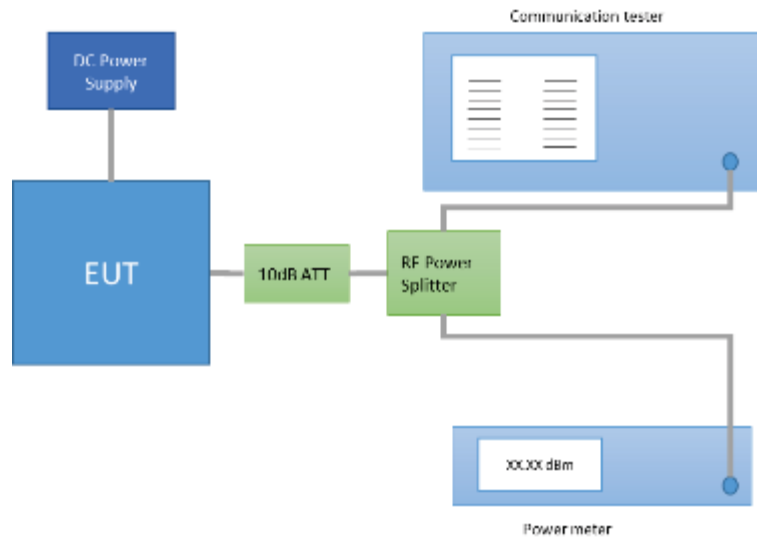
Revision #	Date	Modified by	Revision Details
Rev. 00	2016-12-13	E.Garcia I.Kharrat	First Issue
Rev. 01	2016-12-16	O.Fargant	Added additional sample pictures in Annex C

# Annex A. Test & System Description

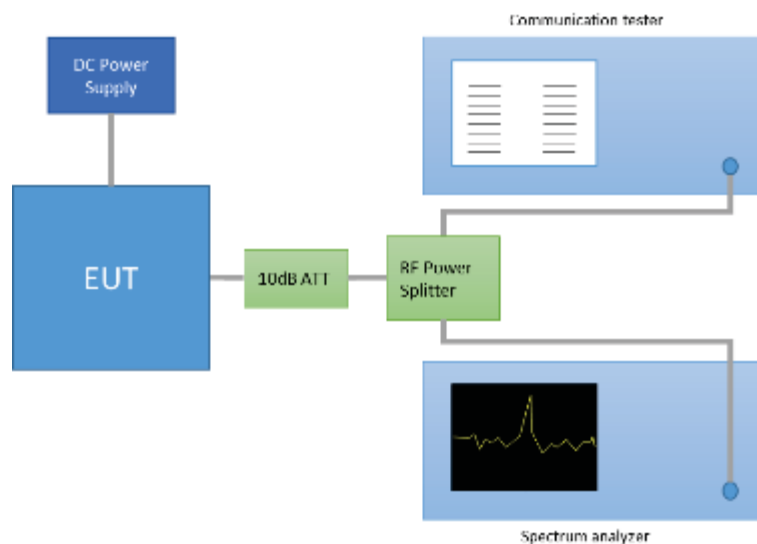
## A.1 Measurement System

Measurements were performed using the following setups. A communication tester was used to establish a communication link with the EUT, and the communication tester parameters were set to get the maximum output power from the EUT.

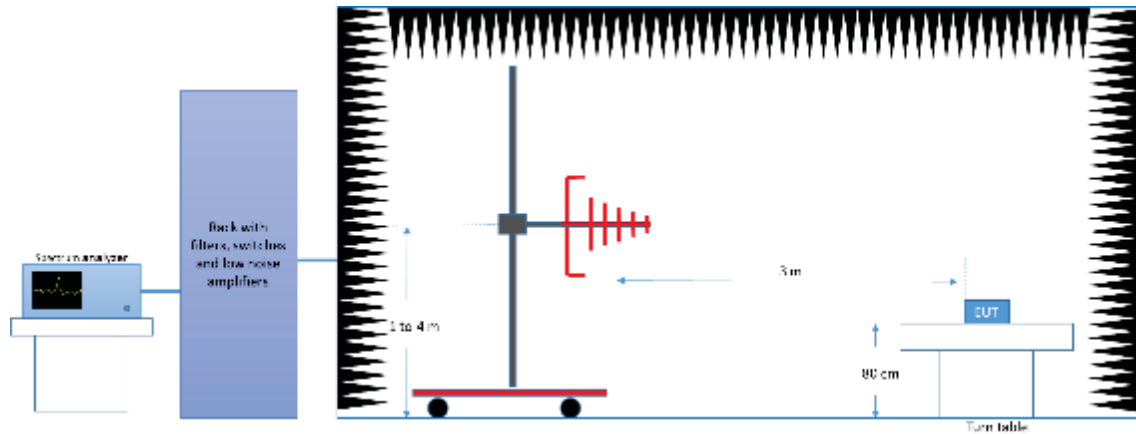
### Conducted Setup 1



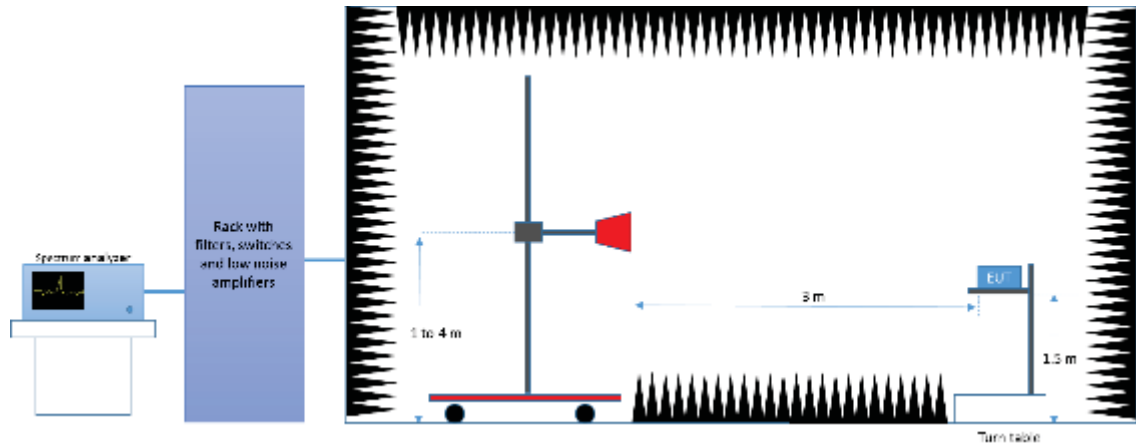
### Conducted Setup 2



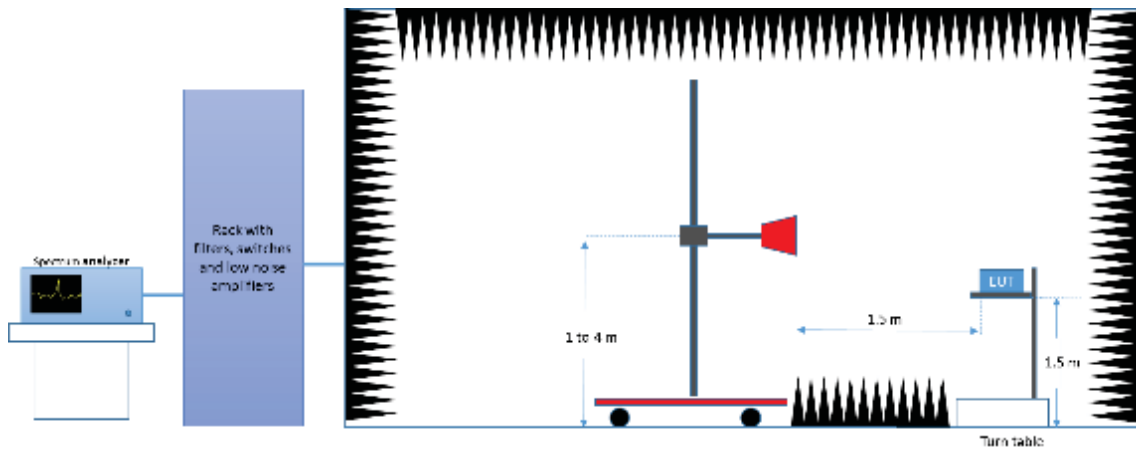
*Radiated Setup < 1GHz*



*Radiated Setup Frequency range 1 GHz to 18 GHz*



*Radiated Setup > 18GHz*





## A.2 Test Equipment List

### A.2.1 Conducted Setup

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0210	Network Emulator	CMW500	147712	Rohde & Schwarz	-	-
0311	Communication tester	CMW500	152720	Rohde & Schwarz	2015-03-19	2017-03-19
0316	Spectrum Analyzer	FSV30	103309	Rohde & Schwarz	2015-03-20	2017-03-20
0038	Power Meter	MI2487	952010	Anritsu	2015-09-24	2017-09-24
0300	Climatic chamber	SLT34/40	56746020930010	SECASI	2015-03-09	2017-03-09
0293	DC power supply	E3640A	MY40006885	Agilent	NA	NA
0036	Multimeter	IDM 103	03902163	ISO-TECH	2016-03-24	2018-03-24

### A.2.2 Radiated Setup #1

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0133	Spectrum analyzer	FSV40	101358	Rohde & Schwarz	2016-04-15	2018-04-15
0137	BiConiLog antenna 26 MHz – 6 GHz	3142E	00156946	ETS Lindgren	2015-12-11	2017-12-11
0143	Biconical 30MHz – 3GHz	3180B	00165215	ETS Lindgren	2016-04-11	2018-04-11
0325	Double Ridge Horn 1GHz -18 GHz	3117	00157734	ETS Lindgren	2015-07-24	2017-07-24
0141	Double-ridged Horn Antenna with preamplifier 1 GHz - 18 GHz	3117-PA	00157736	ETS Lindgren	2016-04-13	2018-04-13
0139	Horn Antenna 18 GHz - 26.5 GHz	114514	00167100	ETS Lindgren	2016-03-16	2018-03-16
0135	Semi Anechoic chamber	FACT 3	5720	ETS Lindgren	2016-04-28	2018-04-28
0329	Measurement Software	EMC32	100401	Rohde & Schwarz	N/A	N/A
0210	Communication tester	CMW500	147712	Rohde & Schwarz	N/A	N/A
0340	Communication tester	CMU200	104365	Rohde & Schwarz	N/A	N/A

### A.2.3 Radiated Setup #2

ID#	Device	Type/Model	Serial #	Manufacturer	Cal. Date	Cal. Due Date
0420	Spectrum analyzer	FSV40	101556	Rohde & Schwarz	2016-04-15	2018-04-15
0248	Double Ridge Antenna with preamplifier 1 GHz – 18 GHz	3117-PA	00167062	ETS Lindgren	2016-07-26	2018-07-26
0138	Horn antenna 1 GHz – 18 GHz	3117	00152266	ETS Lindgren	2016-03-14	2018-03-14
0337	Full Anechoic chamber	RFD_FA_100	5996	ETS Lindgren	2016-04-28	2018-04-28
0530	Measurement Software	EMC32	100623	Rohde & Schwarz	N/A	N/A
0319	Wideband Radio Communication Tester	CMW500	152721	Rohde & Schwarz	2015-03-19	2017-03-19

### A.3 Measurement Uncertainty Evaluation

The system uncertainty evaluation is shown in the below table:

Measurement type	Uncertainty [ $\pm$ dB]
Conducted Power (power meter)	$\pm 1.0$
Conducted spurious emission	$\pm 2.9$
Radiated test < 1GHz	$\pm 3.8$
Radiated test 1GHz - 26 GHz	$\pm 4.7$

# Annex B. Test Results

## B.1 Conducted RF Output Power

### B.1.1 Test Conditions

For cellular transmission modes LTE, the device was put into operation by using an R&S CMW 500 as base station simulator.

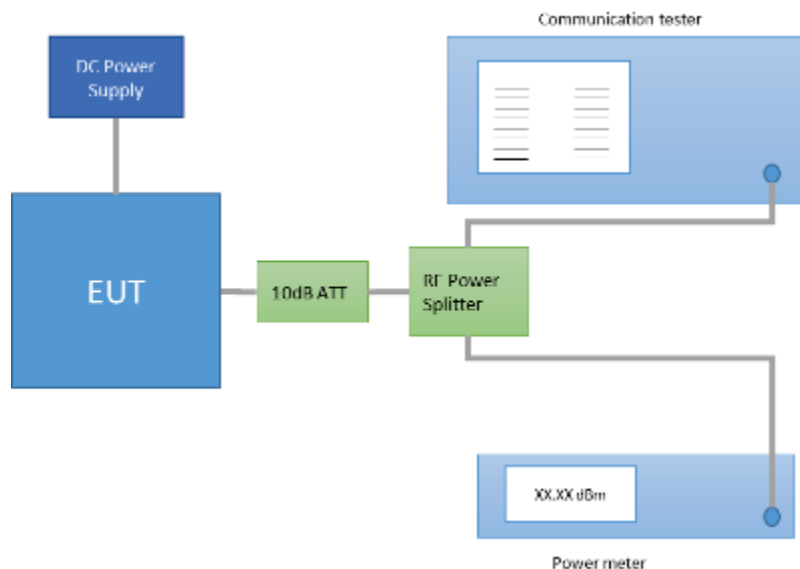
The output power of the device was set to transmit at maximum power for all tests.

### B.1.2 Test Limits

BAND	FCC part	RSS part	Power Limits [Watts]	Max Antenna Gain [dBi]
LTE 2	2.1046, 24.232	133-ch6.4	< 2 watts EIRP	2.0
LTE 4	2.1046, 27.50	139-ch.6.4	< 3 watts ERP	2.0
LTE 5(19)	2.1046, 22.913	132-ch.5.4	< 7 watts ERP	2.0
LTE 12(17)	2.1046, 27.50 (c)(10)	130-ch.4.4 Gen-ch.6.12	< 3 watts ERP	2.0
LTE 13	2.1046, 27.50 (b)(10)	130-ch.4.4 Gen-ch.6.12	< 3 watts ERP	2.0
LTE 7	2.1046,27.50 (h)	199-ch.4.4 Gen-ch.6.12	< 2 watts ERP	2.0

### B.1.3 Test procedure

The setup below was used to measure the conducted output power. The antenna terminal of the EUT is connected to the power meter and the communication tester through an attenuator and a power splitter. The power meter reading is compensated to include the RF. This test was performed according to the KDB 971168 D01 § 5.2.



### B.1.4 Test Results

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg EIRP [W]	Peak EIRP [W]
LTE2	1.4MHz	QPSK	18607	1850.7	1RB	0	<b>23.16</b>	26.01	<b>0.33</b>	0.63
					100%RB	0	21.85	25.79	0.24	0.60
			18900	1880	1RB	3	22.35	25.50	0.27	0.56
					100%RB	0	21.60	25.71	0.23	0.59
			19193	1909.3	1RB	5	22.68	<b>26.15</b>	0.29	<b>0.65</b>
					100%RB	0	21.90	25.78	0.25	0.60
		16QAM	18607	1850.7	1RB	0	22.35	25.74	0.27	0.59
					100%RB	0	21.92	25.78	0.25	0.60
			18900	1880	1RB	3	21.56	25.48	0.23	0.56
					100%RB	0	<b>20.90</b>	<b>25.47</b>	<b>0.19</b>	<b>0.56</b>
			19193	1909.3	1RB	5	22.42	25.88	0.28	0.61
					100%RB	0	20.99	25.78	0.20	0.60
	3MHz	QPSK	18615	1851.5	1RB	0	22.36	25.79	0.27	0.60
					100%RB	0	21.82	<b>25.87</b>	0.24	<b>0.61</b>
			18900	1880	1RB	8	<b>22.73</b>	25.80	<b>0.30</b>	0.60
					100%RB	0	<b>20.86</b>	25.64	<b>0.19</b>	0.58
			19185	1908.5	1RB	14	22.34	25.55	0.27	0.57
					100%RB	0	21.82	25.84	0.24	0.61
		16QAM	18615	1851.5	1RB	0	21.93	25.71	0.25	0.59
					100%RB	0	21.13	25.82	0.21	0.61
			18900	1880	1RB	8	22.14	25.77	0.26	0.60
					100%RB	0	20.92	25.69	0.20	0.59
			19185	1908.5	1RB	14	22.13	<b>25.43</b>	0.26	<b>0.55</b>
					100%RB	0	21.24	<b>25.87</b>	0.21	<b>0.61</b>
	5MHz	QPSK	18625	1852.5	1RB	0	22.28	25.85	0.27	0.61
					100%RB	0	21.94	26.01	0.25	0.63
			18900	1880	1RB	13	22.55	25.94	0.29	0.62
					100%RB	0	21.71	25.95	0.23	0.62
			19175	1907.5	1RB	24	<b>22.58</b>	<b>26.13</b>	<b>0.29</b>	<b>0.65</b>
					100%RB	0	21.93	26.00	0.25	0.63
16QAM		18625	1852.5	1RB	0	21.79	<b>25.63</b>	0.24	<b>0.58</b>	
				100%RB	0	21.22	25.82	0.21	0.61	
		18900	1880	1RB	13	22.41	25.67	0.28	0.58	
				100%RB	0	<b>21.01</b>	25.87	<b>0.20</b>	0.61	
		19175	1907.5	1RB	24	22.17	25.78	0.26	0.60	
				100%RB	0	21.17	25.83	0.21	0.61	

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg EIRP [W]	Peak EIRP [W]	
LTE2	10MHz	QPSK	18650	1855	1RB	0	22.54	25.86	0.28	0.61	
					100%RB	0	21.83	25.87	0.24	0.61	
			18900	1880	1RB	25	22.54	<b>26.13</b>	0.28	<b>0.65</b>	
					100%RB	0	<b>21.71</b>	25.79	<b>0.23</b>	0.60	
		19150	1905	1RB	49	<b>22.70</b>	25.64	<b>0.30</b>	0.58		
				100%RB	0	21.93	25.88	0.25	0.61		
		16QAM	18650	1855	1RB	0	22.35	25.63	0.27	0.58	
					100%RB	0	21.16	25.84	0.21	0.61	
			18900	1880	1RB	25	22.14	<b>25.49</b>	0.26	<b>0.56</b>	
					100%RB	0	<b>21.10</b>	25.88	<b>0.20</b>	0.61	
			19150	1905	1RB	49	22.11	25.74	0.26	0.59	
					100%RB	0	21.16	25.86	0.21	0.61	
	15MHz		QPSK	18675	1857.5	1RB	0	<b>22.48</b>	<b>26.15</b>	<b>0.28</b>	<b>0.65</b>
						100%RB	0	21.72	25.90	0.24	0.62
		18900		1880	1RB	38	22.39	25.60	0.27	0.58	
					100%RB	0	<b>21.64</b>	25.74	<b>0.23</b>	0.59	
		19125	1902.5	1RB	74	22.34	25.90	0.27	0.62		
				100%RB	0	21.88	26.04	0.24	0.64		
		16QAM	18675	1857.5	1RB	0	22.37	<b>25.60</b>	0.27	<b>0.58</b>	
					100%RB	0	21.01	25.82	0.20	0.61	
			18900	1880	1RB	38	22.04	25.48	0.25	0.56	
					100%RB	0	<b>20.95</b>	25.72	<b>0.20</b>	0.59	
		19125	1902.5	1RB	74	22.21	25.65	0.26	0.58		
				100%RB	0	21.15	26.11	0.21	0.65		
	20MHz	QPSK	18700	1860	1RB	0	<b>22.62</b>	25.52	<b>0.29</b>	0.56	
					100%RB	0	21.78	25.96	0.24	0.63	
			18900	1880	1RB	50	22.54	25.83	0.28	0.61	
					100%RB	0	21.65	25.67	0.23	0.58	
		19100	1900	1RB	99	22.42	<b>26.37</b>	0.28	<b>0.69</b>		
				100%RB	0	21.85	25.93	0.24	0.62		
		16QAM	18700	1860	1RB	0	22.23	25.99	0.26	0.63	
					100%RB	0	21.01	25.83	0.20	0.61	
			18900	1880	1RB	50	21.56	25.74	0.23	0.59	
					100%RB	0	<b>20.95</b>	25.67	<b>0.20</b>	0.58	
		19100	1900	1RB	99	21.97	<b>25.44</b>	0.25	<b>0.55</b>		
				100%RB	0	21.07	26.08	0.20	0.64		

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]
LTE4	1.4MHz	QPSK	19957	1710.7	1RB	0	<b>22.61</b>	26.18	<b>0.18</b>	0.40
					100%RB	0	21.65	26.14	0.14	0.40
			20175	1732.5	1RB	3	21.73	25.52	0.14	0.34
					100%RB	0	21.20	26.36	0.13	0.42
			20393	1754.3	1RB	5	22.42	25.42	0.17	0.34
					100%RB	0	21.34	25.02	0.13	0.31
		16QAM	19957	1710.7	1RB	0	21.77	<b>26.38</b>	0.15	<b>0.42</b>
					100%RB	0	20.82	25.88	0.12	0.37
			20175	1732.5	1RB	3	21.14	<b>24.96</b>	0.13	<b>0.30</b>
					100%RB	0	<b>20.56</b>	26.37	<b>0.11</b>	0.42
			20393	1754.3	1RB	5	21.99	25.17	0.15	0.32
					100%RB	0	<b>20.56</b>	25.24	<b>0.11</b>	0.32
	3MHz	QPSK	19965	1711.5	1RB	0	21.67	25.99	0.14	0.38
					100%RB	0	21.61	26.10	0.14	0.39
			20175	1732.5	1RB	8	<b>22.43</b>	26.29	<b>0.17</b>	0.41
					100%RB	0	21.3	26.33	0.13	0.41
			20385	1753.5	1RB	14	21.69	25.25	0.14	0.32
					100%RB	0	21.40	25.22	0.13	0.32
		16QAM	19965	1711.5	1RB	0	21.37	25.74	0.13	0.36
					100%RB	0	21.05	25.74	0.12	0.36
			20175	1732.5	1RB	8	21.87	26.33	0.15	0.41
					100%RB	0	20.63	<b>26.34</b>	0.11	<b>0.42</b>
			20385	1753.5	1RB	14	21.22	<b>25.00</b>	0.13	<b>0.31</b>
					100%RB	0	<b>20.59</b>	25.29	<b>0.11</b>	0.33
	5MHz	QPSK	19975	1712.5	1RB	0	22.20	25.83	0.16	0.37
					100%RB	0	21.76	26.01	0.14	0.39
			20175	1732.5	1RB	13	<b>22.37</b>	26.28	<b>0.17</b>	0.41
					100%RB	0	21.40	<b>26.65</b>	0.13	<b>0.45</b>
			20375	1752.5	1RB	24	21.91	25.49	0.15	0.34
					100%RB	0	21.44	25.60	0.13	0.35
		16QAM	19975	1712.5	1RB	0	21.11	<b>25.33</b>	0.12	<b>0.33</b>
					100%RB	0	20.97	26.03	0.12	0.39
			20175	1732.5	1RB	13	21.64	25.93	0.14	0.38
					100%RB	0	<b>20.73</b>	26.49	<b>0.11</b>	0.43
			20375	1752.5	1RB	24	21.22	25.35	0.13	0.33
					100%RB	0	20.78	25.59	0.12	0.35

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]
LTE4	10MHz	QPSK	20000	1715	1RB	0	22.12	26.00	0.16	0.38
					100%RB	0	21.59	26.12	0.14	0.40
			20175	1732.5	1RB	25	<b>22.22</b>	25.82	<b>0.16</b>	0.37
					100%RB	0	21.40	<b>26.67</b>	0.13	<b>0.45</b>
		20350	1750	1RB	49	21.92	25.36	0.15	0.33	
				100%RB	0	21.20	25.67	0.13	0.36	
		16QAM	20000	1715	1RB	0	21.42	25.12	0.13	0.31
					100%RB	0	21.02	26.25	0.12	0.41
			20175	1732.5	1RB	25	21.68	25.36	0.14	0.33
					100%RB	0	20.64	26.66	0.11	0.45
		20350	1750	1RB	49	21.51	<b>24.81</b>	0.14	<b>0.29</b>	
				100%RB	0	<b>20.58</b>	25.82	<b>0.11</b>	0.37	
	15MHz	QPSK	20025	1717.5	1RB	0	<b>22.23</b>	25.84	<b>0.16</b>	0.37
					100%RB	0	21.60	25.93	0.14	0.38
			20175	1732.5	1RB	38	21.80	25.82	0.15	0.37
					100%RB	0	21.38	26.46	0.13	0.43
			20325	1747.5	1RB	74	22.20	25.16	0.16	0.32
					100%RB	0	21.36	25.88	0.13	0.37
		16QAM	20025	1717.5	1RB	0	21.73	<b>25.08</b>	0.14	<b>0.31</b>
					100%RB	0	20.84	25.85	0.12	0.37
			20175	1732.5	1RB	38	21.38	25.70	0.13	0.36
					100%RB	0	20.78	<b>26.50</b>	0.12	<b>0.43</b>
			20325	1747.5	1RB	74	21.35	25.12	0.13	0.31
					100%RB	0	<b>20.63</b>	26.01	<b>0.11</b>	0.39
	20MHz	QPSK	20050	1720	1RB	0	<b>22.37</b>	26.01	<b>0.17</b>	0.39
					100%RB	0	21.56	25.99	0.14	0.38
			20175	1732.5	1RB	50	22.17	25.87	0.16	0.37
					100%RB	0	21.37	26.18	0.13	0.40
			20300	1745	1RB	99	21.96	25.38	0.15	0.33
					100%RB	0	21.38	25.84	0.13	0.37
		16QAM	20050	1720	1RB	0	21.94	25.24	0.15	0.32
					100%RB	0	20.86	26.00	0.12	0.38
			20175	1732.5	1RB	50	21.33	25.53	0.13	0.35
					100%RB	0	20.62	<b>26.33</b>	0.11	<b>0.41</b>
			20300	1745	1RB	99	21.47	<b>25.11</b>	0.14	<b>0.31</b>
					100%RB	0	<b>20.59</b>	26.02	<b>0.11</b>	0.39

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]	
LTE5	1.4MHz	QPSK	20407	824.7	1RB	0	<b>22.80</b>	26.50	<b>0.18</b>	0.43	
					100%RB	0	21.75	<b>26.85</b>	0.14	<b>0.47</b>	
			20525	836.5	1RB	3	22.20	25.90	0.16	0.38	
					100%RB	0	21.78	26.29	0.15	0.41	
			20643	848.3	1RB	5	22.73	25.6	0.18	0.35	
					100%RB	0	21.46	25.5	0.14	0.34	
		16QAM	20407	824.7	1RB	0	22.12	26.67	0.16	0.45	
					100%RB	0	21.14	26.44	0.13	0.43	
			20525	836.5	1RB	3	21.60	<b>25.36</b>	0.14	<b>0.33</b>	
					100%RB	0	21.16	26.22	0.13	0.40	
			20643	848.3	1RB	5	22.18	25.48	0.16	0.34	
					100%RB	0	<b>20.86</b>	25.39	<b>0.12</b>	0.33	
		3MHz	QPSK	20415	825.5	1RB	0	22.20	25.74	0.16	0.36
						100%RB	0	21.75	26.44	0.14	0.43
	20525			836.5	1RB	8	<b>22.83</b>	26.15	<b>0.19</b>	0.40	
					100%RB	0	21.66	26.48	0.14	0.43	
	20635			847.5	1RB	14	22.08	25.61	0.16	0.35	
					100%RB	0	21.63	25.76	0.14	0.36	
	16QAM		20415	825.5	1RB	0	21.56	25.89	0.14	0.37	
					100%RB	0	<b>20.88</b>	<b>26.76</b>	<b>0.12</b>	<b>0.46</b>	
			20525	836.5	1RB	8	22.56	26.18	0.17	0.40	
					100%RB	0	20.90	<b>20.28</b>	0.12	<b>0.10</b>	
			20635	847.5	1RB	14	21.76	25.77	0.14	0.36	
					100%RB	0	20.96	25.31	0.12	0.33	
	5MHz		QPSK	20425	826.5	1RB	0	22.68	26.38	0.18	0.42
						100%RB	0	21.81	26.42	0.15	0.42
		20525		836.5	1RB	13	<b>22.80</b>	26.3	<b>0.18</b>	0.41	
					100%RB	0	21.68	<b>26.59</b>	0.14	<b>0.44</b>	
		20625		846.5	1RB	24	22.20	26.16	0.16	0.40	
					100%RB	0	21.61	25.73	0.14	0.36	
16QAM		20425	826.5	1RB	0	21.57	26.41	0.14	0.42		
				100%RB	0	20.99	26.57	0.12	0.44		
		20525	836.5	1RB	13	22.13	<b>25.55</b>	0.16	<b>0.35</b>		
				100%RB	0	20.96	26.22	0.12	0.40		
		20625	846.5	1RB	24	21.55	25.66	0.14	0.36		
				100%RB	0	<b>20.90</b>	25.60	<b>0.12</b>	0.35		

Max values

Min values



Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]
LTE5	10MHz	QPSK	20450	829	1RB	0	22.71	26.32	0.18	0.41
					100%RB	0	21.72	26.30	0.14	0.41
			20525	836.5	1RB	25	22.6	26.32	0.18	0.41
					100%RB	0	<b>20.78</b>	25.99	<b>0.12</b>	0.38
		20600	844	1RB	49	<b>22.72</b>	26.22	<b>0.18</b>	0.40	
				100%RB	0	21.80	26.13	0.15	0.40	
		16QAM	20450	829	1RB	0	22.66	<b>26.43</b>	0.18	<b>0.42</b>
					100%RB	0	20.91	26.21	0.12	0.40
			20525	836.5	1RB	25	22.09	26.31	0.16	0.41
					100%RB	0	<b>20.78</b>	26.37	<b>0.12</b>	0.42
		20600	844	1RB	49	21.60	<b>25.80</b>	0.14	<b>0.37</b>	
				100%RB	0	21.01	26.24	0.12	0.41	

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]
LTE7	5MHz	QPSK	20775	2502.5	1RB	0	22.14	24.97	0.16	0.30
					100%RB	0	21.68	25.22	0.14	0.32
			21100	2535	1RB	13	22.28	24.97	0.16	0.30
					100%RB	0	21.44	25.03	0.13	0.31
		21425	2567.5	1RB	24	<b>22.63</b>	25.42	<b>0.18</b>	0.34	
				100%RB	0	21.88	25.55	0.15	0.35	
		16QAM	20775	2502.5	1RB	0	21.68	24.86	0.14	0.30
					100%RB	0	20.91	25.07	0.12	0.31
			21100	2535	1RB	13	21.80	<b>24.77</b>	0.15	<b>0.29</b>
					100%RB	0	<b>20.90</b>	25.04	<b>0.12</b>	0.31
		21425	2567.5	1RB	24	22.27	25.18	0.16	0.32	
				100%RB	0	21.19	<b>25.68</b>	0.13	<b>0.36</b>	
	10MHz	QPSK	20800	2505	1RB	0	22.14	24.78	0.16	0.29
					100%RB	0	21.70	25.20	0.14	0.32
			21100	2535	1RB	25	<b>22.38</b>	24.80	<b>0.17</b>	0.29
					100%RB	0	21.52	24.99	0.14	0.30
			21400	2565	1RB	49	21.93	24.98	0.15	0.30
					100%RB	0	21.76	25.53	0.14	0.35
		16QAM	20800	2505	1RB	0	21.97	<b>24.77</b>	0.15	<b>0.29</b>
					100%RB	0	20.95	25.23	0.12	0.32
			21100	2535	1RB	25	22.15	24.88	0.16	0.30
					100%RB	0	<b>20.75</b>	25.10	<b>0.11</b>	0.31
		21400	2565	1RB	49	21.34	24.79	0.13	0.29	
				100%RB	0	20.96	<b>25.64</b>	0.12	<b>0.35</b>	
	15MHz	QPSK	20825	2507.5	1RB	0	22.26	25.15	0.16	0.32
					100%RB	0	21.81	25.38	0.15	0.33
			21100	2535	1RB	38	22.27	24.94	0.16	0.30
					100%RB	0	21.49	24.98	0.14	0.30
			21375	2562.5	1RB	74	<b>22.54</b>	25.24	<b>0.17</b>	0.32
					100%RB	0	21.46	25.38	0.14	0.33
		16QAM	20825	2507.5	1RB	0	21.99	<b>24.68</b>	0.15	<b>0.28</b>
					100%RB	0	21.16	25.44	0.13	0.34
			21100	2535	1RB	38	21.25	24.99	0.13	0.30
					100%RB	0	20.89	25.02	0.12	0.31
		21375	2562.5	1RB	74	22.03	25.21	0.15	0.32	
				100%RB	0	<b>20.86</b>	<b>25.46</b>	<b>0.12</b>	<b>0.34</b>	

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]
LTE7	20MHz	QPSK	20850	2510	1RB	0	22.26	24.77	0.16	0.29
					100%RB	0	22.06	25.45	0.16	0.34
			21100	2535	1RB	50	22.36	24.64	0.17	0.28
					100%RB	0	21.55	24.88	0.14	0.30
			21350	2560	1RB	99	<b>22.44</b>	25.37	<b>0.17</b>	0.33
					100%RB	0	21.44	25.03	0.13	0.31
		16QAM	20850	2510	1RB	0	21.62	24.74	0.14	0.29
					100%RB	0	21.17	<b>25.52</b>	0.13	<b>0.34</b>
			21100	2535	1RB	50	22.01	<b>24.5</b>	0.15	<b>0.27</b>
					100%RB	0	20.91	25.07	0.12	0.31
			21350	2560	1RB	99	21.56	25.11	0.14	0.31
					100%RB	0	<b>20.77</b>	25.27	<b>0.12</b>	0.33

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]
LTE 12	1.4MHz	QPSK	23017	699.7	1RB	0	<b>24.48</b>	<b>27.42</b>	<b>0.27</b>	<b>0.53</b>
					100%RB	0	23.05	26.99	0.19	0.48
			23095	707.5	1RB	3	23.57	26.48	0.22	0.43
					100%RB	0	22.96	26.05	0.19	0.39
			23173	715.3	1RB	5	24.46	27.02	0.27	0.49
					100%RB	0	23.23	26.6	0.20	0.44
		16QAM	23017	699.7	1RB	0	24.05	27.18	0.25	0.50
					100%RB	0	22.54	26.95	0.17	0.48
			23095	707.5	1RB	3	23.46	26.30	0.21	0.41
					100%RB	0	<b>22.15</b>	<b>25.98</b>	<b>0.16</b>	<b>0.38</b>
			23173	715.3	1RB	5	23.97	26.81	0.24	0.46
					100%RB	0	22.61	26.61	0.18	0.44
	3MHz	QPSK	23025	700.5	1RB	0	23.42	26.82	0.21	0.46
					100%RB	0	22.95	27.01	0.19	0.49
			23095	707.5	1RB	8	<b>24.04</b>	26.73	<b>0.24</b>	0.45
					100%RB	0	22.91	26.06	0.19	0.39
			23165	714.5	1RB	14	23.98	26.75	0.24	0.46
					100%RB	0	23.22	<b>27.02</b>	0.20	<b>0.49</b>
		16QAM	23025	700.5	1RB	0	22.81	26.76	0.18	0.46
					100%RB	0	22.21	26.91	0.16	0.47
			23095	707.5	1RB	8	22.91	<b>26.00</b>	0.19	<b>0.38</b>
					100%RB	0	<b>22.19</b>	26.02	<b>0.16</b>	0.39
			23165	714.5	1RB	14	23.05	26.65	0.19	0.45
					100%RB	0	22.42	26.72	0.17	0.45
	5MHz	QPSK	23035	701.5	1RB	0	23.77	<b>27.23</b>	0.23	<b>0.51</b>
					100%RB	0	23.07	26.84	0.20	0.47
			23095	707.5	1RB	13	<b>24.00</b>	26.66	<b>0.24</b>	0.45
					100%RB	0	22.98	26.12	0.19	0.40
			23155	713.5	1RB	24	23.91	26.92	0.24	0.48
					100%RB	0	23.18	27.08	0.20	0.49
16QAM		23035	701.5	1RB	0	23.28	26.76	0.21	0.46	
				100%RB	0	<b>22.26</b>	26.83	<b>0.16</b>	0.47	
		23095	707.5	1RB	13	23.24	26.42	0.20	0.42	
				100%RB	0	22.28	<b>26.06</b>	0.16	<b>0.39</b>	
		23155	713.5	1RB	24	23.58	26.60	0.22	0.44	
				100%RB	0	22.42	27.02	0.17	0.49	

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]
LTE 12	10MHz	QPSK	23060	704	1RB	0	23.82	27.10	0.23	0.50
					100%RB	0	23.07	26.61	0.20	0.44
			23095	707.5	1RB	25	24.01	26.65	0.24	0.45
					100%RB	0	23.04	26.63	0.19	0.44
			23130	711	1RB	49	<b>24.04</b>	<b>27.14</b>	<b>0.24</b>	<b>0.50</b>
					100%RB	0	23.08	26.84	0.20	0.47
		16QAM	23060	704	1RB	0	23.29	27.02	0.21	0.49
					100%RB	0	22.32	26.63	0.16	0.44
			23095	707.5	1RB	25	23.46	26.83	0.21	0.47
					100%RB	0	<b>22.28</b>	<b>26.51</b>	<b>0.16</b>	<b>0.43</b>
			23130	711	1RB	49	23.91	26.96	0.24	0.48
					100%RB	0	22.34	26.96	0.17	0.48

Max values

Min values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	RB Offset	Avg [dBm]	Peak [dBm]	Avg ERP [W]	Peak ERP [W]	
LTE 13	5MHz	QPSK	23205	779.5	1RB	0	22.45	<b>25.34</b>	0.17	0.33	
					100%RB	0	22.25	<b>27.00</b>	0.16	<b>0.48</b>	
			23230	782	1RB	13	<b>23.50</b>	26.27	<b>0.22</b>	0.41	
					100%RB	0	22.16	26.7	0.16	0.45	
			23255	784.5	1RB	24	22.7	26.88	0.18	0.47	
					100%RB	0	22.07	26.27	0.16	0.41	
		16QAM	23205	779.5	1RB	0	21.87	<b>25.34</b>	0.15	<b>0.33</b>	
					100%RB	0	21.51	26.65	0.14	0.45	
			23230	782	1RB	13	23.05	26.07	0.19	0.39	
					100%RB	0	21.51	26.32	0.14	0.41	
			23255	784.5	1RB	24	22.42	26.8	0.17	0.46	
					100%RB	0	<b>21.24</b>	26.25	<b>0.13</b>	0.41	
		10MHz	QPSK	23230	782	1RB	25	<b>23.61</b>	<b>26.18</b>	<b>0.22</b>	<b>0.40</b>
						100%RB	0	22.29	27.42	0.16	0.53
			16QAM	23025	700.5	1RB	25	23.02	26.19	0.19	0.40
						100%RB	0	<b>21.64</b>	<b>27.94</b>	<b>0.14</b>	<b>0.60</b>

Max values

Min values

## B.2 Occupied bandwidth

### B.2.1 Standard references

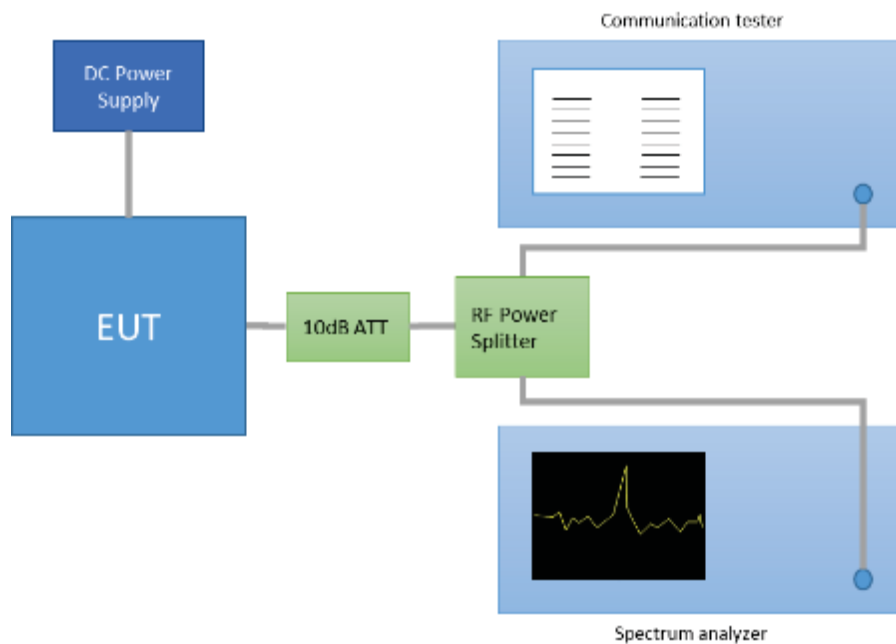
BAND	FCC part	RSS part
LTE 2	2.1049, 24.238	Gen-ch.6.6, 133-ch6.4
LTE 4	2.1049, 27.53	Gen-ch.6.6, 139-ch.2.3
LTE 5(19)	2.1049, 22.917	Gen-ch.6.6, 132-ch.5.4
LTE 7	2.1049, 27.53 (m)	Gen-ch.6.6, 199-ch.4.2
LTE 12(17)	2.1049, 27.53 (g)	Gen-ch.6.6, 27.53 (g)
LTE 13	2.1049, 27.53 (c)	Gen-ch.6.6, 27.53 (c)

### B.2.2 Test procedure

This test was performed according to the KDB 971168 D01 § 4.1 Occupied bandwidth – relative (-26dB OBW) measurement procedure and § 4.2 Occupied bandwidth – power bandwidth (99%) measurement procedure.

The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high.

The setup below was used to measure the transmitted occupied bandwidth. The antenna terminal of the EUT is connected to the spectrum analyzer and the communication tester through an attenuator and a power splitter.



**B.2.3 Results tables**

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE2	1.4MHz	QPSK	18607	1850.7	1RB	1	0	0.468	-
					100%RB	6	0	1.380	<b>1.105</b>
			18900	1880	1RB	1	3	0.480	-
					100%RB	6	0	1.378	1.102
			19193	1909.3	1RB	1	5	0.446	-
					100%RB	6	0	1.319	<b>1.105</b>
		16QAM	18607	1850.7	1RB	1	0	0.446	-
					100%RB	6	0	1.361	<b>1.108</b>
			18900	1880	1RB	1	3	0.474	-
					100%RB	6	0	1.330	1.102
			19193	1909.3	1RB	1	5	0.459	-
					100%RB	6	0	1.324	1.102
	3MHz	QPSK	18615	1851.5	1RB	1	0	0.259	-
					100%RB	15	0	3.113	2.733
			18900	1880	1RB	1	8	0.270	-
					100%RB	15	0	3.079	<b>2.752</b>
			19185	1908.5	1RB	1	14	0.272	-
					100%RB	15	0	3.079	2.733
		16QAM	18615	1851.5	1RB	1	0	0.258	-
					100%RB	15	0	3.097	2.733
			18900	1880	1RB	1	8	0.260	-
					100%RB	15	0	3.114	<b>2.752</b>
			19185	1908.5	1RB	1	14	0.274	-
					100%RB	15	0	3.098	2.741
5MHz	QPSK	18625	1852.5	1RB	1	0	0.258	-	
				100%RB	25	0	5.154	4.507	
		18900	1880	1RB	1	13	0.299	-	
				100%RB	25	0	5.062	4.495	
		19175	1907.5	1RB	1	24	0.273	-	
				100%RB	25	0	5.124	<b>4.519</b>	
	16QAM	18625	1852.5	1RB	1	0	0.302	-	
				100%RB	25	0	5.122	<b>4.531</b>	
		18900	1880	1RB	1	13	0.301	-	
				100%RB	25	0	5.201	<b>4.531</b>	
		19175	1907.5	1RB	1	24	0.285	-	
				100%RB	25	0	5.114	4.519	

**Max values**

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE2	10MHz	QPSK	18650	1855	1RB	1	0	0.343	-
					100%RB	50	0	10.303	9.02
			18900	1880	1RB	1	25	0.328	-
					100%RB	50	0	10.386	8.991
			19150	1905	1RB	1	49	0.342	-
					100%RB	50	0	10.395	9.02
		16QAM	18650	1855	1RB	1	0	0.320	-
					100%RB	50	0	10.196	9.02
			18900	1880	1RB	1	25	0.299	-
					100%RB	50	0	10.226	8.991
			19150	1905	1RB	1	49	0.328	-
					100%RB	50	0	10.280	9.02
	15MHz	QPSK	18675	1857.5	1RB	1	0	0.410	-
					100%RB	75	0	15.460	13.466
			18900	1880	1RB	1	38	0.343	-
					100%RB	75	0	15.145	13.506
			19125	1902.5	1RB	1	74	0.401	-
					100%RB	75	0	15.183	13.386
		16QAM	18675	1857.5	1RB	1	0	0.356	-
					100%RB	75	0	15.157	13.386
			18900	1880	1RB	1	38	0.331	-
					100%RB	75	0	15.322	13.426
			19125	1902.5	1RB	1	74	0.362	-
					100%RB	75	0	15.959	13.426
	20MHz	QPSK	18700	1860	1RB	1	0	0.328	-
					100%RB	100	0	20.001	17.932
			18900	1880	1RB	1	50	0.371	-
					100%RB	100	0	20.427	17.932
			19100	1900	1RB	1	99	0.326	-
					100%RB	100	0	20.138	17.942
16QAM		18700	1860	1RB	1	0	0.311	-	
				100%RB	100	0	19.355	17.982	
		18900	1880	1RB	1	50	0.285	-	
				100%RB	100	0	19.793	17.982	
		19100	1900	1RB	1	99	0.313	-	
				100%RB	100	0	20.076	17.982	

Max values



Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE4	1.4MHz	QPSK	19957	1710.7	1RB	1	0	0.474	-
					100%RB	6	0	1.351	1.108
			20175	1732.5	1RB	1	3	0.495	-
					100%RB	6	0	1.301	1.099
			20393	1754.3	1RB	1	5	0.273	-
					100%RB	6	0	1.426	1.108
		16QAM	19957	1710.7	1RB	1	0	0.468	-
					100%RB	6	0	1.345	1.102
			20175	1732.5	1RB	1	3	0.471	-
					100%RB	6	0	1.356	1.108
			20393	1754.3	1RB	1	5	0.446	-
					100%RB	6	0	1.332	1.108
	3MHz	QPSK	19965	1711.5	1RB	1	0	0.246	-
					100%RB	15	0	3.109	2.741
			20175	1732.5	1RB	1	8	0.272	-
					100%RB	15	0	3.044	2.733
			20385	1753.5	1RB	1	14	0.272	-
					100%RB	15	0	3.09	2.741
		16QAM	19965	1711.5	1RB	1	0	0.247	-
					100%RB	15	0	3.064	2.757
			20175	1732.5	1RB	1	8	0.257	-
					100%RB	15	0	0.595	2.752
			20385	1753.5	1RB	1	14	0.274	-
					100%RB	15	0	3.187	2.741
	5MHz	QPSK	19975	1712.5	1RB	1	0	0.273	-
					100%RB	25	0	5.167	4.519
			20175	1732.5	1RB	1	13	0.284	-
					100%RB	25	0	5.039	4.495
			20375	1752.5	1RB	1	24	0.300	-
					100%RB	25	0	5.183	4.543
16QAM		19975	1712.5	1RB	1	0	0.299	-	
				100%RB	25	0	5.159	4.543	
		20175	1732.5	1RB	1	13	0.301	-	
				100%RB	25	0	5.153	4.519	
		20375	1752.5	1RB	1	24	0.297	-	
				100%RB	25	0	5.069	4.519	

Max values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE4	10MHz	QPSK	20000	1715	1RB	1	0	0.342	-
					100%RB	50	0	10.248	9.05
			20175	1732.5	1RB	1	25	0.314	-
					100%RB	50	0	10.131	8.991
			20350	1750	1RB	1	49	0.340	-
					100%RB	50	0	10.243	9.05
		16QAM	20000	1715	1RB	1	0	0.304	-
					100%RB	50	0	10.386	9.02
			20175	1732.5	1RB	1	25	0.285	-
					100%RB	50	0	10.267	8.991
			20350	1750	1RB	1	49	0.299	-
					100%RB	50	0	10.09	9.05
	15MHz	QPSK	20025	1717.5	1RB	1	0	0.353	-
					100%RB	75	0	15.599	13.506
			20175	1732.5	1RB	1	38	0.311	-
					100%RB	75	0	15.348	13.386
			20325	1747.5	1RB	1	74	0.383	-
					100%RB	75	0	15.498	13.426
		16QAM	20025	1717.5	1RB	1	0	0.39	-
					100%RB	75	0	15.444	13.386
			20175	1732.5	1RB	1	38	0.327	-
					100%RB	75	0	15.579	13.426
			20325	1747.5	1RB	1	74	0.433	-
					100%RB	75	0	15.227	13.466
	20MHz	QPSK	20050	1720	1RB	1	0	0.333	-
					100%RB	100	0	19.596	17.882
			20175	1732.5	1RB	1	50	0.328	-
					100%RB	100	0	20.198	17.932
			20300	1745	1RB	1	99	0.354	-
					100%RB	100	0	20.525	17.982
16QAM		20050	1720	1RB	1	0	0.326	-	
				100%RB	100	0	20.390	17.932	
		20175	1732.5	1RB	1	50	0.315	-	
				100%RB	100	0	20.431	17.882	
		20300	1745	1RB	1	99	0.373	-	
				100%RB	100	0	20.600	17.932	

Max values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE5	1.4MHz	QPSK	20407	824.7	1RB	1	0	0.447	-
					100%RB	6	0	1.318	1.099
			20525	836.5	1RB	1	3	0.486	-
					100%RB	6	0	1.329	1.099
			20643	848.3	1RB	1	5	0.436	-
					100%RB	6	0	1.332	<b>1.105</b>
		16QAM	20407	824.7	1RB	1	0	0.421	-
					100%RB	6	0	1.343	<b>1.105</b>
			20525	836.5	1RB	1	3	0.483	-
					100%RB	6	0	1.319	1.099
			20643	848.3	1RB	1	5	0.421	-
					100%RB	6	0	1.319	1.099
	3MHz	QPSK	20415	825.5	1RB	1	0	0.244	-
					100%RB	15	0	3.052	2.725
			20525	836.5	1RB	1	8	0.257	-
					100%RB	15	0	3.084	2.733
			20635	847.5	1RB	1	14	0.259	-
					100%RB	15	0	3.085	<b>2.741</b>
		16QAM	20415	825.5	1RB	1	0	0.257	-
					100%RB	15	0	3.028	2.717
			20525	836.5	1RB	1	8	0.258	-
					100%RB	15	0	3.067	2.733
			20635	847.5	1RB	1	14	0.257	-
					100%RB	15	0	3.088	<b>2.749</b>
	5MHz	QPSK	20425	826.5	1RB	1	0	0.245	-
					100%RB	25	0	5.147	4.507
			20525	836.5	1RB	1	13	0.273	-
100%RB					25	0	5.022	4.495	
20625			846.5	1RB	1	24	0.284	-	
				100%RB	25	0	5.149	<b>4.519</b>	
16QAM		20425	826.5	1RB	1	0	0.274	-	
				100%RB	25	0	5.053	4.519	
		20525	836.5	1RB	1	13	0.299	-	
				100%RB	25	0	5.146	<b>4.531</b>	
		20625	846.5	1RB	1	24	0.273	-	
				100%RB	25	0	5.077	4.507	

Max values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE5	10MHz	QPSK	20450	829	1RB	1	0	0.313	-
					100%RB	50	0	10.006	9.02
			20525	836.5	1RB	1	25	0.303	-
					100%RB	50	0	10.391	<b>9.02</b>
			20600	844	1RB	1	49	0.300	-
					100%RB	50	0	10.105	8.961
		16QAM	20450	829	1RB	1	0	0.314	-
					100%RB	50	0	10.249	8.991
			20525	836.5	1RB	1	25	0.284	-
					100%RB	50	0	10.180	9.02
			20600	844	1RB	1	49	0.312	-
					100%RB	50	0	10.113	8.991

**Max values**

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE7	5MHz	QPSK	20775	2502.5	1RB	1	0	0.390	-
					100%RB	25	0	5.082	4.531
			21100	2535	1RB	1	13	0.326	-
					100%RB	25	0	5.132	4.519
			21425	2567.5	1RB	1	24	0.368	-
					100%RB	25	0	5.013	4.495
		16QAM	20775	2502.5	1RB	1	0	0.343	-
					100%RB	25	0	5.056	4.519
			21100	2535	1RB	1	13	0.356	-
					100%RB	25	0	5.130	4.531
			21425	2567.5	1RB	1	24	0.342	-
					100%RB	25	0	5.162	4.519
	10MHz	QPSK	20800	2505	1RB	1	0	0.328	-
					100%RB	50	0	10.436	9.05
			21100	2535	1RB	1	25	0.329	-
					100%RB	50	0	10.243	9.02
			21400	2565	1RB	1	49	0.329	-
					100%RB	50	0	10.476	9.05
		16QAM	20800	2505	1RB	1	0	0.332	-
					100%RB	50	0	10.352	9.02
			21100	2535	1RB	1	25	0.314	-
					100%RB	50	0	10.370	9.05
			21400	2565	1RB	1	49	0.314	-
					100%RB	50	0	10.257	9.05
	15MHz	QPSK	20825	2507.5	1RB	1	0	0.423	-
					100%RB	75	0	15.227	13.546
			21100	2535	1RB	1	38	0.316	-
					100%RB	75	0	15.272	13.426
			21375	2562.5	1RB	1	74	0.432	-
					100%RB	75	0	15.048	13.426
16QAM		20825	2507.5	1RB	1	0	0.480	-	
				100%RB	75	0	15.179	13.466	
		21100	2535	1RB	1	38	0.331	-	
				100%RB	75	0	15.304	13.466	
		21375	2562.5	1RB	1	74	0.397	-	
				100%RB	75	0	15.045	13.466	

Max values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE7	20MHz	QPSK	20850	2510	1RB	1	0	0.328	-
					100%RB	100	0	19.951	17.982
			21100	2535	1RB	1	50	0.340	-
					100%RB	100	0	19.664	17.932
			21350	2560	1RB	1	99	0.327	-
					100%RB	100	0	19.900	<b>18.031</b>
		16QAM	20850	2510	1RB	1	0	0.328	-
					100%RB	100	0	20.127	<b>18.031</b>
			21100	2535	1RB	1	50	0.330	-
					100%RB	100	0	19.810	17.932
			21350	2560	1RB	1	99	0.363	-
					100%RB	100	0	19.833	17.932

**Max values**

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE12	1.4MHz	QPSK	23017	699.7	1RB	1	0	0.245	-
					100%RB	6	0	1.329	1.099
			23095	707.5	1RB	1	3	0.282	-
					100%RB	6	0	1.418	1.111
			23173	715.3	1RB	1	5	0.259	-
					100%RB	6	0	1.351	1.108
		16QAM	23017	699.7	1RB	1	0	0.258	-
					100%RB	6	0	1.335	1.108
			23095	707.5	1RB	1	3	0.259	-
					100%RB	6	0	1.358	1.108
			23173	715.3	1RB	1	5	0.272	-
					100%RB	6	0	1.33	1.105
	3MHz	QPSK	23025	700.5	1RB	1	0	0.245	-
					100%RB	15	0	3.080	2.733
			23095	707.5	1RB	1	8	0.259	-
					100%RB	15	0	3.168	2.749
			23165	714.5	1RB	1	14	0.247	-
					100%RB	15	0	3.059	2.733
		16QAM	23025	700.5	1RB	1	0	0.258	-
					100%RB	15	0	3.080	2.741
			23095	707.5	1RB	1	8	0.271	-
					100%RB	15	0	3.407	2.741
			23165	714.5	1RB	1	14	0.256	-
					100%RB	15	0	3.105	2.757
	5MHz	QPSK	23035	701.5	1RB	1	0	0.258	-
					100%RB	25	0	5.109	4.495
			23095	707.5	1RB	1	13	0.302	-
					100%RB	25	0	5.067	4.531
23155			713.5	1RB	1	24	0.286	-	
				100%RB	25	0	5.189	4.519	
16QAM		23035	701.5	1RB	1	0	0.274	-	
				100%RB	25	0	5.177	4.531	
		23095	707.5	1RB	1	13	0.354	-	
				100%RB	25	0	5.092	4.519	
		23155	713.5	1RB	1	24	0.273	-	
				100%RB	25	0	5.142	4.543	

Max values

Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE12	10MHz	QPSK	23060	704	1RB	1	0	0.341	-
					100%RB	50	0	10.249	<b>9.080</b>
			23095	707.5	1RB	1	25	0.328	-
					100%RB	50	0	10.289	9.020
			23130	711	1RB	1	49	0.299	-
					100%RB	50	0	10.233	9.020
		16QAM	23060	704	1RB	1	0	0.291	-
					100%RB	50	0	10.258	9.020
			23095	707.5	1RB	1	25	0.299	-
					100%RB	50	0	10.190	<b>9.050</b>
			23130	711	1RB	1	49	0.327	-
					100%RB	50	0	10.214	<b>9.050</b>

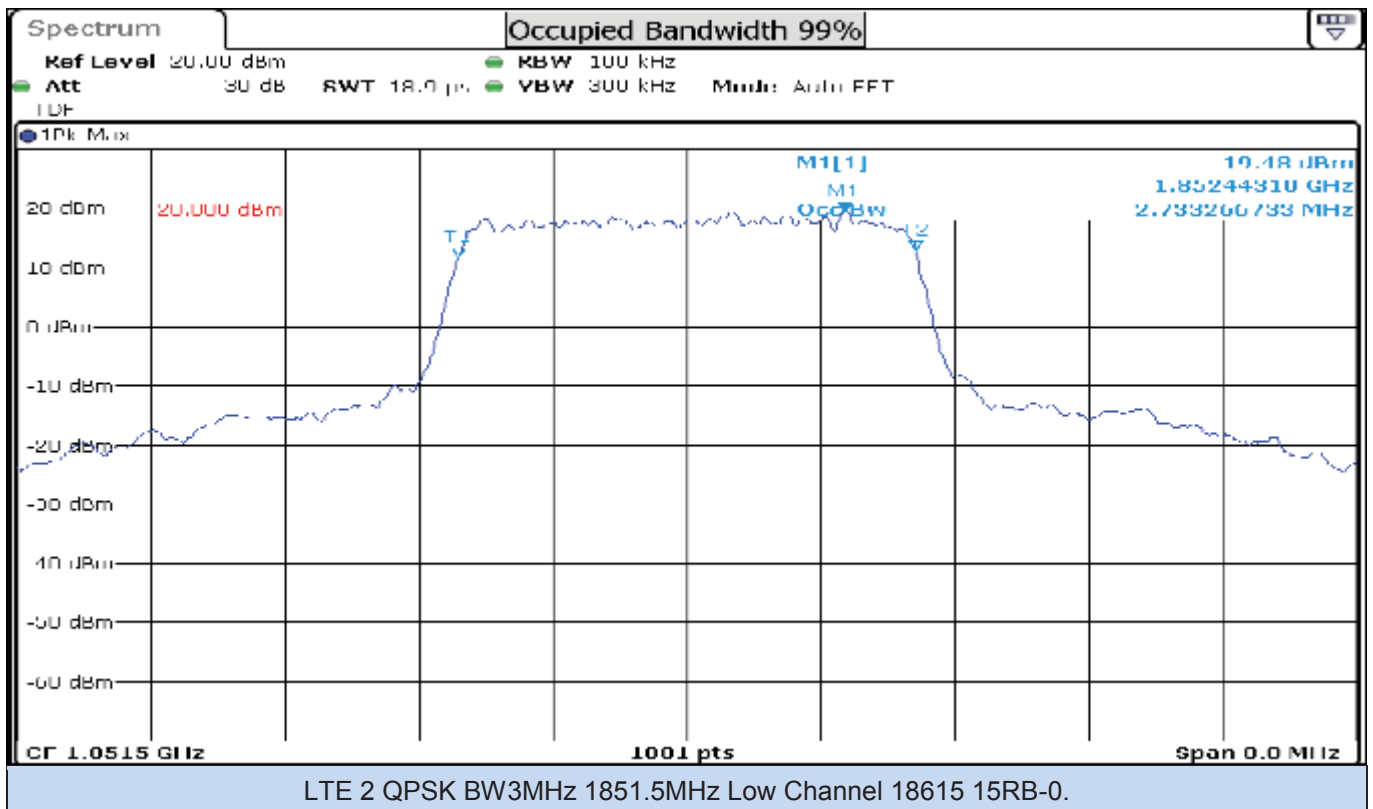
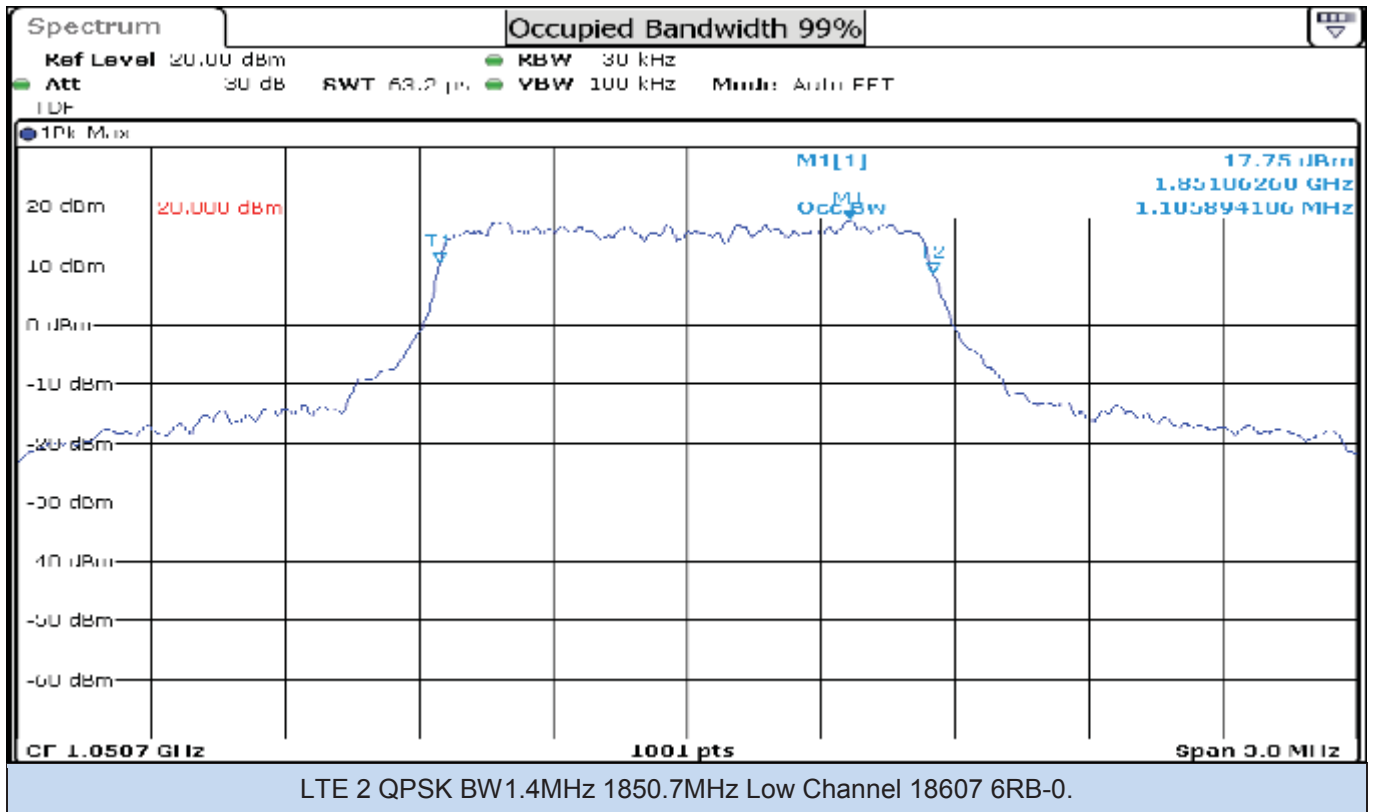
Max values

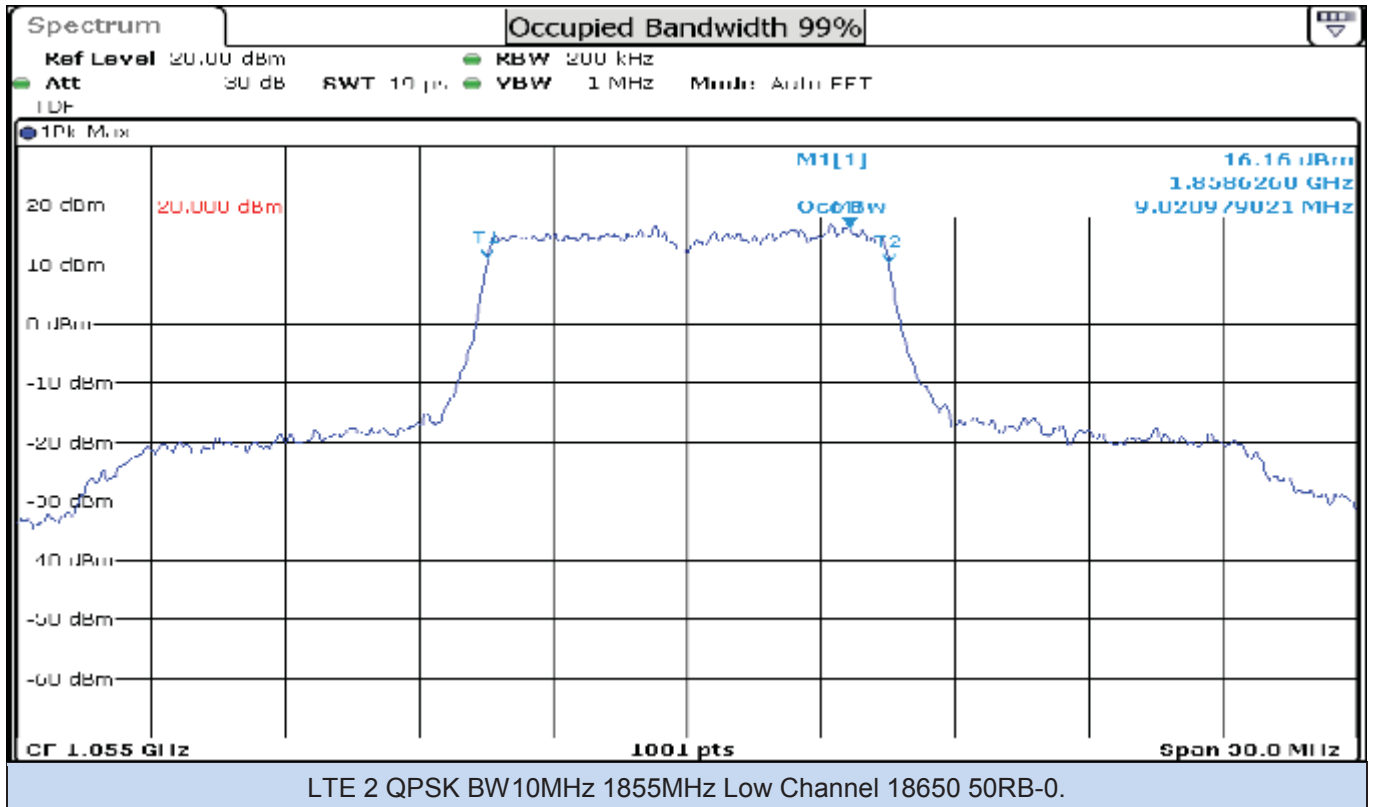
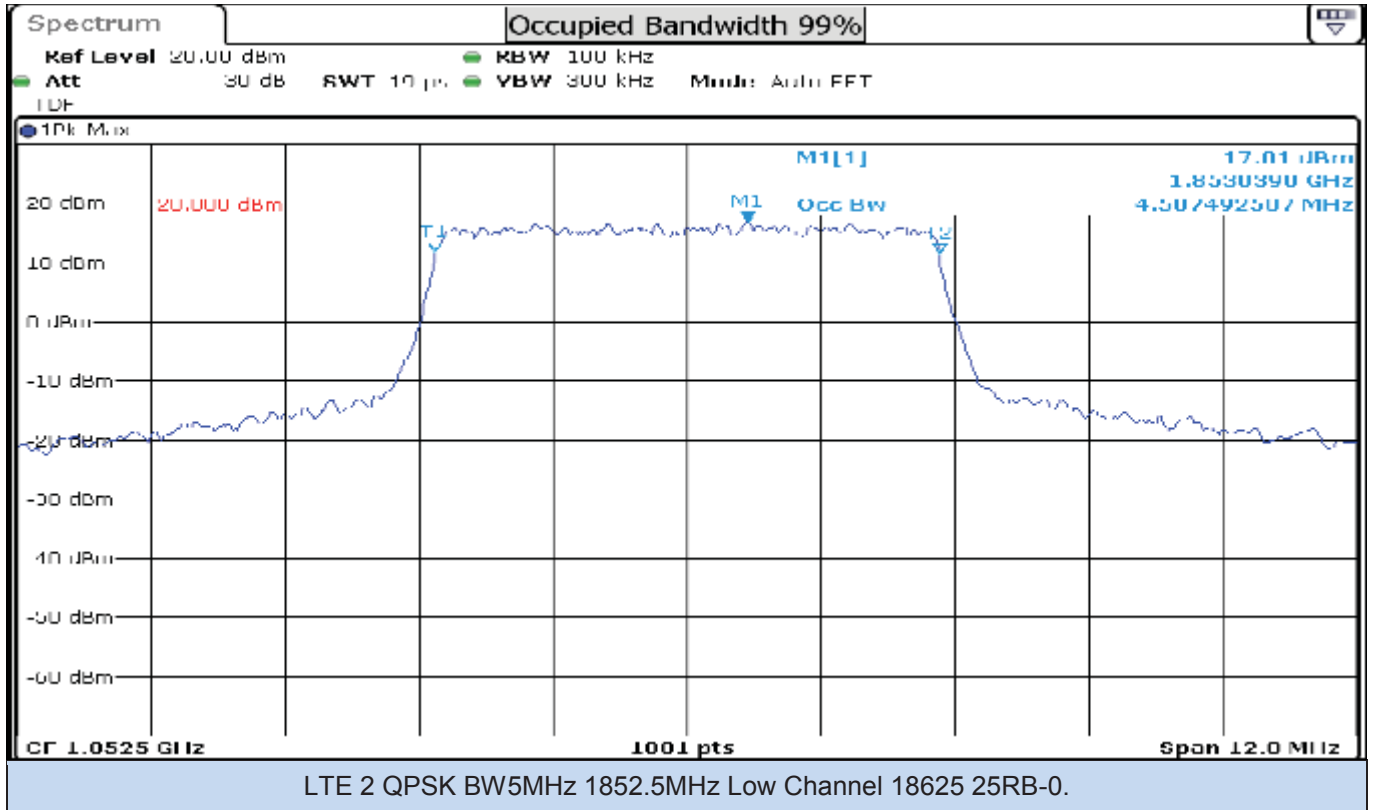
Band	BW [MHz]	Mod.	Channel Number	Freq [MHz]	RB allocation	#RB	RB Offset	EBW [MHz]	OBW [MHz]
LTE13	5MHz	QPSK	23205	779.5	1RB	1	0	0.232	-
					100%RB	25	0	5.165	4.490
			23230	782	1RB	1	13	0.301	-
					100%RB	25	0	5.004	4.470
			23255	784.5	1RB	1	24	0.284	-
					100%RB	25	0	5.180	<b>4.543</b>
		16QAM	23205	779.5	1RB	1	0	0.289	-
					100%RB	25	0	5.109	4.520
			23230	782	1RB	1	13	0.328	-
					100%RB	25	0	5.127	4.500
			23255	784.5	1RB	1	24	0.271	-
					100%RB	25	0	5.034	<b>4.531</b>
	10MHz	QPSK	23230	782	1RB	1	25	0.300	-
					100%RB	50	0	10.315	<b>8.960</b>
					16QAM	23025	700.5	1RB	1
		100%RB	50	0	10.140			<b>8.960</b>	

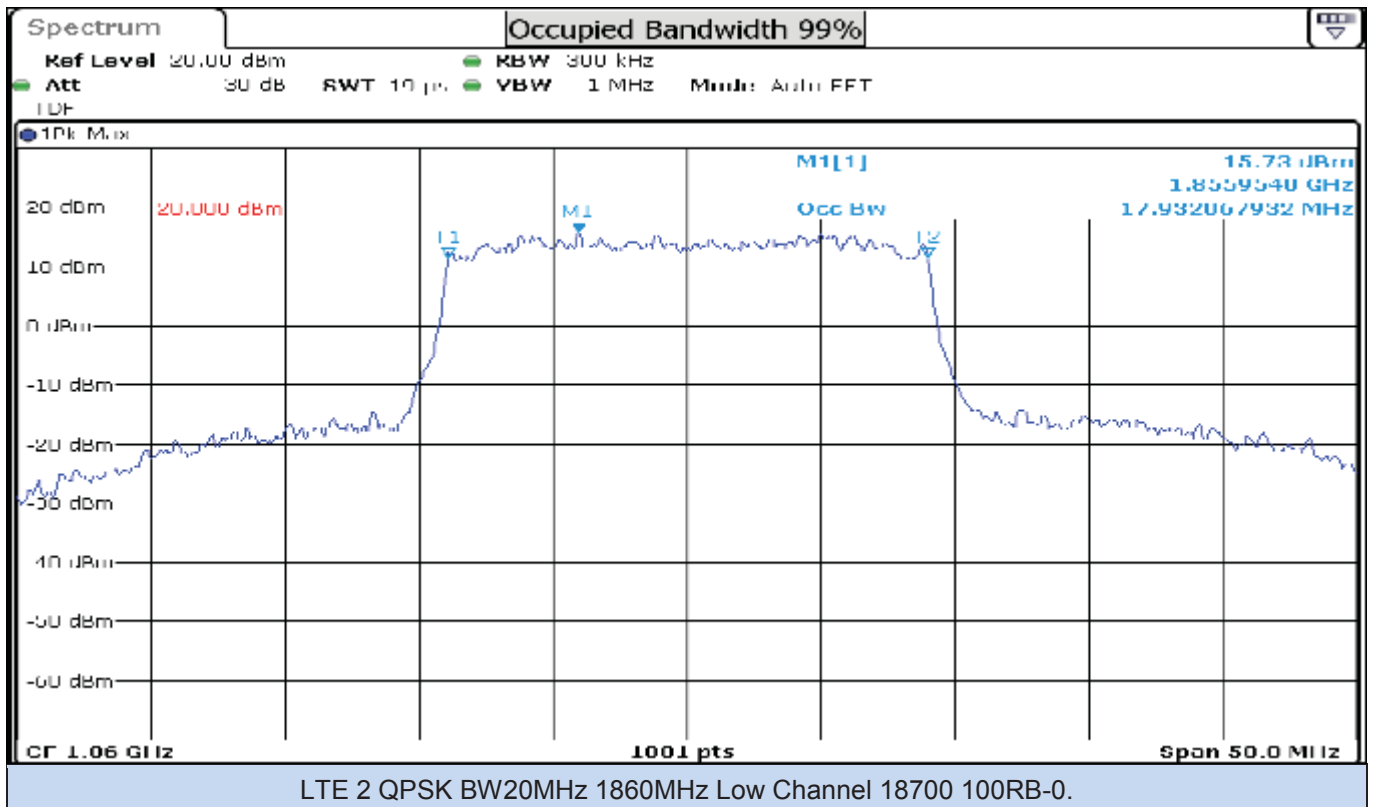
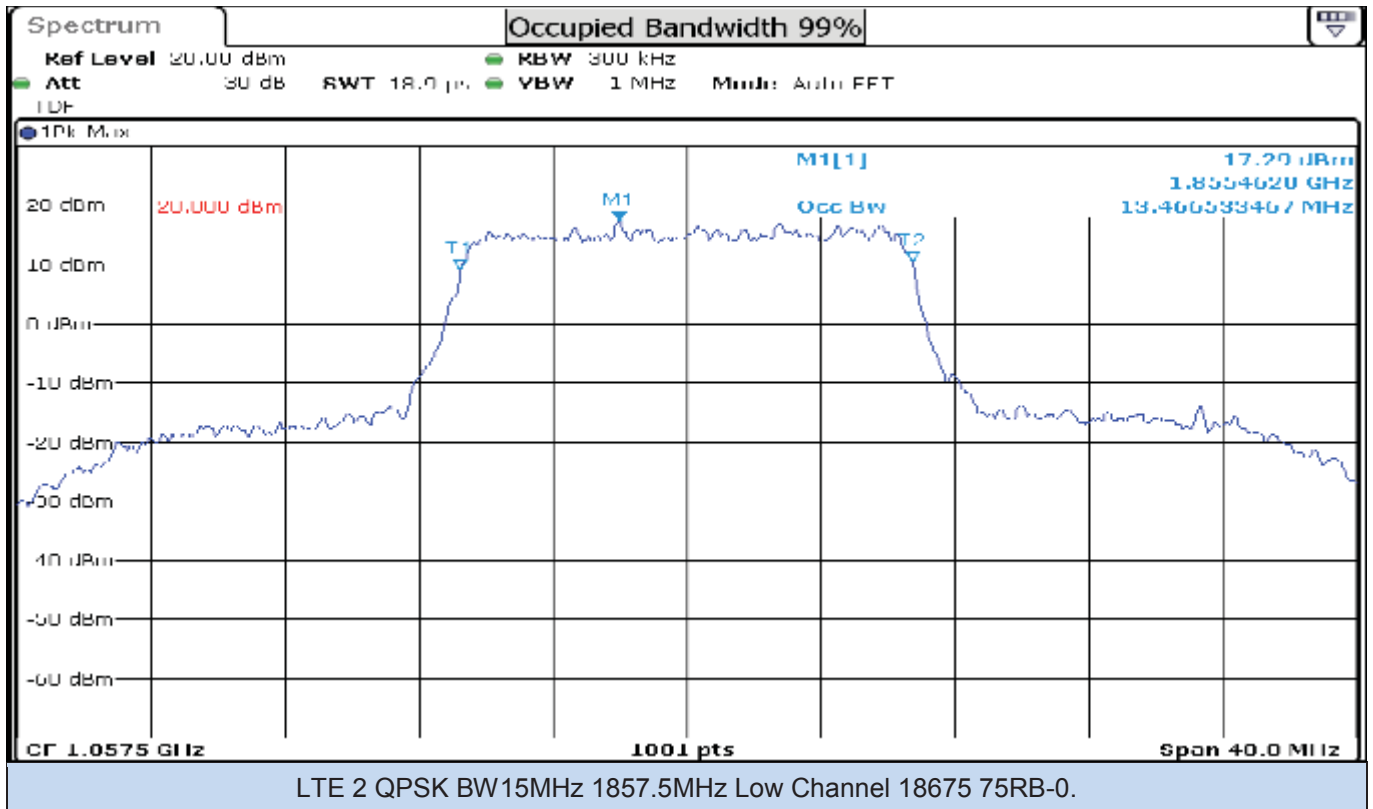
Max values

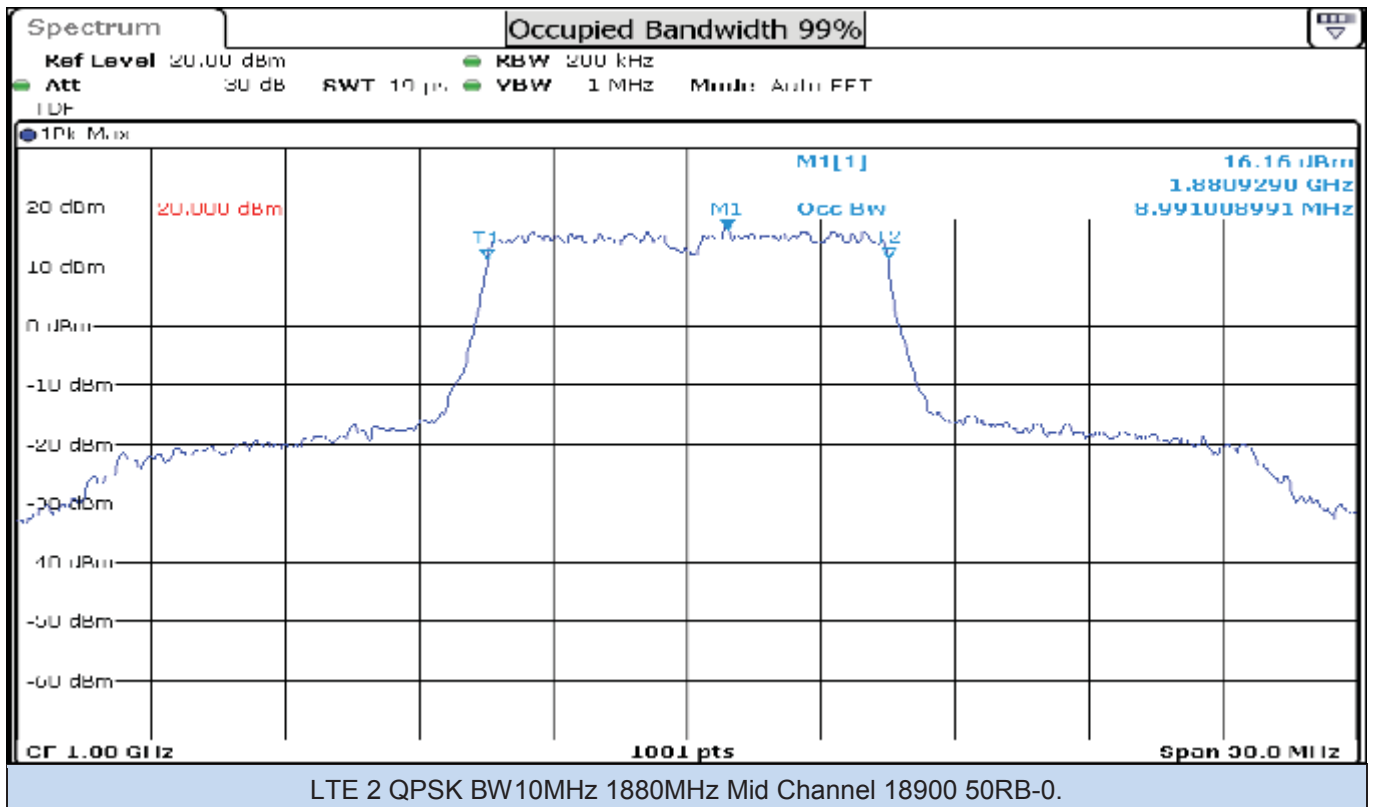
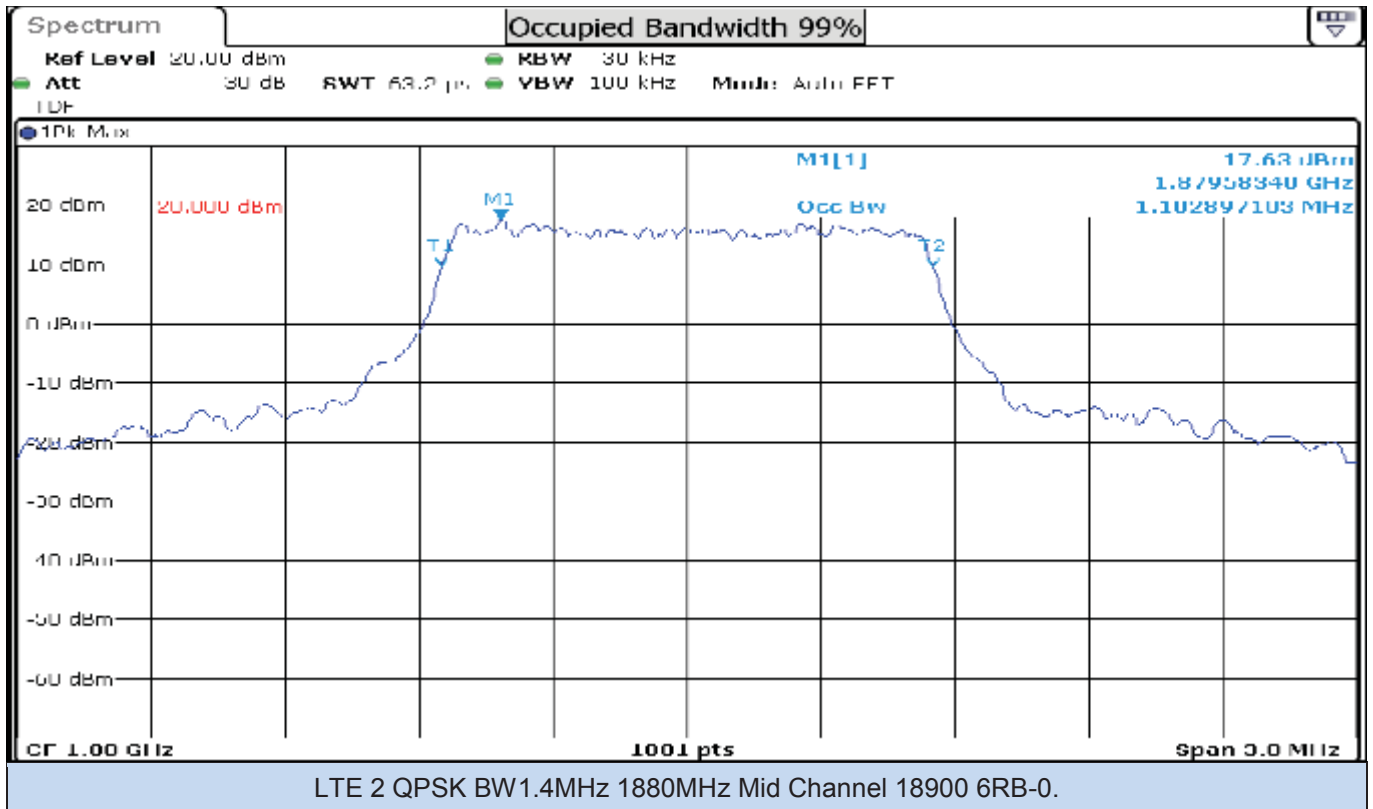


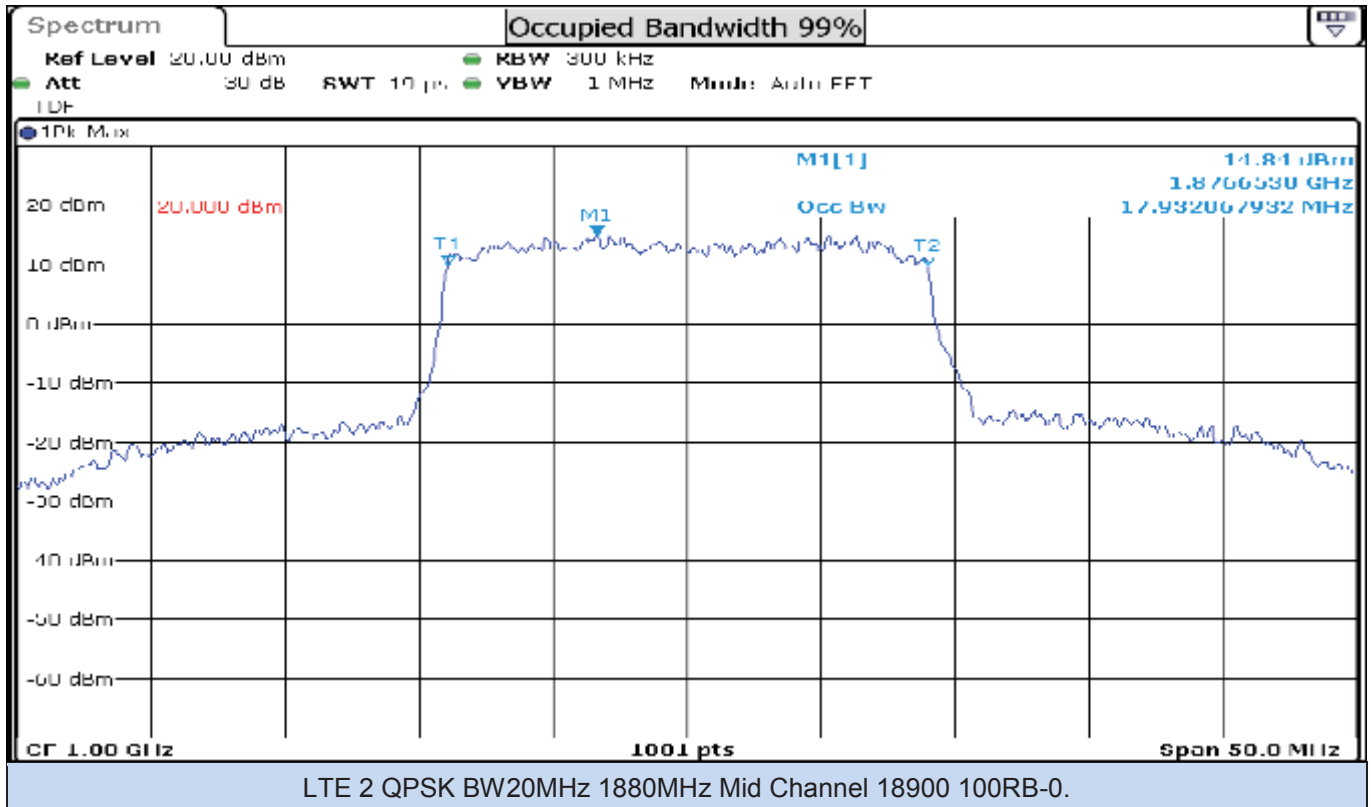
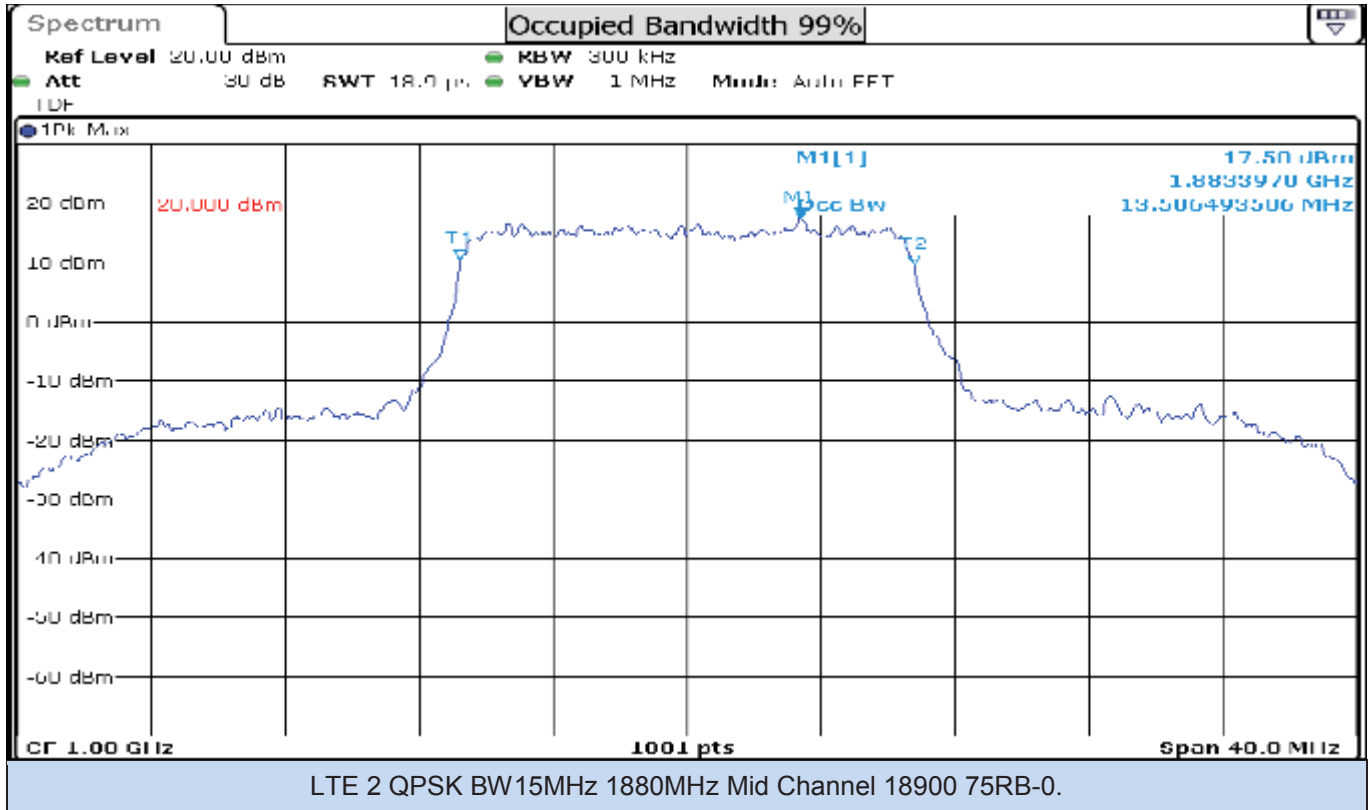
## B.2.4 Results screenshot

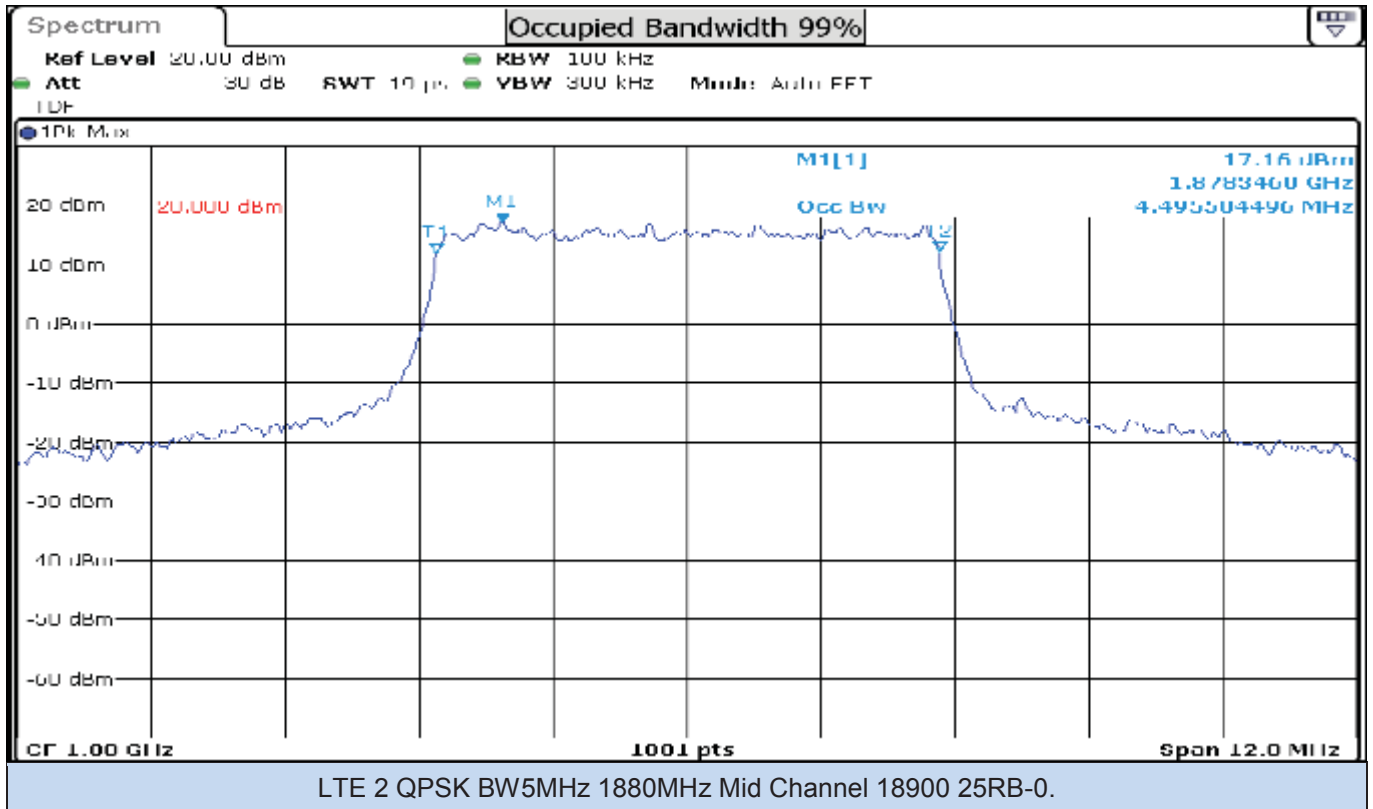
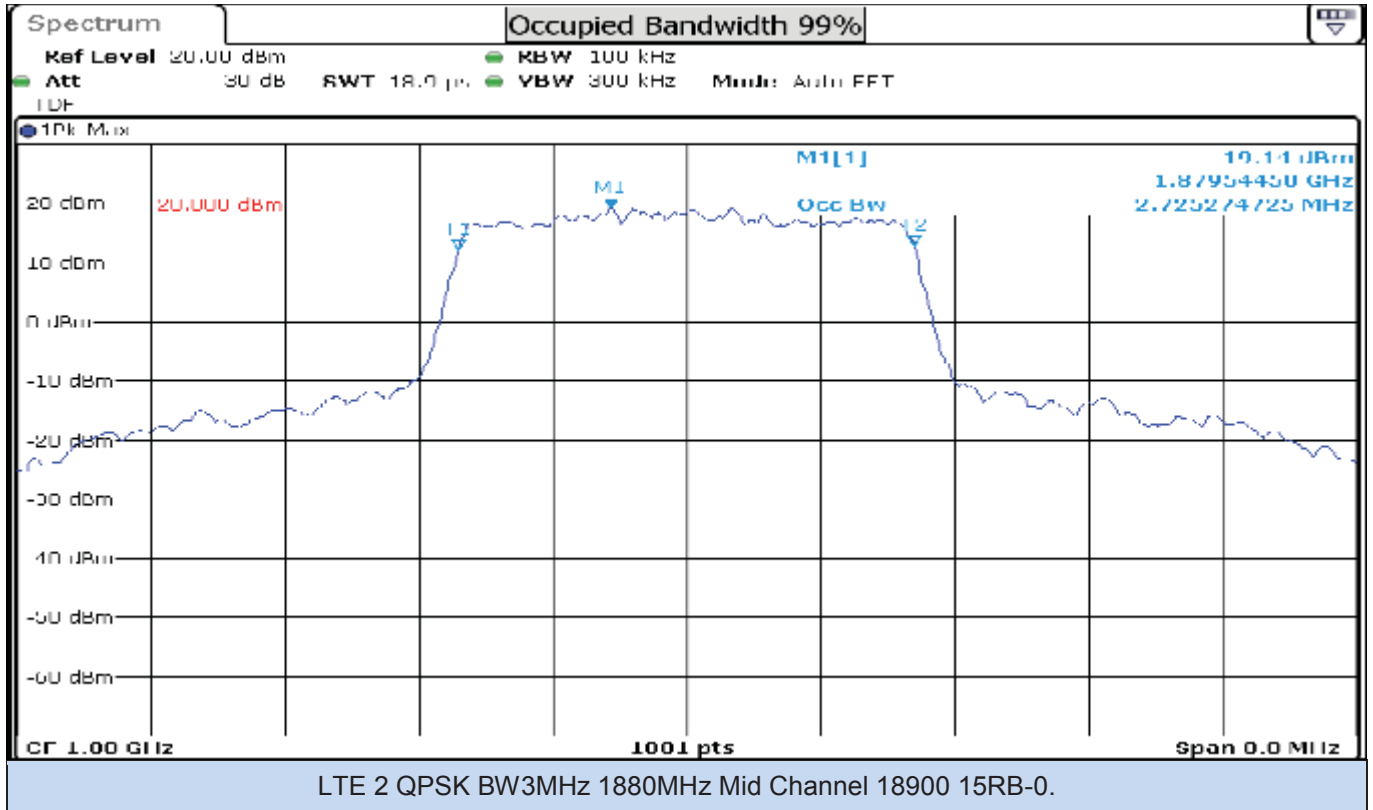


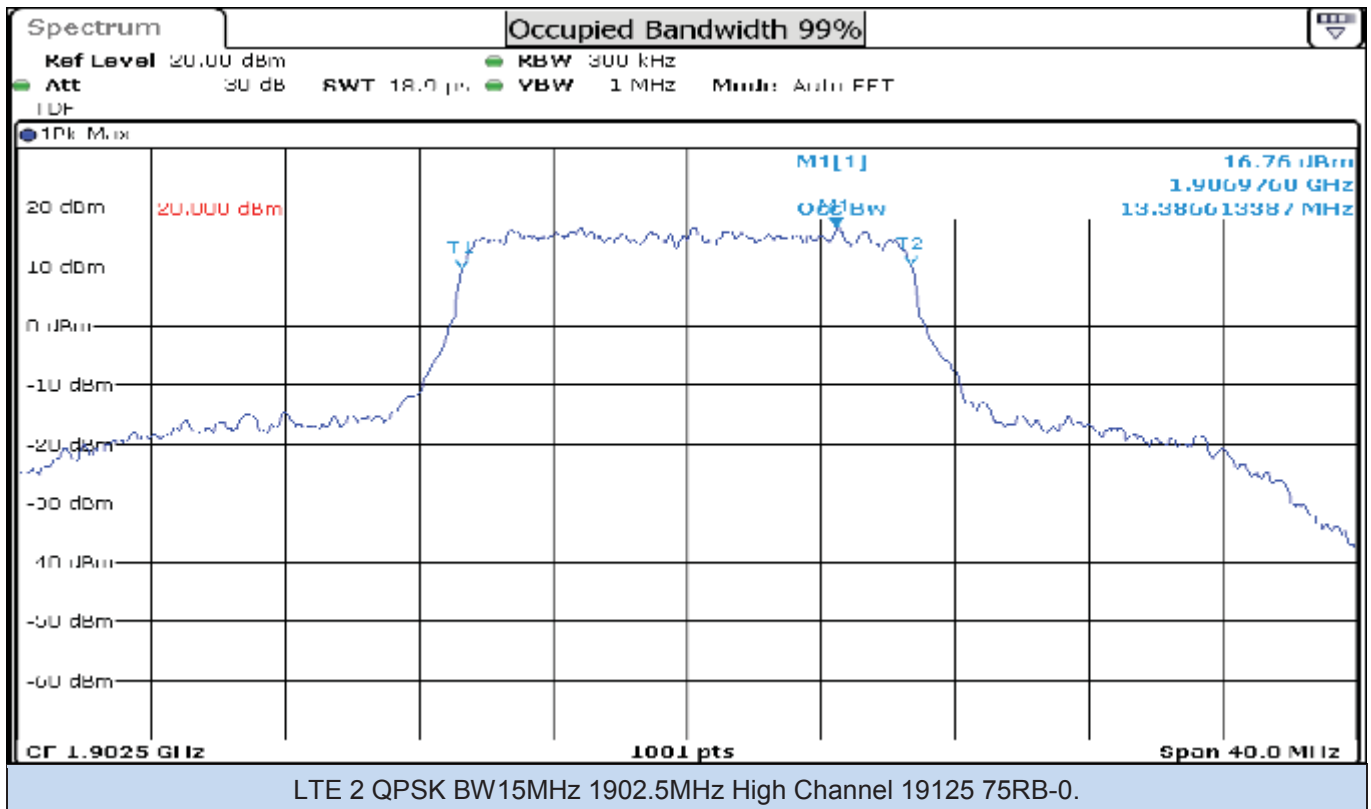
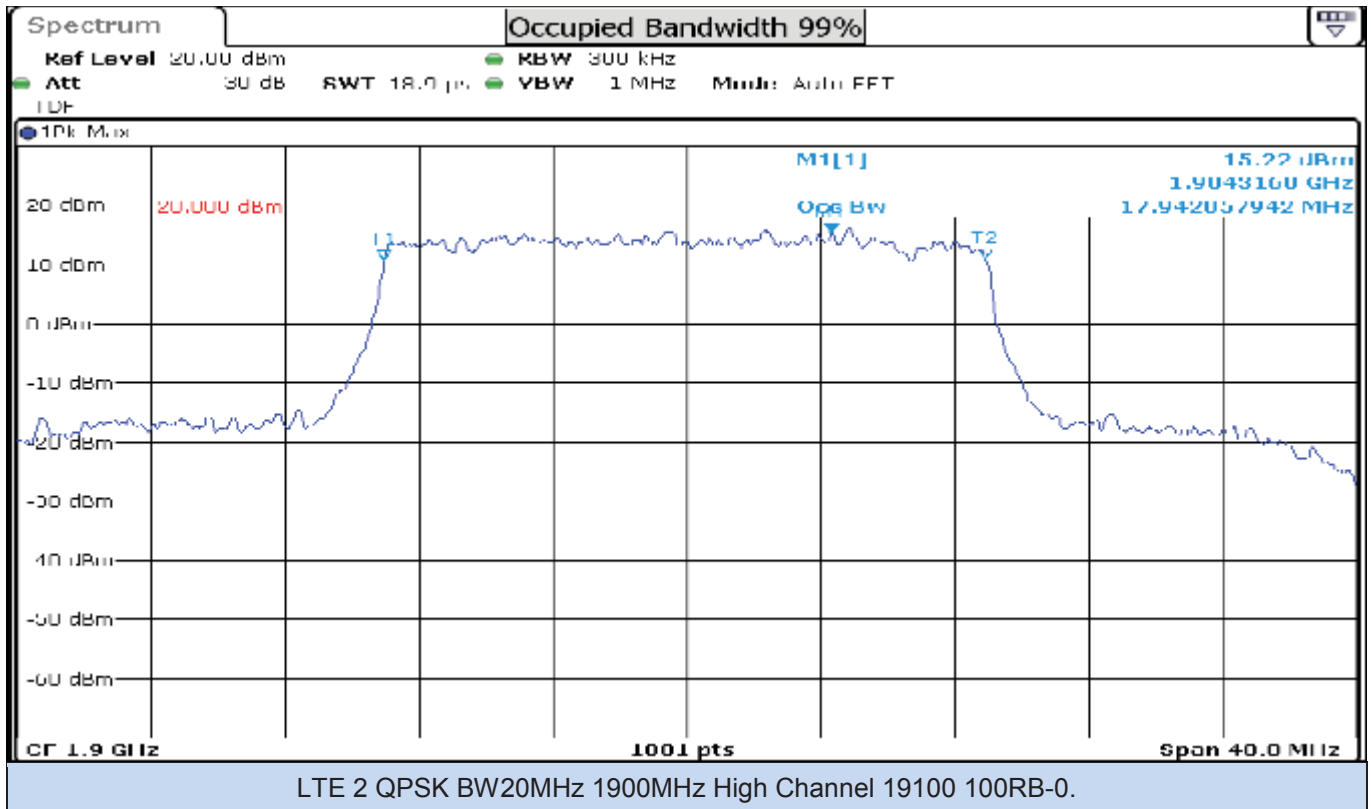


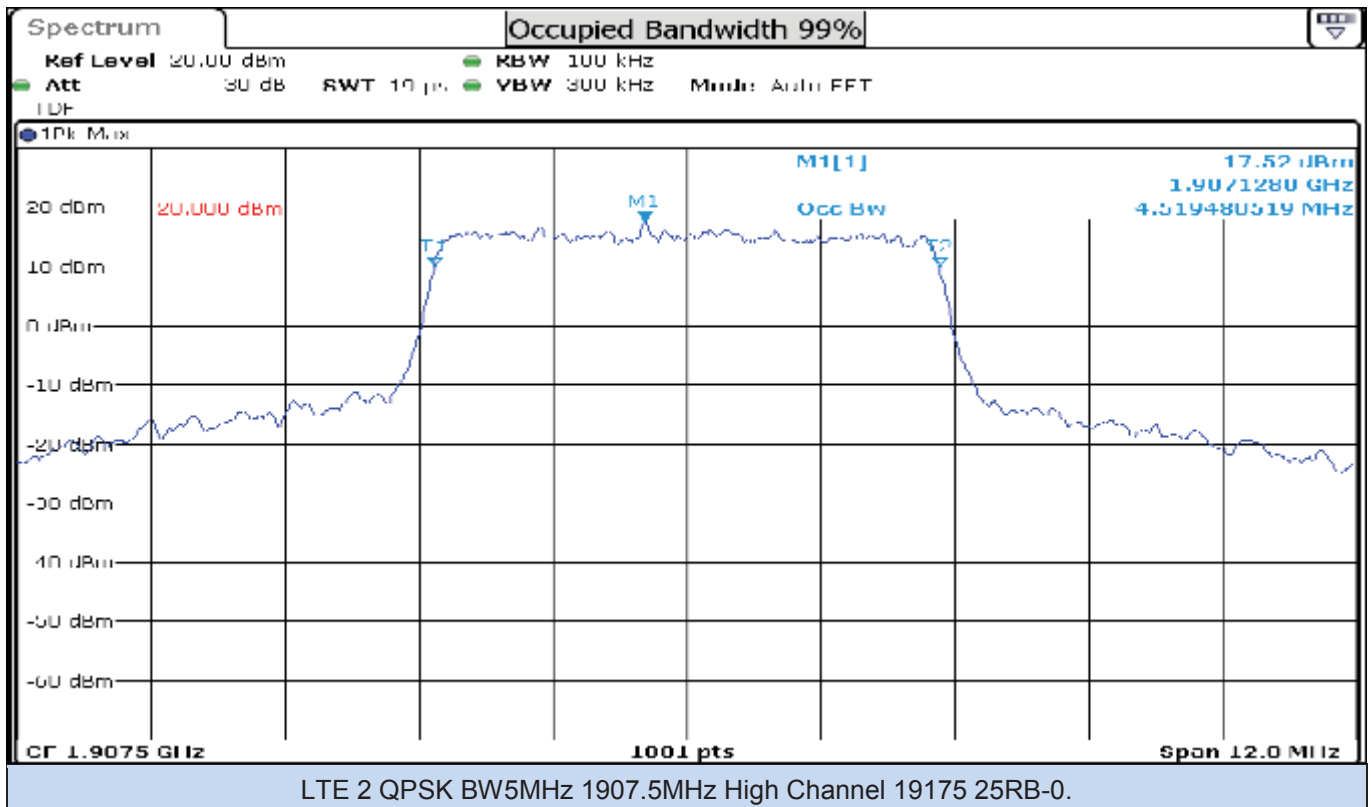
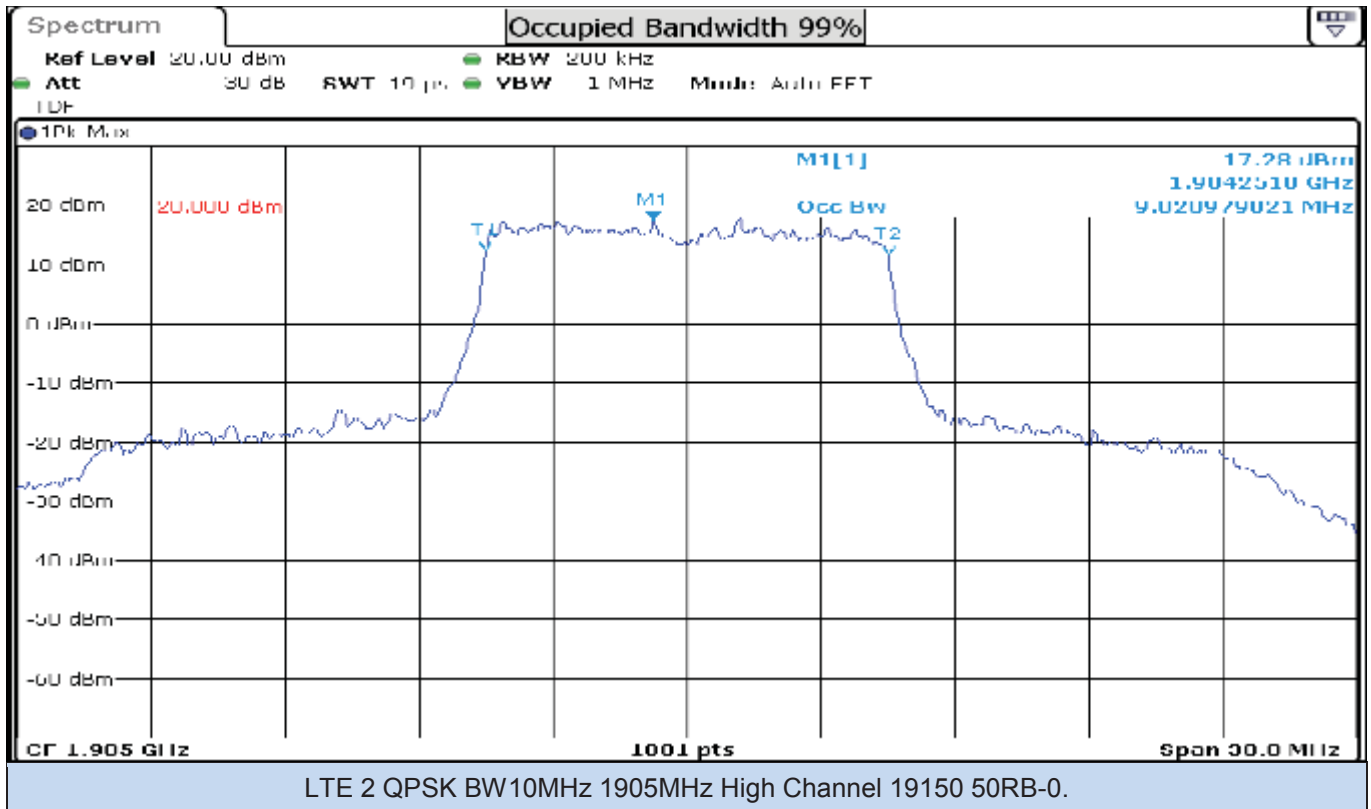




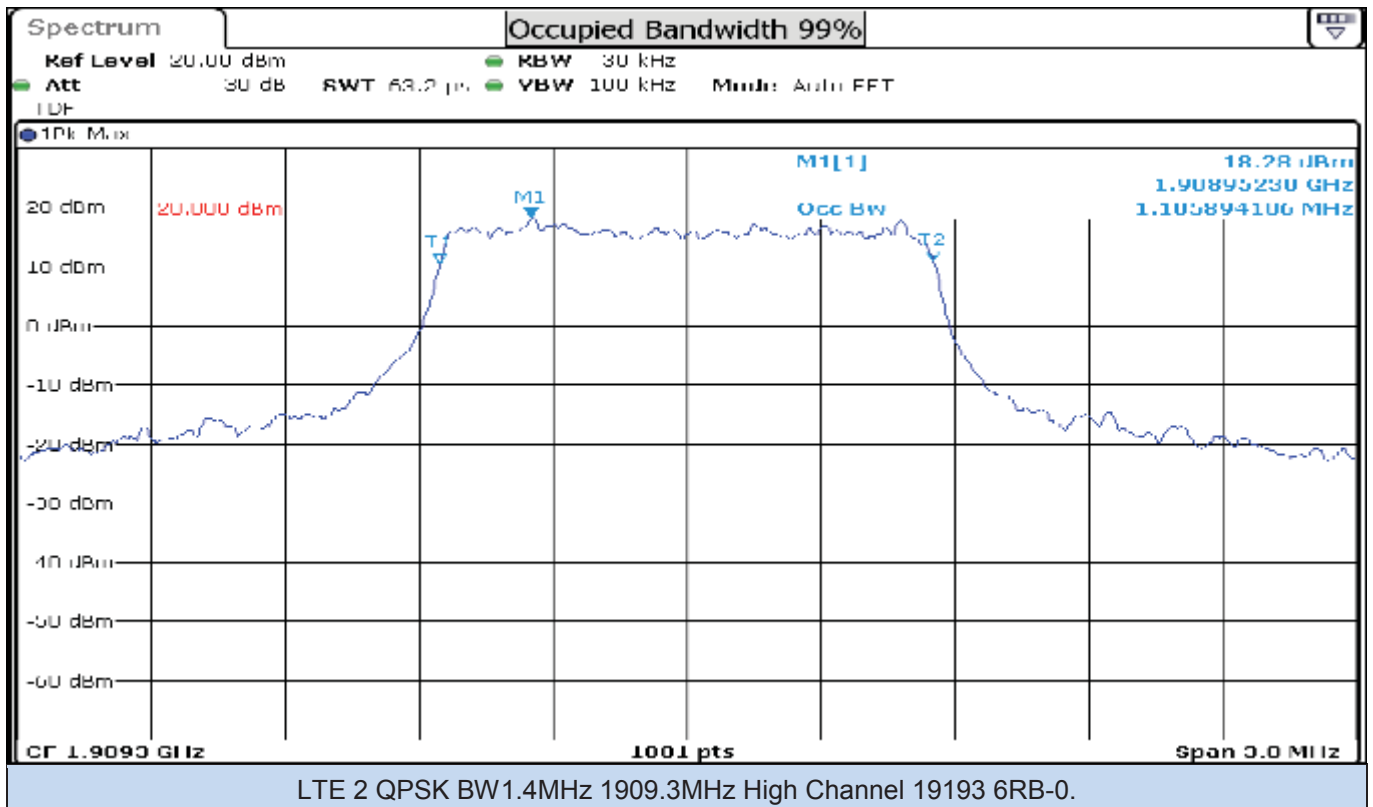
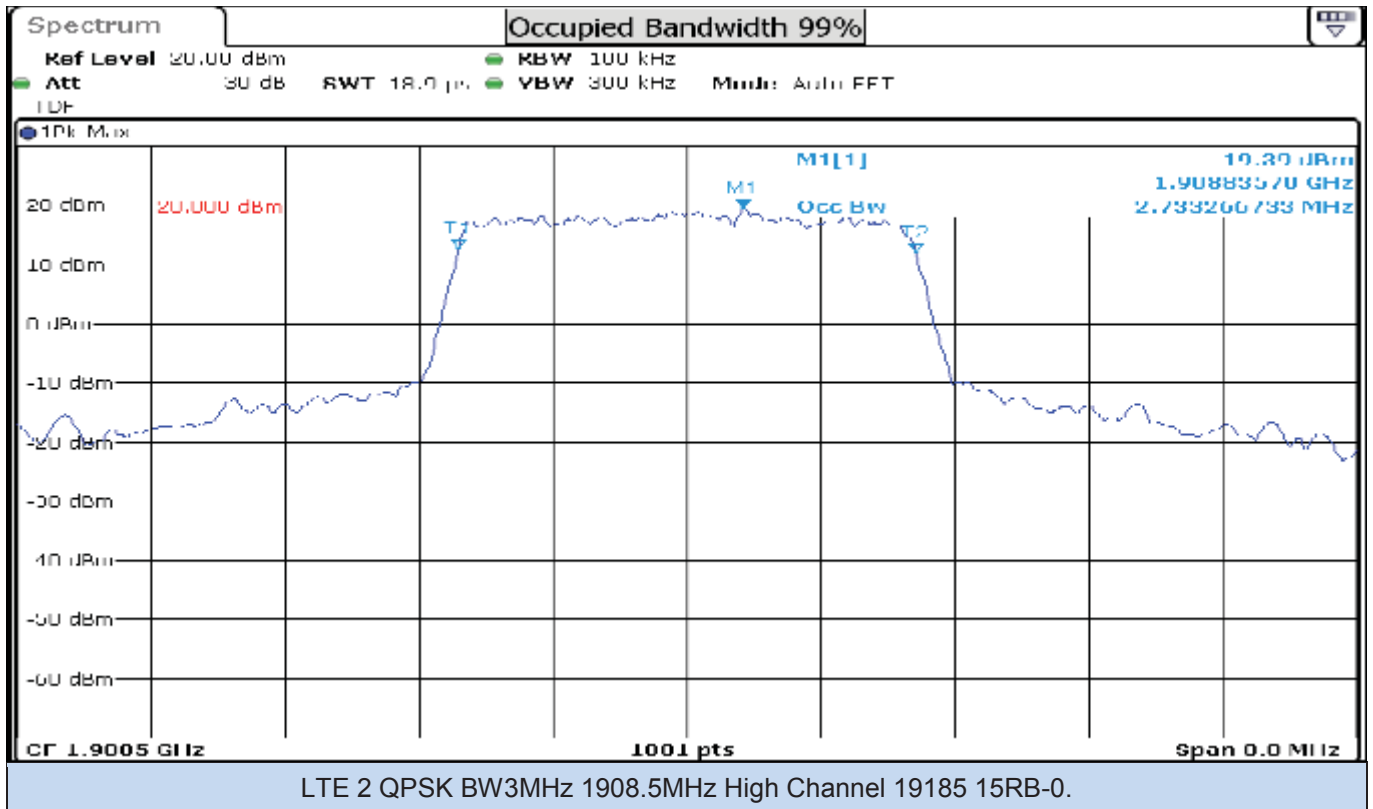


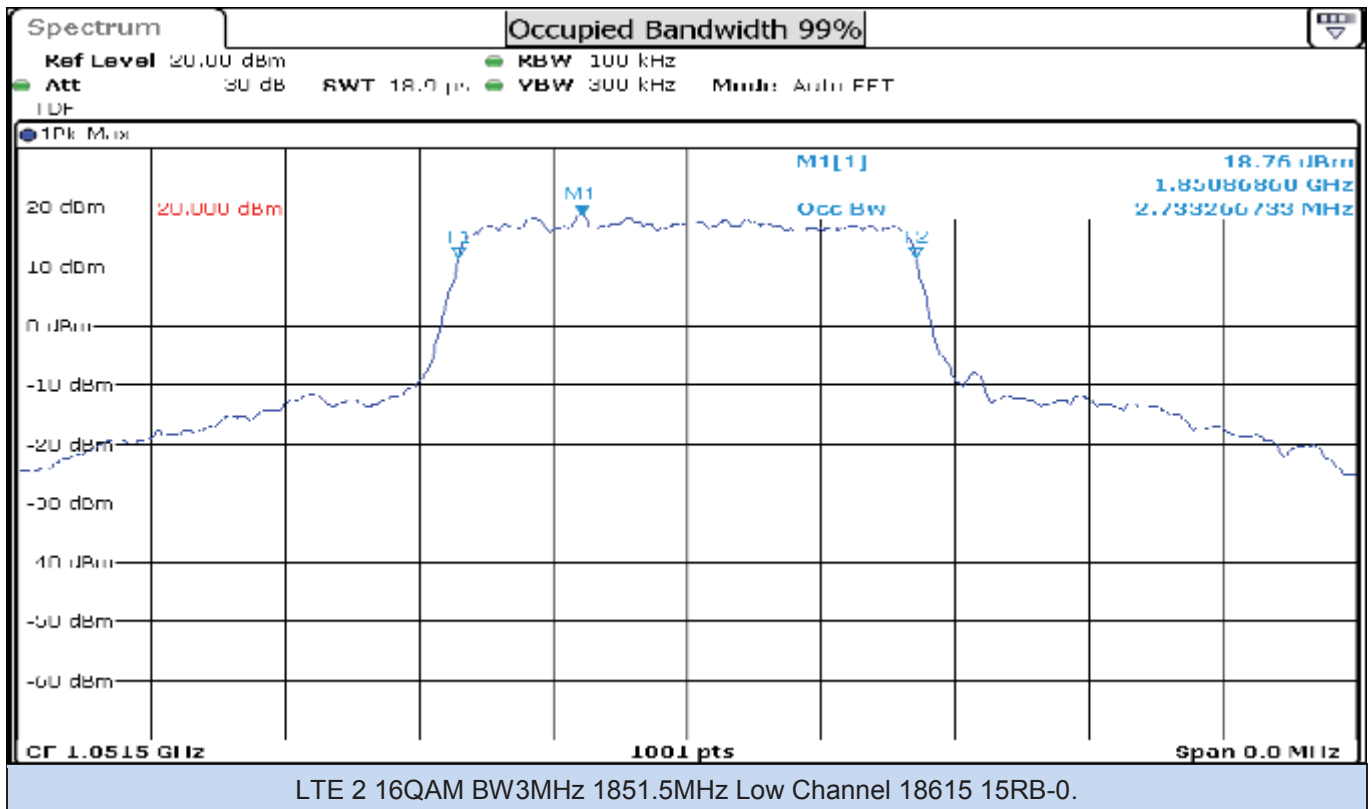
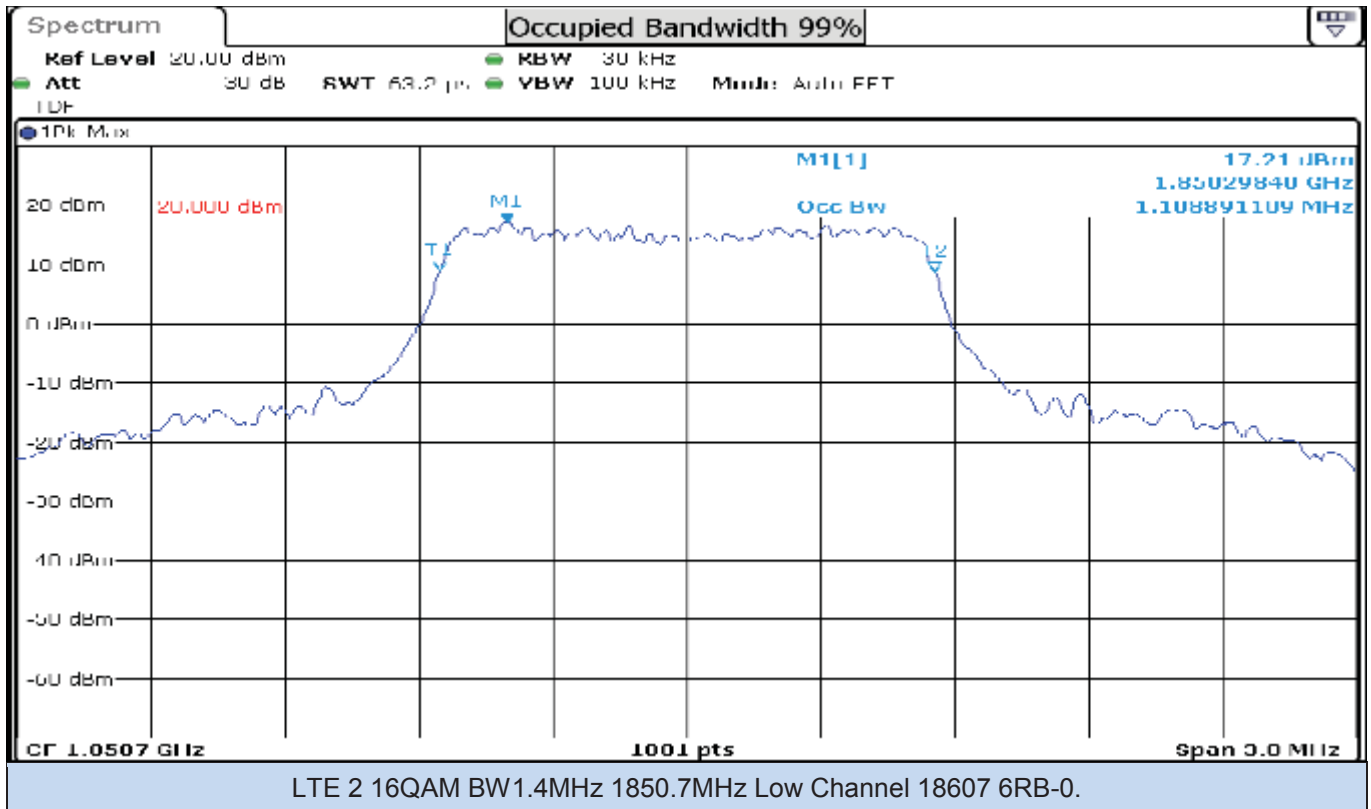


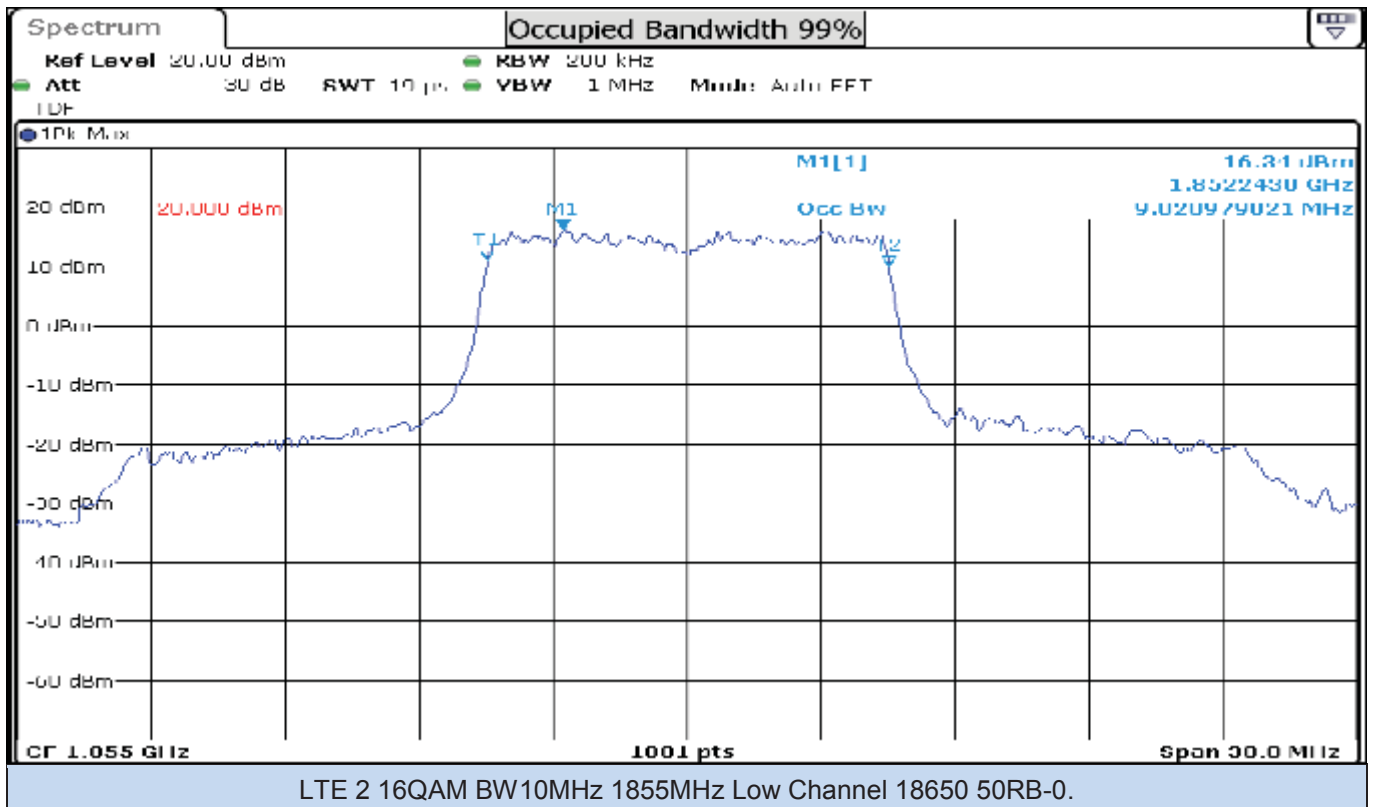
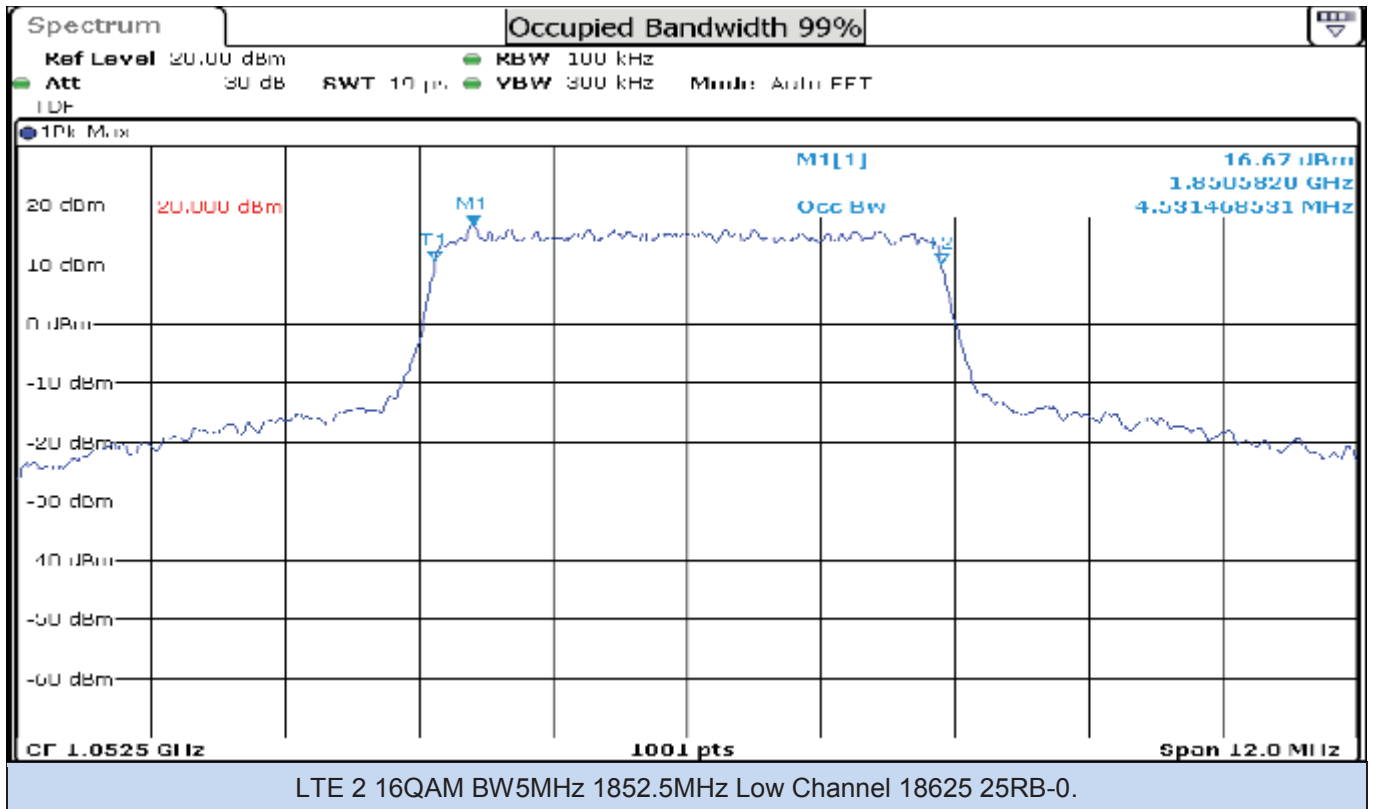


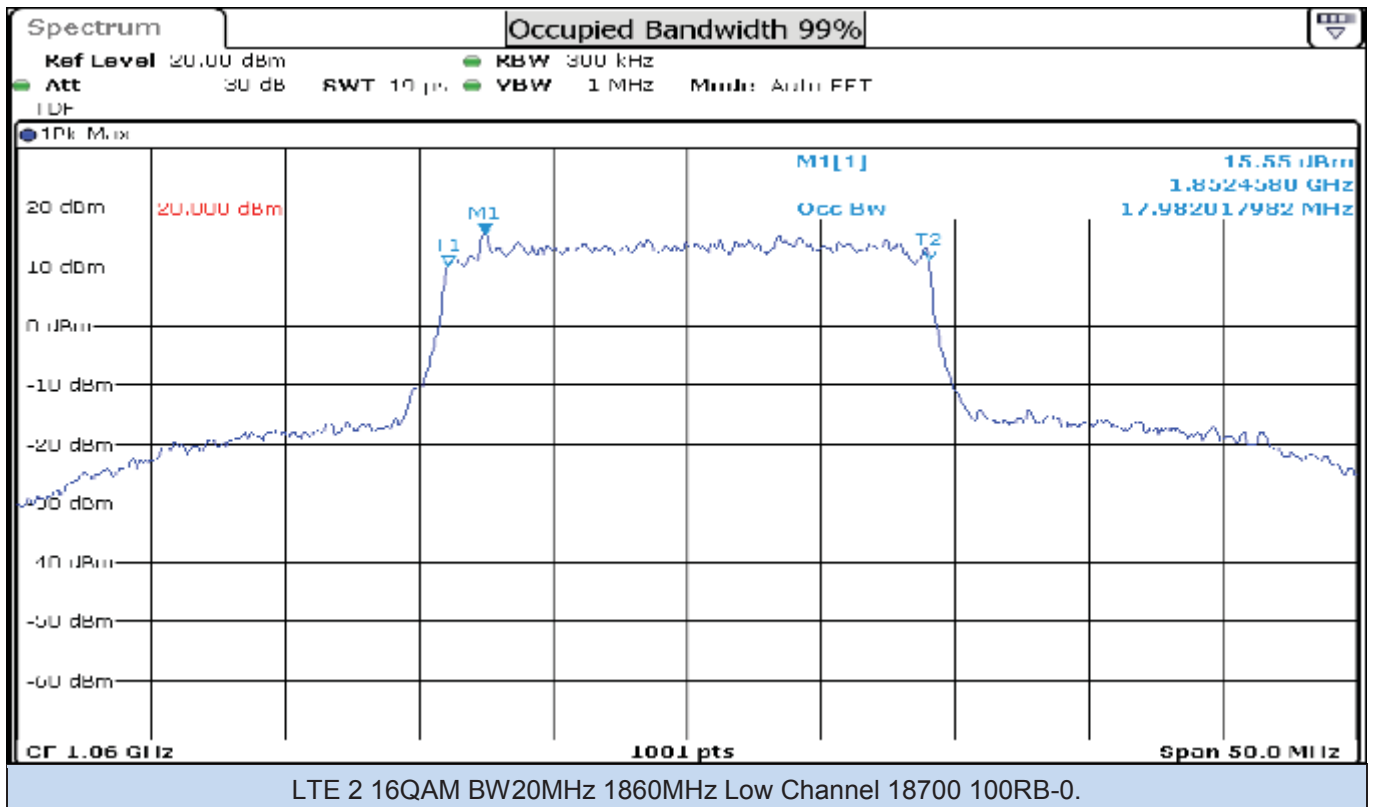
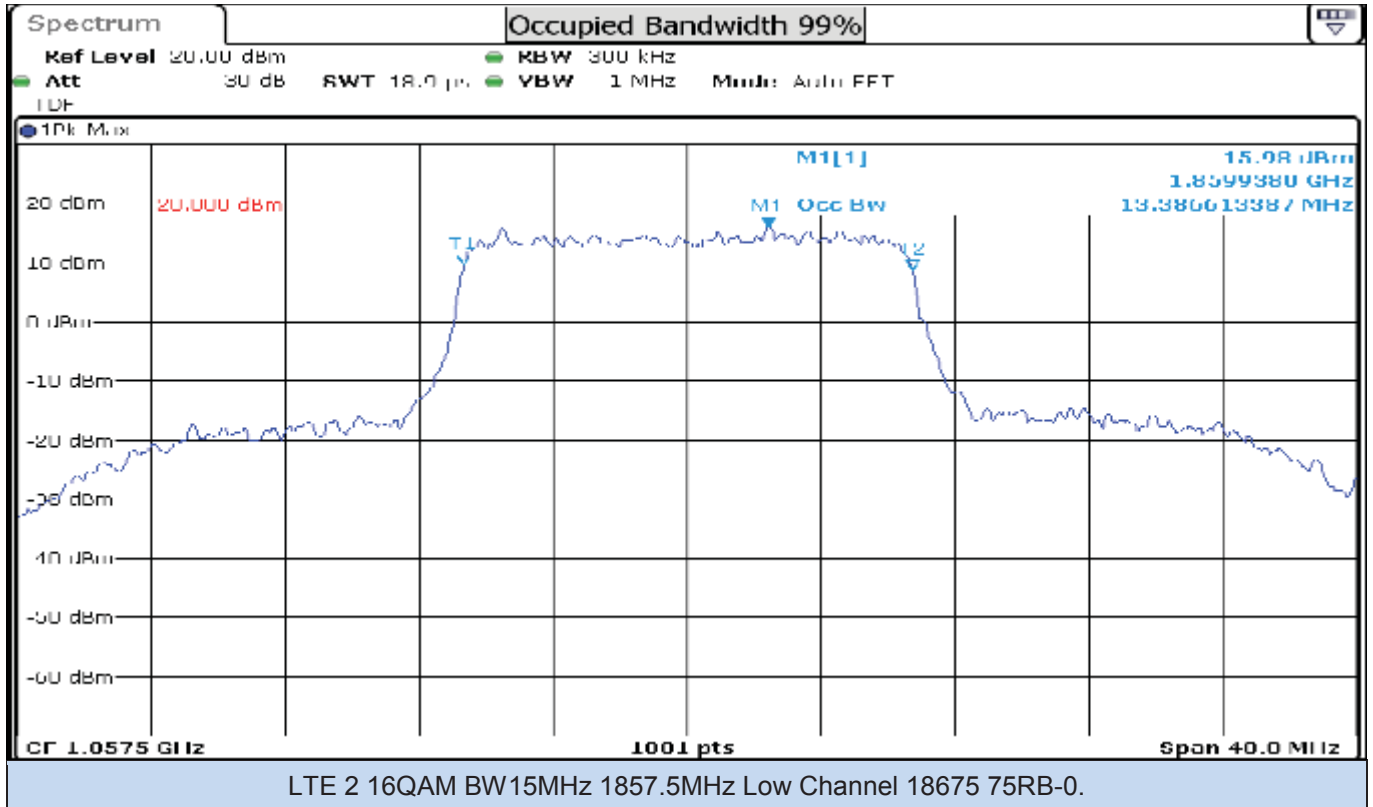


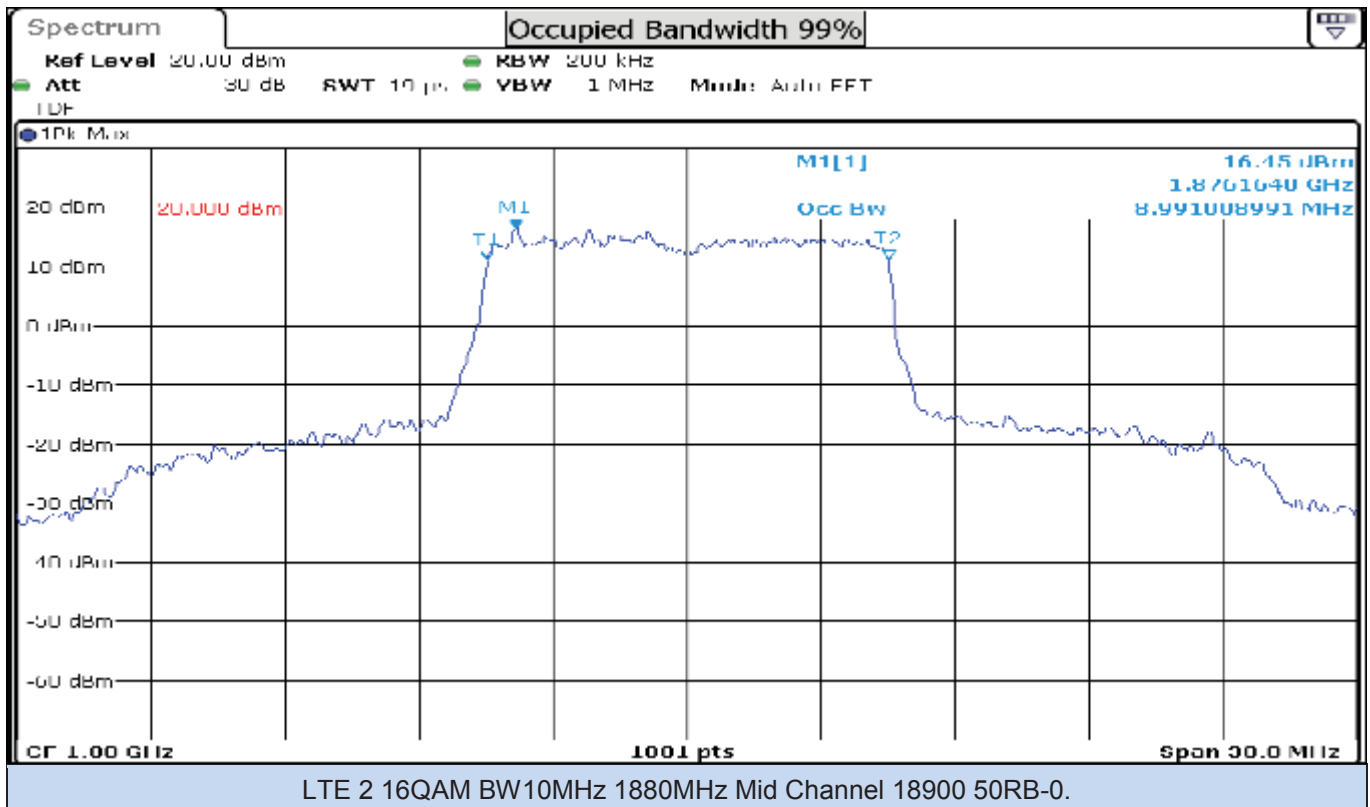
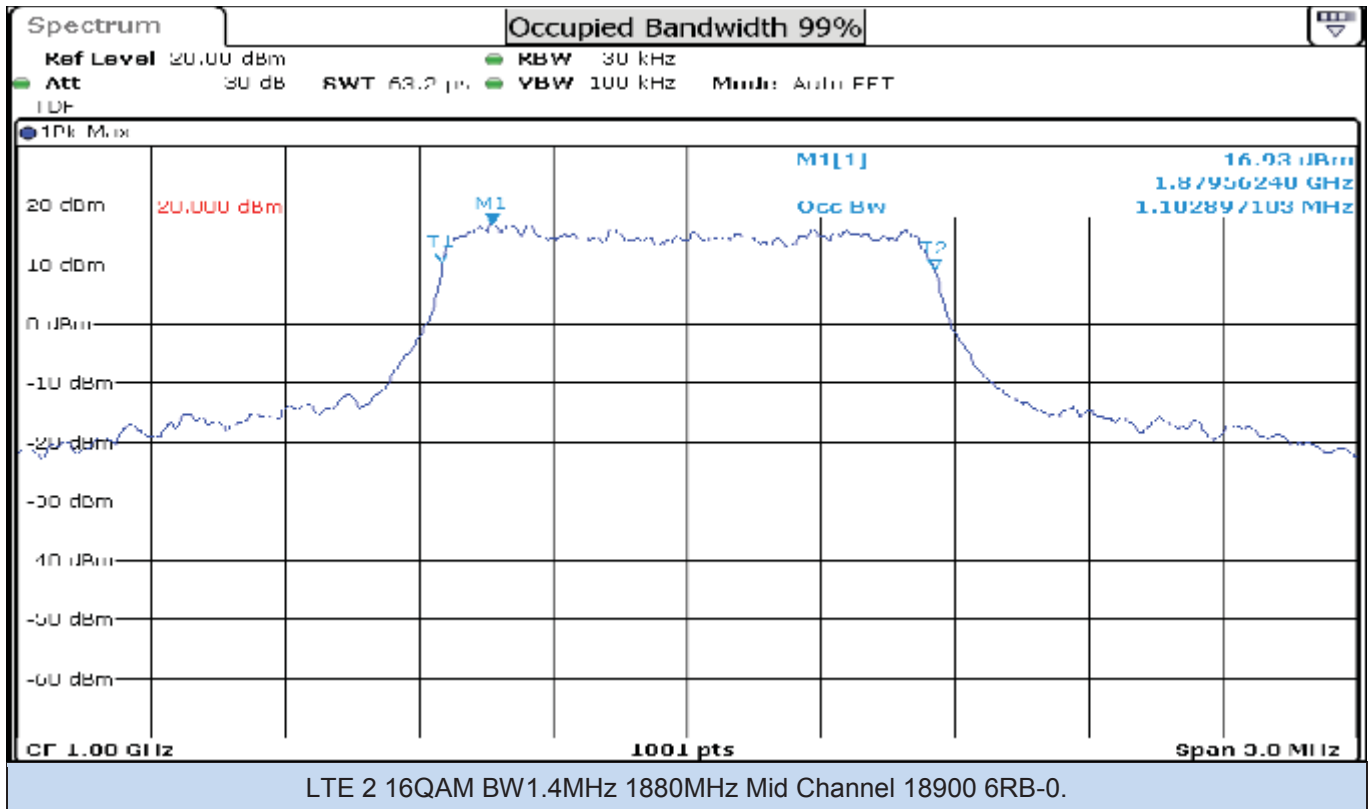


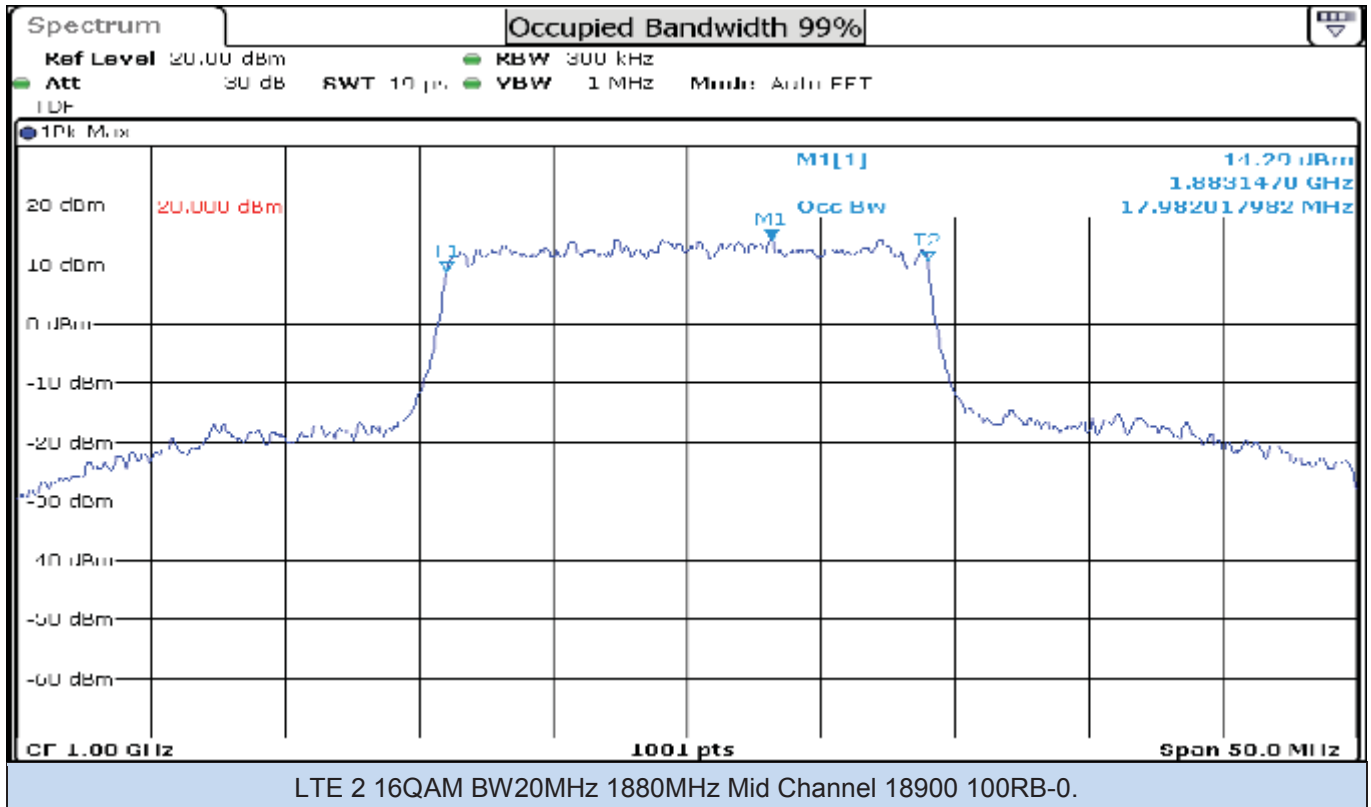
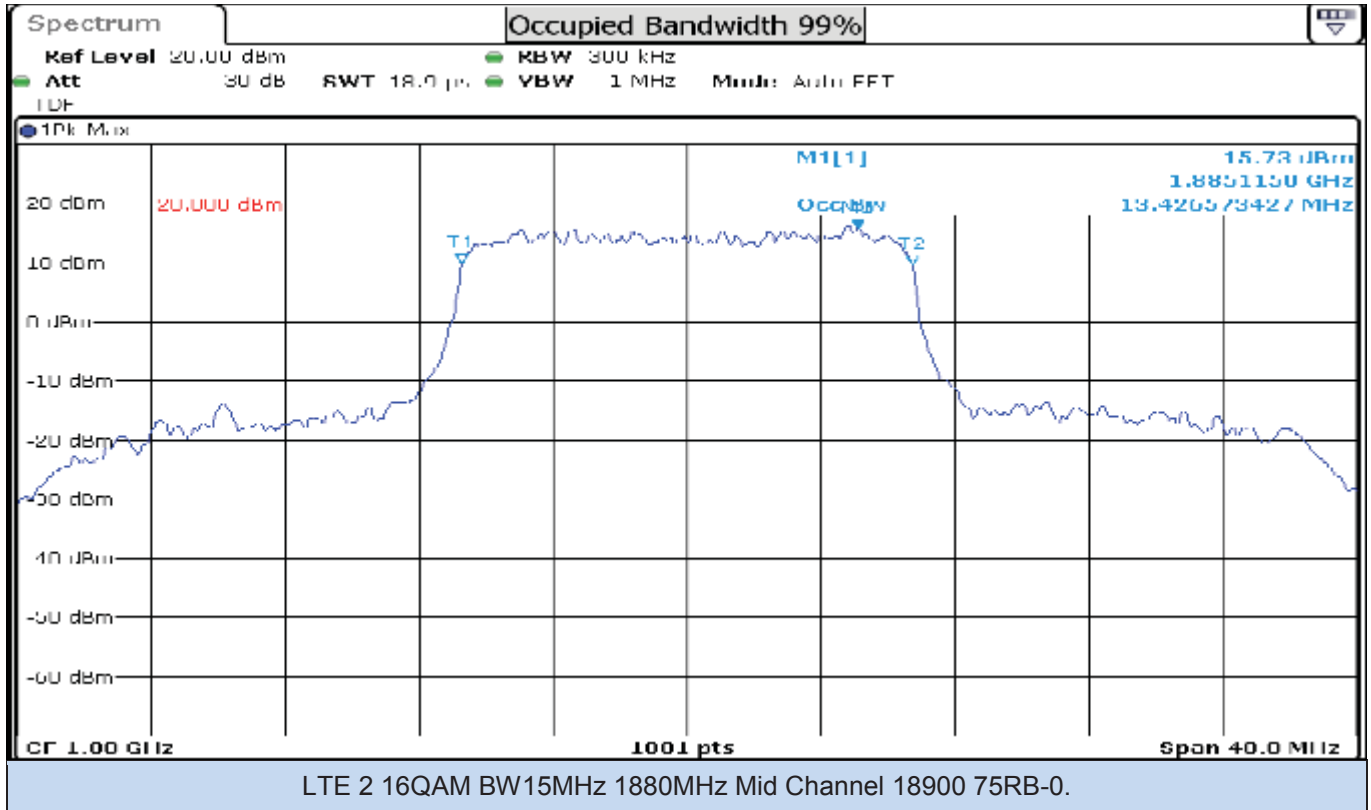


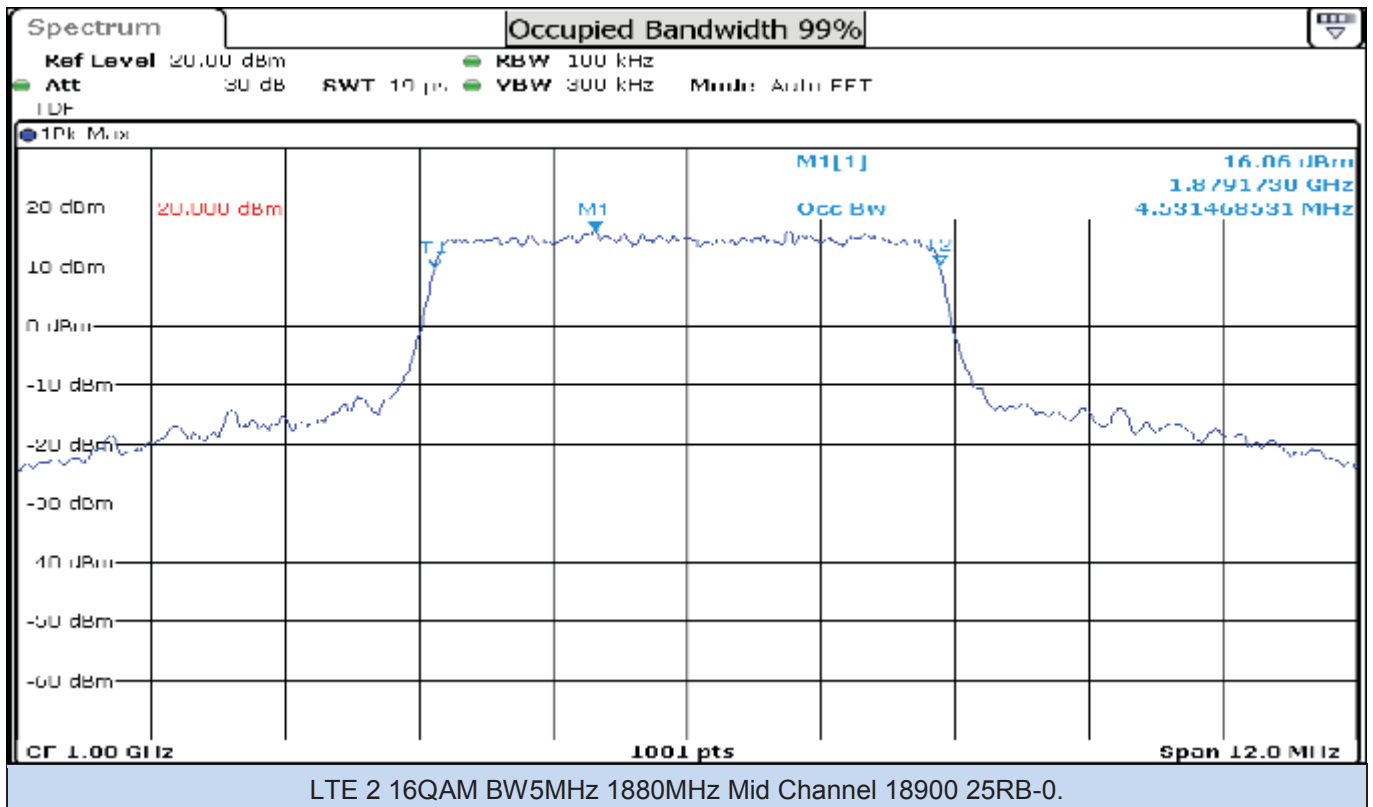
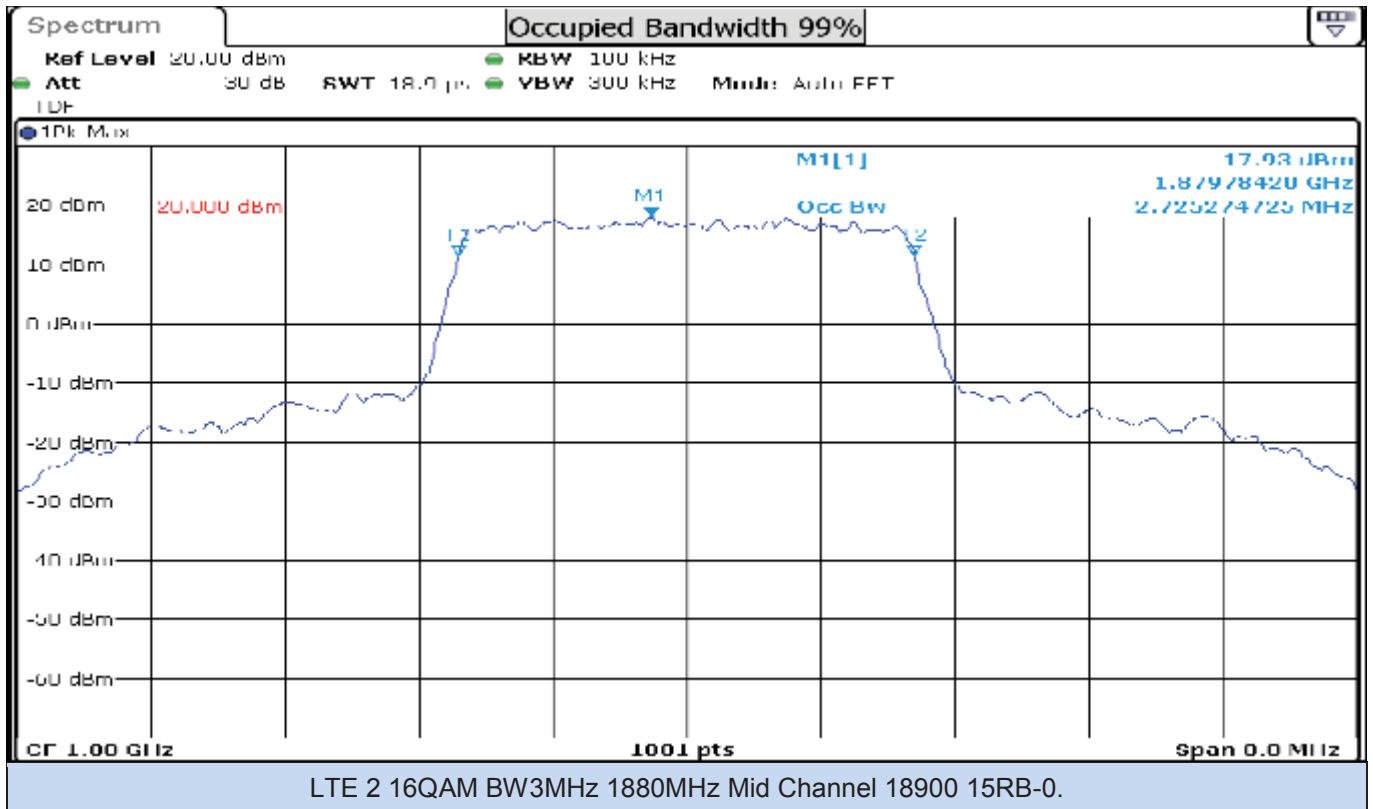


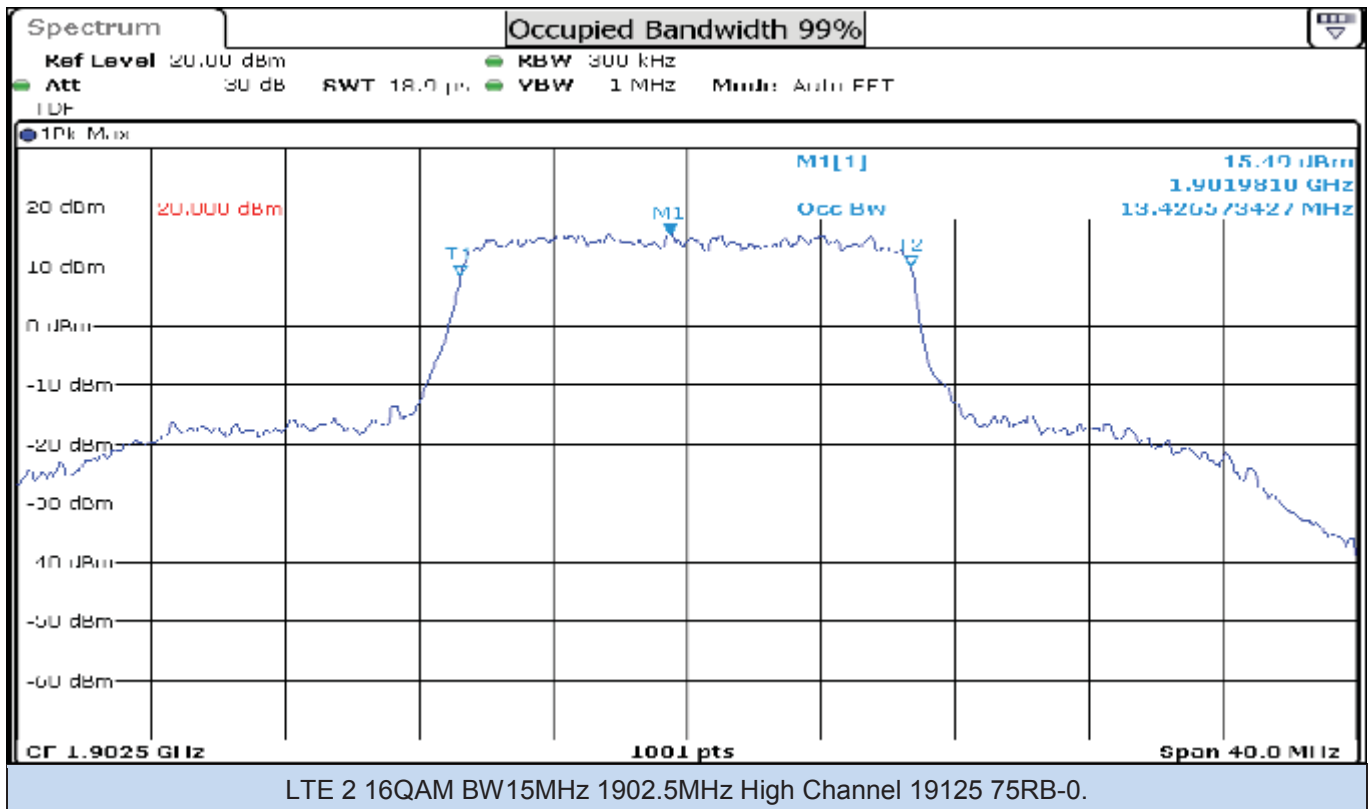
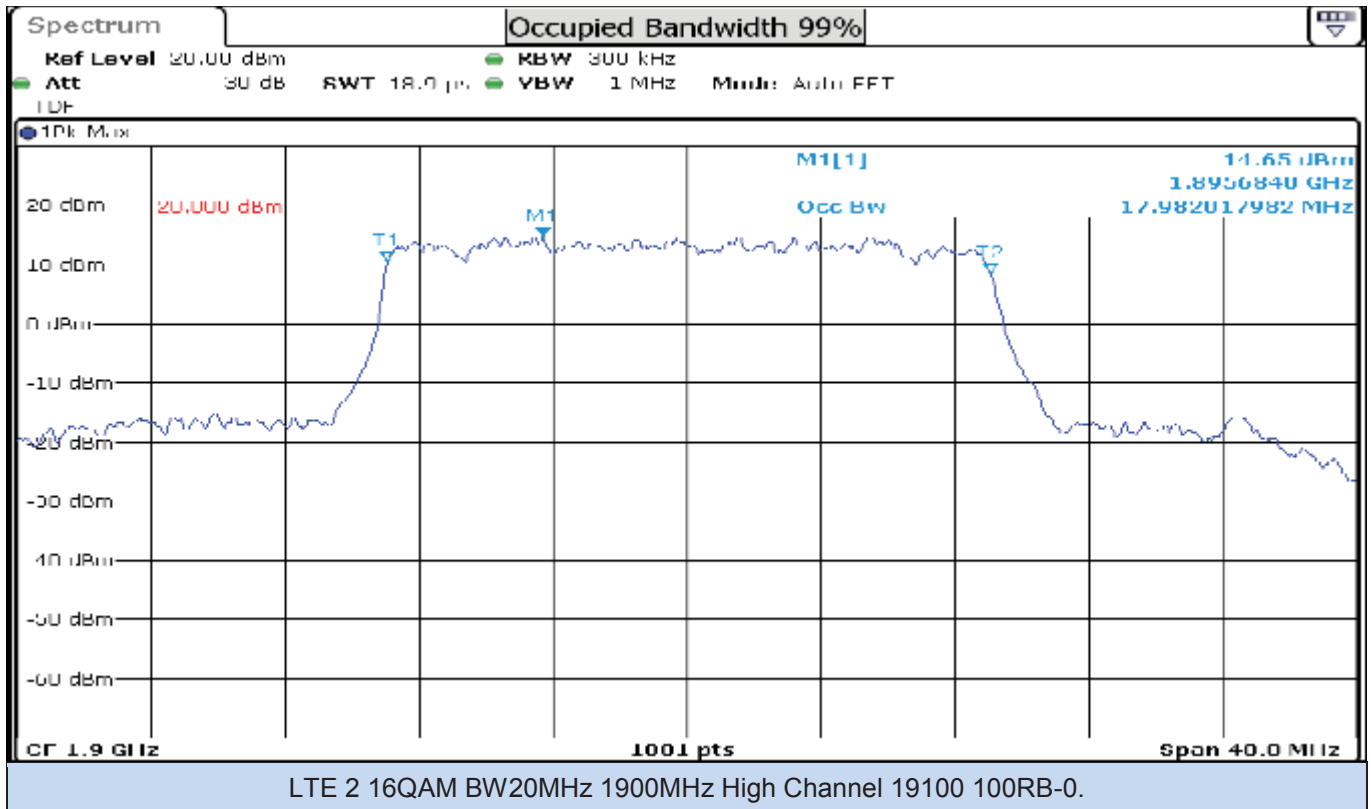




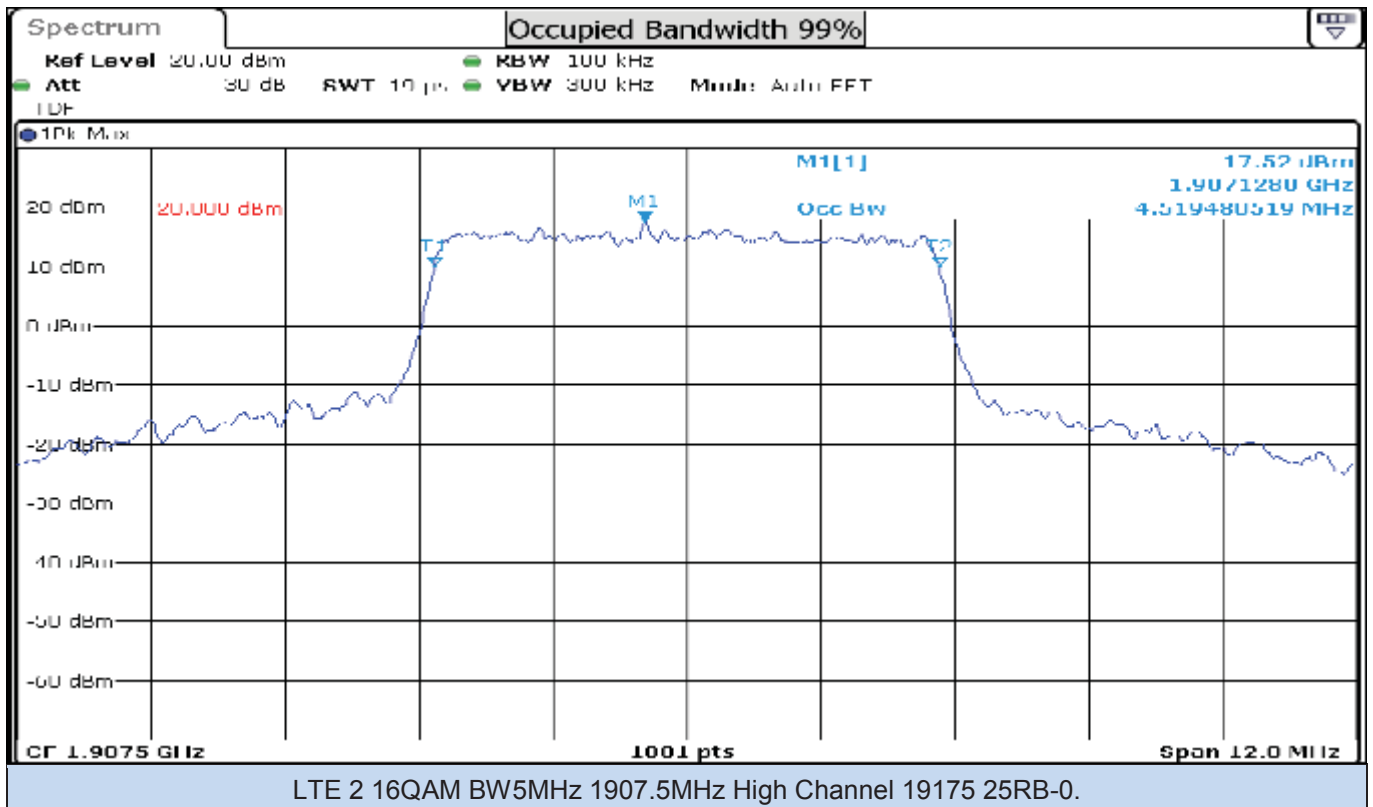
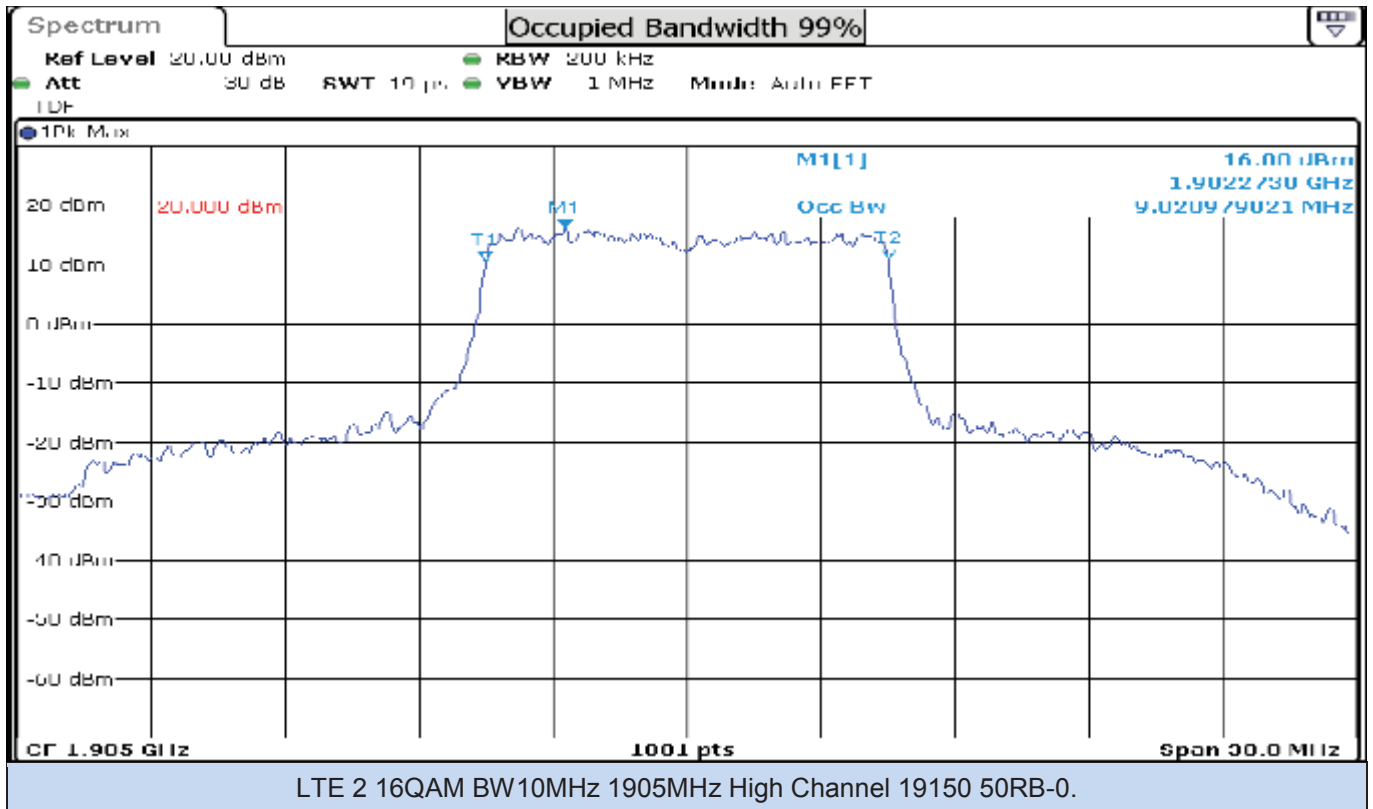


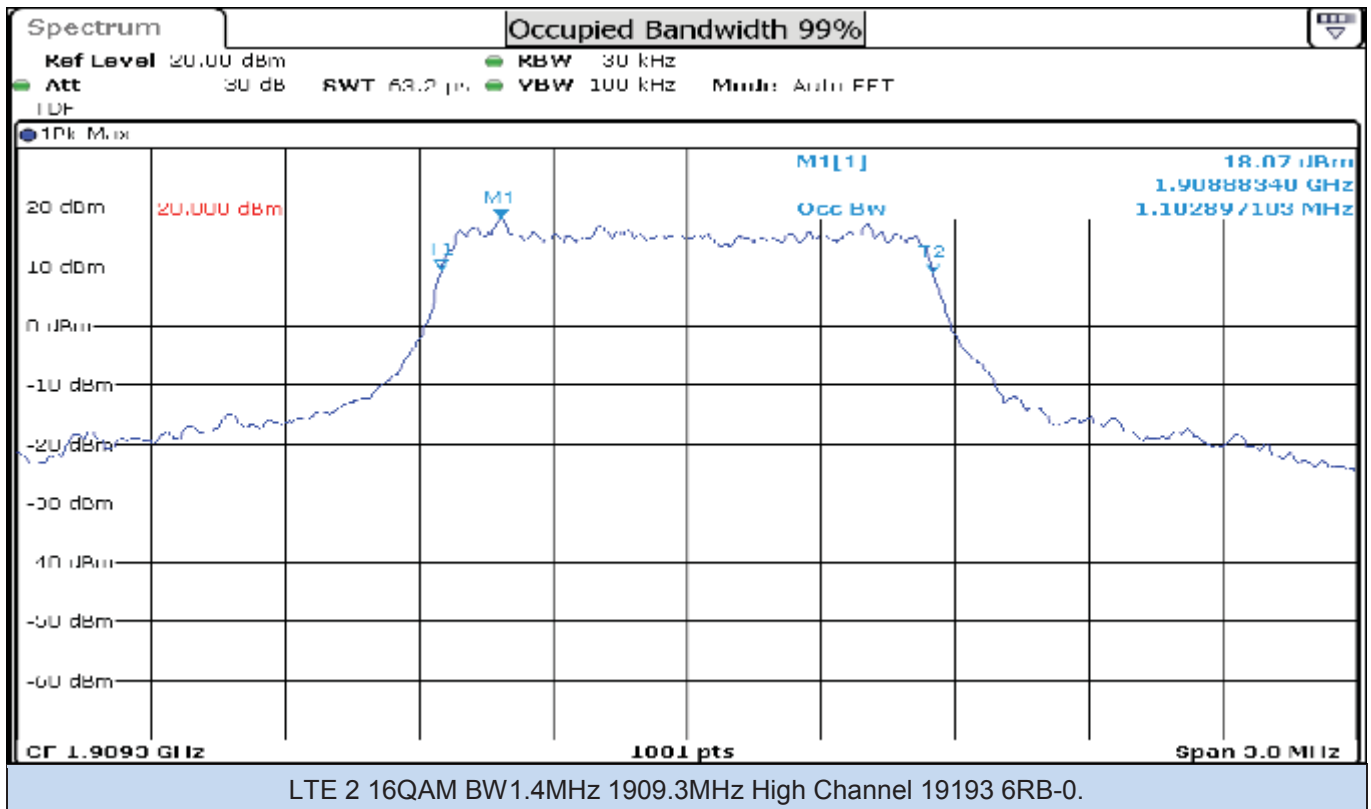
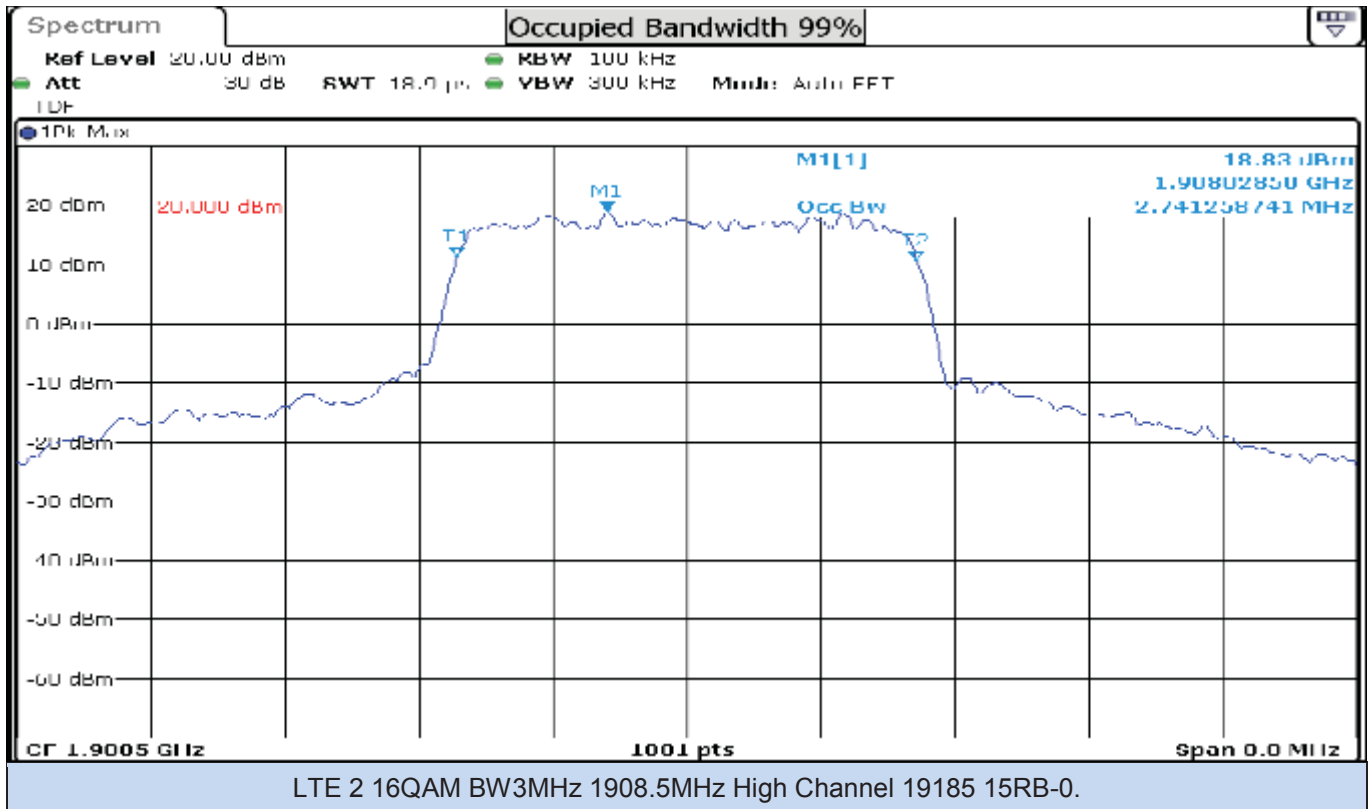


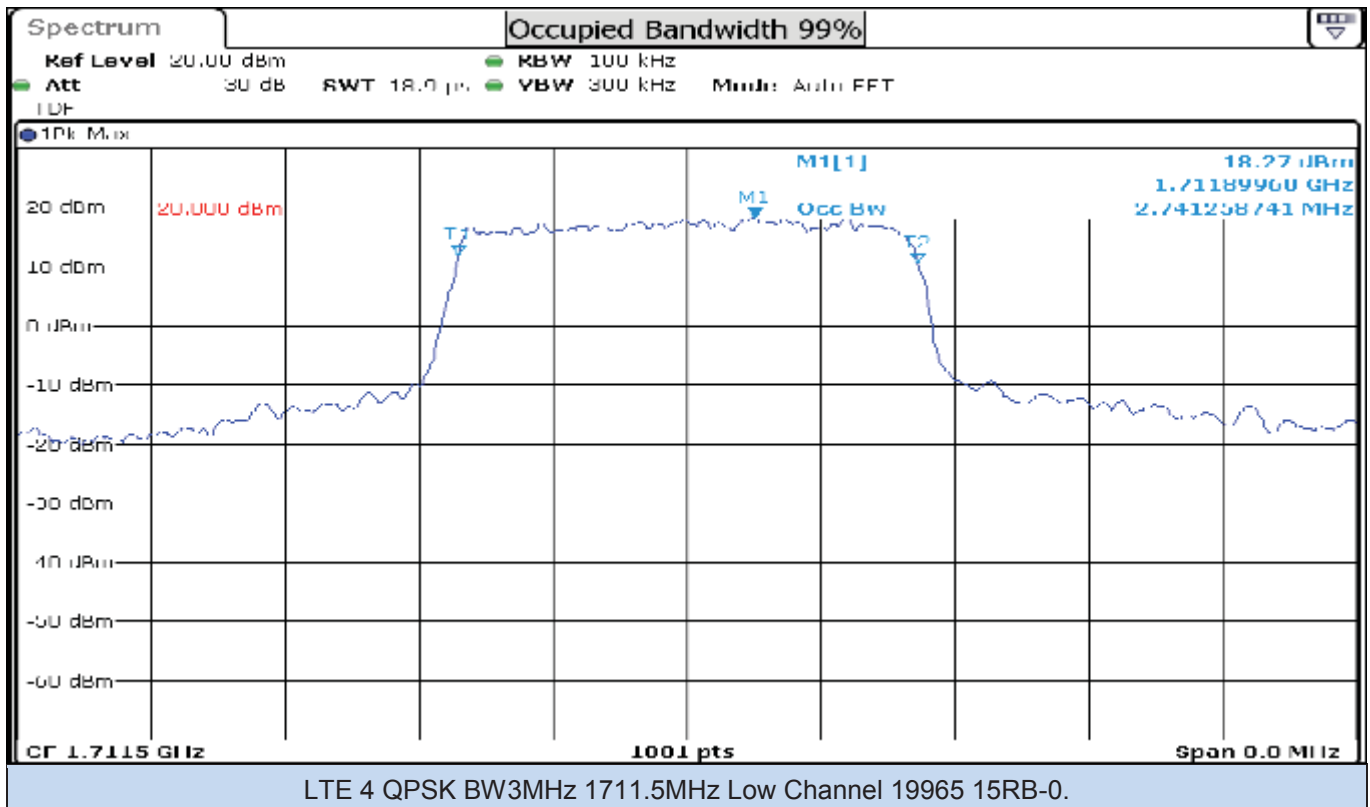
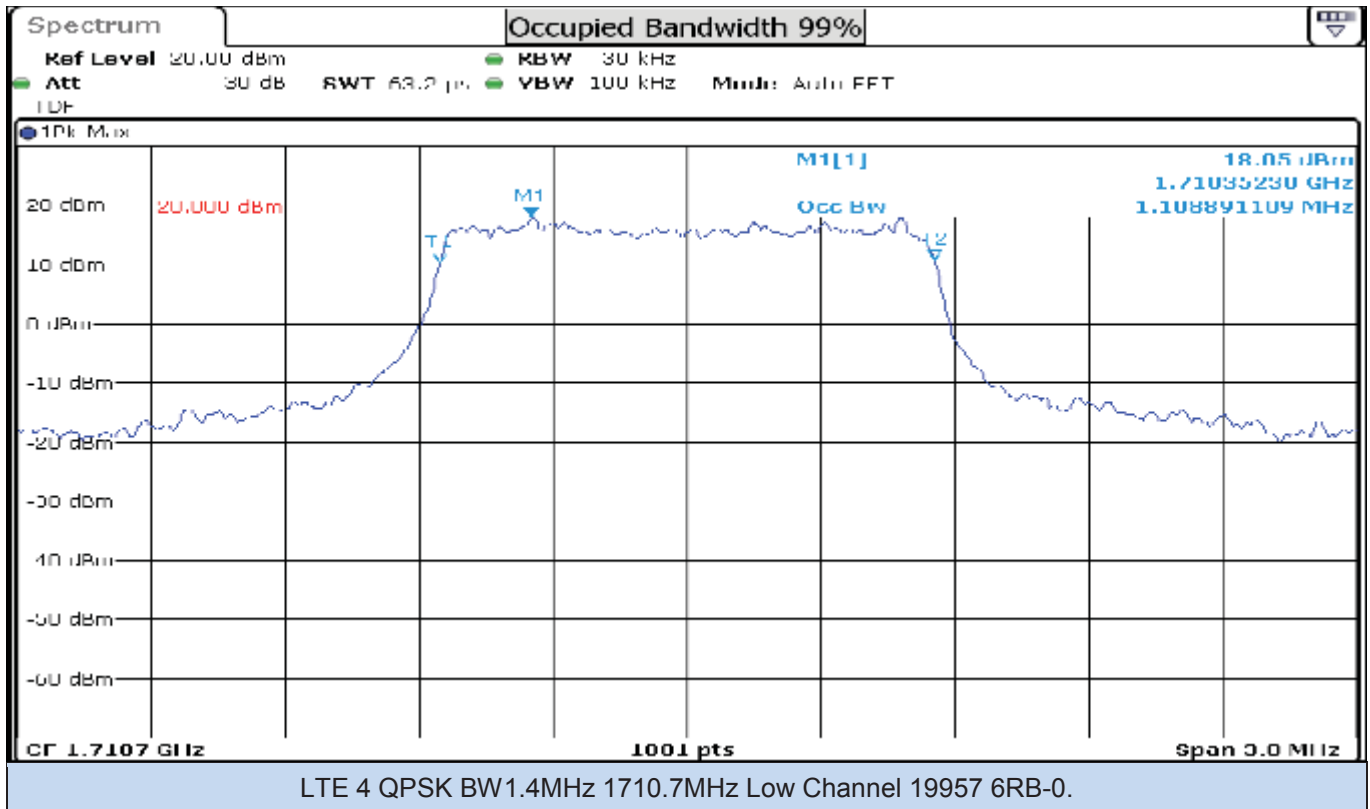


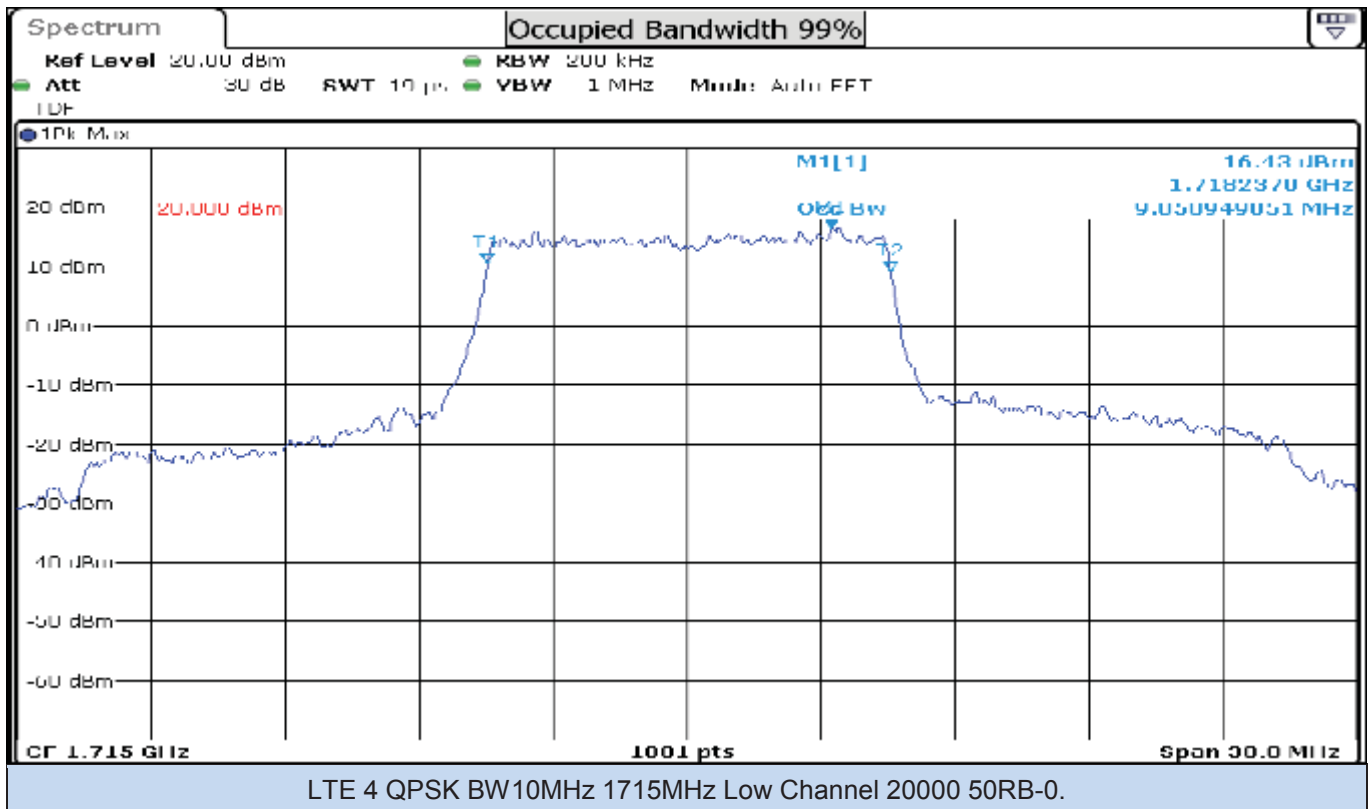
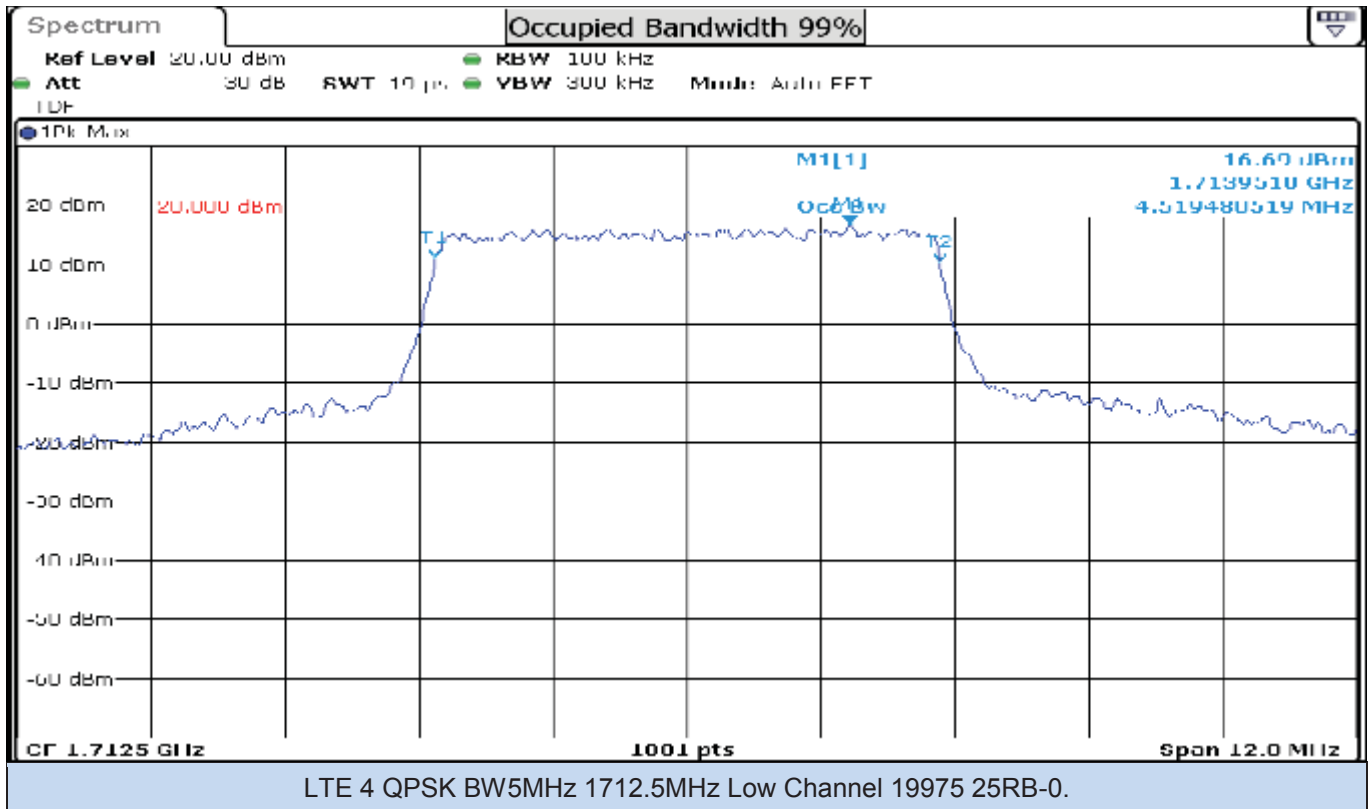


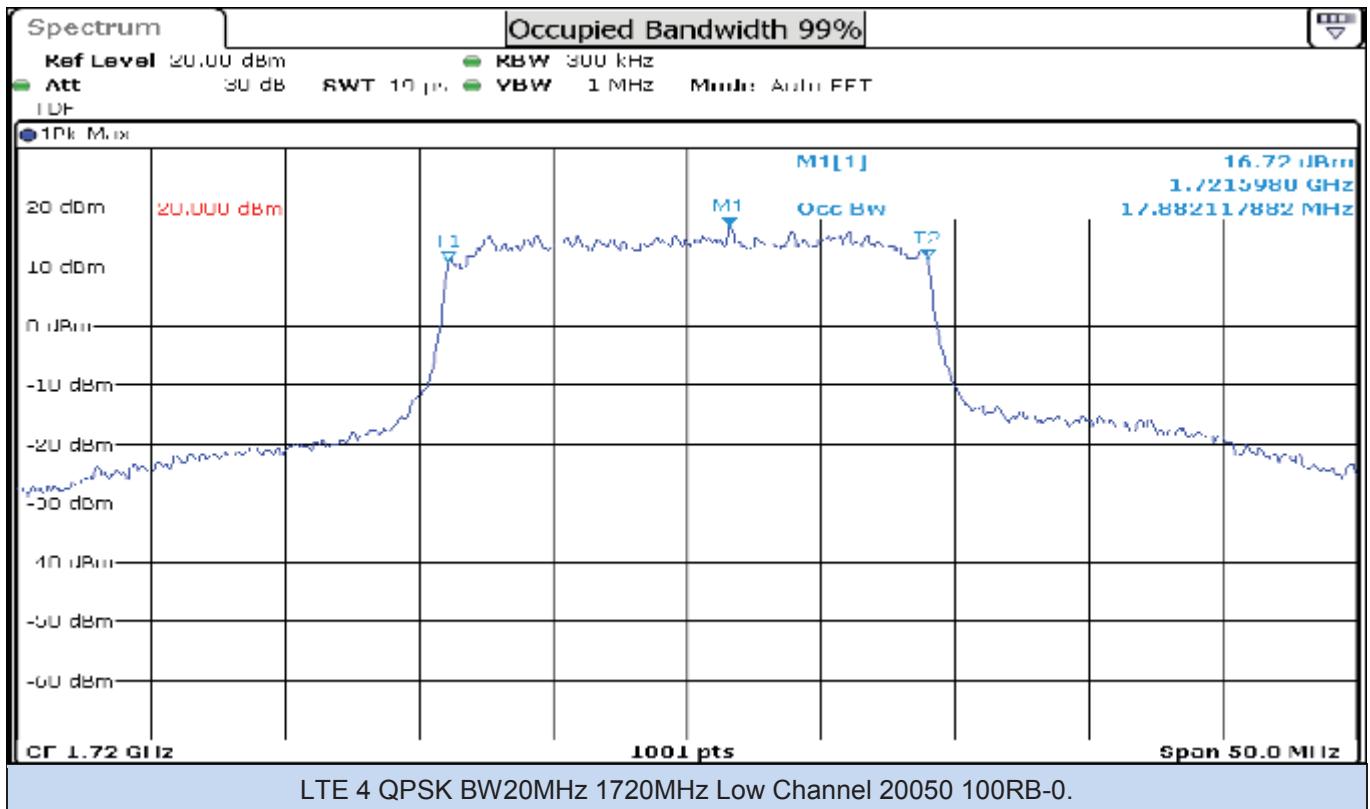
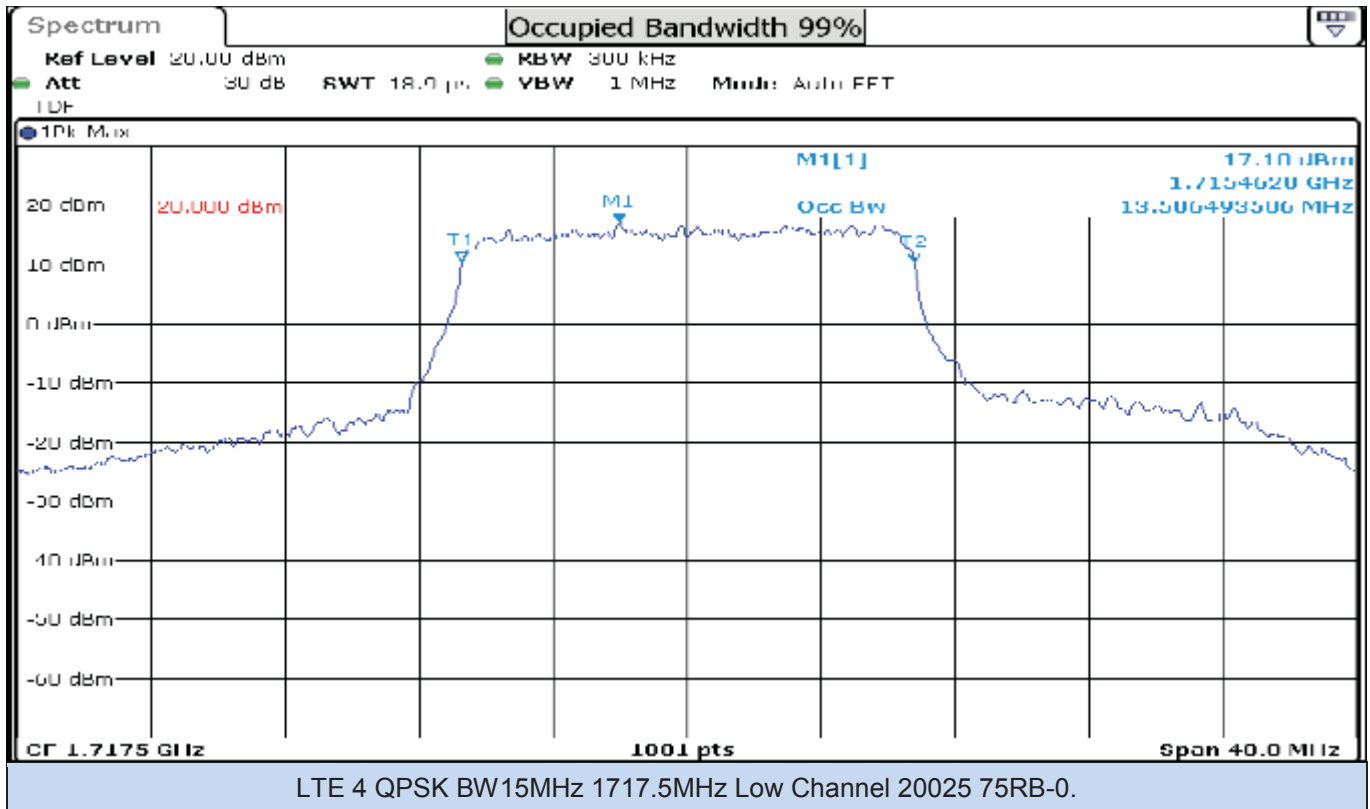


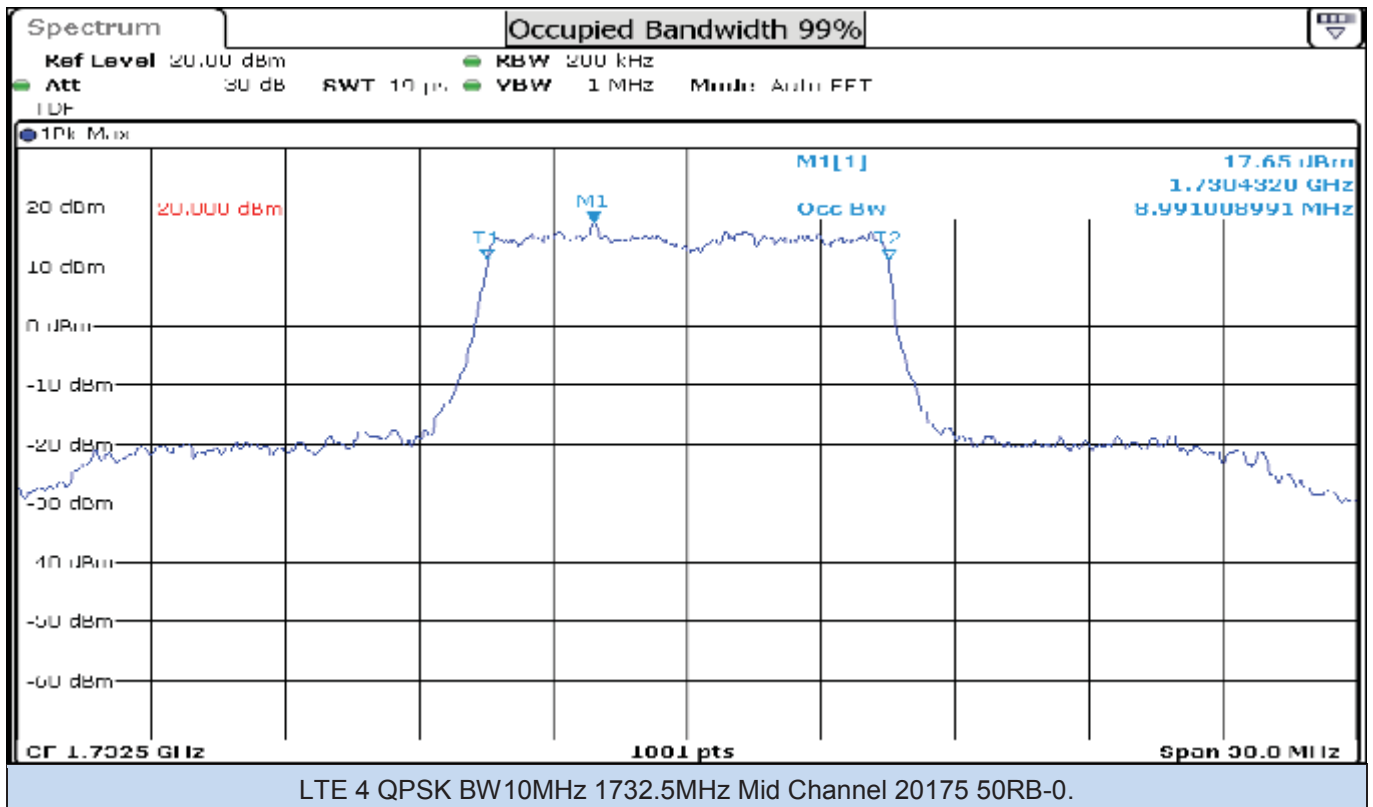
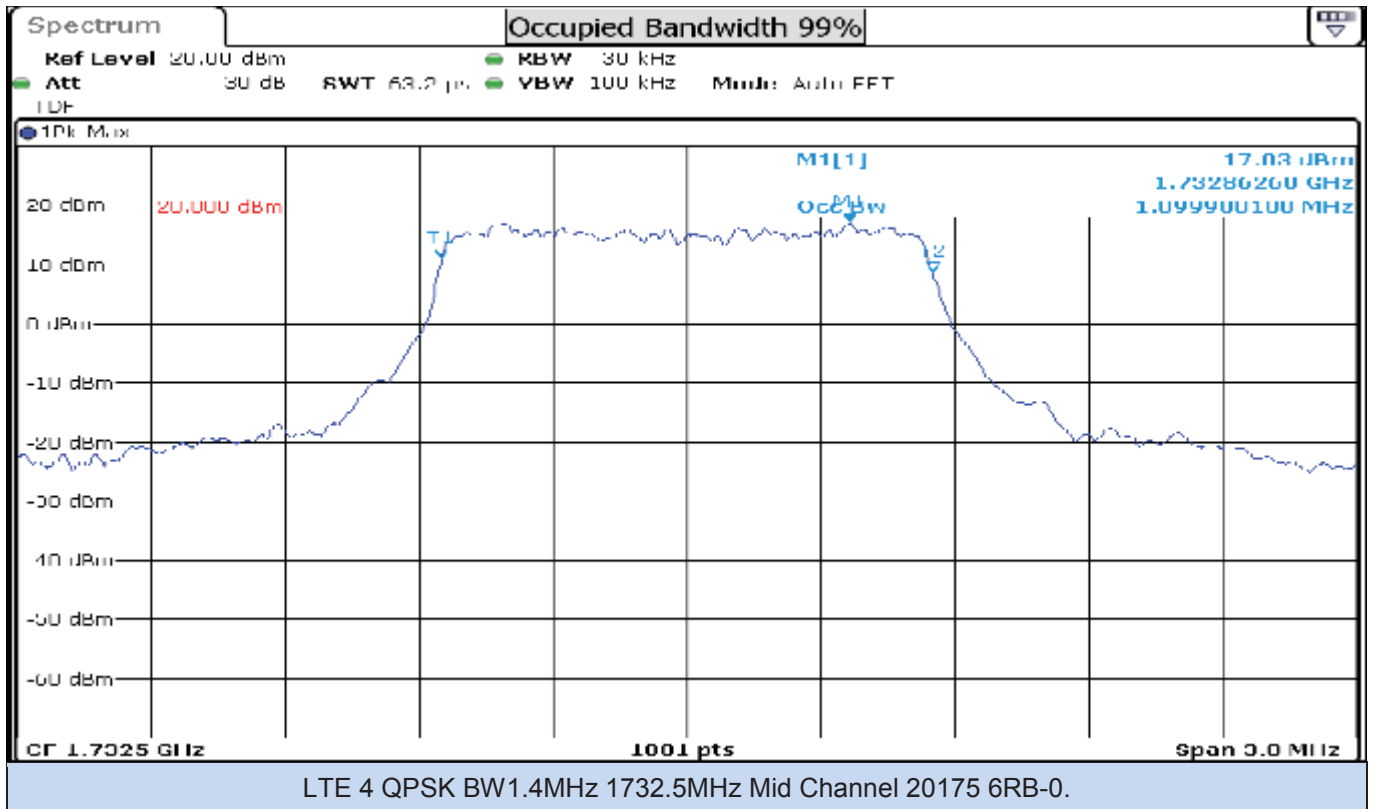


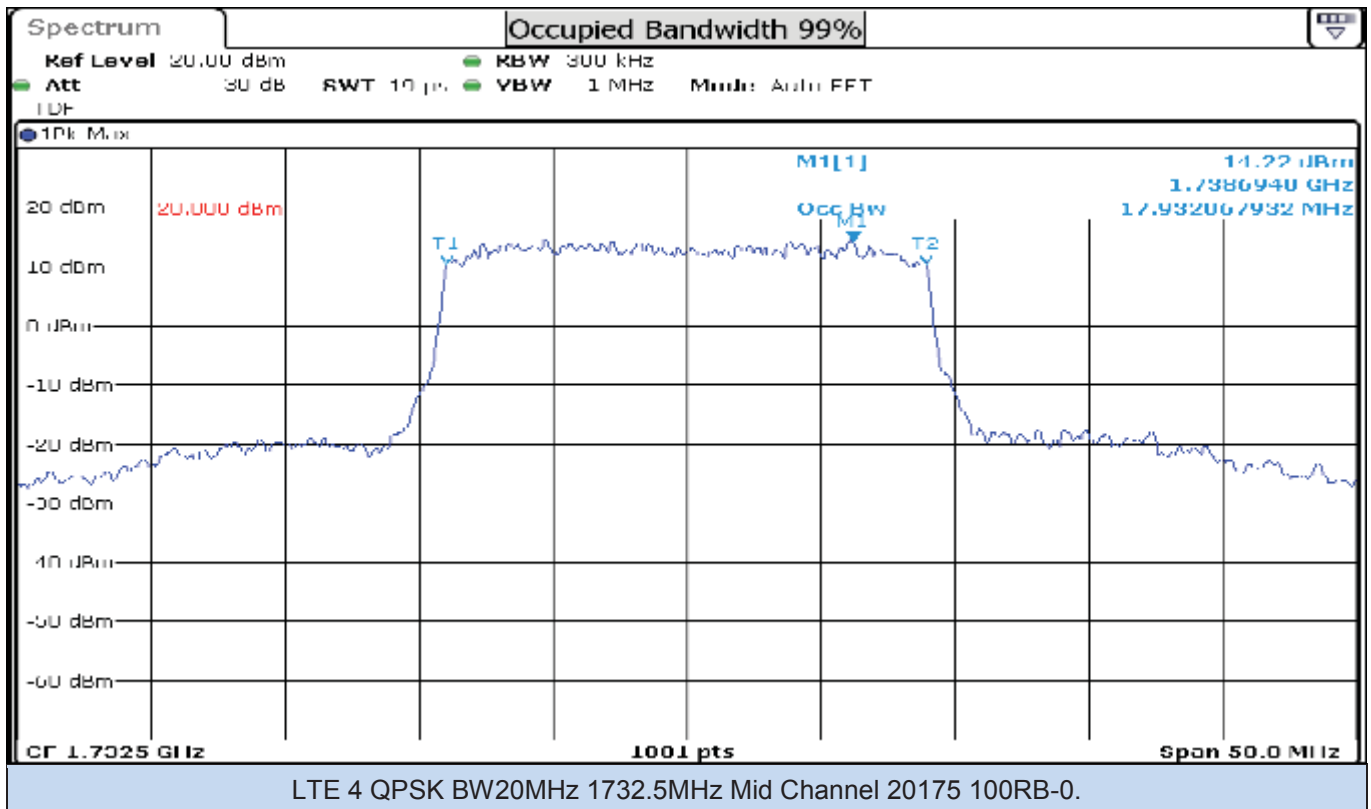
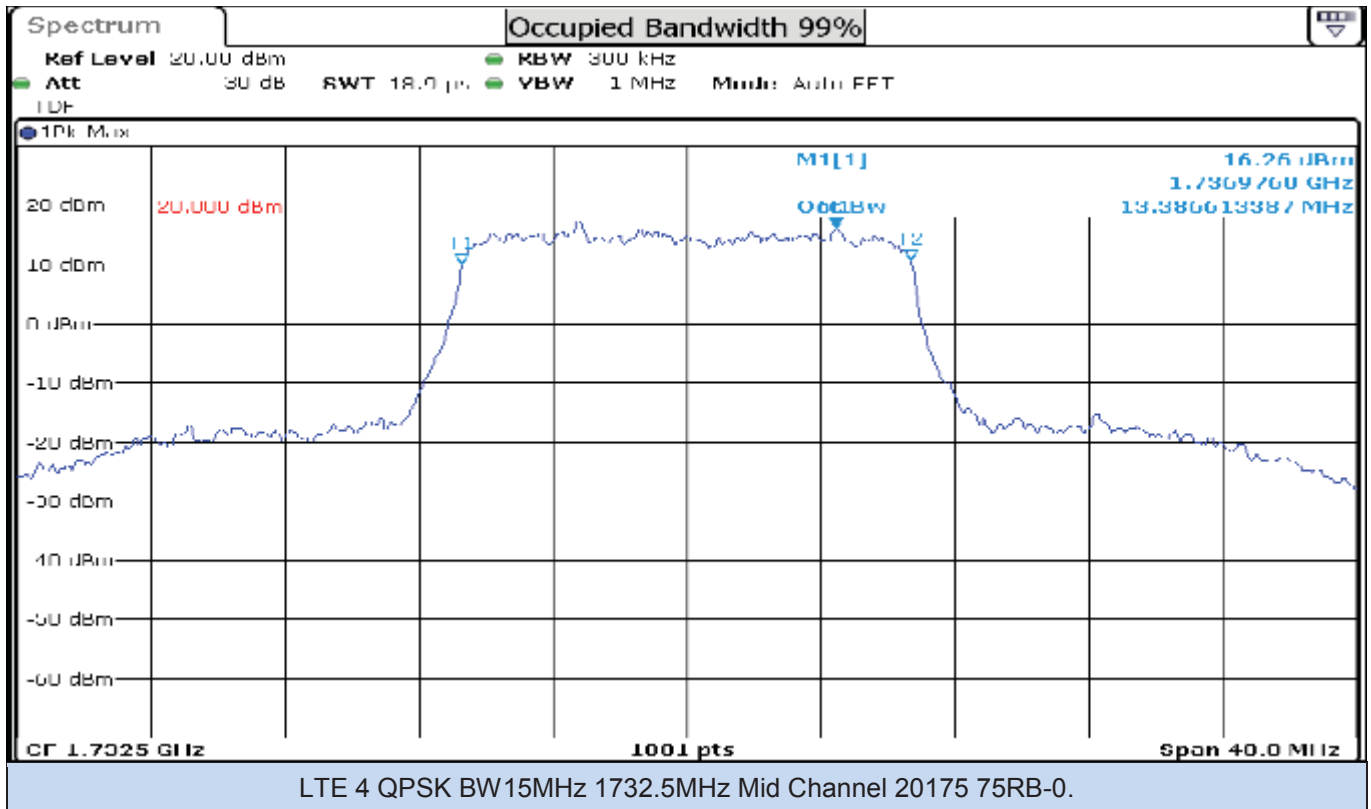


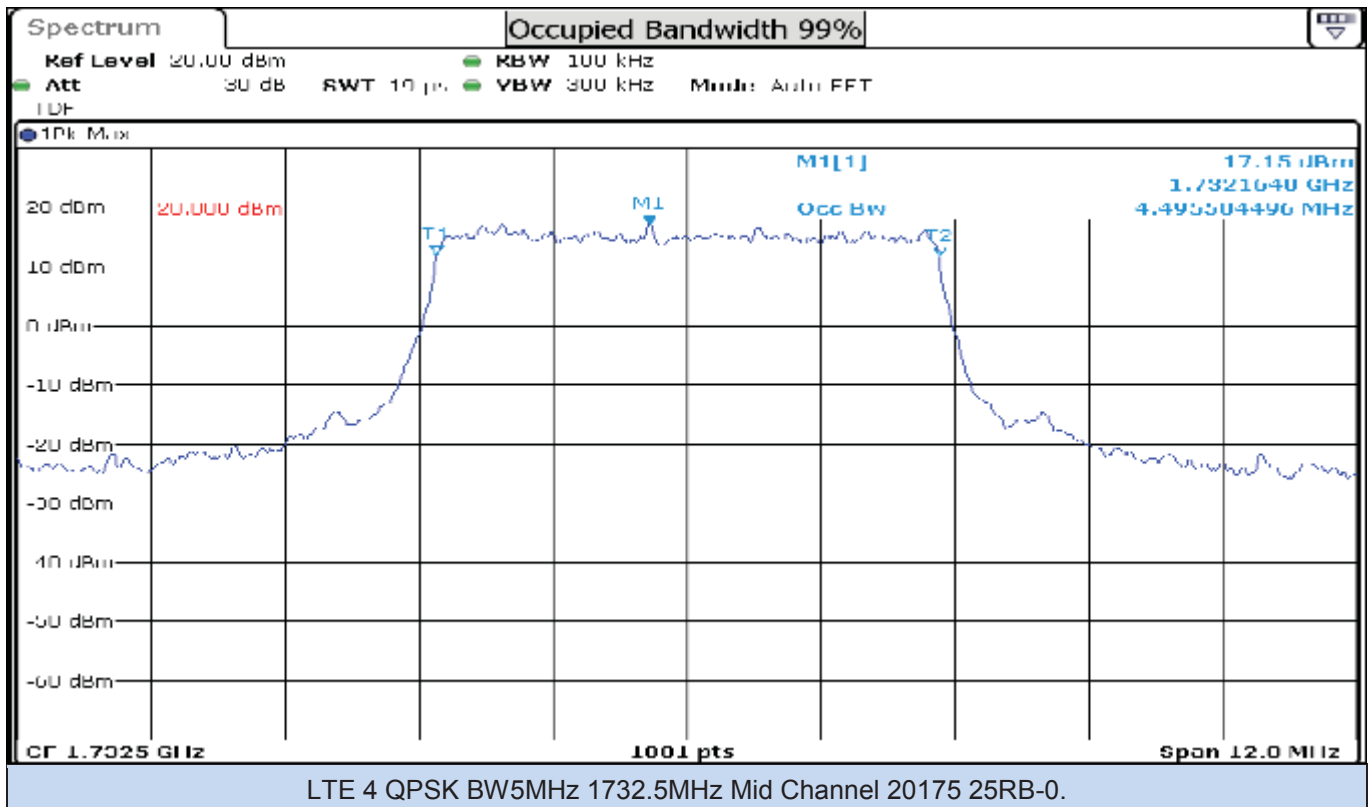
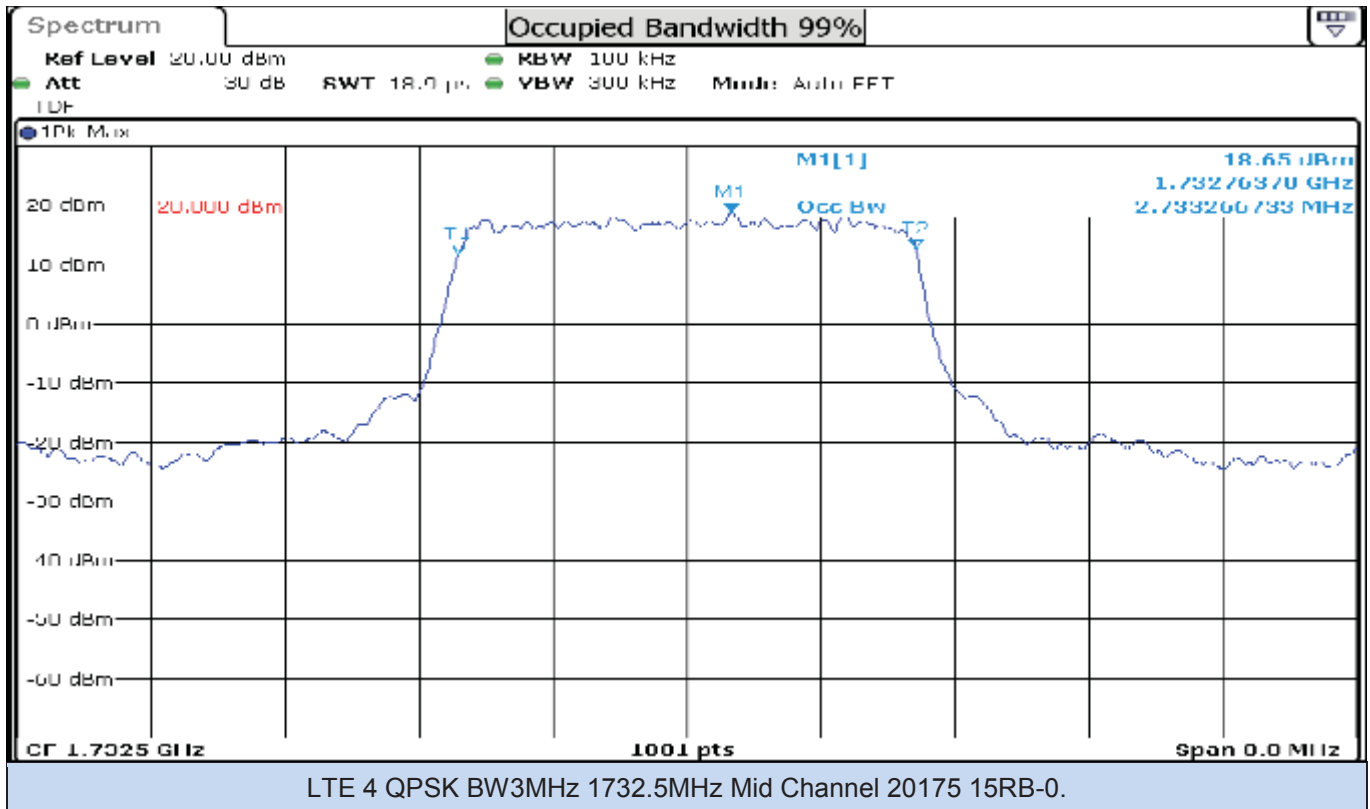




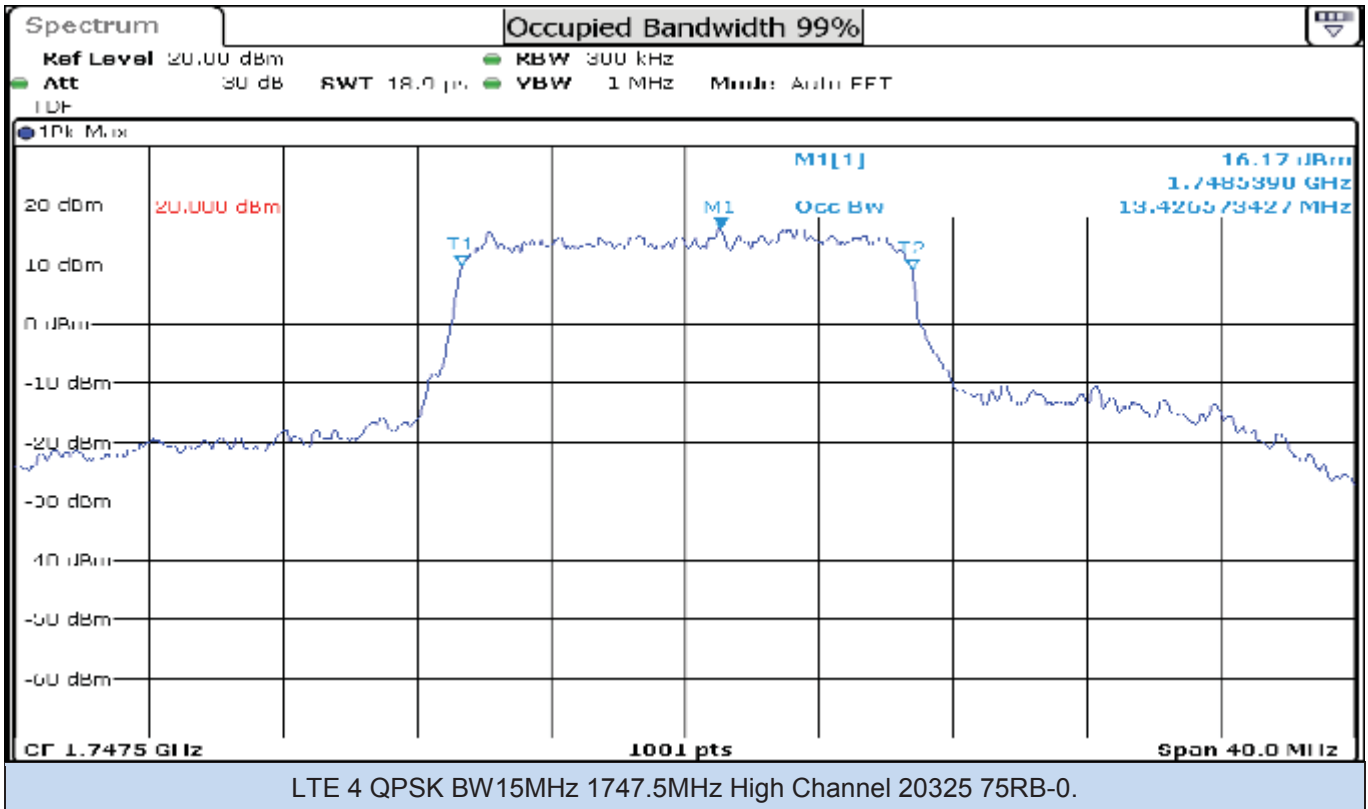
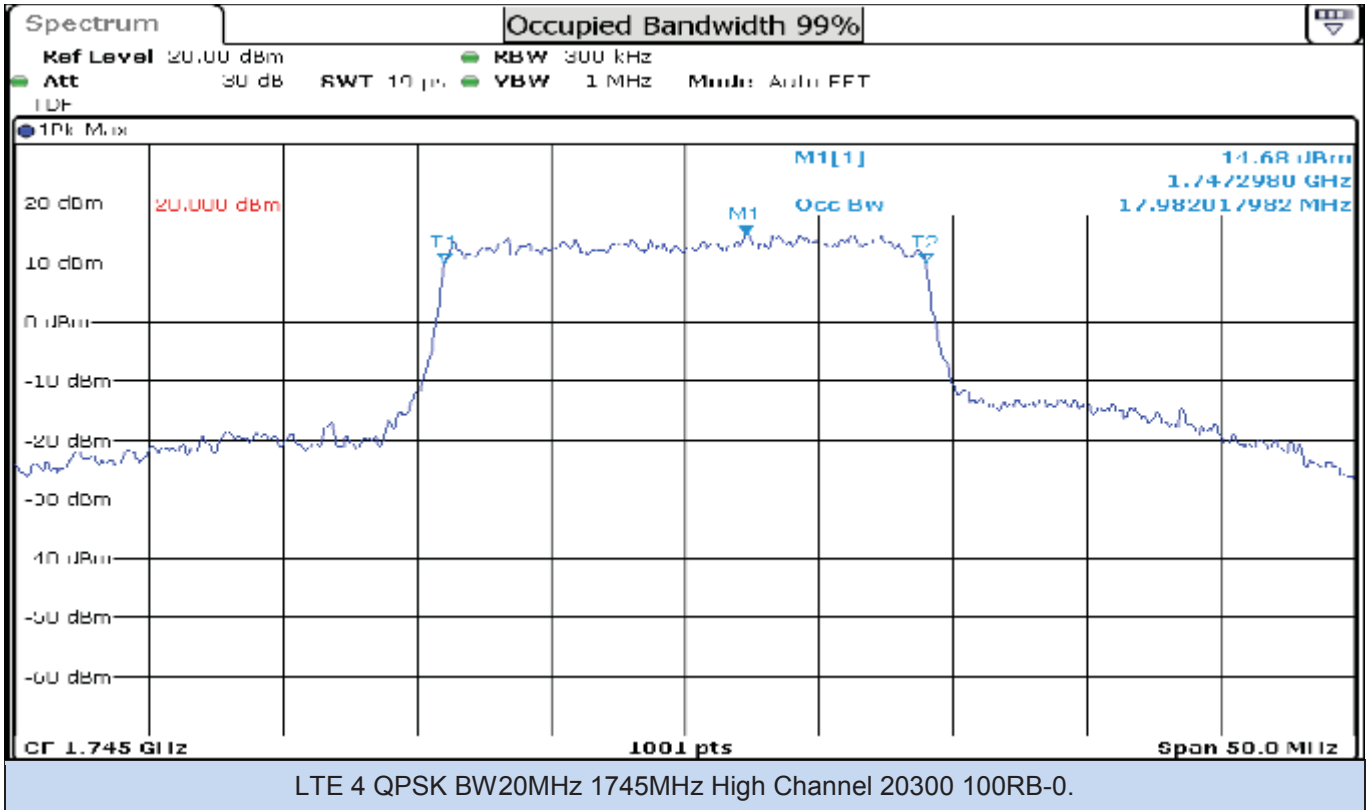


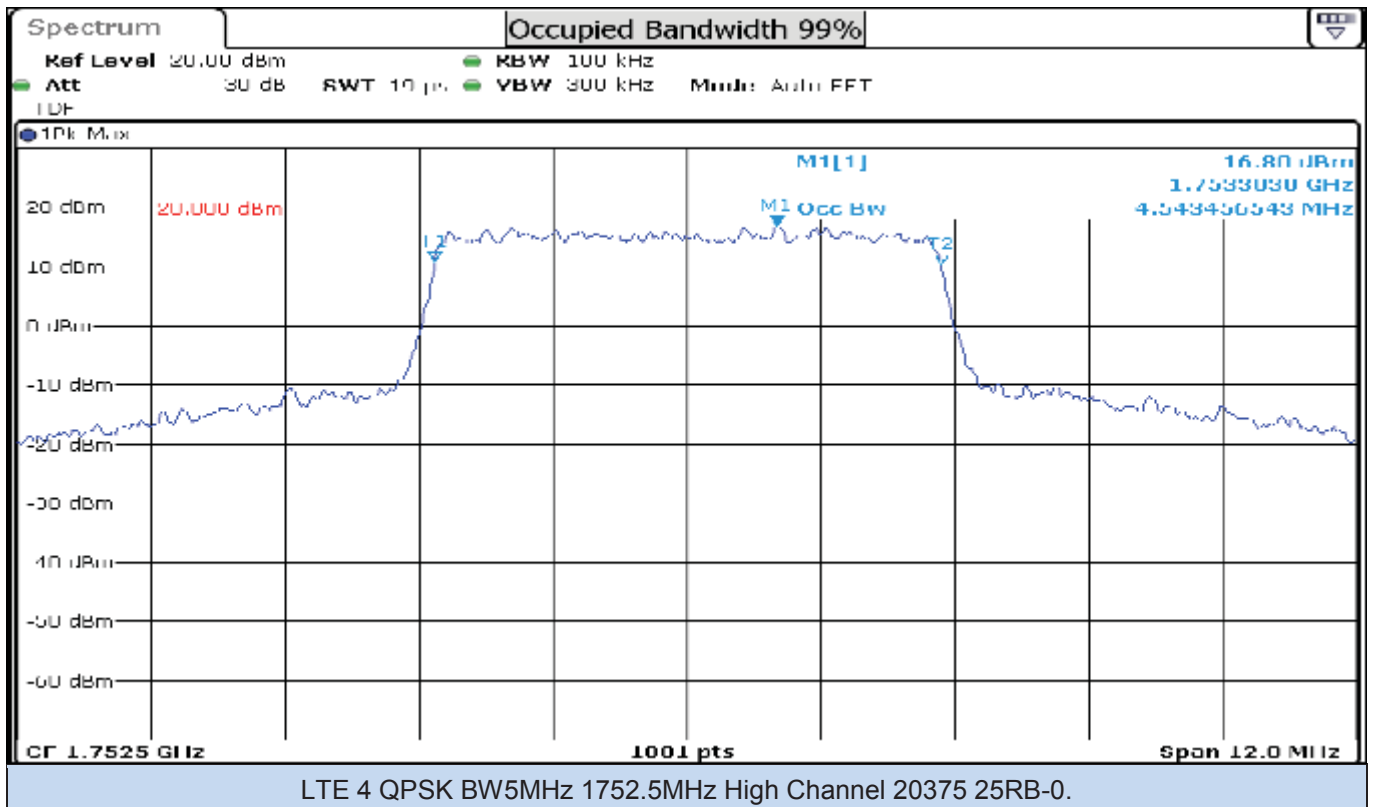
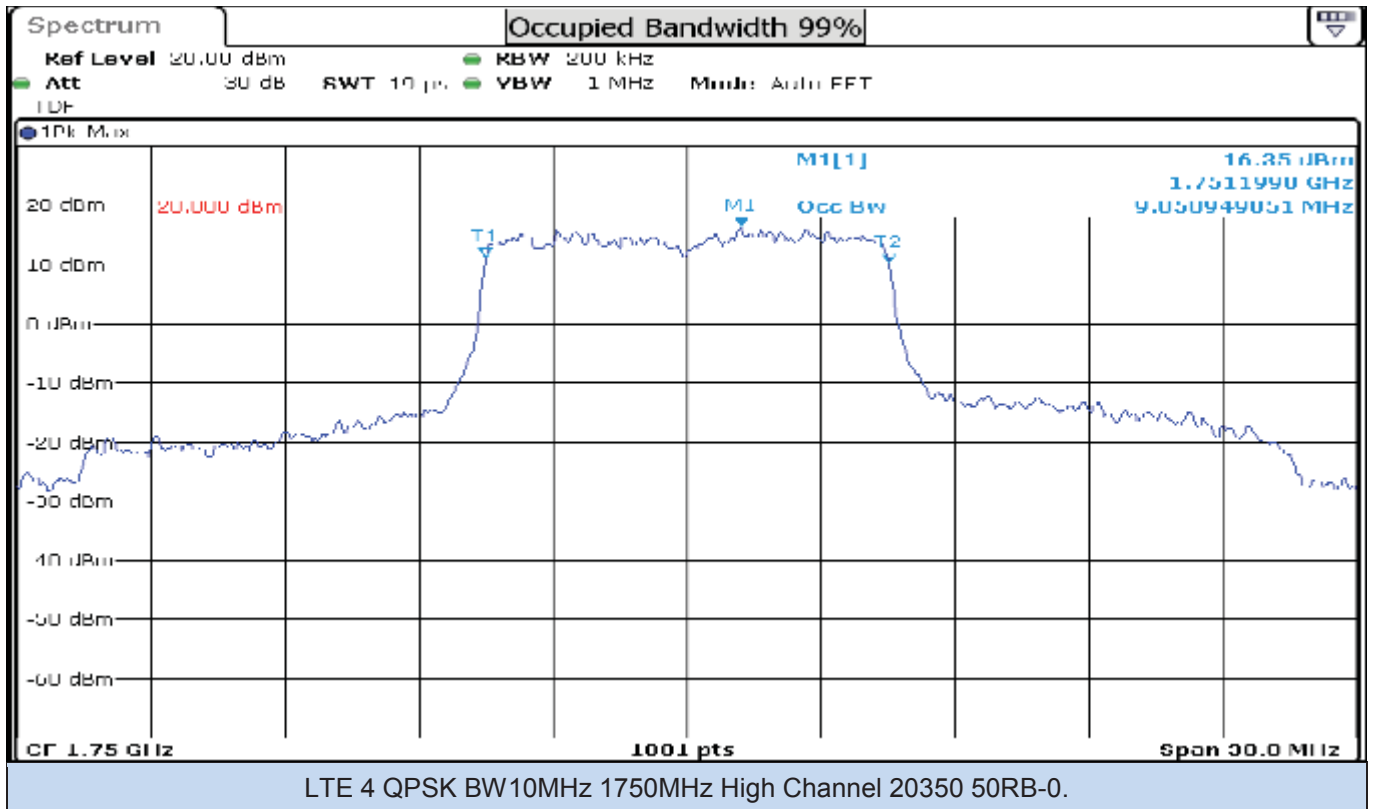


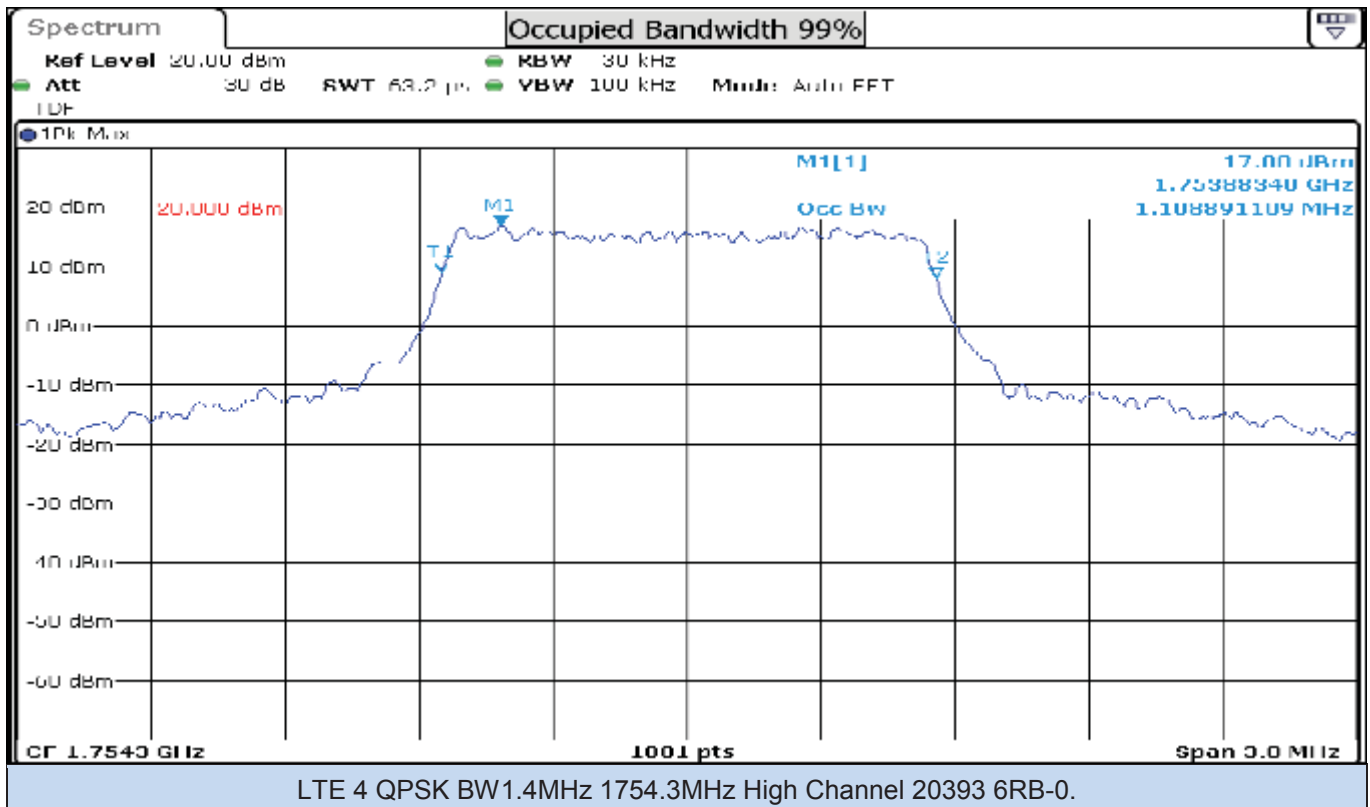
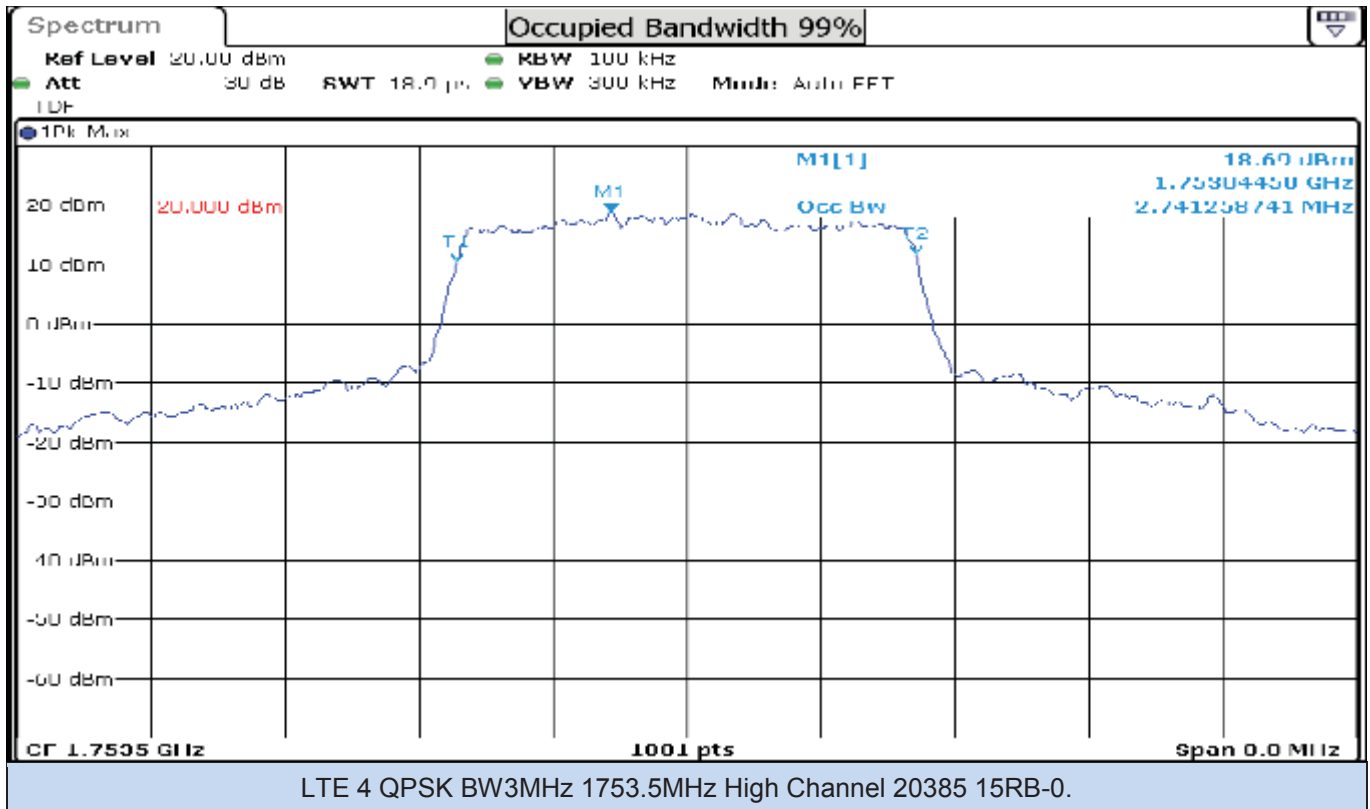


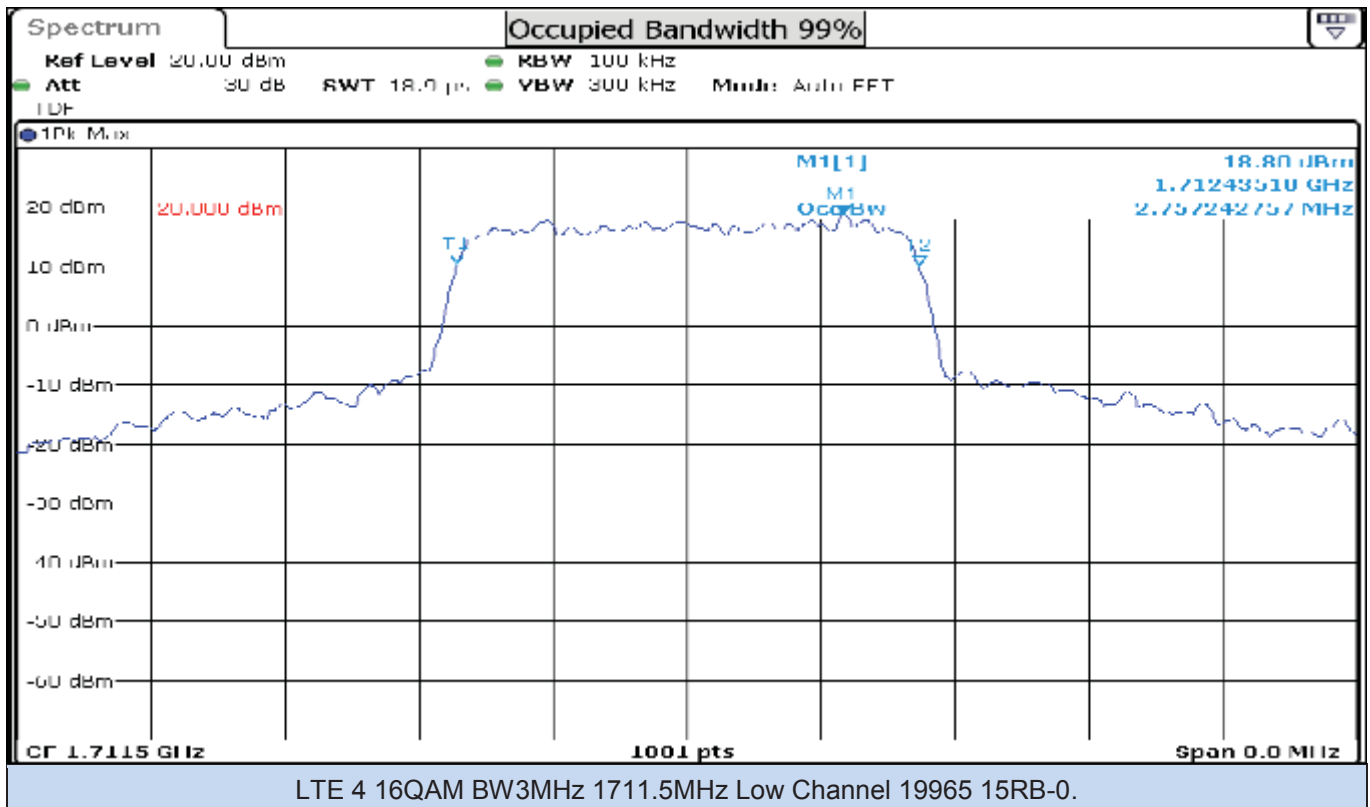
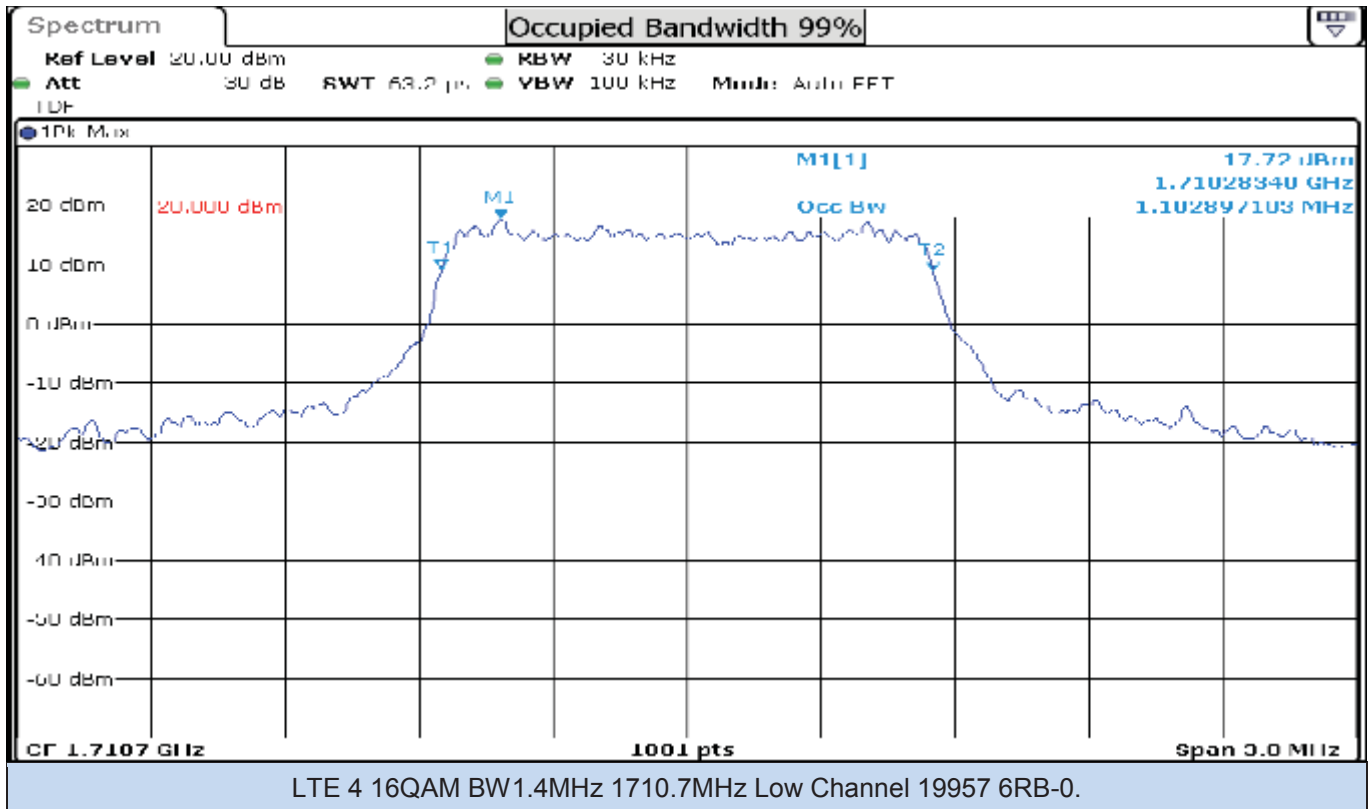


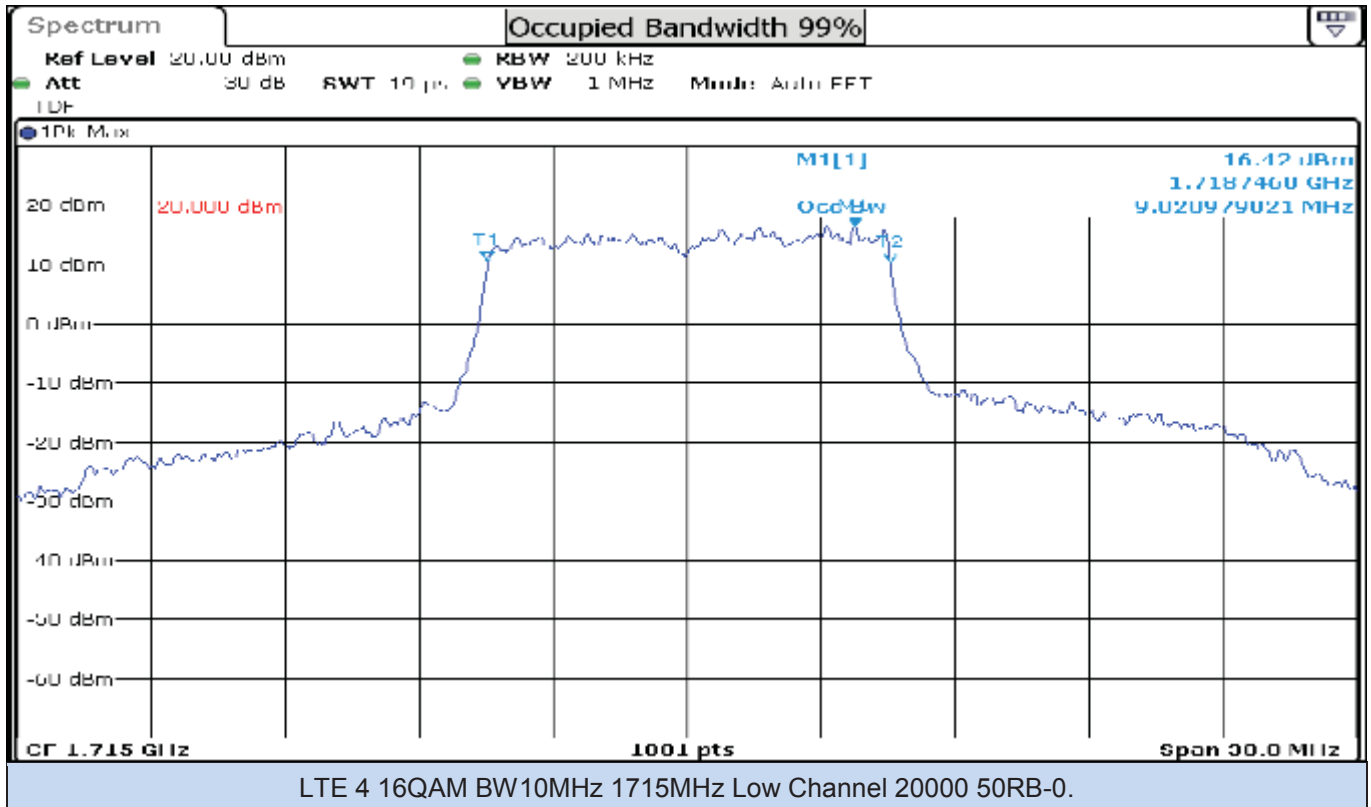
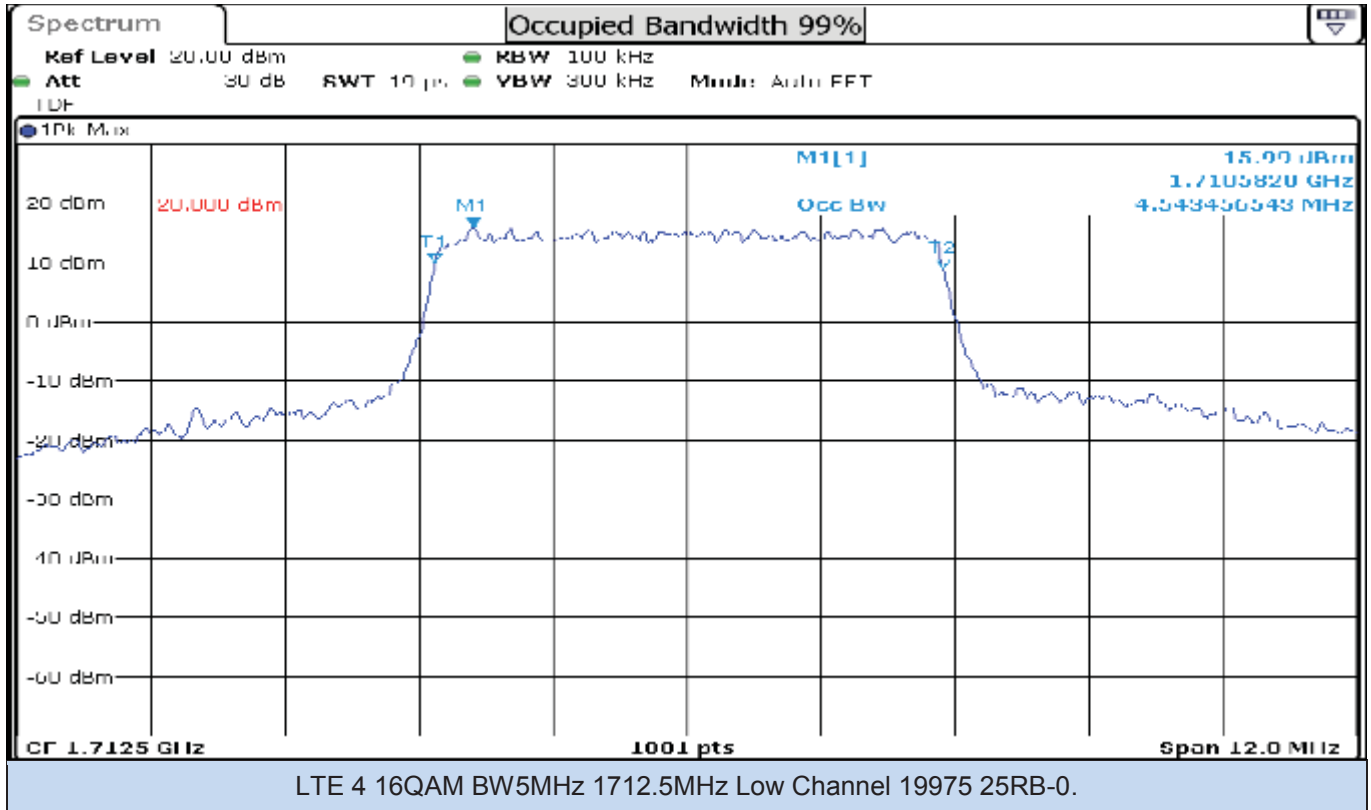


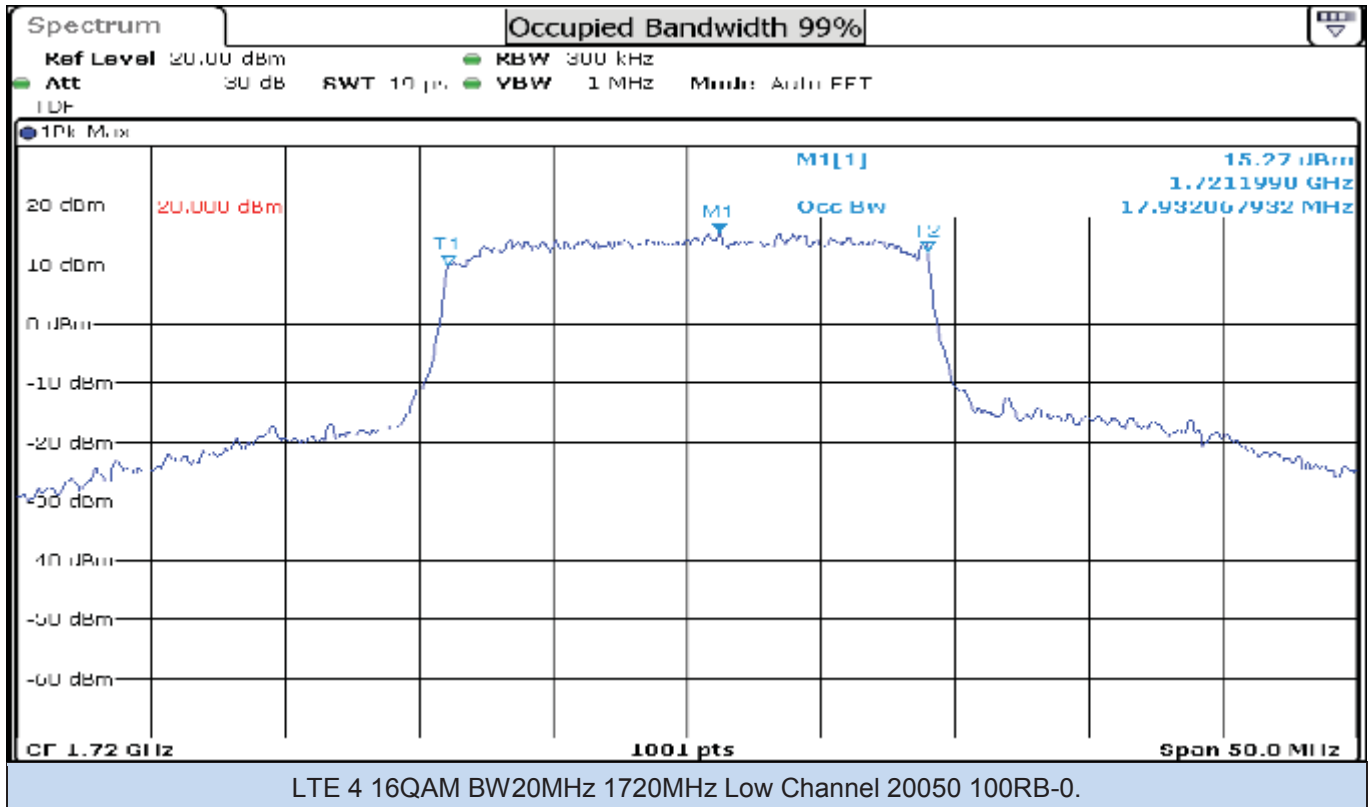
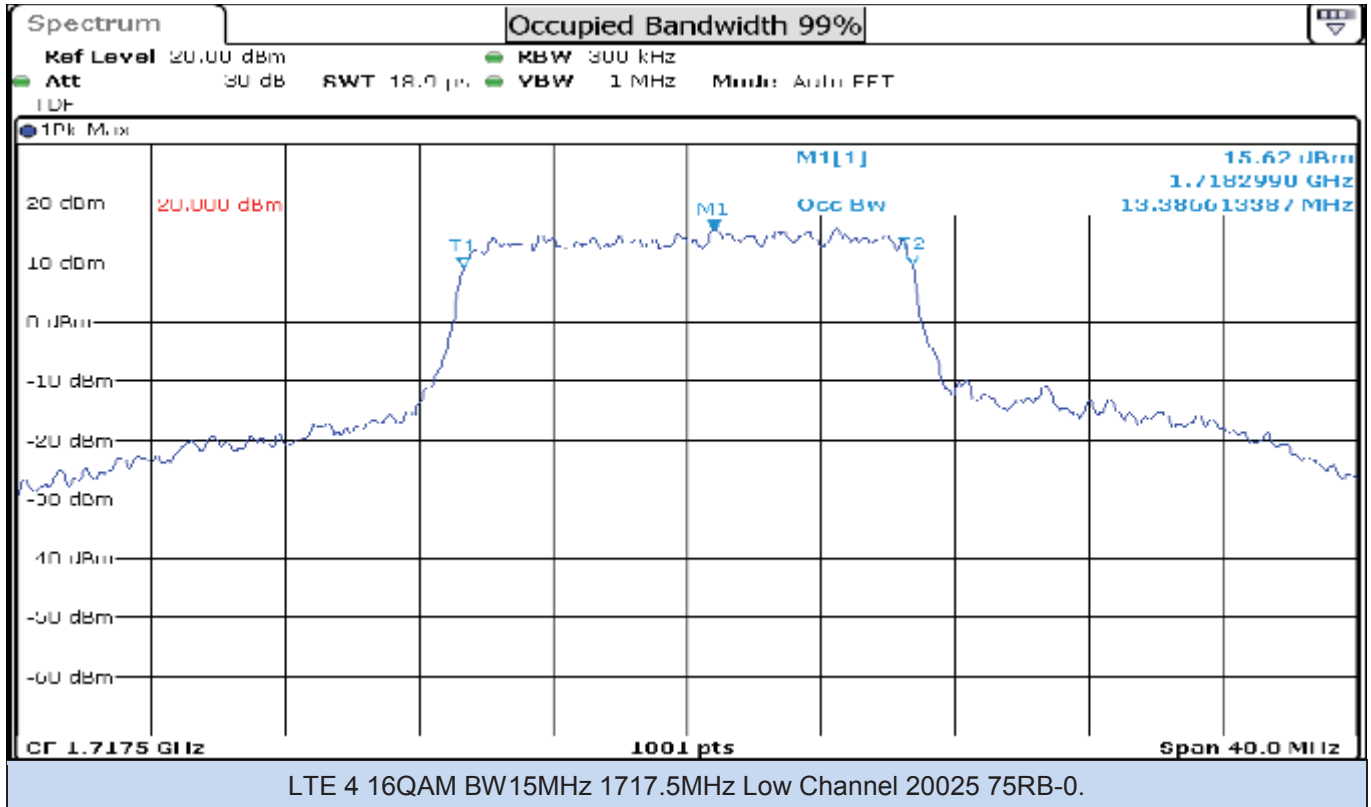


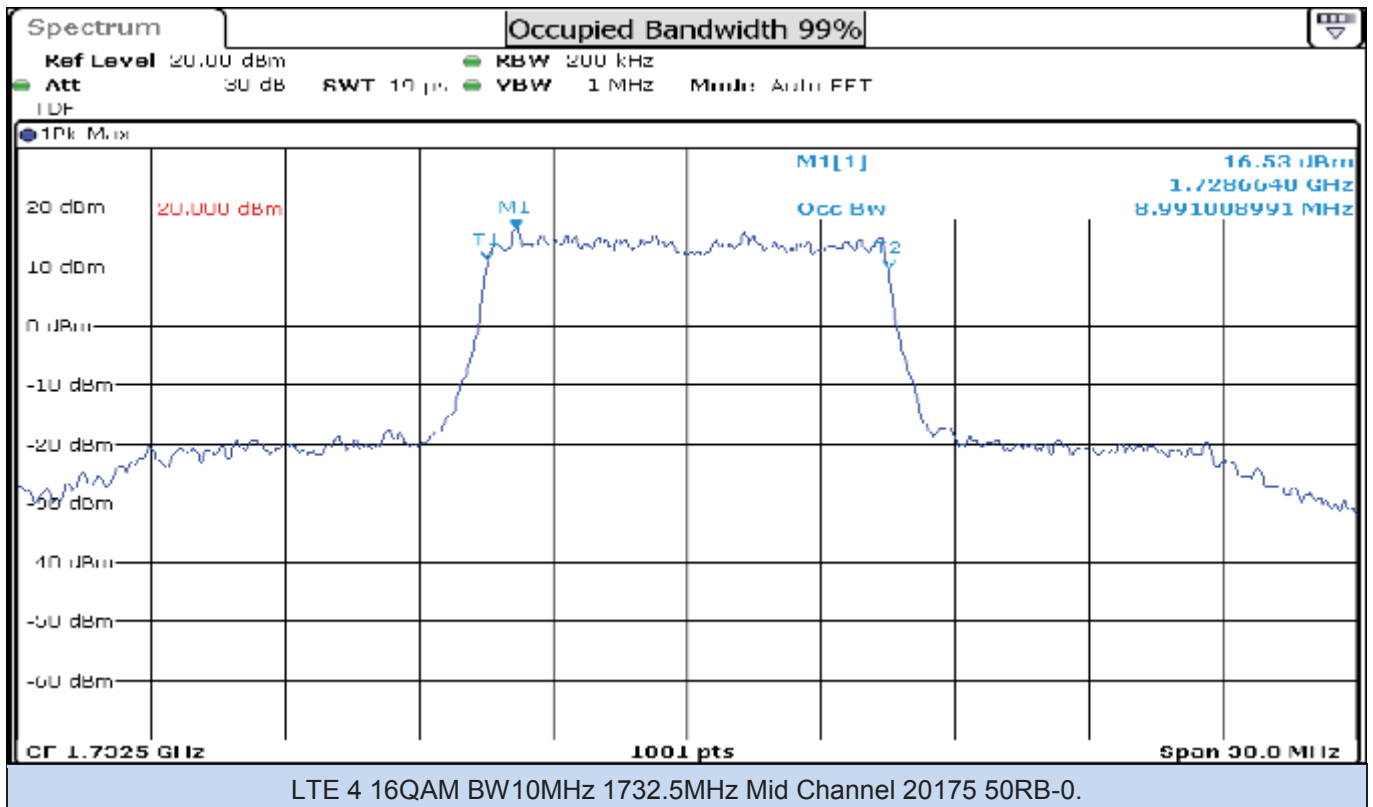
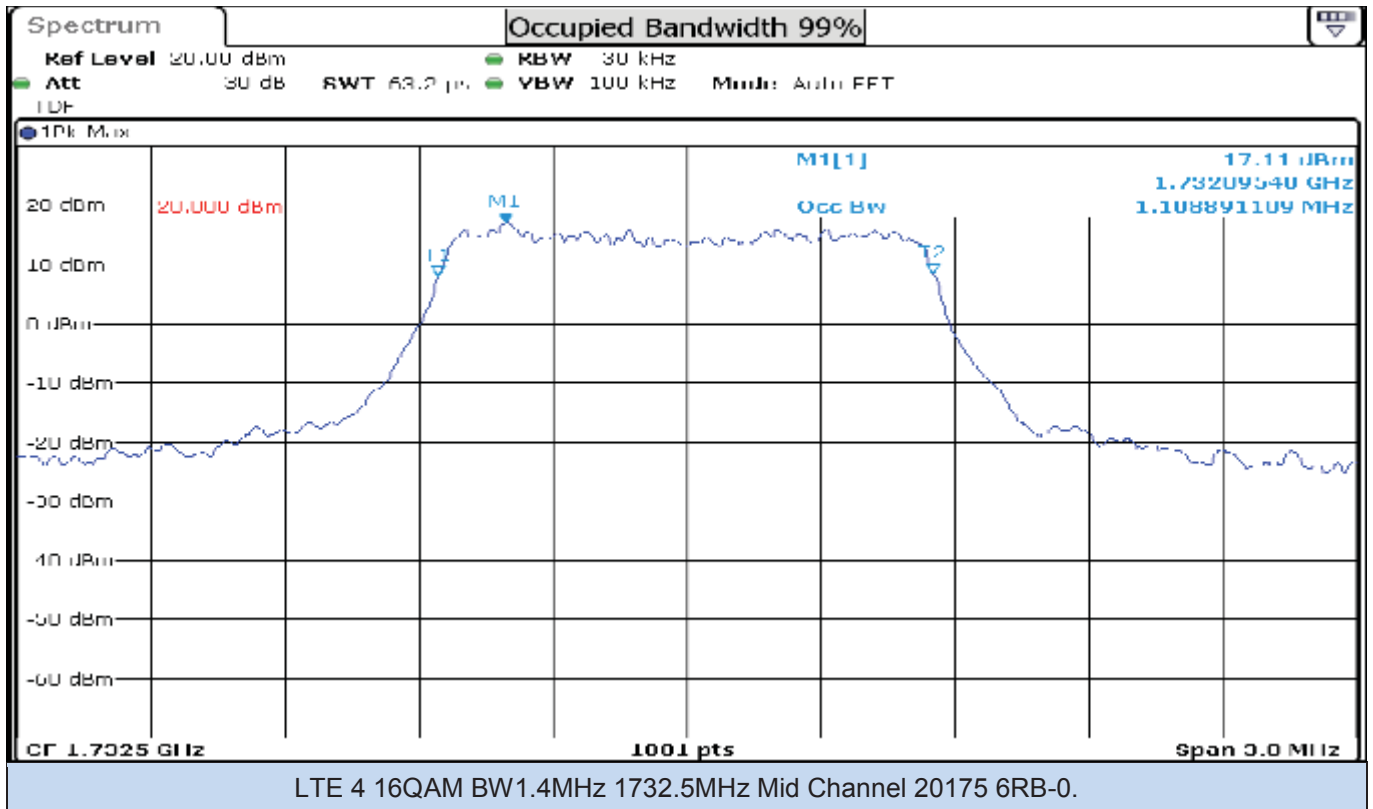


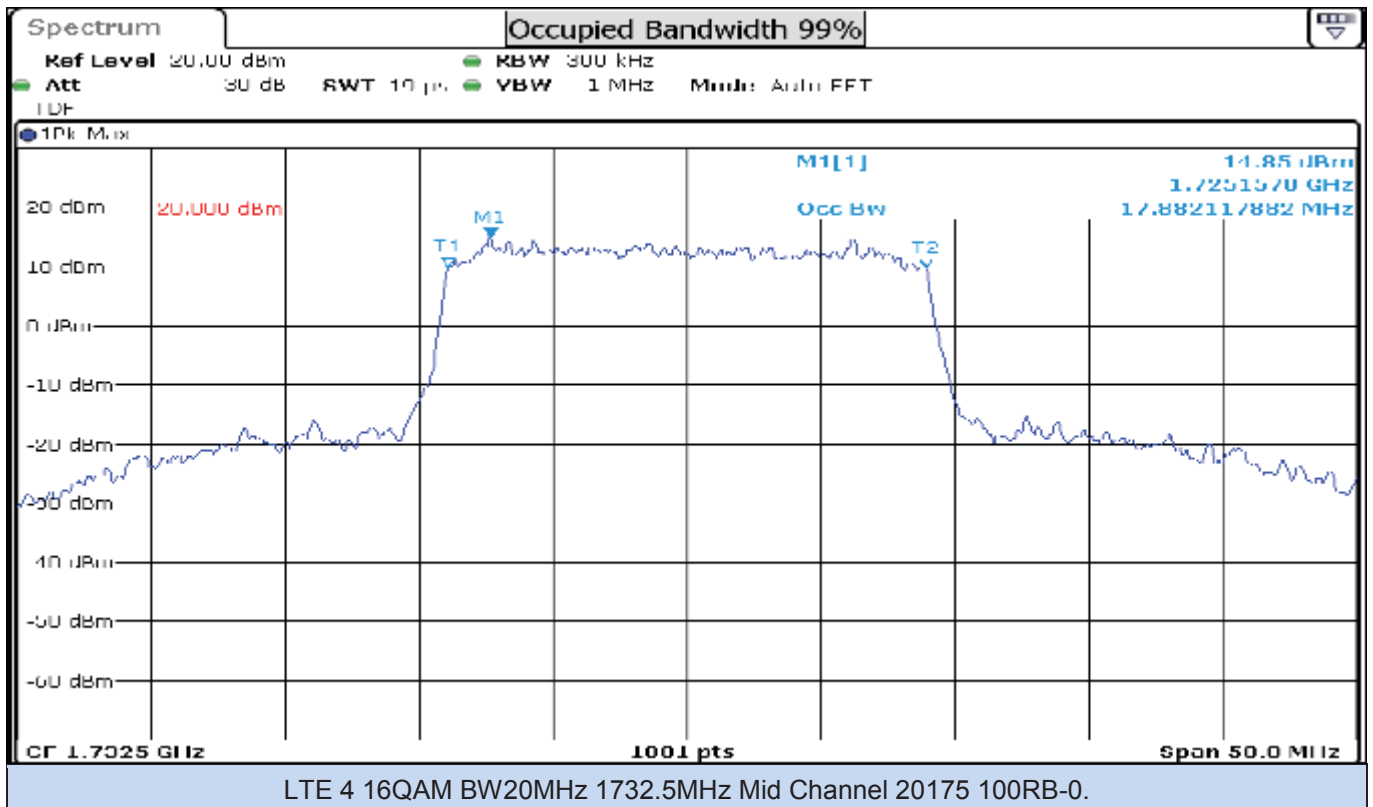
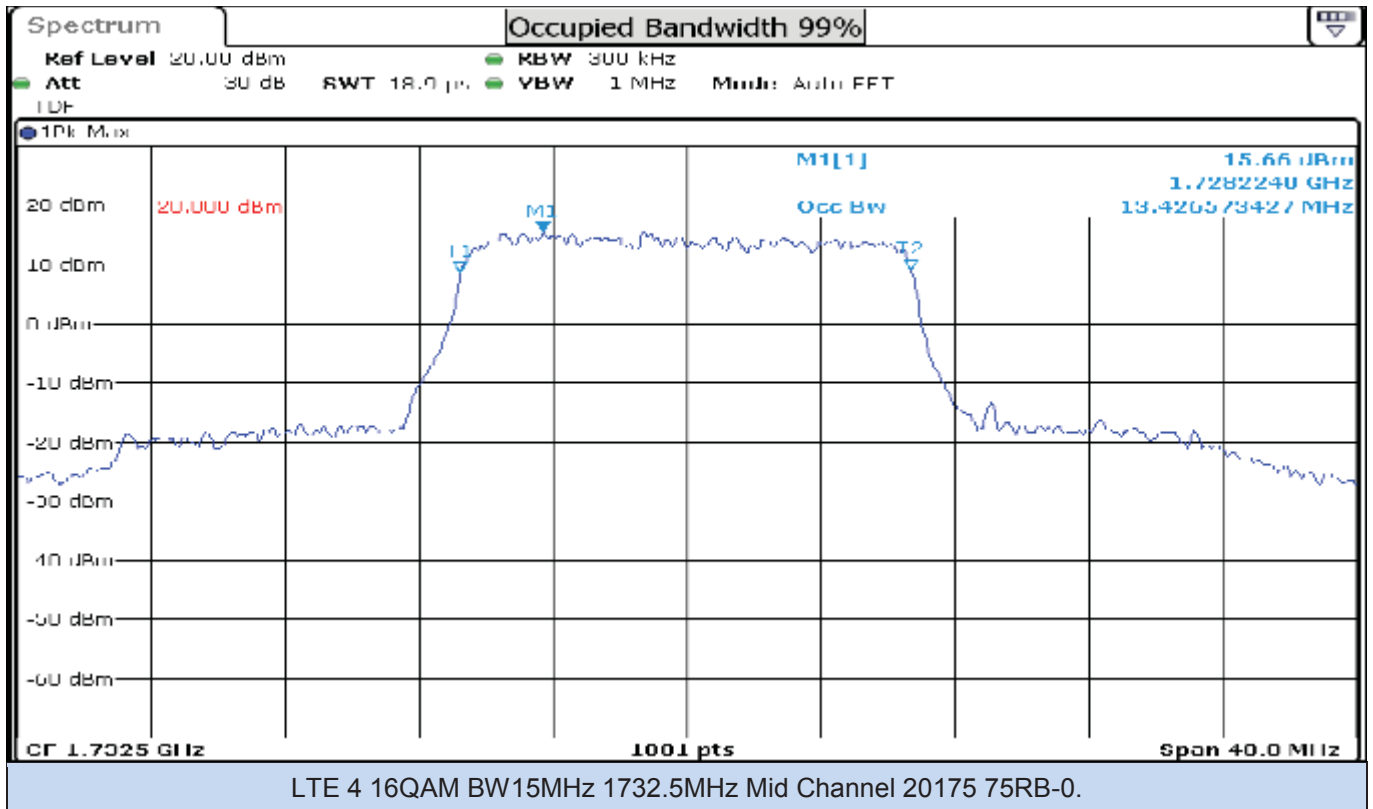




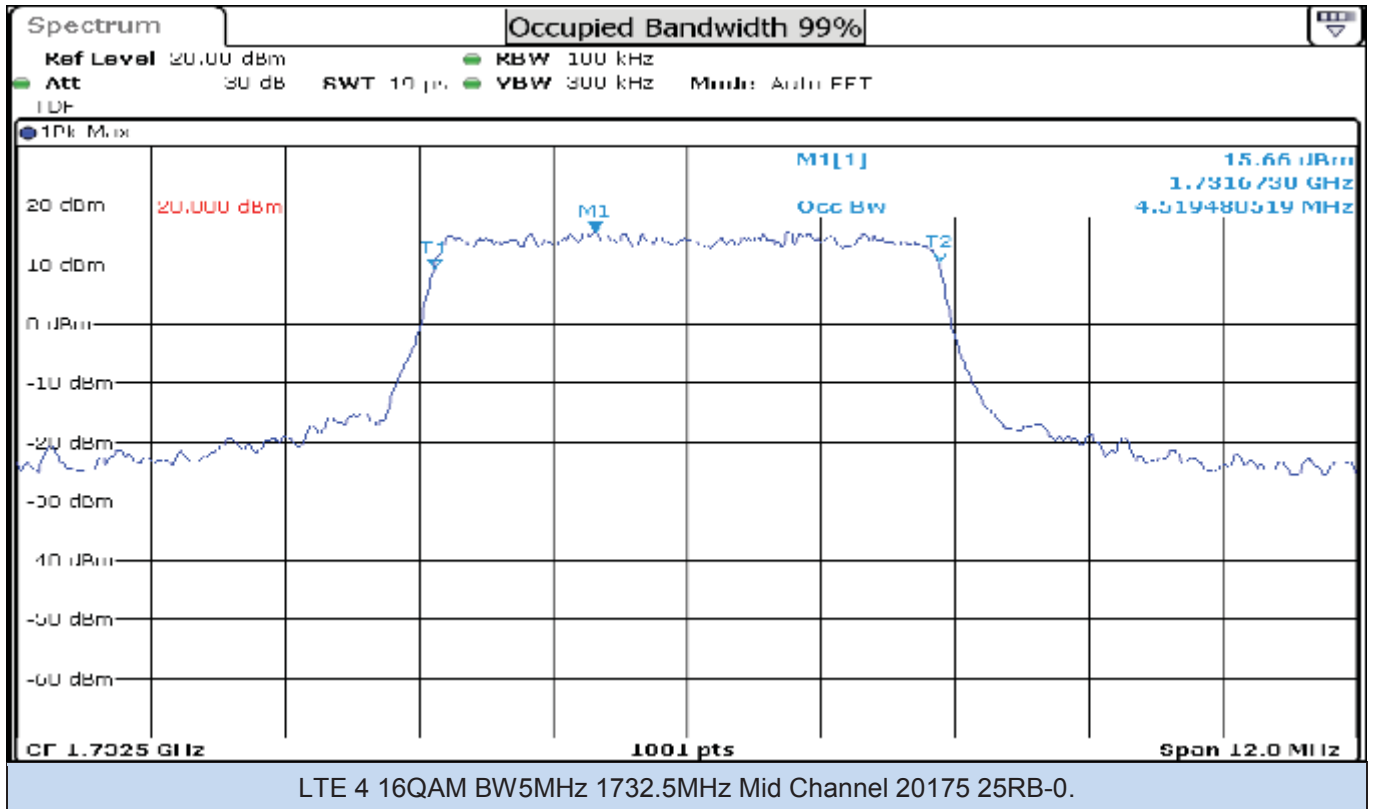
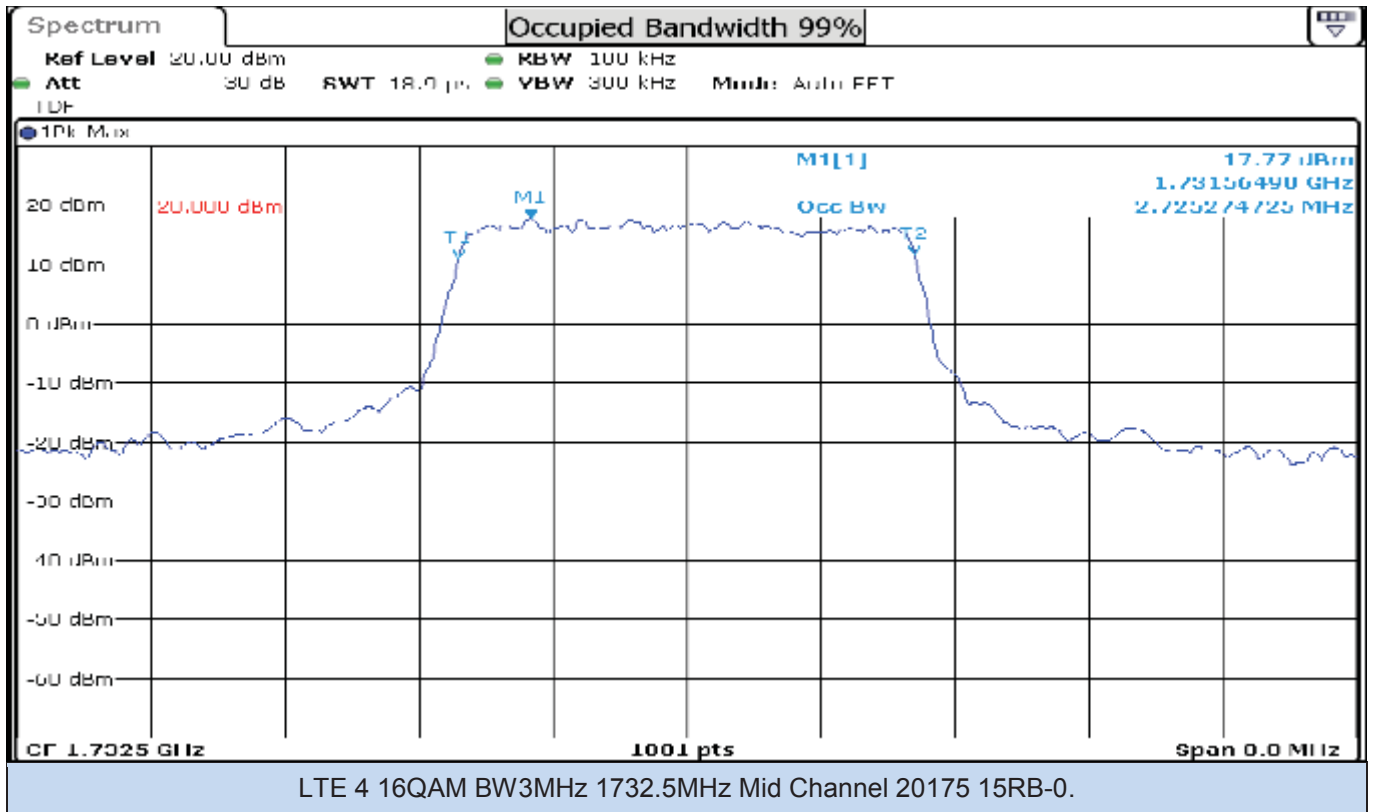


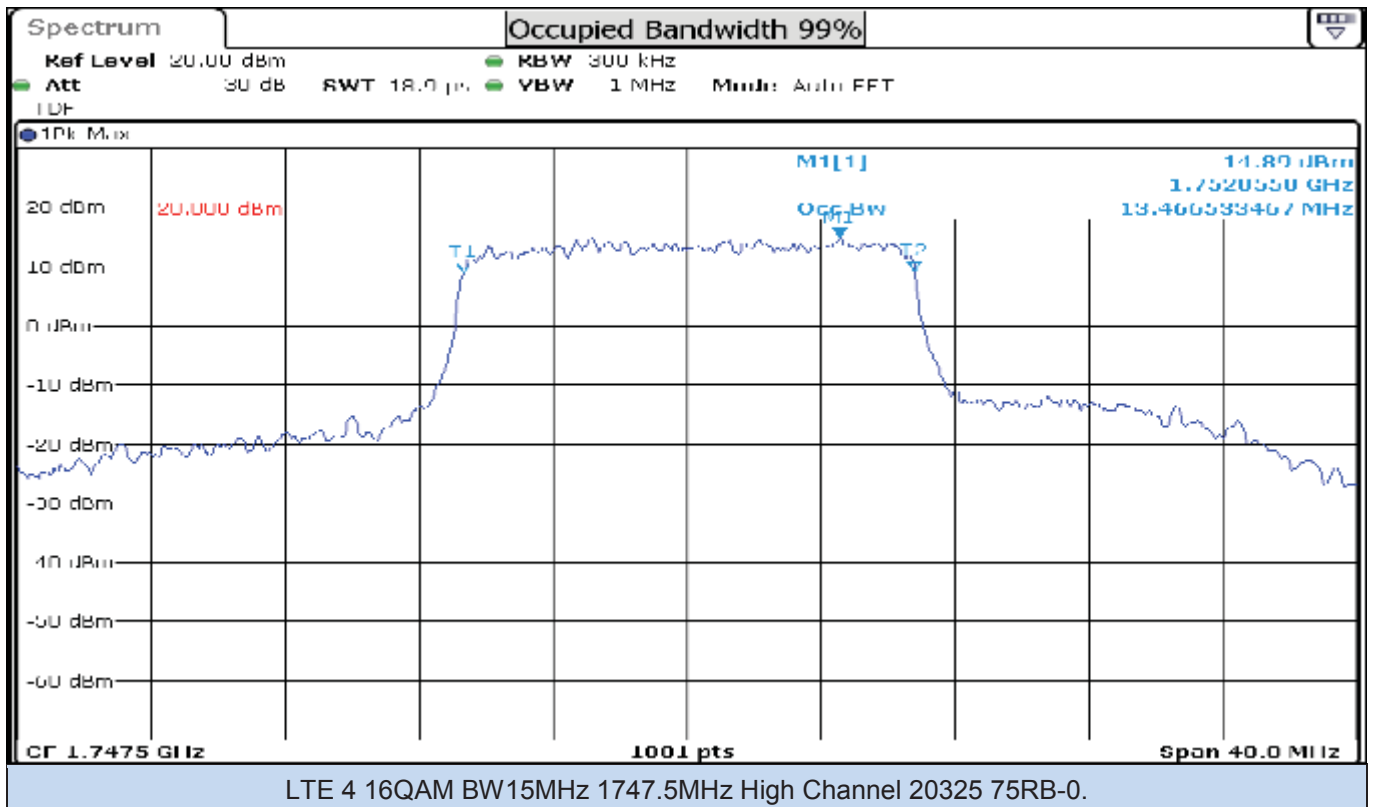
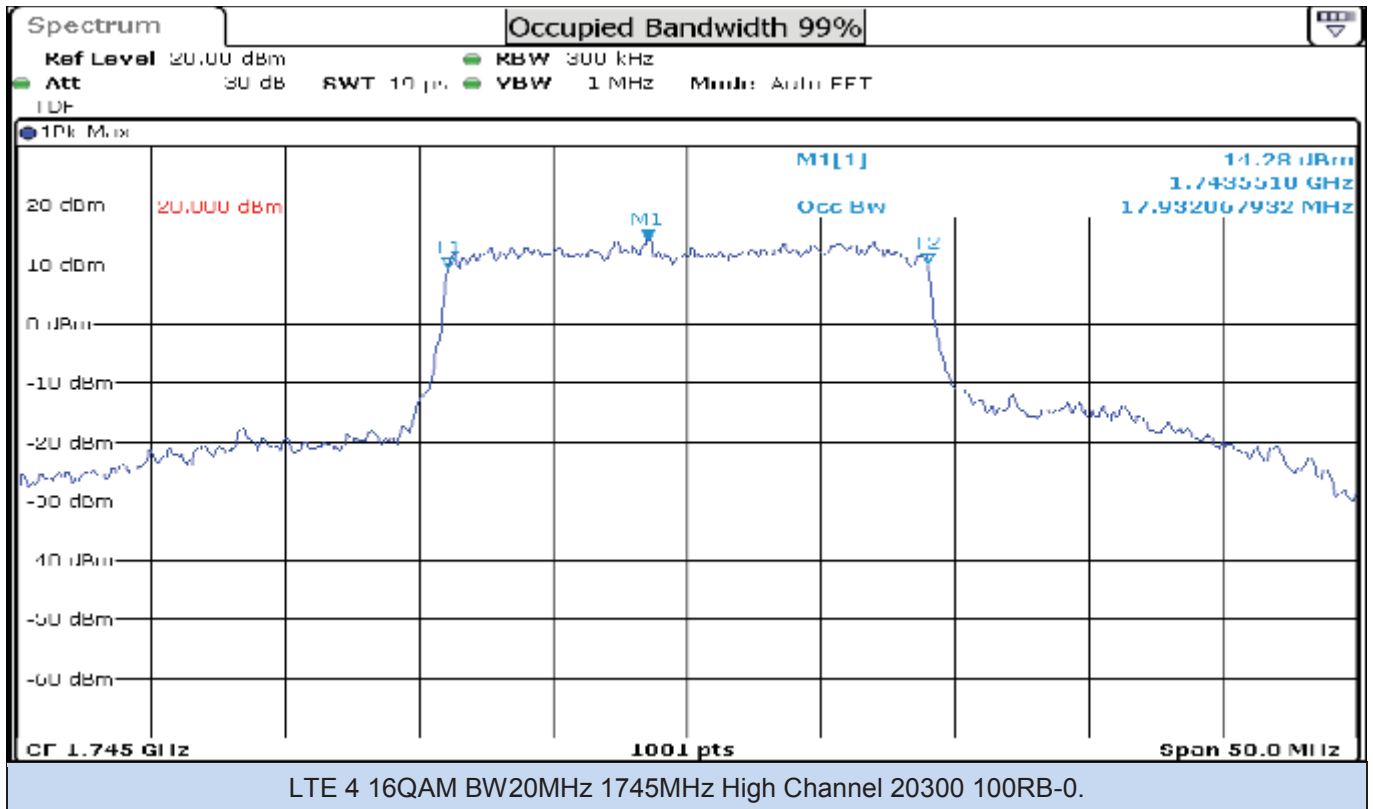


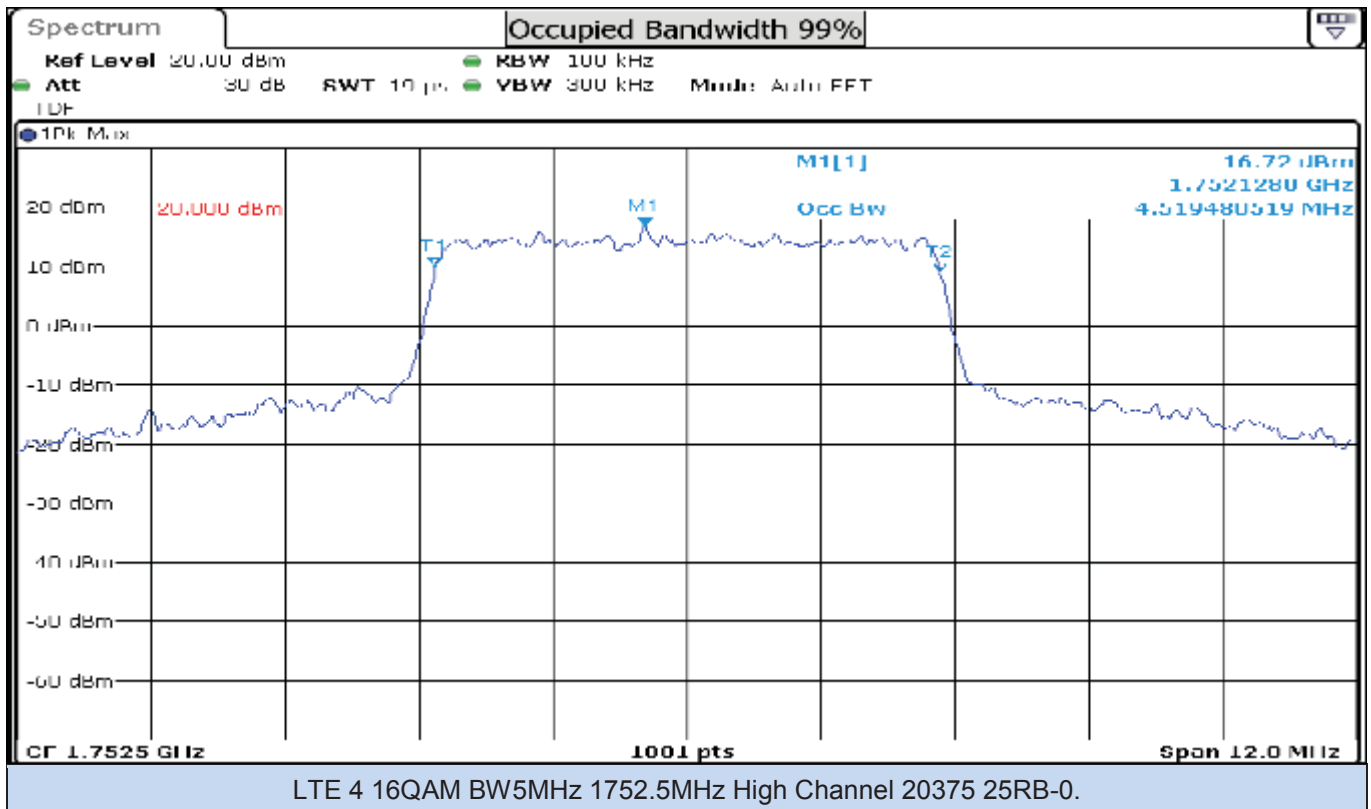
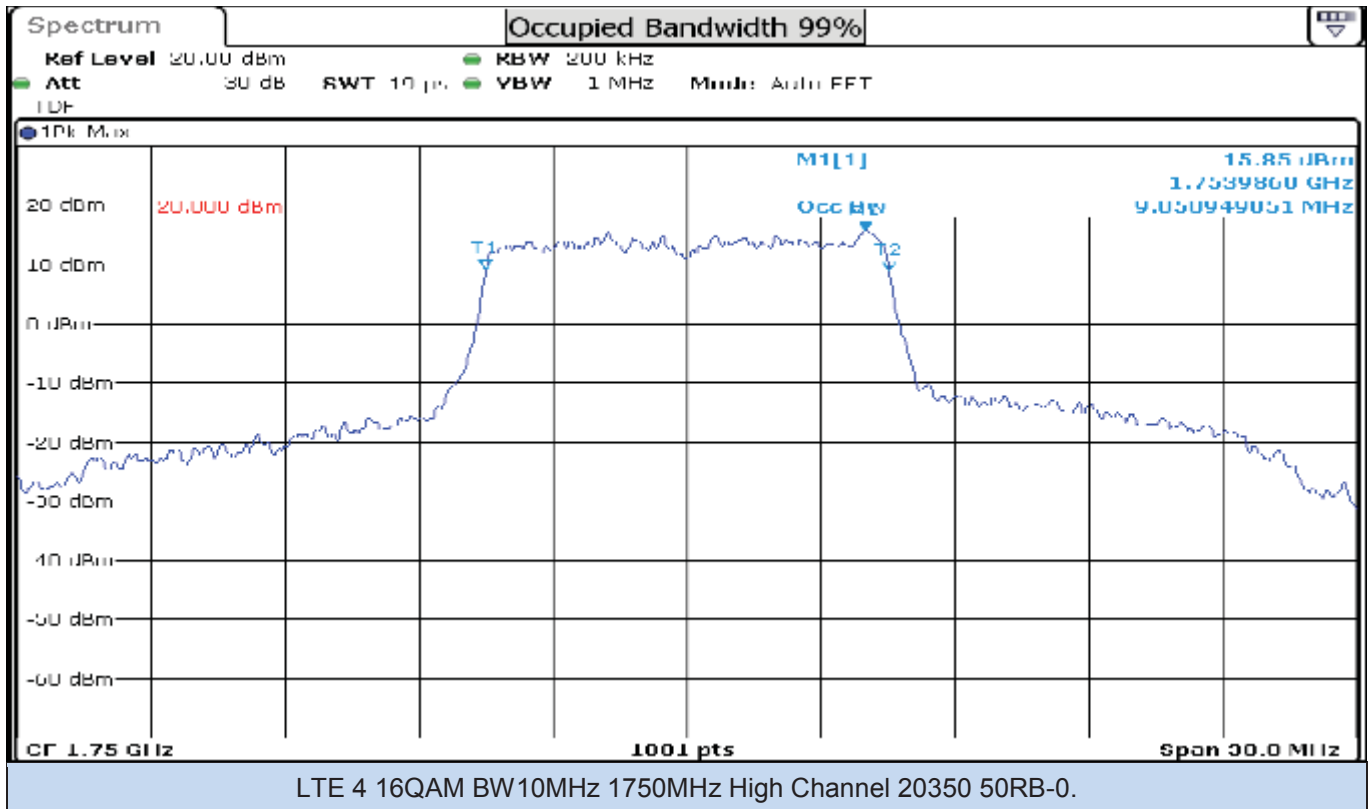


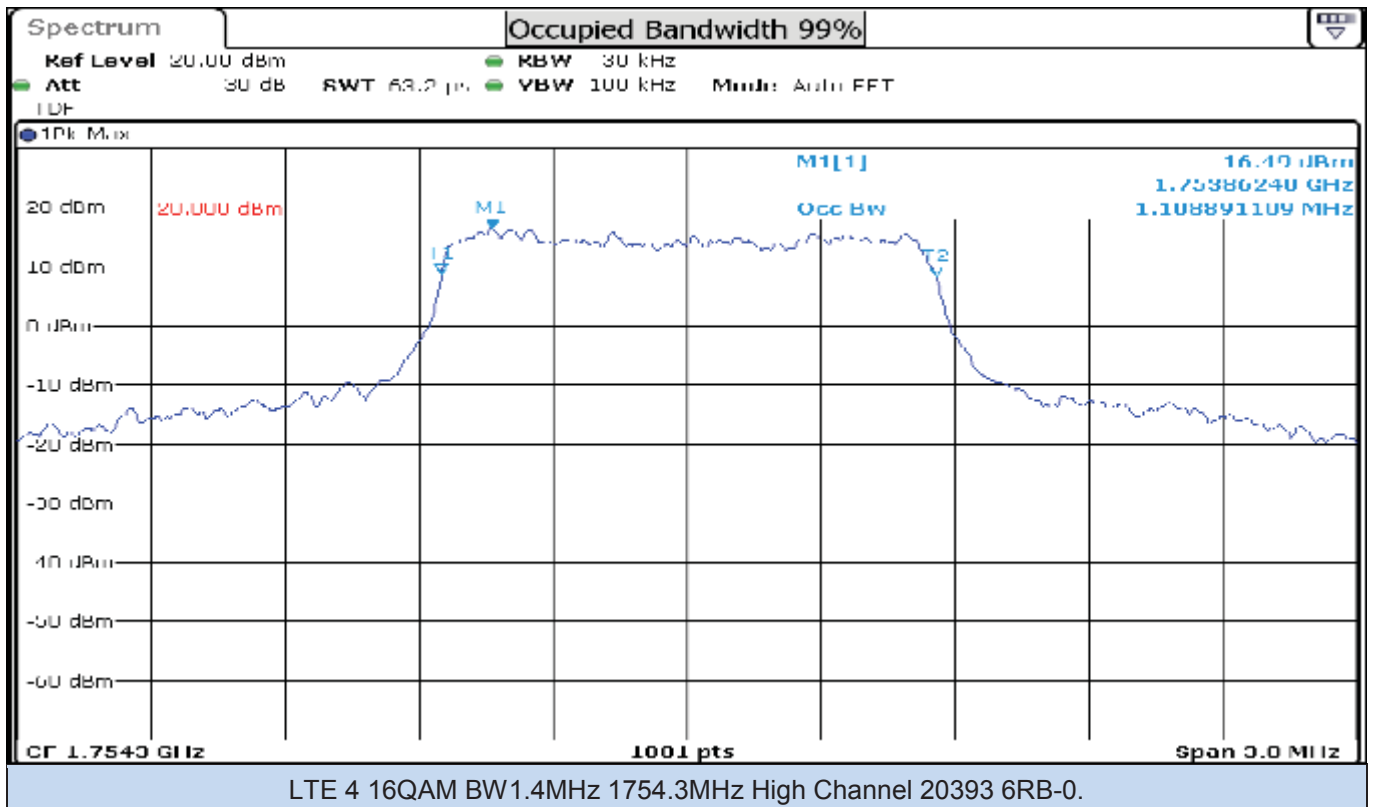
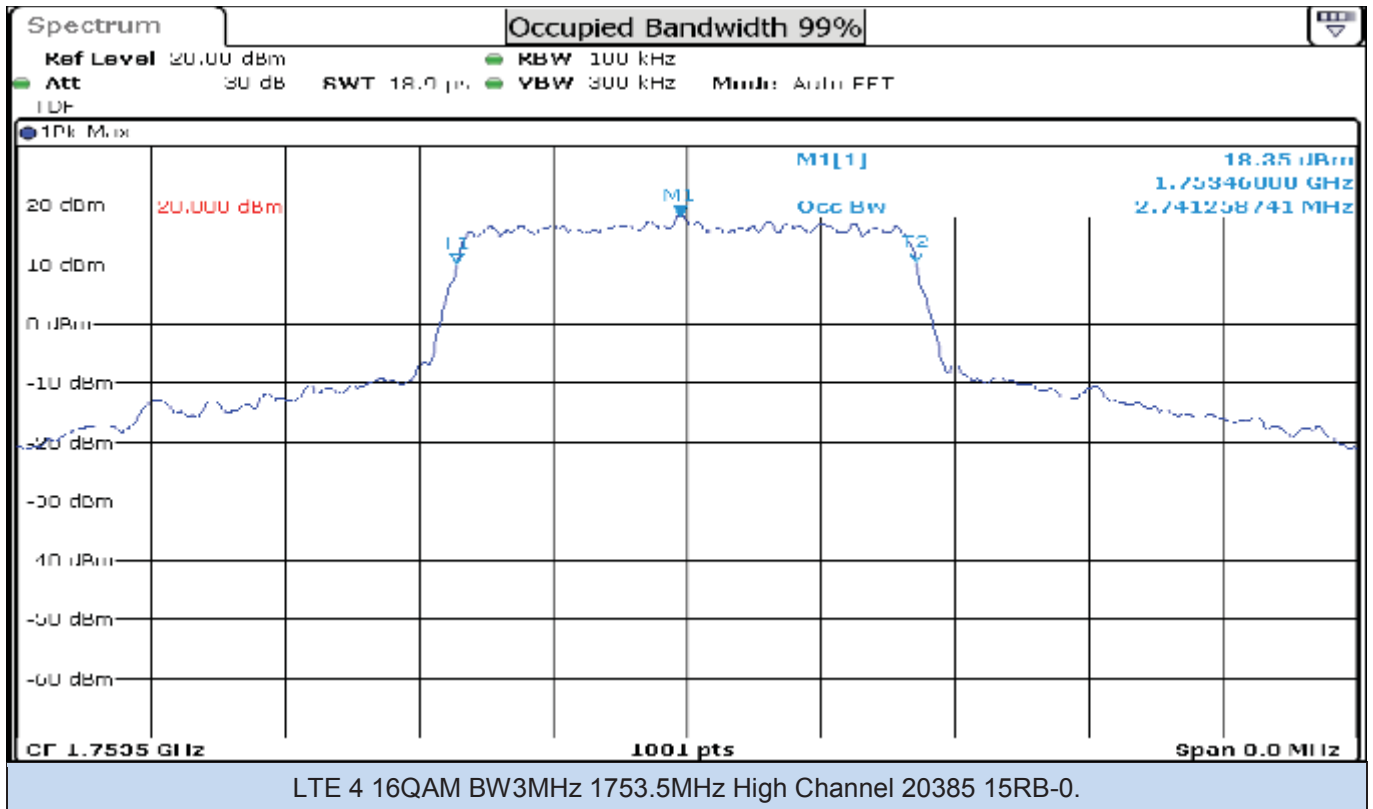


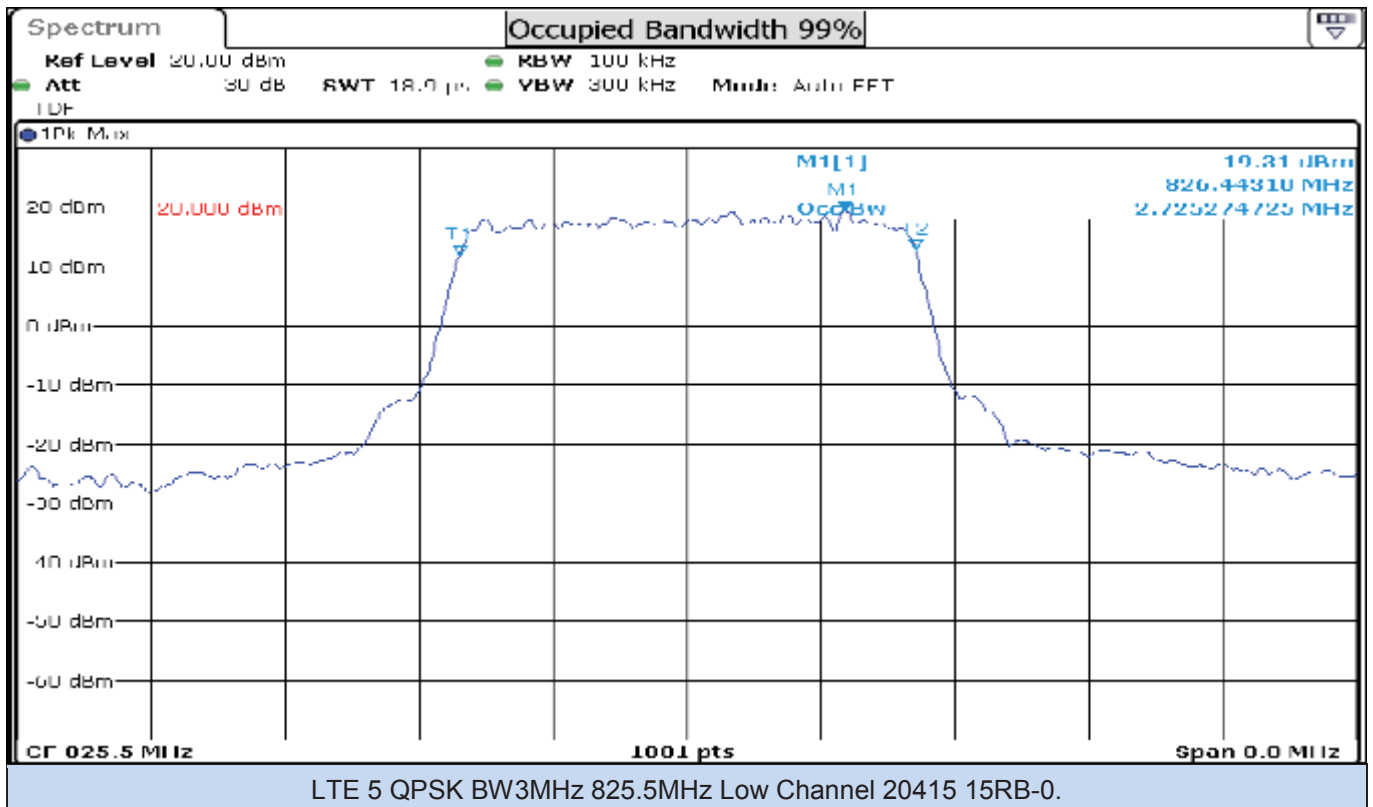
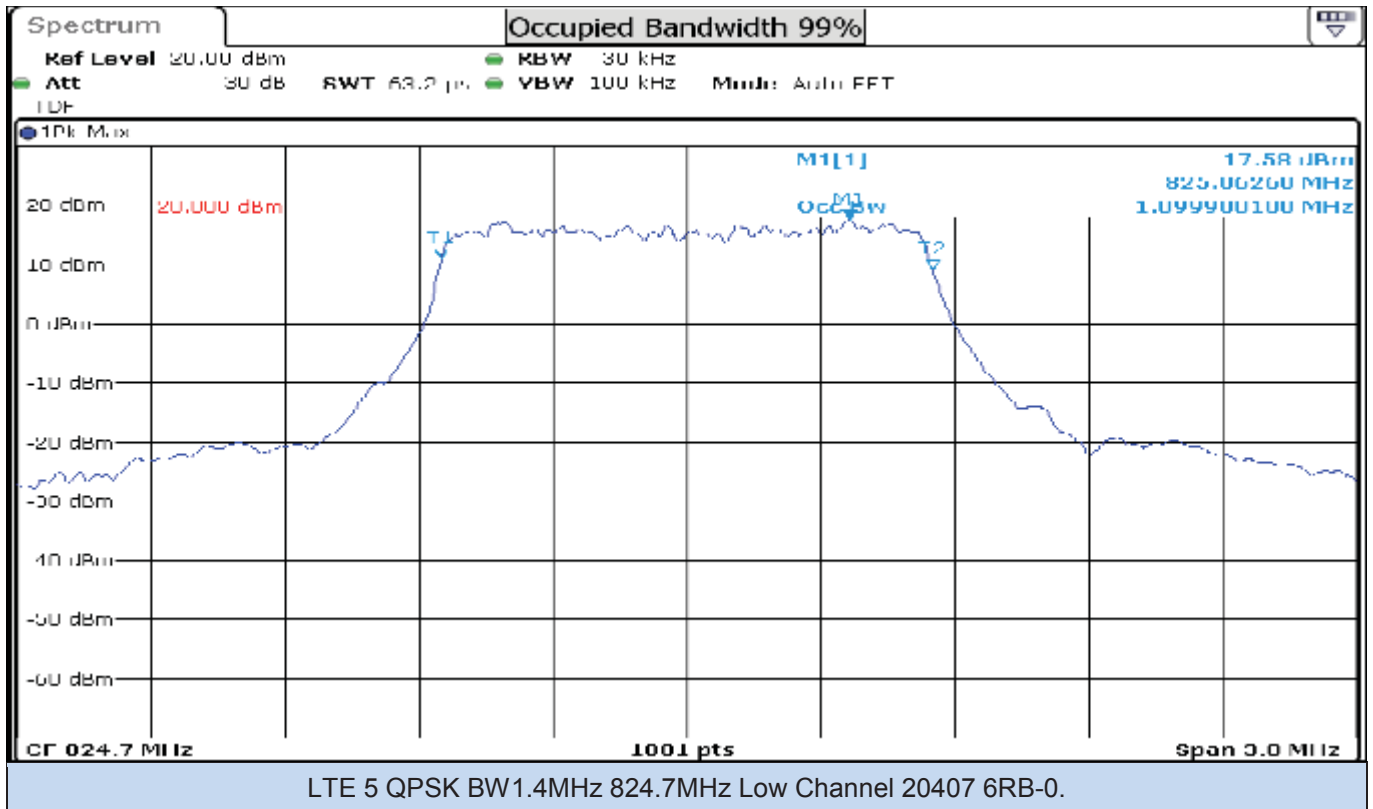


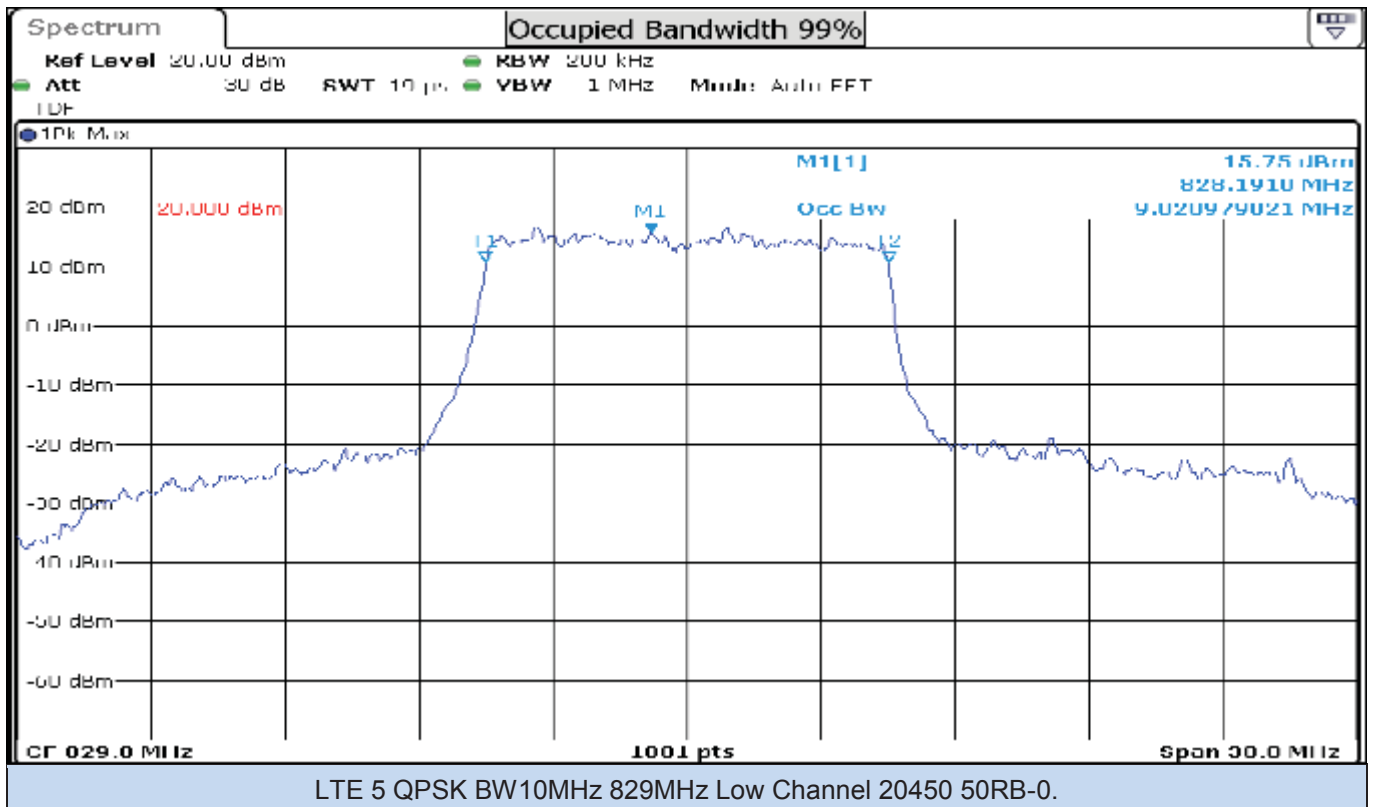
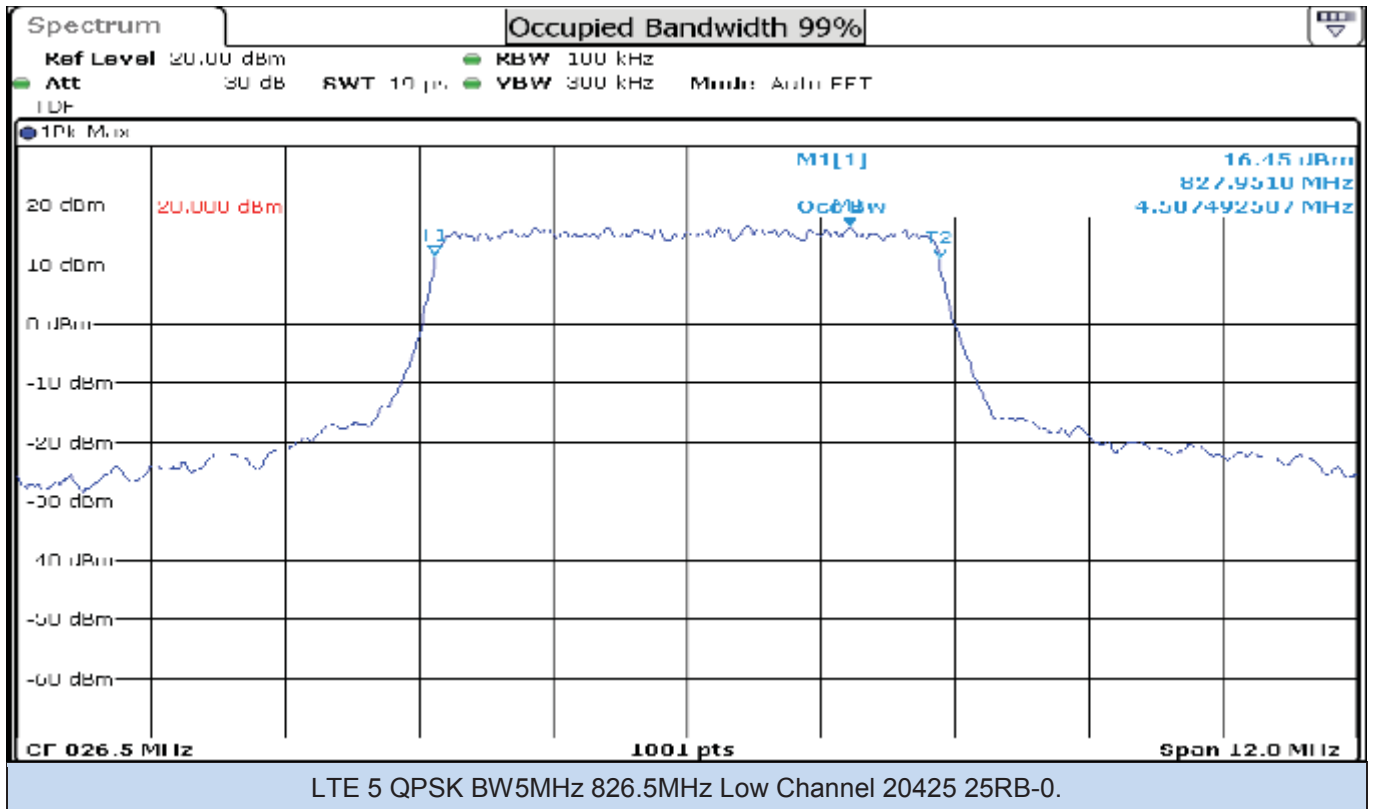


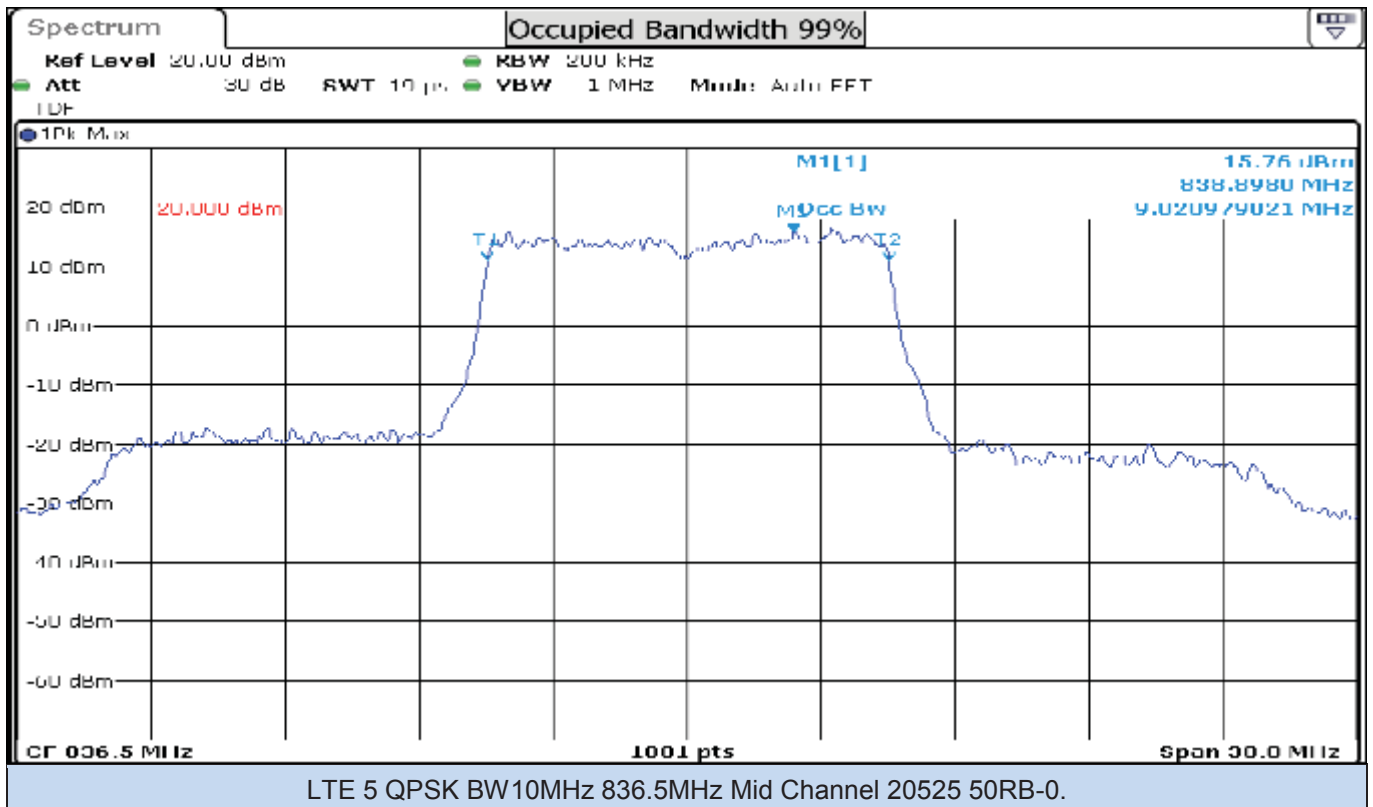
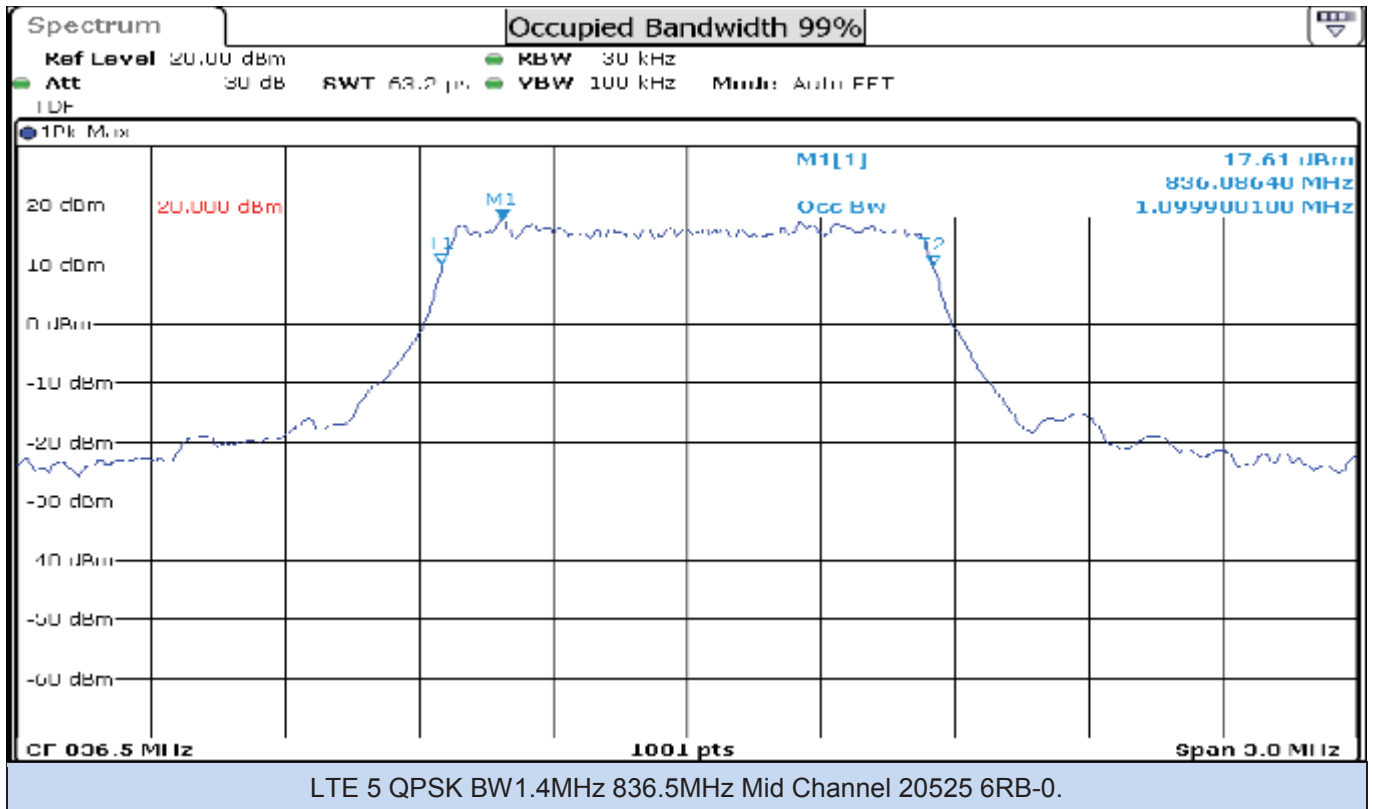


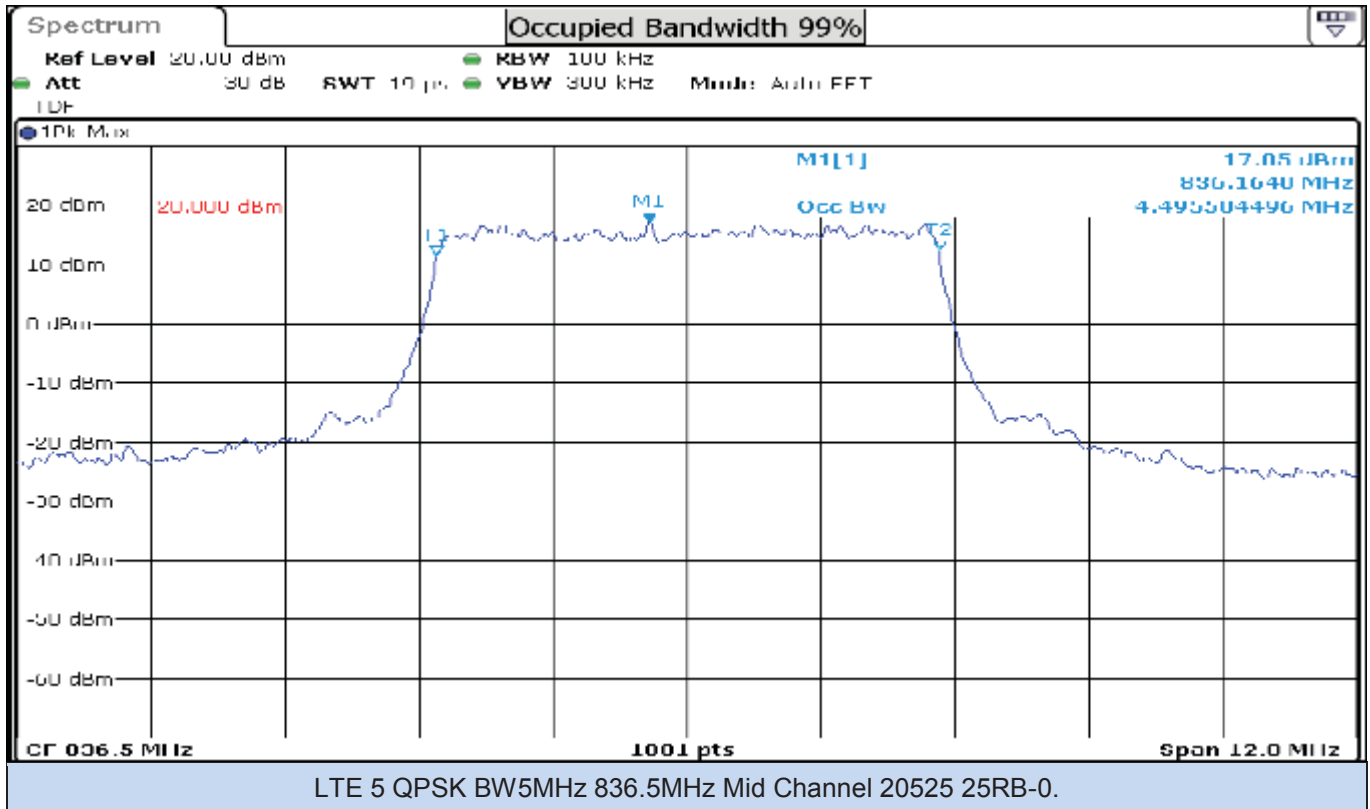
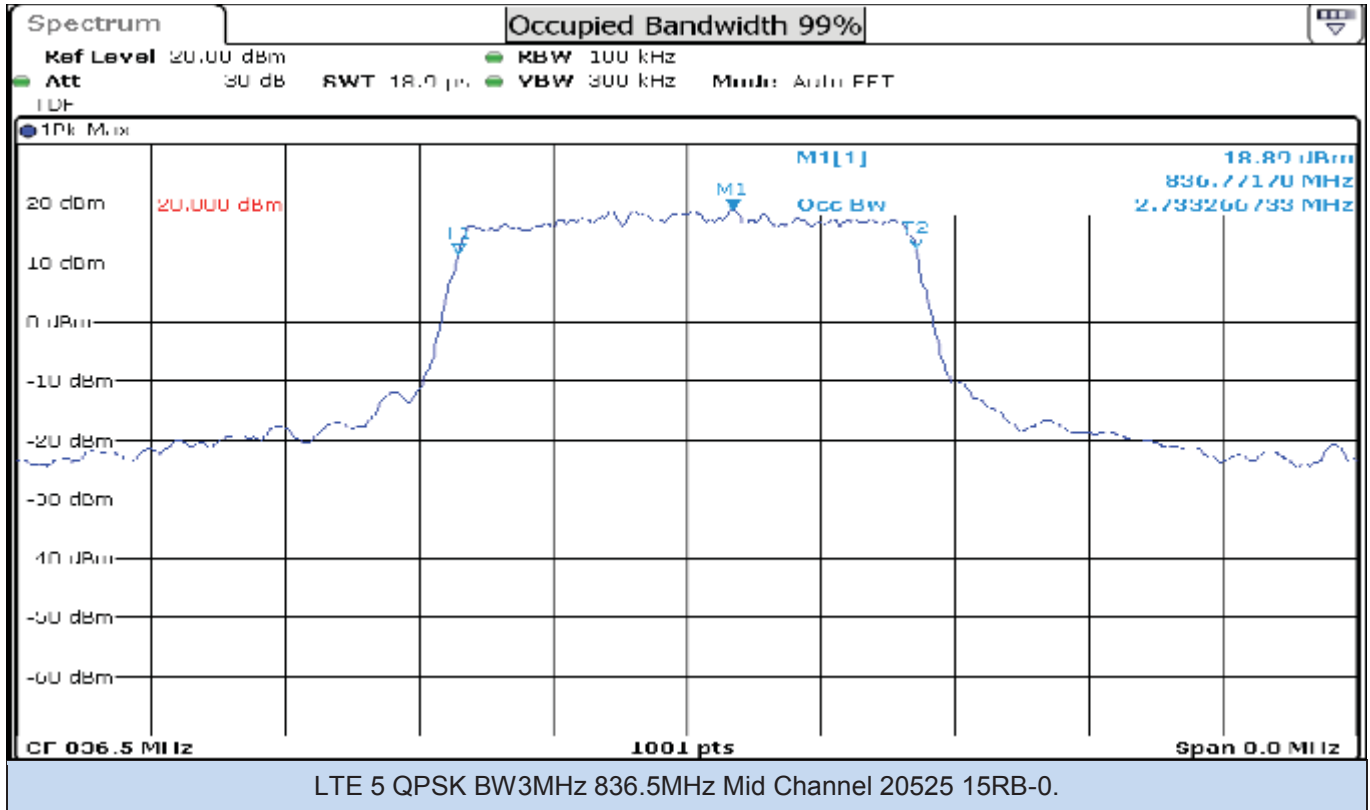






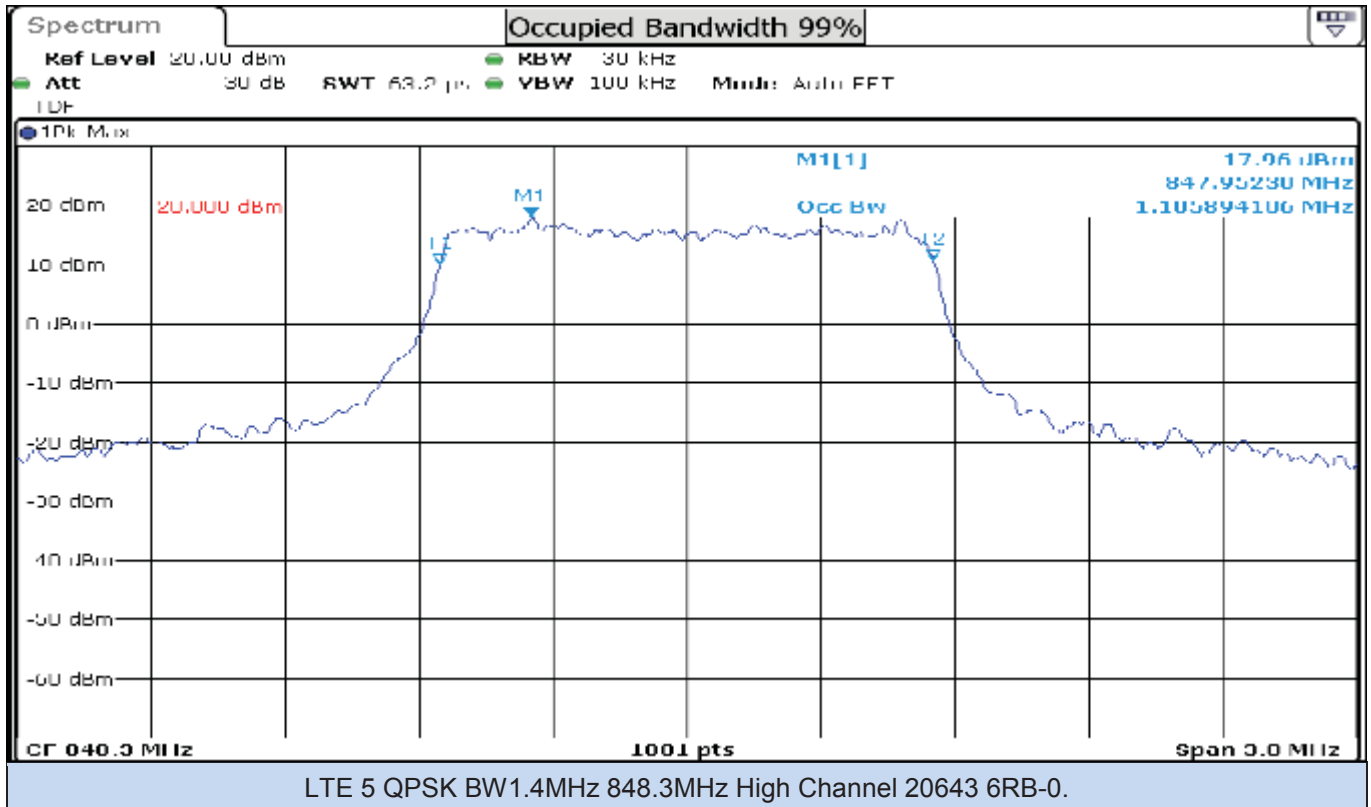
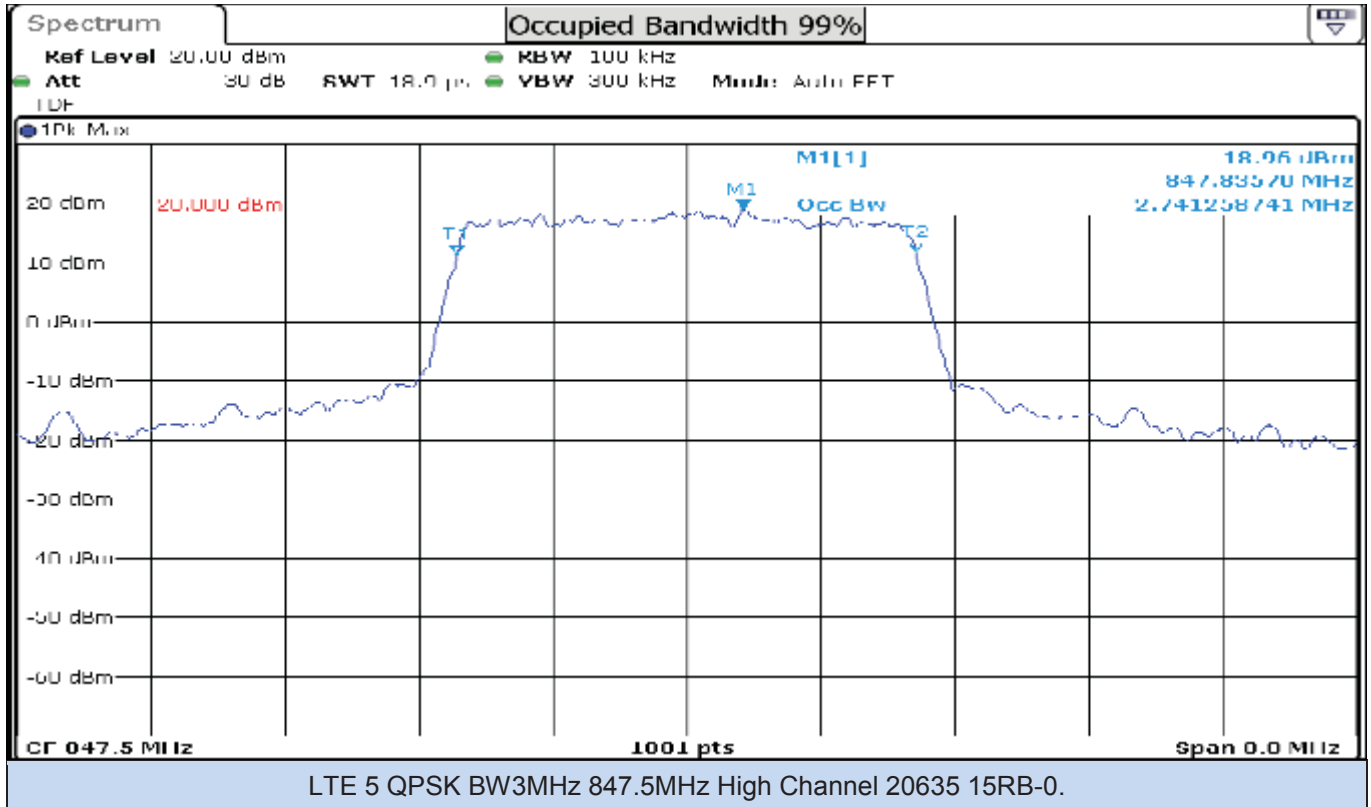


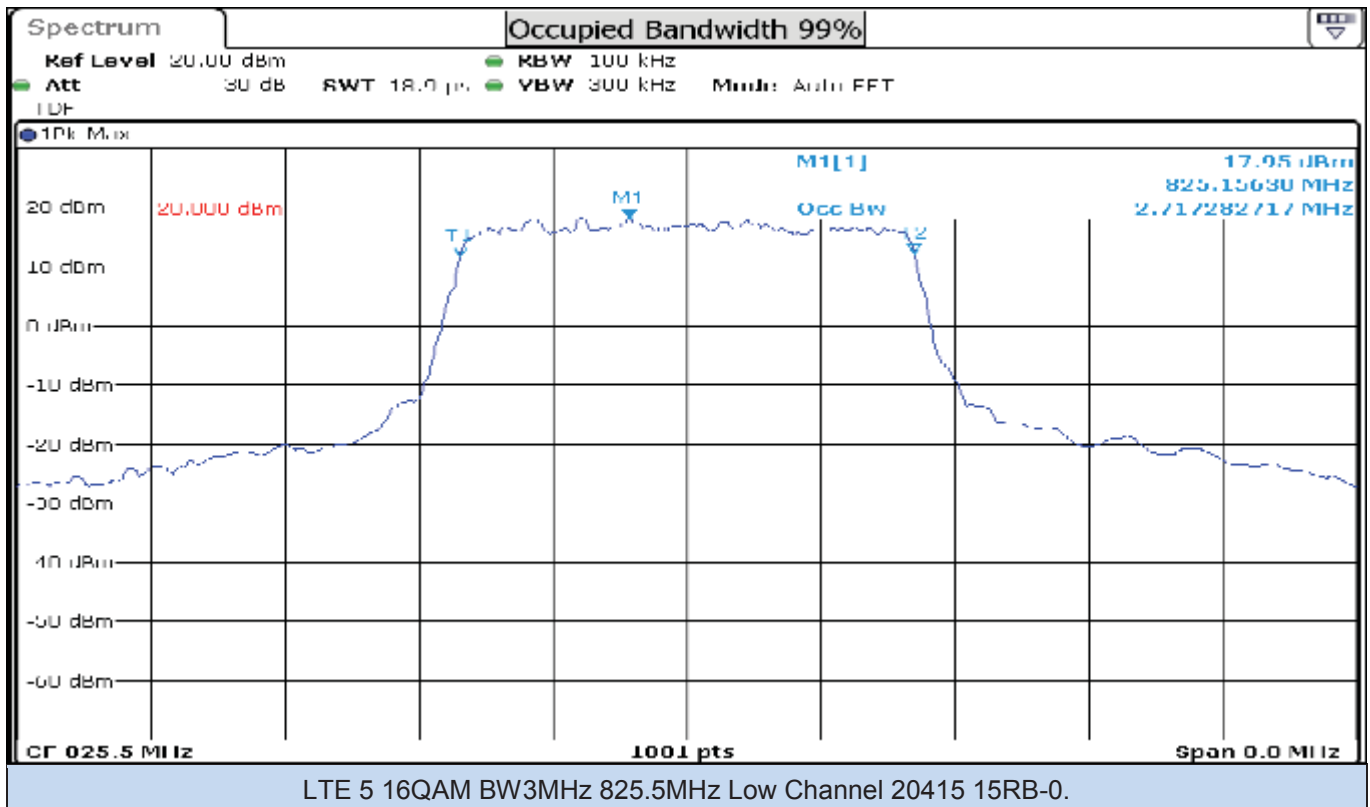
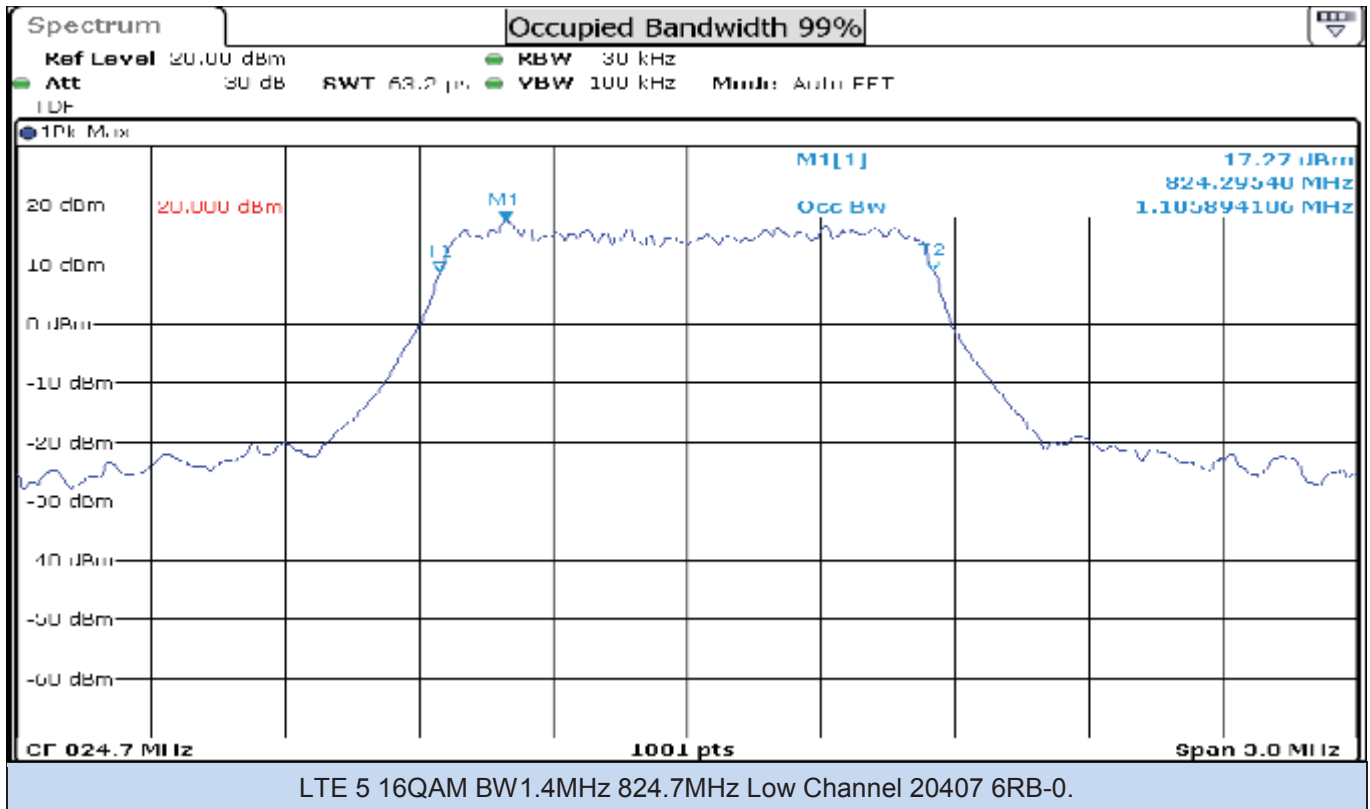


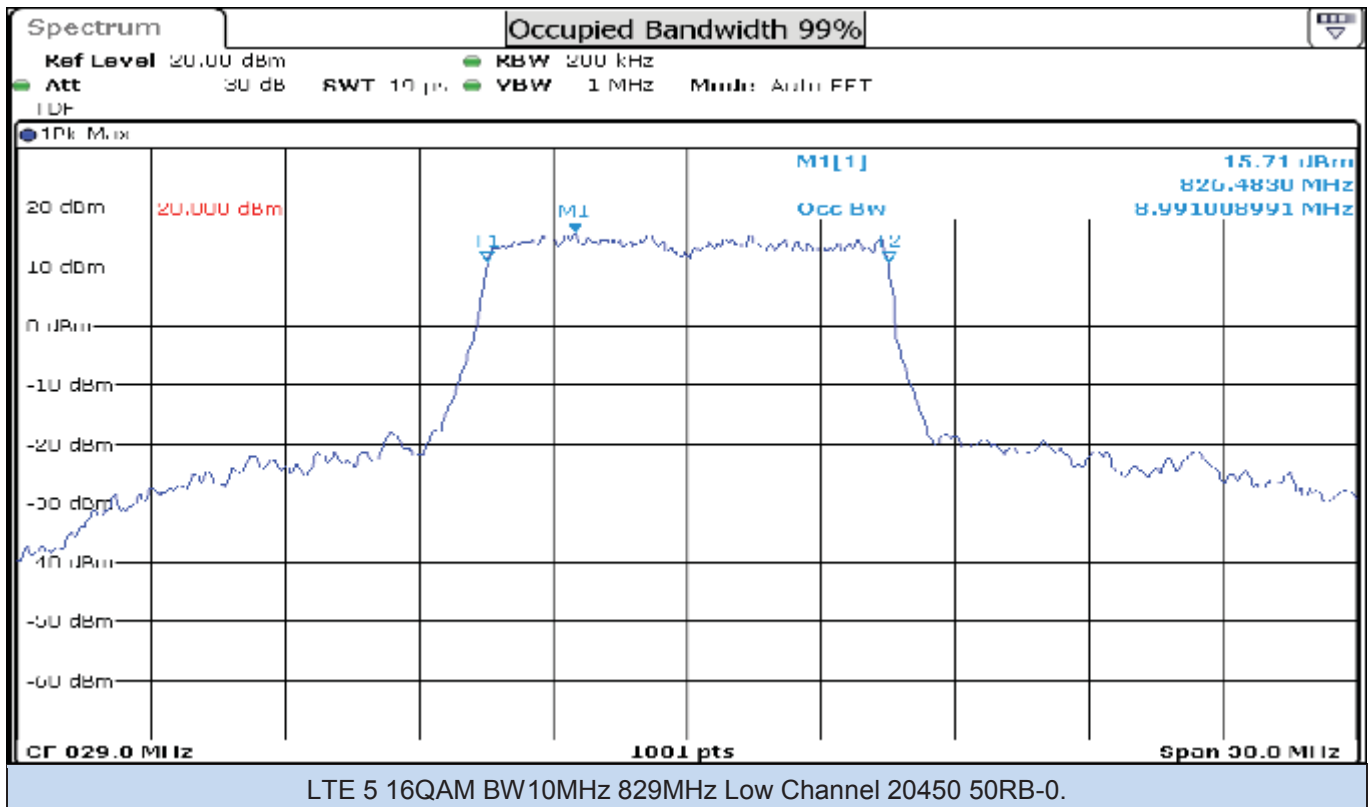
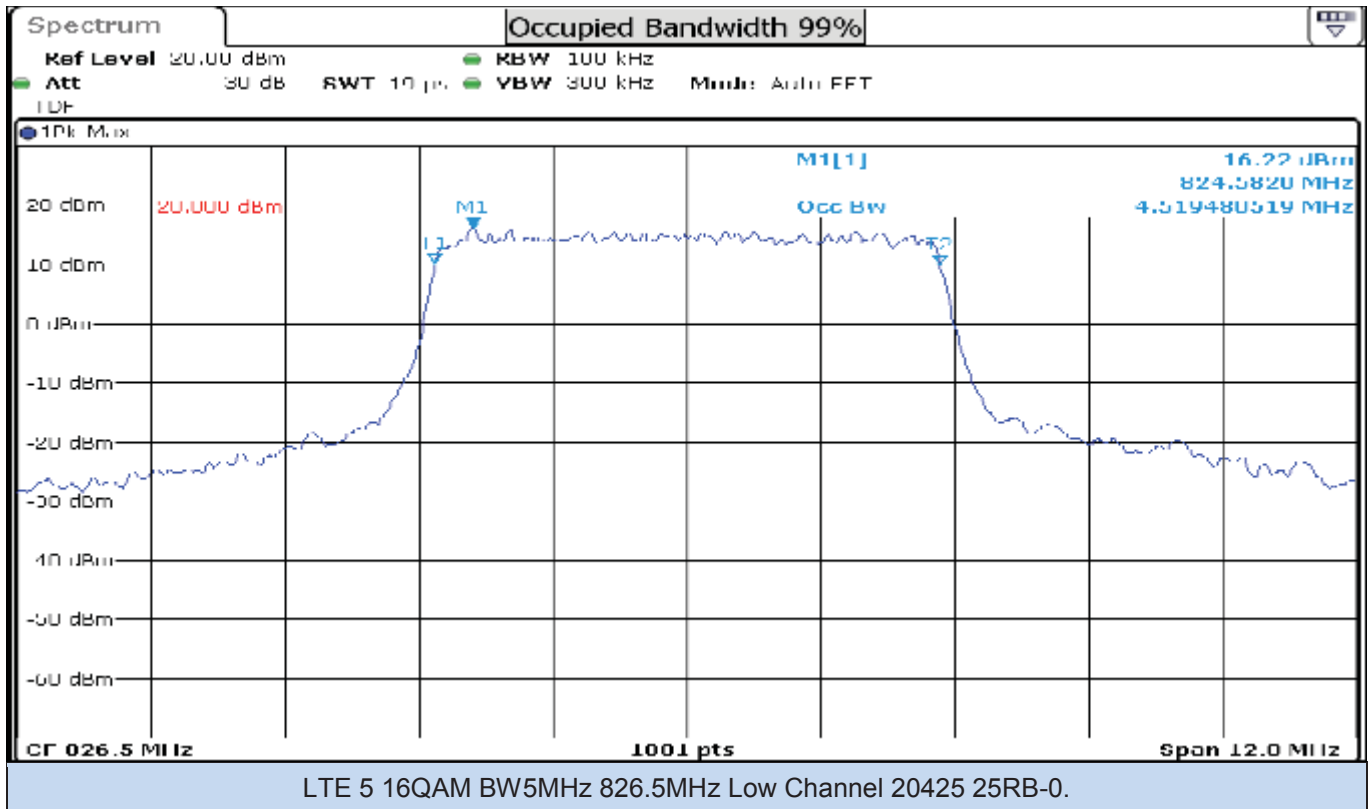


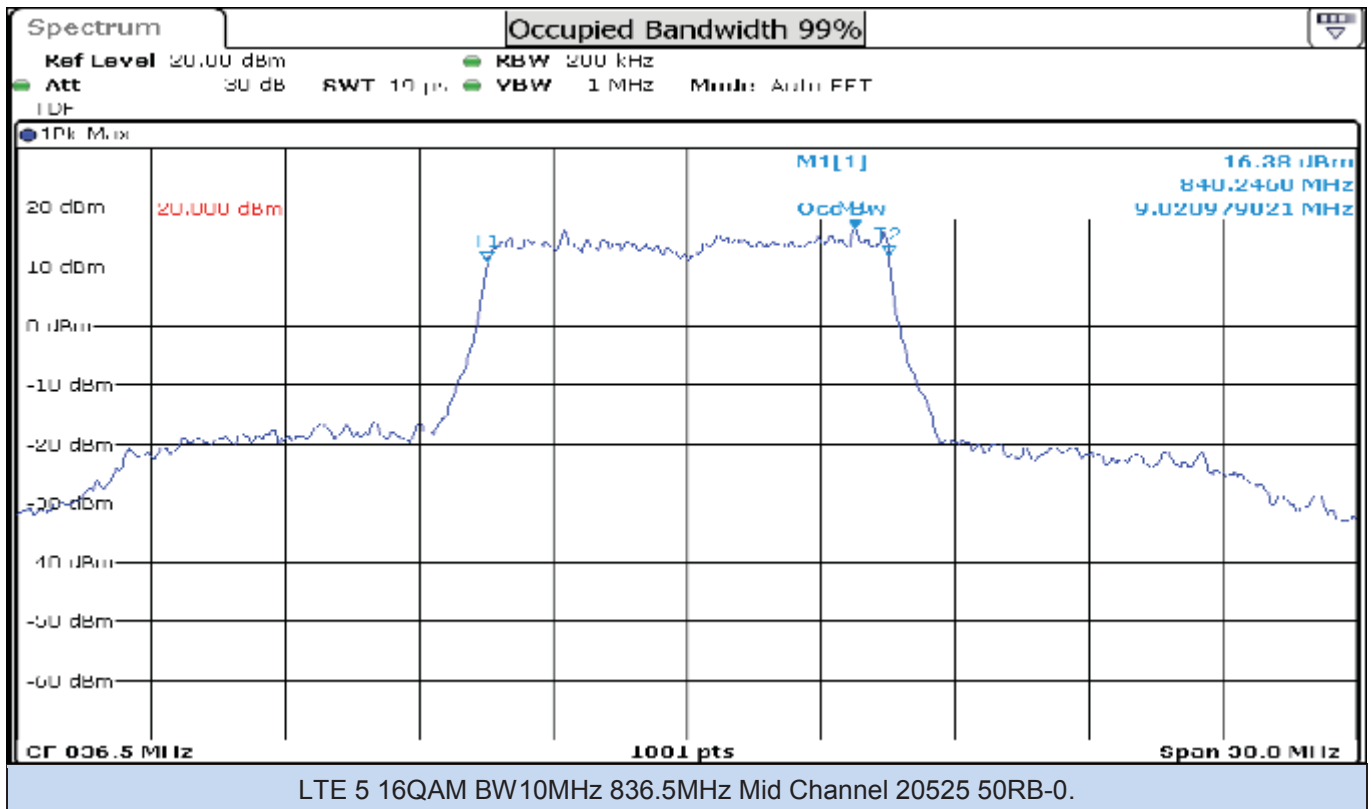
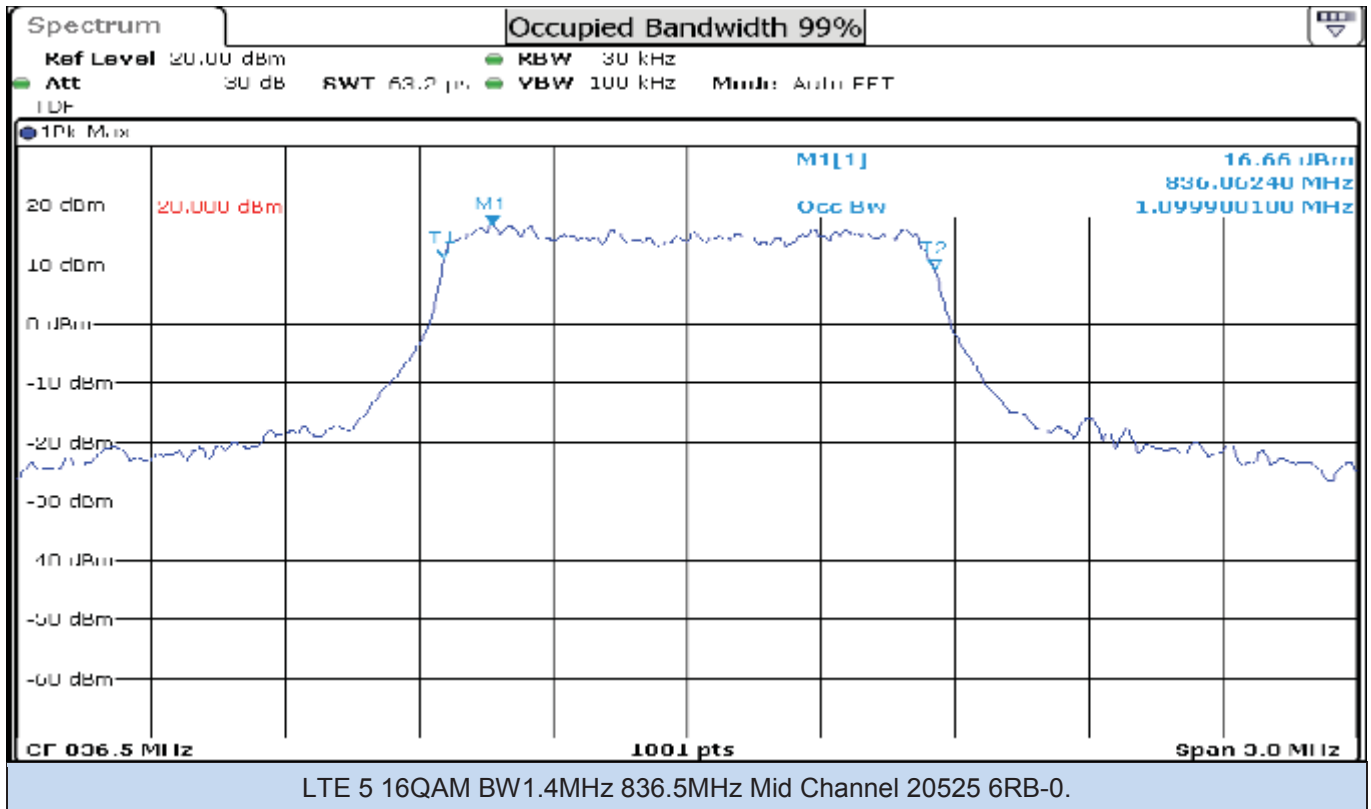


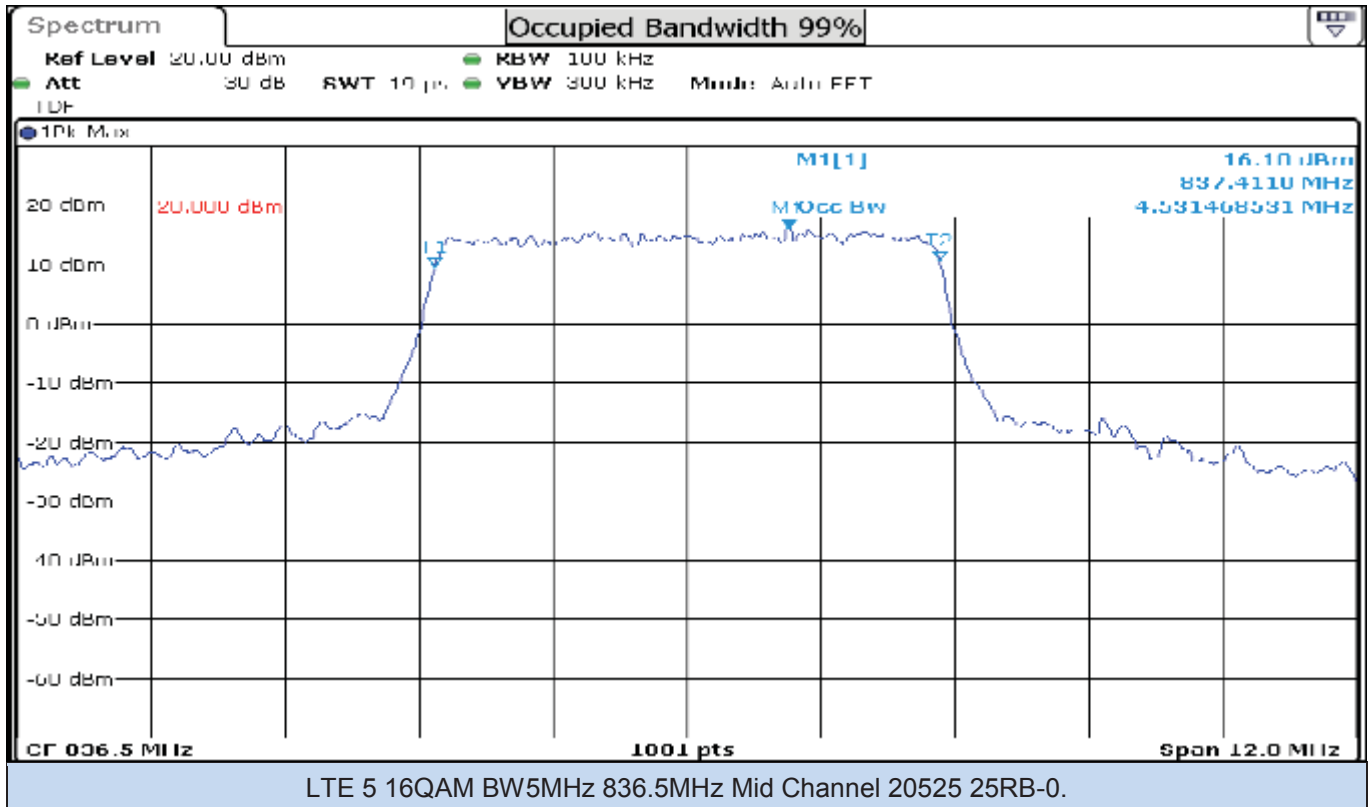
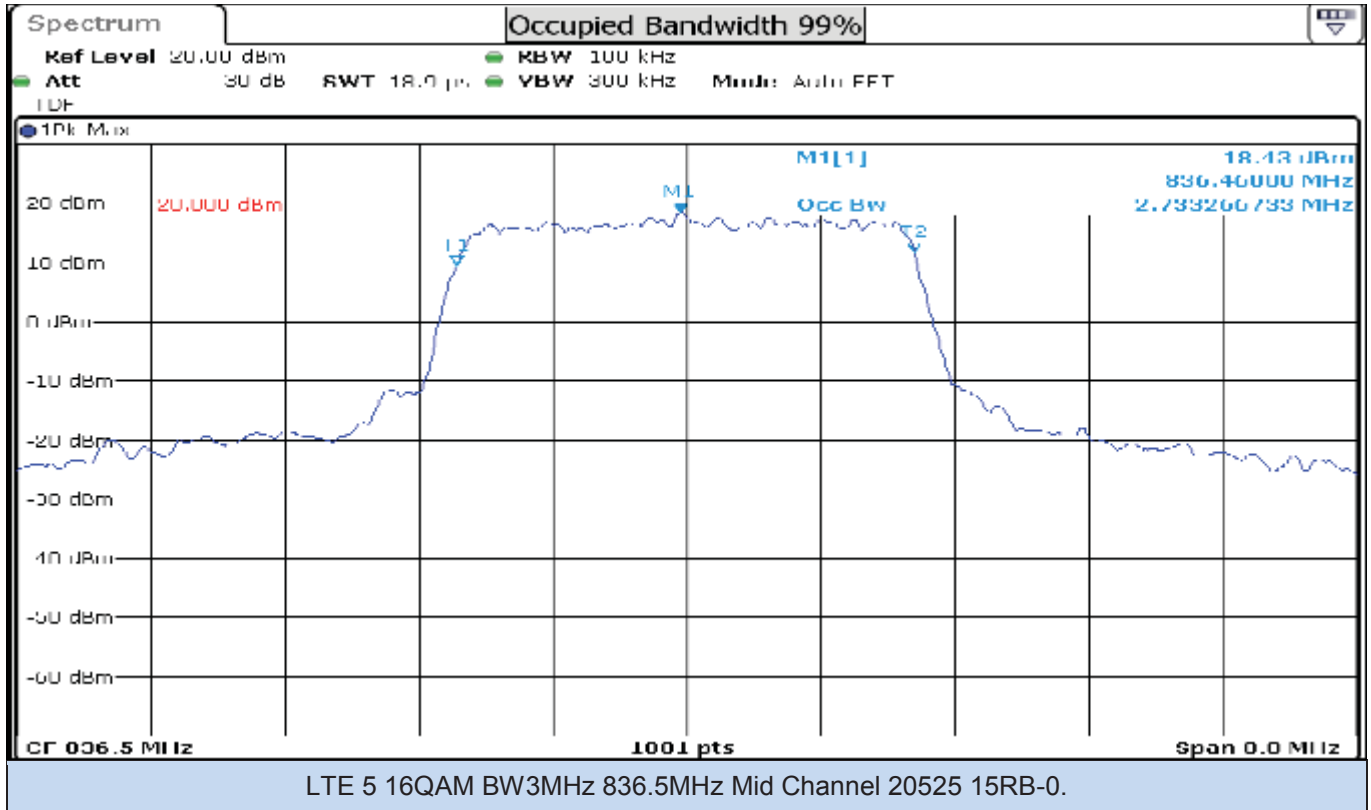


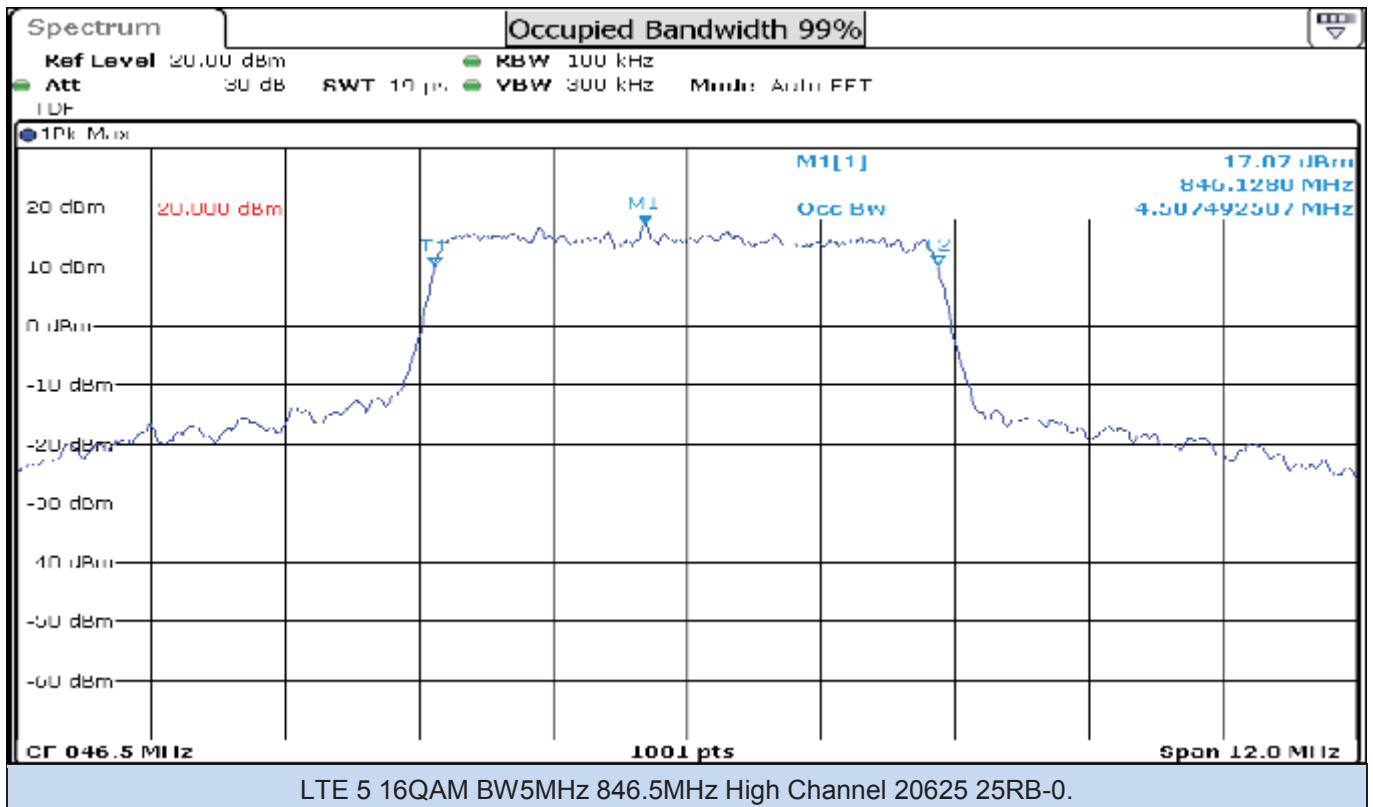
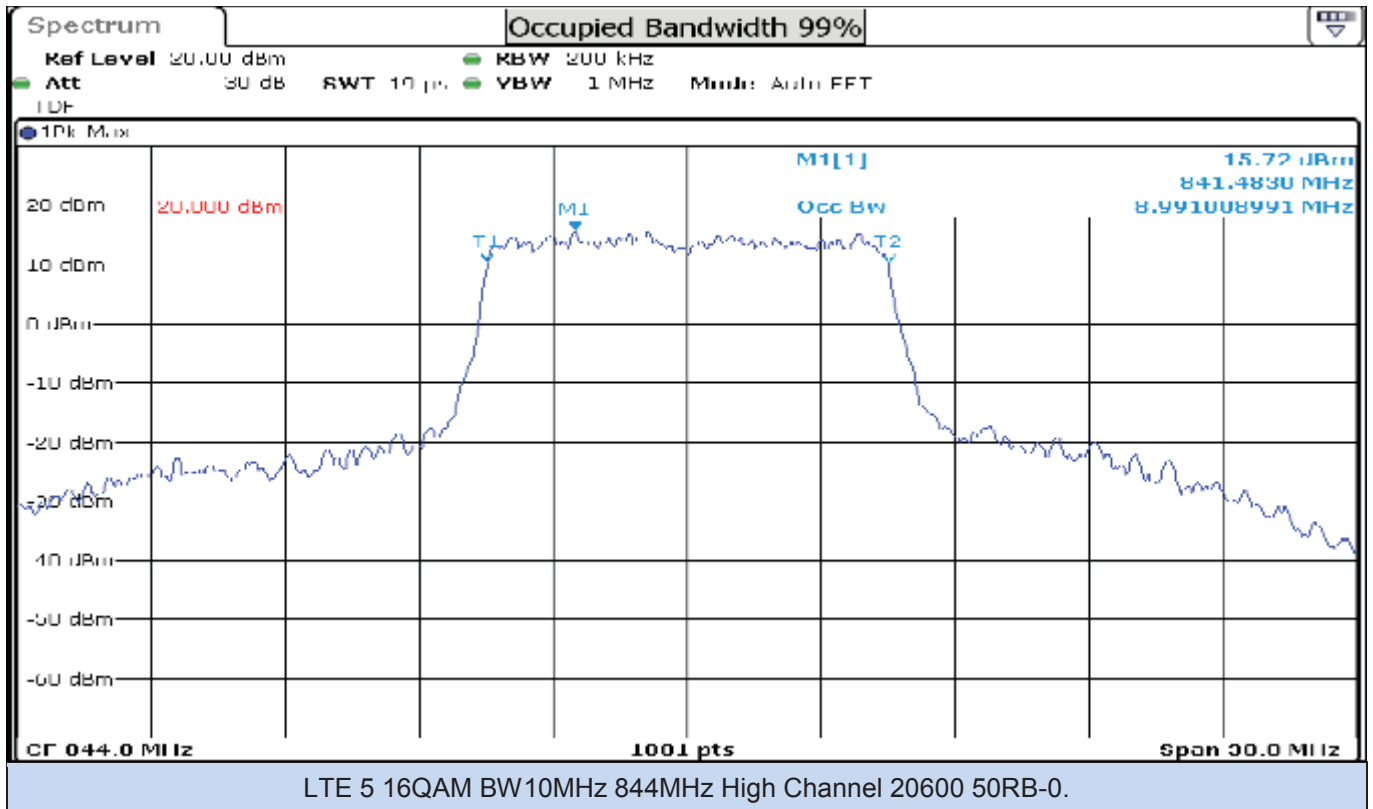


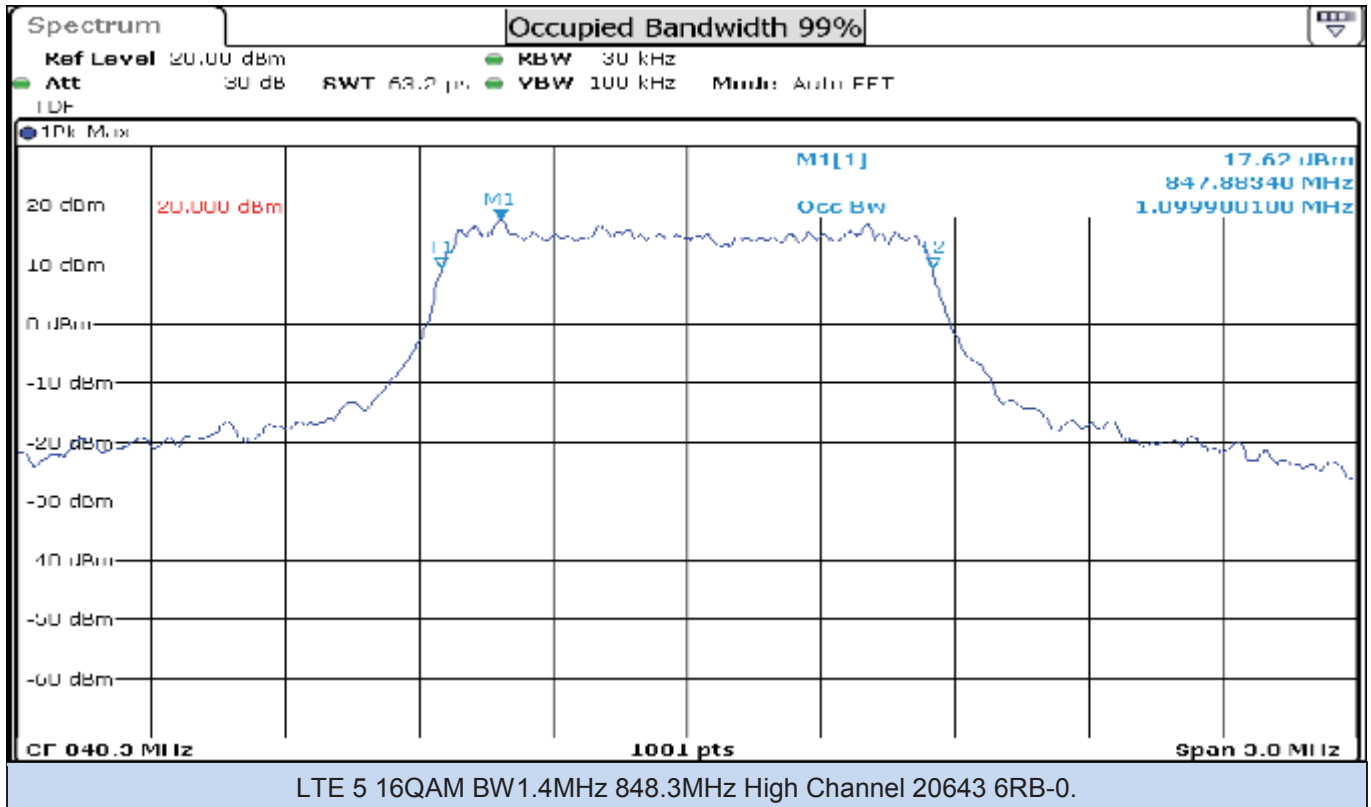
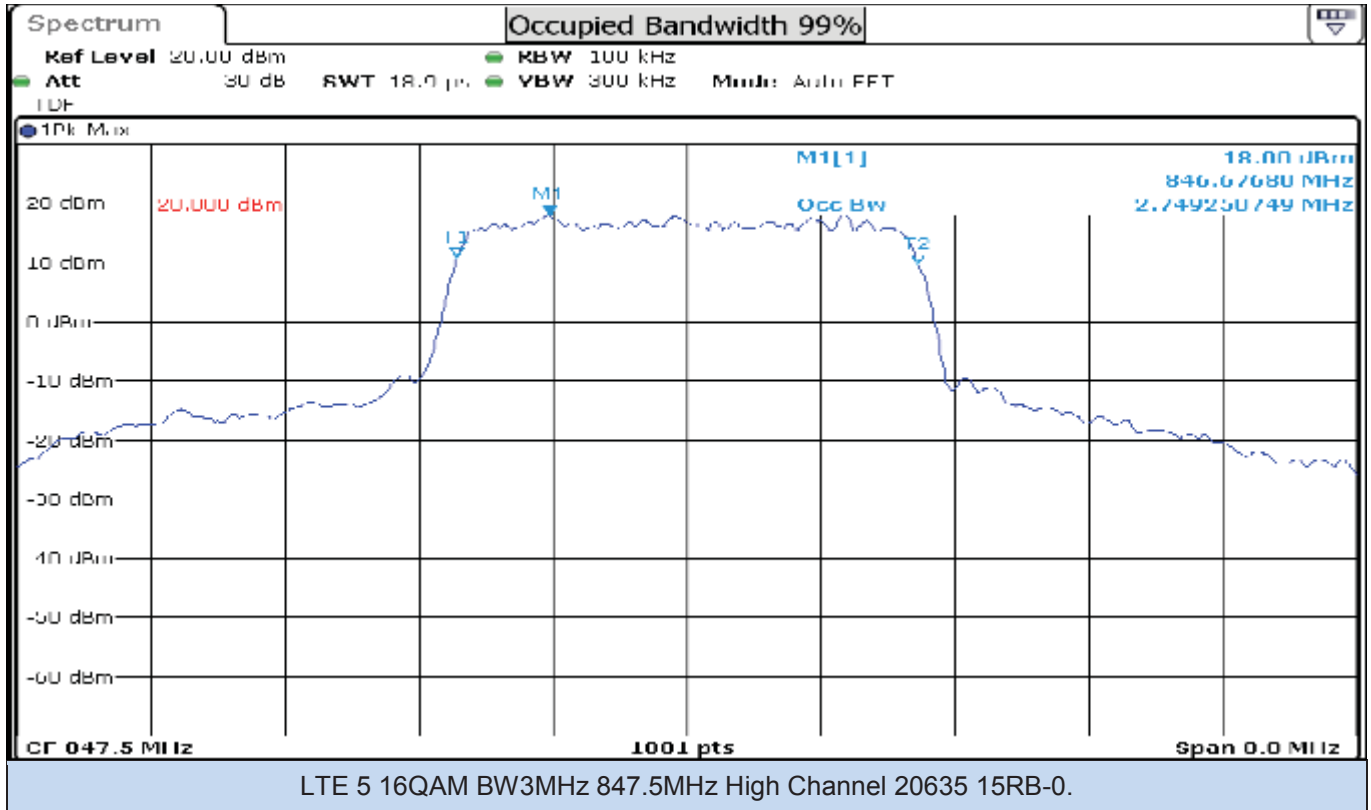




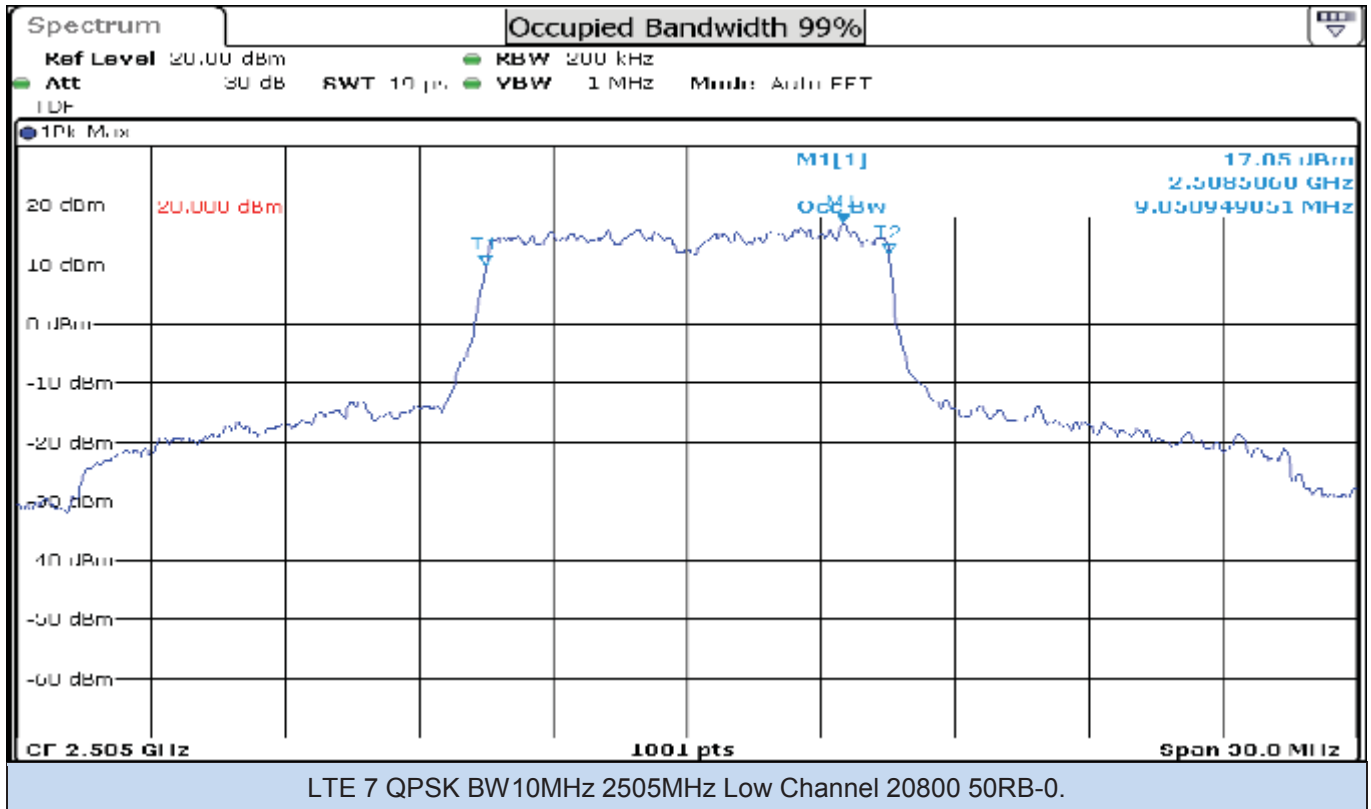
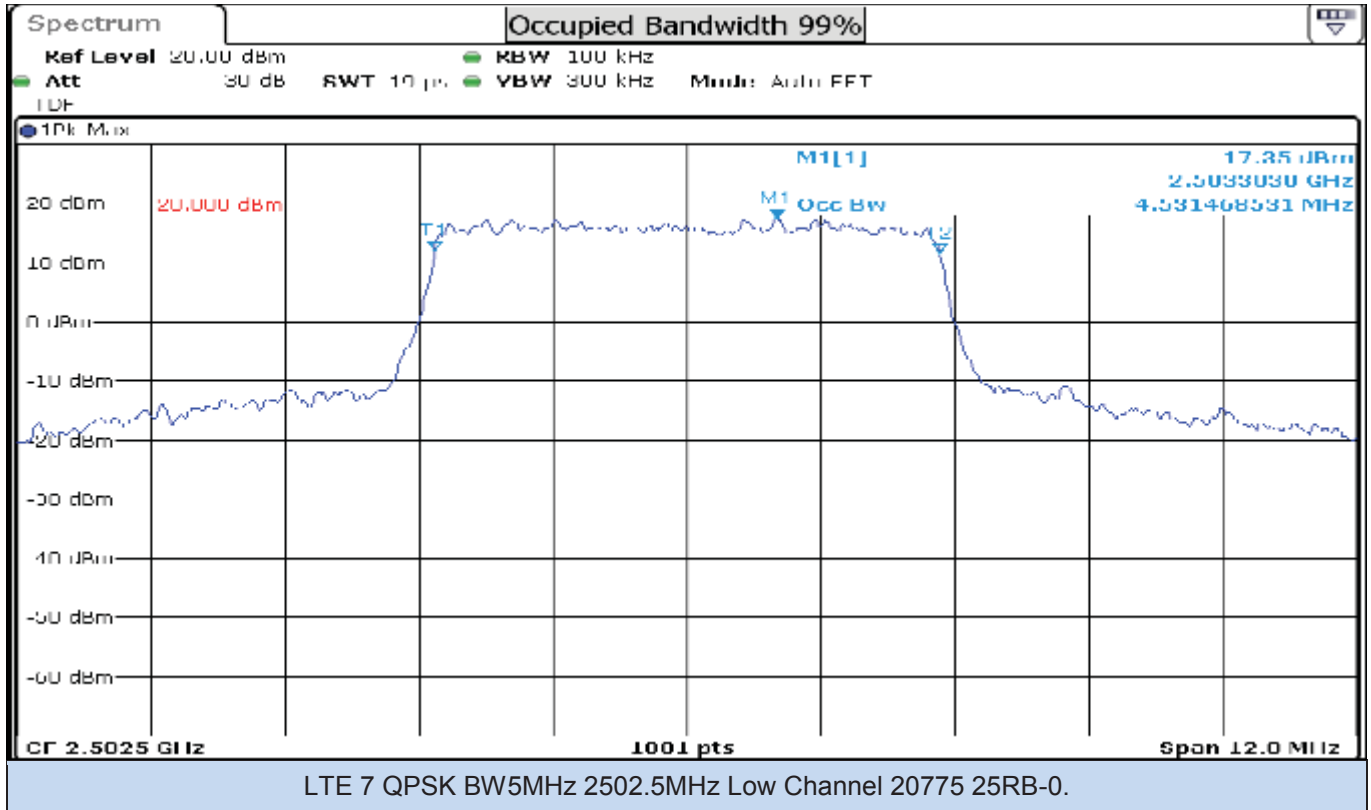


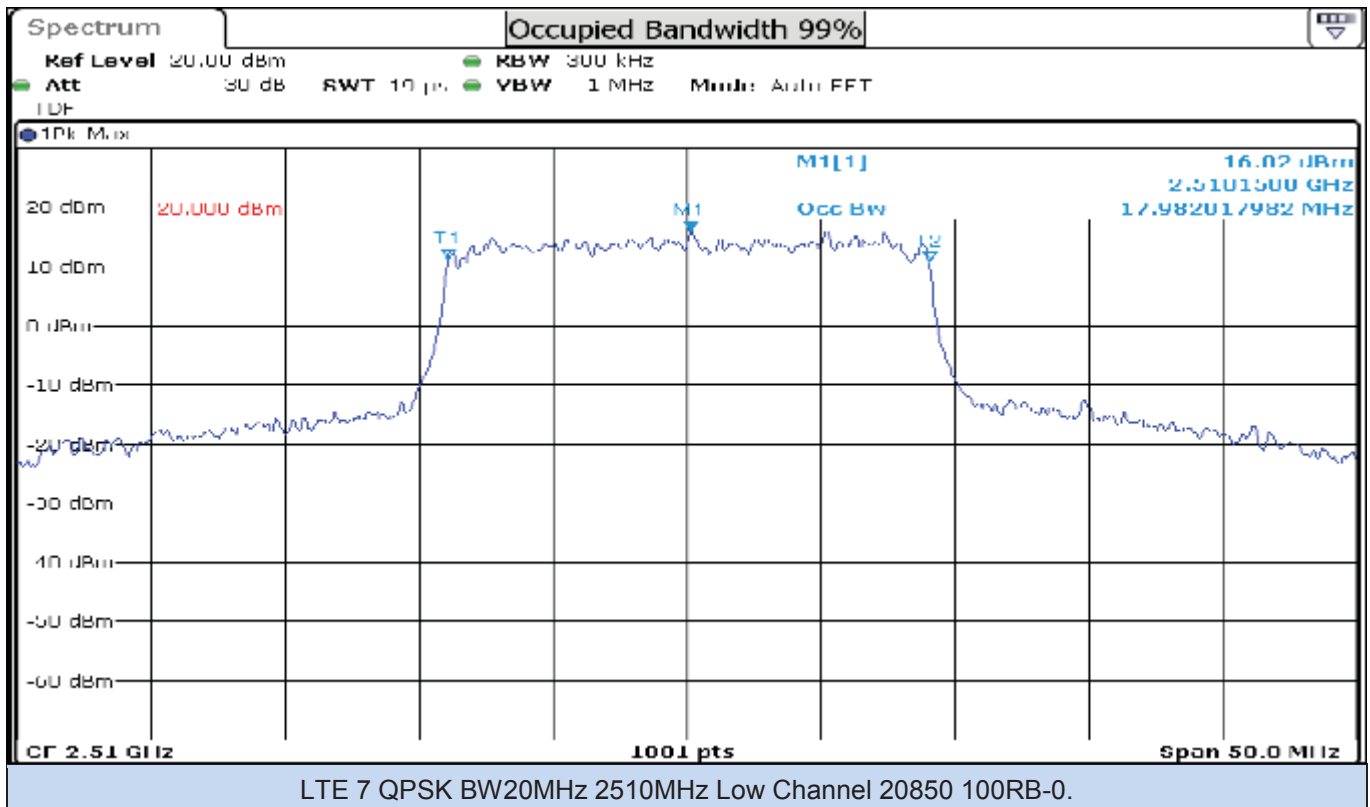
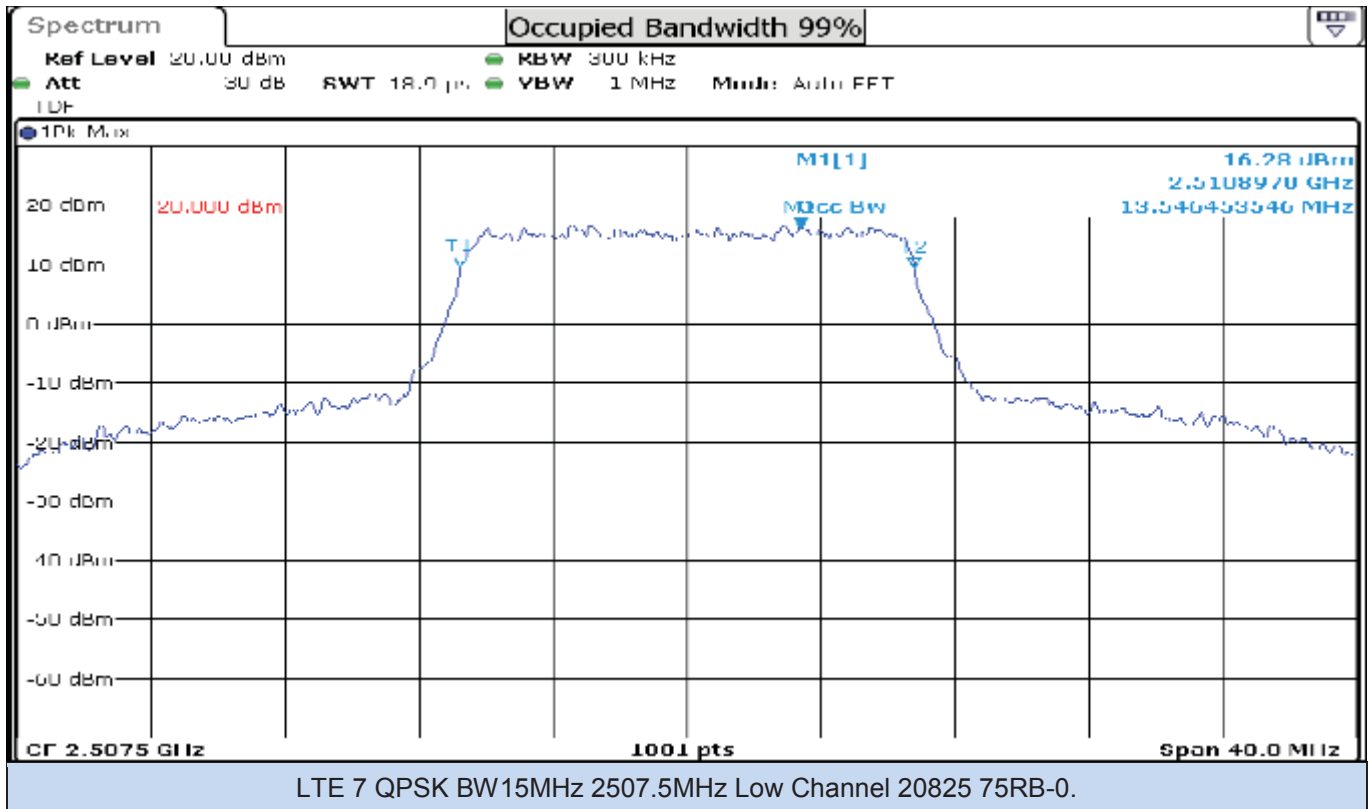


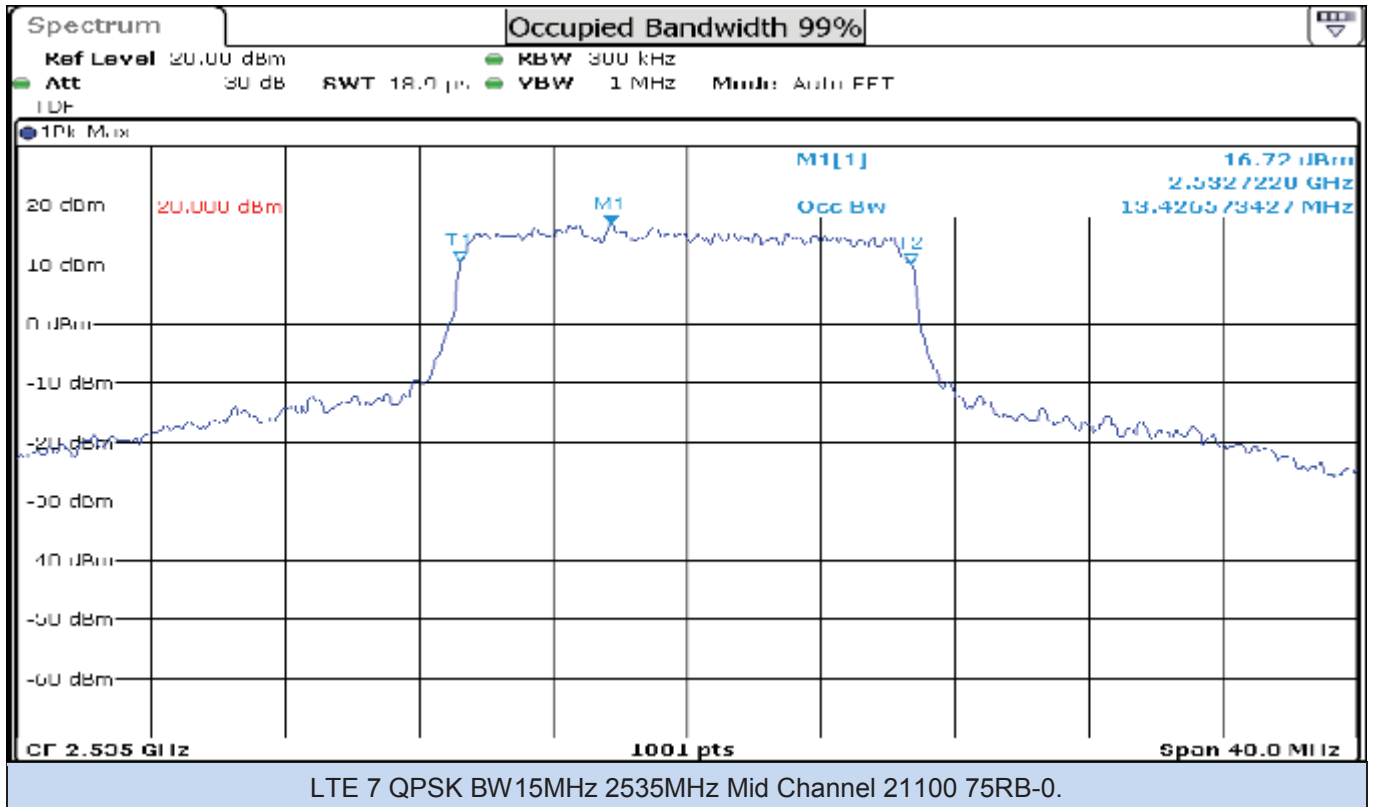
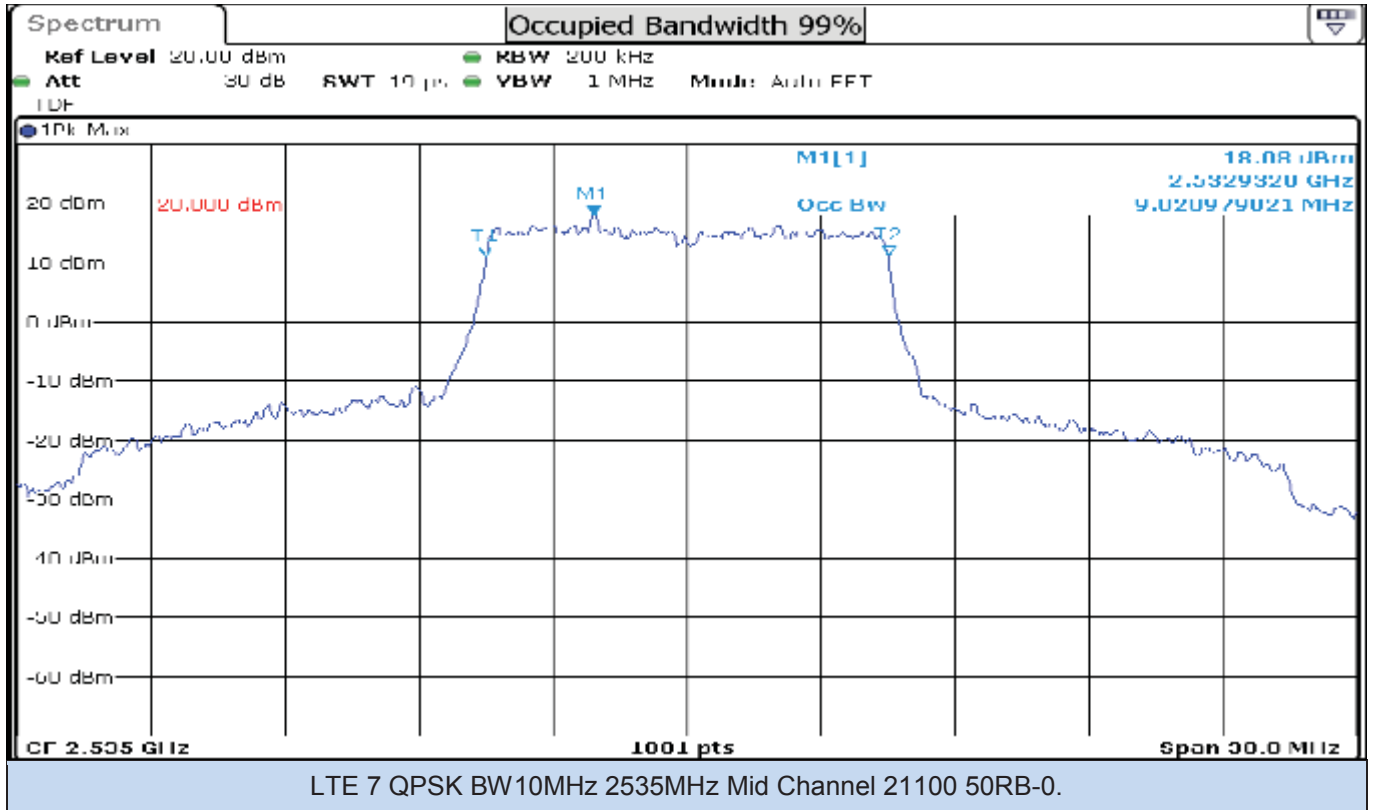


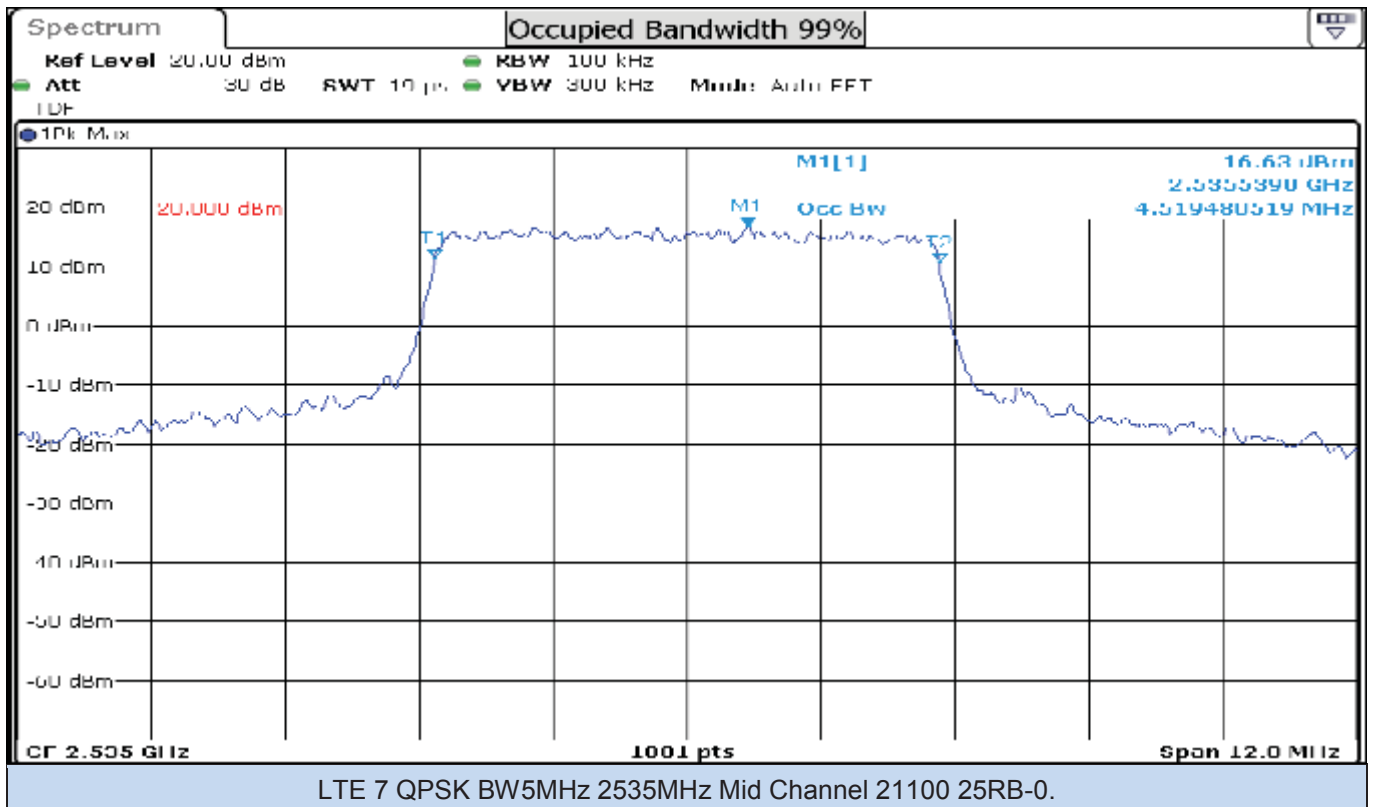
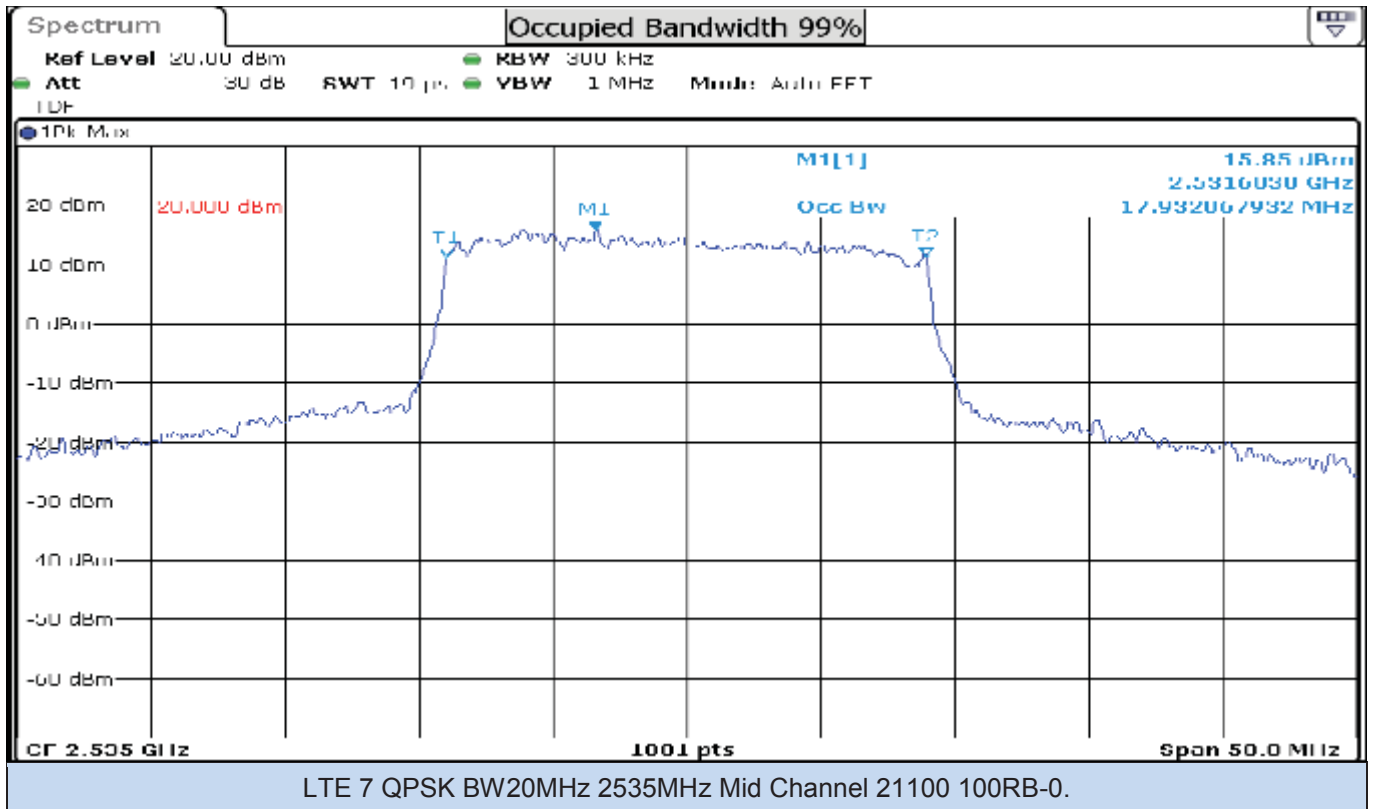


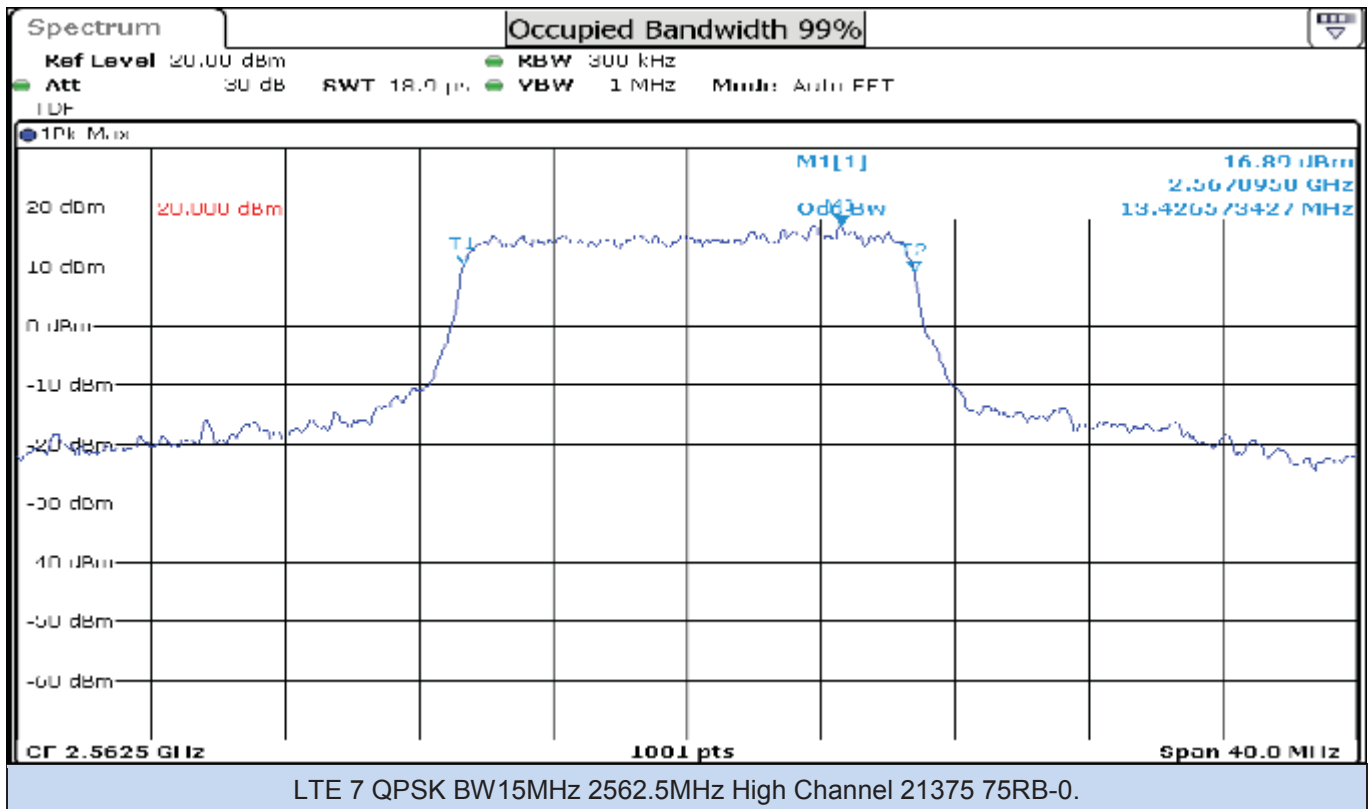
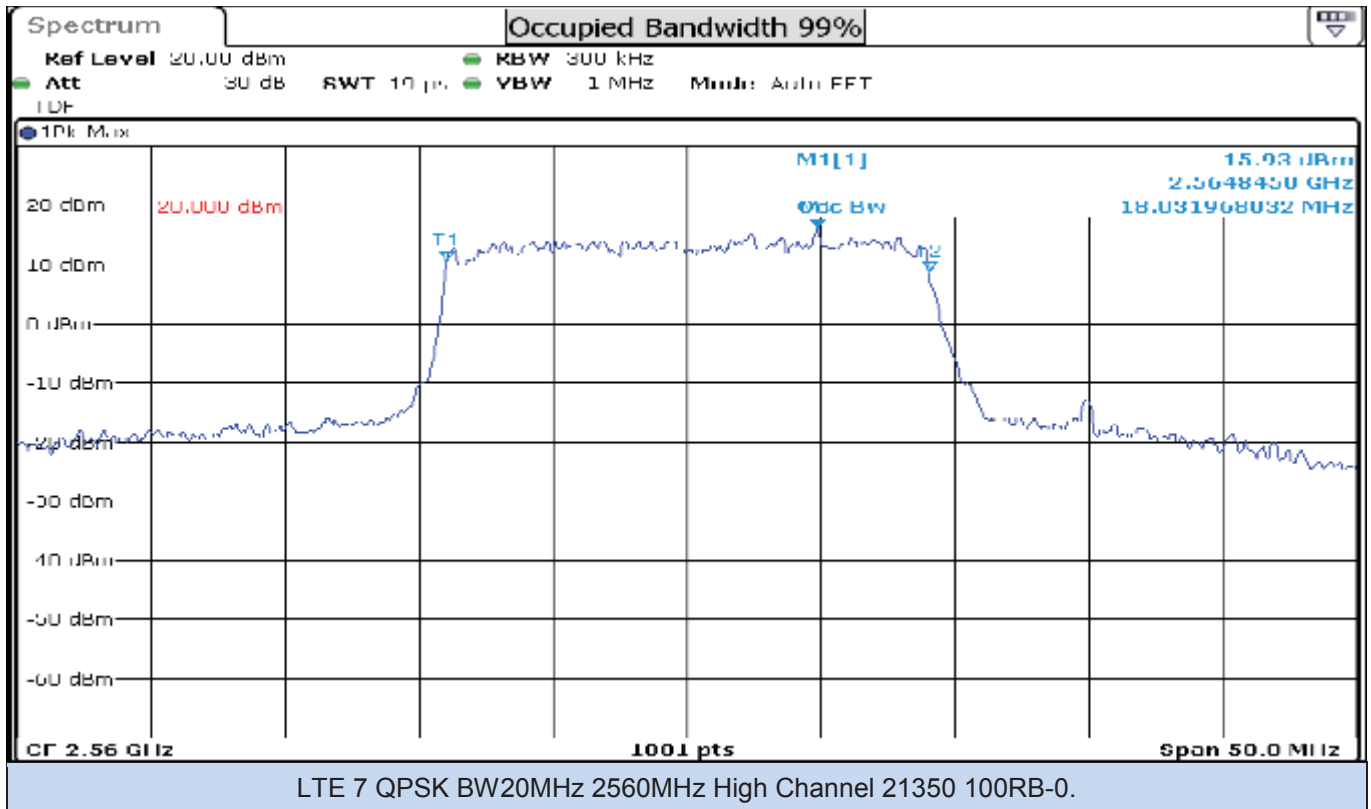


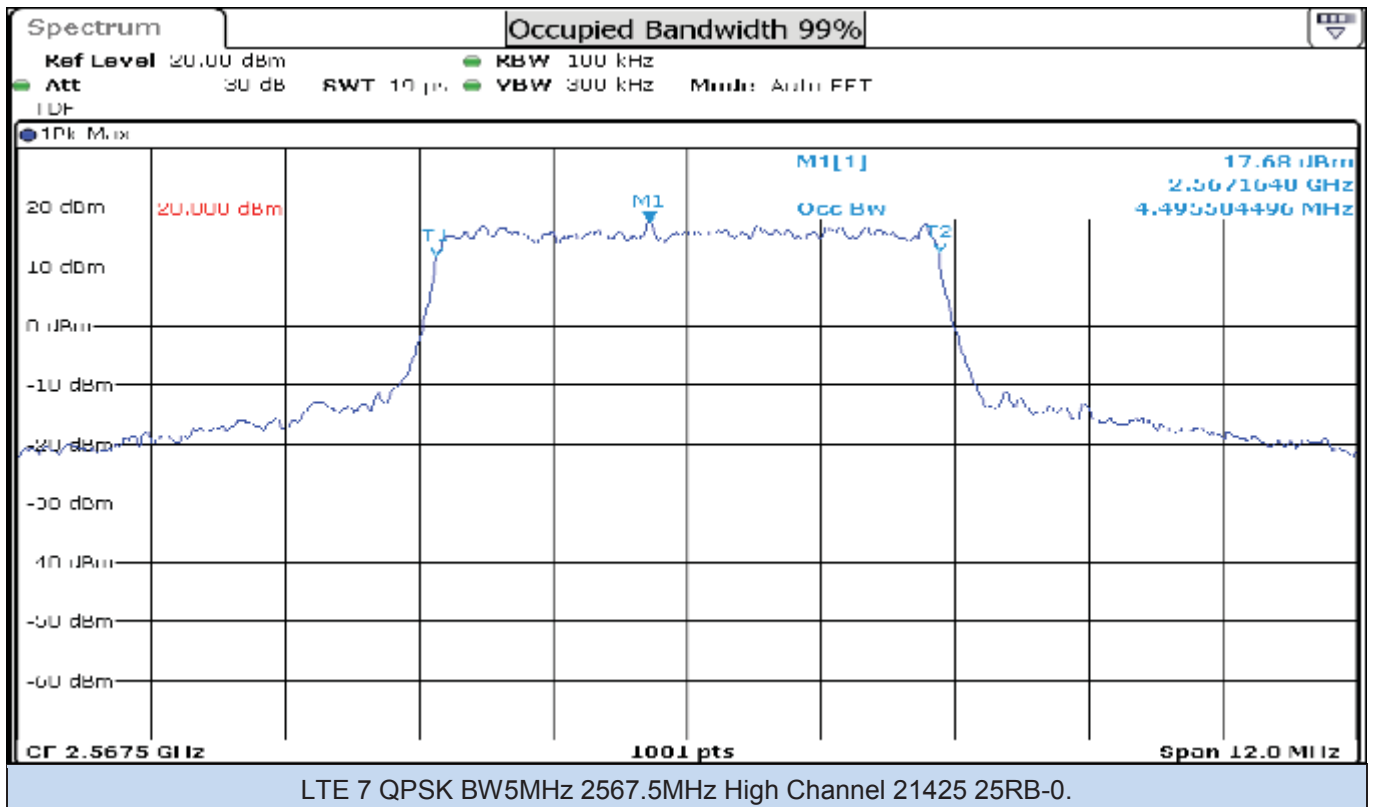
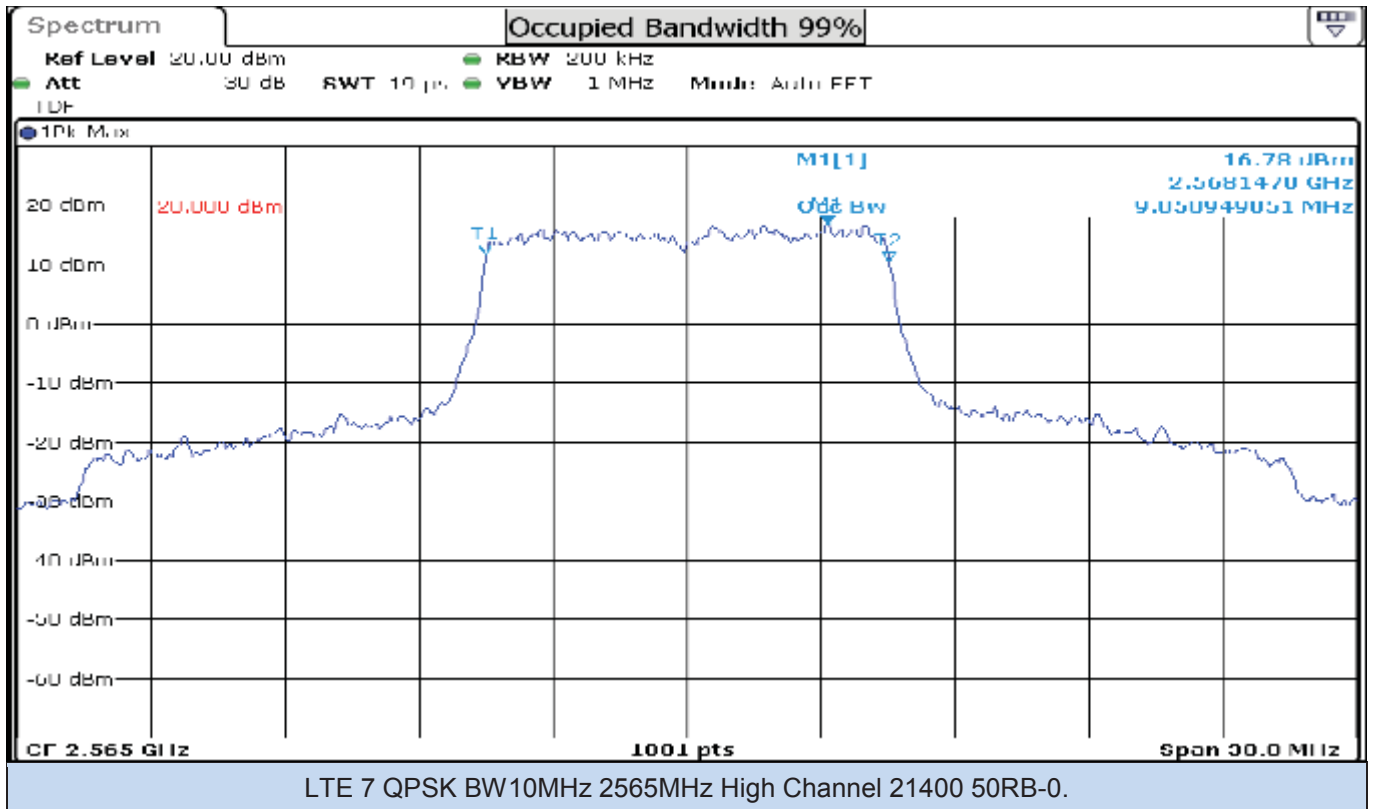


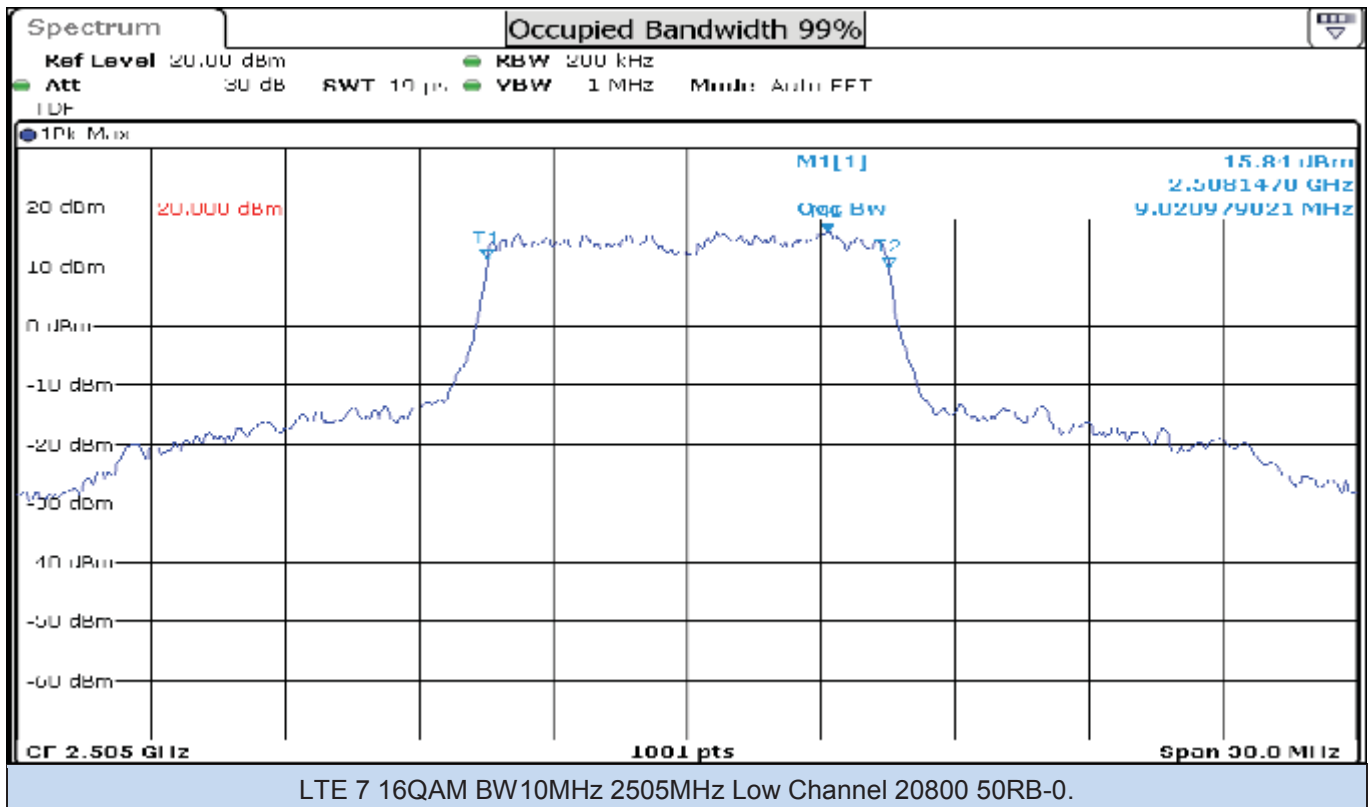
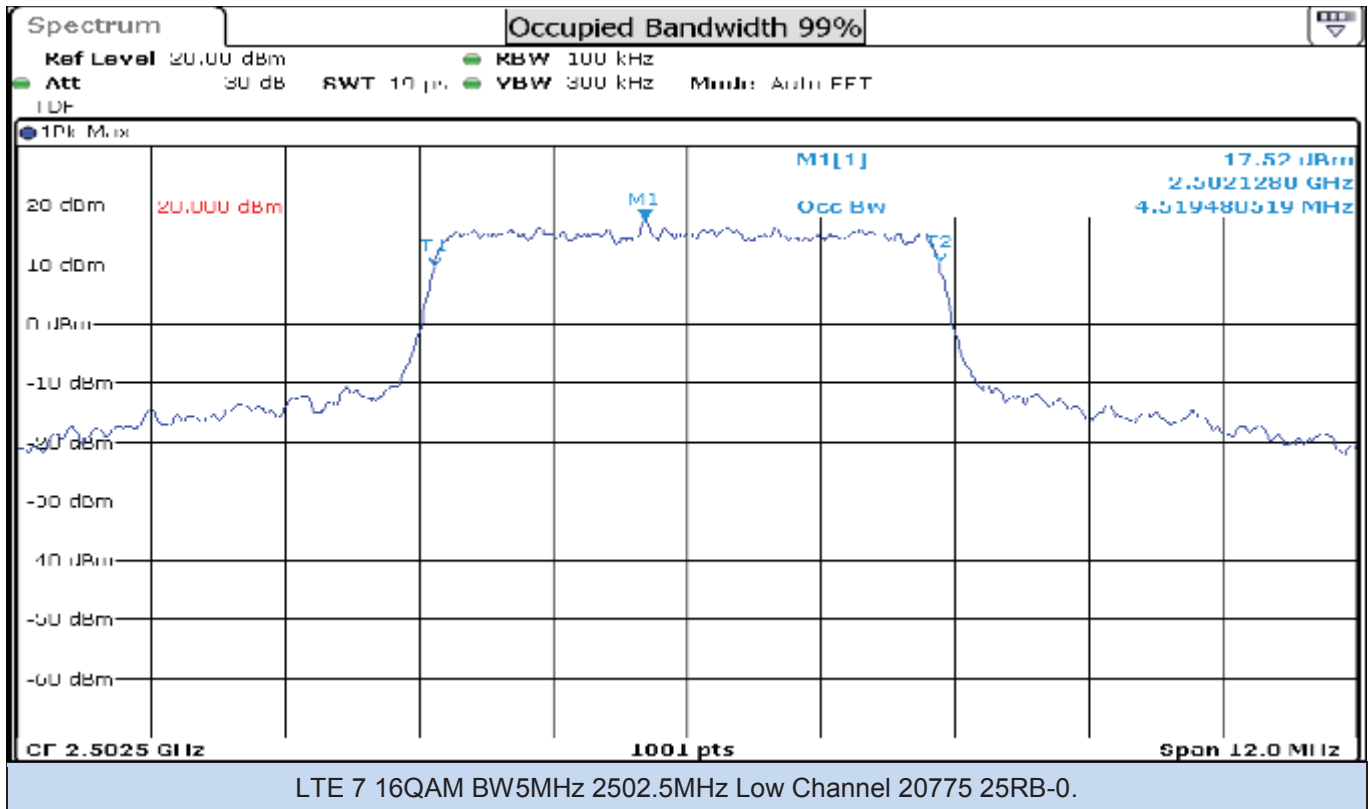


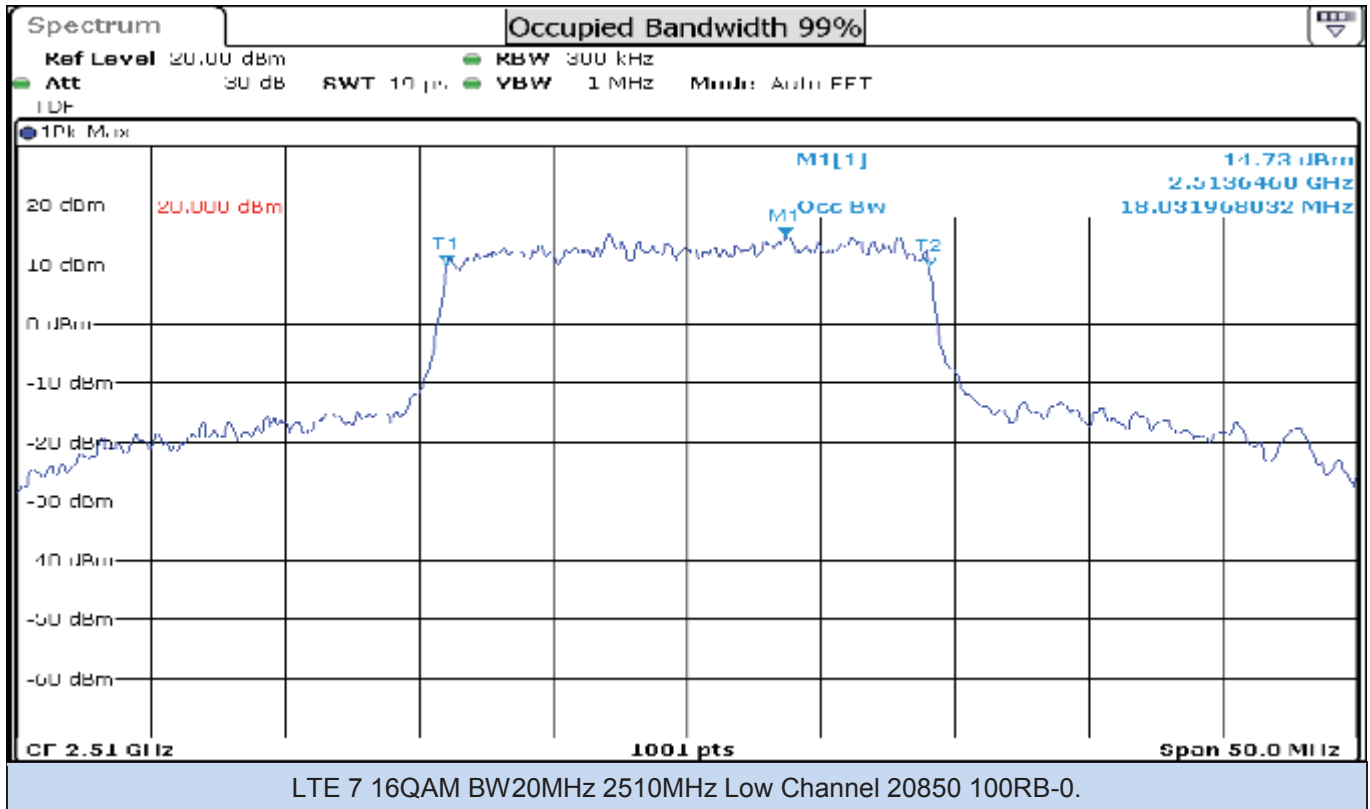
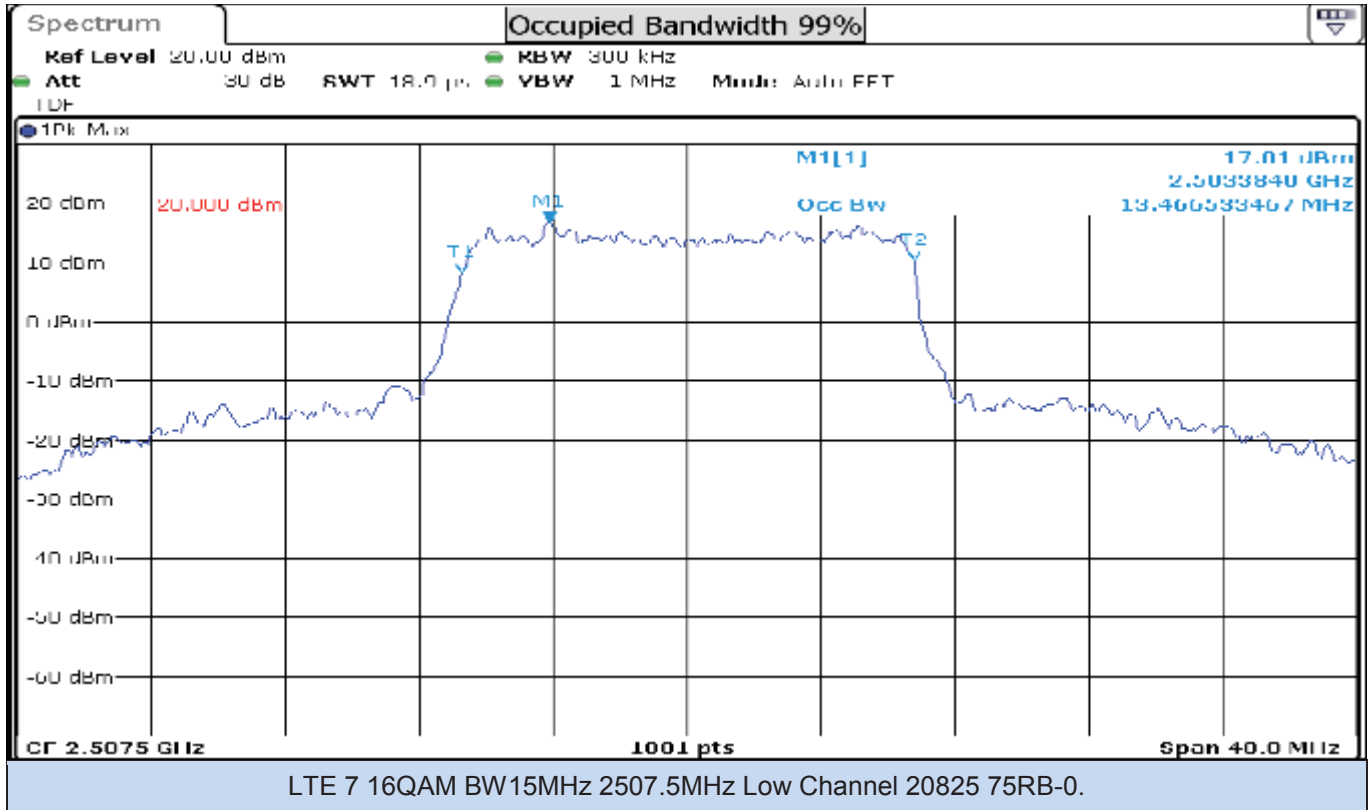




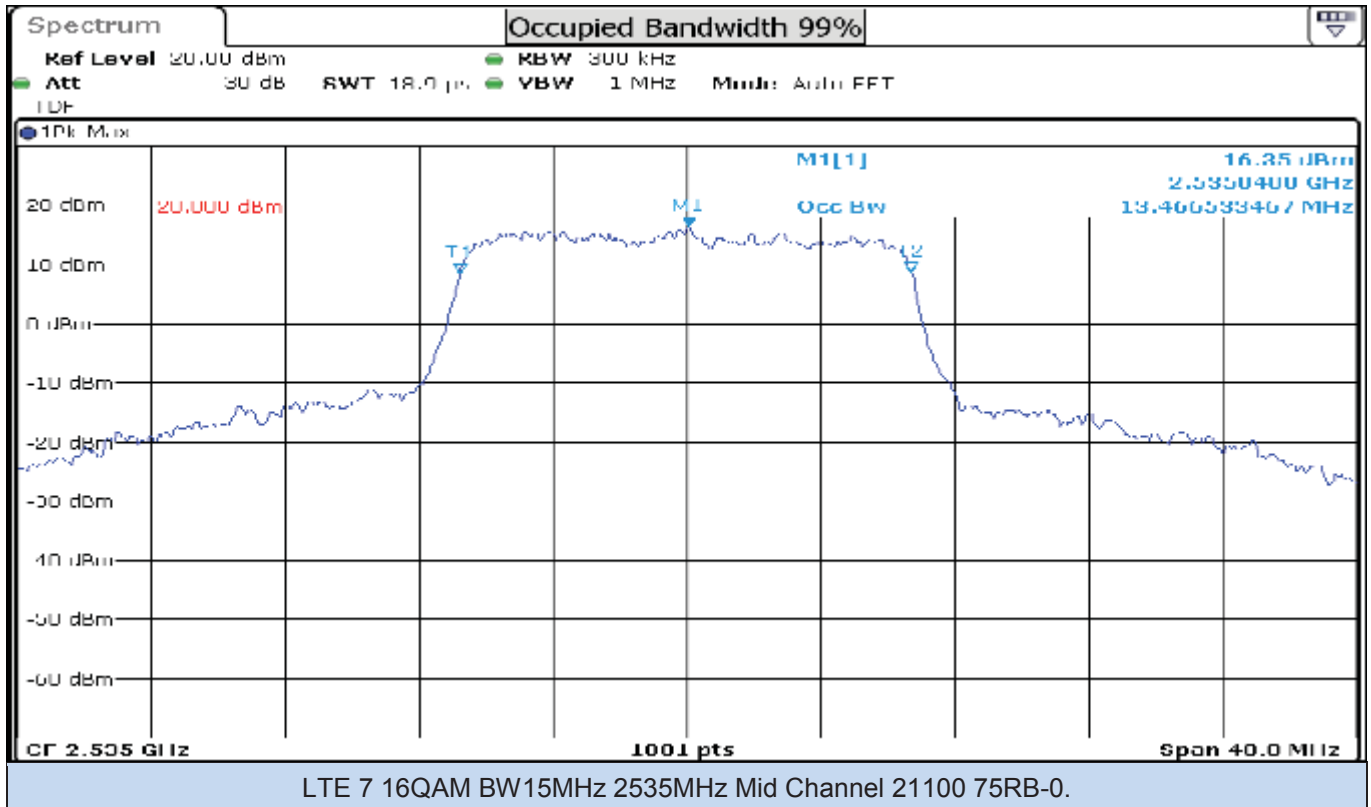
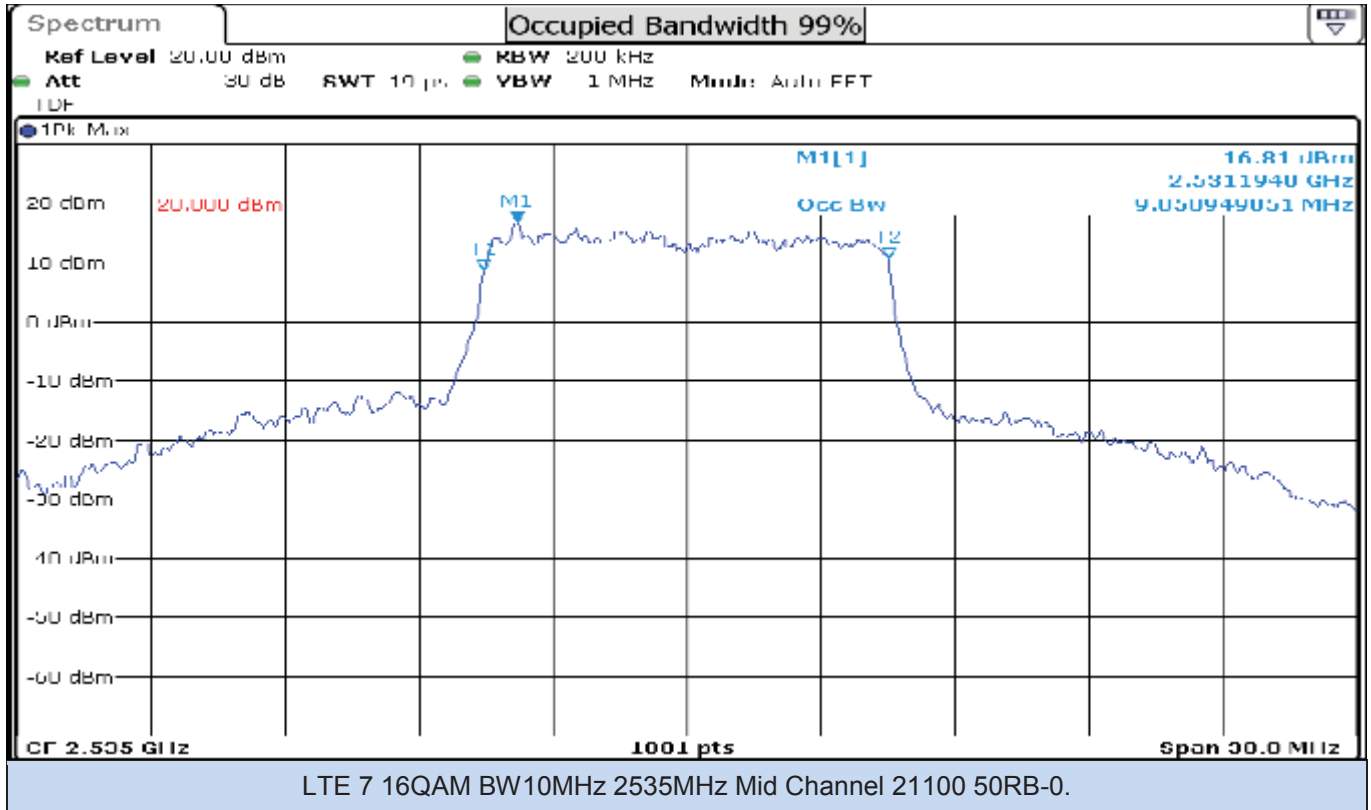


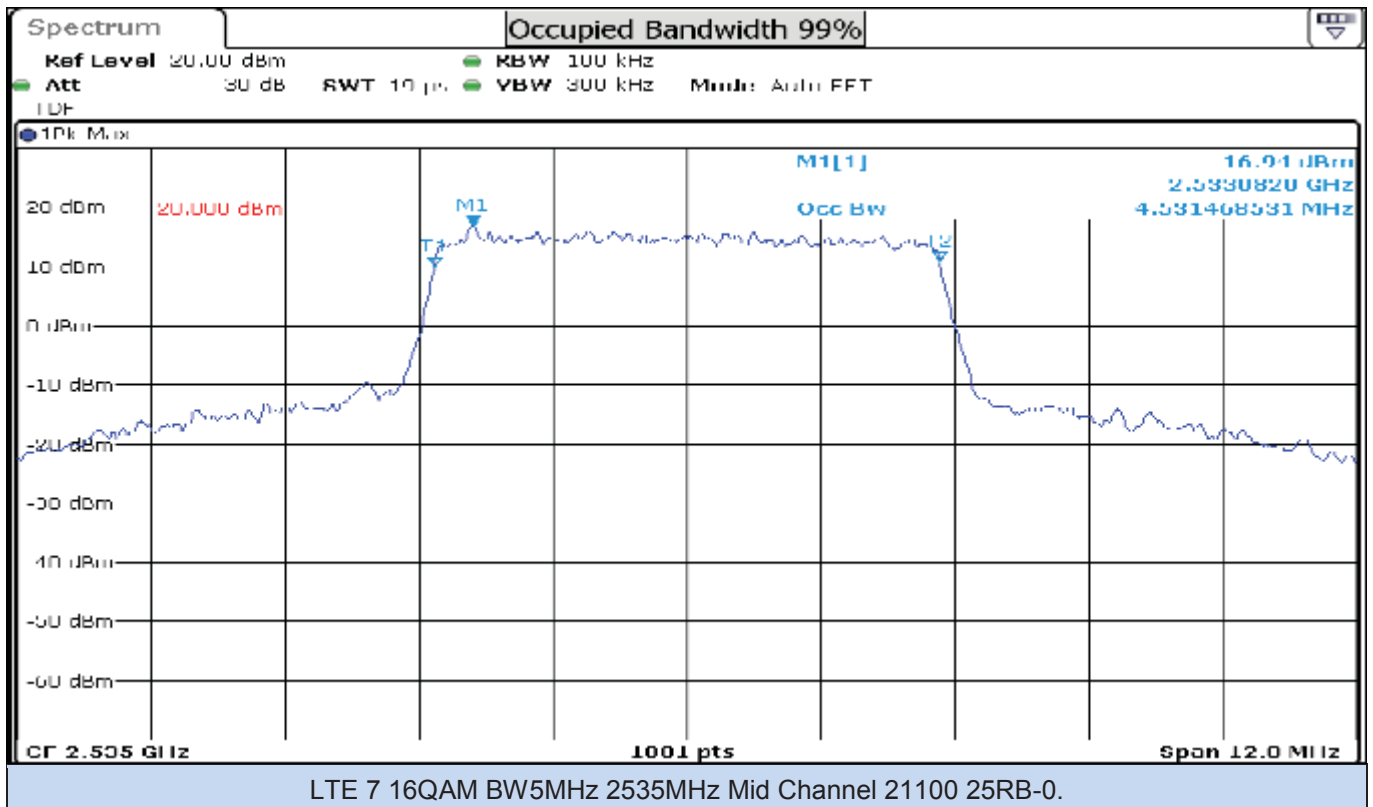
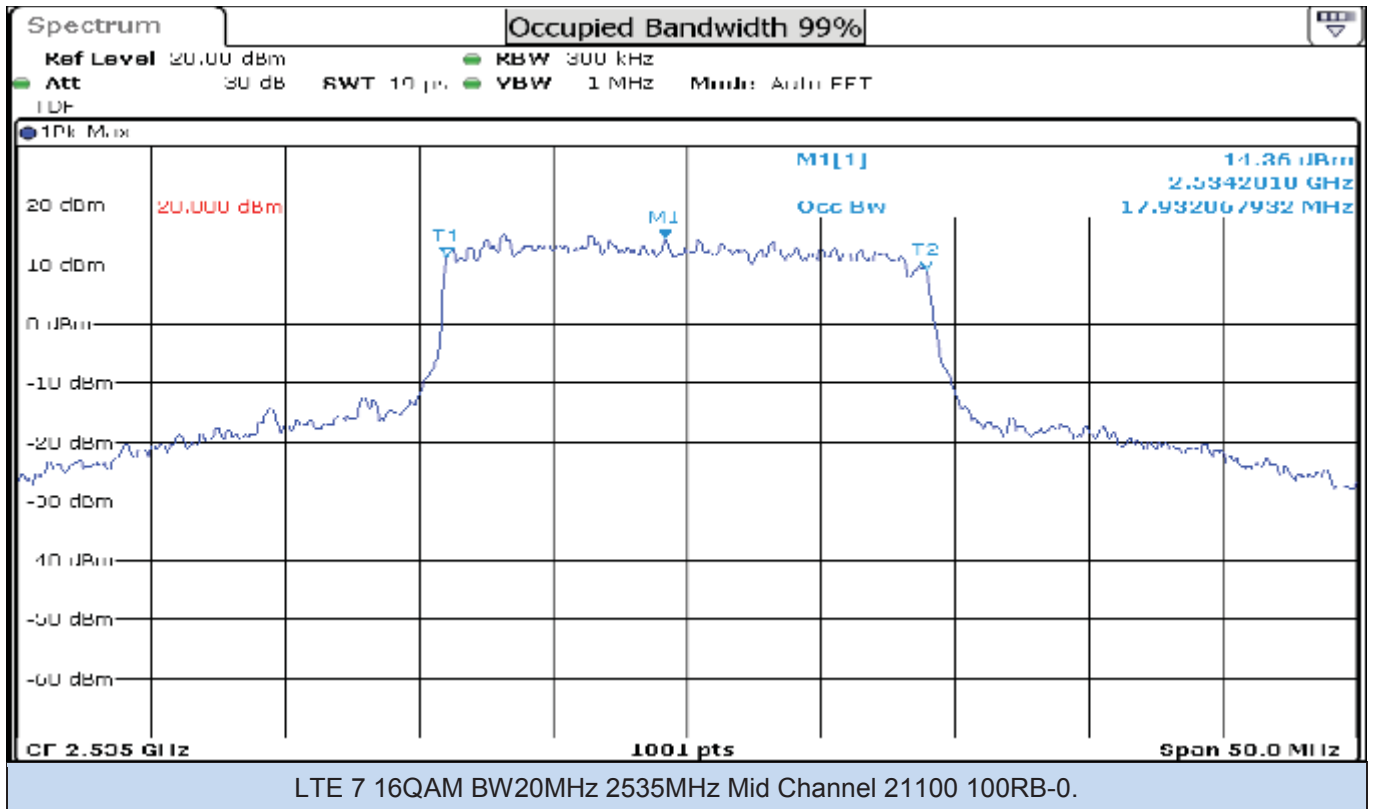


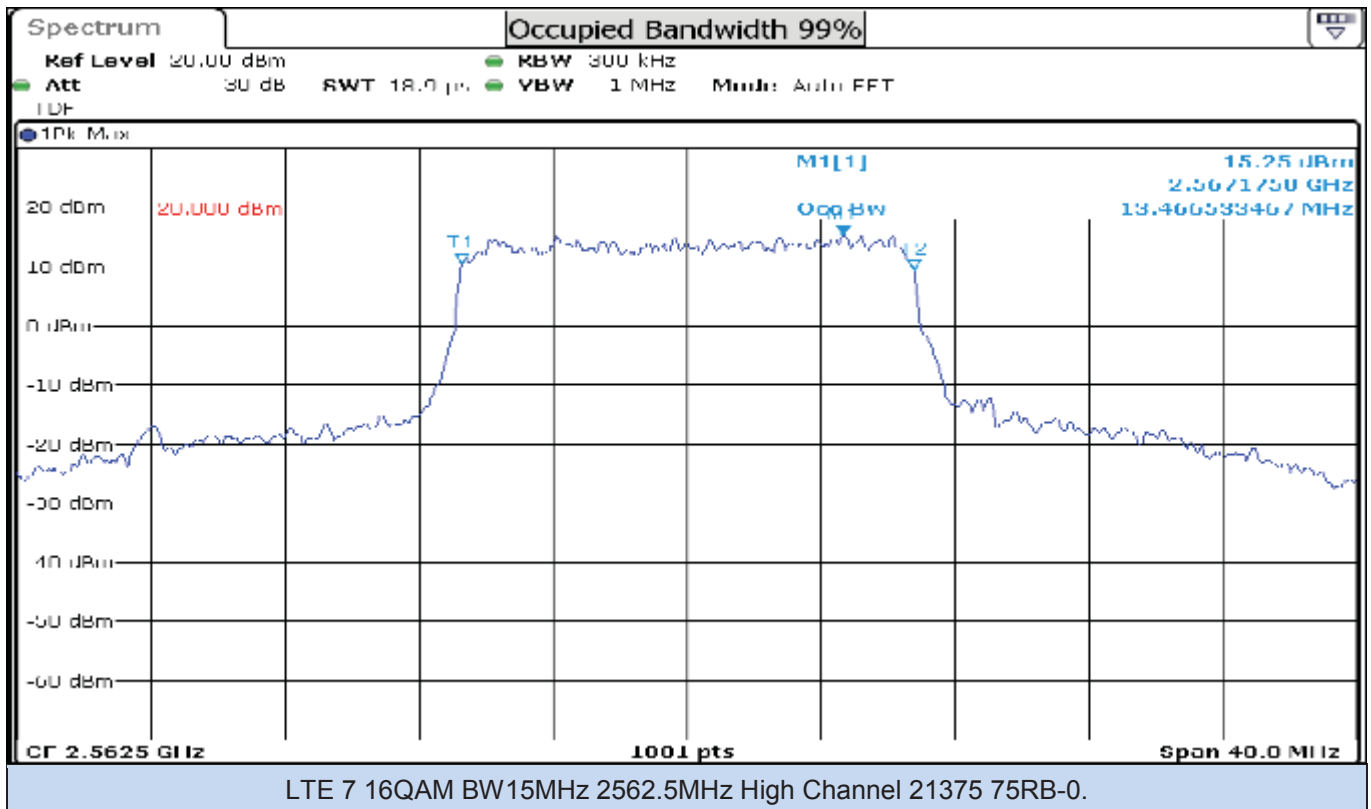
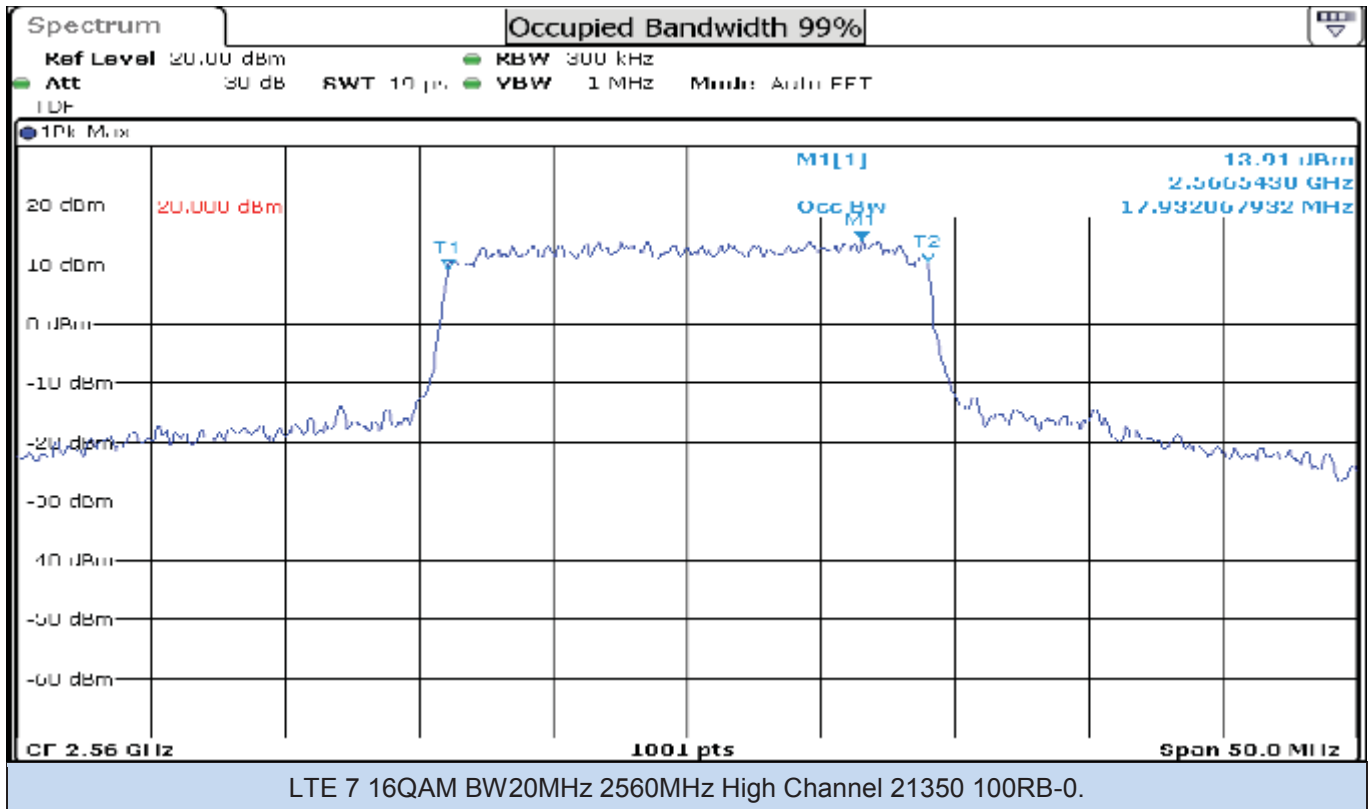


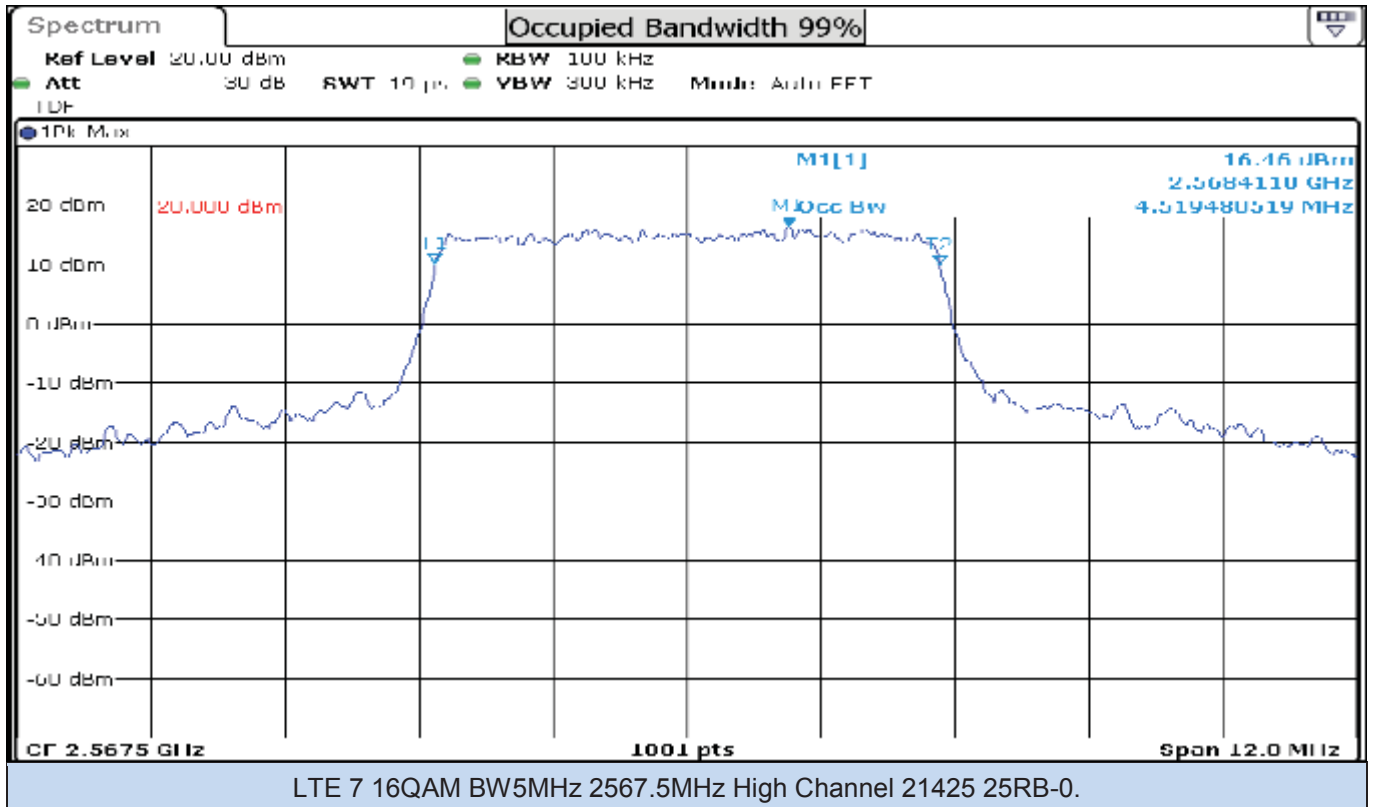
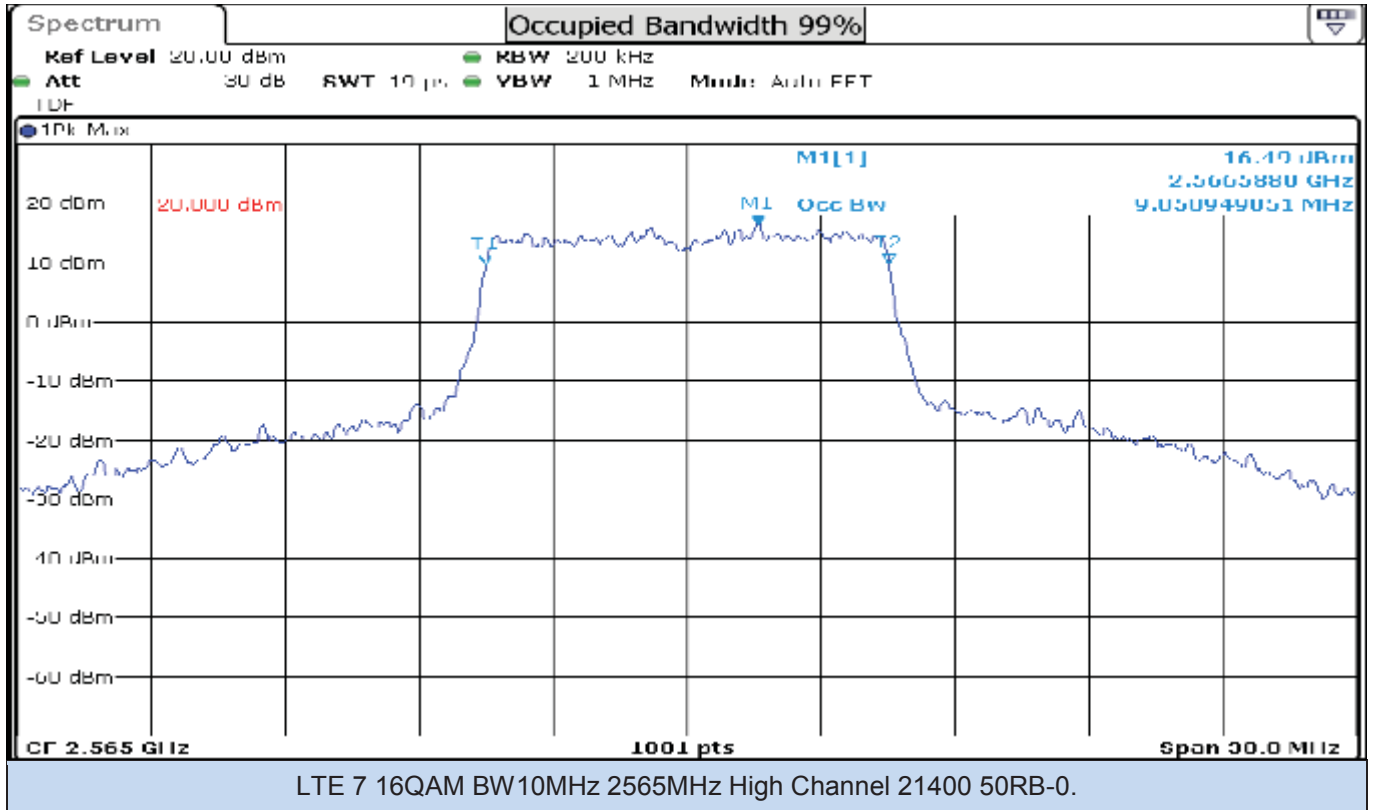


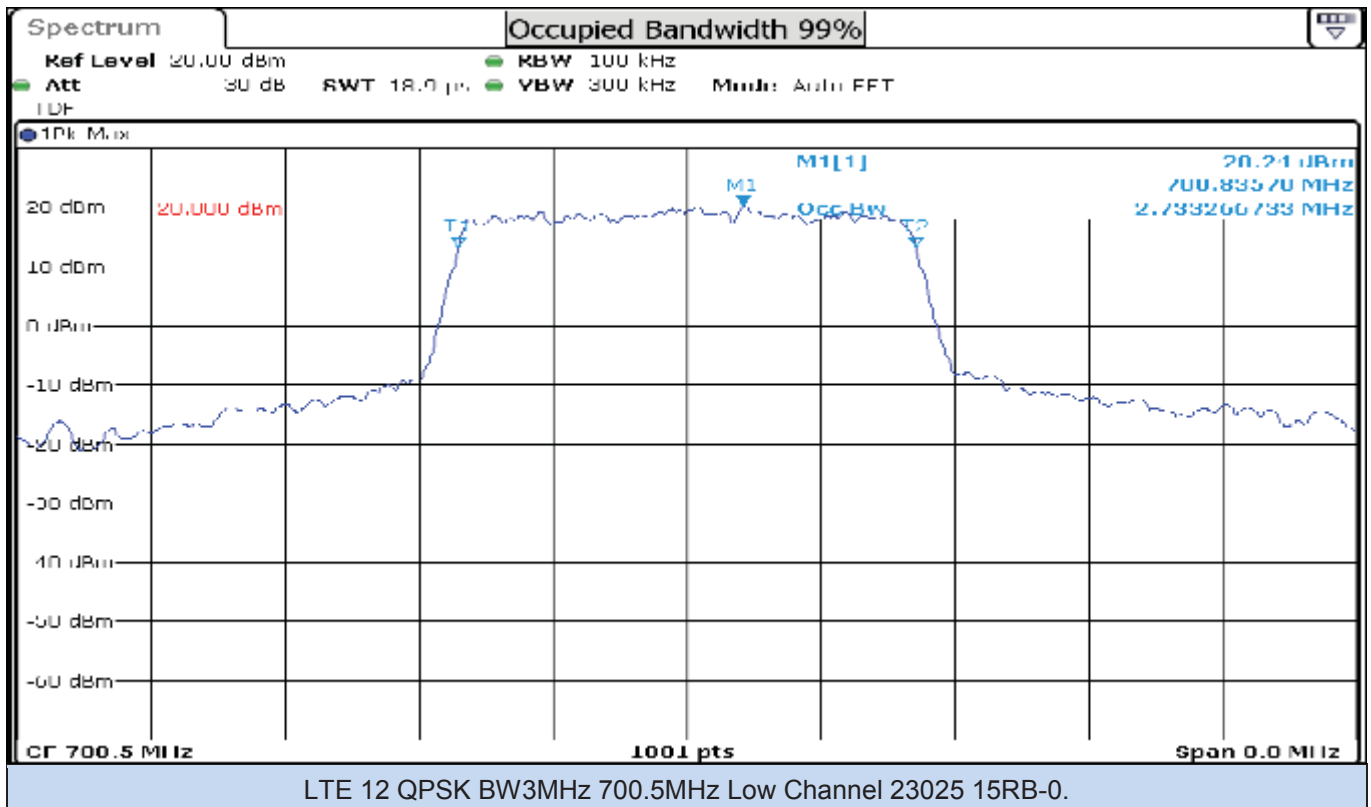
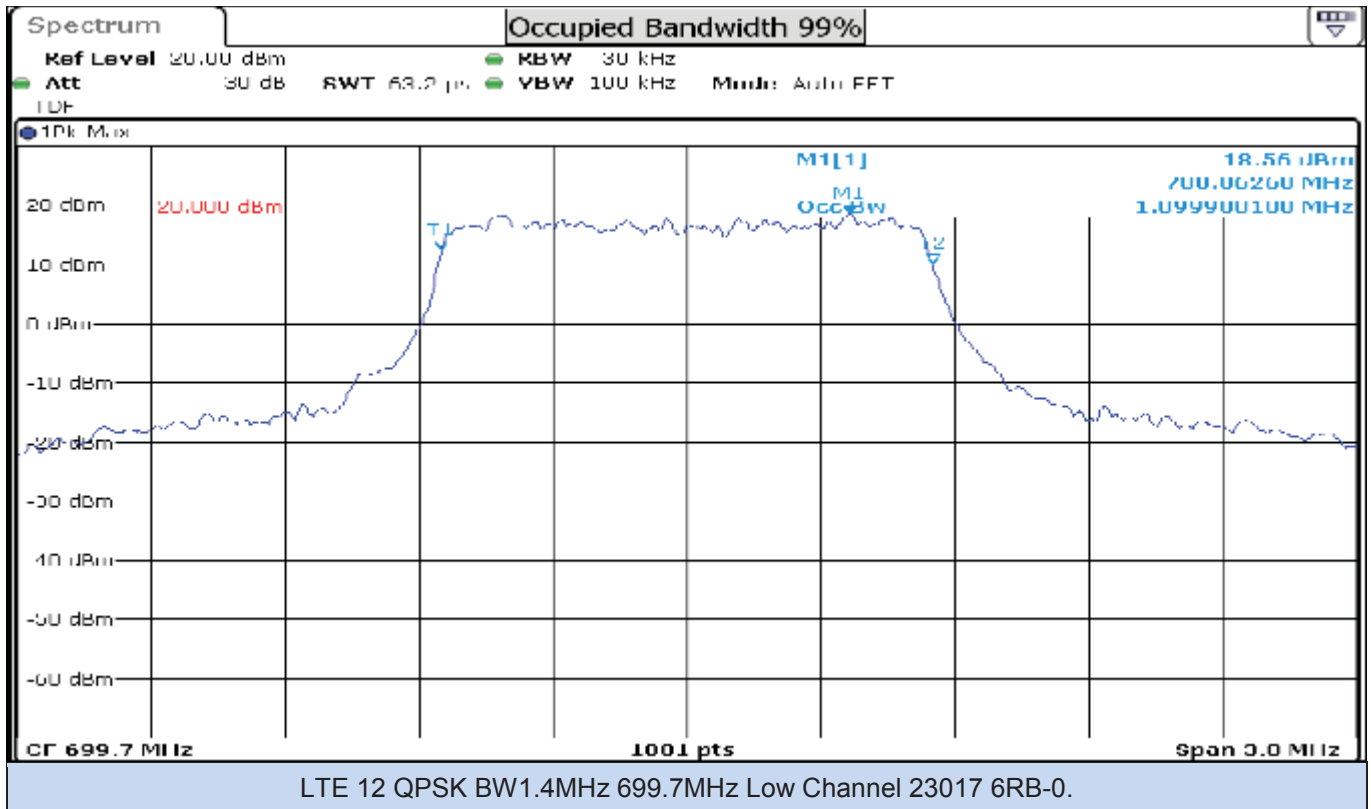


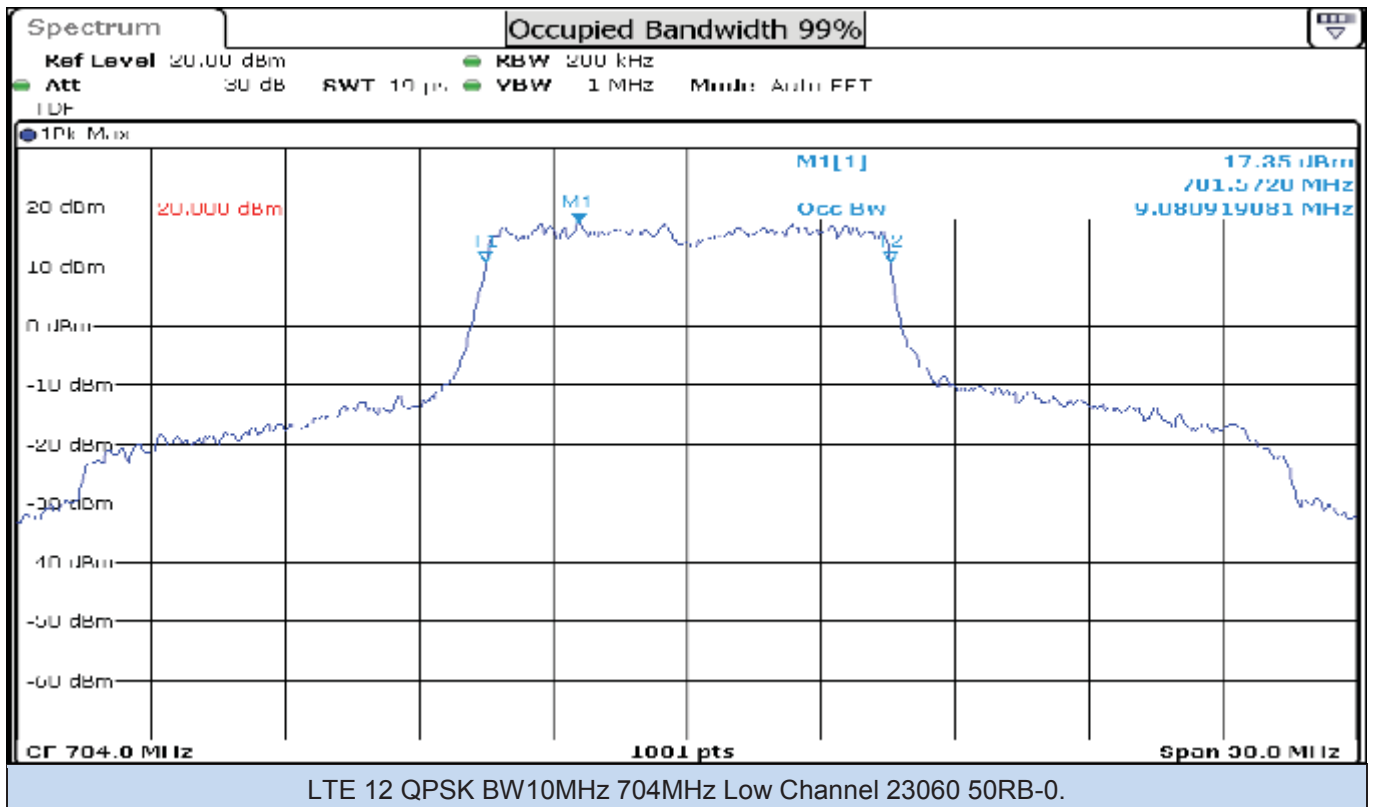
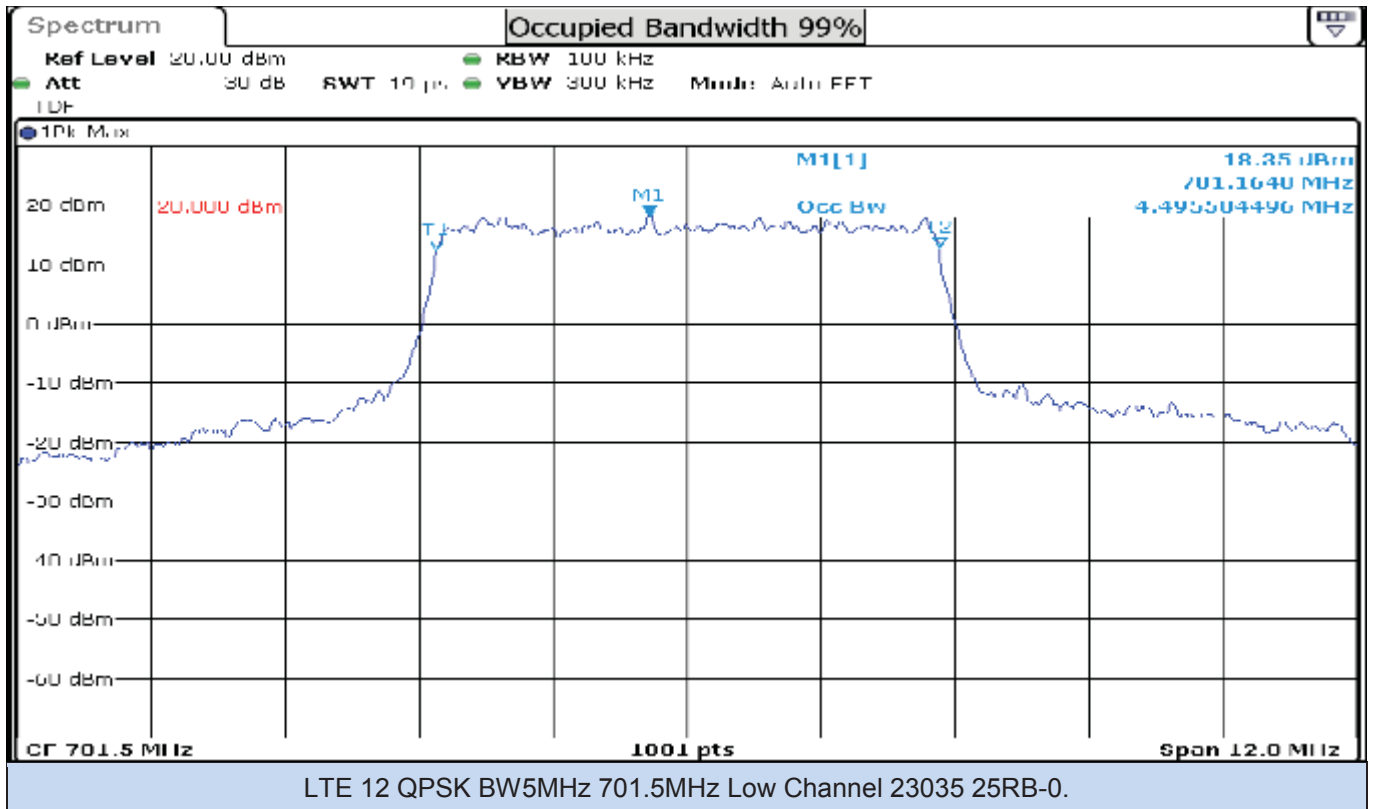


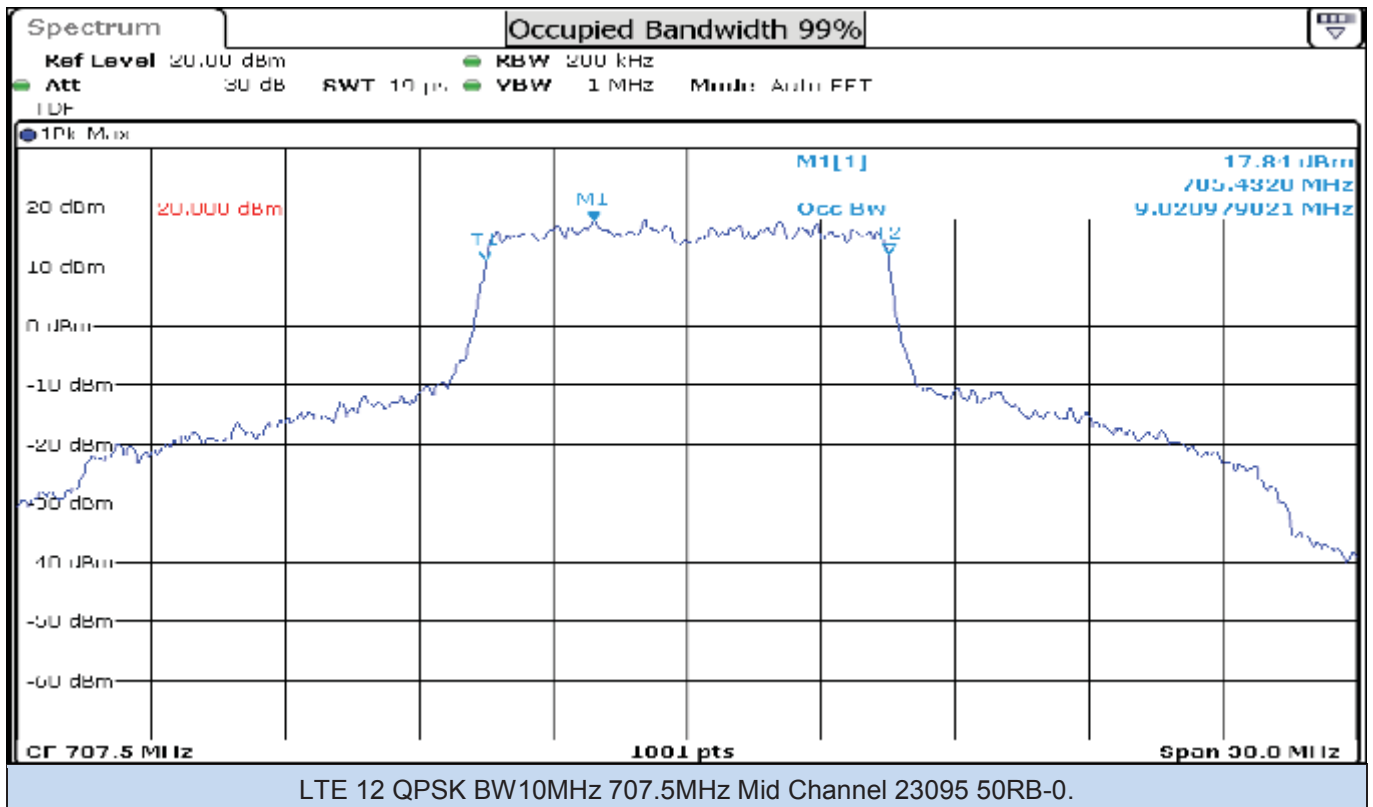
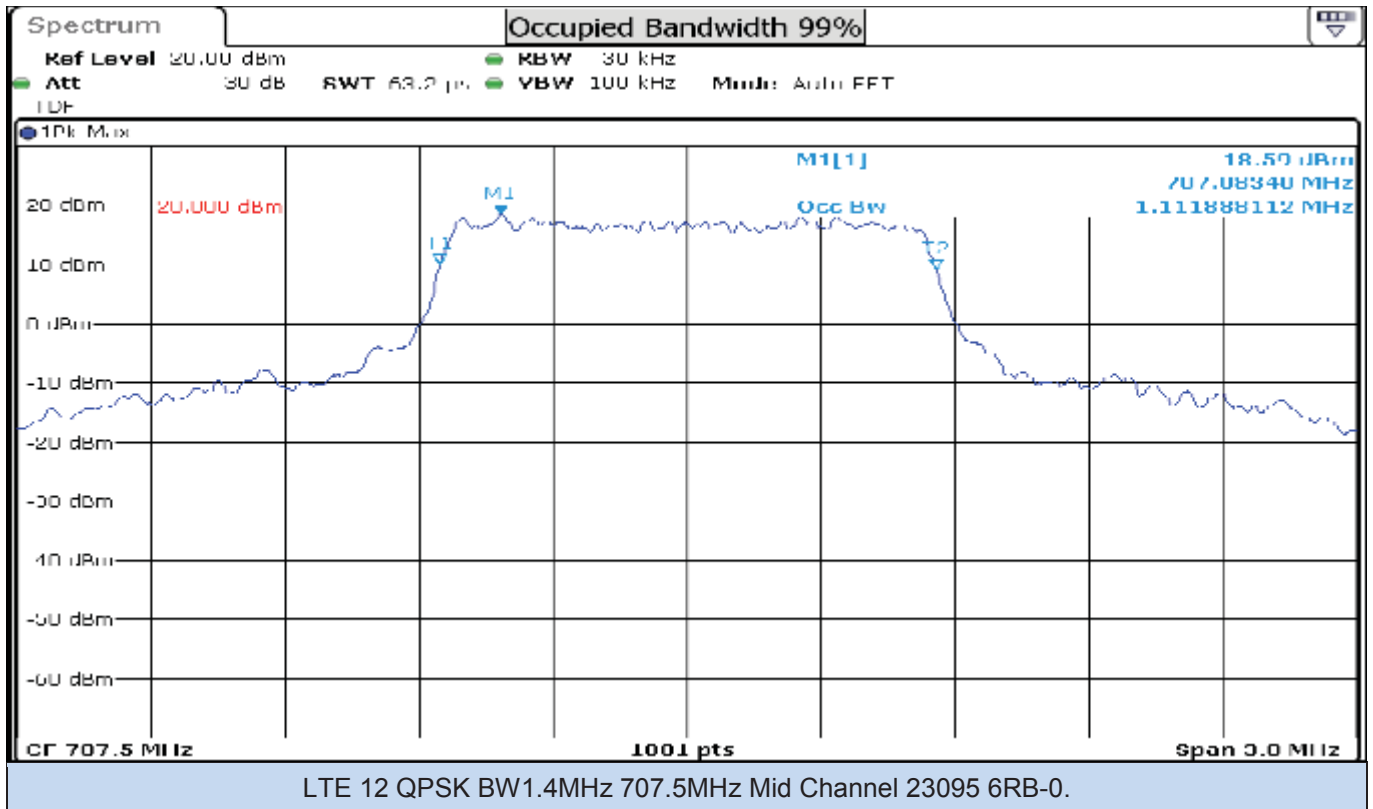


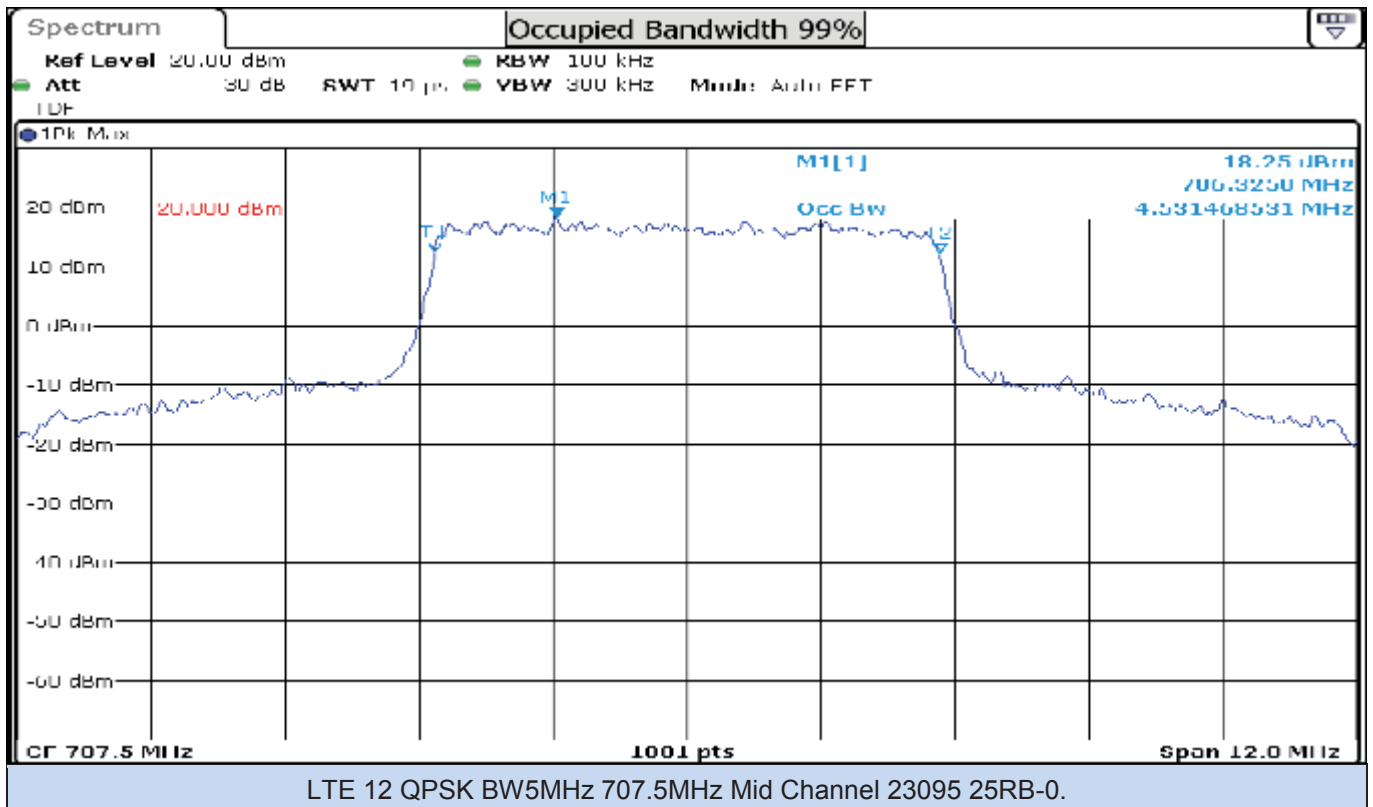
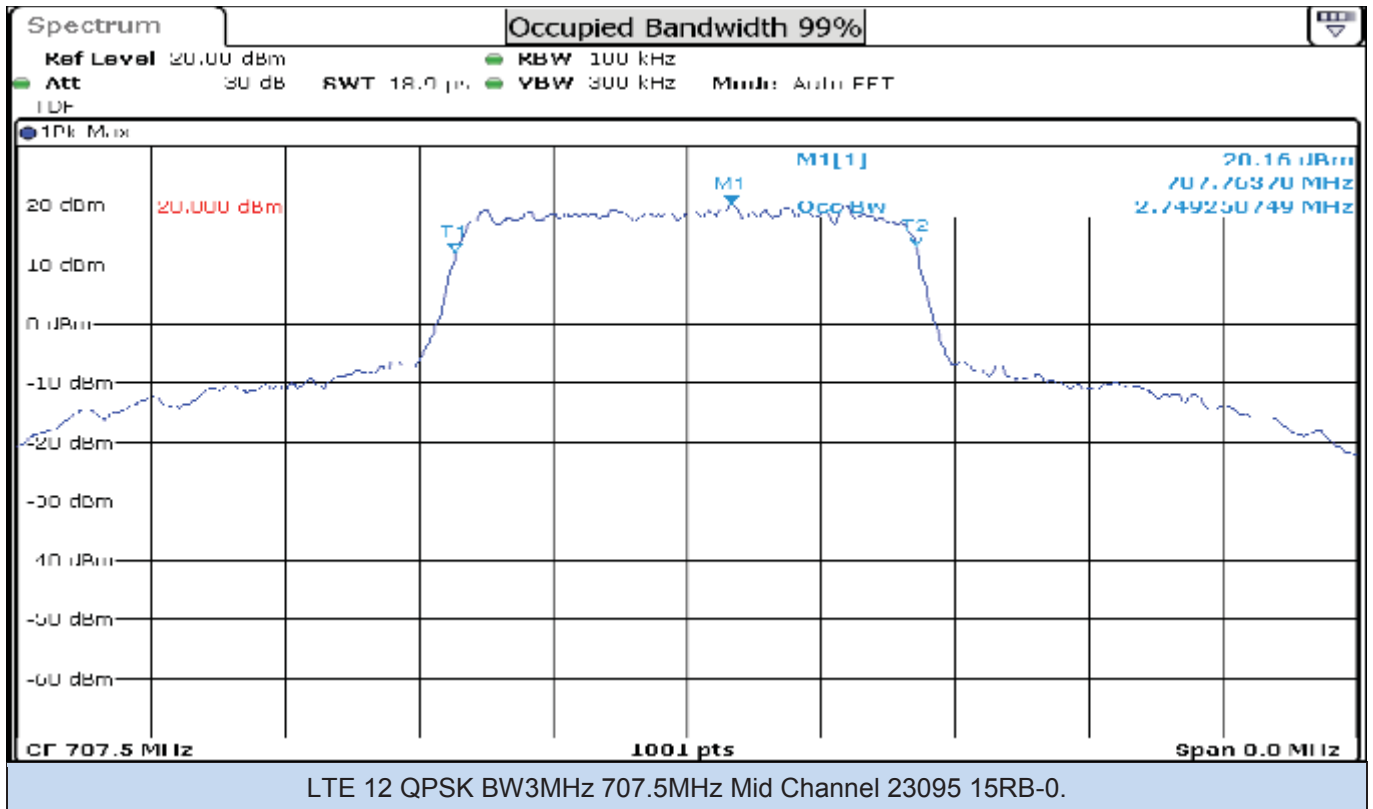




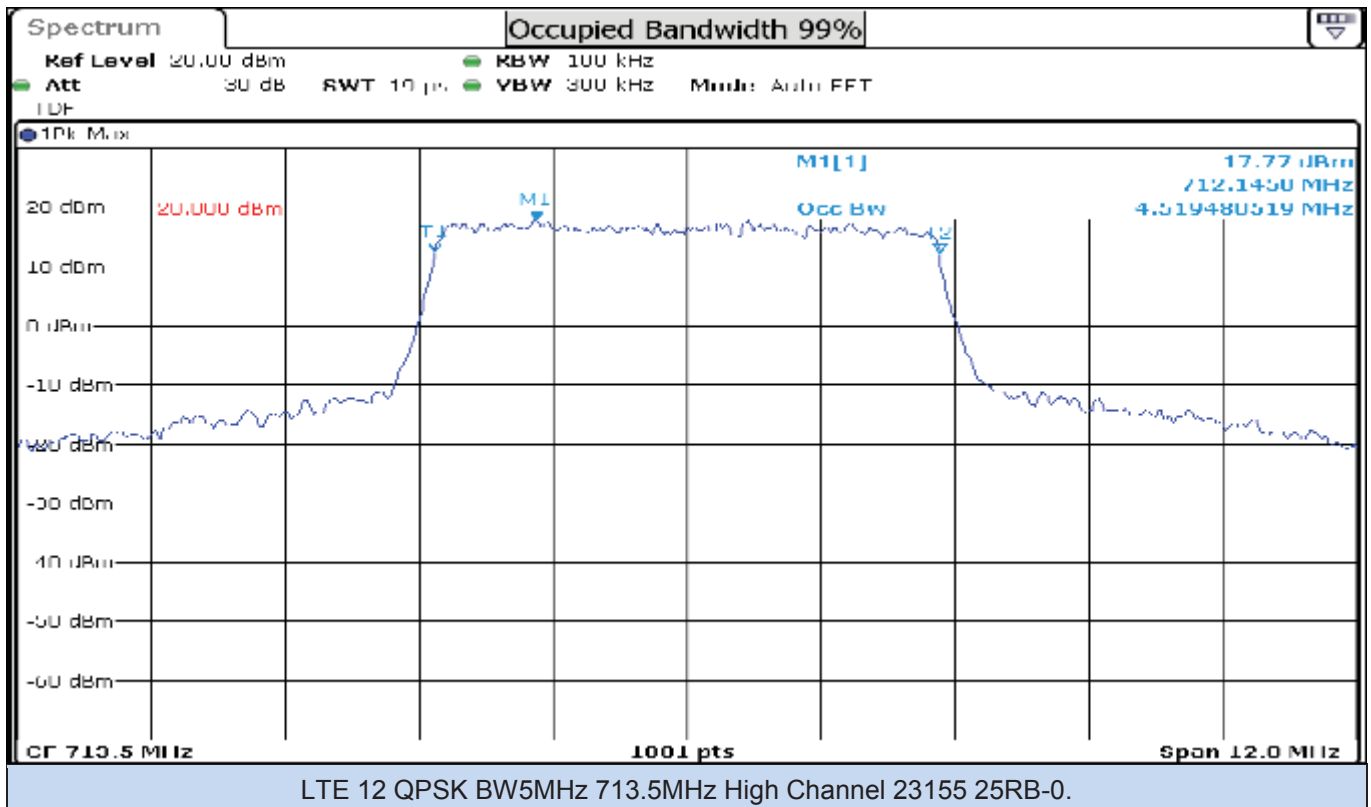
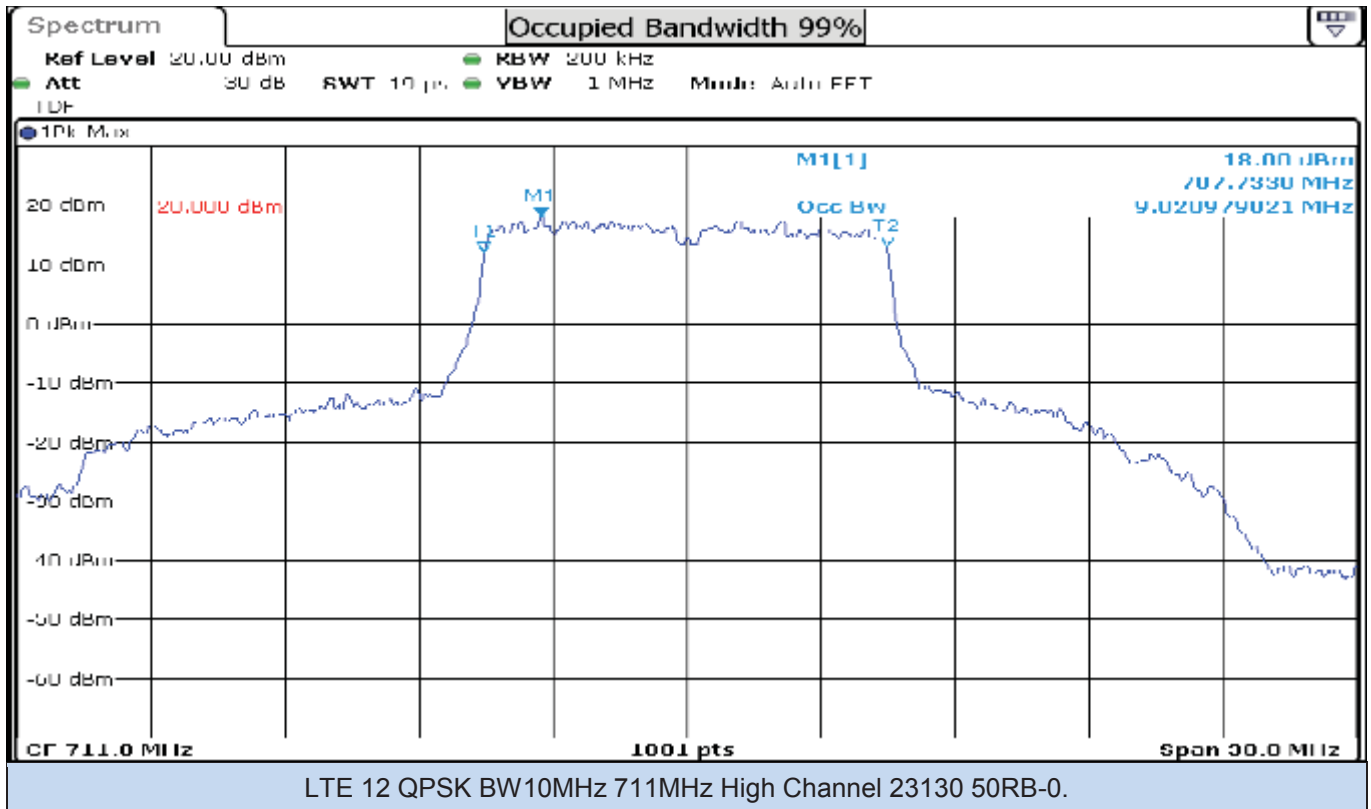


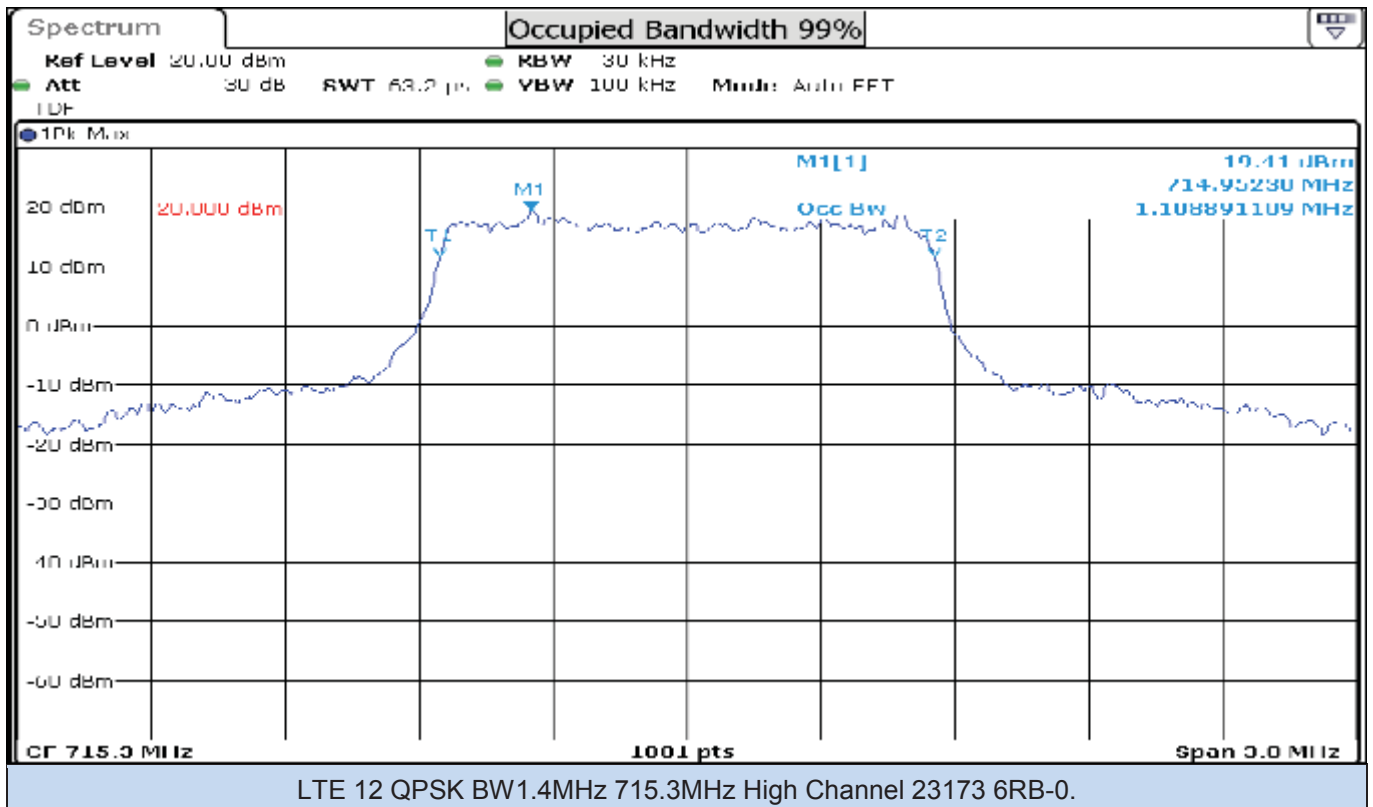
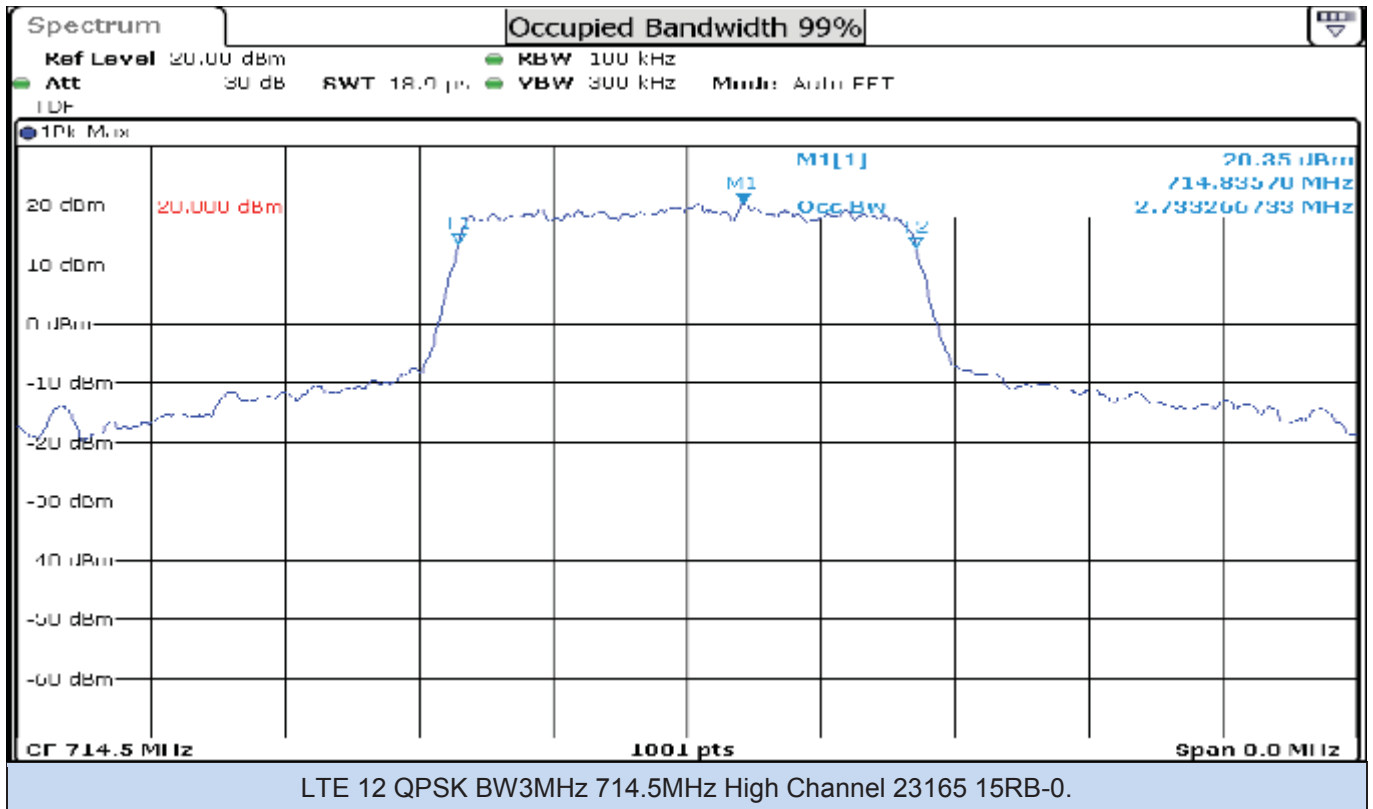


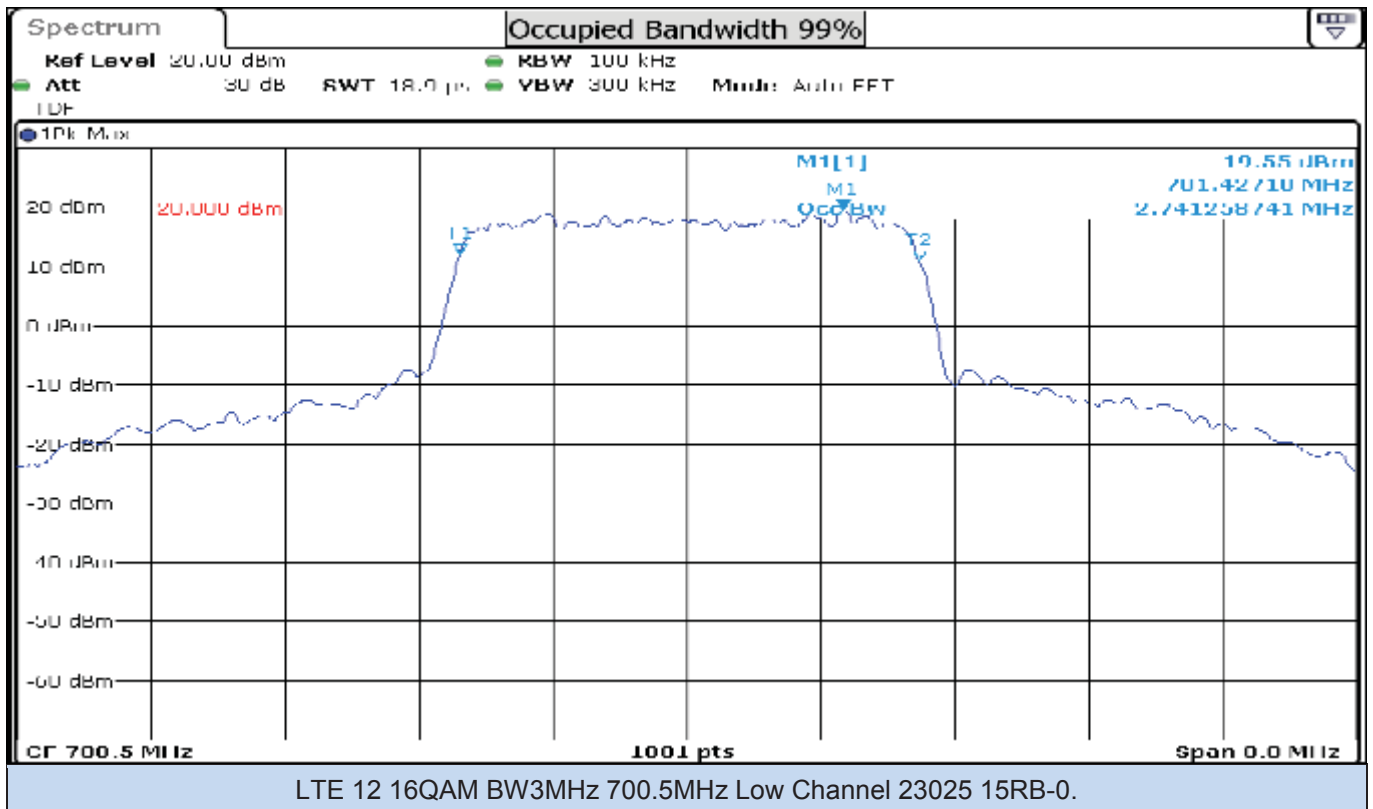
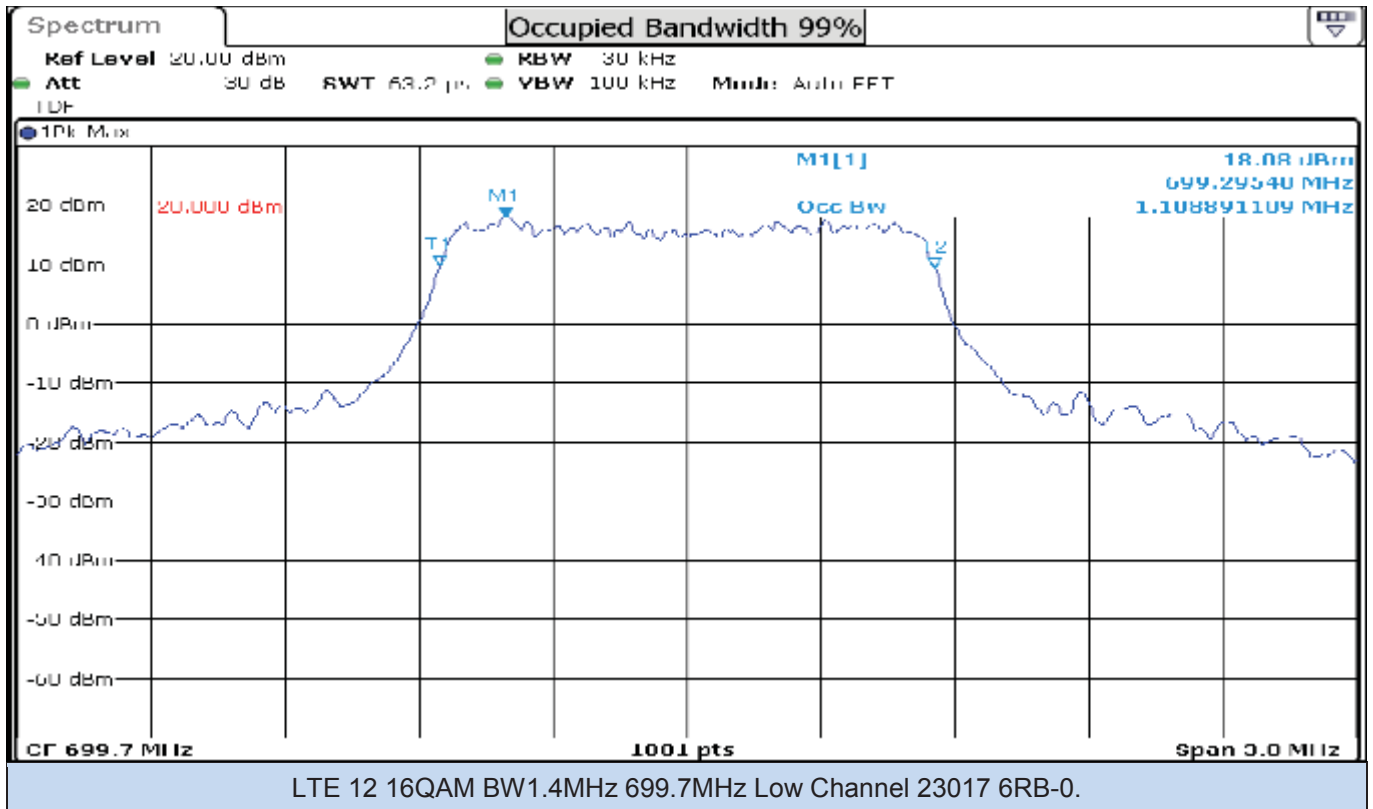




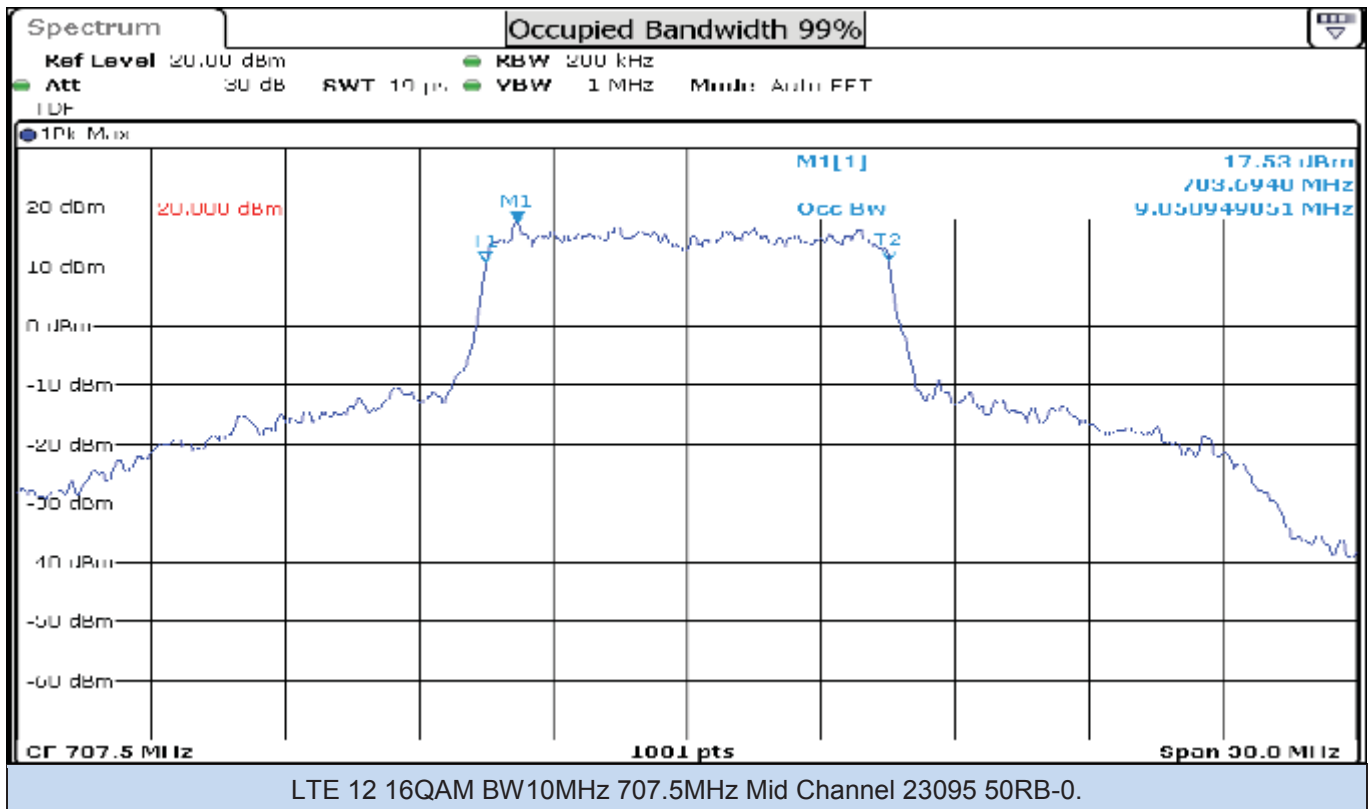
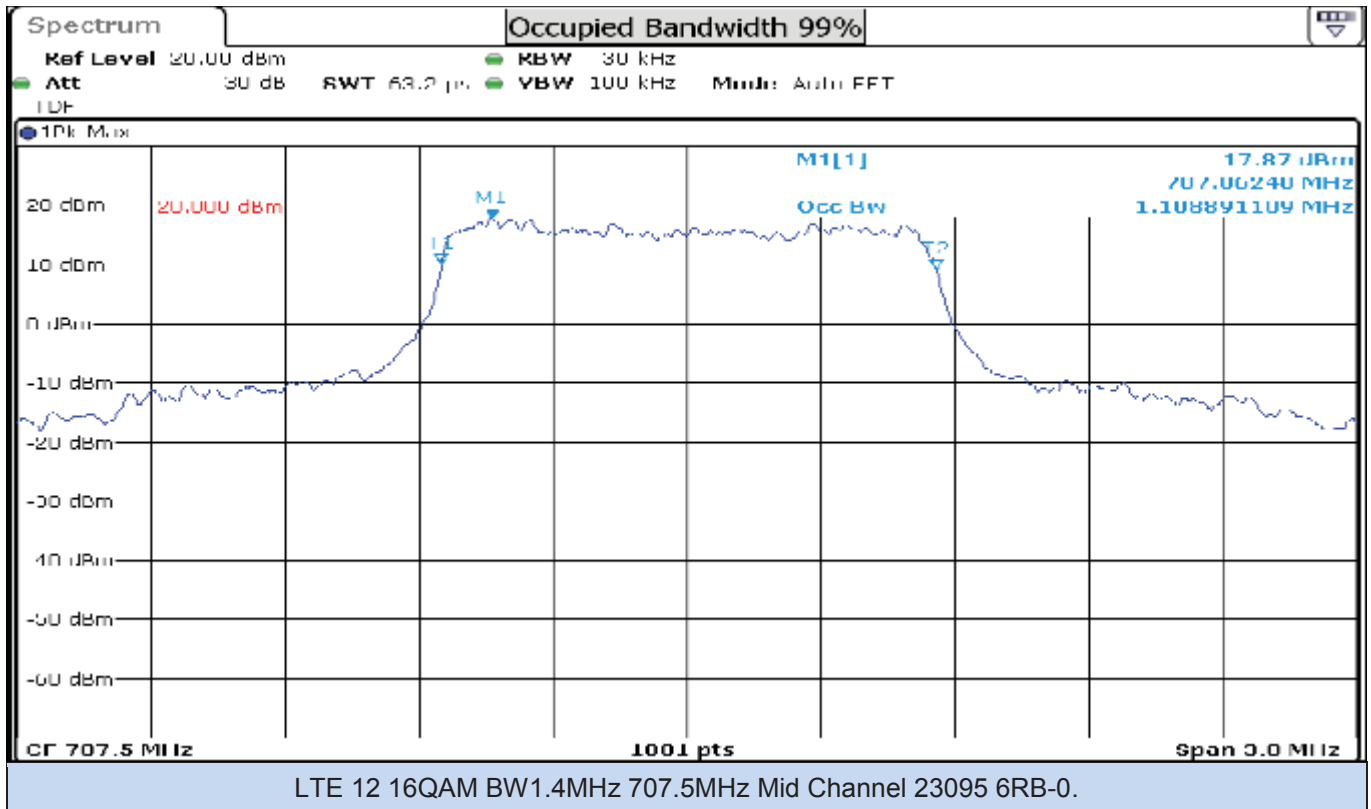


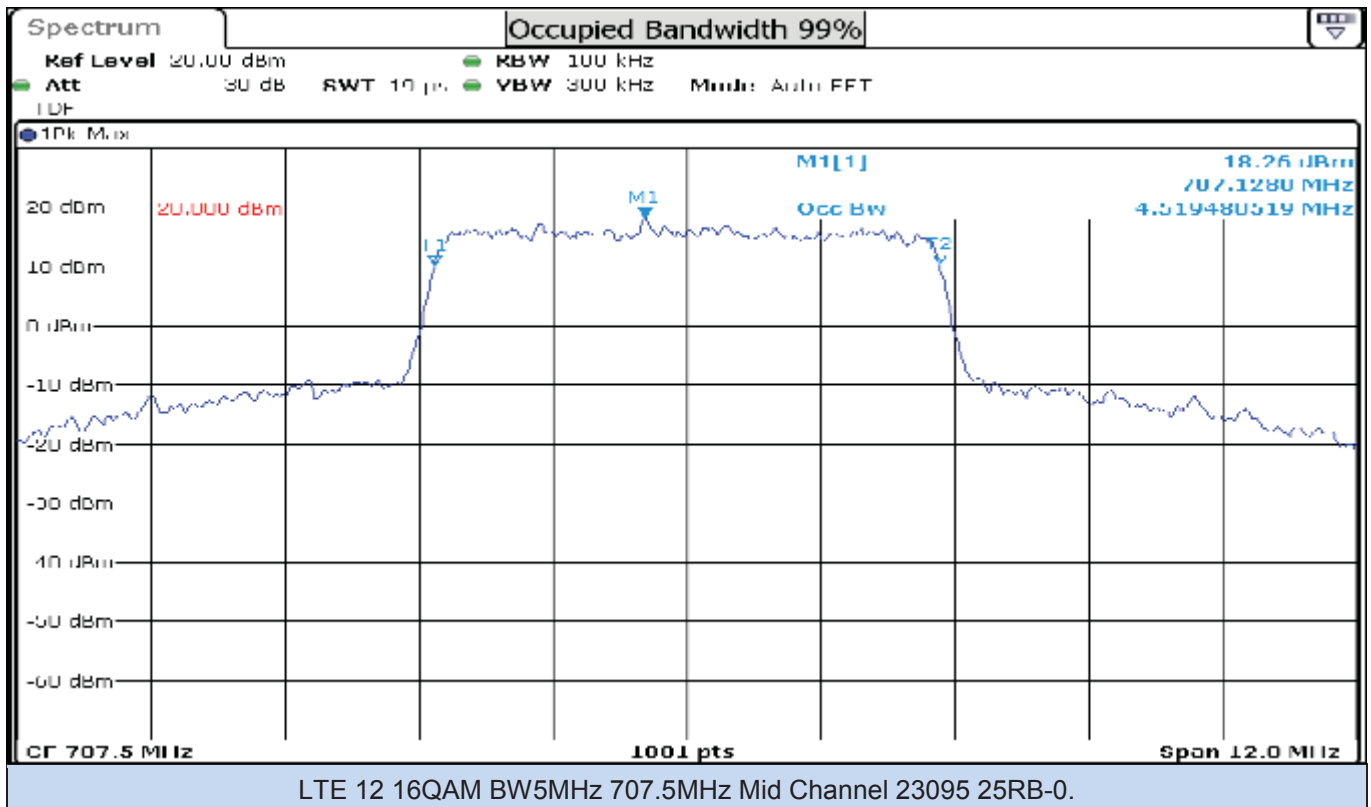
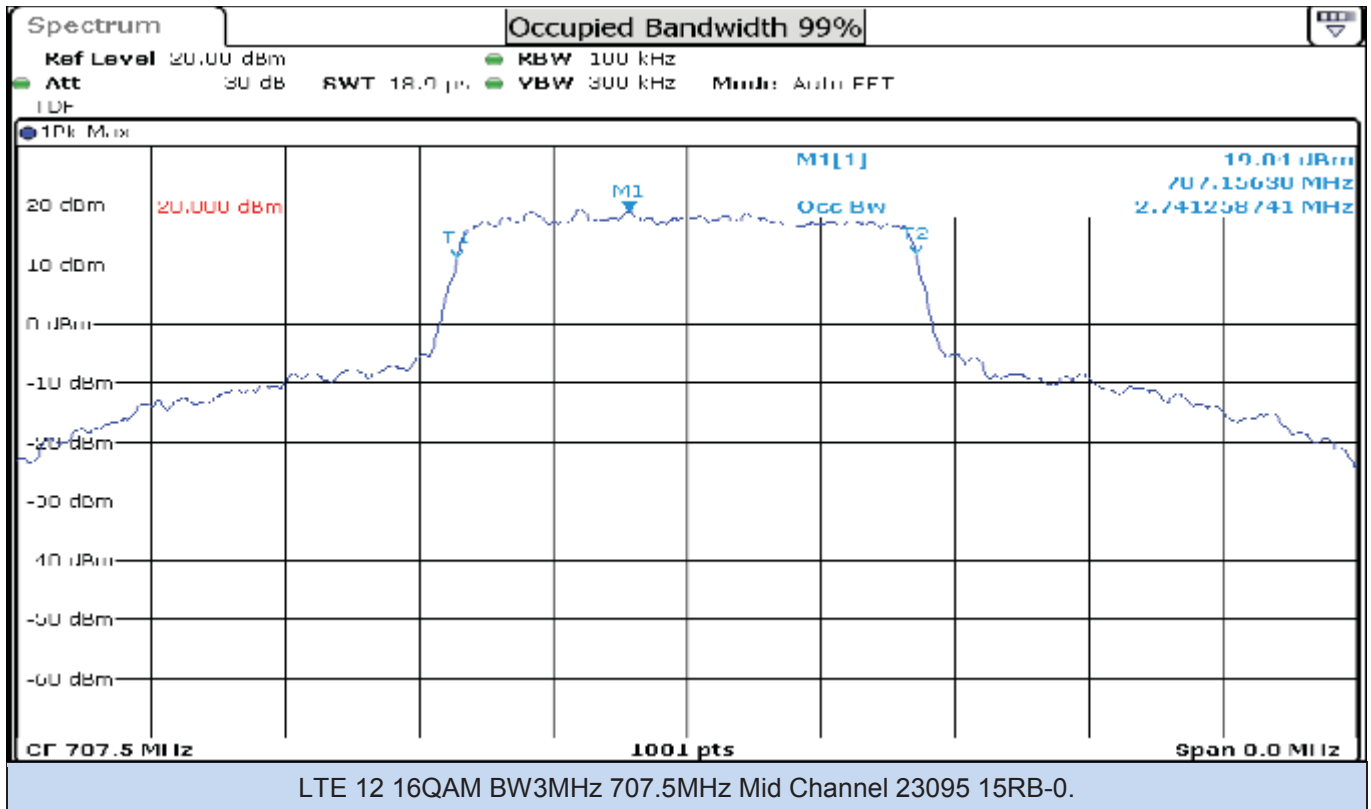


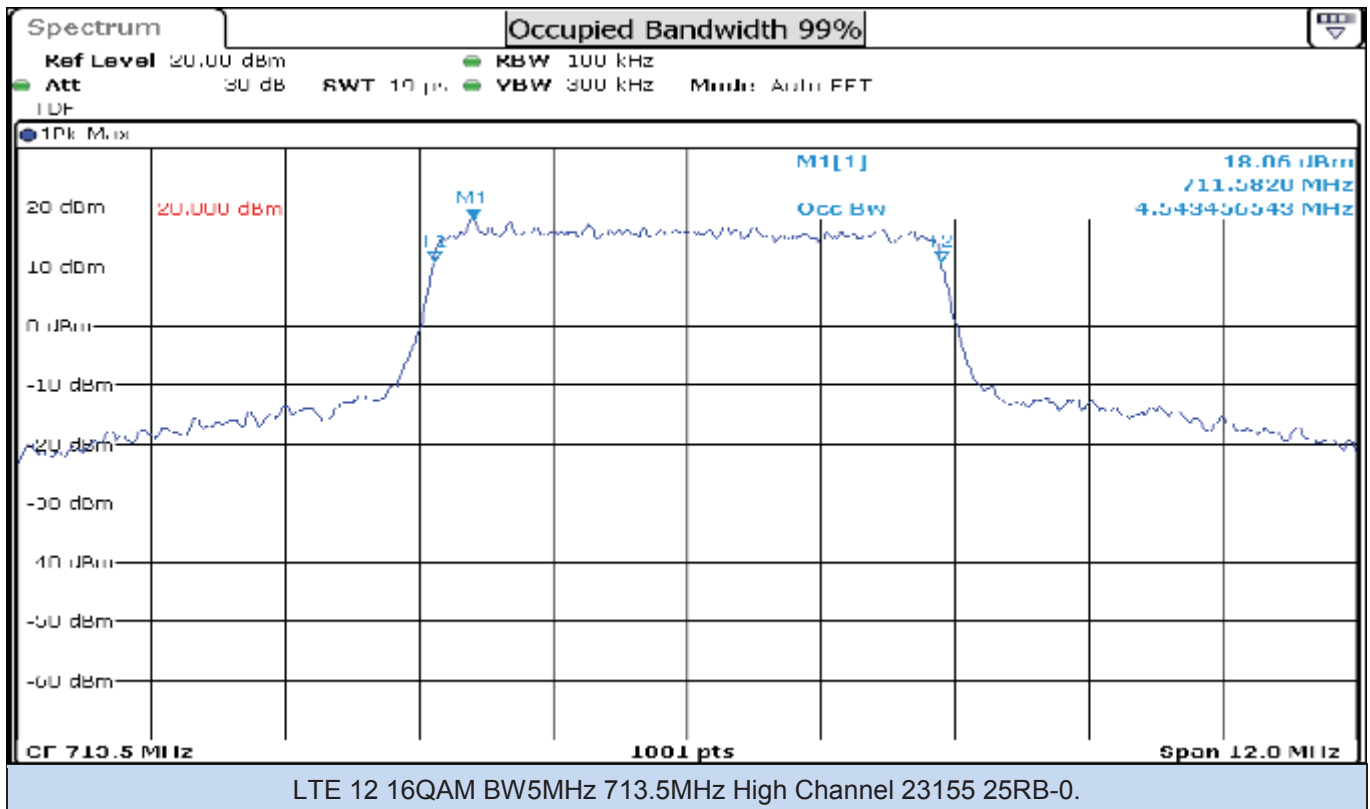
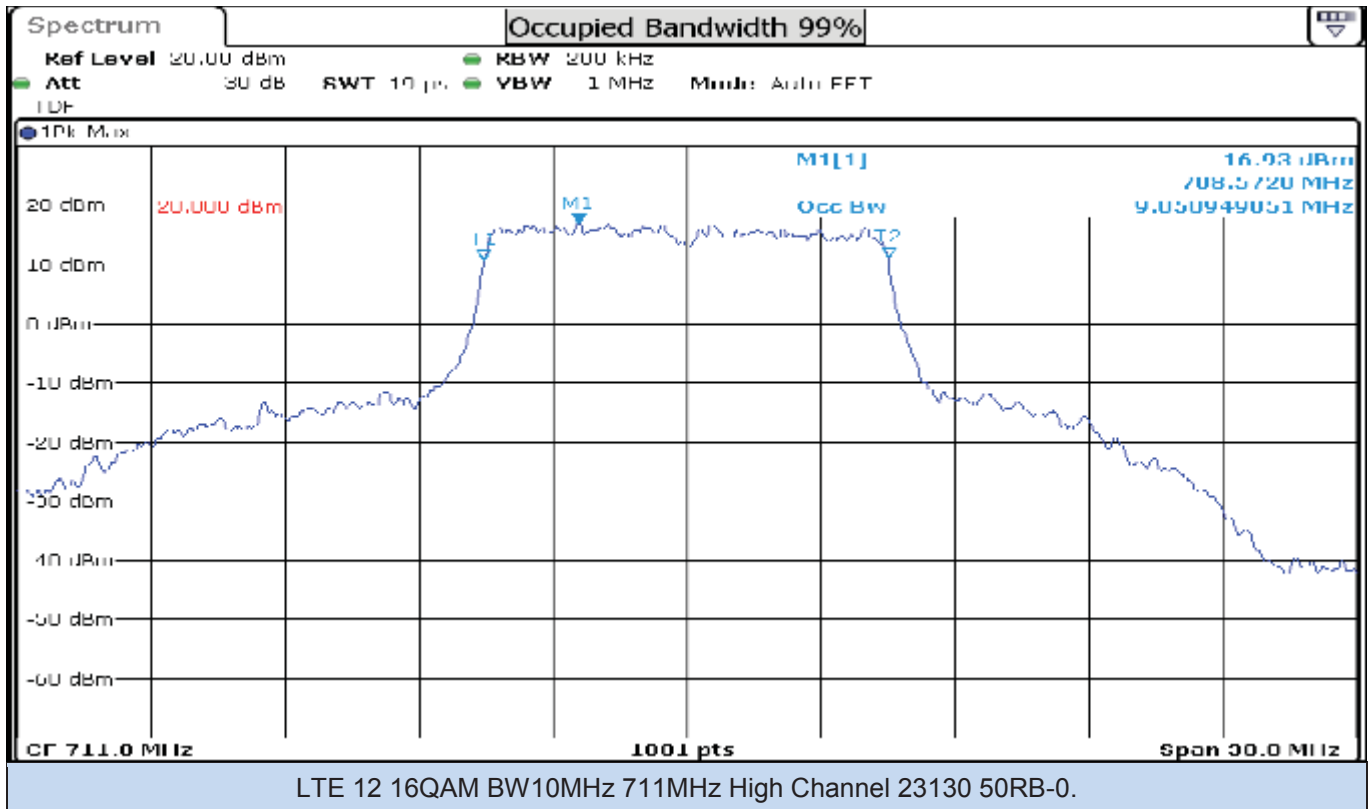


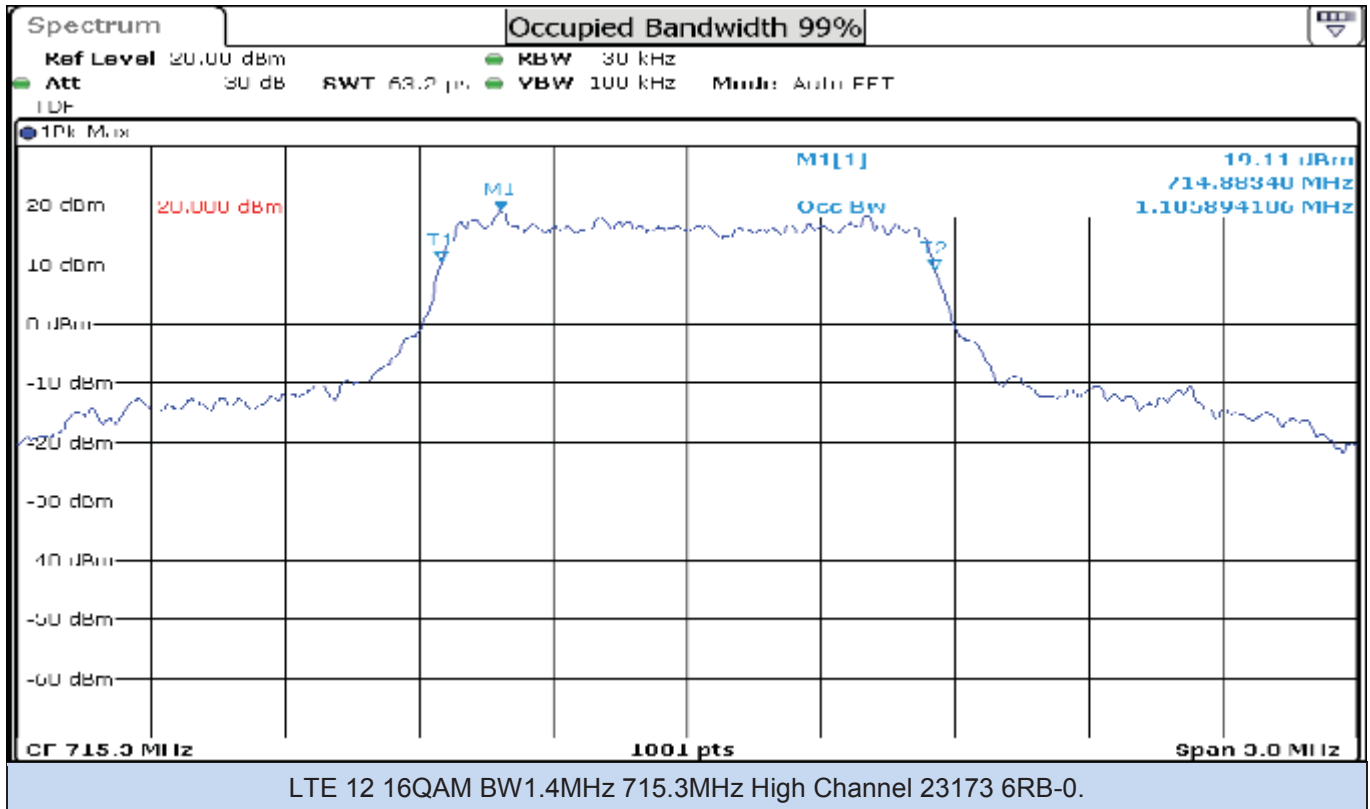
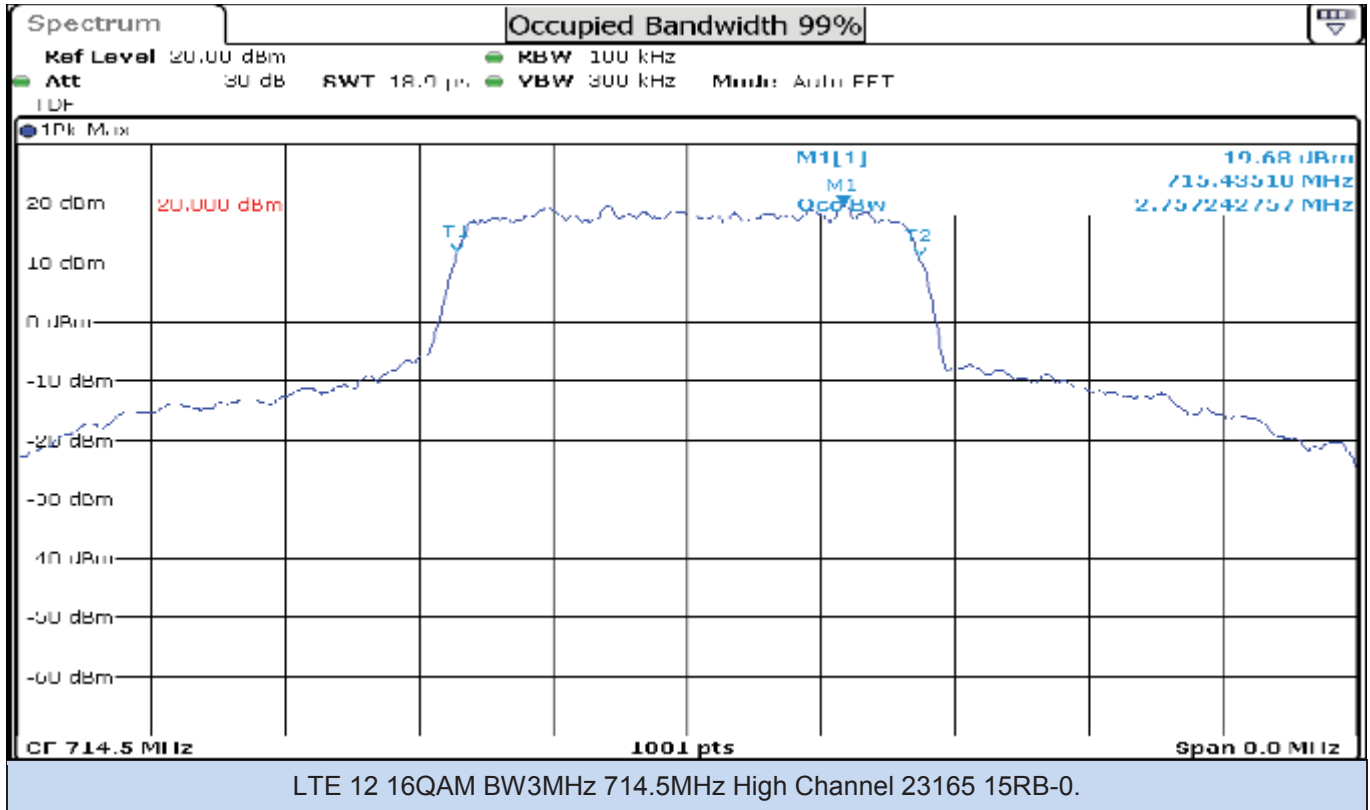




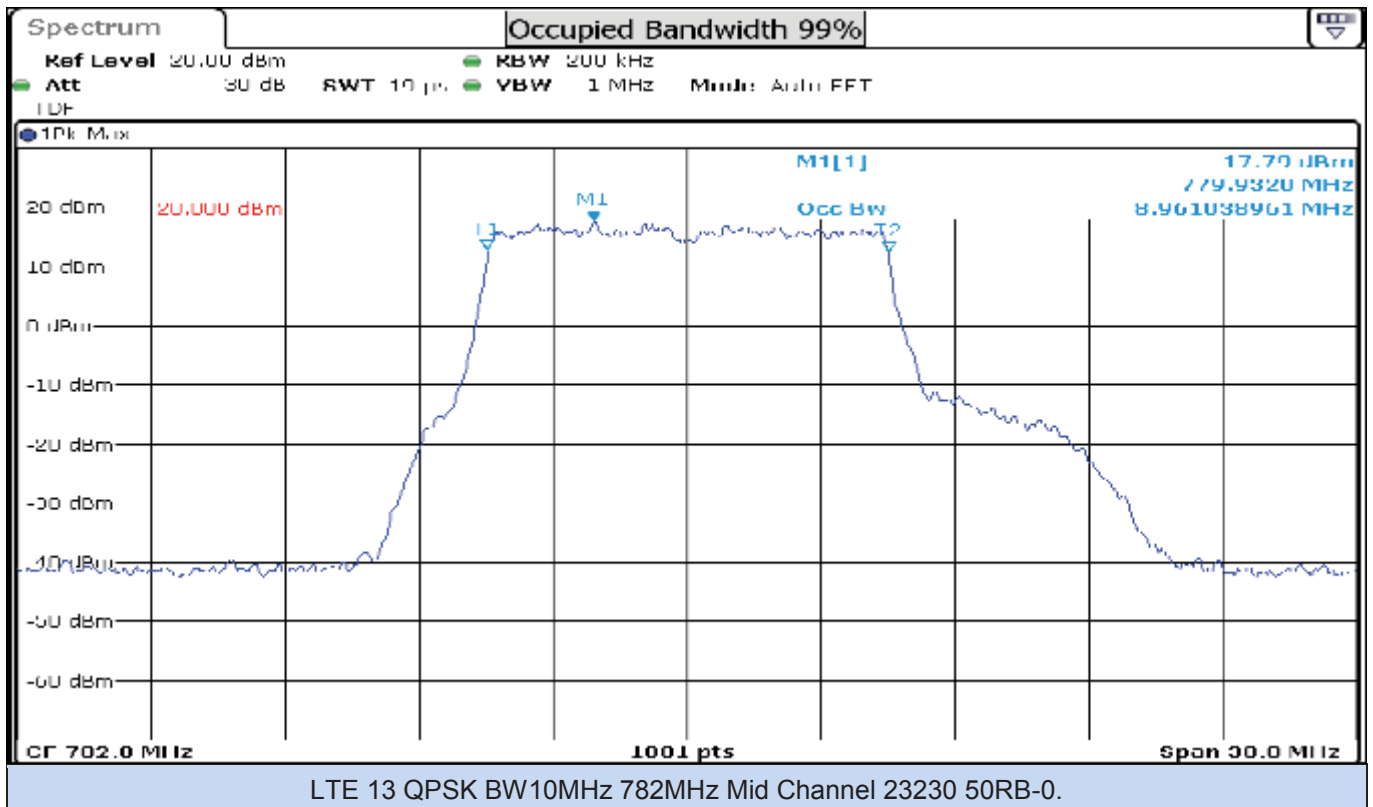
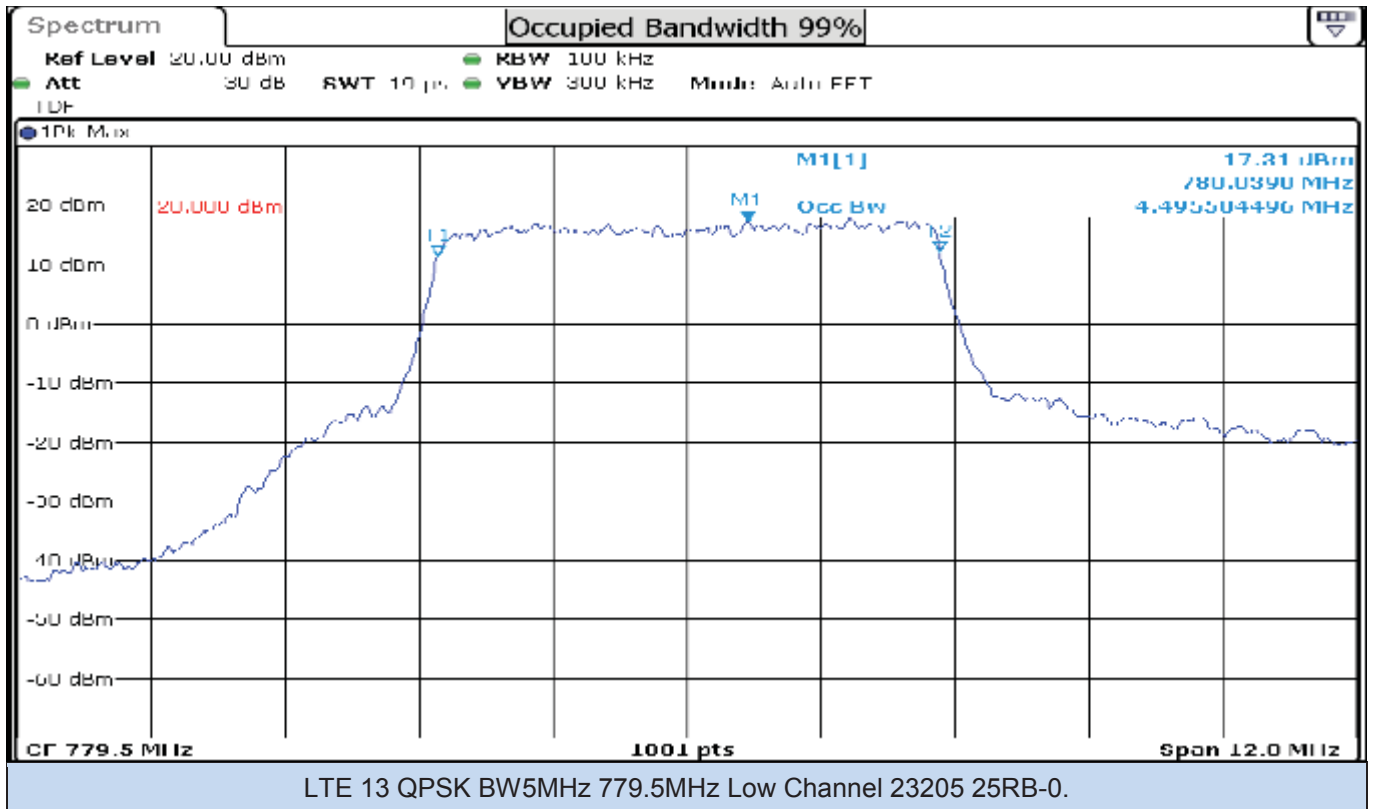


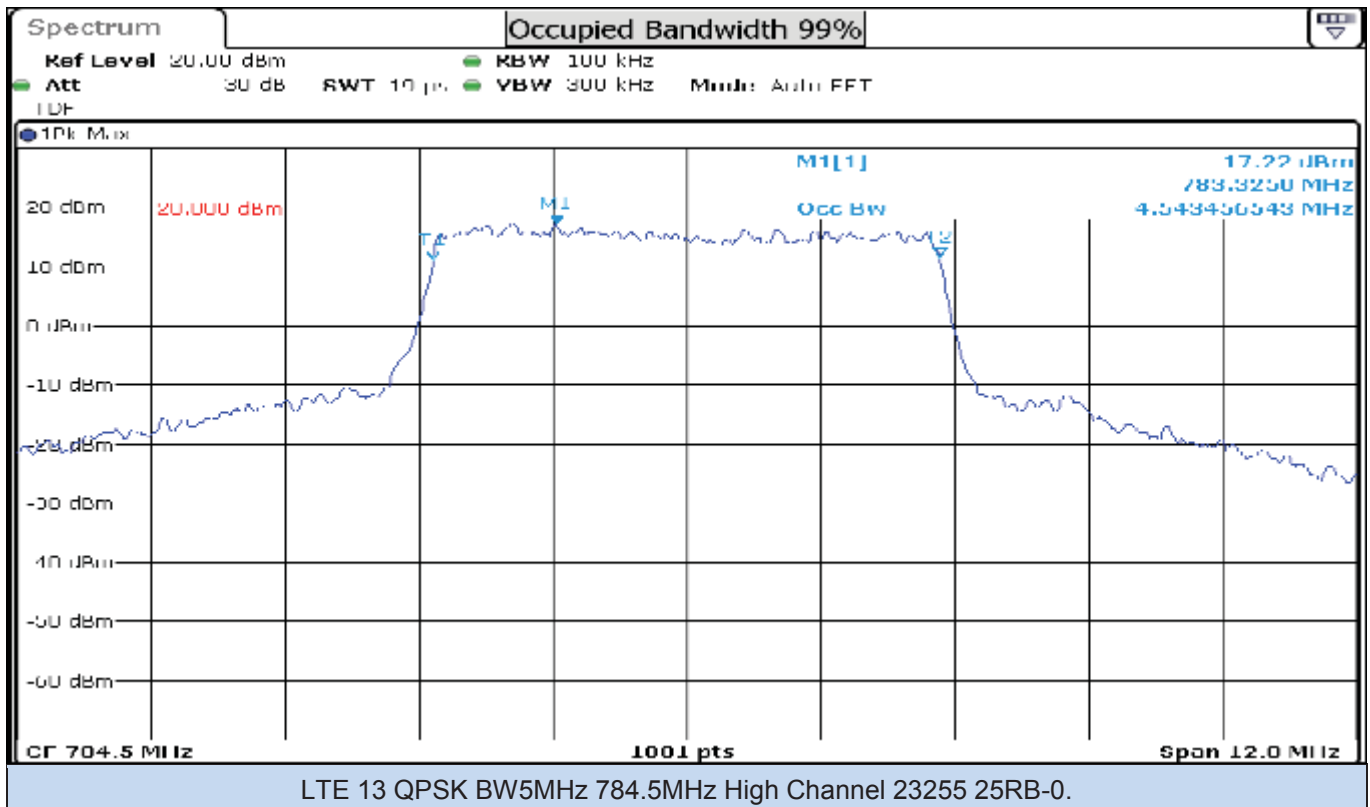
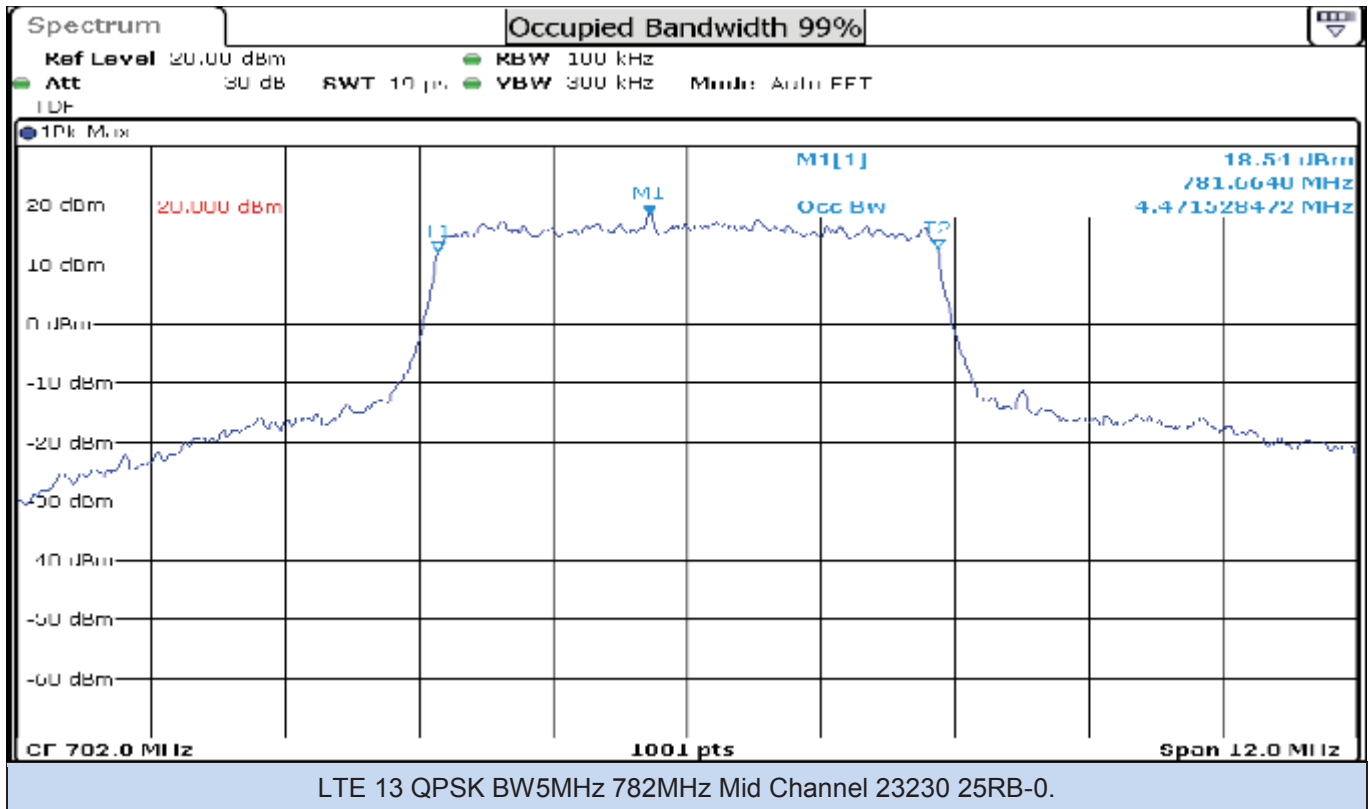


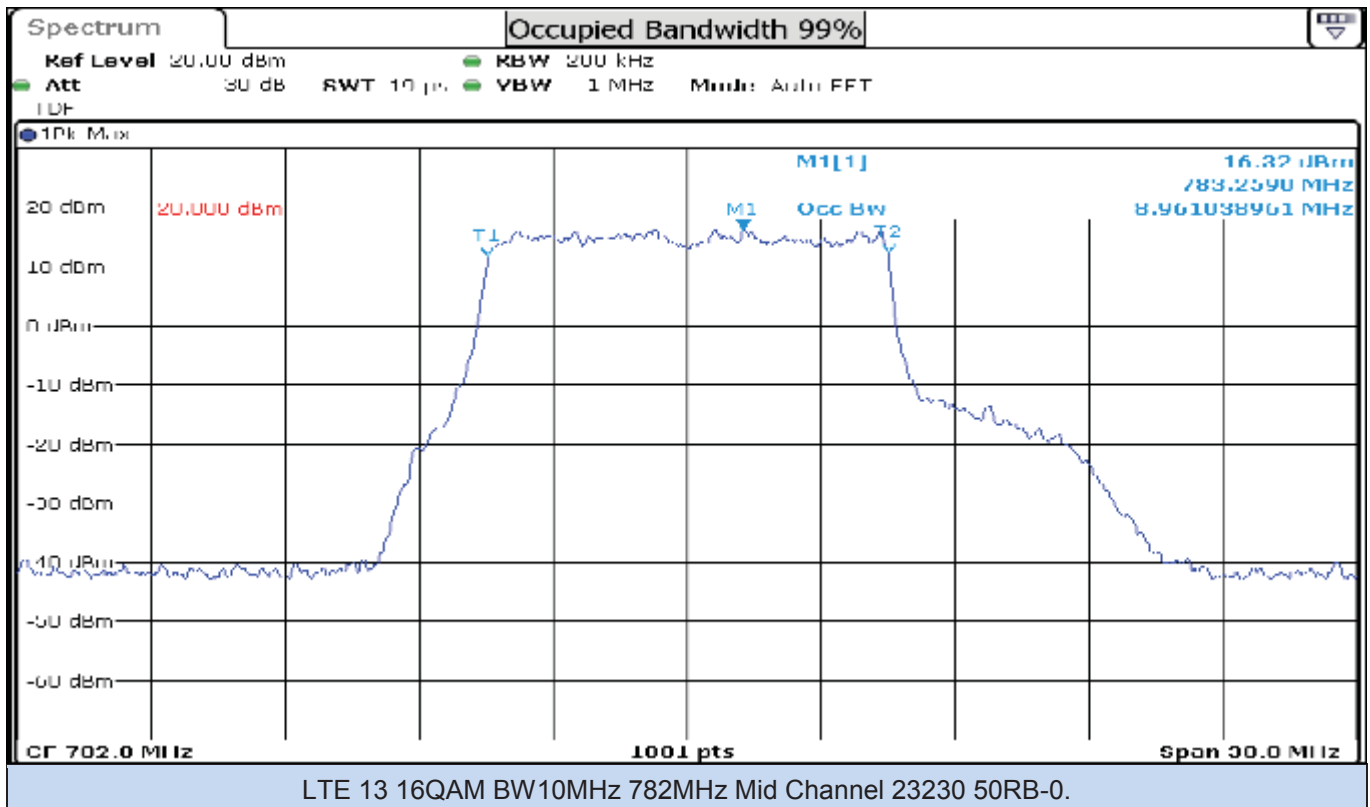
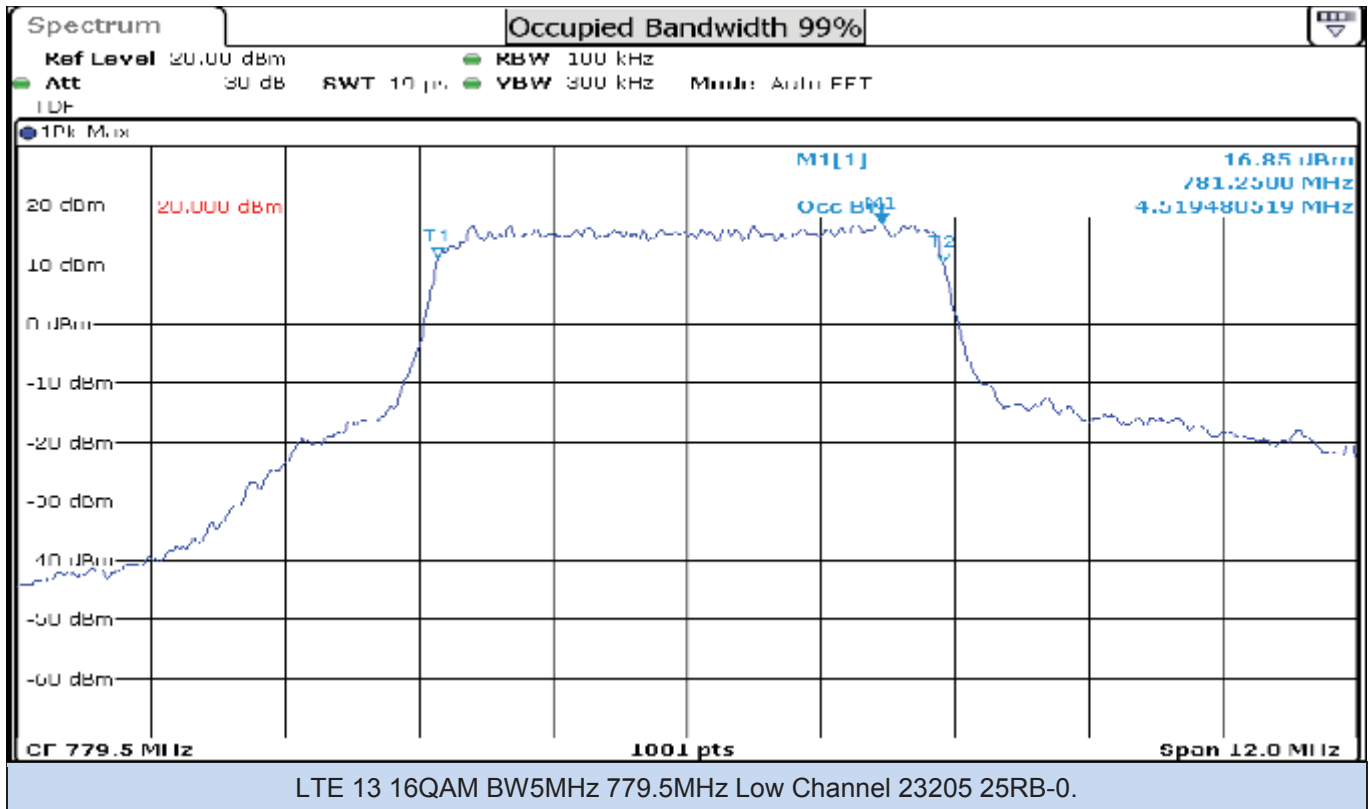


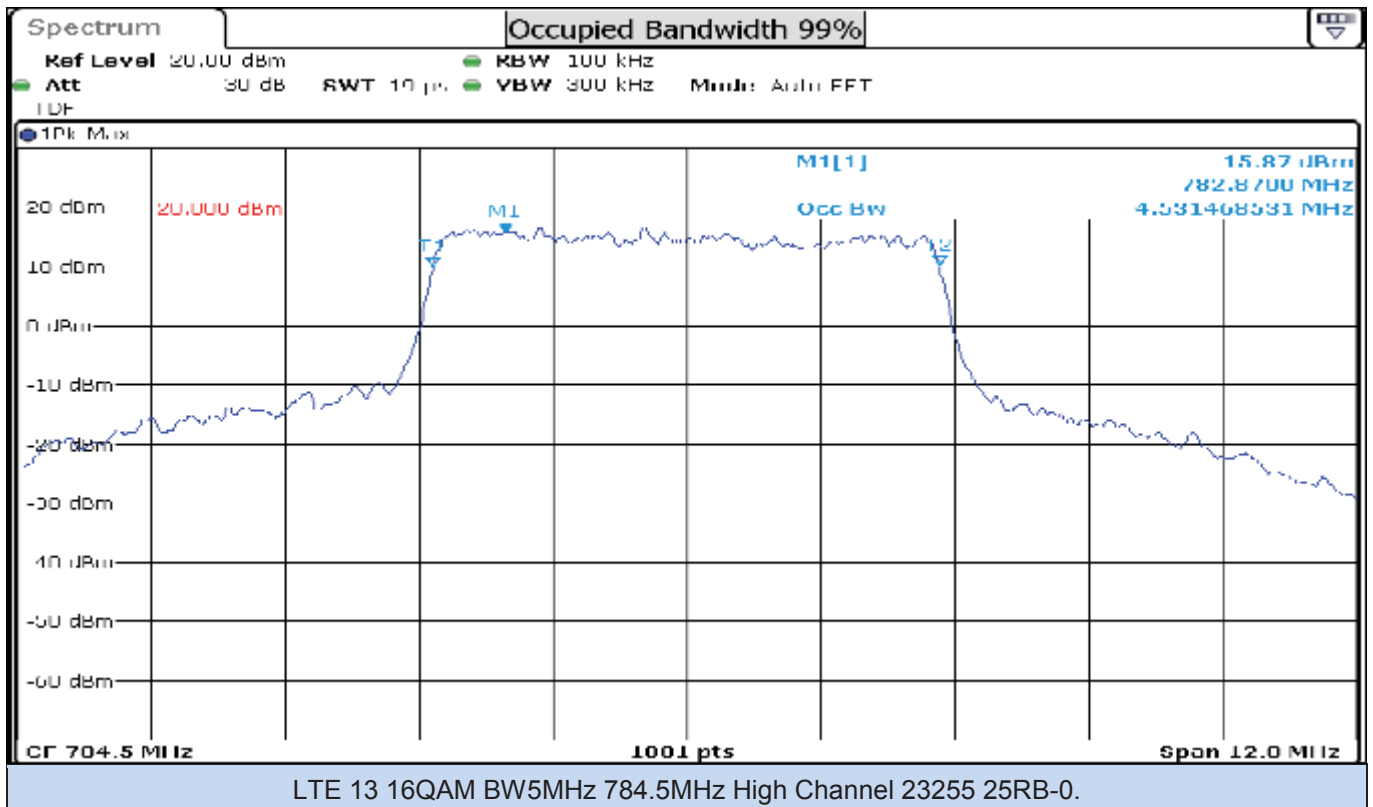
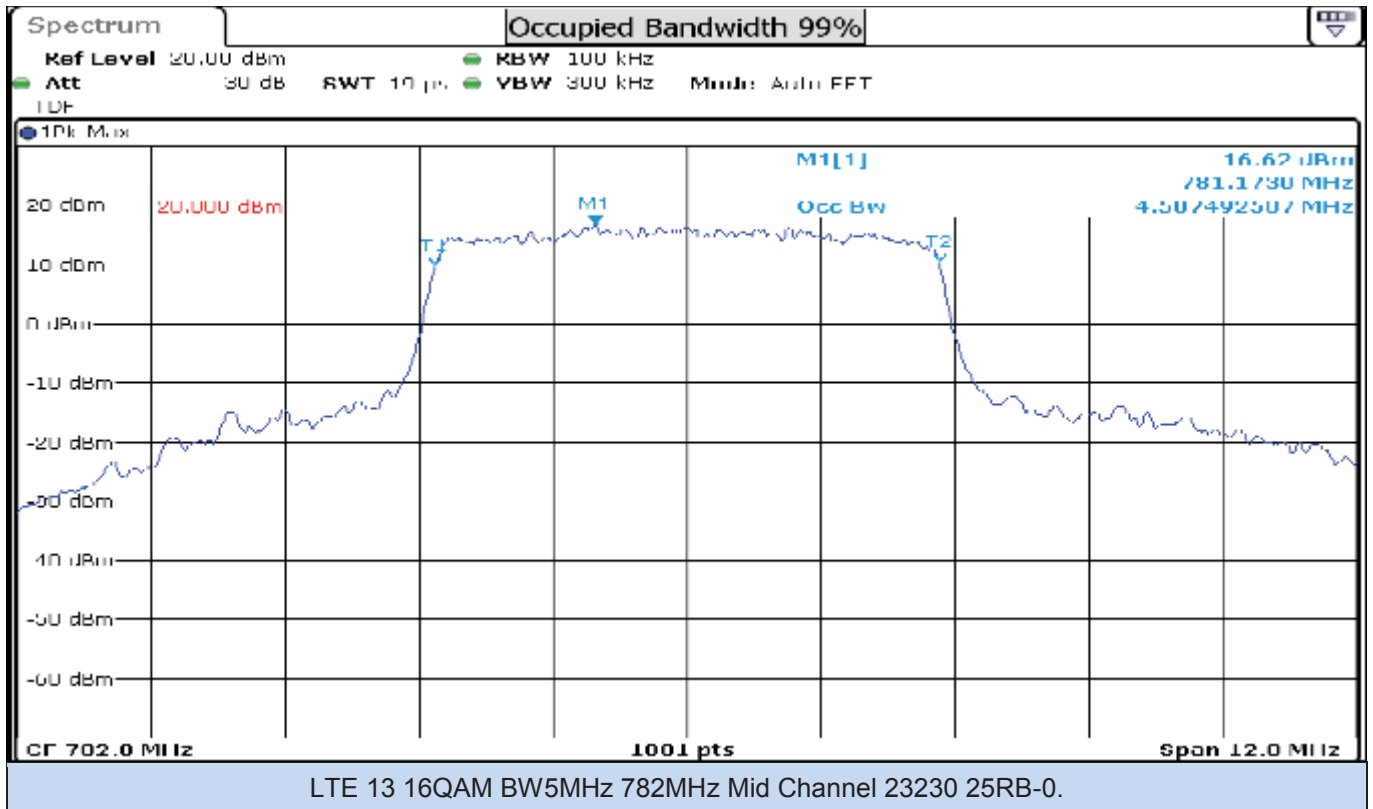












### B.3 Peak to average ratio

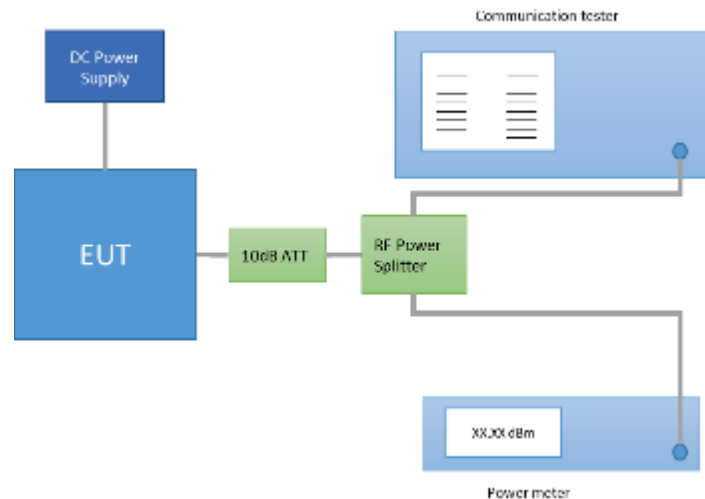
#### B.3.1 Standard references

BAND	FCC part	RSS part	Limits
LTE 2	24.232	133-ch.6.4	< 13 dB
LTE 4	27.50	139-ch.6.4	< 13 dB
LTE 5 (19)	-	132-ch.5.4	< 13 dB
LTE 7	27.50	-	< 13 dB
LTE 12(17)	-	130-ch.4.4	< 13 dB
LTE 13	-	130-ch.4.4	< 13 dB

#### B.3.2 Test Procedure

The setup below was used to measure the transmitted peak power. The antenna terminal of the EUT is connected to the peak power meter and the communication tester through an attenuator and a power splitter. This test was performed according to the KDB 971168 D01 § 5.1. Then the Peak to average power ratio is computed from the average power measured previously.

The transmitted peak power was measured on the worst case configuration selected from the chapter **Error! Reference source not found.**4 and on the middle channel.



**B.3.3 Results table**

Band	Mode	BW [MHz]	Freq. [MHz]	Ch. Number	#RB	PAPR [dB]
LTE 2	QPSK	1.4	1880	18900	1	3.15
					6	4.11
		3			1	3.07
					15	4.78
		5			1	3.39
					25	4.24
		10			1	3.59
					50	4.08
		15			1	3.21
					75	4.10
	20	1			3.29	
		100			4.02	
	16QAM	1.4			1	3.92
					6	4.57
		3			1	3.63
					15	4.77
		5			1	3.26
					25	4.86
		10			1	3.35
					50	4.78
15		1	3.44			
		75	4.77			
	1	4.18				
	100	4.72				

Band	Mod.	BW [MHz]	Freq [MHz]	Channel Number	#RB	APR [dB]
LTE 4	QPSK	1.4	1732.5	20175	1	3.79
					6	5.16
		3			1	3.86
					15	5.03
		5			1	3.91
					25	5.25
		10			1	3.60
					50	5.27
		1			4.02	
		75			5.08	
		1			3.70	
		100			4.81	
	16QAM	1.4			1	3.82
					6	5.81
		3			1	4.46
					15	5.71
5		1	4.29			
		25	5.76			
10		1	3.68			
		50	6.02			
	1	4.32				
	75	5.72				
	1	4.20				
	100	5.71				

Band	Mod.	BW [MHz]	Freq [MHz]	Channel Number	#RB	PAPR [dB]
LTE 5(19)	QPSK	1.4	836.5	20525	1	3.70
					6	4.51
		3			1	3.76
					15	4.82
		5			1	3.32
					25	4.91
		10			1	3.62
					50	5.21
	16QAM	1.4			1	3.50
					6	5.06
		3			1	3.42
					15	5.38
		5			1	3.72
					25	5.26
		10			1	4.22
					50	5.59

Band	Mod.	BW [MHz]	Freq [MHz]	Channel Number	#RB	PAPR [dB]	
LTE 7	QPSK	5	21100	2535.0	1	2.69	
		16QAM			10	25	3.59
					15	1	2.42
						50	3.47
						1	2.67
						75	3.49
	16QAM				20	1	2.28
		5			100	3.33	
		10			1	2.97	
					25	4.14	
					1	2.73	
					50	4.35	
		15			1	3.74	
					75	4.13	
1	2.49						
100	4.16						

Band	Mod.	BW [MHz]	Freq [MHz]	Channel Number	#RB	PAPR [dB]	
LTE 12(17)	QPSK	1.4	23095	707.5	1	2.91	
		3			6	3.09	
					5	1	2.69
						15	3.15
					16QAM	10	1
		1.4				25	3.14
	3					1	2.64
						50	3.59
	16QAM					5	1
		10				6	3.83
					15	1	3.09
						15	3.83
					16QAM	5	1
		10				25	3.78
	1					3.37	
	50	4.23					

Band	Mod.	BW [MHz]	Freq [MHz]	Channel Number	#RB	PAPR [dB]
LTE 13	QPSK	5	23230	782.0	1	2.77
					25	4.54
		10			1	2.57
					50	5.13
	16QAM	5			1	3.02
					25	4.81
		10			1	3.17
					50	6.30



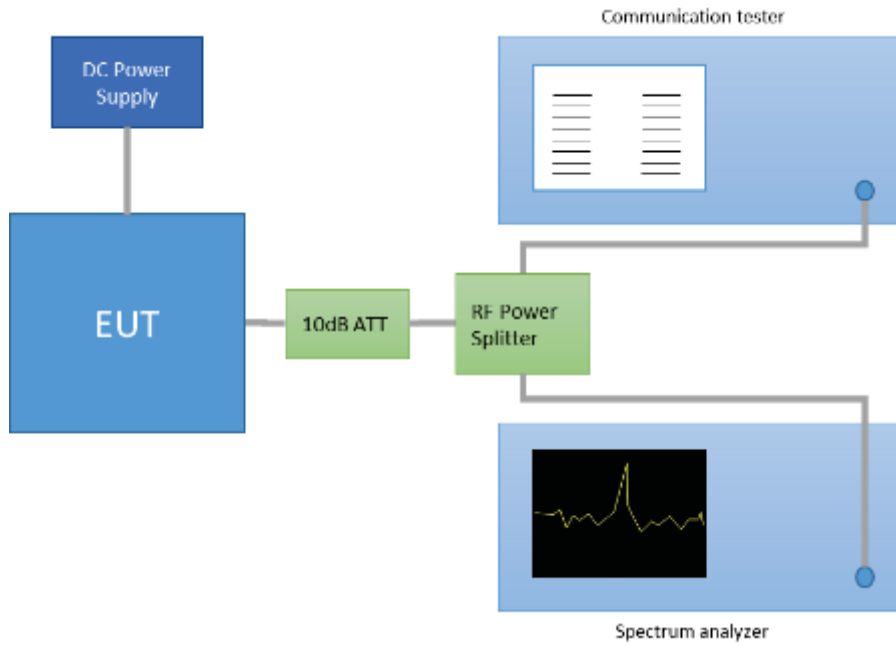
## B.4 Conducted band-edge and spurious emission

### B.4.1 Standard references

BAND	FCC part	RSS part	Limits
LTE 2	2. 1051, 24.238	133-ch6.5.1	The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.
LTE 4	2. 1051, 27.53	139-ch.6.5	The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.
LTE 5	2. 1051, 22.917	132-ch.5.5	The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.
LTE 7	2.1051, 27.53 (m)(4)	199-ch.4.6	For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz
LTE 12(17)	2.1051, 27.53 (g)	130-ch.4.6	The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.
LTE 13	2.1051, 27.53 (c)	130-ch.4.6	On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log(P)$ dB. On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations.

### B.4.2 Test procedure

The setup below was used to measure the band-edge and the conducted spurious. The antenna terminal of the EUT is connected to the spectrum analyzer and the communication tester through an attenuator and a power splitter. According to the standard reference, at 1 MHz immediately outside and adjacent to the authorized operating frequency range, a resolution bandwidth of at least 1% has been applied. For all measurements results shown in this section, the video bandwidth is always set to at least 3 times the resolution bandwidth.



### B.4.3 Conducted Band-edge Emission Results Screenshot

