Test Data

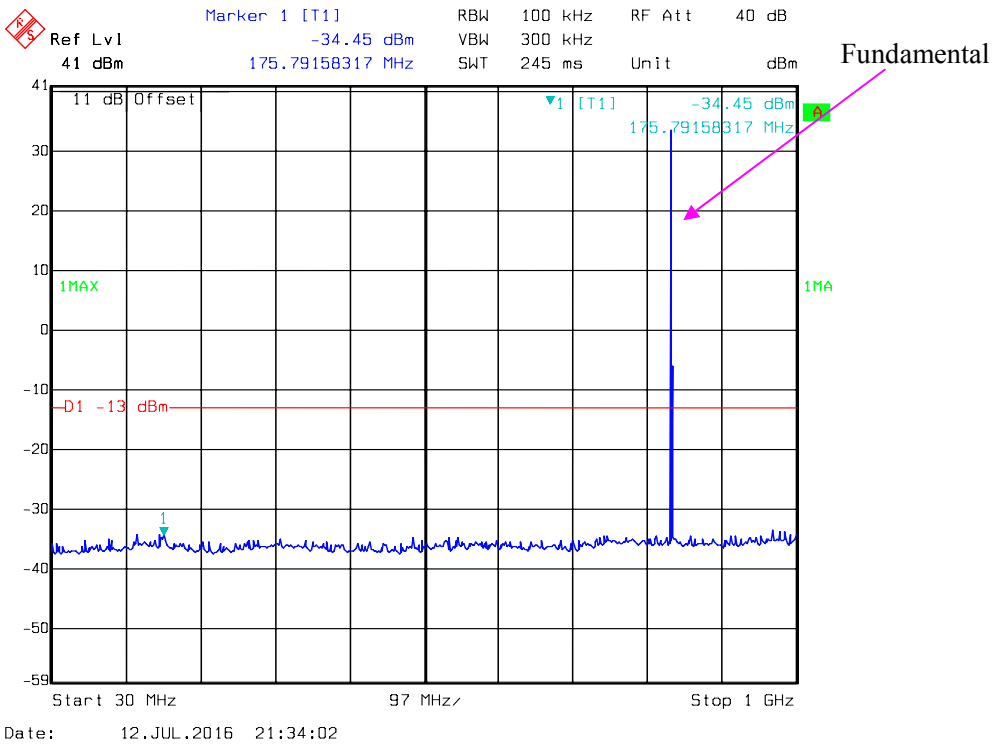
Environmental Conditions

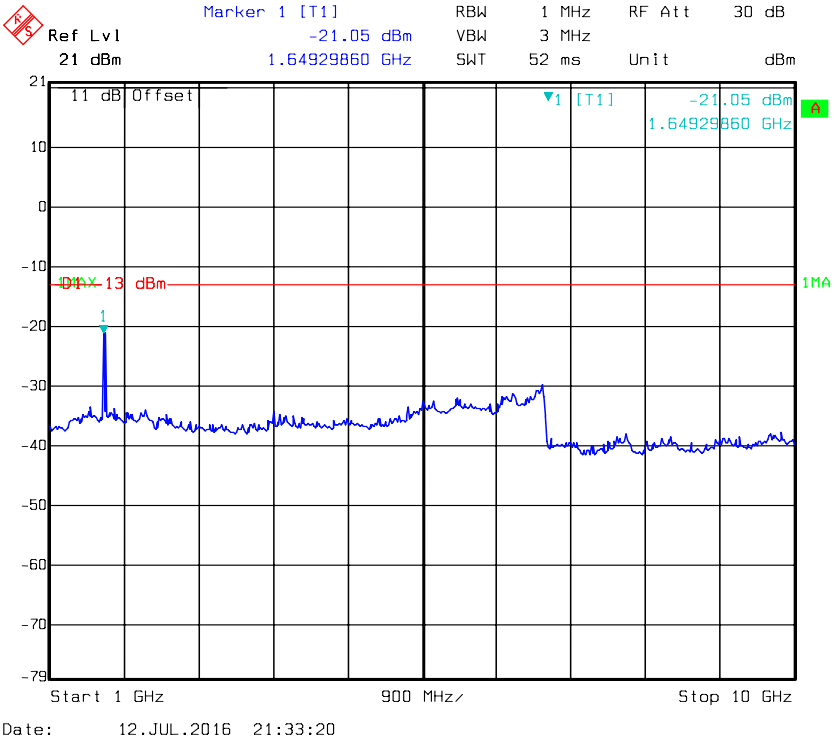
Temperature:	30.6~32.1°C
Relative Humidity:	51~54%
ATM Pressure:	99.6~99.7 kPa

The testing was performed by Robin Zheng from 2016-07-12 to 2016-07-18.

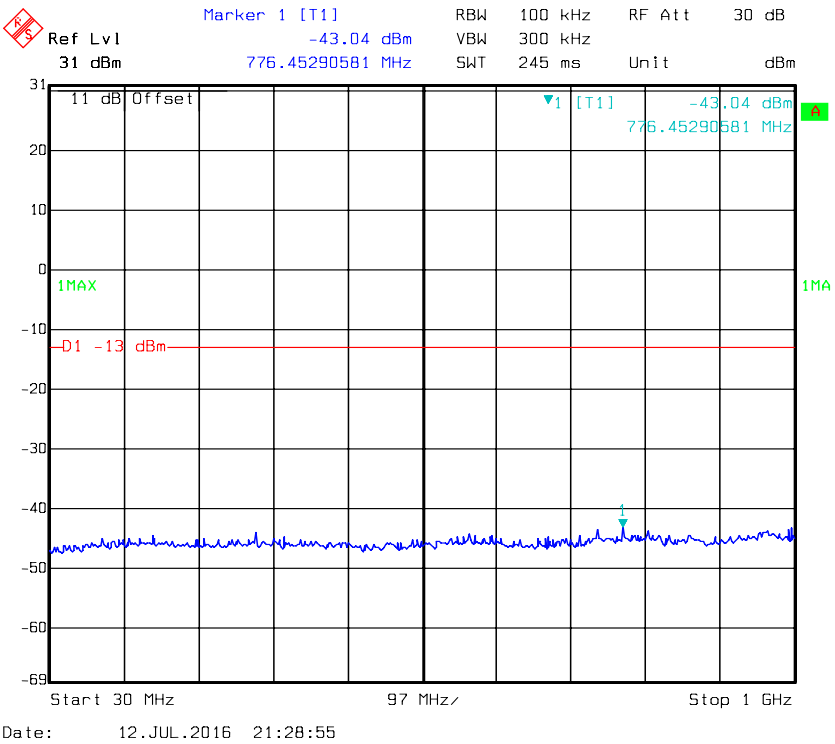
Please refer to the following plots.

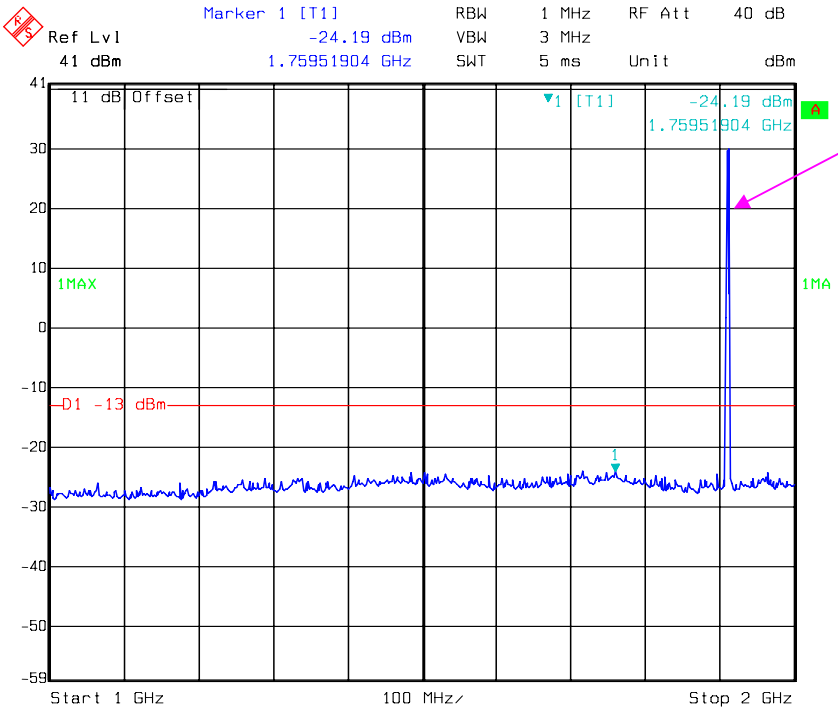
GSM850_Middle Channel

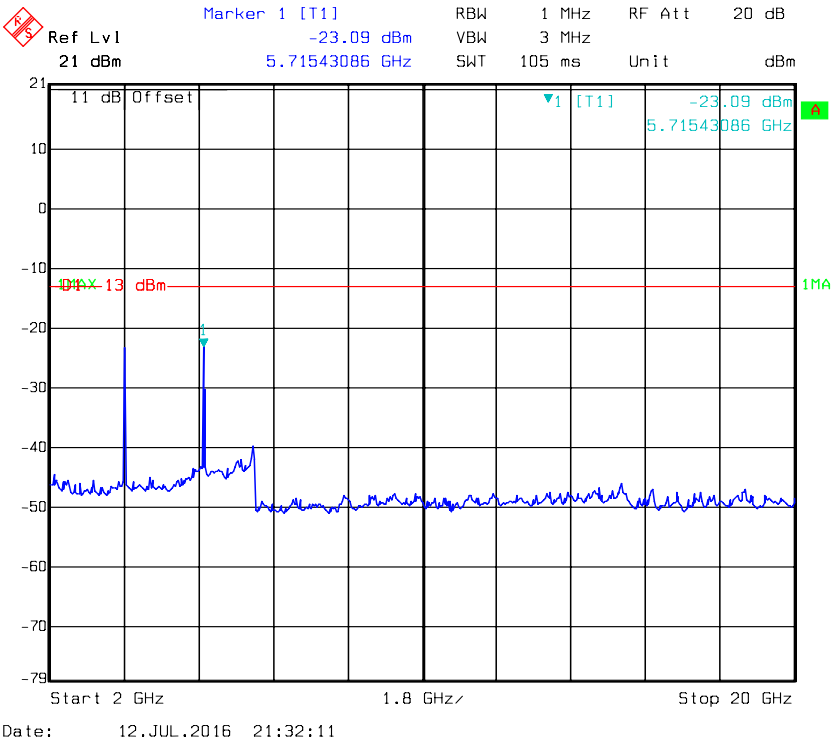




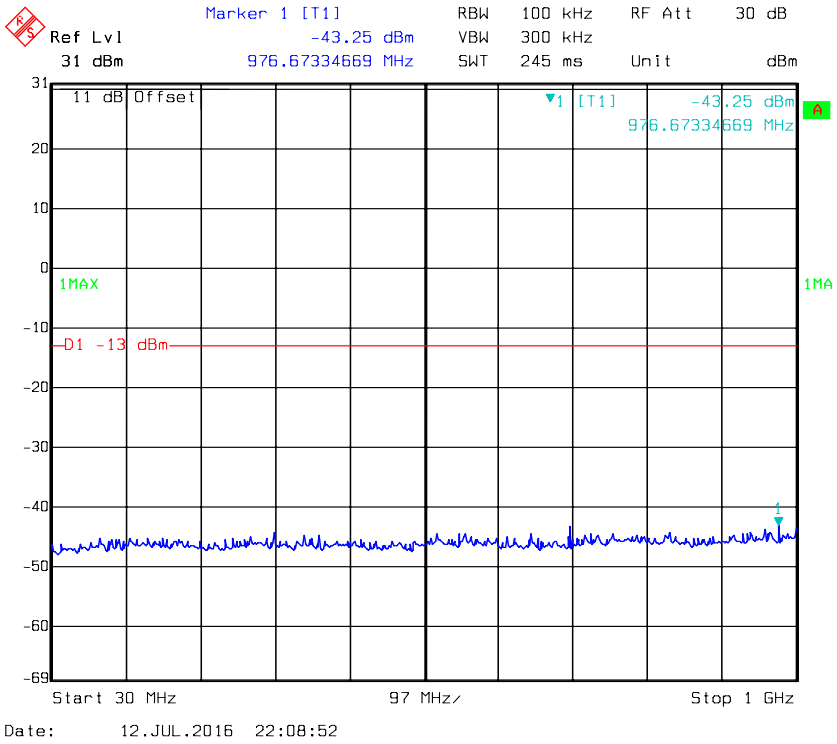
PCS 1900_ High Channel

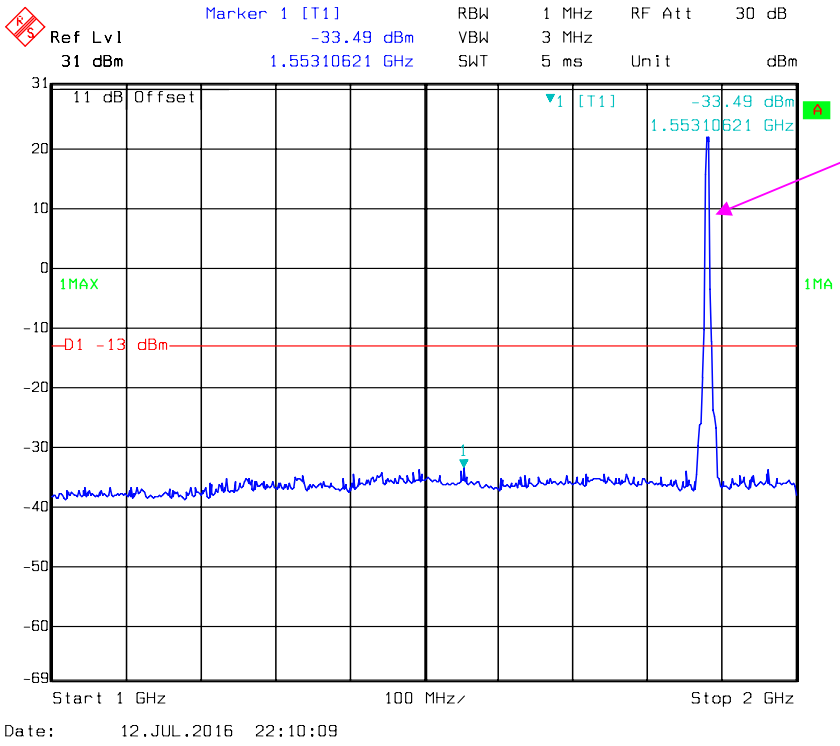



Marker 1 [T1]
Ref Lvl
41 dBm
-24.19 dBm
1.75951904 GHz
RBW 1 MHz
VBW 3 MHz
SWT 5 ms
RF Att 40 dB
Unit dBm
11 dB Offset
[T1]
-24.19 dBm
1.75951904 GHz
1MAX
1MA
D1 -13 dBm
Start 1 GHz
100 MHz/
Stop 2 GHz
Date: 12.JUL.2016 21:31:05
Fundamental

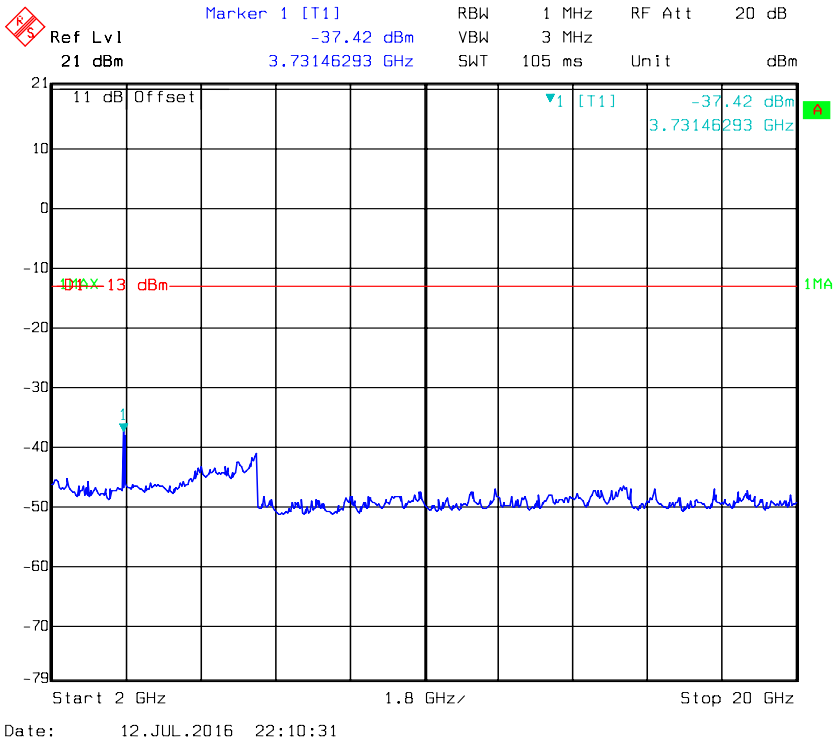

Marker 1 [T1]
Ref Lvl
21 dBm
-23.09 dBm
5.71543086 GHz
RBW 1 MHz
VBW 3 MHz
SWT 105 ms
RF Att 20 dB
Unit dBm
11 dB Offset
[T1]
-23.09 dBm
5.71543086 GHz
1MA
D1 -13 dBm
Start 2 GHz
1.8 GHz/
Stop 20 GHz
Date: 12.JUL.2016 21:32:11

REL99 Band II_ Middle Channel

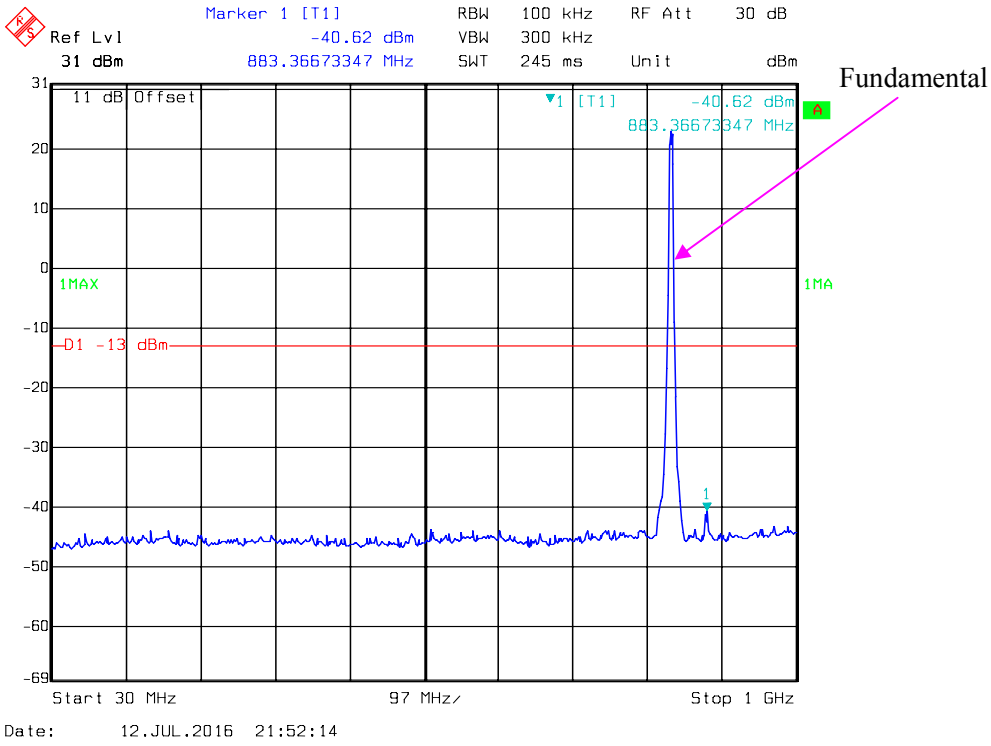


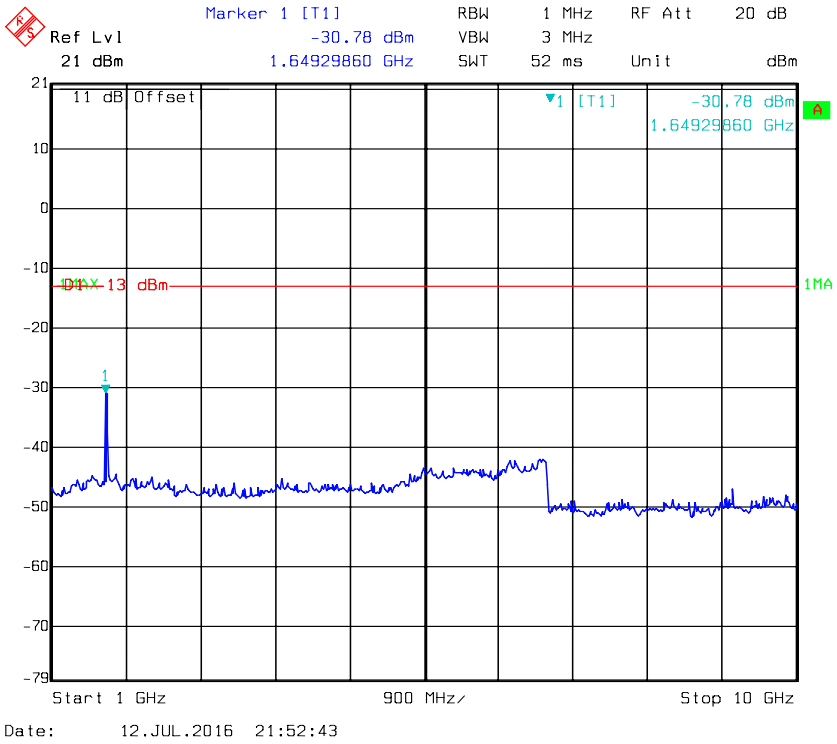


Fundamental



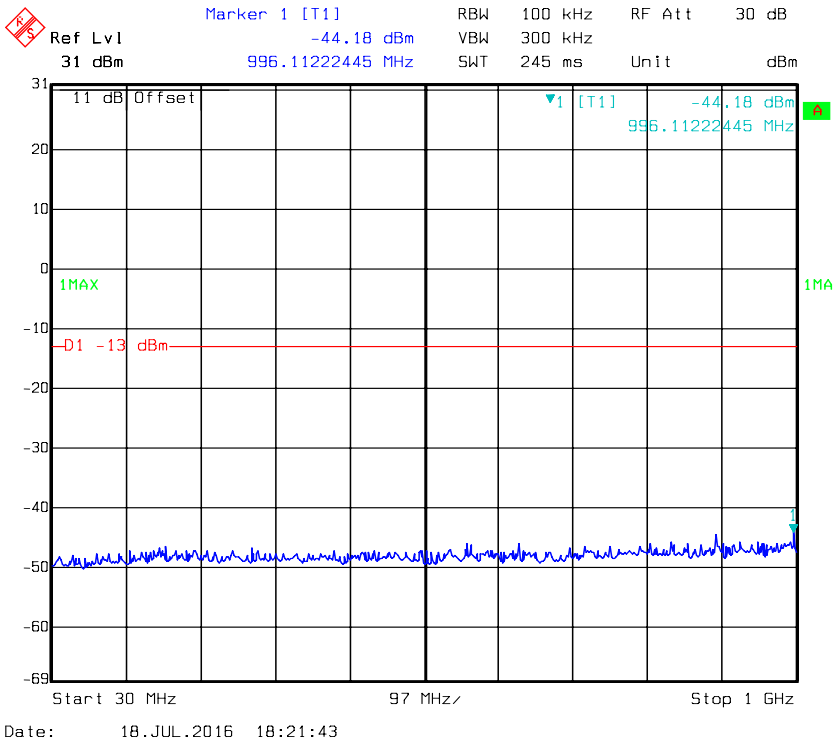
REL99 Band V_ Middle Channel

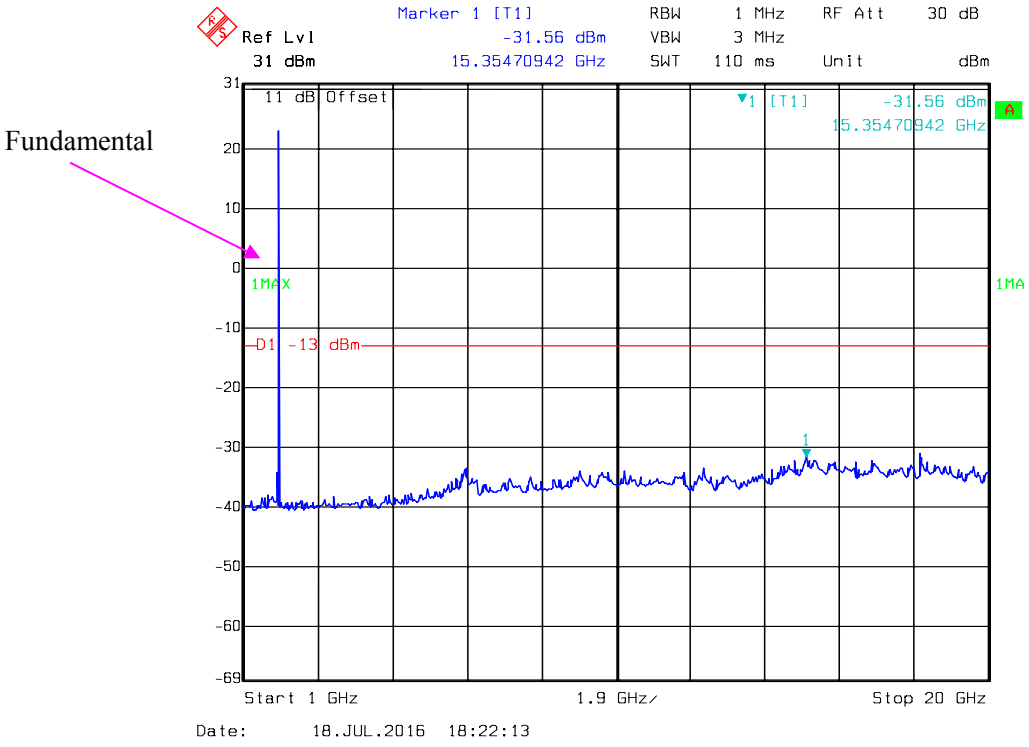




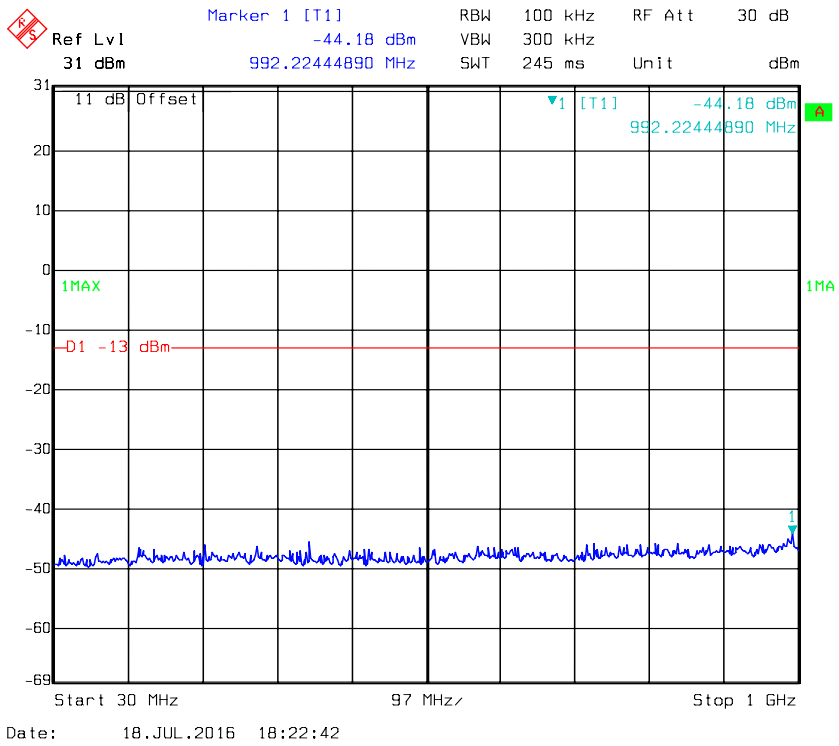
LTE Band II (Middle Channel)

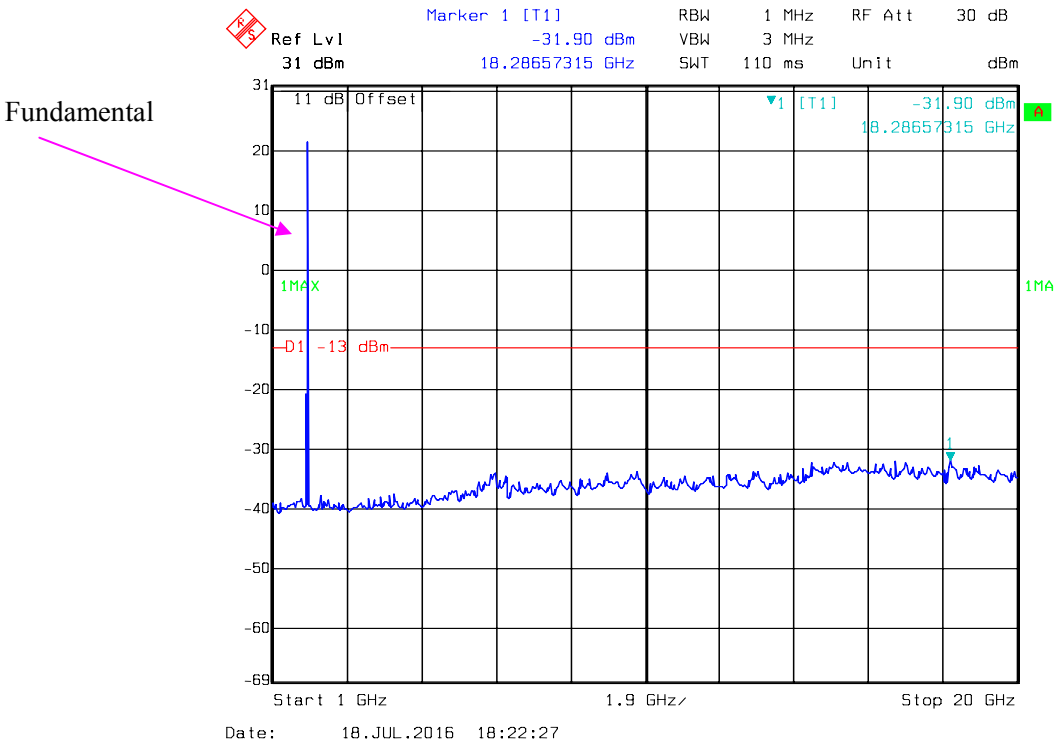
QPSK-1.4 MHz



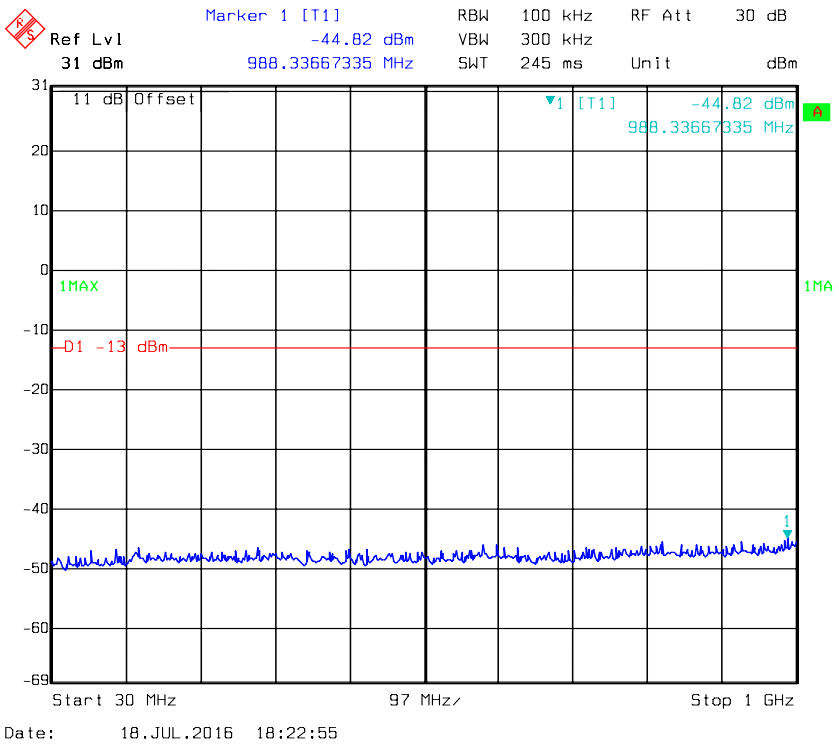

Fundamental
Marker 1 [T1]
Ref Lvl
31 dBm
-31.56 dBm
15.35470942 GHz
RBW 1 MHz
VBW 3 MHz
SWT 110 ms
RF Att 30 dB
Unit dBm
11 dB Offset
[T1] -31.56 dBm
15.35470942 GHz
1MAX
1MA
D1 -13 dBm
Start 1 GHz
1.9 GHz/
Stop 20 GHz
Date: 18.JUL.2016 18:22:13

QPSK_3MHz

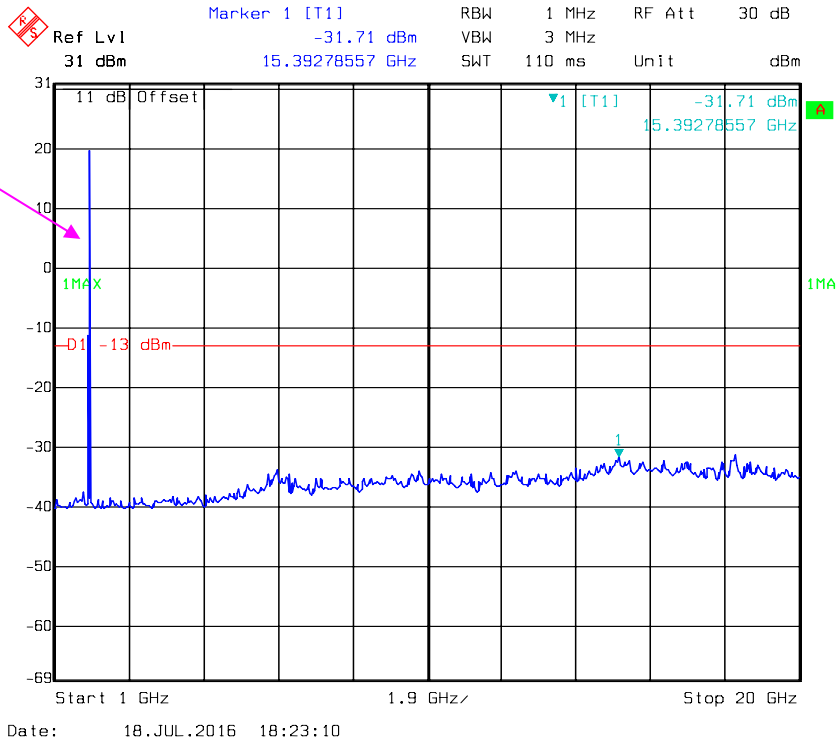

Marker 1 [T1]
Ref Lvl
31 dBm
-44.18 dBm
992.22444890 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 30 dB
Unit dBm
11 dB Offset
[T1] -44.18 dBm
992.22444890 MHz
1MAX
1MA
D1 -13 dBm
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:22:42


Fundamental
Marker 1 [T1]
Ref Lvl
31 dBm
-31.90 dBm
18.28657315 GHz
RBW 1 MHz
VBW 3 MHz
SWT 110 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1MAX
D1 -13 dBm
1MA
Start 1 GHz
1.9 GHz/
Stop 20 GHz
Date: 18.JUL.2016 18:22:27

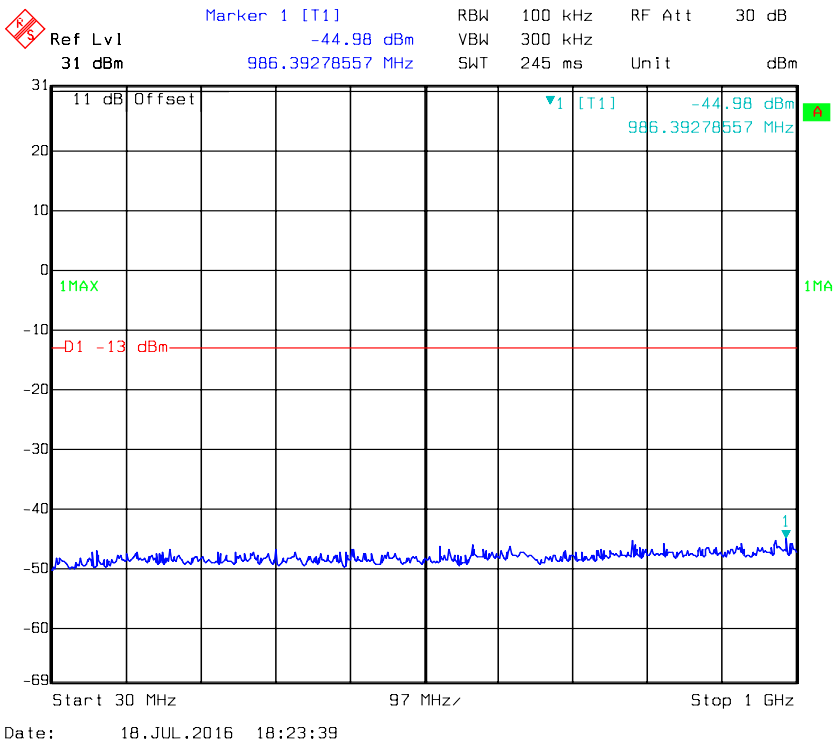
QPSK_5MHz


Marker 1 [T1]
Ref Lvl
31 dBm
-44.82 dBm
988.33667335 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1MAX
D1 -13 dBm
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:22:55

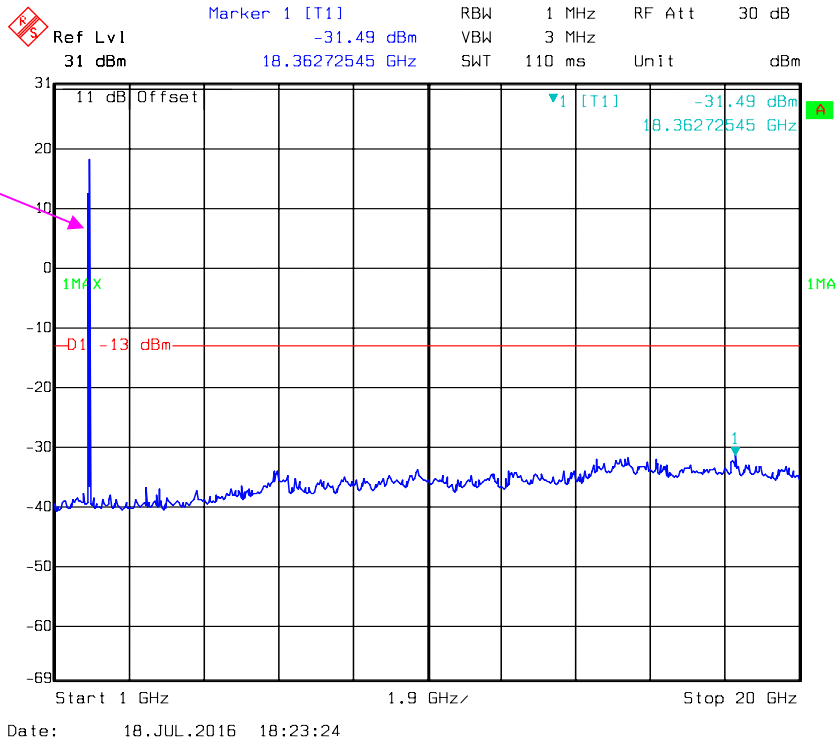
Fundamental



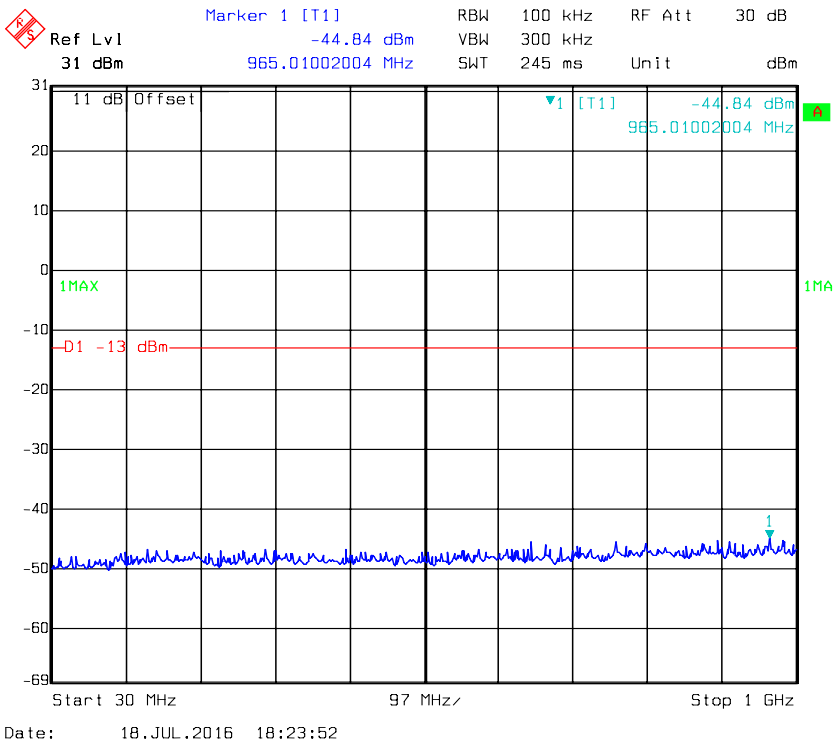
QPSK_10MHz



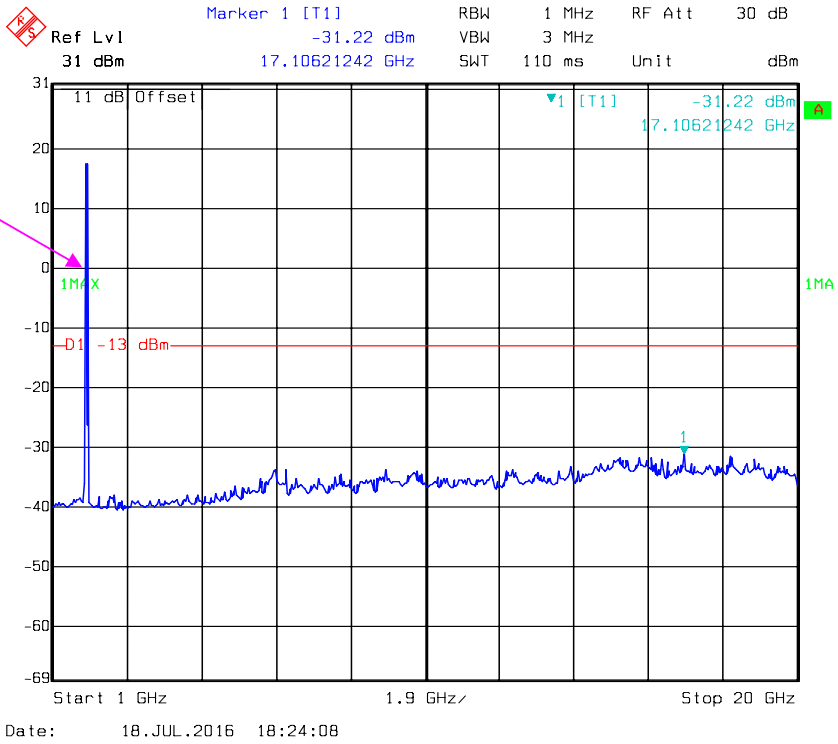
Fundamental



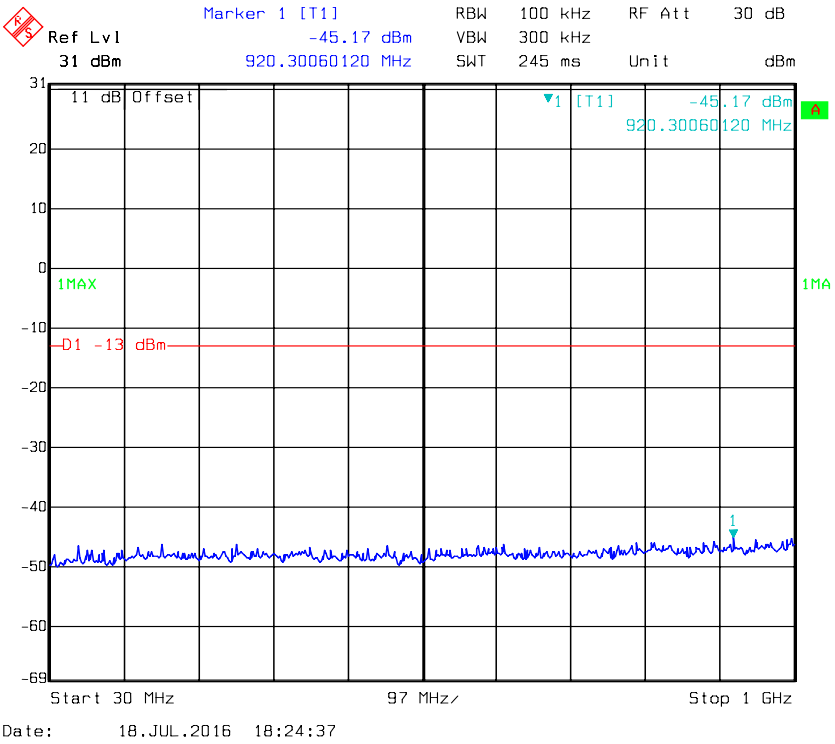
QPSK_15MHz

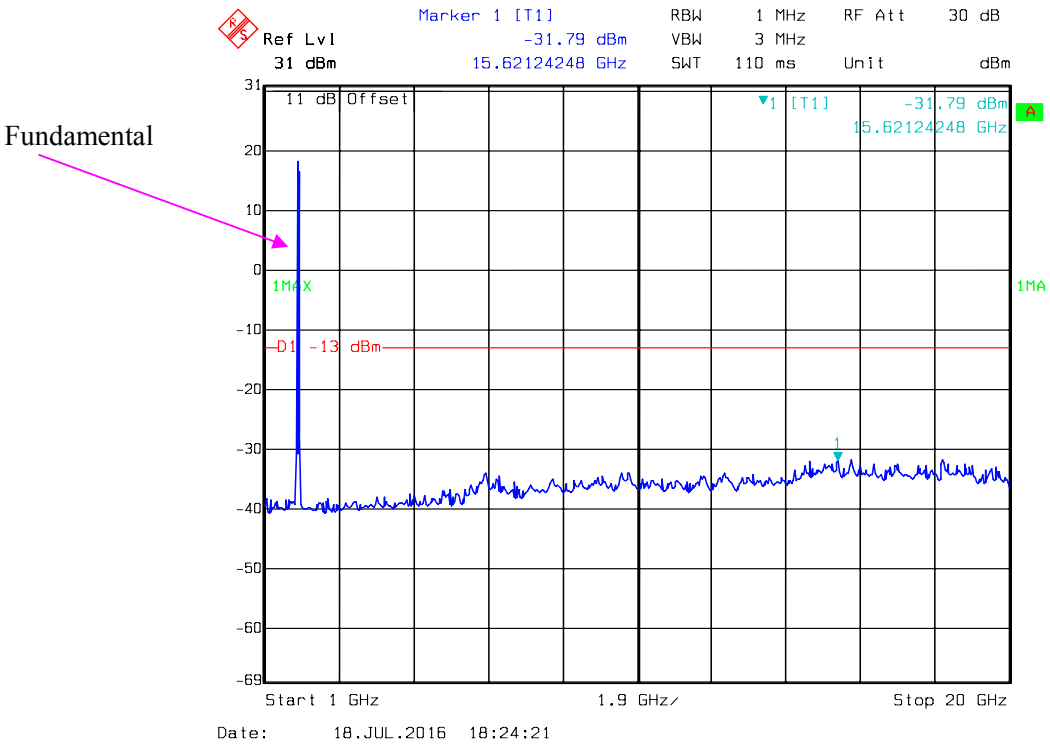


Fundamental



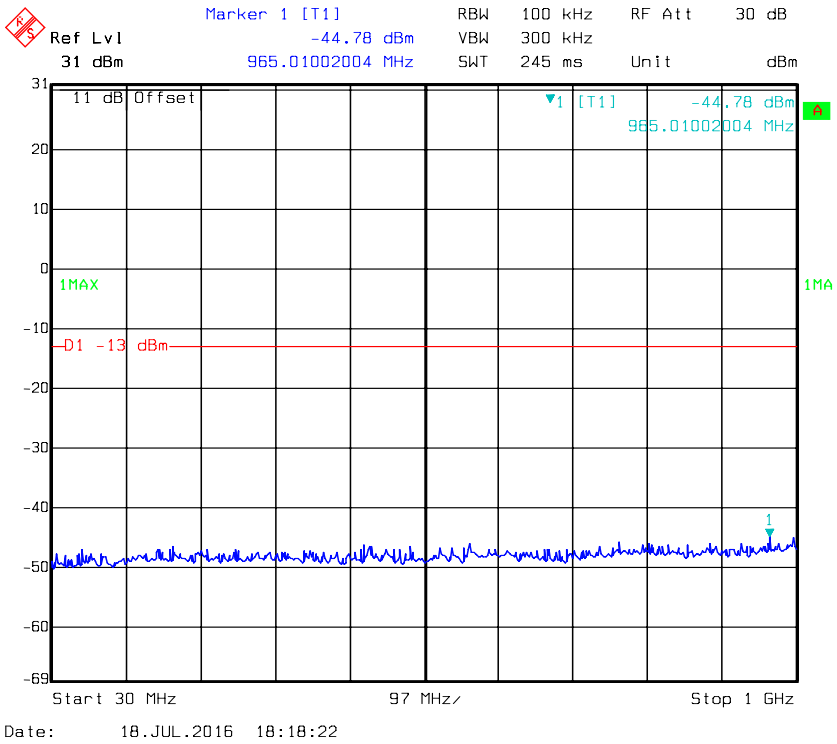
QPSK_20MHz

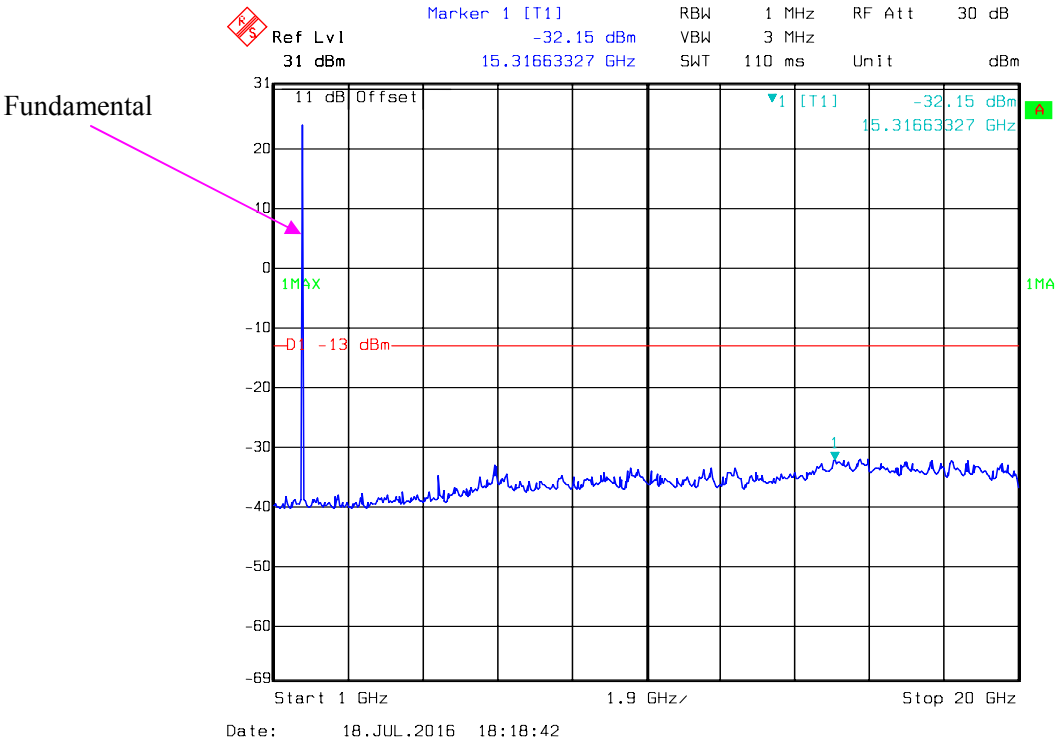




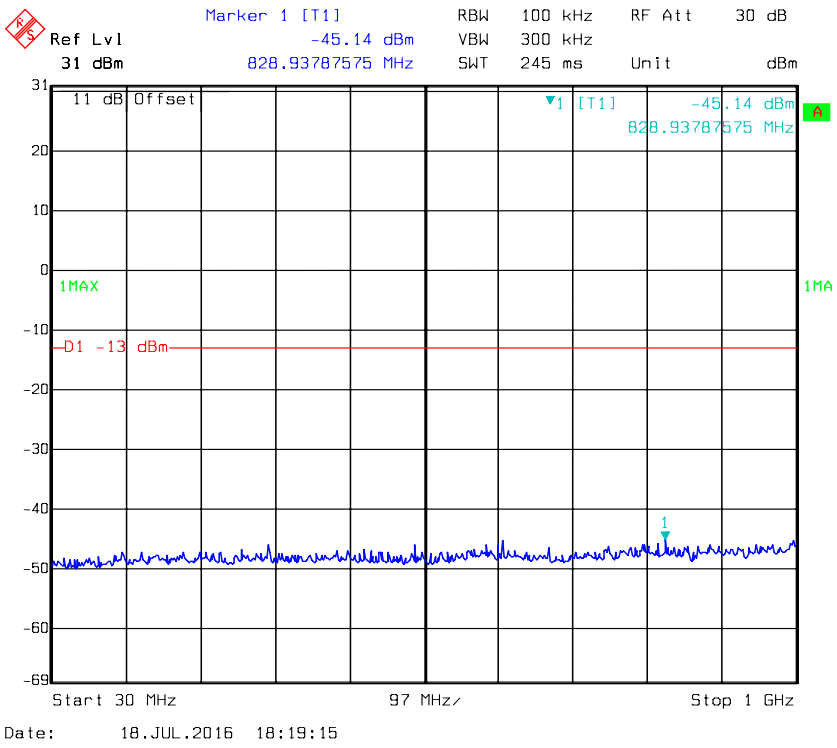
LTE Band IV (Middle Channel)

QPSK-1.4 MHz

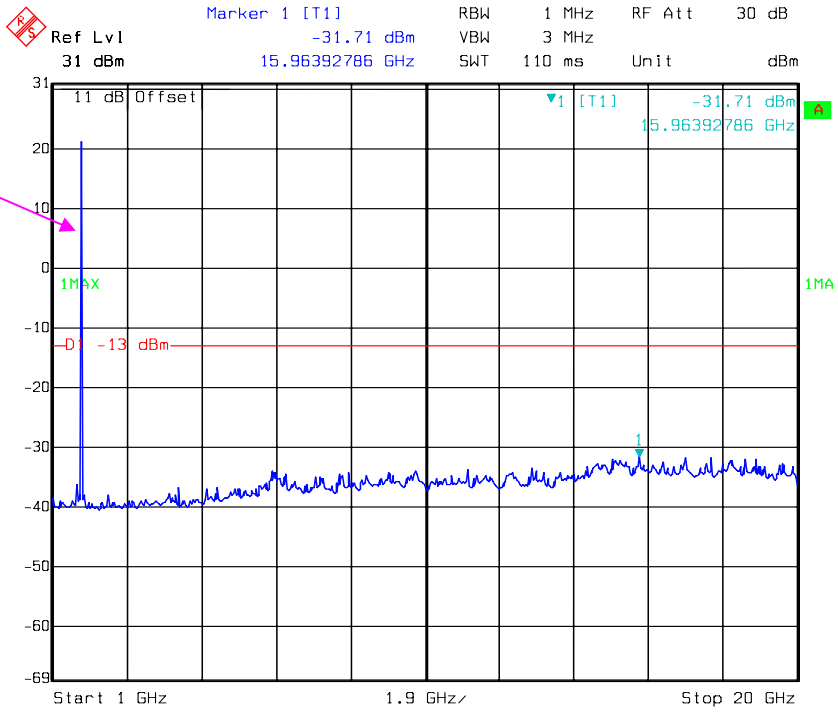



Fundamental
Marker 1 [T1]
Ref Lvl
31 dBm
-32.15 dBm
15.31663327 GHz
RBW 1 MHz
VBW 3 MHz
SWT 110 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1MAX
D1 -13 dBm
1MA
Start 1 GHz
1.9 GHz/
Stop 20 GHz
Date: 18.JUL.2016 18:18:42

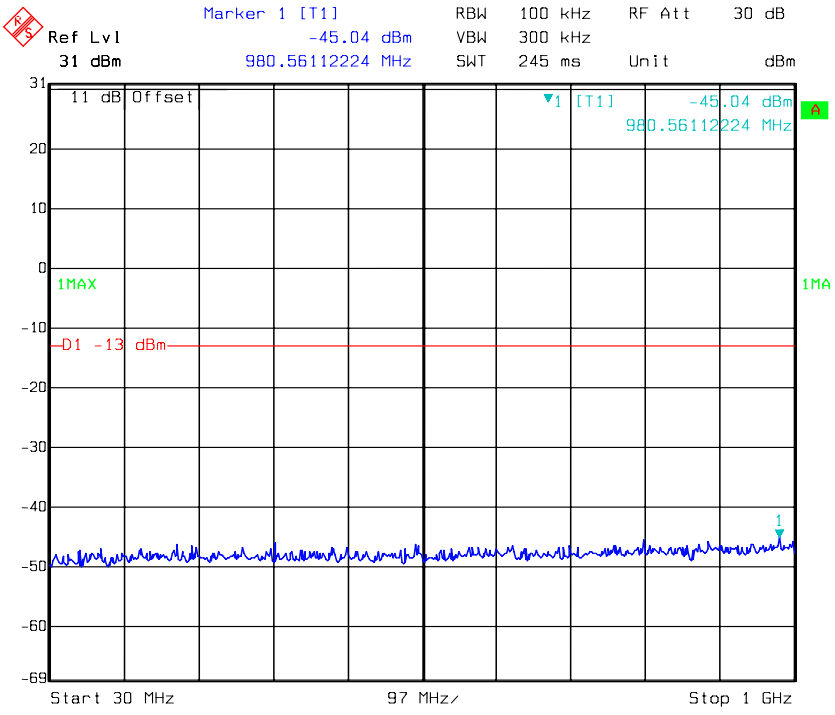
QPSK_3MHz

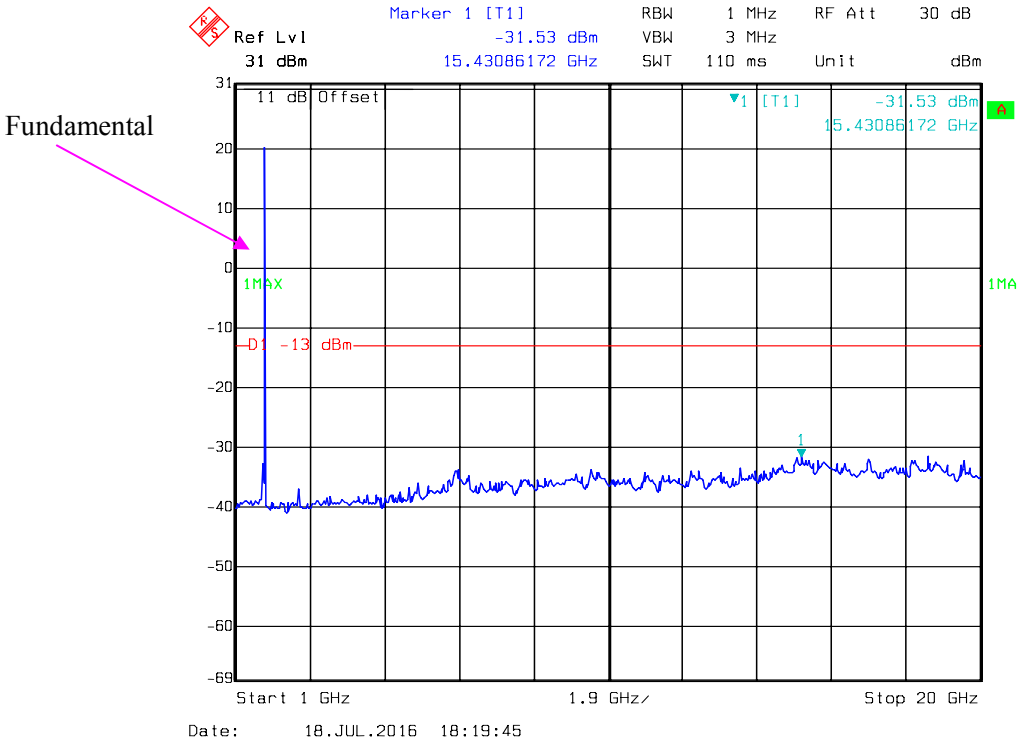

Marker 1 [T1]
Ref Lvl
31 dBm
-45.14 dBm
828.93787575 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1MAX
D1 -13 dBm
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:19:15

Fundamental

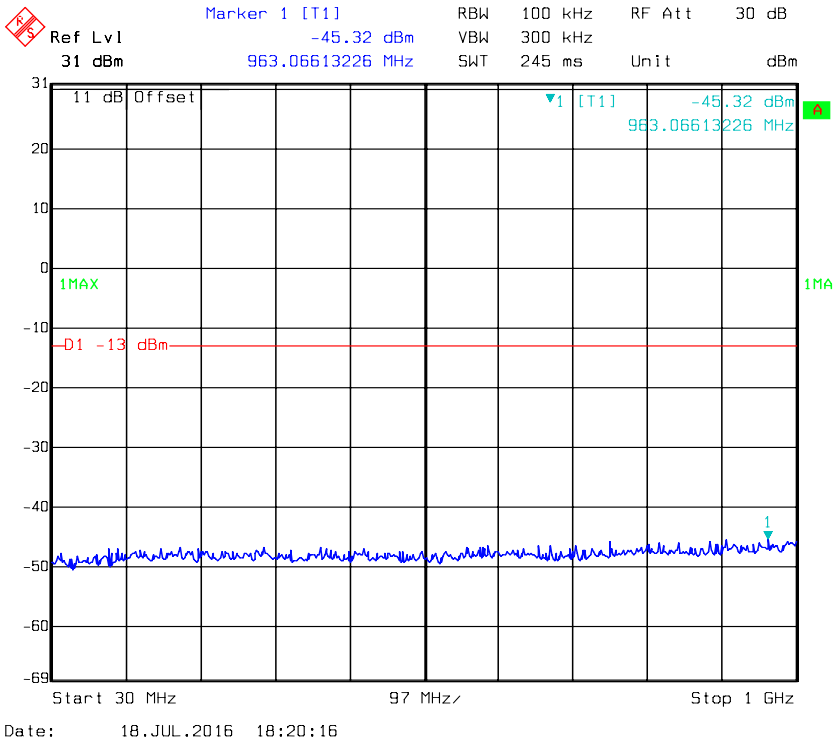


QPSK_5MHz

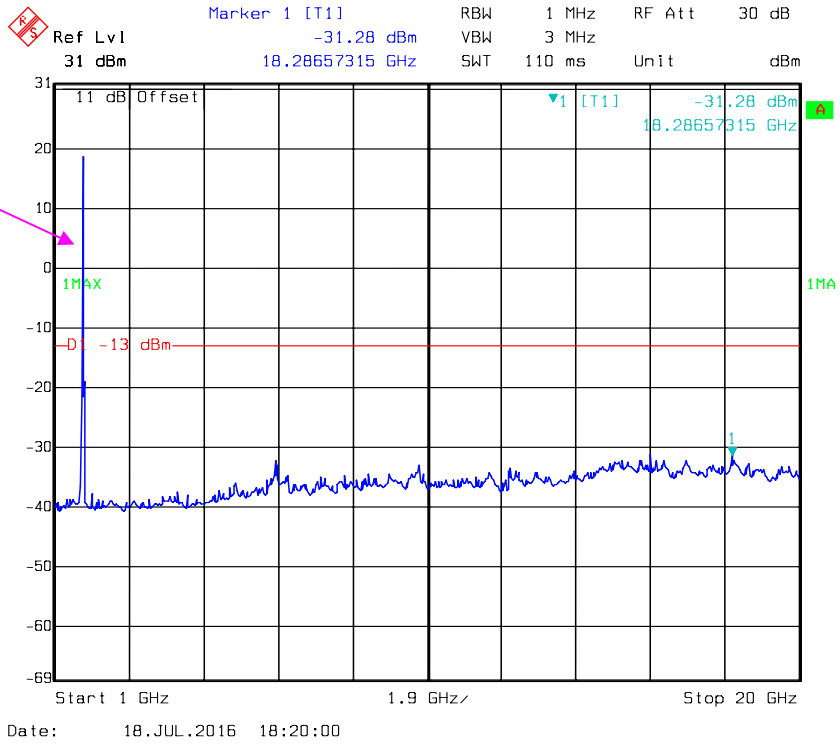



Fundamental
Marker 1 [T1]
Ref Lvl
31 dBm
-31.53 dBm
15.43086172 GHz
RBW 1 MHz
VBW 3 MHz
SWT 110 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1MAX
D1 -13 dBm
1MA
Start 1 GHz
1.9 GHz/
Stop 20 GHz
Date: 18.JUL.2016 18:19:45

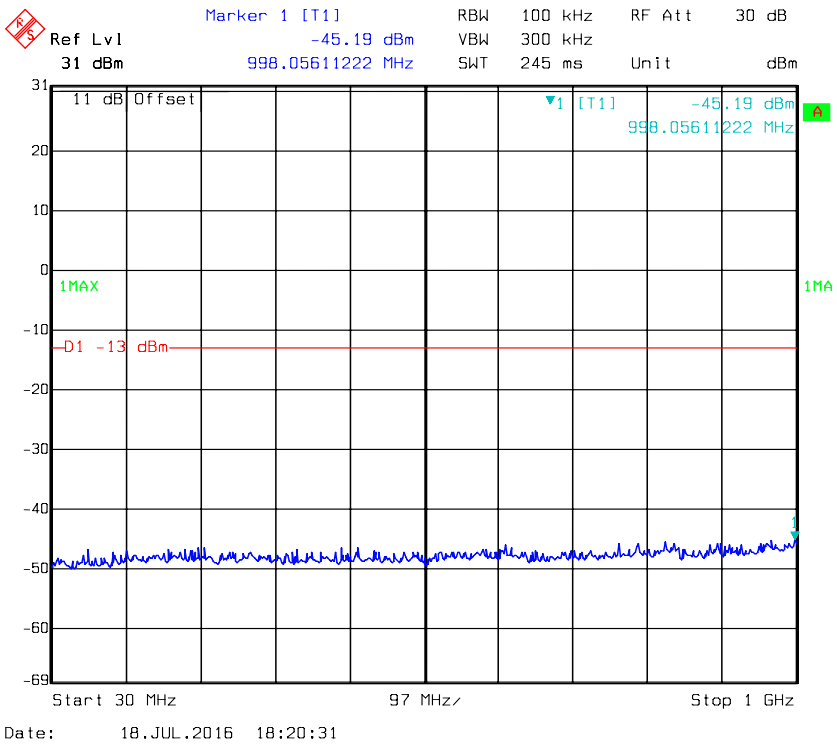
QPSK_10MHz


Marker 1 [T1]
Ref Lvl
31 dBm
-45.32 dBm
963.06613226 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1MAX
D1 -13 dBm
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:20:16

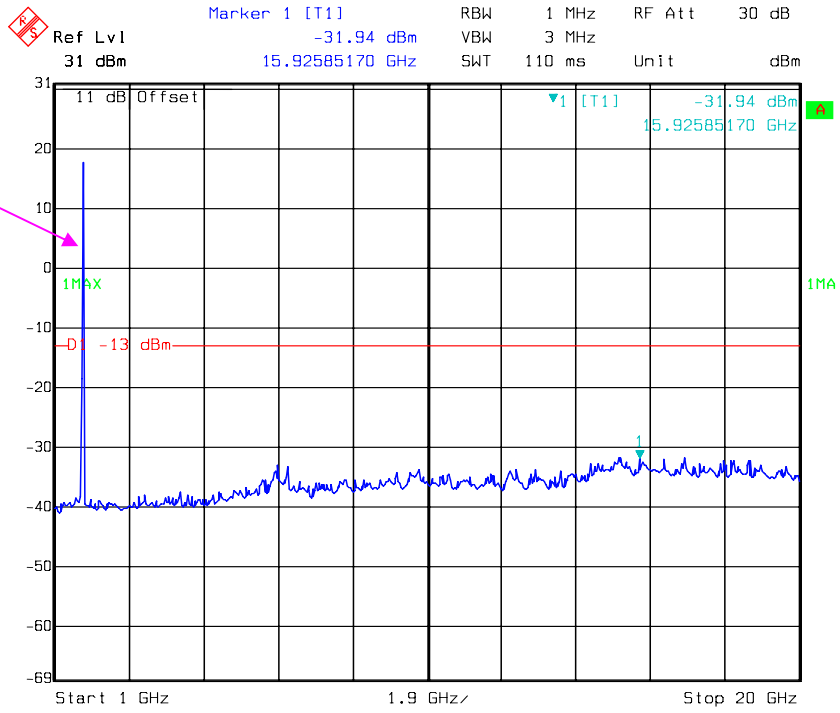
Fundamental



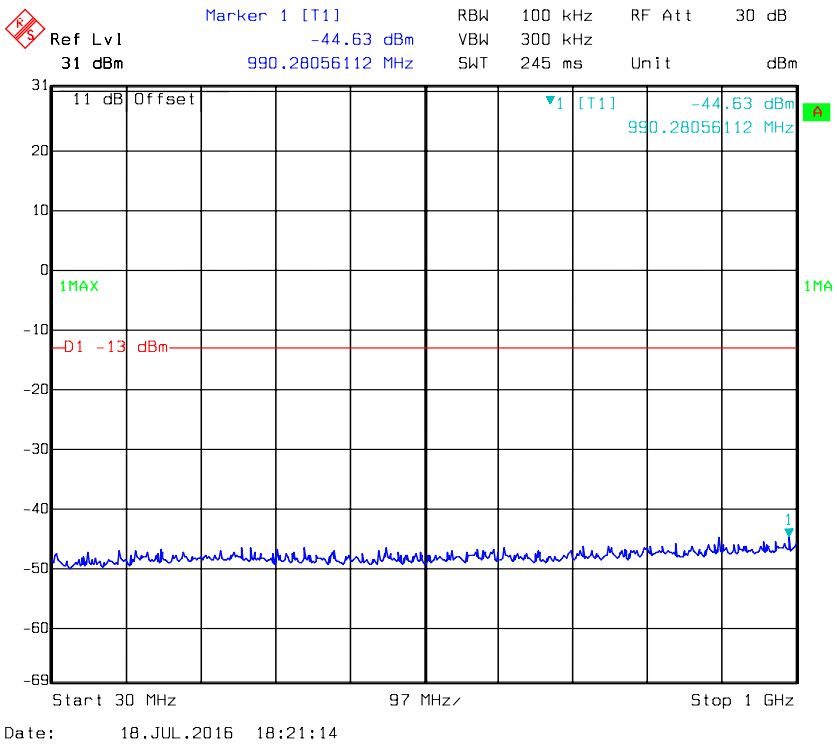
QPSK_15MHz



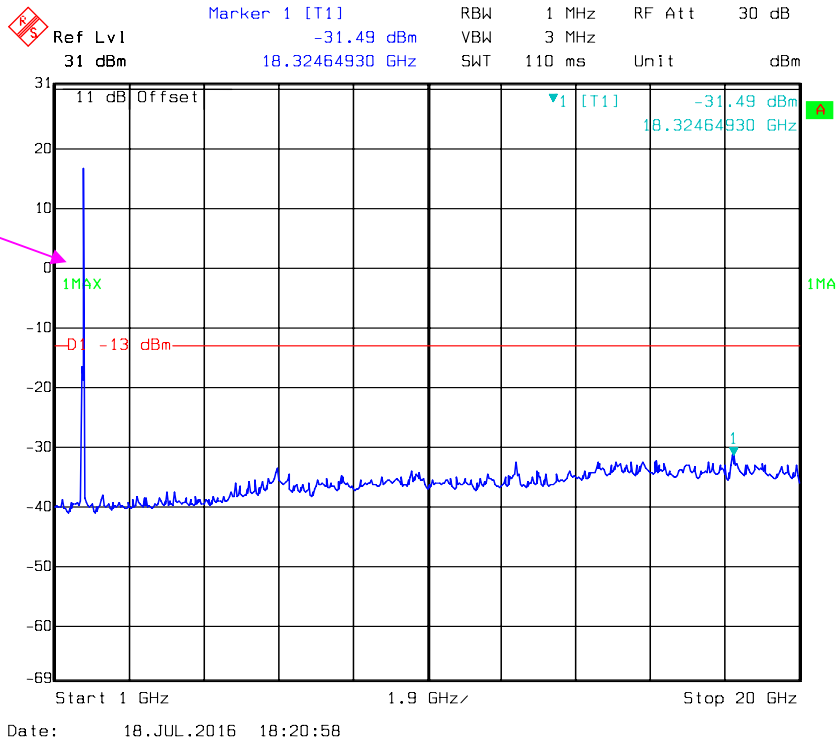
Fundamental



QPSK_20MHz

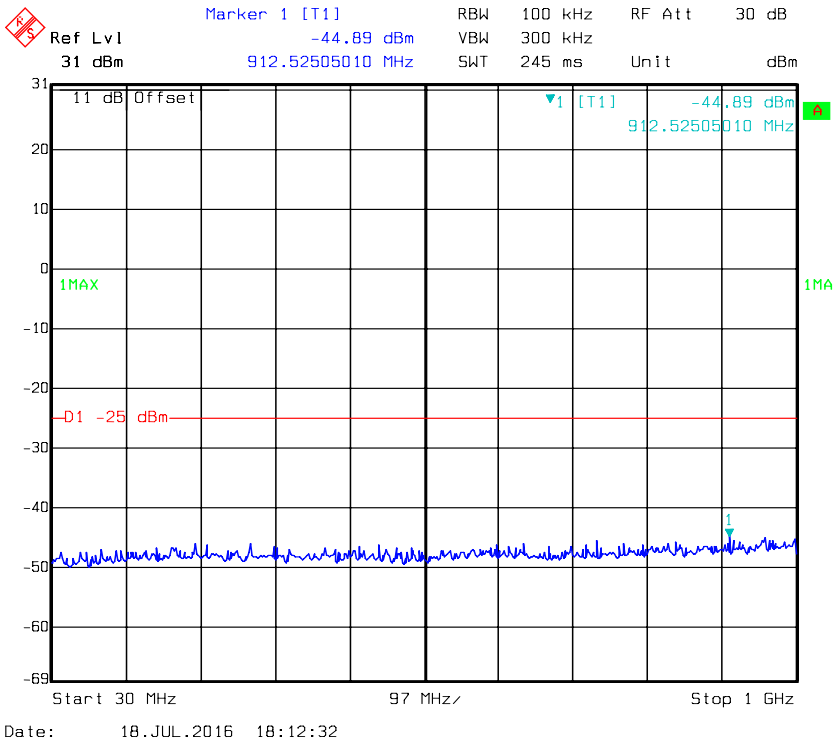


Fundamental

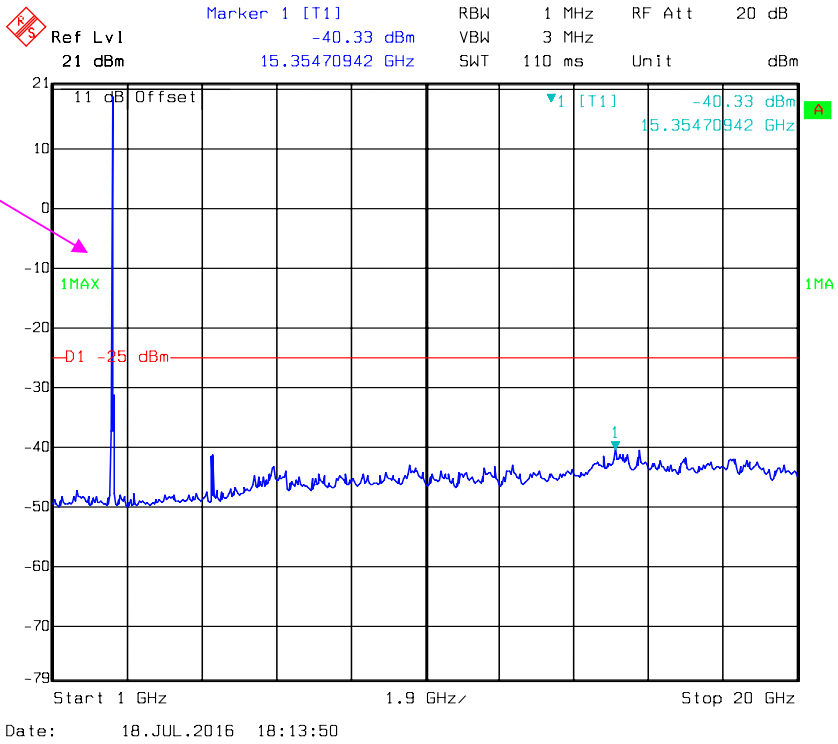


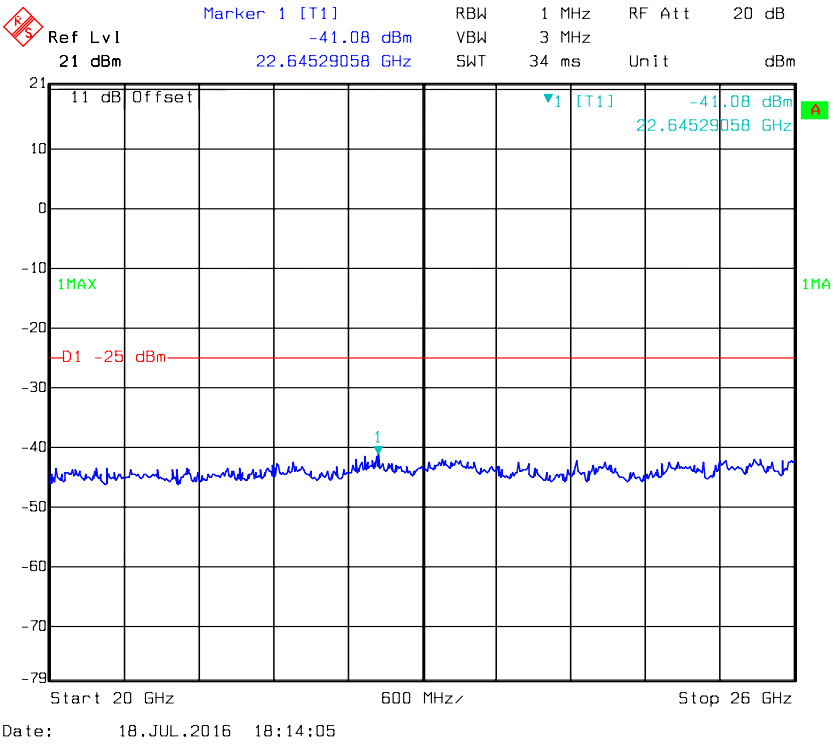
LTE Band VII (Middle Channel)

QPSK_5MHz

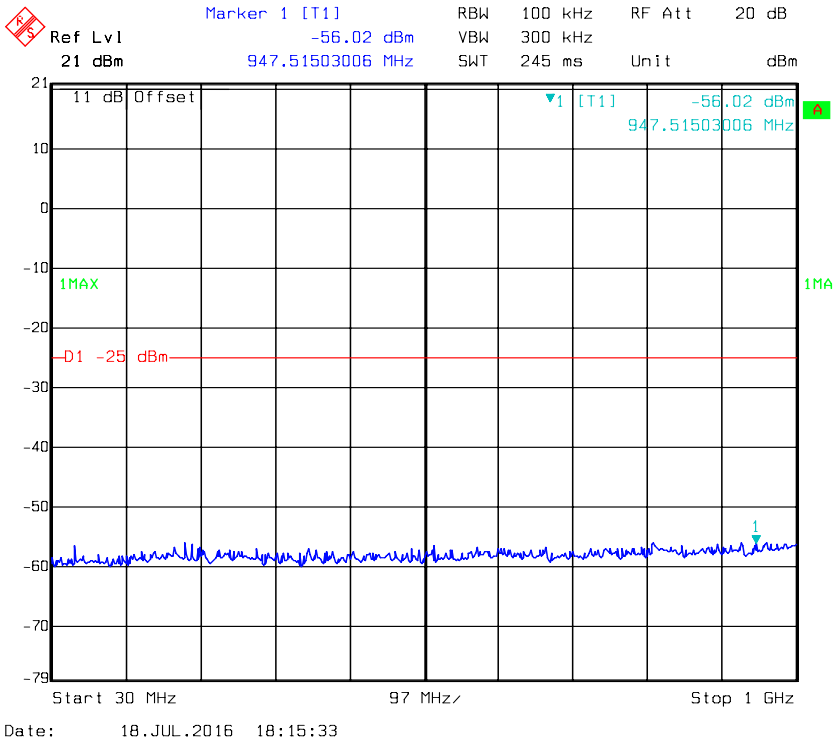


Fundamental

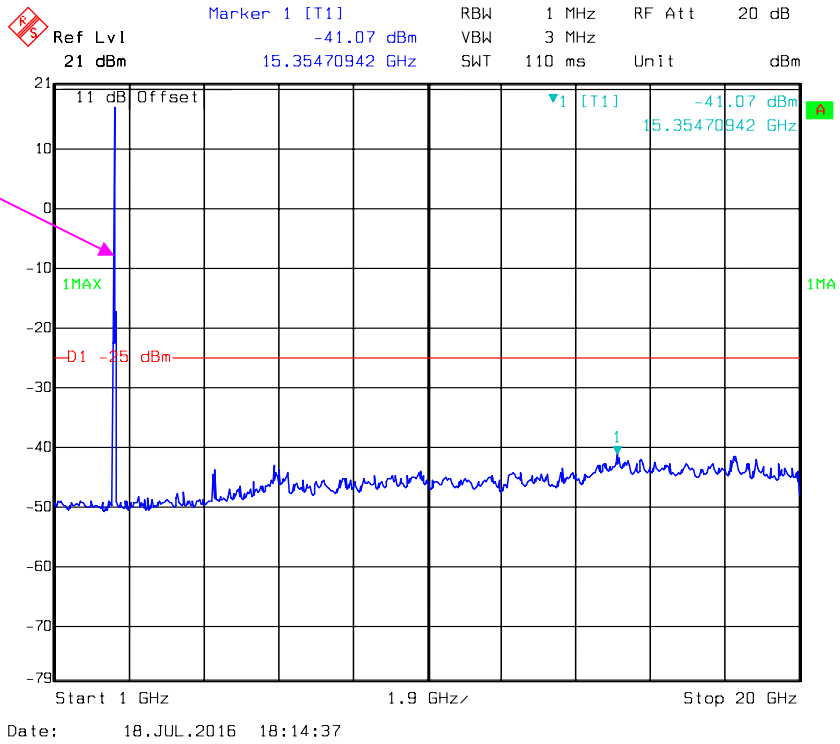


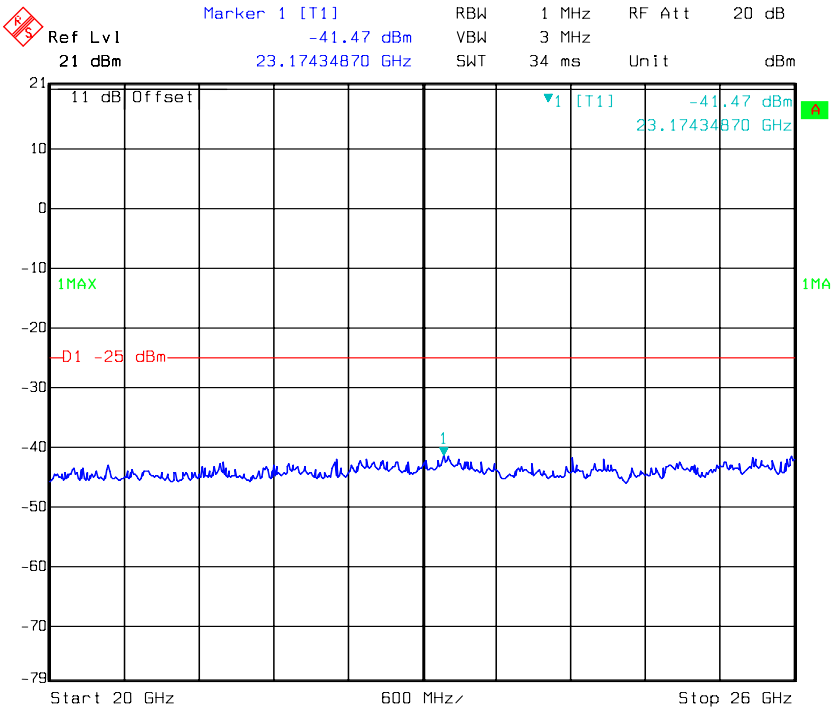


QPSK_10MHz

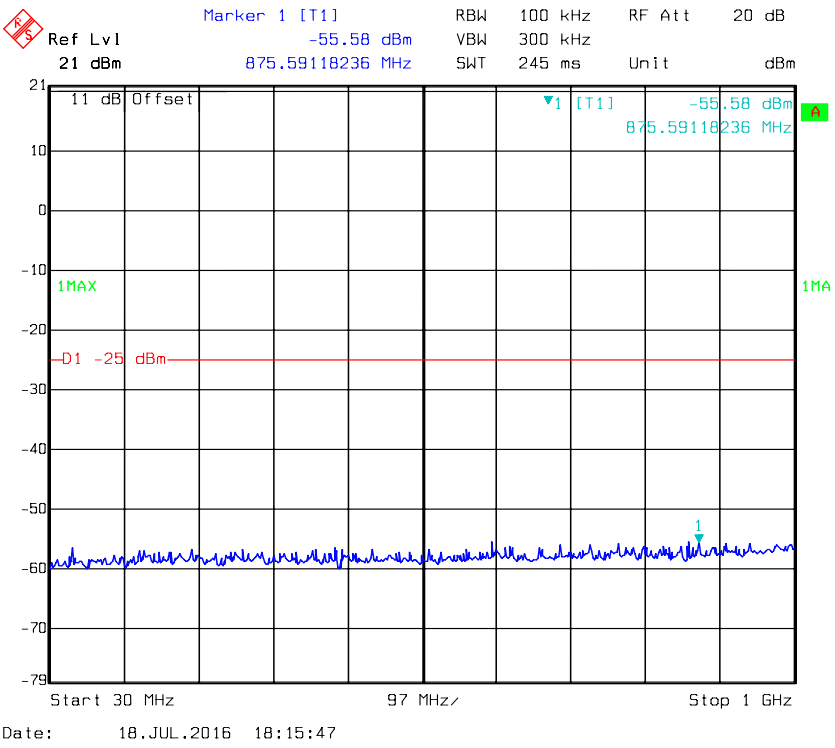


Fundamental

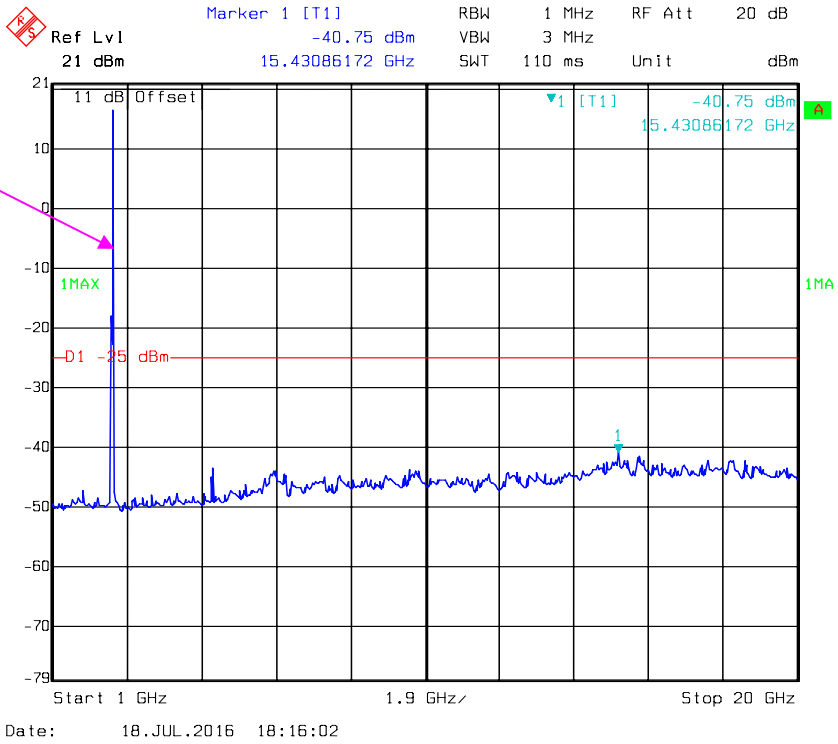


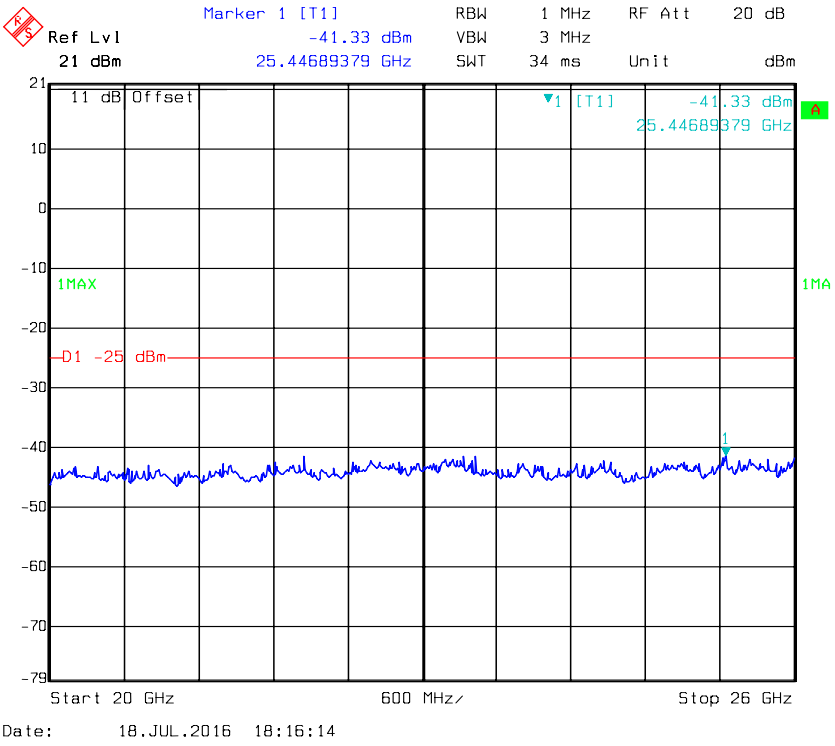

Marker 1 [T1]
Ref Lvl
21 dBm
-41.47 dBm
23.17434870 GHz
RBW 1 MHz
VBW 3 MHz
SWT 34 ms
RF Att 20 dB
Unit dBm
11 dB Offset
1MAX
D1 -25 dBm
1MA
Start 20 GHz
600 MHz/
Stop 26 GHz
Date: 18.JUL.2016 18:14:25

QPSK_15MHz

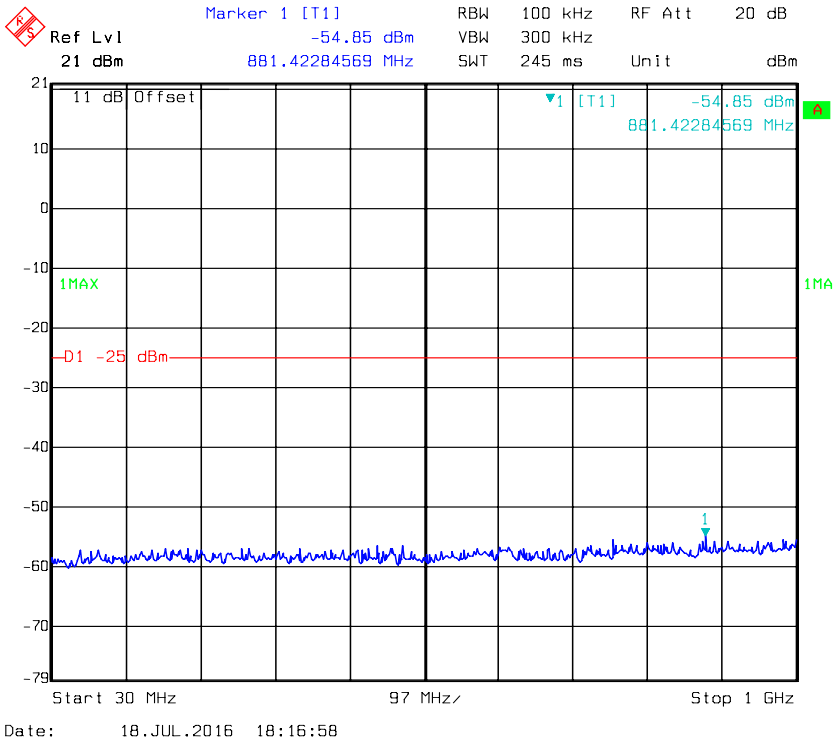

Marker 1 [T1]
Ref Lvl
21 dBm
-55.58 dBm
875.59118236 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 20 dB
Unit dBm
11 dB Offset
1MAX
D1 -25 dBm
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:15:47

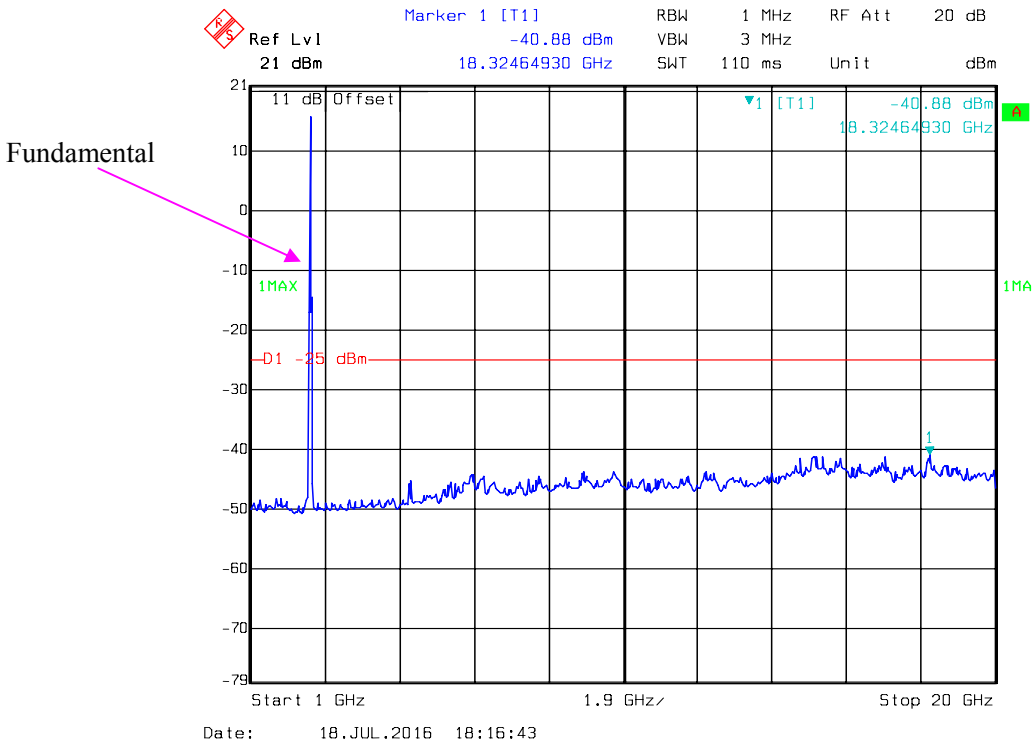
Fundamental

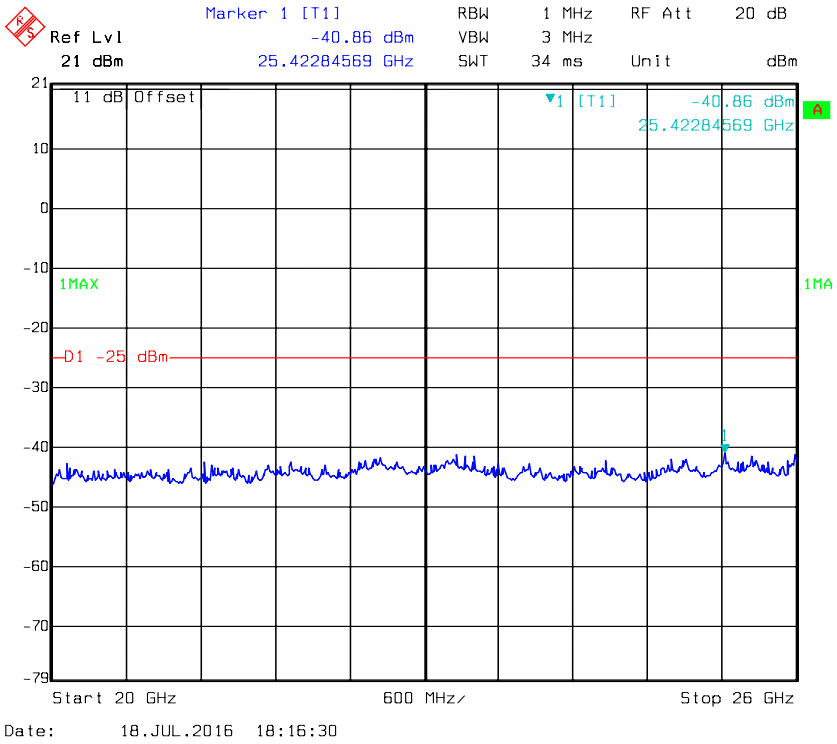




QPSK_20MHz

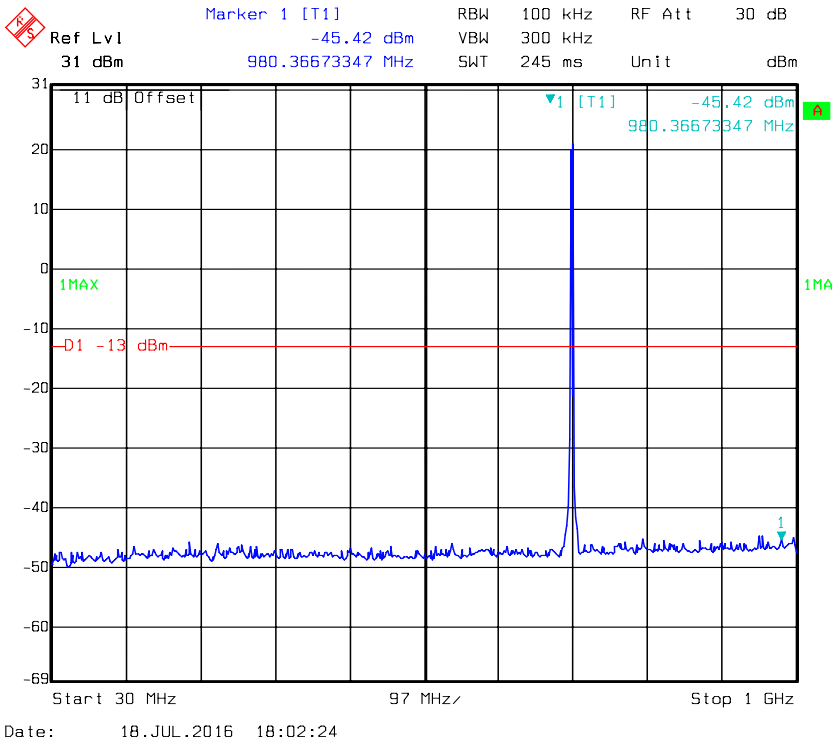

Marker 1 [T1]
Ref Lvl
21 dBm
-54.85 dBm
881.42284569 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 20 dB
Unit dBm
11 dB Offset
1MAX
D1 -25 dBm
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:16:58

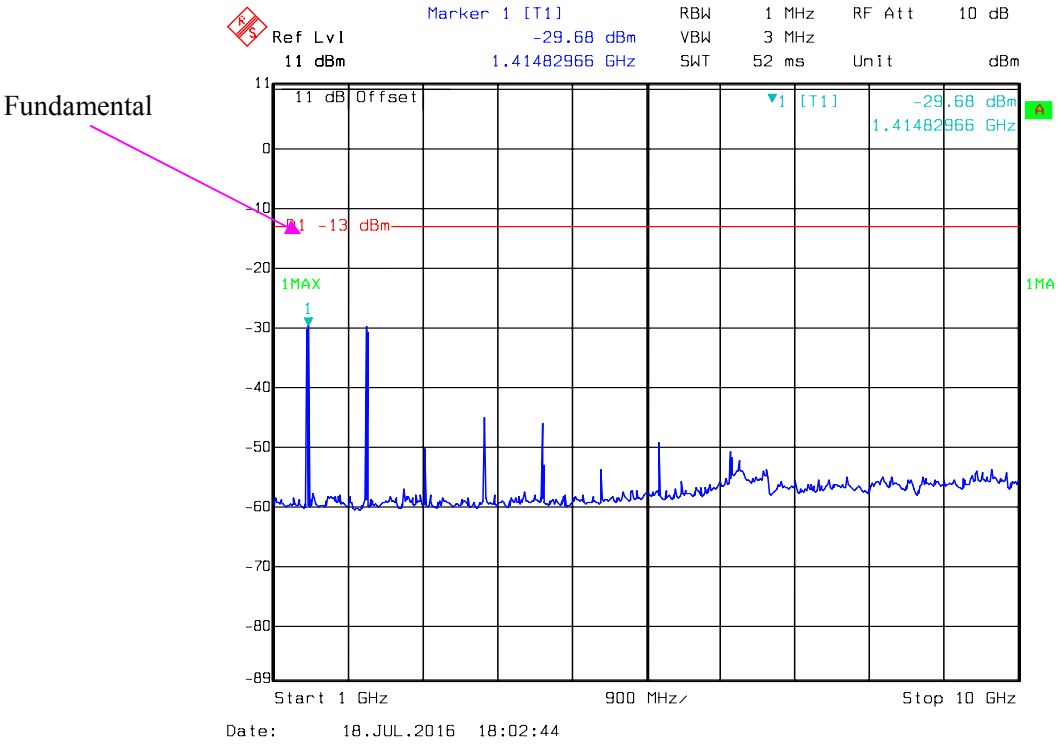

Fundamental
Marker 1 [T1]
Ref Lvl
21 dBm
-40.88 dBm
18.32464930 GHz
RBW 1 MHz
VBW 3 MHz
SWT 110 ms
RF Att 20 dB
Unit dBm
11 dB Offset
1MAX
D1 -25 dBm
1MA
Start 1 GHz
1.9 GHz/
Stop 20 GHz
Date: 18.JUL.2016 18:16:43



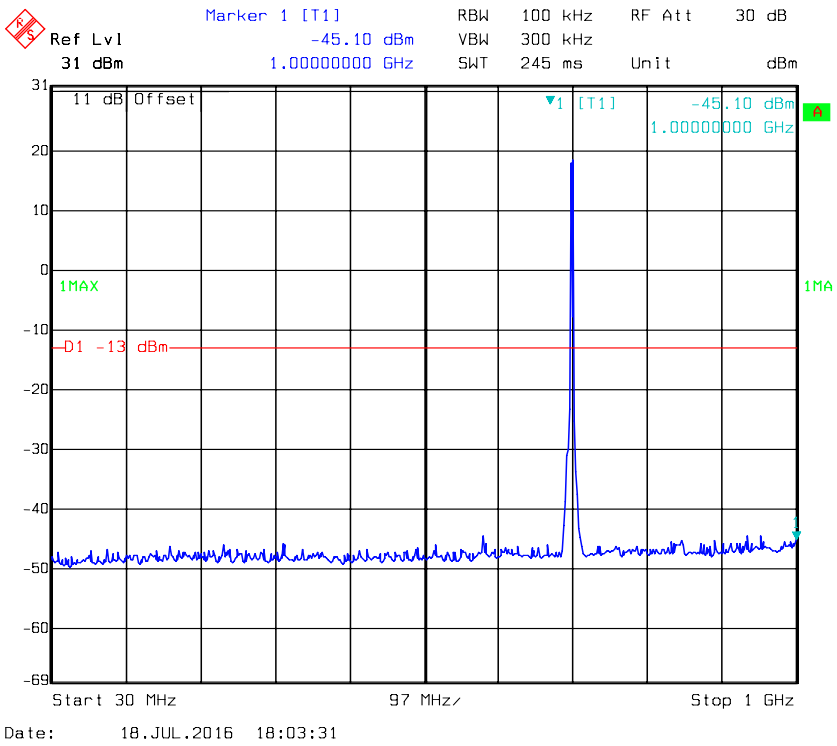
LTE Band 12 (Middle Channel)

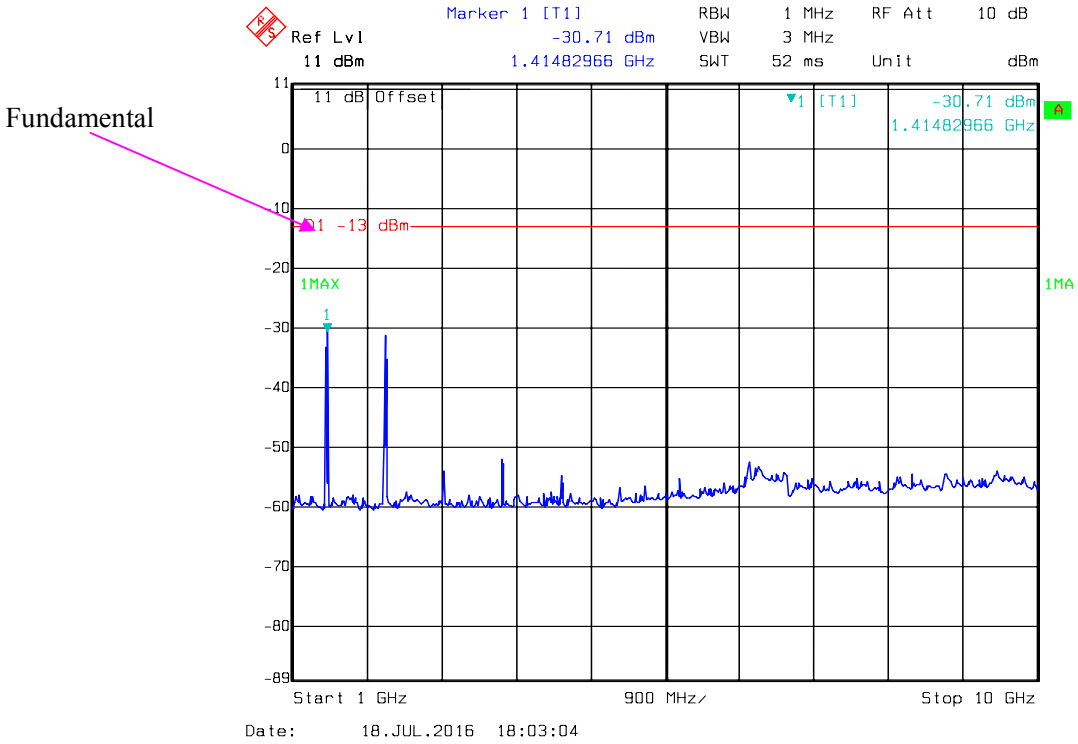
QPSK-1.4 MHz



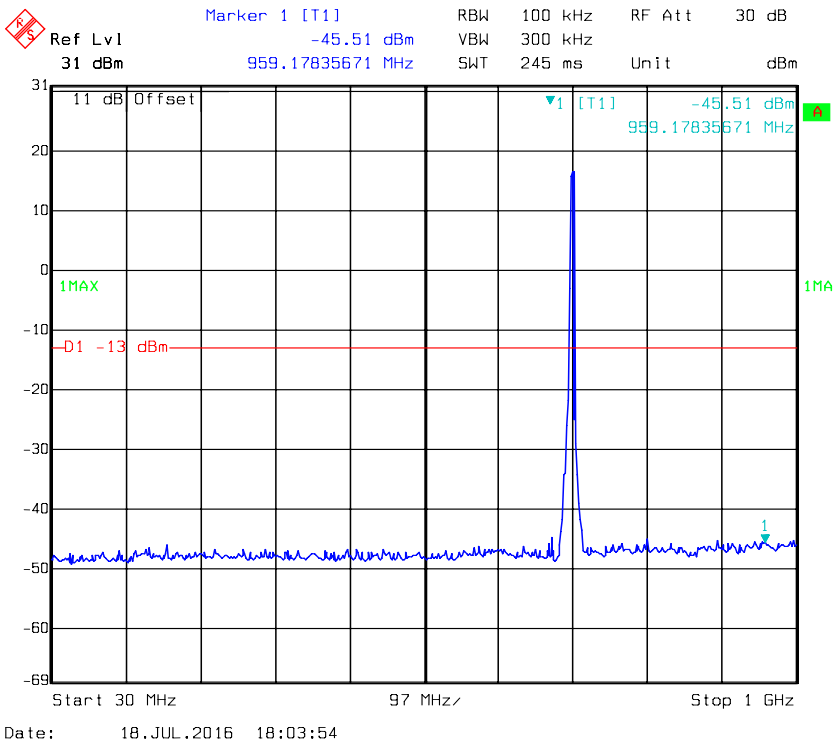

Fundamental
Marker 1 [T1]
Ref Lvl
11 dBm
-29.68 dBm
1.41482966 GHz
RBW 1 MHz
VBW 3 MHz
SWT 52 ms
RF Att 10 dB
Unit dBm
11 dB Offset
1 [T1]
-29.68 dBm
1.41482966 GHz
D1 -13 dBm
1MAX
1MA
Start 1 GHz
900 MHz/
Stop 10 GHz
Date: 18.JUL.2016 18:02:44

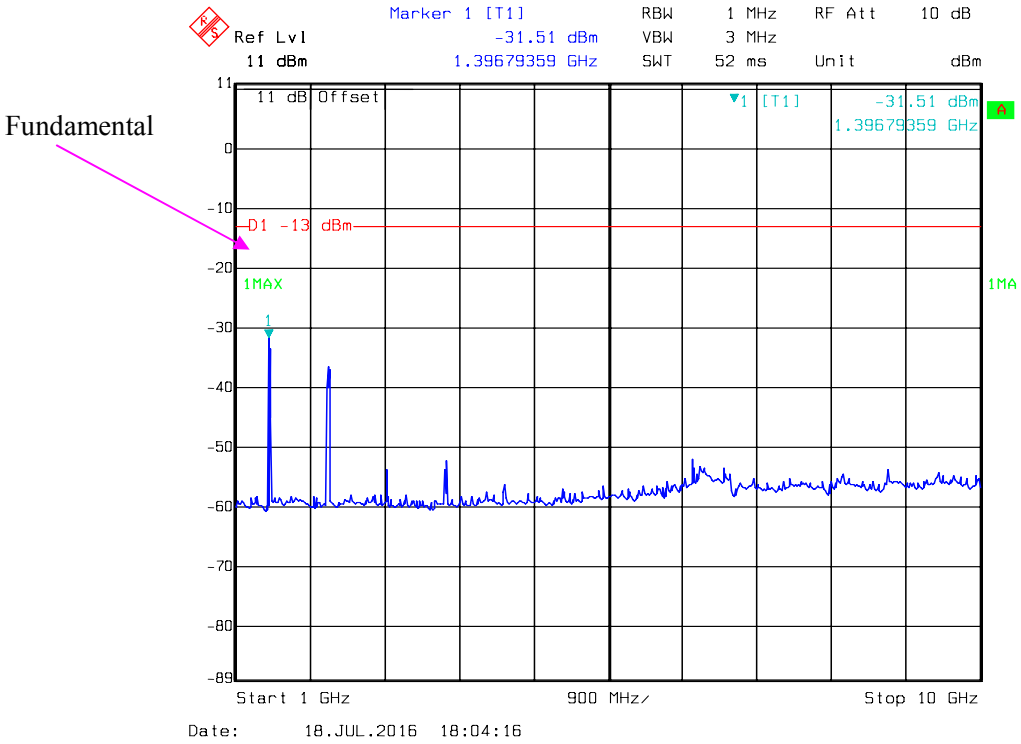
QPSK_3MHz


Marker 1 [T1]
Ref Lvl
31 dBm
-45.10 dBm
1.00000000 GHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1 [T1]
-45.10 dBm
1.00000000 GHz
D1 -13 dBm
1MAX
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:03:31

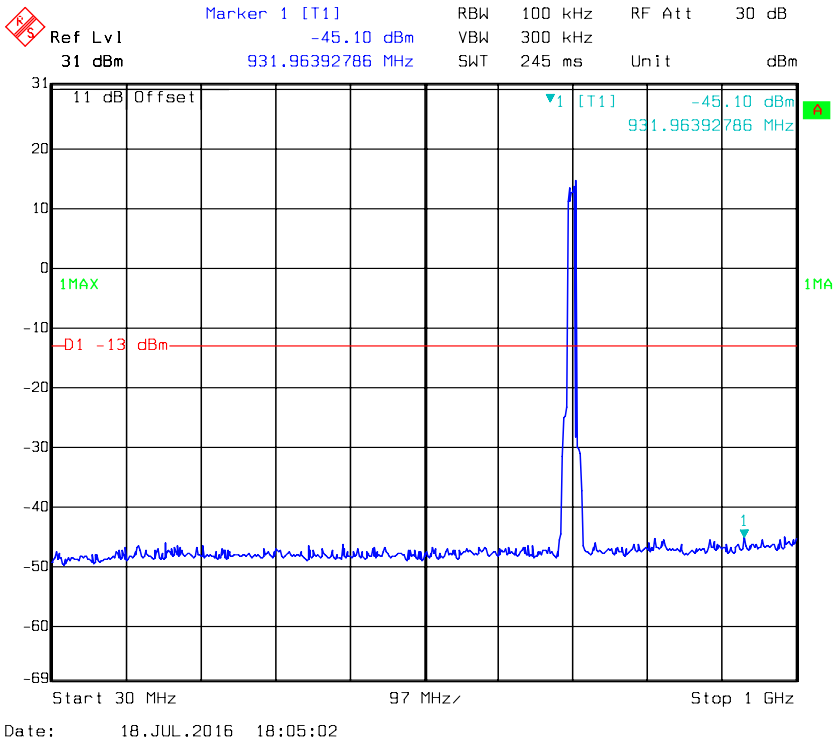

Fundamental
Marker 1 [T1]
Ref Lvl
11 dBm
-30.71 dBm
1.41482966 GHz
RBW 1 MHz
VBW 3 MHz
SWT 52 ms
RF Att 10 dB
Unit dBm
11 dB Offset
1 [T1]
-30.71 dBm
1.41482966 GHz
D1 -13 dBm
1MAX
1MA
Start 1 GHz
900 MHz/
Stop 10 GHz
Date: 18.JUL.2016 18:03:04

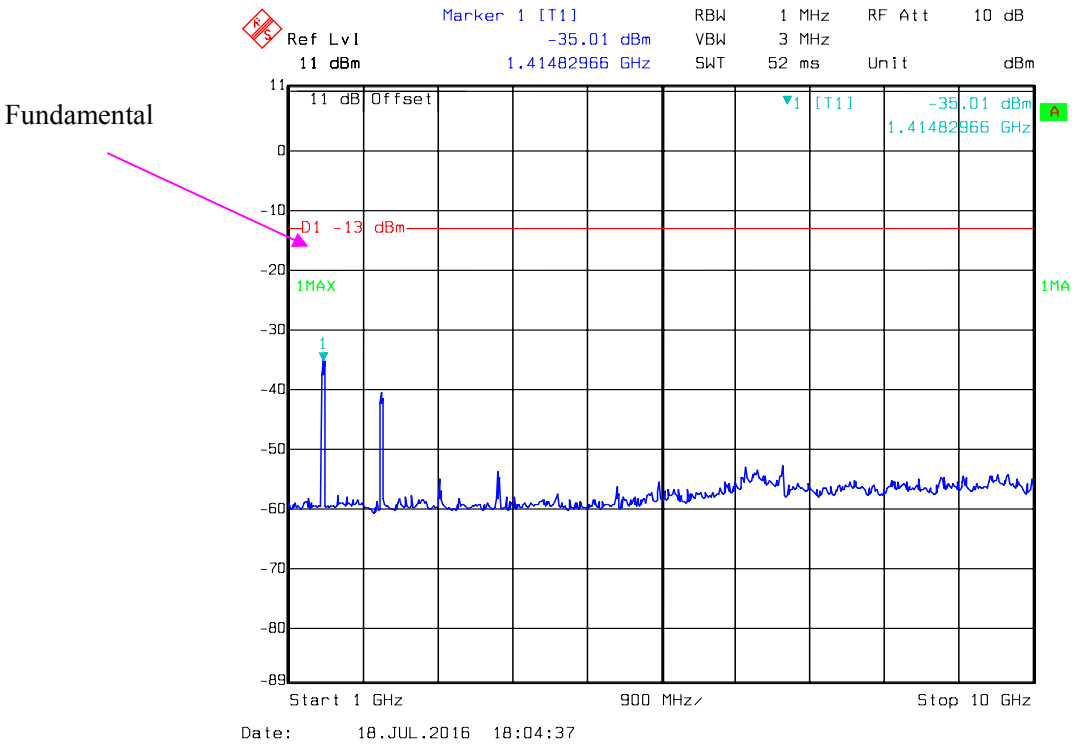
QPSK_5MHz


Marker 1 [T1]
Ref Lvl
31 dBm
-45.51 dBm
959.17835671 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 30 dB
Unit dBm
11 dB Offset
1 [T1]
-45.51 dBm
959.17835671 MHz
D1 -13 dBm
1MAX
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:03:54


Fundamental
Marker 1 [T1]
Ref Lvl
11 dBm
-31.51 dBm
1.39679359 GHz
RBW 1 MHz
VBW 3 MHz
SWT 52 ms
RF Att 10 dB
Unit dBm
11 dB Offset
[T1] -31.51 dBm
1.39679359 GHz
D1 -13 dBm
1MAX
1MA
Start 1 GHz
900 MHz/
Stop 10 GHz
Date: 18.JUL.2016 18:04:16

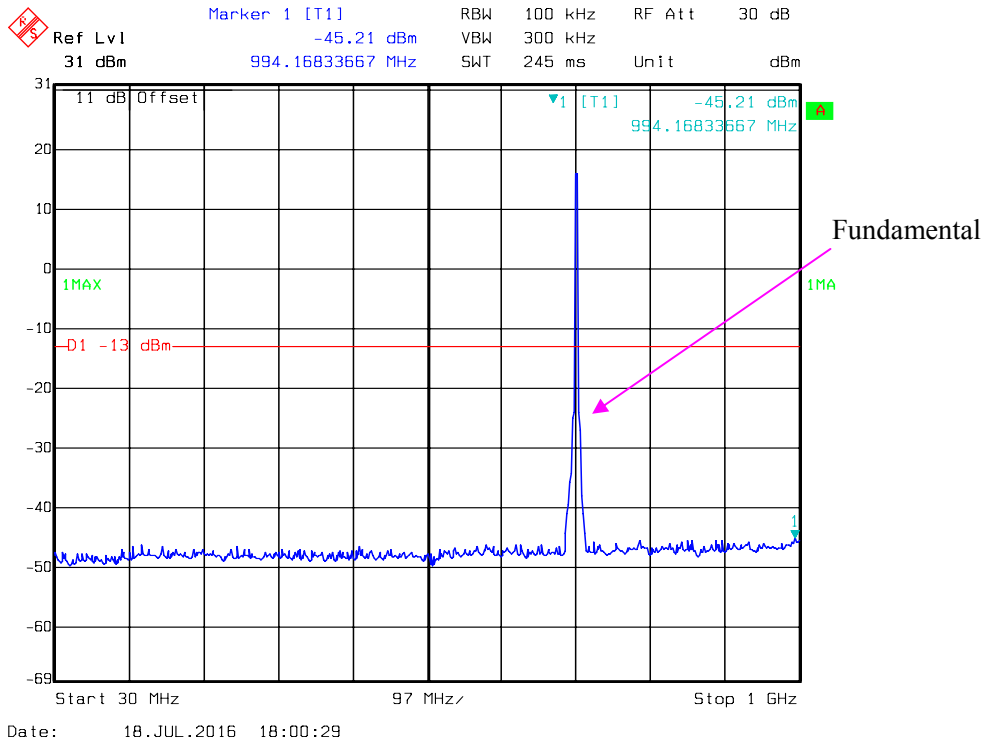
QPSK_10MHz

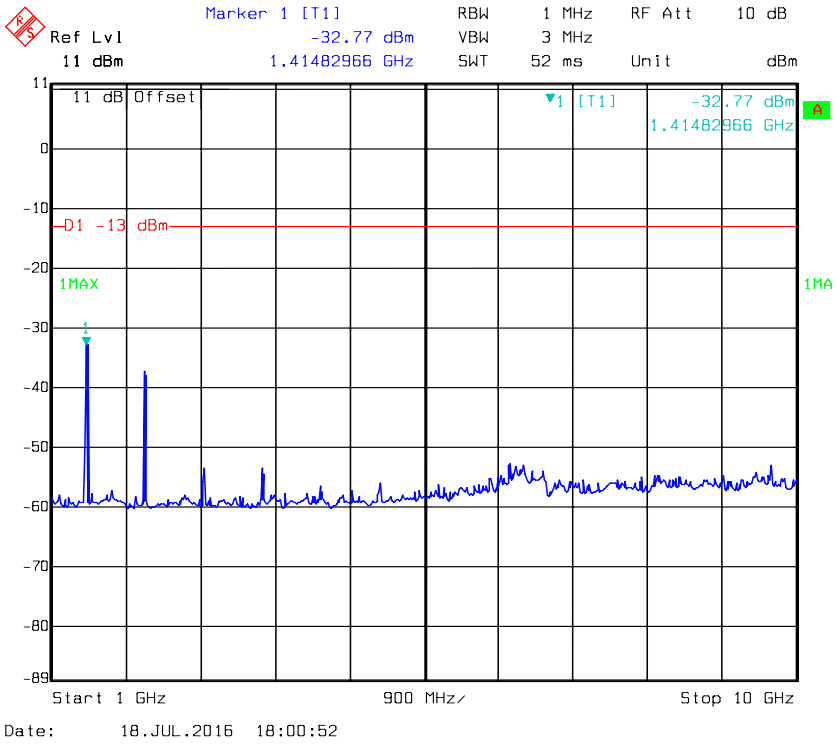

Marker 1 [T1]
Ref Lvl
31 dBm
-45.10 dBm
931.96392786 MHz
RBW 100 kHz
VBW 300 kHz
SWT 245 ms
RF Att 30 dB
Unit dBm
11 dB Offset
[T1] -45.10 dBm
931.96392786 MHz
D1 -13 dBm
1MAX
1MA
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:05:02



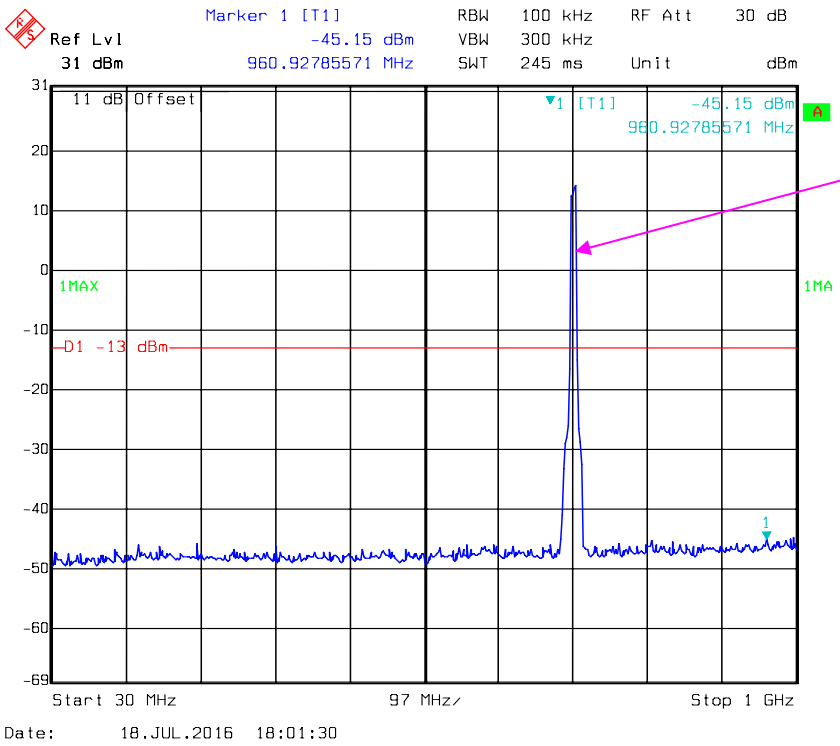
LTE Band 17 (Middle Channel)

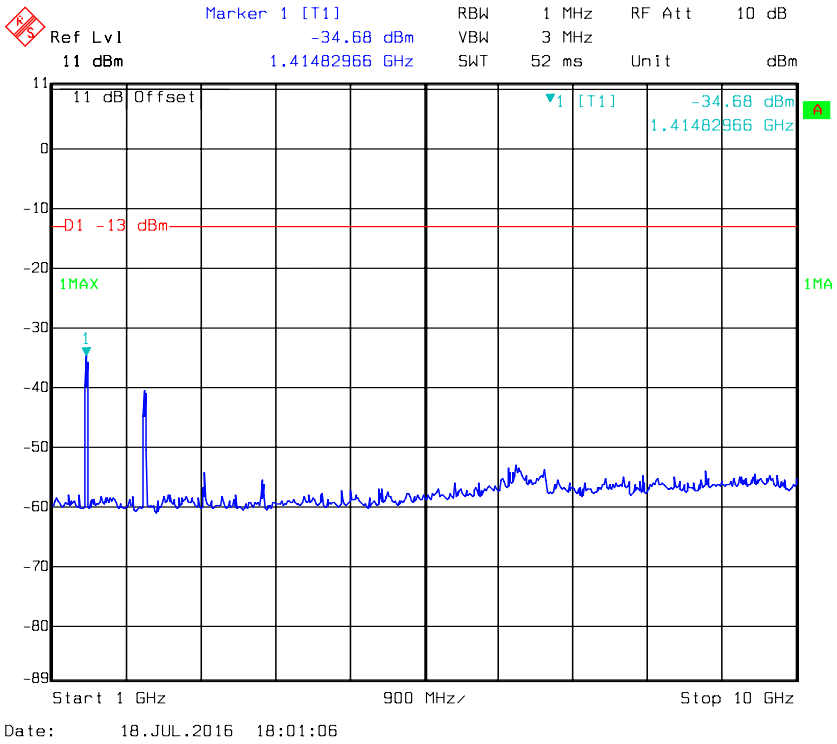
QPSK_5MHz




Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-32.77 dBm
VBW 3 MHz
11 dBm
1.41482966 GHz
SWT 52 ms
Unit dBm
11 dB Offset
1 [T1]
-32.77 dBm
1.41482966 GHz
D1 -13 dBm
1MAX
1MA
Start 1 GHz
900 MHz/
Stop 10 GHz
Date: 18.JUL.2016 18:00:52

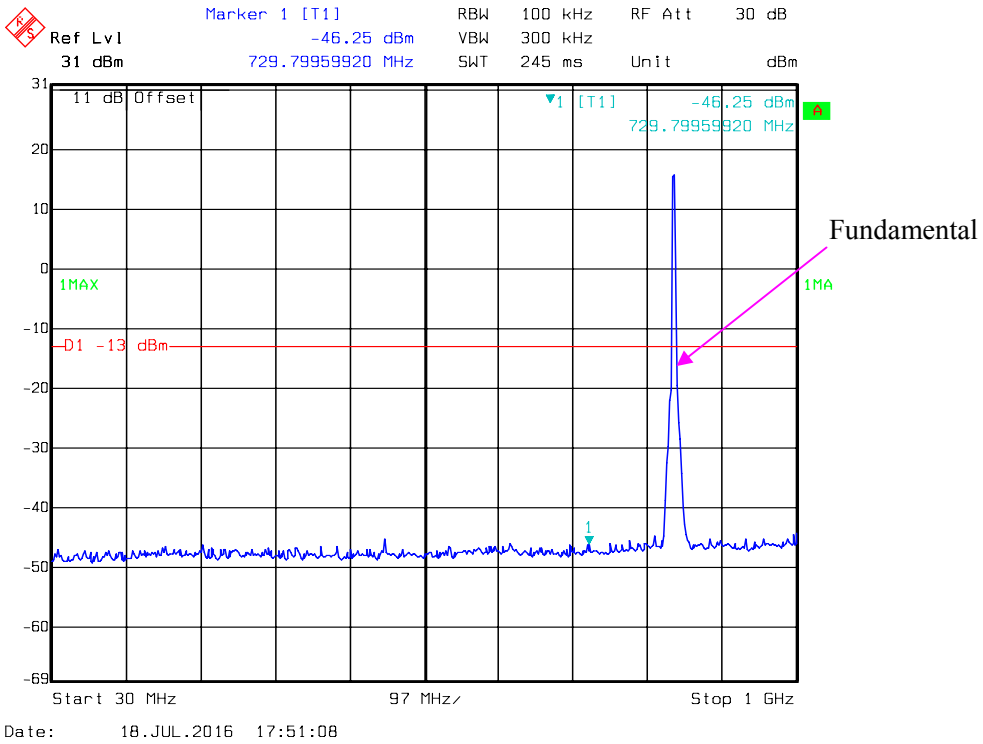
QPSK_10MHz

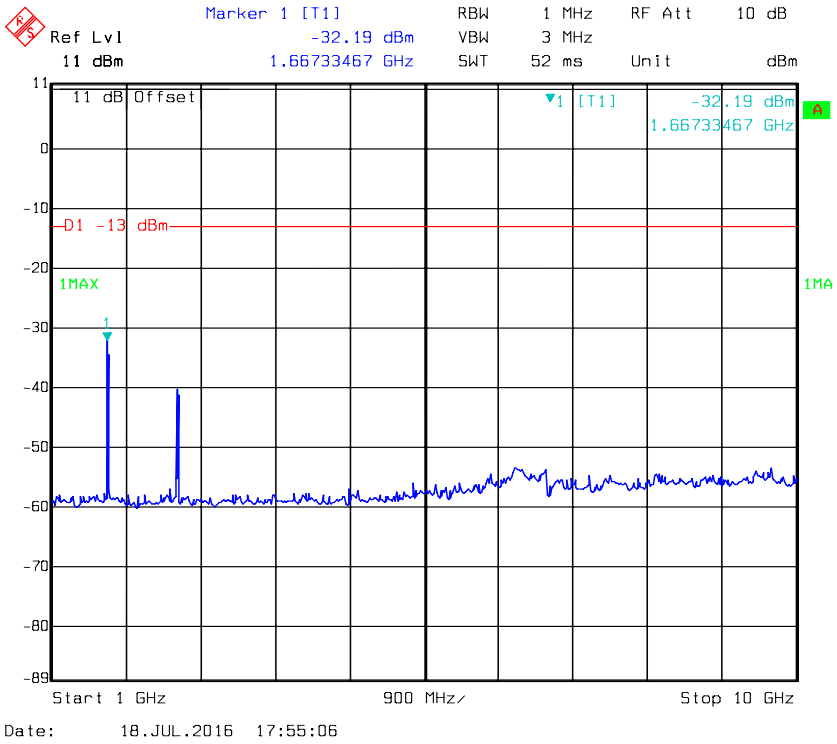

Marker 1 [T1]
RBW 100 kHz
RF Att 30 dB
Ref Lvl
-45.15 dBm
VBW 300 kHz
31 dBm
960.92785571 MHz
SWT 245 ms
Unit dBm
11 dB Offset
1 [T1]
-45.15 dBm
960.92785571 MHz
Fundamental
1MAX
1MA
D1 -13 dBm
Start 30 MHz
97 MHz/
Stop 1 GHz
Date: 18.JUL.2016 18:01:30



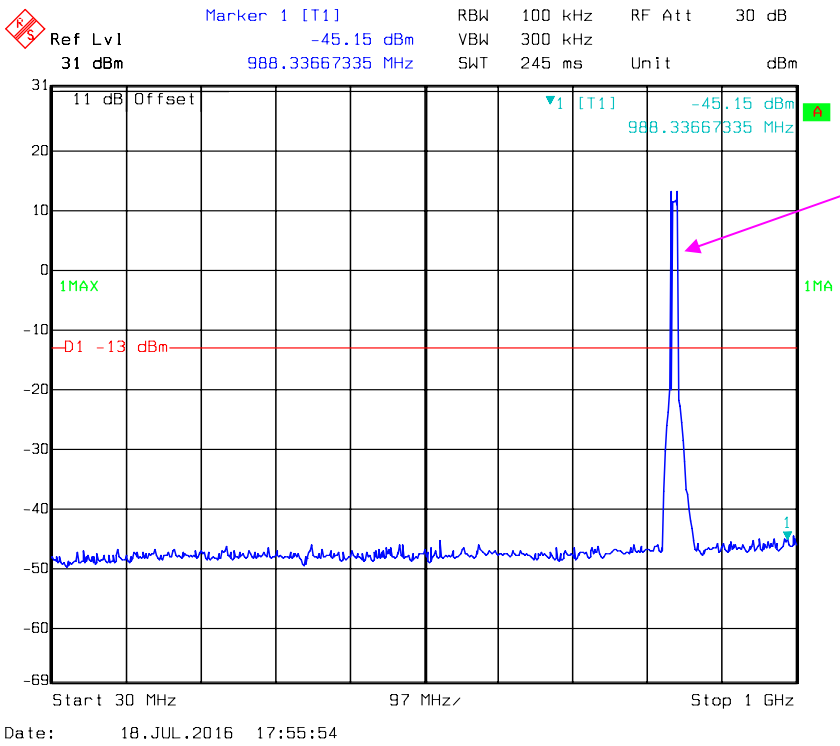
LTE Band 20 (Middle Channel)

QPSK_5MHz

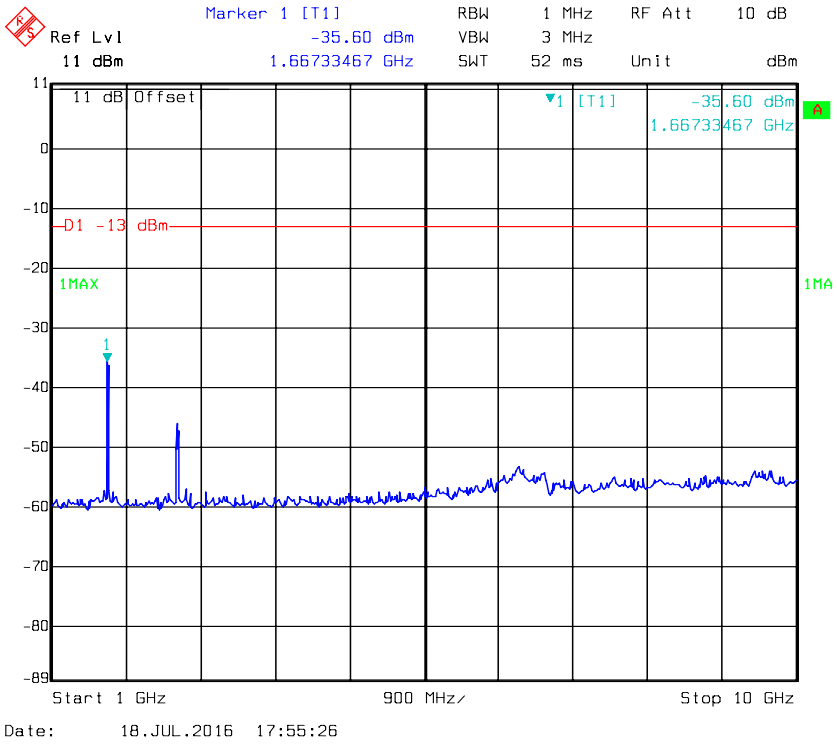




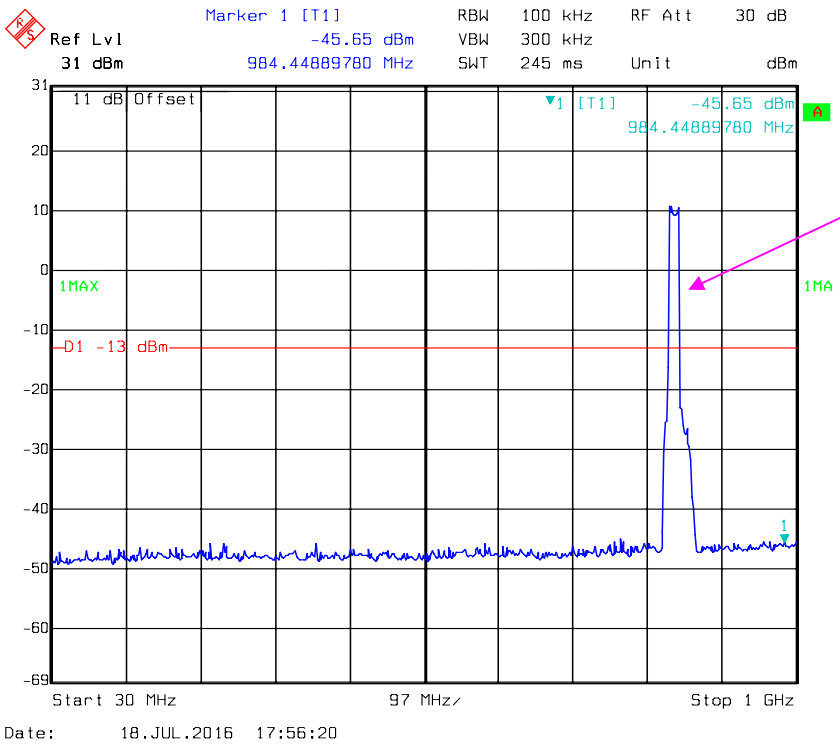
QPSK_10MHz



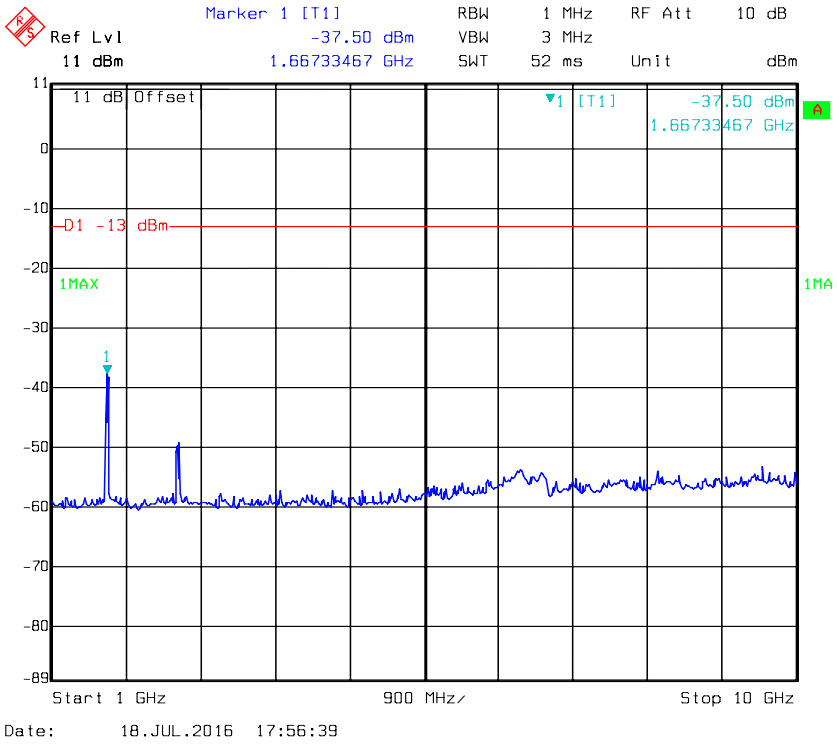
Fundamental



QPSK_15MHz



Fundamental


Marker 1 [T1]
RBW 1 MHz
RF Att 10 dB
Ref Lvl
-37.50 dBm
VBW 3 MHz
11 dBm
1.66733467 GHz
SWT 52 ms
Unit dBm
11 dB Offset
1 [T1]
-37.50 dBm
1.66733467 GHz
D1 -13 dBm
1MAX
1MA
Start 1 GHz
900 MHz/
Stop 10 GHz
Date: 18.JUL.2016 17:56:39

FCC §2.1053, §22.917 & §24.238 & §27.53- SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, §22.917, § 24.238 and § 27.53.

Test Procedure

The transmitter was placed on a wooden turntable, and it was transmitting into a non-radiating load which was also placed on the turntable.

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level

Spurious attenuation limit in dB = 43 + 10 Log_{10} (power out in Watts)

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-07-28	2017-07-27
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
R&S	Spectrum Analyzer	FSEM	DE23437	2015-11-23	2016-11-22
ETS LINDGREN	Horn Antenna	3115	000 527 35	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2016-02-19	2017-02-19
Agilent	MXG Vector Signal Generator	N5182B	MY51350142	2016-03-30	2017-03-29
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
TDK RF	Horn Antenna	HRN-0118	130 084	2015-09-06	2018-09-06
N/A	Coaxial Cable	14m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	8m	N/A	2016-05-06	2017-05-06
N/A	Coaxial Cable	2m	N/A	2016-05-06	2017-05-06
Mini Circuit	High Pass Filter	VHF-3100+	31251	2016-05-06	2017-05-06
Mini Circuit	High Pass Filte	VHF-1200+	N/A	2016-05-06	2017-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	26.5°C
Relative Humidity:	69 %
ATM Pressure:	99.9 kPa

The testing was performed by Robin Zheng on 2016-07-13.

EUT Operation Mode: Transmitting

Cellular Band

30MHz-10 GHz

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM850, Frequency:836.600 MHz								
1673.200	H	39.72	-61.4	10.6	1.5	-52.3	-13.0	39.3
1673.200	V	39.79	-61.6	10.6	1.5	-52.5	-13.0	39.5
2509.800	H	47.50	-50.5	13.1	2.8	-40.2	-13.0	27.2
2509.800	V	48.26	-48.8	13.1	2.8	-38.5	-13.0	25.5
321.500	H	32.15	-72.7	0.0	0.5	-73.2	-13.0	60.2
325.400	V	31.26	-70.6	0.0	0.5	-71.1	-13.0	58.1
WCDMA Band V R99,Frequency:836.600 MHz								
1673.200	H	38.41	-62.7	10.6	1.5	-53.6	-13.0	40.6
1673.200	V	37.85	-63.5	10.6	1.5	-54.4	-13.0	41.4
321.500	H	32.56	-72.3	0.0	0.5	-72.8	-13.0	59.8
325.400	V	31.22	-70.6	0.0	0.5	-71.1	-13.0	58.1

PCS Band

30MHz-20GHz:

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
GSM1900, Frequency:1880.000 MHz								
3760.000	H	36.87	-57.4	13.8	2.9	-46.5	-13.0	33.5
3760.000	V	36.65	-56.4	13.8	2.9	-45.5	-13.0	32.5
321.500	H	32.06	-72.8	0.0	0.5	-73.3	-13.0	60.3
325.400	V	31.34	-70.5	0.0	0.5	-71.0	-13.0	58.0
WCDMA Band II, R99, Frequency:1880.000 MHz								
3760.000	H	35.87	-58.4	13.8	2.9	-47.5	-13.0	34.5
3760.000	V	34.68	-58.4	13.8	2.9	-47.5	-13.0	34.5
321.500	H	32.36	-72.5	0.0	0.5	-73.0	-13.0	60.0
325.400	V	31.45	-70.4	0.0	0.5	-70.9	-13.0	57.9

LTE Bands(Worst case as below):

LTE band II(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency:1880.00 MHz								
3760.000	H	35.86	-58.4	13.8	2.9	-47.5	-13.0	34.5
3760.000	V	33.89	-59.2	13.8	2.9	-48.3	-13.0	35.3
5640.000	H	42.62	-49.1	14.0	2.1	-37.2	-13.0	24.2
5640.000	V	41.23	-50.4	14.0	2.1	-38.5	-13.0	25.5
325.610	H	32.61	-71.7	0.0	0.5	-72.2	-13.0	59.2
314.800	V	31.81	-71.3	0.0	0.5	-71.8	-13.0	58.8

LTE Band IV(30MHz-20GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency:1732.50 MHz								
3465.000	H	34.56	-62.4	13.9	1.9	-50.4	-13.0	37.4
3465.000	V	34.58	-61.6	13.9	1.9	-49.6	-13.0	36.6
5197.500	H	44.06	-46.9	14.0	2.3	-35.2	-13.0	22.2
5197.500	V	42.81	-49.7	14.0	2.3	-38.0	-13.0	25.0
325.610	H	32.25	-72.1	0.0	0.5	-72.6	-13.0	59.6
314.800	V	31.58	-71.6	0.0	0.5	-72.1	-13.0	59.1

LTE Band VII(30MHz-26GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK,Frequency:2535.00 MHz								
5070.000	H	40.40	-50.9	13.9	2.4	-39.4	-25.0	14.4
5070.000	V	38.42	-53.7	13.9	2.4	-42.2	-25.0	17.2
7605.000	H	37.14	-50.3	13.2	3.1	-40.2	-25.0	15.2
7605.000	V	35.22	-52.3	13.2	3.1	-42.2	-25.0	17.2
325.610	H	32.52	-71.8	0.0	0.5	-72.3	-25.0	47.3
314.800	V	31.57	-71.6	0.0	0.5	-72.1	-25.0	47.1

LTE Band 12(30MHz-10GHz):

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK, Frequency:705.500 MHz								
1415.000	H	49.28	-51.6	9.0	1.3	-43.9	-13.0	30.9
1415.000	V	48.32	-52.2	9.0	1.3	-44.5	-13.0	31.5
2122.500	H	51.27	-44.7	11.2	1.4	-34.9	-13.0	21.9
2122.500	V	48.56	-46.1	11.2	1.4	-36.3	-13.0	23.3
2830.000	H	42.79	-55.5	13.4	1.7	-43.8	-13.0	30.8
2830.000	V	42.77	-55.5	13.4	1.7	-43.8	-13.0	30.8
3537.500	H	40.38	-55.9	13.9	1.9	-43.9	-13.0	30.9
3537.500	V	42.39	-53	13.9	1.9	-41.0	-13.0	28.0
325.610	H	32.15	-72.2	0.0	0.5	-72.7	-13.0	59.7
314.800	V	31.52	-71.6	0.0	0.5	-72.1	-13.0	59.1

LTE Band 17(30MHz-10GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK,Frequency:710.00 MHz								
1420.000	H	47.81	-53.1	9.1	1.3	-45.3	-13.0	32.3
1420.000	V	46.81	-53.8	9.1	1.3	-46.0	-13.0	33.0
2130.000	H	44.32	-51.6	11.2	1.4	-41.8	-13.0	28.8
2130.000	V	41.12	-53.7	11.2	1.4	-43.9	-13.0	30.9
325.610	H	32.51	-71.8	0.0	0.5	-72.3	-13.0	59.3
314.800	V	31.57	-71.6	0.0	0.5	-72.1	-13.0	59.1

LTE Band 20(30MHz-10GHz)

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			S.G. Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK,Frequency:840.500 MHz								
1681.000	H	34.49	-66.6	10.7	1.5	-57.4	-13.0	44.4
1681.000	V	37.35	-64	10.7	1.5	-54.8	-13.0	41.8
2521.500	H	38.12	-59.4	13.1	2.8	-49.1	-13.0	36.1
2521.500	V	39.26	-57.8	13.1	2.8	-47.5	-13.0	34.5
325.610	H	32.48	-71.9	0.0	0.5	-72.4	-13.0	59.4
314.800	V	31.55	-71.6	0.0	0.5	-72.1	-13.0	59.1

Note:
1) The unit of Antenna Gain is dBd for frequency below 1GHz, and the unit of Antenna Gain is dBi for frequency above 1GHz.
2) Absolute Level = SG Level - Cable loss + Antenna Gain
3) Margin = Limit-Absolute Level

FCC §22.917(a) & §24.238(a) & §27.53- BAND EDGES

Applicable Standard

According to § 22.917(a), the power of any emissions 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.

According to §24.238(a), the power of any emissions 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.

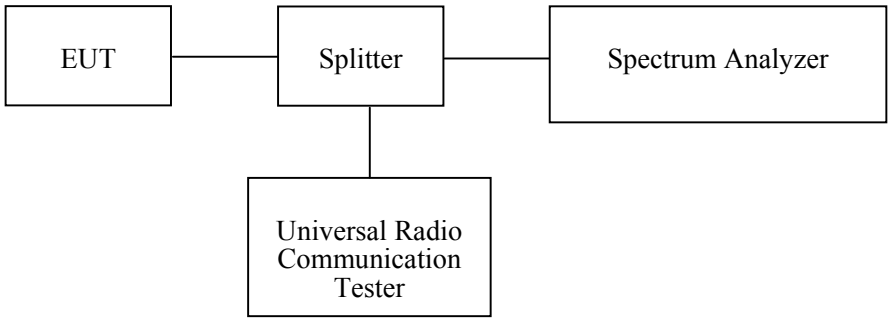
According to §27.53 (h), AWS emission limits—(1) General protection levels. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

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

Test Procedure

The RF output of the transmitter was connected to the input of the spectrum analyzer through sufficient attenuation.

The center of the spectrum analyzer was set to block edge frequency.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
R&S	Spectrum Analyzer	FSEM	831259/019	2015-07-28	2016-07-27
R&S	Universal Radio Communication Tester	CMU200	109 038	2015-07-28	2016-07-27
R&S	Wideband Radio Communication Tester	CMW500	106891	2015-11-23	2016-11-23
N/A	Coaxial Cable	0.1m	N/A	2016-05-06	2017-05-06
E-Microwave	DC Blocking	EMDCB-00036	0E01201047	2016-05-06	2017-05-06
E-Microwave	Attenuator	EMCA10-5RN	OE01203239	2016-05-08	2017-05-08
Pasternack	RF Coaxial Cable	RF-01	N/A	2016-05-06	2017-05-06
Pasternack	RF Coaxial Cable	RF-02	N/A	2016-05-06	2017-05-06
N/A	Two-way Spliter	ODP-1-6-2S	OE0120142	2016-05-06	2017-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

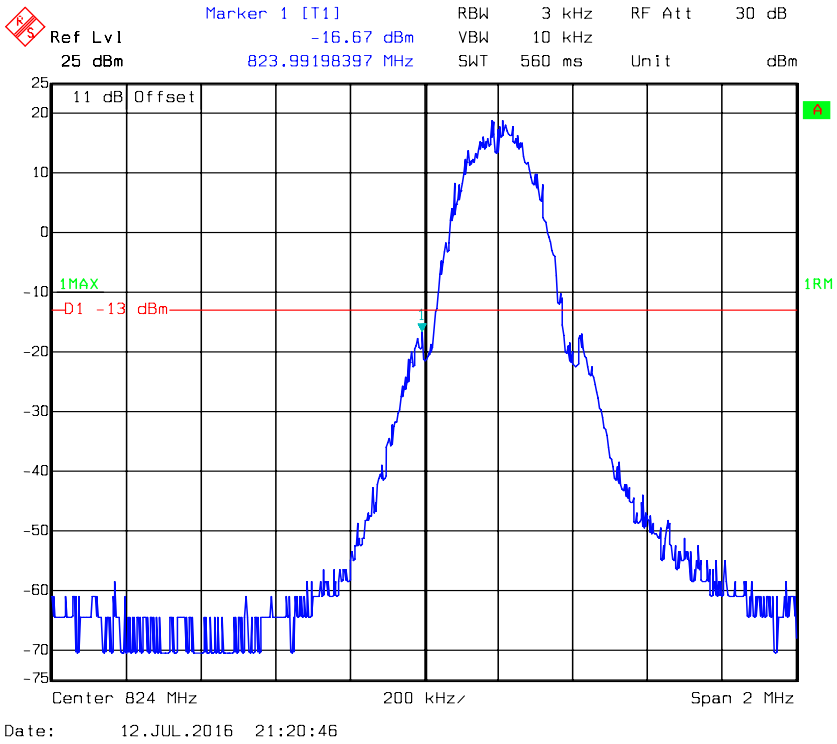
Temperature:	30.6~32.1°C
Relative Humidity:	51~54%
ATM Pressure:	99.6~99.7 kPa

The testing was performed by Robin Zheng from 2016-07-12 to 2016-07-18.

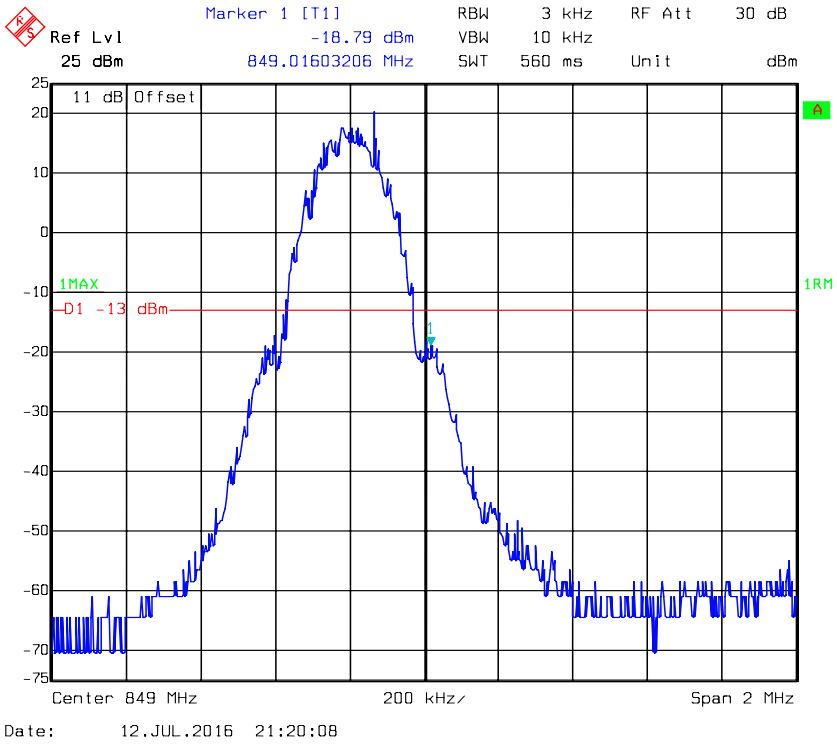
Test Mode: Transmitting

Test Result: Compliant. Please refer to the following plots.

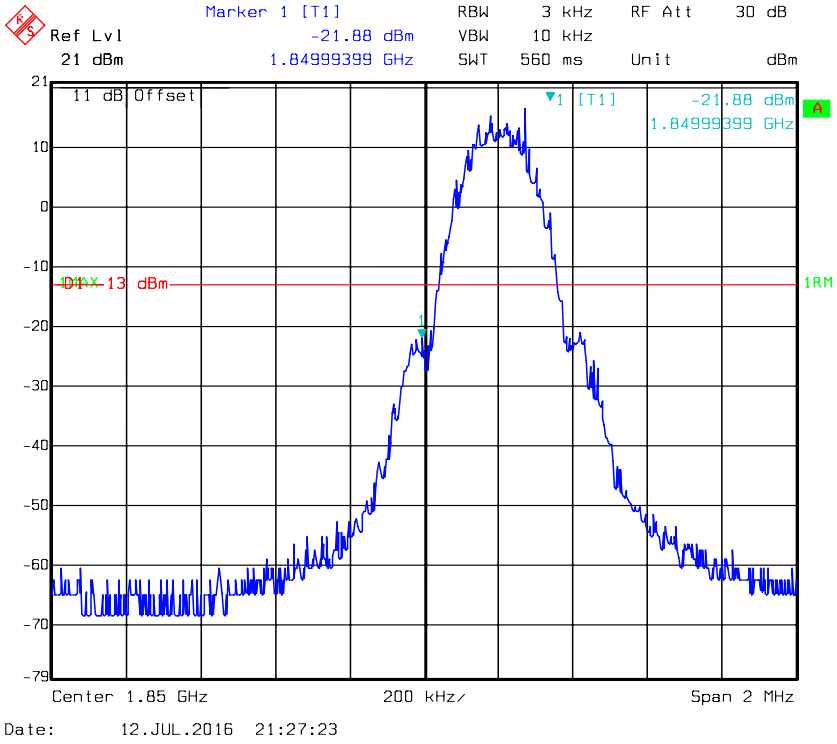
GSM 850, Left Band Edge



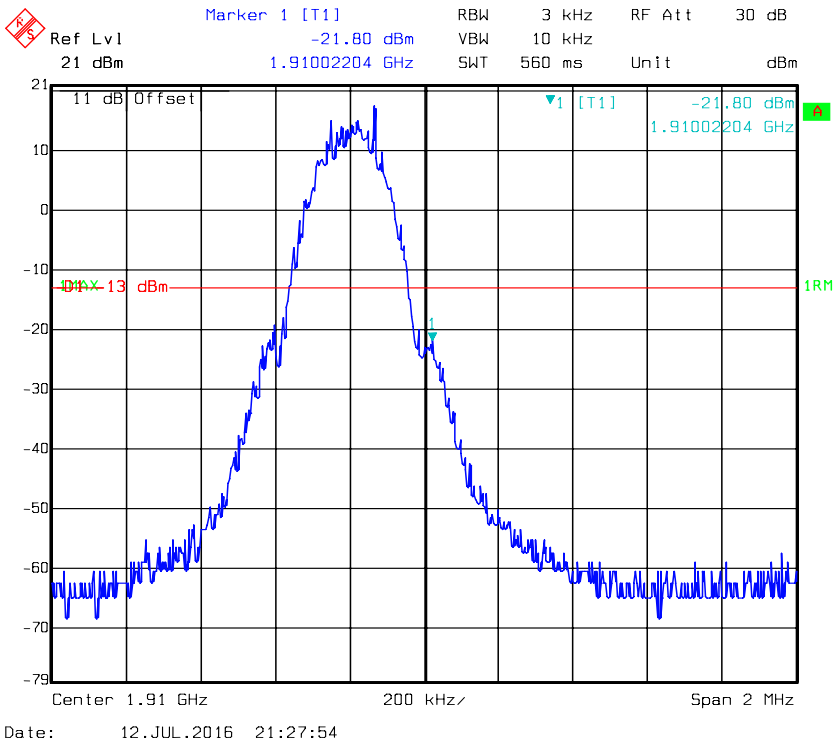
GSM 850, Right Band Edge



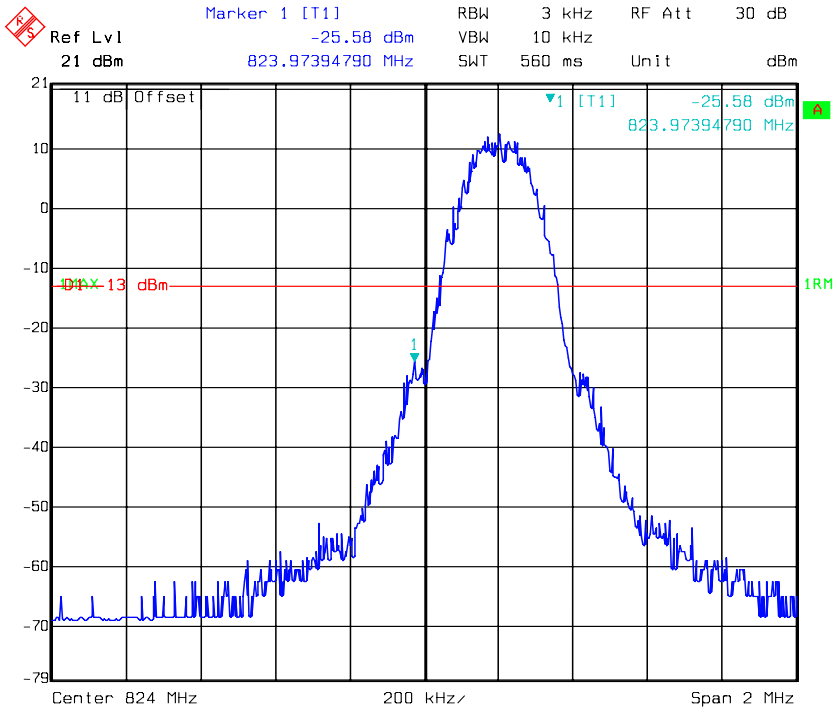
GSM 1900, Left Band Edge



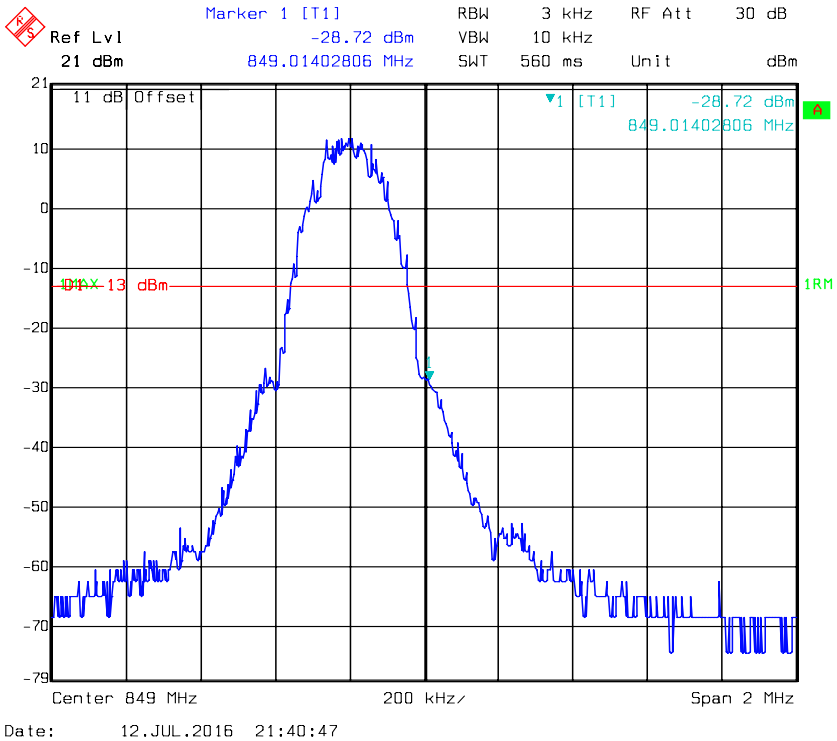
GSM 1900, Right Band Edge



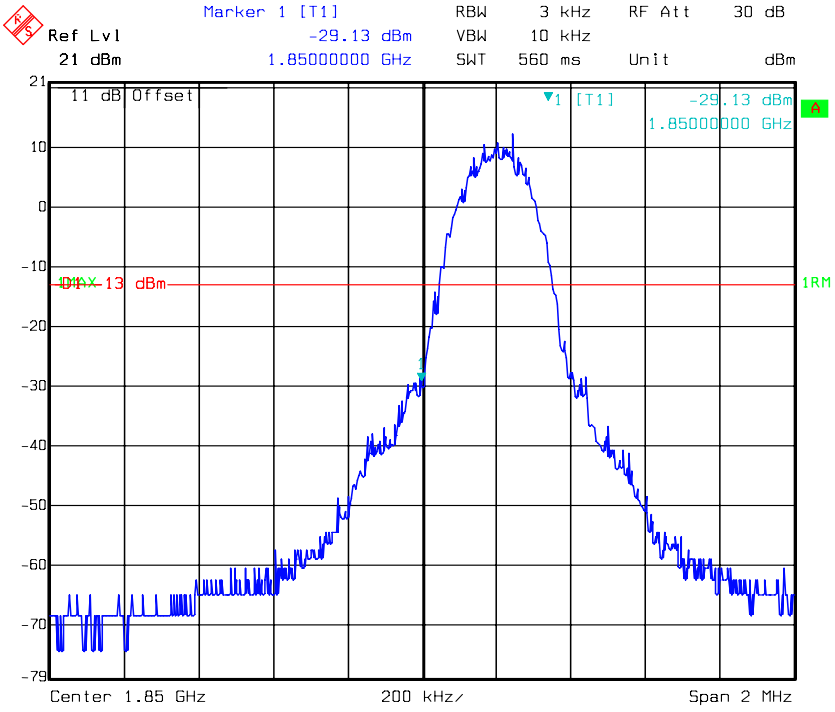
EDGE 850, Left Band Edge



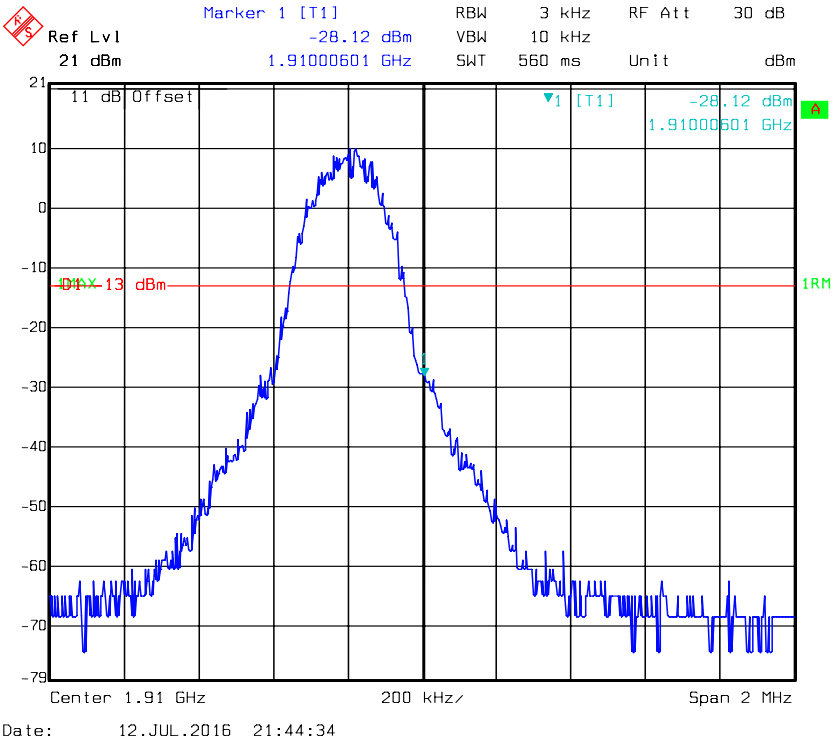
EDGE 850, Right Band Edge



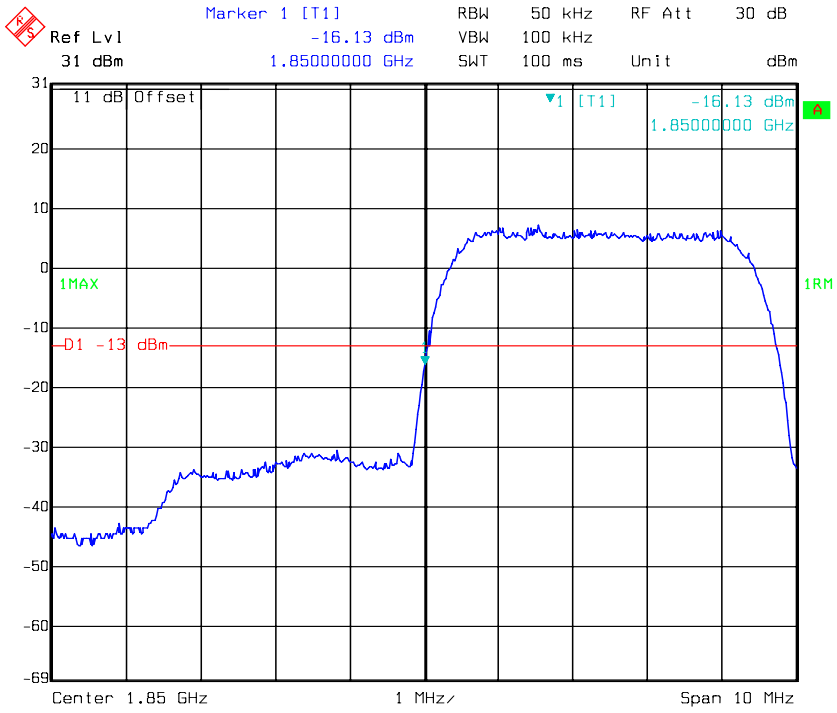
EDGE 1900, Left Band Edge



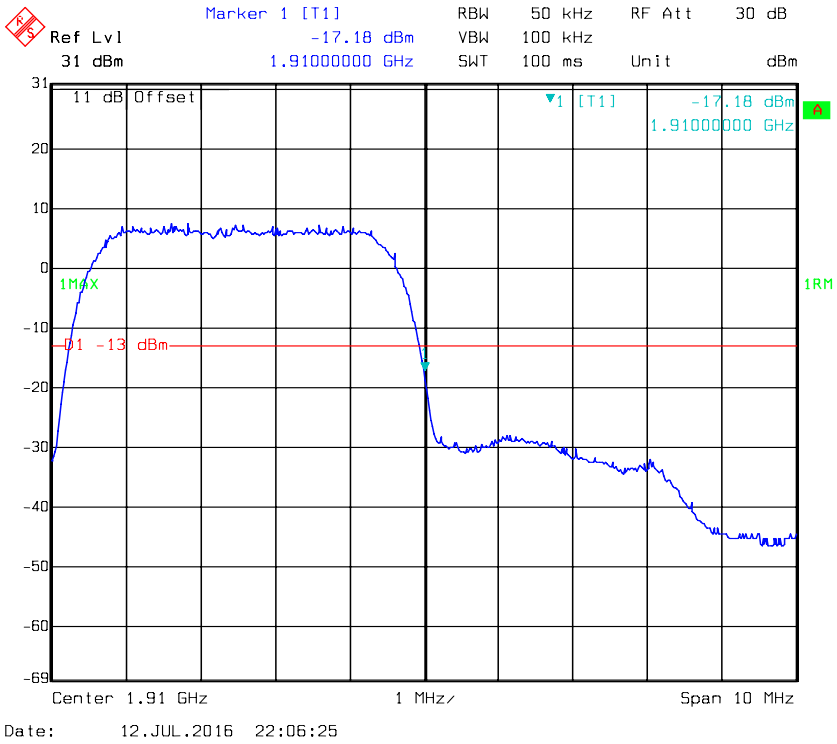
EDGE 1900, Right Band Edge



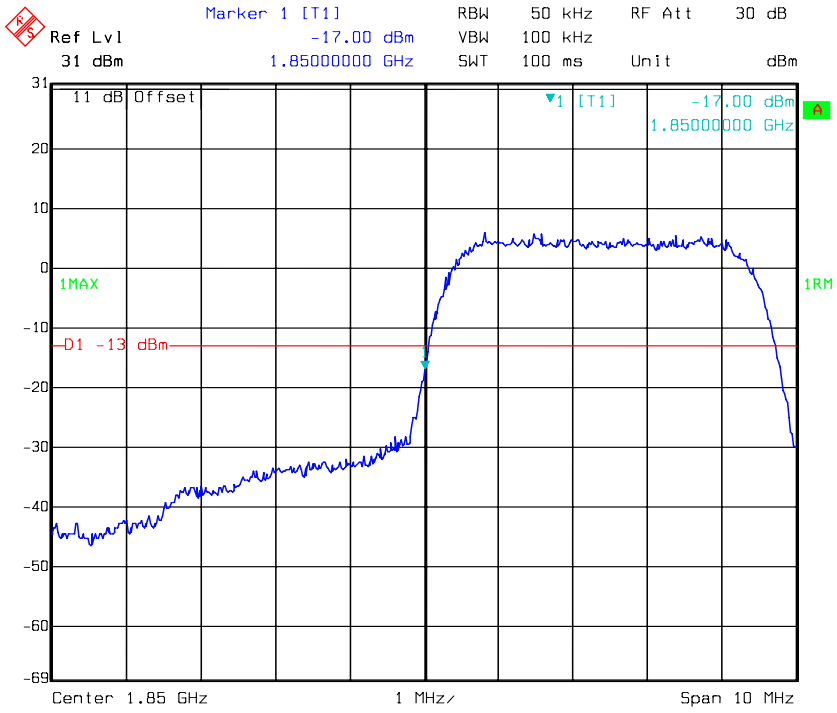
REL99 Band II, Left Band Edge



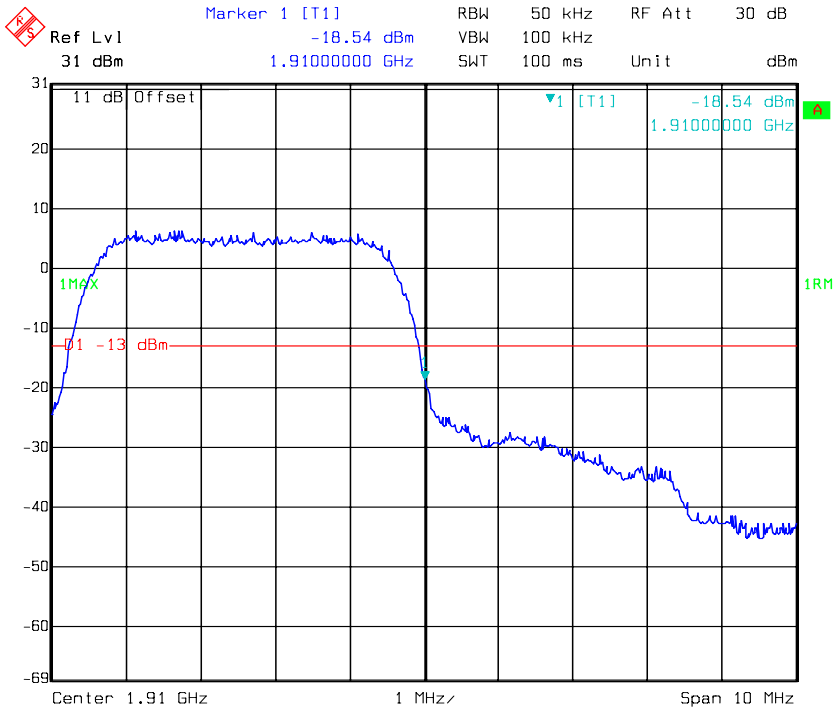
REL99 Band II, Right Band Edge



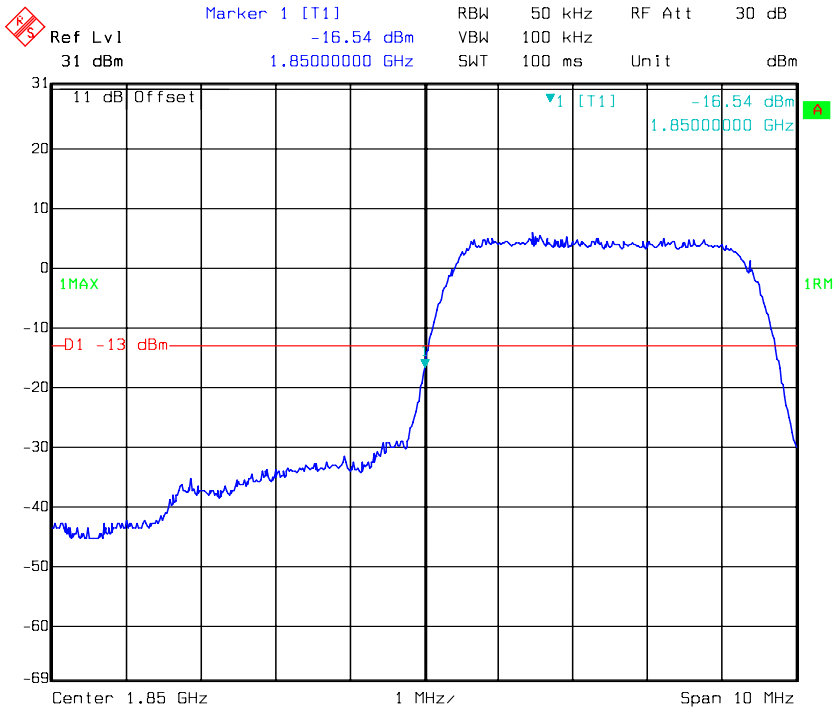
HSDPA Band II, Left Band Edge



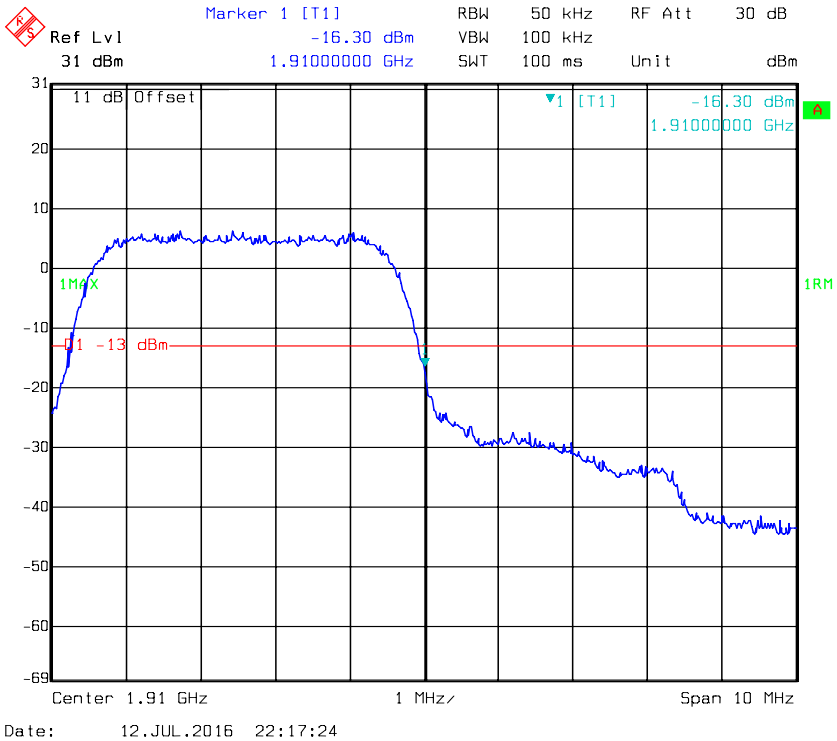
HSDPA Band II, Right Band Edge



HSUPA Band II, Left Band Edge

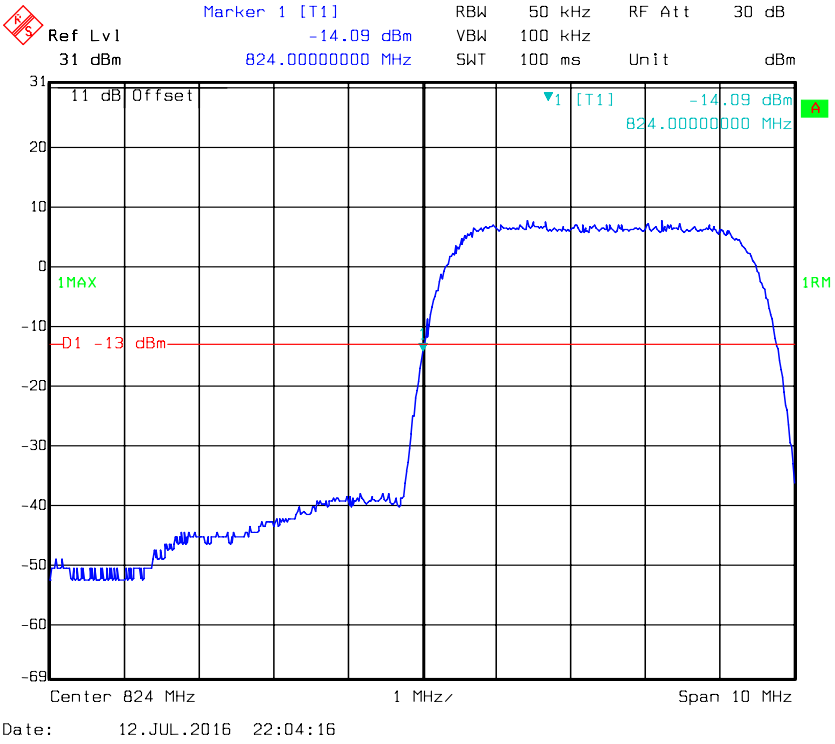


HSUPA Band II, Right Band Edge

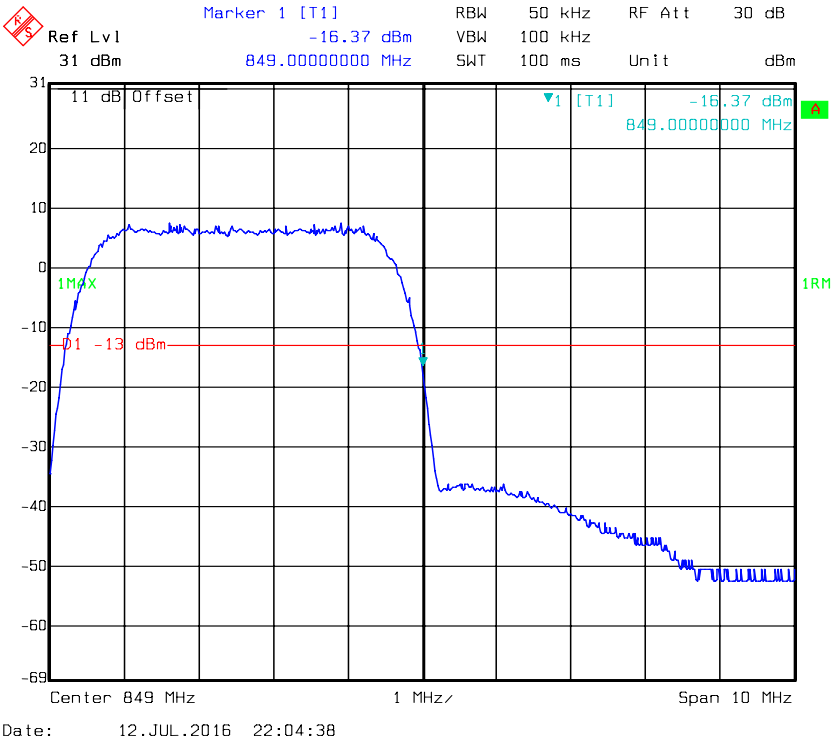


WCDMA Band V

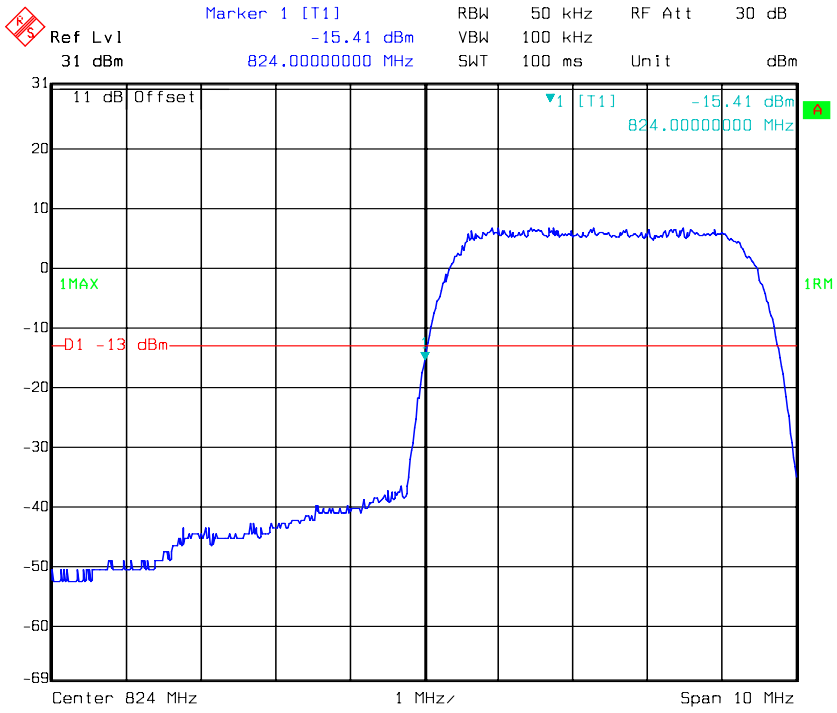
REL99 Band V, Left Band Edge



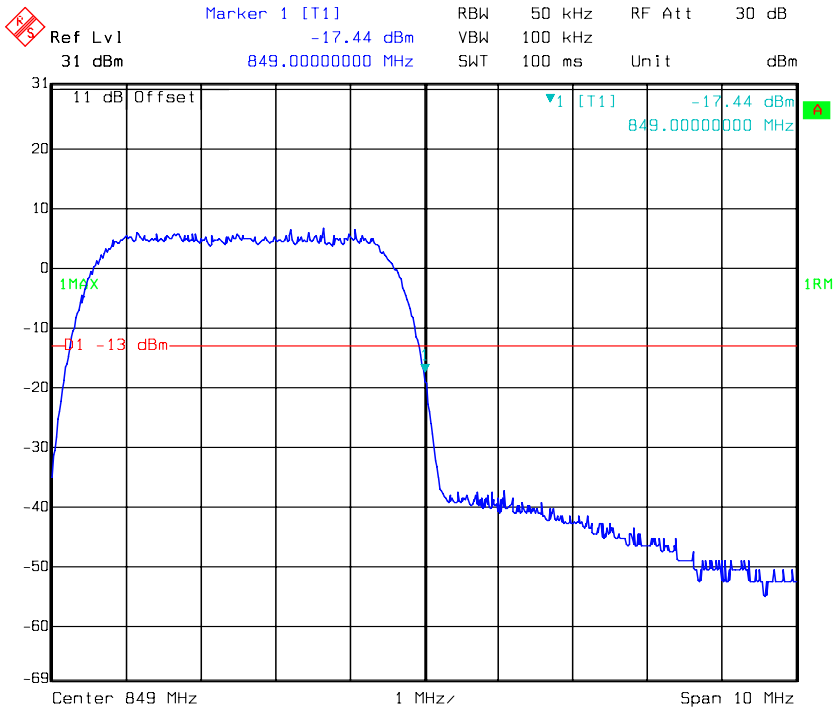
REL99 Band V Right Band Edge



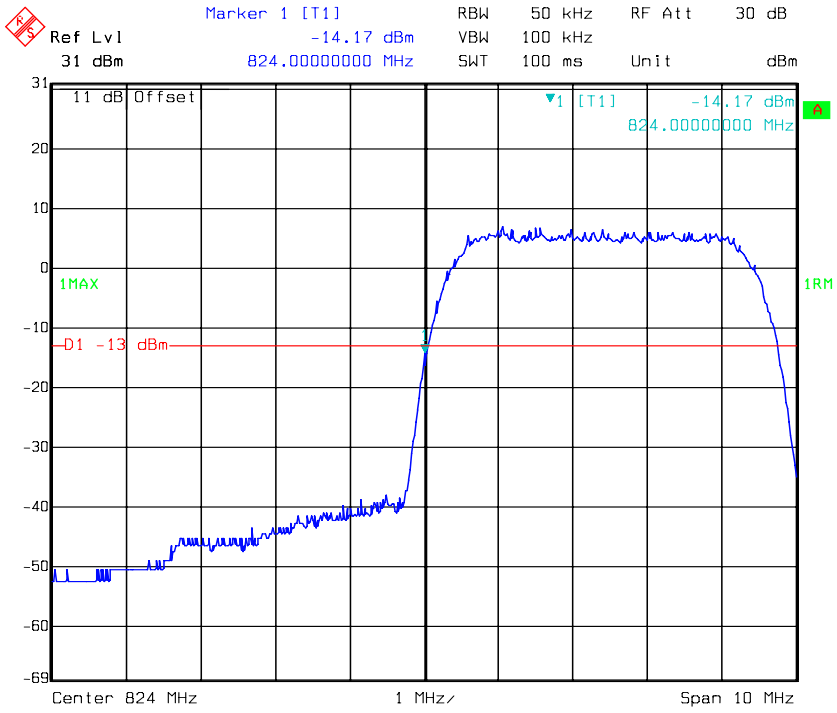
HSDPA Band V, Left Band Edge



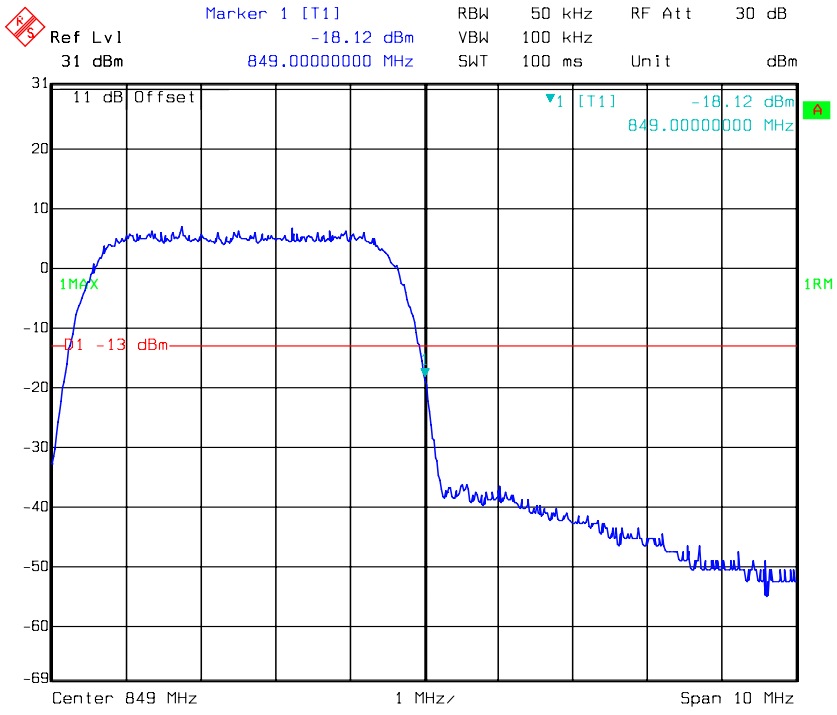
HSDPA Band V, Right Band Edge



HSUPA Band V, Left Band Edge

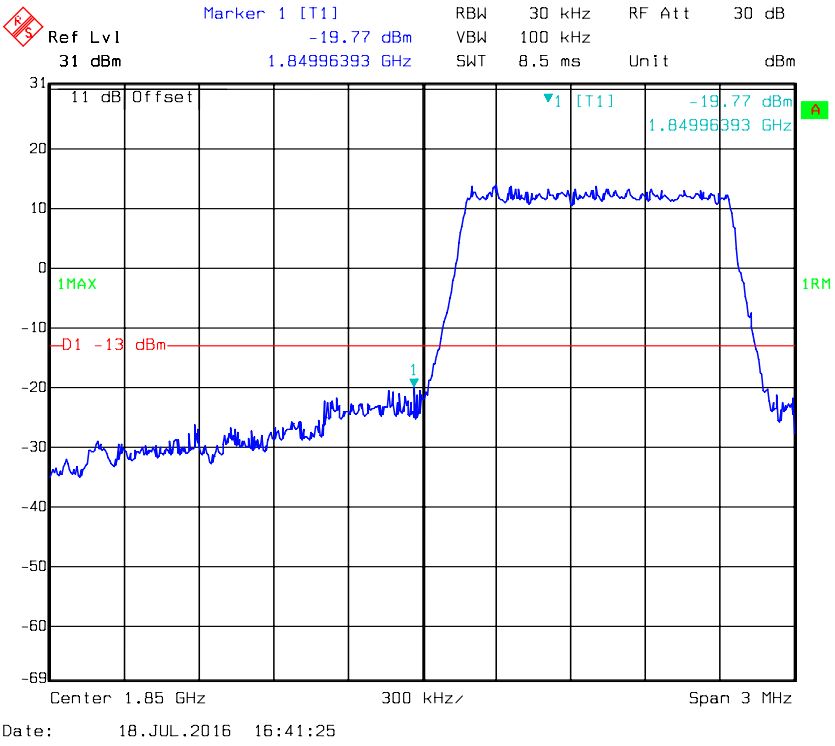


HSUPA Band V, Right Band Edge

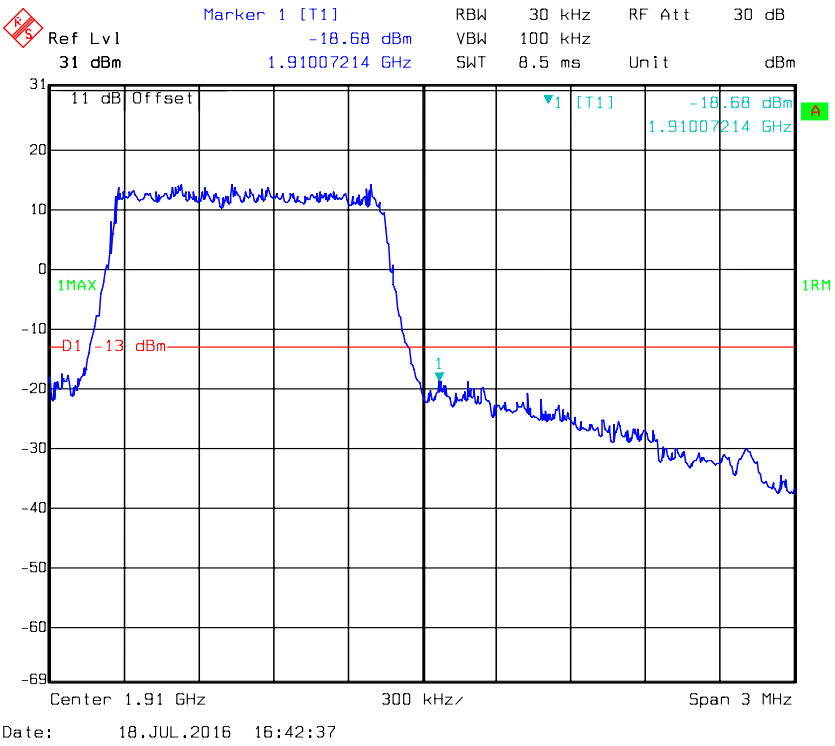


LTE Band II

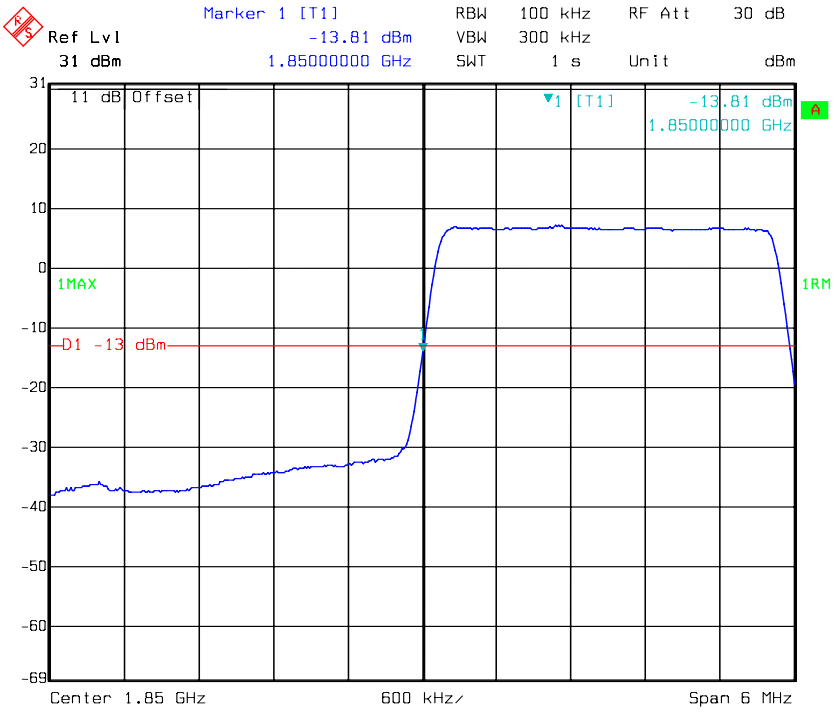
QPSK_1.4MHz_FULL RB_ Left



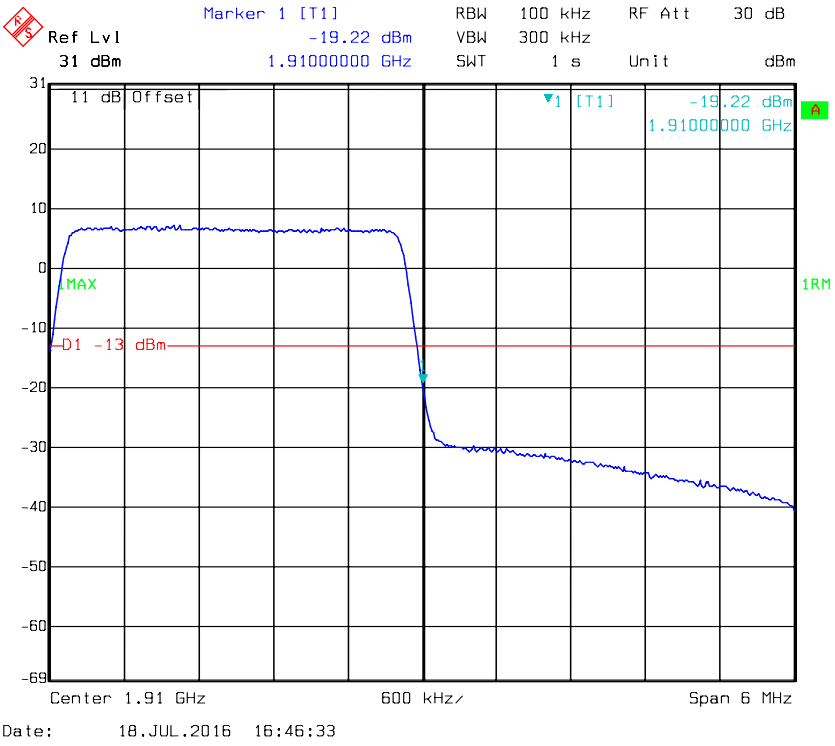
QPSK_1.4MHz_FULL RB_ Right



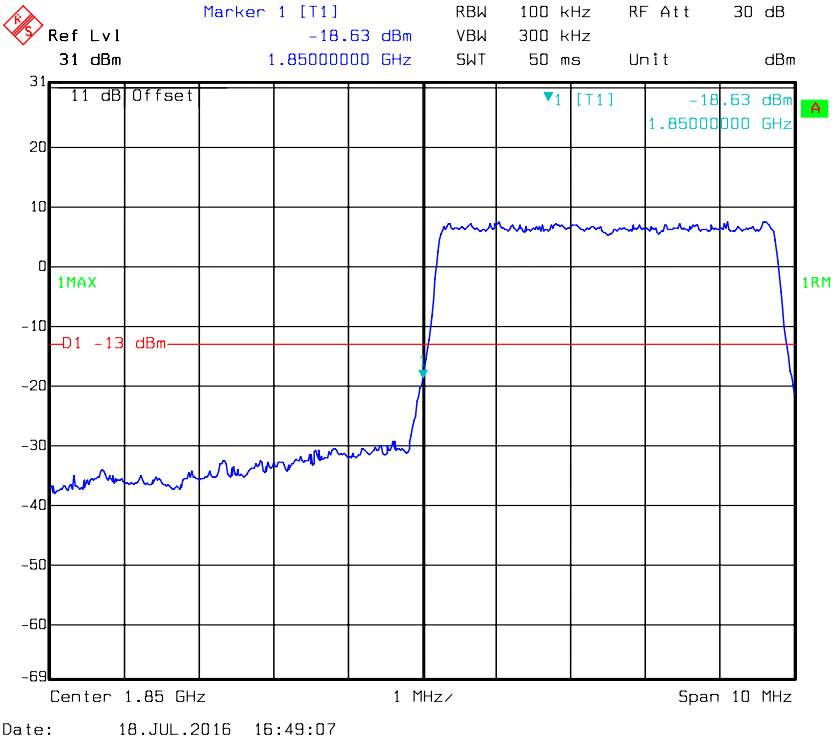
QPSK_3MHz_FULL RB_ Left



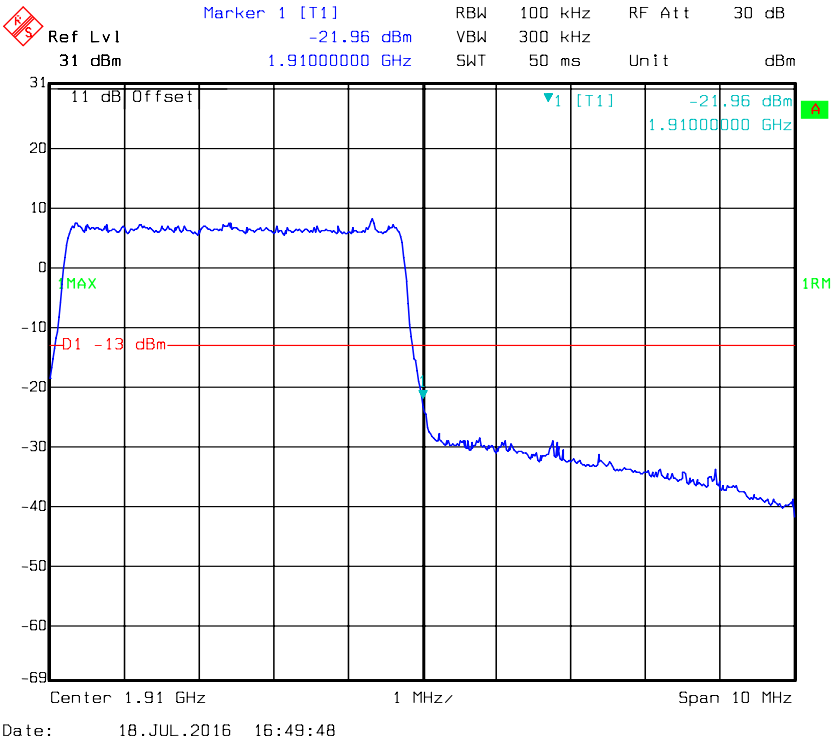
QPSK_3MHz_ FULL RB_ Right



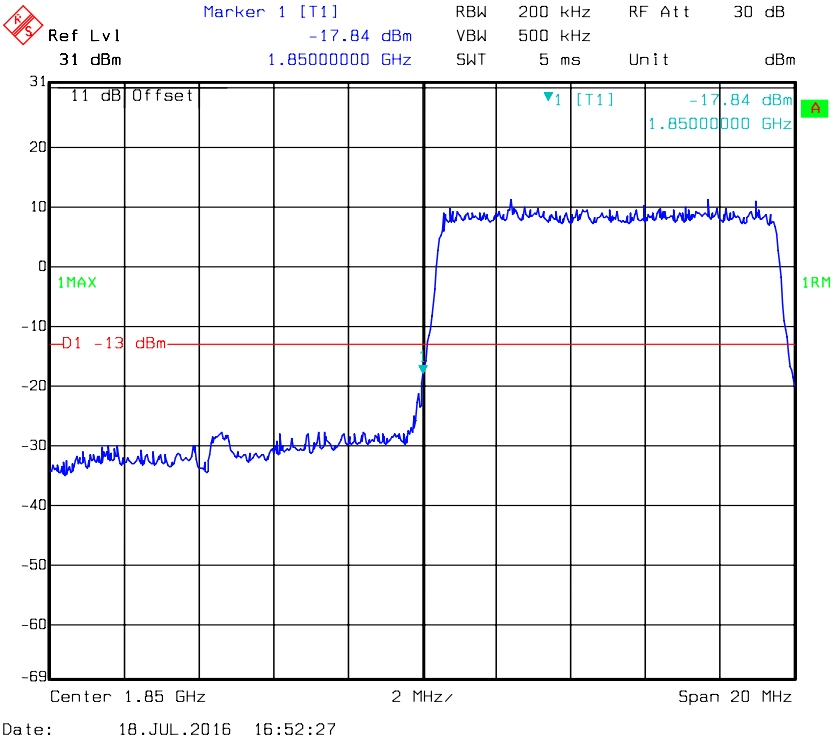
QPSK_5MHz_ FULL RB_ Left



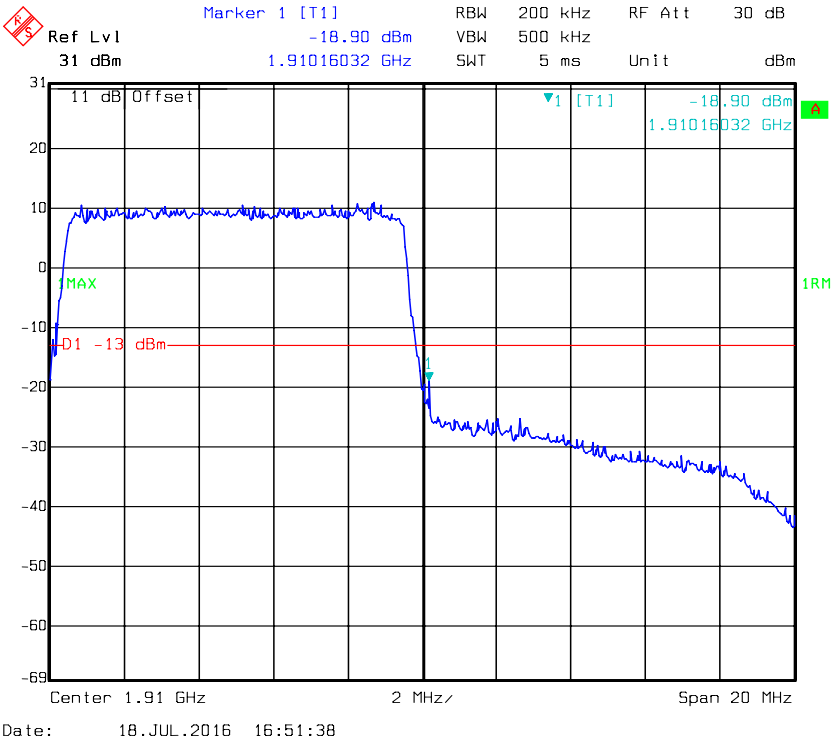
QPSK_5MHz_ FULL RB_ Right



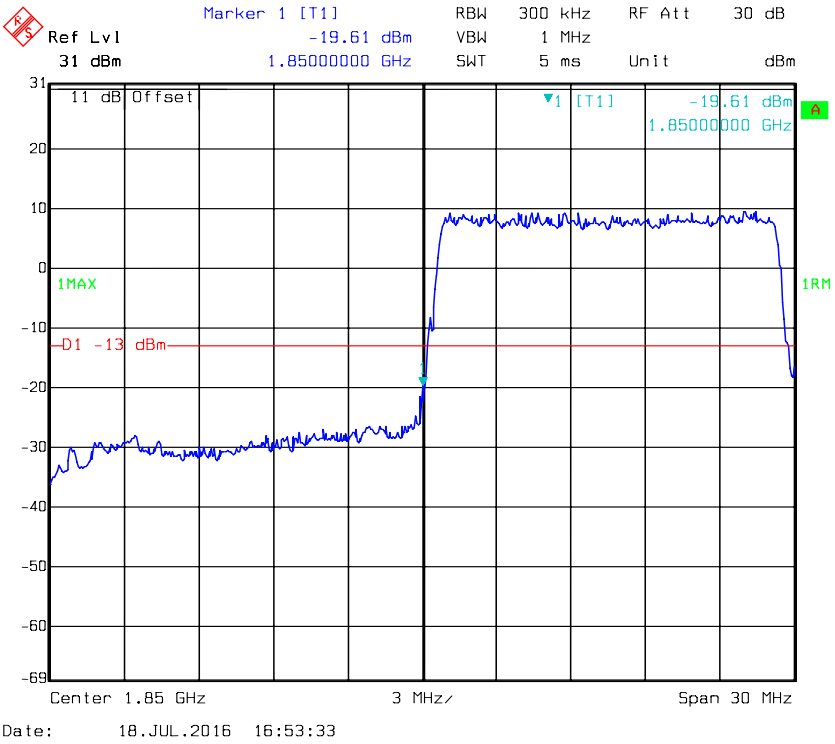
QPSK_10MHz_ FULL RB_ Left



QPSK_10MHz_ FULL RB_ Right

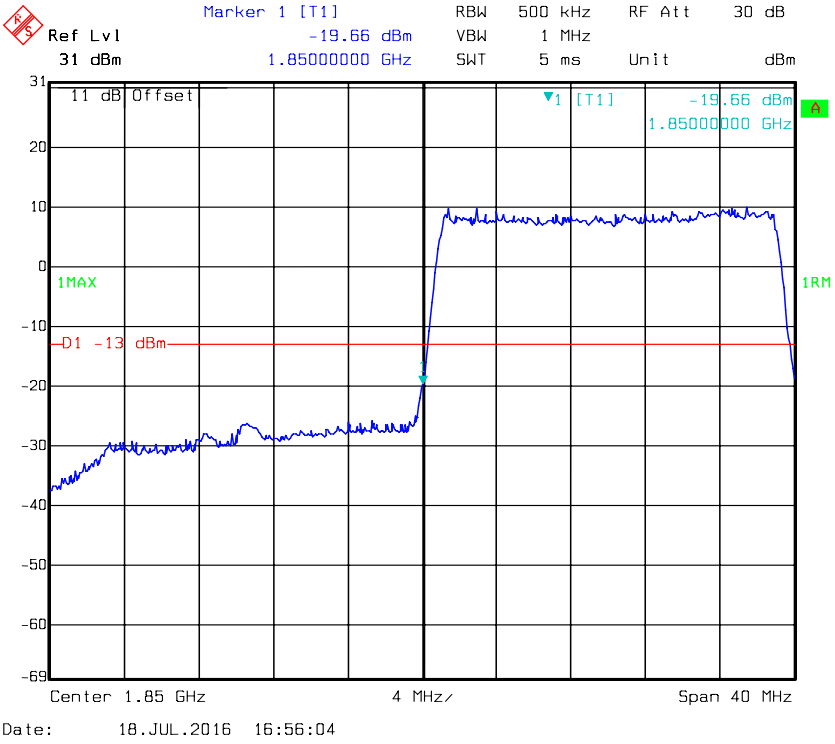


QPSK_15MHz_ FULL RB_ Left

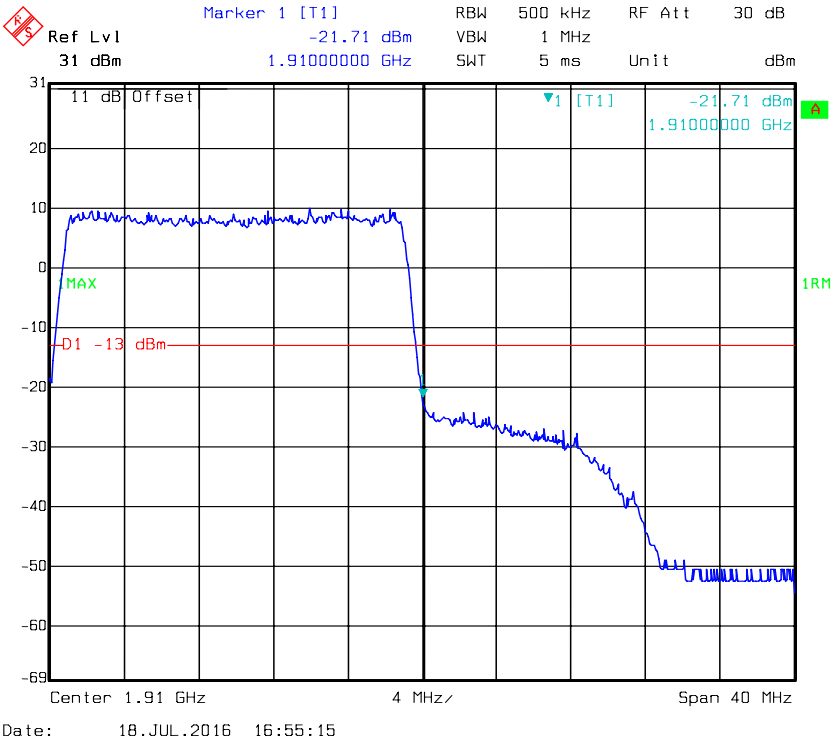


QPSK_15MHz_ FULL RB_ Right

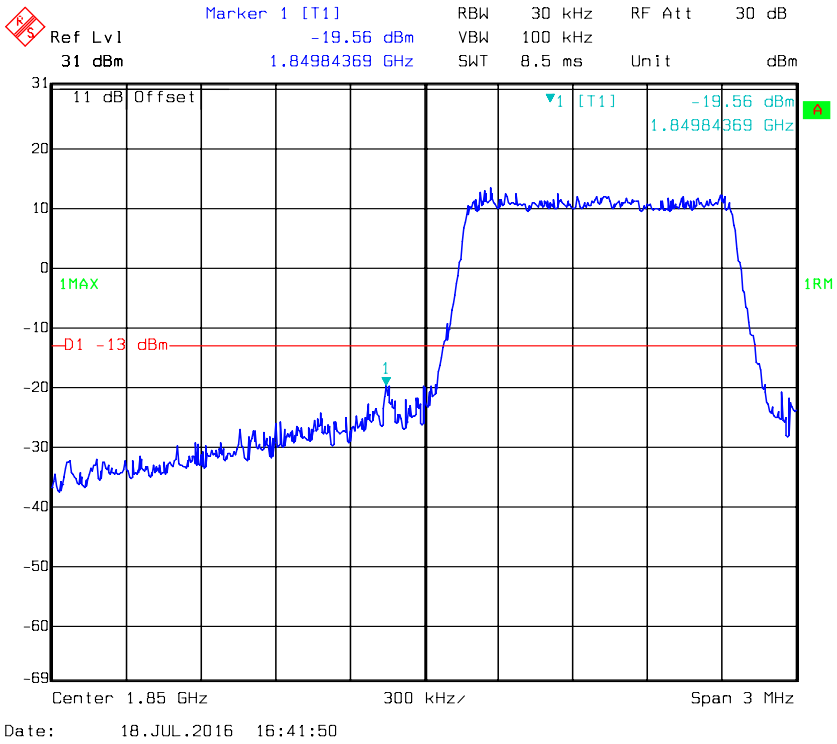
QPSK_20MHz_ FULL RB_ Left



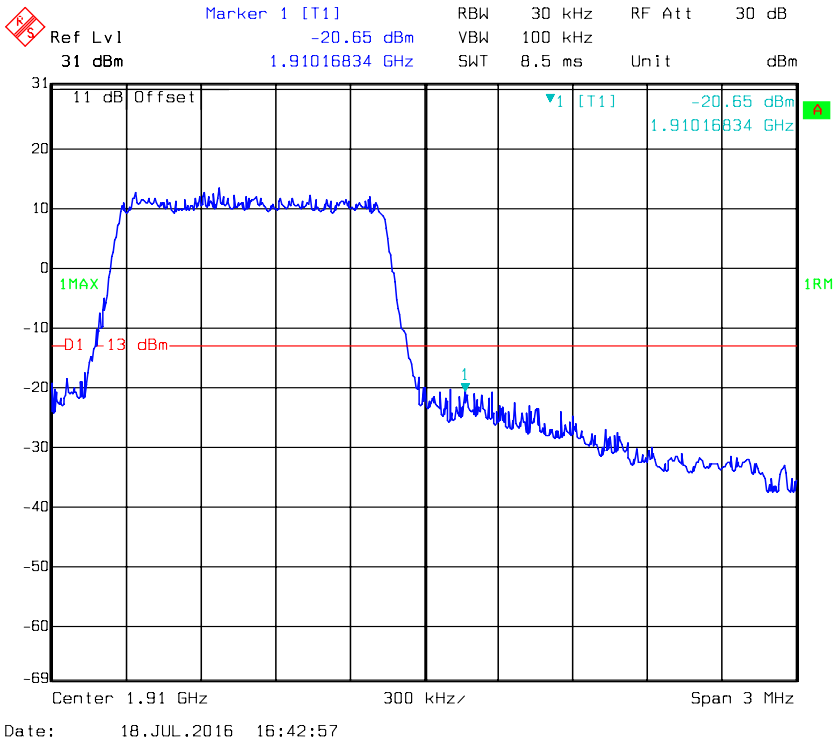
QPSK_20MHz_ FULL RB_ Right



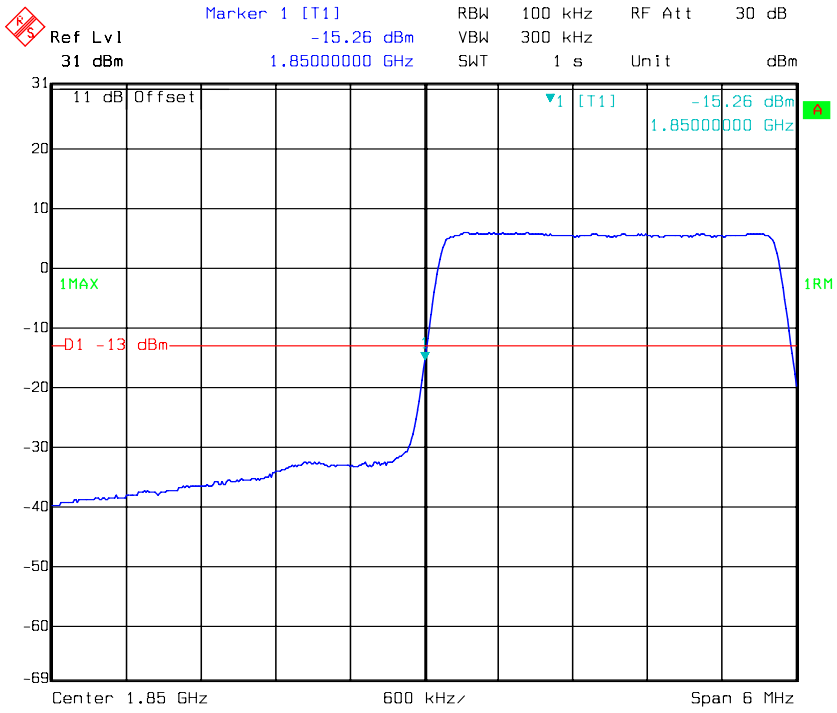
16QAM_1.4MHz_ FULL RB_ Left



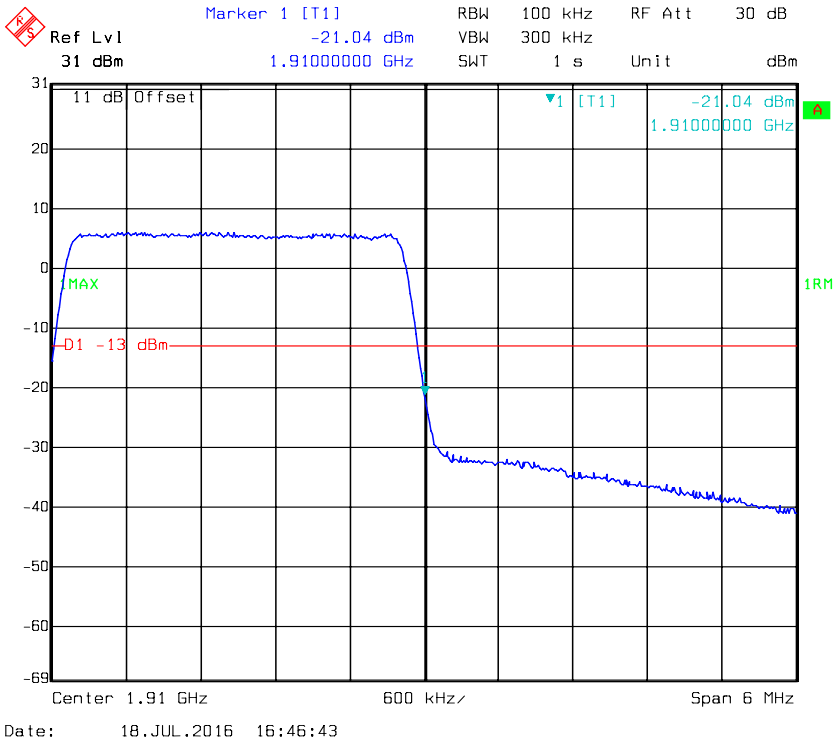
16QAM_1.4MHz_ FULL RB_ Right



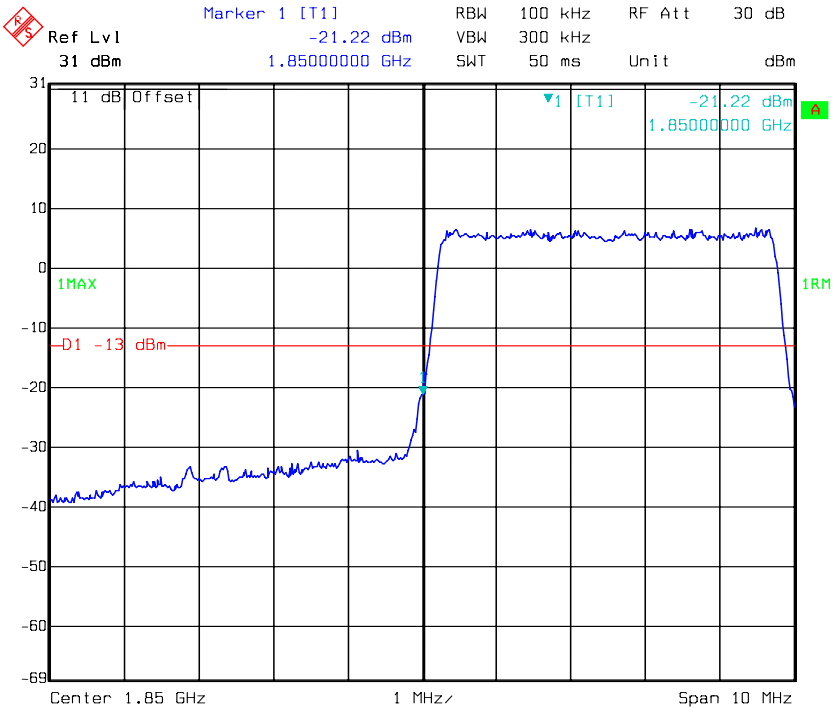
16QAM_3MHz_ FULL RB_ Left



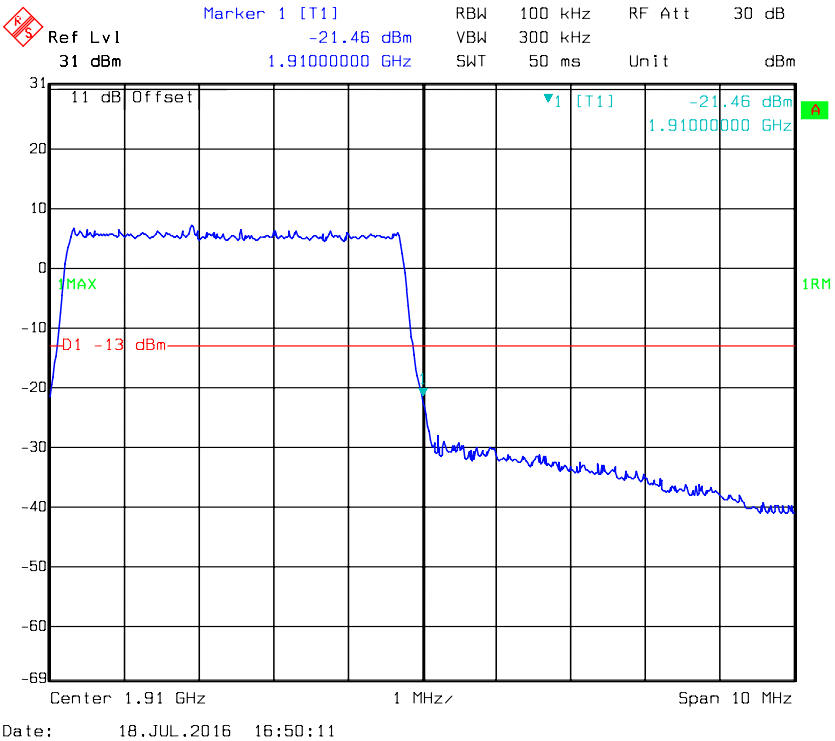
16QAM_3M_ FULL RB_ Right



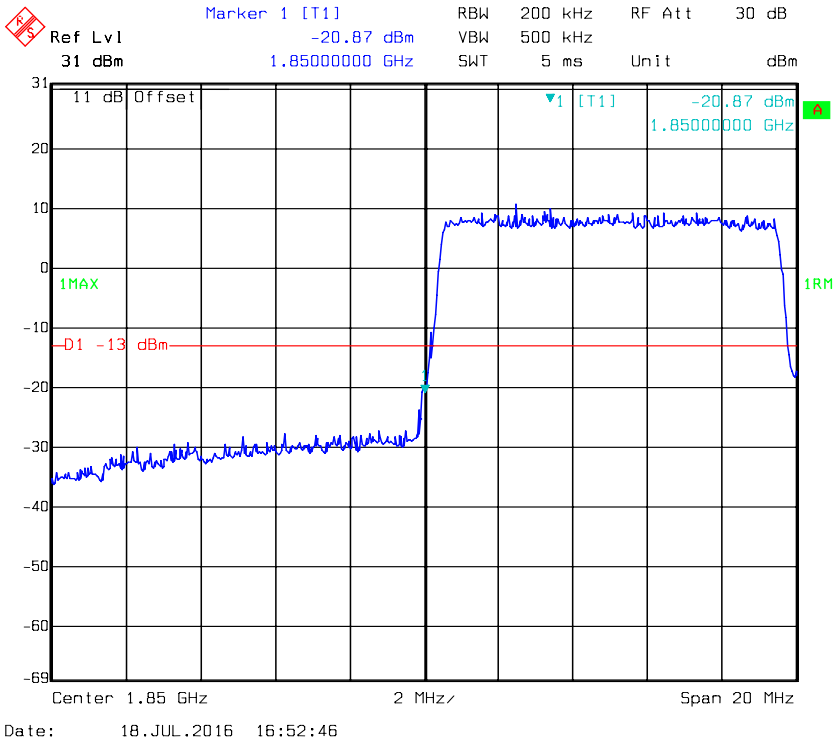
16QAM_5MHz_ FULL RB_ Left



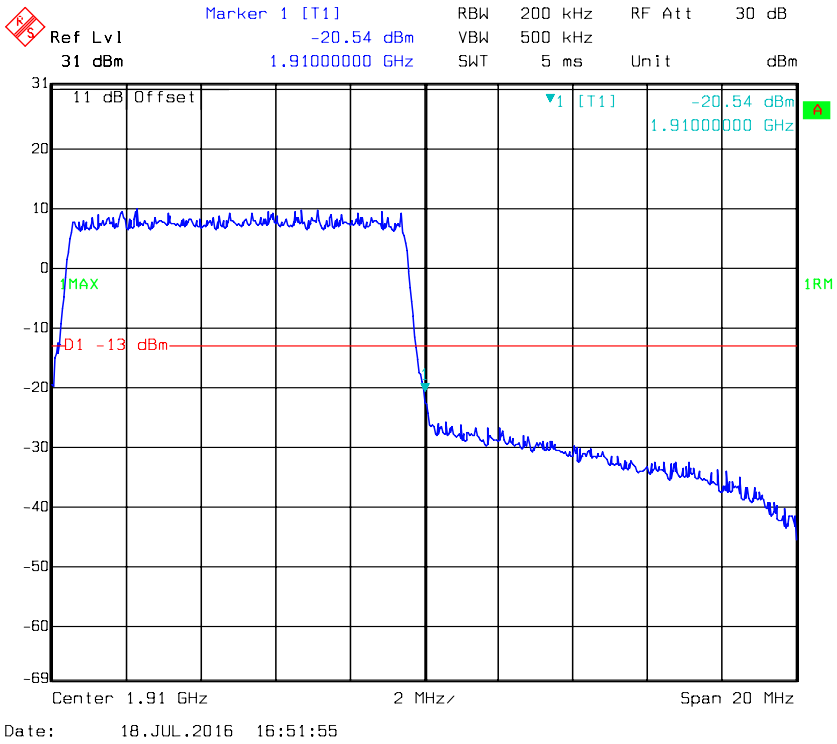
16QAM_5MHz_ FULL RB_ Right



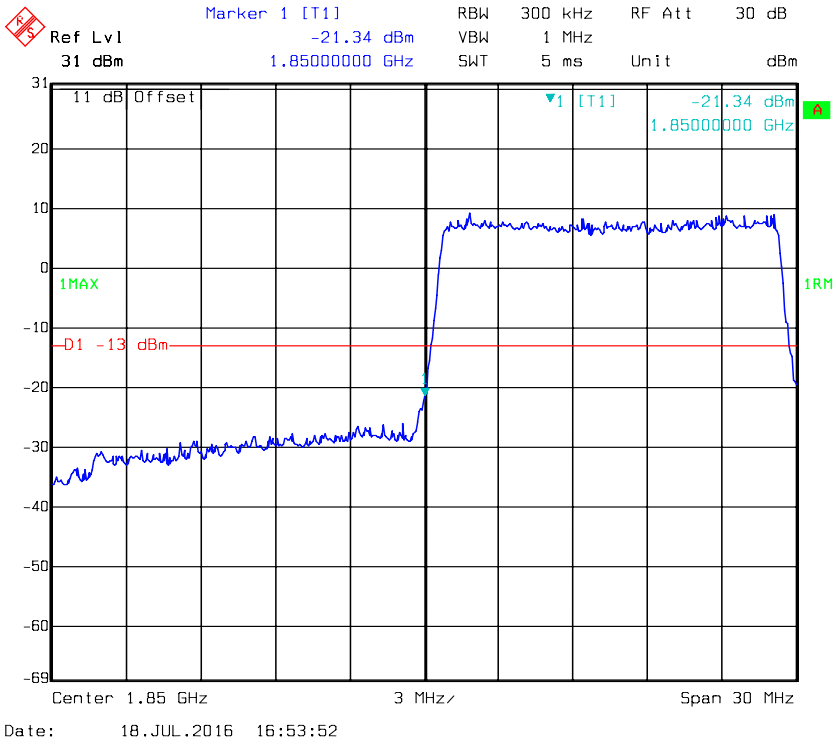
16QAM_10MHz_ FULL RB_ Left



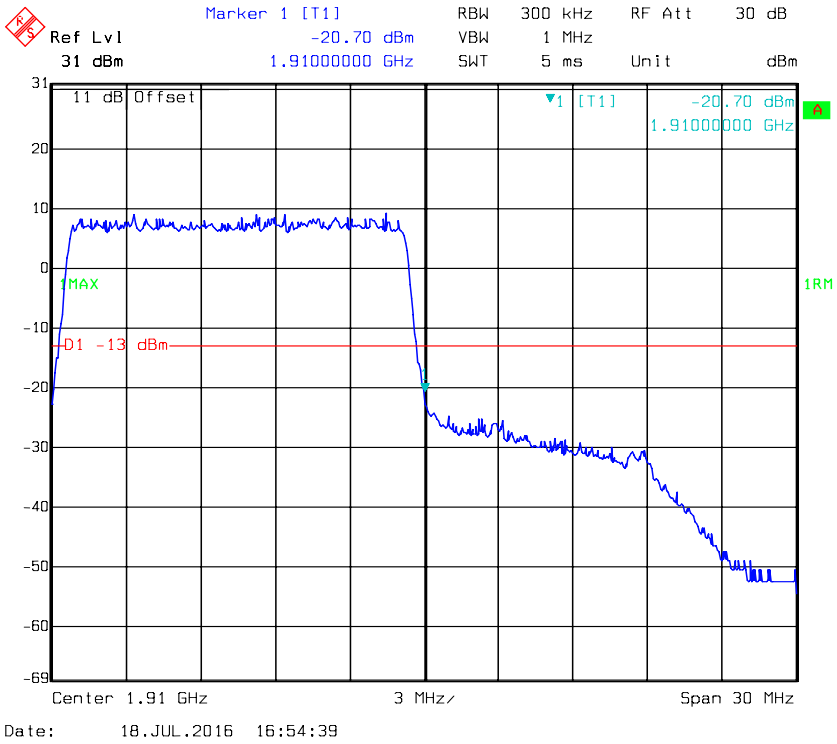
16QAM_10MHz_ FULL RB_ Right



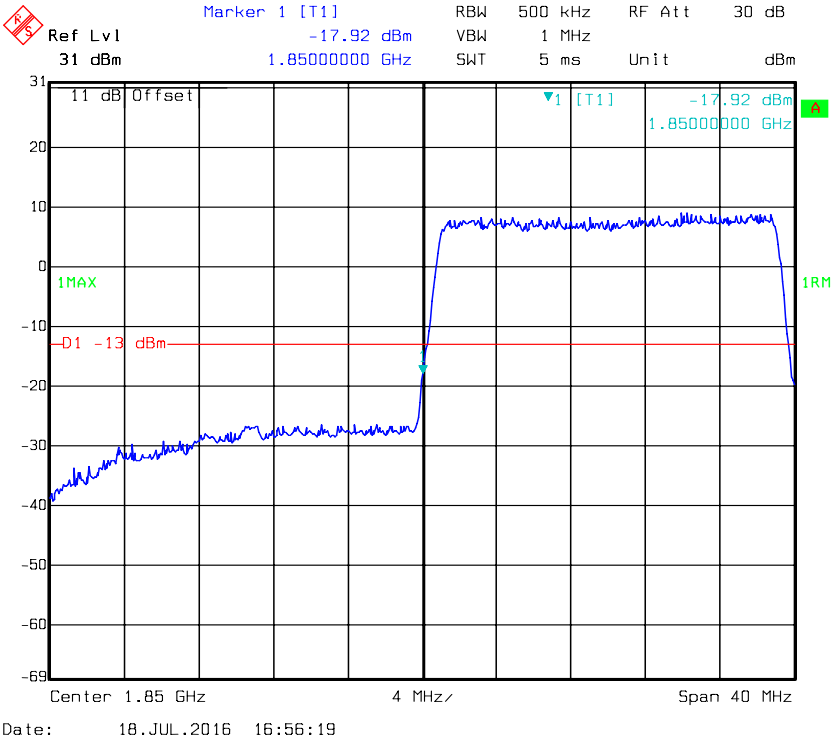
16QAM_15MHz_ FULL RB_ Left



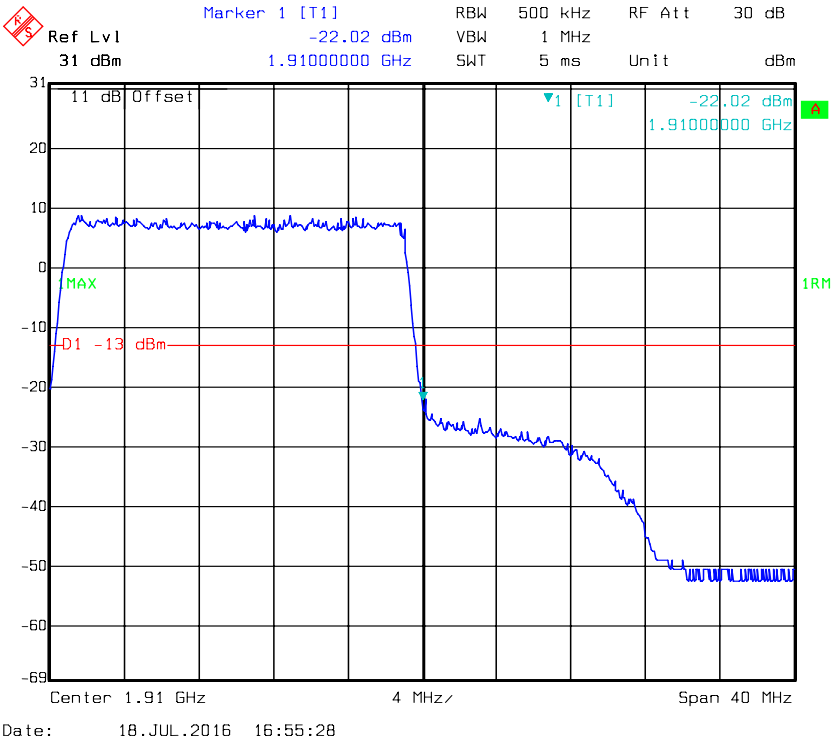
16QAM_15MHz_ FULL RB_ Right



16QAM_20MHz_ FULL RB_ Left

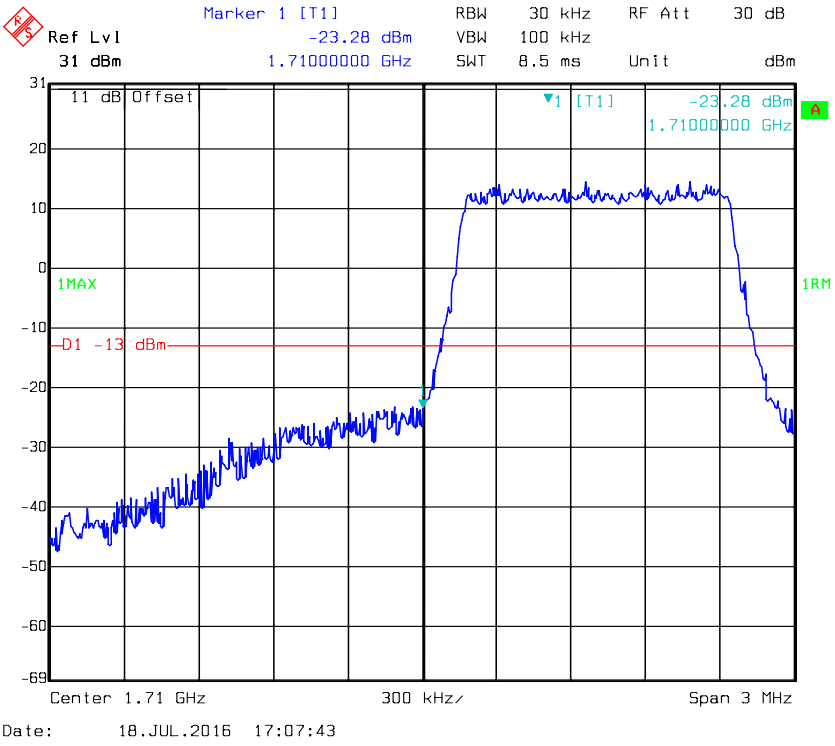


16QAM_20MHz_ FULL RB_ Right

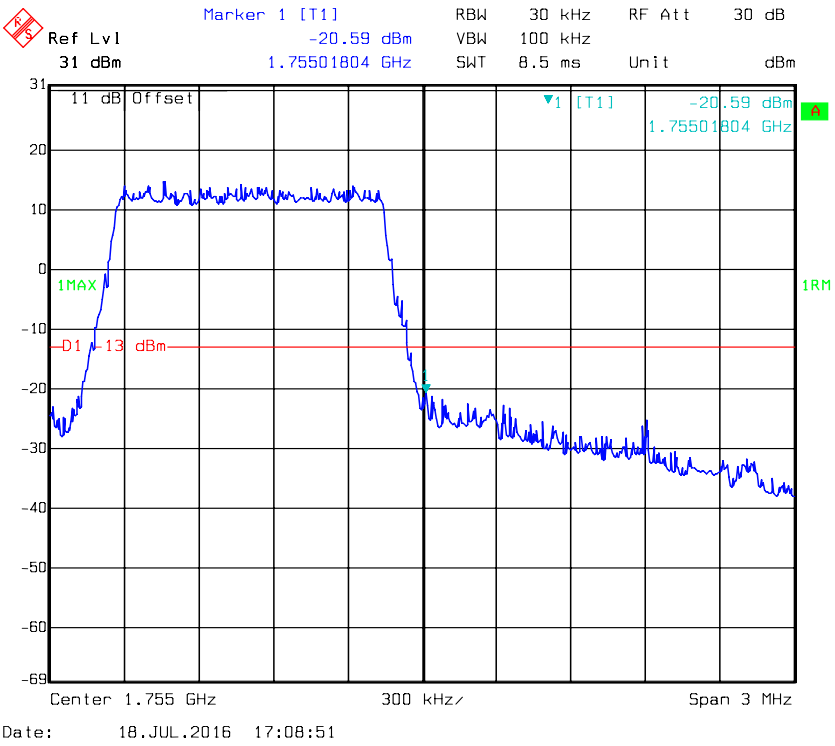


LTE Band IV

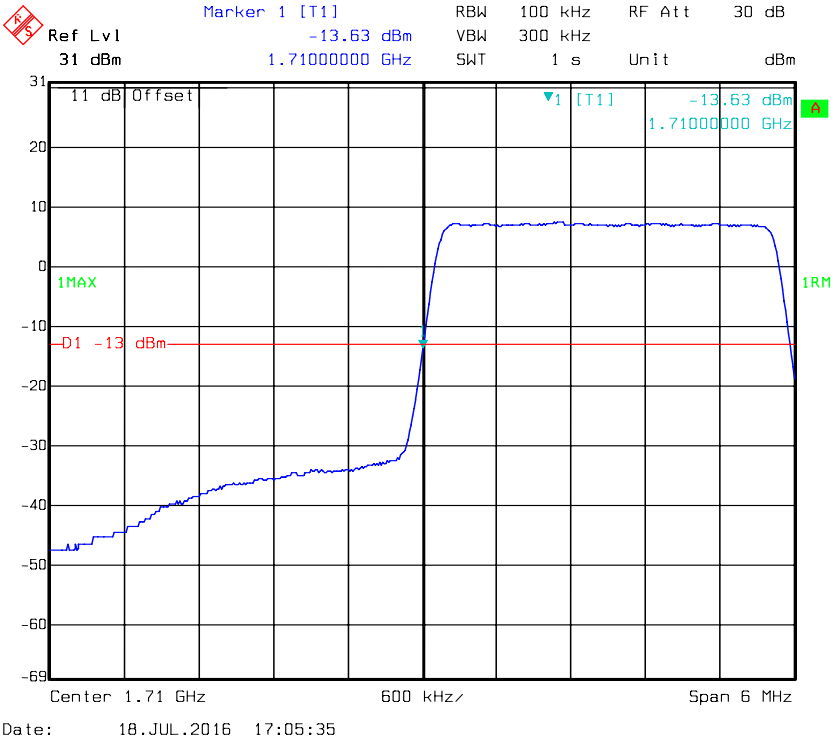
QPSK_1.4MHz_FULL RB_ Left



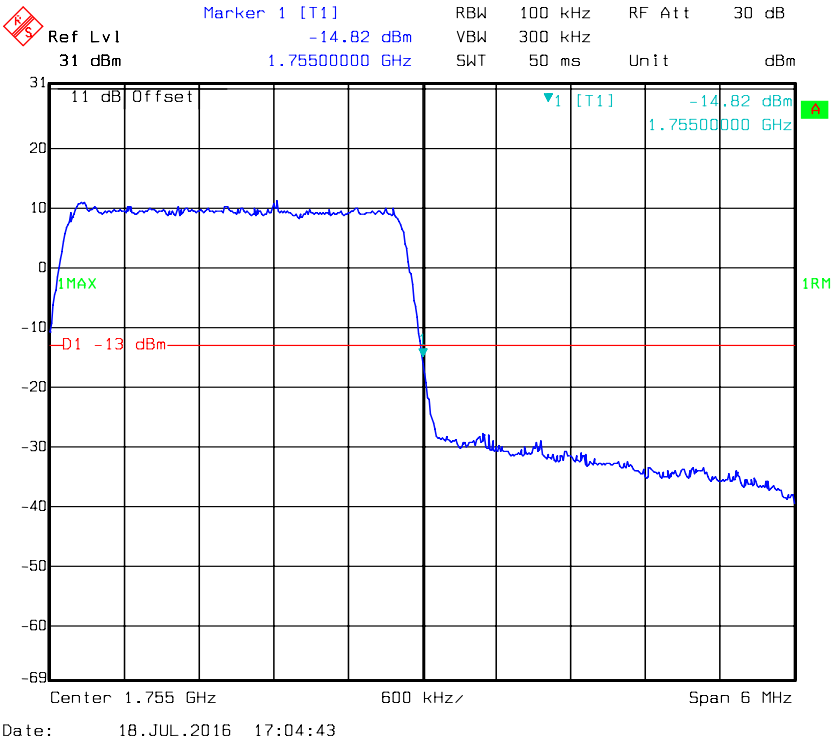
QPSK_1.4MHz_FULL RB_ Right



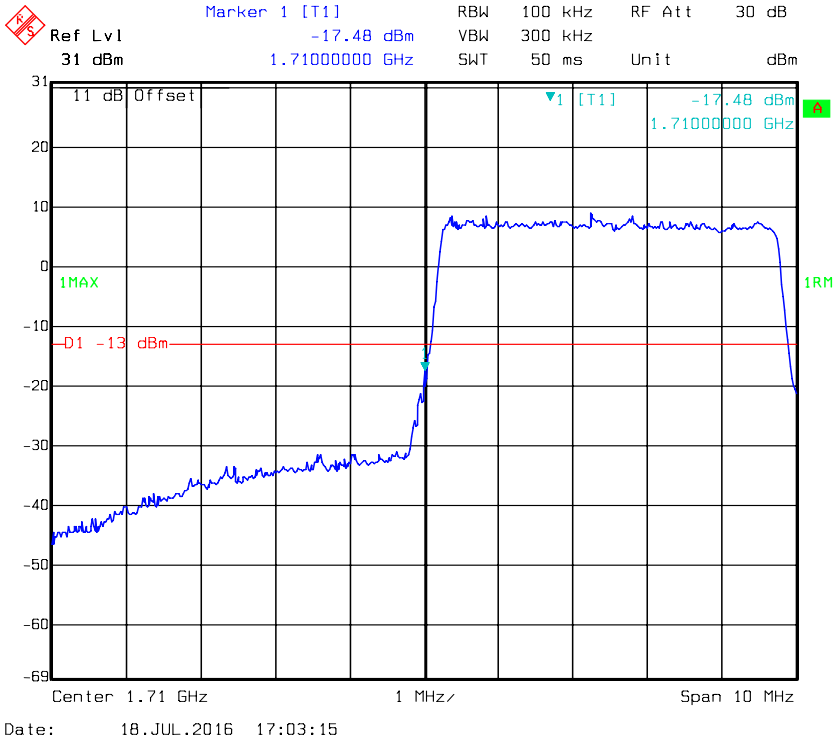
QPSK_3MHz_FULL RB_ Left



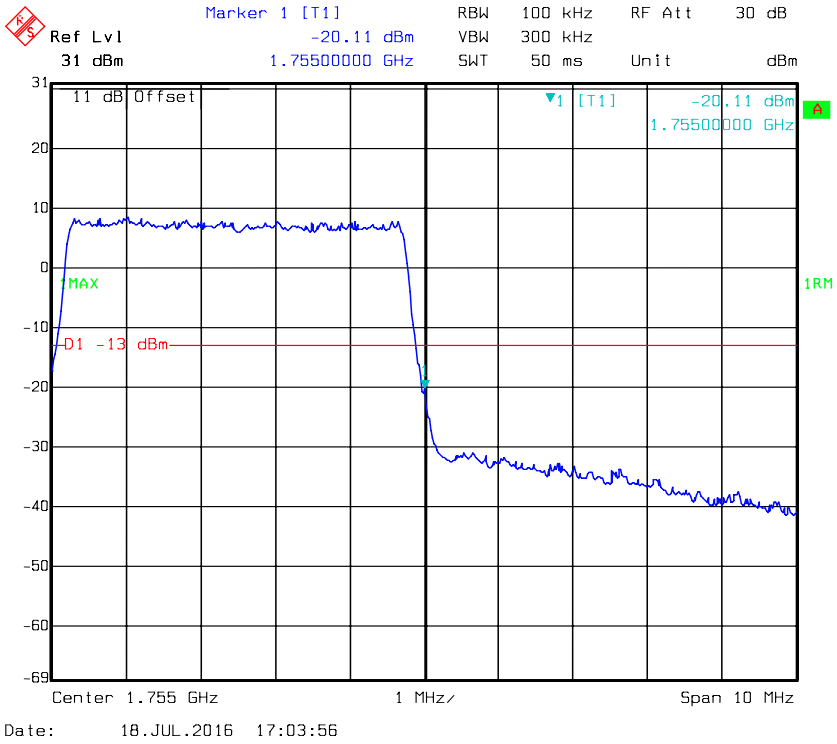
QPSK_3MHz_ FULL RB_ Right



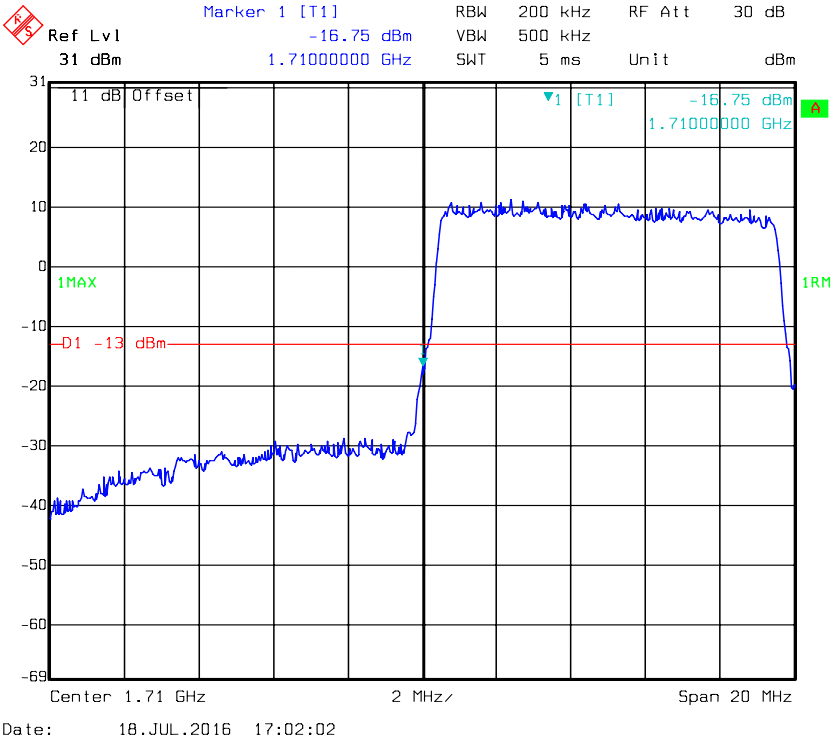
QPSK_5MHz_ FULL RB_ Left



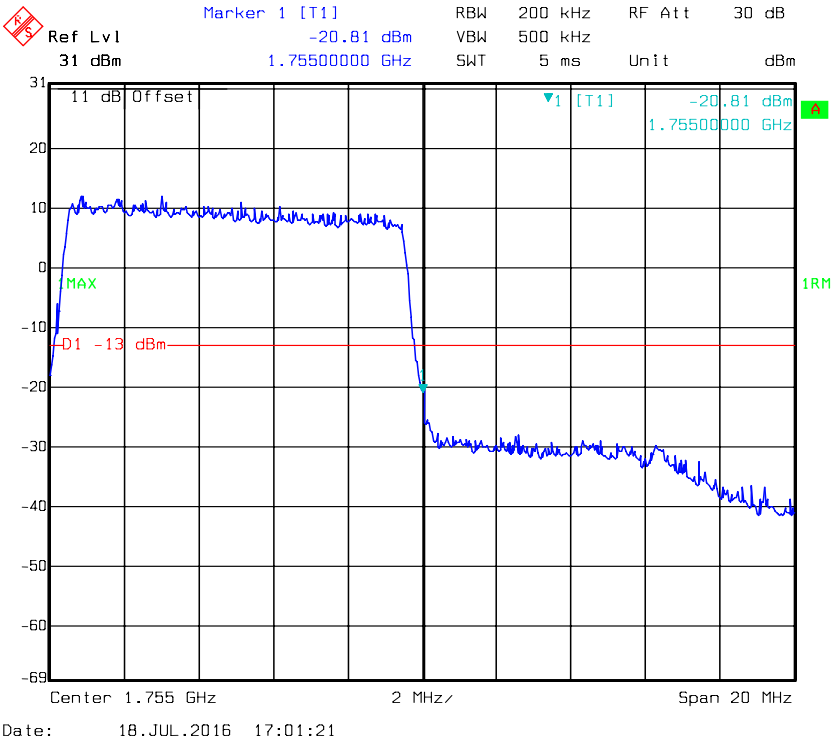
QPSK_5MHz_ FULL RB_ Right



QPSK_10MHz_ FULL RB_ Left



QPSK_10MHz_ FULL RB_ Right



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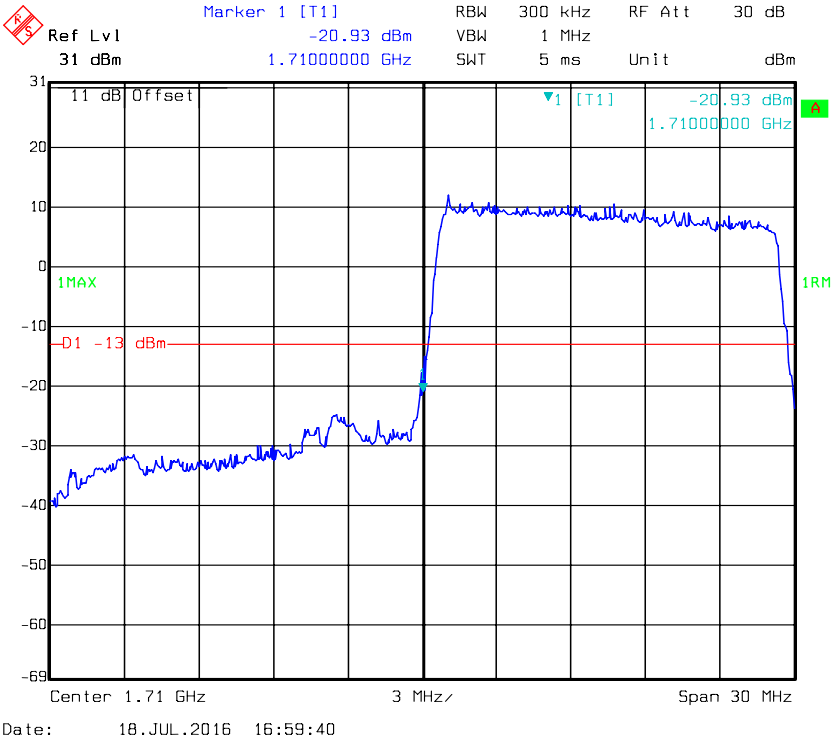

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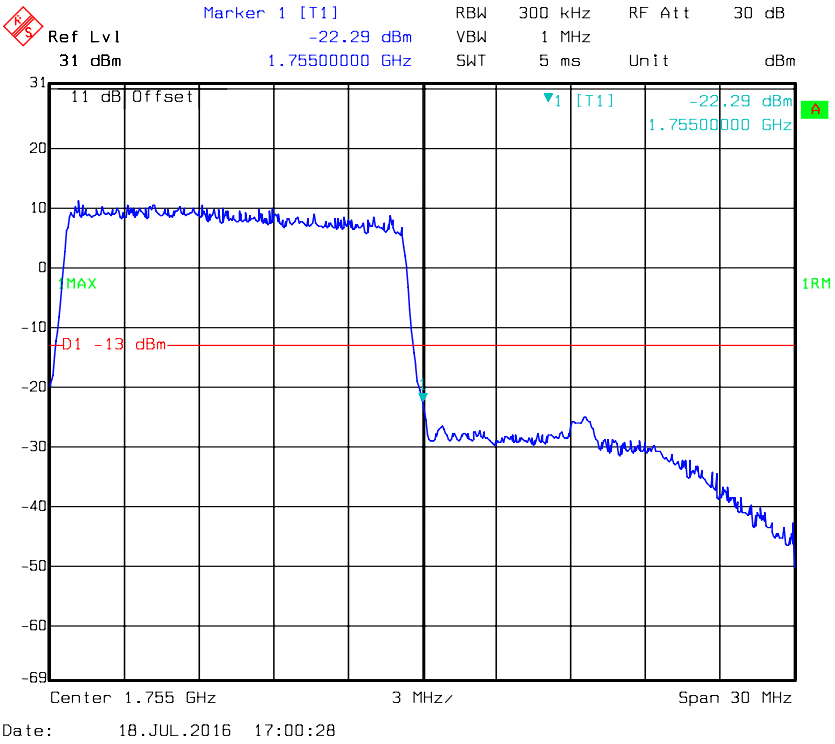

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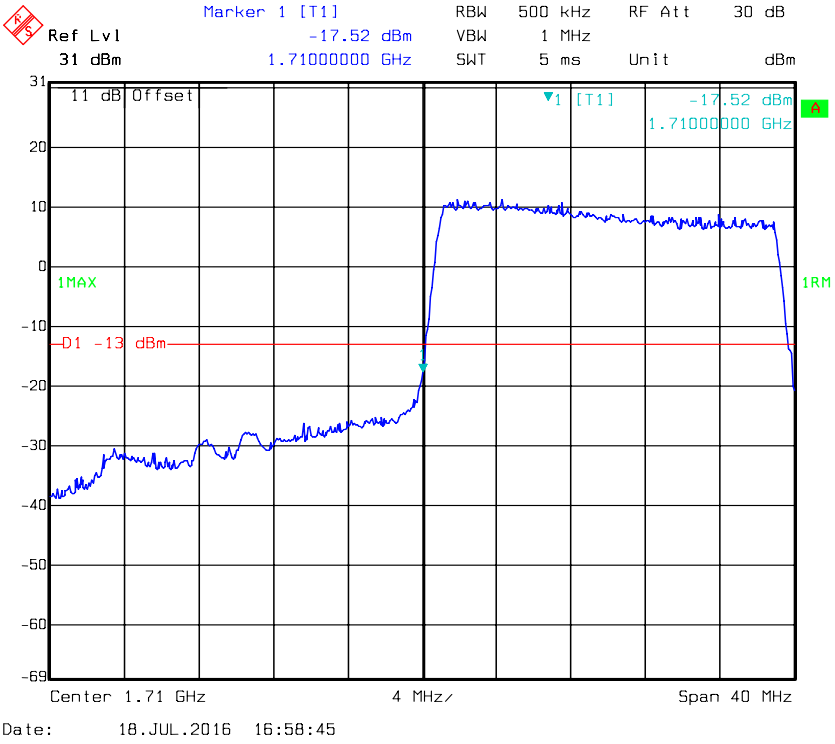
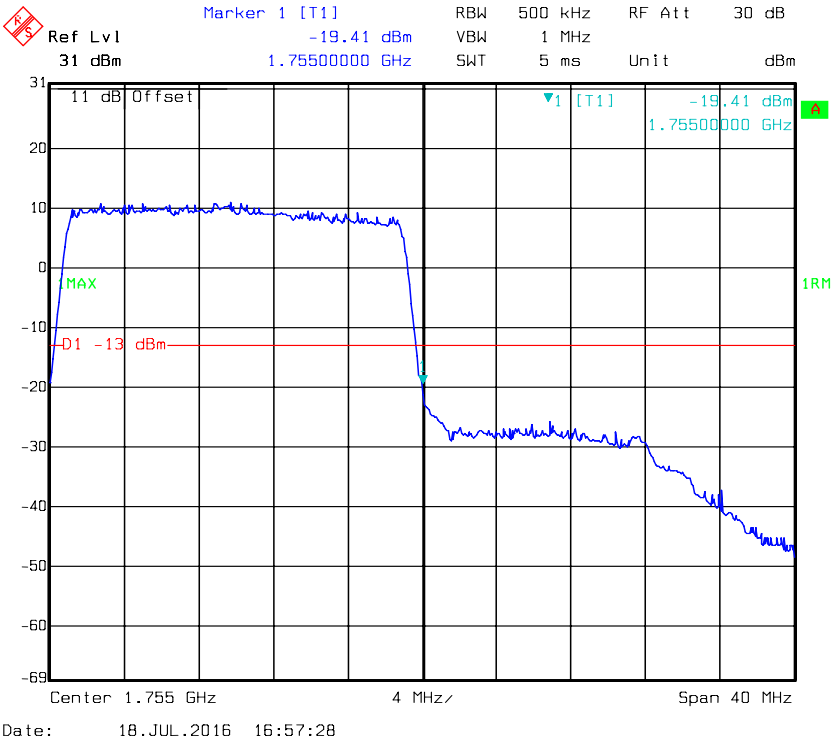
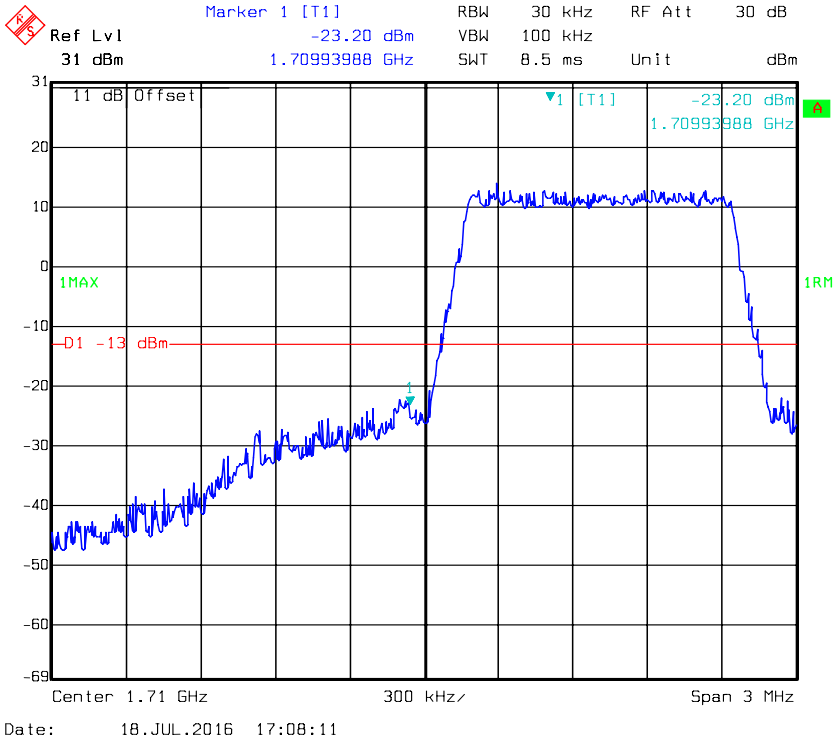


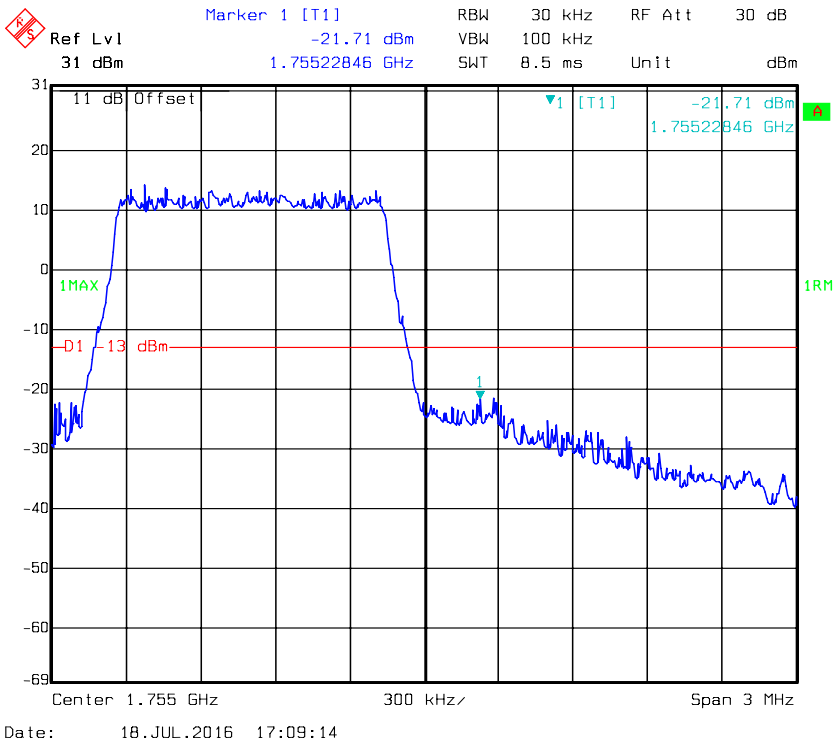
QPSK_20MHz_ FULL RB_ Right



16QAM_1.4MHz_ FULL RB_ Left



16QAM_1.4MHz_ FULL RB_ Right



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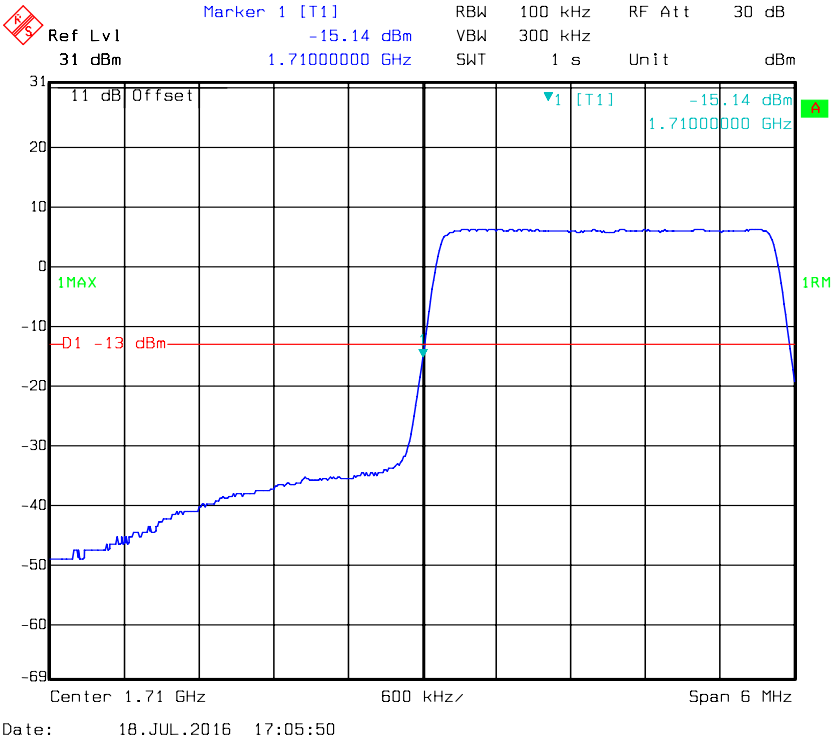
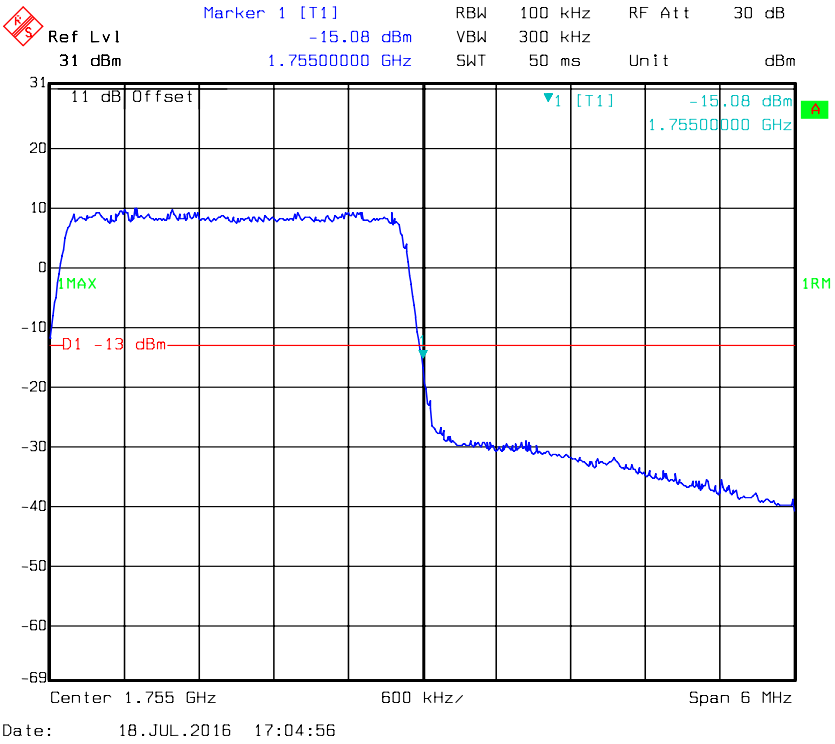


16QAM_3M_ FULL RB_ Right



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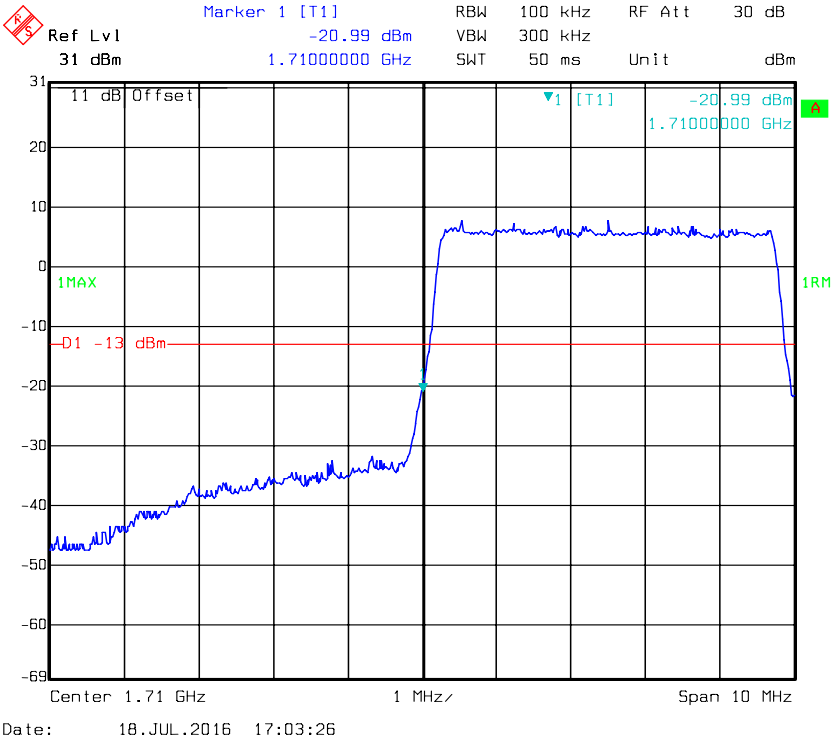
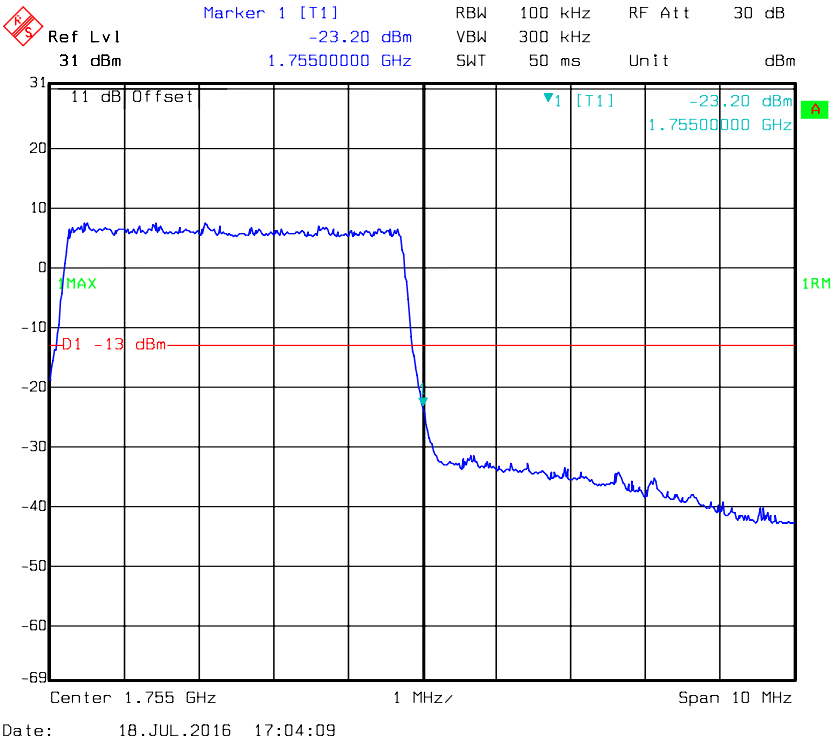
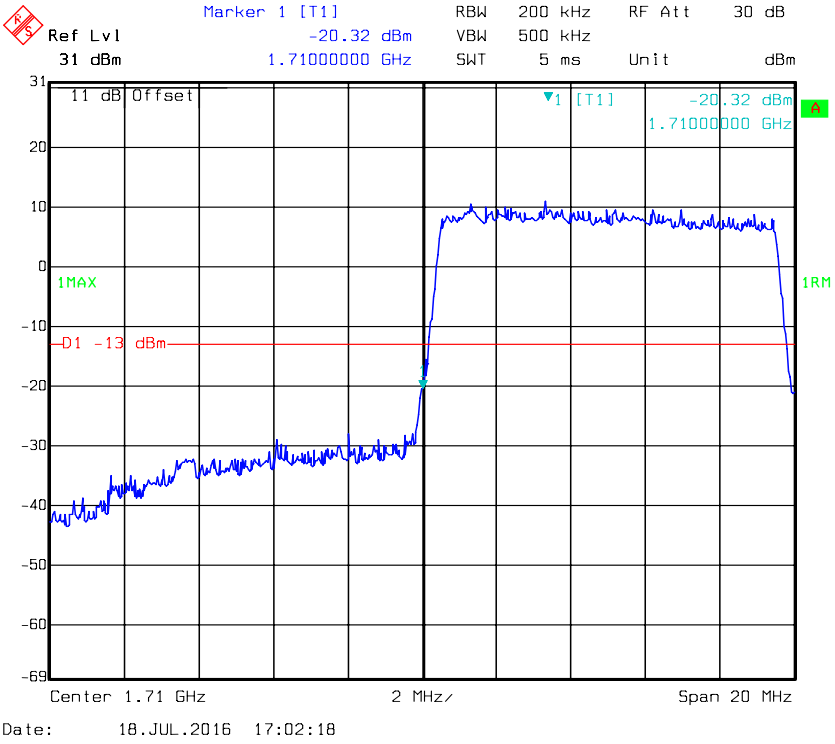


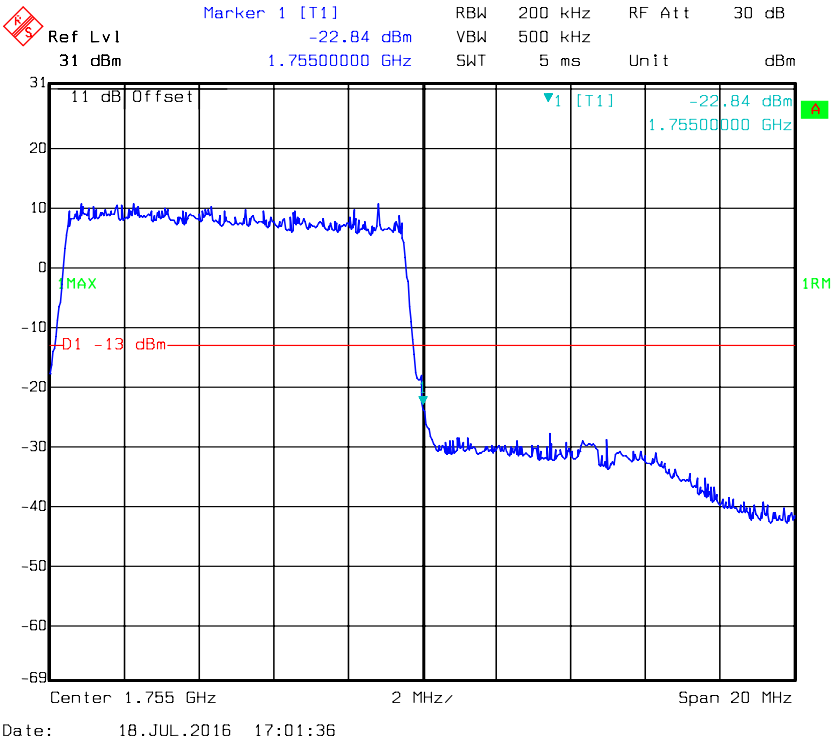
16QAM_5MHz_ FULL RB_ Right



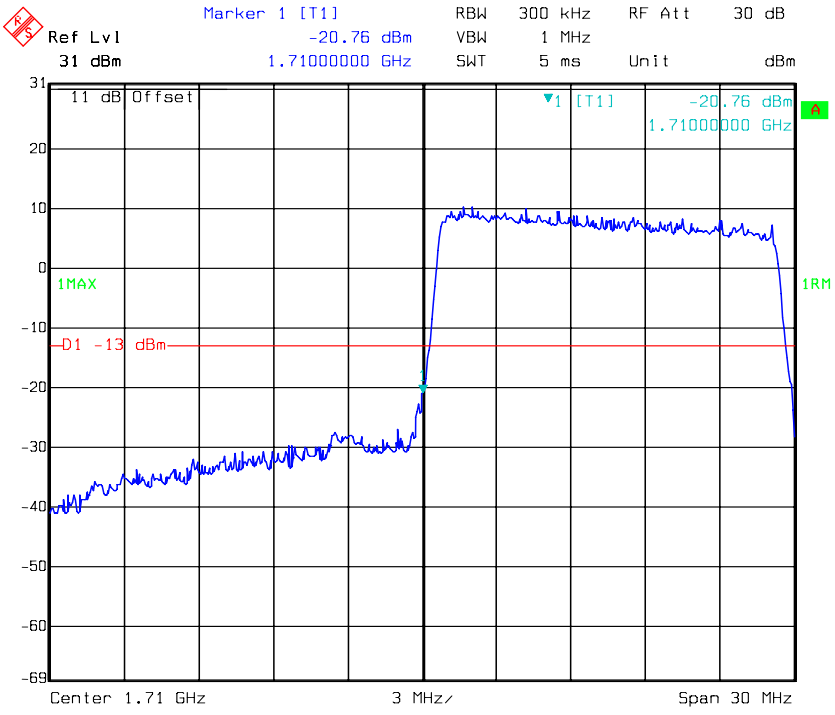
16QAM_10MHz_ FULL RB_ Left



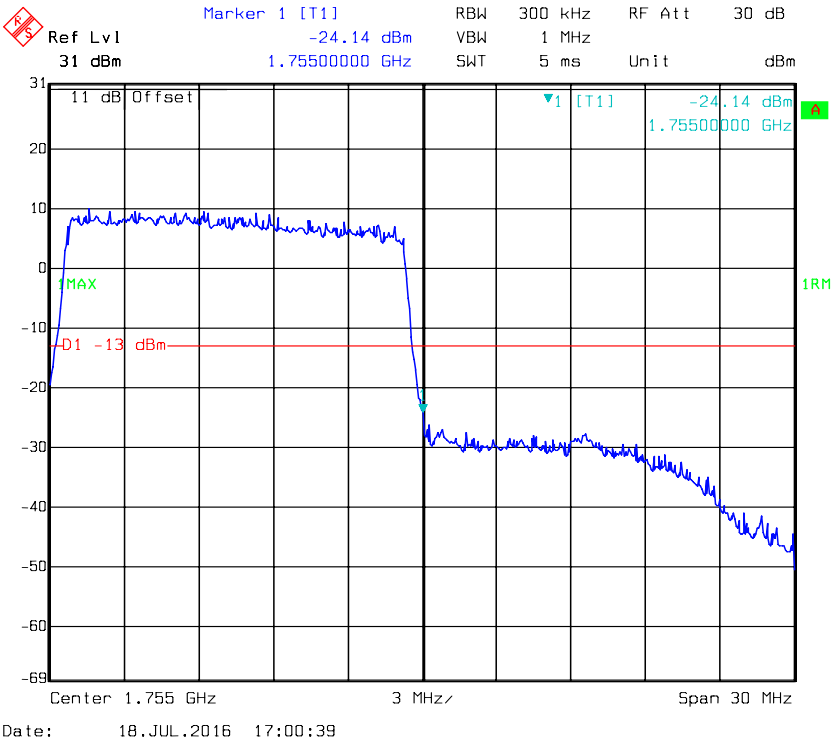
16QAM_10MHz_ FULL RB_ Right



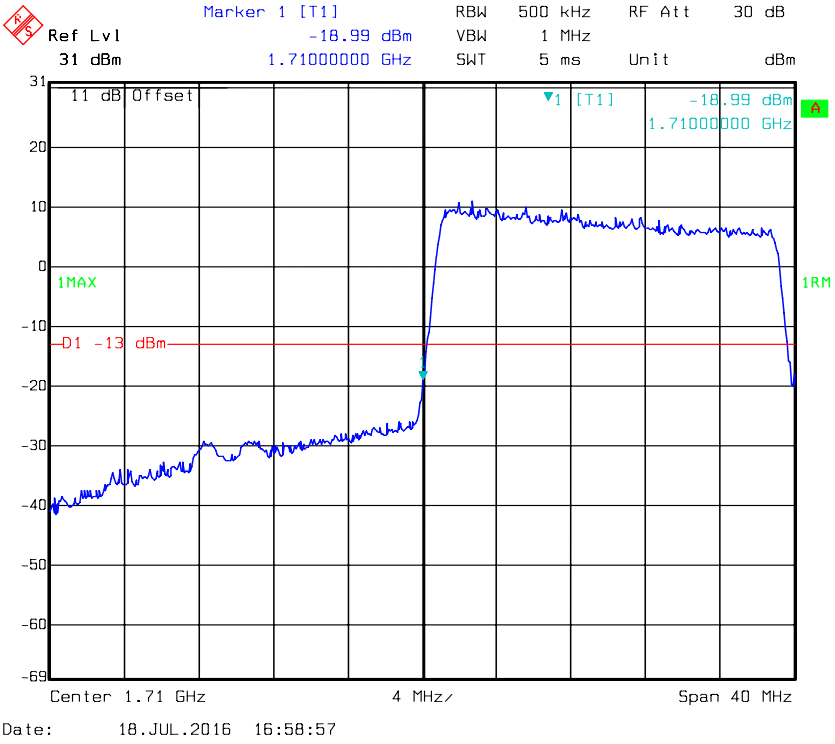
16QAM_15MHz_ FULL RB_ Left



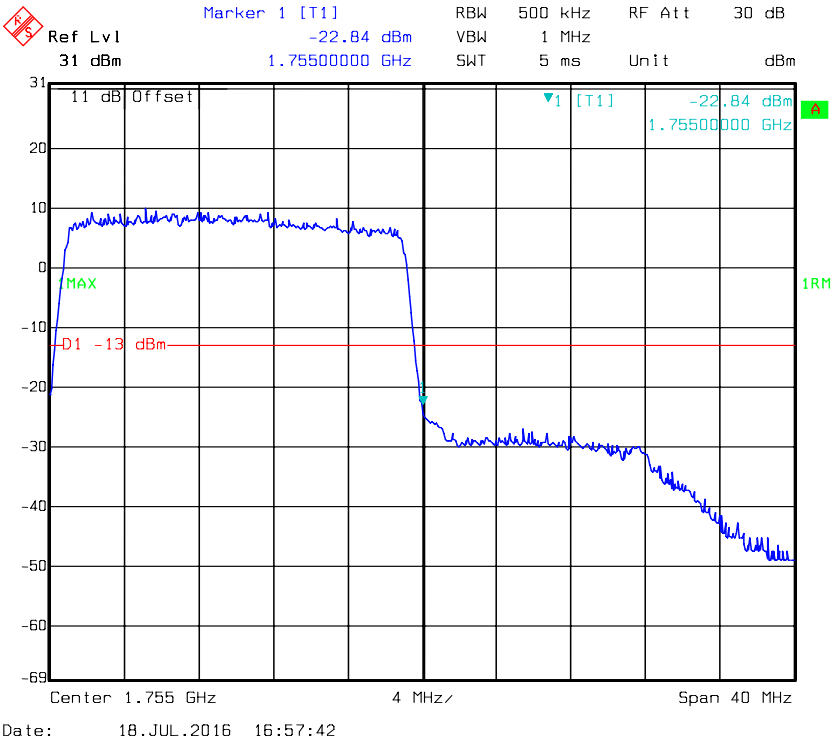
16QAM_15MHz_ FULL RB_ Right



16QAM_20MHz_ FULL RB_ Left

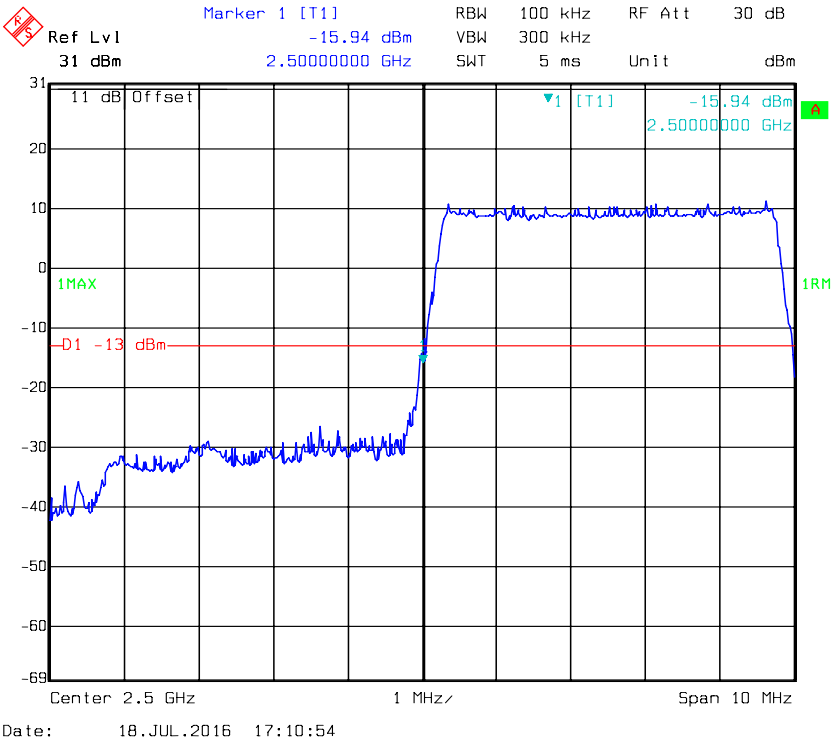


16QAM_20MHz_ FULL RB_ Right

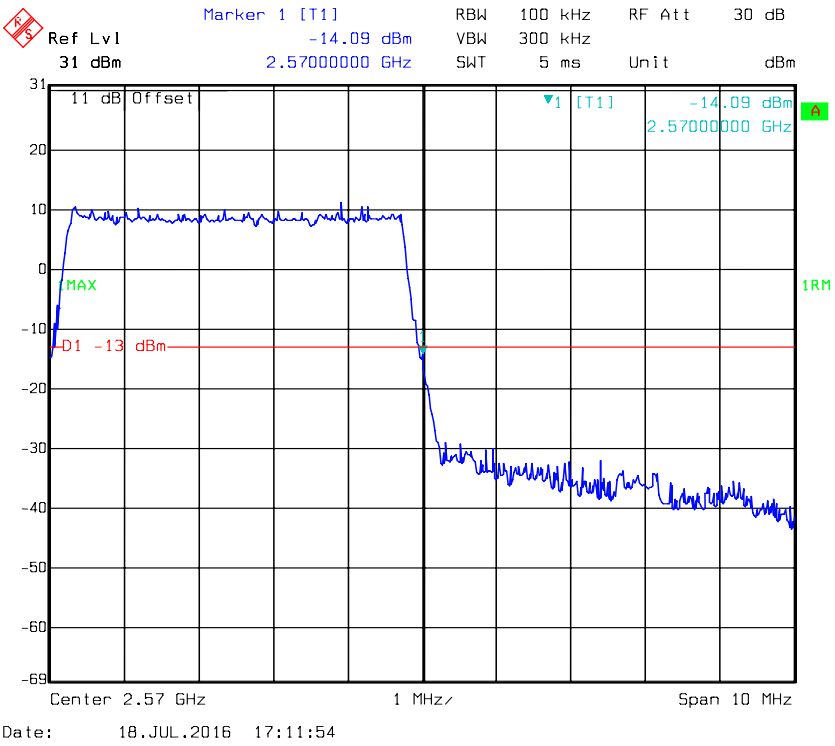


LTE Band VII

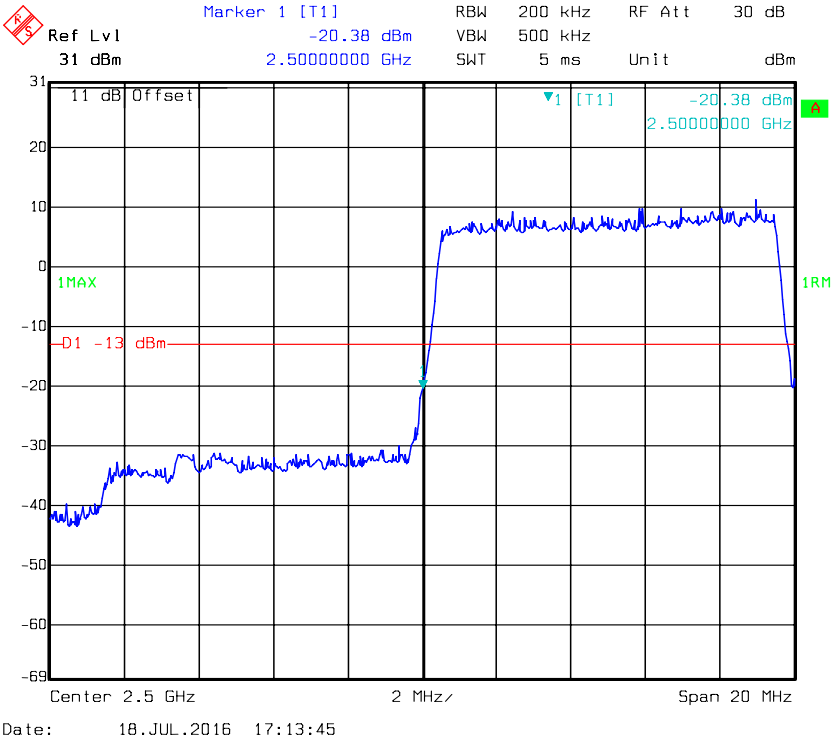
QPSK_5MHz_ FULL RB_ Left



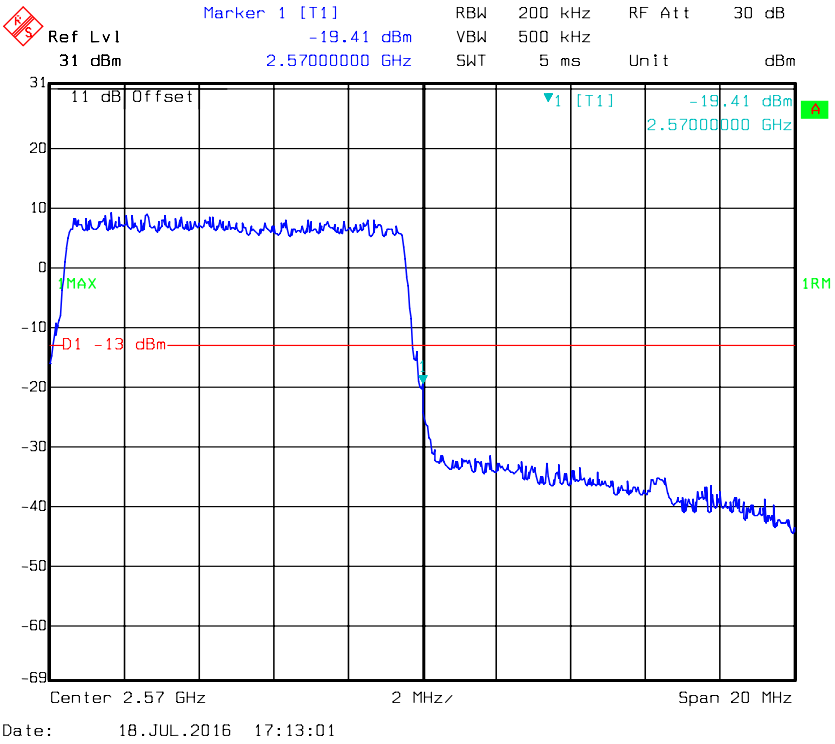
QPSK_5MHz_ FULL RB_ Right



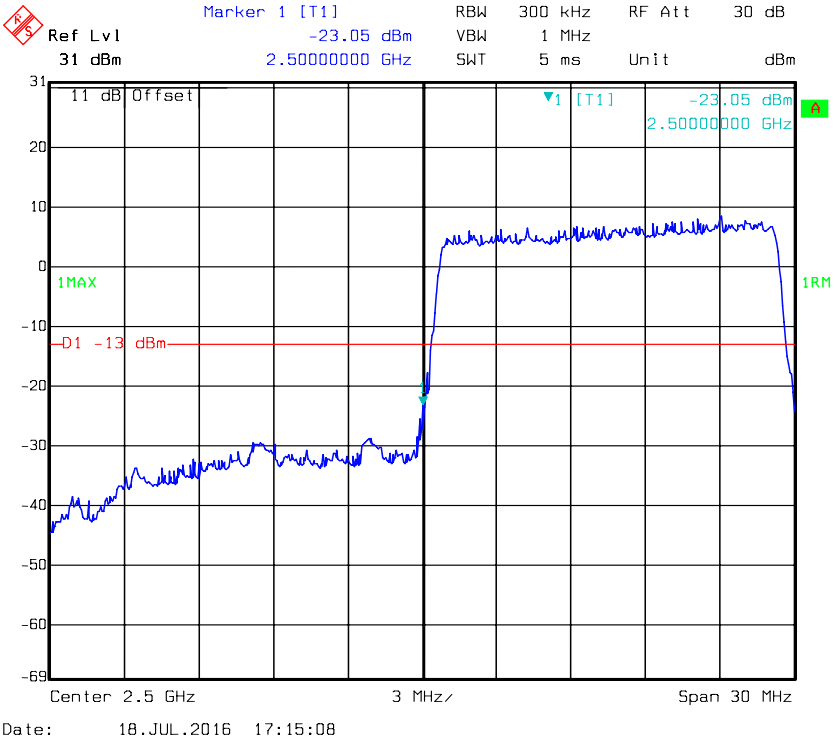
QPSK_10MHz_ FULL RB_ Left



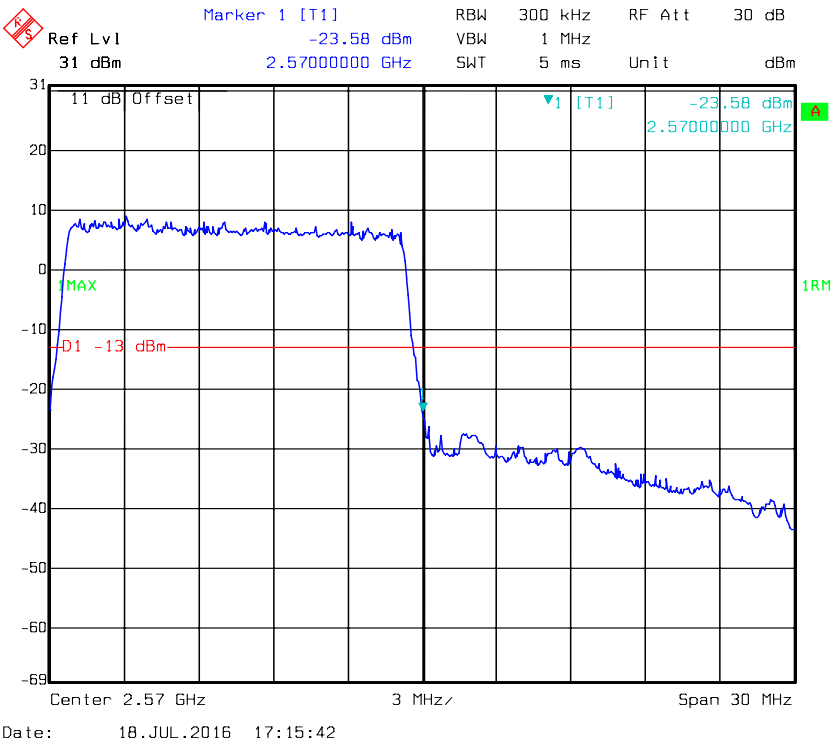
QPSK_10MHz_ FULL RB_ Right



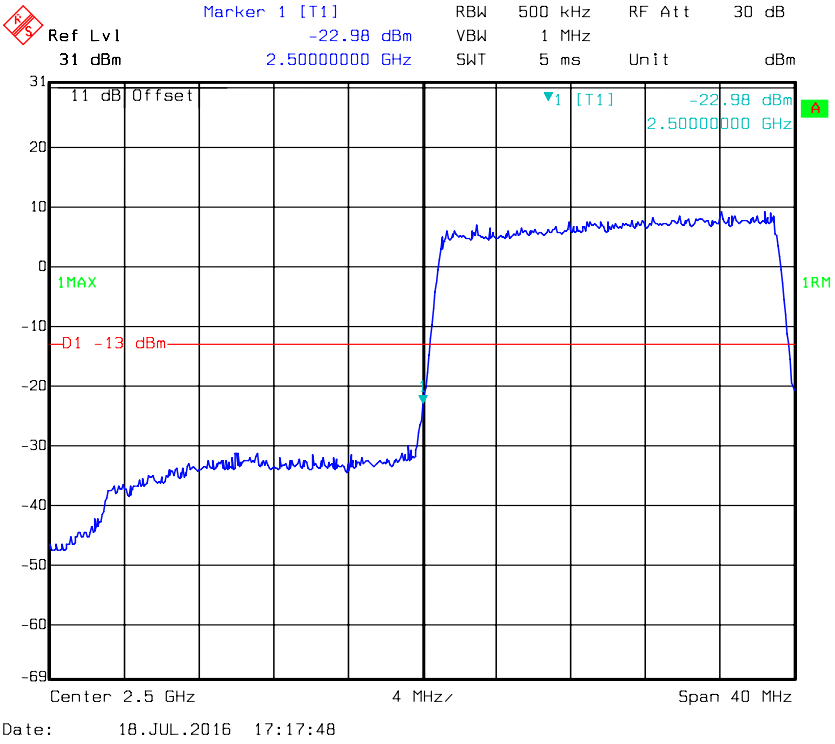
QPSK_15MHz_ FULL RB_ Left



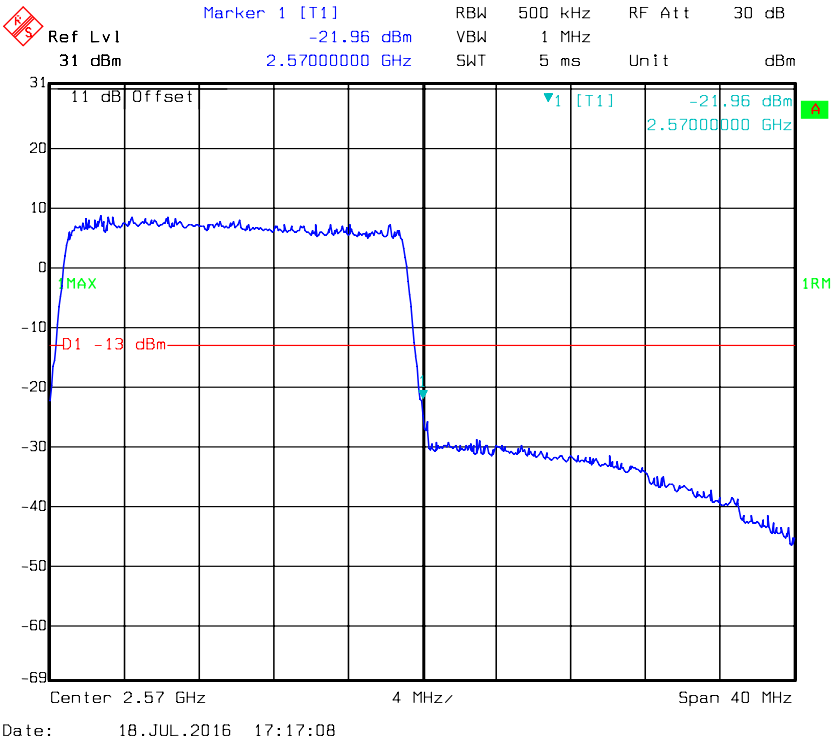
QPSK_15MHz_ FULL RB_ Right



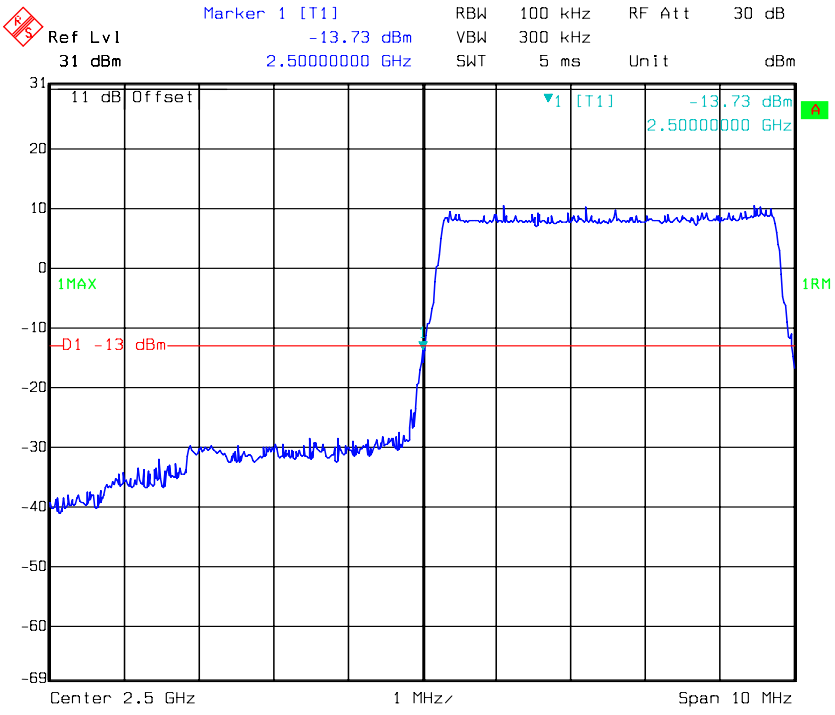
QPSK_20MHz_ FULL RB_ Left



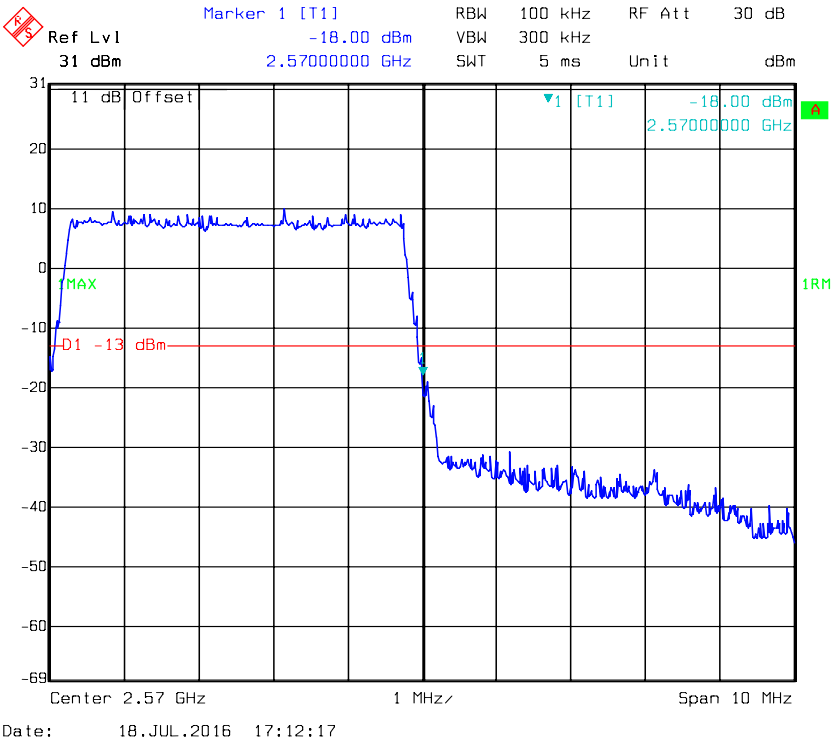
QPSK_20MHz_ FULL RB_ Right



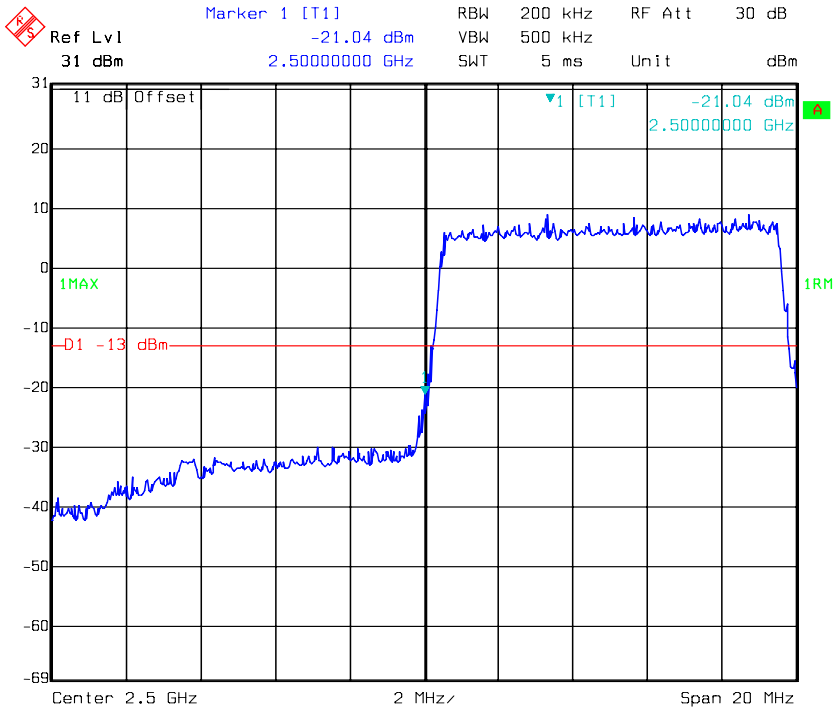
16QAM_5MHz_ FULL RB_ Left



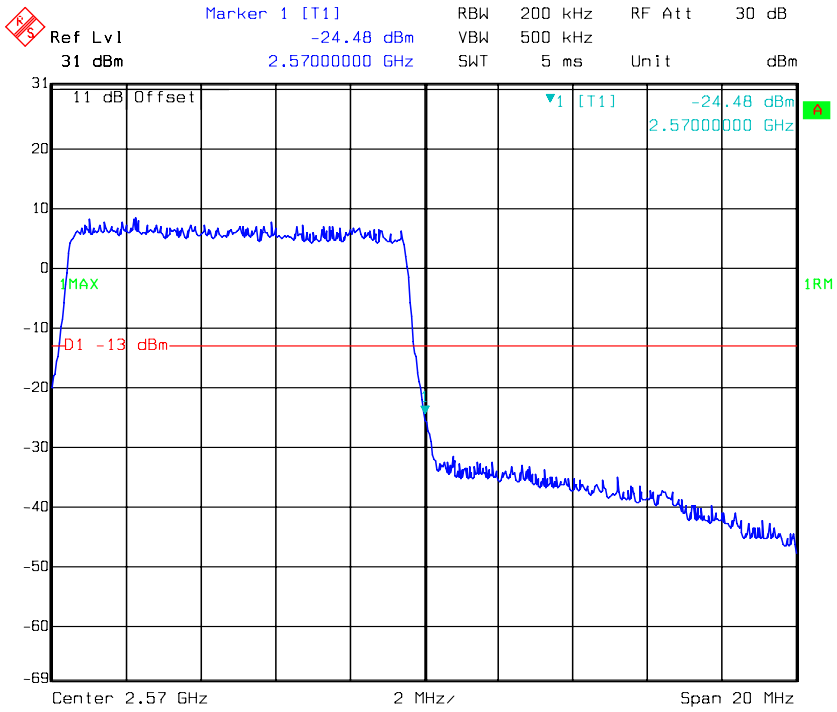
16QAM_5MHz_ FULL RB_ Right



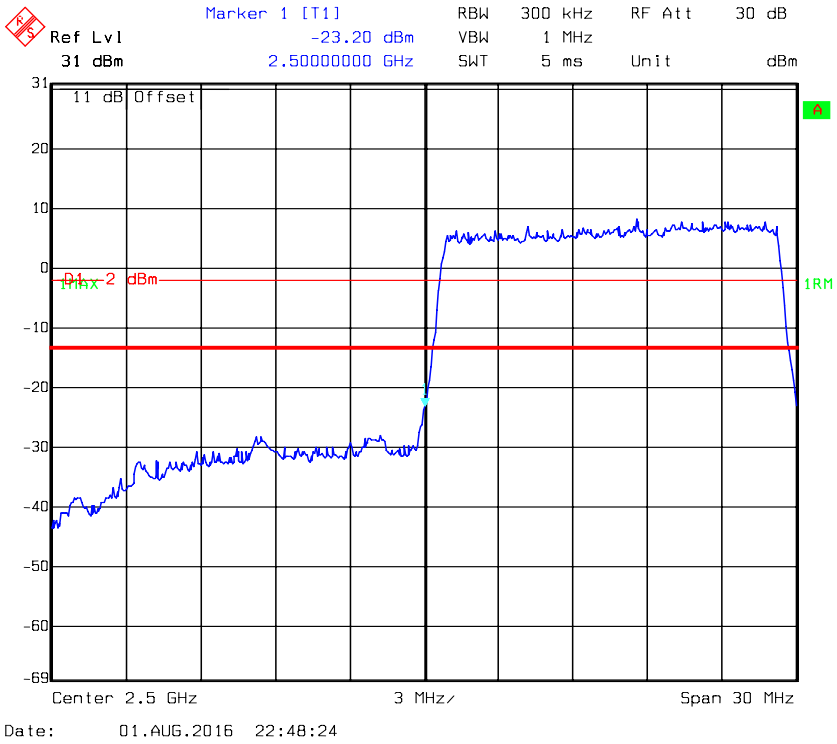
16QAM_10MHz_ FULL RB_ Left



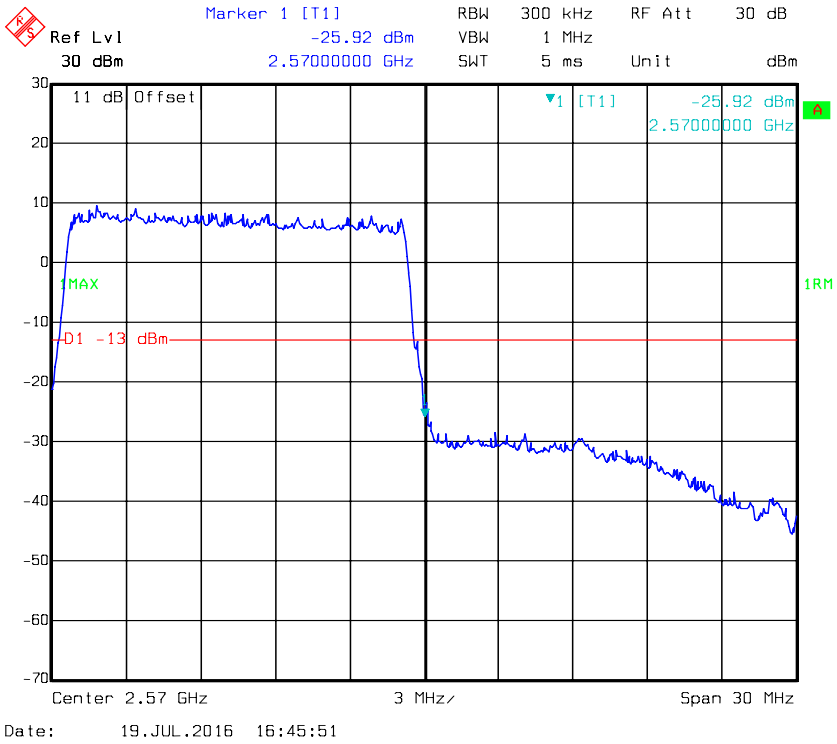
16QAM_10MHz_ FULL RB_ Right



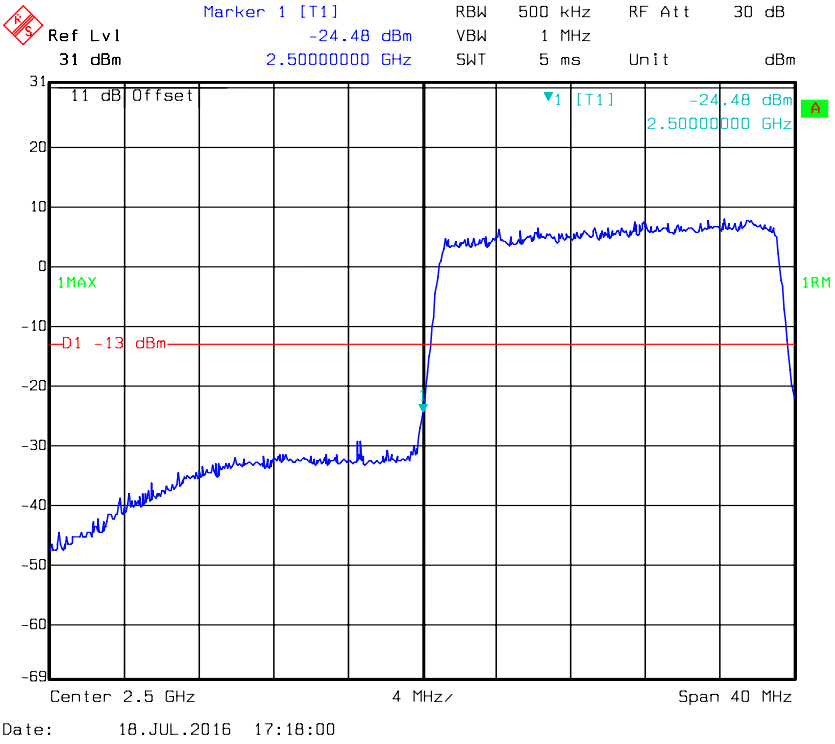
16QAM_15MHz_ FULL RB_ Left



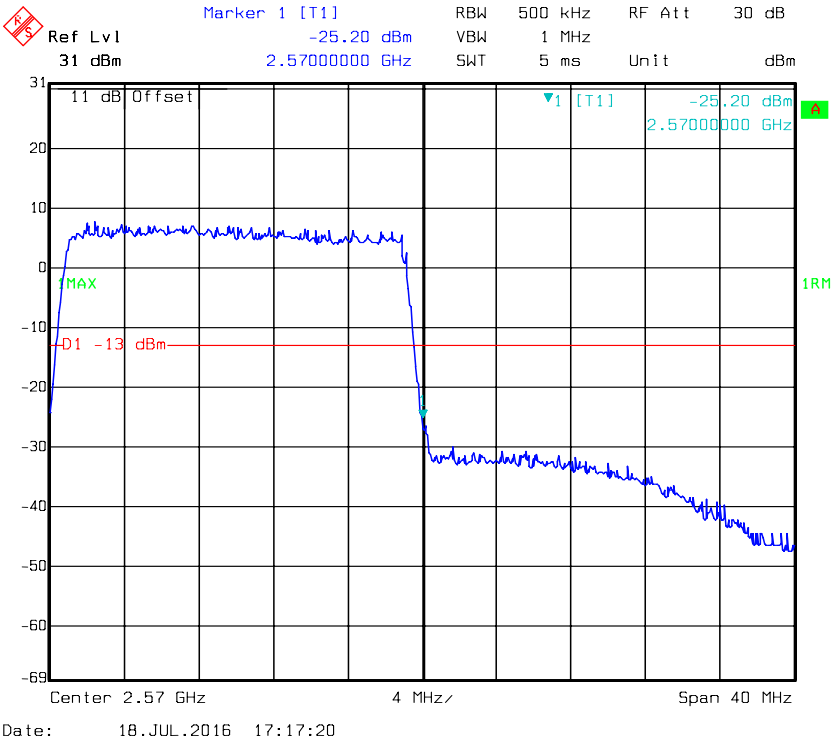
16QAM_15MHz_ FULL RB_ Right



16QAM_20MHz_ FULL RB_ Left

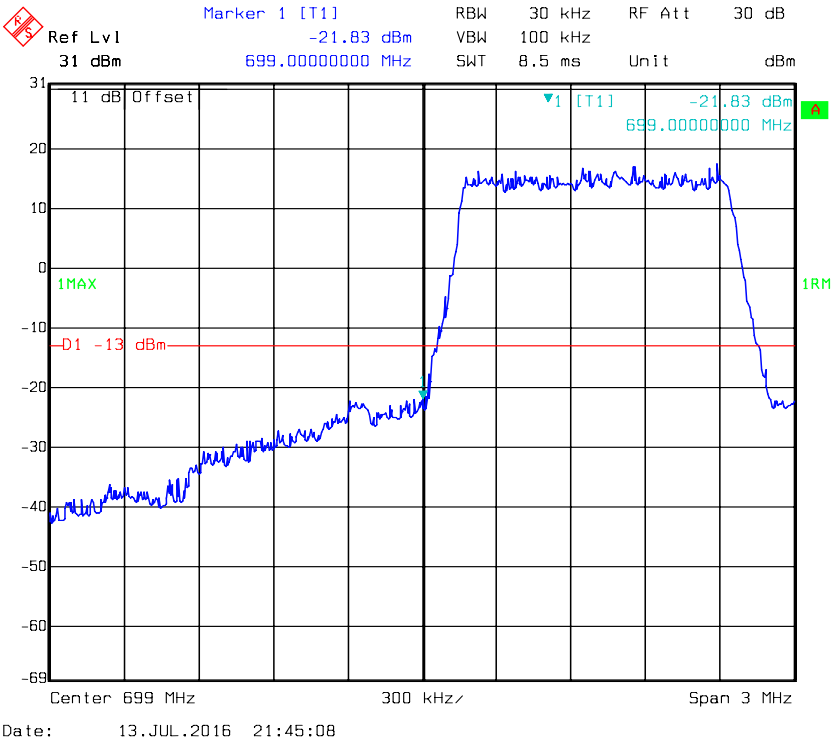


16QAM_20MHz_ FULL RB_ Right

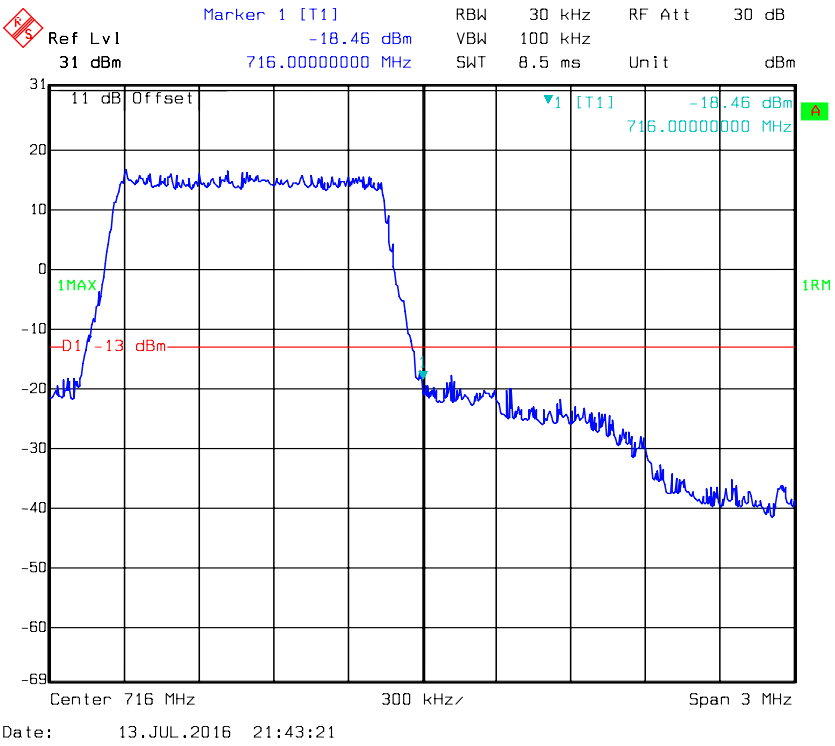


LTE Band 12

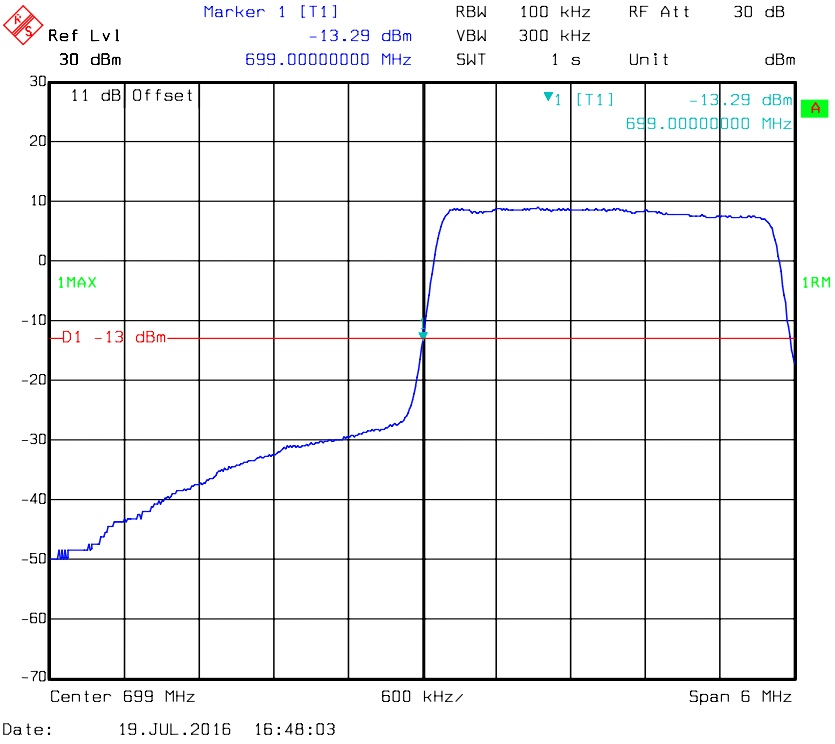
QPSK_1.4MHz_FULL RB_ Left



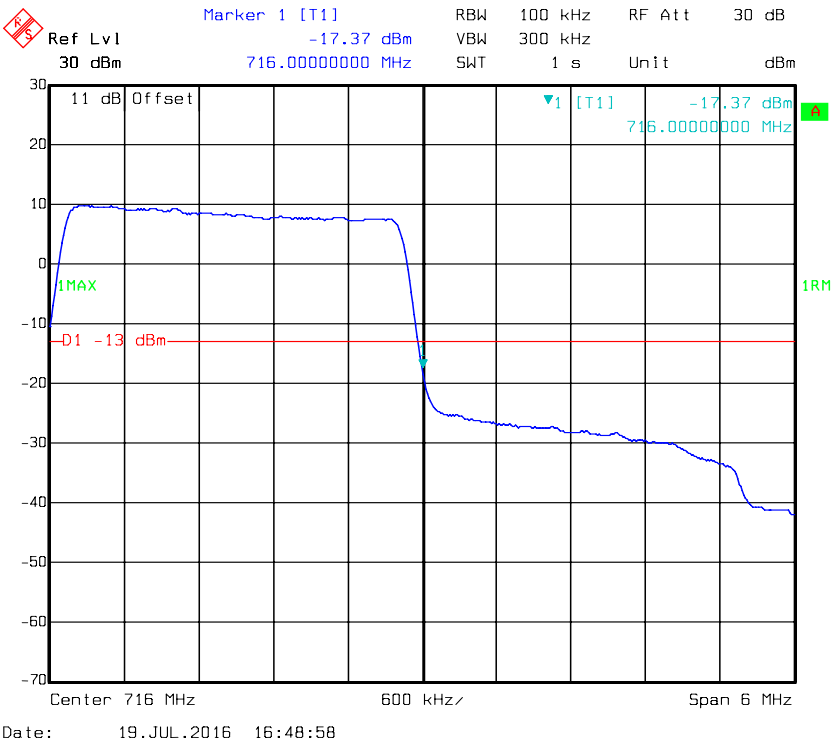
QPSK_1.4MHz_FULL RB_ Right



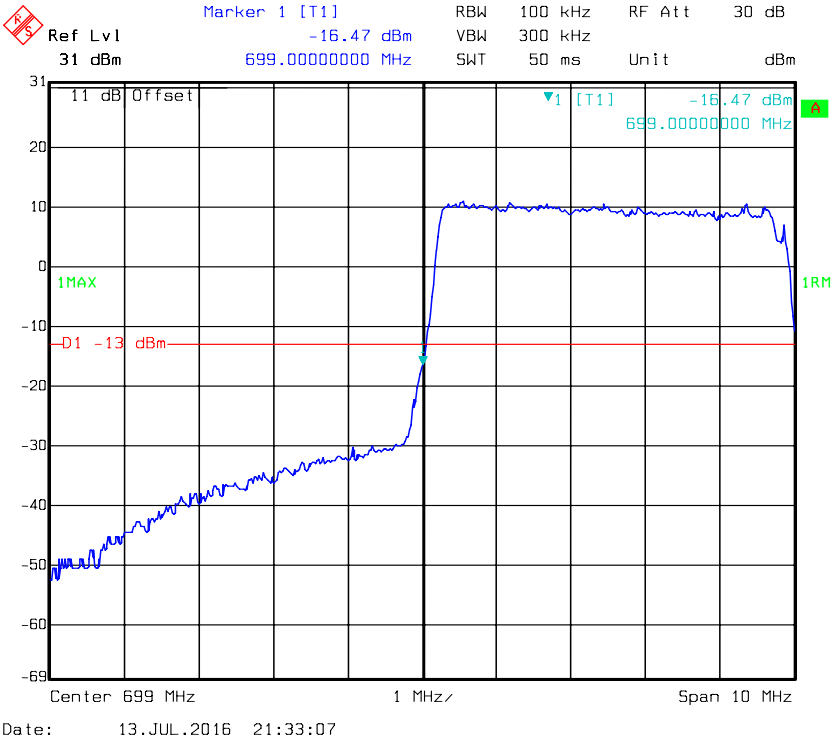
QPSK_3MHz_FULL RB_ Left



QPSK_3MHz_ FULL RB_ Right

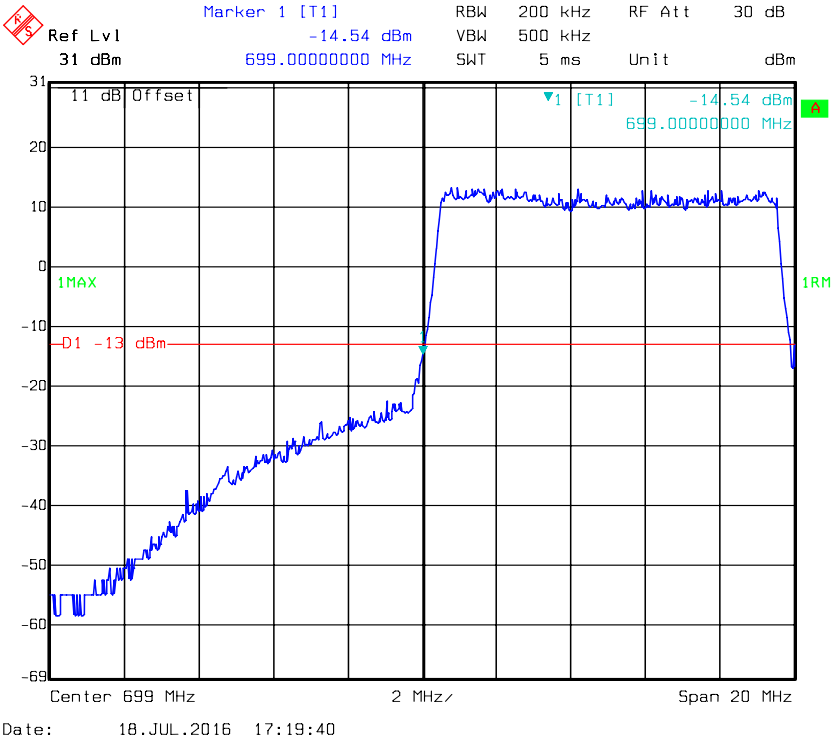


QPSK_5MHz_ FULL RB_ Left

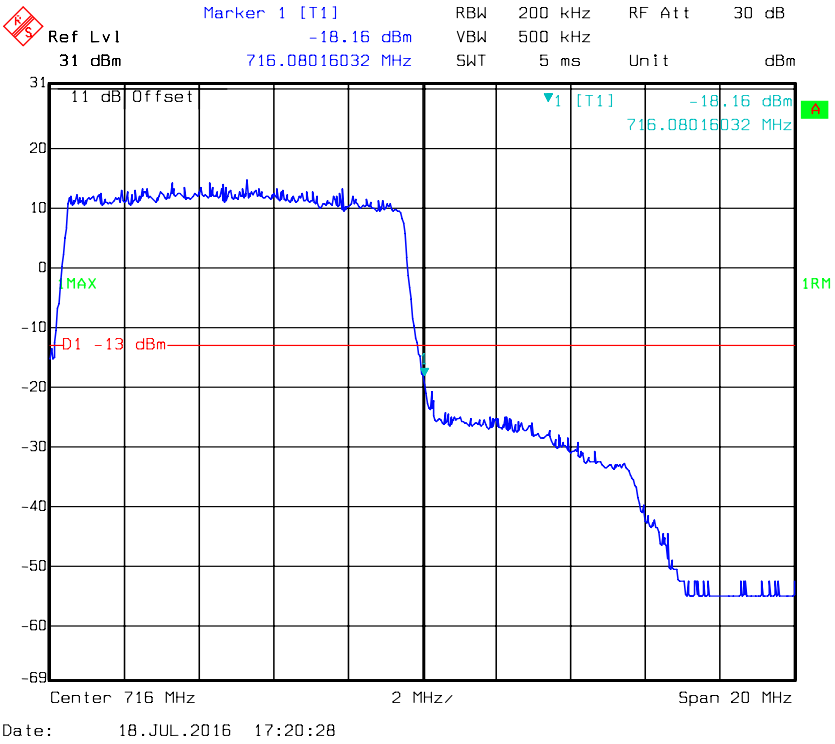


QPSK_5MHz_ FULL RB_ Right

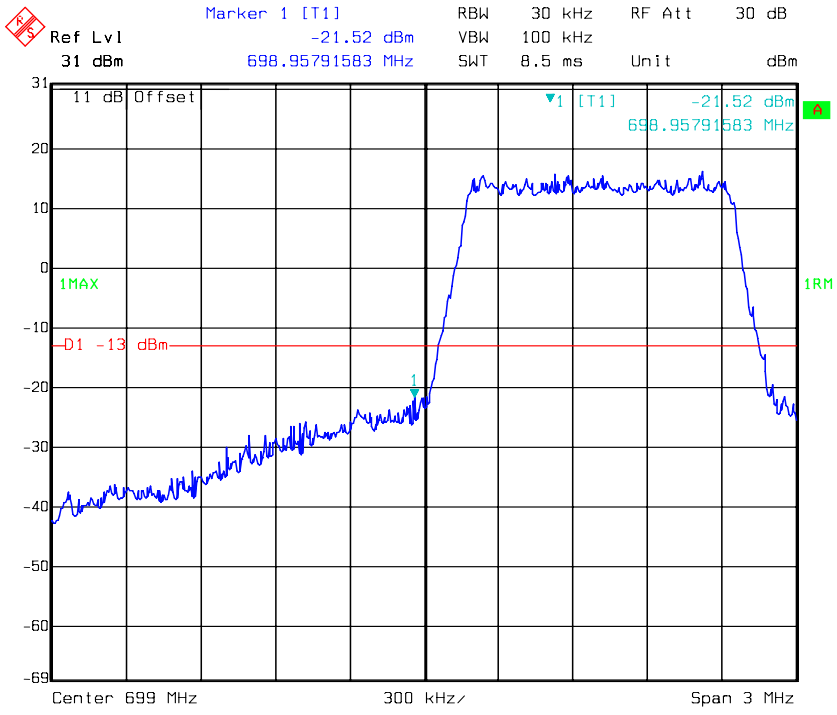
QPSK_10MHz_ FULL RB_ Left



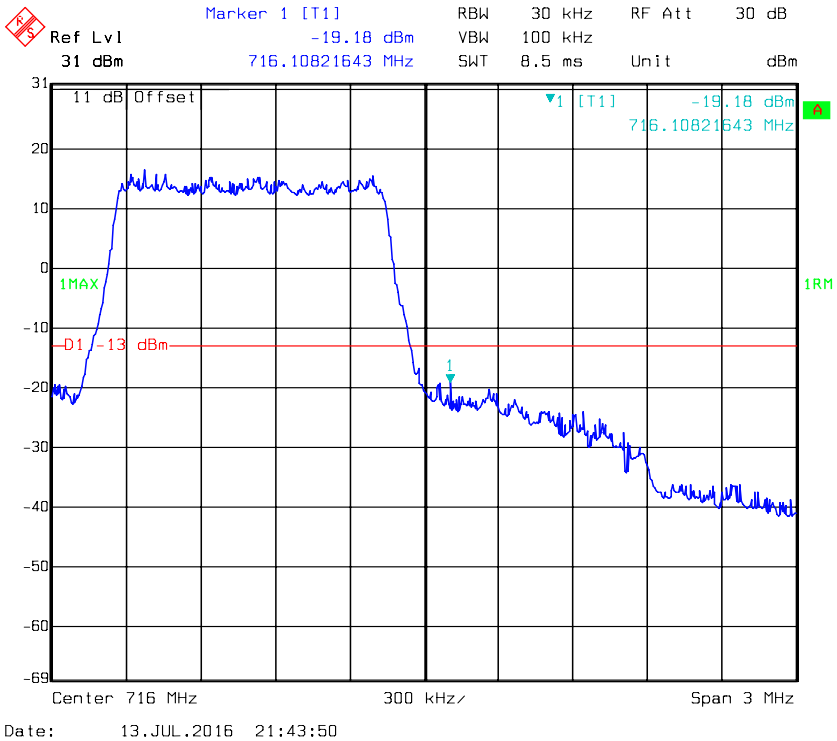
QPSK_10MHz_ FULL RB_ Right



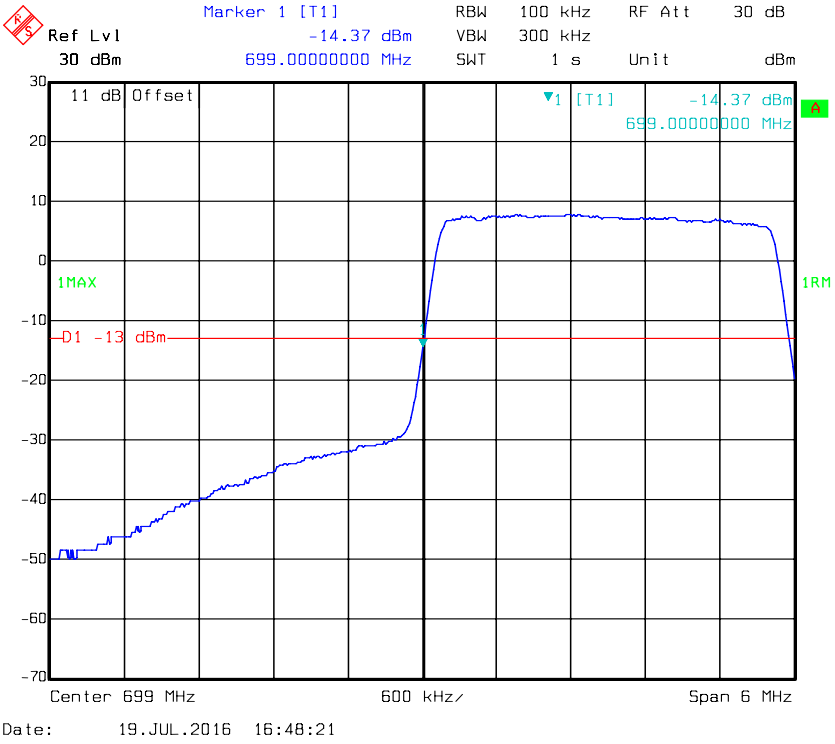
16QAM_1.4MHz_ FULL RB_ Left



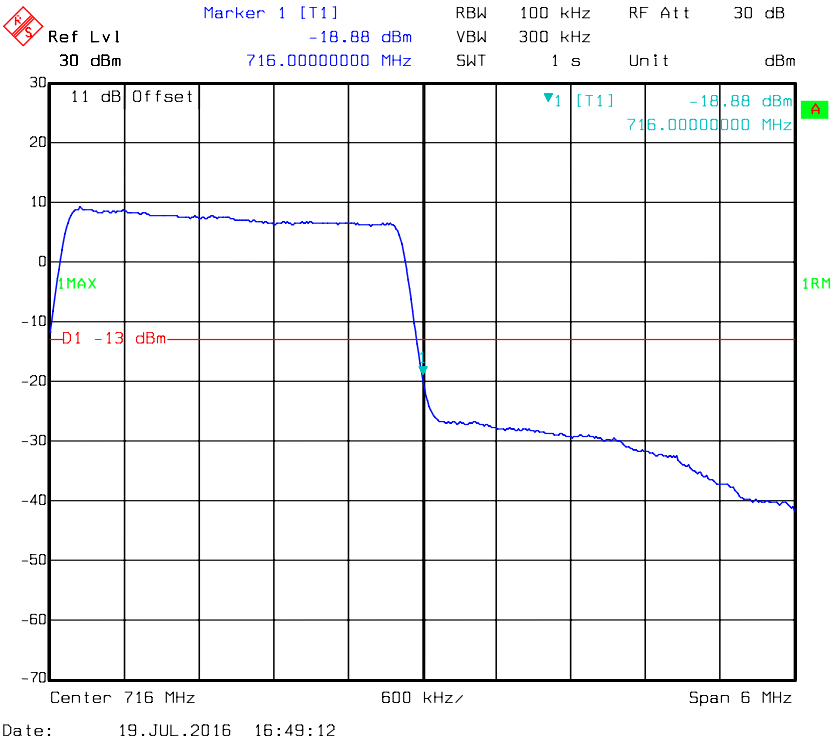
16QAM_1.4MHz_ FULL RB_ Right



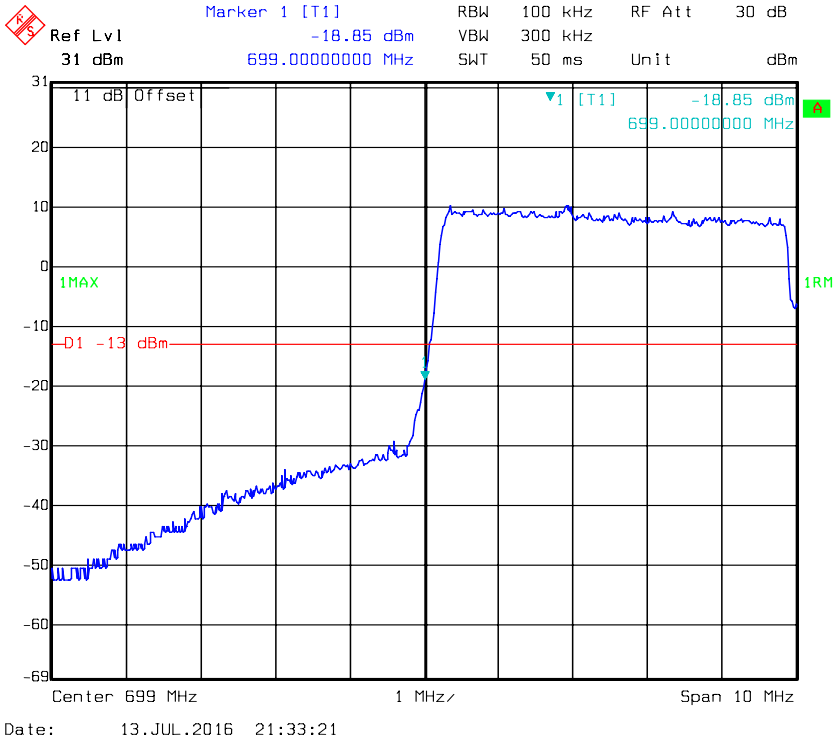
16QAM_3MHz_ FULL RB_ Left



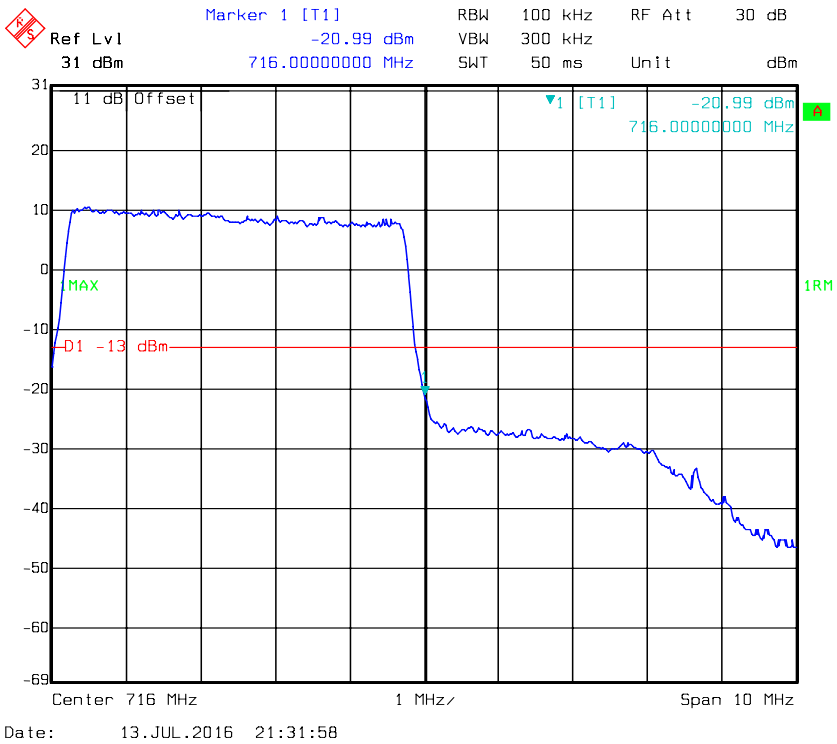
16QAM_3M_ FULL RB_ Right



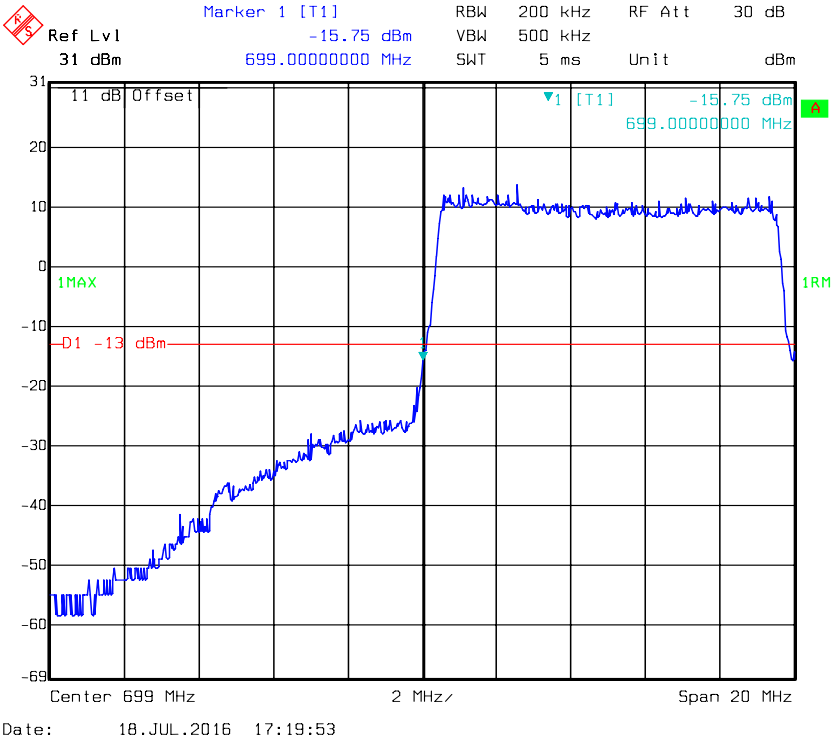
16QAM_5MHz_ FULL RB_ Left



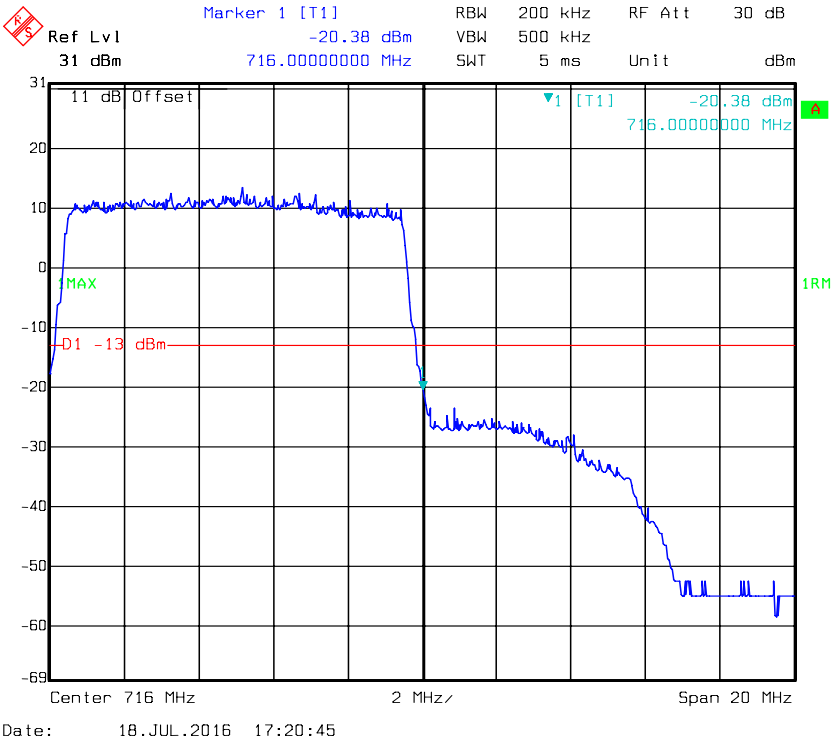
16QAM_5MHz_ FULL RB_ Right



16QAM_10MHz_ FULL RB_ Left

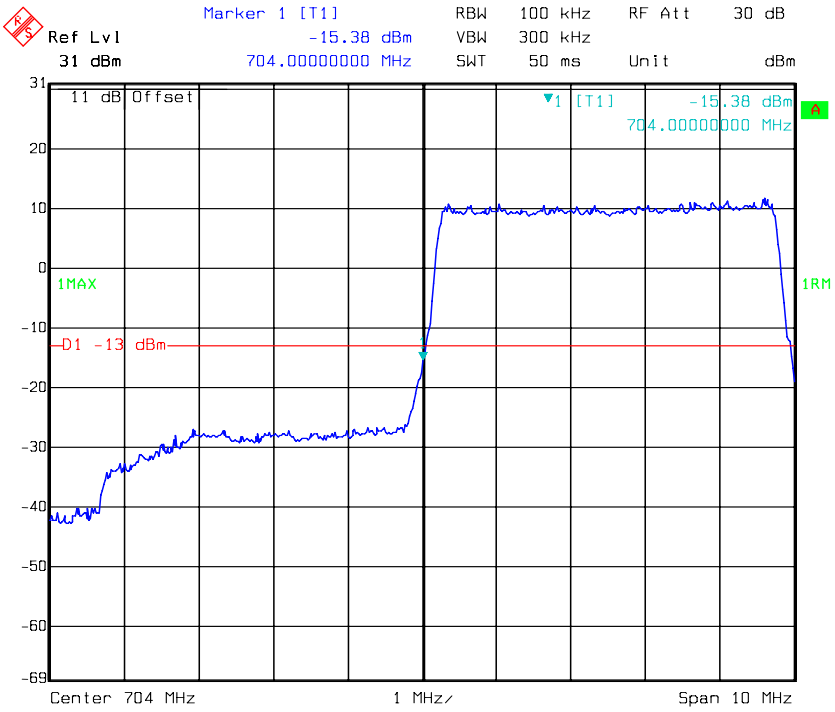


16QAM_10MHz_ FULL RB_ Right



LTE Band 17

QPSK_5MHz_ FULL RB_ Left

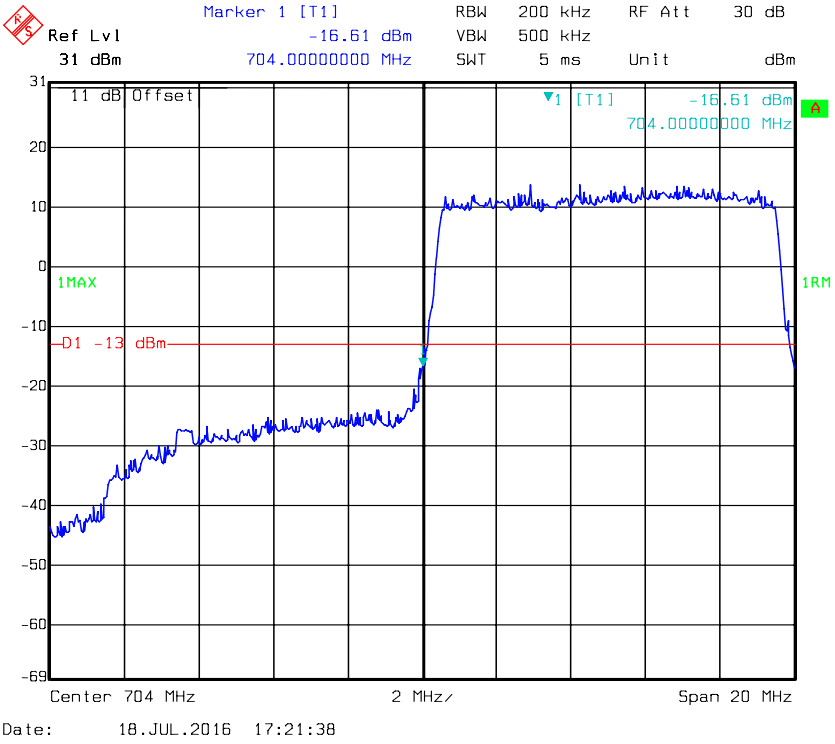


Date: 13.JUL.2016 21:13:08

QPSK_5MHz_ FULL RB_ Right

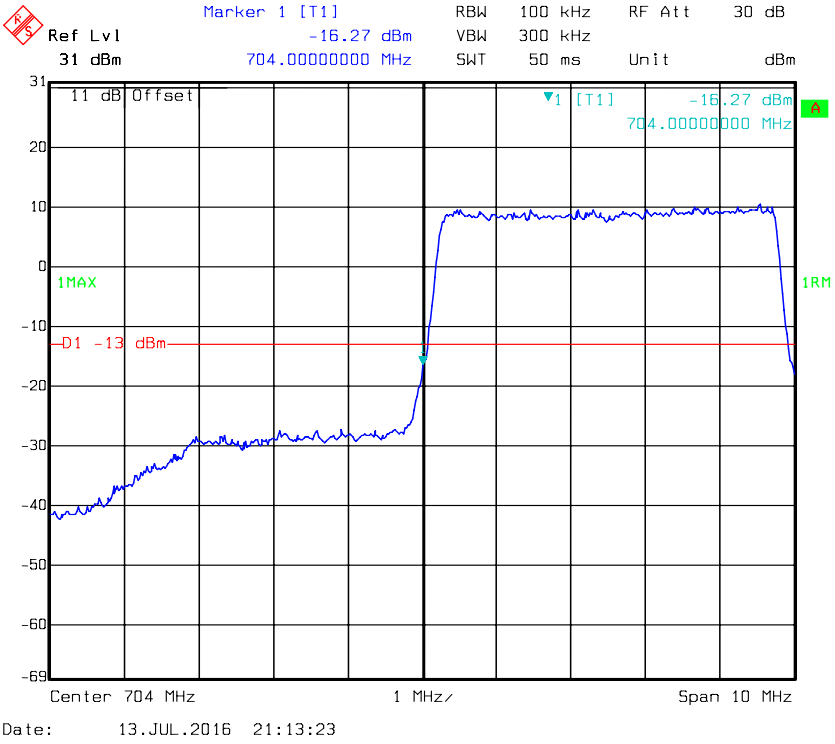
Date: 13.JUL.2016 21:13:50

QPSK_10MHz_ FULL RB_ Left

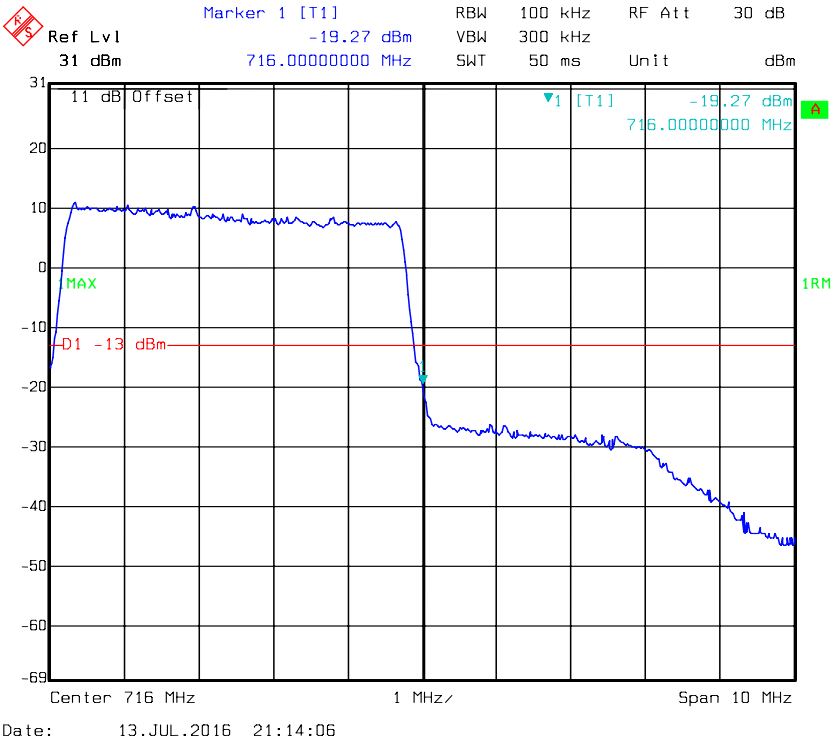


QPSK_10MHz_ FULL RB_ Right

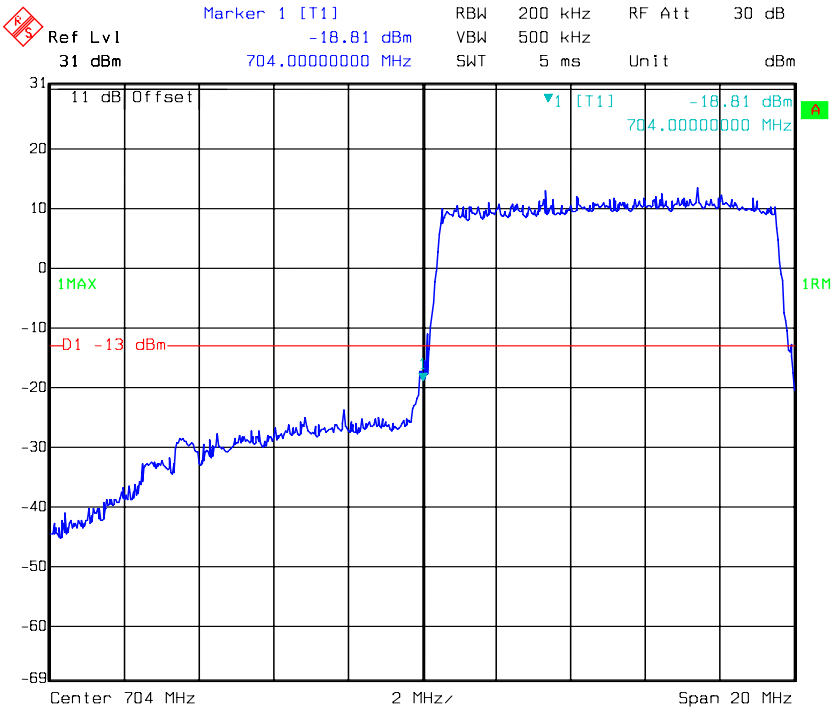
16QAM_5MHz_ FULL RB_ Left



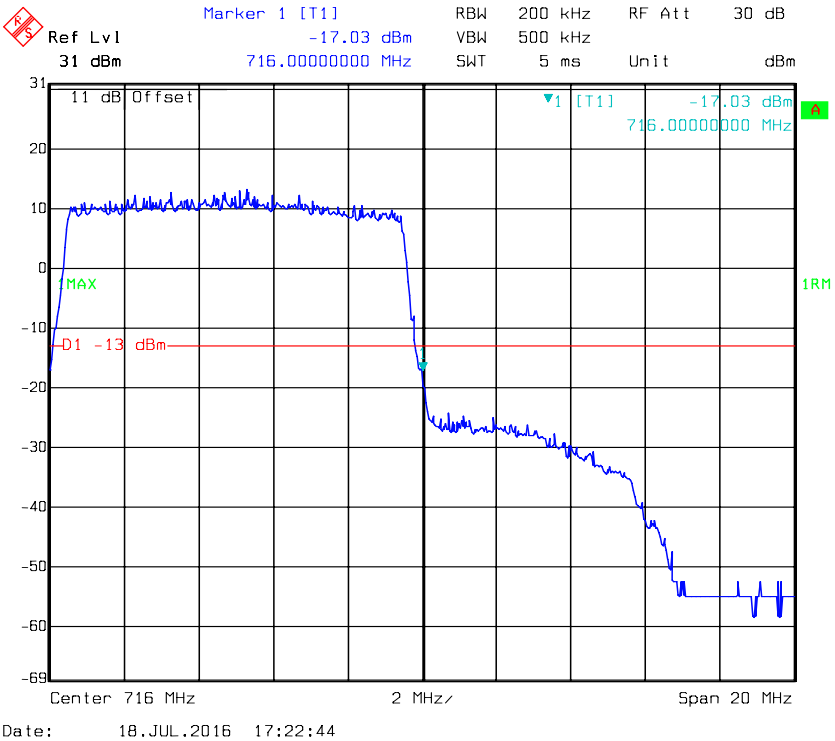
16QAM_5MHz_ FULL RB_ Right



16QAM_10MHz_ FULL RB_ Left

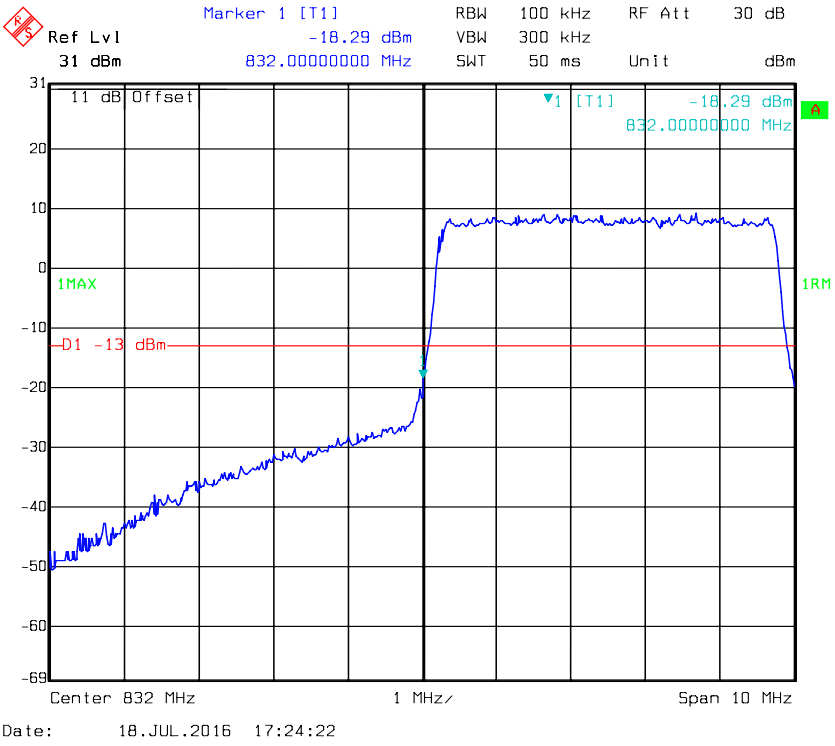


16QAM_10MHz_ FULL RB_ Right

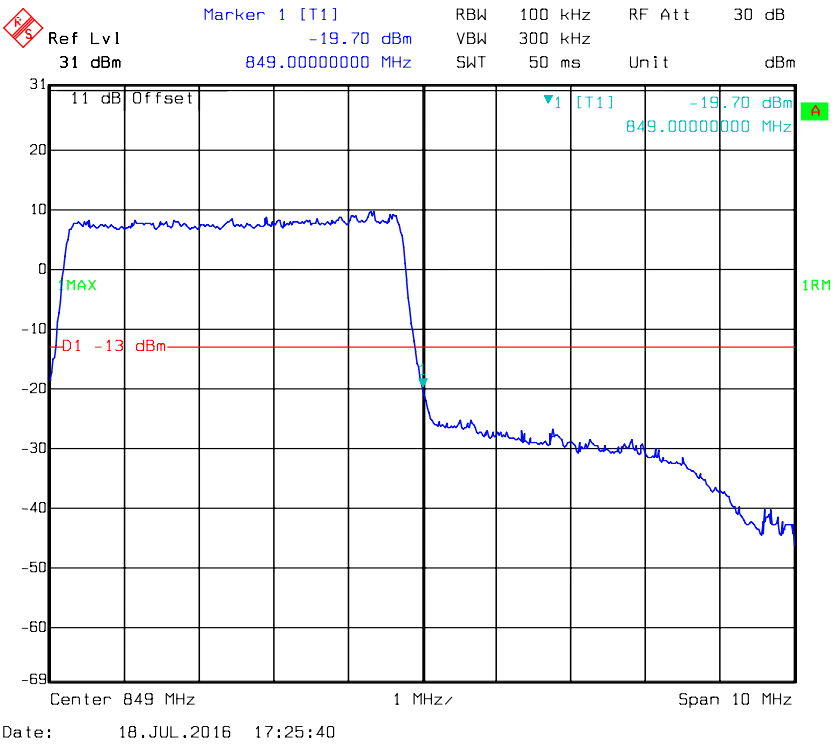


LTE Band 20

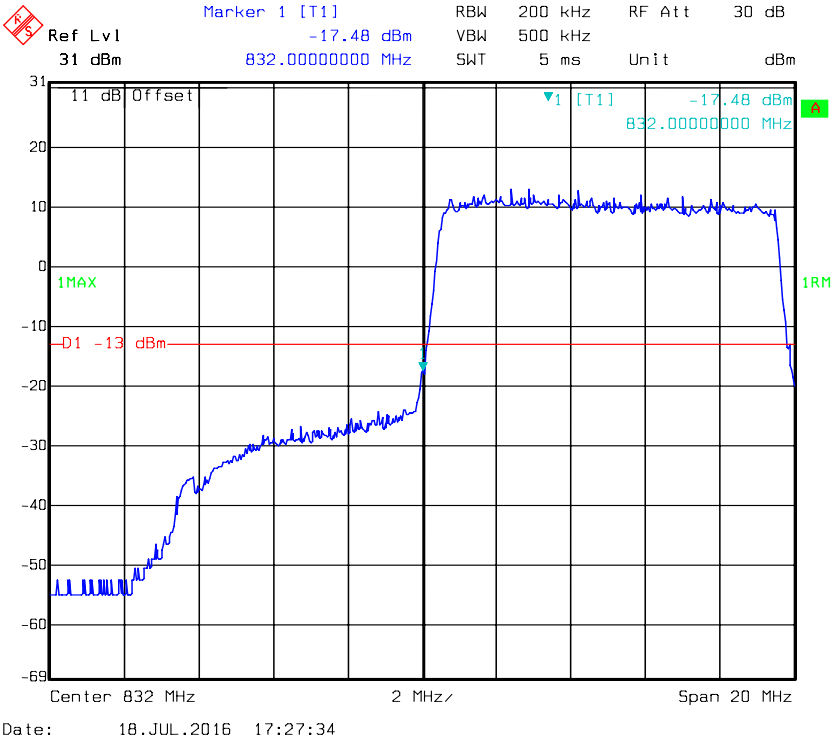
QPSK_5MHz_ FULL RB_ Left



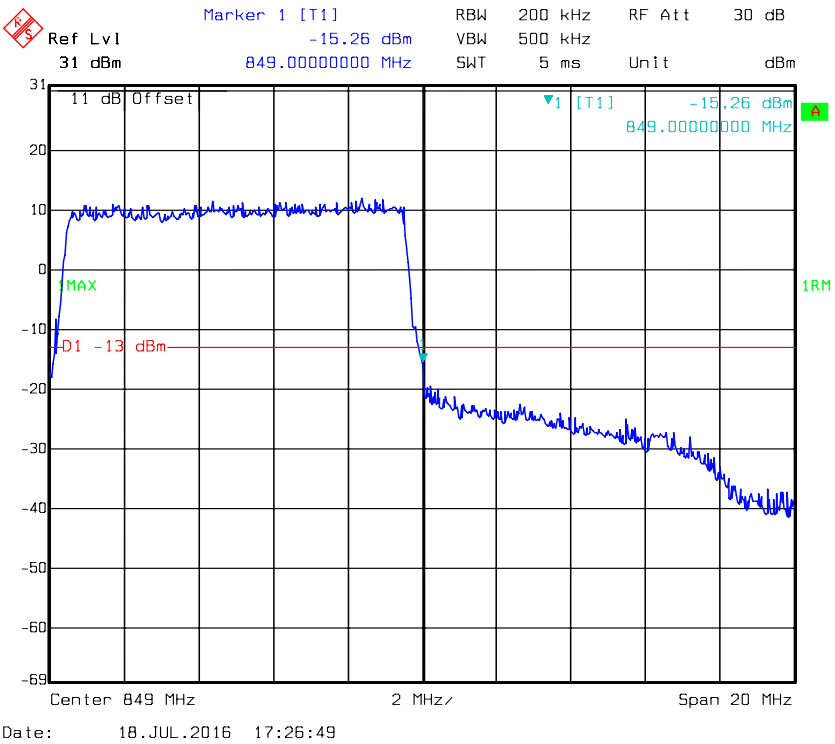
QPSK_5MHz_ FULL RB_ Right



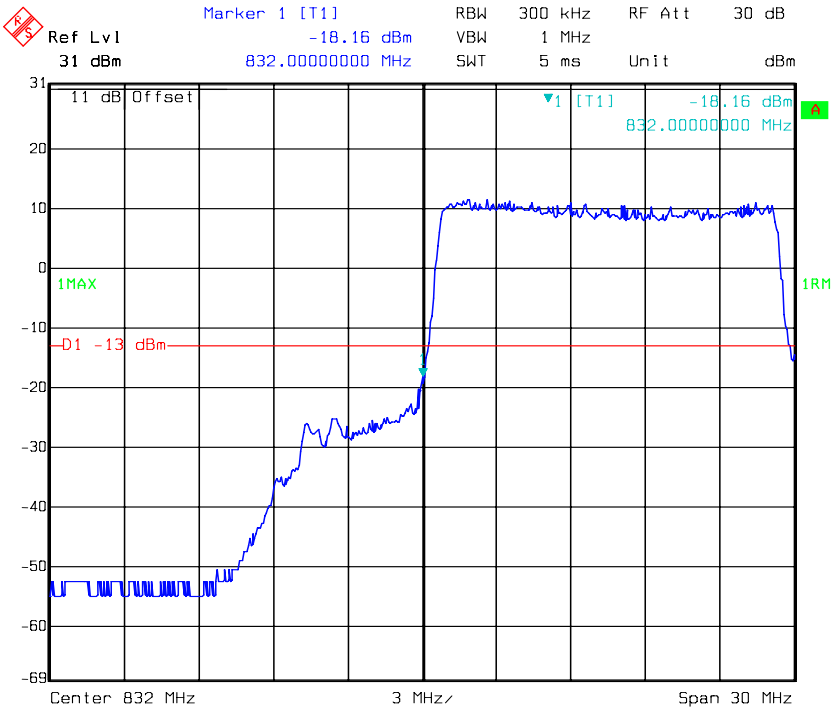
QPSK_10MHz_ FULL RB_ Left



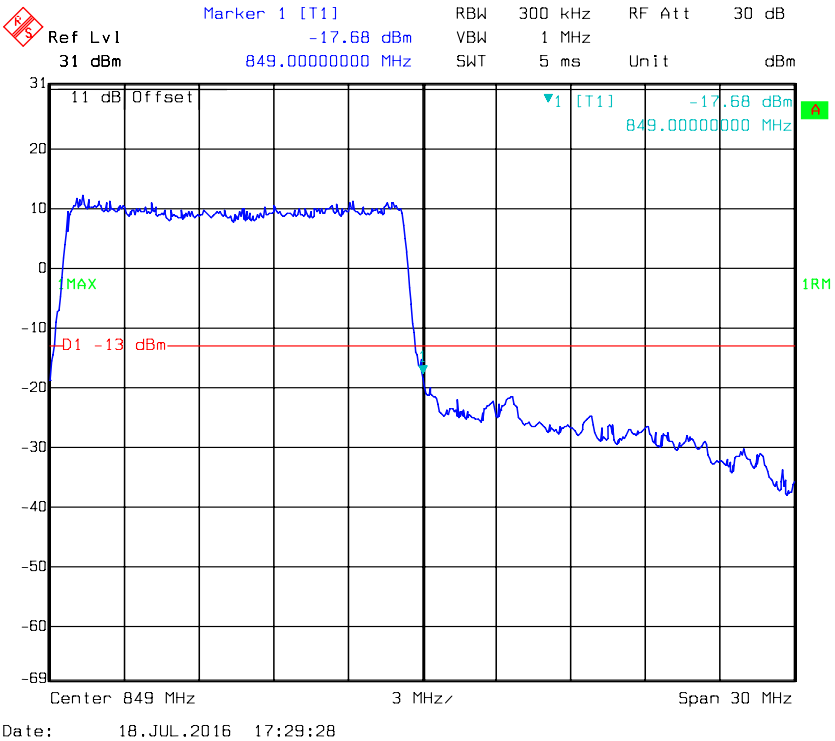
QPSK_10MHz_ FULL RB_ Right



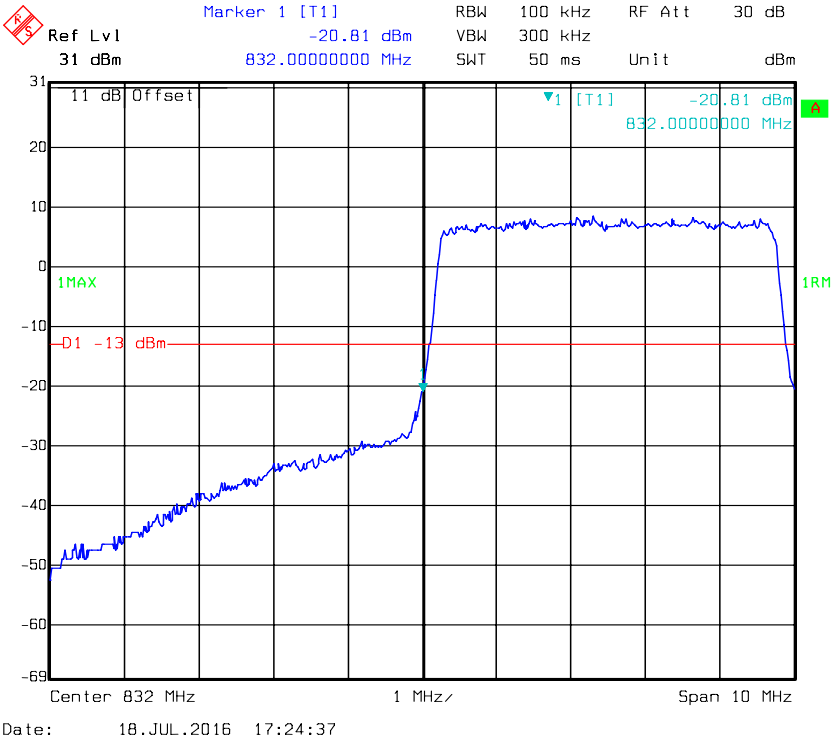
QPSK_15MHz_ FULL RB_ Left



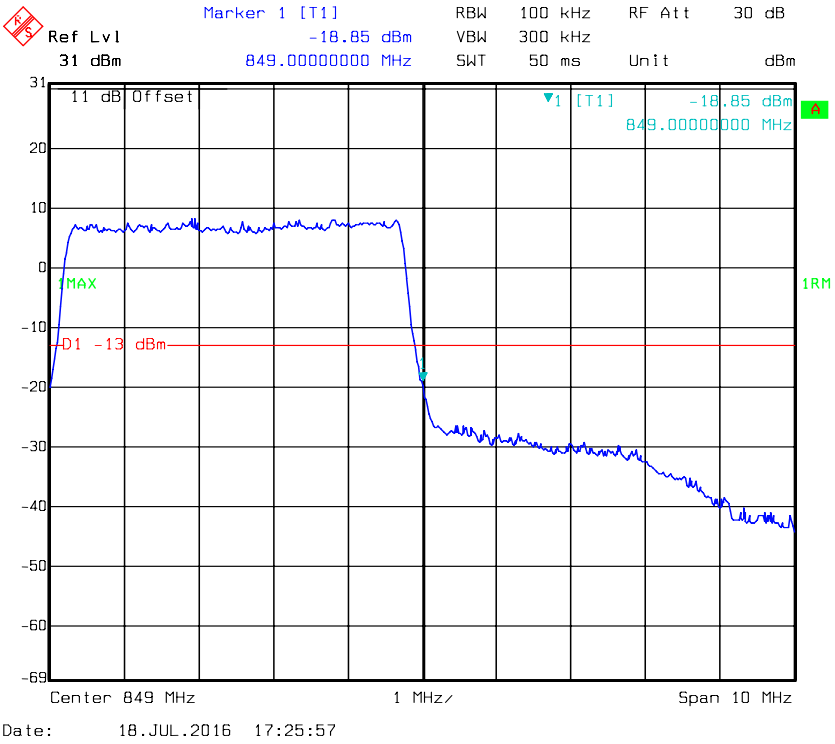
QPSK_15MHz_ FULL RB_ Right



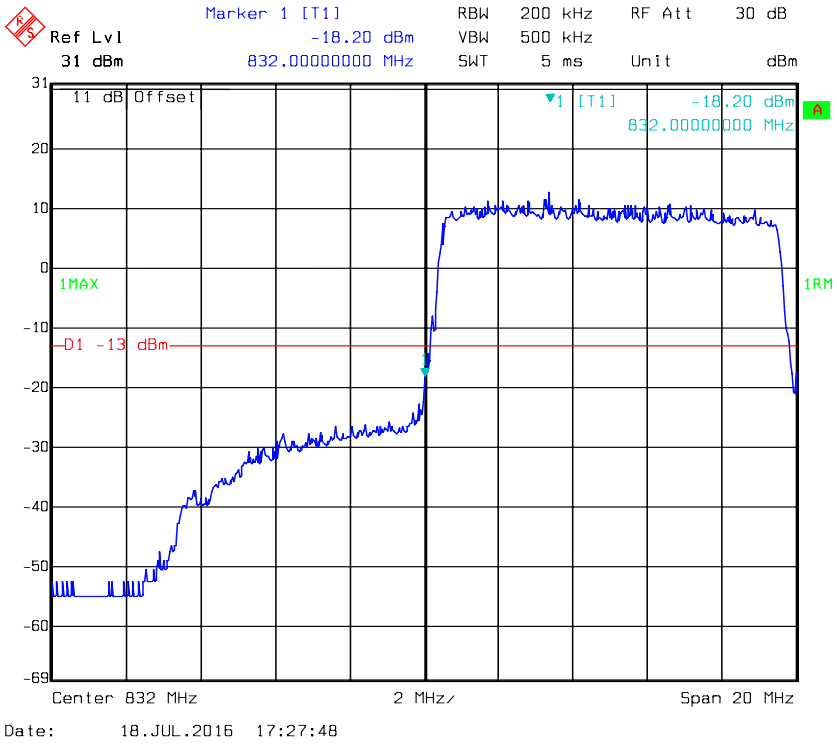
16QAM_5MHz_ FULL RB_ Left



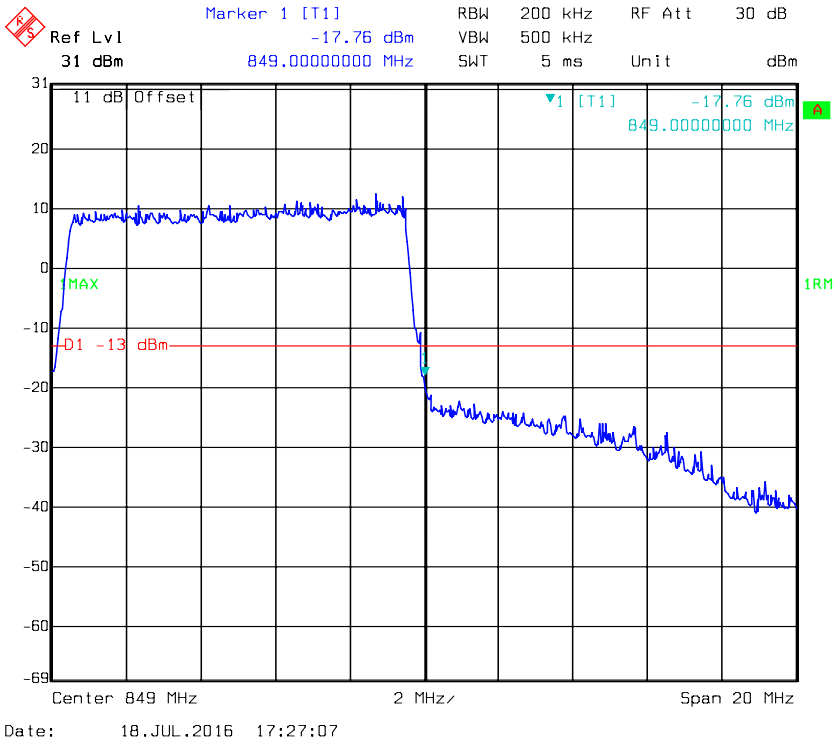
16QAM_5MHz_ FULL RB_ Right



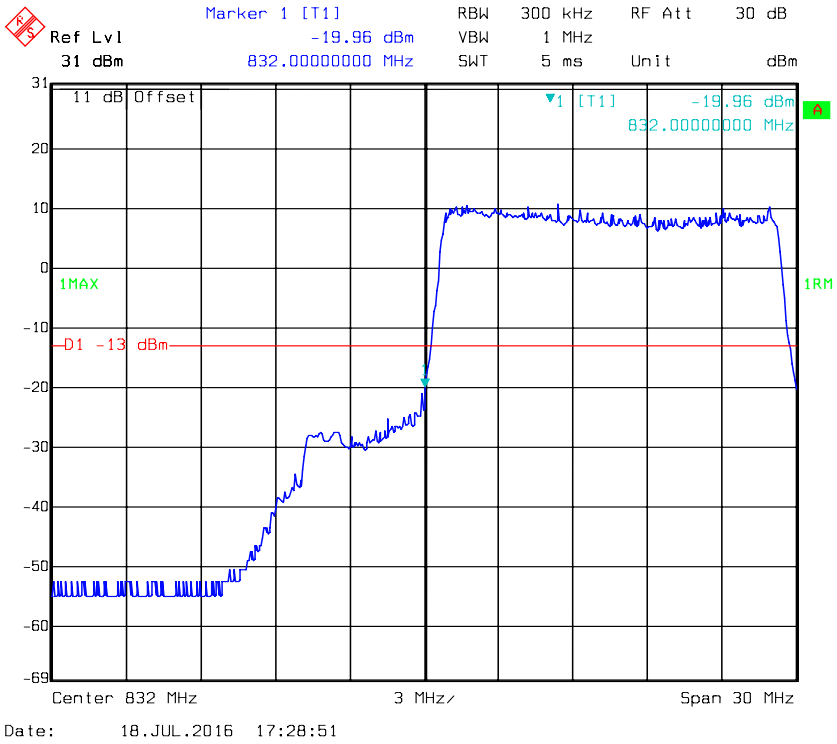
16QAM_10MHz_ FULL RB_ Left



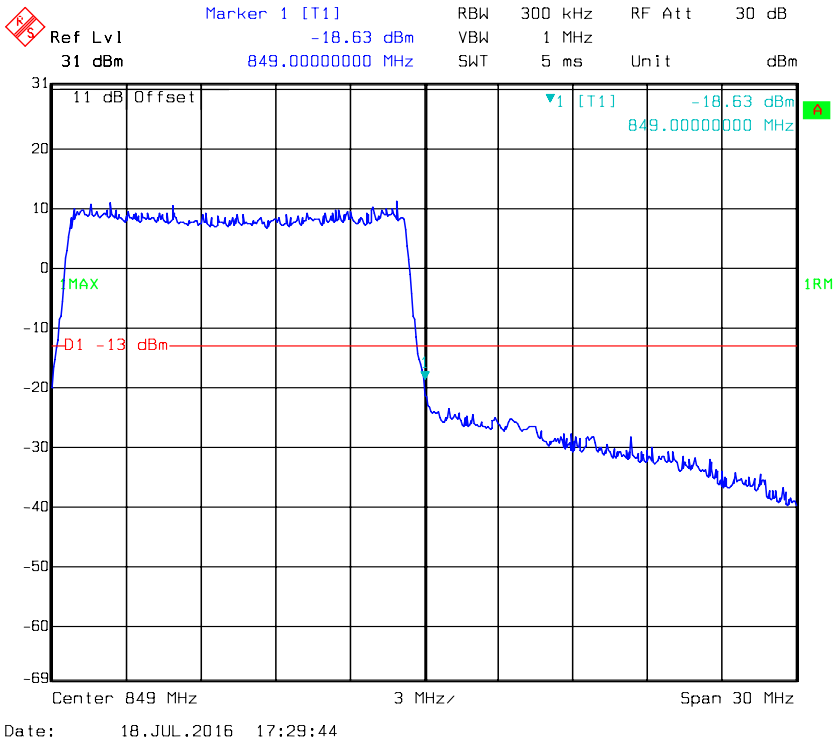
16QAM_10MHz_ FULL RB_ Right



16QAM_15MHz_ FULL RB_ Left



16QAM_15MHz_ FULL RB_ Right



FCC §2.1055, §22.355 & §24.235 & §27.54 - FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055 (a), § 2.1055 (d), §22.355, §24.235，§27.54

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

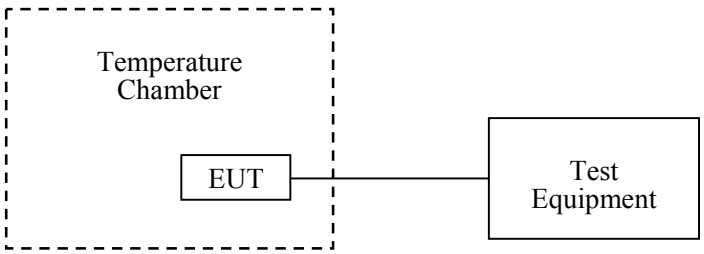
According to §27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external DC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The DC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: An external variable DC power supply was connected to the battery terminals of the equipment under test. The voltage was set from 85% to 115% of the nominal value and was then decreased until the transmitter light no longer illuminated; i.e., the battery end point. The output frequency was recorded for each battery voltage.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Dongzhixu	High Temperature Test Chamber	DP1000	201105083-3	2015-09-10	2016-09-09
R&S	Universal Radio Communication Tester	CMU200	109 038	2016-05-09	2017-05-09
R&S	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2015-12-19	2016-12-19
UNI-T	Multimeter	UT39A	M130199938	2016-04-02	2017-04-02
Pasternack	RF Coaxial Cable	RF-01	/	2016-05-06	2017-05-06

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

Environmental Conditions

Temperature:	30.6°C
Relative Humidity:	51%
ATM Pressure:	99.6 kPa

The testing was performed by Robin Zheng on 2016-07-18.

Cellular Band (Part 22H)

GMSK, Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-5	-0.006	2.5
-20	3.8	-6	-0.007	2.5
-10	3.8	-5	-0.006	2.5
0	3.8	-2	-0.002	2.5
10	3.8	-1	-0.001	2.5
20	3.8	-5	-0.006	2.5
30	3.8	-6	-0.007	2.5
40	3.8	-5	-0.006	2.5
50	3.8	-9	-0.011	2.5
25	3.6	-4	-0.005	2.5

Cellular Band (Part 22H)

EDGE, Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	3	0.004	2.5
-20	3.8	-8	-0.010	2.5
-10	3.8	-1	-0.001	2.5
0	3.8	0	0.000	2.5
10	3.8	-6	-0.007	2.5
20	3.8	-4	-0.005	2.5
30	3.8	-10	-0.012	2.5
40	3.8	-8	-0.010	2.5
50	3.8	-5	-0.006	2.5
25	3.6	-1	-0.001	2.5

PCS Band (Part 24E)

GMSK, Middle Channel, f_c = 1880.0 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	8	0.004	Pass
-20	3.8	10	0.005	Pass
-10	3.8	9	0.005	Pass
0	3.8	12	0.006	Pass
10	3.8	3	0.002	Pass
20	3.8	6	0.003	Pass
30	3.8	6	0.003	Pass
40	3.8	12	0.006	Pass
50	3.8	13	0.007	Pass
25	3.6	5	0.003	Pass

PCS Band (Part 24E)

EDGE, Middle Channel, f_c = 1880.0 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	1	0.001	Pass
-20	3.8	4	0.002	Pass
-10	3.8	4	0.002	Pass
0	3.8	-1	-0.001	Pass
10	3.8	4	0.002	Pass
20	3.8	-2	-0.001	Pass
30	3.8	-1	-0.001	Pass
40	3.8	4	0.002	Pass
50	3.8	-1	-0.001	Pass
25	3.6	0	0.000	Pass

WCDMA Band V: Re199

Middle Channel, f_c = 836.6 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	3	0.004	2.5
-20	3.8	-2	-0.002	2.5
-10	3.8	-2	-0.002	2.5
0	3.8	1	0.001	2.5
10	3.8	-2	-0.002	2.5
20	3.8	1	0.001	2.5
30	3.8	5	0.006	2.5
40	3.8	1	0.001	2.5
50	3.8	5	0.006	2.5
25	3.6	-3	-0.004	2.5

WCDMA Band II: Re199

Middle Channel, f_c = 1880.0 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-2	-0.001	Pass
-20	3.8	5	0.003	Pass
-10	3.8	1	0.001	Pass
0	3.8	-1	-0.001	Pass
10	3.8	-3	-0.002	Pass
20	3.8	5	0.003	Pass
30	3.8	1	0.001	Pass
40	3.8	3	0.002	Pass
50	3.8	4	0.002	Pass
25	3.6	-1	-0.001	Pass

LTE Band II:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 1880 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	-1.06	-0.0006	Pass
-20	3.8	-0.40	-0.0002	Pass
-10	3.8	0.74	0.0004	Pass
0	3.8	5.31	0.0028	Pass
10	3.8	7.49	0.0040	Pass
20	3.8	2.48	0.0013	Pass
30	3.8	5.01	0.0027	Pass
40	3.8	-5.95	-0.0032	Pass
50	3.8	-5.26	-0.0028	Pass
25	3.6	-7.79	-0.0041	Pass

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 1880 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	1.29	0.0007	Pass
-20	3.8	6.07	0.0032	Pass
-10	3.8	3.01	0.0016	Pass
0	3.8	0.74	0.0004	Pass
10	3.8	-7.04	-0.0037	Pass
20	3.8	-7.21	-0.0038	Pass
30	3.8	-7.75	-0.0041	Pass
40	3.8	-2.74	-0.0015	Pass
50	3.8	-7.52	-0.0040	Pass
25	3.6	-3.47	-0.0018	Pass

LTE Band IV:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 1732.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	1.34	0.0008	Pass
-20	3.8	-5.45	-0.0031	Pass
-10	3.8	-1.73	-0.0010	Pass
0	3.8	-2.11	-0.0012	Pass
10	3.8	3.56	0.0021	Pass
20	3.8	-5.32	-0.0031	Pass
30	3.8	-0.29	-0.0002	Pass
40	3.8	5.31	0.0031	Pass
50	3.8	-1.37	-0.0008	Pass
25	3.6	1.13	0.0007	Pass

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 1732.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	0.68	0.0004	Pass
-20	3.8	4.08	0.0024	Pass
-10	3.8	-1.40	-0.0008	Pass
0	3.8	-0.03	0.0000	Pass
10	3.8	-3.25	-0.0019	Pass
20	3.8	2.58	0.0015	Pass
30	3.8	5.06	0.0029	Pass
40	3.8	5.80	0.0033	Pass
50	3.8	4.39	0.0025	Pass
25	3.6	-2.45	-0.0014	Pass

LTE Band VII:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 2535 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	0.79	0.0003	Pass
-20	3.8	-0.18	-0.0001	Pass
-10	3.8	1.46	0.0006	Pass
0	3.8	-7.45	-0.0029	Pass
10	3.8	-3.93	-0.0016	Pass
20	3.8	3.14	0.0012	Pass
30	3.8	-2.81	-0.0011	Pass
40	3.8	1.83	0.0007	Pass
50	3.8	-7.02	-0.0028	Pass
25	3.6	0.23	0.0001	Pass

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c =2535 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	0.34	0.0001	Pass
-20	3.8	-0.52	-0.0002	Pass
-10	3.8	-7.34	-0.0029	Pass
0	3.8	2.18	0.0009	Pass
10	3.8	-3.62	-0.0014	Pass
20	3.8	5.96	0.0024	Pass
30	3.8	0.06	0.0000	Pass
40	3.8	-3.93	-0.0016	Pass
50	3.8	-2.74	-0.0011	Pass
25	3.6	-6.00	-0.0024	Pass

LTE Band 12:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c =707.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	0.09	0.0001	Pass
-20	3.8	3.24	0.0046	Pass
-10	3.8	-0.08	-0.0001	Pass
0	3.8	1.46	0.0021	Pass
10	3.8	-0.14	-0.0002	Pass
20	3.8	-3.00	-0.0042	Pass
30	3.8	4.37	0.0062	Pass
40	3.8	-6.50	-0.0092	Pass
50	3.8	-6.89	-0.0097	Pass
25	3.6	-4.44	-0.0063	Pass

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c =707.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	0.76	0.0011	Pass
-20	3.8	-4.25	-0.0060	Pass
-10	3.8	0.28	0.0004	Pass
0	3.8	4.49	0.0063	Pass
10	3.8	-3.80	-0.0054	Pass
20	3.8	0.73	0.0010	Pass
30	3.8	-7.56	-0.0107	Pass
40	3.8	7.35	0.0104	Pass
50	3.8	-1.21	-0.0017	Pass
25	3.6	-6.31	-0.0089	Pass

LTE Band 17:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 710 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	0.34	0.0005	Pass
-20	3.8	-6.05	-0.0085	Pass
-10	3.8	-7.17	-0.0101	Pass
0	3.8	-3.57	-0.0050	Pass
10	3.8	-7.10	-0.0100	Pass
20	3.8	-0.33	-0.0005	Pass
30	3.8	-6.64	-0.0094	Pass
40	3.8	6.03	0.0085	Pass
50	3.8	-3.23	-0.0045	Pass
25	3.6	-4.74	-0.0067	Pass

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 710 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Result**
℃	**V_{DC}**	**Hz**	**ppm**	
-30	3.8	6.06	0.0085	Pass
-20	3.8	-7.23	-0.0102	Pass
-10	3.8	7.90	0.0111	Pass
0	3.8	0.47	0.0007	Pass
10	3.8	-4.88	-0.0069	Pass
20	3.8	7.57	0.0107	Pass
30	3.8	-5.36	-0.0075	Pass
40	3.8	6.39	0.0090	Pass
50	3.8	0.02	0.0000	Pass
25	3.6	-6.64	-0.0094	Pass

LTE Band 20:

QPSK, Channel Bandwidth:10MHz Middle Channel, f_c = 840.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-1.53	-0.0008	2.5
-20	3.8	-0.65	-0.0003	2.5
-10	3.8	0.02	0.0000	2.5
0	3.8	-7.62	-0.0041	2.5
10	3.8	1.05	0.0006	2.5
20	3.8	-1.79	-0.0010	2.5
30	3.8	7.43	0.0040	2.5
40	3.8	0.85	0.0005	2.5
50	3.8	5.11	0.0027	2.5
25	3.6	5.27	0.0028	2.5

16QAM, Channel Bandwidth:10MHz Middle Channel, f_c = 840.5 MHz				
Temperature	**Voltage**	**Frequency Error**	**Frequency Error**	**Limit**
℃	**V_{DC}**	**Hz**	**ppm**	**ppm**
-30	3.8	-1.62	-0.0009	2.5
-20	3.8	0.20	0.0001	2.5
-10	3.8	5.12	0.0027	2.5
0	3.8	7.14	0.0038	2.5
10	3.8	-4.92	-0.0026	2.5
20	3.8	7.83	0.0042	2.5
30	3.8	-4.41	-0.0023	2.5
40	3.8	5.43	0.0029	2.5
50	3.8	2.15	0.0011	2.5
25	3.6	1.76	0.0009	2.5

Note: The fundamental emissions stay within the authorized bands of operation based on the frequency deviation measured is small.

******* END OF REPORT *******