ACCREDITED
TESTING LABORATORY
CERTIFICATE#4323.01

FCC PART 27

FCC PART 90

FCC PART 22H, PART 24E

MEASUREMENT AND TEST REPORT

For

Shanghai Sunmi Technology Co.,Ltd.

Room 605, Block 7, KIC Plaza, No.388 Song Hu Road, Yang Pu District, Shanghai 200433 China

FCC ID: 2AH25T6920

Report Type:	**Product Type:**
Original Report	Smart POS system

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Report Number:	RKSA190719002-00B
Report Date:	2019-09-09
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Shanghai Sunmi Technology Co.,Ltd.
Tested Model	T6920
Product Type	Smart POS system
Dimension	219.1mm(L)* 80mm(W)* 17.8mm(H)
Power Supply	DC 5V from adapter and DC 7.6V from battery

Adapter information:
Model: TPA-23A050200UU01
Input: AC 100-240V, 50/60Hz 0.3A
Output: DC 5V, 2A

**All measurement and test data in this report was gathered from production sample serial number: 20190719002. (Assigned by the BACL. The EUT supplied by the applicant was received on 2019-07-19)*

Objective

This type approval report is prepared on behalf of Shanghai Sunmi Technology Co.,Ltd. in accordance with Part 2, Part 22-Subpart H and Part 24-Subpart E , Part 27 and Part 90 of the Federal Communication Commission's rules.

The objective is to determine the compliance of EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability, and band edge.

Related Submittal(s)/Grant(s)

FCC Part 15.247 DSS, Part 15.247 DTS, Part 15.225 DXX and Part 15.407 NII submittals with FCC ID: 2AH25T6920

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2, Sub-Part J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services
Part 27 – Miscellaneous wireless communications services
Part 90 – Private Land Mobile Radio Service

Applicable Standards: TIA/EIA 603-D.

All radiated and conducted emissions measurements were performed at Bay Area Compliance Laboratories Corp. (Kunshan). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Item		Uncertainty
AC Power Lines Conducted Emissions		3.19dB
RF conducted test with spectrum		0.9dB
RF Output Power with Power meter		0.5dB
Radiated emission	30MHz~1GHz	5.91dB
	1GHz~6GHz	4.68dB
	6GHz~18GHz	4.92dB
	18GHz~40GHz	5.21dB
Occupied Bandwidth		0.5kHz
Temperature		1.0℃
Humidity		6%

Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Kunshan) to collect test data is located on the No.248 Chenghu Road, Kunshan, Jiangsu province, China.

Bay Area Compliance Laboratories Corp. (Kunshan) Lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4323.01) and the FCC designation No. CN1185 under the FCC KDB 974614 D01 and CAB identifier CN0004 under the ISED requirement. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

SYSTEM TEST CONFIGURATION

Justification

The EUT was configured for testing according to TIA/EIA-603-D.

The final qualification test was performed with the EUT operating at normal mode.

Channel List

Mode	Channel		Frequency (MHz)
GPRS/EGPRS 850	Low	128	824.2
	Middle	190	836.6
	High	251	848.8
GPRS/EGPRS 1900	Low	512	1850.2
	Middle	661	1880.0
	High	810	1909.8
WCDMA Band II	Low	9262	1852.4
	Middle	9400	1880.0
	High	9538	1907.6
WCDMA Band IV	Low	1312	1712.4
	Middle	1413	1732.6
	High	1513	1752.6
WCDMA Band V	Low	4132	826.4
	Middle	4183	836.6
	High	4233	846.6
CDMA BC0	Low	1013	824.70
	Middle	384	836.52
	High	777	848.31
CDMA BC1	Low	25	1851.25
	Middle	600	1880.00
	High	1175	1908.75

Mode		Channel		Frequency (MHz)
LTE Band 2	1.4M	Low	18607	1850.7
		Middle	18900	1880.0
		High	19193	1909.3
	3M	Low	18615	1851.5
		Middle	18900	1880.0
		High	19185	1908.5
	5M	Low	18625	1852.5
		Middle	18900	1880.0
		High	19175	1907.5
	10M	Low	18650	1855.0
		Middle	18900	1880.0
		High	19150	1905.0
	15M	Low	18675	1857.5
		Middle	18900	1880.0
		High	19125	1902.5
	20M	Low	18700	1860.0
		Middle	18900	1880.0
		High	19100	1900.0
LTE Band 4	1.4M	Low	19957	1710.7
		Middle	20175	1732.5
		High	20393	1754.3
	3M	Low	19965	1711.5
		Middle	20175	1732.5
		High	20385	1753.5
	5M	Low	19975	1712.5
		Middle	20175	1732.5
		High	20375	1752.5
	10M	Low	20000	1715.0
		Middle	20175	1732.5
		High	20350	1750.0
	15M	Low	20025	1717.5
		Middle	20175	1732.5
		High	20325	1747.5
	20M	Low	20050	1720.0
		Middle	20175	1732.5
		High	20300	1745.0

Mode		Channel		Frequency (MHz)
LTE Band 5	1.4M	Low	20407	824.7
		Middle	20525	836.5
		High	20643	848.3
	3M	Low	20415	825.5
		Middle	20525	836.5
		High	20635	847.5
	5M	Low	20425	826.5
		Middle	20525	836.5
		High	20625	846.5
	10M	Low	20450	829.0
		Middle	20525	836.5
		High	20600	844.0
LTE Band 7	5M	Low	20775	2502.5
		Middle	21100	2535.0
		High	21425	2567.5
	10M	Low	20800	2505.0
		Middle	21100	2535.0
		High	21400	2565.0
	15M	Low	20825	2507.5
		Middle	21100	2535.0
		High	21375	2562.5
	20M	Low	20850	2510.0
		Middle	21100	2535.0
		High	21350	2560.0
LTE Band 12	1.4M	Low	23017	699.7
		Middle	23095	707.5
		High	23173	715.3
	3M	Low	23025	700.5
		Middle	23095	707.5
		High	23165	714.5
	5M	Low	23035	701.5
		Middle	23095	707.5
		High	23155	713.5
	10M	Low	23060	704.0
		Middle	23095	707.5
		High	23130	711.0

Mode		Channel		Frequency (MHz)
LTE Band 17	5M	Low	23755	706.5
		Middle	23790	710.0
		High	23825	713.5
	10M	Low	23780	709.0
		Middle	23790	710.0
		High	23800	711.0
LTE Band 25	1.4M	Low	26047	1850.7
		Middle	26365	1882.5
		High	26683	1914.3
	3M	Low	26055	1851.5
		Middle	26683	1882.5
		High	26675	1913.5
	5M	Low	26065	1852.5
		Middle	26683	1882.5
		High	26665	1912.5
	10M	Low	26090	1855.0
		Middle	26683	1882.5
		High	26640	1910.0
	15M	Low	26115	1857.5
		Middle	26683	1882.5
		High	26615	1907.5
	20M	Low	26140	1860.0
		Middle	26683	1882.5
		High	26590	1905.0
LTE Band 26	1.4M	Low	26697	814.7
		Middle	26915	831.5
		High	27033	848.3
	3M	Low	26705	815.5
		Middle	26915	831.5
		High	27025	847.5
	5M	Low	26715	816.5
		Middle	26915	831.5
		High	27015	846.5
	10M	Low	26740	819.0
		Middle	26915	831.5
		High	26990	844.0
	15M	Low	26765	821.5
		Middle	26915	831.5
		High	26965	841.5

Mode		Channel		Frequency (MHz)
LTE Band 38	5M	Low	37775	2572.5
		Middle	38000	2595.0
		High	38225	2617.5
	10M	Low	37800	2575.0
		Middle	38000	2595.0
		High	38200	2615.0
	15M	Low	37825	2577.5
		Middle	38000	2595.0
		High	38175	2612.5
	20M	Low	37850	2580.0
		Middle	38000	2595.0
		High	38150	2610.0
LTE Band 41	5M	Low	40265	2498.5
		Middle	40740	2593.0
		High	41215	2687.5
	10M	Low	40290	2501.0
		Middle	40740	2593.0
		High	41190	2685.0
	15M	Low	40315	2503.5
		Middle	40740	2593.0
		High	41165	2682.5
	20M	Low	40340	2506.0
		Middle	40740	2593.0
		High	41140	2680.0

Equipment Modifications

No modifications were made to the EUT.

Support Equipment List and Details

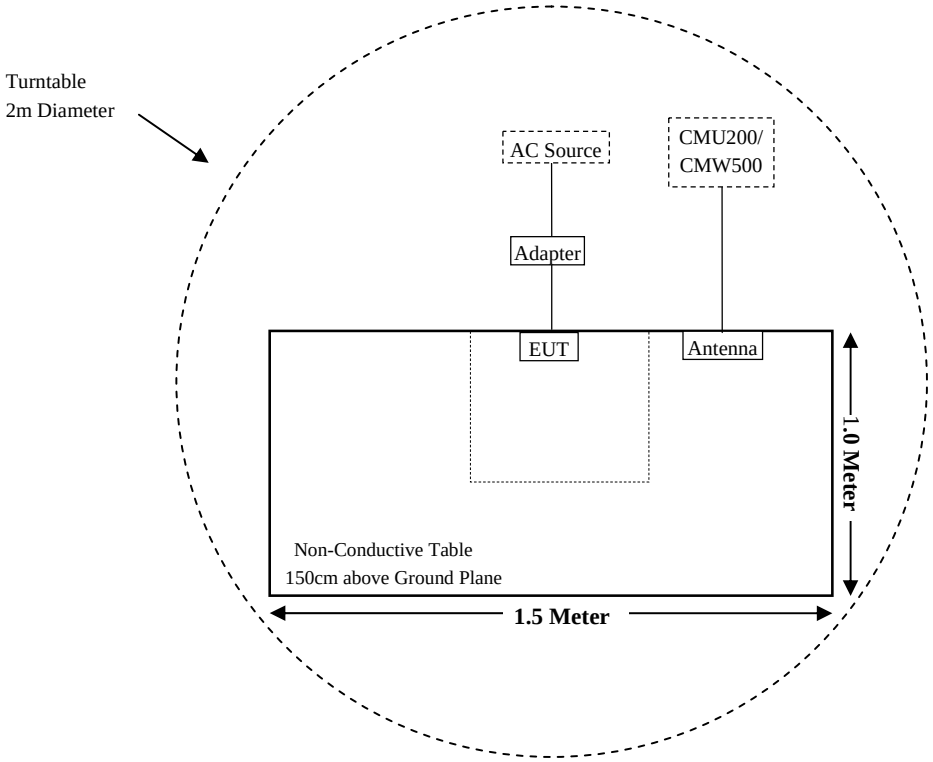
Manufacturer	Description	Model	Serial Number
Waylens Inc.	Antenna	/	/
Rohde & Schwarz	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	110605
R & S	Wideband Radio Communication Tester	CMW500	104478

External I/O Cable

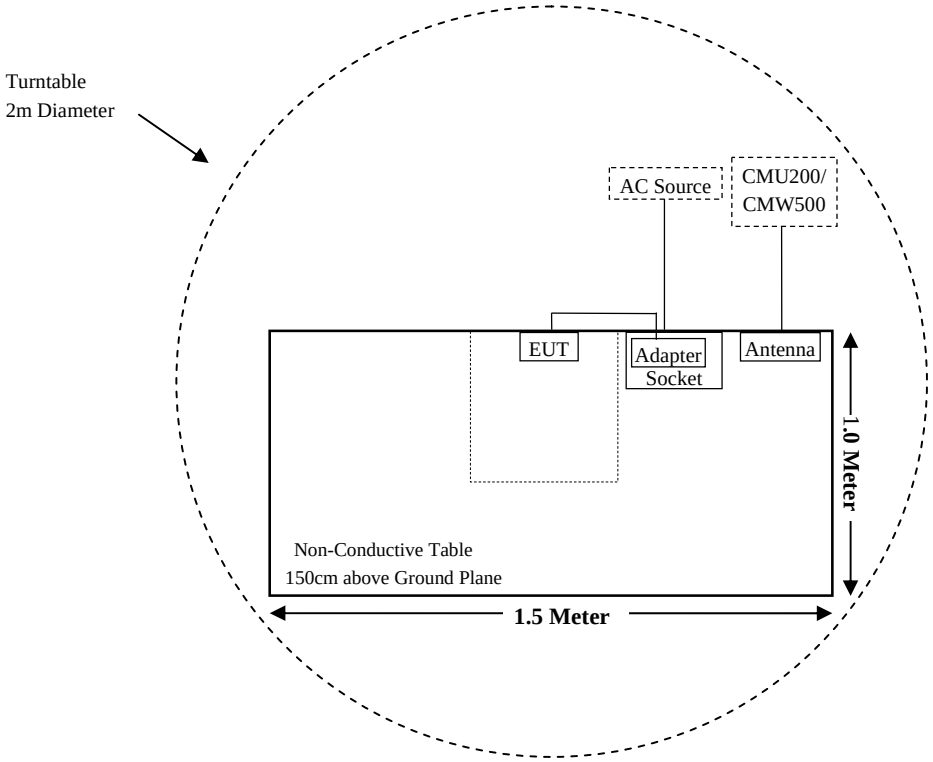
Cable Description	Length (m)	From Port	To
Power Cable	0.8	EUT	Adapter

Block Diagram of Test Setup

For Radiated Emissions (Below 1GHz):



For Radiated Emissions (Above 1GHz):



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307(b)(1)& §2.1093	RF Exposure Information	Compliant
§2.1046; § 22.913 (a);§ 24.232 (c); § 27.50 (c)(d);§27.50(h) (2); § 90.635(b)	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53; § 90.209	Occupied Bandwidth	Compliant
§ 2.1051; § 22.917 (a); § 24.238 (a); §27.53; § 90.691	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53 (h) (m); § 90.691	Spurious Radiated Emissions	Compliant
§ 22.917 (a); § 24.238 (a); §27.53 (h) (m); § 90.691	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54; § 90.213	Frequency stability	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test（Chamber 1#）					
Rohde & Schwarz	EMI Test Receiver	ESCI	100195	2018-11-30	2019-11-29
HP	Signal Generator	HP 8341B	2624A00116	2018-11-30	2019-11-29
Sunol Sciences	Broadband Antenna	JB3	A090413-1	2016-12-26	2019-12-25
Sunol Sciences	Bilog antenna	JB3	A060217	2017-08-04	2020-08-03
Sonoma Instrunent	Pre-amplifier	310N	171205	2018-08-14	2019-08-13
Sonoma Instrunent	Pre-amplifier	310N	171205	2019-08-14	2020-08-13
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-6	006	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-6	006	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-8	008	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-8	008	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-9	009	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-10	010	2019-08-15	2020-08-14
Rohde & Schwarz	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	110605	2018-11-12	2019-11-11
R & S	Wideband Radio Communication Tester	CMW500	104478	2019-07-21	2020-07-20
Radiated Emission Test（Chamber 2#）					
HP	Signal Generator	HP 8341B	2624A00116	2018-11-30	2019-11-29
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2018-08-27	2019-08-26
Rohde & Schwarz	EMI Test Receiver	ESU40	100207	2019-08-27	2020-08-26
ETS-LINDGREN	Horn Antenna	3115	9207-3900	2017-07-15	2020-07-14
ETS-LINDGREN	Horn Antenna	3115	6229	2016-12-12	2019-12-11
ETS-LINDGREN	Horn Antenna	3116	00084159	2016-12-12	2019-12-11
ETS-LINDGREN	Horn Antenna	3116	2516	2016-12-12	2019-12-11
A.H.Systems, inc	Amplifier	2641-1	491	2019-02-20	2020-02-19
EM Electronics Corporation	Amplifier	EM18G40G	060726	2019-03-22	2020-03-21
Rohde & Schwarz	Auto test Software	EMC32	100361	/	/
MICRO-COAX	Coaxial Cable	Cable-6	006	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-6	006	2019-08-15	2020-08-14

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
MICRO-COAX	Coaxial Cable	Cable-11	011	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-11	011	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-12	012	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-13	013	2019-08-15	2020-08-14
MICRO-COAX	Coaxial Cable	Cable-16	016	2018-08-15	2019-08-14
MICRO-COAX	Coaxial Cable	Cable-16	016	2019-08-15	2020-08-14
Rohde & Schwarz	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	110605	2018-11-12	2019-11-11
R & S	Wideband Radio Communication Tester	CMW500	104478	2019-07-21	2020-07-20
RF Conducted Test					
Rohde & Schwarz	Signal Analyzer	FSIQ26	836131/009	2018-11-30	2019-11-29
Rohde & Schwarz	Signal Analyzer	FSV40	101116	2019-07-23	2020-07-22
Narda	Attenuator	6dB	006	2019-01-10	2020-01-09
Rohde & Schwarz	UNIVERSAL RADIO COMMUNICATION TESTER	CMU200	110605	2018-11-12	2019-11-11
R & S	Wideband Radio Communication Tester	CMW500	104478	2019-07-21	2020-07-20
Mini-Ciruits	Power splitter	ZFRSC-14-S+	SF019411452	2018-11-10	2019-11-09
BACL	Temperature & Humidity Chamber	BTH-150	30023	2018-10-10	2019-10-09
EAST	Regulated DC Power Supply	MCH-303D-II	14070562	2018-10-10	2019-10-09
Sunmi	RF Cable	Sunmi C01	C01	Each Time	/

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

FCC §1.1307(b) & §2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

FCC§1.1307,§2.1093.

Test Result

Compliance, please refer to the SAR report: RKSA190719002-20

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E, Part 27 , Part 90 there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC §2.1046; § 22.913 (a); § 24.232 (c); §27.50 (c) (d); §27.50(h) (2) ; §90.635 (b) - RF OUTPUT POWER

Applicable Standards

According to FCC §2.1046 and §22.913 (a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts (38.45dBm).

According to FCC §2.1046 and §24.232 (c), mobile and portable stations are limited to 2 watts (33dBm) EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz.

According to §27.50(c), the maximum EIRP must not exceed 3Watts (34.77dBm) for 699-716MHz.

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

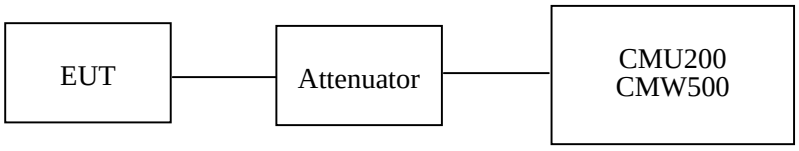
According to FCC §2.1046 and §90.635 (b),The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw)

The peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB.

Test Procedure

Conducted method:

The RF output of the transmitter was connected to the CMU200 through sufficient attenuation.



Radiated Output Power:

The measurements procedures specified in ANSI/TIA-603-D were applied.

a) Connect the equipment as illustrated. Mount the equipment with the manufacturer specified antenna in a vertical orientation on a manufacturer specified mounting surface located on a non-conducting rotating platform of a RF anechoic chamber (preferred) or a standard radiation site.

b) Key the transmitter, then rotate the EUT 360o azimuthally and record spectrum analyzer power level (LVL) measurements at angular increments that are sufficiently small to permit resolution of all peaks. If a standard radiation test site is used, raise and lower the test antenna to obtain a maximum reading at each angular increment. (Note: several batteries may be needed to offset the effect of battery voltage droop, which should not exceed 5% of the manufactured specified battery voltage during transmission).

c) Replace the transmitter under test with a vertically polarized half-wave dipole (or an antenna whose gain is known relative to an ideal half-wave dipole). The center of the antenna should be at the same location as the center of the antenna under test.

d) Connect the antenna to a signal generator with a known output power and record the path loss (in dB) as LOSS. If a standard radiation test site is used,raise and lower the test antenna to obtain a maximum reading.
LOSS = Generator Output Power (dBm) – Analyzer reading (dBm)

e) Determine the effective radiated output power at each angular position from the readings in steps b) and d) using the following equation:
ERP (dBm) = LVL (dBm) + LOSS (dB)

f) The maximum ERP is the maximum value determined in the preceding step.
(Note: Effective Isotropic Radiated Power (EIRP) can be computed using the following:
EIRP (dBm) = ERP (dBm) + 2.15 (dB)

Test Data

Environmental Conditions

Temperature:	23.2 ℃
Relative Humidity:	51 %
ATM Pressure:	101.3 kPa

The testing was performed by Sam Ye on 2019-08-24.

Conducted Power:

GSM 850 Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	31.99	30.98	29.66	29.05	38.45
	190	836.6	32.17	30.83	30.31	29.08	38.45
	251	848.8	32.25	31.37	29.81	28.68	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	26.26	23.87	22.96	22.23	38.45
	190	836.6	25.91	23.77	22.75	21.89	38.45
	251	848.8	26.01	23.81	23.18	21.84	38.45

WCDMA Band V

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band V)	Normal	Rel 99	1	22.27	22.01	22.07
		HSDPA	1	21.15	21.13	20.65
			2	21.09	20.75	20.95
			3	21.11	21.01	20.94
			4	20.59	21.02	21.29
		HSUPA	1	20.98	21.14	21.03
			2	20.98	21.00	20.77
			3	20.68	21.27	21.23
			4	21.14	20.80	20.81
			5	21.34	21.23	21.06

CDMA BC0 Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			RC1+SO55	RC3+SO55	RC3+SO32 (FCH)	RC3+SO32 (SCH)	
CDMA 1xRTT (BC0)	1013	824.70	23.01	22.71	22.88	23.03	38.45
	384	836.52	23.05	22.74	23.05	22.94	38.45
	777	848.31	23.24	23.17	22.79	22.93	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)		Limit (dBm)
			RTAP 153.6kbps Subtype 0	RETAP 4096bps Subtype 2	
CDMA 1xEV-DO (BC0)	1013	824.70	23.88	23.71	38.45
	384	836.52	24.10	24.10	38.45
	777	848.31	23.98	23.95	38.45

PCS 1900 Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	28.77	27.22	26.23	24.08	33
	661	1880.0	29.11	27.21	25.61	23.83	33
	810	1909.8	28.95	27.36	26.00	24.22	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	24.74	24.39	21.59	20.99	33
	661	1880.0	25.40	23.71	22.28	20.75	33
	810	1909.8	25.18	24.28	21.86	20.87	33

WCDMA Band II

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band II)	Normal	Rel 99	1	23.15	23.29	23.05
		HSDPA	1	21.97	22.14	21.77
			2	22.15	22.29	22.05
			3	22.18	22.00	21.97
			4	22.32	22.13	22.03
		HSUPA	1	21.80	21.95	21.93
			2	21.53	21.99	22.05
			3	22.20	22.38	21.75
			4	21.88	22.08	21.62
			5	21.88	21.84	21.73

WCDMA Band IV

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band IV)	Normal	Rel 99	1	22.98	23.42	22.77
		HSDPA	1	22.44	22.05	22.02
			2	22.03	22.15	21.82
			3	22.32	22.18	21.89
			4	22.46	21.63	21.67
		HSUPA	1	22.10	21.97	21.93
			2	22.39	22.27	22.05
			3	21.75	21.90	22.00
			4	21.89	21.97	21.75
			5	21.84	21.96	21.94

CDMA BC1 Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			RC1+SO55	RC3+SO55	RC3+SO32 (FCH)	RC3+SO32 (SCH)	
CDMA 1xRTT (BC1)	25	1851.25	21.82	22.25	22.09	21.86	33
	600	1880.00	21.93	21.54	21.83	22.12	33
	1175	1908.75	22.16	21.65	22.03	21.93	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)		Limit (dBm)
			RTAP 153.6kbps Subtype 0	RETAP 4096bps Subtype 2	
CDMA 1xEV-DO (BC1)	25	1851.25	23.04	23.24	33
	600	1880.00	23.27	22.85	33
	1175	1908.75	23.17	23.24	33

Maximum Output Power:

LTE Band 2

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	20.84	21.33	20.93
		1#3	21.12	21.35	21.31
		1#5	21.13	20.69	21.02
		3#0	21.20	20.77	21.14
		3#1	20.88	20.73	21.09
		3#3	20.89	21.02	20.94
		6#0	20.77	21.39	20.91
	16-QAM	1#0	20.88	21.06	20.87
		1#3	21.17	21.07	21.03
		1#5	21.20	20.97	20.85
		3#0	21.16	20.94	20.93
		3#1	21.34	21.00	21.30
		3#3	20.89	20.70	20.76
		6#0	21.22	21.20	20.70
3M	QPSK	1#0	21.37	20.96	20.59
		1#7	21.41	20.58	21.47
		1#14	21.07	21.06	20.92
		8#0	21.17	21.40	21.01
		8#4	20.71	21.00	21.10
		8#7	20.62	21.13	20.95
		15#0	20.76	21.19	20.89
	16-QAM	1#0	20.67	20.85	20.78
		1#7	21.23	20.59	20.78
		1#14	21.26	21.02	20.77
		8#0	20.77	20.74	20.73
		8#4	20.73	21.04	20.89
		8#7	21.02	20.98	20.97
		15#0	21.18	21.25	21.01

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.21	20.77	21.23
		1#12	21.00	20.91	21.06
		1#24	21.06	20.82	21.20
		12#0	21.39	21.11	21.14
		12#6	20.70	21.18	20.97
		12#11	21.09	21.28	21.13
		25#0	20.99	20.94	20.96
	16-QAM	1#0	20.81	21.04	21.20
		1#12	21.34	20.93	21.41
		1#24	21.39	21.16	21.16
		12#0	20.64	20.95	20.88
		12#6	20.97	20.90	20.94
		12#11	21.18	21.15	21.09
		25#0	20.72	21.01	21.17
10M	QPSK	1#0	21.19	20.97	21.00
		1#24	21.03	21.04	21.17
		1#49	20.76	20.73	20.64
		25#0	21.31	20.86	20.67
		25#12	21.19	20.89	20.66
		25#24	20.81	21.09	21.37
		50#0	21.19	20.56	21.10
	16-QAM	1#0	20.86	20.91	21.25
		1#24	21.26	21.22	20.99
		1#49	20.91	21.06	20.80
		25#0	21.11	20.82	20.93
		25#12	20.81	21.39	21.17
		25#24	20.65	20.99	21.18
		50#0	21.08	20.74	20.74

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	20.82	20.89	21.03
		1#37	21.02	20.91	20.96
		1#74	20.96	21.41	20.70
		36#0	21.02	21.21	21.23
		36#17	20.89	21.30	20.88
		36#35	20.61	21.06	21.00
		75#0	20.88	20.68	21.09
	16-QAM	1#0	20.78	21.01	20.95
		1#37	21.02	21.02	20.88
		1#74	20.80	20.74	21.28
		36#0	20.89	20.98	21.37
		36#17	20.98	21.19	21.03
		36#35	21.15	20.93	21.32
		75#0	21.19	20.80	21.06
20M	QPSK	1#0	21.18	21.04	21.17
		1#49	21.18	20.89	21.43
		1#99	20.83	21.35	20.80
		50#0	20.98	21.16	21.40
		50#24	21.32	20.81	21.11
		50#49	21.19	20.94	20.91
		100#0	20.91	20.82	21.08
	16-QAM	1#0	20.77	21.06	20.79
		1#49	20.63	20.98	21.21
		1#99	20.96	21.12	21.09
		50#0	21.13	20.92	20.92
		50#24	20.76	21.39	20.93
		50#49	21.06	20.68	21.10
		100#0	21.20	21.04	20.84

LTE Band 4

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	20.81	21.33	20.70
		1#3	21.15	20.67	21.33
		1#5	20.90	20.71	21.03
		3#0	21.17	20.86	21.30
		3#1	21.14	20.70	20.93
		3#3	21.43	21.03	20.71
		6#0	21.20	20.83	20.87
	16-QAM	1#0	20.55	21.29	20.97
		1#3	20.92	20.98	20.95
		1#5	21.05	20.93	20.85
		3#0	21.27	21.03	20.89
		3#1	21.11	21.31	21.43
		3#3	21.05	21.25	21.30
		6#0	20.90	20.75	20.75
3M	QPSK	1#0	20.57	21.03	20.98
		1#7	21.14	21.27	21.26
		1#14	20.87	21.03	21.09
		8#0	20.72	21.17	21.03
		8#4	21.14	20.94	20.73
		8#7	21.22	20.80	20.82
		15#0	21.00	20.61	21.23
	16-QAM	1#0	20.84	21.06	20.87
		1#7	21.00	20.74	21.12
		1#14	20.92	21.21	20.93
		8#0	20.87	21.02	21.13
		8#4	20.82	20.77	21.28
		8#7	20.80	21.07	20.72
		15#0	21.04	21.24	20.62

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	20.76	20.97	20.83
		1#12	21.10	21.21	20.74
		1#24	21.26	20.92	21.21
		12#0	20.83	21.31	21.06
		12#6	20.78	21.22	21.35
		12#11	21.14	20.91	20.77
		25#0	21.10	21.21	21.05
	16-QAM	1#0	21.30	21.38	21.03
		1#12	20.94	21.04	21.35
		1#24	21.08	20.87	20.92
		12#0	21.13	20.98	21.08
		12#6	21.36	21.34	21.24
		12#11	20.75	21.06	21.13
		25#0	20.93	21.13	21.05
10M	QPSK	1#0	21.01	21.16	20.80
		1#24	20.99	20.92	20.91
		1#49	20.74	20.93	20.96
		25#0	21.35	20.74	20.94
		25#12	21.04	21.15	21.16
		25#24	20.84	20.64	21.25
		50#0	21.04	20.90	21.15
	16-QAM	1#0	21.17	21.04	20.93
		1#24	21.22	21.03	20.98
		1#49	21.08	20.70	20.99
		25#0	20.94	20.79	20.94
		25#12	20.92	20.76	21.21
		25#24	21.31	21.07	21.05
		50#0	21.02	20.83	21.18

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.01	20.72	20.96
		1#37	20.99	21.36	21.39
		1#74	20.87	21.21	21.00
		36#0	21.08	20.90	21.11
		36#17	21.00	21.35	21.08
		36#35	20.67	21.13	21.03
		75#0	21.23	20.90	21.05
	16-QAM	1#0	21.06	21.06	20.95
		1#37	21.24	21.19	21.20
		1#74	21.42	20.92	20.90
		36#0	21.03	21.15	20.95
		36#17	21.21	20.71	20.90
		36#35	20.93	21.17	21.28
		75#0	21.19	21.09	21.11
20M	QPSK	1#0	21.12	21.01	20.83
		1#49	20.94	21.09	20.72
		1#99	20.95	20.93	21.08
		50#0	20.90	21.10	21.16
		50#24	21.07	21.08	21.03
		50#49	20.85	21.12	20.79
		100#0	20.98	21.17	21.09
	16-QAM	1#0	21.28	20.88	21.36
		1#49	20.75	20.97	21.05
		1#99	20.69	21.07	21.10
		50#0	21.07	21.09	21.11
		50#24	21.45	20.80	20.93
		50#49	20.91	21.07	21.38
		100#0	20.90	21.20	20.94

LTE Band 5

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	21.43	20.74	20.94
		1#3	21.26	20.66	21.02
		1#5	21.20	20.73	21.04
		3#0	20.90	20.67	20.92
		3#1	21.11	21.05	20.89
		3#3	20.69	21.27	21.44
		6#0	21.07	21.23	20.73
	16-QAM	1#0	21.10	21.38	20.89
		1#3	20.80	20.96	20.86
		1#5	21.14	20.79	21.06
		3#0	20.83	21.16	21.14
		3#1	21.07	21.26	20.92
		3#3	20.92	21.07	20.73
		6#0	20.59	20.94	21.18
3M	QPSK	1#0	20.96	20.67	20.92
		1#7	21.27	20.99	21.26
		1#14	21.32	21.11	20.97
		8#0	20.85	20.75	20.78
		8#4	20.84	20.80	20.81
		8#7	20.86	20.71	21.05
		15#0	20.80	20.69	21.07
	16-QAM	1#0	21.32	21.01	21.01
		1#7	21.30	21.02	20.65
		1#14	21.01	20.97	20.70
		8#0	20.94	21.00	20.76
		8#4	20.91	21.13	20.83
		8#7	20.85	20.84	21.03
		15#0	20.75	21.22	21.23

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.23	20.86	21.21
		1#12	21.20	20.88	21.13
		1#24	21.10	20.92	21.30
		12#0	20.73	20.96	20.82
		12#6	21.07	20.67	20.78
		12#11	21.39	20.76	21.07
		25#0	20.82	20.72	20.98
	16-QAM	1#0	21.38	20.66	21.17
		1#12	20.77	21.22	21.12
		1#24	21.02	20.88	21.27
		12#0	21.15	20.89	20.69
		12#6	20.83	21.21	21.08
		12#11	21.03	20.69	20.62
		25#0	21.10	21.05	21.23
10M	QPSK	1#0	20.90	21.09	21.30
		1#24	20.74	21.03	21.00
		1#49	21.19	21.08	21.28
		25#0	21.07	20.93	20.94
		25#12	20.94	20.51	21.27
		25#24	20.85	20.98	21.03
		50#0	21.32	20.84	20.92
	16-QAM	1#0	20.73	20.82	21.19
		1#24	20.83	20.76	21.05
		1#49	20.98	21.33	20.65
		25#0	21.19	21.07	20.69
		25#12	20.97	21.07	21.12
		25#24	21.29	20.78	20.90
		50#0	20.97	20.93	21.15

LTE Band 7

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.10	21.00	20.84
		1#12	21.05	20.98	21.38
		1#24	21.17	21.07	20.86
		12#0	20.88	20.72	21.01
		12#6	20.89	21.33	20.68
		12#11	21.18	20.73	20.56
		25#0	20.68	20.94	20.80
	16-QAM	1#0	20.87	21.25	20.95
		1#12	21.17	21.27	21.07
		1#24	21.04	21.15	20.64
		12#0	20.86	20.76	21.05
		12#6	20.90	21.05	21.23
		12#11	20.82	20.91	20.68
		25#0	20.73	20.63	20.88
10M	QPSK	1#0	21.00	21.15	21.03
		1#24	20.63	20.69	20.99
		1#49	20.90	20.77	20.91
		25#0	21.00	21.35	20.81
		25#12	20.98	21.13	21.02
		25#24	21.06	20.88	21.38
		50#0	20.61	21.27	20.83
	16-QAM	1#0	20.52	21.15	21.18
		1#24	21.05	21.15	21.00
		1#49	21.26	20.98	20.94
		25#0	21.21	21.18	21.13
		25#12	21.09	21.14	21.32
		25#24	21.14	21.26	21.00
		50#0	21.33	21.32	21.11

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.32	20.73	21.03
		1#37	20.77	21.30	21.17
		1#74	21.00	21.31	21.02
		36#0	21.10	21.01	21.26
		36#17	21.02	20.83	21.02
		36#35	21.14	21.24	20.80
		75#0	21.08	20.76	21.38
	16-QAM	1#0	20.68	20.84	21.15
		1#37	21.24	21.14	21.25
		1#74	20.71	21.04	20.93
		36#0	21.31	21.07	20.89
		36#17	20.97	21.29	20.64
		36#35	21.05	20.66	21.28
		75#0	20.77	20.83	21.11
20M	QPSK	1#0	20.97	20.75	20.76
		1#49	21.06	20.84	20.91
		1#99	20.73	21.04	20.97
		50#0	21.29	21.08	20.96
		50#24	20.70	20.89	21.32
		50#49	21.20	21.28	20.74
		100#0	20.79	21.24	21.30
	16-QAM	1#0	21.21	21.00	20.74
		1#49	21.13	20.86	20.61
		1#99	20.95	21.03	20.59
		50#0	21.14	21.05	21.30
		50#24	21.06	21.00	21.27
		50#49	20.82	20.67	20.84
		100#0	20.98	21.07	21.16

LTE Band 12

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	20.94	20.70	20.76
		1#3	21.15	21.03	21.12
		1#5	21.22	20.91	21.16
		3#0	20.85	20.98	21.23
		3#1	20.85	21.32	20.89
		3#3	20.66	21.30	21.07
		6#0	21.13	21.21	21.00
	16-QAM	1#0	20.57	21.13	20.69
		1#3	20.98	20.54	20.68
		1#5	21.12	21.08	21.17
		3#0	21.24	21.10	20.71
		3#1	21.23	20.84	21.21
		3#3	20.78	20.62	21.00
		6#0	21.27	21.09	20.85
3M	QPSK	1#0	21.18	21.10	20.85
		1#7	21.07	21.25	20.91
		1#14	21.02	21.29	21.13
		8#0	20.91	20.69	20.91
		8#4	20.93	21.10	21.47
		8#7	20.99	20.80	20.87
		15#0	20.95	21.37	21.36
	16-QAM	1#0	20.91	20.90	21.11
		1#7	20.81	21.16	21.25
		1#14	20.71	20.83	20.96
		8#0	21.10	20.95	20.68
		8#4	20.85	21.09	21.12
		8#7	20.91	21.28	21.12
		15#0	21.08	20.81	20.89

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	20.86	21.17	21.35
		1#12	20.81	21.14	20.85
		1#24	20.88	20.83	20.92
		12#0	20.75	21.12	20.77
		12#6	20.90	20.78	21.02
		12#11	21.04	21.14	20.67
		25#0	20.64	21.03	21.25
	16-QAM	1#0	20.88	20.76	21.05
		1#12	20.88	20.74	21.15
		1#24	20.78	20.87	20.87
		12#0	21.22	20.89	21.33
		12#6	21.15	21.07	21.02
		12#11	20.84	21.24	20.62
		25#0	20.81	20.85	21.18
10M	QPSK	1#0	20.85	21.00	20.75
		1#24	21.09	20.88	20.90
		1#49	21.05	21.30	20.88
		25#0	21.01	20.79	21.36
		25#12	21.09	20.88	21.15
		25#24	20.65	21.00	21.05
		50#0	20.79	21.17	21.32
	16-QAM	1#0	20.94	21.10	20.94
		1#24	20.93	21.29	21.33
		1#49	20.86	21.10	20.67
		25#0	20.84	20.92	20.85
		25#12	21.15	20.92	21.23
		25#24	20.66	20.86	20.91
		50#0	20.82	21.07	20.78

LTE Band 17

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.24	20.73	21.03
		1#12	20.82	20.84	21.33
		1#24	20.80	21.10	20.95
		12#0	20.89	20.64	20.81
		12#6	21.11	21.03	20.92
		12#11	20.81	21.09	21.23
		25#0	20.66	21.04	20.77
	16-QAM	1#0	21.01	20.94	21.00
		1#12	21.04	21.04	21.00
		1#24	20.92	21.09	21.08
		12#0	21.05	20.62	21.29
		12#6	21.08	21.25	21.05
		12#11	20.85	20.68	21.09
		25#0	21.12	20.78	21.03
10M	QPSK	1#0	20.68	20.56	20.96
		1#24	20.86	21.29	20.84
		1#49	20.73	20.94	20.69
		25#0	20.88	20.65	21.04
		25#12	21.08	20.53	21.09
		25#24	20.65	20.92	21.12
		50#0	21.31	20.87	20.73
	16-QAM	1#0	20.84	20.66	21.13
		1#24	21.00	21.37	20.83
		1#49	21.16	21.24	20.83
		25#0	21.05	21.06	20.74
		25#12	20.79	20.73	21.26
		25#24	20.78	21.22	21.31
		50#0	20.75	20.90	20.72

LTE Band 25

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	21.12	21.11	21.04
		1#3	20.97	20.88	21.08
		1#5	20.71	20.89	21.00
		3#0	20.67	20.71	20.90
		3#1	20.95	21.07	20.85
		3#3	20.94	20.89	20.70
		6#0	21.26	20.82	21.11
	16-QAM	1#0	20.87	21.13	21.28
		1#3	21.35	21.39	20.61
		1#5	20.61	21.02	21.23
		3#0	21.04	21.03	21.36
		3#1	21.15	20.66	20.95
		3#3	20.76	21.13	20.84
		6#0	21.04	20.92	21.16
3M	QPSK	1#0	21.05	20.80	21.44
		1#7	21.29	20.78	20.63
		1#14	21.25	21.07	20.77
		8#0	20.86	20.63	20.87
		8#4	20.56	21.16	20.80
		8#7	21.25	20.93	20.86
		15#0	21.02	21.01	21.07
	16-QAM	1#0	21.45	21.04	20.82
		1#7	21.46	20.92	21.20
		1#14	20.83	21.26	21.17
		8#0	20.83	21.27	21.18
		8#4	21.28	21.22	20.81
		8#7	21.12	21.05	21.21
		15#0	20.91	20.69	20.89

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.01	20.99	21.05
		1#12	20.69	20.76	20.89
		1#24	20.64	20.93	21.04
		12#0	20.63	20.94	21.48
		12#6	20.88	21.18	21.27
		12#11	21.00	21.12	20.89
		25#0	21.18	21.05	20.76
	16-QAM	1#0	21.10	20.97	20.73
		1#12	21.16	20.72	21.24
		1#24	20.80	20.88	21.08
		12#0	20.88	21.10	20.59
		12#6	21.15	21.12	20.74
		12#11	20.96	21.35	21.46
		25#0	21.13	21.03	21.22
10M	QPSK	1#0	21.41	20.87	21.02
		1#24	21.26	20.72	20.88
		1#49	21.07	20.91	21.04
		25#0	21.06	20.99	20.93
		25#12	21.09	20.95	21.17
		25#24	21.09	21.13	20.93
		50#0	21.33	20.99	21.02
	16-QAM	1#0	20.91	20.84	20.80
		1#24	20.66	21.13	20.99
		1#49	20.88	20.73	21.01
		25#0	20.97	20.71	20.99
		25#12	20.78	20.95	21.41
		25#24	21.33	20.85	20.75
		50#0	20.55	21.29	21.13

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.21	21.10	21.02
		1#37	21.20	21.03	20.68
		1#74	20.89	21.06	20.66
		36#0	21.19	20.85	21.19
		36#17	21.10	20.73	21.03
		36#35	21.27	21.34	20.60
		75#0	20.82	21.35	20.84
	16-QAM	1#0	20.87	21.11	21.12
		1#37	20.96	21.24	21.16
		1#74	21.20	21.33	21.07
		36#0	21.07	21.13	21.37
		36#17	21.09	21.01	21.35
		36#35	21.23	20.83	21.40
		75#0	21.30	21.15	20.89
20M	QPSK	1#0	21.14	21.21	21.33
		1#49	20.79	21.29	21.09
		1#99	21.18	20.79	20.98
		50#0	20.71	20.81	21.22
		50#24	20.70	21.07	20.74
		50#49	20.64	21.14	20.70
		100#0	20.84	20.96	20.83
	16-QAM	1#0	21.17	20.71	20.71
		1#49	21.30	21.02	21.15
		1#99	21.34	21.11	20.81
		50#0	21.01	20.95	20.81
		50#24	20.98	21.21	21.09
		50#49	20.87	20.77	21.11
		100#0	21.07	20.81	20.90

LTE Band 26

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4M	QPSK	1#0	21.39	20.97	21.13
		1#3	21.34	21.21	20.69
		1#5	20.77	20.66	21.33
		3#0	20.79	20.83	21.27
		3#1	21.46	21.39	20.82
		3#3	20.73	20.76	20.92
		6#0	20.88	20.96	21.18
	16-QAM	1#0	20.89	21.06	21.36
		1#3	20.74	21.12	21.11
		1#5	20.63	21.12	20.87
		3#0	21.05	21.36	21.12
		3#1	21.32	21.13	21.06
		3#3	21.06	21.22	21.29
		6#0	20.69	20.84	20.78
3M	QPSK	1#0	21.29	20.95	21.00
		1#7	21.04	20.61	21.06
		1#14	21.27	21.12	21.05
		8#0	21.25	20.99	21.12
		8#4	21.12	21.25	20.96
		8#7	20.89	20.82	21.19
		15#0	21.03	20.58	21.02
	16-QAM	1#0	21.23	20.94	20.91
		1#7	20.84	21.11	20.98
		1#14	20.61	20.73	21.12
		8#0	20.86	21.04	21.05
		8#4	21.23	20.79	20.74
		8#7	20.56	21.00	20.85
		15#0	20.84	21.21	21.23

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	20.74	20.94	21.36
		1#12	21.25	21.10	20.60
		1#24	20.72	21.38	20.92
		12#0	20.96	20.60	21.48
		12#6	21.06	21.02	21.15
		12#11	20.97	21.41	20.67
		25#0	20.83	21.01	21.02
	16-QAM	1#0	20.95	20.92	20.92
		1#12	20.78	21.14	20.96
		1#24	20.81	21.38	20.84
		12#0	21.13	20.94	21.26
		12#6	20.86	21.23	20.87
		12#11	21.22	21.15	21.00
		25#0	20.71	21.06	21.40
10M	QPSK	1#0	20.86	20.67	21.04
		1#24	20.99	20.96	20.72
		1#49	20.77	21.07	20.81
		25#0	21.08	21.40	20.65
		25#12	21.06	20.84	20.84
		25#24	21.44	20.78	21.29
		50#0	20.77	21.08	21.01
	16-QAM	1#0	21.10	21.36	20.93
		1#24	21.11	20.96	20.93
		1#49	20.78	20.74	21.23
		25#0	21.04	20.89	20.95
		25#12	21.14	20.62	20.96
		25#24	21.22	21.04	20.81
		50#0	20.86	21.20	21.26

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	21.43	21.01	21.03
		1#37	21.41	20.71	20.87
		1#74	20.83	21.15	21.14
		36#0	20.89	20.76	21.10
		36#17	21.11	20.93	21.12
		36#35	21.21	20.85	20.83
		75#0	20.81	21.06	21.16
	16-QAM	1#0	20.96	20.74	21.02
		1#37	20.89	20.85	20.91
		1#74	20.61	20.92	21.17
		36#0	20.92	21.36	20.64
		36#17	20.97	21.28	21.14
		36#35	20.80	20.93	21.00
		75#0	21.35	21.30	21.10

LTE Band 38

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	21.92	22.26	21.91
		1#12	21.97	21.75	22.30
		1#24	22.02	22.07	21.59
		12#0	22.17	21.93	21.86
		12#6	22.23	21.85	22.11
		12#11	22.13	21.81	21.67
		25#0	21.67	21.77	21.90
	16-QAM	1#0	22.04	21.76	21.75
		1#12	21.72	21.66	21.87
		1#24	21.94	22.04	21.81
		12#0	22.43	22.09	21.84
		12#6	21.88	21.88	22.05
		12#11	21.74	21.97	21.90
		25#0	21.95	21.68	21.69
10M	QPSK	1#0	21.85	22.10	22.34
		1#24	22.19	21.81	22.00
		1#49	22.07	22.15	21.87
		25#0	21.88	22.12	22.11
		25#12	22.00	21.81	22.06
		25#24	22.14	22.13	22.12
		50#0	22.39	22.08	22.00
	16-QAM	1#0	21.93	21.76	22.22
		1#24	22.01	21.72	22.41
		1#49	22.25	22.03	22.42
		25#0	22.02	21.52	22.05
		25#12	21.76	22.11	22.12
		25#24	21.76	22.05	22.02
		50#0	22.10	21.61	21.97

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	22.04	22.18	22.18
		1#37	21.75	21.99	22.17
		1#74	22.18	22.23	22.18
		36#0	21.99	22.01	21.75
		36#17	21.91	21.89	22.44
		36#35	22.04	21.92	22.01
		75#0	22.26	22.02	21.82
	16-QAM	1#0	22.14	21.86	22.18
		1#37	21.87	21.68	21.98
		1#74	22.11	22.33	21.79
		36#0	22.31	22.24	21.86
		36#17	21.81	21.76	22.03
		36#35	22.33	22.03	21.96
		75#0	22.29	22.00	22.26
20M	QPSK	1#0	22.24	21.90	22.20
		1#49	21.91	22.27	22.08
		1#99	22.40	21.99	22.21
		50#0	22.27	22.04	22.26
		50#24	21.96	21.83	22.05
		50#49	22.16	21.86	22.00
		100#0	22.16	21.96	21.92
	16-QAM	1#0	22.13	21.74	21.78
		1#49	21.88	22.21	21.79
		1#99	22.18	21.75	22.30
		50#0	21.93	21.94	22.35
		50#24	22.37	22.09	22.30
		50#49	22.13	21.69	22.19
		100#0	21.88	22.14	21.63

LTE Band 41

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5M	QPSK	1#0	22.00	22.07	21.70
		1#12	22.14	21.72	22.10
		1#24	21.87	22.19	21.98
		12#0	22.09	21.92	22.42
		12#6	21.94	22.10	21.60
		12#11	22.05	21.92	22.18
		25#0	22.16	21.93	22.13
	16-QAM	1#0	21.71	22.07	21.68
		1#12	22.07	22.36	21.99
		1#24	21.85	21.98	22.00
		12#0	21.88	22.16	22.15
		12#6	22.24	22.12	22.27
		12#11	21.90	22.29	21.89
		25#0	22.04	22.13	22.24
10M	QPSK	1#0	21.86	22.16	22.02
		1#24	22.10	22.04	22.02
		1#49	21.60	22.01	21.93
		25#0	22.12	21.80	21.97
		25#12	21.97	22.23	21.68
		25#24	21.92	22.33	22.05
		50#0	22.07	22.31	22.08
	16-QAM	1#0	21.91	22.25	22.04
		1#24	21.78	22.02	21.92
		1#49	22.14	21.81	21.76
		25#0	21.77	22.07	21.63
		25#12	22.03	21.81	21.92
		25#24	21.70	22.32	22.18
		50#0	21.74	21.82	21.96

Test Bandwidth	Test Modulation	Resource Block & RB offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15M	QPSK	1#0	22.22	21.85	21.64
		1#37	21.64	22.14	22.06
		1#74	21.88	21.93	21.62
		36#0	22.03	22.09	22.17
		36#17	21.72	21.99	21.80
		36#35	21.66	22.02	22.08
		75#0	21.93	21.92	21.56
	16-QAM	1#0	21.67	22.04	22.16
		1#37	22.21	21.93	22.09
		1#74	21.83	21.86	22.15
		36#0	21.95	22.01	21.54
		36#17	22.20	21.93	21.64
		36#35	21.62	21.84	21.96
		75#0	21.88	22.17	21.57
20M	QPSK	1#0	22.03	21.80	22.20
		1#49	21.87	21.88	21.94
		1#99	21.86	22.47	21.86
		50#0	22.06	22.21	22.13
		50#24	21.95	22.11	22.05
		50#49	22.38	22.23	22.16
		100#0	22.11	21.97	21.98
	16-QAM	1#0	22.17	22.29	21.73
		1#49	21.89	22.07	21.83
		1#99	22.05	22.15	21.58
		50#0	21.59	21.82	21.55
		50#24	22.00	22.10	22.04
		50#49	22.08	22.00	21.96
		100#0	21.74	22.06	21.65

Peak-to-average ratio (PAR):

GSM 850

Mode	Channel	PAR (dB)	Limit (dB)
GPRS	Low	3.04	13
	Middle	2.94	13
	High	3.12	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	4.19	13
	Middle	3.74	13
	High	4.08	13

WCDMA Band V

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (Rel99)	Low	2.81	≤ 13
	Middle	2.75	≤ 13
	High	2.68	≤ 13
WCDMA (HSDPA)	Low	2.77	≤ 13
	Middle	3.41	≤ 13
	High	3.07	≤ 13
WCDMA (HSUPA)	Low	2.86	≤ 13
	Middle	2.98	≤ 13
	High	3.40	≤ 13

CDMA BC0

Mode	Channel	PAR(dB)	Limit(dB)
CDMA 1xRTT (BC0)	Low	3.23	13
	Middle	3.04	13
	High	2.71	13
CDMA 1xEV-DO (BC0)	Low	2.91	13
	Middle	2.99	13
	High	2.56	13

PCS 1900

Mode	Channel	PAR (dB)	Limit (dB)
GPRS	Low	2.90	13
	Middle	2.85	13
	High	3.12	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.37	13
	Middle	3.21	13
	High	2.87	13

WCDMA Band II

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (Rel99)	Low	2.98	≤ 13
	Middle	3.02	≤ 13
	High	2.92	≤ 13
WCDMA (HSDPA)	Low	3.22	≤ 13
	Middle	3.09	≤ 13
	High	2.75	≤ 13
WCDMA (HSUPA)	Low	3.10	≤ 13
	Middle	2.84	≤ 13
	High	2.99	≤ 13

WCDMA Band IV

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (Rel99)	Low	3.19	≤ 13
	Middle	2.82	≤ 13
	High	2.83	≤ 13
WCDMA (HSDPA)	Low	2.97	≤ 13
	Middle	3.06	≤ 13
	High	2.61	≤ 13
WCDMA (HSUPA)	Low	3.16	≤ 13
	Middle	3.40	≤ 13
	High	2.98	≤ 13

CDMA BC1

Mode	Channel	PAR(dB)	Limit(dB)
CDMA 1xRTT (BC1)	Low	2.25	13
	Middle	2.25	13
	High	2.25	13
CDMA 1xEV-DO (BC1)	Low	2.25	13
	Middle	2.25	13
	High	2.25	13

LTE Band 2

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit (dB)
QPSK	1 RB	20M	2.63	2.63	3.32	13
	100 RB		6.39	6.20	6.08	13
16-QAM	1 RB	20M	3.01	2.87	2.92	13
	100 RB		5.99	5.65	6.01	13

LTE Band 4

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	20M	3.24	2.58	2.75	13
	100 RB		6.20	5.82	5.91	13
16-QAM	1 RB	20M	2.68	3.24	2.79	13
	100 RB		6.44	5.57	6.08	13

LTE Band 5

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	10M	3.24	3.12	3.07	13
	50 RB		6.15	5.72	6.06	13
16-QAM	1 RB	10M	3.12	2.94	3.00	13
	50 RB		5.91	5.88	6.18	13

LTE Band 7

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	20M	2.76	3.21	3.41	13
	100 RB		5.80	6.18	5.74	13
16-QAM	1 RB	20M	2.99	2.93	2.98	13
	100 RB		6.31	6.03	6.08	13

LTE Band 12

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	10M	3.05	2.79	2.99	13
	50 RB		6.22	5.92	6.01	13
16-QAM	1 RB	10M	2.61	3.10	2.89	13
	50 RB		5.66	5.68	5.77	13

LTE Band 17

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	10M	2.62	3.02	3.25	13
	50 RB		5.80	6.12	6.04	13
16-QAM	1 RB	10M	3.08	2.61	3.17	13
	50 RB		5.65	5.89	5.94	13

LTE Band 25

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	20M	3.00	2.86	2.98	13
	100 RB		6.06	5.53	5.89	13
16-QAM	1 RB	20M	2.83	2.93	2.64	13
	100 RB		6.18	5.84	5.96	13

LTE Band 26

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	15M	3.17	3.05	2.69	13
	75 RB		5.97	6.16	5.56	13
16-QAM	1 RB	15M	3.19	3.32	2.70	13
	75 RB		6.45	5.87	5.73	13

LTE Band 38

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	20M	3.01	3.08	3.02	13
	100 RB		6.12	6.24	6.38	13
16-QAM	1 RB	20M	2.86	3.02	3.36	13
	100 RB		5.92	5.82	5.83	13

LTE Band 41

Test Modulation		Test Bandwidth	Low Channel (dB)	Middle Channel (dB)	High Channel (dB)	Limit(dB)
QPSK	1 RB	20M	3.04	3.45	2.93	13
	100 RB		5.72	6.08	5.79	13
16-QAM	1 RB	20M	2.89	2.96	2.76	13
	100 RB		5.75	5.66	5.66	13

Radiated Power:

GSM Mode

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
GPRS 850, Middle Channel (ERP)										
836.6	95.12	198	175	H	31.43	0.63	-1.14	29.66	38.45	8.79
836.6	91.32	237	119	V	24.17	0.63	-1.14	22.40	38.45	16.05
EGPRS 850, Middle Channel (ERP)										
836.6	88.69	255	106	H	25.00	0.63	-1.14	23.23	38.45	15.22
836.6	87.34	37	146	V	20.19	0.63	-1.14	18.42	38.45	20.03
GPRS 1900, Middle Channel (EIRP)										
1880.0	84.21	25	160	H	20.78	0.85	8.81	28.74	33.00	4.26
1880.0	82.32	254	100	V	18.46	0.85	8.81	26.42	33.00	6.58
EGPRS 1900, Middle Channel (EIRP)										
1880.0	80.33	245	185	H	16.90	0.85	8.81	24.86	33.00	8.14
1880.0	75.63	312	125	V	11.77	0.85	8.81	19.73	33.00	13.27

WCDMA Mode

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
WCDMA Band V, Middle Channel(ERP)										
836.6	86.34	37	116	H	22.65	0.63	-1.14	20.88	38.45	17.57
836.6	85.36	68	198	V	18.21	0.63	-1.14	16.44	38.45	22.01
WCDMA Band II, Middle Channel(EIRP)										
1880.0	76.48	244	138	H	13.05	0.85	8.81	21.01	33.00	11.99
1880.0	75.33	321	189	V	11.47	0.85	8.81	19.43	33.00	13.57
WCDMA Band IV, Middle Channel(EIRP)										
1732.6	78.12	212	146	H	13.68	0.84	8.57	21.41	30.00	8.59
1732.6	76.12	263	140	V	11.20	0.84	8.57	18.93	30.00	11.07

CDMA Mode

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
CDMA BC0 1xRTT, Middle Channel(ERP)										
836.52	83.16	165	143	H	19.46	0.30	4.86	24.02	38.50	14.48
836.52	80.61	132	104	V	13.45	0.30	4.86	18.01	38.50	20.49
CDMA BC0 1xEV-DO, Middle Channel(ERP)										
836.52	82.74	178	142	H	19.04	0.30	4.86	23.60	38.50	14.9
836.52	81.12	236	198	V	13.96	0.30	4.86	18.52	38.50	19.98
CDMA BC1 1xRTT, Middle Channel(EIRP)										
1880.00	82.47	36	199	H	19.04	0.30	4.86	23.60	33.00	9.40
1880.00	79.54	269	118	V	15.68	0.30	4.86	20.24	33.00	12.76
CDMA BC1 1xEV-DO, Middle Channel(EIRP)										
1880.00	82.63	27	157	H	19.20	0.30	4.86	23.76	33.00	9.24
1880.00	78.94	68	129	V	15.08	0.30	4.86	19.64	33.00	13.36

EIRP:

LTE Band 2

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK 1.4M BW Middle Channel								
1880	H	83.16	12.37	0.85	8.81	20.33	33	12.67
1880	V	80.67	9.57	0.85	8.81	17.53	33	15.47
16-QAM 1.4M BW Middle Channel								
1880	H	83.97	13.18	0.85	8.81	21.14	33	11.86
1880	V	79.25	8.15	0.85	8.81	16.11	33	16.89
QPSK 3M BW Middle Channel								
1880	H	83.44	12.65	0.85	8.81	20.61	33	12.39
1880	V	78.96	7.86	0.85	8.81	15.82	33	17.18
16-QAM 3M BW Middle Channel								
1880	H	83.69	12.90	0.85	8.81	20.86	33	12.14
1880	V	78.45	7.35	0.85	8.81	15.31	33	17.69
QPSK 5M BW Middle Channel								
1880	H	84.21	13.42	0.85	8.81	21.38	33	11.62
1880	V	78.25	7.15	0.85	8.81	15.11	33	17.89
16-QAM 5M BW Middle Channel								
1880	H	83.89	13.10	0.85	8.81	21.06	33	11.94
1880	V	78.92	7.82	0.85	8.81	15.78	33	17.22
QPSK 10M BW Middle Channel								
1880	H	84.08	13.29	0.85	8.81	21.25	33	11.75
1880	V	78.96	7.86	0.85	8.81	15.82	33	17.18
16-QAM 10M BW Middle Channel								
1880	H	82.32	11.53	0.85	8.81	19.49	33	13.51
1880	V	77.89	6.79	0.85	8.81	14.75	33	18.25
QPSK 15M BW Middle Channel								
1880	H	83.54	12.75	0.85	8.81	20.71	33	12.29
1880	V	78.45	7.35	0.85	8.81	15.31	33	17.69
16-QAM 15M BW Middle Channel								
1880	H	82.28	11.49	0.85	8.81	19.45	33	13.55
1880	V	78.34	7.24	0.85	8.81	15.20	33	17.80
QPSK 20M BW Middle Channel								
1880	H	83.21	12.42	0.85	8.81	20.38	33	12.62
1880	V	78.16	7.06	0.85	8.81	15.02	33	17.98
16-QAM 20M BW Middle Channel								
1880	H	84.12	13.33	0.85	8.81	21.29	33	11.71
1880	V	76.92	5.82	0.85	8.81	13.78	33	19.22

LTE Band 4

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK 1.4M BW Middle Channel								
1732.5	H	85.63	13.80	0.84	8.57	21.53	30	8.47
1732.5	V	80.47	8.37	0.84	8.57	16.10	30	13.90
16-QAM 1.4M BW Middle Channel								
1732.5	H	84.79	12.96	0.84	8.57	20.69	30	9.31
1732.5	V	79.95	7.85	0.84	8.57	15.58	30	14.42
QPSK 3M BW Middle Channel								
1732.5	H	85.67	13.84	0.84	8.57	21.57	30	8.43
1732.5	V	80.33	8.23	0.84	8.57	15.96	30	14.04
16-QAM 3M BW Middle Channel								
1732.5	H	84.79	12.96	0.84	8.57	20.69	30	9.31
1732.5	V	80.67	8.57	0.84	8.57	16.30	30	13.70
QPSK 5M BW Middle Channel								
1732.5	H	86.47	14.64	0.84	8.57	22.37	30	7.63
1732.5	V	79.68	7.58	0.84	8.57	15.31	30	14.69
16-QAM 5M BW Middle Channel								
1732.5	H	84.61	12.78	0.84	8.57	20.51	30	9.49
1732.5	V	81.35	9.25	0.84	8.57	16.98	30	13.02
QPSK 10M BW Middle Channel								
1732.5	H	85.11	13.28	0.84	8.57	21.01	30	8.99
1732.5	V	80.67	8.57	0.84	8.57	16.30	30	13.70
16-QAM 10M BW Middle Channel								
1732.5	H	83.16	11.33	0.84	8.57	19.06	30	10.94
1732.5	V	79.63	7.53	0.84	8.57	15.26	30	14.74
QPSK 15M BW Middle Channel								
1732.5	H	84.78	12.95	0.84	8.57	20.68	30	9.32
1732.5	V	81.01	8.91	0.84	8.57	16.64	30	13.36
16-QAM 15M BW Middle Channel								
1732.5	H	85.31	13.48	0.84	8.57	21.21	30	8.79
1732.5	V	79.36	7.26	0.84	8.57	14.99	30	15.01
QPSK 20M BW Middle Channel								
1732.5	H	84.27	12.44	0.84	8.57	20.17	30	9.83
1732.5	V	79.63	7.53	0.84	8.57	15.26	30	14.74
16-QAM 20M BW Middle Channel								
1732.5	H	84.57	12.74	0.84	8.57	20.47	30	9.53
1732.5	V	79.86	7.76	0.84	8.57	15.49	30	14.51

LTE Band 5

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
QPSK 1.4M BW Middle Channel								
836.5	H	87.06	23.37	0.63	-1.14	21.60	33	11.40
836.5	V	83.47	16.32	0.63	-1.14	14.55	33	18.45
16-QAM 1.4M BW Middle Channel								
836.5	H	86.95	23.26	0.63	-1.14	21.49	33	11.51
836.5	V	82.12	14.97	0.63	-1.14	13.20	33	19.80
QPSK 3M BW Middle Channel								
836.5	H	87.02	23.33	0.63	-1.14	21.56	33	11.44
836.5	V	83.78	16.63	0.63	-1.14	14.86	33	18.14
16-QAM 3M BW Middle Channel								
836.5	H	86.47	22.78	0.63	-1.14	21.01	33	11.99
836.5	V	81.02	13.87	0.63	-1.14	12.10	33	20.90
QPSK 5M BW Middle Channel								
836.5	H	86.58	22.89	0.63	-1.14	21.12	33	11.88
836.5	V	82.47	15.32	0.63	-1.14	13.55	33	19.45
16-QAM 5M BW Middle Channel								
836.5	H	86.02	22.33	0.63	-1.14	20.56	33	12.44
836.5	V	81.45	14.30	0.63	-1.14	12.53	33	20.47
QPSK 10M BW Middle Channel								
836.5	H	87.32	23.63	0.63	-1.14	21.86	33	11.14
836.5	V	82.14	14.99	0.63	-1.14	13.22	33	19.78
16-QAM 10M BW Middle Channel								
836.5	H	85.78	22.09	0.63	-1.14	20.32	33	12.68
836.5	V	80.63	13.48	0.63	-1.14	11.71	33	21.29

LTE Band 7

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5M BW Middle Channel								
2535	H	82.08	12.25	0.89	10.05	21.41	33	11.59
2535	V	76.77	6.87	0.89	10.05	16.03	33	16.97
16-QAM 5M BW Middle Channel								
2535	H	81.14	11.31	0.89	10.05	20.47	33	12.53
2535	V	76.85	6.95	0.89	10.05	16.11	33	16.89
QPSK 10M BW Middle Channel								
2535	H	81.74	11.91	0.89	10.05	21.07	33	11.93
2535	V	76.88	6.98	0.89	10.05	16.14	33	16.86
16-QAM 10M BW Middle Channel								
2535	H	81.37	11.54	0.89	10.05	20.70	33	12.3
2535	V	76.98	7.08	0.89	10.05	16.24	33	16.76
QPSK 15M BW Middle Channel								
2535	H	82.21	12.38	0.89	10.05	21.54	33	11.46
2535	V	77.83	7.93	0.89	10.05	17.09	33	15.91
16-QAM 15M BW Middle Channel								
2535	H	81.72	11.89	0.89	10.05	21.05	33	11.95
2535	V	76.69	6.79	0.89	10.05	15.95	33	17.05
QPSK 20M BW Middle Channel								
2535	H	82.10	12.27	0.89	10.05	21.43	33	11.57
2535	V	76.94	7.04	0.89	10.05	16.20	33	16.80
16-QAM 20M BW Middle Channel								
2535	H	81.69	11.86	0.89	10.05	21.02	33	11.98
2535	V	77.33	7.43	0.89	10.05	16.59	33	16.41

LTE Band 12

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4M BW Middle Channel								
707.5	H	87.87	19.26	0.62	-1.71	16.93	34.77	17.84
707.5	V	85.47	18.25	0.62	-1.71	15.92	34.77	18.85
16-QAM 1.4M BW Middle Channel								
707.5	H	86.93	18.32	0.62	-1.71	15.99	34.77	18.78
707.5	V	87.12	19.90	0.62	-1.71	17.57	34.77	17.20
QPSK 3M BW Middle Channel								
707.5	H	86.71	18.10	0.62	-1.71	15.77	34.77	19.00
707.5	V	87.53	20.31	0.62	-1.71	17.98	34.77	16.79
16-QAM 3M BW Middle Channel								
707.5	H	88.24	19.63	0.62	-1.71	17.30	34.77	17.47
707.5	V	88.04	20.82	0.62	-1.71	18.49	34.77	16.28
QPSK 5M BW Middle Channel								
707.5	H	88.71	20.10	0.62	-1.71	17.77	34.77	17.00
707.5	V	87.40	20.18	0.62	-1.71	17.85	34.77	16.92
16-QAM 5M BW Middle Channel								
707.5	H	86.75	18.14	0.62	-1.71	15.81	34.77	18.96
707.5	V	87.27	20.05	0.62	-1.71	17.72	34.77	17.05
QPSK 10M BW Middle Channel								
707.5	H	87.90	19.29	0.62	-1.71	16.96	34.77	17.81
707.5	V	85.82	18.60	0.62	-1.71	16.27	34.77	18.50
16-QAM 10M BW Middle Channel								
707.5	H	88.18	19.57	0.62	-1.71	17.24	34.77	17.53
707.5	V	86.43	19.21	0.62	-1.71	16.88	34.77	17.89

LTE Band 17

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5M BW Middle Channel								
710	H	86.91	18.25	0.62	-1.7	15.93	34.77	18.84
710	V	86.88	19.78	0.62	-1.7	17.46	34.77	17.31
16-QAM 5M BW Middle Channel								
710	H	88.58	19.92	0.62	-1.7	17.60	34.77	17.17
710	V	87.26	20.16	0.62	-1.7	17.84	34.77	16.93
QPSK 10M BW Middle Channel								
710	H	89.43	20.77	0.62	-1.7	18.45	34.77	16.32
710	V	85.88	18.78	0.62	-1.7	16.46	34.77	18.31
16-QAM 10M BW Middle Channel								
710	H	88.21	19.55	0.62	-1.7	17.23	34.77	17.54
710	V	88.01	20.91	0.62	-1.7	18.59	34.77	16.18

LTE Band 25

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4M BW Middle Channel								
1882.5	H	84.66	13.89	0.85	8.81	21.85	33	11.15
1882.5	V	76.52	5.44	0.85	8.81	13.40	33	19.60
16-QAM 1.4M BW Middle Channel								
1882.5	H	83.05	12.28	0.85	8.81	20.24	33	12.76
1882.5	V	76.05	4.97	0.85	8.81	12.93	33	20.07
QPSK 3M BW Middle Channel								
1882.5	H	83.90	13.13	0.85	8.81	21.09	33	11.91
1882.5	V	76.48	5.40	0.85	8.81	13.36	33	19.64
16-QAM 3M BW Middle Channel								
1882.5	H	83.19	12.42	0.85	8.81	20.38	33	12.62
1882.5	V	76.44	5.36	0.85	8.81	13.32	33	19.68
QPSK 5M BW Middle Channel								
1882.5	H	83.98	13.21	0.85	8.81	21.17	33	11.83
1882.5	V	77.59	6.51	0.85	8.81	14.47	33	18.53
16-QAM 5M BW Middle Channel								
1882.5	H	84.00	13.23	0.85	8.81	21.19	33	11.81
1882.5	V	76.36	5.28	0.85	8.81	13.24	33	19.76
QPSK 10M BW Middle Channel								
1882.5	H	83.98	13.21	0.85	8.81	21.17	33	11.83
1882.5	V	77.31	6.23	0.85	8.81	14.19	33	18.81
16-QAM 10M BW Middle Channel								
1882.5	H	84.66	13.89	0.85	8.81	21.85	33	11.15
1882.5	V	77.19	6.11	0.85	8.81	14.07	33	18.93
QPSK 15M BW Middle Channel								
1882.5	H	83.87	13.10	0.85	8.81	21.06	33	11.94
1882.5	V	76.98	5.90	0.85	8.81	13.86	33	19.14
16-QAM 15M BW Middle Channel								
1882.5	H	84.82	14.05	0.85	8.81	22.01	33	10.99
1882.5	V	77.26	6.18	0.85	8.81	14.14	33	18.86
QPSK 20M BW Middle Channel								
1882.5	H	84.43	13.66	0.85	8.81	21.62	33	11.38
1882.5	V	76.99	5.91	0.85	8.81	13.87	33	19.13
16-QAM 20M BW Middle Channel								
1882.5	H	84.33	13.56	0.85	8.81	21.52	33	11.48
1882.5	V	77.56	6.48	0.85	8.81	14.44	33	18.56

LTE Band 26

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4M BW Middle Channel								
831.5	H	86.03	22.59	0.63	-1.16	20.80	33	12.20
831.5	V	81.86	15.41	0.63	-1.16	13.62	33	19.38
16-QAM 1.4M BW Middle Channel								
831.5	H	85.88	22.44	0.63	-1.16	20.65	33	12.35
831.5	V	82.08	15.63	0.63	-1.16	13.84	33	19.16
QPSK 3M BW Middle Channel								
831.5	H	86.27	22.83	0.63	-1.16	21.04	33	11.96
831.5	V	82.50	16.05	0.63	-1.16	14.26	33	18.74
16-QAM 3M BW Middle Channel								
831.5	H	85.29	21.85	0.63	-1.16	20.06	33	12.94
831.5	V	81.92	15.47	0.63	-1.16	13.68	33	19.32
QPSK 5M BW Middle Channel								
831.5	H	85.89	22.45	0.63	-1.16	20.66	33	12.34
831.5	V	81.48	15.03	0.63	-1.16	13.24	33	19.76
16-QAM 5M BW Middle Channel								
831.5	H	86.05	22.61	0.63	-1.16	20.82	33	12.18
831.5	V	82.83	16.38	0.63	-1.16	14.59	33	18.41
QPSK 10M BW Middle Channel								
831.5	H	85.55	22.11	0.63	-1.16	20.32	33	12.68
831.5	V	82.05	15.60	0.63	-1.16	13.81	33	19.19
16-QAM 10M BW Middle Channel								
831.5	H	86.44	23.00	0.63	-1.16	21.21	33	11.79
831.5	V	82.65	16.20	0.63	-1.16	14.41	33	18.59
QPSK 15M BW Middle Channel								
831.5	H	85.47	22.03	0.63	-1.16	20.24	33	12.76
831.5	V	81.88	15.43	0.63	-1.16	13.64	33	19.36
16-QAM 15M BW Middle Channel								
831.5	H	85.43	21.99	0.63	-1.16	20.20	33	12.80
831.5	V	81.70	15.25	0.63	-1.16	13.46	33	19.54

LTE Band 38

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5M BW Middle Channel								
2595	H	82.36	12.72	0.90	9.97	21.79	33	11.21
2595	V	75.69	5.98	0.90	9.97	15.05	33	17.95
16-QAM 5M BW Middle Channel								
2595	H	82.03	12.39	0.90	9.97	21.46	33	11.54
2595	V	75.60	5.89	0.90	9.97	14.96	33	18.04
QPSK 10M BW Middle Channel								
2595	H	81.51	11.87	0.90	9.97	20.94	33	12.06
2595	V	75.19	5.48	0.90	9.97	14.55	33	18.45
16-QAM 10M BW Middle Channel								
2595	H	81.51	11.87	0.90	9.97	20.94	33	12.06
2595	V	75.21	5.50	0.90	9.97	14.57	33	18.43
QPSK 15M BW Middle Channel								
2595	H	81.78	12.14	0.90	9.97	21.21	33	11.79
2595	V	74.96	5.25	0.90	9.97	14.32	33	18.68
16-QAM 15M BW Middle Channel								
2595	H	81.45	11.81	0.90	9.97	20.88	33	12.12
2595	V	75.37	5.66	0.90	9.97	14.73	33	18.27
QPSK 20M BW Middle Channel								
2595	H	81.77	12.13	0.90	9.97	21.20	33	11.80
2595	V	74.38	4.67	0.90	9.97	13.74	33	19.26
16-QAM 20M BW Middle Channel								
2595	H	81.61	11.97	0.90	9.97	21.04	33	11.96
2595	V	74.76	5.05	0.90	9.97	14.12	33	18.88

LTE Band 41

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBμV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Submitted Level (dBm)	Cable loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5M BW Middle Channel								
2593	H	73.78	12.06	0.90	9.97	21.13	33	11.87
2593	V	69.42	7.65	0.90	9.97	16.72	33	16.28
16-QAM 5M BW Middle Channel								
2593	H	73.97	12.25	0.90	9.97	21.32	33	11.68
2593	V	68.78	7.01	0.90	9.97	16.08	33	16.92
QPSK 10M BW Middle Channel								
2593	H	73.55	11.83	0.90	9.97	20.90	33	12.10
2593	V	69.04	7.27	0.90	9.97	16.34	33	16.66
16-QAM 10M BW Middle Channel								
2593	H	74.24	12.52	0.90	9.97	21.59	33	11.41
2593	V	68.45	6.68	0.90	9.97	15.75	33	17.25
QPSK 15M BW Middle Channel								
2593	H	74.10	12.38	0.90	9.97	21.45	33	11.55
2593	V	69.16	7.39	0.90	9.97	16.46	33	16.54
16-QAM 15M BW Middle Channel								
2593	H	74.44	12.72	0.90	9.97	21.79	33	11.21
2593	V	68.47	6.70	0.90	9.97	15.77	33	17.23
QPSK 20M BW Middle Channel								
2593	H	73.68	11.96	0.90	9.97	21.03	33	11.97
2593	V	69.17	7.40	0.90	9.97	16.47	33	16.53
16-QAM 20M BW Middle Channel								
2593	H	73.65	11.93	0.90	9.97	21.00	33	12.00
2593	V	69.51	7.74	0.90	9.97	16.81	33	16.19

Note:
All above data were tested without amplifier.
Absolute Level (dBm) = Submitted Level (dBm) - Cable loss (dB) + Antenna Gain (dBd/dBi)
Margin (dB) = Limit (dBm) - Absolute Level (dBm)

FCC §2.1049, §22.917, §22.905 & §24.238; §27.53; §90.209- OCCUPIED BANDWIDTH

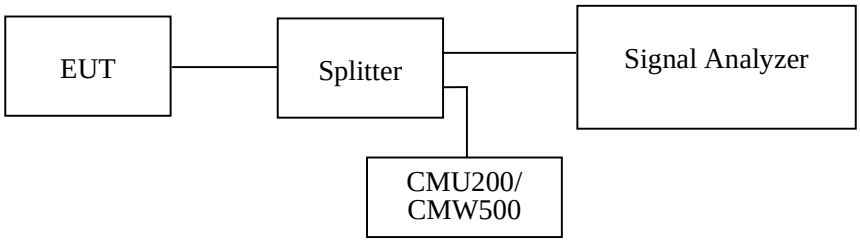
Applicable Standards

FCC 47 §2.1049, §22.917, §22.905 & §24.238, §90.209 and §27.53.

Test Procedure

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

The resolution bandwidth of the spectrum analyzer was set at 5 kHz (Cellular /PCS) & 100 kHz (WCDMA), and the 26 dB & 99% bandwidth was recorded.



Test Data

Environmental Conditions

Temperature:	23.2 ℃-23.5 ℃
Relative Humidity:	51 %-23 %
ATM Pressure:	101.1 kPa-103.3 kPa

The testing was performed by Sam Ye from 2019-08-06 to 2019-09-06.

EUT operation mode: Transmitting

Test Result: Compliant.

GSM 850

Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
GPRS (GMSK)	836.6	0.319	0.246
EGPRS (8PSK)	836.6	0.323	0.246

WCDMA Band V

Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
WCDMA (BPSK)	836.6	4.770	4.148
WCDMA (HSDPA)	836.6	4.770	4.128
WCDMA (HSUPA)	836.6	4.749	4.148

CDMA BC0 Band

Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CDMA BC0 (1xRTT)	836.52	1.443	1.283
CDMA BC0 (1xEV-DO)	836.52	1.443	1.273

PCS 1900

Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
GPRS (GMSK)	1880	0.313	0.240
EGPRS (8PSK)	1880	0.317	0.240

WCDMA Band II

Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
WCDMA (BPSK)	1880	4.749	4.148
WCDMA (HSDPA)	1880	4.749	4.148
WCDMA (HSUPA)	1880	4.810	4.148

WCDMA Band IV

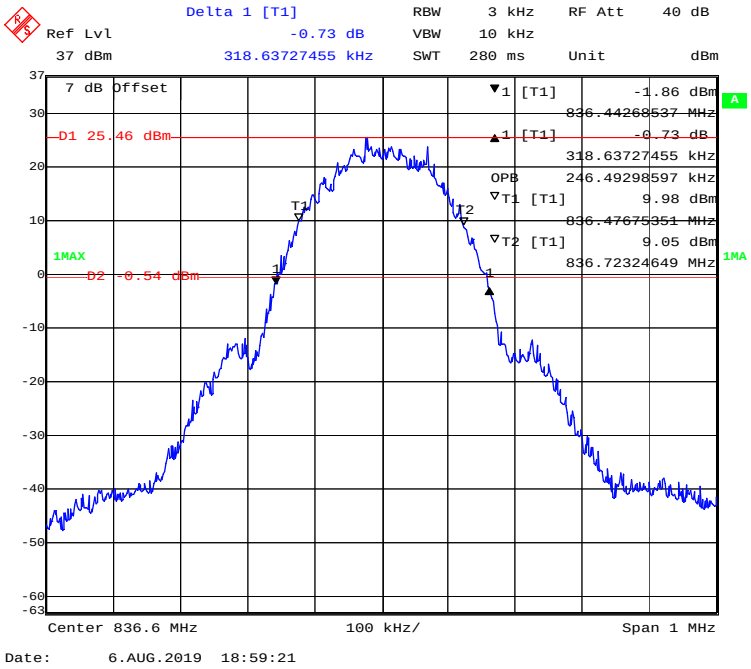
Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
WCDMA (Rel 99)	1732.6	4.770	4.128
WCDMA (HSDPA)	1732.6	4.770	4.148
WCDMA (HSUPA)	1732.6	4.770	4.168

CDMA BC1 Band

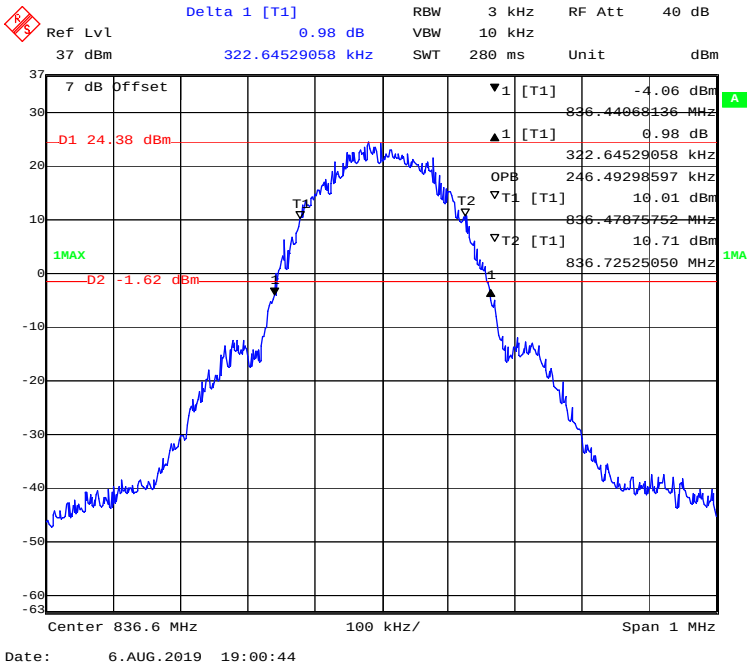
Mode	Frequency (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
CDMA BC1 (1xRTT)	1880	1.443	1.283
CDMA BC1 (1xEV-DO)	1880	1.443	1.273

GSM 850

99% Occupied & 26 dB Emissions Bandwidth for GPRS (GMSK) Mode

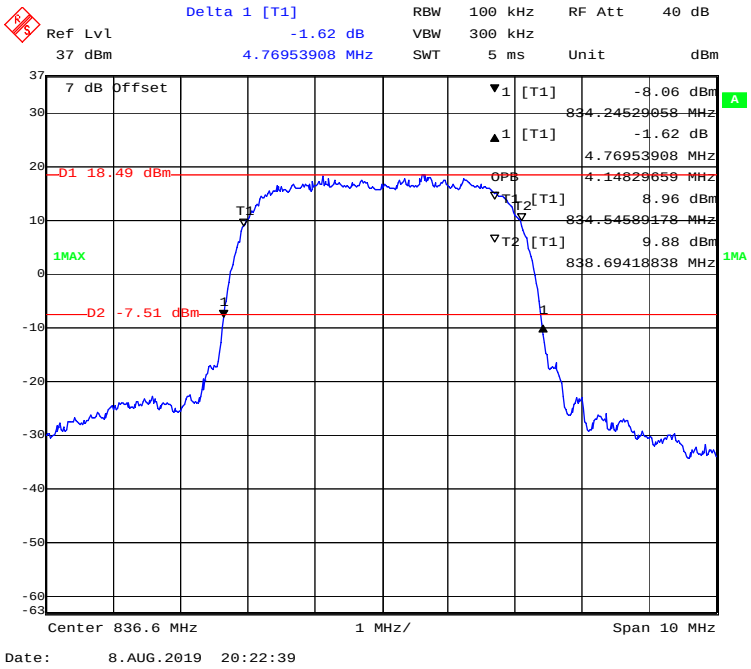


99% Occupied & 26 dB Emissions Bandwidth for EGPRS (8PSK) Mode

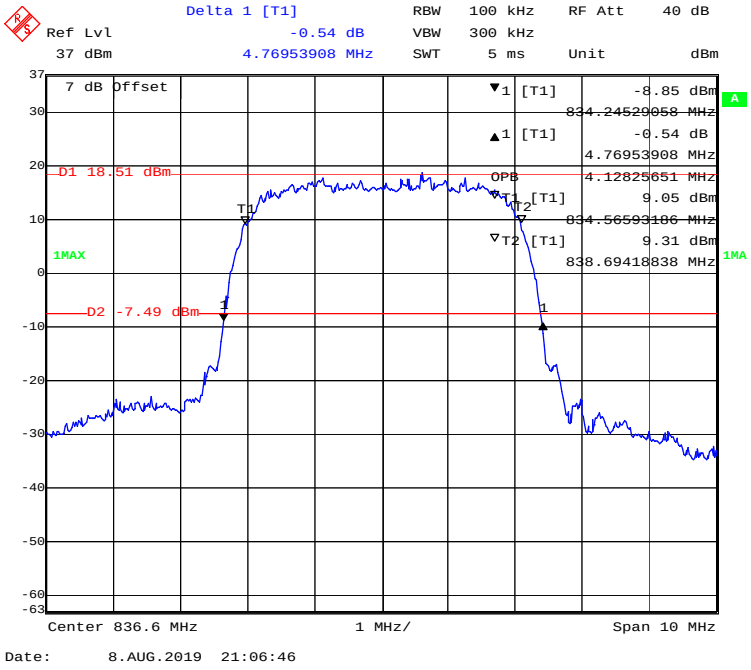


WCDMA Band V

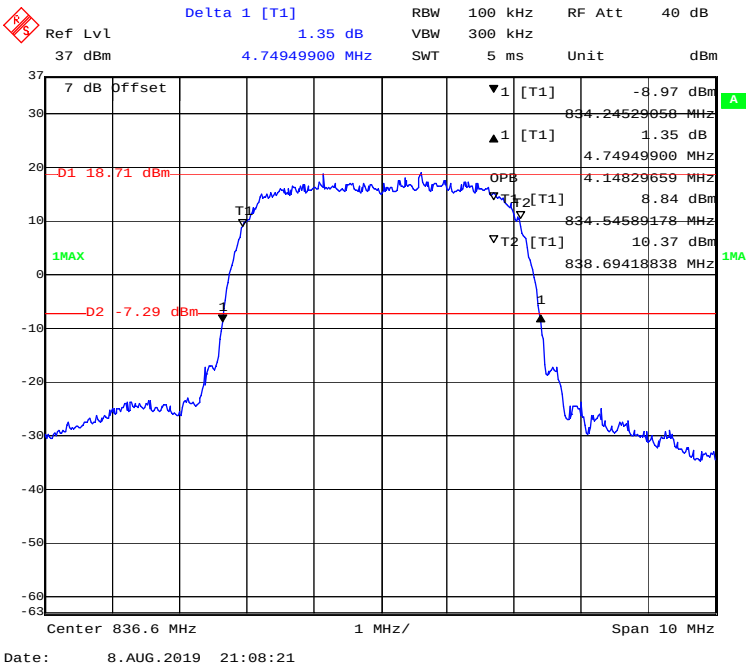
99% Occupied & 26 dB Emissions Bandwidth for WCDMA (Rel 99) Mode



99% Occupied & 26 dB Emissions Bandwidth for WCDMA (HSDPA) Mode

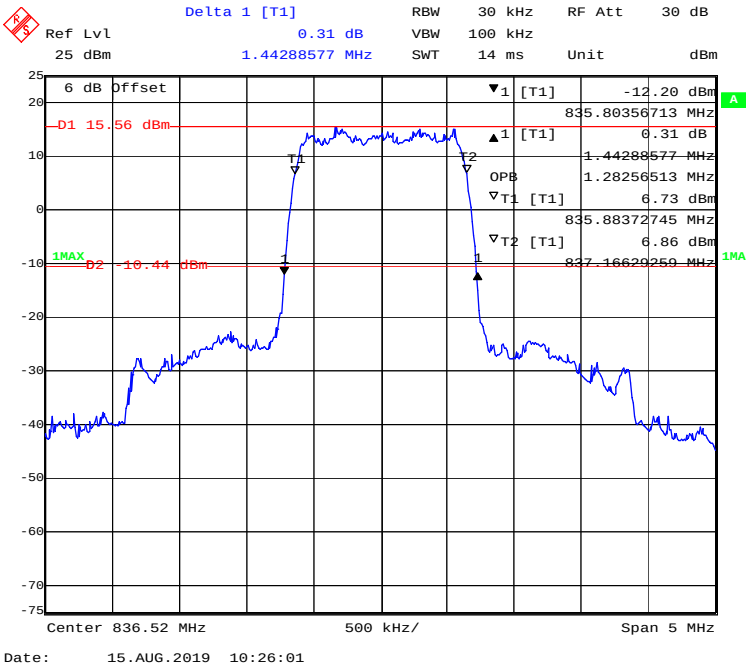


99% Occupied & 26 dB Emissions Bandwidth for WCDMA (HSUPA) Mode

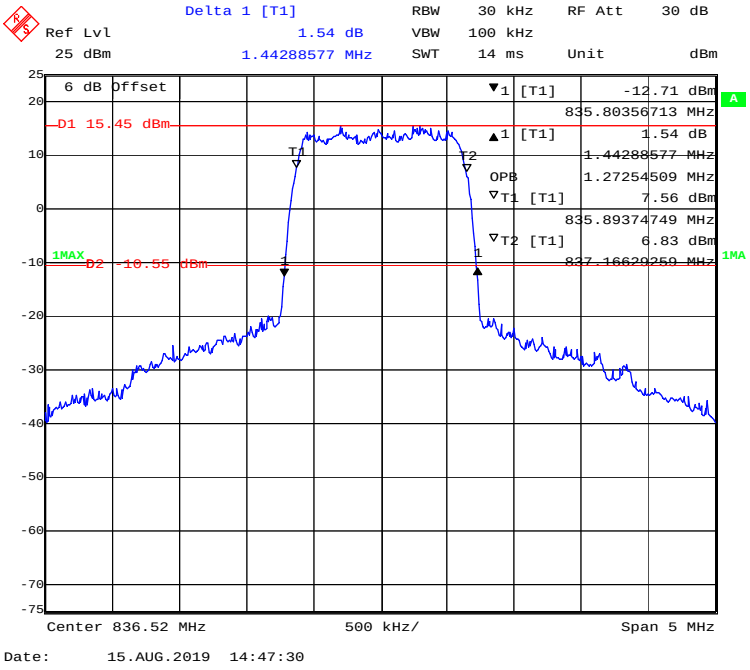


CDMA BC0 Band

99% Occupied & 26 dB Emissions Bandwidth for CDMA BC0 (1xRTT) Mode

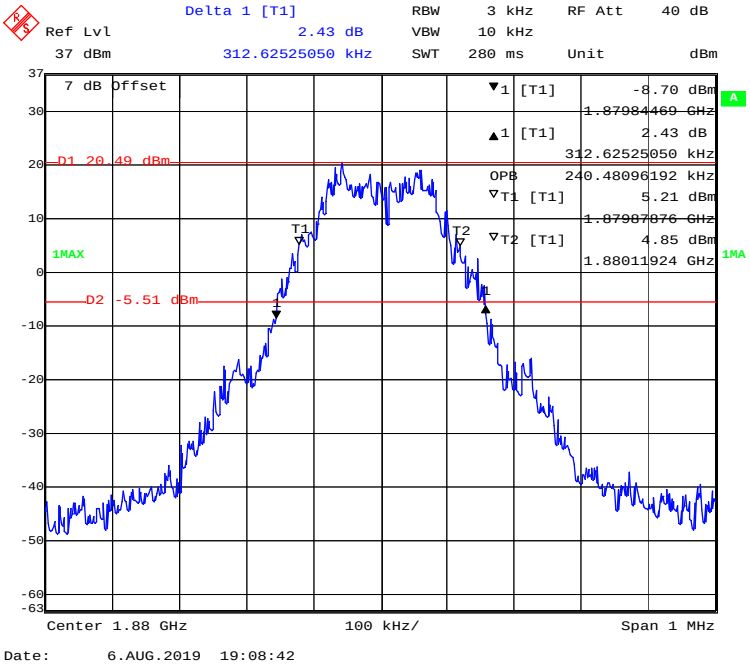


99% Occupied & 26 dB Emissions Bandwidth for CDMA BC0 (1xEV-DO) Mode

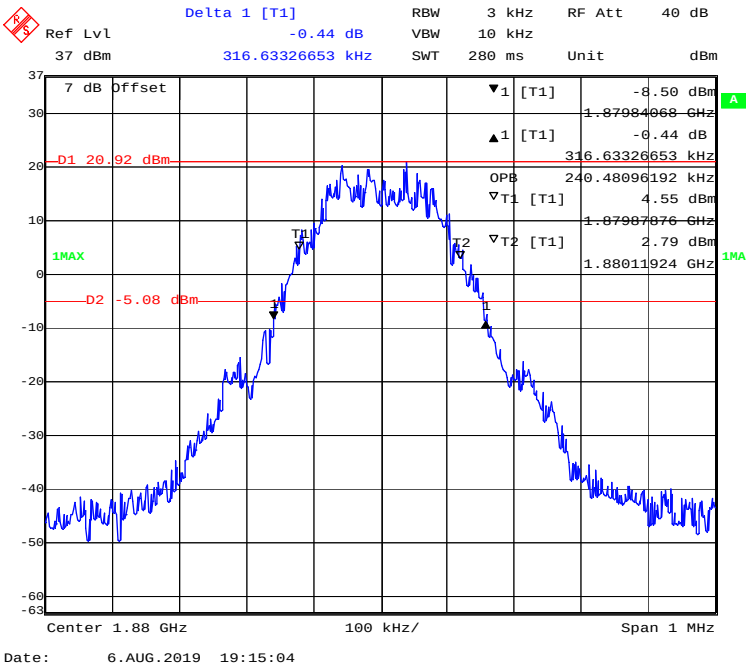


PCS 1900 Band

99% Occupied & 26 dB Emissions Bandwidth for GPRS (GMSK) Mode

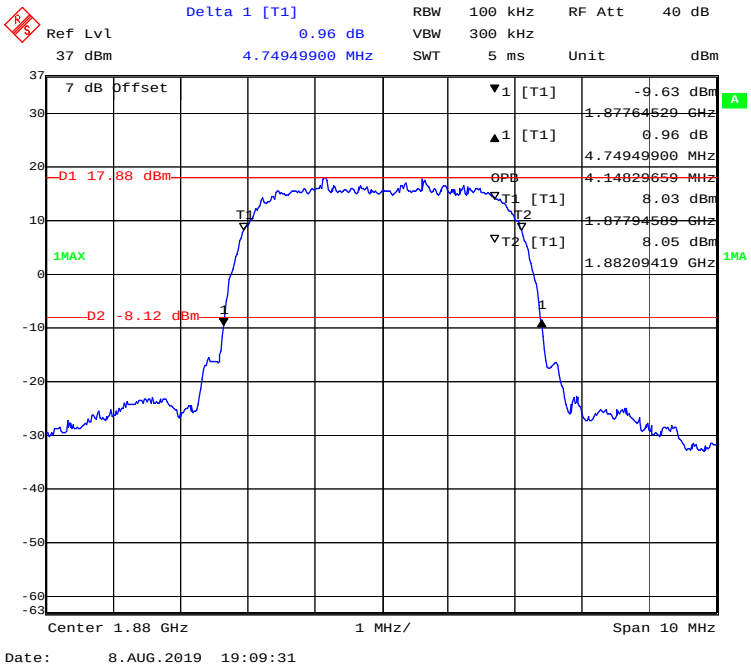


99% Occupied & 26 dB Emissions Bandwidth for EGPRS (8PSK) Mode

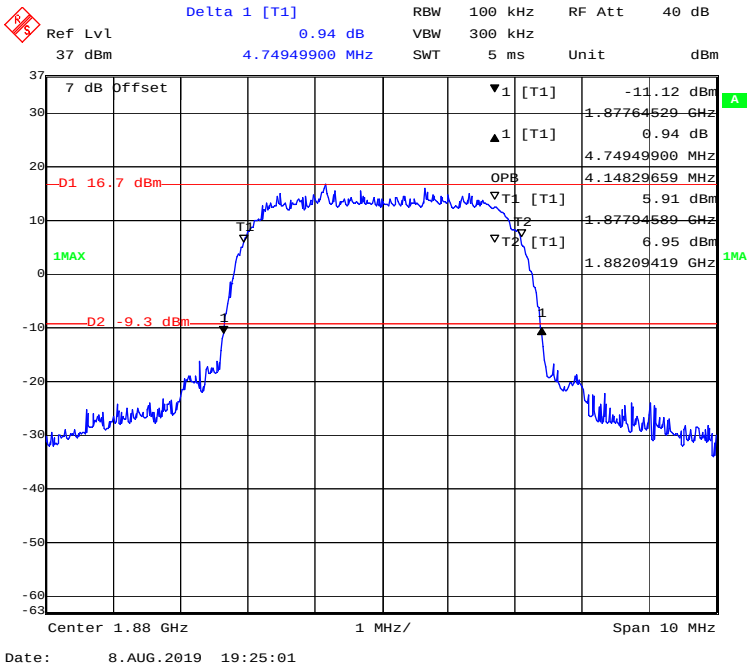


WCDMA Band II

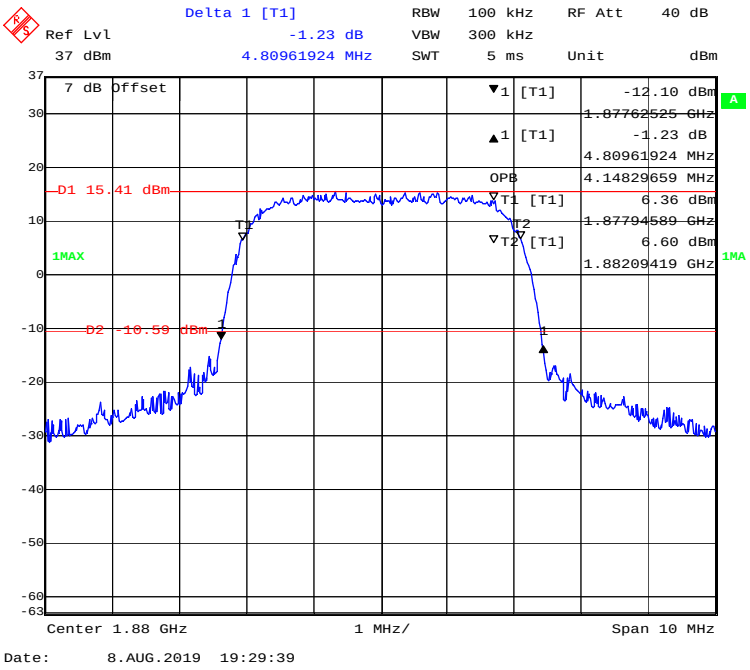
99% Occupied & 26 dB Emissions Bandwidth for WCDMA (Rel 99) Mode



99% Occupied & 26 dB Emissions Bandwidth for WCDMA (HSDPA) Mode

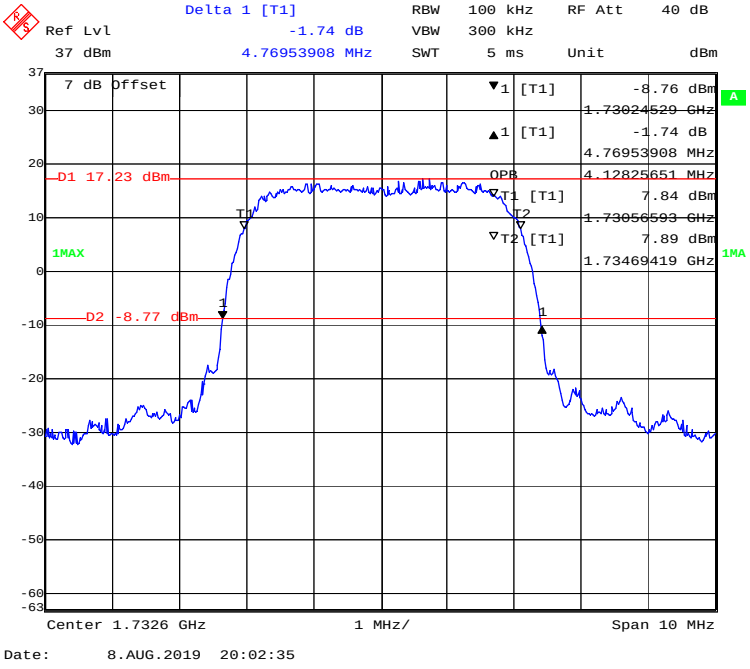


99% Occupied & 26 dB Emissions Bandwidth for WCDMA (HSUPA) Mode

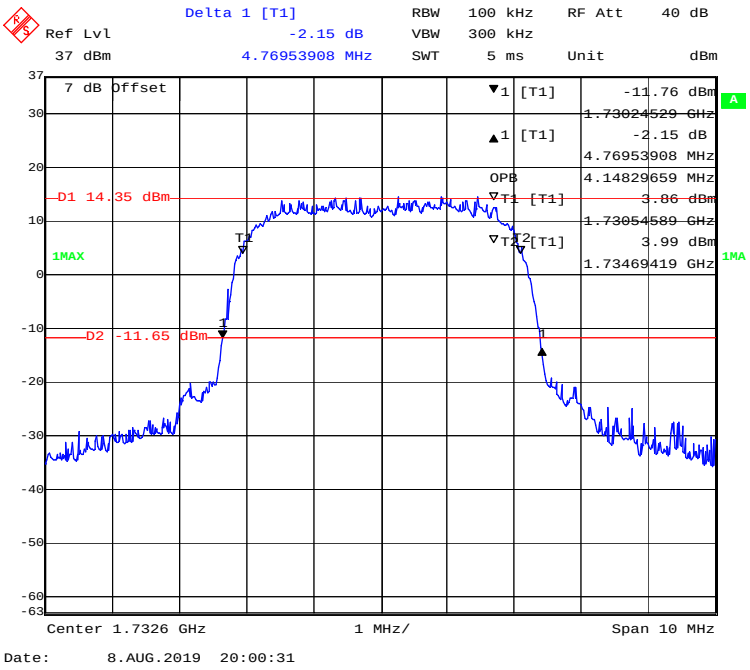


WCDMA Band IV

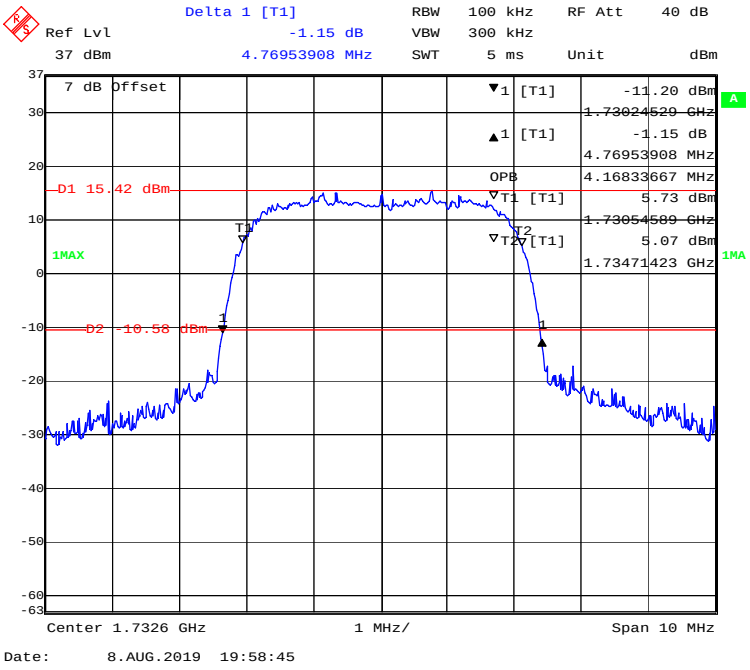
99% Occupied & 26 dB Emissions Bandwidth for WCDMA (Rel 99) Mode



99% Occupied & 26 dB Emissions Bandwidth for WCDMA (HSDPA) Mode

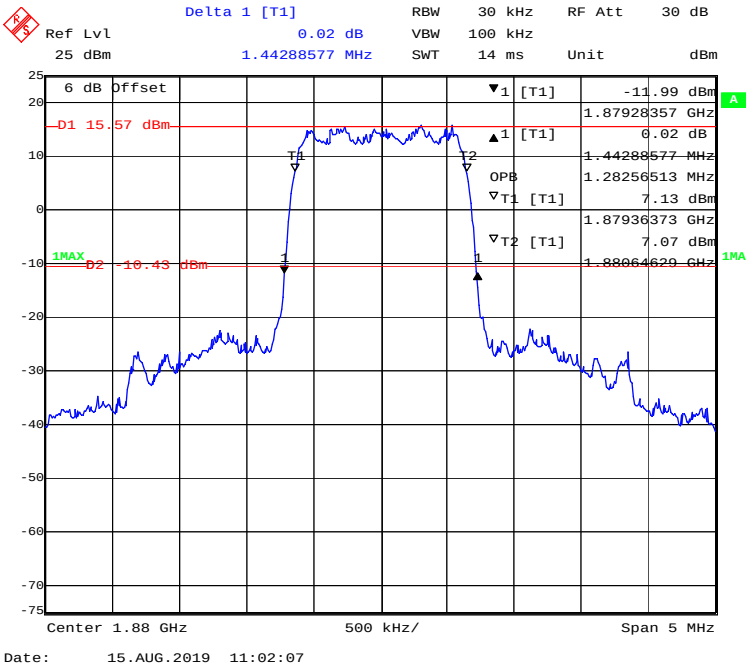


99% Occupied & 26 dB Emissions Bandwidth for WCDMA (HSUPA) Mode

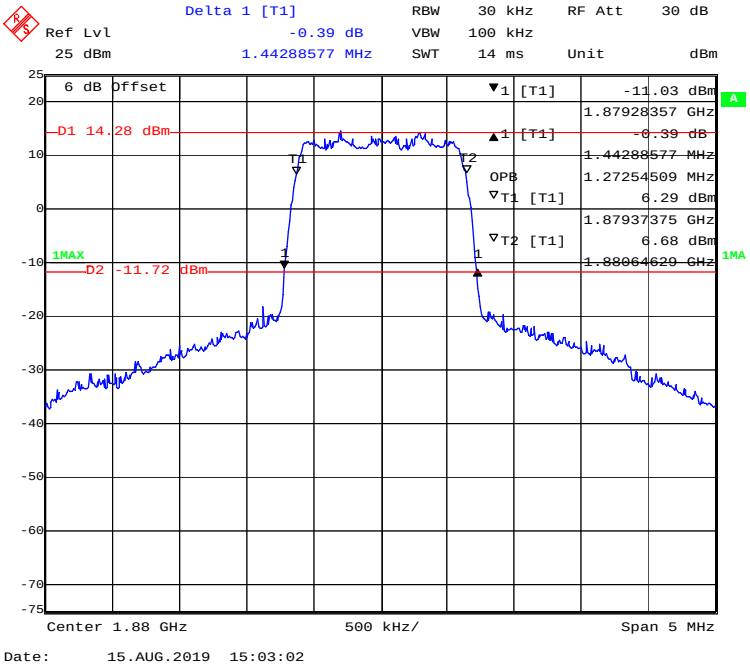


CDMA BC1 Band

99% Occupied & 26 dB Emissions Bandwidth for CDMA BC1 (1xRTT) Mode



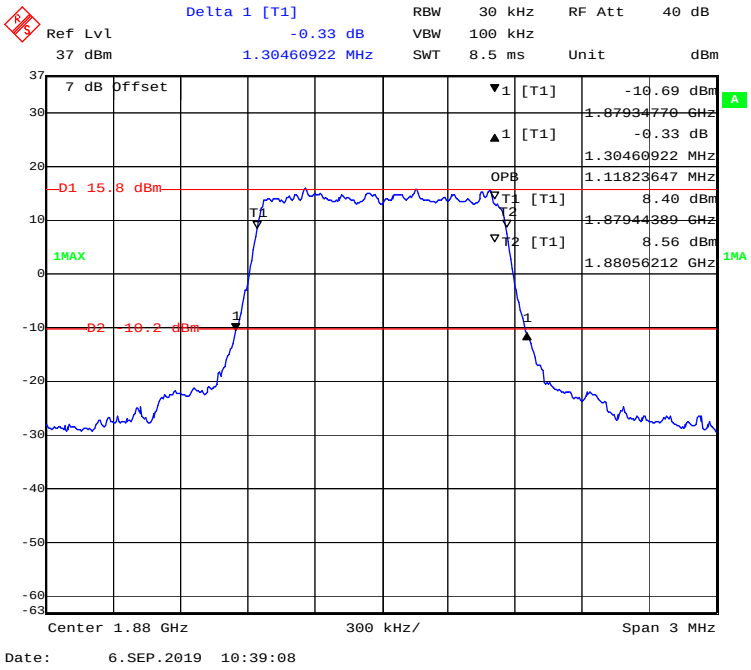
99% Occupied & 26 dB Emissions Bandwidth for CDMA BC1 (1xEV-DO) Mode



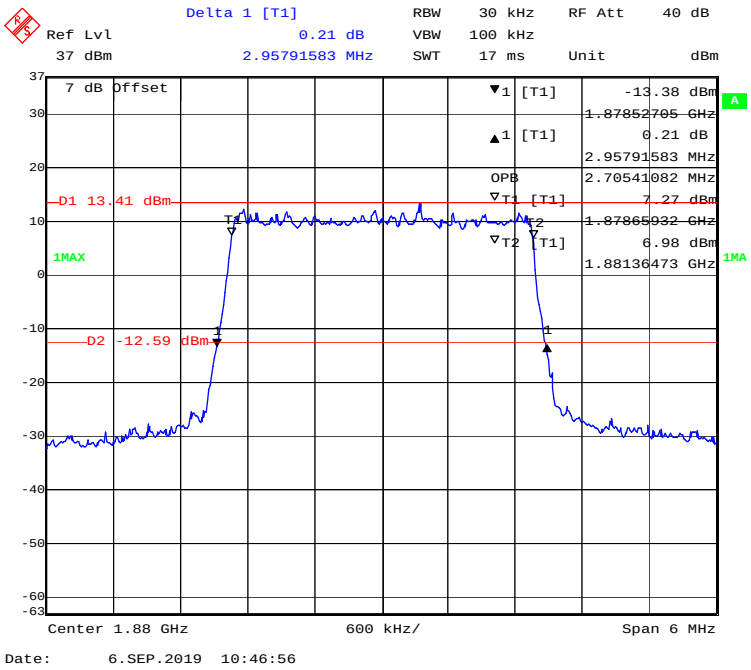
LTE Band 2:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	1.4M	Middle	1.305	1.118
	3M		2.958	2.705
	5M		5.090	4.549
	10M		9.920	8.982
	15M		15.691	13.707
	20M		19.880	18.036
16-QAM	1.4M	Middle	1.341	1.106
	3M		2.994	2.705
	5M		5.050	4.529
	10M		9.739	8.982
	15M		15.391	13.647
	20M		20.040	18.036

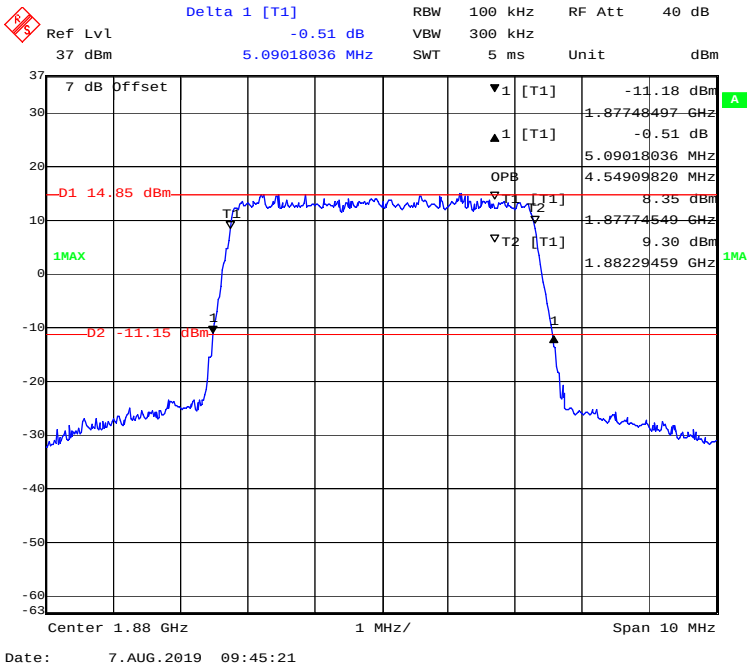
QPSK (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



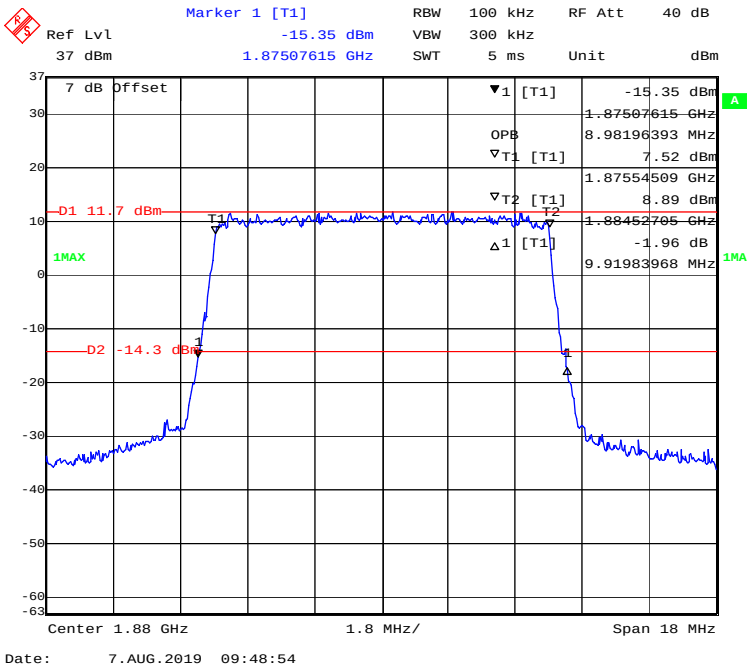
QPSK (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



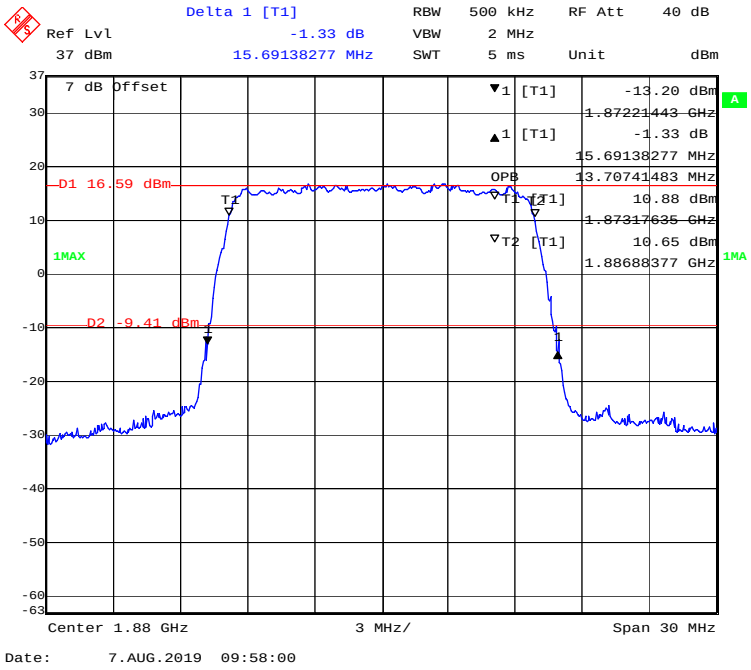
QPSK (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



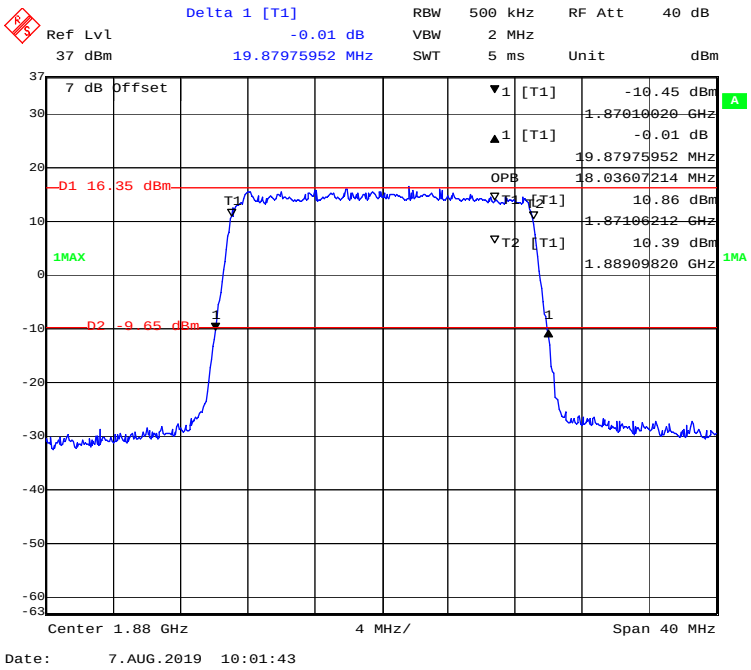
QPSK (10.0MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



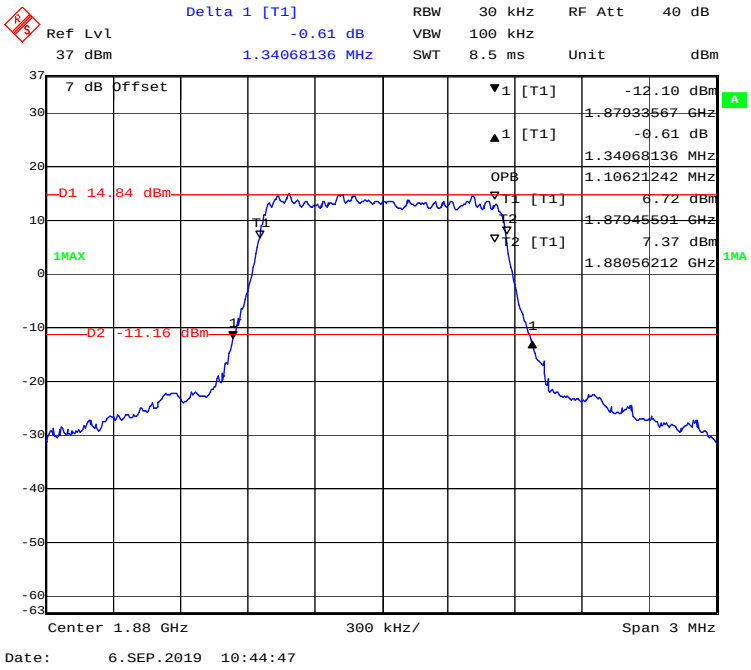
QPSK (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



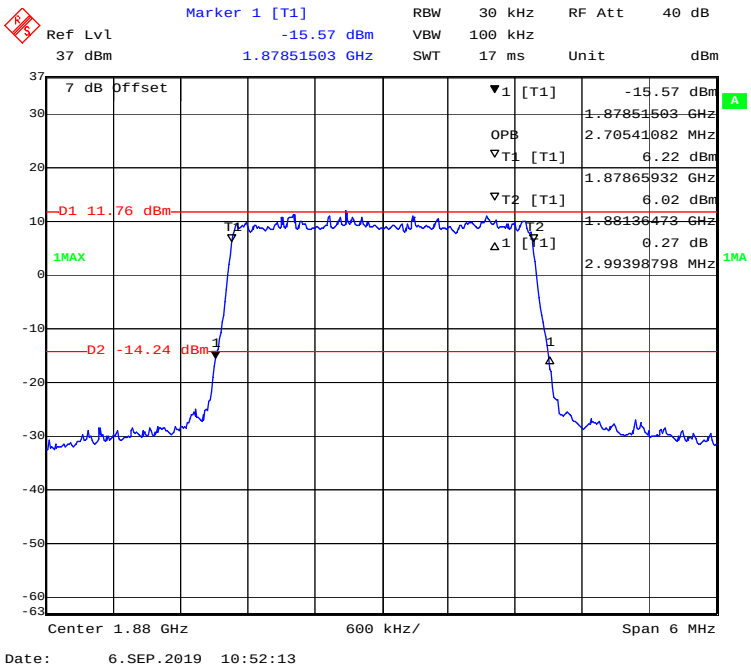
QPSK (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



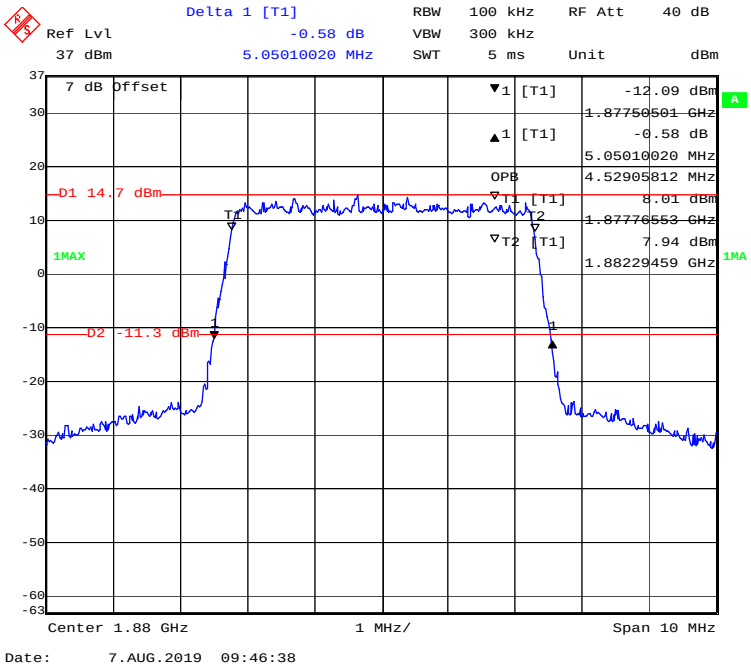
16-QAM (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



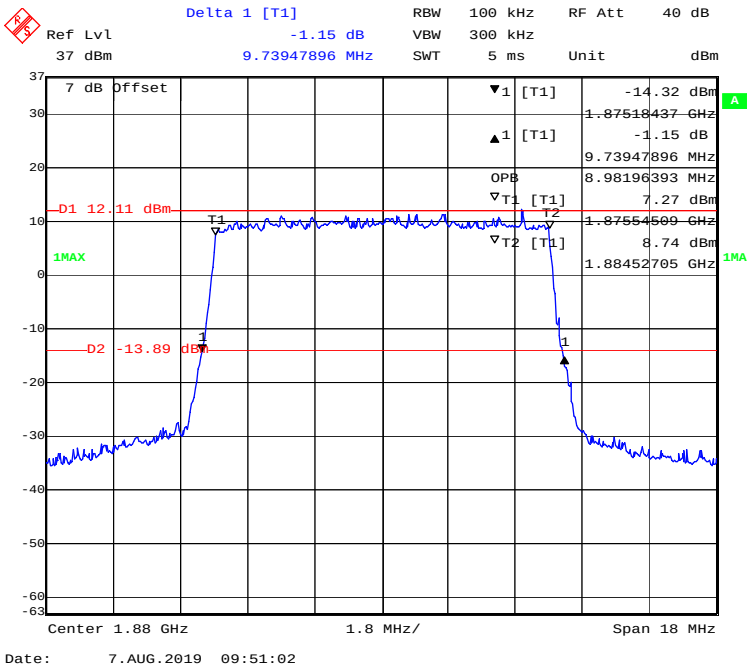
16-QAM (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



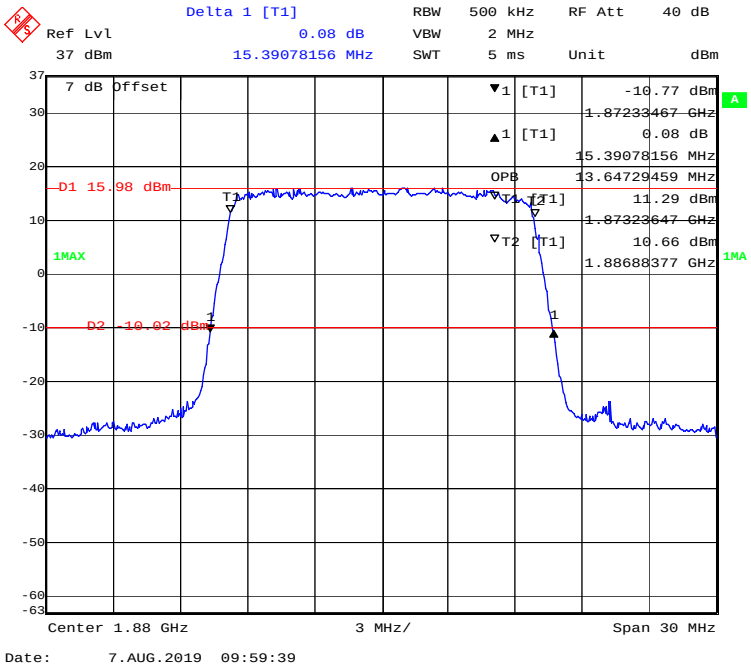
16-QAM (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



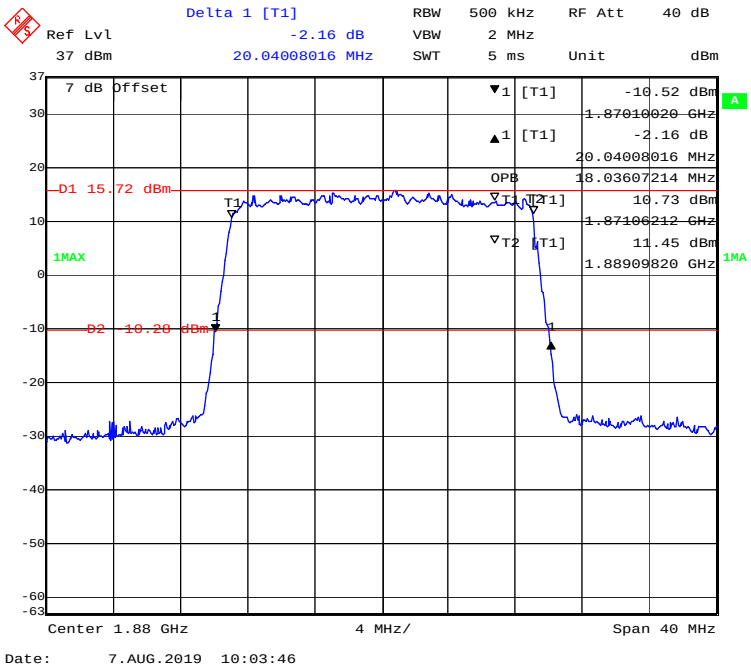
16-QAM (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



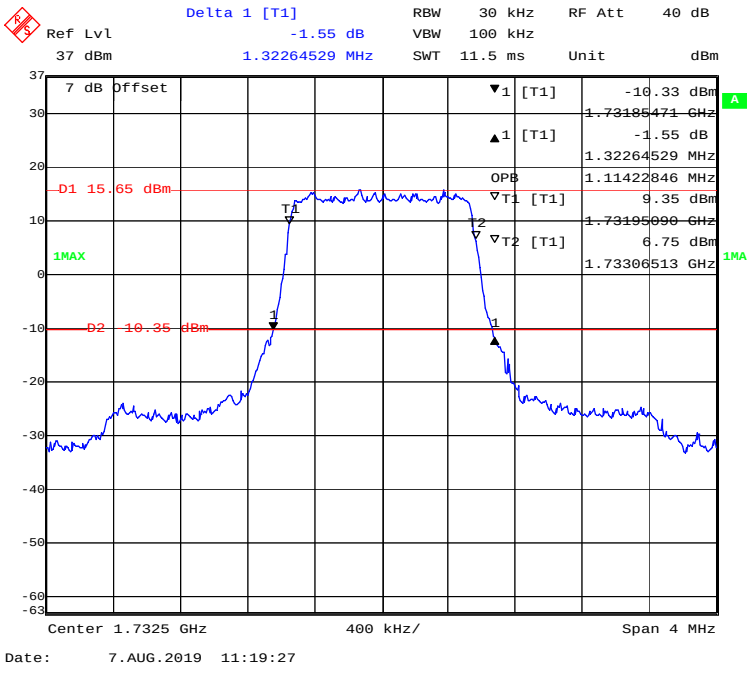
16-QAM (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



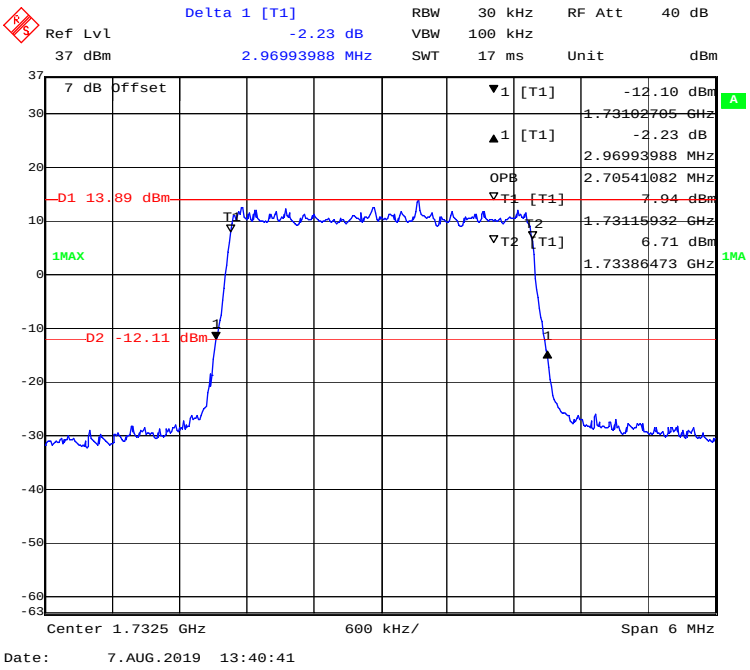
LTE Band 4:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	1.4M	Middle	1.323	1.114
	3M		2.970	2.705
	5M		5.070	4.529
	10M		9.900	8.978
	15M		15.391	13.647
	20M		20.040	18.036
16-QAM	1.4M	Middle	1.331	1.106
	3M		2.982	2.705
	5M		5.110	4.529
	10M		9.739	8.978
	15M		15.451	13.647
	20M		20.120	18.036

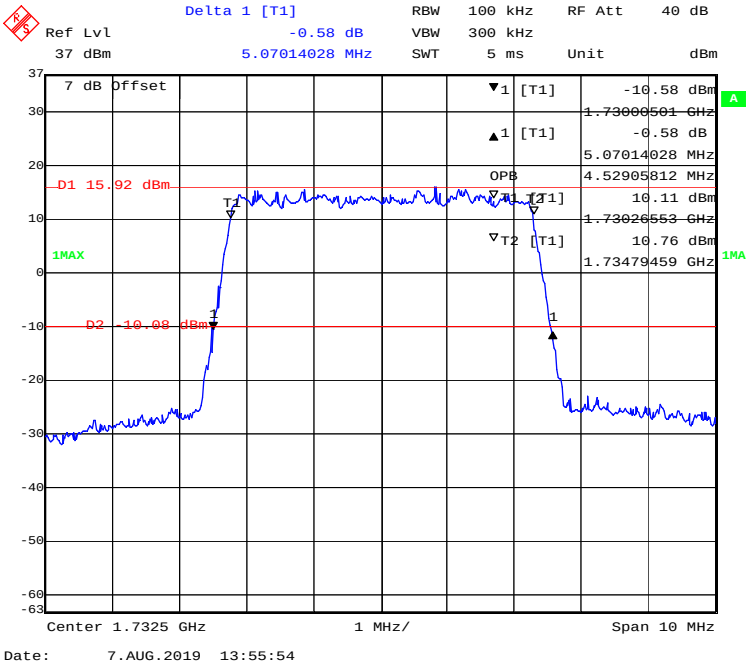
QPSK (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



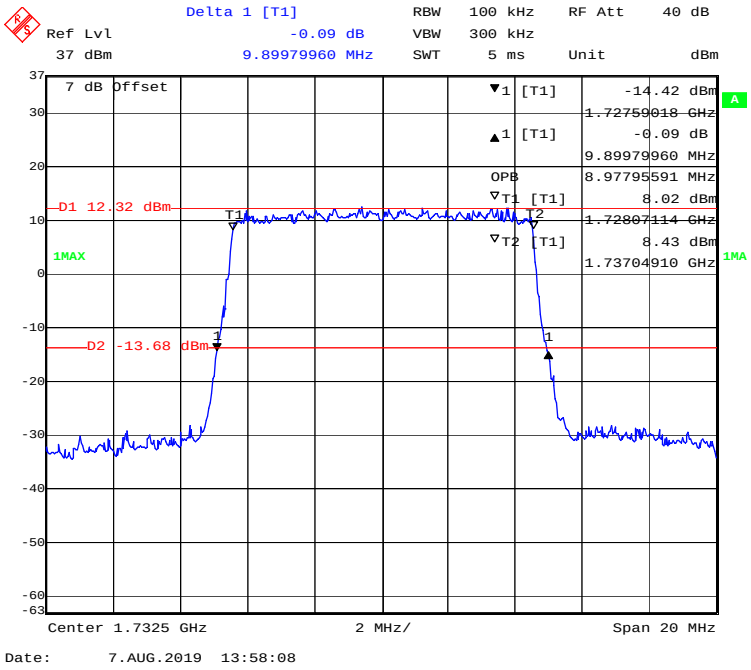
QPSK (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



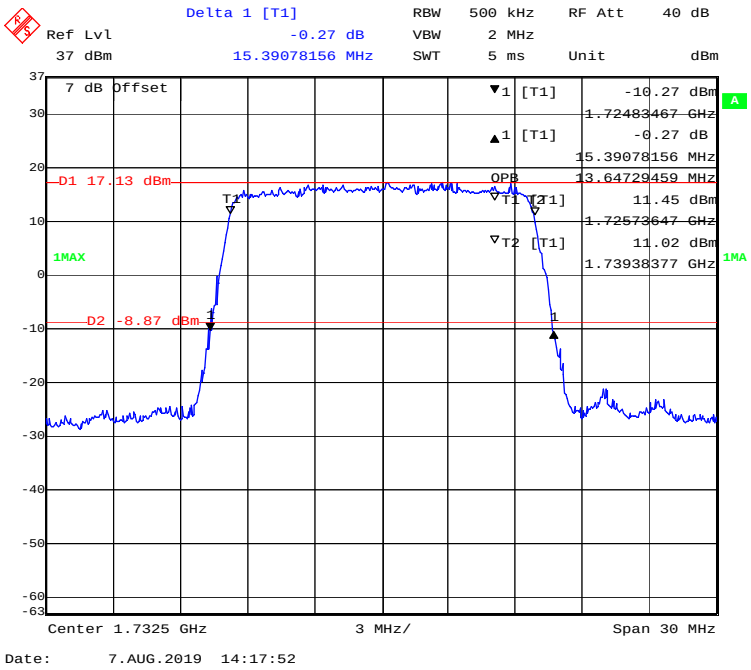
QPSK (5.0MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



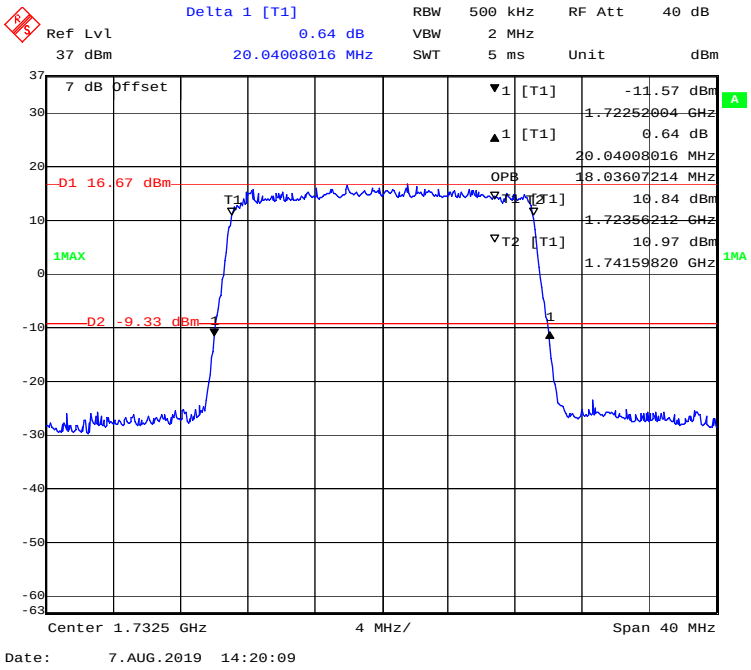
QPSK (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



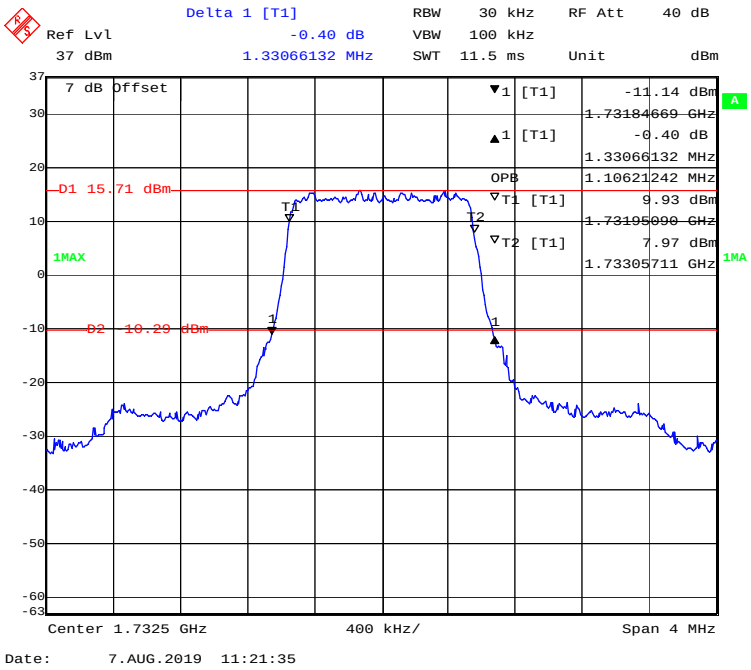
QPSK (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



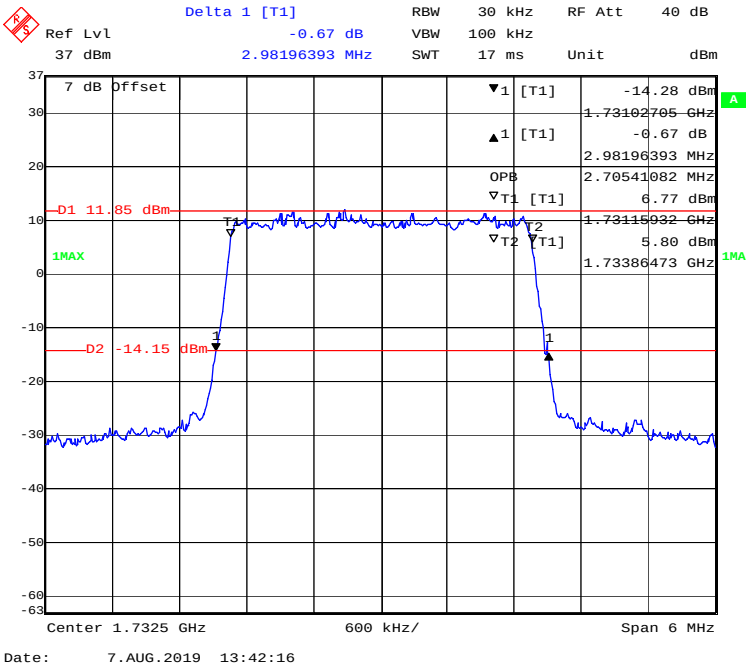
QPSK (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



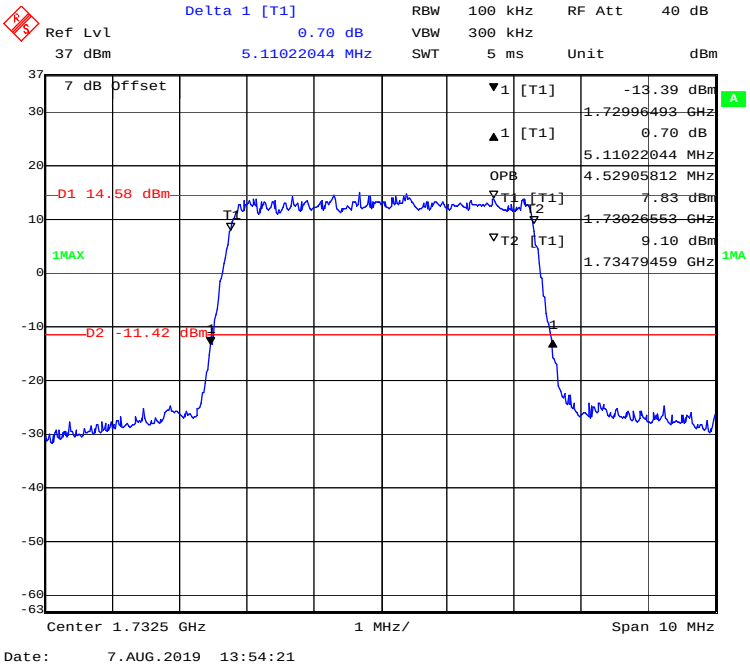
16-QAM (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



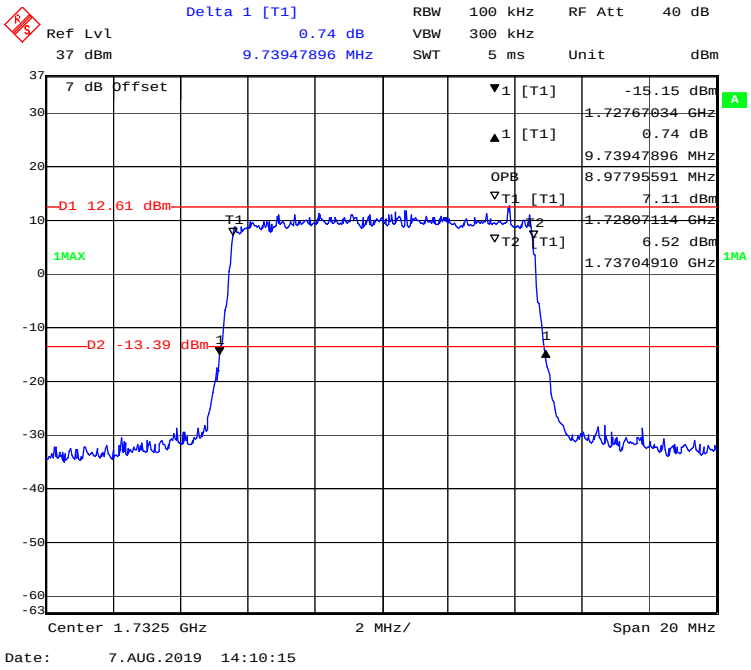
16-QAM (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



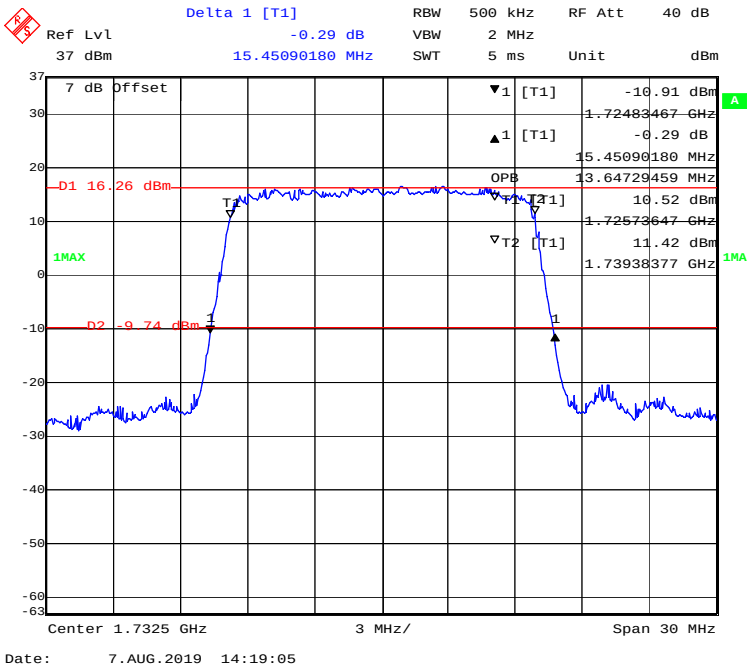
16-QAM (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



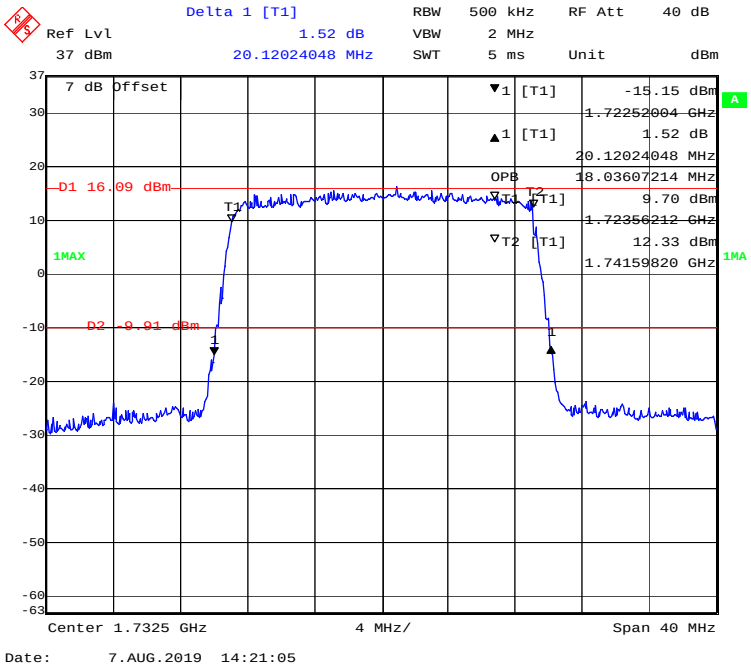
16-QAM (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



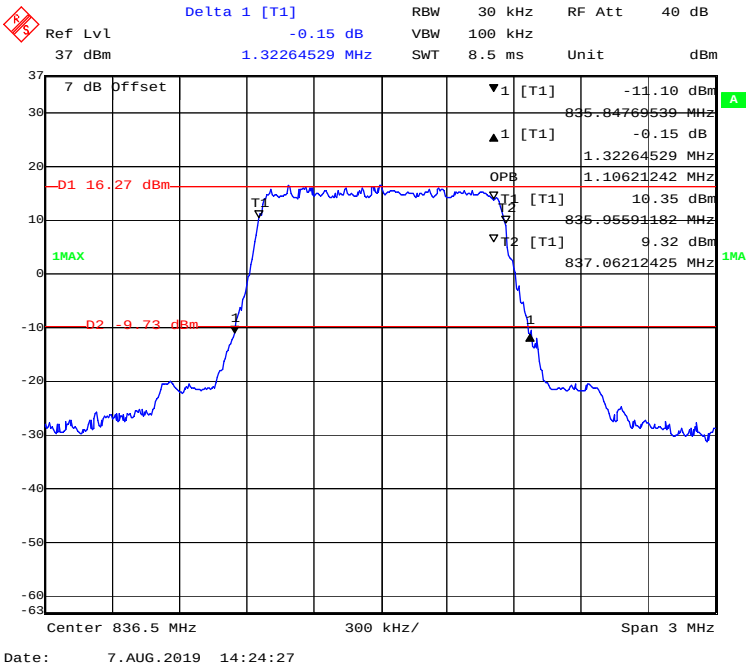
16-QAM (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



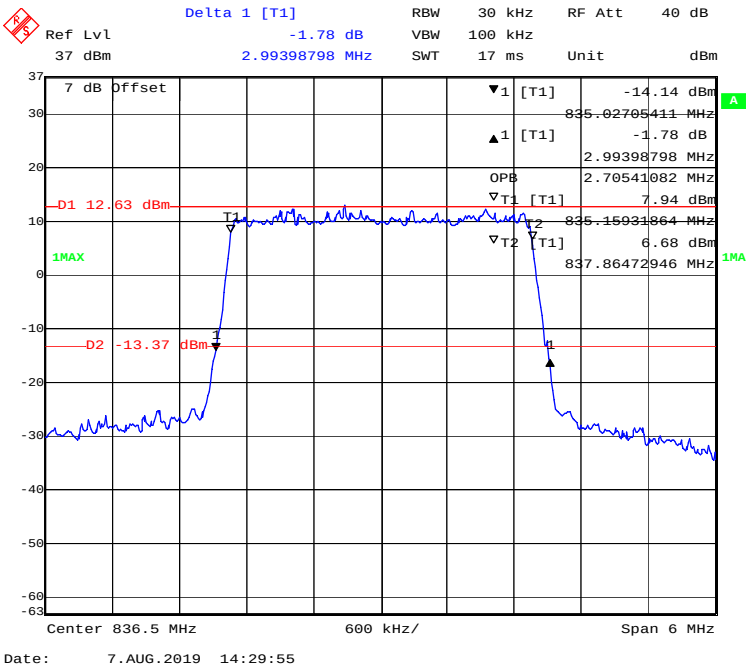
LTE Band 5:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	1.4M	Middle	1.323	1.106
	3M		2.994	2.705
	5M		5.070	4.529
	10M		9.860	8.978
16-QAM	1.4M	Middle	1.305	1.100
	3M		2.982	2.705
	5M		5.090	4.529
	10M		9.780	8.978

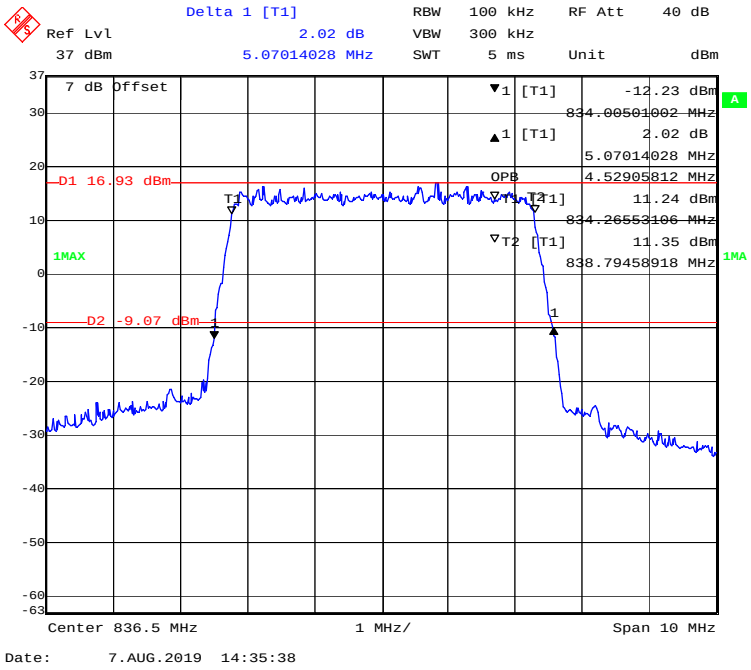
QPSK (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



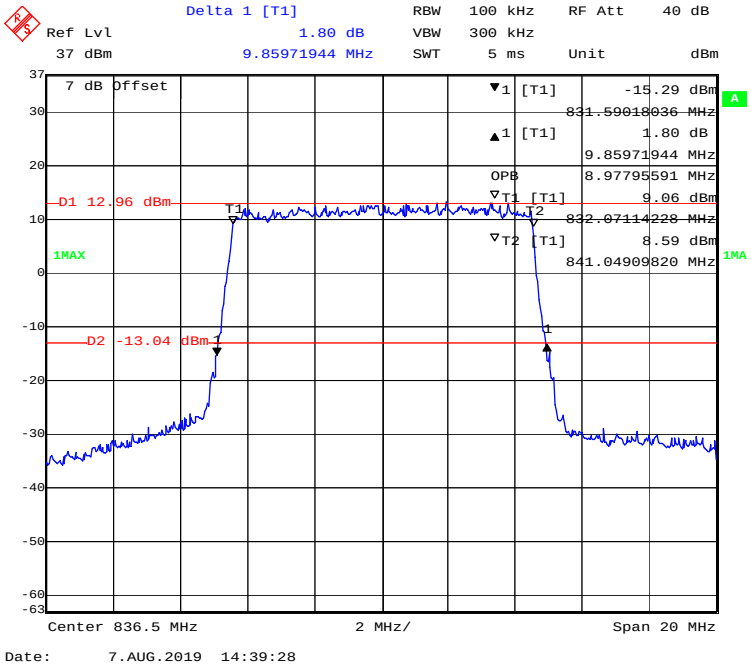
QPSK (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



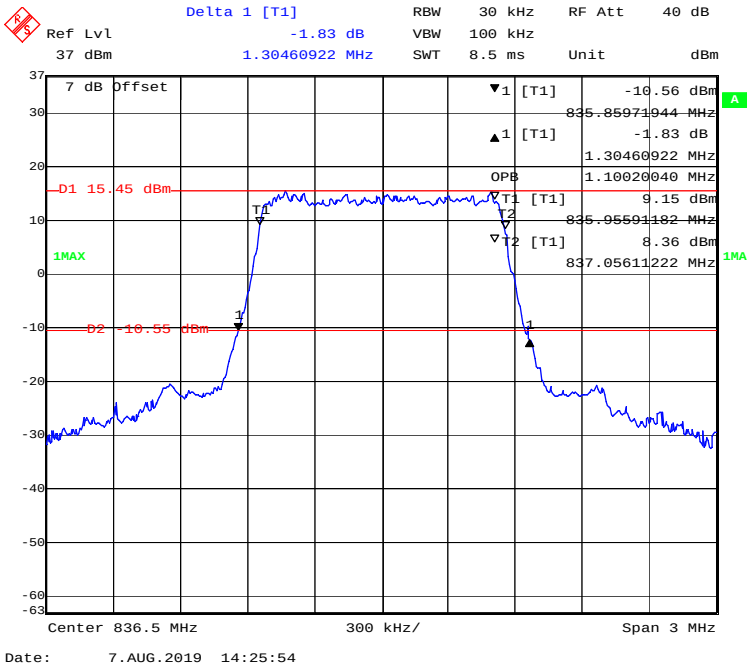
QPSK (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



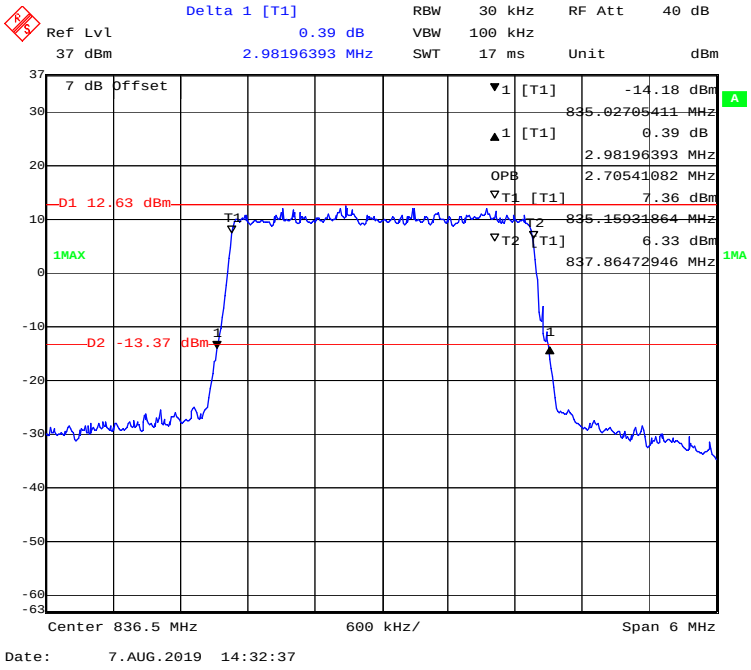
QPSK (10.0MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



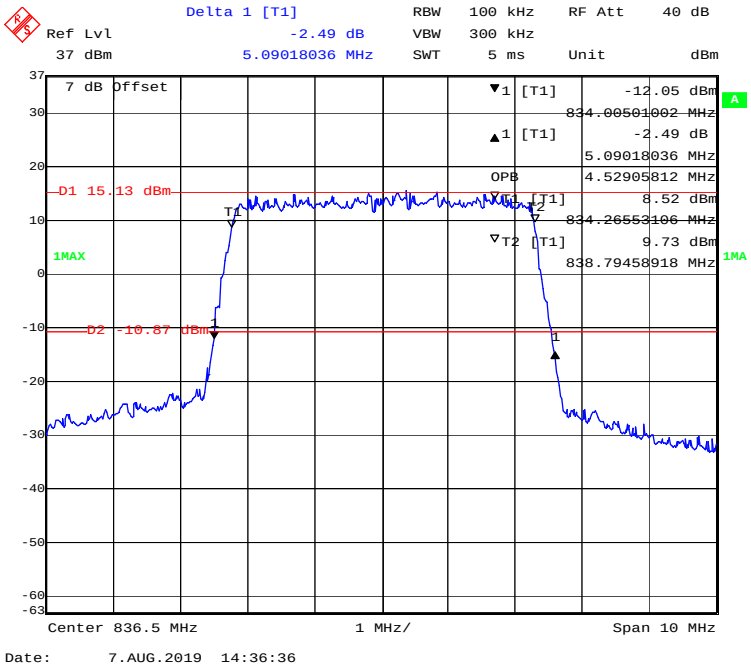
16-QAM (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



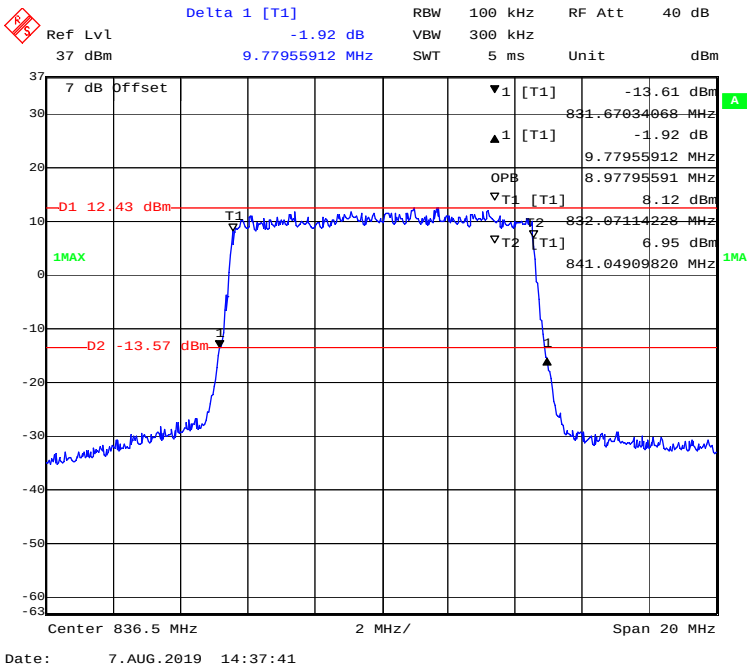
16-QAM (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



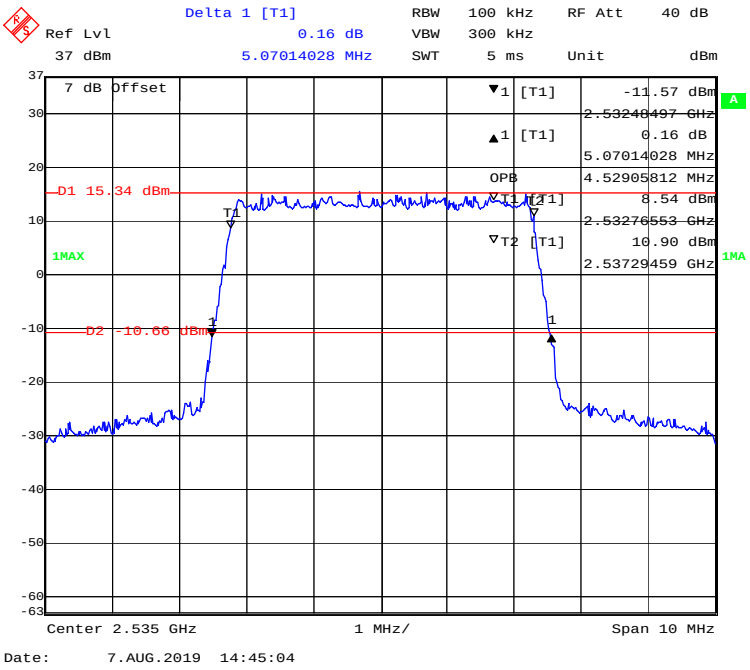
16-QAM (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



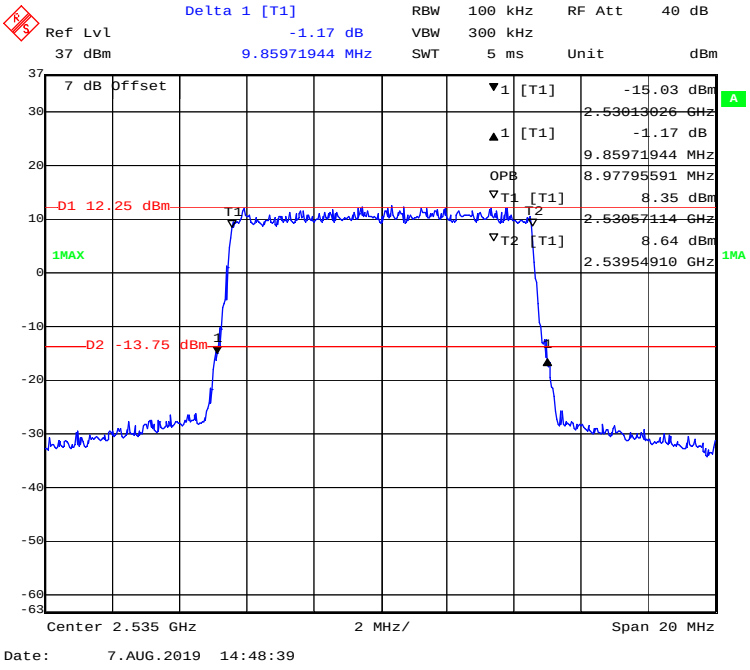
LTE Band 7:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	5M	Middle	5.070	4.529
	10M		9.860	8.978
	15M		15.511	13.707
	20M		20.040	18.116
16-QAM	5M	Middle	5.110	4.549
	10M		9.820	8.978
	15M		15.451	13.647
	20M		20.120	18.036

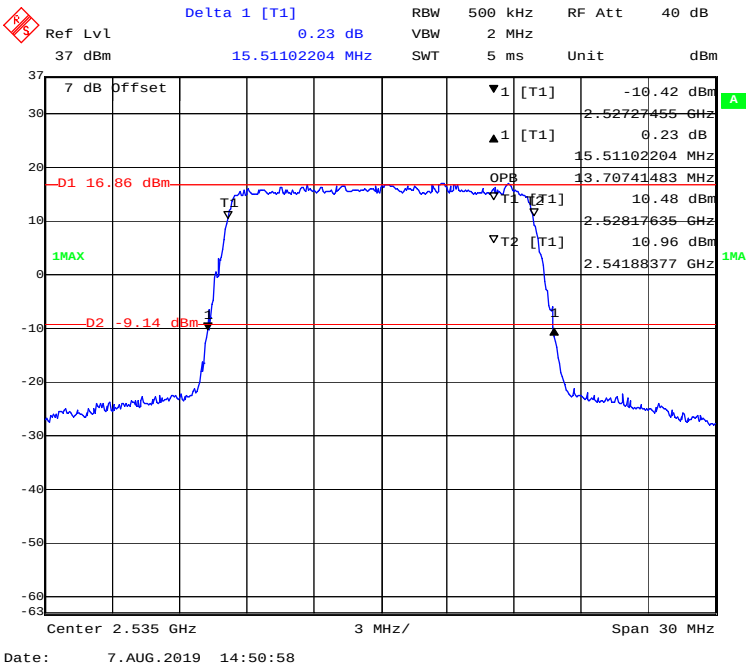
QPSK (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



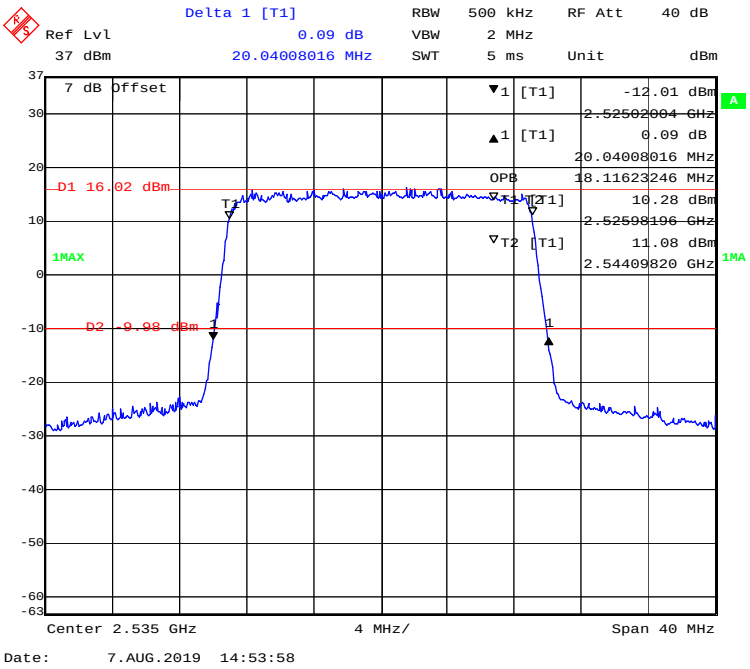
QPSK (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



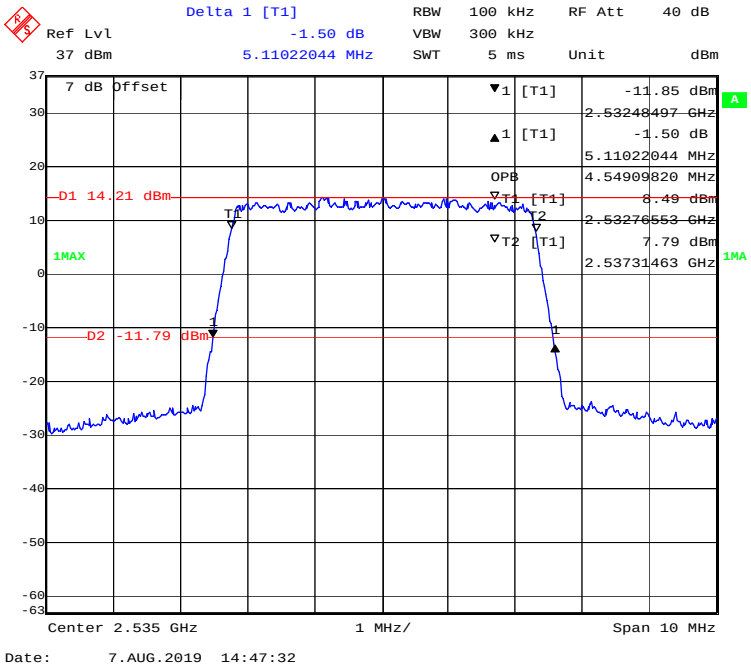
QPSK (15.0MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



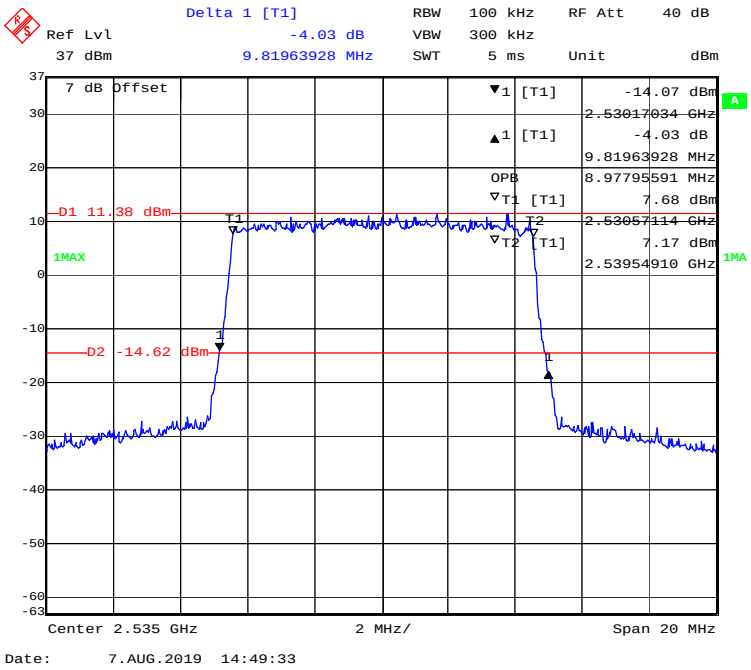
QPSK (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



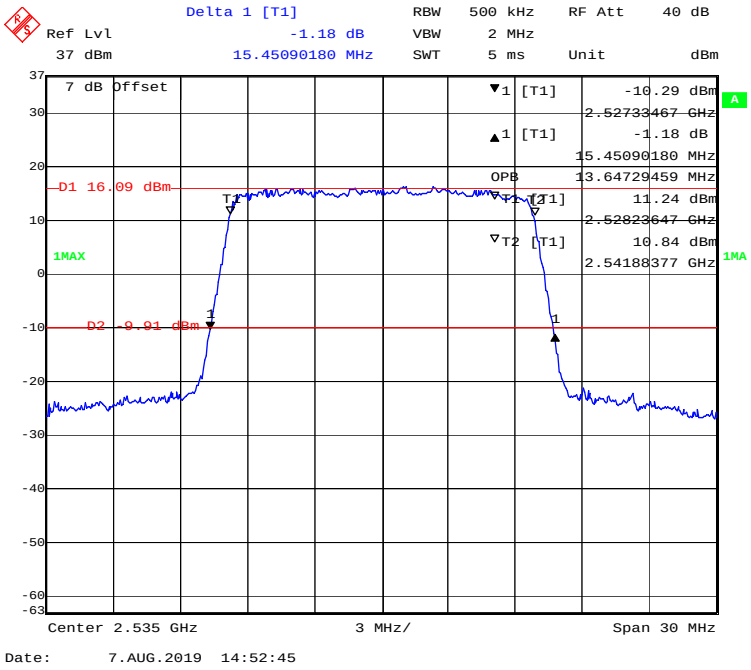
16-QAM (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



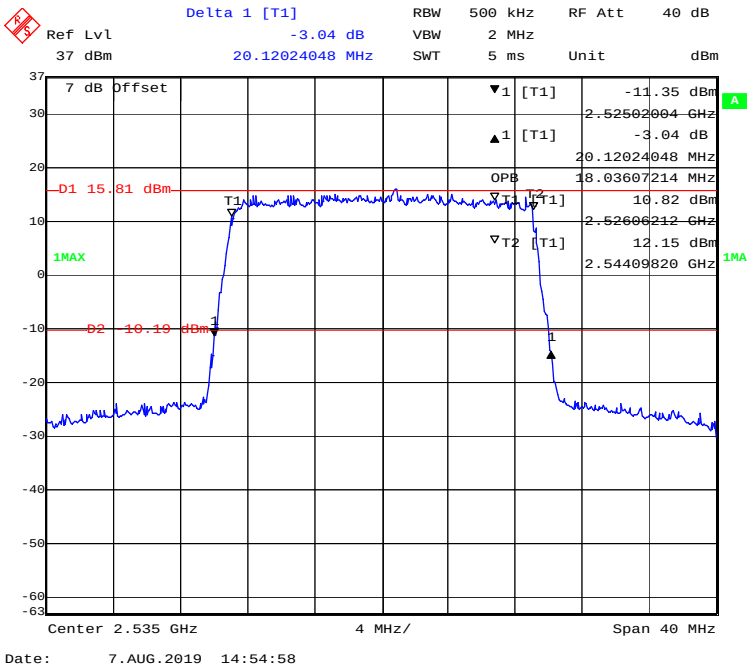
16-QAM (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



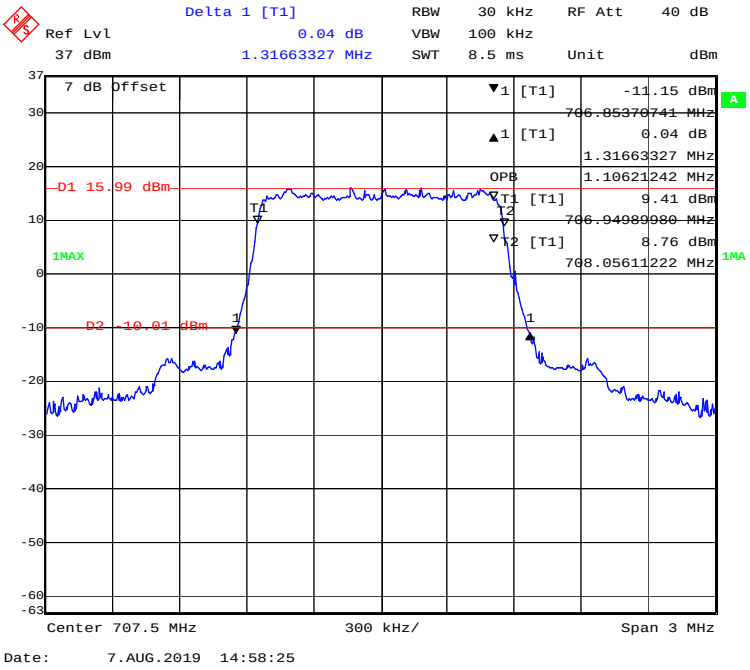
16-QAM (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



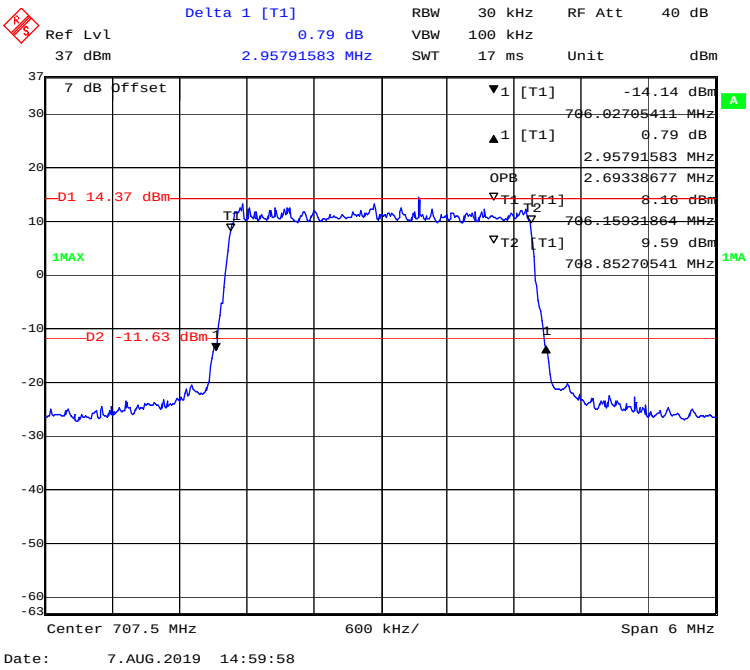
LTE Band 12:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	1.4M	Middle	1.317	1.106
	3M		2.958	2.693
	5M		5.110	4.569
	10M		9.940	9.018
16-QAM	1.4M	Middle	1.311	1.112
	3M		2.982	2.705
	5M		5.070	4.529
	10M		9.780	8.978

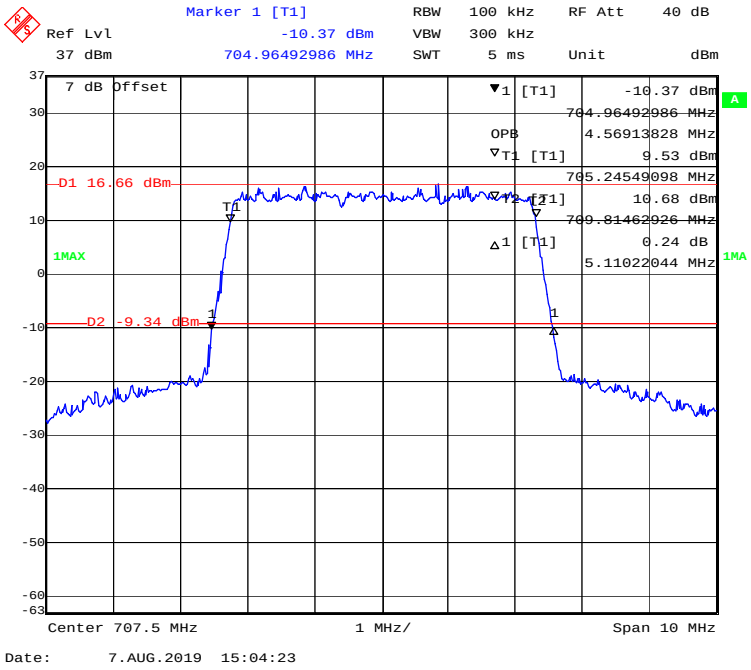
QPSK (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



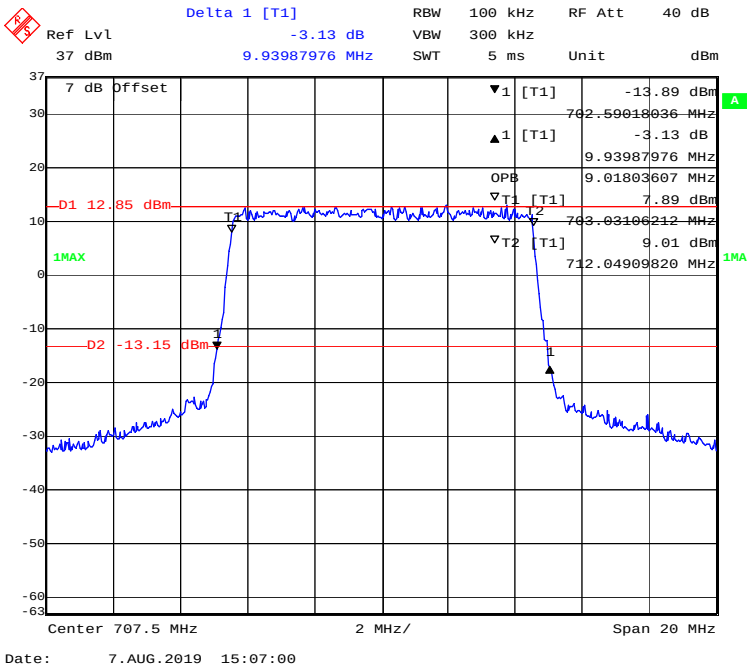
QPSK (3 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



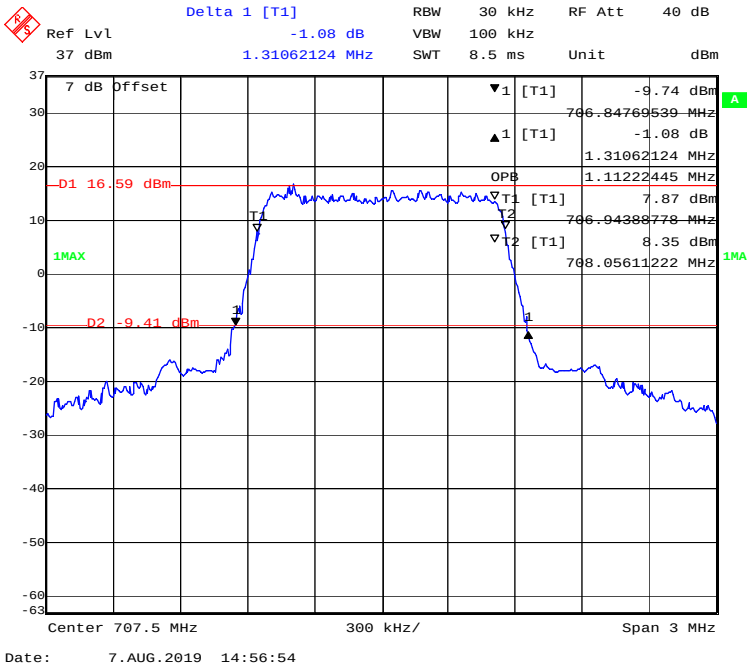
QPSK (5 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



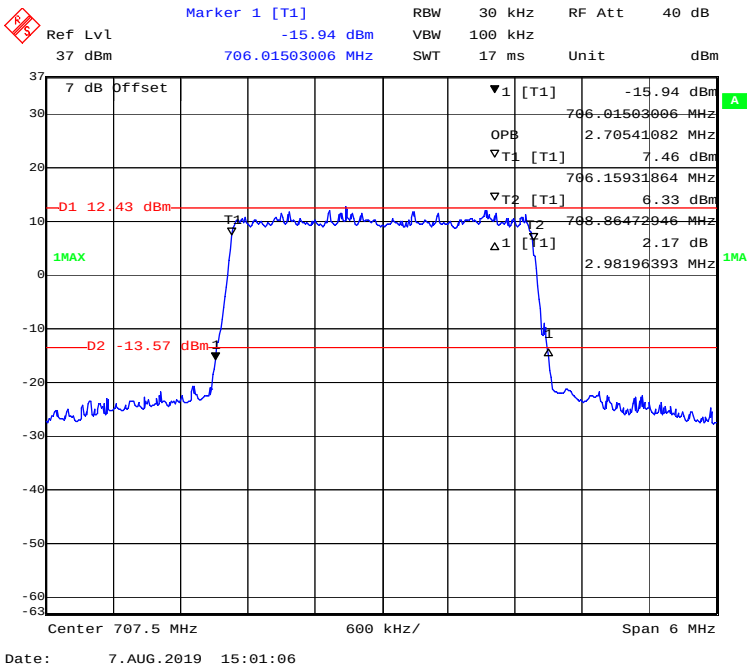
QPSK (10MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



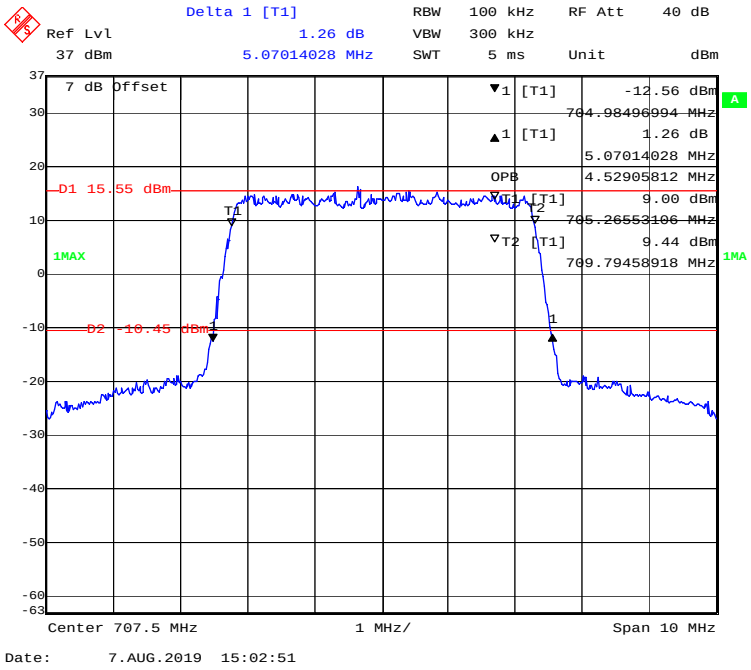
16-QAM (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



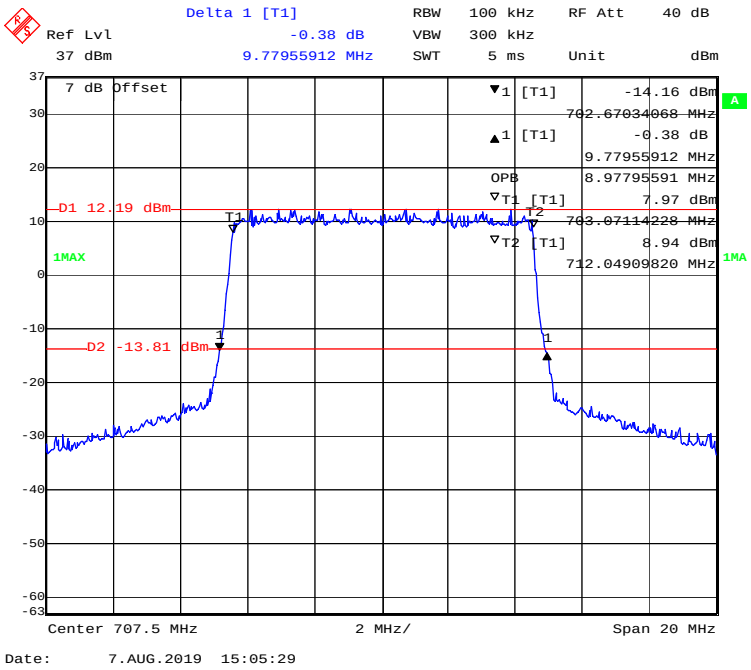
16-QAM (3 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (5 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



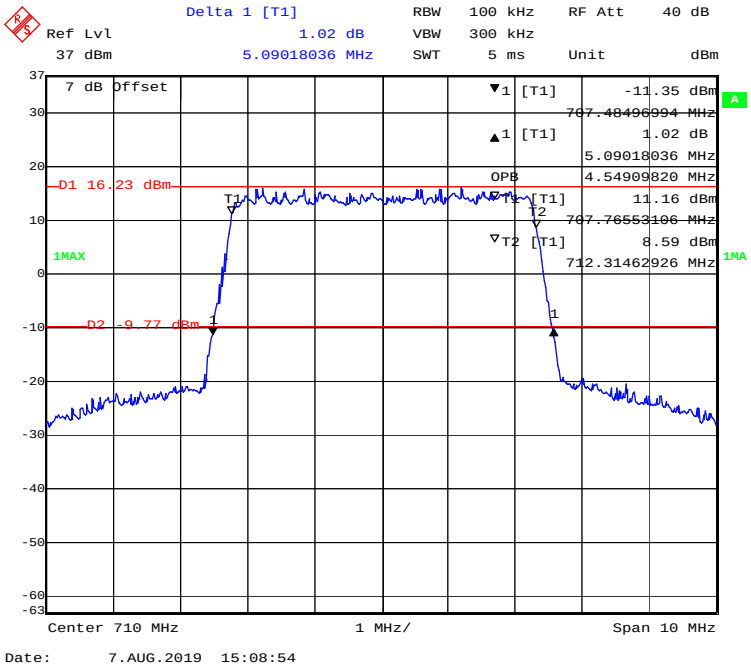
16-QAM (10 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



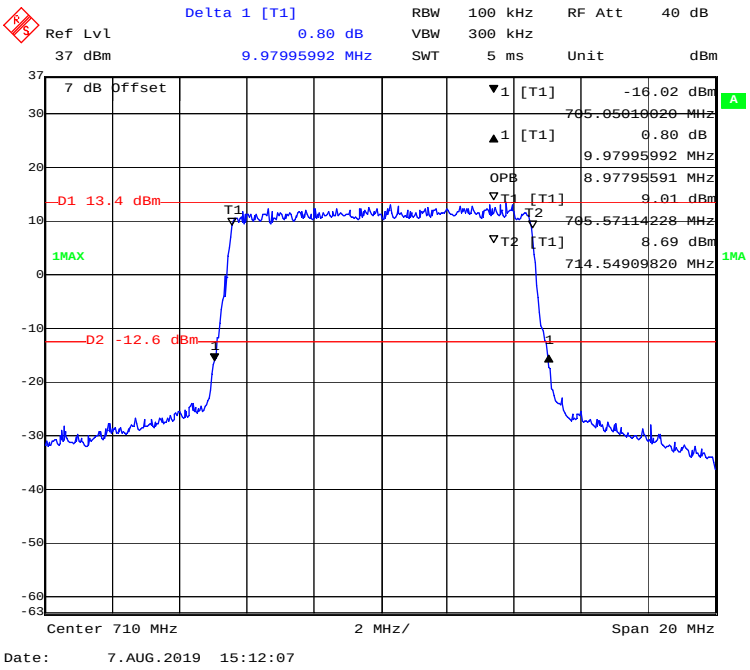
LTE Band 17:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	5M	Middle	5.090	4.549
	10M		9.980	8.978
16-QAM	5M	Middle	5.050	4.529
	10M		9.780	8.978

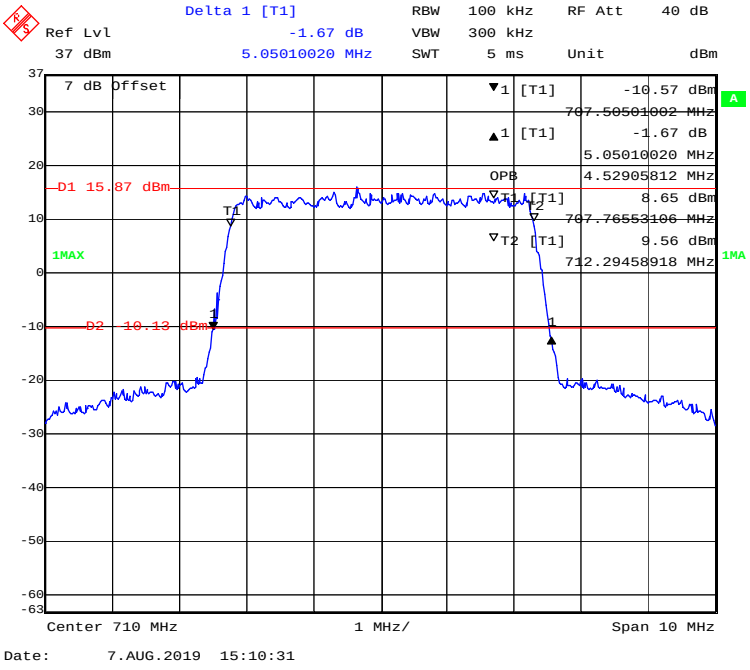
QPSK (5 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



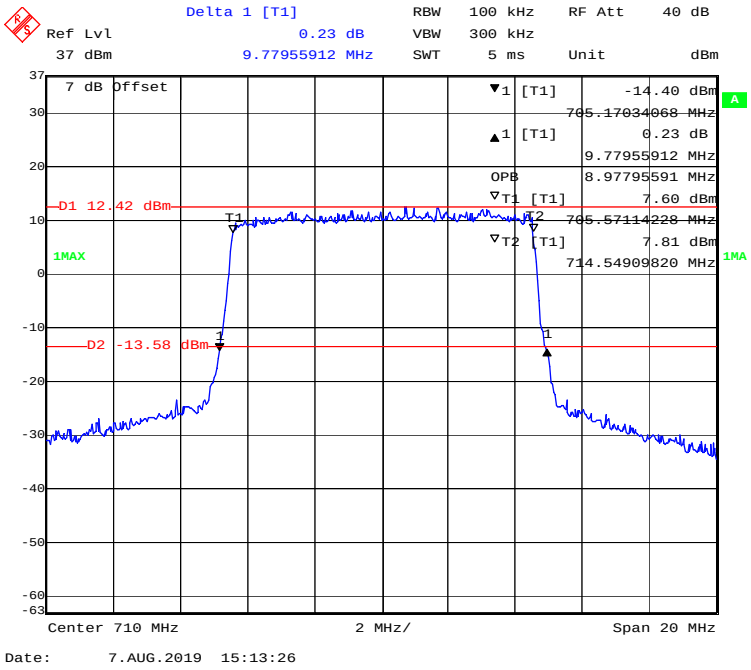
QPSK (10 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (5MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



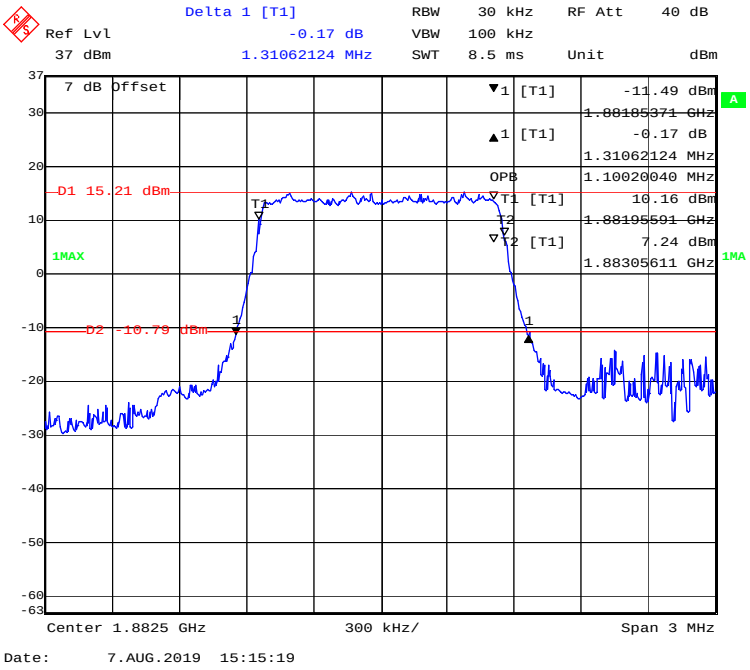
16-QAM (10 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



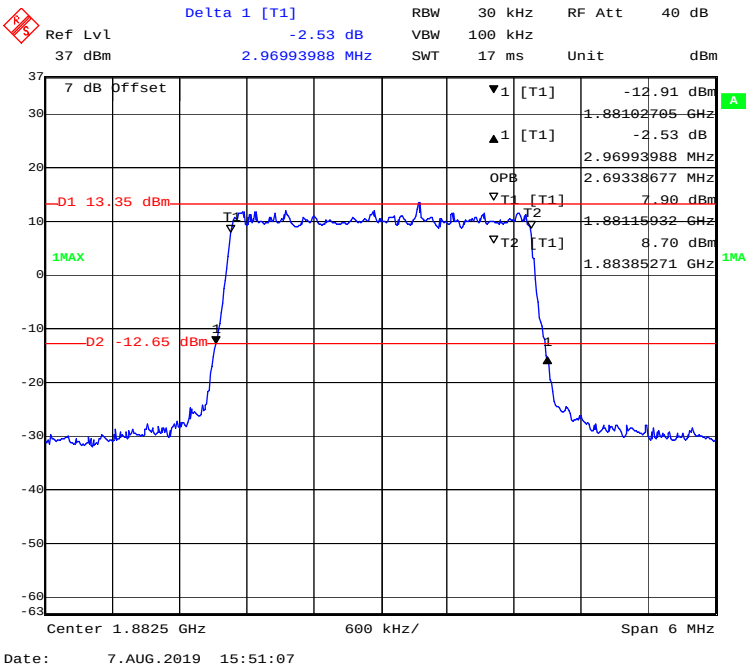
LTE Band 25:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	1.4M	Middle	1.311	1.100
	3M		2.970	2.693
	5M		5.090	4.549
	10M		9.860	8.938
	15M		15.571	13.707
	20M		20.040	18.116
16-QAM	1.4M	Middle	1.335	1.118
	3M		2.994	2.693
	5M		5.070	4.529
	10M		9.699	8.978
	15M		15.391	13.647
	20M		19.960	18.193

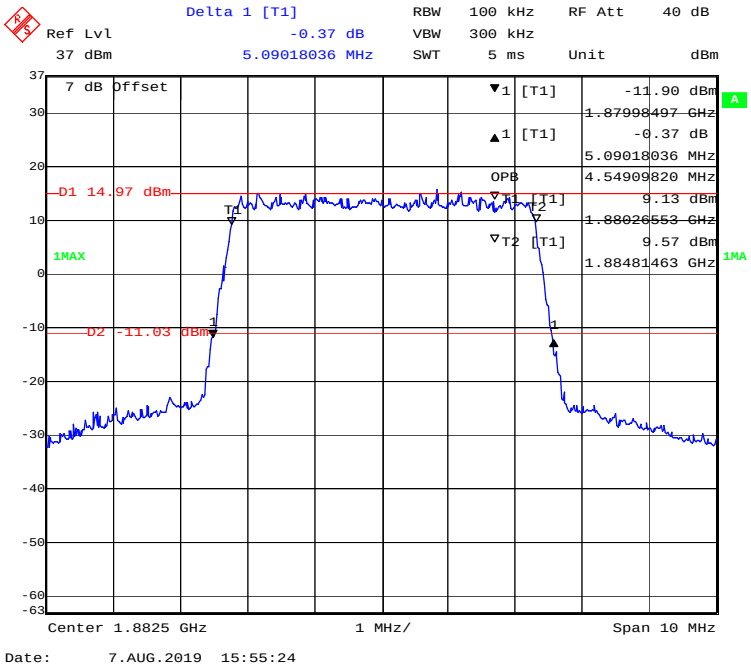
QPSK (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



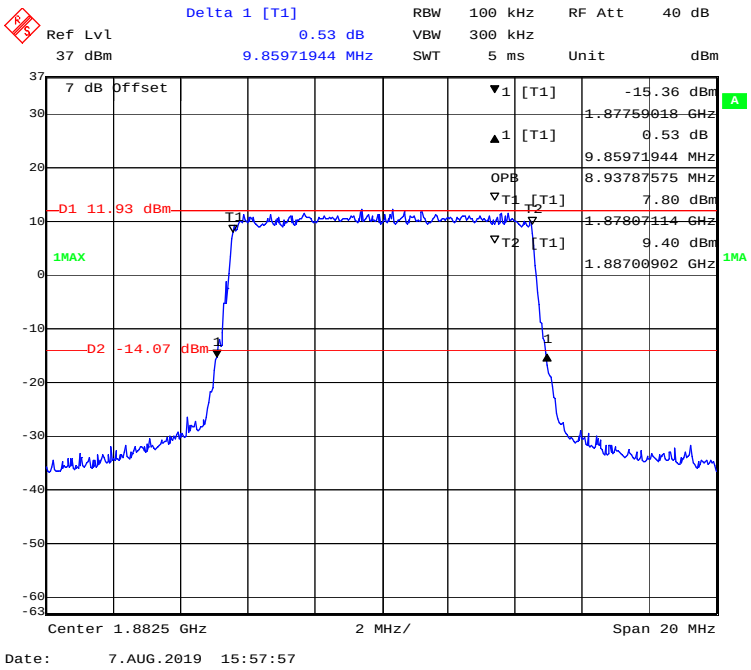
QPSK (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



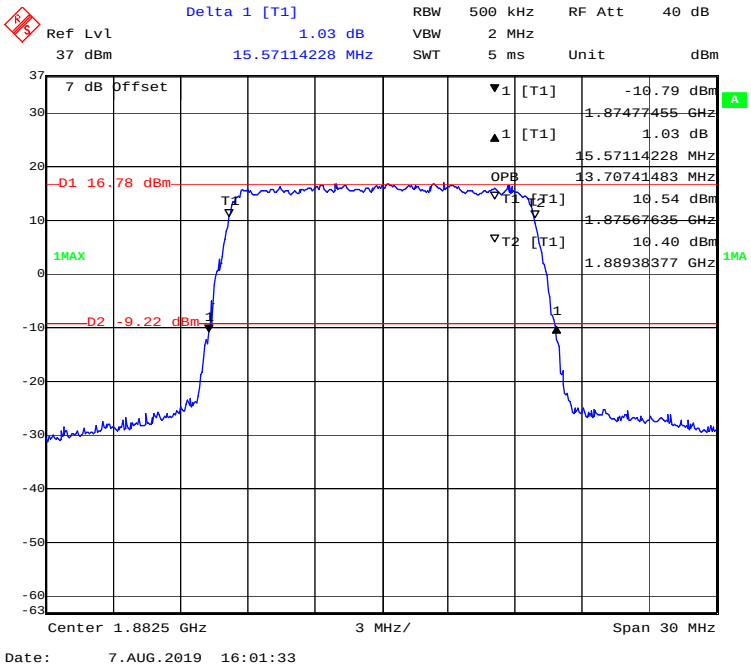
QPSK (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



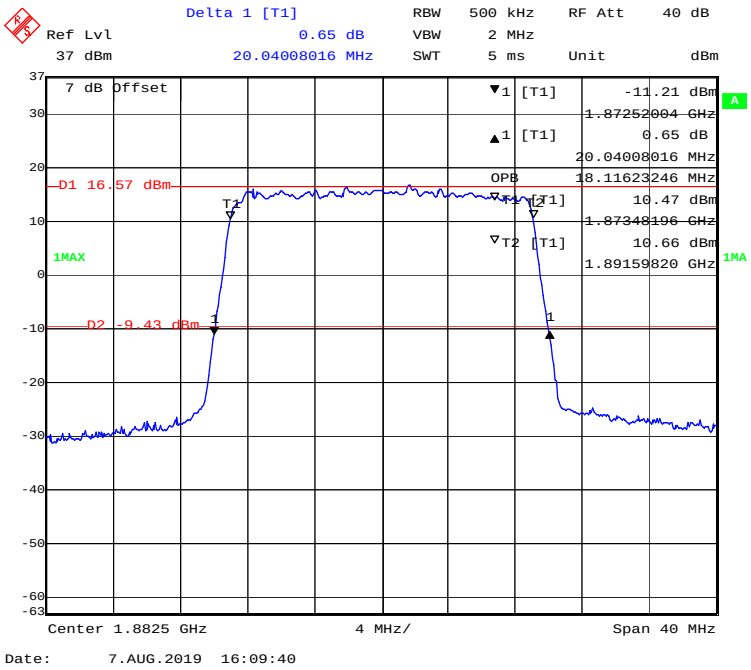
QPSK (10.0MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



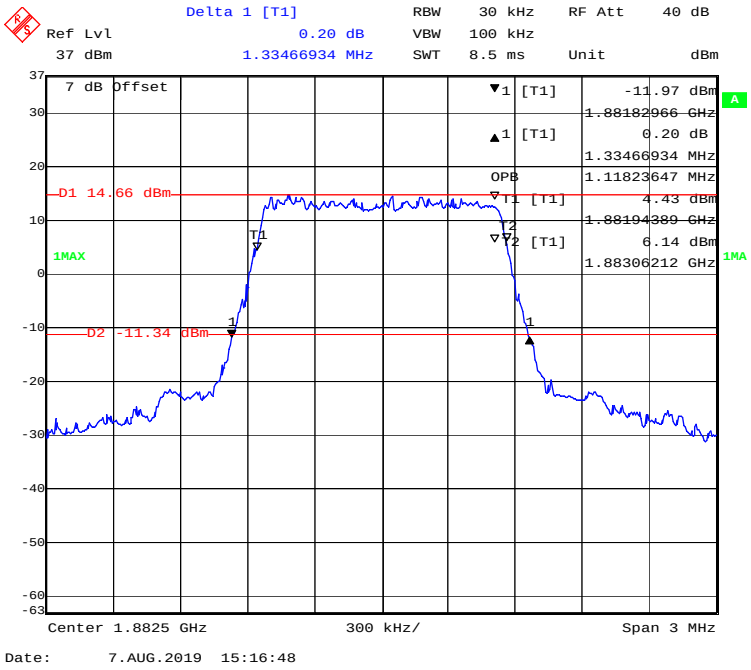
QPSK (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



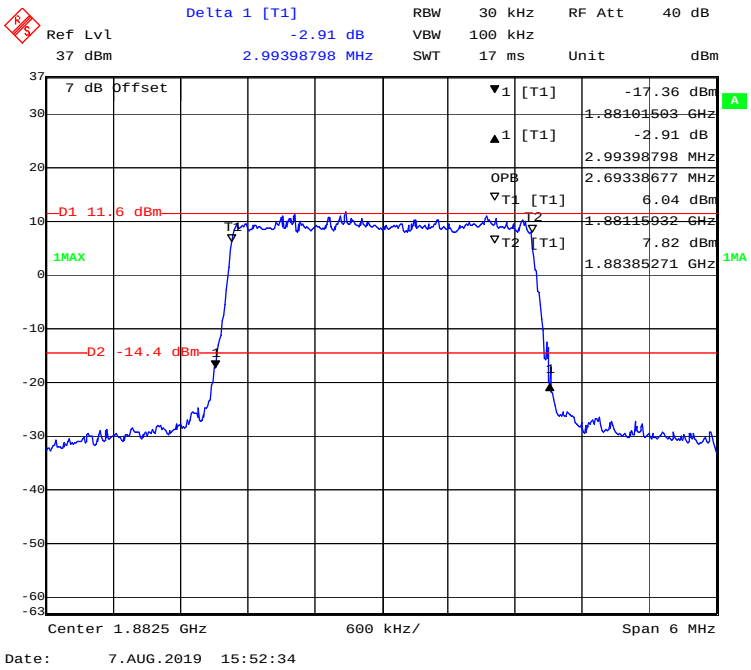
QPSK (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



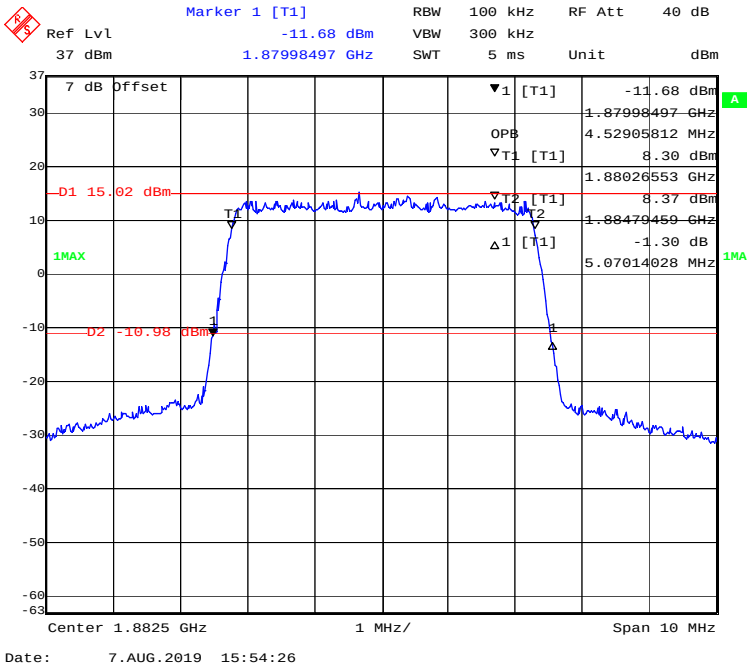
16-QAM (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



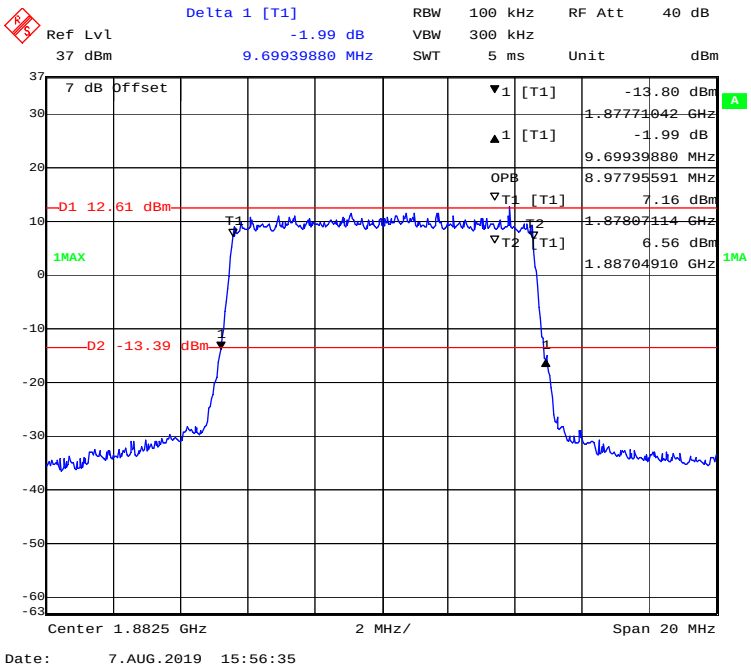
16-QAM (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



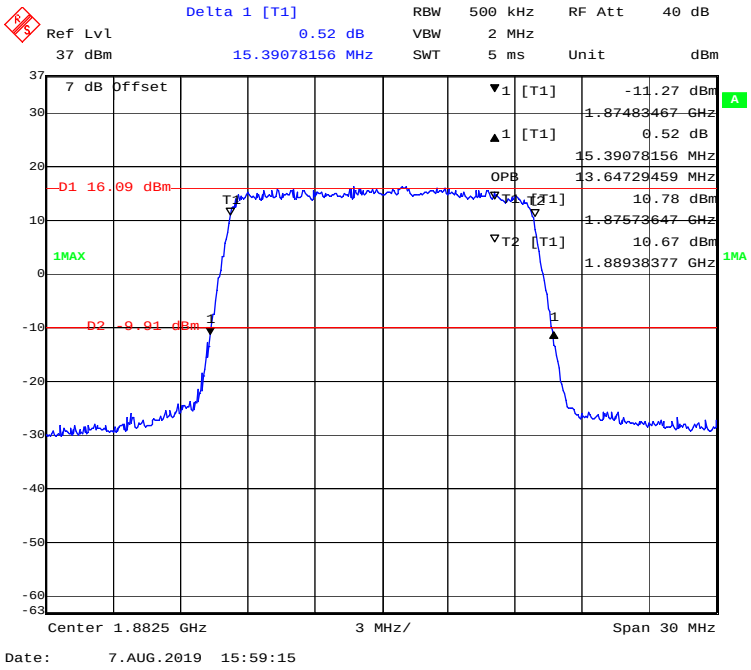
16-QAM (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



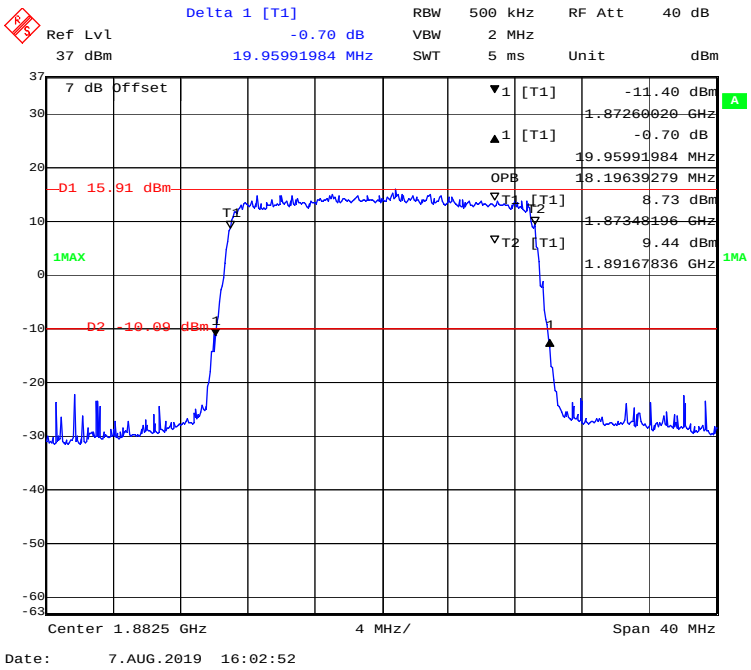
16-QAM (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



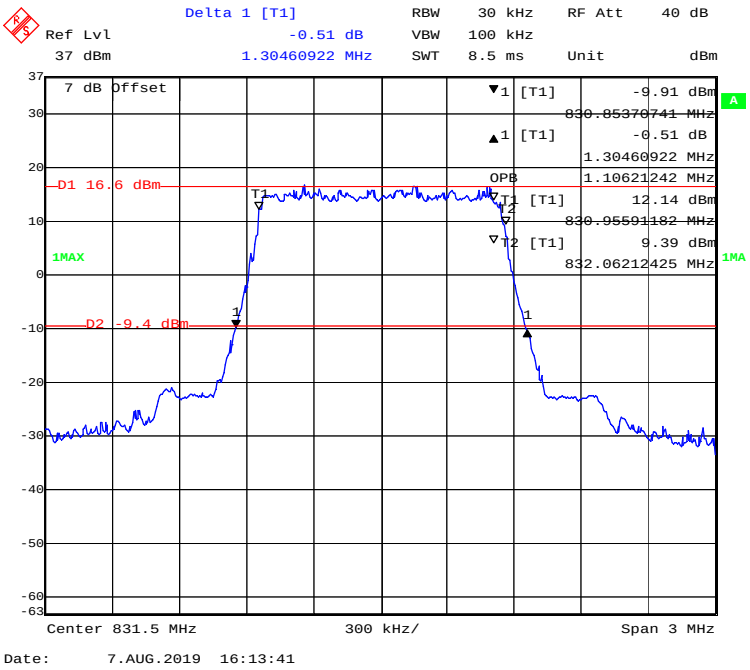
16-QAM (20.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



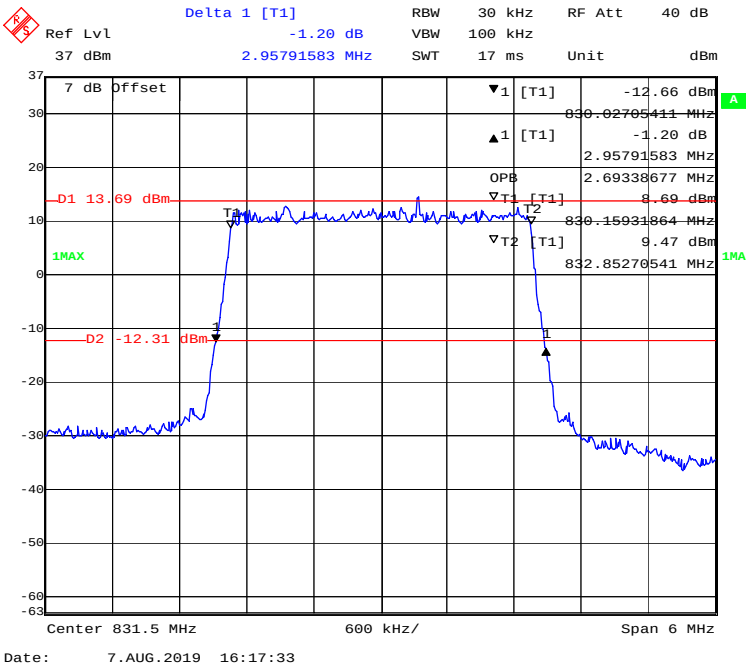
LTE Band 26:

Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	1.4M	Middle	1.305	1.106
	3M		2.958	2.693
	5M		5.090	4.549
	10M		9.980	8.978
	15M		15.571	13.768
16-QAM	1.4M	Middle	1.323	1.100
	3M		2.982	2.693
	5M		5.050	4.529
	10M		9.739	8.978
	15M		15.391	13.647

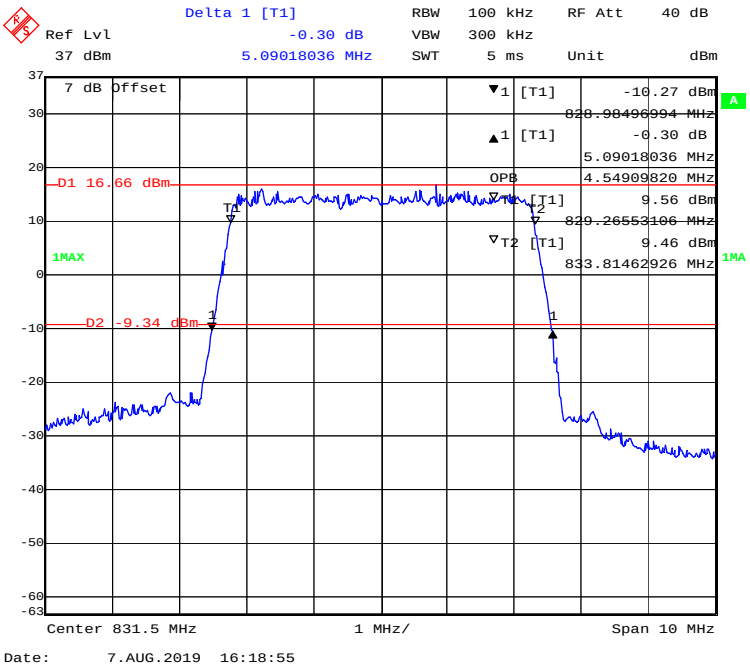
QPSK (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



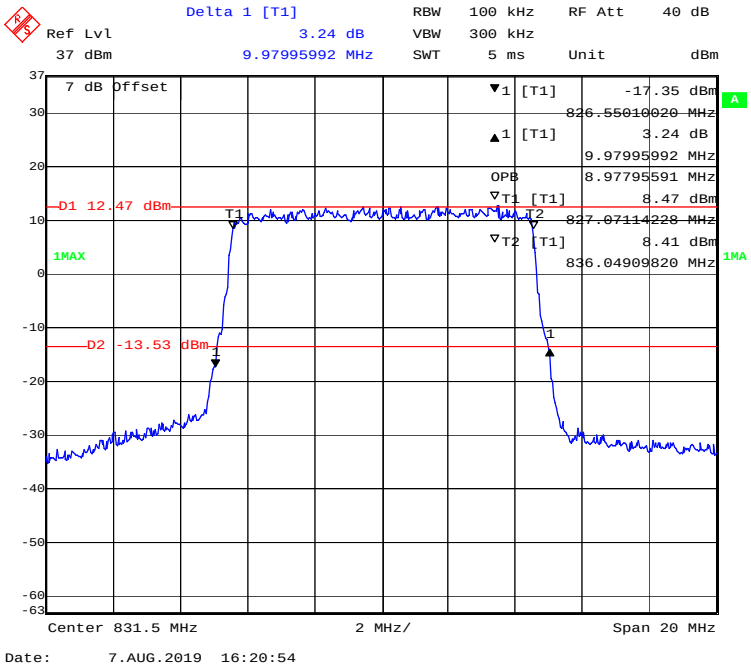
QPSK (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



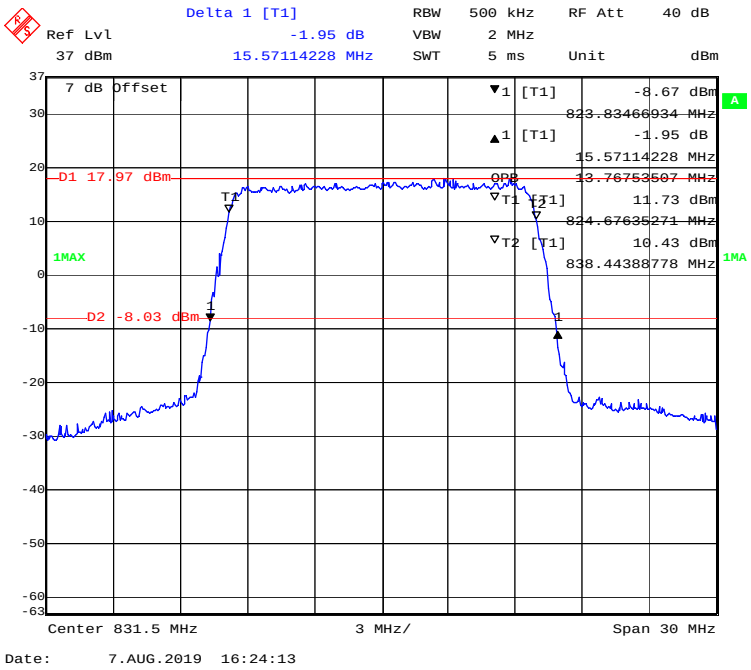
QPSK (5.0MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



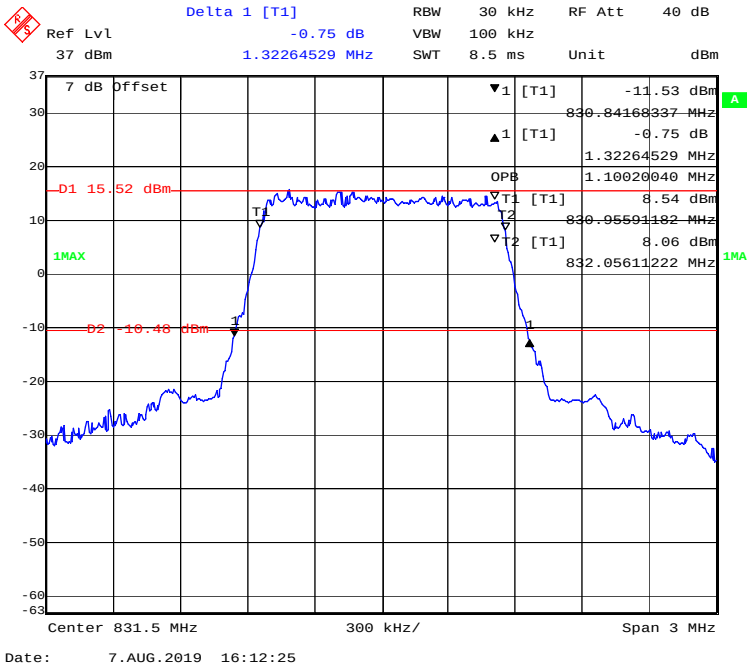
QPSK (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



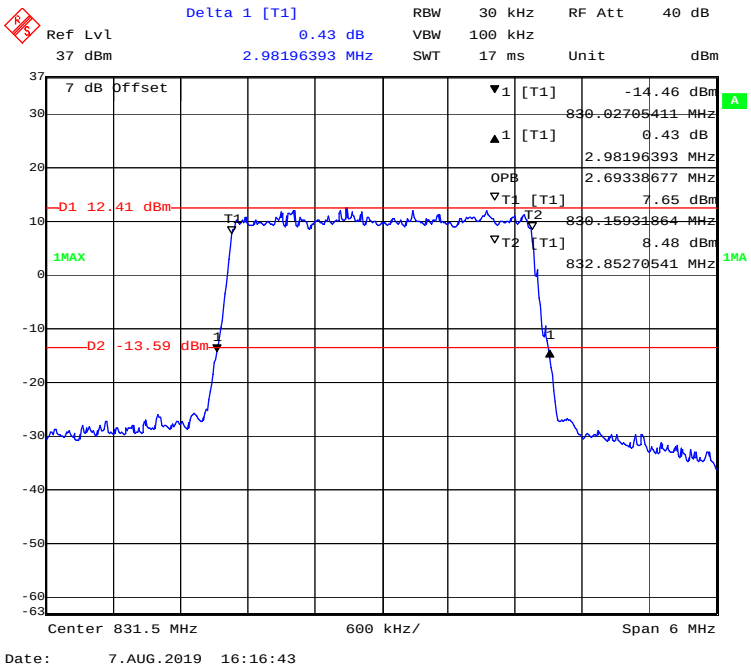
QPSK (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



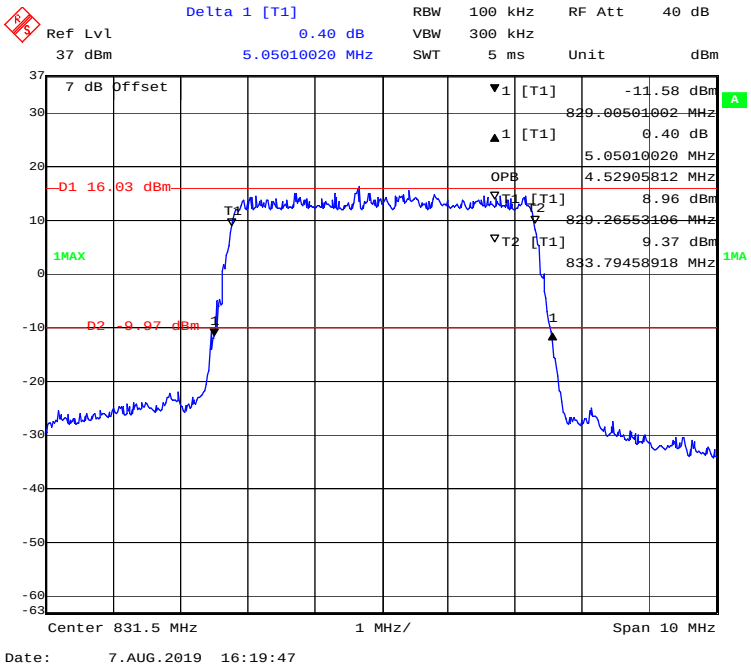
16-QAM (1.4 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



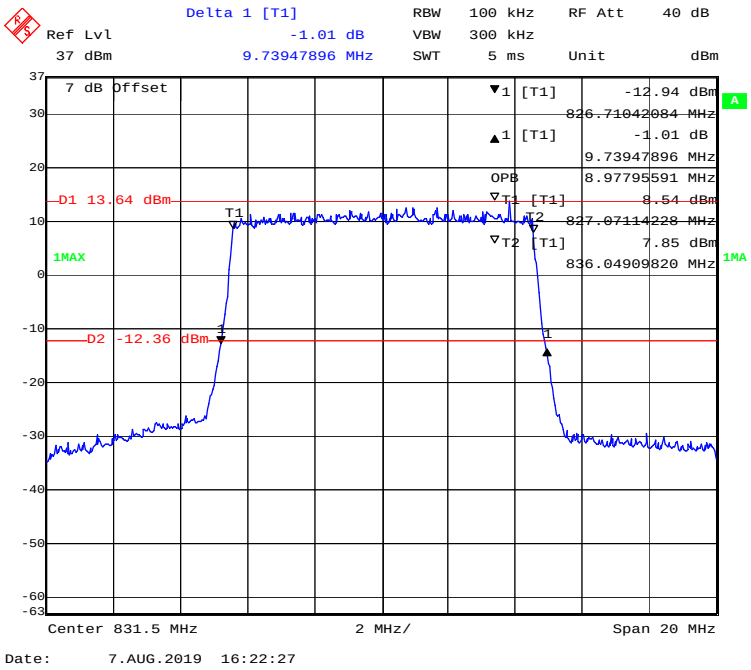
16-QAM (3.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



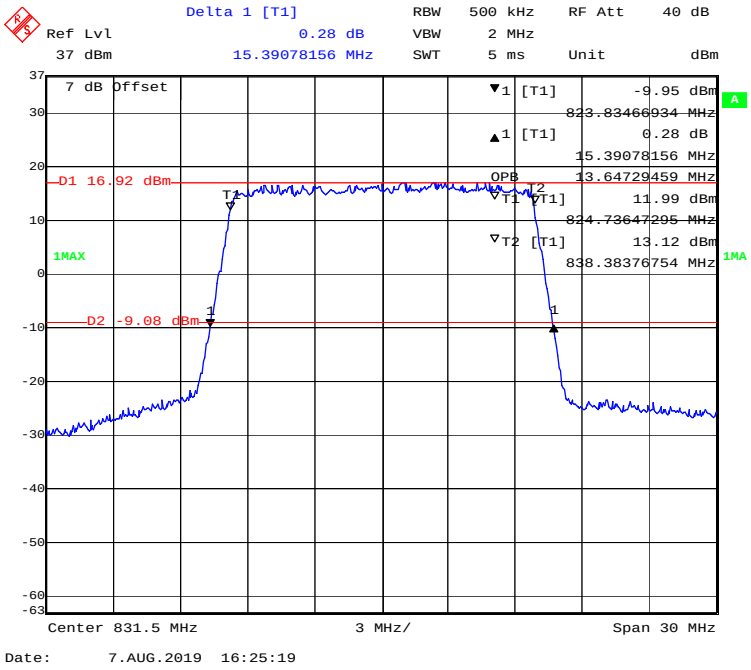
16-QAM (5.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (10.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (15.0 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel

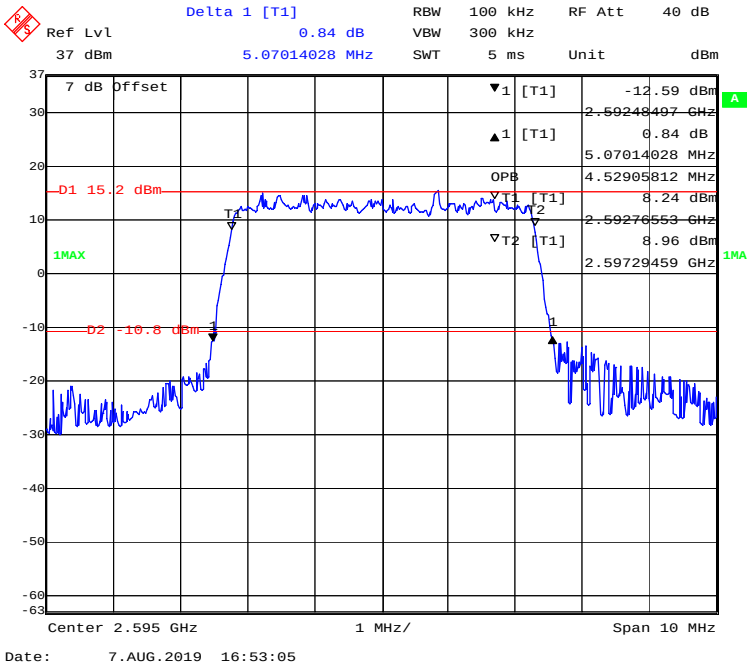


LTE Band 38:

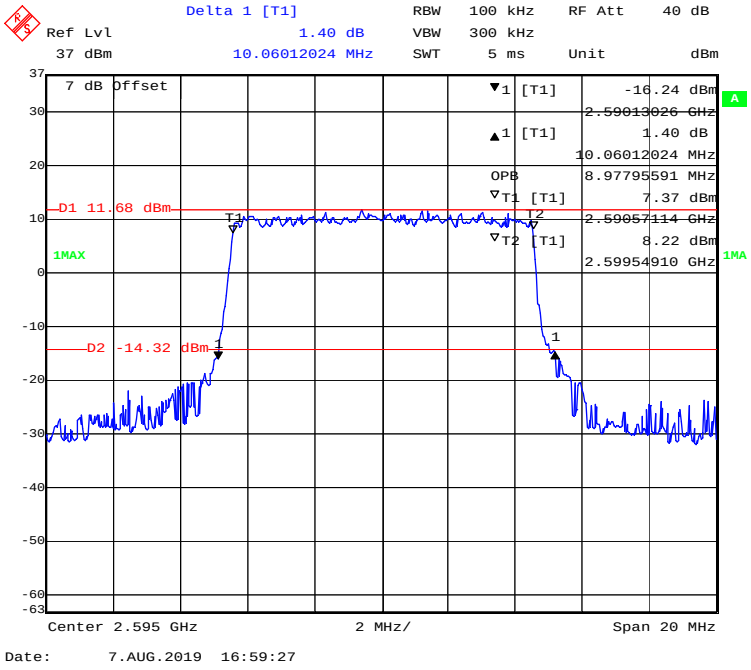
Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	5M	Middle	5.070	4.529
	10M		10.060	8.978
	15M		15.391	13.647
	20M		19.960	18.116
16-QAM	5M	Middle	5.050	4.529
	10M		9.860	8.978
	15M		15.210	13.587
	20M		20.361	18.116

LTE Band 38:

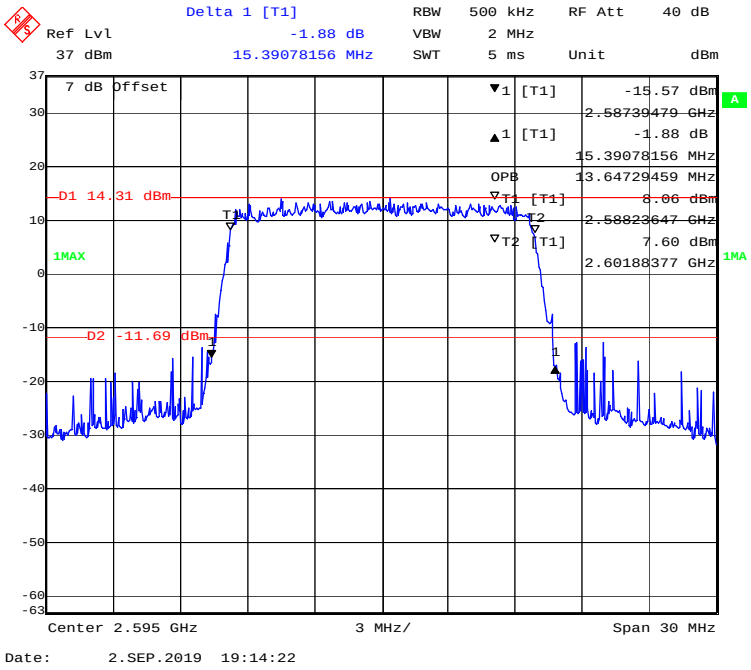
QPSK (5 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



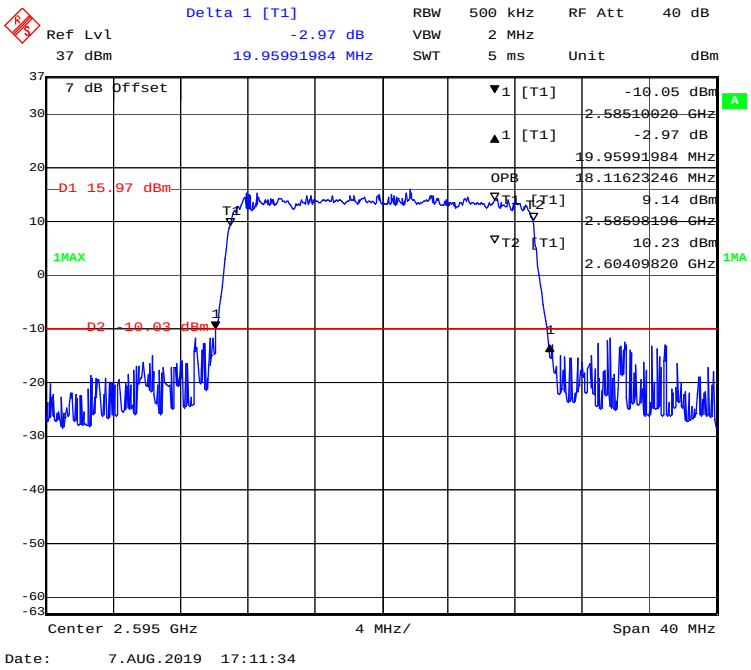
QPSK (10 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



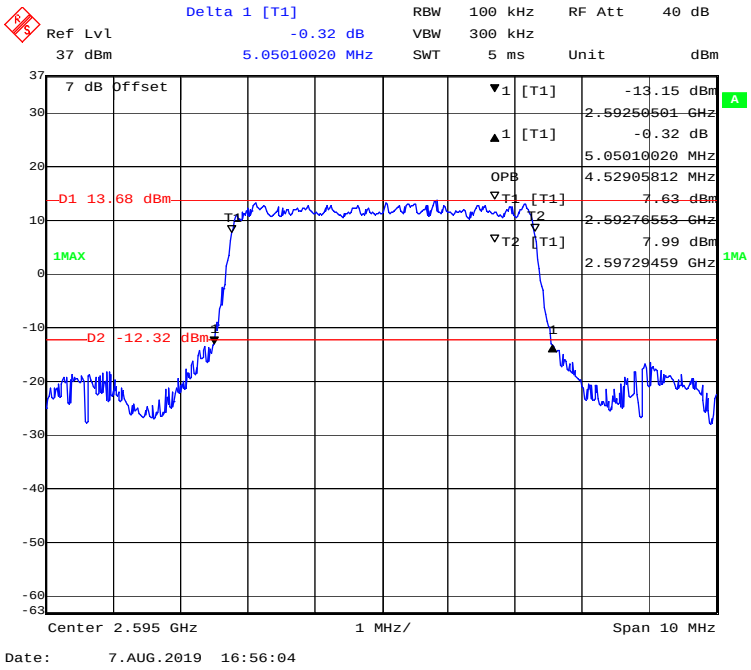
QPSK (15MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



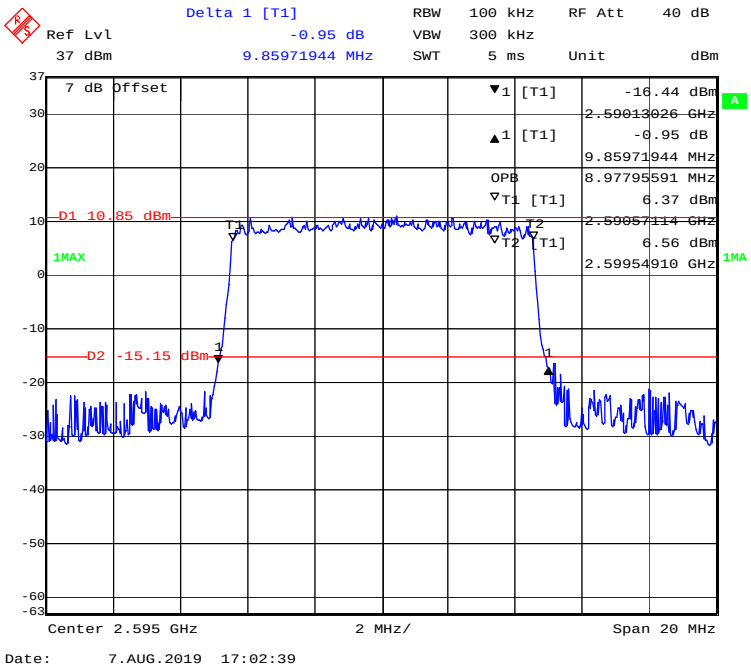
QPSK (20 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



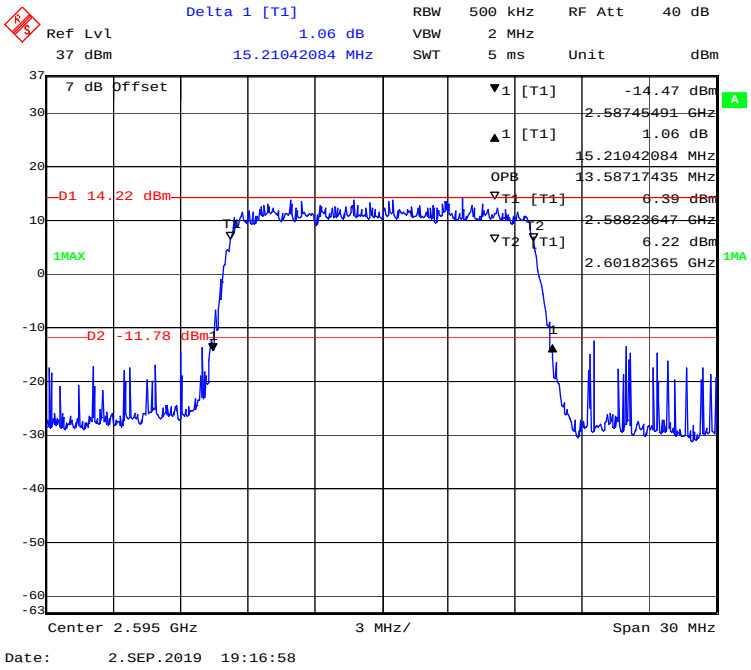
16-QAM (5 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



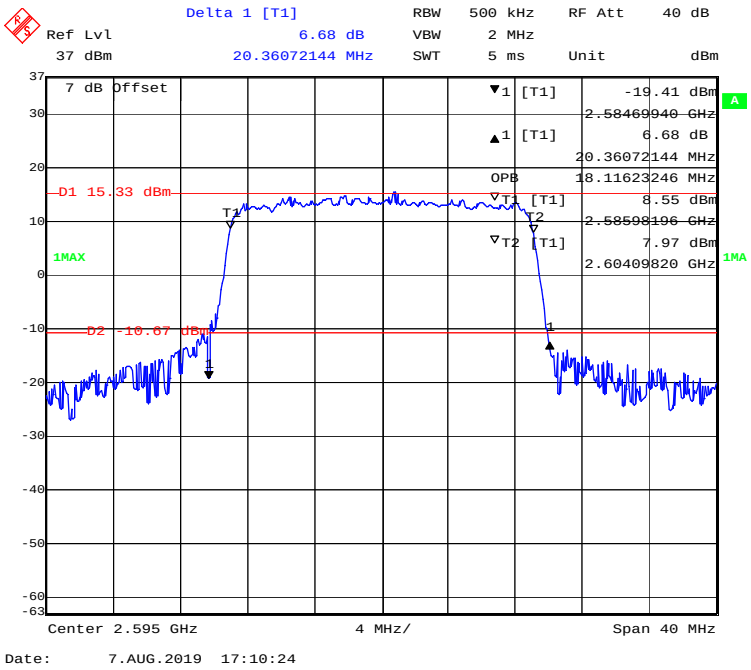
16-QAM (10 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (15 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (20 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel

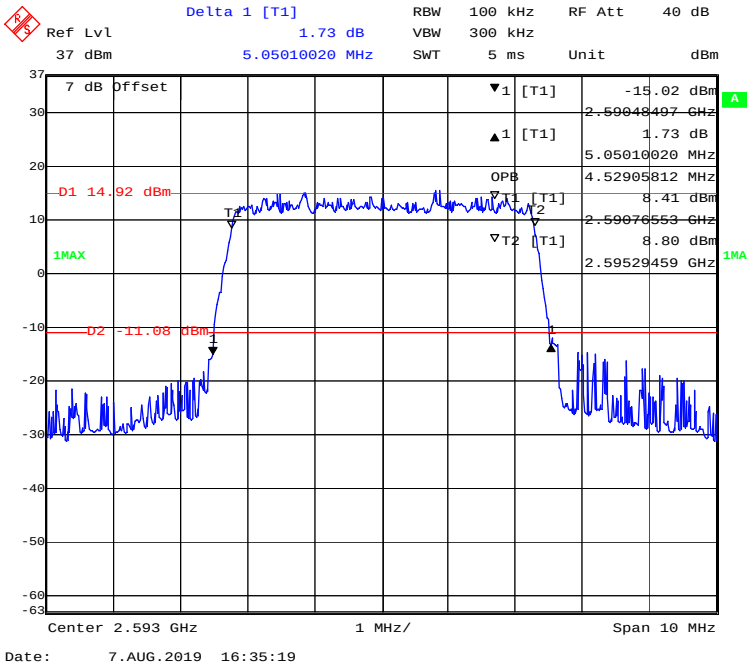


LTE Band 41:

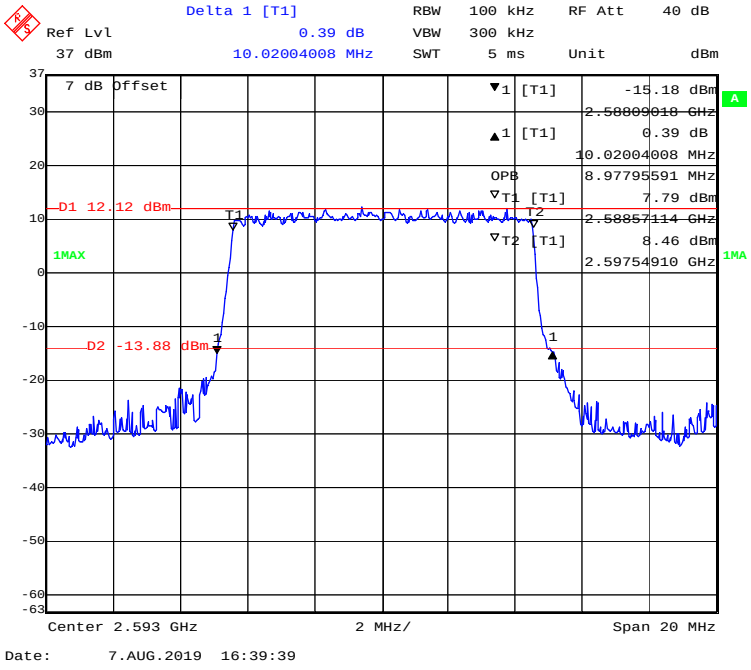
Test Modulation	Test Bandwidth	Test Channel	26 dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
QPSK	5M	Middle	5.050	4.529
	10M		10.020	8.978
	15M		15.331	13.587
	20M		20.601	18.116
16-QAM	5M	Middle	5.050	4.529
	10M		9.739	8.978
	15M		15.391	13.707
	20M		20.762	18.116

LTE Band 41:

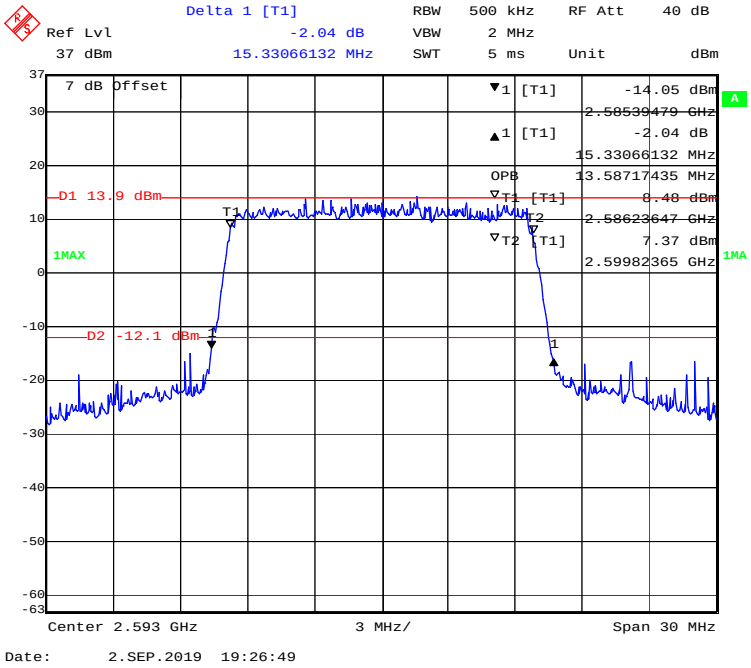
QPSK (5MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



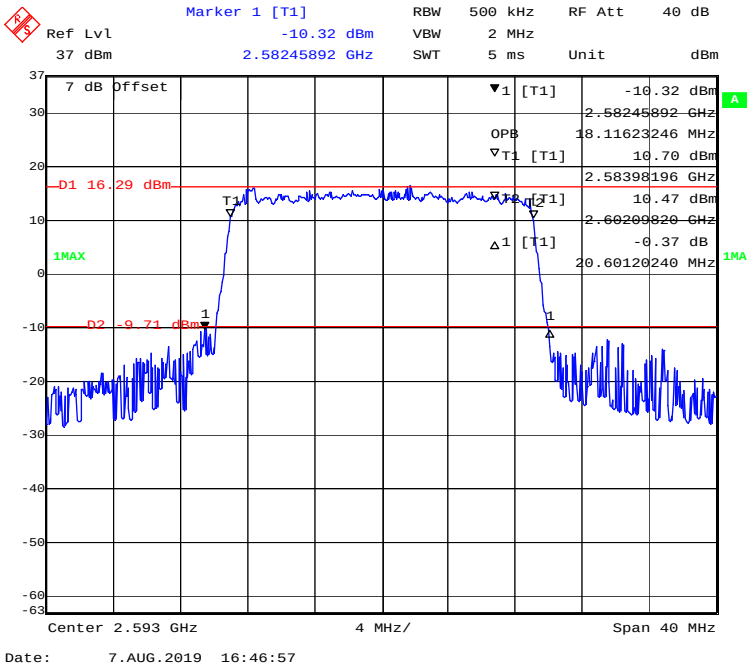
QPSK (10 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



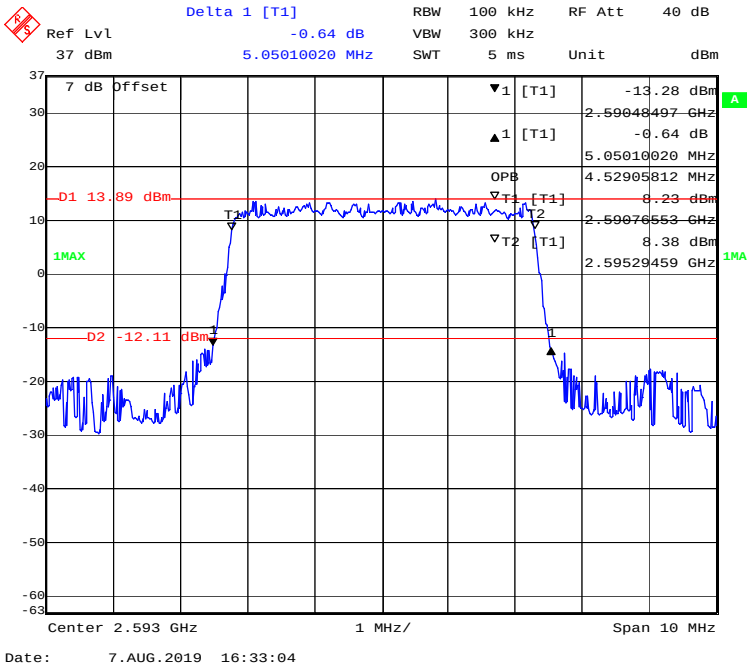
QPSK (15 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



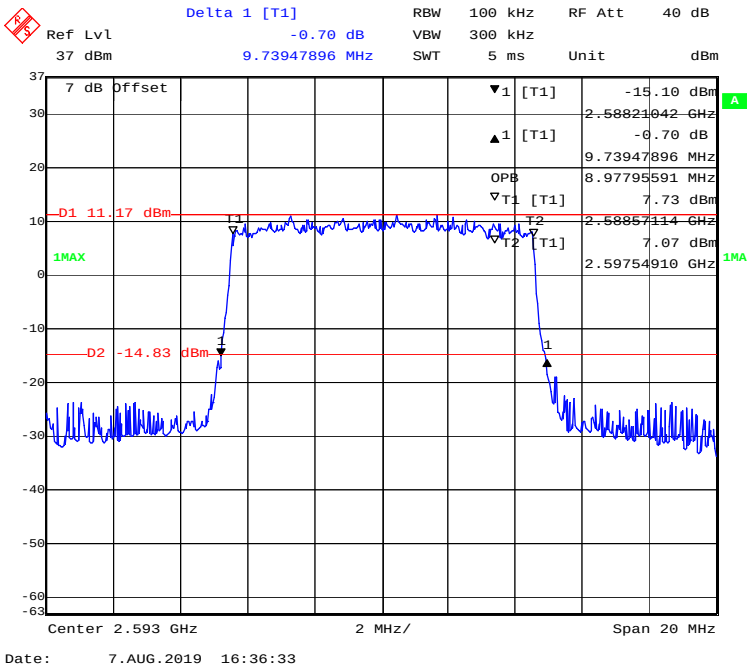
QPSK (20 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



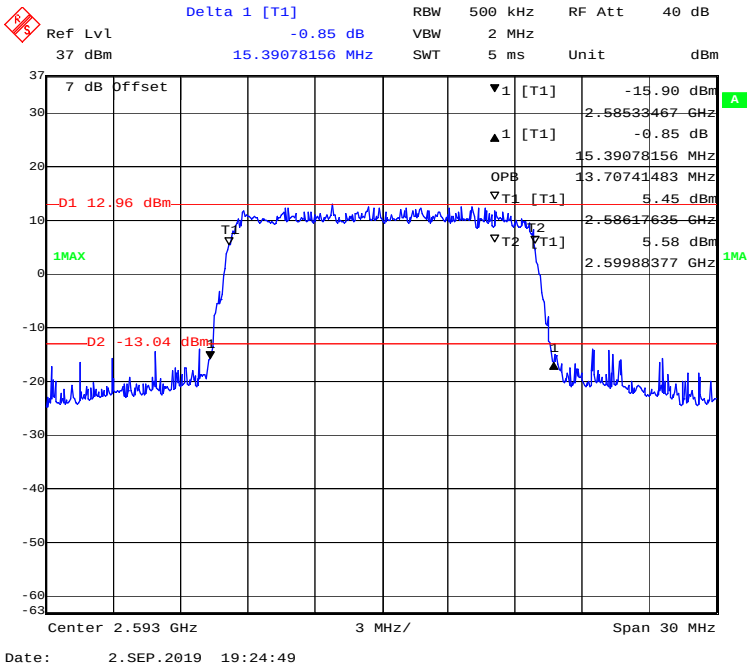
16-QAM (5 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



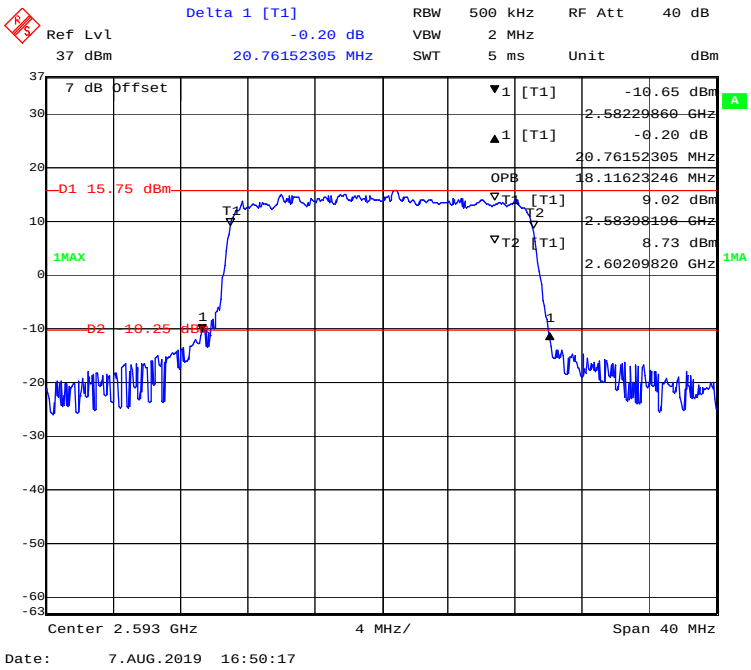
16-QAM (10 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (15 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



16-QAM (20 MHz) - 99% Occupied & 26 dB Emissions Bandwidth, Middle channel



FCC § 2.1051; § 22.917 (a); § 24.238 (a); §27.53(c) (f) (h) (m); § 90.691 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

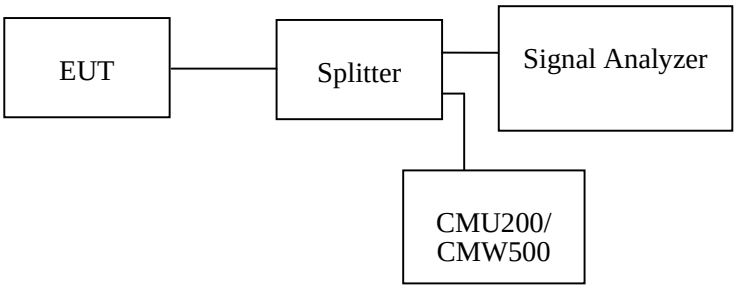
Applicable Standards

FCC §2.1051, §22.917(a) and §24.238(a) , §90.691(a) and §27.53(c) (f) (h) (m).

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for below 1GHz & 1MHz for above 1GHz. sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Data

Environmental Conditions

Temperature:	23.2℃-23.5℃
Relative Humidity:	51 %-23%
ATM Pressure:	101.1kPa-103.3kPa

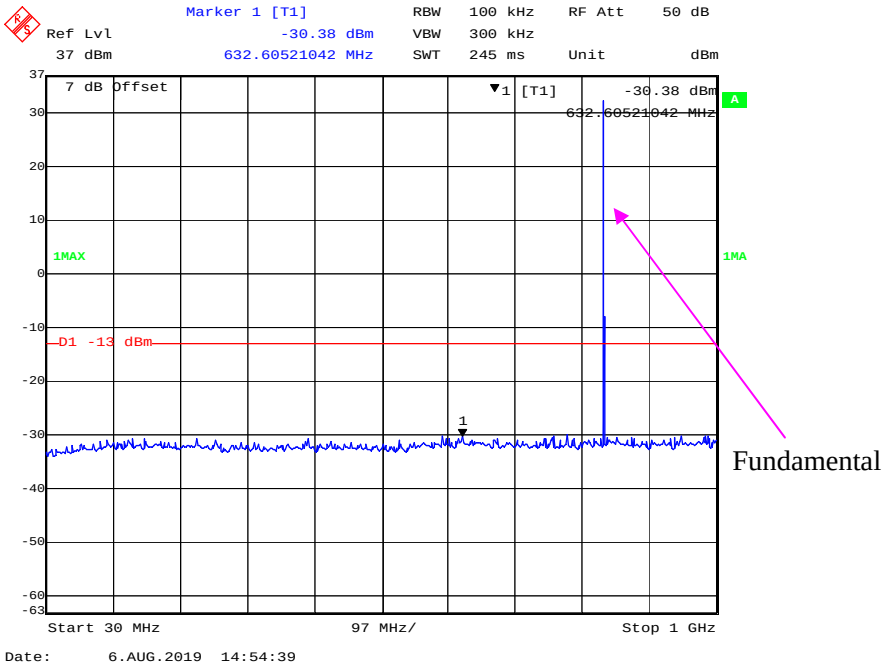
The testing was performed by Sam Ye from 2019-08-06 to 2019-09-06.

EUT operation mode: Transmitting

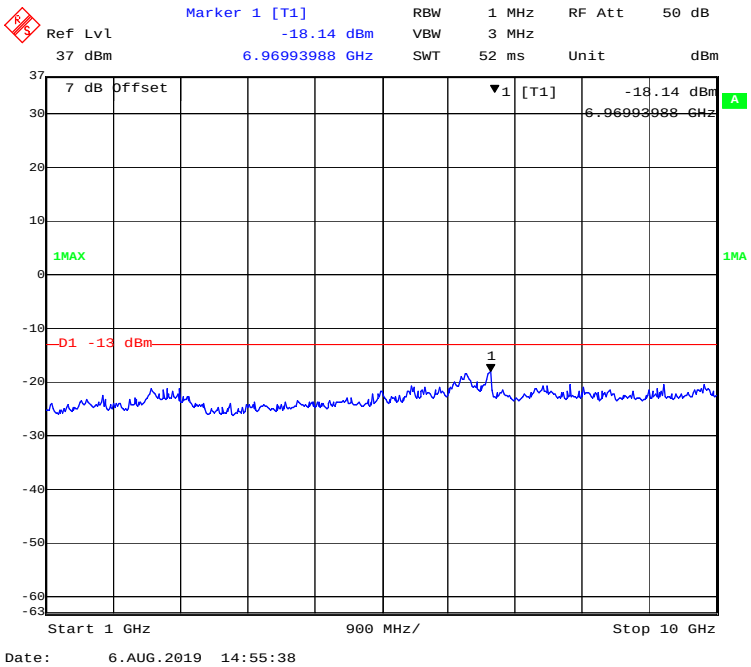
Test Result: Compliant.

GSM 850 Band:

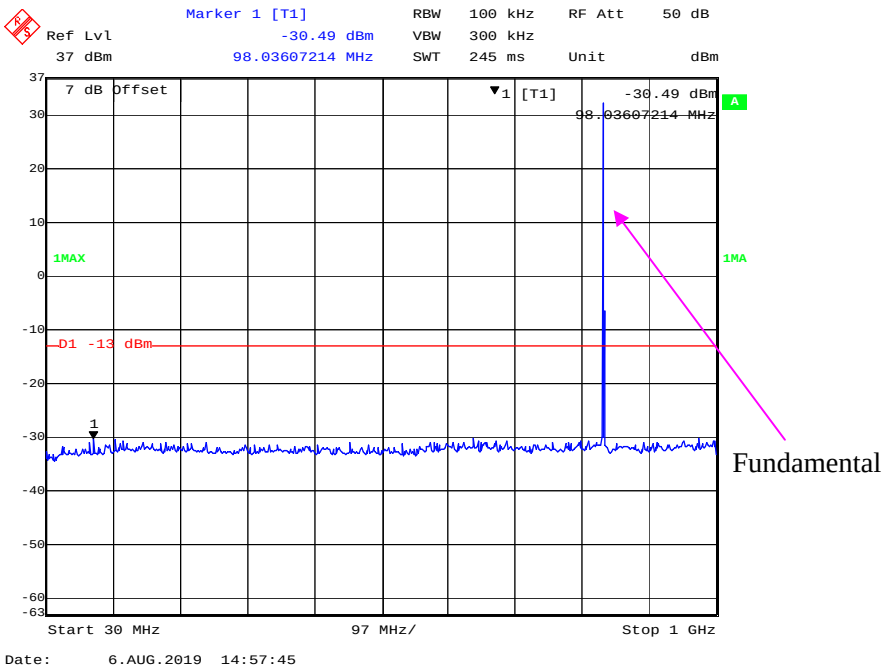
30 MHz – 1GHz(GPRS Mode)



1 GHz – 10 GHz (GPRS Mode)

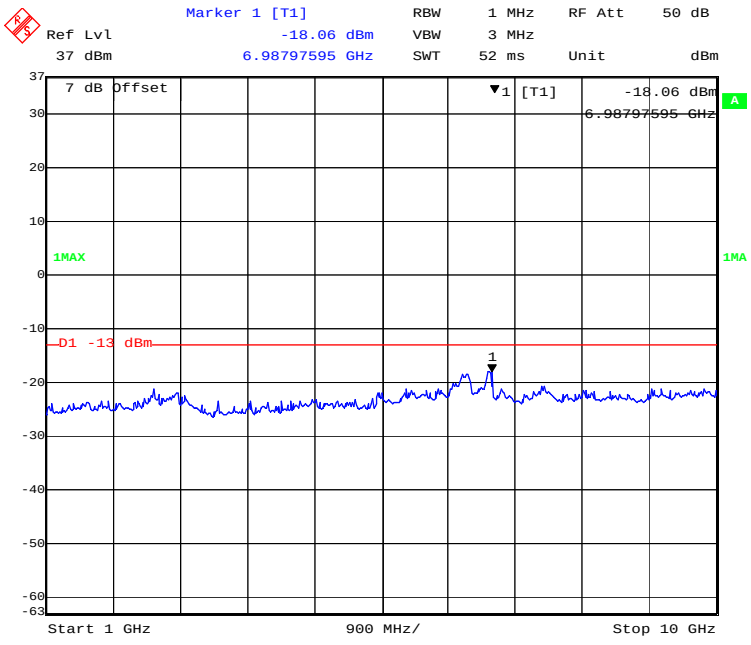


30 MHz – 1GHz(EGPRS Mode)



Date: 6.AUG.2019 14:57:45

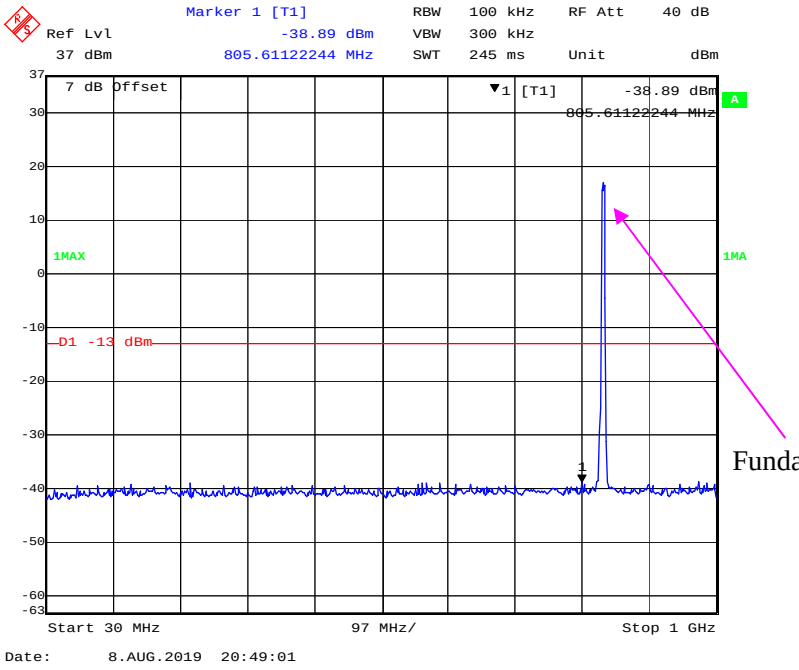
1 GHz – 10 GHz (EGPRS Mode)



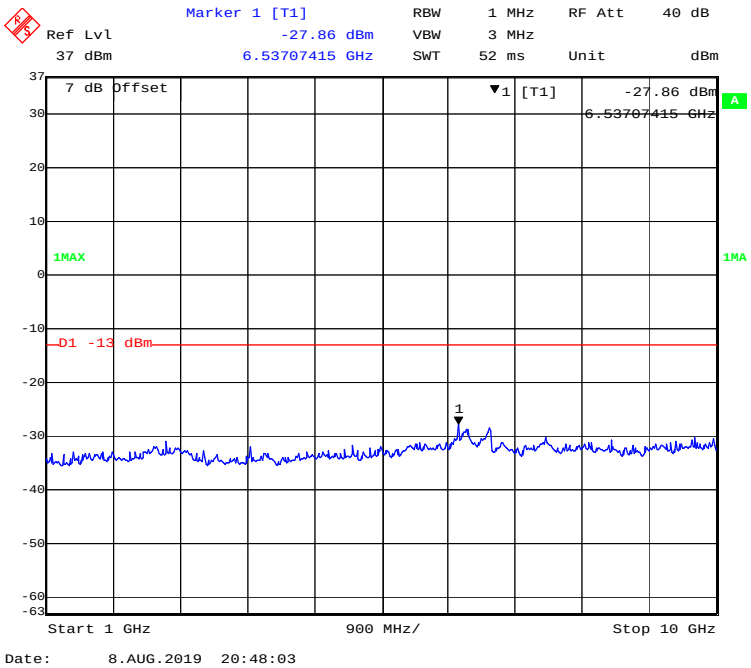
Date: 6.AUG.2019 14:56:54

WCDMA Band V:

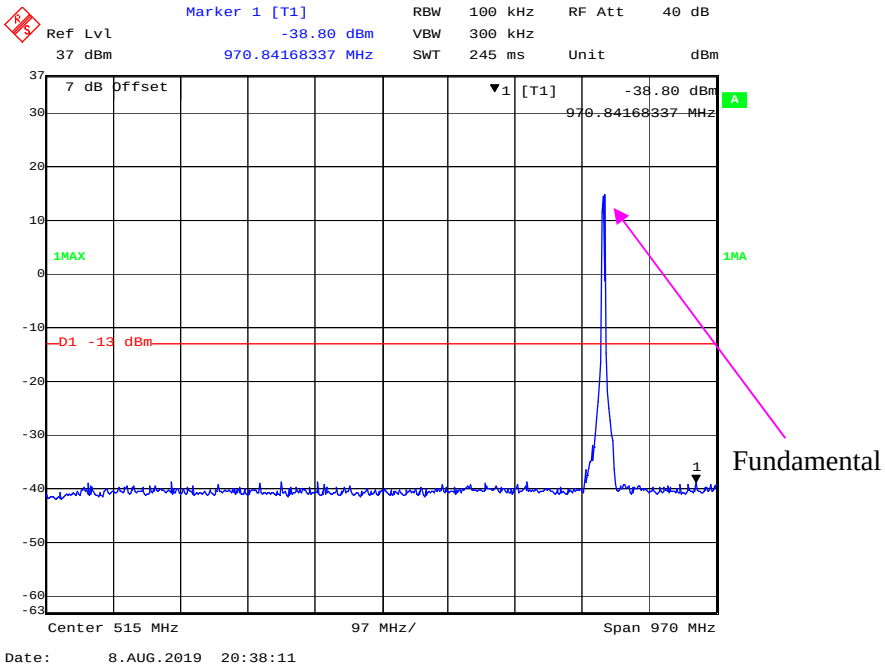
30 MHz – 1GHz WCDMA (Rel 99) Mode



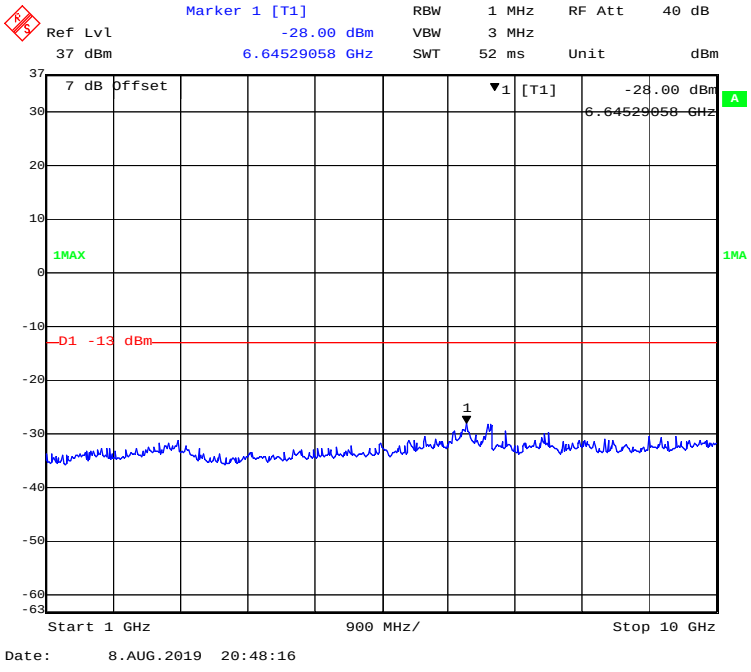
1 GHz – 10 GHz WCDMA (Rel 99) Mode



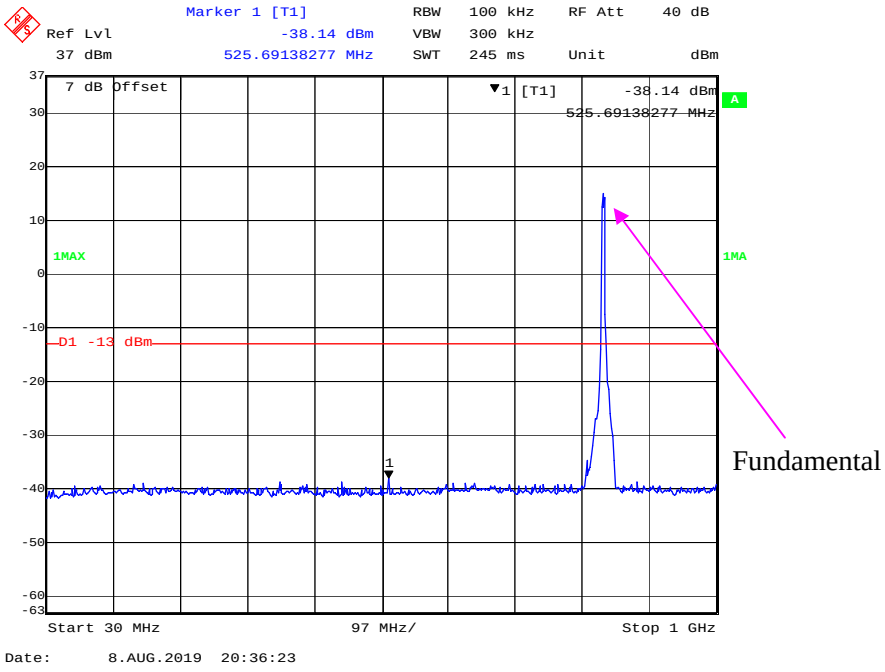
30 MHz – 1GHz WCDMA (HSDPA) Mode



1 GHz – 10 GHz WCDMA (HSDPA) Mode

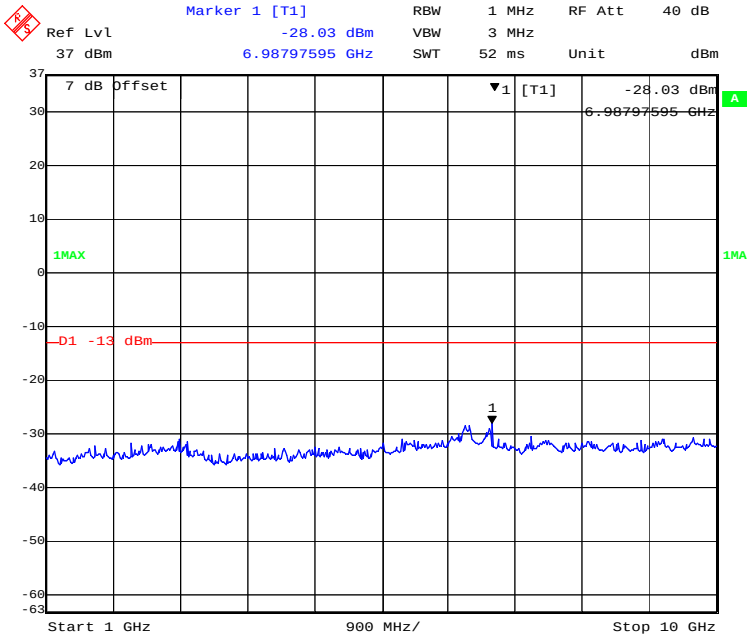


30 MHz – 1GHz WCDMA (HSUPA) Mode



Date: 8.AUG.2019 20:36:23

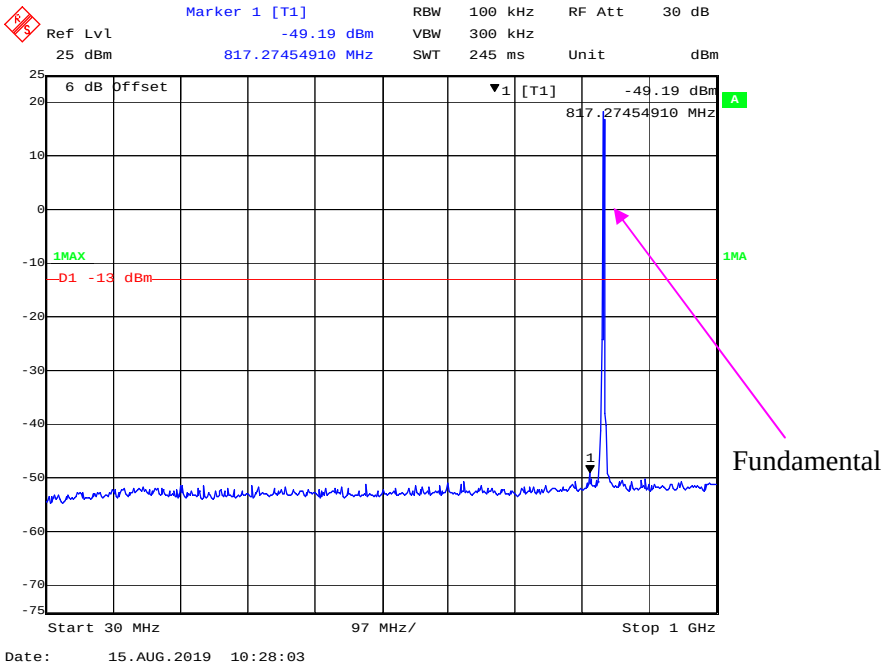
1 GHz – 10 GHz WCDMA (HSUPA) Mode



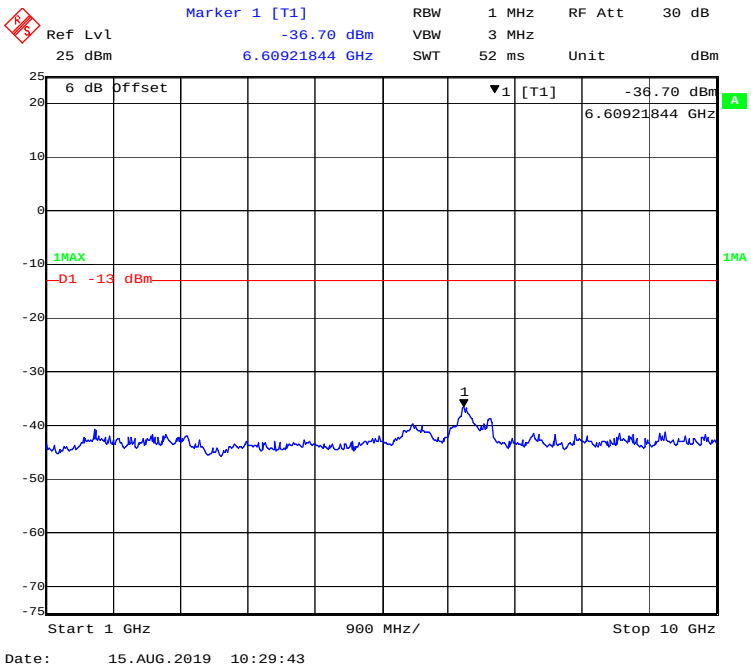
Date: 8.AUG.2019 20:48:34

CDMA BC0 Band:

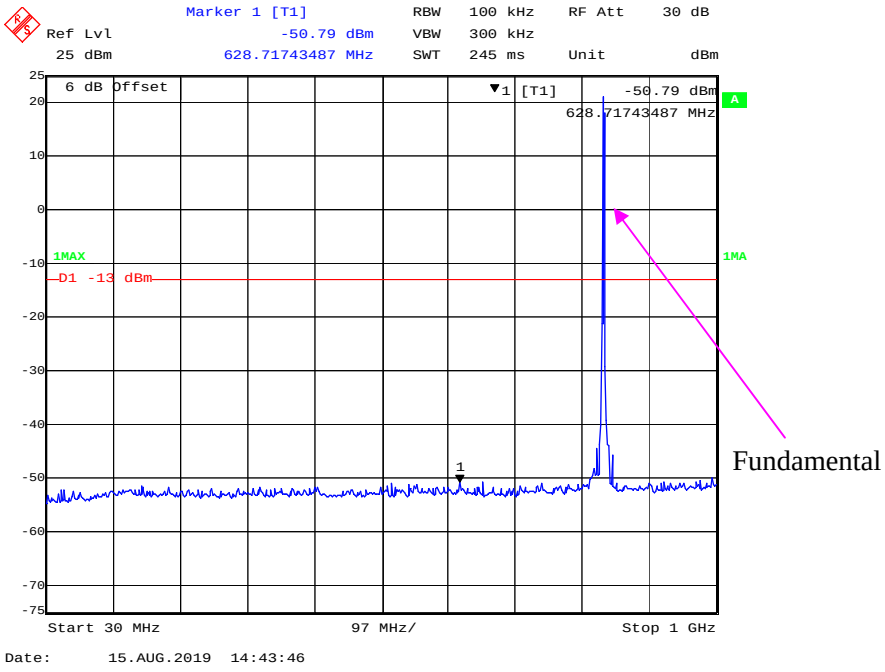
30 MHz – 1GHz CDMA BC0 (1xRTT) Mode



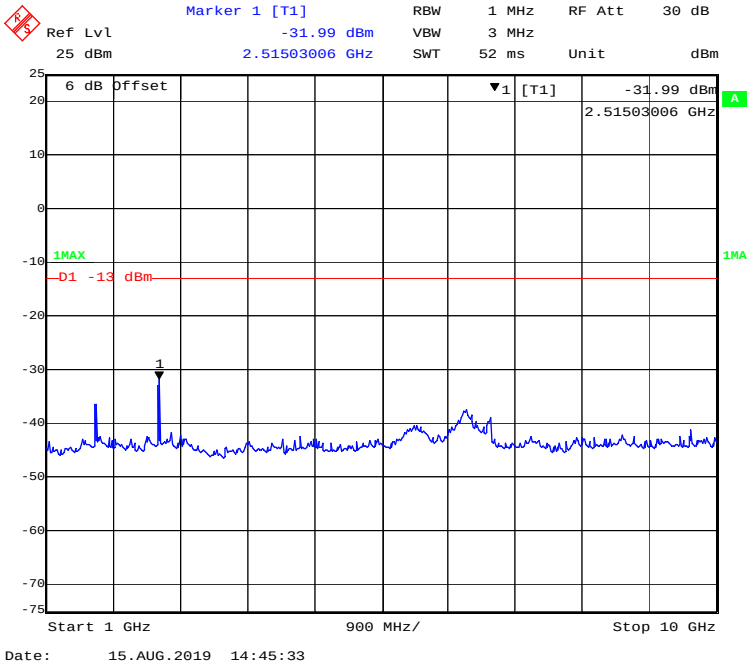
1 GHz – 10 GHz CDMA BC0 (1xRTT) Mode



30 MHz – 1GHz CDMA BC0 (1xEV-DO) Mode

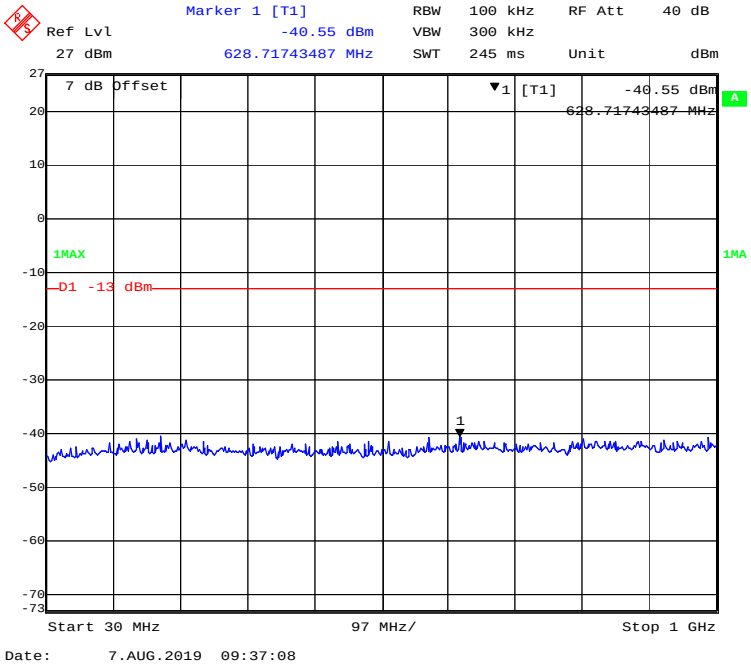


1 GHz – 10 GHz CDMA BC0 (1xEV-DO) Mode

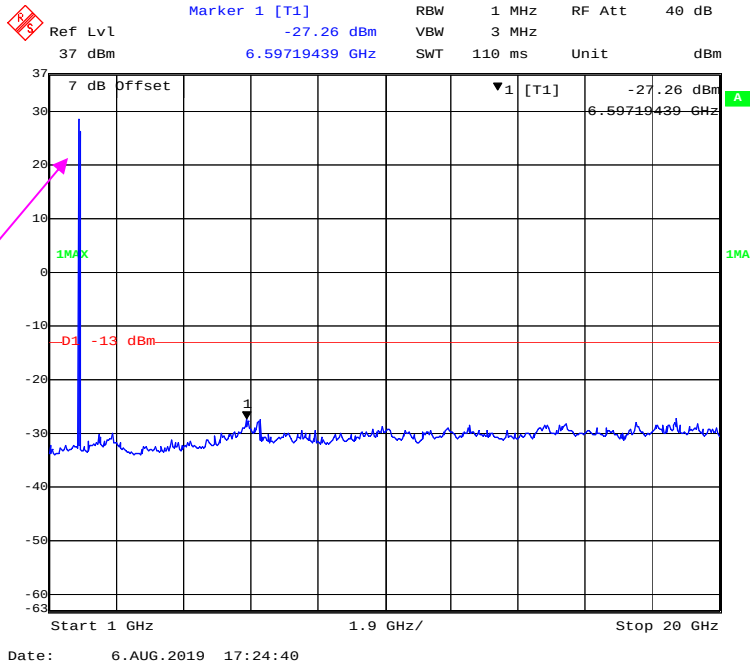


PCS 1900 Band:

30 MHz – 1GHz(GPRS Mode)

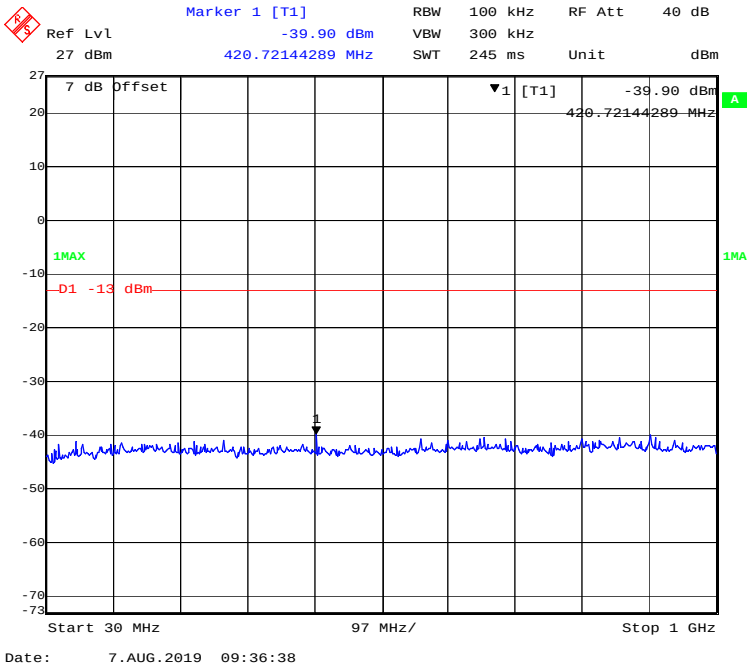


1 GHz – 20 GHz (GPRS Mode)

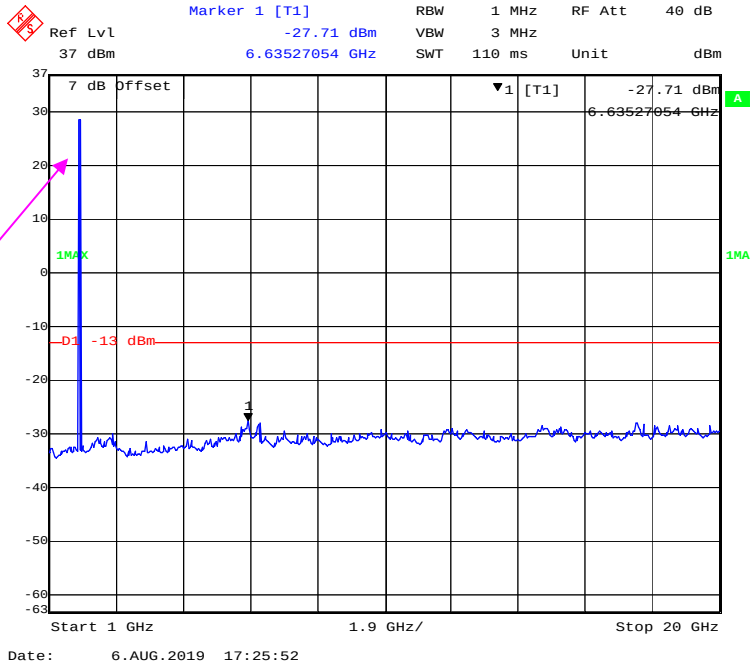


Fundamental

30 MHz – 1GHz(EGPRS Mode)



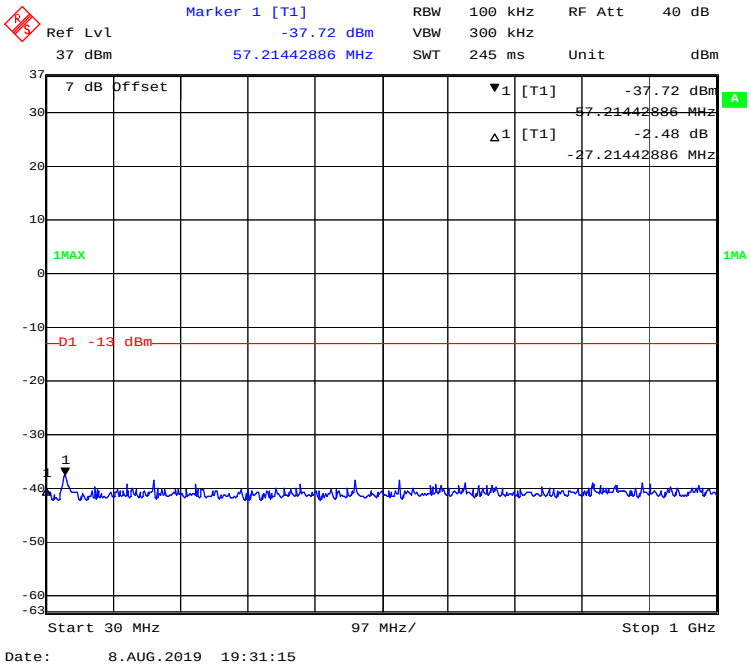
1 GHz – 20 GHz (EGPRS Mode)



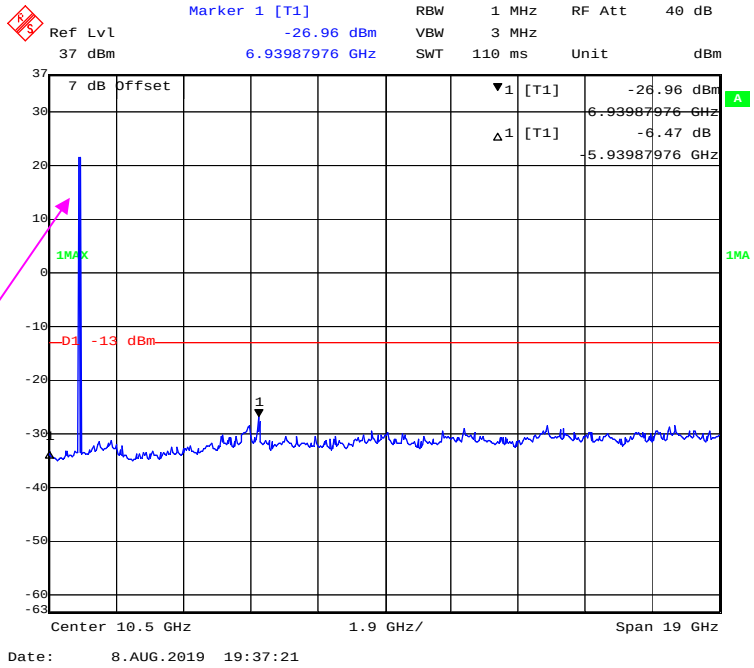
Fundamental

WCDMA Band II:

30 MHz – 1GHz WCDMA (Rel 99) Mode

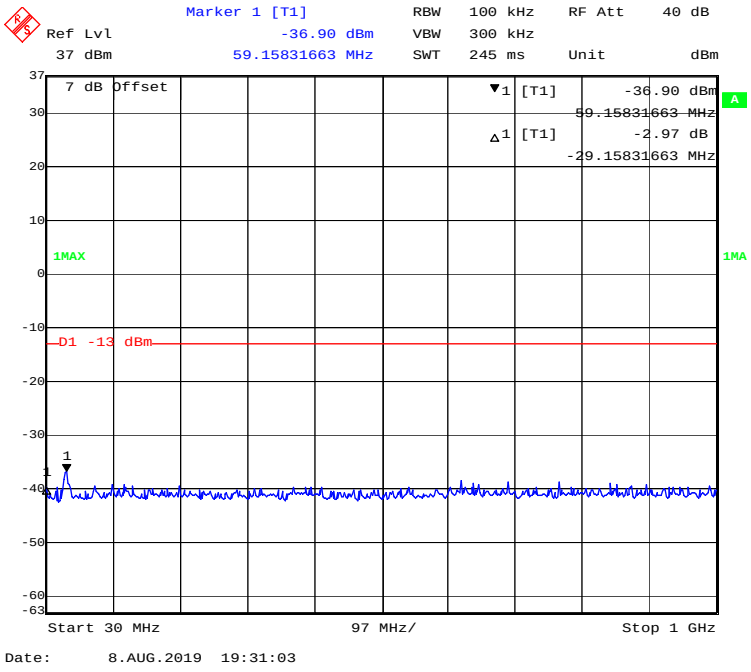


1 GHz – 20 GHz WCDMA (Rel 99) Mode

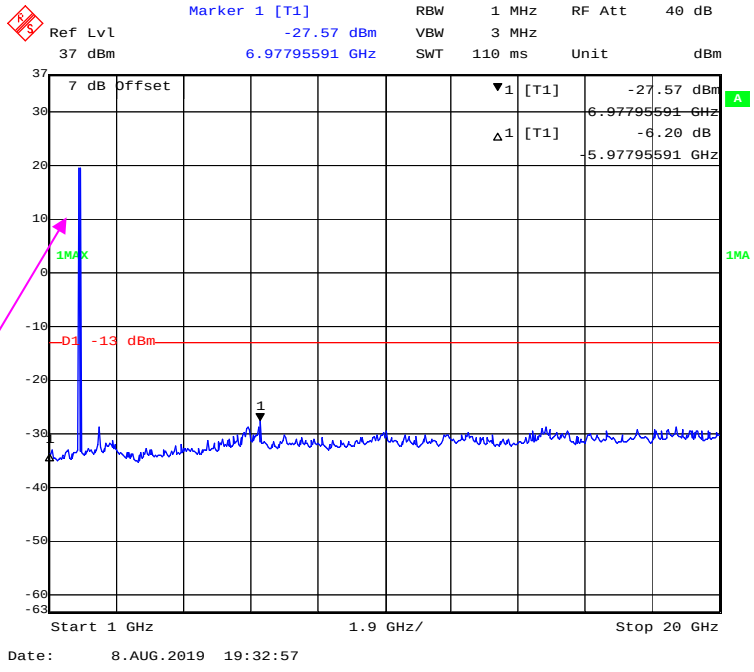


Fundamental

30 MHz – 1GHz WCDMA (HSDPA) Mode

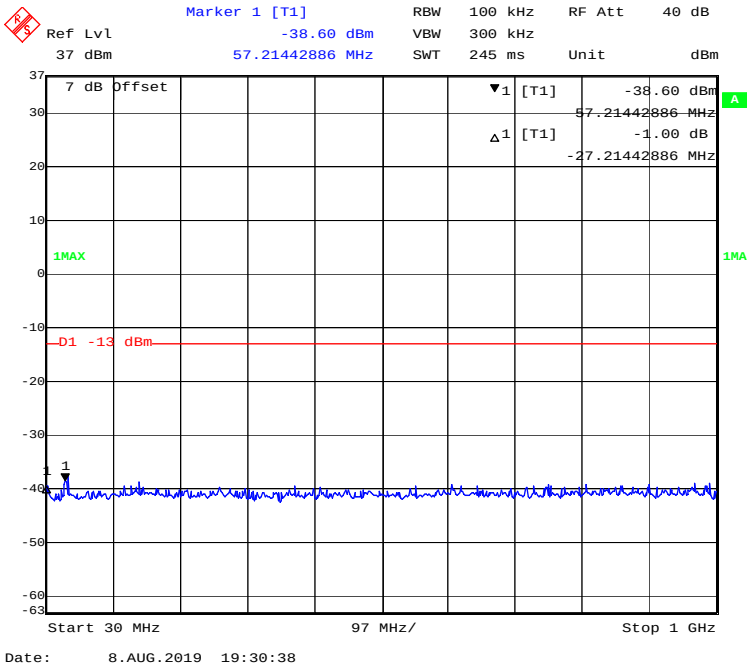


1 GHz – 20 GHz WCDMA (HSDPA) Mode

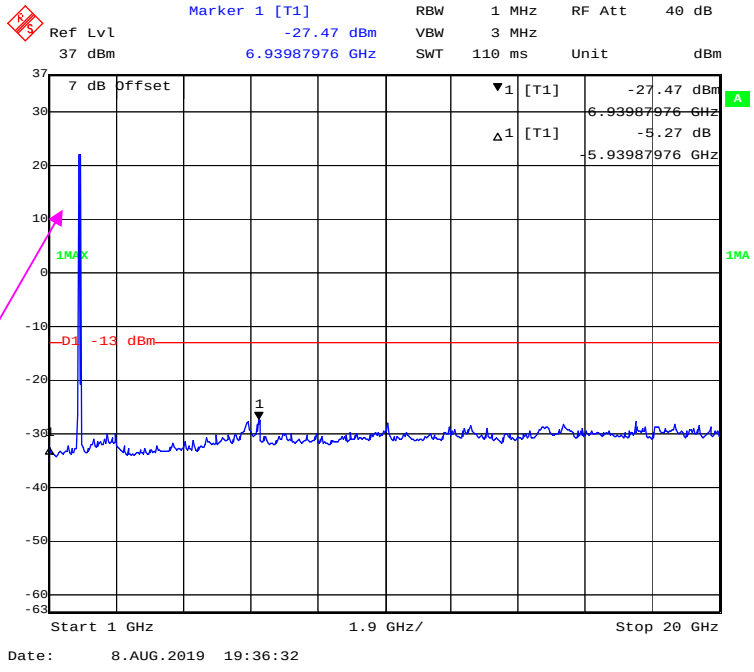


Fundamental

30 MHz – 1GHz WCDMA (HSUPA) Mode



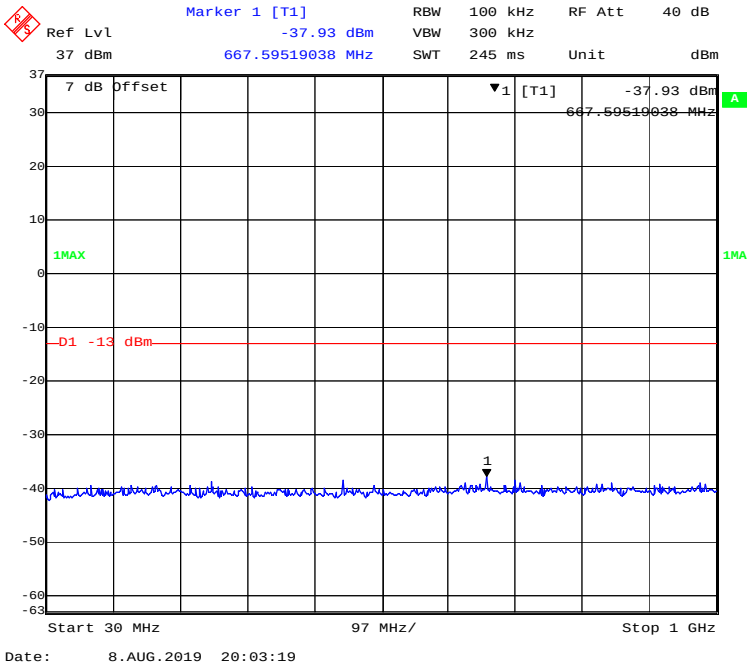
1 GHz – 20 GHz WCDMA (HSUPA) Mode



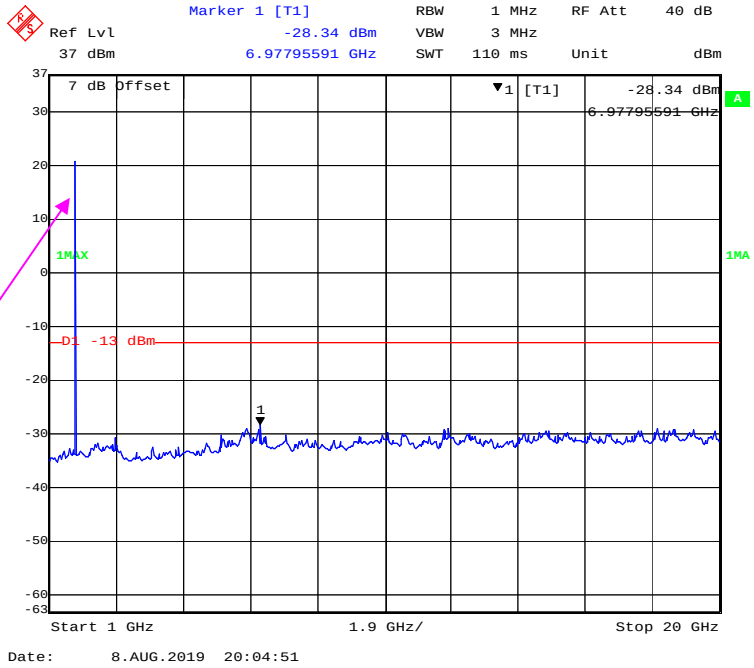
Fundamental

WCDMA Band IV:

30 MHz – 1GHz WCDMA (Rel 99) Mode

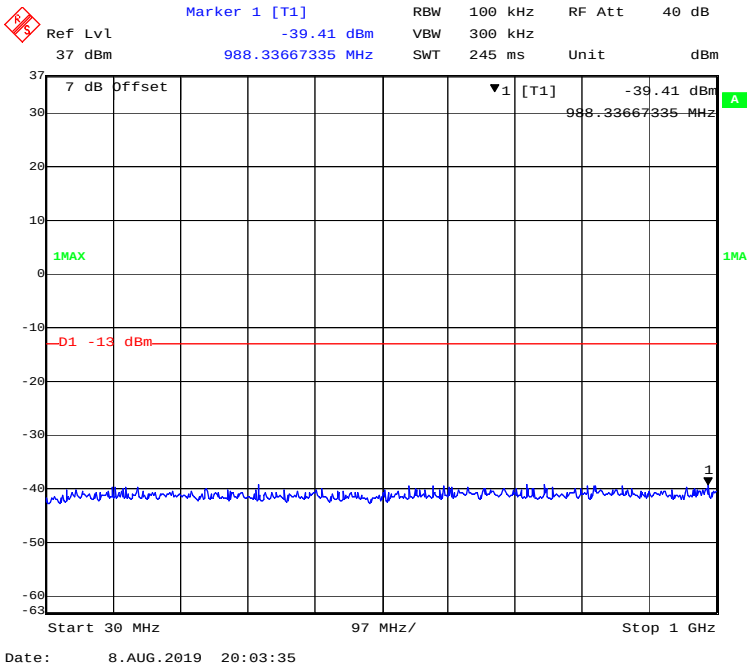


1 GHz – 20 GHz WCDMA (Rel 99) Mode

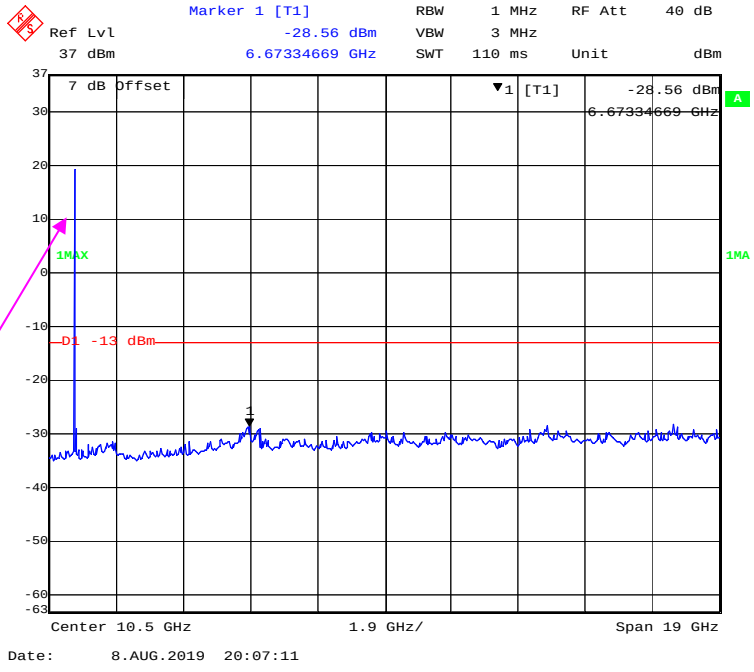


Fundamental

30 MHz – 1GHz WCDMA (HSDPA) Mode

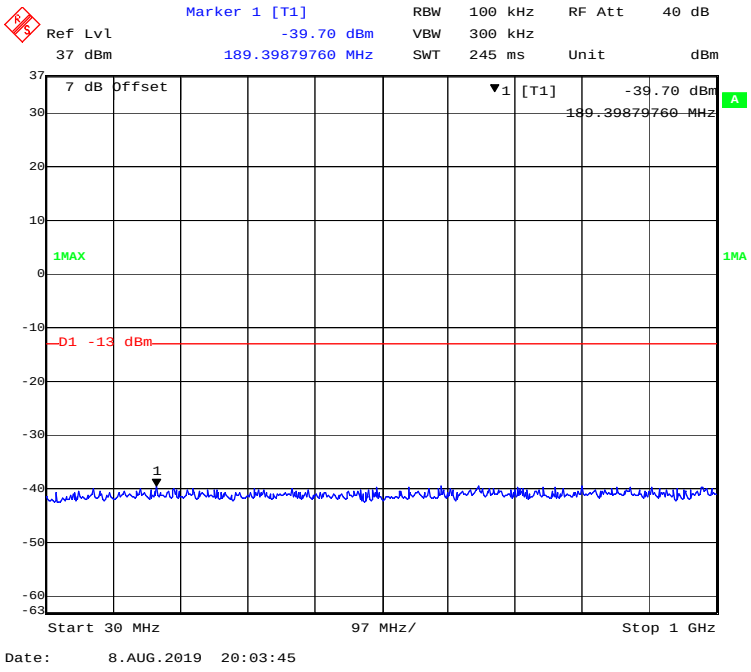


1 GHz – 20 GHz WCDMA (HSDPA) Mode

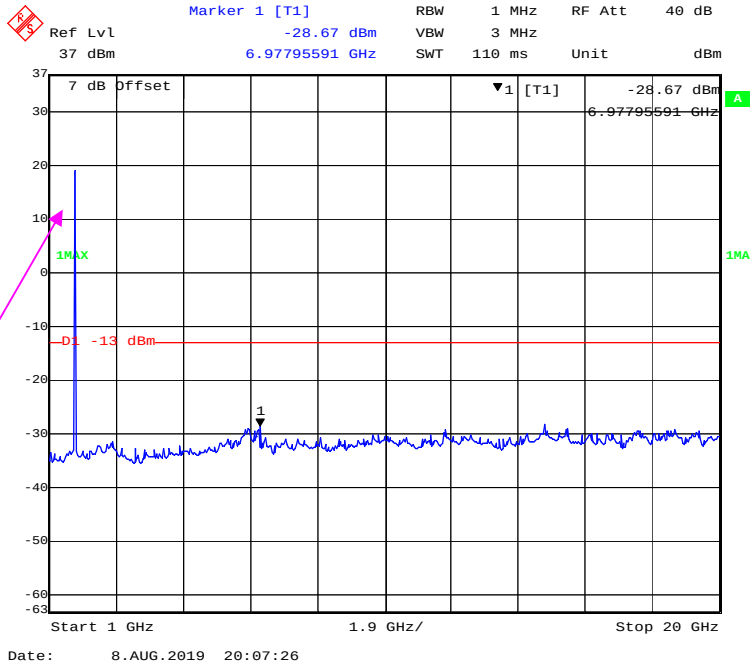


Fundamental

30 MHz – 1GHz WCDMA (HSUPA) Mode



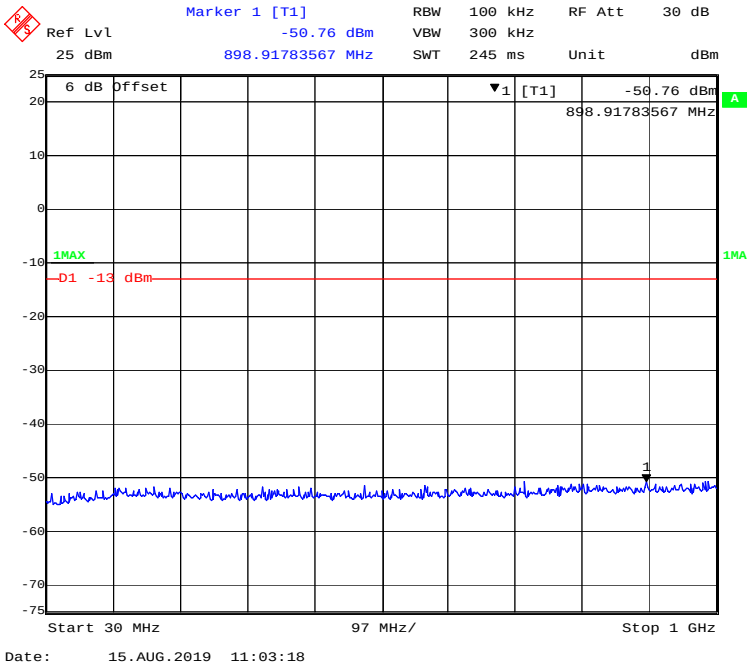
1 GHz – 20 GHz WCDMA (HSUPA) Mode



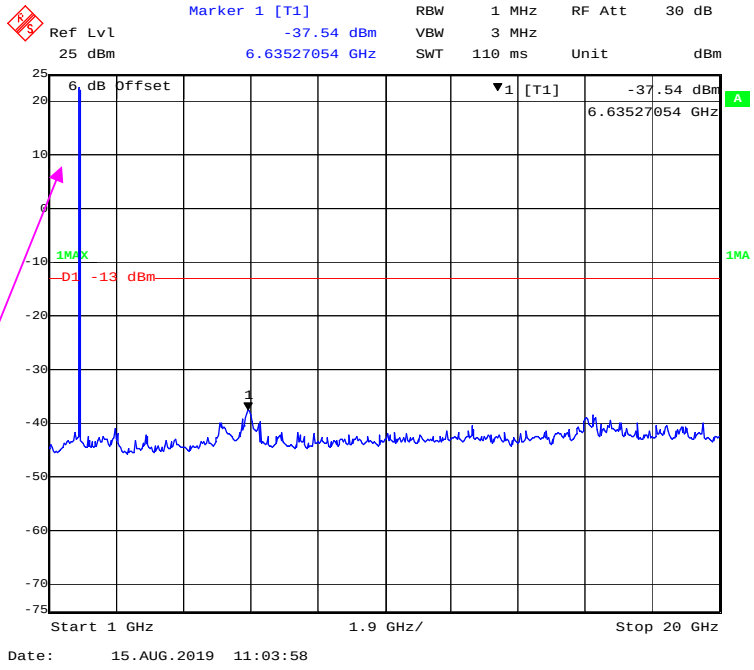
Fundamental

CDMA BC1 Band:

30 MHz – 1GHz CDMA BC1 (1xRTT) Mode

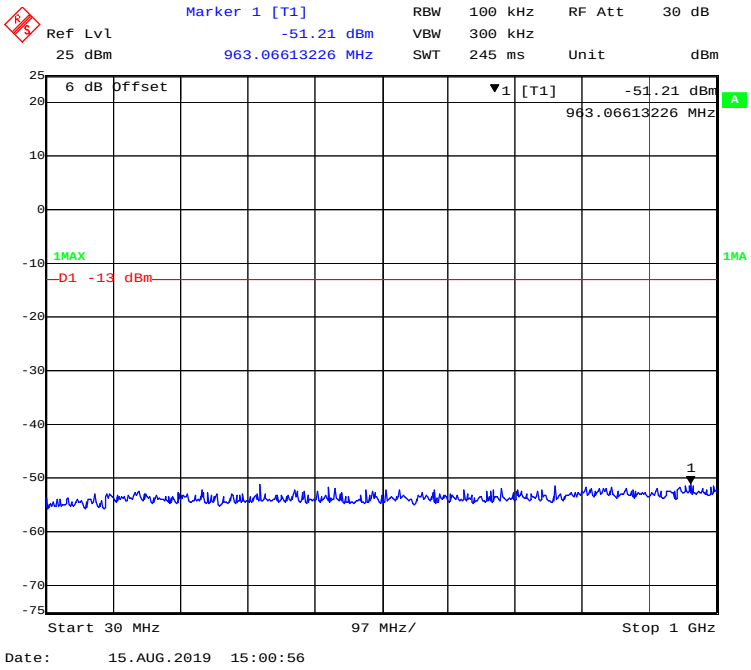


1 GHz – 20 GHz CDMA BC1 (1xRTT) Mode

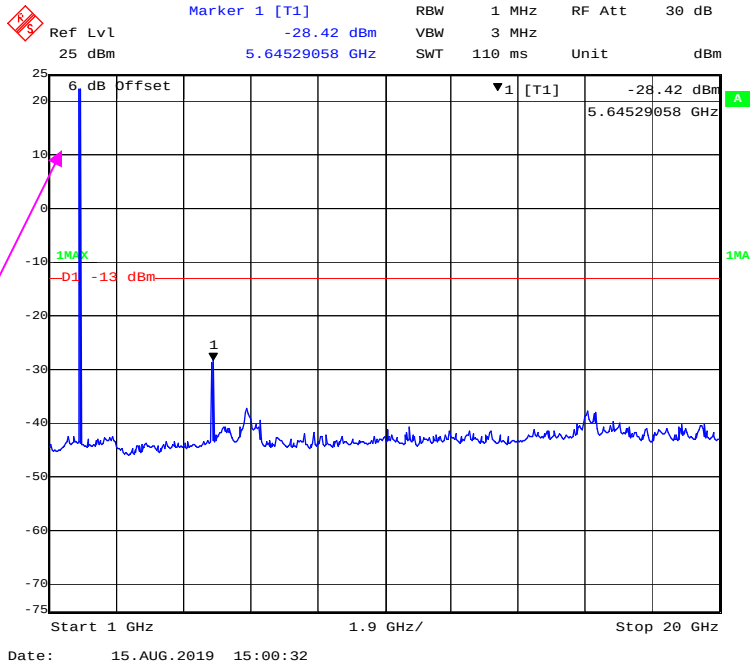


Fundamental

30 MHz – 1GHz CDMA BC1 (1xEV-DO) Mode



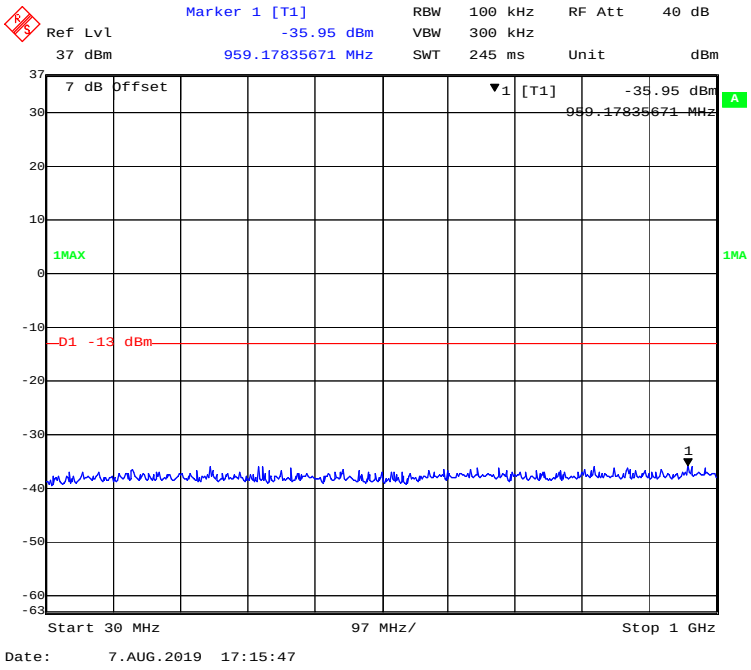
1 GHz – 20 GHz CDMA BC1 (1xEV-DO) Mode



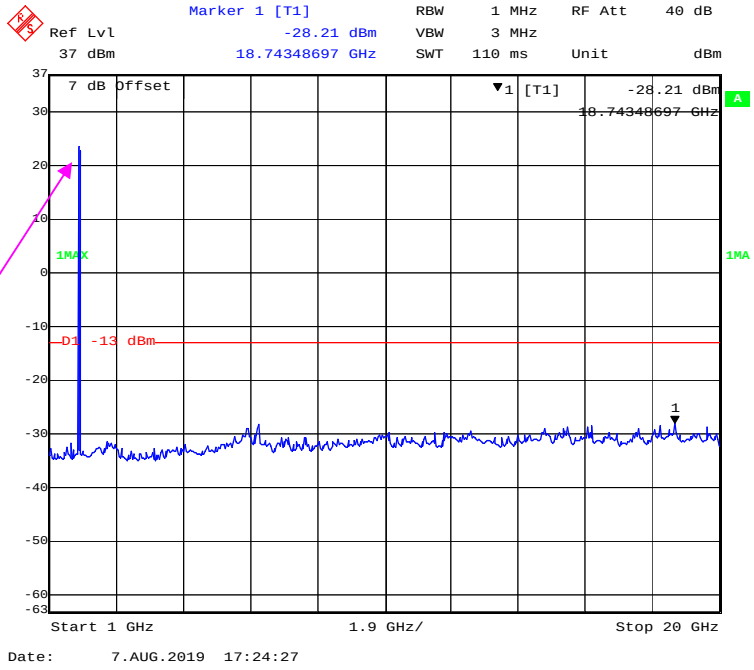
Fundamental

LTE Band 2:

30 MHz - 1 GHz (1.4 MHz, QPSK, Middle Channel)

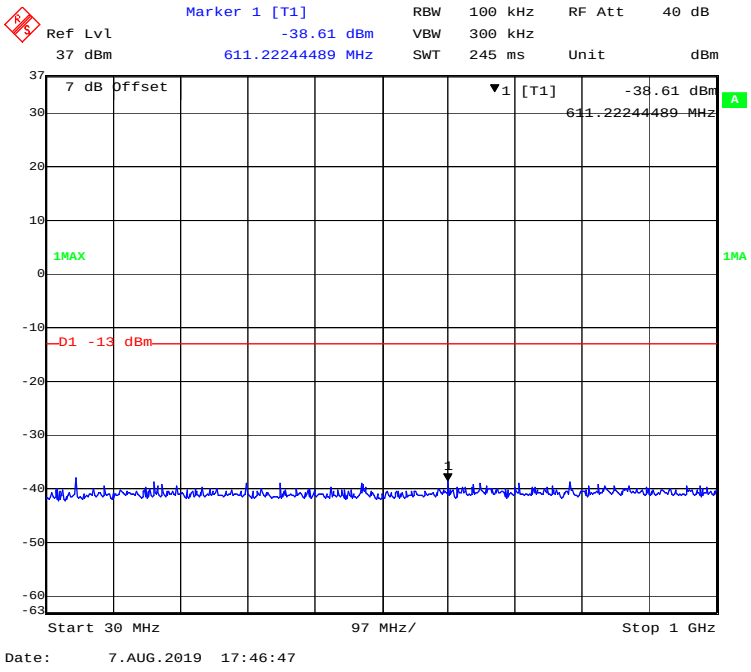


1 GHz – 20 GHz (1.4 MHz, QPSK, Middle Channel)

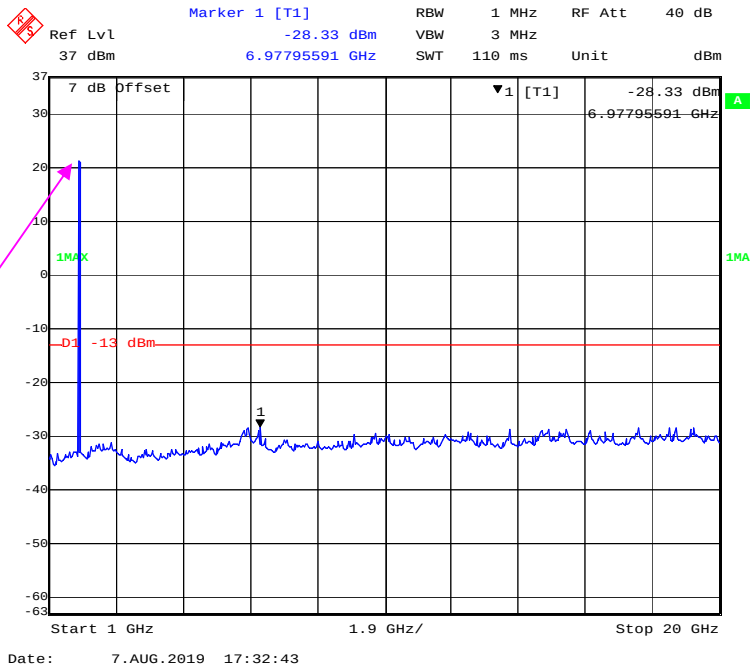


Fundamental

30 MHz - 1 GHz (3.0 MHz, QPSK, Middle Channel)

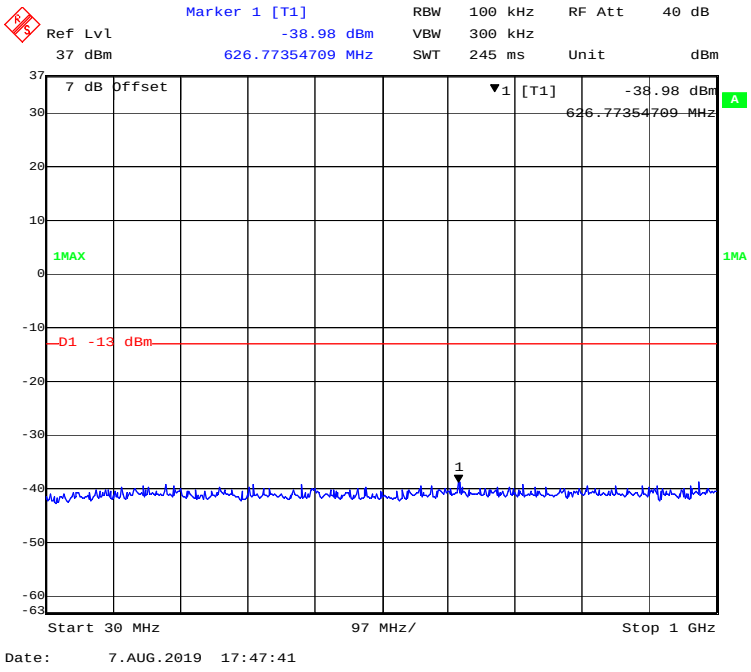


1 GHz – 20 GHz (3.0 MHz, QPSK, Middle Channel)

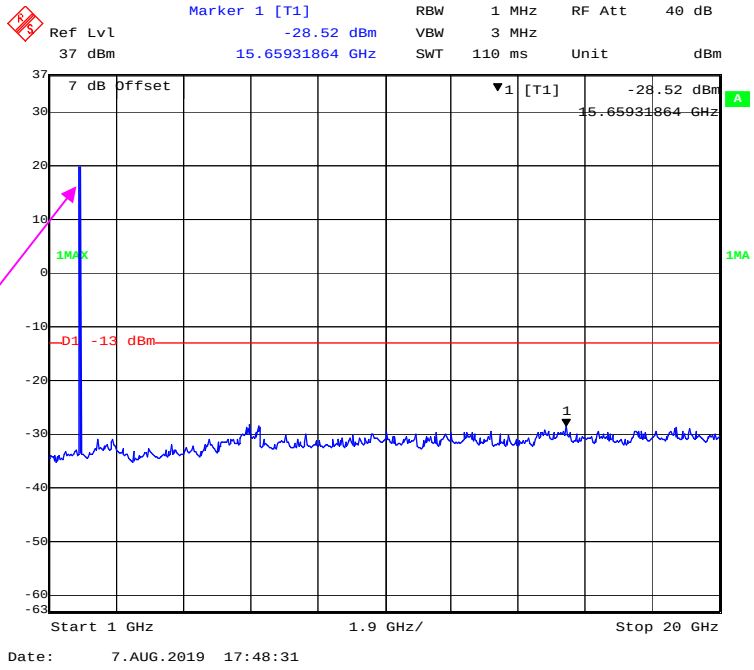


Fundamental

30 MHz - 1 GHz (5.0 MHz, QPSK, Middle Channel)

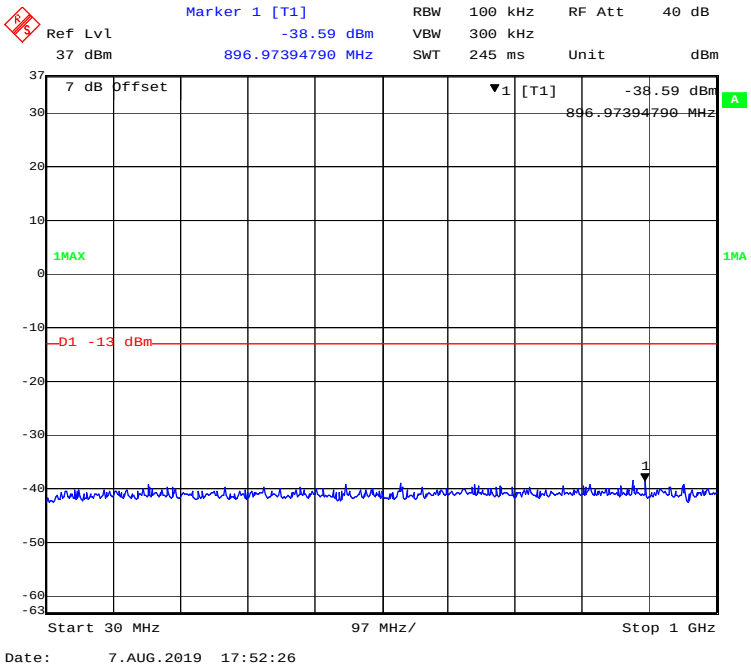


1 GHz – 20 GHz (5.0MHz, QPSK, Middle Channel)

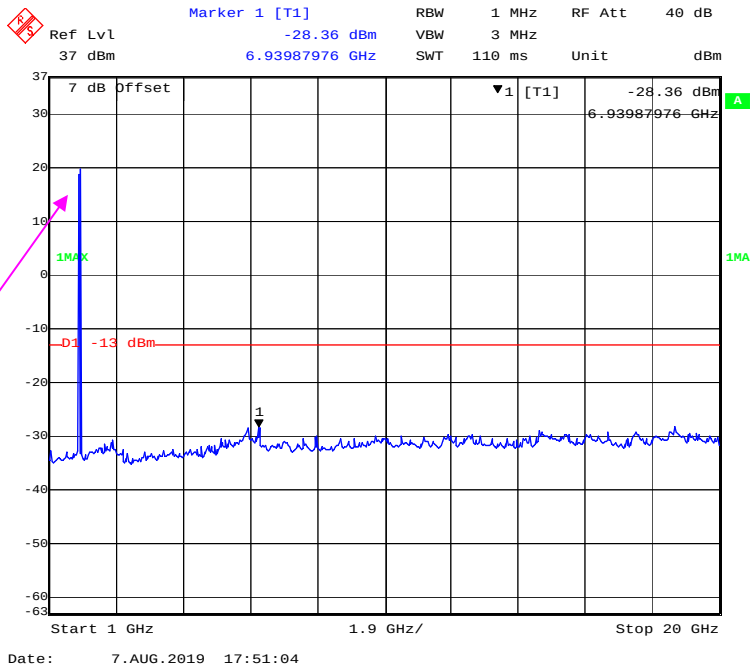


Fundamental

30 MHz - 1 GHz (10.0 MHz, QPSK, Middle Channel)

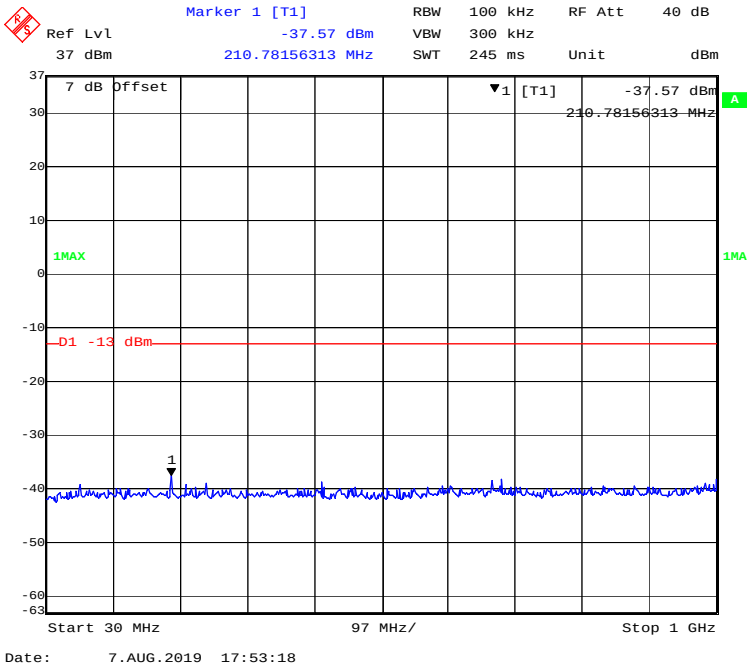


1 GHz – 20 GHz (10.0 MHz, QPSK, Middle Channel)

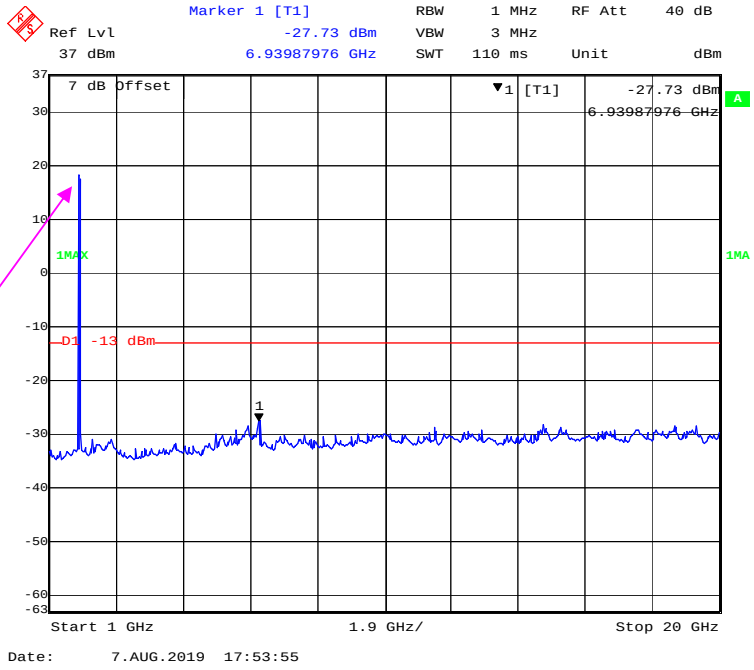


Fundamental

30 MHz - 1 GHz (15.0 MHz, QPSK, Middle Channel)

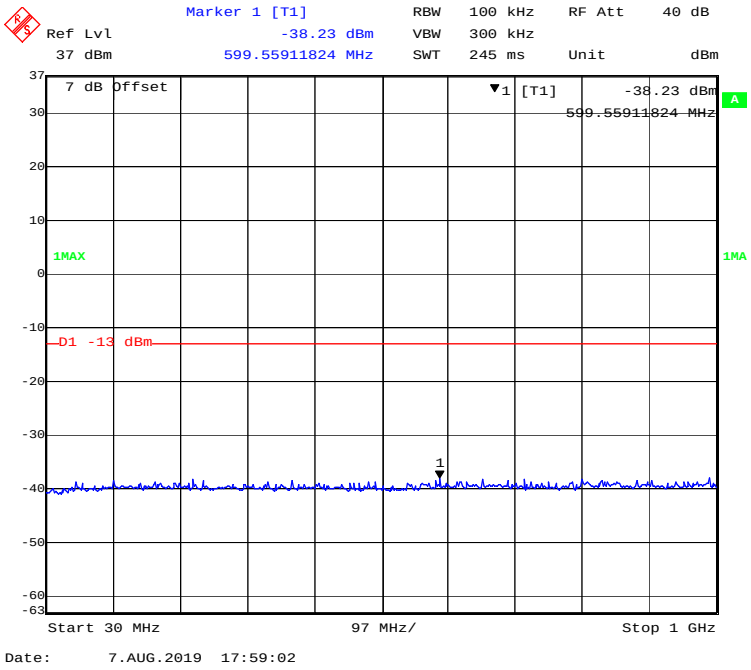


1 GHz – 20 GHz (15.0 MHz, QPSK, Middle Channel)

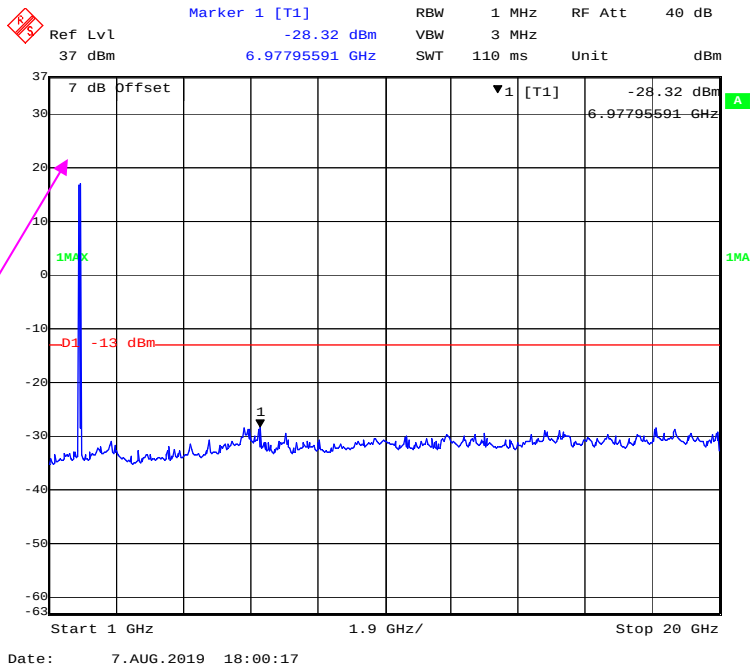


Fundamental

30 MHz - 1 GHz (20.0 MHz, QPSK, Middle Channel)

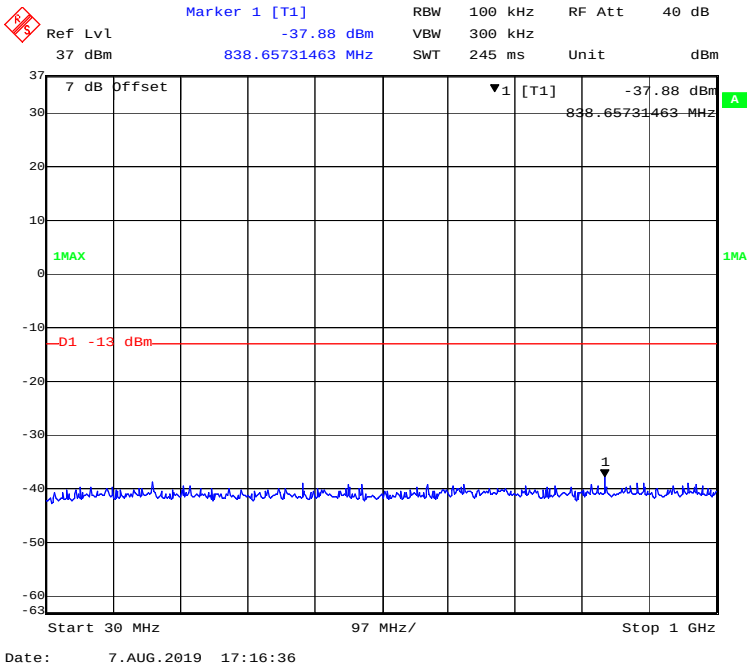


1 GHz – 20 GHz (20.0 MHz, QPSK, Middle Channel)

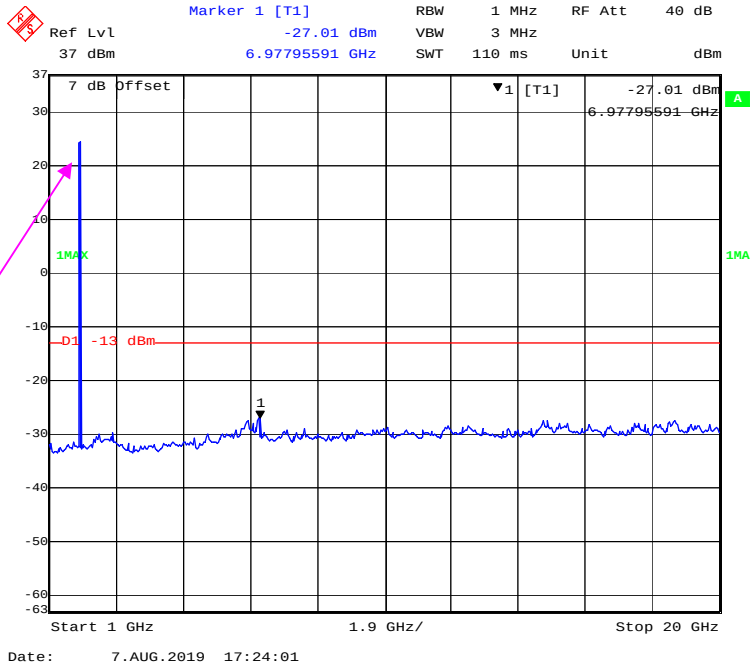


Fundamental

30 MHz - 1 GHz (1.4 MHz, 16-QAM, Middle Channel)

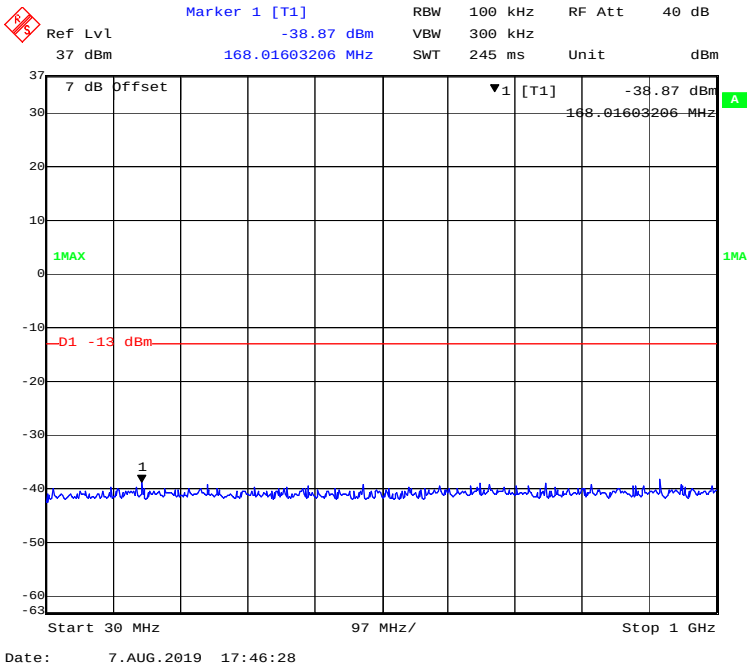


1 GHz – 20 GHz (1.4 MHz, 16-QAM, Middle Channel)

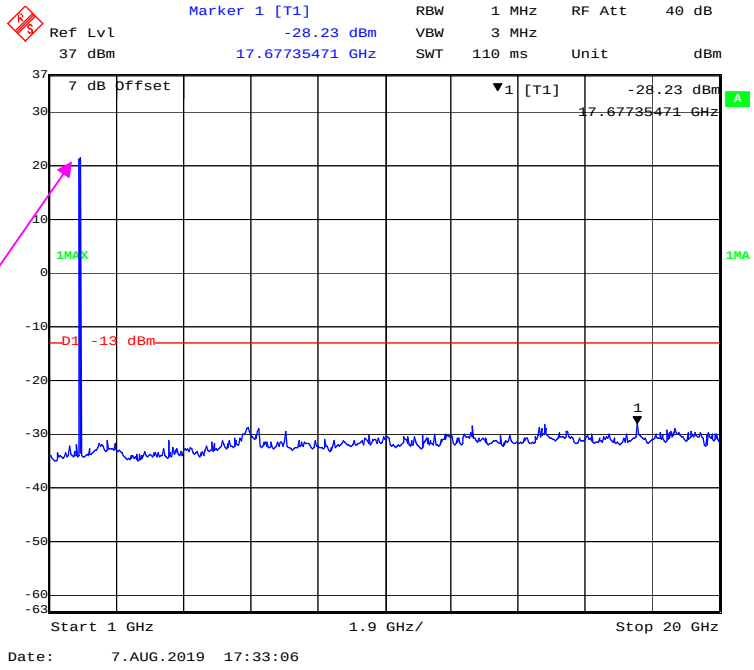


Fundamental

30 MHz - 1 GHz (3.0 MHz, 16-QAM, Middle Channel)

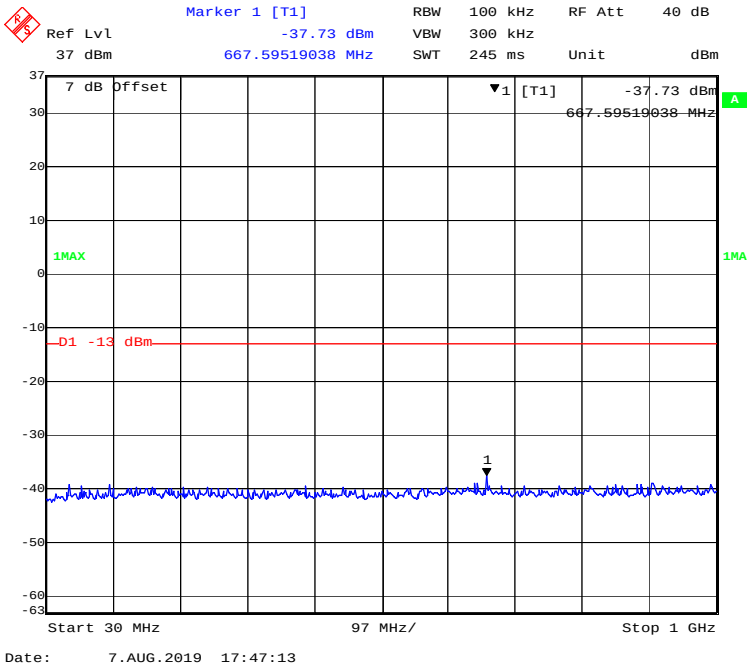


1 GHz – 20 GHz (3.0 MHz, 16-QAM, Middle Channel)

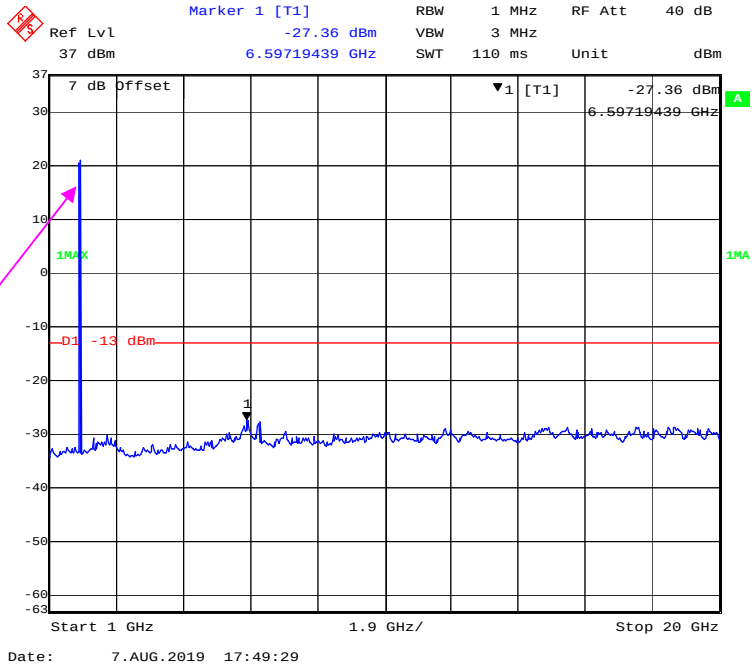


Fundamental

30 MHz - 1 GHz (5.0 MHz, 16-QAM, Middle Channel)

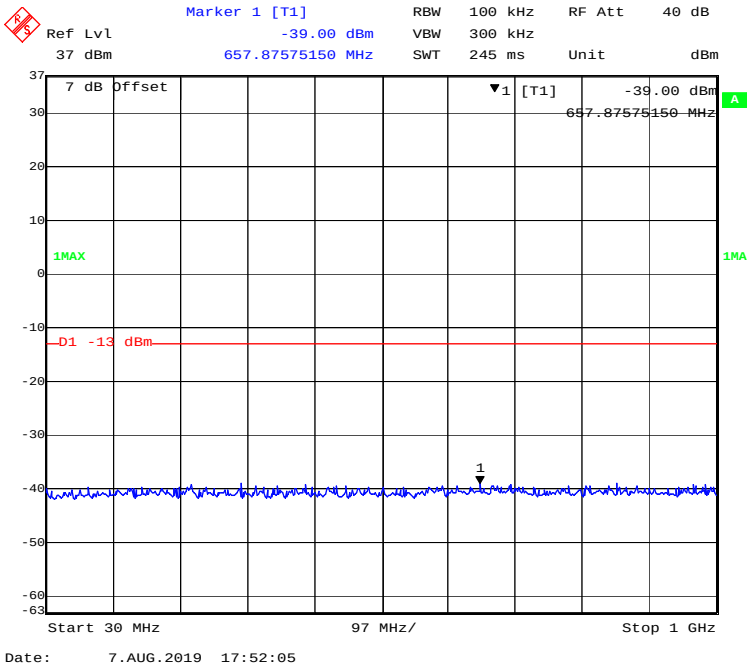


1 GHz – 20 GHz (5.0MHz, 16-QAM, Middle Channel)

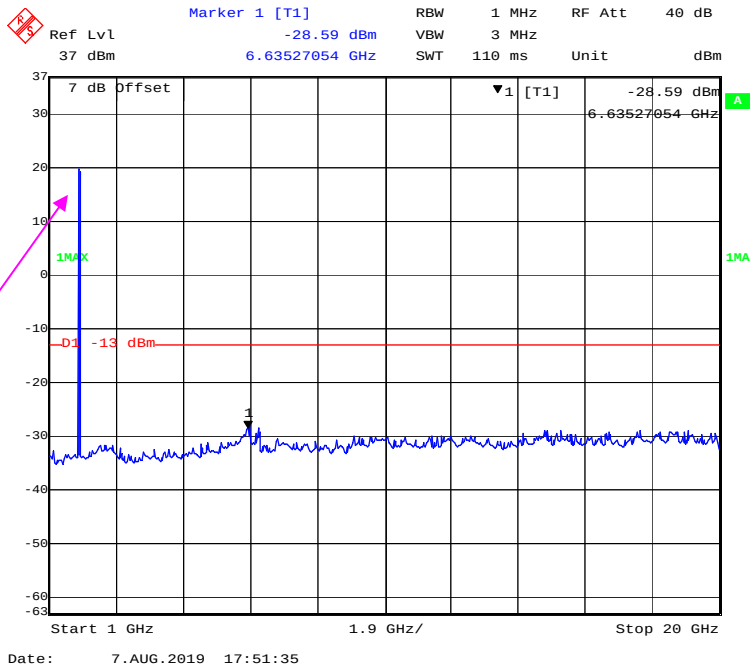


Fundamental

30 MHz - 1 GHz (10.0 MHz, 16-QAM, Middle Channel)

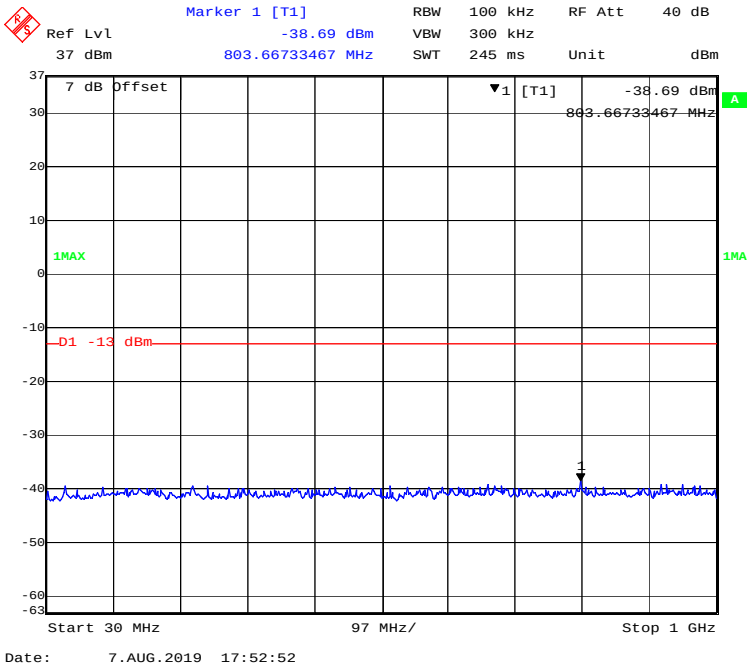


1 GHz – 20 GHz (10.0 MHz, 16-QAM, Middle Channel)

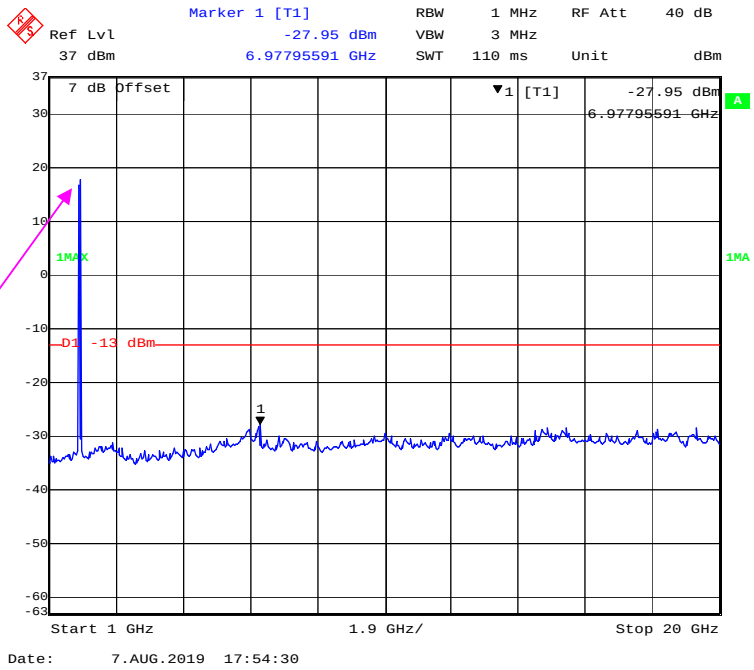


Fundamental

30 MHz - 1 GHz (15.0 MHz, 16-QAM, Middle Channel)

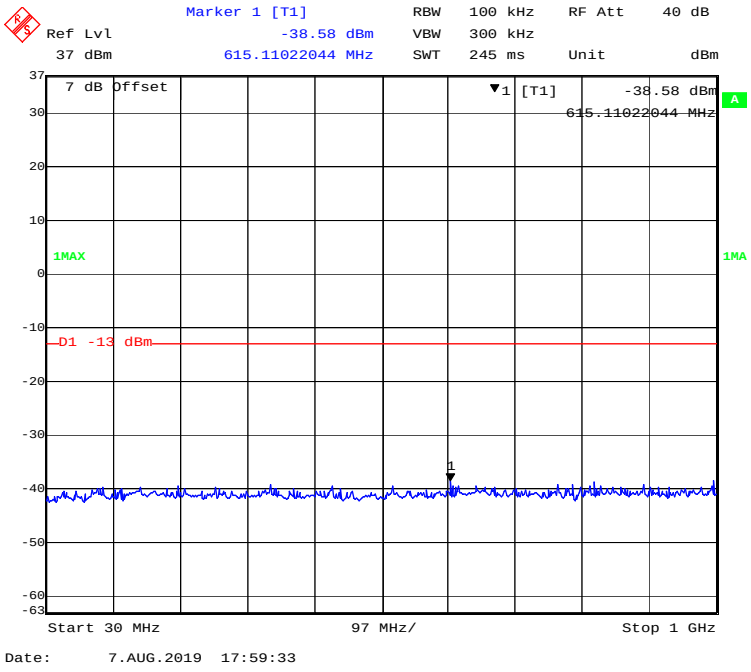


1 GHz – 20 GHz (15.0 MHz, 16-QAM, Middle Channel)

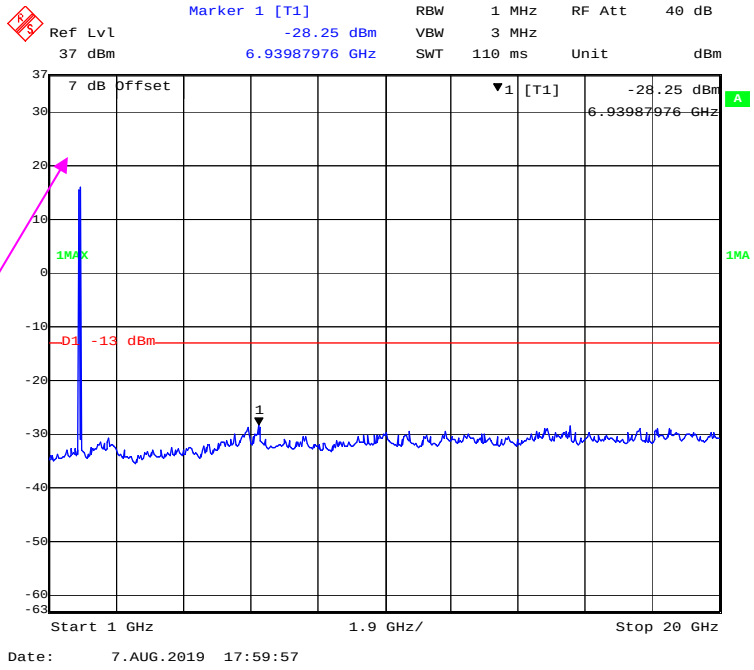


Fundamental

30 MHz - 1 GHz (20.0 MHz, 16-QAM, Middle Channel)



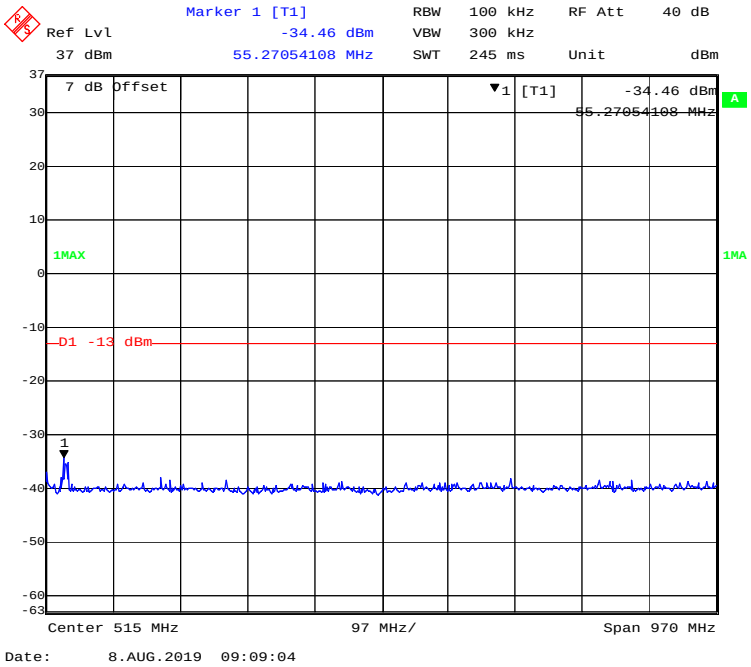
1 GHz – 20 GHz (20.0 MHz, 16-QAM, Middle Channel)



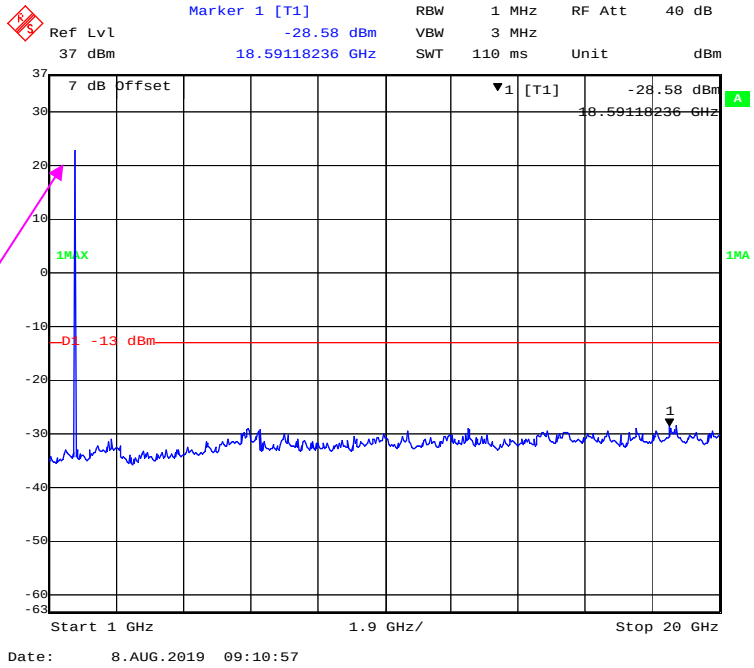
Fundamental

LTE Band 4:

30 MHz - 1 GHz (1.4 MHz, QPSK, Middle Channel)

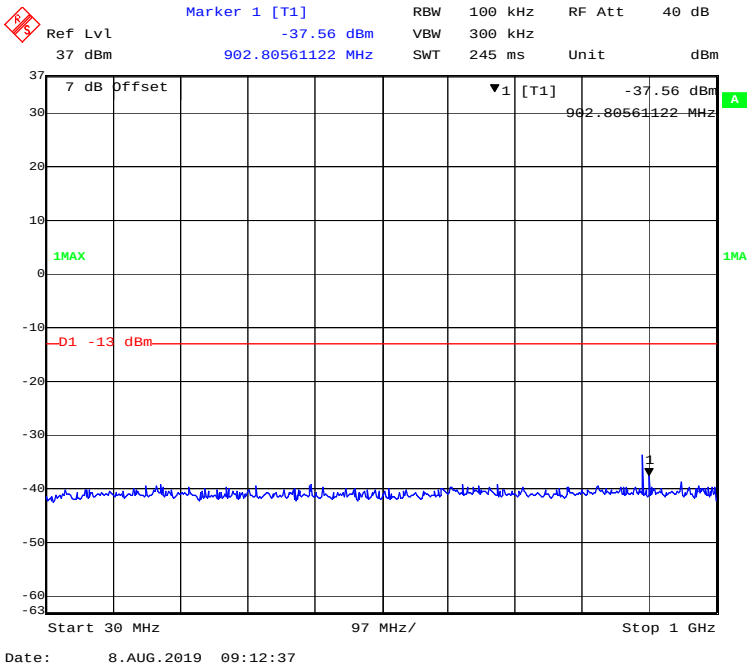


1 GHz – 20 GHz (1.4 MHz, QPSK, Middle Channel)

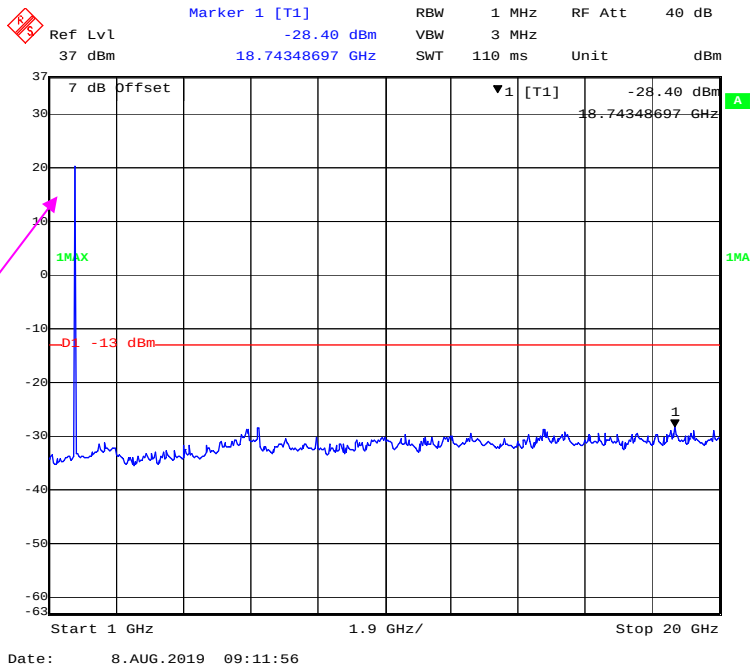


Fundamental

30 MHz - 1 GHz (3.0 MHz, QPSK, Middle Channel)

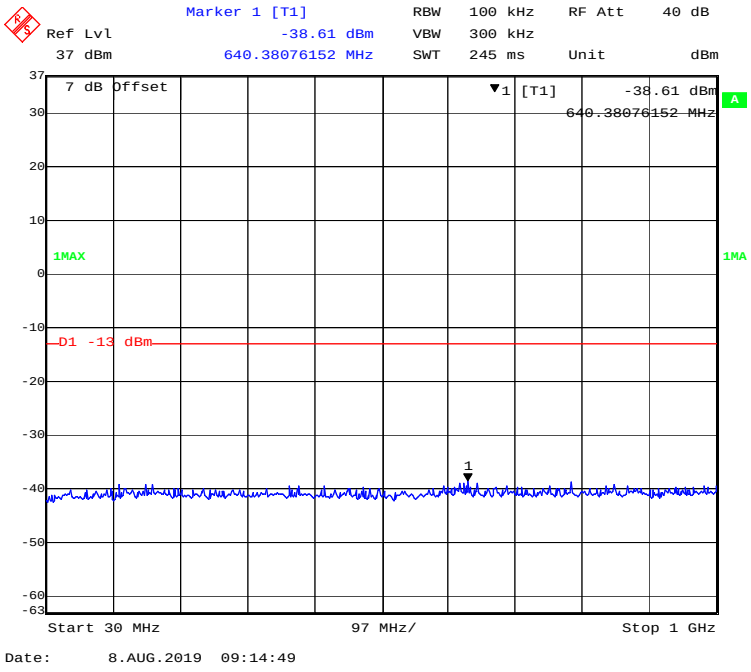


1 GHz – 20 GHz (3.0 MHz, QPSK, Middle Channel)

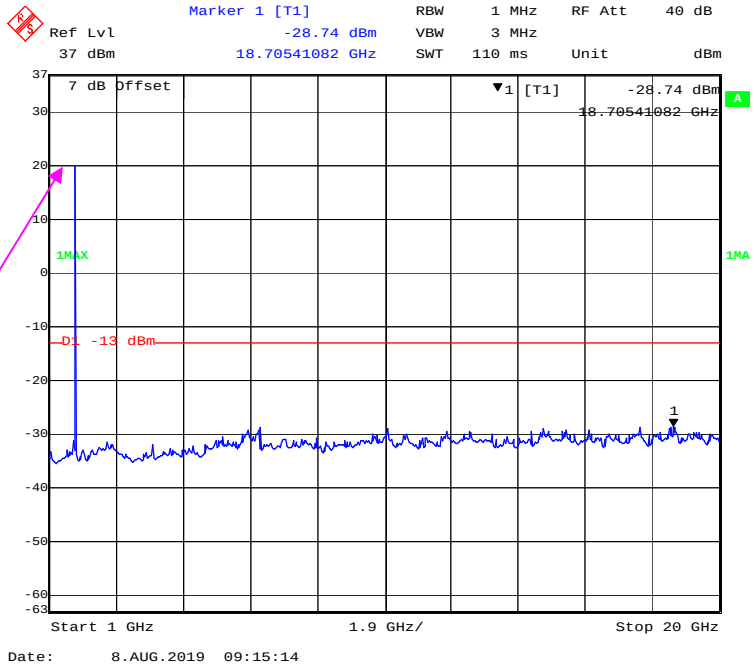


Fundamental

30 MHz - 1 GHz (5.0 MHz, QPSK, Middle Channel)

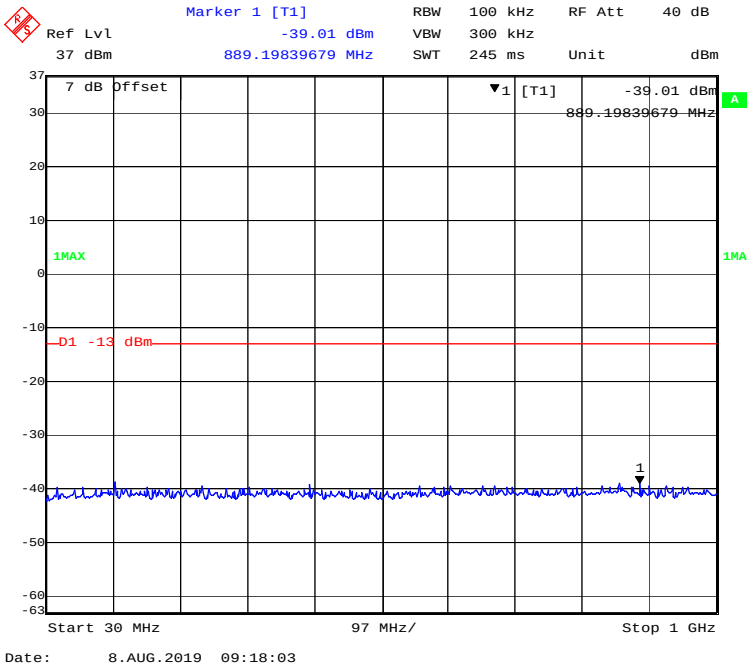


1 GHz – 20 GHz (5.0MHz, QPSK, Middle Channel)

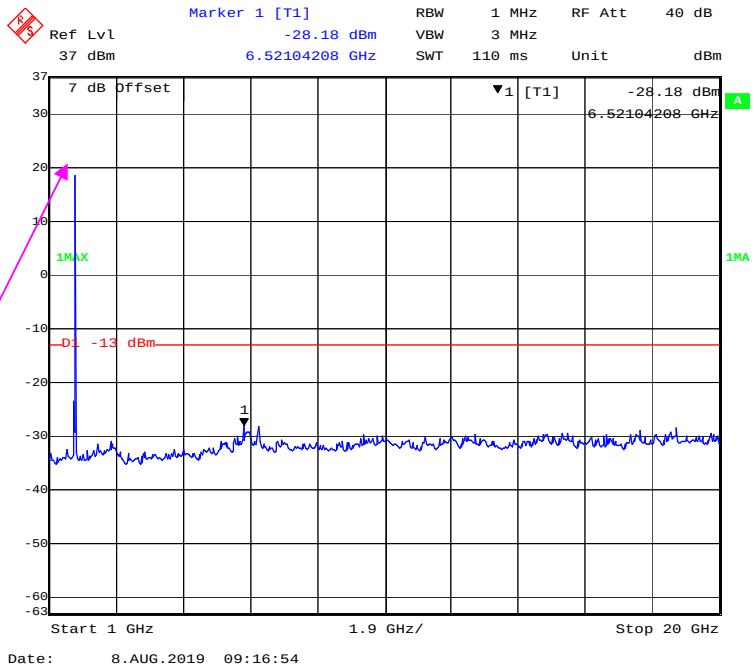


Fundamental

30 MHz - 1 GHz (10.0 MHz, QPSK, Middle Channel)

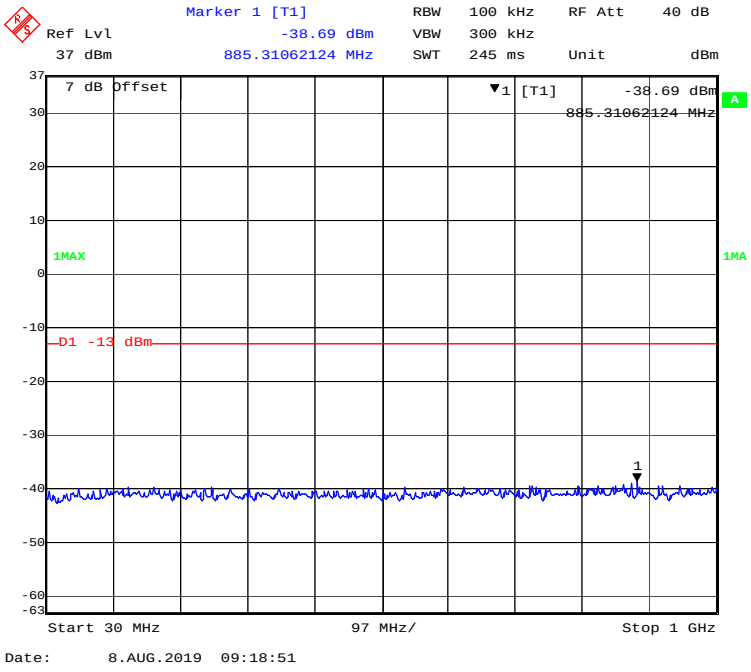


1 GHz – 20 GHz (10.0 MHz, QPSK, Middle Channel)

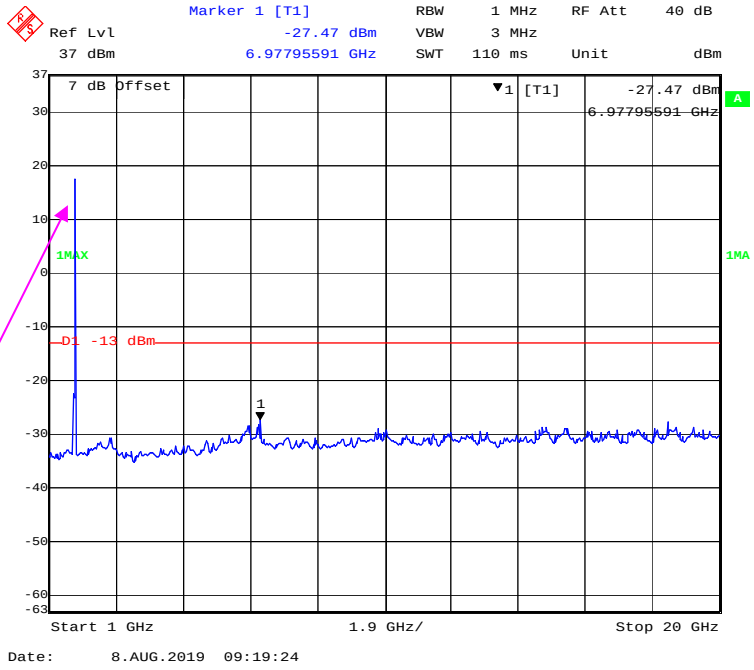


Fundamental

30 MHz - 1 GHz (15.0 MHz, QPSK, Middle Channel)

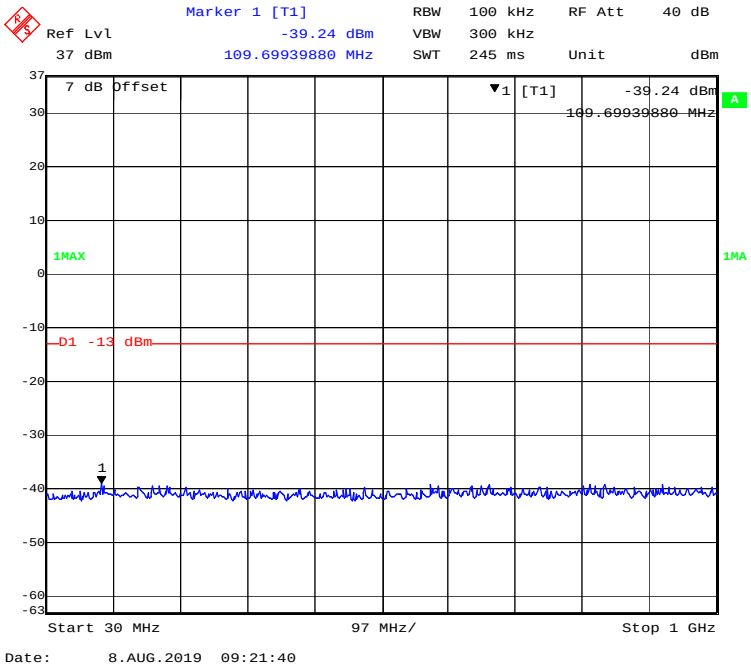


1 GHz – 20 GHz (15.0 MHz, QPSK, Middle Channel)

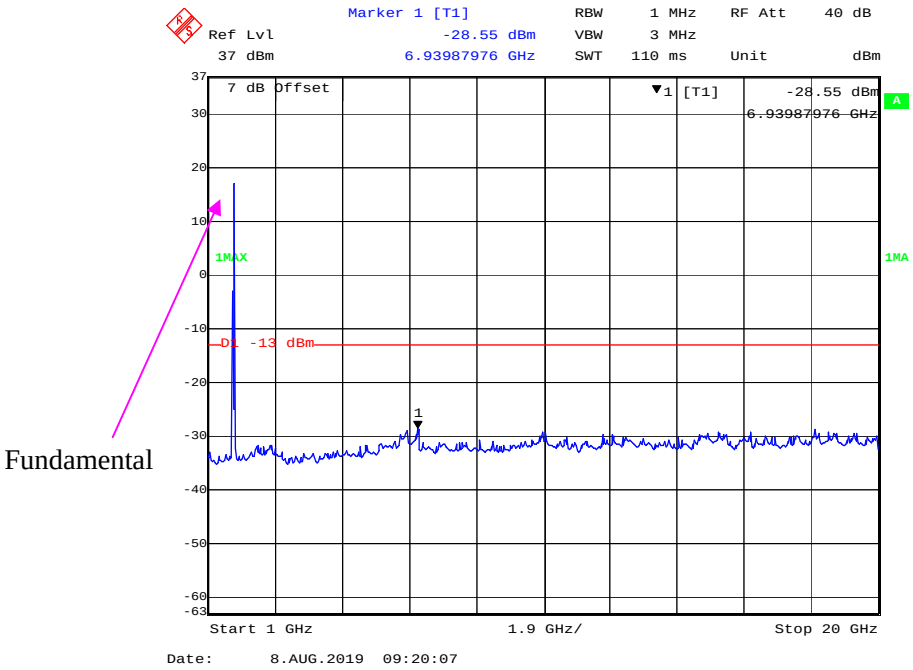


Fundamental

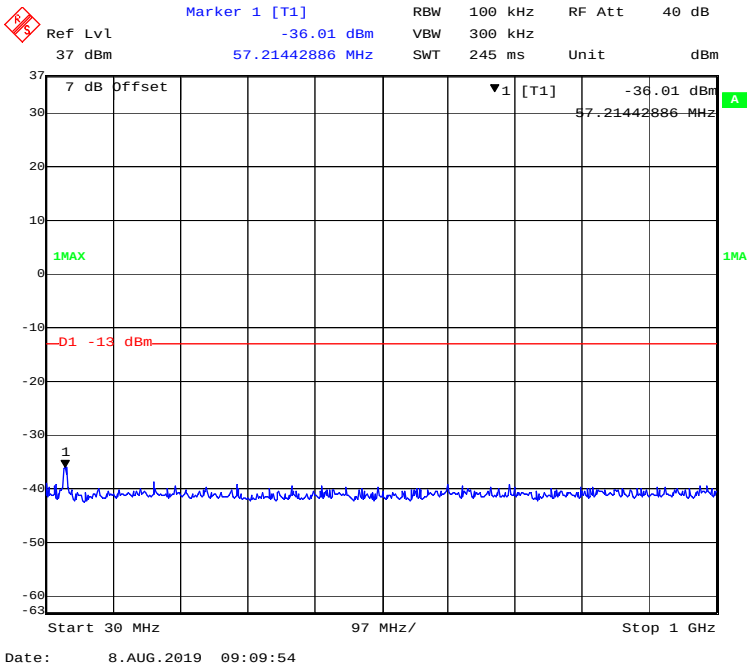
30 MHz - 1 GHz (20.0 MHz, QPSK, Middle Channel)



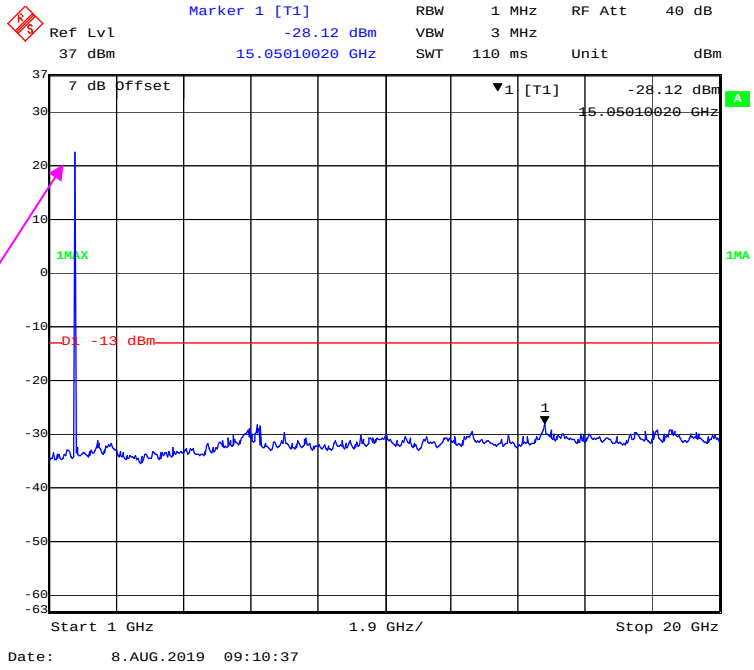
1 GHz – 20 GHz (20.0 MHz, QPSK, Middle Channel)



30 MHz - 1 GHz (1.4 MHz, 16-QAM, Middle Channel)

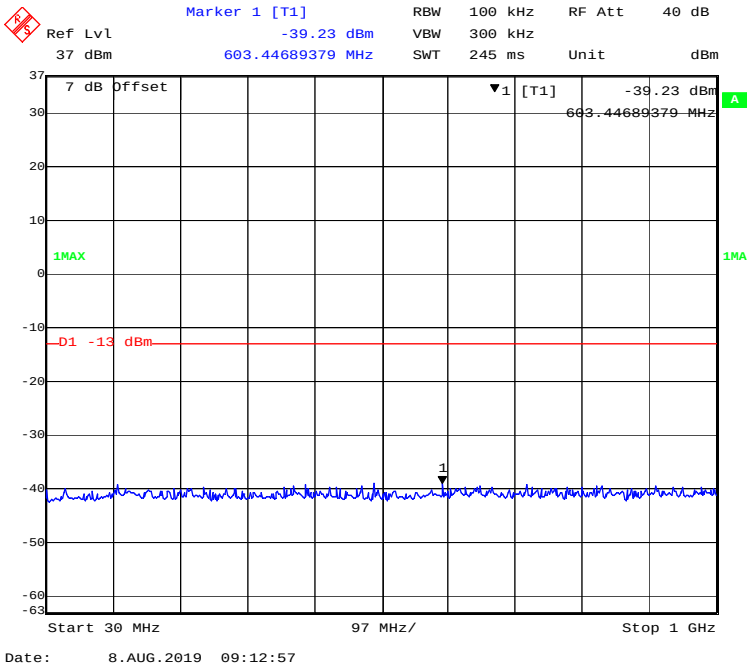


1 GHz – 20 GHz (1.4 MHz, 16-QAM, Middle Channel)

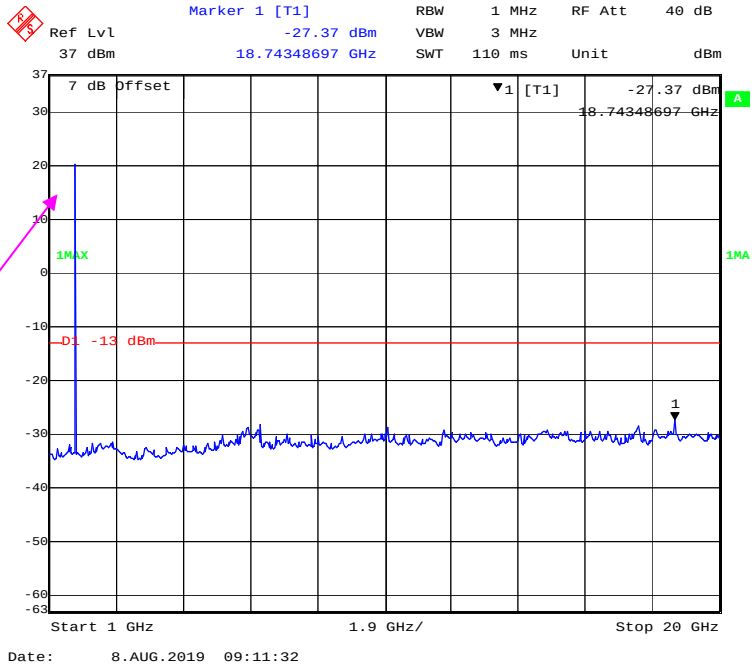


Fundamental

30 MHz - 1 GHz (3.0 MHz, 16-QAM, Middle Channel)

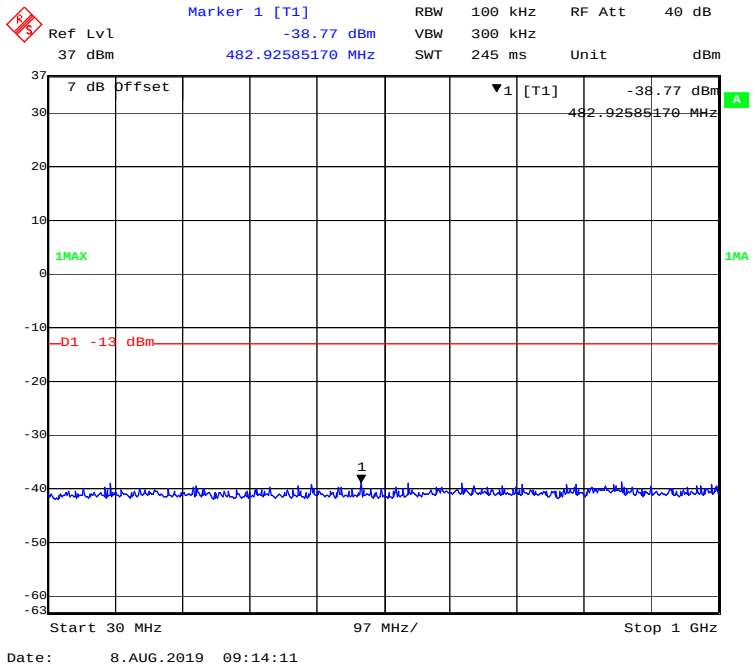


1 GHz – 20 GHz (3.0 MHz, 16-QAM, Middle Channel)

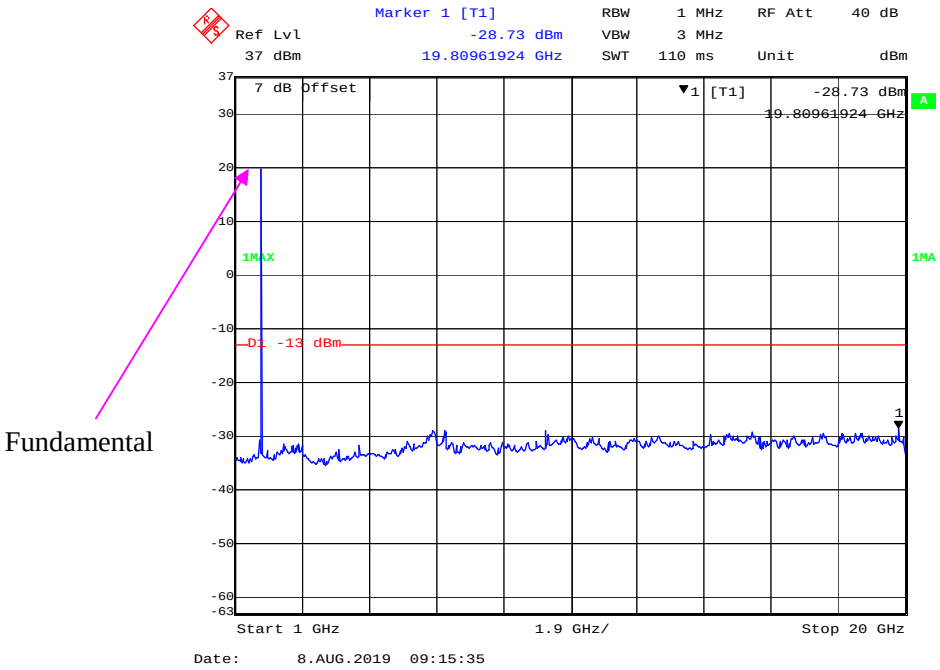


Fundamental

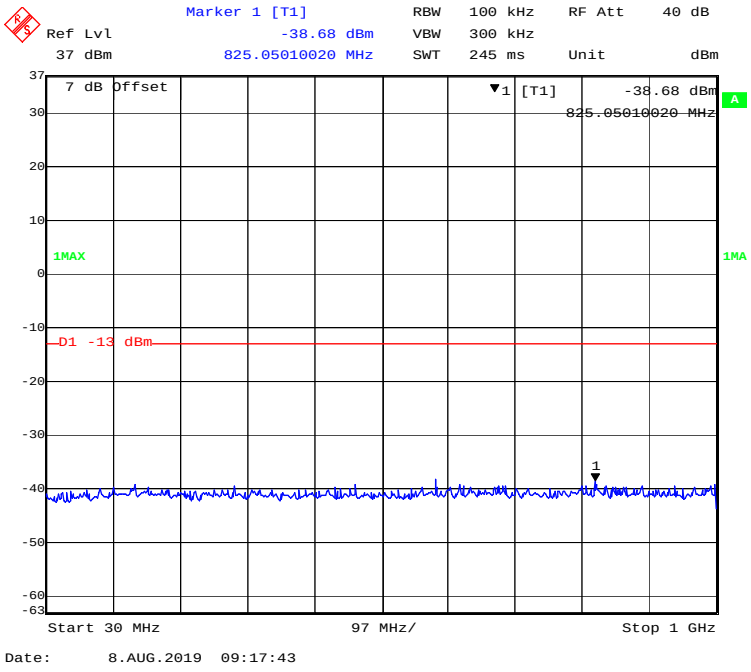
30 MHz - 1 GHz (5.0 MHz, 16-QAM, Middle Channel)



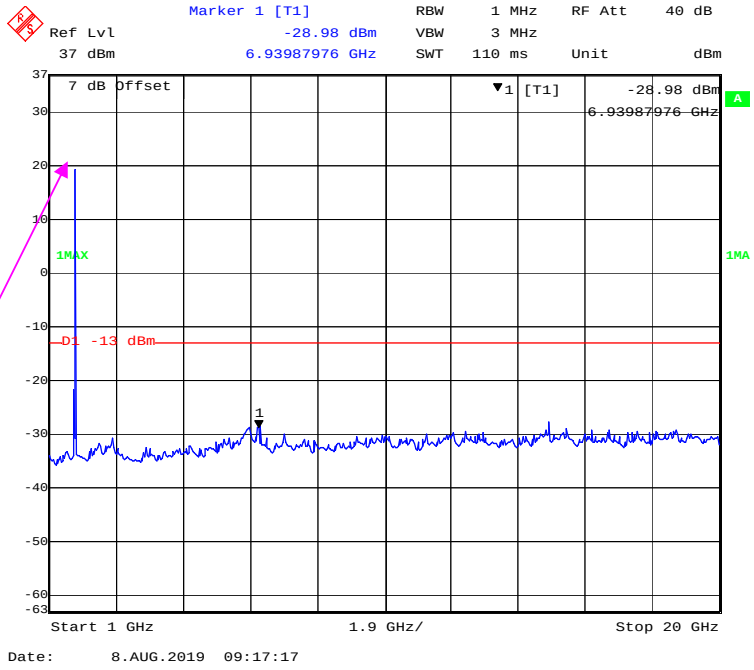
1 GHz – 20 GHz (5.0MHz, 16-QAM, Middle Channel)



30 MHz - 1 GHz (10.0 MHz, 16-QAM, Middle Channel)

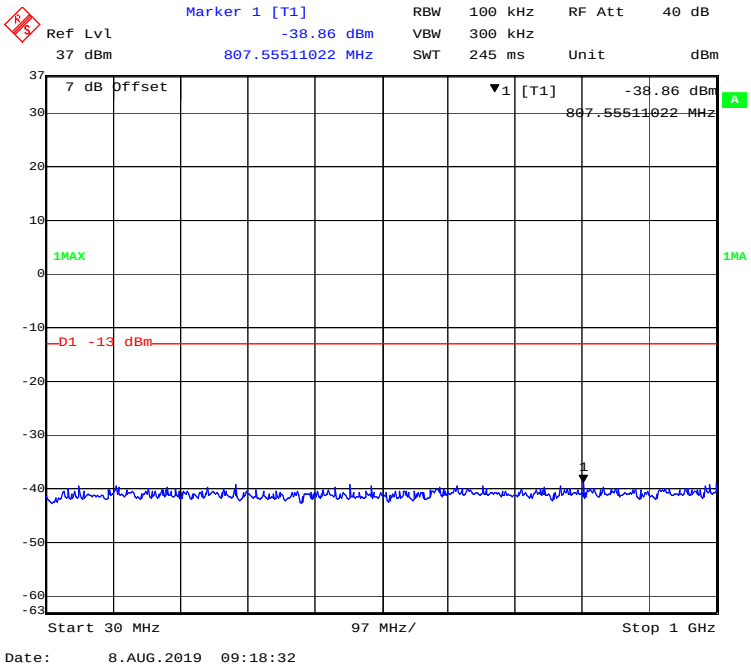


1 GHz – 20 GHz (10.0 MHz, 16-QAM, Middle Channel)

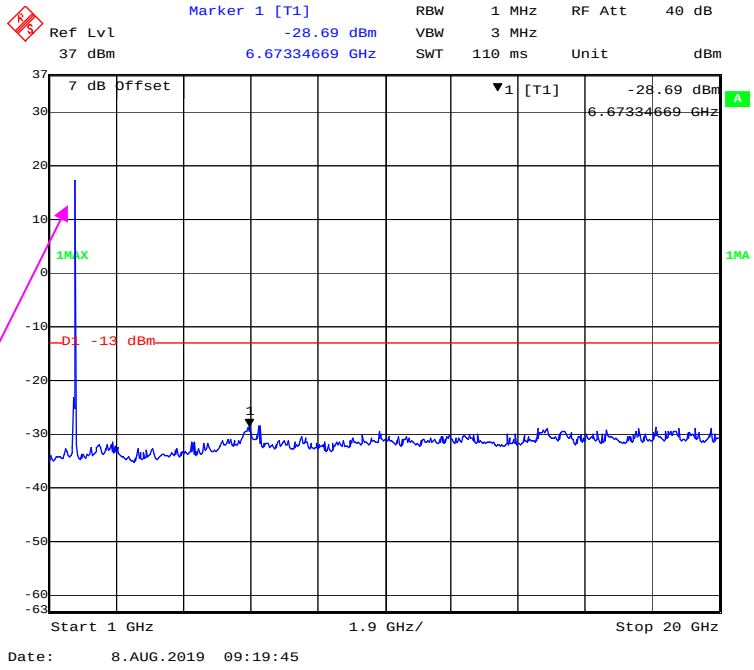


Fundamental

30 MHz - 1 GHz (15.0 MHz, 16-QAM, Middle Channel)

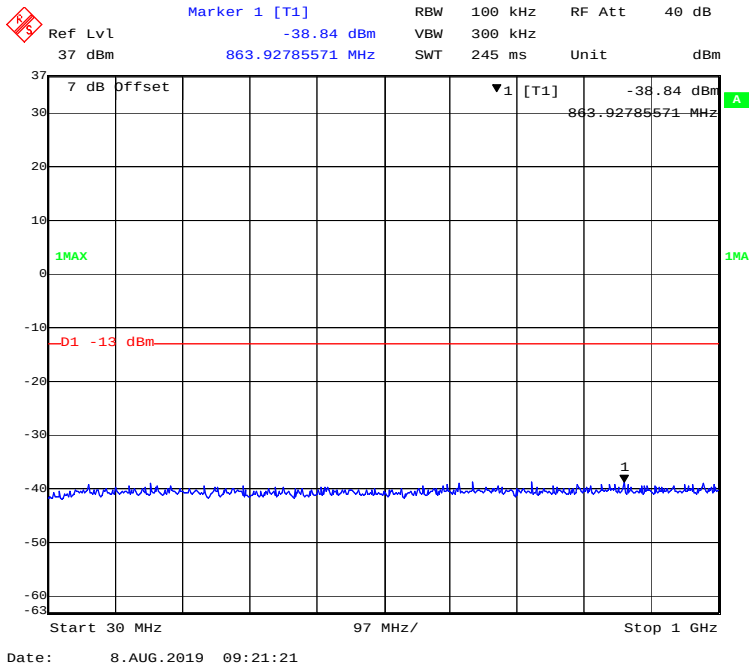


1 GHz – 20 GHz (15.0 MHz, 16-QAM, Middle Channel)

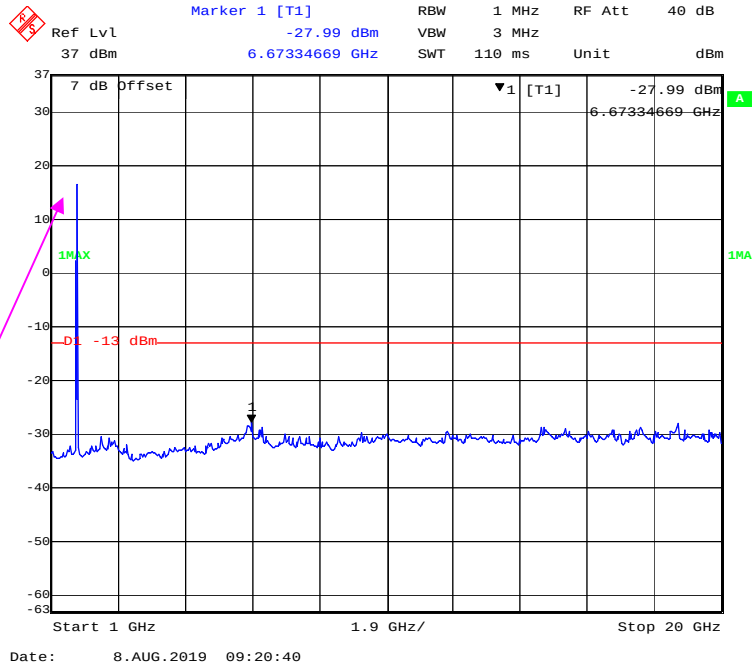


Fundamental

30 MHz - 1 GHz (20.0 MHz, 16-QAM, Middle Channel)



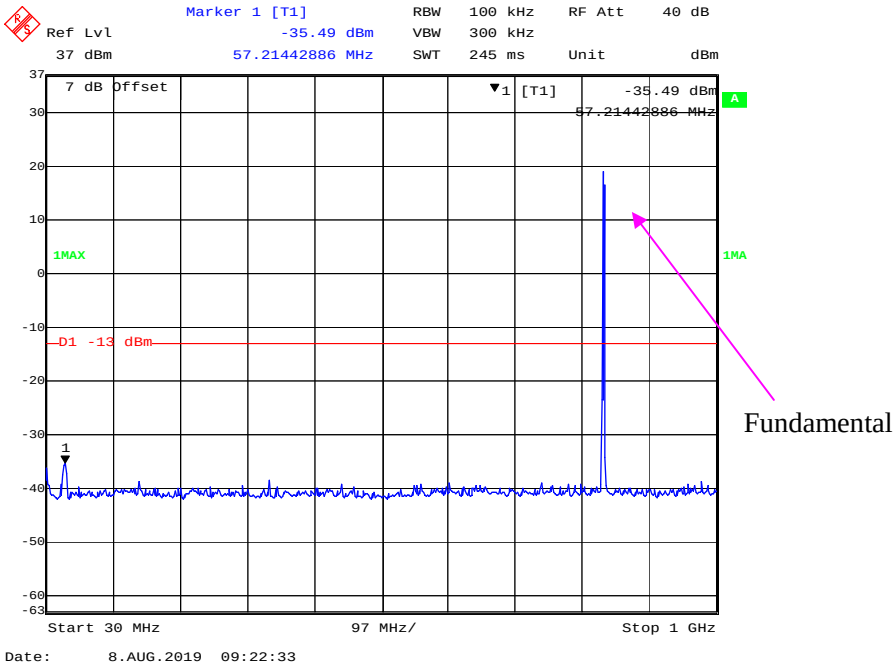
1 GHz – 20 GHz (20.0 MHz, 16-QAM, Middle Channel)



Fundamental

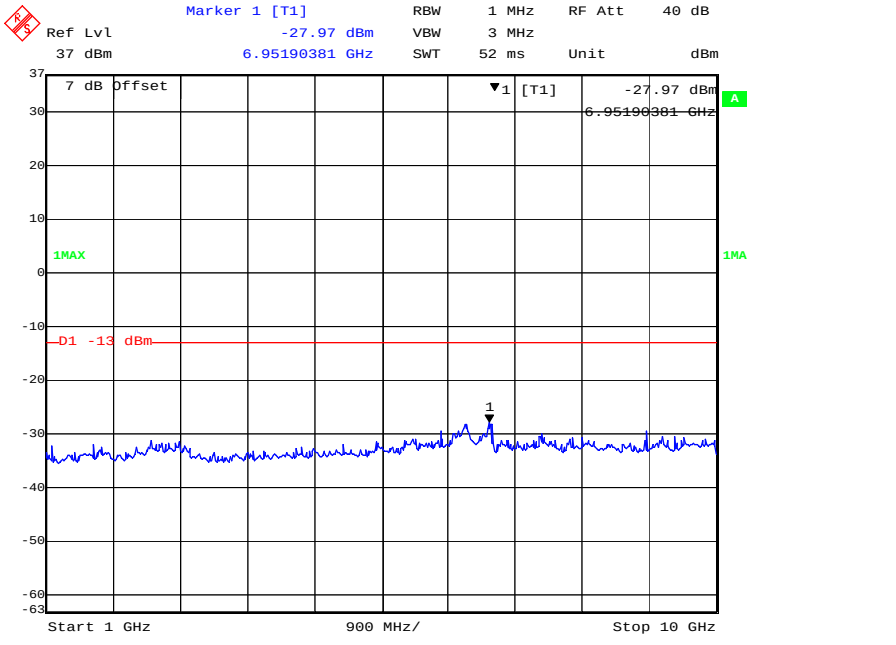
LTE Band 5:

30 MHz - 1 GHz (1.4 MHz, QPSK, Middle Channel)



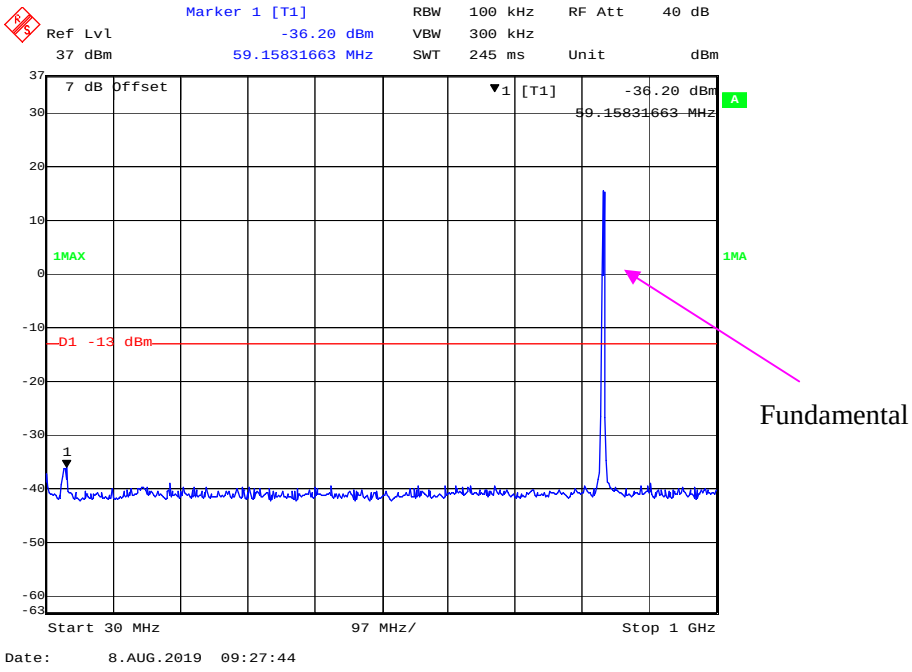
Date: 8.AUG.2019 09:22:33

1 GHz – 10 GHz (1.4 MHz, QPSK, Middle Channel)



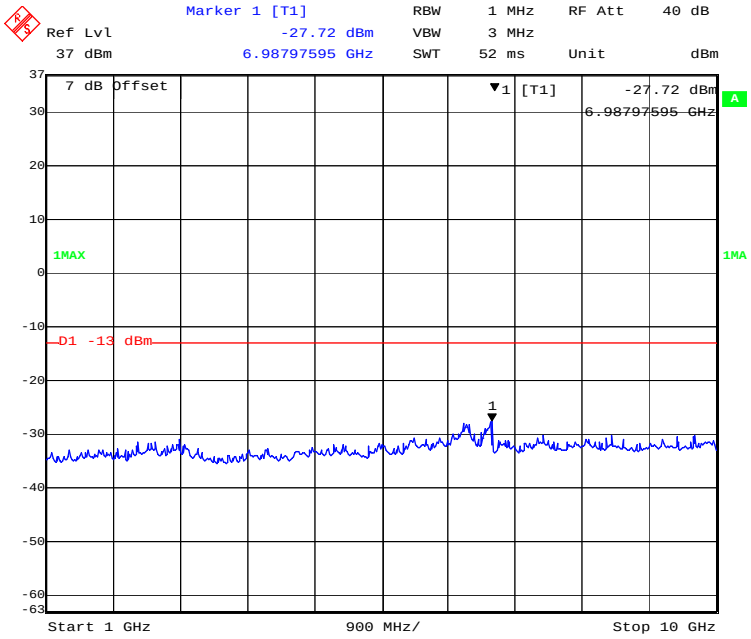
Date: 8.AUG.2019 09:26:38

30 MHz - 1 GHz (3.0 MHz, QPSK, Middle Channel)



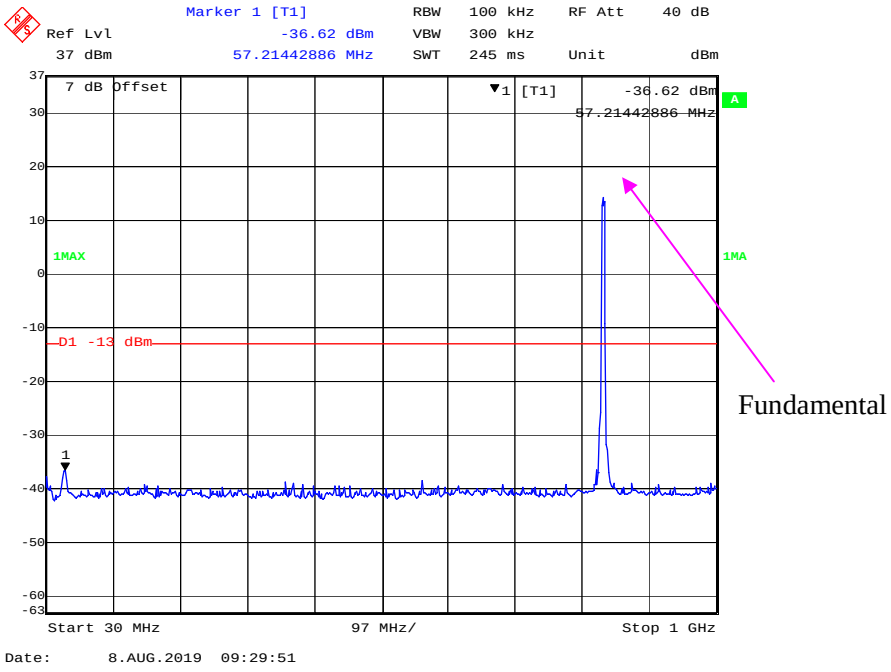
Date: 8.AUG.2019 09:27:44

1 GHz – 10 GHz (3.0 MHz, QPSK, Middle Channel)



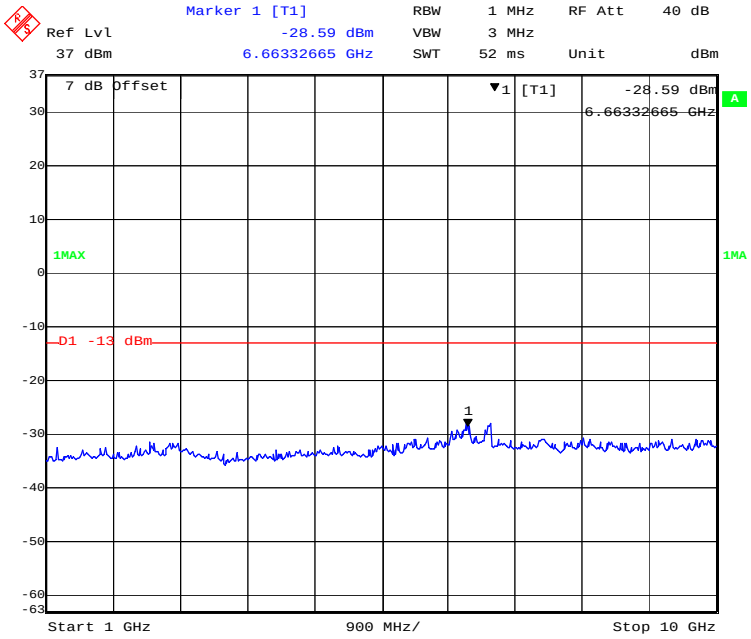
Date: 8.AUG.2019 09:27:23

30 MHz - 1 GHz (5.0 MHz, QPSK, Middle Channel)



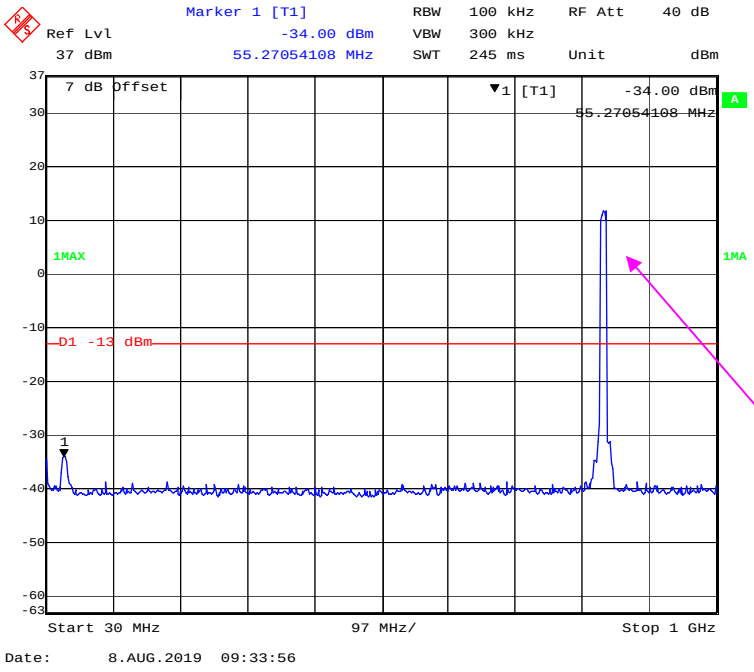
Date: 8.AUG.2019 09:29:51

1 GHz – 10 GHz (5.0MHz, QPSK, Middle Channel)



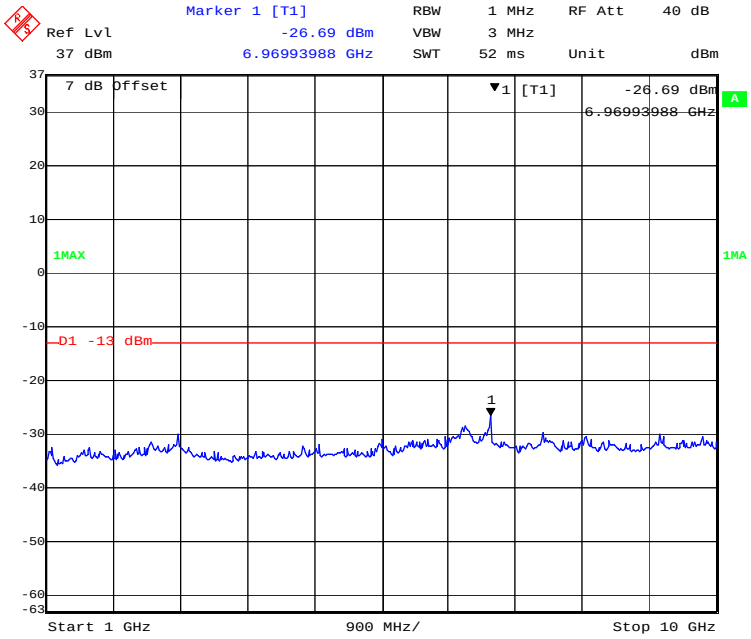
Date: 8.AUG.2019 09:30:22

30 MHz - 1 GHz (10.0 MHz, QPSK, Middle Channel)



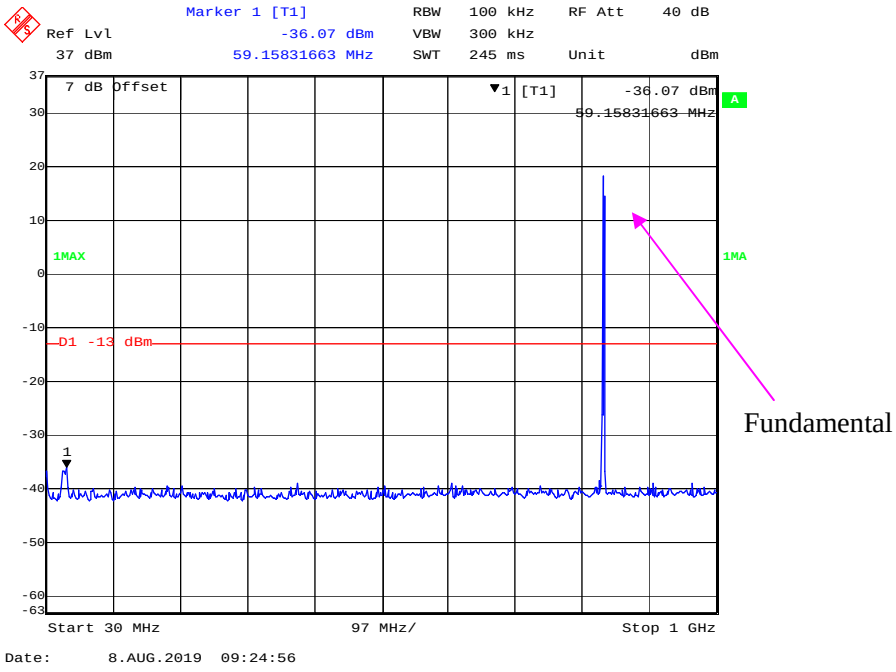
Date: 8.AUG.2019 09:33:56

1 GHz – 10 GHz (10.0 MHz, QPSK, Middle Channel)



Date: 8.AUG.2019 09:32:11

30 MHz - 1 GHz (1.4 MHz, 16-QAM, Middle Channel)



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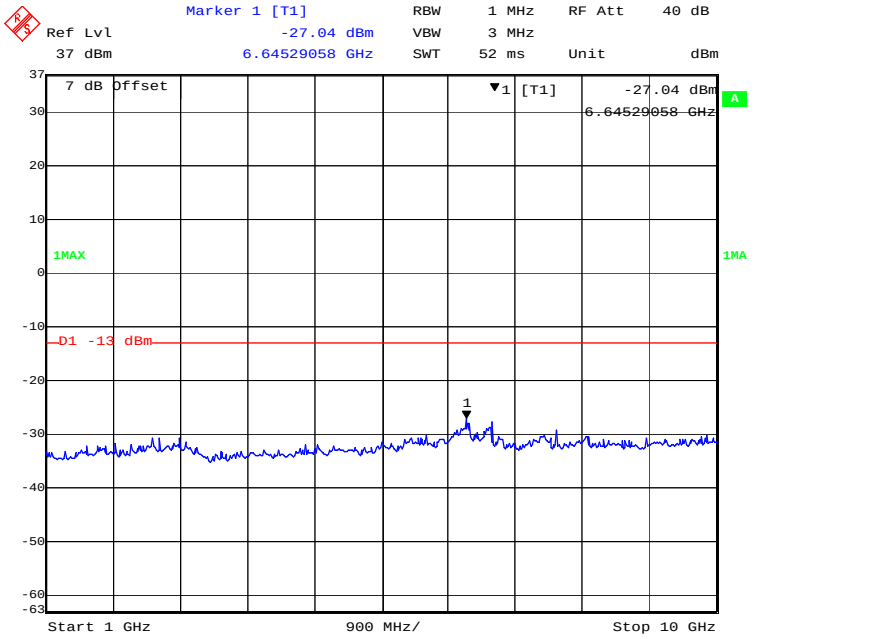
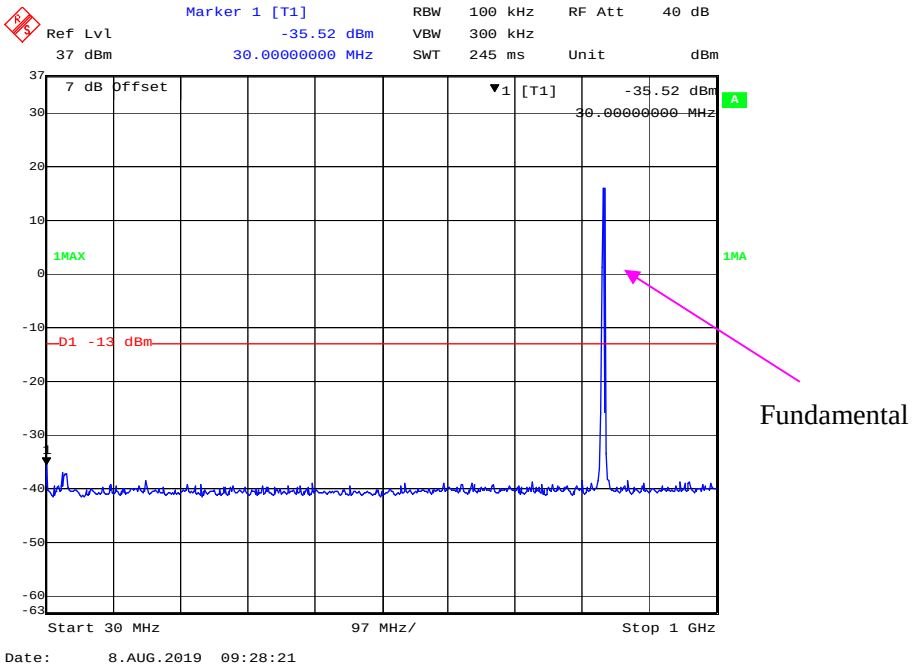
1 GHz – 10 GHz (1.4 MHz, 16-QAM, Middle Channel)

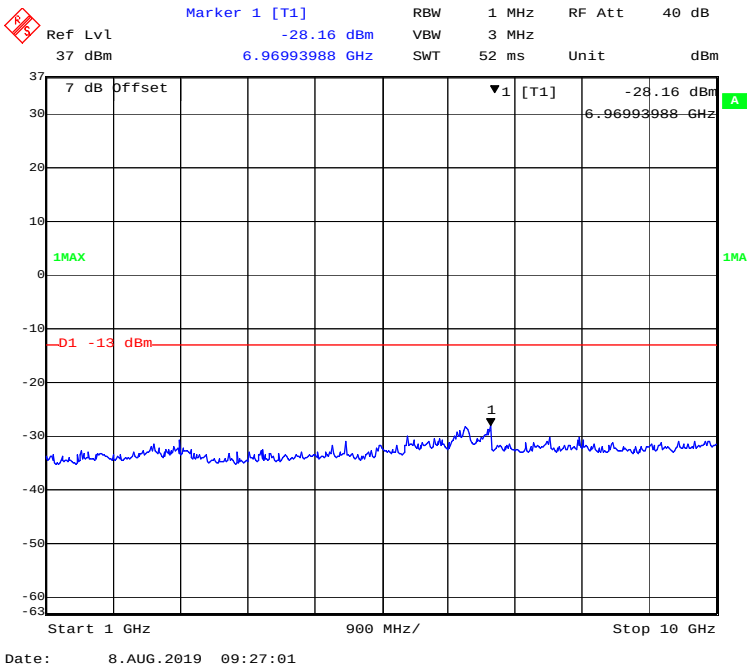


Date: 8.AUG.2019 09:26:03

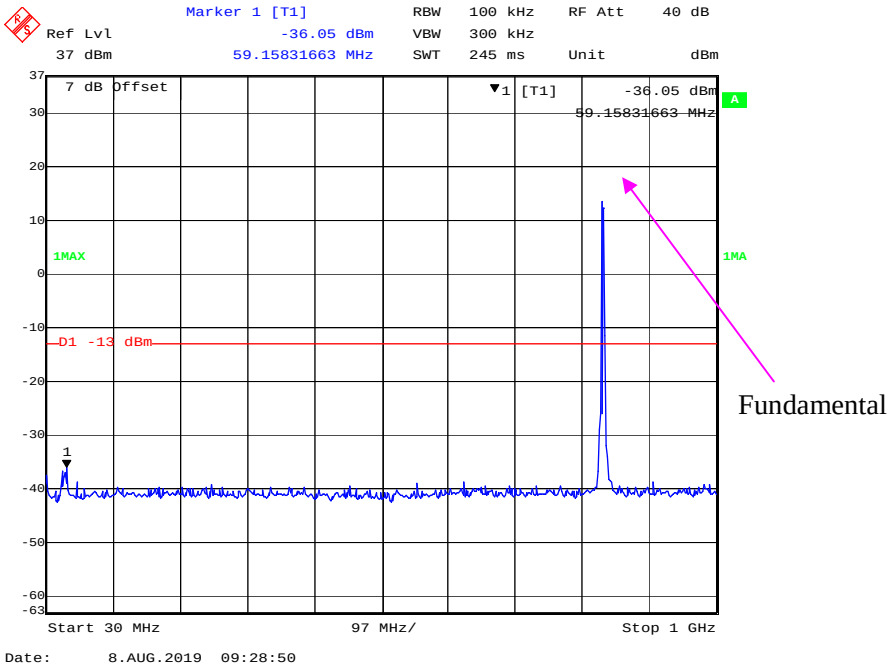
30 MHz - 1 GHz (3.0 MHz, 16-QAM, Middle Channel)



1 GHz – 10 GHz (3.0 MHz, 16-QAM, Middle Channel)

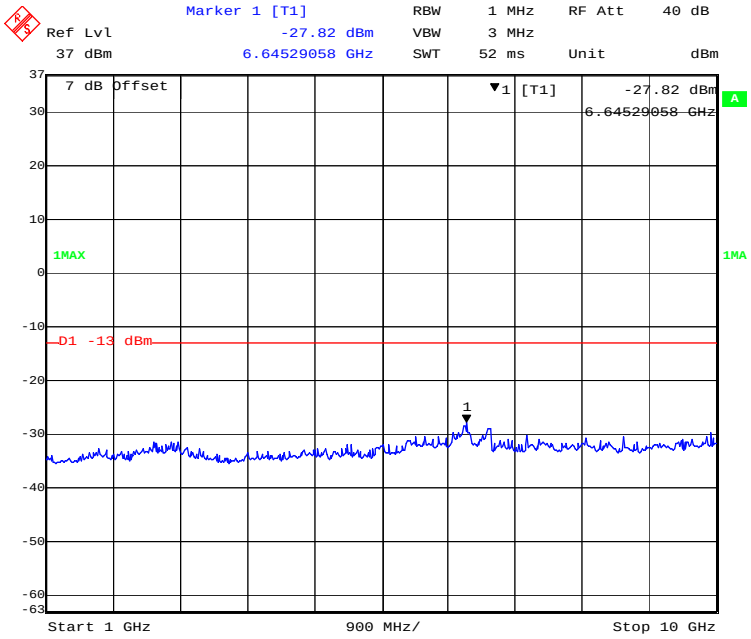


30 MHz - 1 GHz (5.0 MHz, 16-QAM, Middle Channel)



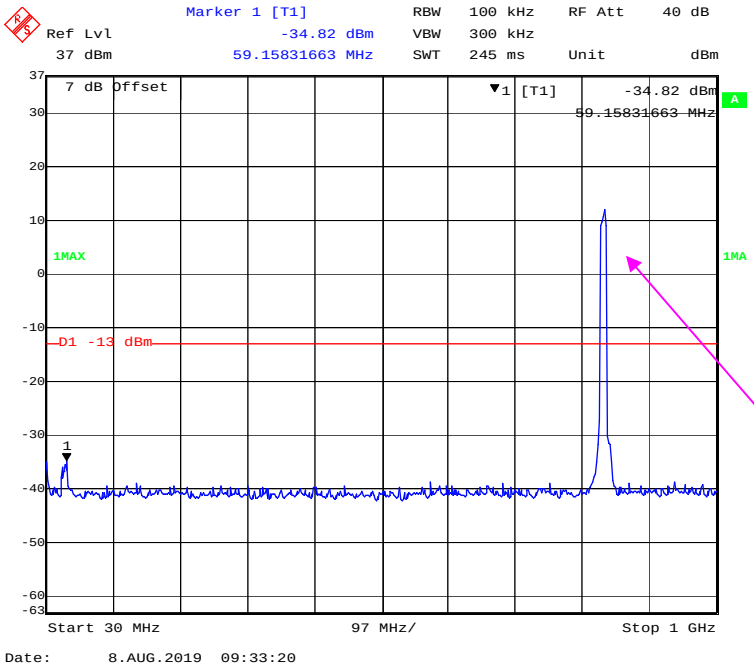
Date: 8.AUG.2019 09:28:50

1 GHz – 10 GHz (5.0MHz, 16-QAM, Middle Channel)



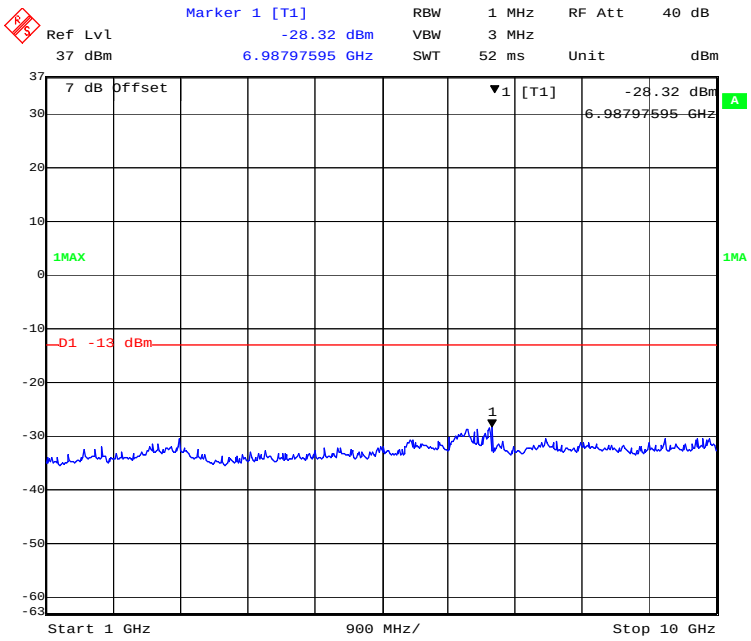
Date: 8.AUG.2019 09:30:42

30 MHz - 1 GHz (10.0 MHz, 16-QAM, Middle Channel)



Date: 8.AUG.2019 09:33:20

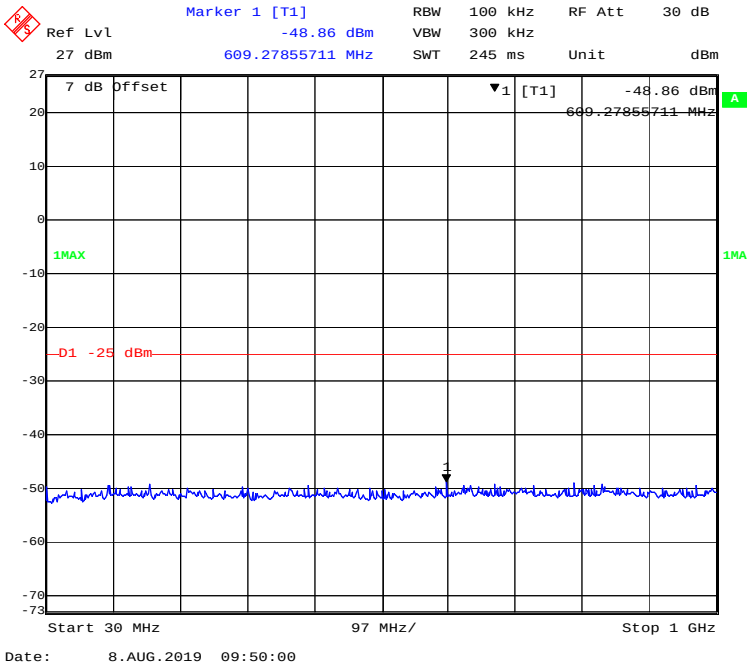
1 GHz – 10 GHz (10.0 MHz, 16-QAM, Middle Channel)



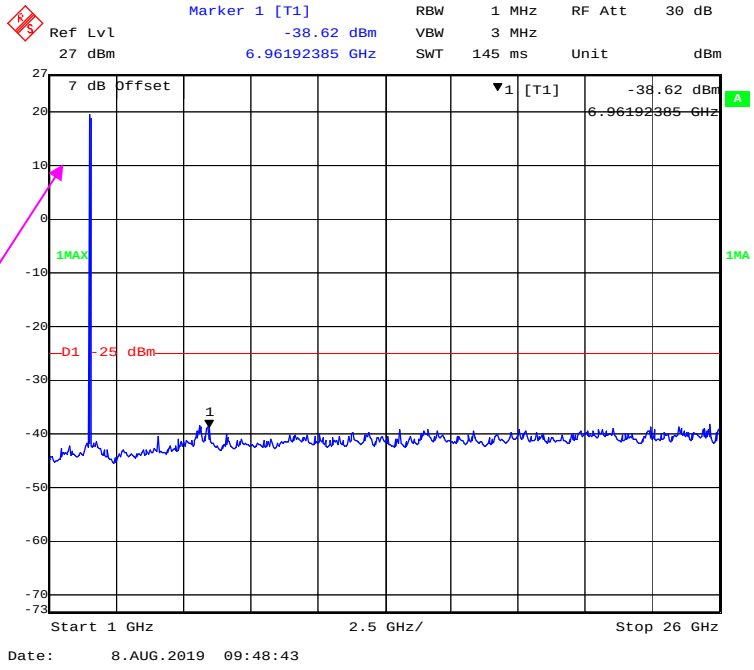
Date: 8.AUG.2019 09:32:33

LTE Band 7:

30 MHz - 1 GHz (5.0 MHz, QPSK, Middle Channel)

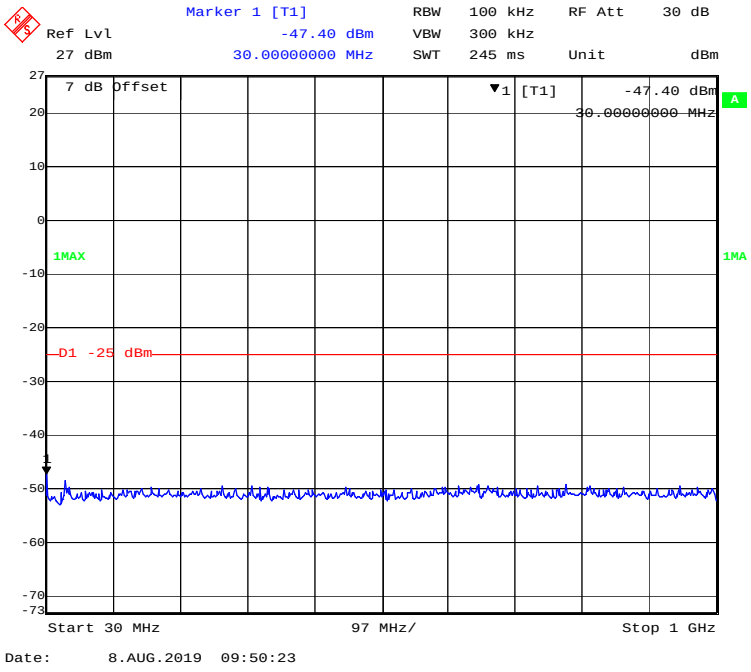


1 GHz – 26 GHz (5.0 MHz, QPSK, Middle Channel)

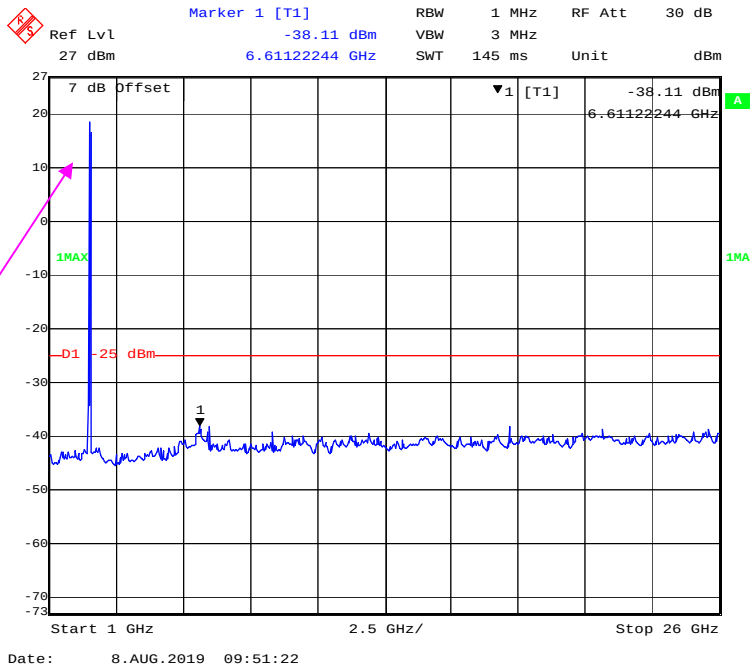


Fundamental

30 MHz - 1 GHz (10.0 MHz, QPSK, Middle Channel)

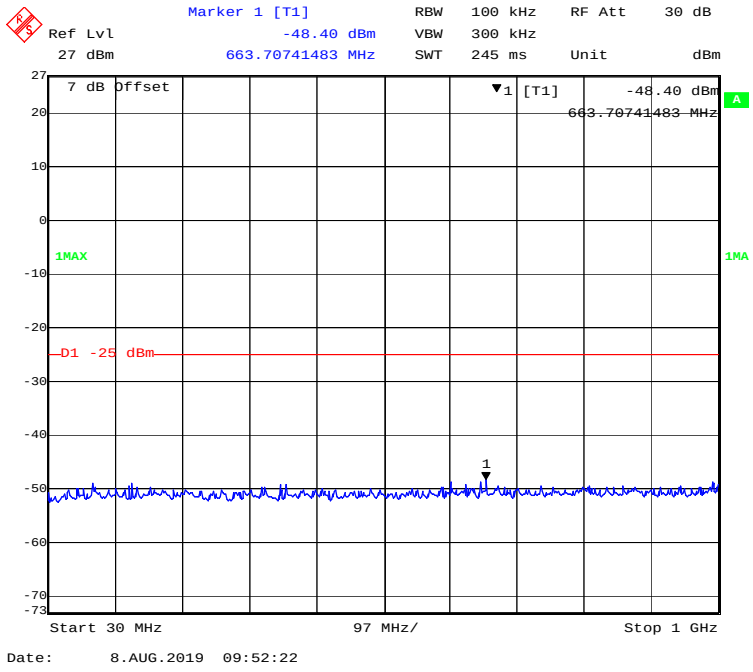


1 GHz – 26 GHz (10.0 MHz, QPSK, Middle Channel)

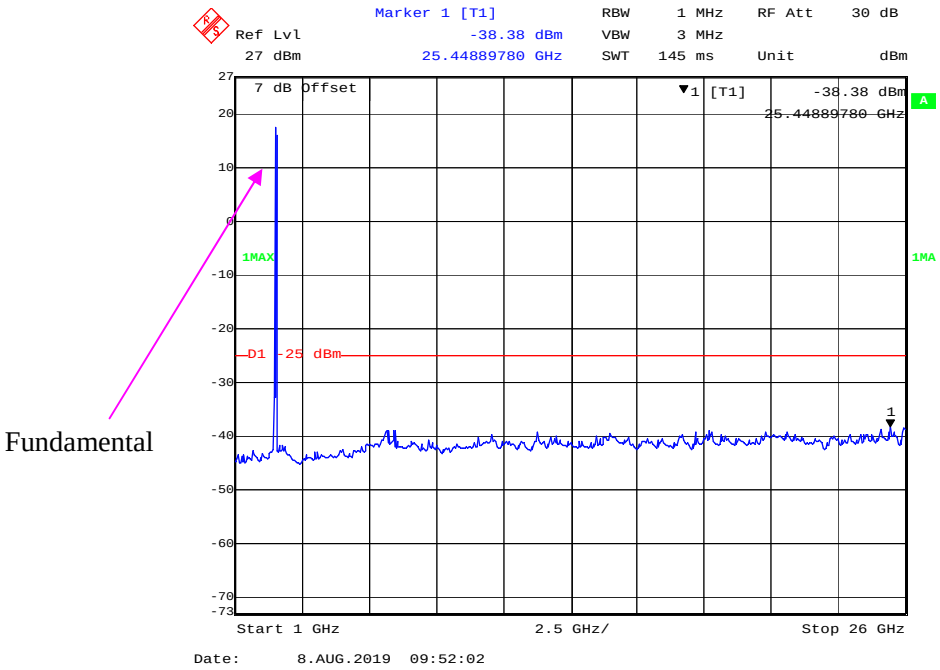


Fundamental

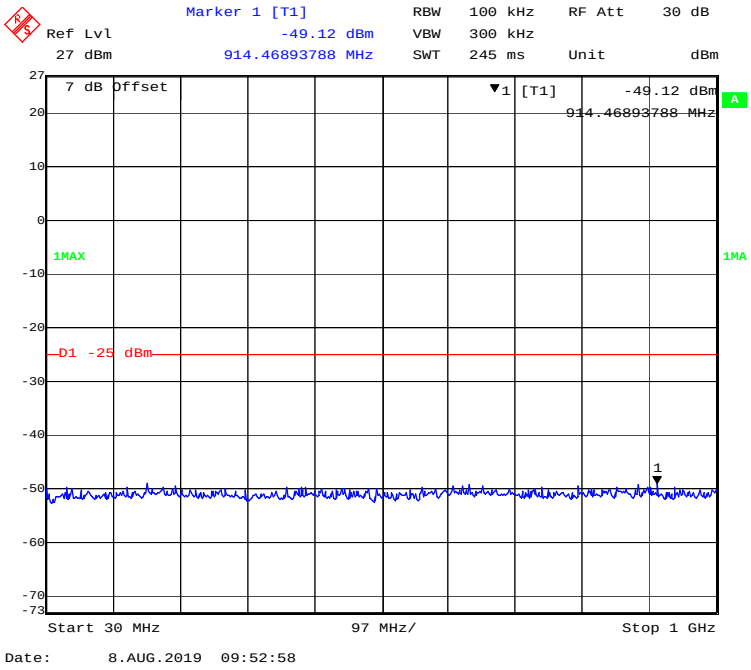
30 MHz - 1 GHz (15.0 MHz, QPSK, Middle Channel)



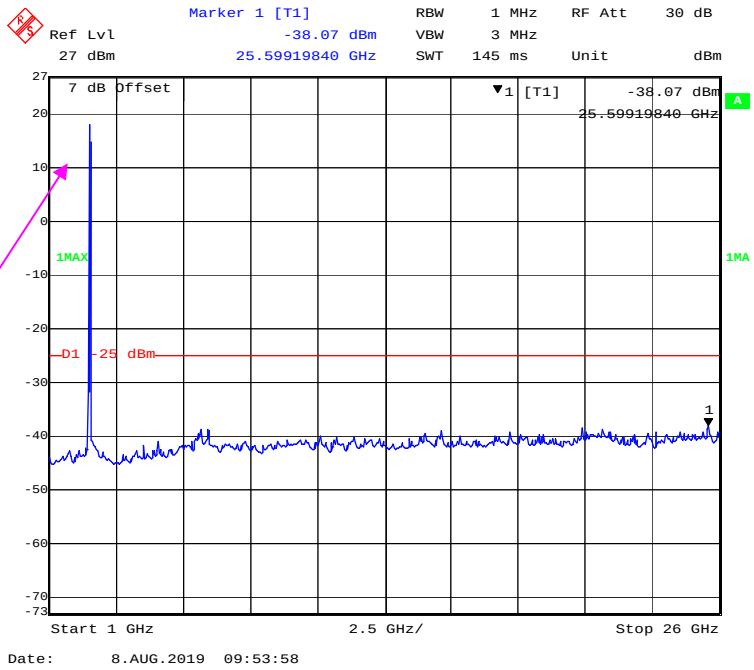
1 GHz – 26 GHz (15.0MHz, QPSK, Middle Channel)



30 MHz - 1 GHz (20.0 MHz, QPSK, Middle Channel)

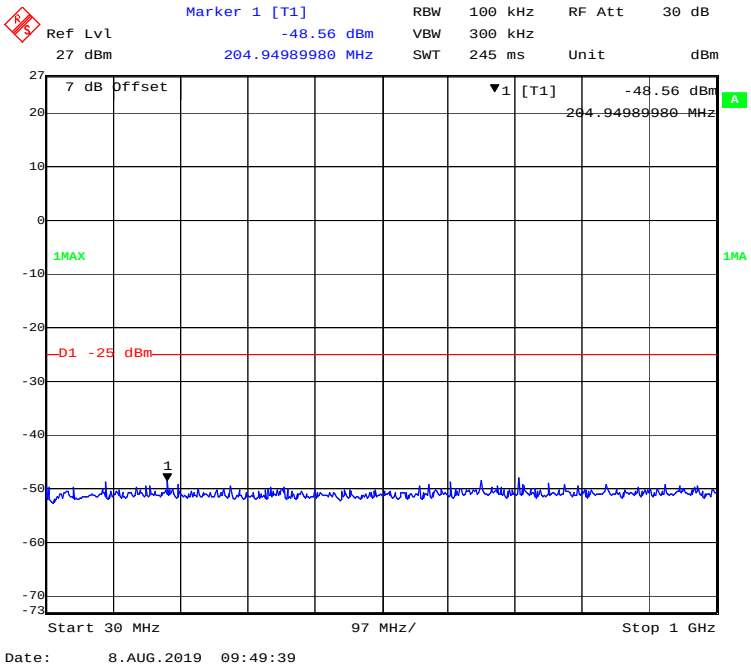


1 GHz – 26 GHz (20.0 MHz, QPSK, Middle Channel)

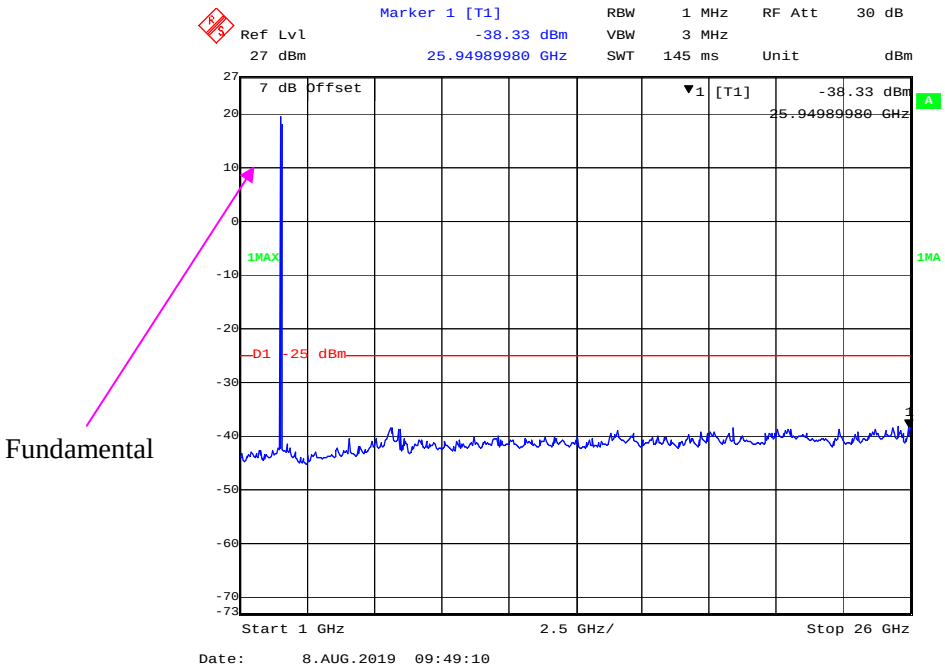


Fundamental

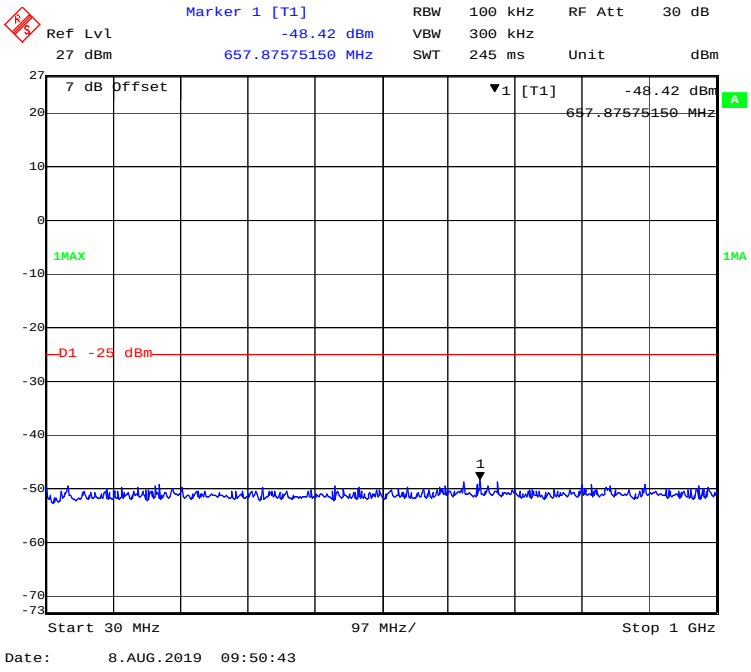
30 MHz - 1 GHz (5.0 MHz, 16-QAM, Middle Channel)



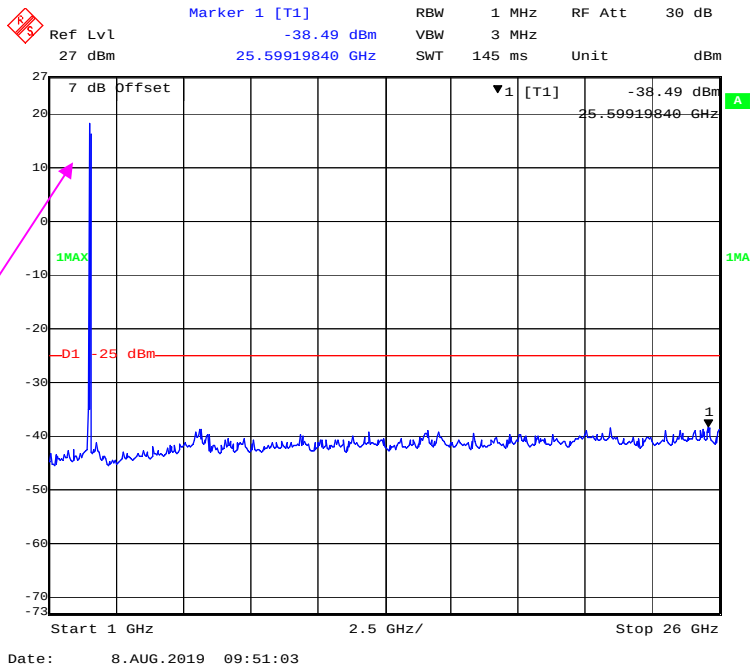
1 GHz – 26 GHz (5.0 MHz, 16-QAM, Middle Channel)



30 MHz - 1 GHz (10.0 MHz, 16-QAM, Middle Channel)

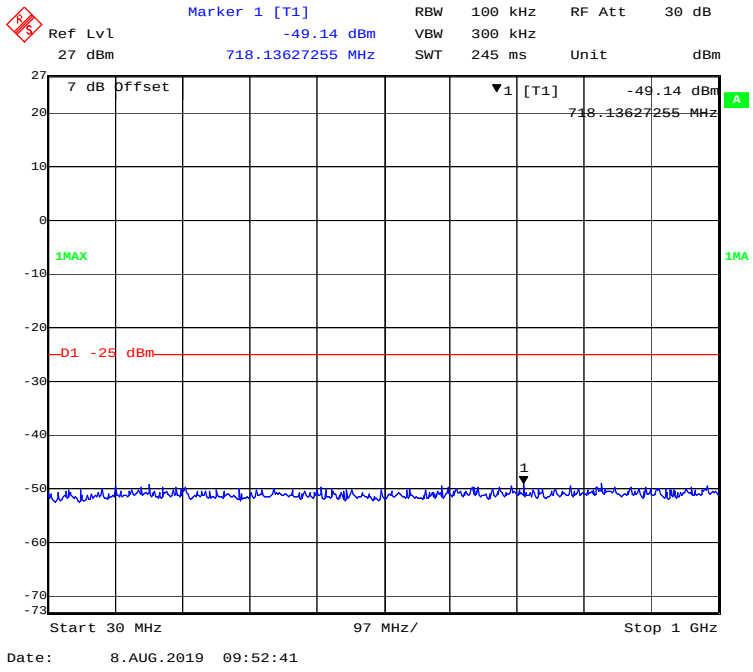


1 GHz – 26 GHz (10.0 MHz, 16-QAM, Middle Channel)

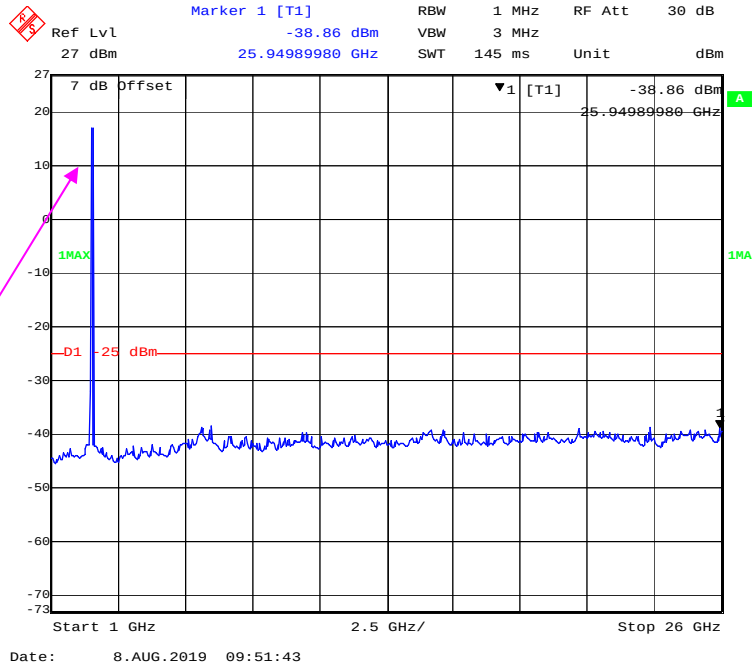


Fundamental

30 MHz - 1 GHz (15.0 MHz, 16-QAM, Middle Channel)

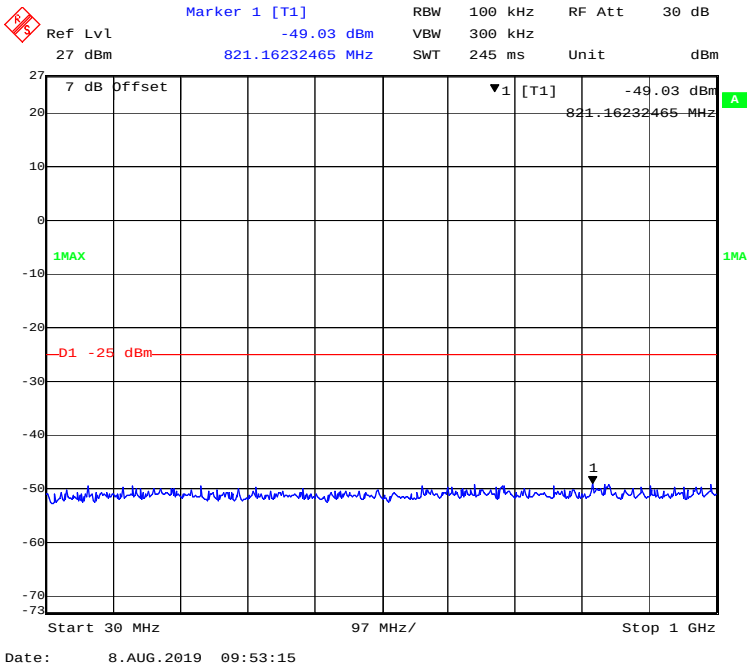


1 GHz – 26 GHz (15.0MHz, 16-QAM, Middle Channel)

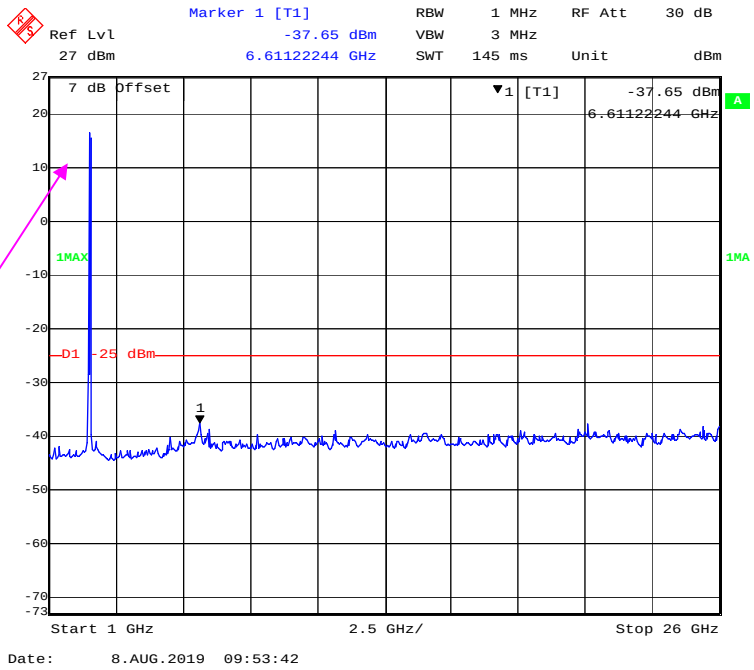


Fundamental

30 MHz - 1 GHz (20.0 MHz, 16-QAM, Middle Channel)



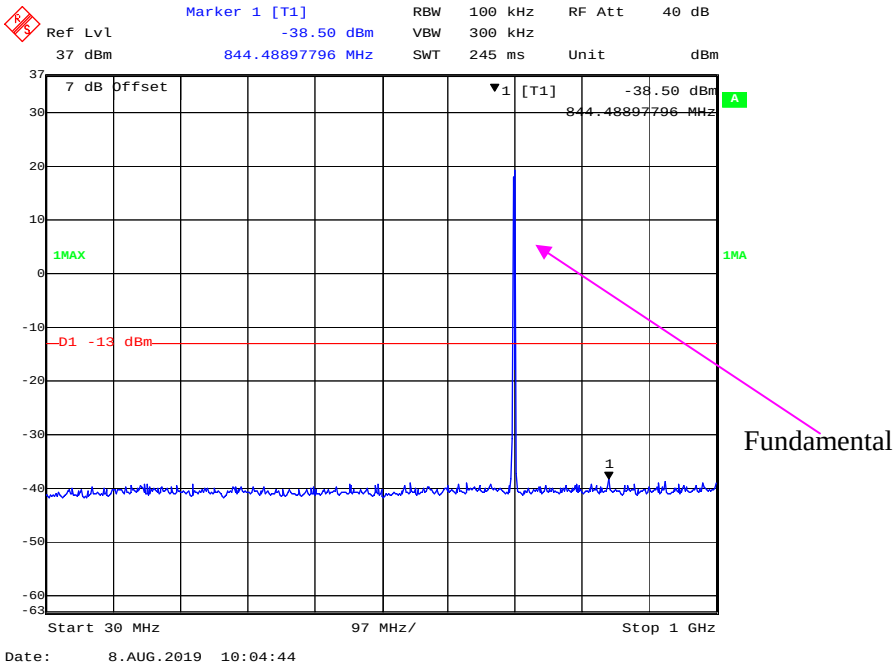
1 GHz – 26 GHz (20.0 MHz, 16-QAM, Middle Channel)



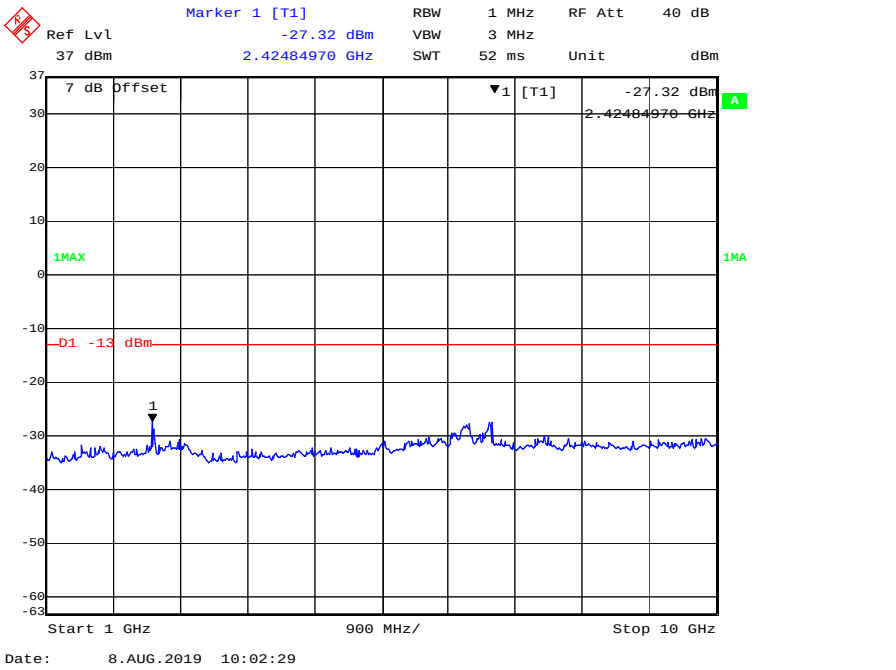
Fundamental

LTE Band 12:

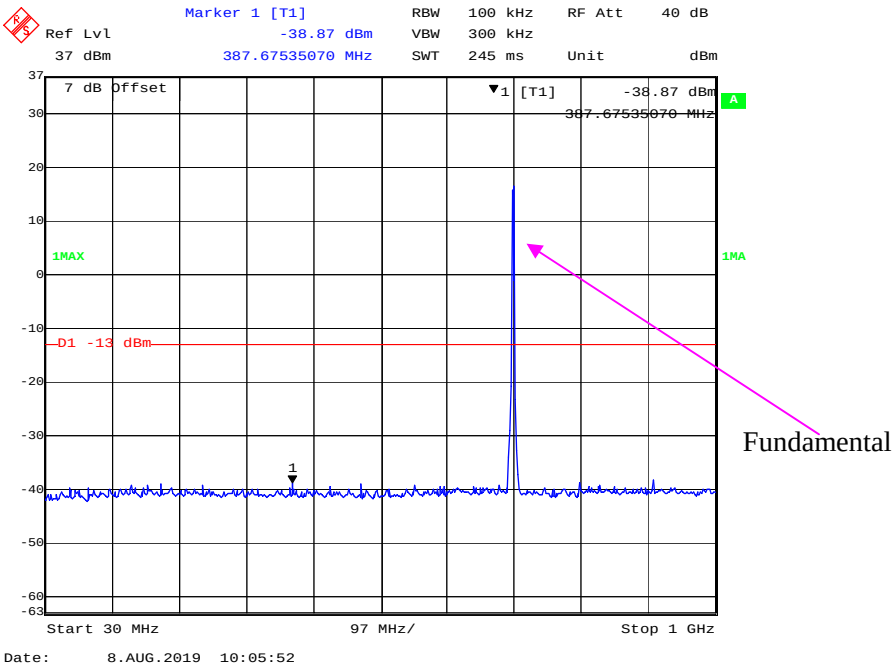
30 MHz - 1 GHz (1.4 MHz, QPSK, Middle Channel)



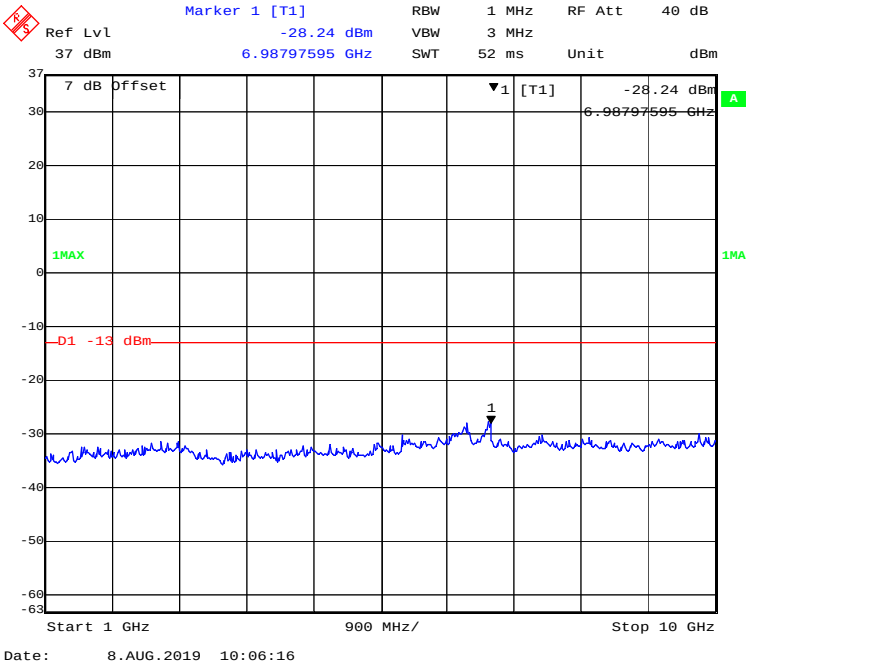
1 GHz – 10 GHz (1.4 MHz, QPSK, Middle Channel)



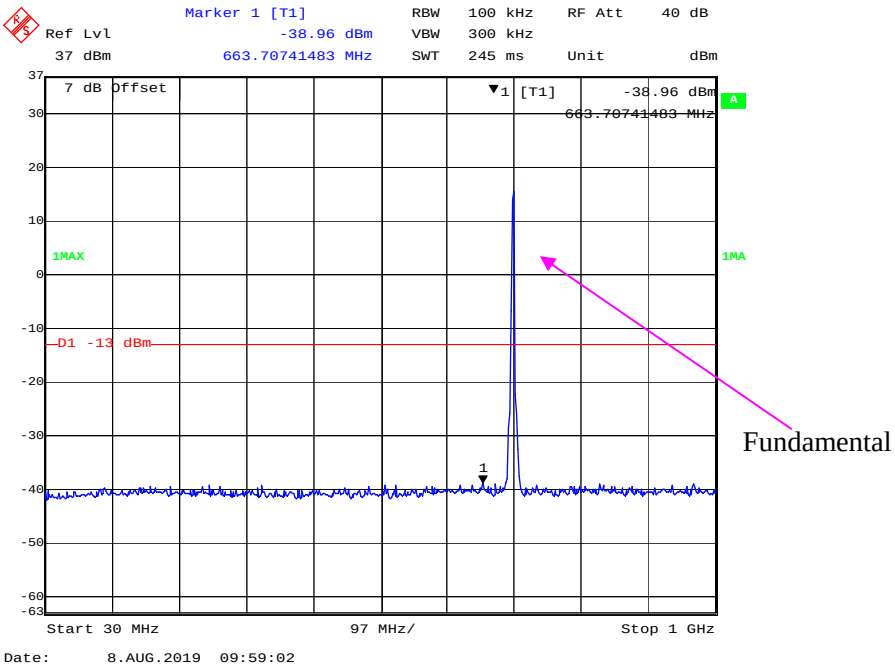
30 MHz - 1 GHz (3 MHz, QPSK, Middle Channel)



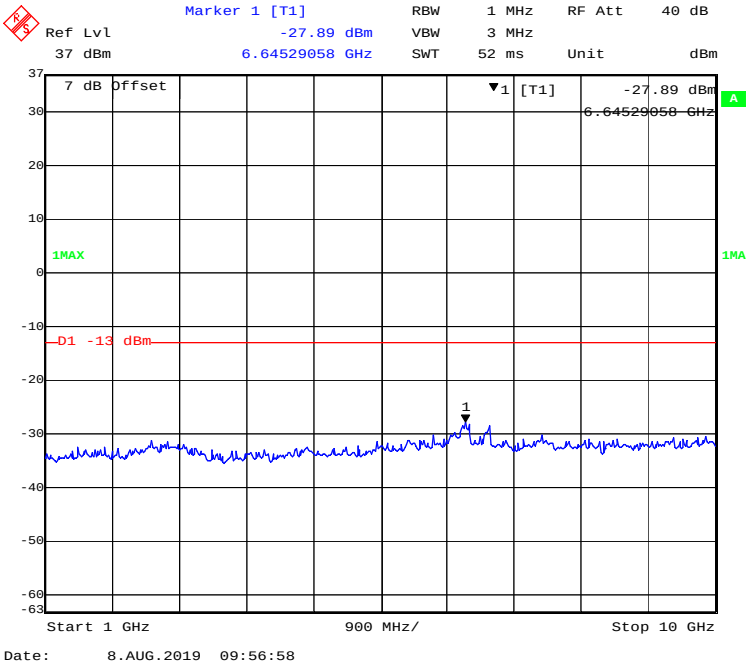
1 GHz – 10 GHz (3 MHz, QPSK, Middle Channel)



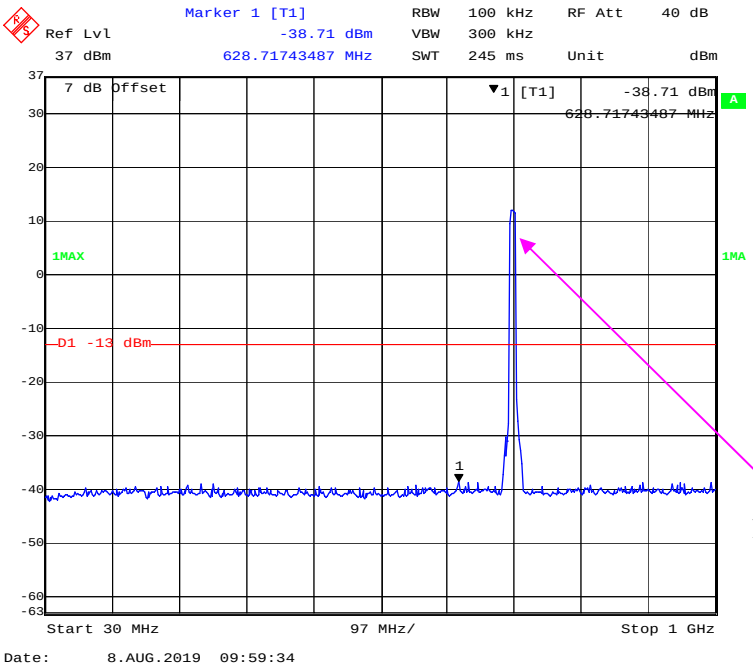
30 MHz - 1 GHz (5 MHz, QPSK, Middle Channel)



1 GHz – 10 GHz (5 MHz, QPSK, Middle Channel)

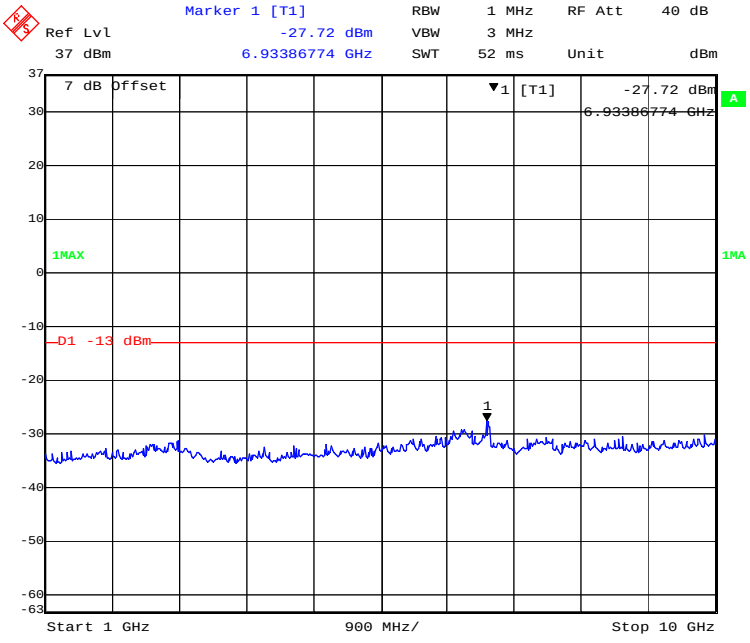


30 MHz - 1 GHz (10 MHz, QPSK, Middle Channel)



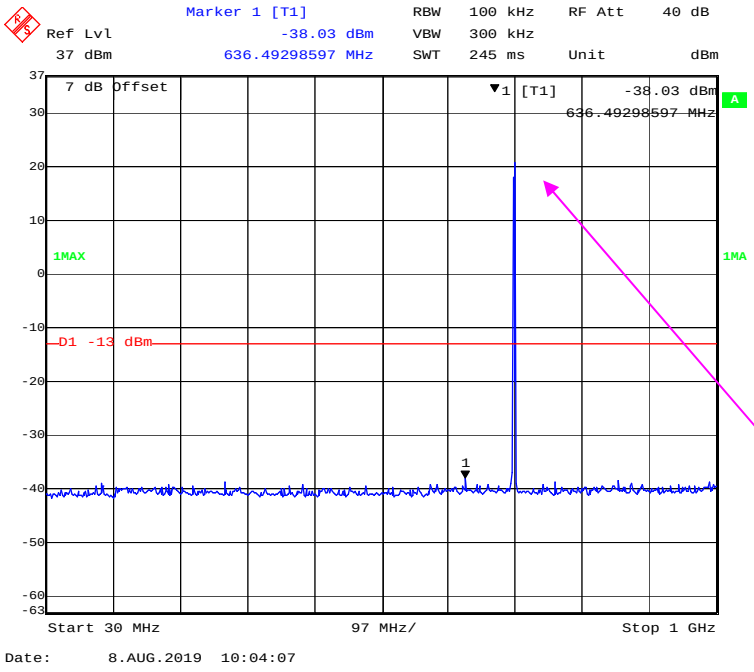
Date: 8.AUG.2019 09:59:34

1 GHz – 10 GHz (10 MHz, QPSK, Middle Channel)



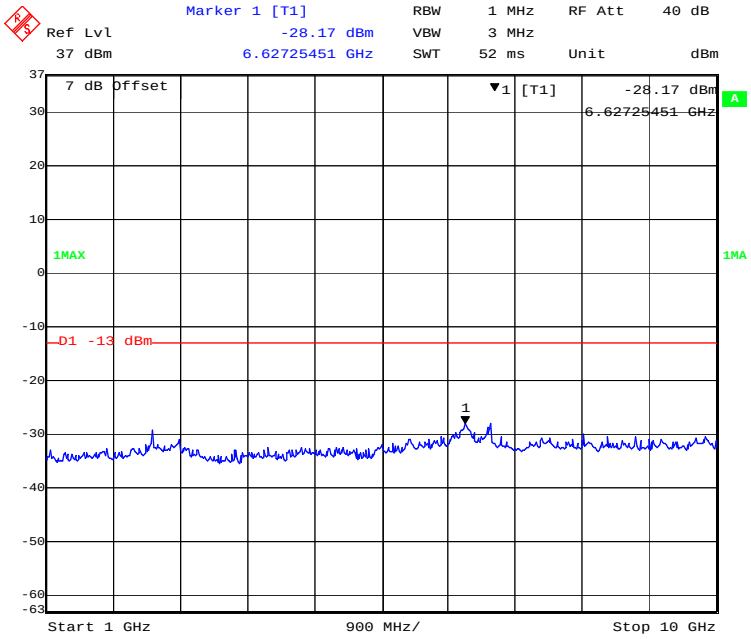
Date: 8.AUG.2019 10:00:50

30 MHz - 1 GHz (1.4 MHz, 16-QAM, Middle Channel)



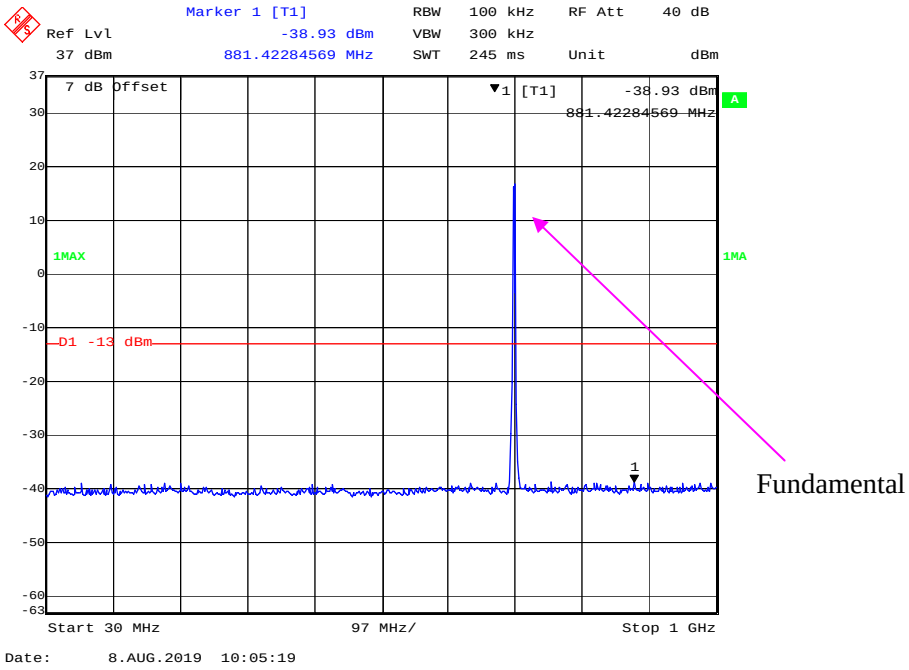
Date: 8.AUG.2019 10:04:07

1 GHz – 10 GHz (1.4 MHz, 16-QAM, Middle Channel)



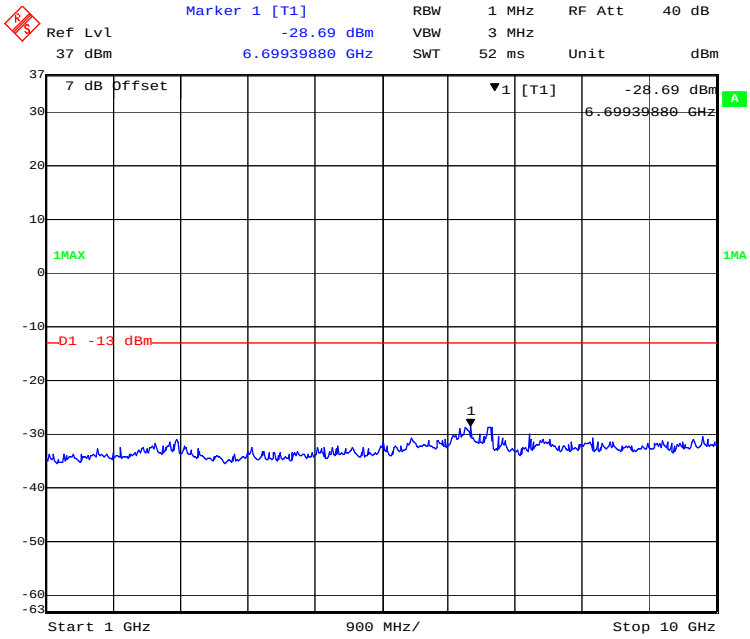
Date: 8.AUG.2019 10:03:10

30 MHz - 1 GHz (3 MHz, 16-QAM, Middle Channel)



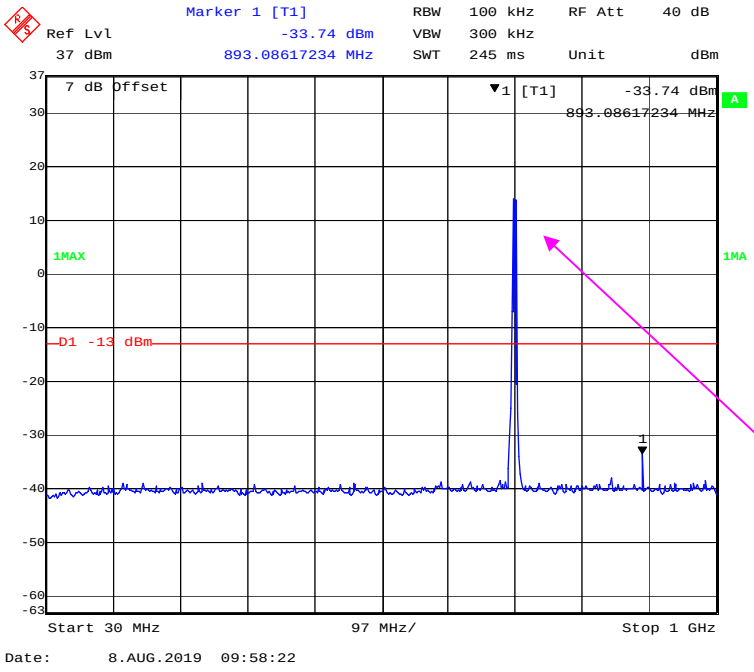
Date: 8.AUG.2019 10:05:19

1 GHz – 10 GHz (3 MHz, 16-QAM, Middle Channel)



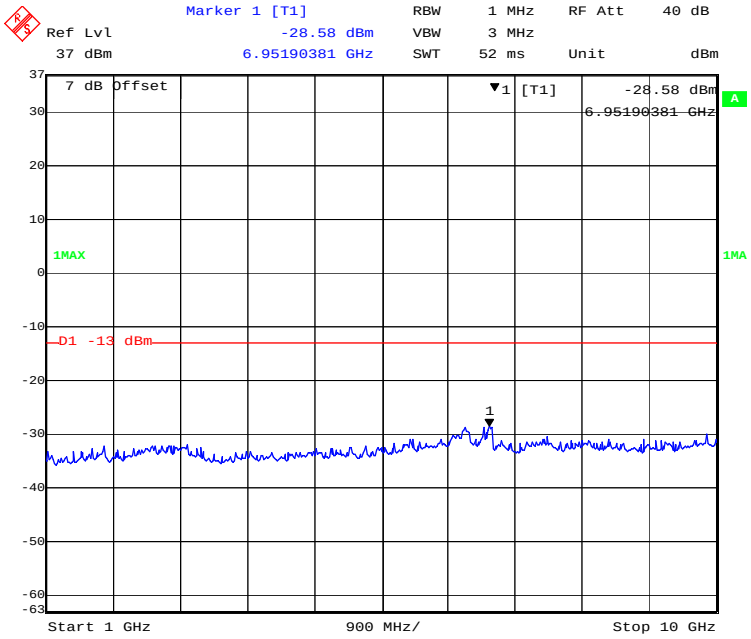
Date: 8.AUG.2019 10:06:32

30 MHz - 1 GHz (5 MHz, 16-QAM, Middle Channel)



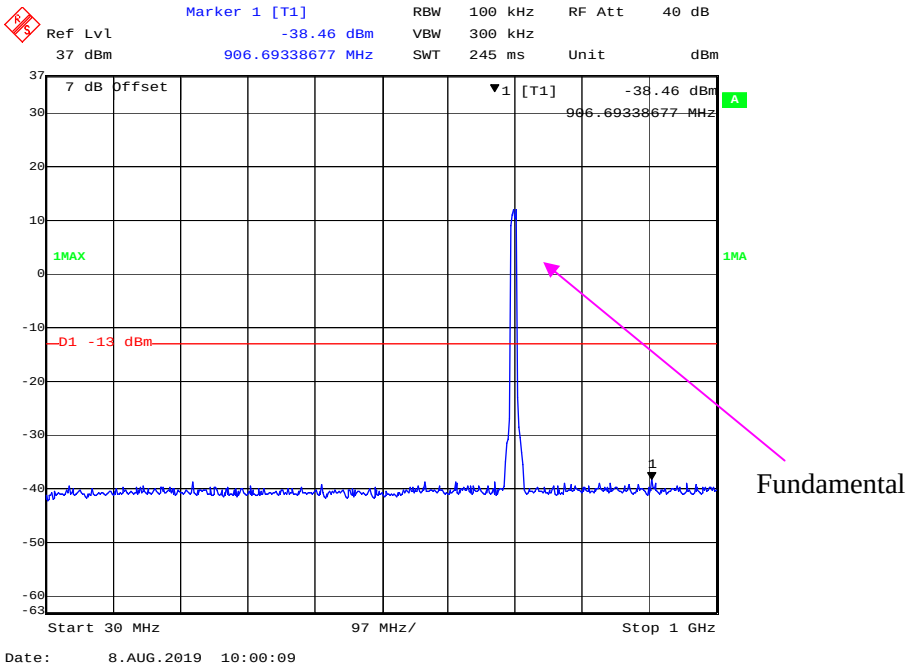
Date: 8.AUG.2019 09:58:22

1 GHz – 10 GHz (5 MHz, 16-QAM, Middle Channel)



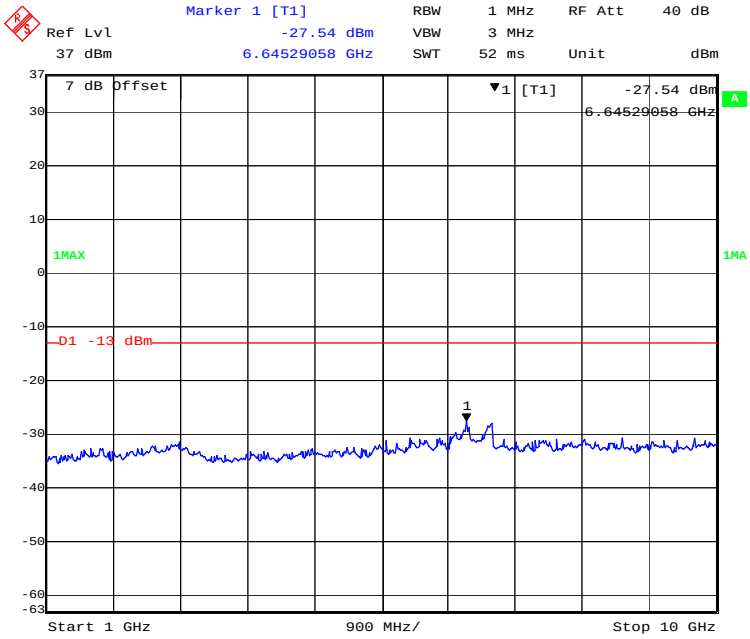
Date: 8.AUG.2019 09:57:27

30 MHz - 1 GHz (10 MHz, 16-QAM, Middle Channel)



Date: 8.AUG.2019 10:00:09

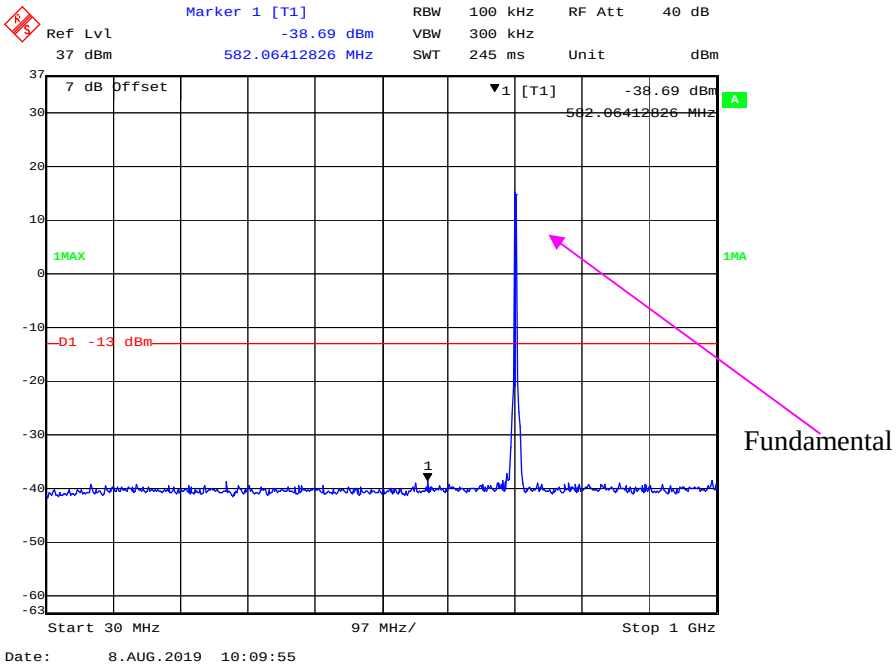
1 GHz – 10 GHz (10 MHz, 16-QAM, Middle Channel)



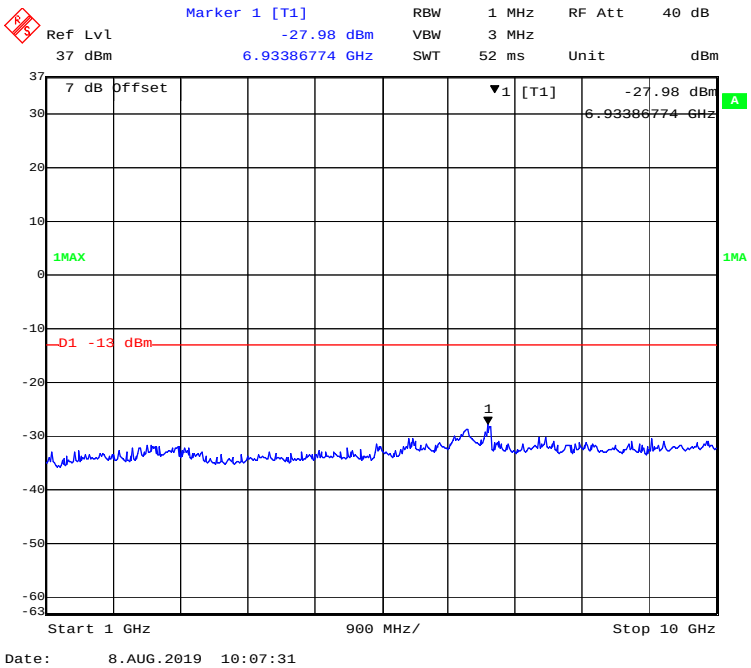
Date: 8.AUG.2019 10:00:34

LTE Band 17:

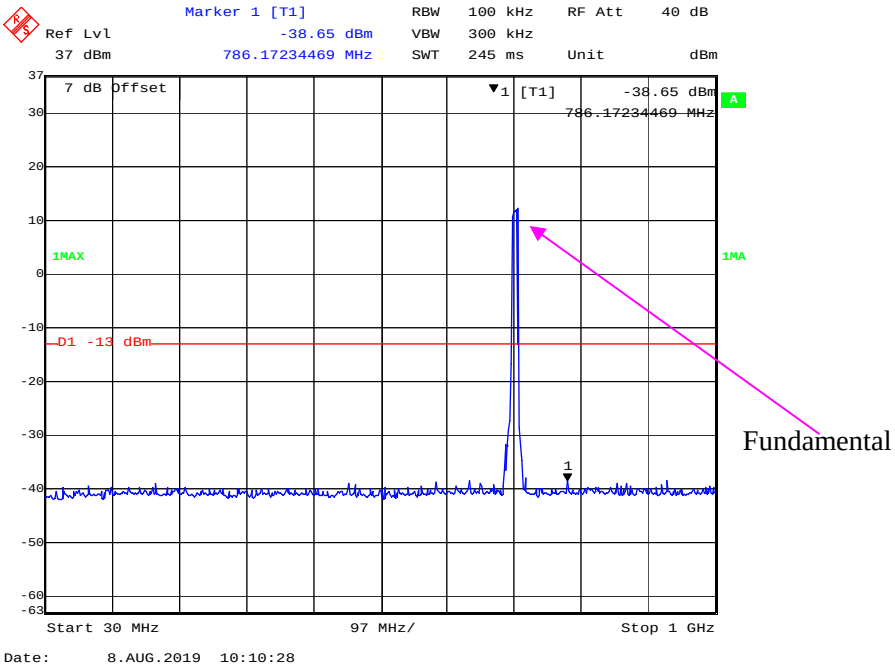
30 MHz - 1 GHz (5 MHz, QPSK, Middle Channel)



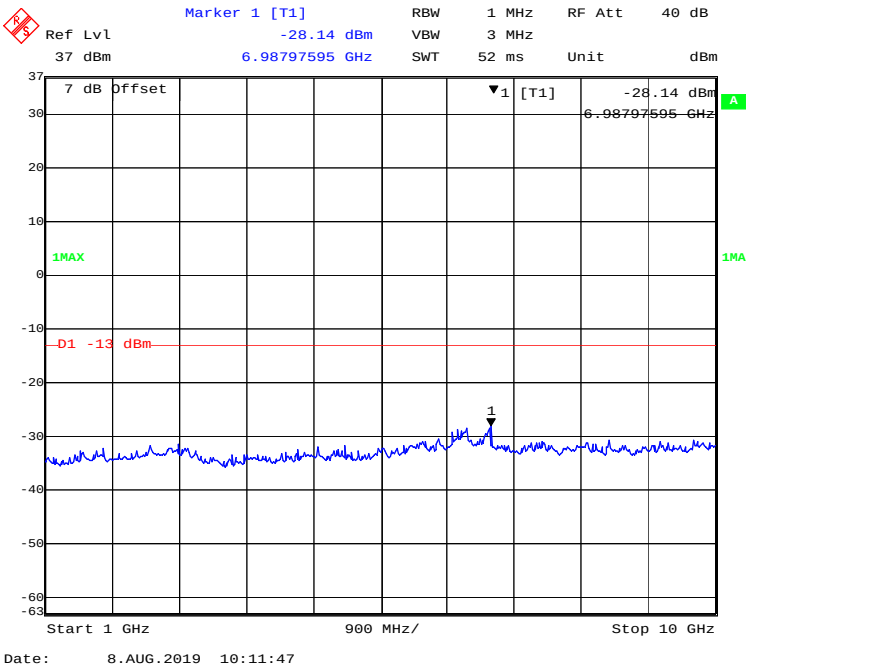
1 GHz – 10 GHz (5 MHz, QPSK, Middle Channel)



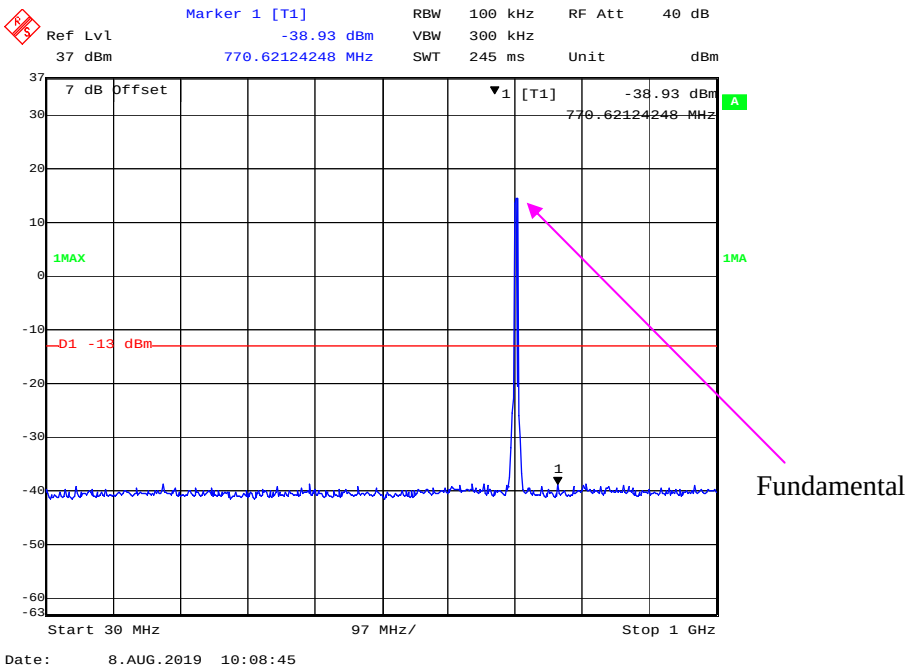
30 MHz - 1 GHz (10 MHz, QPSK, Middle Channel)



1 GHz – 10 GHz (10 MHz, QPSK, Middle Channel)

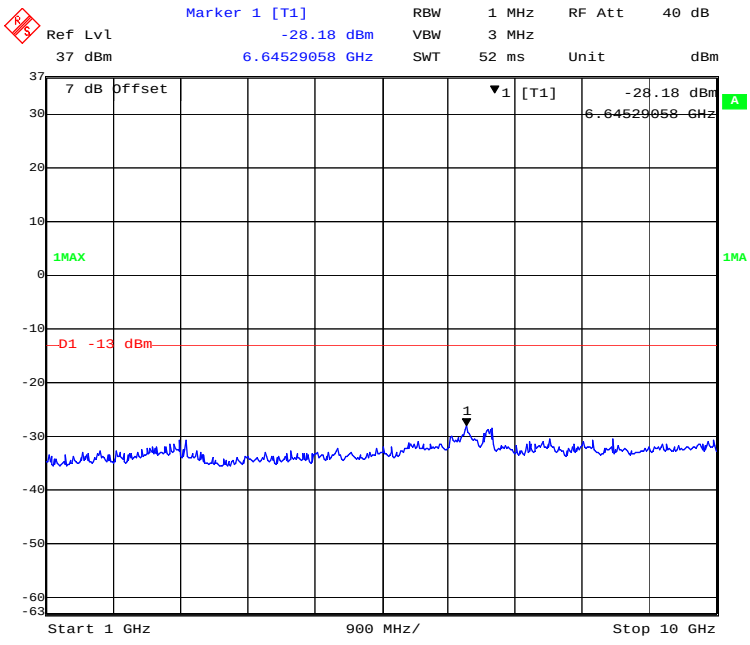


30 MHz - 1 GHz (5 MHz, 16-QAM, Middle Channel)



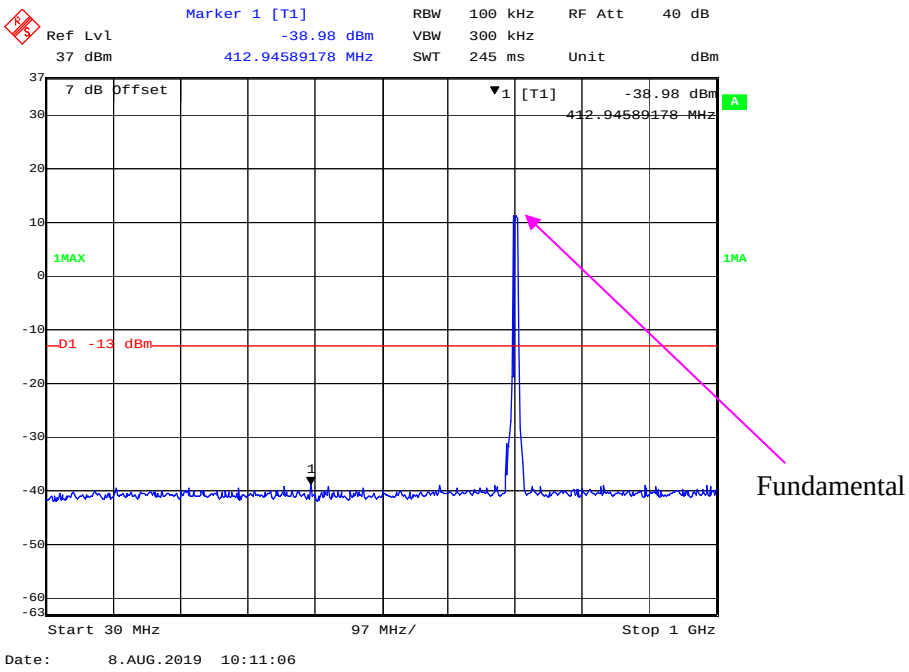
Date: 8.AUG.2019 10:08:45

1 GHz – 10 GHz (5 MHz, 16-QAM, Middle Channel)



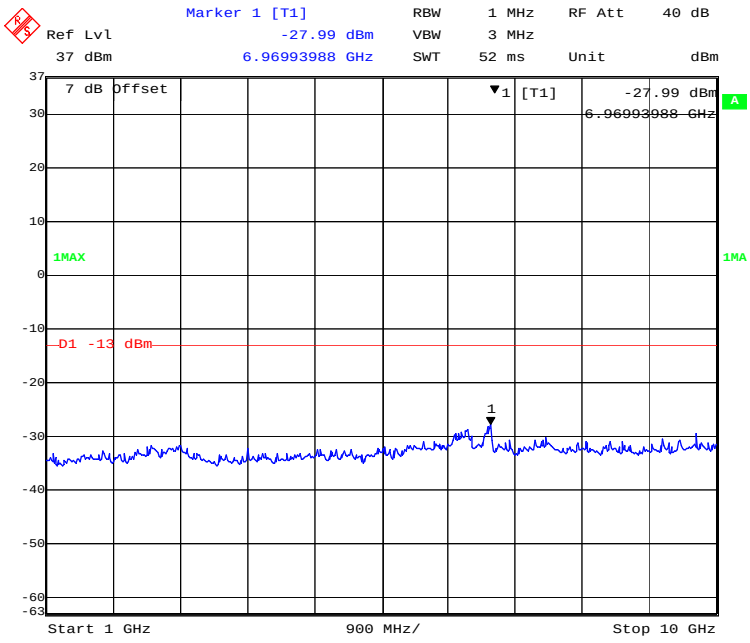
Date: 8.AUG.2019 10:08:00

30 MHz - 1 GHz (10 MHz, 16-QAM, Middle Channel)



Date: 8.AUG.2019 10:11:06

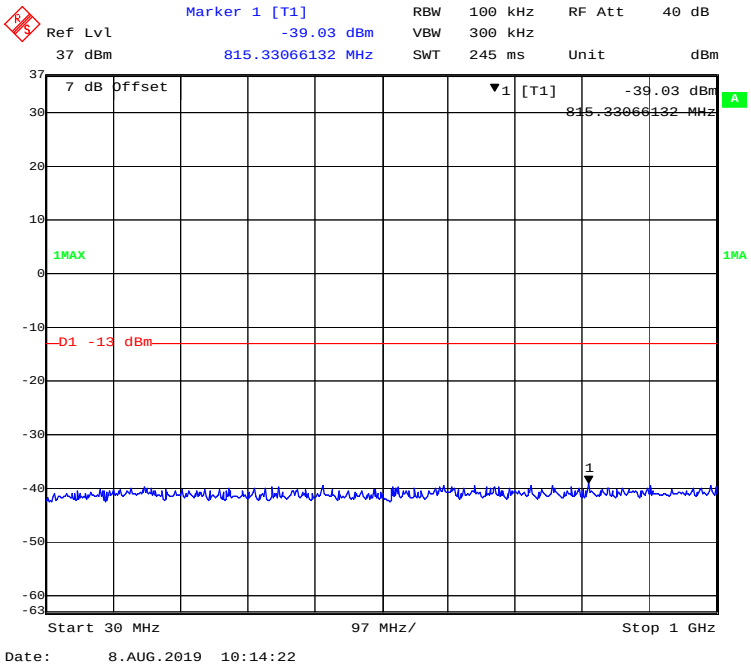
1 GHz – 10 GHz (10 MHz, 16-QAM, Middle Channel)



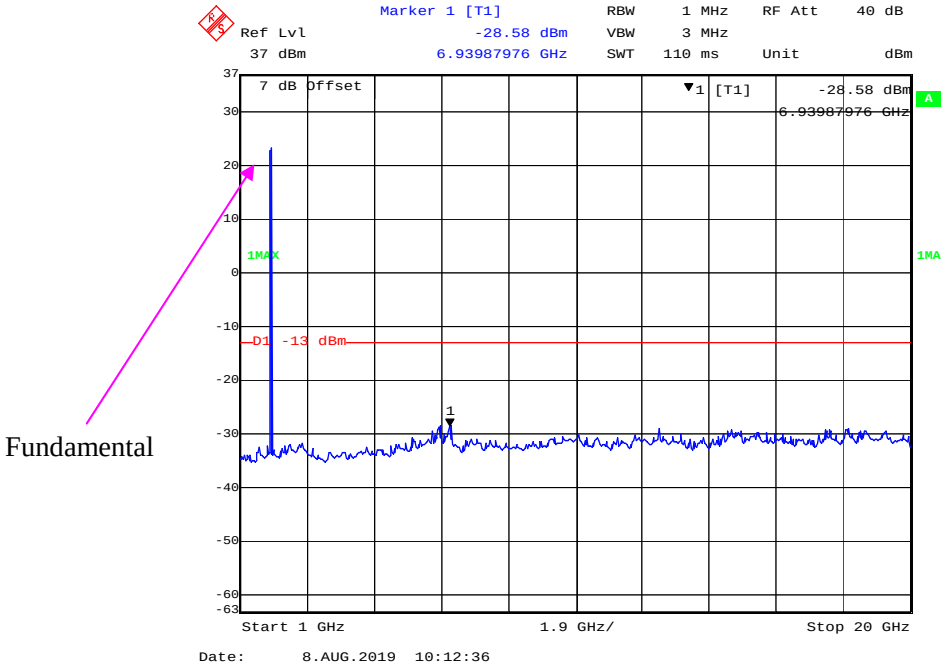
Date: 8.AUG.2019 10:11:30

LTE Band 25:

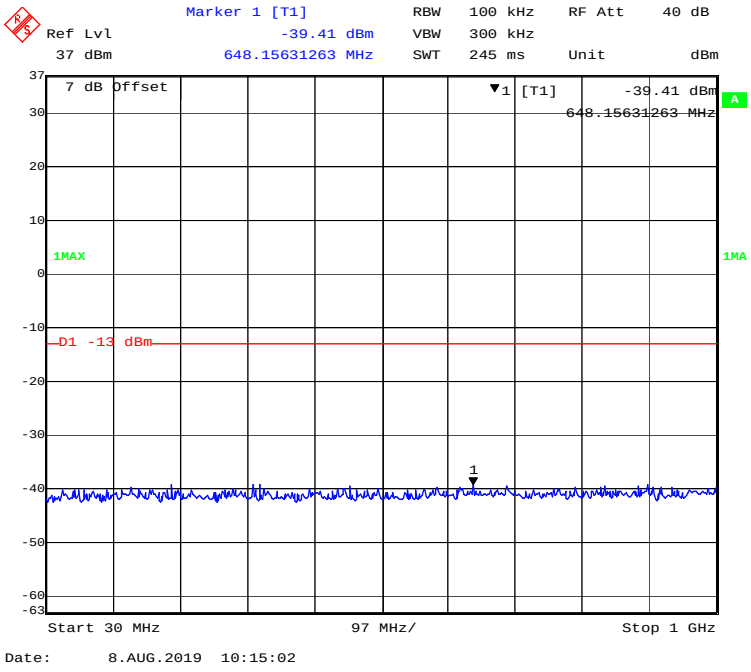
30 MHz - 1 GHz (1.4 MHz, QPSK, Middle Channel)



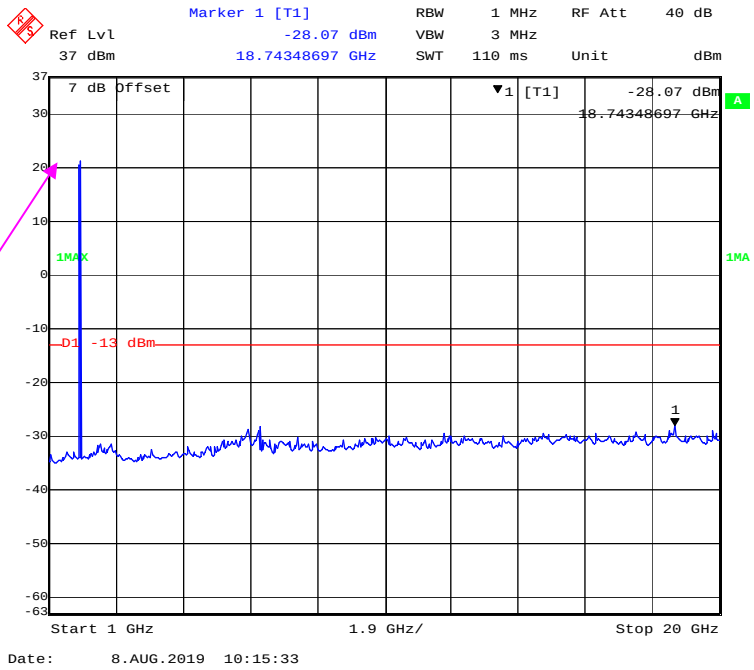
1 GHz – 20 GHz (1.4 MHz, QPSK, Middle Channel)



30 MHz - 1 GHz (3.0 MHz, QPSK, Middle Channel)

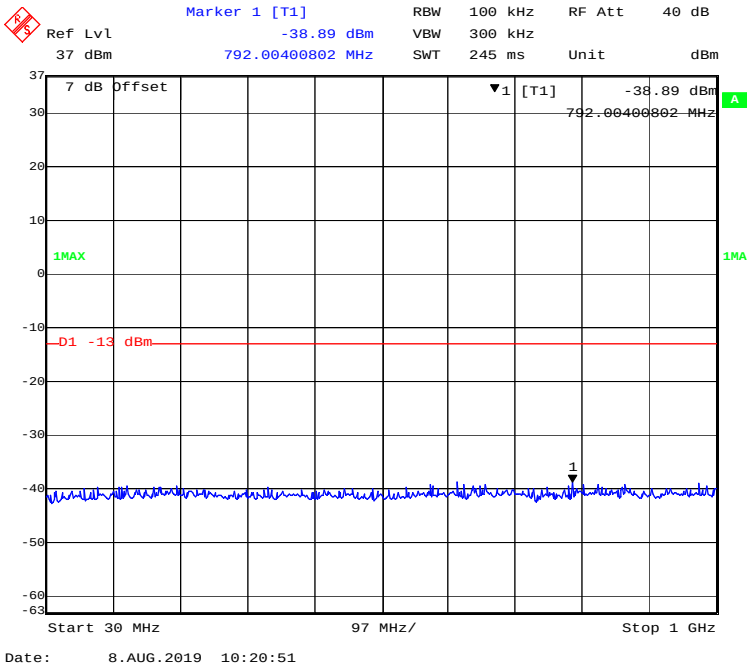


1 GHz – 20 GHz (3.0 MHz, QPSK, Middle Channel)

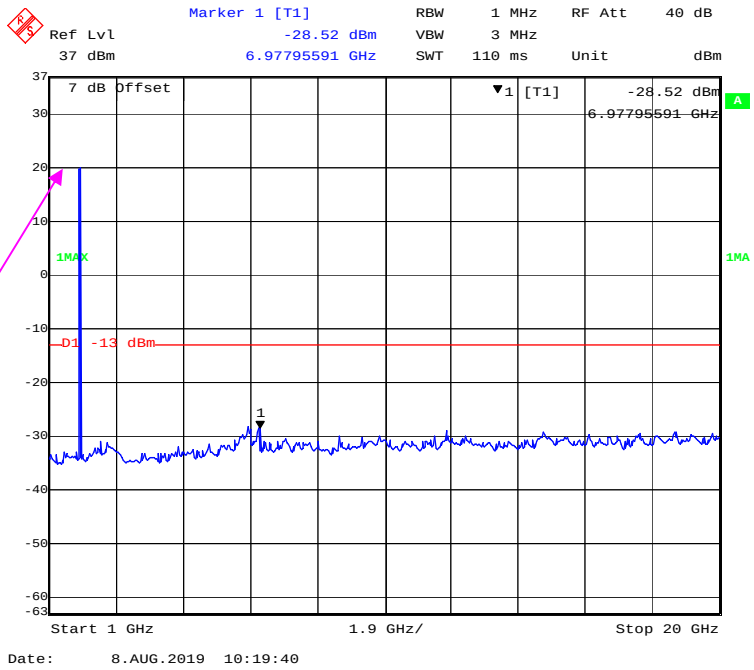


Fundamental

30 MHz - 1 GHz (5.0 MHz, QPSK, Middle Channel)

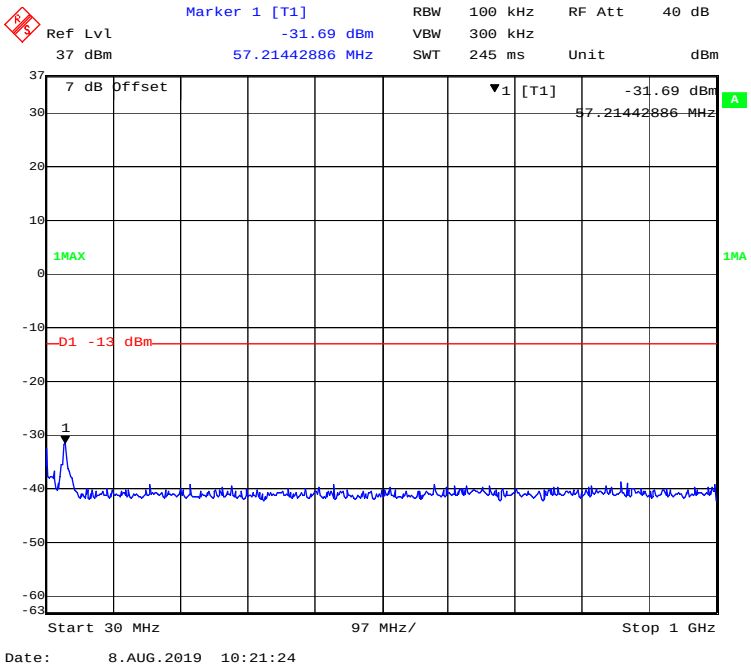


1 GHz – 20 GHz (5.0MHz, QPSK, Middle Channel)

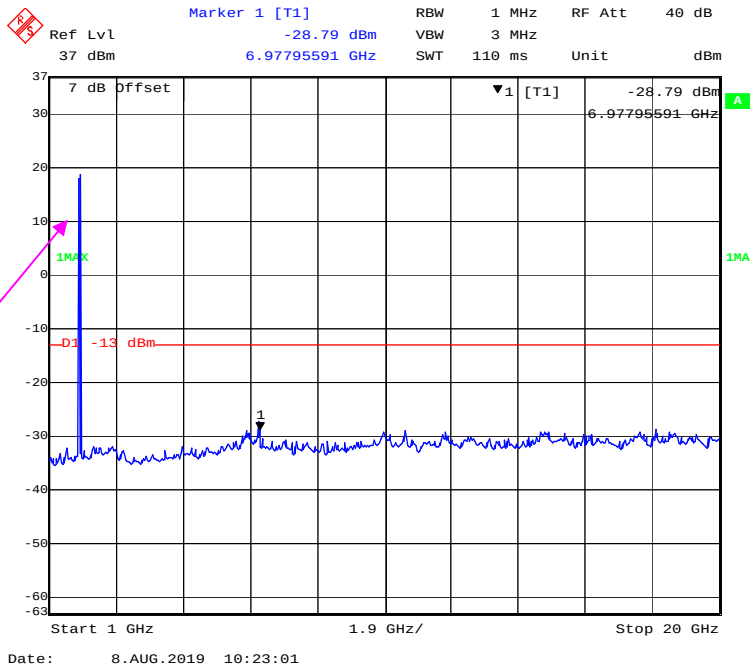


Fundamental

30 MHz - 1 GHz (10.0 MHz, QPSK, Middle Channel)

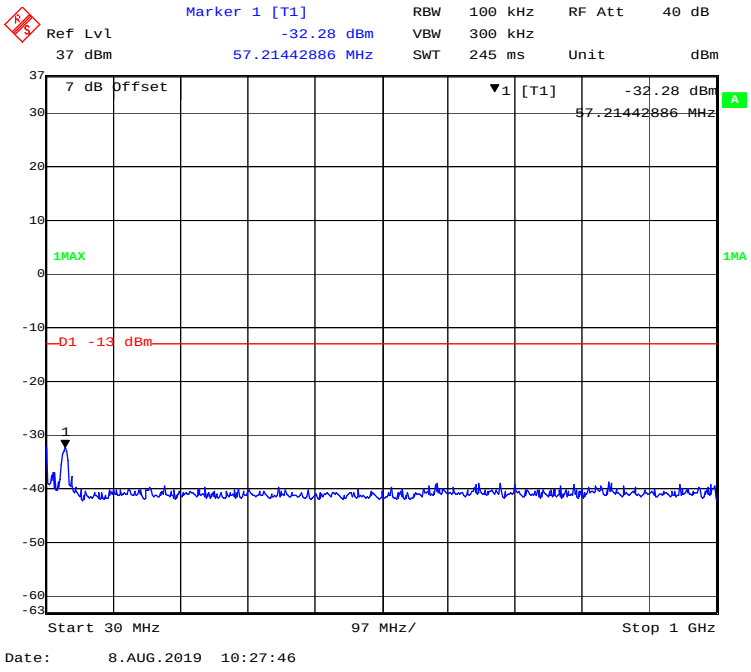


1 GHz – 20 GHz (10.0 MHz, QPSK, Middle Channel)

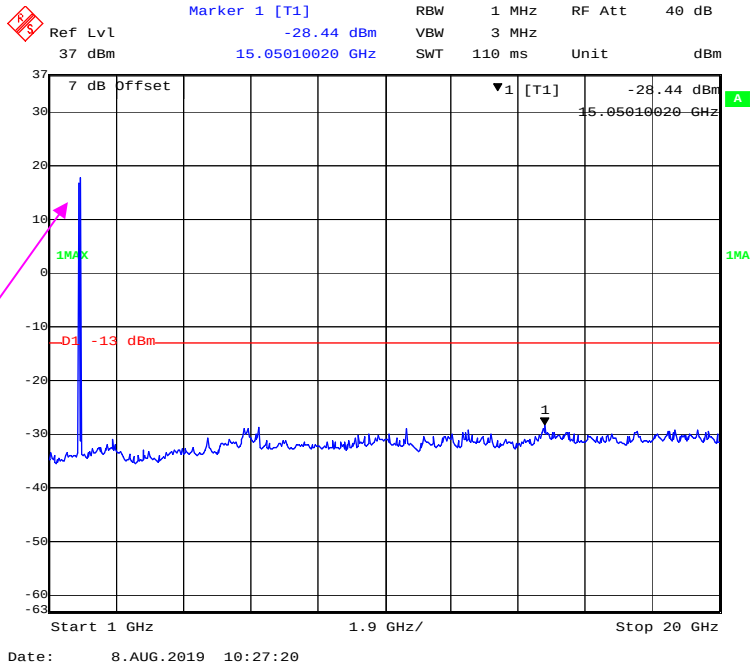


Fundamental

30 MHz - 1 GHz (15.0 MHz, QPSK, Middle Channel)

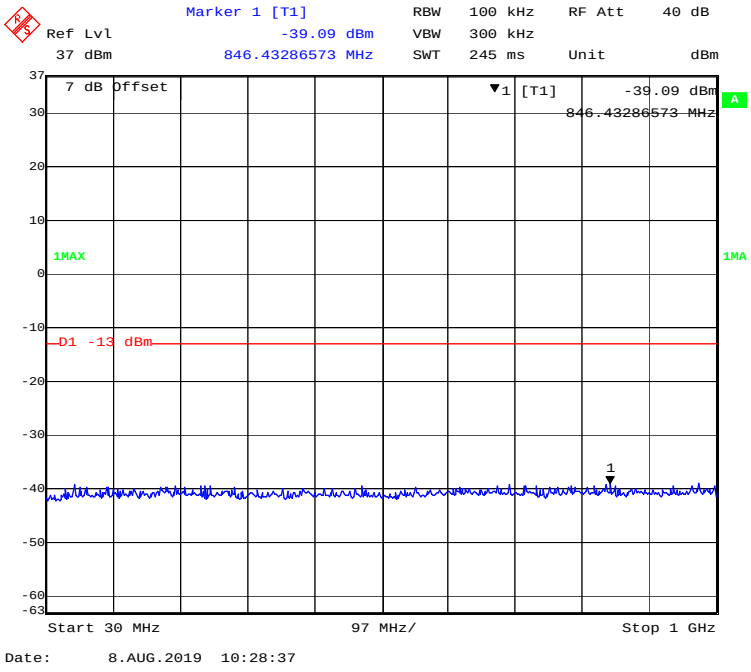


1 GHz – 20 GHz (15.0 MHz, QPSK, Middle Channel)

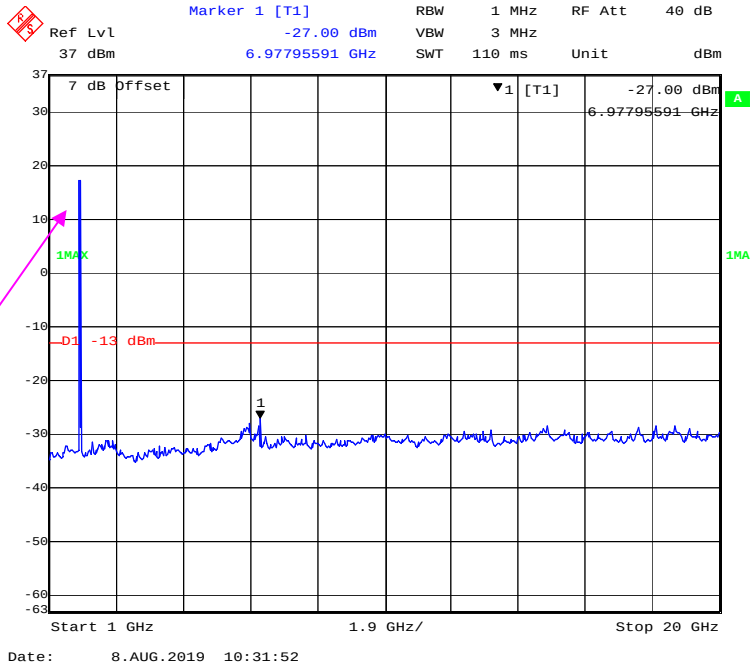


Fundamental

30 MHz - 1 GHz (20.0 MHz, QPSK, Middle Channel)

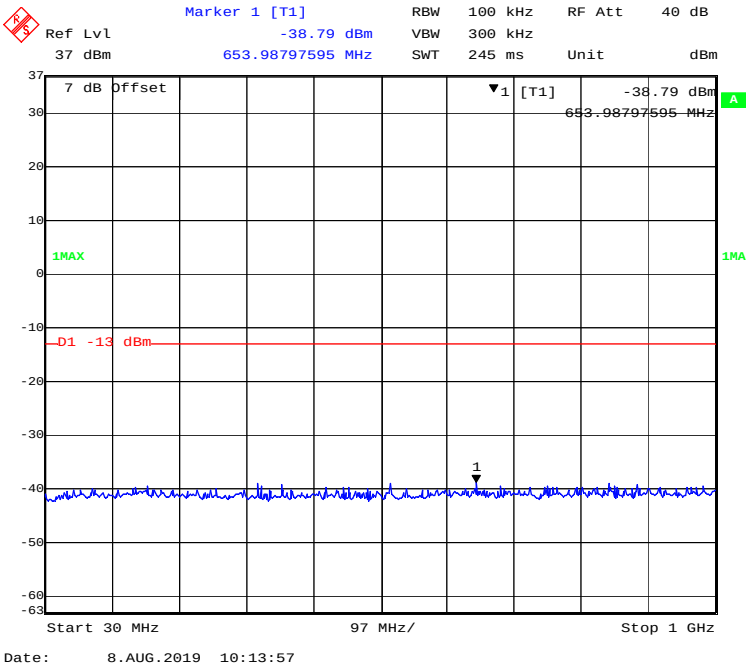


1 GHz – 20 GHz (20.0 MHz, QPSK, Middle Channel)

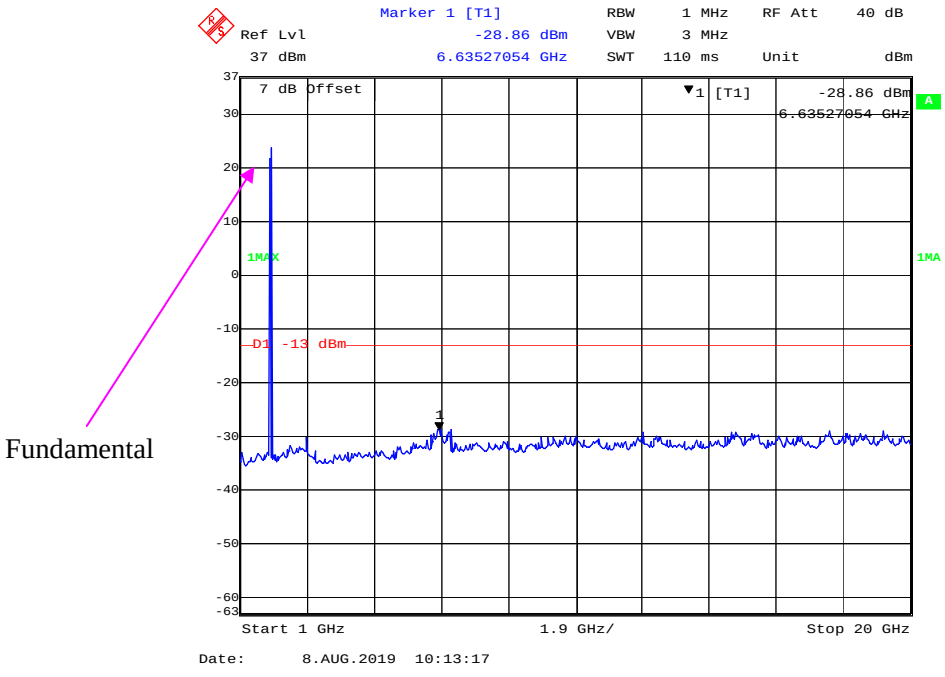


Fundamental

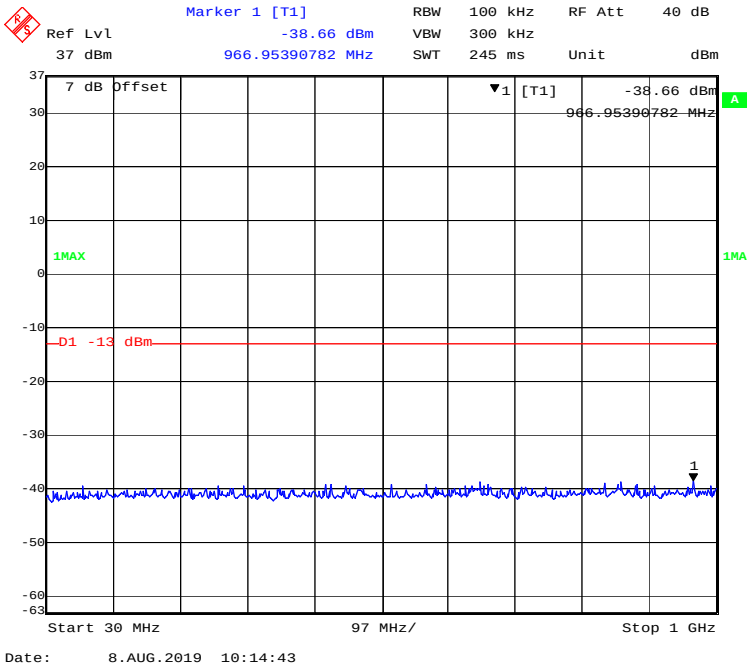
30 MHz - 1 GHz (1.4 MHz, 16-QAM, Middle Channel)



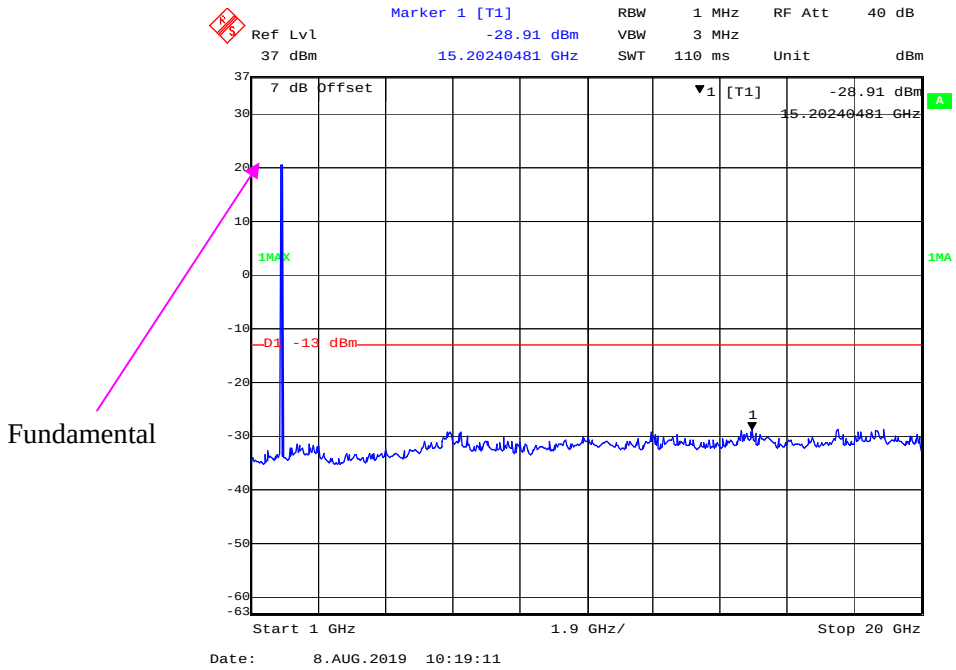
1 GHz – 20 GHz (1.4 MHz, 16-QAM, Middle Channel)



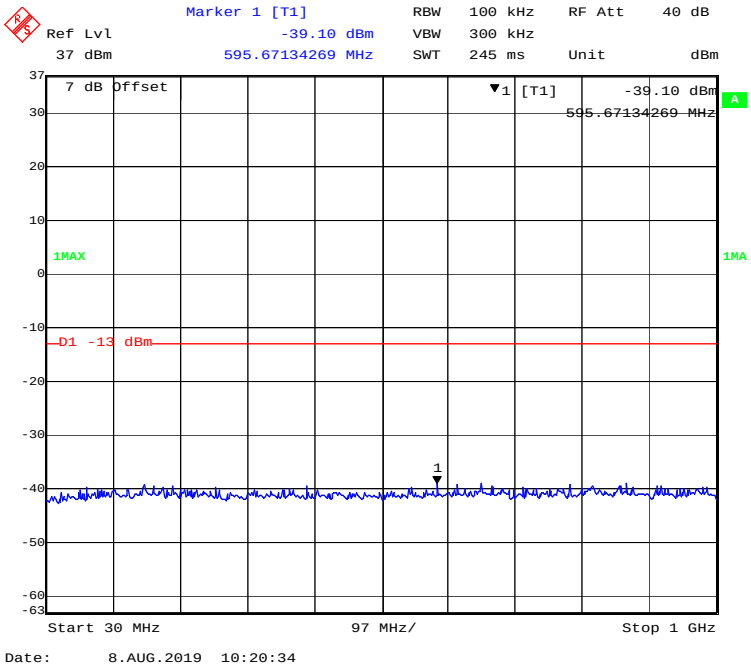
30 MHz - 1 GHz (3.0 MHz, 16-QAM, Middle Channel)



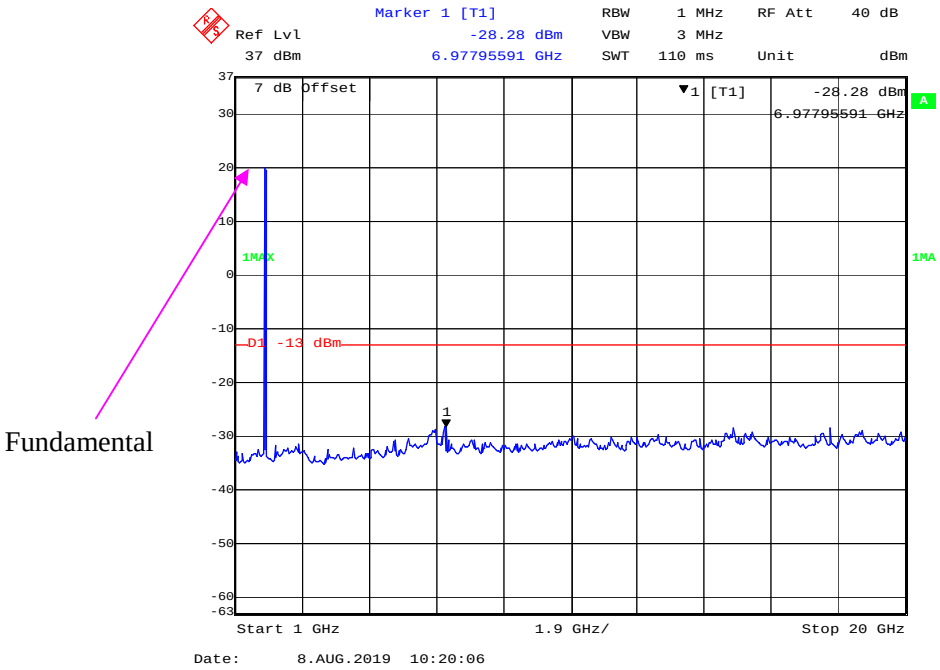
1 GHz – 20 GHz (3.0 MHz, 16-QAM, Middle Channel)



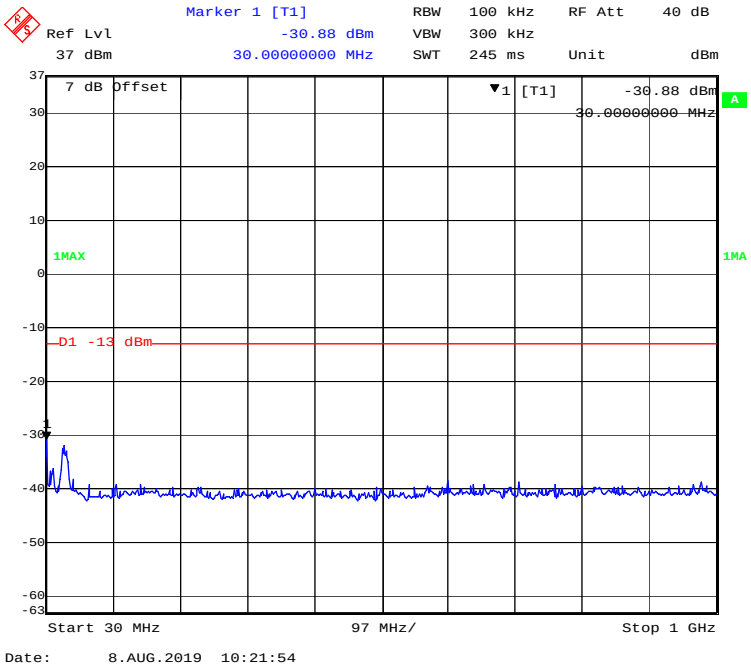
30 MHz - 1 GHz (5.0 MHz, 16-QAM, Middle Channel)



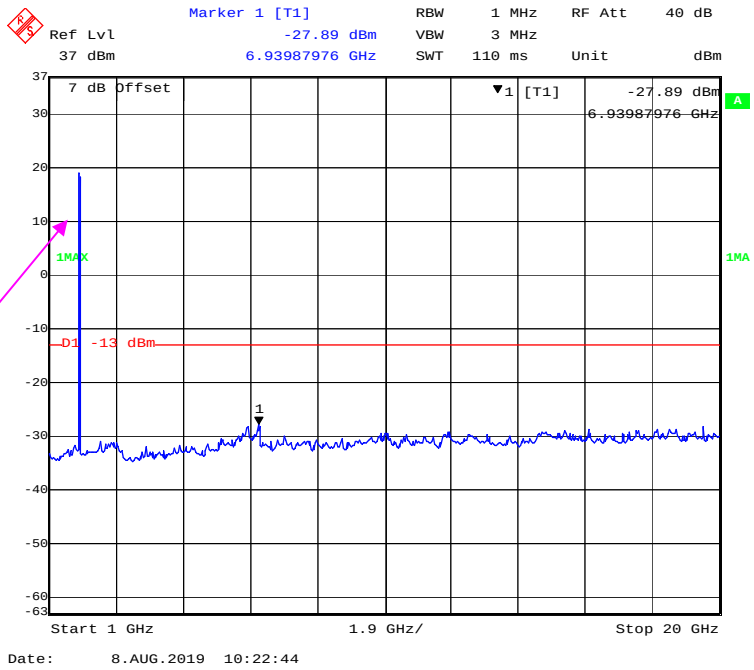
1 GHz – 20 GHz (5.0MHz, 16-QAM, Middle Channel)



30 MHz - 1 GHz (10.0 MHz, 16-QAM, Middle Channel)

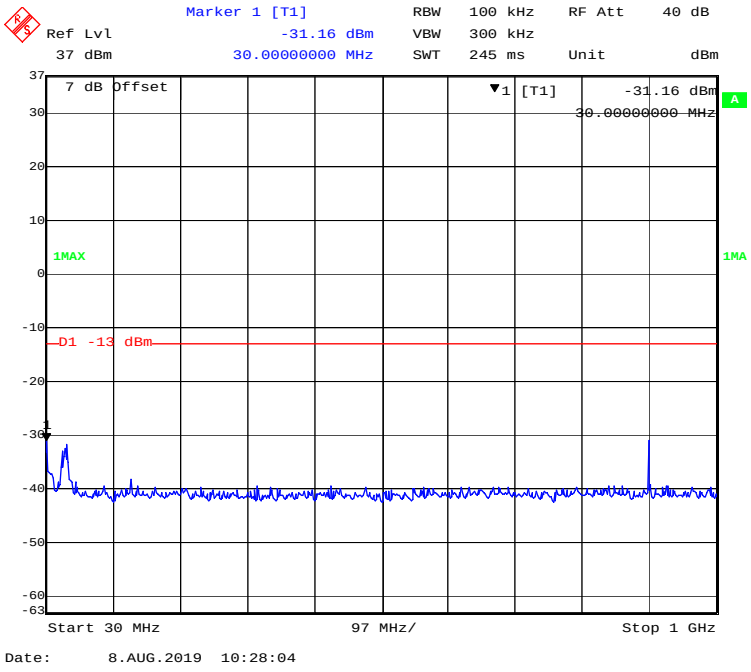


1 GHz – 20 GHz (10.0 MHz, 16-QAM, Middle Channel)

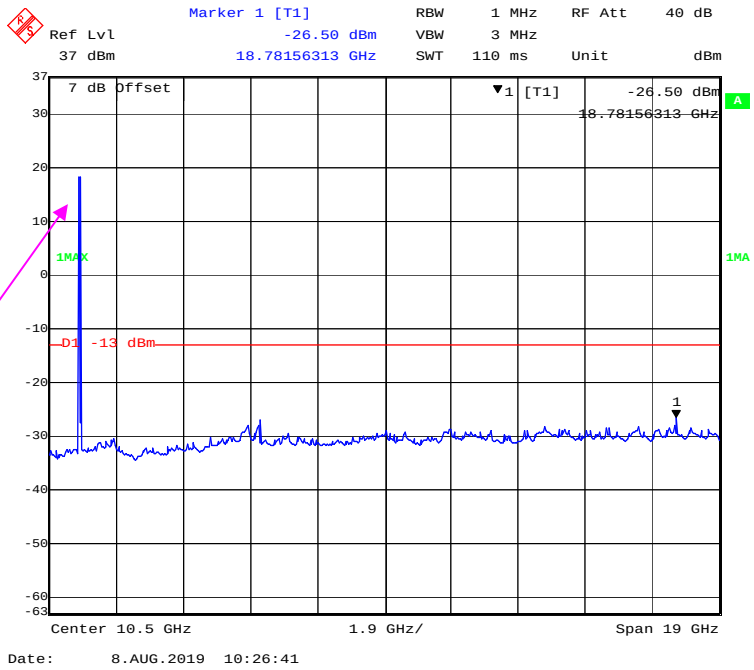


Fundamental

30 MHz - 1 GHz (15.0 MHz, 16-QAM, Middle Channel)

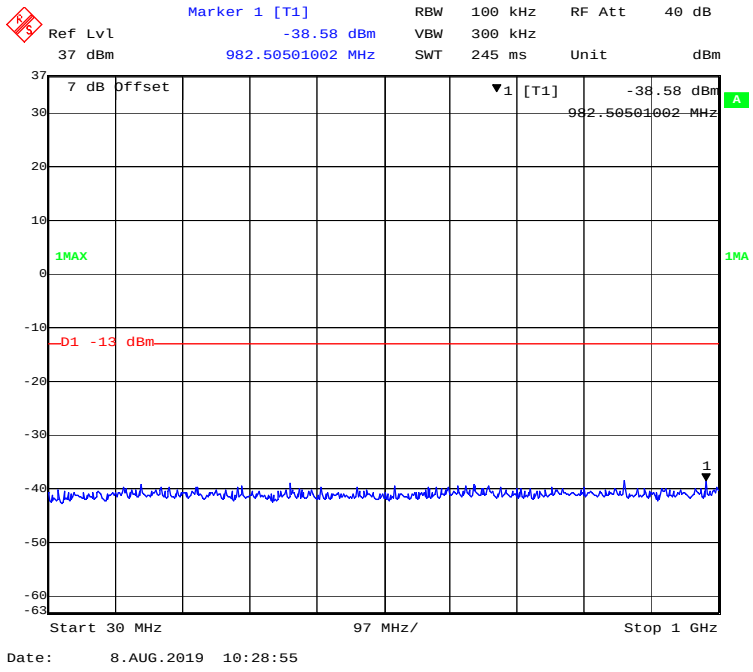


1 GHz – 20 GHz (15.0 MHz, 16-QAM, Middle Channel)

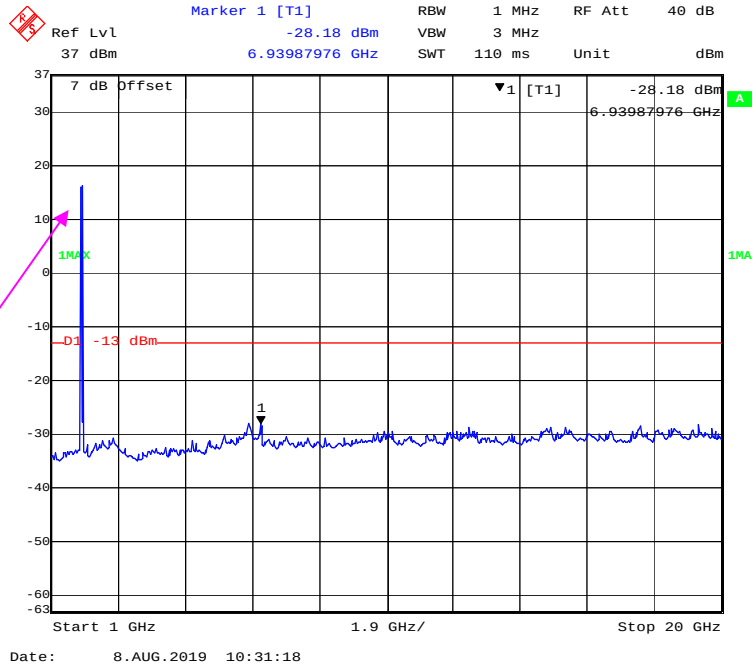


Fundamental

30 MHz - 1 GHz (20.0 MHz, 16-QAM, Middle Channel)



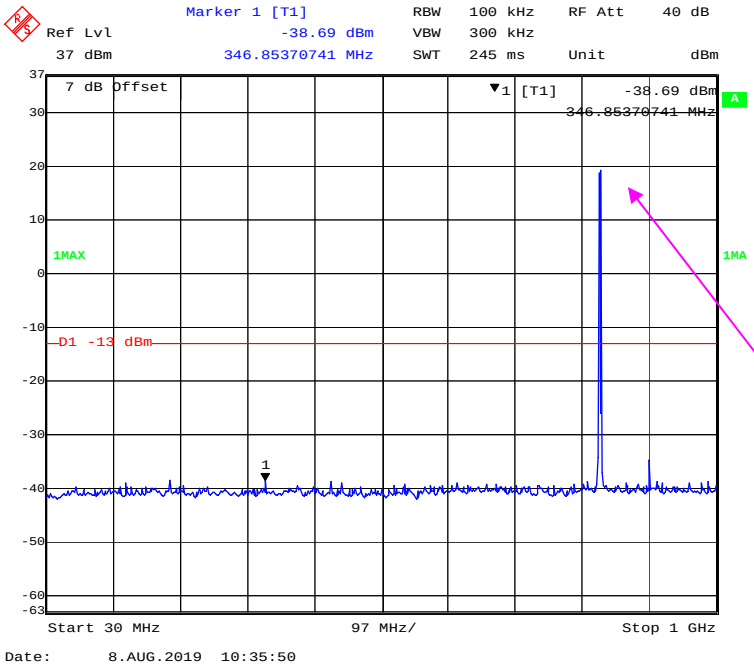
1 GHz – 20 GHz (20.0 MHz, 16-QAM, Middle Channel)



Fundamental

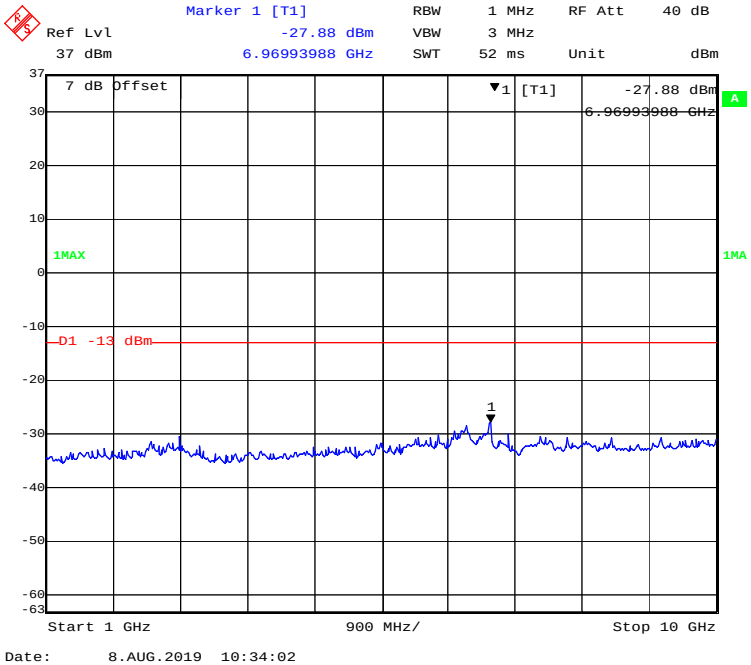
LTE Band 26:

30 MHz - 1 GHz (1.4 MHz, QPSK, Middle Channel)

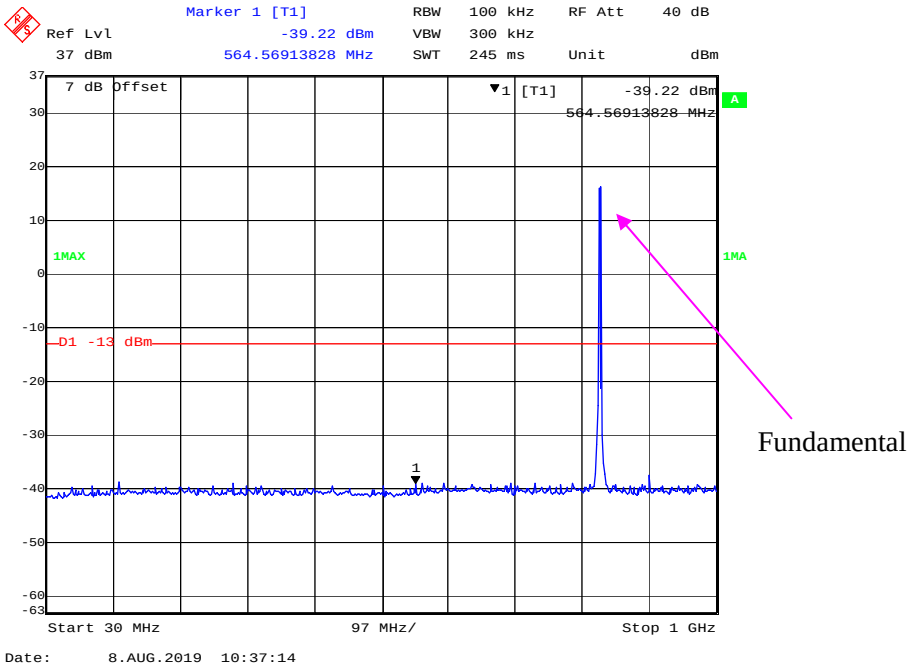


Fundamental

1 GHz – 10 GHz (1.4 MHz, QPSK, Middle Channel)

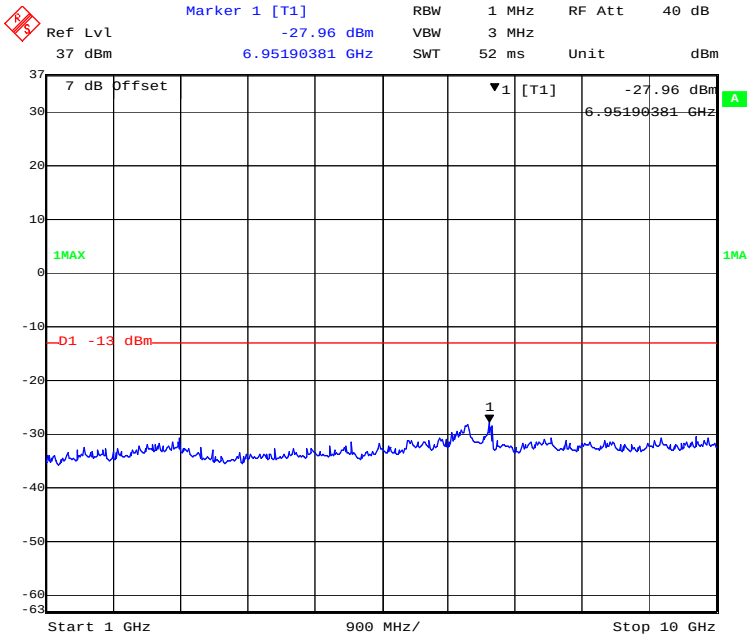


30 MHz - 1 GHz (3.0 MHz, QPSK, Middle Channel)



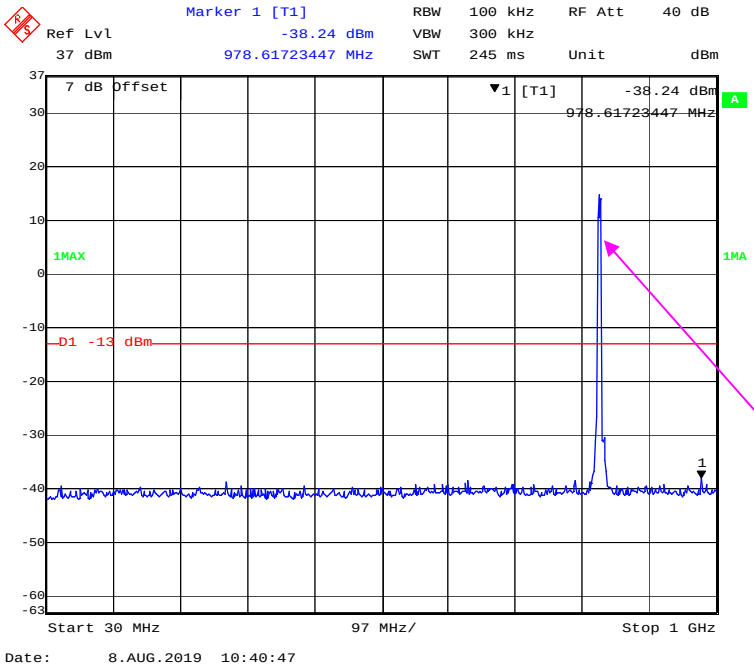
Date: 8.AUG.2019 10:37:14

1 GHz – 10 GHz (3.0 MHz, QPSK, Middle Channel)



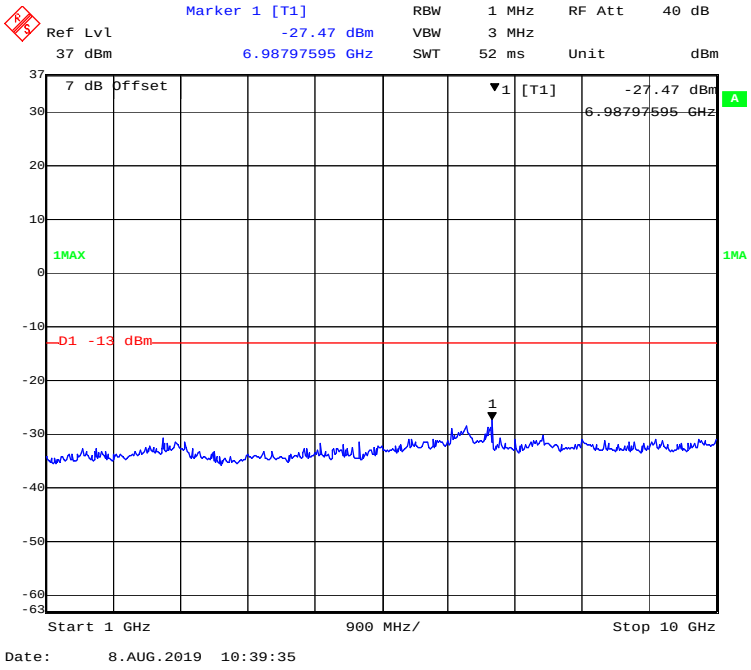
Date: 8.AUG.2019 10:38:59

30 MHz - 1 GHz (5.0 MHz, QPSK, Middle Channel)

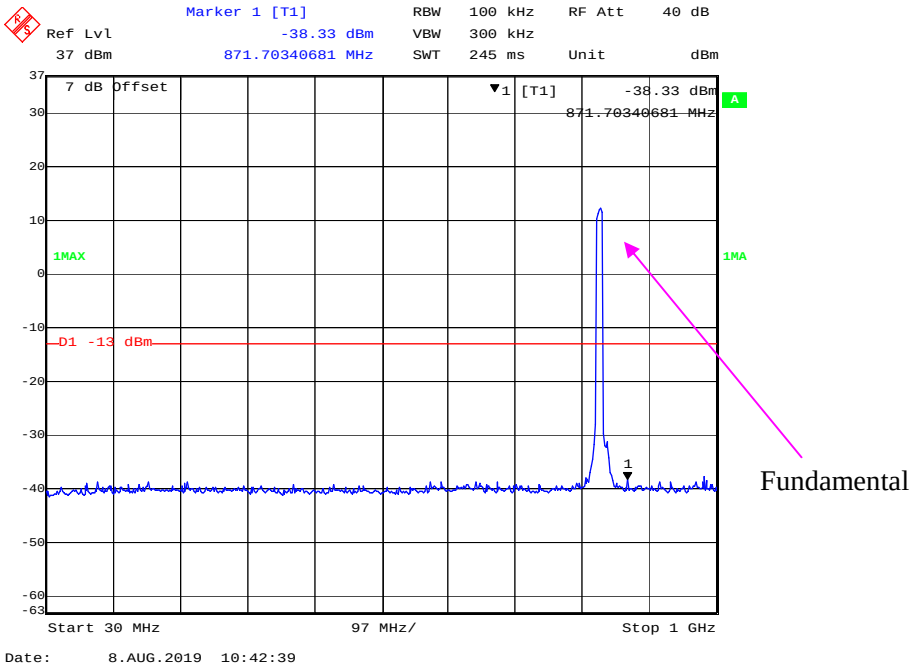


Fundamental

1 GHz – 10 GHz (5.0MHz, QPSK, Middle Channel)

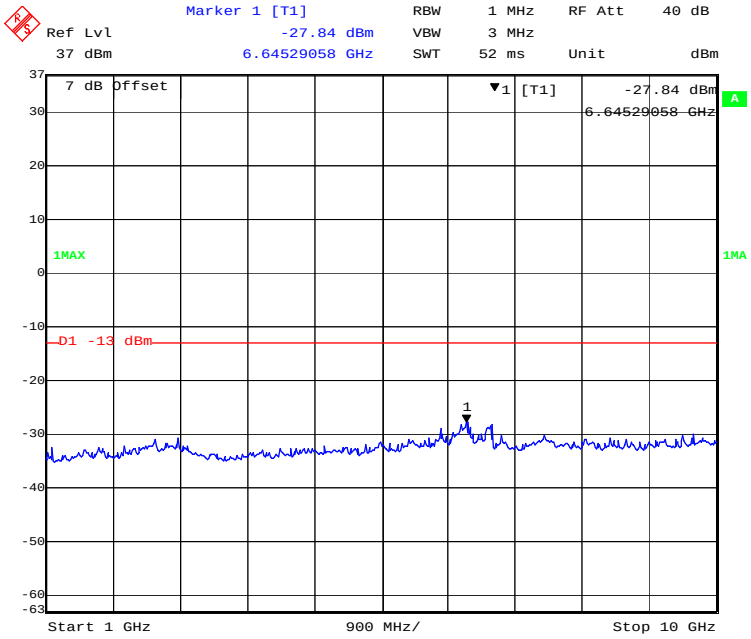


30 MHz - 1 GHz (10.0 MHz, QPSK, Middle Channel)



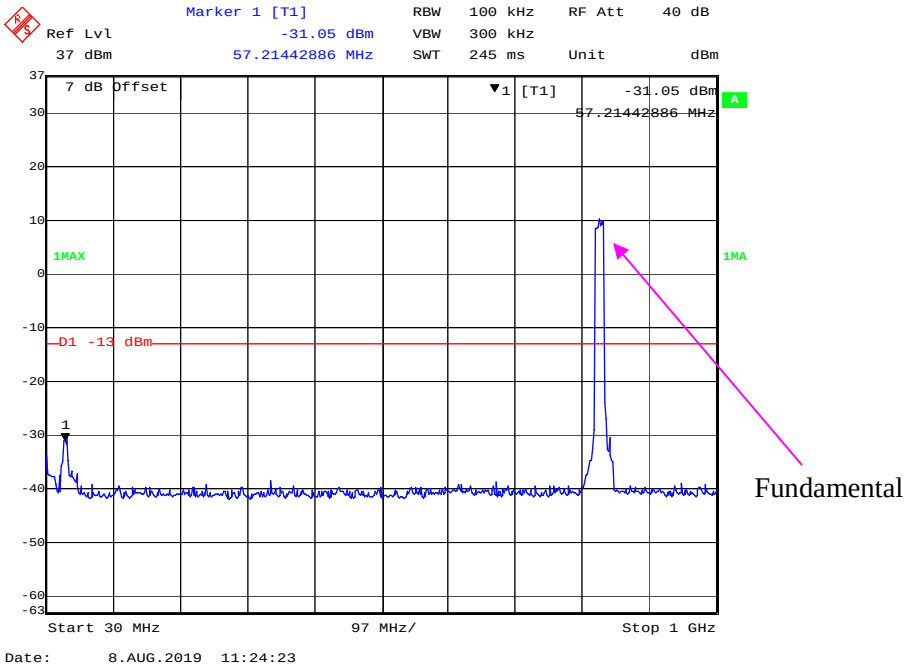
Date: 8.AUG.2019 10:42:39

1 GHz – 10 GHz (10.0 MHz, QPSK, Middle Channel)



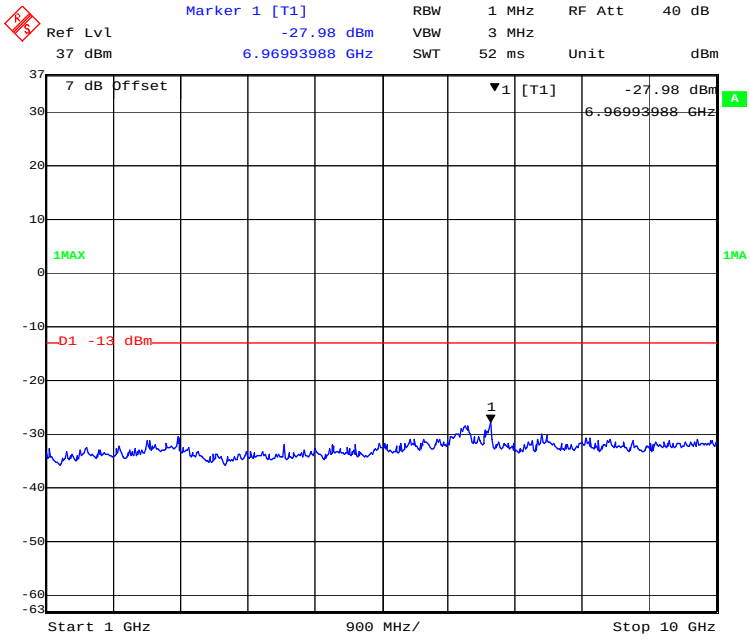
Date: 8.AUG.2019 10:44:16

30 MHz - 1 GHz (15.0 MHz, QPSK, Middle Channel)



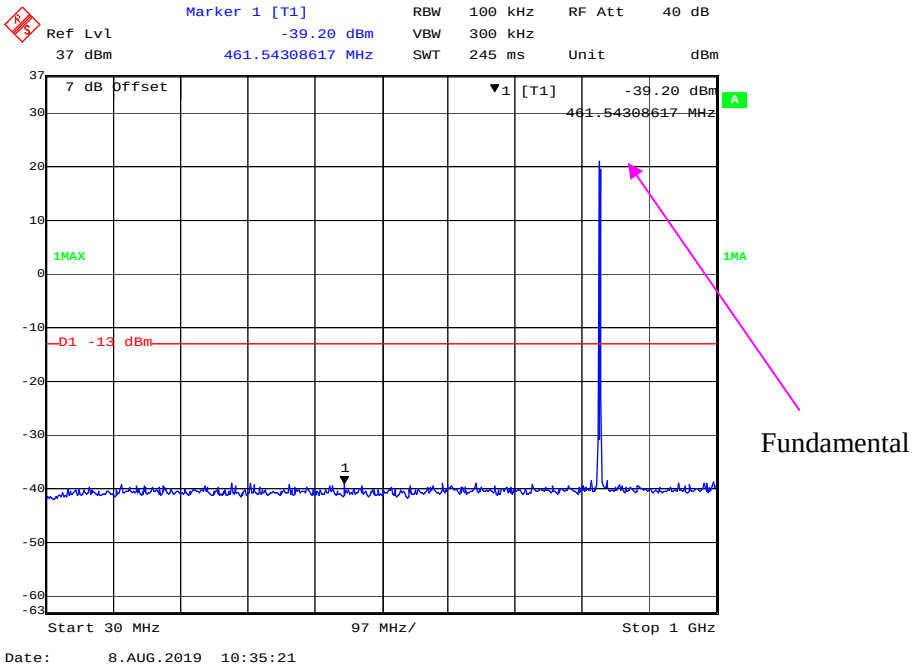
Date: 8.AUG.2019 11:24:23

1 GHz – 10 GHz (15.0 MHz, QPSK, Middle Channel)



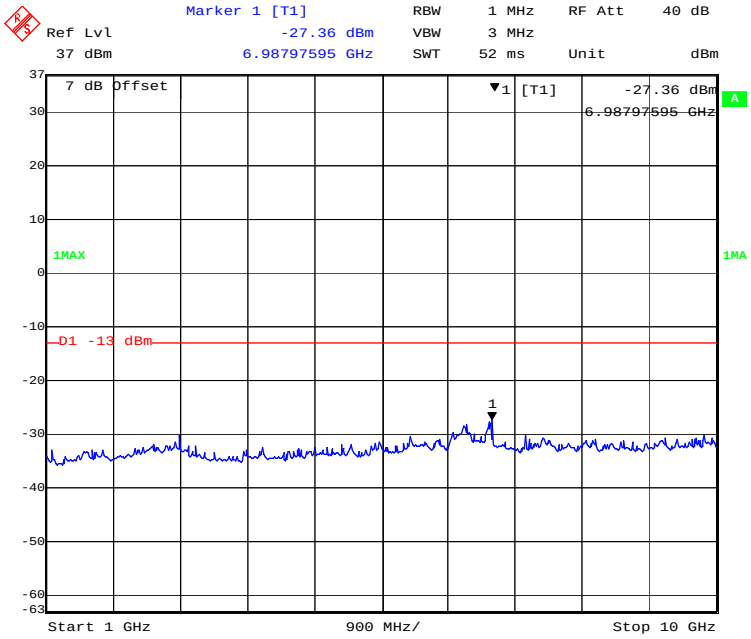
Date: 8.AUG.2019 10:45:10

30 MHz - 1 GHz (1.4 MHz, 16-QAM, Middle Channel)



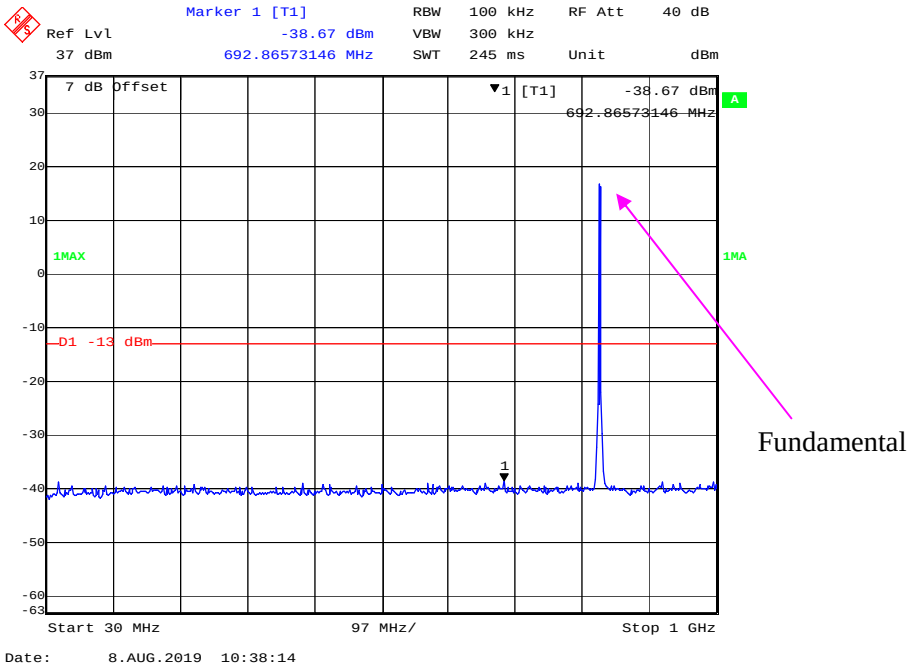
Date: 8.AUG.2019 10:35:21

1 GHz – 10 GHz (1.4 MHz, 16-QAM, Middle Channel)



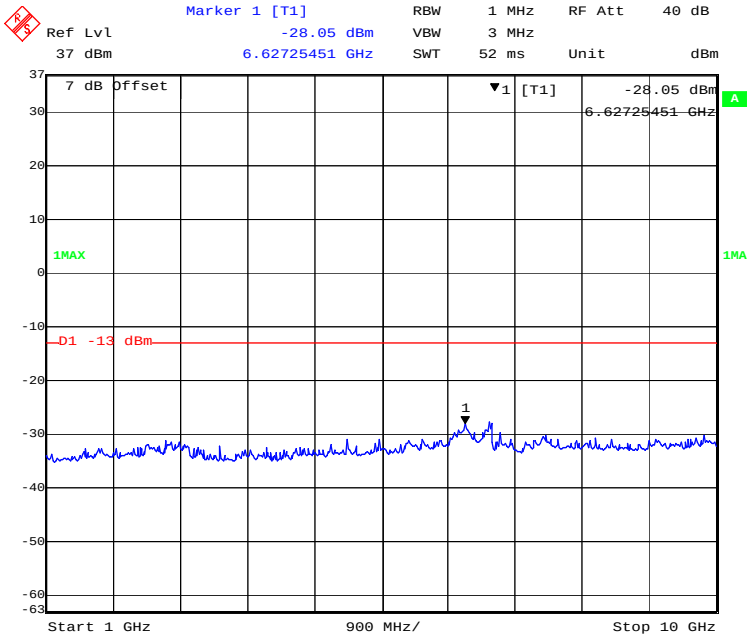
Date: 8.AUG.2019 10:34:38

30 MHz - 1 GHz (3.0 MHz, 16-QAM, Middle Channel)



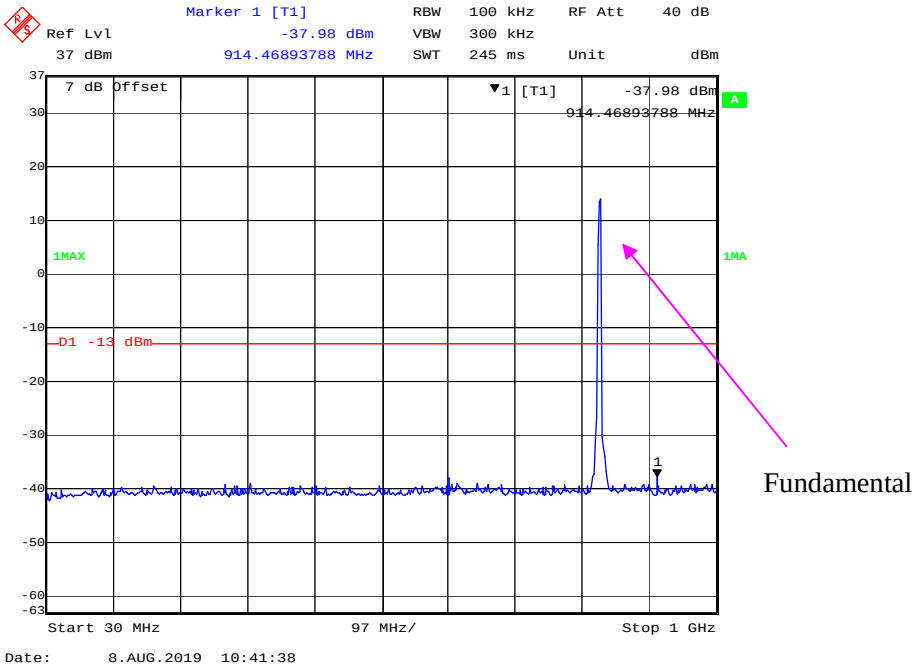
Date: 8.AUG.2019 10:38:14

1 GHz – 10 GHz (3.0 MHz, 16-QAM, Middle Channel)



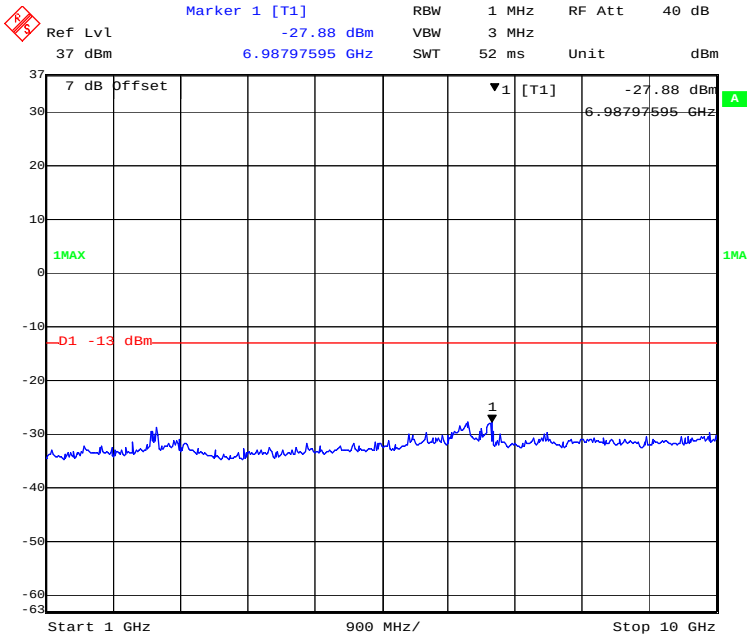
Date: 8.AUG.2019 10:38:40

30 MHz - 1 GHz (5.0 MHz, 16-QAM, Middle Channel)



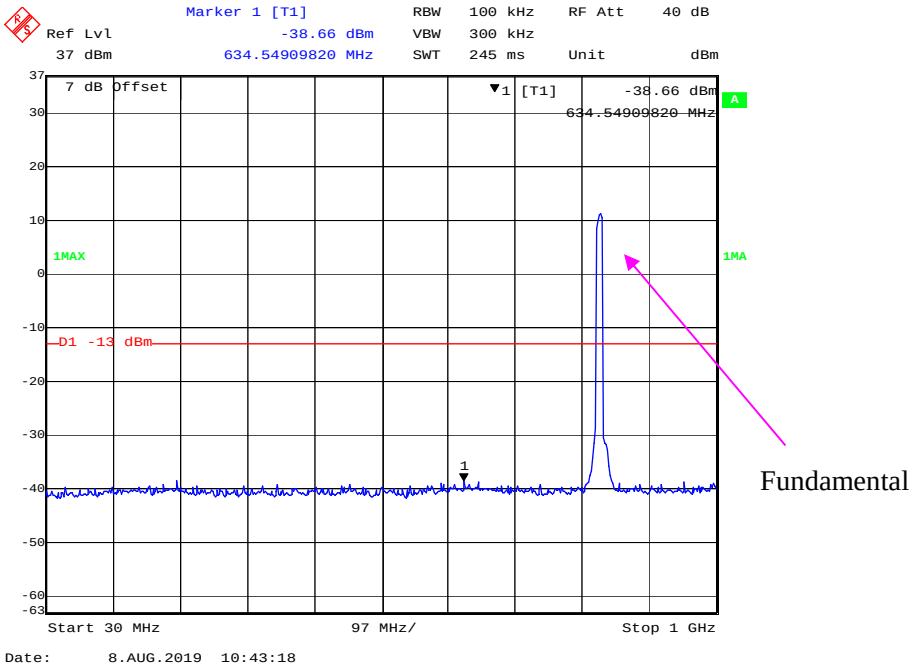
Date: 8.AUG.2019 10:41:38

1 GHz – 10 GHz (5.0MHz, 16-QAM, Middle Channel)



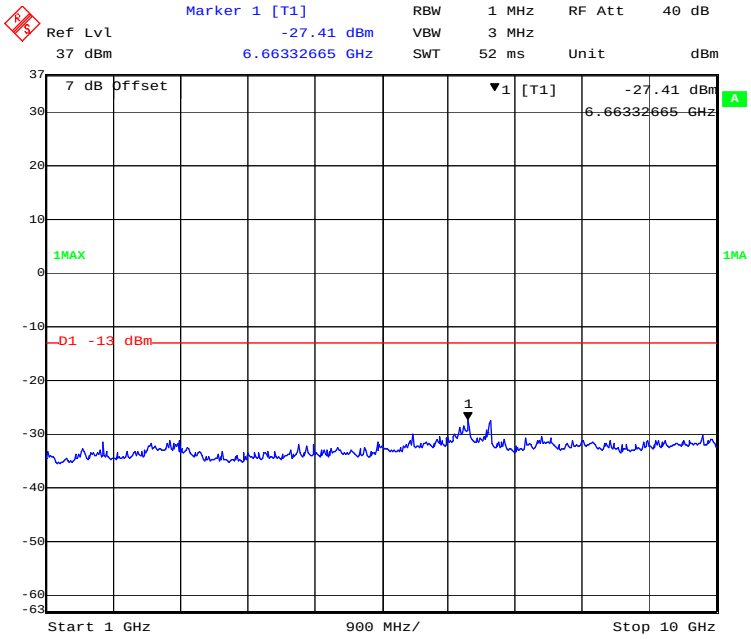
Date: 2.SEP.2019 19:28:11

30 MHz - 1 GHz (10.0 MHz, 16-QAM, Middle Channel)



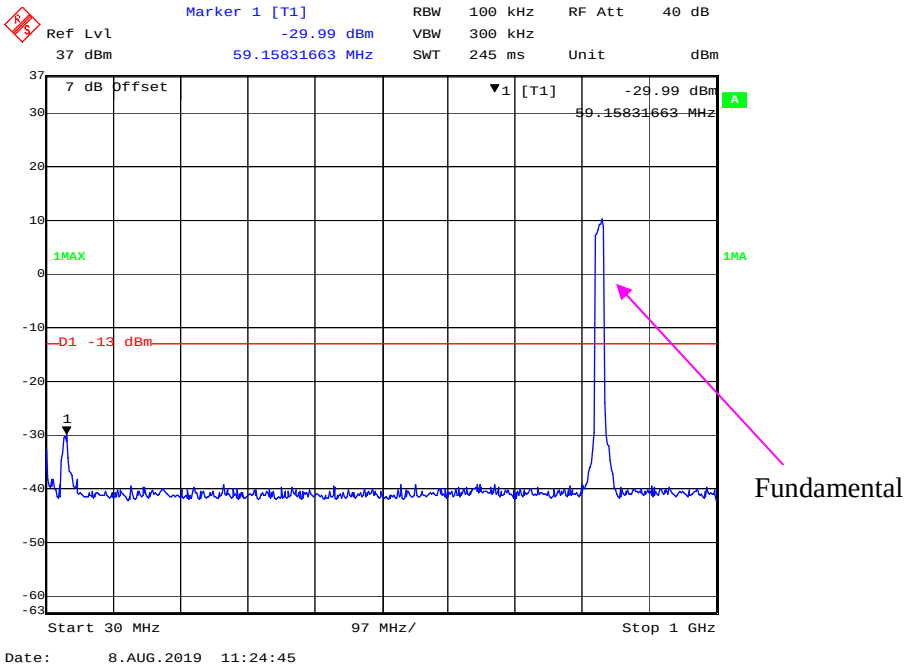
Date: 8.AUG.2019 10:43:18

1 GHz – 10 GHz (10.0 MHz, 16-QAM, Middle Channel)



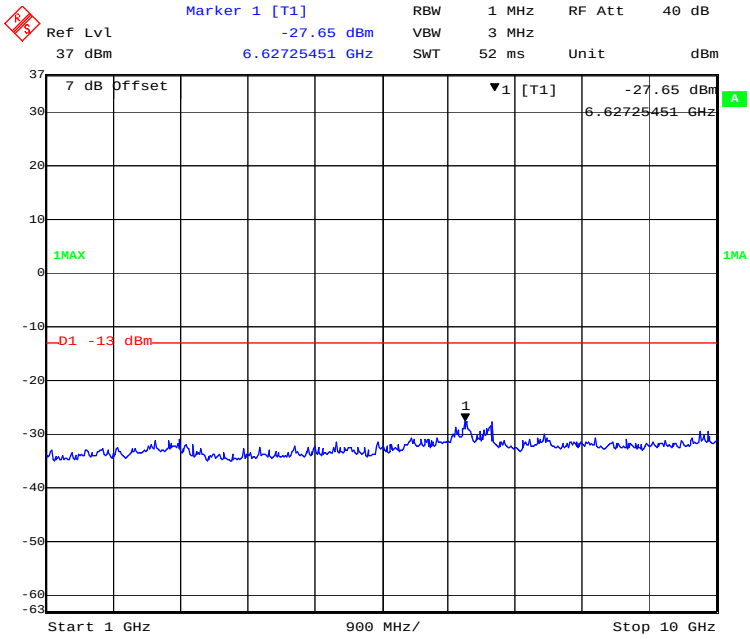
Date: 8.AUG.2019 10:43:41

30 MHz - 1 GHz (15.0 MHz, 16-QAM, Middle Channel)



Date: 8.AUG.2019 11:24:45

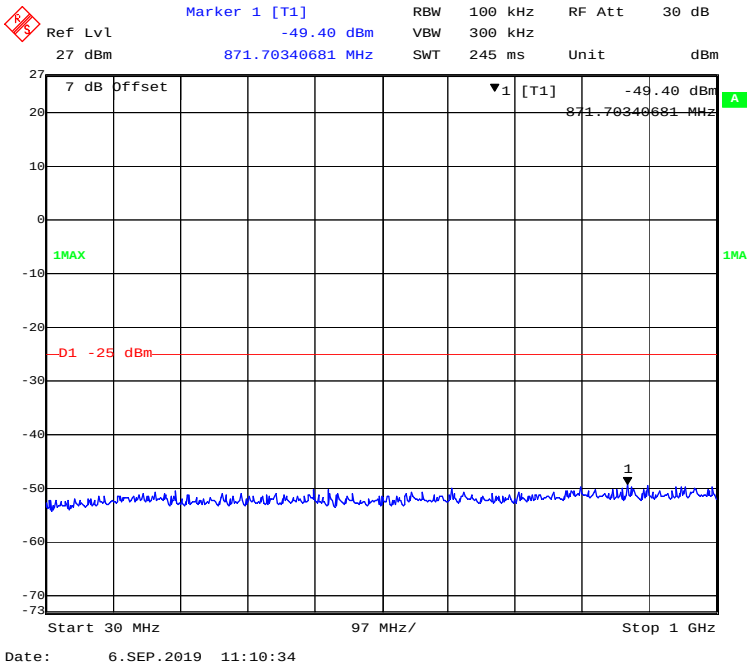
1 GHz – 10 GHz (15.0 MHz, 16-QAM, Middle Channel)



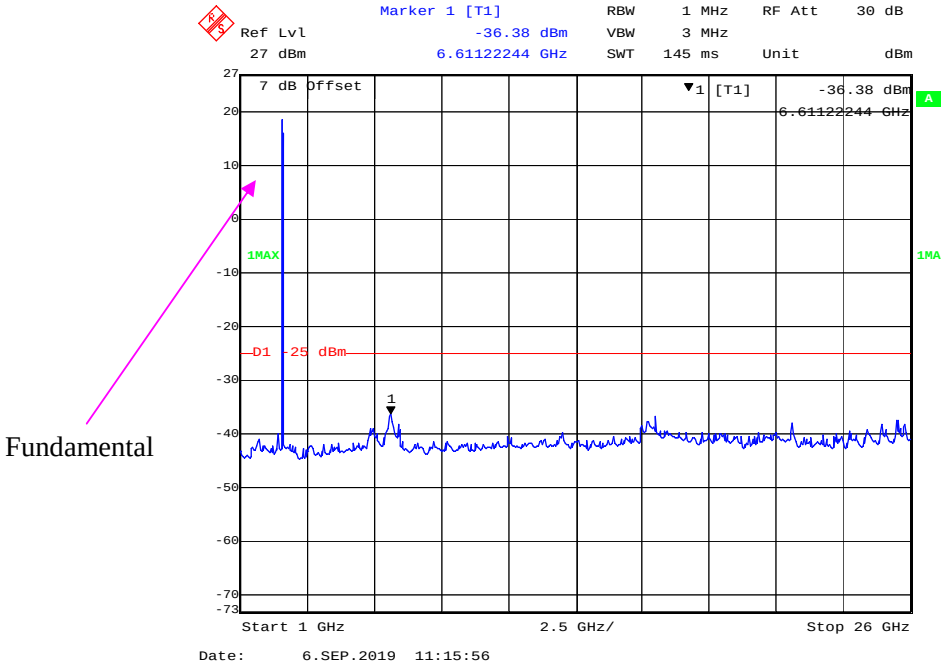
Date: 8.AUG.2019 10:44:40

LTE Band 38:

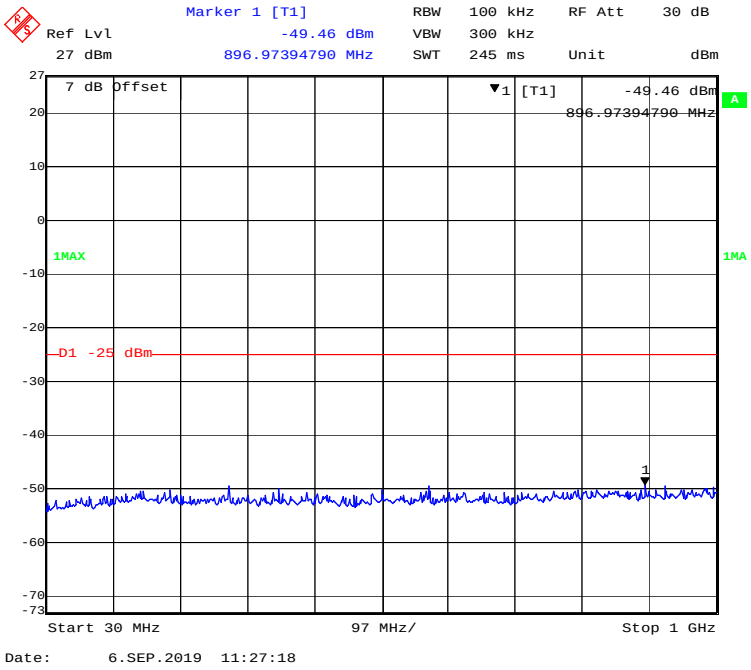
30 MHz - 1 GHz (5 MHz, QPSK, Middle Channel)



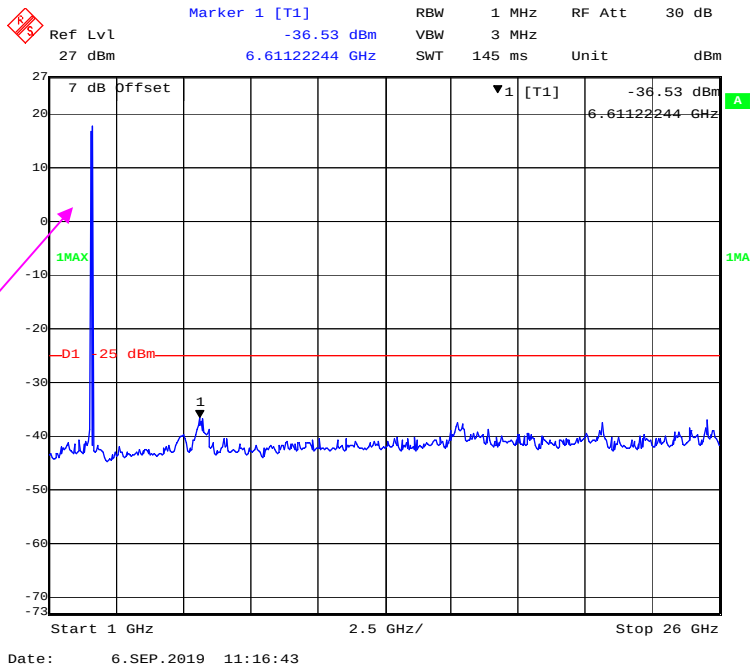
1 GHz – 26 GHz (5 MHz, QPSK, Middle Channel)



30 MHz - 1 GHz (10MHz, QPSK, Middle Channel)

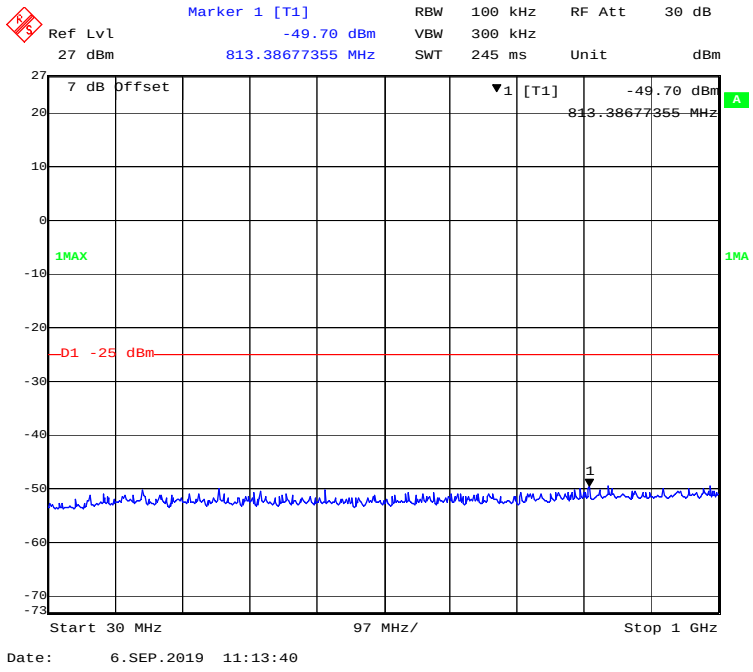


1 GHz – 26 GHz (10 MHz, QPSK, Middle Channel)

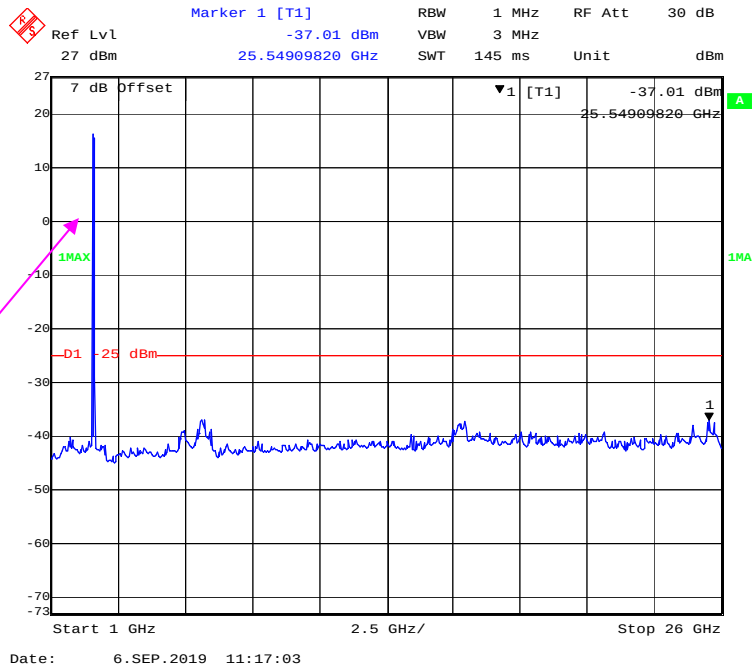


Fundamental

30 MHz - 1 GHz (15 MHz, QPSK, Middle Channel)

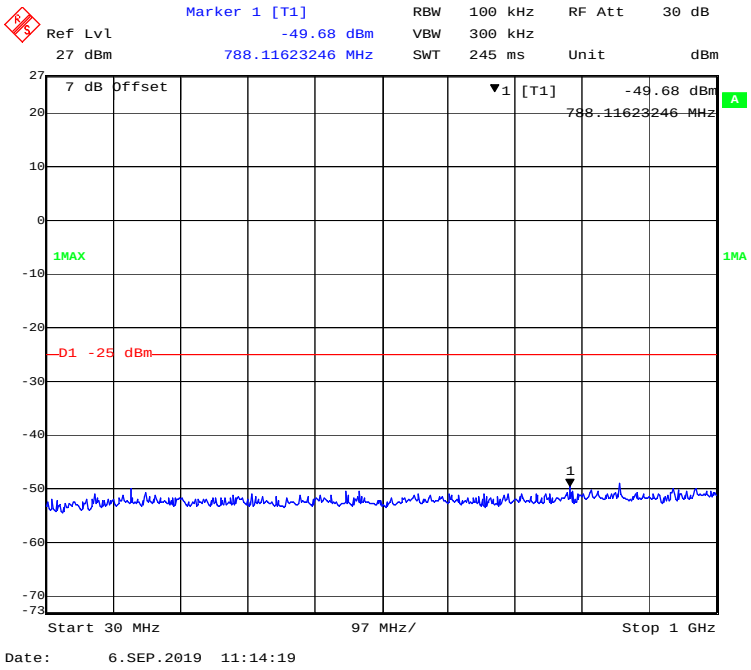


1 GHz – 26 GHz (15MHz, QPSK, Middle Channel)

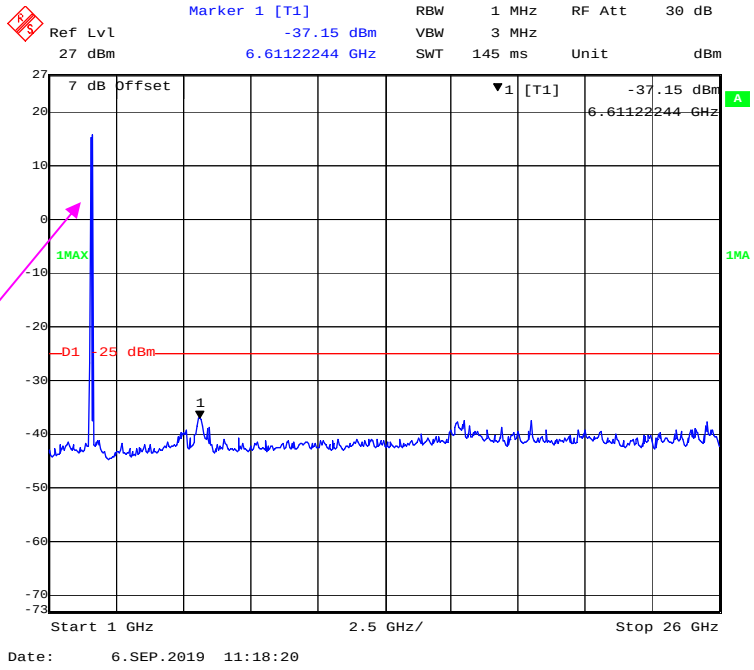


Fundamental

30 MHz - 1 GHz (20 MHz, QPSK, Middle Channel)

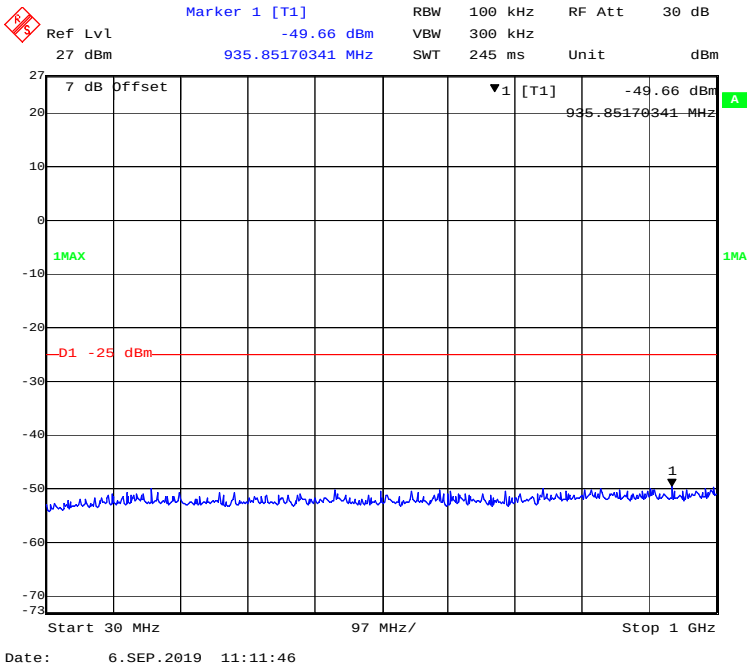


1 GHz – 26 GHz (20 MHz, QPSK, Middle Channel)

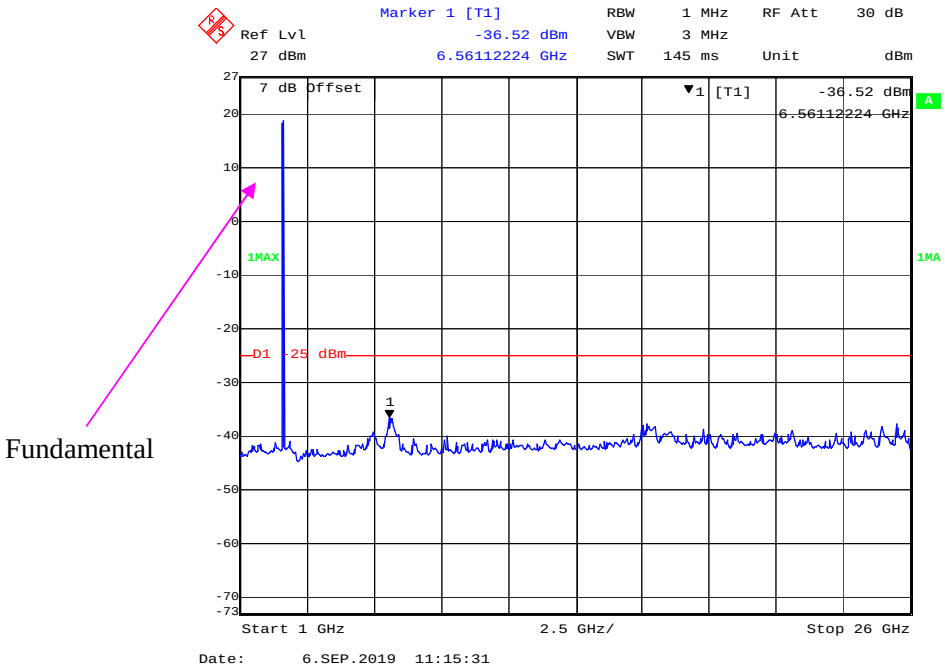


Fundamental

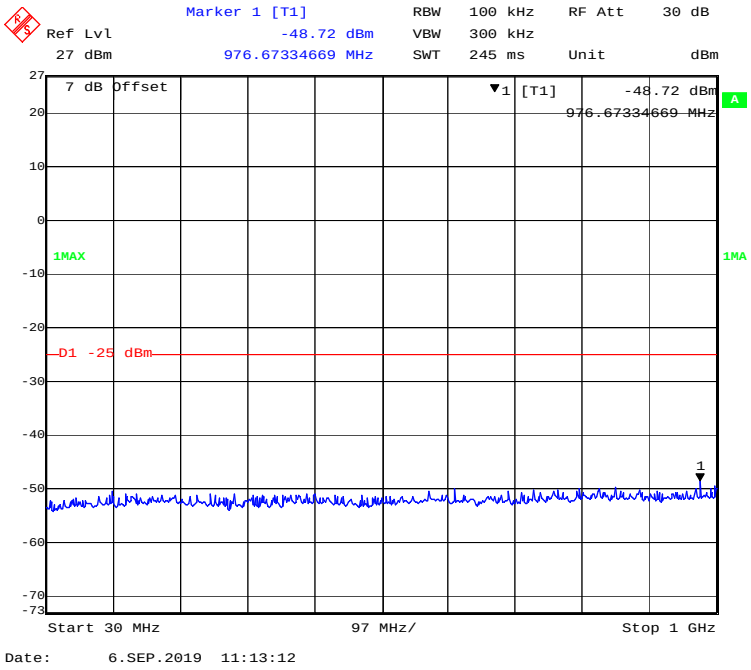
30 MHz - 1 GHz (5 MHz, 16-QAM, Middle Channel)



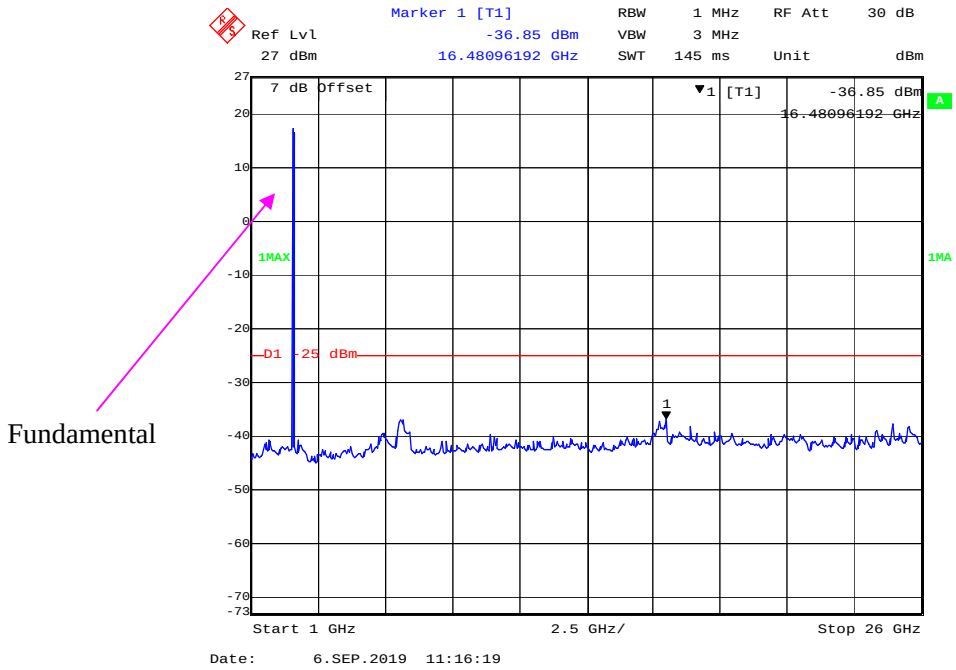
1 GHz – 26 GHz (5 MHz, 16-QAM, Middle Channel)



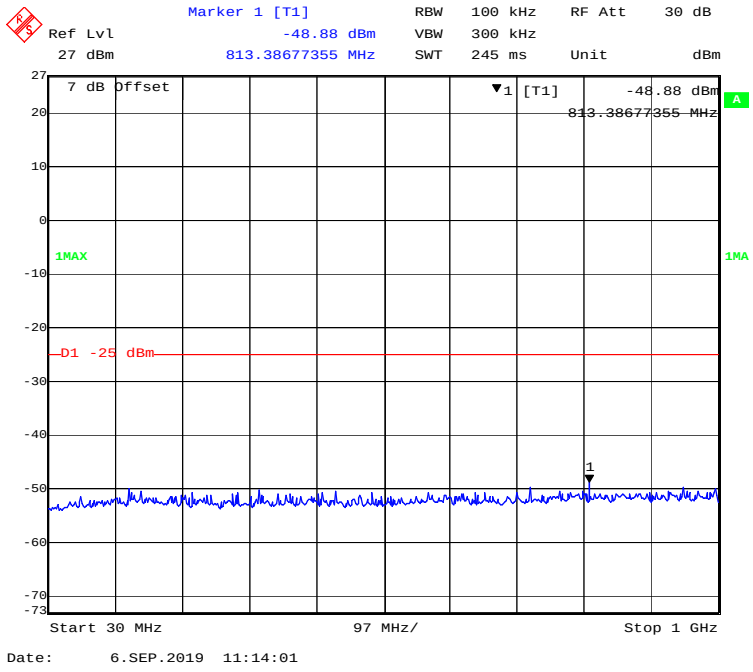
30 MHz - 1 GHz (10MHz, 16-QAM, Middle Channel)



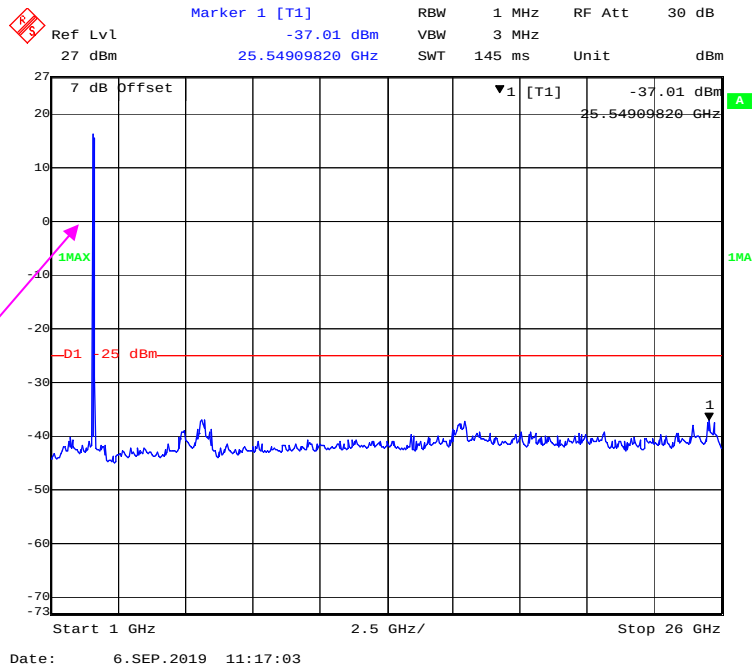
1 GHz – 26 GHz (10 MHz, 16-QAM, Middle Channel)



30 MHz - 1 GHz (15 MHz, 16-QAM, Middle Channel)

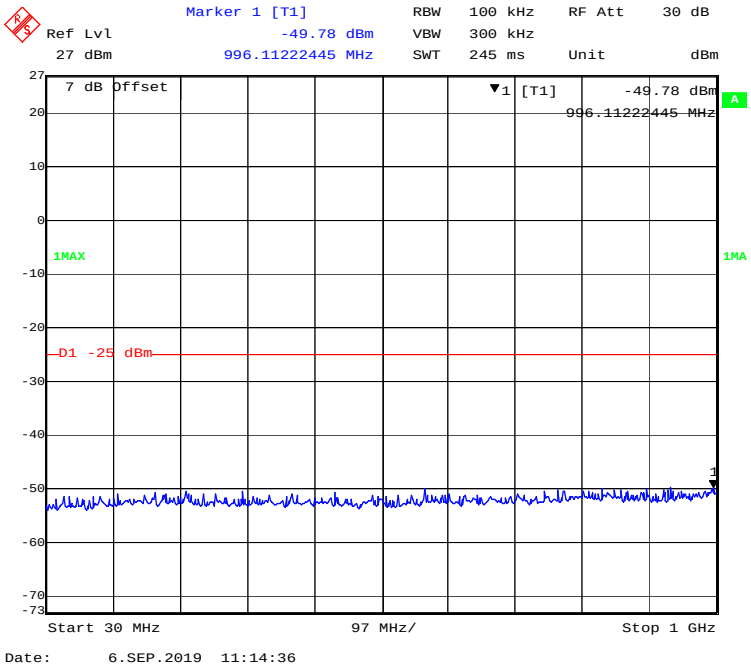


1 GHz – 26 GHz (15MHz, 16-QAM, Middle Channel)

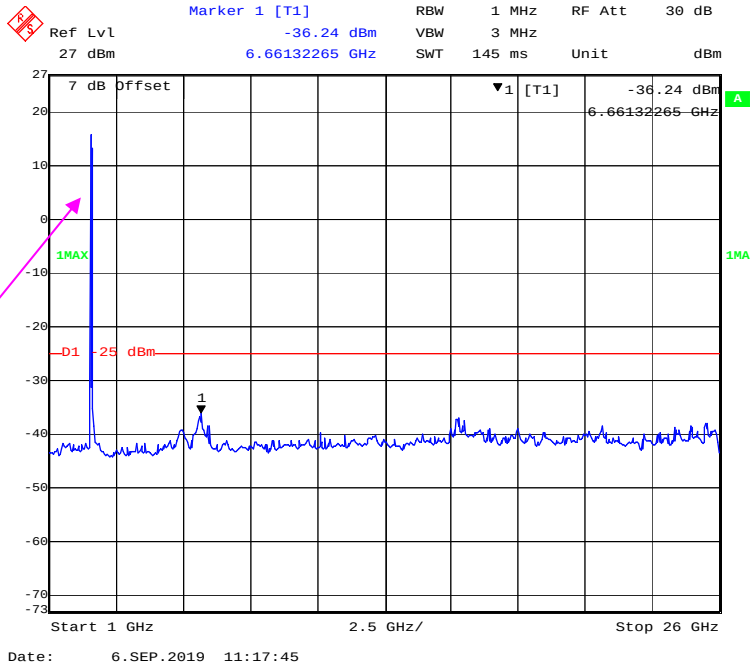


Fundamental

30 MHz - 1 GHz (20 MHz, 16-QAM, Middle Channel)



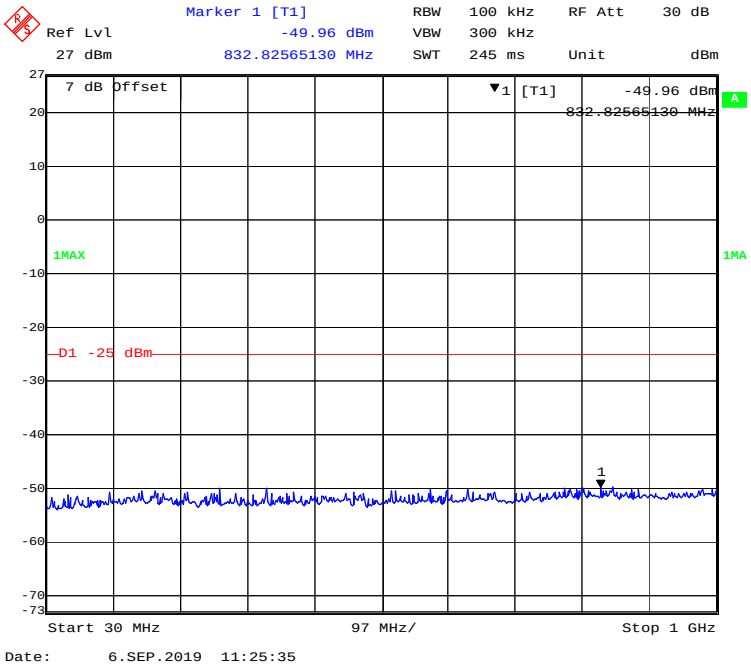
1 GHz – 26 GHz (20 MHz, 16-QAM, Middle Channel)



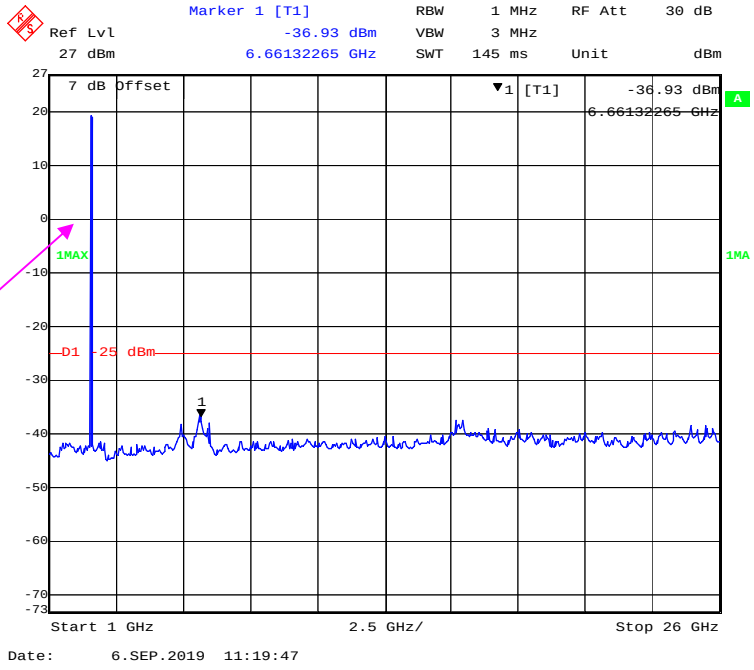
Fundamental

LTE Band 41:

30 MHz - 1 GHz (5 MHz, QPSK, Middle Channel)

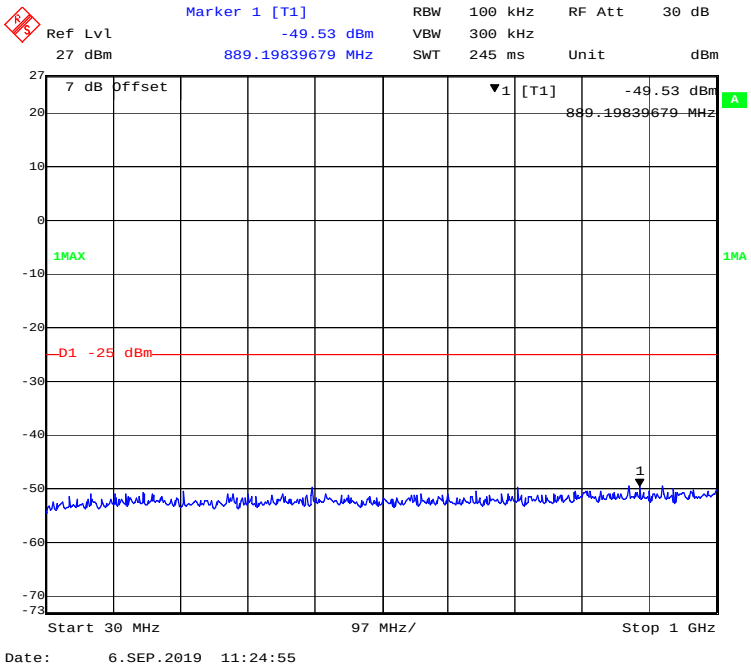


1 GHz – 26 GHz (5 MHz, QPSK, Middle Channel)

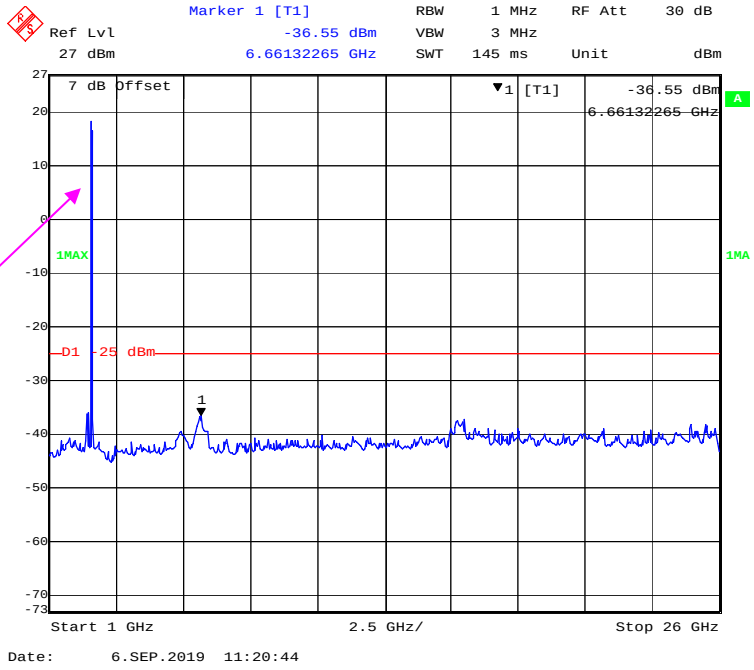


Fundamental

30 MHz - 1 GHz (10 MHz, QPSK, Middle Channel)

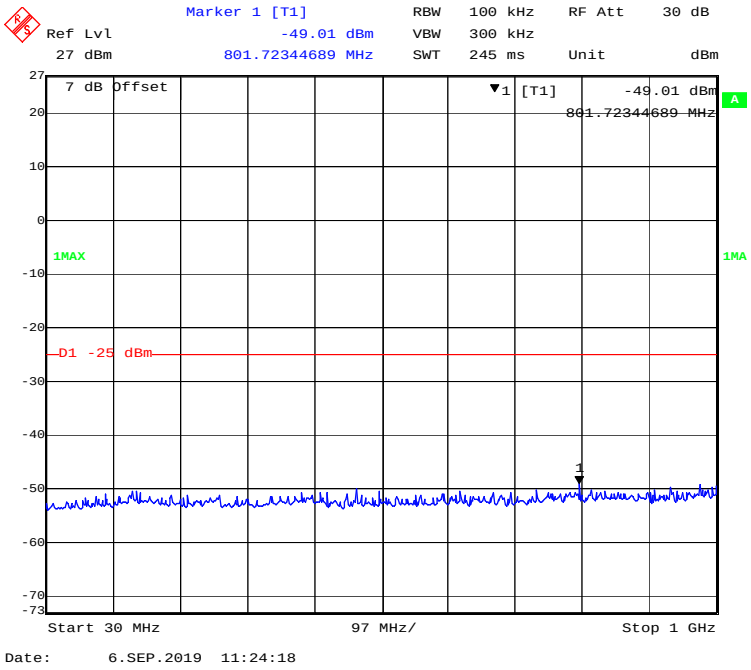


1 GHz –26 GHz (10 MHz, QPSK, Middle Channel)

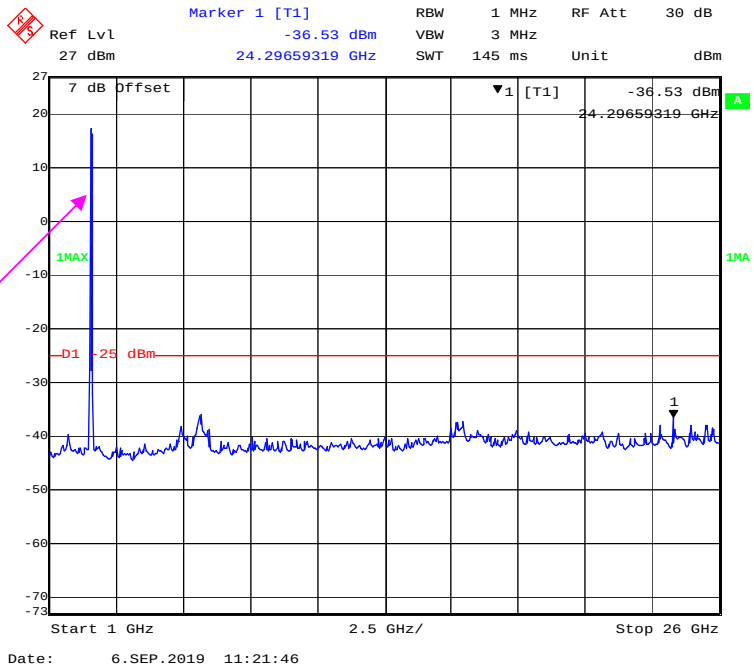


Fundamental

30 MHz - 1 GHz (15 MHz, QPSK, Middle Channel)

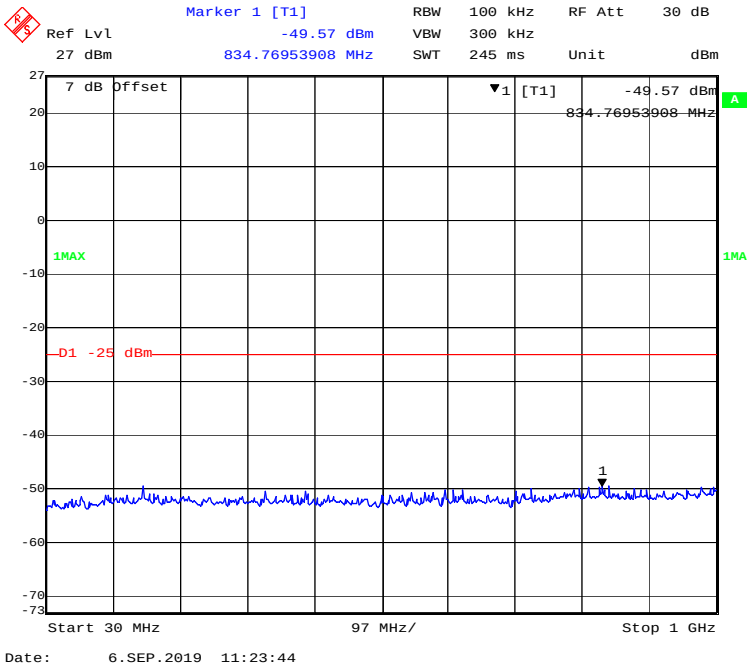


1 GHz – 26 GHz (15MHz, QPSK, Middle Channel)

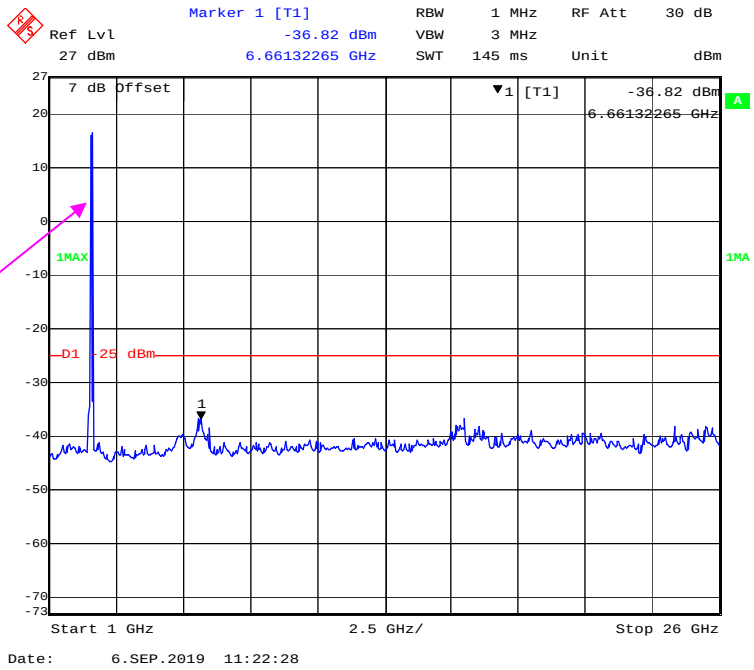


Fundamental

30 MHz - 1 GHz (20 MHz, QPSK, Middle Channel)

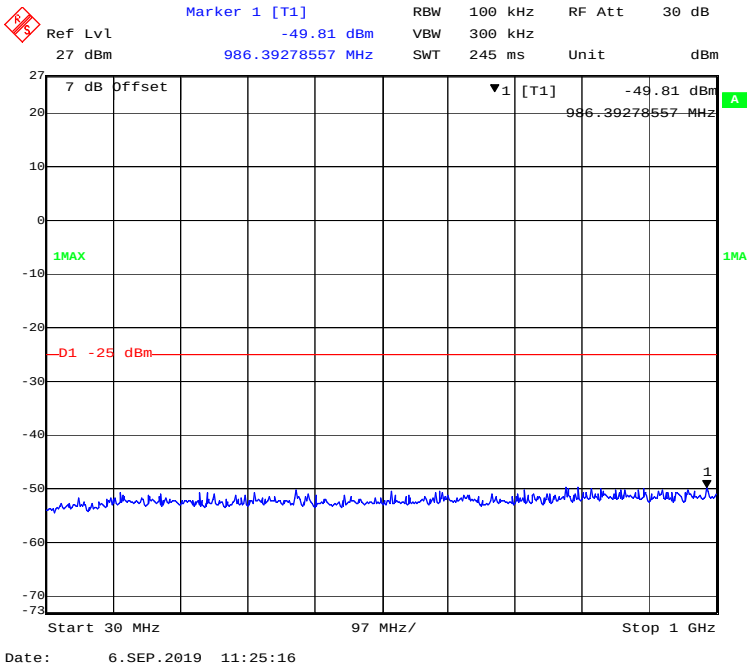


1 GHz – 26 GHz (20 MHz, QPSK, Middle Channel)

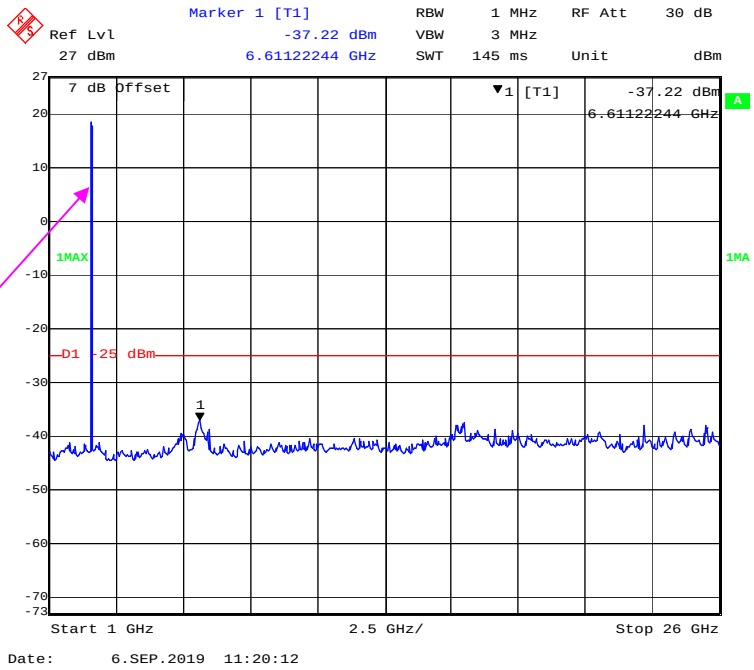


Fundamental

30 MHz - 1 GHz (5 MHz, 16-QAM, Middle Channel)

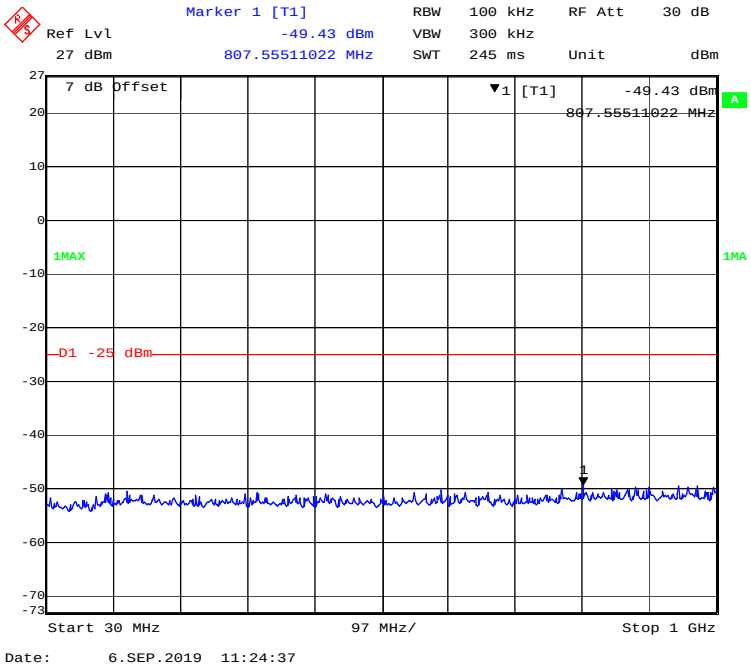


1 GHz – 26 GHz (5 MHz, 16-QAM, Middle Channel)

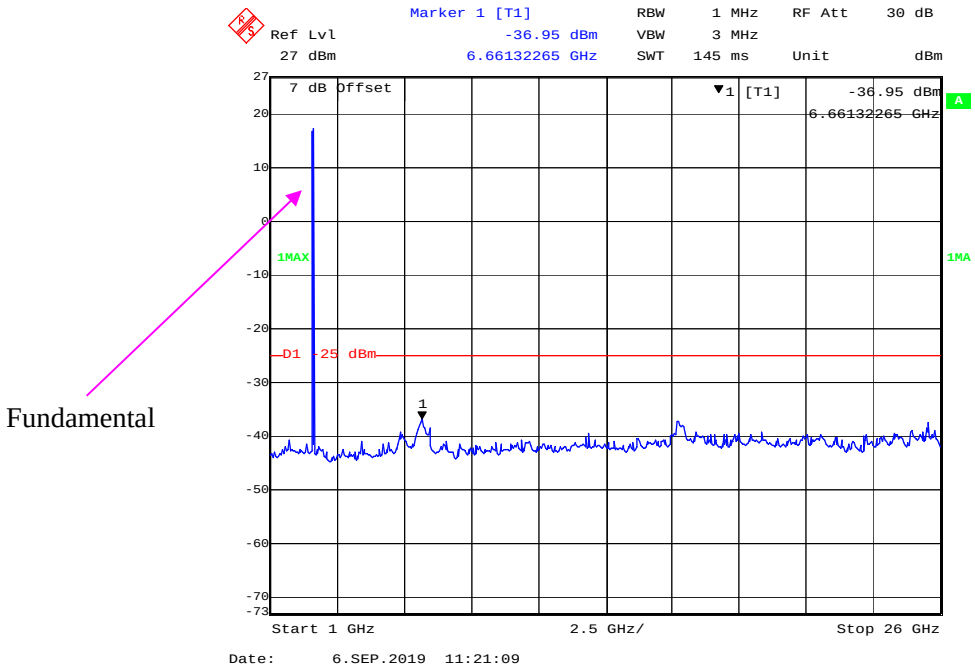


Fundamental

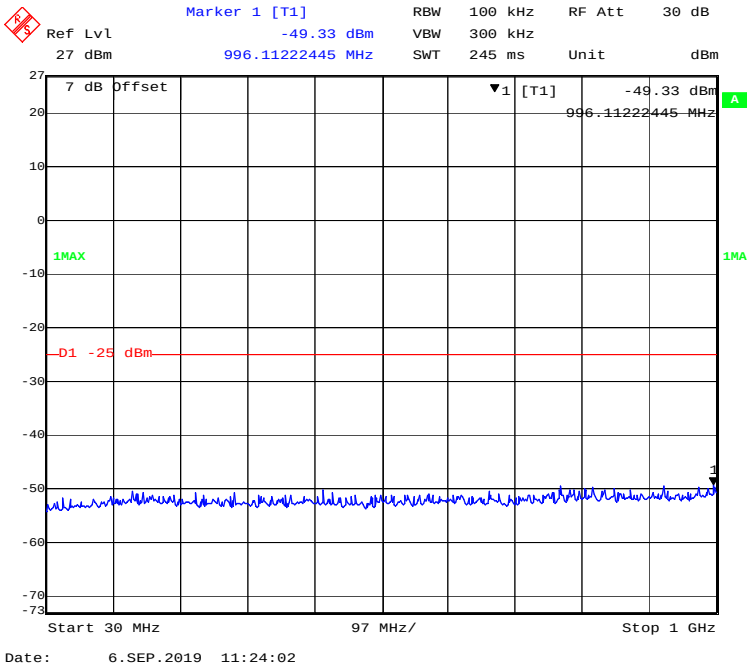
30 MHz - 1 GHz (10 MHz, 16-QAM, Middle Channel)



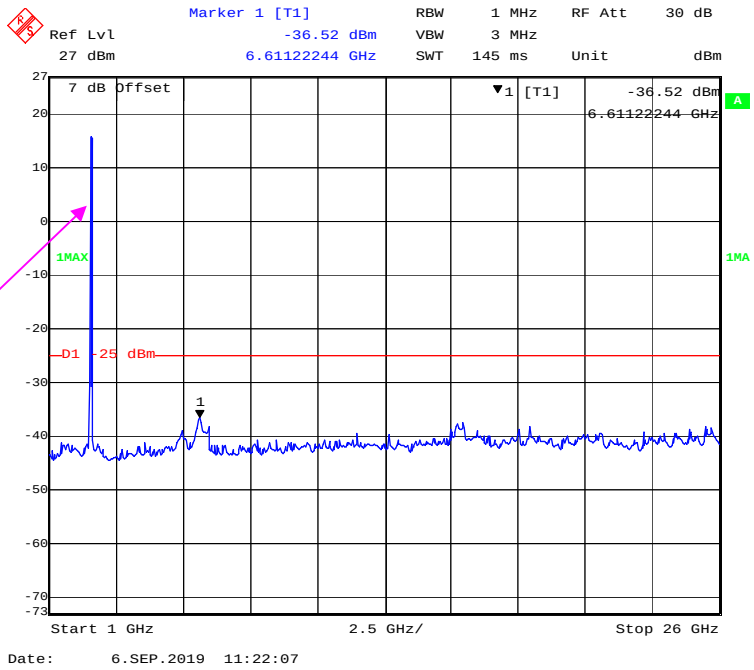
1 GHz –26 GHz (10 MHz, 16-QAM, Middle Channel)



30 MHz - 1 GHz (15 MHz, 16-QAM, Middle Channel)

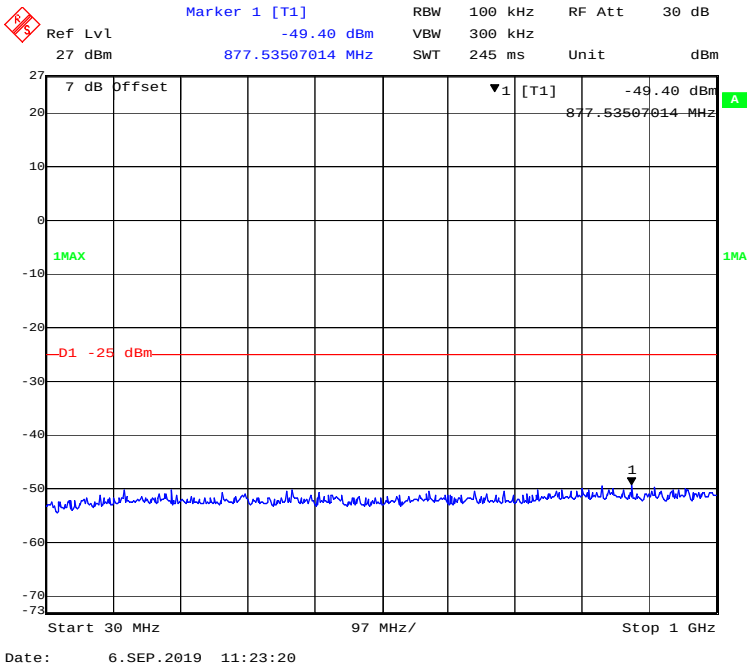


1 GHz – 26 GHz (15MHz, 16-QAM, Middle Channel)

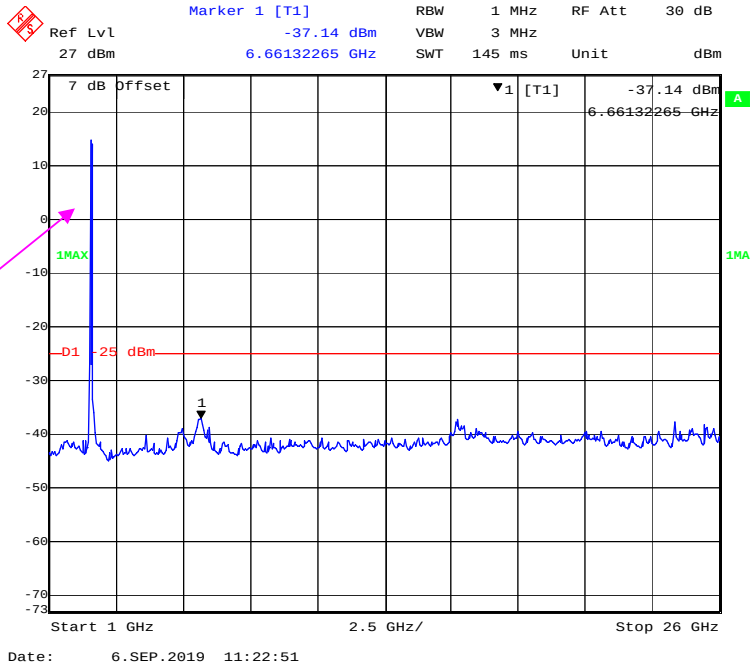


Fundamental

30 MHz - 1 GHz (20 MHz, 16-QAM, Middle Channel)



1 GHz – 26 GHz (20 MHz, 16-QAM, Middle Channel)



Fundamental

FCC § 2.1053; § 22.917 (a); § 24.238 (a); §27.53 (h) (m); § 90.691- SPURIOUS RADIATED EMISSIONS

Applicable Standards

FCC § 2.1053, §22.917(a) and § 24.238(a), §90.691 and § 27.53(h) (m)

22.917 (a) Out of band emissions. 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.

24.238 (a) Out of band emissions. 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.

27.53(h) (m), 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.

Rule Part 90.691 specifies that “The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log (P) dB.

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 (TX pwr in Watts/0.001) – the absolute level

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

Test Data

Environmental Conditions

Temperature:	23.2℃
Relative Humidity:	51 %
ATM Pressure:	101.3kPa

The testing was performed by Sam Ye on 2019-08-24.

Test mode: Transmitting (Pre-scan with low, middle and high channels, and the worse case data as below)

30 MHz ~ 10 GHz:

GSM 850 Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
GSM Mode, Middle channel										
49.01	46.12	145	190	H	-51.62	0.24	-13.25	-65.11	-13	52.11
49.01	45.56	60	155	V	-57.25	0.24	-13.25	-70.74	-13	57.74
1673.20	62.17	259	181	H	-41.22	0.84	8.48	-33.58	-13	20.58
1673.20	61.36	343	115	V	-42.53	0.84	8.48	-34.89	-13	21.89
2509.80	56.10	117	117	H	-44.84	0.89	10.09	-35.64	-13	22.64
2509.80	59.29	28	189	V	-41.66	0.89	10.09	-32.46	-13	19.46

WCDMA Band V

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
WCDMA Mode, Middle channel										
49.53	45.65	311	157	H	-52.90	0.25	-12.83	-65.98	-13	52.98
49.53	46.20	222	158	V	-57.29	0.25	-12.83	-70.37	-13	57.37
1672.80	39.98	103	176	H	-63.42	0.84	8.48	-55.78	-13	42.78
1672.80	43.00	47	193	V	-60.89	0.84	8.48	-53.25	-13	40.25
2509.20	41.29	314	130	H	-59.65	0.89	10.09	-50.45	-13	37.45
2509.20	43.08	358	116	V	-57.87	0.89	10.09	-48.67	-13	35.67

CDMA BC0 Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
CDMA BC0 1xRTT Mode, Middle channel										
37.95	43.26	84	178	H	-37.24	0.18	-22.15	-59.57	-13	46.57
37.95	44.58	355	181	V	-43.83	0.18	-22.15	-66.16	-13	53.16
1673.04	60.30	274	149	H	-43.09	0.84	8.48	-35.45	-13	22.45
1673.04	61.47	229	197	V	-42.42	0.84	8.48	-34.78	-13	21.78
2509.56	55.60	163	157	H	-45.34	0.89	10.09	-36.14	-13	23.14
2509.56	58.28	21	138	V	-42.67	0.89	10.09	-33.47	-13	20.47
CDMA BC0 1xEV-DO Mode, Middle channel										
37.95	43.26	141	107	H	-37.24	0.18	-22.15	-58.47	-13	45.47
37.95	44.58	158	148	V	-43.83	0.18	-22.15	-59.88	-13	46.88
1673.04	59.27	126	112	H	-44.12	0.84	8.48	-36.48	-13	23.48
1673.04	60.81	204	171	V	-43.08	0.84	8.48	-35.44	-13	22.44
2509.56	54.08	318	195	H	-46.86	0.89	10.09	-37.66	-13	24.66
2509.56	56.63	29	161	V	-44.32	0.89	10.09	-35.12	-13	22.12

30 MHz ~ 20 GHz:

PCS 1900 Band

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
GPRS Mode, Middle channel										
49.01	47.58	332	139	H	-50.16	0.24	-13.25	-63.65	-13	50.65
49.01	46.16	198	164	V	-56.65	0.24	-13.25	-70.14	-13	57.14
3760.00	43.67	176	127	H	-53.04	0.95	9.74	-44.25	-13	31.25
3760.00	41.20	228	126	V	-55.68	0.95	9.74	-46.89	-13	33.89
5640.00	44.38	282	139	H	-49.55	1.15	10.47	-40.23	-13	27.23
5640.00	42.10	260	146	V	-51.86	1.15	10.47	-42.54	-13	29.54

WCDMA Band II

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
WCDMA Mode, Middle channel										
49.01	43.87	150	117	H	-53.87	0.24	-13.25	-67.36	-13	54.36
49.01	46.29	354	152	V	-56.52	0.24	-13.25	-70.01	-13	57.01
3760.00	38.13	155	114	H	-58.58	0.95	9.74	-49.79	-13	36.79
3760.00	37.51	301	166	V	-59.37	0.95	9.74	-50.58	-13	37.58
5640.00	33.36	164	159	H	-60.57	1.15	10.47	-51.25	-13	38.25
5640.00	30.76	106	133	V	-63.20	1.15	10.47	-53.88	-13	40.88

WCDMA Band IV

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
WCDMA Mode, Middle channel										
49.01	45.54	220	170	H	-52.20	0.24	-13.25	-65.69	-13	52.69
49.01	47.96	308	166	V	-54.85	0.24	-13.25	-68.34	-13	55.34
3465.20	33.51	295	141	H	-64.10	0.93	9.87	-55.16	-13	42.16
3465.20	35.96	156	149	V	-62.19	0.93	9.87	-53.25	-13	40.25
5197.80	35.89	289	123	H	-58.98	1.10	10.30	-49.78	-13	36.78
5197.80	37.29	77	149	V	-57.87	1.10	10.30	-48.67	-13	35.67

CDMA BC1 Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
CDMA BC1 1xRTT Mode, Middle channel										
50.23	47.85	222	157	H	-51.49	0.25	-12.32	-64.06	-13	51.06
50.23	48.00	355	135	V	-56.13	0.25	-12.32	-68.70	-13	55.70
3760.00	43.34	35	123	H	-53.37	0.95	9.74	-44.58	-13	31.58
3760.00	41.55	274	120	V	-55.33	0.95	9.74	-46.54	-13	33.54
5640.00	29.74	70	131	H	-64.19	1.15	10.47	-54.87	-13	41.87
5640.00	27.86	286	181	V	-66.10	1.15	10.47	-56.78	-13	43.78
CDMA BC1 1xEV-DO Mode, Middle channel										
50.23	47.85	18	164	H	-51.49	0.25	-12.32	-60.78	-13	47.78
50.23	48.00	355	123	V	-56.13	0.25	-12.32	-65.48	-13	52.48
3760.00	42.30	145	191	H	-54.41	0.95	9.74	-45.62	-13	32.62
3760.00	40.93	216	179	V	-55.95	0.95	9.74	-47.16	-13	34.16
5640.00	31.90	128	143	H	-62.03	1.15	10.47	-52.71	-13	39.71
5640.00	30.95	113	104	V	-63.01	1.15	10.47	-53.69	-13	40.69

Note:
1) Absolute Level (dBm) = Submitted Level (dBm) - Cable loss (dB) + Antenna Gain (dBd/dBi)
2) Margin (dB) = Limit (dBm) - Absolute Level (dBm)

Test mode: Transmitting (Pre-scan with all the bandwidth, and worse case as below)

LTE Band 2 (30 MHz ~ 20 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
50.06	47.96	225	178	H	-51.34	0.25	-12.34	-63.93	-13	50.93
50.06	48.32	274	165	V	-55.79	0.25	-12.34	-68.38	-13	55.38
3760.00	46.27	105	149	H	-50.44	0.95	9.74	-41.65	-13	28.65
3760.00	44.93	240	131	V	-51.95	0.95	9.74	-43.16	-13	30.16
5640.00	30.29	202	134	H	-63.64	1.15	10.47	-54.32	-13	41.32
5640.00	29.17	217	140	V	-64.79	1.15	10.47	-55.47	-13	42.47
16-QAM 1.4MHz Bandwidth Middle Channel										
51.58	48.15	320	161	H	-51.53	0.25	-12.34	-64.12	-13	51.12
51.58	49.85	105	179	V	-54.42	0.25	-12.34	-67.01	-13	54.01
3760.00	43.30	288	118	H	-53.41	0.95	9.74	-44.62	-13	31.62
3760.00	40.90	128	147	V	-55.98	0.95	9.74	-47.19	-13	34.19
5640.00	35.62	338	168	H	-58.31	1.15	10.47	-48.99	-13	35.99
5640.00	33.19	132	183	V	-60.77	1.15	10.47	-51.45	-13	38.45

LTE Band 4 (30 MHz ~ 20 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
35.13	43.19	344	146	H	-32.92	0.25	-12.34	-45.51	-13	32.51
35.13	45.74	349	116	V	-39.00	0.25	-12.34	-51.59	-13	38.59
3465.00	49.90	332	104	H	-47.71	0.93	9.87	-38.77	-13	25.77
3465.00	48.65	5	156	V	-49.50	0.93	9.87	-40.56	-13	27.56
5197.50	41.04	94	165	H	-53.83	1.15	10.47	-44.51	-13	31.51
5197.50	38.97	335	139	V	-56.19	1.15	10.47	-46.87	-13	33.87
16-QAM 1.4MHz Bandwidth Middle Channel										
35.38	46.11	136	110	H	-30.38	0.25	-12.34	-42.97	-13	29.97
35.38	47.06	344	173	V	-38.00	0.25	-12.34	-50.59	-13	37.59
3465.00	48.93	224	197	H	-48.68	0.93	9.87	-39.74	-13	26.74
3465.00	46.55	32	117	V	-51.60	0.93	9.87	-42.66	-13	29.66
5197.50	38.76	303	139	H	-56.11	1.15	10.47	-46.79	-13	33.79
5197.50	35.37	261	155	V	-59.79	1.15	10.47	-50.47	-13	37.47

LTE Band 5 (30 MHz ~ 10 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
50.23	46.78	262	112	H	-52.56	0.25	-12.34	-65.15	-13	52.15
50.23	48.52	14	115	V	-55.61	0.25	-12.34	-68.20	-13	55.20
1673.00	53.13	320	192	H	-50.26	0.84	8.48	-42.62	-13	29.62
1673.00	51.47	238	101	V	-52.42	0.84	8.48	-44.78	-13	31.78
2509.50	48.17	166	187	H	-52.77	0.89	10.09	-43.57	-13	30.57
2509.50	44.01	240	159	V	-56.94	0.89	10.09	-47.74	-13	34.74
16-QAM 1.4MHz Bandwidth Middle Channel										
50.23	47.54	275	102	H	-51.80	0.25	-12.34	-64.39	-13	51.39
50.23	48.08	304	104	V	-56.05	0.25	-12.34	-68.64	-13	55.64
2509.80	49.15	188	100	H	-54.24	0.95	9.74	-45.45	-13	32.45
2509.80	47.23	244	156	V	-56.66	0.95	9.74	-47.87	-13	34.87
5640.00	47.50	182	198	H	-53.44	1.15	10.47	-44.12	-13	31.12
5640.00	45.67	143	132	V	-55.28	1.15	10.47	-45.96	-13	32.96

LTE Band 7 (30 MHz ~ 26 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Middle Channel										
49.71	45.52	288	154	H	-53.31	0.25	-12.34	-65.90	-25	40.90
49.71	46.85	246	174	V	-56.87	0.25	-12.34	-69.46	-25	44.46
5070.00	40.62	192	161	H	-54.66	1.09	10.30	-45.45	-25	20.45
5070.00	39.58	154	174	V	-56.06	1.09	10.30	-46.85	-25	21.85
7605.00	31.72	120	147	H	-58.93	1.78	10.08	-50.63	-25	25.63
7605.00	29.38	262	165	V	-61.44	1.78	10.08	-53.14	-25	28.14
16-QAM 5MHz Bandwidth Middle Channel										
49.71	45.15	175	115	H	-53.68	0.25	-12.34	-66.27	-25	41.27
49.71	47.85	31	159	V	-55.87	0.25	-12.34	-68.46	-25	43.46
5070.00	41.22	219	147	H	-54.06	1.09	10.30	-44.85	-25	19.85
5070.00	38.85	230	106	V	-56.79	1.09	10.30	-47.58	-25	22.58
7605.00	29.03	263	189	H	-61.62	1.78	10.08	-53.32	-25	28.32
7605.00	26.78	262	118	V	-64.04	1.78	10.08	-55.74	-25	30.74

LTE Band 12 (30 MHz ~ 10 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
50.23	45.15	324	111	H	-54.19	0.25	-12.34	-66.78	-13	53.78
50.23	47.85	289	181	V	-56.28	0.25	-12.34	-68.87	-13	55.87
1415.00	63.01	288	128	H	-41.74	0.82	7.96	-34.60	-13	21.60
1415.00	64.44	309	149	V	-40.71	0.82	7.96	-33.57	-13	20.57
2122.50	44.10	256	118	H	-57.16	0.86	9.27	-48.75	-13	35.75
2122.50	43.58	179	135	V	-57.96	0.86	9.27	-49.55	-13	36.55
16-QAM 1.4MHz Bandwidth Middle Channel										
50.23	44.79	72	146	H	-54.55	0.25	-12.34	-67.14	-13	54.14
50.23	46.87	119	197	V	-57.26	0.25	-12.34	-69.85	-13	56.85
1415.00	61.16	87	166	H	-43.59	0.82	7.96	-36.45	-13	23.45
1415.00	63.38	112	104	V	-41.77	0.82	7.96	-34.63	-13	21.63
2122.50	43.08	93	188	H	-58.18	0.86	9.27	-49.77	-13	36.77
2122.50	42.20	182	129	V	-59.34	0.86	9.27	-50.93	-13	37.93

LTE Band 17 (30 MHz ~ 10 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Middle Channel										
37.68	43.78	341	149	H	-36.30	0.25	-12.34	-48.89	-13	35.89
37.68	46.09	69	143	V	-41.97	0.25	-12.34	-54.56	-13	41.56
1420.00	56.72	45	121	H	-48.01	0.82	7.98	-40.85	-13	27.85
1420.00	59.28	139	164	V	-45.86	0.82	7.98	-38.70	-13	25.70
2130.00	35.97	351	187	H	-65.28	0.86	9.29	-56.85	-13	43.85
2130.00	39.62	38	111	V	-61.91	0.86	9.29	-53.48	-13	40.48
16-QAM 5MHz Bandwidth Middle Channel										
49.71	48.15	188	163	H	-50.68	0.25	-12.34	-63.27	-13	50.27
49.71	49.20	212	109	V	-54.52	0.25	-12.34	-67.11	-13	54.11
1420.00	54.35	31	175	H	-50.38	0.82	7.98	-43.22	-13	30.22
1420.00	58.24	12	169	V	-46.90	0.82	7.98	-39.74	-13	26.74
2130.00	38.71	143	158	H	-62.54	0.86	9.29	-54.11	-13	41.11
2130.00	42.47	234	108	V	-59.06	0.86	9.29	-50.63	-13	37.63

LTE Band 25 (30 MHz ~ 20 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
49.71	48.15	218	105	H	-50.68	0.25	-12.34	-63.27	-13	50.27
49.71	50.78	208	104	V	-52.94	0.25	-12.34	-65.53	-13	52.53
3760.00	48.67	268	198	H	-48.04	0.95	9.74	-39.25	-13	26.25
3760.00	46.46	192	100	V	-50.42	0.95	9.74	-41.63	-13	28.63
5640.00	37.63	84	179	H	-56.30	1.15	10.47	-46.98	-13	33.98
5640.00	39.09	1	172	V	-54.87	1.15	10.47	-45.55	-13	32.55
16-QAM 1.4MHz Bandwidth Middle Channel										
49.71	47.78	259	112	H	-51.05	0.25	-12.34	-63.64	-13	50.64
49.71	49.68	313	160	V	-54.04	0.25	-12.34	-66.63	-13	53.63
3760.00	49.45	240	165	H	-47.26	0.95	9.74	-38.47	-13	25.47
3760.00	47.84	47	138	V	-49.04	0.95	9.74	-40.25	-13	27.25
5640.00	40.46	66	118	H	-53.47	1.15	10.47	-44.15	-13	31.15
5640.00	40.90	315	147	V	-53.06	1.15	10.47	-43.74	-13	30.74

LTE Band 26 (30 MHz ~ 10 GHz)

Frequency (MHz)	Receiver Reading (dBµV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 1.4MHz Bandwidth Middle Channel										
49.71	49.87	12	160	H	-48.96	0.25	-12.34	-61.55	-13	48.55
49.71	51.47	66	149	V	-52.25	0.25	-12.34	-64.84	-13	51.84
1663.00	51.68	193	147	H	-51.78	0.84	8.46	-44.16	-13	31.16
1663.00	53.34	283	161	V	-50.62	0.84	8.46	-43.00	-13	30.00
2494.50	41.64	140	126	H	-59.36	0.89	10.09	-50.16	-13	37.16
2494.50	43.15	4	192	V	-57.86	0.89	10.09	-48.66	-13	35.66
16-QAM 1.4MHz Bandwidth Middle Channel										
49.71	46.78	72	158	H	-52.05	0.25	-12.34	-64.64	-13	51.64
49.71	48.77	265	169	V	-54.95	0.25	-12.34	-67.54	-13	54.54
1663.00	49.48	20	137	H	-53.98	0.84	8.46	-46.36	-13	33.36
1663.00	51.87	137	108	V	-52.09	0.84	8.46	-44.47	-13	31.47
2494.50	42.33	61	188	H	-58.67	0.89	10.09	-49.47	-13	36.47
2494.50	43.89	98	123	V	-57.12	0.89	10.09	-47.92	-13	34.92

LTE Band 38 (30 MHz ~ 26 GHz)

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Middle Channel										
35.01	45.70	233	111	H	-30.22	0.25	-12.34	-42.81	-25	17.81
35.01	46.96	351	123	V	-37.62	0.25	-12.34	-50.21	-25	25.21
5190.00	43.03	178	124	H	-51.86	1.10	10.30	-42.66	-25	17.66
5190.00	45.49	129	153	V	-49.70	1.10	10.30	-40.50	-25	15.50
7785.00	35.94	13	105	H	-54.18	1.81	10.04	-45.95	-25	20.95
7785.00	35.25	329	166	V	-55.01	1.81	10.04	-46.78	-25	21.78
16-QAM 5MHz Bandwidth Middle Channel										
35.01	46.52	353	172	H	-29.40	0.25	-12.34	-41.99	-25	16.99
35.01	48.86	40	185	V	-35.72	0.25	-12.34	-48.31	-25	23.31
5190.00	40.91	197	139	H	-53.98	1.10	10.30	-44.78	-25	19.78
5190.00	42.73	135	125	V	-52.46	1.10	10.30	-43.26	-25	18.26
7785.00	34.93	120	170	H	-55.19	1.81	10.04	-46.96	-25	21.96
7785.00	34.89	296	151	V	-55.37	1.81	10.04	-47.14	-25	22.14

LTE Band 41 (30 MHz ~ 26 GHz)

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (cm)	Polar (H/V)	Submitted Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
QPSK 5MHz Bandwidth Middle Channel										
35.50	46.74	19	200	H	-29.94	0.25	-12.34	-42.53	-25	17.53
35.50	48.47	213	199	V	-36.75	0.25	-12.34	-49.34	-25	24.34
5186.00	45.50	134	117	H	-49.40	1.10	10.30	-40.20	-25	15.20
5186.00	42.84	223	192	V	-52.36	1.10	10.30	-43.16	-25	18.16
7779.00	41.28	7	157	H	-48.86	1.81	10.04	-40.63	-25	15.63
7779.00	39.90	118	159	V	-50.37	1.81	10.04	-42.14	-25	17.14
16-QAM 5MHz Bandwidth Middle Channel										
35.50	45.14	122	189	H	-31.54	0.25	-12.34	-44.13	-25	19.13
35.50	47.54	335	124	V	-37.68	0.25	-12.34	-50.27	-25	25.27
5186.00	46.26	69	106	H	-48.64	1.10	10.30	-39.44	-25	14.44
5186.00	44.64	256	148	V	-50.56	1.10	10.30	-41.36	-25	16.36
7779.00	38.95	199	106	H	-51.19	1.81	10.04	-42.96	-25	17.96
7779.00	37.33	135	177	V	-52.94	1.81	10.04	-44.71	-25	19.71

Note:
1) Absolute Level (dBm) = Submitted Level (dBm) - Cable loss (dB) + Antenna Gain (dBd/dBi)
2) Margin (dB) = Limit (dBm) - Absolute Level (dBm)

FCC § 22.917 (a); § 24.238 (a); §27.53 (h) (m); § 90.691 - BAND EDGES

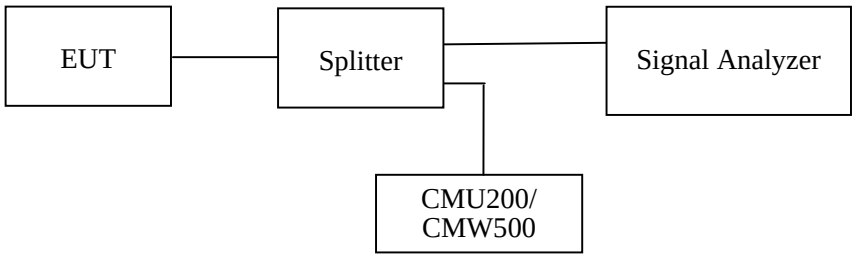
Applicable Standards

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 FCC §27.53 (h) (m), 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.
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.
FCC §2.1051 and §90.691(a).The power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or less, but at least one percent of the emission bandwidth of the fundamental emission of the transmitter, provided the measured energy is integrated over a 1 MHz bandwidth.

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 Data

Environmental Conditions

Temperature:	23.2 ℃-23.5 ℃
Relative Humidity:	51 %-23 %
ATM Pressure:	101.1 kPa-103.3 kPa

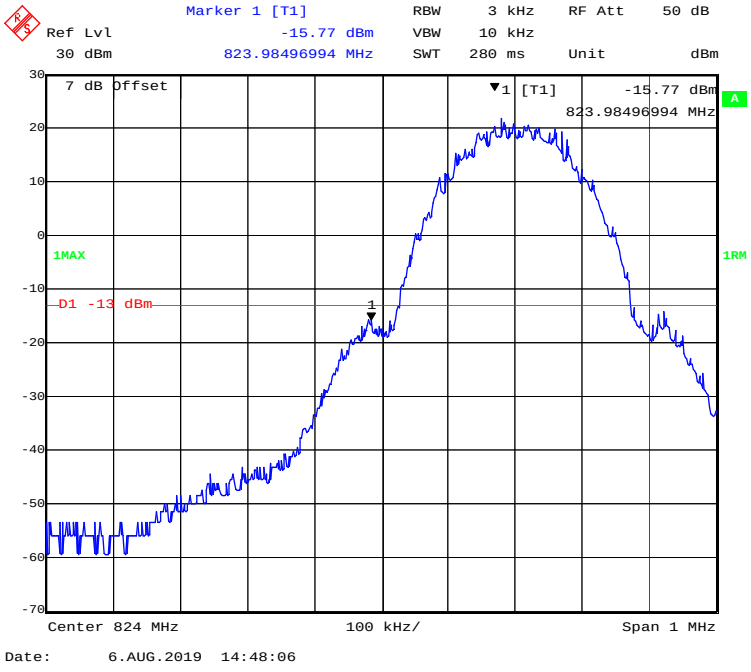
The testing was performed by Sam Ye from 2019-08-06 to 2019-09-02.

EUT operation mode: Transmitting

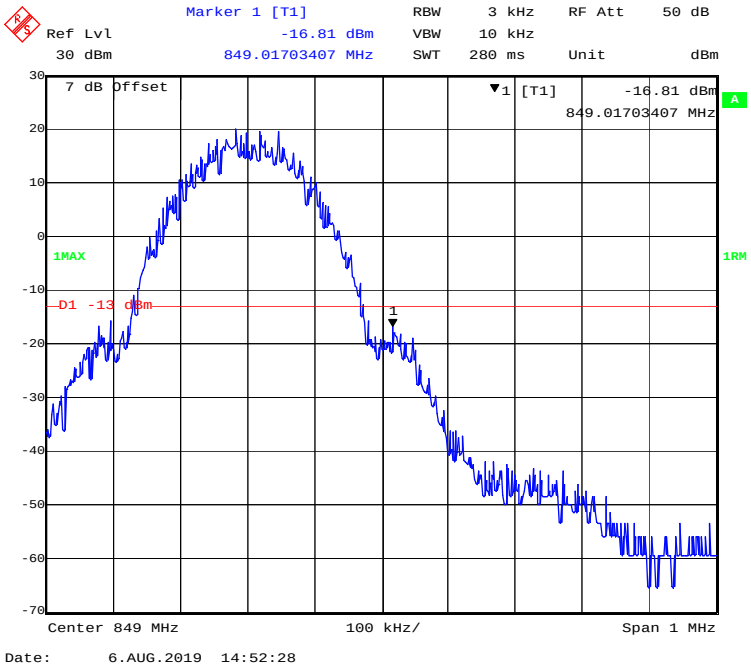
Test Result: Compliant.

GSM 850 Band:

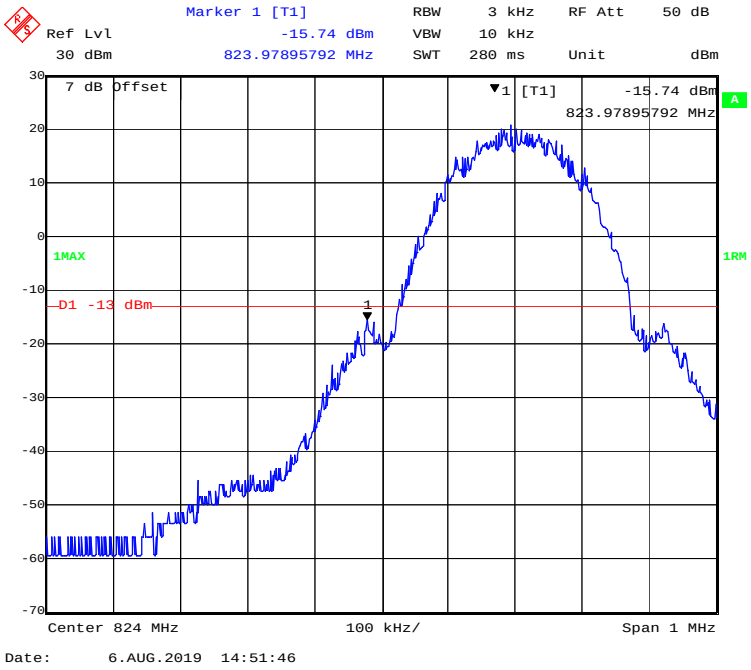
GPRS Mode, Left Band Edge



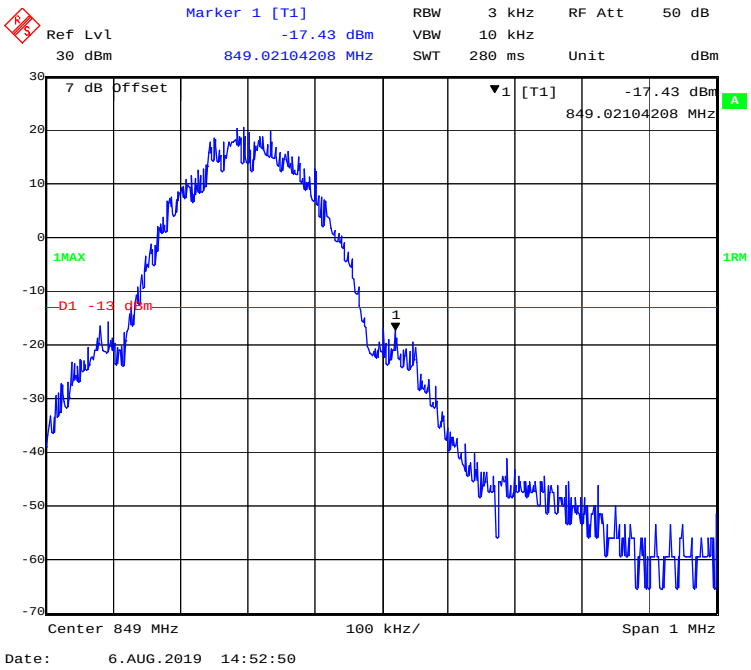
GPRS Mode, Right Band Edge



EGPRS Mode, Left Band Edge

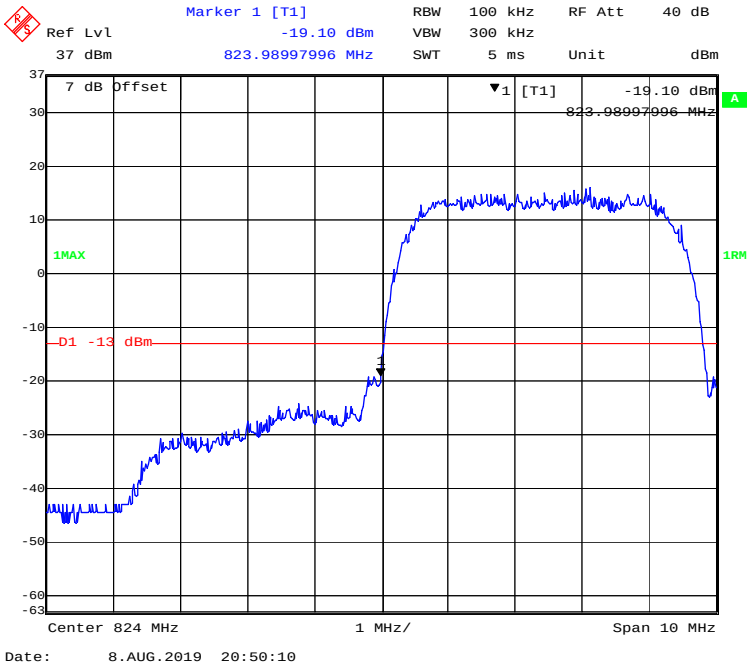


EGPRS Mode, Right Band Edge

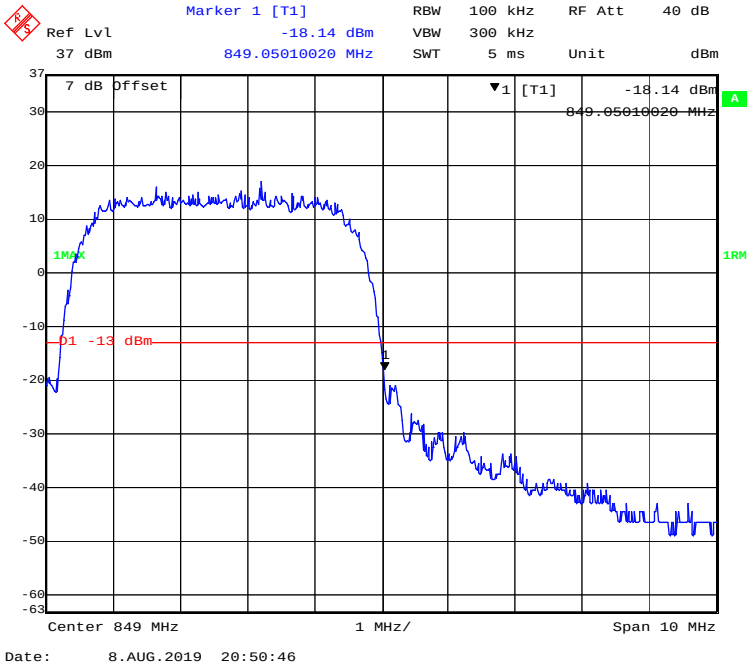


WCDMA Band V

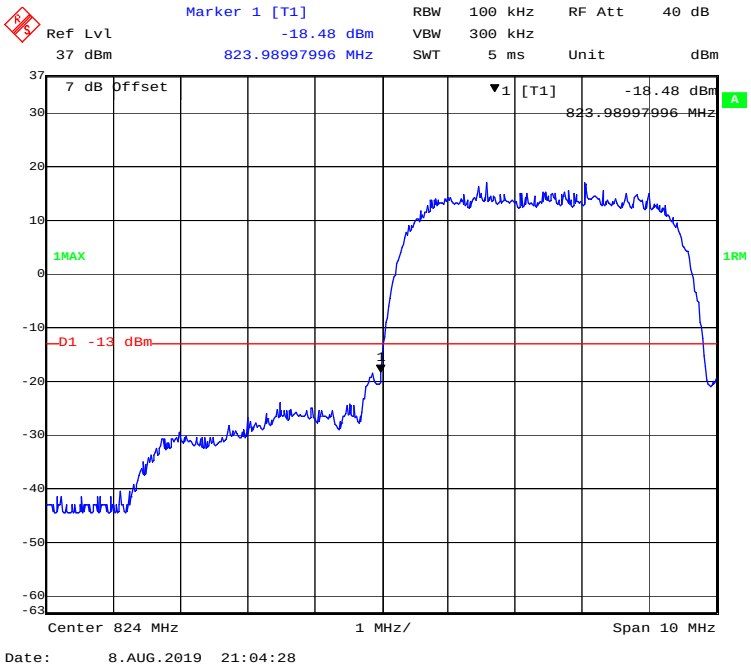
WCDMA (Rel 99) Mode, Left Band Edge



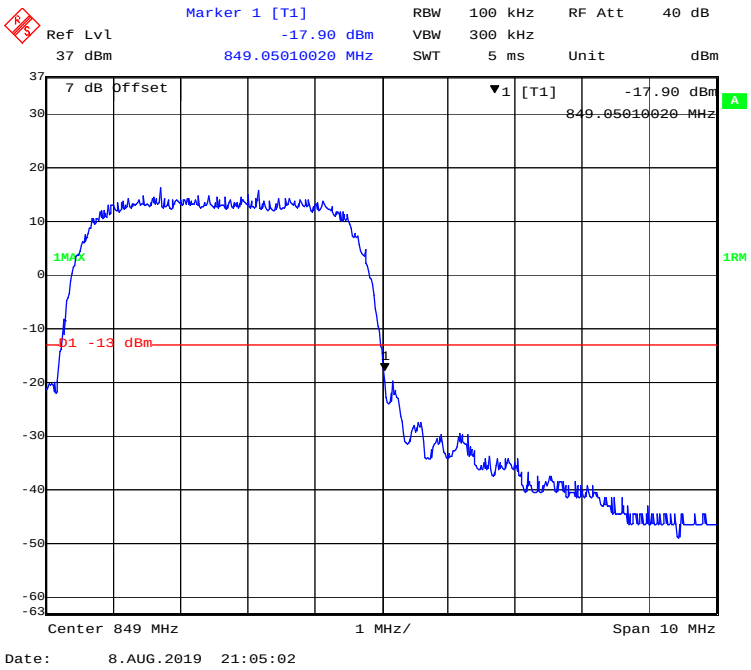
WCDMA (Rel 99) Mode, Right Band Edge



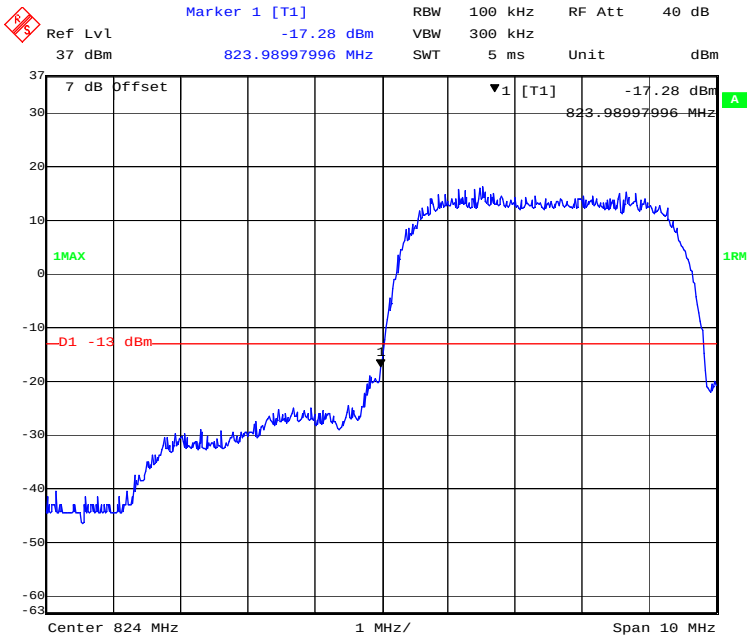
WCDMA (HSDPA) Mode, Left Band Edge



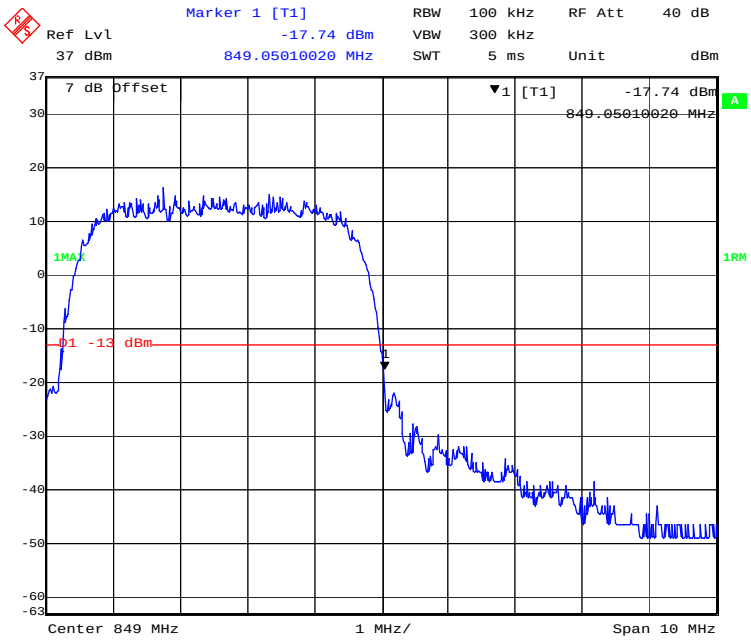
WCDMA (HSDPA) Mode, Right Band Edge



WCDMA (HSUPA) Mode, Left Band Edge

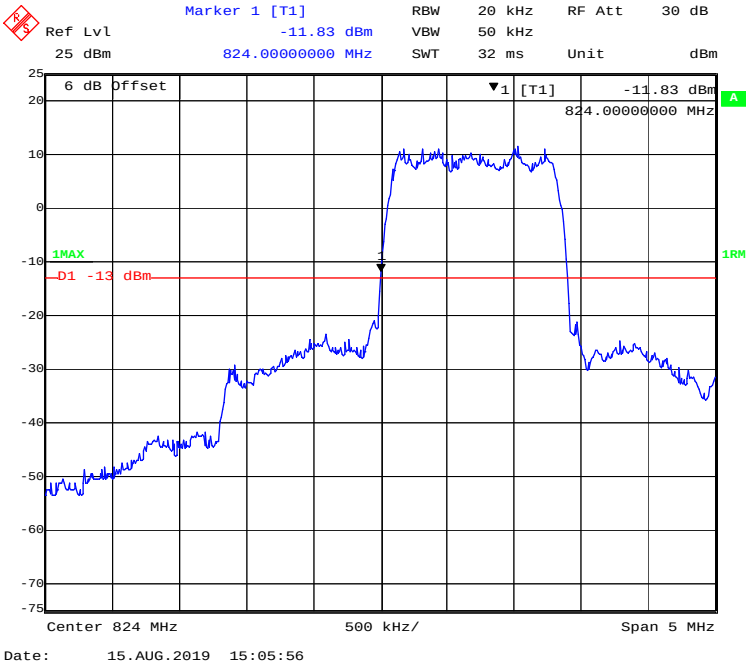


WCDMA (HSUPA) Mode, Right Band Edge



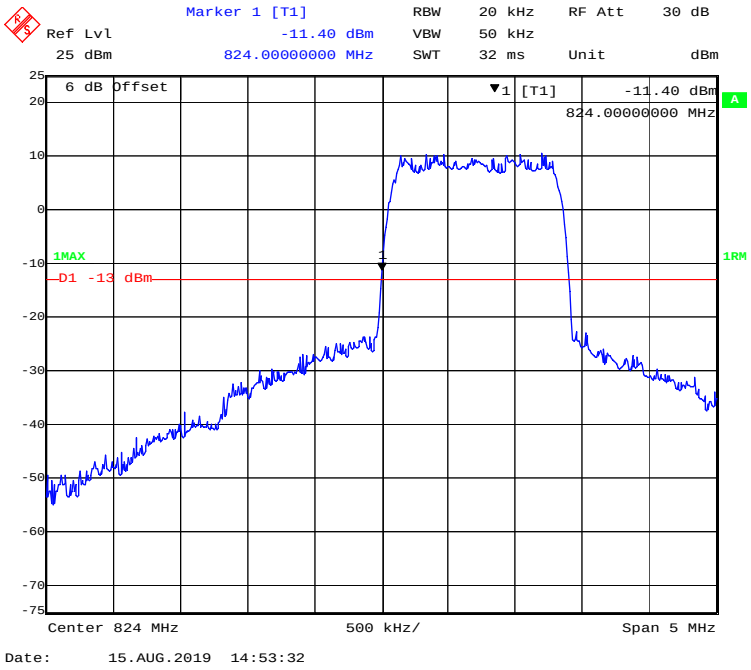
CDMA BC0 Band:

1xRTT Mode, Left Band Edge

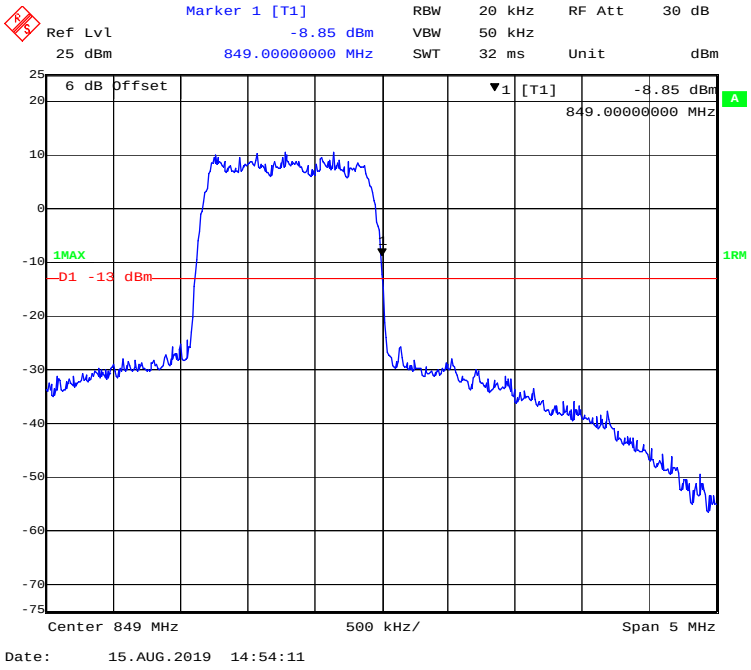


1xRTT Mode, Right Band Edge

1xEV-DO Mode, Left Band Edge



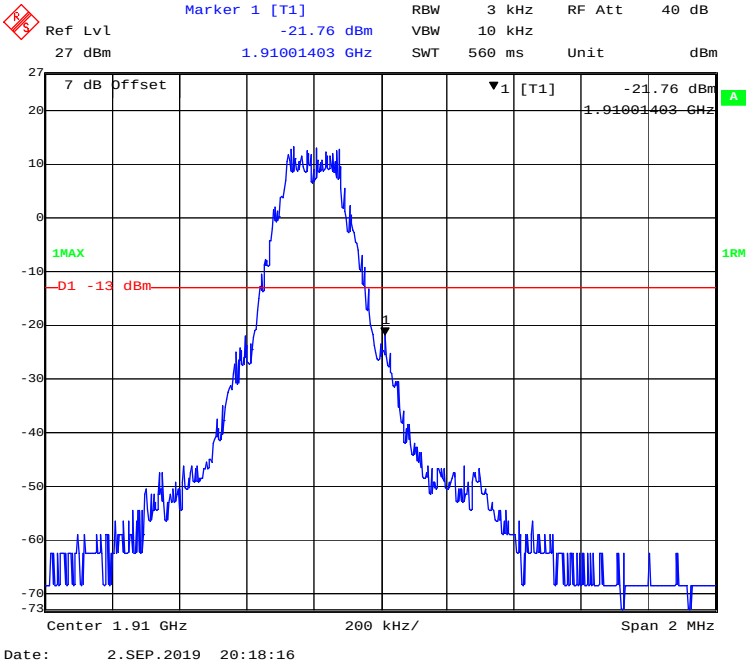
1xEV-DO Mode, Right Band Edge



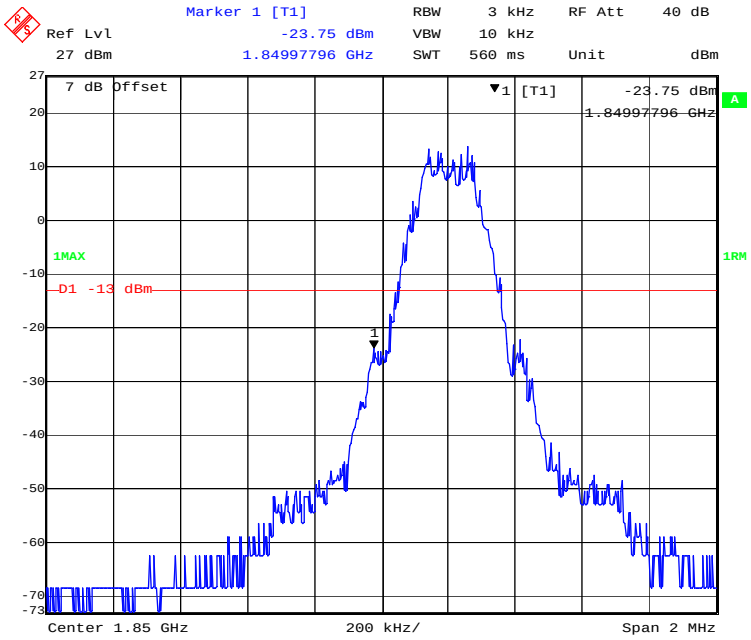
PCS 1900 Band:

GPRS Mode, Left Band Edge

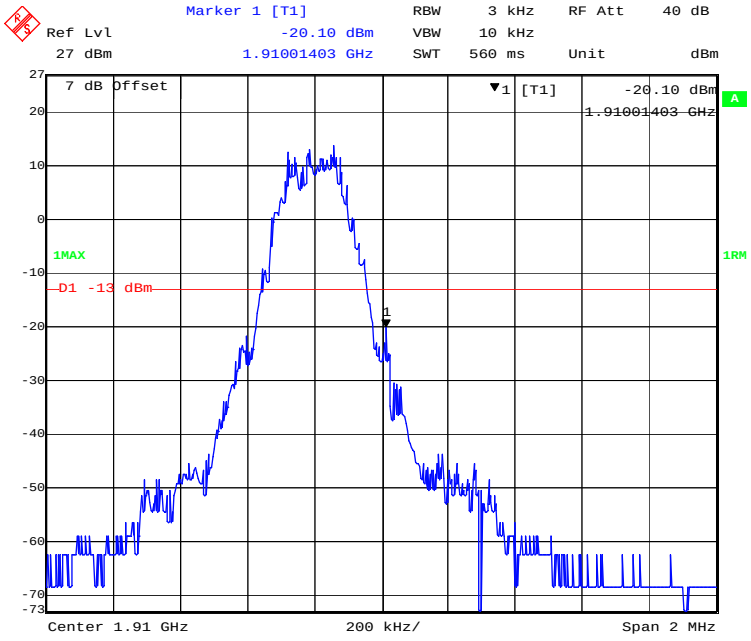
GPRS Mode, Right Band Edge



EGPRS Mode, Left Band Edge

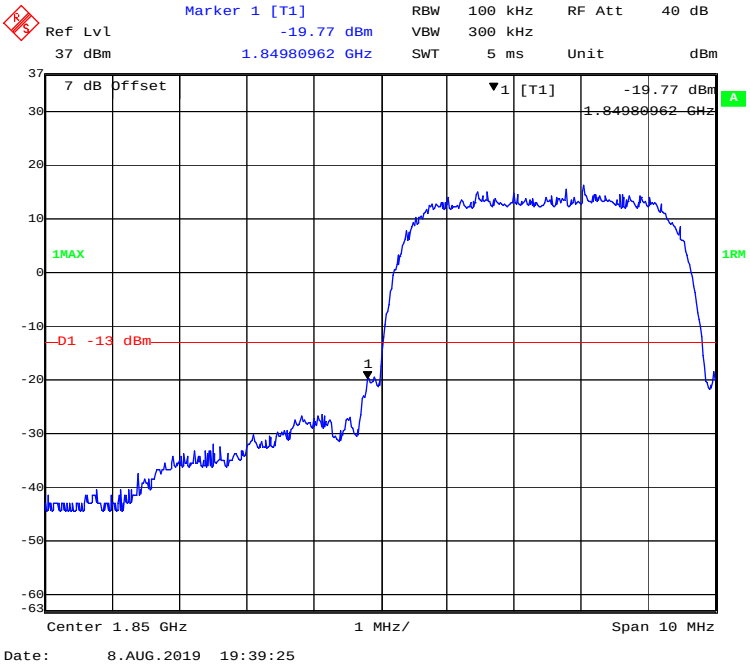


EGPRS Mode, Right Band Edge

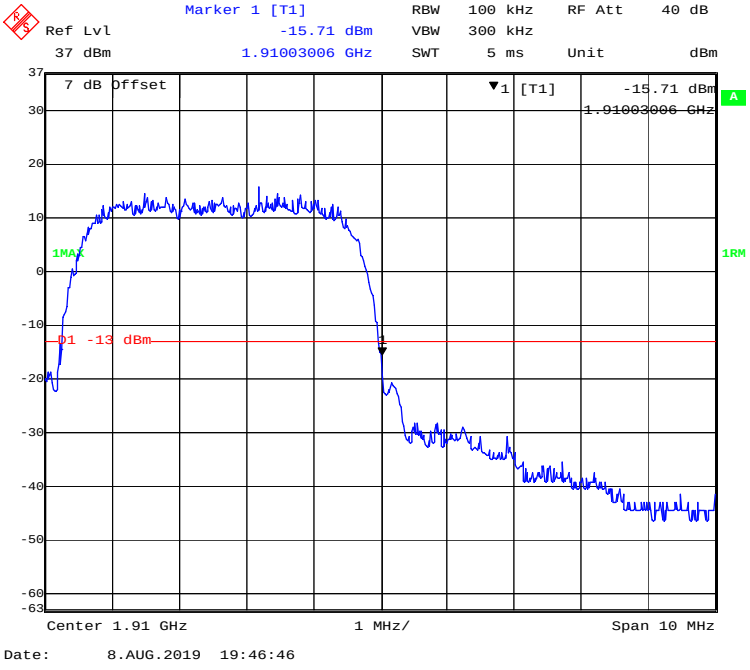


WCDMA Band II

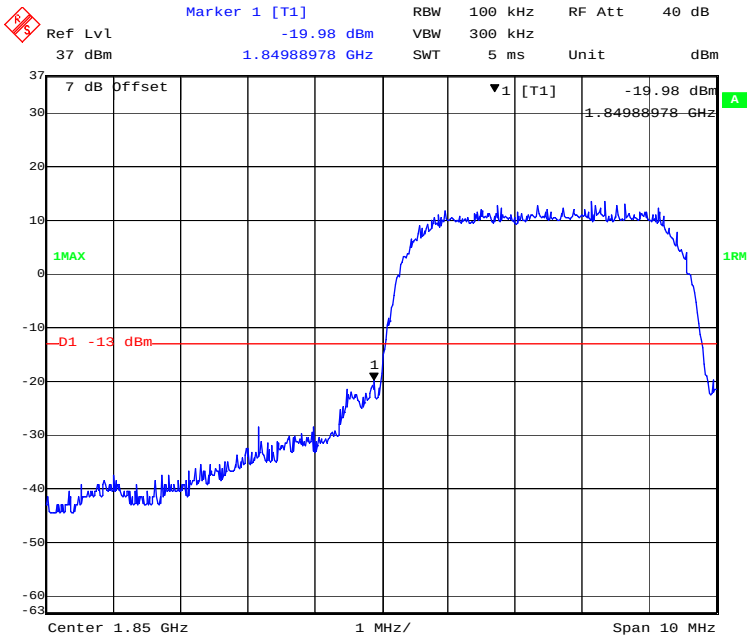
WCDMA (Rel99) Mode, Left Band Edge



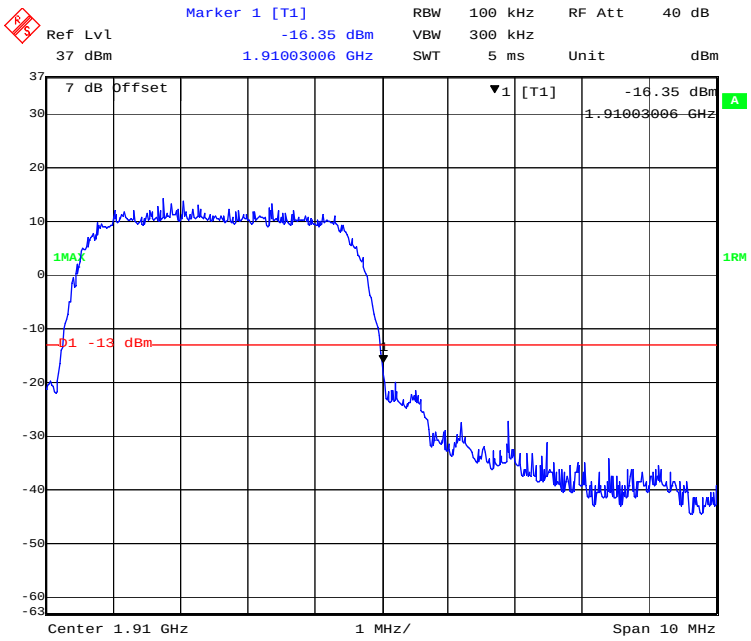
WCDMA (Rel99) Mode, Right Band Edge



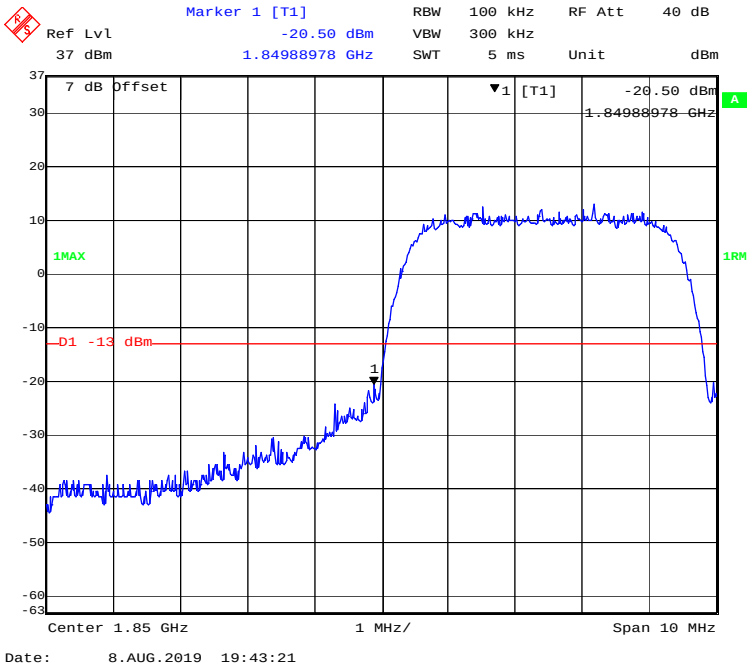
WCDMA (HSDPA) Mode, Left Band Edge



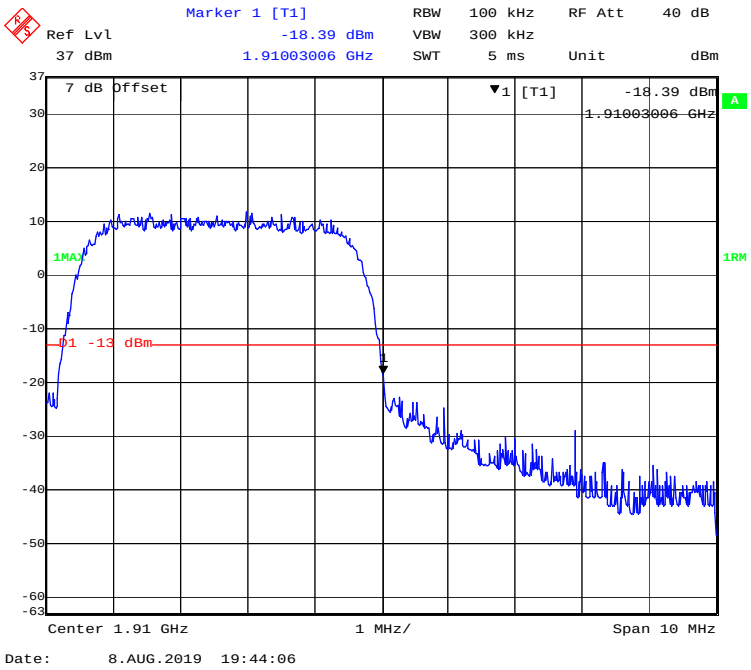
WCDMA (HSDPA) Mode, Right Band Edge



WCDMA (HSUPA) Mode, Left Band Edge

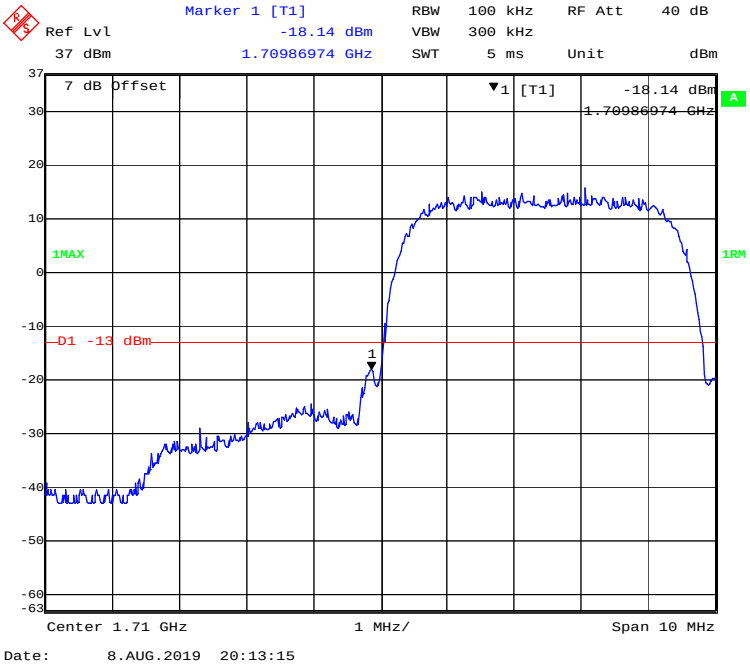


WCDMA (HSUPA) Mode, Right Band Edge

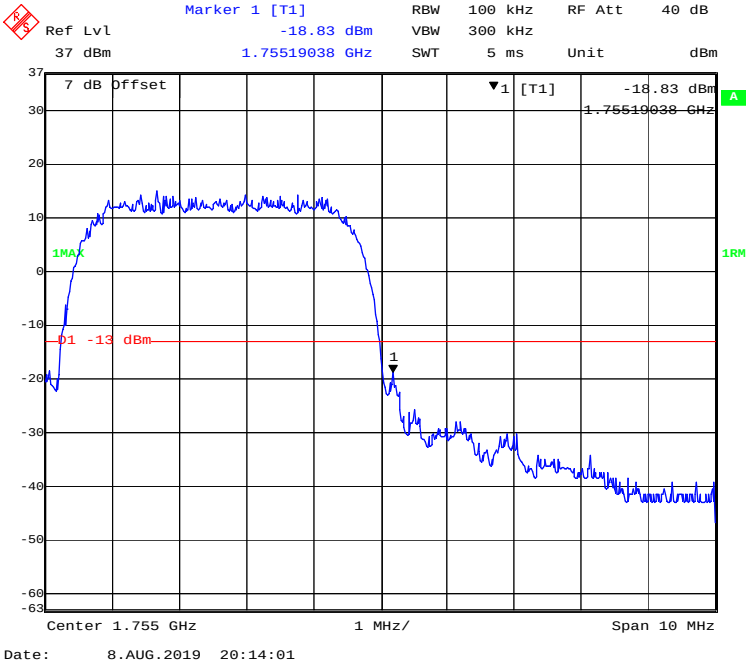


WCDMA Band IV

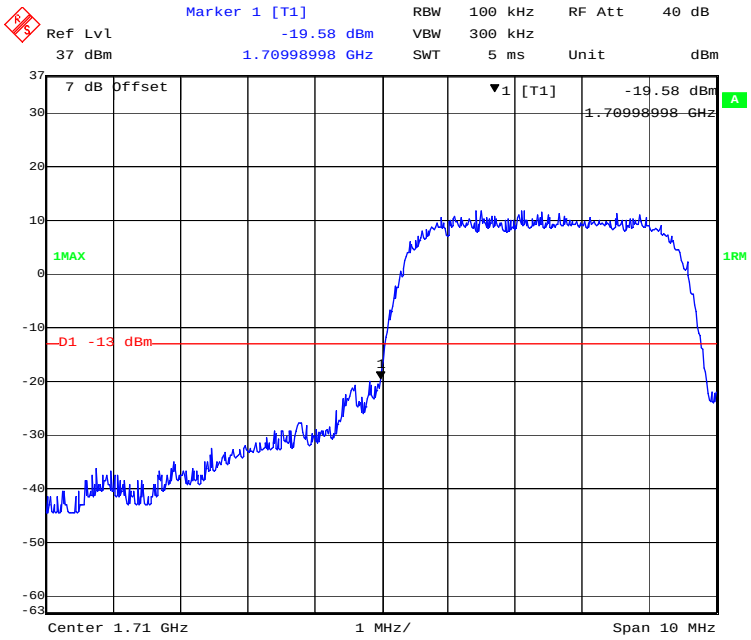
WCDMA (Rel99) Mode, Left Band Edge



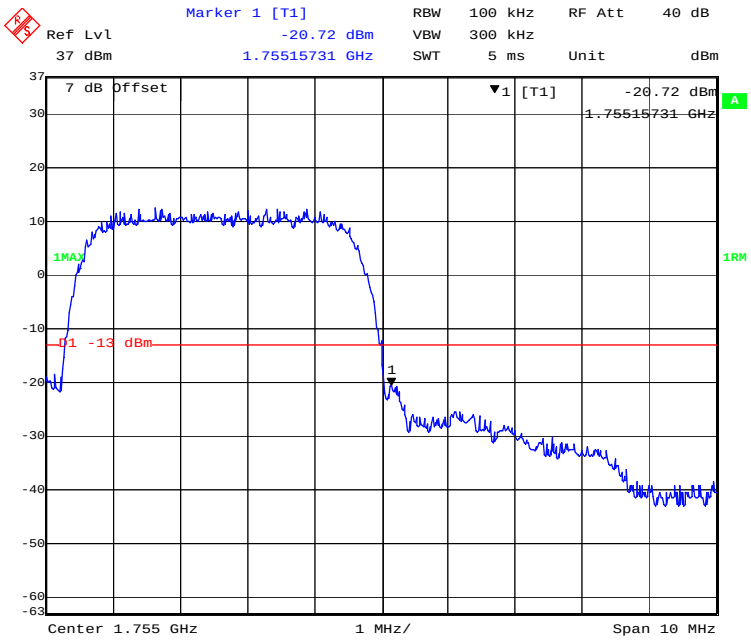
WCDMA (Rel99) Mode, Right Band Edge



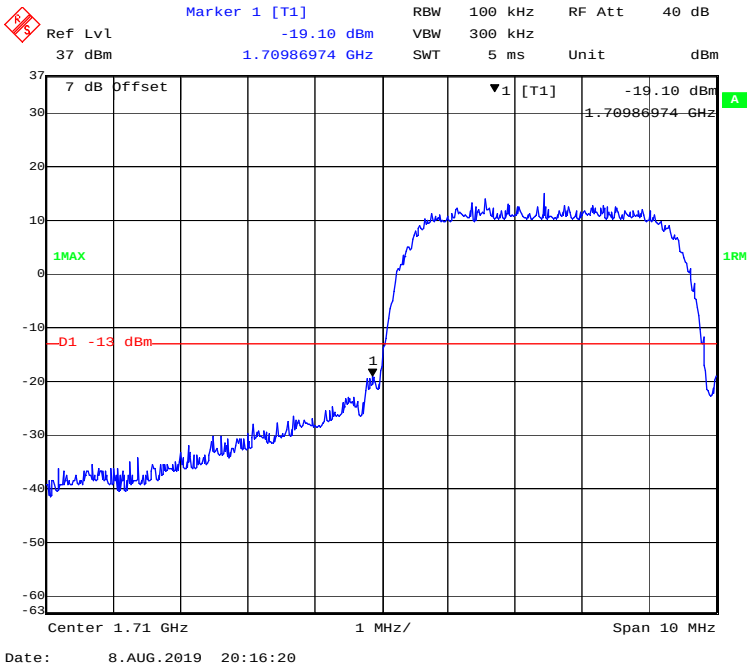
WCDMA (HSDPA) Mode, Left Band Edge



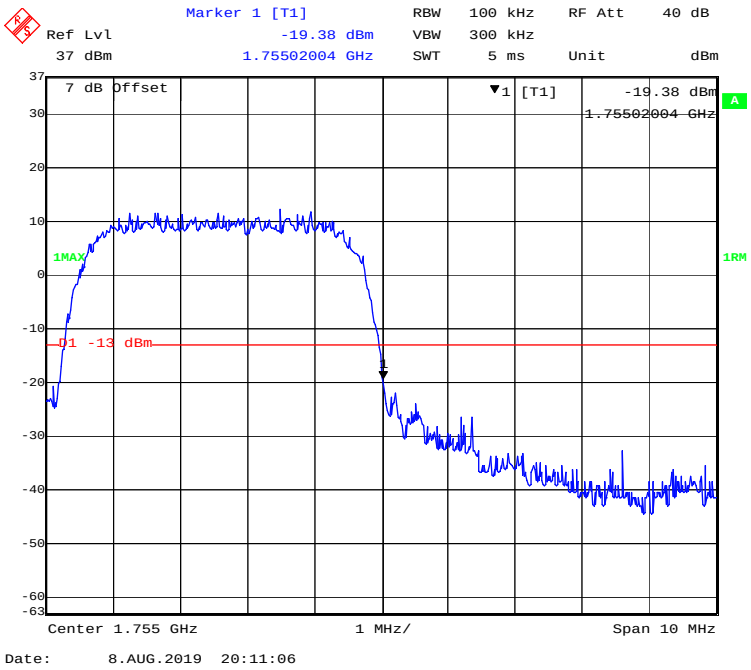
WCDMA (HSDPA) Mode, Right Band Edge



WCDMA (HSUPA) Mode, Left Band Edge

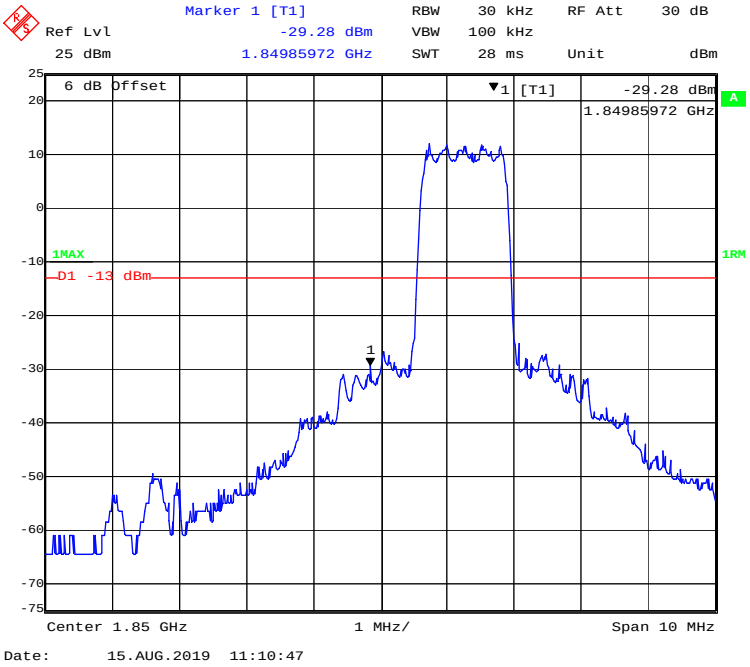


WCDMA (HSUPA) Mode, Right Band Edge

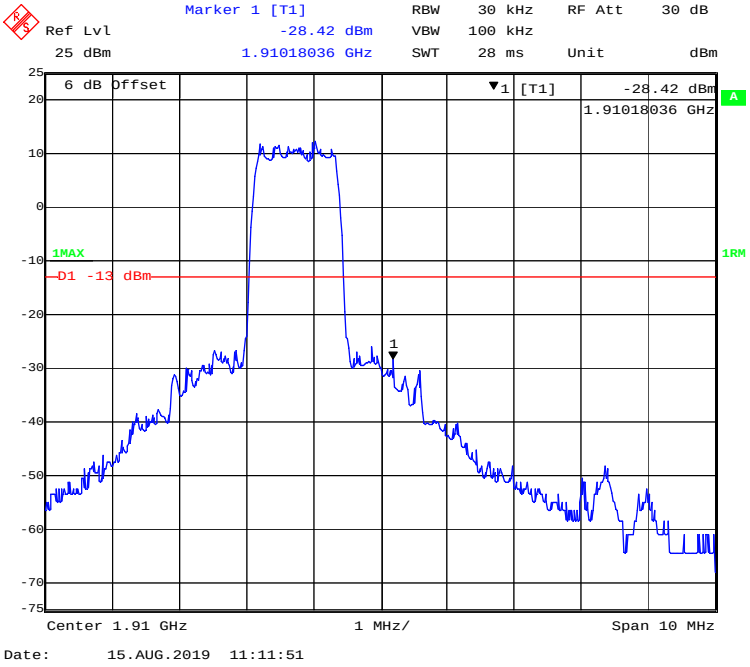


CDMA BC1 Band:

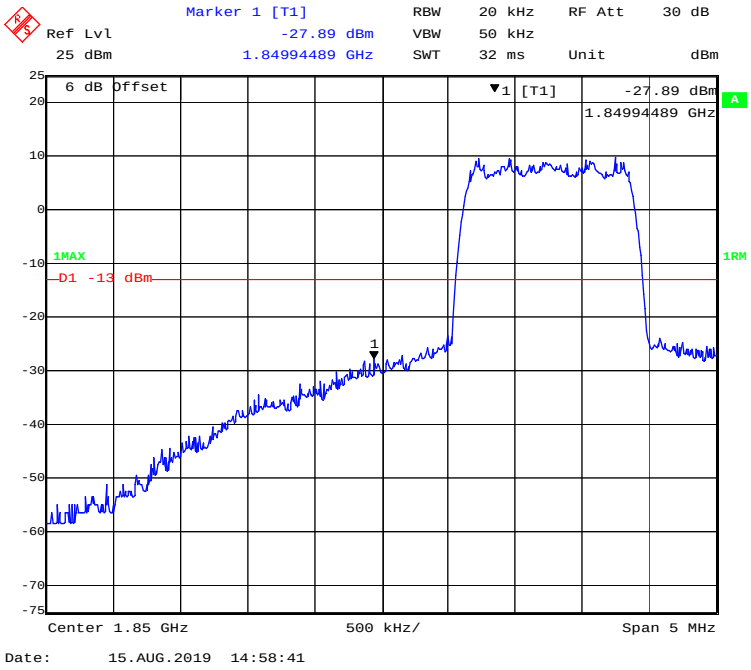
1xRTT Mode, Left Band Edge



1xRTT Mode, Right Band Edge



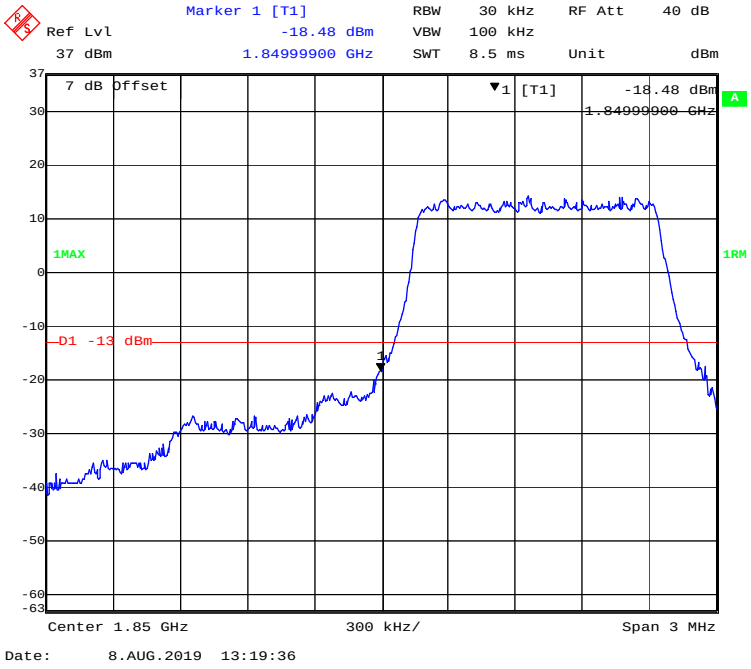
1xEV-DO Mode, Left Band Edge



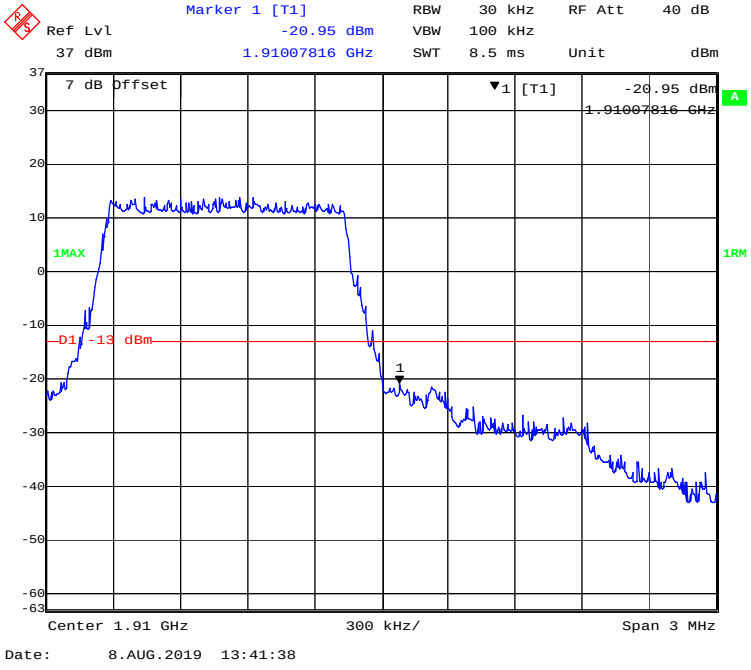
1xEV-DO Mode, Right Band Edge

LTE Band 2:

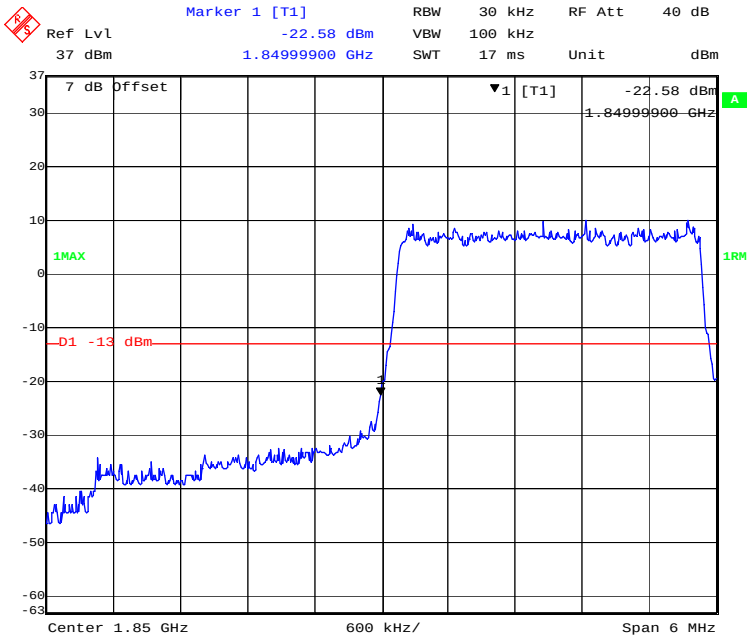
QPSK (1.4 MHz, FULL RB) - Left Band Edge



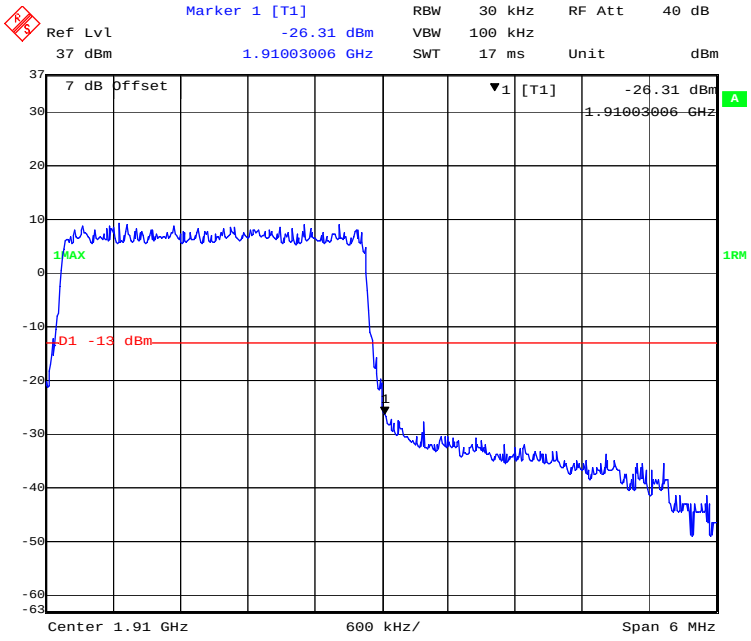
QPSK (1.4 MHz, FULL RB) - Right Band Edge



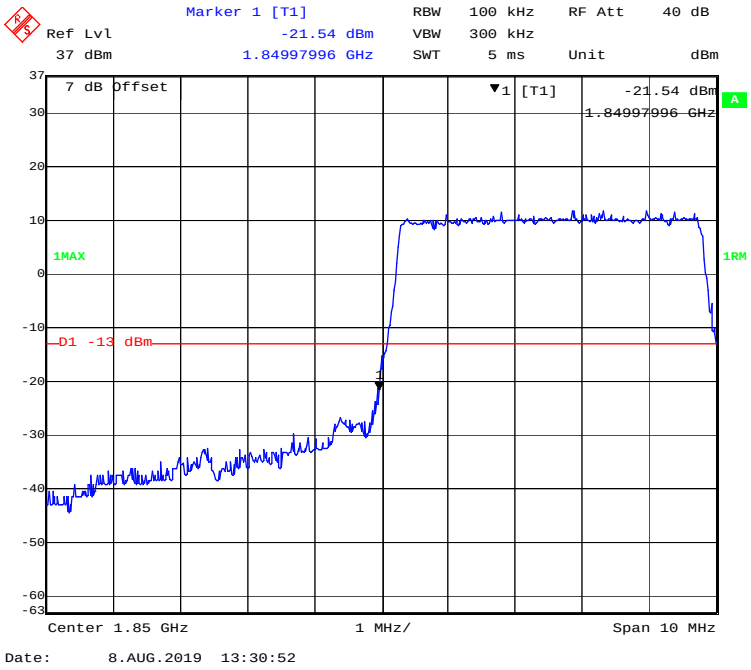
QPSK (3.0 MHz, FULL RB) - Left Band Edge



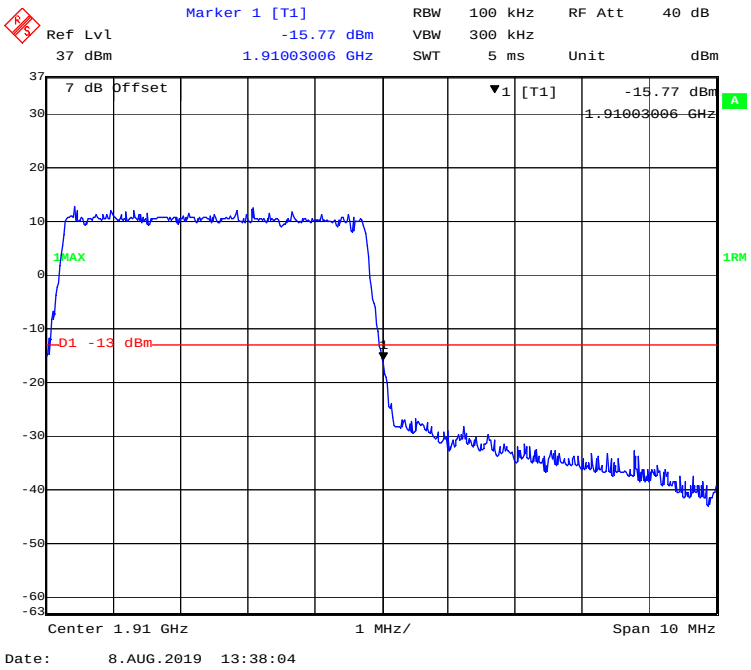
QPSK (3.0 MHz, FULL RB) - Right Band Edge



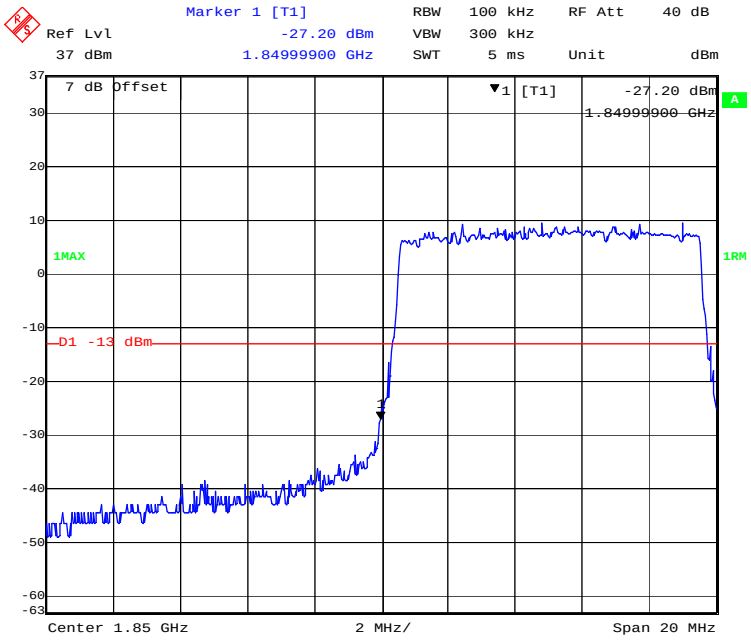
QPSK (5.0 MHz, FULL RB) - Left Band Edge



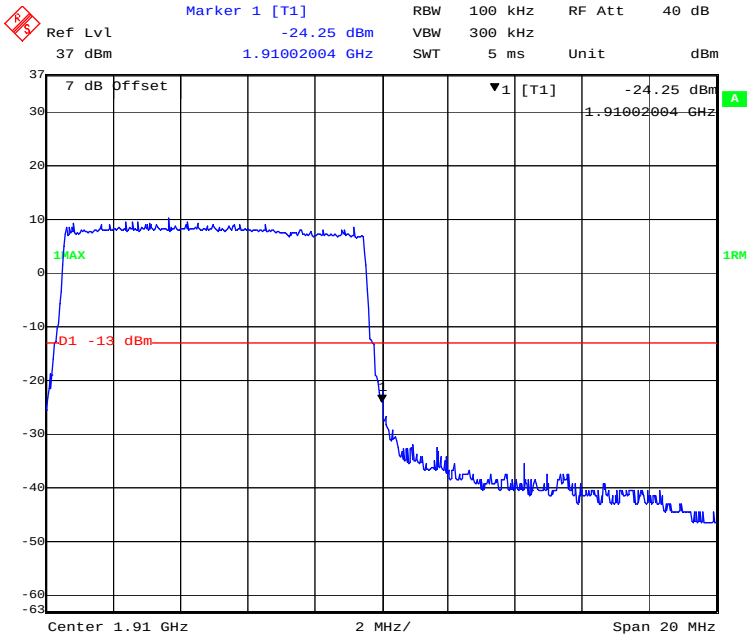
QPSK (5.0 MHz, FULL RB) - Right Band Edge



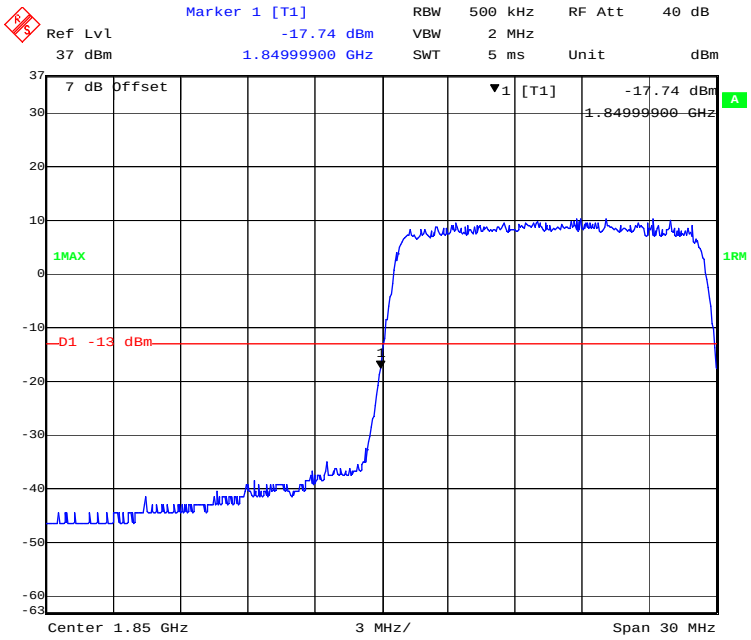
QPSK (10.0 MHz, FULL RB) - Left Band Edge



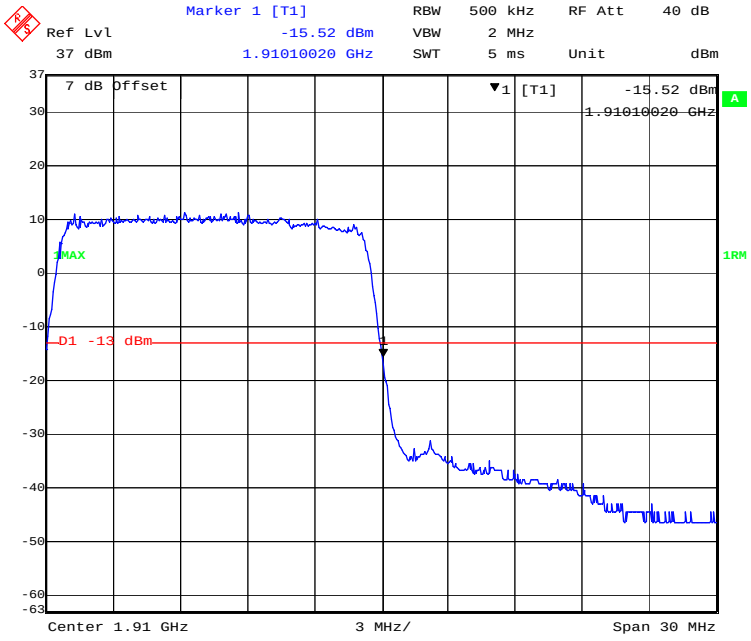
QPSK (10.0 MHz, FULL RB) - Right Band Edge



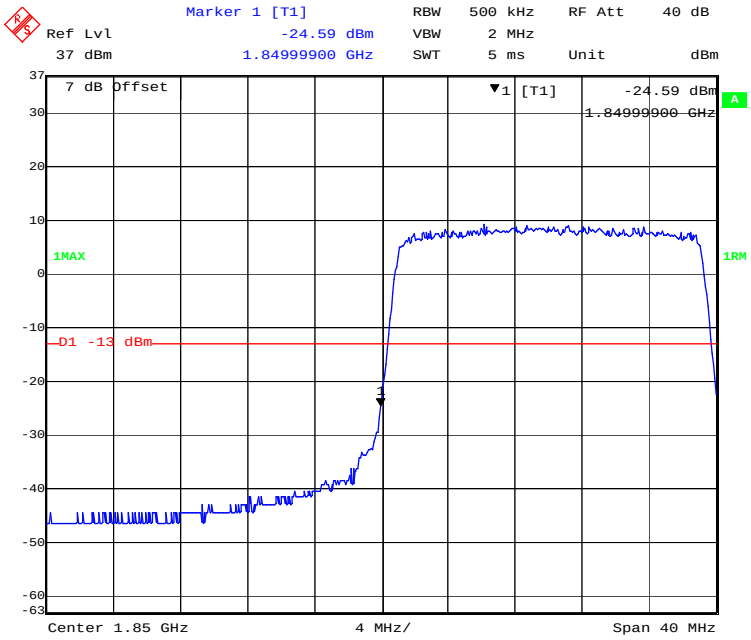
QPSK (15.0 MHz, FULL RB) - Left Band Edge



QPSK (15.0 MHz, FULL RB) - Right Band Edge

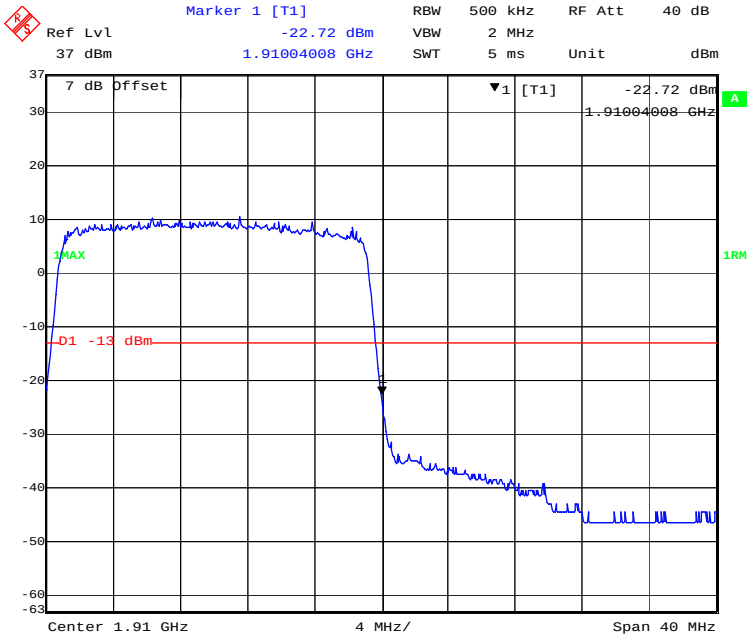


QPSK (20.0 MHz, FULL RB) - Left Band Edge



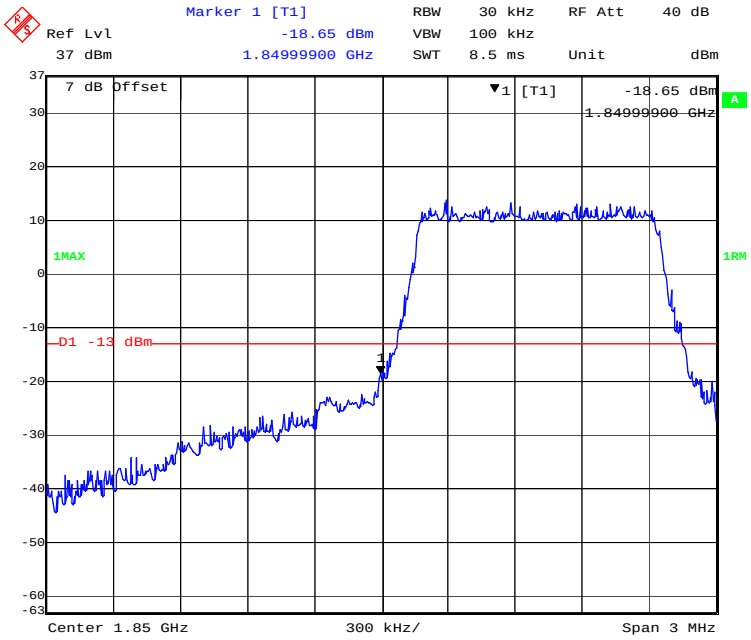
Date: 8.AUG.2019 13:25:49

QPSK (20.0 MHz, FULL RB) - Right Band Edge

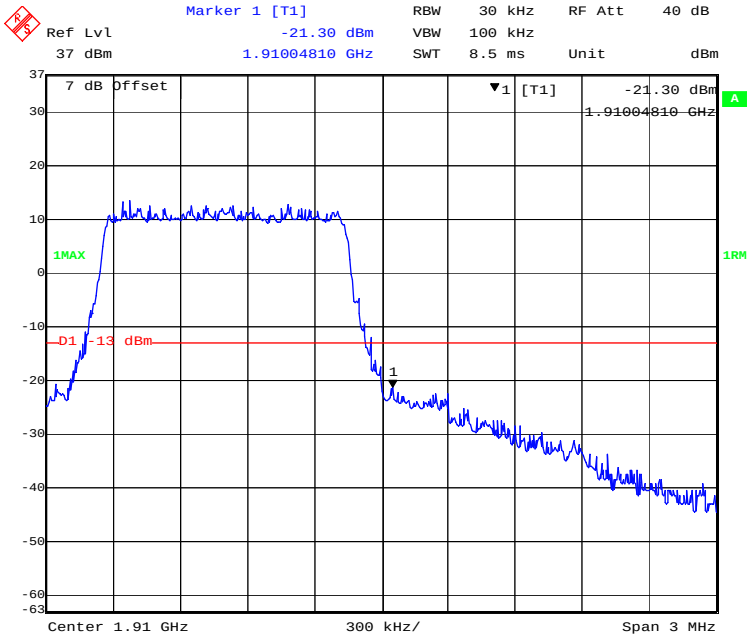


Date: 8.AUG.2019 13:34:10

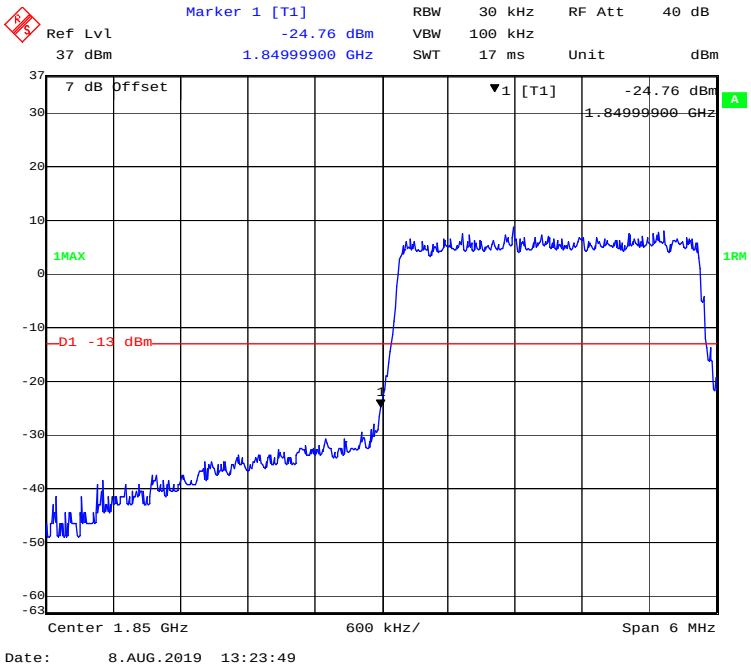
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



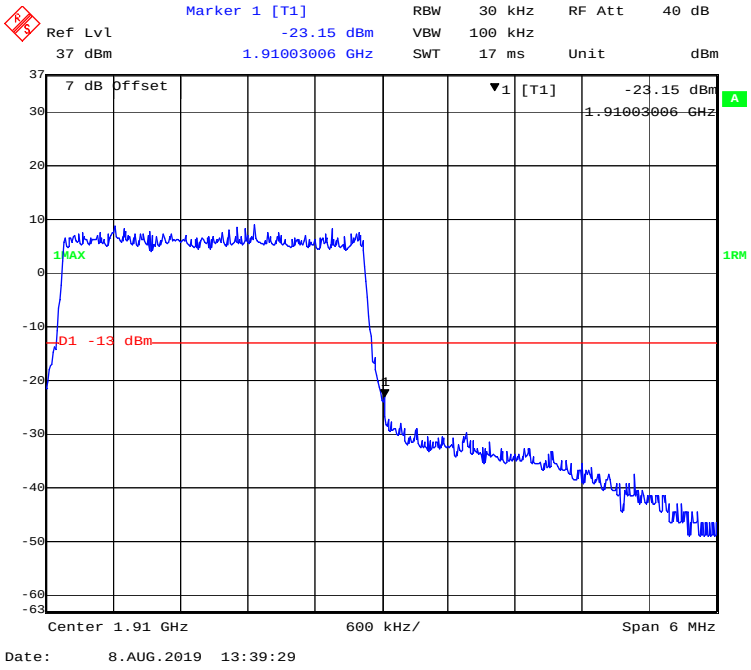
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



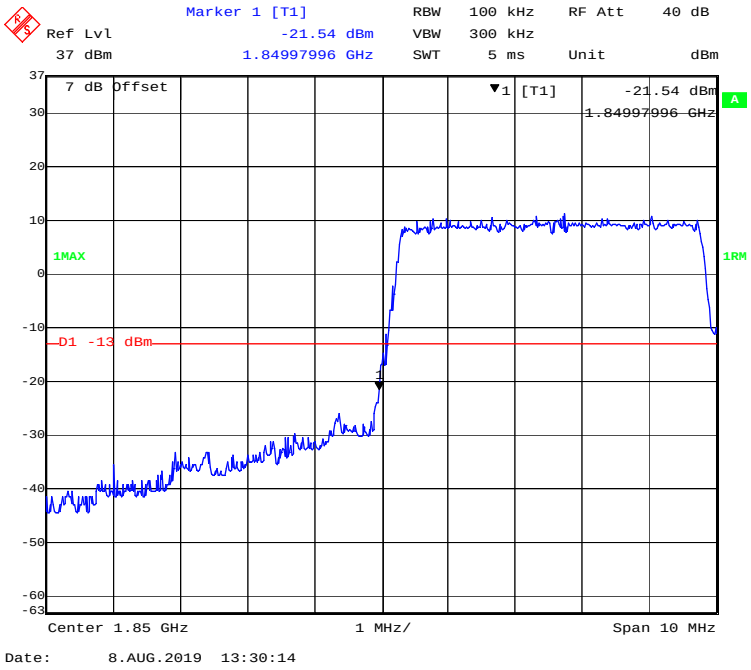
16-QAM (3.0 MHz, FULL RB) - Left Band Edge



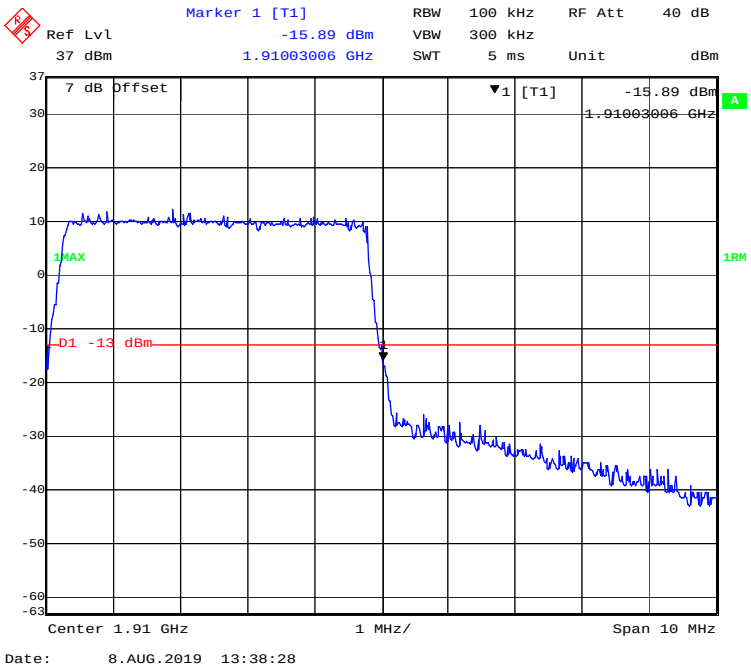
16-QAM (3.0 MHz, FULL RB) - Right Band Edge



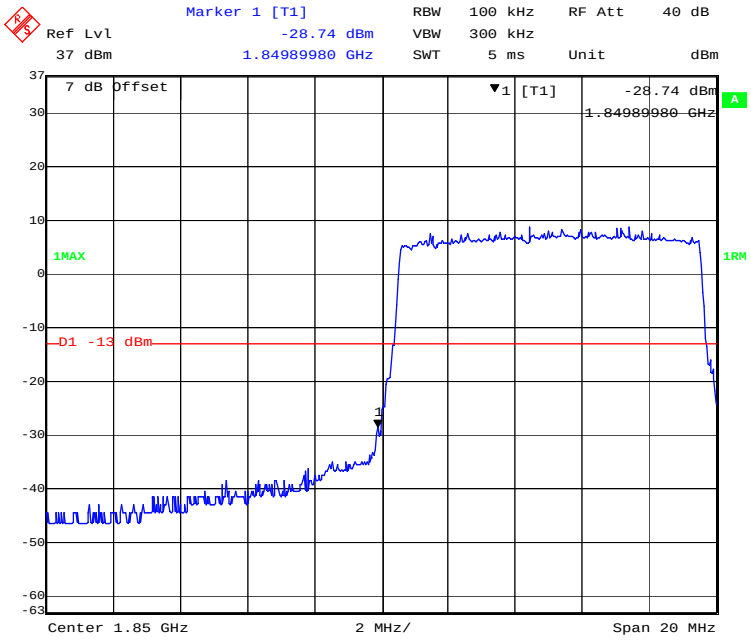
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



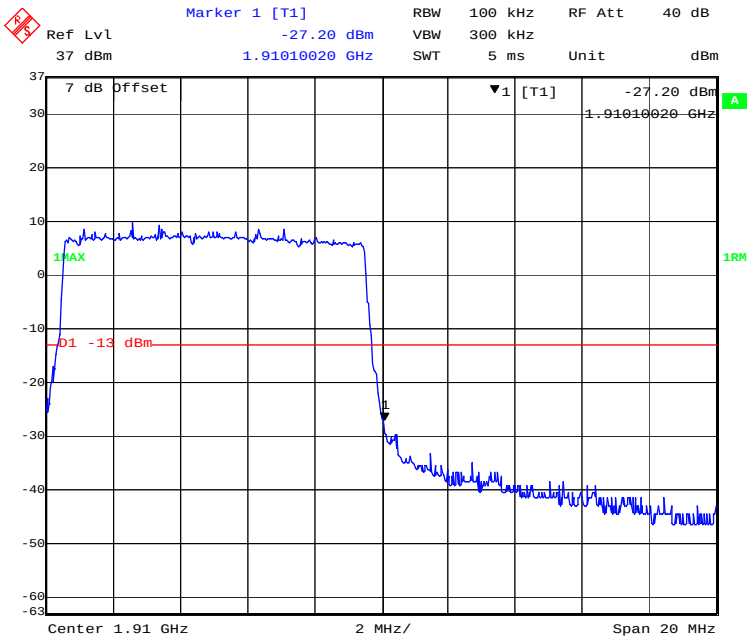
16-QAM (5.0 MHz, FULL RB) - Right Band Edge



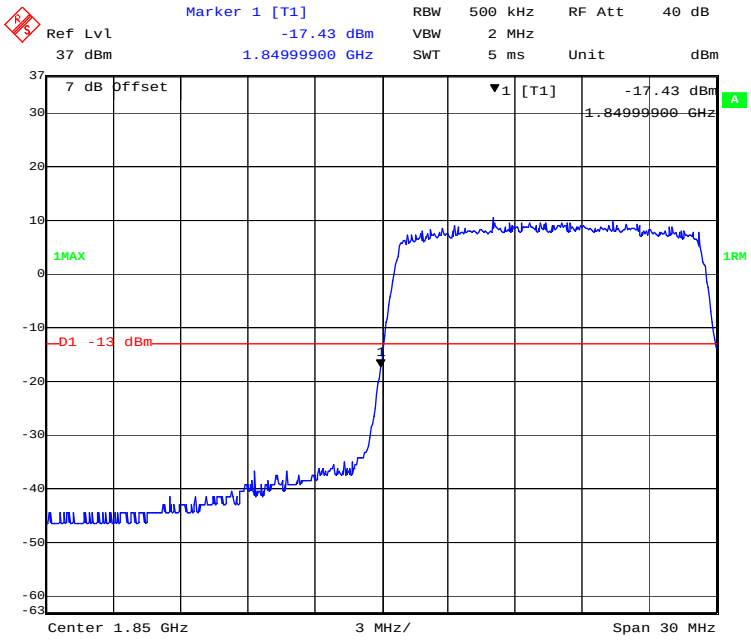
16-QAM (10.0 MHz, FULL RB) - Left Band Edge



16-QAM (10.0 MHz, FULL RB) - Right Band Edge



16-QAM (15.0 MHz, FULL RB) - Left Band Edge



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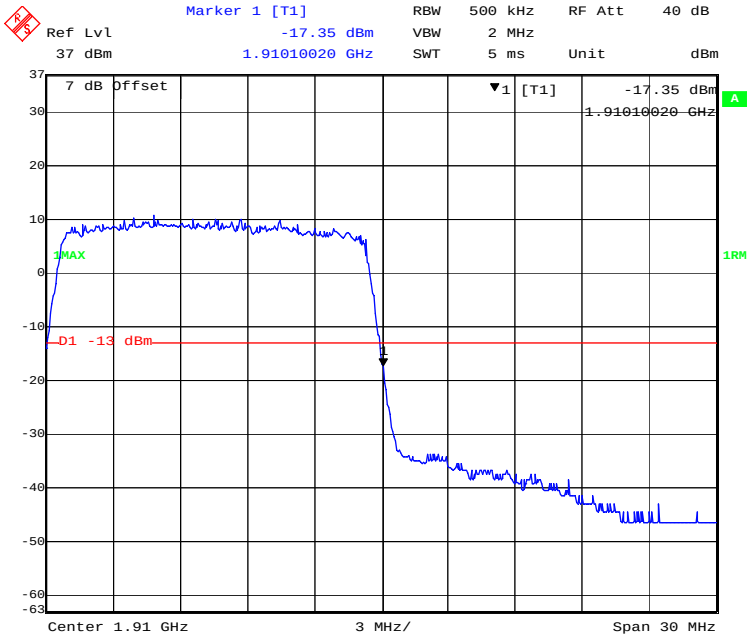
16-QAM (15.0 MHz, FULL RB) - Right Band Edge



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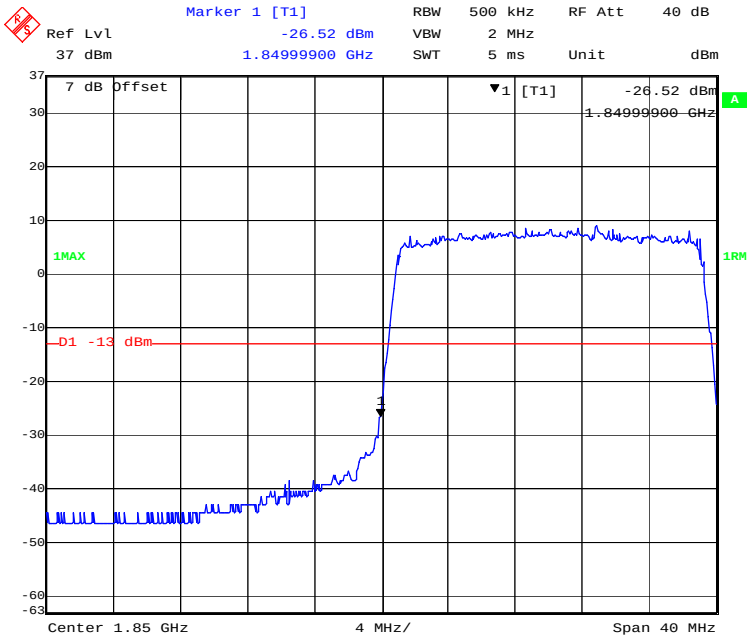
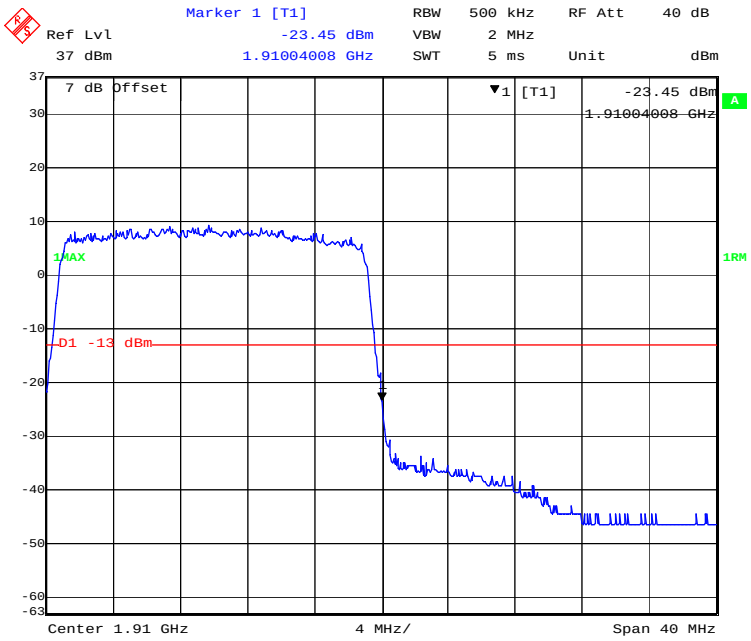
16-QAM (20.0 MHz, FULL RB) - Left Band Edge

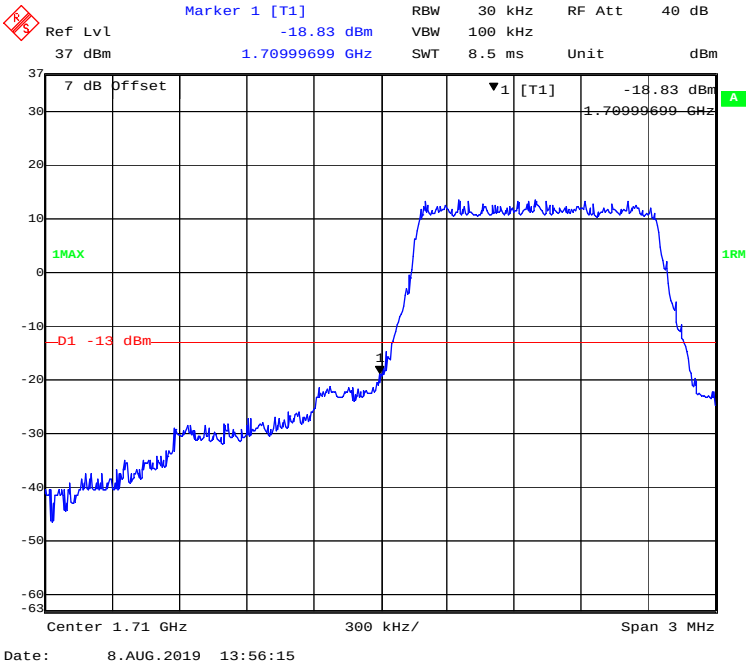


16-QAM (20.0 MHz, FULL RB) - Right Band Edge

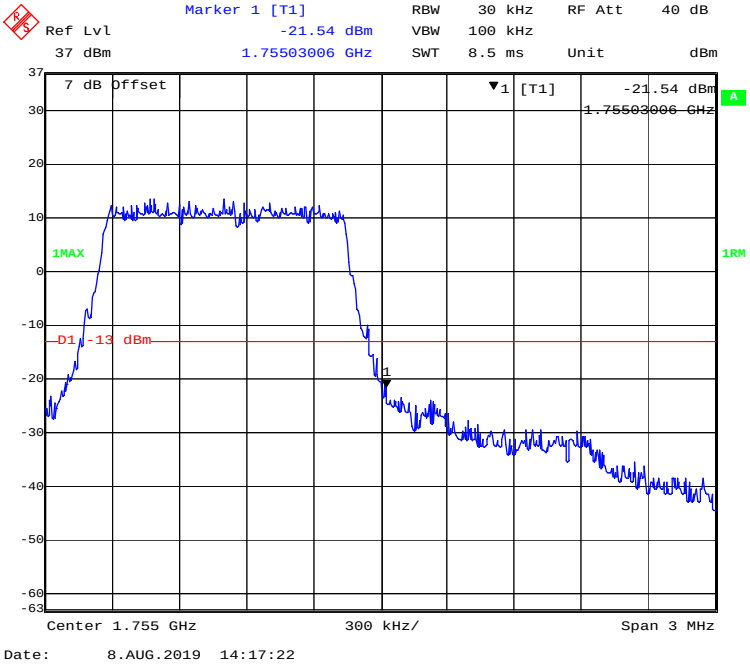


LTE Band 4:

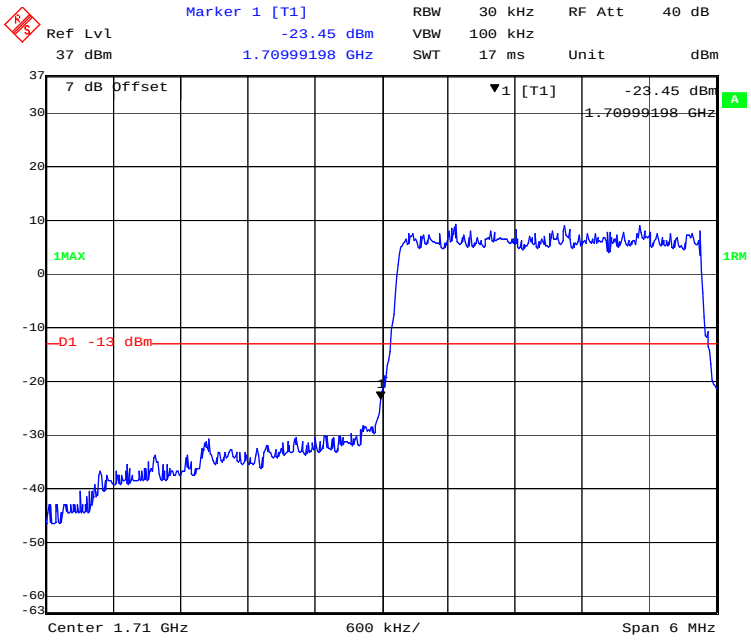
QPSK (1.4 MHz, FULL RB) - Left Band Edge



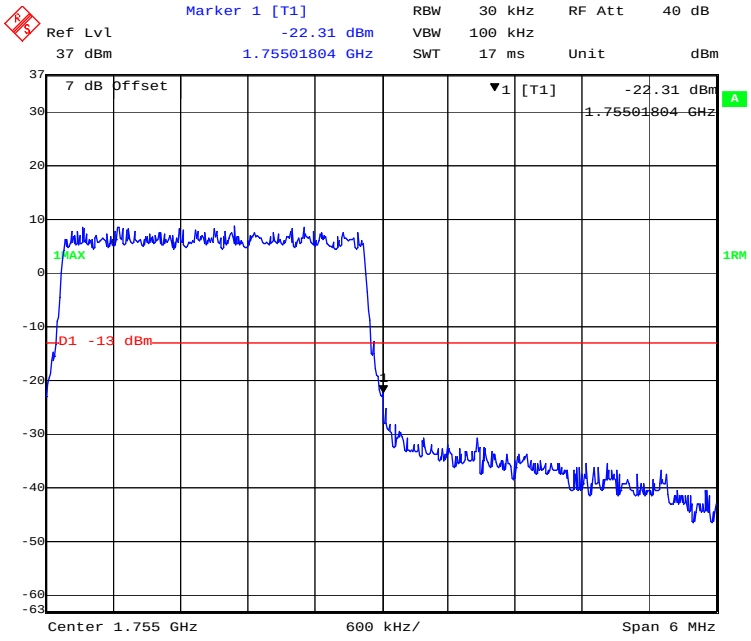
QPSK (1.4 MHz, FULL RB) - Right Band Edge



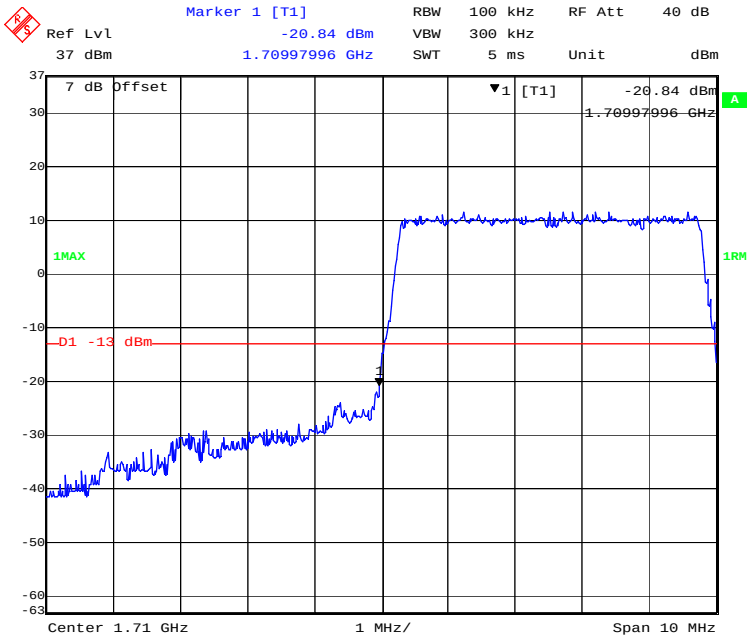
QPSK (3.0 MHz, FULL RB) - Left Band Edge



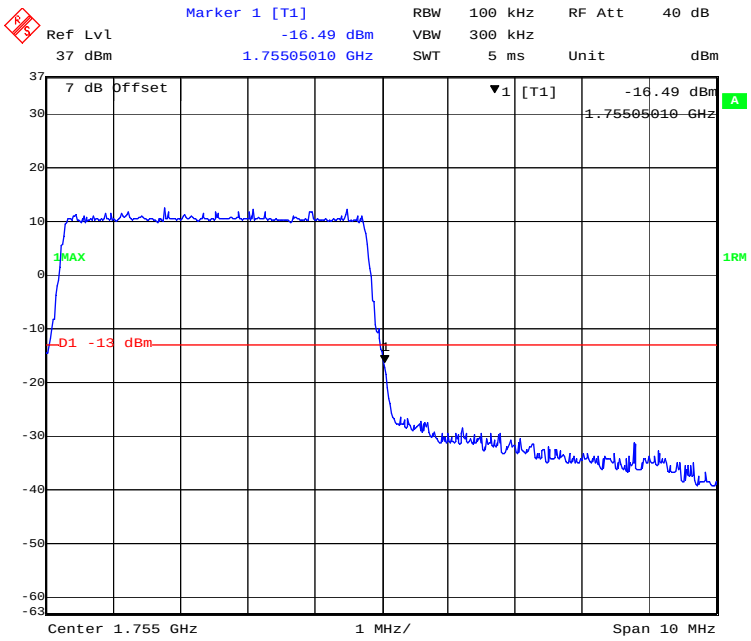
QPSK (3.0 MHz, FULL RB) - Right Band Edge



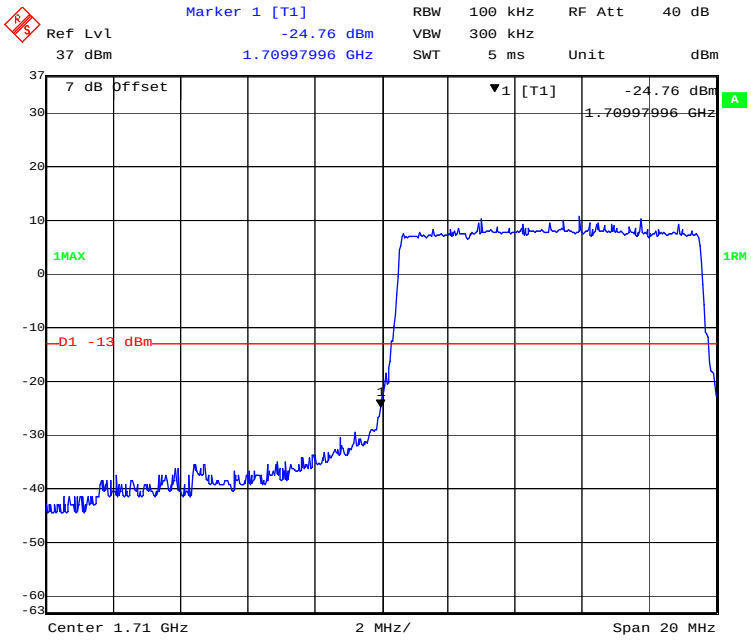
QPSK (5.0 MHz, FULL RB) - Left Band Edge



QPSK (5.0 MHz, FULL RB) - Right Band Edge



QPSK (10.0 MHz, FULL RB) - Left Band Edge



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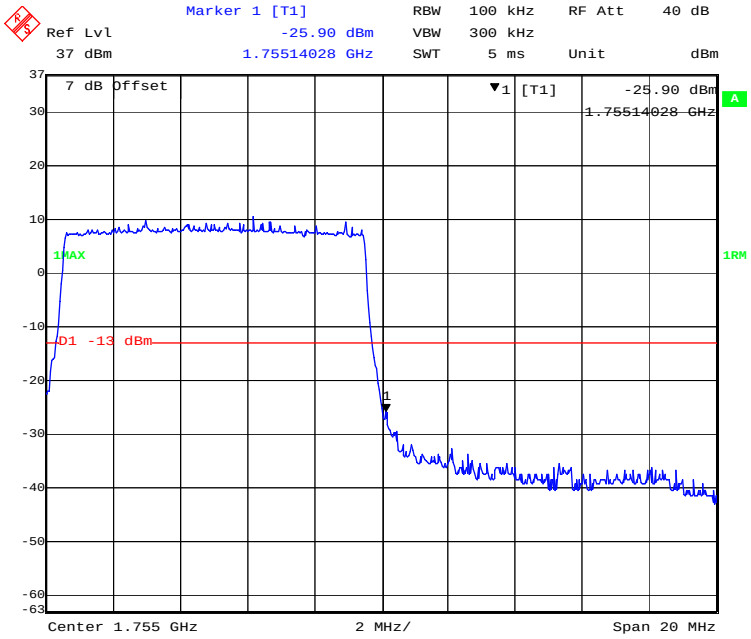
QPSK (10.0 MHz, FULL RB) - Right Band Edge



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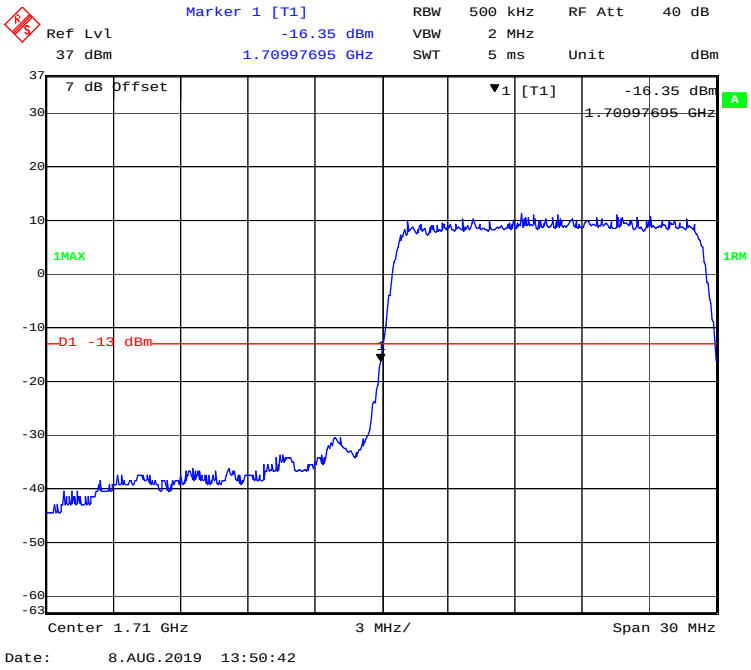
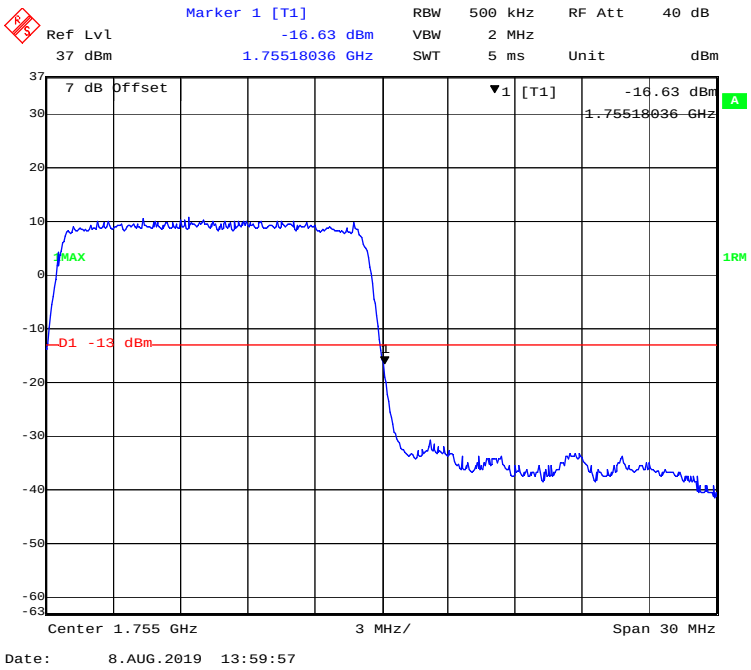
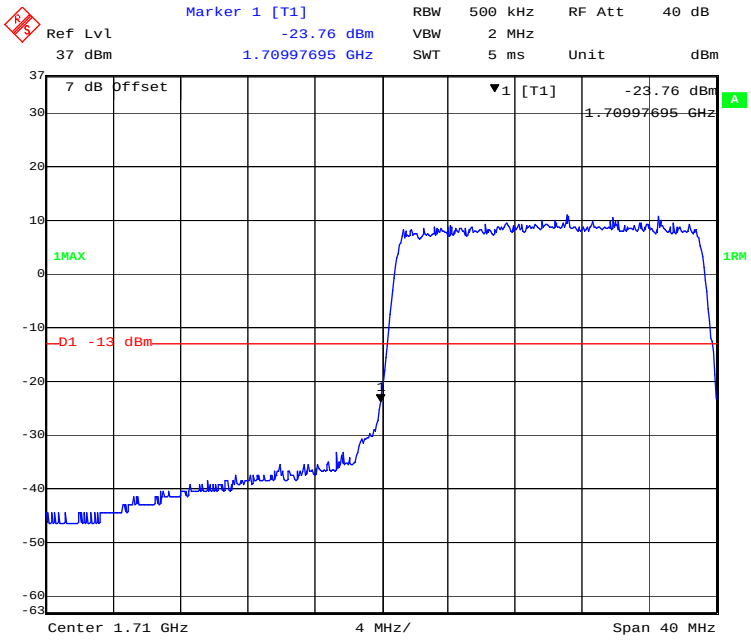
QPSK (15.0 MHz, FULL RB) - Left Band Edge



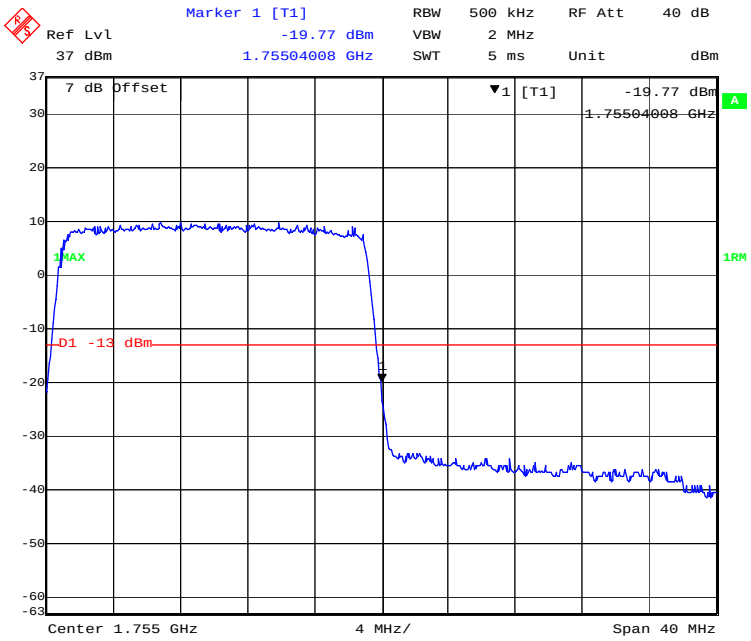
QPSK (15.0 MHz, FULL RB) - Right Band Edge



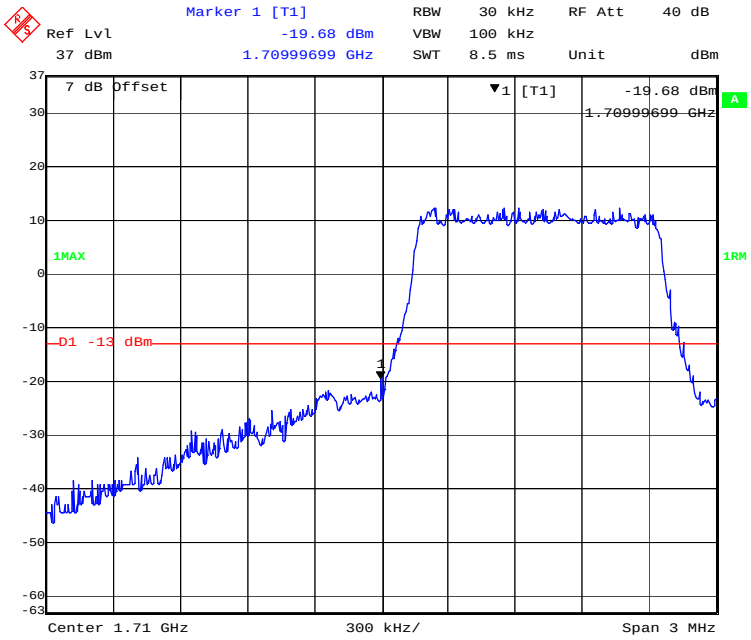
QPSK (20.0 MHz, FULL RB) - Left Band Edge



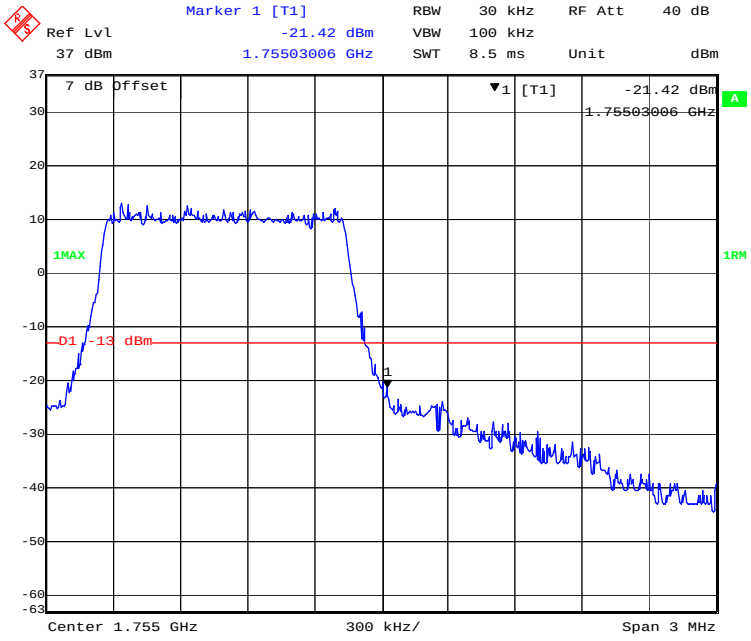
QPSK (20.0 MHz, FULL RB) - Right Band Edge



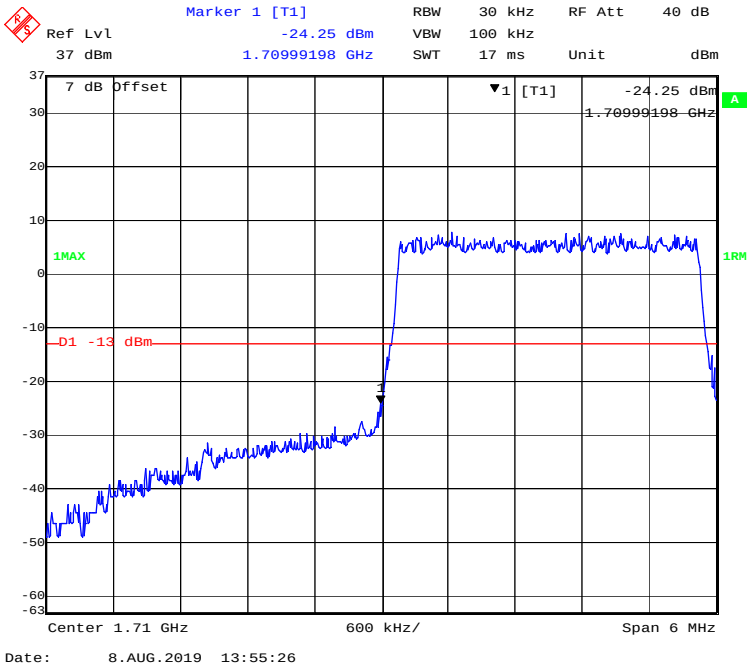
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



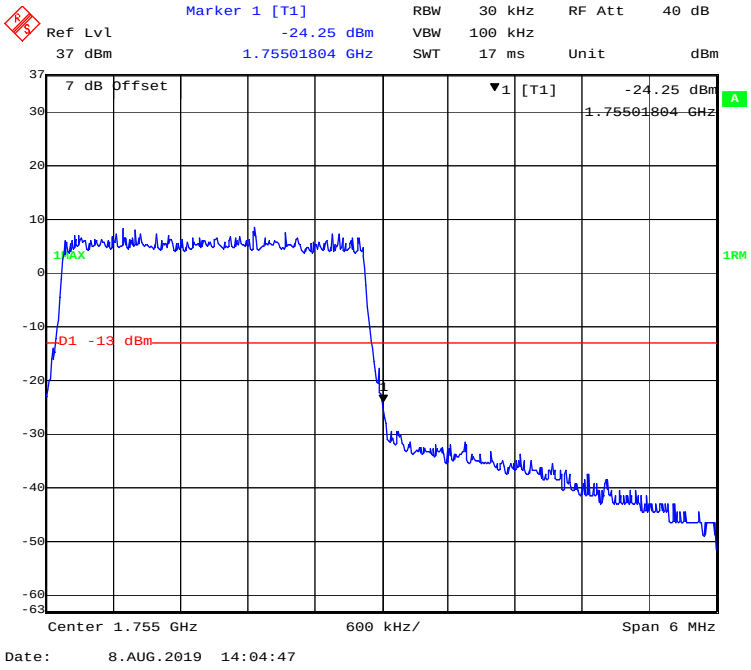
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



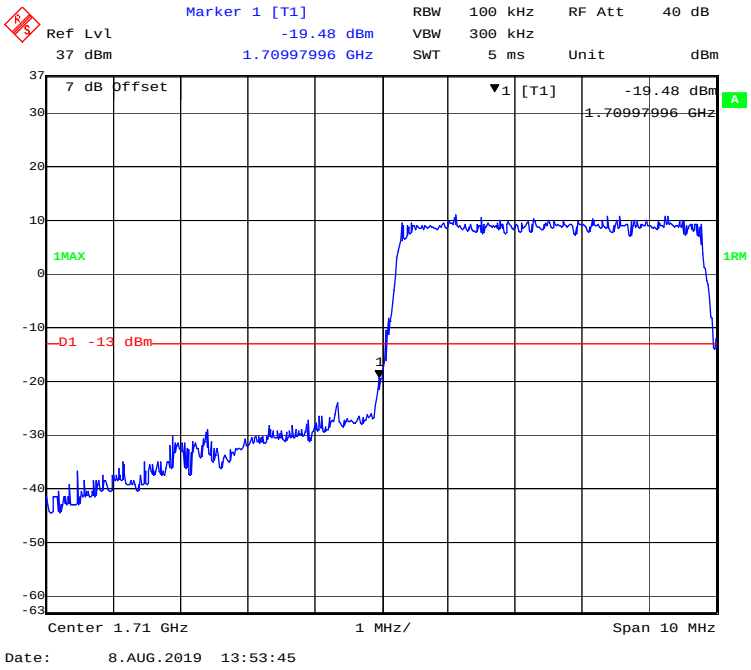
16-QAM (3.0 MHz, FULL RB) - Left Band Edge



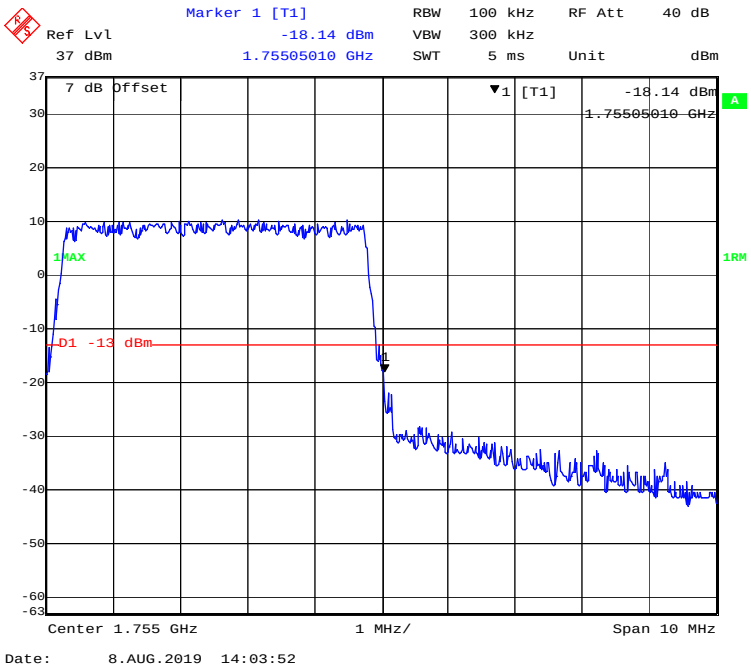
16-QAM (3.0 MHz, FULL RB) - Right Band Edge



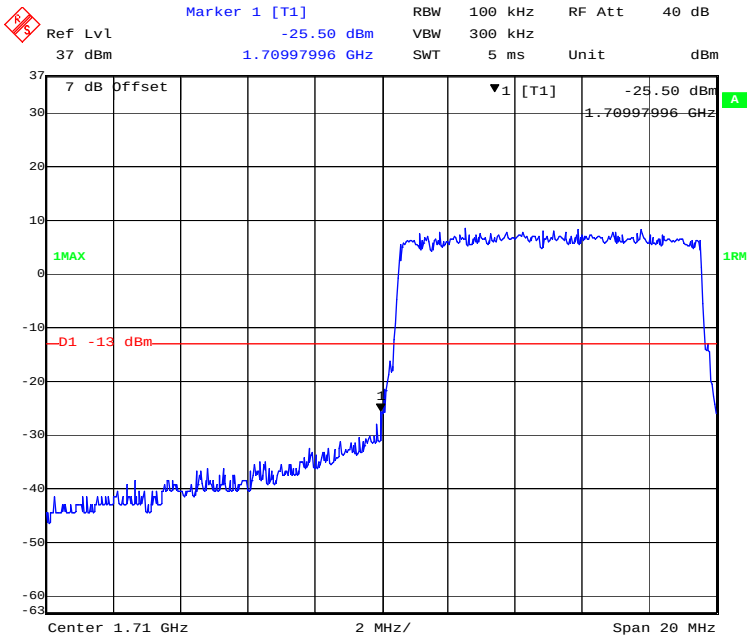
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



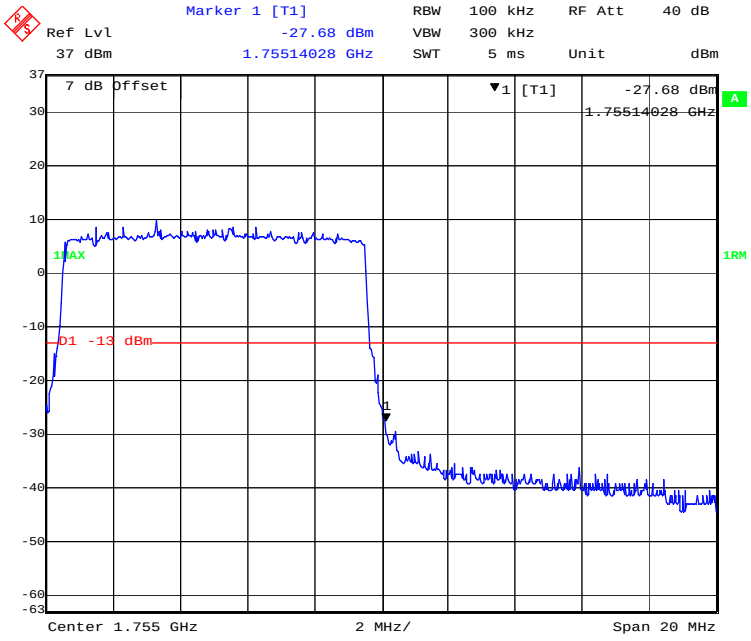
16-QAM (5.0 MHz, FULL RB) - Right Band Edge



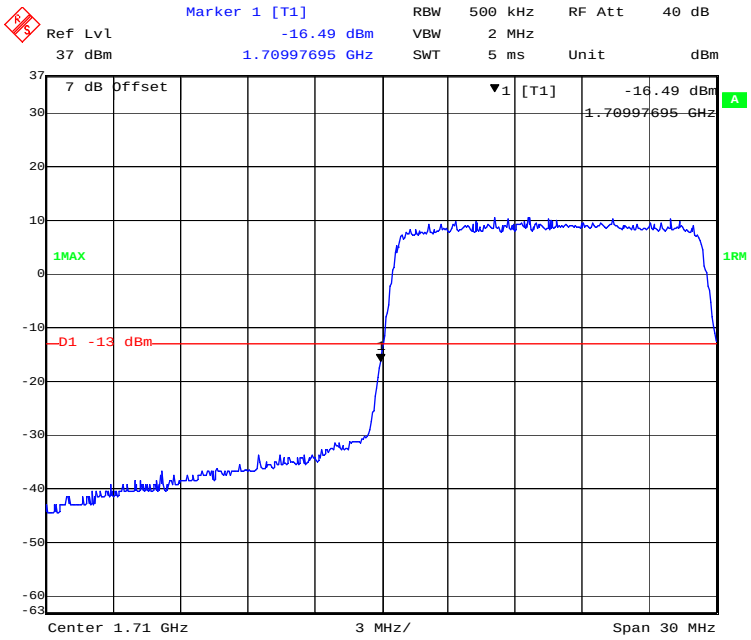
16-QAM (10.0 MHz, FULL RB) - Left Band Edge



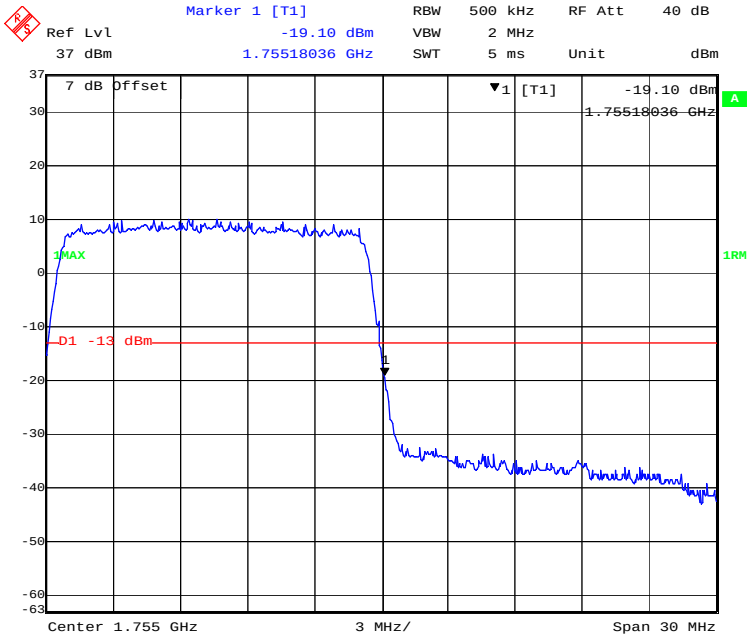
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



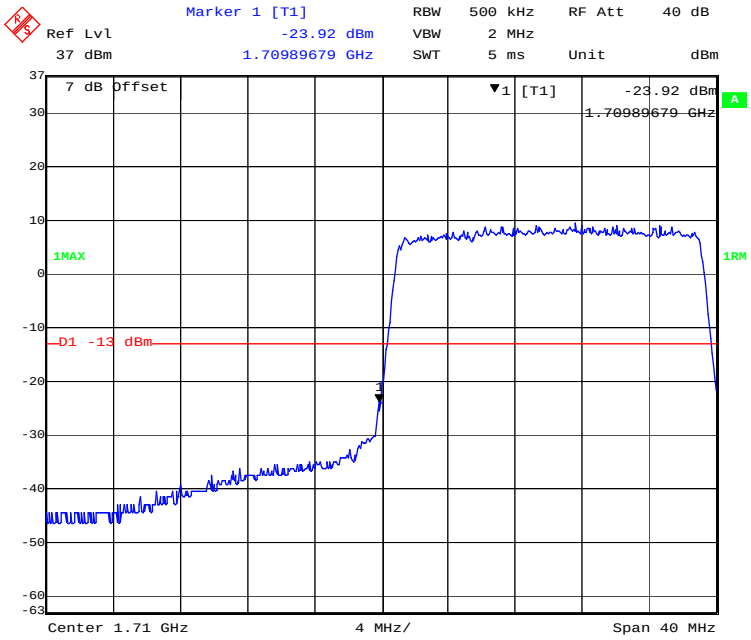
16-QAM (15.0 MHz, FULL RB) - Left Band Edge



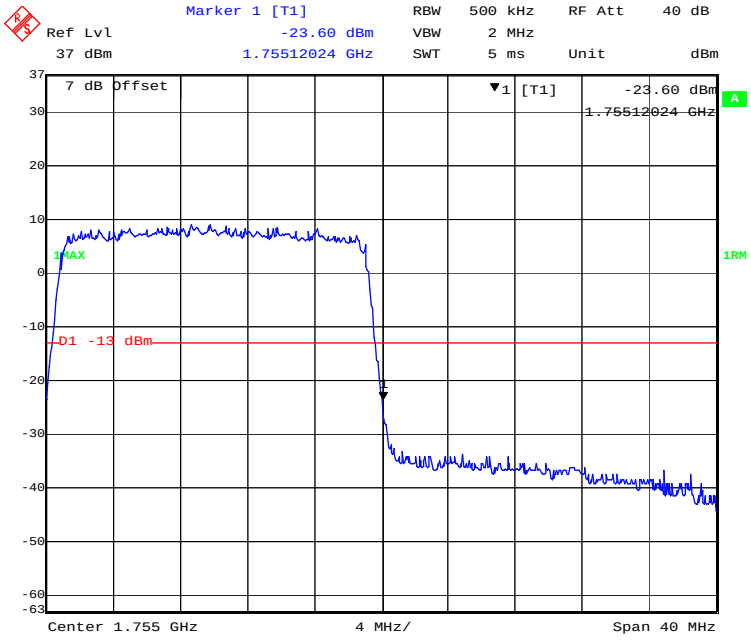
16-QAM (15.0 MHz, FULL RB) - Right Band Edge



16-QAM (20.0 MHz, FULL RB) - Left Band Edge

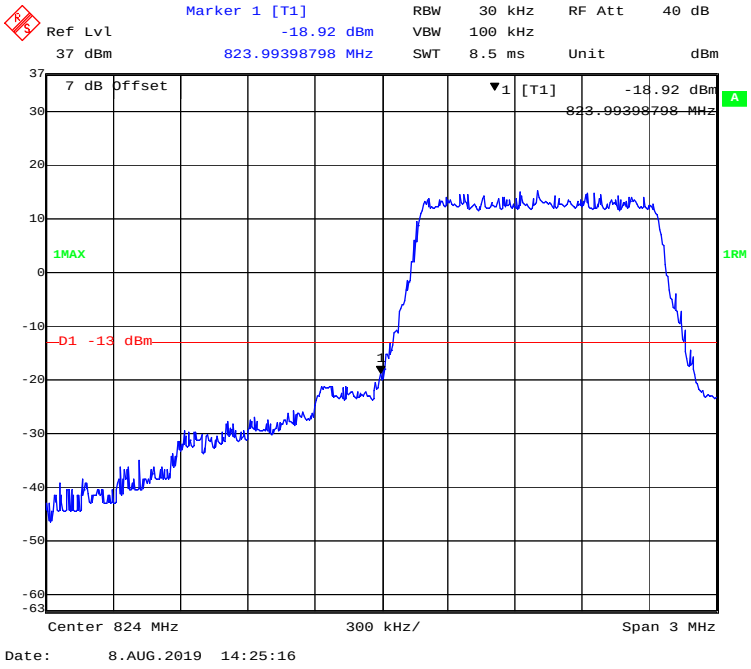


16-QAM (20.0 MHz, FULL RB) - Right Band Edge

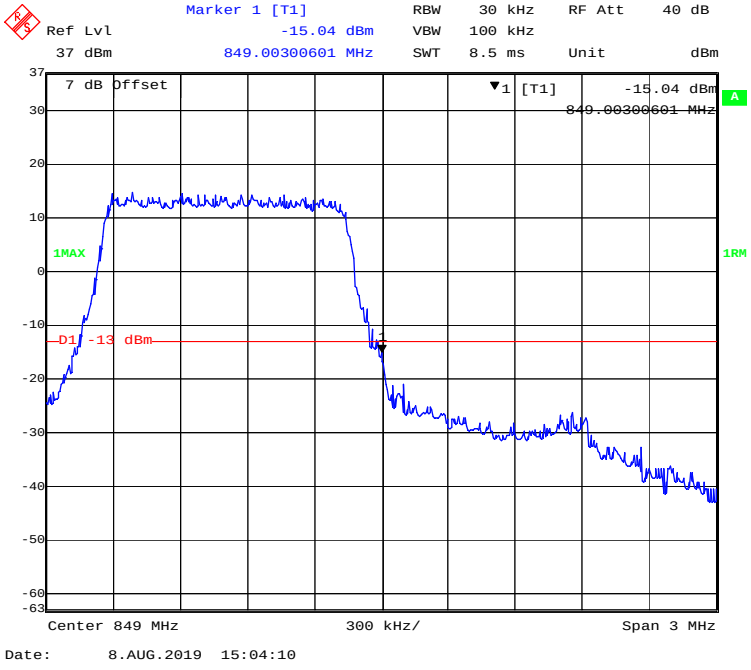


LTE Band 5:

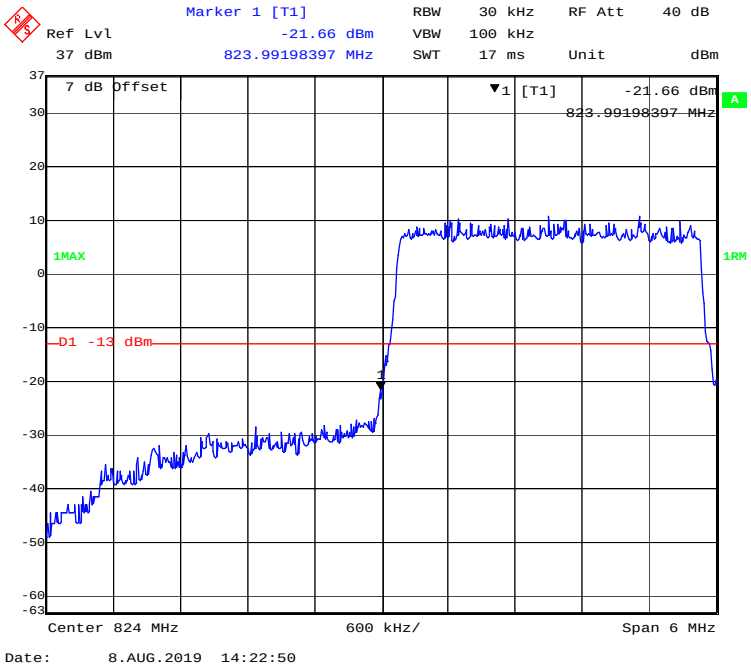
QPSK (1.4 MHz, FULL RB) - Left Band Edge



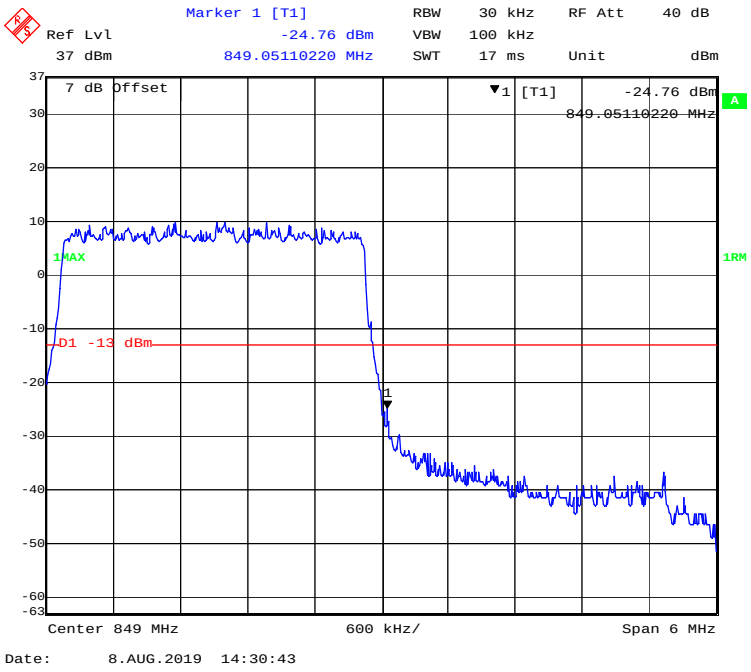
QPSK (1.4 MHz, FULL RB) - Right Band Edge



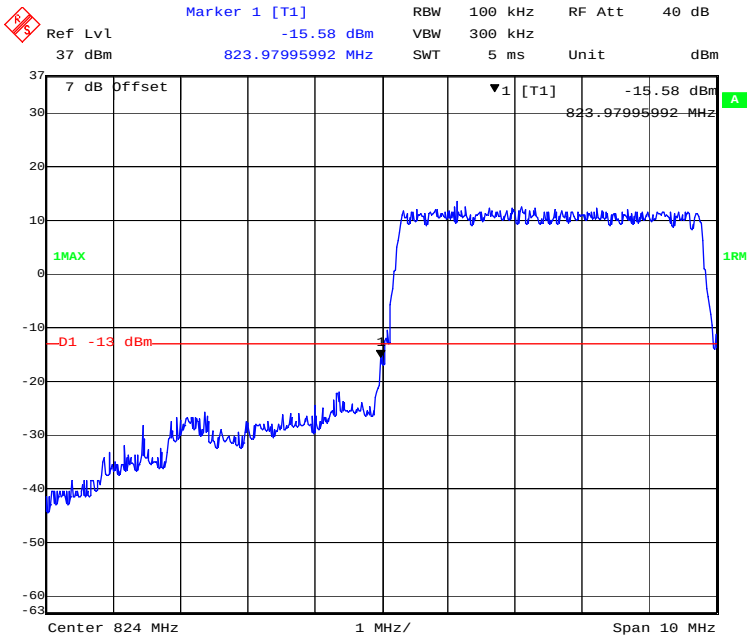
QPSK (3.0 MHz, FULL RB) - Left Band Edge



QPSK (3.0 MHz, FULL RB) - Right Band Edge



QPSK (5.0 MHz, FULL RB) - Left Band Edge



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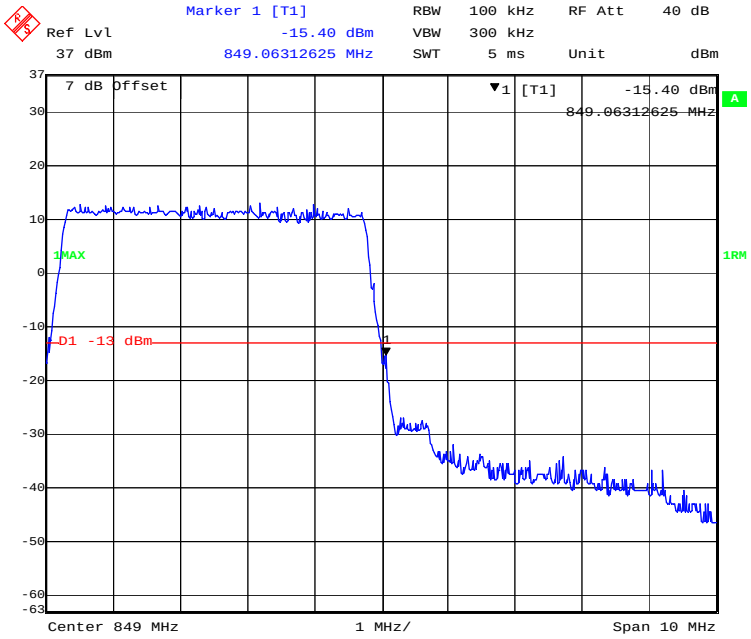
QPSK (5.0 MHz, FULL RB) - Right Band Edge



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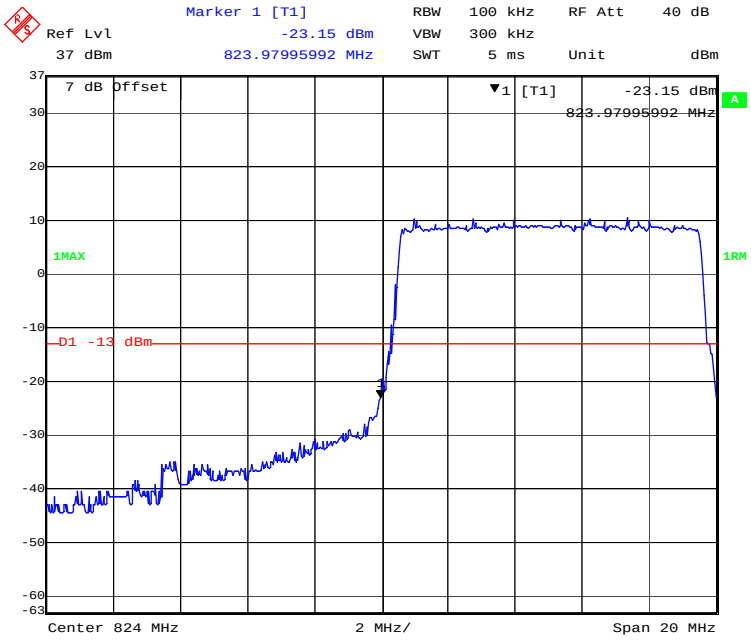
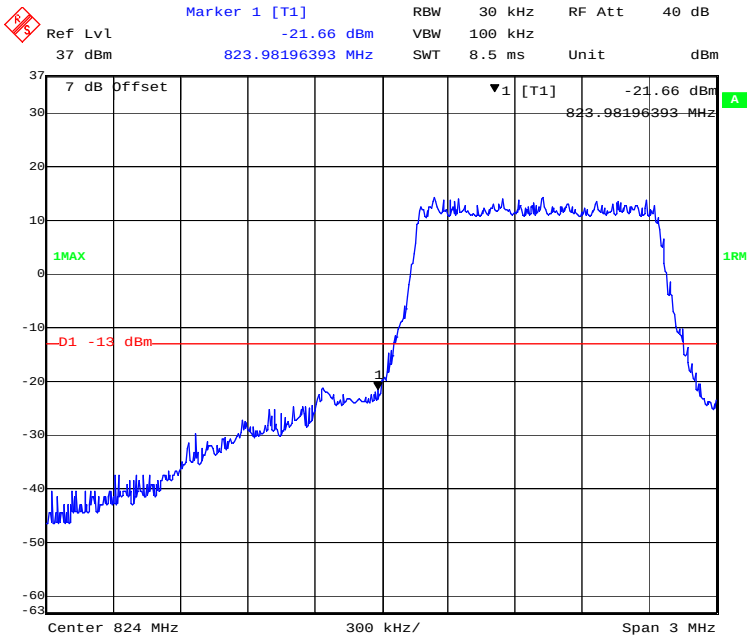
QPSK (10.0 MHz, FULL RB) - Left Band Edge

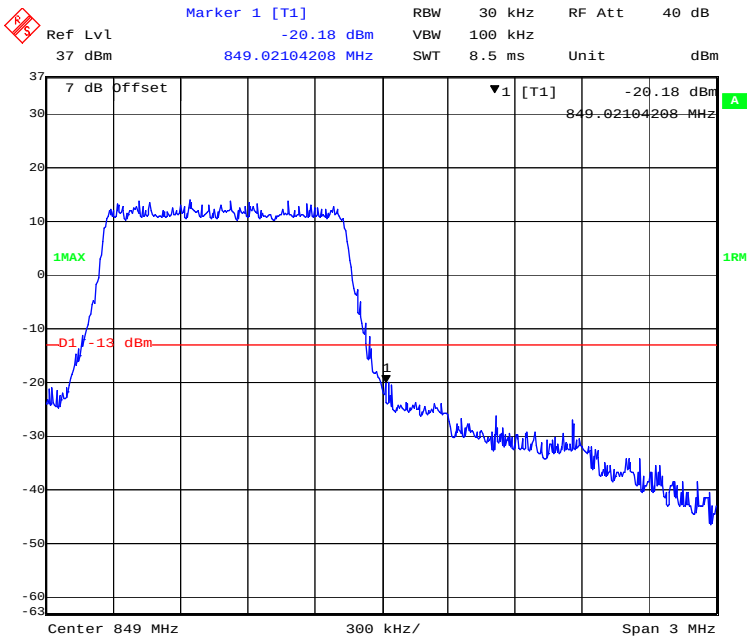


QPSK (10.0 MHz, FULL RB) - Right Band Edge

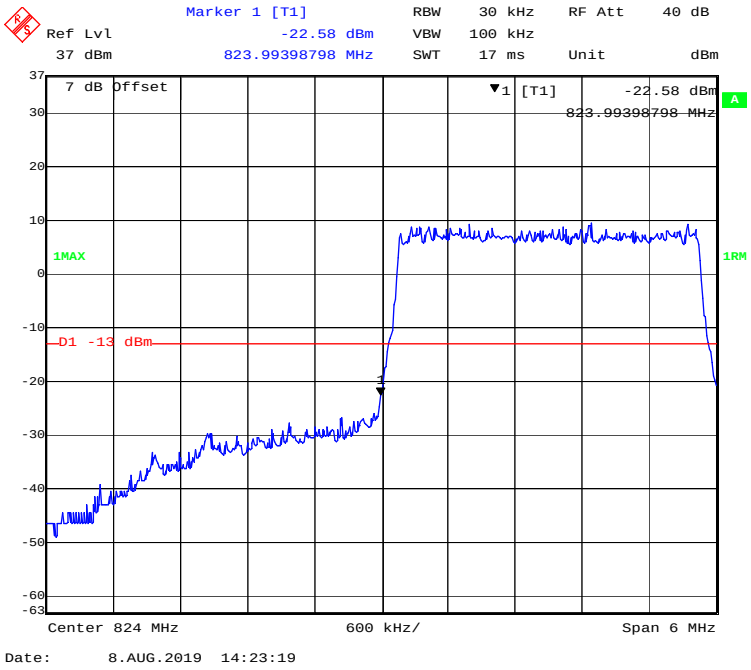
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



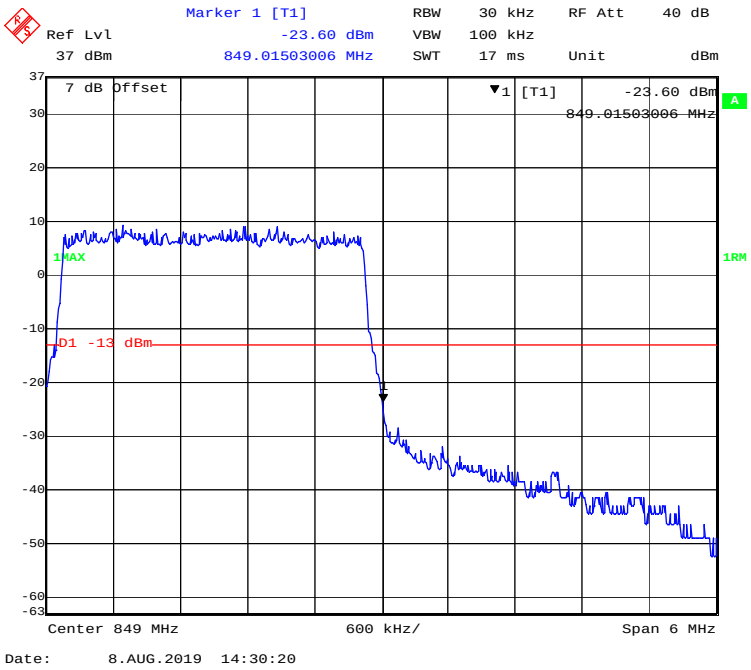
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



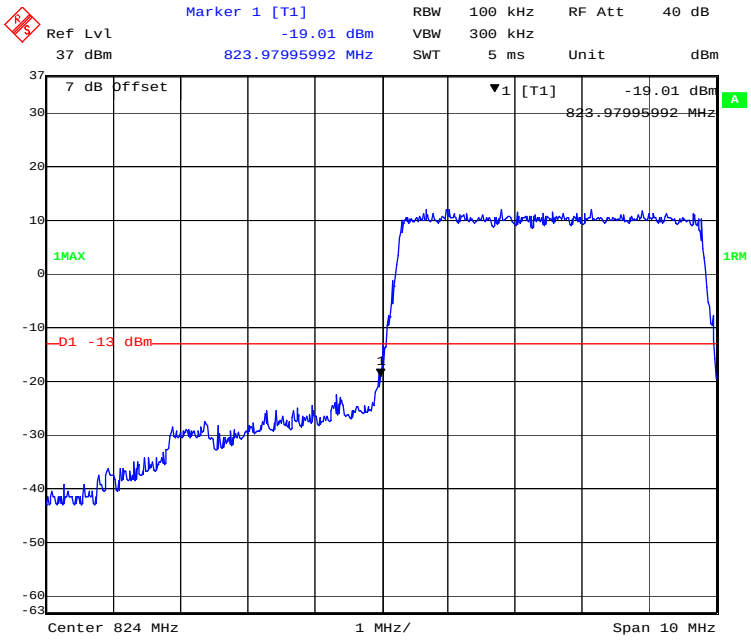
16-QAM (3.0 MHz, FULL RB) - Left Band Edge



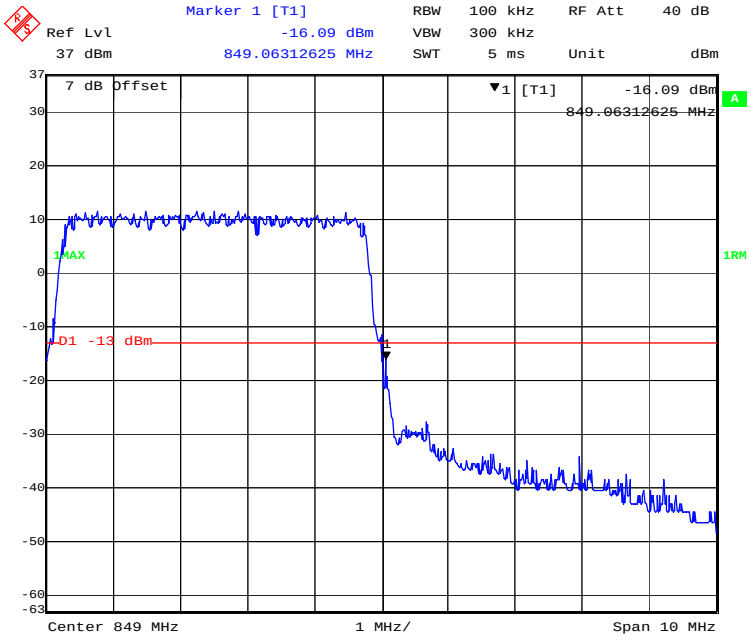
16-QAM (3.0 MHz, FULL RB) - Right Band Edge



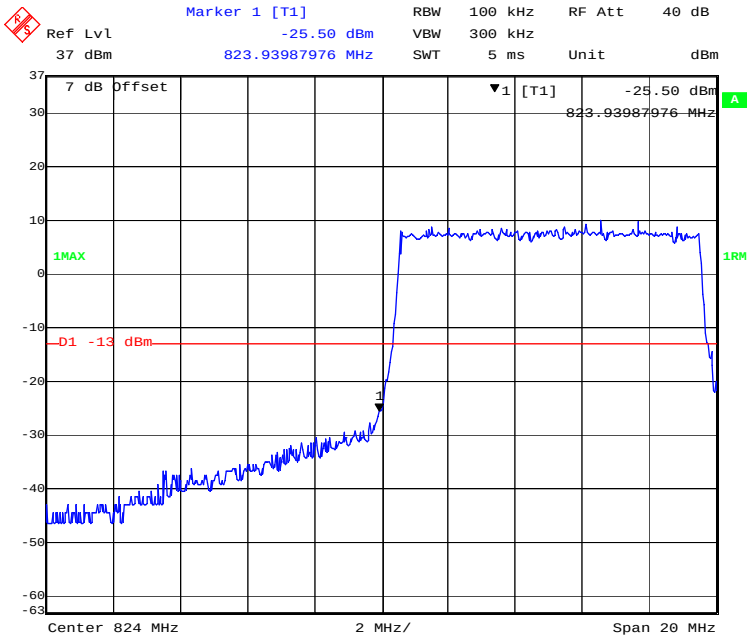
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



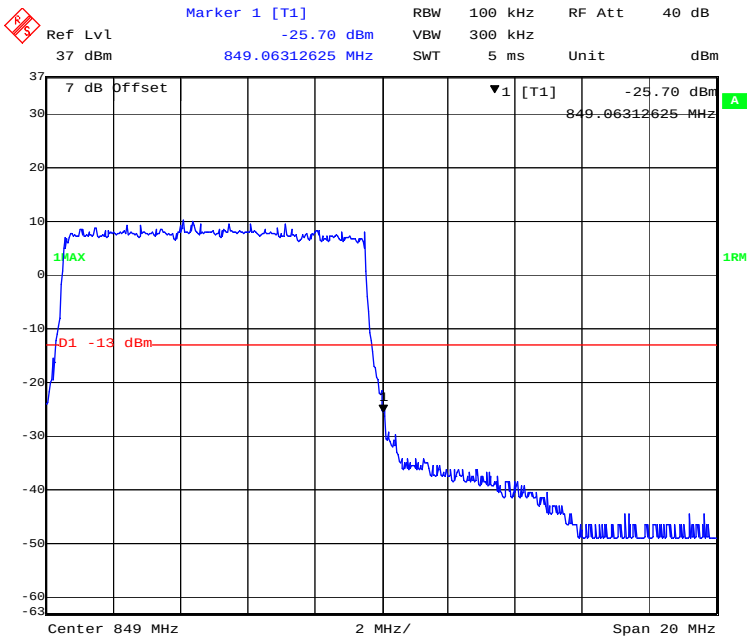
16-QAM (5.0 MHz, FULL RB) - Right Band Edge



16-QAM (10.0 MHz, FULL RB) - Left Band Edge

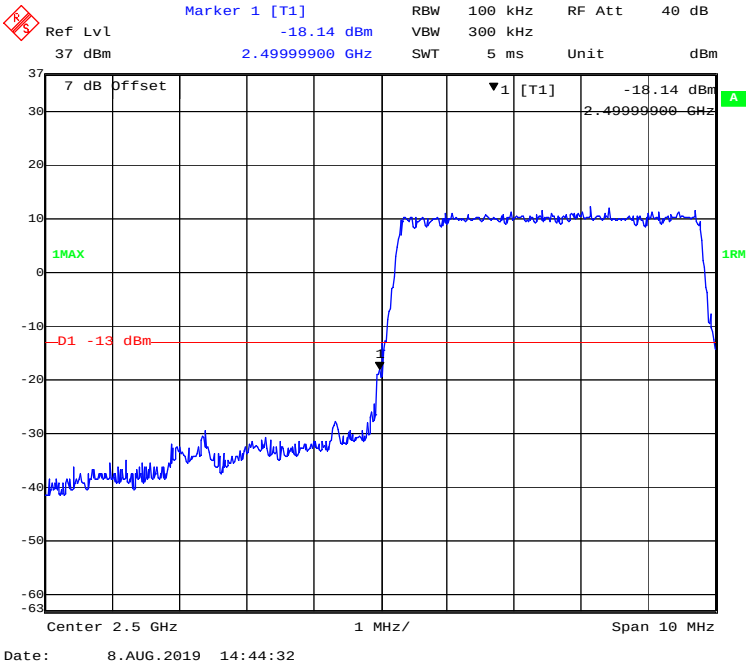


16-QAM (10.0 MHz, FULL RB) - Right Band Edge

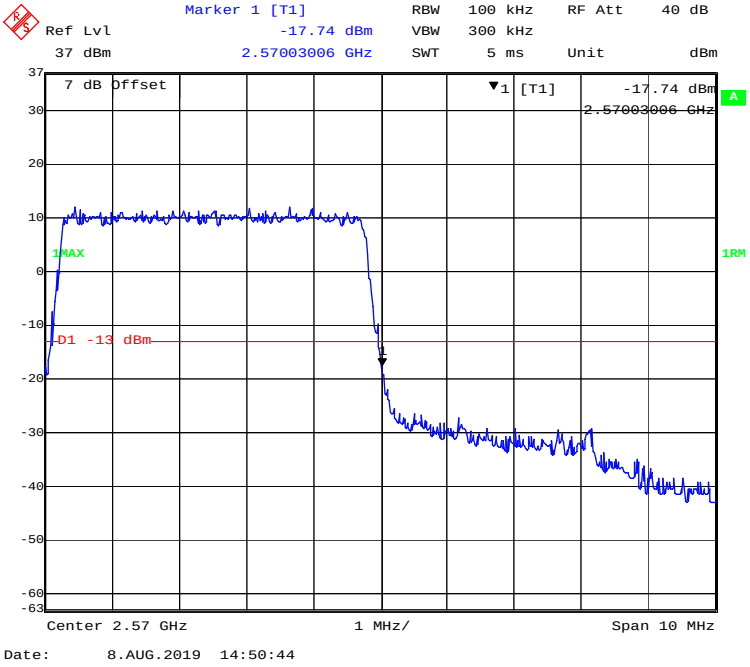


LTE Band 7:

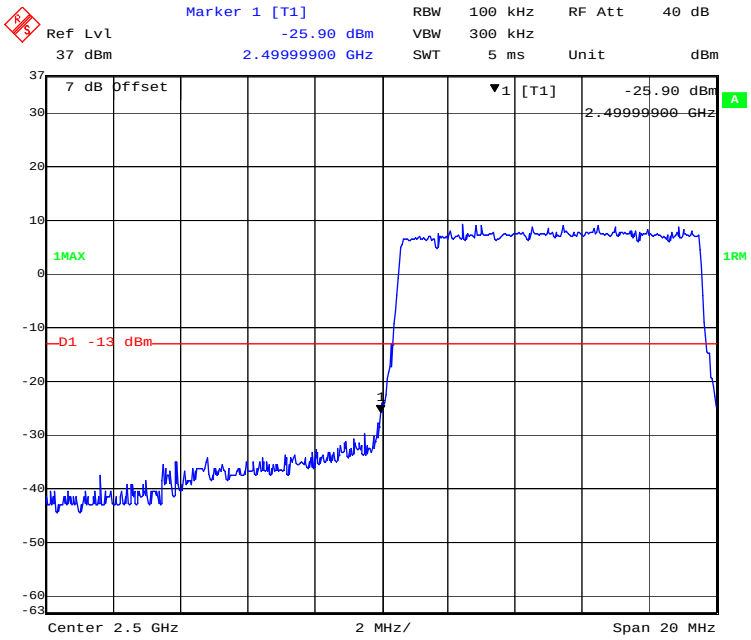
QPSK (5.0 MHz, FULL RB) - Left Band Edge



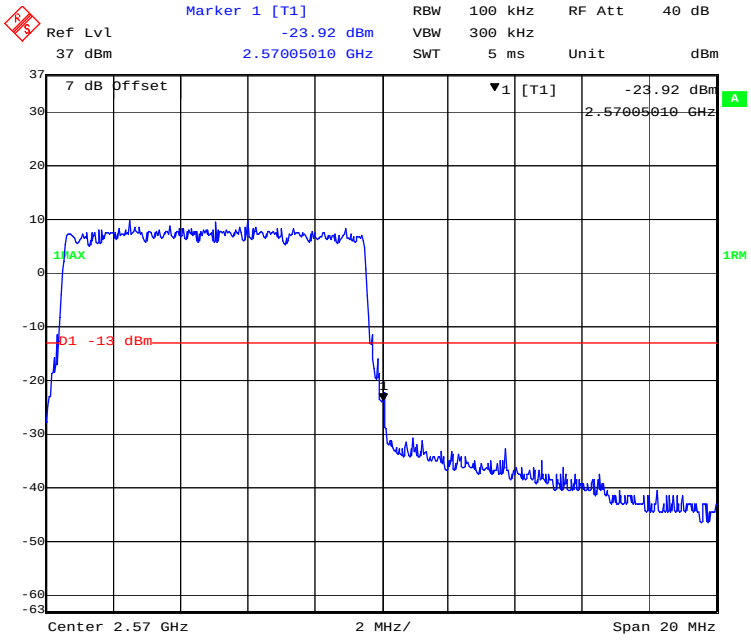
QPSK (5.0 MHz, FULL RB) - Right Band Edge



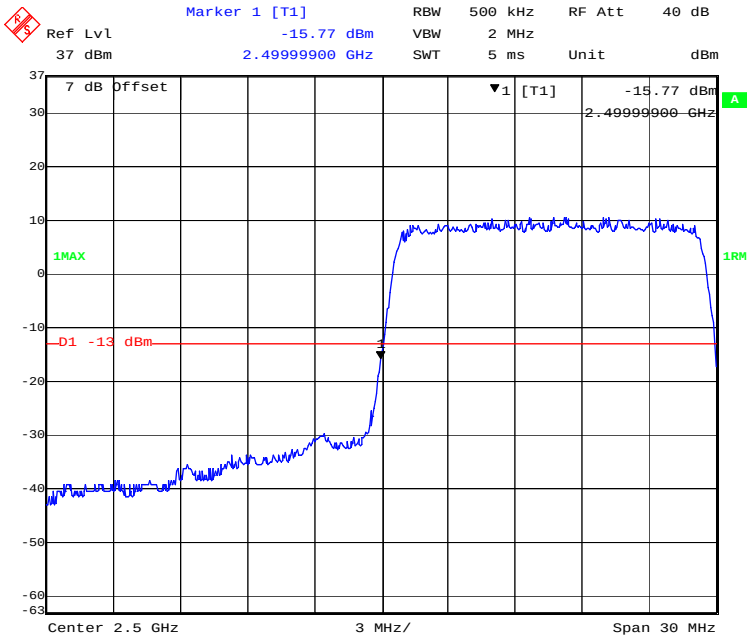
QPSK (10.0 MHz, FULL RB) - Left Band Edge



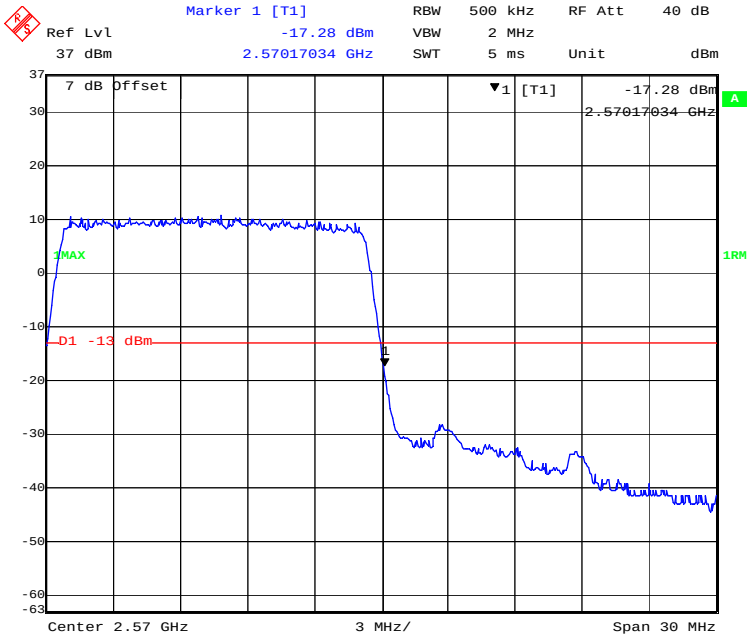
QPSK (10.0 MHz, FULL RB) - Right Band Edge



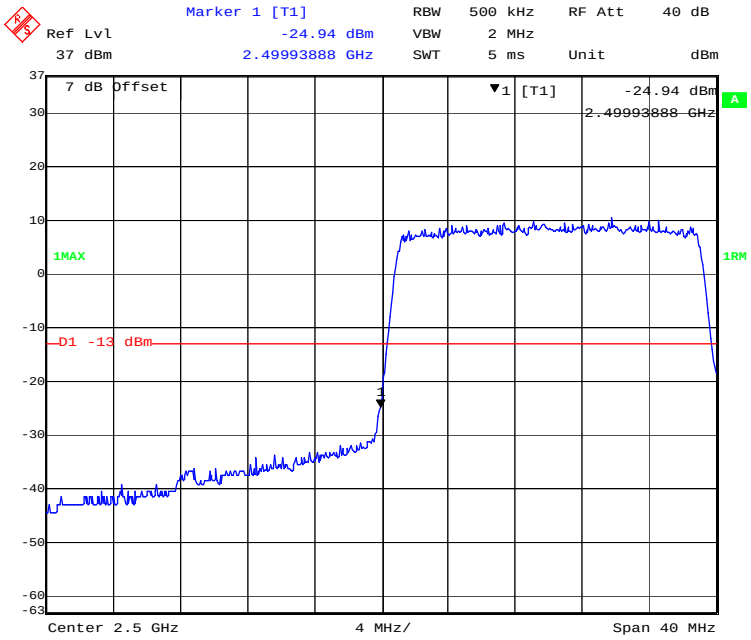
QPSK (15.0 MHz, FULL RB) - Left Band Edge



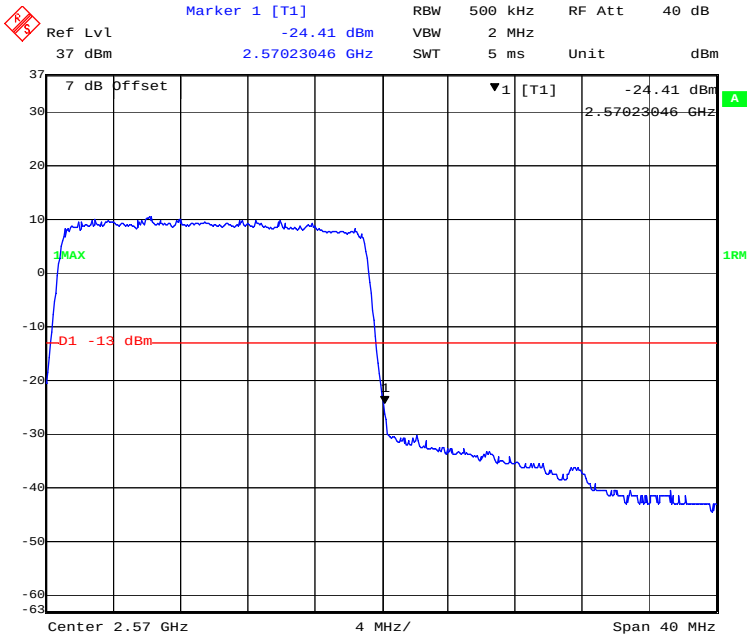
QPSK (15.0 MHz, FULL RB) - Right Band Edge



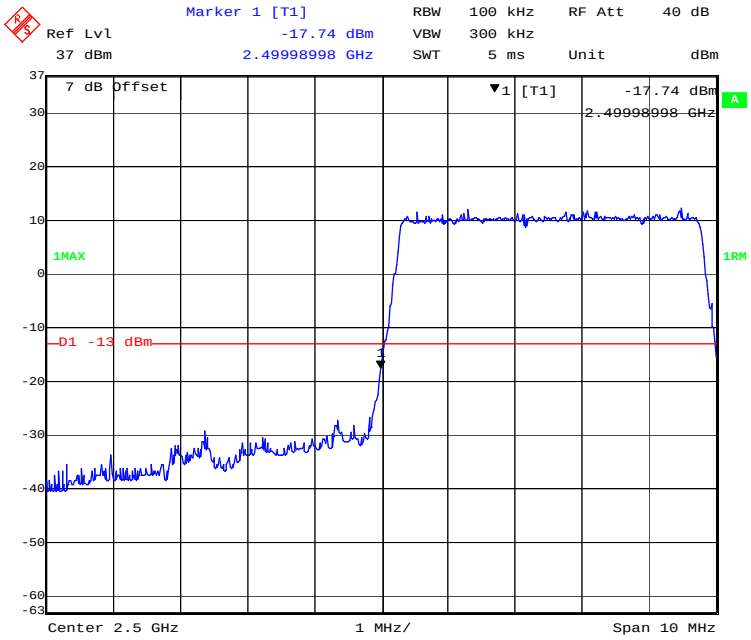
QPSK (20.0 MHz, FULL RB) - Left Band Edge



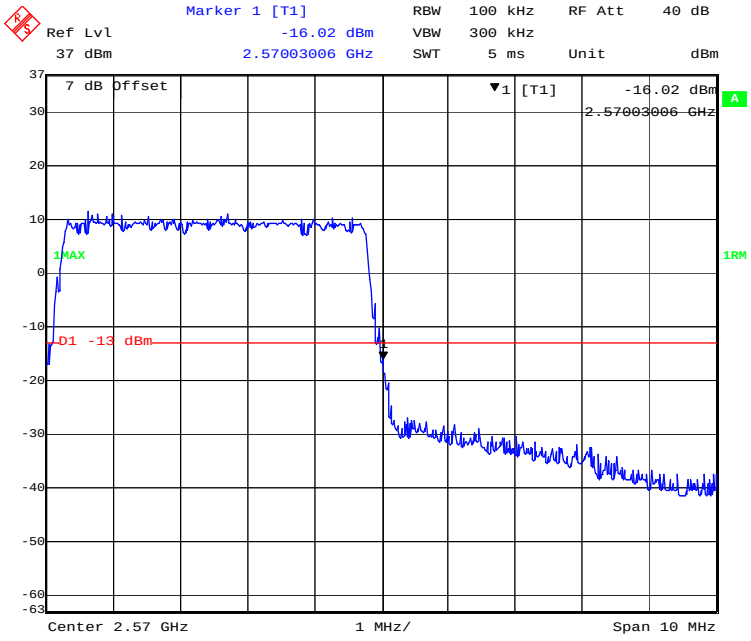
QPSK (20.0 MHz, FULL RB) - Right Band Edge



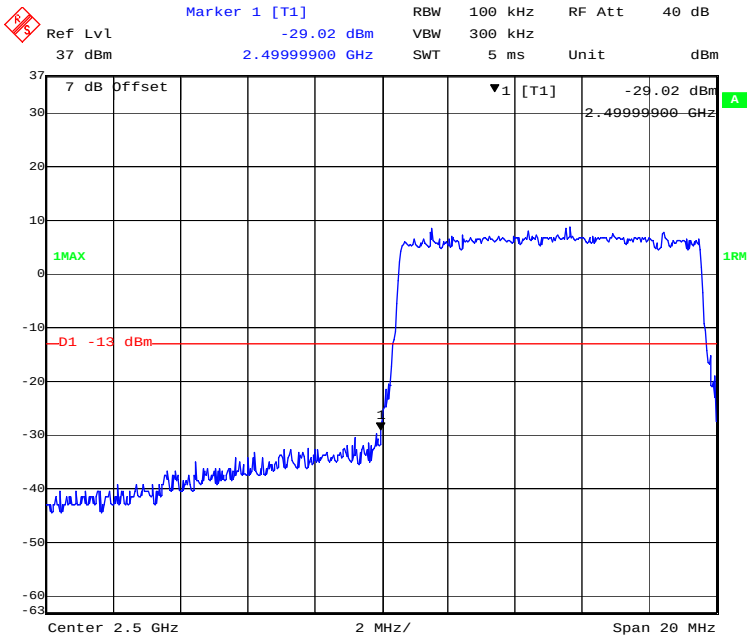
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



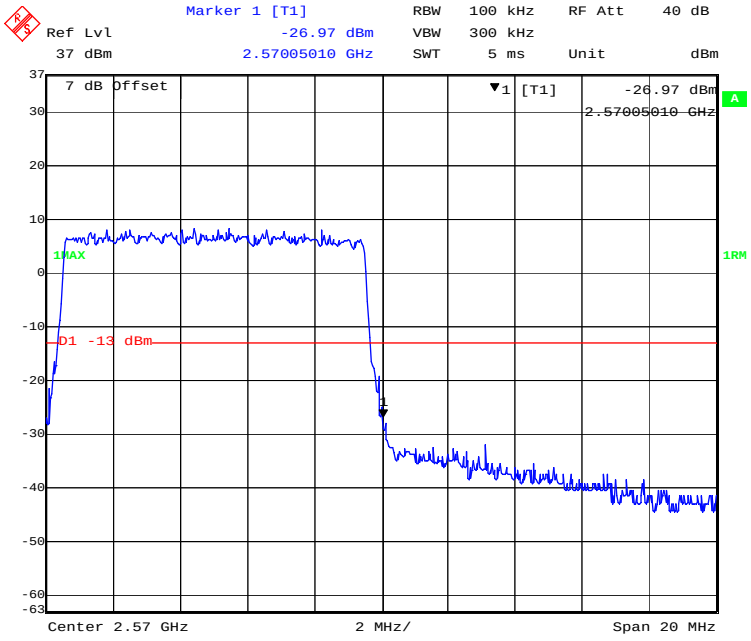
16-QAM (5.0 MHz, FULL RB) - Right Band Edge



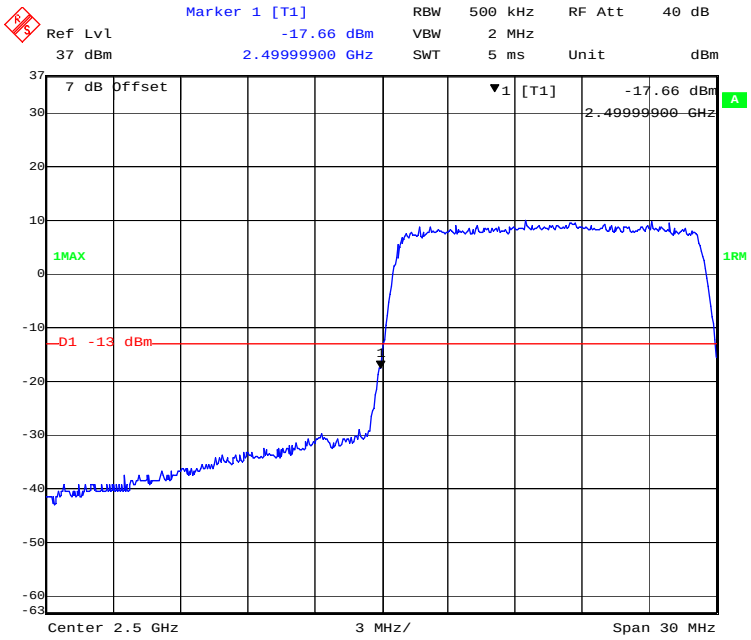
16-QAM (10.0 MHz, FULL RB) - Left Band Edge



16-QAM (10.0 MHz, FULL RB) - Right Band Edge

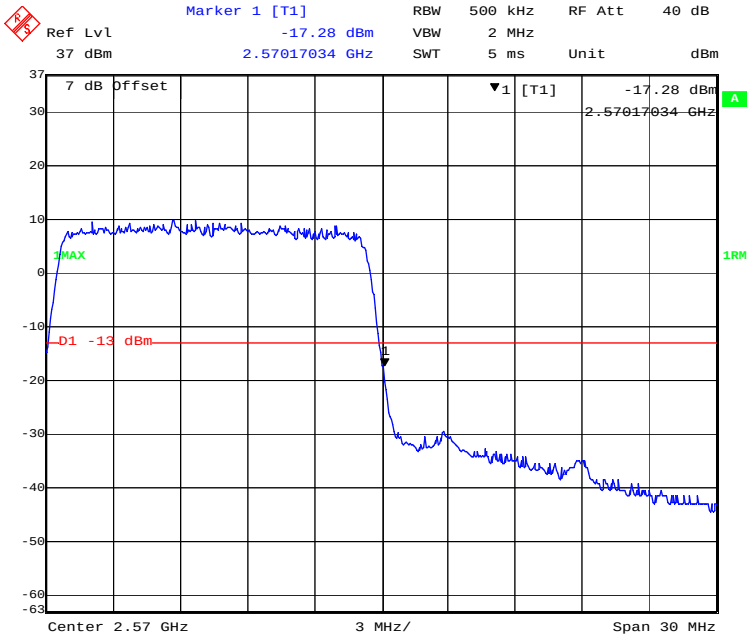


16-QAM (15.0 MHz, FULL RB) - Left Band Edge



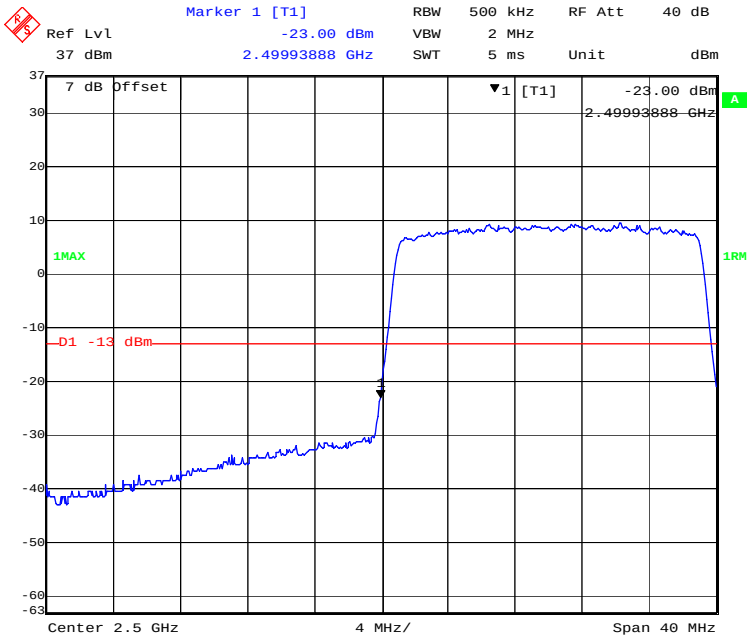
Date: 8.AUG.2019 14:41:58

16-QAM (15.0 MHz, FULL RB) - Right Band Edge



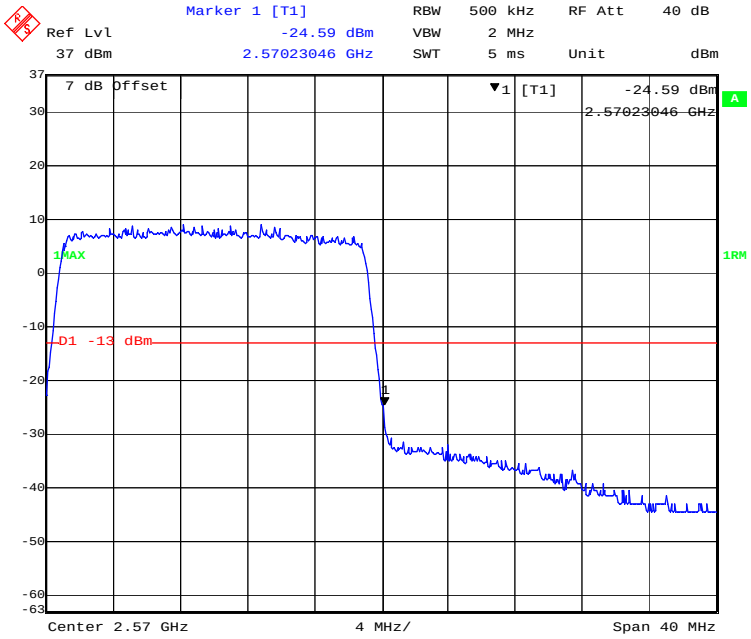
Date: 8.AUG.2019 14:48:45

16-QAM (20.0 MHz, FULL RB) - Left Band Edge



Date: 8.AUG.2019 14:39:59

16-QAM (20.0 MHz, FULL RB) - Right Band Edge



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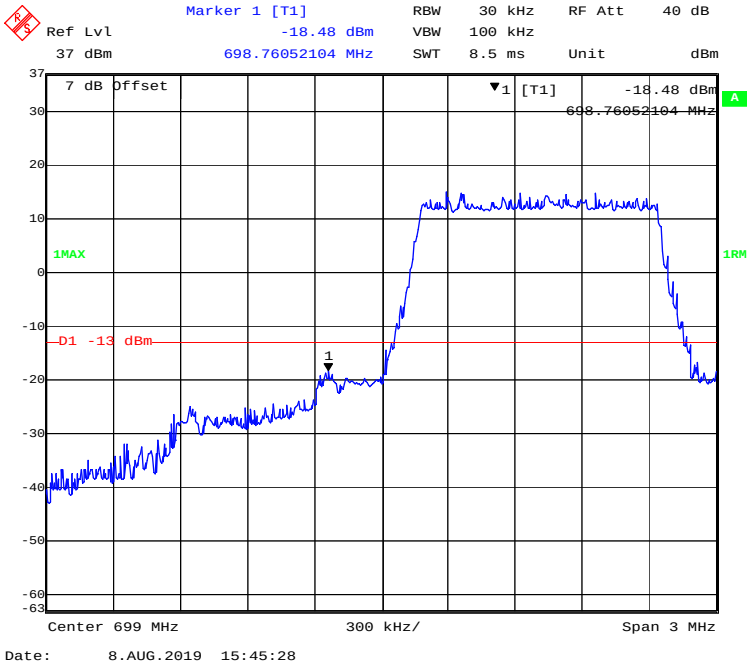
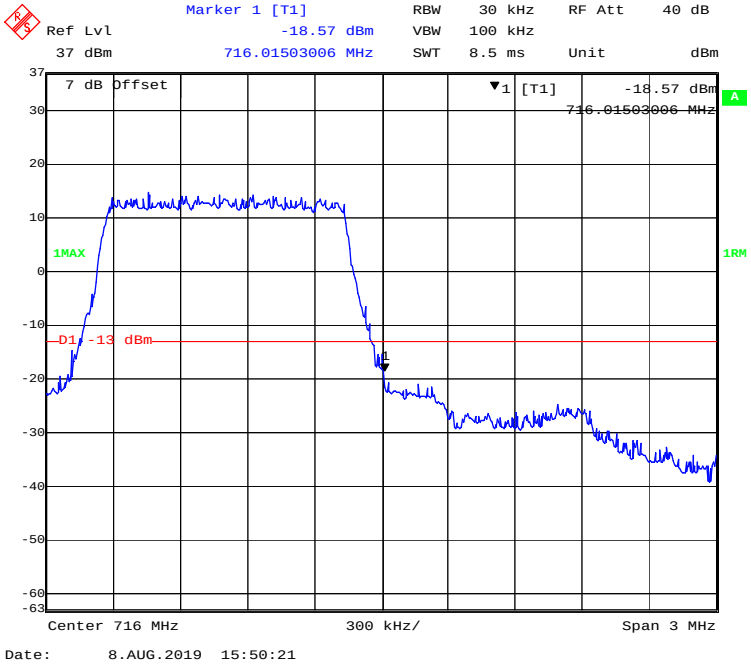
LTE Band 12:

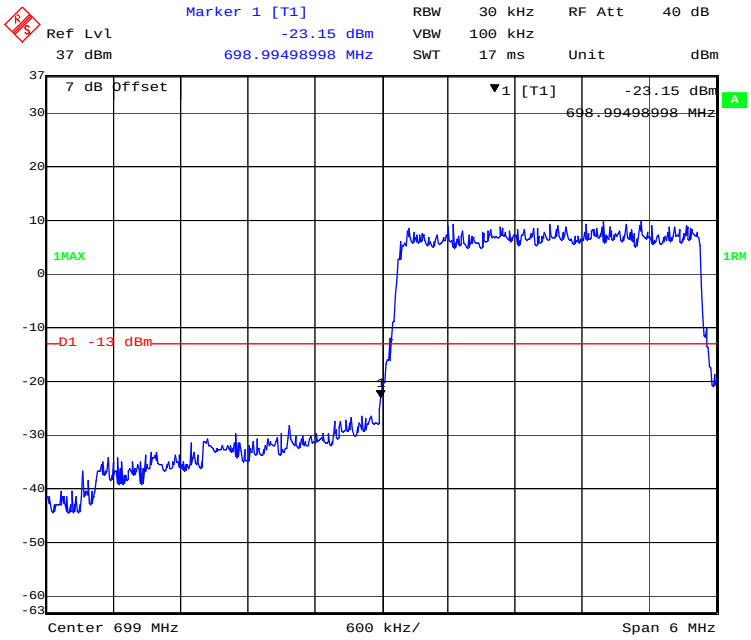
QPSK (1.4 MHz, FULL RB) - Left Band Edge



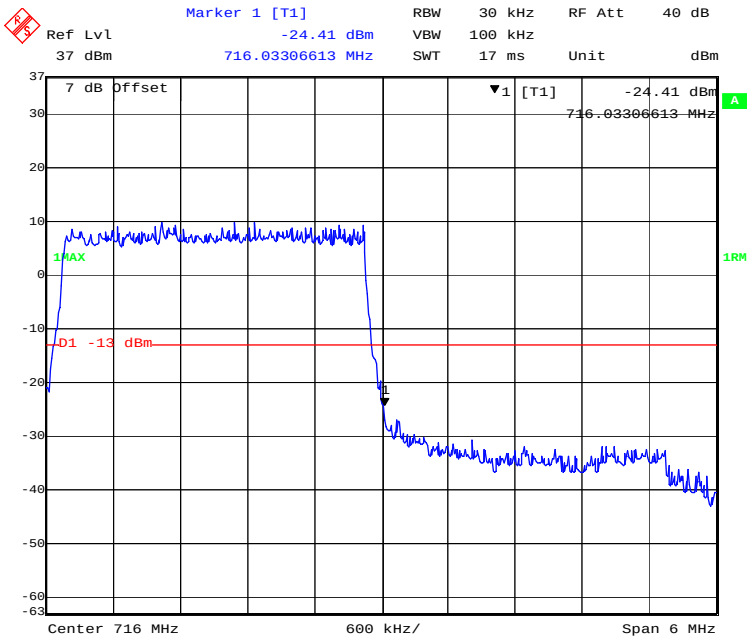
QPSK (1.4 MHz, FULL RB) - Right Band Edge



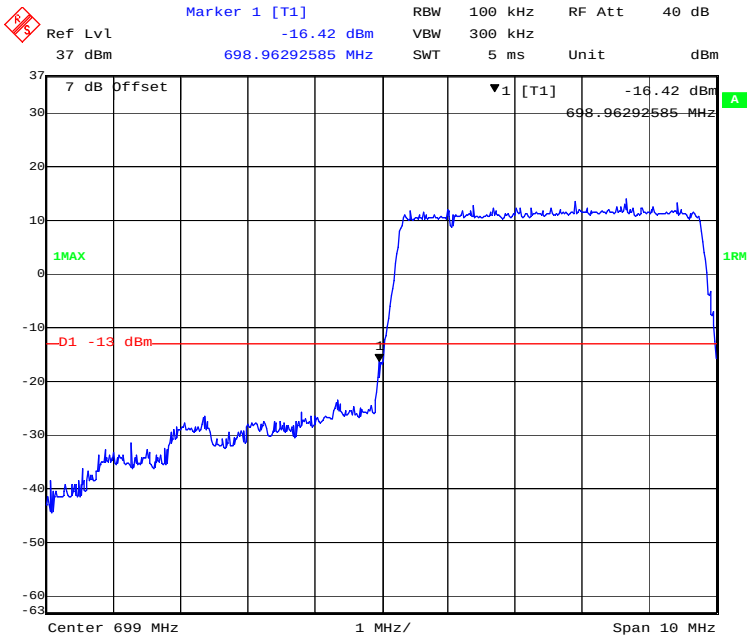
QPSK (3 MHz, FULL RB) - Left Band Edge



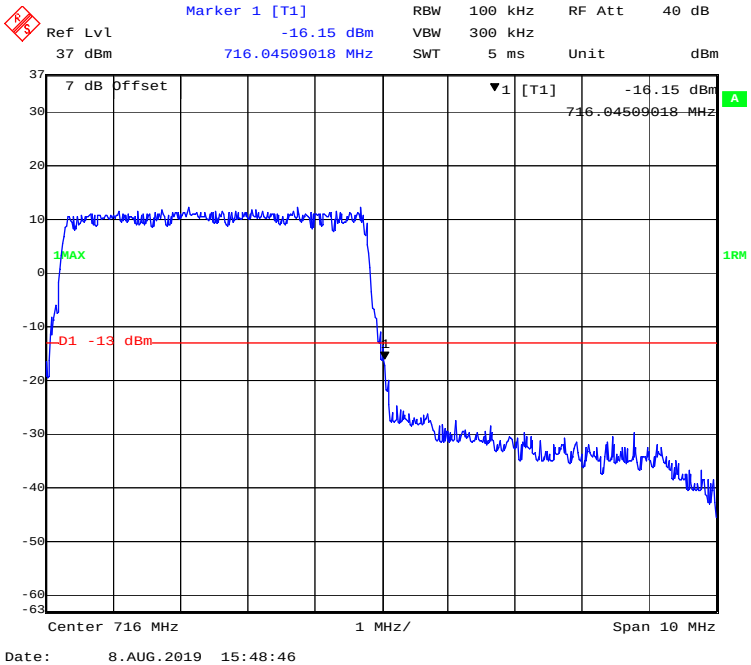
QPSK (3 MHz, FULL RB) - Right Band Edge



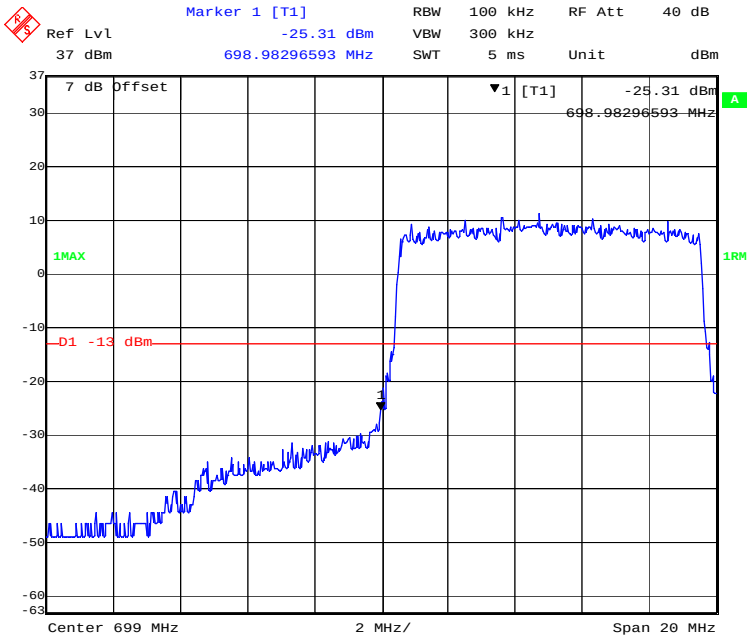
QPSK (5 MHz, FULL RB) - Left Band Edge



QPSK (5 MHz, FULL RB) - Right Band Edge



QPSK (10 MHz, FULL RB) - Left Band Edge



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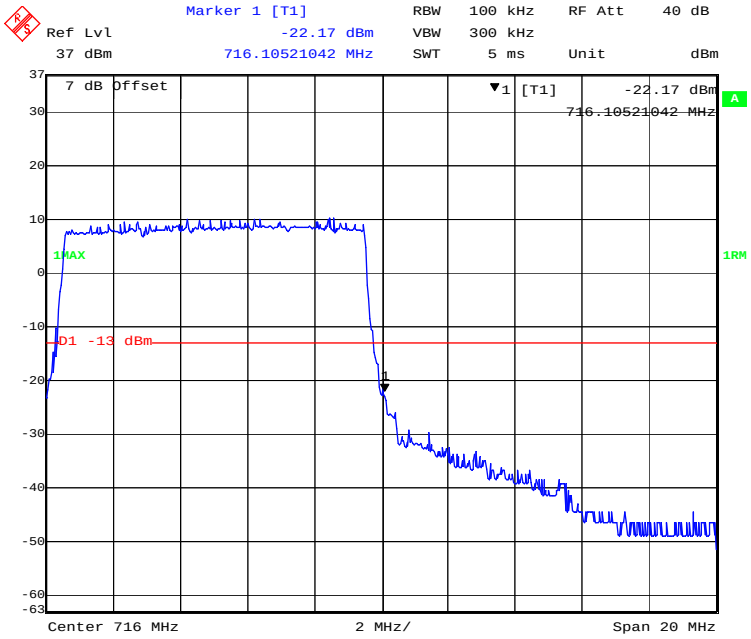
QPSK (10 MHz, FULL RB) - Right Band Edge



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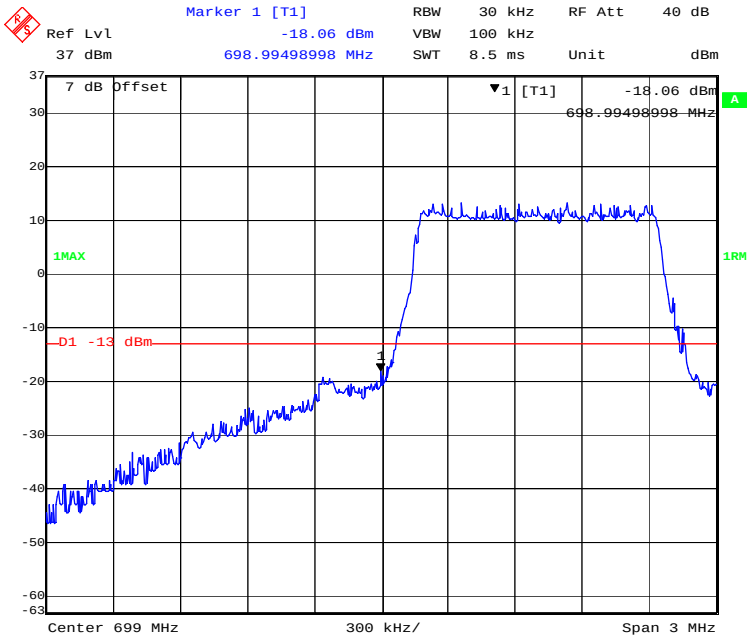
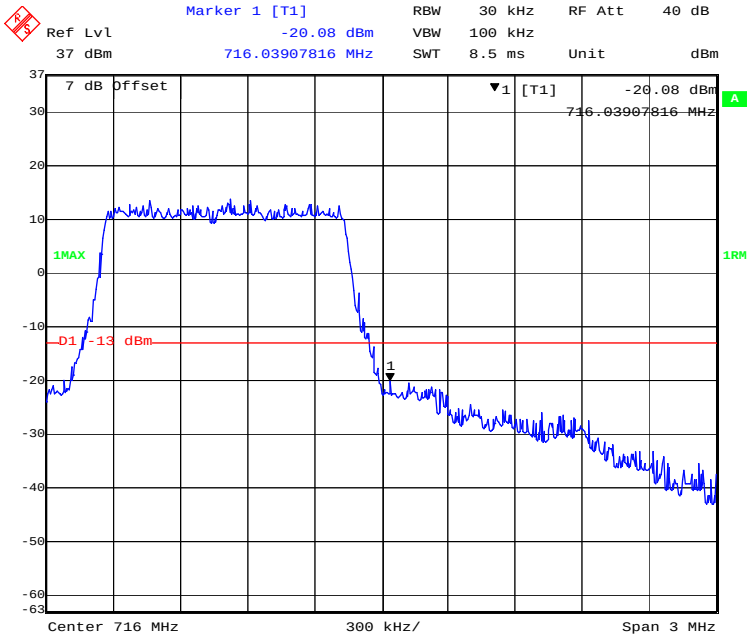
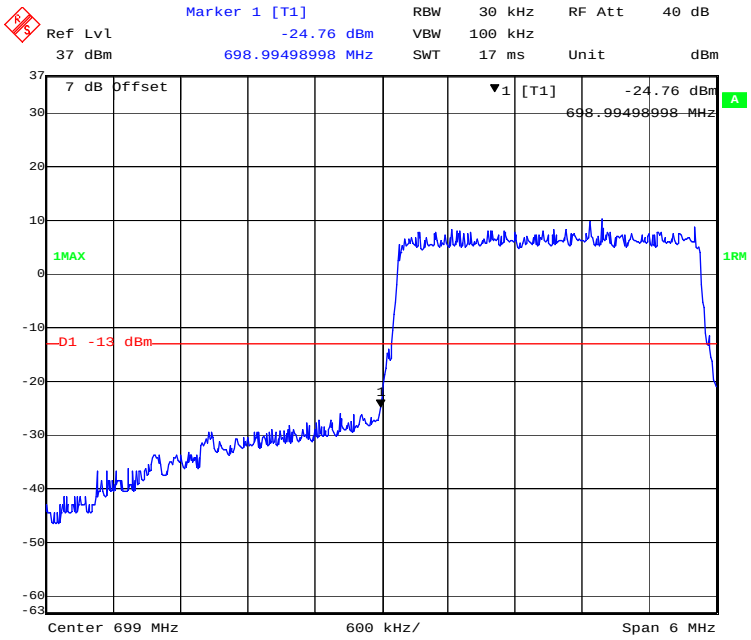
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



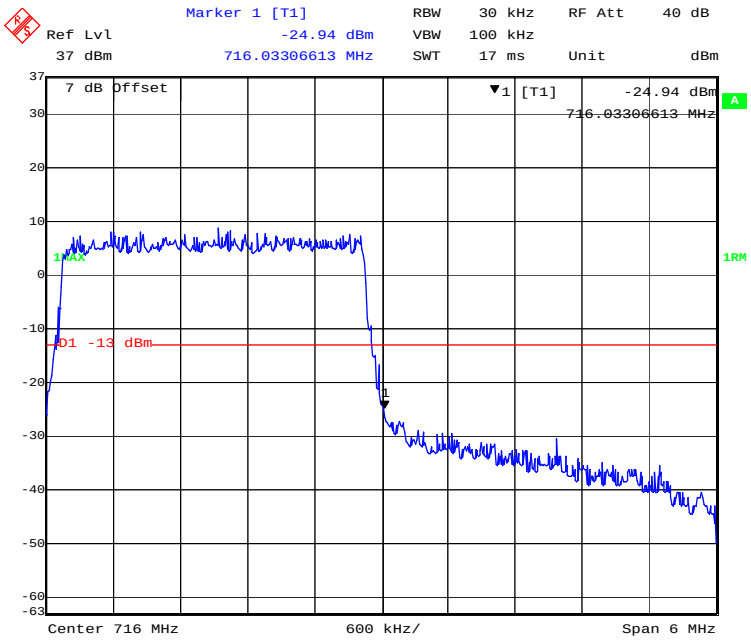
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



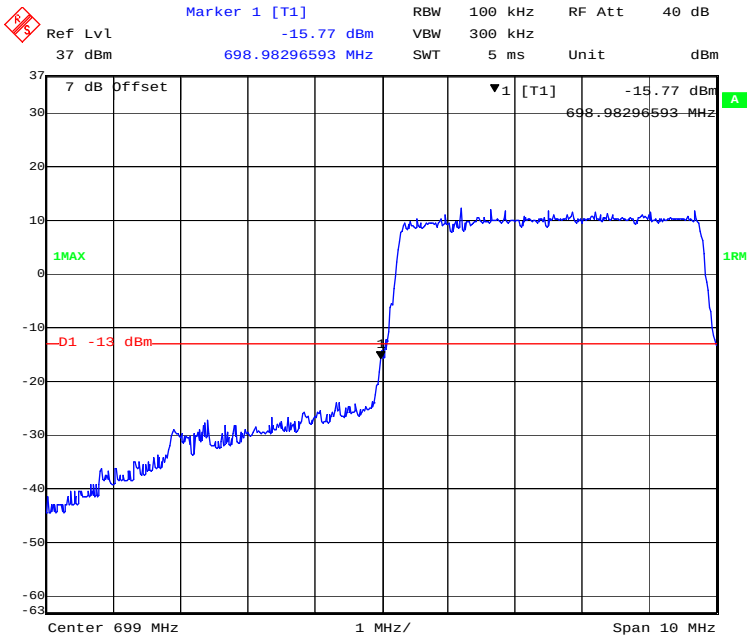
16-QAM (3 MHz, FULL RB) - Left Band Edge



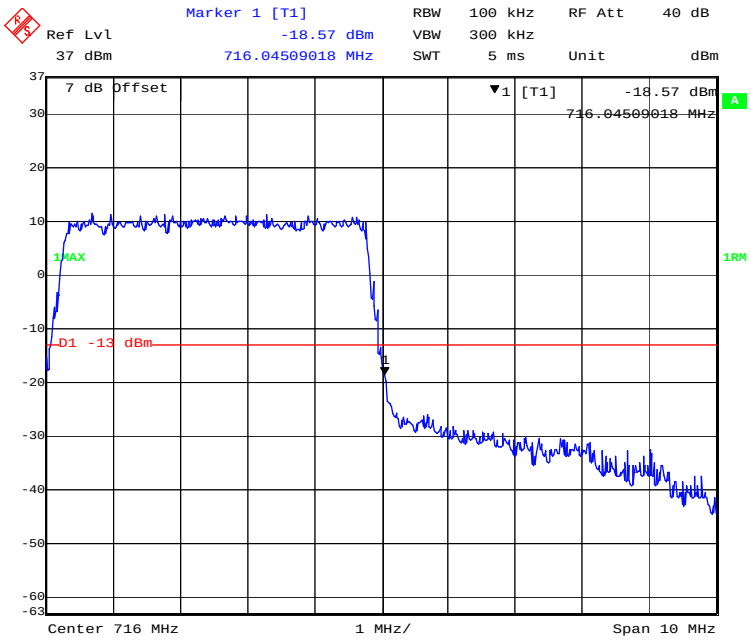
16-QAM (3 MHz, FULL RB) - Right Band Edge



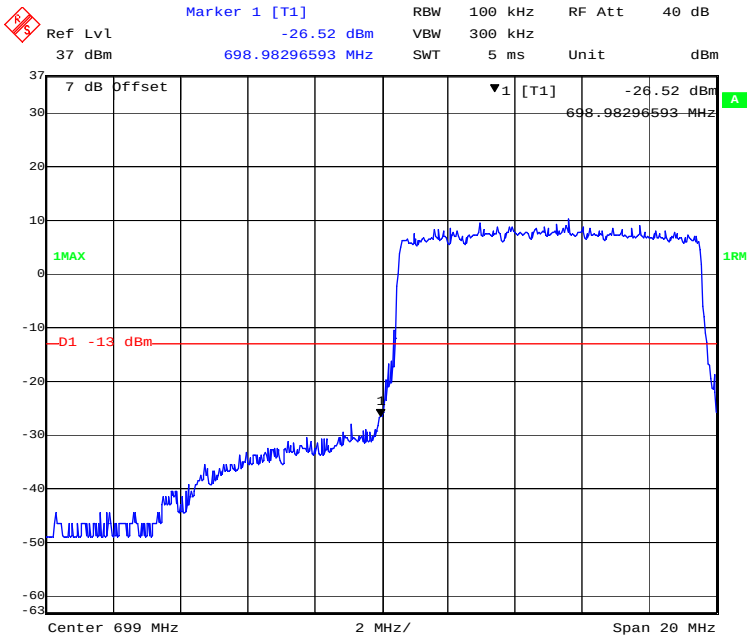
16-QAM (5 MHz, FULL RB) - Left Band Edge



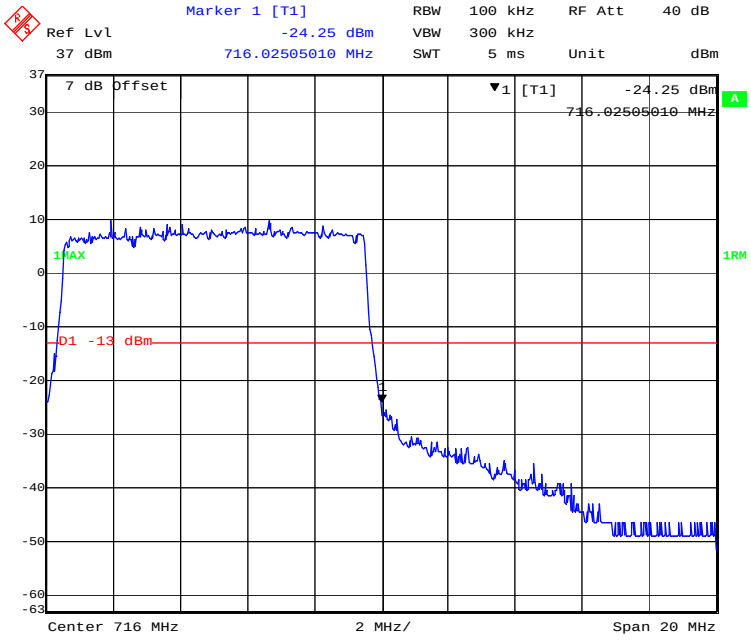
16-QAM (5 MHz, FULL RB) - Right Band Edge



16-QAM (10 MHz, FULL RB) - Left Band Edge

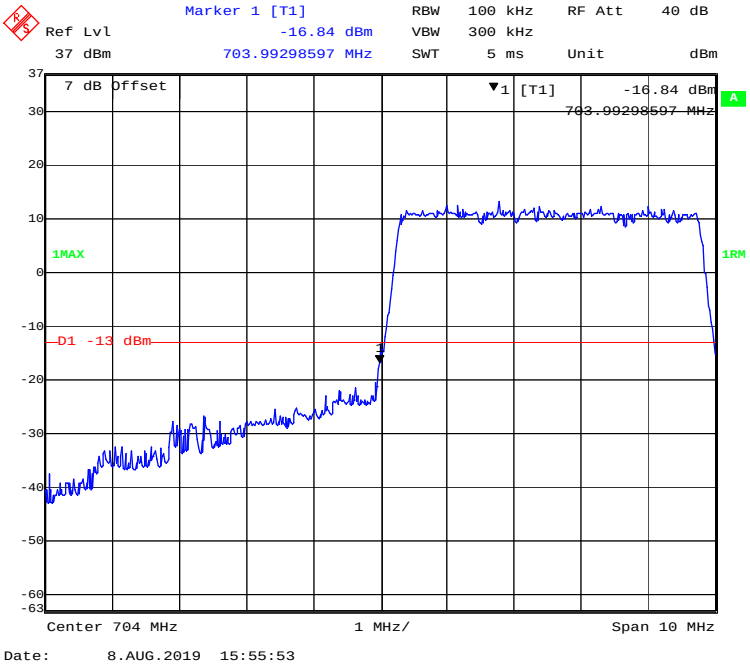


16-QAM (10 MHz, FULL RB) - Right Band Edge

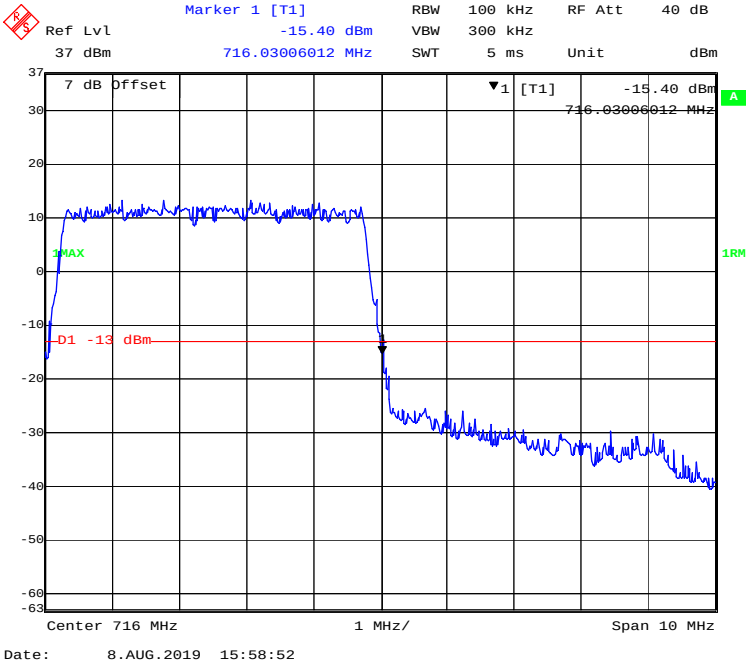


LTE Band 17:

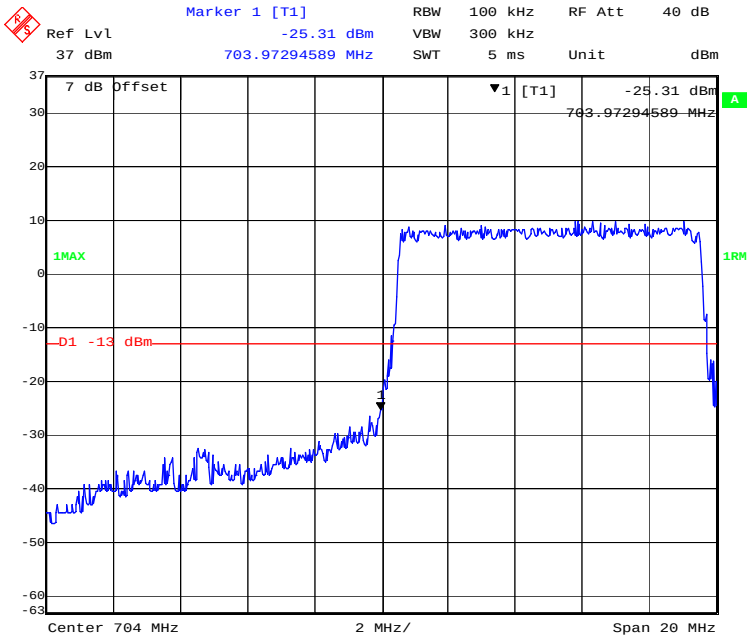
QPSK (5 MHz, FULL RB) - Left Band Edge



QPSK (5 MHz, FULL RB) - Right Band Edge

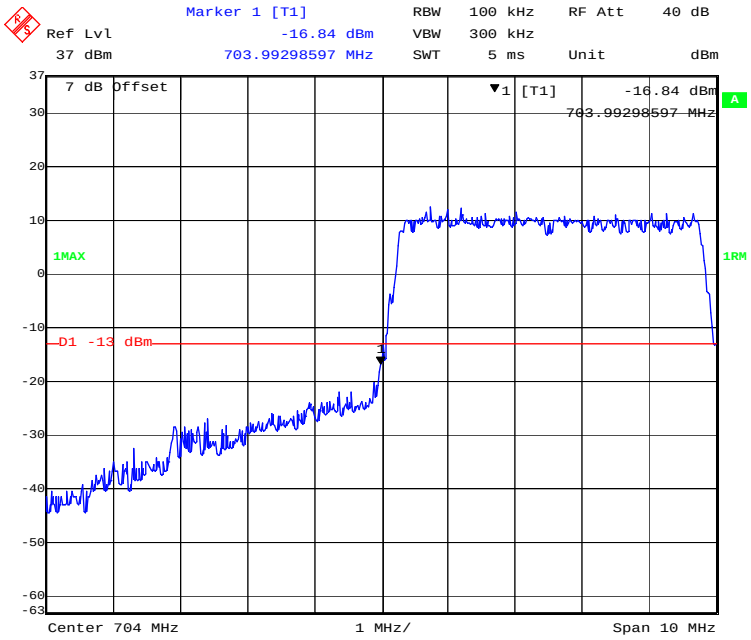


QPSK (10 MHz, FULL RB) - Left Band Edge

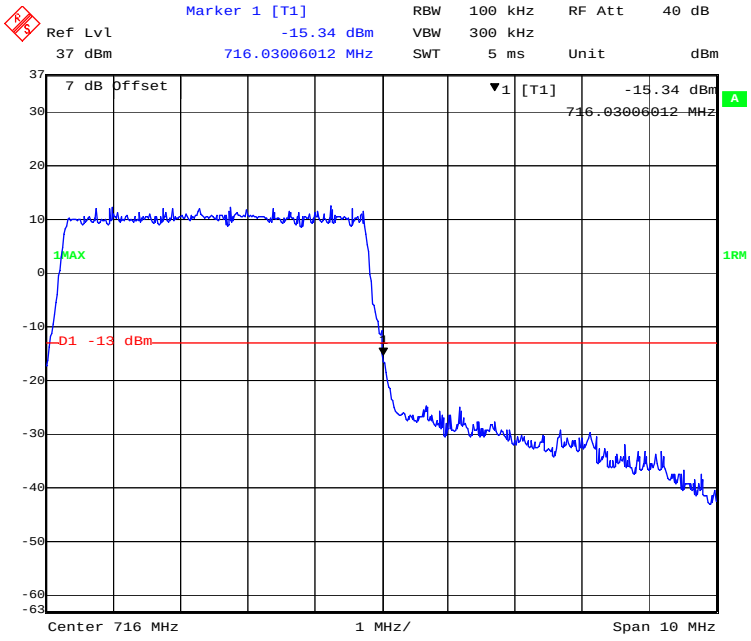


QPSK (10 MHz, FULL RB) - Right Band Edge

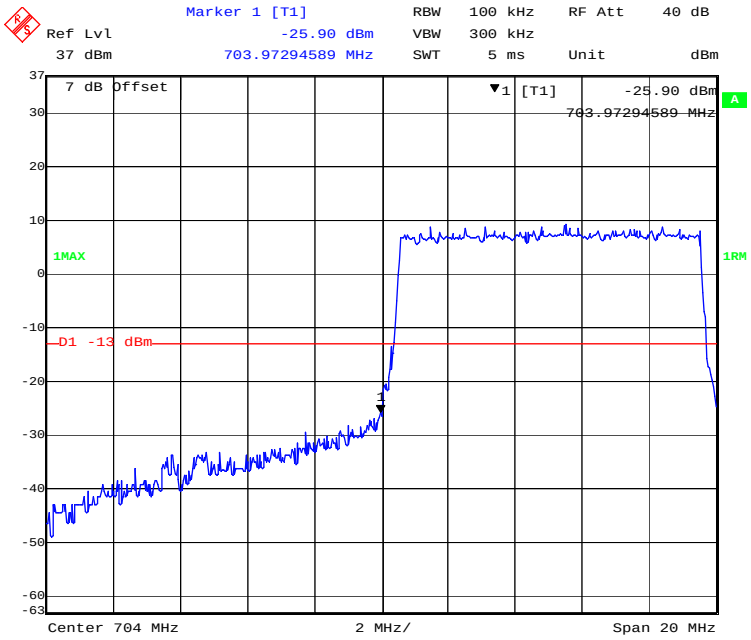
16-QAM (5 MHz, FULL RB) - Left Band Edge



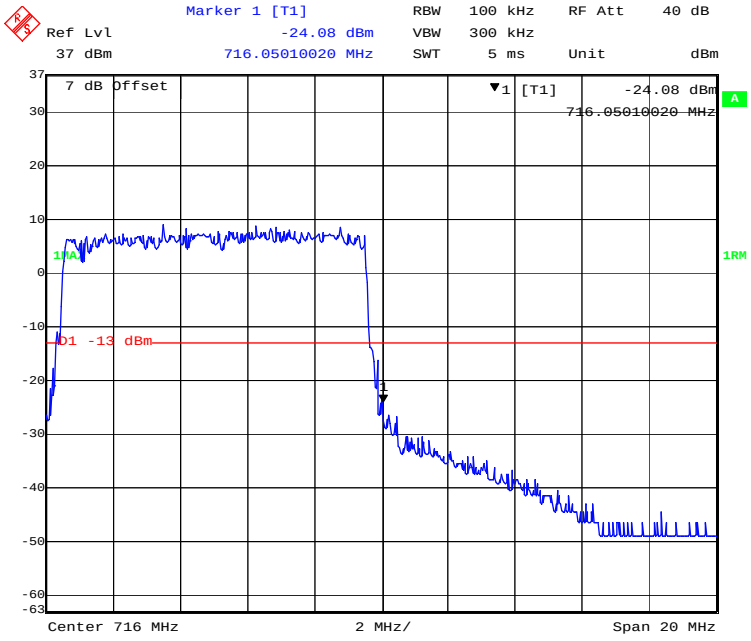
16-QAM (5 MHz, FULL RB) - Right Band Edge



16-QAM (10 MHz, FULL RB) - Left Band Edge

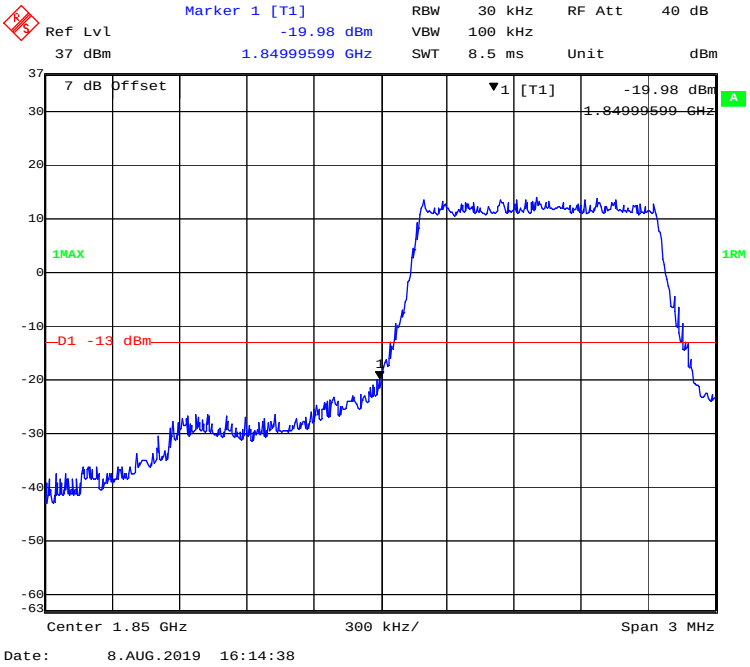


16-QAM (10 MHz, FULL RB) - Right Band Edge

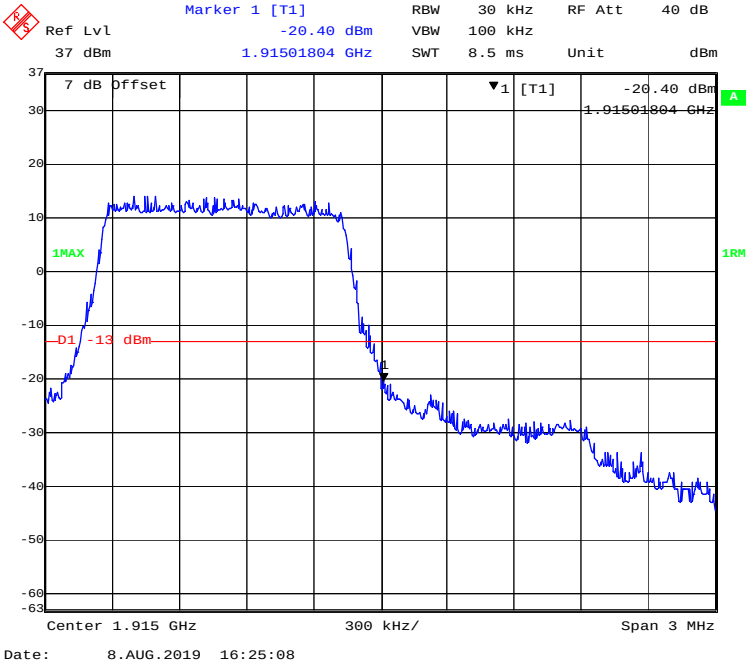


LTE Band 25:

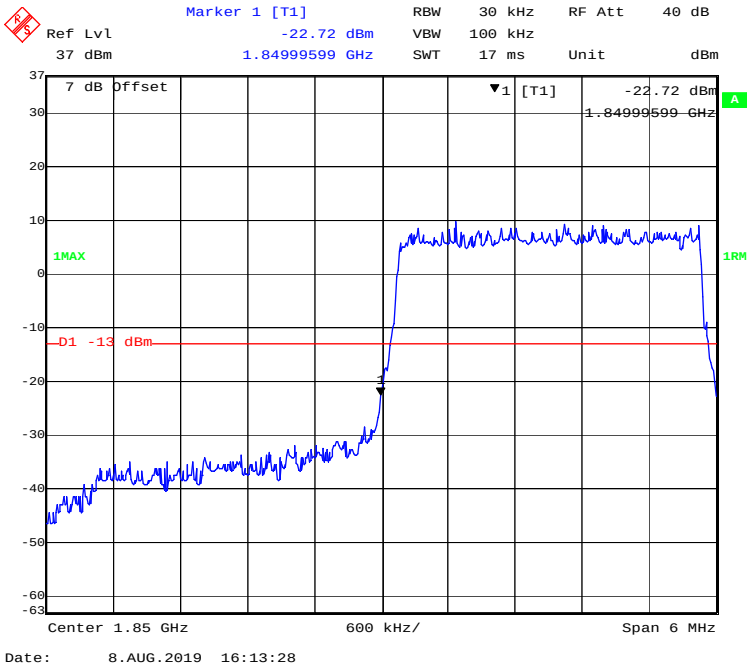
QPSK (1.4 MHz, FULL RB) - Left Band Edge



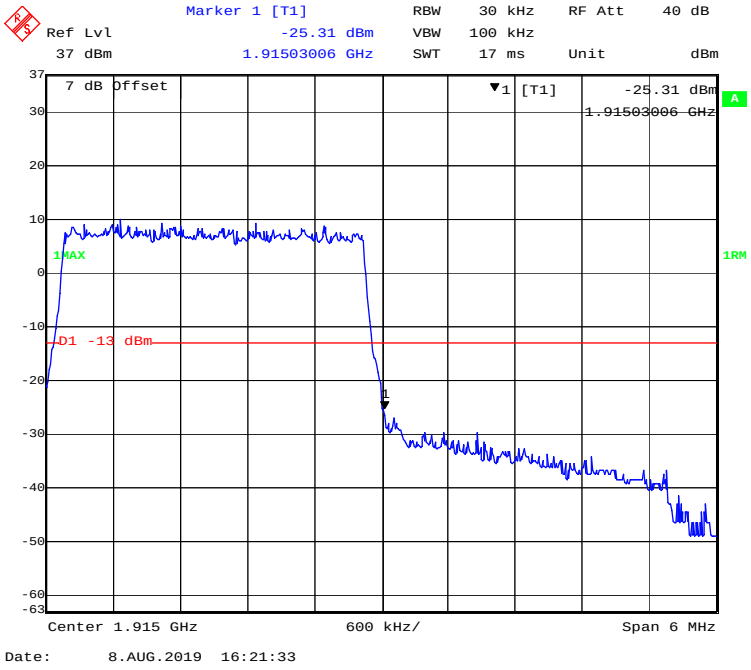
QPSK (1.4 MHz, FULL RB) - Right Band Edge



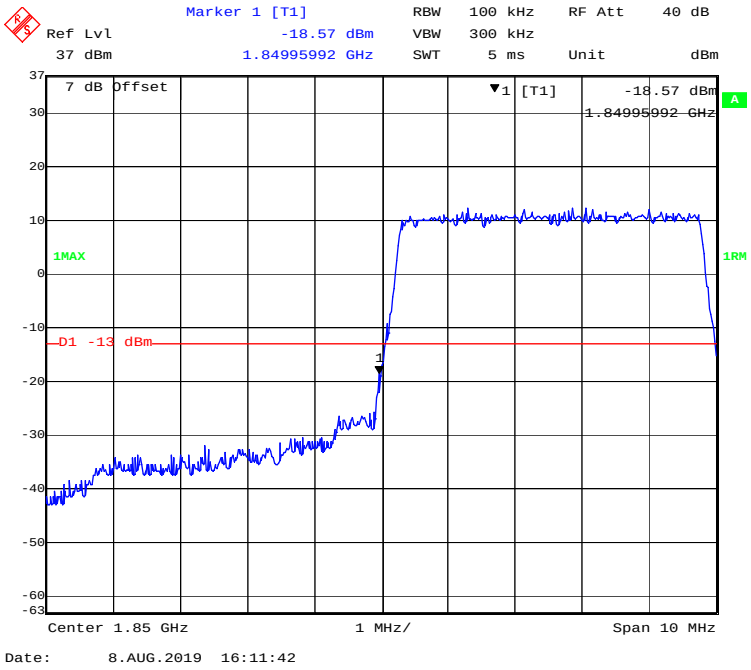
QPSK (3.0 MHz, FULL RB) - Left Band Edge



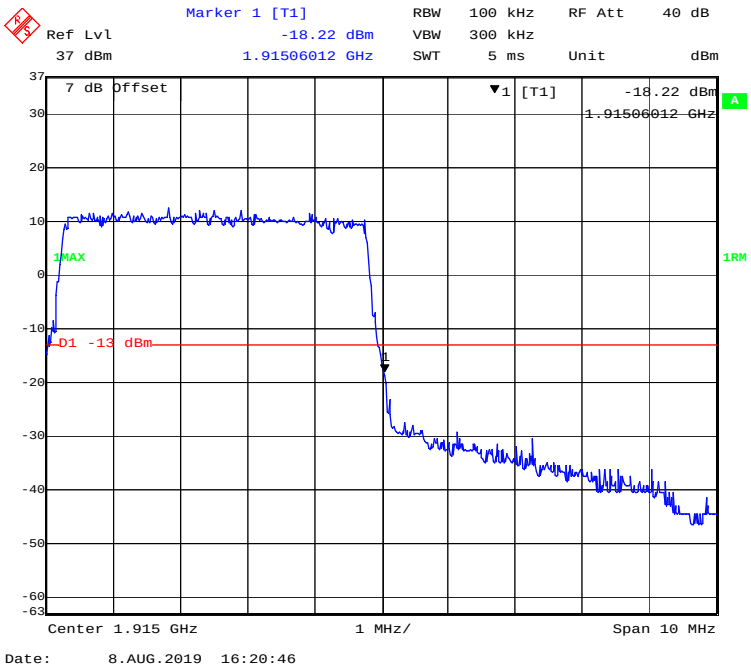
QPSK (3.0 MHz, FULL RB) - Right Band Edge



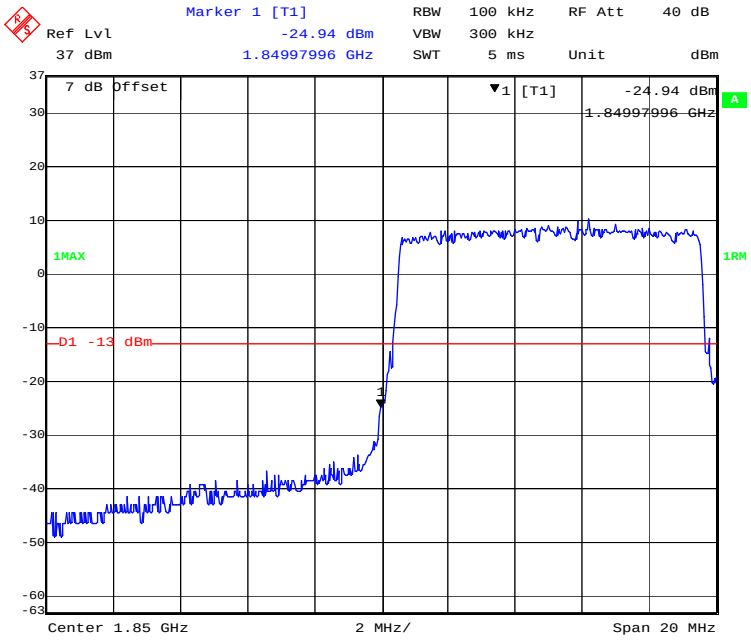
QPSK (5.0 MHz, FULL RB) - Left Band Edge



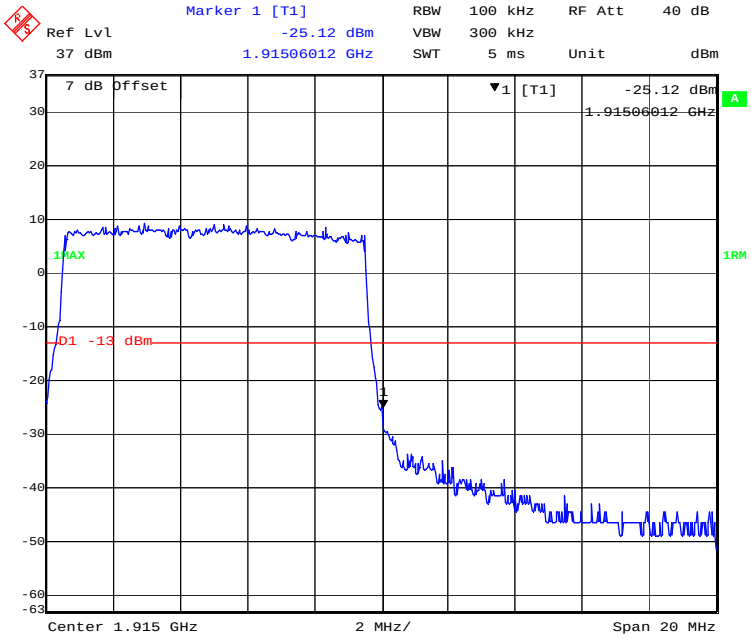
QPSK (5.0 MHz, FULL RB) - Right Band Edge



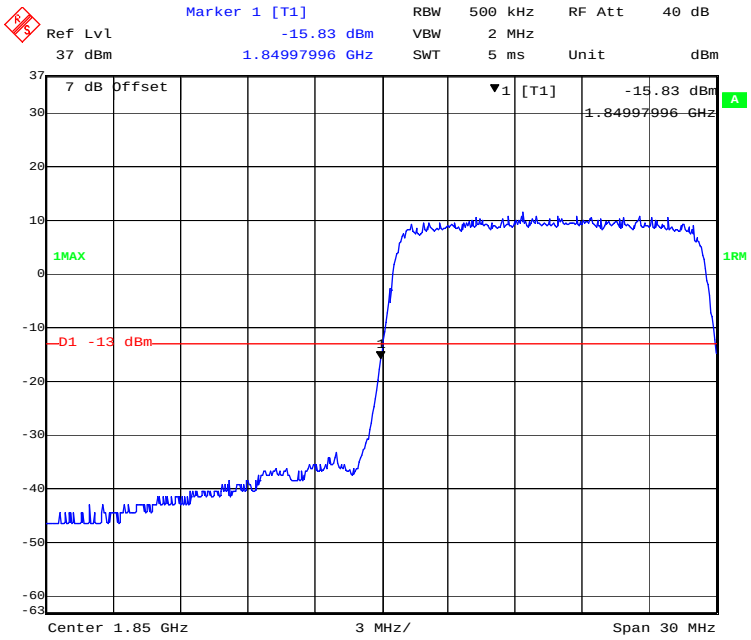
QPSK (10.0 MHz, FULL RB) - Left Band Edge



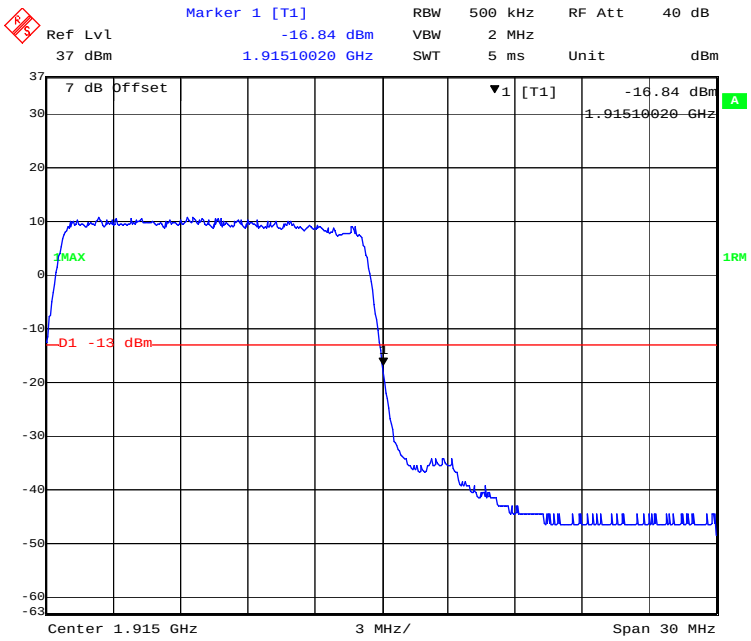
QPSK (10.0 MHz, FULL RB) - Right Band Edge



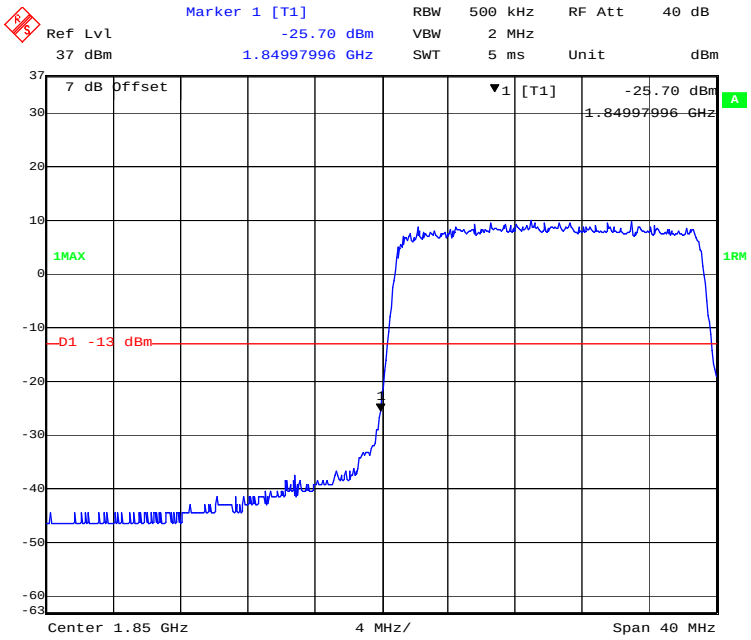
QPSK (15.0 MHz, FULL RB) - Left Band Edge



QPSK (15.0 MHz, FULL RB) - Right Band Edge



QPSK (20.0 MHz, FULL RB) - Left Band Edge



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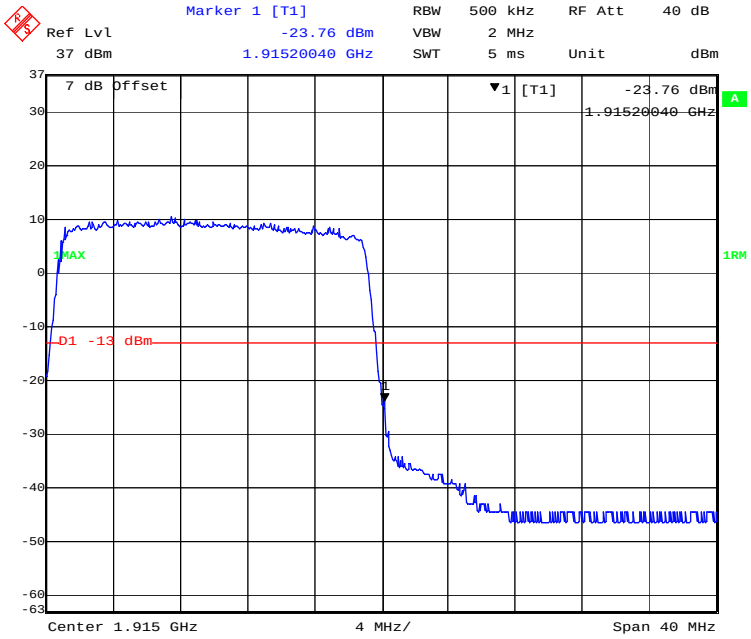
QPSK (20.0 MHz, FULL RB) - Right Band Edge



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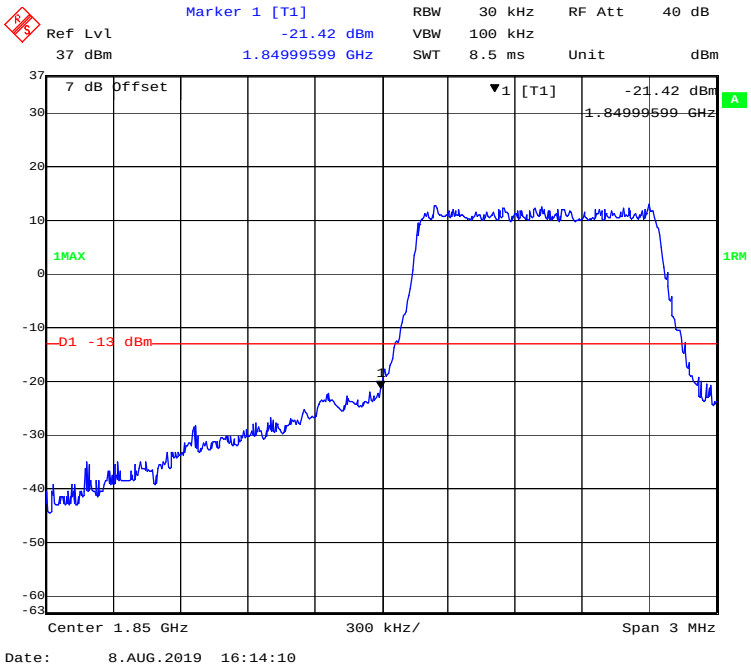
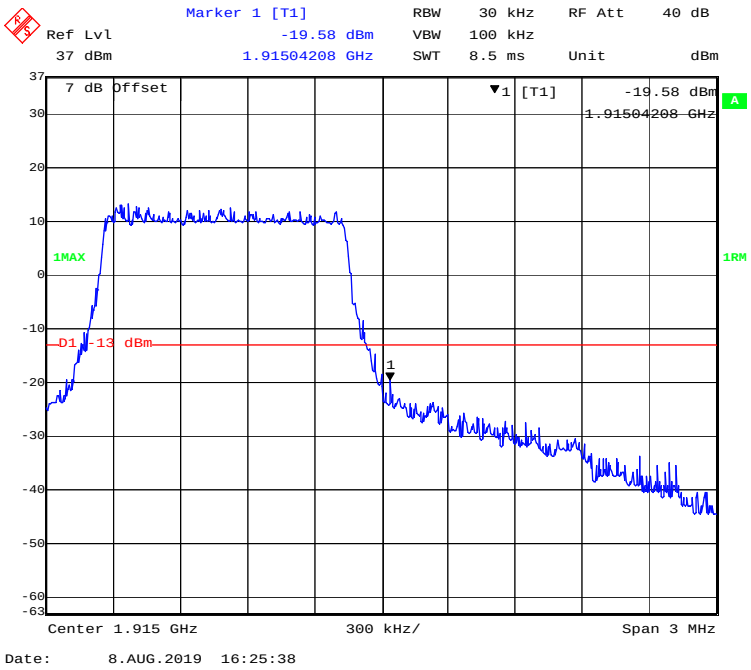
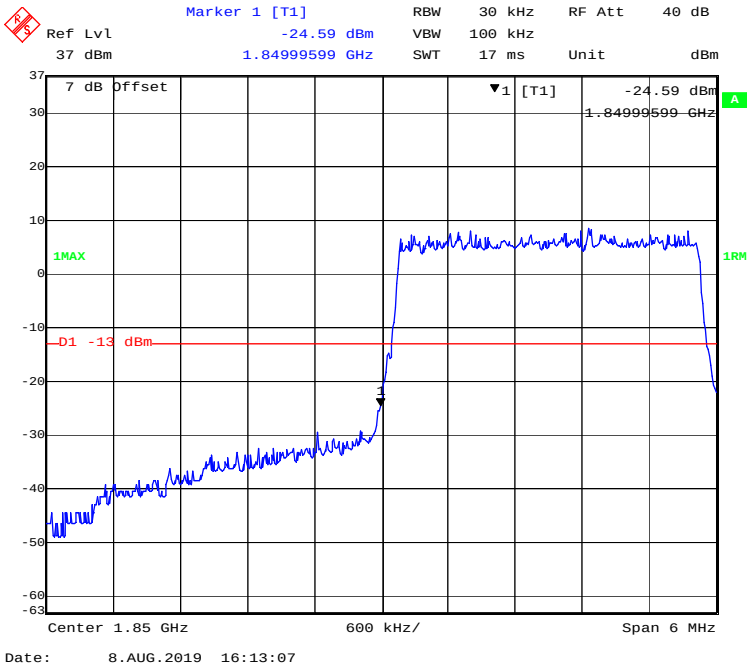
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



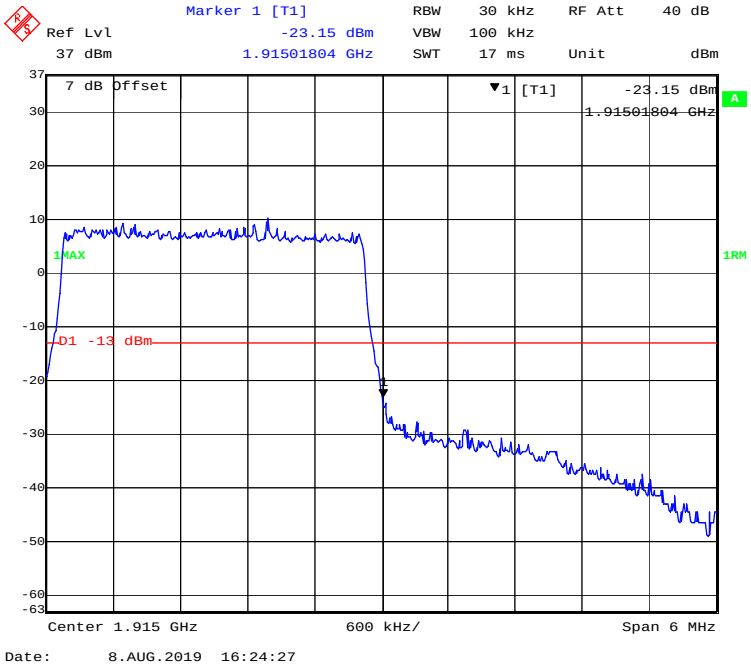
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



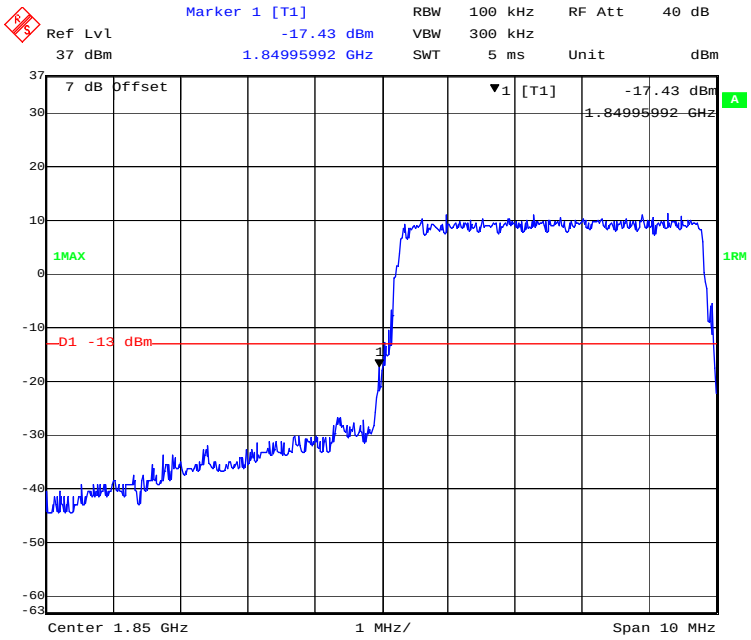
16-QAM (3.0 MHz, FULL RB) - Left Band Edge



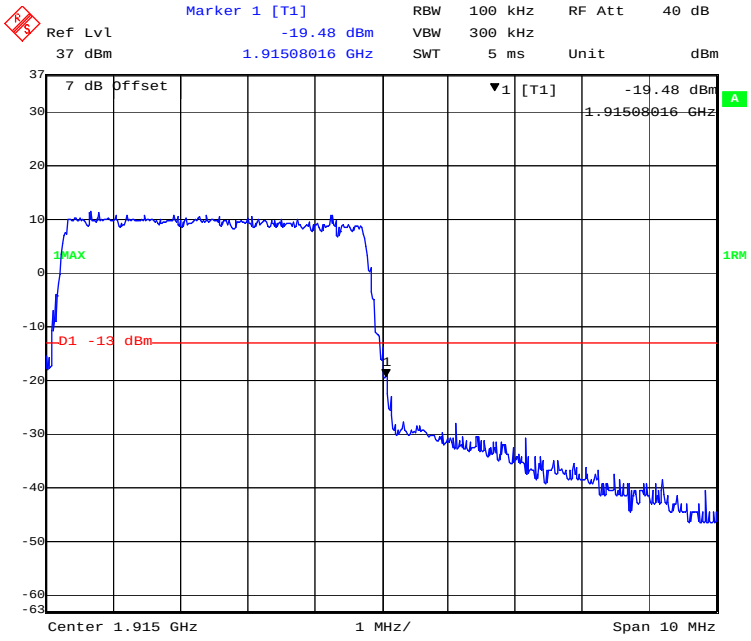
16-QAM (3.0 MHz, FULL RB) - Right Band Edge



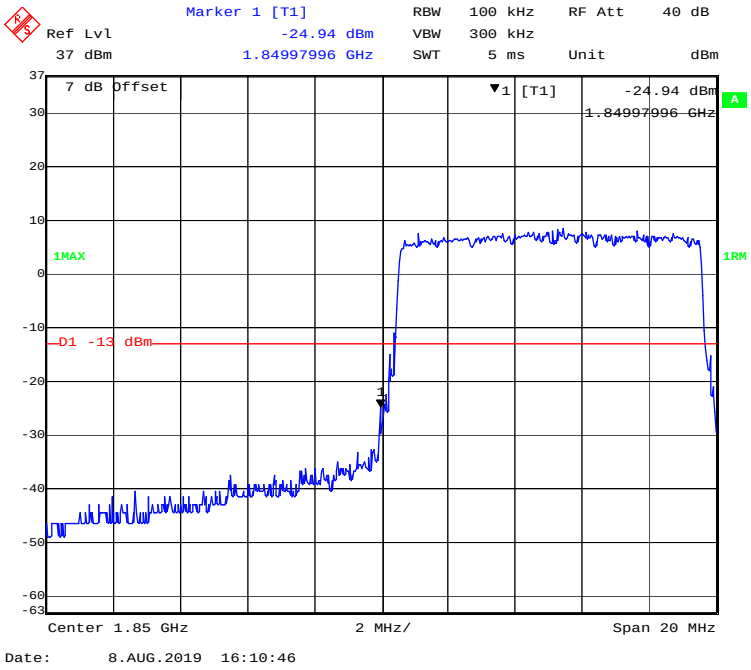
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



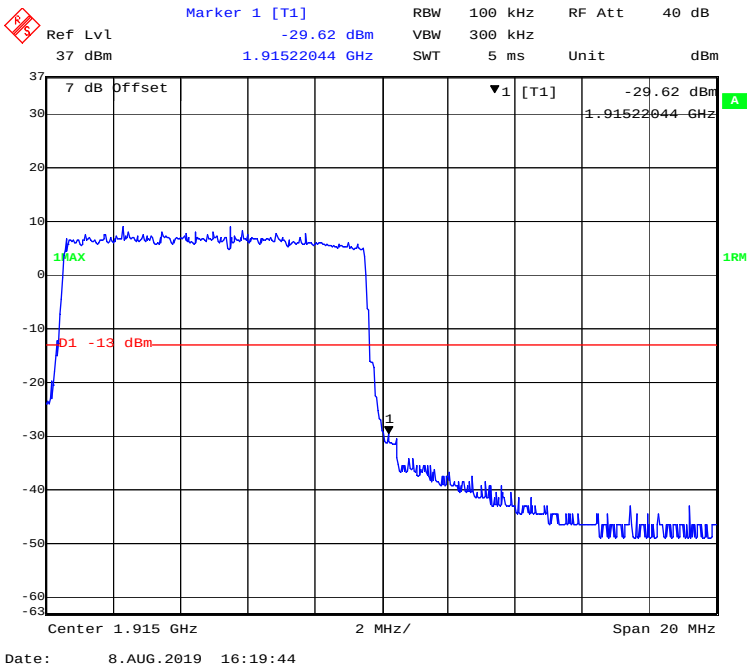
16-QAM (5.0 MHz, FULL RB) - Right Band Edge



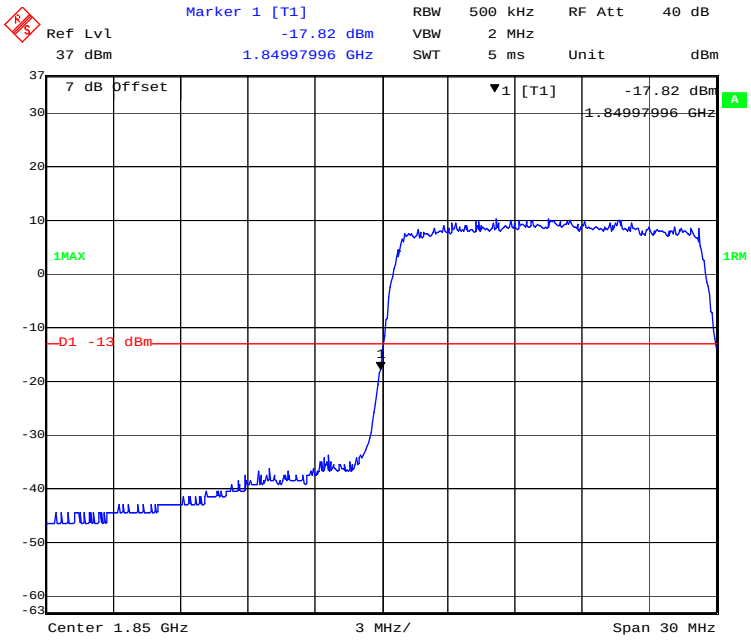
16-QAM (10.0 MHz, FULL RB) - Left Band Edge



16-QAM (10.0 MHz, FULL RB) - Right Band Edge



16-QAM (15.0 MHz, FULL RB) - Left Band Edge



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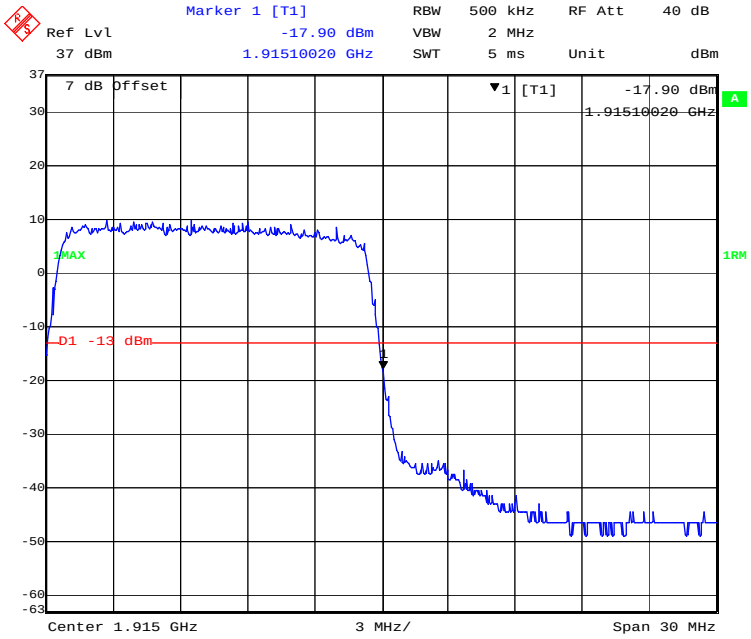
16-QAM (15.0 MHz, FULL RB) - Right Band Edge



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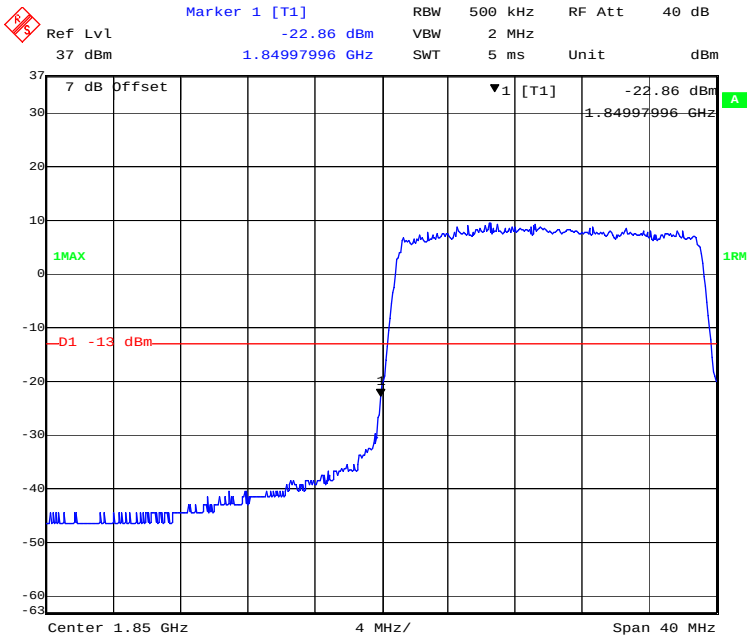
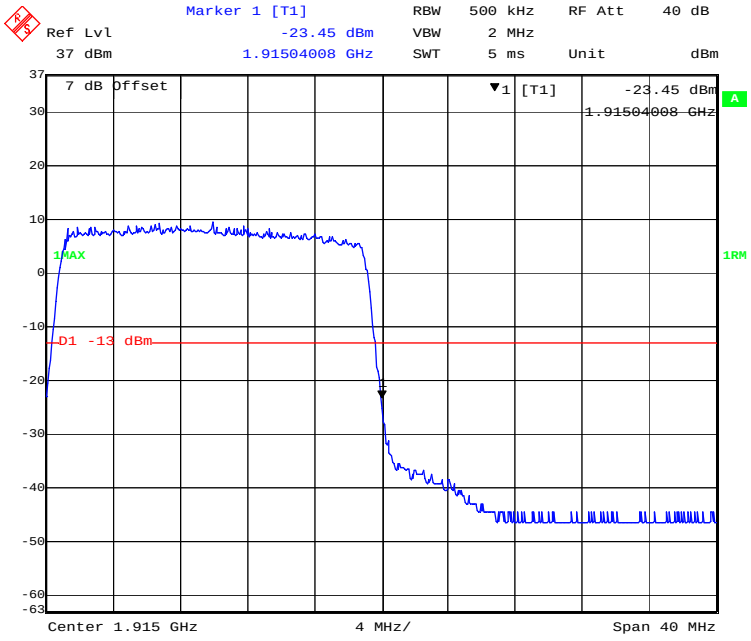
16-QAM (20.0 MHz, FULL RB) - Left Band Edge

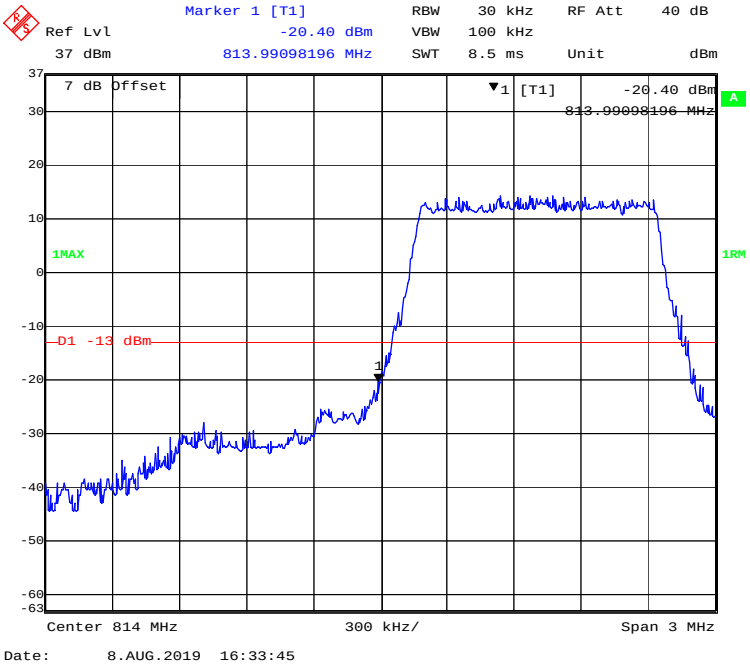


16-QAM (20.0 MHz, FULL RB) - Right Band Edge



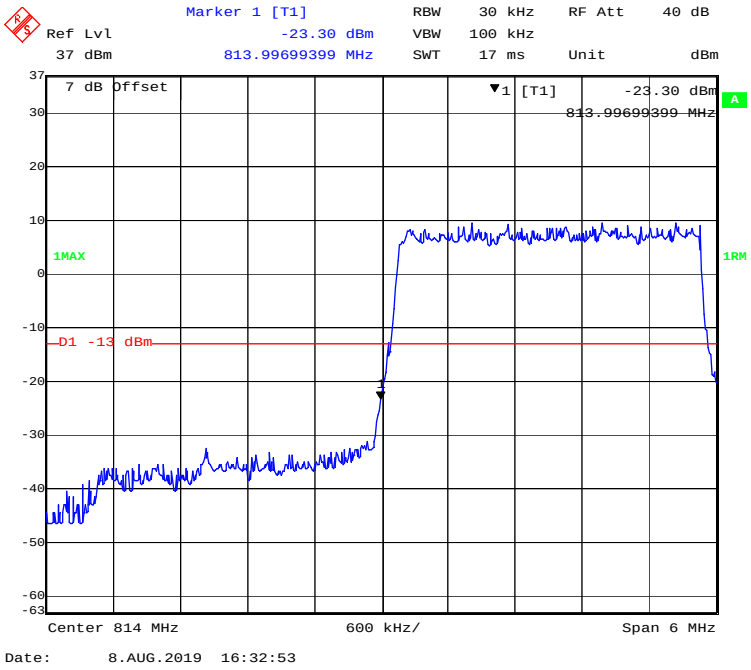
LTE Band 26:

QPSK (1.4 MHz, FULL RB) - Left Band Edge

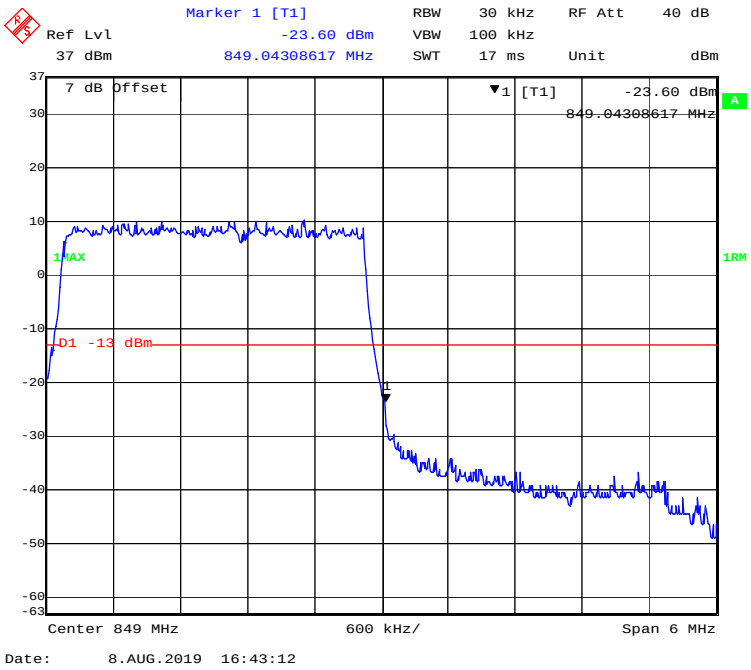


QPSK (1.4 MHz, FULL RB) - Right Band Edge

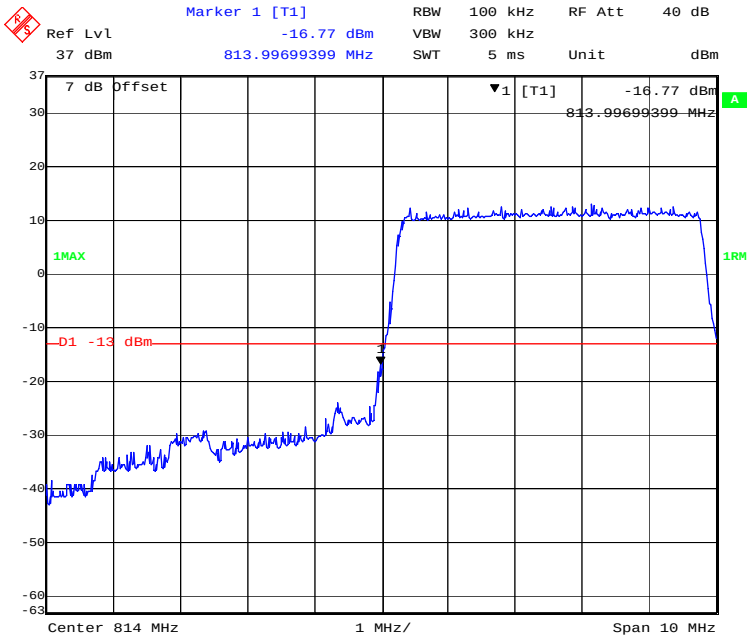
QPSK (3.0 MHz, FULL RB) - Left Band Edge



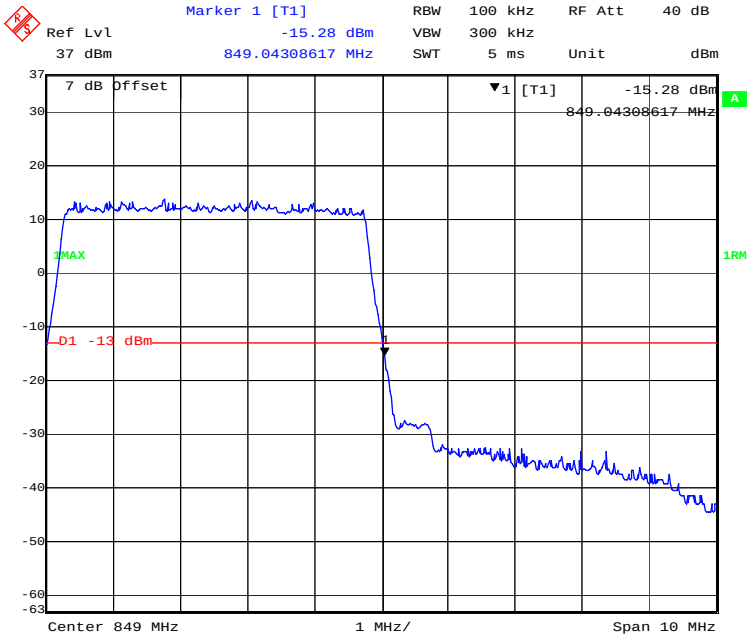
QPSK (3.0 MHz, FULL RB) - Right Band Edge



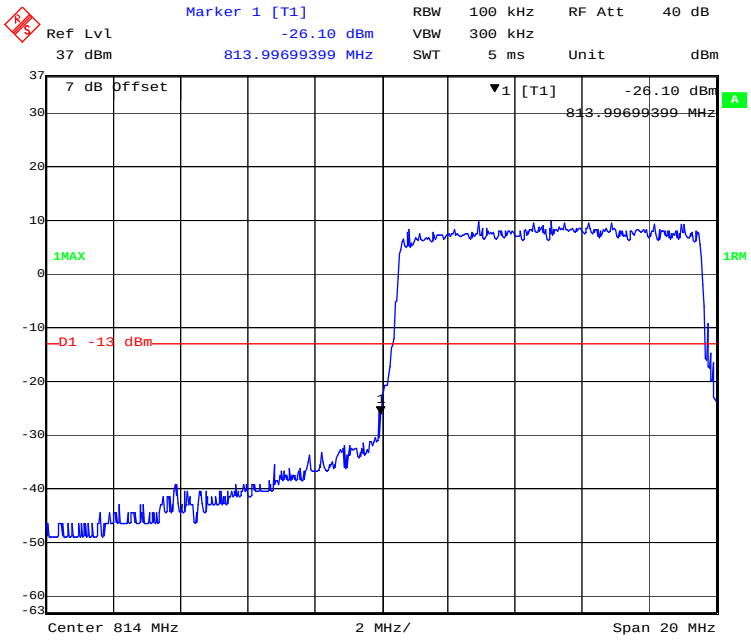
QPSK (5.0 MHz, FULL RB) - Left Band Edge



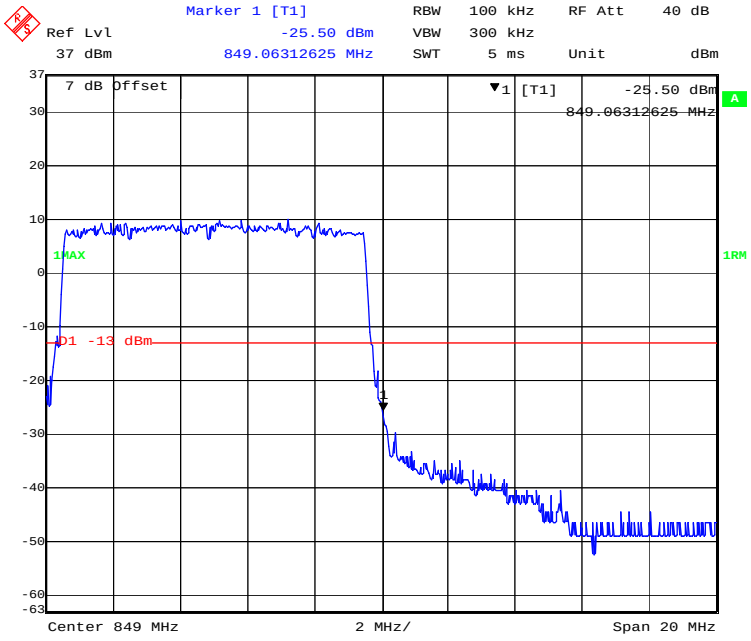
QPSK (5.0 MHz, FULL RB) - Right Band Edge



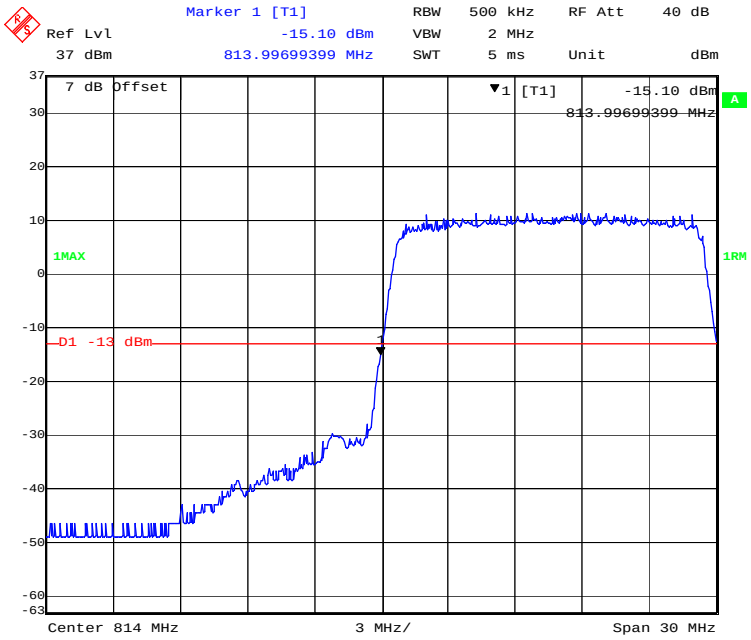
QPSK (10.0 MHz, FULL RB) - Left Band Edge



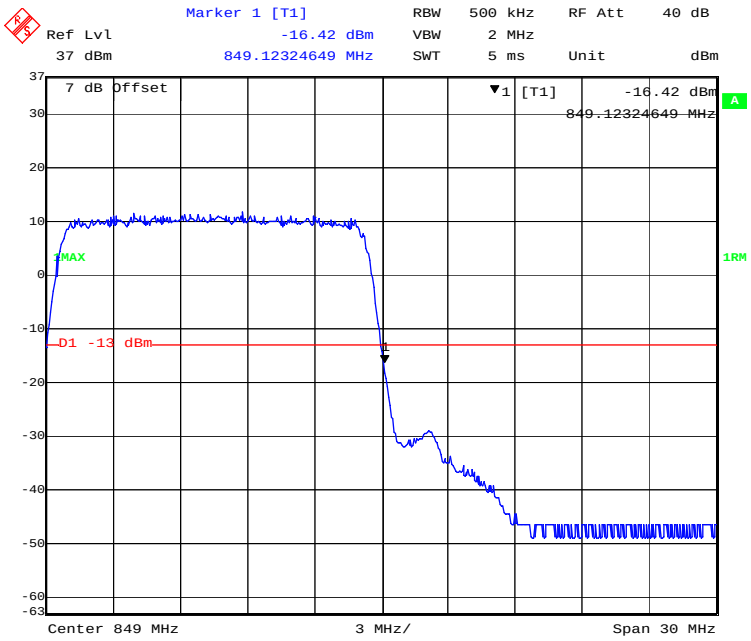
QPSK (10.0 MHz, FULL RB) - Right Band Edge



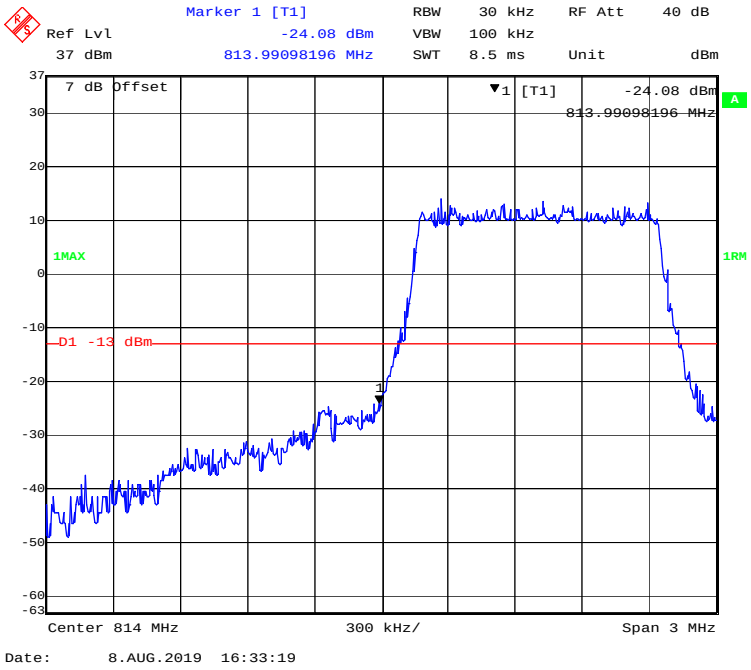
QPSK (15.0 MHz, FULL RB) - Left Band Edge



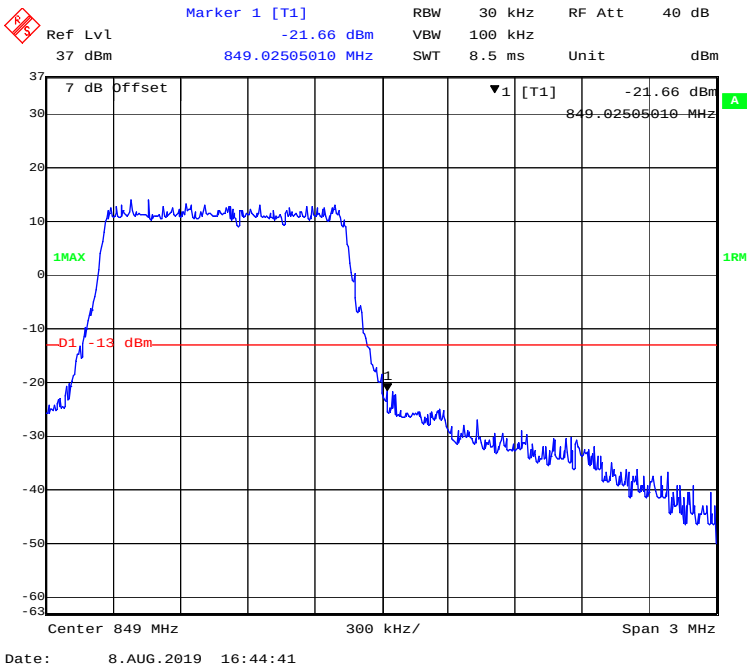
QPSK (15.0 MHz, FULL RB) - Right Band Edge



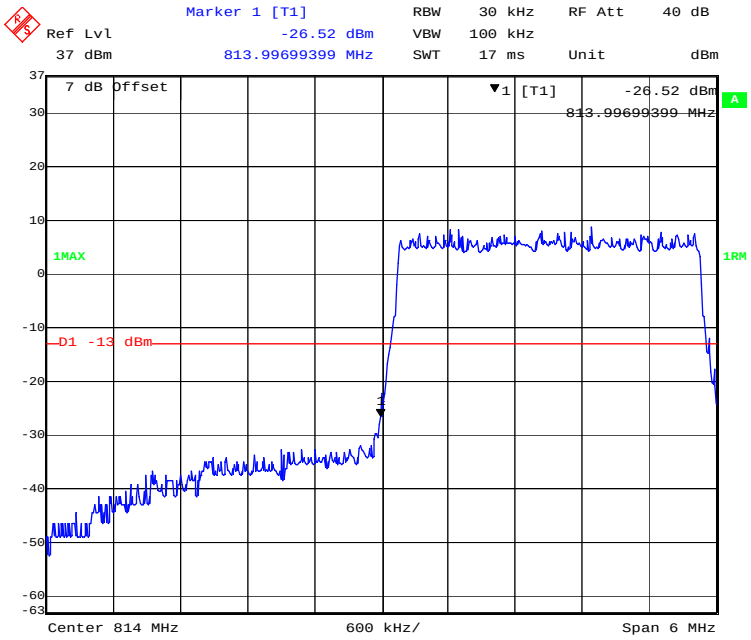
16-QAM (1.4 MHz, FULL RB) - Left Band Edge



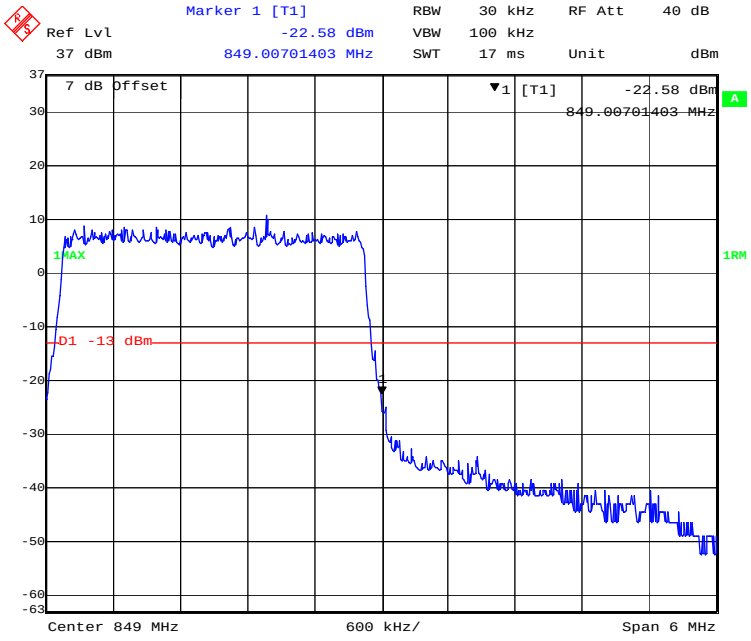
16-QAM (1.4 MHz, FULL RB) - Right Band Edge



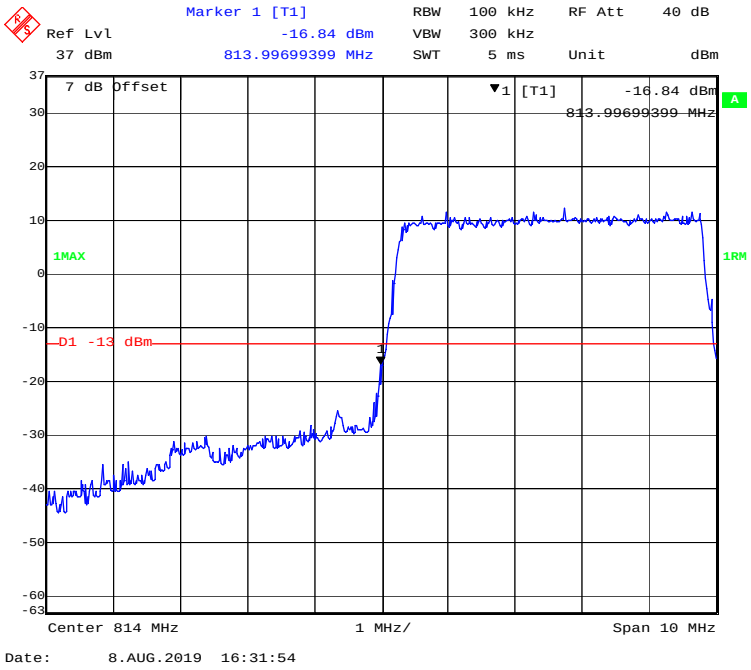
16-QAM (3.0 MHz, FULL RB) - Left Band Edge



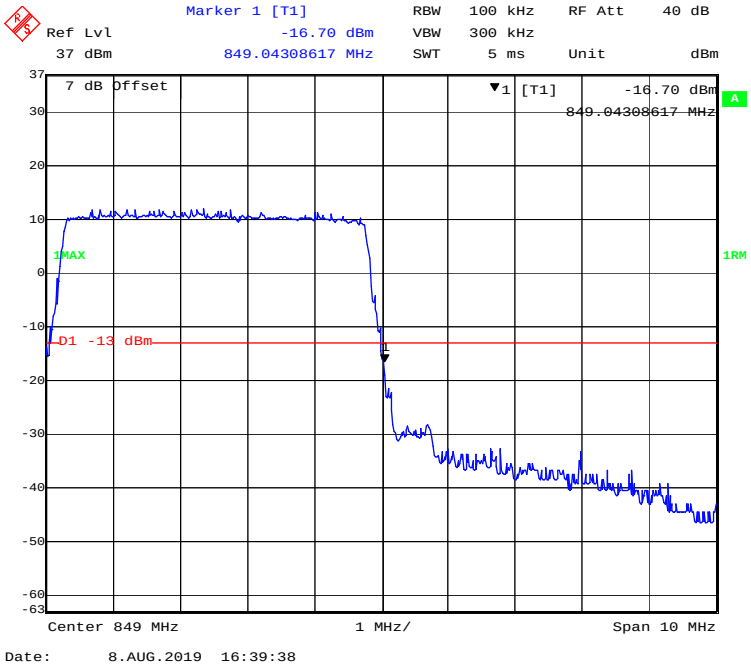
16-QAM (3.0 MHz, FULL RB) - Right Band Edge



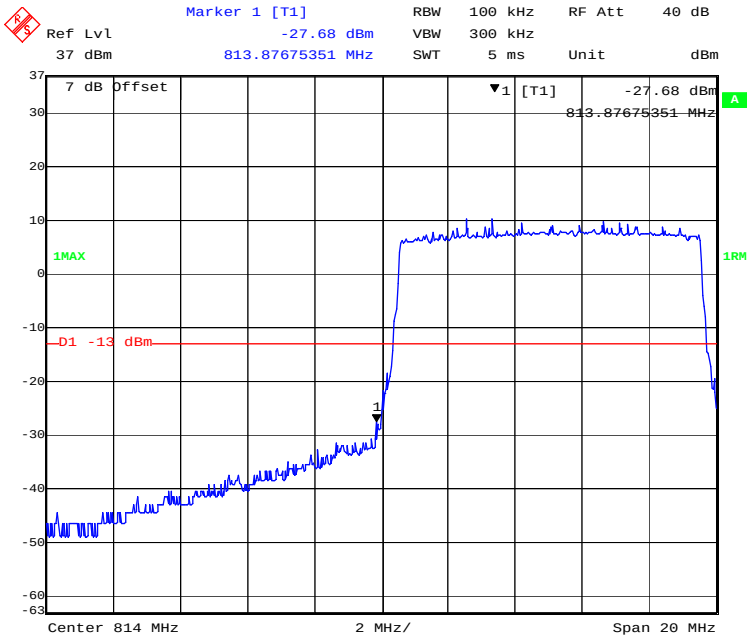
16-QAM (5.0 MHz, FULL RB) - Left Band Edge



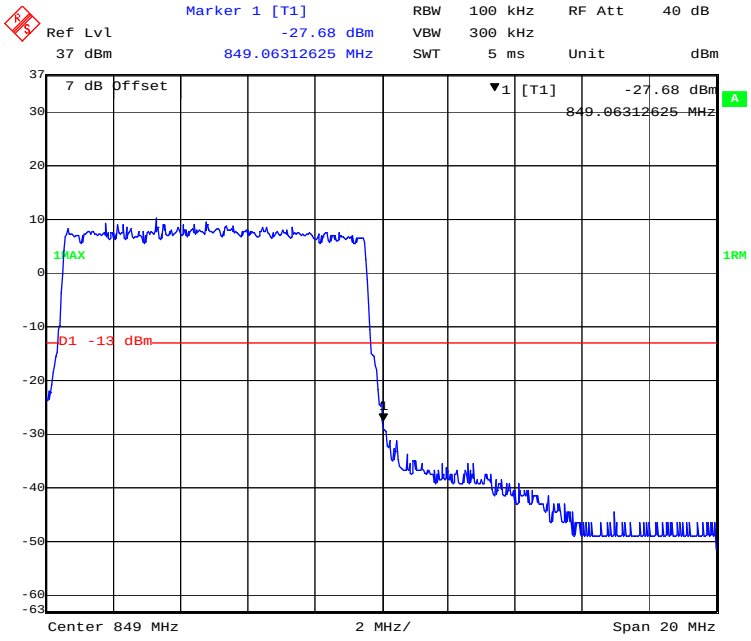
16-QAM (5.0 MHz, FULL RB) - Right Band Edge



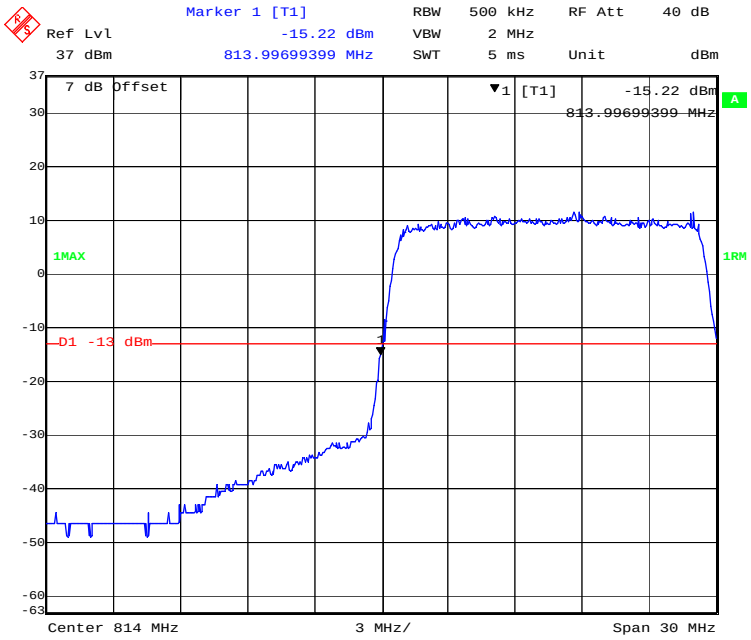
16-QAM (10.0 MHz, FULL RB) - Left Band Edge



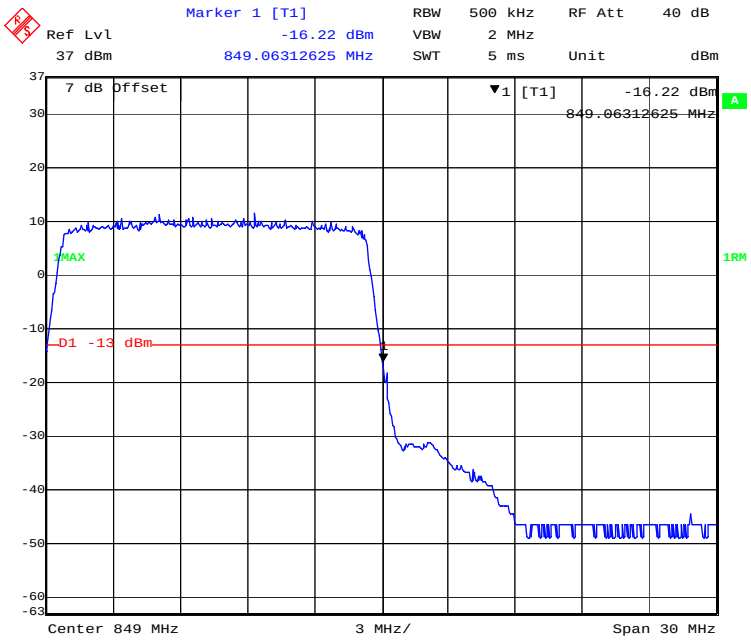
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



16-QAM (15.0 MHz, FULL RB) - Left Band Edge

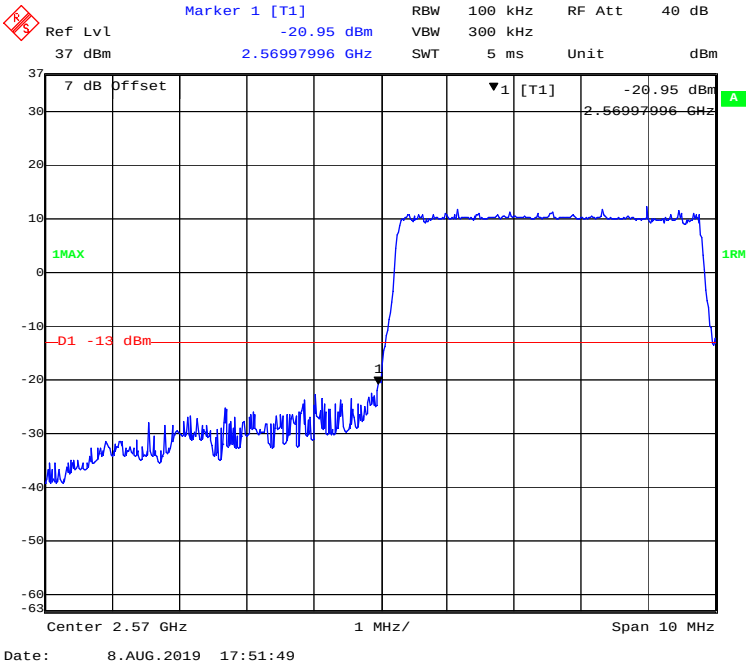


16-QAM (15.0 MHz, FULL RB) - Right Band Edge

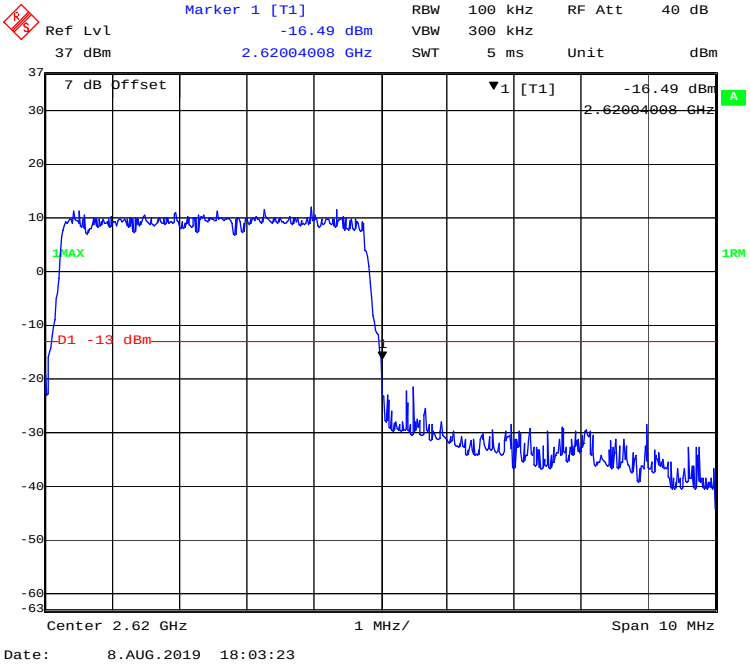


LTE Band 38:

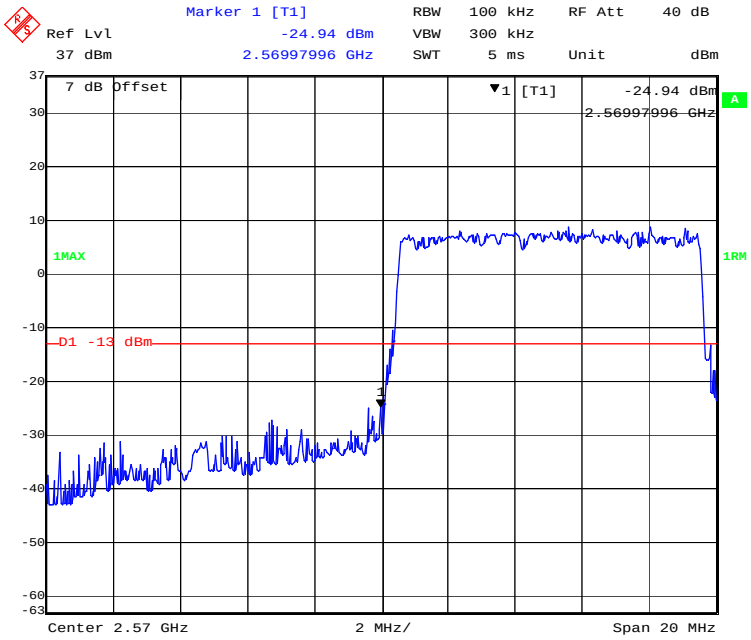
QPSK (5 MHz, FULL RB) - Left Band Edge



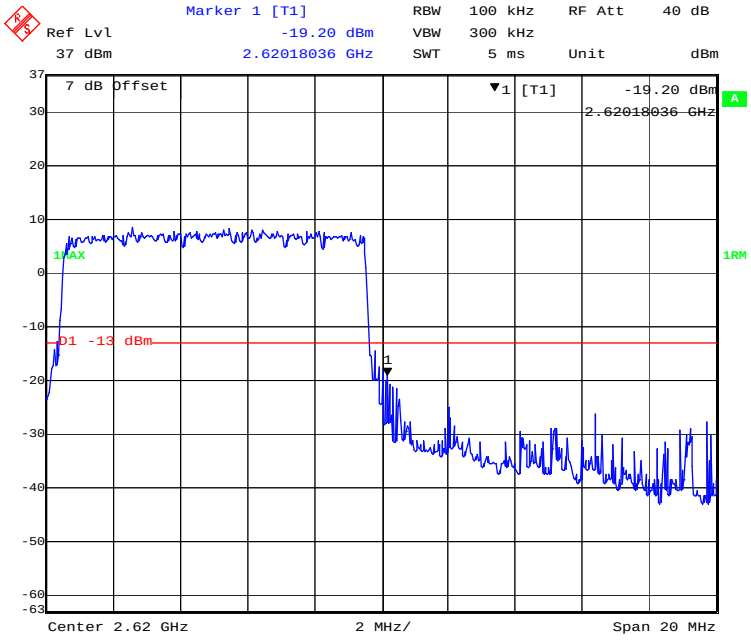
QPSK (5 MHz, FULL RB) - Right Band Edge



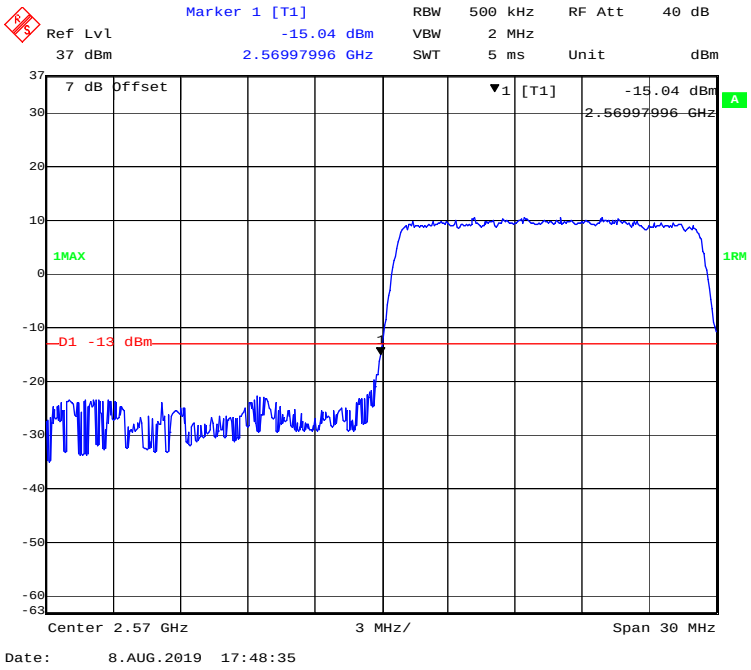
QPSK (10 MHz, FULL RB) - Left Band Edge



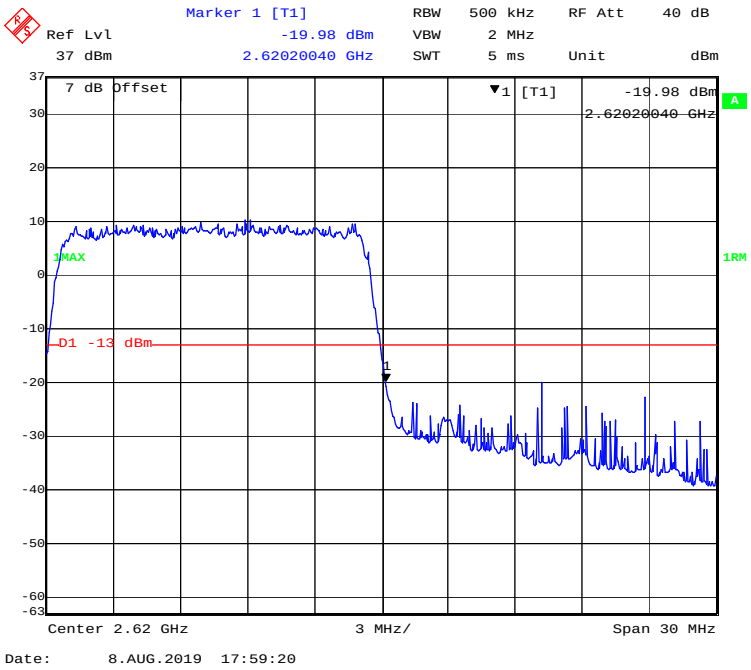
QPSK (10 MHz, FULL RB) - Right Band Edge



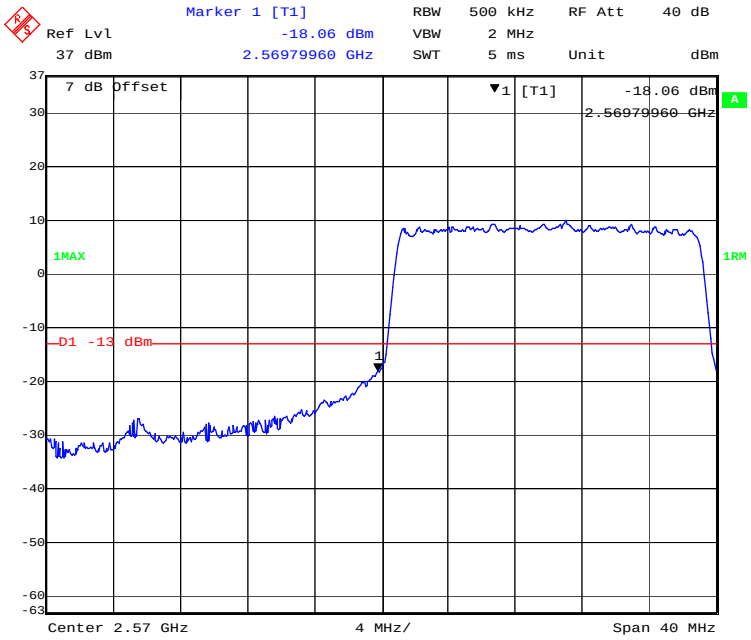
QPSK (15 MHz, FULL RB) - Left Band Edge



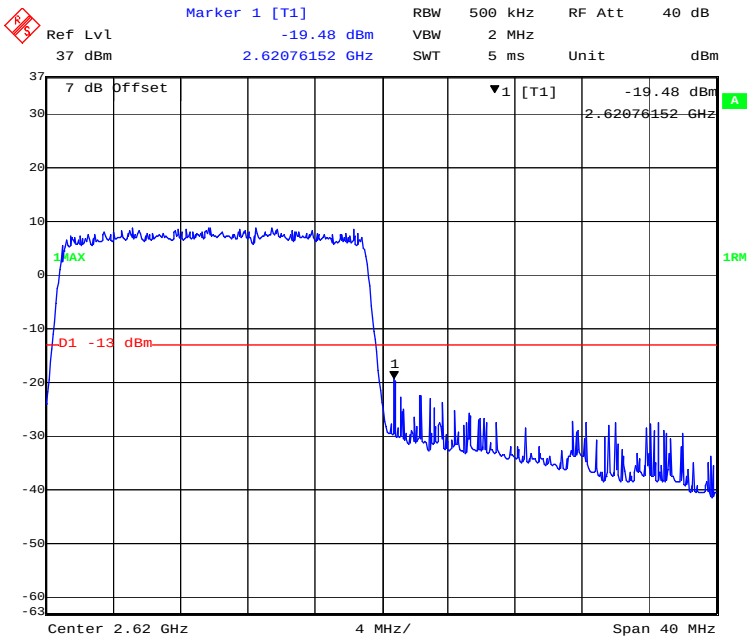
QPSK (15 MHz, FULL RB) - Right Band Edge



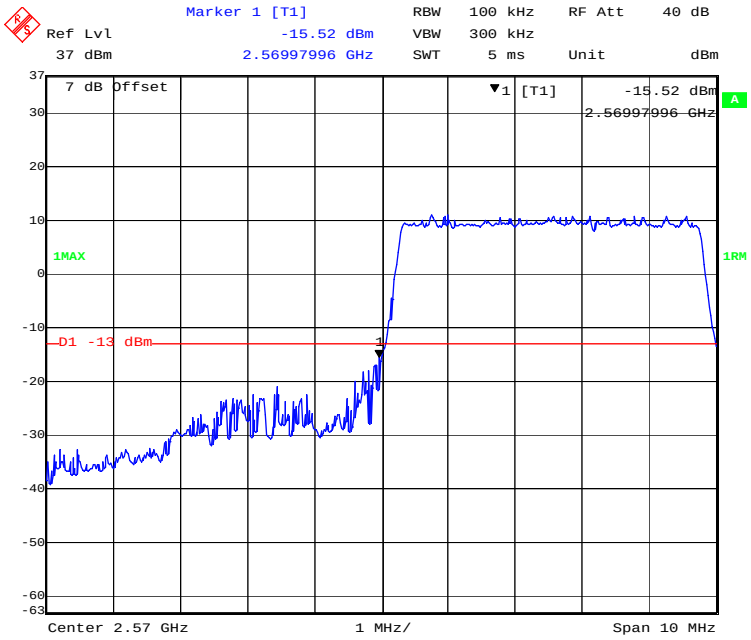
QPSK (20 MHz, FULL RB) - Left Band Edge



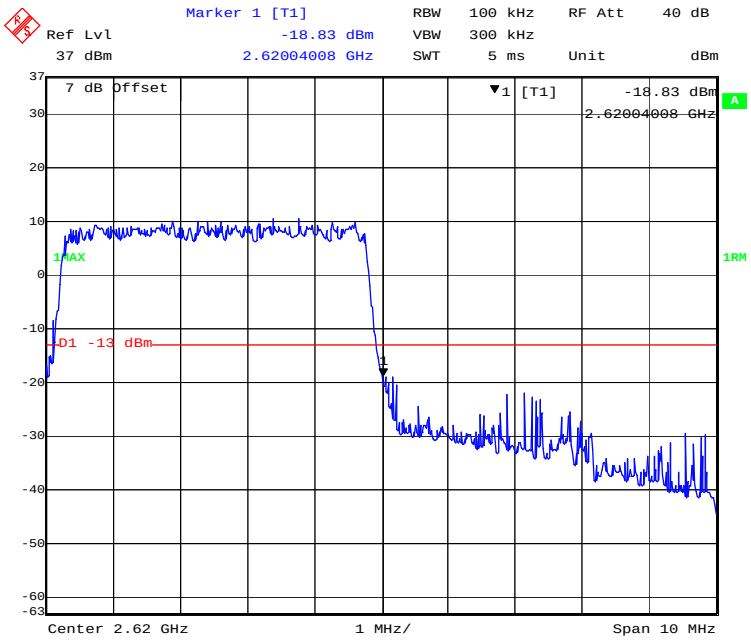
QPSK (20 MHz, FULL RB) - Right Band Edge



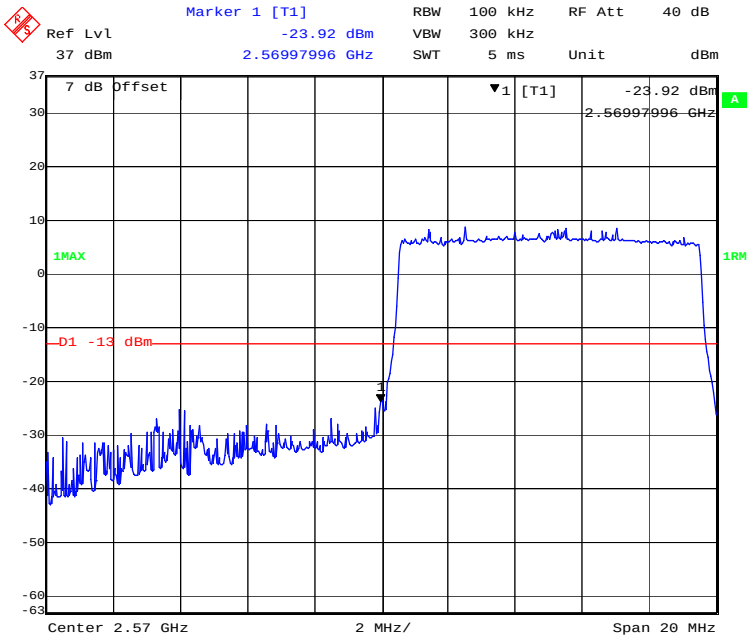
16QAM (5 MHz, FULL RB) - Left Band Edge



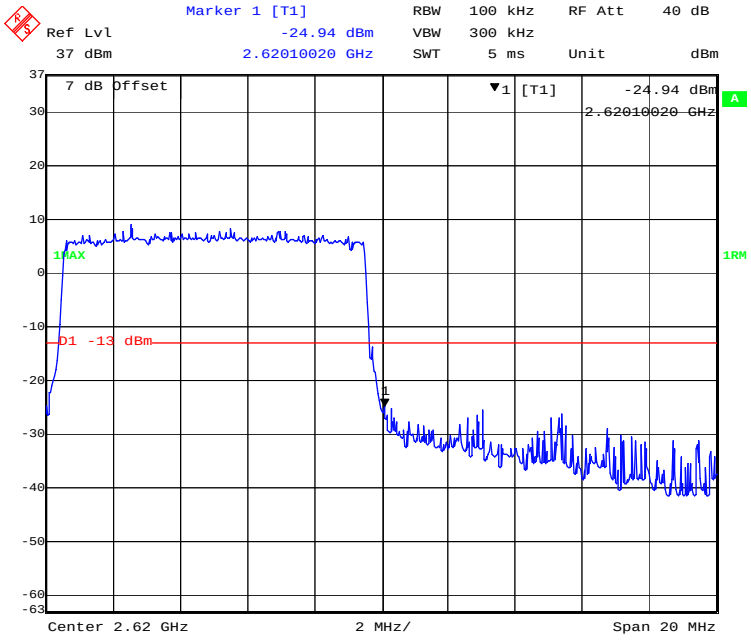
16QAM (5 MHz, FULL RB) - Right Band Edge



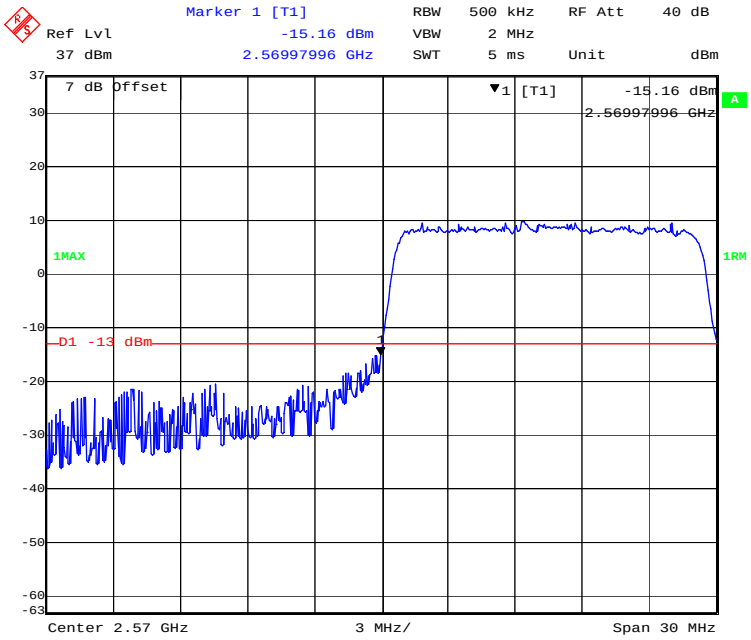
16QAM (10 MHz, FULL RB) - Left Band Edge



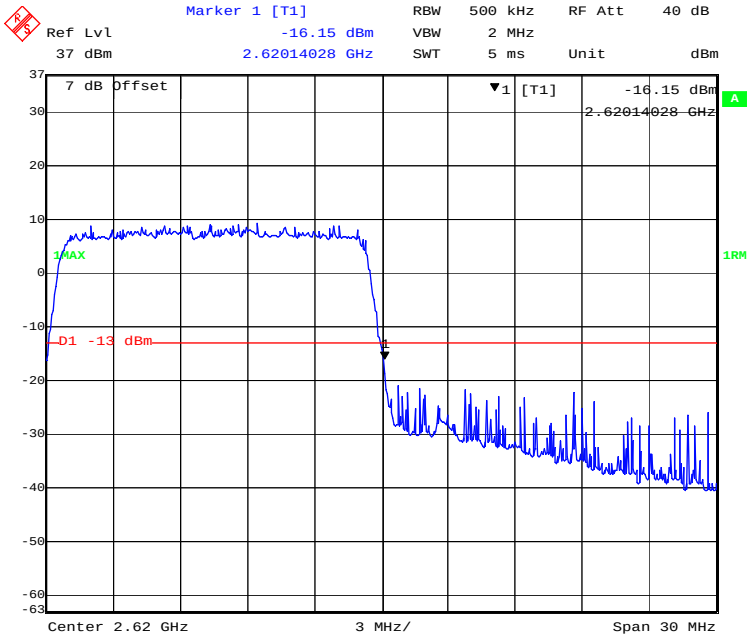
16QAM (10 MHz, FULL RB) - Right Band Edge



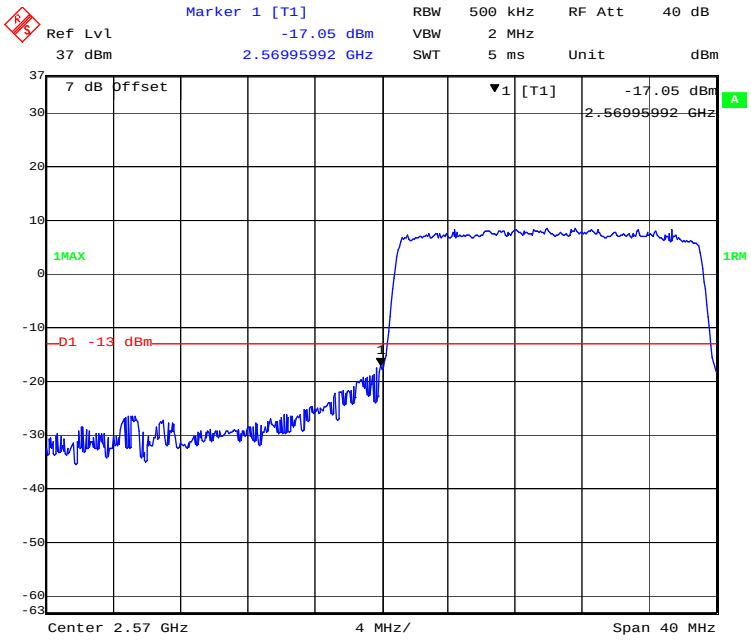
16QAM (15 MHz, FULL RB) - Left Band Edge



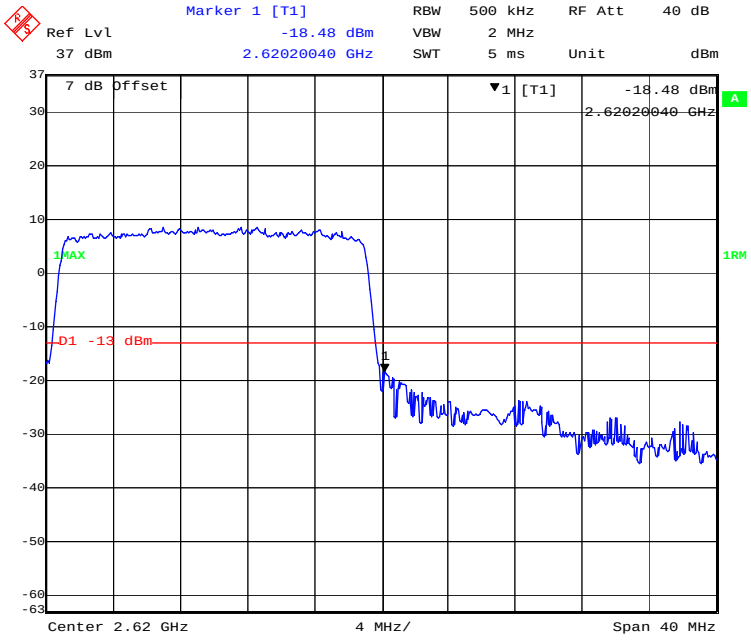
16QAM (15 MHz, FULL RB) - Right Band Edge



16QAM (20 MHz, FULL RB) - Left Band Edge

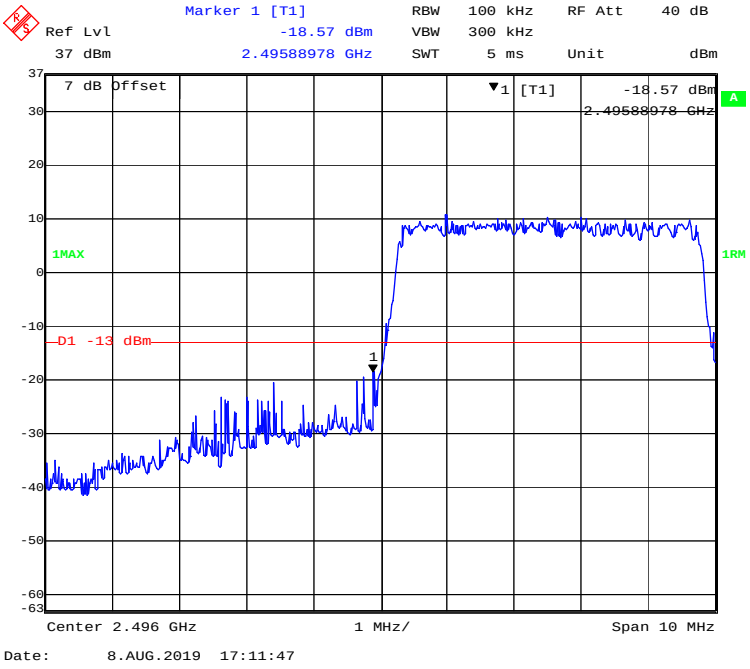


16QAM (20 MHz, FULLRB) - Right Band Edge

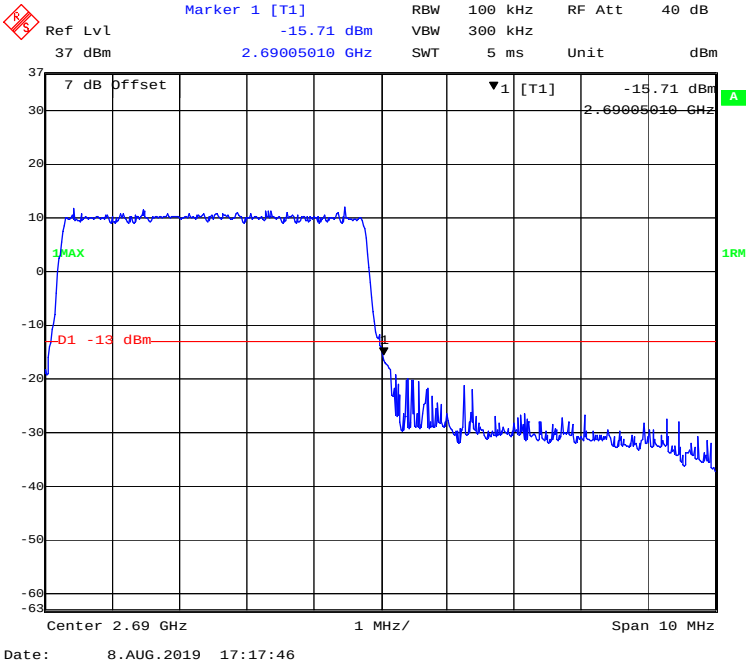


LTE Band 41:

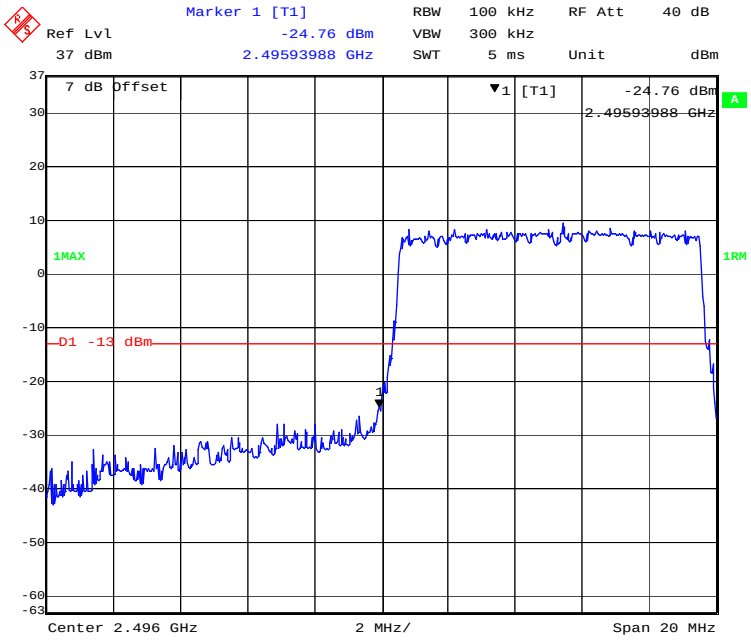
QPSK (5 MHz, FULL RB) - Left Band Edge



QPSK (5 MHz, FULL RB) - Right Band Edge



QPSK (10 MHz, FULL RB) - Left Band Edge



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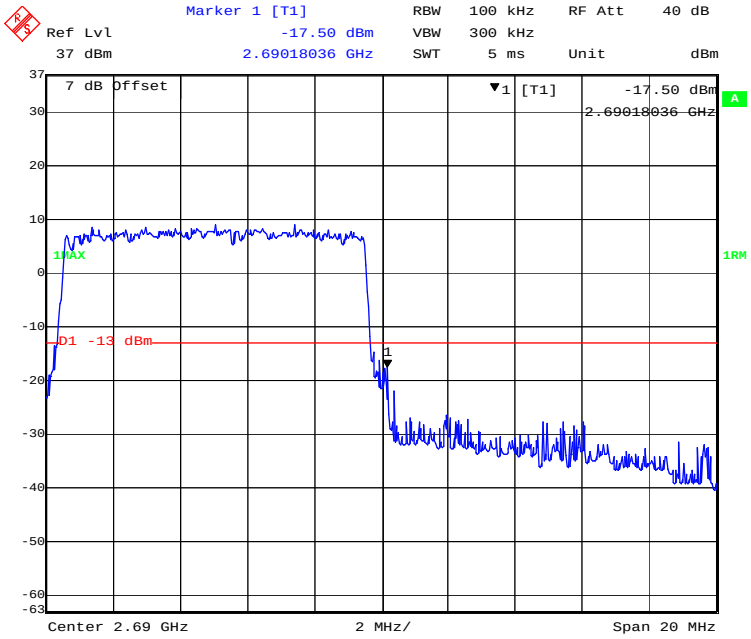
QPSK (10 MHz, FULL RB) - Right Band Edge



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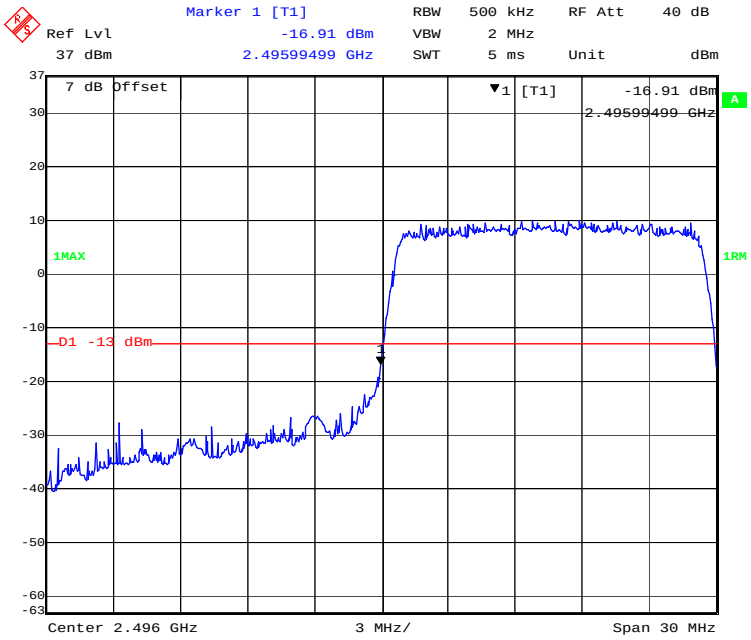
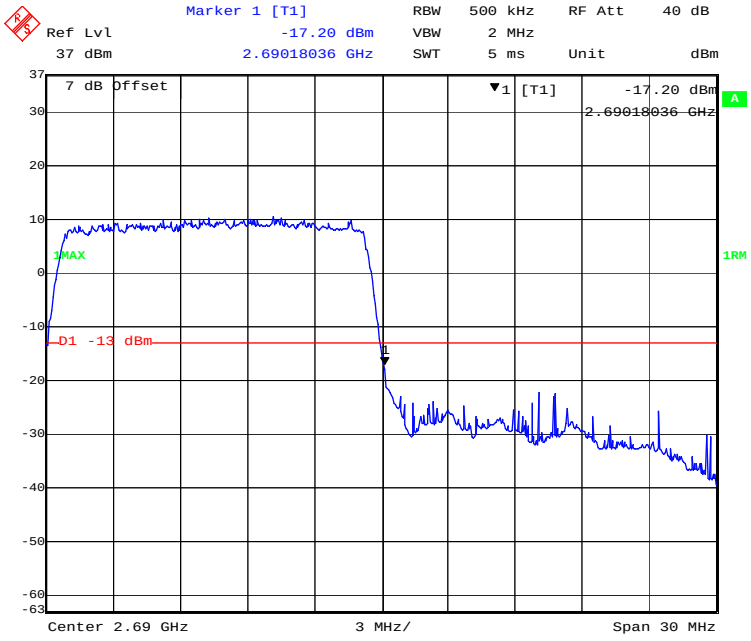
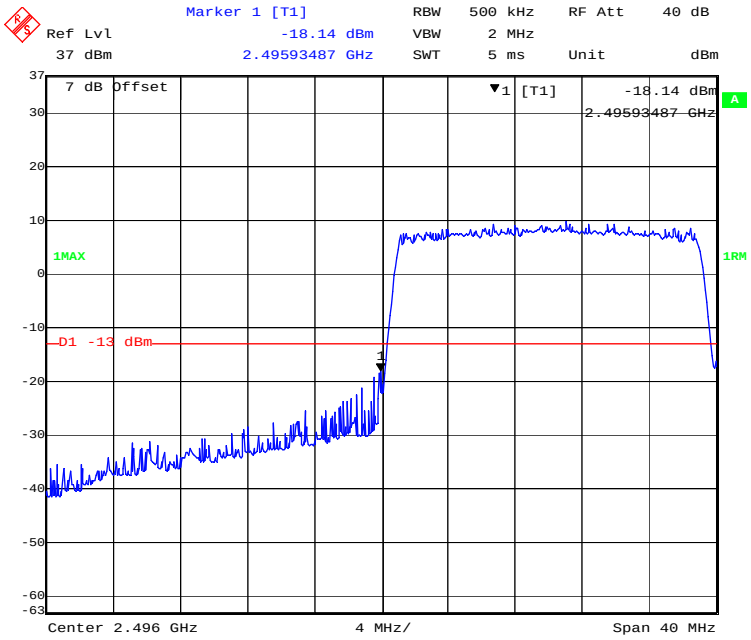
QPSK (15MHz, FULL RB) - Left Band Edge



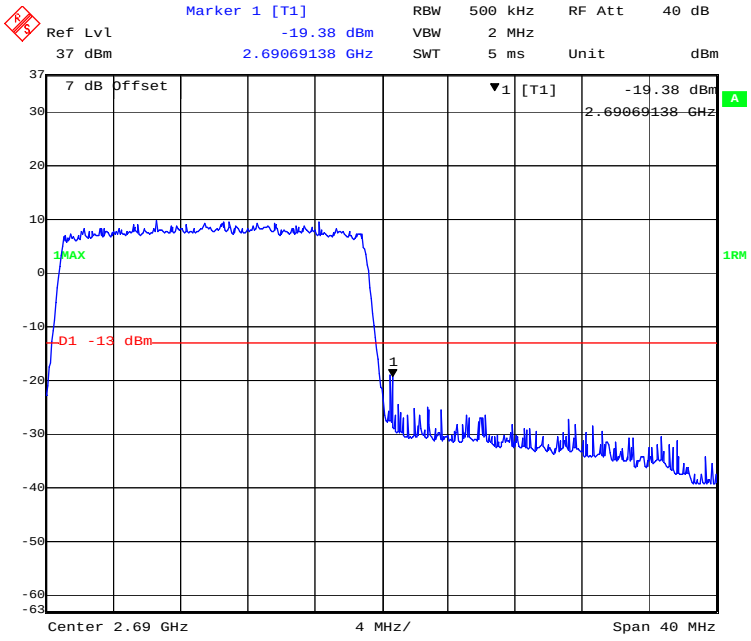
QPSK (15 MHz, FULL RB) - Right Band Edge



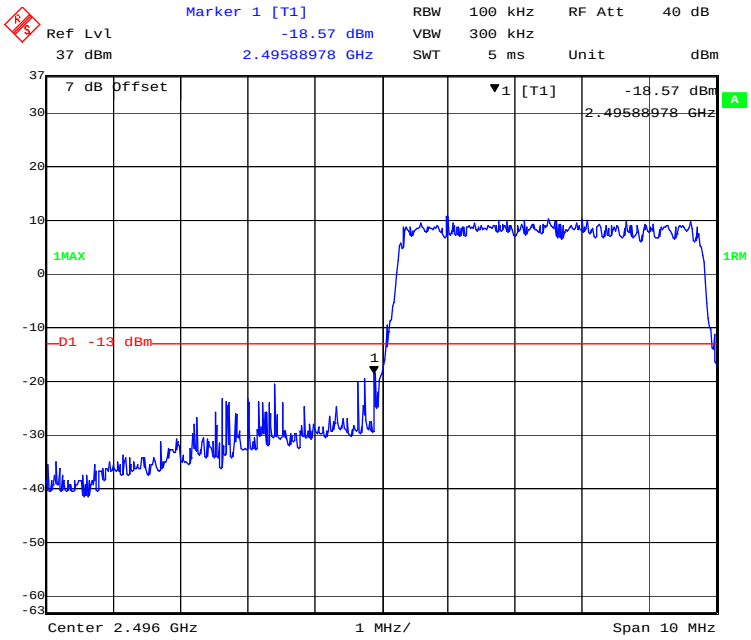
QPSK (20MHz, FULL RB) - Left Band Edge



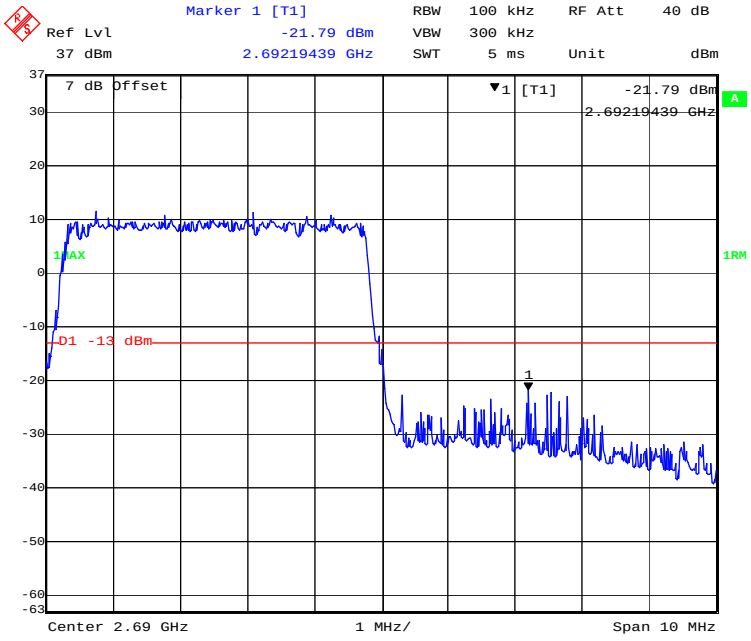
QPSK (20 MHz, FULL RB) - Right Band Edge



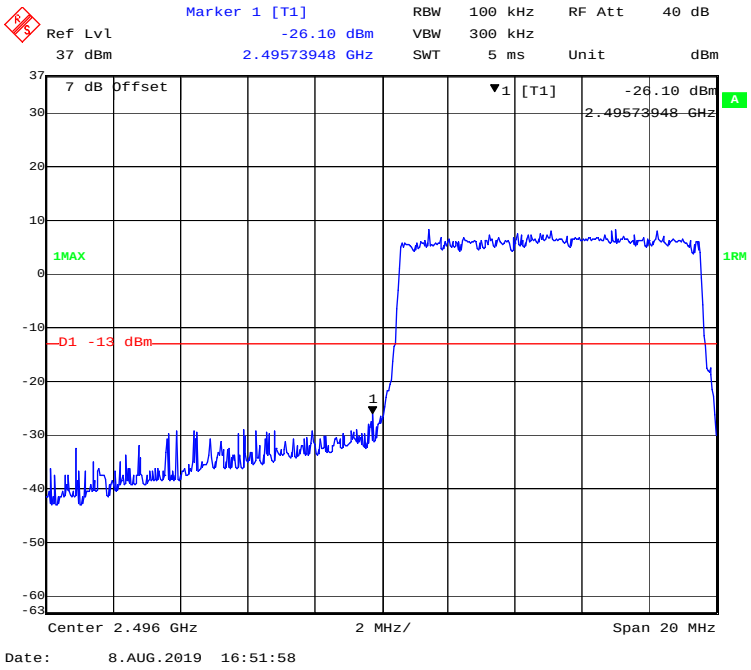
16-QAM (5MHz, FULL RB) - Left Band Edge



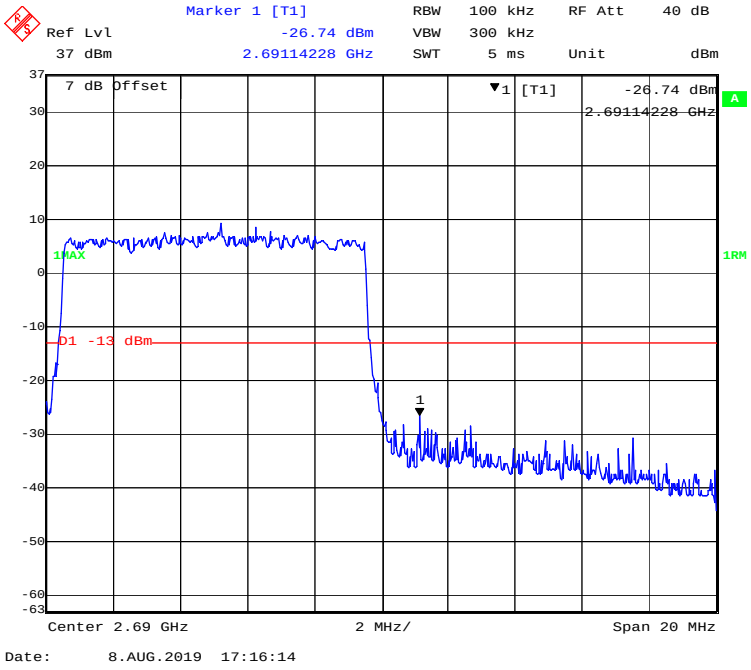
16-QAM (5MHz, FULL RB) - Right Band Edge



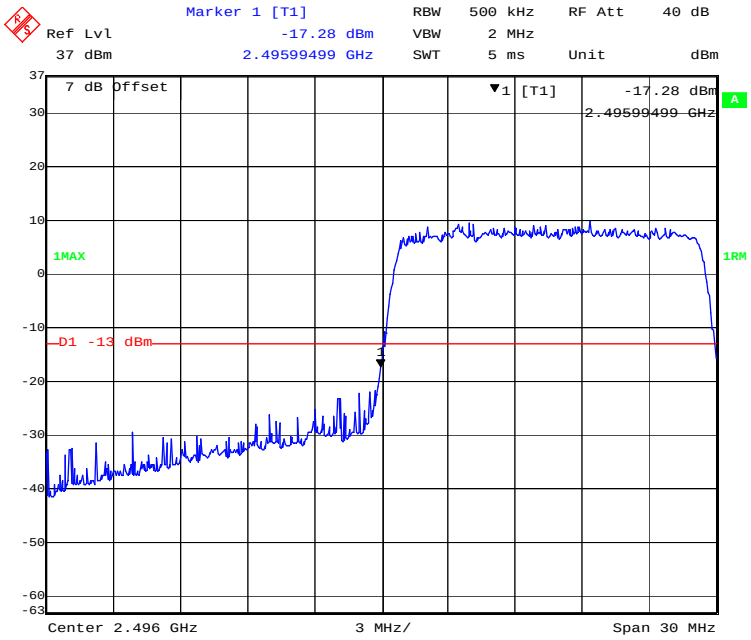
16-QAM (10 MHz, FULL RB) - Left Band Edge



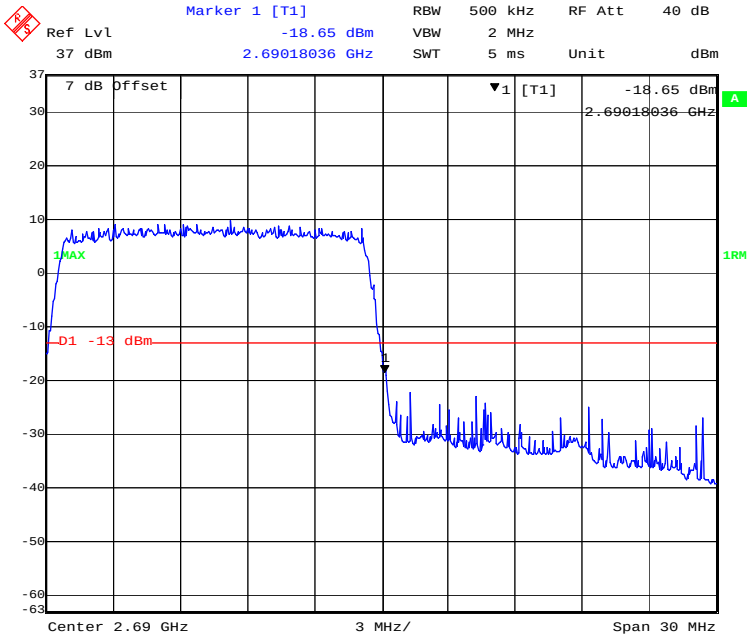
16-QAM (10 MHz, FULL RB) - Right Band Edge



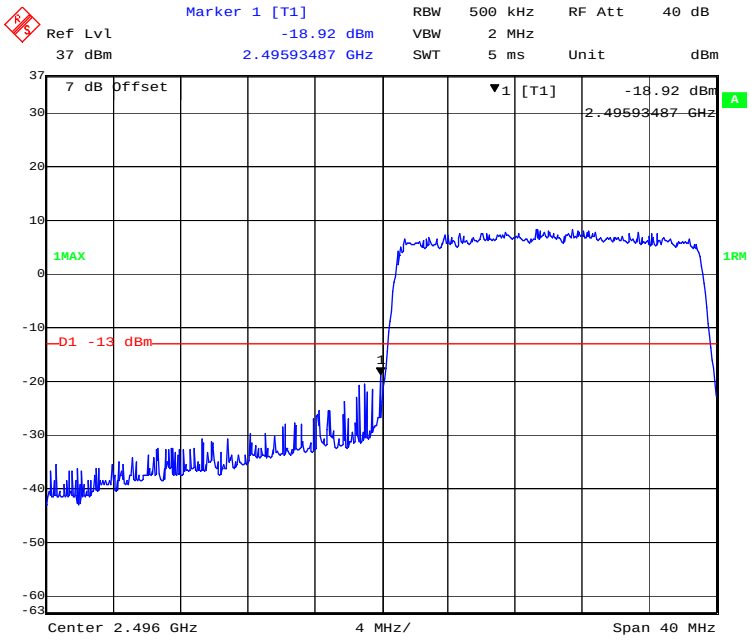
16-QAM (15 MHz, FULL RB) - Left Band Edge



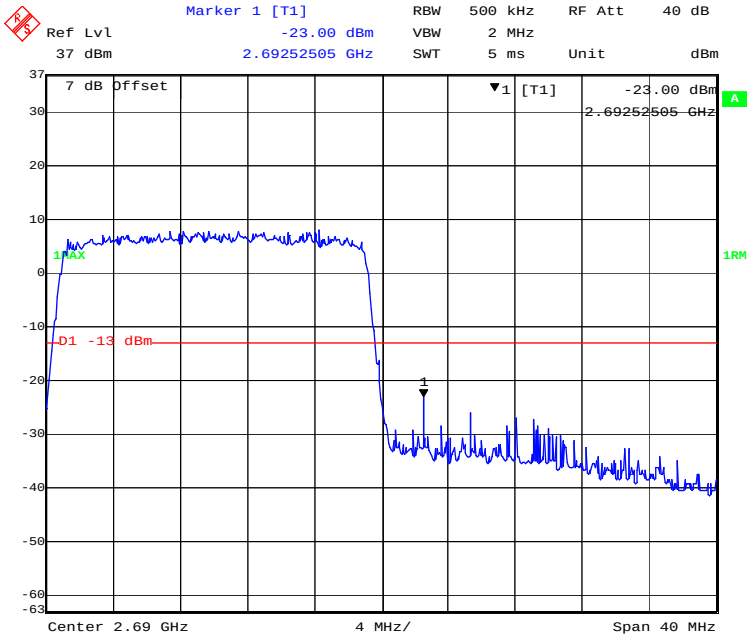
16-QAM (15 MHz, FULL RB) - Right Band Edge



16-QAM (20 MHz, FULL RB) - Left Band Edge



16-QAM (20 MHz, FULL RB) - Right Band Edge



FCC § 2.1055; § 22.355; § 24.235; §27.54, § 90.213- FREQUENCY STABILITY

Applicable Standards

FCC § 2.1055, §22.355, §24.235 , § 90.213 and §27.54.

According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

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

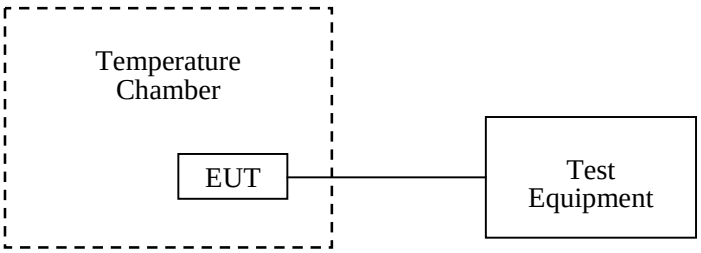
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



Test Data

Environmental Conditions

Temperature:	23.2℃
Relative Humidity:	51 %
ATM Pressure:	101.3kPa

The testing was performed by Sam Ye on 2019-08-24.

EUT operation mode: Transmitting

Test Result: Compliant.

GSM 850 Band

GPRS Mode, Middle Channel, f_o =836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	3	0.0066	2.5
-20		1	0.0072	2.5
-10		7	0.0053	2.5
0		2	0.0101	2.5
10		5	0.0075	2.5
20		3	0.0138	2.5
30		9	0.0105	2.5
40		4	0.0100	2.5
50		2	0.0118	2.5
20	V min.= 7.0	7	0.0124	2.5
20	V max.=8.7	3	0.0072	2.5

EGPRS Mode, Middle Channel, f_o =836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	4	0.0064	2.5
-20		9	0.0108	2.5
-10		6	0.0057	2.5
0		7	0.0097	2.5
10		8	0.0135	2.5
20		5	0.0126	2.5
30		1	0.0065	2.5
40		5	0.0068	2.5
50		7	0.0134	2.5
20	V min.= 7.0	10	0.0124	2.5
20	V max.=8.7	5	0.0057	2.5

WCDMA Band V

Middle Channel, f_o = 836.6 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	6	0.0290	2.5
-20		9	0.0109	2.5
-10		10	0.0416	2.5
0		9	0.0212	2.5
10		6	0.0255	2.5
20		6	0.0130	2.5
30		2	0.0074	2.5
40		2	0.0360	2.5
50		7	0.0352	2.5
20	V min.= 7.0	3	0.0101	2.5
20	V max.=8.7	7	0.0108	2.5

CDMA BC0 1xRTT Mode

Middle Channel, f_o = 836.52 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	6	0.0041	2.5
-20		7	0.0056	2.5
-10		5	0.0054	2.5
0		9	0.0116	2.5
10		7	0.0142	2.5
20		3	0.0219	2.5
30		4	0.0139	2.5
40		8	0.0085	2.5
50		10	0.0078	2.5
20	V min.= 7.0	7	0.0104	2.5
20	V max.=8.7	7	0.0036	2.5

CDMA BC0 EV-DO Mode

Middle Channel, f_o = 836.52 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	8	0.0137	2.5
-20		10	0.0139	2.5
-10		3	0.0111	2.5
0		2	0.0055	2.5
10		4	0.0080	2.5
20		4	0.0103	2.5
30		2	0.0055	2.5
40		10	0.0124	2.5
50		10	0.0132	2.5
20	V min.= 7.0	3	0.0054	2.5
20	V max.=8.7	1	0.0134	2.5

PCS 1900 Band

GPRS Mode, Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	7.6	3	0.0117	pass
-20		7	0.0196	pass
-10		9	0.0056	pass
0		4	0.0085	pass
10		7	0.0055	pass
20		5	0.0163	pass
30		3	0.0037	pass
40		1	0.0362	pass
50		10	0.0070	pass
20	V min.= 7.0	3	0.0139	pass
20	V max.=8.7	4	0.0172	pass

EGPRS Mode, Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	7.6	5	0.0385	pass
-20		10	0.0045	pass
-10		2	0.0330	pass
0		8	0.0193	pass
10		3	0.0153	pass
20		2	0.0395	pass
30		1	0.0124	pass
40		5	0.0167	pass
50		3	0.0370	pass
20	V min.= 7.0	4	0.0090	pass
20	V max.=8.7	9	0.0099	pass

WCDMA Band II

WCDMA Mode, Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	7.6	3	0.0034	pass
-20		4	0.0104	pass
-10		4	0.0354	pass
0		6	0.0388	pass
10		8	0.0040	pass
20		8	0.0179	pass
30		7	0.0177	pass
40		7	0.0401	pass
50		1	0.0061	pass
20	V min.= 7.0	9	0.0035	pass
20	V max.=8.7	2	0.0128	pass

WCDMA Band IV

WCDMA Mode, Middle Channel, f_o =1732.6 MHz					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	1710.3253	1754.6714	1710	1755
-20		1710.3230	1754.6746	1710	1755
-10		1710.3290	1754.6736	1710	1755
0		1710.3293	1754.6723	1710	1755
10		1710.3260	1754.6742	1710	1755
20		1710.3241	1754.6775	1710	1755
30		1710.3213	1754.6759	1710	1755
40		1710.3295	1754.6740	1710	1755
50		1710.3296	1754.6784	1710	1755
20	V min.= 7.0	1710.3293	1754.6793	1710	1755
20	V max.=8.7	1710.3273	1754.6732	1710	1755

CDMA BC1 1xRTT Mode

Middle Channel, f_o = 1880 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	8	0.0375	2.5
-20		4	0.0295	2.5
-10		3	0.0051	2.5
0		1	0.0117	2.5
10		6	0.0375	2.5
20		5	0.0412	2.5
30		2	0.0108	2.5
40		9	0.0112	2.5
50		4	0.0172	2.5
20	V min.= 7.0	2	0.0126	2.5
20	V max.=8.7	6	0.0423	2.5

CDMA BC1 EV-DO Mode

Middle Channel, f_o = 1880 MHz				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	6	0.0103	2.5
-20		1	0.0158	2.5
-10		3	0.0313	2.5
0		1	0.0060	2.5
10		9	0.0095	2.5
20		8	0.0250	2.5
30		6	0.0113	2.5
40		8	0.0119	2.5
50		5	0.0061	2.5
20	V min.= 7.0	9	0.0304	2.5
20	V max.=8.7	2	0.0206	2.5

LTE Band 2

Middle Channel, f_o =1880.0 MHz (QPSK)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	7.6	8	0.0122	pass
-20		1	0.0258	pass
-10		5	0.0284	pass
0		7	0.0080	pass
10		9	0.0244	pass
20		2	0.0034	pass
30		10	0.0105	pass
40		5	0.0350	pass
50		3	0.0156	pass
20	V min.= 7.0	2	0.0160	pass
20	V max.=8.7	10	0.0097	pass

Middle Channel, f_o =1880.0 MHz (16-QAM)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	7.6	7	0.0265	pass
-20		2	0.0211	pass
-10		4	0.0147	pass
0		10	0.0333	pass
10		6	0.0074	pass
20		8	0.0351	pass
30		7	0.0090	pass
40		7	0.0192	pass
50		7	0.0328	pass
20	V min.= 7.0	9	0.0223	pass
20	V max.=8.7	9	0.0208	pass

LTE Band 4

Low Channel & High Channel (QPSK)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	1710.0584	1754.9471	1710	1755
-20		1710.0505	1754.9415	1710	1755
-10		1710.0513	1754.9420	1710	1755
0		1710.0566	1754.9454	1710	1755
10		1710.0583	1754.9436	1710	1755
20		1710.0527	1754.9406	1710	1755
30		1710.0509	1754.9444	1710	1755
40		1710.0598	1754.9441	1710	1755
50		1710.0537	1754.9474	1710	1755
20	V min.= 7.0	1710.0545	1754.9500	1710	1755
20	V max.=8.7	1710.0525	1754.9439	1710	1755

Low Channel & High Channel (16-QAM)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	1710.0595	1754.9494	1710	1755
-20		1710.0584	1754.9496	1710	1755
-10		1710.0523	1754.9499	1710	1755
0		1710.0525	1754.9417	1710	1755
10		1710.0544	1754.9434	1710	1755
20		1710.0520	1754.9444	1710	1755
30		1710.0534	1754.9439	1710	1755
40		1710.0544	1754.9467	1710	1755
50		1710.0535	1754.9480	1710	1755
20	V min.= 7.0	1710.0582	1754.9465	1710	1755
20	V max.=8.7	1710.0575	1754.9451	1710	1755

LTE Band 5

Middle Channel, f_o =836.5 MHz (QPSK)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	1	0.0144	2.5
-20		5	0.0042	2.5
-10		1	0.0247	2.5
0		7	0.0174	2.5
10		10	0.0126	2.5
20		3	0.0415	2.5
30		5	0.0190	2.5
40		6	0.0059	2.5
50		3	0.0378	2.5
20	V min.= 7.0	5	0.0250	2.5
20	V max.=8.7	9	0.0392	2.5

Middle Channel, f_o =836.5 MHz(16-QAM)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	10	0.0316	2.5
-20		7	0.0328	2.5
-10		3	0.0161	2.5
0		5	0.0181	2.5
10		1	0.0078	2.5
20		4	0.0327	2.5
30		3	0.0103	2.5
40		8	0.0084	2.5
50		2	0.0419	2.5
20	V min.= 7.0	8	0.0130	2.5
20	V max.=8.7	8	0.0119	2.5

LTE Band 7

Low Channel & High Channel (QPSK)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	2500.4901	2569.9418	2500	2570
-20		2500.4964	2569.9492	2500	2570
-10		2500.4949	2569.9425	2500	2570
0		2500.4969	2569.9450	2500	2570
10		2500.4996	2569.9464	2500	2570
20		2500.4930	2569.9431	2500	2570
30		2500.4943	2569.9462	2500	2570
40		2500.4995	2569.9407	2500	2570
50		2500.4901	2569.9419	2500	2570
20	V min.= 7.0	2500.4965	2569.9443	2500	2570
20	V max.=8.7	2500.4959	2569.9476	2500	2570

Low Channel & High Channel (16-QAM)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	2500.0512	2569.9474	2500	2570
-20		2500.0570	2569.9463	2500	2570
-10		2500.0569	2569.9418	2500	2570
0		2500.0552	2569.9443	2500	2570
10		2500.0517	2569.9438	2500	2570
20		2500.0587	2569.9441	2500	2570
30		2500.0578	2569.9403	2500	2570
40		2500.0571	2569.9482	2500	2570
50		2500.0503	2569.9438	2500	2570
20	V min.= 7.0	2500.0517	2569.9482	2500	2570
20	V max.=8.7	2500.0514	2569.9446	2500	2570

LTE Band 12

Low Channel & High Channel (QPSK)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	699.0269	715.9730	699	716
-20		699.0283	715.9766	699	716
-10		699.0211	715.9722	699	716
0		699.0280	715.9772	699	716
10		699.0296	715.9759	699	716
20		699.0233	715.9700	699	716
30		699.0227	715.9759	699	716
40		699.0280	715.9799	699	716
50		699.0209	715.9744	699	716
25	V min.= 7.0	699.0223	715.9747	699	716
25	V max.=8.7	699.0272	715.9731	699	716

Low Channel & High Channel (16-QAM)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	699.0248	715.9770	699	716
-20		699.0227	715.9747	699	716
-10		699.0236	715.9777	699	716
0		699.0282	715.9702	699	716
10		699.0244	715.9736	699	716
20		699.0285	715.9775	699	716
30		699.0221	715.9714	699	716
40		699.0204	715.9731	699	716
50		699.0298	715.9782	699	716
25	V min.= 7.0	699.0219	715.9775	699	716
25	V max.=8.7	699.0231	715.9714	699	716

LTE Band 17

Low Channel & High Channel (QPSK)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	704.0536	715.9820	704	716
-20		704.0545	715.9834	704	716
-10		704.0544	715.9826	704	716
0		704.0518	715.9806	704	716
10		704.0515	715.9827	704	716
20		704.0530	715.9852	704	716
30		704.0509	715.9889	704	716
40		704.0594	715.9851	704	716
50		704.0518	715.9807	704	716
25	V min.= 7.0	704.0582	715.9808	704	716
25	V max.=8.7	704.0521	715.9842	704	716

Low Channel & High Channel (16-QAM)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	704.0587	715.9783	704	716
-20		704.0512	715.9768	704	716
-10		704.0506	715.9710	704	716
0		704.0577	715.9733	704	716
10		704.0550	715.9793	704	716
20		704.0553	715.9761	704	716
30		704.0574	715.9800	704	716
40		704.0510	715.9744	704	716
50		704.0595	715.9722	704	716
25	V min.= 7.0	704.0576	715.9725	704	716
25	V max.=8.7	704.0567	715.9773	704	716

LTE Band 25

Middle Channel, f_o =1882.5 MHz (QPSK)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	7.6	10	0.0077	pass
-20		2	0.0081	pass
-10		7	0.0200	pass
0		5	0.0121	pass
10		1	0.0052	pass
20		10	0.0066	pass
30		2	0.0298	pass
40		1	0.0040	pass
50		4	0.0304	pass
20	V min.= 7.0	5	0.0242	pass
20	V max.=8.7	8	0.0253	pass

Middle Channel, f_o =1882.5 MHz(16-QAM)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	7.6	8	0.0192	pass
-20		7	0.0288	pass
-10		7	0.0201	pass
0		3	0.0348	pass
10		9	0.0039	pass
20		6	0.0203	pass
30		10	0.0122	pass
40		3	0.0430	pass
50		10	0.0059	pass
20	V min.= 7.0	9	0.0044	pass
20	V max.=8.7	8	0.0368	pass

LTE Band 26

Middle Channel, f_o =831.5 MHz (QPSK)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	2	0.0327	2.5
-20		8	0.0035	2.5
-10		4	0.0194	2.5
0		3	0.0424	2.5
10		9	0.0170	2.5
20		8	0.0170	2.5
30		3	0.0166	2.5
40		10	0.0362	2.5
50		8	0.0106	2.5
20	V min.= 7.0	3	0.0295	2.5
20	V max.=8.7	9	0.0427	2.5

Middle Channel, f_o =831.5 MHz(16-QAM)				
Temperature (℃)	**Power Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	7.6	2	0.0064	2.5
-20		9	0.0344	2.5
-10		6	0.0051	2.5
0		10	0.0266	2.5
10		8	0.0157	2.5
20		5	0.0194	2.5
30		5	0.0318	2.5
40		1	0.0279	2.5
50		7	0.0320	2.5
20	V min.= 7.0	1	0.0416	2.5
20	V max.=8.7	4	0.0106	2.5

LTE Band 38

Low Channel & High Channel (QPSK)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	2570.0518	2619.9503	2570	2620
-20		2570.0550	2619.9534	2570	2620
-10		2570.0595	2619.9573	2570	2620
0		2570.0536	2619.9505	2570	2620
10		2570.0518	2619.9523	2570	2620
20		2570.0528	2619.9538	2570	2620
30		2570.0520	2619.9535	2570	2620
40		2570.0577	2619.9543	2570	2620
50		2570.0593	2619.9555	2570	2620
25	V min.= 7.0	2570.0542	2619.9565	2570	2620
25	V max.= 8.7	2570.0581	2619.9559	2570	2620

Low Channel & High Channel (16-QAM)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	2570.0501	2619.9510	2570	2620
-20		2570.0507	2619.9543	2570	2620
-10		2570.0507	2619.9541	2570	2620
0		2570.0572	2619.9516	2570	2620
10		2570.0563	2619.9530	2570	2620
20		2570.0594	2619.9532	2570	2620
30		2570.0553	2619.9599	2570	2620
40		2570.0572	2619.9579	2570	2620
50		2570.0577	2619.9527	2570	2620
25	V min.= 7.0	2570.0542	2619.9552	2570	2620
25	V max.= 8.7	2570.0566	2619.9561	2570	2620

LTE Band 41

Low Channel & High Channel (QPSK)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	2496.0623	2689.9463	2496	2690
-20		2496.0603	2689.9416	2496	2690
-10		2496.0640	2689.9454	2496	2690
0		2496.0642	2689.9442	2496	2690
10		2496.0602	2689.9412	2496	2690
20		2496.0627	2689.9454	2496	2690
30		2496.0639	2689.9412	2496	2690
40		2496.0610	2689.9443	2496	2690
50		2496.0629	2689.9450	2496	2690
25	V min.= 7.0	2496.0685	2689.9446	2496	2690
25	V max.= 8.7	2496.0694	2689.9452	2496	2690

Low Channel & High Channel (16-QAM)					
Temperature	**Power Supplied**	**F_L**	**F_H**	**F_L Limit**	**F_H Limit**
(℃)	**(V_{DC})**	**(MHz)**	**(MHz)**	**(MHz)**	**(MHz)**
-30	7.6	2496.0603	2689.9497	2496	2690
-20		2496.0603	2689.9439	2496	2690
-10		2496.0639	2689.9442	2496	2690
0		2496.0615	2689.9470	2496	2690
10		2496.0666	2689.9418	2496	2690
20		2496.0671	2689.9481	2496	2690
30		2496.0696	2689.9411	2496	2690
40		2496.0692	2689.9472	2496	2690
50		2496.0650	2689.9453	2496	2690
25	V min.= 7.0	2496.0682	2689.9427	2496	2690
25	V max.= 8.7	2496.0652	2689.9405	2496	2690

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