

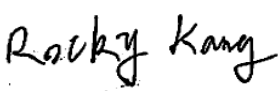
FCC PART 27
FCC PART 22H, PART 24E
TEST REPORT

For

Shenzhen Jingwah Information Technology Co., Ltd.

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FCC ID: RBD-S4005L

Report Type: Original Report	Product Type: Smart Phone
Report Number: RGMA190103002-00D	
Report Date: 2019-01-21	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Smart Phone
Tested Model	S4005L
Multiple Model#	A4000-PB
Frequency Range	GSM 850: 824-849 MHz(TX); 869-894 MHz(RX) PCS 1900: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX) WCDMA Band 4: 1710-1755 MHz(TX) ; 2110-2155 MHz(RX) WCDMA Band 5: 824-849 MHz(TX); 869-894 MHz(RX) LTE Band 2: 1850-1910 MHz(TX); 1930-1990 MHz(RX) LTE Band 4: 1710-1755 MHz(TX) ; 2110-2155 MHz(RX) LTE Band 5: 824-849 MHz(TX); 869-894 MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 17: 704-716MHz (TX); 734-746MHz (RX)
Transmit Power	Cellular: 32.5dBm (GSM/GPRS), 27.8dBm (EDGE), 22.7dBm (WCDMA/HSPA) PCS: 29.1dBm (GSM/GPRS), 27.5dBm (EDGE), 22.5dBm (WCDMA/HSPA) AWS B4: 22.5dBm (WCDMA/HSPA) LTE: 23.2dBm (B2), 22.9dBm (B4), 23.2dBm (B5), 24.0dBm (B7), 23.3dBm (B17)
Modulation Technique	2G: GMSK, 8PSK 3G: BPMS/QPSK/16QAM 4G: QPSK/16QAM
Antenna Specification	2G:GSM850: 2.13dBi; GSM1900: 2.87dBi 3G:band 2: 2.87dBi; band 4: 3.08dBi, band 5: 2.13dBi 4G:band2 : 2.87dBi; band17: 2.47dBi
Voltage Range	DC 3.7 V battery or DC 5.0V from adapter
Date of Test	2019-01-11 to 2019-01-19
Sample serial number	A4000181200001
Received date	2019-01-03
Sample/EUT Status	Good condition
Adapter information	Model: TPA-95A050100UU Input: AC 100-240V, 60/80Hz, 0.16A Output: DC 5V, 1000mA

Notes: This series products model: A4000-PB and S4005L are identical; they have the same or similar appearance, structure, PCB, Material and function to the testing products, Model S4005L was selected for fully testing, the detailed information can be referred to the attached declaration which was stated and guaranteed by the applicant.

Objective

This test report is prepared on behalf of *Shenzhen Jingwah Information Technology Co., Ltd.* in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E and Subpart 27 of the Federal Communication Commissions rules.

The objective is to determine the compliance of the 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&DTS and Part 15.407 NII submissions with FCC ID: RBD-S4005L.

Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart 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

Applicable Standards: TIA/EIA 603-D.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±0.5dB
Unwanted Emission, conducted		±1.5dB
Radiated Emissions	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±3°C
Supply voltages		±0.4%

Note: 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. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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.

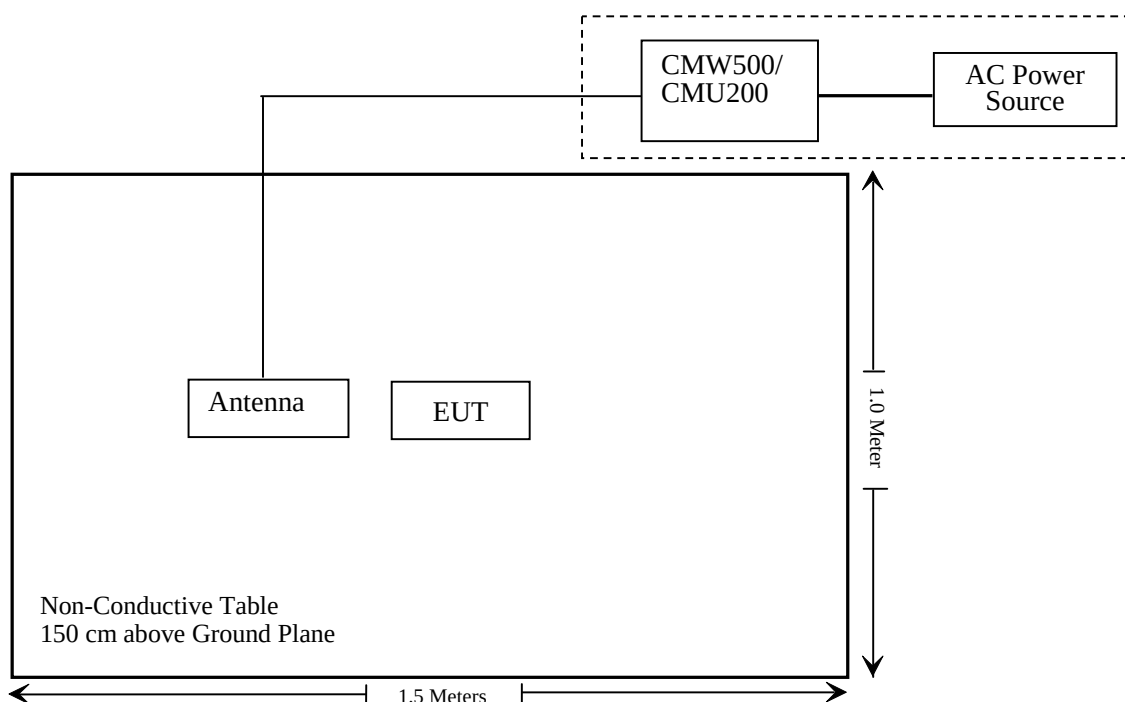
Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-116218-UY
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	110605

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 , §2.1093	RF Exposure (SAR)	Compliance*
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (c) (d) (h)	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliance
§ 2.1051; § 22.917 (a); § 24.238 (a); §27.53 (h)(m)	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53 (h)(m)	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a); §27.53 (h)(m)	Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliance

Note: * Please refer to SAR report released by BACL, report number: RGMA190103002-20A

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017-12-22	2020-12-21
Rohde & Schwarz	Signal Analyzer	FSEM	845987/005	2018-06-23	2019-06-23
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017-12-22	2020-12-21
COM-POWER	Pre-amplifier	PA-122	181919	2018-11-12	2019-11-12
Sonoma instrument	Amplifier	310N	186238	2018-11-12	2019-11-12
Anritsu	Signal Generator	68369B	004114	2018-12-24	2019-12-24
Rohde & Schwarz	EMI Test Receiver	ESCI	101120	2019-01-11	2020-01-11
COM POWER	Dipole Antenna	AD-100	41000	NCR	NCR
A.H. System	Horn Antenna	SAS-200/571	135	2018-09-01	2021-08-31
Ducommun technologies	RF Cable	UFA147A-2362-100100	MFR64639 231029-003	2018-07-11	2021-07-10
Ducommun technologies	RF Cable	104PEA	218124002	2018-11-12	2019-11-12
Ducommun technologies	RF Cable	RG-214	1	2018-11-19	2019-05-21
Ducommun technologies	RF Cable	RG-214	2	2018-11-12	2019-11-12
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-04	2017-12-29	2020-12-28
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-03	2017-12-29	2020-12-28
Heatsink Required	Amplifier	QLW-18405536-J0	15964001002	2018-11-12	2019-11-12

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200120	2018-12-24	2019-12-24
ESPEC	Temperature & Humidity Chamber	EL-10KA	09107726	2018-12-21	2019-12-21
Long Wei	DC Power Supply	TPR-6420D	398363	NCR	NCR
Agilent	Vector signal source	N5182B	MY53051503	2018-06-23	2019-06-23
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2018-12-14	2019-12-14
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2018-06-23	2019-06-23
Ducommun technologies	RF Cable	RG-214	3	Each Time	
WEINSCHTEL	6dB Attenuator	50-6	R4376	Each Time	
Un-known	Power Splitter	1620	129	Each Time	

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) 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(b) and §2.1093.

Test Result

Compliance, please refer to the SAR report: RGMA190103002-20A.

FCC §2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E & 27 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) (h) - RF OUTPUT POWER

Applicable Standard

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

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

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

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

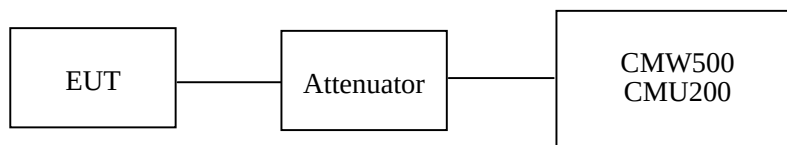
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2500-2570MHz.

Test Procedure

Conducted method:

The RF output of the transmitter was connected to the CMW500/CMU200 through sufficient attenuation.



Radiated method:

TIA 603-D section 2.2.17

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Shawn Xiao on 2019-01-19.

Conducted Power**Cellular Band (Part 22H)**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	128	824.2	32.40	38.45
	190	836.6	32.20	38.45
	251	848.8	31.70	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	32.42	31.10	29.17	27.85	38.45
	190	836.6	32.25	31.21	29.25	27.72	38.45
	251	848.8	31.60	31.20	29.36	28.41	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	26.79	25.40	23.04	21.57	38.45
	190	836.6	27.70	26.15	23.59	21.87	38.45
	251	848.8	27.70	27.08	24.35	22.55	38.45

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band V)	Normal	RMC12.2k		22.65	22.21	22.48
		HSDPA	1	21.58	21.42	21.32
			2	21.77	21.36	21.31
			3	21.49	22.07	22.01
			4	21.38	21.44	21.74
		HSUPA	1	21.47	21.25	21.51
			2	21.77	21.78	21.70
			3	21.77	21.27	21.58
			4	21.89	21.66	21.99
			5	22.22	22.04	21.71
		HSPA+	1	21.14	21.37	21.06

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	512	1850.2	28.50	33
	661	1880.0	28.42	33
	810	1909.8	29.01	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	28.37	27.27	25.25	23.81	33
	661	1880.0	28.42	27.43	25.47	24.26	33
	810	1909.8	29.07	28.18	26.35	25.27	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	27.35	25.34	23.76	21.54	33
	661	1880.0	26.95	25.19	22.79	20.98	33
	810	1909.8	27.22	24.53	24.18	21.38	33

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band II)	Normal	RMC12.2k		22.40	22.30	22.30
		HSDPA	1	20.97	21.28	20.89
			2	21.33	21.56	21.14
			3	21.23	21.51	21.82
			4	21.80	21.38	21.18
		HSUPA	1	21.71	21.21	20.58
			2	21.76	21.45	21.33
			3	21.77	21.83	22.06
			4	22.02	21.01	21.73
			5	21.90	21.31	21.55
		HSPA+	1	21.40	21.44	20.96

AWS Band (Part 27)

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band IV)	Normal	RMC12.2k		22.10	21.89	22.41
		HSDPA	1	21.14	21.08	21.15
			2	21.53	21.04	21.70
			3	21.45	21.96	21.54
			4	21.31	21.36	21.15
		HSUPA	1	21.72	21.42	21.30
			2	21.48	21.81	21.77
			3	21.71	21.33	21.34
			4	22.07	21.89	21.59
			5	22.04	21.17	21.72
		HSPA+	1	21.23	21.35	20.84

Peak-to-average ratio (PAR)**Cellular Band**

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	7.24	13
	Middle	7.72	13
	High	7.20	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	10.32	13
	Middle	10.48	13
	High	10.31	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.63	13
	Middle	3.06	13
	High	3.05	13
HSDPA (16QAM)	Low	2.75	13
	Middle	2.77	13
	High	3.08	13
HSUPA (BPSK)	Low	3.44	13
	Middle	3.14	13
	High	3.40	13
HSPA+	Low	3.13	13
	Middle	3.25	13
	High	3.46	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	7.16	13
	Middle	7.06	13
	High	7.32	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	10.35	13
	Middle	10.44	13
	High	10.29	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.65	13
	Middle	2.85	13
	High	2.56	13
HSDPA (16QAM)	Low	2.55	13
	Middle	2.74	13
	High	2.68	13
HSUPA (BPSK)	Low	2.48	13
	Middle	2.97	13
	High	3.02	13
HSPA+	Low	2.85	13
	Middle	2.93	13
	High	2.84	13

AWS Band (Part 27)

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.08	13
	Middle	3.05	13
	High	2.77	13
HSDPA (16QAM)	Low	3.05	13
	Middle	2.82	13
	High	3.28	13
HSUPA (BPSK)	Low	3.29	13
	Middle	3.46	13
	High	2.77	13
HSPA+	Low	3.18	13
	Middle	3.21	13
	High	2.84	13

Radiated Power**GSM Mode:**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable loss (dB)	Antenna Gain (dBi)			
ERP for Cellular Band (Part 22H), Middle Channel										
836.60	90.45	187	2.1	H	31.1	1.88	0	29.22	38.45	9.23
836.60	93.41	227	1.4	V	33.4	1.88	0	31.52	38.45	6.93
EIRP for PCS Band (Part 24E), Middle Channel										
1880.00	90.56	91	2.2	H	20.5	1.30	9.40	28.60	33	4.4
1880.00	86.90	60	1.9	V	16.6	1.30	9.40	24.70	33	8.3

EDGE Mode:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable loss (dB)	Antenna Gain (dBi)			
ERP, Cellular Band (Part 22H), Middle Channel										
836.60	86.18	97	1.6	H	26.8	1.88	0	24.92	38.45	13.53
836.60	87.95	285	1.8	V	27.9	1.88	0	26.02	38.45	12.43
EIRP, PCS Band (Part 24E), Middle Channel										
1880.00	84.11	106	1.7	H	14.1	1.30	9.40	22.20	33	10.8
1880.00	86.38	330	1.4	V	16.1	1.30	9.40	24.20	33	8.8

WCDMA Mode:

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)	Level (dBm)	Cable loss (dB)	Antenna Gain (dBi)			
ERP for WCDMA Band V (Part 22H), Middle Channel										
836.60	80.80	334	2.1	H	21.4	1.88	0	19.52	38.45	18.93
836.60	82.49	355	1.1	V	22.5	1.88	0	20.62	38.45	17.83
EIRP for WCDMA Band II (Part 24E), Middle Channel										
1880.00	82.05	291	1.7	H	12.0	1.30	9.40	20.10	33.00	12.9
1880.00	81.10	215	1.7	V	10.8	1.30	9.40	18.90	33.00	14.1
EIRP for WCDMA Band IV (Part 27), Middle Channel										
1732.60	86.30	216	2.2	H	13.1	1.30	8.90	20.70	30	9.3
1732.60	86.48	145	1.4	V	13.9	1.30	8.90	21.50	30	8.5

Note:

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

LTE Band 2:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.75	22.68	22.67
		RB Size=1, RB Offset=2	22.49	22.62	22.65
		RB Size=1, RB Offset=5	22.37	22.74	22.65
		RB Size=3, RB Offset=0	22.45	22.27	22.39
		RB Size=3, RB Offset=1	22.28	22.42	22.19
		RB Size=3, RB Offset=2	22.34	22.20	22.20
		RB Size=6, RB Offset=0	22.13	22.12	22.22
	16QAM	RB Size=1, RB Offset=0	22.15	22.22	22.08
		RB Size=1, RB Offset=2	22.10	22.15	21.98
		RB Size=1, RB Offset=5	22.10	21.93	23.04
		RB Size=3, RB Offset=0	21.83	21.75	22.82
		RB Size=3, RB Offset=1	21.75	21.97	21.78
		RB Size=3, RB Offset=2	21.80	21.84	21.76
		RB Size=6, RB Offset=0	21.67	21.62	21.79
3.0	QPSK	RB Size=1, RB Offset=0	22.84	22.78	22.81
		RB Size=1, RB Offset=7	22.87	22.60	22.80
		RB Size=1, RB Offset=14	22.58	22.60	22.76
		RB Size=8, RB Offset=0	21.99	21.93	21.89
		RB Size=8, RB Offset=4	21.74	21.72	21.78
		RB Size=8, RB Offset=7	21.50	21.68	21.74
		RB Size=15, RB Offset=0	21.76	21.71	21.73
	16QAM	RB Size=1, RB Offset=0	22.19	22.11	22.03
		RB Size=1, RB Offset=7	22.14	22.03	22.13
		RB Size=1, RB Offset=14	22.20	21.80	22.03
		RB Size=8, RB Offset=0	20.84	20.73	20.96
		RB Size=8, RB Offset=4	20.64	20.74	20.94
		RB Size=8, RB Offset=7	20.46	20.61	20.79
		RB Size=15, RB Offset=0	20.77	20.82	20.86

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.84	22.72	22.88
		RB Size=1, RB Offset=12	22.91	22.88	22.68
		RB Size=1, RB Offset=24	22.54	22.94	22.43
		RB Size=12, RB Offset=0	21.86	21.91	21.98
		RB Size=12, RB Offset=6	21.77	21.76	21.69
		RB Size=12, RB Offset=11	21.92	21.51	21.67
		RB Size=25, RB Offset=0	21.80	21.67	21.88
	16QAM	RB Size=1, RB Offset=0	21.90	21.64	21.65
		RB Size=1, RB Offset=12	21.84	21.28	21.77
		RB Size=1, RB Offset=24	21.93	21.28	21.68
		RB Size=12, RB Offset=0	20.69	20.80	20.92
		RB Size=12, RB Offset=6	20.86	20.67	20.81
		RB Size=12, RB Offset=11	20.51	20.56	20.64
		RB Size=25, RB Offset=0	20.82	20.78	20.89
10.0	QPSK	RB Size=1, RB Offset=0	22.87	22.77	22.64
		RB Size=1, RB Offset=24	22.73	22.87	22.63
		RB Size=1, RB Offset=49	22.65	22.78	22.58
		RB Size=25, RB Offset=0	21.82	21.66	21.81
		RB Size=25, RB Offset=12	21.76	21.64	21.68
		RB Size=25, RB Offset=24	21.94	21.58	21.57
		RB Size=50, RB Offset=0	21.56	21.53	21.57
	16QAM	RB Size=1, RB Offset=0	21.79	21.67	21.72
		RB Size=1, RB Offset=24	21.76	21.46	21.74
		RB Size=1, RB Offset=49	21.49	21.46	21.74
		RB Size=25, RB Offset=0	22.67	20.72	20.69
		RB Size=25, RB Offset=12	22.55	20.47	20.54
		RB Size=25, RB Offset=24	22.63	20.30	20.44
		RB Size=50, RB Offset=0	20.45	20.37	20.55

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.19	22.00	22.32
		RB Size=1, RB Offset=37	21.97	22.01	22.36
		RB Size=1, RB Offset=74	22.08	22.08	22.27
		RB Size=36, RB Offset=0	21.97	21.98	22.06
		RB Size=36, RB Offset=18	22.16	21.99	21.92
		RB Size=36, RB Offset=37	22.14	21.81	21.64
		RB Size=75, RB Offset=0	21.93	21.88	21.96
	16QAM	RB Size=1, RB Offset=0	21.87	22.01	21.71
		RB Size=1, RB Offset=37	21.74	21.83	21.51
		RB Size=1, RB Offset=74	21.81	21.93	21.35
		RB Size=36, RB Offset=0	21.71	21.81	22.20
		RB Size=36, RB Offset=18	21.84	21.74	22.00
		RB Size=36, RB Offset=37	21.52	21.55	21.94
		RB Size=75, RB Offset=0	21.18	21.28	21.09
20.0	QPSK	RB Size=1, RB Offset=0	22.87	22.90	23.06
		RB Size=1, RB Offset=49	22.96	22.84	22.87
		RB Size=1, RB Offset=99	22.81	22.88	22.77
		RB Size=50, RB Offset=0	21.87	21.79	22.01
		RB Size=50, RB Offset=24	21.84	21.89	21.94
		RB Size=50, RB Offset=49	21.71	21.72	21.65
		RB Size=100, RB Offset=0	21.73	21.88	21.84
	16QAM	RB Size=1, RB Offset=0	22.06	22.00	22.12
		RB Size=1, RB Offset=49	21.94	21.94	21.94
		RB Size=1, RB Offset=99	21.99	21.72	21.96
		RB Size=50, RB Offset=0	20.94	20.91	20.89
		RB Size=50, RB Offset=24	20.78	20.90	20.90
		RB Size=50, RB Offset=49	20.62	20.66	20.88
		RB Size=100, RB Offset=0	20.75	20.75	20.89

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.86	13	Pass
QPSK (100RB Size)	5.91	13	Pass
16QAM (1RB Size)	7.30	13	Pass
16QAM (100RB Size)	7.33	13	Pass

QPSK:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
1.4 MHz Bandwidth									
1880.00	84.20	93	2.3	H	14.2	1.30	9.40	22.30	33
1880.00	80.36	70	2.3	V	10.1	1.30	9.40	18.20	33
3 MHz Bandwidth									
1880.00	84.12	3	1.7	H	14.1	1.30	9.40	22.20	33
1880.00	80.19	235	1.4	V	9.9	1.30	9.40	18.00	33
5 MHz Bandwidth									
1880.00	83.20	107	2.4	H	13.2	1.30	9.40	21.30	33
1880.00	79.58	164	2.0	V	9.3	1.30	9.40	17.40	33
10 MHz Bandwidth									
1880.00	83.67	127	2.1	H	13.6	1.30	9.40	21.70	33
1880.00	79.42	61	1.6	V	9.2	1.30	9.40	17.30	33
15 MHz Bandwidth									
1880.00	83.20	166	1.5	H	13.2	1.30	9.40	21.30	33
1880.00	79.20	22	2.4	V	8.9	1.30	9.40	17.00	33
20 MHz Bandwidth									
1880.00	83.60	271	1.1	H	13.6	1.30	9.40	21.70	33
1880.00	79.41	161	1.2	V	9.1	1.30	9.40	17.20	33

16QAM:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
1.4 MHz Bandwidth									
1880.00	84.60	282	2.5	H	14.6	1.30	9.40	22.70	33
1880.00	79.90	341	1.8	V	9.6	1.30	9.40	17.70	33
3 MHz Bandwidth									
1880.00	84.10	272	1.3	H	14.1	1.30	9.40	22.20	33
1880.00	80.20	59	2.0	V	9.9	1.30	9.40	18.00	33
5 MHz Bandwidth									
1880.00	83.57	59	1.7	H	13.5	1.30	9.40	21.60	33
1880.00	80.02	154	2.4	V	9.8	1.30	9.40	17.90	33
10 MHz Bandwidth									
1880.00	83.10	231	2.3	H	13.1	1.30	9.40	21.20	33
1880.00	79.90	283	1.9	V	9.6	1.30	9.40	17.70	33
15 MHz Bandwidth									
1880.00	83.56	118	1.7	H	13.5	1.30	9.40	21.60	33
1880.00	79.26	37	2.5	V	9.0	1.30	9.40	17.10	33
20 MHz Bandwidth									
1880.00	83.34	144	2.3	H	13.3	1.30	9.40	21.40	33
1880.00	79.10	135	2.2	V	8.8	1.30	9.40	16.90	33

LTE Band 4:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.53	22.44	22.61
		RB Size=1, RB Offset=2	22.55	22.26	22.48
		RB Size=1, RB Offset=5	22.40	21.97	22.59
		RB Size=3, RB Offset=0	22.74	22.65	22.68
		RB Size=3, RB Offset=1	22.56	22.64	22.71
		RB Size=3, RB Offset=2	22.53	22.57	22.50
		RB Size=6, RB Offset=0	21.36	21.47	21.45
	16QAM	RB Size=1, RB Offset=0	21.80	21.91	21.92
		RB Size=1, RB Offset=2	21.68	21.80	21.72
		RB Size=1, RB Offset=5	21.70	21.91	21.83
		RB Size=3, RB Offset=0	22.73	21.85	21.86
		RB Size=3, RB Offset=1	22.84	21.69	21.81
		RB Size=3, RB Offset=2	22.64	21.76	21.70
		RB Size=6, RB Offset=0	20.82	20.80	20.66
3.0	QPSK	RB Size=1, RB Offset=0	22.54	22.50	22.53
		RB Size=1, RB Offset=7	22.23	22.52	22.39
		RB Size=1, RB Offset=14	22.36	22.15	22.17
		RB Size=8, RB Offset=0	21.64	21.56	21.60
		RB Size=8, RB Offset=4	21.52	21.53	21.72
		RB Size=8, RB Offset=7	21.25	21.39	21.73
		RB Size=15, RB Offset=0	21.50	21.50	21.62
	16QAM	RB Size=1, RB Offset=0	21.69	21.60	21.60
		RB Size=1, RB Offset=7	21.74	21.60	21.47
		RB Size=1, RB Offset=14	21.68	21.40	21.39
		RB Size=8, RB Offset=0	20.84	20.63	20.77
		RB Size=8, RB Offset=4	20.51	20.62	20.87
		RB Size=8, RB Offset=7	20.69	20.79	20.49
		RB Size=15, RB Offset=0	20.74	20.80	20.70

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.80	22.68	22.67
		RB Size=1, RB Offset=12	22.56	22.58	22.60
		RB Size=1, RB Offset=24	22.45	22.65	22.71
		RB Size=12, RB Offset=0	21.88	21.57	21.62
		RB Size=12, RB Offset=6	21.68	21.75	21.65
		RB Size=12, RB Offset=11	21.51	21.67	21.61
		RB Size=25, RB Offset=0	21.66	21.63	21.68
	16QAM	RB Size=1, RB Offset=0	21.93	21.91	21.89
		RB Size=1, RB Offset=12	21.83	21.86	21.66
		RB Size=1, RB Offset=24	21.59	21.64	21.66
		RB Size=12, RB Offset=0	20.94	20.91	21.02
		RB Size=12, RB Offset=6	20.78	20.94	20.94
		RB Size=12, RB Offset=11	20.77	20.79	20.79
		RB Size=25, RB Offset=0	20.96	20.71	20.69
10.0	QPSK	RB Size=1, RB Offset=0	22.72	22.64	22.74
		RB Size=1, RB Offset=24	22.69	22.58	22.79
		RB Size=1, RB Offset=49	22.62	22.67	22.72
		RB Size=25, RB Offset=0	21.68	21.70	21.66
		RB Size=25, RB Offset=12	21.62	21.88	21.70
		RB Size=25, RB Offset=24	21.61	21.42	21.73
		RB Size=50, RB Offset=0	21.96	21.76	21.88
	16QAM	RB Size=1, RB Offset=0	22.11	22.24	22.30
		RB Size=1, RB Offset=24	22.22	22.04	22.36
		RB Size=1, RB Offset=49	22.19	22.07	22.06
		RB Size=25, RB Offset=0	20.77	20.97	20.89
		RB Size=25, RB Offset=12	20.69	20.58	20.84
		RB Size=25, RB Offset=24	20.45	20.64	20.56
		RB Size=50, RB Offset=0	21.04	20.94	21.04

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.74	22.68	22.63
		RB Size=1, RB Offset=37	22.65	22.28	22.43
		RB Size=1, RB Offset=74	22.51	22.43	22.60
		RB Size=36, RB Offset=0	22.01	21.98	21.87
		RB Size=36, RB Offset=18	21.85	21.80	21.67
		RB Size=36, RB Offset=37	21.94	21.66	21.72
		RB Size=75, RB Offset=0	21.75	21.61	21.64
	16QAM	RB Size=1, RB Offset=0	21.79	21.50	21.64
		RB Size=1, RB Offset=37	21.52	21.53	21.74
		RB Size=1, RB Offset=74	21.59	21.57	21.49
		RB Size=36, RB Offset=0	20.84	20.68	20.61
		RB Size=36, RB Offset=18	20.81	20.48	20.64
		RB Size=36, RB Offset=37	20.61	20.52	20.62
		RB Size=75, RB Offset=0	20.73	20.83	20.78
20.0	QPSK	RB Size=1, RB Offset=0	22.67	22.27	22.57
		RB Size=1, RB Offset=49	22.66	22.36	22.51
		RB Size=1, RB Offset=99	22.75	22.34	22.09
		RB Size=50, RB Offset=0	21.76	21.94	21.98
		RB Size=50, RB Offset=24	21.94	21.98	21.83
		RB Size=50, RB Offset=49	21.74	21.96	21.74
		RB Size=100, RB Offset=0	21.73	21.58	21.55
	16QAM	RB Size=1, RB Offset=0	22.31	22.32	22.35
		RB Size=1, RB Offset=49	22.17	22.31	22.46
		RB Size=1, RB Offset=99	22.11	22.02	22.46
		RB Size=50, RB Offset=0	21.08	21.03	21.07
		RB Size=50, RB Offset=24	20.97	21.05	21.09
		RB Size=50, RB Offset=49	20.86	21.02	20.96
		RB Size=100, RB Offset=0	20.91	20.82	20.83

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.56	13	Pass
QPSK (100RB Size)	6.63	13	Pass
16QAM (1RB Size)	7.51	13	Pass
16QAM (100RB Size)	7.55	13	Pass

QPSK:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
1.4 MHz Bandwidth									
1732.50	84.60	325	2.0	H	11.4	1.30	8.90	19.00	30
1732.50	82.54	318	1.0	V	10.0	1.30	8.90	17.60	30
3 MHz Bandwidth									
1732.50	84.33	325	2.2	H	11.2	1.30	8.90	18.80	30
1732.50	82.19	104	1.5	V	9.6	1.30	8.90	17.20	30
5 MHz Bandwidth									
1732.50	84.59	352	1.3	H	11.4	1.30	8.90	19.00	30
1732.50	81.76	336	2.0	V	9.2	1.30	8.90	16.80	30
10 MHz Bandwidth									
1732.50	82.20	346	1.1	H	9.0	1.30	8.90	16.60	30
1732.50	81.94	94	2.4	V	9.4	1.30	8.90	17.00	30
15 MHz Bandwidth									
1732.50	84.53	231	2.0	H	11.4	1.30	8.90	19.00	30
1732.50	82.30	355	2.1	V	9.7	1.30	8.90	17.30	30
20 MHz Bandwidth									
1732.50	84.02	200	1.3	H	10.9	1.30	8.90	18.50	30
1732.50	81.89	136	1.9	V	9.3	1.30	8.90	16.90	30

16QAM:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
1.4 MHz Bandwidth									
1732.50	85.27	197	1.7	H	12.1	1.30	8.90	19.70	30
1732.50	83.90	17	1.7	V	11.3	1.30	8.90	18.90	30
3 MHz Bandwidth									
1732.50	85.02	184	1.8	H	11.9	1.30	8.90	19.50	30
1732.50	83.21	172	1.3	V	10.6	1.30	8.90	18.20	30
5 MHz Bandwidth									
1732.50	85.20	300	1.5	H	12.0	1.30	8.90	19.60	30
1732.50	83.02	191	2.3	V	10.5	1.30	8.90	18.10	30
10 MHz Bandwidth									
1732.50	84.33	345	1.8	H	11.2	1.30	8.90	18.80	30
1732.50	82.90	284	1.7	V	10.3	1.30	8.90	17.90	30
15 MHz Bandwidth									
1732.50	84.10	94	1.8	H	10.9	1.30	8.90	18.50	30
1732.50	83.02	69	1.7	V	10.5	1.30	8.90	18.10	30
20 MHz Bandwidth									
1732.50	84.06	15	1.4	H	10.9	1.30	8.90	18.50	30
1732.50	82.77	100	1.5	V	10.2	1.30	8.90	17.80	30

LTE Band 5:

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.73	22.60	22.57
		RB Size=1, RB Offset=2	22.77	22.71	22.78
		RB Size=1, RB Offset=5	22.30	22.64	22.59
		RB Size=3, RB Offset=0	22.53	22.39	22.50
		RB Size=3, RB Offset=1	22.38	22.32	22.31
		RB Size=3, RB Offset=2	22.38	22.47	22.27
		RB Size=6, RB Offset=0	22.22	22.21	22.23
	16QAM	RB Size=1, RB Offset=0	22.16	22.23	22.24
		RB Size=1, RB Offset=2	22.10	22.09	21.99
		RB Size=1, RB Offset=5	22.02	22.24	22.88
		RB Size=3, RB Offset=0	21.89	21.86	22.92
		RB Size=3, RB Offset=1	21.87	21.90	21.90
		RB Size=3, RB Offset=2	22.01	21.88	21.92
		RB Size=6, RB Offset=0	21.75	21.75	21.86
3	QPSK	RB Size=1, RB Offset=0	22.78	22.67	23.11
		RB Size=1, RB Offset=7	22.81	22.93	22.83
		RB Size=1, RB Offset=14	22.80	22.71	22.92
		RB Size=8, RB Offset=0	22.07	21.93	21.80
		RB Size=8, RB Offset=4	21.86	21.68	21.88
		RB Size=8, RB Offset=7	21.64	21.66	21.96
		RB Size=15, RB Offset=0	21.84	21.73	21.87
	16QAM	RB Size=1, RB Offset=0	22.09	22.23	22.06
		RB Size=1, RB Offset=7	22.26	22.04	22.14
		RB Size=1, RB Offset=14	22.27	21.87	22.10
		RB Size=8, RB Offset=0	20.89	20.81	21.02
		RB Size=8, RB Offset=4	20.80	20.87	20.98
		RB Size=8, RB Offset=7	20.53	20.55	20.77
		RB Size=15, RB Offset=0	20.90	20.68	20.68

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.85	22.76	23.16
		RB Size=1, RB Offset=12	22.90	22.70	22.57
		RB Size=1, RB Offset=24	22.67	22.95	22.60
		RB Size=12, RB Offset=0	21.95	21.86	22.06
		RB Size=12, RB Offset=6	21.92	21.89	21.91
		RB Size=12, RB Offset=11	21.98	21.50	21.70
		RB Size=25, RB Offset=0	21.93	21.80	22.02
	16QAM	RB Size=1, RB Offset=0	22.06	21.64	21.70
		RB Size=1, RB Offset=12	22.01	21.49	21.77
		RB Size=1, RB Offset=24	21.84	21.45	21.49
		RB Size=12, RB Offset=0	20.82	20.81	20.76
		RB Size=12, RB Offset=6	20.81	20.78	20.64
		RB Size=12, RB Offset=11	20.49	20.52	20.70
		RB Size=25, RB Offset=0	20.78	20.76	20.98
10.0	QPSK	RB Size=1, RB Offset=0	23.02	22.87	22.77
		RB Size=1, RB Offset=24	22.73	22.90	22.92
		RB Size=1, RB Offset=49	22.65	22.78	22.73
		RB Size=25, RB Offset=0	21.81	21.76	21.71
		RB Size=25, RB Offset=12	21.94	21.71	21.70
		RB Size=25, RB Offset=24	21.91	21.48	21.56
		RB Size=50, RB Offset=0	21.66	21.57	21.64
	16QAM	RB Size=1, RB Offset=0	21.90	21.79	21.82
		RB Size=1, RB Offset=24	21.75	21.66	21.67
		RB Size=1, RB Offset=49	21.52	21.45	21.84
		RB Size=25, RB Offset=0	22.66	20.84	20.84
		RB Size=25, RB Offset=12	22.43	20.73	20.58
		RB Size=25, RB Offset=24	22.66	20.29	20.28
		RB Size=50, RB Offset=0	20.72	20.46	20.52

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.71	13	Pass
QPSK (50RB Size)	6.77	13	Pass
16QAM (1RB Size)	7.61	13	Pass
16QAM (50RB Size)	7.65	13	Pass

EIRP:**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
1.4 MHz Bandwidth									
836.50	83.00	150	2.4	H	23.7	1.88	0	21.82	38.45
836.50	84.05	47	2.1	V	24.0	1.88	0	22.12	38.45
3 MHz Bandwidth									
836.50	83.27	317	1.4	H	23.9	1.88	0	22.02	38.45
836.50	84.46	87	1.0	V	24.4	1.88	0	22.52	38.45
5 MHz Bandwidth									
836.50	83.08	349	1.1	H	23.7	1.88	0	21.82	38.45
836.50	84.43	45	1.1	V	24.4	1.88	0	22.52	38.45
10 MHz Bandwidth									
836.50	83.04	220	2.1	H	23.7	1.88	0	21.82	38.45
836.50	84.37	156	2.3	V	24.3	1.88	0	22.42	38.45

16QAM:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
1.4 MHz Bandwidth									
836.50	83.07	180	1.4	H	23.7	1.88	0	21.82	38.45
836.50	84.41	156	1.4	V	24.4	1.88	0	22.52	38.45
3 MHz Bandwidth									
836.50	83.25	47	1.0	H	23.9	1.88	0	22.02	38.45
836.50	84.40	19	2.3	V	24.3	1.88	0	22.42	38.45
5 MHz Bandwidth									
836.50	82.90	32	1.8	H	23.6	1.88	0	21.72	38.45
836.50	84.05	90	1.1	V	24.0	1.88	0	22.12	38.45
10 MHz Bandwidth									
836.50	83.19	11	1.5	H	23.8	1.88	0	21.92	38.45
836.50	84.18	104	1.6	V	24.1	1.88	0	22.22	38.45

LTE Band 7:

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5	QPSK	RB Size=1, RB Offset=0	23.15	22.90	22.54
		RB Size=1, RB Offset=12	22.78	22.47	22.32
		RB Size=1, RB Offset=24	23.32	22.94	22.78
		RB Size=12, RB Offset=0	21.92	21.47	21.24
		RB Size=12, RB Offset=6	22.14	21.54	21.38
		RB Size=12, RB Offset=11	22.01	21.48	21.58
		RB Size=25, RB Offset=0	21.98	21.59	22.29
	16QAM	RB Size=1, RB Offset=0	22.62	22.04	22.07
		RB Size=1, RB Offset=12	22.60	21.81	22.19
		RB Size=1, RB Offset=24	22.71	22.02	22.28
		RB Size=12, RB Offset=0	21.74	20.90	21.24
		RB Size=12, RB Offset=6	21.61	21.13	21.32
		RB Size=12, RB Offset=11	21.73	20.98	21.36
		RB Size=25, RB Offset=0	21.08	20.73	20.61
10	QPSK	RB Size=1, RB Offset=0	22.59	22.50	22.86
		RB Size=1, RB Offset=24	22.79	22.36	22.66
		RB Size=1, RB Offset=49	22.64	22.26	22.80
		RB Size=25, RB Offset=0	21.89	21.61	22.14
		RB Size=25, RB Offset=12	22.02	21.90	21.93
		RB Size=25, RB Offset=24	21.74	21.84	22.16
		RB Size=50, RB Offset=0	22.07	21.51	21.41
	16QAM	RB Size=1, RB Offset=0	21.84	22.13	21.90
		RB Size=1, RB Offset=24	21.75	22.18	22.00
		RB Size=1, RB Offset=49	21.91	22.29	21.98
		RB Size=25, RB Offset=0	21.01	21.25	21.16
		RB Size=25, RB Offset=12	21.12	21.23	21.13
		RB Size=25, RB Offset=24	21.05	21.18	21.27
		RB Size=50, RB Offset=0	21.16	20.57	20.69

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15	QPSK	RB Size=1, RB Offset=0	22.74	22.66	23.78
		RB Size=1, RB Offset=37	22.65	22.57	23.65
		RB Size=1, RB Offset=74	22.85	22.60	23.90
		RB Size=36, RB Offset=0	22.01	22.00	23.05
		RB Size=36, RB Offset=18	21.98	21.78	23.17
		RB Size=36, RB Offset=37	22.03	21.96	23.01
		RB Size=75, RB Offset=0	22.06	21.31	22.12
	16QAM	RB Size=1, RB Offset=0	22.10	21.79	22.62
		RB Size=1, RB Offset=37	21.95	21.43	22.71
		RB Size=1, RB Offset=74	21.99	21.72	22.77
		RB Size=36, RB Offset=0	21.20	21.07	21.96
		RB Size=36, RB Offset=18	21.26	20.89	21.70
		RB Size=36, RB Offset=37	21.20	21.10	21.78
		RB Size=75, RB Offset=0	20.72	20.56	21.31
20	QPSK	RB Size=1, RB Offset=0	22.94	22.78	22.65
		RB Size=1, RB Offset=49	22.68	22.98	22.75
		RB Size=1, RB Offset=99	22.69	22.74	22.84
		RB Size=50, RB Offset=0	22.02	21.70	21.59
		RB Size=50, RB Offset=24	21.97	21.75	21.75
		RB Size=50, RB Offset=49	21.90	21.61	21.55
		RB Size=100, RB Offset=0	21.53	21.69	21.63
	16QAM	RB Size=1, RB Offset=0	21.81	21.64	21.74
		RB Size=1, RB Offset=49	21.86	21.64	21.72
		RB Size=1, RB Offset=99	21.34	21.56	21.80
		RB Size=50, RB Offset=0	22.65	20.90	20.84
		RB Size=50, RB Offset=24	22.46	20.69	20.83
		RB Size=50, RB Offset=49	22.72	20.37	20.32
		RB Size=100, RB Offset=0	20.70	20.45	20.63

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.52	13	Pass
QPSK (100RB Size)	6.57	13	Pass
16QAM (1RB Size)	7.70	13	Pass
16QAM (100RB Size)	7.74	13	Pass

EIRP:**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
5 MHz Bandwidth									
2535.00	81.67	112	1.5	H	12.2	2.60	10.20	19.80	33
2535.00	77.20	92	2.0	V	8.3	2.60	10.20	15.90	33
10 MHz Bandwidth									
2535.00	81.50	18	2.5	H	12.0	2.60	10.20	19.60	33
2535.00	77.06	6	1.9	V	8.2	2.60	10.20	15.80	33
15 MHz Bandwidth									
2535.00	81.28	262	1.8	H	11.8	2.60	10.20	19.40	33
2535.00	77.39	335	1.4	V	8.5	2.60	10.20	16.10	33
20 MHz Bandwidth									
2535.00	81.04	32	1.2	H	11.6	2.60	10.20	19.20	33
2535.00	77.24	259	2.4	V	8.4	2.60	10.20	16.00	33

16QAM:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
5 MHz Bandwidth									
2535.00	82.54	41	2.0	H	13.1	2.60	10.20	20.70	33
2535.00	78.36	14	2.4	V	9.5	2.60	10.20	17.10	33
10 MHz Bandwidth									
2535.00	81.95	242	1.1	H	12.5	2.60	10.20	20.10	33
2535.00	77.46	234	1.4	V	8.6	2.60	10.20	16.20	33
15 MHz Bandwidth									
2535.00	82.03	193	1.9	H	12.5	2.60	10.20	20.10	33
2535.00	78.16	106	1.5	V	9.3	2.60	10.20	16.90	33
20 MHz Bandwidth									
2535.00	82.44	194	2.0	H	13.0	2.60	10.20	20.60	33
2535.00	77.90	311	1.7	V	9.0	2.60	10.20	16.60	33

LTE Band 17:

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.05	22.11	22.12
		RB Size=1, RB Offset=12	21.95	21.81	21.94
		RB Size=1, RB Offset=24	21.87	21.86	21.87
		RB Size=12, RB Offset=0	21.26	21.38	21.23
		RB Size=12, RB Offset=6	21.15	21.10	21.25
		RB Size=12, RB Offset=11	20.87	21.39	21.00
		RB Size=25, RB Offset=0	21.97	21.94	22.05
	16QAM	RB Size=1, RB Offset=0	22.08	22.06	22.22
		RB Size=1, RB Offset=12	21.91	21.73	22.18
		RB Size=1, RB Offset=24	22.01	21.73	22.02
		RB Size=12, RB Offset=0	21.23	21.36	21.26
		RB Size=12, RB Offset=6	21.24	21.16	21.25
		RB Size=12, RB Offset=11	21.02	20.96	21.03
		RB Size=25, RB Offset=0	21.20	21.15	21.21
10.0	QPSK	RB Size=1, RB Offset=0	23.11	23.02	23.15
		RB Size=1, RB Offset=24	23.20	23.01	22.79
		RB Size=1, RB Offset=49	23.20	23.22	22.92
		RB Size=25, RB Offset=0	22.12	22.06	22.01
		RB Size=25, RB Offset=12	21.99	21.94	22.09
		RB Size=25, RB Offset=24	21.82	22.02	21.90
		RB Size=50, RB Offset=0	22.36	22.17	22.09
	16QAM	RB Size=1, RB Offset=0	22.64	22.90	22.64
		RB Size=1, RB Offset=24	22.68	22.51	22.50
		RB Size=1, RB Offset=49	22.38	22.21	22.26
		RB Size=25, RB Offset=0	21.26	21.20	21.09
		RB Size=25, RB Offset=12	21.18	21.28	21.03
		RB Size=25, RB Offset=24	21.25	21.27	21.13
		RB Size=50, RB Offset=0	21.21	21.27	21.17

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.76	13	Pass
QPSK (50RB Size)	5.77	13	Pass
16QAM (1RB Size)	6.96	13	Pass
16QAM (50RB Size)	6.97	13	Pass

ERP:**QPSK:**

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
5 MHz Bandwidth									
710	83.18	4	2.4	H	23.8	1.88	0	21.92	34.77
710	84.17	35	2.1	V	24.1	1.88	0	22.22	34.77
10 MHz Bandwidth									
710	83.10	257	1.6	H	23.8	1.88	0	21.92	34.77
710	84.21	337	1.4	V	24.2	1.88	0	22.32	34.77

16QAM:

Frequency (MHz)	Receiver Reading (dBμV)	Turn table Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBi)		
Middle Channel									
5 MHz Bandwidth									
710	83.12	20	1.7	H	23.8	1.88	0	21.92	34.77
710	84.28	42	2.4	V	24.2	1.88	0	22.32	34.77
10 MHz Bandwidth									
710	82.95	24	1.7	H	23.6	1.88	0	21.72	34.77
710	84.11	1	1.6	V	24.1	1.88	0	22.22	34.77

Note:

All above data were tested with no amplifier

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

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

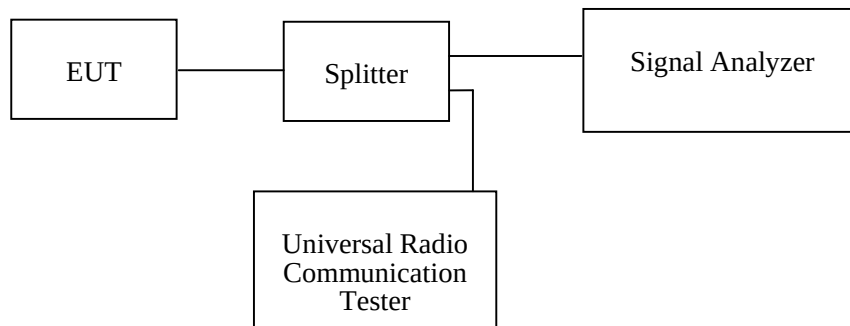
Applicable Standard

FCC 47 §2.1049, §22.917, §22.905, §24.238 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 1% to 5% of the anticipated emission bandwidth and the 26 dB & 99% bandwidth was recorded.



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Shawn Xiao on 2019-01-13 and 2019-01-15.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	836.6	243.59	315.71
EGPRS(8PSK)	836.6	259.62	322.12

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	836.6	4.21	4.87
HSUPA (BPSK)	836.6	4.21	4.82
HSDPA (16QAM)	836.6	4.21	4.82

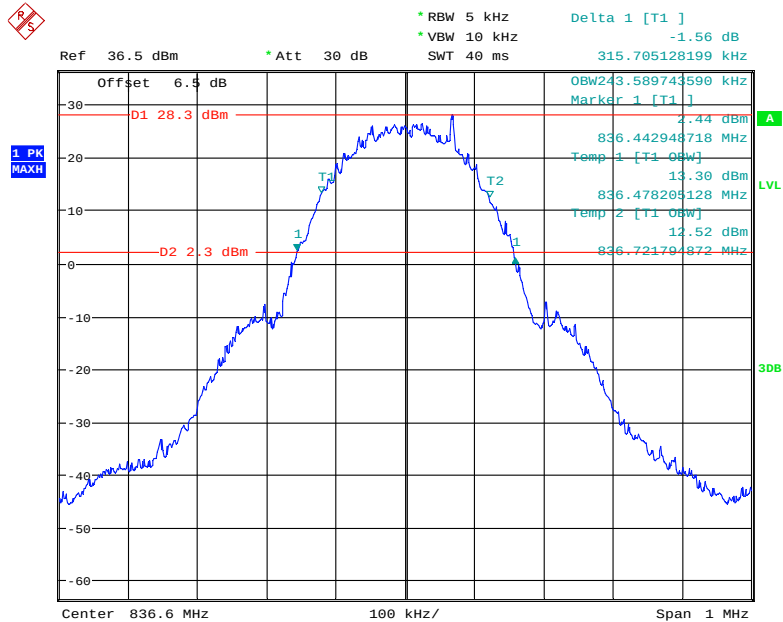
PCS Band (Part 24E)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1880.0	245.19	323.72
EGPRS(8PSK)	1880.0	248.40	315.71

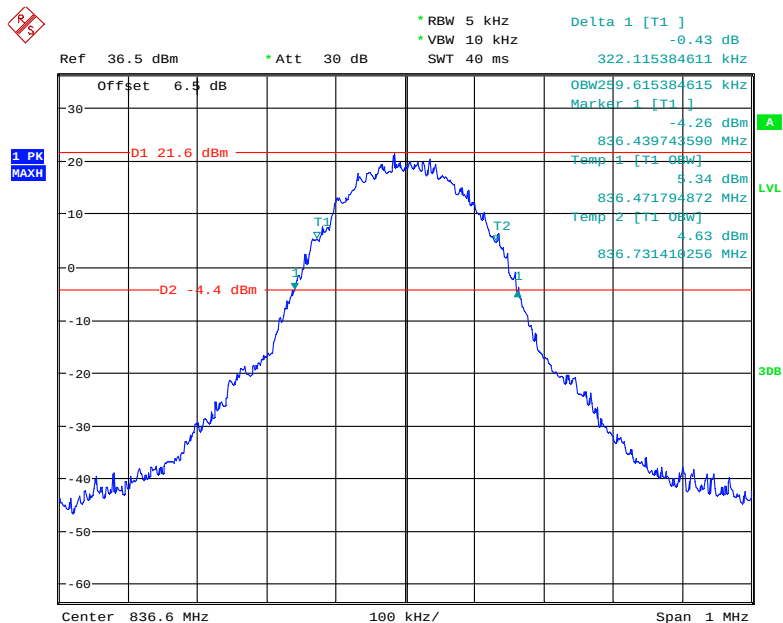
Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	1880.0	4.21	4.87
HSUPA (BPSK)	1880.0	4.21	4.87
HSDPA (16QAM)	1880.0	4.23	4.89

AWS Band (Part27)

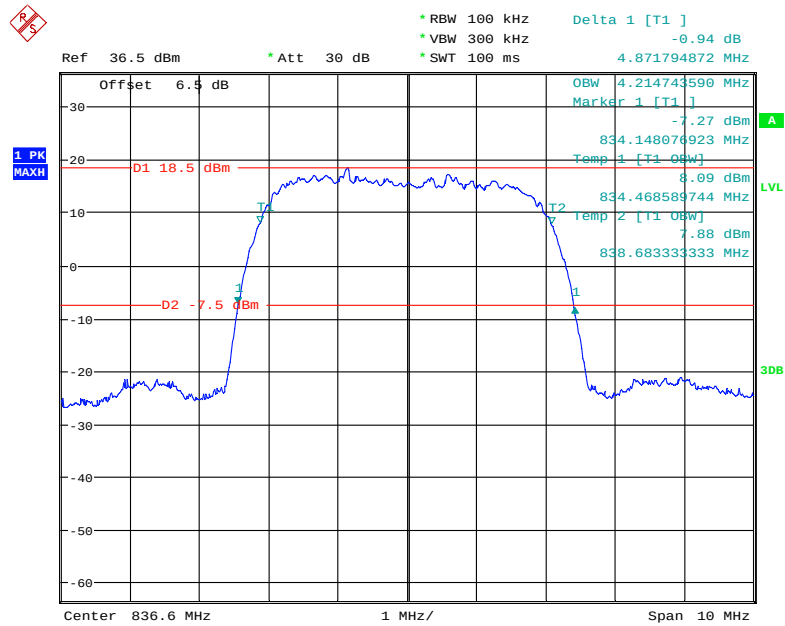
Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	1732.6	4.21	4.87
HSUPA (BPSK)	1732.6	4.20	4.87
HSDPA (16QAM)	1732.6	4.21	4.86

Cellular Band (Part 22H)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode**

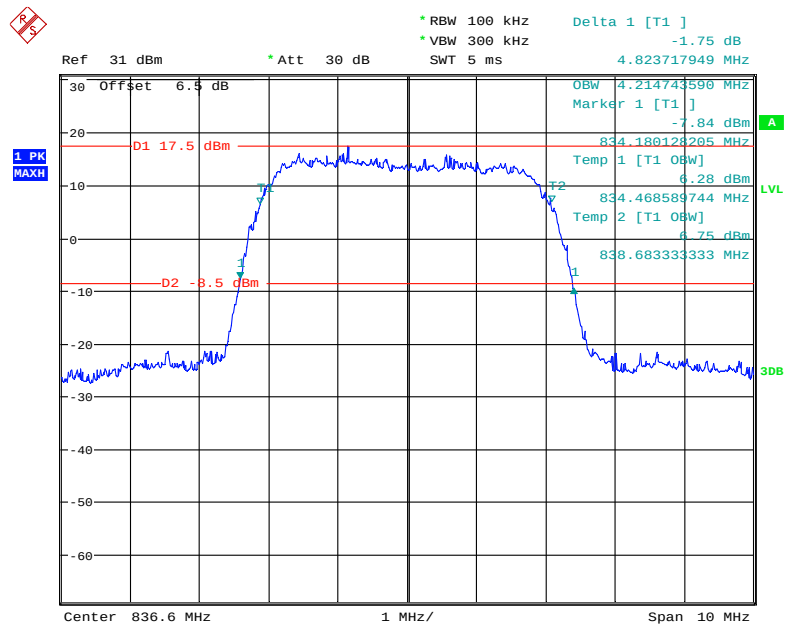
Date: 15.JAN.2019 11:12:25

26 dB Emissions & 99% Occupied Bandwidth for EDGE Mode

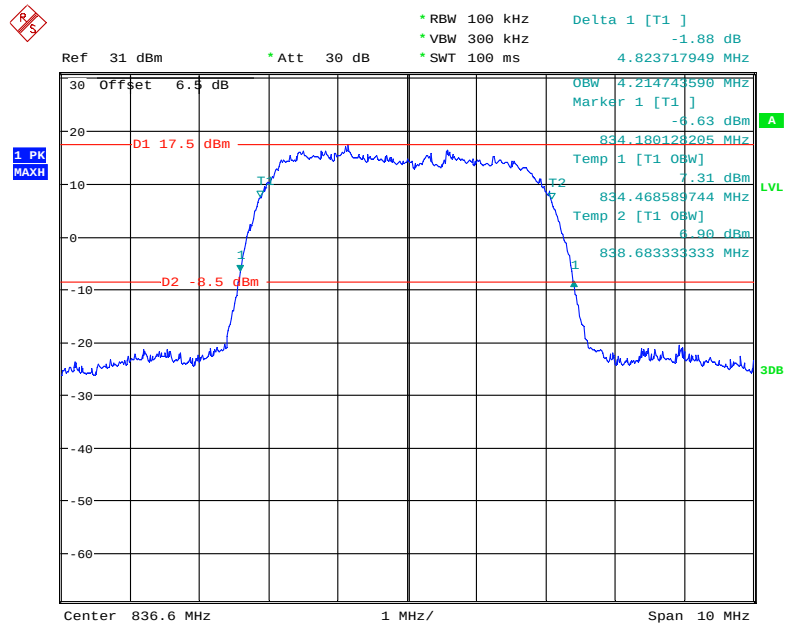
Date: 15.JAN.2019 11:29:25

26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode

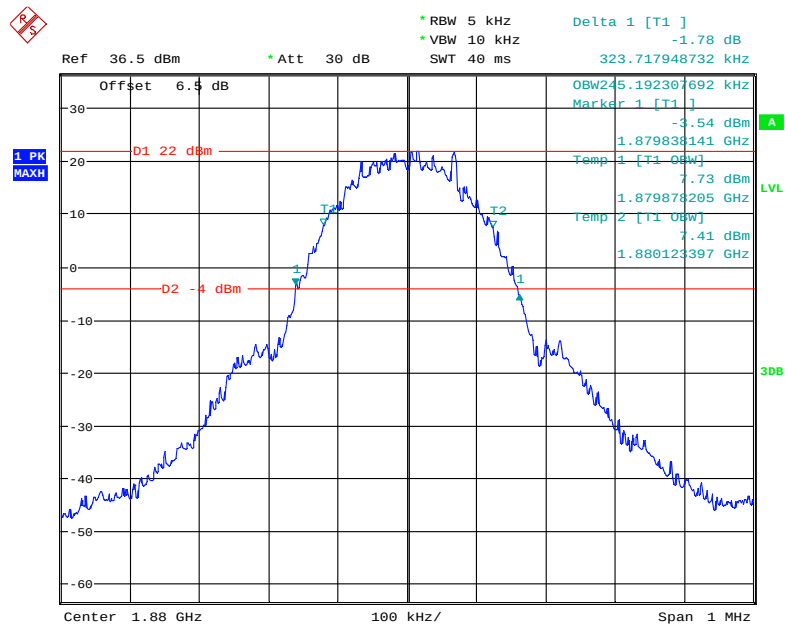
Date: 15.JAN.2019 15:35:11

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

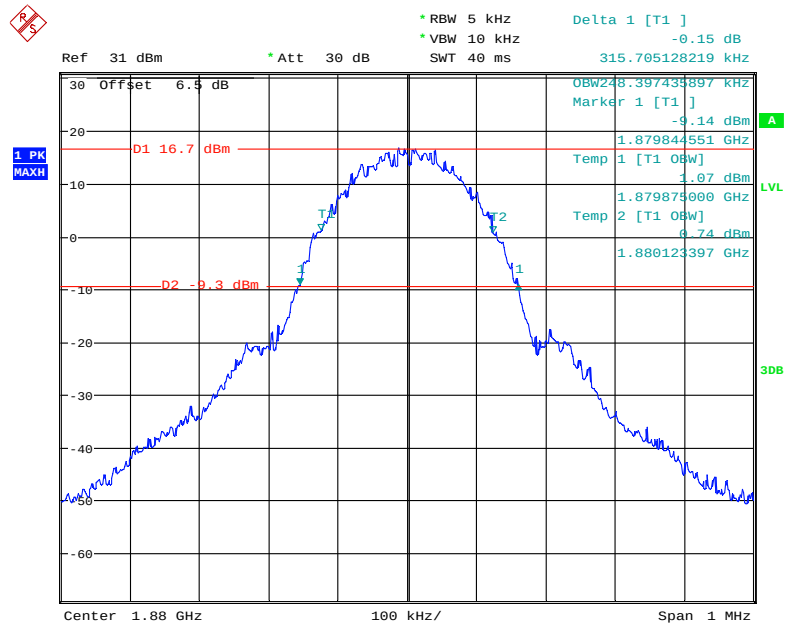
Date: 15.JAN.2019 16:15:04

26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode

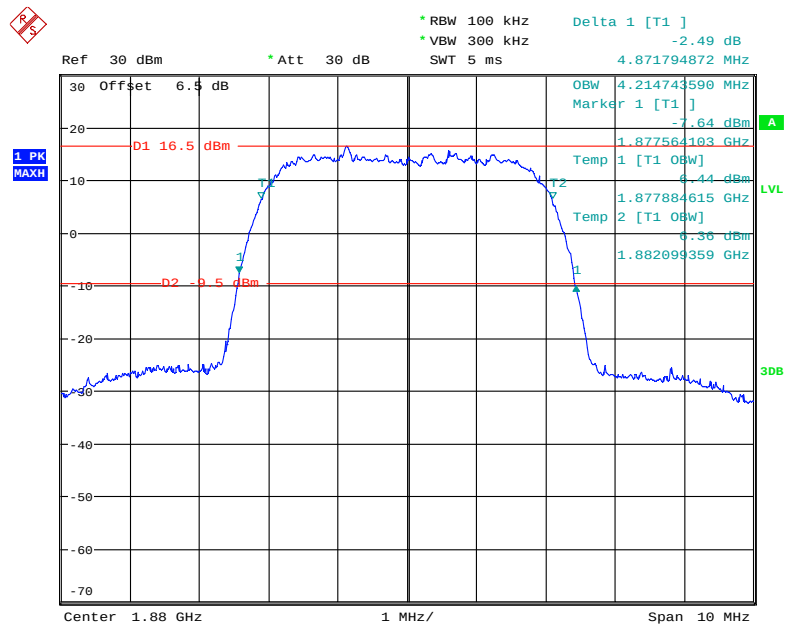
Date: 15.JAN.2019 16:19:27

PCS Band (Part 24E)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode**

Date: 15.JAN.2019 11:39:51

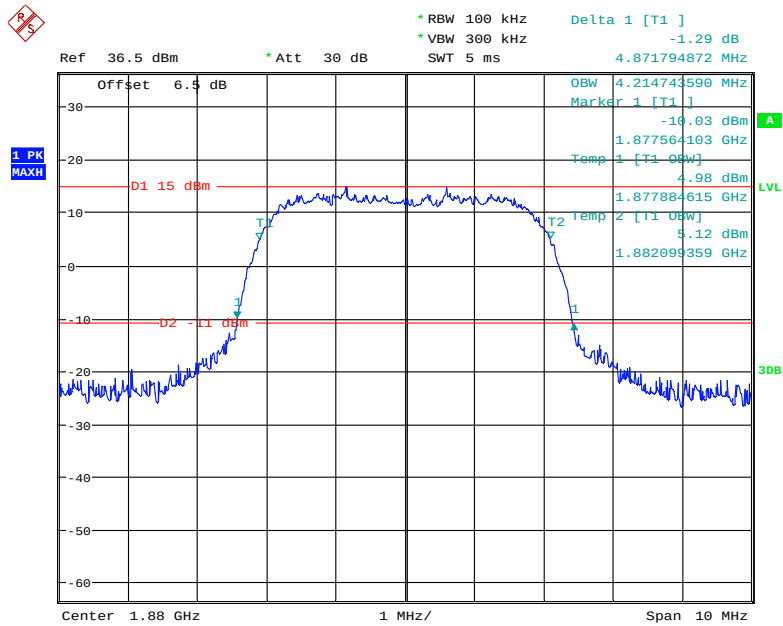
26 dB Emissions & 99% Occupied Bandwidth for EDGE Mode

Date: 15.JAN.2019 11:51:36

26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode

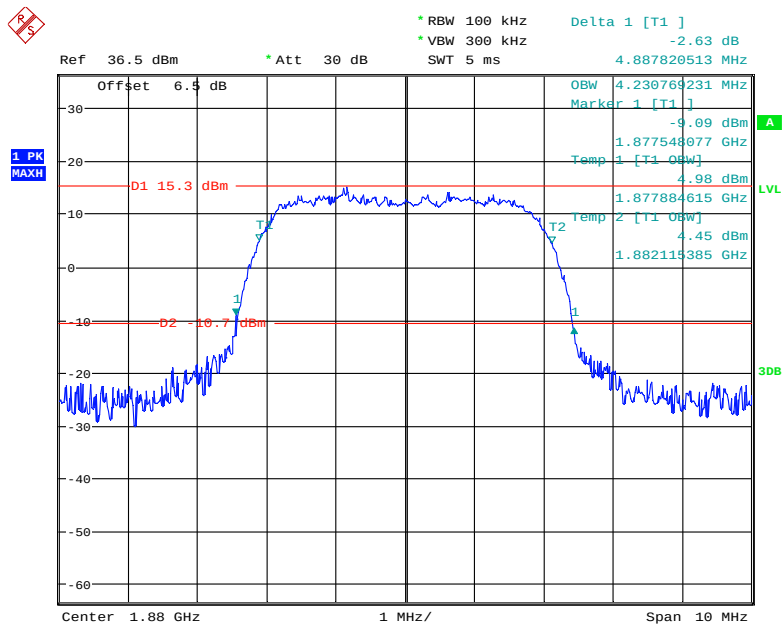
Date: 15.JAN.2019 14:22:13

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



Date: 15.JAN.2019 14:56:50

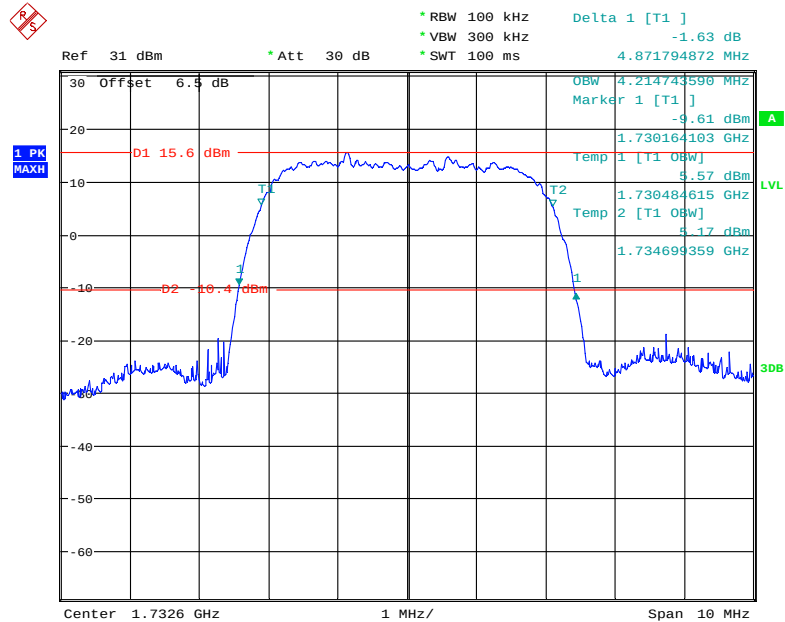
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode



Date: 15.JAN.2019 14:48:47

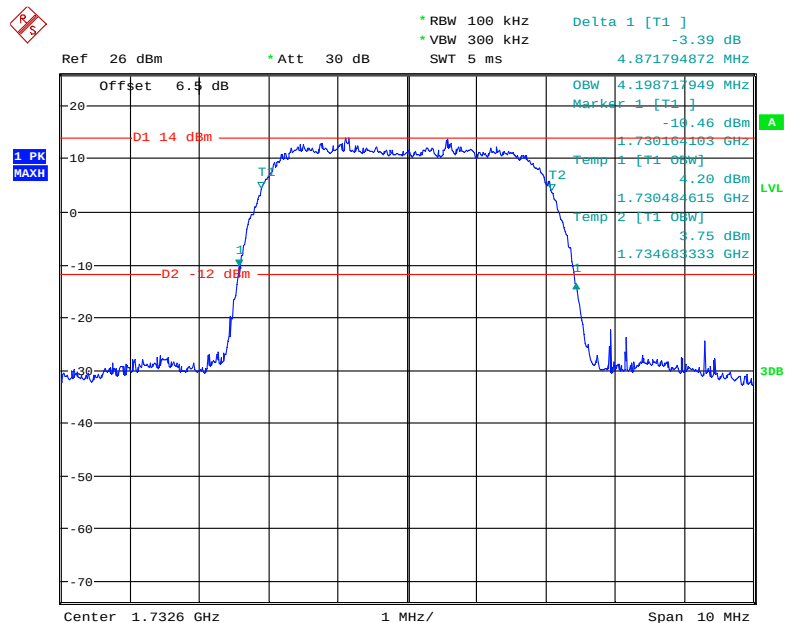
AWS Band (Part 27)

26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode



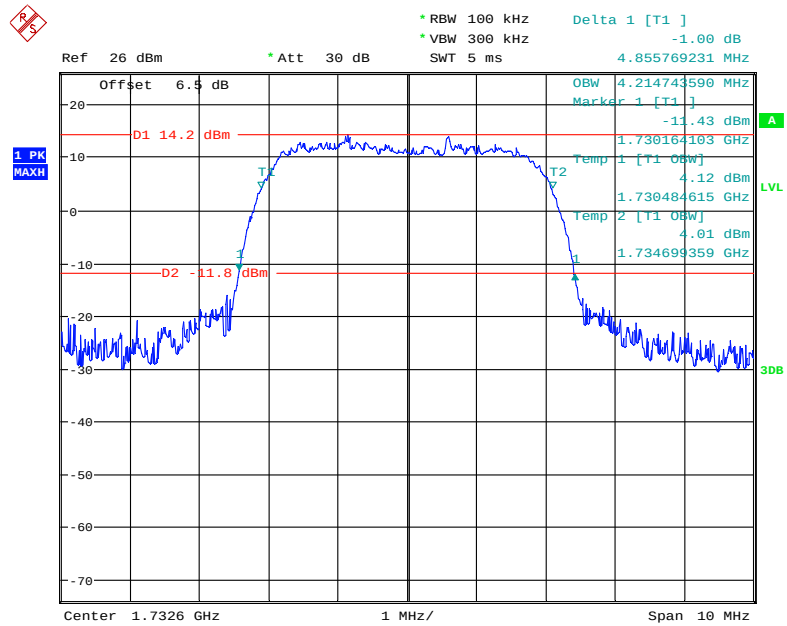
Date: 15.JAN.2019 16:25:08

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



Date: 15.JAN.2019 16:40:56

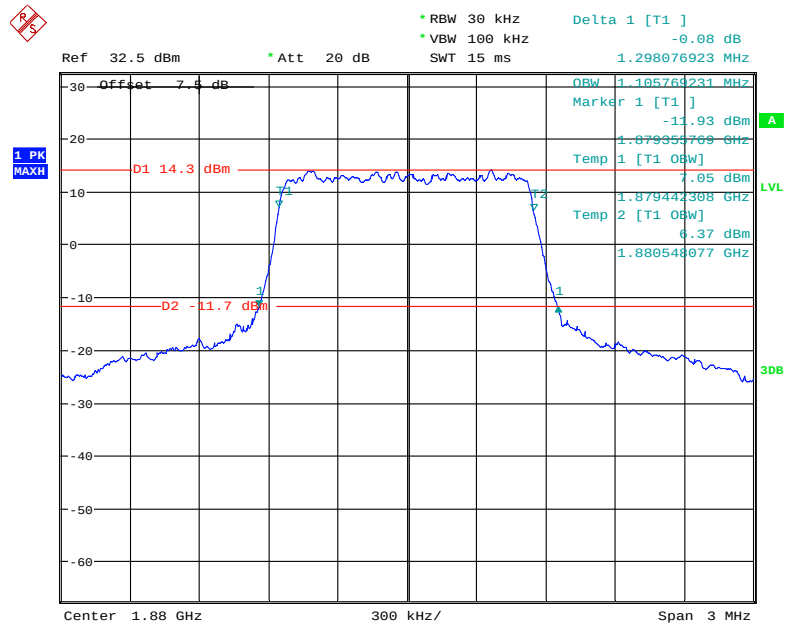
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode



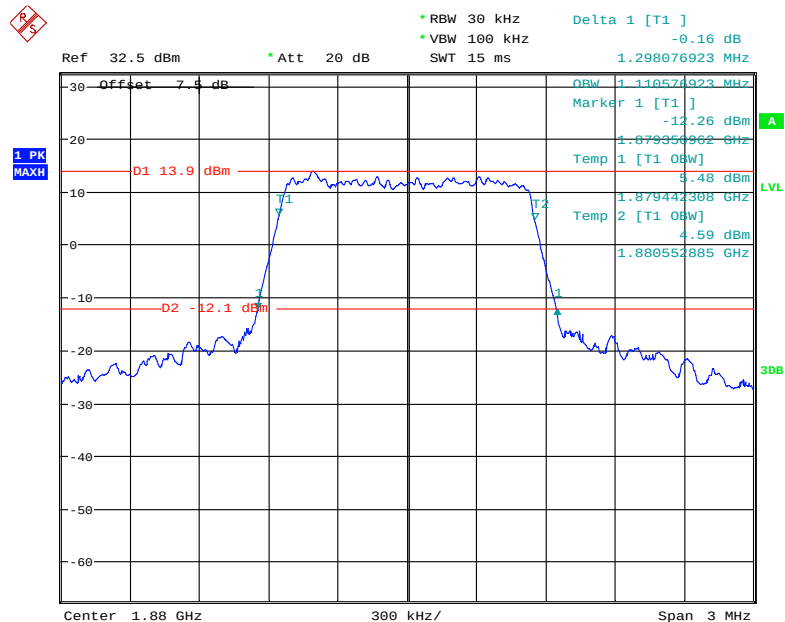
Date: 15.JAN.2019 16:39:31

LTE Band 2: (Middle Channel)

Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	1.106	1.298
	16QAM	1.111	1.298
3.0	QPSK	2.692	2.942
	16QAM	2.692	2.981
5.0	QPSK	4.551	5.128
	16QAM	4.535	5.064
10.0	QPSK	8.974	9.840
	16QAM	8.974	9.744
15.0	QPSK	13.462	14.712
	16QAM	13.462	14.712
20.0	QPSK	17.885	19.295
	16QAM	17.885	19.295

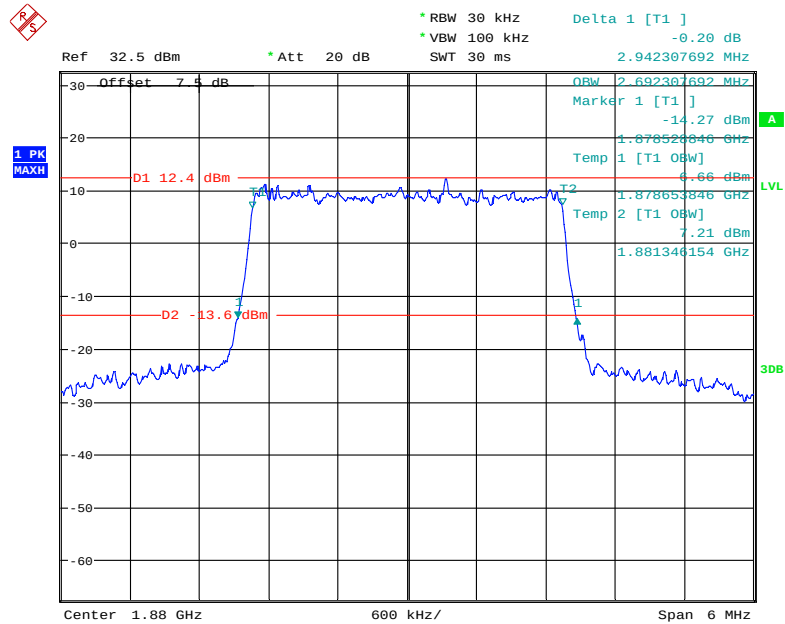
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.JAN.2019 10:36:23

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

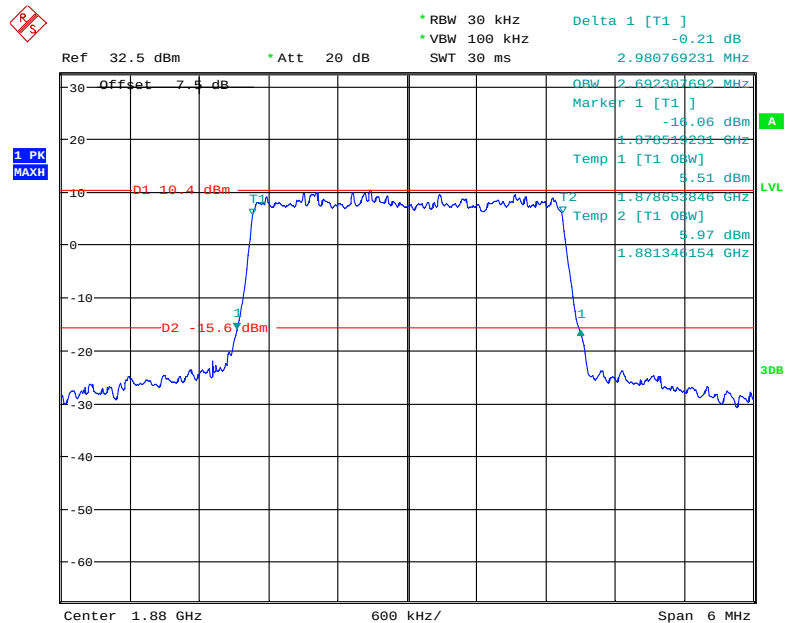
Date: 13.JAN.2019 10:38:04

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

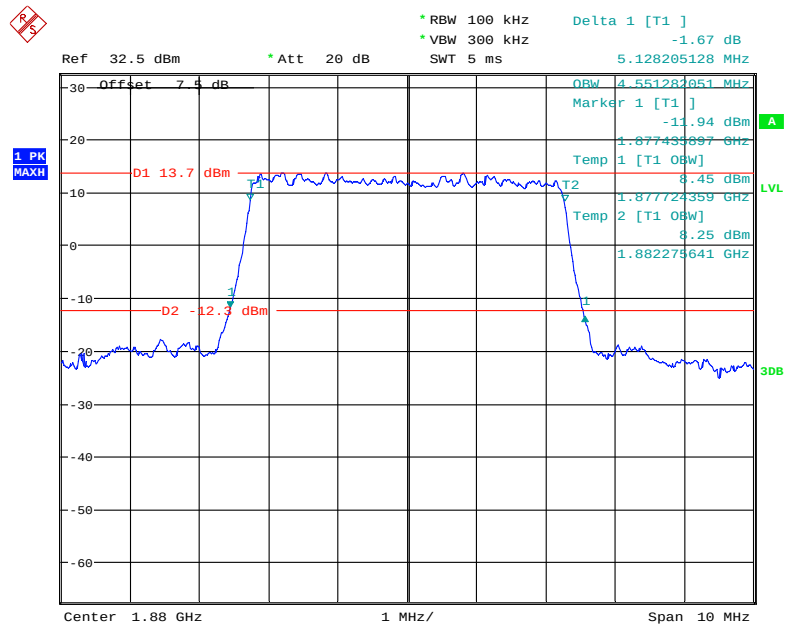


Date: 13.JAN.2019 10:40:00

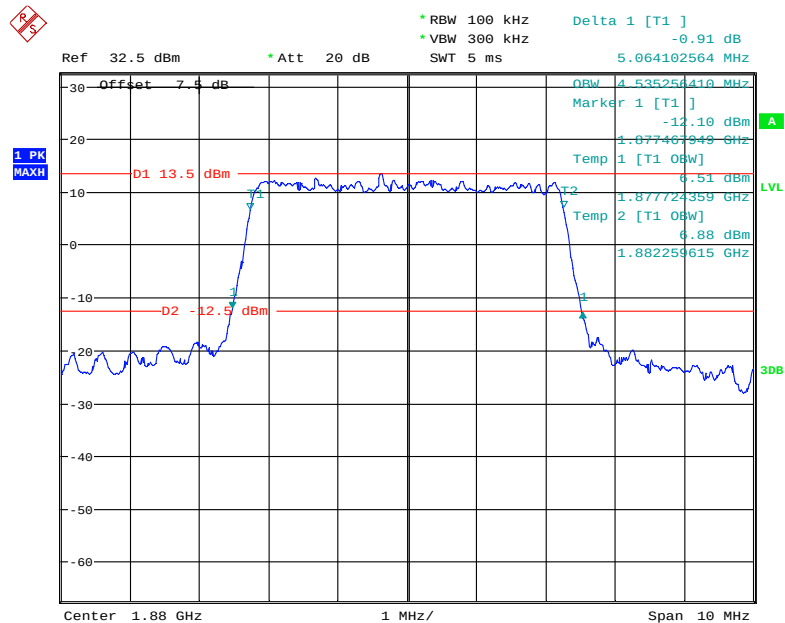
16-QAM (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



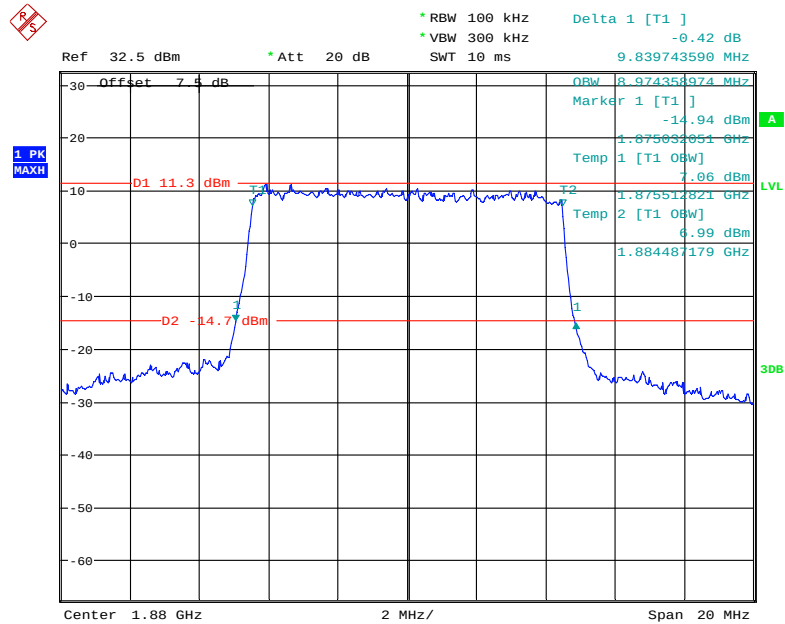
Date: 13.JAN.2019 10:49:40

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

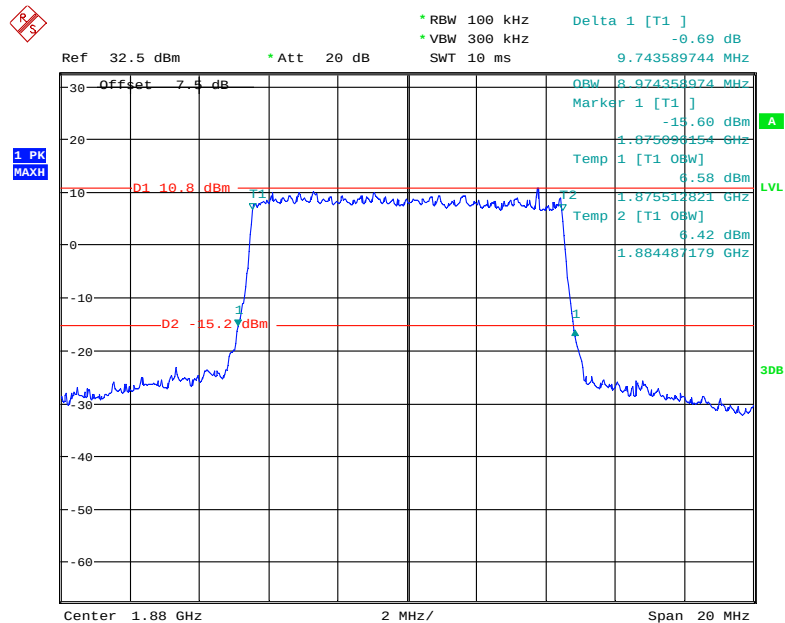
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16-QAM (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

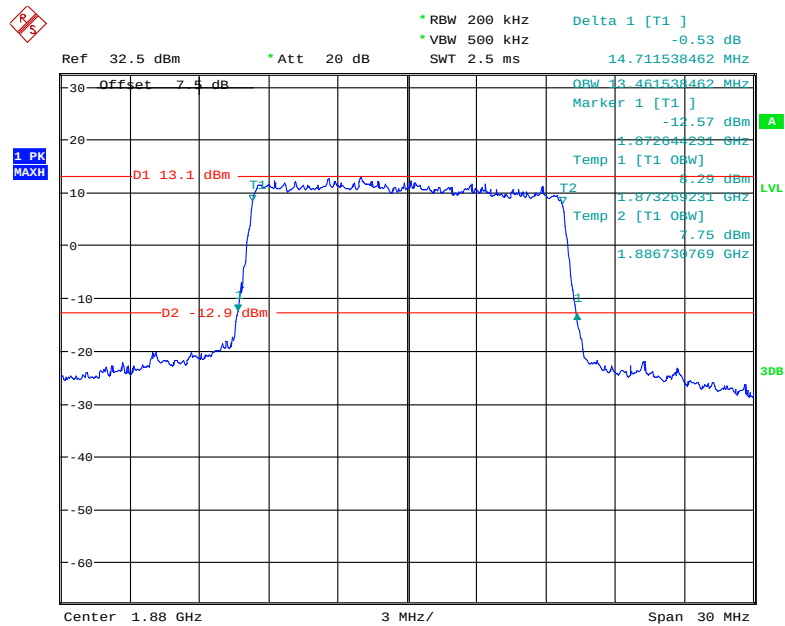
Date: 13.JAN.2019 10:51:07

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

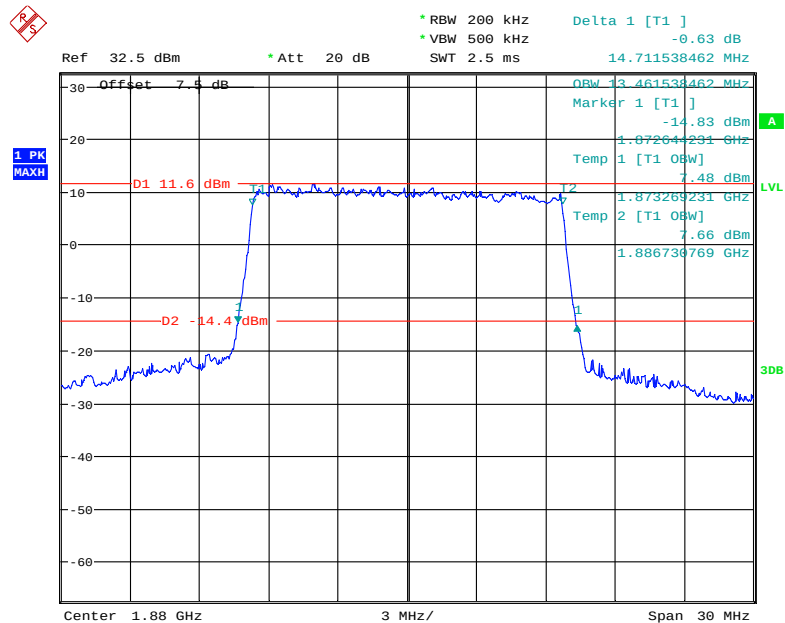
Date: 13.JAN.2019 10:54:16

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

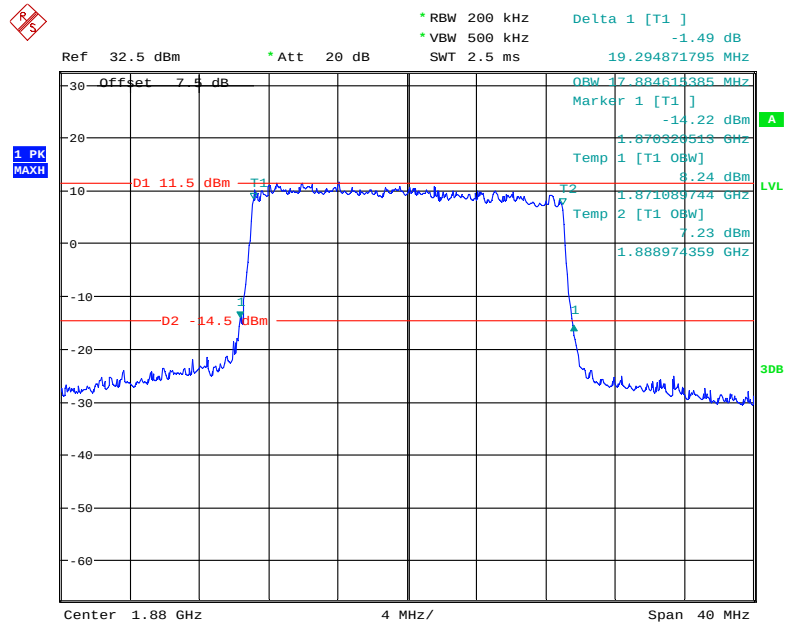
Date: 13.JAN.2019 10:55:29

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

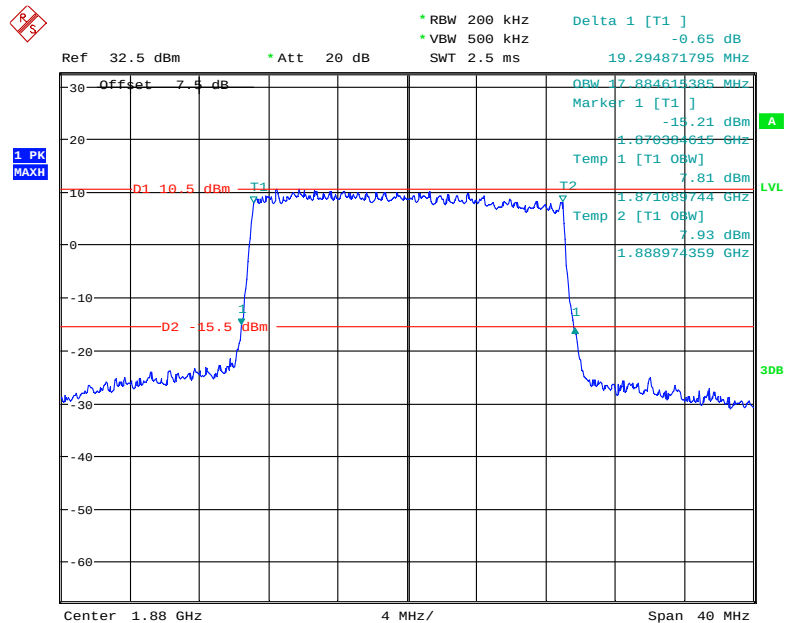
Date: 13.JAN.2019 10:56:49

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

Date: 13.JAN.2019 10:58:14

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

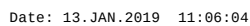
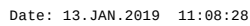
Date: 13.JAN.2019 11:00:25

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

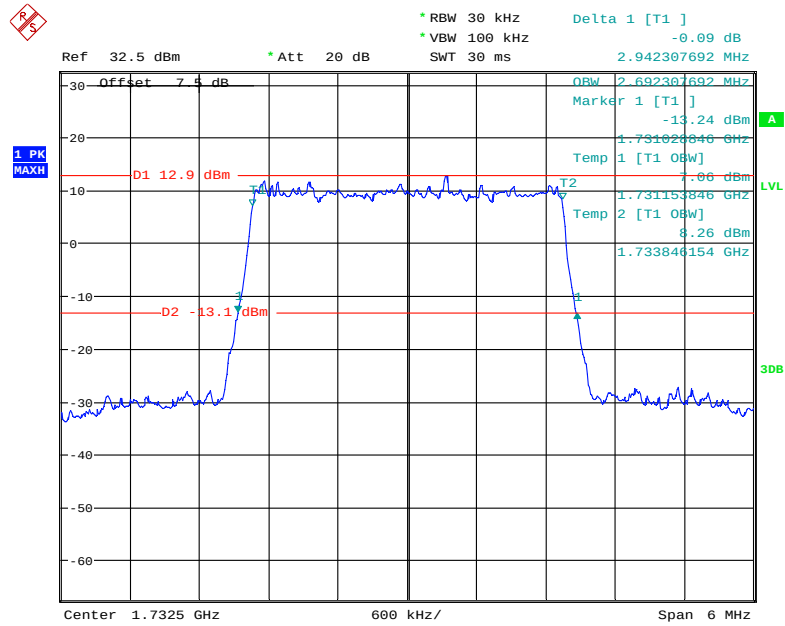
Date: 13.JAN.2019 11:03:53

LTE Band 4: (Middle Channel)

Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	1.101	1.288
	16QAM	1.106	1.308
3.0	QPSK	2.692	2.942
	16QAM	2.692	2.962
5.0	QPSK	4.551	5.096
	16QAM	4.519	5.064
10.0	QPSK	8.974	9.872
	16QAM	8.974	9.712
15.0	QPSK	13.510	14.904
	16QAM	13.510	14.808
20.0	QPSK	17.949	19.359
	16QAM	17.949	19.359

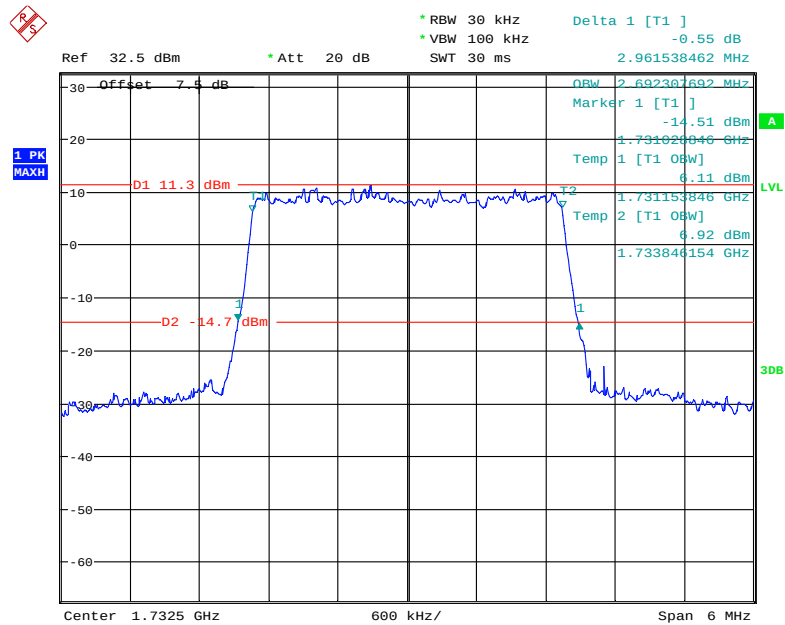


QPSK (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

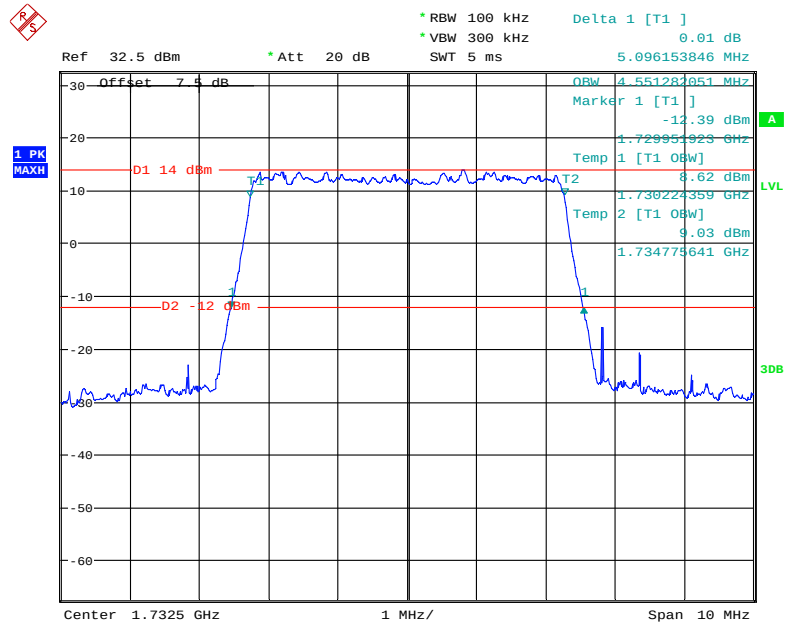


Date: 13.JAN.2019 11:11:48

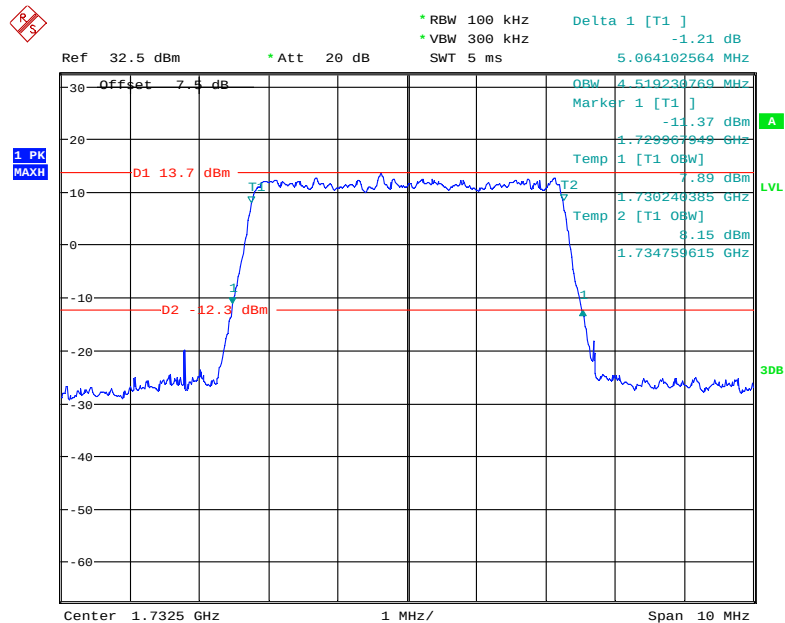
16-QAM (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



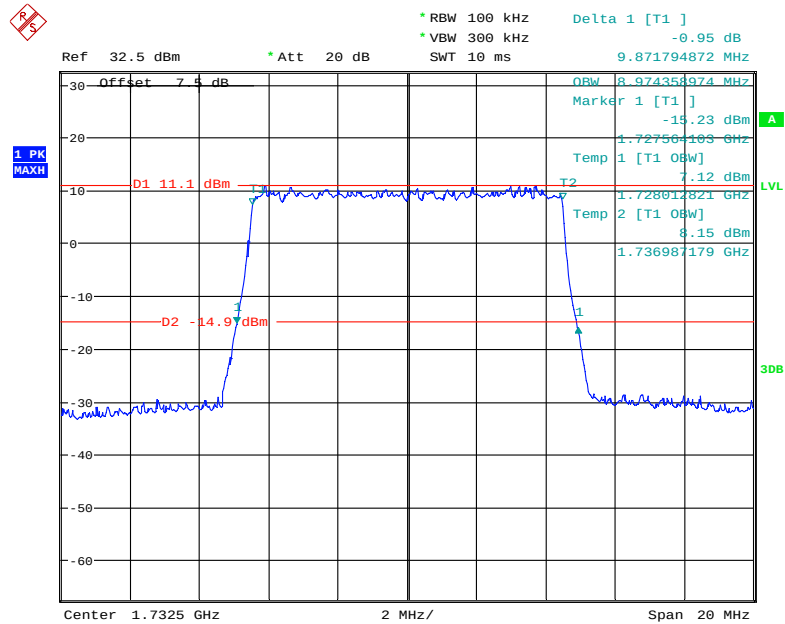
Date: 13.JAN.2019 11:09:59

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

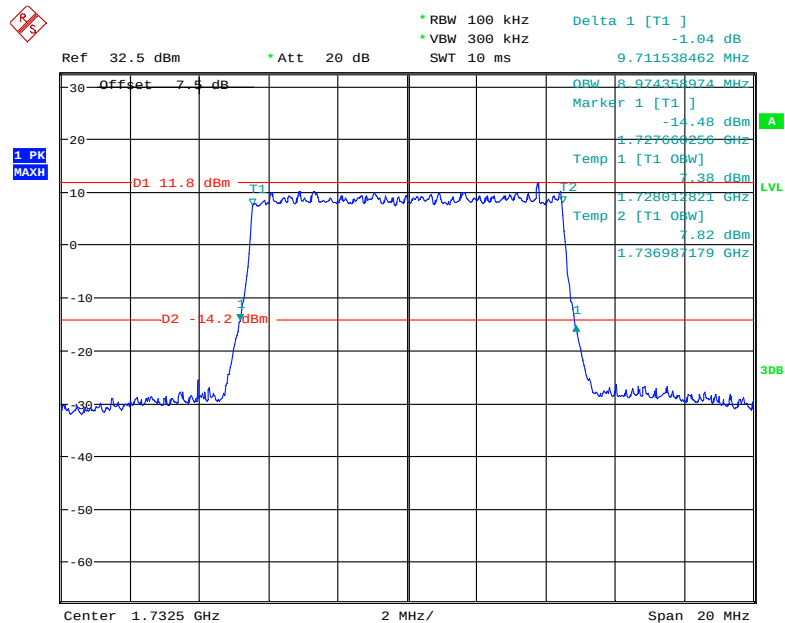
Date: 13.JAN.2019 11:13:09

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

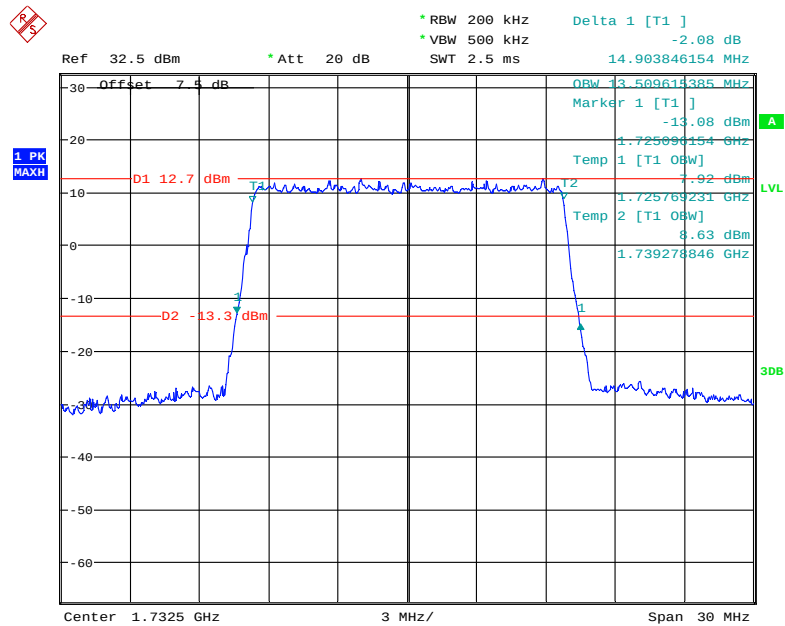
Date: 13.JAN.2019 11:14:31

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

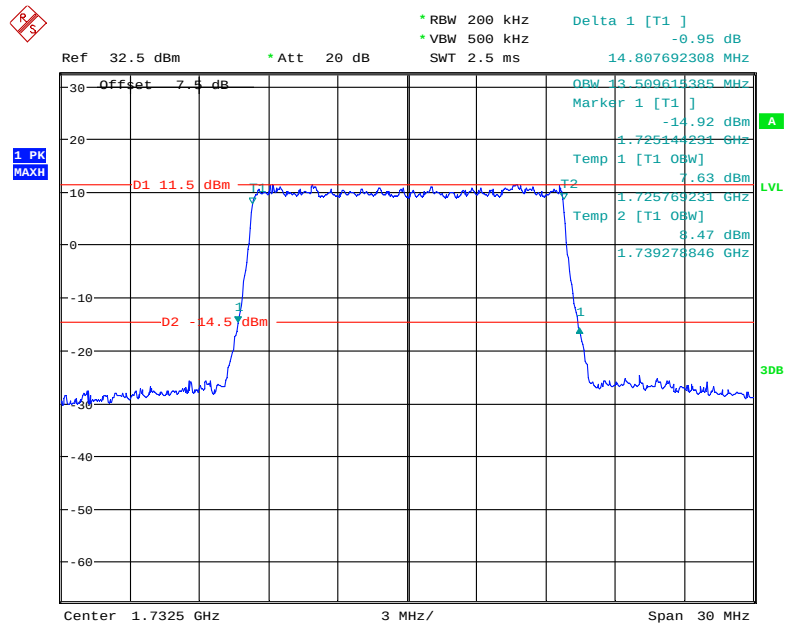
Date: 13.JAN.2019 11:17:15

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

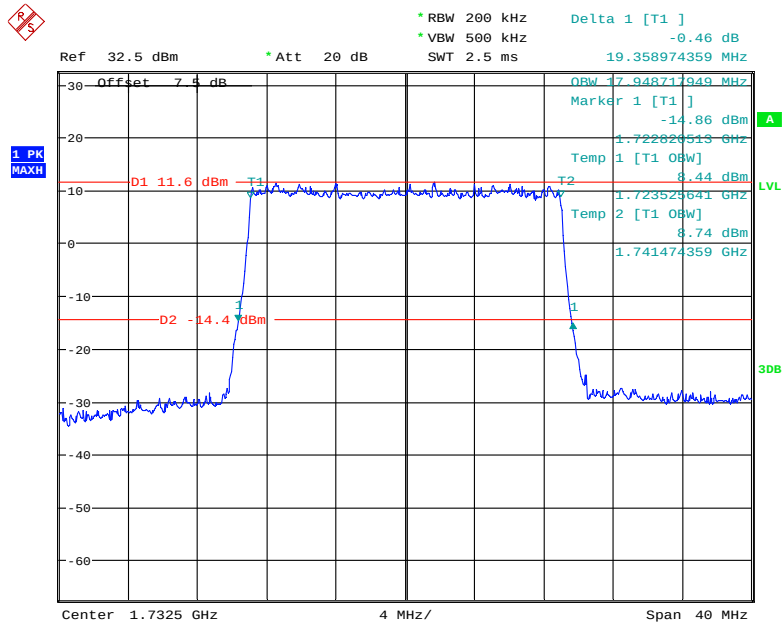
Date: 13.JAN.2019 11:15:52

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

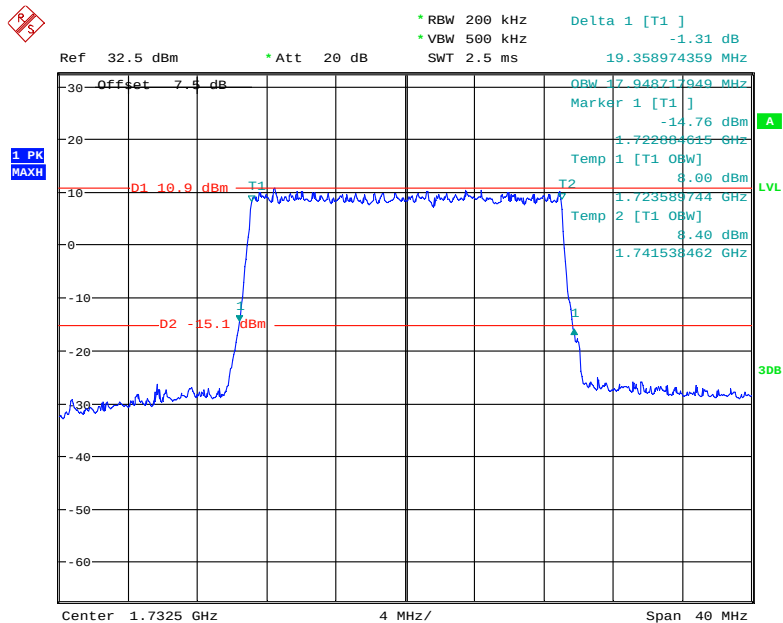
Date: 13.JAN.2019 11:21:03

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

Date: 13.JAN.2019 11:18:54

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

Date: 13.JAN.2019 11:26:04

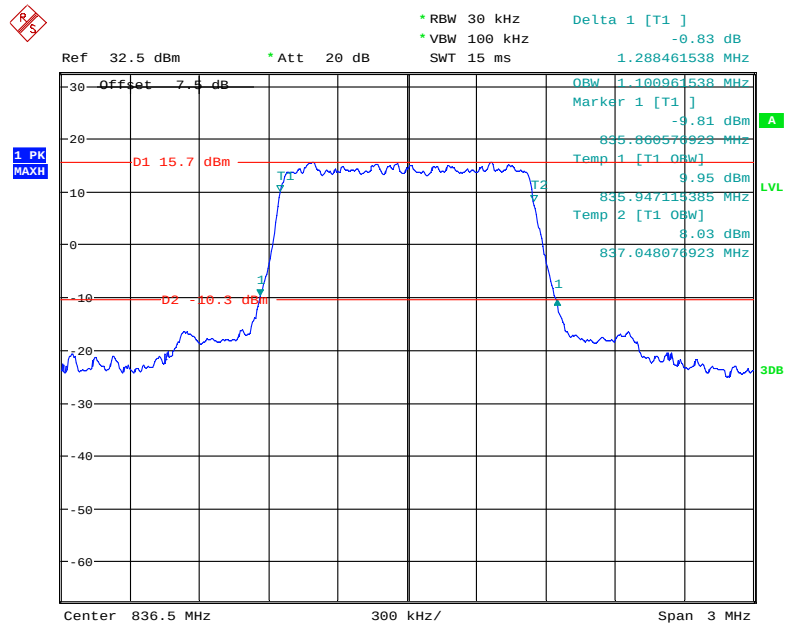
16-QAM (20.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.JAN.2019 11:24:25

LTE Band 5: (Middle Channel)

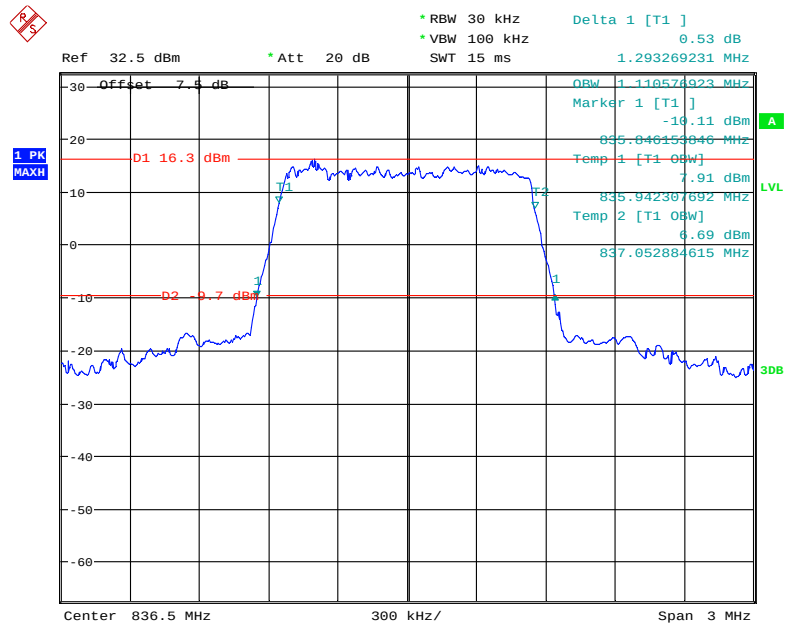
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	1.101	1.288
	16QAM	1.111	1.293
3.0	QPSK	2.692	2.933
	16QAM	2.692	2.971
5.0	QPSK	4.551	5.112
	16QAM	4.535	5.080
10.0	QPSK	8.974	9.776
	16QAM	8.974	9.776

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

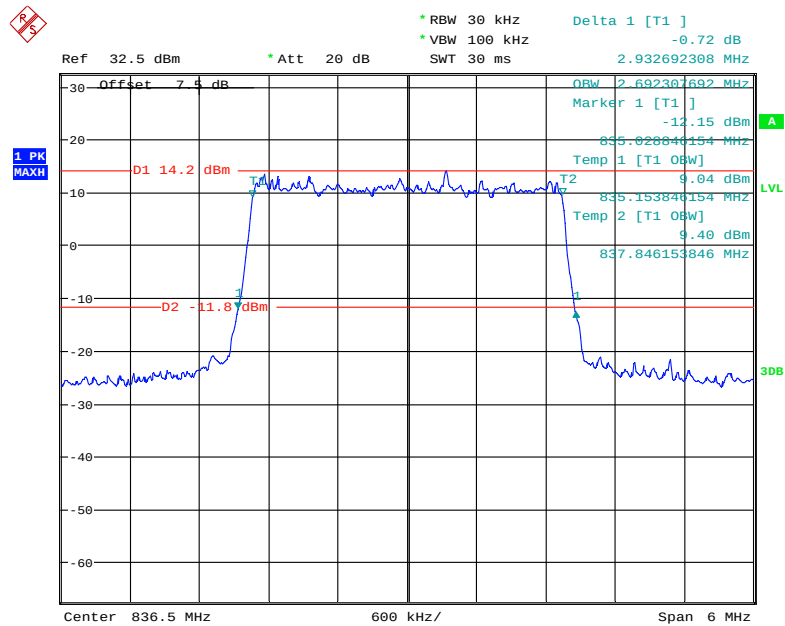


Date: 13.JAN.2019 11:29:09

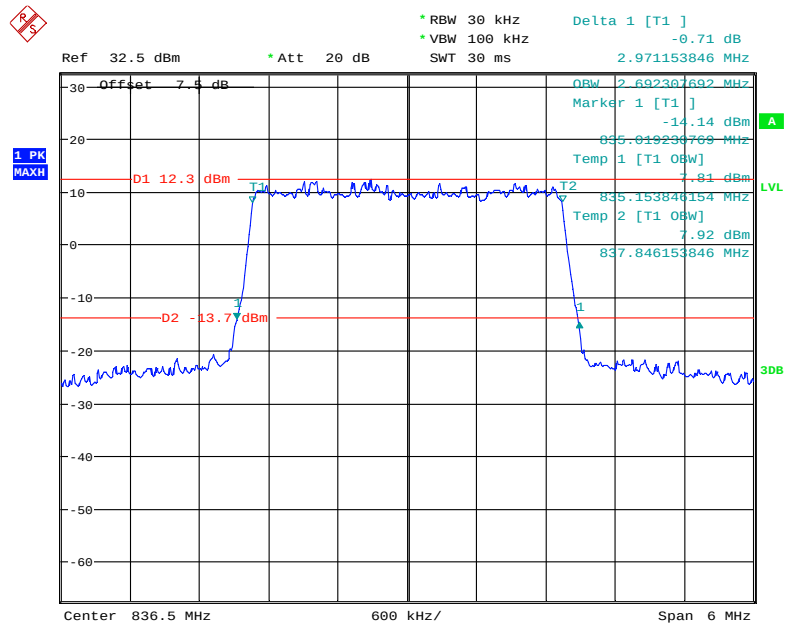
16-QAM (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



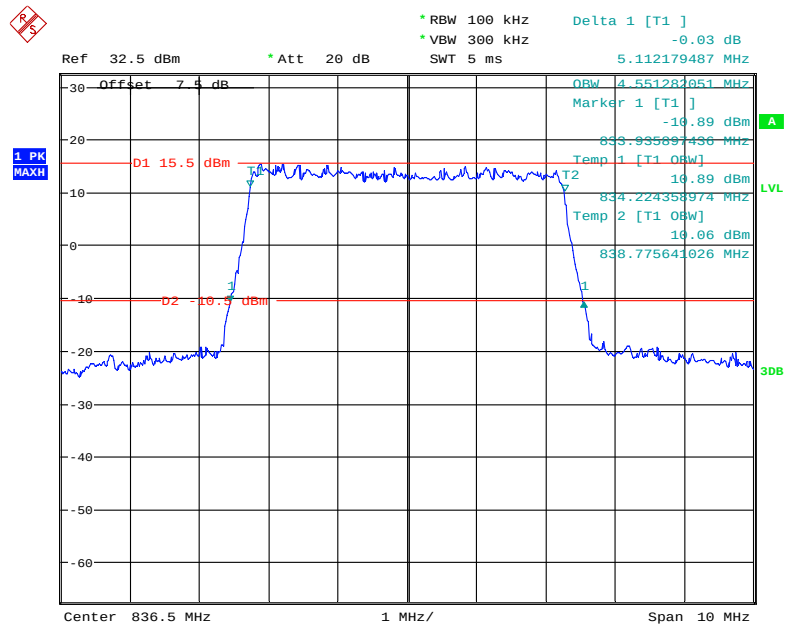
Date: 13.JAN.2019 11:31:39

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

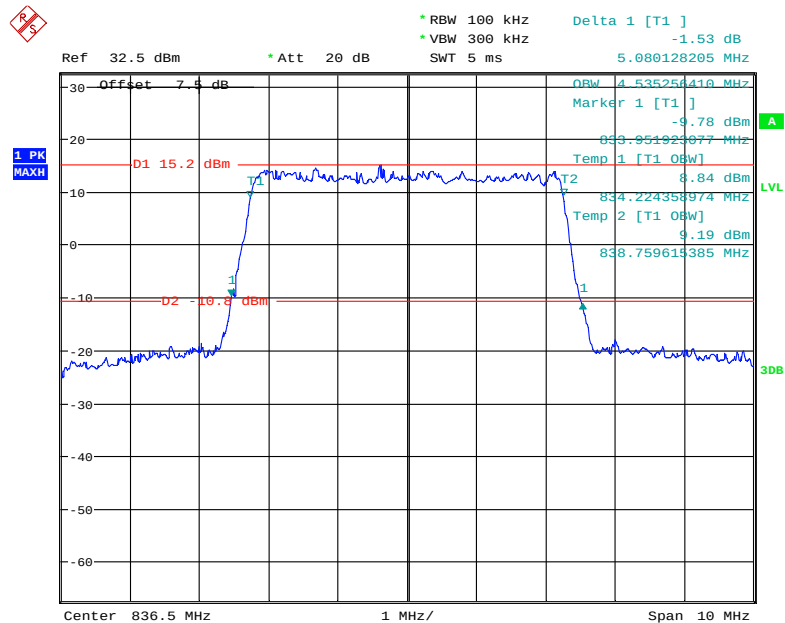
Date: 13.JAN.2019 11:33:28

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

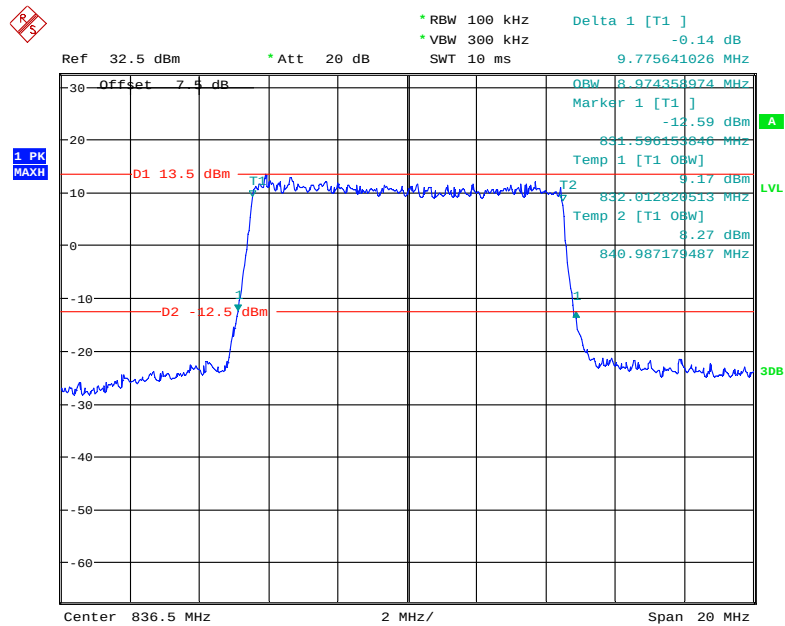
Date: 13.JAN.2019 11:34:51

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

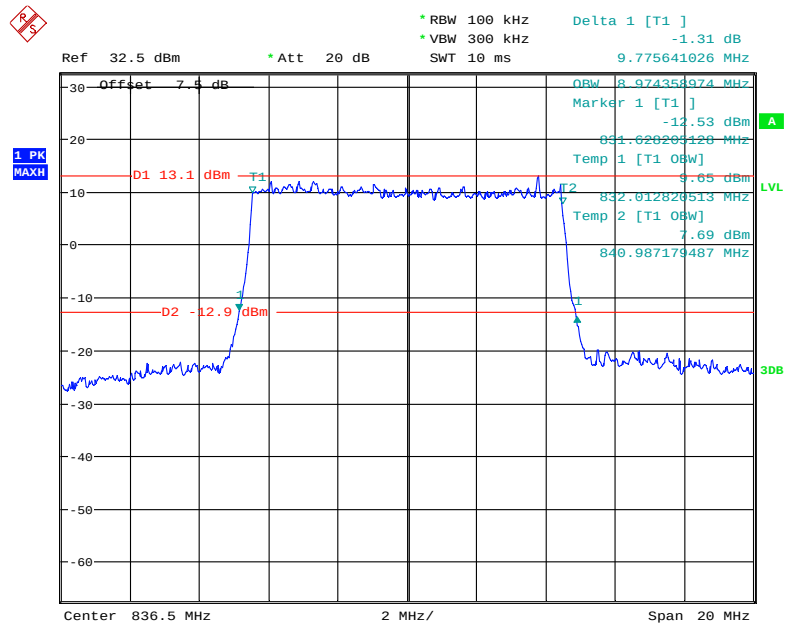
Date: 13.JAN.2019 11:38:17

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

Date: 13.JAN.2019 11:36:46

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

Date: 13.JAN.2019 11:39:50

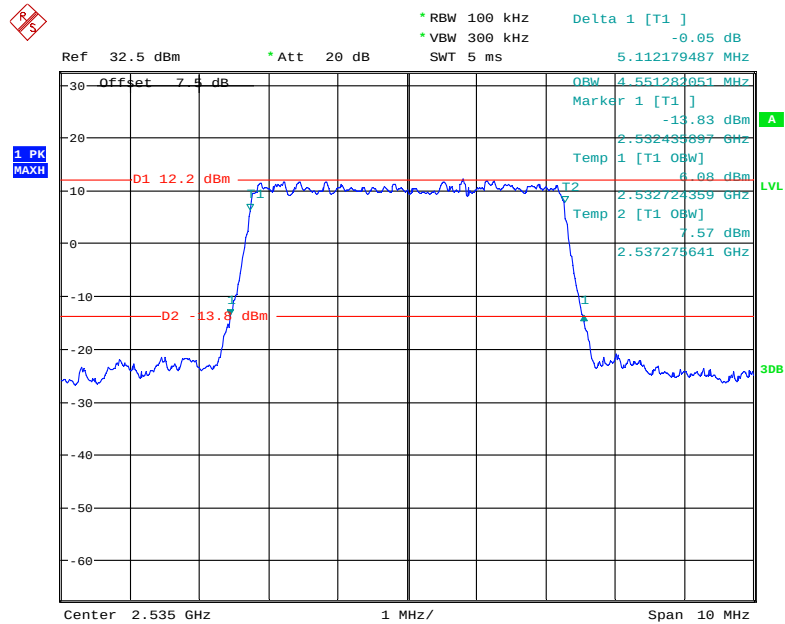
16-QAM (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.JAN.2019 11:41:57

LTE Band 7: (Middle Channel)

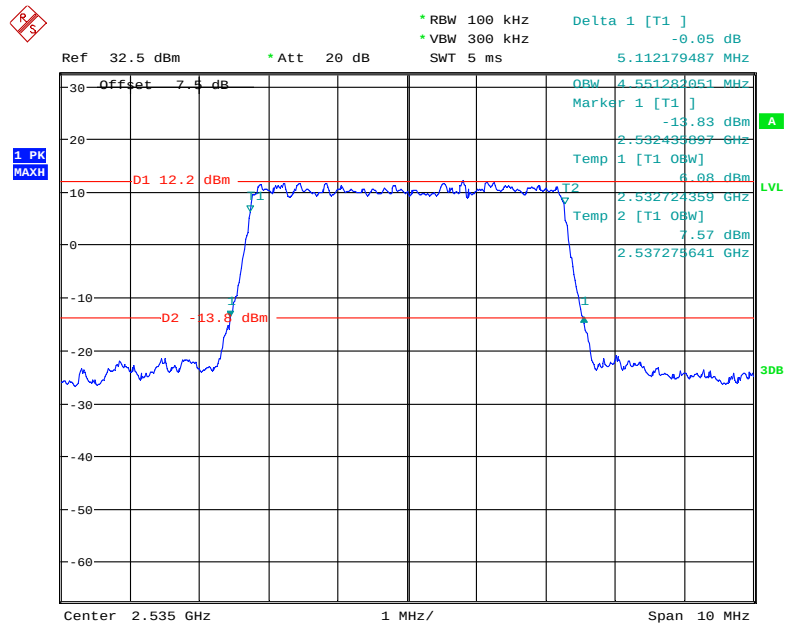
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5.0	QPSK	4.551	5.112
	16QAM	4.551	5.112
10.0	QPSK	8.974	9.872
	16QAM	8.974	9.872
15.0	QPSK	13.462	14.856
	16QAM	13.462	14.808
20.0	QPSK	17.885	19.231
	16QAM	17.949	19.295

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

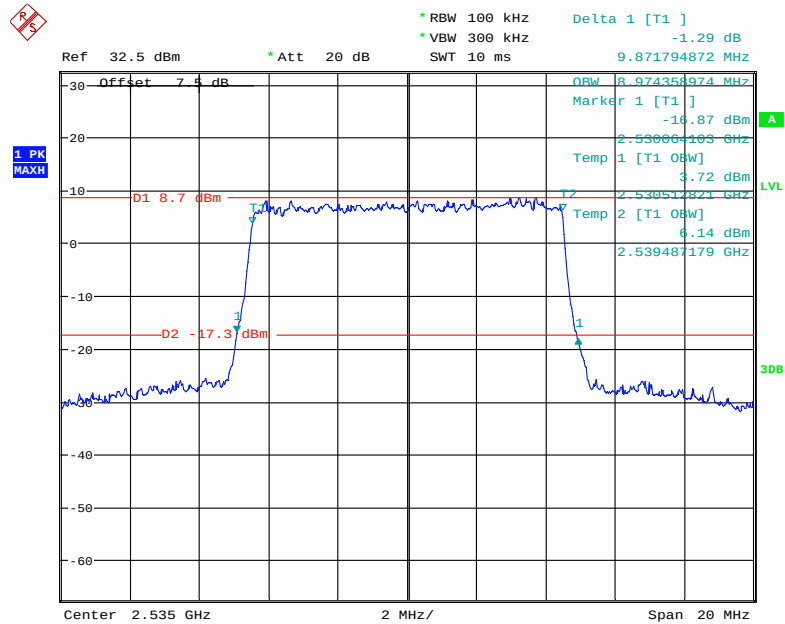


Date: 13.JAN.2019 11:45:28

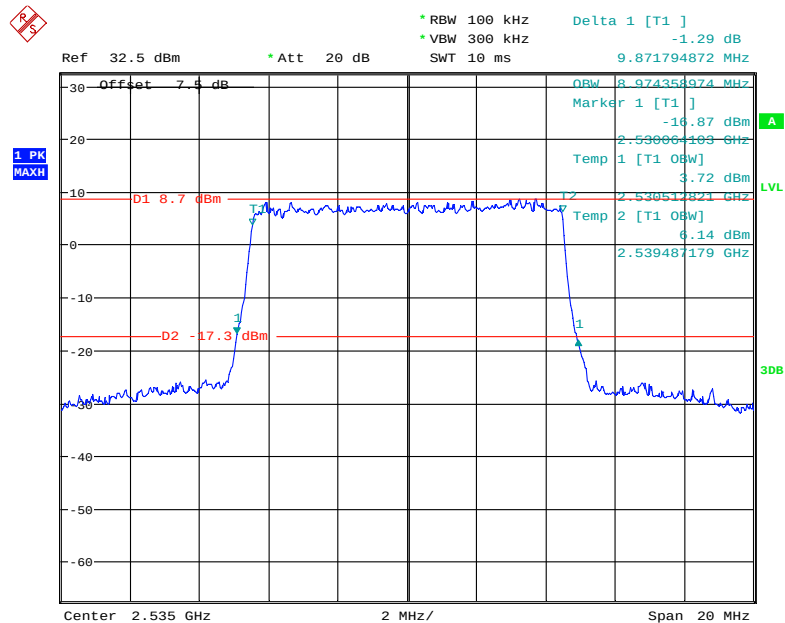
16-QAM (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



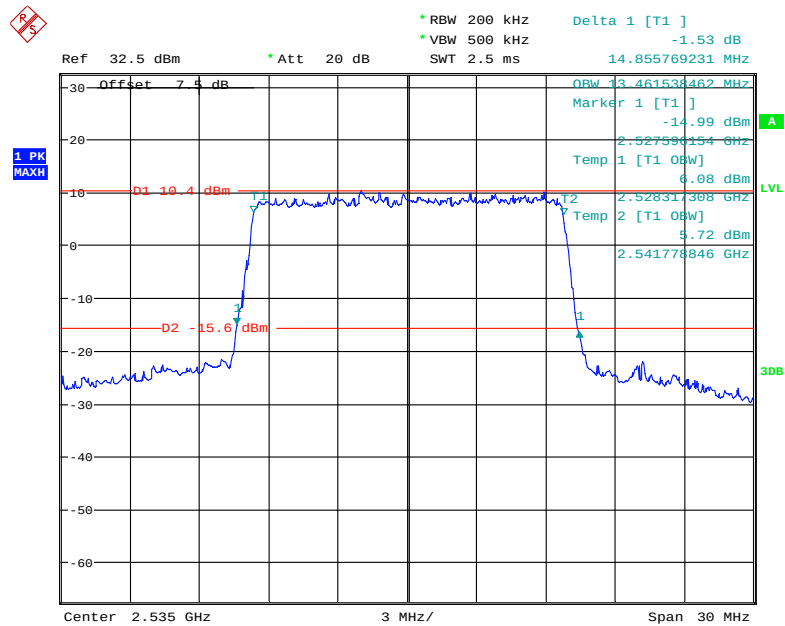
Date: 13.JAN.2019 11:45:28

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

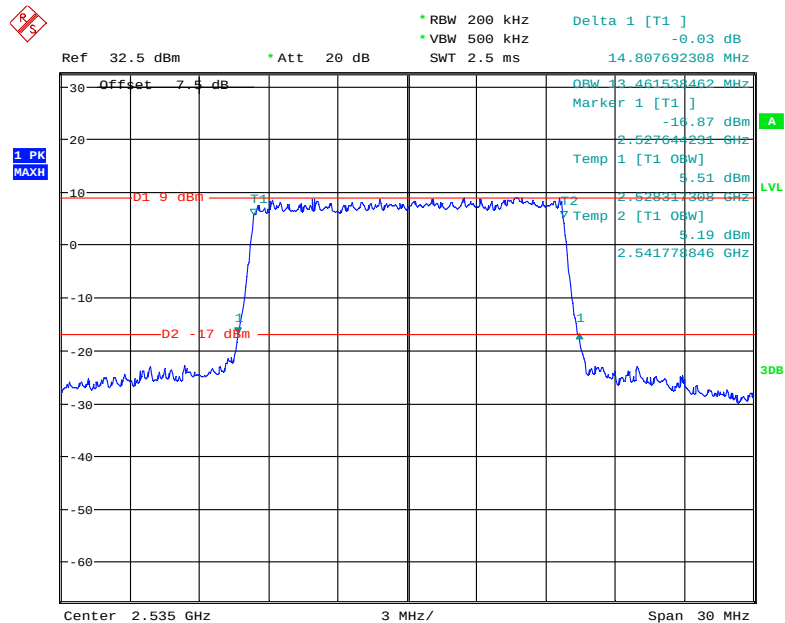
Date: 13.JAN.2019 13:13:39

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

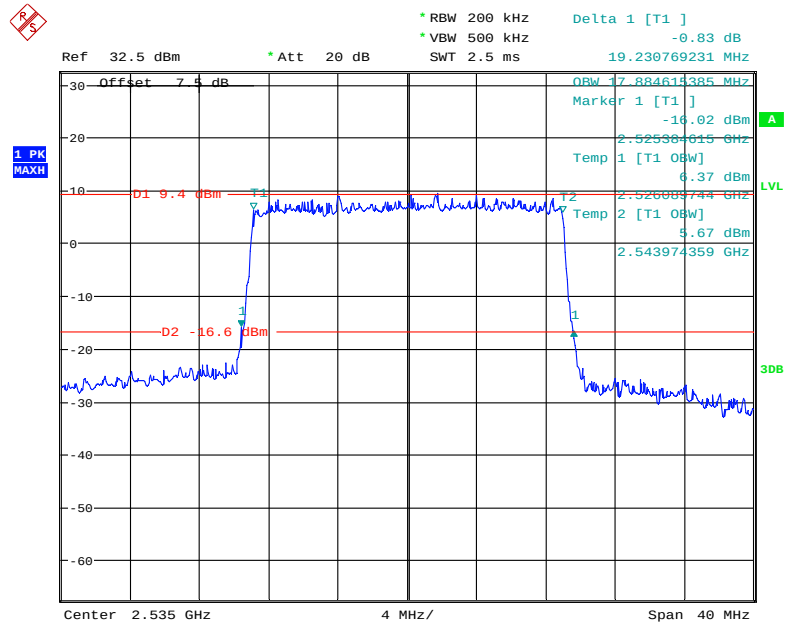
Date: 13.JAN.2019 13:13:39

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

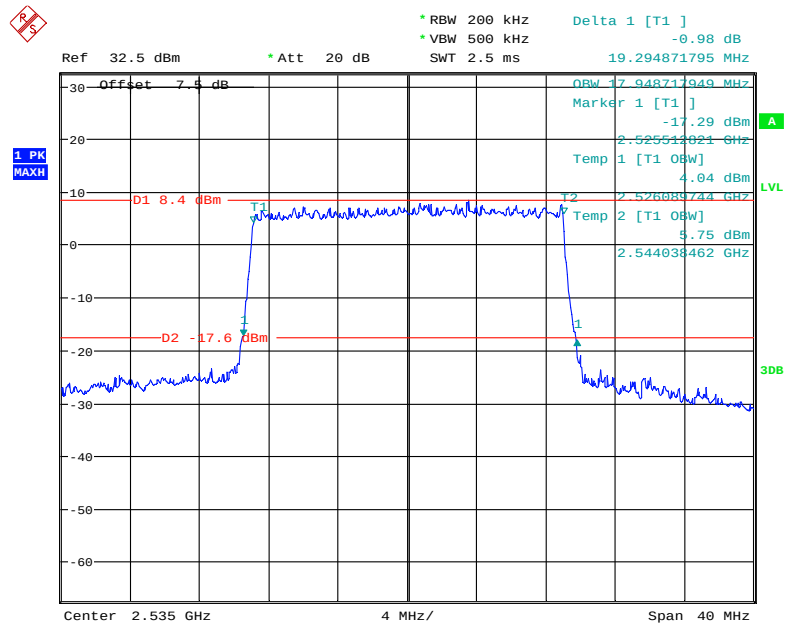
Date: 13.JAN.2019 13:17:29

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

Date: 13.JAN.2019 13:21:12

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

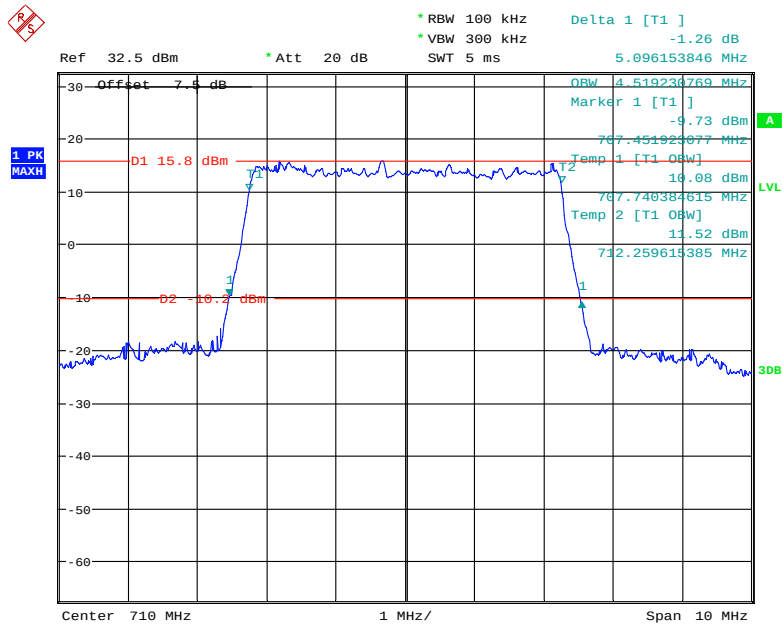
Date: 13.JAN.2019 13:22:35

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

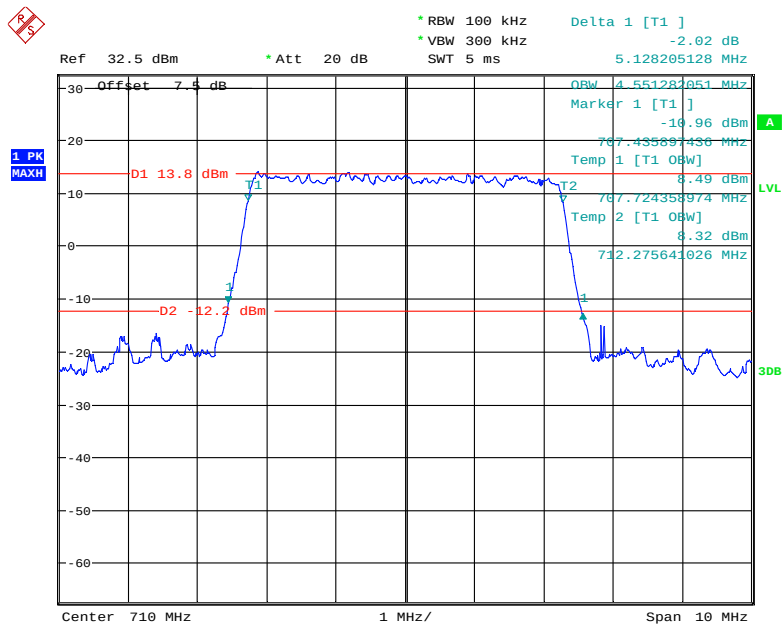
Date: 13.JAN.2019 13:24:23

LTE Band 17: (Middle Channel)

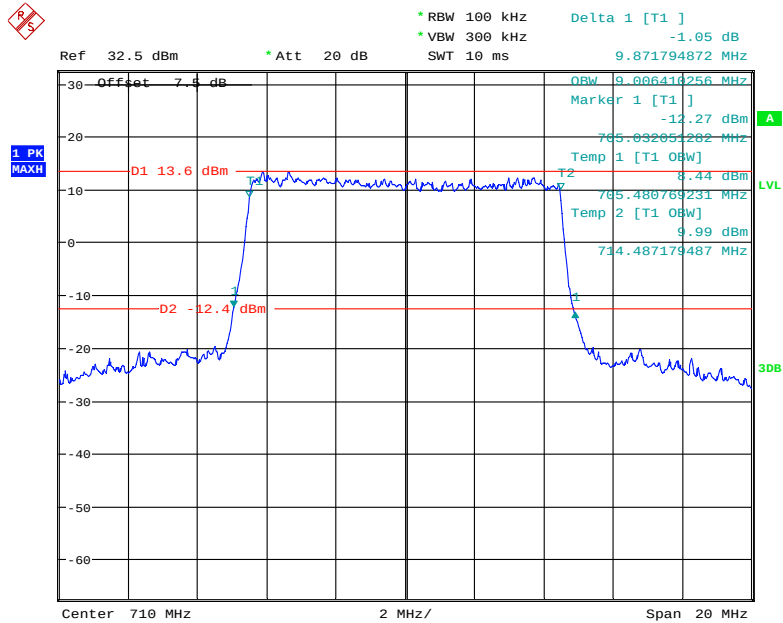
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5.0	QPSK	4.519	5.096
	16QAM	4.551	5.128
10.0	QPSK	9.006	9.872
	16QAM	8.974	9.712

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

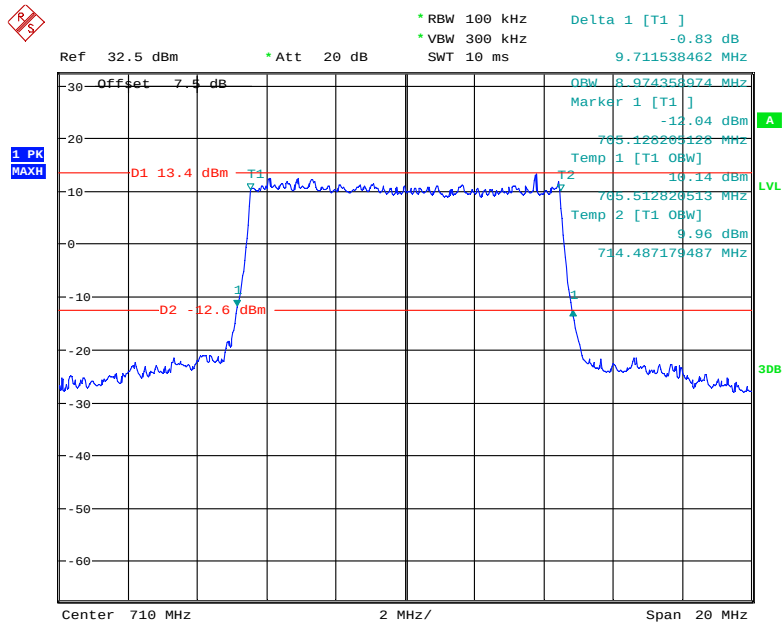
Date: 13.JAN.2019 13:28:50

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

Date: 13.JAN.2019 13:27:12

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

Date: 13.JAN.2019 13:32:57

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

Date: 13.JAN.2019 13:30:54

FCC §2.1051, §22.917(a) & §24.238(a); §27.53 (h) (m) - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

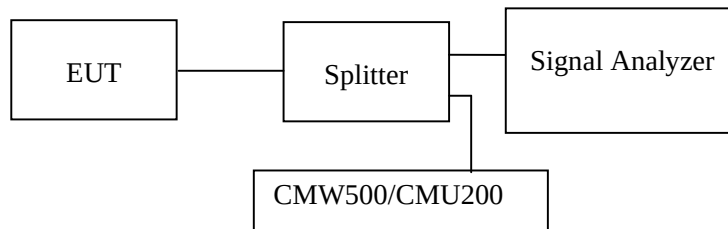
Applicable Standard

FCC §2.1051, §22.917(a) and §24.238(a) and §27.53(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 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Shawn Xiao on 2019-01-13 and 2019-01-15.

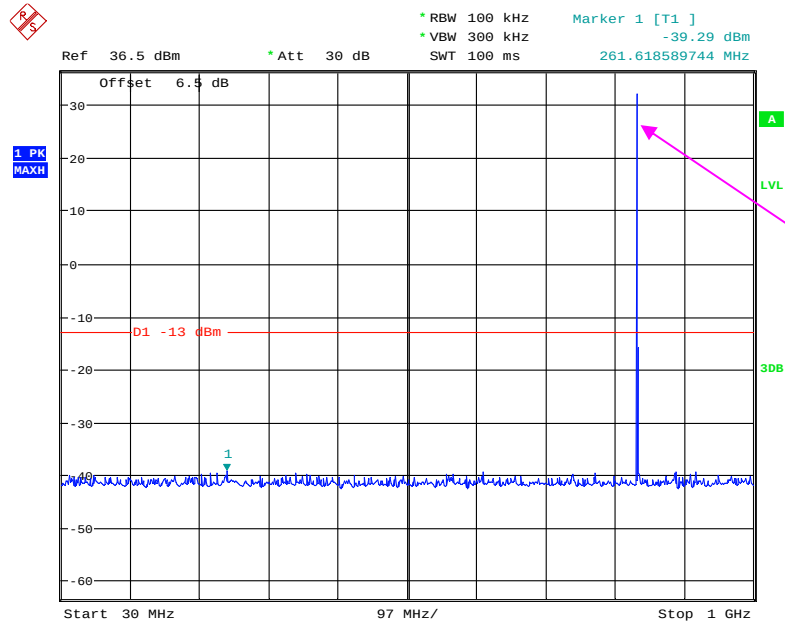
Test result: Compliance.

EUT operation mode: transmitting

Please refer to the following plots.

Cellular Band (Part 22H)

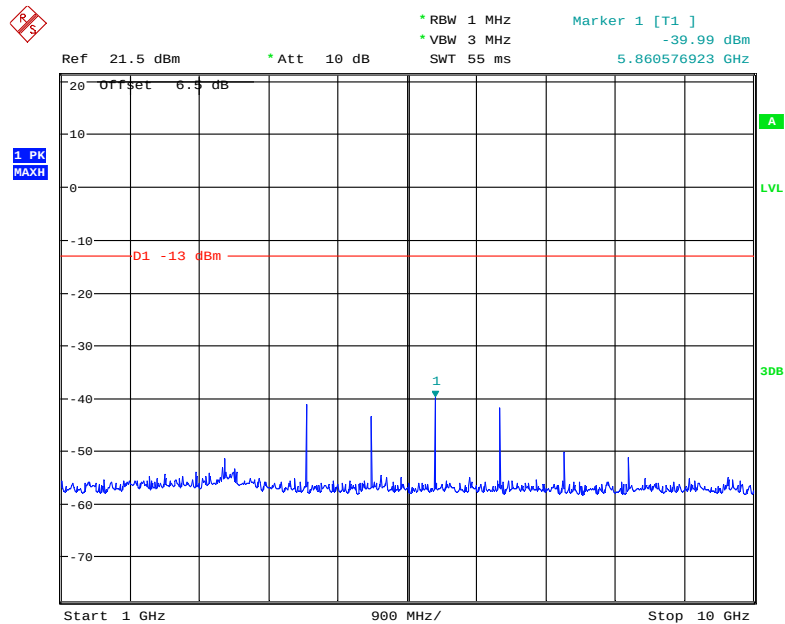
30 MHz – 1 GHz (GSM Mode)



Fundamental test

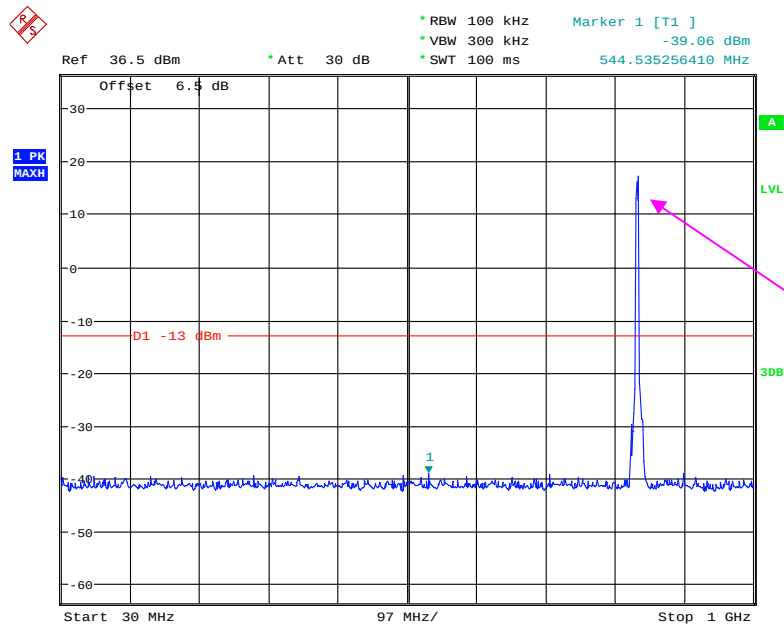
Date: 15.JAN.2019 11:18:37

1 GHz – 10 GHz (GSM Mode)



Date: 15.JAN.2019 11:19:55

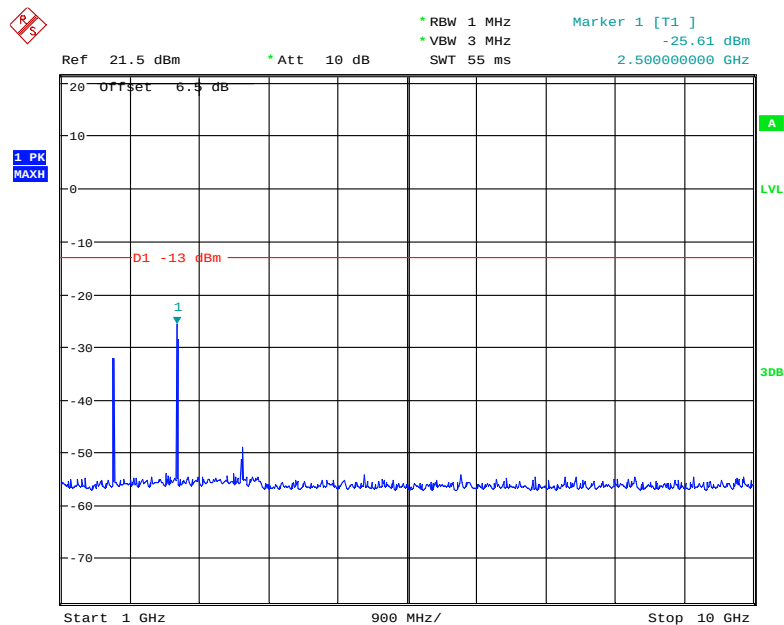
30 MHz – 1 GHz (WCDMA Mode)



Fundamental test

Date: 15.JAN.2019 15:41:08

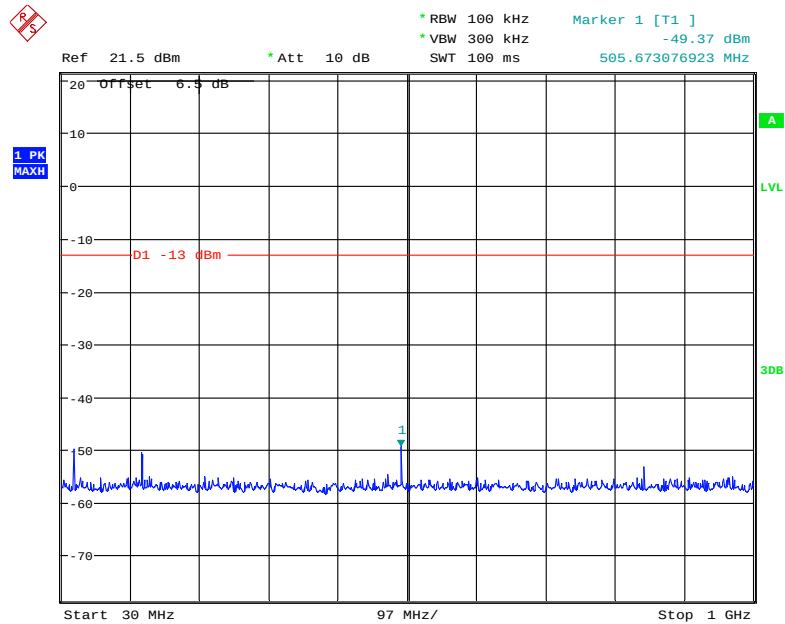
1 GHz – 10 GHz (WCDMA Mode)



Date: 15.JAN.2019 15:42:13

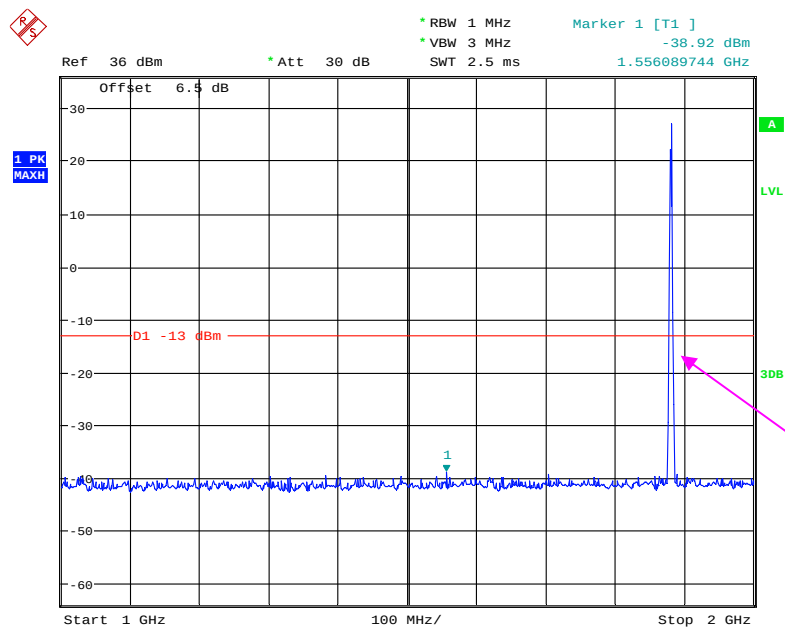
PCS Band (Part 24E)

30 MHz – 1 GHz (GSM Mode)



Date: 15.JAN.2019 11:43:38

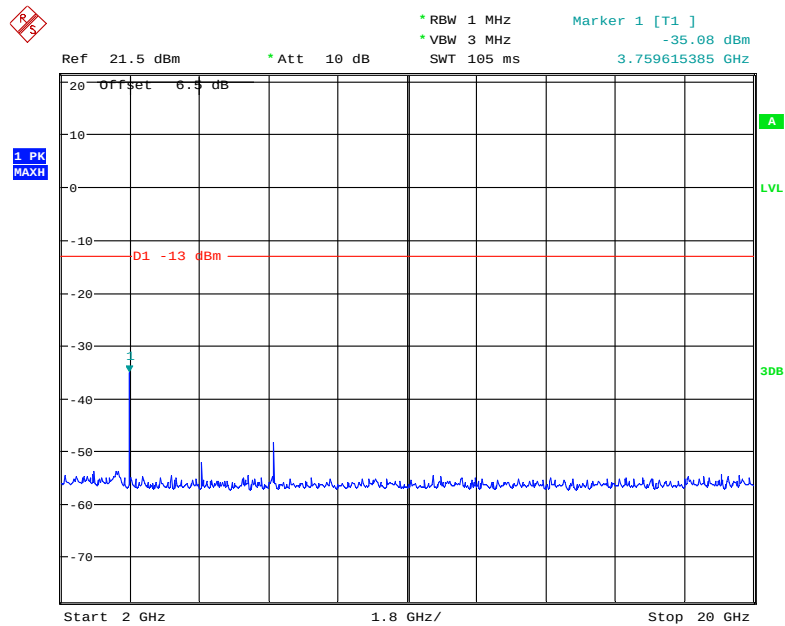
1 GHz – 2 GHz (GSM Mode)



Fundamental test

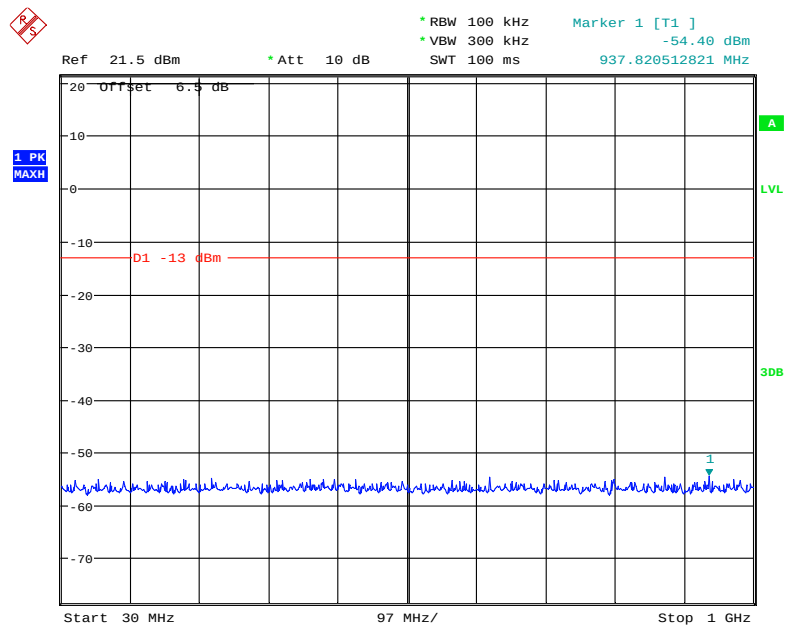
Date: 15.JAN.2019 11:44:50

2 GHz – 20 GHz (GSM Mode)



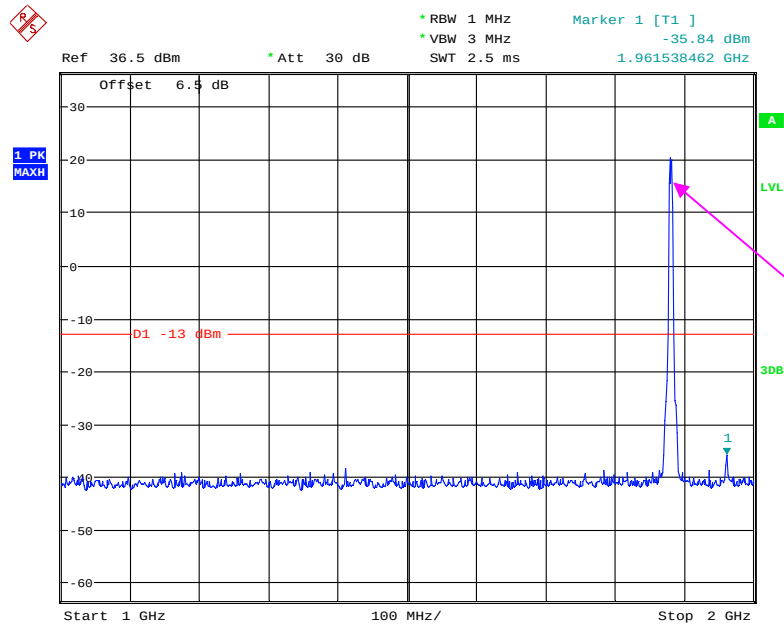
Date: 15.JAN.2019 11:45:13

30 MHz – 1 GHz (WCDMA Mode)



Date: 15.JAN.2019 14:41:12

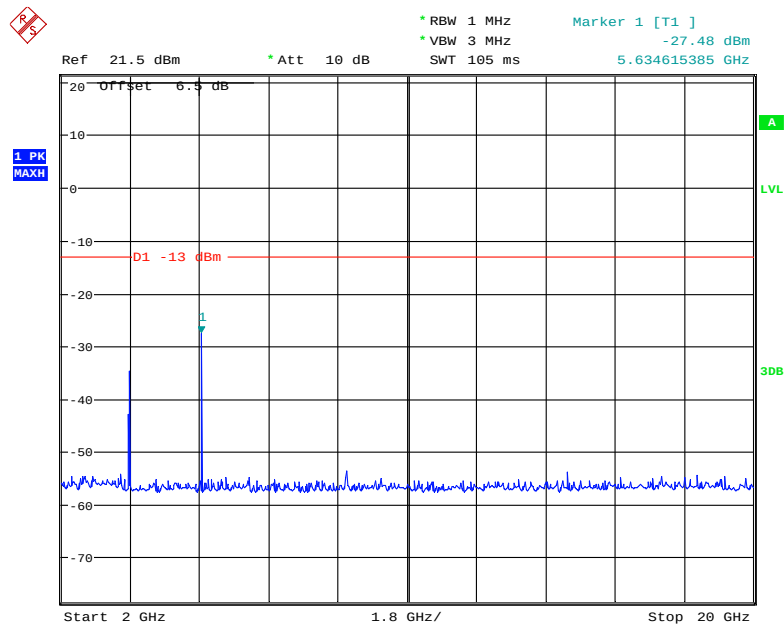
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 15.JAN.2019 14:41:51

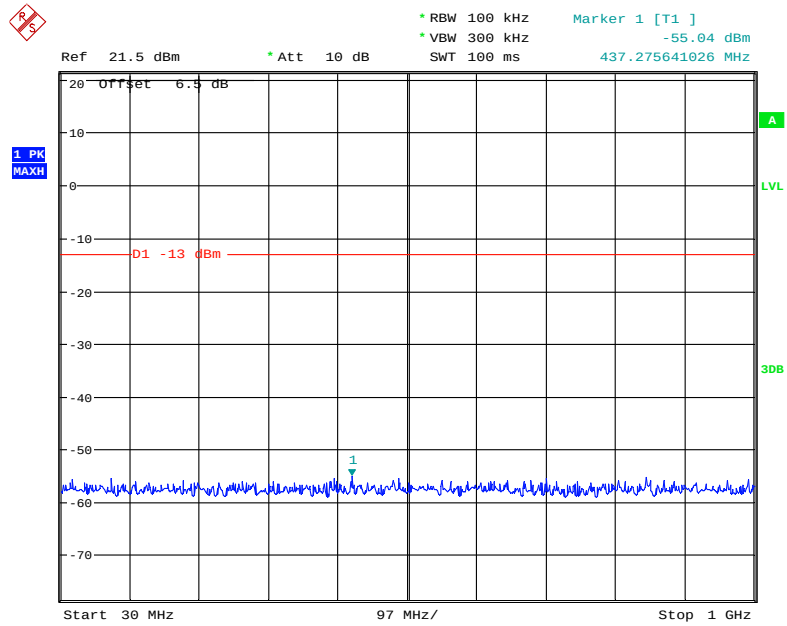
2 GHz – 20 GHz (WCDMA Mode)



Date: 15.JAN.2019 16:47:58

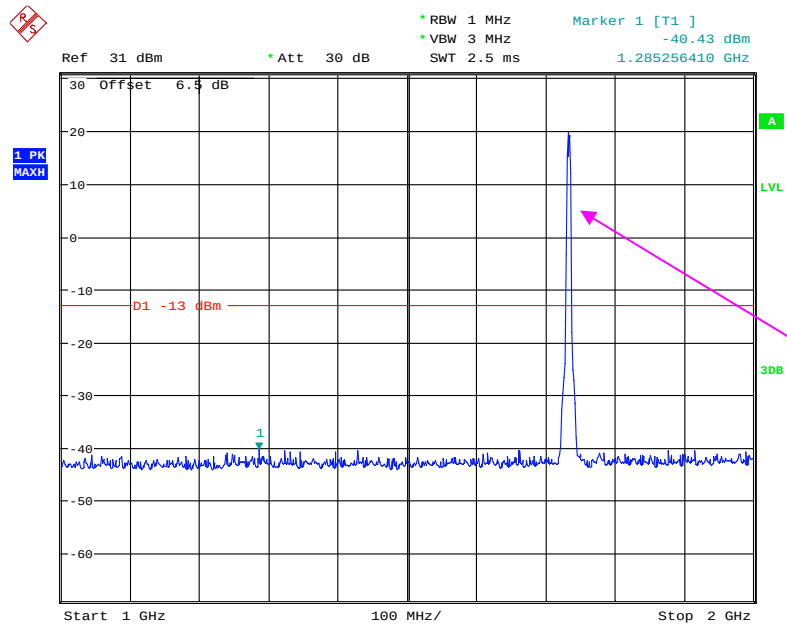
AWS Band (Part 27)

30 MHz – 1 GHz (WCDMA Mode)



Date: 15.JAN.2019 16:28:52

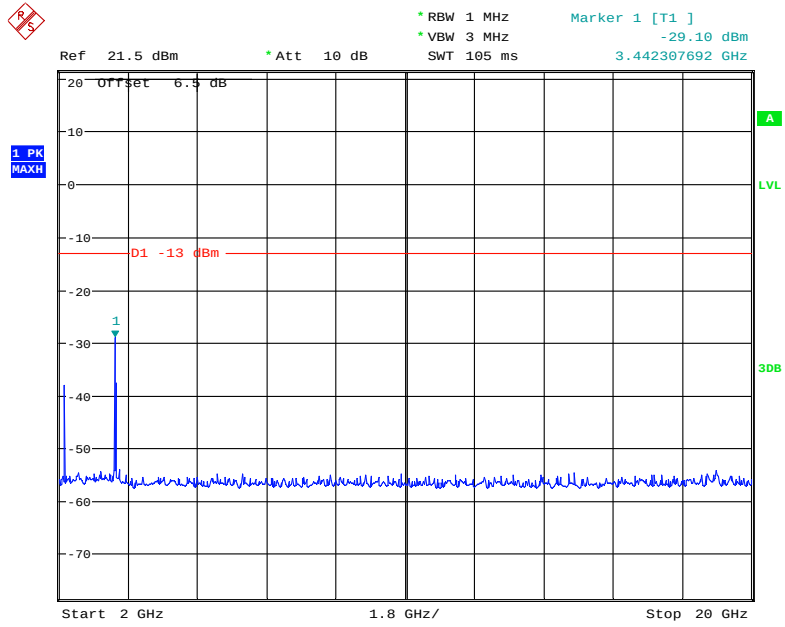
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 15.JAN.2019 16:30:37

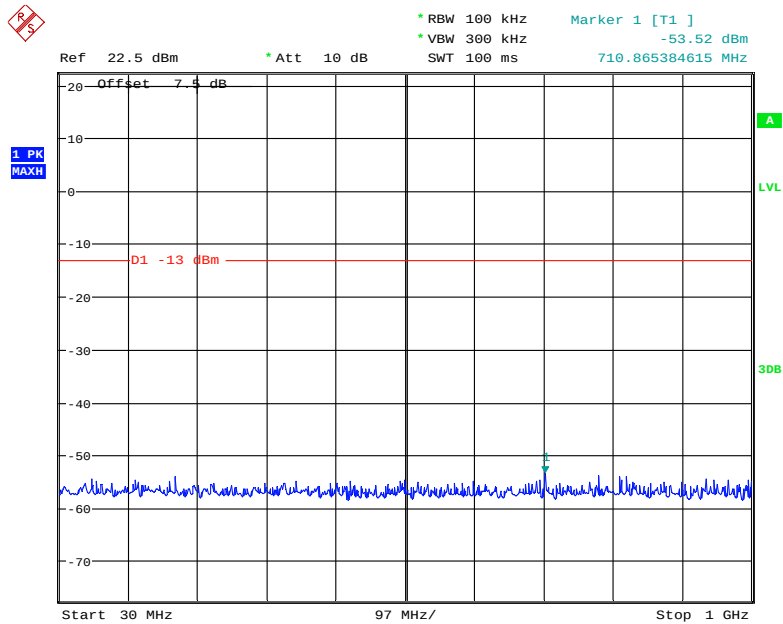
2 GHz – 20 GHz (WCDMA Mode)



Date: 15.JAN.2019 16:30:58

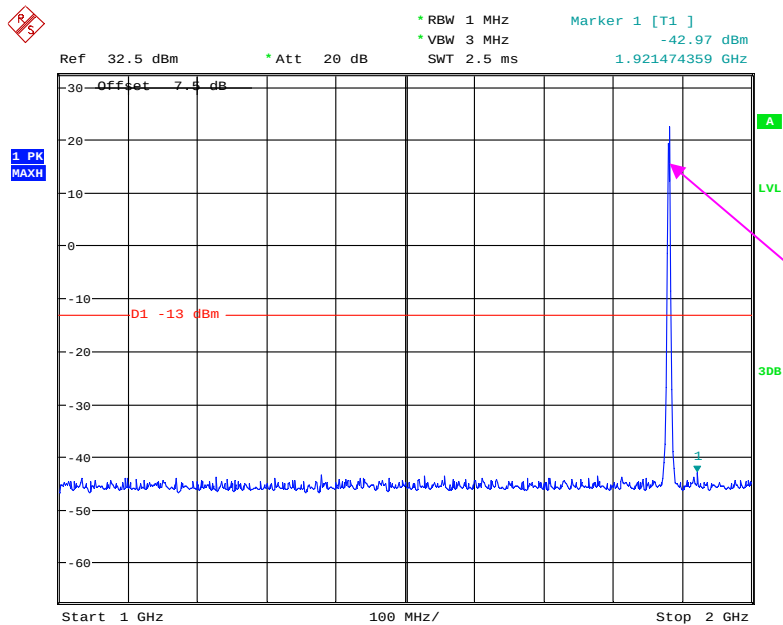
LTE Band 2:

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



Date: 15.JAN.2019 20:45:27

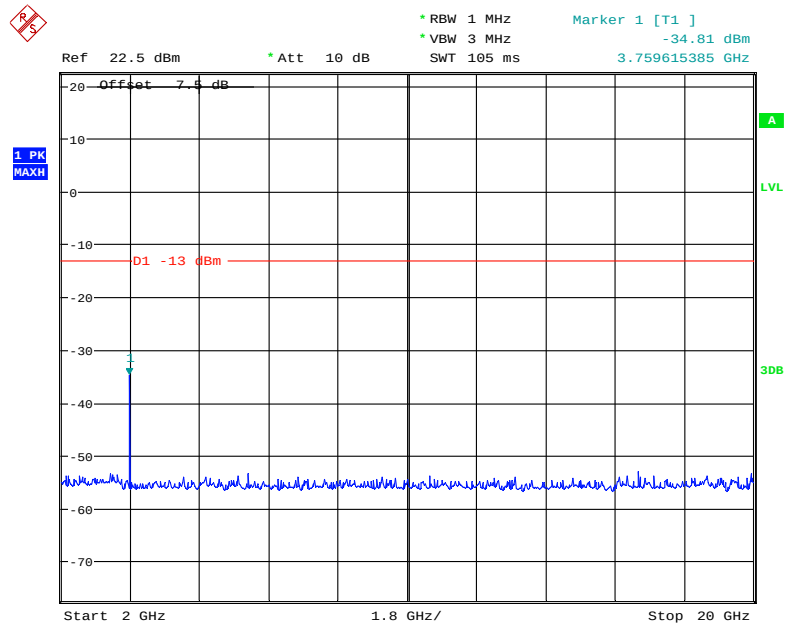
1 GHz - 2 GHz (1.4 MHz, Middle Channel)



Fundamental test

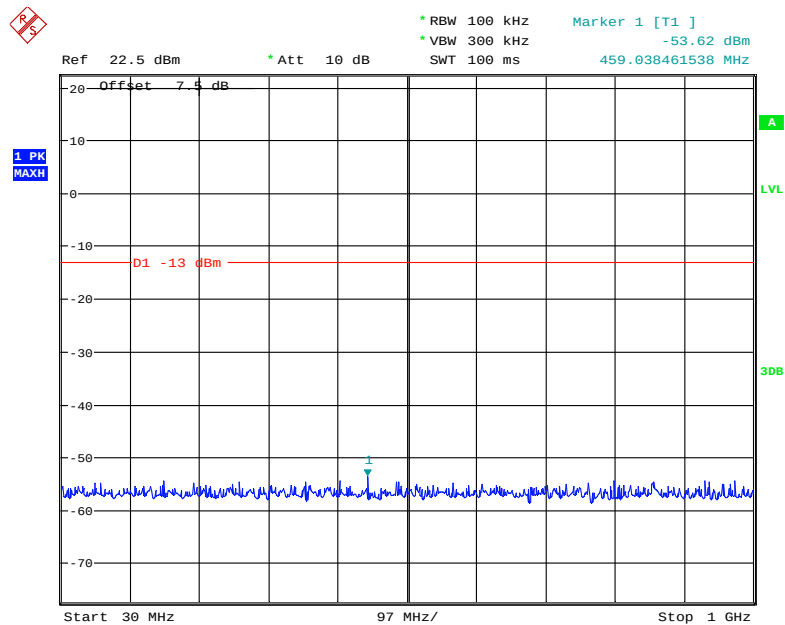
Date: 15.JAN.2019 20:46:03

2 GHz – 20 GHz (1.4 MHz, Middle Channel)



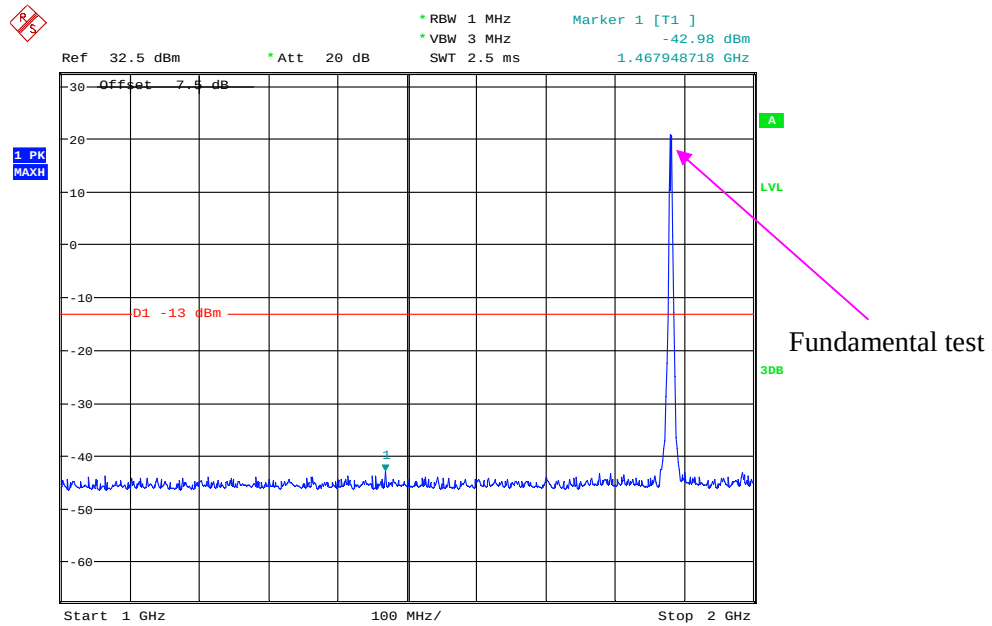
Date: 15.JAN.2019 20:51:44

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



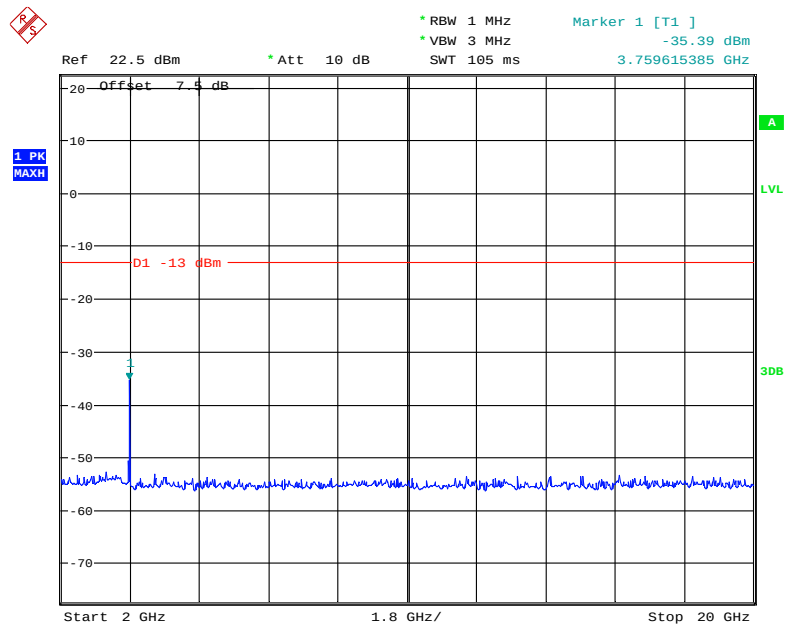
Date: 15.JAN.2019 20:45:35

1 GHz – 2 GHz (3.0 MHz, Middle Channel)



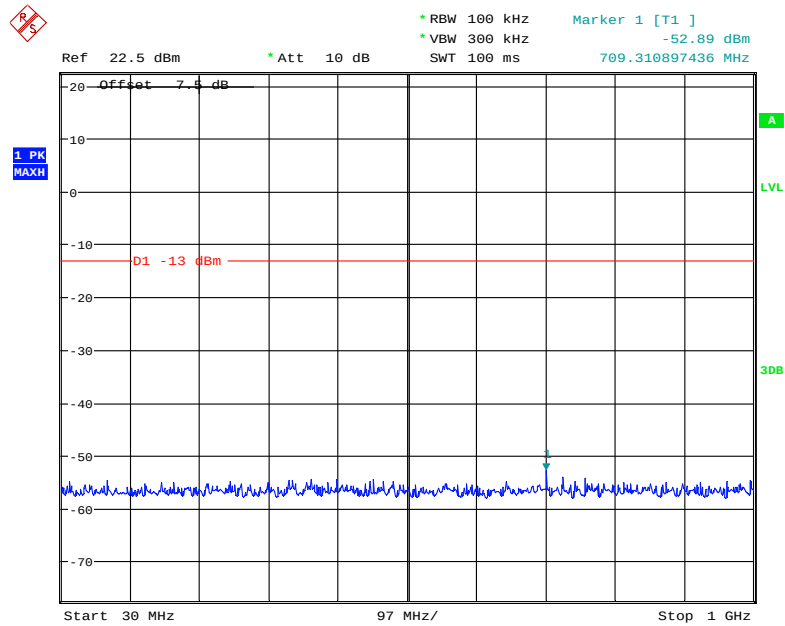
Date: 15.JAN.2019 20:46:30

2 GHz – 20 GHz (3.0 MHz, Middle Channel)



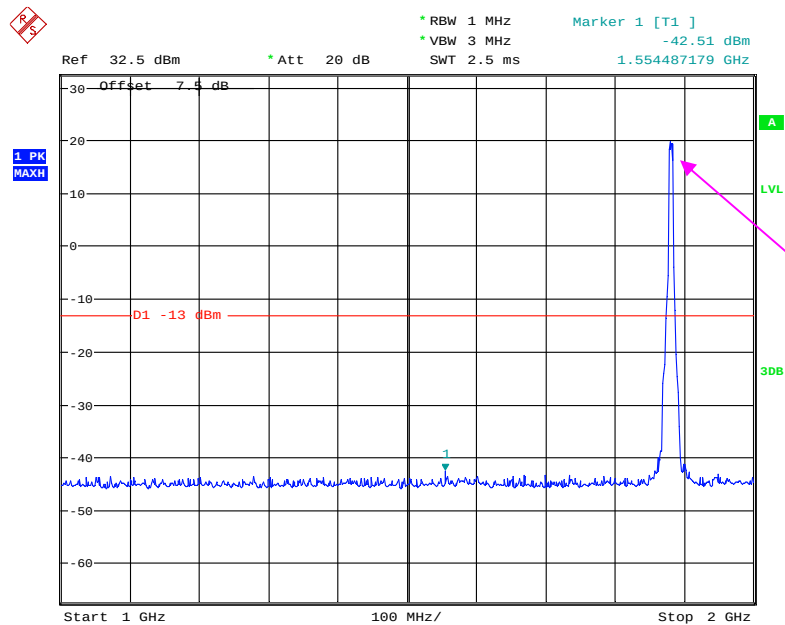
Date: 15.JAN.2019 20:51:33

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



Date: 15.JAN.2019 20:38:14

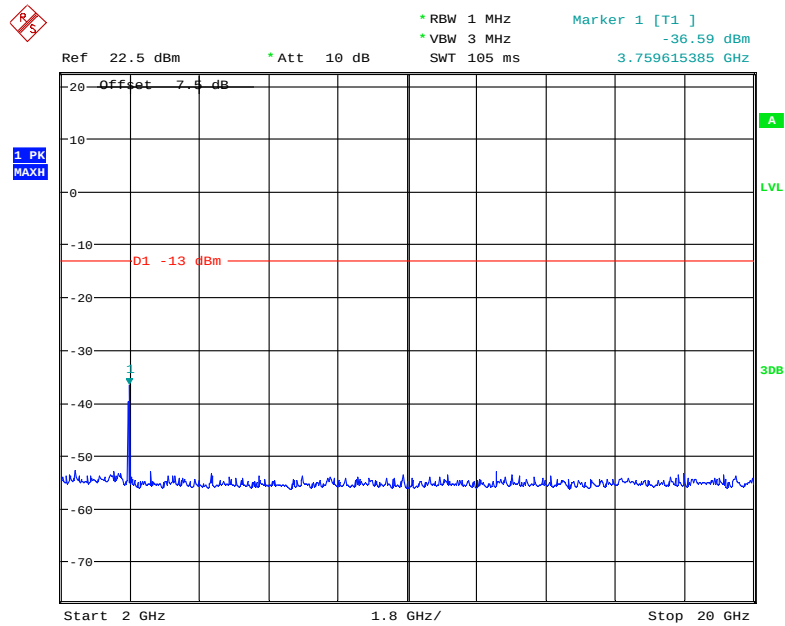
1 GHz - 2 GHz (5.0 MHz, Middle Channel)



Fundamental test

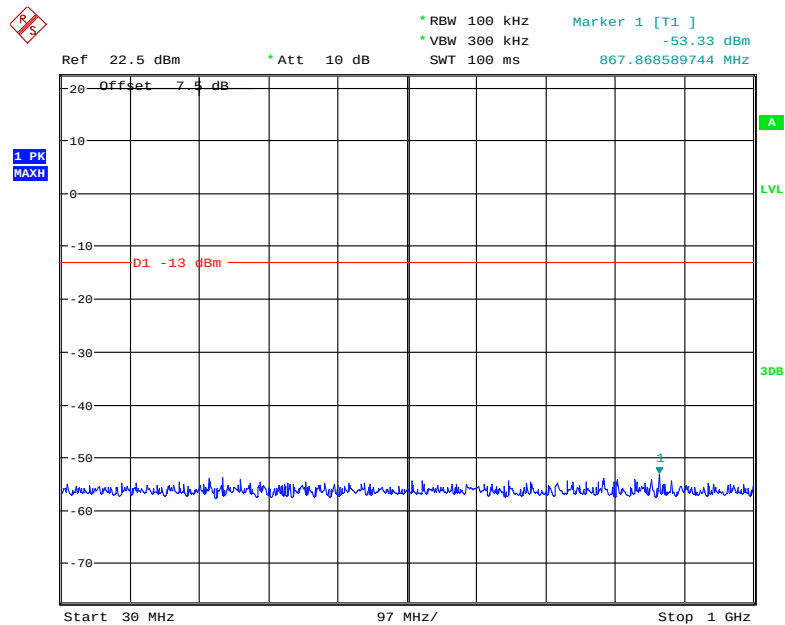
Date: 15.JAN.2019 20:47:06

2 GHz – 20 GHz (5.0 MHz, Middle Channel)



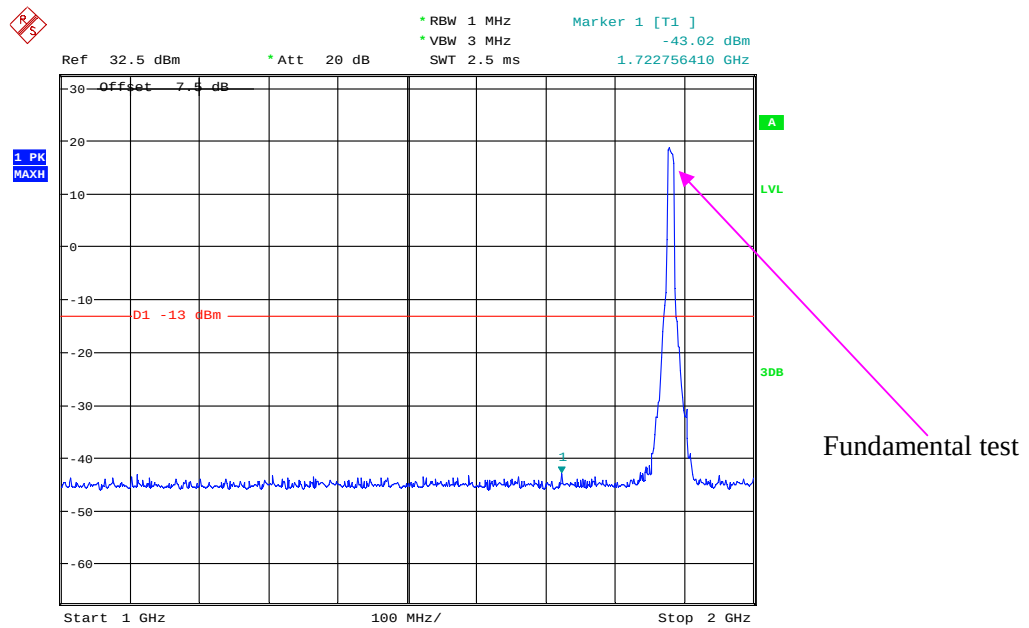
Date: 15.JAN.2019 20:51:19

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



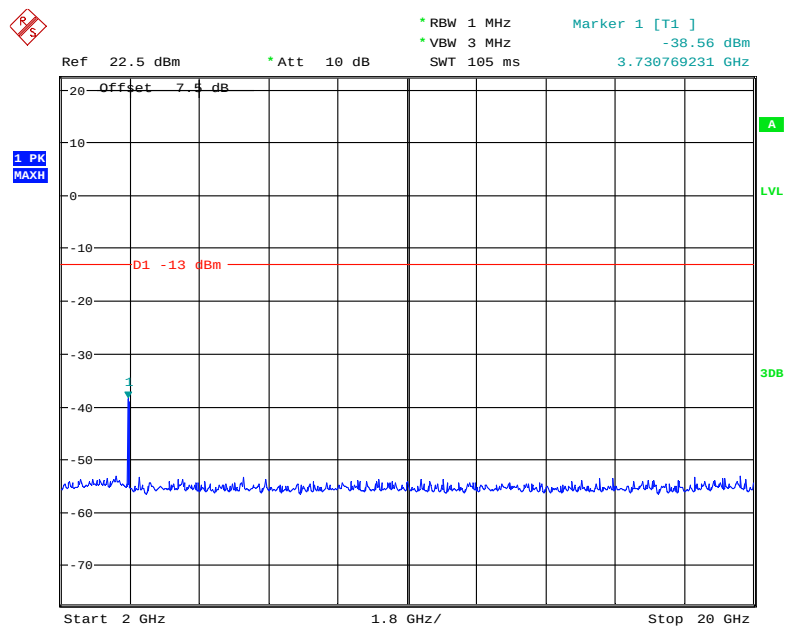
Date: 15.JAN.2019 20:38:36

1 GHz – 2 GHz (10.0 MHz, Middle Channel)



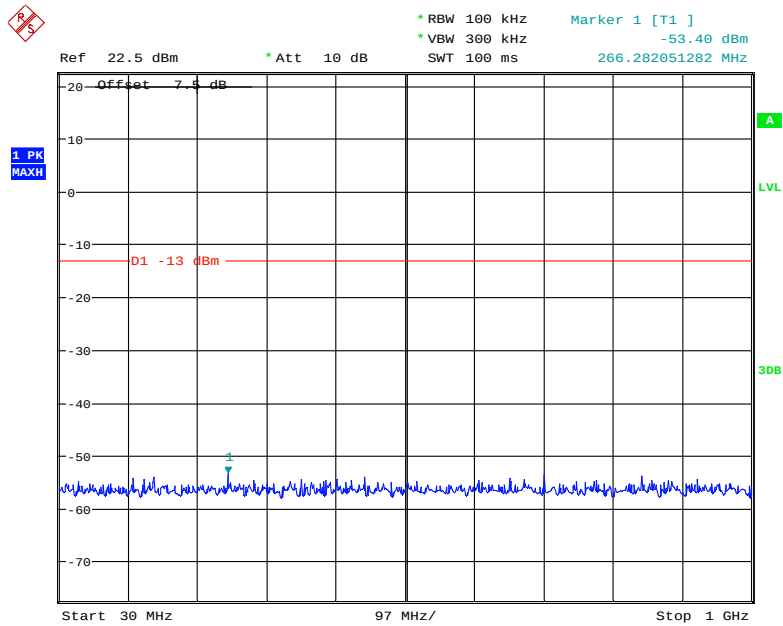
Date: 15.JAN.2019 20:48:01

2 GHz – 20 GHz (10.0 MHz, Middle Channel)



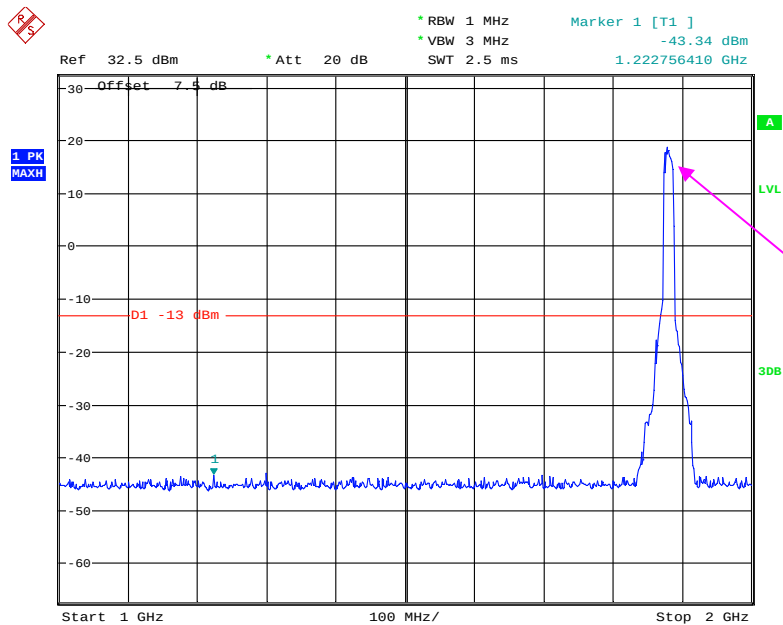
Date: 15.JAN.2019 20:51:06

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



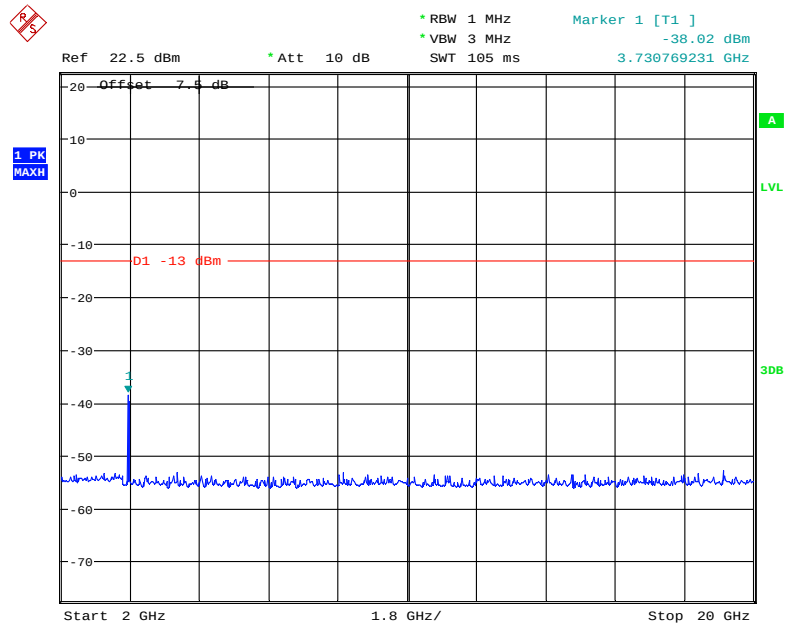
Date: 15.JAN.2019 20:38:49

1 GHz – 2 GHz (15.0 MHz, Middle Channel)



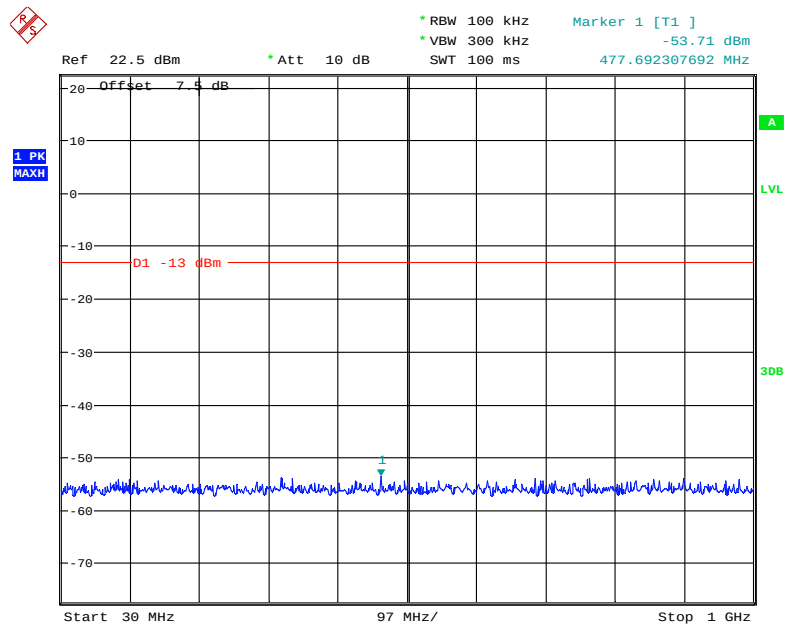
Date: 15.JAN.2019 20:48:29

2 GHz – 20 GHz (15.0 MHz, Middle Channel)



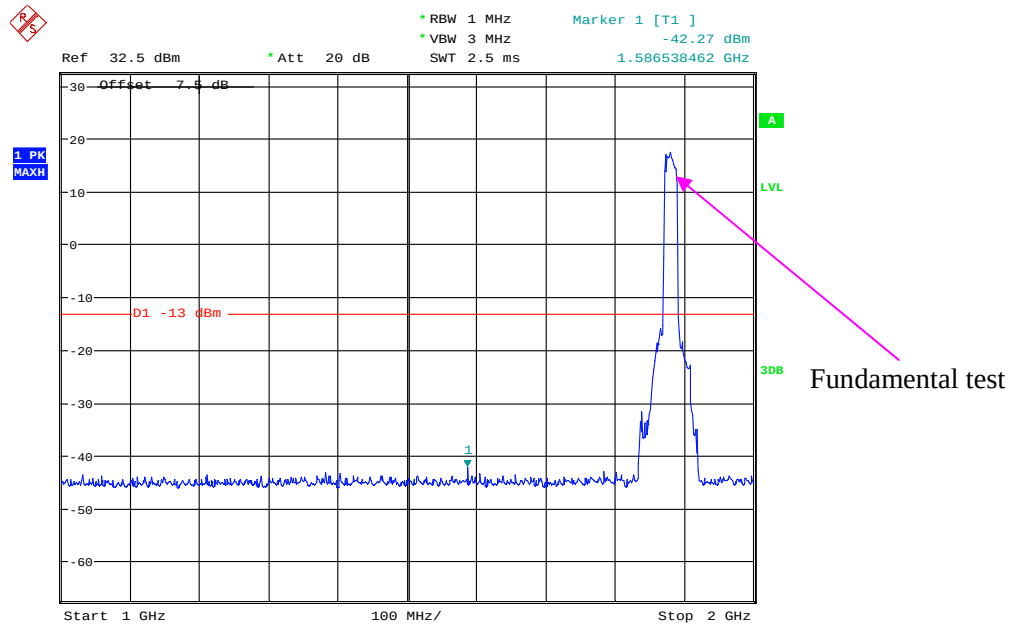
Date: 15.JAN.2019 20:50:48

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



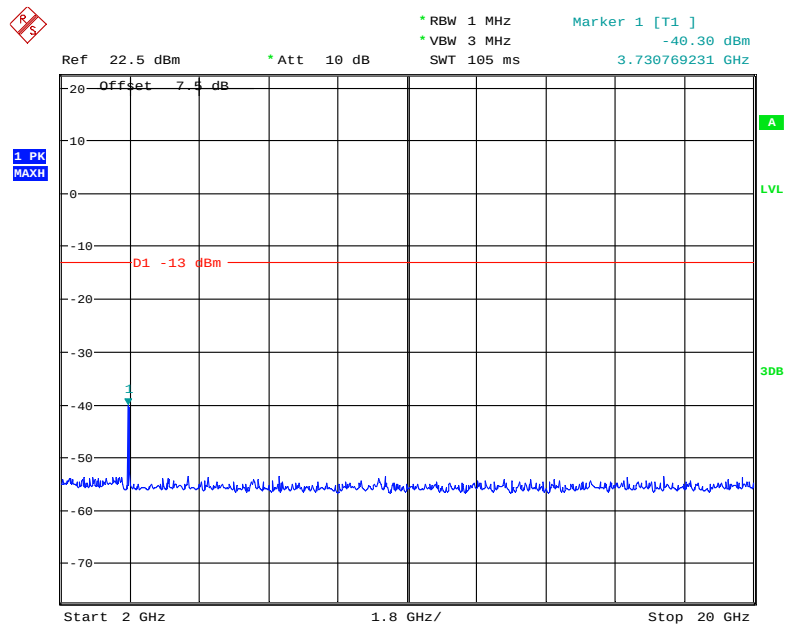
Date: 15.JAN.2019 20:39:05

1 GHz – 2 GHz (20.0 MHz, Middle Channel)

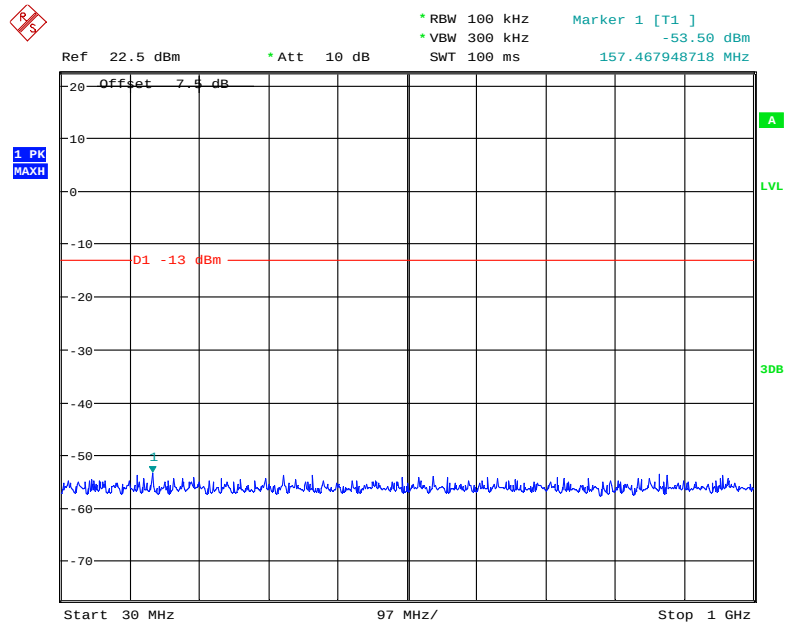


Date: 15.JAN.2019 20:49:06

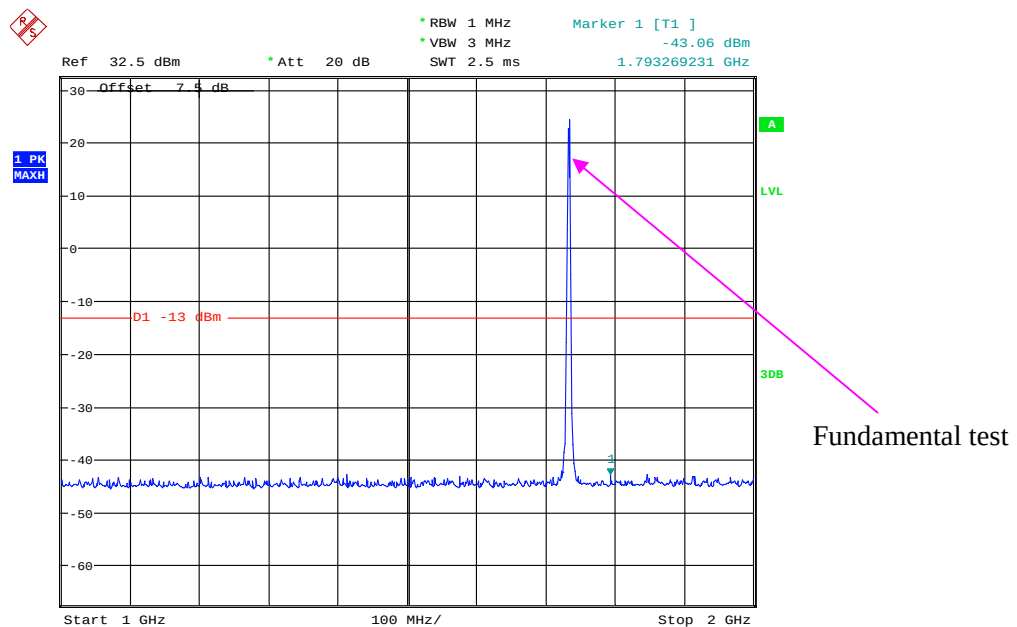
2 GHz –20 GHz (20.0 MHz, Middle Channel)



Date: 15.JAN.2019 20:50:24

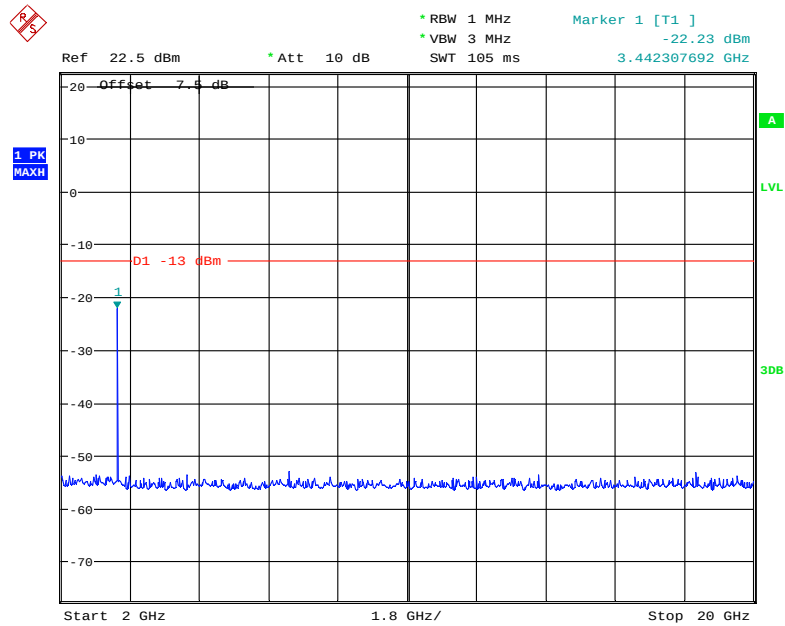
LTE Band 4:**30 MHz - 1 GHz (1.4 MHz, Middle Channel)**

Date: 15.JAN.2019 20:22:58

1 GHz – 2 GHz (1.4 MHz, Middle Channel)

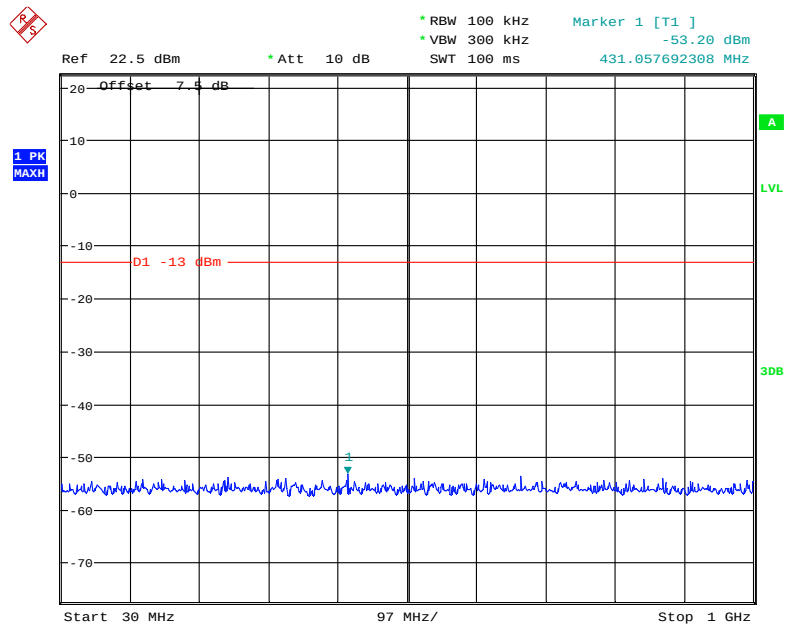
Date: 15.JAN.2019 20:31:01

2 GHz – 20 GHz (1.4 MHz, Middle Channel)



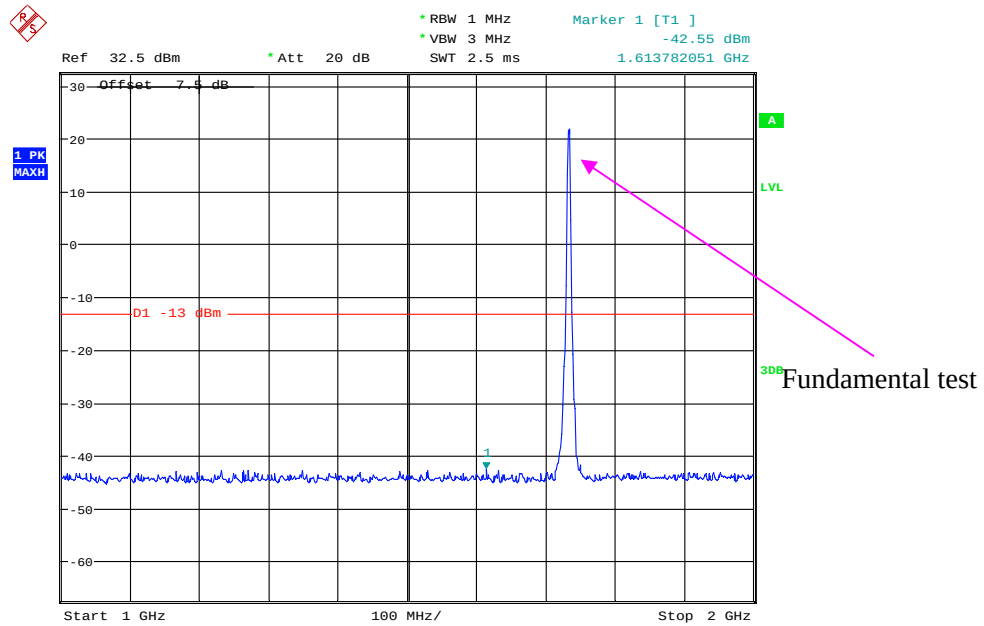
Date: 15.JAN.2019 20:32:40

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



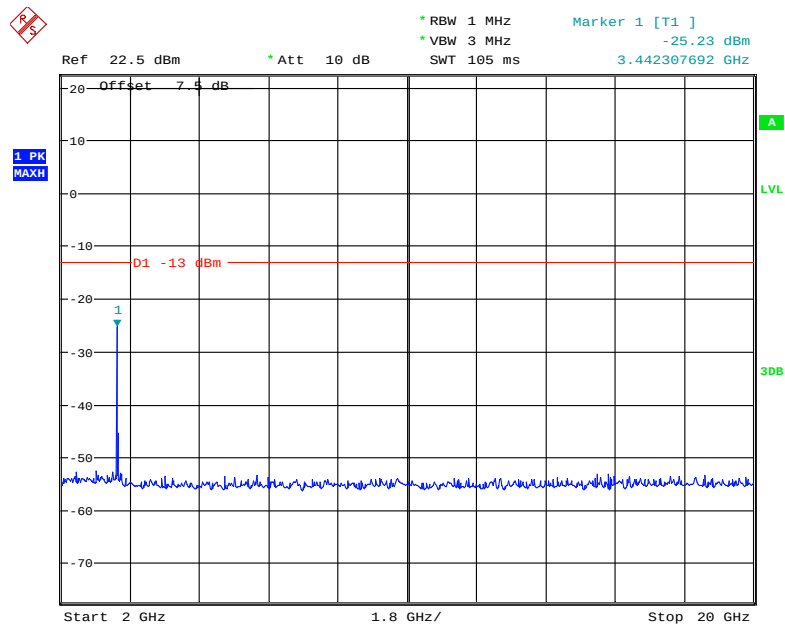
Date: 15.JAN.2019 20:23:18

1 GHz – 2 GHz (3.0 MHz, Middle Channel)



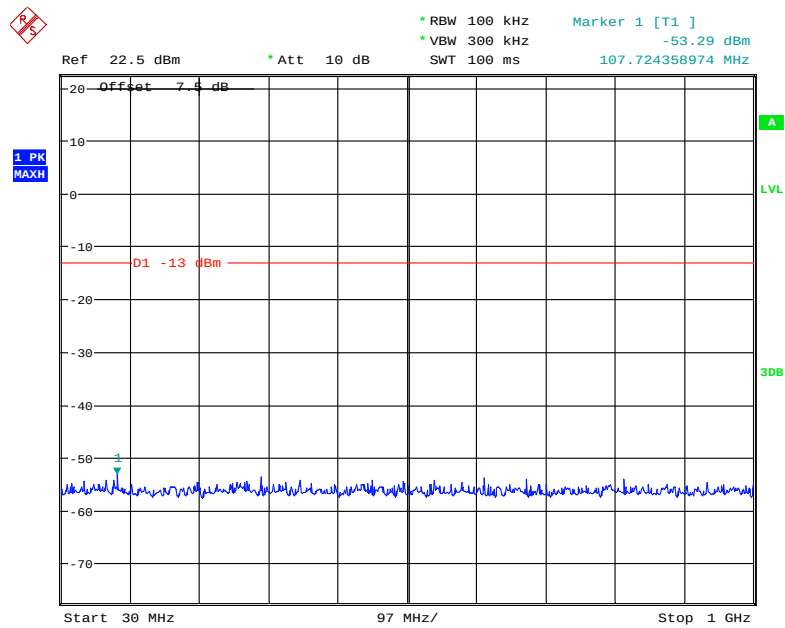
Date: 15.JAN.2019 20:29:52

2 GHz – 20 GHz (3.0 MHz, Middle Channel)



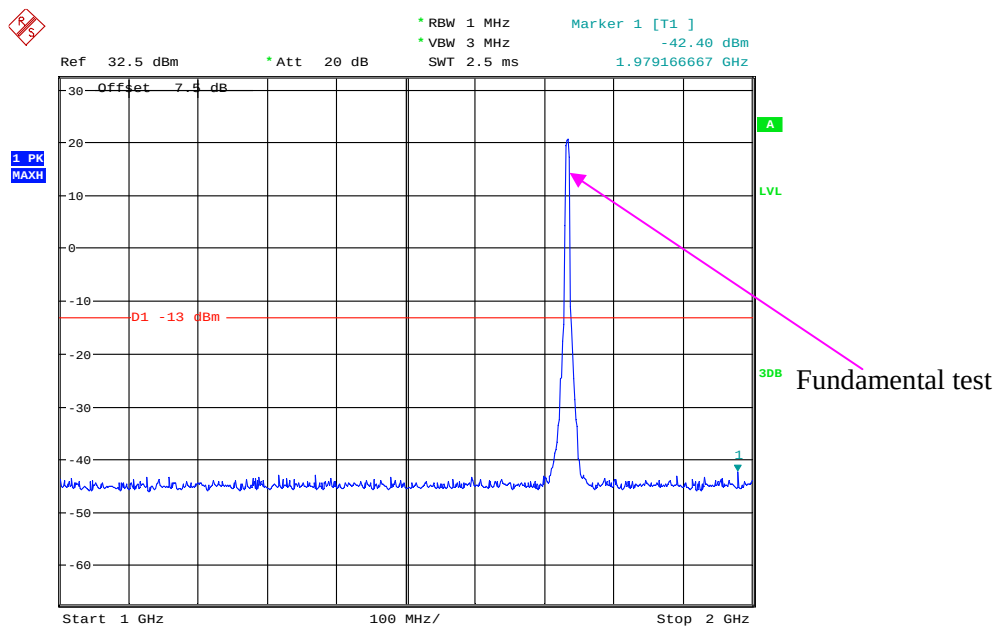
Date: 15.JAN.2019 20:32:57

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



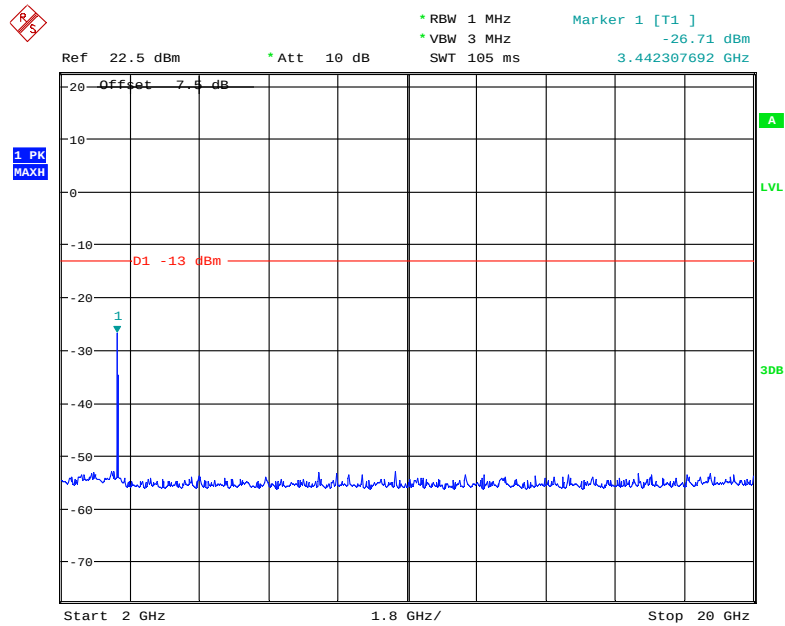
Date: 15.JAN.2019 20:23:32

1 GHz - 2 GHz (5.0 MHz, Middle Channel)



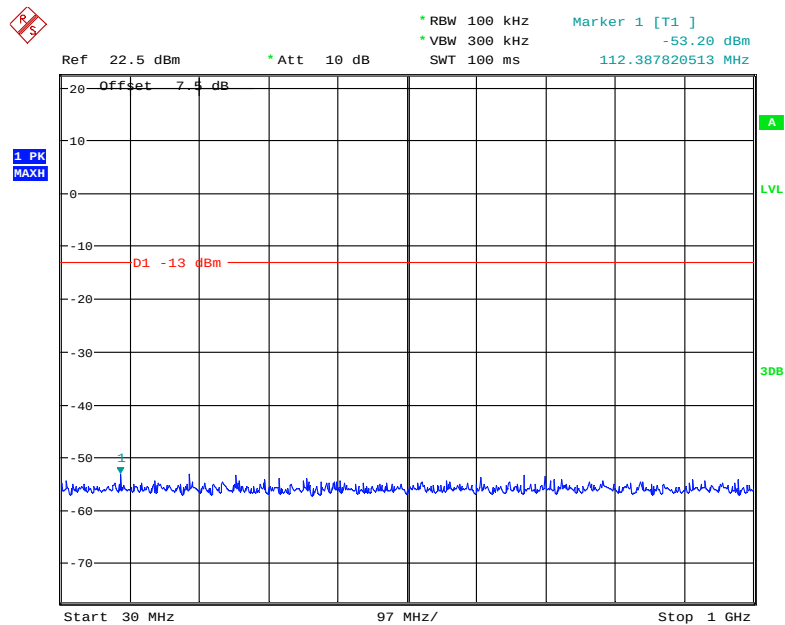
Date: 15.JAN.2019 20:27:45

2 GHz – 20 GHz (5.0 MHz, Middle Channel)



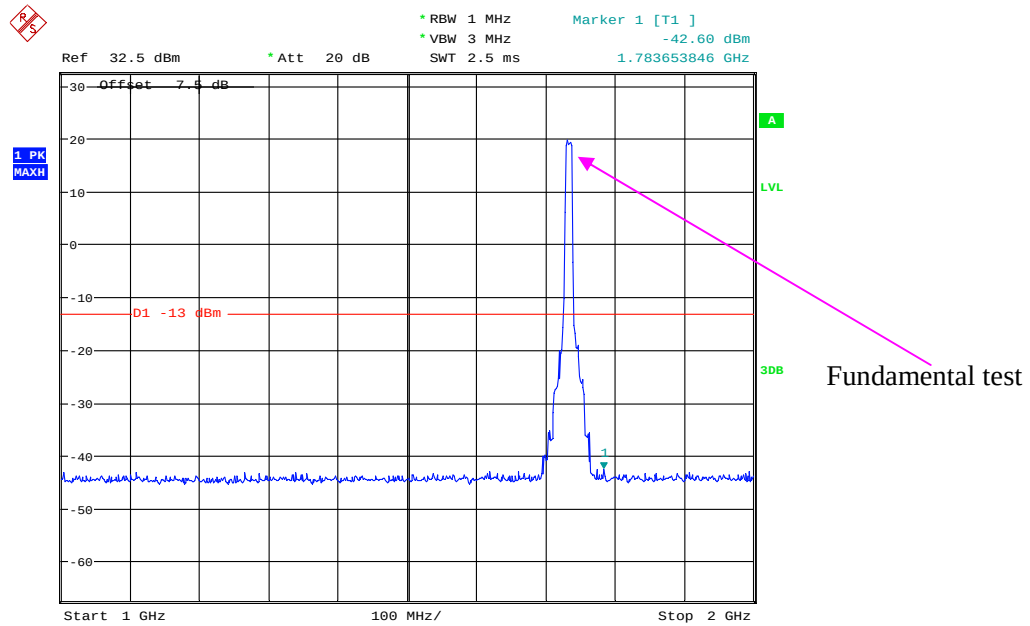
Date: 15.JAN.2019 20:33:12

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



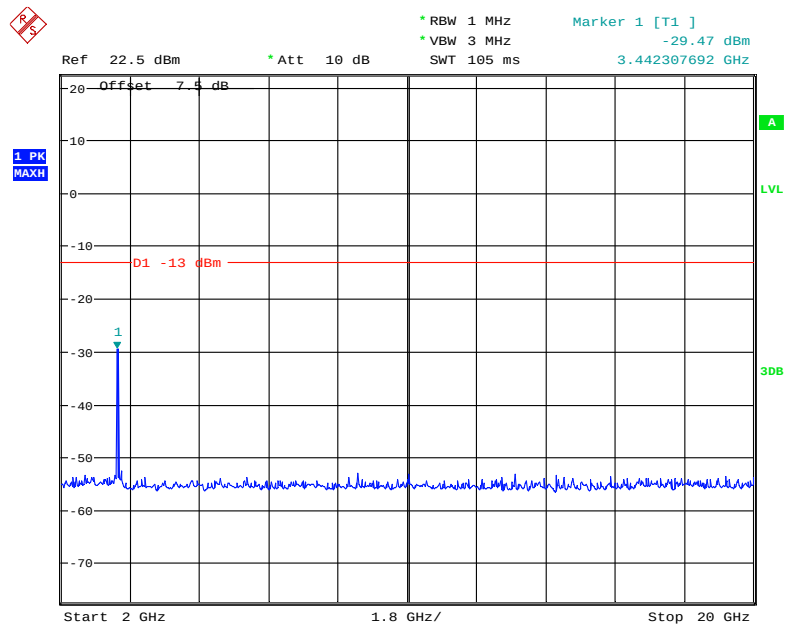
Date: 15.JAN.2019 20:23:49

1 GHz – 2 GHz (10.0 MHz, Middle Channel)



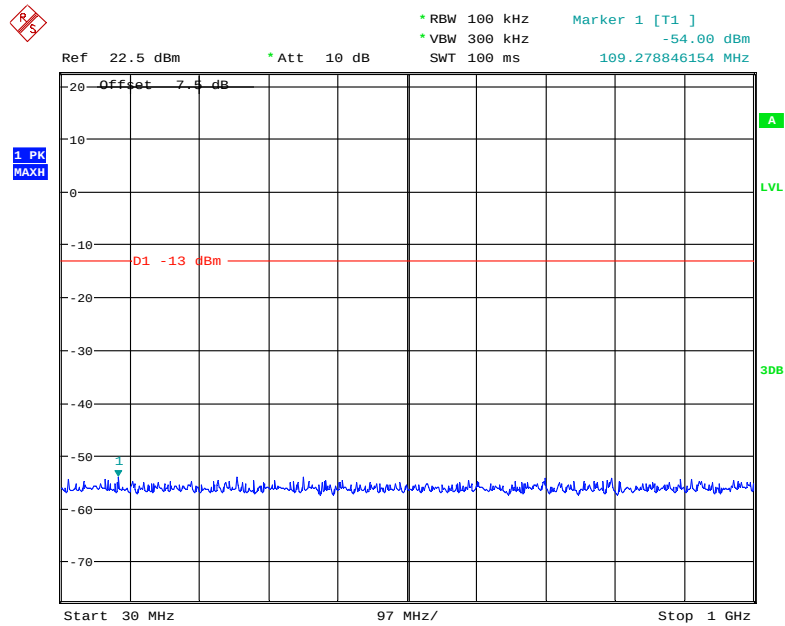
Date: 15.JAN.2019 20:27:08

2 GHz – 20 GHz (10.0 MHz, Middle Channel)



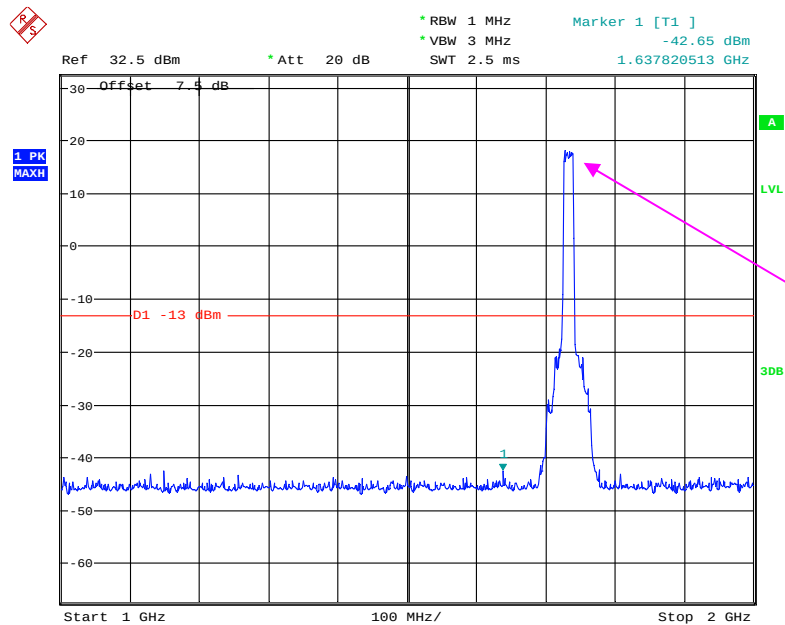
Date: 15.JAN.2019 20:33:25

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



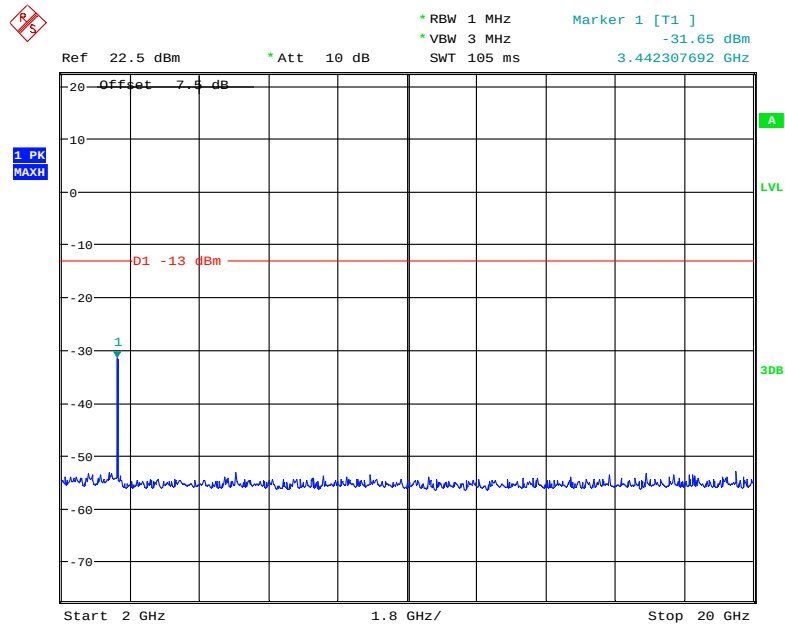
Date: 15.JAN.2019 20:24:06

1 GHz – 2 GHz (15.0 MHz, Middle Channel)



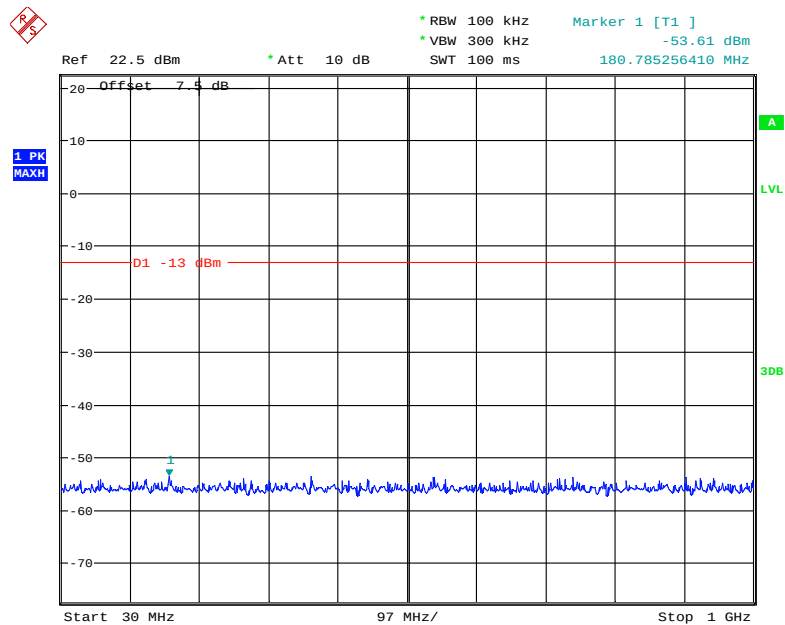
Date: 15.JAN.2019 20:25:19

2 GHz – 20 GHz (15.0 MHz, Middle Channel)



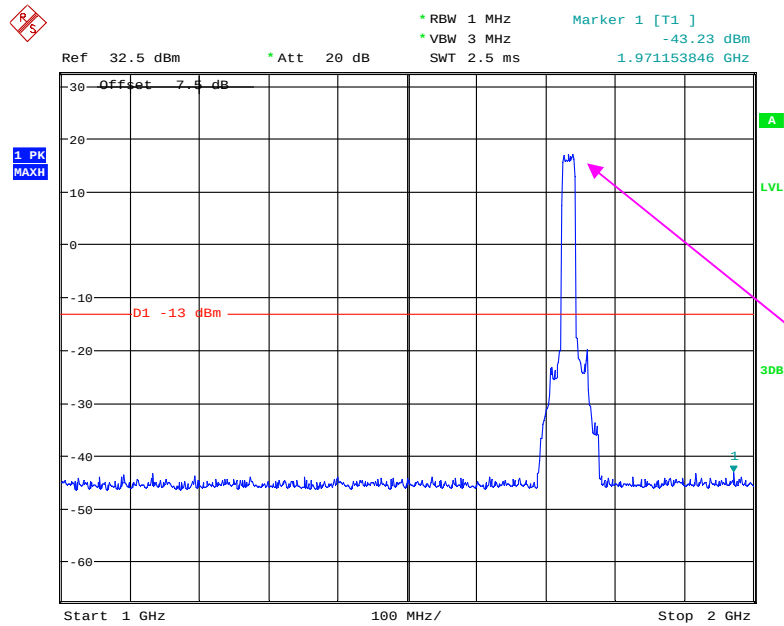
Date: 15.JAN.2019 20:33:37

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



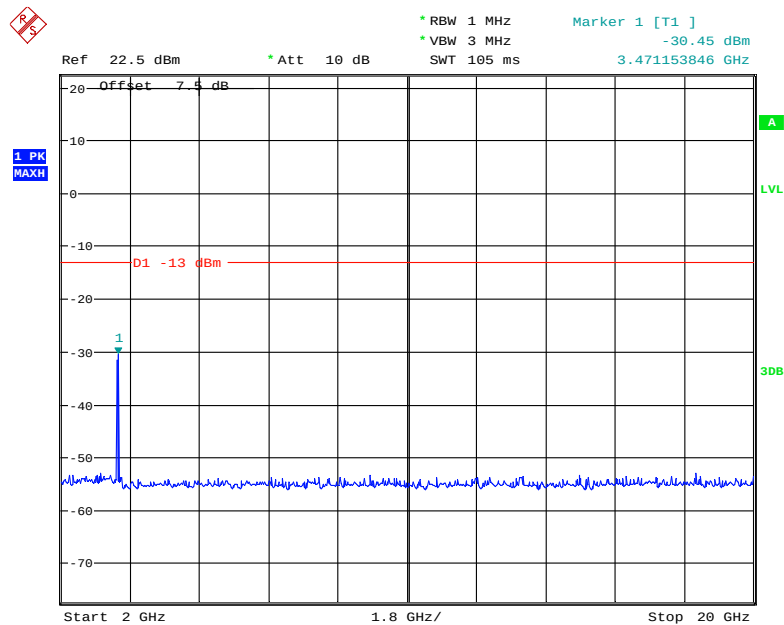
Date: 15.JAN.2019 20:24:24

1 GHz – 2 GHz (20.0 MHz, Middle Channel)



Date: 15.JAN.2019 20:24:58

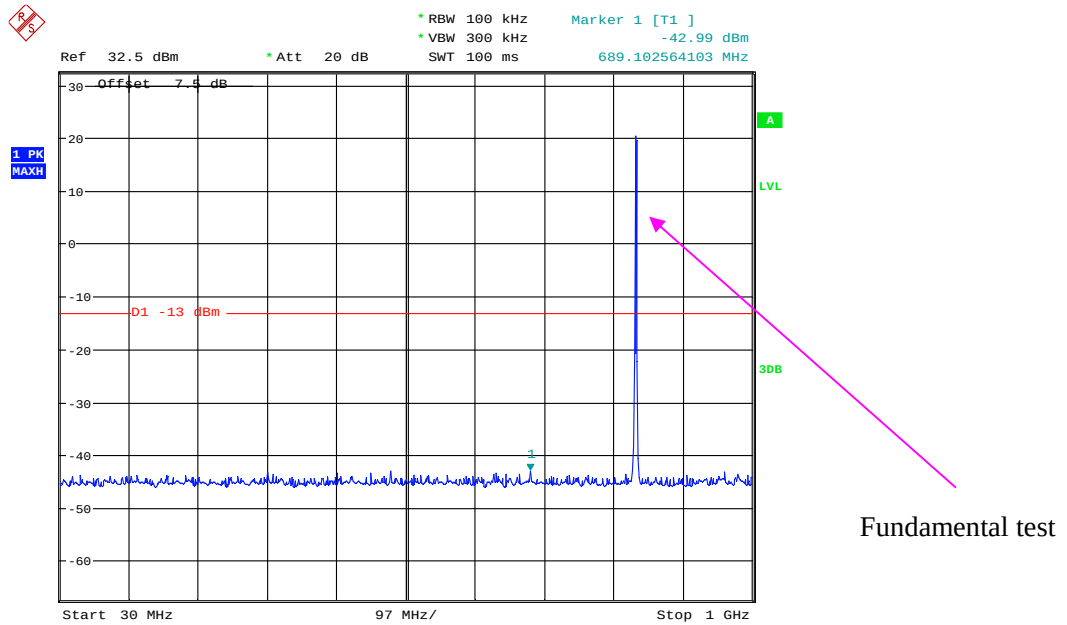
2 GHz – 20 GHz (20.0 MHz, Middle Channel)



Date: 15.JAN.2019 20:33:53

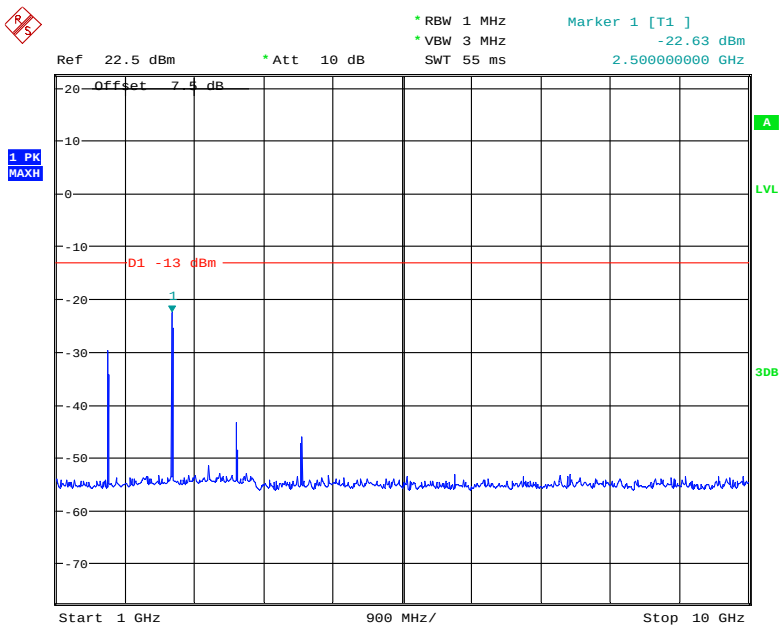
LTE Band 5:

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



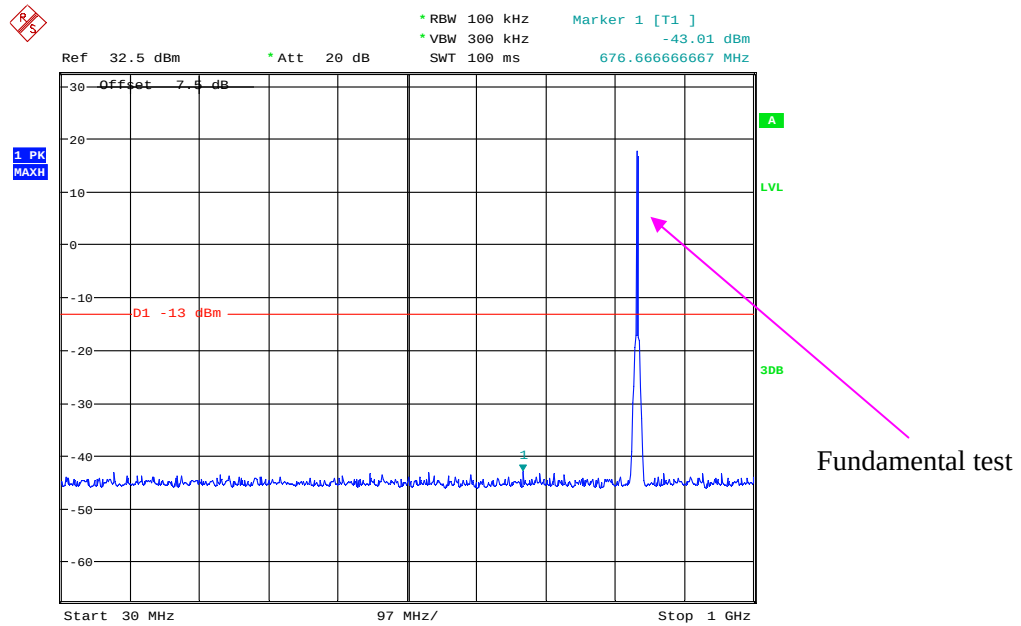
Date: 15.JAN.2019 20:18:20

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



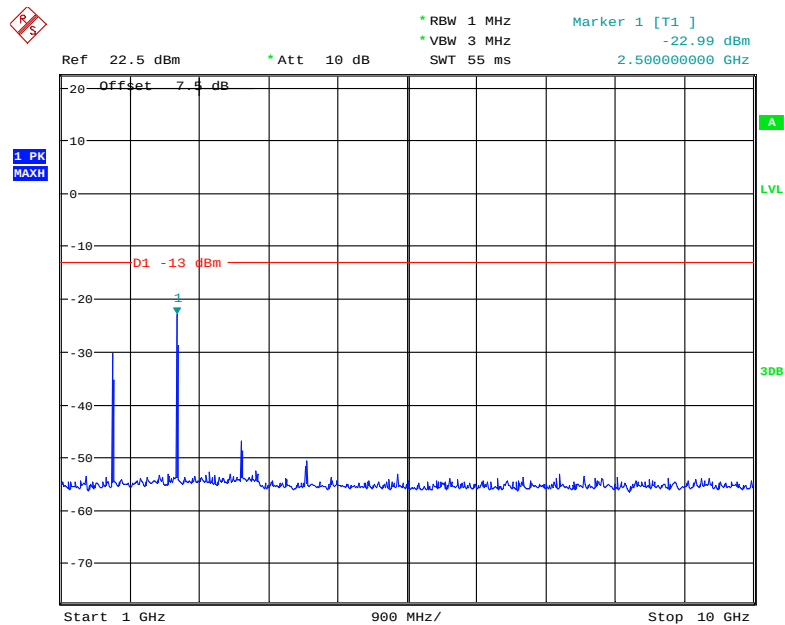
Date: 15.JAN.2019 20:21:51

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



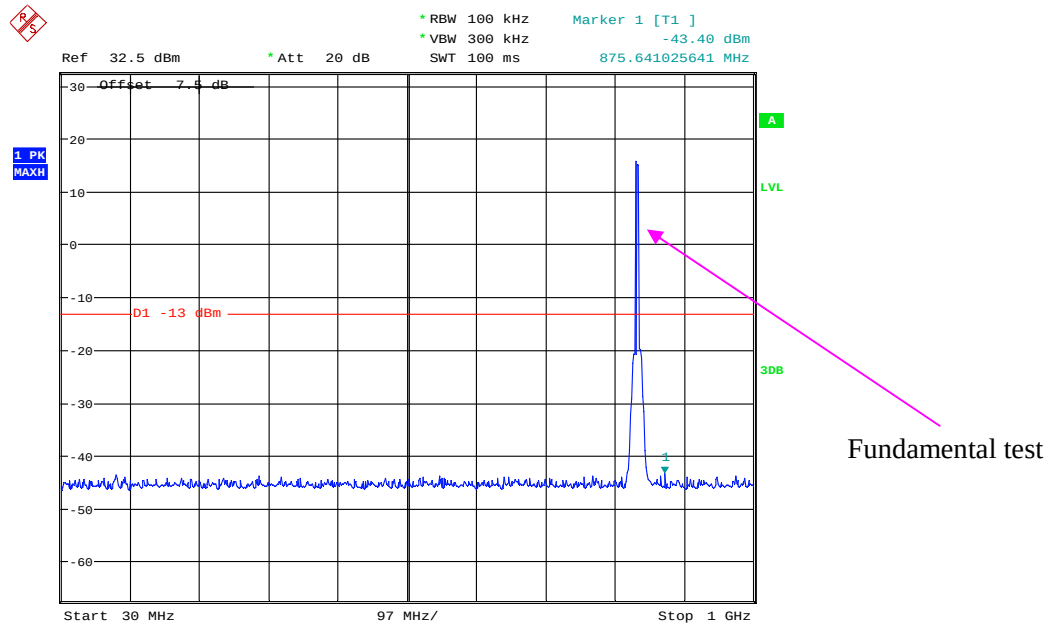
Date: 15.JAN.2019 20:19:15

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



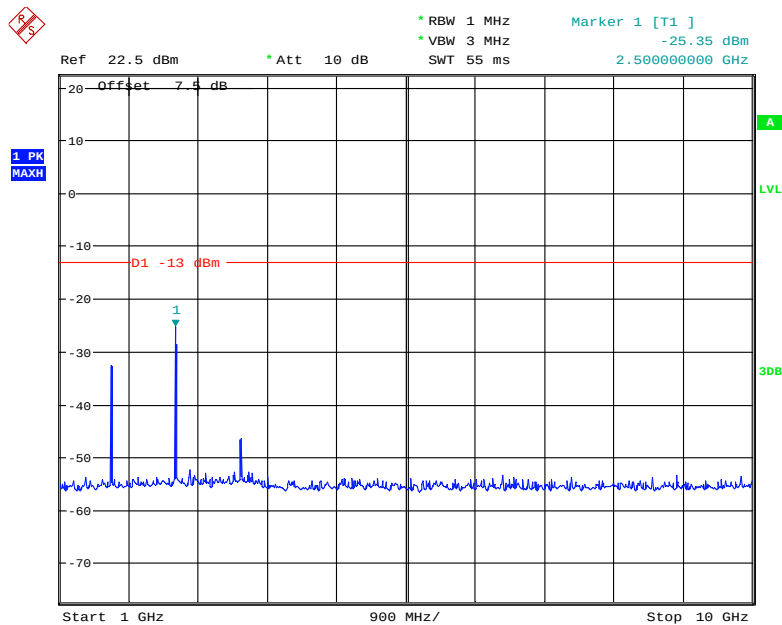
Date: 15.JAN.2019 20:21:39

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



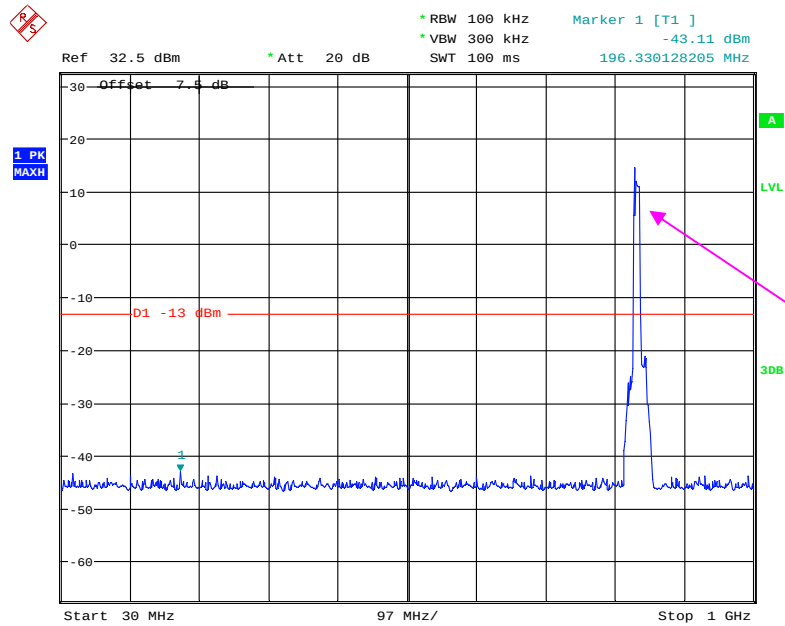
Date: 15.JAN.2019 20:19:53

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



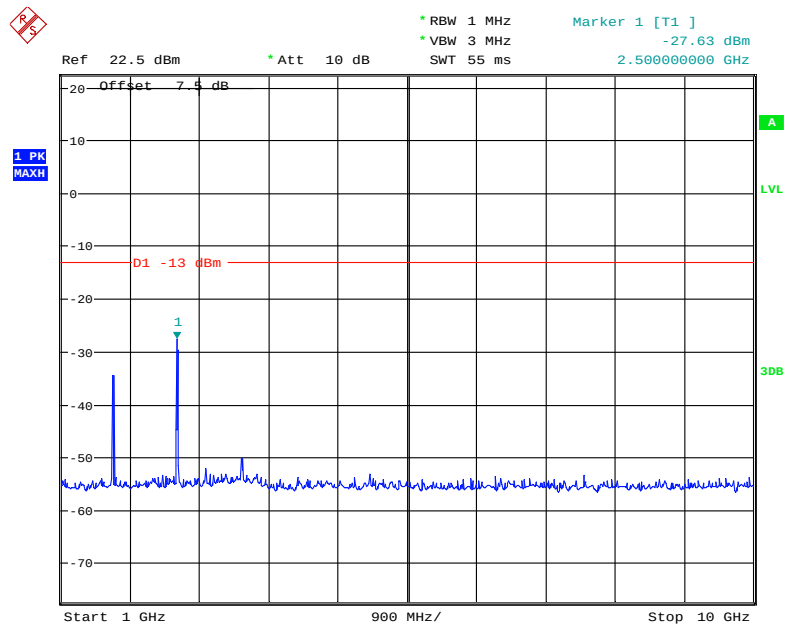
Date: 15.JAN.2019 20:21:22

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



Date: 15.JAN.2019 20:20:20

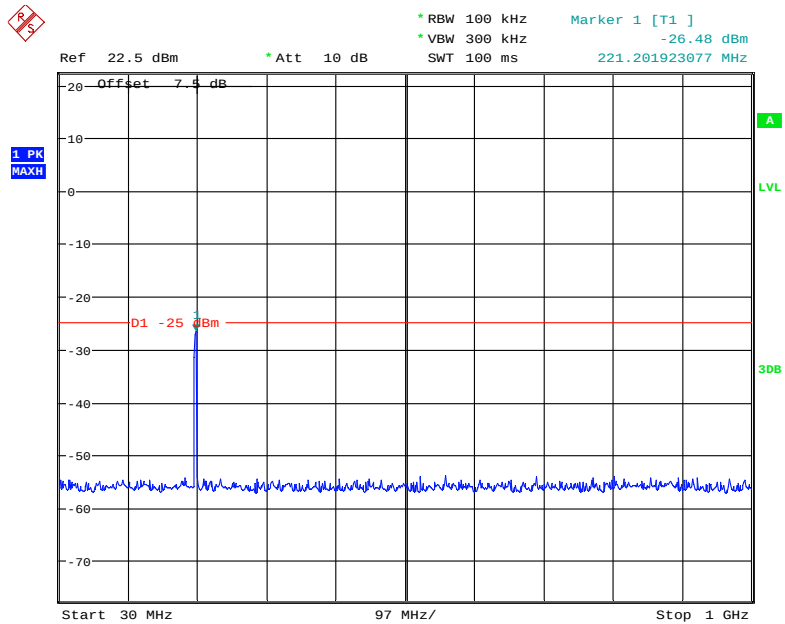
1 GHz – 10 GHz (10.0 MHz, Middle Channel)



Date: 15.JAN.2019 20:21:04

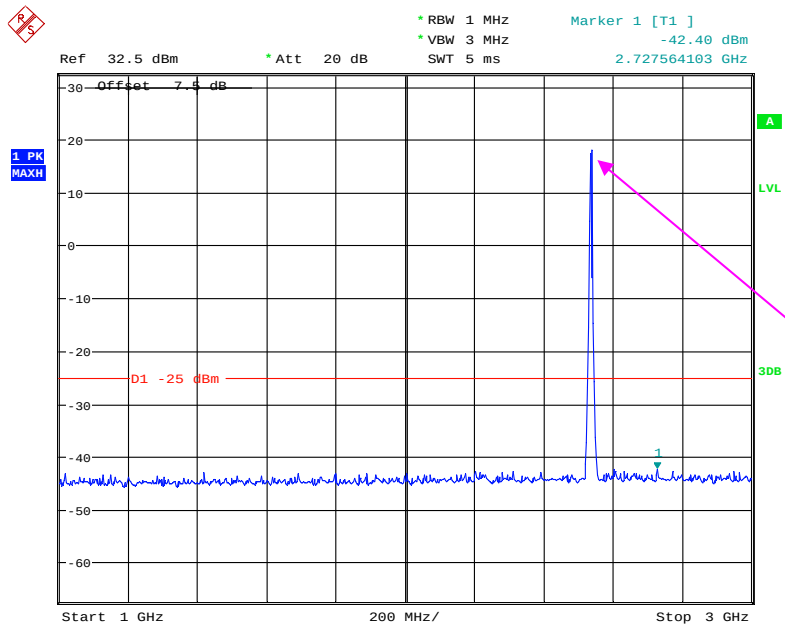
LTE Band 7:

30 MHz – 1 GHz (5.0 MHz, Middle Channel)



Date: 15.JAN.2019 20:05:07

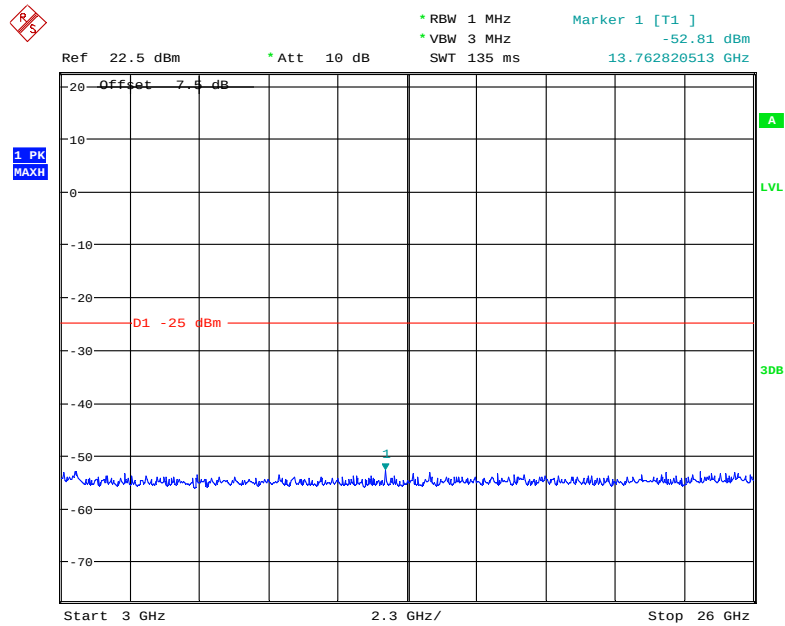
1 GHz – 3.0 GHz (5.0 MHz, Middle Channel)



Fundamental test

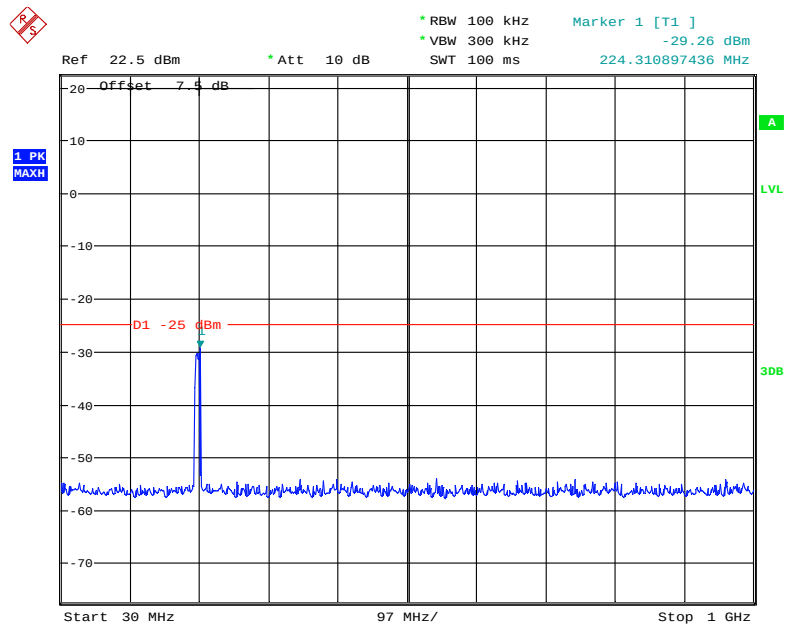
Date: 15.JAN.2019 20:08:53

3.0 GHz – 26 GHz (5.0 MHz, Middle Channel)



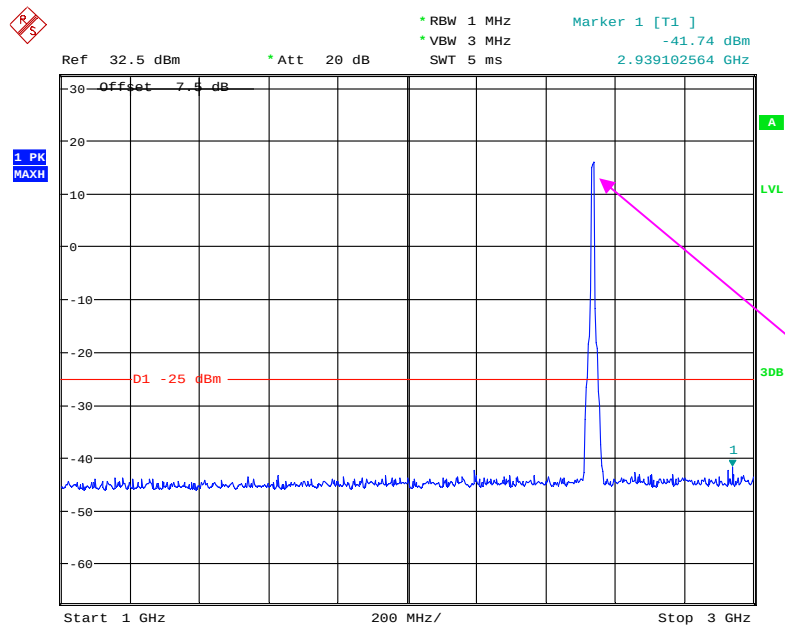
Date: 15.JAN.2019 20:09:22

30 MHz – 1.0 GHz (10.0 MHz, Middle Channel)



Date: 15.JAN.2019 20:05:38

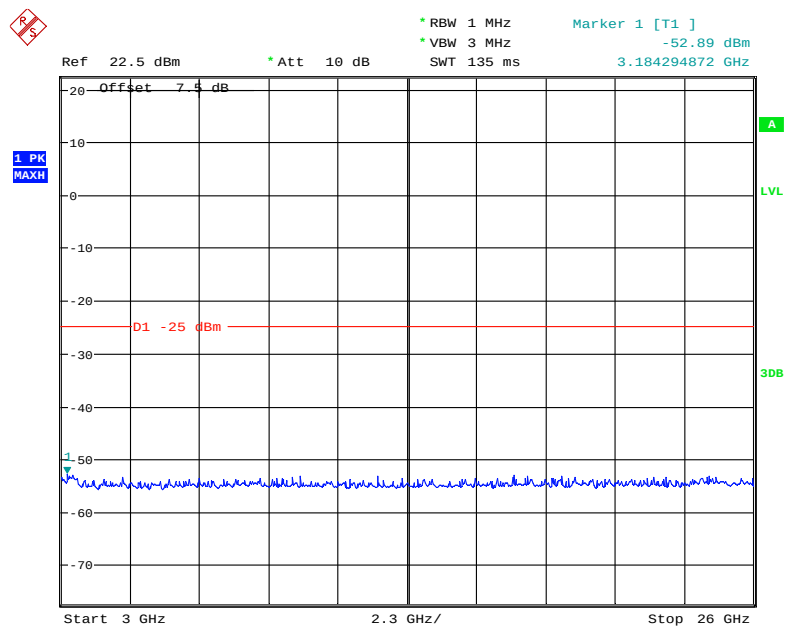
1 GHz – 3 GHz (10.0 MHz, Middle Channel)



Fundamental test

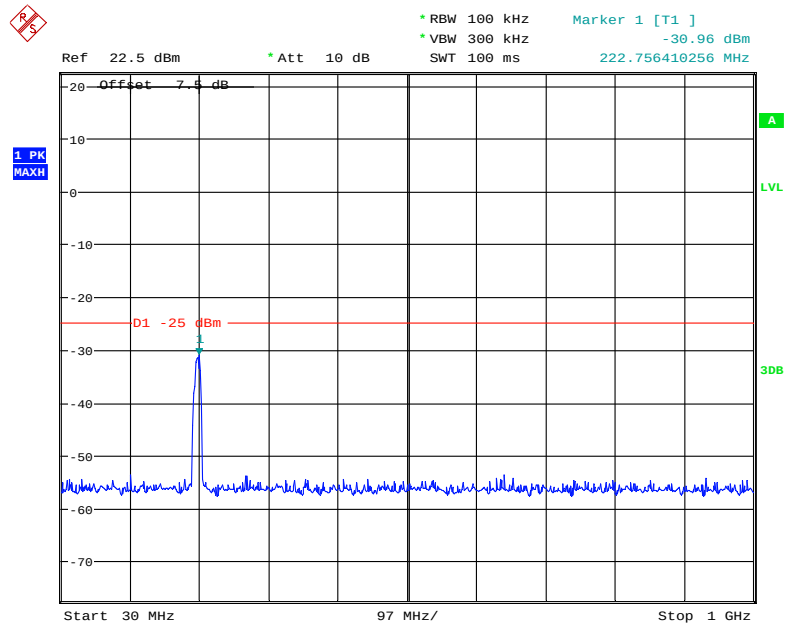
Date: 15.JAN.2019 20:07:43

3 GHz – 26 GHz (10.0 MHz, Middle Channel)



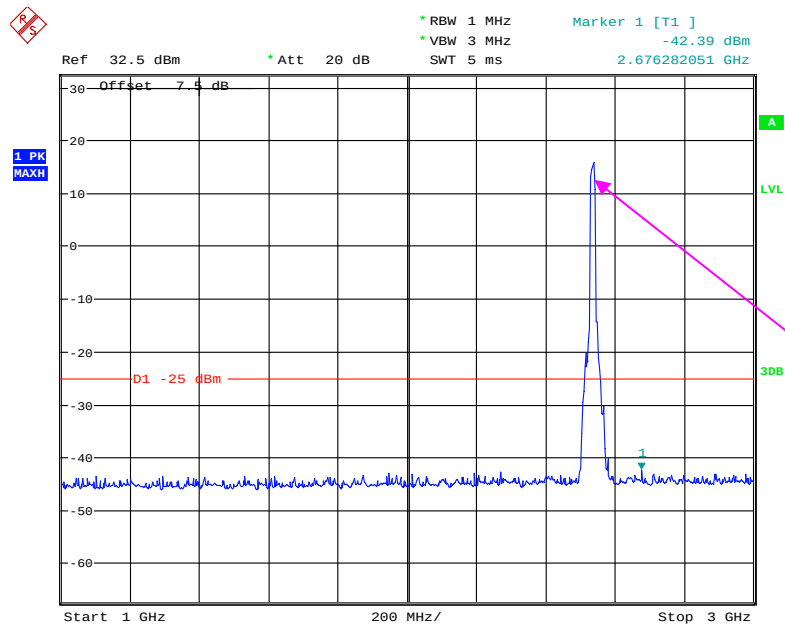
Date: 15.JAN.2019 20:09:50

30 MHz – 1 GHz (15.0 MHz, Middle Channel)



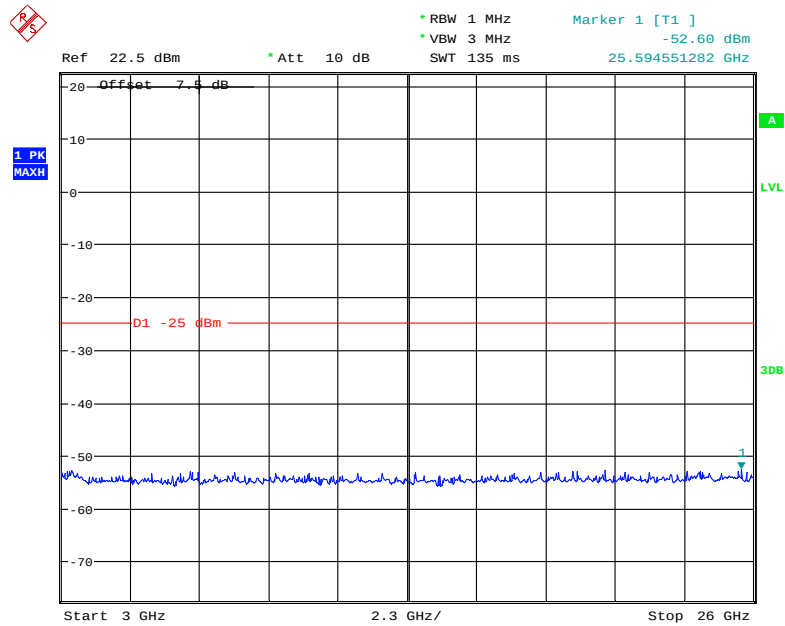
Date: 15.JAN.2019 20:05:55

1 GHz – 3 GHz (15.0 MHz, Middle Channel)



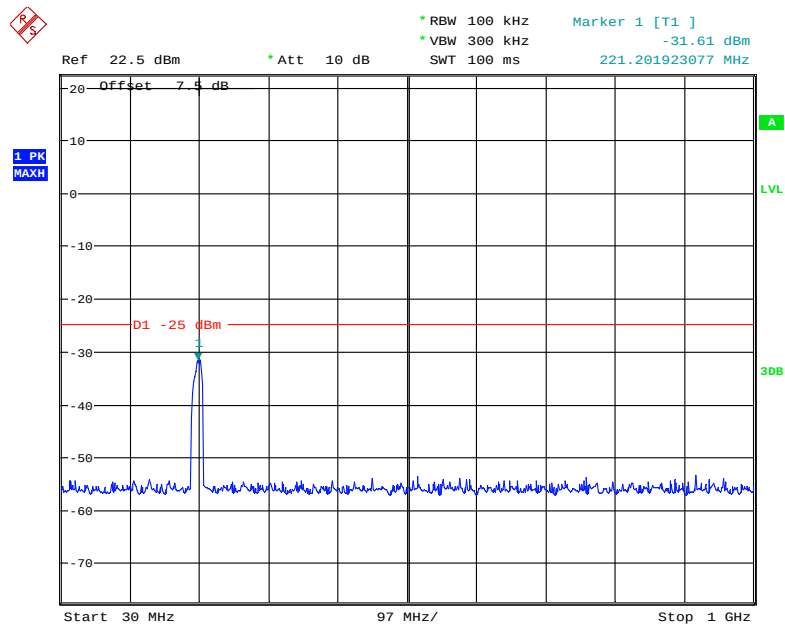
Date: 15.JAN.2019 20:07:05

3 GHz – 26 GHz (15.0 MHz, Middle Channel)



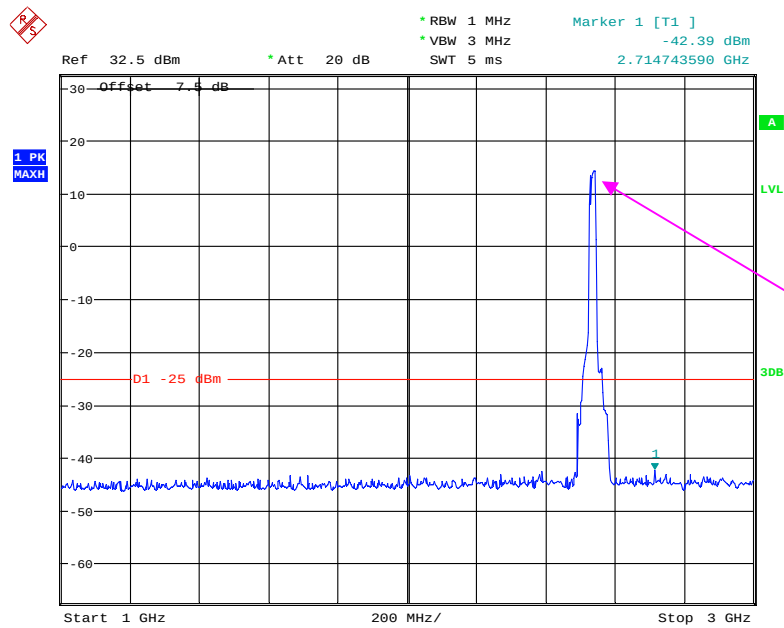
Date: 15.JAN.2019 20:10:15

30 MHz – 1 GHz (20.0 MHz, Middle Channel)



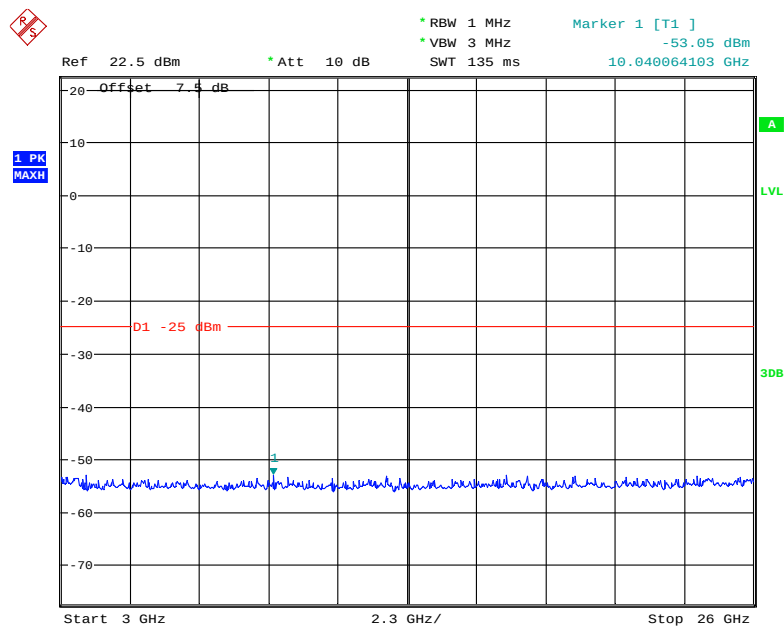
Date: 15.JAN.2019 20:06:15

1 GHz – 3 GHz (20.0 MHz, Middle Channel)

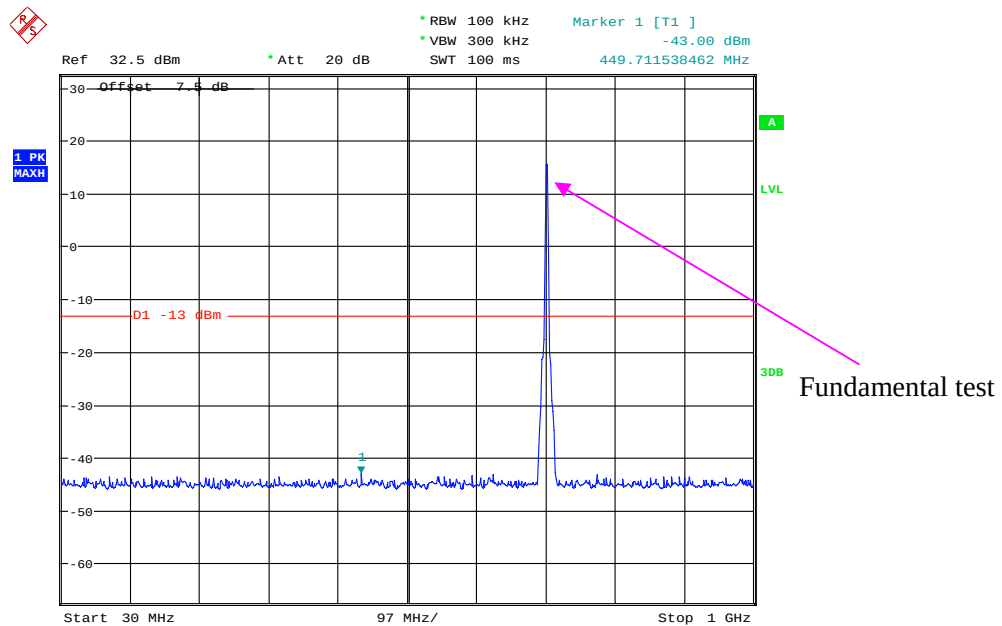


Date: 15.JAN.2019 20:06:45

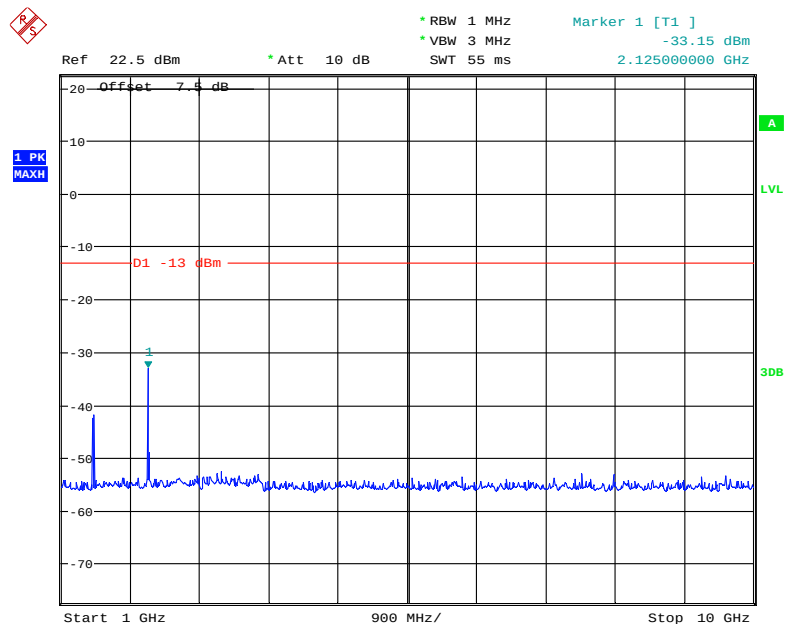
3 GHz – 26 GHz (20.0 MHz, Middle Channel)



Date: 15.JAN.2019 20:11:24

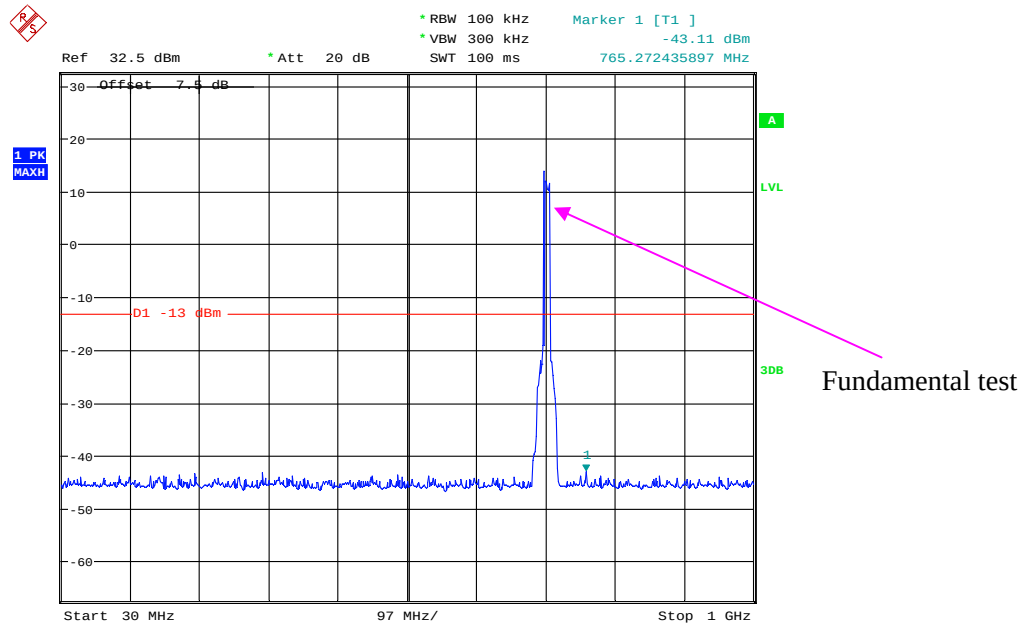
LTE Band 17:**30 MHz - 1 GHz (5.0 MHz, Middle Channel)**

Date: 13.JAN.2019 13:51:43

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

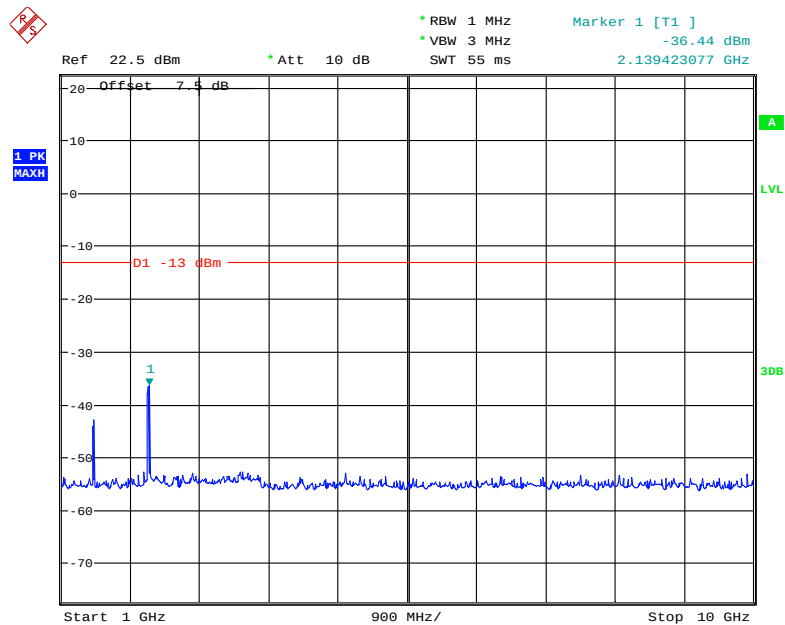
Date: 13.JAN.2019 13:52:12

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



Date: 13.JAN.2019 13:50:25

1 GHz - 10 GHz (10.0 MHz, Middle Channel)



Date: 13.JAN.2019 13:52:35

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

Applicable Standard

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

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 receiving 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.

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Shawn Xiao on 2019-01-11.

EUT operation mode: Transmitting

Pre-scan with Low, Middle and High channel, the worst case as below:

30 MHz ~ 10 GHz:

Cellular Band (Part 22H)

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
GSM Mode, middle channel										
235.18	35.87	15	1.1	H	-65.1	1.88	0	-66.98	-13	53.98
235.18	36.69	63	1.8	V	-63.1	1.88	0	-64.98	-13	51.98
1673.20	61.28	351	2.2	H	-45.8	1.30	8.90	-38.20	-13	25.20
1673.20	60.02	195	1.6	V	-46.5	1.30	8.90	-38.90	-13	25.90
2509.80	59.25	43	1.5	H	-44.3	2.60	10.20	-36.70	-13	23.70
2509.80	56.36	47	2.2	V	-46.6	2.60	10.20	-39.00	-13	26.00
3346.40	47.20	142	1.2	H	-53.1	1.50	11.70	-42.90	-13	29.90
3346.40	46.39	300	1.9	V	-54.0	1.50	11.70	-43.80	-13	30.80
WCDMA Mode, Middle channel										
235.18	35.47	174	1.3	H	-65.5	1.88	0	-67.38	-13	54.38
235.18	35.44	5	1.7	V	-64.4	1.88	0	-66.28	-13	53.28
1673.20	56.90	55	2.5	H	-50.2	1.30	8.90	-42.60	-13	29.60
1673.20	54.97	81	1.4	V	-51.5	1.30	8.90	-43.90	-13	30.90
2509.80	45.90	80	1.3	H	-57.6	2.60	10.20	-50.00	-13	37.00
2509.80	44.68	14	1.5	V	-58.2	2.60	10.20	-50.60	-13	37.60

30 MHz ~ 20 GHz:

PCS Band (Part 24E)

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
GSM Mode, middle channel										
235.18	36.97	260	1.5	H	-64.0	1.88	0	-65.88	-13	52.88
235.18	36.98	198	2.1	V	-62.8	1.88	0	-64.68	-13	51.68
3760.00	44.55	129	1.7	H	-56.7	1.50	11.80	-46.40	-13	33.40
3760.00	44.03	268	2.0	V	-56.7	1.50	11.80	-46.40	-13	33.40
WCDMA Mode Band II, Middle channel										
235.18	36.95	283	1.4	H	-64.0	1.88	0	-65.88	-13	52.88
235.18	36.70	255	1.9	V	-63.1	1.88	0	-64.98	-13	51.98
3760.00	55.70	351	1.5	H	-45.5	1.50	11.80	-35.20	-13	22.20
3760.00	54.90	293	1.5	V	-45.9	1.50	11.80	-35.60	-13	22.60

30 MHz ~ 20 GHz:**AWS Band (Part 27)**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)		Limit (dBm)	Margin (dB)
WCDMA Mode Band IV, Middle channel										
235.18	35.45	314	1.2	H	-65.5	1.88	0	-67.38	-13	54.38
235.18	35.94	178	1.7	V	-63.9	1.88	0	-65.78	-13	52.78
3465.20	44.86	94	2.0	H	-55.5	1.50	12.00	-45.00	-13	32.00
3465.20	45.48	326	2.2	V	-56.0	1.50	12.00	-45.10	-13	32.50

LTE Band: (Pre-scan with all the bandwidth, and worse case as below)

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dB)			
Band 2										
Test frequency range:30 MHz ~ 20 GHz										
235.18	36.93	16	2.1	H	-64.0	1.88	0	-65.88	-13	52.88
235.18	36.32	43	2.2	V	-63.5	1.88	0	-65.38	-13	52.38
3760.00	52.96	27	1.6	H	-48.3	1.50	11.80	-38.00	-13	25.00
3760.00	50.30	277	2.4	V	-50.5	1.50	11.80	-40.20	-13	27.20
Band 4										
Test frequency range:30 MHz ~ 18 GHz										
235.18	35.99	42	2.0	H	-65.0	1.88	0	-66.88	-13	53.88
235.18	36.33	23	1.4	V	-63.5	1.88	0	-65.38	-13	52.38
3465.00	43.02	335	1.5	H	-57.4	1.50	12.00	-46.90	-13	33.90
3465.00	43.16	198	1.6	V	-58.0	1.50	12.00	-47.50	-13	34.50
Band 5										
Test frequency range:30 MHz ~ 10 GHz										
235.18	35.70	320	1.1	H	-65.3	1.88	0	-67.18	-13	54.18
235.18	36.04	8	2.2	V	-63.8	1.88	0	-65.68	-13	52.68
1673.00	59.35	42	2.0	H	-47.7	1.30	8.90	-40.10	-13	27.10
1673.00	56.40	228	2.2	V	-50.1	1.30	8.90	-42.50	-13	29.50
Band 7										
Test frequency range: 30 MHz ~ 26GHz										
235.18	36.80	228	1.5	H	-64.2	1.88	0	-66.08	-25	41.08
235.18	36.78	94	2.5	V	-63.0	1.88	0	-64.88	-25	39.88
5070.00	45.80	169	1.4	H	-52.1	1.60	12.10	-41.60	-25	16.60
5070.00	44.60	43	1.3	V	-53.3	1.60	12.10	-42.80	-25	17.80
Band 17										
Test frequency range: 30 MHz ~ 10GHz										
235.18	35.11	235	1.0	H	-65.9	1.88	0	-67.78	-13	54.78
235.18	35.19	248	1.7	V	-64.6	1.88	0	-66.48	-13	53.48
1420.00	61.34	197	1.1	H	-46.5	1.60	7.90	-40.20	-13	27.20
1420.00	57.90	332	2.1	V	-50.2	1.60	7.90	-43.90	-13	30.90

Note:

- 1) Absolute Level = Substituted Level - Cable loss + Antenna Gain
- 2) Margin = Limit- Absolute Level

FCC § 22.917 (a);§ 24.238 (a); §27.53 (h)(m) - BAND EDGES**Applicable Standard**

According to § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

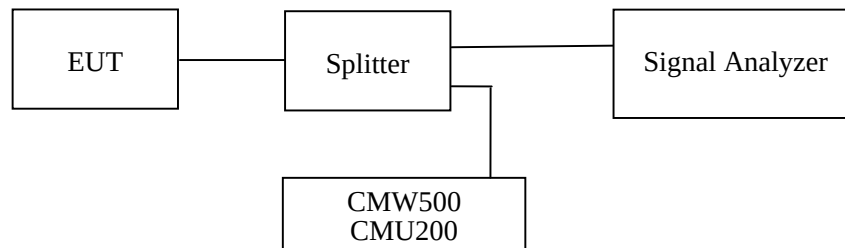
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to 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.

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**

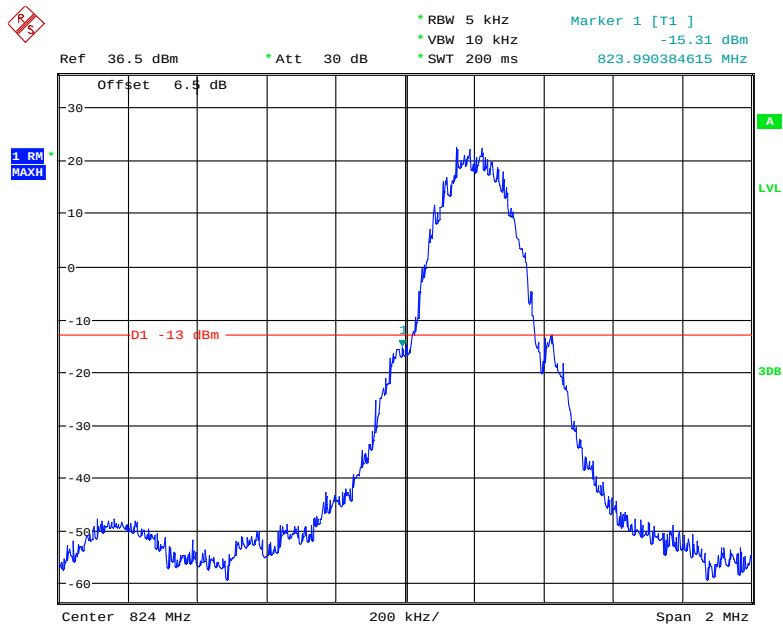
Temperature:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Shawn Xiao on 2019-01-15.

EUT operation mode: Transmitting

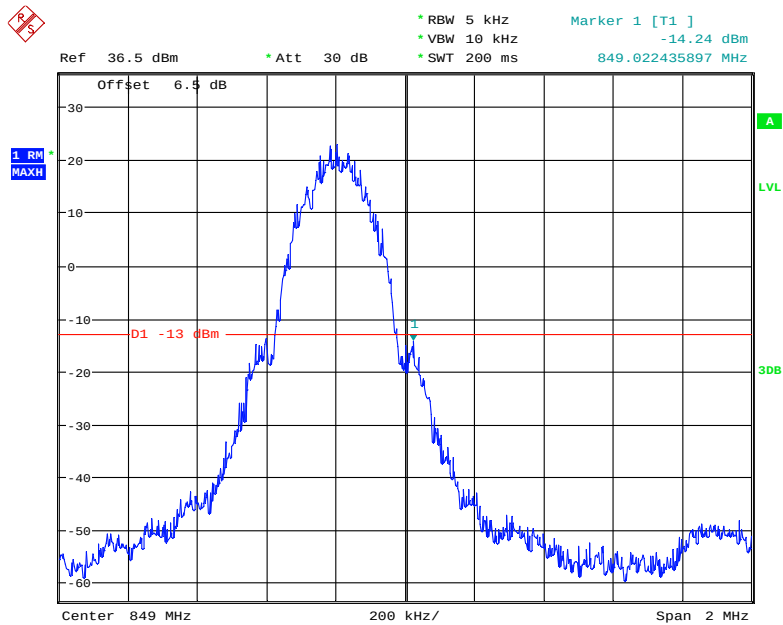
Test Result: Compliance. Please refer to the following plots.

Cellular Band, Left Band Edge for GSM (GMSK) Mode



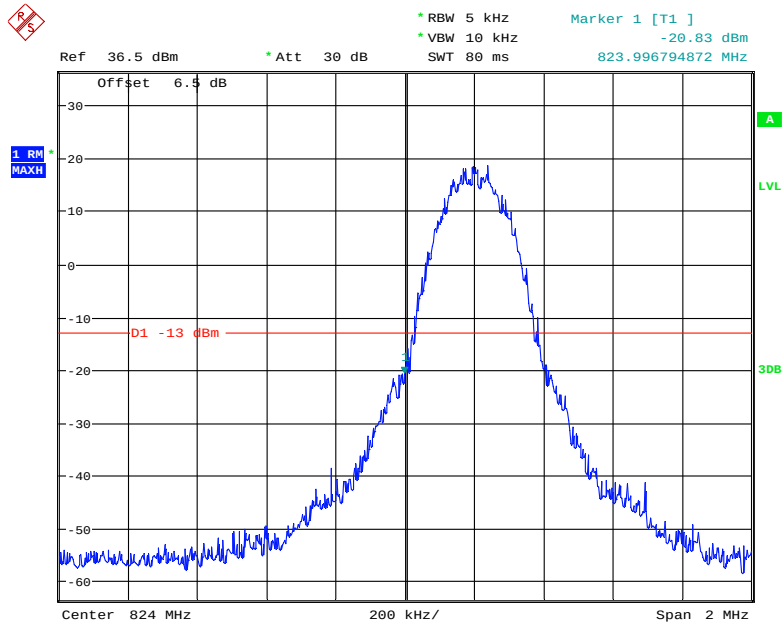
Date: 15.JAN.2019 11:15:38

Cellular Band, Right Band Edge for GSM (GMSK) Mode



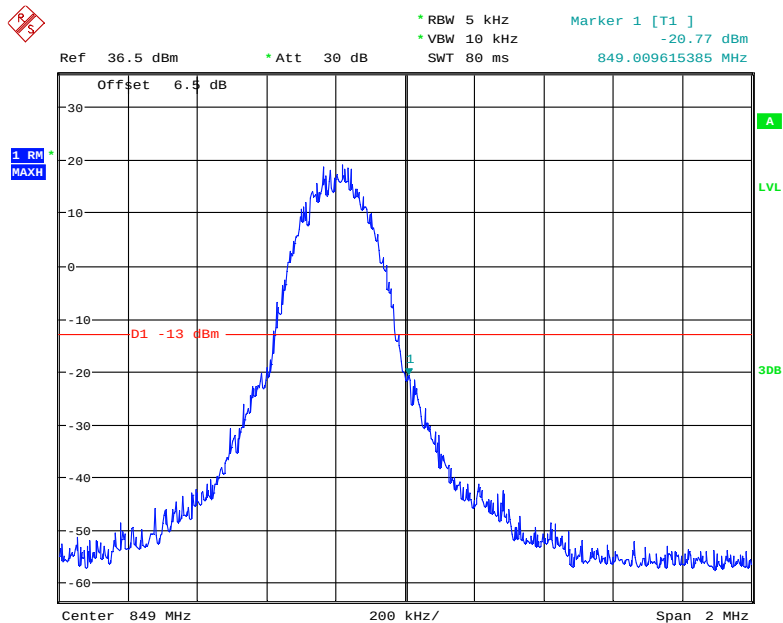
Date: 15.JAN.2019 11:16:38

Cellular Band, Left Band Edge for EDGE Mode



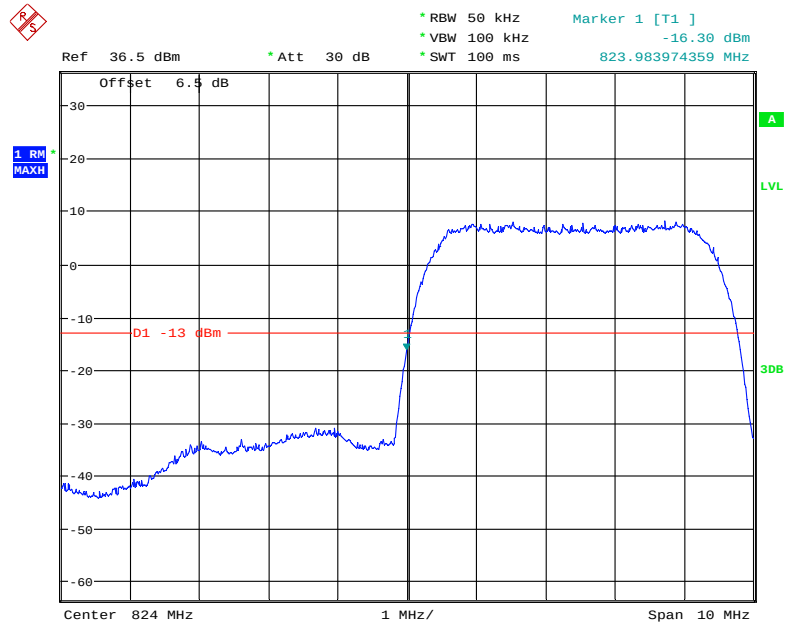
Date: 15.JAN.2019 11:30:57

Cellular Band, Right Band Edge for EDGE Mode



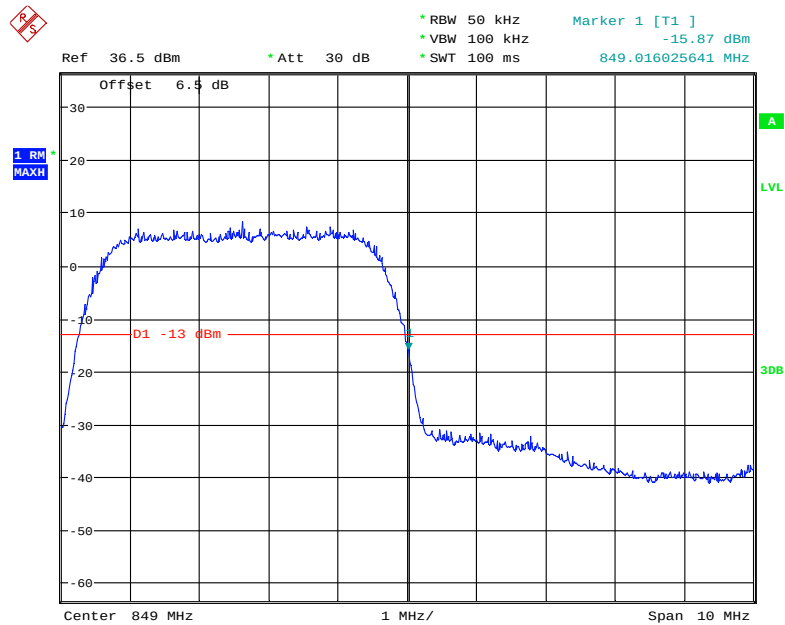
Date: 15.JAN.2019 11:31:53

Cellular Band, Left Band Edge for WCDMA (BPSK) Mode



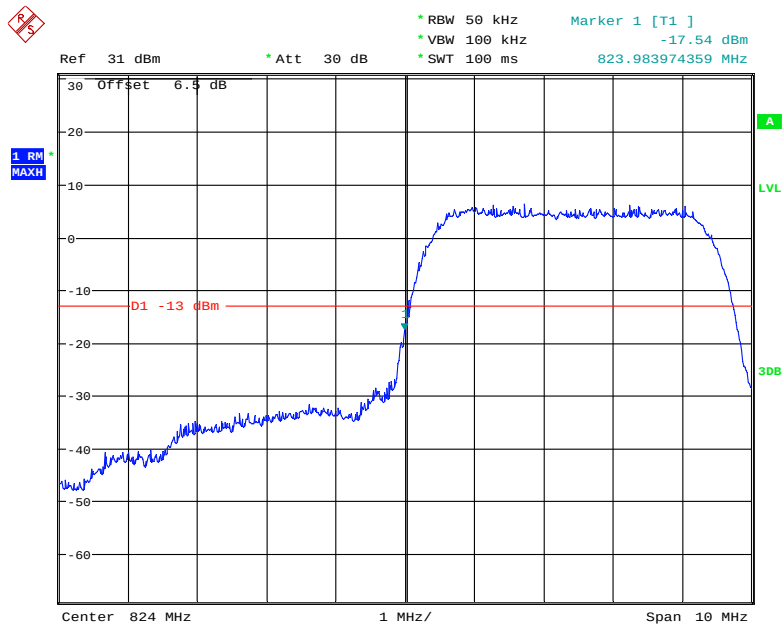
Date: 15.JAN.2019 15:39:19

Cellular Band, Right Band Edge for WCDMA (BPSK) Mode



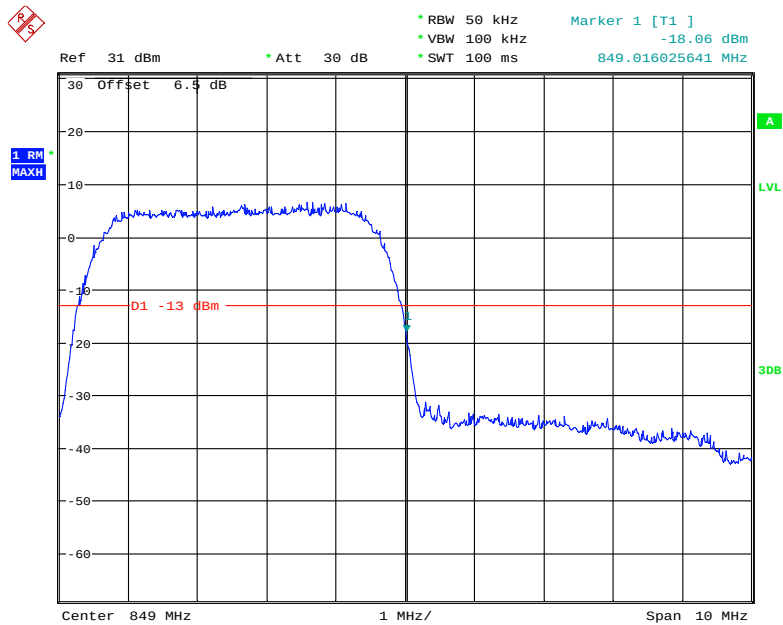
Date: 15.JAN.2019 15:39:47

Cellular Band, Left Band Edge for HSDPA (16QAM) Mode



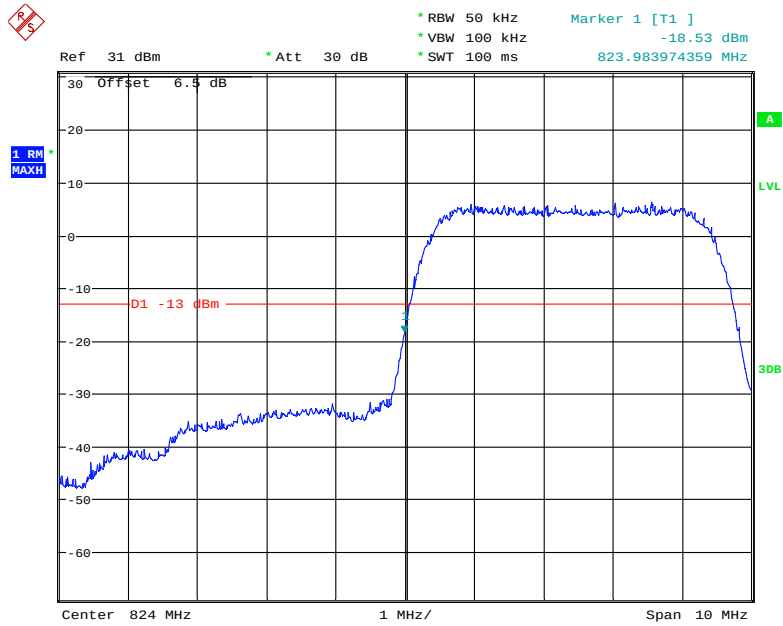
Date: 15.JAN.2019 16:18:16

Cellular Band, Right Band Edge for HSDPA (16QAM) Mode



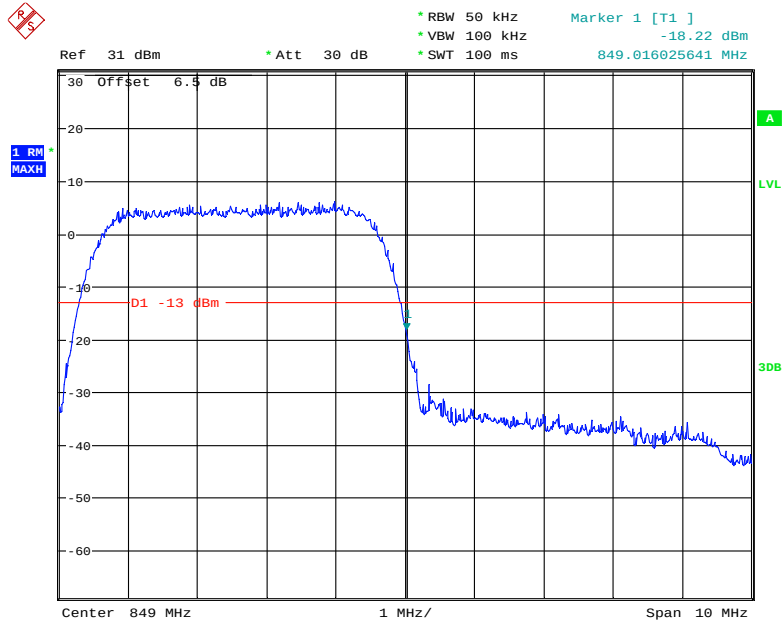
Date: 15.JAN.2019 16:17:48

Cellular Band, Left Band Edge for HSUPA (BPSK) Mode



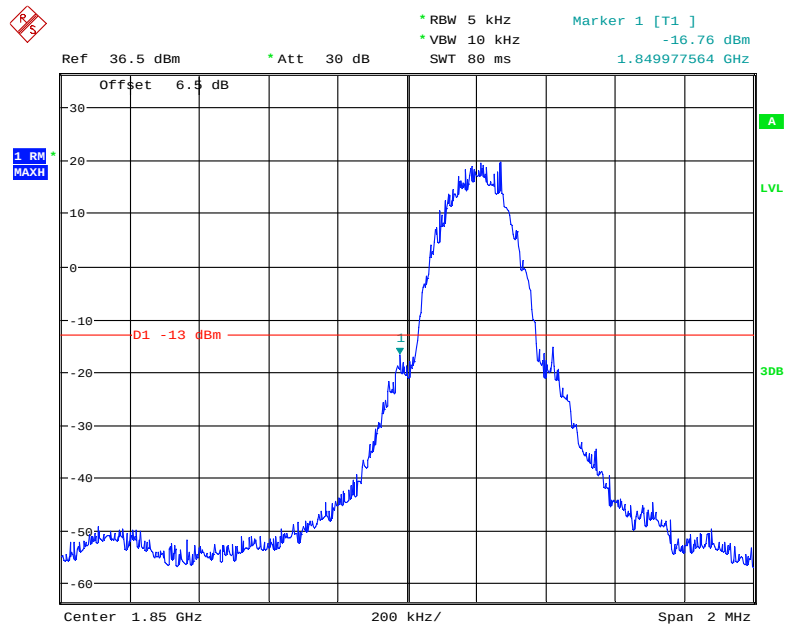
Date: 15.JAN.2019 16:16:18

Cellular Band, Right Band Edge for HSUPA (BPSK) Mode



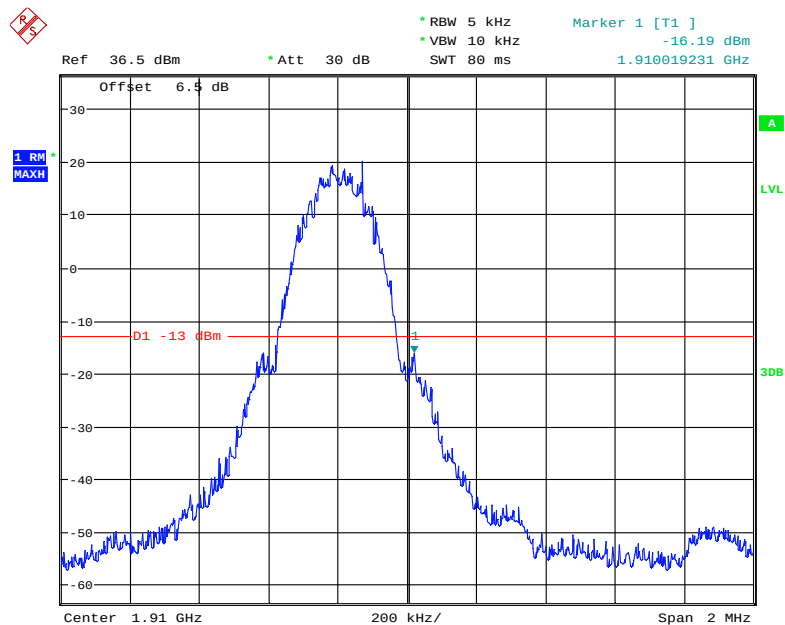
Date: 15.JAN.2019 16:16:45

PCS Band, Left Band Edge for GSM (GMSK) Mode



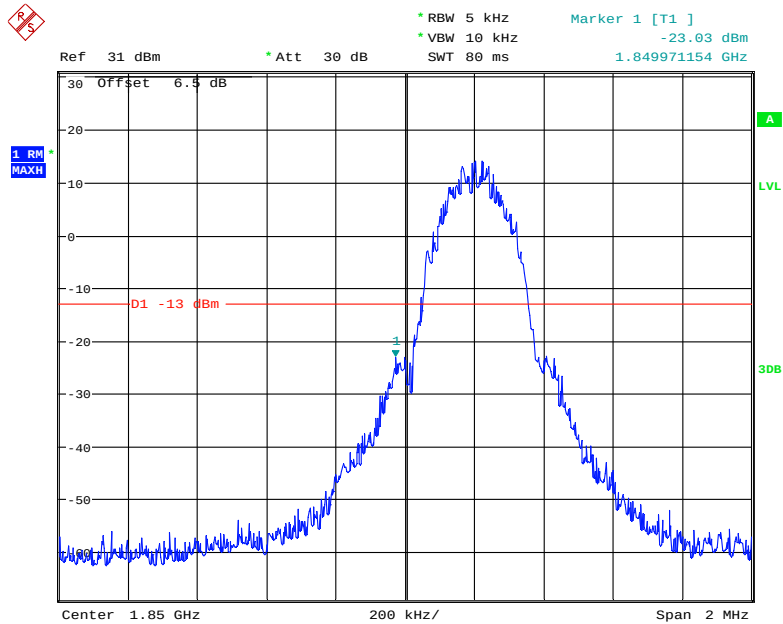
Date: 15.JAN.2019 11:41:56

PCS Band, Right Band Edge for GSM (GMSK) Mode



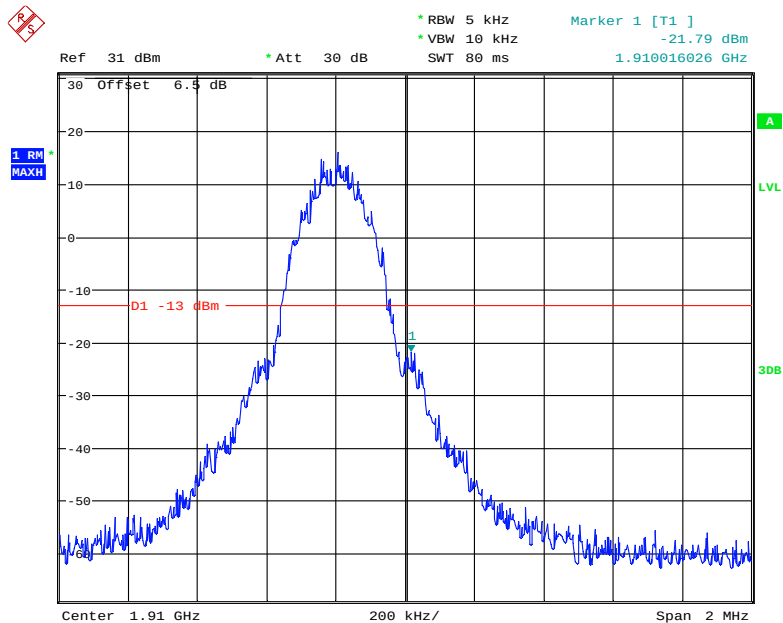
Date: 15.JAN.2019 11:42:42

PCS Band, Left Band Edge for EDGE Mode



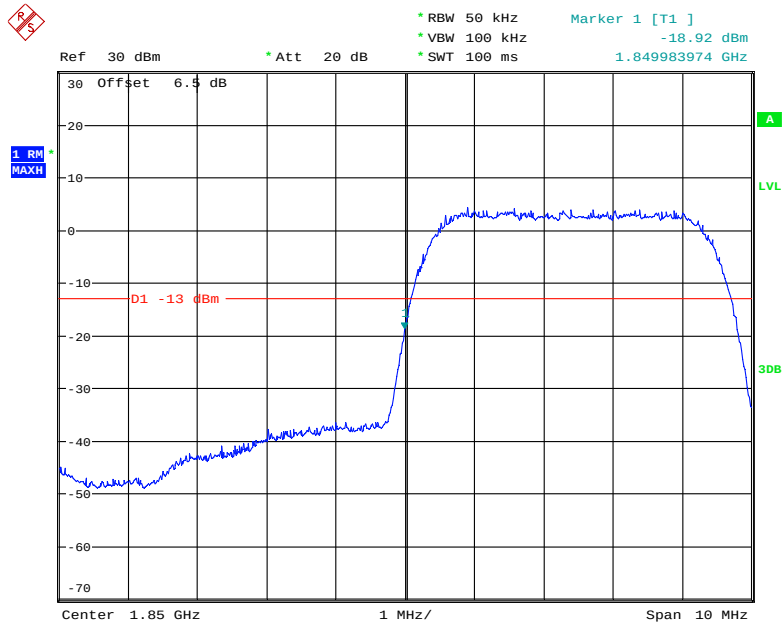
Date: 15.JAN.2019 11:52:55

PCS Band, Right Band Edge for EDGE Mode



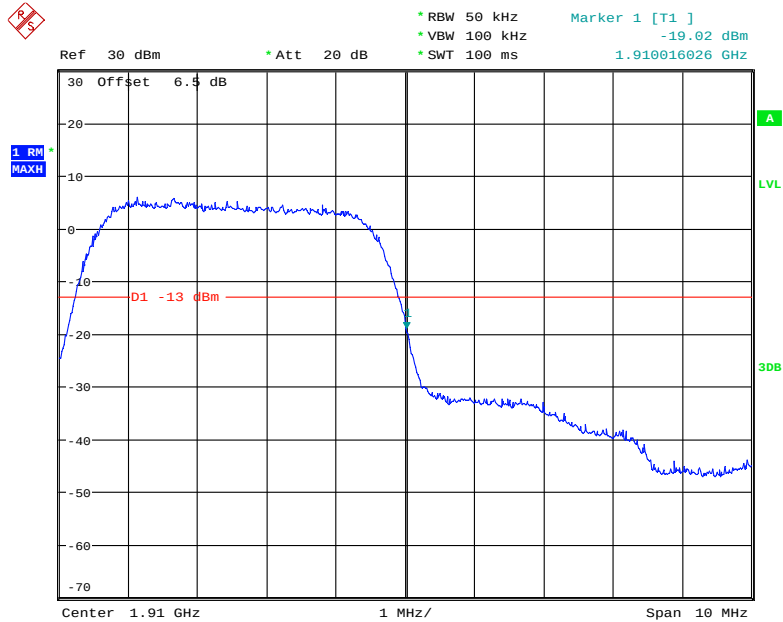
Date: 15.JAN.2019 11:53:46

PCS Band, Left Band Edge for WCDMA (BPSK) Mode



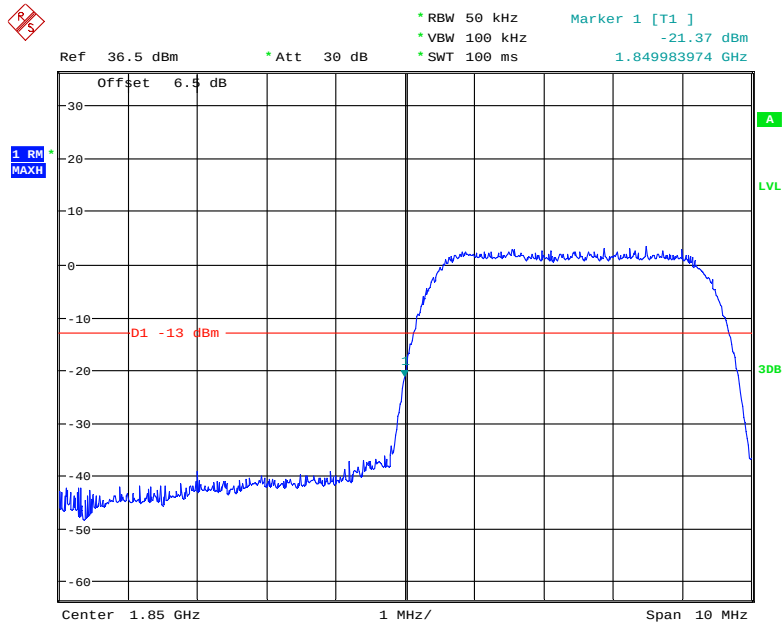
Date: 15.JAN.2019 14:35:54

PCS Band, Right Band Edge for WCDMA (BPSK) Mode



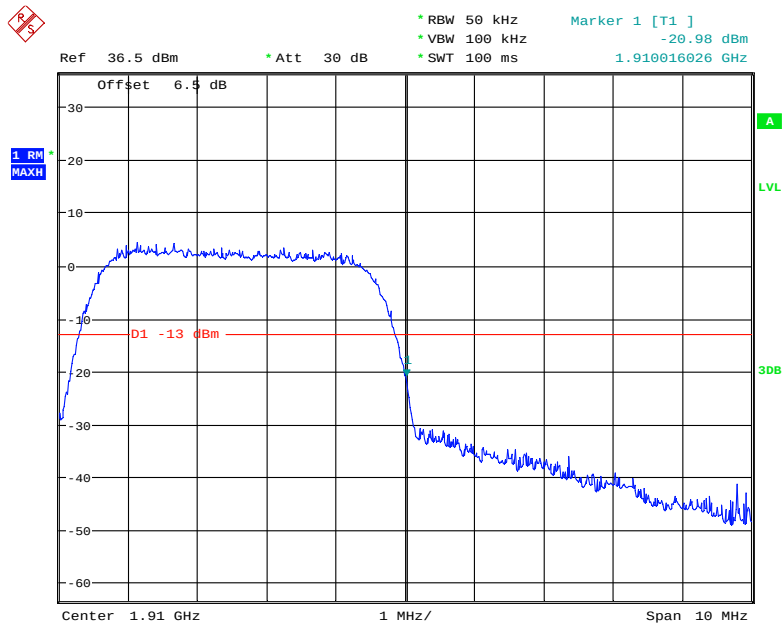
Date: 15.JAN.2019 14:37:20

PCS Band, Left Band Edge for HSDPA (16QAM) Mode



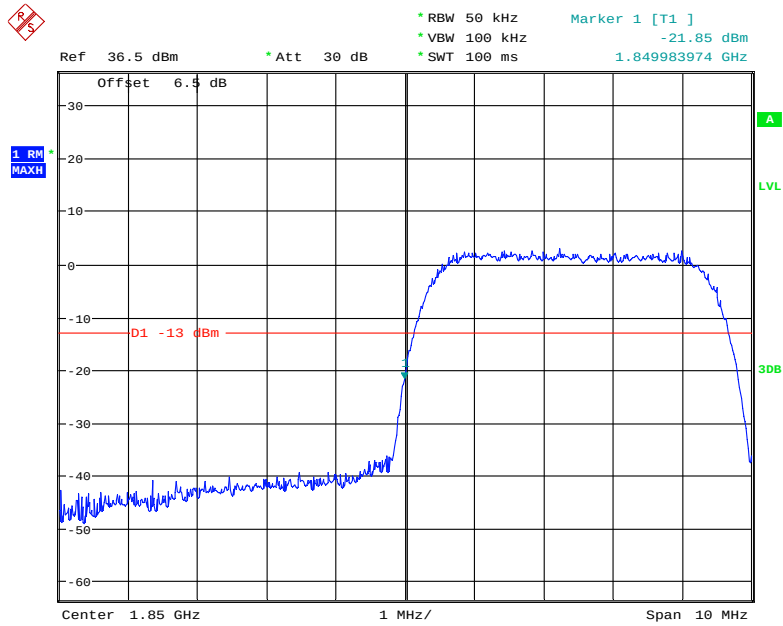
Date: 15.JAN.2019 14:50:34

PCS Band, Right Band Edge for HSDPA (16QAM) Mode



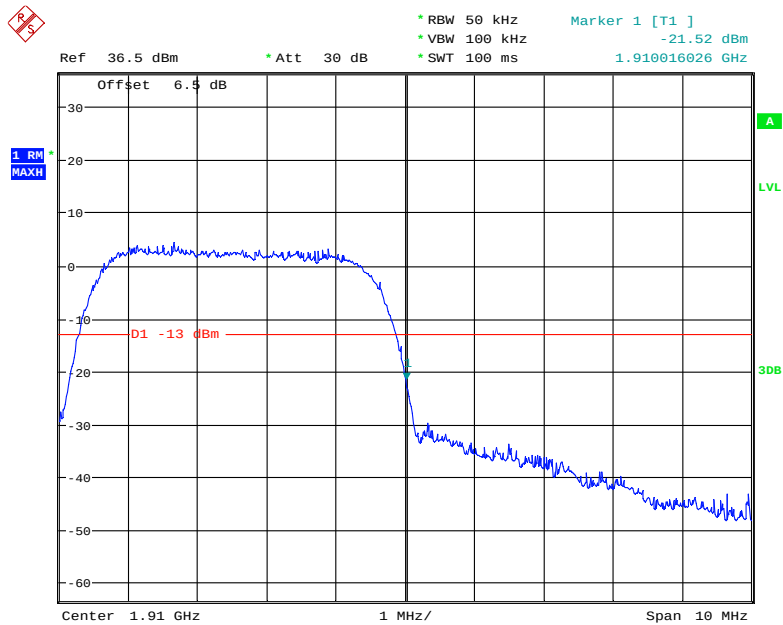
Date: 15.JAN.2019 14:51:09

PCS Band, Left Band Edge for HSUPA (BPSK) Mode



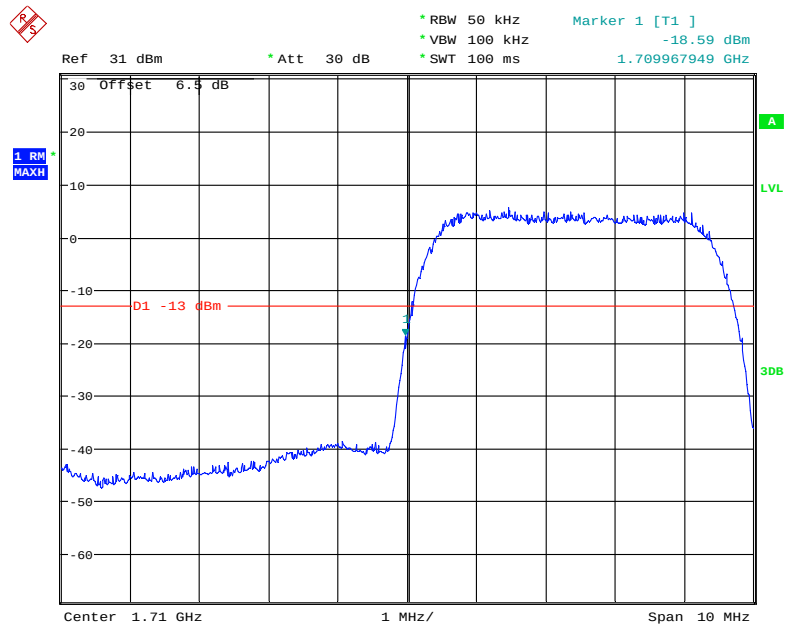
Date: 15.JAN.2019 14:58:48

PCS Band, Right Band Edge for HSUPA (BPSK) Mode



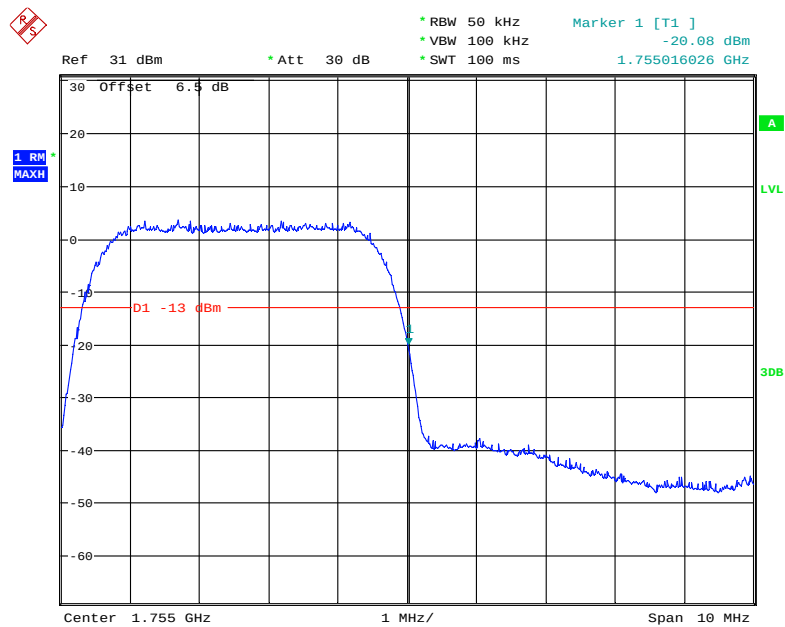
Date: 15.JAN.2019 14:59:39

AWS Band, Left Band Edge for WCDMA (BPSK) Mode



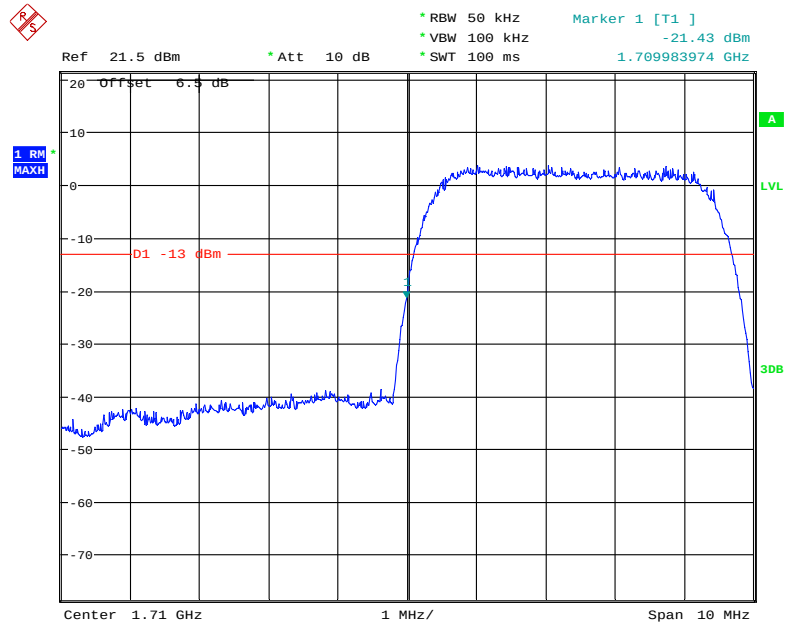
Date: 15.JAN.2019 16:27:18

AWS Band, Right Band Edge for WCDMA (BPSK) Mode



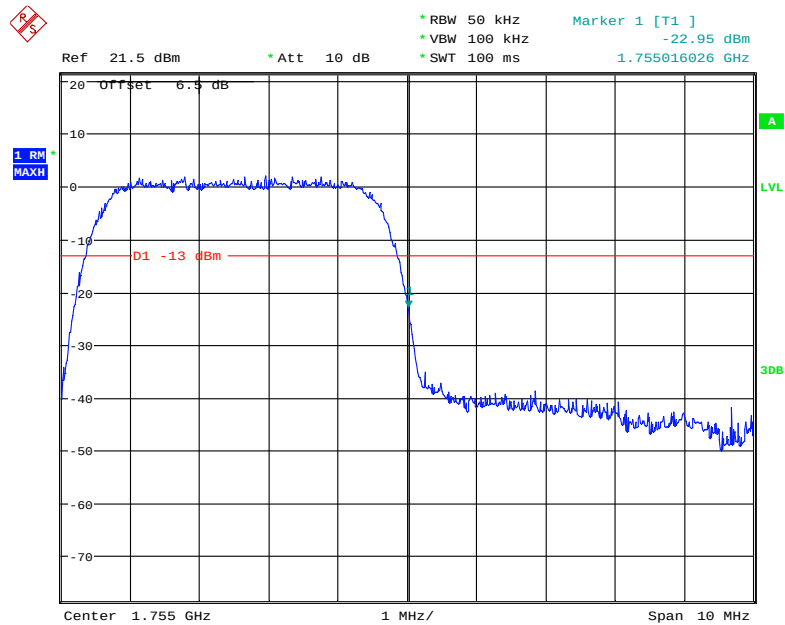
Date: 15.JAN.2019 16:27:53

AWS Band, Left Band Edge for HSDPA (16QAM) Mode



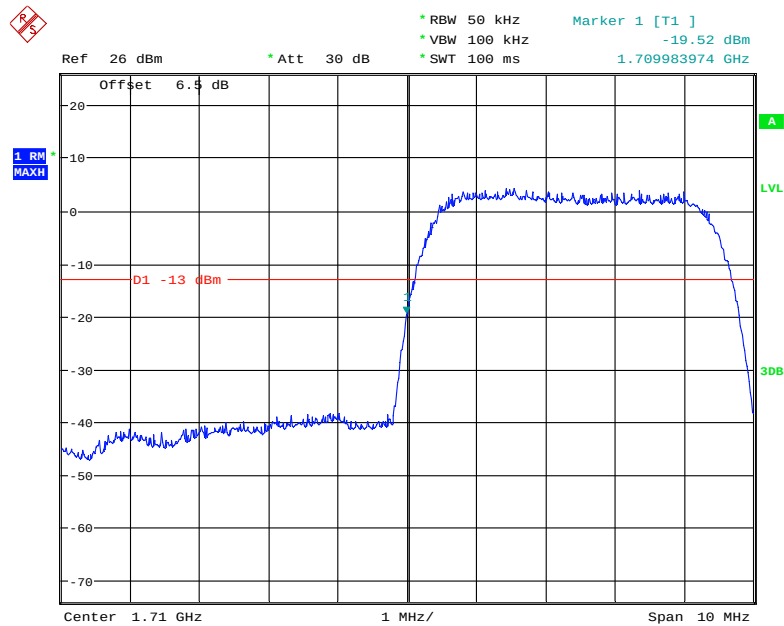
Date: 15.JAN.2019 16:35:35

AWS Band, Right Band Edge for HSDPA (16QAM) Mode



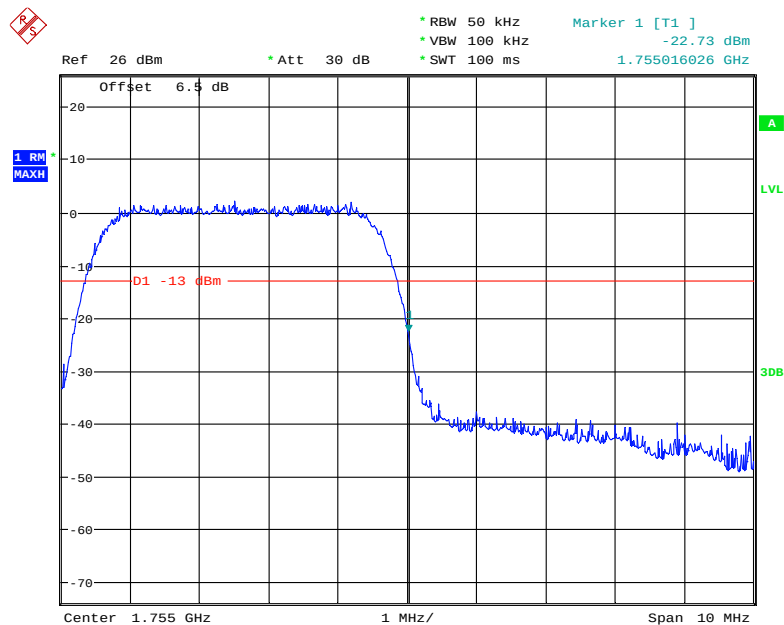
Date: 15.JAN.2019 16:36:18

AWS Band, Left Band Edge for HSUPA (BPSK) Mode

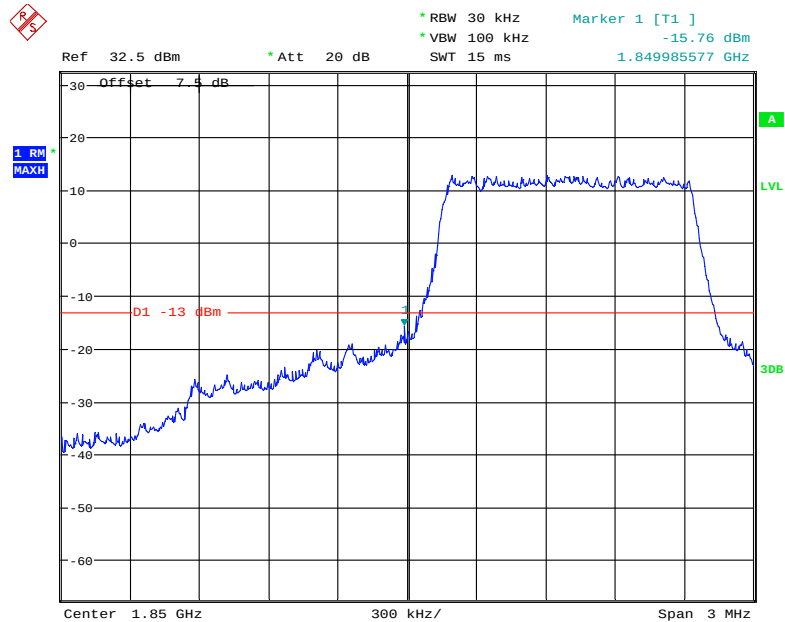


Date: 15.JAN.2019 16:42:04

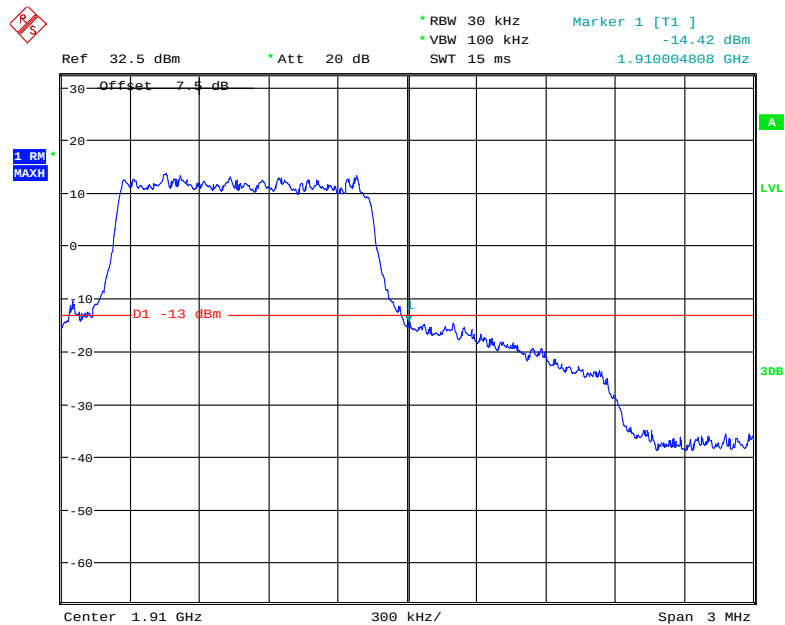
AWS Band, Right Band Edge for HSUPA (BPSK) Mode



Date: 15.JAN.2019 16:42:33

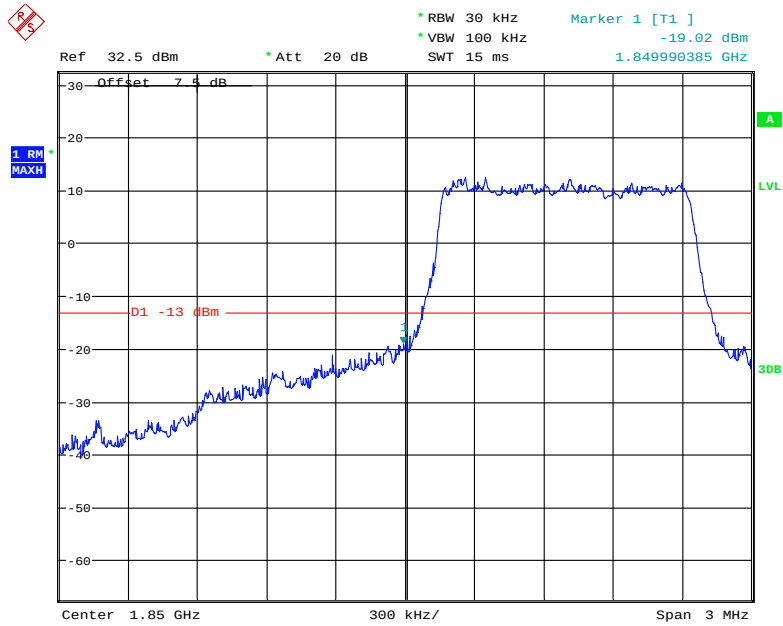
Band 2:**QPSK (1.4 MHz, FULL RB) - Left Band Edge**

Date: 15.JAN.2019 20:58:32

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

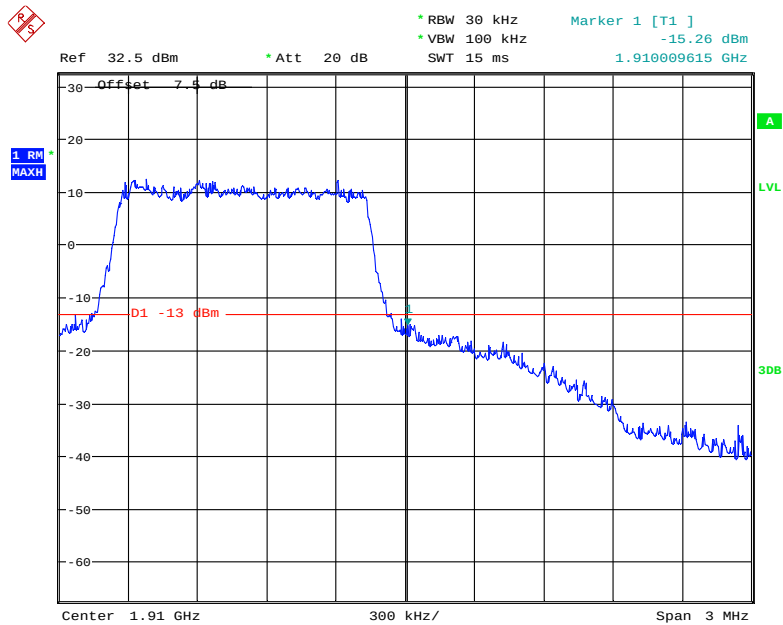
Date: 15.JAN.2019 21:02:17

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



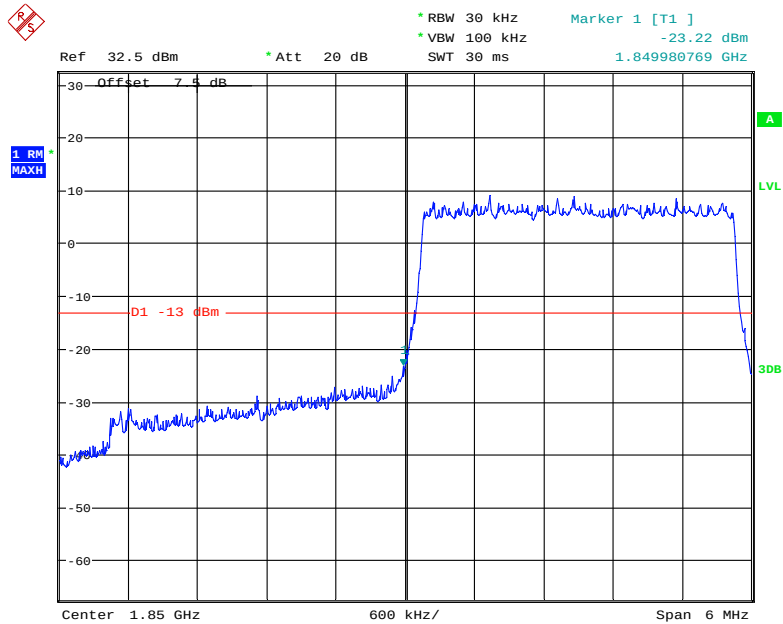
Date: 15.JAN.2019 20:59:33

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



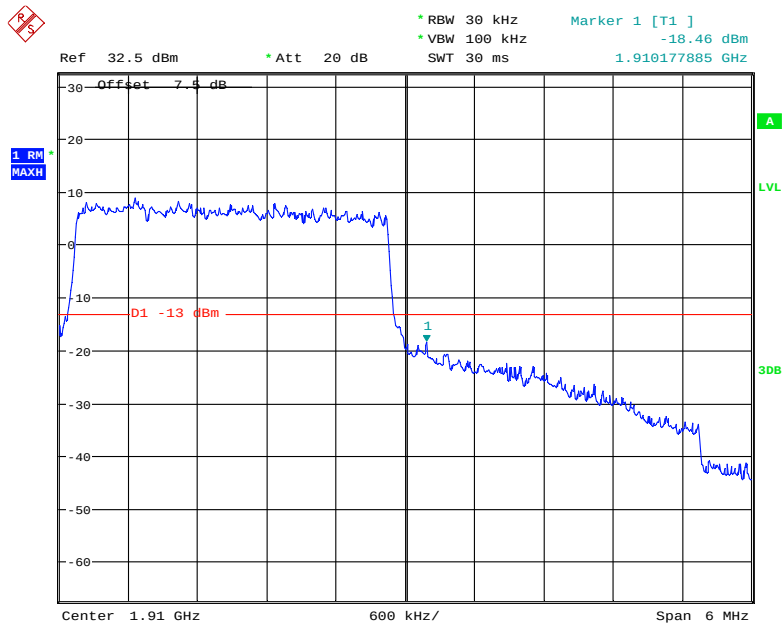
Date: 15.JAN.2019 21:00:29

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



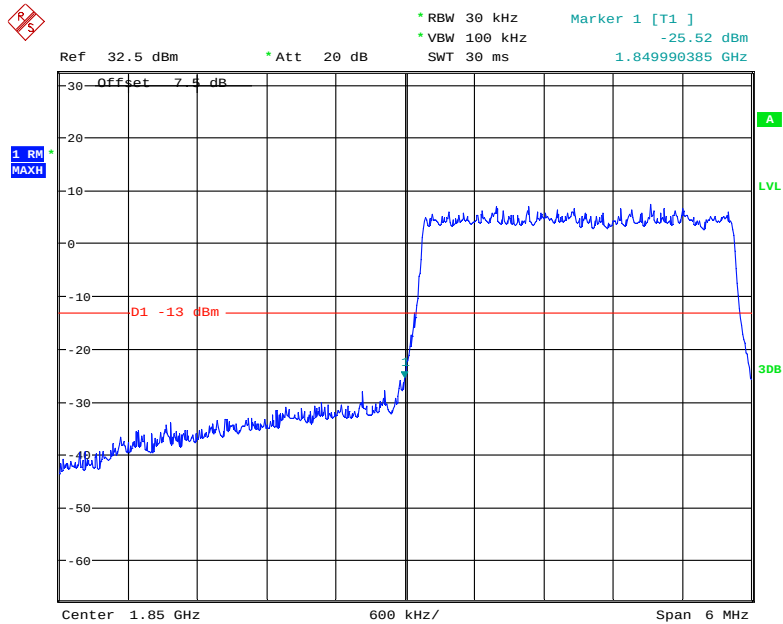
Date: 15.JAN.2019 21:11:44

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



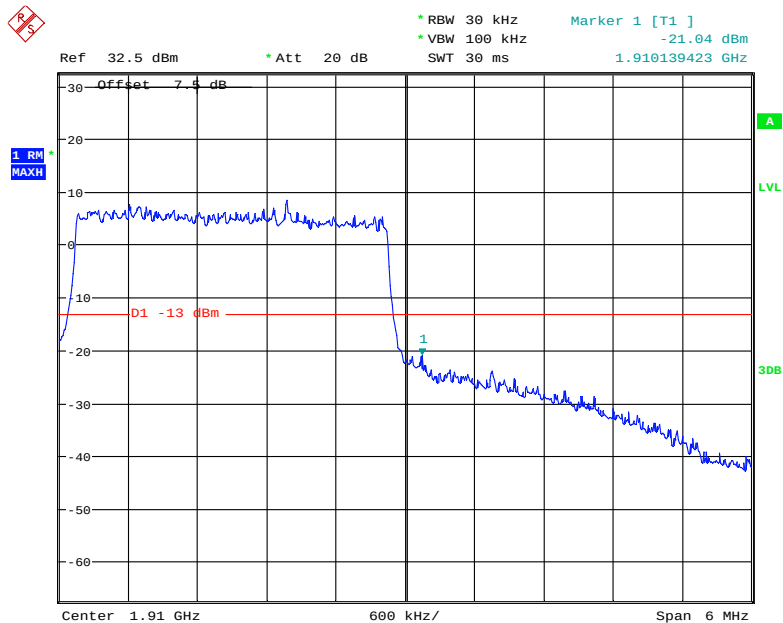
Date: 15.JAN.2019 21:03:48

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



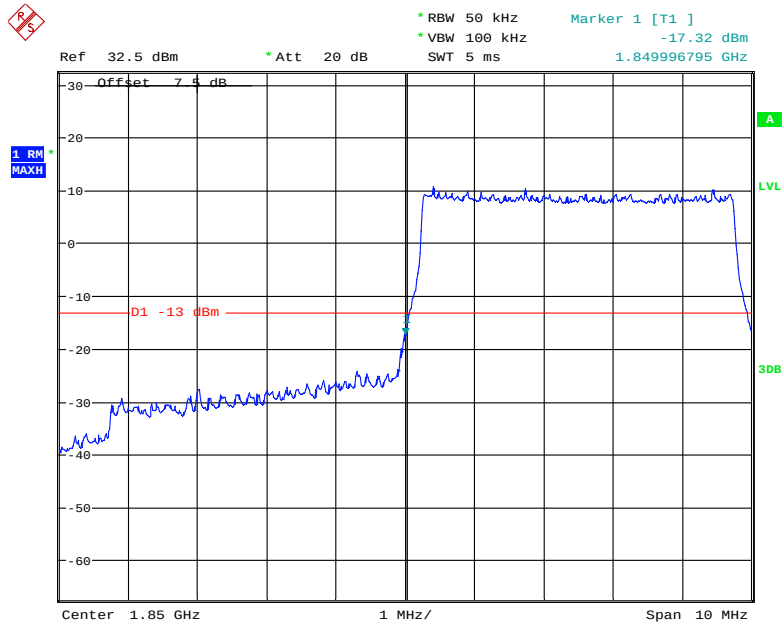
Date: 15.JAN.2019 21:09:42

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



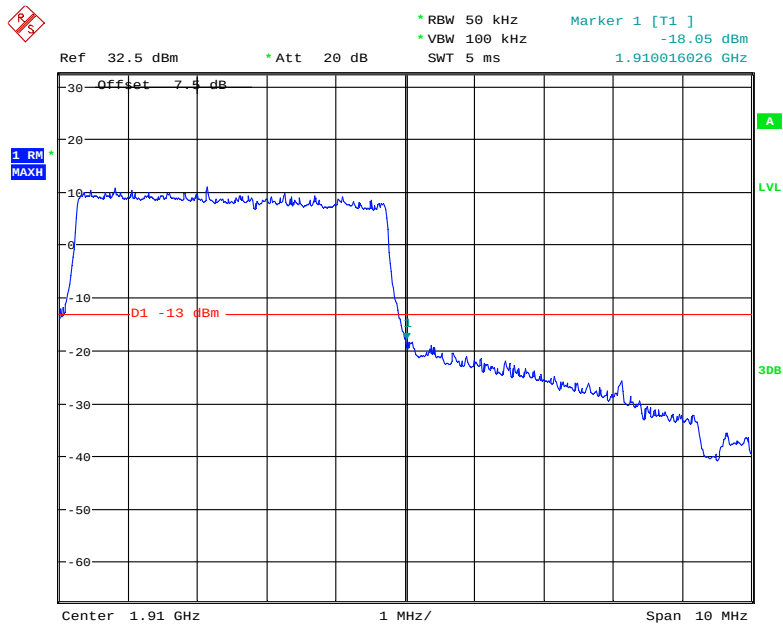
Date: 15.JAN.2019 21:09:10

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



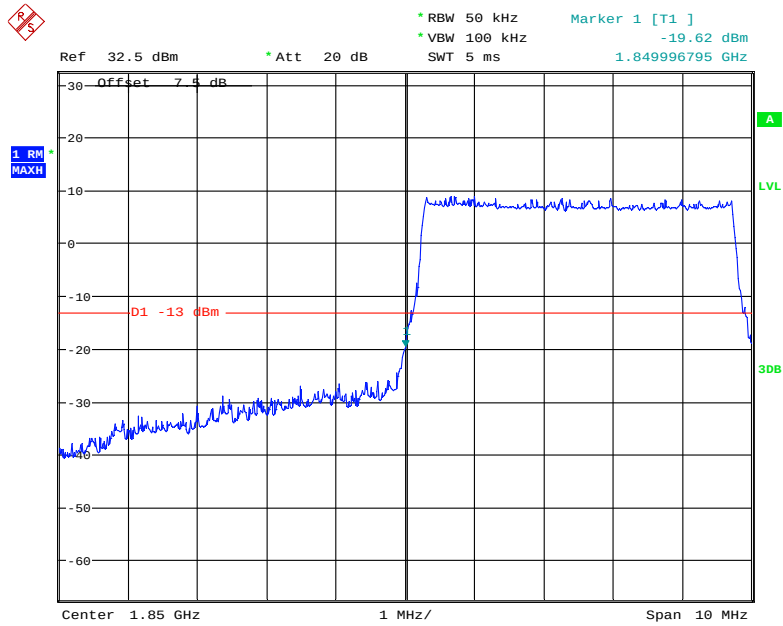
Date: 15.JAN.2019 21:14:53

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



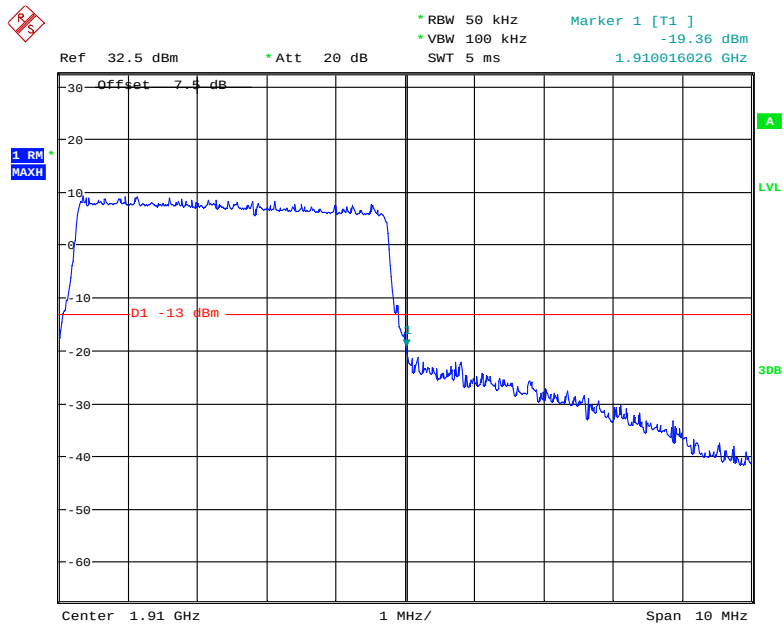
Date: 15.JAN.2019 21:27:23

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



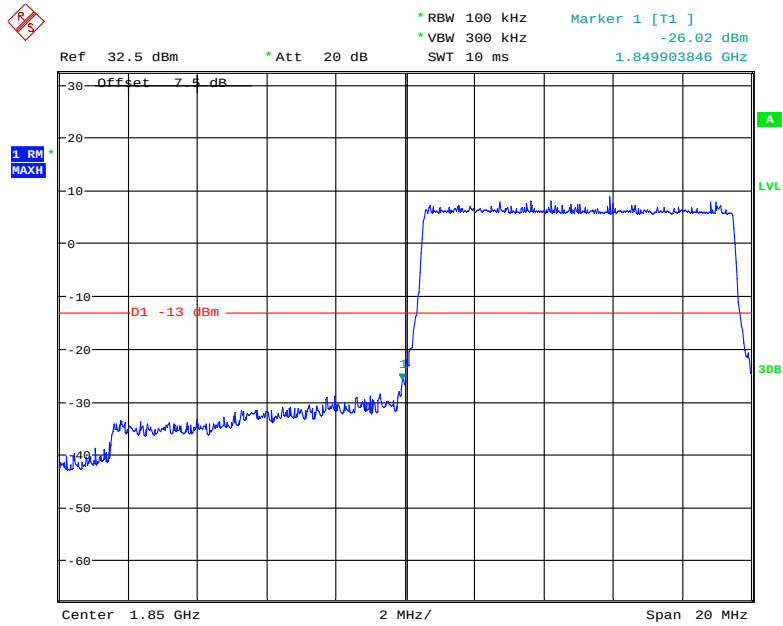
Date: 15.JAN.2019 21:15:24

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



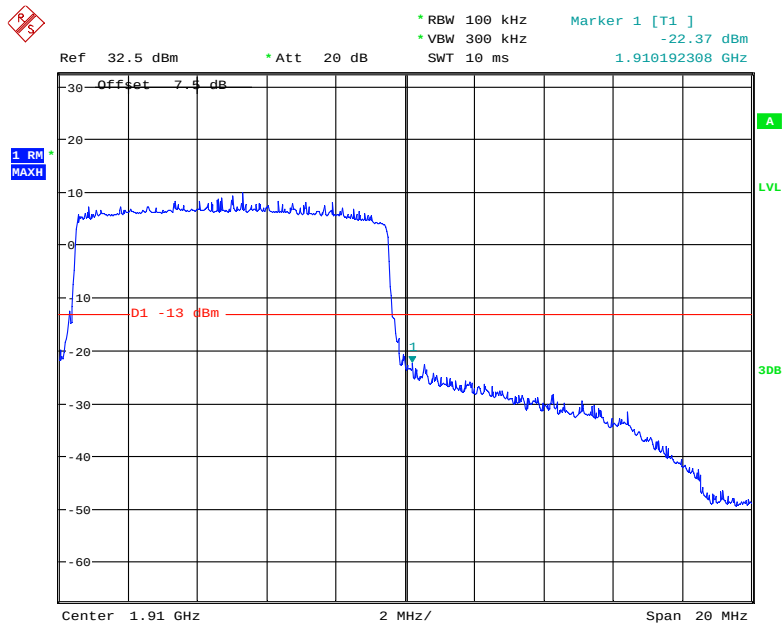
Date: 15.JAN.2019 21:25:48

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



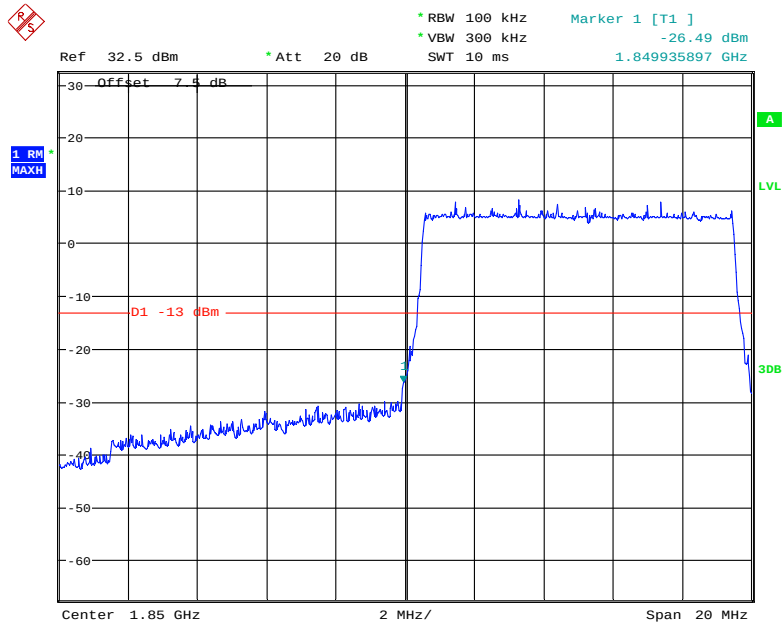
Date: 15.JAN.2019 21:32:10

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



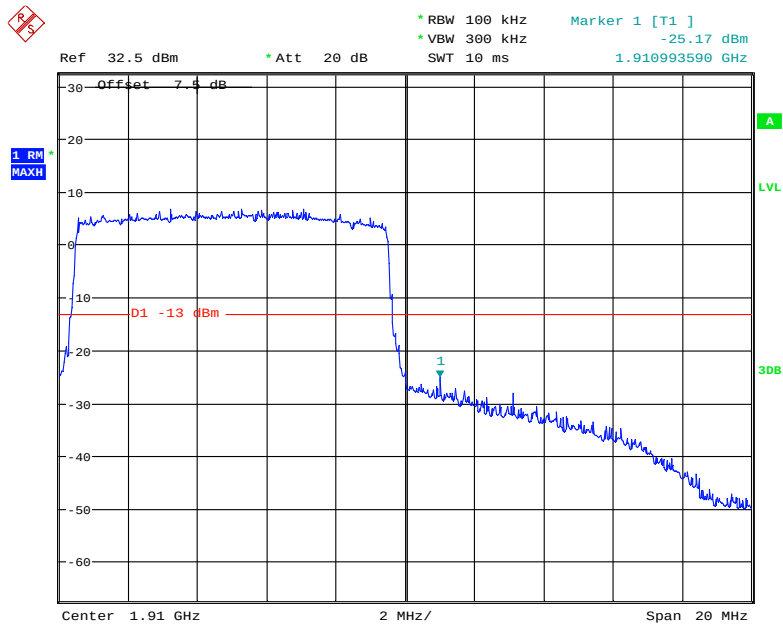
Date: 15.JAN.2019 21:34:18

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



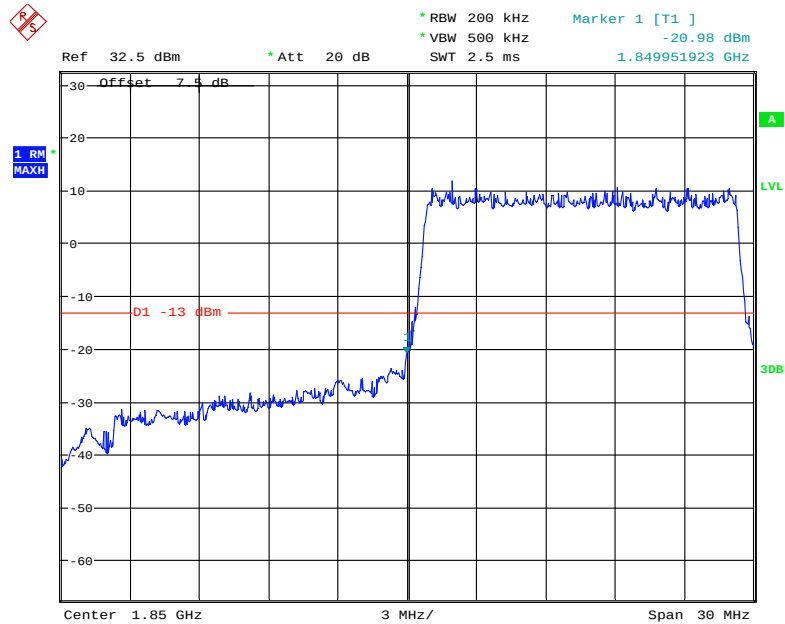
Date: 15.JAN.2019 21:32:57

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



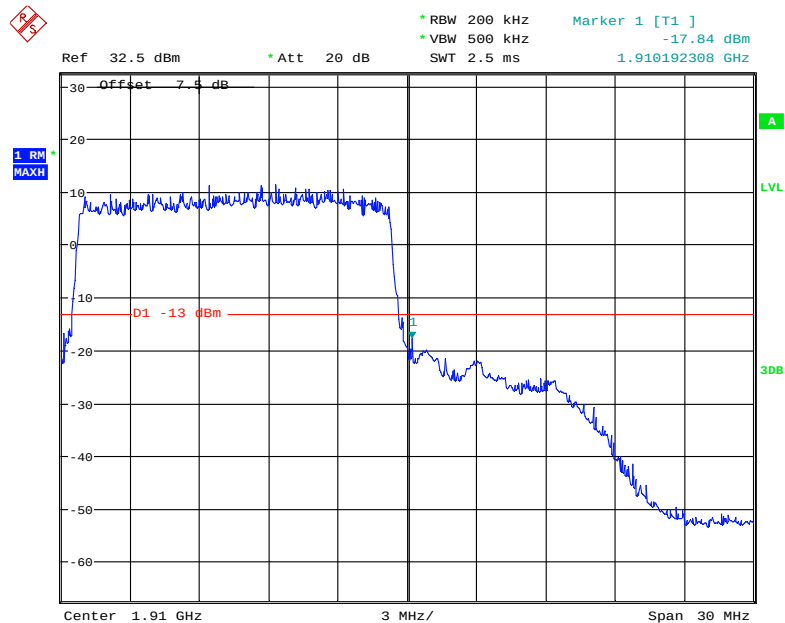
Date: 15.JAN.2019 21:33:33

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

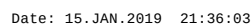
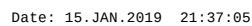


Date: 15.JAN.2019 21:37:35

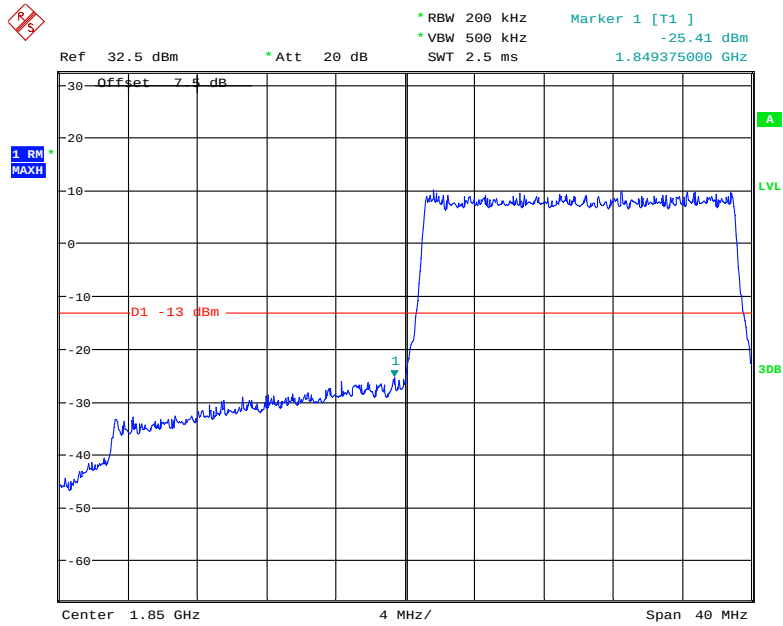
QPSK (15.0 MHz, FULL RB) - Right Band Edge



Date: 15.JAN.2019 21:35:26

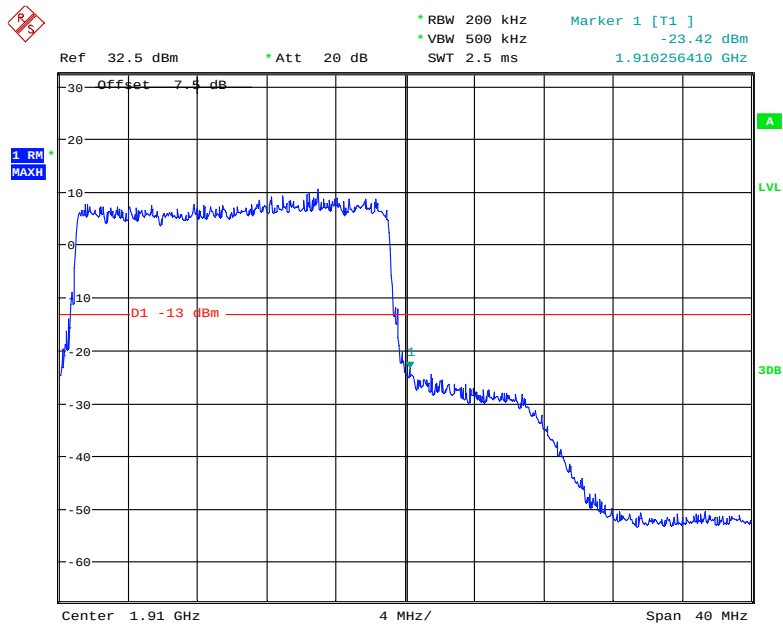


QPSK (20.0 MHz, FULL RB) - Left Band Edge



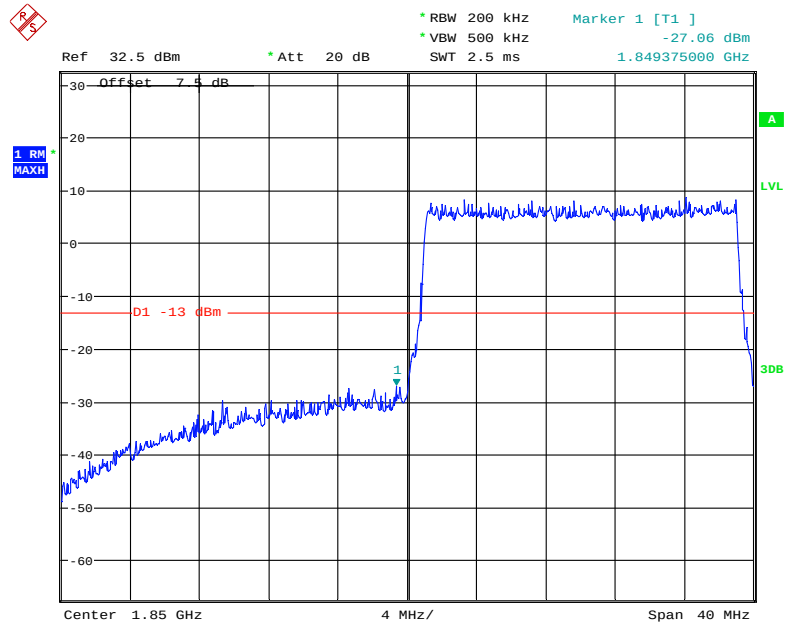
Date: 15.JAN.2019 21:39:56

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



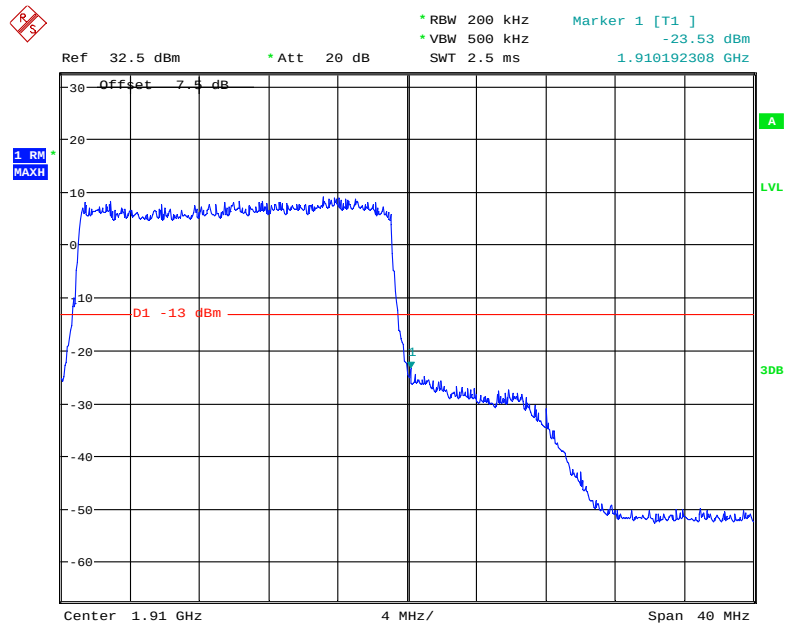
Date: 15.JAN.2019 21:43:04

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



Date: 15.JAN.2019 21:40:27

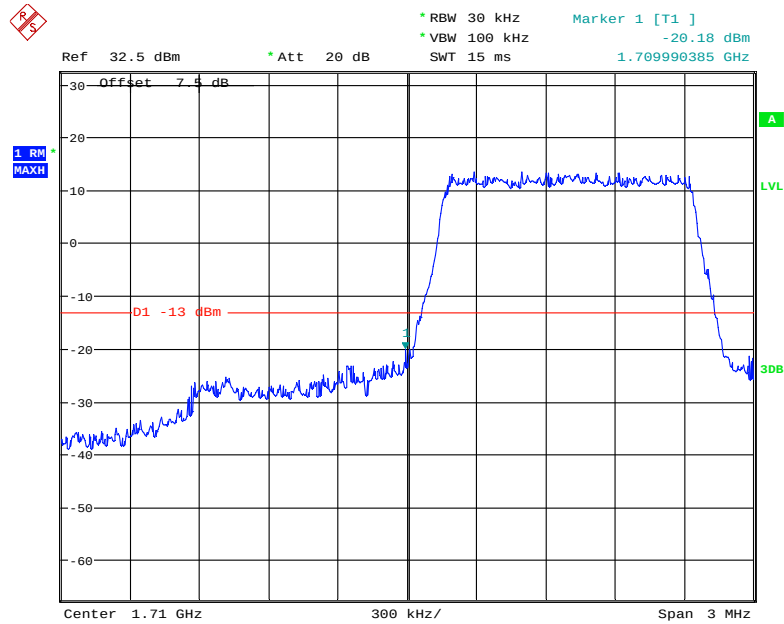
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 15.JAN.2019 21:42:12

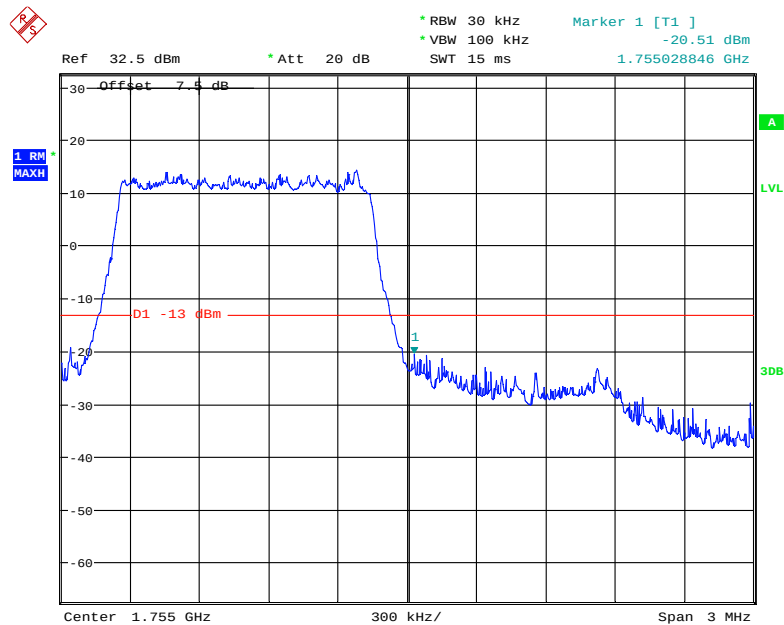
Band 4:

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



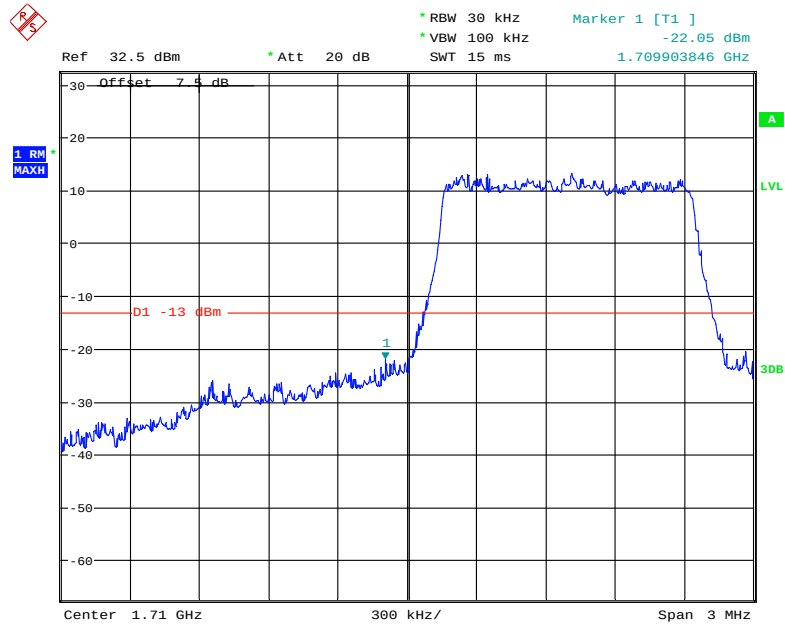
Date: 15.JAN.2019 22:15:51

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



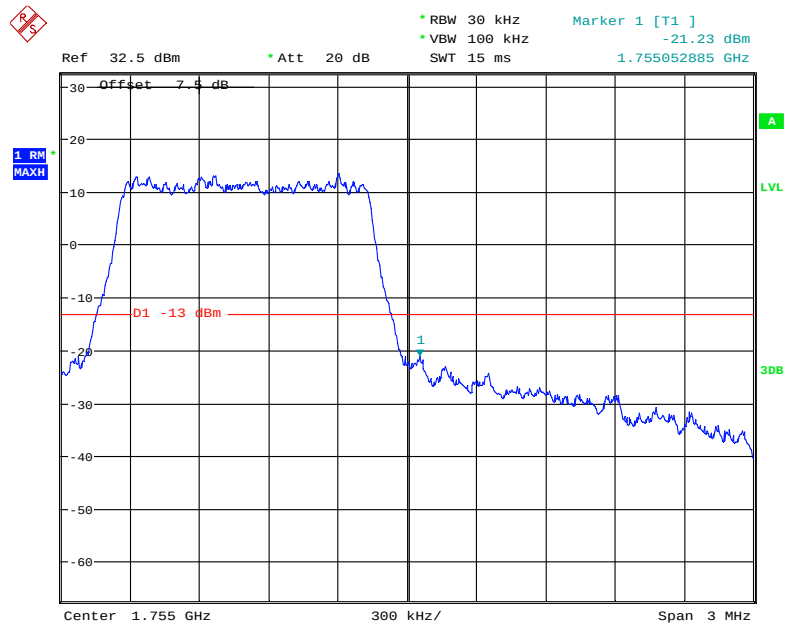
Date: 15.JAN.2019 22:19:57

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



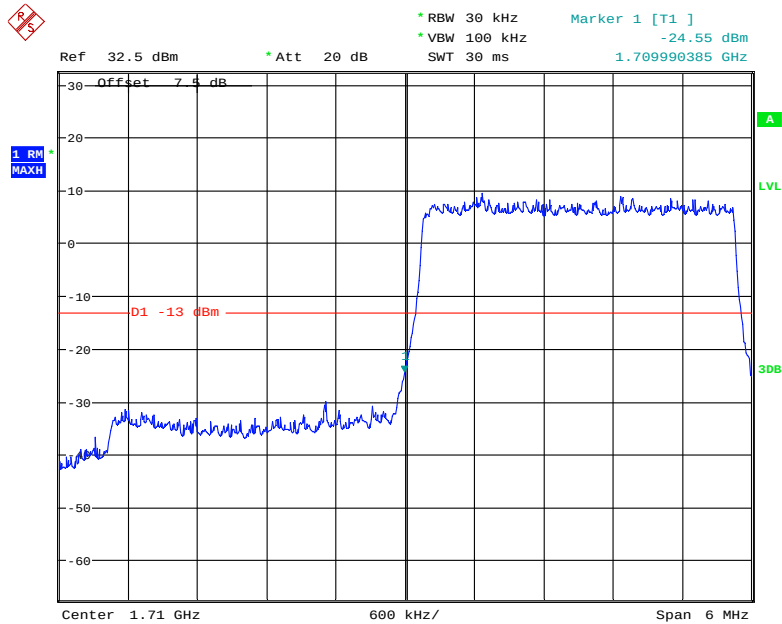
Date: 15.JAN.2019 22:16:29

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



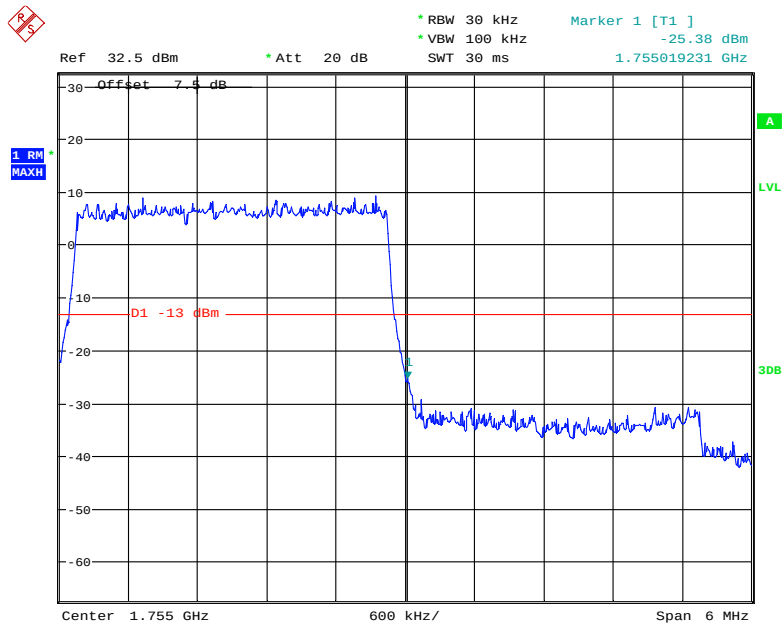
Date: 15.JAN.2019 22:19:14

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



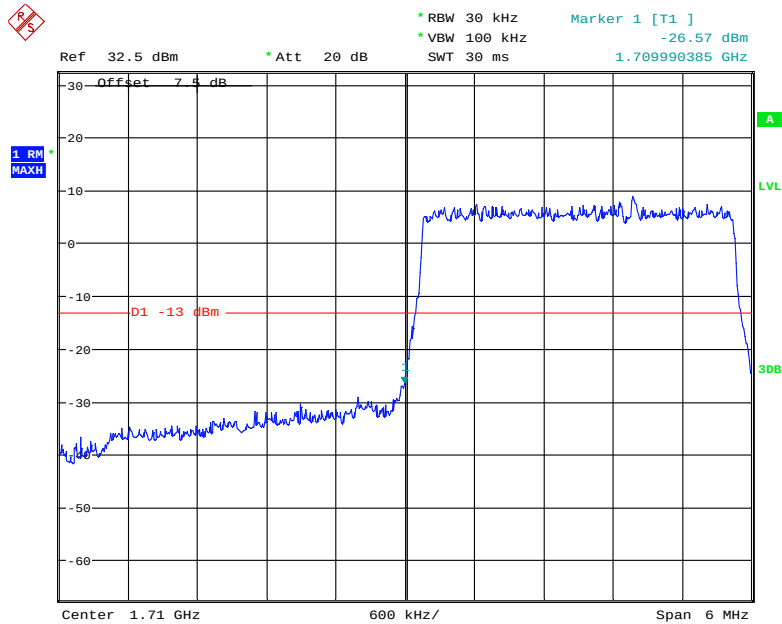
Date: 15.JAN.2019 22:09:27

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



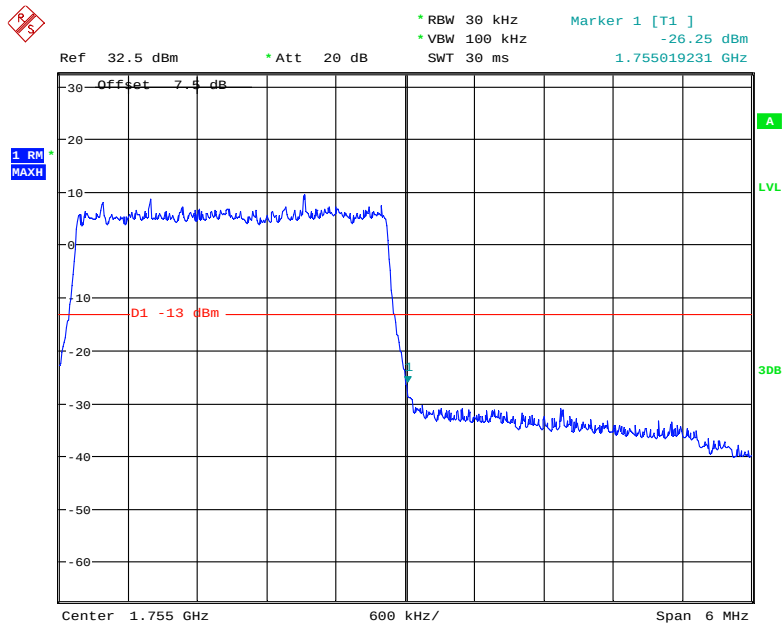
Date: 15.JAN.2019 22:12:28

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



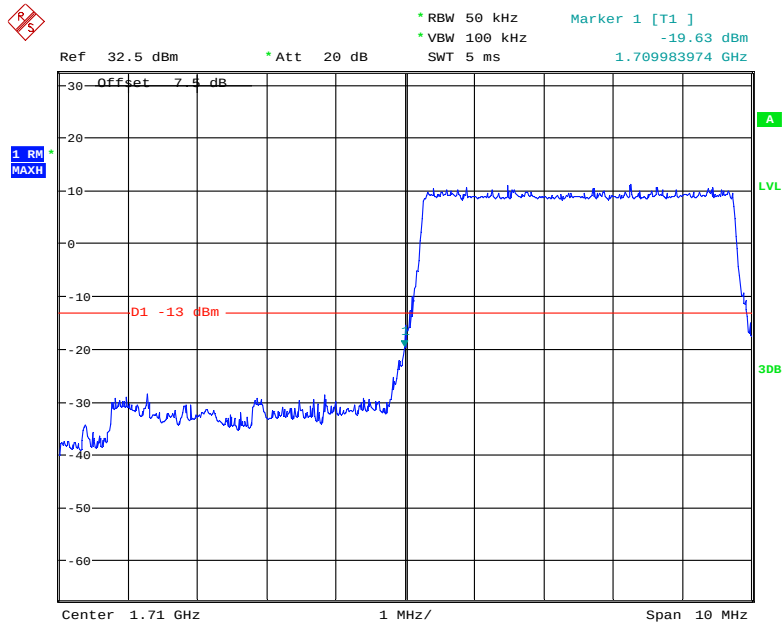
Date: 15.JAN.2019 22:10:44

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



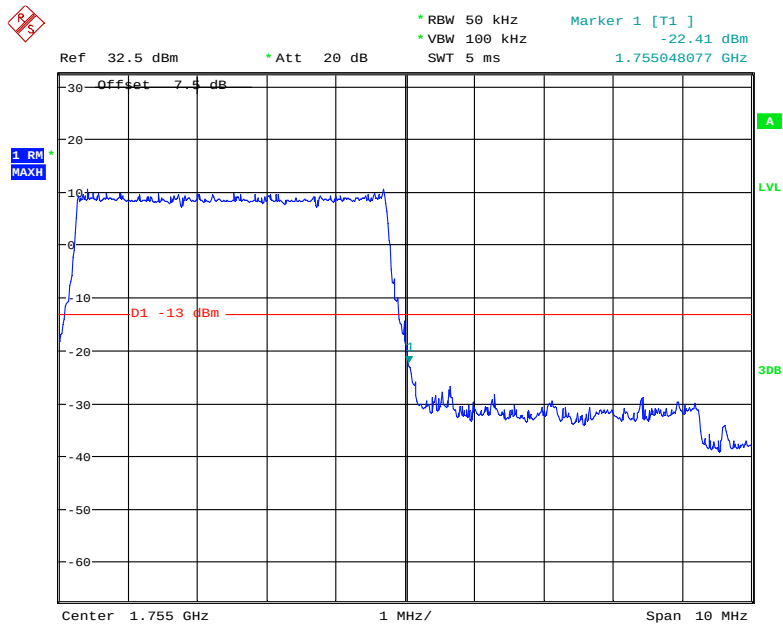
Date: 15.JAN.2019 22:11:56

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



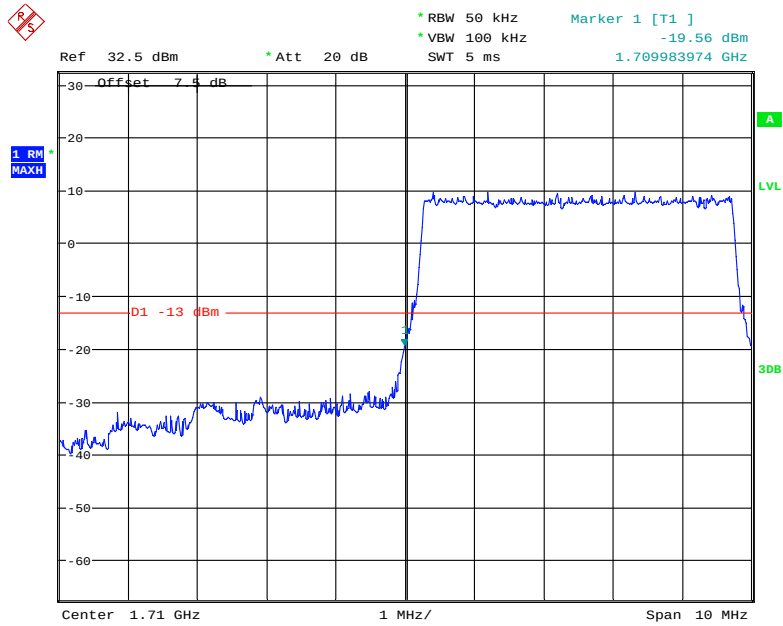
Date: 15.JAN.2019 22:05:46

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



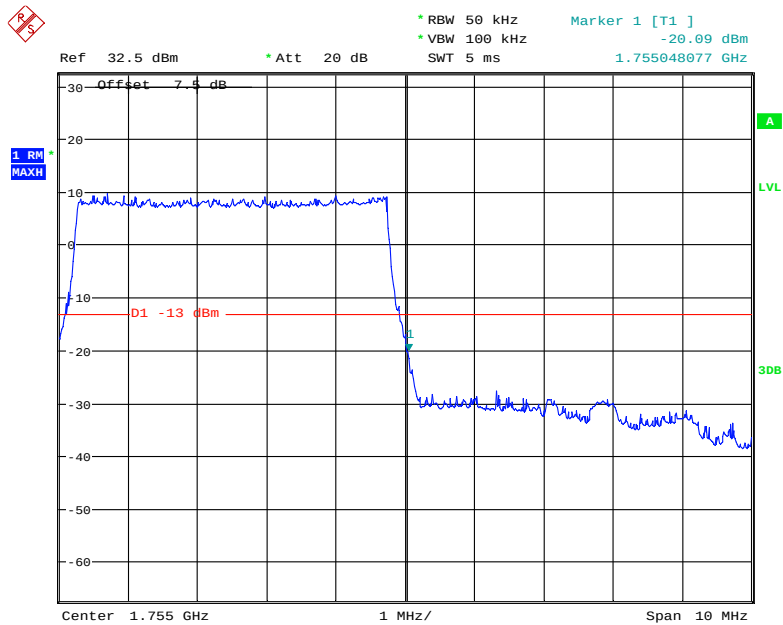
Date: 15.JAN.2019 22:08:01

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



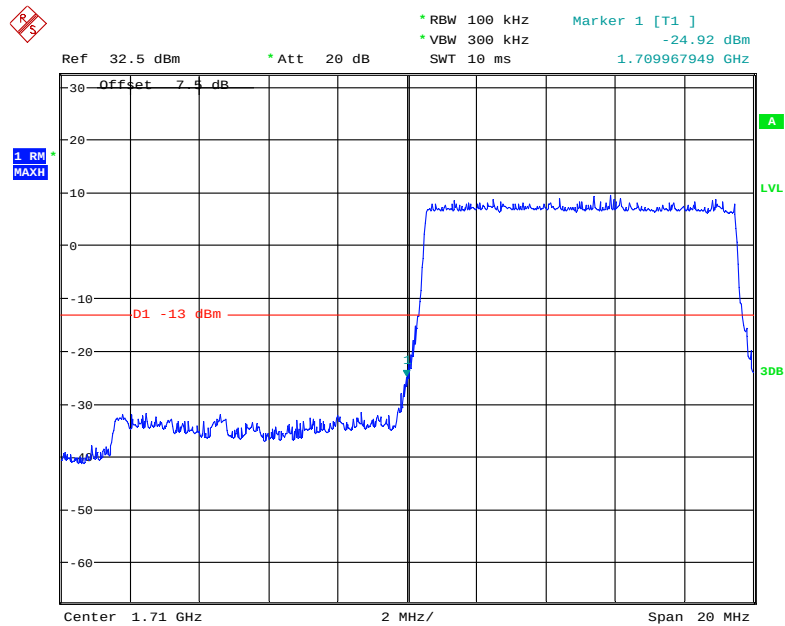
Date: 15.JAN.2019 22:06:14

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



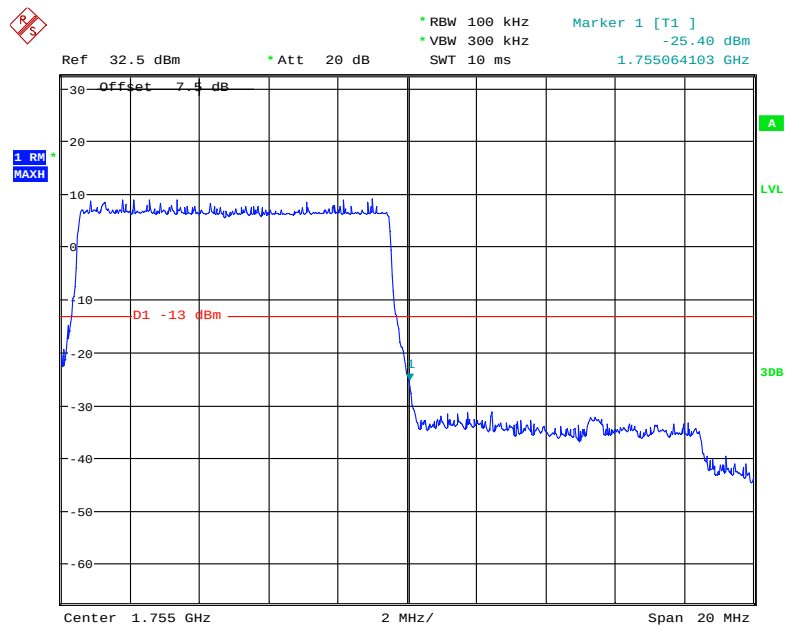
Date: 15.JAN.2019 22:07:13

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



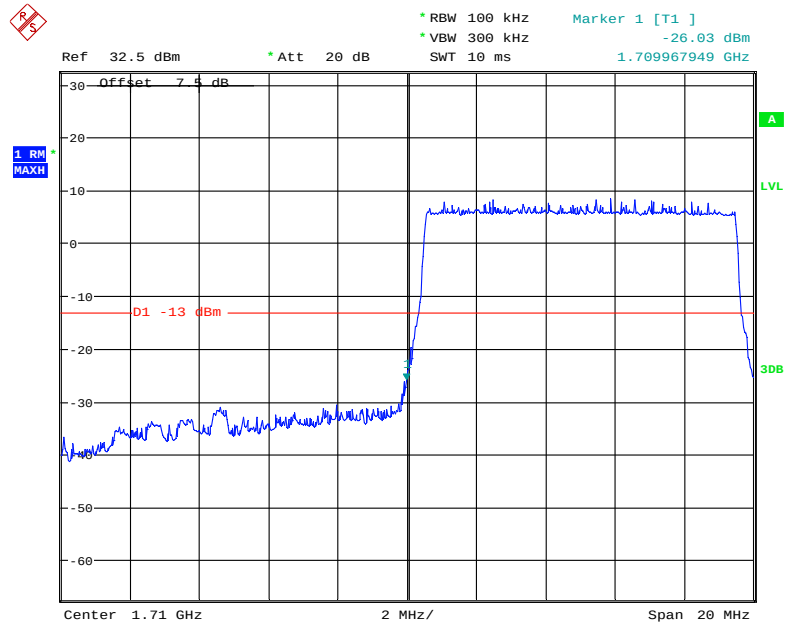
Date: 15.JAN.2019 22:00:39

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



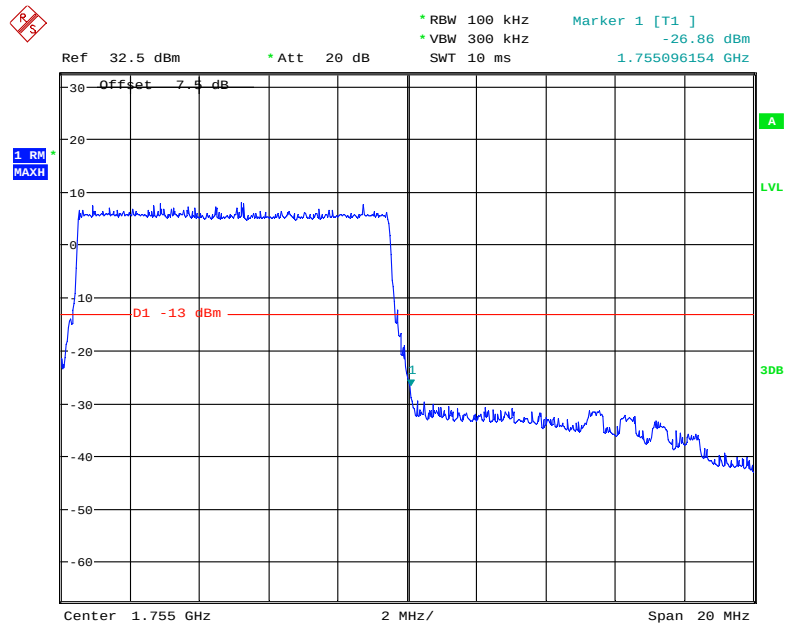
Date: 15.JAN.2019 22:03:56

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



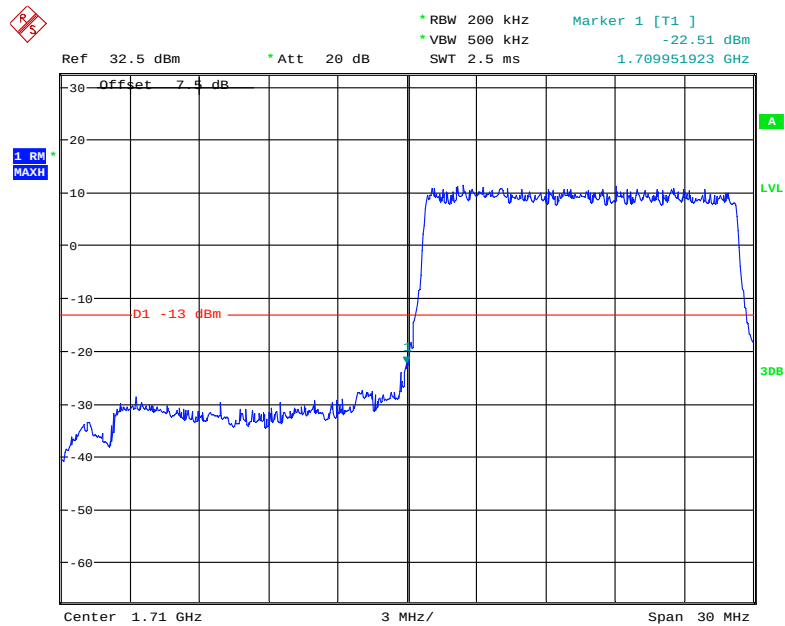
Date: 15.JAN.2019 22:01:36

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



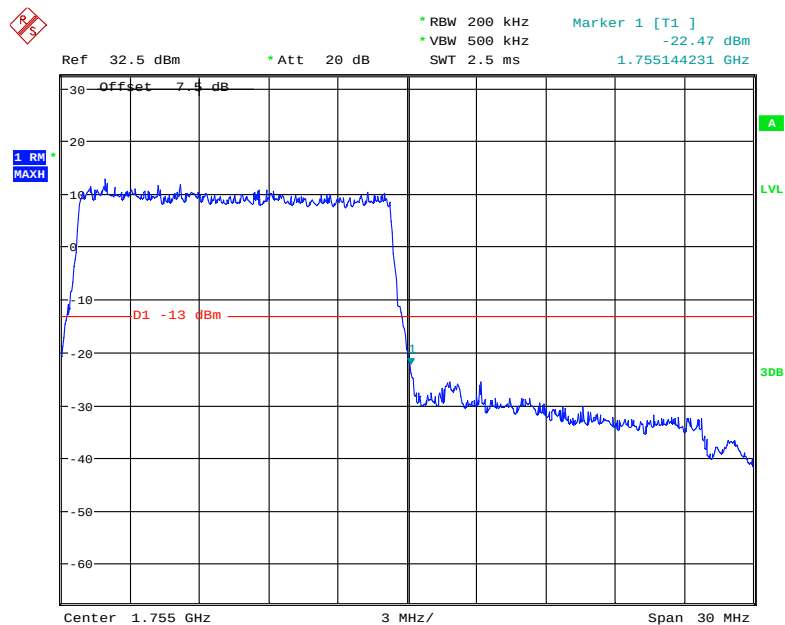
Date: 15.JAN.2019 22:03:08

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



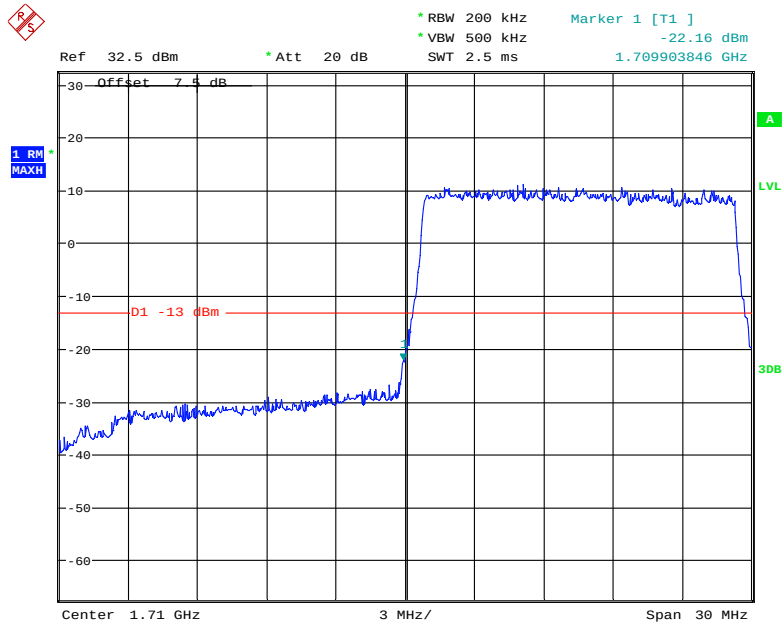
Date: 15.JAN.2019 21:50:21

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



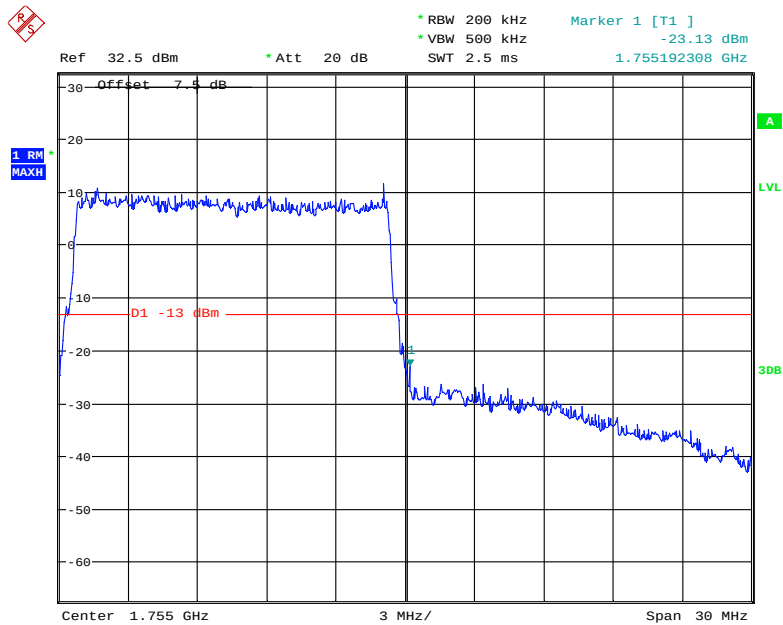
Date: 15.JAN.2019 21:54:12

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



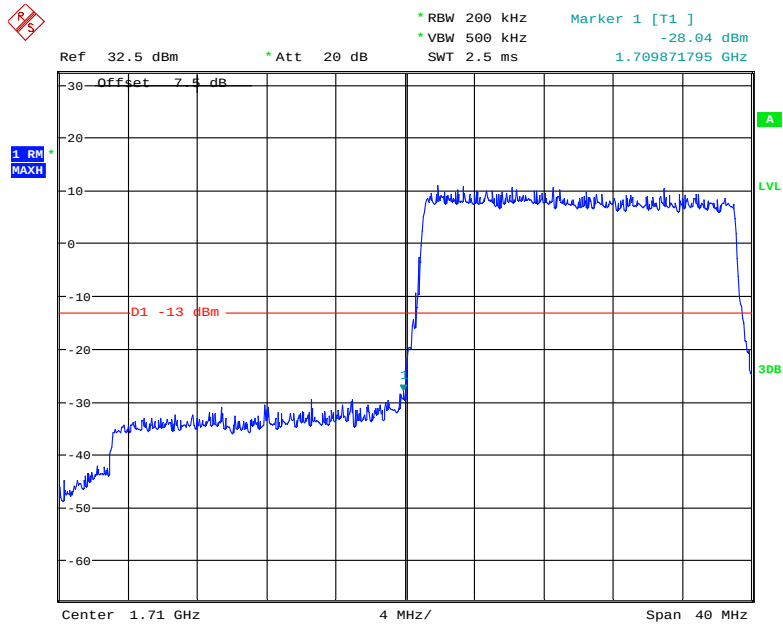
Date: 15.JAN.2019 21:52:19

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



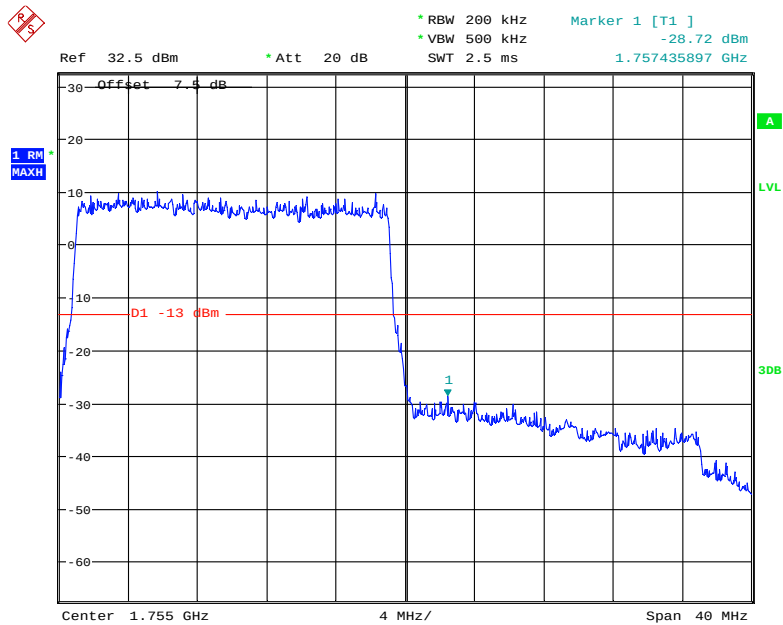
Date: 15.JAN.2019 21:53:16

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



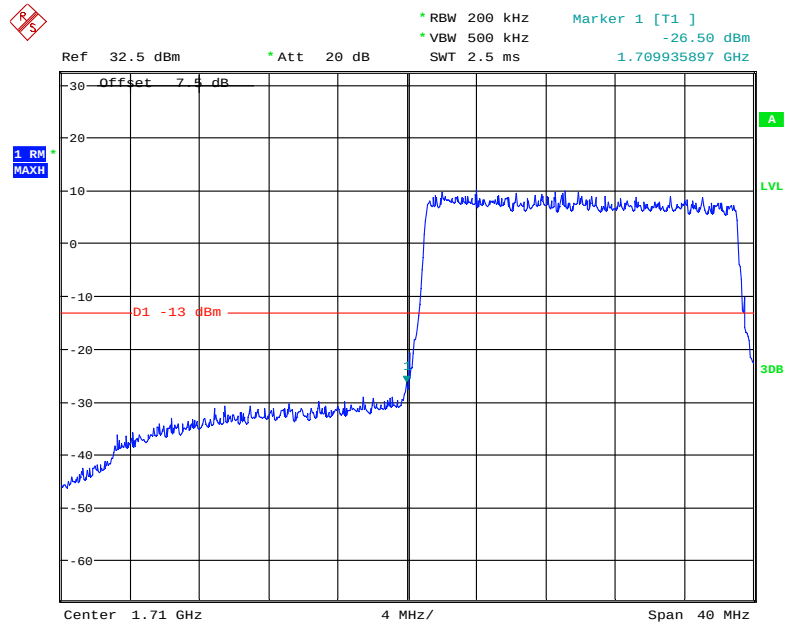
Date: 15.JAN.2019 21:46:31

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



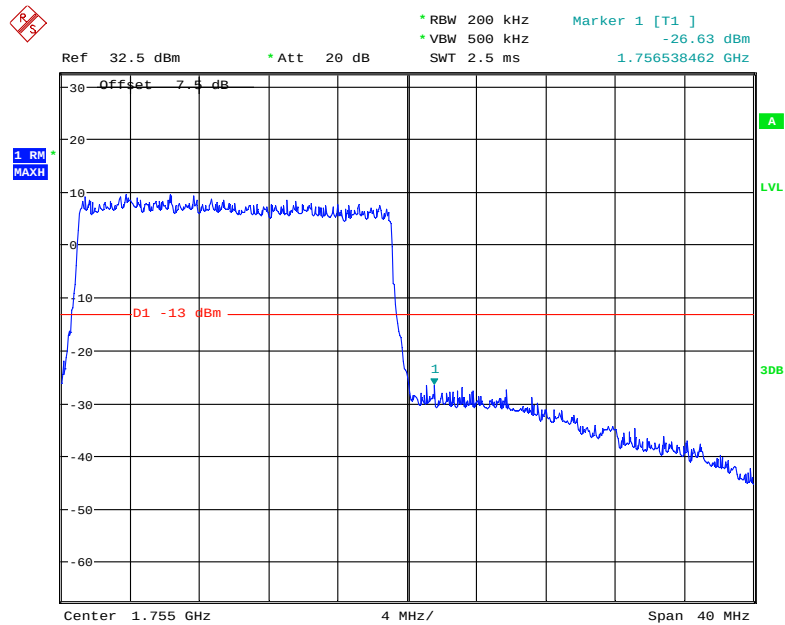
Date: 15.JAN.2019 21:49:21

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



Date: 15.JAN.2019 21:47:42

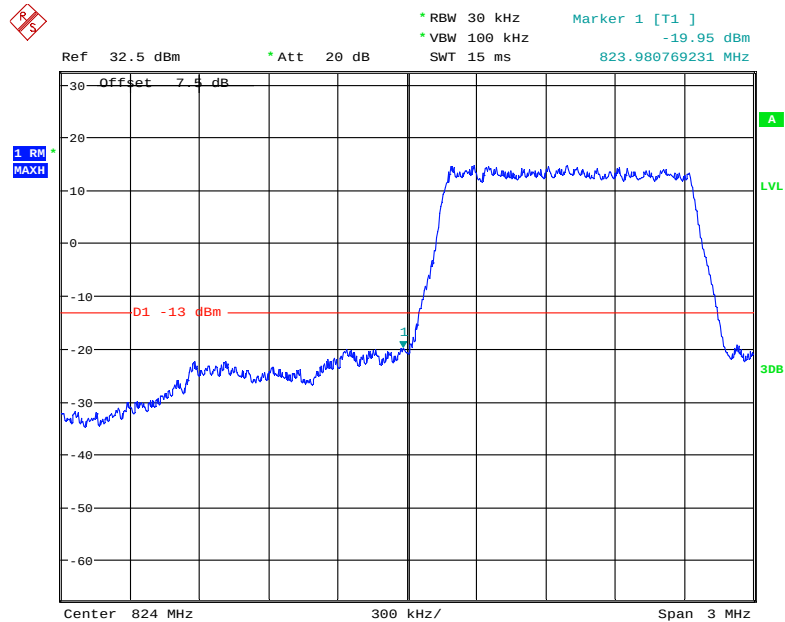
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 15.JAN.2019 21:48:53

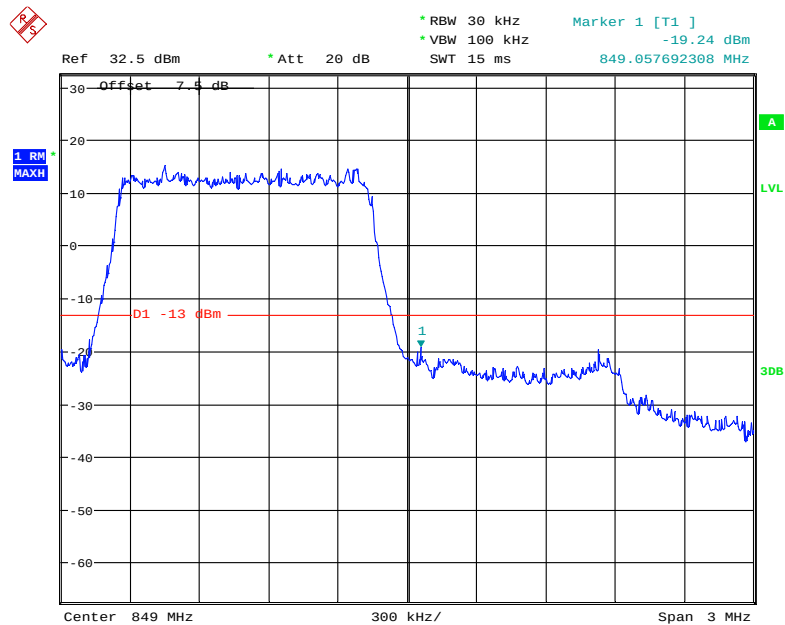
Band 5:

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



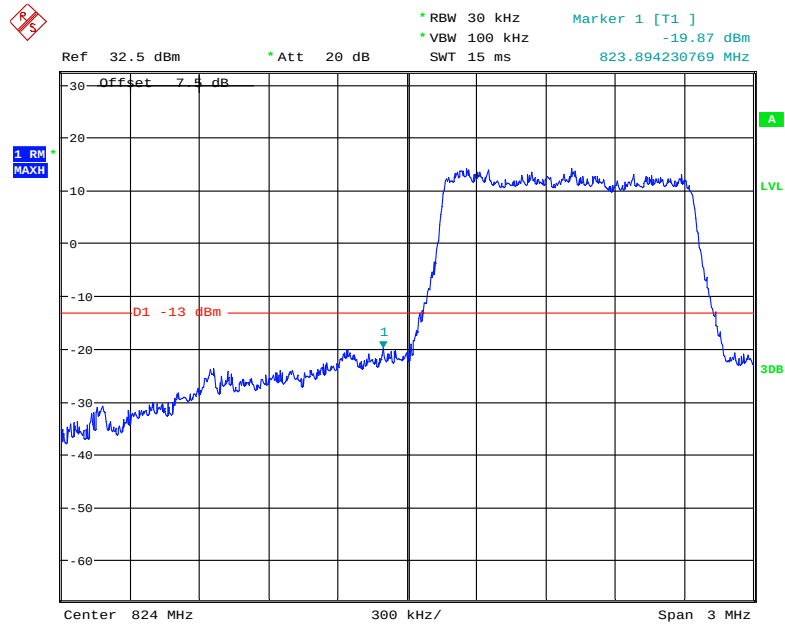
Date: 15.JAN.2019 22:33:42

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



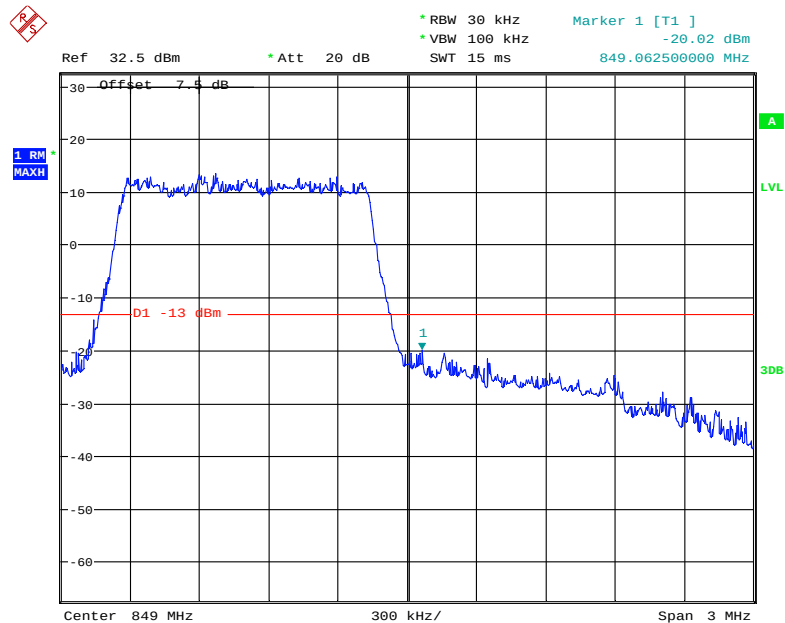
Date: 15.JAN.2019 22:35:26

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



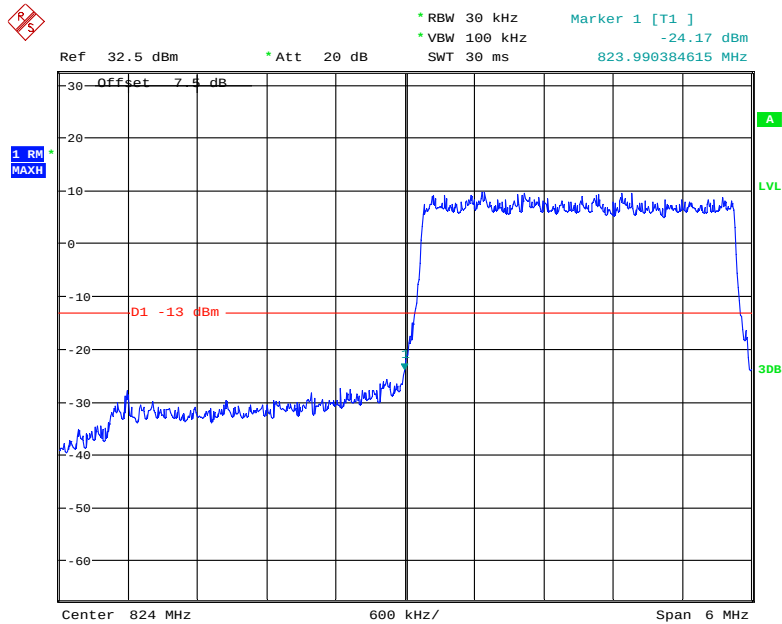
Date: 15.JAN.2019 22:34:21

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



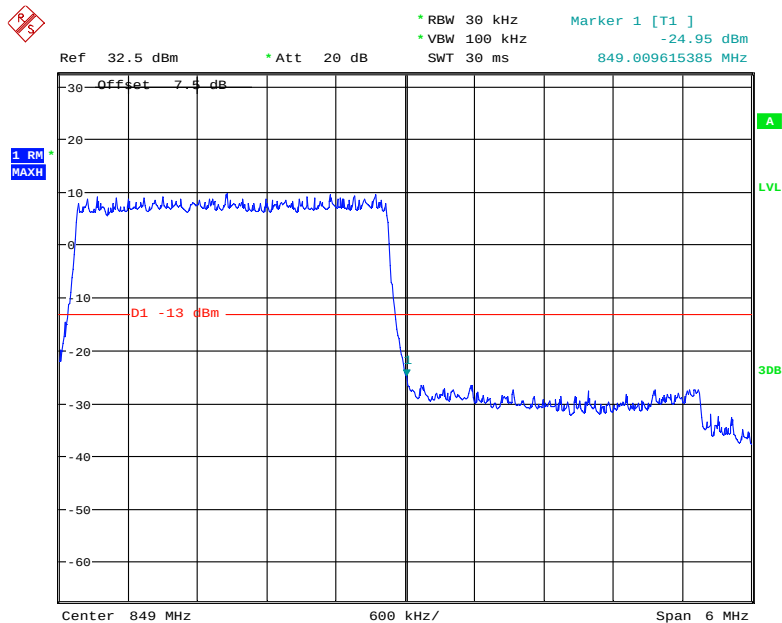
Date: 15.JAN.2019 22:34:56

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



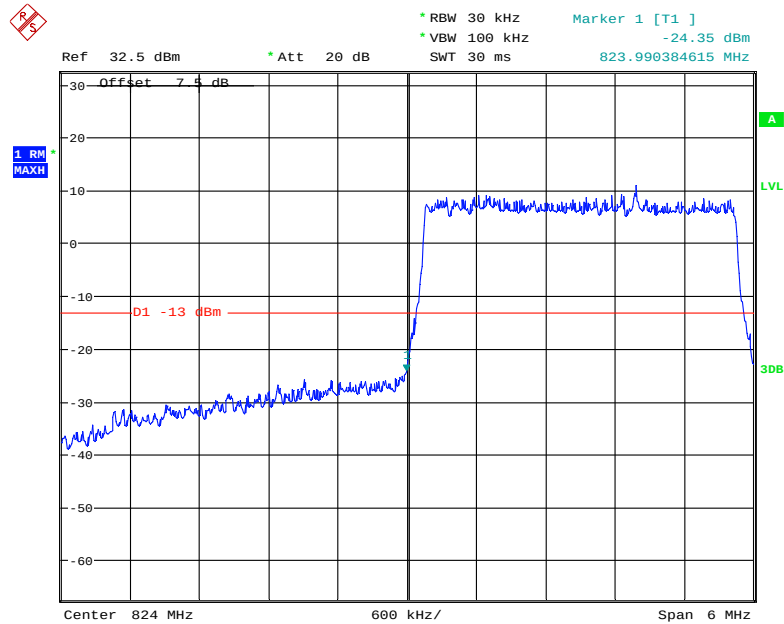
Date: 15.JAN.2019 22:36:05

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



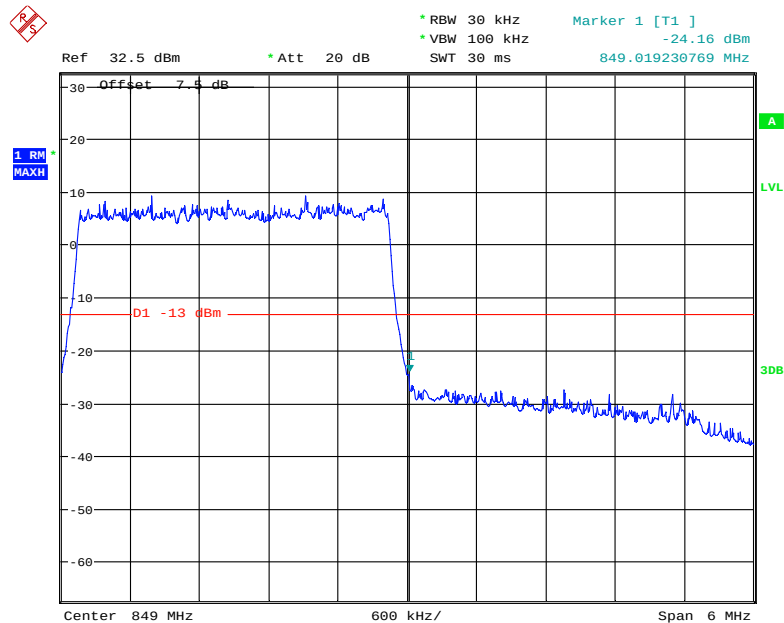
Date: 15.JAN.2019 22:42:53

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



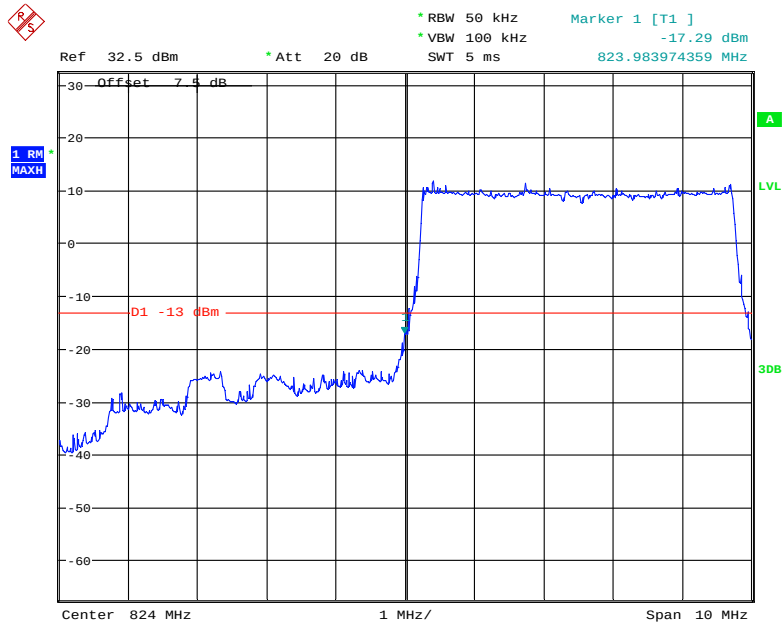
Date: 15.JAN.2019 22:41:24

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



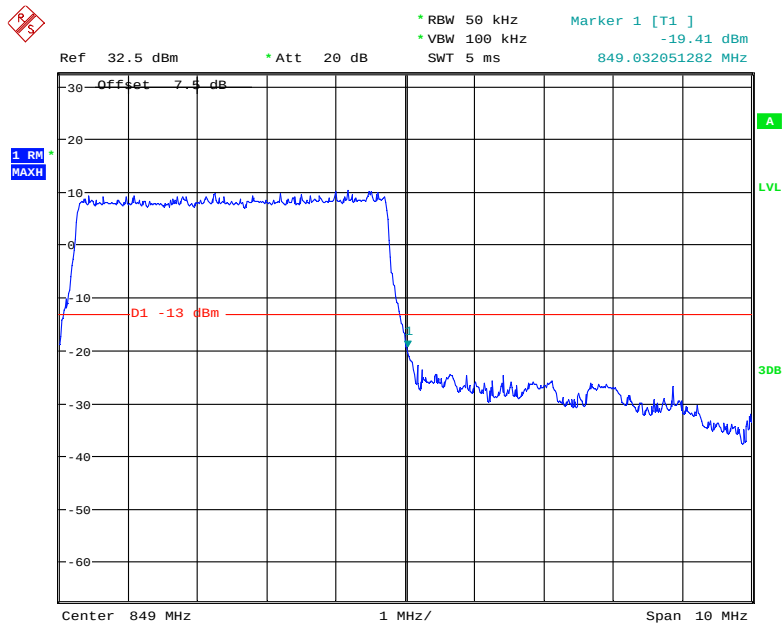
Date: 15.JAN.2019 22:41:56

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



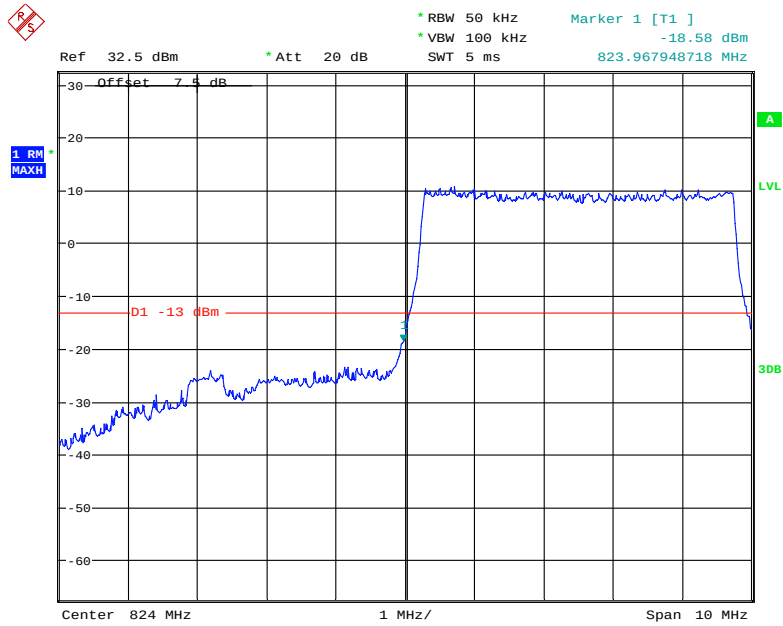
Date: 15.JAN.2019 22:44:22

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



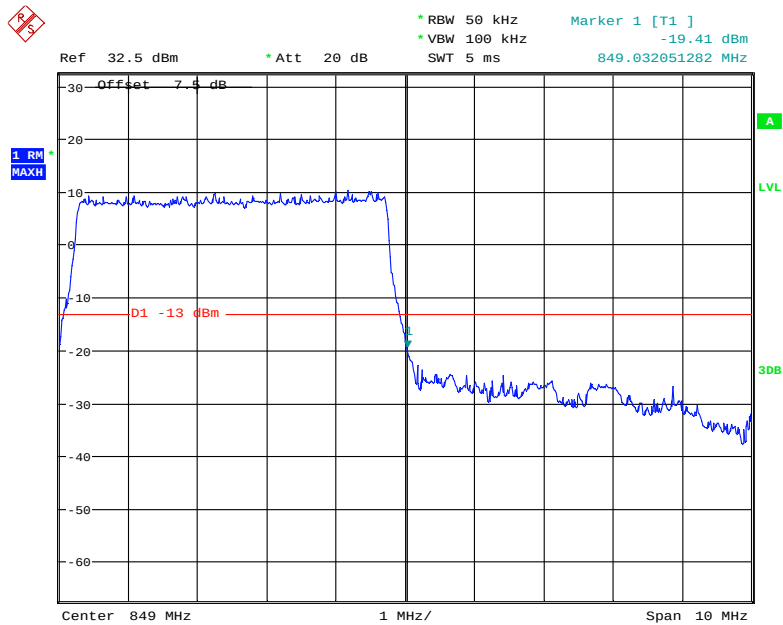
Date: 15.JAN.2019 22:47:24

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



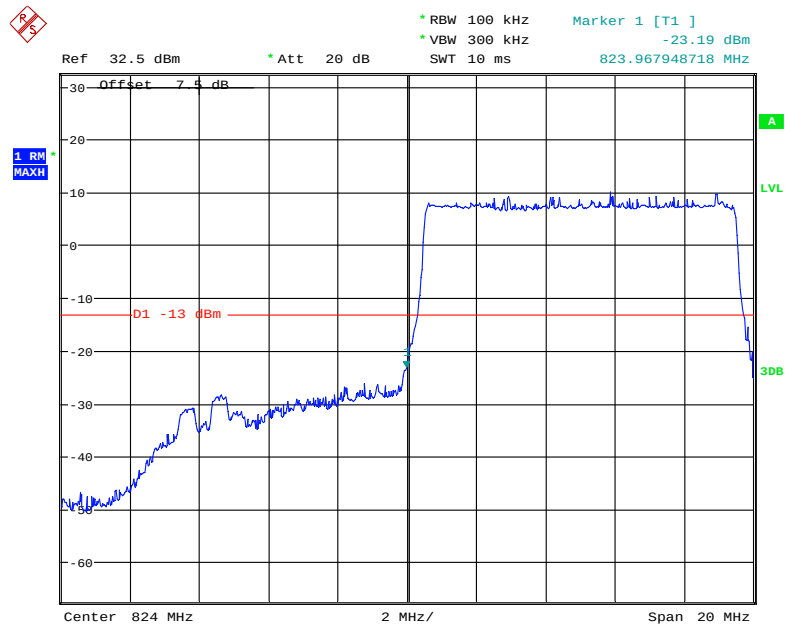
Date: 15.JAN.2019 22:45:47

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



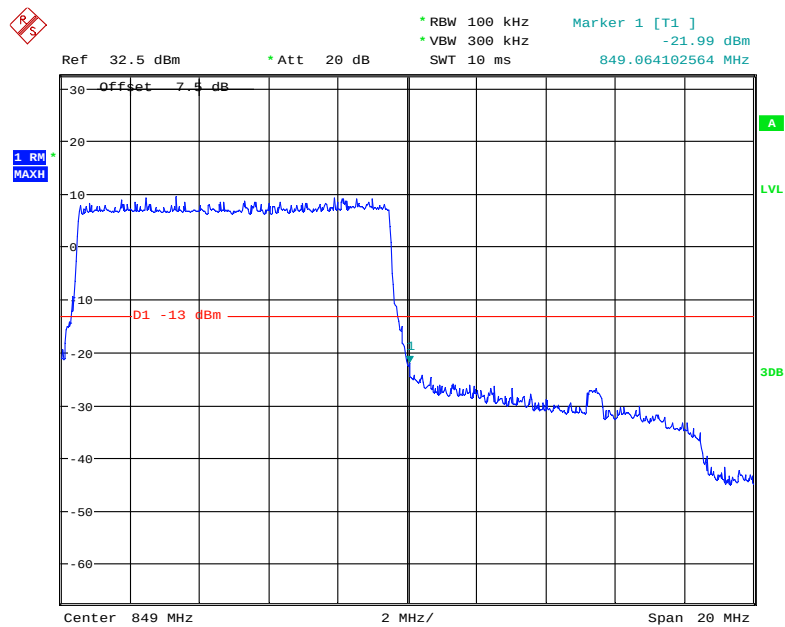
Date: 15.JAN.2019 22:47:24

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



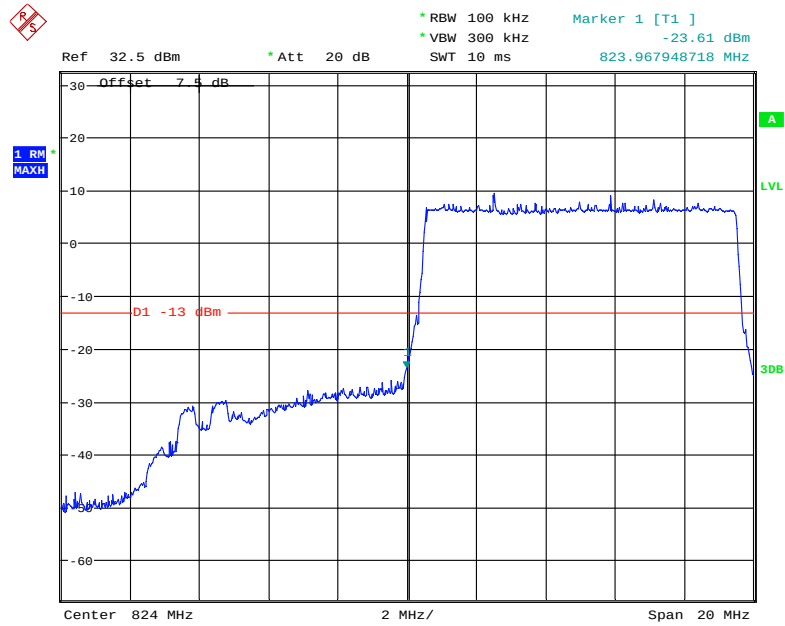
Date: 15.JAN.2019 22:49:48

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



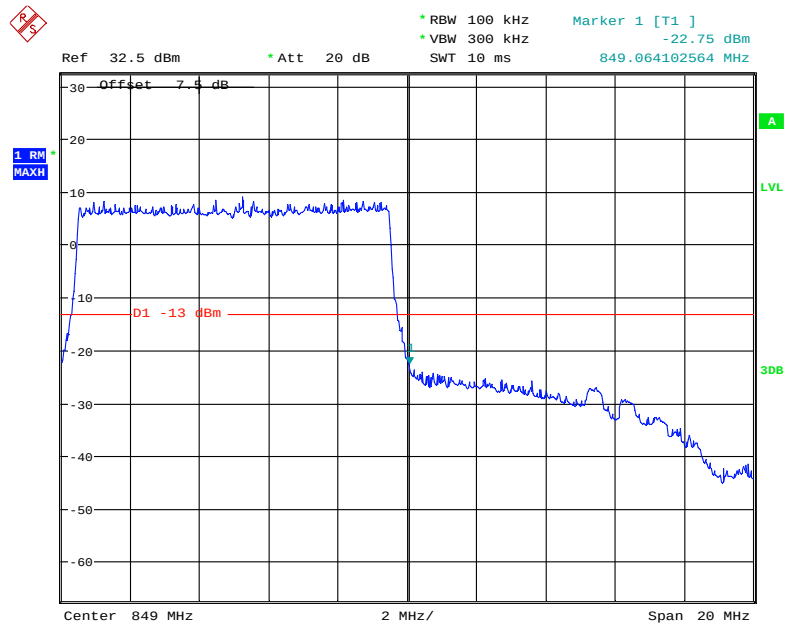
Date: 15.JAN.2019 22:53:40

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

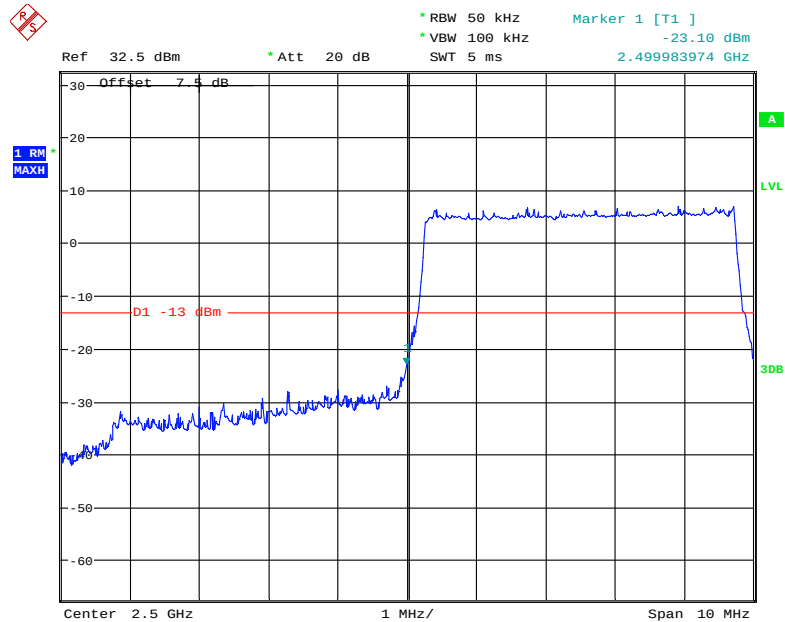


Date: 15.JAN.2019 22:50:48

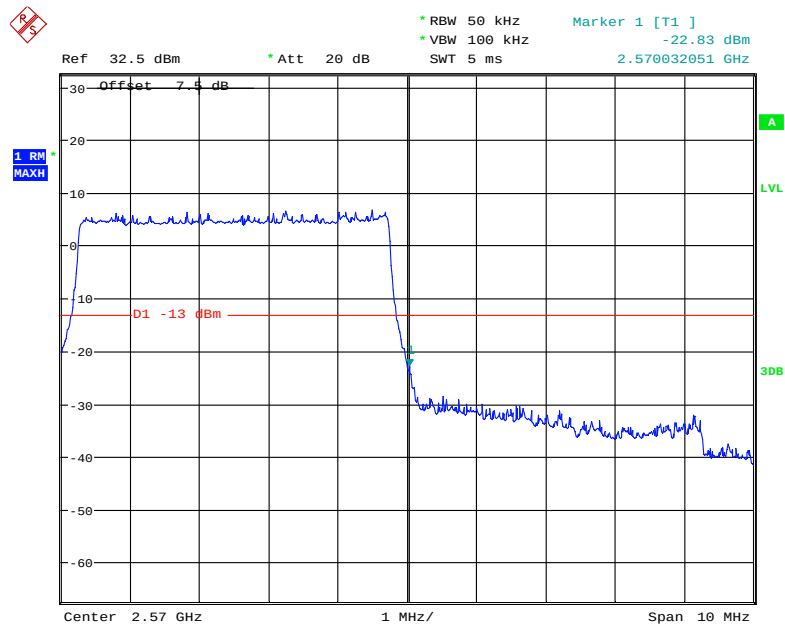
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 15.JAN.2019 22:52:52

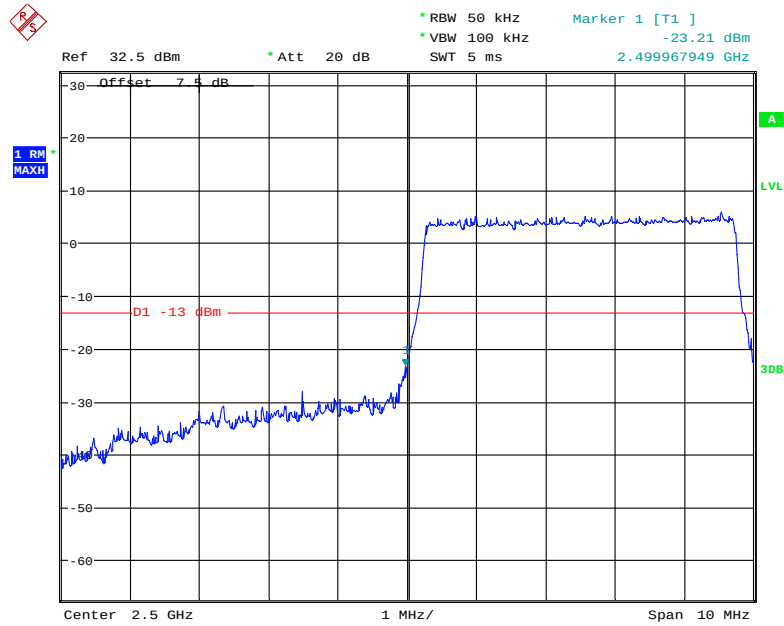
Band 7:**QPSK (5.0 MHz, FULL RB) - Left Band Edge**

Date: 15.JAN.2019 22:54:47

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

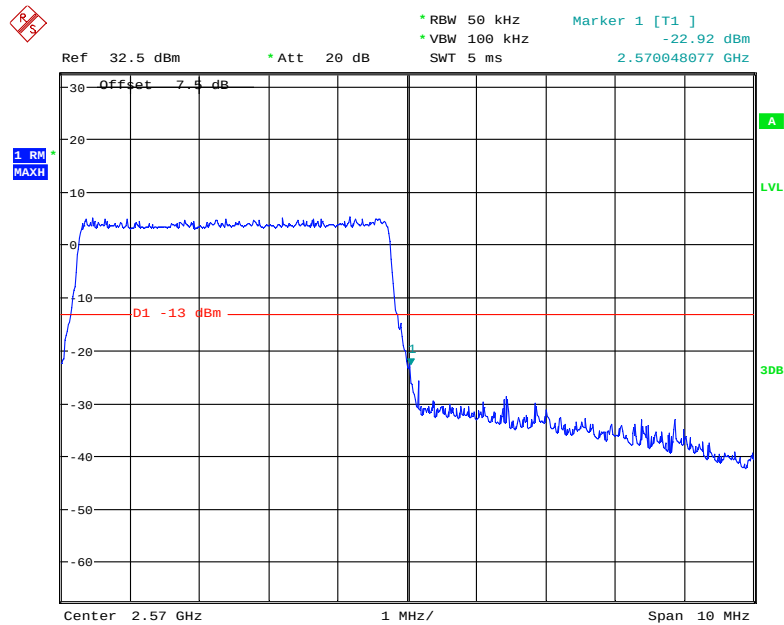
Date: 15.JAN.2019 22:57:00

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



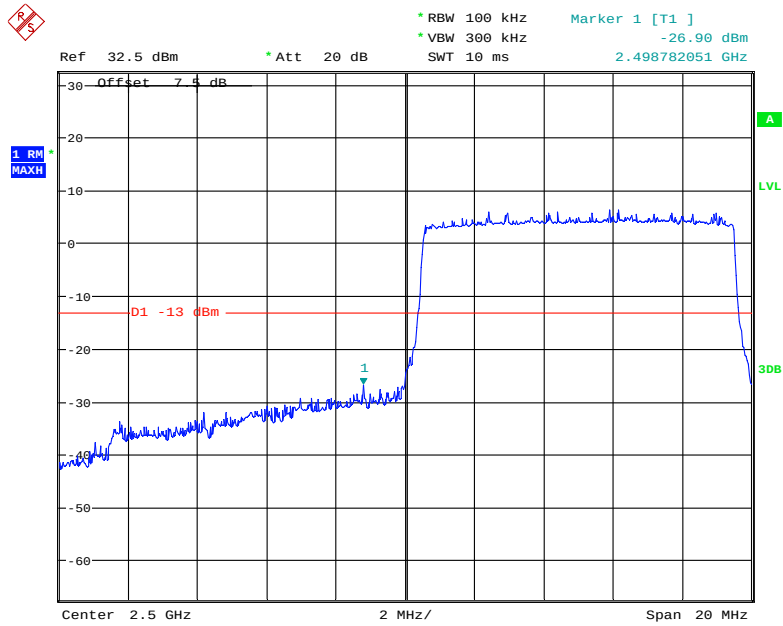
Date: 15.JAN.2019 22:55:20

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



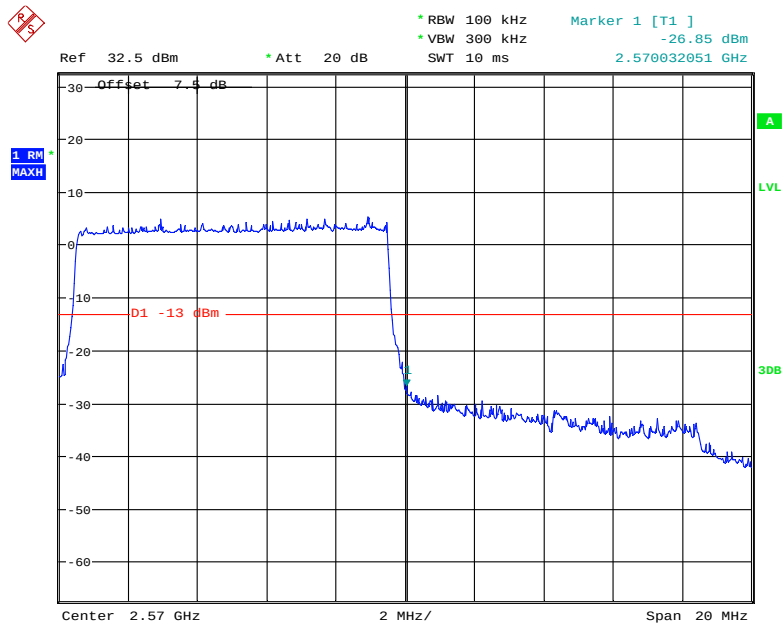
Date: 15.JAN.2019 22:56:20

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



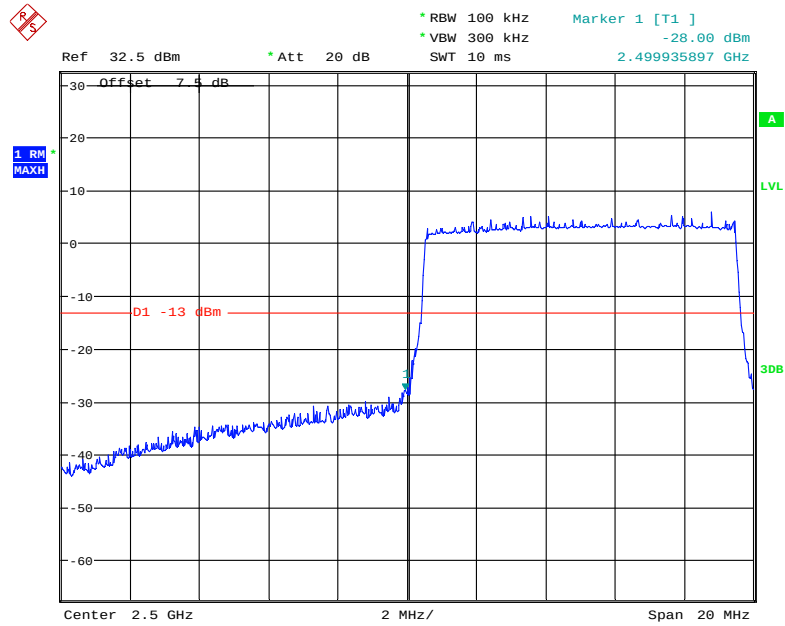
Date: 15.JAN.2019 23:00:29

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



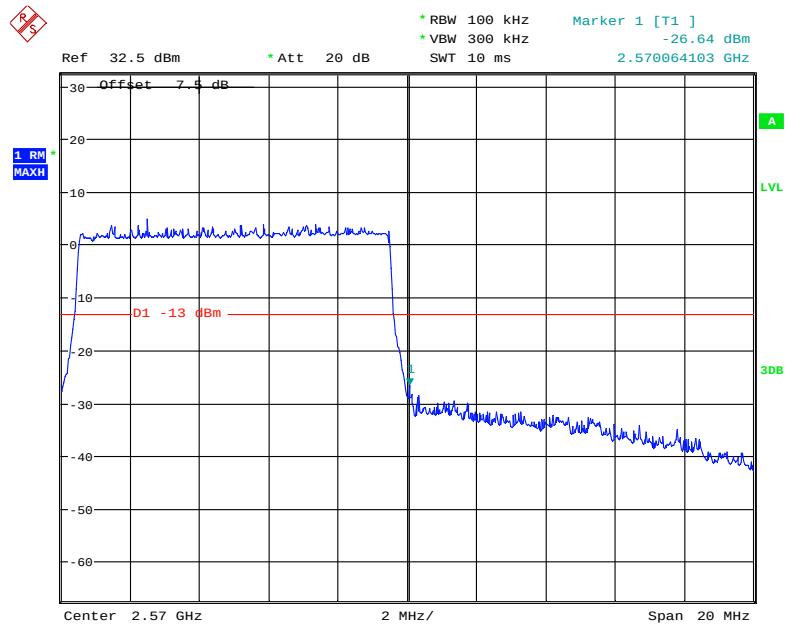
Date: 15.JAN.2019 23:11:34

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



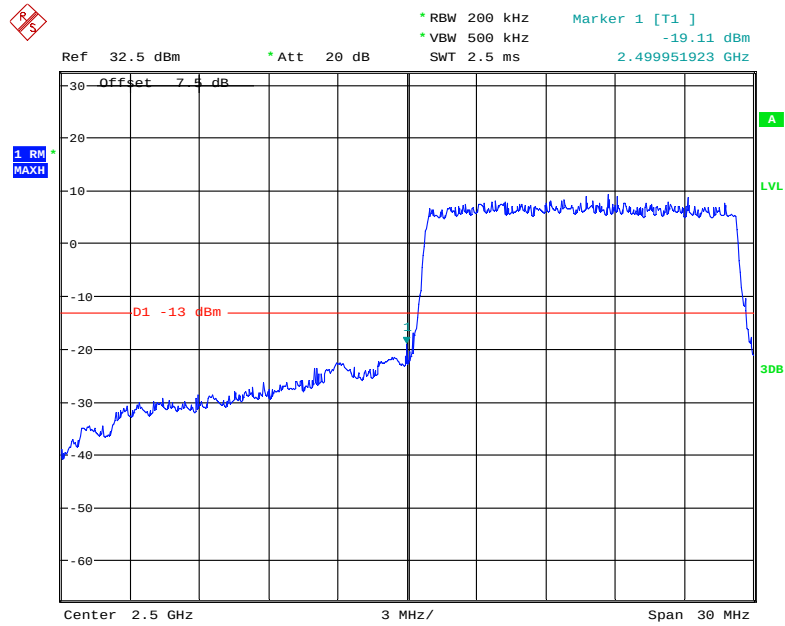
Date: 15.JAN.2019 23:06:30

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



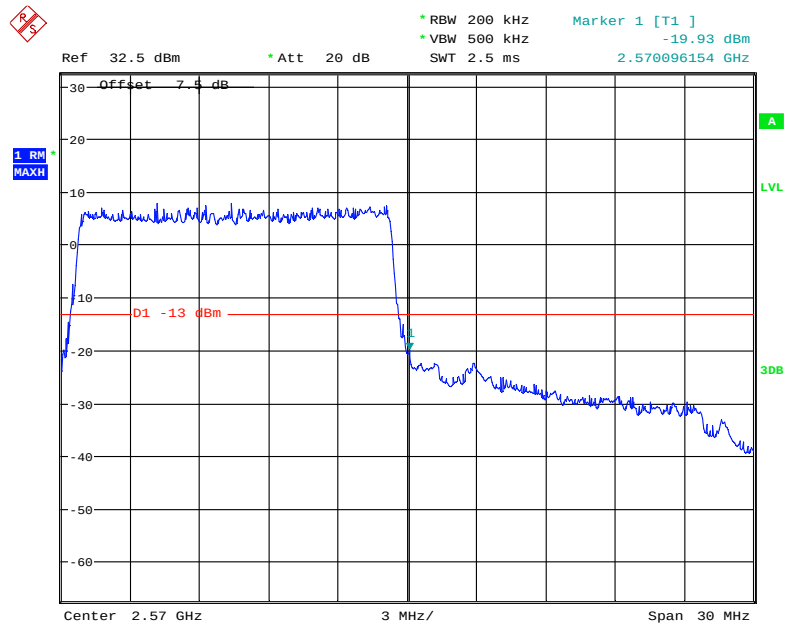
Date: 15.JAN.2019 23:10:23

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



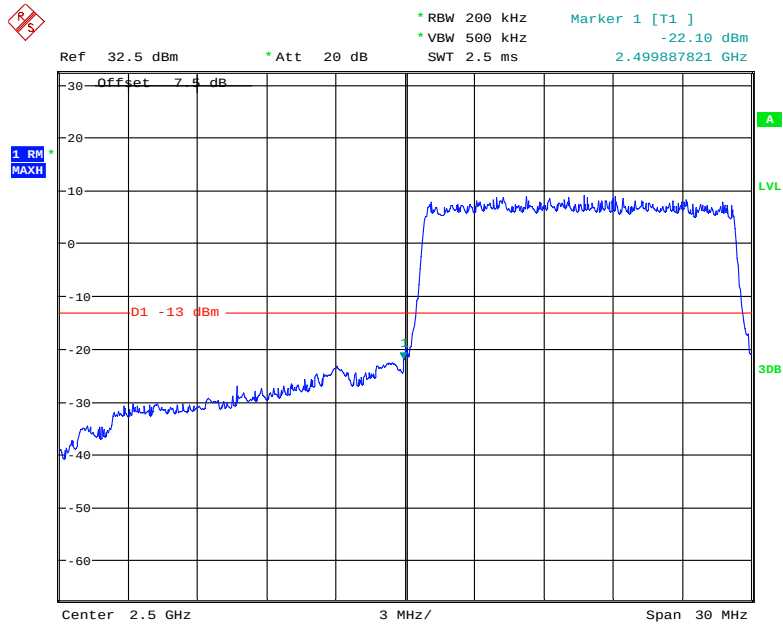
Date: 15.JAN.2019 23:12:42

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



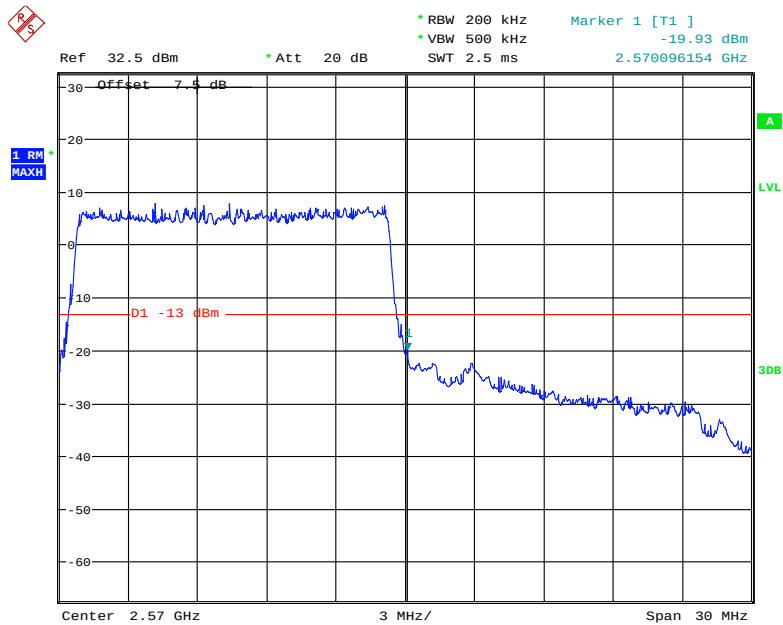
Date: 15.JAN.2019 23:16:15

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



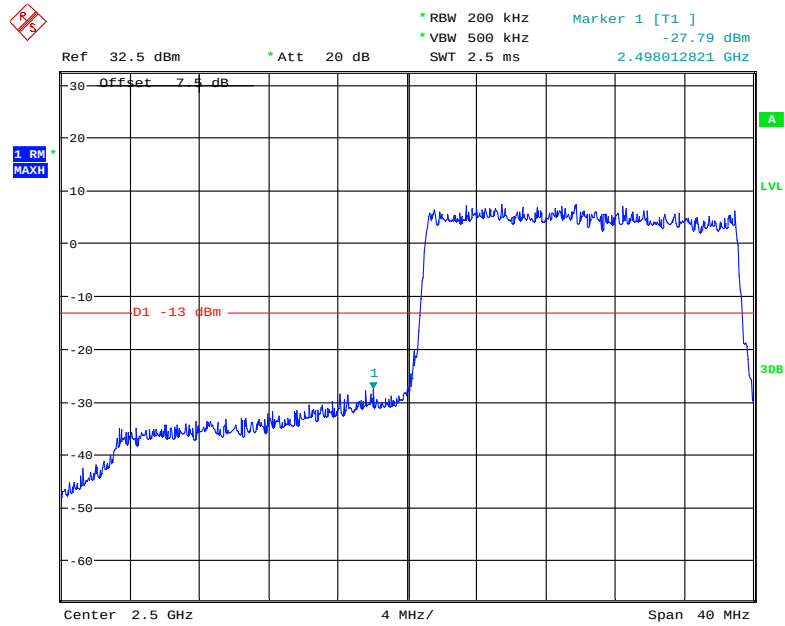
Date: 15.JAN.2019 23:04:25

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



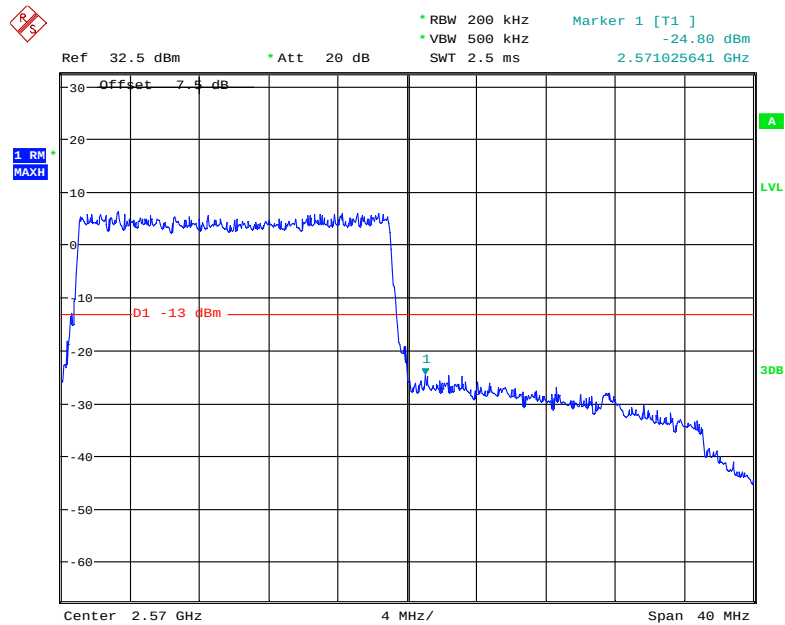
Date: 15.JAN.2019 23:16:15

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

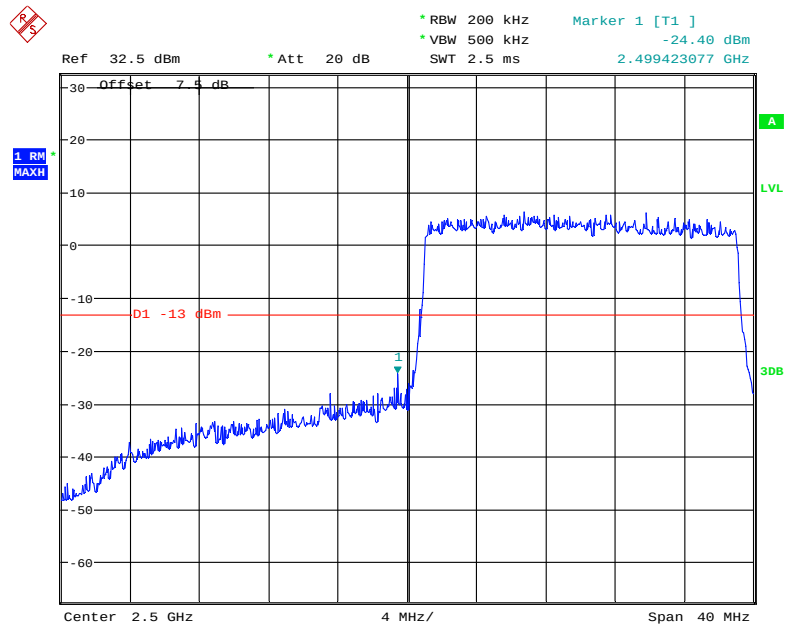


Date: 15.JAN.2019 23:23:58

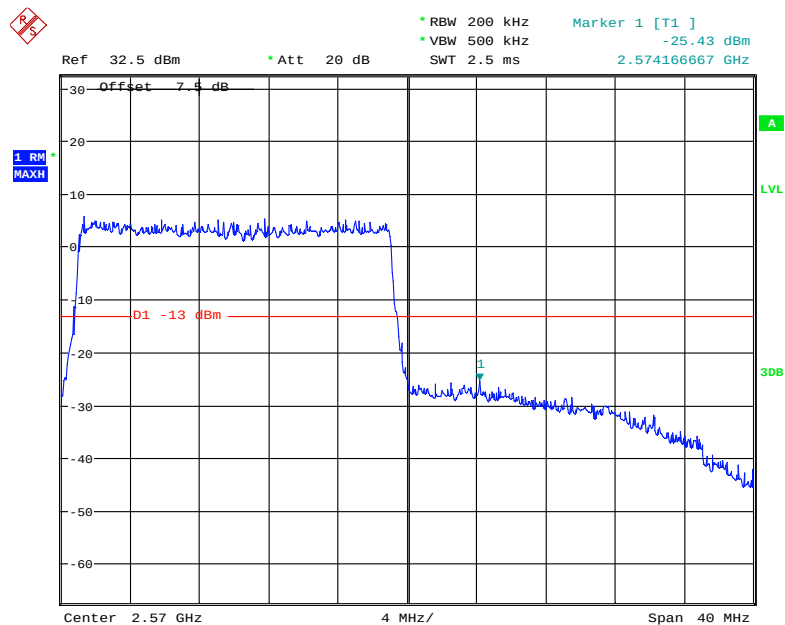
QPSK (20.0 MHz, FULL RB) - Right Band Edge



Date: 15.JAN.2019 23:28:24

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

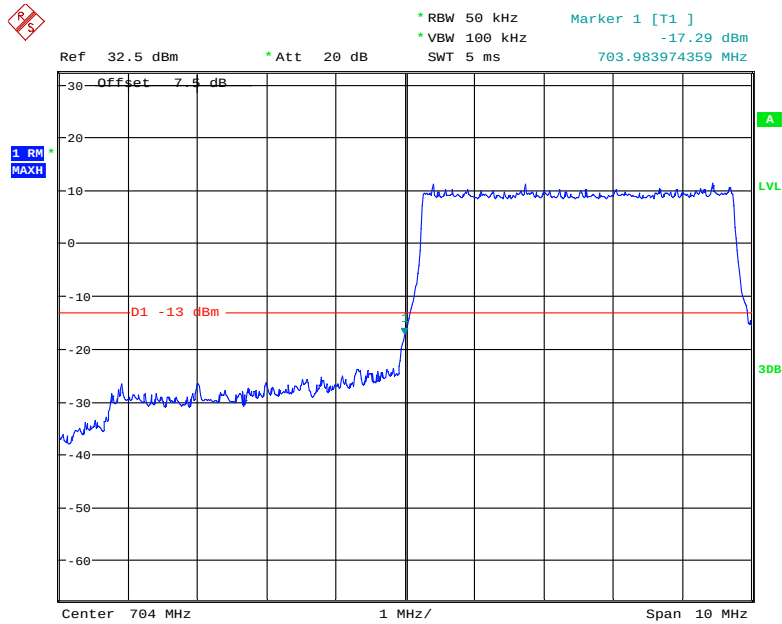
Date: 15.JAN.2019 23:24:38

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

Date: 15.JAN.2019 23:26:33

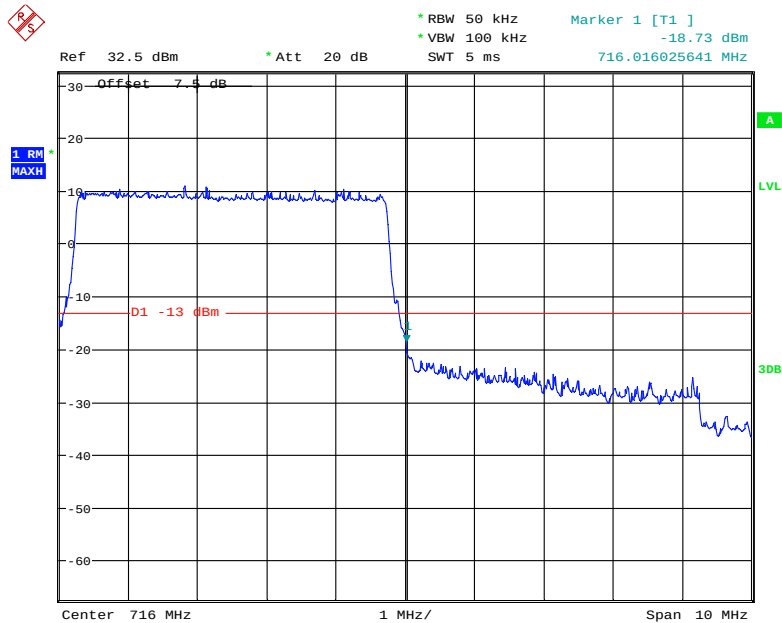
Band 17:

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



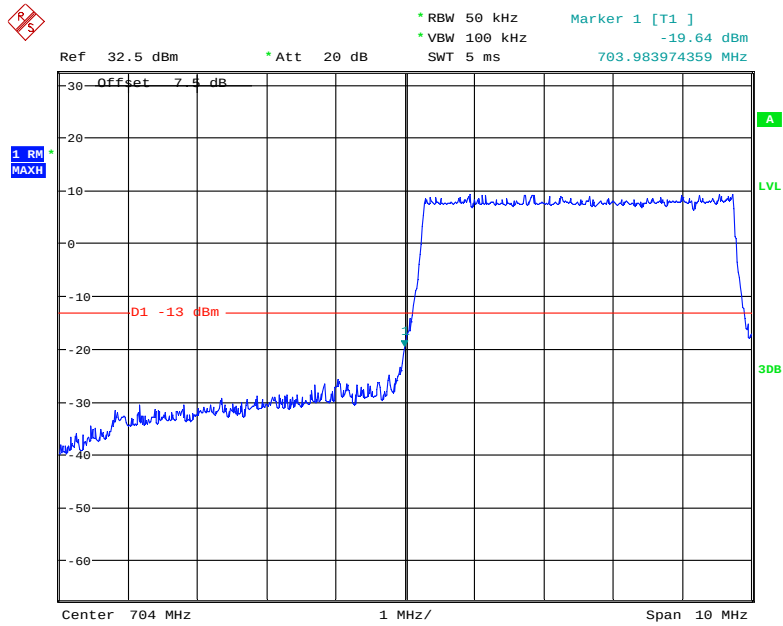
Date: 15.JAN.2019 23:31:49

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



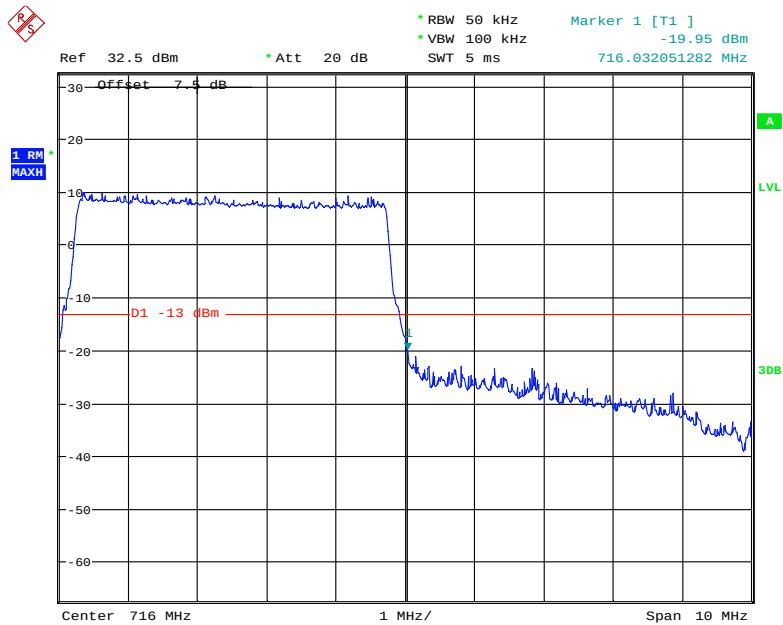
Date: 15.JAN.2019 23:34:12

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



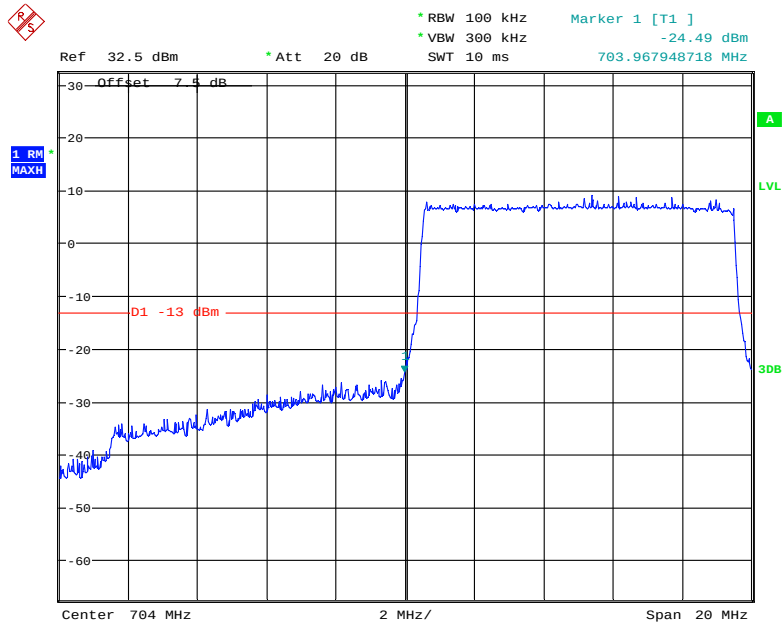
Date: 15.JAN.2019 23:32:29

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



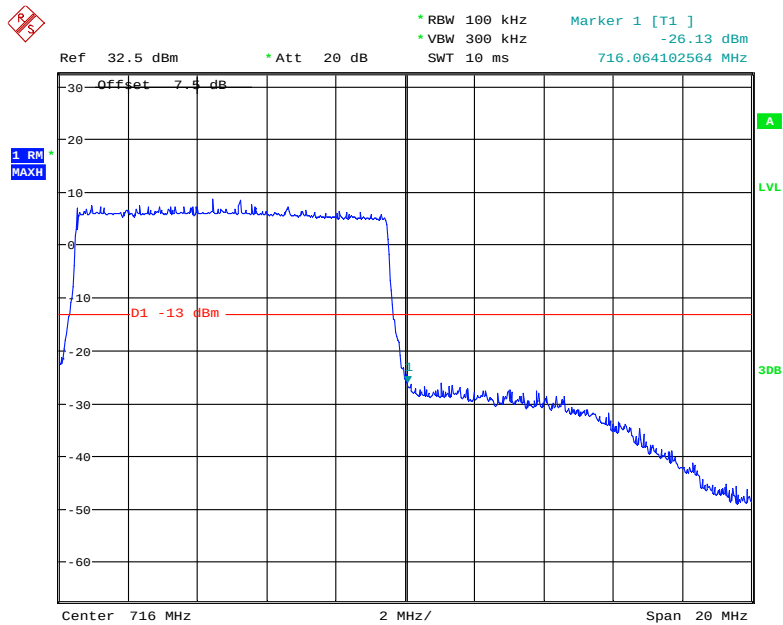
Date: 15.JAN.2019 23:33:39

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

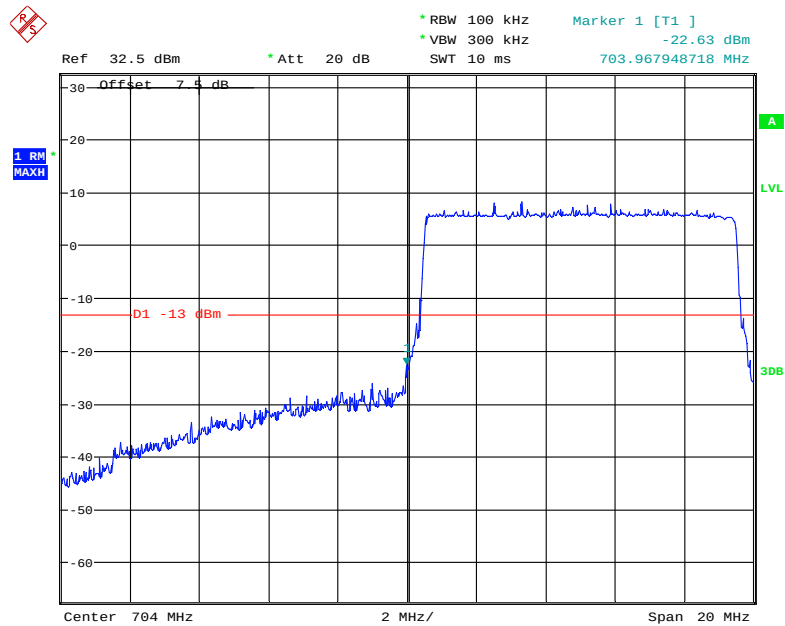


Date: 15.JAN.2019 23:35:32

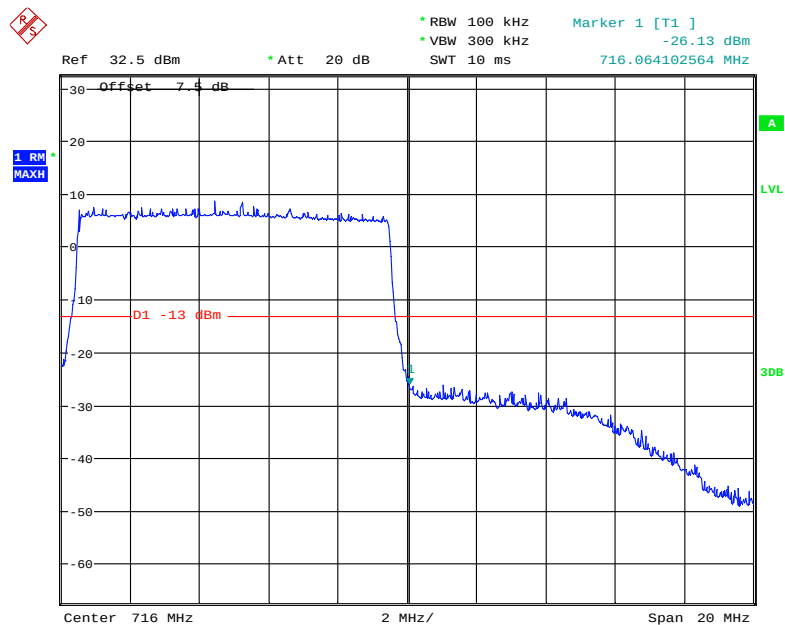
QPSK (10.0 MHz, FULL RB) - Right Band Edge



Date: 15.JAN.2019 23:37:03

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

Date: 15.JAN.2019 23:36:23

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

Date: 15.JAN.2019 23:37:03

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

Applicable Standard

FCC § 2.1055, §22.355, §24.235 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

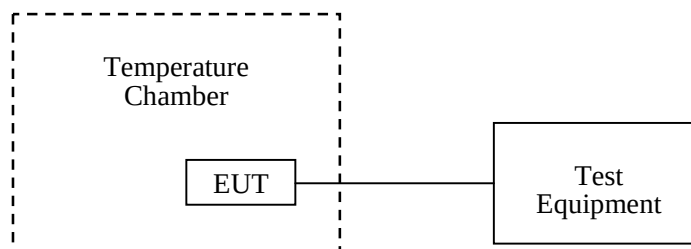
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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:	25 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Shawn Xiao on 2019-01-15.

EUT operation mode: Transmitting

Test Result: Compliance. Please refer to the following tables.

Cellular Band (Part 22H)**GSM Mode**

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	13	0.015539	2.5
-20		15	0.017930	2.5
-10		10	0.011953	2.5
0		5	0.005977	2.5
10		0	0.000000	2.5
20		7	0.008367	2.5
30		1	0.001195	2.5
40		6	0.007172	2.5
50		14	0.016734	2.5
20	V min.= 3.5	11	0.013148	2.5
	V max.= 4.2	6	0.007172	2.5

EDGE Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	0	0.000000	2.5
-20		9	0.010758	2.5
-10		6	0.007172	2.5
0		3	0.003586	2.5
10		-6	-0.007172	2.5
20		0	0.000000	2.5
30		-4	-0.004781	2.5
40		6	0.007172	2.5
50		3	0.003586	2.5
20	V min.= 3.5	-3	-0.003586	2.5
	V max.= 4.2	1	0.001195	2.5

WCDMA Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	6	0.007172	2.5
-20		1	0.001195	2.5
-10		5	0.005977	2.5
0		-1	-0.001195	2.5
10		5	0.005977	2.5
20		2	0.002391	2.5
30		2	0.002391	2.5
40		-2	-0.002391	2.5
50		-2	-0.002391	2.5
20	V min.= 3.5	-5	-0.005977	2.5
	V max.= 4.2	-4	-0.004781	2.5

PCS Band (Part 24E)**GSM Mode**

Middle Channel, $f_0=1880.0\text{ MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	4	0.002128	pass
-20		-3	-0.001596	pass
-10		6	0.003191	pass
0		-3	-0.001596	pass
10		-5	-0.002660	pass
20		2	0.001064	pass
30		1	0.000532	pass
40		-4	-0.002128	pass
50		1	0.000532	pass
20	V min.= 3.5	2	0.001064	pass
	V max.= 4.2	2	0.001064	pass

EDGE Mode

Middle Channel, $f_o = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	9	0.004787	pass
-20		12	0.006383	pass
-10		1	0.000532	pass
0		11	0.005851	pass
10		8	0.004255	pass
20		7	0.003723	pass
30		6	0.003191	pass
40		6	0.003191	pass
50		10	0.005319	pass
20	V min.= 3.5	6	0.003191	pass
	V max.= 4.2	14	0.007447	pass

WCDMA Mode

Middle Channel, $f_o = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	6	0.007172	pass
-20		7	0.008367	pass
-10		7	0.008367	pass
0		4	0.004781	pass
10		6	0.007172	pass
20		4	0.004781	pass
30		-1	-0.001195	pass
40		-1	-0.001195	pass
50		8	0.009563	pass
20	V min.= 3.5	6	0.007172	pass
	V max.= 4.2	9	0.010758	pass

AWS Band (Part 27)**WCDMA Mode**

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	1710.4657	1754.4882	1710	1755
-20		1710.4569	1754.5051	1710	1755
-10		1710.4572	1754.4863	1710	1755
0		1710.4453	1754.4990	1710	1755
10		1710.4492	1754.4805	1710	1755
20		1710.4673	1754.4871	1710	1755
30		1710.4634	1754.4912	1710	1755
40		1710.4542	1754.5079	1710	1755
50		1710.4651	1754.4969	1710	1755
20	V min.= 3.5	1710.4530	1754.4882	1710	1755
	V max.= 4.2	1710.4634	1754.5046	1710	1755

LTE:
QPSK:

Band 2:

10.0 MHz Middle Channel, $f_o=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	-7	-0.0043	pass
-20		-5	-0.0027	pass
-10		-3	-0.0021	pass
0		-2	-0.0005	pass
10		0	0.0005	pass
20		2.18	0.0017	pass
30		3	0.0021	pass
40		4	0.0011	pass
50		6	0.0027	pass
20	V min.= 3.5	8	0.0032	pass
	V max.= 4.2	10	0.0043	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	1710.4097	1754.5584	1710	1755
-20		1710.2125	1754.8096	1710	1755
-10		1710.1693	1754.0931	1710	1755
0		1710.1073	1754.2357	1710	1755
10		1710.7799	1754.5354	1710	1755
20		1710.2111	1754.1361	1710	1755
30		1710.3048	1754.6744	1710	1755
40		1710.4892	1754.5105	1710	1755
50		1710.4945	1754.8613	1710	1755
20	V min.= 3.5	1710.9124	1754.1797	1710	1755
	V max.= 4.2	1710.1214	1754.2284	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_0 = 836.5$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	-9	-0.0108	2.5
-20		-5	-0.0072	2.5
-10		-7	-0.0084	2.5
0		-3	-0.0048	2.5
10		-1	-0.0024	2.5
20		2	0.0024	2.5
30		1	0.0012	2.5
40		2	0.0024	2.5
50		4	-0.0012	2.5
20	V min.= 3.5	7	0.0048	2.5
	V max.= 4.2	6	0.0072	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	2500.1254	2569.3862	2500	2570
-20		2500.0473	2569.5083	2500	2570
-10		2500.3134	2569.1460	2500	2570
0		2500.3434	2569.1702	2500	2570
10		2500.2703	2569.1956	2500	2570
20		2500.1068	2569.5216	2500	2570
30		2500.2975	2569.2832	2500	2570
40		2500.4059	2569.6285	2500	2570
50		2500.5377	2569.5627	2500	2570
20	V min.= 3.5	2500.5296	2569.5347	2500	2570
	V max.= 4.2	2500.5279	2569.5447	2500	2570

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	704.2676	715.5569	704	716
-20		704.0709	715.4977	704	716
-10		704.1122	715.0838	704	716
0		704.0918	715.7348	704	716
10		704.1492	715.6672	704	716
20		704.0249	715.5440	704	716
30		704.0399	715.4025	704	716
40		704.4012	715.7171	704	716
50		704.5216	715.5620	704	716
20	V min.= 3.5	704.5142	715.5405	704	716
	V max.= 4.2	704.5304	715.5774	704	716

16QAM:**Band 2:**

10.0 MHz Middle Channel, $f_o=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	-9	-0.0037	pass
-20		-7	-0.0032	pass
-10		-5	-0.0021	pass
0		-4	-0.0016	pass
10		-2	-0.0005	pass
20		3	0.0021	pass
30		2	0.0011	pass
40		3	0.0021	pass
50		5	0.0032	pass
20	V min.= 3.5	7	0.0048	pass
	V max.= 4.2	11	0.0064	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	1710.8836	1754.2664	1710	1755
-20		1710.1859	1754.1428	1710	1755
-10		1710.8546	1754.5622	1710	1755
0		1710.4357	1754.9945	1710	1755
10		1710.2755	1754.5491	1710	1755
20		1710.2734	1754.5933	1710	1755
30		1710.7435	1754.1246	1710	1755
40		1710.3220	1754.8976	1710	1755
50		1710.7625	1754.3755	1710	1755
20	V min.= 3.5	1710.7192	1754.4235	1710	1755
	V max.= 4.2	1710.7008	1754.4231	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_o = 836.5$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	-6	-0.0084	2.5
-20		-7	-0.0060	2.5
-10		-5	-0.0048	2.5
0		-4	-0.0024	2.5
10		-2	-0.0012	2.5
20		5	0.0084	2.5
30		2	0.0012	2.5
40		3	0.0048	2.5
50		5	0.0084	2.5
20	V min.= 3.5	7	0.0108	2.5
	V max.= 4.2	9	0.0143	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	2500.4609	2569.5195	2500	2570
-20		2500.4713	2569.5014	2500	2570
-10		2500.4701	2569.4881	2500	2570
0		2500.4539	2569.4896	2500	2570
10		2500.4621	2569.4982	2500	2570
20		2500.4518	2569.5214	2500	2570
30		2500.4620	2569.5038	2500	2570
40		2500.4628	2569.4965	2500	2570
50		2500.4693	2569.5034	2500	2570
20	V min.= 3.5	2500.4736	2569.5042	2500	2570
	V max.= 4.2	2500.4542	2569.5068	2500	2570

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	704.4751	715.5083	704	716
-20		704.4464	715.4984	704	716
-10		704.4606	715.4844	704	716
0		704.4670	715.5149	704	716
10		704.4689	715.4948	704	716
20		704.4596	715.5006	704	716
30		704.4612	715.4993	704	716
40		704.4754	715.5074	704	716
50		704.4601	715.4927	704	716
20	V min.= 3.5	704.4655	715.4823	704	716
	V max.= 4.2	704.4687	715.4917	704	716

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