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TESTING LABORATORY
CERTIFICATE # 4821.01

FCC PART 27

FCC PART 22H, PART 24E

TEST REPORT

For

SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD

A2 2F BUILDING ENET NEW INDUSTRIAL PARK, DAFU INDUSTRIAL ZONE, GUANLAN, LONGHUA SHENZHEN China

FCC ID: 2ANMU-Y1000PRO

Report Type:	**Product Type:**
Original Report	Smart Phone

Report Number:	RSZ190902003-00D
Report Date:	2019-12-04
Reviewed By:	Kieron Luo RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Smart Phone
Tested Model	Y1000 Pro
Voltage Range	DC 3.8 from battery or DC 5.0V from adapter
Frequency Range	Cellular: 824-849 MHz PCS: 1850-1910 MHz WCDMA B2/LTE B2: 1850-1910 MHz WCDMA B5/LTE B5: 824-849 MHz WCDMA B4/LTE B4: 1710- 1755 MHz LTE B7: 2500-2570 MHz LTE B12: 699-716 MHz LTE B17: 704-716MHz LTE B19:830-845MHz
Conducted Average Power	GSM850: 32.53dBm(GMSK), 27.19dBm(8PSK) PCS1900: 29.74dBm(GMSK), 26.46dBm(8PSK) WCDMA Band 2: 22.74dBm WCDMA Band 4: 22.73dBm WCDMA Band 5: 22.62dBm LTE Band 2: 23.02dBm,LTE Band 4: 22.80dBm LTE Band 5: 23.13dBm,LTE Band 7: 23.91dBm LTE Band 12: 23.15dBm,LTE Band 17: 22.10dBm LTE Band 19: 23.20dBm
Modulation Technique	2G: GMSK,8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification	2G/3G/4G:FPC Antennas
Date of Test	2019-09-24 to 2019-12-02
Sample serial number	190902003 (Assigned by BACL, Shenzhen)
Received date	2019-09-02
Sample/EUT Status	Good condition
Adapter information	Model:HU-0502000W2-US Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5V, 2000mA

Objective

This test report is prepared on behalf of *SHENZHEN YUNJI INTELLIGENT TECHNOLOGY CO.,LTD* in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E and Part 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, Part 15.247 DTS submissions with FCC ID: 2ANMU-Y1000PRO.

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		±0.73dB
Unwanted Emission, conducted		±1.6dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.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.

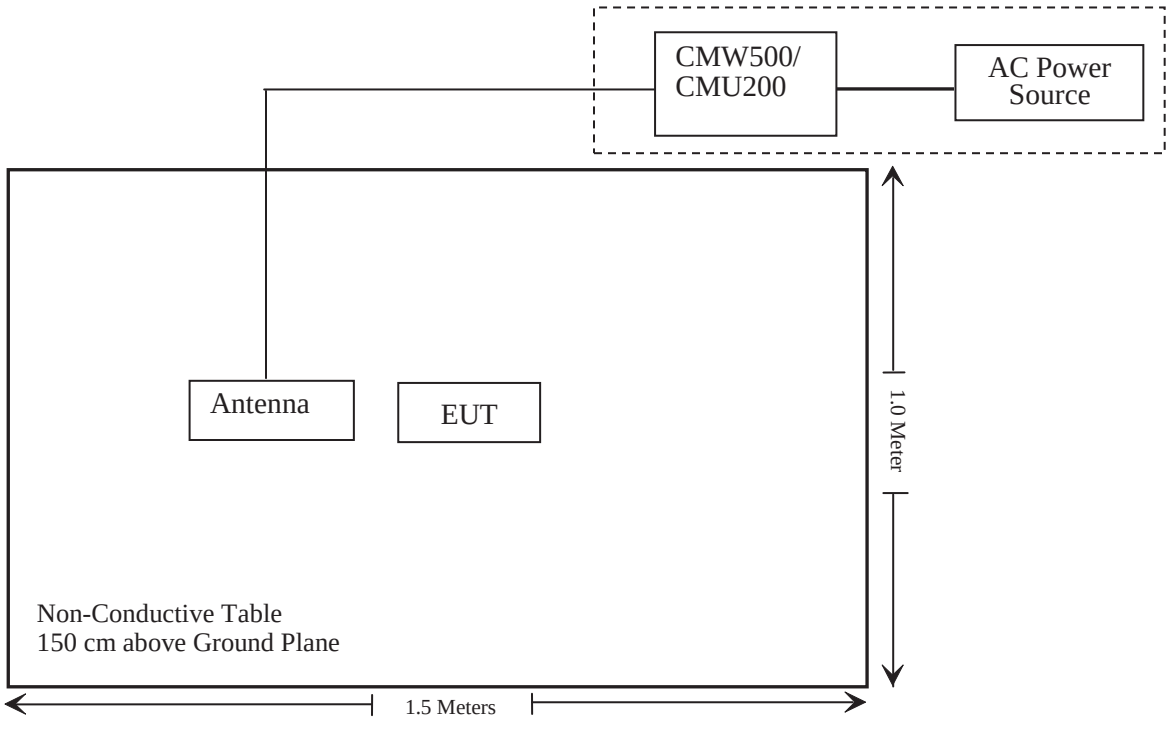
Equipment Modifications

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: RSZ190902003-SA

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	2019-07-22	2020-07-21
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
Agilent	Signal Generator	N5183A	MY51040755	2018-12-03	2019-12-03
Rohde & Schwarz	EMI Test Receiver	ESR3	102455	2019-07-09	2020-07-08
COM-POWER	Dipole Antenna	AD-100	41000	NCR	NCR
A.H. System	Horn Antenna	SAS-200/571	135	2018-09-01	2021-08-31
UTiFLEX MICRO-C0AX	RF Cable	UFA147A-2362-100100	MFR64639 231029-003	2018-11-12	2019-11-12
Ducommun Technologies	RF Cable	104PEA	218124002	2018-11-12	2019-11-12
Ducommun Technologies	RF Cable	RG-214	1	2019-05-21	2019-11-19
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
Wainwright Germany	Band Reject Filter	WRCG1850/1910-1835/1925-40/8SS	22	2019-03-02	2020-03-01
Wainwright Germany	Band Reject Filter	WRCG823/850-813/860-40/8SS	7	2019-03-02	2020-03-01
Wainwright Germany	Band Reject Filter	WRCG1786-1689/1806	2	2019-03-02	2020-03-01

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSU26	200120	2019-03-02	2020-03-01
ESPEC	Temperature & Humidity Chamber	EL-10KA	9107726	2019-01-05	2020-01-05
Long Wei	DC Power Supply	TPR-6420D	398363	NCR	NCR
KEYSIGHT	Vector signal source	N5182B	MY53051503	2019-07-22	2020-07-21
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	106891	2019-01-15	2020-01-15
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2019-07-09	2020-07-08
Ducommun Technologies	RF Cable	RG-214	3	Each Time	
Unknown	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§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: RSZ190902003-SA.

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.

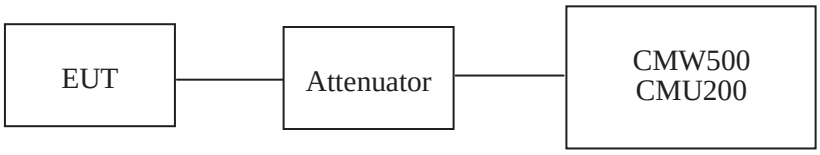
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz.

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 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by George Zhong on 2019-09-11.

Conducted Power

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	128	824.2	32.52	38.45
	190	836.6	32.51	38.45
	251	848.8	32.46	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	30.67	28.86	27.31	38.45
	190	836.6	32.53	30.49	28.81	27.42	38.45
	251	848.8	32.47	30.57	28.83	27.31	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	27.10	25.12	23.86	21.69	38.45
	190	836.6	27.19	25.26	23.89	21.63	38.45
	251	848.8	27.16	25.10	23.96	21.67	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		22.61	22.62	22.58
		HSDPA	1	21.42	21.35	21.52
			2	21.32	21.51	21.57
			3	21.41	21.54	21.46
			4	21.44	21.65	21.64
			5	21.47	21.57	21.57
		HSUPA	1	21.45	21.21	21.40
			2	21.46	21.26	21.28
			3	21.57	21.25	21.12
			4	21.51	21.37	21.44
			5	21.65	21.36	21.56
		HSPA+	1	21.25	21.41	21.13

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	Limit (dBm)
GSM	512	1850.2	29.63	33
	661	1880.0	29.65	33
	810	1909.8	29.74	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.38	27.13	25.87	23.59	33
	661	1880.0	29.36	27.28	25.91	23.62	33
	810	1909.8	29.42	27.16	25.96	23.79	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	26.45	24.46	22.15	20.72	33
	661	1880.0	26.46	24.65	22.34	20.72	33
	810	1909.8	26.34	24.51	22.21	20.79	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		22.74	22.67	22.62
		HSDPA	1	21.66	21.56	21.78
			2	21.54	21.75	21.47
			3	21.31	21.83	21.42
			4	21.56	21.85	21.53
			5	21.38	21.85	21.57
		HSUPA	1	21.14	21.10	21.15
			2	21.22	21.36	21.11
			3	21.27	21.41	21.28
			4	21.36	21.44	21.36
			5	21.36	21.50	21.34
		HSPA+	1	21.22	21.53	21.18

AWS Band (Part27)

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Frequency	Middle Frequency	High Frequency
WCDMA (Band IV)	Normal	RMC12.2k		22.56	22.74	22.67
		HSDPA	1	21.44	21.59	21.44
			2	21.55	21.68	21.46
			3	21.46	21.40	21.51
			4	21.48	21.61	21.34
			5	21.42	21.57	21.52
		HSUPA	1	21.17	21.15	21.20
			2	21.26	21.12	21.38
			3	21.14	21.26	21.26
			4	21.03	21.14	21.14
			5	21.15	21.31	21.27
		HSPA+	1	21.24	21.18	21.37

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	1.37	13
	Middle	1.33	13
	High	1.35	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	1.36	13
	Middle	1.34	13
	High	1.31	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.26	13
	Middle	3.50	13
	High	3.41	13
HSDPA (16QAM)	Low	3.08	13
	Middle	3.05	13
	High	3.07	13
HSUPA (BPSK)	Low	2.99	13
	Middle	3.04	13
	High	2.97	13
HSPA+	Low	3.01	13
	Middle	3.23	13
	High	3.08	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	1.47	13
	Middle	1.42	13
	High	1.34	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	1.63	13
	Middle	1.58	13
	High	1.71	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.12	13
	Middle	3.18	13
	High	3.28	13
HSDPA (16QAM)	Low	2.98	13
	Middle	2.97	13
	High	3.02	13
HSUPA (BPSK)	Low	3.16	13
	Middle	2.95	13
	High	3.26	13
HSPA+	Low	3.22	13
	Middle	3.08	13
	High	3.37	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dBm)
WCDMA (BPSK)	Low	2.96	13
	Middle	2.91	13
	High	3.19	13
HSDPA (16QAM)	Low	3.02	13
	Middle	3.04	13
	High	3.18	13
HSUPA (BPSK)	Low	2.96	13
	Middle	2.89	13
	High	3.01	13
HSPA+	Low	3.56	13
	Middle	3.28	13
	High	3.41	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										
836.6	91.39	205	1.8	H	32.0	1.90	0.0	30.10	38.45	8.35
836.6	86.92	122	2.3	V	26.9	1.90	0.0	25.00	38.45	13.45
EIRP for PCS Band (Part 24E), Middle Channel										
1880.00	91.08	108	1.8	H	21.4	1.30	9.40	29.50	33	3.50
1880.00	89.17	259	1.6	V	19.3	1.30	9.40	27.40	33	5.60

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										
836.6	87.53	95	1.6	H	28.2	1.90	0.0	26.30	38.45	12.15
836.6	82.39	247	1.4	V	22.4	1.90	0.0	20.50	38.45	17.95
EIRP, PCS Band (Part 24E), Middle Channel										
1880.00	86.93	179	1.9	H	17.3	1.30	9.40	25.40	33	7.60
1880.00	83.27	332	2.0	V	13.4	1.30	9.40	21.50	33	11.50

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										
836.6	84.91	309	1.1	H	21.3	1.88	0.0	19.42	38.45	19.03
836.6	85.36	359	2.3	V	23.6	1.88	0.0	21.72	38.45	16.73
EIRP for WCDMA Band II (Part 24E), Middle Channel										
1880.00	82.75	178	1.8	H	13.1	1.30	9.40	21.20	33	11.8
1880.00	82.19	225	2.4	V	12.3	1.30	9.40	20.40	33	12.6
EIRP for WCDMA Band IV (Part 27), Middle Channel										
1732.60	82.49	80	1.1	H	9.2	1.30	8.90	16.80	30	13.20
1732.60	78.69	179	1.7	V	6.0	1.30	8.90	13.60	30	16.40

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	22.70
		RB Size=1, RB Offset=2	22.54	22.57	22.55
		RB Size=1, RB Offset=5	22.32	22.67	22.56
		RB Size=3, RB Offset=0	22.35	22.39	22.29
		RB Size=3, RB Offset=1	22.30	22.39	22.39
		RB Size=3, RB Offset=2	22.17	22.14	22.24
		RB Size=6, RB Offset=0	22.17	22.16	22.08
	16QAM	RB Size=1, RB Offset=0	22.15	22.19	22.20
		RB Size=1, RB Offset=2	22.03	22.01	21.96
		RB Size=1, RB Offset=5	22.03	21.92	23.02
		RB Size=3, RB Offset=0	21.89	21.62	22.95
		RB Size=3, RB Offset=1	21.82	21.92	21.83
		RB Size=3, RB Offset=2	21.79	21.88	21.82
		RB Size=6, RB Offset=0	21.79	21.66	21.76
3.0	QPSK	RB Size=1, RB Offset=0	22.85	22.91	22.82
		RB Size=1, RB Offset=7	22.73	22.73	22.72
		RB Size=1, RB Offset=14	22.54	22.72	22.92
		RB Size=8, RB Offset=0	21.87	21.85	22.00
		RB Size=8, RB Offset=4	21.90	21.81	21.92
		RB Size=8, RB Offset=7	21.58	21.56	21.68
		RB Size=15, RB Offset=0	21.90	21.71	21.73
	16QAM	RB Size=1, RB Offset=0	22.02	22.15	22.06
		RB Size=1, RB Offset=7	22.09	21.96	22.15
		RB Size=1, RB Offset=14	22.27	21.70	22.03
		RB Size=8, RB Offset=0	20.94	20.87	21.03
		RB Size=8, RB Offset=4	20.67	20.78	20.99
		RB Size=8, RB Offset=7	20.37	20.63	20.76
		RB Size=15, RB Offset=0	20.68	20.82	20.83

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	22.83	22.84
		RB Size=1, RB Offset=12	22.85	22.90	22.74
		RB Size=1, RB Offset=24	22.59	22.93	22.61
		RB Size=12, RB Offset=0	21.91	21.82	21.93
		RB Size=12, RB Offset=6	21.88	21.78	21.80
		RB Size=12, RB Offset=11	21.89	21.52	21.69
		RB Size=25, RB Offset=0	21.65	21.74	21.82
	16QAM	RB Size=1, RB Offset=0	22.08	21.58	21.59
		RB Size=1, RB Offset=12	21.76	21.41	21.65
		RB Size=1, RB Offset=24	21.93	21.45	21.65
		RB Size=12, RB Offset=0	20.83	20.72	20.80
		RB Size=12, RB Offset=6	20.72	20.69	20.57
		RB Size=12, RB Offset=11	20.55	20.53	20.71
		RB Size=25, RB Offset=0	20.80	20.81	20.68
10.0	QPSK	RB Size=1, RB Offset=0	22.76	22.88	22.69
		RB Size=1, RB Offset=24	22.84	22.78	22.71
		RB Size=1, RB Offset=49	22.74	22.67	22.69
		RB Size=25, RB Offset=0	21.93	21.89	21.64
		RB Size=25, RB Offset=12	21.93	21.80	21.70
		RB Size=25, RB Offset=24	21.82	21.59	21.65
		RB Size=50, RB Offset=0	21.56	21.46	21.58
	16QAM	RB Size=1, RB Offset=0	21.76	21.75	21.75
		RB Size=1, RB Offset=24	21.59	21.45	21.64
		RB Size=1, RB Offset=49	21.42	21.46	21.73
		RB Size=25, RB Offset=0	22.63	20.79	20.86
		RB Size=25, RB Offset=12	22.57	20.52	20.65
		RB Size=25, RB Offset=24	22.71	20.31	20.45
		RB Size=50, RB Offset=0	20.52	20.54	20.51

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	22.06	22.08	22.35
		RB Size=1, RB Offset=37	22.00	21.97	22.18
		RB Size=1, RB Offset=74	21.99	22.02	22.35
		RB Size=36, RB Offset=0	22.02	21.93	22.00
		RB Size=36, RB Offset=18	22.02	21.88	21.86
		RB Size=36, RB Offset=37	22.06	21.82	21.62
		RB Size=75, RB Offset=0	21.93	21.87	21.92
	16QAM	RB Size=1, RB Offset=0	21.85	21.81	21.68
		RB Size=1, RB Offset=37	21.82	21.86	21.62
		RB Size=1, RB Offset=74	21.71	21.84	21.38
		RB Size=36, RB Offset=0	21.80	21.87	22.09
		RB Size=36, RB Offset=18	21.94	21.61	22.13
		RB Size=36, RB Offset=37	21.54	21.53	21.88
		RB Size=75, RB Offset=0	21.15	21.06	21.09
20.0	QPSK	RB Size=1, RB Offset=0	22.94	22.95	23.07
		RB Size=1, RB Offset=49	22.94	22.98	22.96
		RB Size=1, RB Offset=99	22.95	22.79	22.79
		RB Size=50, RB Offset=0	21.91	21.79	22.01
		RB Size=50, RB Offset=24	21.76	21.85	21.96
		RB Size=50, RB Offset=49	21.70	21.62	21.57
		RB Size=100, RB Offset=0	21.89	21.83	21.94
	16QAM	RB Size=1, RB Offset=0	21.99	22.12	21.96
		RB Size=1, RB Offset=49	21.99	21.94	22.02
		RB Size=1, RB Offset=99	21.98	21.69	21.98
		RB Size=50, RB Offset=0	20.81	20.97	21.07
		RB Size=50, RB Offset=24	20.74	20.94	21.06
		RB Size=50, RB Offset=49	20.51	20.77	20.92
		RB Size=100, RB Offset=0	20.89	20.85	20.96

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.05	13	Pass
QPSK (100RB Size)	5.97	13	Pass
16QAM (1RB Size)	6.97	13	Pass
16QAM (100RB Size)	6.92	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	83.75	26	1.5	H	14.1	1.30	9.40	22.20	33
1880.00	84.73	139	1.3	V	14.8	1.30	9.40	22.90	33
3 MHz Bandwidth									
1880.00	83.62	333	1.7	H	13.9	1.30	9.40	22.00	33
1880.00	84.61	125	2.5	V	14.7	1.30	9.40	22.80	33
5 MHz Bandwidth									
1880.00	83.18	19	1.9	H	13.5	1.30	9.40	21.60	33
1880.00	84.47	29	1.6	V	14.6	1.30	9.40	22.70	33
10 MHz Bandwidth									
1880.00	82.85	70	1.8	H	13.2	1.30	9.40	21.30	33
1880.00	83.85	303	1.7	V	14.0	1.30	9.40	22.10	33
15 MHz Bandwidth									
1880.00	82.49	208	2.5	H	12.8	1.30	9.40	20.90	33
1880.00	83.62	90	1.6	V	13.7	1.30	9.40	21.80	33
20 MHz Bandwidth									
1880.00	82.37	187	1.7	H	12.7	1.30	9.40	20.80	33
1880.00	83.58	162	1.3	V	13.7	1.30	9.40	21.80	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	82.69	189	1.9	H	13.0	1.30	9.40	21.10	33
1880.00	83.99	269	2.0	V	14.1	1.30	9.40	22.20	33
3 MHz Bandwidth									
1880.00	82.39	270	1.3	H	12.7	1.30	9.40	20.80	33
1880.00	83.81	108	2.3	V	13.9	1.30	9.40	22.00	33
5 MHz Bandwidth									
1880.00	82.53	297	1.9	H	12.9	1.30	9.40	21.00	33
1880.00	83.64	171	1.2	V	13.7	1.30	9.40	21.80	33
10 MHz Bandwidth									
1880.00	82.17	49	2.1	H	12.5	1.30	9.40	20.60	33
1880.00	83.44	305	1.3	V	13.5	1.30	9.40	21.60	33
15 MHz Bandwidth									
1880.00	82.53	233	1.5	H	12.9	1.30	9.40	21.00	33
1880.00	83.17	190	1.9	V	13.3	1.30	9.40	21.40	33
20 MHz Bandwidth									
1880.00	82.11	100	2.0	H	12.4	1.30	9.40	20.50	33
1880.00	83.08	336	1.9	V	13.2	1.30	9.40	21.30	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	22.39	22.44	22.64
		RB Size=1, RB Offset=2	22.44	22.25	22.53
		RB Size=1, RB Offset=5	22.40	21.92	22.66
		RB Size=3, RB Offset=0	22.59	22.73	22.80
		RB Size=3, RB Offset=1	22.51	22.50	22.67
		RB Size=3, RB Offset=2	22.55	22.59	22.49
		RB Size=6, RB Offset=0	21.53	21.37	21.40
	16QAM	RB Size=1, RB Offset=0	21.85	21.97	21.90
		RB Size=1, RB Offset=2	21.80	21.83	21.75
		RB Size=1, RB Offset=5	21.81	21.95	21.85
		RB Size=3, RB Offset=0	22.71	21.69	21.76
		RB Size=3, RB Offset=1	22.78	21.67	21.86
		RB Size=3, RB Offset=2	22.60	21.79	21.69
		RB Size=6, RB Offset=0	20.76	20.69	20.62
3.0	QPSK	RB Size=1, RB Offset=0	22.54	22.45	22.52
		RB Size=1, RB Offset=7	22.39	22.48	22.28
		RB Size=1, RB Offset=14	22.32	22.30	22.23
		RB Size=8, RB Offset=0	21.57	21.53	21.54
		RB Size=8, RB Offset=4	21.51	21.59	21.73
		RB Size=8, RB Offset=7	21.40	21.27	21.54
		RB Size=15, RB Offset=0	21.59	21.59	21.64
	16QAM	RB Size=1, RB Offset=0	21.67	21.71	21.69
		RB Size=1, RB Offset=7	21.80	21.58	21.64
		RB Size=1, RB Offset=14	21.69	21.54	21.33
		RB Size=8, RB Offset=0	20.59	20.68	20.82
		RB Size=8, RB Offset=4	20.50	20.50	20.64
		RB Size=8, RB Offset=7	20.58	20.73	20.52
		RB Size=15, RB Offset=0	20.69	20.74	20.74

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	22.62	22.60	22.68
		RB Size=1, RB Offset=12	22.70	22.63	22.67
		RB Size=1, RB Offset=24	22.55	22.48	22.68
		RB Size=12, RB Offset=0	21.86	21.68	21.63
		RB Size=12, RB Offset=6	21.69	21.58	21.73
		RB Size=12, RB Offset=11	21.54	21.65	21.73
		RB Size=25, RB Offset=0	21.73	21.61	21.79
	16QAM	RB Size=1, RB Offset=0	21.94	21.94	22.00
		RB Size=1, RB Offset=12	21.77	21.74	21.62
		RB Size=1, RB Offset=24	21.69	21.69	21.73
		RB Size=12, RB Offset=0	20.87	20.96	20.99
		RB Size=12, RB Offset=6	20.92	20.95	20.86
		RB Size=12, RB Offset=11	20.77	20.69	20.73
		RB Size=25, RB Offset=0	20.78	20.71	20.73
10.0	QPSK	RB Size=1, RB Offset=0	22.65	22.74	22.67
		RB Size=1, RB Offset=24	22.68	22.62	22.83
		RB Size=1, RB Offset=49	22.50	22.59	22.71
		RB Size=25, RB Offset=0	21.83	21.78	21.78
		RB Size=25, RB Offset=12	21.74	21.77	21.73
		RB Size=25, RB Offset=24	21.56	21.49	21.77
		RB Size=50, RB Offset=0	21.70	21.87	21.90
	16QAM	RB Size=1, RB Offset=0	22.13	22.16	22.20
		RB Size=1, RB Offset=24	22.21	22.08	22.22
		RB Size=1, RB Offset=49	22.30	22.23	21.99
		RB Size=25, RB Offset=0	20.83	20.82	20.99
		RB Size=25, RB Offset=12	20.75	20.56	21.02
		RB Size=25, RB Offset=24	20.66	20.63	20.74
		RB Size=50, RB Offset=0	21.00	20.92	20.92

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	22.62	22.66	22.71
		RB Size=1, RB Offset=37	22.65	22.44	22.44
		RB Size=1, RB Offset=74	22.41	22.42	22.44
		RB Size=36, RB Offset=0	21.99	21.94	21.90
		RB Size=36, RB Offset=18	21.95	21.75	21.78
		RB Size=36, RB Offset=37	21.95	21.70	21.70
		RB Size=75, RB Offset=0	21.74	21.51	21.60
	16QAM	RB Size=1, RB Offset=0	21.65	21.49	21.63
		RB Size=1, RB Offset=37	21.64	21.46	21.70
		RB Size=1, RB Offset=74	21.57	21.46	21.55
		RB Size=36, RB Offset=0	20.96	20.65	20.66
		RB Size=36, RB Offset=18	20.81	20.52	20.59
		RB Size=36, RB Offset=37	20.51	20.60	20.56
		RB Size=75, RB Offset=0	20.84	20.86	20.83
20.0	QPSK	RB Size=1, RB Offset=0	22.64	22.53	22.45
		RB Size=1, RB Offset=49	22.62	22.38	22.42
		RB Size=1, RB Offset=99	22.66	22.20	22.27
		RB Size=50, RB Offset=0	21.97	21.94	22.00
		RB Size=50, RB Offset=24	21.83	21.99	21.95
		RB Size=50, RB Offset=49	21.75	21.87	21.91
		RB Size=100, RB Offset=0	21.75	21.55	21.57
	16QAM	RB Size=1, RB Offset=0	22.45	22.17	22.29
		RB Size=1, RB Offset=49	22.08	22.22	22.35
		RB Size=1, RB Offset=99	22.09	22.08	22.38
		RB Size=50, RB Offset=0	21.04	20.97	21.12
		RB Size=50, RB Offset=24	21.03	21.05	20.99
		RB Size=50, RB Offset=49	20.76	21.06	21.02
		RB Size=100, RB Offset=0	20.94	20.72	20.71

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.23	13	Pass
QPSK (100RB Size)	6.14	13	Pass
16QAM (1RB Size)	7.33	13	Pass
16QAM (100RB Size)	7.25	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	85.77	186	1.9	H	12.4	1.30	8.90	20.00	30
1732.50	84.33	102	1.4	V	11.6	1.30	8.90	19.20	30
3 MHz Bandwidth									
1732.50	85.53	16	2.3	H	12.2	1.30	8.90	19.80	30
1732.50	84.69	94	1.4	V	12.0	1.30	8.90	19.60	30
5 MHz Bandwidth									
1732.50	85.27	149	1.7	H	11.9	1.30	8.90	19.50	30
1732.50	84.07	21	1.3	V	11.3	1.30	8.90	18.90	30
10 MHz Bandwidth									
1732.50	84.95	37	1.6	H	11.6	1.30	8.90	19.20	30
1732.50	83.88	15	1.0	V	11.2	1.30	8.90	18.80	30
15 MHz Bandwidth									
1732.50	85.36	139	1.8	H	12.0	1.30	8.90	19.60	30
1732.50	84.34	35	1.7	V	11.6	1.30	8.90	19.20	30
20 MHz Bandwidth									
1732.50	85.62	19	1.3	H	12.3	1.30	8.90	19.90	30
1732.50	83.92	323	1.8	V	11.2	1.30	8.90	18.80	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	85.69	331	2.1	H	12.4	1.30	8.90	20.00	30
1732.50	84.32	158	2.4	V	11.6	1.30	8.90	19.20	30
3 MHz Bandwidth									
1732.50	85.36	58	1.8	H	12.0	1.30	8.90	19.60	30
1732.50	84.13	123	1.3	V	11.4	1.30	8.90	19.00	30
5 MHz Bandwidth									
1732.50	85.21	296	1.7	H	11.9	1.30	8.90	19.50	30
1732.50	84.36	290	2.0	V	11.6	1.30	8.90	19.20	30
10 MHz Bandwidth									
1732.50	85.09	117	1.6	H	11.8	1.30	8.90	19.40	30
1732.50	84.67	181	2.2	V	11.9	1.30	8.90	19.50	30
15 MHz Bandwidth									
1732.50	85.52	212	1.6	H	12.2	1.30	8.90	19.80	30
1732.50	84.19	178	2.1	V	11.5	1.30	8.90	19.10	30
20 MHz Bandwidth									
1732.50	85.81	41	1.8	H	12.5	1.30	8.90	20.10	30
1732.50	84.67	200	1.8	V	11.9	1.30	8.90	19.50	30

LTE Band 5:

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	22.92	23.09	22.96
		RB Size=1, RB Offset=2	23.09	23.03	23.06
		RB Size=1, RB Offset=5	22.91	22.92	22.84
		RB Size=3, RB Offset=0	23.07	23.00	23.13
		RB Size=3, RB Offset=1	22.93	22.99	23.11
		RB Size=3, RB Offset=2	22.81	22.82	22.96
		RB Size=6, RB Offset=0	22.05	22.13	21.99
	16QAM	RB Size=1, RB Offset=0	22.05	21.97	22.08
		RB Size=1, RB Offset=2	21.94	21.85	21.83
		RB Size=1, RB Offset=5	21.84	21.80	21.60
		RB Size=3, RB Offset=0	22.13	22.15	22.09
		RB Size=3, RB Offset=1	22.15	22.09	22.08
		RB Size=3, RB Offset=2	21.90	22.18	22.14
		RB Size=6, RB Offset=0	20.96	21.09	21.01
3.0	QPSK	RB Size=1, RB Offset=0	22.99	22.96	22.92
		RB Size=1, RB Offset=7	22.77	23.07	22.87
		RB Size=1, RB Offset=14	22.43	22.77	22.58
		RB Size=8, RB Offset=0	22.18	22.06	22.12
		RB Size=8, RB Offset=4	22.06	22.04	22.00
		RB Size=8, RB Offset=7	22.19	21.83	21.74
		RB Size=15, RB Offset=0	22.13	21.94	22.07
	16QAM	RB Size=1, RB Offset=0	22.43	22.42	22.63
		RB Size=1, RB Offset=7	22.35	22.24	22.61
		RB Size=1, RB Offset=14	22.31	22.22	22.38
		RB Size=8, RB Offset=0	21.09	21.13	21.17
		RB Size=8, RB Offset=4	21.18	20.98	21.24
		RB Size=8, RB Offset=7	21.10	21.03	21.31
		RB Size=15, RB Offset=0	21.10	21.02	21.00

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	21.97	22.14	22.09
		RB Size=1, RB Offset=12	21.98	21.95	21.86
		RB Size=1, RB Offset=24	22.05	21.86	21.90
		RB Size=12, RB Offset=0	21.23	21.24	21.21
		RB Size=12, RB Offset=6	21.13	21.05	21.02
		RB Size=12, RB Offset=11	20.88	21.14	20.91
		RB Size=25, RB Offset=0	22.15	22.05	21.91
	16QAM	RB Size=1, RB Offset=0	21.98	22.09	22.08
		RB Size=1, RB Offset=12	21.89	21.73	21.98
		RB Size=1, RB Offset=24	21.91	21.67	21.98
		RB Size=12, RB Offset=0	21.31	21.13	21.15
		RB Size=12, RB Offset=6	21.00	21.17	21.30
		RB Size=12, RB Offset=11	20.86	20.98	20.86
		RB Size=25, RB Offset=0	21.17	21.13	21.20
10.0	QPSK	RB Size=1, RB Offset=0	23.10	22.96	23.04
		RB Size=1, RB Offset=24	23.07	22.95	22.97
		RB Size=1, RB Offset=49	22.93	23.15	22.90
		RB Size=25, RB Offset=0	22.03	21.96	22.09
		RB Size=25, RB Offset=12	21.96	21.99	22.20
		RB Size=25, RB Offset=24	21.77	21.82	21.93
		RB Size=50, RB Offset=0	22.12	22.05	22.02
	16QAM	RB Size=1, RB Offset=0	22.58	22.72	22.62
		RB Size=1, RB Offset=24	22.64	22.47	22.59
		RB Size=1, RB Offset=49	22.39	22.34	22.32
		RB Size=25, RB Offset=0	21.21	21.20	21.21
		RB Size=25, RB Offset=12	20.95	21.19	21.05
		RB Size=25, RB Offset=24	21.06	21.20	20.90
		RB Size=50, RB Offset=0	21.18	21.17	21.12

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.61	13	Pass
QPSK (50RB Size)	6.55	13	Pass
16QAM (1RB Size)	7.62	13	Pass
16QAM (50RB 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									
836.5	81.26	113	1.5	H	21.9	1.90	0.0	20.00	38.45
836.5	76.22	257	2.2	V	16.2	1.90	0.0	14.30	38.45
3 MHz Bandwidth									
836.5	81.36	34	1.9	H	22.0	1.90	0.0	20.10	38.45
836.5	76.31	21	1.4	V	16.3	1.90	0.0	14.40	38.45
5 MHz Bandwidth									
836.5	81.44	331	2.2	H	22.1	1.90	0.0	20.20	38.45
836.5	76.39	59	1.7	V	16.4	1.90	0.0	14.50	38.45
10 MHz Bandwidth									
836.5	81.58	234	2.1	H	22.2	1.90	0.0	20.30	38.45
836.5	76.33	236	1.0	V	16.3	1.90	0.0	14.40	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									
836.5	81.62	159	2.3	H	22.2	1.90	0.0	20.30	38.45
836.5	76.22	146	1.6	V	16.2	1.90	0.0	14.30	38.45
3 MHz Bandwidth									
836.5	81.54	277	2.1	H	22.2	1.90	0.0	20.30	38.45
836.5	76.35	219	1.3	V	16.4	1.90	0.0	14.50	38.45
5 MHz Bandwidth									
836.5	81.32	45	1.4	H	21.9	1.90	0.0	20.00	38.45
836.5	76.17	159	2.0	V	16.2	1.90	0.0	14.30	38.45
10 MHz Bandwidth									
836.5	81.77	291	1.9	H	22.4	1.90	0.0	20.50	38.45
836.5	76.35	283	1.8	V	16.4	1.90	0.0	14.50	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	23.11	22.91	22.55
		RB Size=1, RB Offset=12	22.67	22.47	22.22
		RB Size=1, RB Offset=24	23.36	23.10	22.79
		RB Size=12, RB Offset=0	22.02	21.50	21.26
		RB Size=12, RB Offset=6	22.14	21.57	21.40
		RB Size=12, RB Offset=11	21.97	21.54	21.46
		RB Size=25, RB Offset=0	21.97	21.63	22.40
	16QAM	RB Size=1, RB Offset=0	22.60	21.98	22.04
		RB Size=1, RB Offset=12	22.63	21.82	22.12
		RB Size=1, RB Offset=24	22.68	22.07	22.33
		RB Size=12, RB Offset=0	21.73	20.95	21.24
		RB Size=12, RB Offset=6	21.68	21.02	21.19
		RB Size=12, RB Offset=11	21.69	20.94	21.31
		RB Size=25, RB Offset=0	21.01	20.63	20.65
10	QPSK	RB Size=1, RB Offset=0	22.60	22.38	22.87
		RB Size=1, RB Offset=24	22.73	22.32	22.74
		RB Size=1, RB Offset=49	22.57	22.29	22.78
		RB Size=25, RB Offset=0	21.97	21.59	22.13
		RB Size=25, RB Offset=12	21.85	21.79	21.95
		RB Size=25, RB Offset=24	21.72	21.82	21.99
		RB Size=50, RB Offset=0	21.96	21.44	21.58
	16QAM	RB Size=1, RB Offset=0	21.84	22.08	21.98
		RB Size=1, RB Offset=24	21.81	22.13	22.01
		RB Size=1, RB Offset=49	21.80	22.26	21.86
		RB Size=25, RB Offset=0	21.07	21.28	21.17
		RB Size=25, RB Offset=12	21.22	21.21	21.08
		RB Size=25, RB Offset=24	21.02	21.31	21.30
		RB Size=50, RB Offset=0	21.08	20.57	20.59

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle Channel (dBm)	High Channel (dBm)
15	QPSK	RB Size=1, RB Offset=0	22.71	22.72	23.91
		RB Size=1, RB Offset=37	22.59	22.73	23.67
		RB Size=1, RB Offset=74	22.83	22.59	23.84
		RB Size=36, RB Offset=0	21.98	21.87	23.04
		RB Size=36, RB Offset=18	21.88	21.68	23.12
		RB Size=36, RB Offset=37	22.13	21.87	23.13
		RB Size=75, RB Offset=0	22.14	21.32	22.13
	16QAM	RB Size=1, RB Offset=0	21.99	21.83	22.63
		RB Size=1, RB Offset=37	21.99	21.57	22.70
		RB Size=1, RB Offset=74	21.96	21.75	22.84
		RB Size=36, RB Offset=0	21.02	20.99	21.93
		RB Size=36, RB Offset=18	21.41	20.91	21.84
		RB Size=36, RB Offset=37	21.10	20.97	21.79
		RB Size=75, RB Offset=0	20.72	20.54	21.25
20	QPSK	RB Size=1, RB Offset=0	22.83	23.00	23.60
		RB Size=1, RB Offset=49	22.60	22.93	23.41
		RB Size=1, RB Offset=99	22.93	23.23	23.66
		RB Size=50, RB Offset=0	22.06	22.28	22.84
		RB Size=50, RB Offset=24	22.11	22.29	22.74
		RB Size=50, RB Offset=49	22.04	22.12	22.84
		RB Size=100, RB Offset=0	22.25	21.71	22.48
	16QAM	RB Size=1, RB Offset=0	22.11	22.25	22.80
		RB Size=1, RB Offset=49	22.04	22.33	22.52
		RB Size=1, RB Offset=99	22.14	22.34	22.99
		RB Size=50, RB Offset=0	21.43	21.27	22.11
		RB Size=50, RB Offset=24	21.32	21.52	22.06
		RB Size=50, RB Offset=49	21.35	21.48	22.03
		RB Size=100, RB Offset=0	21.41	20.65	21.52

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.98	13	Pass
QPSK (100RB Size)	5.90	13	Pass
16QAM (1RB Size)	6.94	13	Pass
16QAM (100RB Size)	6.88	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	81.62	323	1.3	H	11.5	2.60	10.20	19.10	33
2535.00	82.47	13	1.5	V	12.9	2.60	10.20	20.50	33
10 MHz Bandwidth									
2535.00	81.47	189	1.3	H	11.3	2.60	10.20	18.90	33
2535.00	82.34	357	2.2	V	12.8	2.60	10.20	20.40	33
15 MHz Bandwidth									
2535.00	81.29	191	1.9	H	11.1	2.60	10.20	18.70	33
2535.00	82.51	133	1.4	V	13.0	2.60	10.20	20.60	33
20 MHz Bandwidth									
2535.00	81.08	305	1.3	H	10.9	2.60	10.20	18.50	33
2535.00	82.44	30	2.2	V	12.9	2.60	10.20	20.50	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	81.33	210	2.0	H	11.2	2.60	10.20	18.80	33
2535.00	82.69	200	1.5	V	13.1	2.60	10.20	20.70	33
10 MHz Bandwidth									
2535.00	81.53	170	1.3	H	11.4	2.60	10.20	19.00	33
2535.00	82.21	311	1.8	V	12.7	2.60	10.20	20.30	33
15 MHz Bandwidth									
2535.00	81.27	203	1.5	H	11.1	2.60	10.20	18.70	33
2535.00	82.38	43	1.8	V	12.8	2.60	10.20	20.40	33
20 MHz Bandwidth									
2535.00	81.58	296	2.2	H	11.4	2.60	10.20	19.00	33
2535.00	82.73	142	2.3	V	13.2	2.60	10.20	20.80	33

LTE Band 12:

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	22.92	23.13	22.96
		RB Size=1, RB Offset=2	23.10	22.99	23.03
		RB Size=1, RB Offset=5	23.04	22.87	22.93
		RB Size=3, RB Offset=0	23.04	23.15	23.13
		RB Size=3, RB Offset=1	23.03	23.07	23.10
		RB Size=3, RB Offset=2	22.75	22.85	23.05
		RB Size=6, RB Offset=0	22.02	22.11	21.88
	16QAM	RB Size=1, RB Offset=0	22.11	21.90	22.03
		RB Size=1, RB Offset=2	22.09	22.00	21.76
		RB Size=1, RB Offset=5	21.88	21.64	21.63
		RB Size=3, RB Offset=0	22.14	22.09	22.18
		RB Size=3, RB Offset=1	22.09	22.24	22.08
		RB Size=3, RB Offset=2	21.94	22.25	22.07
		RB Size=6, RB Offset=0	20.92	20.90	20.96
3.0	QPSK	RB Size=1, RB Offset=0	23.03	23.12	22.85
		RB Size=1, RB Offset=7	22.82	23.08	22.89
		RB Size=1, RB Offset=14	22.62	22.81	22.66
		RB Size=8, RB Offset=0	22.13	22.01	22.13
		RB Size=8, RB Offset=4	21.99	21.91	22.06
		RB Size=8, RB Offset=7	22.18	21.82	21.81
		RB Size=15, RB Offset=0	22.07	22.06	22.16
	16QAM	RB Size=1, RB Offset=0	22.46	22.43	22.63
		RB Size=1, RB Offset=7	22.36	22.30	22.49
		RB Size=1, RB Offset=14	22.19	22.05	22.33
		RB Size=8, RB Offset=0	21.15	21.21	21.12
		RB Size=8, RB Offset=4	21.01	21.19	21.12
		RB Size=8, RB Offset=7	21.24	20.96	21.16
		RB Size=15, RB Offset=0	21.20	21.18	21.16

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	22.07	21.91	22.07
		RB Size=1, RB Offset=12	22.00	21.85	21.89
		RB Size=1, RB Offset=24	21.91	21.84	21.82
		RB Size=12, RB Offset=0	21.24	21.24	21.13
		RB Size=12, RB Offset=6	20.96	21.11	21.19
		RB Size=12, RB Offset=11	20.77	21.09	20.93
		RB Size=25, RB Offset=0	22.02	22.04	21.95
	16QAM	RB Size=1, RB Offset=0	22.07	22.04	21.98
		RB Size=1, RB Offset=12	21.90	21.82	22.09
		RB Size=1, RB Offset=24	22.06	21.61	21.85
		RB Size=12, RB Offset=0	21.21	21.25	21.13
		RB Size=12, RB Offset=6	20.99	21.06	21.08
		RB Size=12, RB Offset=11	21.00	21.02	21.03
		RB Size=25, RB Offset=0	21.02	20.95	21.13
10.0	QPSK	RB Size=1, RB Offset=0	23.10	23.12	23.03
		RB Size=1, RB Offset=24	23.03	23.06	22.89
		RB Size=1, RB Offset=49	23.00	23.12	22.75
		RB Size=25, RB Offset=0	22.01	22.03	21.93
		RB Size=25, RB Offset=12	21.98	22.01	22.05
		RB Size=25, RB Offset=24	21.89	21.84	21.89
		RB Size=50, RB Offset=0	22.05	22.01	22.04
	16QAM	RB Size=1, RB Offset=0	22.59	22.52	22.59
		RB Size=1, RB Offset=24	22.65	22.50	22.44
		RB Size=1, RB Offset=49	22.52	22.36	22.28
		RB Size=25, RB Offset=0	21.22	21.17	21.24
		RB Size=25, RB Offset=12	20.95	21.24	21.09
		RB Size=25, RB Offset=24	21.07	21.24	20.98
		RB Size=50, RB Offset=0	21.08	20.99	21.23

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.91	13	Pass
QPSK (50RB Size)	6.81	13	Pass
16QAM (1RB Size)	7.90	13	Pass
16QAM (50RB Size)	7.84	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									
707.5	89.01	168	2.3	H	21.2	1.56	0.0	19.64	34.77
707.5	82.36	291	1.8	V	16.0	1.56	0.0	14.44	34.77
3 MHz Bandwidth									
707.5	89.13	220	1.7	H	21.3	1.56	0.0	19.74	34.77
707.5	82.57	276	1.5	V	16.2	1.56	0.0	14.64	34.77
5 MHz Bandwidth									
707.5	88.82	109	2.0	H	21.0	1.56	0.0	19.44	34.77
707.5	82.43	149	2.2	V	16.1	1.56	0.0	14.54	34.77
10 MHz Bandwidth									
707.5	89.25	78	2.3	H	21.5	1.56	0.0	19.94	34.77
707.5	82.69	259	1.4	V	16.4	1.56	0.0	14.84	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									
1.4 MHz Bandwidth									
707.5	89.62	253	2.4	H	21.8	1.56	0.0	20.24	34.77
707.5	82.33	187	1.6	V	16.0	1.56	0.0	14.44	34.77
3 MHz Bandwidth									
707.5	89.58	1	2.4	H	21.8	1.56	0.0	20.24	34.77
707.5	82.69	171	1.8	V	16.4	1.56	0.0	14.84	34.77
5 MHz Bandwidth									
707.5	89.13	70	1.8	H	21.3	1.56	0.0	19.74	34.77
707.5	82.14	25	1.3	V	15.8	1.56	0.0	14.24	34.77
10 MHz Bandwidth									
707.5	89.77	166	1.5	H	22.0	1.56	0.0	20.44	34.77
707.5	83.18	232	1.7	V	16.8	1.56	0.0	15.24	34.77

LTE Band 17:

Maximum Output Power

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	22.09	22.08	22.10
		RB Size=1, RB Offset=12	22.03	22.02	21.73
		RB Size=1, RB Offset=24	21.84	21.91	21.90
		RB Size=12, RB Offset=0	21.21	21.16	21.11
		RB Size=12, RB Offset=6	20.94	21.27	21.12
		RB Size=12, RB Offset=11	20.68	21.27	20.90
		RB Size=25, RB Offset=0	22.09	22.14	22.13
	16QAM	RB Size=1, RB Offset=0	22.03	21.89	22.04
		RB Size=1, RB Offset=12	21.96	21.76	22.02
		RB Size=1, RB Offset=24	22.03	21.74	21.96
		RB Size=12, RB Offset=0	21.29	21.16	21.29
		RB Size=12, RB Offset=6	21.10	21.01	21.11
		RB Size=12, RB Offset=11	20.83	20.97	20.90
		RB Size=25, RB Offset=0	21.12	21.09	21.07
10.0	QPSK	RB Size=1, RB Offset=0	23.13	22.98	23.01
		RB Size=1, RB Offset=24	23.13	22.89	22.96
		RB Size=1, RB Offset=49	22.92	23.02	22.72
		RB Size=25, RB Offset=0	22.15	22.05	21.96
		RB Size=25, RB Offset=12	21.99	21.96	22.15
		RB Size=25, RB Offset=24	21.82	21.81	21.81
		RB Size=50, RB Offset=0	22.01	22.01	22.07
	16QAM	RB Size=1, RB Offset=0	22.65	22.60	22.55
		RB Size=1, RB Offset=24	22.67	22.37	22.58
		RB Size=1, RB Offset=49	22.35	22.23	22.27
		RB Size=25, RB Offset=0	21.28	21.13	21.12
		RB Size=25, RB Offset=12	21.00	21.23	21.08
		RB Size=25, RB Offset=24	20.96	21.23	20.88
		RB Size=50, RB Offset=0	21.23	21.14	21.19

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.71	13	Pass
QPSK (50RB Size)	6.62	13	Pass
16QAM (1RB Size)	7.75	13	Pass
16QAM (50 Size)	7.65	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									
5 MHz Bandwidth									
710	89.43	197	1.6	H	21.6	1.56	0.0	20.04	34.77
710	84.03	336	2.3	V	17.7	1.56	0.0	16.14	34.77
10 MHz Bandwidth									
710	89.88	127	1.2	H	22.1	1.56	0.0	20.54	34.77
710	84.03	125	1.7	V	17.7	1.56	0.0	16.14	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	89.62	272	1.8	H	21.8	1.56	0.0	20.24	34.77
710	83.58	26	2.0	V	17.2	1.56	0.0	15.64	34.77
10 MHz Bandwidth									
710	90.03	99	1.5	H	22.2	1.56	0.0	20.64	34.77
710	84.17	142	1.6	V	17.8	1.56	0.0	16.24	34.77

LTE Band 19:

Maximum Output Power

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	21.96	21.99	22.08
		RB Size=1, RB Offset=12	21.93	21.81	21.80
		RB Size=1, RB Offset=24	22.00	21.78	21.85
		RB Size=12, RB Offset=0	21.09	21.27	21.09
		RB Size=12, RB Offset=6	21.10	21.11	21.19
		RB Size=12, RB Offset=11	20.78	21.17	20.96
		RB Size=25, RB Offset=0	22.14	22.14	21.96
	16QAM	RB Size=1, RB Offset=0	21.92	21.93	21.97
		RB Size=1, RB Offset=12	21.99	21.75	22.04
		RB Size=1, RB Offset=24	22.07	21.53	22.01
		RB Size=12, RB Offset=0	21.28	21.14	21.15
		RB Size=12, RB Offset=6	21.00	21.17	21.13
		RB Size=12, RB Offset=11	20.98	20.91	20.89
		RB Size=25, RB Offset=0	21.15	21.05	21.08
10.0	QPSK	RB Size=1, RB Offset=0	23.04	23.05	23.11
		RB Size=1, RB Offset=24	23.20	22.93	22.96
		RB Size=1, RB Offset=49	23.07	23.01	22.85
		RB Size=25, RB Offset=0	22.00	22.10	21.98
		RB Size=25, RB Offset=12	22.01	22.05	21.93
		RB Size=25, RB Offset=24	21.80	21.84	21.79
		RB Size=50, RB Offset=0	22.05	22.10	22.22
	16QAM	RB Size=1, RB Offset=0	22.72	22.54	22.58
		RB Size=1, RB Offset=24	22.55	22.39	22.53
		RB Size=1, RB Offset=49	22.59	22.30	22.26
		RB Size=25, RB Offset=0	21.18	21.10	21.08
		RB Size=25, RB Offset=12	20.97	21.17	21.00
		RB Size=25, RB Offset=24	21.07	21.24	21.01
		RB Size=50, RB Offset=0	21.11	21.07	21.21

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	/	22.57	/
		RB Size=1, RB Offset=37	/	22.51	/
		RB Size=1, RB Offset=74	/	22.61	/
		RB Size=36, RB Offset=0	/	21.82	/
		RB Size=36, RB Offset=18	/	21.96	/
		RB Size=36, RB Offset=37	/	21.91	/
		RB Size=75, RB Offset=0	/	21.54	/
	16QAM	RB Size=1, RB Offset=0	/	21.60	/
		RB Size=1, RB Offset=37	/	21.60	/
		RB Size=1, RB Offset=74	/	21.38	/
		RB Size=36, RB Offset=0	/	20.58	/
		RB Size=36, RB Offset=18	/	20.60	/
		RB Size=36, RB Offset=37	/	20.18	/
		RB Size=75, RB Offset=0	/	20.85	/

Peak-to-average ratio (PAR)

Modulation	Middle Channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.30	13	Pass
QPSK (75RB Size)	6.25	13	Pass
16QAM (1RB Size)	7.37	13	Pass
16QAM (75RB Size)	7.29	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									
5 MHz Bandwidth									
837.5	81.62	100	2.5	H	22.2	1.90	0.0	20.30	38.45
837.5	77.35	252	2.5	V	17.4	1.90	0.0	15.50	38.45
10 MHz Bandwidth									
837.5	81.62	100	2.5	H	22.2	1.90	0.0	20.30	38.45
837.5	77.35	252	2.5	V	17.4	1.90	0.0	15.50	38.45
15 MHz Bandwidth									
837.5	81.66	26	1.4	H	22.3	1.90	0.0	20.40	38.45
837.5	76.92	176	1.4	V	16.9	1.90	0.0	15.00	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									
5 MHz Bandwidth									
837.5	80.97	74	2.0	H	21.6	1.90	0.0	19.70	38.45
837.5	76.58	21	1.4	V	16.6	1.90	0.0	14.70	38.45
10 MHz Bandwidth									
837.5	80.65	4	1.3	H	21.3	1.90	0.0	19.40	38.45
837.5	77.38	87	1.7	V	17.4	1.90	0.0	15.50	38.45
15 MHz Bandwidth									
837.5	81.11	101	1.2	H	21.7	1.90	0.0	19.80	38.45
837.5	77.04	286	1.8	V	17.0	1.90	0.0	15.10	38.45

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

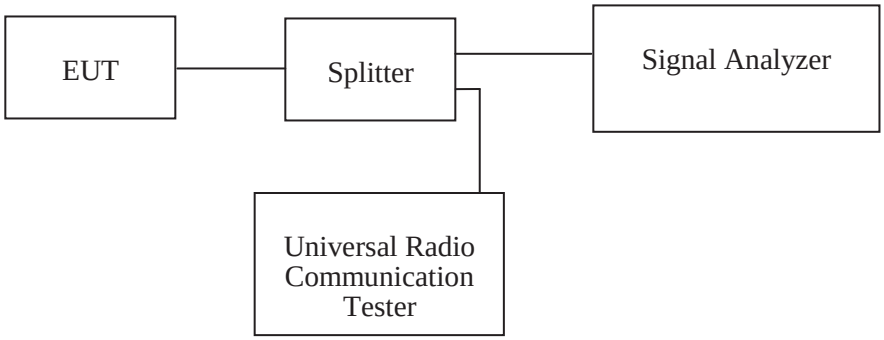
Applicable Standard

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 ℃
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by George Zhong from 2019-09-11 to 2019-09-18.

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	246.79	316.03
EGPRS(8PSK)	836.6	256.41	328.21

Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	836.6	4.17	4.70
HSUPA (BPSK)	836.6	4.17	4.71
HSDPA (16QAM)	836.6	4.18	4.73

PCS Band (Part 24E)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1880.0	245.19	317.63
EGPRS(8PSK)	1880.0	250.00	319.87

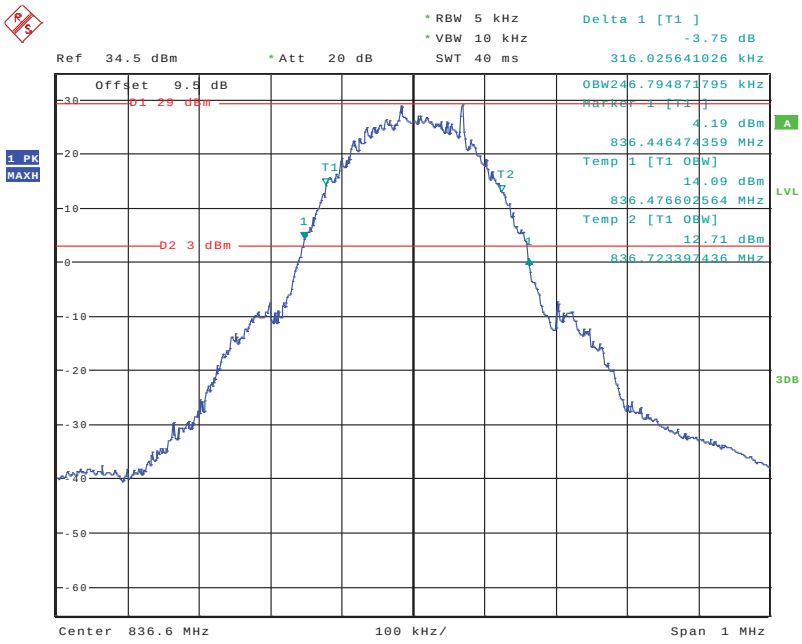
Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	1880.0	4.17	4.73
HSUPA (BPSK)	1880.0	4.18	4.74
HSDPA (16QAM)	1880.0	4.18	4.74

AWS Band (Part 27)

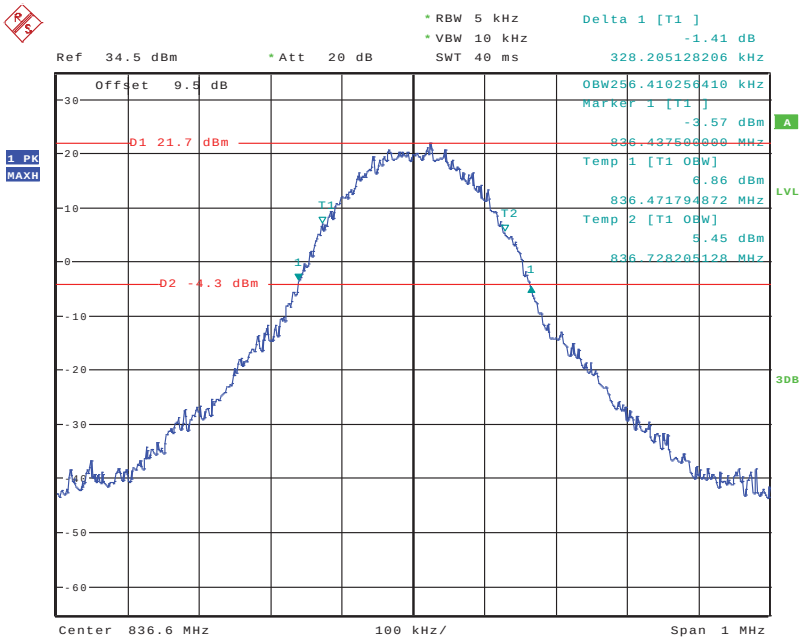
Mode	Frequency (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
RMC (BPSK)	1732.6	4.17	4.74
HSUPA (BPSK)	1732.6	4.18	4.71
HSDPA (16QAM)	1732.6	4.17	4.71

Cellular Band (Part 22H)

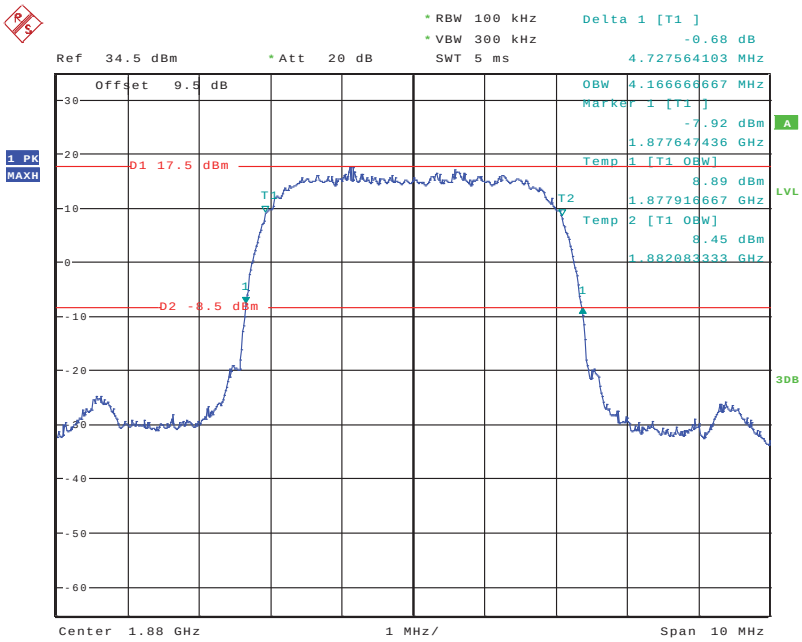
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode



26 dB Emissions &99% Occupied Bandwidth for EDGE Mode

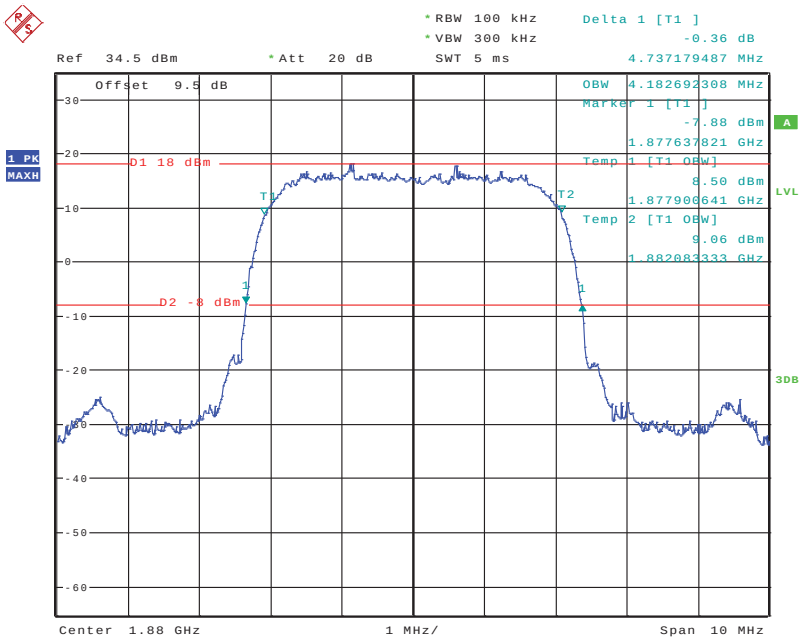


26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode



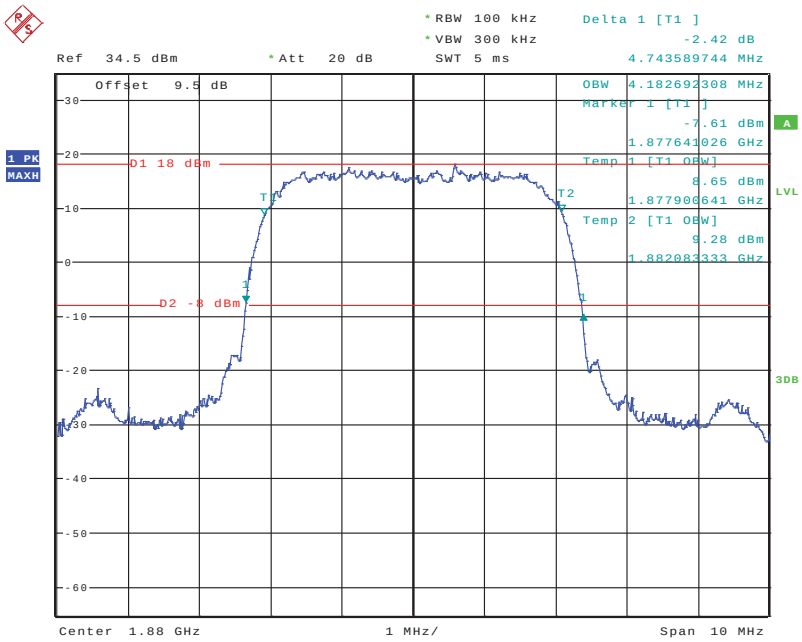
Date: 11.SEP.2019 21:58:03

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



Date: 11.SEP.2019 21:51:51

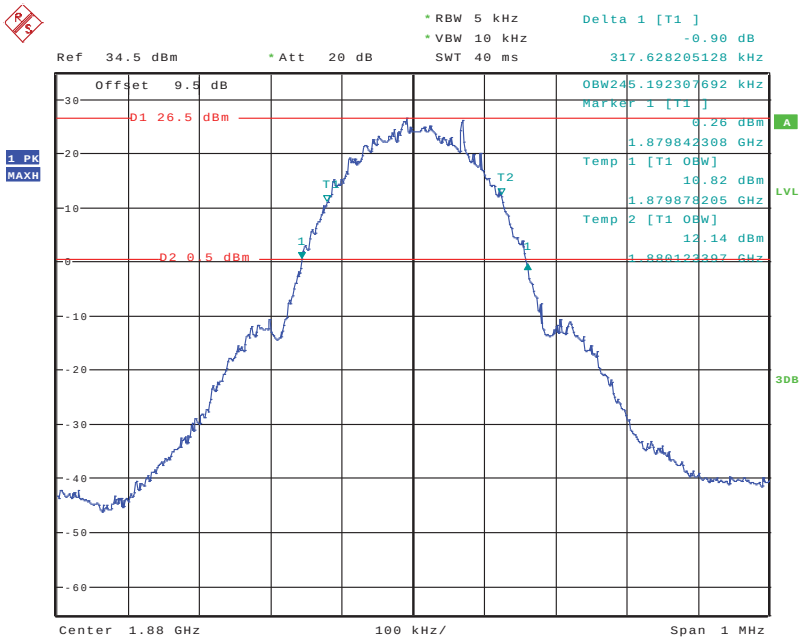
26 dB Emissions &99% Occupied Bandwidth for HSDPA (16QAM) Mode



Date: 11.SEP.2019 21:48:38

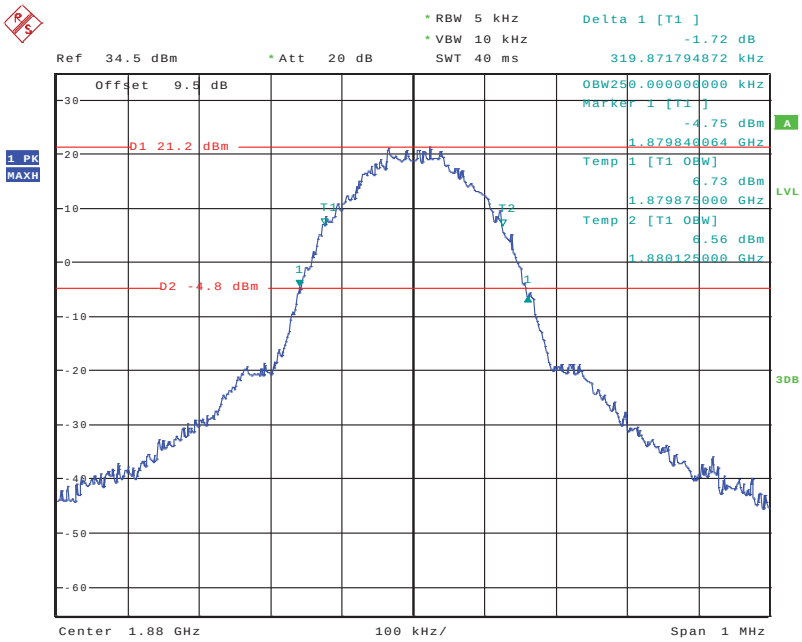
PCS Band (Part 24E)

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



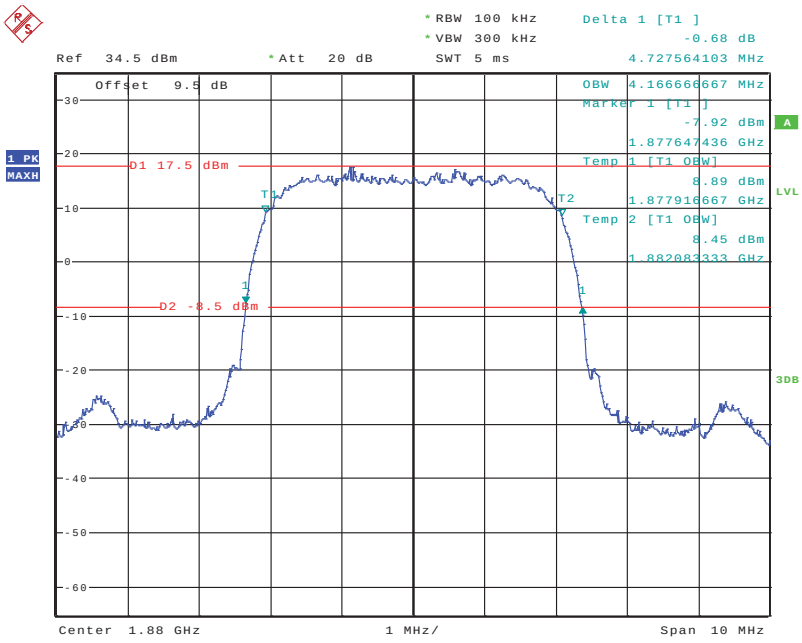
Date: 11.SEP.2019 21:00:40

26 dB Emissions &99% Occupied Bandwidth for EDGE Mode



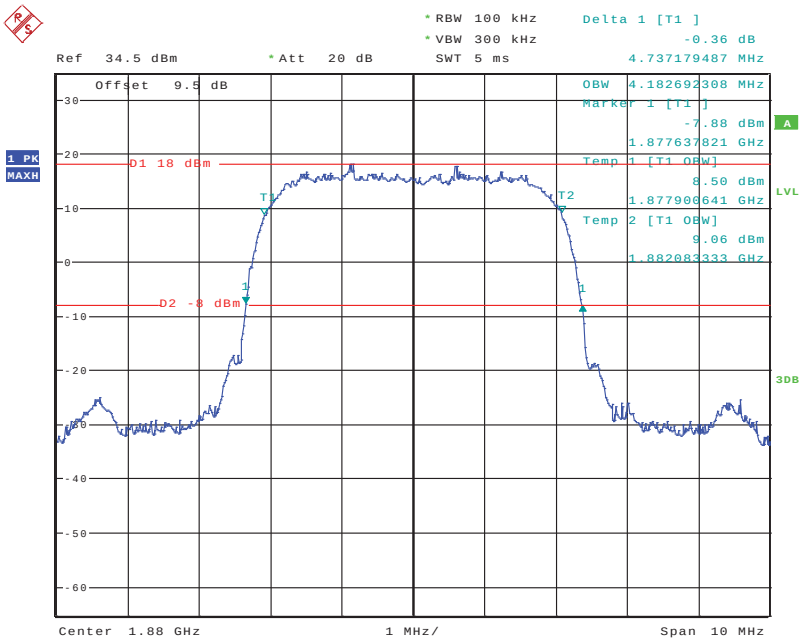
Date: 11.SEP.2019 21:10:41

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



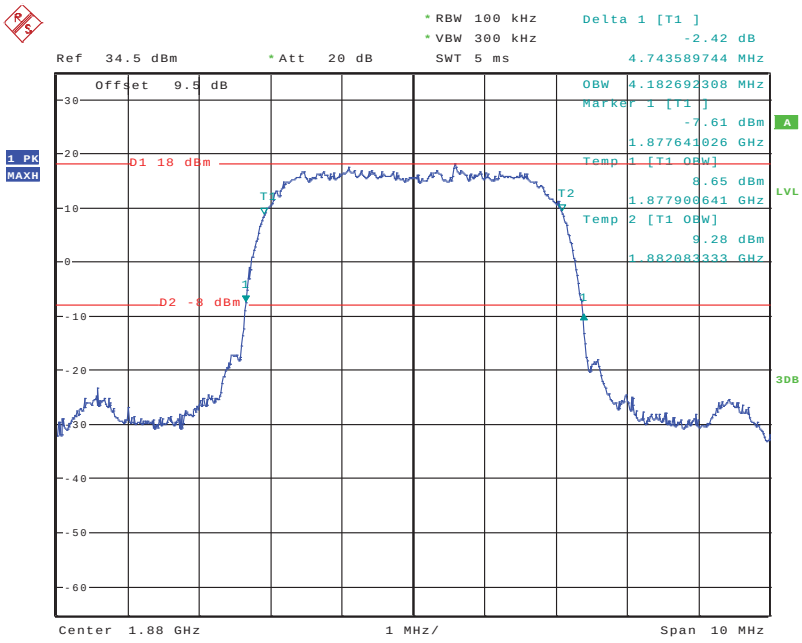
Date: 11.SEP.2019 21:58:03

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



Date: 11.SEP.2019 21:51:51

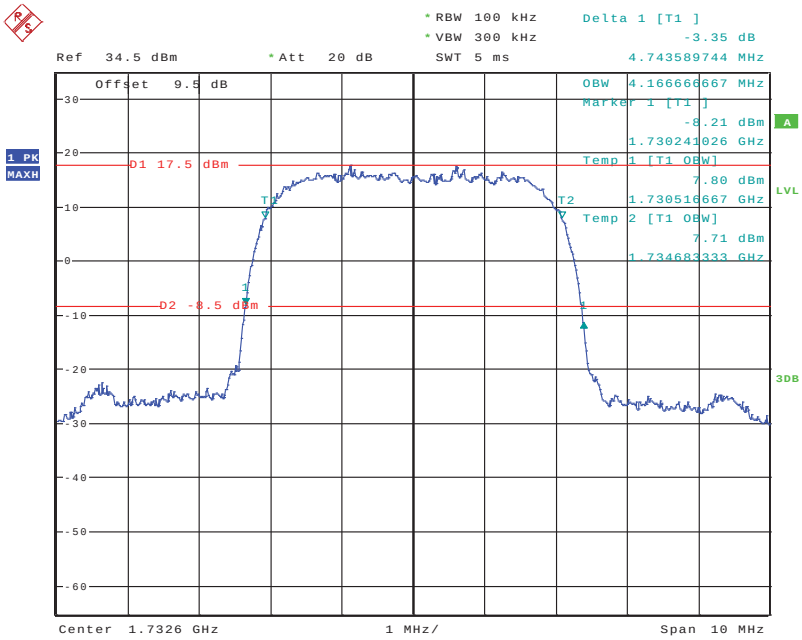
26 dB Emissions &99% Occupied Bandwidth for HSDPA (16QAM) Mode



Date: 11.SEP.2019 21:48:38

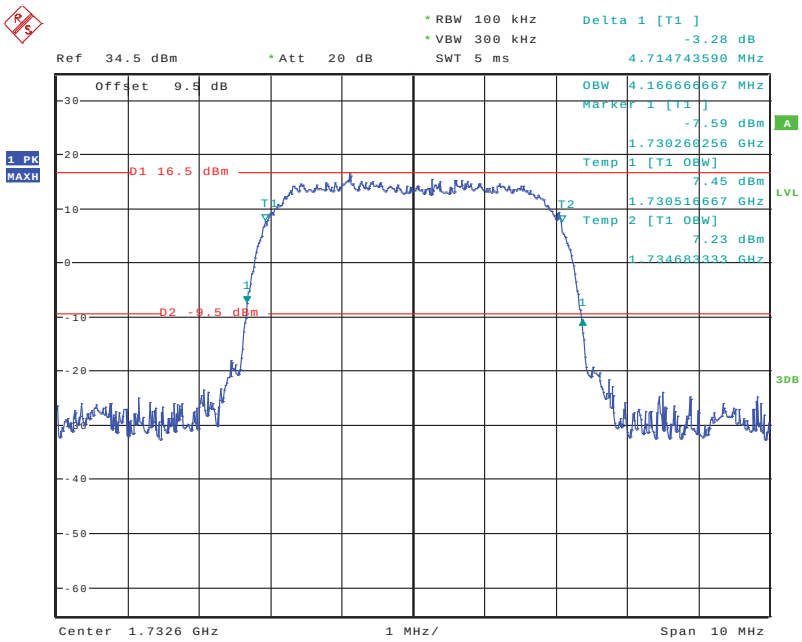
AWS Band (Part 24E)

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



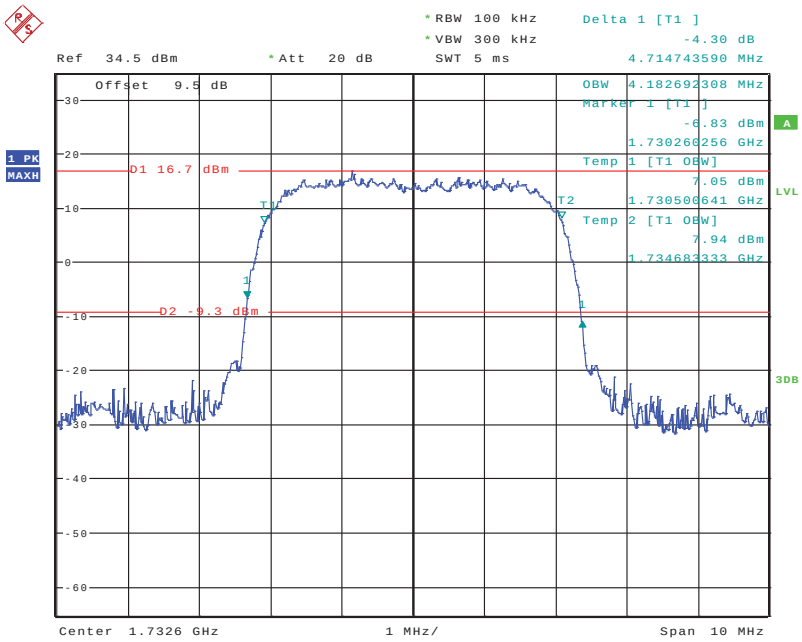
Date: 11.SEP.2019 23:13:25

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



Date: 11.SEP.2019 23:08:30

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

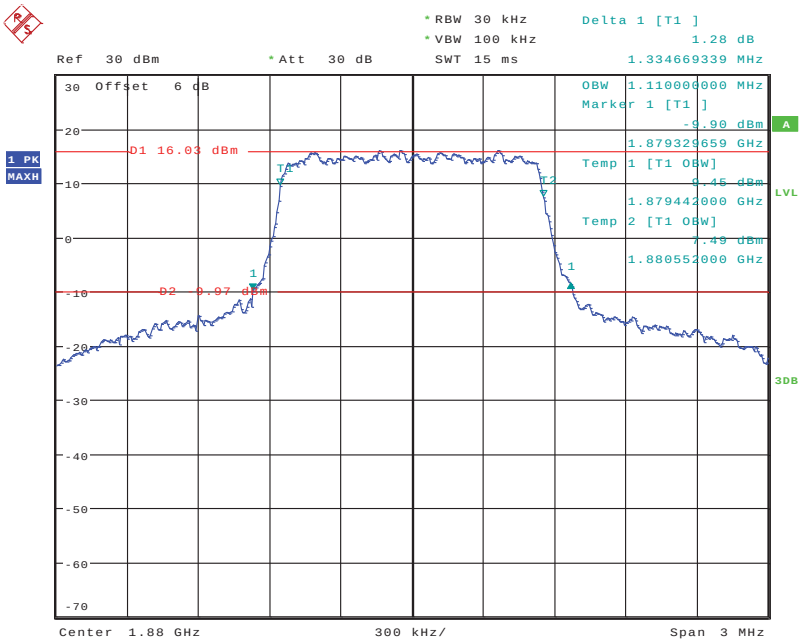


Date: 11.SEP.2019 23:07:11

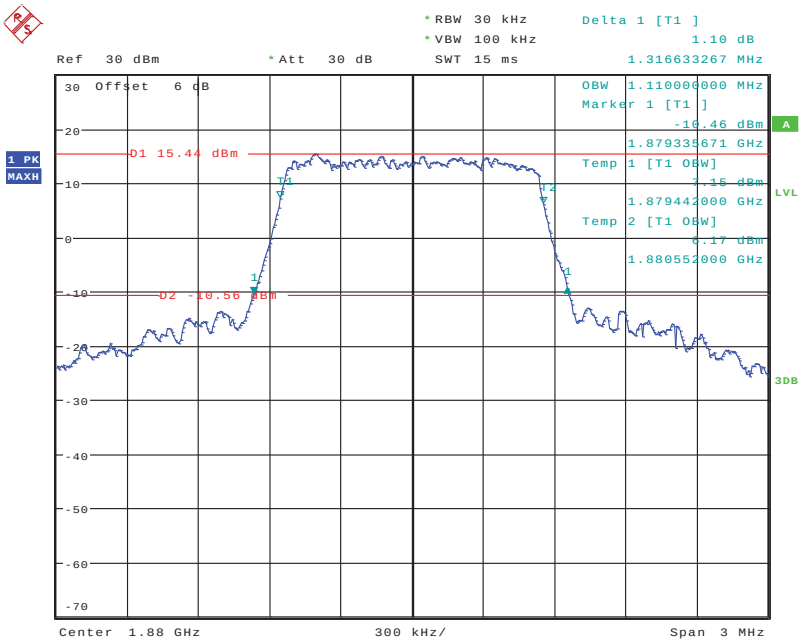
LTE Band 2: (Middle Channel)

Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	1.11	1.33
	16QAM	1.11	1.32
3.0	QPSK	2.69	2.86
	16QAM	2.69	2.86
5.0	QPSK	4.56	5.29
	16QAM	4.54	5.19
10.0	QPSK	9.04	10.10
	16QAM	9.00	9.70
15.0	QPSK	13.62	15.21
	16QAM	13.62	15.09
20.0	QPSK	18.00	19.64
	16QAM	18.08	19.80

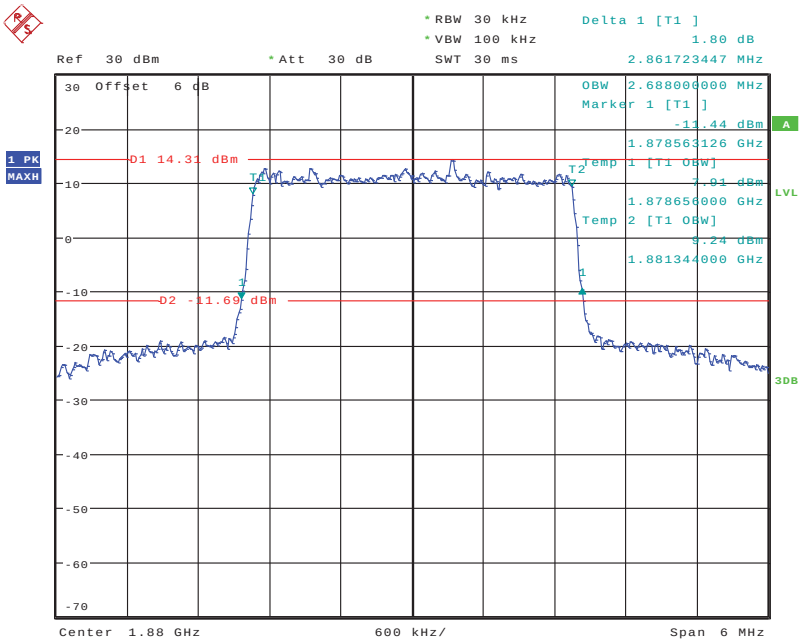
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



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

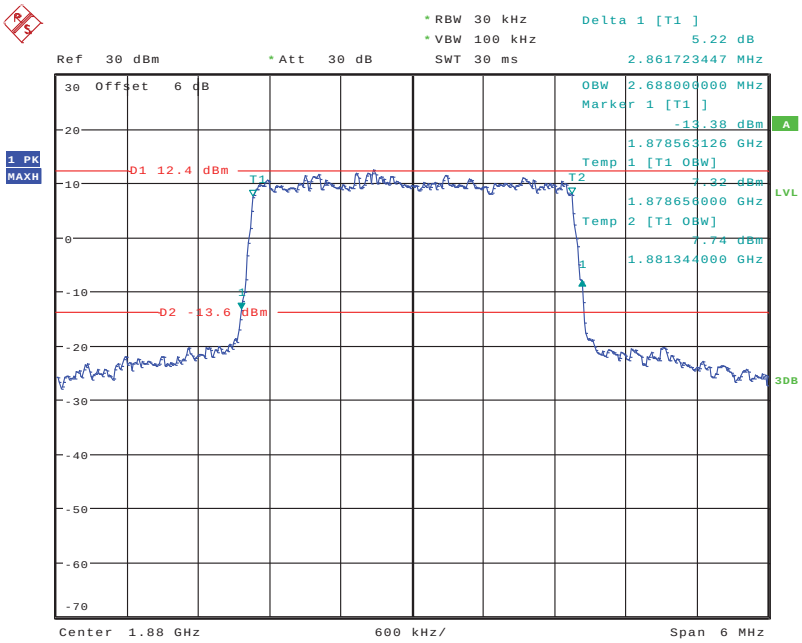


QPSK (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



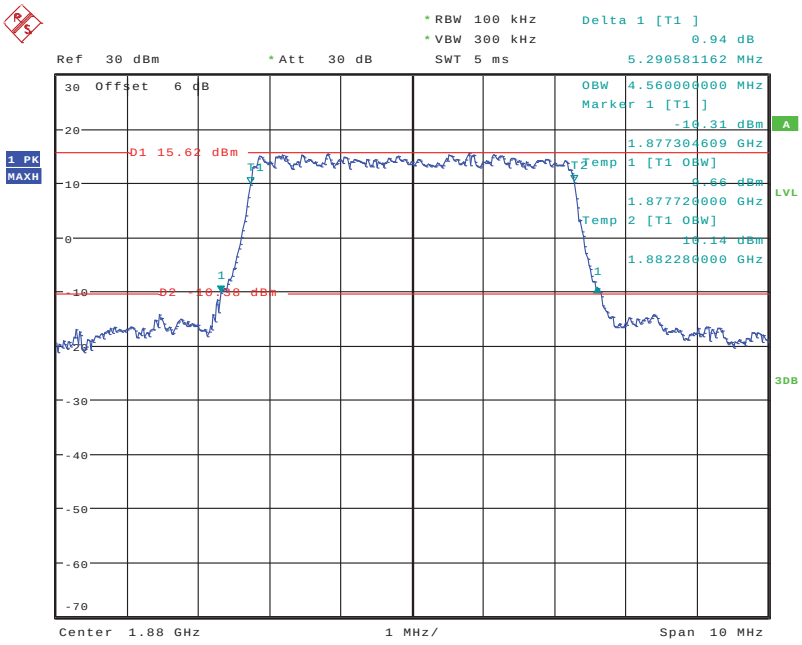
Date: 18.SEP.2019 20:04:17

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



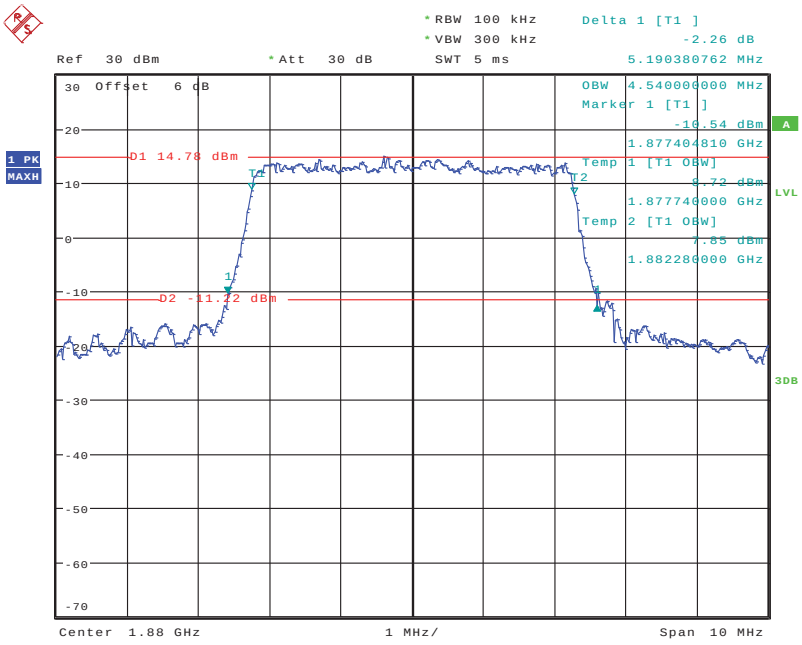
Date: 18.SEP.2019 20:04:40

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



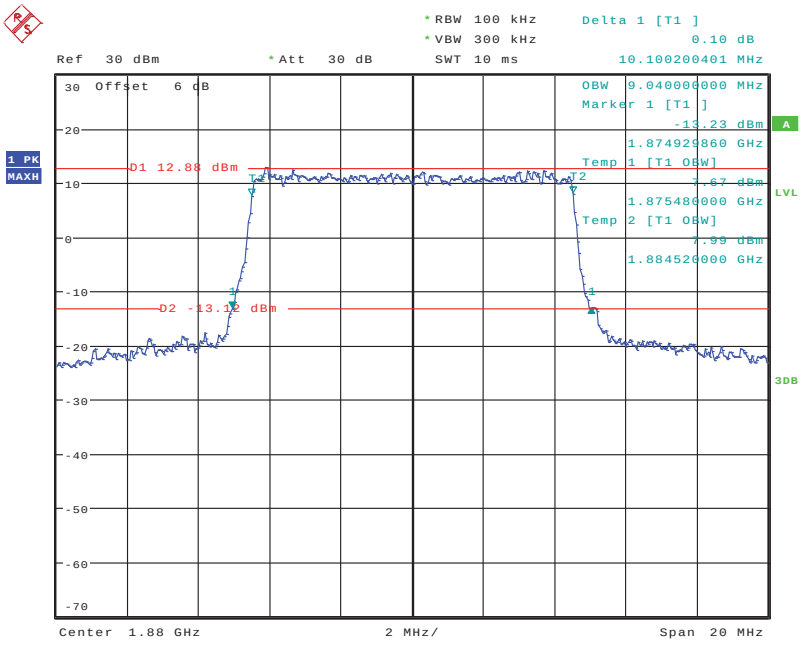
Date: 18.SEP.2019 20:05:10

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

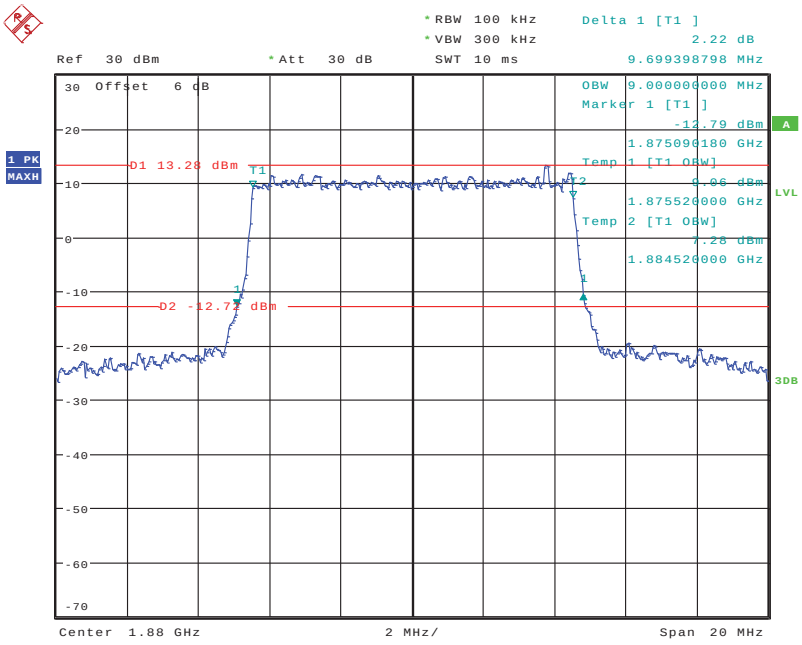


Date: 18.SEP.2019 20:05:33

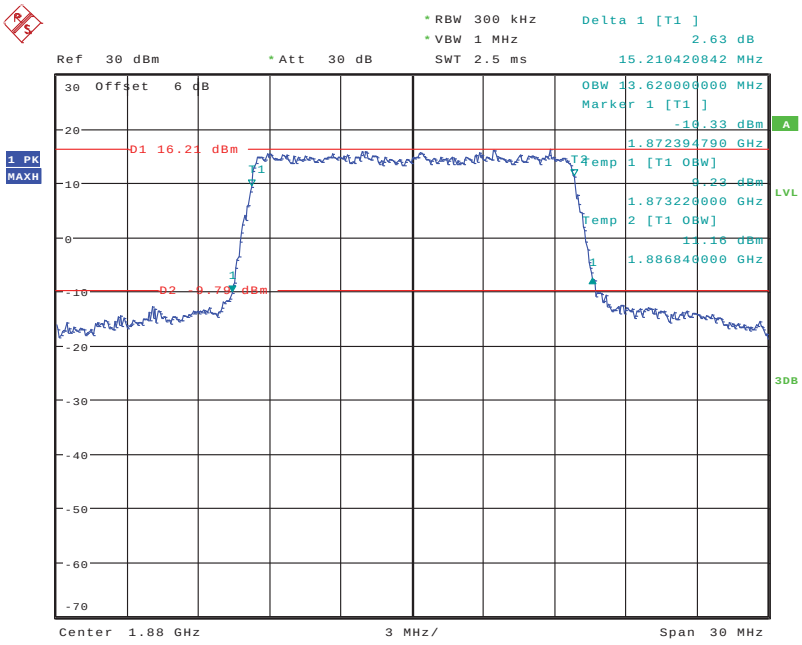
QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



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

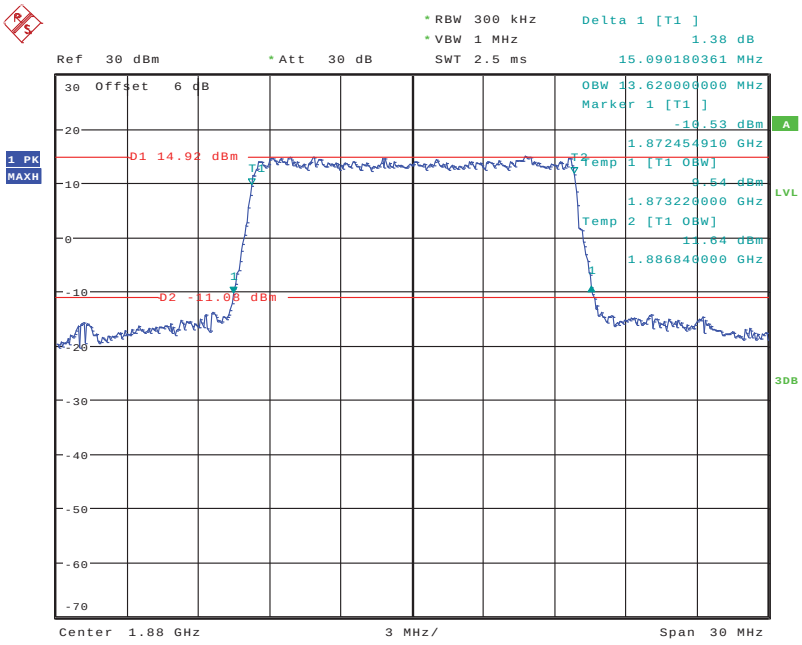


QPSK (15.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



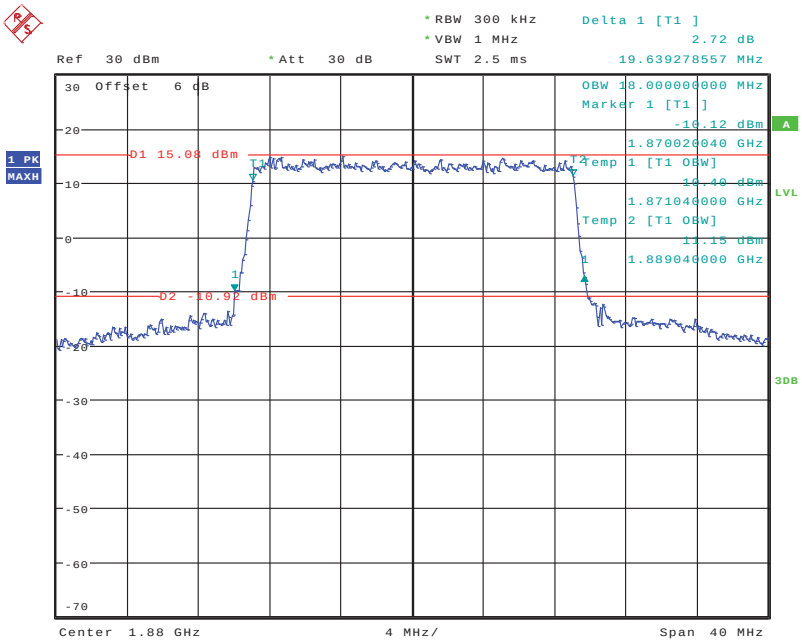
Date: 18.SEP.2019 20:07:15

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



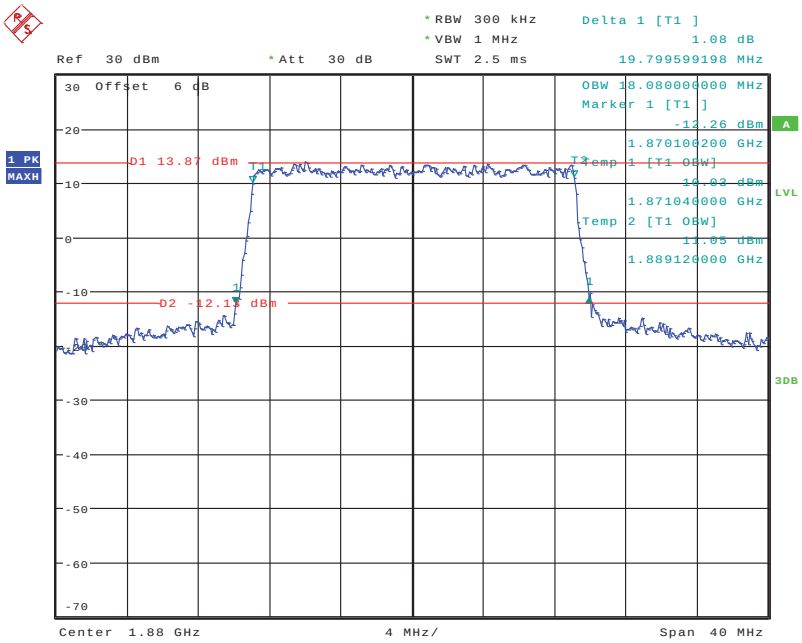
Date: 18.SEP.2019 20:07:47

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



Date: 18.SEP.2019 20:08:15

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

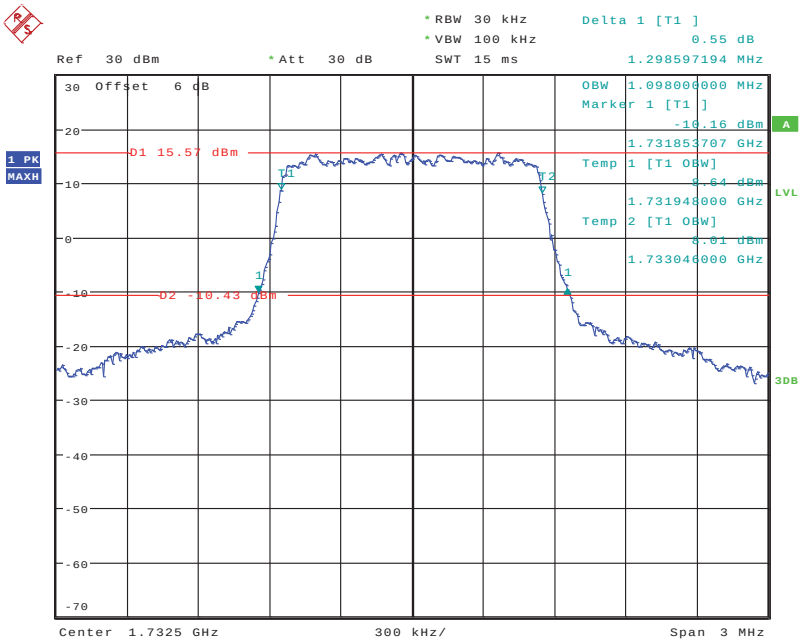


Date: 18.SEP.2019 20:08:50

LTE Band 4: (Middle Channel)

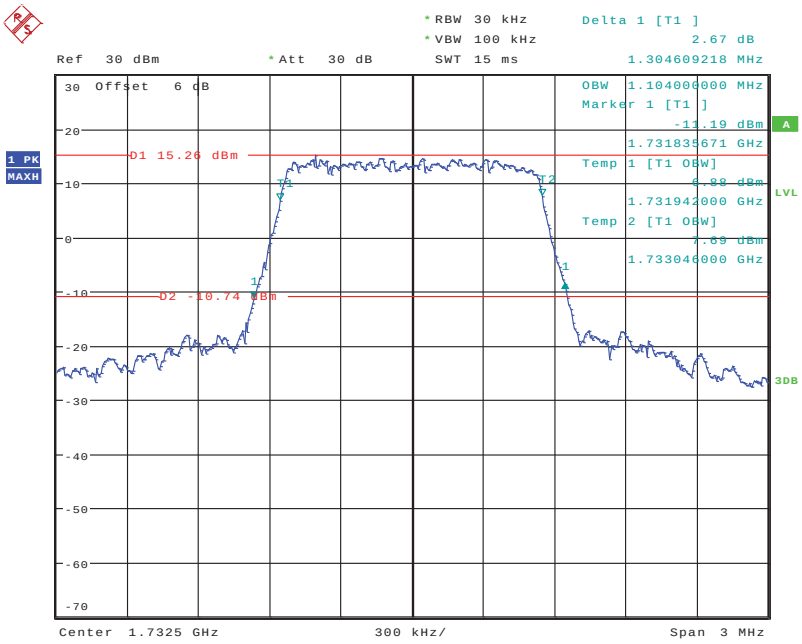
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	1.10	1.30
	16QAM	1.10	1.30
3.0	QPSK	2.69	2.85
	16QAM	2.69	2.86
5.0	QPSK	4.56	5.21
	16QAM	4.52	5.11
10.0	QPSK	8.96	9.86
	16QAM	8.96	9.70
15.0	QPSK	13.62	15.09
	16QAM	13.62	15.09
20.0	QPSK	18.00	19.48
	16QAM	18.00	19.64

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



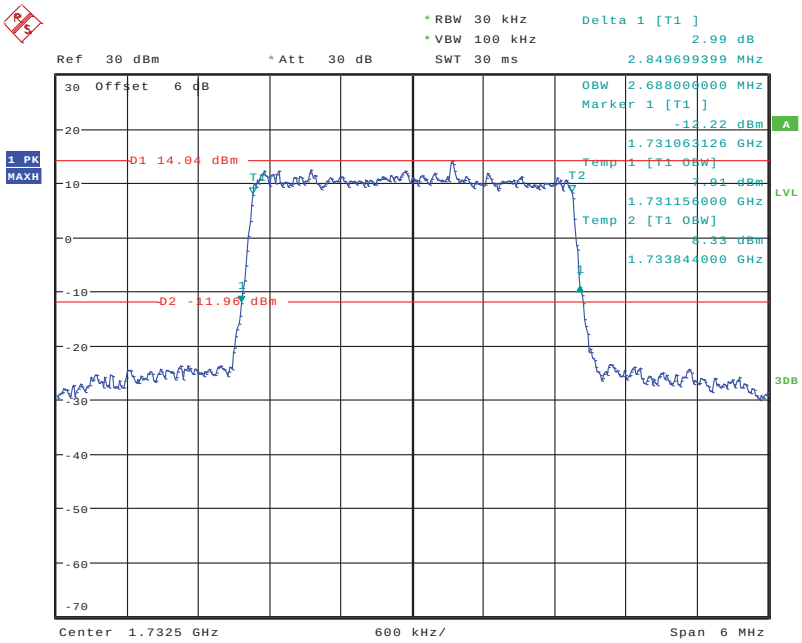
Date: 18.SEP.2019 20:09:19

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



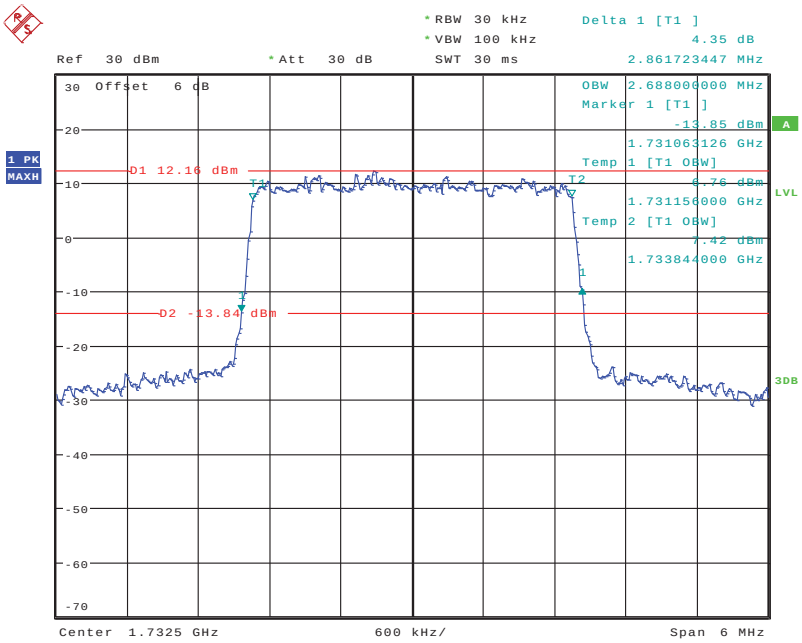
Date: 18.SEP.2019 20:09:42

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



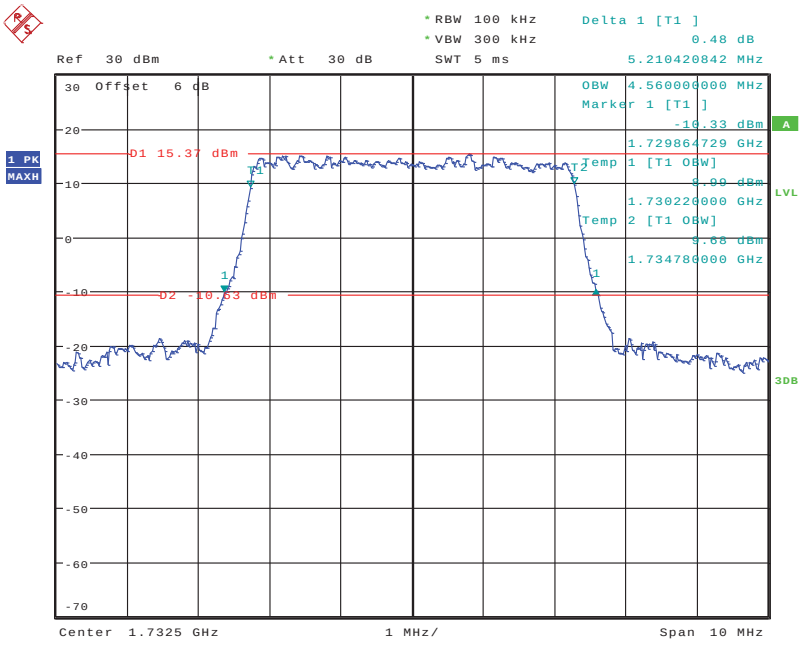
Date: 18.SEP.2019 20:10:07

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



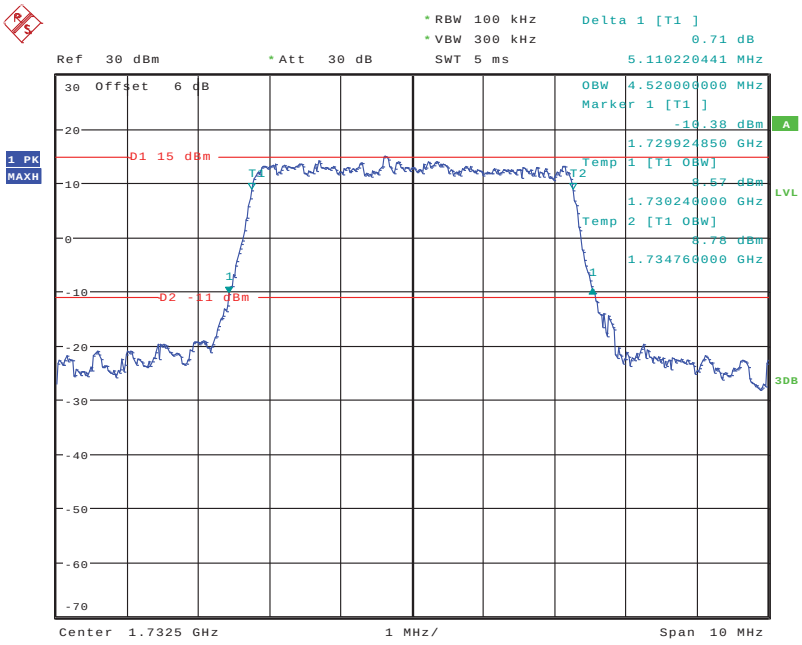
Date: 18.SEP.2019 20:10:29

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



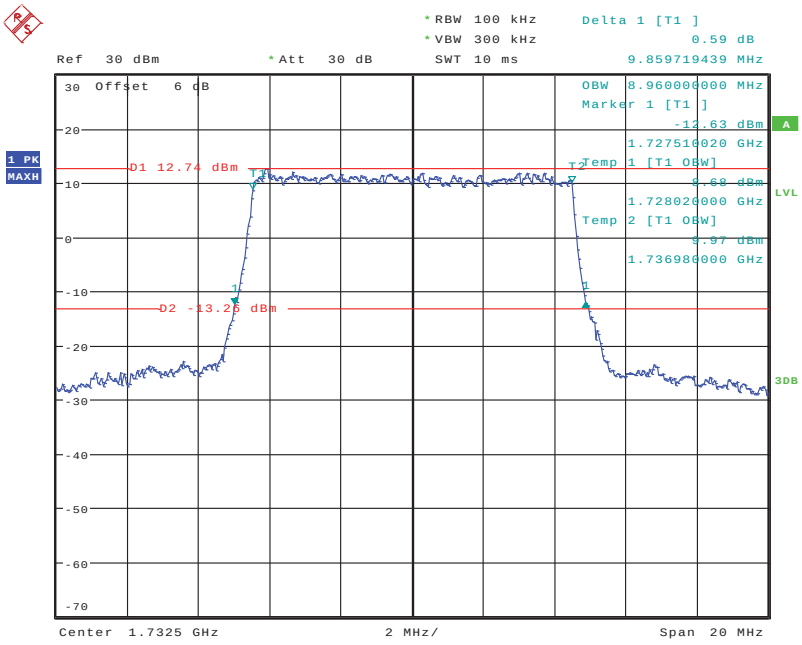
Date: 18.SEP.2019 20:11:03

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



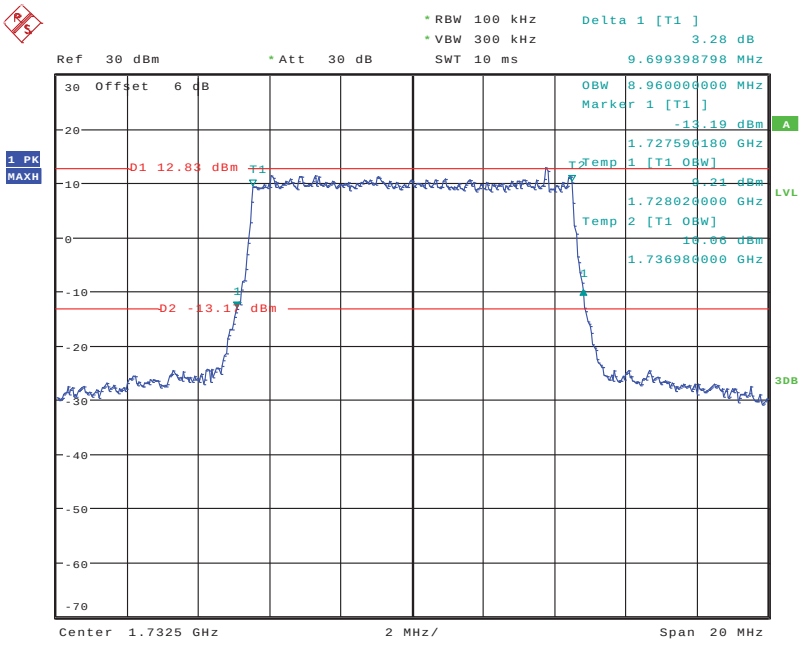
Date: 18.SEP.2019 20:11:29

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



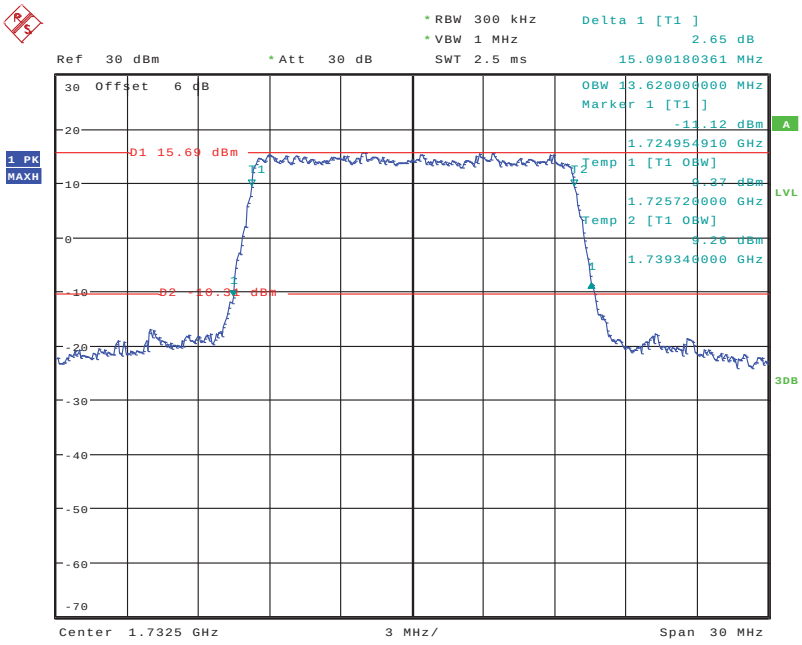
Date: 18.SEP.2019 20:12:01

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



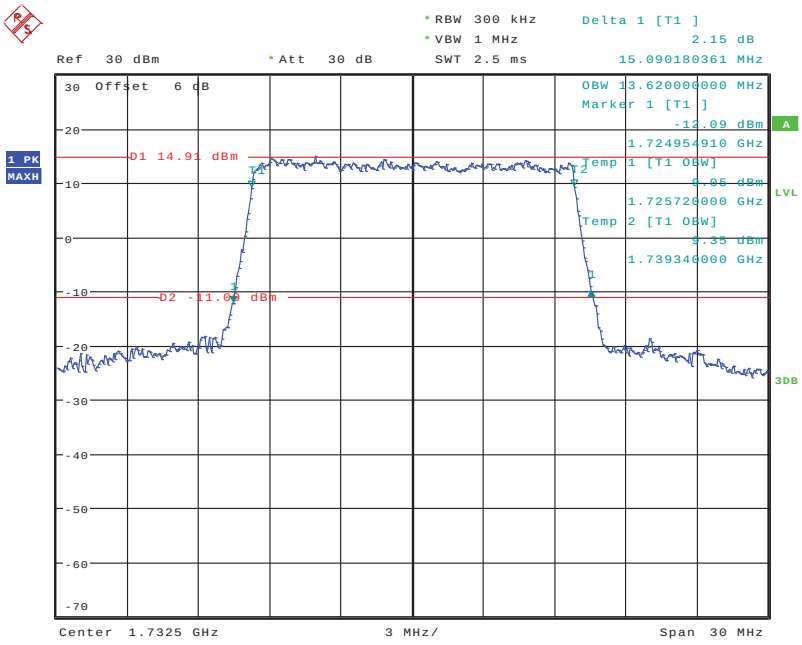
Date: 18.SEP.2019 20:12:25

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



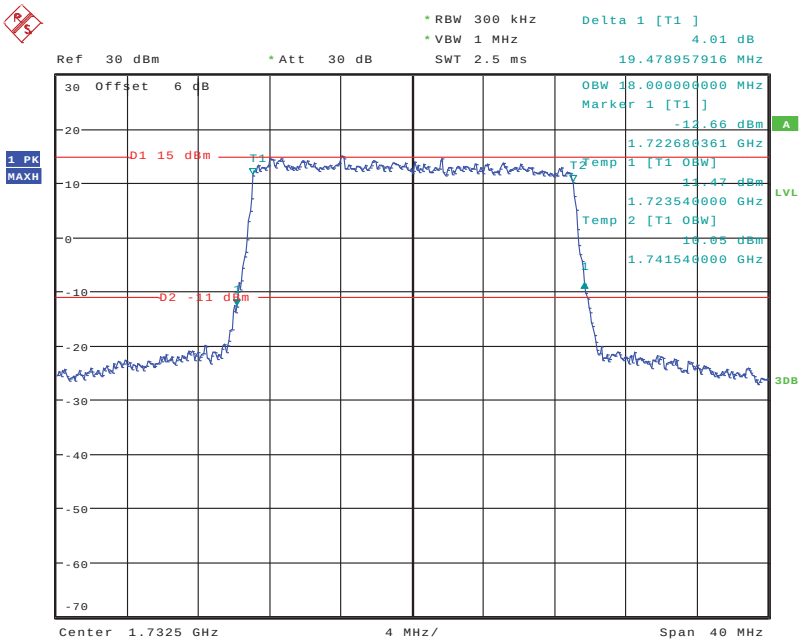
Date: 18.SEP.2019 20:13:02

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



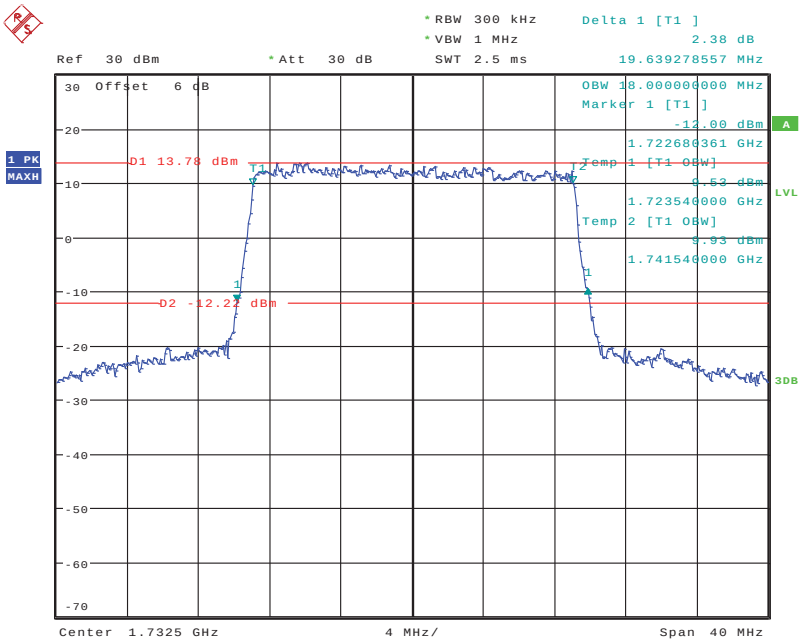
Date: 18.SEP.2019 20:13:34

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



Date: 18.SEP.2019 20:14:12

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

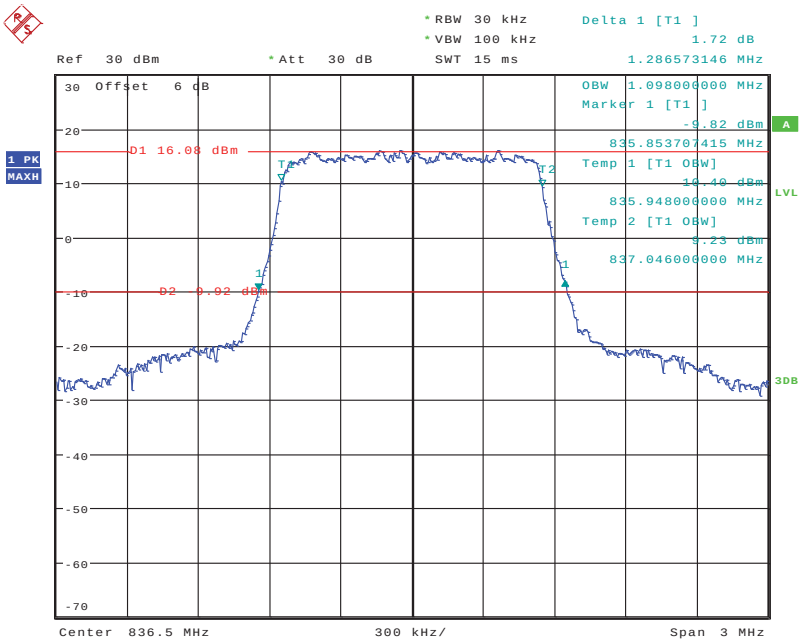


Date: 18.SEP.2019 20:14:47

LTE Band 5: (Middle Channel)

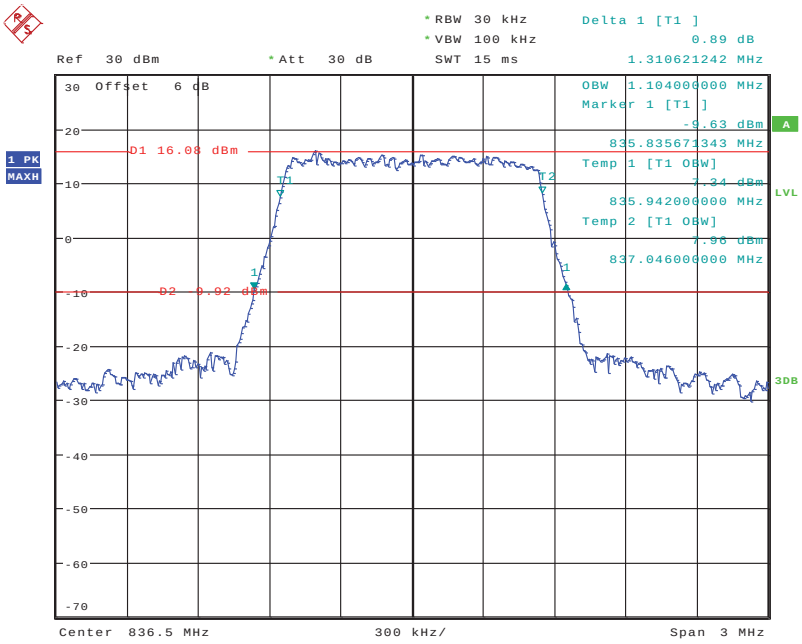
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	1.10	1.29
	16QAM	1.10	1.31
3.0	QPSK	2.69	2.86
	16QAM	2.69	2.86
5.0	QPSK	4.54	5.17
	16QAM	4.52	5.11
10.0	QPSK	9.00	9.90
	16QAM	8.96	9.82

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



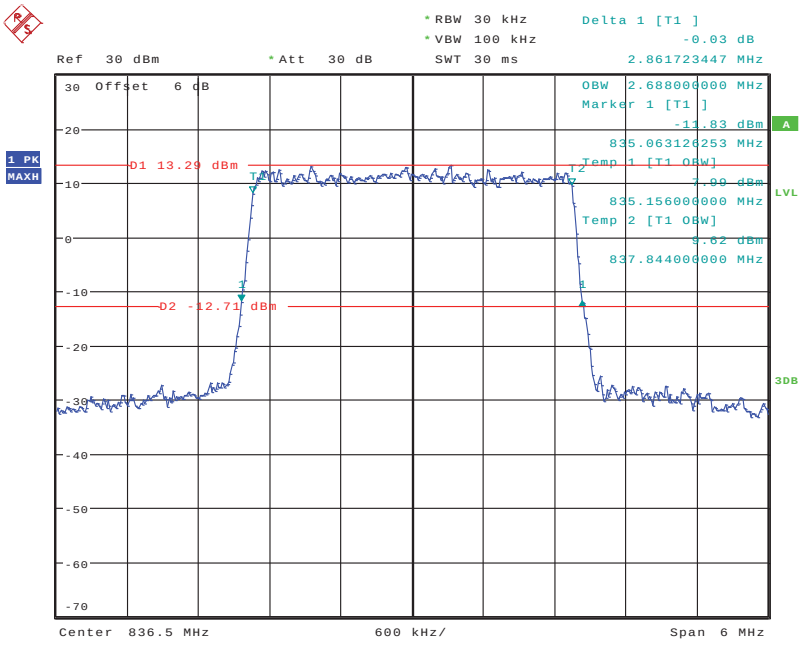
Date: 18.SEP.2019 20:15:23

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



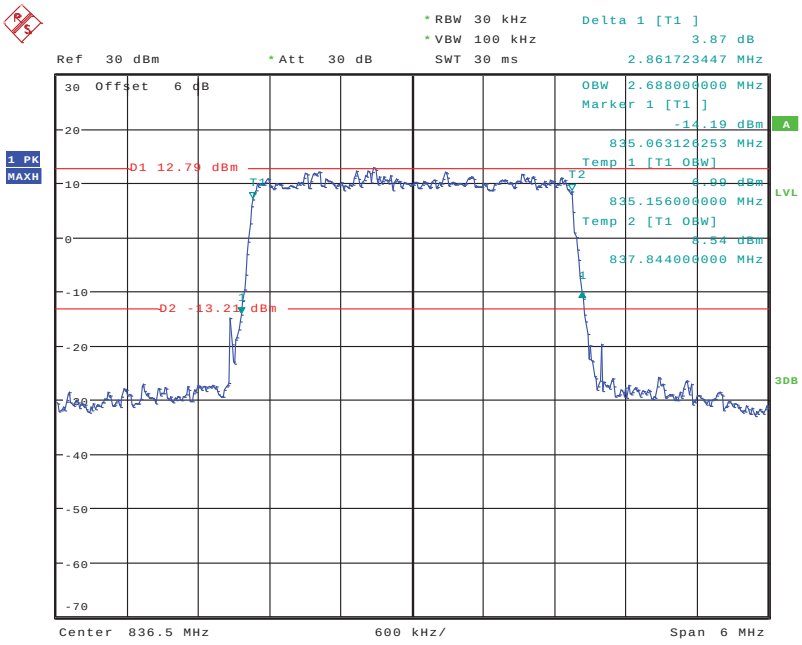
Date: 18.SEP.2019 20:15:57

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



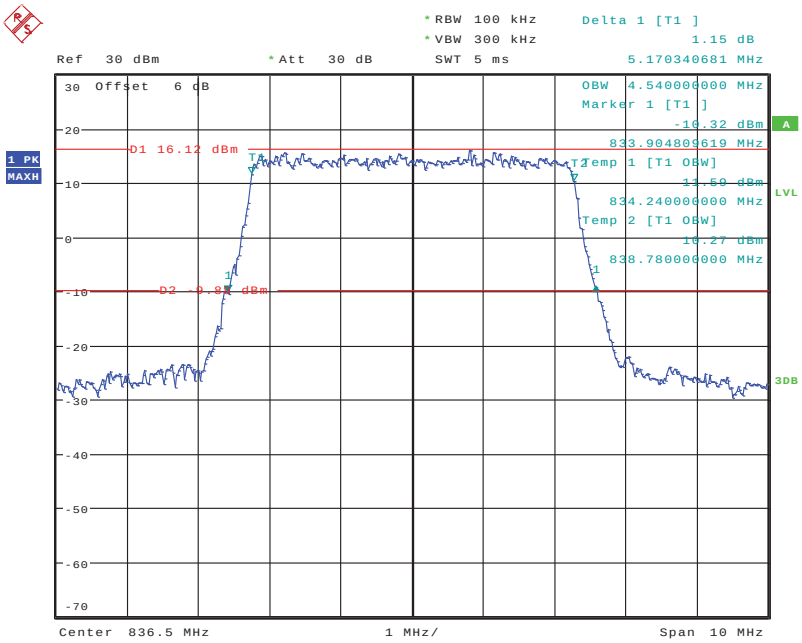
Date: 18.SEP.2019 20:16:22

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



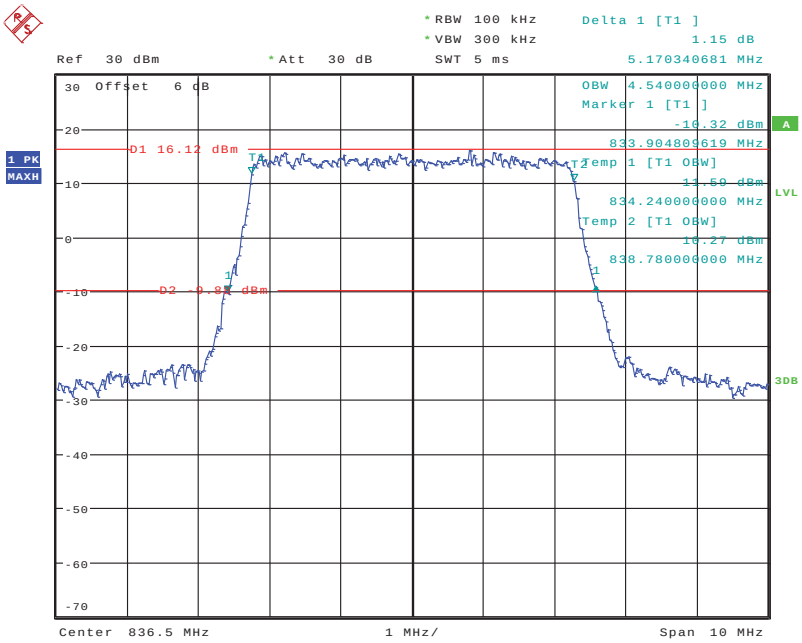
Date: 18.SEP.2019 20:16:48

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



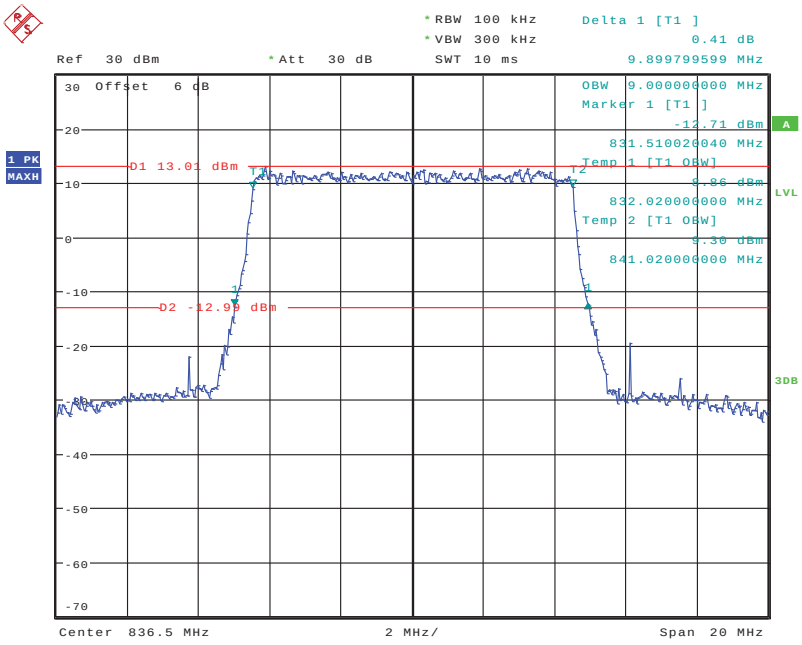
Date: 18.SEP.2019 20:17:28

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

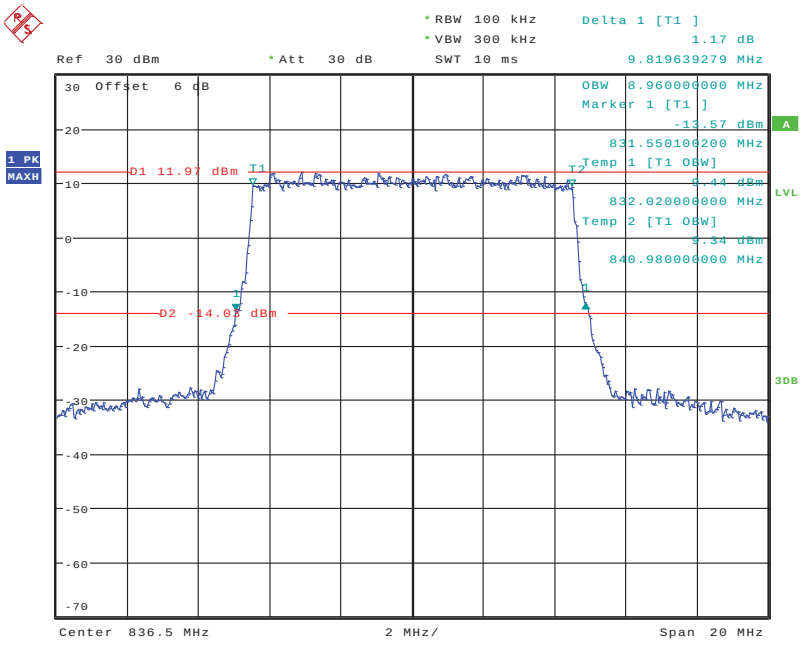


Date: 18.SEP.2019 20:17:28

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



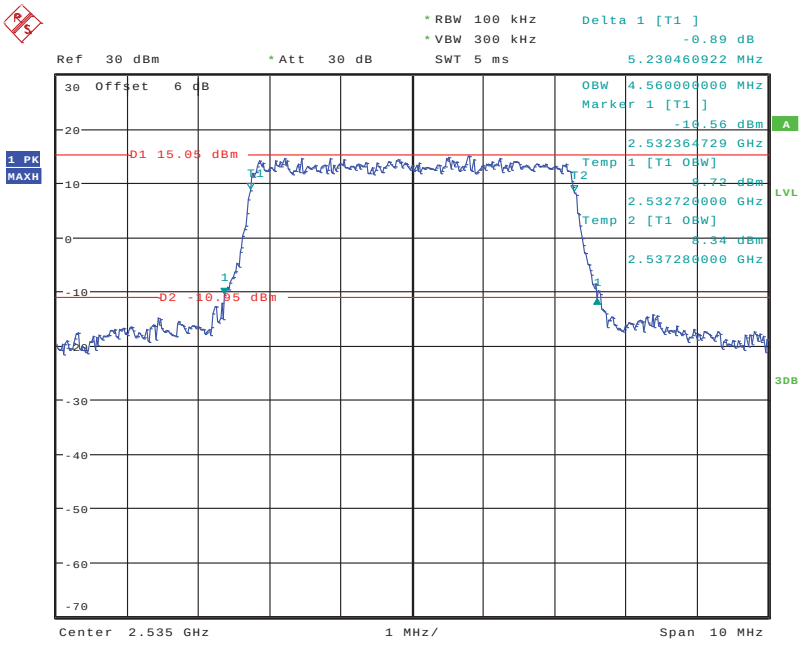
16-QAM (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



LTE Band 7: (Middle Channel)

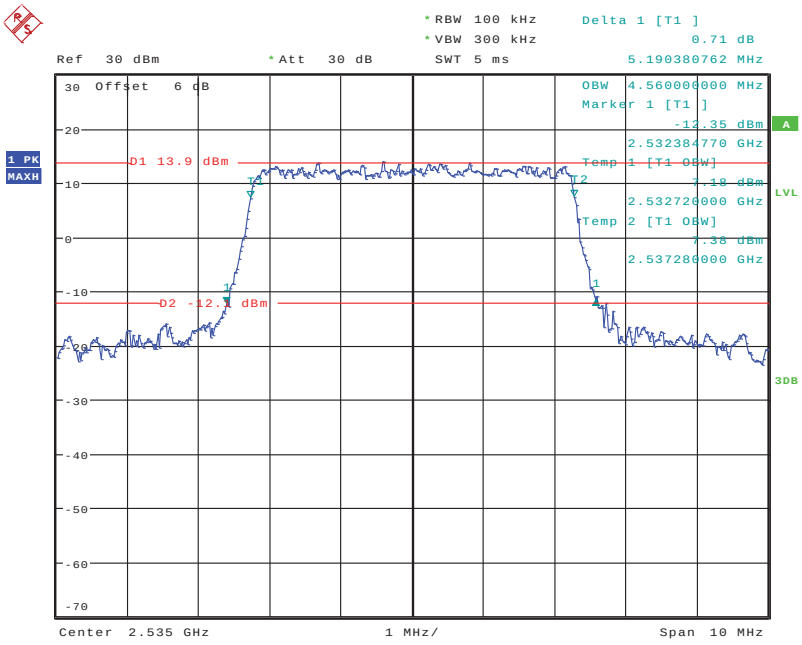
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5.0	QPSK	4.56	5.23
	16QAM	4.56	5.19
10.0	QPSK	9.04	10.18
	16QAM	8.96	9.90
15.0	QPSK	13.62	15.15
	16QAM	13.62	15.15
20.0	QPSK	18.00	19.72
	16QAM	18.00	19.72

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



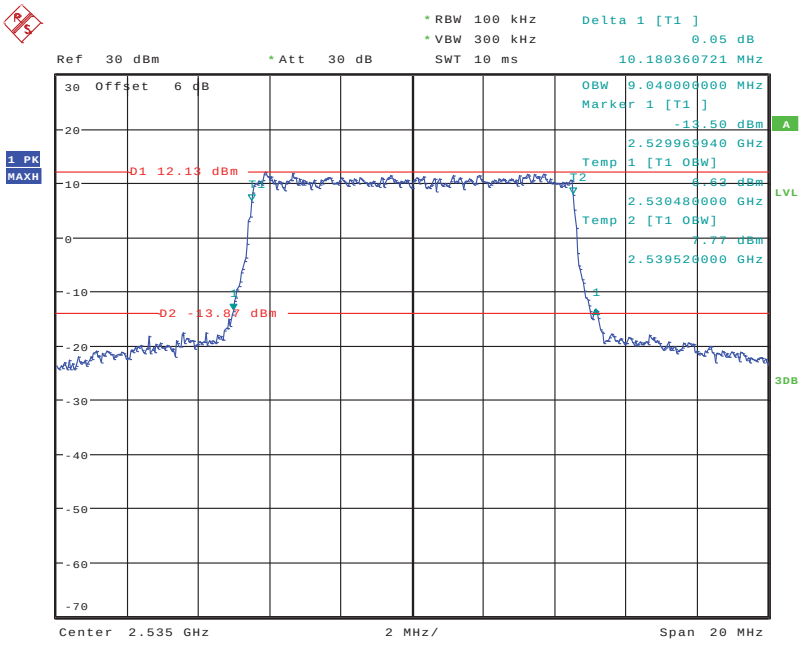
Date: 18.SEP.2019 20:19:48

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



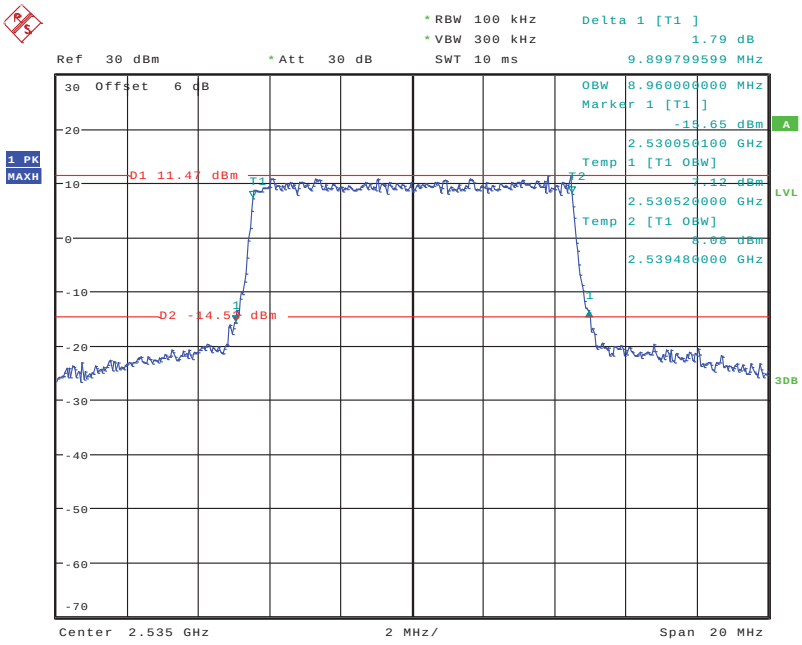
Date: 18.SEP.2019 20:20:16

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



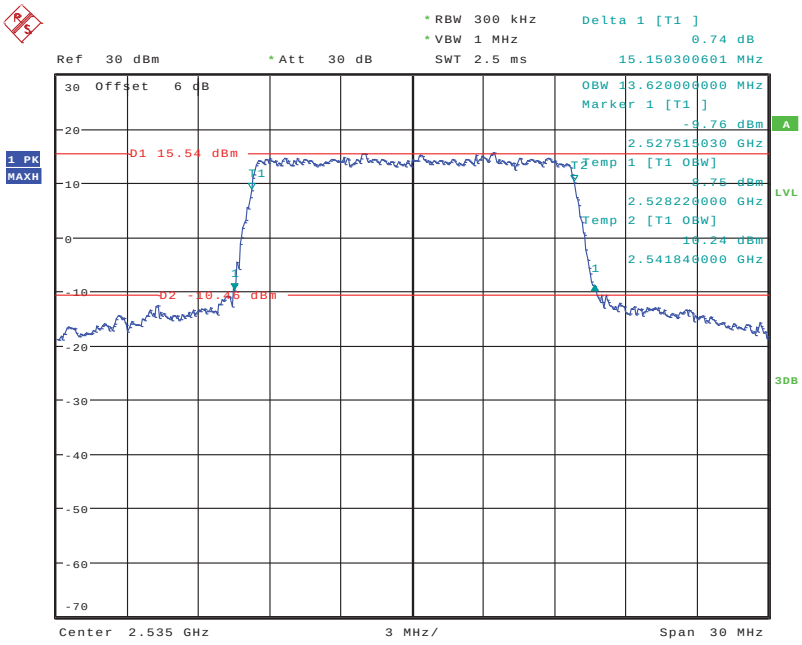
Date: 18.SEP.2019 20:20:52

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



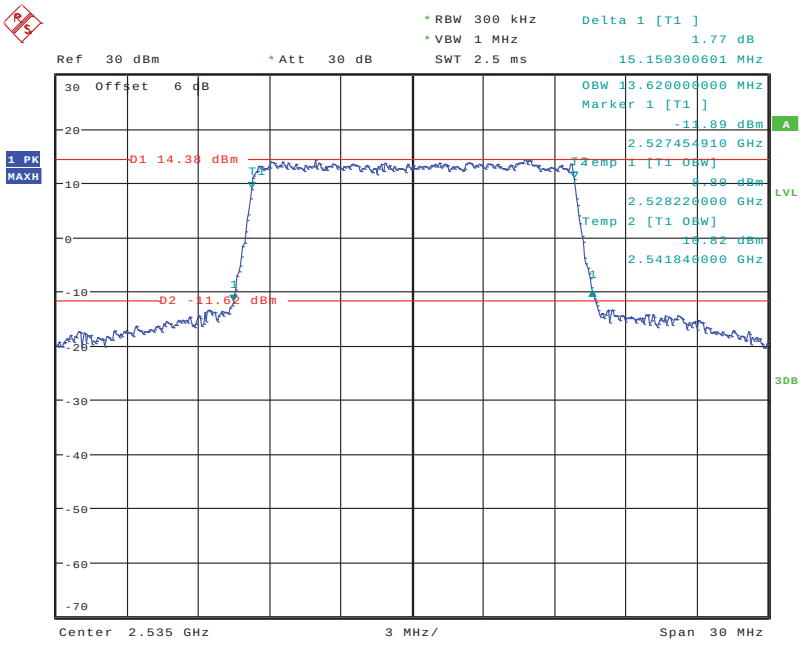
Date: 18.SEP.2019 20:21:24

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



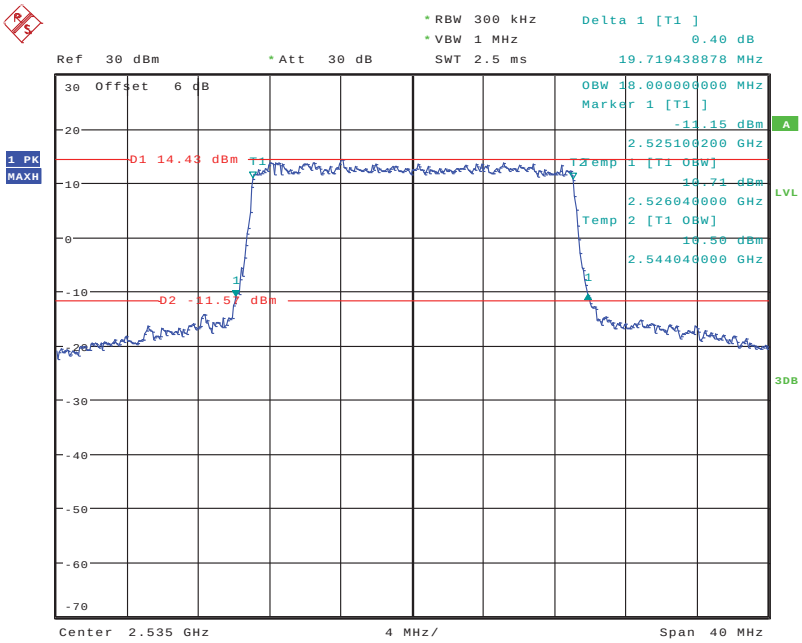
Date: 18.SEP.2019 20:22:08

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



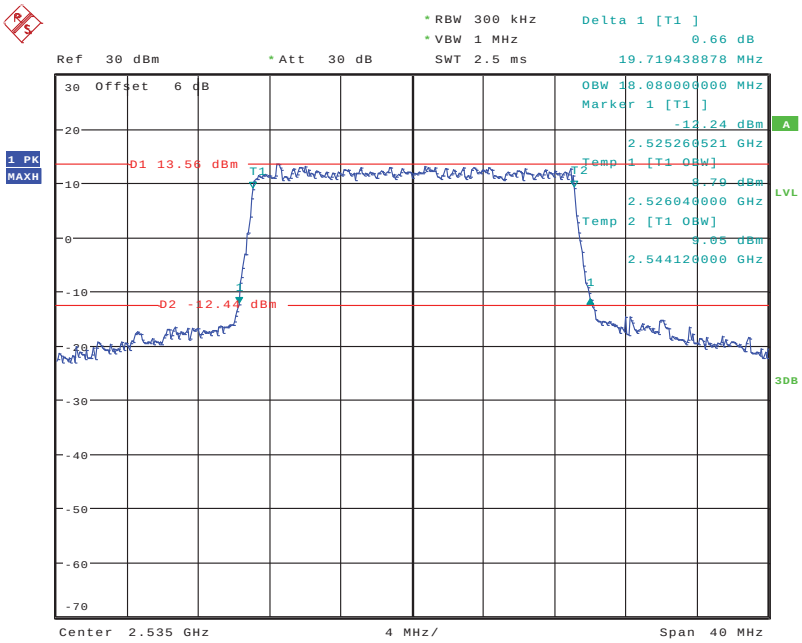
Date: 18.SEP.2019 20:22:46

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



Date: 18.SEP.2019 20:23:20

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

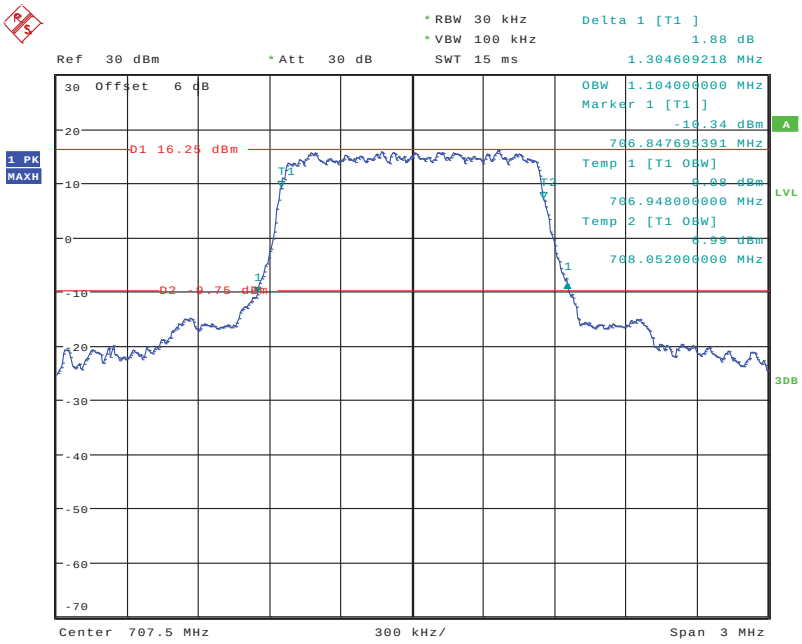


Date: 18.SEP.2019 20:23:55

LTE Band 12: (Middle Channel)

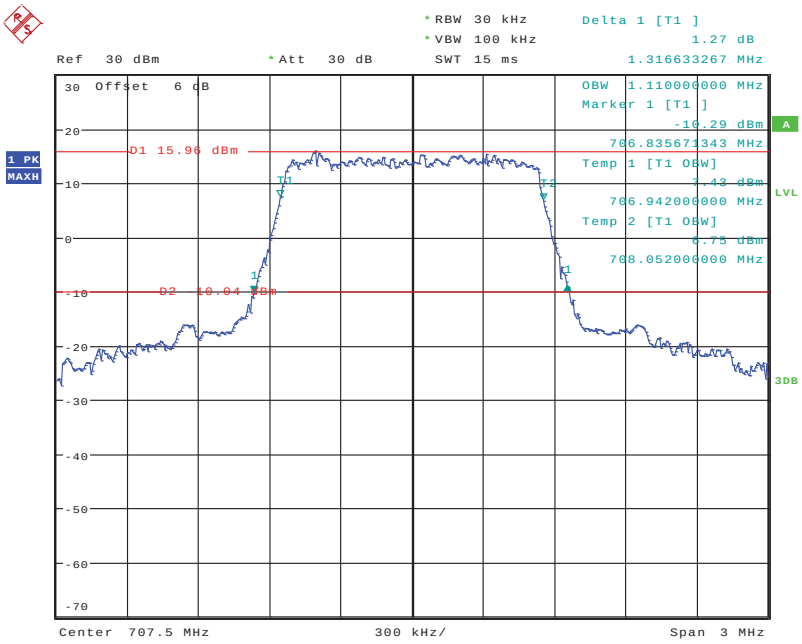
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	1.10	1.30
	16QAM	1.11	1.32
3.0	QPSK	2.68	2.96
	16QAM	2.69	2.86
5.0	QPSK	4.54	5.17
	16QAM	4.54	5.11
10.0	QPSK	9.00	9.94
	16QAM	9.00	9.66

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



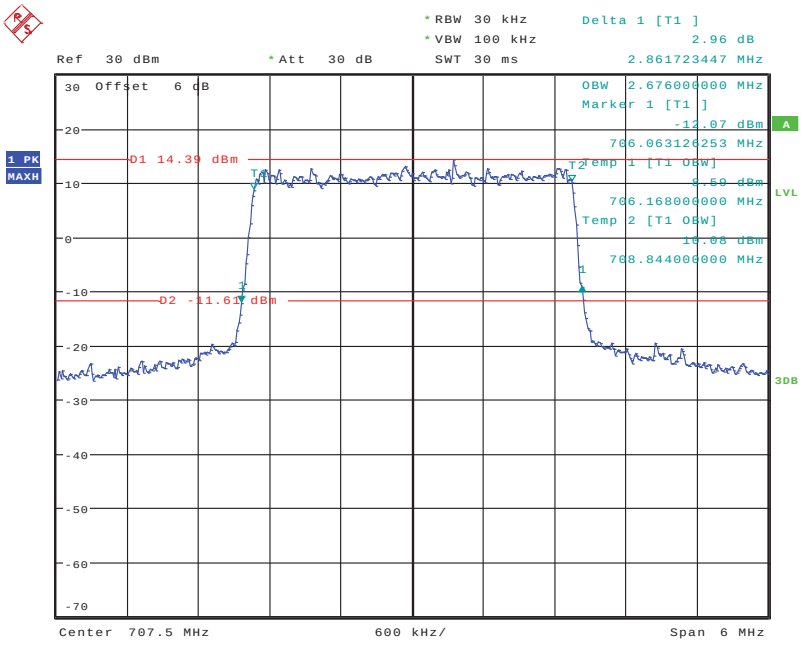
Date: 18.SEP.2019 20:24:24

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



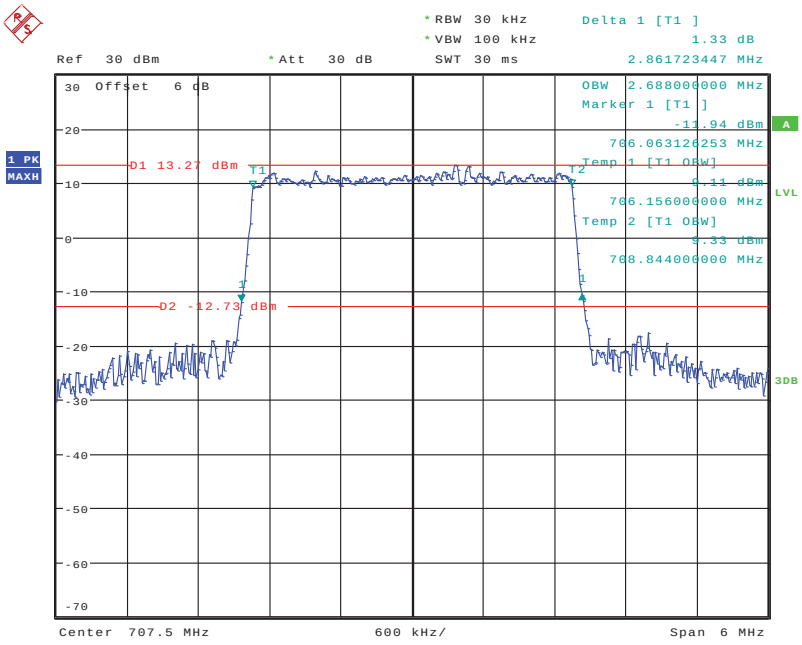
Date: 18.SEP.2019 20:24:46

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



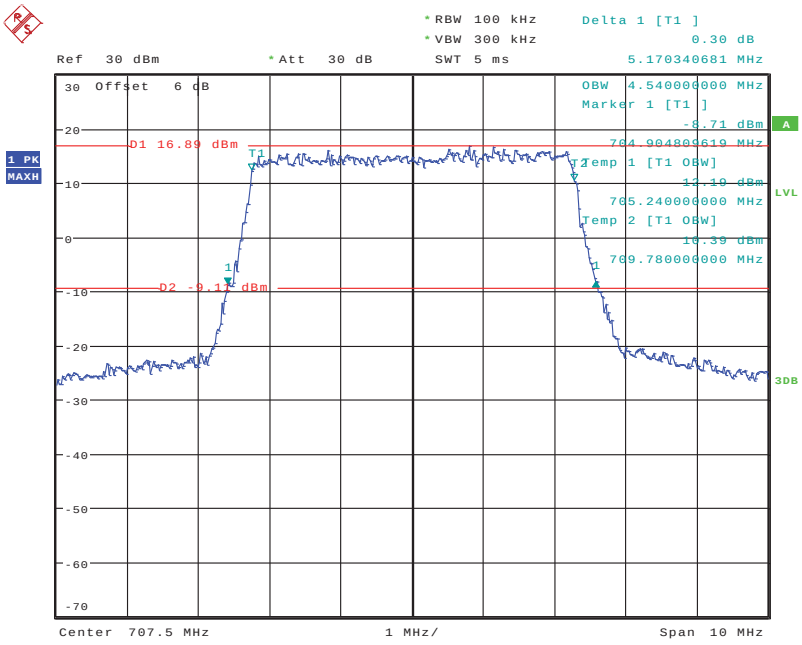
Date: 18.SEP.2019 20:25:08

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



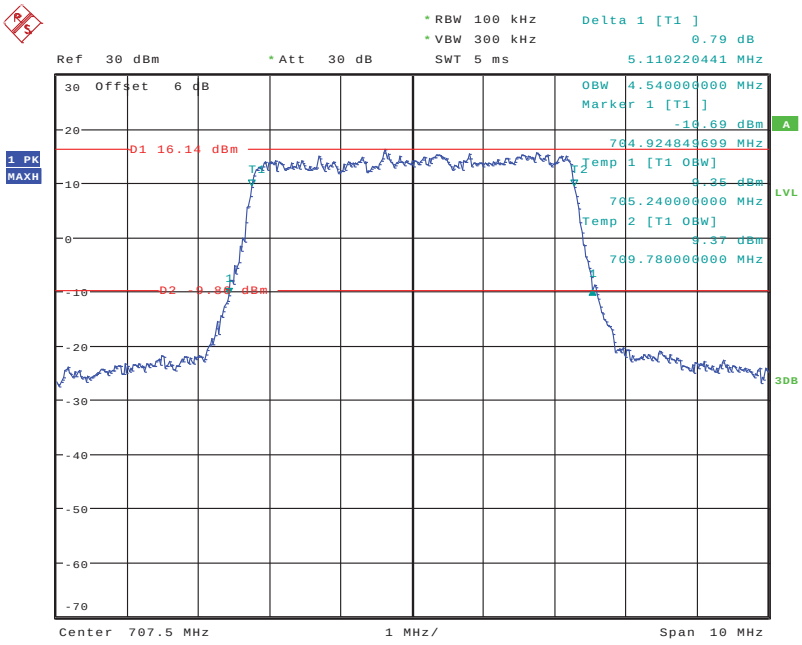
Date: 18.SEP.2019 21:09:36

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



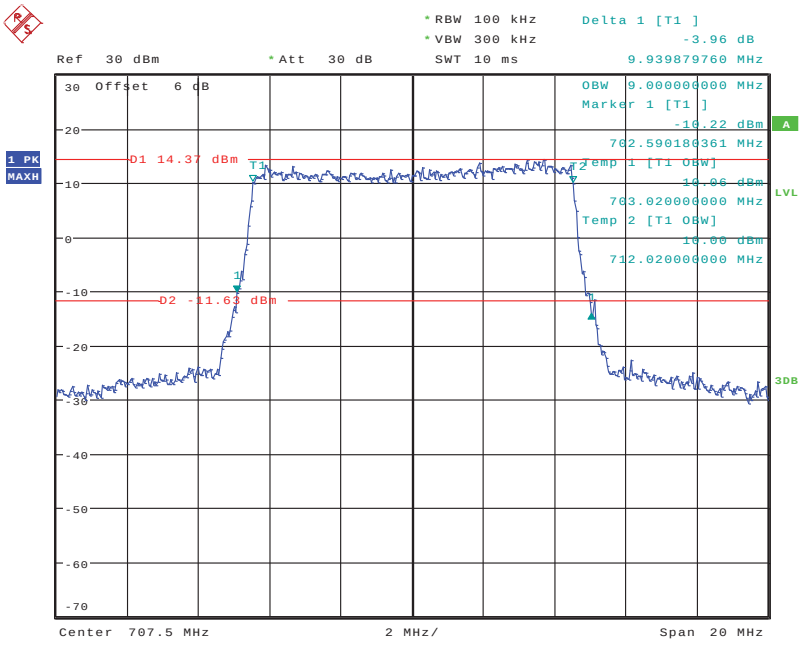
Date: 18.SEP.2019 21:10:07

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



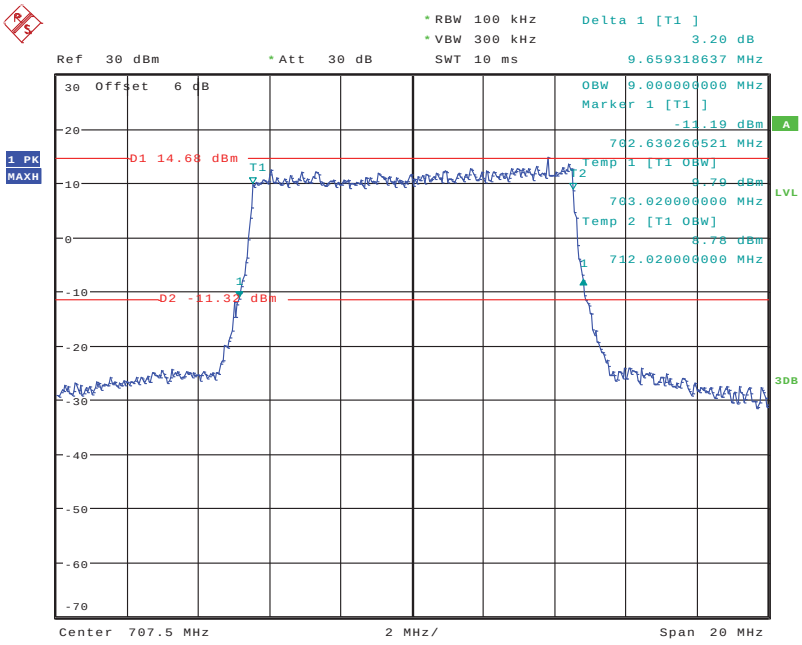
Date: 18.SEP.2019 21:10:36

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



Date: 18.SEP.2019 21:11:05

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

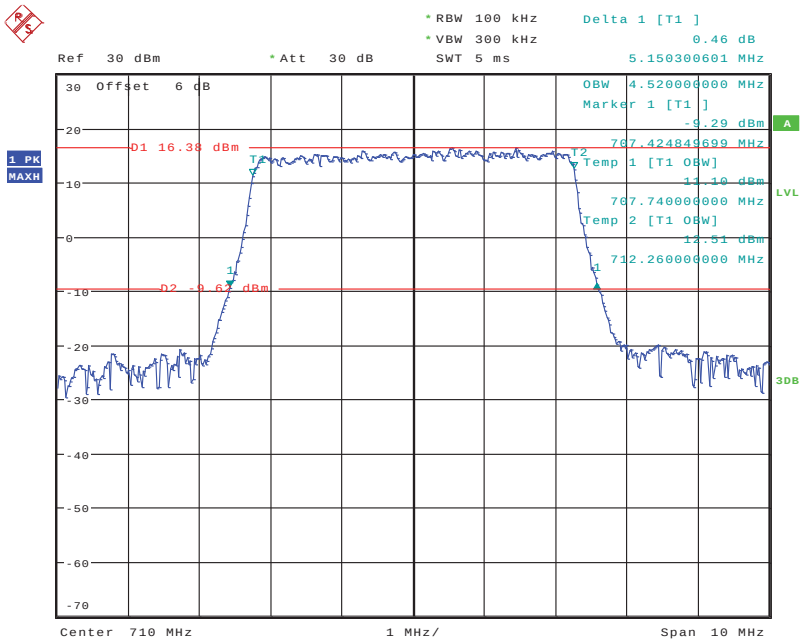


Date: 18.SEP.2019 21:11:34

LTE Band 17: (Middle Channel)

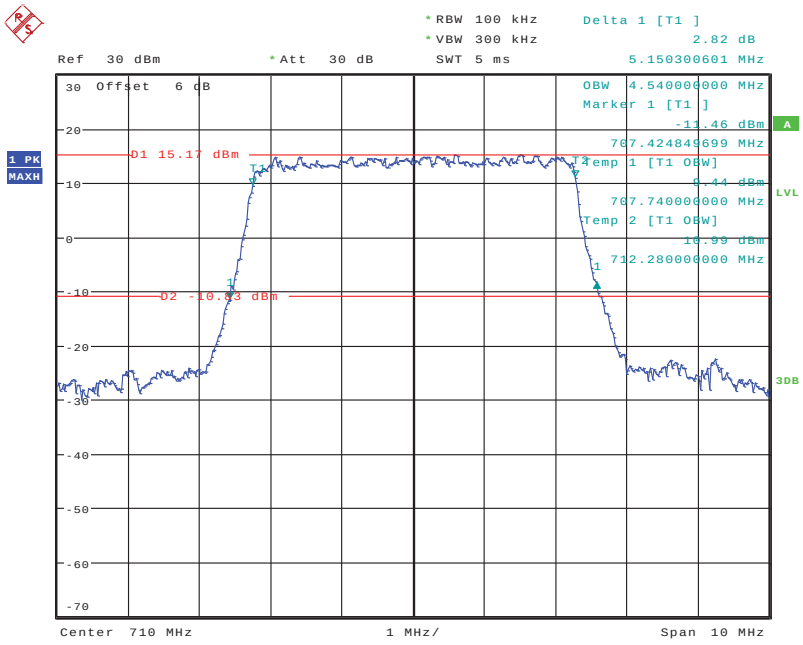
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5.0	QPSK	4.52	5.15
	16QAM	4.54	5.15
10.0	QPSK	8.96	9.82
	16QAM	8.96	9.62

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



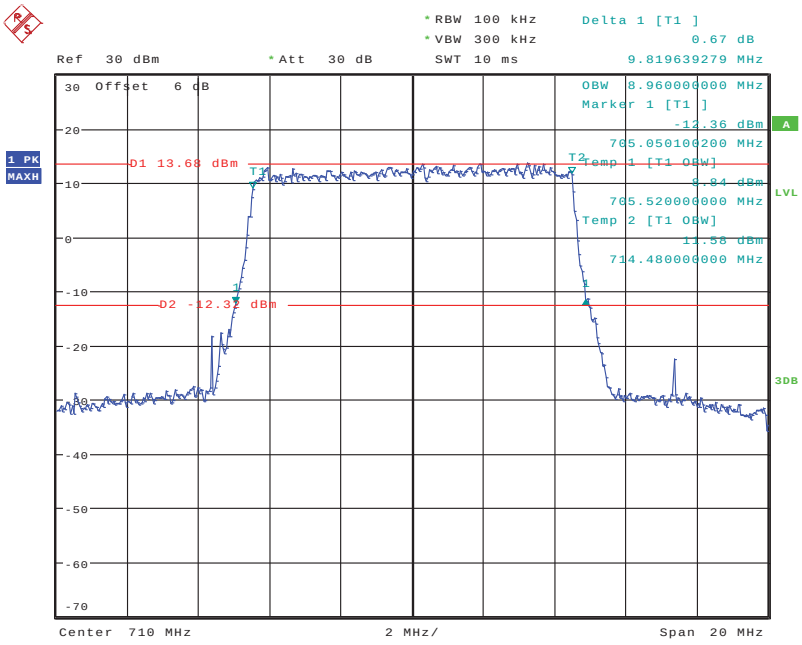
Date: 18.SEP.2019 22:46:13

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

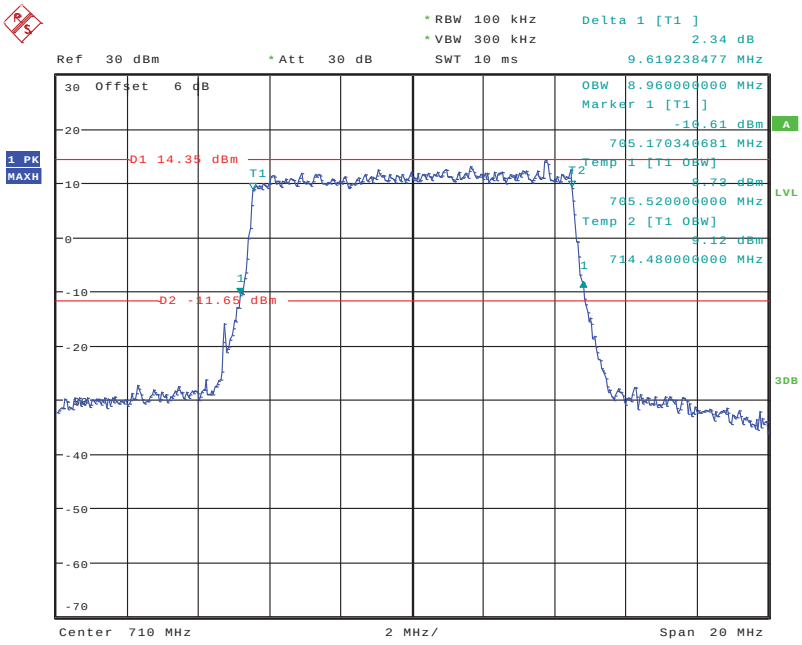


Date: 18.SEP.2019 22:46:51

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



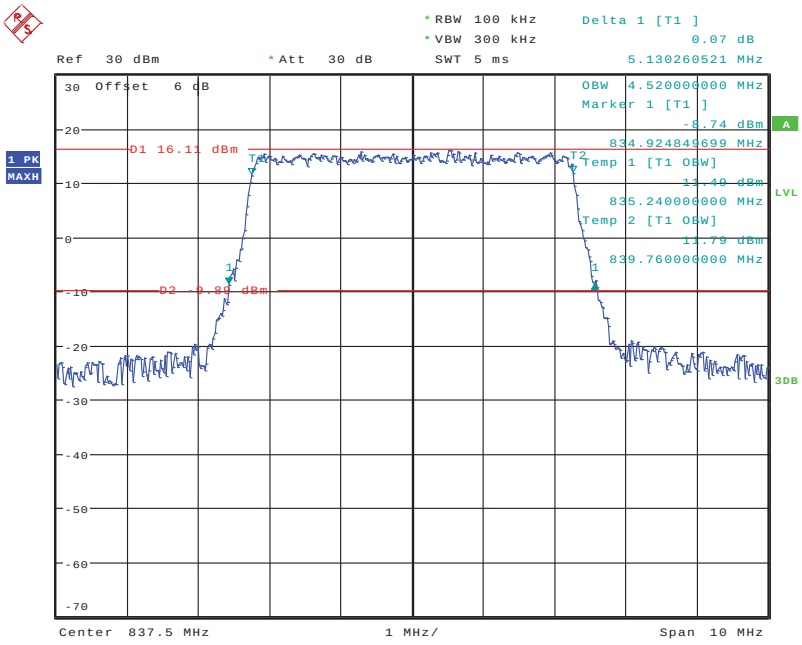
16-QAM (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



LTE Band 19: (Middle Channel)

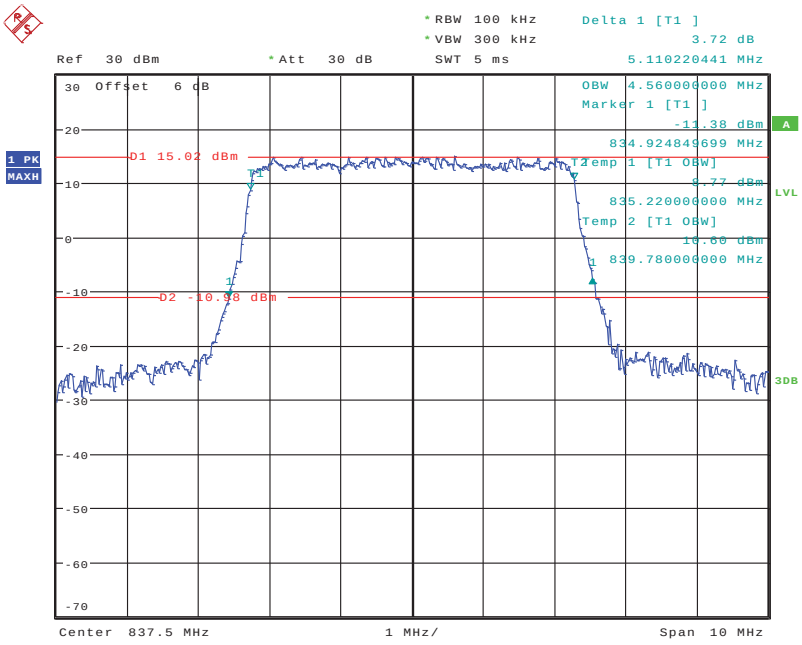
Bandwidth (MHz)	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5.0	QPSK	4.52	5.13
	16QAM	4.56	5.11
10.0	QPSK	9.00	9.86
	16QAM	8.96	9.78
15.0	QPSK	13.56	14.97
	16QAM	13.50	15.03

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



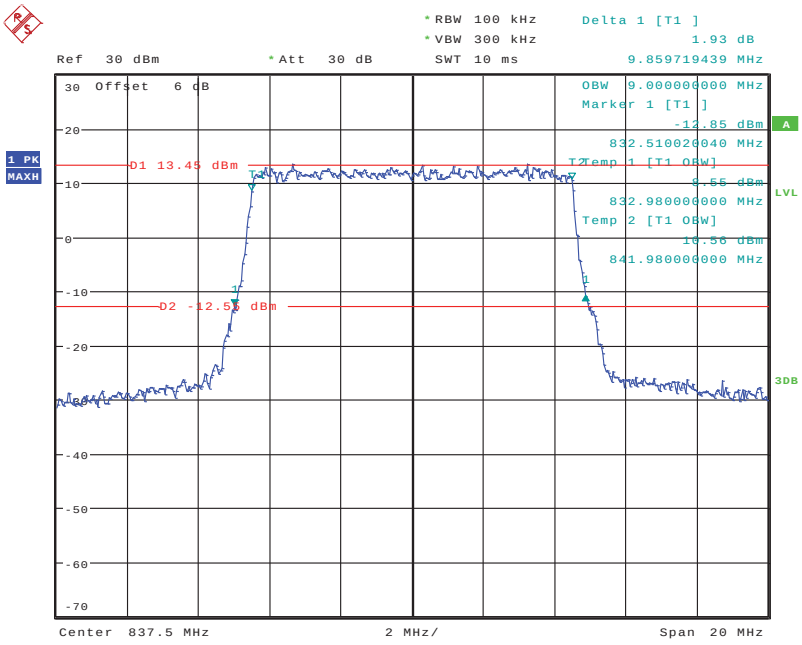
Date: 18.SEP.2019 22:40:48

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

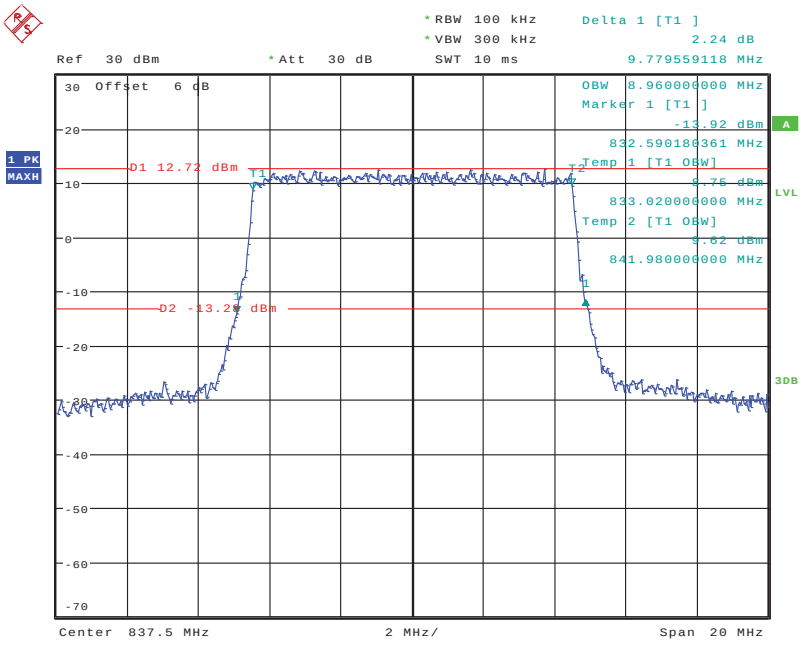


Date: 18.SEP.2019 22:41:23

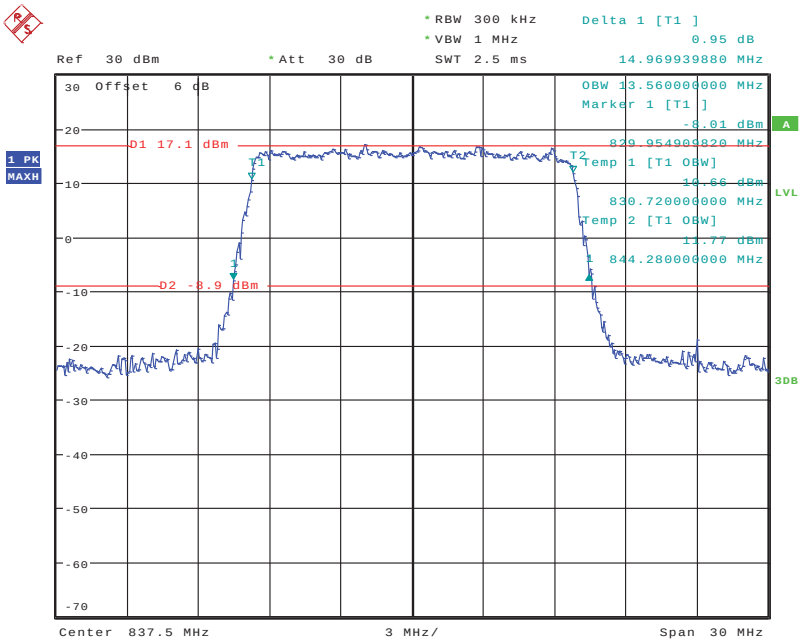
QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



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

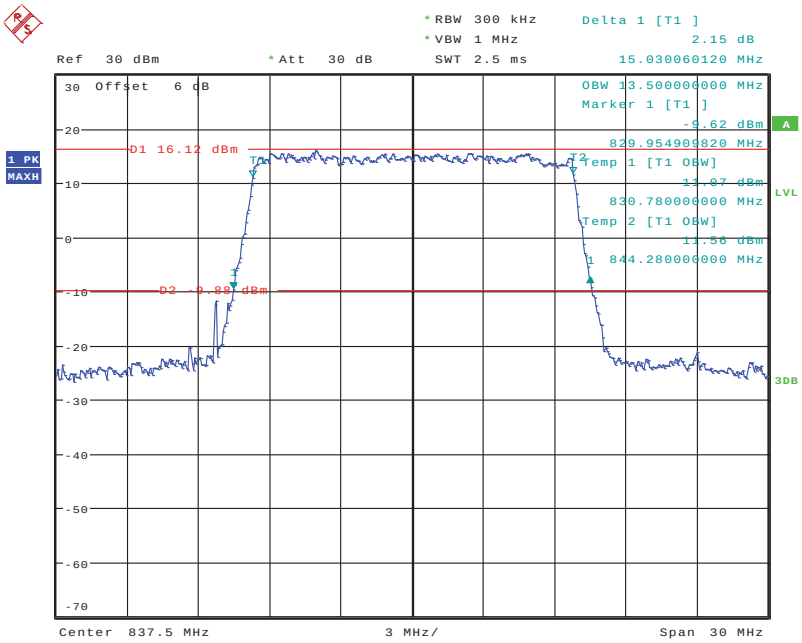


QPSK (15.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



Date: 18.SEP.2019 22:43:05

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



Date: 18.SEP.2019 22:43:40

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

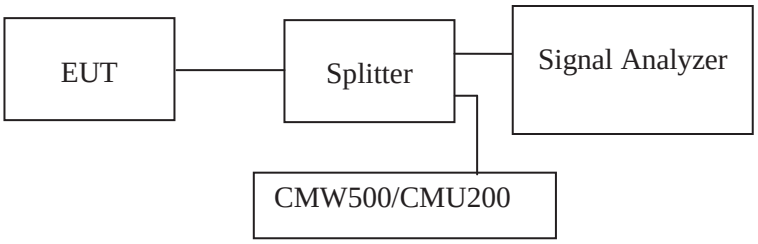
Applicable Standard

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 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by George Zhong from 2019-09-11 to 2019-09-18.

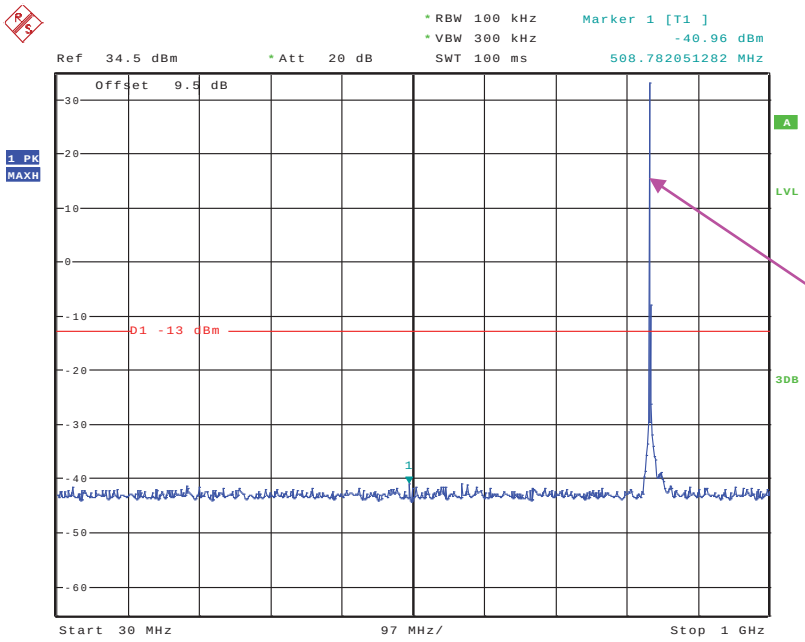
Test result: Compliance.

EUT operation mode: transmitting

Please refer to the following plots.

Cellular Band (Part 22H)

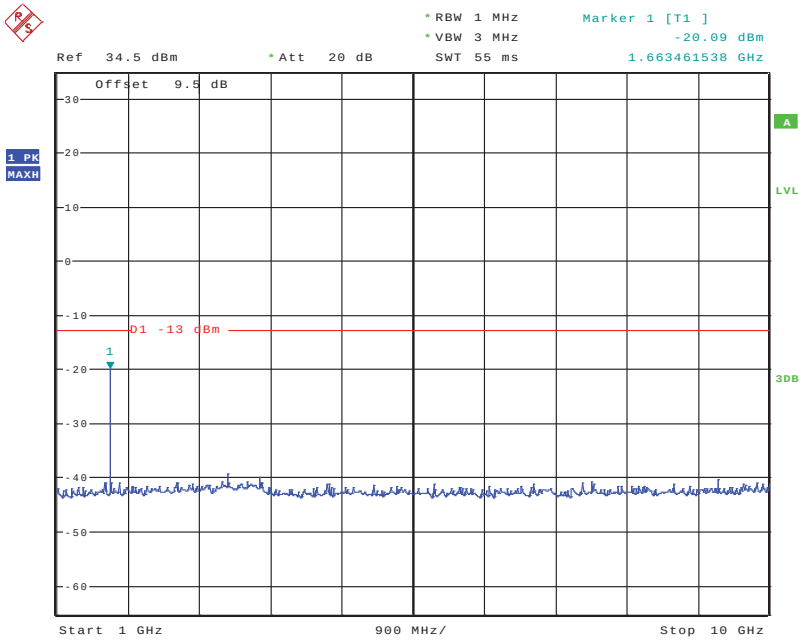
30 MHz – 1 GHz (GSM Mode)



Fundamental test

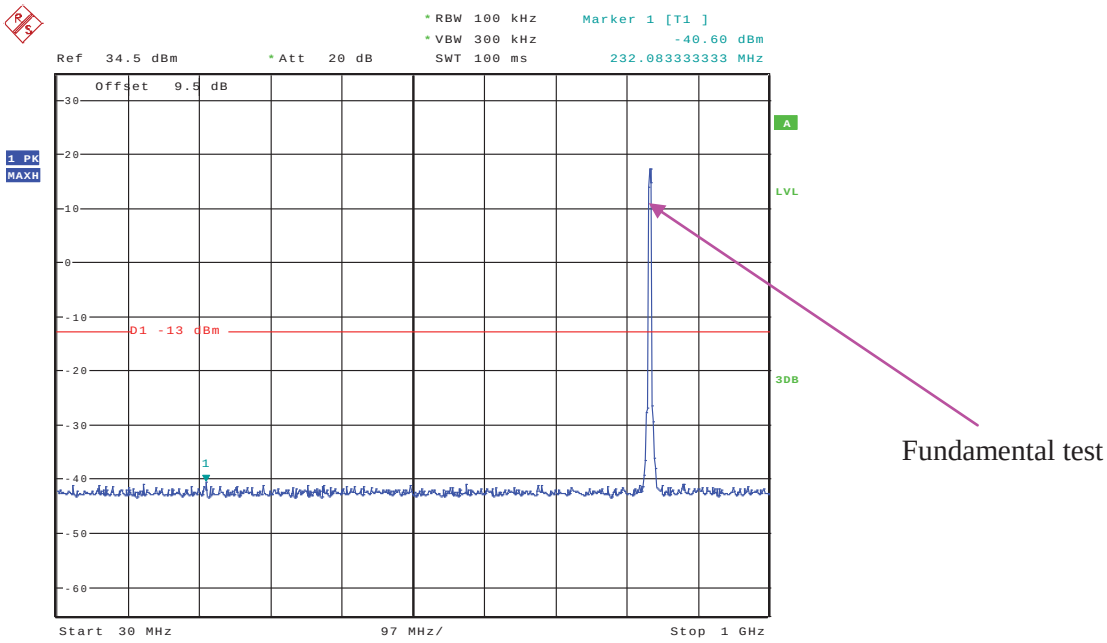
Date: 11.SEP.2019 20:52:07

1 GHz – 10 GHz (GSM Mode)



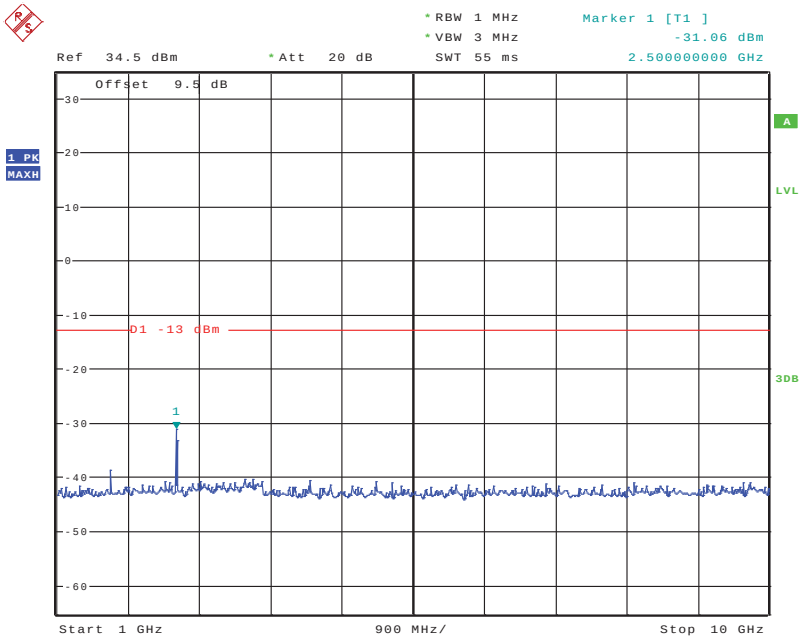
Date: 11.SEP.2019 20:53:51

30 MHz – 1 GHz (WCDMA Mode)



Date: 11.SEP.2019 22:06:23

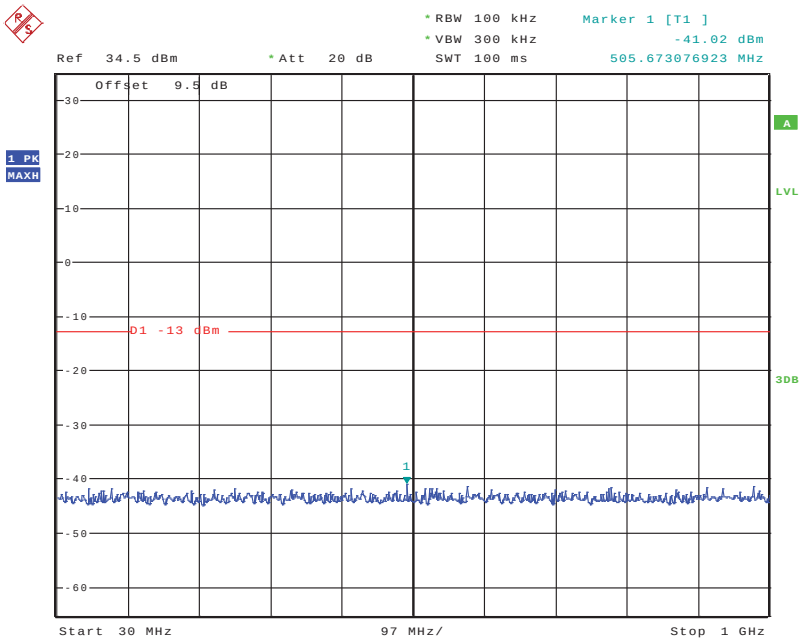
1 GHz – 10 GHz (WCDMA Mode)



Date: 11.SEP.2019 22:04:49

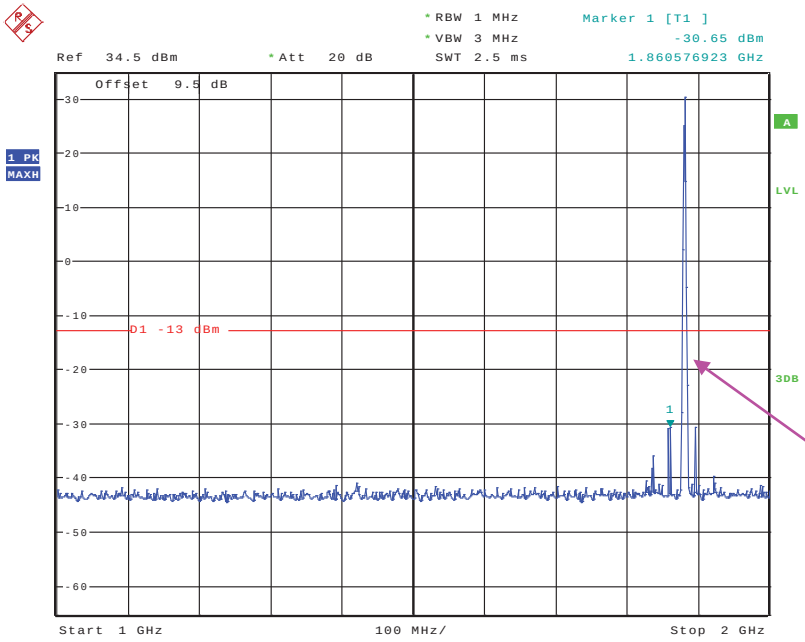
PCS Band (Part 24E)

30 MHz – 1 GHz (GSM Mode)



Date: 11.SEP.2019 20:57:04

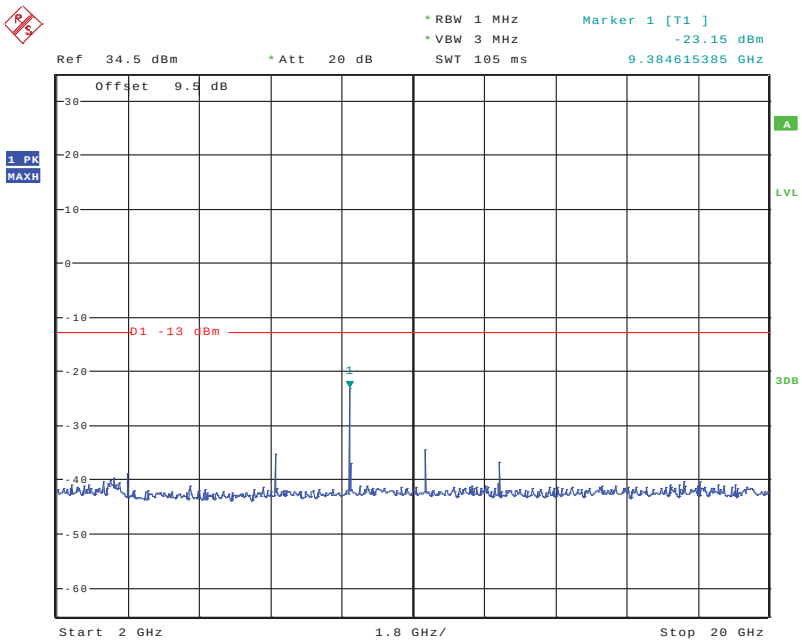
1 GHz – 2 GHz (GSM Mode)



Fundamental test

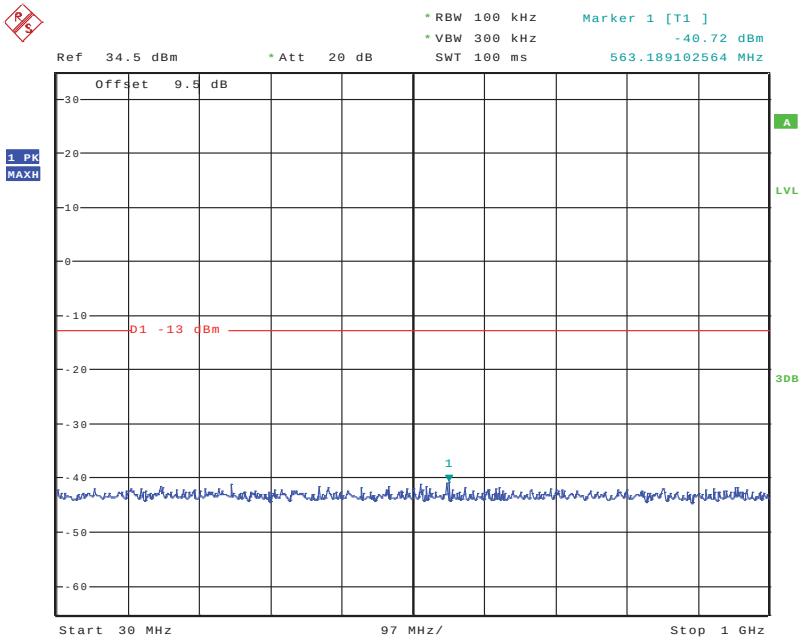
Date: 11.SEP.2019 20:56:03

2 GHz – 20 GHz (GSM Mode)



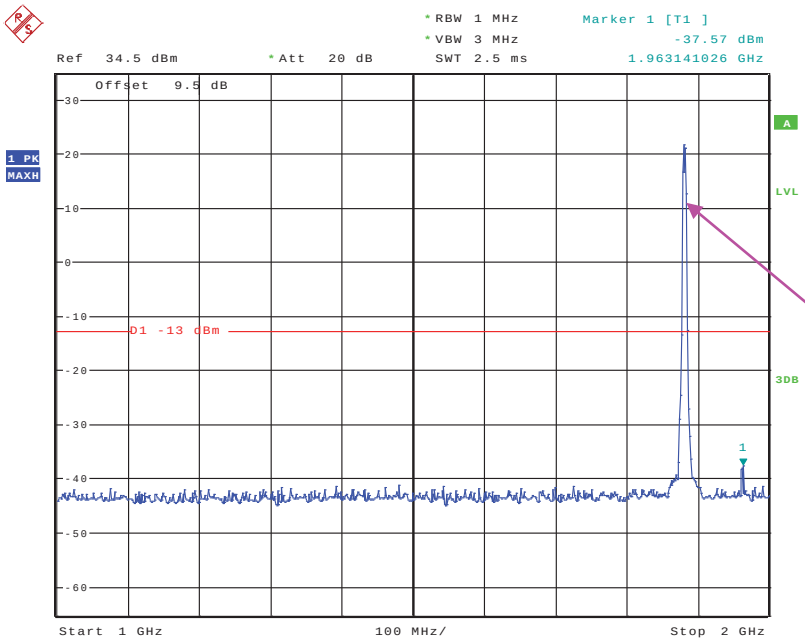
Date: 11.SEP.2019 20:56:39

30 MHz – 1 GHz (WCDMA Mode)



Date: 11.SEP.2019 21:59:40

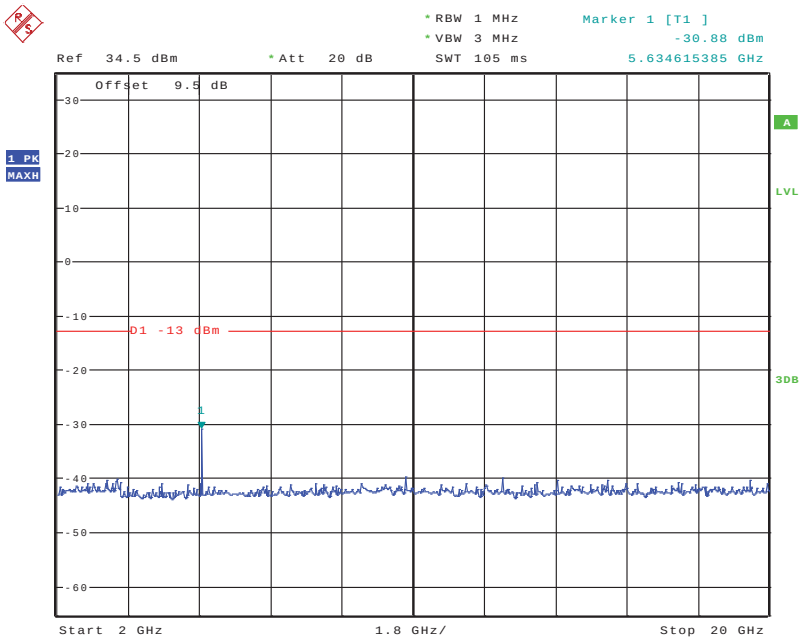
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 11.SEP.2019 22:00:08

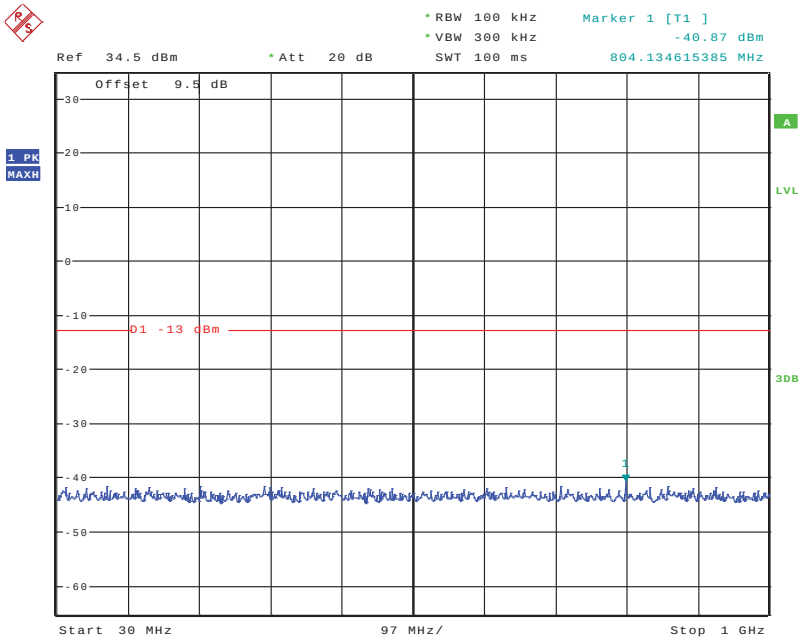
2 GHz – 20 GHz (WCDMA Mode)



Date: 11.SEP.2019 22:00:23

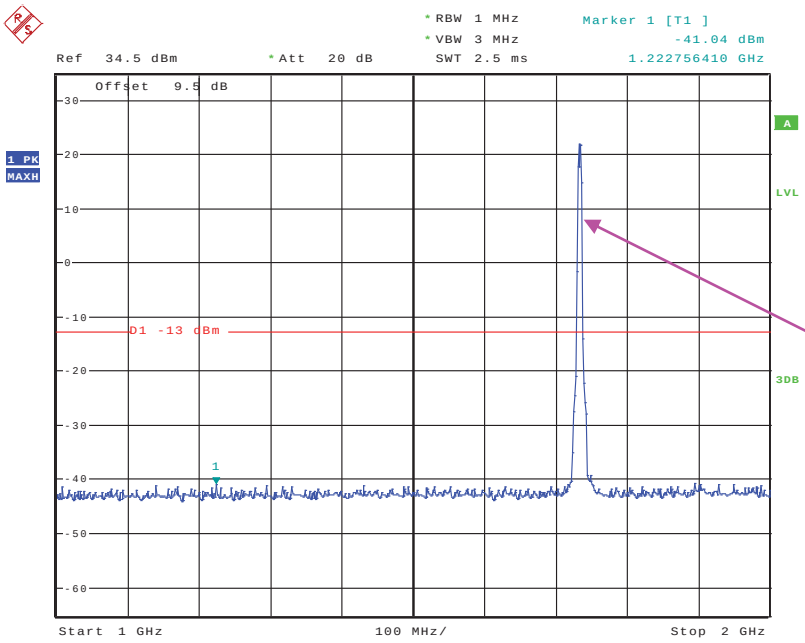
AWS Band (Part27)

30 MHz – 1 GHz (WCDMA Mode)



Date: 11.SEP.2019 23:14:37

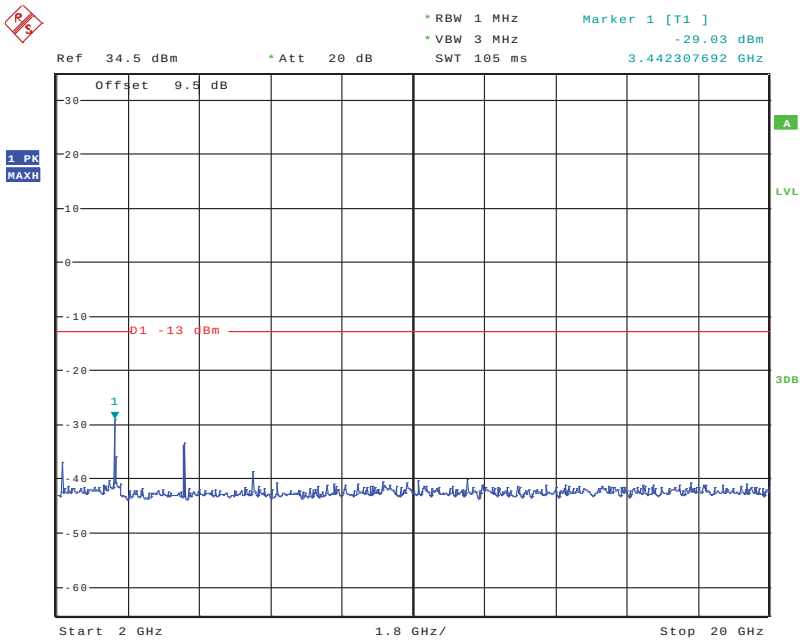
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 11.SEP.2019 23:15:29

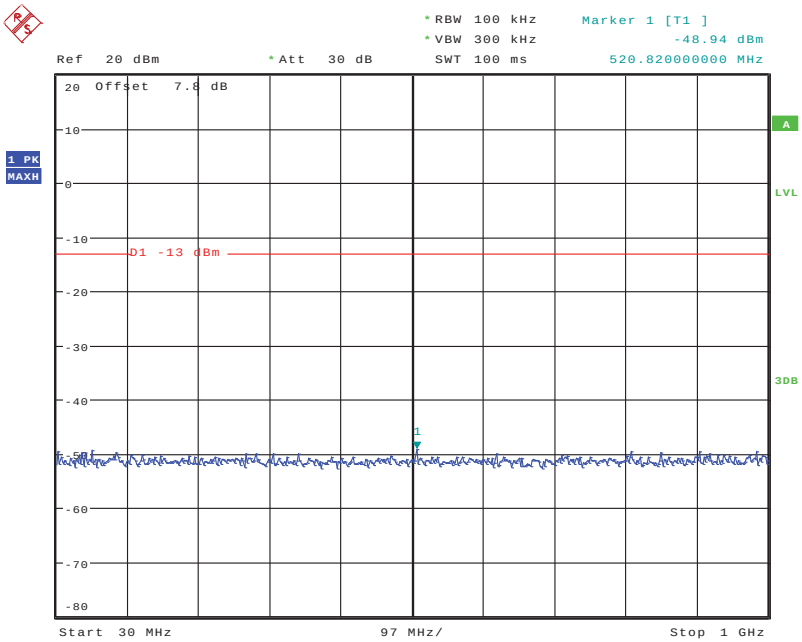
2 GHz – 20 GHz (WCDMA Mode)



Date: 11.SEP.2019 23:15:50

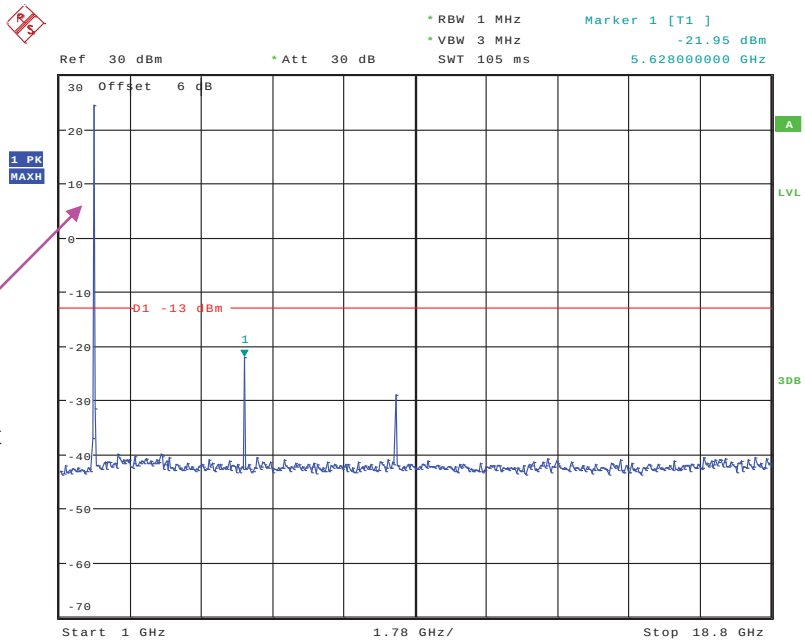
LTE Band 2:

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



Date: 18.SEP.2019 22:25:20

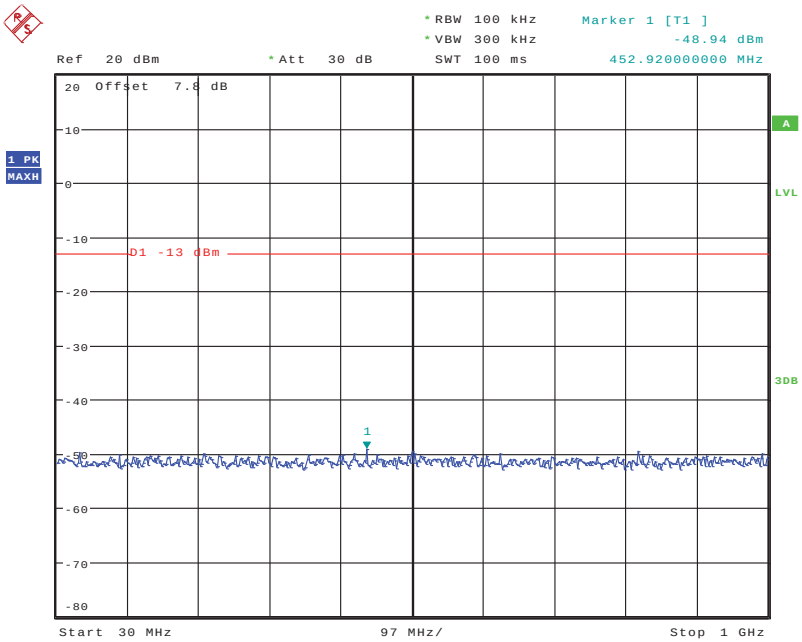
1 GHz – 18.8 GHz (1.4 MHz, Middle Channel)



Fundamental test

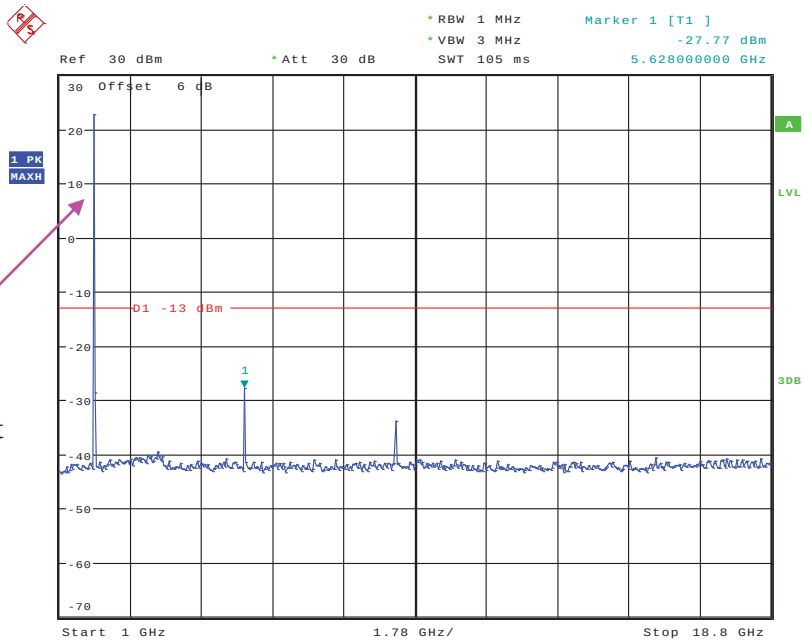
Date: 18.SEP.2019 22:25:28

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



Date: 18.SEP.2019 22:25:43

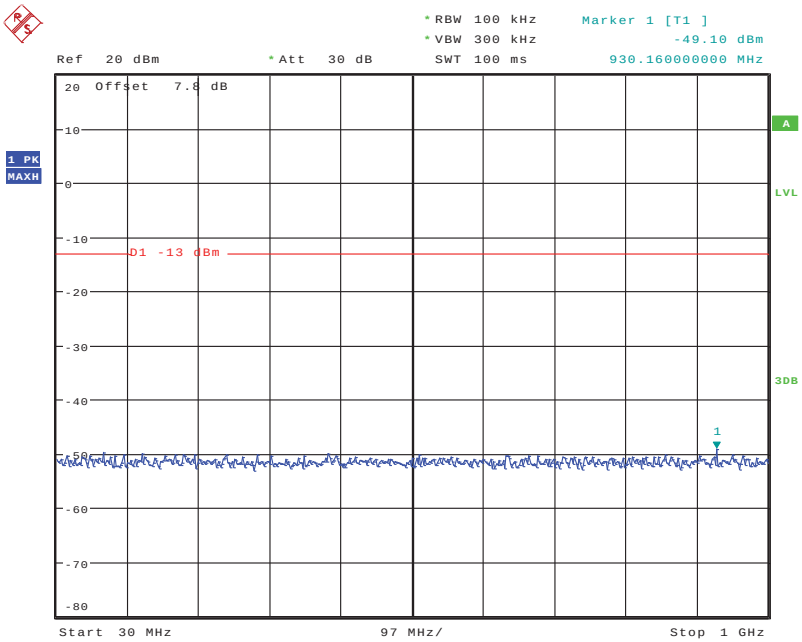
1 GHz – 18.8 GHz (3.0 MHz, Middle Channel)



Fundamental test

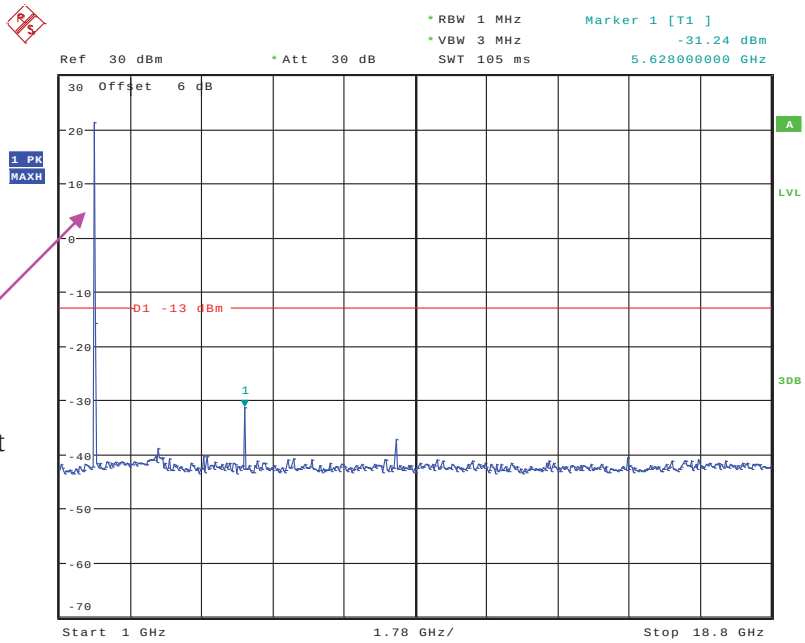
Date: 18.SEP.2019 22:25:55

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



Date: 18.SEP.2019 22:26:09

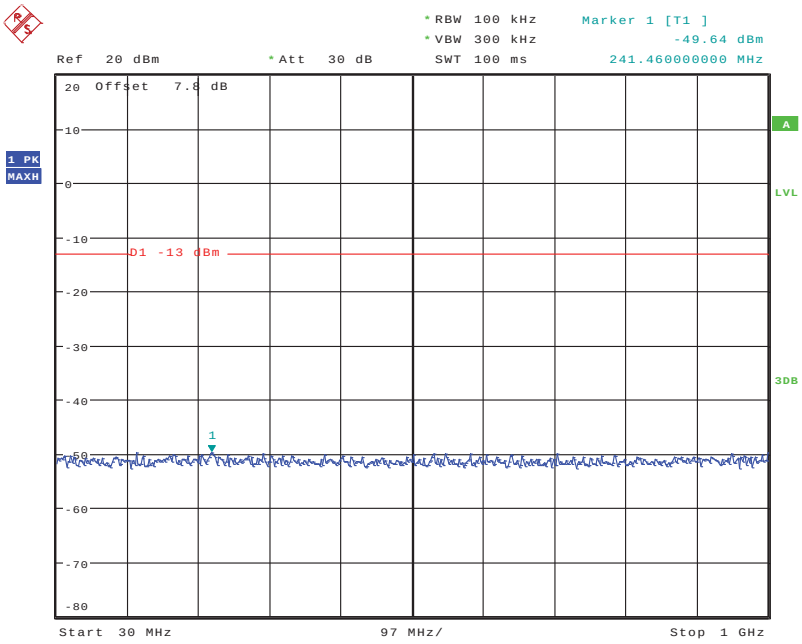
1 GHz –18.8 GHz (5.0 MHz, Middle Channel)



Fundamental test

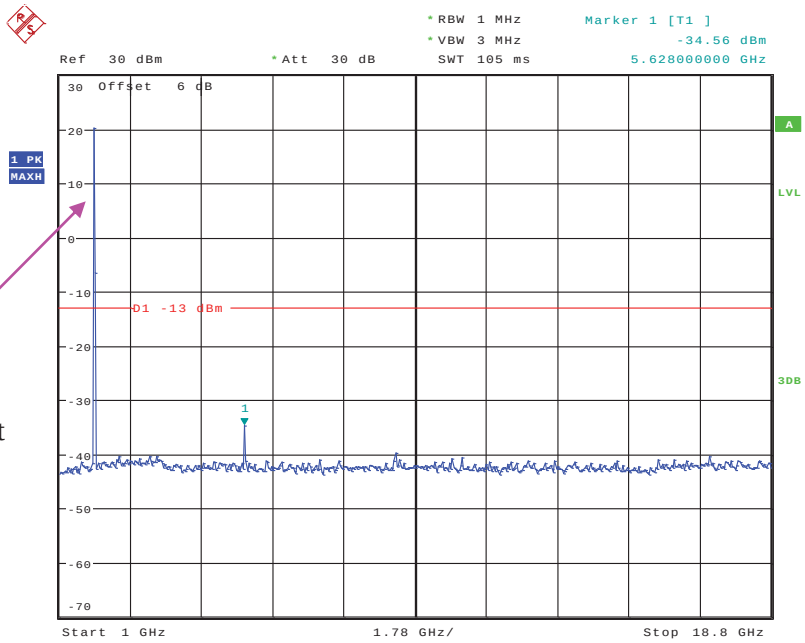
Date: 18.SEP.2019 22:26:18

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



Date: 18.SEP.2019 22:26:37

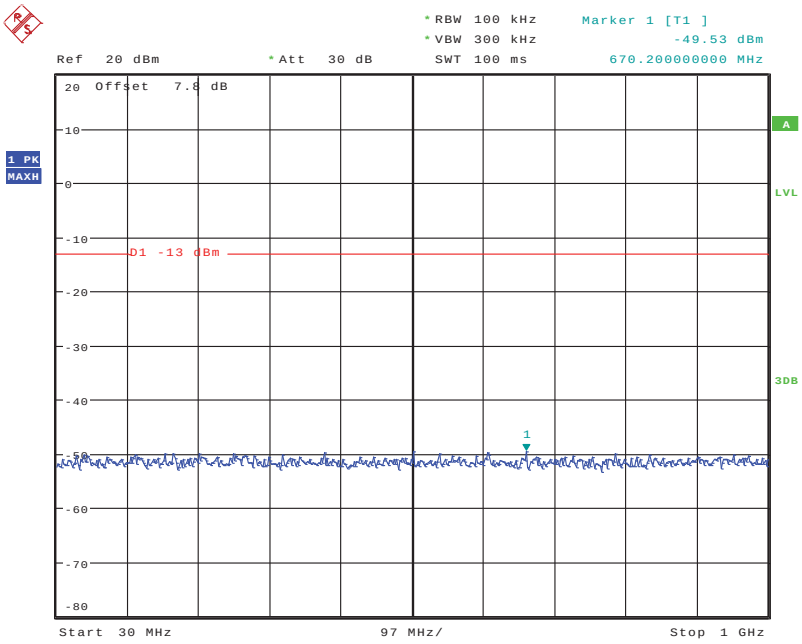
1 GHz –18.8 GHz (10.0 MHz, Middle Channel)



Fundamental test

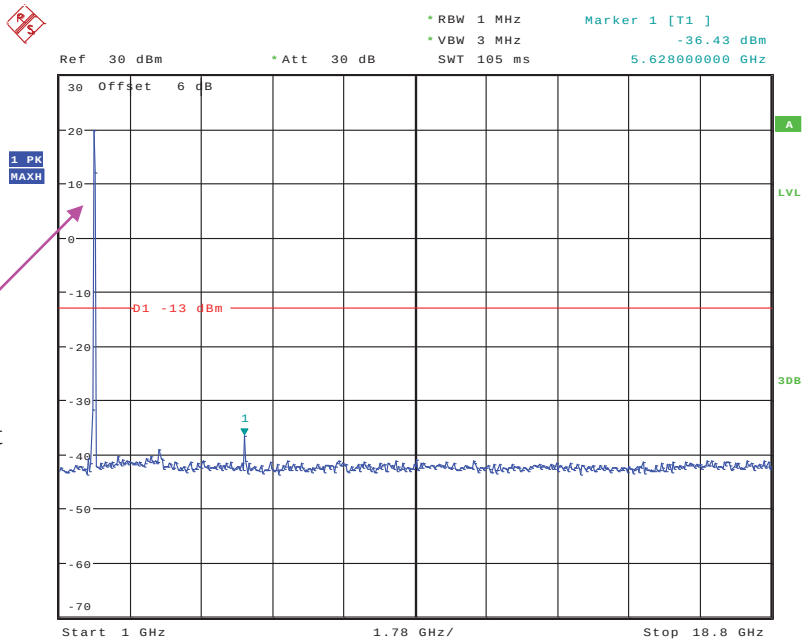
Date: 18.SEP.2019 22:26:45

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



Date: 18.SEP.2019 22:27:04

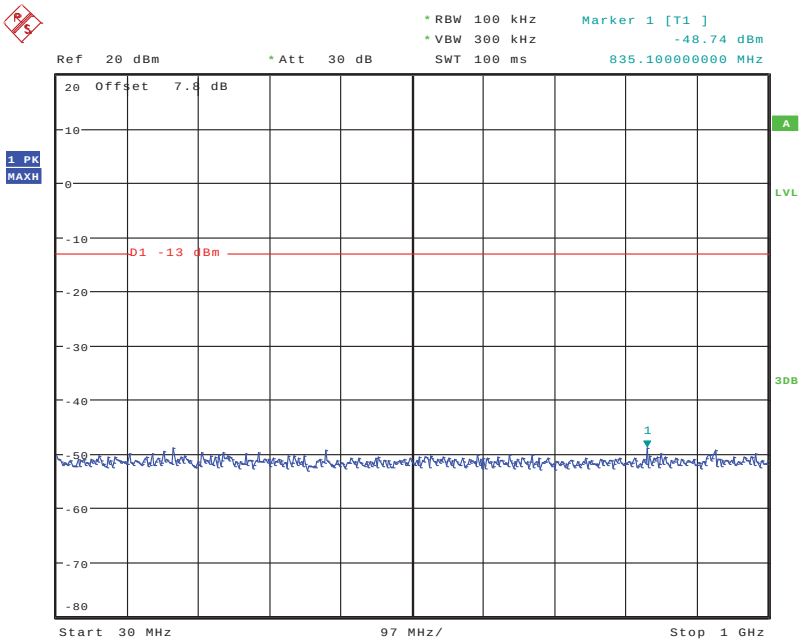
1 GHz –18.8 GHz (15.0 MHz, Middle Channel)



Fundamental test

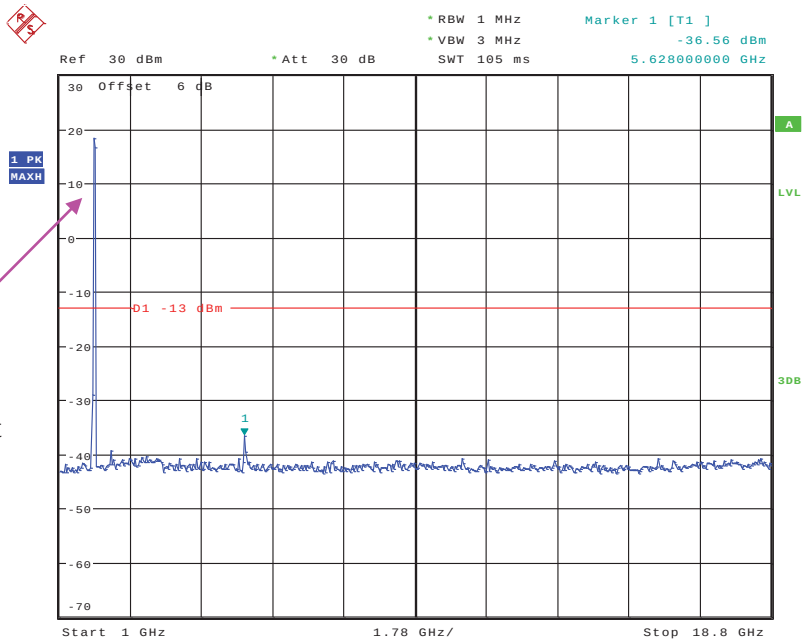
Date: 18.SEP.2019 22:27:12

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



Date: 18.SEP.2019 22:27:30

1 GHz –18.8 GHz (20.0 MHz, Middle Channel)

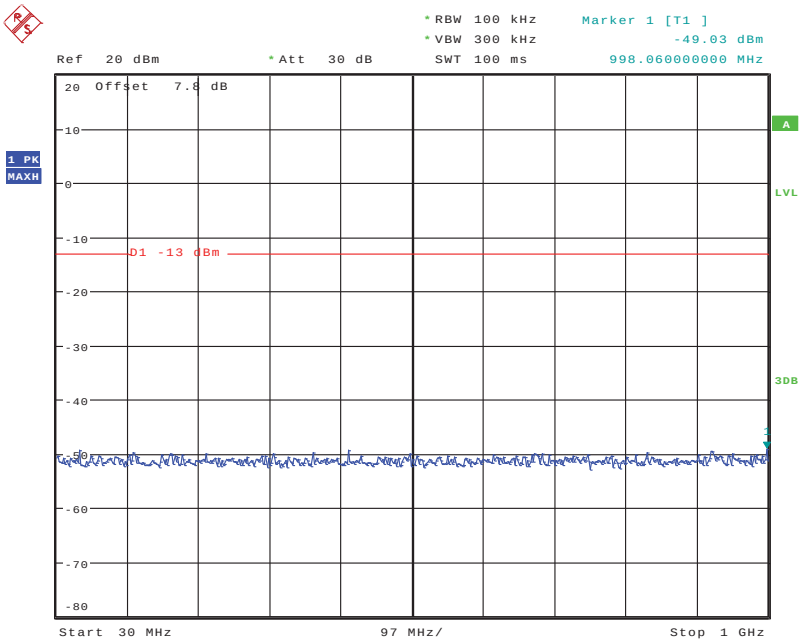


Fundamental test

Date: 18.SEP.2019 22:27:39

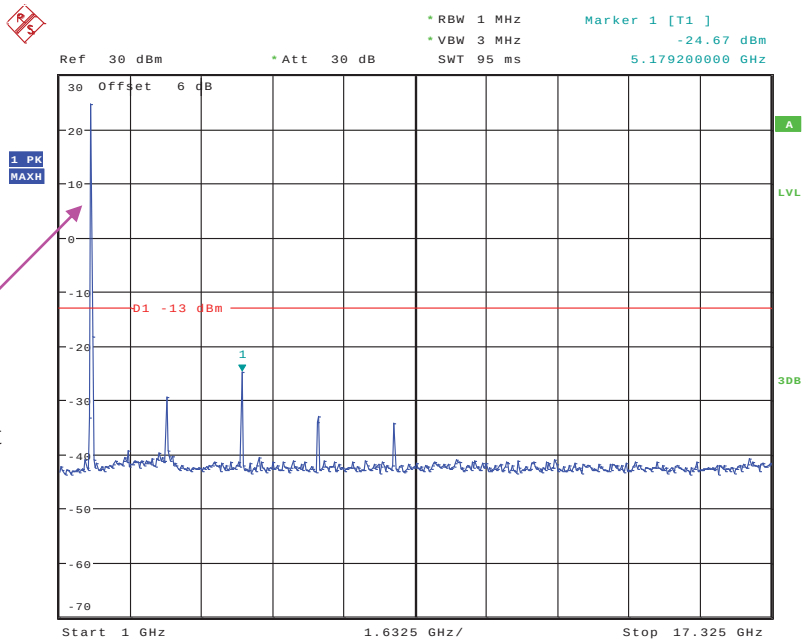
LTE Band 4:

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



Date: 18.SEP.2019 22:27:58

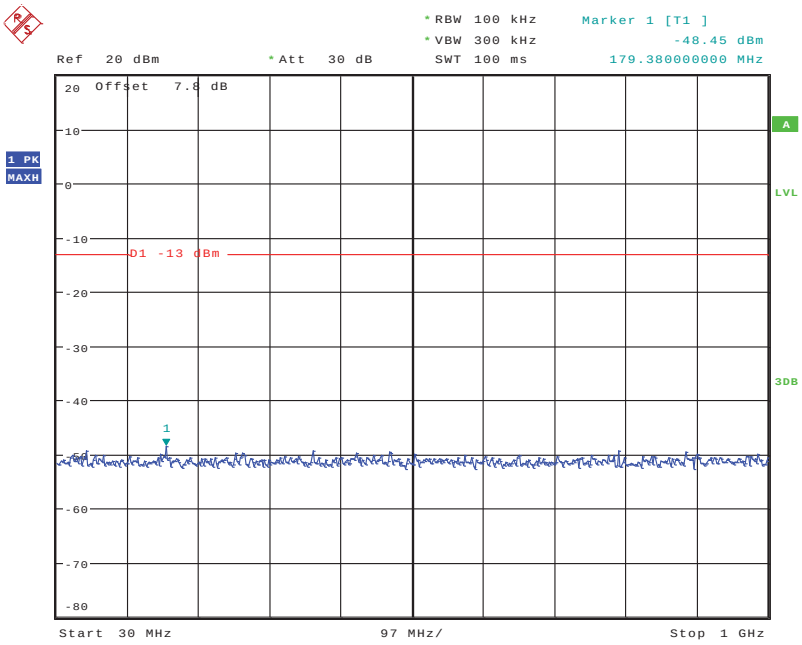
1 GHz – 17.325GHz (1.4 MHz, Middle Channel)



Fundamental test

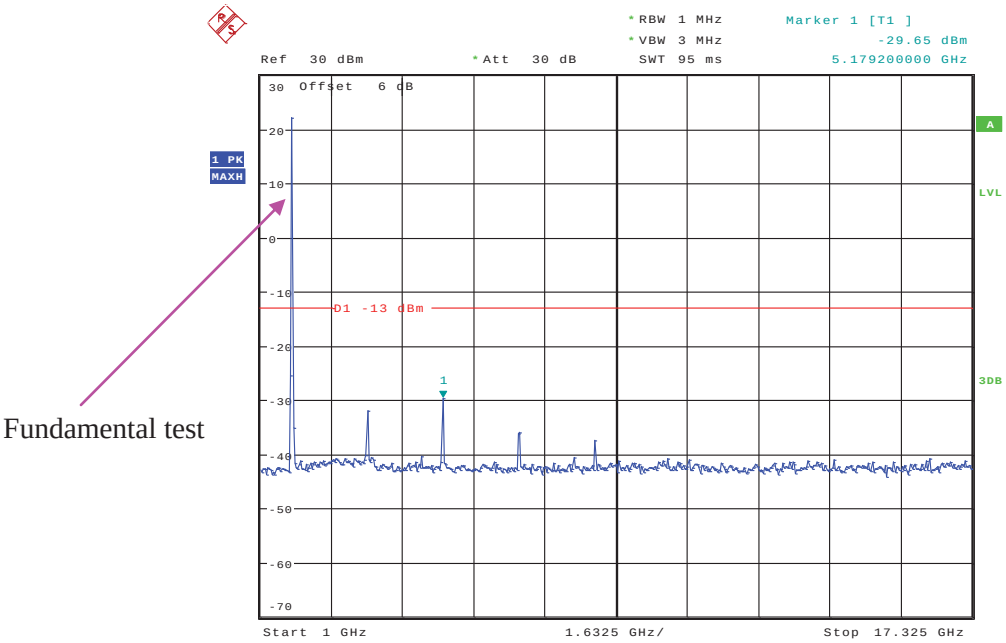
Date: 18.SEP.2019 22:28:06

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



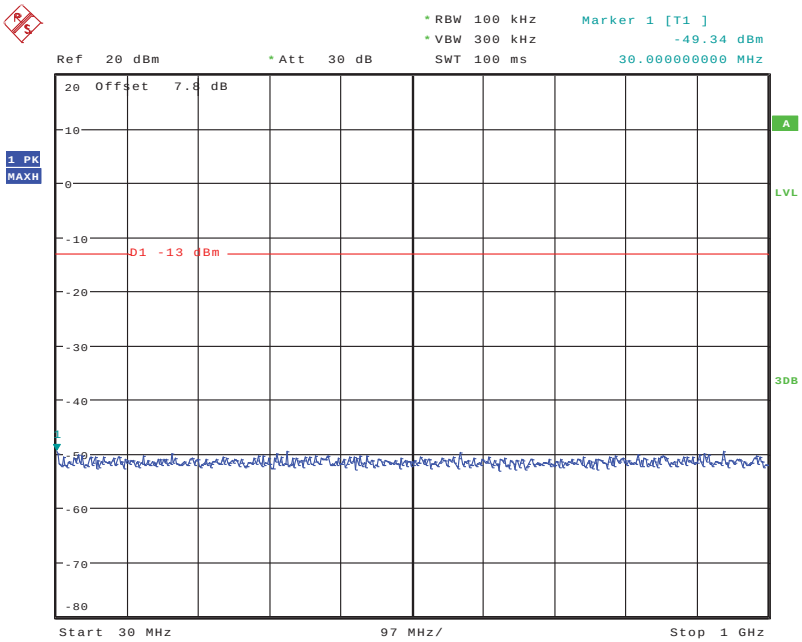
Date: 18.SEP.2019 22:28:24

1 GHz –17.325GHz (3.0 MHz, Middle Channel)



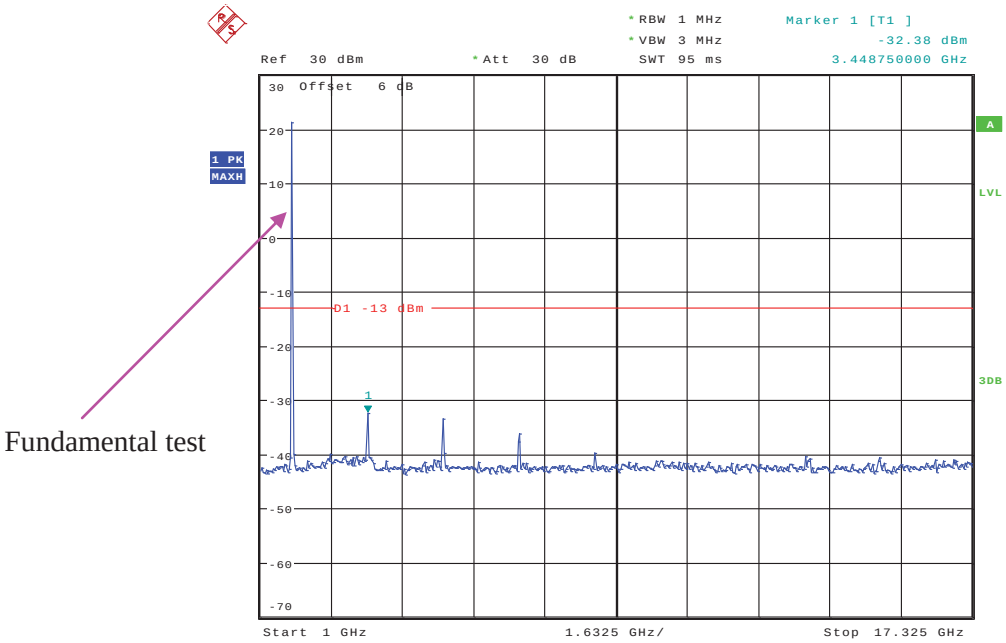
Date: 18.SEP.2019 22:28:33

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



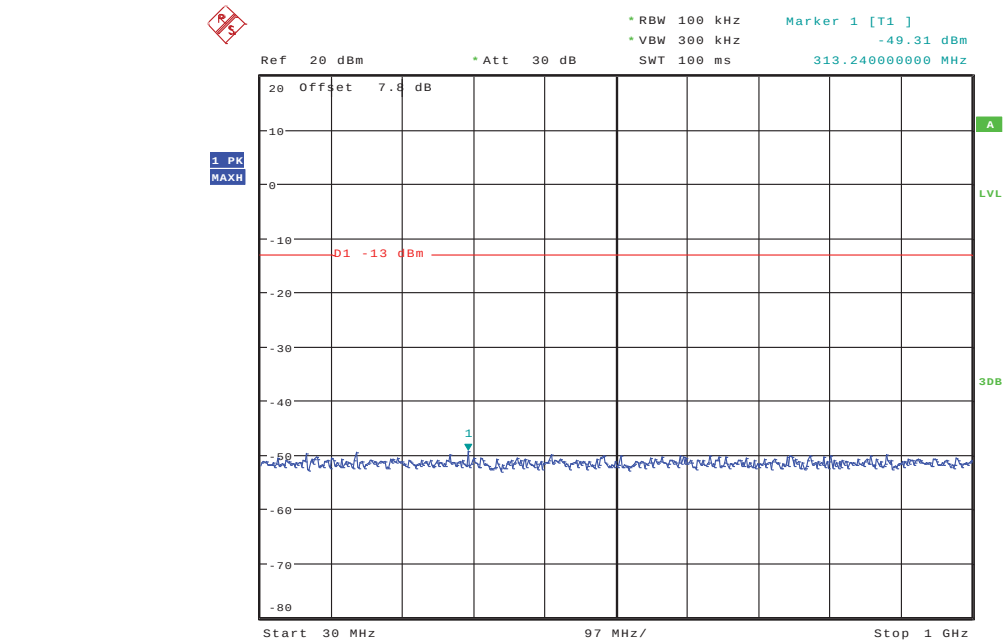
Date: 18.SEP.2019 22:28:47

1 GHz –17.325GHz (5.0 MHz, Middle Channel)



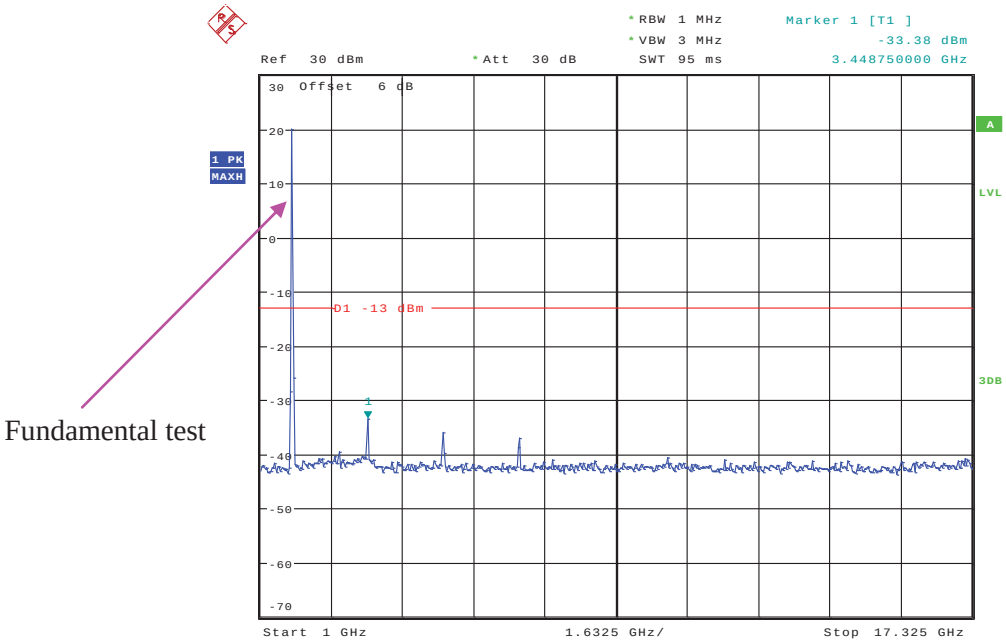
Date: 18.SEP.2019 22:28:56

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



Date: 18.SEP.2019 22:29:12

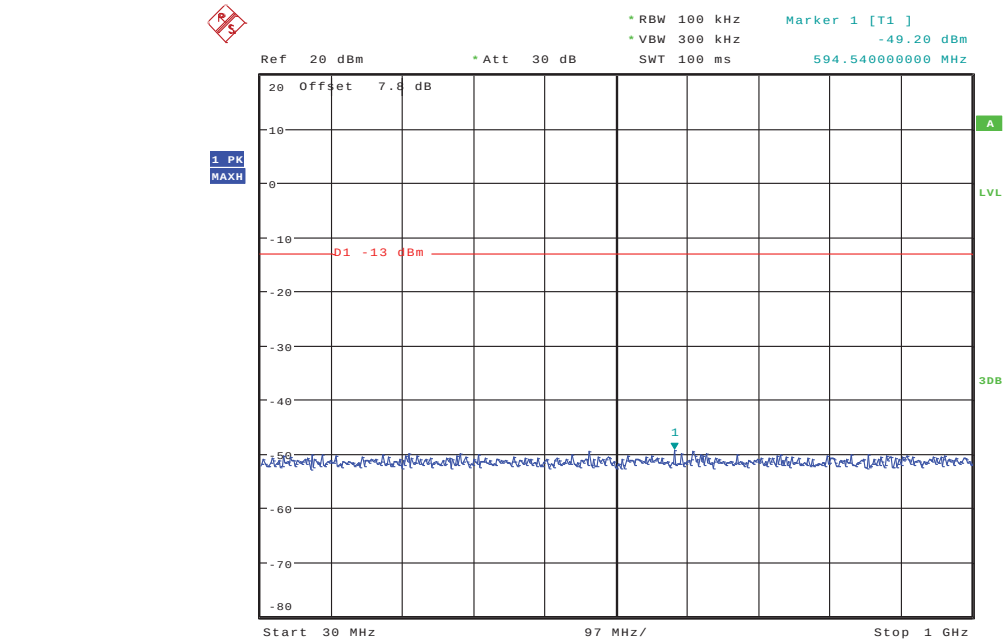
1 GHz –17.325GHz (10.0 MHz, Middle Channel)



Fundamental test

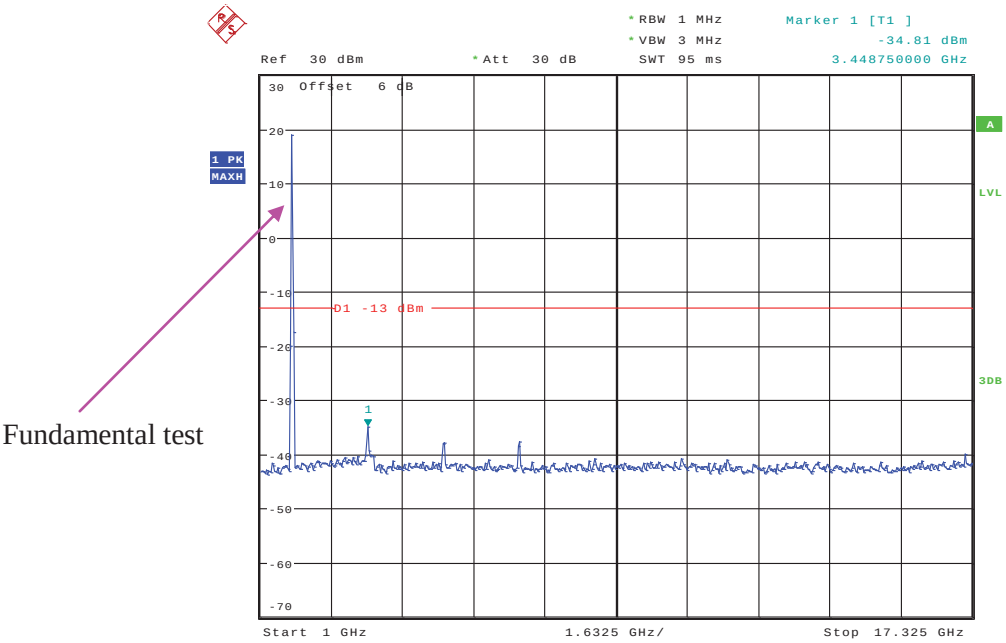
Date: 18.SEP.2019 22:29:20

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



Date: 18.SEP.2019 22:29:38

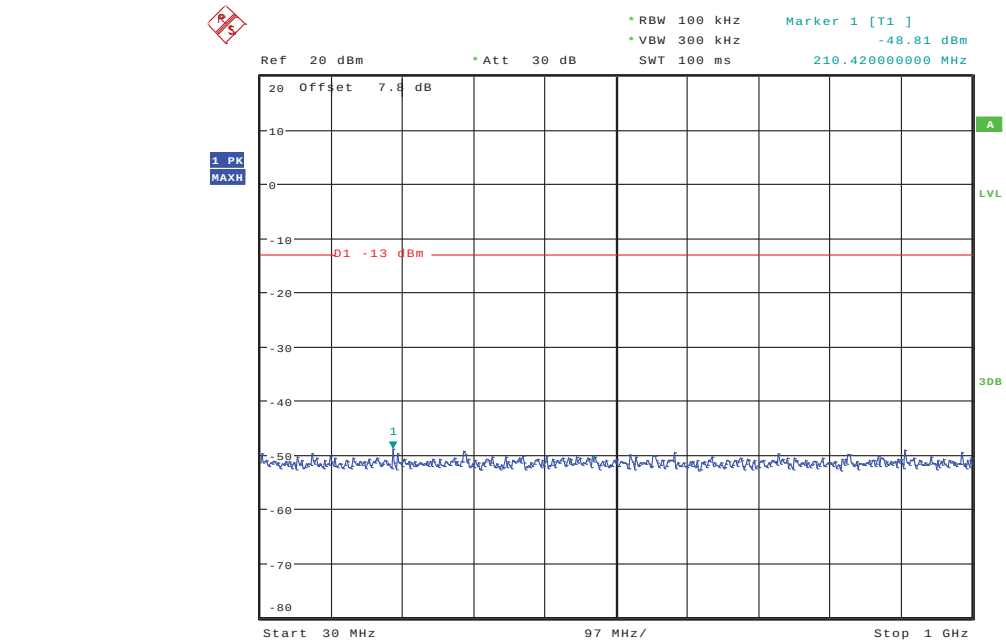
1 GHz –17.325GHz (15.0 MHz, Middle Channel)



Fundamental test

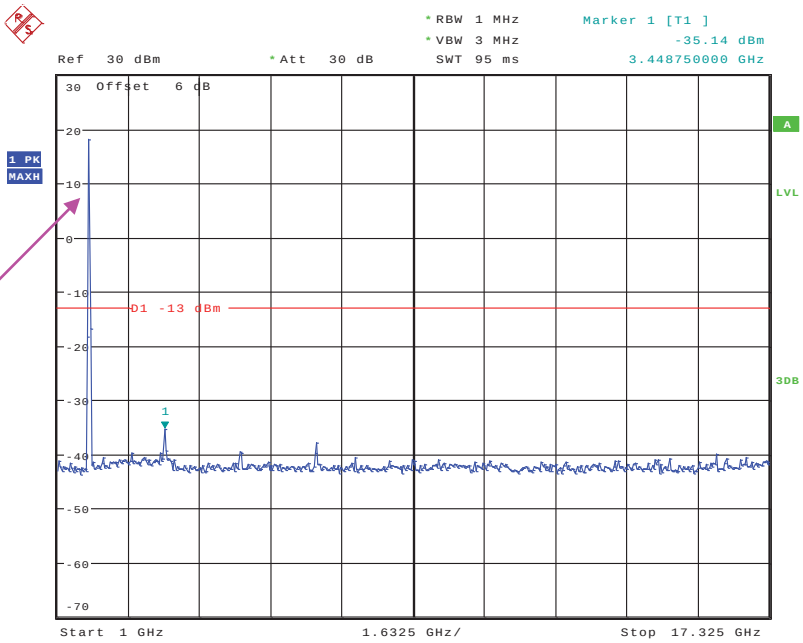
Date: 18.SEP.2019 22:29:47

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



Date: 18.SEP.2019 22:30:05

1 GHz –17.325GHz (20.0 MHz, Middle Channel)

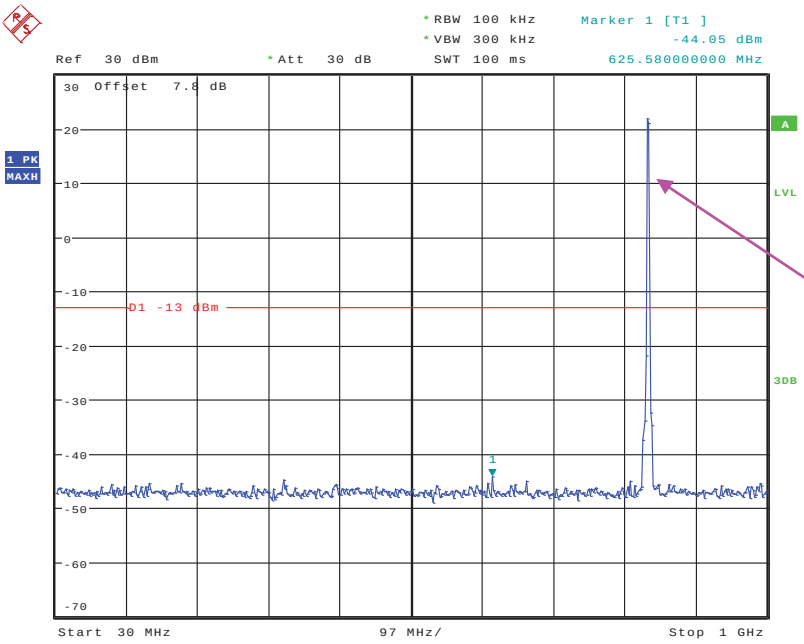


Fundamental test

Date: 18.SEP.2019 22:30:13

LTE Band 5:

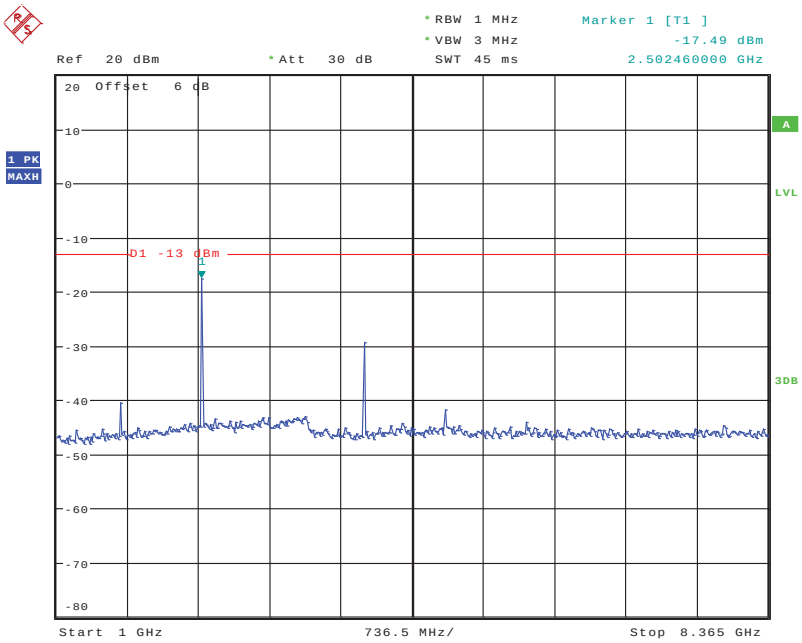
30 MHz - 1 GHz (1.4 MHz, Middle Channel)



Fundamental test

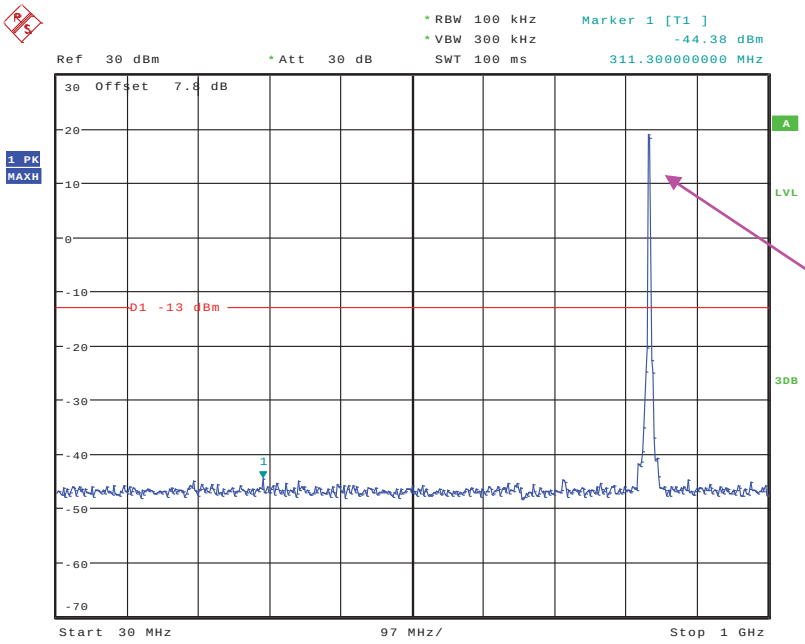
Date: 18.SEP.2019 22:30:30

1 GHz – 8.365 GHz (1.4 MHz, Middle Channel)



Date: 18.SEP.2019 22:30:39

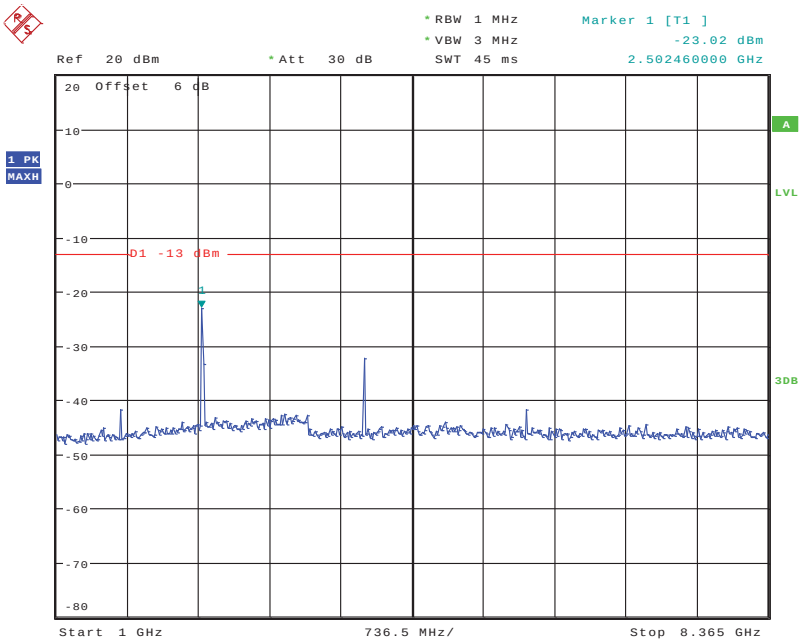
30 MHz - 1 GHz (3.0 MHz, Middle Channel)



Fundamental test

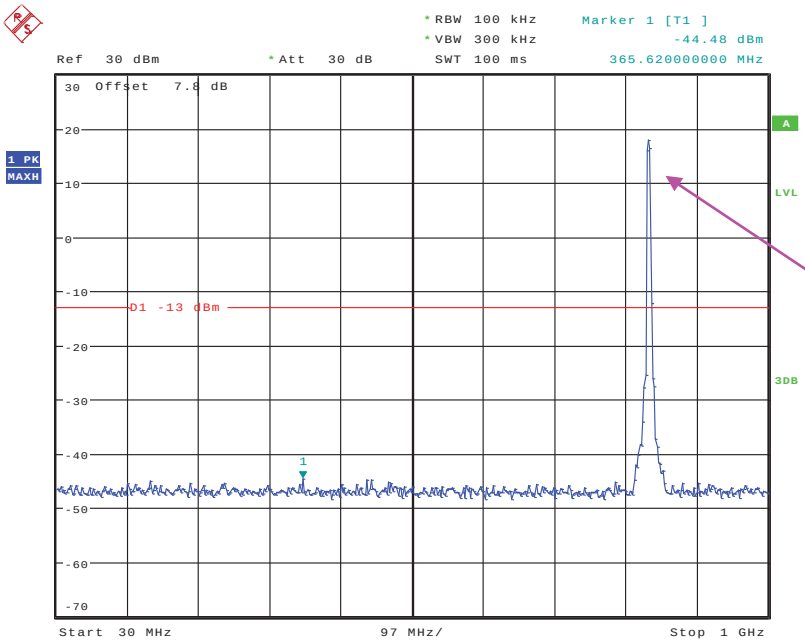
Date: 18.SEP.2019 22:30:56

1 GHz –8.365 GHz (3.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:31:05

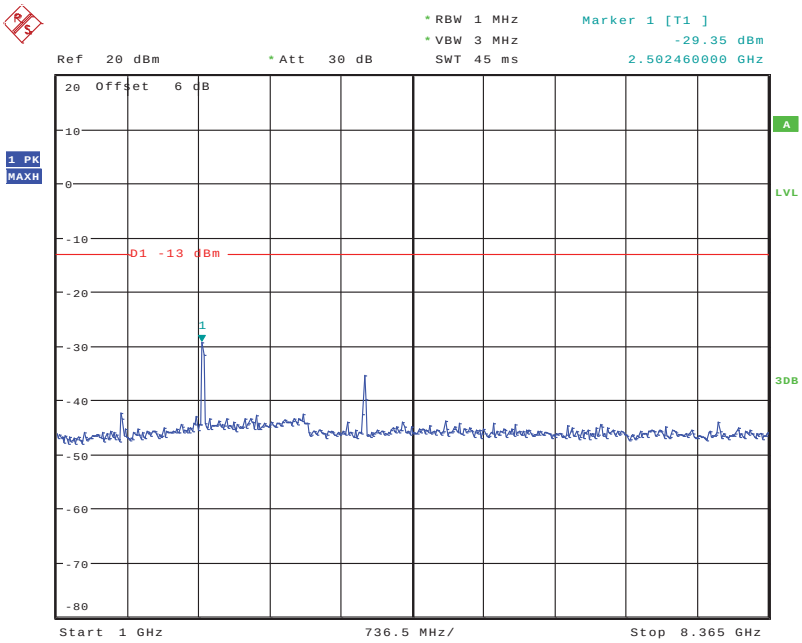
30 MHz - 1 GHz (5.0 MHz, Middle Channel)



Fundamental test

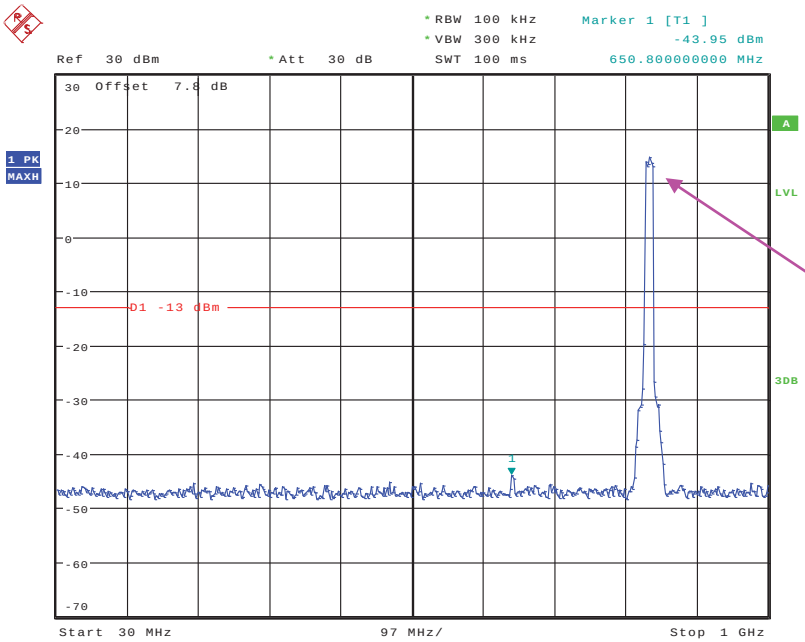
Date: 18.SEP.2019 22:31:22

1 GHz –8.365 GHz (5.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:31:31

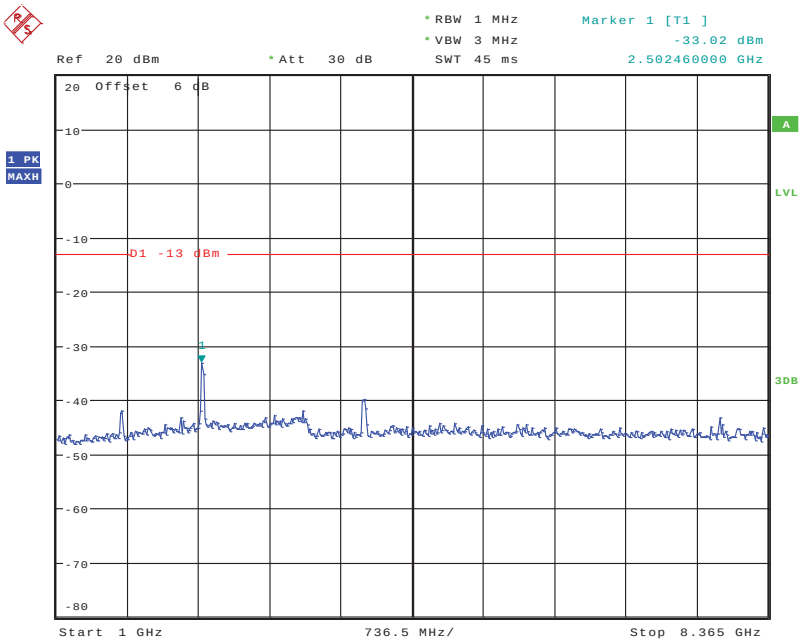
30 MHz - 1 GHz (10.0 MHz, Middle Channel)



Fundamental test

Date: 18.SEP.2019 22:31:47

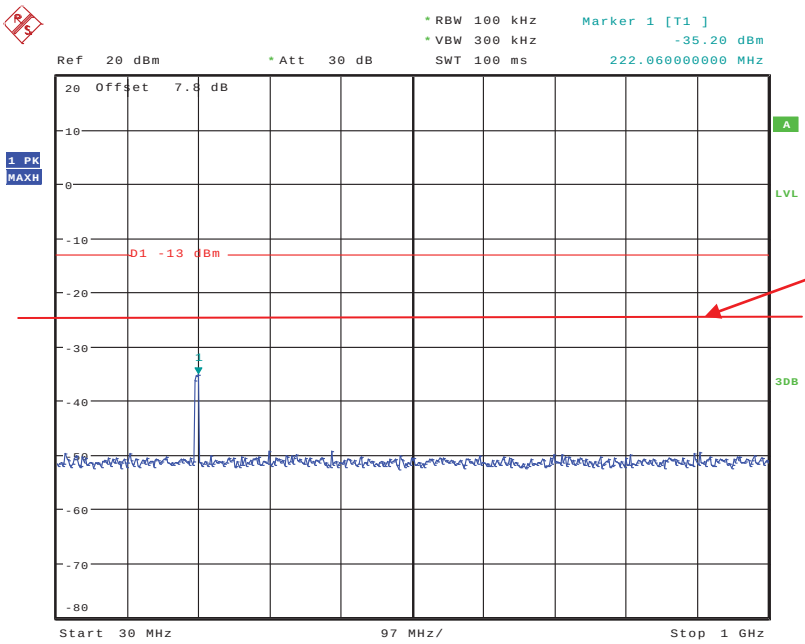
1 GHz –8.365 GHz (10.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:31:55

LTE Band 7:

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



Limit:-25dBm

Date: 18.SEP.2019 22:32:13

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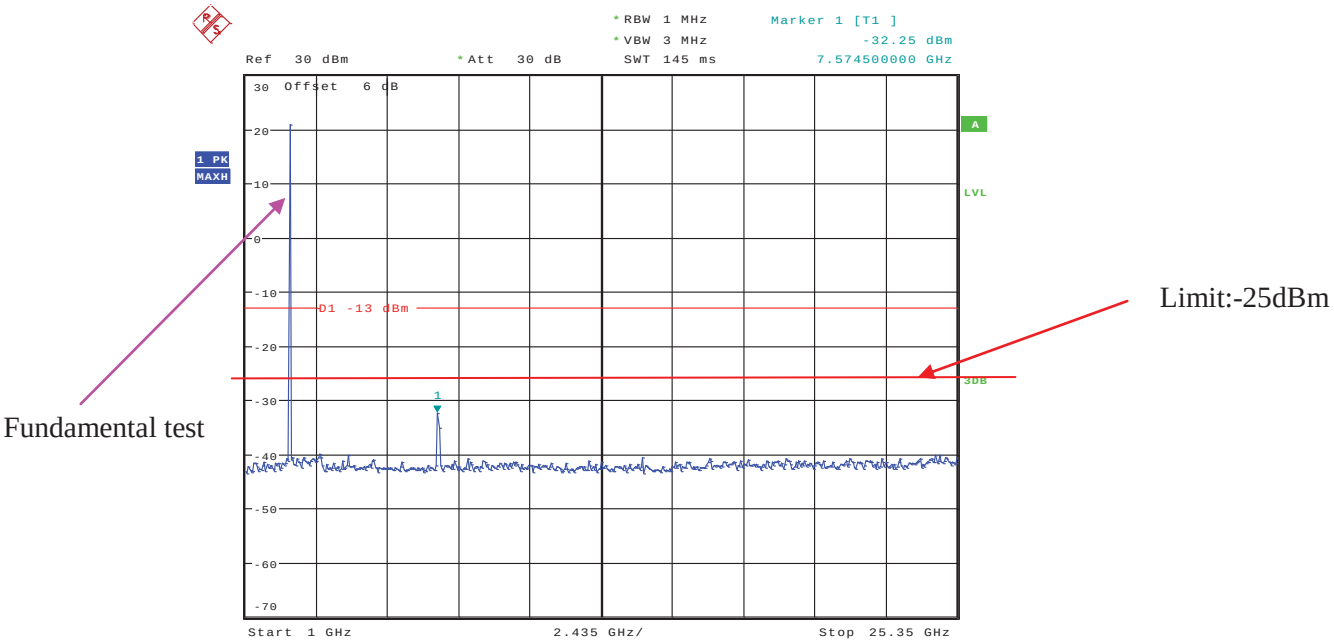
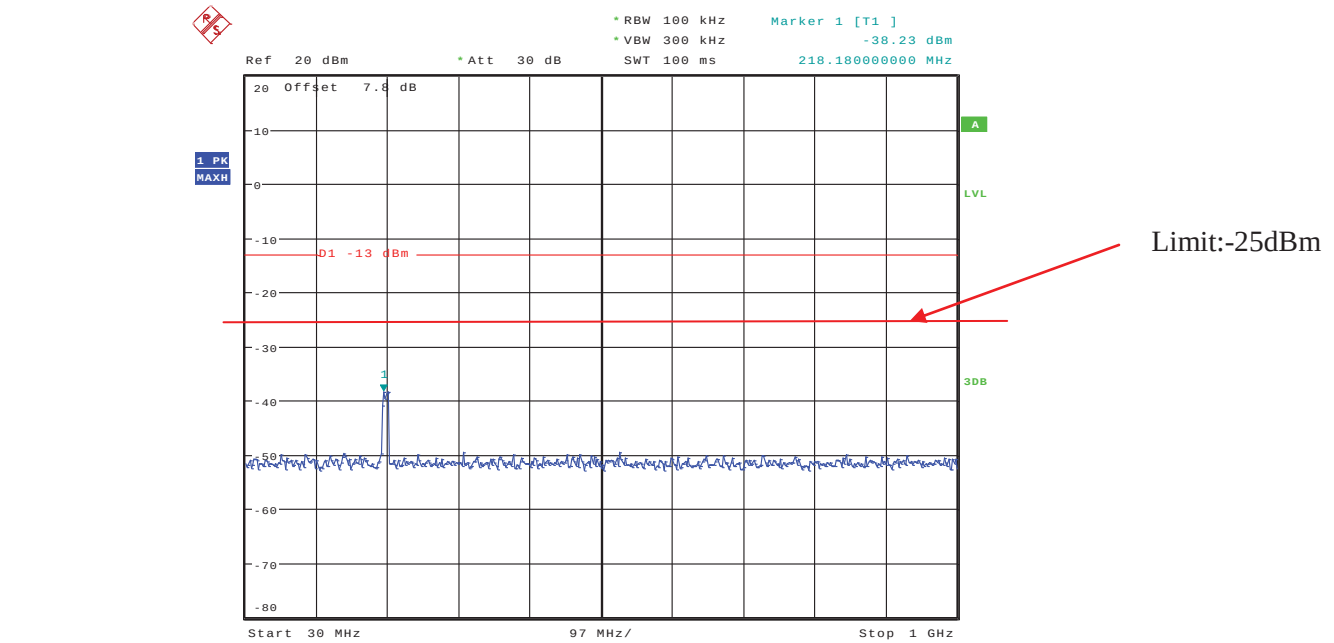
1 GHz – 25.35GHz (5.0 MHz, Middle Channel)



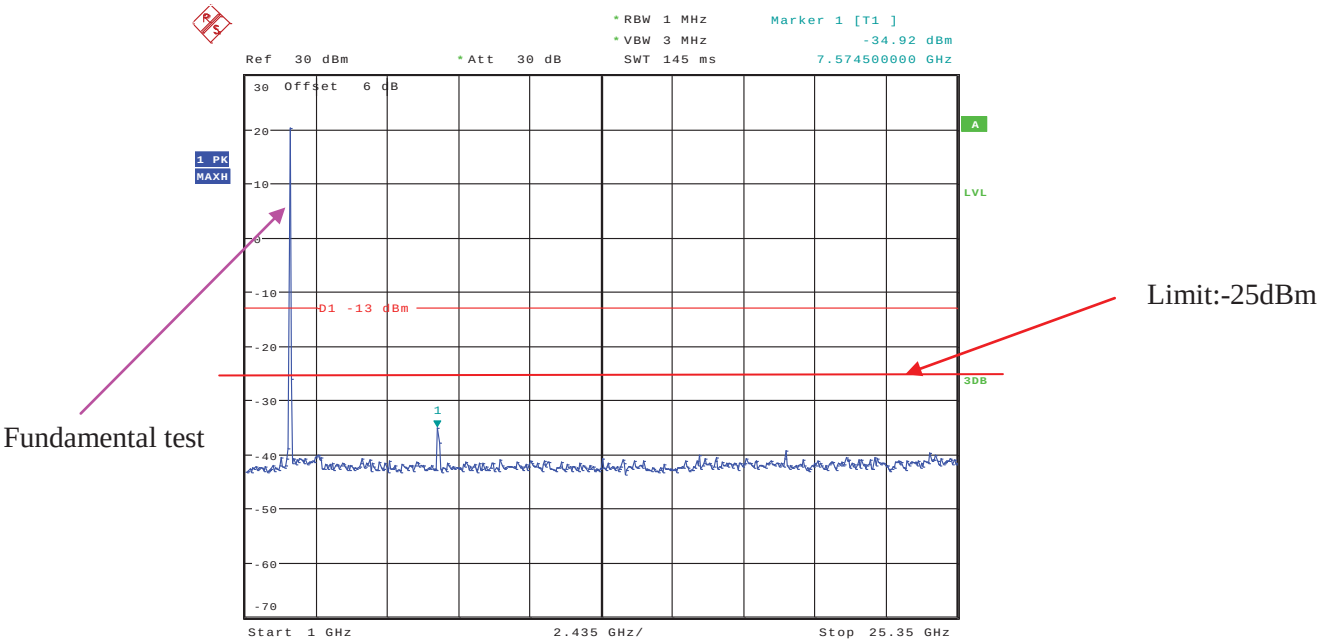
Date: 18.SEP.2019 22:32:22

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



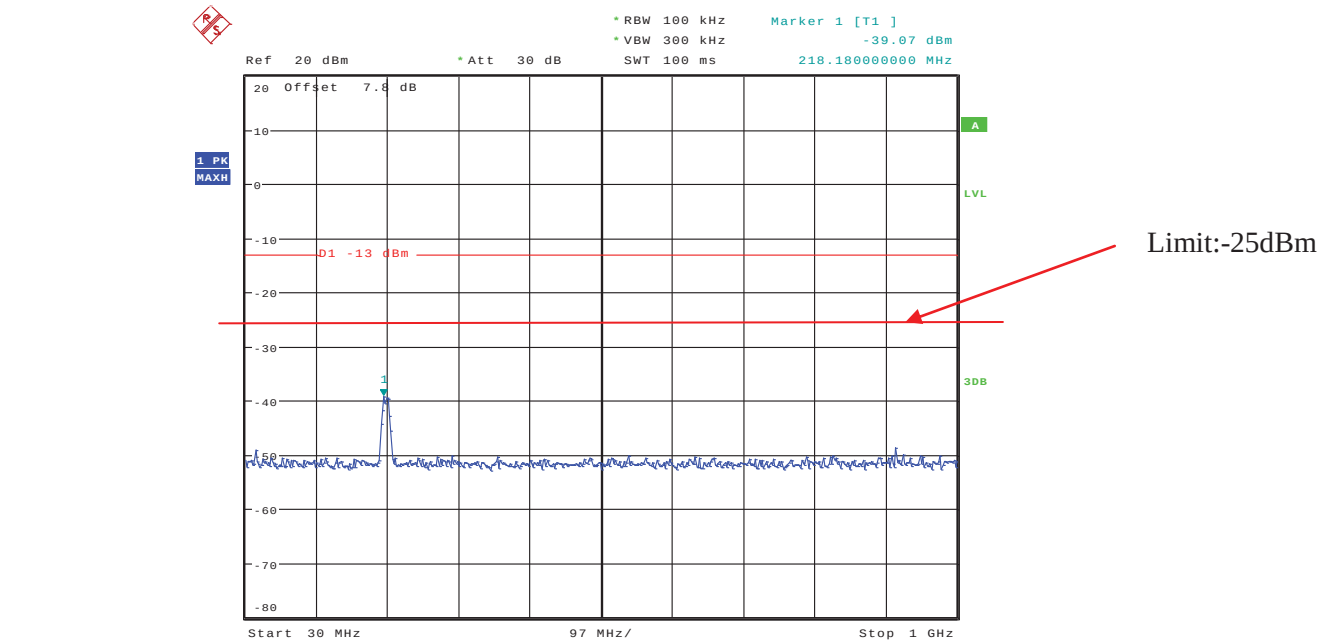
Date: 18.SEP.2019 22:32:38

1 GHz –25.35GHz (10.0 MHz, Middle Channel)



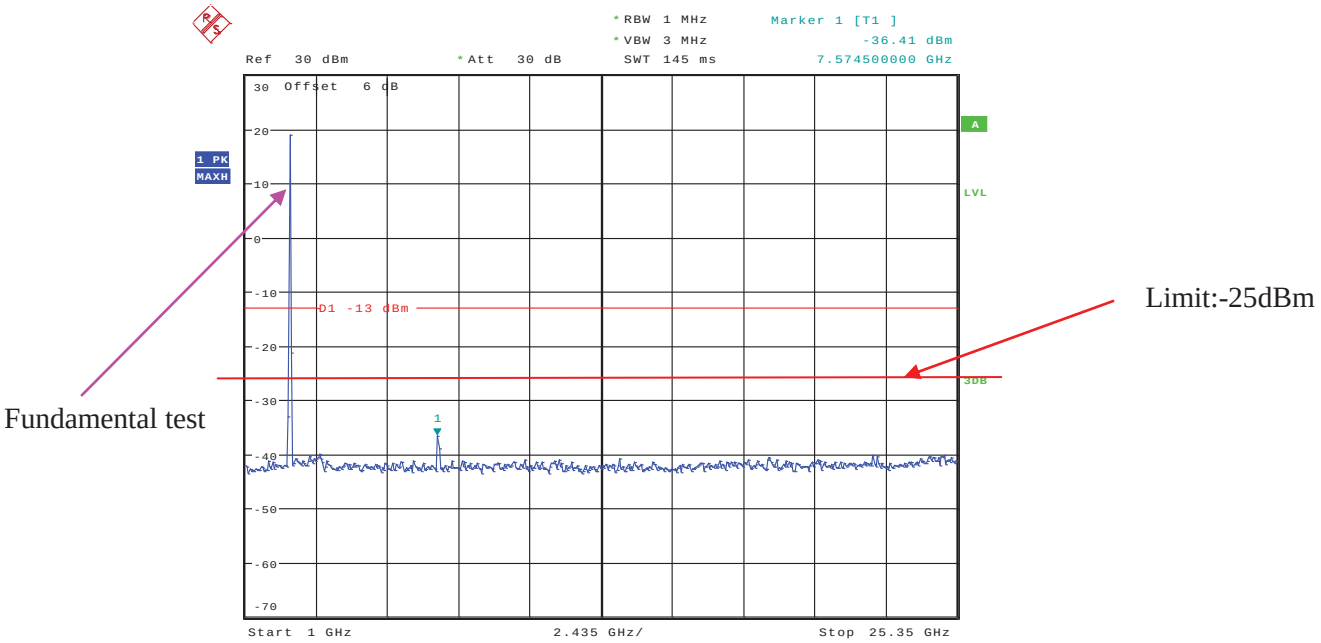
Date: 18.SEP.2019 22:32:46

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



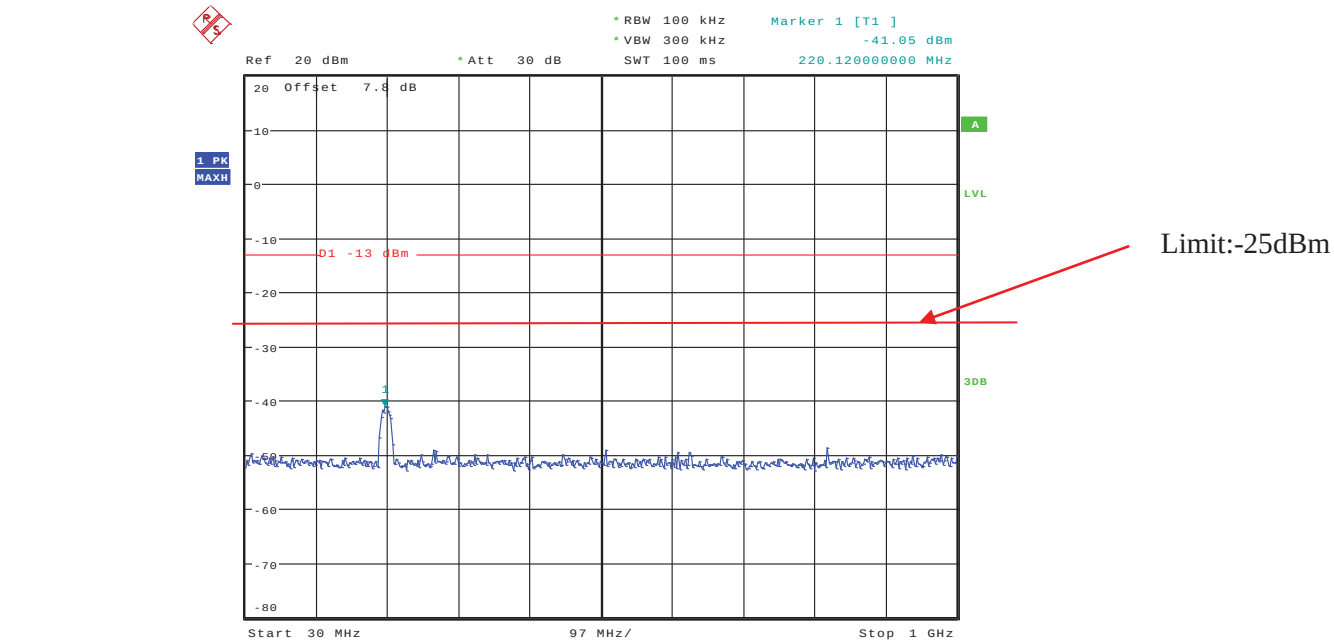
Date: 18.SEP.2019 22:33:04

1 GHz –25.35GHz (15.0 MHz, Middle Channel)



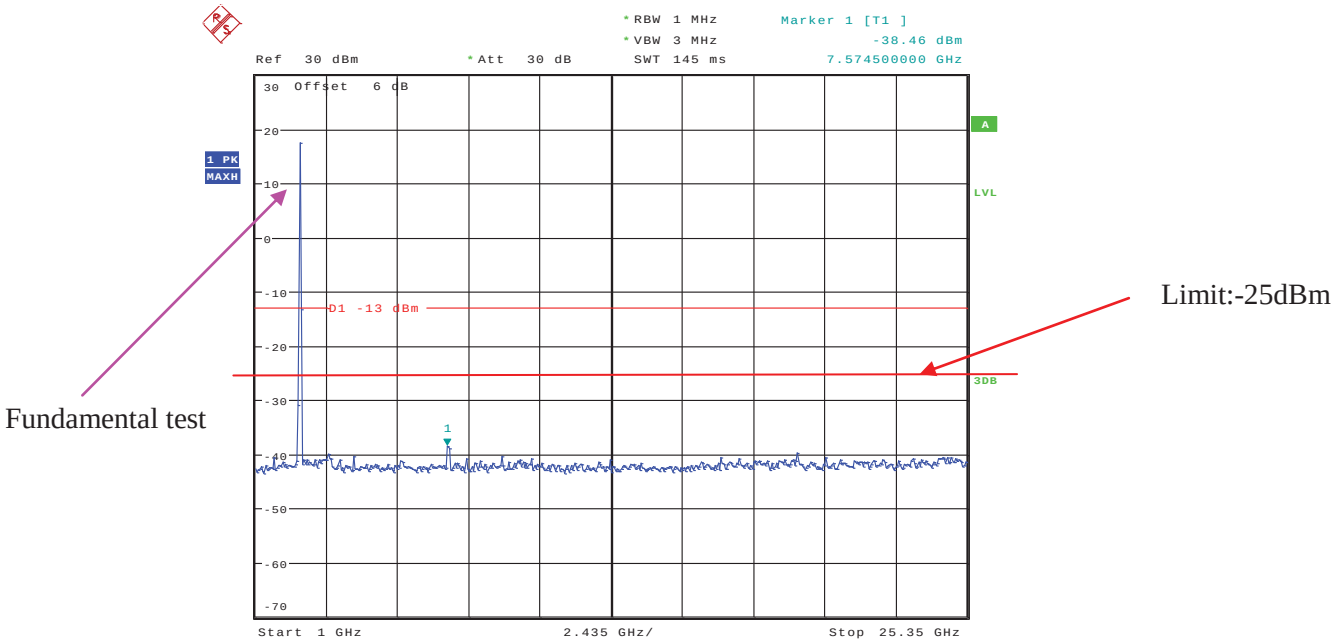
Date: 18.SEP.2019 22:33:13

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



Date: 18.SEP.2019 22:33:31

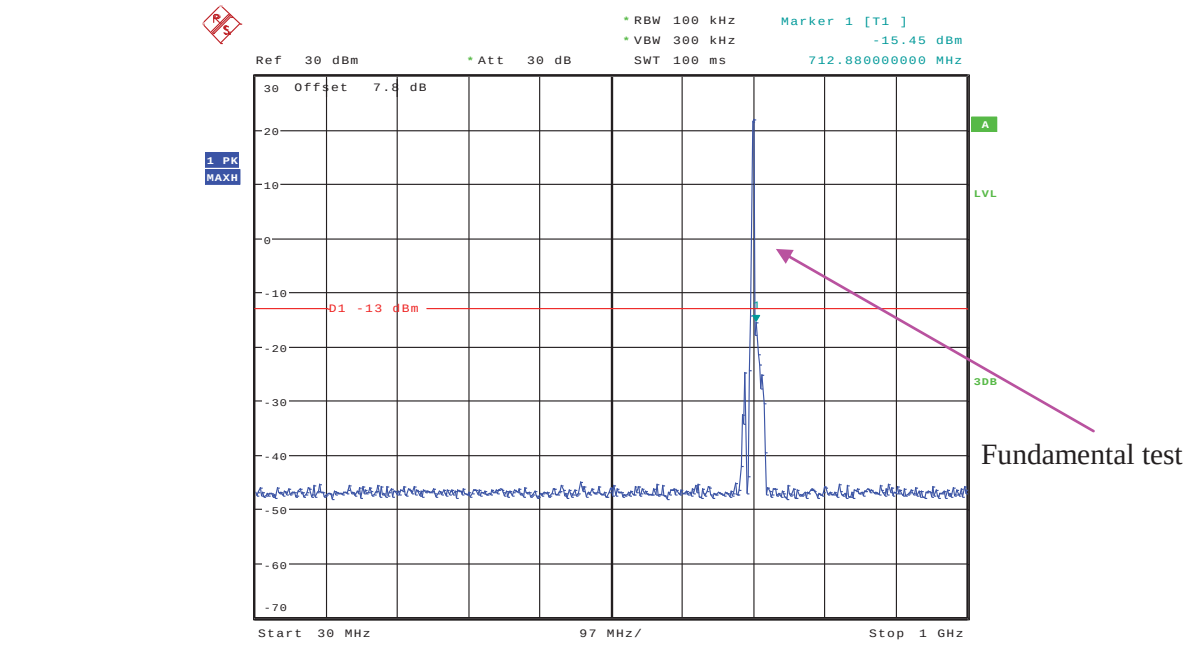
1 GHz –25.35GHz (20.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:33:39

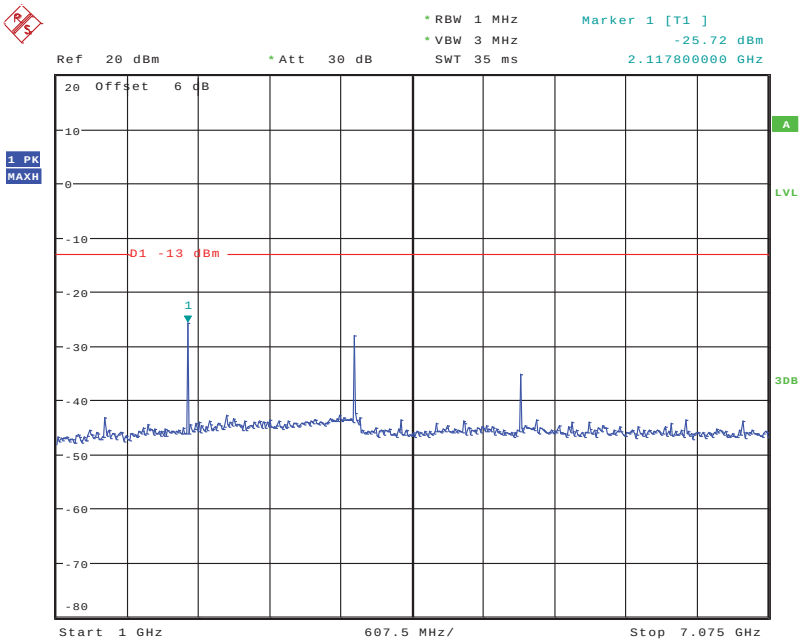
LTE Band 12:

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



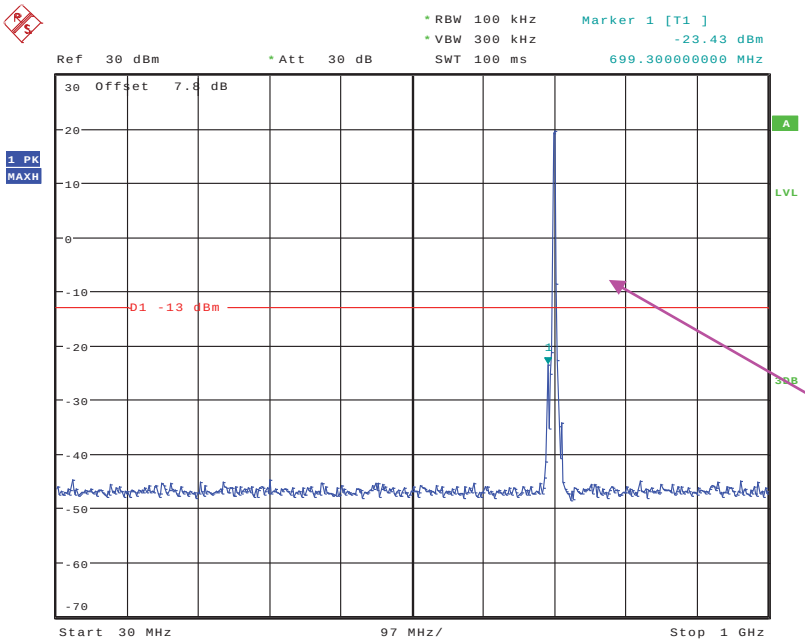
Date: 18.SEP.2019 22:33:57

1 GHz – 7.075GHz (1.4MHz, Middle Channel)



Date: 18.SEP.2019 22:34:09

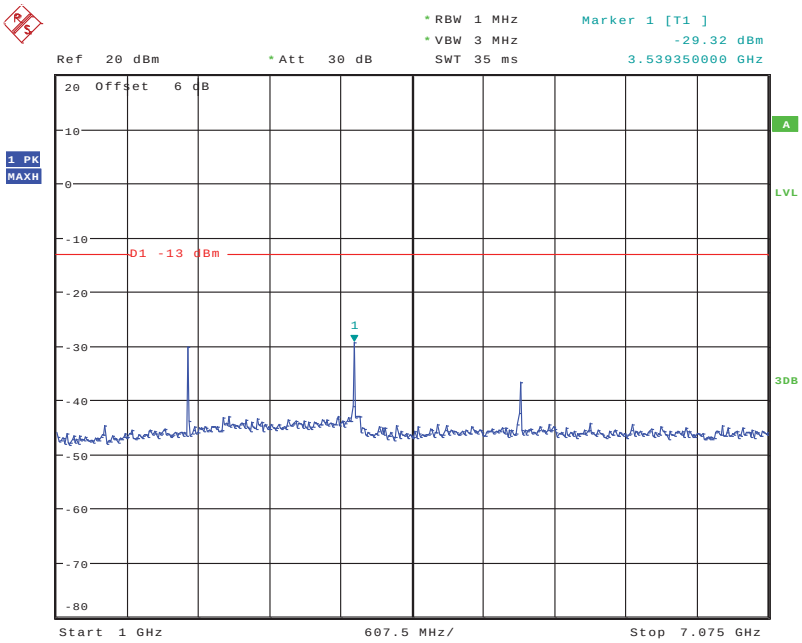
30 MHz – 1 GHz (3.0 MHz, Middle Channel)



Fundamental test

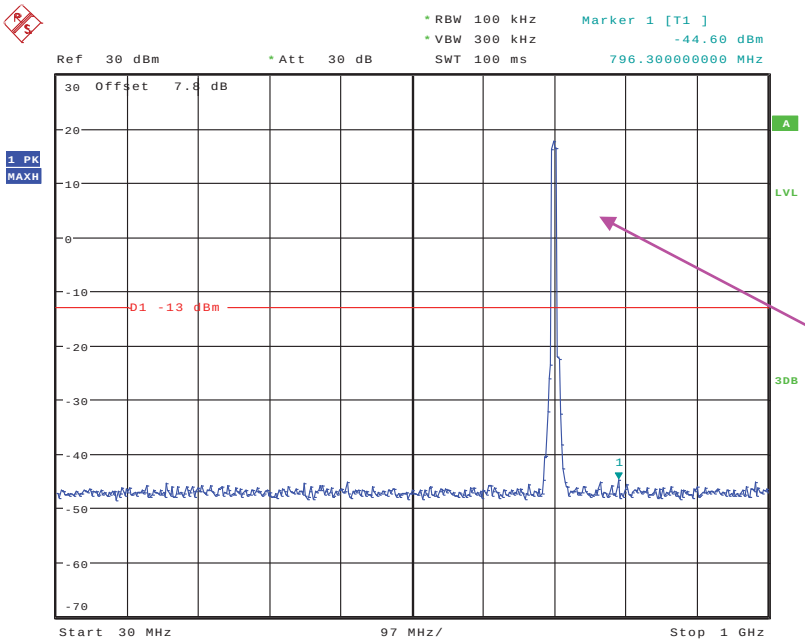
Date: 18.SEP.2019 22:34:26

1 GHz – 7.075GHz (3.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:34:35

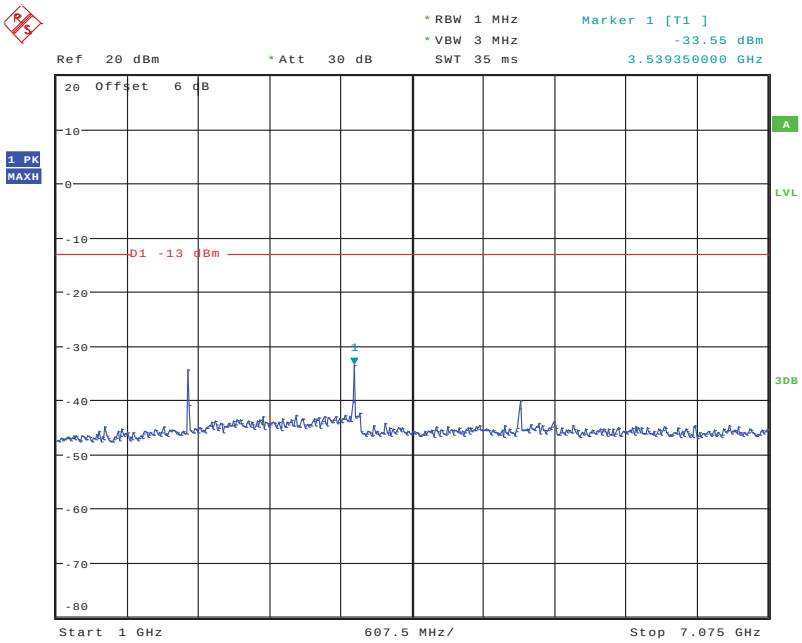
30 MHz – 1 GHz (5.0 MHz, Middle Channel)



Fundamental test

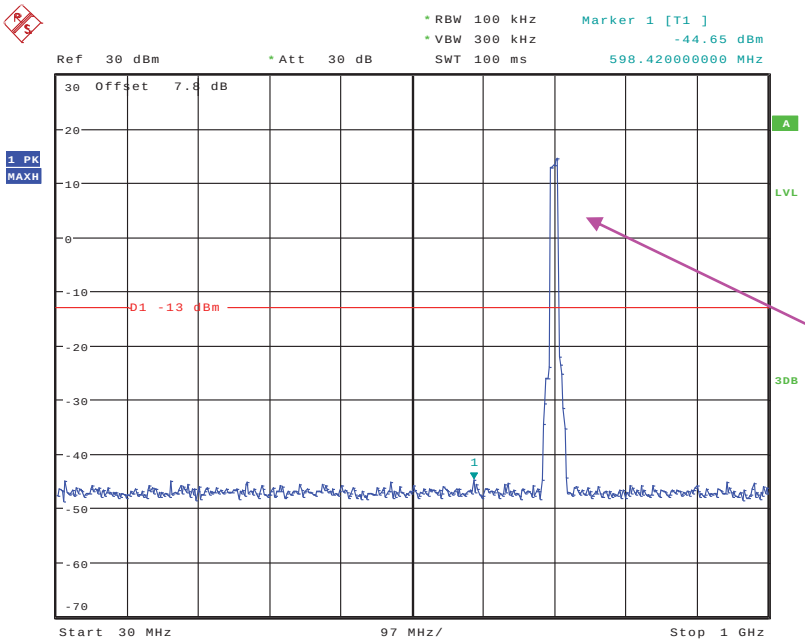
Date: 18.SEP.2019 22:34:50

1 GHz – 7.075GHz (5.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:35:01

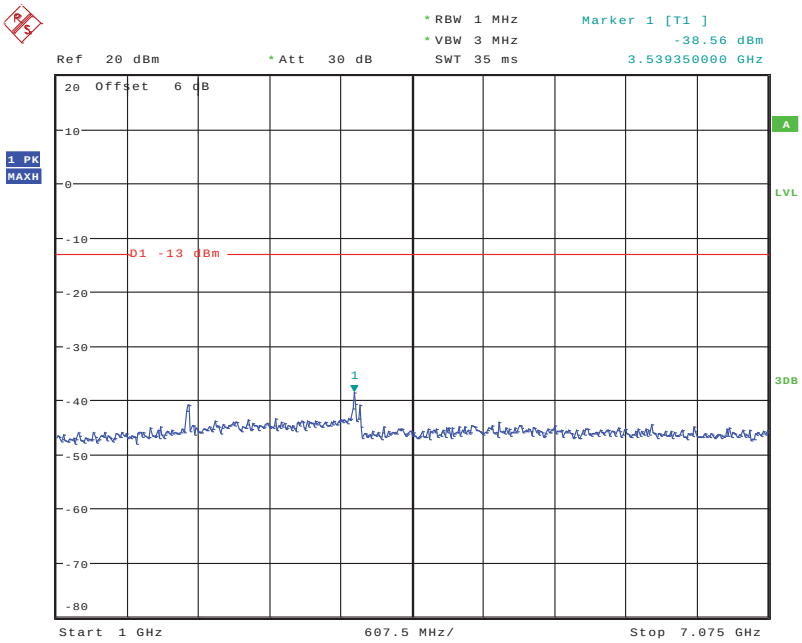
30 MHz – 1.0 GHz (10.0 MHz, Middle Channel)



Fundamental test

Date: 18.SEP.2019 22:35:17

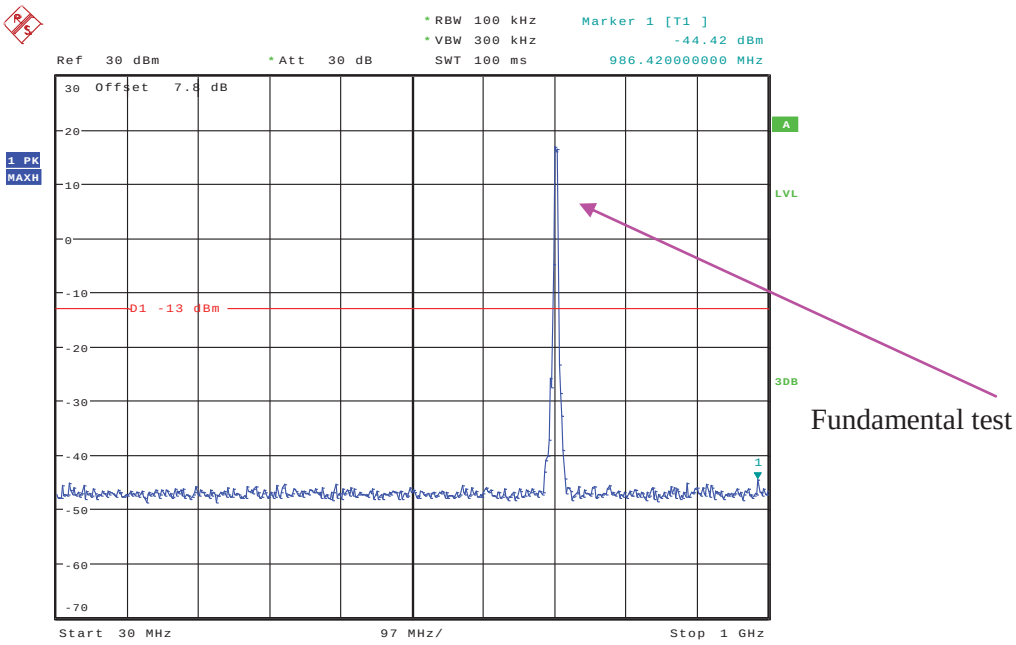
1 GHz – 7.075GHz (10.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:35:25

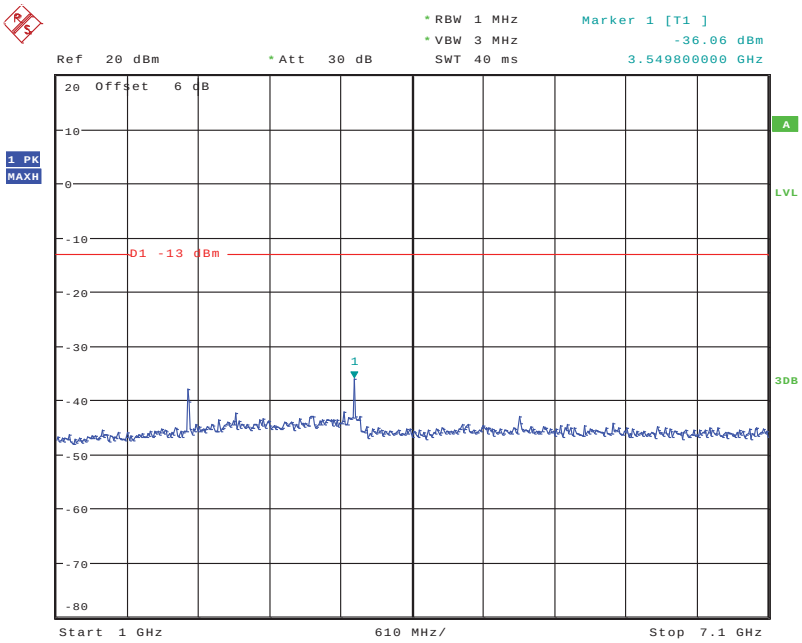
LTE Band 17:

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



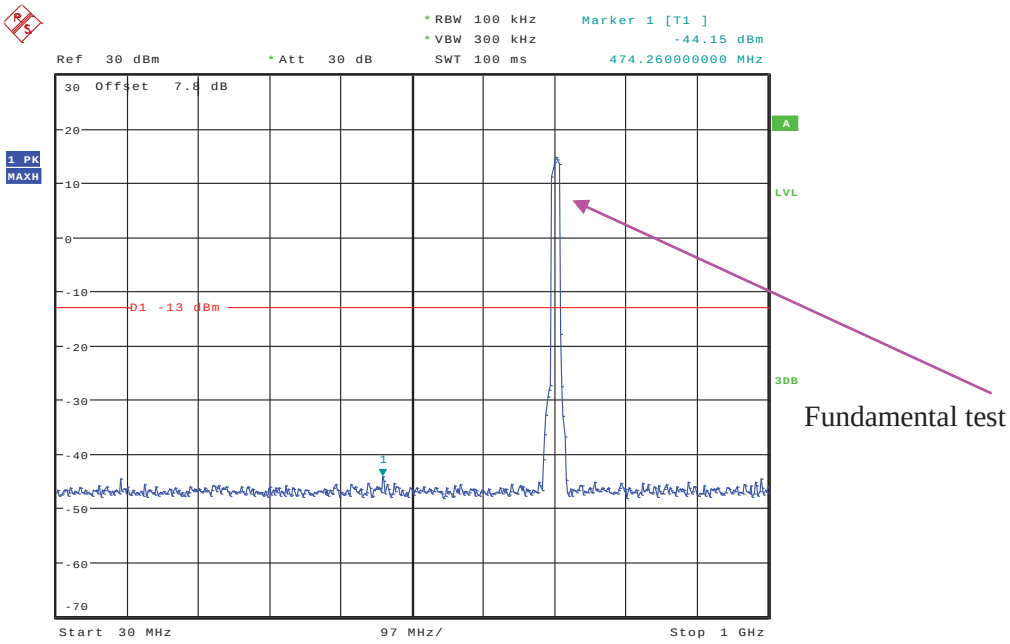
Date: 18.SEP.2019 22:35:40

1 GHz – 7.1GHz (5.0 MHz, Middle Channel)



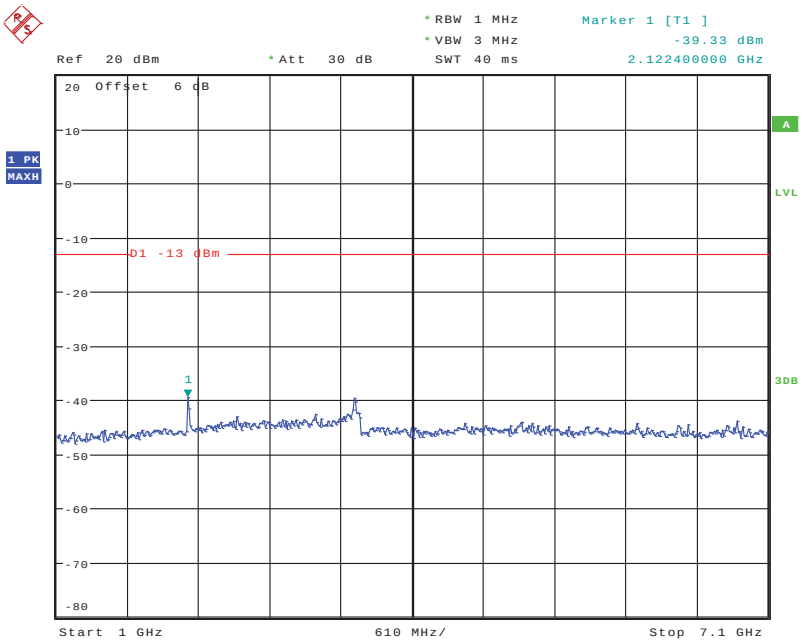
Date: 18.SEP.2019 22:35:49

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



Date: 18.SEP.2019 22:36:08

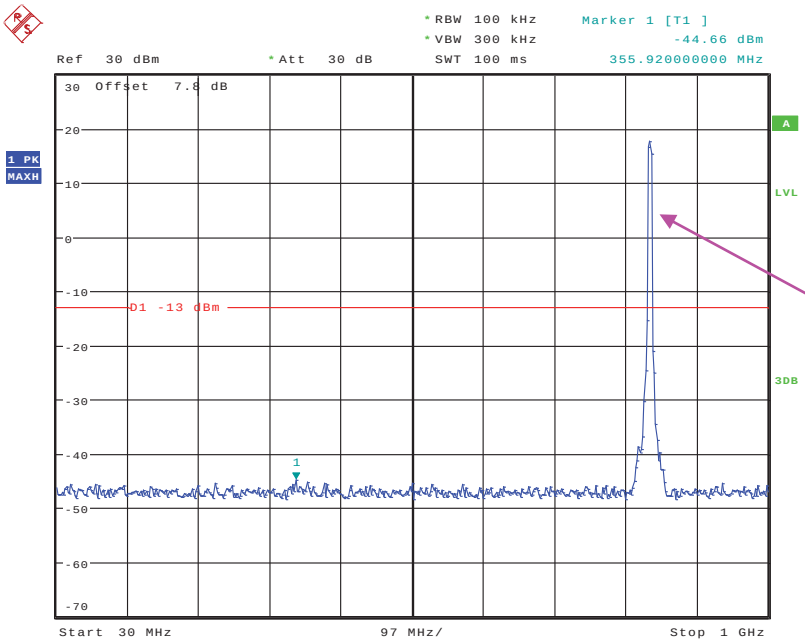
1 GHz – 7.1GHz (10.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:36:19

LTE Band 19:

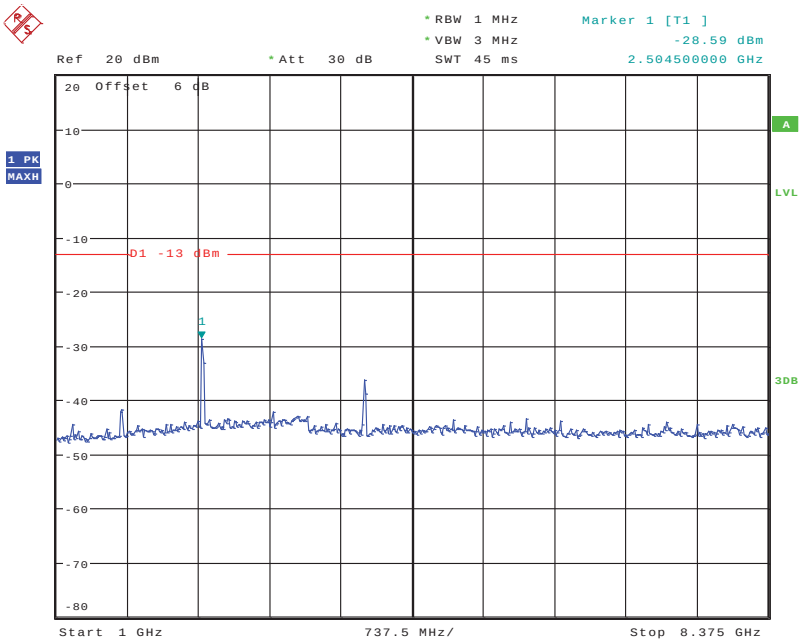
30 MHz – 1 GHz (5.0 MHz, Middle Channel)



Fundamental test

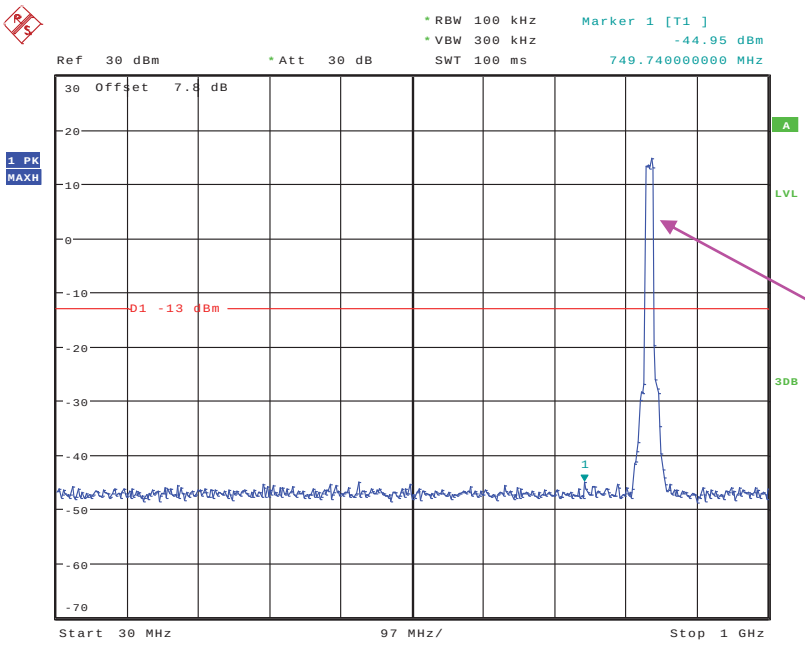
Date: 18.SEP.2019 22:36:35

1 GHz – 8.375GHz (5.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:36:47

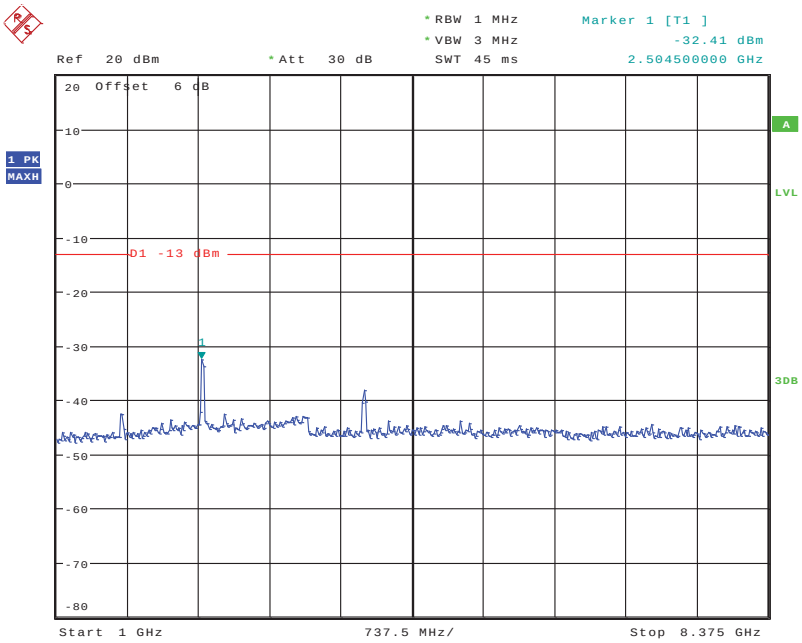
30 MHz – 1.0 GHz (10.0 MHz, Middle Channel)



Fundamental test

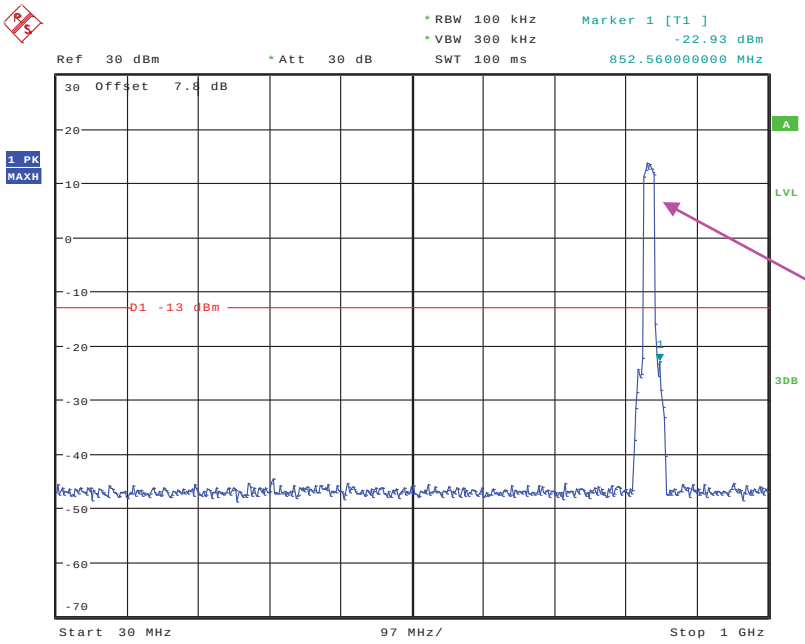
Date: 18.SEP.2019 22:37:03

1 GHz – 8.375GHz (10.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:37:11

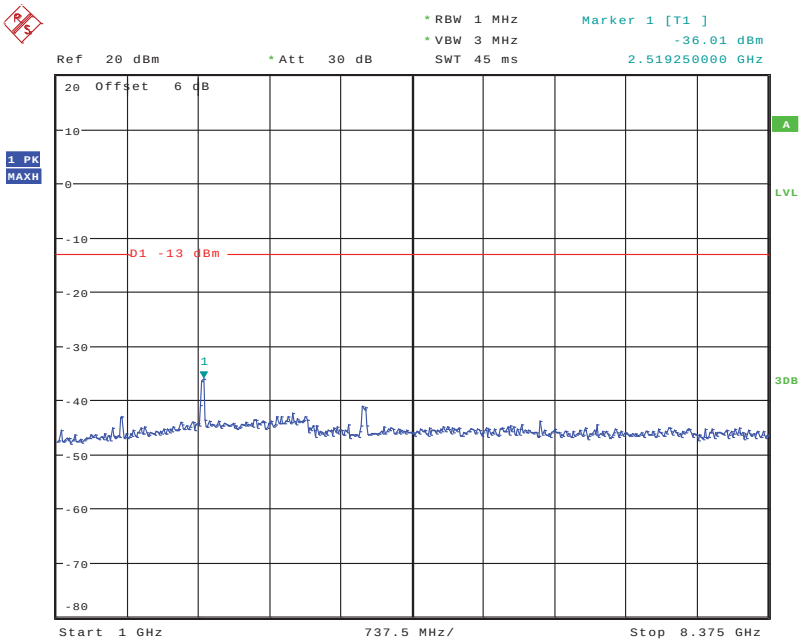
30 MHz – 1 GHz (15.0 MHz, Middle Channel)



Fundamental test

Date: 18.SEP.2019 22:37:32

1 GHz – 8.375GHz (15.0 MHz, Middle Channel)



Date: 18.SEP.2019 22:37:41

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:	23~26 ℃
Relative Humidity:	50~54 %
ATM Pressure:	100.6~101.0 kPa

The testing was performed by Curry Xiang on 2019-10-07.

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 (dBi)		Limit (dBm)	Margin (dB)
GSM Mode, middle channel										
326.51	33.49	124	1.1	H	-63.5	0.38	0	-63.88	-13	50.88
326.51	34.30	44	1.5	V	-62.7	0.38	0	-63.08	-13	50.08
1673.20	48.43	16	1.9	H	-57.9	1.30	8.90	-50.30	-13	37.30
1673.20	49.67	58	1.6	V	-56.1	1.30	8.90	-48.50	-13	35.50
2509.80	49.23	188	1.9	H	-54.1	2.60	10.20	-46.50	-13	33.50
2509.80	51.90	235	1.3	V	-50.8	2.60	10.20	-43.20	-13	30.20
3346.40	43.61	324	1.0	H	-57.3	1.50	11.70	-47.10	-13	34.10
3346.40	44.24	143	2.1	V	-56.7	1.50	11.70	-46.50	-13	33.50
WCDMA Mode, Middle channel										
326.51	33.45	174	1.5	H	-63.6	0.38	0	-63.98	-13	50.98
326.51	33.65	107	1.7	V	-63.4	0.38	0	-63.78	-13	50.78
1673.20	46.69	70	1.9	H	-59.6	1.30	8.90	-52.00	-13	39.00
1673.20	46.13	73	2.2	V	-59.6	1.30	8.90	-52.00	-13	39.00
2509.80	46.53	87	1.2	H	-56.8	2.60	10.20	-49.20	-13	36.20
2509.80	45.47	103	2.0	V	-57.3	2.60	10.20	-49.70	-13	36.70
3346.40	43.24	227	2.0	H	-57.7	1.50	11.70	-47.50	-13	34.50
3346.40	42.98	337	1.2	V	-57.9	1.50	11.70	-47.70	-13	34.70
4183.00	54.71	170	2.3	H	-47.2	1.50	11.80	-36.90	-13	23.90
4183.00	53.87	77	2.0	V	-47.3	1.50	11.80	-37.00	-13	24.00

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 (dBi)		Limit (dBm)	Margin (dB)
GSM Mode, middle channel										
326.51	34.26	130	2.1	H	-62.7	0.38	0	-63.08	-13	50.08
326.51	34.63	305	2.3	V	-62.4	0.38	0	-62.78	-13	49.78
3760.00	46.00	152	1.1	H	-56.1	1.50	11.80	-45.80	-13	32.80
3760.00	44.26	141	1.4	V	-57.3	1.50	11.80	-47.00	-13	34.00
5640.00	46.09	359	2.1	H	-53.6	1.70	12.40	-42.90	-13	29.90
5640.00	45.07	181	1.7	V	-54.3	1.70	12.40	-43.60	-13	30.60
WCDMA Mode Band II, Middle channel										
326.51	33.63	91	1.8	H	-63.4	0.38	0	-63.78	-13	50.78
326.51	34.83	138	1.3	V	-62.2	0.38	0	-62.58	-13	49.58
3760.00	44.91	327	1.9	H	-57.1	1.50	11.80	-46.80	-13	33.80
3760.00	45.38	307	2.2	V	-56.2	1.50	11.80	-45.90	-13	32.90
5640.00	46.74	64	2.0	H	-52.9	1.70	12.40	-42.20	-13	29.20
5640.00	46.19	38	2.0	V	-53.2	1.70	12.40	-42.50	-13	29.50

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 (dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode Band IV, Middle channel										
326.51	33.92	14	1.6	H	-63.1	0.38	0	-63.48	-13	50.48
326.51	33.96	297	1.1	V	-63.0	0.38	0	-63.38	-13	50.38
3465.20	47.25	273	1.4	H	-53.5	1.50	12.00	-43.00	-13	30.00
3465.20	46.08	288	1.5	V	-55.4	1.50	12.00	-44.90	-13	31.90
5197.80	49.54	267	2.5	H	-50.6	1.60	12.10	-40.10	-13	27.10
5197.80	48.82	195	1.2	V	-50.8	1.60	12.10	-40.30	-13	27.30
6930.40	48.36	230	1.2	H	-50.0	1.80	11.30	-40.50	-13	27.50
6930.40	51.88	331	1.4	V	-46.6	1.80	11.30	-37.10	-13	24.10

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 (dBi)			
Band 2										
Test frequency range:30 MHz ~ 20 GHz										
326.51	33.87	113	2.2	H	-63.1	0.38	0	-63.48	-13	50.48
326.51	34.23	211	2.3	V	-62.8	0.38	0	-63.18	-13	50.18
3760.00	44.35	153	2.0	H	-57.7	1.50	11.80	-47.40	-13	34.40
3760.00	43.44	206	2.2	V	-58.1	1.50	11.80	-47.80	-13	34.80
Band 4										
Test frequency range:30 MHz ~ 20 GHz										
326.51	34.61	134	2.4	H	-62.4	0.38	0	-62.78	-13	49.78
326.51	34.10	295	1.5	V	-62.9	0.38	0	-63.28	-13	50.28
3465.00	53.07	108	1.3	H	-47.7	1.50	12.00	-37.20	-13	24.20
3465.00	51.74	314	2.0	V	-49.8	1.50	12.00	-39.30	-13	26.30
Band 5										
Test frequency range:30 MHz ~ 10 GHz										
326.51	33.27	309	2.5	H	-63.7	0.38	0	-64.08	-13	51.08
326.51	34.92	136	2.1	V	-62.1	0.38	0	-62.48	-13	49.48
1673.00	60.65	5	2.4	H	-45.7	1.30	8.90	-38.10	-13	25.10
1673.00	57.81	256	2.1	V	-47.9	1.30	8.90	-40.30	-13	27.30
2509.50	45.88	359	2.1	H	-57.5	2.60	10.20	-49.90	-13	36.90
2509.50	45.25	63	1.4	V	-57.5	2.60	10.20	-49.90	-13	36.90
3346.00	43.30	30	1.1	H	-57.6	1.50	11.70	-47.40	-13	34.40
3346.00	42.78	88	1.5	V	-58.1	1.50	11.70	-47.90	-13	34.90
Band 7										
Test frequency range:30 MHz ~ 26.5 GHz										
326.51	33.29	130	2.4	H	-63.7	0.38	0	-64.08	-25	39.08
326.51	33.16	176	1.9	V	-63.8	0.38	0	-64.18	-25	39.18
5070.00	44.01	213	1.3	H	-56.0	1.60	12.10	-45.50	-25	20.50
5070.00	43.40	10	2.2	V	-56.6	1.60	12.10	-46.10	-25	21.10

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 (dBi)			
Band 12										
Test frequency range:30 MHz ~ 10 GHz										
326.51	33.02	238	1.5	H	-64.0	0.38	0	-64.38	-13	51.38
326.51	33.71	112	2.4	V	-63.3	0.38	0	-63.68	-13	50.68
1415.00	48.89	34	2.1	H	-59.3	1.60	7.90	-53.00	-13	40.00
1415.00	46.28	267	1.3	V	-62.2	1.60	7.90	-55.90	-13	42.90
2122.50	43.37	355	2.4	H	-57.8	1.30	9.70	-49.40	-13	36.40
2122.50	43.80	244	2.1	V	-58.2	1.30	9.70	-49.80	-13	36.80
2830.00	43.15	8	1.9	H	-60.8	1.80	10.50	-52.10	-13	39.10
2830.00	43.68	175	1.9	V	-59.9	1.80	10.50	-51.20	-13	38.20
3537.50	44.02	154	1.6	H	-56.9	1.50	12.00	-46.40	-13	33.40
3537.50	43.81	1	1.1	V	-57.8	1.50	12.00	-47.30	-13	34.30
Band 17										
Test frequency range:30 MHz ~ 10 GHz										
326.51	33.29	145	2.3	H	-63.7	0.38	0	-64.08	-13	51.08
326.51	34.73	289	2.3	V	-62.3	0.38	0	-62.68	-13	49.68
1420.00	48.11	181	2.1	H	-60.1	1.60	7.90	-53.80	-13	40.80
1420.00	47.40	208	2.4	V	-61.0	1.60	7.90	-54.70	-13	41.70
2130.00	51.88	228	2.2	H	-49.2	1.30	9.70	-40.80	-13	27.80
2130.00	51.29	251	2.1	V	-50.7	1.30	9.70	-42.30	-13	29.30
2840.00	43.66	44	1.6	H	-60.3	1.80	10.50	-51.60	-13	38.60
2840.00	43.15	229	1.3	V	-60.5	1.80	10.50	-51.80	-13	38.80
3550.00	43.73	304	1.9	H	-58.0	1.50	12.10	-47.40	-13	34.40
3550.00	43.48	43	1.2	V	-57.7	1.50	12.10	-47.10	-13	34.10
Band 19										
Test frequency range:30 MHz ~ 10 GHz										
326.51	33.55	184	2.2	H	-63.5	0.38	0	-63.88	-13	50.88
326.51	33.87	246	1.0	V	-63.1	0.38	0	-63.48	-13	50.48
1675.00	58.67	67	2.5	H	-47.7	1.30	8.90	-40.10	-13	27.10
1675.00	55.91	52	2.3	V	-49.8	1.30	8.90	-42.20	-13	29.20
2512.50	45.21	128	1.0	H	-58.1	2.60	10.20	-50.50	-13	37.50
2512.50	44.73	13	1.8	V	-58.0	2.60	10.20	-50.40	-13	37.40
3350.00	43.55	253	2.4	H	-57.7	1.40	11.80	-47.30	-13	34.30
3350.00	43.20	210	2.3	V	-57.8	1.40	11.80	-47.40	-13	34.40
4187.50	50.65	260	1.8	H	-51.3	1.50	11.80	-41.00	-13	28.00
4187.50	49.88	122	1.6	V	-51.3	1.50	11.80	-41.00	-13	28.00

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.

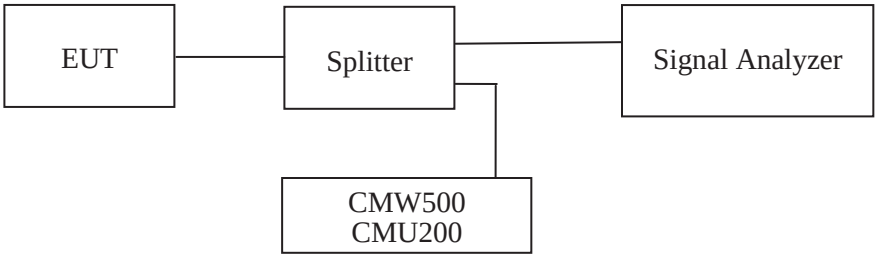
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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

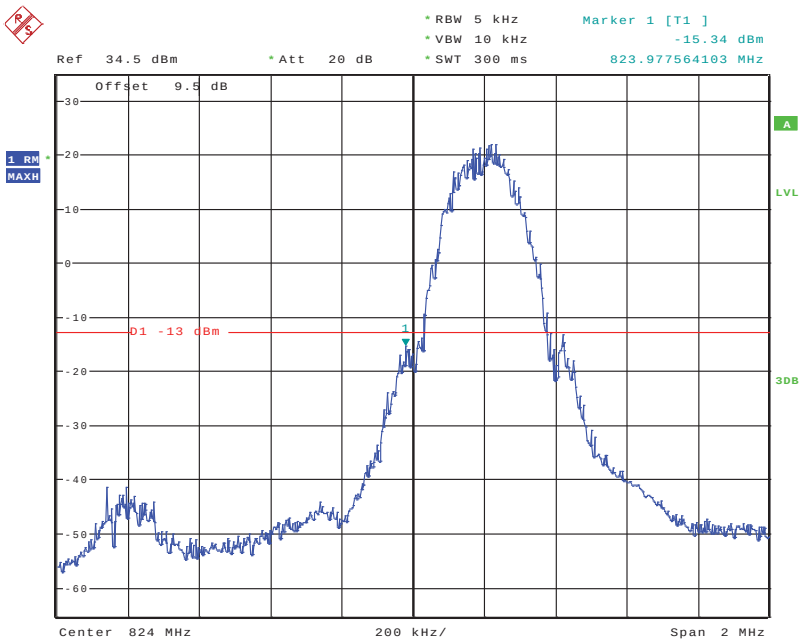
Temperature:	25 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by George Zhong from 2019-09-11 to 2019-12-02.

EUT operation mode: Transmitting

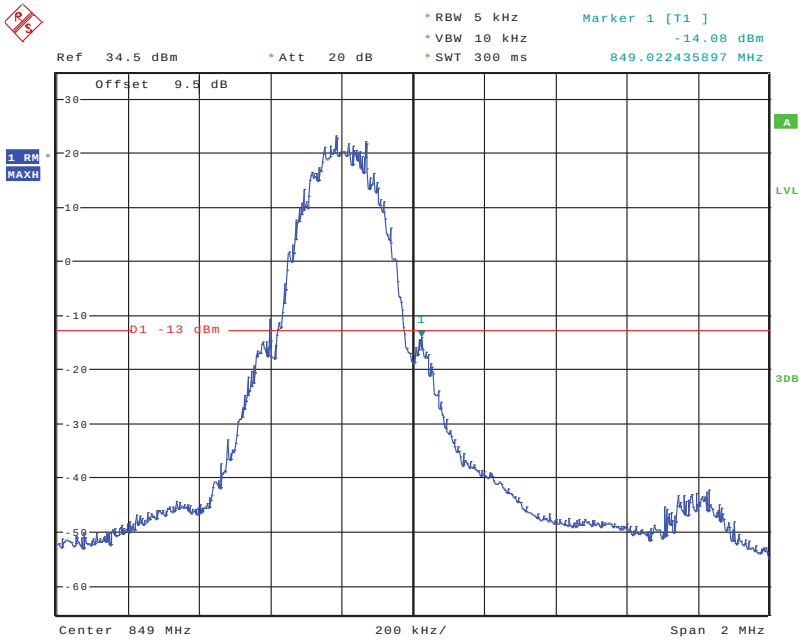
Test Result: Compliance. Please refer to the following plots.

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



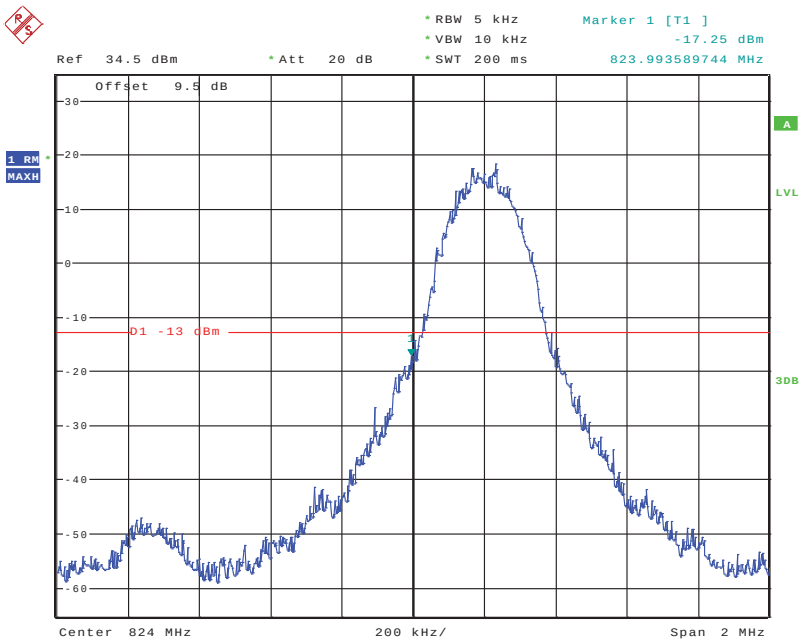
Date: 11.SEP.2019 20:41:31

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



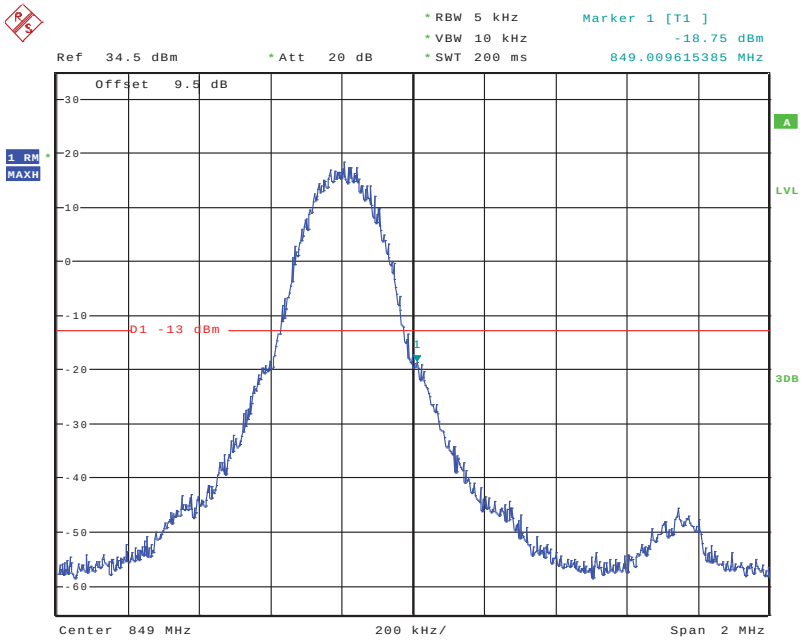
Date: 11.SEP.2019 20:45:49

Cellular Band, Left Band Edge for EDGE Mode



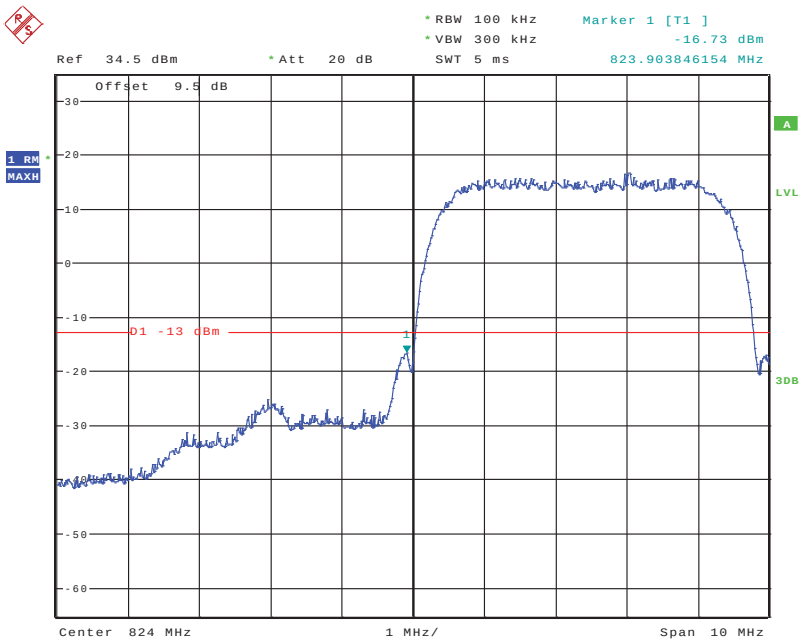
Date: 11.SEP.2019 21:20:34

Cellular Band, Right Band Edge for EDGE Mode



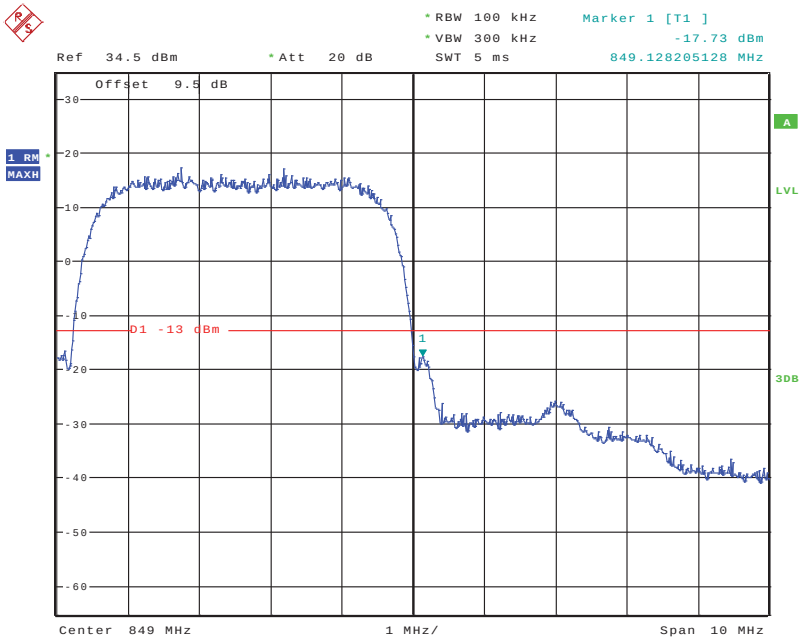
Date: 11.SEP.2019 21:21:59

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



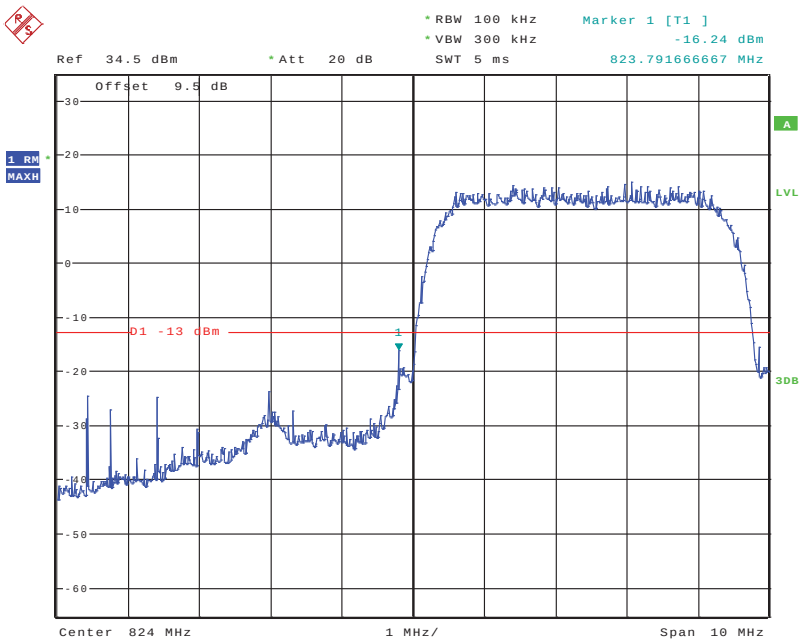
Date: 11.SEP.2019 22:12:58

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



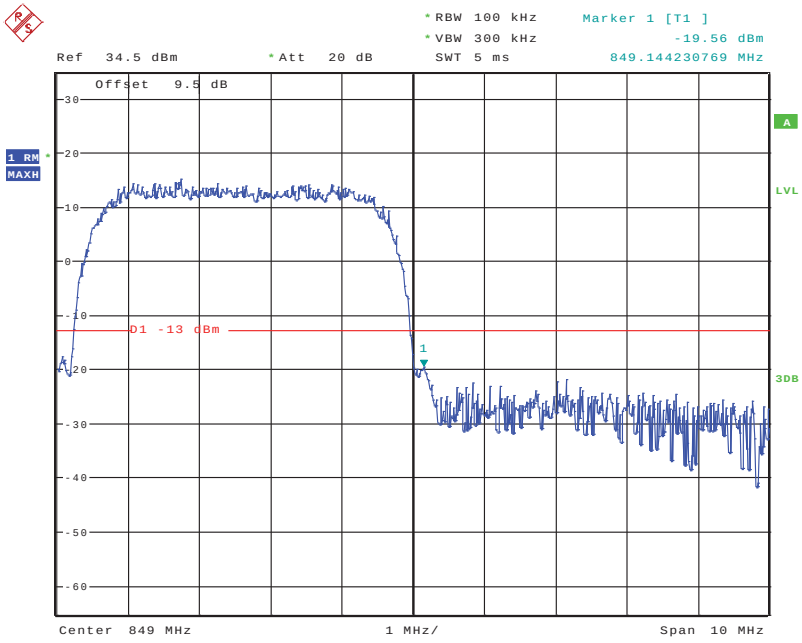
Date: 11.SEP.2019 22:14:22

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



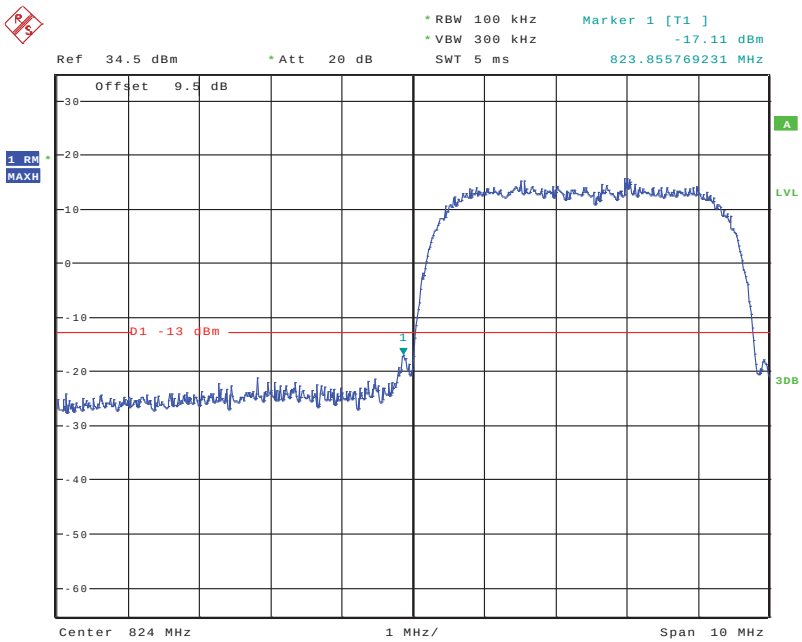
Date: 11.SEP.2019 22:48:45

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



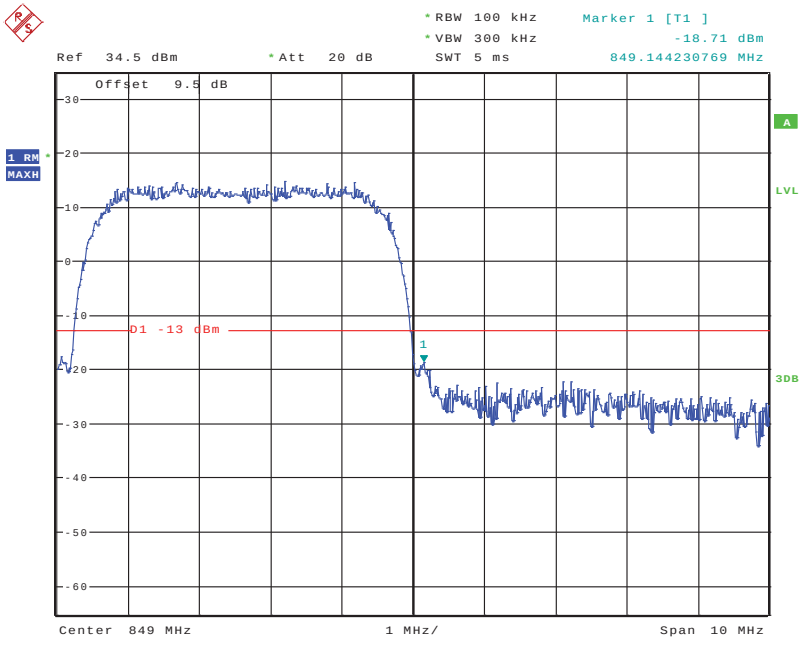
Date: 11.SEP.2019 22:48:15

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



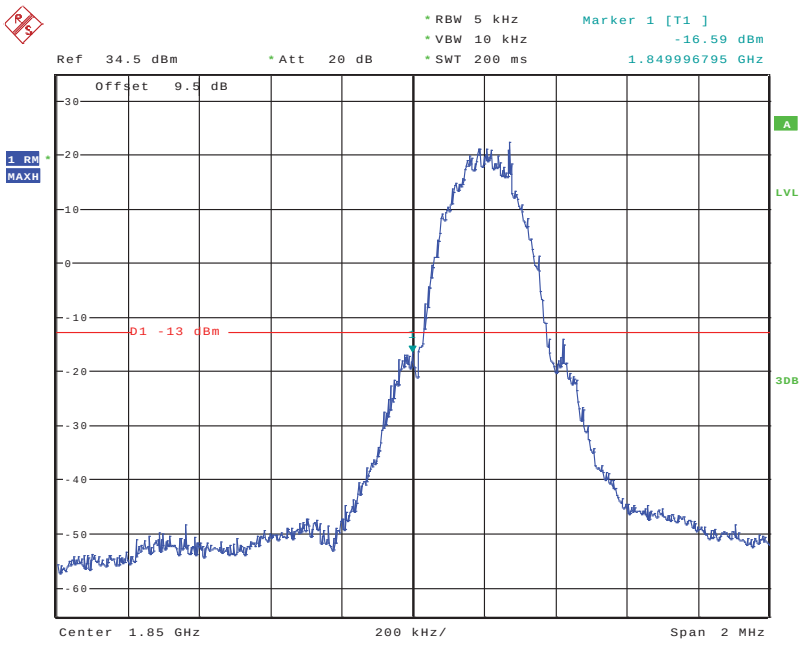
Date: 11.SEP.2019 22:17:49

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



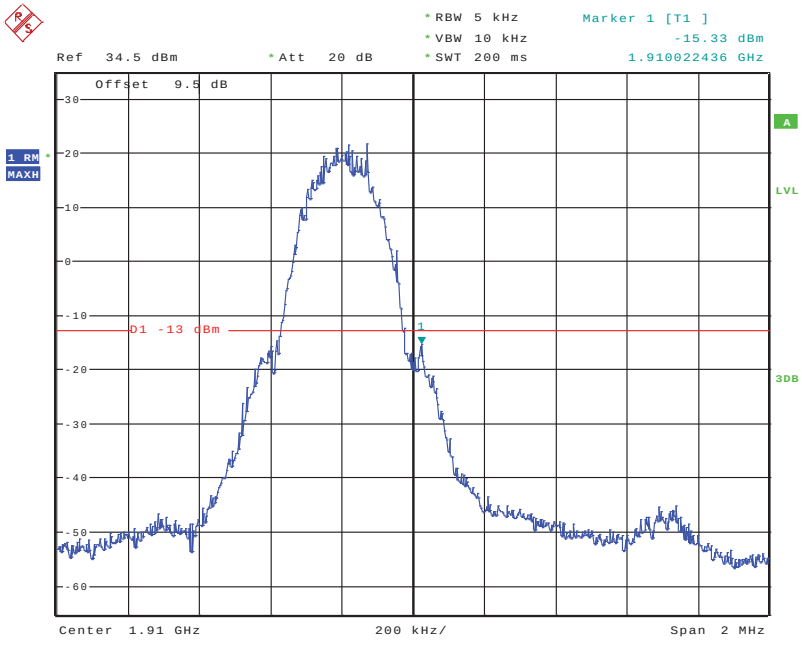
Date: 11.SEP.2019 22:15:52

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



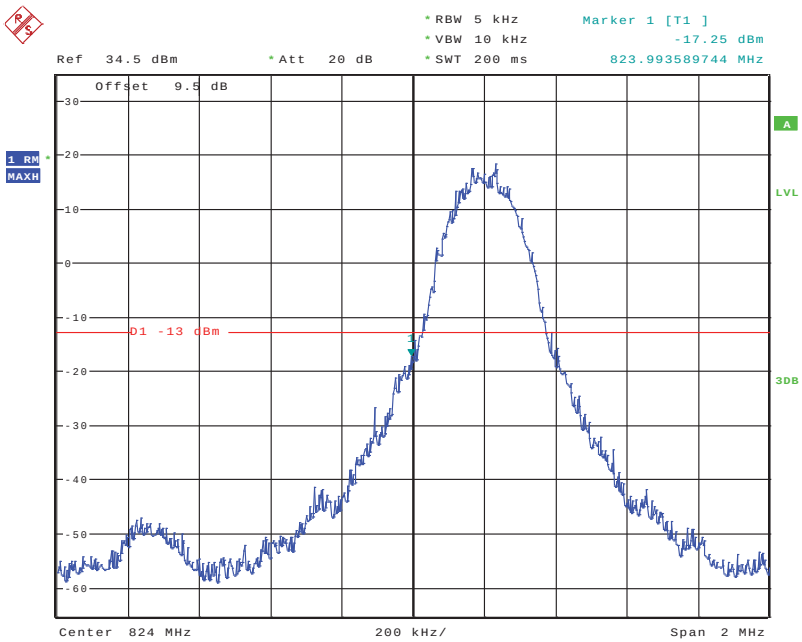
Date: 11.SEP.2019 21:03:13

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



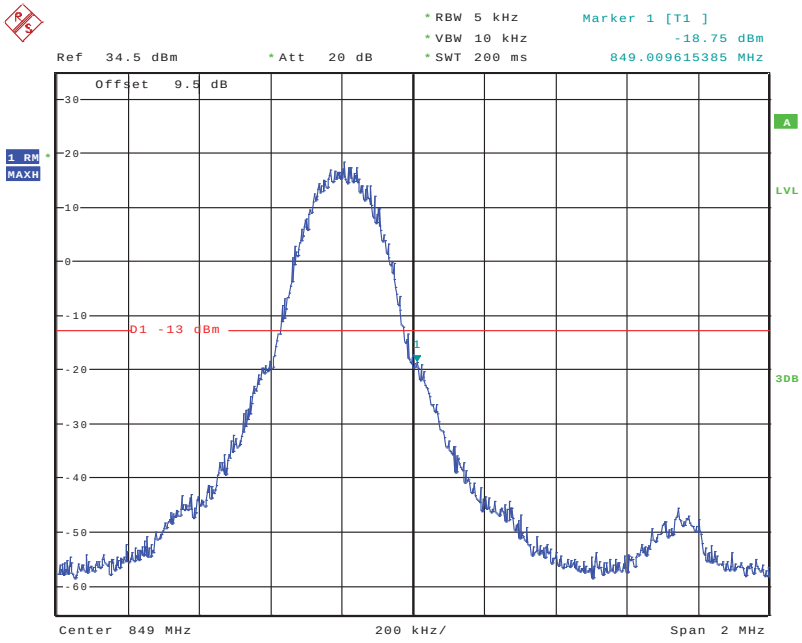
Date: 11.SEP.2019 21:04:41

PCS Band, Left Band Edge for EDGE Mode



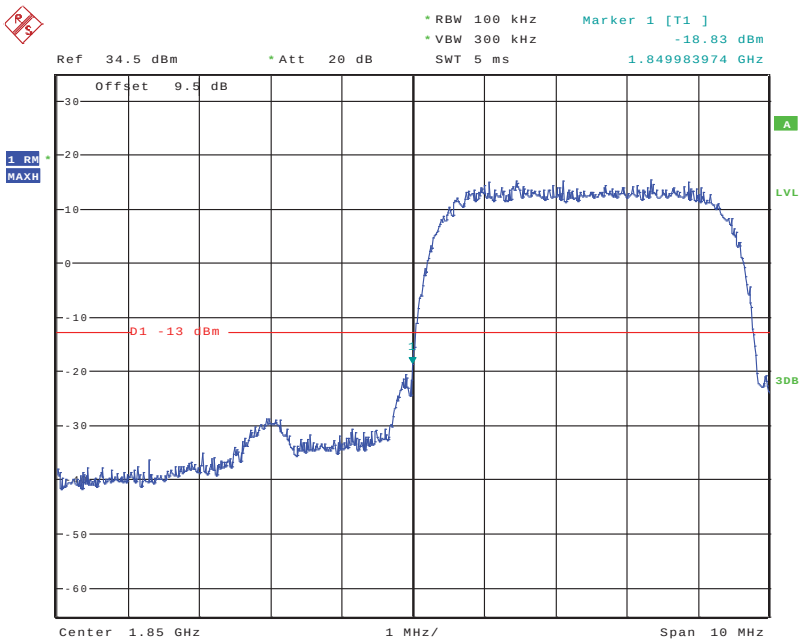
Date: 11.SEP.2019 21:20:34

PCS Band, Right Band Edge for EDGE Mode



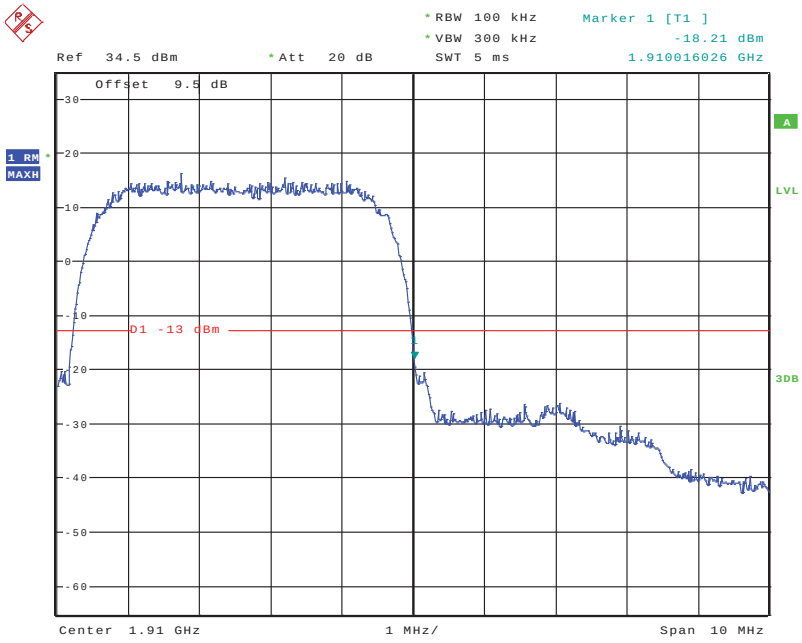
Date: 11.SEP.2019 21:21:59

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



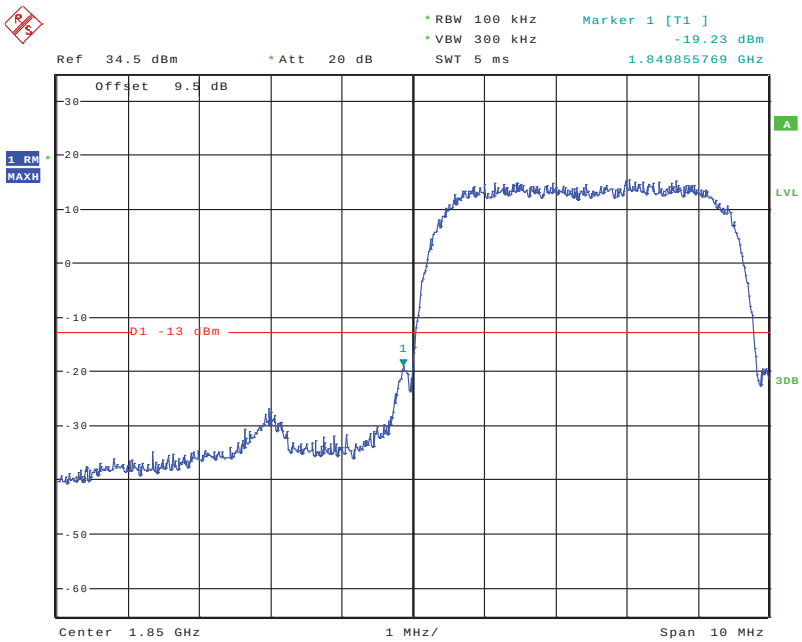
Date: 11.SEP.2019 21:55:20

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



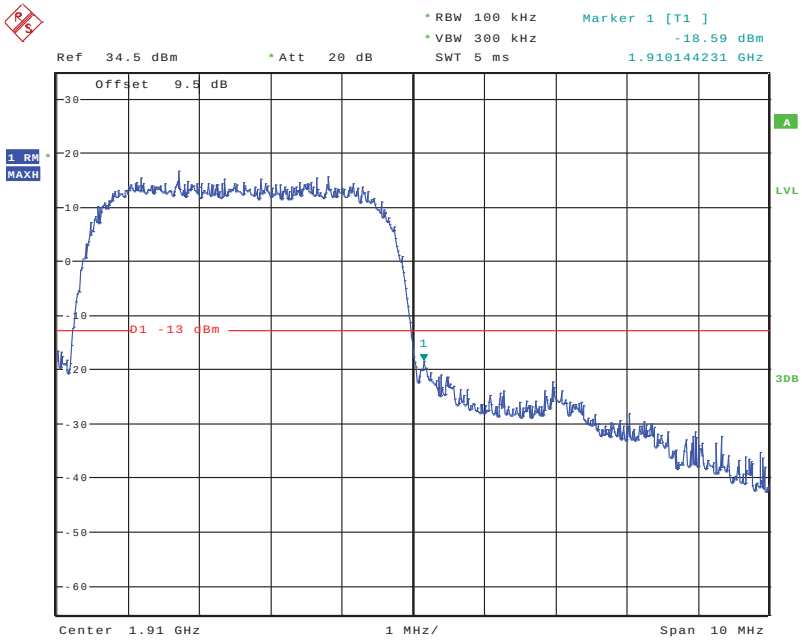
Date: 11.SEP.2019 21:56:27

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



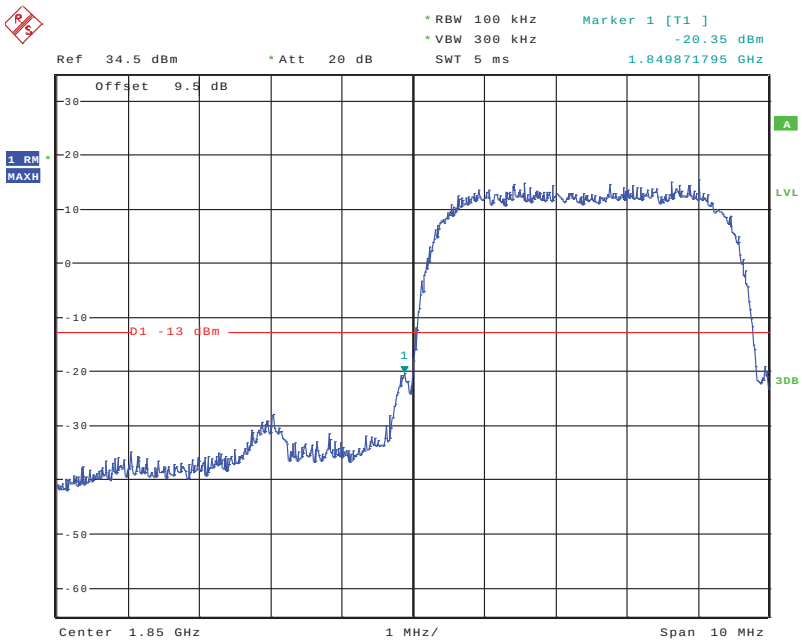
Date: 11.SEP.2019 21:45:54

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



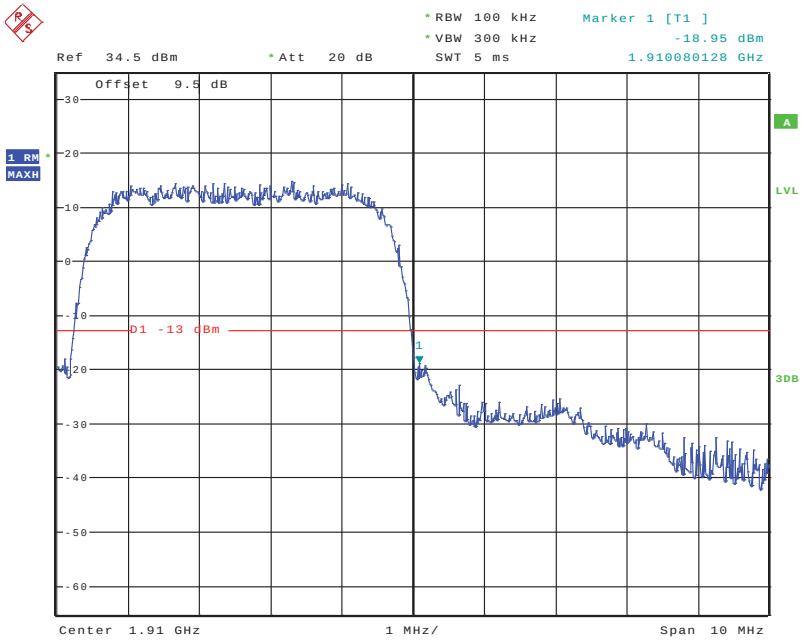
Date: 11.SEP.2019 21:46:36

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



Date: 11.SEP.2019 21:53:10

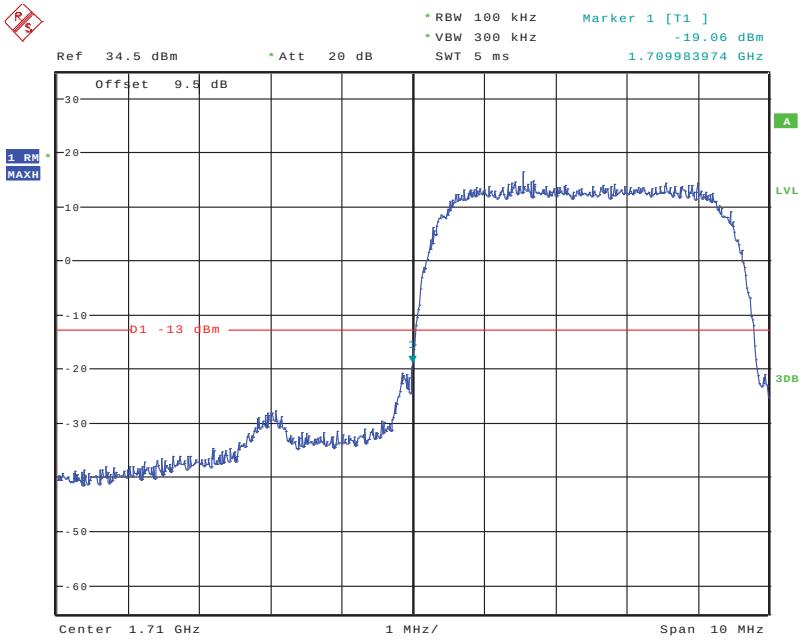
PCS Band, Right Band Edge for HSUPA (BPSK) Mode



Date: 11.SEP.2019 21:52:37

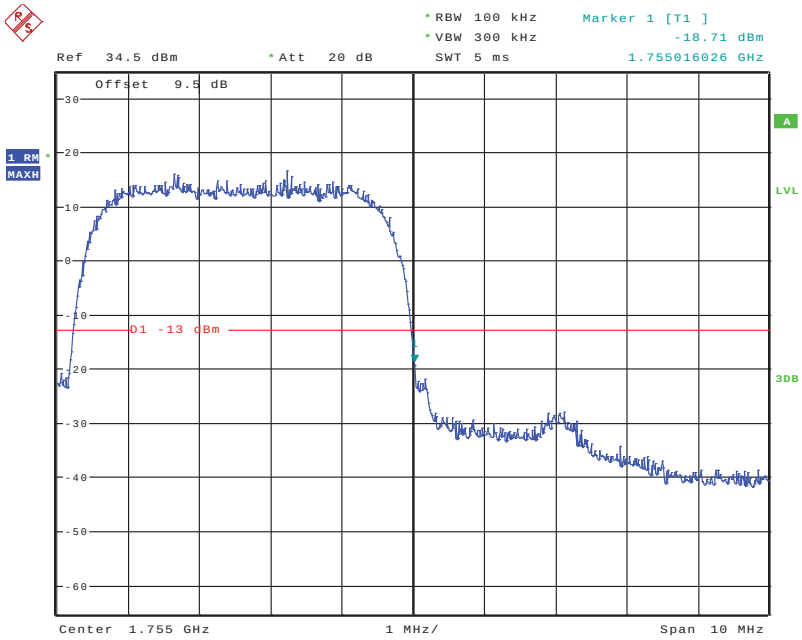
AWS Band (Part 27)

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



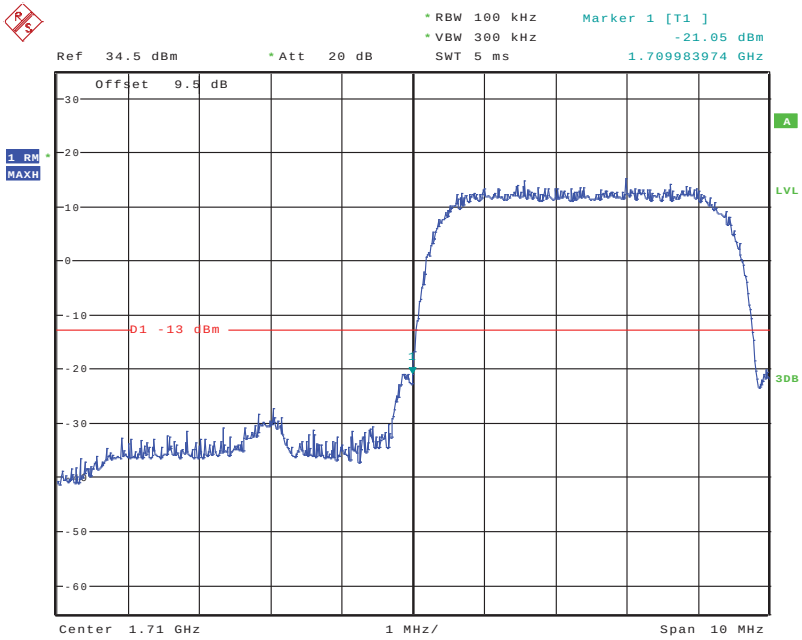
Date: 11.SEP.2019 23:11:35

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



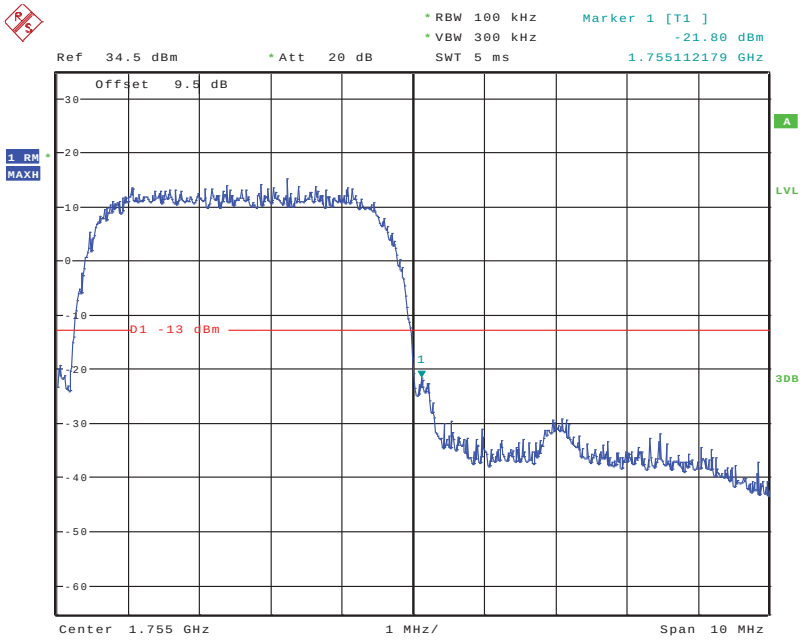
Date: 11.SEP.2019 23:12:05

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



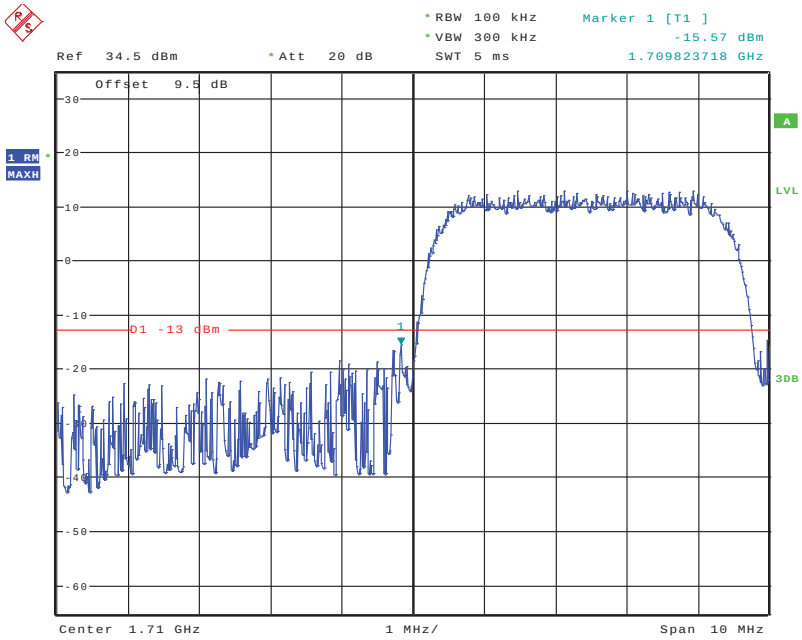
Date: 11.SEP.2019 23:03:08

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



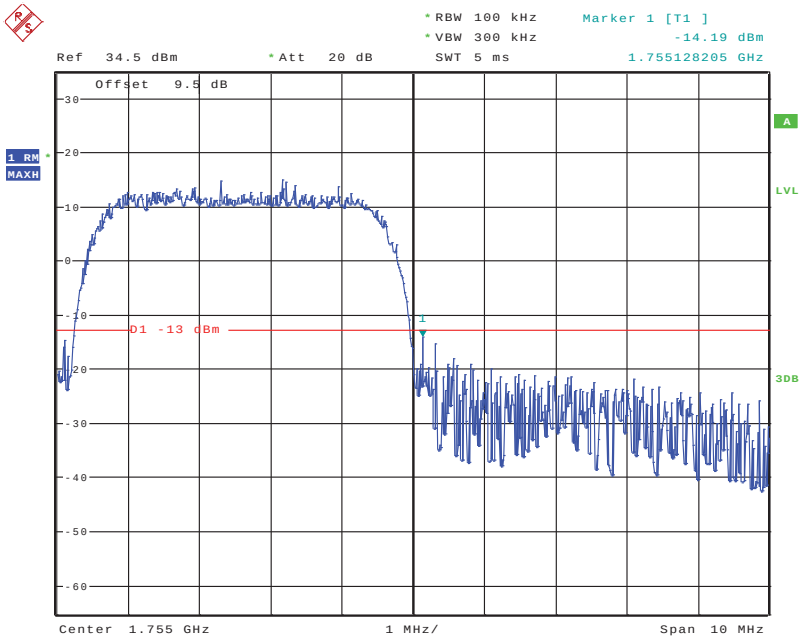
Date: 11.SEP.2019 23:03:47

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



Date: 11.SEP.2019 23:10:33

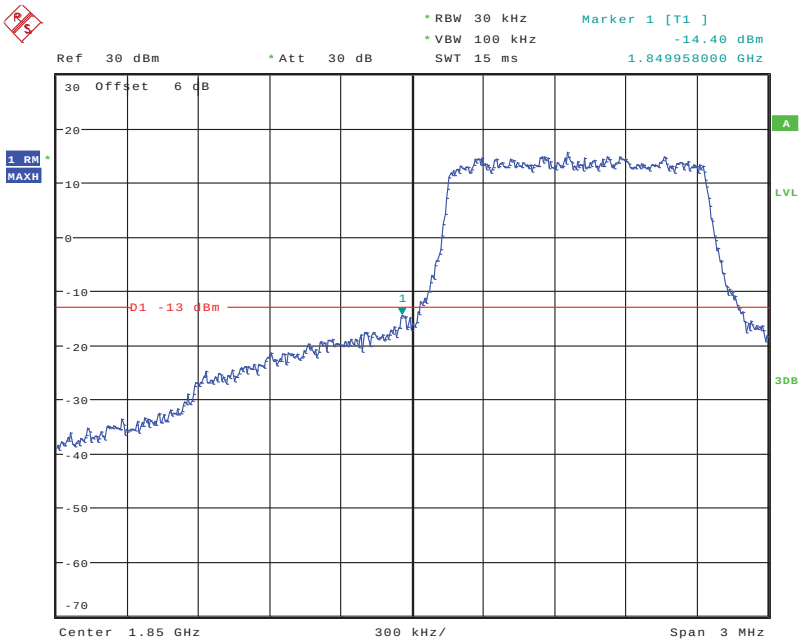
PCS Band, Right Band Edge for HSUPA (BPSK) Mode



Date: 11.SEP.2019 23:09:38

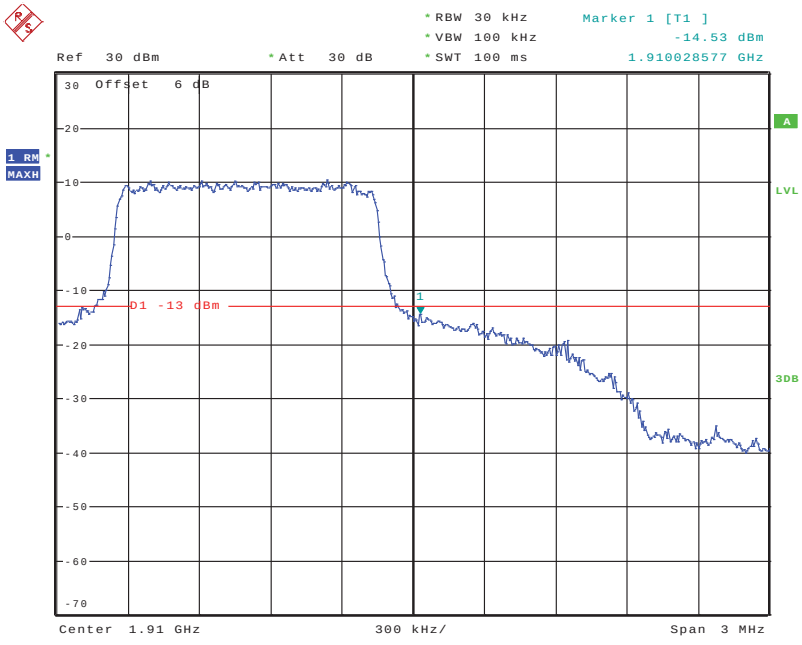
Band 2:

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



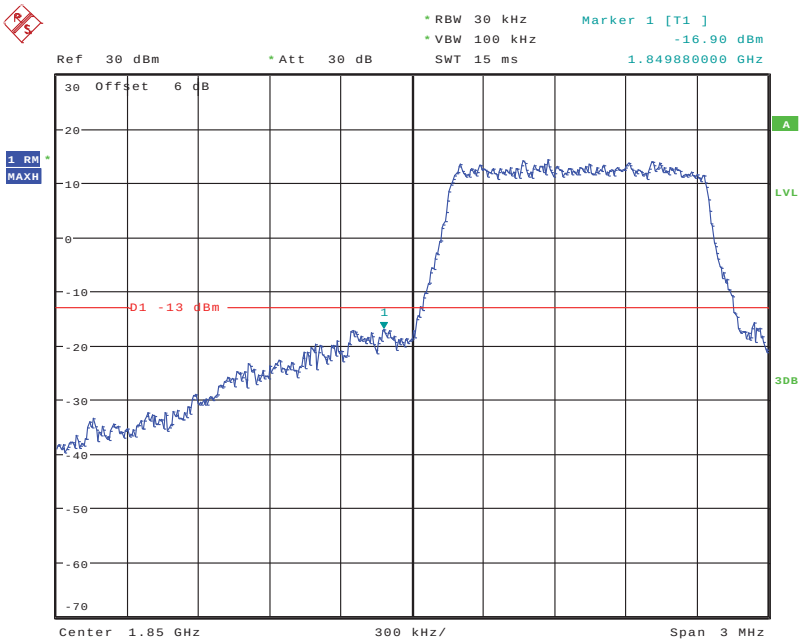
Date: 18.SEP.2019 21:15:28

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



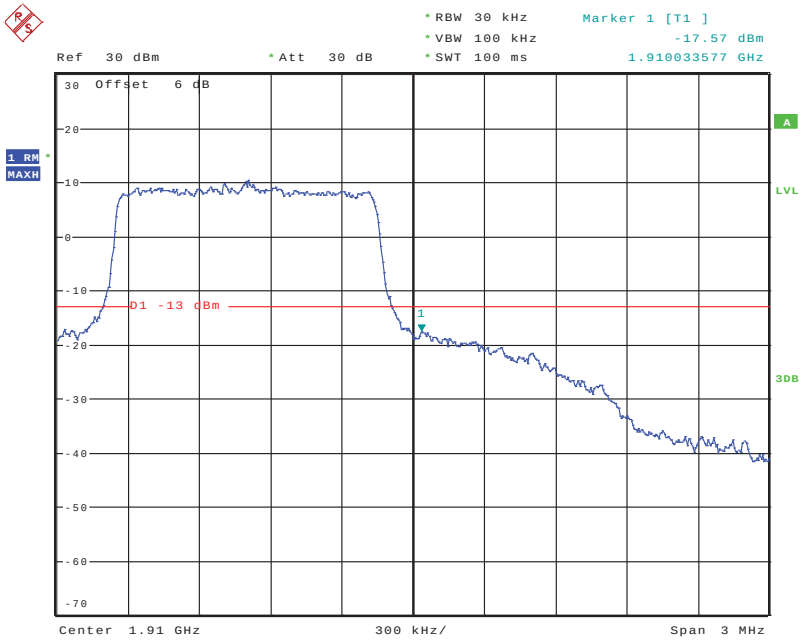
Date: 18.SEP.2019 23:28:14

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



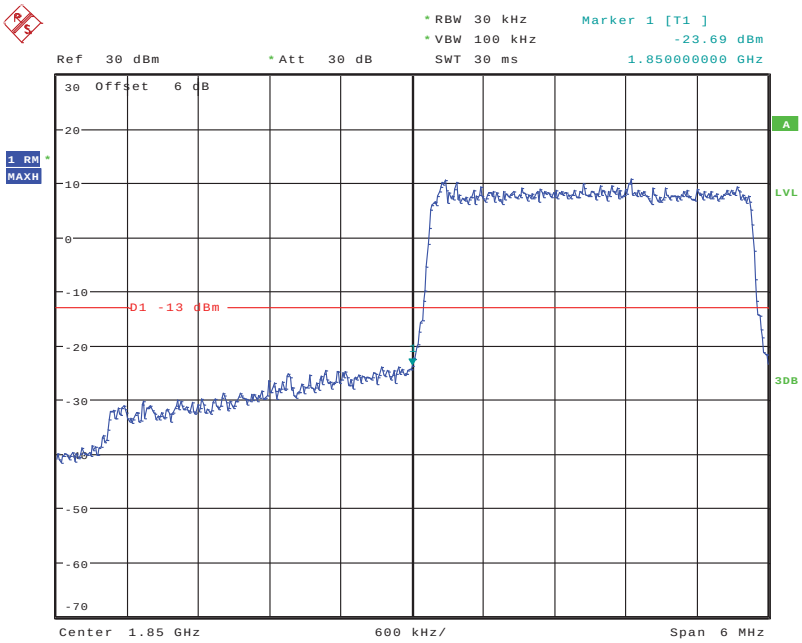
Date: 18.SEP.2019 21:15:56

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



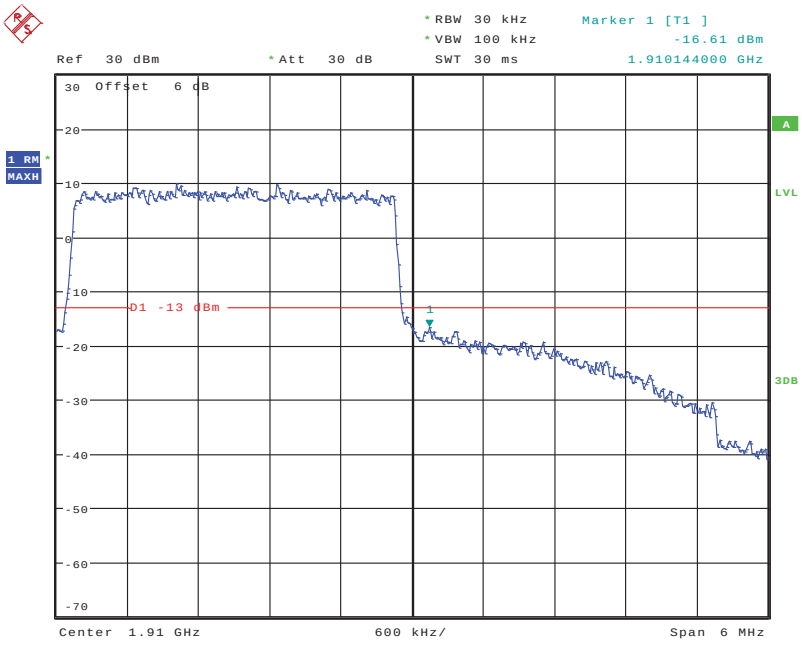
Date: 18.SEP.2019 23:22:05

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



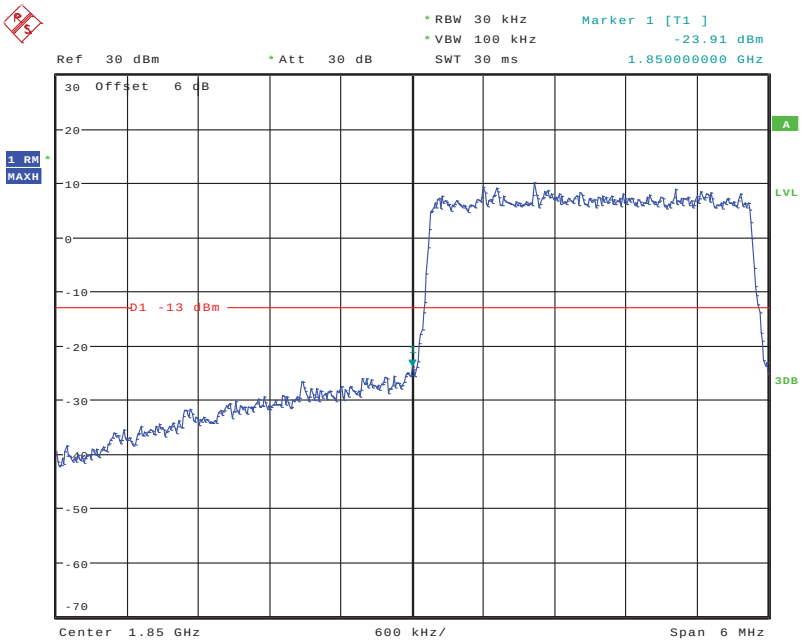
Date: 18.SEP.2019 21:17:15

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



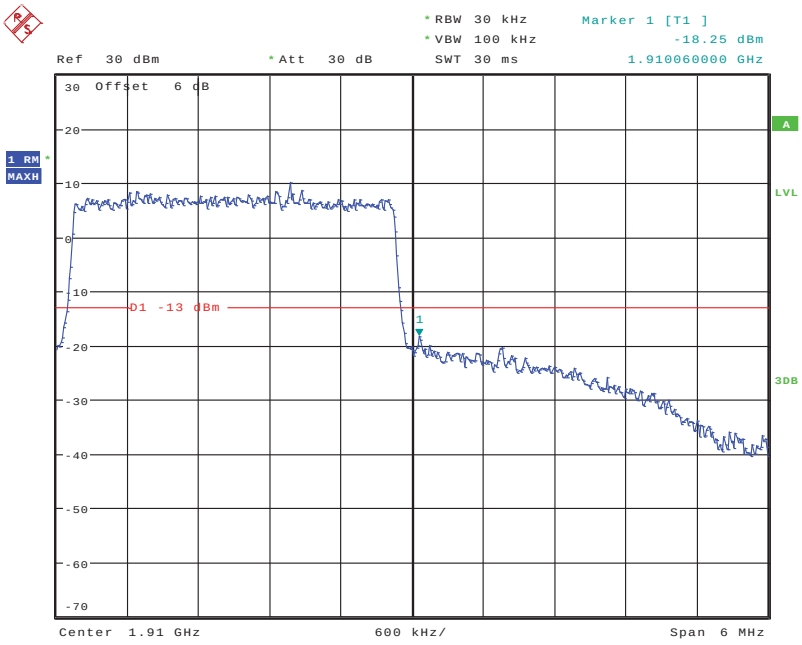
Date: 18.SEP.2019 21:18:08

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



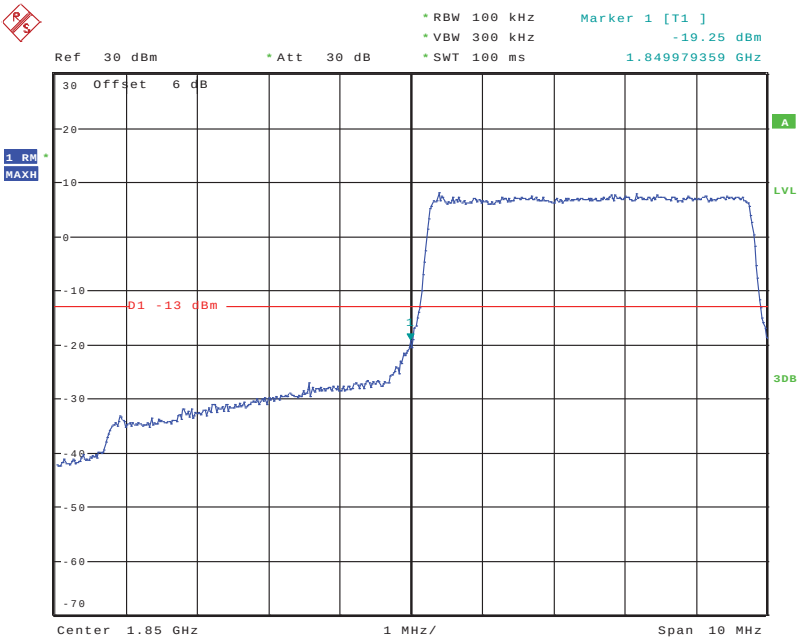
Date: 18.SEP.2019 21:17:40

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

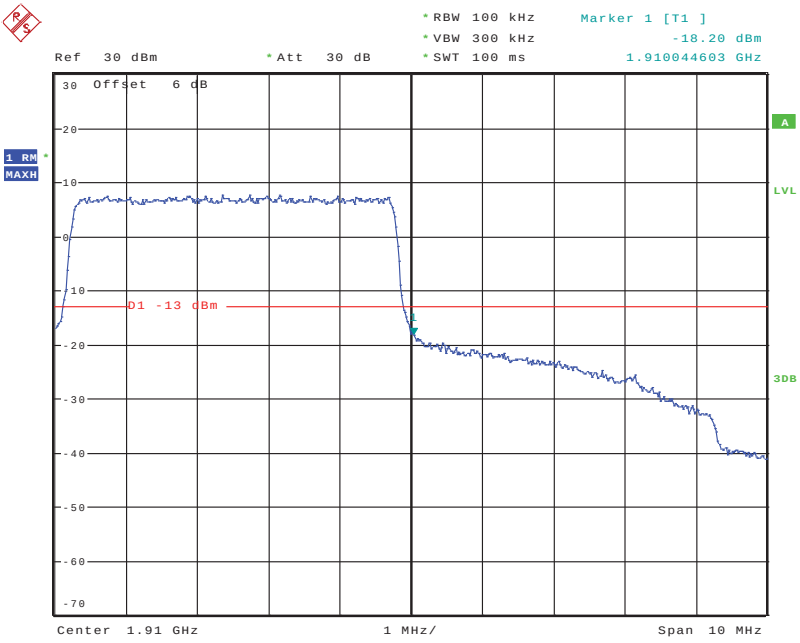


Date: 18.SEP.2019 21:18:33

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

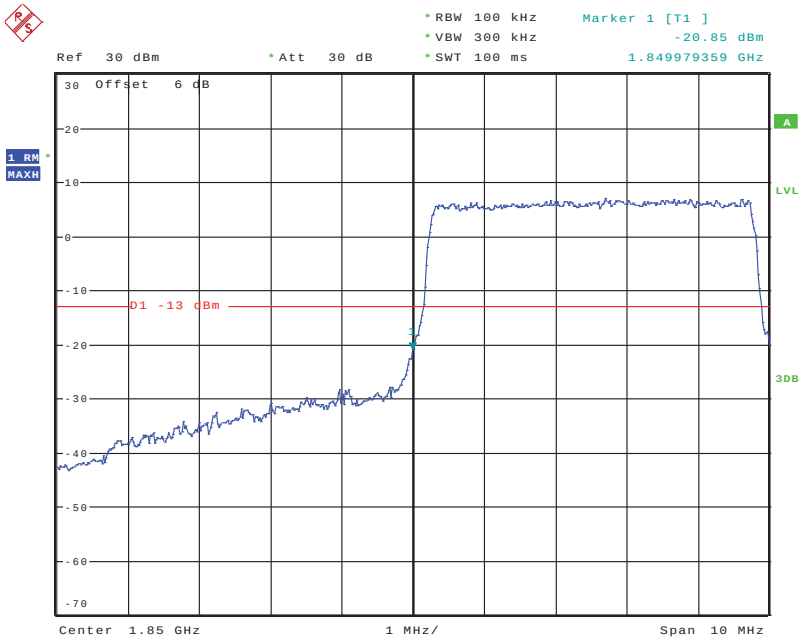


QPSK (5.0 MHz, FULL RB) - Right Band Edge



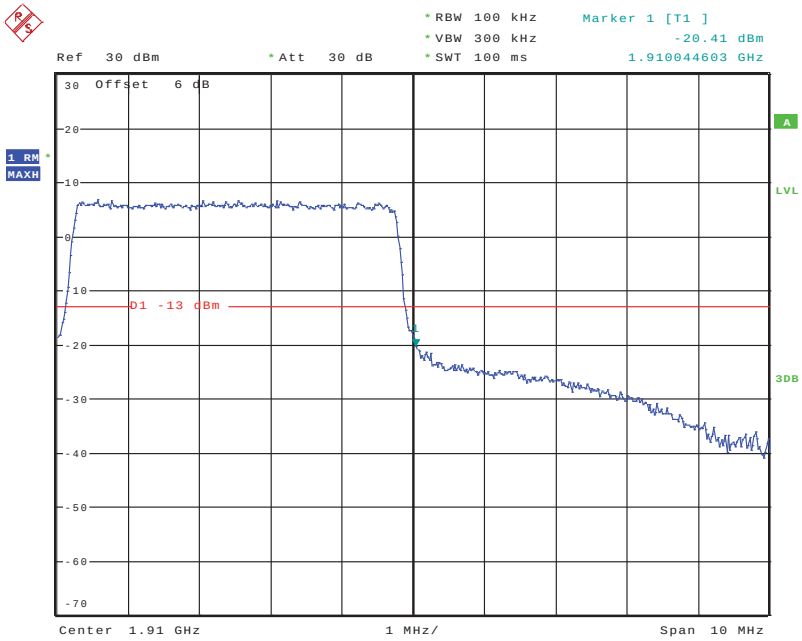
Date: 18.SEP.2019 23:30:32

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



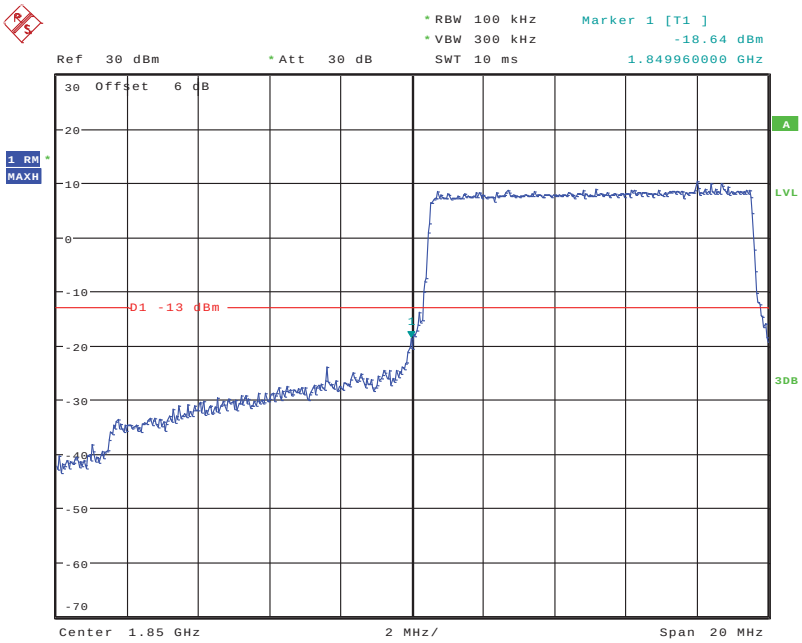
Date: 18.SEP.2019 23:31:43

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



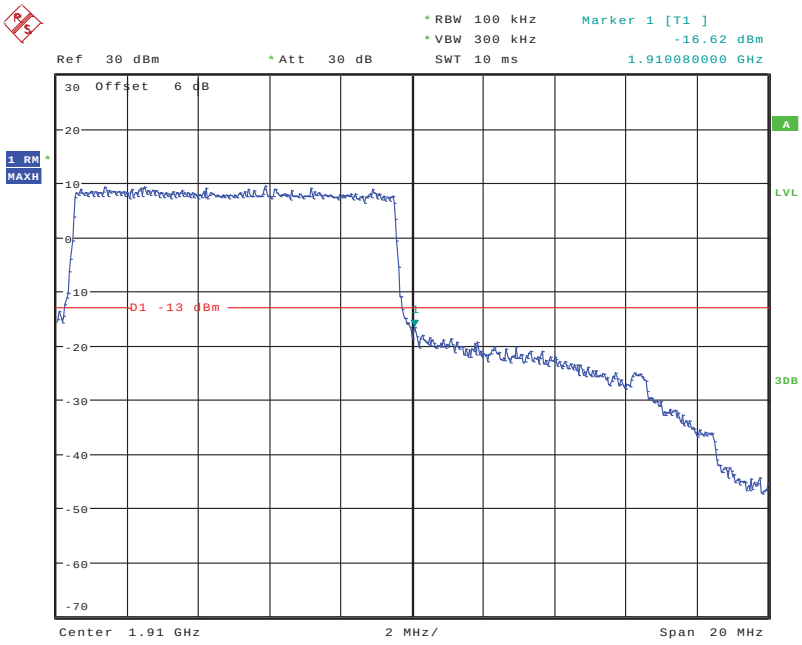
Date: 18.SEP.2019 23:29:52

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



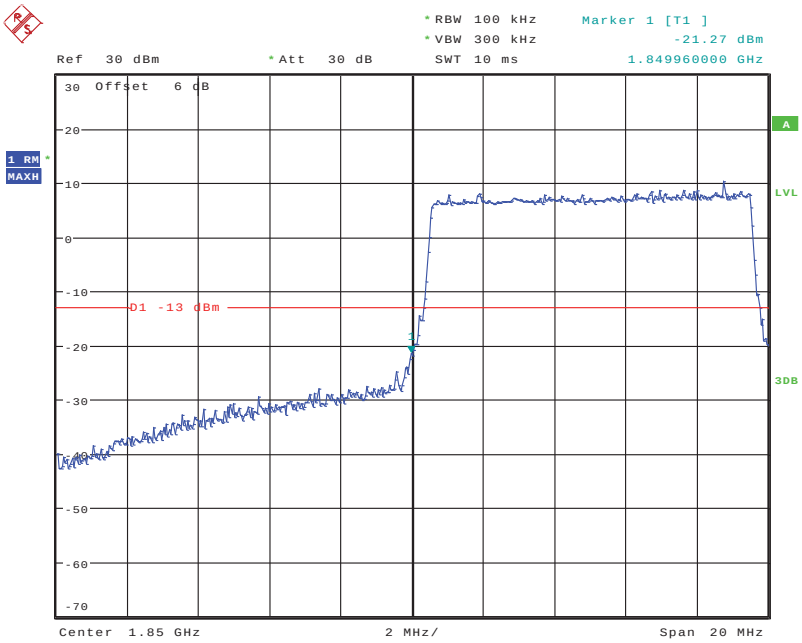
Date: 18.SEP.2019 21:20:54

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



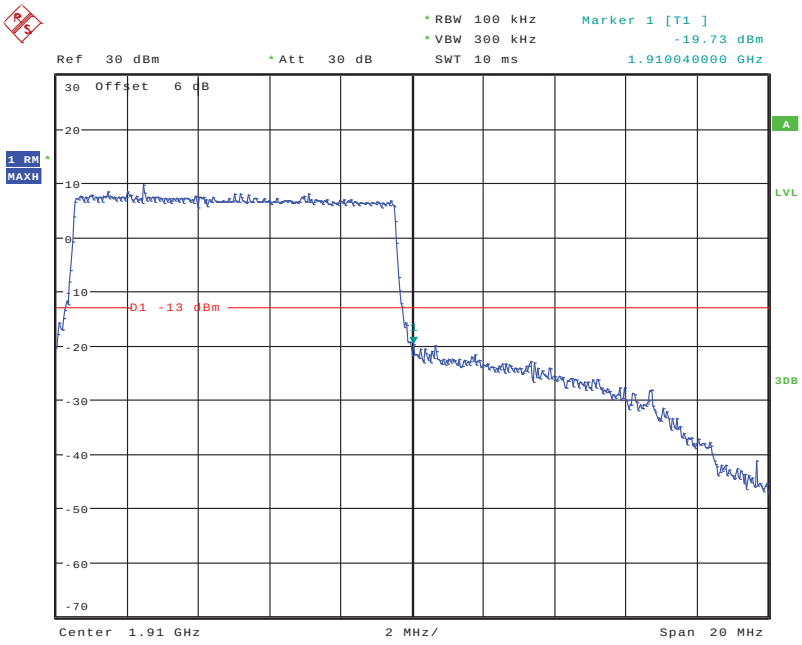
Date: 18.SEP.2019 21:21:50

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



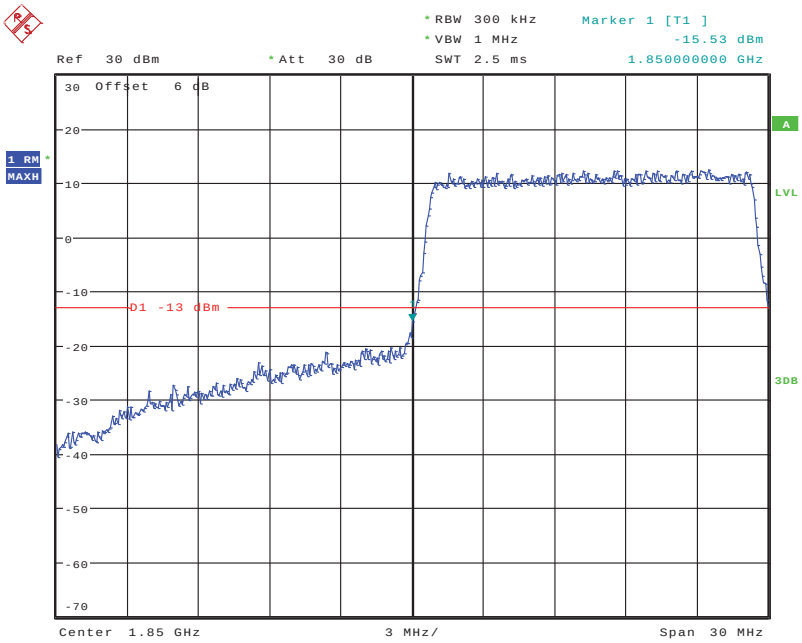
Date: 18.SEP.2019 21:21:23

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



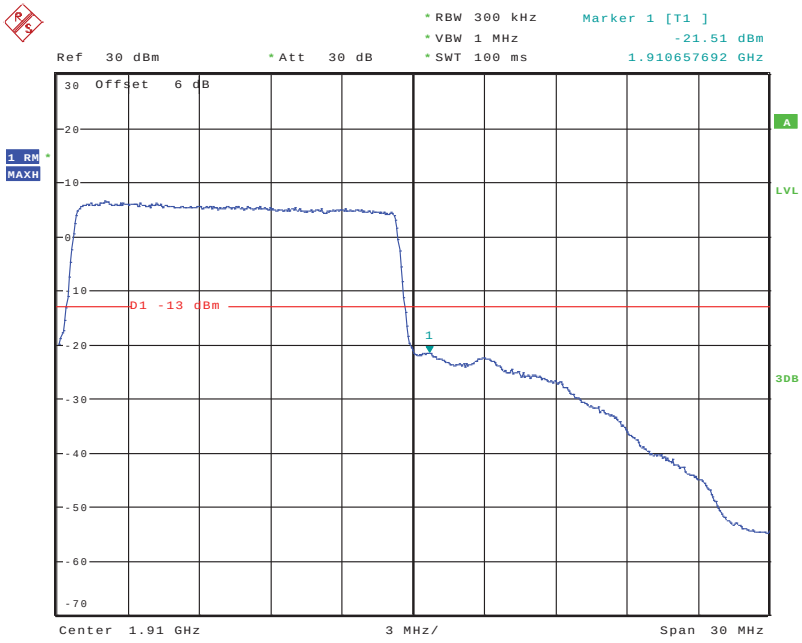
Date: 18.SEP.2019 21:22:16

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



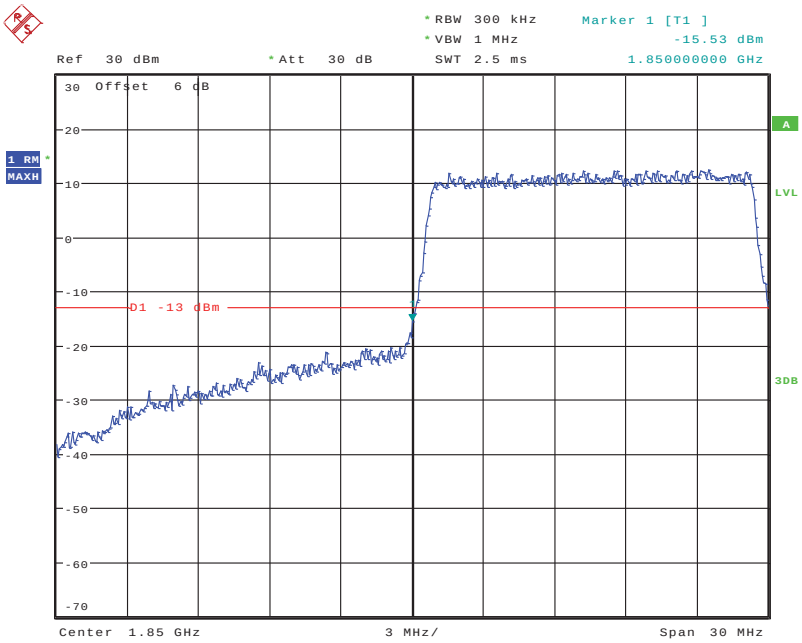
Date: 18.SEP.2019 21:23:16

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



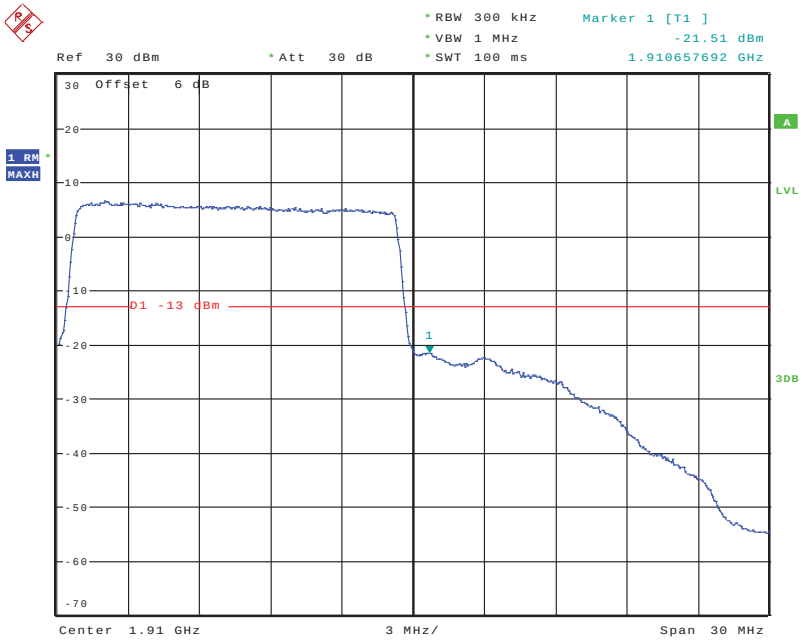
Date: 18.SEP.2019 23:32:48

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



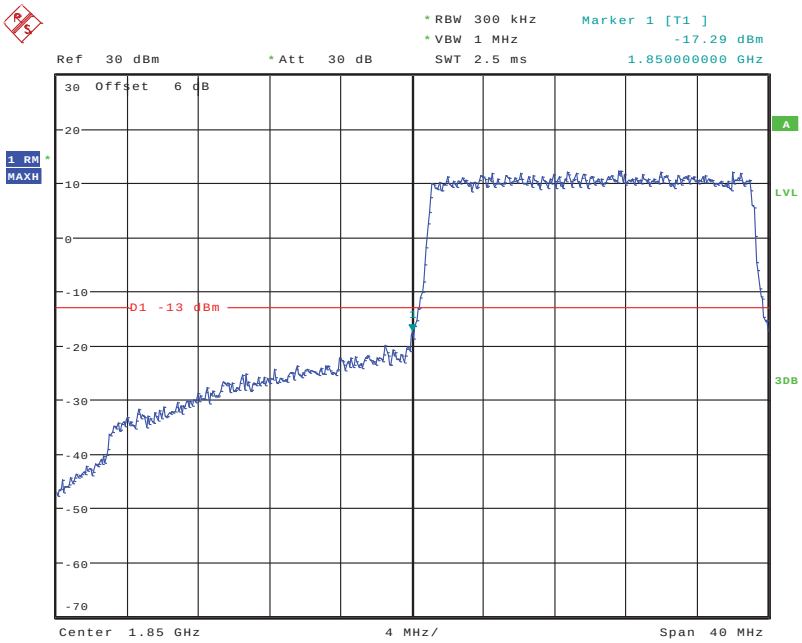
Date: 18.SEP.2019 21:23:16

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



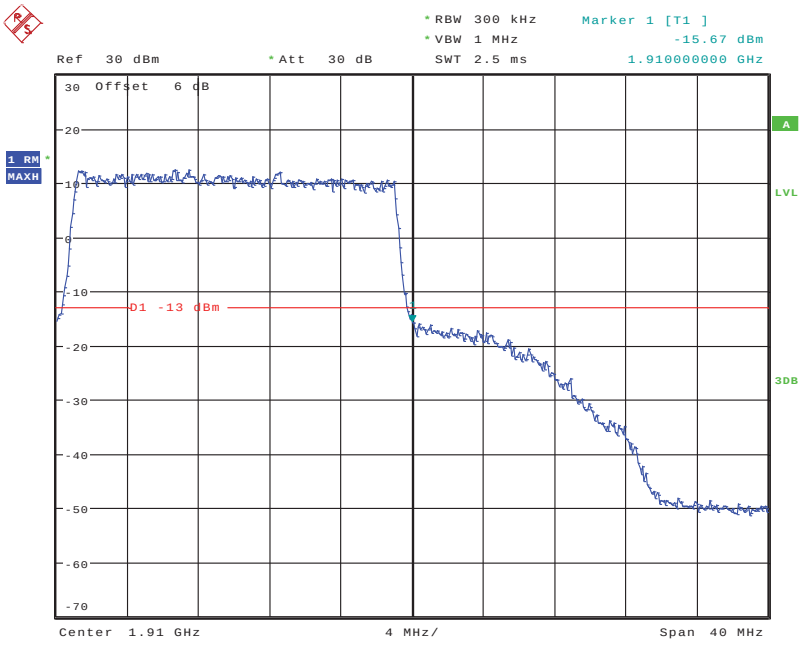
Date: 18.SEP.2019 23:32:48

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



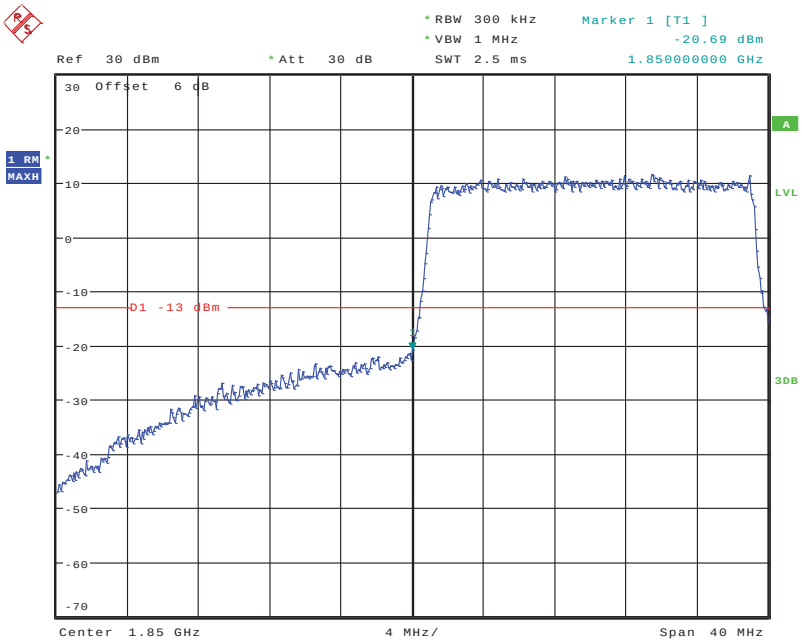
Date: 18.SEP.2019 21:24:50

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



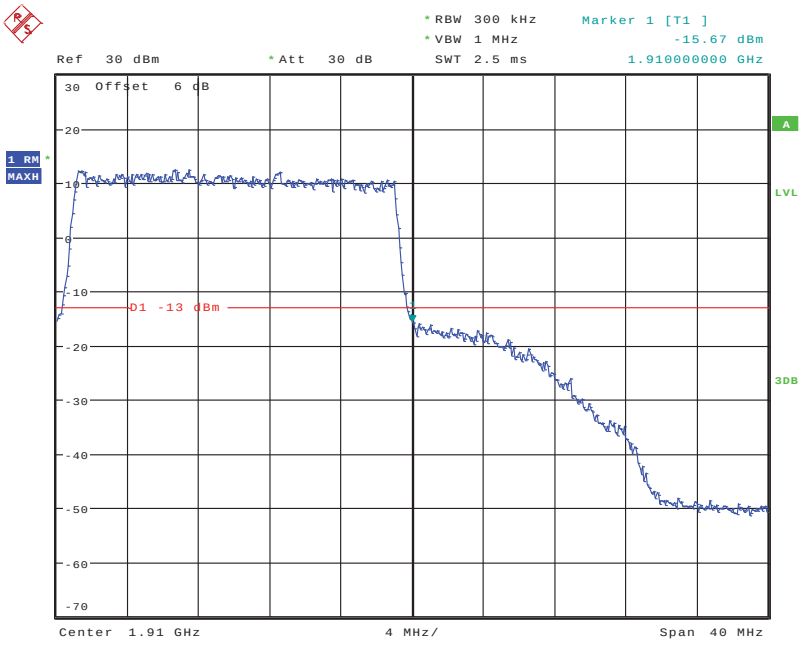
Date: 18.SEP.2019 21:25:57

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



Date: 18.SEP.2019 21:25:28

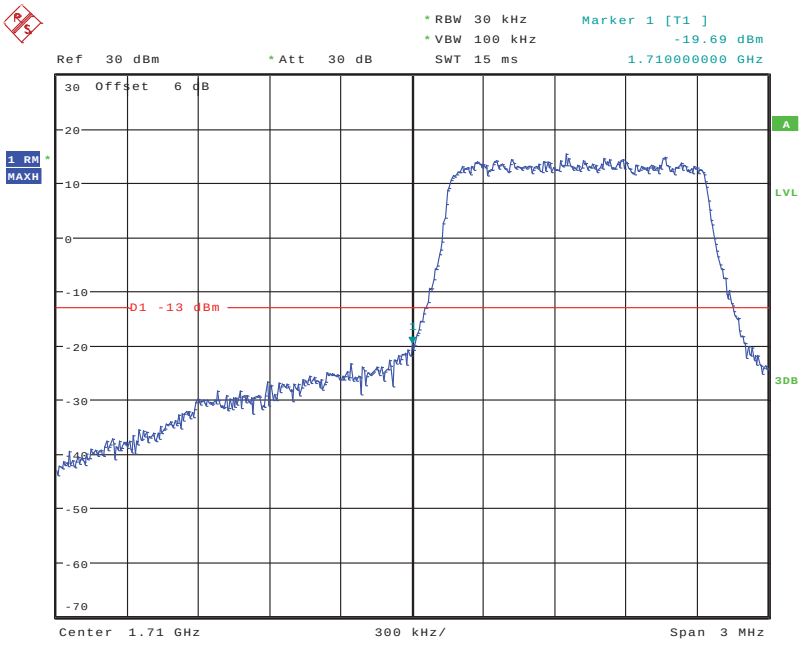
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 18.SEP.2019 21:25:57

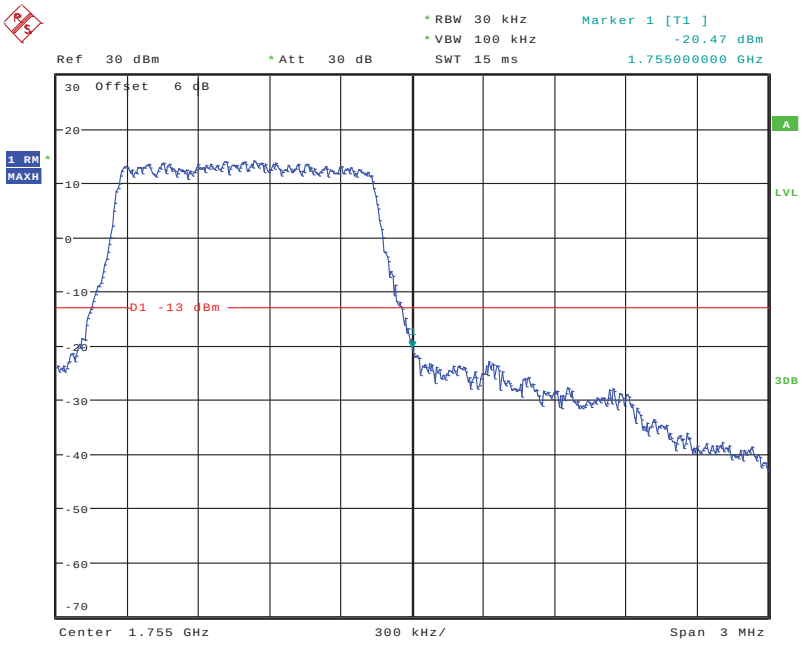
Band 4:

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



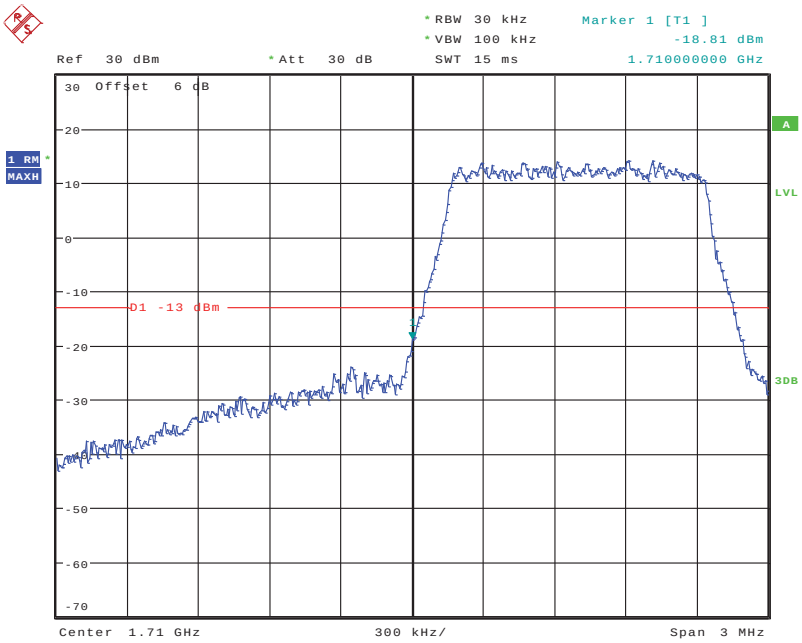
Date: 18.SEP.2019 21:27:03

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



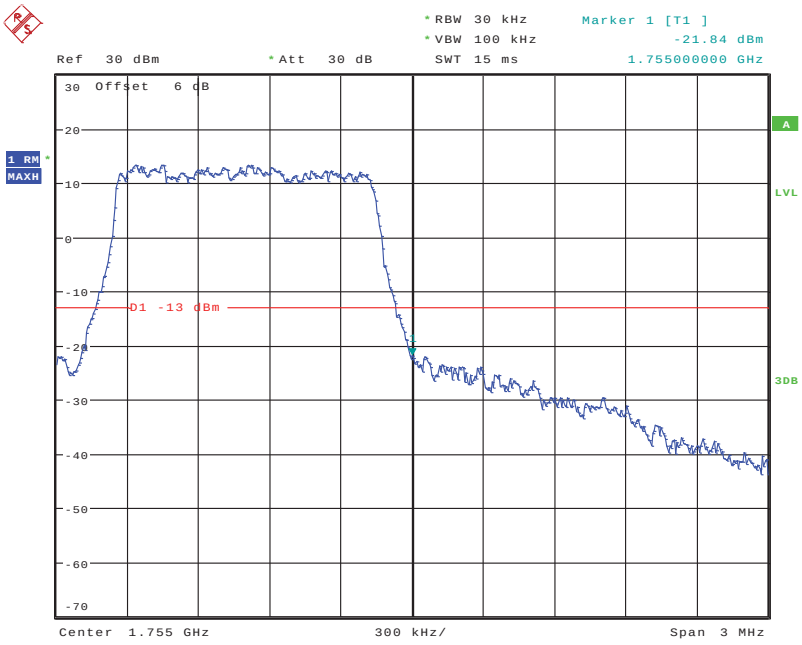
Date: 18.SEP.2019 21:27:57

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



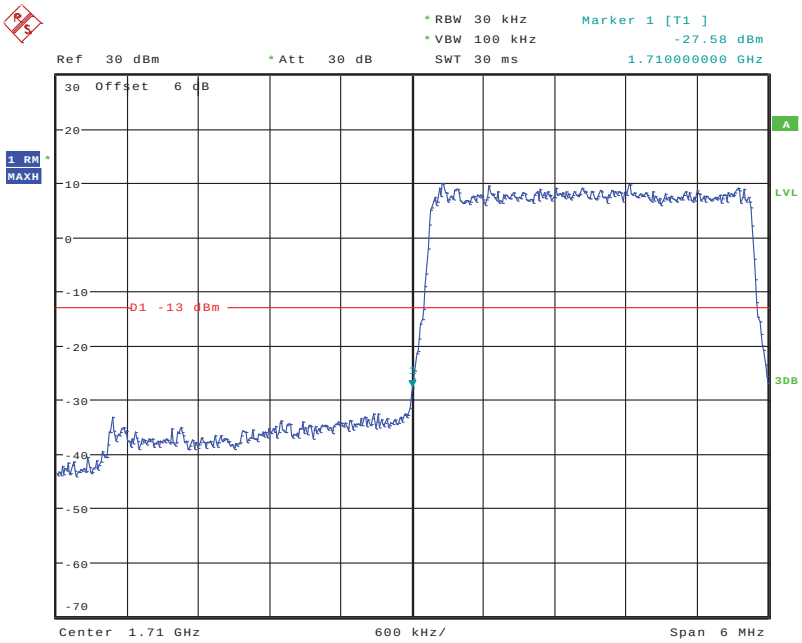
Date: 18.SEP.2019 21:27:34

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



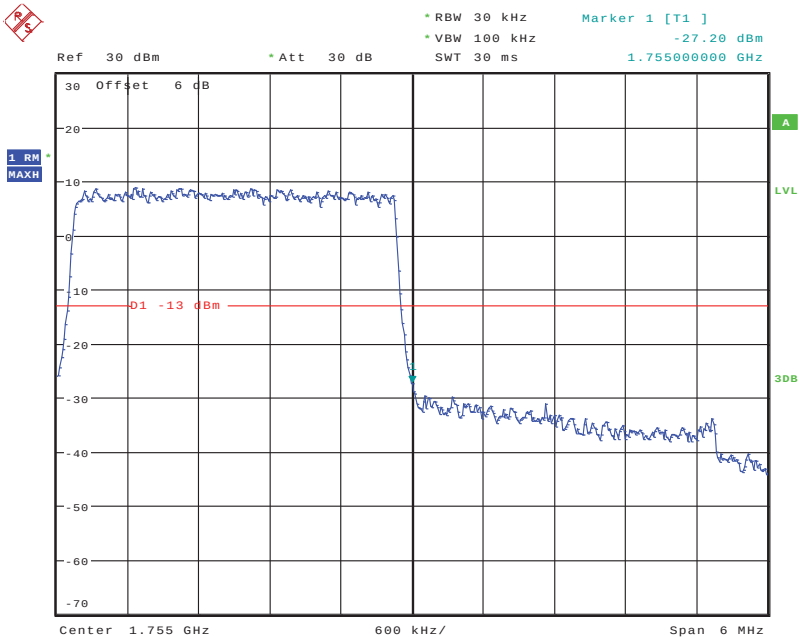
Date: 18.SEP.2019 21:28:28

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



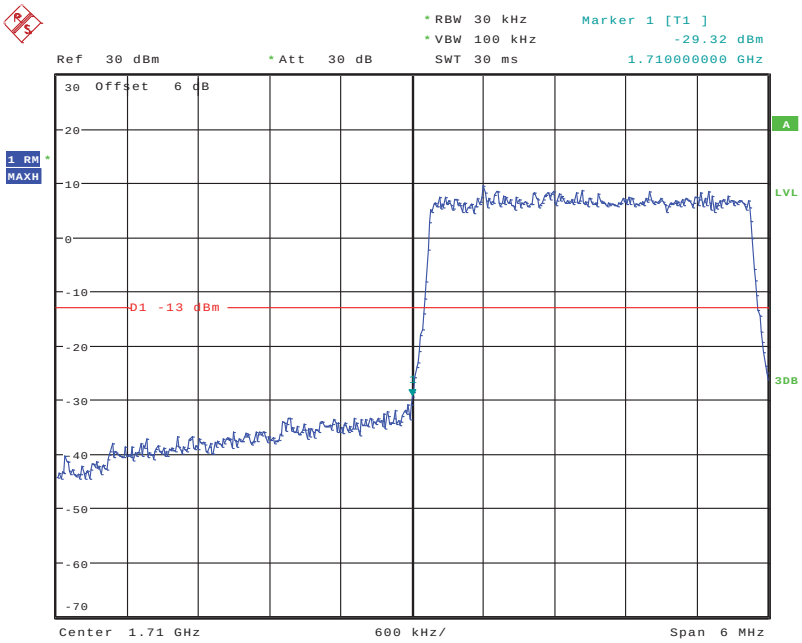
Date: 18.SEP.2019 21:28:58

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



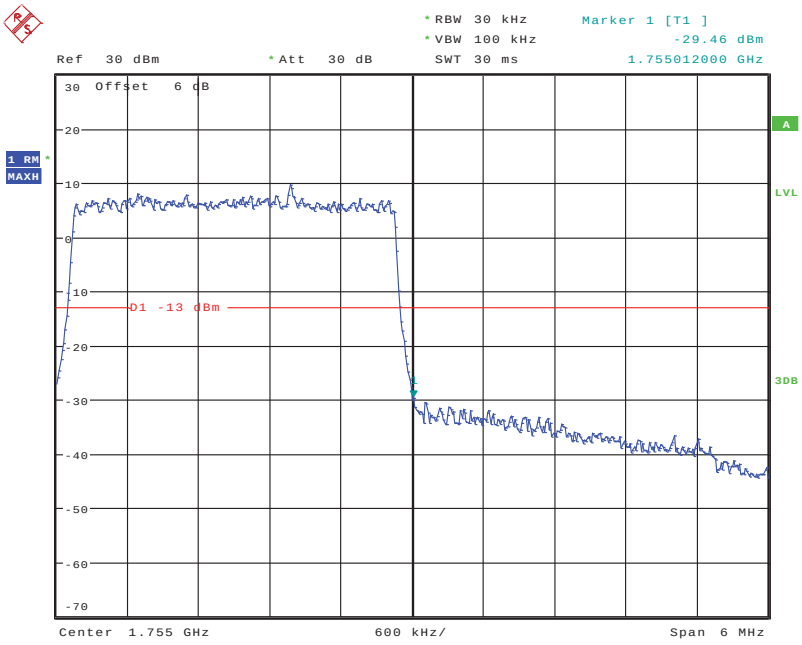
Date: 18.SEP.2019 21:29:55

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



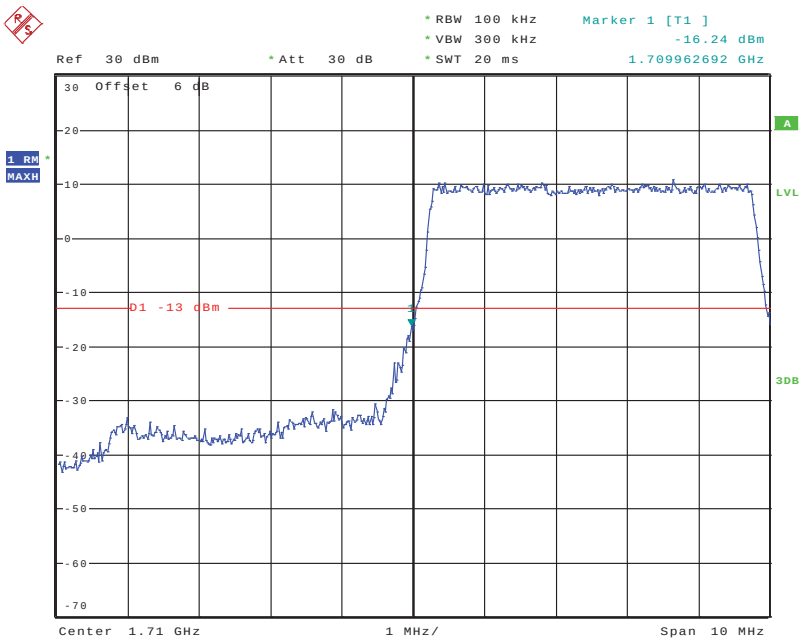
Date: 18.SEP.2019 21:29:26

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



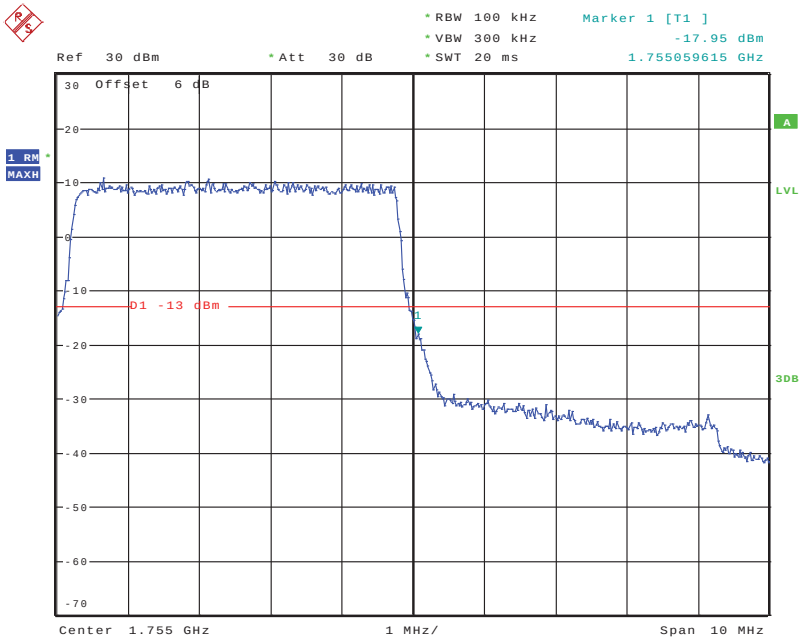
Date: 18.SEP.2019 21:30:17

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



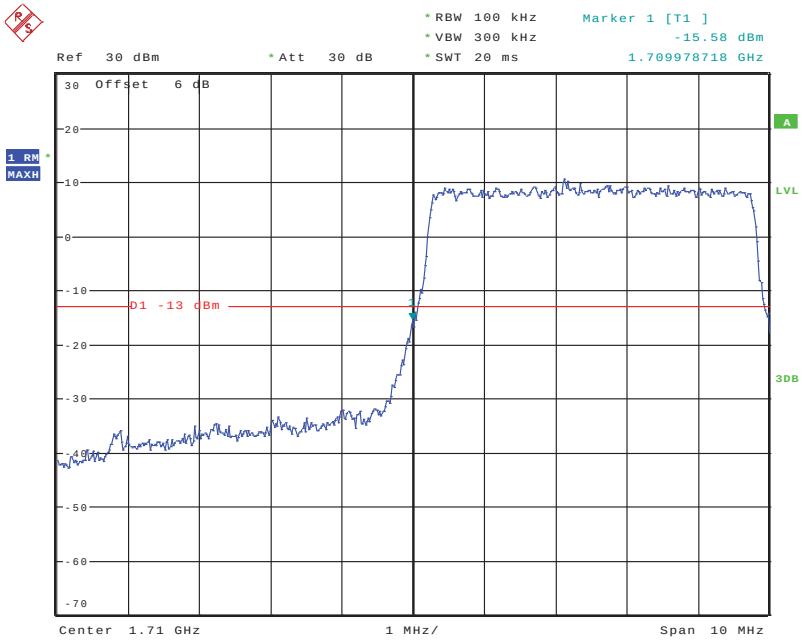
Date: 18.SEP.2019 23:37:03

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



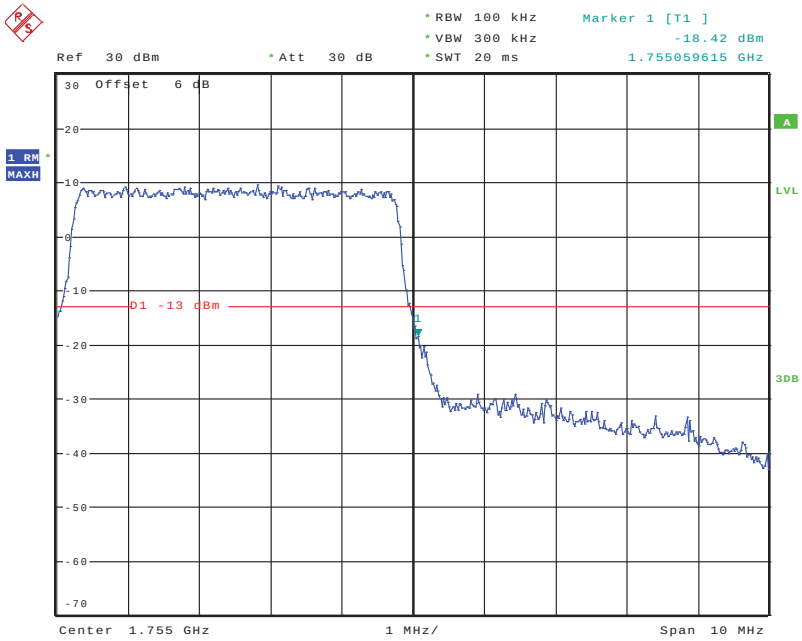
Date: 18.SEP.2019 23:35:46

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



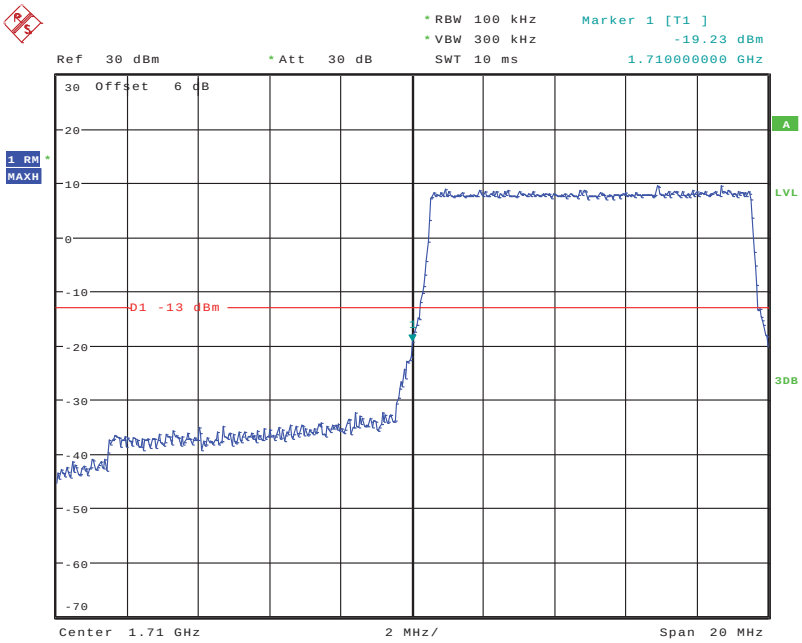
Date: 18.SEP.2019 23:37:35

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



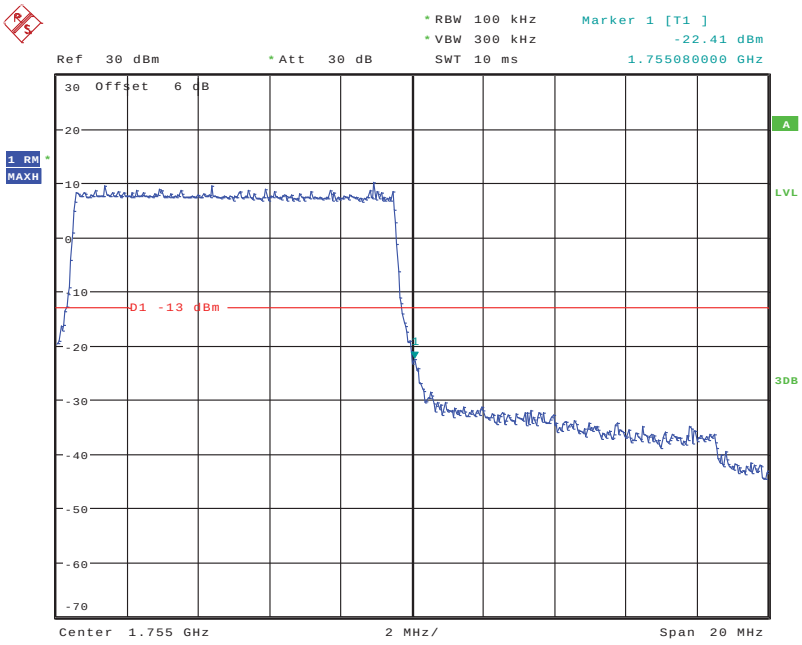
Date: 18.SEP.2019 23:35:14

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



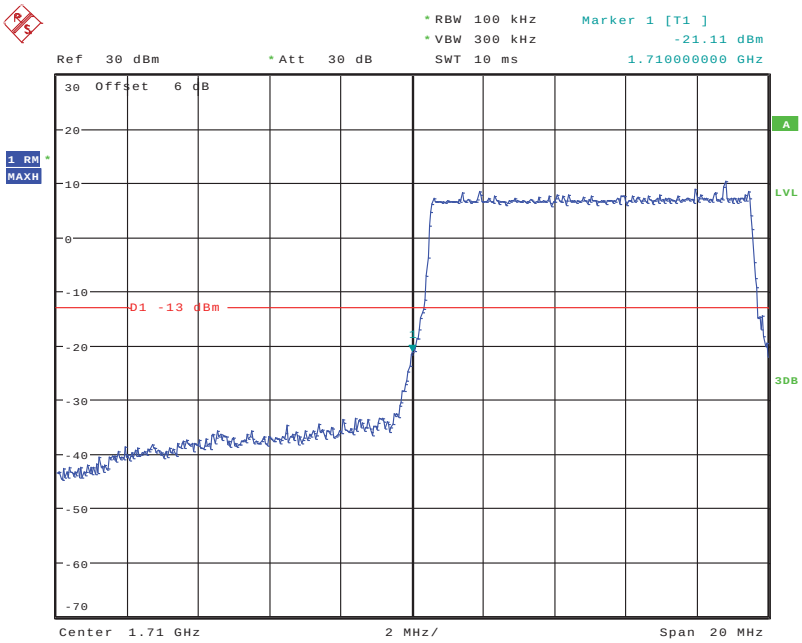
Date: 18.SEP.2019 21:32:59

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



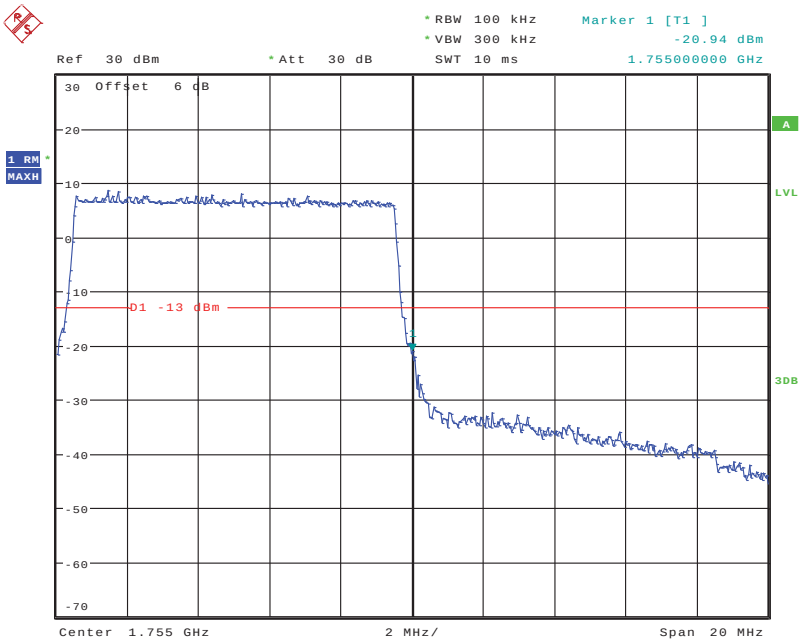
Date: 18.SEP.2019 21:33:52

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



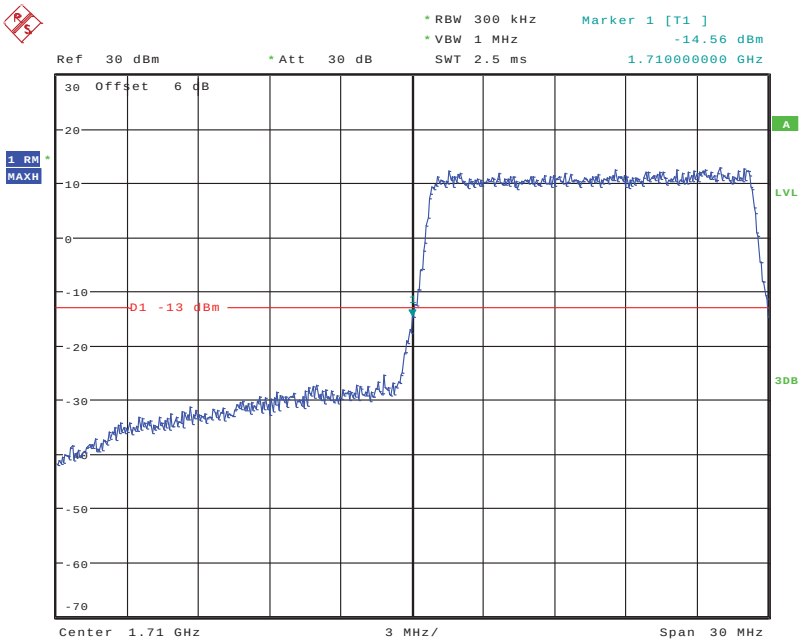
Date: 18.SEP.2019 21:33:25

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



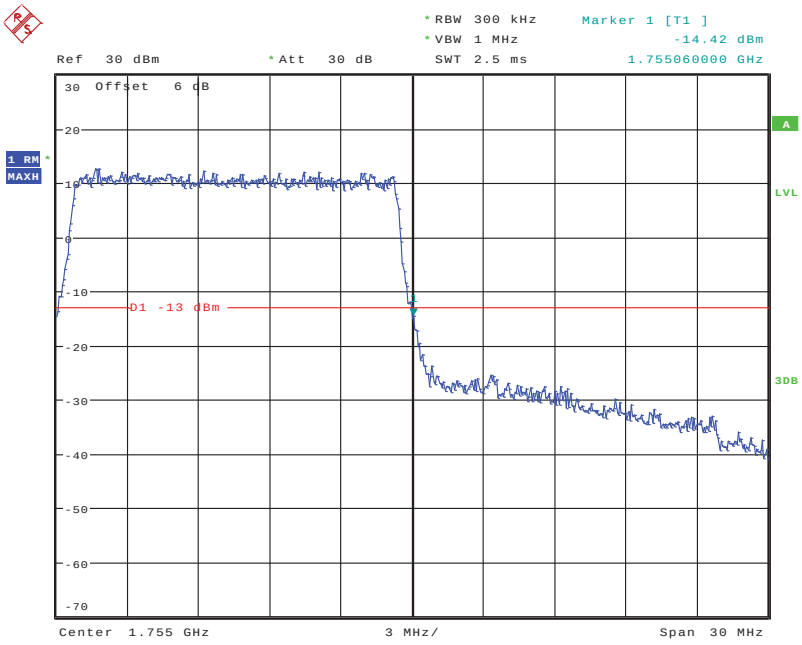
Date: 18.SEP.2019 21:34:18

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



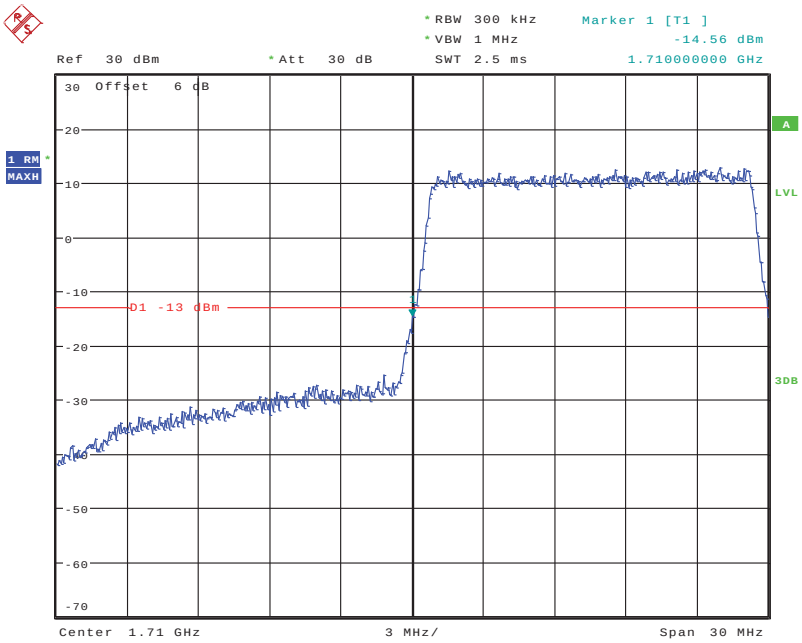
Date: 18.SEP.2019 21:35:26

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



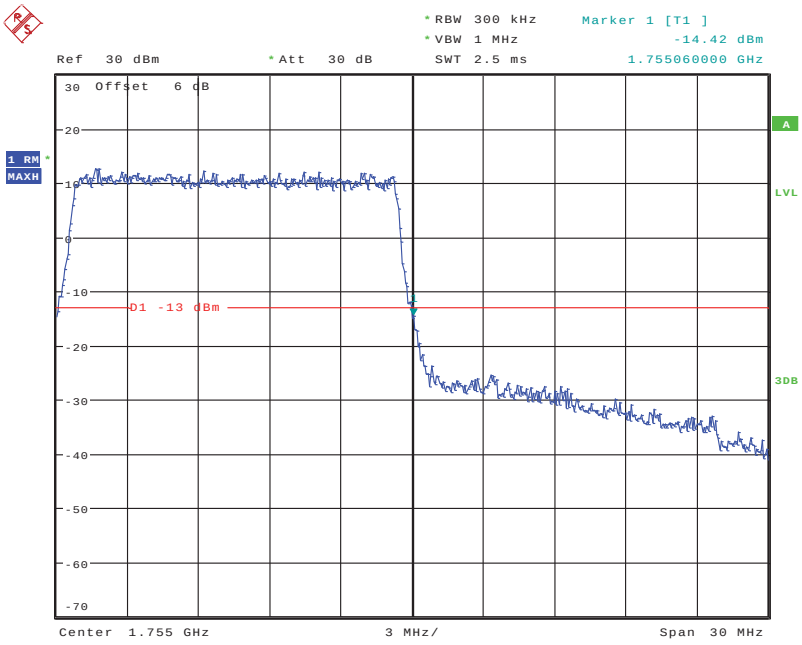
Date: 18.SEP.2019 21:36:24

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



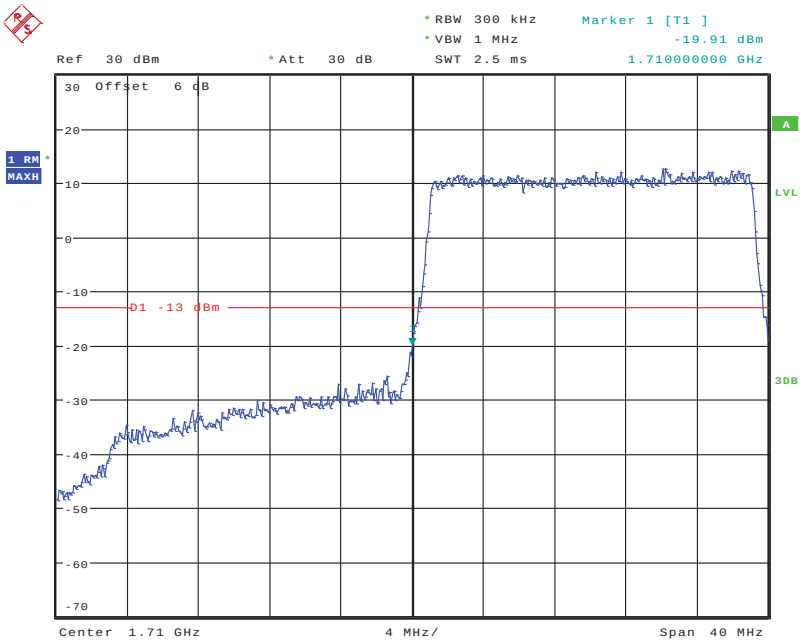
Date: 18.SEP.2019 21:35:26

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



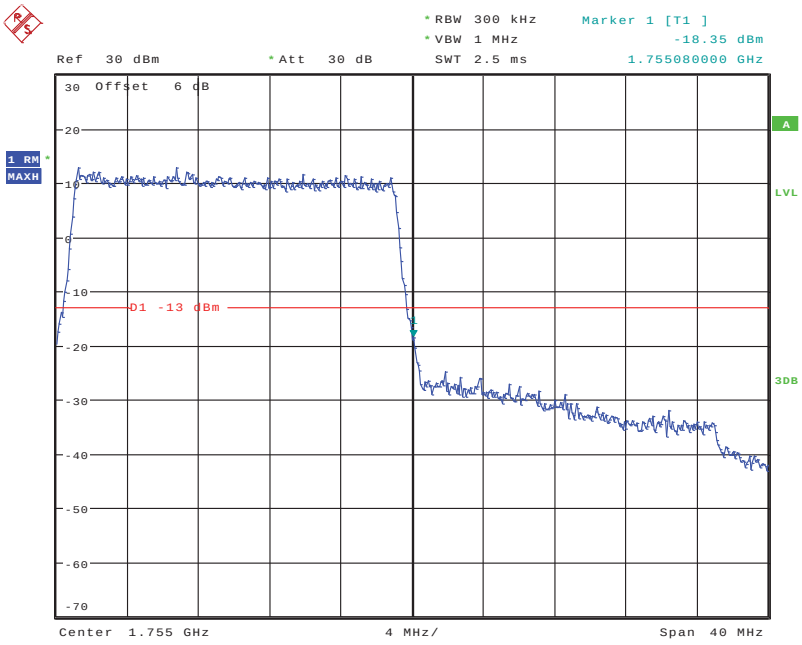
Date: 18.SEP.2019 21:36:24

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



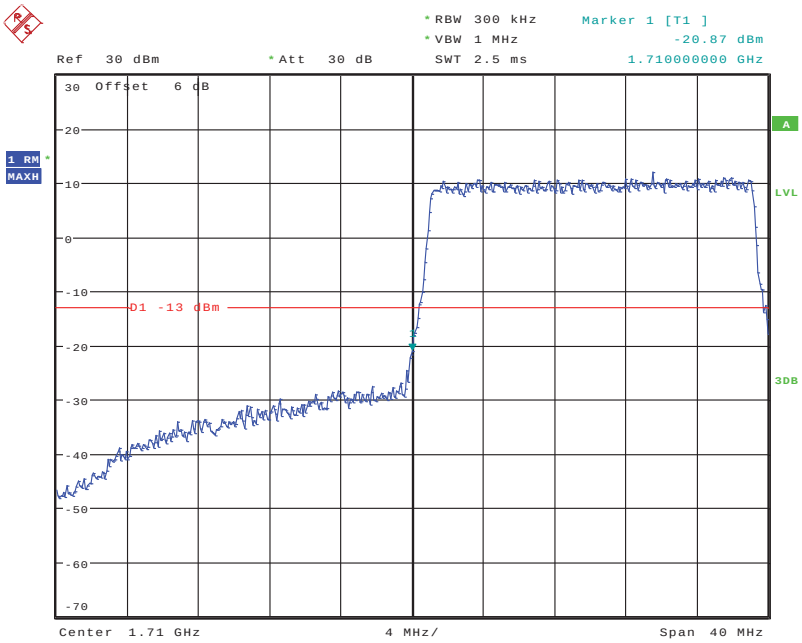
Date: 18.SEP.2019 21:37:04

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



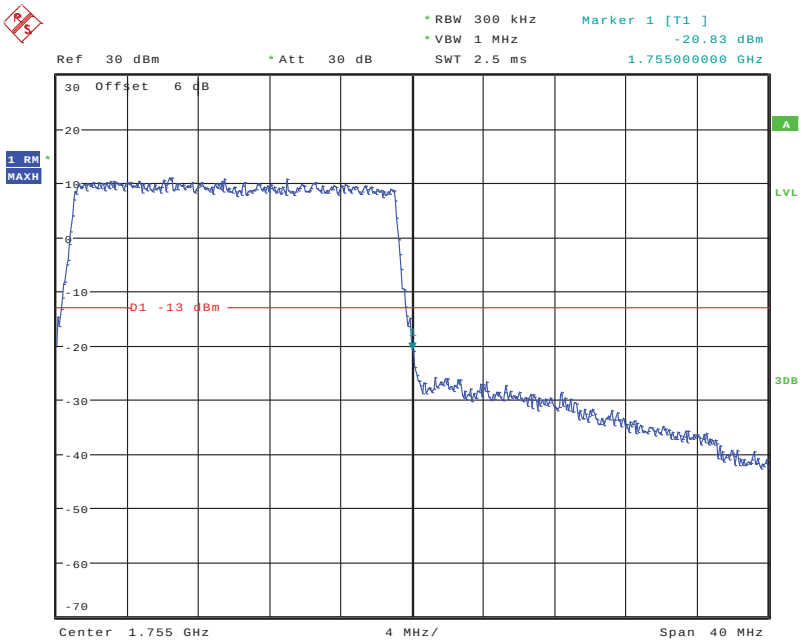
Date: 18.SEP.2019 21:38:01

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



Date: 18.SEP.2019 21:37:35

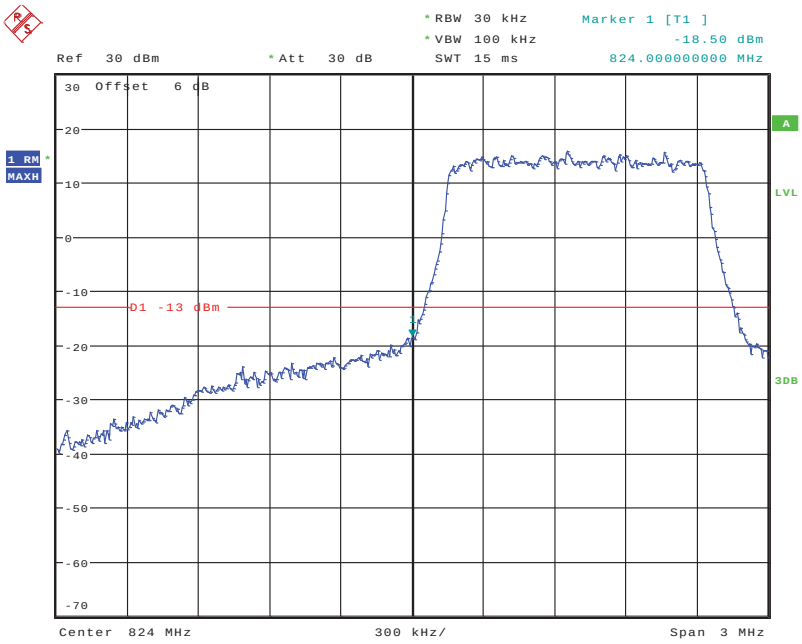
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 18.SEP.2019 21:38:35

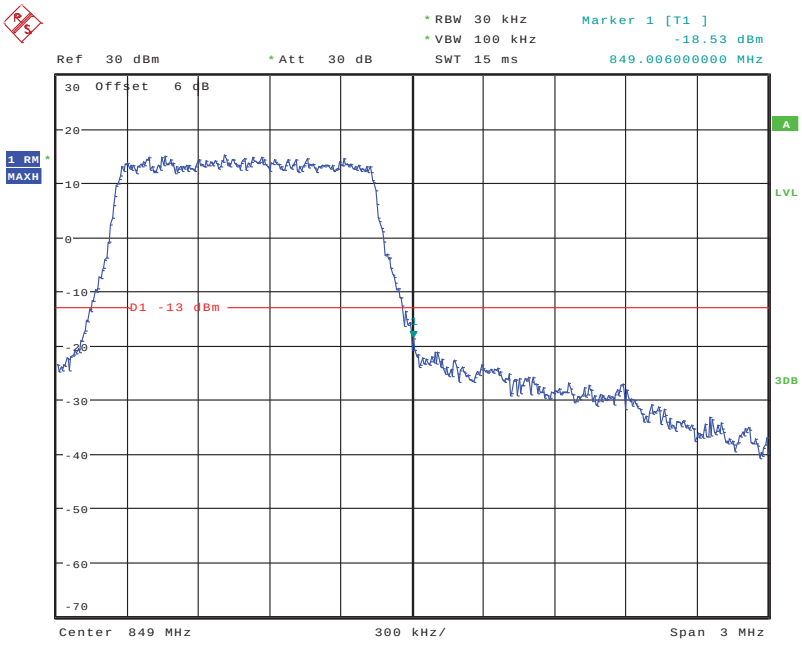
Band 5:

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



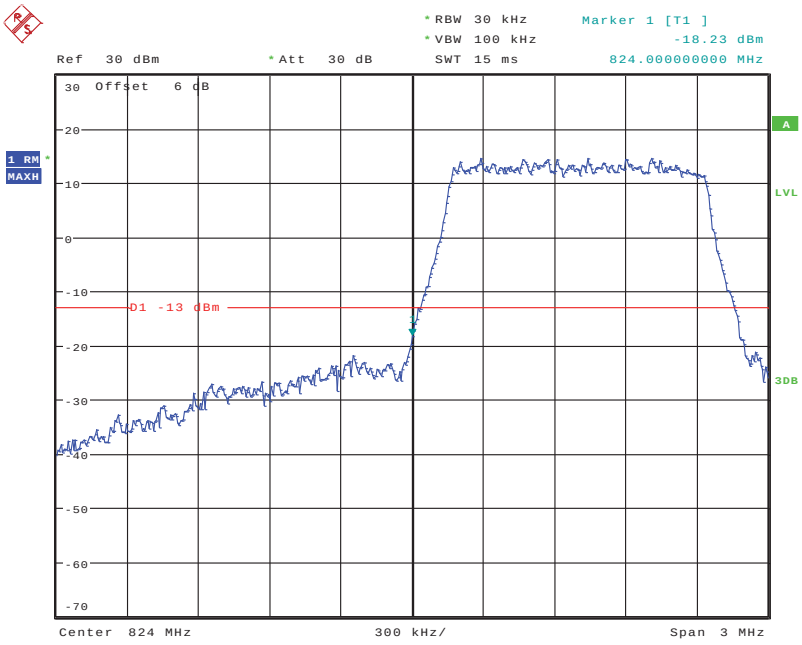
Date: 18.SEP.2019 21:39:11

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



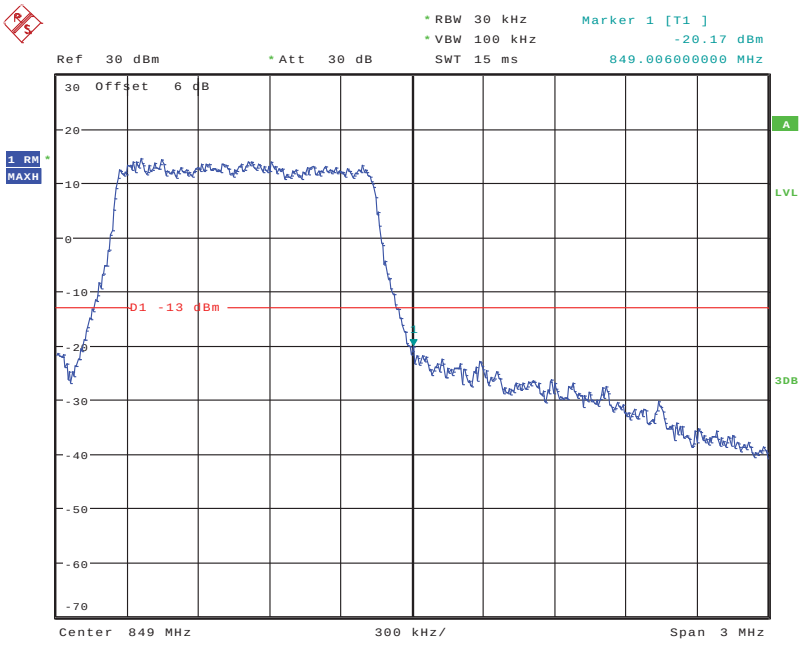
Date: 18.SEP.2019 21:40:01

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



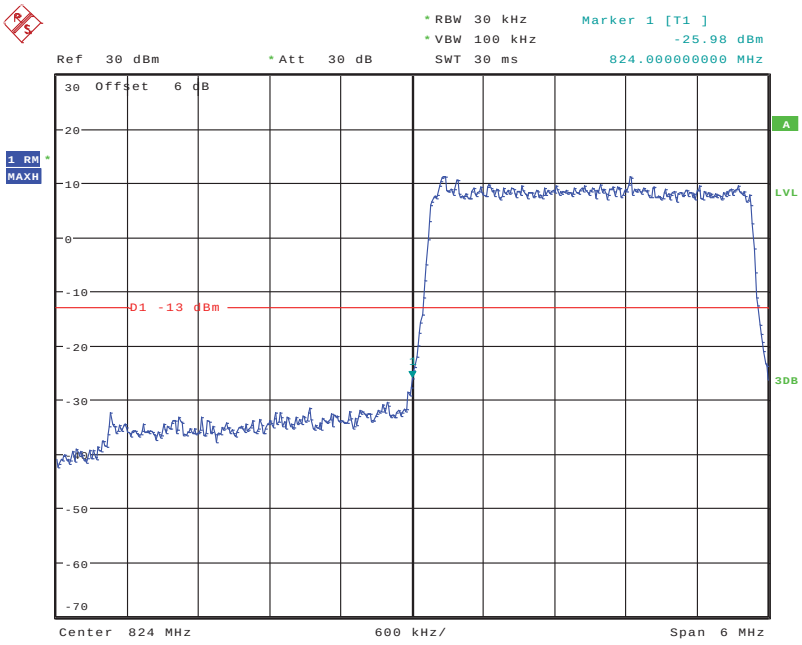
Date: 18.SEP.2019 21:39:36

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



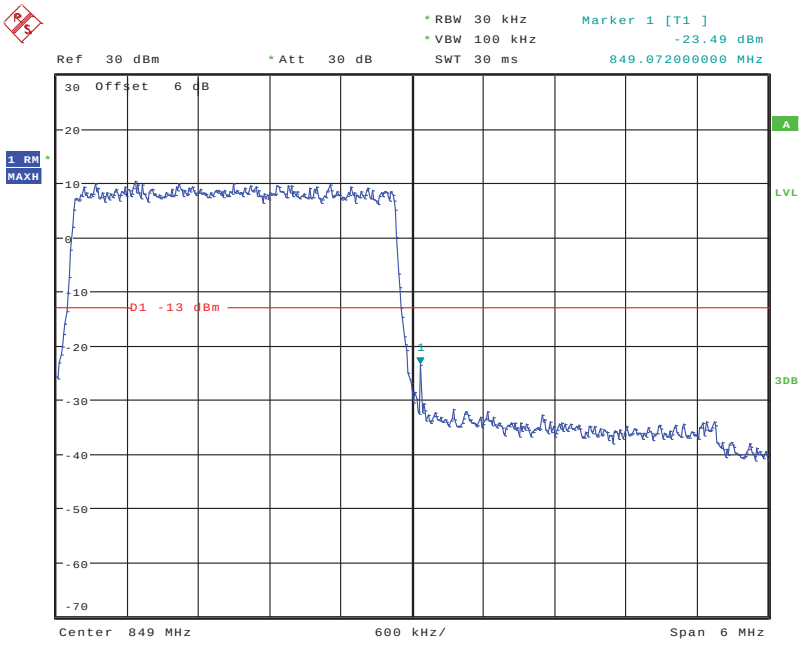
Date: 18.SEP.2019 21:40:35

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



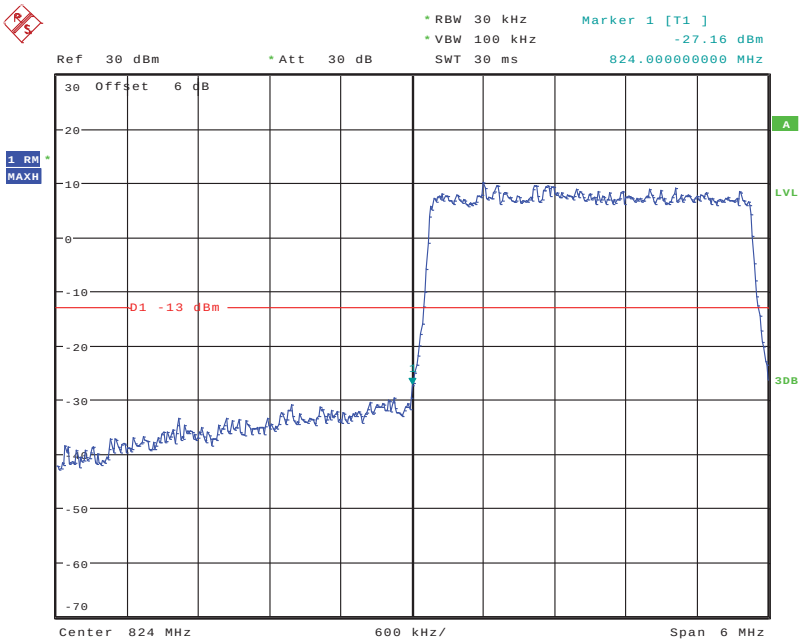
Date: 18.SEP.2019 21:41:03

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



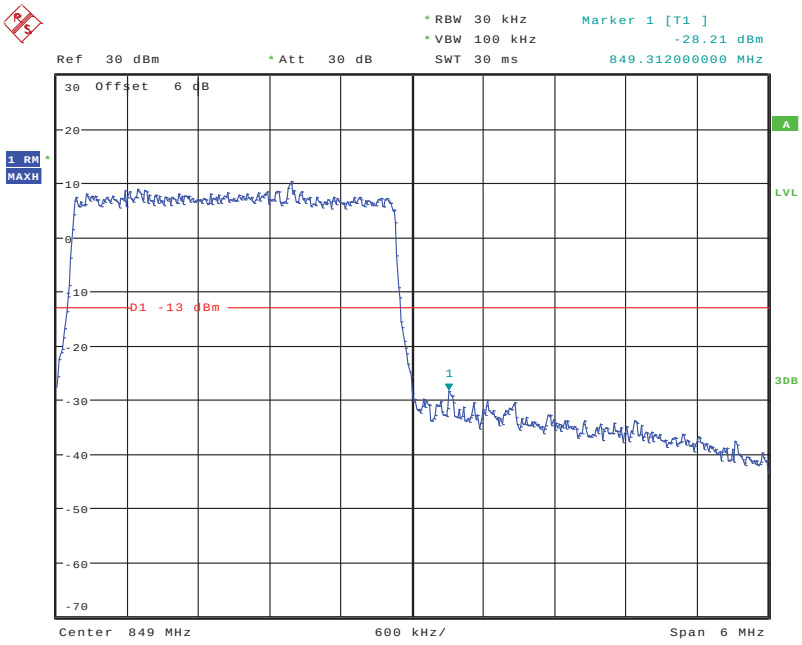
Date: 18.SEP.2019 21:42:00

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



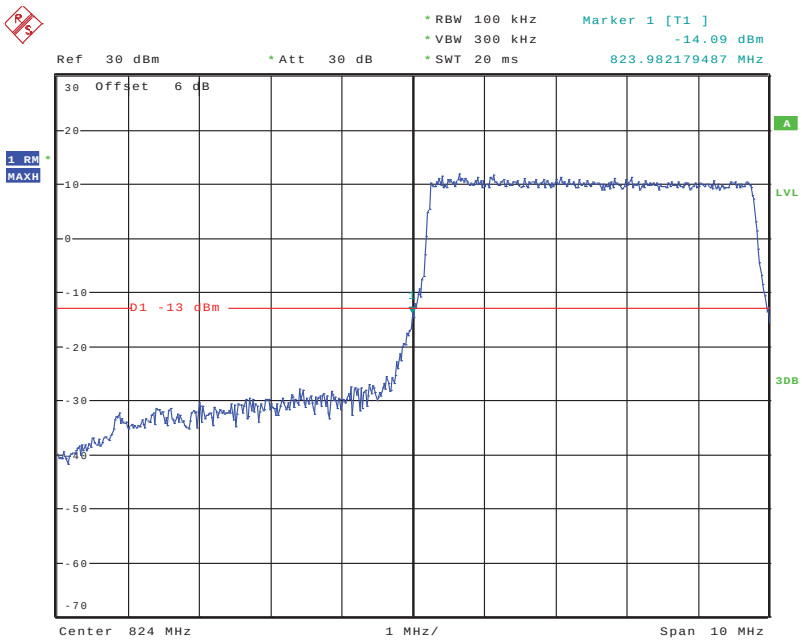
Date: 18.SEP.2019 21:41:31

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



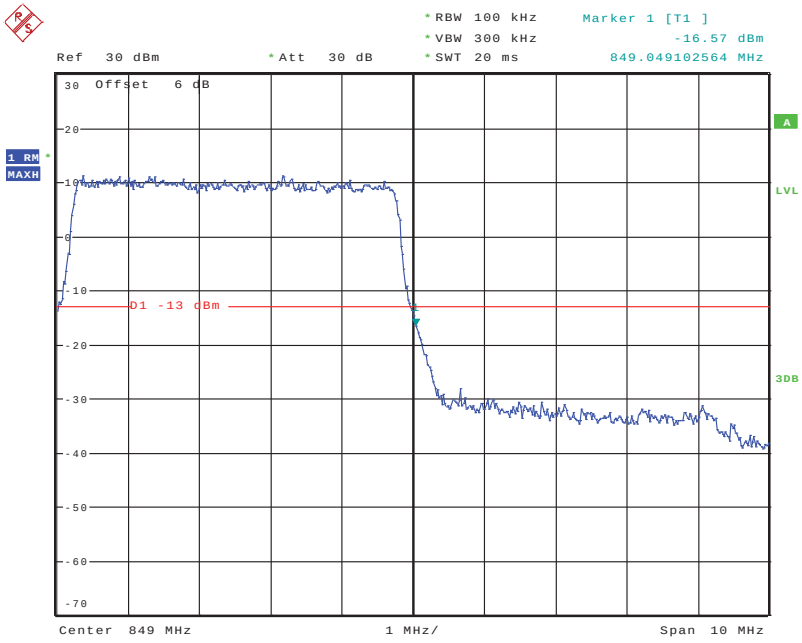
Date: 18.SEP.2019 21:42:25

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



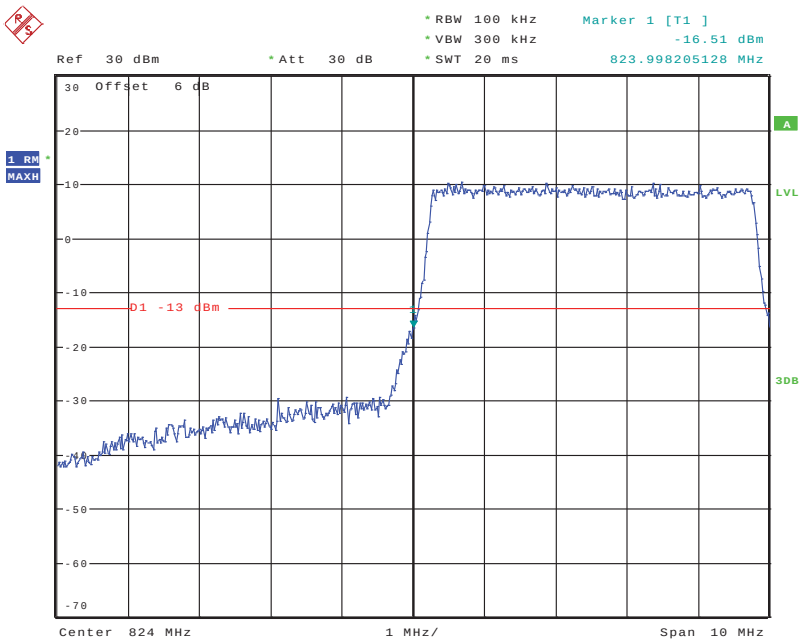
Date: 18.SEP.2019 23:43:36

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



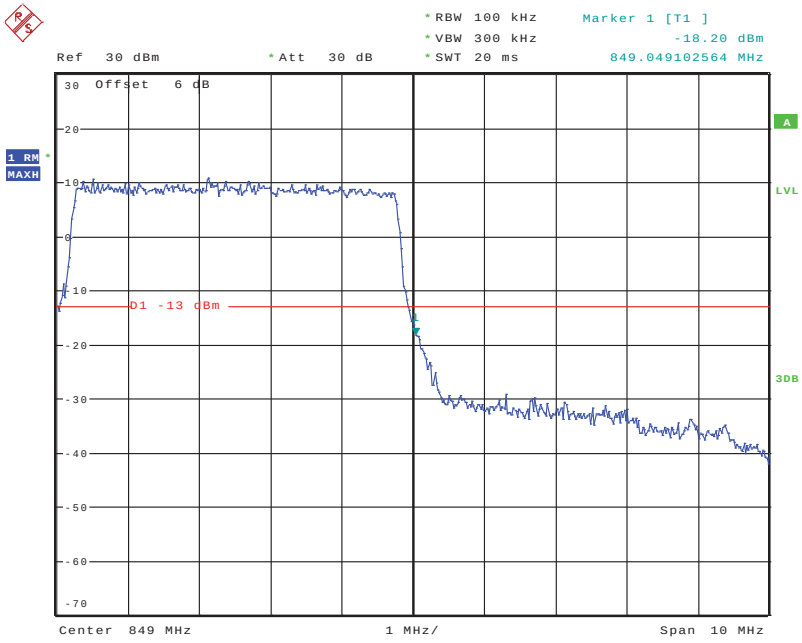
Date: 18.SEP.2019 23:42:39

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



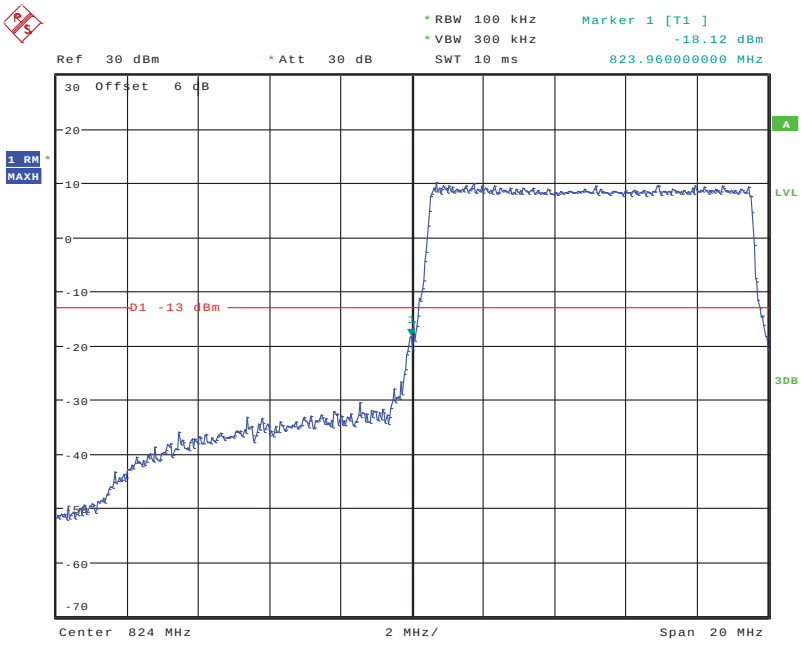
Date: 18.SEP.2019 23:44:00

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



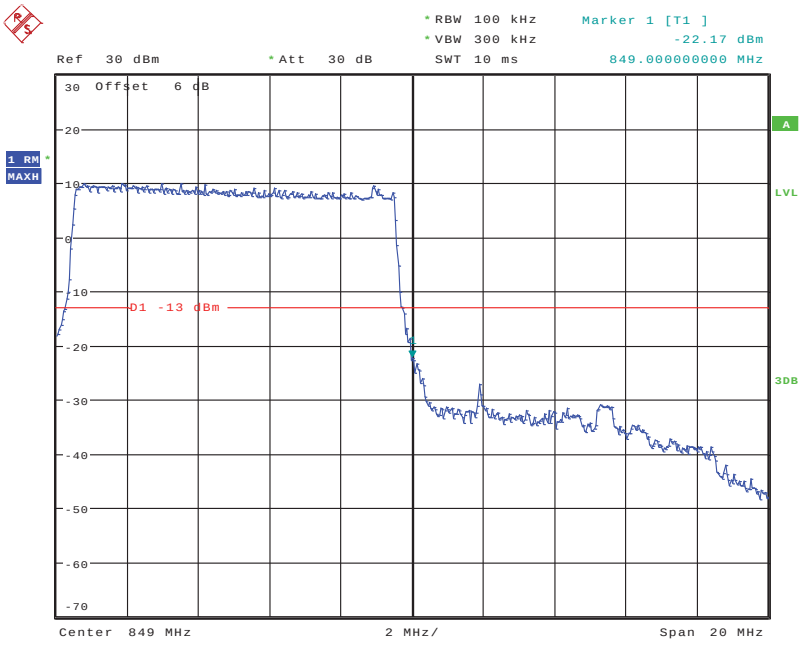
Date: 18.SEP.2019 23:42:13

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



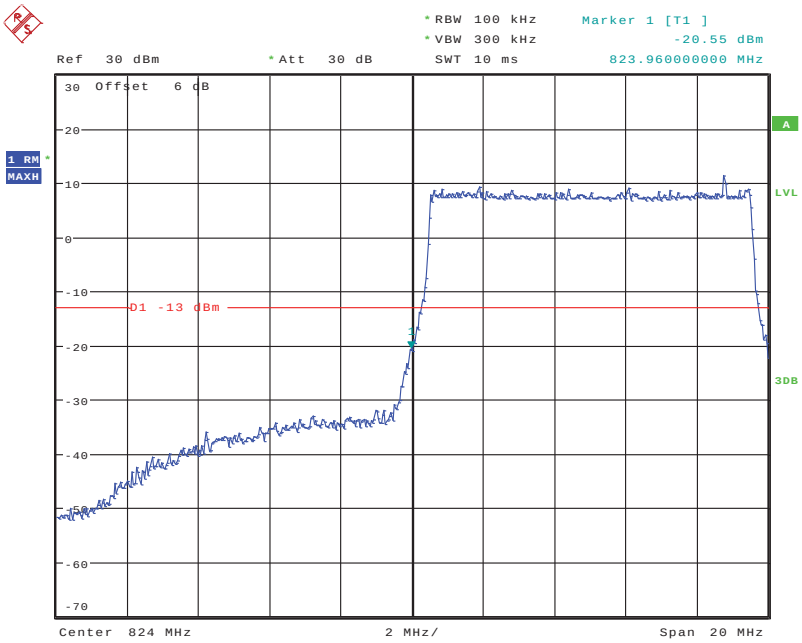
Date: 18.SEP.2019 21:44:58

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



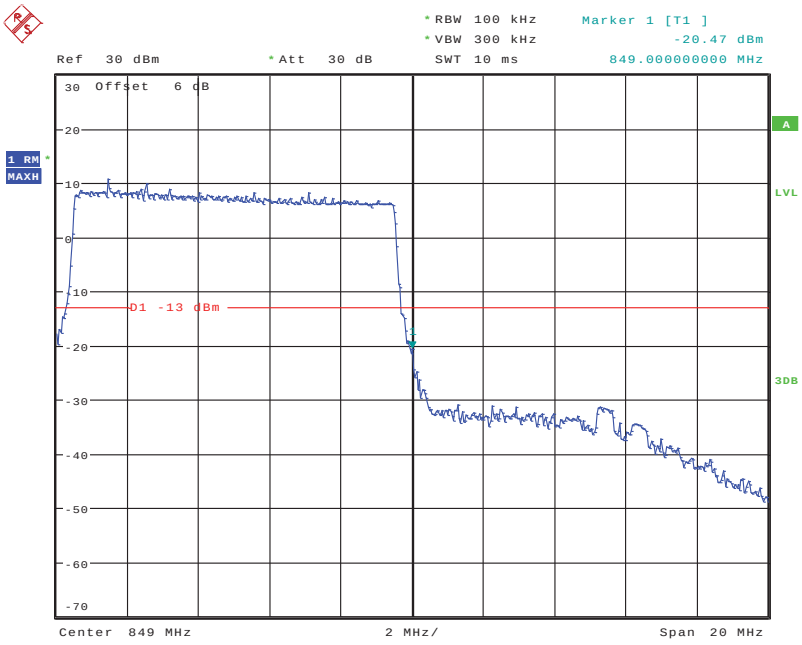
Date: 18.SEP.2019 21:45:54

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



Date: 18.SEP.2019 21:45:24

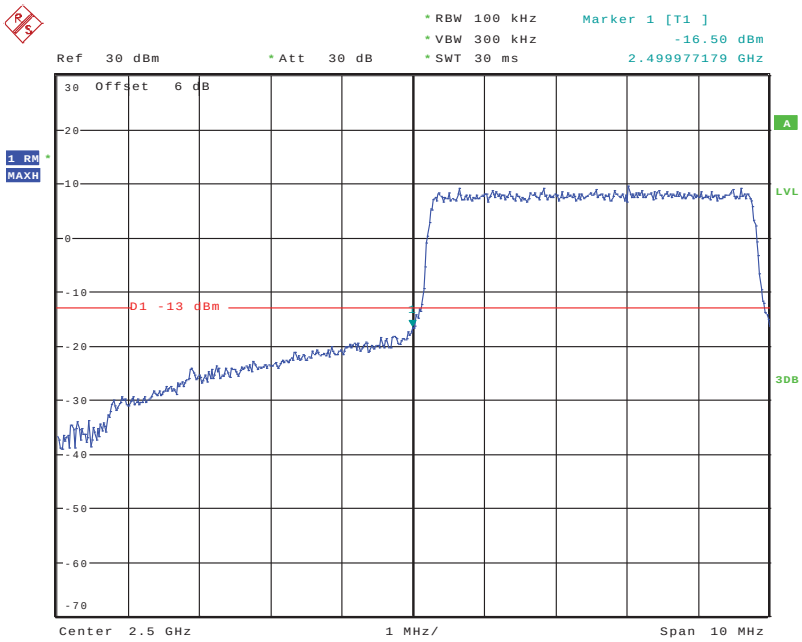
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 18.SEP.2019 21:46:17

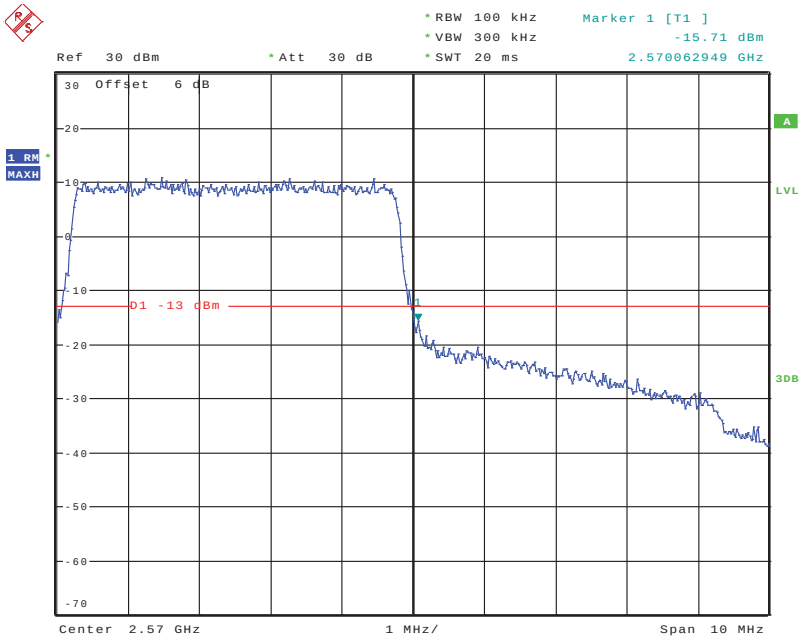
Band 7:

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



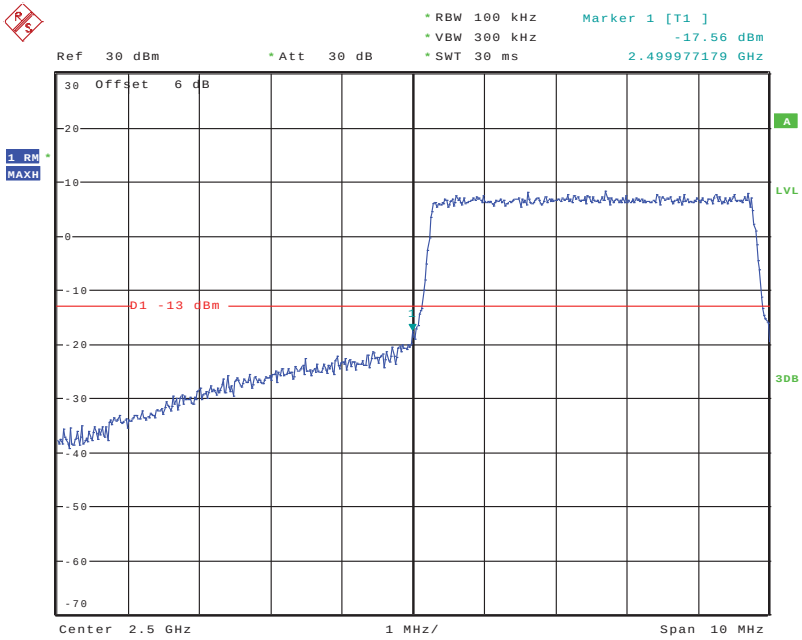
Date: 18.SEP.2019 23:46:33

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



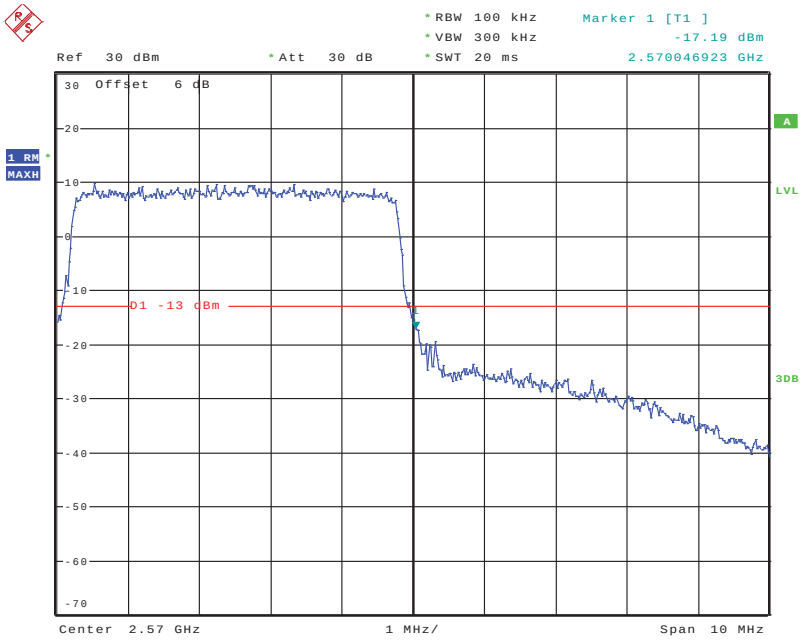
Date: 18.SEP.2019 23:45:39

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



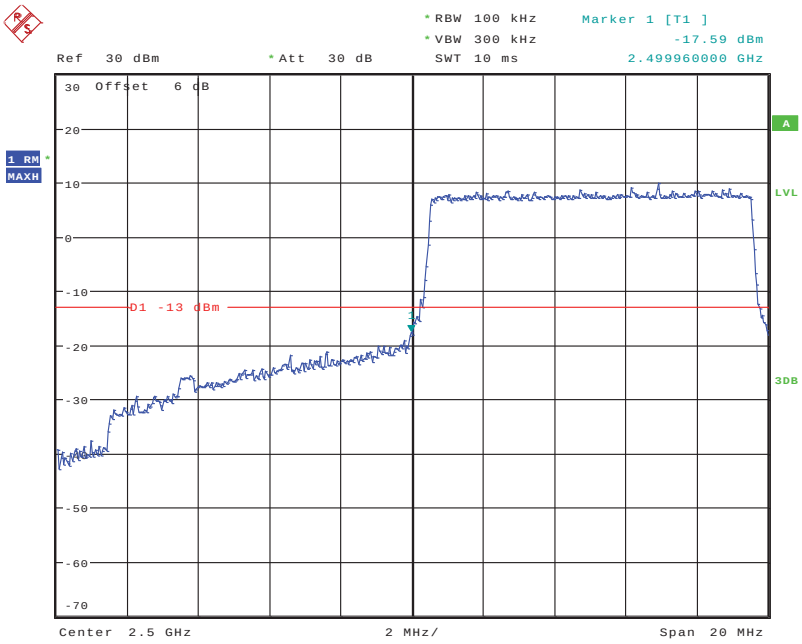
Date: 18.SEP.2019 23:47:04

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



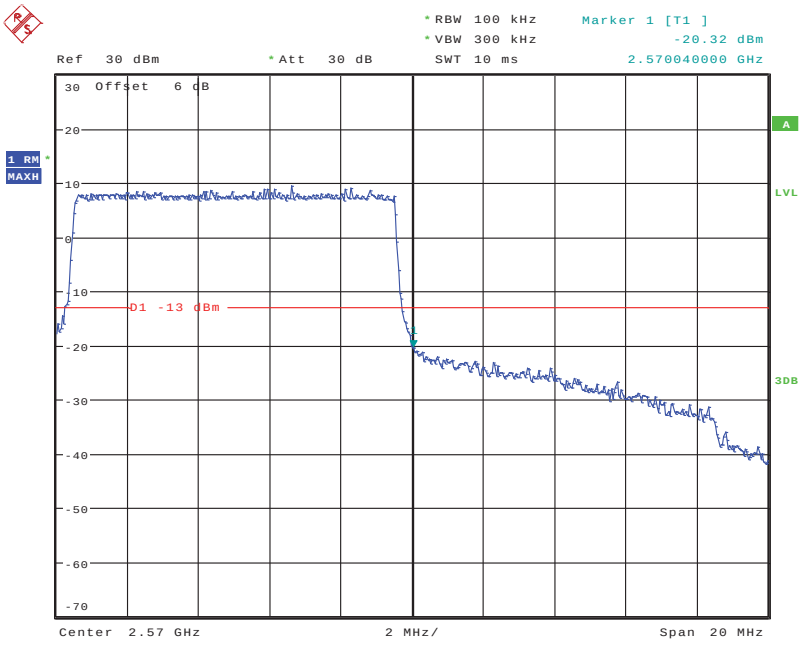
Date: 18.SEP.2019 23:45:14

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



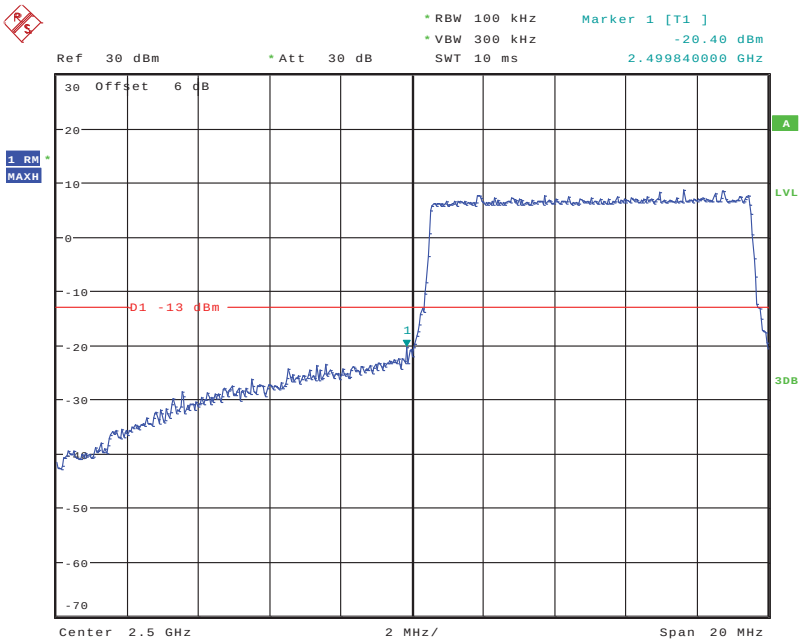
Date: 18.SEP.2019 21:48:47

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



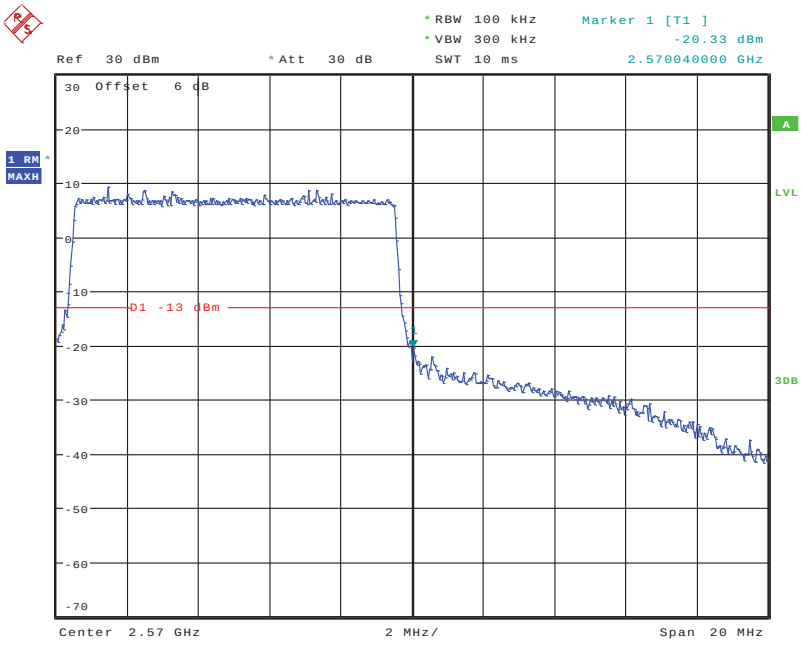
Date: 18.SEP.2019 21:49:43

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



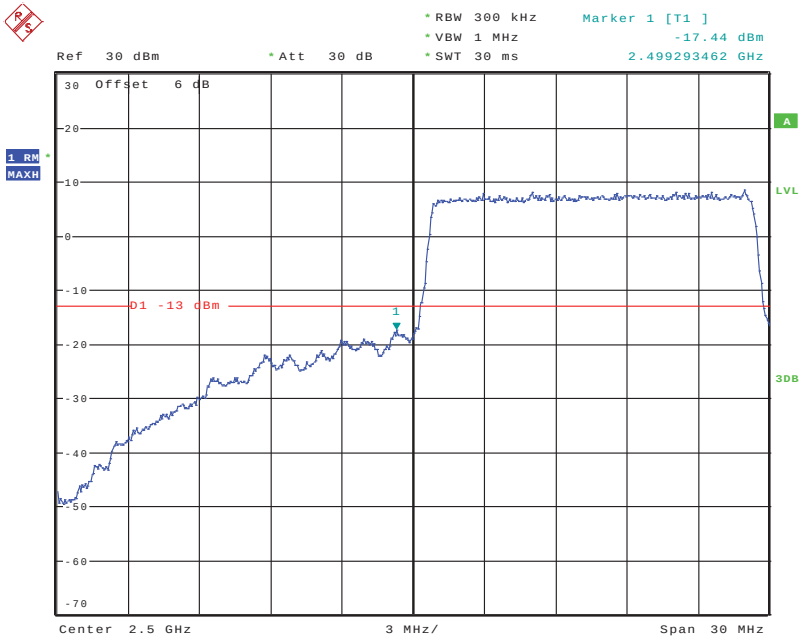
Date: 18.SEP.2019 21:49:16

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



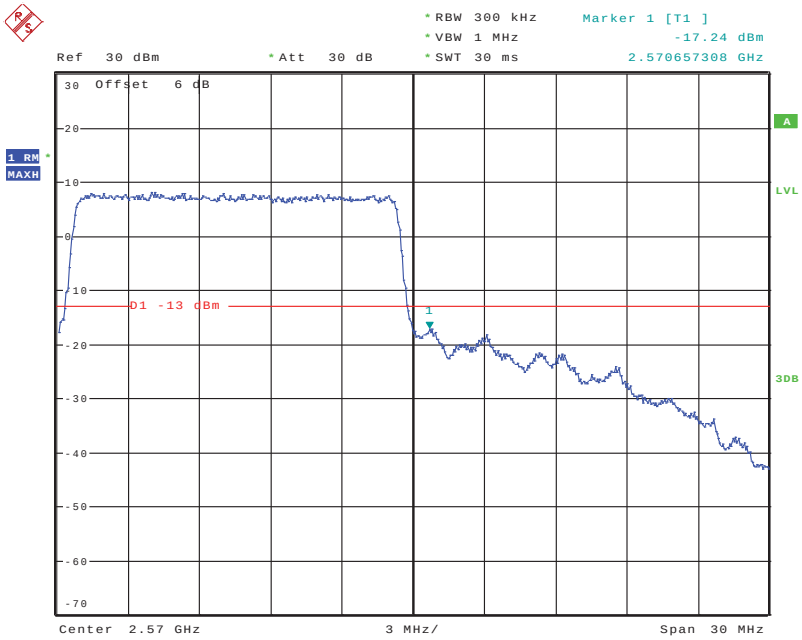
Date: 18.SEP.2019 21:50:15

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



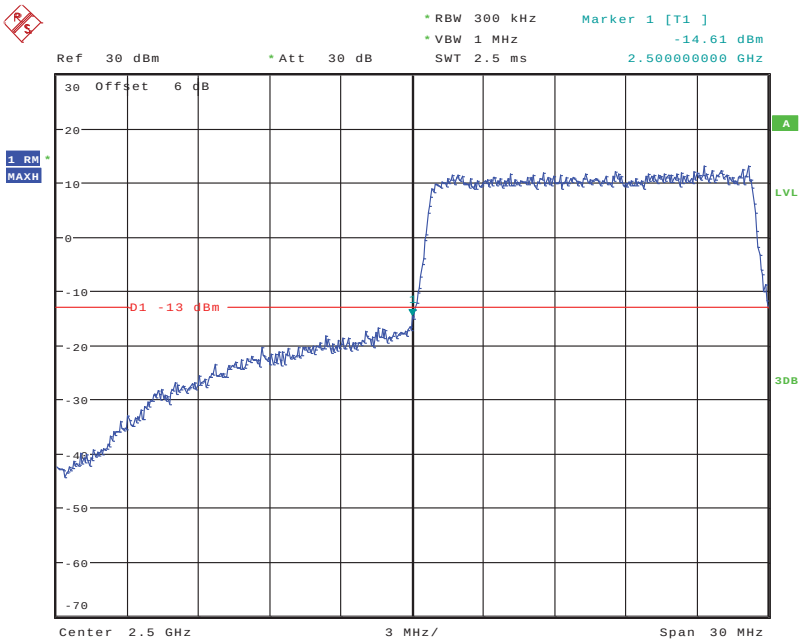
Date: 18.SEP.2019 23:48:18

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



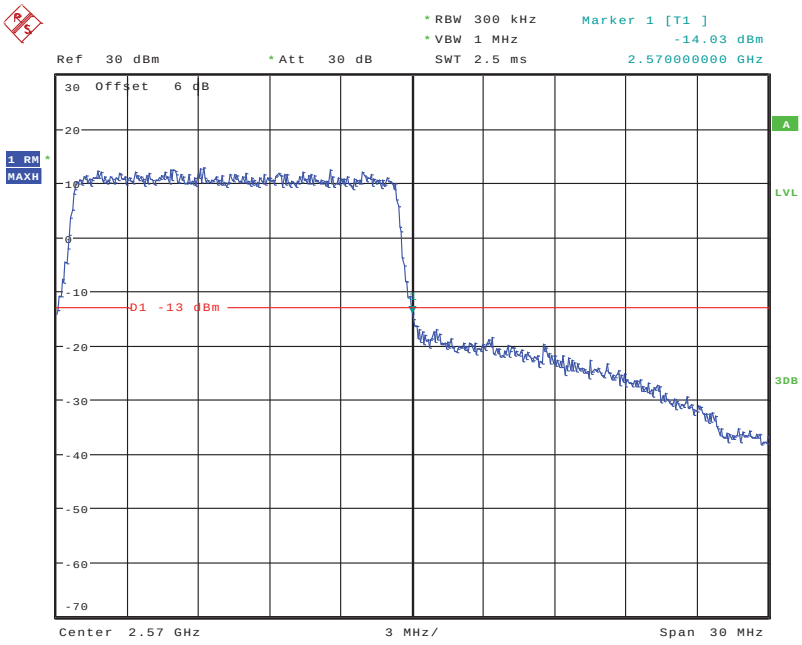
Date: 18.SEP.2019 23:48:57

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



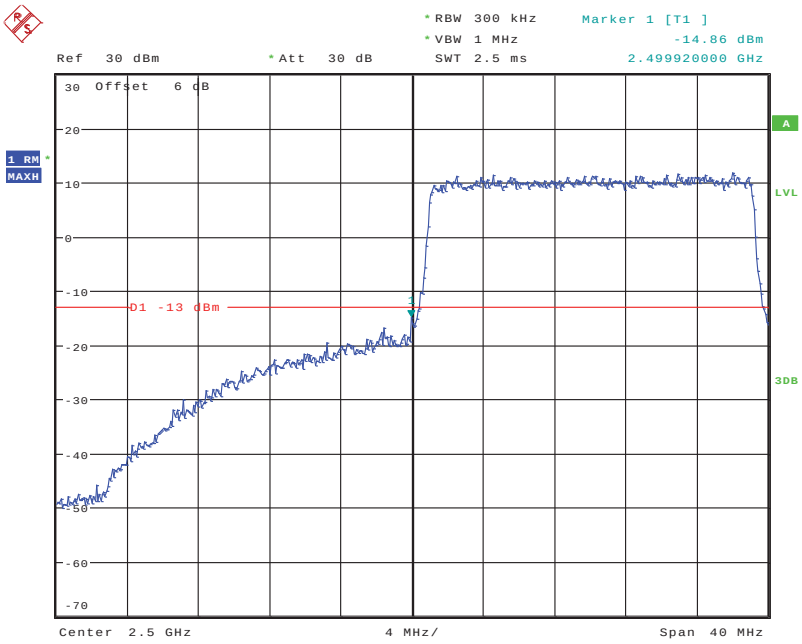
Date: 18.SEP.2019 21:51:17

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



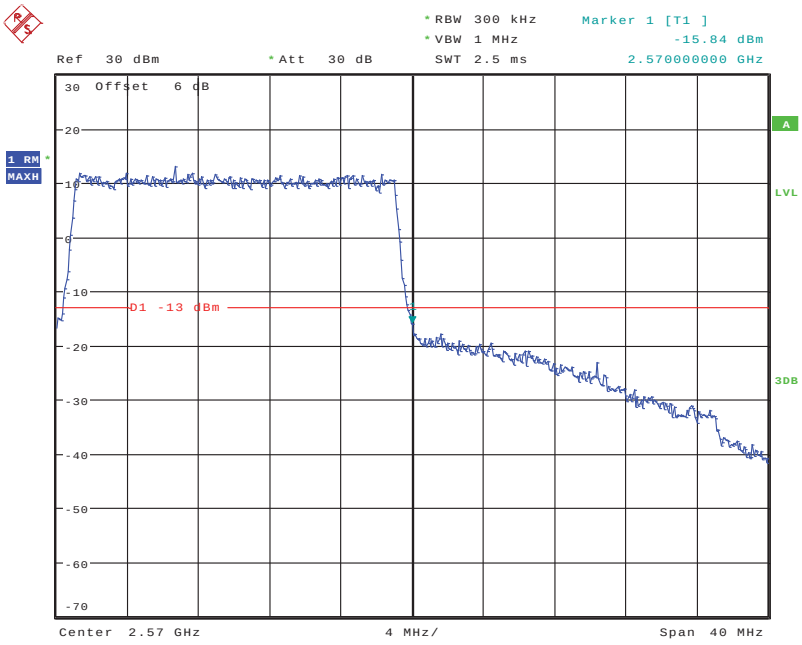
Date: 18.SEP.2019 21:52:15

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



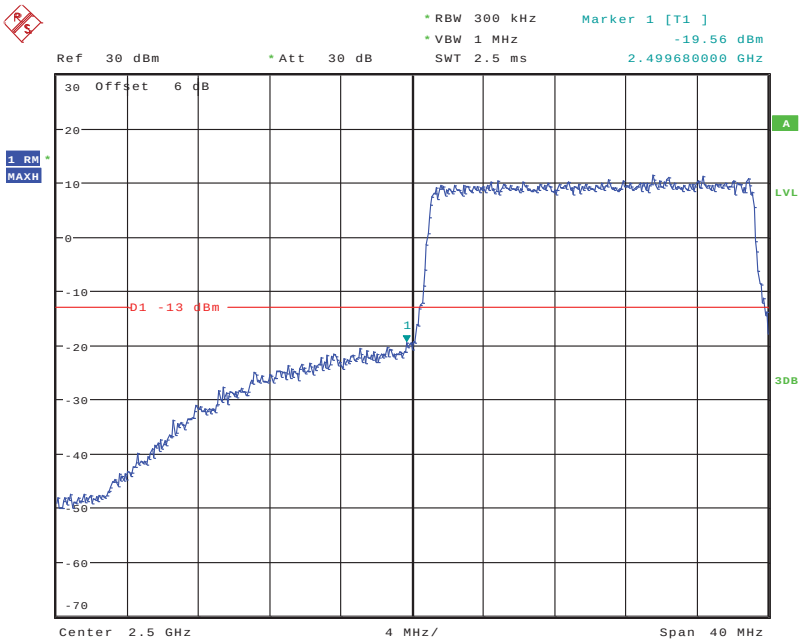
Date: 18.SEP.2019 21:52:49

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



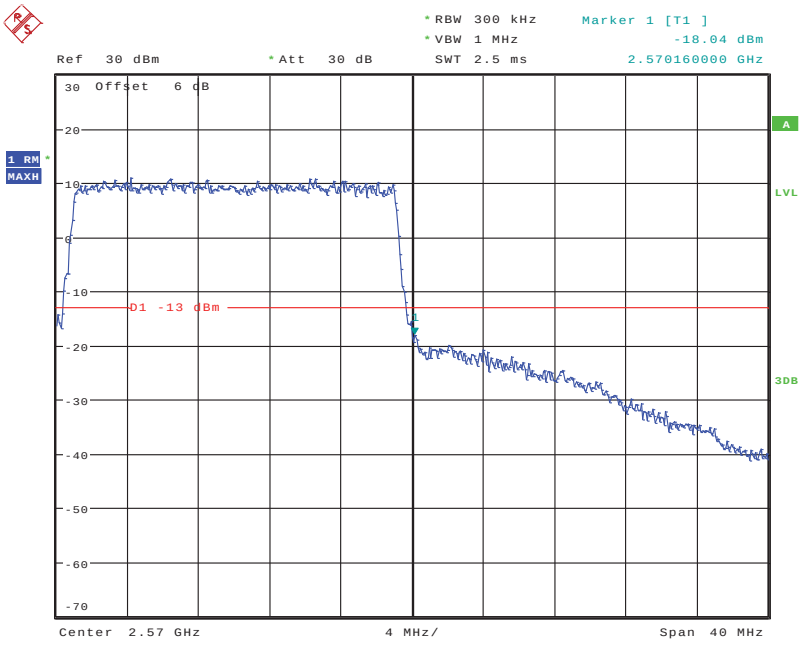
Date: 18.SEP.2019 21:53:56

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



Date: 18.SEP.2019 21:53:20

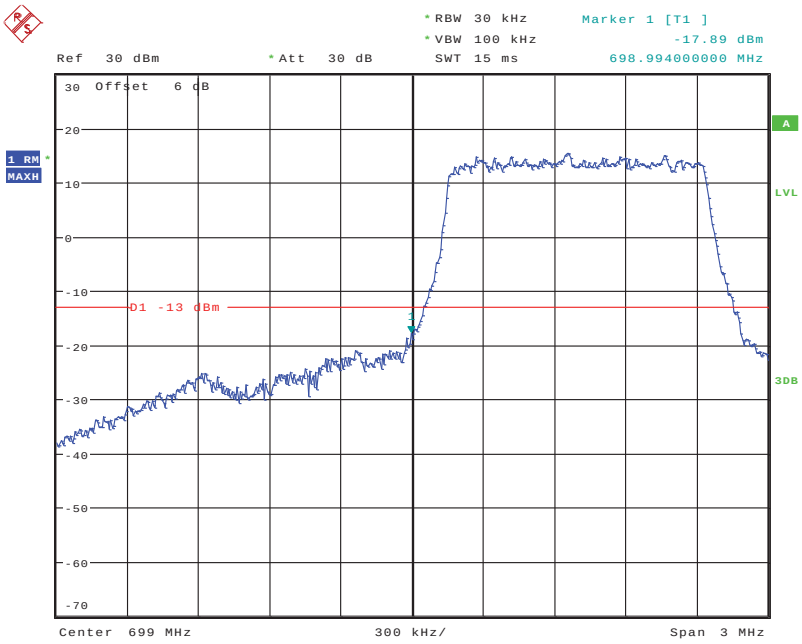
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 18.SEP.2019 21:54:27

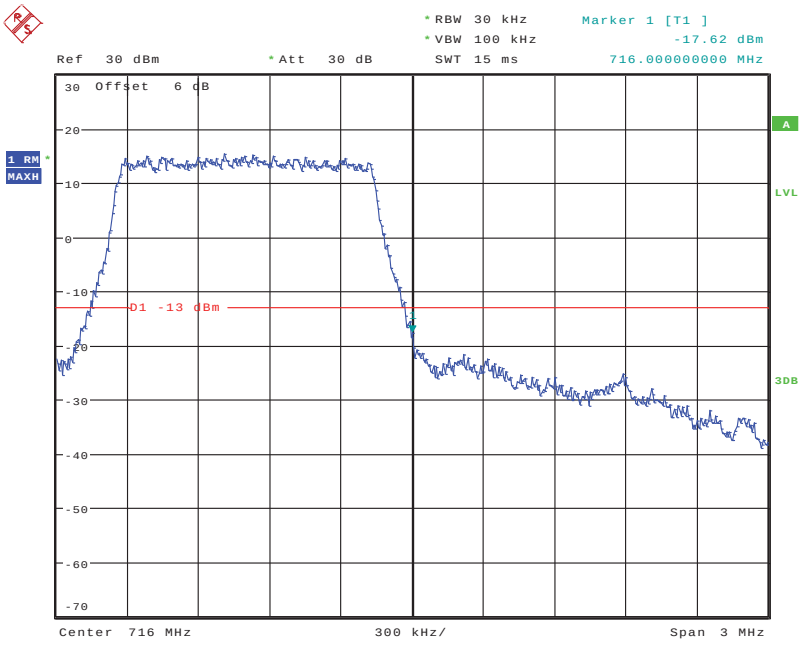
Band 12:

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



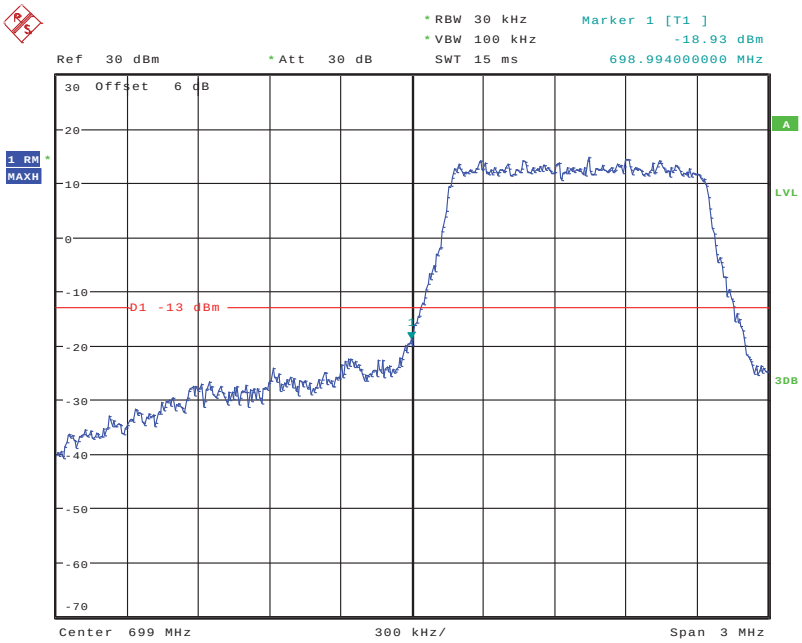
Date: 18.SEP.2019 21:55:01

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



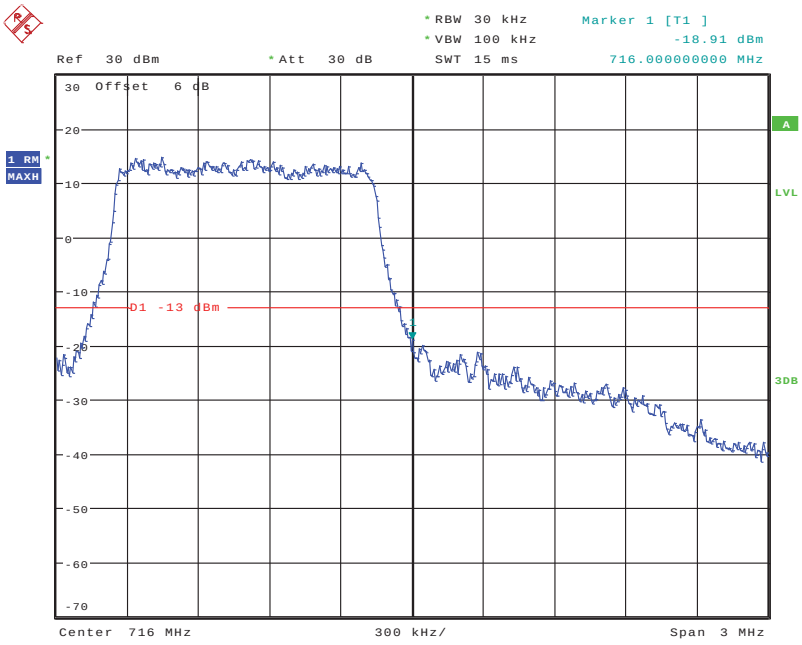
Date: 18.SEP.2019 21:56:03

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



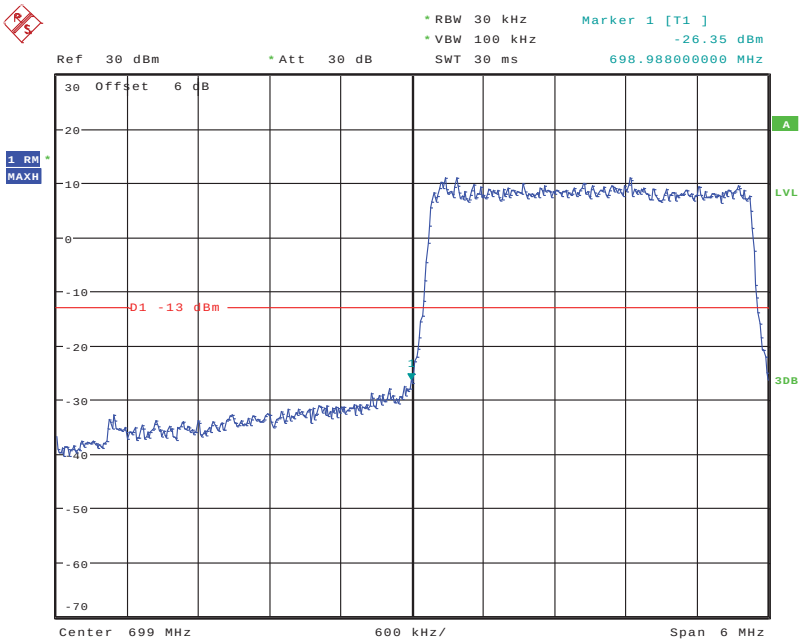
Date: 18.SEP.2019 21:55:26

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



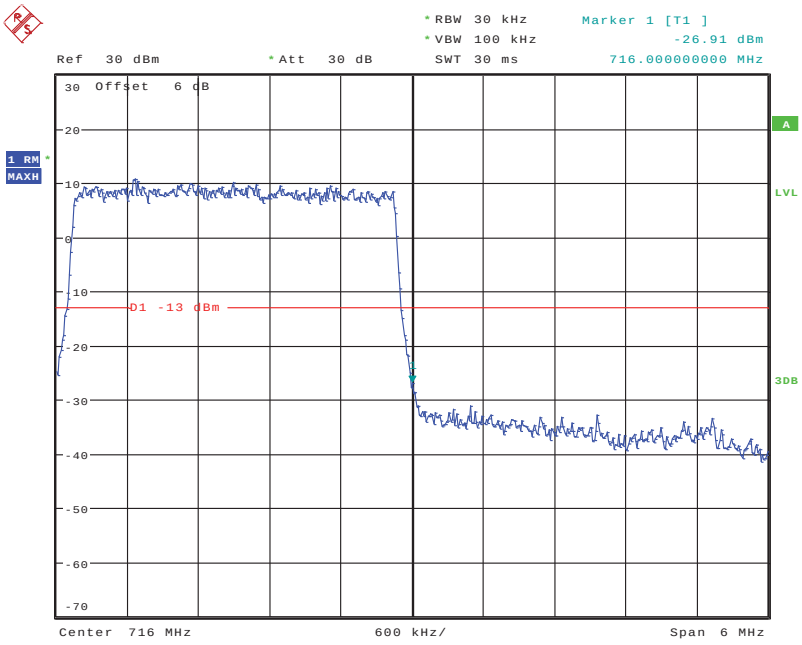
Date: 18.SEP.2019 21:56:31

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



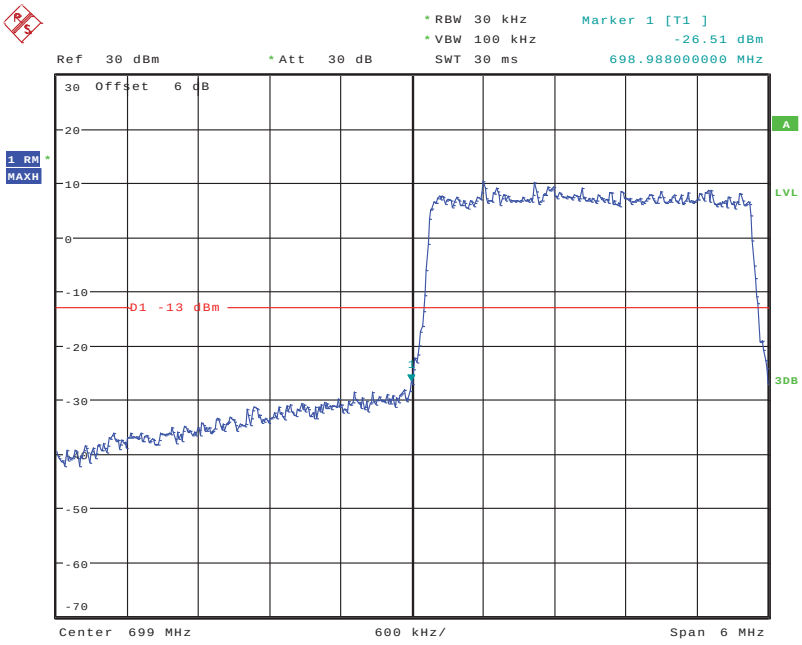
Date: 18.SEP.2019 21:57:02

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



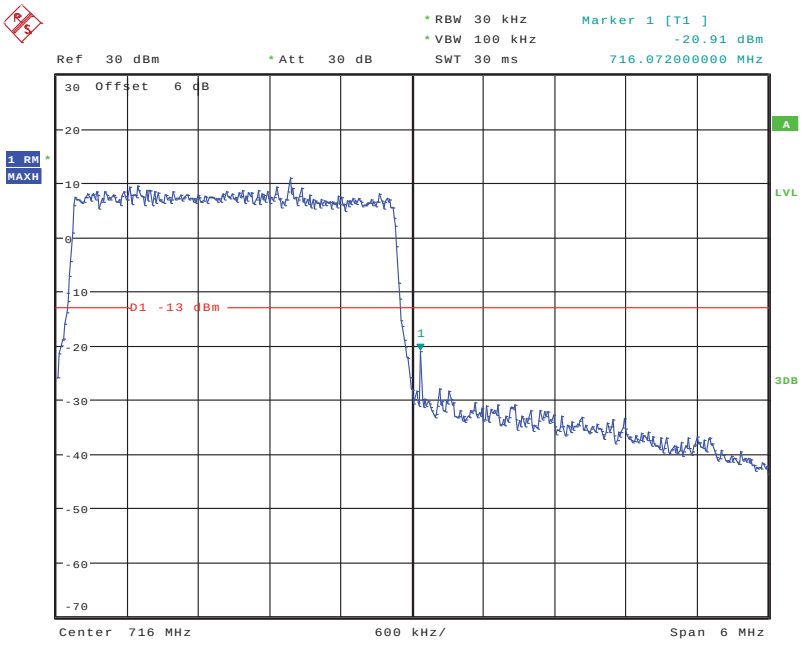
Date: 18.SEP.2019 21:57:53

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



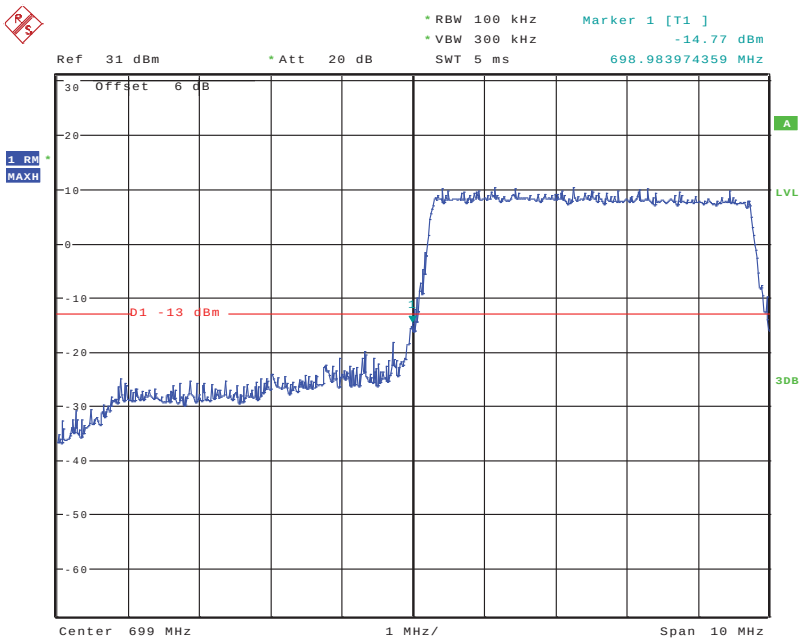
Date: 18.SEP.2019 21:57:30

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



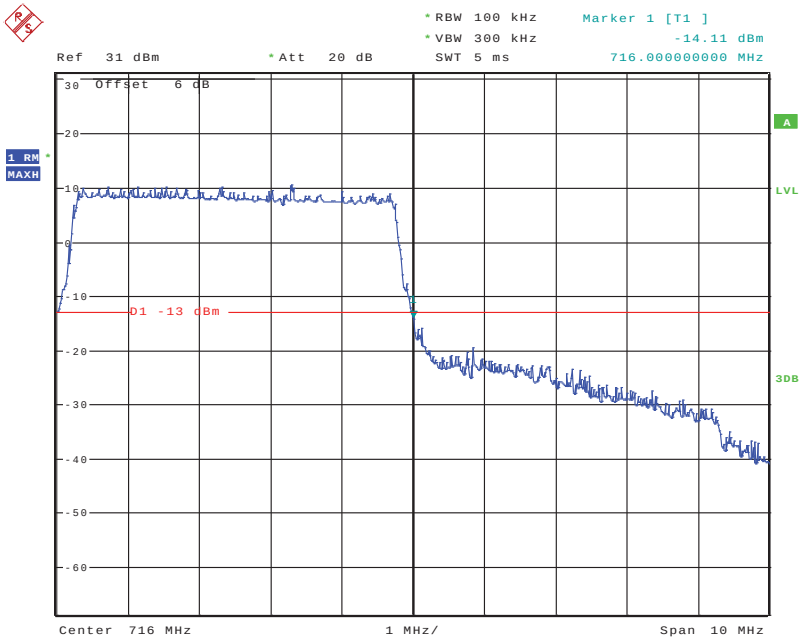
Date: 18.SEP.2019 21:58:15

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



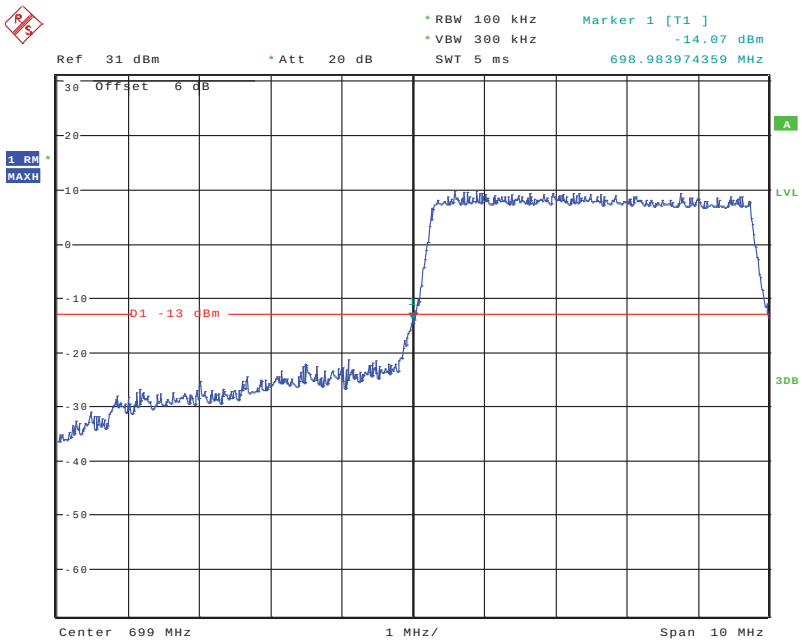
Date: 2.DEC.2019 14:55:14

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



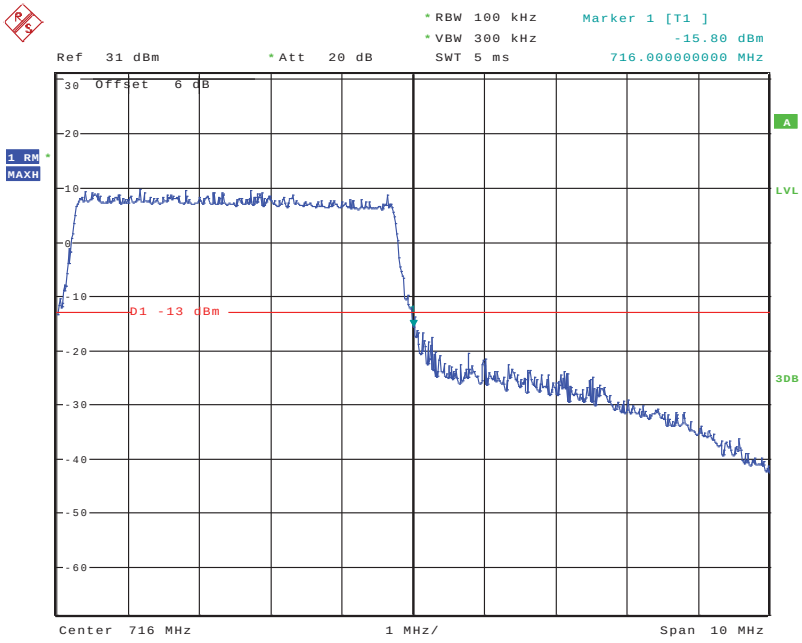
Date: 2.DEC.2019 14:52:13

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



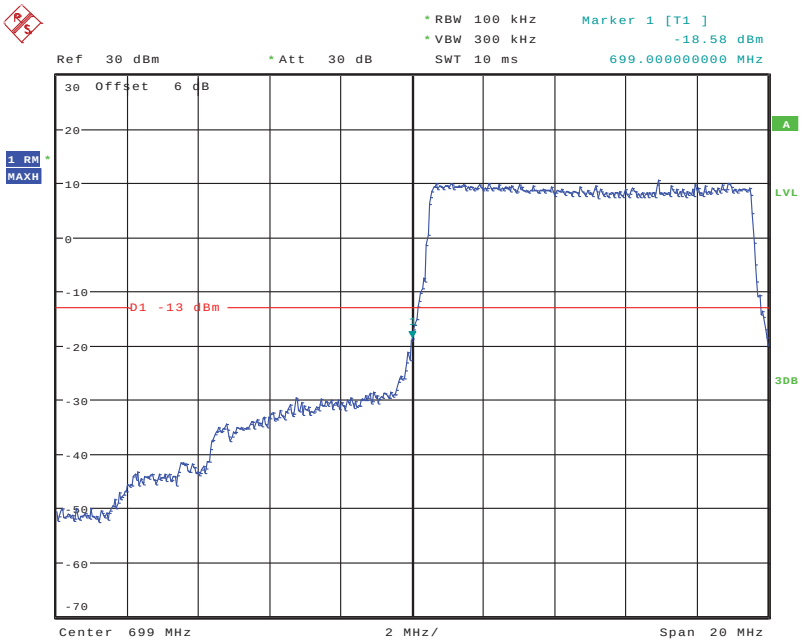
Date: 2.DEC.2019 14:54:26

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



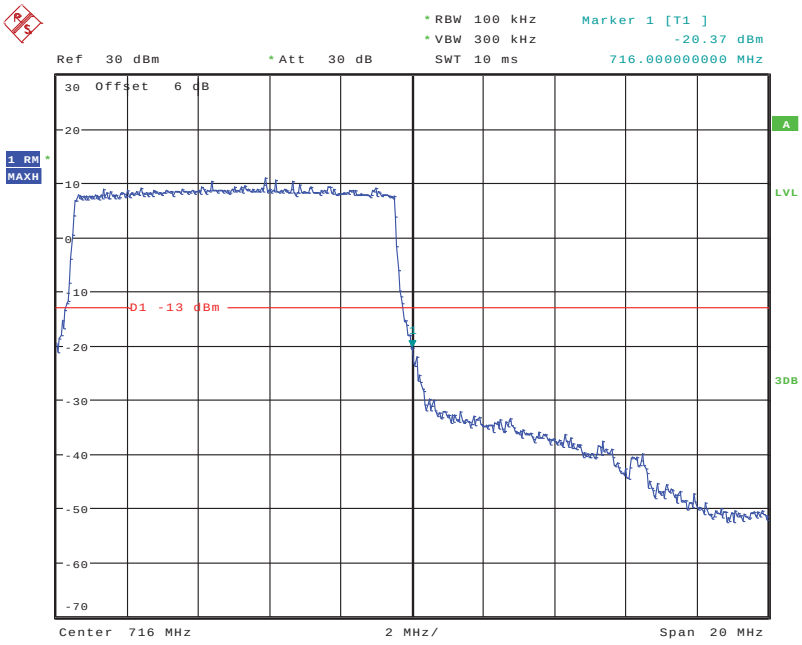
Date: 2.DEC.2019 14:53:02

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



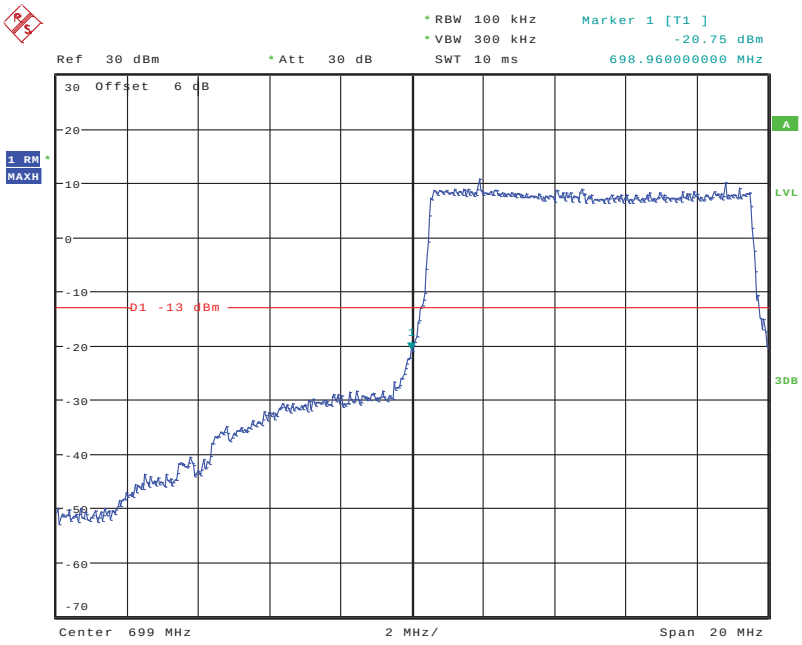
Date: 18.SEP.2019 22:01:09

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



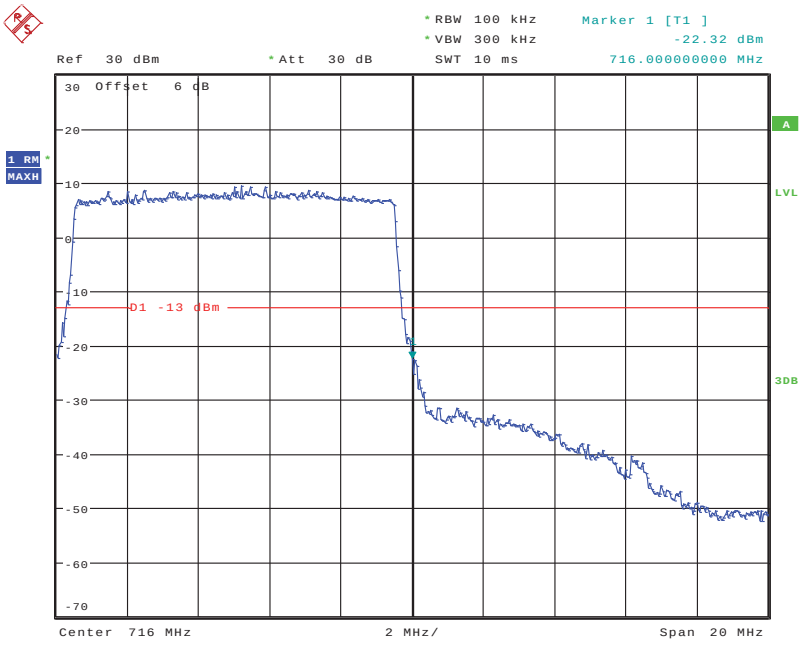
Date: 18.SEP.2019 22:02:05

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



Date: 18.SEP.2019 22:01:41

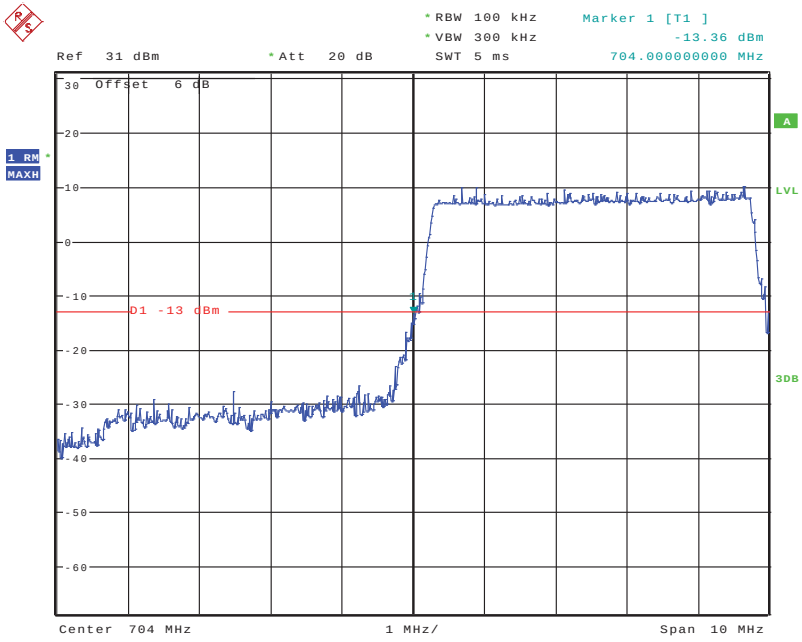
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 18.SEP.2019 22:02:31

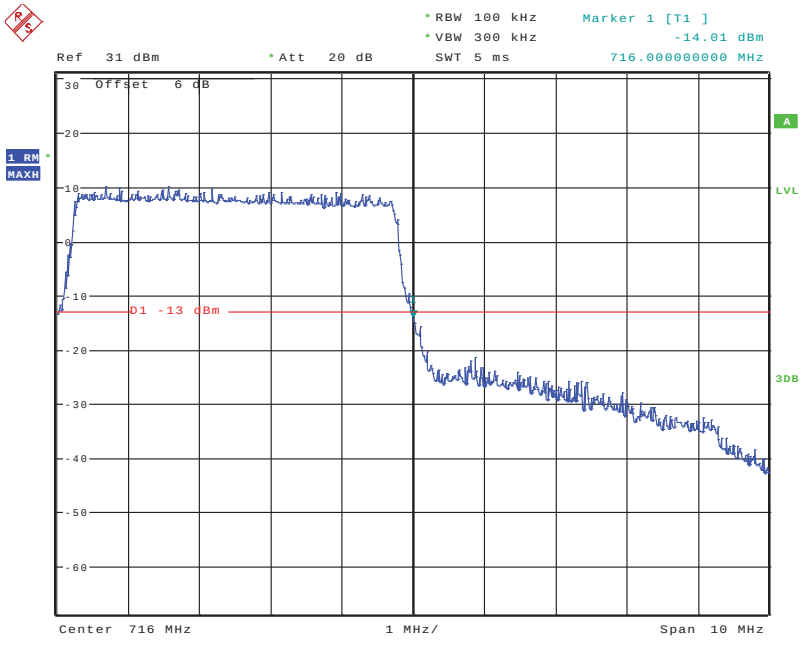
Band 17:

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



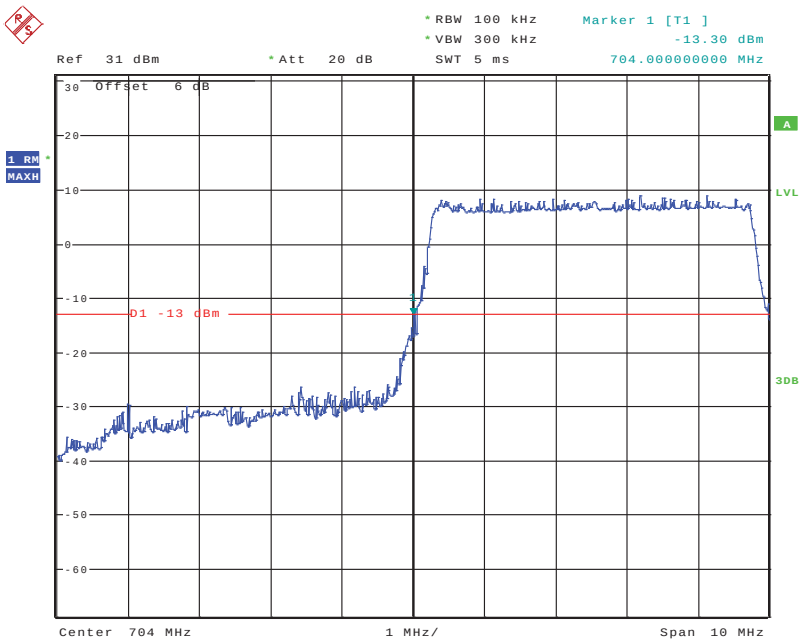
Date: 2.DEC.2019 14:48:19

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



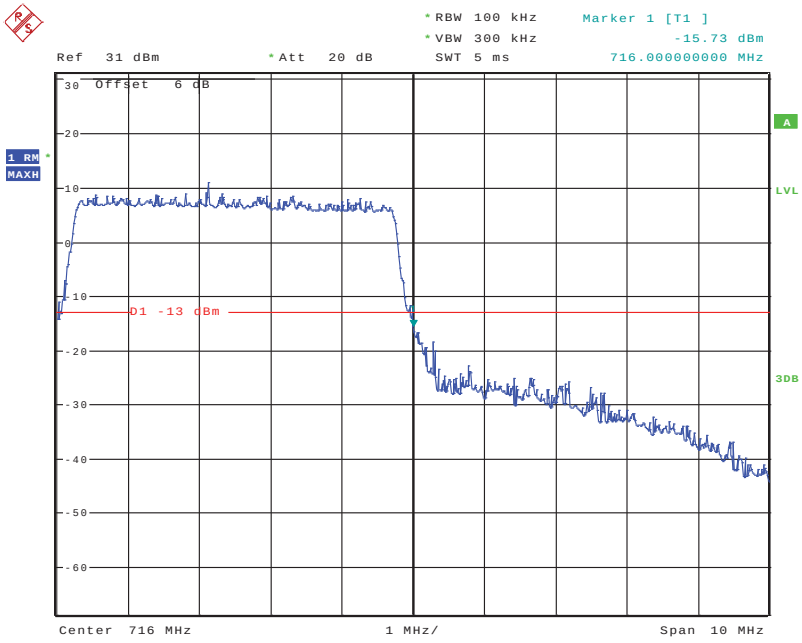
Date: 2.DEC.2019 14:51:28

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



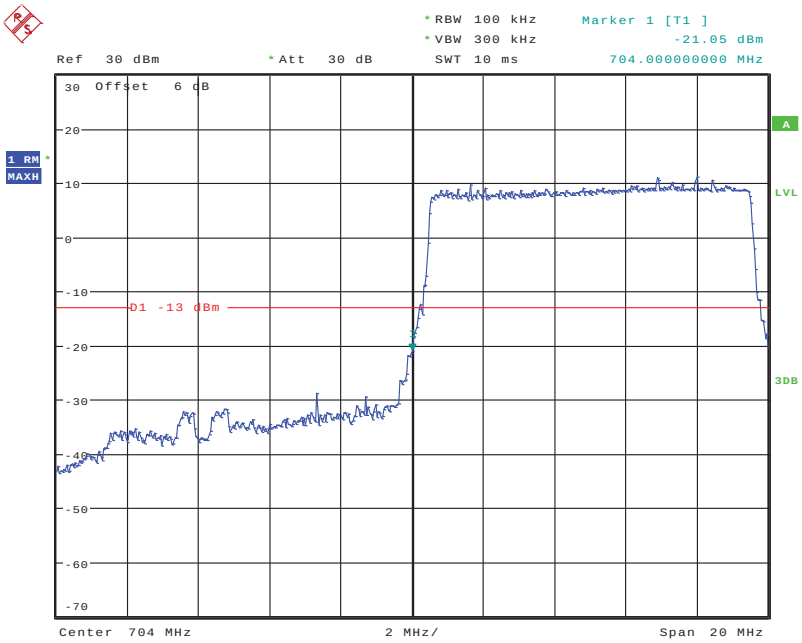
Date: 2.DEC.2019 14:49:51

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



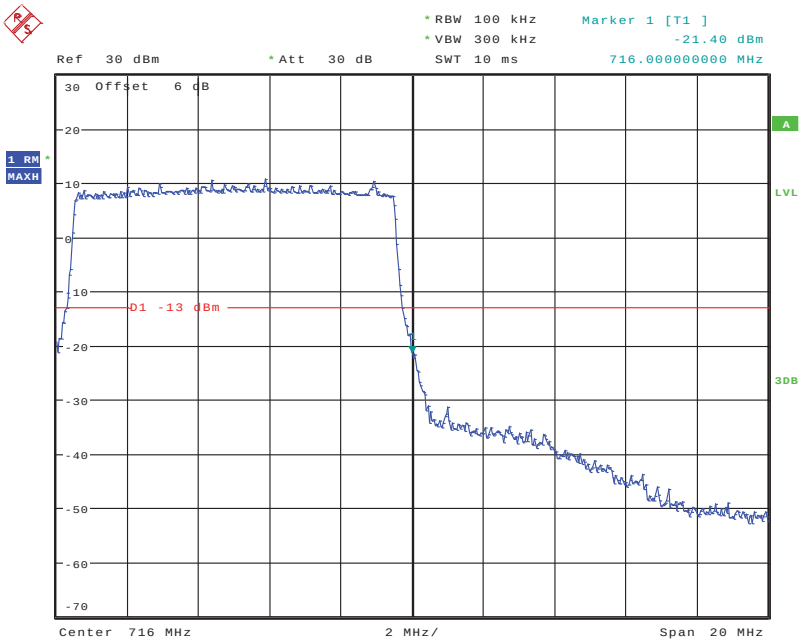
Date: 2.DEC.2019 14:50:47

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



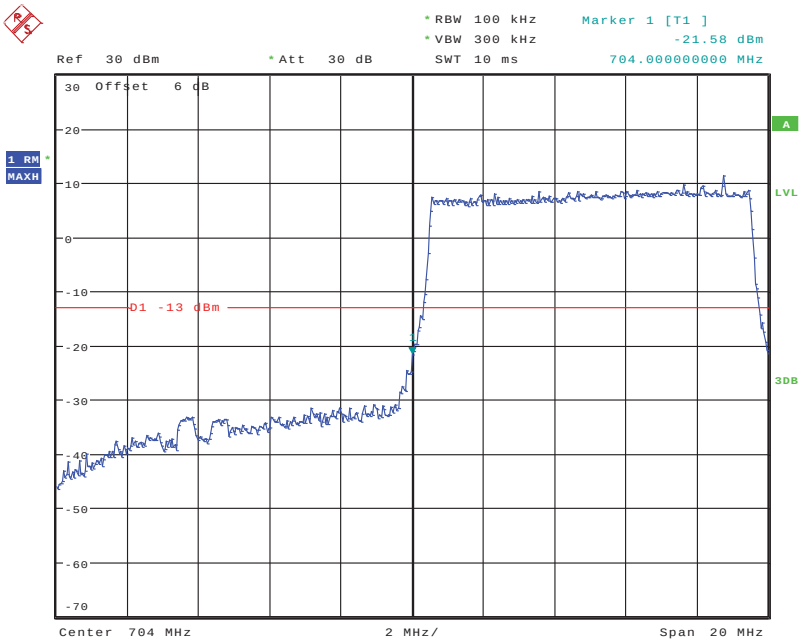
Date: 18.SEP.2019 22:05:20

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



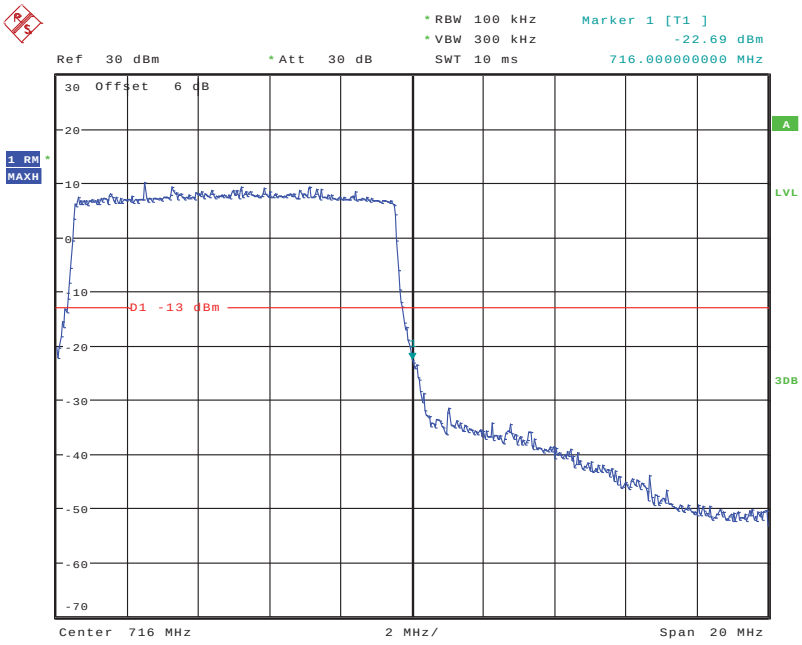
Date: 18.SEP.2019 22:06:15

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



Date: 18.SEP.2019 22:05:49

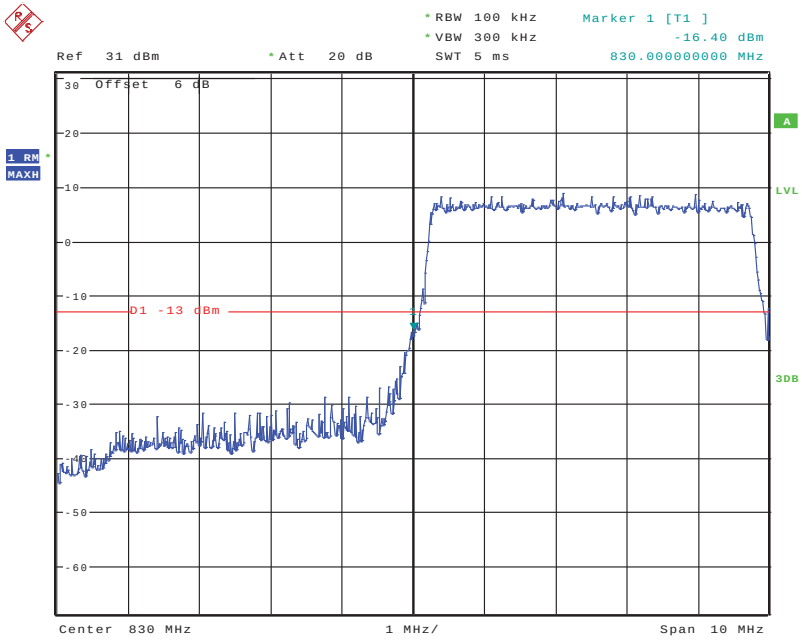
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 18.SEP.2019 22:06:41

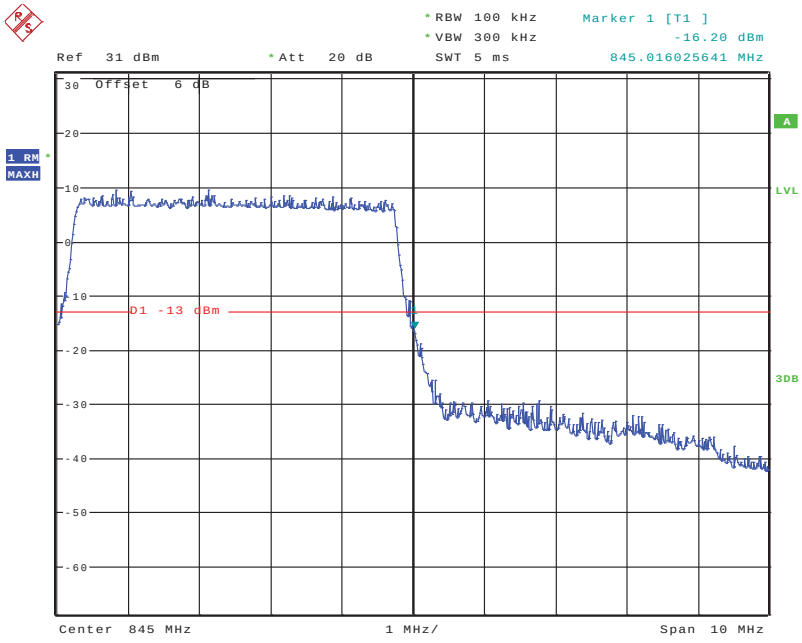
Band 19:

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



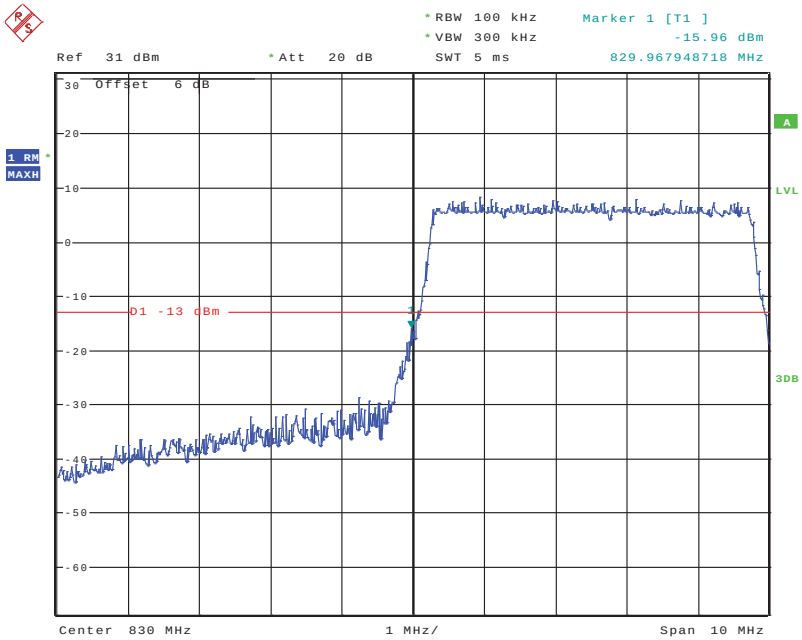
Date: 2.DEC.2019 14:32:21

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



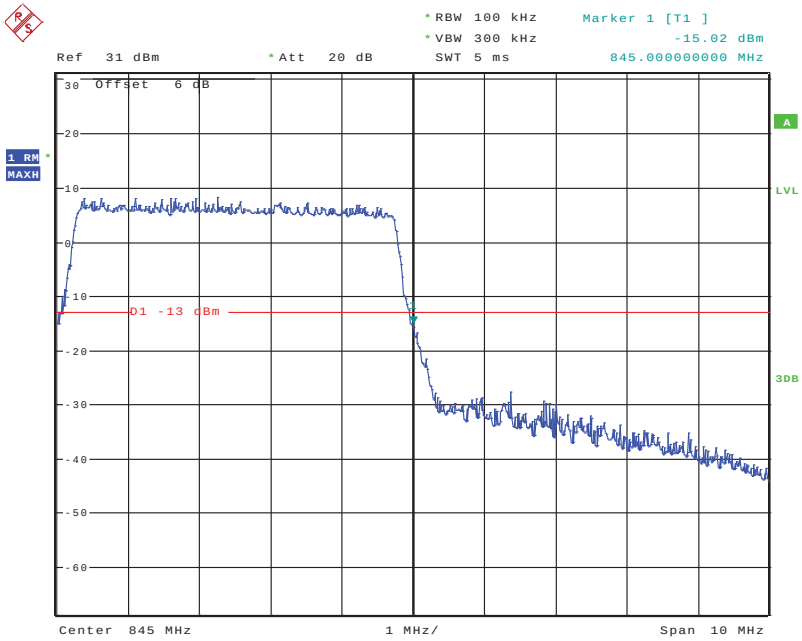
Date: 2.DEC.2019 14:38:39

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



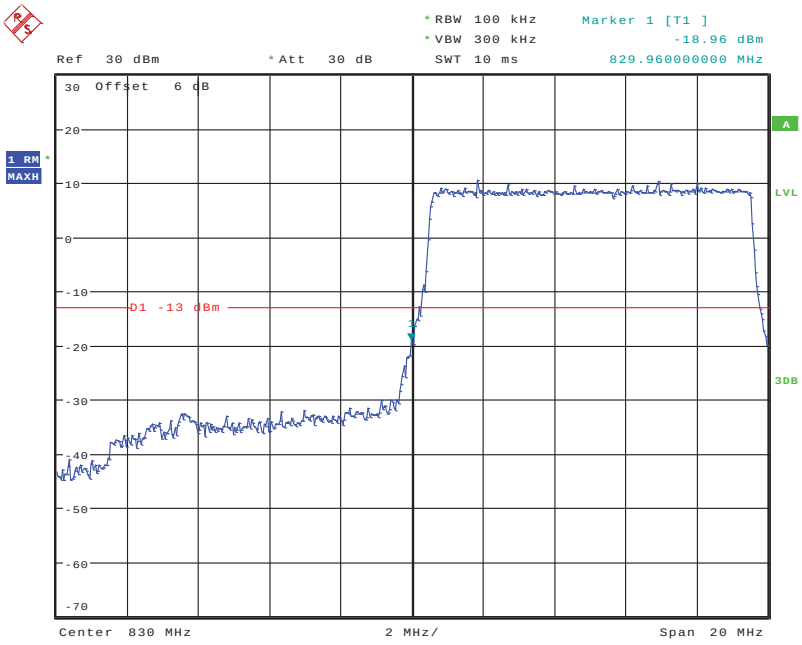
Date: 2.DEC.2019 14:35:48

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



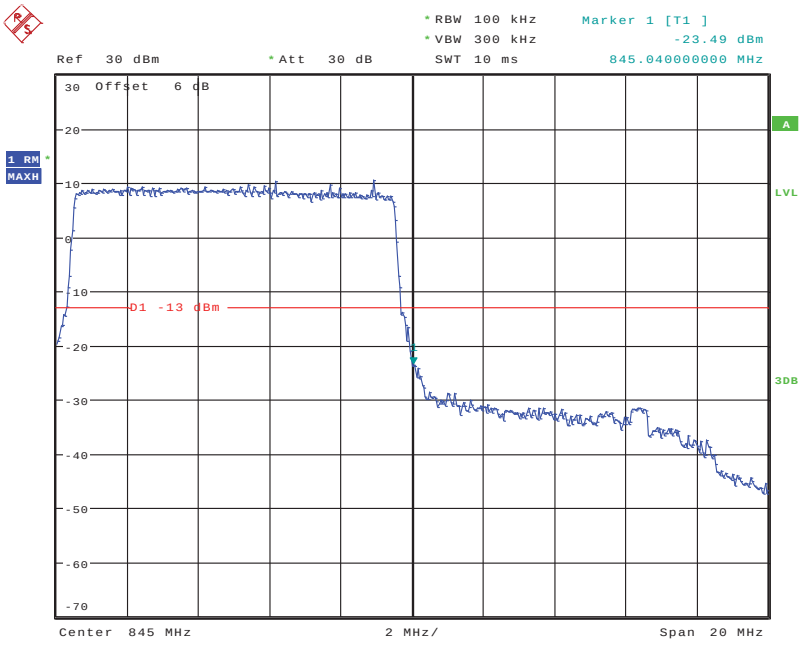
Date: 2.DEC.2019 14:37:55

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



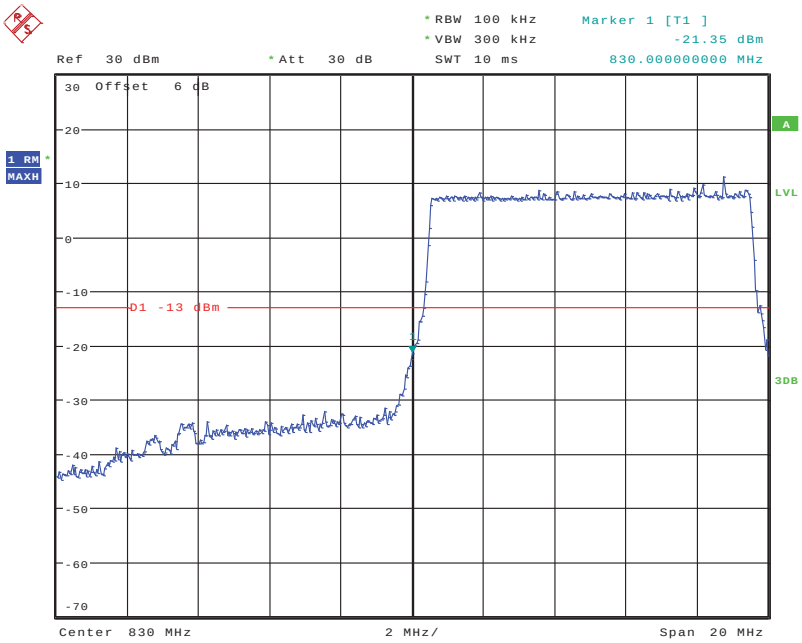
Date: 18.SEP.2019 22:09:08

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



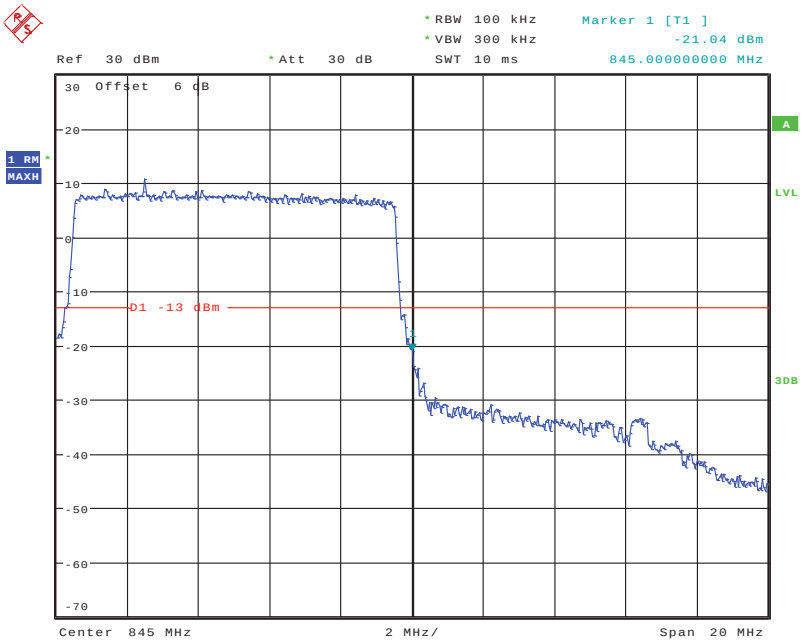
Date: 18.SEP.2019 22:10:13

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



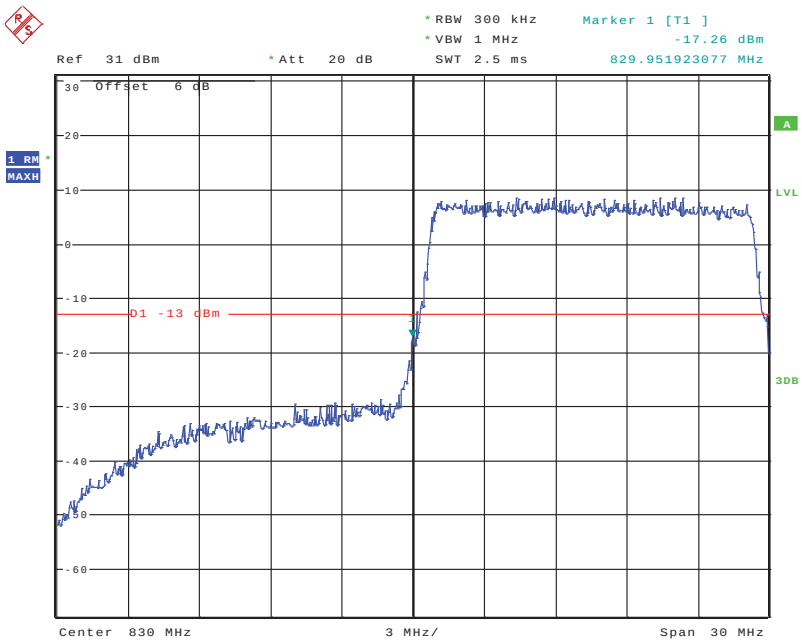
Date: 18.SEP.2019 22:09:38

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



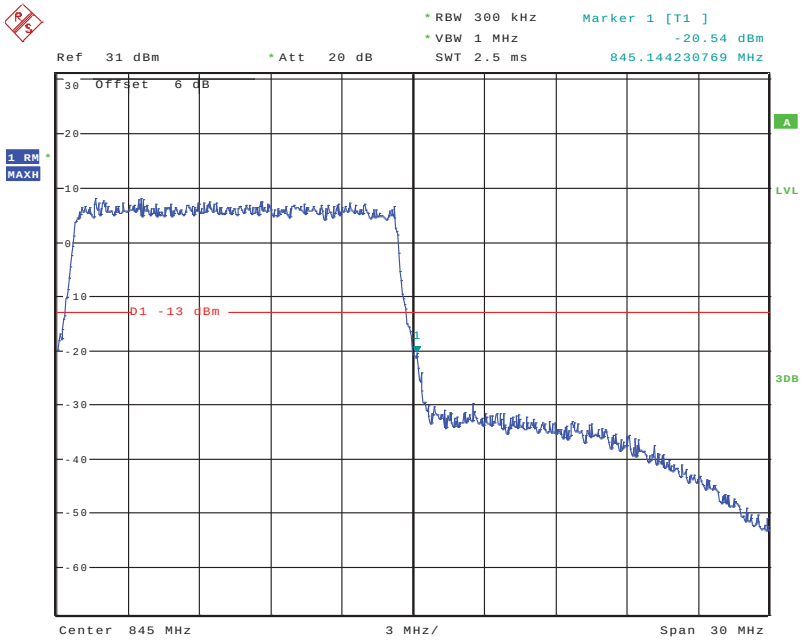
Date: 18.SEP.2019 22:10:39

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



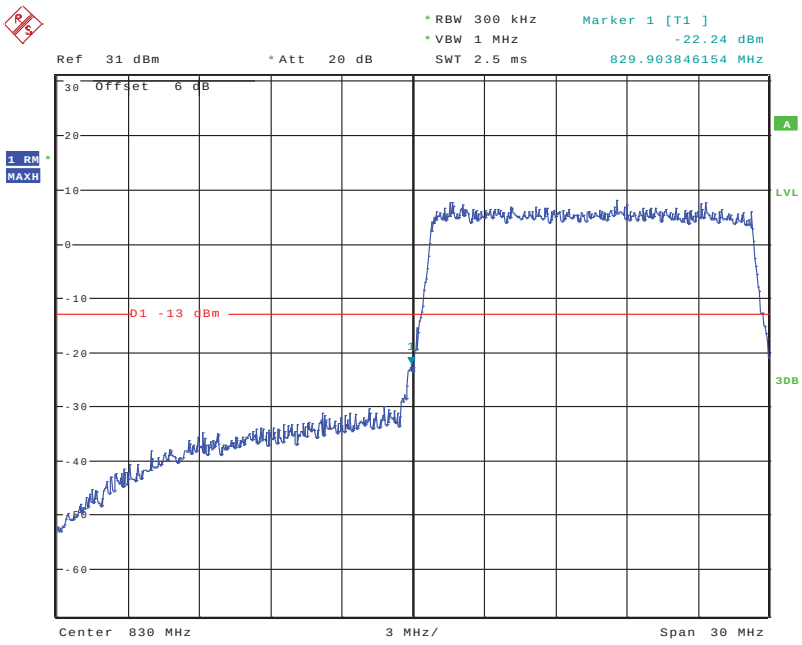
Date: 2.DEC.2019 14:43:50

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



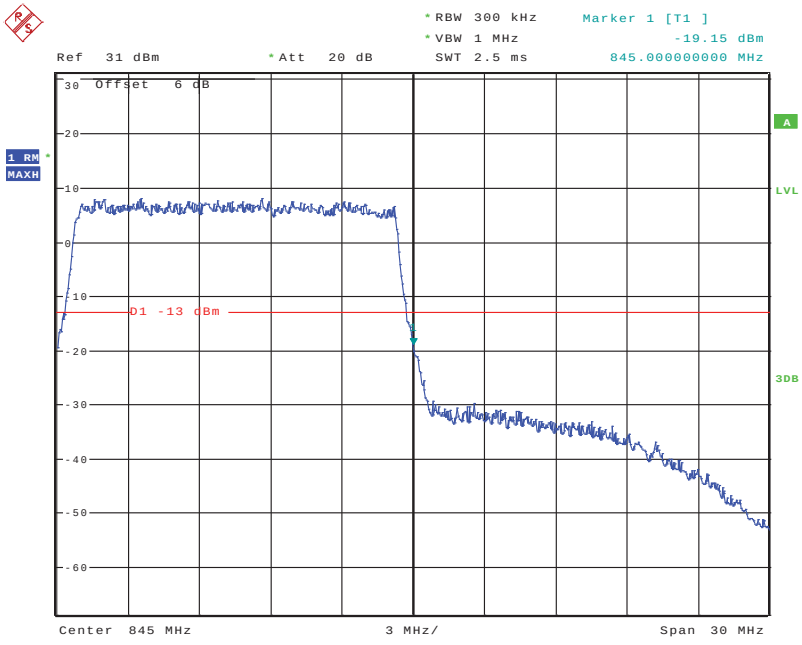
Date: 2.DEC.2019 14:40:15

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



Date: 2.DEC.2019 14:43:22

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



Date: 2.DEC.2019 14:42:49

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

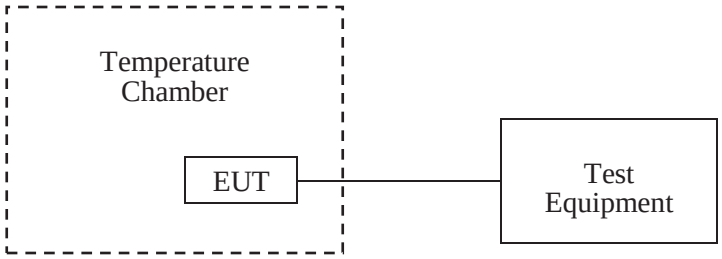
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by George Zhong on 2019-09-11.

EUT operation mode: Transmitting

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

Cellular Band (Part 22H)

GSM Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	4	0.004781	2.5
-20		3	0.003586	2.5
-10		8	0.009563	2.5
0		1	0.001195	2.5
10		-2	-0.002391	2.5
20		-4	-0.004781	2.5
30		6	0.007172	2.5
40		-2	-0.002391	2.5
50		-7	-0.008367	2.5
20	V min.= 3.6	3	0.003586	2.5
	V max.= 4.35	4	0.004781	2.5

EDGE Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	2	0.002391	2.5
-20		-1	-0.001195	2.5
-10		3	0.003586	2.5
0		-4	-0.004781	2.5
10		-2	-0.002391	2.5
20		-5	-0.005977	2.5
30		6	0.007172	2.5
40		8	0.009563	2.5
50		4	0.004781	2.5
20	V min.= 3.6	-2	-0.002391	2.5
	V max.= 4.35	3	0.003586	2.5

WCDMA Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	3	0.003586	2.5
-20		4	0.004781	2.5
-10		6	0.007172	2.5
0		8	0.009563	2.5
10		1	0.001195	2.5
20		-2	-0.002391	2.5
30		-4	-0.004781	2.5
40		3	0.003586	2.5
50		-5	-0.005977	2.5
20	V min.= 3.6	4	0.004781	2.5
	V max.= 4.35	-2	-0.002391	2.5

PCS Band (Part 24E)

GSM Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8V	5	0.002660	pass
-20		8	0.004255	pass
-10		-2	-0.001064	pass
0		-4	-0.002128	pass
10		3	0.001596	pass
20		-1	-0.000532	pass
30		2	0.001064	pass
40		6	0.003191	pass
50		-7	-0.003723	pass
20	V min.= 3.6	-3	-0.001596	pass
	V max.= 4.35	4	0.002128	pass

EDGE Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	3	0.001596	pass
-20		-1	-0.000532	pass
-10		2	0.001064	pass
0		4	0.002128	pass
10		-7	-0.003723	pass
20		-2	-0.001064	pass
30		3	0.001596	pass
40		-5	-0.002660	pass
50		1	0.000532	pass
20	V min.= 3.6	-3	-0.001596	pass
	V max.= 4.35	-4	-0.002128	pass

WCDMA Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8V	3	0.001596	pass
-20		-5	-0.002660	pass
-10		-2	-0.001064	pass
0		4	0.002128	pass
10		-1	-0.000532	pass
20		-6	-0.003191	pass
30		4	0.002128	pass
40		-7	-0.003723	pass
50		2	0.001064	pass
20	V min.= 3.6	-3	-0.001596	pass
	V max.= 4.35	4	0.002128	pass

AWS Band (Part 27)

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	3.8V	1710.1113	1754.9983	1710	1755
-20		1710.0751	1754.9974	1710	1755
-10		1710.0123	1754.9975	1710	1755
0		1710.2689	1754.9958	1710	1755
10		1710.2081	1754.9942	1710	1755
20		1710.2962	1754.9984	1710	1755
30		1710.256	1754.9966	1710	1755
40		1710.0333	1754.9977	1710	1755
50		1710.156	1754.9983	1710	1755
20	V min.= 3.6	1710.0626	1754.9969	1710	1755
	V max.= 4.35	1710.2776	1754.9984	1710	1755

LTE:
QPSK:

Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (℃)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.8V	-9	-0.0048	pass
-20		-8	-0.0043	pass
-10		-7	-0.0037	pass
0		-24	-0.0128	pass
10		-21	-0.0112	pass
20		-21	-0.0112	pass
30		-10	-0.0053	pass
40		-9	-0.0048	pass
50		1	0.0005	pass
20	V min.= 3.6	4	0.0021	pass
	V max.= 4.35	5	0.0027	pass

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	1710.5309	1754.7709	1710	1755
-20		1710.5235	1754.7575	1710	1755
-10		1710.5333	1754.7647	1710	1755
0		1710.5336	1754.7629	1710	1755
10		1710.5365	1754.7586	1710	1755
20		1710.5294	1754.7694	1710	1755
30		1710.5193	1754.7651	1710	1755
40		1710.5377	1754.7613	1710	1755
50		1710.5346	1754.7727	1710	1755
20	V min.= 3.6	1710.5410	1754.7612	1710	1755
	V max.= 4.35	1710.5236	1754.7558	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o =836.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	-15	-0.0179	2.5
-20		-8	-0.0096	2.5
-10		-6	-0.0072	2.5
0		-11	-0.0131	2.5
10		-15	-0.0179	2.5
20		-17	-0.0203	2.5
30		-10	-0.0120	2.5
40		1	0.0012	2.5
50		-2	-0.0024	2.5
20	V min.= 3.6	6	0.0072	2.5
	V max.= 4.35	11	0.0131	2.5

Band 7:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	2500.4529	2569.7019	2500	2570
-20		2500.4589	2569.7109	2500	2570
-10		2500.4523	2569.7129	2500	2570
0		2500.4611	2569.7112	2500	2570
10		2500.4565	2569.7129	2500	2570
20		2500.4500	2569.7144	2500	2570
30		2500.4614	2569.7028	2500	2570
40		2500.4621	2569.7057	2500	2570
50		2500.4560	2569.7008	2500	2570
20	V min.= 3.6	2500.4688	2569.7133	2500	2570
	V max.= 4.35	2500.4534	2569.7012	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	699.4537	715.6405	699	716
-20		699.4553	715.6406	699	716
-10		699.4510	715.6417	699	716
0		699.4536	715.6456	699	716
10		699.4532	715.6422	699	716
20		699.4529	715.6415	699	716
30		699.4555	715.6437	699	716
40		699.4536	715.6439	699	716
50		699.4569	715.6425	699	716
20	V min.= 3.6	699.4554	715.6434	699	716
	V max.= 4.35	699.4547	715.6439	699	716

Band 17:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	704.3645	715.6709	704	716
-20		704.3633	715.6680	704	716
-10		704.3638	715.6663	704	716
0		704.3656	715.6700	704	716
10		704.3642	715.6684	704	716
20		704.3623	715.6671	704	716
30		704.3647	715.6687	704	716
40		704.3671	715.6664	704	716
50		704.3677	715.6680	704	716
20	V min.= 3.6	704.3679	715.6707	704	716
	V max.= 4.35	704.3651	715.6678	704	716

Band 19:

10.0 MHz Middle Channel, f_o =837.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	-8	-0.00955	2.5
-20		-5	-0.00597	2.5
-10		-2	-0.00239	2.5
0		1	0.001194	2.5
10		3	0.003582	2.5
20		4	0.004776	2.5
30		5	0.00597	2.5
40		8	0.009552	2.5
50		9	0.010746	2.5
20	V min.= 3.6	11	0.013134	2.5
	V max.= 4.35	14	0.016716	2.5

16QAM:
Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8V	-14	-0.0074	pass
-20		-9	-0.0048	pass
-10		-6	-0.0032	pass
0		-5	-0.0027	pass
10		-1	-0.0005	pass
20		2	0.0011	pass
30		4	0.0021	pass
40		5	0.0027	pass
50		7	0.0037	pass
20	V min.= 3.6	11	0.0059	pass
	V max.= 4.35	13	0.0069	pass

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	1710.4885	1754.5278	1710	1755
-20		1710.4858	1754.5310	1710	1755
-10		1710.4896	1754.5296	1710	1755
0		1710.4882	1754.5280	1710	1755
10		1710.4886	1754.5282	1710	1755
20		1710.4878	1754.5266	1710	1755
30		1710.4906	1754.5288	1710	1755
40		1710.4869	1754.5291	1710	1755
50		1710.4908	1754.5311	1710	1755
20	V min.= 3.6	1710.4885	1754.5278	1710	1755
	V max.= 4.35	1710.4858	1754.5310	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o =836.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	-13	-0.0155	2.5
-20		-11	-0.0131	2.5
-10		-9	-0.0108	2.5
0		-6	-0.0072	2.5
10		-4	-0.0048	2.5
20		-1	-0.0012	2.5
30		2	0.0024	2.5
40		3	0.0036	2.5
50		5	0.0060	2.5
20	V min.= 3.6	7	0.0084	2.5
	V max.= 4.35	9	0.0108	2.5

Band 7:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	2500.7230	2569.3388	2500	2570
-20		2500.7263	2569.3344	2500	2570
-10		2500.7221	2569.3371	2500	2570
0		2500.7263	2569.3377	2500	2570
10		2500.7246	2569.3368	2500	2570
20		2500.7234	2569.3376	2500	2570
30		2500.7260	2569.3344	2500	2570
40		2500.7259	2569.3368	2500	2570
50		2500.7245	2569.3353	2500	2570
20	V min.= 3.6	2500.7230	2569.3388	2500	2570
	V max.= 4.35	2500.7263	2569.3344	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	699.4637	715.6665	699	716
-20		699.4651	715.6637	699	716
-10		699.4621	715.6639	699	716
0		699.4644	715.6653	699	716
10		699.4632	715.6644	699	716
20		699.4628	715.6632	699	716
30		699.4664	715.6652	699	716
40		699.4621	715.6678	699	716
50		699.4632	715.6668	699	716
20	V min.= 3.6	699.4637	715.6665	699	716
	V max.= 4.35	699.4651	715.6637	699	716

Band 17:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8V	704.3632	715.6737	704	716
-20		704.3620	715.6757	704	716
-10		704.3617	715.6730	704	716
0		704.3640	715.6733	704	716
10		704.3628	715.6742	704	716
20		704.3641	715.6762	704	716
30		704.3634	715.6742	704	716
40		704.3643	715.6766	704	716
50		704.3639	715.6769	704	716
20	V min.= 3.6	704.3632	715.6737	704	716
	V max.= 4.35	704.3620	715.6757	704	716

Band 19:

10.0 MHz Middle Channel, f_o =837.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8V	-16	-0.0191	2.5
-20		-12	-0.0143	2.5
-10		-8	-0.0096	2.5
0		-7	-0.0084	2.5
10		-5	-0.0060	2.5
20		-2	-0.0024	2.5
30		1	0.0012	2.5
40		3	0.0036	2.5
50		4	0.0048	2.5
20	V min.= 3.6	7	0.0084	2.5
	V max.= 4.35	8	0.0096	2.5

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