FCC PART 27

FCC PART 22H, PART 24E

TEST REPORT

For

BLU Products, Inc.

10814 NW 33rd St # 100 Doral, FL 33172,USA

FCC ID: YHLBLUG91

Report Type:	**Product Type:**
Original Report	Mobile Phone

Report Number:	RSZ200929012-00D
Report Date:	2020-11-03
Reviewed By:	Nancy Wang 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

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mobile Phone
Tested Model	G91
Frequency Range	EGSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE B12: 699-716 MHz (TX); 729-746 MHz (RX) LTE B17: 704-716 MHz (TX); 734-746 MHz (RX)
Maximum Target Output Power	EGSM 850: 32.5dBm, 25.5dBm(8PSK) PCS 1900: 29.5Bm, 25.5dBm(8PSK) WCDMA Band 2/4/5: 24.0dBm LTE Band 2/4/5/7/12/17: 24.0dBm
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	FPC Antennas: EGSM850/ WCDMA Band 5/ LTE Band 5: -0.7dBi* PCS1900/ WCDMA Band 2/ LTE Band 2: 0.7dBi * WCDMA Band 4/ LTE Band 4: 0.8dBi * LTE Band 7: 0.7dBi *, LTE Band 12: -2.5dBi *, LTE Band 17: -2.5dBi * (provided by the applicant)
Voltage Range	DC 3.87V from battery or DC 5V from adapter
Date of Test	2020-10-10 to 2020-11-02
Sample serial number	RSZ200929012-RF-S1(Assigned by BACL, Shenzhen)
Received date	2020-09-29
Sample/EUT Status	Good condition
Adapter information	Model: TPA-46050200UU Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5.0V, 2000 mA

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E and Subpart 27 of the Federal Communication Commissions rules.

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

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

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

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

Equipment Modifications

No modification was made to the EUT.

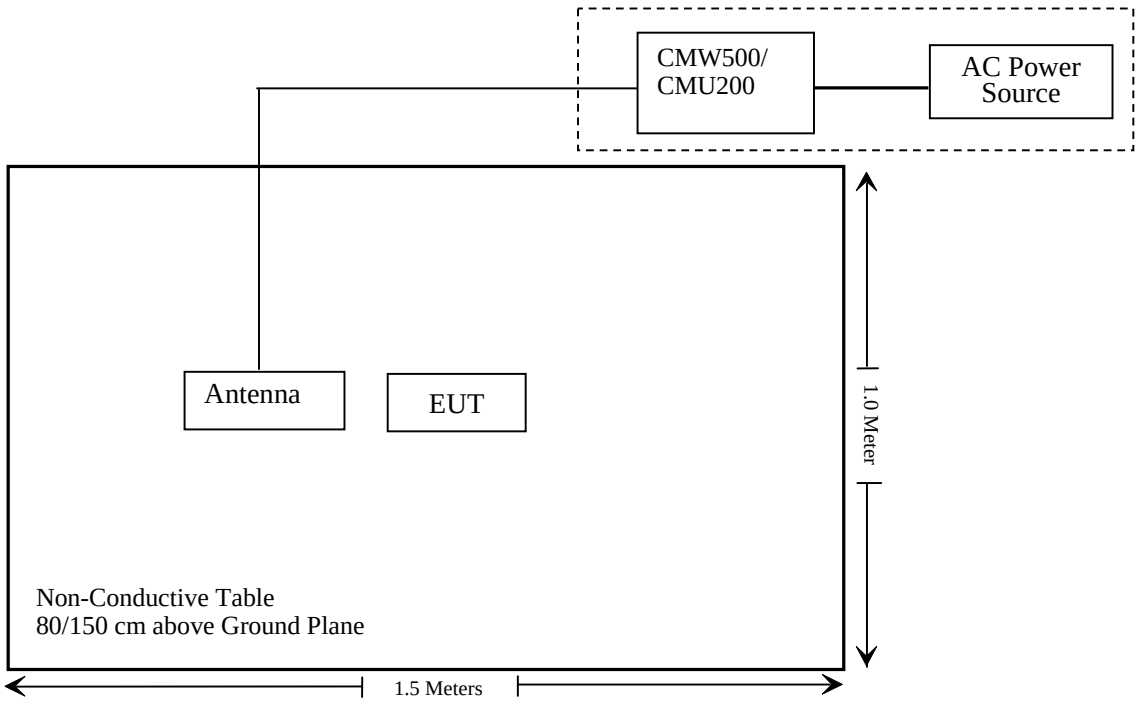
Support Equipment List and Details

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

Support Cable Description

Cable Description	Length (m)	From / Port	To
Unshielded Un-detachable AC cable	1.2	AC Power	CMW500/ CMU200

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	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	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: RSZ200929012-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017/12/22	2020/12/21
COM-POWER	Dipole Antenna	AD-100	721027	NCR	NCR
Unknown	Cable 2	RF Cable 2	F-03-EM197	2019/11/29	2020/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2019/11/29	2020/11/28
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2020/08/04	2021/08/03
COM-POWER	Pre-amplifier	PA-122	181919	2019/11/29	2020/11/28
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2019/11/29	2020/11/28
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017/12/22	2020/12/21
A.H.System	Horn Antenna	SAS-200/571	135	2018/09/01	2021/08/31
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2019/11/29	2020/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2019/11/29	2020/11/28
MICRO-TRONICS	Passband filter	HPM50111	F-19-EM006	2020/04/20	2021/04/20
Unknown	High Pass filter	1.3GHz	101120	2020/04/20	2021/04/20
Ducommun Technolagies	Horn antenna	ARH-4223-02	1007726-02 1304	2017/12/06	2020/12/05
Ducommun Technolagies	Horn antenna	ARH-4223-02	1007726-01 1304	2017/12/06	2020/12/05
Agilent	Signal Generator	N5183A	MY51040755	2019/12/04	2020/12/04

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2020/04/03	2021/04/02
WEINSCHEL	3dB Attenuator	Unknown	F-03-EM121	2019/11/29	2020/11/28
Yijia	Temperature & Humidity Meter	10316377	T-03-EM397	2019/10/14	2020/10/13
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2020/08/04	2021/08/03
Unknown	RF Cable	Unknown	2301 276	2019/11/29	2020/11/28
Unknown	RF Cable	Unknown	DLO J5/W6102	2019/11/29	2020/11/28
Weinschel	Power divider	1515	MY628	2019/11/29	2020/11/28
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500	2020/07/31	2021/07/30
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
Fluke	Digital Multimeter	287	19000011	2020/07/23	2021/07/22

* 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: RSZ200929012-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.

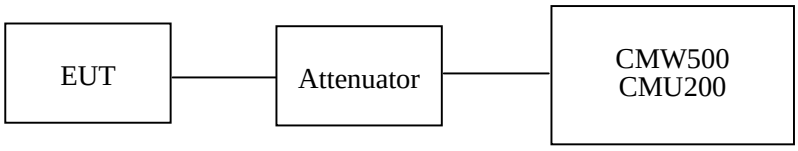
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz.

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:	28~29.3 ℃
Relative Humidity:	50~58 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Harris He and Lovan Liang on 2020-10-10.

Conducted Power

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	32.10	28.75	38.45
	190	836.6	31.80	28.45	38.45
	251	848.8	31.60	28.25	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	31.87	31.19	29.71	28.55	28.52	27.84	26.36	25.2	38.45
	190	836.6	31.89	31.15	30.40	28.47	28.54	27.8	27.05	25.12	38.45
	251	848.8	32.01	31.23	29.92	28.55	28.66	27.88	26.57	25.2	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	23.87	22.55	20.24	18.91	20.52	19.2	16.89	15.56	38.45
	190	836.6	24.71	23.41	21.08	19.85	21.36	20.06	17.73	16.5	38.45
	251	848.8	25.65	24.24	21.73	20.55	22.3	20.89	18.38	17.2	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		23.34	23.36	23.23	19.99	20.01	19.88
	HSDPA	1	22.24	22.28	22.16	18.89	18.93	18.81
		2	22.21	22.22	22.15	18.86	18.87	18.80
		3	22.15	22.12	22.09	18.8	18.77	18.74
		4	22.56	22.50	22.47	19.21	19.15	19.12
	HSUPA	1	22.37	22.37	22.33	19.02	19.02	18.98
		2	22.29	22.27	22.16	18.94	18.92	18.81
		3	22.55	22.55	22.32	19.2	19.3	18.97
		4	22.39	22.40	22.23	19.04	19.05	18.88
		5	22.32	22.32	22.19	18.97	18.97	18.84

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For GSM850 / WCDMA Band5: Antenna Gain = -0.7dBi = -2.85dBd (0dBd=2.15dBi)
For 700-960MHz, Cable Loss=0.5dB* (provided by the applicant)
Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	28.50	28.40	33
	661	1880.0	28.40	2830	33
	810	1909.8	28.80	28.70	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	28.79	27.74	25.67	24.55	28.69	27.64	25.57	24.45	33
	661	1880.0	28.90	27.87	25.81	24.72	28.8	27.77	25.71	24.62	33
	810	1909.8	29.12	28.07	26.04	24.94	29.02	27.97	25.94	24.84	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	24.97	23.73	21.44	20.12	24.87	23.63	21.34	20.02	33
	661	1880.0	24.72	23.54	21.32	19.91	24.62	23.44	21.22	19.81	33
	810	1909.8	24.57	23.42	21.11	19.72	24.47	23.32	21.01	19.62	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.36	23.32	23.13	23.26	23.22	23.03
	HSDPA	1	22.30	22.30	22.05	22.2	22.2	21.95
		2	22.20	22.27	22.08	22.1	22.17	21.98
		3	22.17	22.11	21.97	22.07	22.01	21.87
		4	22.53	22.47	22.37	22.43	22.37	22.27
	HSUPA	1	22.27	22.23	22.15	22.17	22.13	22.05
		2	22.24	22.20	22.09	22.14	22.1	21.99
		3	22.13	22.13	22.01	22.03	22.03	21.91
		4	22.54	22.51	22.33	22.44	22.41	22.23
		5	22.43	22.45	22.22	22.33	22.35	22.12

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For PCS1900 / WCDMA Band2: Antenna Gain = 0.7dBi
For 1700-3000MHz, Cable Loss=0.8dB*(provided by the applicant)
Limit: EIRP≤33dBm

AWS Band (Part 27)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		23.28	23.32	23.22	23.28	23.32	23.22
	HSDPA	1	22.31	22.24	22.25	22.31	22.24	22.25
		2	22.26	22.26	22.17	22.26	22.26	22.17
		3	22.15	22.11	22.10	22.15	22.11	22.10
		4	22.49	22.49	22.43	22.49	22.49	22.43
	HSUPA	1	22.42	22.37	22.39	22.42	22.37	22.39
		2	22.29	22.28	22.15	22.29	22.28	22.15
		3	22.51	22.50	22.33	22.51	22.50	22.33
		4	22.36	22.39	22.17	22.36	22.39	22.17
		5	22.33	22.33	22.21	22.33	22.33	22.21

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band4: Antenna Gain = 0.8dBi
For 1700-3000MHz, Cable Loss=0.8dB*(provided by the applicant)
Limit: EIRP≤30dBm

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.23	13
	Middle	3.36	13
	High	3.47	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.21	13
	Middle	3.18	13
	High	3.32	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.22	13
	Middle	3.29	13
	High	3.48	13
HSDPA (16QAM)	Low	3.26	13
	Middle	3.45	13
	High	3.62	13
HSUPA (BPSK)	Low	3.25	13
	Middle	3.29	13
	High	3.41	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.36	13
	Middle	3.18	13
	High	3.36	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.16	13
	Middle	3.21	13
	High	3.52	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.65	13
	Middle	3.27	13
	High	3.56	13
HSDPA (16QAM)	Low	3.45	13
	Middle	3.32	13
	High	3.66	13
HSUPA (BPSK)	Low	3.02	13
	Middle	3.34	13
	High	3.74	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.70	13
	Middle	3.48	13
	High	3.42	13
HSDPA (16QAM)	Low	3.23	13
	Middle	3.30	13
	High	3.15	13
HSUPA (BPSK)	Low	3.24	13
	Middle	3.57	13
	High	3.52	13

LTE Band 2:

Maximum Output Power

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.57	23.63	23.51	23.47	23.53	23.41
		RB1#2	23.08	23.13	23.08	22.98	23.03	22.98
		RB1#5	23.43	23.46	23.42	23.33	23.36	23.32
		RB3#0	23.19	23.28	23.27	23.09	23.18	23.17
		RB3#1	23.06	23.10	23.06	22.96	23	22.96
		RB3#2	23.24	23.17	23.31	23.14	23.07	23.21
		RB6#0	23.54	23.52	23.55	23.44	23.42	23.45
	16QAM	RB1#0	23.22	23.16	23.23	23.12	23.06	23.13
		RB1#2	23.28	23.28	23.28	23.18	23.18	23.18
		RB1#5	23.28	23.18	23.28	23.18	23.08	23.18
		RB3#0	23.19	23.17	23.13	23.09	23.07	23.03
		RB3#1	23.57	23.65	23.54	23.47	23.55	23.44
		RB3#2	23.56	23.63	23.52	23.46	23.53	23.42
		RB6#0	23.50	23.55	23.53	23.4	23.45	23.43
3.0	QPSK	RB1#0	23.53	23.47	23.55	23.43	23.37	23.45
		RB1#7	23.25	23.25	23.31	23.15	23.15	23.21
		RB1#14	23.44	23.50	23.49	23.34	23.4	23.39
		RB8#0	23.50	23.49	23.51	23.4	23.39	23.41
		RB8#4	23.38	23.43	23.36	23.28	23.33	23.26
		RB8#7	23.35	23.29	23.26	23.25	23.19	23.16
		RB15#0	23.49	23.54	23.43	23.39	23.44	23.33
	16QAM	RB1#0	23.58	23.64	23.49	23.48	23.54	23.39
		RB1#7	23.44	23.50	23.35	23.34	23.4	23.25
		RB1#14	23.16	23.06	23.17	23.06	22.96	23.07
		RB8#0	23.69	23.72	23.63	23.59	23.62	23.53
		RB8#4	23.07	22.99	23.02	22.97	22.89	22.92
		RB8#7	23.03	22.98	22.95	22.93	22.88	22.85
		RB15#0	23.56	23.57	23.46	23.46	23.47	23.36

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.40	23.48	23.33	23.3	23.38	23.23
		RB1#12	23.70	23.74	23.61	23.6	23.64	23.51
		RB1#24	23.49	23.44	23.44	23.39	23.34	23.34
		RB12#0	23.20	23.20	23.18	23.1	23.1	23.08
		RB12#6	23.62	23.67	23.57	23.52	23.57	23.47
		RB12#11	23.50	23.60	23.53	23.4	23.5	23.43
		RB25#0	23.69	23.73	23.77	23.59	23.63	23.67
	16QAM	RB1#0	23.10	23.19	23.18	23	23.09	23.08
		RB1#12	23.26	23.30	23.36	23.16	23.2	23.26
		RB1#24	23.52	23.61	23.53	23.42	23.51	23.43
		RB12#0	23.04	23.05	23.07	22.94	22.95	22.97
		RB12#6	23.57	23.48	23.54	23.47	23.38	23.44
		RB12#11	23.21	23.27	23.25	23.11	23.17	23.15
		RB25#0	23.39	23.34	23.41	23.29	23.24	23.31
10.0	QPSK	RB1#0	23.48	23.41	23.55	23.38	23.31	23.45
		RB1#24	23.08	23.17	23.11	22.98	23.07	23.01
		RB1#49	23.01	23.02	22.93	22.91	22.92	22.83
		RB25#0	23.38	23.41	23.39	23.28	23.31	23.29
		RB25#12	23.05	22.98	23.10	22.95	22.88	23
		RB25#24	23.24	23.29	23.21	23.14	23.19	23.11
		RB50#0	23.38	23.36	23.46	23.28	23.26	23.36
	16QAM	RB1#0	23.22	23.24	23.29	23.12	23.14	23.19
		RB1#24	23.26	23.21	23.21	23.16	23.11	23.11
		RB1#49	23.60	23.63	23.55	23.5	23.53	23.45
		RB25#0	23.41	23.34	23.41	23.31	23.24	23.31
		RB25#12	23.20	23.28	23.16	23.1	23.18	23.06
		RB25#24	23.30	23.36	23.25	23.2	23.26	23.15
		RB50#0	23.16	23.19	23.26	23.06	23.09	23.16

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.55	23.54	23.52	23.45	23.44	23.42
		RB1#37	23.18	23.25	23.21	23.08	23.15	23.11
		RB1#74	23.53	23.48	23.48	23.43	23.38	23.38
		RB36#0	23.37	23.29	23.31	23.27	23.19	23.21
		RB36#18	23.10	23.07	23.07	23	22.97	22.97
		RB36#37	23.32	23.32	23.38	23.22	23.22	23.28
		RB75#0	23.36	23.31	23.41	23.26	23.21	23.31
	16QAM	RB1#0	23.08	23.14	23.08	22.98	23.04	22.98
		RB1#37	23.24	23.27	23.28	23.14	23.17	23.18
		RB1#74	23.52	23.56	23.43	23.42	23.46	23.33
		RB36#0	23.37	23.30	23.29	23.27	23.2	23.19
		RB36#18	23.70	23.60	23.66	23.6	23.5	23.56
		RB36#37	23.14	23.19	23.13	23.04	23.09	23.03
		RB75#0	23.28	23.22	23.23	23.18	23.12	23.13
20.0	QPSK	RB1#0	23.24	23.17	23.18	23.14	23.07	23.08
		RB1#49	23.42	23.44	23.47	23.32	23.34	23.37
		RB1#99	23.60	23.69	23.55	23.5	23.59	23.45
		RB50#0	23.29	23.28	23.32	23.19	23.18	23.22
		RB50#24	23.41	23.44	23.37	23.31	23.34	23.27
		RB50#49	23.41	23.36	23.35	23.31	23.26	23.25
		RB100#0	23.46	23.42	23.47	23.36	23.32	23.37
	16QAM	RB1#0	23.21	23.17	23.13	23.11	23.07	23.03
		RB1#49	23.11	23.08	23.05	23.01	22.98	22.95
		RB1#99	23.48	23.41	23.49	23.38	23.31	23.39
		RB50#0	23.43	23.45	23.37	23.33	23.35	23.27
		RB50#24	23.51	23.47	23.54	23.41	23.37	23.44
		RB50#49	23.44	23.41	23.39	23.34	23.31	23.29
		RB100#0	23.43	23.50	23.35	23.33	23.4	23.25

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band2: Antenna Gain = 0.7dBi，
For 1700-3000MHz, Cable Loss=0.8dB*(provided by the applicant)
Limit: EIRP≤33dBm

Peak-to-average ratio (PAR)

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.40	4.04	3.88	13	Pass
QPSK (100RB Size)	5.29	5.35	5.35	13	Pass
16QAM (1RB Size)	4.07	4.87	4.74	13	Pass
16QAM (100RB Size)	6.09	6.12	6.22	13	Pass

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.35	23.31	23.36	23.35	23.31	23.36
		RB1#2	23.24	23.20	23.19	23.24	23.20	23.19
		RB1#5	23.18	23.20	23.16	23.18	23.20	23.16
		RB3#0	23.53	23.52	23.45	23.53	23.52	23.45
		RB3#1	23.32	23.41	23.24	23.32	23.41	23.24
		RB3#2	23.58	23.63	23.66	23.58	23.63	23.66
		RB6#0	23.35	23.41	23.26	23.35	23.41	23.26
	16QAM	RB1#0	23.60	23.55	23.64	23.60	23.55	23.64
		RB1#2	23.08	23.06	23.04	23.08	23.06	23.04
		RB1#5	23.25	23.27	23.30	23.25	23.27	23.30
		RB3#0	23.04	23.12	23.13	23.04	23.12	23.13
		RB3#1	23.35	23.45	23.31	23.35	23.45	23.31
		RB3#2	23.28	23.33	23.27	23.28	23.33	23.27
		RB6#0	23.52	23.42	23.61	23.52	23.42	23.61
3.0	QPSK	RB1#0	23.32	23.41	23.32	23.32	23.41	23.32
		RB1#7	23.26	23.24	23.17	23.26	23.24	23.17
		RB1#14	23.38	23.33	23.38	23.38	23.33	23.38
		RB8#0	23.22	23.23	23.29	23.22	23.23	23.29
		RB8#4	23.08	22.99	23.17	23.08	22.99	23.17
		RB8#7	23.25	23.20	23.34	23.25	23.20	23.34
		RB15#0	23.17	23.14	23.23	23.17	23.14	23.23
	16QAM	RB1#0	23.40	23.47	23.43	23.40	23.47	23.43
		RB1#7	23.30	23.26	23.39	23.30	23.26	23.39
		RB1#14	23.22	23.31	23.16	23.22	23.31	23.16
		RB8#0	23.18	23.12	23.18	23.18	23.12	23.18
		RB8#4	23.33	23.24	23.25	23.33	23.24	23.25
		RB8#7	23.45	23.45	23.43	23.45	23.45	23.43
		RB15#0	23.31	23.27	23.34	23.31	23.27	23.34

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.20	23.29	23.15	23.20	23.29	23.15
		RB1#12	23.11	23.13	23.15	23.11	23.13	23.15
		RB1#24	23.26	23.31	23.26	23.26	23.31	23.26
		RB12#0	23.15	23.20	23.24	23.15	23.20	23.24
		RB12#6	23.31	23.26	23.34	23.31	23.26	23.34
		RB12#11	23.37	23.38	23.39	23.37	23.38	23.39
		RB25#0	23.08	23.16	23.04	23.08	23.16	23.04
	16QAM	RB1#0	23.29	23.21	23.24	23.29	23.21	23.24
		RB1#12	23.64	23.66	23.62	23.64	23.66	23.62
		RB1#24	23.44	23.35	23.50	23.44	23.35	23.50
		RB12#0	23.23	23.13	23.25	23.23	23.13	23.25
		RB12#6	23.18	23.15	23.24	23.18	23.15	23.24
		RB12#11	23.26	23.32	23.34	23.26	23.32	23.34
		RB25#0	23.61	23.56	23.57	23.61	23.56	23.57
10.0	QPSK	RB1#0	23.57	23.63	23.59	23.57	23.63	23.59
		RB1#24	23.40	23.32	23.49	23.40	23.32	23.49
		RB1#49	23.55	23.63	23.65	23.55	23.63	23.65
		RB25#0	23.09	23.08	23.15	23.09	23.08	23.15
		RB25#12	23.50	23.46	23.58	23.50	23.46	23.58
		RB25#24	23.14	23.05	23.23	23.14	23.05	23.23
		RB50#0	23.22	23.18	23.31	23.22	23.18	23.31
	16QAM	RB1#0	23.11	23.12	23.02	23.11	23.12	23.02
		RB1#24	23.52	23.48	23.53	23.52	23.48	23.53
		RB1#49	23.36	23.40	23.40	23.36	23.40	23.40
		RB25#0	23.41	23.45	23.44	23.41	23.45	23.44
		RB25#12	23.39	23.42	23.31	23.39	23.42	23.31
		RB25#24	23.25	23.26	23.29	23.25	23.26	23.29
		RB50#0	23.50	23.49	23.43	23.50	23.49	23.43

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.17	23.09	23.08	23.17	23.09	23.08
		RB1#37	23.58	23.59	23.55	23.58	23.59	23.55
		RB1#74	23.15	23.06	23.18	23.15	23.06	23.18
		RB36#0	23.44	23.46	23.42	23.44	23.46	23.42
		RB36#18	23.44	23.48	23.42	23.44	23.48	23.42
		RB36#37	23.76	23.81	23.84	23.76	23.81	23.84
		RB75#0	23.21	23.25	23.30	23.21	23.25	23.30
	16QAM	RB1#0	23.08	23.07	23.02	23.08	23.07	23.02
		RB1#37	23.27	23.33	23.20	23.27	23.33	23.20
		RB1#74	23.01	22.95	22.93	23.01	22.95	22.93
		RB36#0	23.27	23.21	23.29	23.27	23.21	23.29
		RB36#18	23.30	23.31	23.38	23.30	23.31	23.38
		RB36#37	23.23	23.25	23.19	23.23	23.25	23.19
		RB75#0	23.13	23.10	23.18	23.13	23.10	23.18
20.0	QPSK	RB1#0	23.54	23.49	23.55	23.54	23.49	23.55
		RB1#49	23.69	23.64	23.75	23.69	23.64	23.75
		RB1#99	23.60	23.63	23.58	23.60	23.63	23.58
		RB50#0	23.04	23.01	23.14	23.04	23.01	23.14
		RB50#24	23.18	23.16	23.16	23.18	23.16	23.16
		RB50#49	23.17	23.12	23.16	23.17	23.12	23.16
		RB100#0	23.27	23.31	23.21	23.27	23.31	23.21
	16QAM	RB1#0	23.45	23.38	23.41	23.45	23.38	23.41
		RB1#49	23.42	23.51	23.37	23.42	23.51	23.37
		RB1#99	23.40	23.33	23.46	23.40	23.33	23.46
		RB50#0	23.01	23.07	23.11	23.01	23.07	23.11
		RB50#24	23.69	23.65	23.70	23.69	23.65	23.70
		RB50#49	23.69	23.74	23.78	23.69	23.74	23.78
		RB100#0	23.39	23.38	23.42	23.39	23.38	23.42

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band4: Antenna Gain = 0.8dBi
For 1700-3000MHz, Cable Loss=0.8dB*(provided by the applicant)
Limit: EIRP≤30dBm

Peak-to-average ratio (PAR)

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.49	4.10	3.88	13	Pass
QPSK (100RB Size)	5.45	5.29	5.26	13	Pass
16QAM (1RB Size)	5.74	5.00	4.71	13	Pass
16QAM (100RB Size)	6.35	6.19	6.09	13	Pass

LTE Band 5:

Maximum Output Power

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.35	23.31	23.36	20	19.96	20.01
		RB1#2	23.24	23.2	23.19	19.89	19.85	19.84
		RB1#5	23.18	23.2	23.16	19.83	19.85	19.81
		RB3#0	23.53	23.52	23.45	20.18	20.17	20.1
		RB3#1	23.32	23.41	23.24	19.97	20.06	19.89
		RB3#2	23.58	23.63	23.66	20.23	20.28	20.31
		RB6#0	23.35	23.41	23.26	20	20.06	19.91
	16QAM	RB1#0	23.60	23.55	23.64	20.25	20.2	20.29
		RB1#2	23.08	23.06	23.04	19.73	19.71	19.69
		RB1#5	23.25	23.27	23.30	19.9	19.92	19.95
		RB3#0	23.04	23.12	23.13	19.69	19.77	19.78
		RB3#1	23.35	23.45	23.31	20	20.1	19.96
		RB3#2	23.28	23.33	23.27	19.93	19.98	19.92
		RB6#0	23.52	23.42	23.61	20.17	20.07	20.26
3.0	QPSK	RB1#0	23.32	23.41	23.32	19.97	20.06	19.97
		RB1#7	23.26	23.24	23.17	19.91	19.89	19.82
		RB1#14	23.38	23.33	23.38	20.03	19.98	20.03
		RB8#0	23.22	23.23	23.29	19.87	19.88	19.94
		RB8#4	23.08	22.99	23.17	19.73	19.64	19.82
		RB8#7	23.25	23.2	23.34	19.9	19.85	19.99
		RB15#0	23.17	23.14	23.23	19.82	19.79	19.88
	16QAM	RB1#0	23.4	23.47	23.43	20.05	20.12	20.08
		RB1#7	23.3	23.26	23.39	19.95	19.91	20.04
		RB1#14	23.22	23.31	23.16	19.87	19.96	19.81
		RB8#0	23.18	23.12	23.18	19.83	19.77	19.83
		RB8#4	23.33	23.24	23.25	19.98	19.89	19.9
		RB8#7	23.45	23.45	23.43	20.1	20.1	20.08
		RB15#0	23.31	23.27	23.34	19.96	19.92	19.99

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.20	23.29	23.15	19.85	19.94	19.8
		RB1#12	23.11	23.13	23.15	19.76	19.78	19.8
		RB1#24	23.26	23.31	23.26	19.91	19.96	19.91
		RB12#0	23.15	23.20	23.24	19.8	19.85	19.89
		RB12#6	23.31	23.26	23.34	19.96	19.91	19.99
		RB12#11	23.37	23.38	23.39	20.02	20.03	20.04
		RB25#0	23.08	23.16	23.04	19.73	19.81	19.69
	16QAM	RB1#0	23.29	23.21	23.24	19.94	19.86	19.89
		RB1#12	23.64	23.66	23.62	20.29	20.31	20.27
		RB1#24	23.44	23.35	23.50	20.09	20	20.15
		RB12#0	23.23	23.13	23.25	19.88	19.78	19.9
		RB12#6	23.18	23.15	23.24	19.83	19.8	19.89
		RB12#11	23.26	23.32	23.34	19.91	19.97	19.99
		RB25#0	23.61	23.56	23.57	20.26	20.21	20.22
10.0	QPSK	RB1#0	23.57	23.63	23.59	20.22	20.28	20.24
		RB1#24	23.40	23.32	23.49	20.05	19.97	20.14
		RB1#49	23.55	23.63	23.65	20.2	20.28	20.3
		RB25#0	23.09	23.08	23.15	19.74	19.73	19.8
		RB25#12	23.50	23.46	23.58	20.15	20.11	20.23
		RB25#24	23.14	23.05	23.23	19.79	19.7	19.88
		RB50#0	23.22	23.18	23.31	19.87	19.83	19.96
	16QAM	RB1#0	23.11	23.12	23.02	19.76	19.77	19.67
		RB1#24	23.52	23.48	23.53	20.17	20.13	20.18
		RB1#49	23.36	23.40	23.40	20.01	20.05	20.05
		RB25#0	23.41	23.45	23.44	20.06	20.1	20.09
		RB25#12	23.39	23.42	23.31	20.04	20.07	19.96
		RB25#24	23.25	23.26	23.29	19.9	19.91	19.94
		RB50#0	23.50	23.49	23.43	20.15	20.14	20.08

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For Band5: Antenna Gain = -0.7dBi = -2.85dBd (0dBd=2.15dBi)
For 700-960MHz, Cable Loss=0.5dB*(provided by the applicant)
Limit: ERP≤38.45dBm

Peak-to-average ratio (PAR)

10MHz bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.55	4.10	4.36	13	Pass
QPSK (50RB Size)	5.38	5.45	5.42	13	Pass
16QAM (1RB Size)	5.58	4.94	5.06	13	Pass
16QAM (50RB Size)	6.22	6.35	6.25	13	Pass

LTE Band 7:

Maximum Output Power

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.23	23.17	23.14	23.13	23.07	23.04
		RB1#12	23.20	23.26	23.23	23.1	23.16	23.13
		RB1#24	23.08	23.06	23.05	22.98	22.96	22.95
		RB12#0	23.28	23.35	23.35	23.18	23.25	23.25
		RB12#6	23.48	23.56	23.40	23.38	23.46	23.3
		RB12#11	23.43	23.37	23.36	23.33	23.27	23.26
		RB25#0	23.37	23.38	23.37	23.27	23.28	23.27
	16QAM	RB1#0	23.32	23.22	23.40	23.22	23.12	23.3
		RB1#12	23.48	23.47	23.39	23.38	23.37	23.29
		RB1#24	23.42	23.44	23.38	23.32	23.34	23.28
		RB12#0	22.98	22.89	23.06	22.88	22.79	22.96
		RB12#6	23.39	23.39	23.44	23.29	23.29	23.34
		RB12#11	23.43	23.51	23.50	23.33	23.41	23.4
		RB25#0	23.24	23.31	23.28	23.14	23.21	23.18
10.0	QPSK	RB1#0	23.23	23.29	23.21	23.13	23.19	23.11
		RB1#24	23.16	23.12	23.20	23.06	23.02	23.1
		RB1#49	23.01	22.94	22.98	22.91	22.84	22.88
		RB25#0	23.63	23.71	23.68	23.53	23.61	23.58
		RB25#12	23.33	23.34	23.31	23.23	23.24	23.21
		RB25#24	23.32	23.29	23.25	23.22	23.19	23.15
		RB50#0	23.43	23.43	23.36	23.33	23.33	23.26
	16QAM	RB1#0	23.25	23.31	23.17	23.15	23.21	23.07
		RB1#24	23.12	23.17	23.19	23.02	23.07	23.09
		RB1#49	23.39	23.38	23.42	23.29	23.28	23.32
		RB25#0	23.44	23.54	23.52	23.34	23.44	23.42
		RB25#12	23.27	23.25	23.26	23.17	23.15	23.16
		RB25#24	23.52	23.46	23.48	23.42	23.36	23.38
		RB50#0	23.12	23.06	23.10	23.02	22.96	23

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.23	23.18	23.28	23.13	23.08	23.18
		RB1#37	23.17	23.18	23.26	23.07	23.08	23.16
		RB1#74	23.30	23.27	23.23	23.2	23.17	23.13
		RB36#0	23.11	23.05	23.03	23.01	22.95	22.93
		RB36#18	23.45	23.49	23.38	23.35	23.39	23.28
		RB36#37	23.15	23.05	23.12	23.05	22.95	23.02
		RB75#0	23.37	23.45	23.43	23.27	23.35	23.33
	16QAM	RB1#0	23.29	23.26	23.21	23.19	23.16	23.11
		RB1#37	23.50	23.55	23.60	23.4	23.45	23.5
		RB1#74	23.67	23.63	23.59	23.57	23.53	23.49
		RB36#0	23.70	23.63	23.79	23.6	23.53	23.69
		RB36#18	23.49	23.55	23.56	23.39	23.45	23.46
		RB36#37	23.17	23.16	23.07	23.07	23.06	22.97
		RB75#0	23.56	23.48	23.54	23.46	23.38	23.44
20.0	QPSK	RB1#0	23.23	23.18	23.17	23.13	23.08	23.07
		RB1#49	23.08	23.00	23.10	22.98	22.9	23
		RB1#99	23.71	23.64	23.70	23.61	23.54	23.6
		RB50#0	23.01	22.99	23.05	22.91	22.89	22.95
		RB50#24	23.57	23.62	23.49	23.47	23.52	23.39
		RB50#49	23.44	23.48	23.49	23.34	23.38	23.39
		RB100#0	23.24	23.20	23.24	23.14	23.1	23.14
	16QAM	RB1#0	23.28	23.27	23.18	23.18	23.17	23.08
		RB1#49	23.28	23.19	23.34	23.18	23.09	23.24
		RB1#99	23.43	23.45	23.42	23.33	23.35	23.32
		RB50#0	22.91	22.85	22.85	22.81	22.75	22.75
		RB50#24	23.20	23.24	23.22	23.1	23.14	23.12
		RB50#49	23.30	23.28	23.35	23.2	23.18	23.25
		RB100#0	23.30	23.28	23.40	23.2	23.18	23.3

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band7: Antenna Gain = 0.7dBi
For 1700-3000MHz, Cable Loss=0.8dB*(provided by the applicant)
Limit: EIRP≤33dBm

Peak-to-average ratio (PAR)

20MHz bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.07	4.23	3.72	13	Pass
QPSK (100RB Size)	5.35	5.51	5.32	13	Pass
16QAM (1RB Size)	5.00	5.00	4.71	13	Pass
16QAM (100RB Size)	6.19	6.31	6.22	13	Pass

LTE Band 12

Maximum Output Power

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.33	23.33	23.40	18.18	18.18	18.25
		RB1#2	23.20	23.27	23.21	18.05	18.12	18.06
		RB1#5	23.46	23.44	23.42	18.31	18.29	18.27
		RB3#0	23.60	23.56	23.62	18.45	18.41	18.47
		RB3#1	23.31	23.23	23.34	18.16	18.08	18.19
		RB3#2	23.42	23.47	23.52	18.27	18.32	18.37
		RB6#0	22.96	23.02	23.00	17.81	17.87	17.85
	16QAM	RB1#0	23.21	23.12	23.18	18.06	17.97	18.03
		RB1#2	22.95	22.99	22.95	17.8	17.84	17.8
		RB1#5	23.33	23.25	23.27	18.18	18.1	18.12
		RB3#0	23.33	23.30	23.27	18.18	18.15	18.12
		RB3#1	23.29	23.19	23.27	18.14	18.04	18.12
		RB3#2	23.28	23.36	23.19	18.13	18.21	18.04
		RB6#0	23.21	23.16	23.23	18.06	18.01	18.08
3.0	QPSK	RB1#0	23.33	23.39	23.24	18.18	18.24	18.09
		RB1#7	23.39	23.45	23.44	18.24	18.3	18.29
		RB1#14	23.15	23.07	23.23	18	17.92	18.08
		RB8#0	23.41	23.34	23.50	18.26	18.19	18.35
		RB8#4	23.44	23.49	23.41	18.29	18.34	18.26
		RB8#7	23.32	23.38	23.41	18.17	18.23	18.26
		RB15#0	23.53	23.61	23.48	18.38	18.46	18.33
	16QAM	RB1#0	23.60	23.66	23.65	18.45	18.51	18.5
		RB1#7	23.10	23.06	23.15	17.95	17.91	18
		RB1#14	22.93	22.95	22.87	17.78	17.8	17.72
		RB8#0	23.28	23.36	23.29	18.13	18.21	18.14
		RB8#4	23.48	23.44	23.47	18.33	18.29	18.32
		RB8#7	23.05	23.13	23.10	17.9	17.98	17.95
		RB15#0	23.13	23.14	23.03	18.18	18.18	18.25

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.33	23.40	23.31	18.18	18.25	18.16
		RB1#12	23.36	23.27	23.29	18.21	18.12	18.14
		RB1#24	23.10	23.08	23.14	17.95	17.93	17.99
		RB12#0	23.44	23.41	23.38	18.29	18.26	18.23
		RB12#6	23.38	23.36	23.44	18.23	18.21	18.29
		RB12#11	23.59	23.69	23.67	18.44	18.54	18.52
		RB25#0	23.39	23.29	23.31	18.24	18.14	18.16
	16QAM	RB1#0	23.53	23.50	23.55	18.38	18.35	18.4
		RB1#12	23.27	23.24	23.33	18.12	18.09	18.18
		RB1#24	23.50	23.46	23.46	18.35	18.31	18.31
		RB12#0	23.10	23.10	23.14	17.95	17.95	17.99
		RB12#6	23.11	23.06	23.02	17.96	17.91	17.87
		RB12#11	23.61	23.57	23.61	18.46	18.42	18.46
		RB25#0	23.38	23.42	23.37	18.23	18.27	18.22
10.0	QPSK	RB1#0	23.33	23.26	23.33	18.18	18.11	18.18
		RB1#24	23.06	22.97	23.01	17.91	17.82	17.86
		RB1#49	23.61	23.59	23.69	18.46	18.44	18.54
		RB25#0	23.43	23.51	23.46	18.28	18.36	18.31
		RB25#12	23.67	23.77	23.68	18.52	18.62	18.53
		RB25#24	23.38	23.42	23.42	18.23	18.27	18.27
		RB50#0	23.67	23.61	23.60	18.52	18.46	18.45
	16QAM	RB1#0	23.54	23.61	23.52	18.39	18.46	18.37
		RB1#24	23.32	23.29	23.34	18.17	18.14	18.19
		RB1#49	23.18	23.18	23.22	18.03	18.03	18.07
		RB25#0	23.13	23.10	23.04	17.98	17.95	17.89
		RB25#12	23.57	23.52	23.66	18.42	18.37	18.51
		RB25#24	23.60	23.51	23.69	18.45	18.36	18.54
		RB50#0	23.70	23.67	23.61	18.55	18.52	18.46

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For Band12: Antenna Gain = -2.5dBi = -4.65dBd (0dBd=2.15dBi)
For 700-960MHz, Cable Loss=0.5dB*(provided by the applicant)
Limit: ERP≤34.77dBm

Peak-to-average ratio (PAR)

10MHz bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.33	4.33	4.74	13	Pass
QPSK (50RB Size)	5.51	5.61	5.64	13	Pass
16QAM (1RB Size)	5.54	5.26	5.83	13	Pass
16QAM (50RB Size)	6.47	6.47	6.47	13	Pass

LTE Band 17:

Maximum Output Power

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.40	23.48	23.33	18.25	18.33	18.18
		RB1#12	23.70	23.74	23.61	18.55	18.59	18.46
		RB1#24	23.49	23.44	23.44	18.34	18.29	18.29
		RB12#0	23.20	23.20	23.18	18.05	18.05	18.03
		RB12#6	23.62	23.67	23.57	18.47	18.52	18.42
		RB12#11	23.50	23.60	23.53	18.35	18.45	18.38
		RB25#0	23.69	23.73	23.77	18.54	18.58	18.62
	16QAM	RB1#0	23.10	23.19	23.18	17.95	18.04	18.03
		RB1#12	23.26	23.30	23.36	18.11	18.15	18.21
		RB1#24	23.52	23.61	23.53	18.37	18.46	18.38
		RB12#0	23.04	23.05	23.07	17.89	17.9	17.92
		RB12#6	23.57	23.48	23.54	18.42	18.33	18.39
		RB12#11	23.21	23.27	23.25	18.06	18.12	18.1
		RB25#0	23.39	23.34	23.41	18.24	18.19	18.26
10.0	QPSK	RB1#0	23.48	23.41	23.55	18.33	18.26	18.4
		RB1#24	23.08	23.17	23.11	17.93	18.02	17.96
		RB1#49	23.01	23.02	22.93	17.86	17.87	17.78
		RB25#0	23.38	23.41	23.39	18.23	18.26	18.24
		RB25#12	23.05	22.98	23.10	17.9	17.83	17.95
		RB25#24	23.24	23.29	23.21	18.09	18.14	18.06
		RB50#0	23.38	23.36	23.46	18.23	18.21	18.31
	16QAM	RB1#0	23.22	23.24	23.29	18.07	18.09	18.14
		RB1#24	23.26	23.21	23.21	18.11	18.06	18.06
		RB1#49	23.60	23.63	23.55	18.45	18.48	18.4
		RB25#0	23.41	23.34	23.41	18.26	18.19	18.26
		RB25#12	23.20	23.28	23.16	18.05	18.13	18.01
		RB25#24	23.30	23.36	23.25	18.15	18.21	18.1
		RB50#0	23.16	23.19	23.26	18.01	18.04	18.11

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For Band17: Antenna Gain =-2.5dBi = -4.65dBd (0dBd=2.15dBi)
For 700-960MHz, Cable Loss=0.5dB*(provided by the applicant)
Limit: ERP≤34.77dBm

Peak-to-average ratio (PAR)

10MHz bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.49	4.74	4.62	13	Pass
QPSK (50RB Size)	5.61	5.58	5.58	13	Pass
16QAM (1RB Size)	5.67	5.61	5.26	13	Pass
16QAM (50RB Size)	6.47	6.47	6.44	13	Pass

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

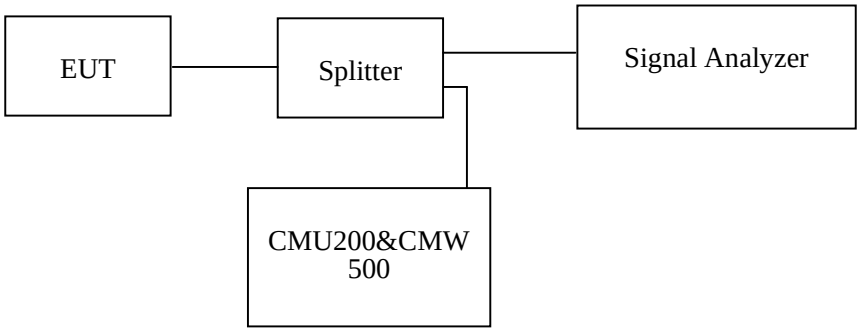
Applicable Standard

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:	23 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Andy Yu from 2020-10-10 to 2020-11-02.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	243.59	317.31
	190	836.6	245.19	327.24
	251	848.8	246.79	320.51
EGPRS(8PSK)	128	824.2	253.21	326.28
	190	836.6	253.21	332.05
	251	848.8	253.21	319.07

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.18	4.72
	836.6	4.18	4.71
	846.6	4.20	4.72
HSDPA	826.4	4.21	4.75
	836.6	4.21	4.97
	846.6	4.20	6.54
HSUPA	826.4	4.20	4.75
	836.6	4.18	4.70
	846.6	4.18	6.52

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	241.99	317.31
	661	1880.0	245.19	315.38
	810	1909.8	246.79	318.27
EGPRS(8PSK)	512	1850.2	250.00	321.47
	661	1880.0	250.00	321.47
	810	1909.8	248.40	316.67

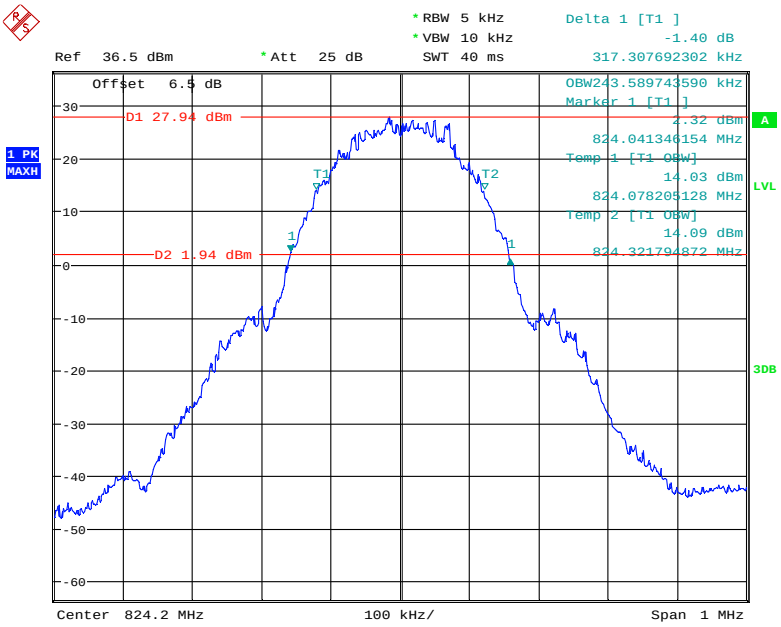
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.18	4.74
	1880.0	4.18	4.72
	1907.6	4.20	4.73
HSDPA	1852.4	4.18	4.76
	1880.0	4.21	5.02
	1907.6	4.18	4.73
HSUPA	1852.4	4.20	4.71
	1880.0	4.21	4.86
	1907.6	4.18	4.75

AWS Band (Part 27)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.20	4.71
	1732.6	4.18	4.71
	1752.6	4.18	4.71
HSDPA	1712.4	4.19	4.73
	1732.6	4.21	5.87
	1752.6	4.21	5.63
HSUPA	1712.4	4.18	4.73
	1732.6	4.21	5.85
	1752.6	4.23	6.08

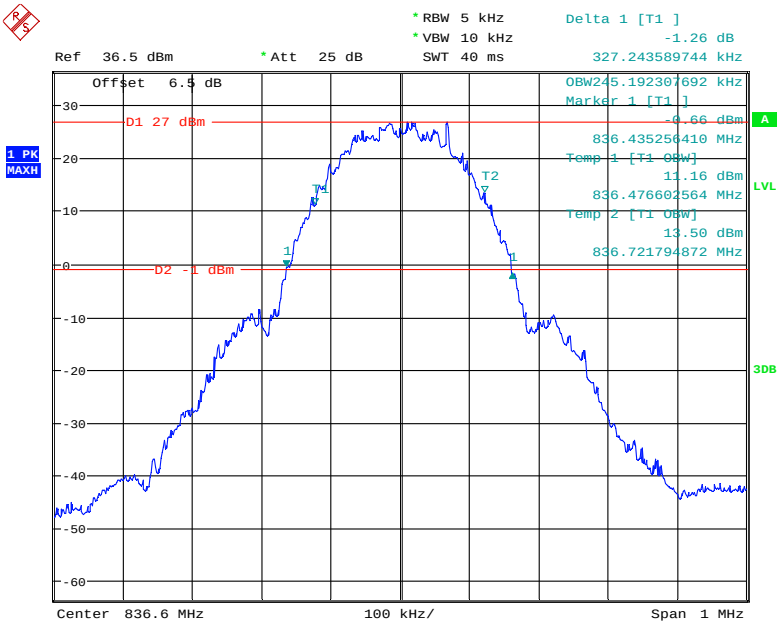
Cellular Band (Part 22H)

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



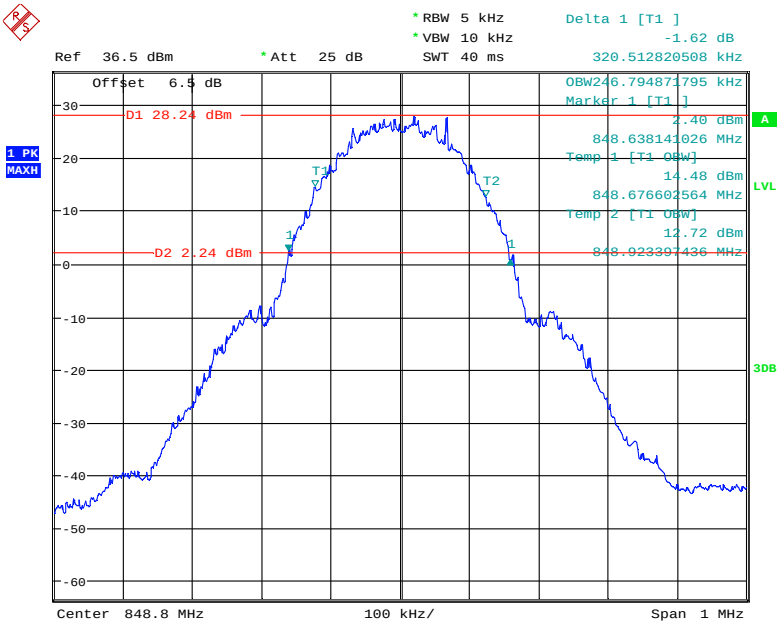
Date: 10.OCT.2020 10:09:23

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



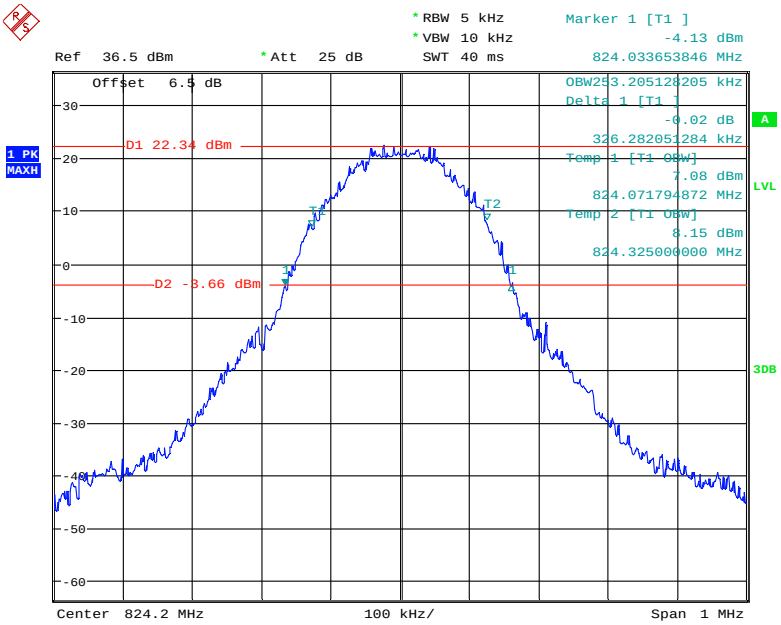
Date: 31.OCT.2020 12:01:51

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



Date: 10.OCT.2020 10:14:55

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



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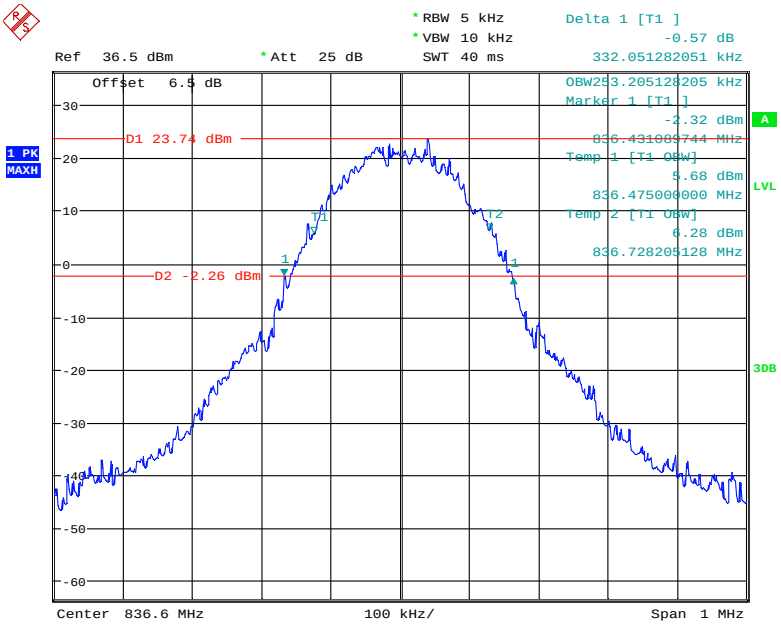
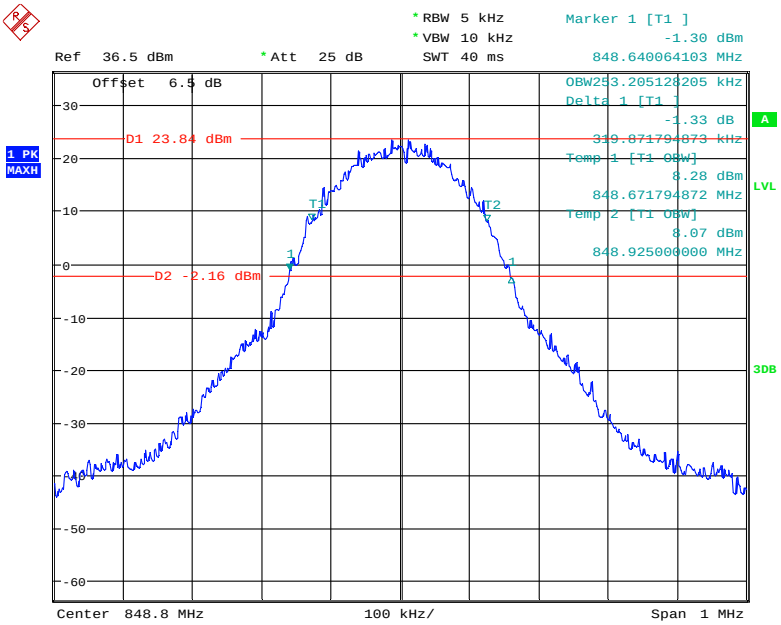
26 dB Emissions &99% Occupied Bandwidth for EGPRS (8PSK) Mode, Middle channel



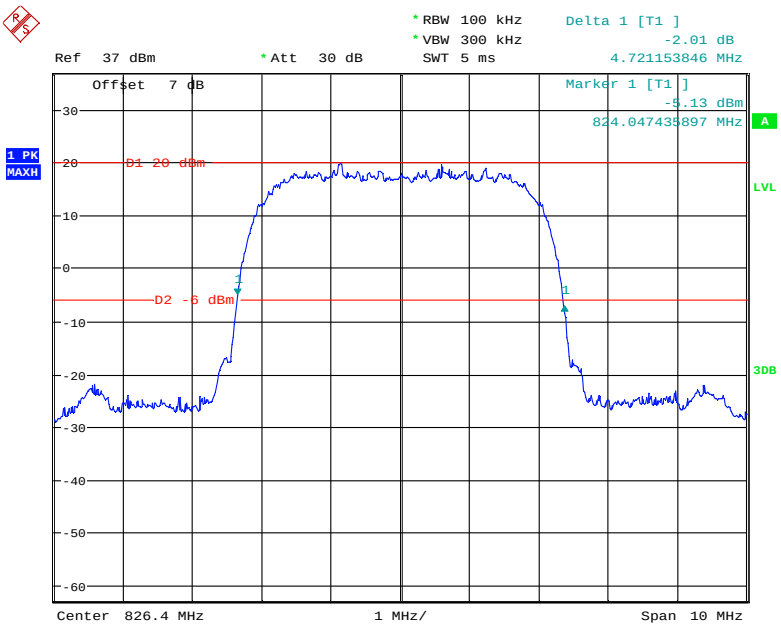
Date: 10.OCT.2020 10:42:36

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



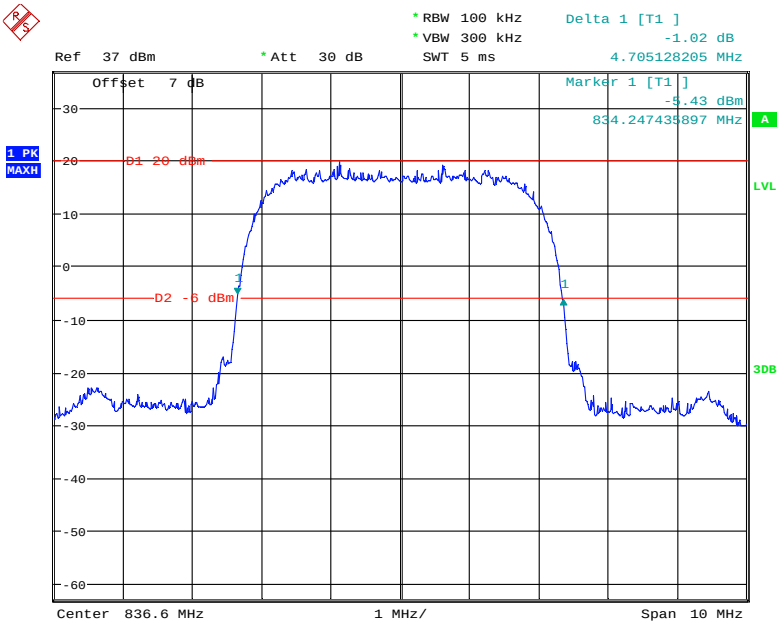
Date: 10.OCT.2020 10:44:37

26 dB Emissions Bandwidth for RMC (BPSK) Mode, Low channel



Date: 30.OCT.2020 19:49:25

26 dB Emissions Bandwidth for RMC (BPSK) Mode, Middle channel



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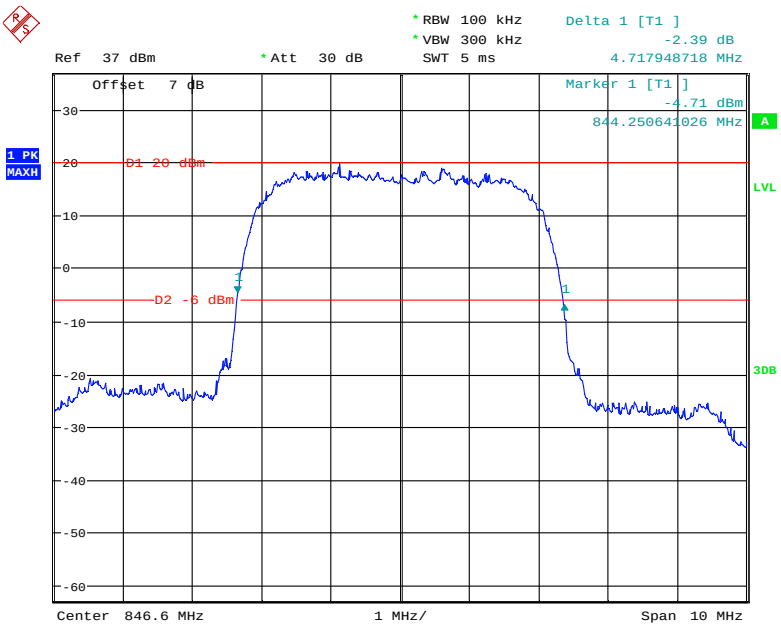
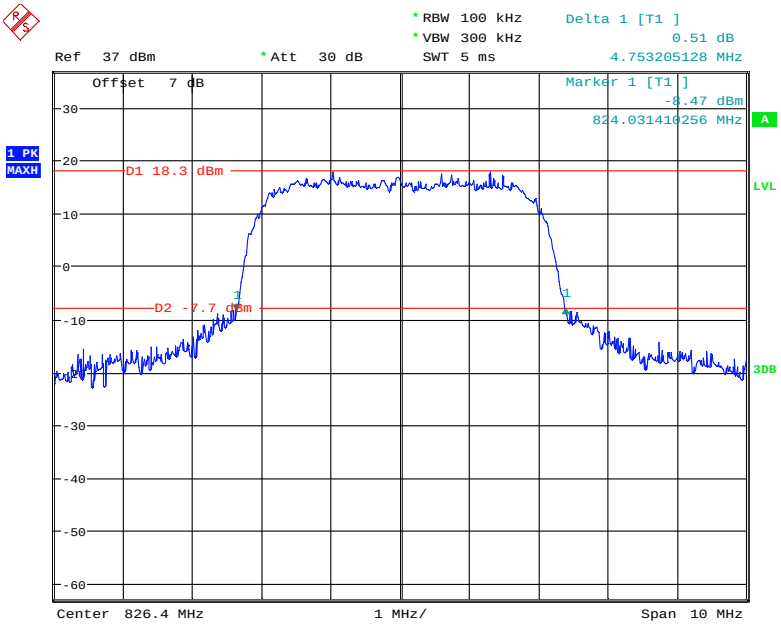
26 dB Emissions Bandwidth for RMC (BPSK) Mode, High channel



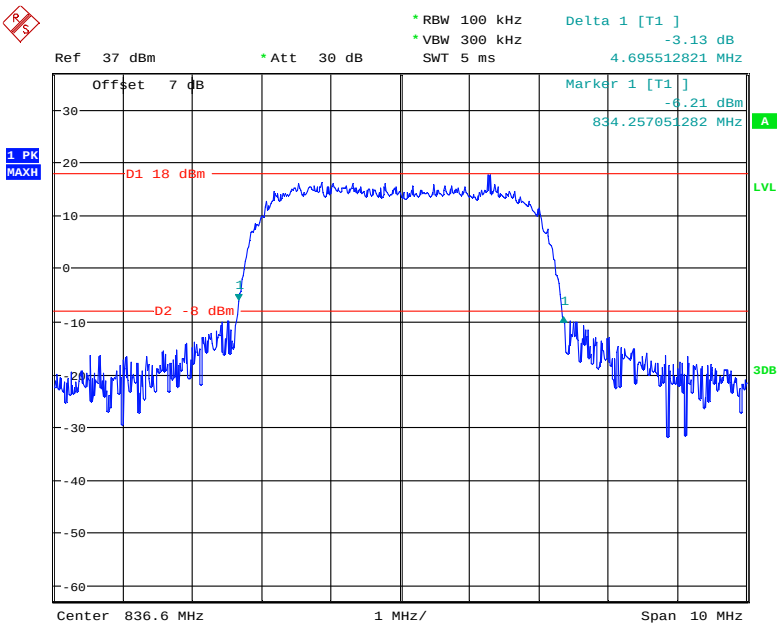
Date: 30.OCT.2020 19:47:32

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Low channel



Date: 30.OCT.2020 19:44:03

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Middle channel



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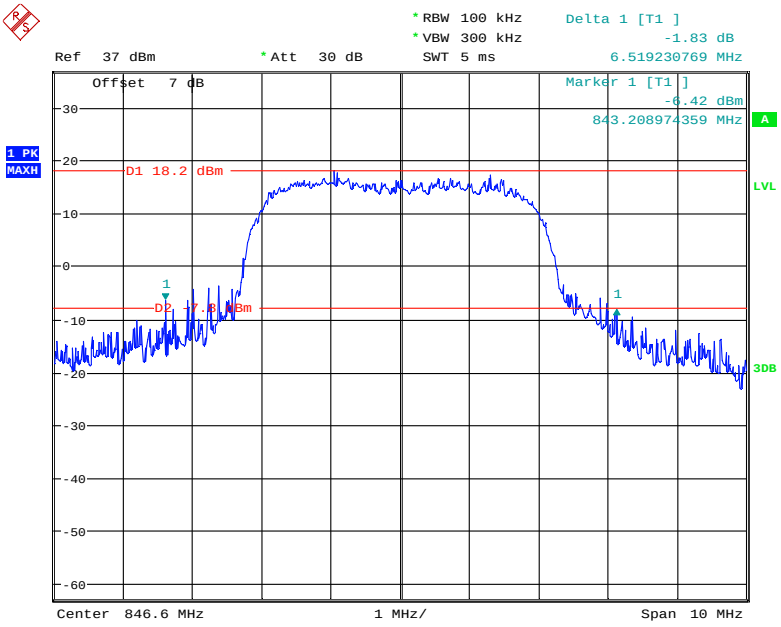
26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, High channel



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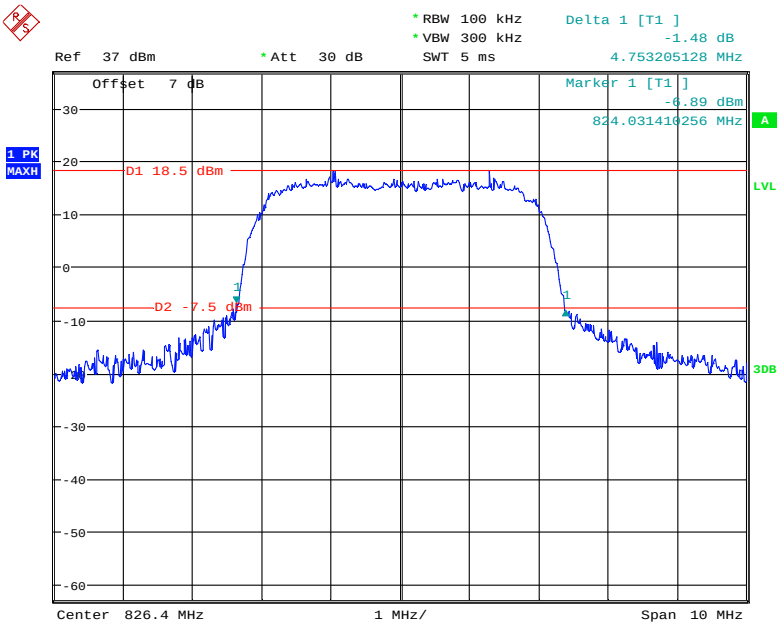
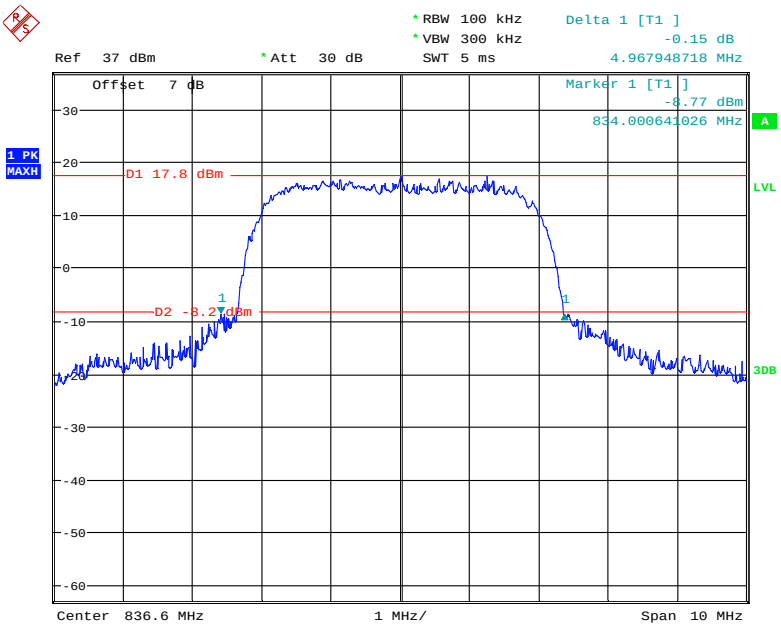
26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Low channel



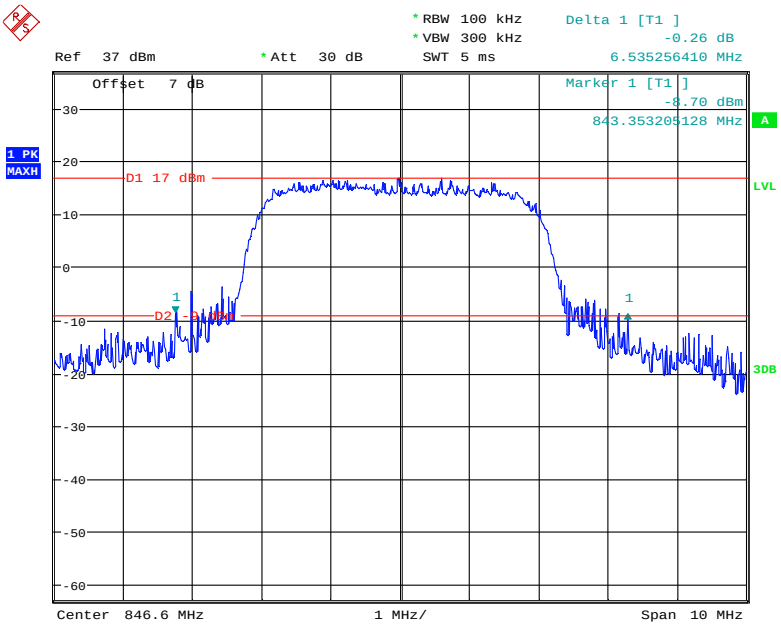
Date: 30.OCT.2020 19:42:56

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Middle channel



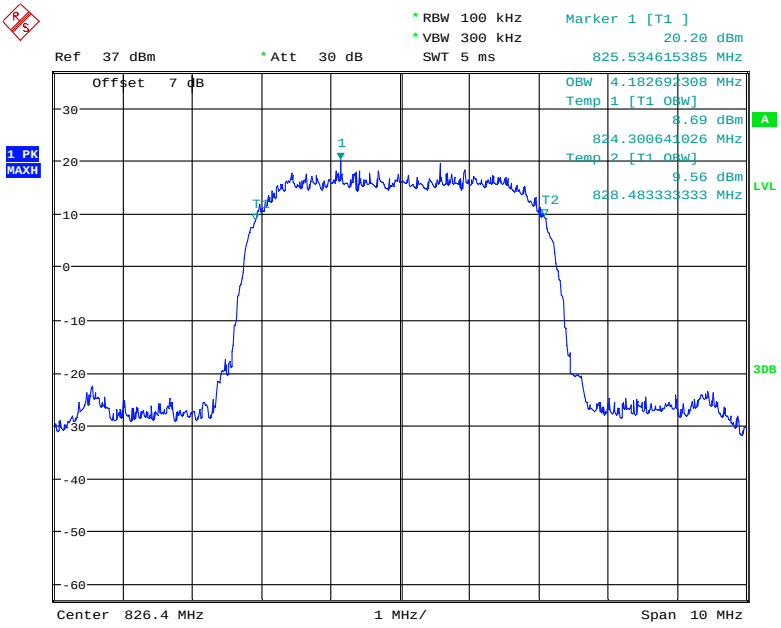
Date: 30.OCT.2020 19:41:34

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, High channel



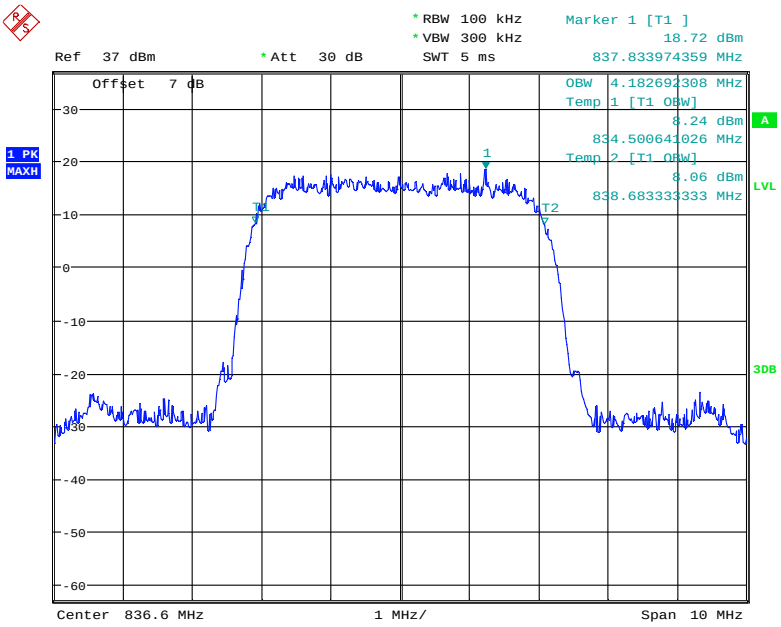
Date: 30.OCT.2020 19:46:16

99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



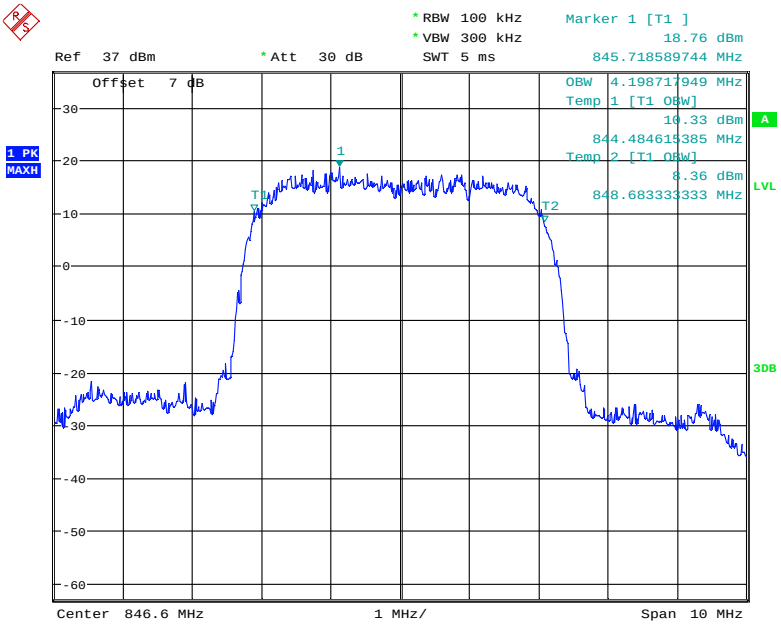
Date: 31.OCT.2020 09:43:27

99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



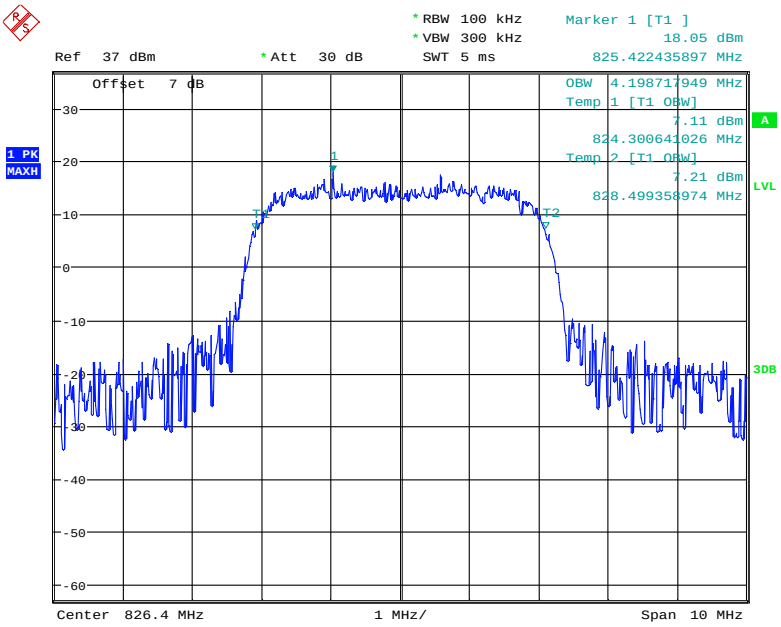
Date: 31.OCT.2020 09:43:53

99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



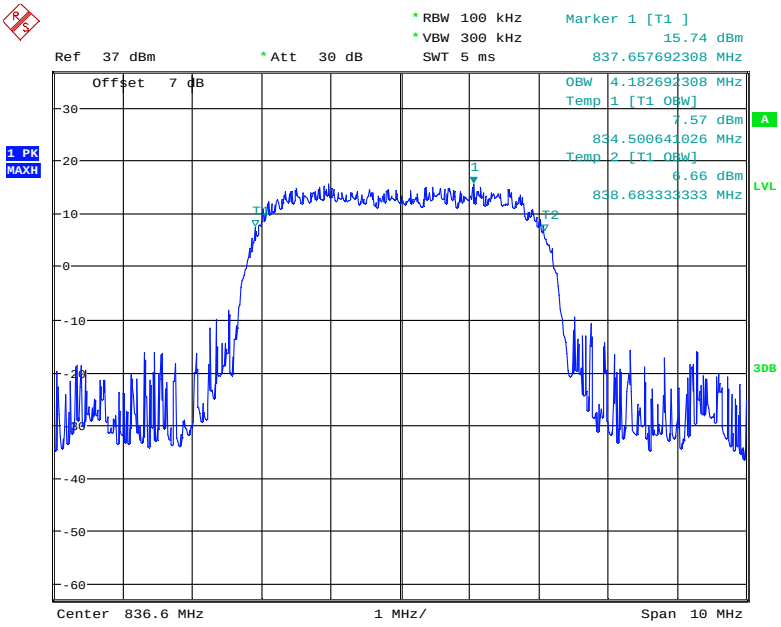
Date: 31.OCT.2020 09:44:06

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel



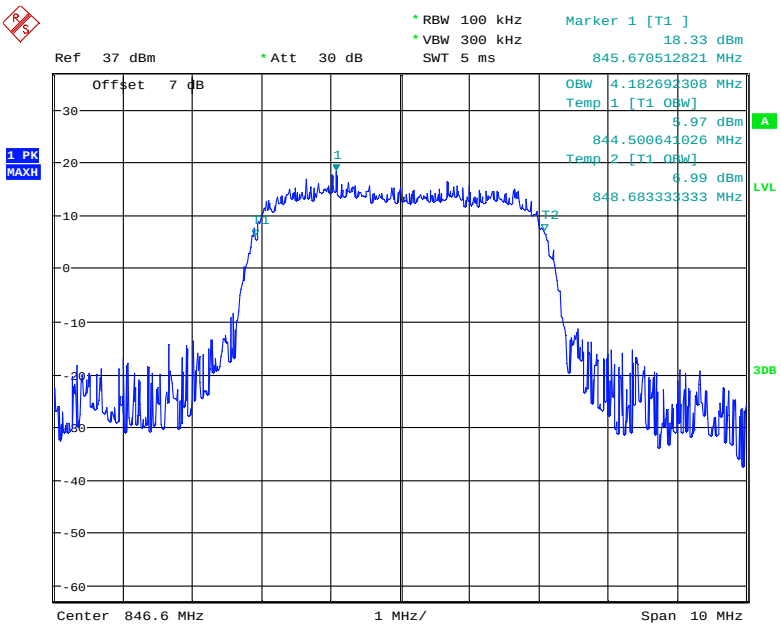
Date: 31.OCT.2020 09:45:28

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel



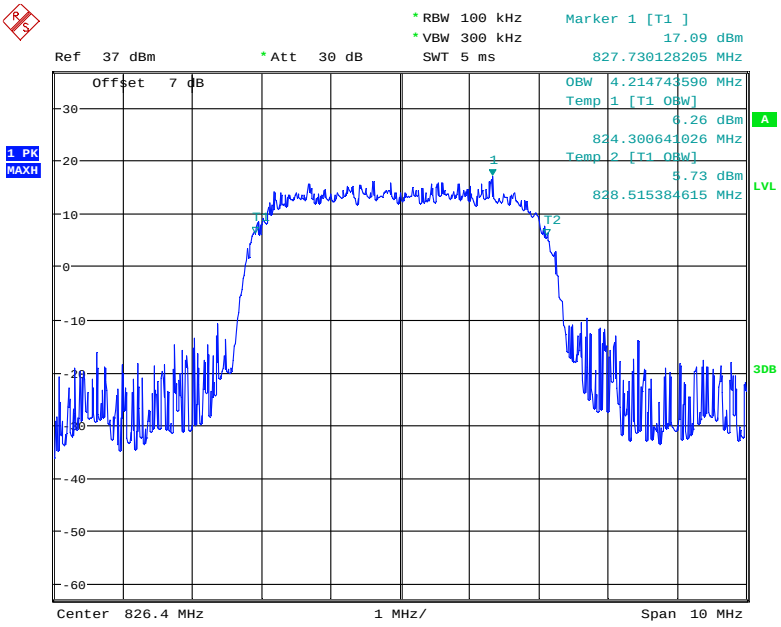
Date: 31.OCT.2020 09:44:58

99% Occupied Bandwidth for HSDP (BPSK) Mode, Low channel



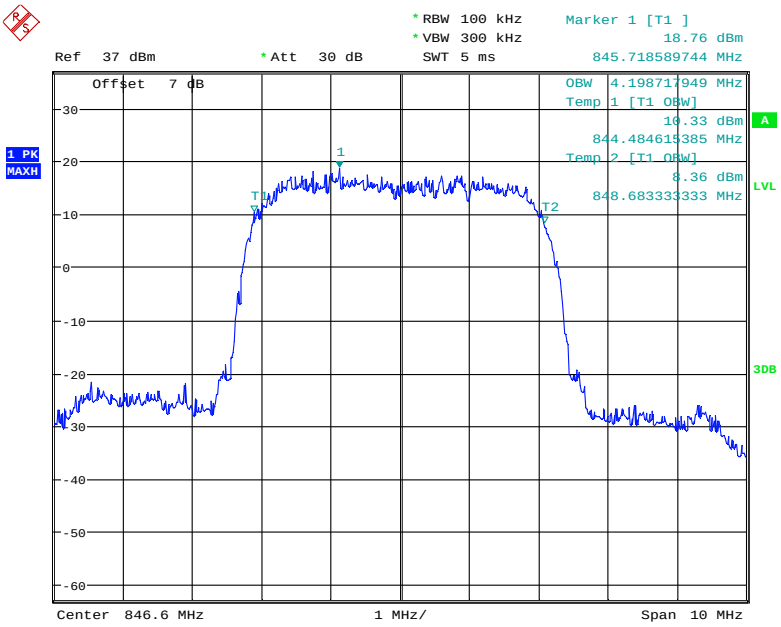
Date: 31.OCT.2020 09:44:38

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

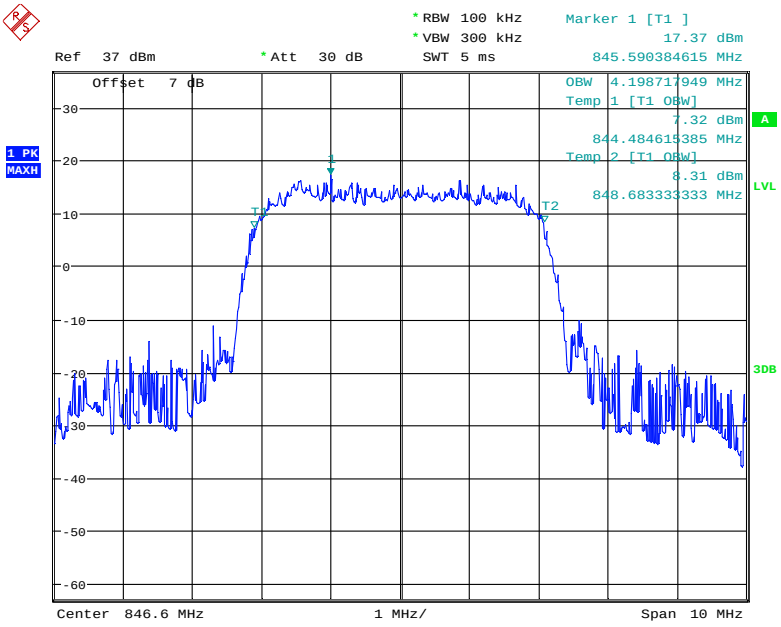


Date: 31.OCT.2020 09:45:19

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel

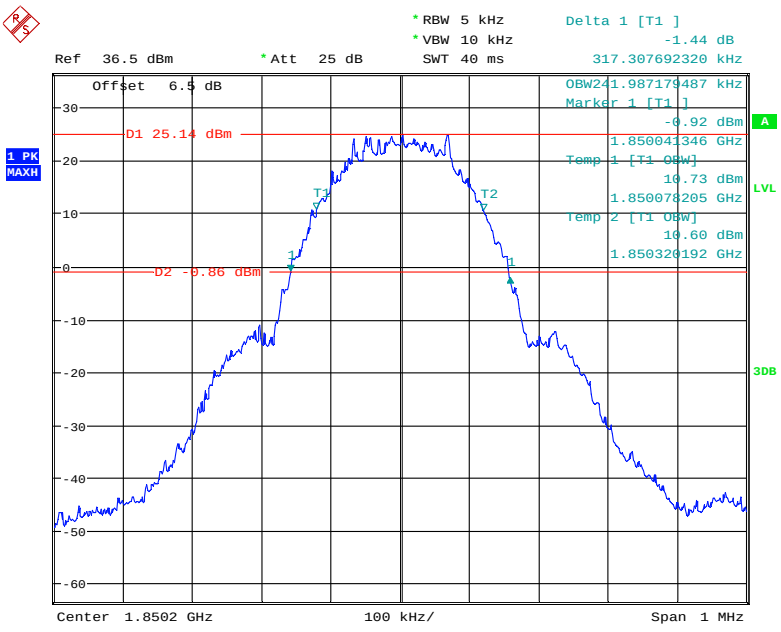


99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



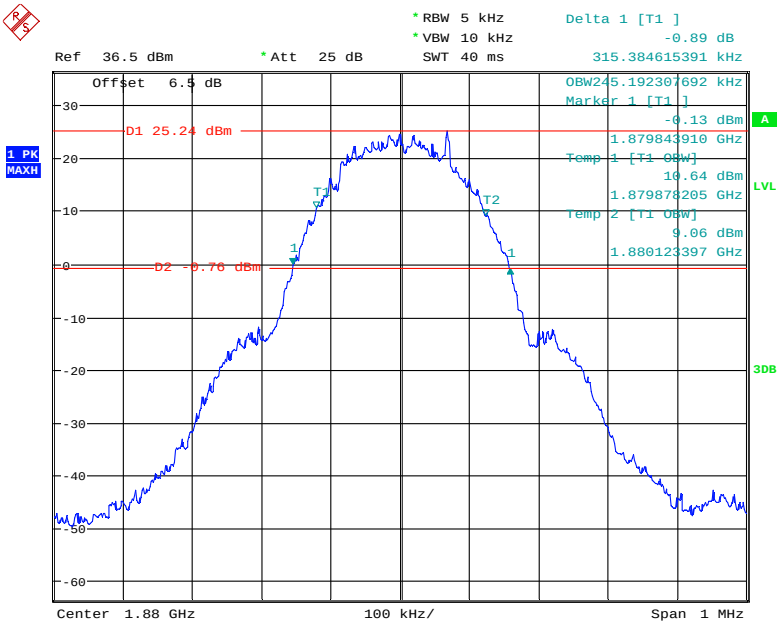
PCS Band (Part 24E)

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



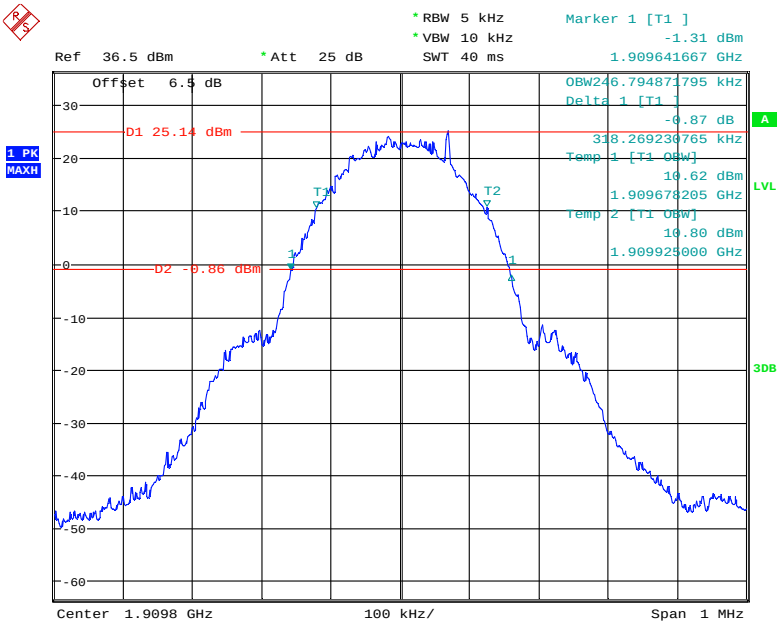
Date: 10.OCT.2020 10:20:50

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



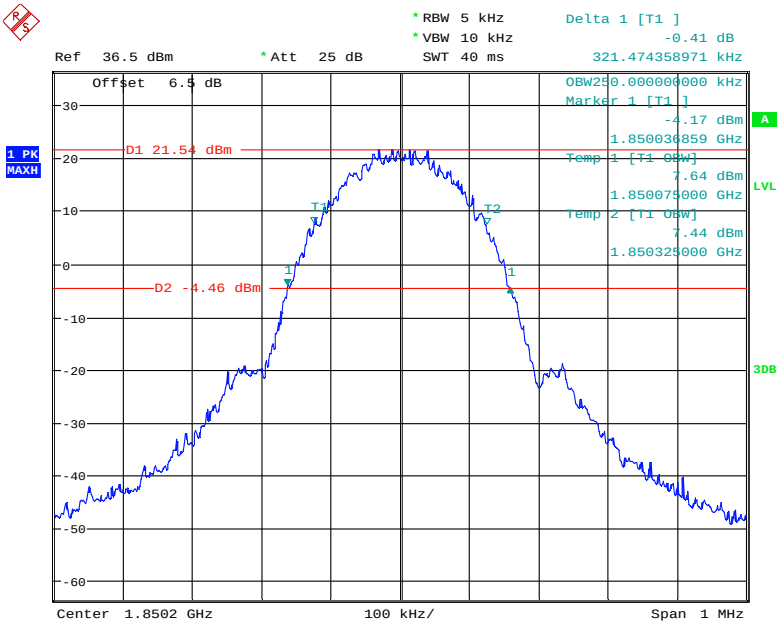
Date: 10.OCT.2020 10:22:51

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



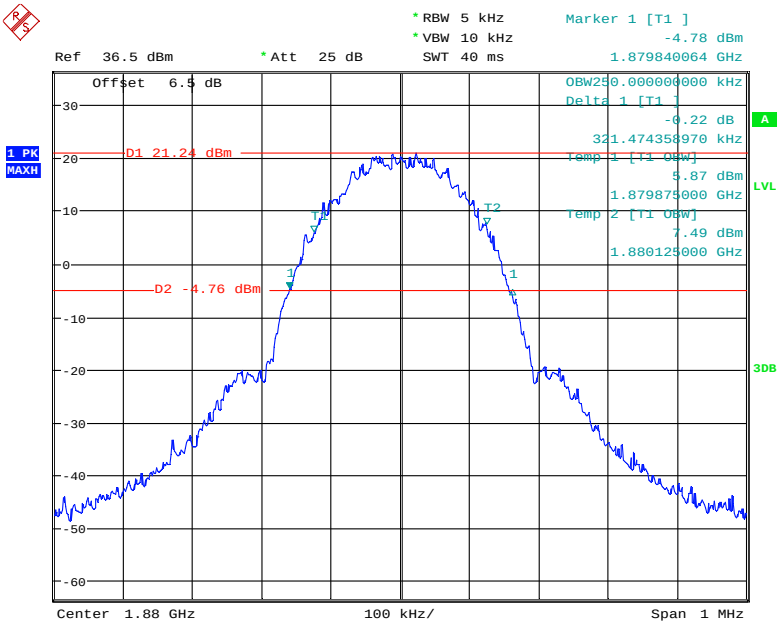
Date: 10.OCT.2020 10:25:41

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



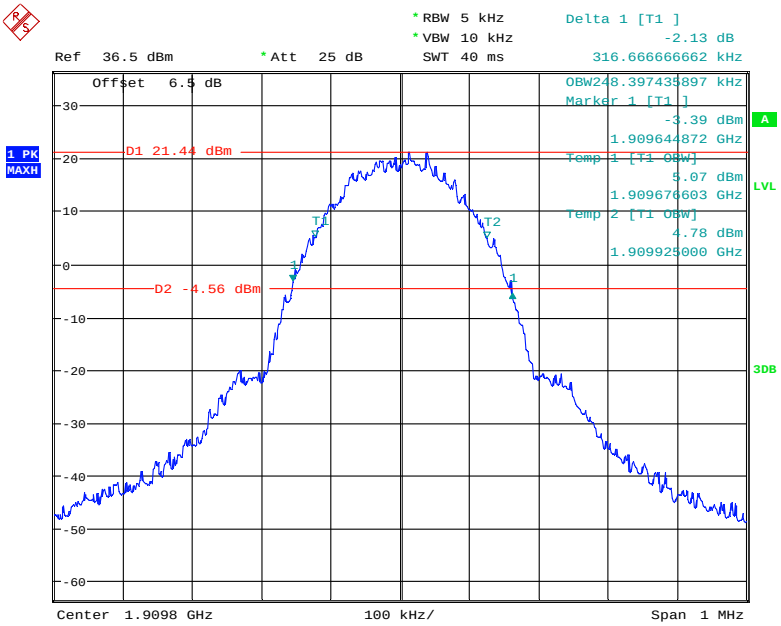
Date: 10.OCT.2020 10:34:47

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



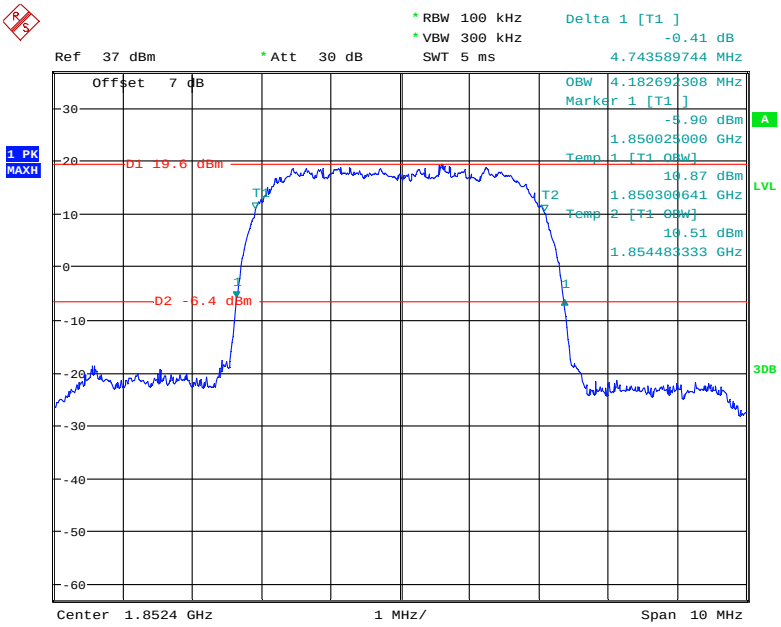
Date: 10.OCT.2020 10:31:50

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



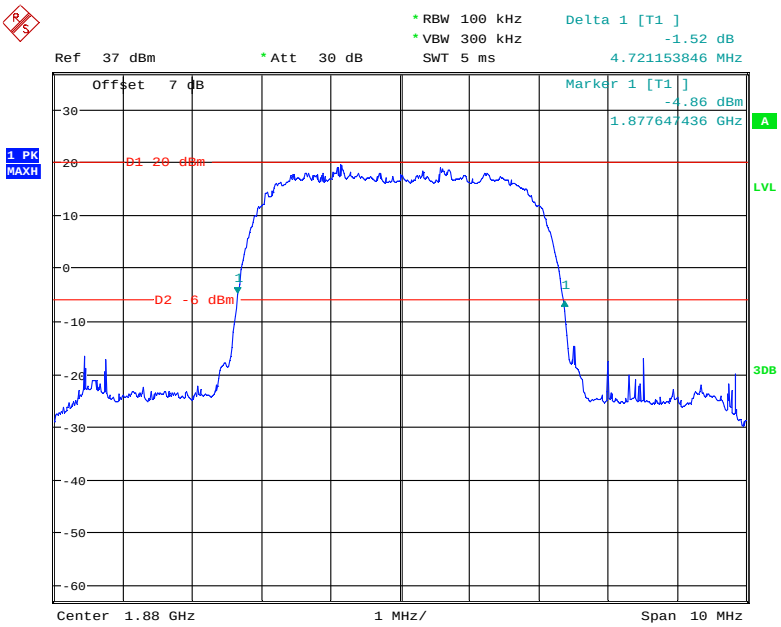
Date: 10.OCT.2020 10:29:51

26 dB Emissions Bandwidth for RMC (BPSK) Mode, Low channel



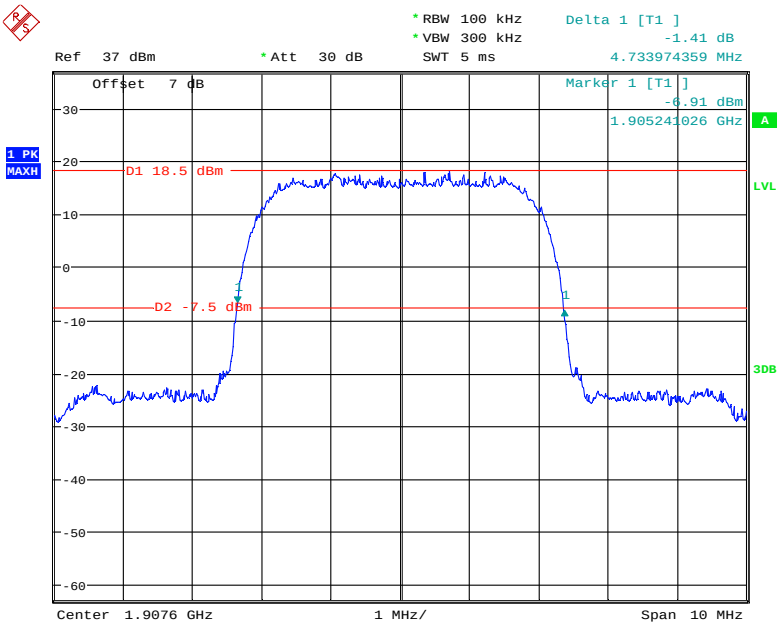
Date: 30.OCT.2020 19:12:29

26 dB Emissions Bandwidth for RMC (BPSK) Mode, Middle channel



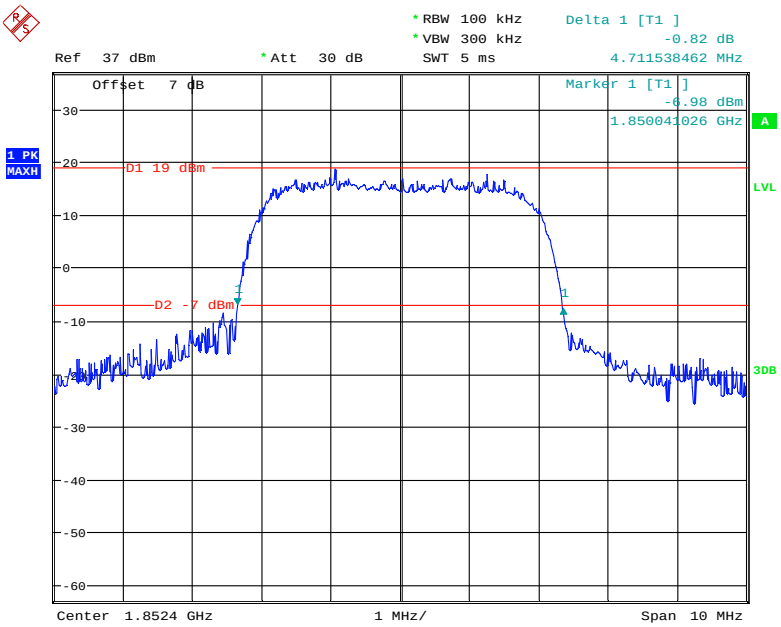
Date: 30.OCT.2020 19:25:50

26 dB Emissions Bandwidth for RMC (BPSK) Mode, High channel



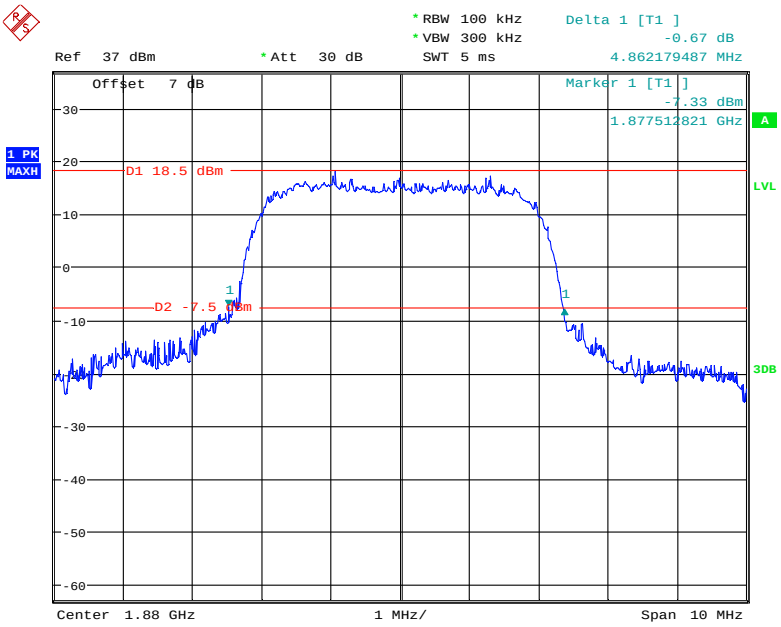
Date: 30.OCT.2020 19:24:41

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Low channel



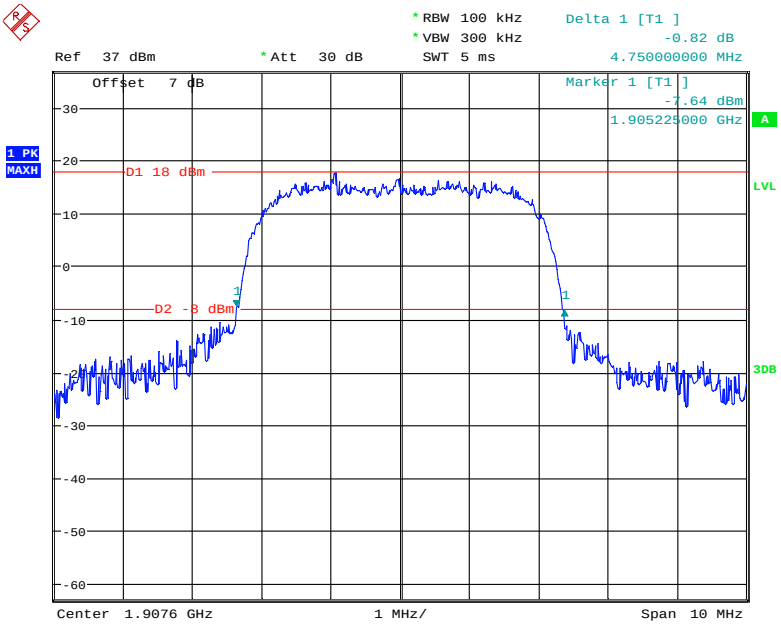
Date: 30.OCT.2020 19:20:13

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Middle channel



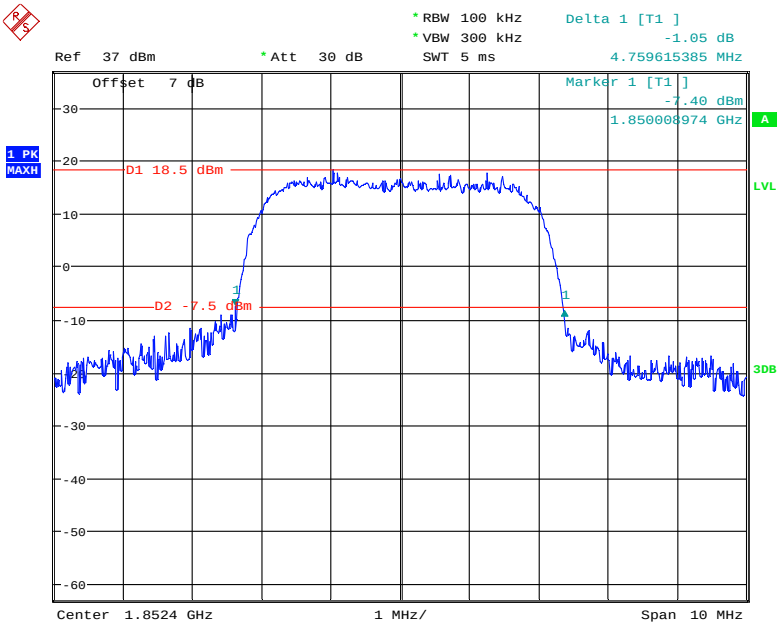
Date: 30.OCT.2020 19:20:56

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, High channel



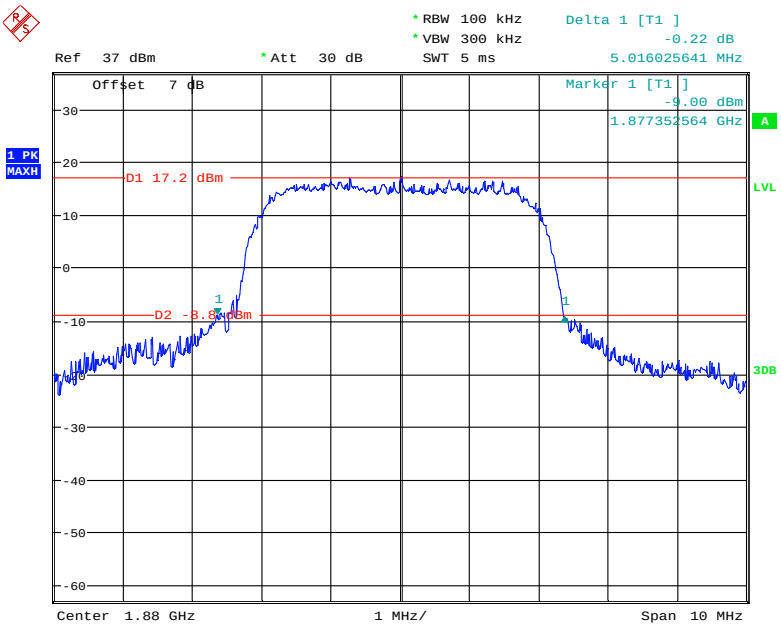
Date: 30.OCT.2020 19:21:57

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Low channel



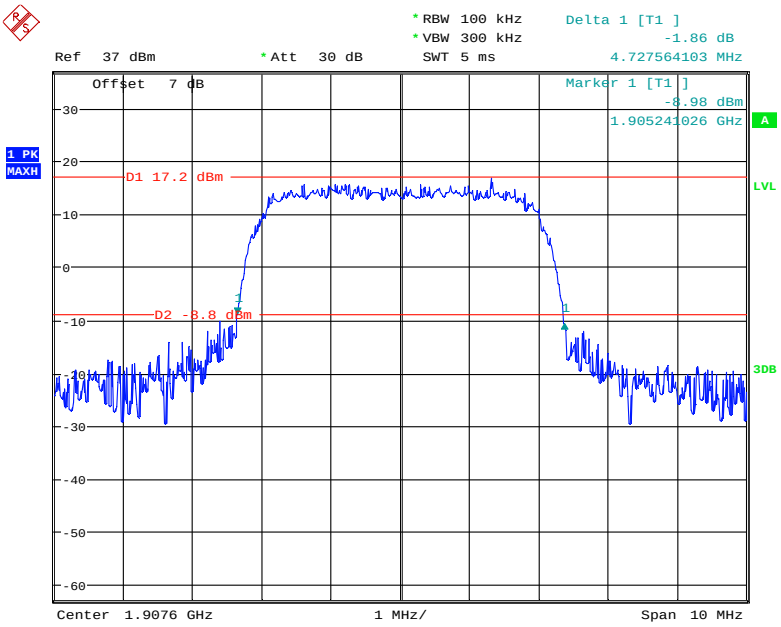
Date: 30.OCT.2020 19:19:30

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Middle channel



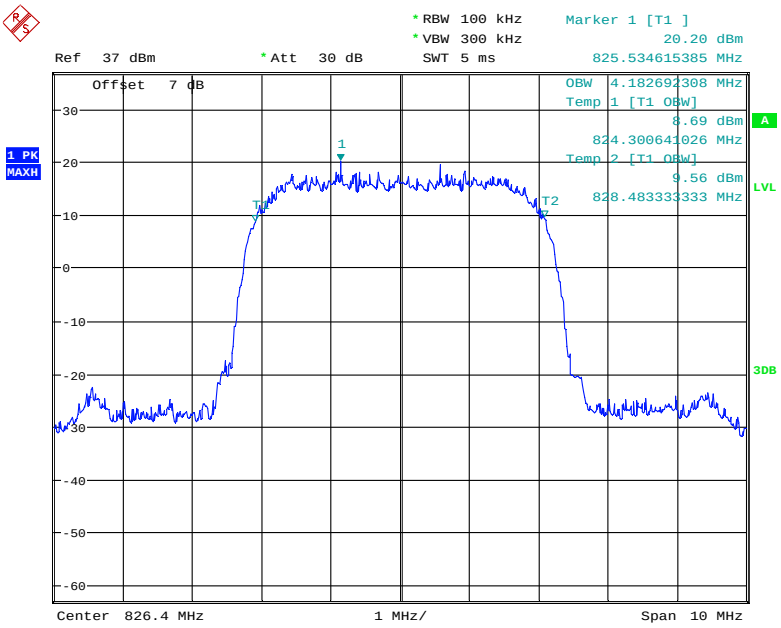
Date: 30.OCT.2020 19:17:48

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, High channel



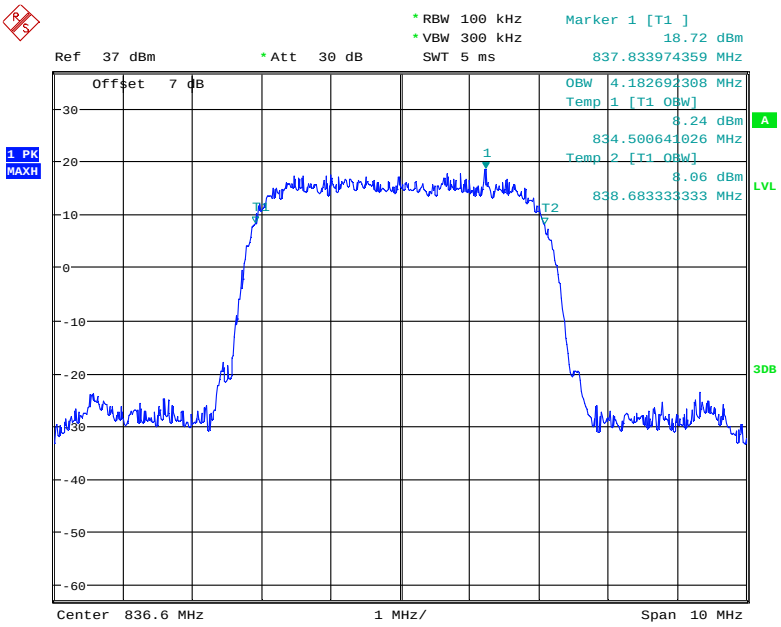
Date: 30.OCT.2020 19:18:44

99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



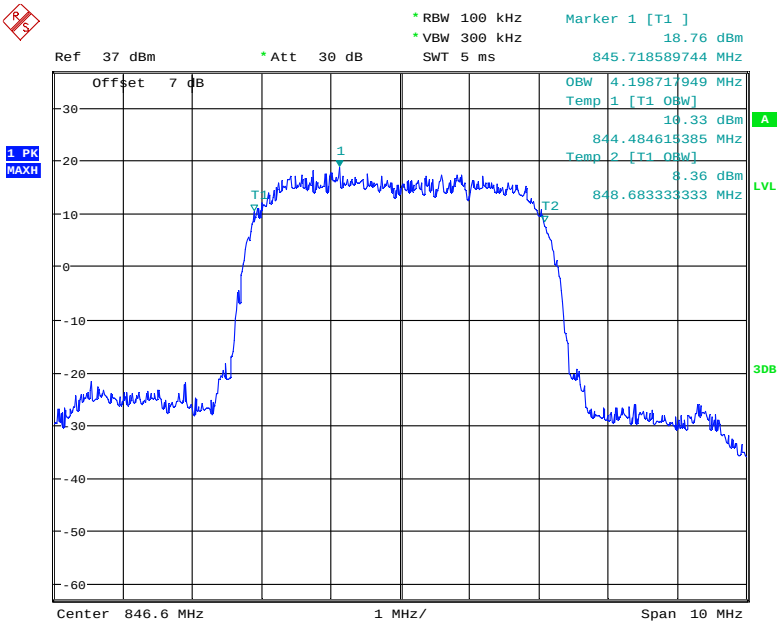
Date: 31.OCT.2020 09:43:27

99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



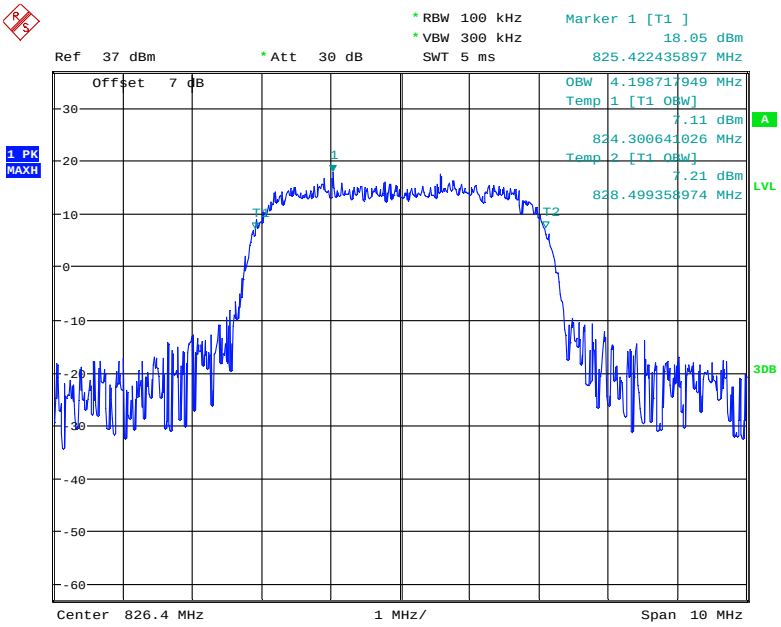
Date: 31.OCT.2020 09:43:53

99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



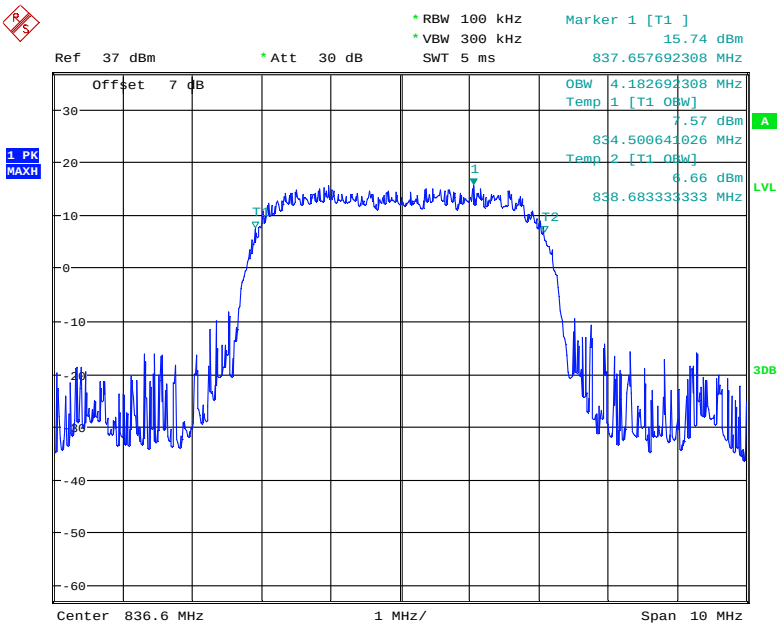
Date: 31.OCT.2020 09:44:06

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel



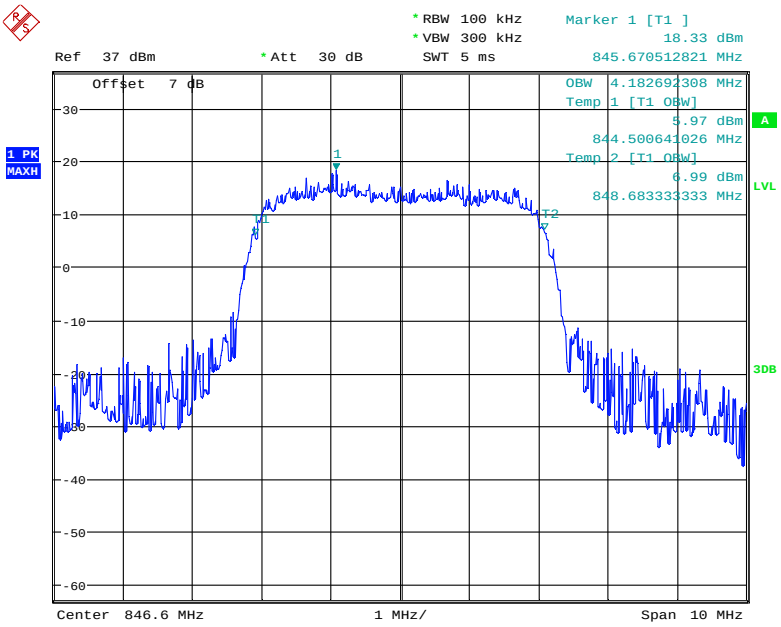
Date: 31.OCT.2020 09:45:28

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel



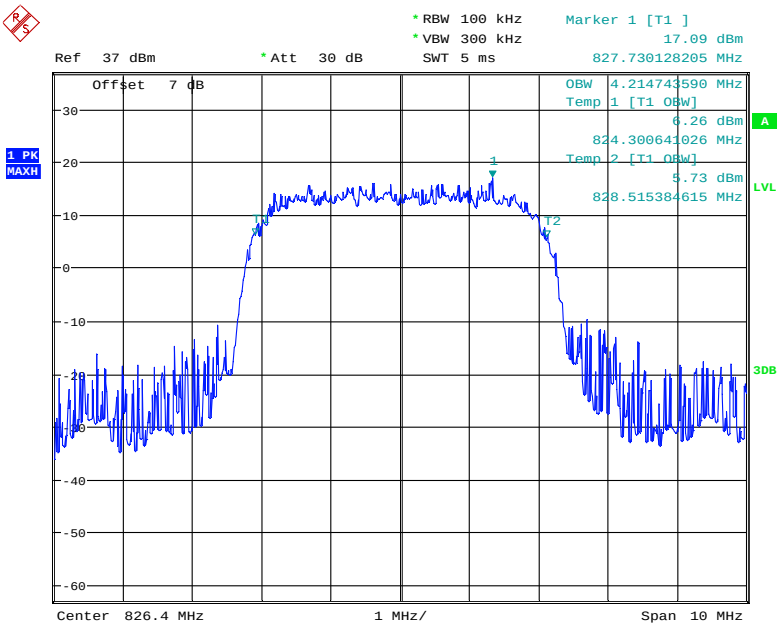
Date: 31.OCT.2020 09:44:58

99% Occupied Bandwidth for HSUPA(BPSK) Mode, High channel



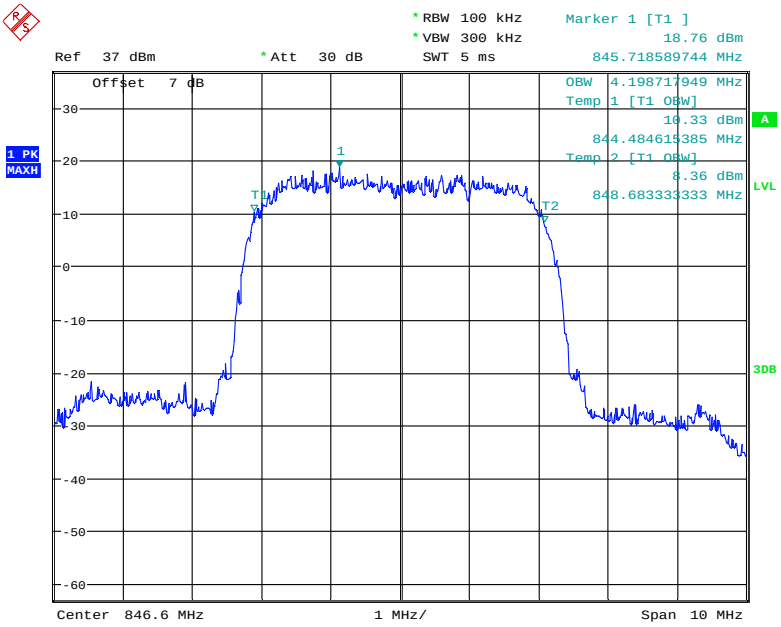
Date: 31.OCT.2020 09:44:38

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel



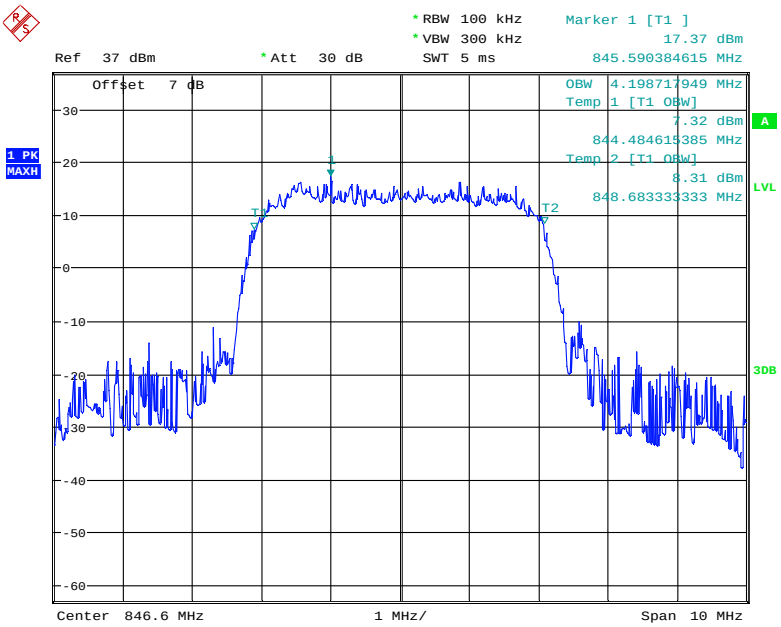
Date: 31.OCT.2020 09:45:19

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel



Date: 31.OCT.2020 09:44:06

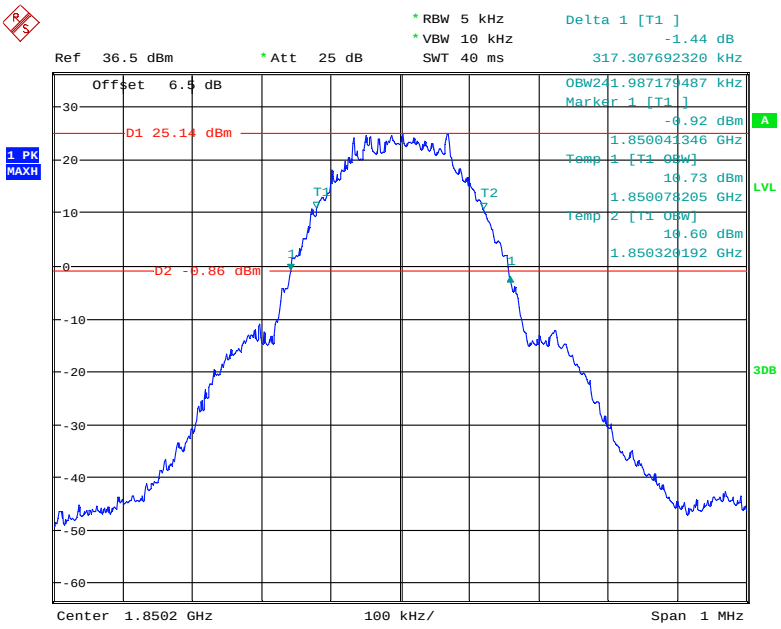
99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 31.OCT.2020 09:44:29

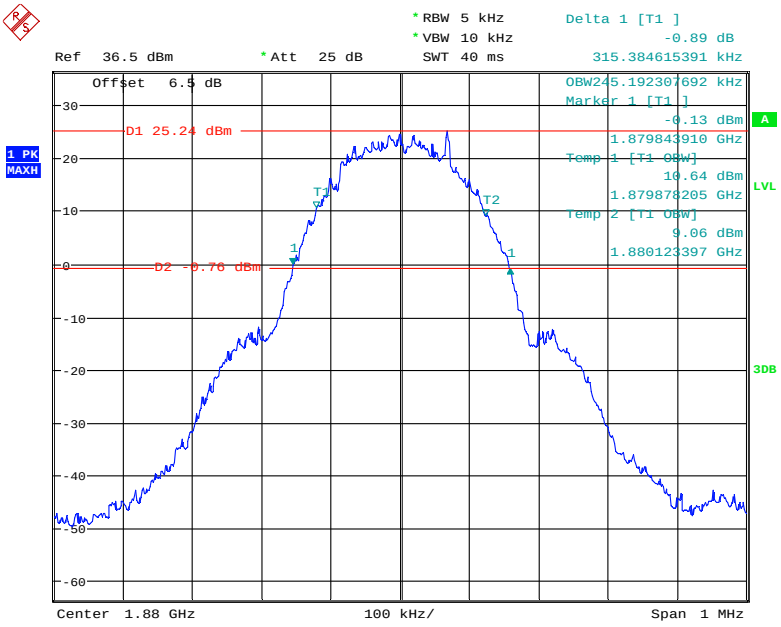
PCS Band (Part 24E)

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



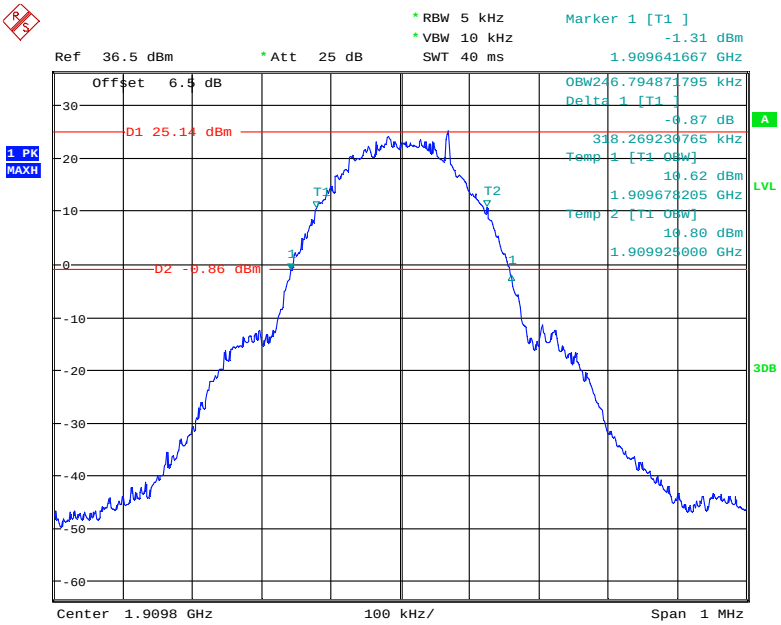
Date: 10.OCT.2020 10:20:50

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



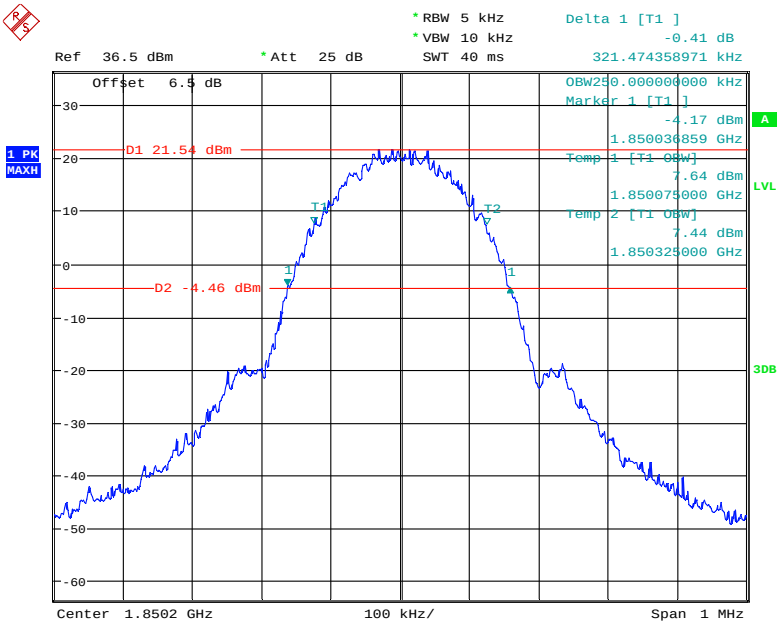
Date: 10.OCT.2020 10:22:51

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



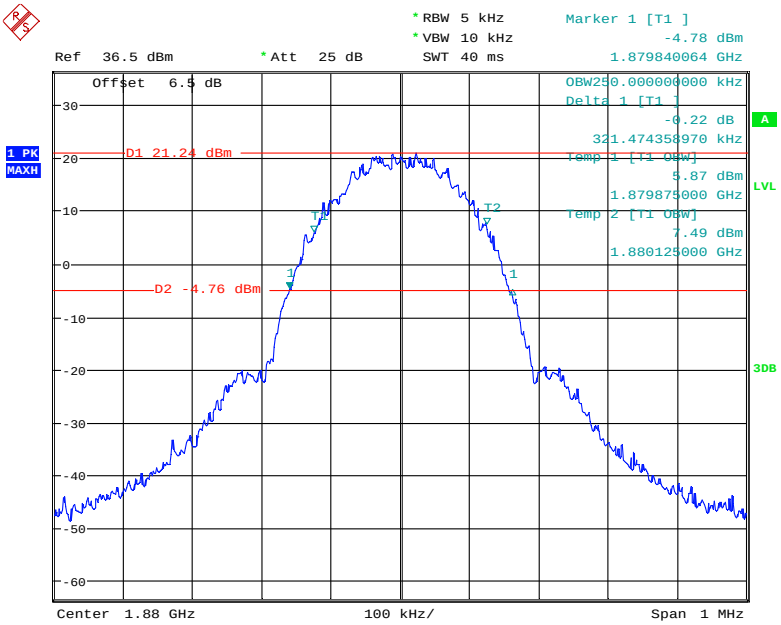
Date: 10.OCT.2020 10:25:41

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



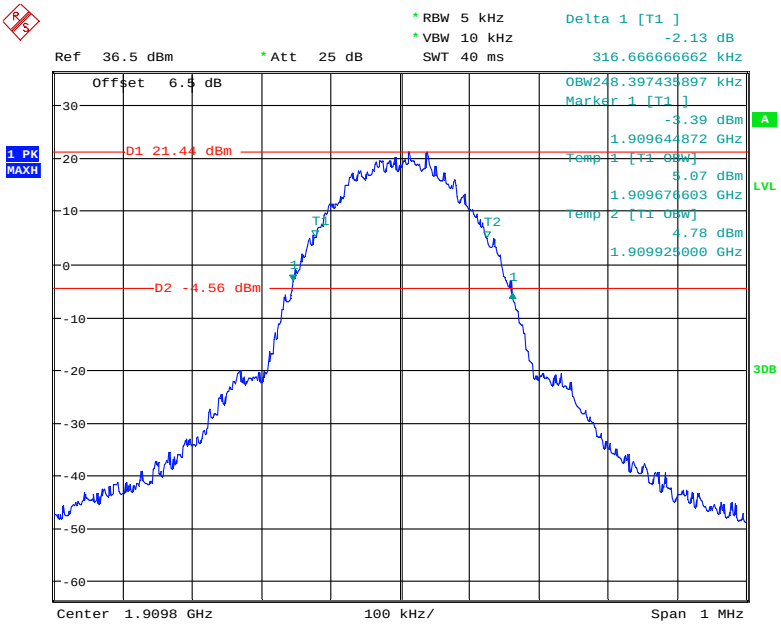
Date: 10.OCT.2020 10:34:47

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



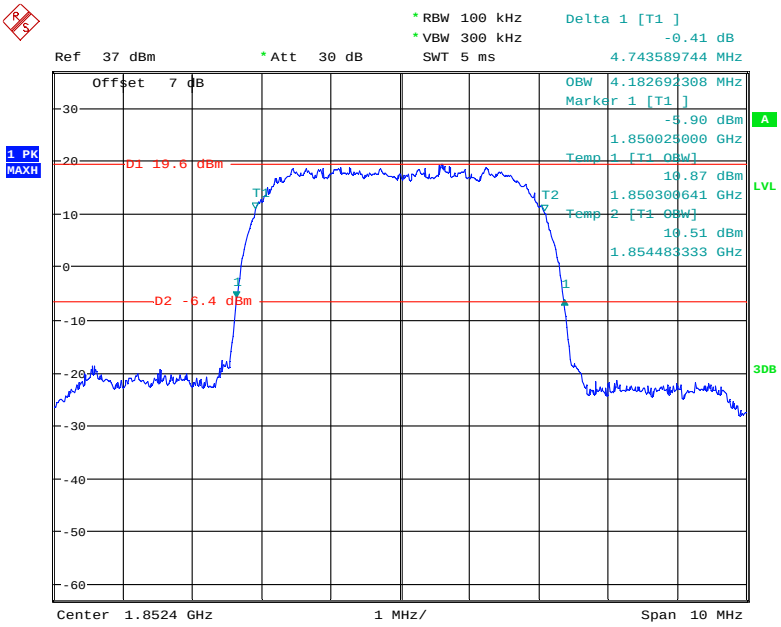
Date: 10.OCT.2020 10:31:50

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



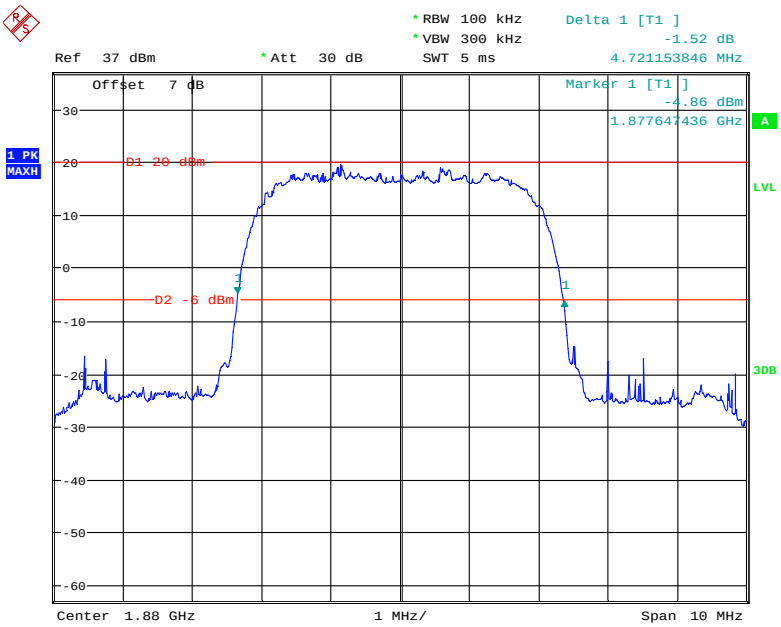
Date: 10.OCT.2020 10:29:51

26 dB Emissions Bandwidth for RMC (BPSK) Mode, Low channel



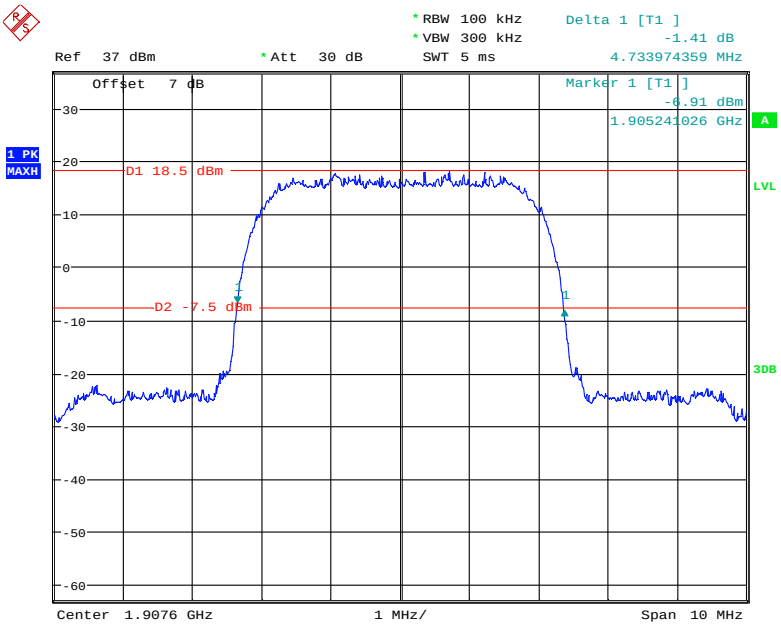
Date: 30.OCT.2020 19:12:29

26 dB Emissions Bandwidth for RMC (BPSK) Mode, Middle channel



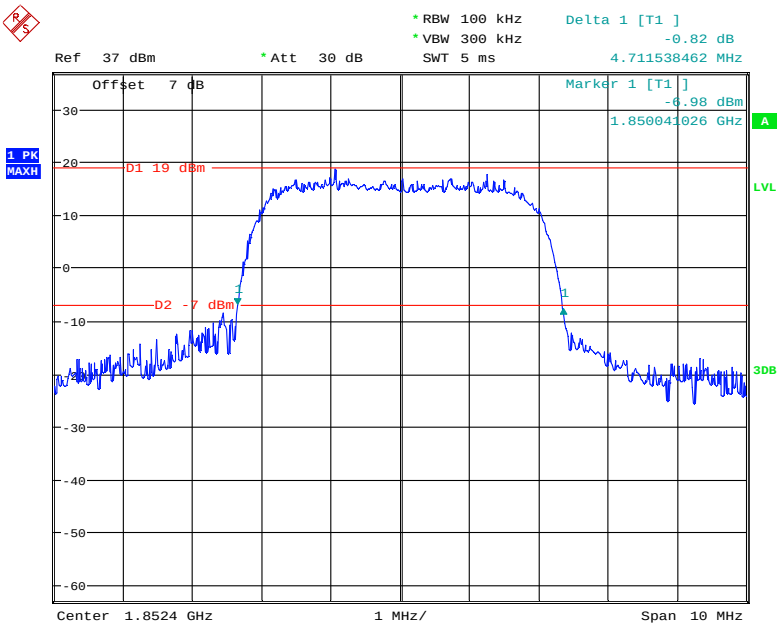
Date: 30.OCT.2020 19:25:50

26 dB Emissions Bandwidth for RMC (BPSK) Mode, High channel



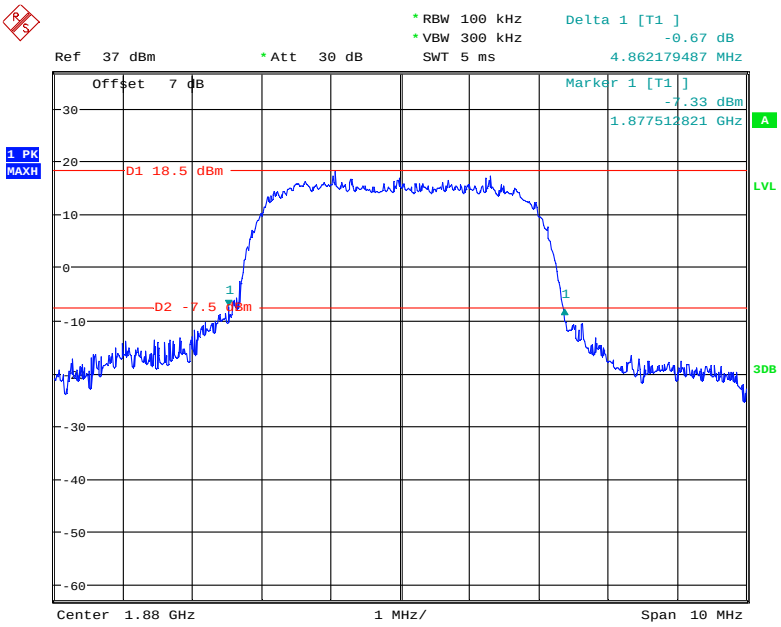
Date: 30.OCT.2020 19:24:41

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Low channel



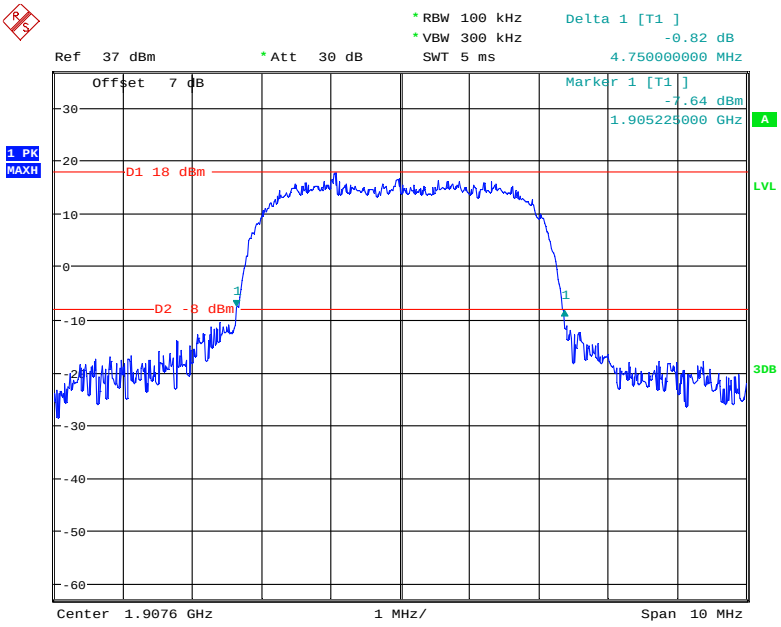
Date: 30.OCT.2020 19:20:13

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Middle channel



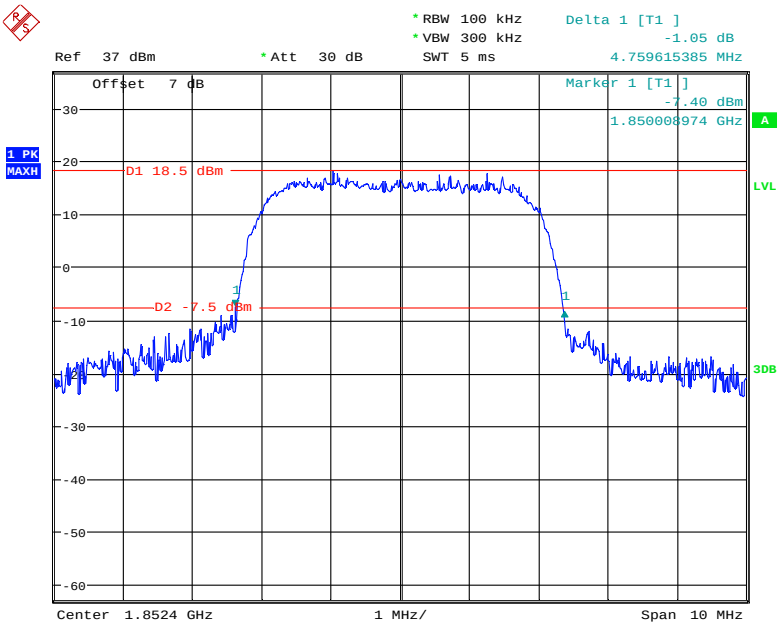
Date: 30.OCT.2020 19:20:56

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, High channel



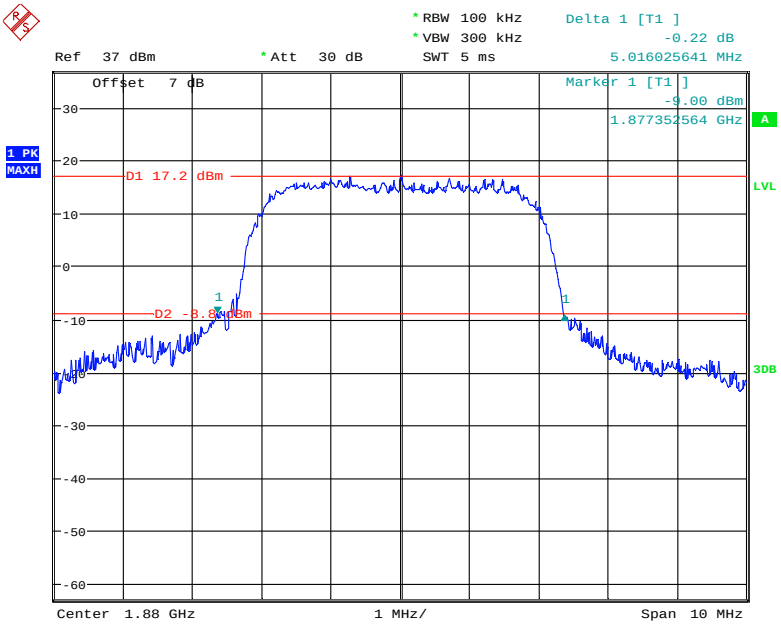
Date: 30.OCT.2020 19:21:57

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Low channel



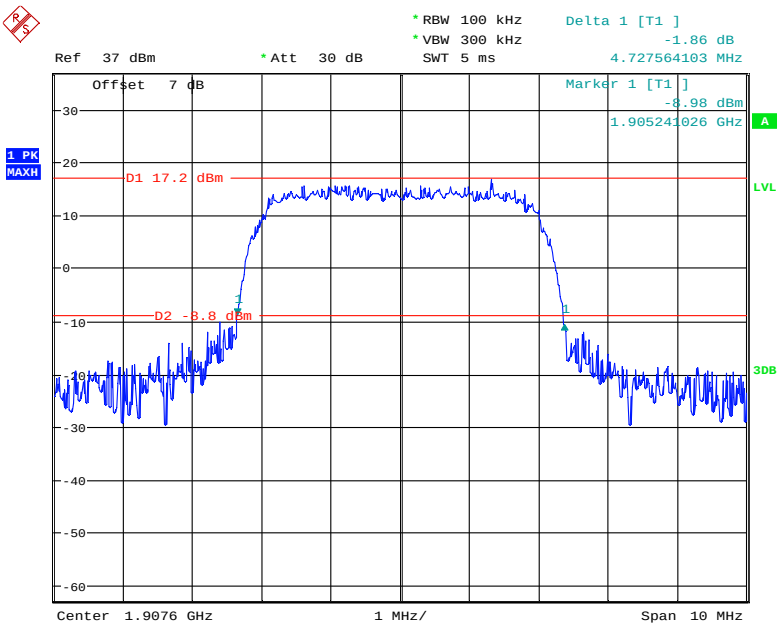
Date: 30.OCT.2020 19:19:30

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Middle channel



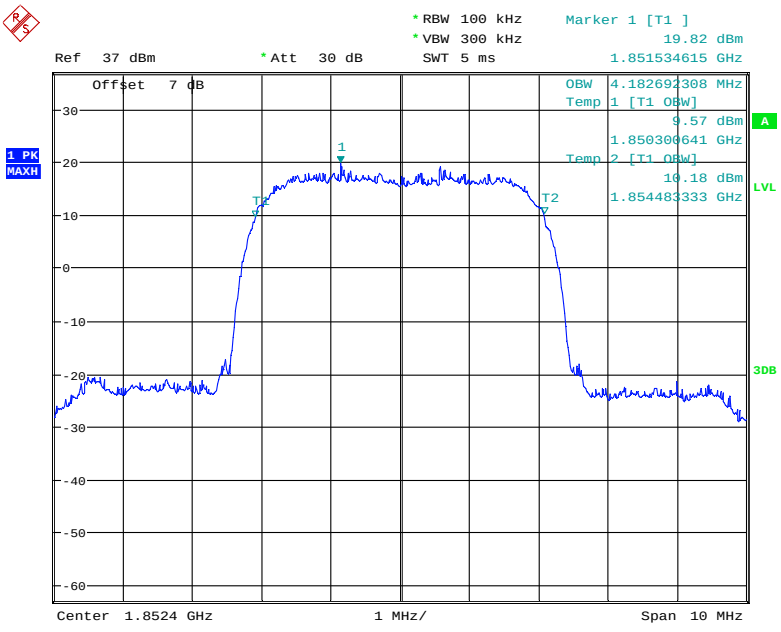
Date: 30.OCT.2020 19:17:48

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, High channel



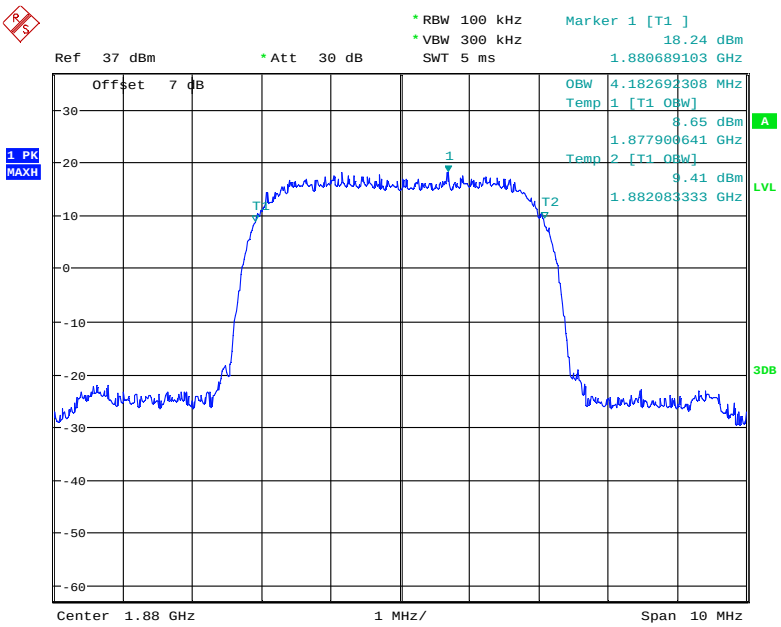
Date: 30.OCT.2020 19:18:44

99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



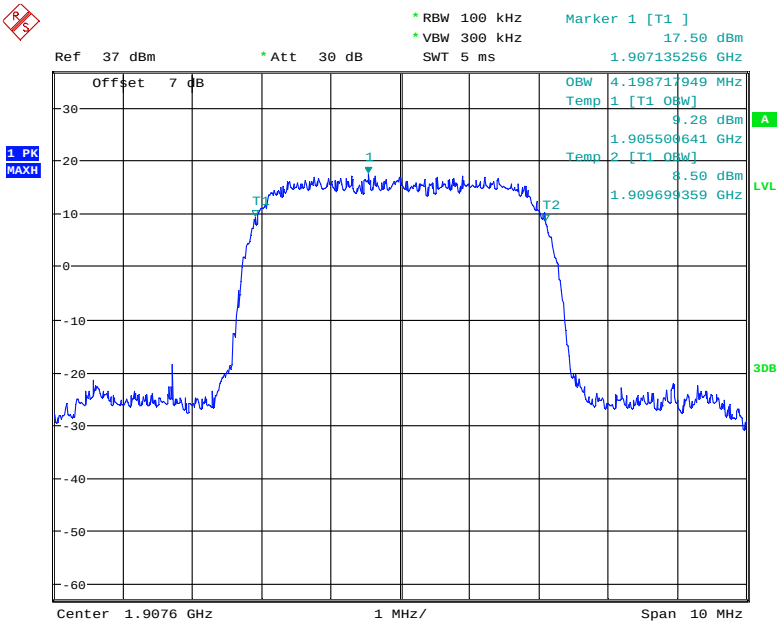
Date: 31.OCT.2020 09:36:02

99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



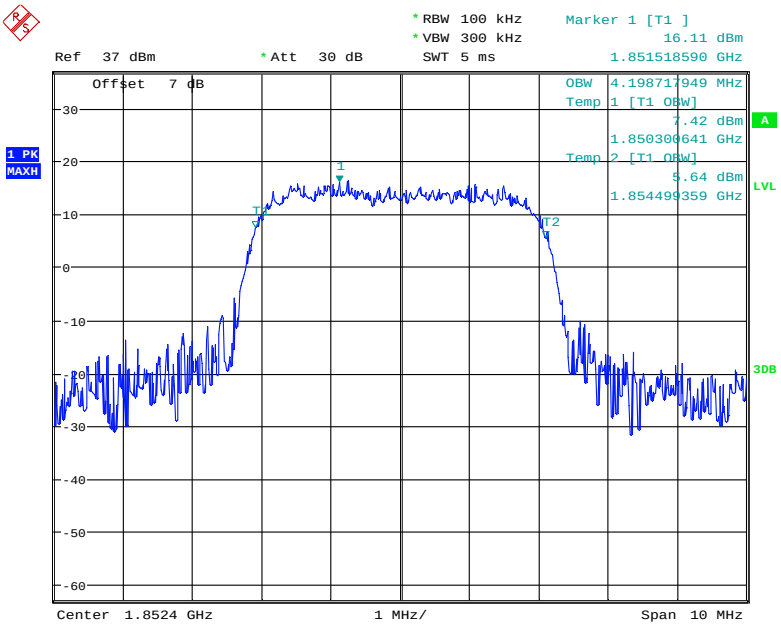
Date: 31.OCT.2020 09:37:18

99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



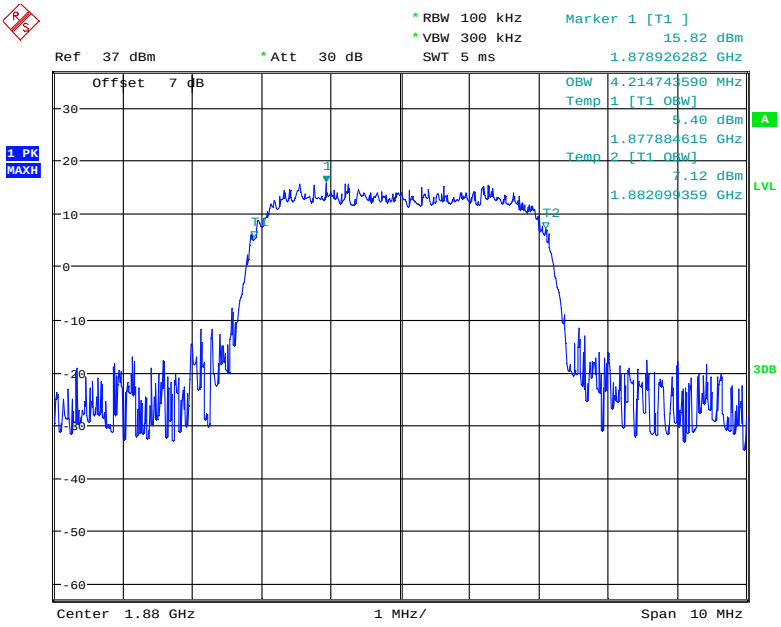
Date: 31.OCT.2020 09:37:40

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel



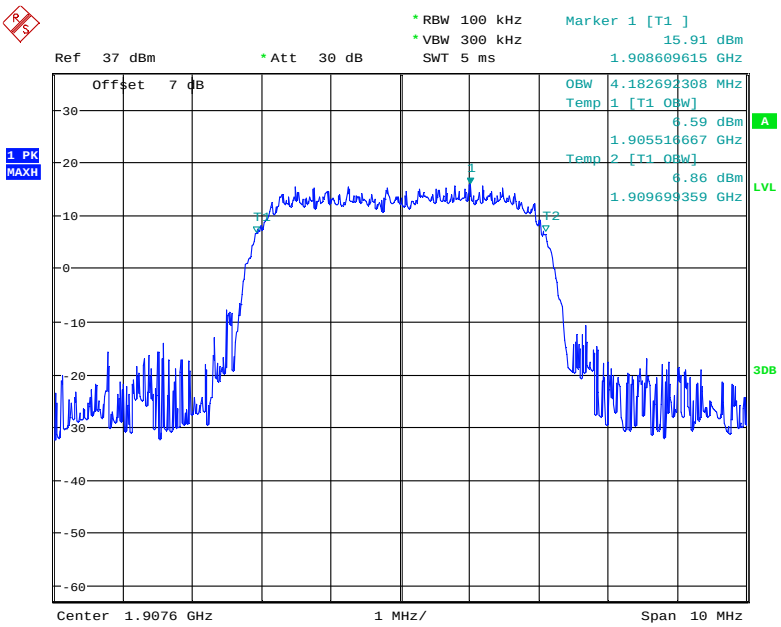
Date: 31.OCT.2020 09:39:14

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel



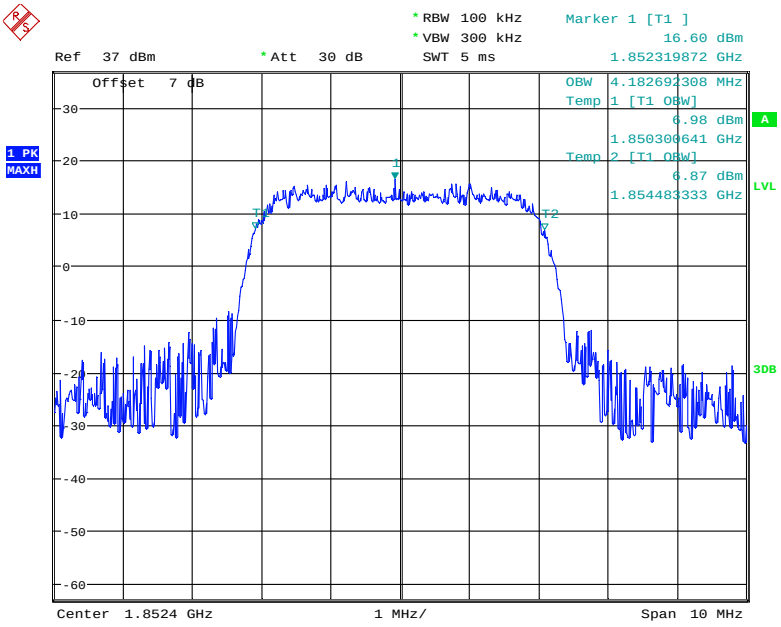
Date: 31.OCT.2020 09:38:39

99% Occupied Bandwidth for HSUPA(BPSK) Mode, High channel



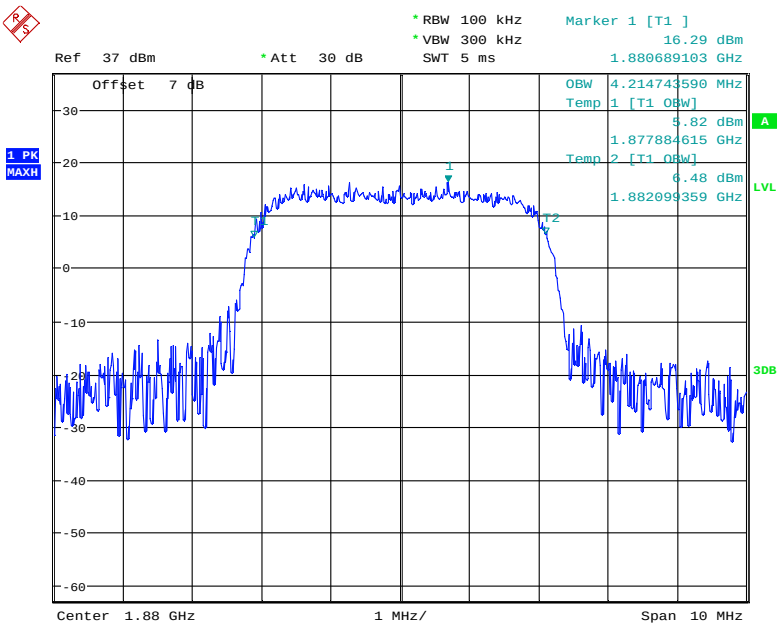
Date: 31.OCT.2020 09:38:23

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel



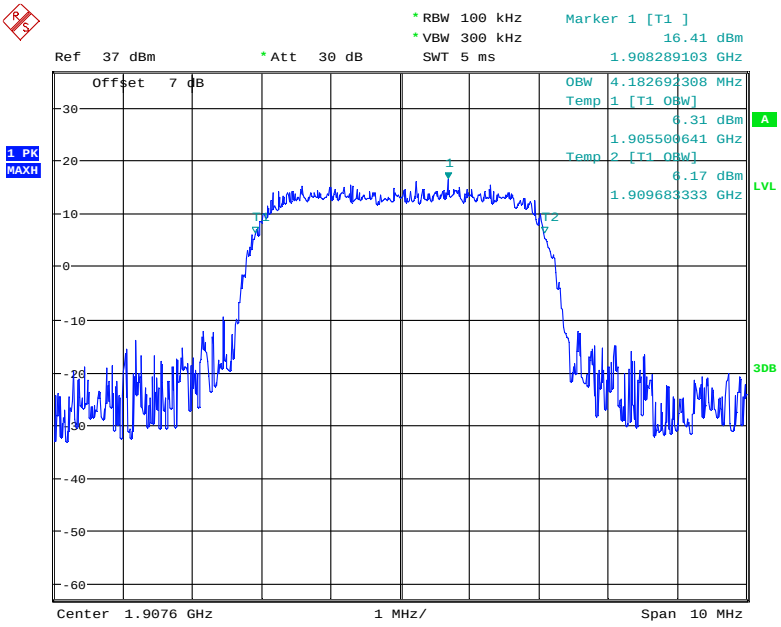
Date: 31.OCT.2020 09:39:04

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel



Date: 31.OCT.2020 09:38:48

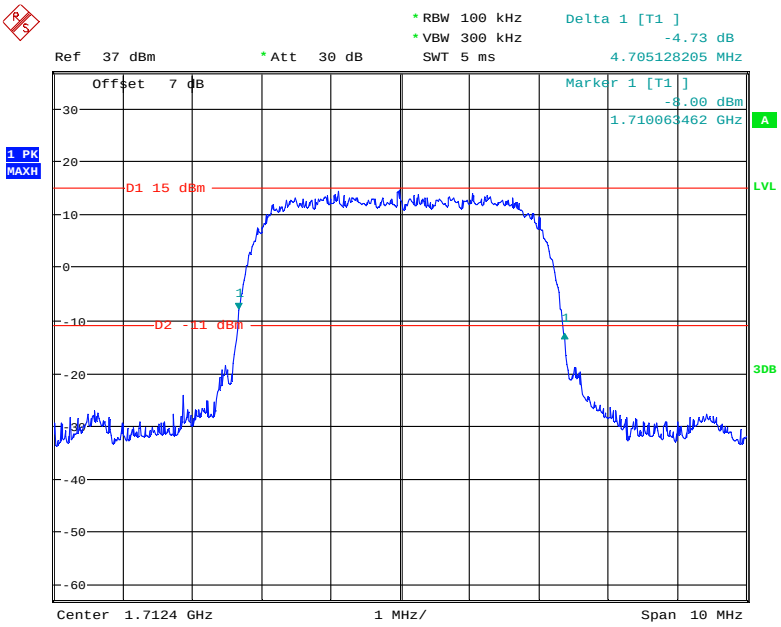
99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 31.OCT.2020 09:38:12

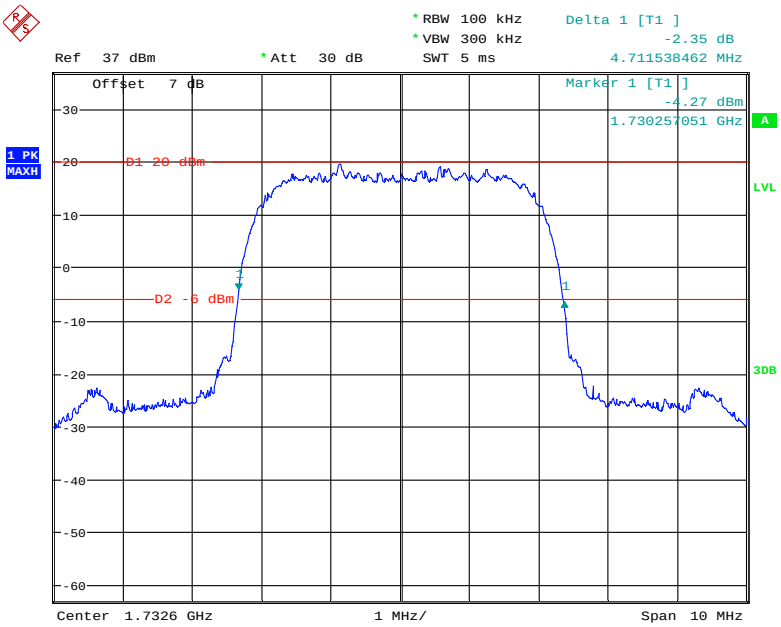
AWS Band (Part 27)

26 dB Emissions Bandwidth for RMC (BPSK) Mode, Low channel



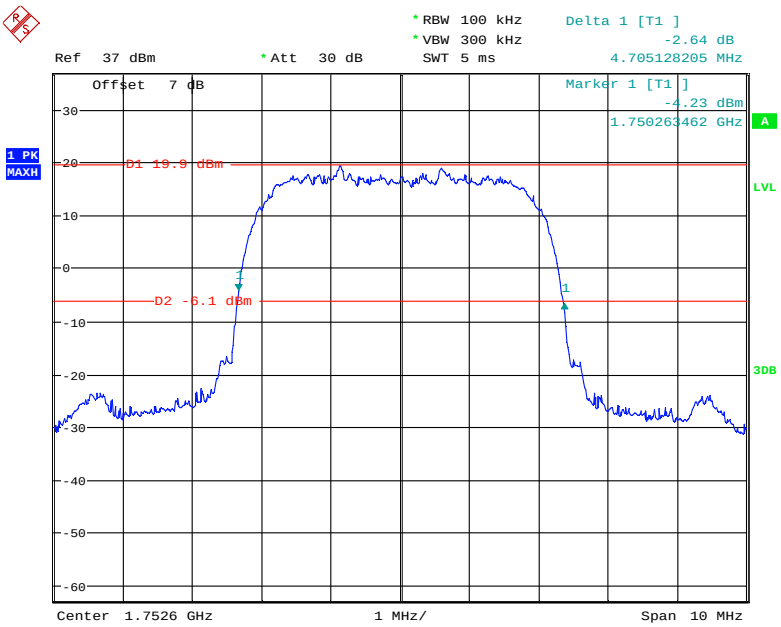
Date: 31.OCT.2020 10:06:21

26 dB Emissions for RMC (BPSK) Mode, Middle channel



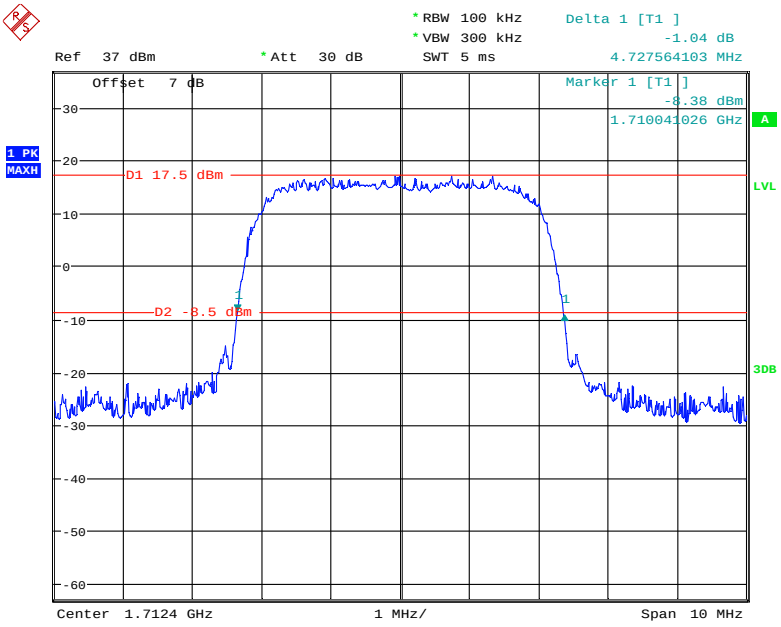
Date: 30.OCT.2020 19:29:27

26 dB Emissions Bandwidth for RMC (BPSK) Mode, High channel



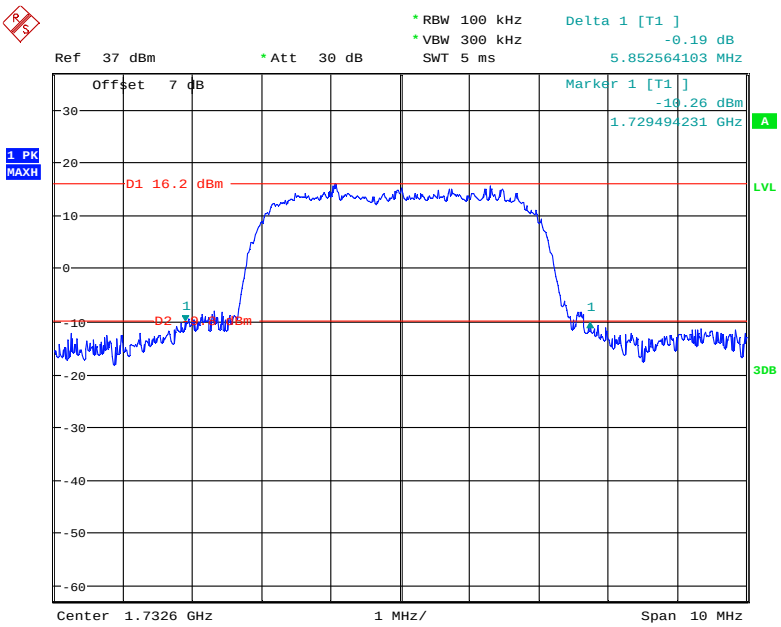
Date: 30.OCT.2020 19:57:00

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Low channel



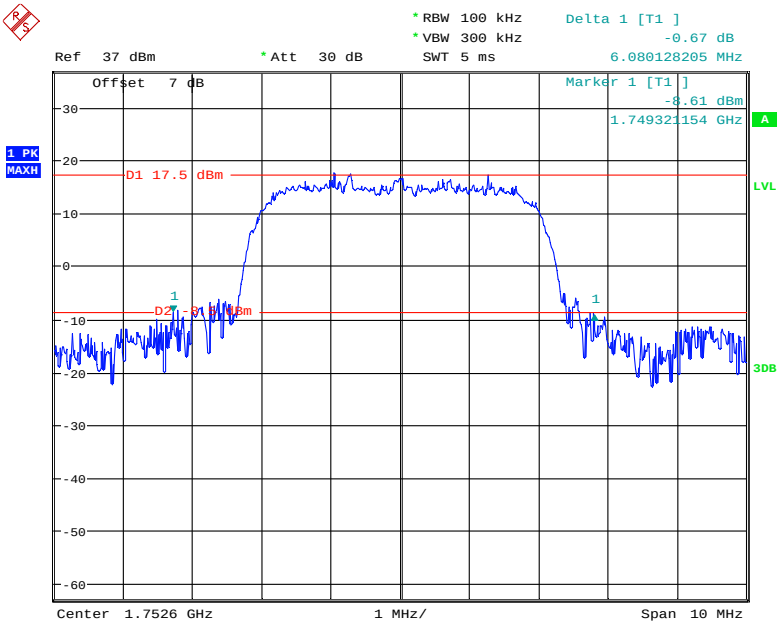
Date: 30.OCT.2020 19:38:42

26 dB Emissions Bandwidth for HSUPA (BPSK) Mode, Middle channel



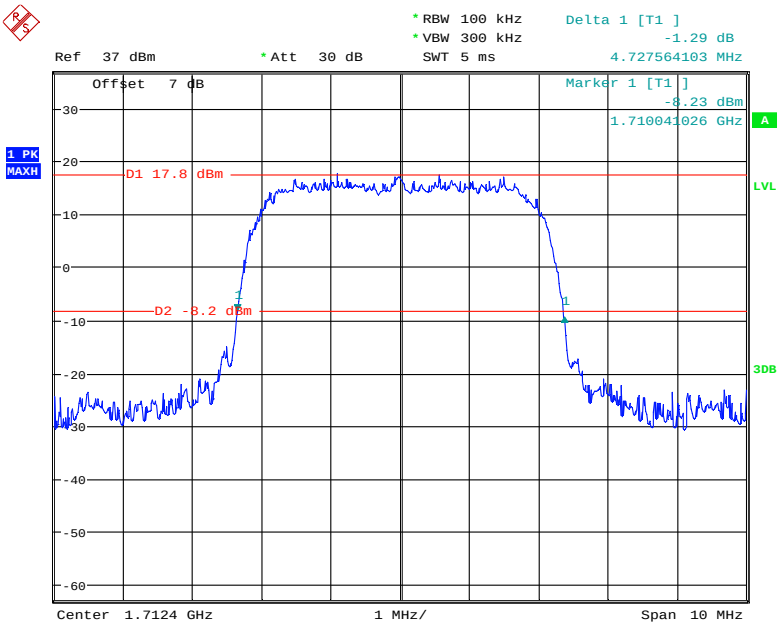
Date: 31.OCT.2020 10:00:49

26 dB Emissions for HSUPA (BPSK) Mode, High channel



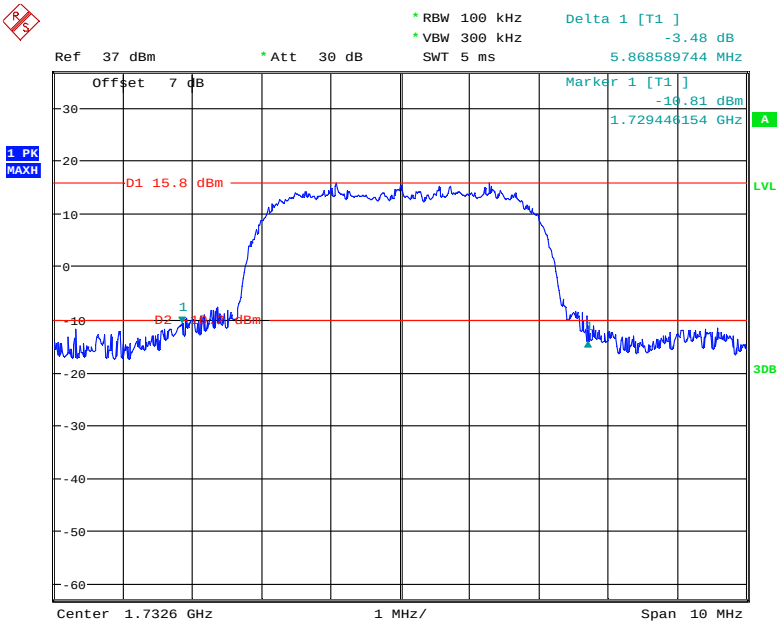
Date: 30.OCT.2020 19:33:27

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Low channel



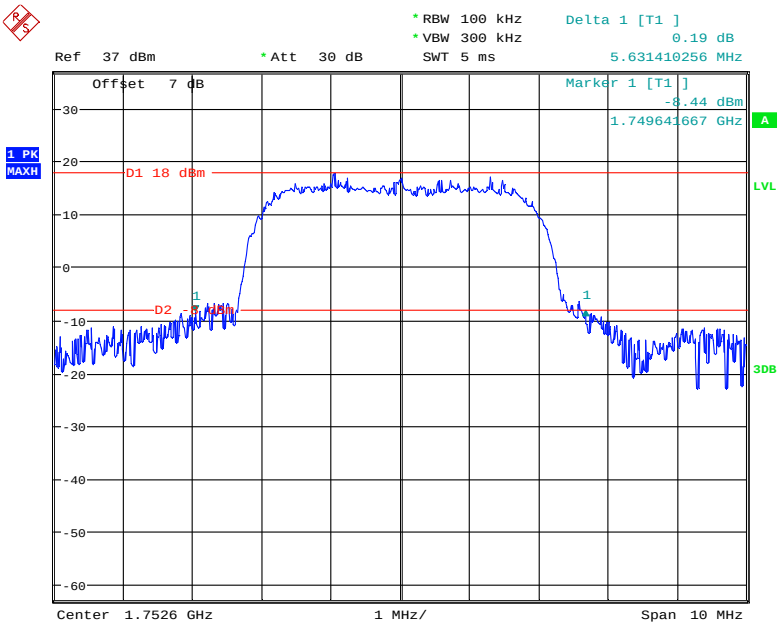
Date: 30.OCT.2020 19:37:36

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, Middle channel



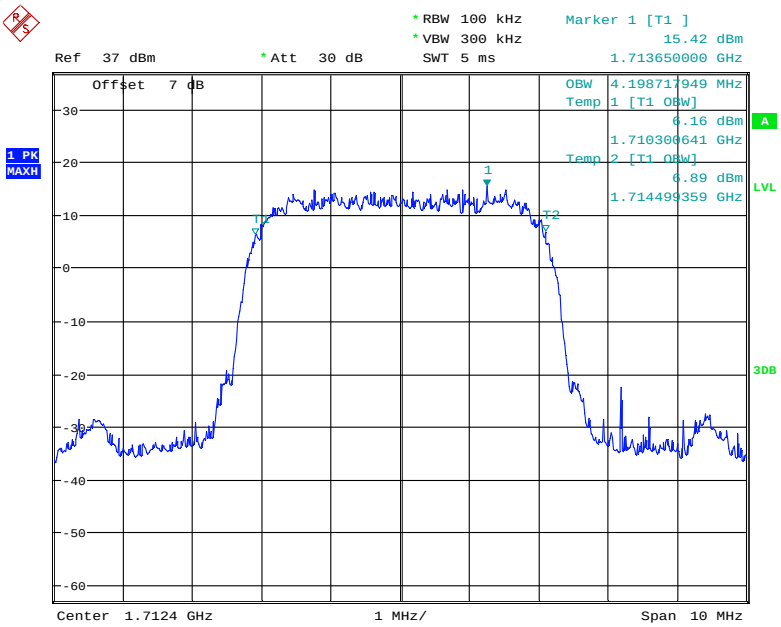
Date: 31.OCT.2020 09:58:57

26 dB Emissions Bandwidth for HSDPA (16QAM) Mode, High channel



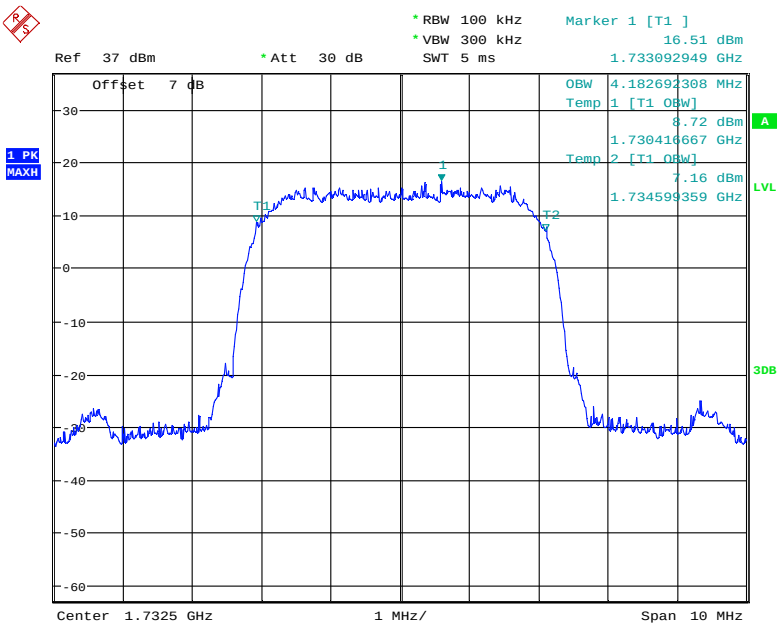
Date: 30.OCT.2020 19:32:10

99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



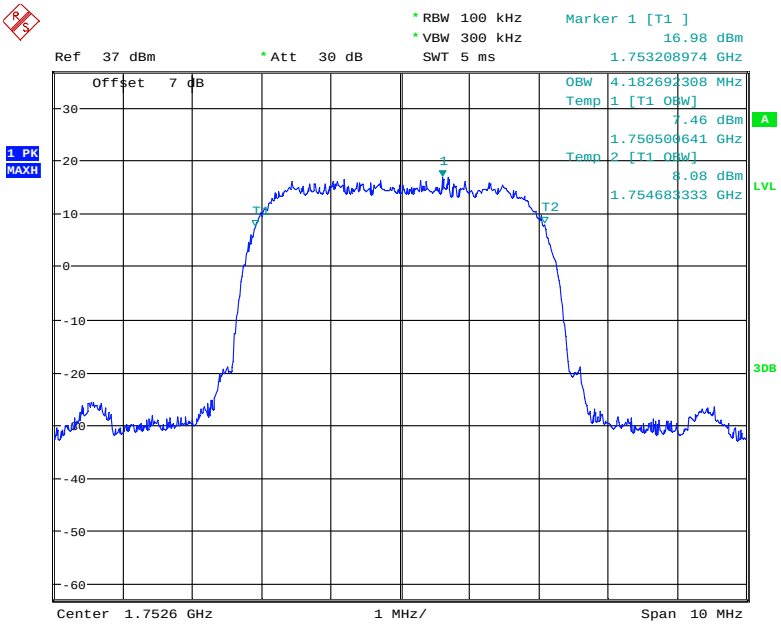
Date: 31.OCT.2020 09:43:04

99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



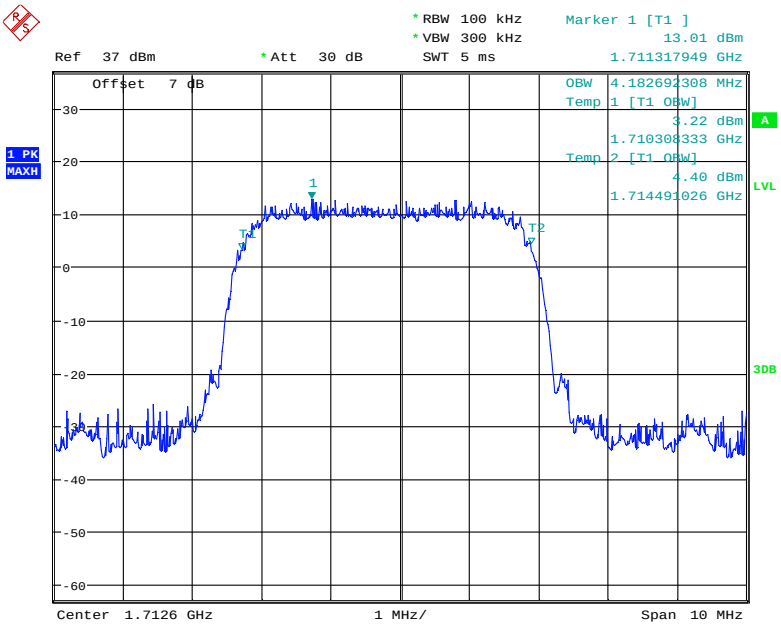
Date: 31.OCT.2020 09:42:50

99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



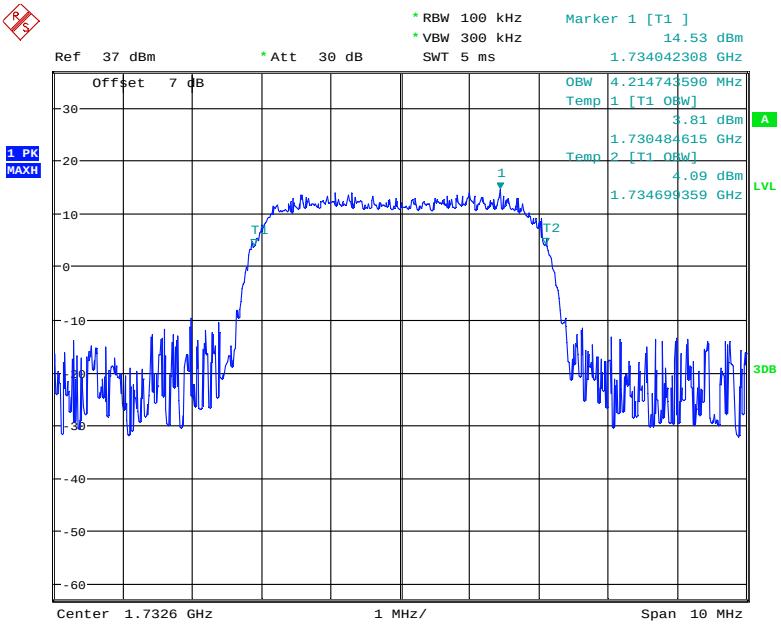
Date: 31.OCT.2020 09:42:25

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel



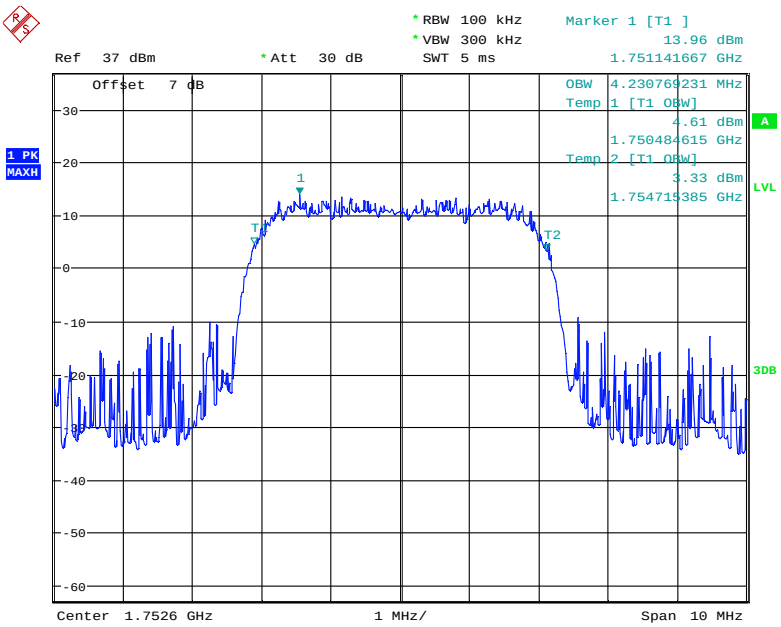
Date: 31.OCT.2020 09:39:41

99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel



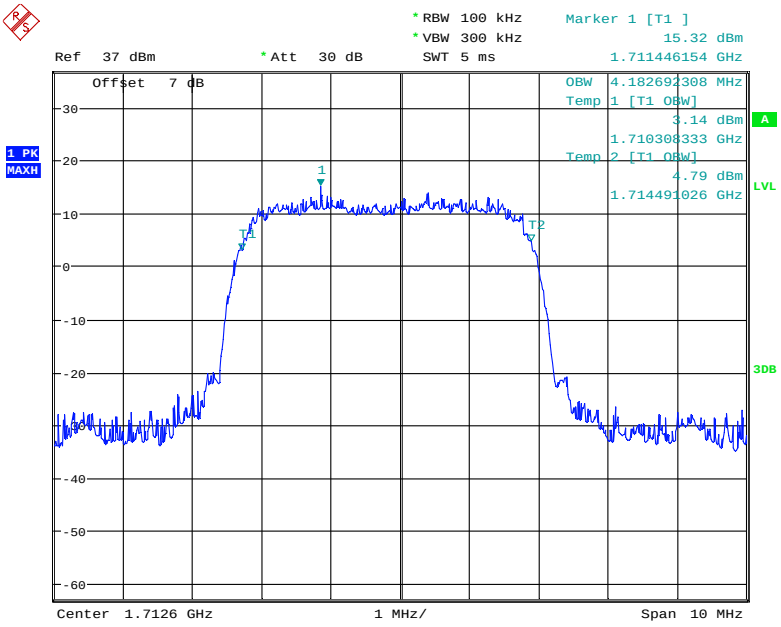
Date: 31.OCT.2020 09:56:40

99% Occupied Bandwidth for HSUPA(BPSK) Mode, High channel



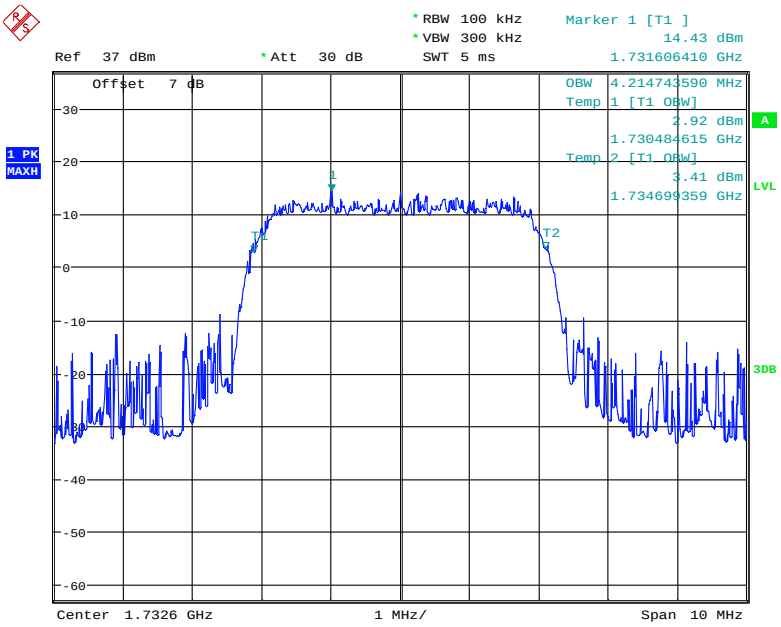
Date: 31.OCT.2020 09:41:46

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel



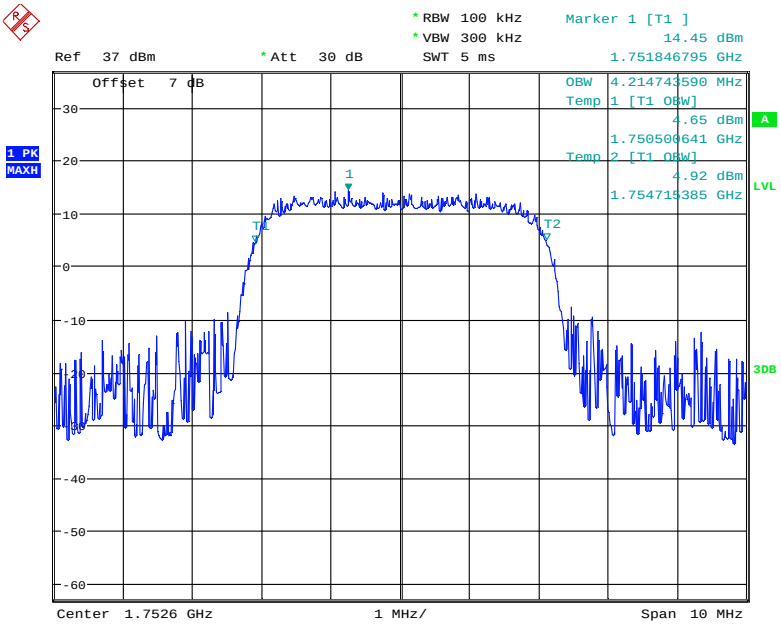
Date: 31.OCT.2020 09:39:56

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel



Date: 31.OCT.2020 09:57:03

99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel

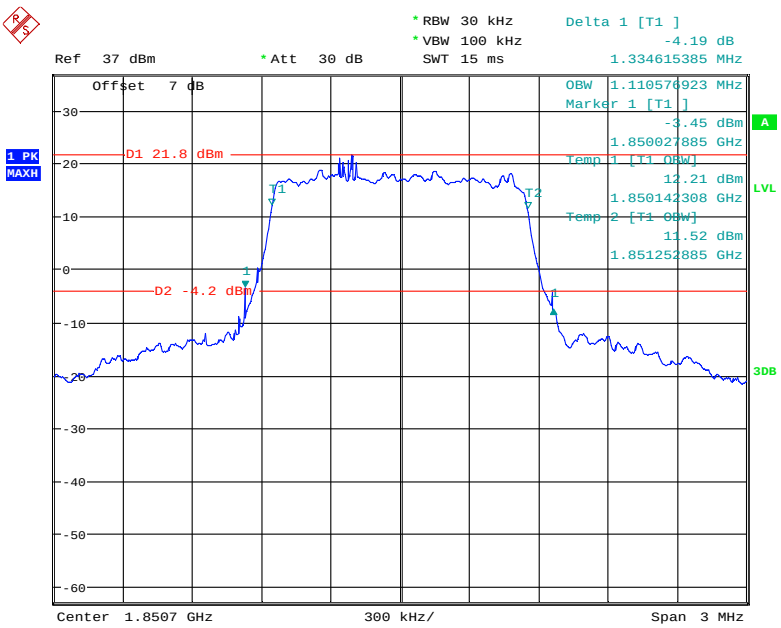


Date: 31.OCT.2020 09:41:55

LTE Band 2:

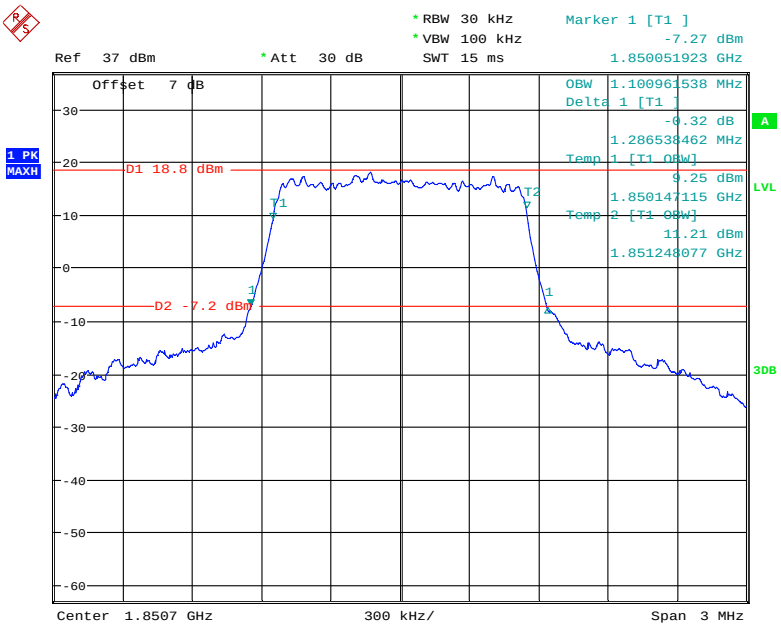
Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.11	1.33
		Middle	1.10	1.31
		High	1.11	1.51
	16QAM	Low	1.10	1.29
		Middle	1.10	1.29
		High	1.10	1.30
3	QPSK	Low	2.68	2.88
		Middle	2.69	2.87
		High	2.68	2.91
	16QAM	Low	2.68	2.88
		Middle	2.69	2.88
		High	2.67	2.89
5	QPSK	Low	4.50	4.99
		Middle	4.52	4.94
		High	4.50	4.95
	16QAM	Low	4.52	5.62
		Middle	4.52	4.94
		High	4.50	4.98
10	QPSK	Low	8.97	9.62
		Middle	8.96	9.68
		High	8.97	9.62
	16QAM	Low	8.97	9.65
		Middle	8.96	9.60
		High	8.97	9.63
15	QPSK	Low	13.56	14.97
		Middle	13.50	14.82
		High	13.56	14.91
	16QAM	Low	13.56	14.86
		Middle	13.50	14.76
		High	13.56	14.94
20	QPSK	Low	18.01	19.38
		Middle	17.92	19.20
		High	18.01	19.64
	16QAM	Low	18.08	19.49
		Middle	18.00	19.28
		High	18.01	19.38

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



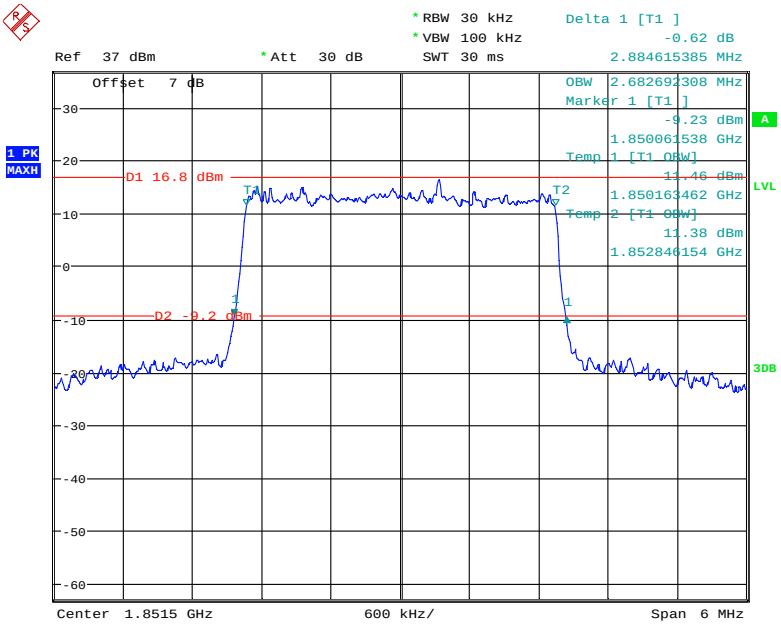
Date: 30.OCT.2020 09:24:13

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



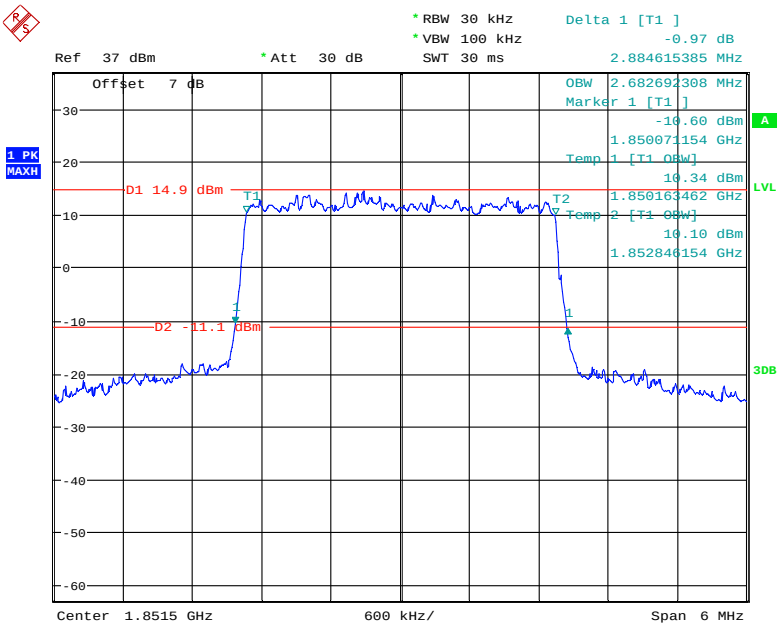
Date: 30.OCT.2020 09:27:32

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



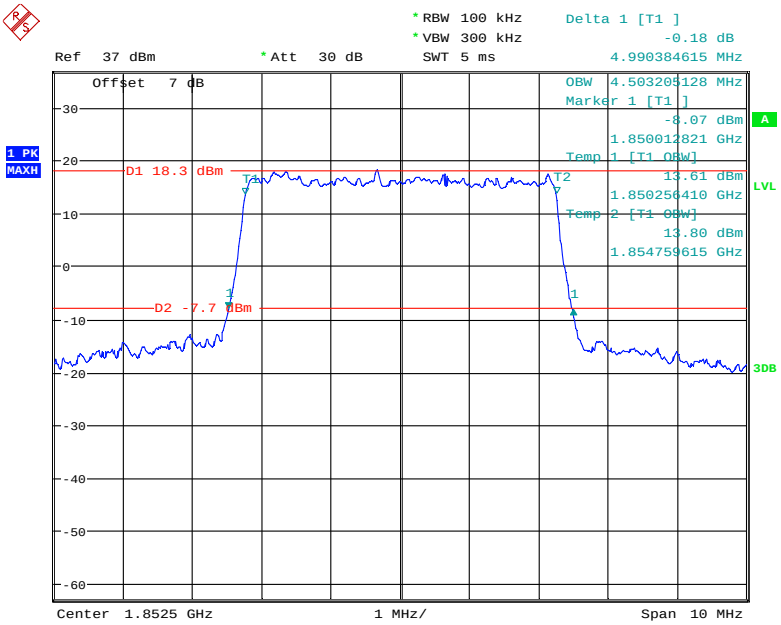
Date: 30.OCT.2020 09:43:45

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



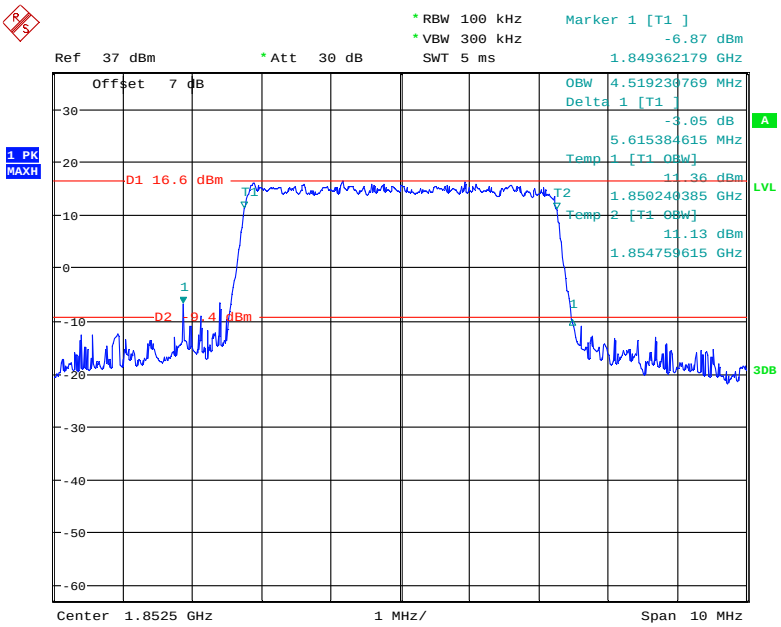
Date: 30.OCT.2020 09:47:27

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



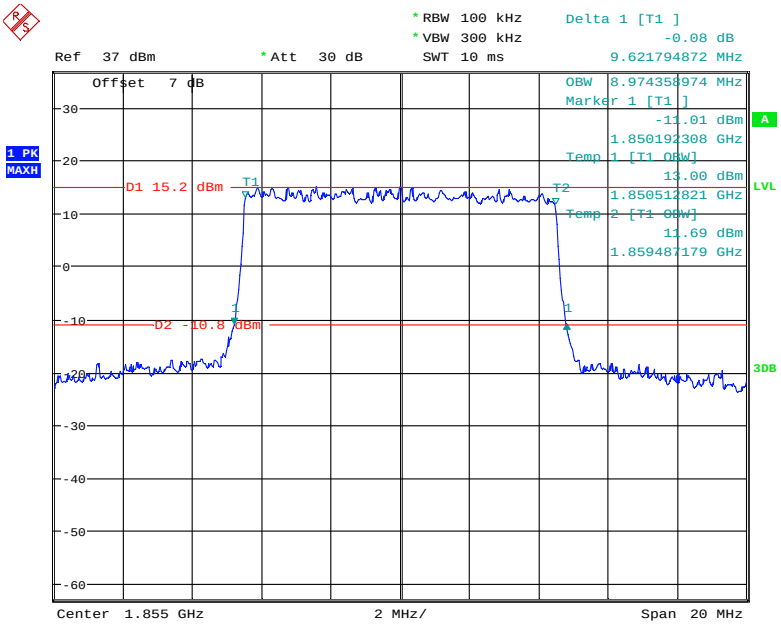
Date: 30.OCT.2020 09:51:12

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



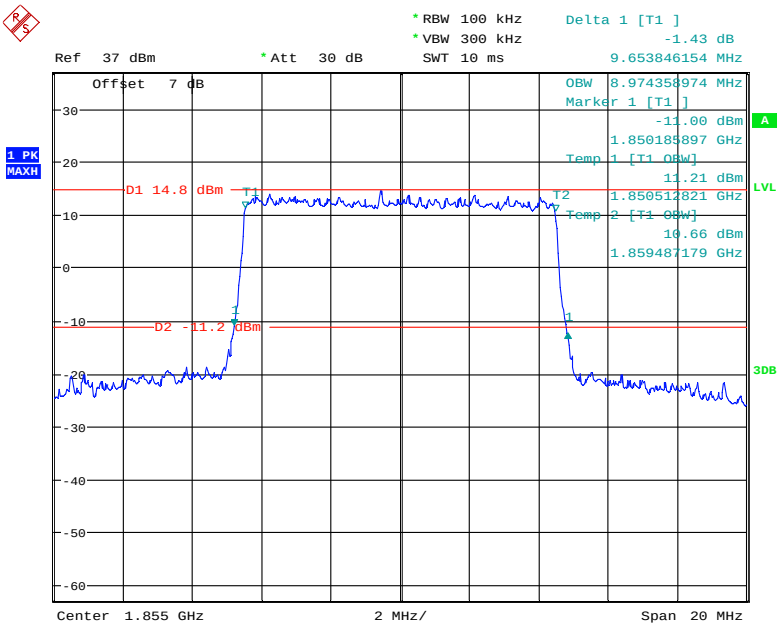
Date: 30.OCT.2020 09:58:29

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



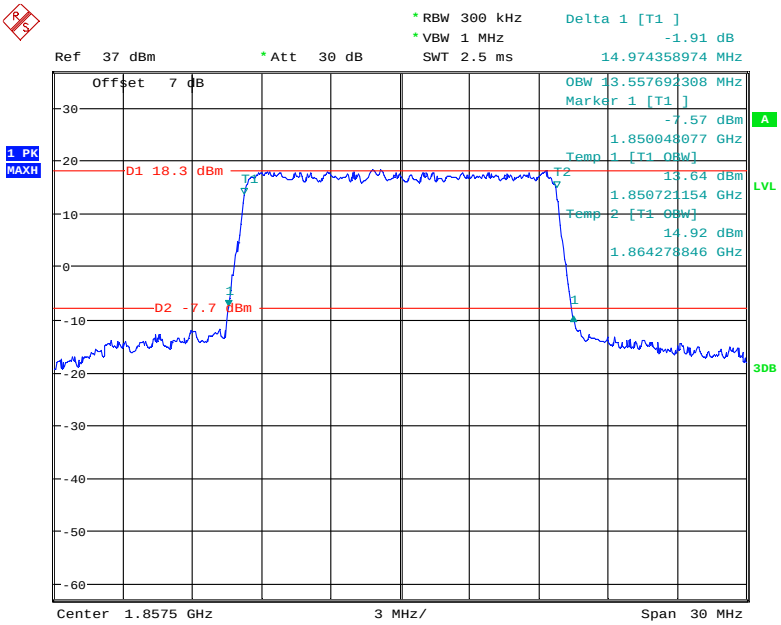
Date: 30.OCT.2020 10:04:41

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



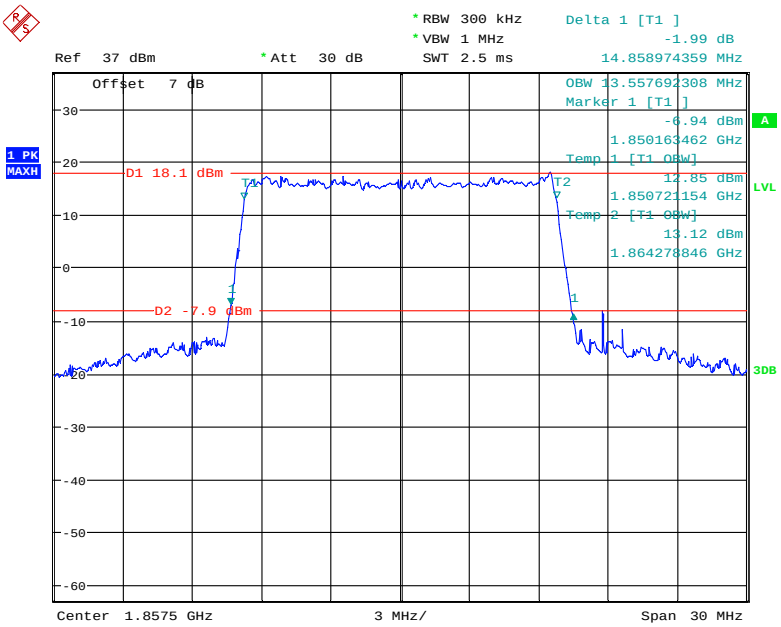
Date: 30.OCT.2020 10:09:05

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



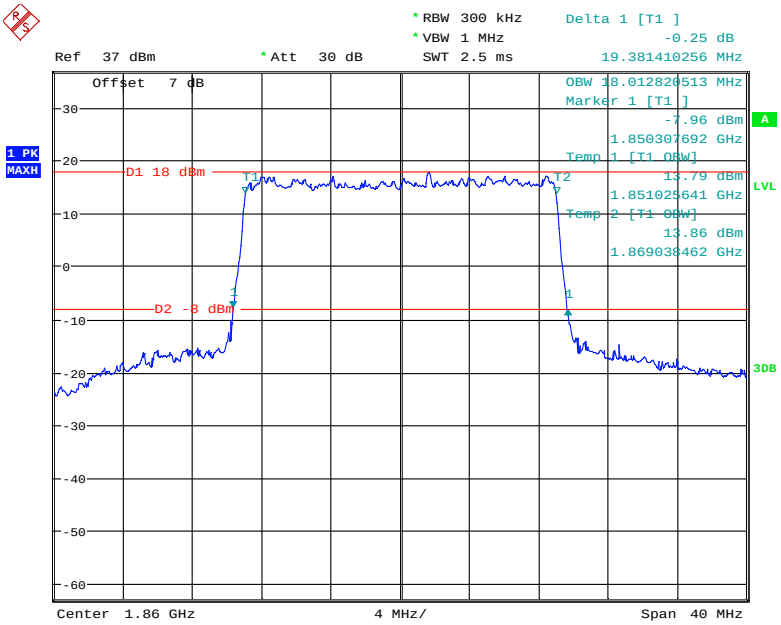
Date: 30.OCT.2020 11:14:53

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



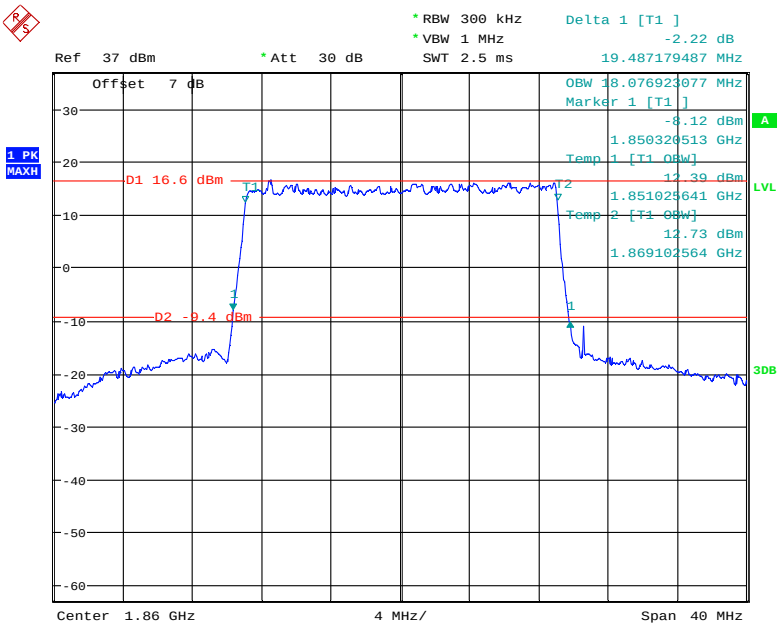
Date: 30.OCT.2020 11:19:37

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



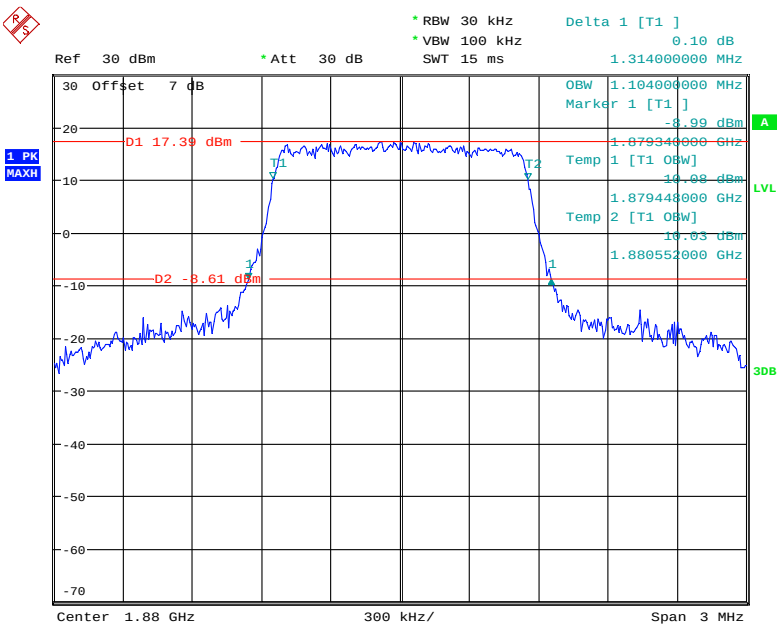
Date: 30.OCT.2020 11:22:22

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



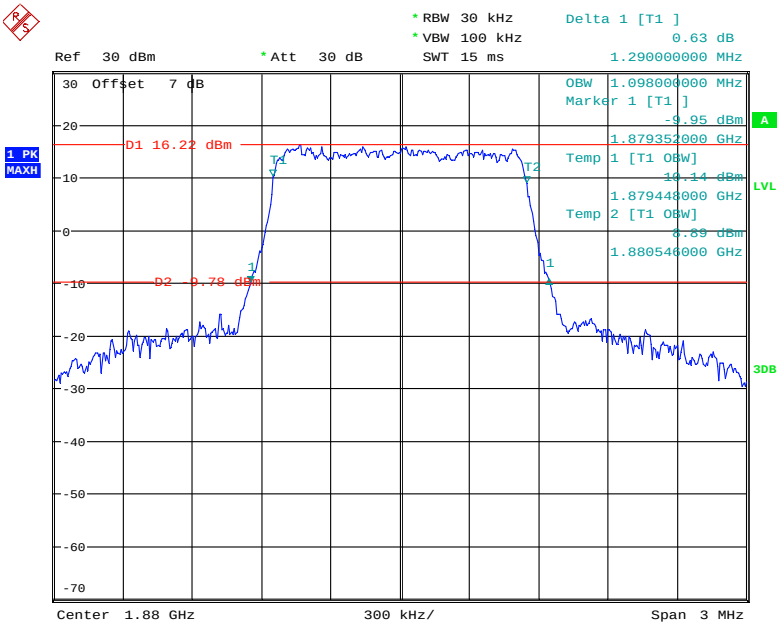
Date: 30.OCT.2020 11:31:11

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



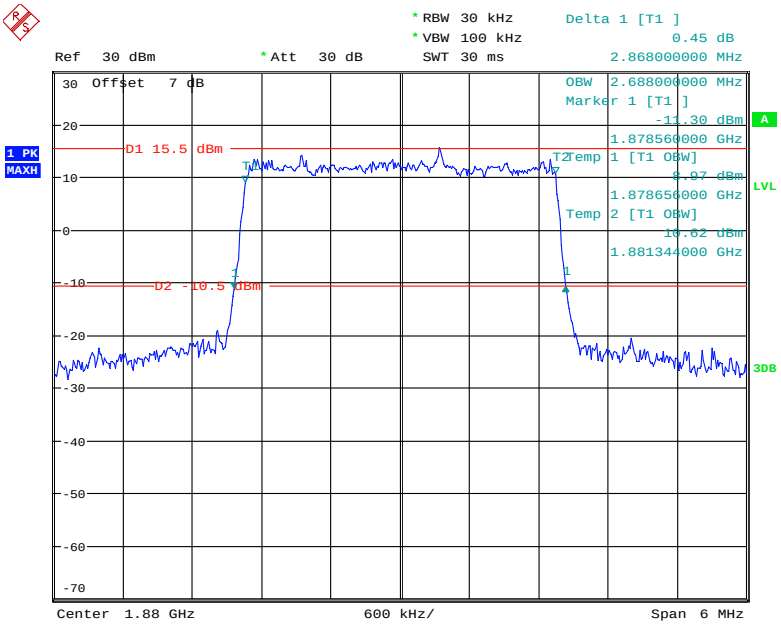
Date: 29.OCT.2020 10:55:58

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



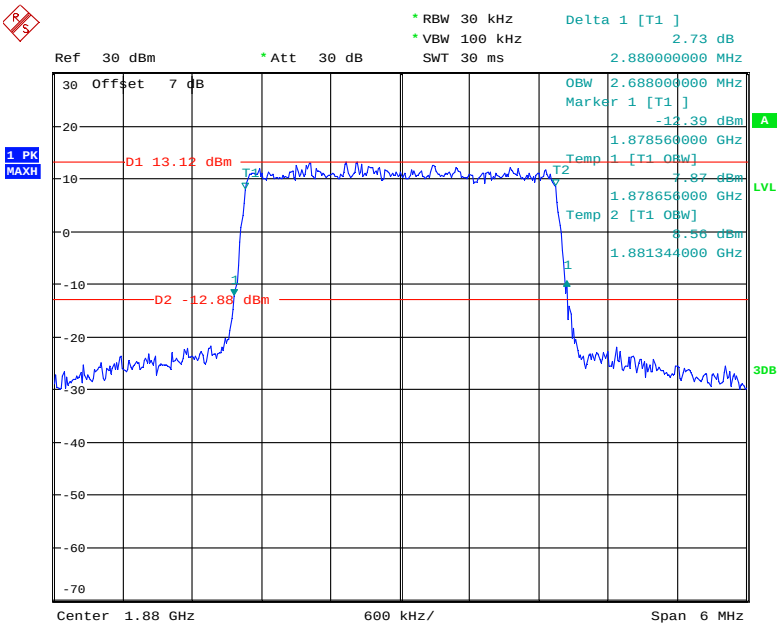
Date: 29.OCT.2020 10:56:19

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



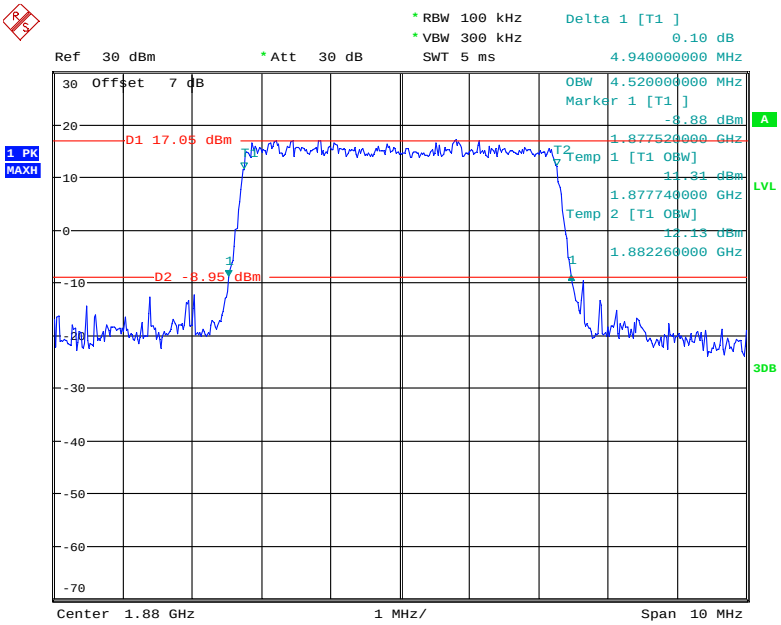
Date: 29.OCT.2020 10:56:39

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



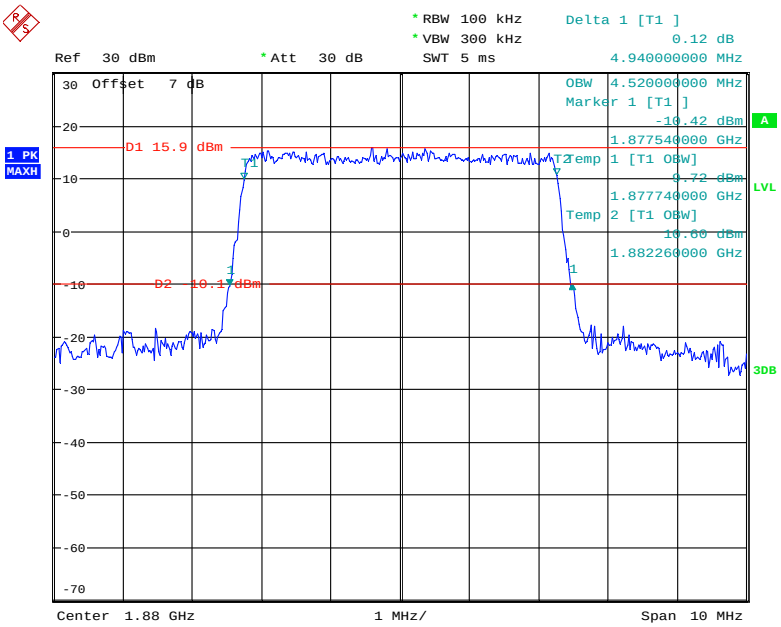
Date: 29.OCT.2020 10:56:59

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



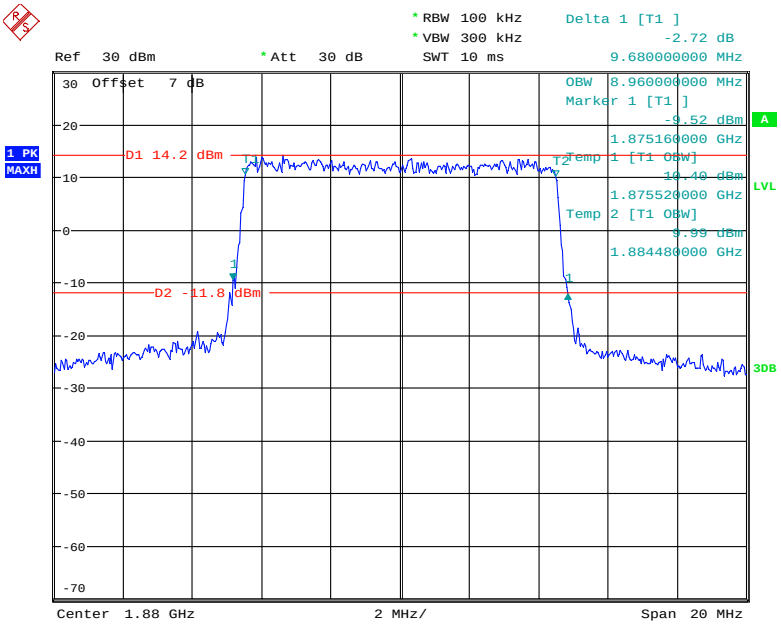
Date: 29.OCT.2020 10:57:25

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



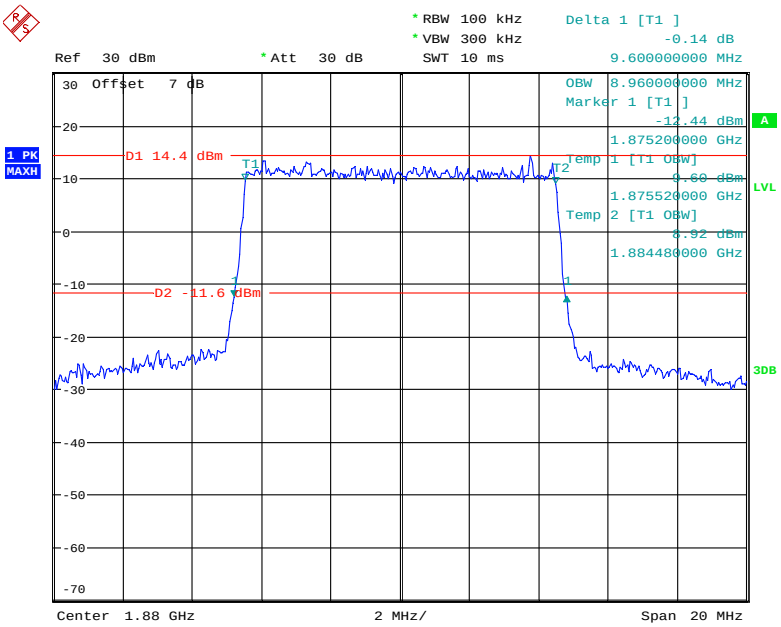
Date: 29.OCT.2020 10:57:46

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



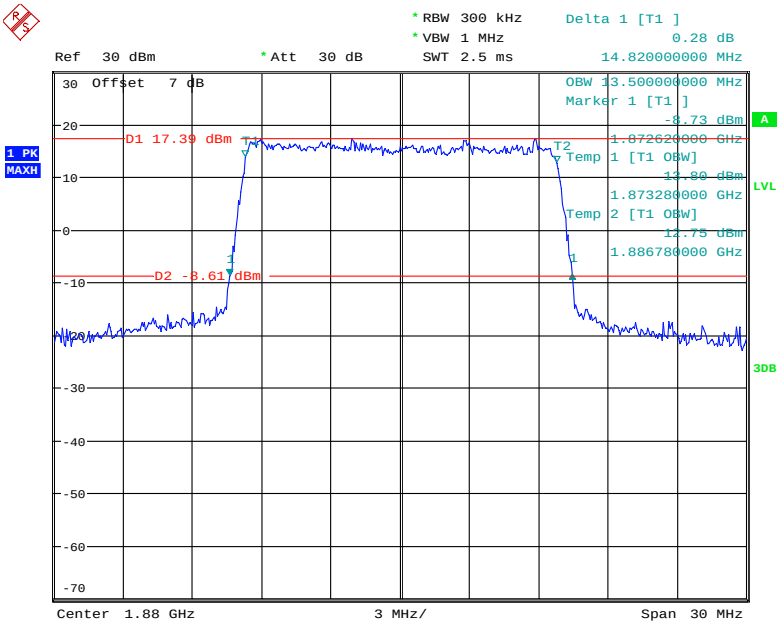
Date: 29.OCT.2020 10:58:10

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



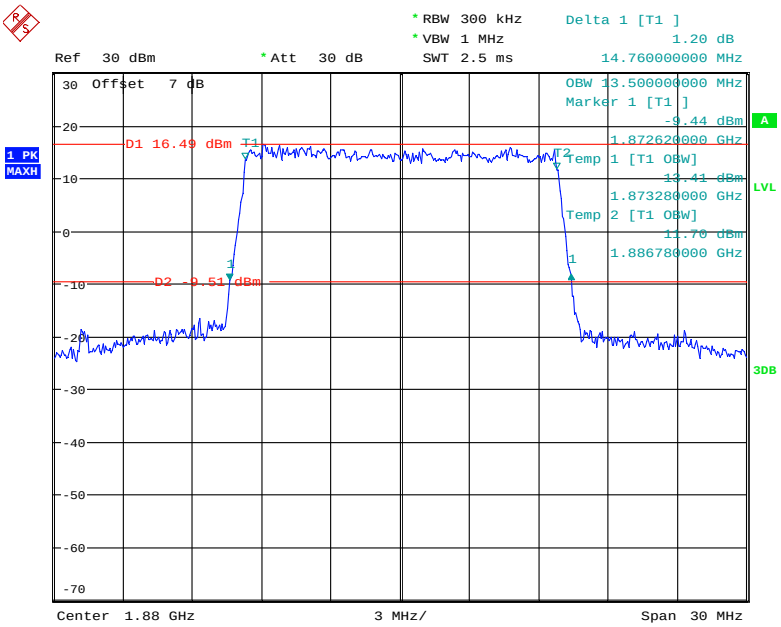
Date: 29.OCT.2020 10:58:31

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



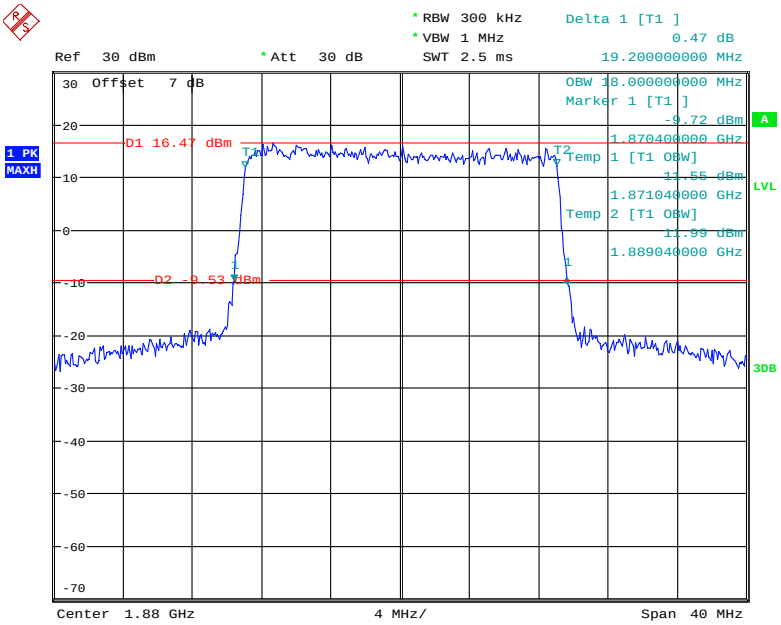
Date: 29.OCT.2020 10:59:01

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



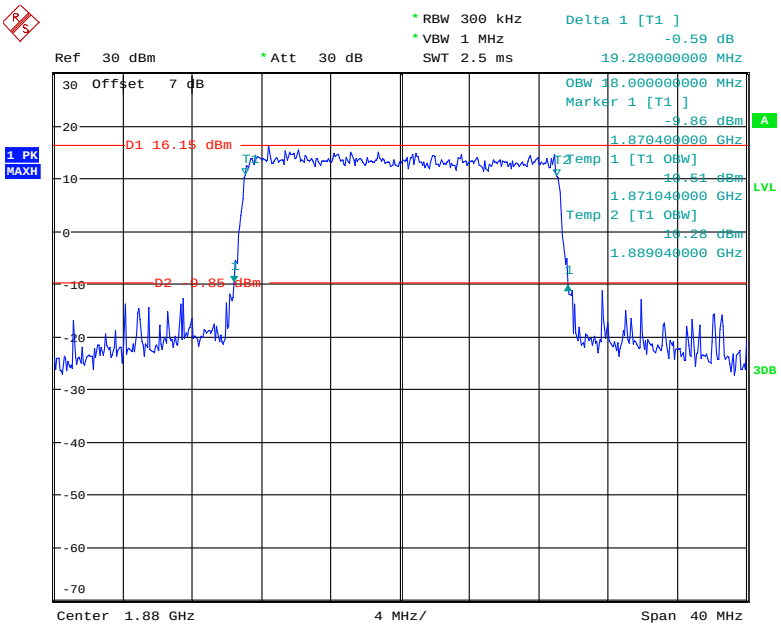
Date: 29.OCT.2020 10:59:25

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



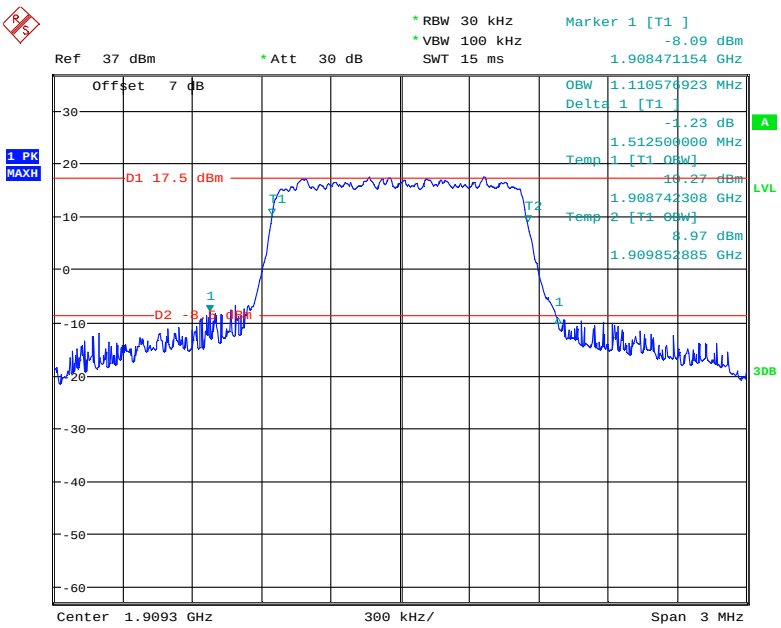
Date: 29.OCT.2020 10:59:51

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



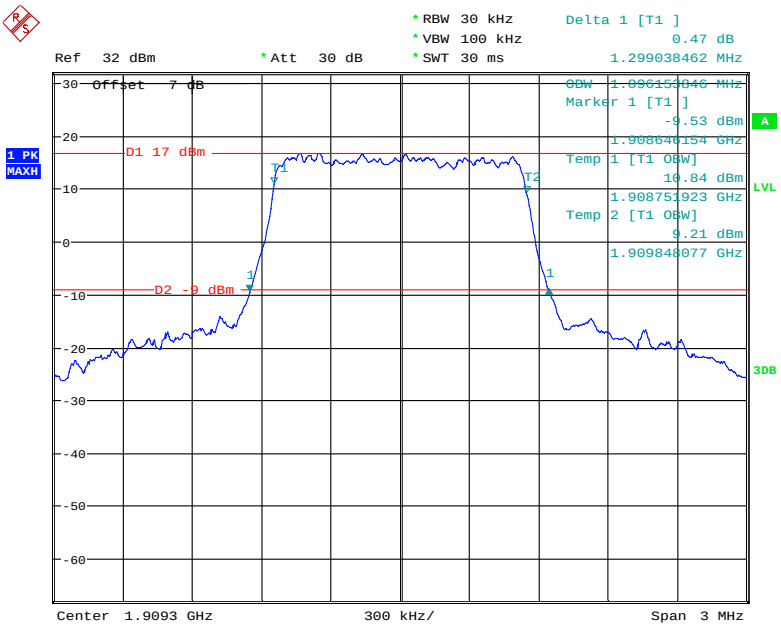
Date: 29.OCT.2020 11:00:18

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



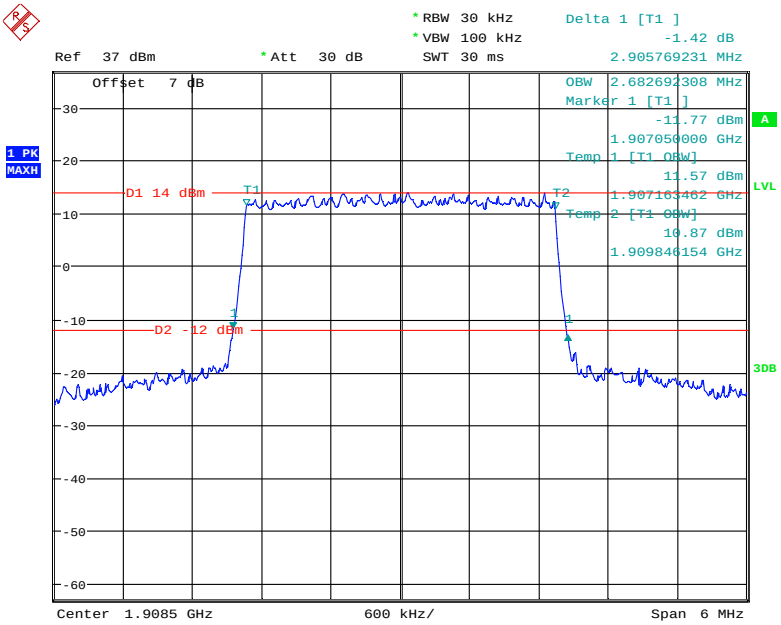
Date: 30.OCT.2020 11:44:01

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



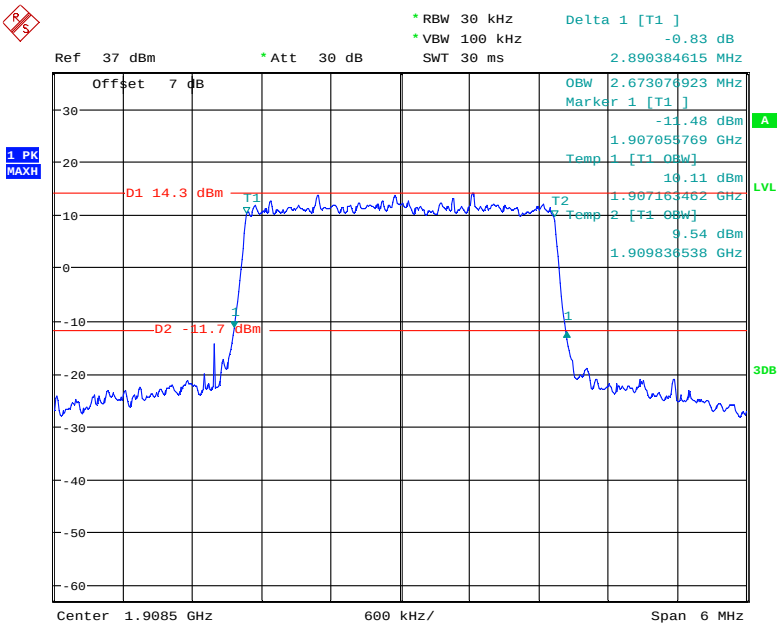
Date: 31.OCT.2020 11:38:04

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



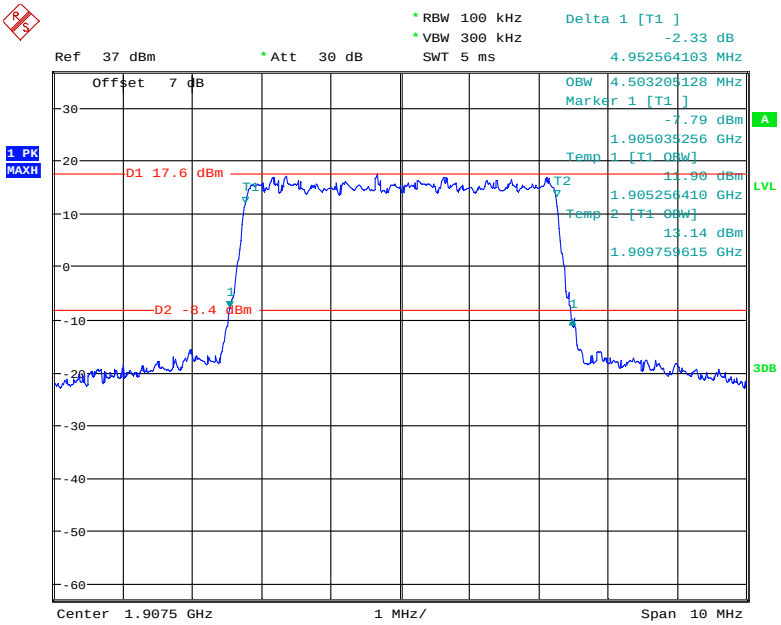
Date: 30.OCT.2020 11:51:59

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



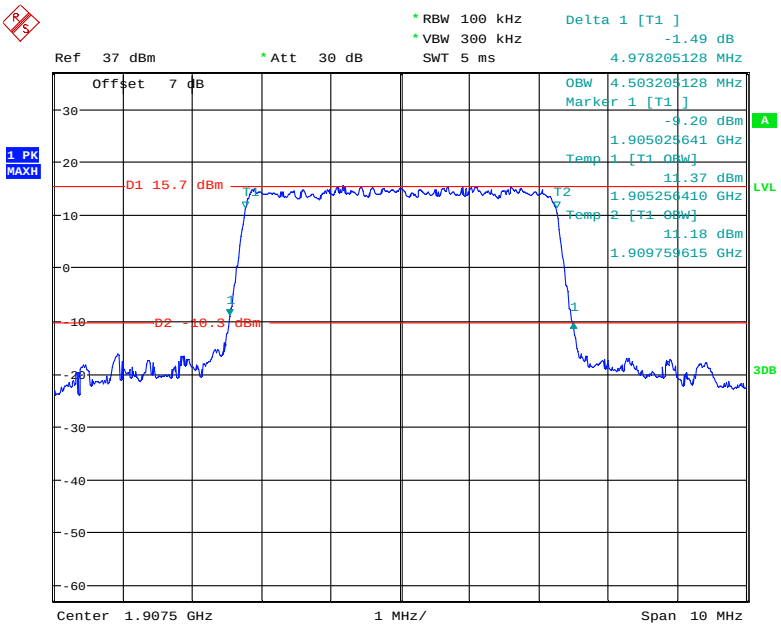
Date: 30.OCT.2020 11:50:12

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



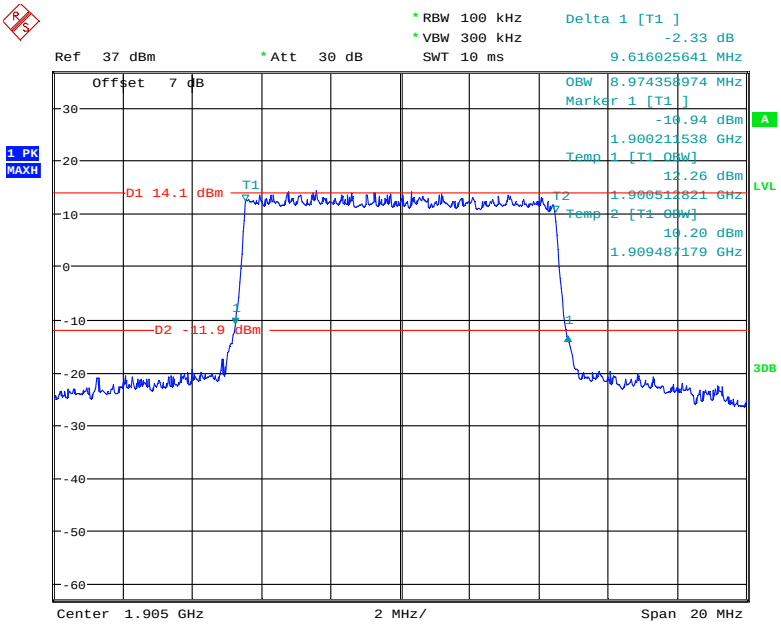
Date: 30.OCT.2020 11:58:19

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



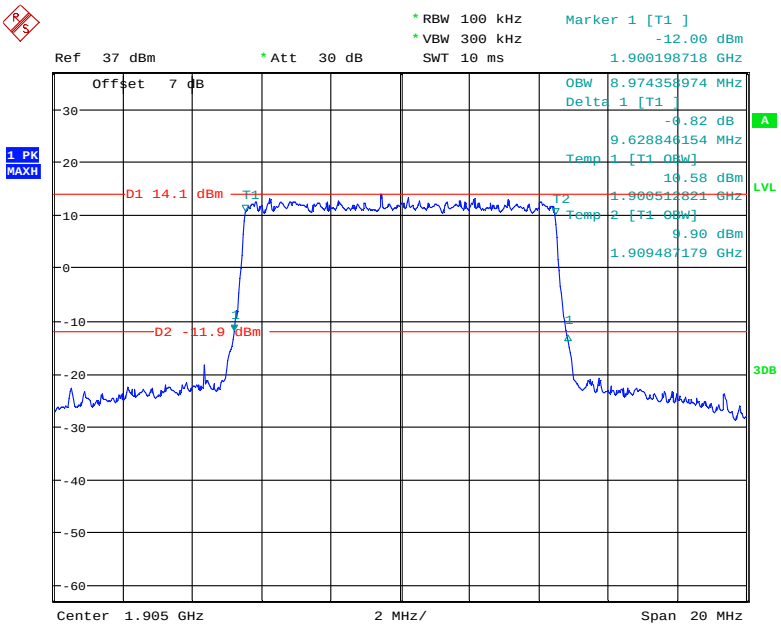
Date: 30.OCT.2020 11:57:17

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



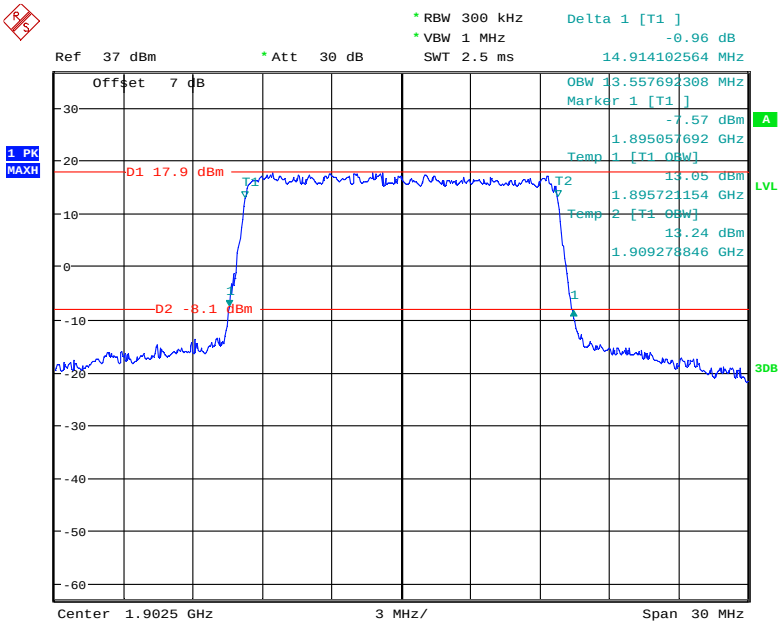
Date: 30.OCT.2020 12:02:48

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



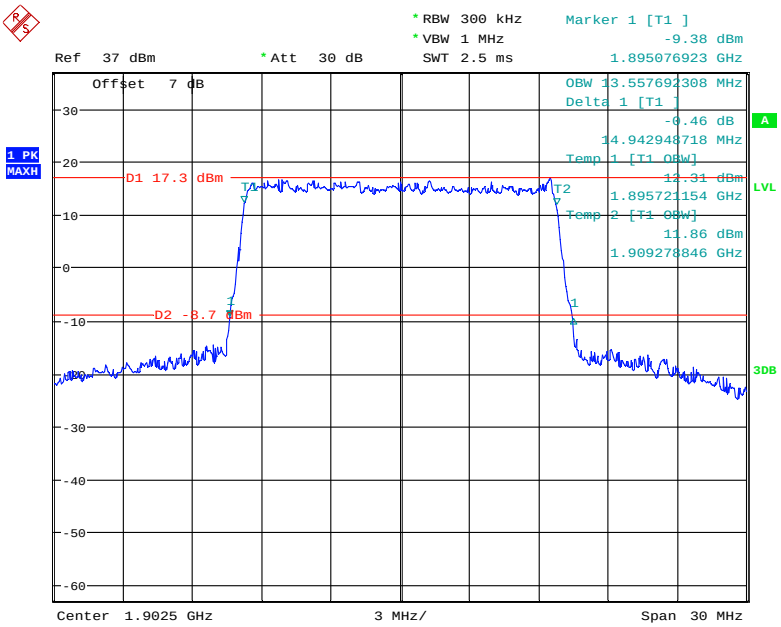
Date: 30.OCT.2020 12:01:30

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



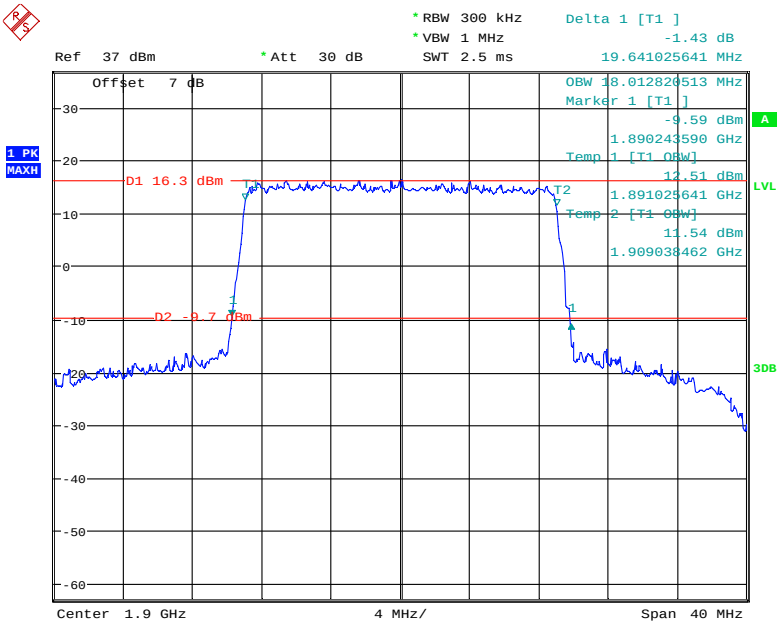
Date: 30.OCT.2020 12:11:54

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



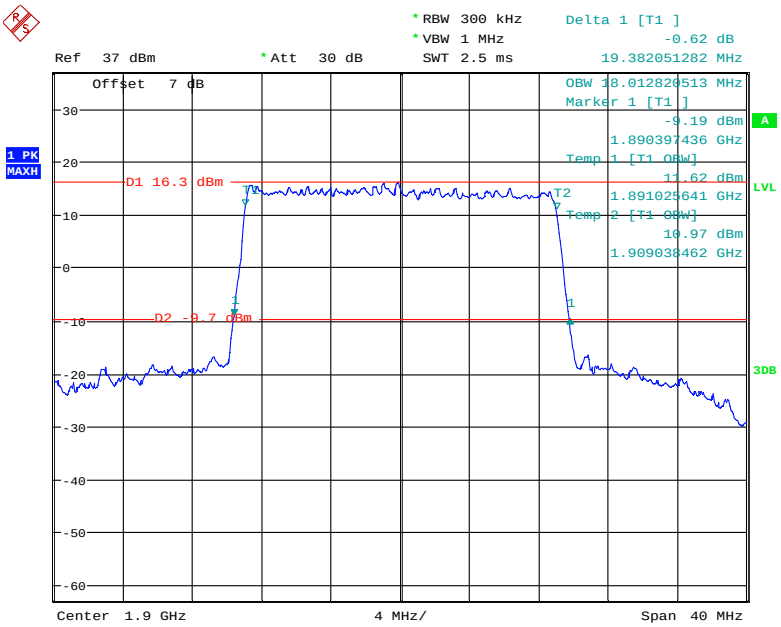
Date: 30.OCT.2020 12:10:06

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



Date: 30.OCT.2020 12:16:44

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

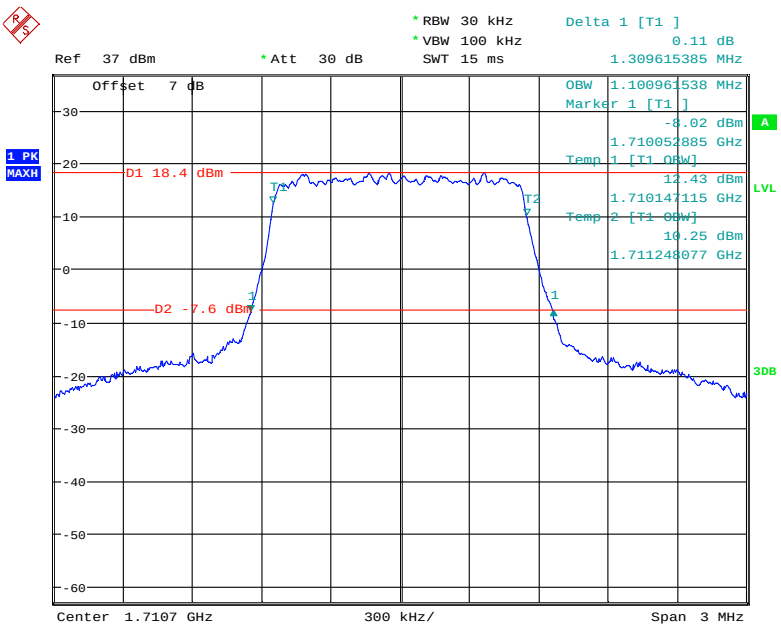


Date: 30.OCT.2020 12:15:41

Band 4:

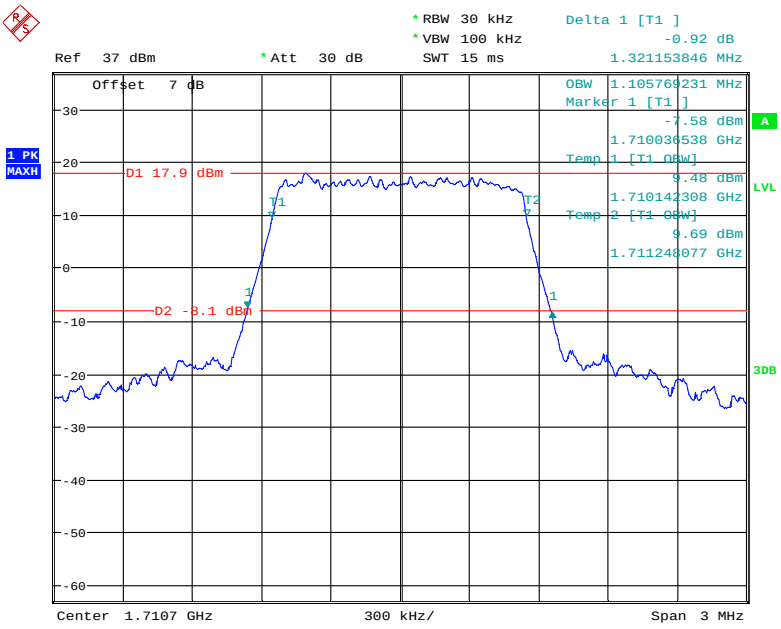
Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.10	1.31
		Middle	1.10	1.31
		High	1.11	1.32
	16QAM	Low	1.11	1.32
		Middle	1.10	1.31
		High	1.10	1.29
3	QPSK	Low	2.69	2.91
		Middle	2.69	2.88
		High	2.73	3.02
	16QAM	Low	2.67	2.88
		Middle	2.69	2.89
		High	2.68	2.89
5	QPSK	Low	4.50	4.94
		Middle	4.52	4.94
		High	4.52	4.96
	16QAM	Low	4.52	4.96
		Middle	4.50	4.92
		High	4.41	4.94
10	QPSK	Low	8.97	9.66
		Middle	8.96	9.68
		High	8.97	9.72
	16QAM	Low	8.97	9.90
		Middle	8.96	9.60
		High	8.97	9.61
15	QPSK	Low	13.56	14.95
		Middle	13.56	14.82
		High	13.56	15.00
	16QAM	Low	13.51	14.86
		Middle	13.56	14.70
		High	13.51	14.88
20	QPSK	Low	18.01	19.62
		Middle	17.92	19.28
		High	17.94	19.36
	16QAM	Low	18.01	19.62
		Middle	18.00	19.60
		High	18.01	19.42

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



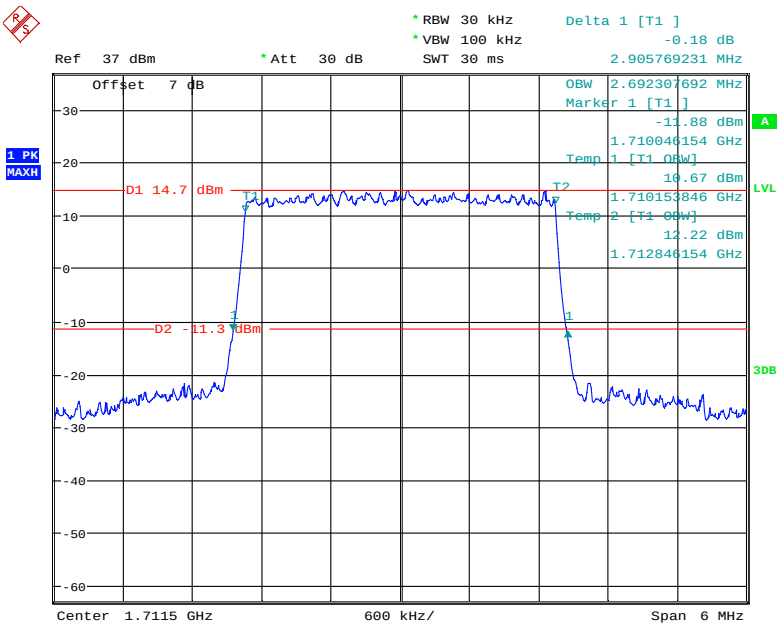
Date: 30.OCT.2020 12:20:07

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



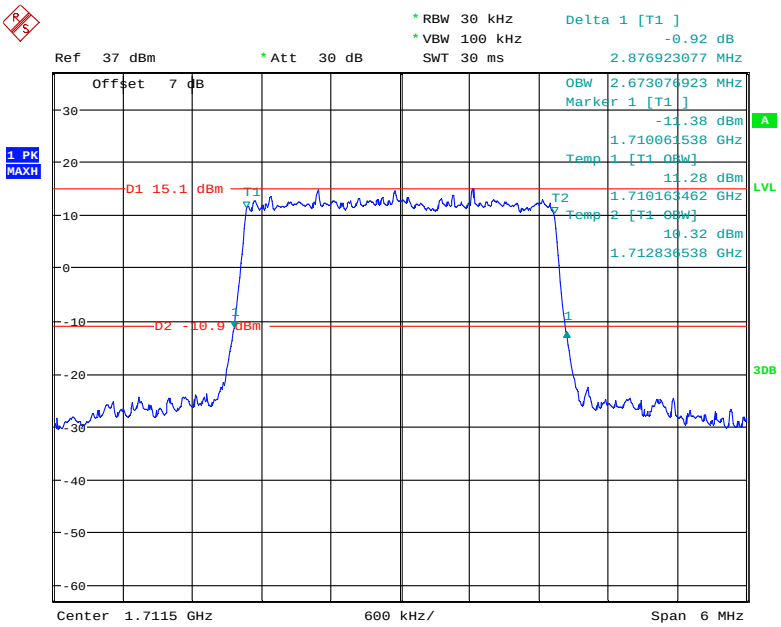
Date: 30.OCT.2020 12:23:13

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



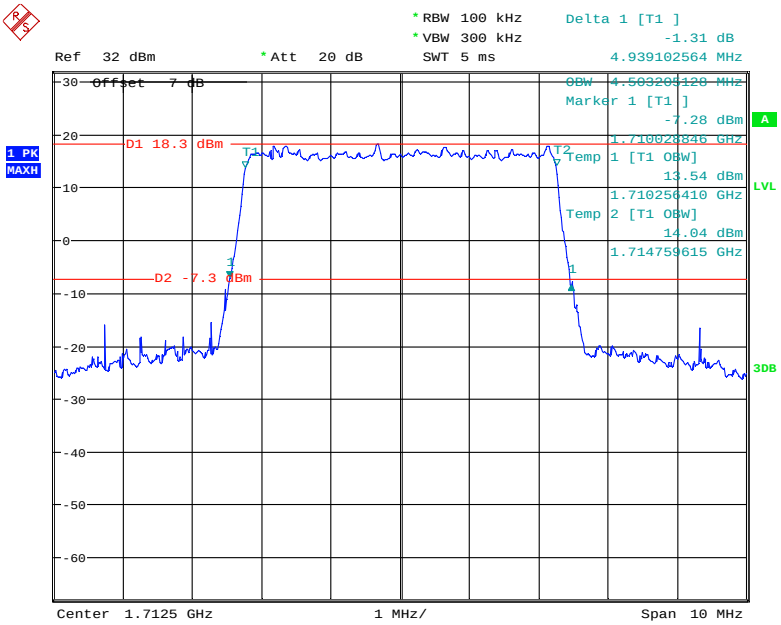
Date: 30.OCT.2020 12:30:51

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



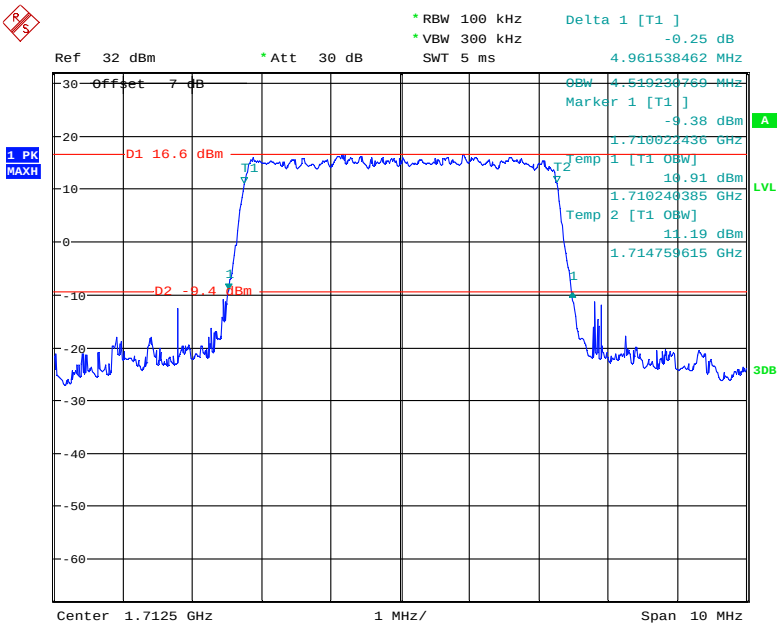
Date: 30.OCT.2020 12:32:38

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



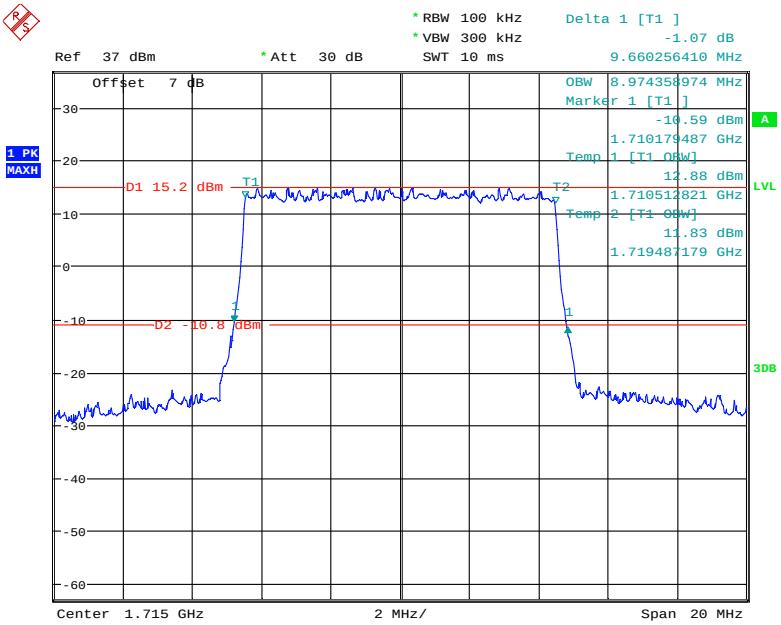
Date: 30.OCT.2020 13:04:51

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



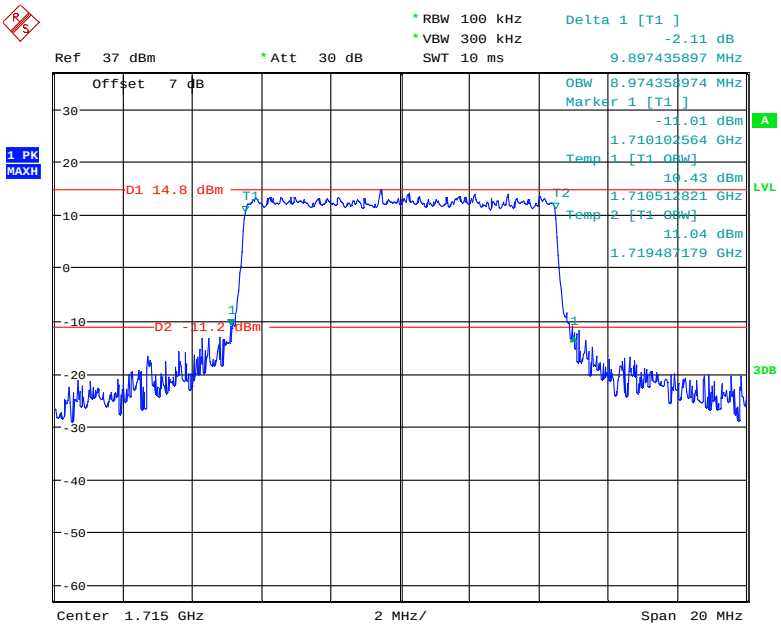
Date: 30.OCT.2020 13:07:53

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



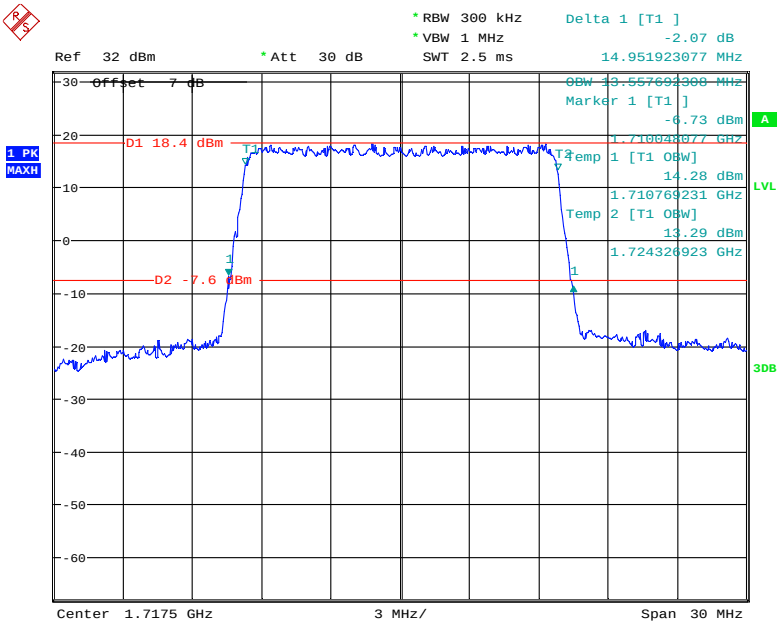
Date: 30.OCT.2020 13:16:34

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



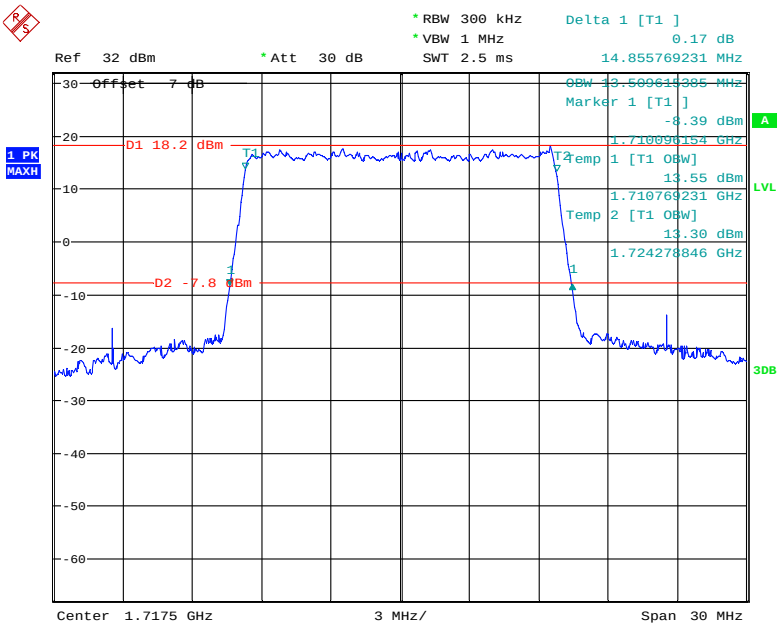
Date: 30.OCT.2020 13:18:04

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



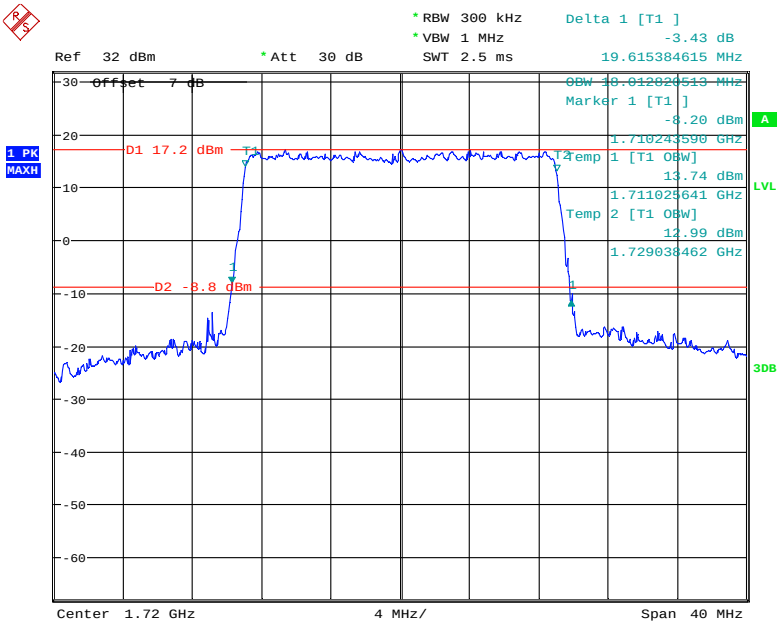
Date: 30.OCT.2020 13:25:21

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



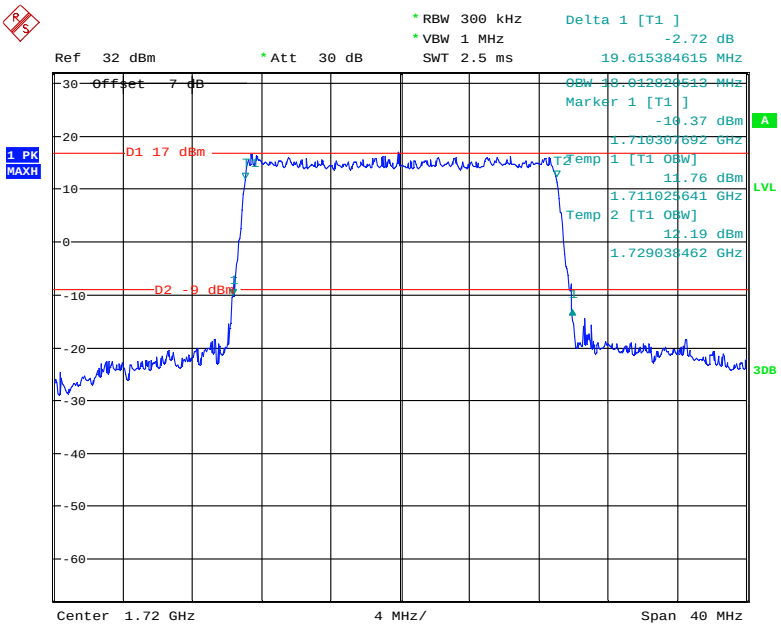
Date: 30.OCT.2020 13:29:57

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



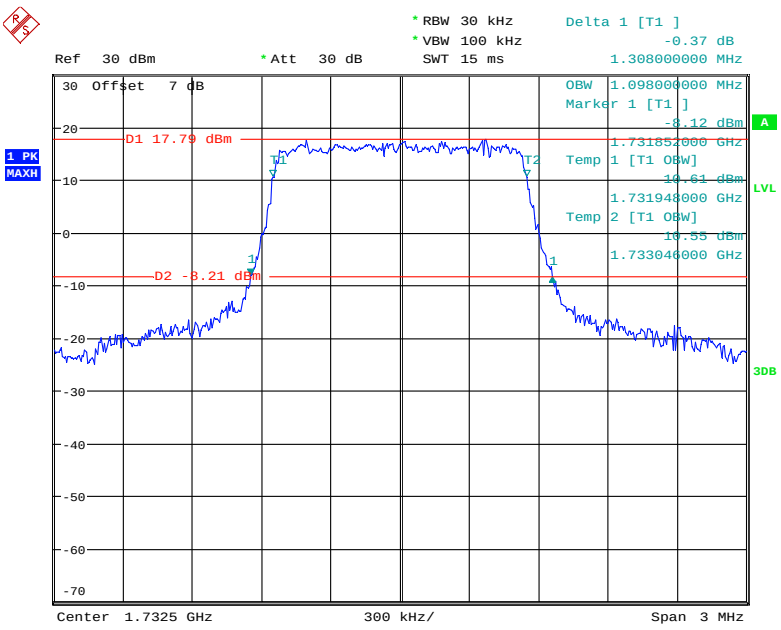
Date: 30.OCT.2020 13:35:13

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



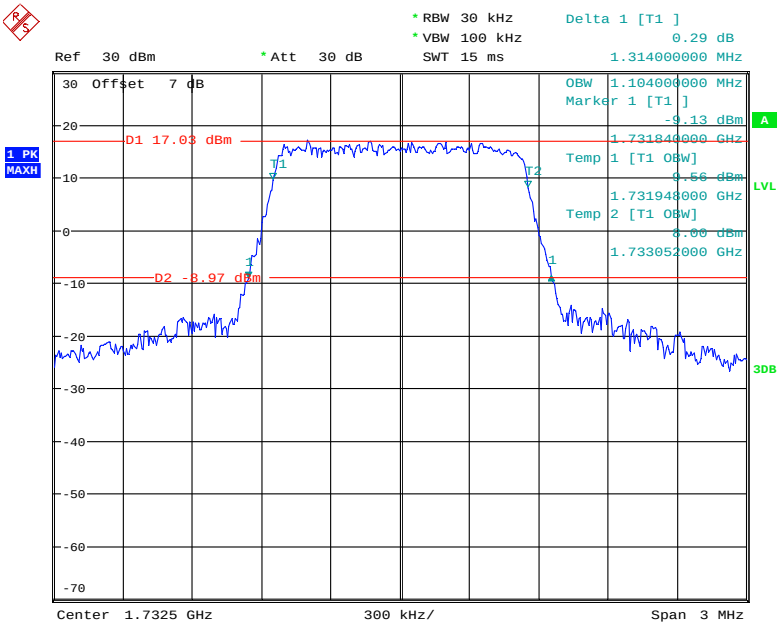
Date: 30.OCT.2020 13:37:19

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



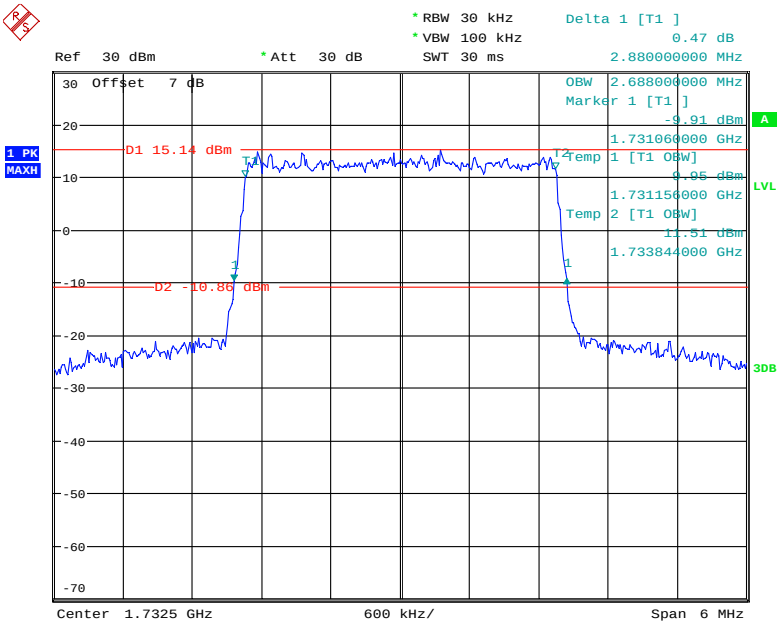
Date: 29.OCT.2020 11:00:38

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



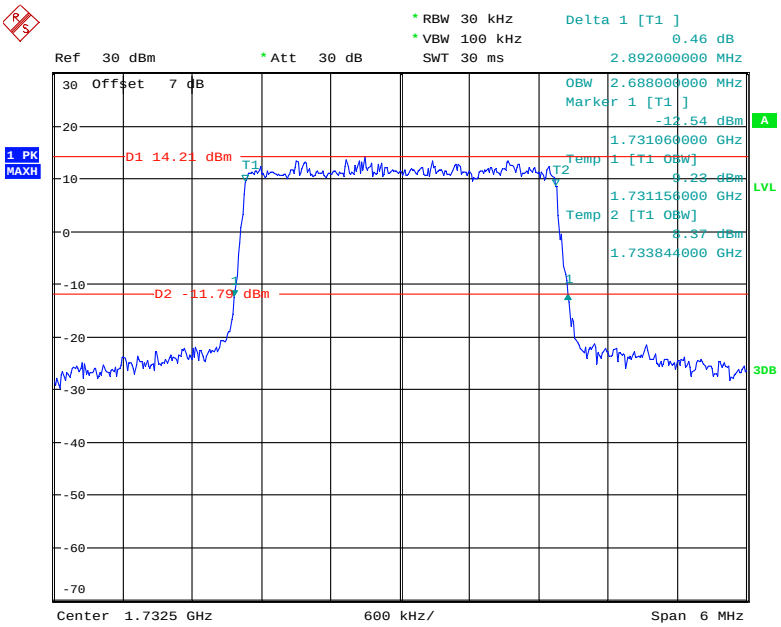
Date: 29.OCT.2020 11:00:58

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



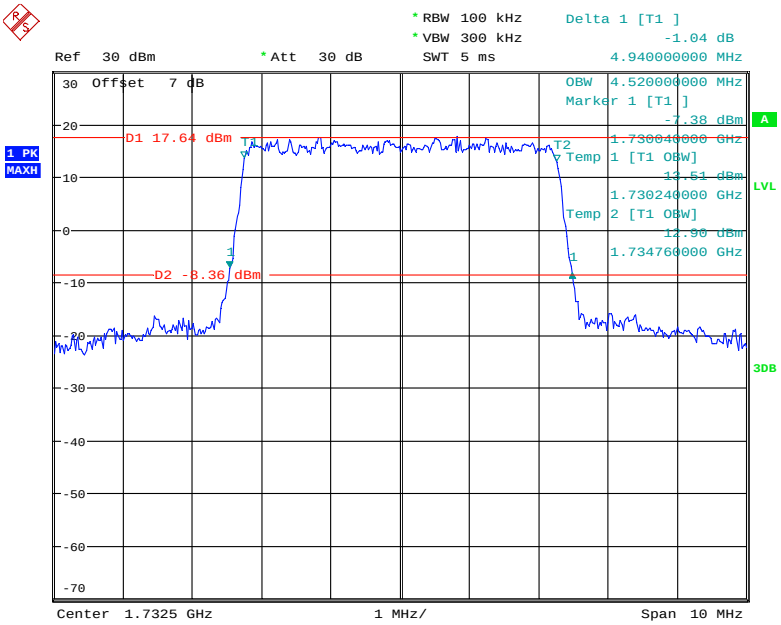
Date: 29.OCT.2020 11:01:18

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



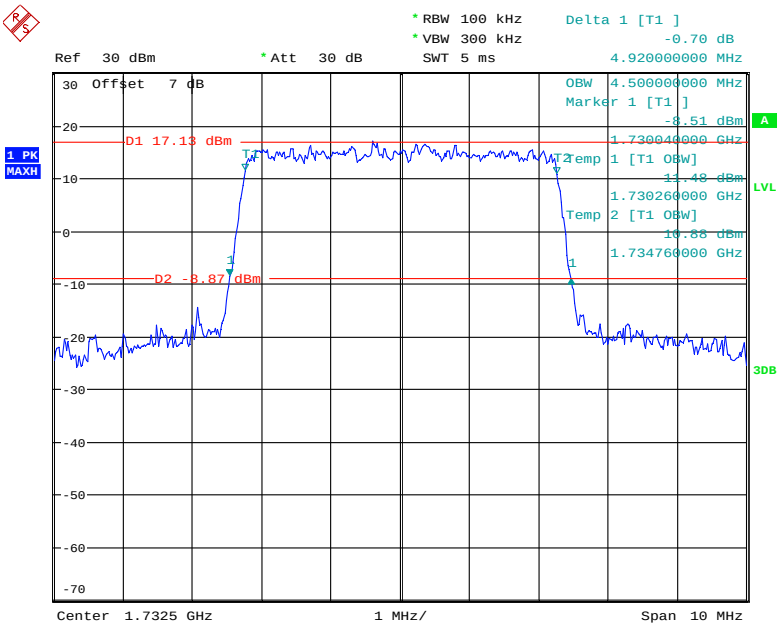
Date: 29.OCT.2020 11:01:35

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



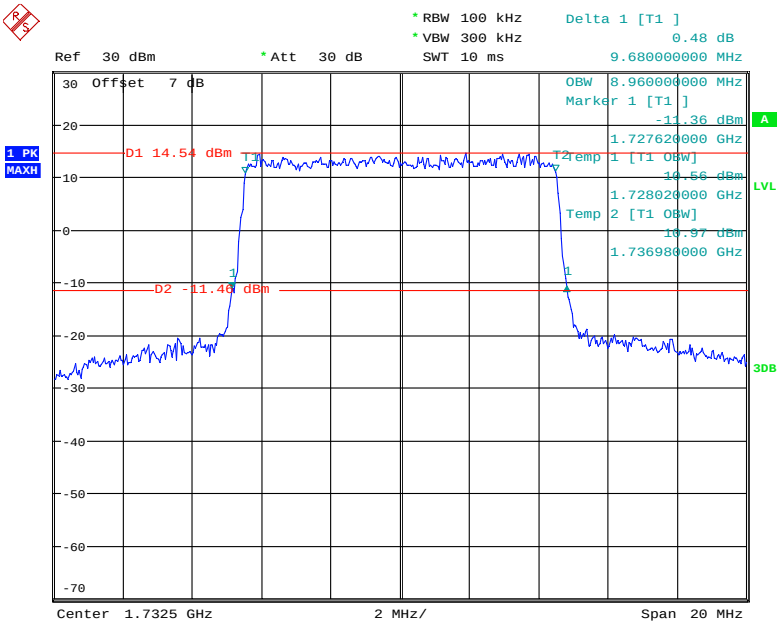
Date: 29.OCT.2020 11:02:04

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



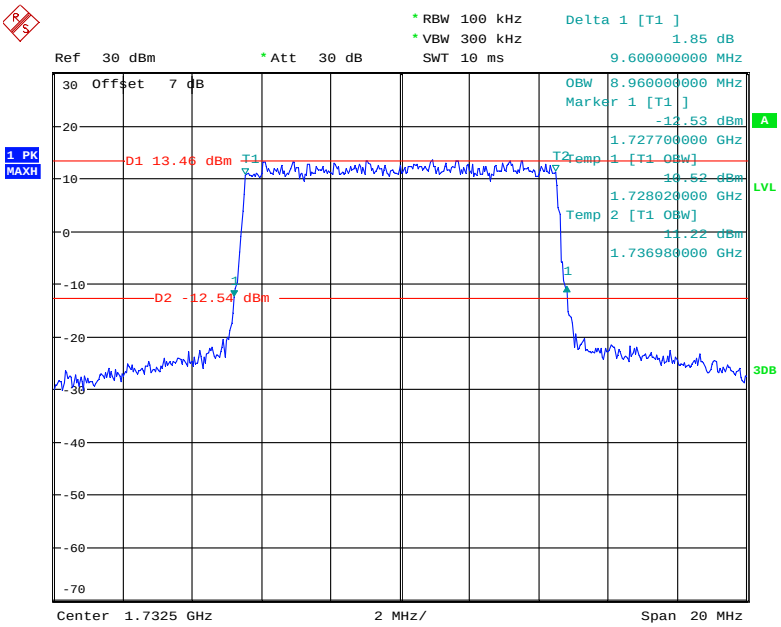
Date: 29.OCT.2020 11:02:25

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



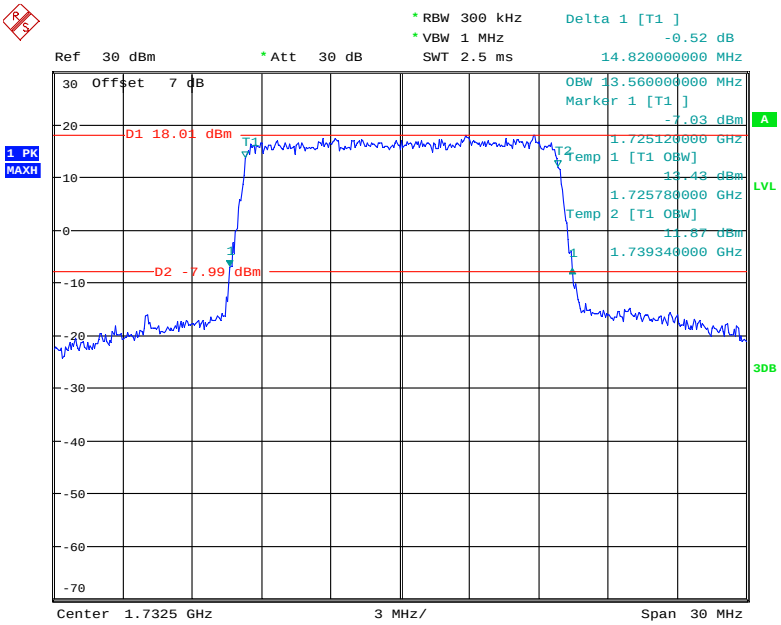
Date: 29.OCT.2020 11:02:49

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



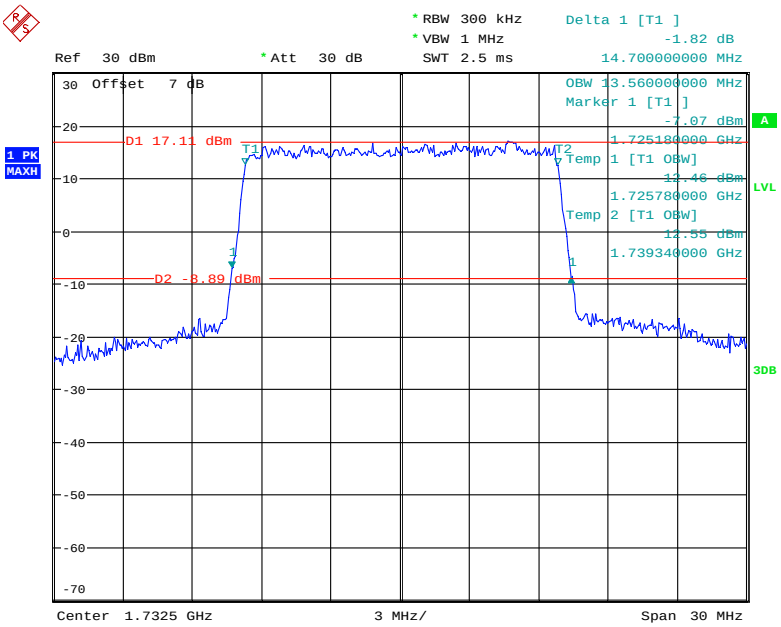
Date: 29.OCT.2020 11:03:07

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



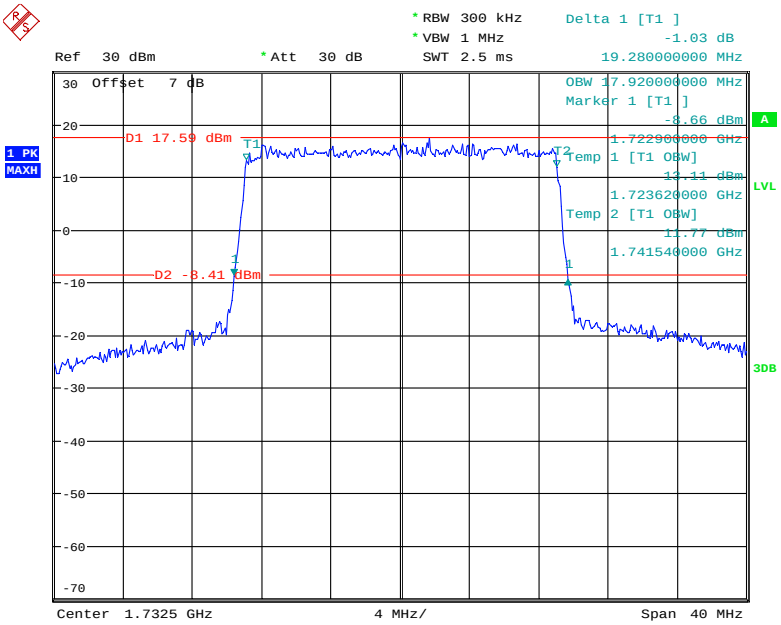
Date: 29.OCT.2020 11:03:37

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



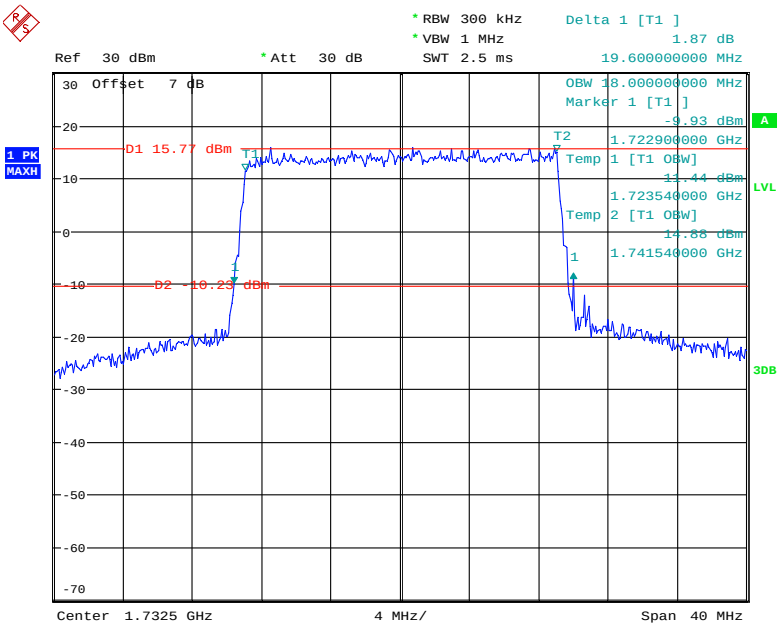
Date: 29.OCT.2020 11:04:04

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



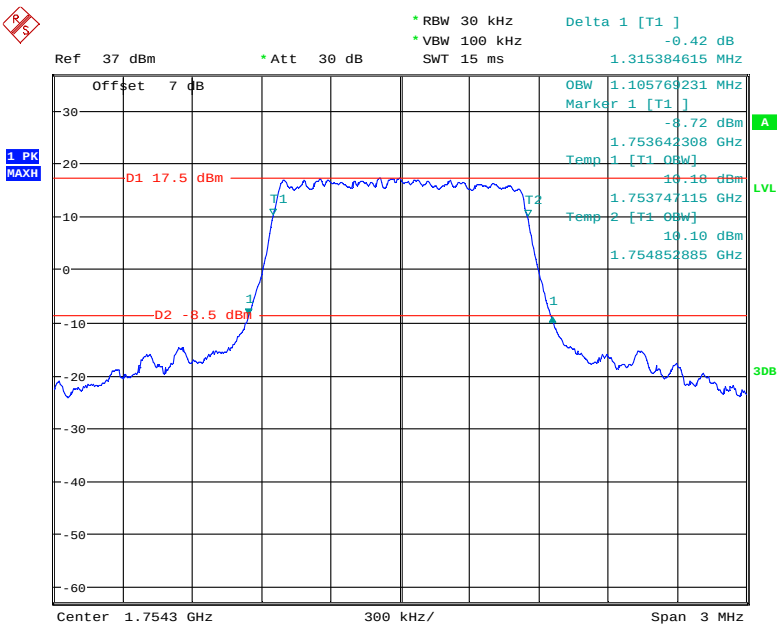
Date: 29.OCT.2020 11:04:30

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



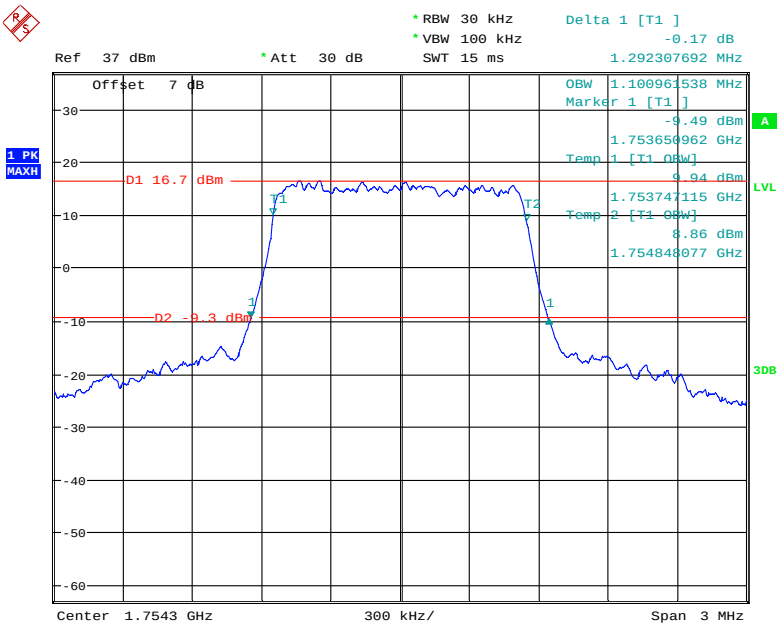
Date: 29.OCT.2020 11:04:57

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



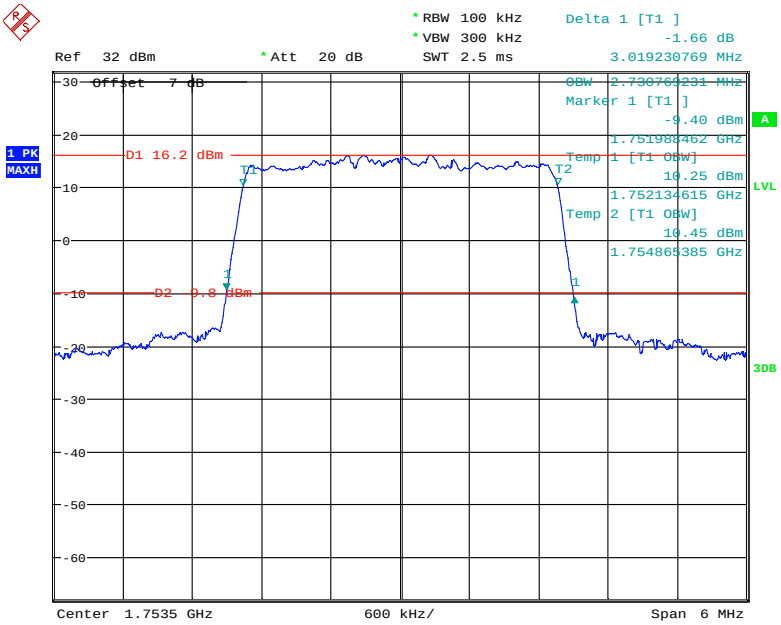
Date: 30.OCT.2020 12:28:40

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



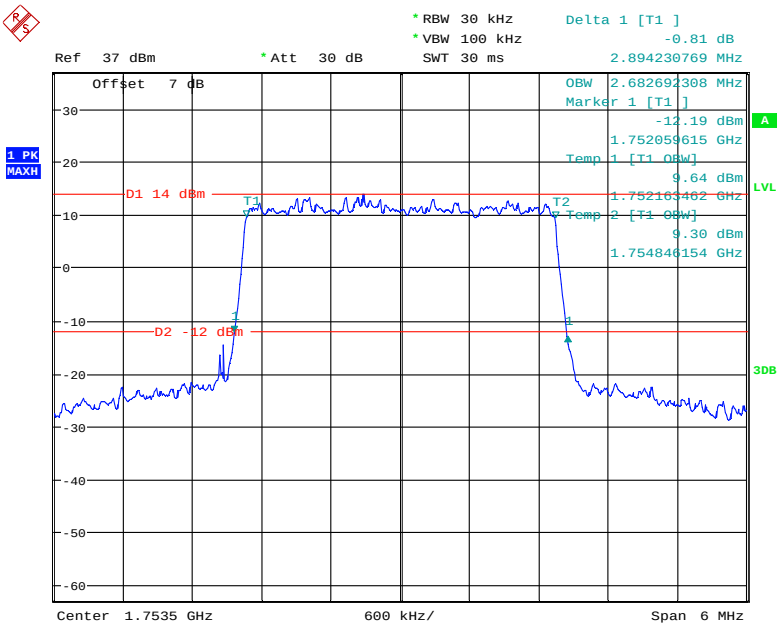
Date: 30.OCT.2020 12:27:07

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



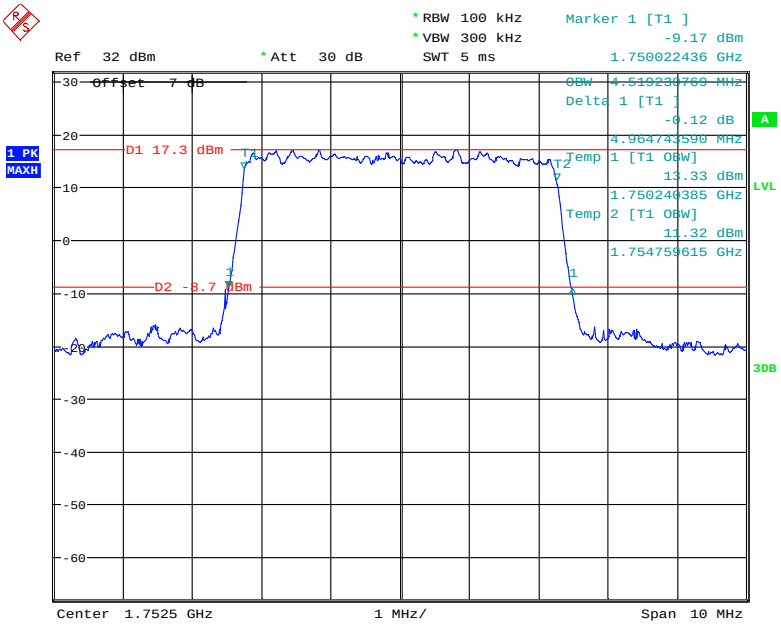
Date: 2.NOV.2020 17:48:33

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



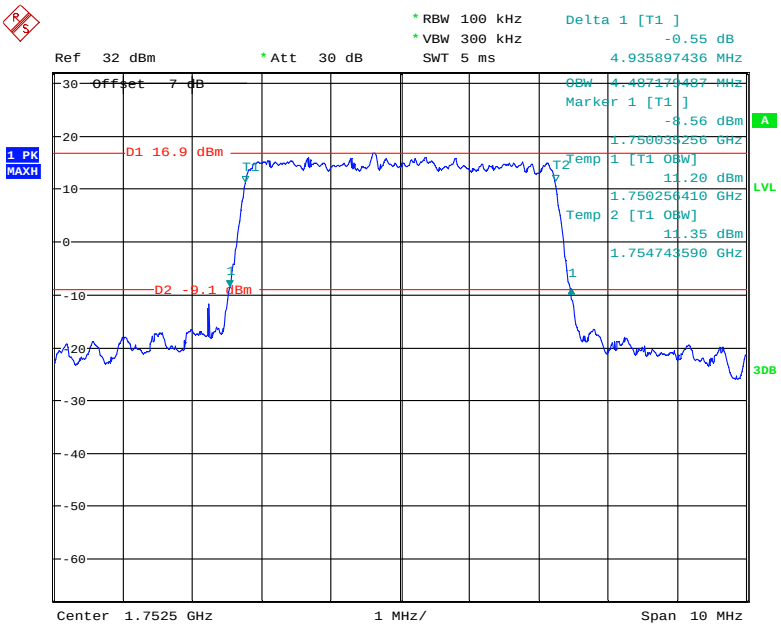
Date: 30.OCT.2020 12:34:21

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



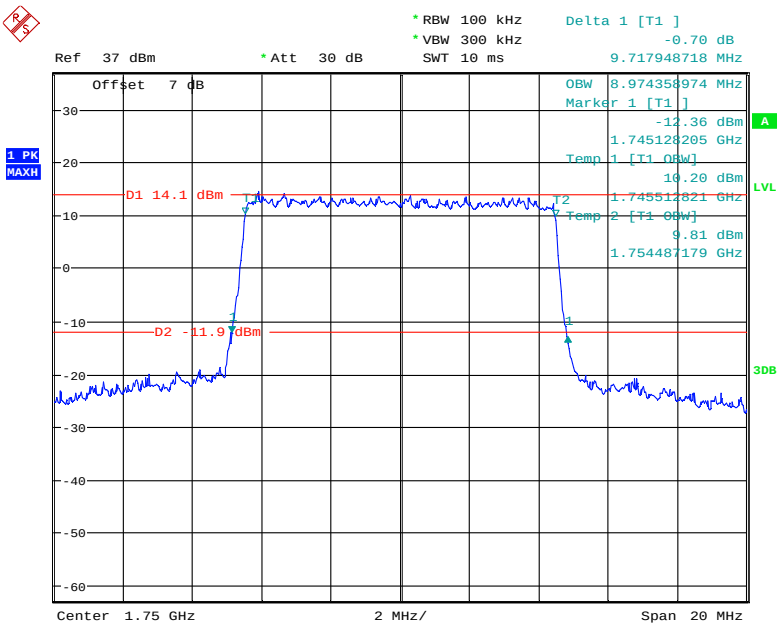
Date: 30.OCT.2020 13:11:12

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



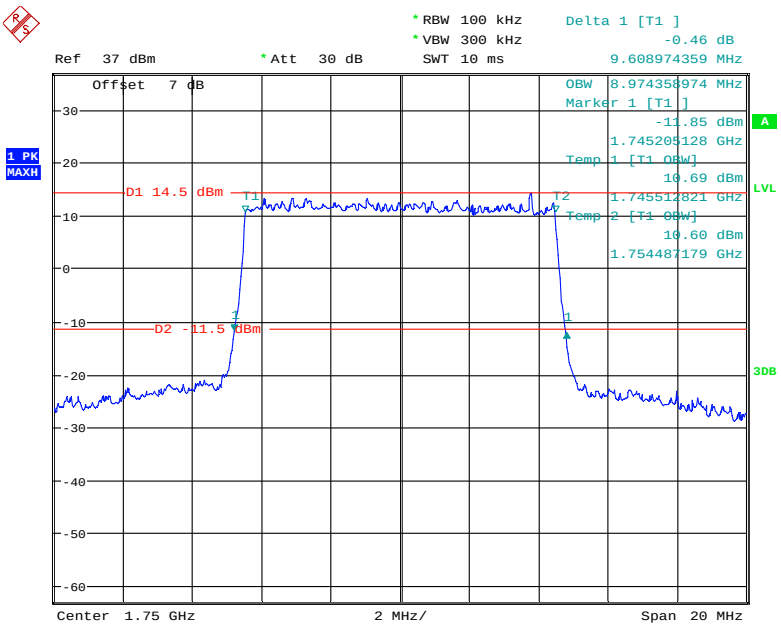
Date: 30.OCT.2020 13:09:40

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



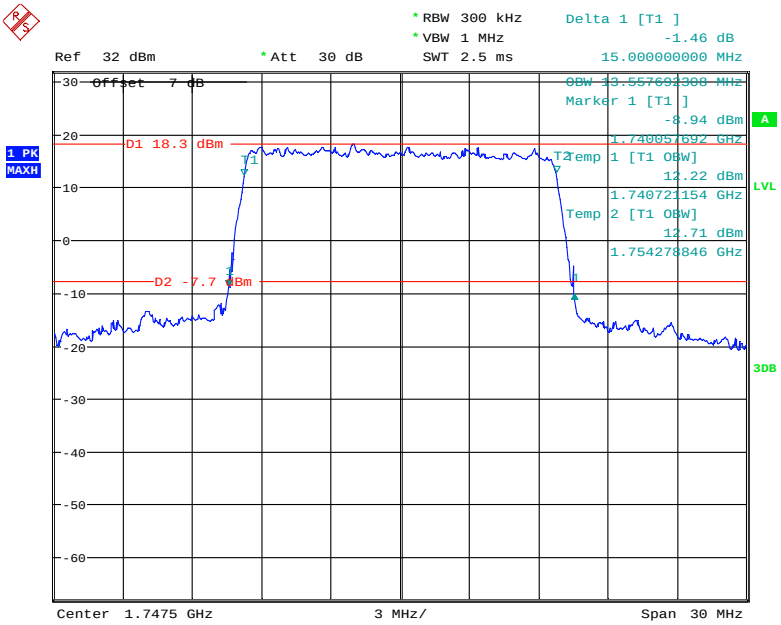
Date: 30.OCT.2020 13:22:03

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



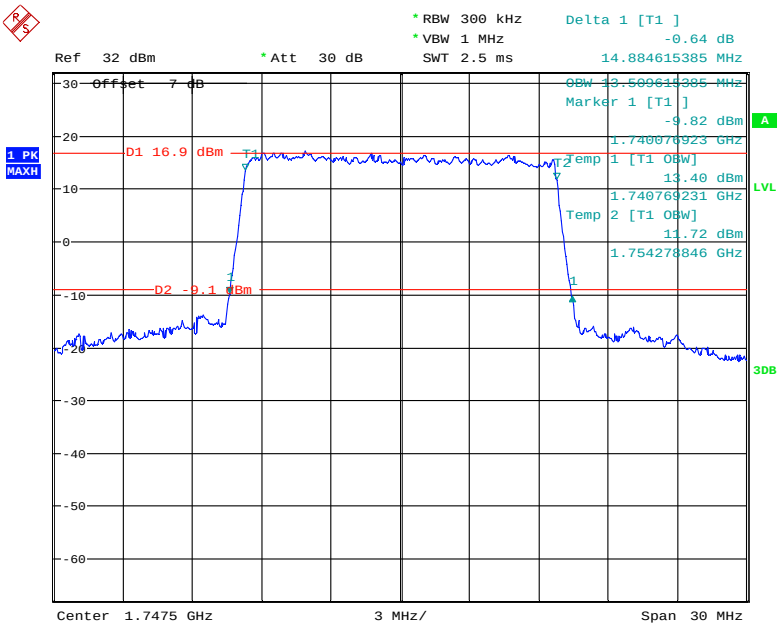
Date: 30.OCT.2020 13:20:44

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



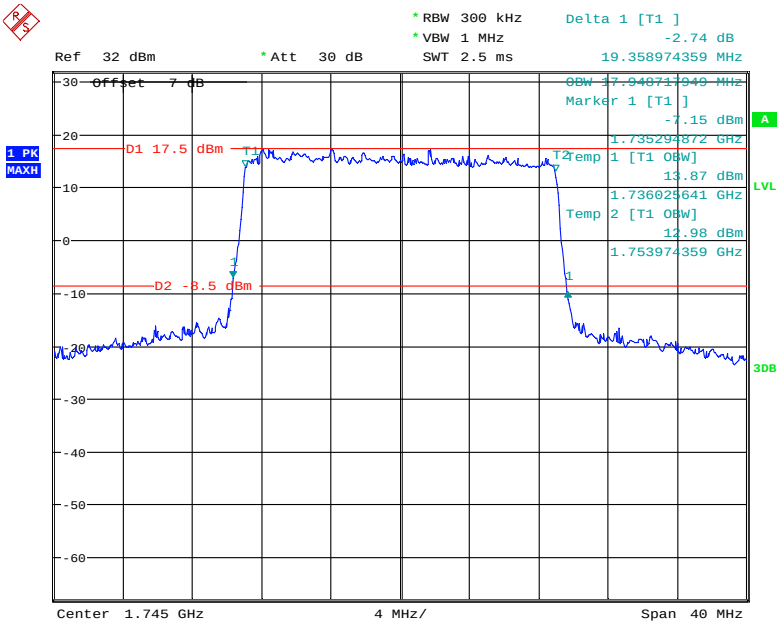
Date: 30.OCT.2020 13:32:47

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



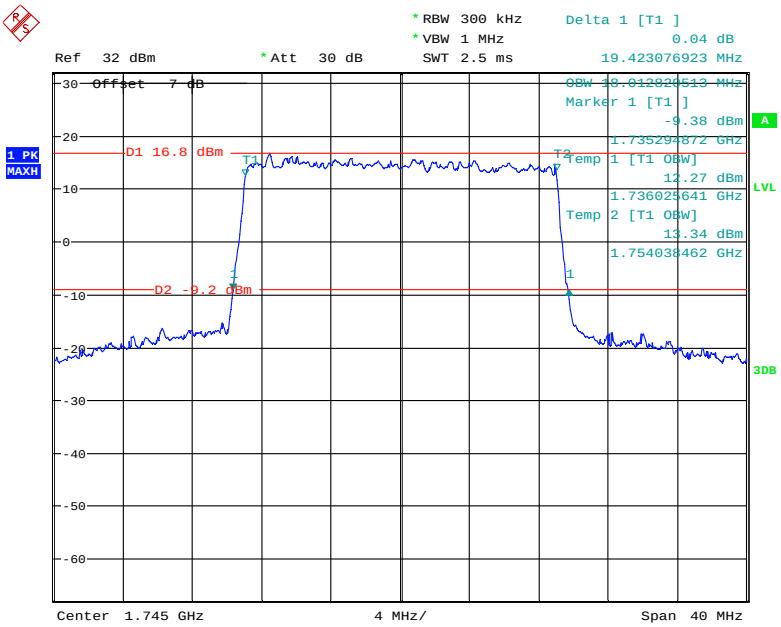
Date: 30.OCT.2020 13:31:41

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



Date: 30.OCT.2020 13:40:44

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

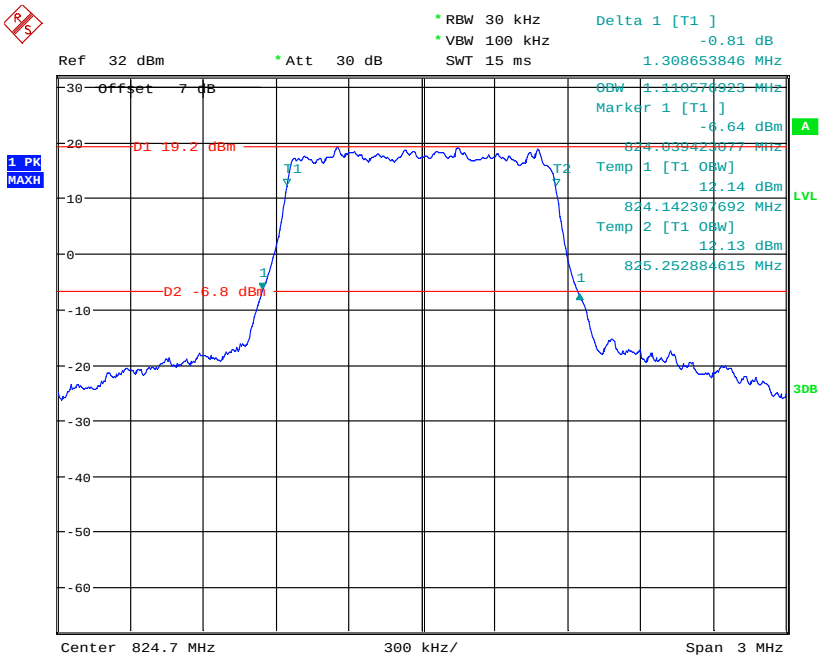


Date: 30.OCT.2020 13:39:35

Band 5:

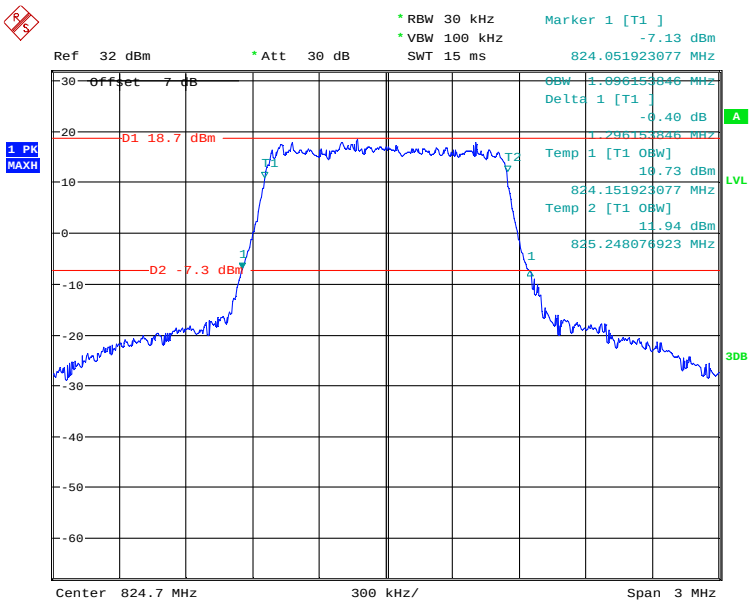
Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.11	1.31
		Middle	1.10	1.30
		High	1.11	1.33
	16QAM	Low	1.10	1.30
		Middle	1.10	1.31
		High	1.11	1.32
3	QPSK	Low	2.68	2.89
		Middle	2.69	2.87
		High	2.69	2.89
	16QAM	Low	2.68	2.87
		Middle	2.69	2.89
		High	2.68	2.89
5	QPSK	Low	4.50	4.95
		Middle	4.50	4.92
		High	4.50	4.98
	16QAM	Low	4.52	4.98
		Middle	4.50	4.94
		High	4.50	4.95
10	QPSK	Low	8.97	9.61
		Middle	8.96	9.64
		High	8.97	9.69
	16QAM	Low	8.97	9.62
		Middle	8.96	9.60
		High	8.97	9.54

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



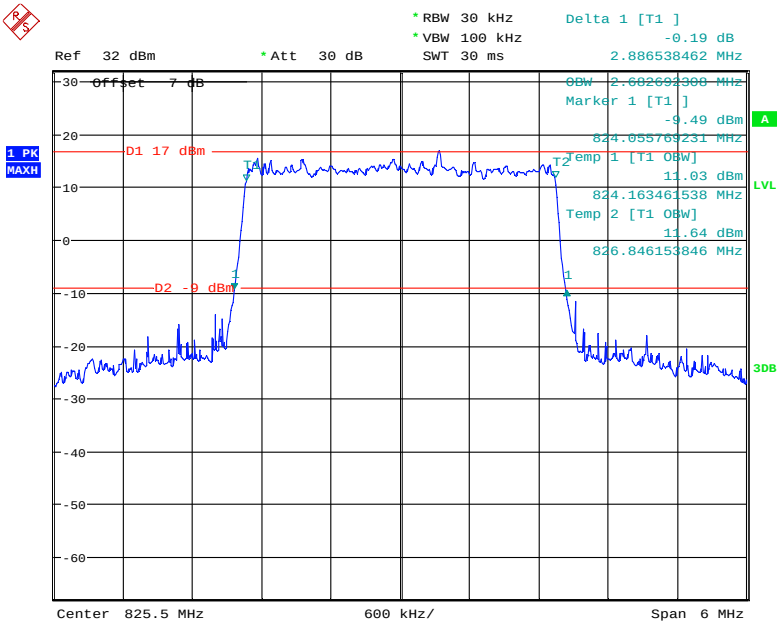
Date: 30.OCT.2020 13:45:05

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



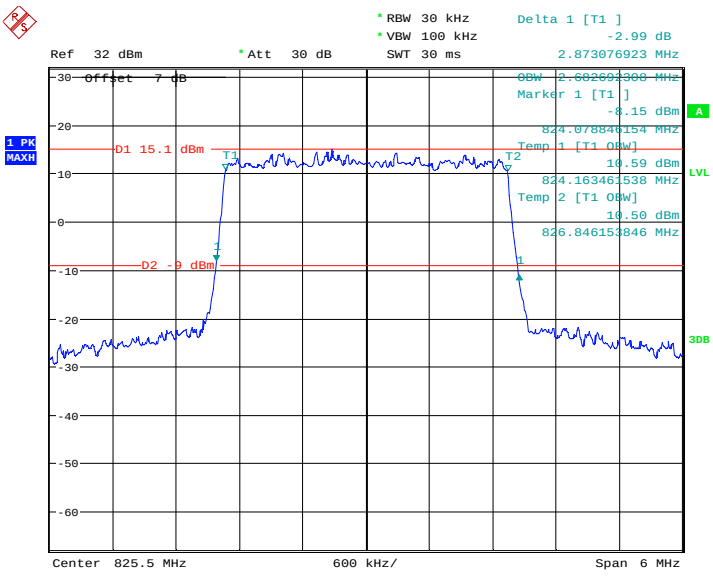
Date: 30.OCT.2020 13:46:23

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



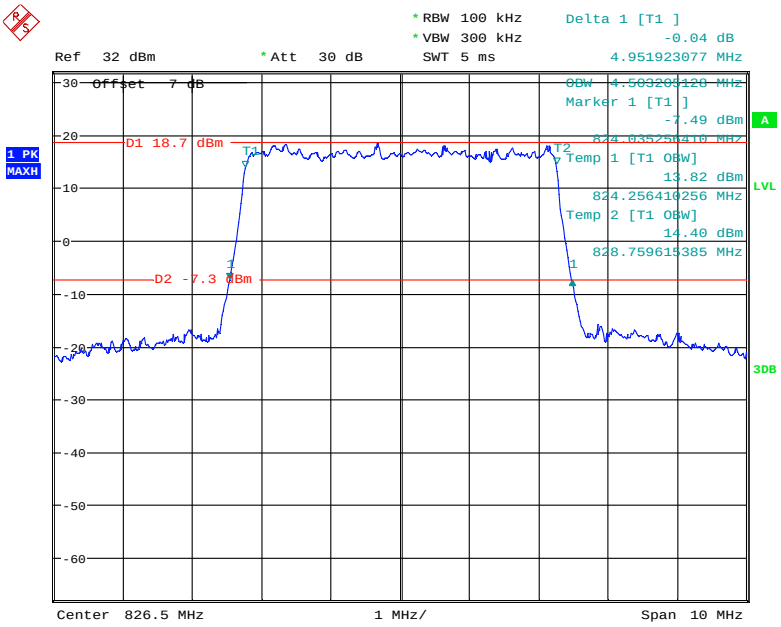
Date: 30.OCT.2020 13:50:45

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



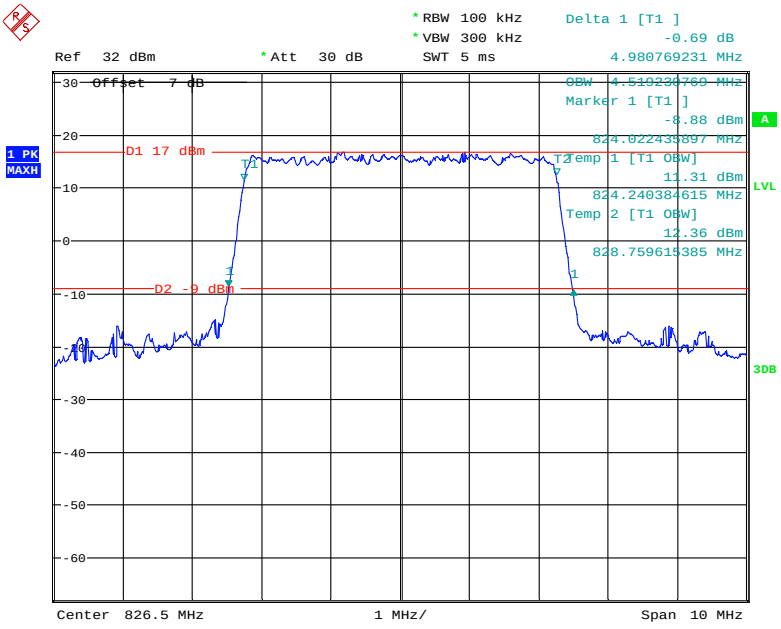
Date: 30.OCT.2020 13:52:37

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



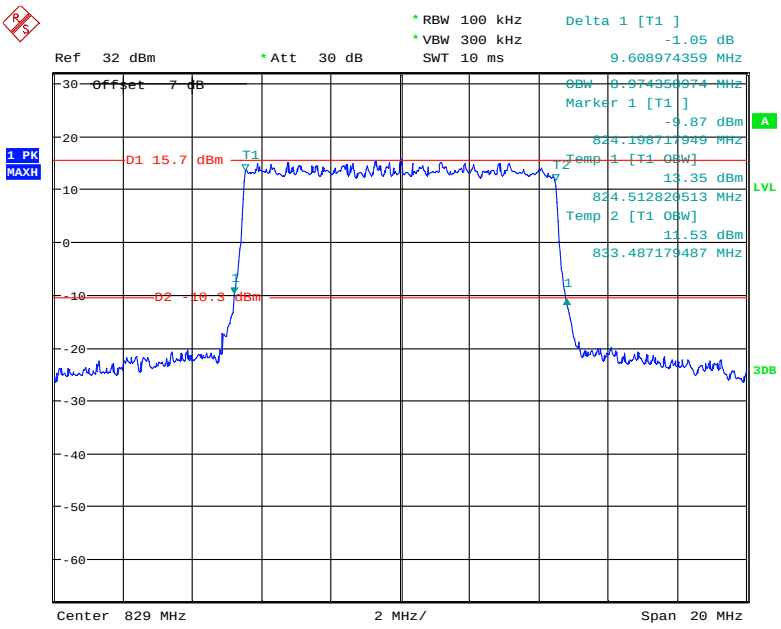
Date: 30.OCT.2020 13:58:26

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



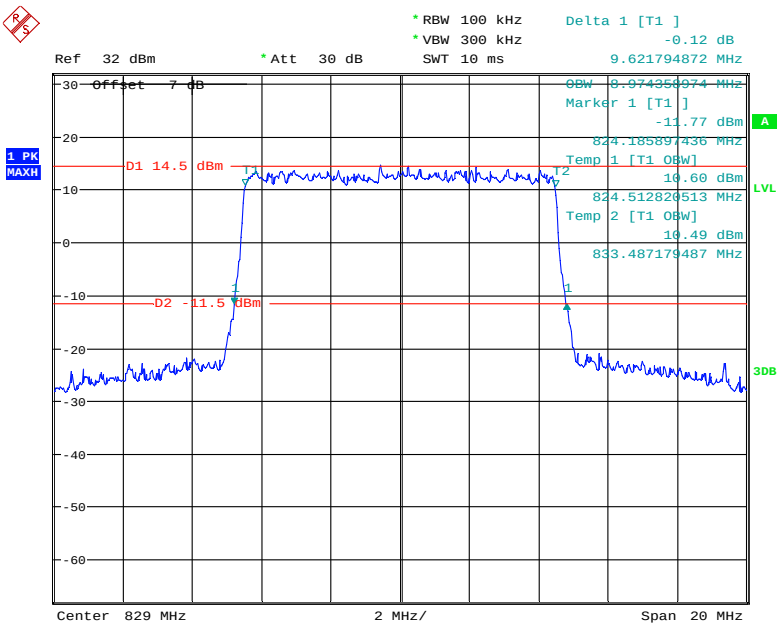
Date: 30.OCT.2020 13:59:38

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



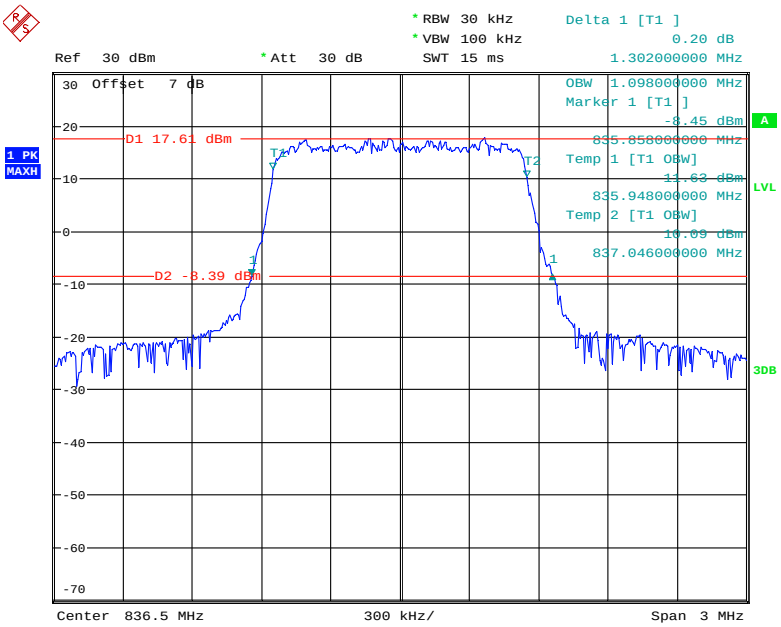
Date: 30.OCT.2020 14:04:35

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



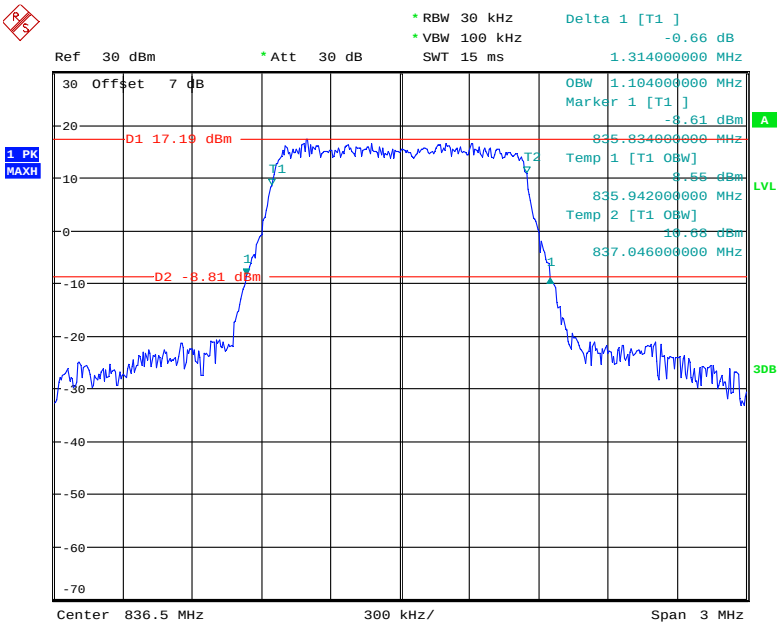
Date: 30.OCT.2020 14:05:47

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



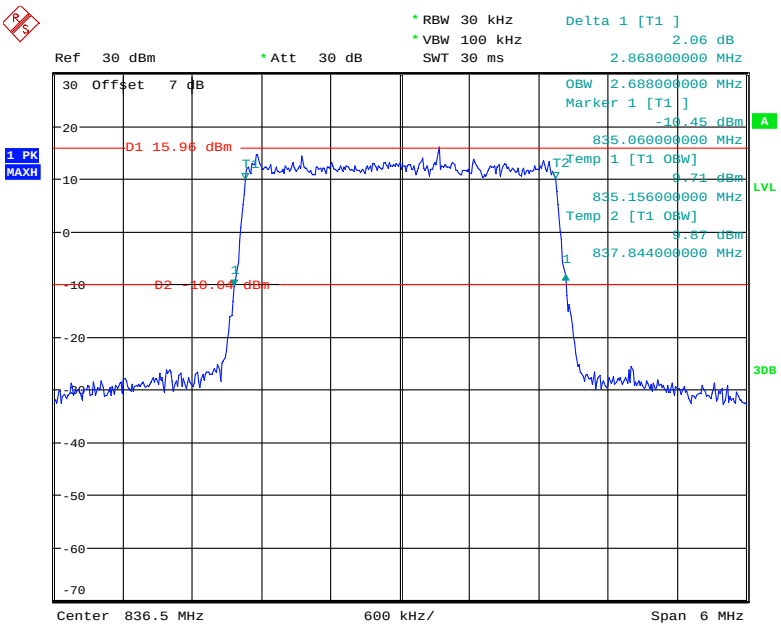
Date: 29.OCT.2020 11:05:23

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



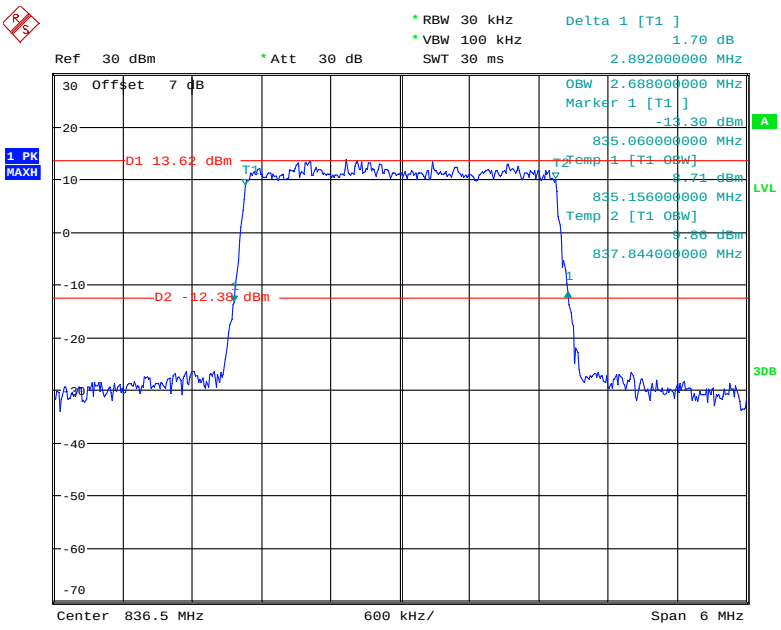
Date: 29.OCT.2020 11:05:46

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



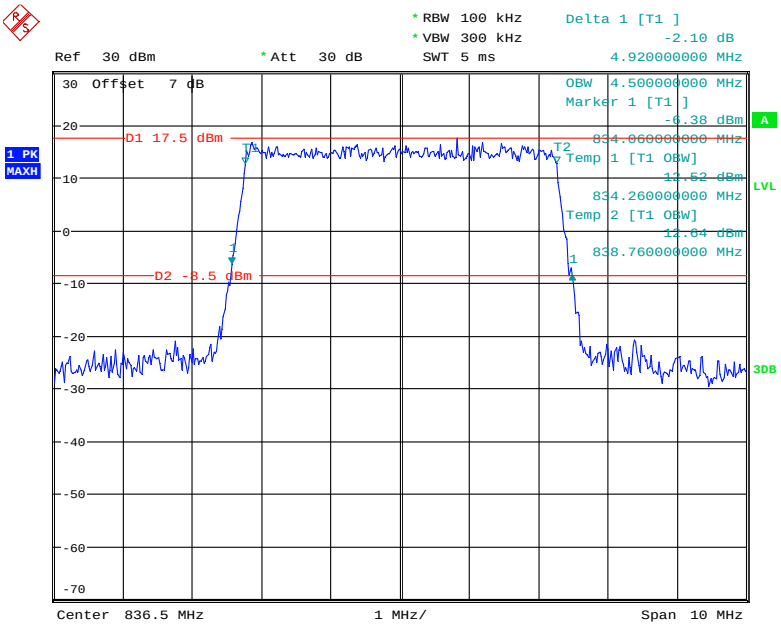
Date: 29.OCT.2020 11:06:06

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



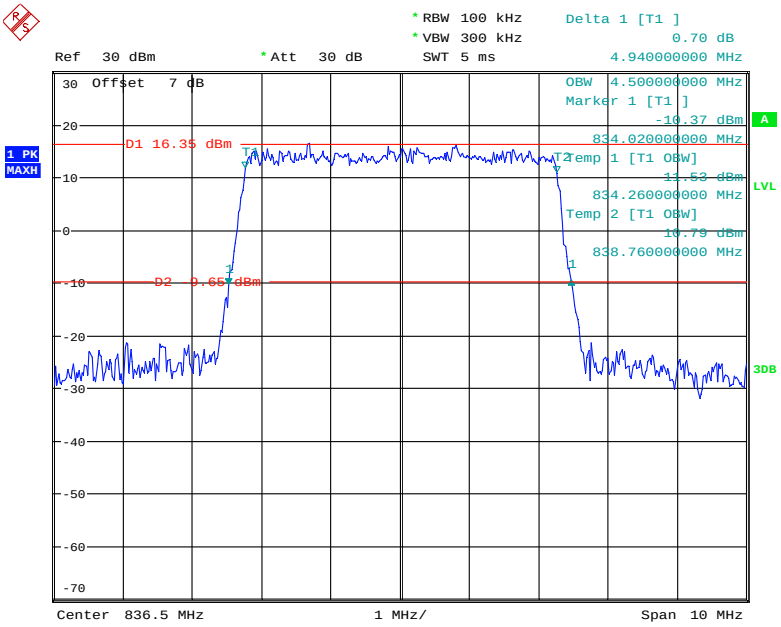
Date: 29.OCT.2020 11:06:30

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



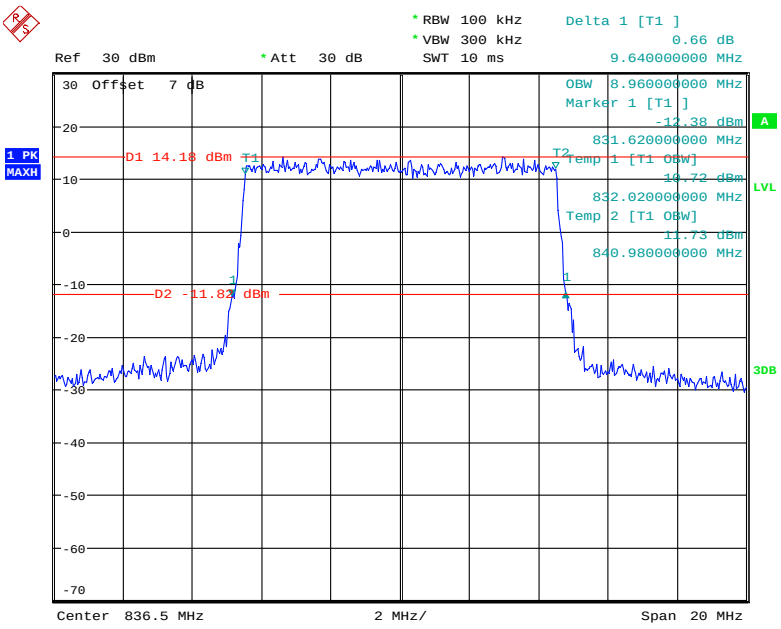
Date: 29.OCT.2020 11:06:53

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



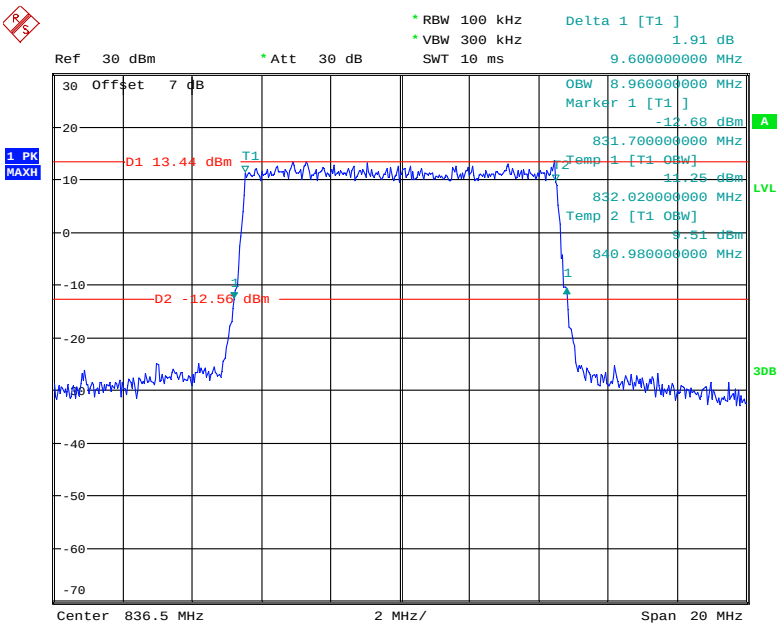
Date: 29.OCT.2020 11:07:16

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



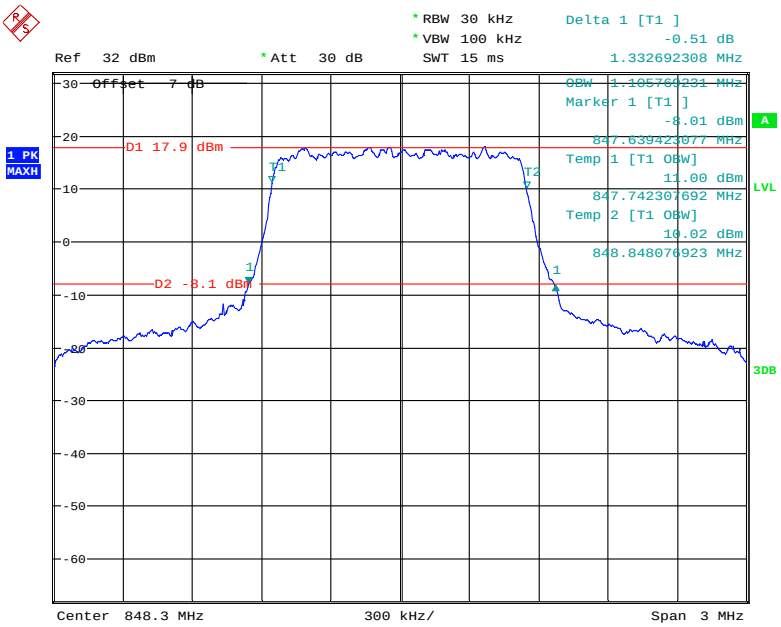
Date: 29.OCT.2020 11:07:40

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



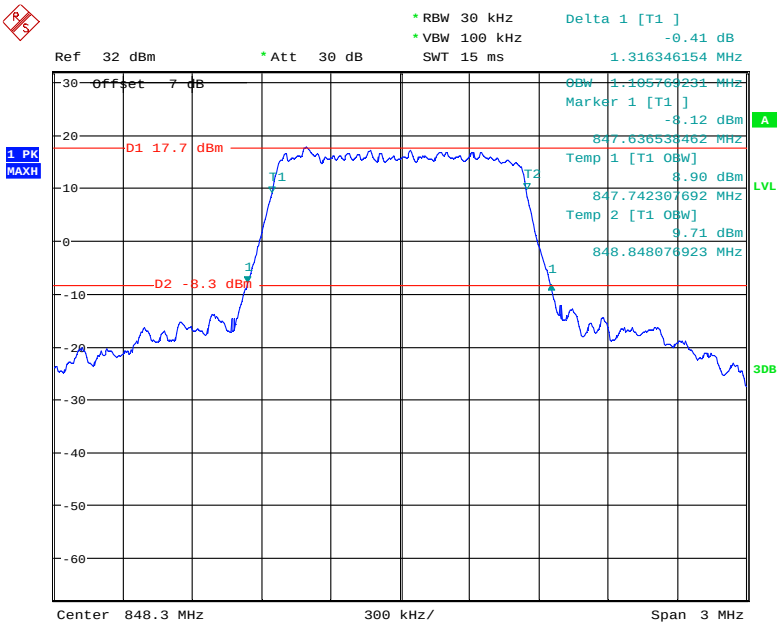
Date: 29.OCT.2020 11:08:01

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



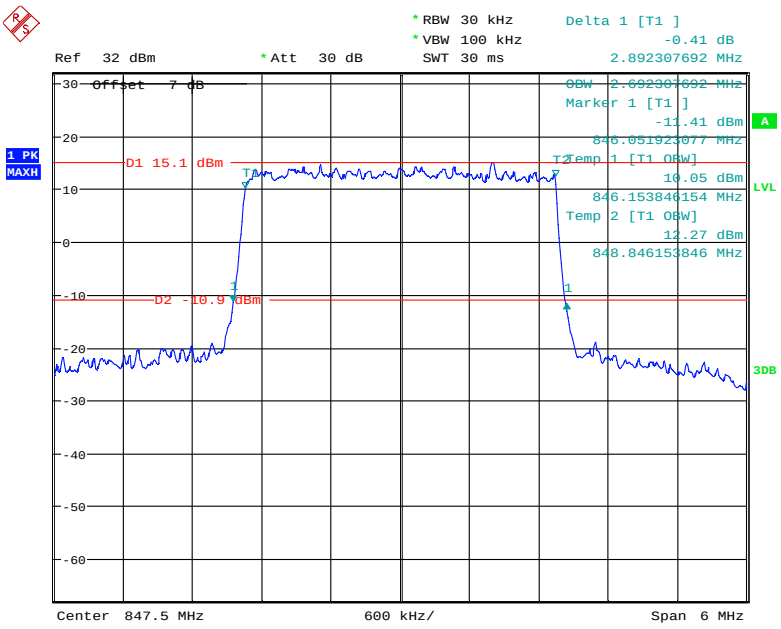
Date: 30.OCT.2020 13:48:56

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



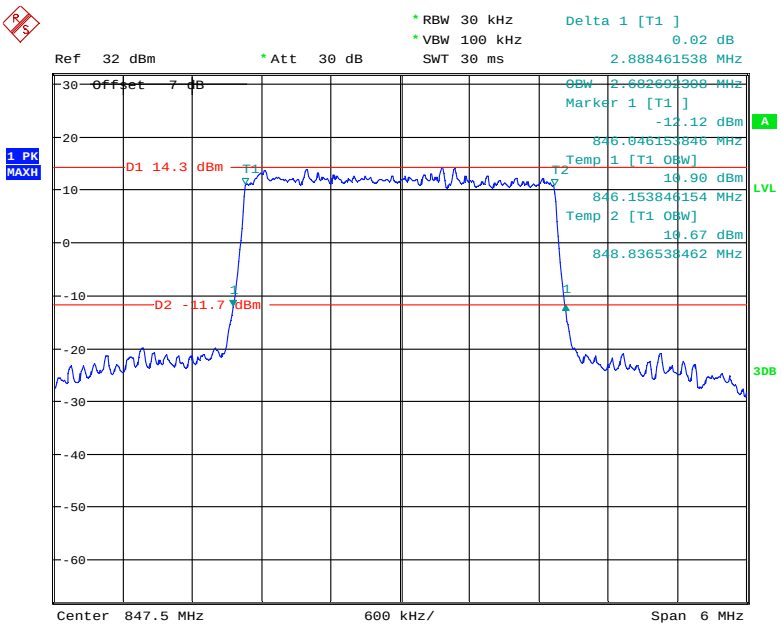
Date: 30.OCT.2020 13:48:00

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



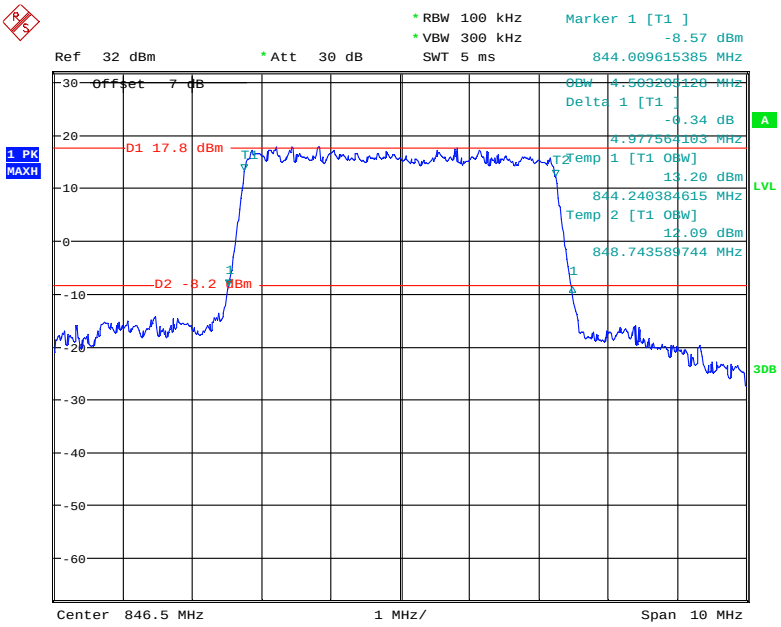
Date: 30.OCT.2020 13:56:29

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



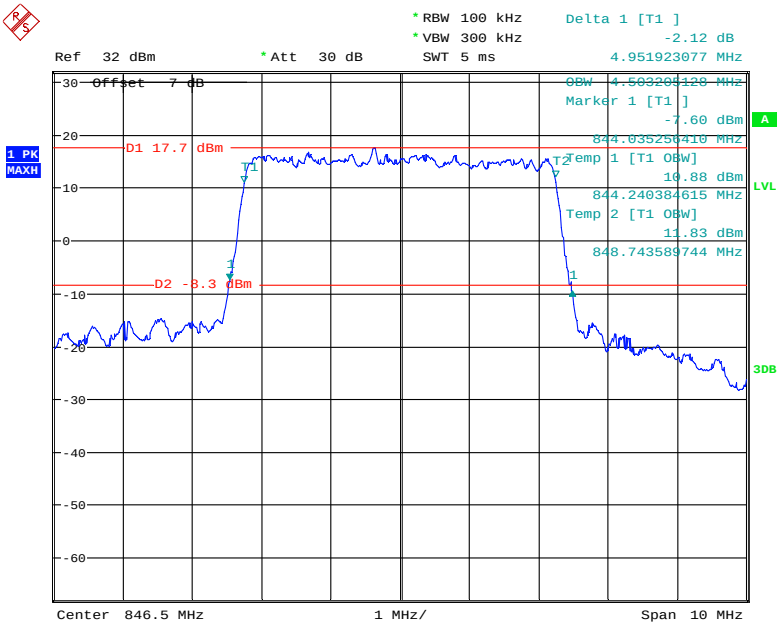
Date: 30.OCT.2020 13:54:54

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



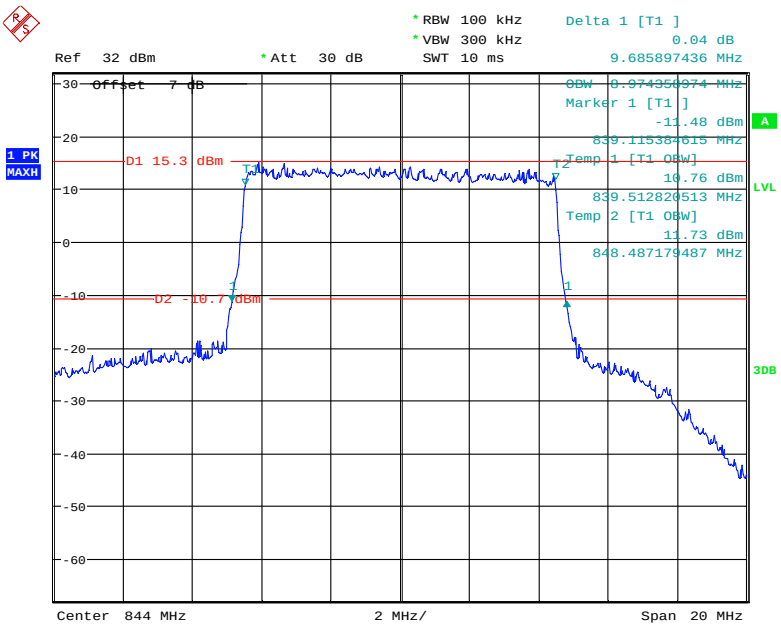
Date: 30.OCT.2020 14:02:32

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



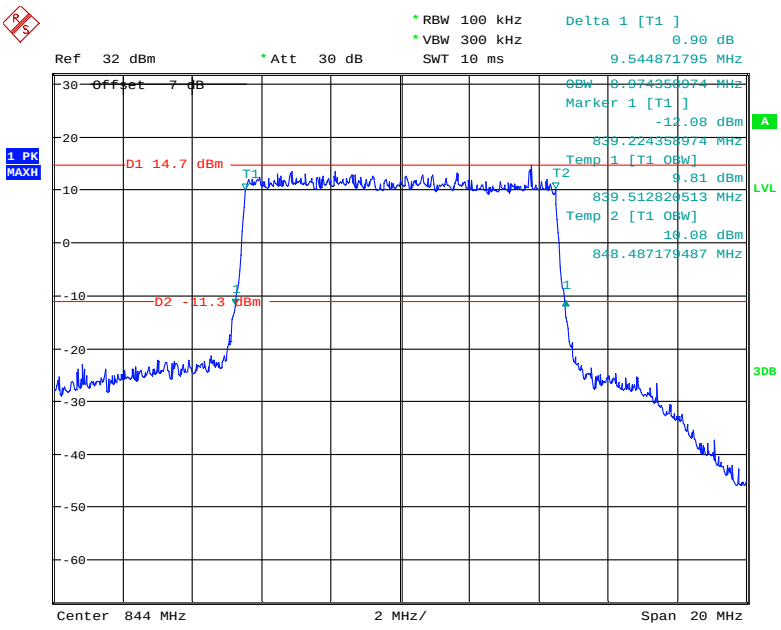
Date: 30.OCT.2020 14:01:16

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



Date: 30.OCT.2020 14:08:56

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

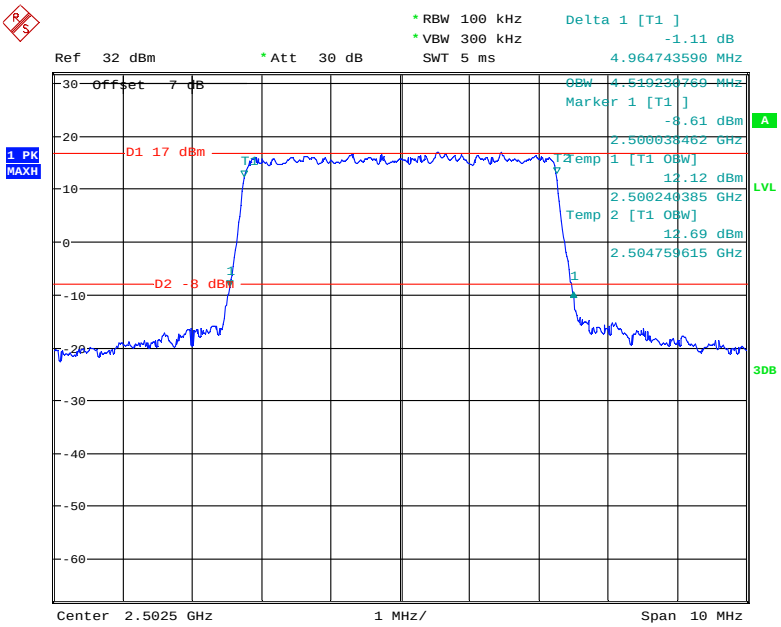


Date: 30.OCT.2020 14:07:38

Band 7

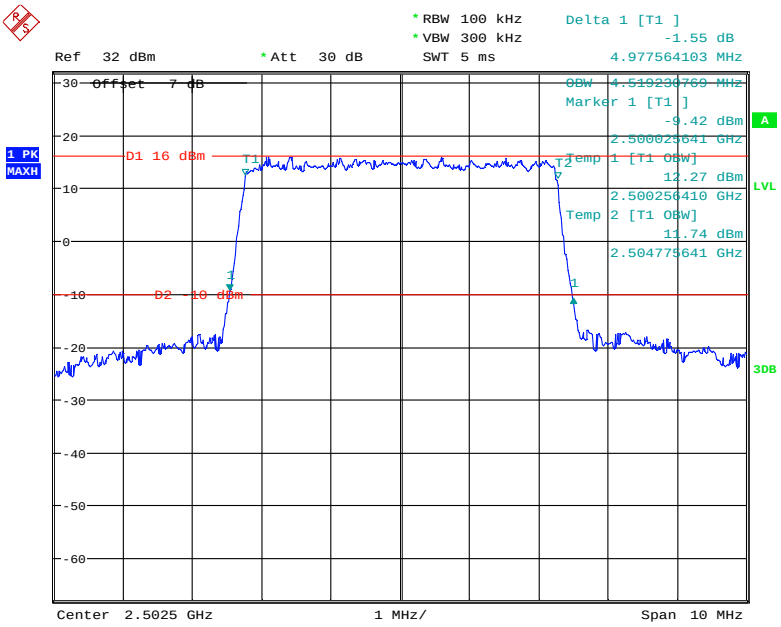
Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.52	4.96
		Middle	4.52	4.92
		High	4.49	4.99
	16QAM	Low	4.52	4.98
		Middle	4.52	4.94
		High	4.52	4.96
10	QPSK	Low	8.97	9.65
		Middle	9.00	9.68
		High	8.97	9.76
	16QAM	Low	8.97	9.65
		Middle	9.00	9.60
		High	8.97	9.54
15	QPSK	Low	13.56	14.88
		Middle	13.56	14.88
		High	13.51	14.89
	16QAM	Low	13.51	14.79
		Middle	13.50	14.70
		High	13.56	14.89
20	QPSK	Low	18.01	19.54
		Middle	18.00	19.44
		High	17.94	19.40
	16QAM	Low	17.94	19.37
		Middle	18.00	19.36
		High	18.01	19.46

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



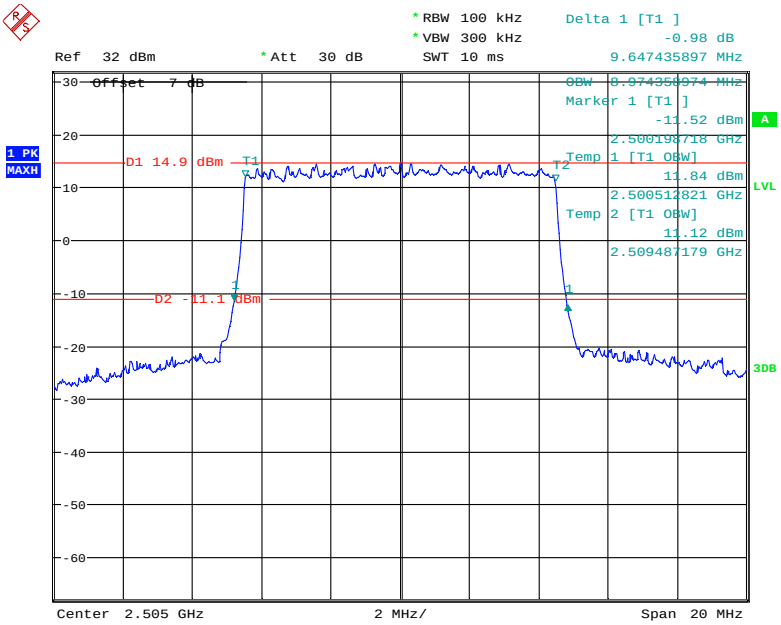
Date: 30.OCT.2020 14:11:39

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



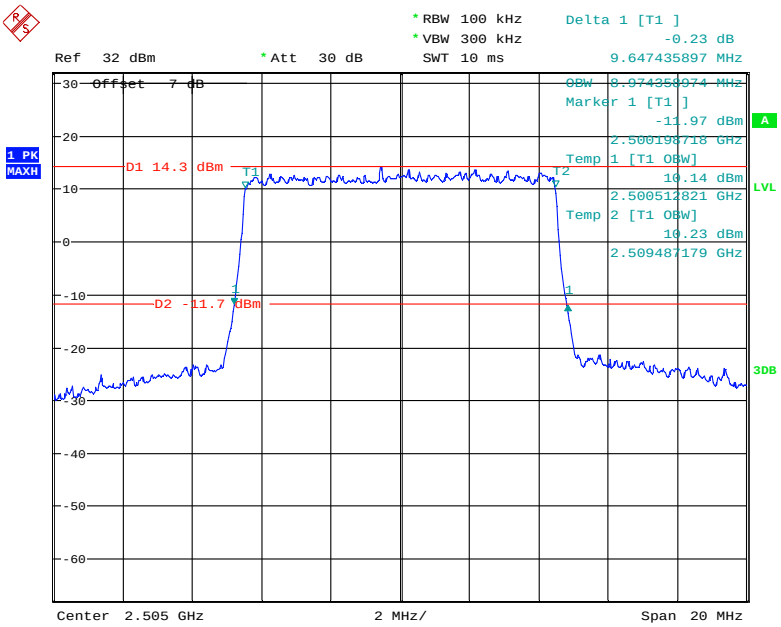
Date: 30.OCT.2020 14:12:42

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



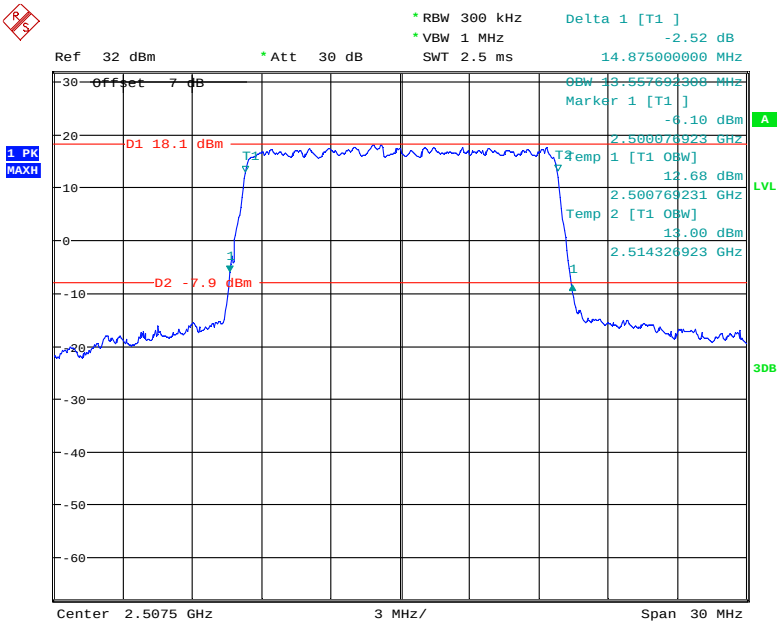
Date: 30.OCT.2020 14:19:51

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



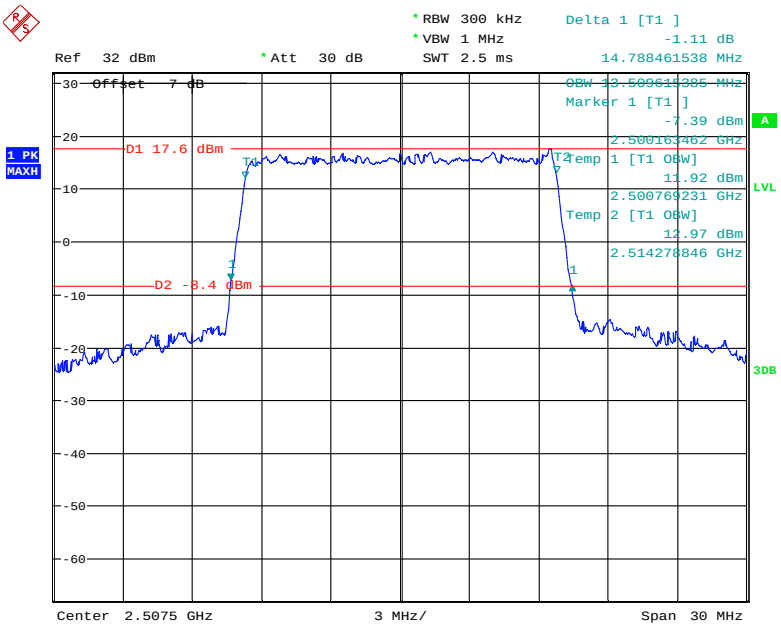
Date: 30.OCT.2020 14:23:28

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



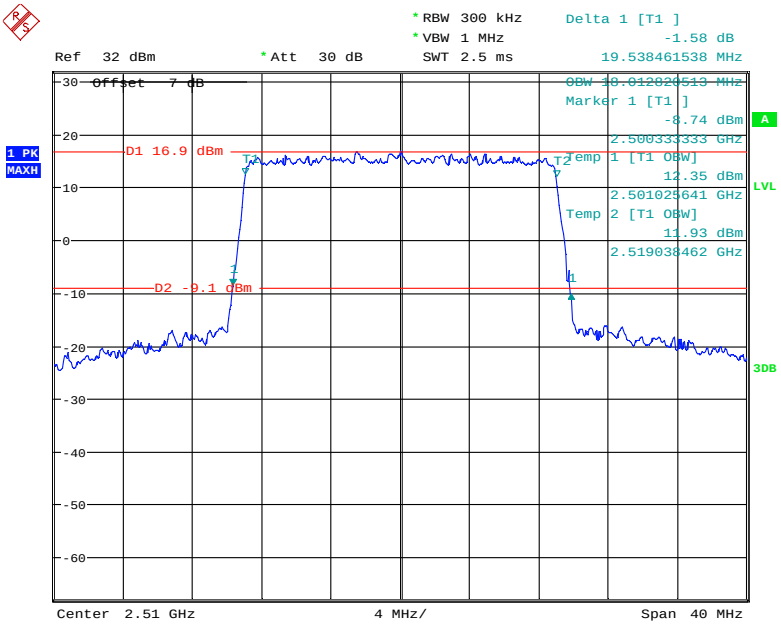
Date: 30.OCT.2020 14:29:14

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



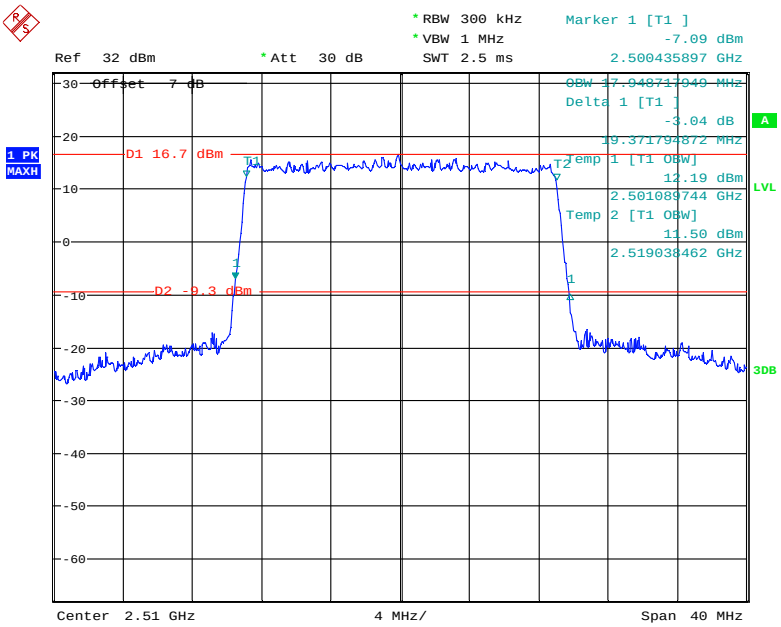
Date: 30.OCT.2020 14:30:29

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



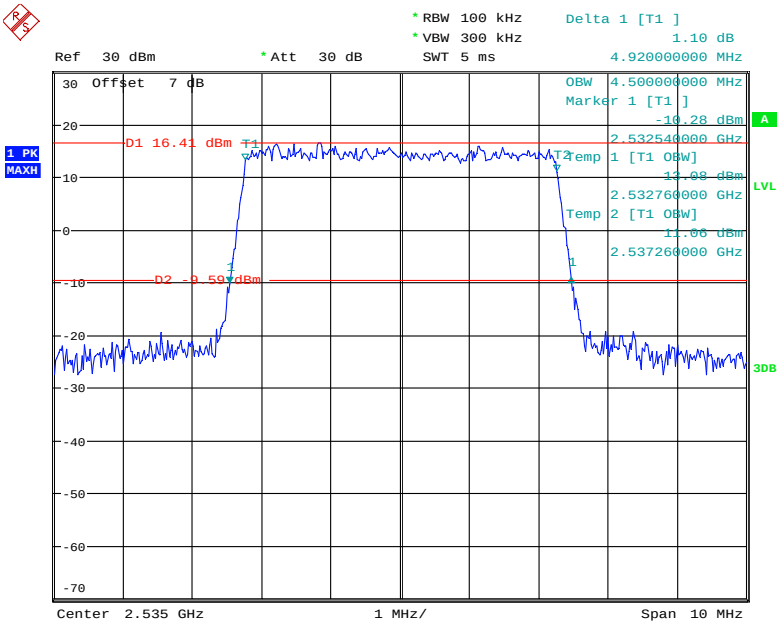
Date: 30.OCT.2020 14:37:30

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



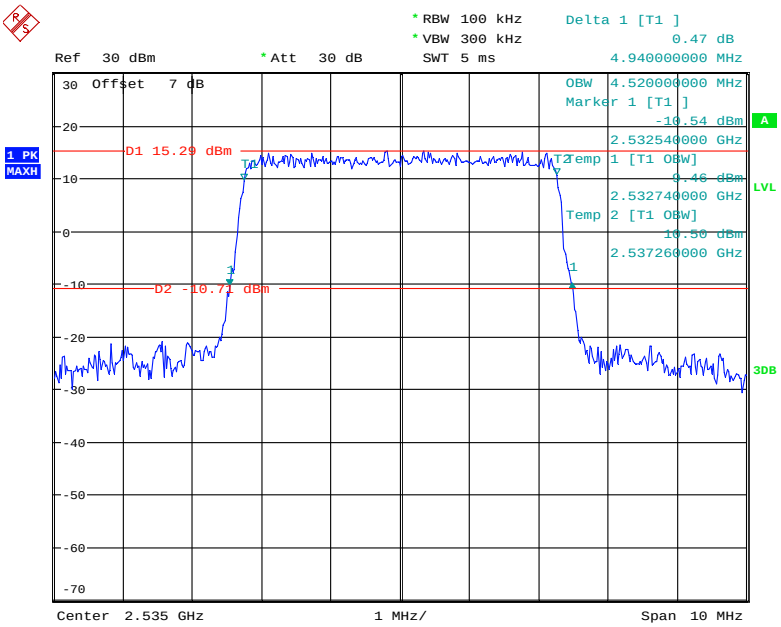
Date: 30.OCT.2020 14:40:43

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



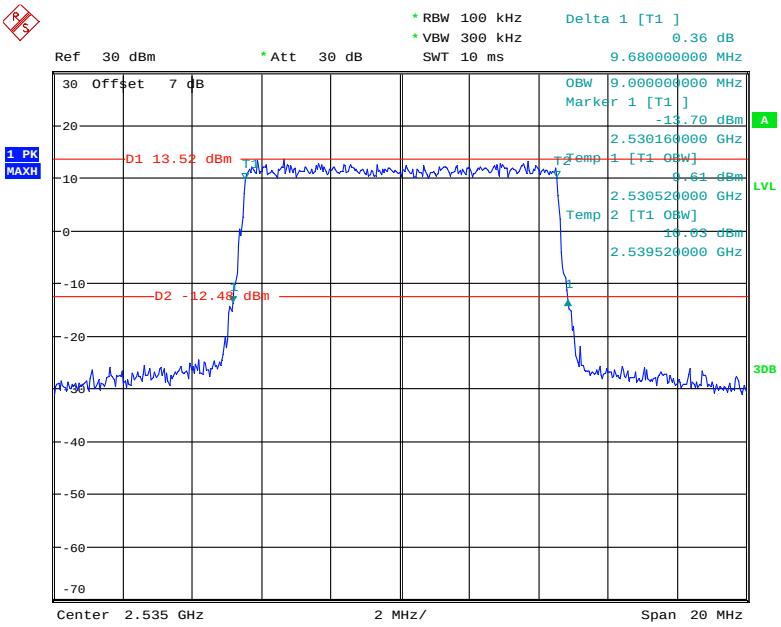
Date: 29.OCT.2020 11:08:27

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



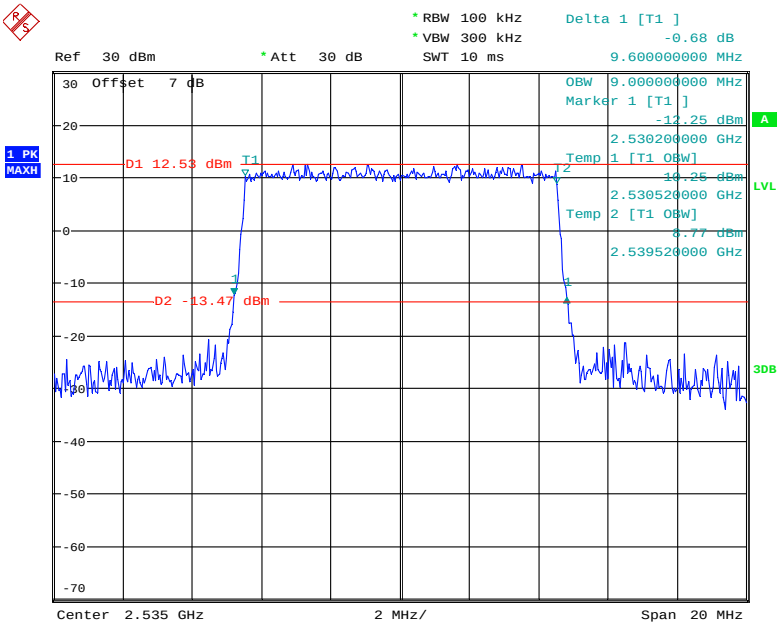
Date: 29.OCT.2020 11:08:51

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



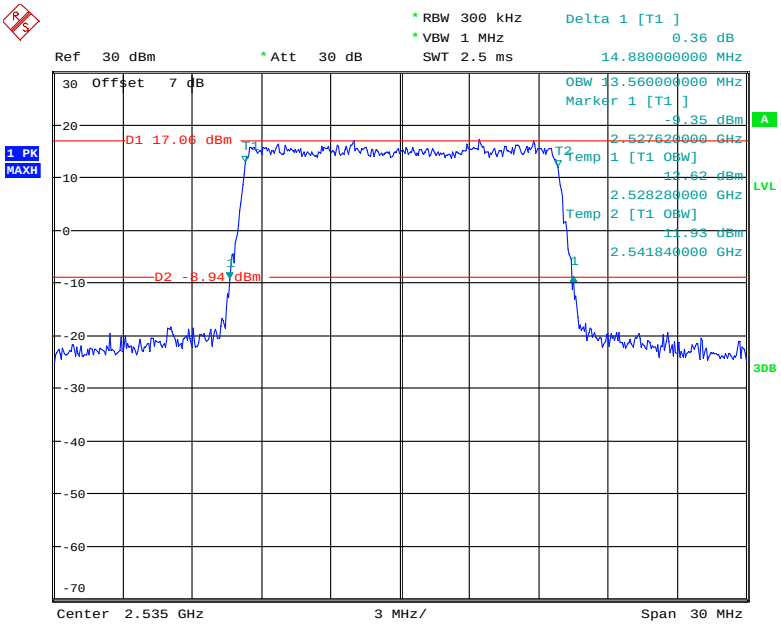
Date: 29.OCT.2020 11:09:15

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



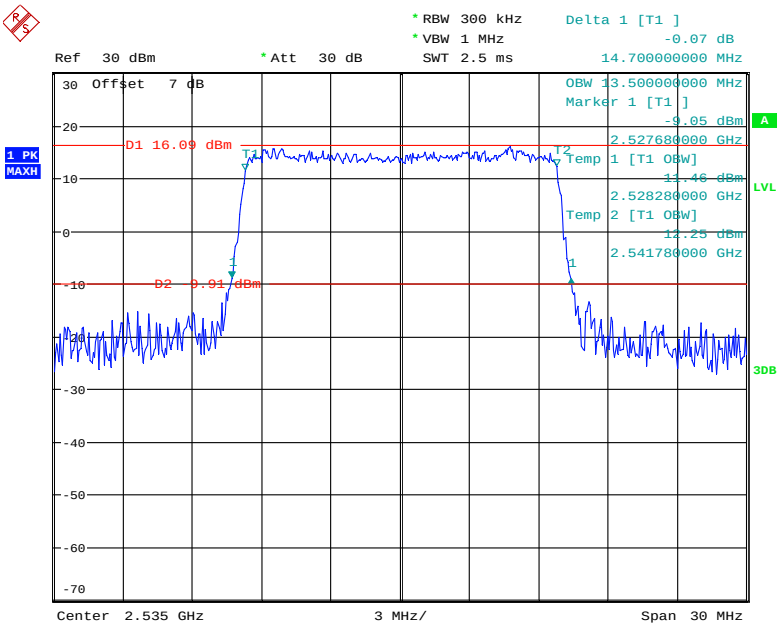
Date: 29.OCT.2020 11:09:37

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



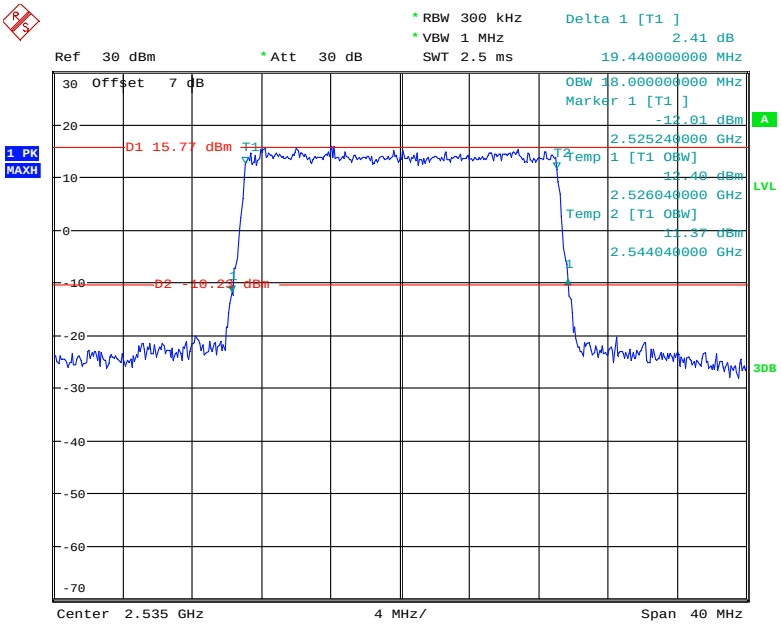
Date: 29.OCT.2020 11:10:03

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



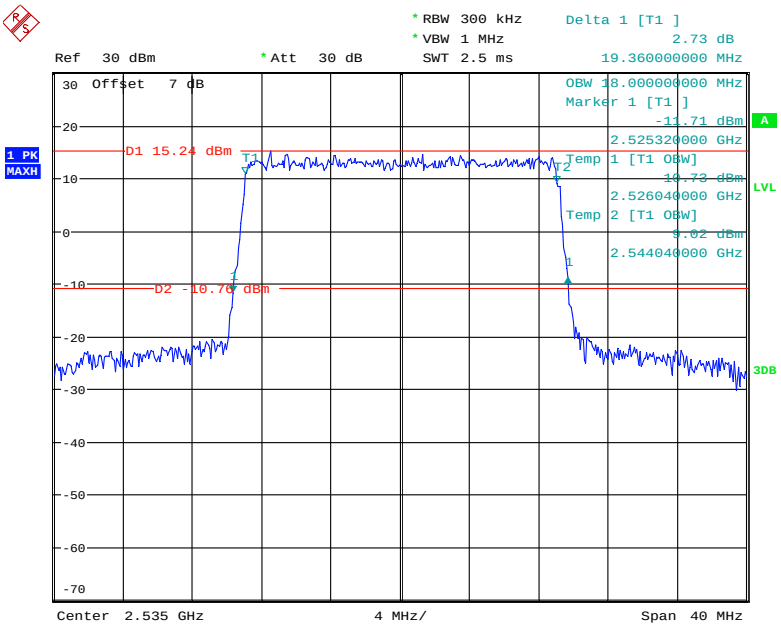
Date: 29.OCT.2020 11:10:27

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



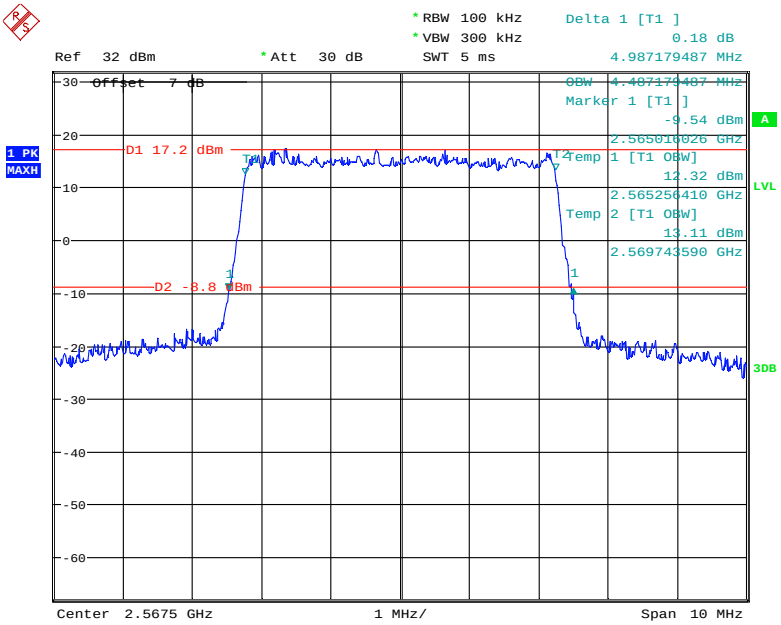
Date: 29.OCT.2020 11:10:53

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



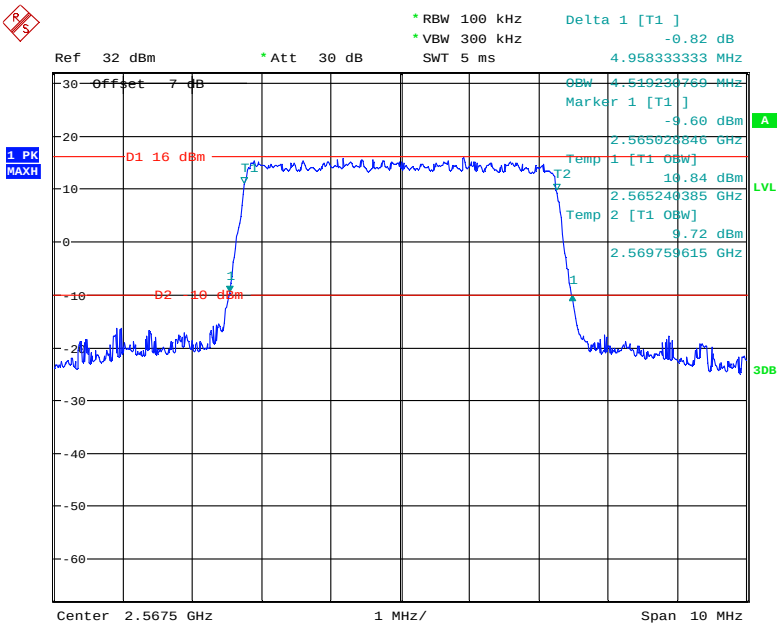
Date: 29.OCT.2020 11:11:17

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



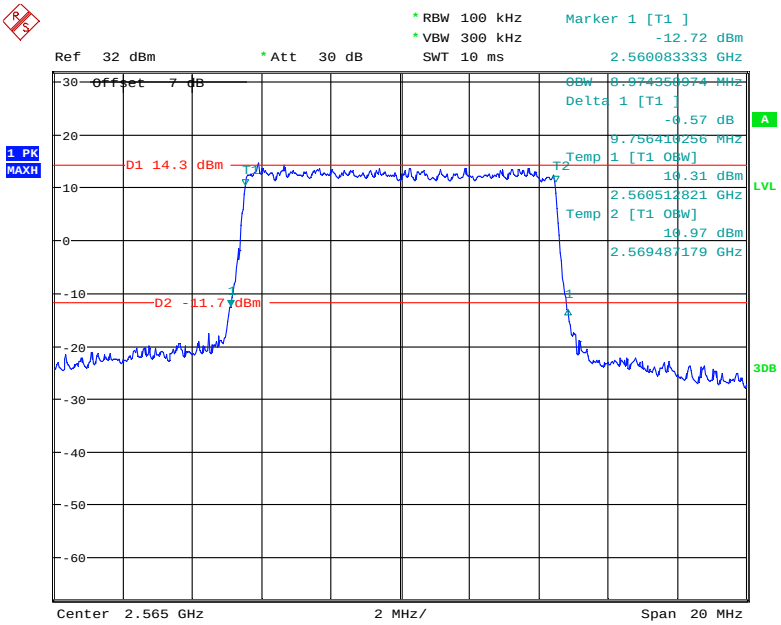
Date: 30.OCT.2020 14:16:10

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



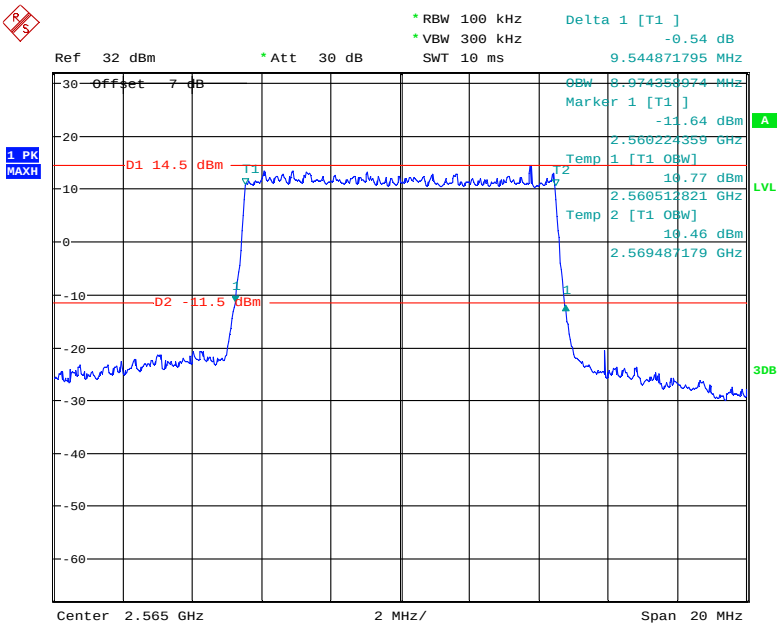
Date: 30.OCT.2020 14:13:50

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



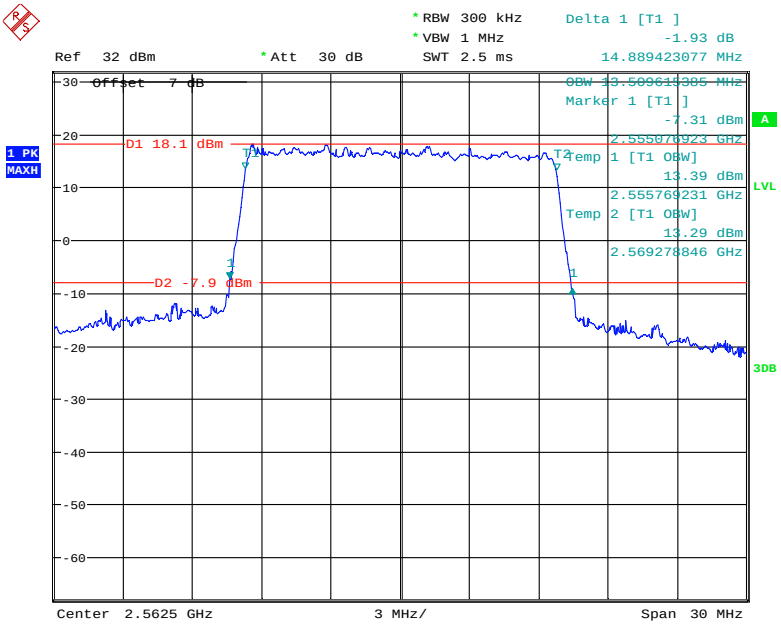
Date: 30.OCT.2020 14:26:31

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



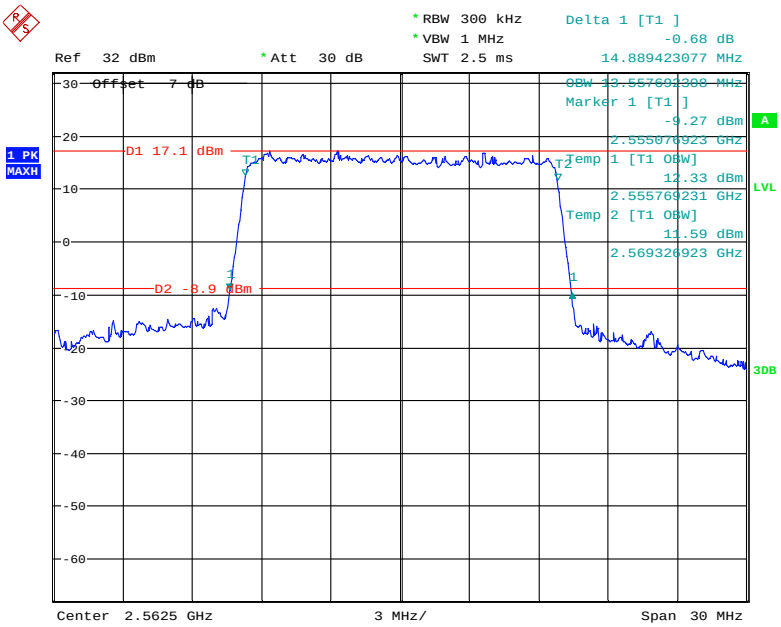
Date: 30.OCT.2020 14:25:10

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



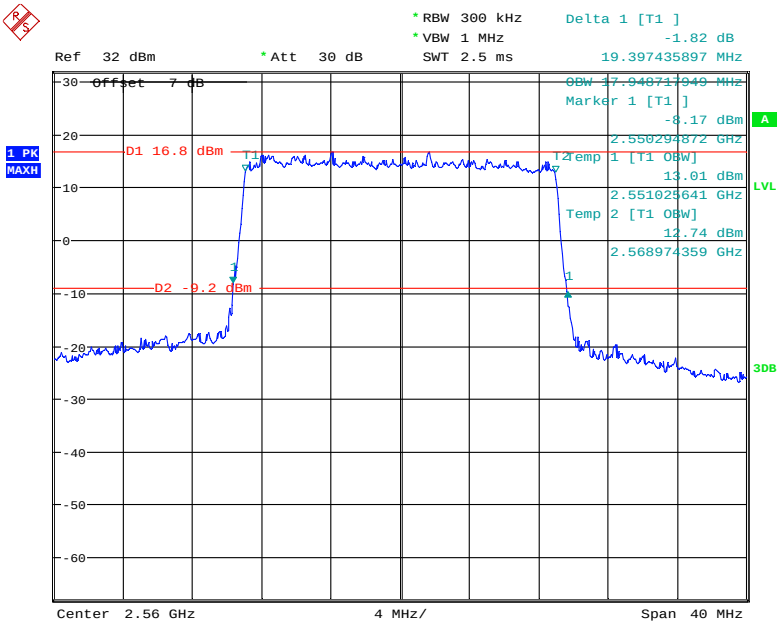
Date: 30.OCT.2020 14:35:14

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



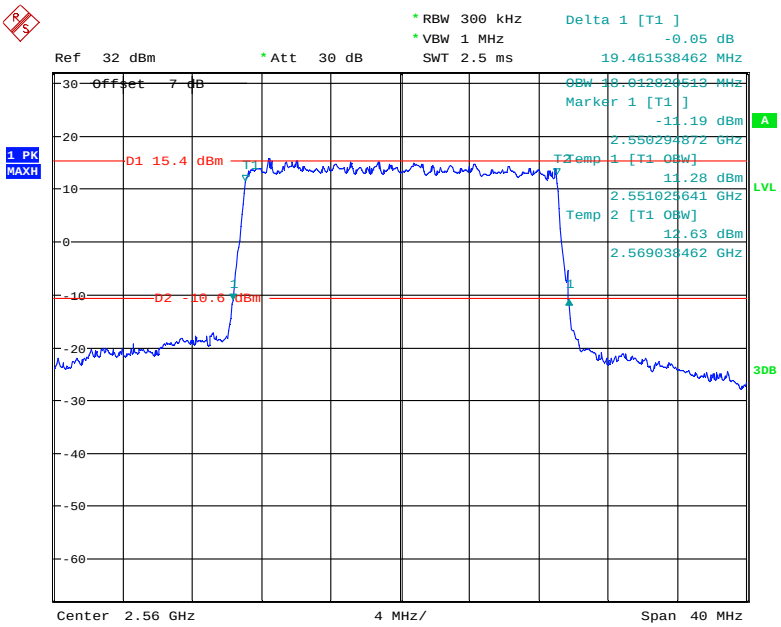
Date: 30.OCT.2020 14:34:16

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



Date: 30.OCT.2020 14:43:02

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

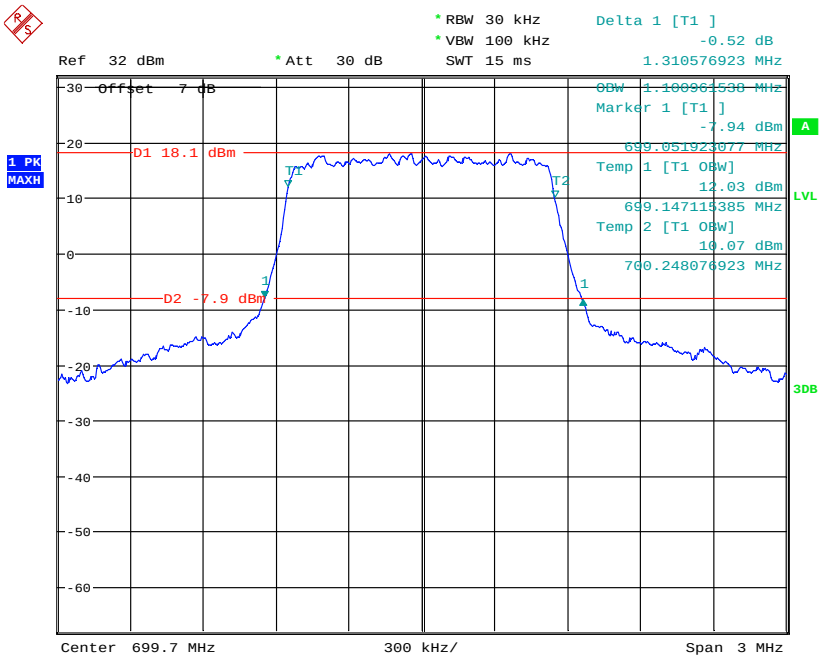


Date: 30.OCT.2020 14:42:09

Band 12:

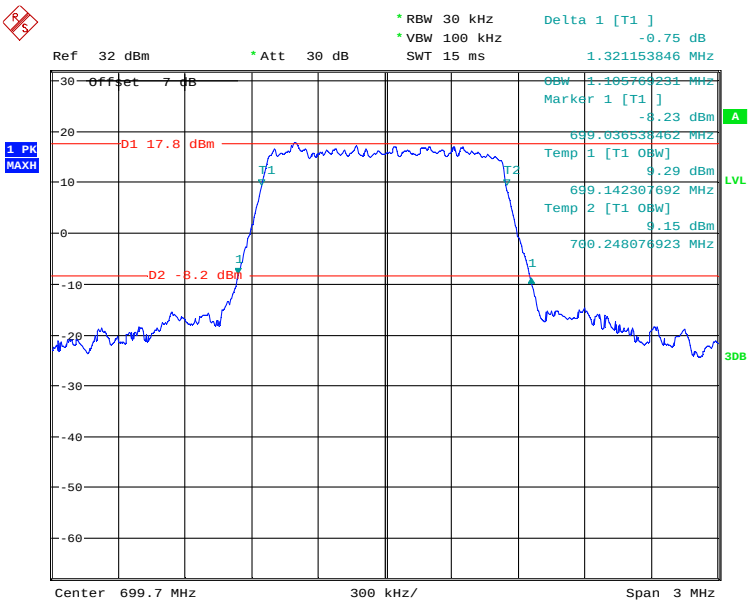
Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.10	1.31
		Middle	1.10	1.30
		High	1.11	1.30
	16QAM	Low	1.11	1.32
		Middle	1.10	1.31
		High	1.11	1.30
3	QPSK	Low	2.69	2.87
		Middle	2.69	2.89
		High	2.69	2.89
	16QAM	Low	2.69	2.88
		Middle	2.69	2.88
		High	2.68	2.89
5	QPSK	Low	4.54	5.20
		Middle	4.58	5.76
		High	4.54	5.24
	16QAM	Low	4.54	5.14
		Middle	4.52	5.40
		High	4.57	5.19
10	QPSK	Low	8.97	9.87
		Middle	9.00	10.08
		High	8.97	9.98
	16QAM	Low	9.03	11.76
		Middle	8.96	10.24
		High	8.97	9.96

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



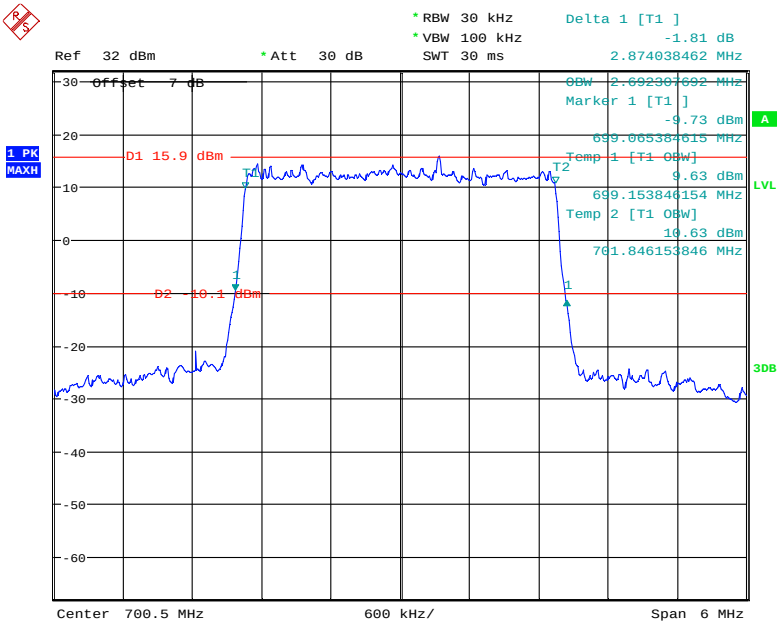
Date: 30.OCT.2020 15:11:57

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



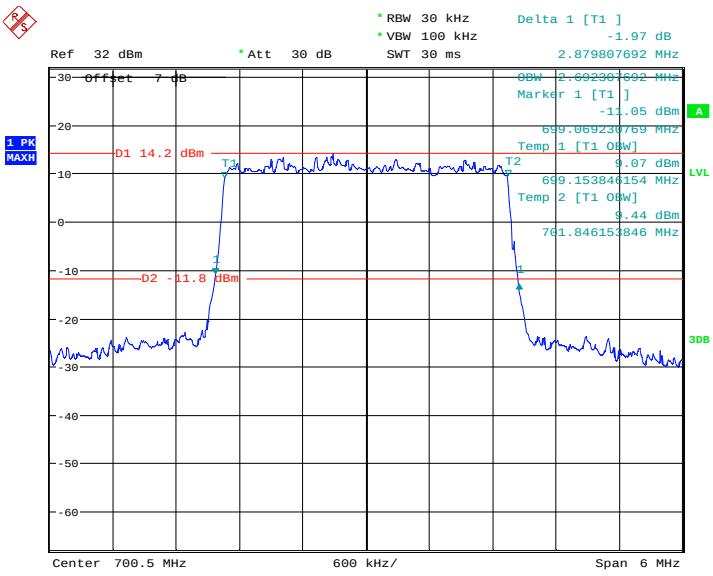
Date: 30.OCT.2020 15:13:22

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



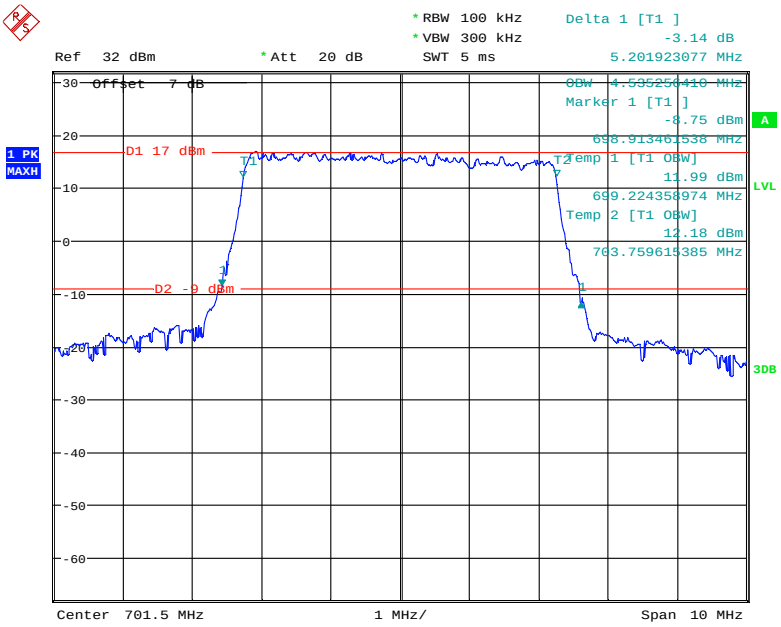
Date: 30.OCT.2020 15:28:38

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



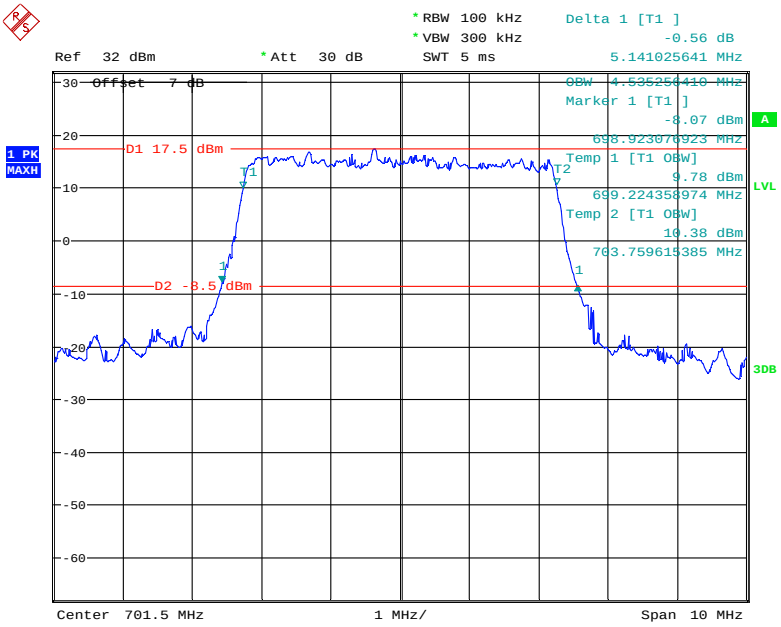
Date: 30.OCT.2020 15:29:47

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



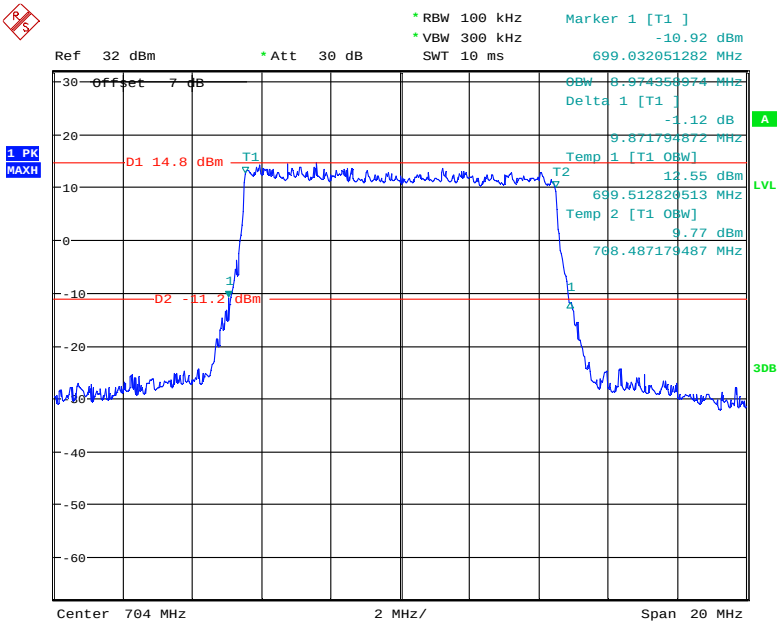
Date: 2.NOV.2020 18:05:08

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



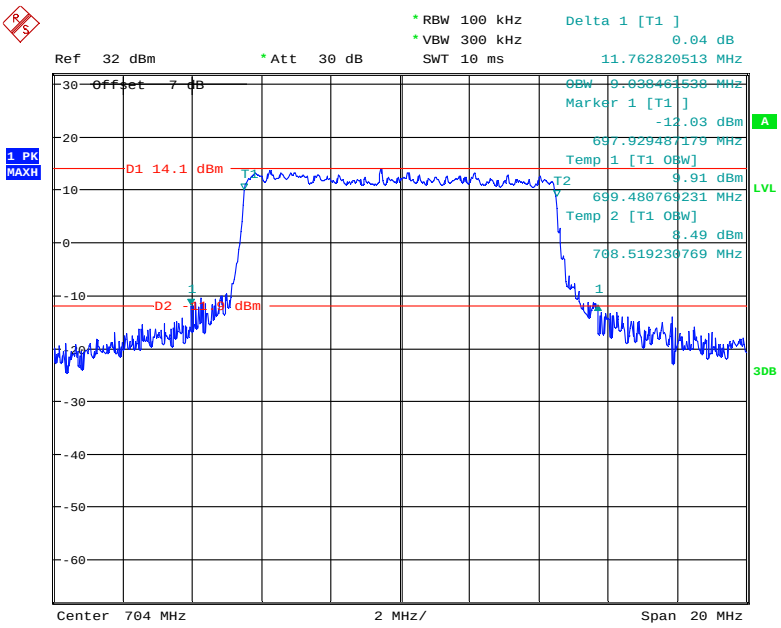
Date: 30.OCT.2020 16:04:06

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



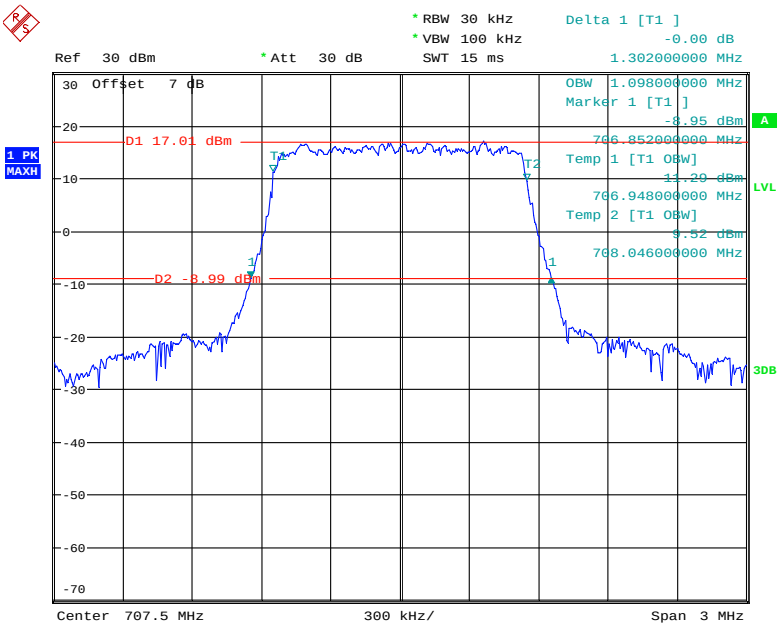
Date: 30.OCT.2020 16:19:51

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



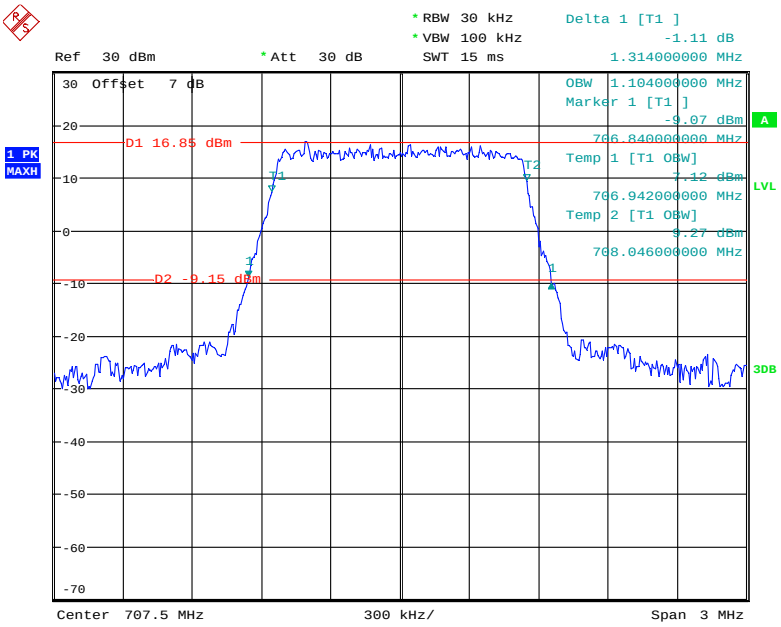
Date: 30.OCT.2020 16:26:13

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



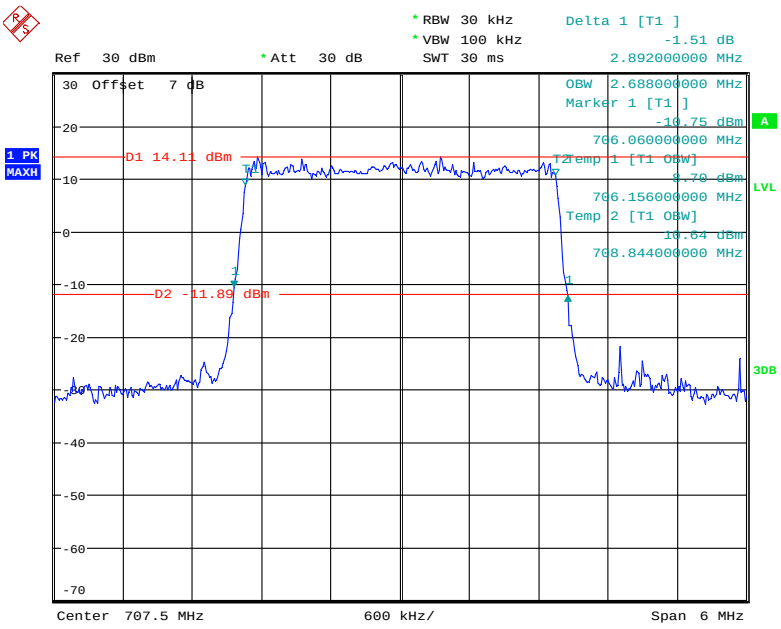
Date: 29.OCT.2020 11:11:43

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



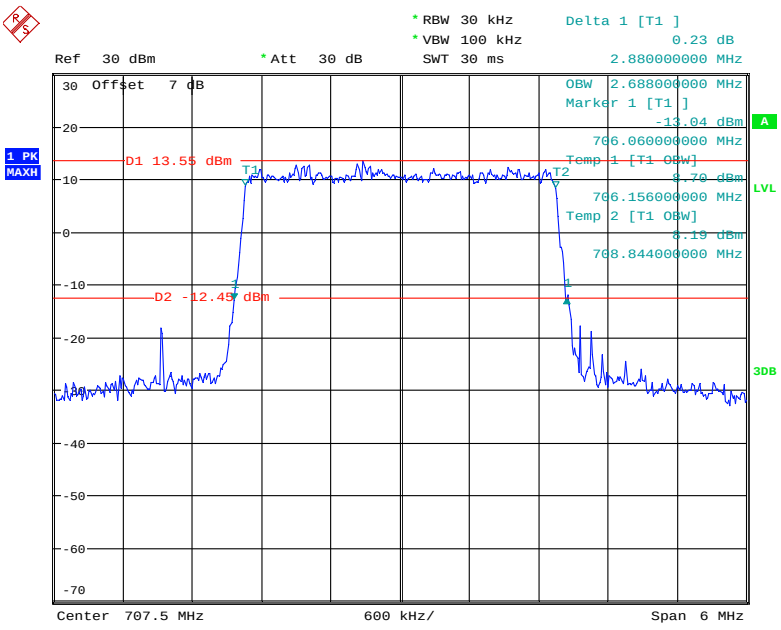
Date: 29.OCT.2020 11:12:03

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



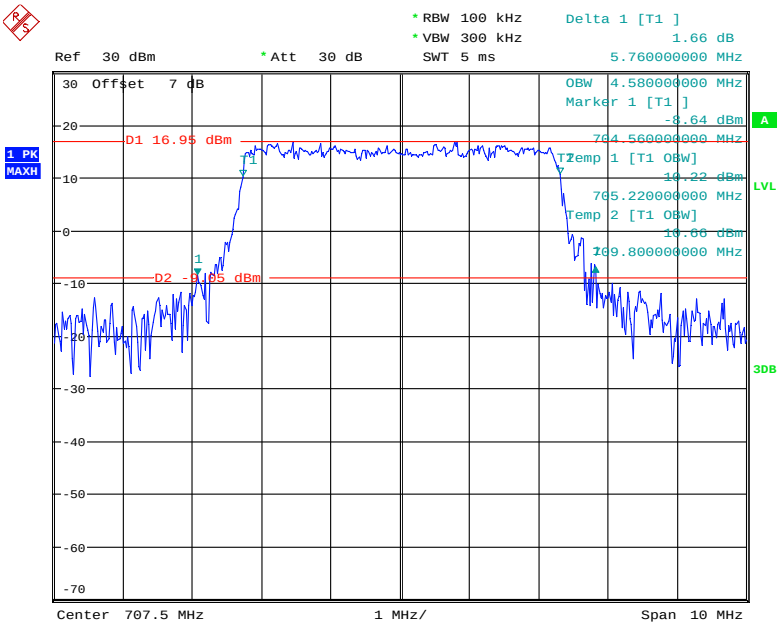
Date: 29.OCT.2020 11:12:26

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



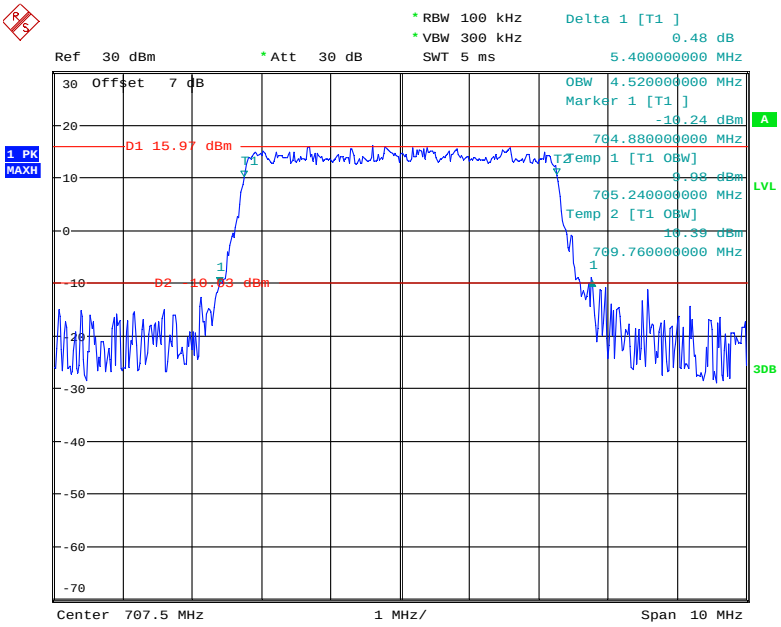
Date: 29.OCT.2020 11:12:43

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



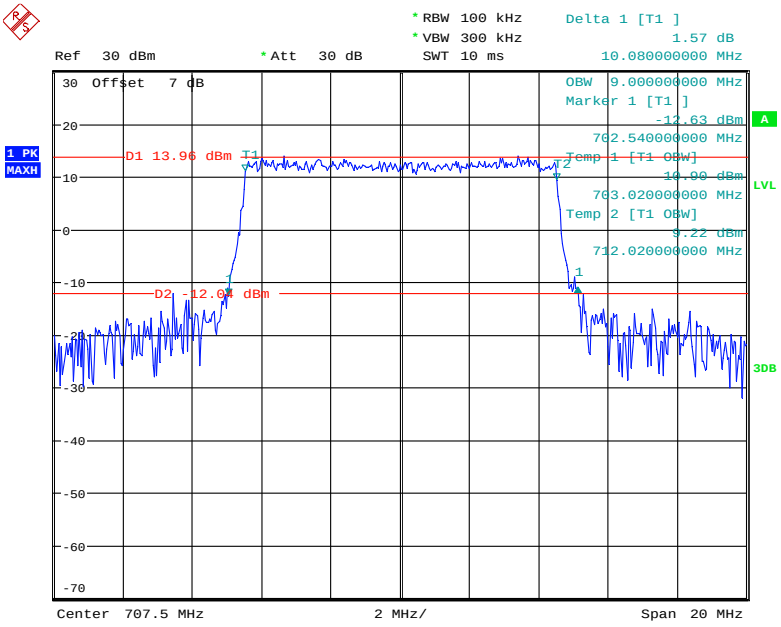
Date: 29.OCT.2020 11:13:31

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



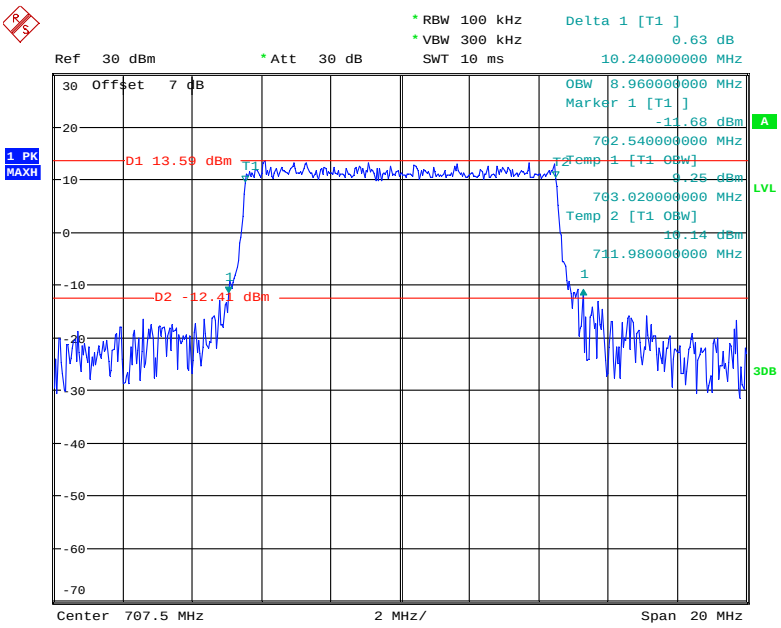
Date: 29.OCT.2020 11:13:58

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



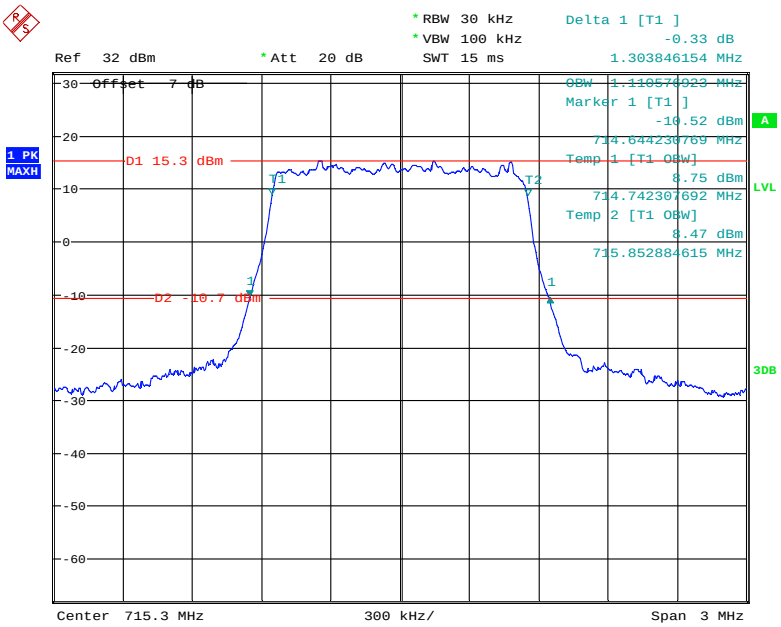
Date: 29.OCT.2020 11:14:37

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



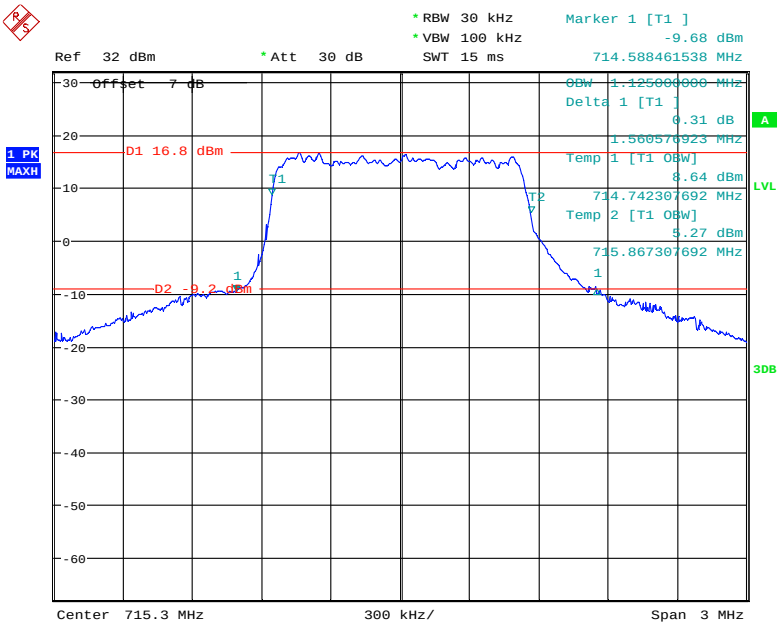
Date: 29.OCT.2020 11:15:08

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



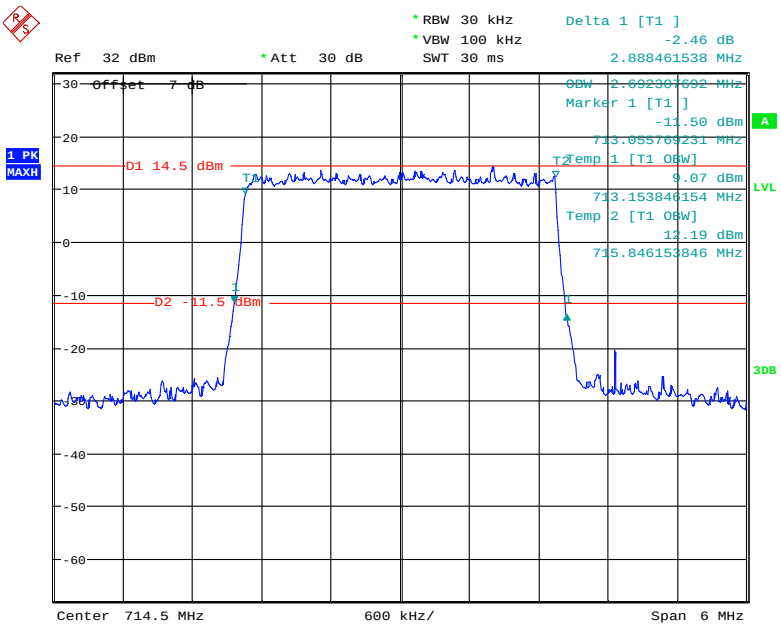
Date: 2.NOV.2020 18:11:09

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



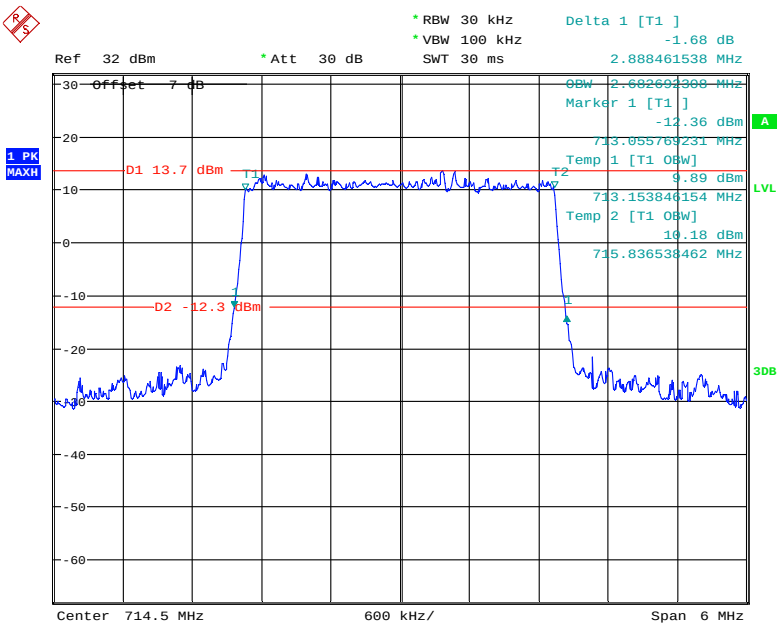
Date: 30.OCT.2020 15:21:27

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



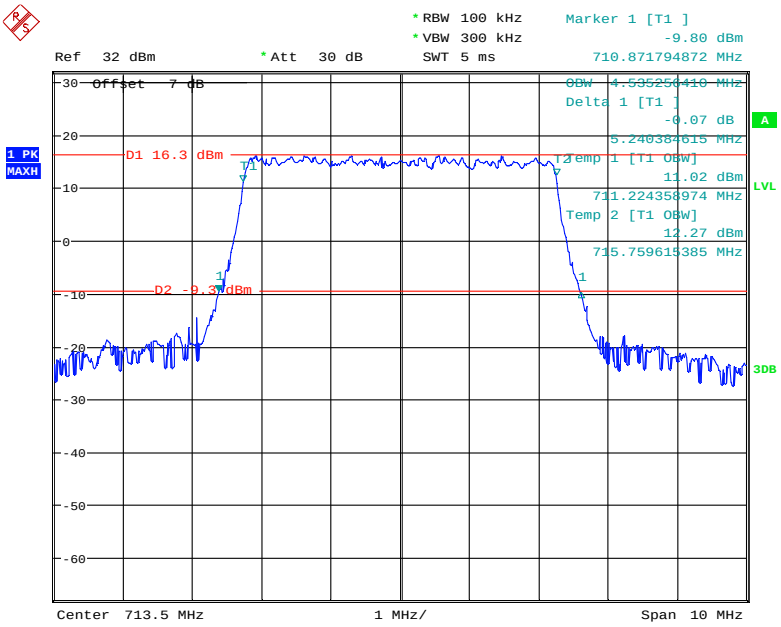
Date: 30.OCT.2020 15:35:01

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



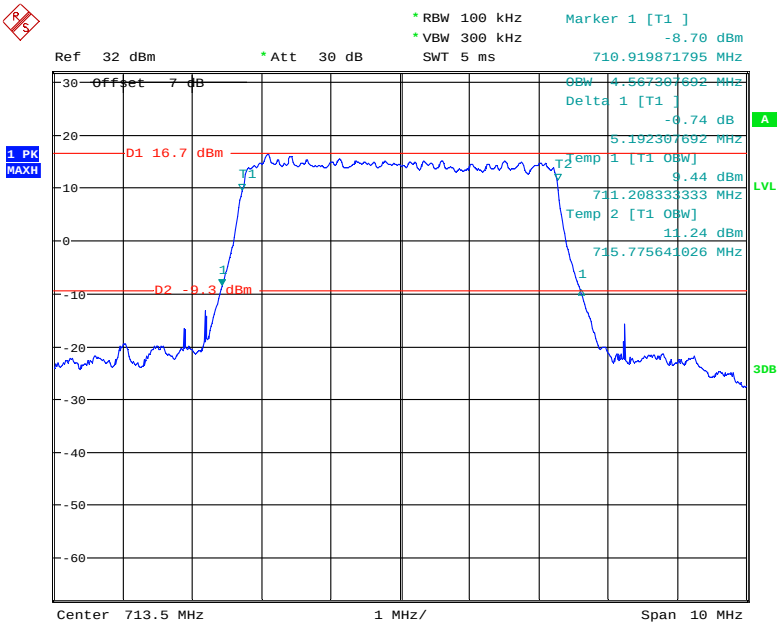
Date: 30.OCT.2020 15:33:40

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



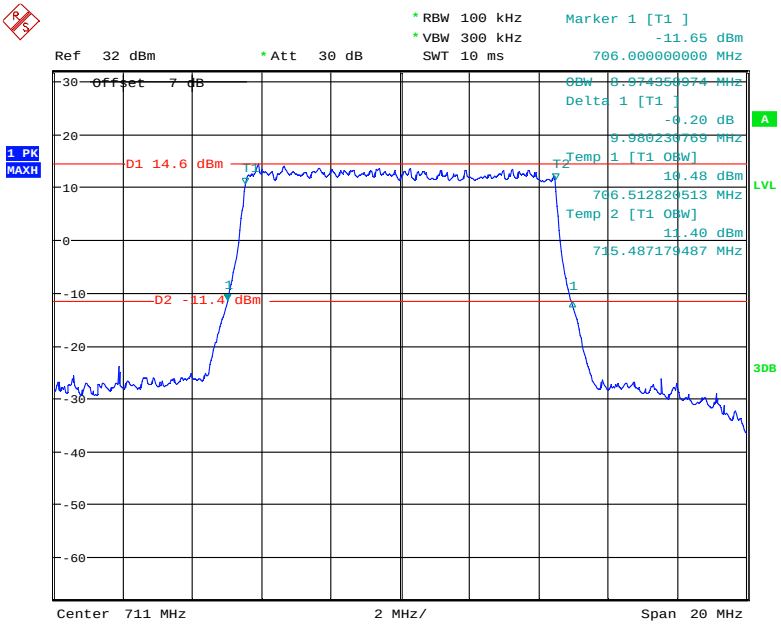
Date: 30.OCT.2020 16:11:06

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



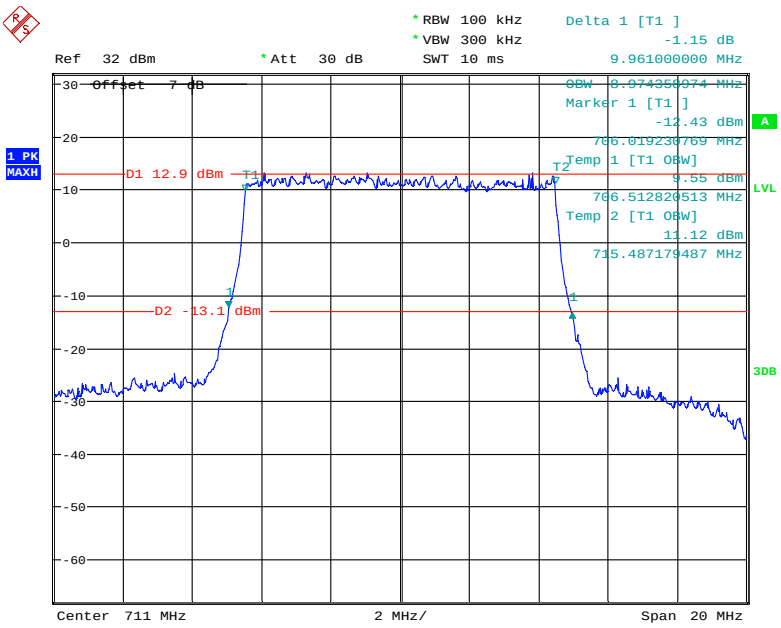
Date: 30.OCT.2020 16:08:49

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



Date: 30.OCT.2020 16:33:52

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

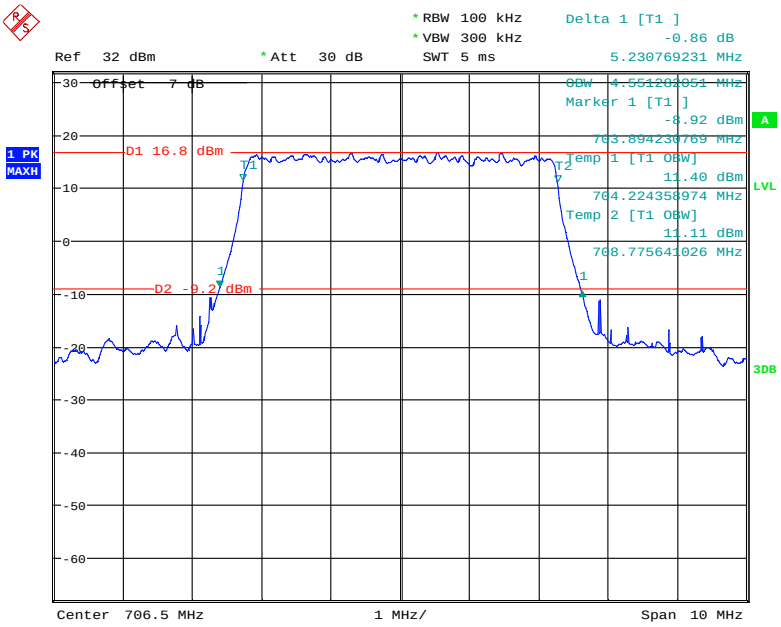


Date: 30.OCT.2020 16:28:06

Band 17:

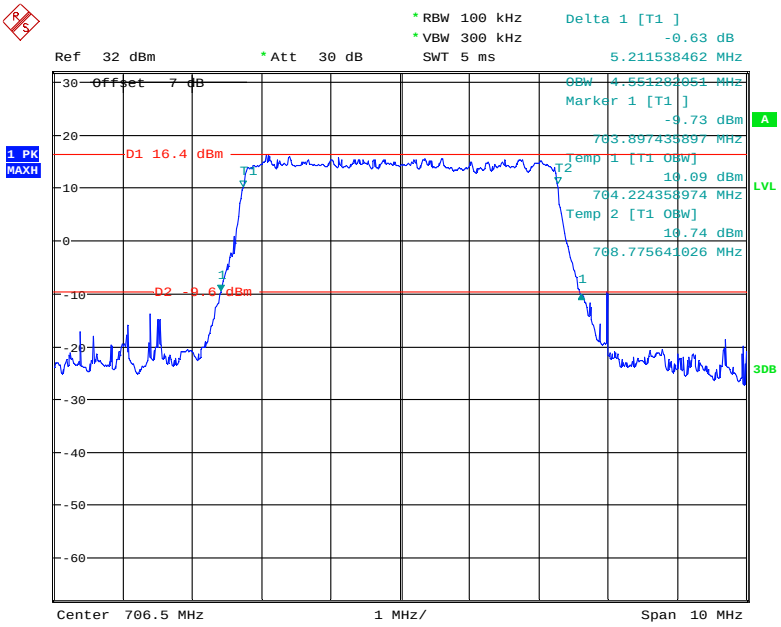
Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.55	5.23
		Middle	4.56	5.64
		High	4.52	5.23
	16QAM	Low	4.55	5.21
		Middle	4.56	5.50
		High	4.55	5.26
10	QPSK	Low	8.97	9.94
		Middle	8.96	9.92
		High	8.97	9.85
	16QAM	Low	9.01	9.90
		Middle	8.96	9.80
		High	8.97	9.87

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



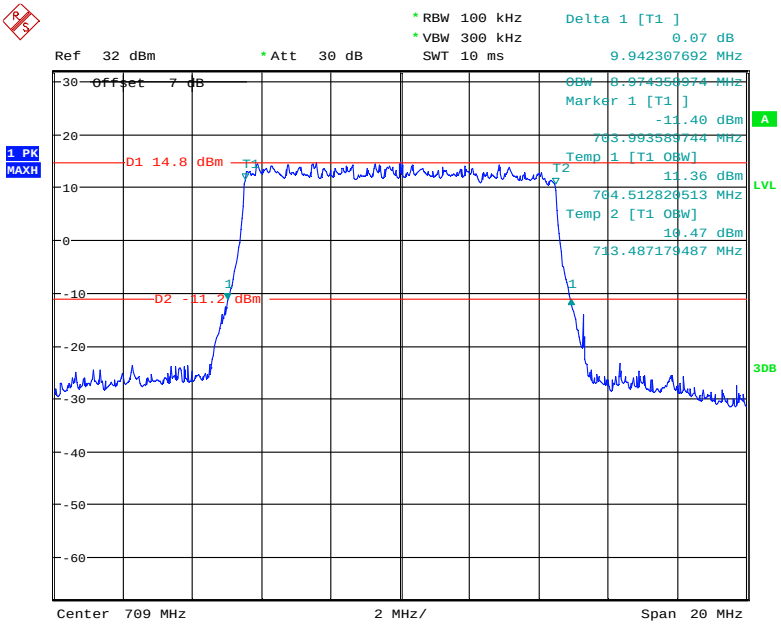
Date: 30.OCT.2020 16:47:44

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



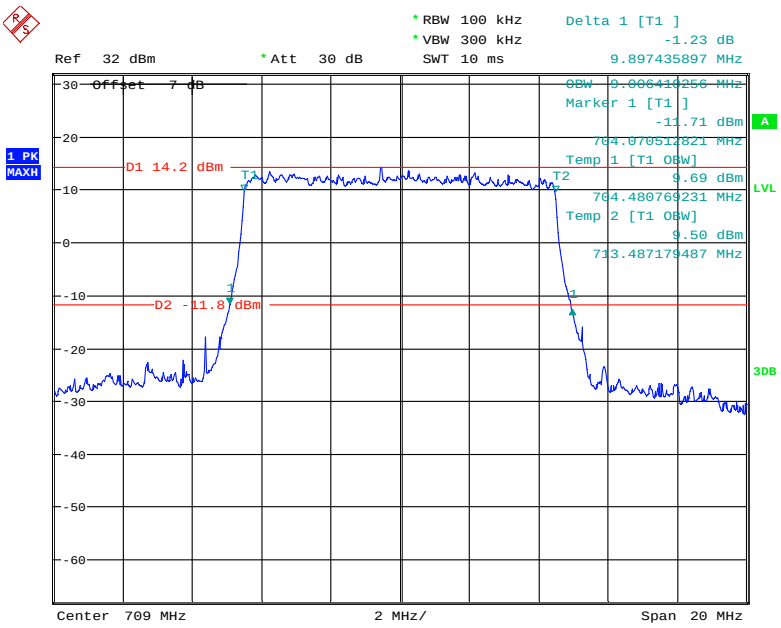
Date: 30.OCT.2020 16:49:12

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



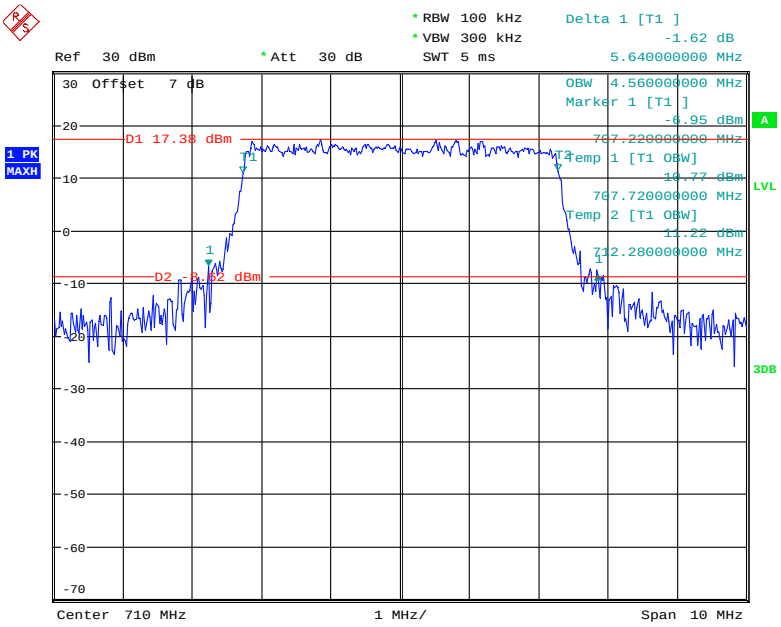
Date: 30.OCT.2020 16:54:00

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



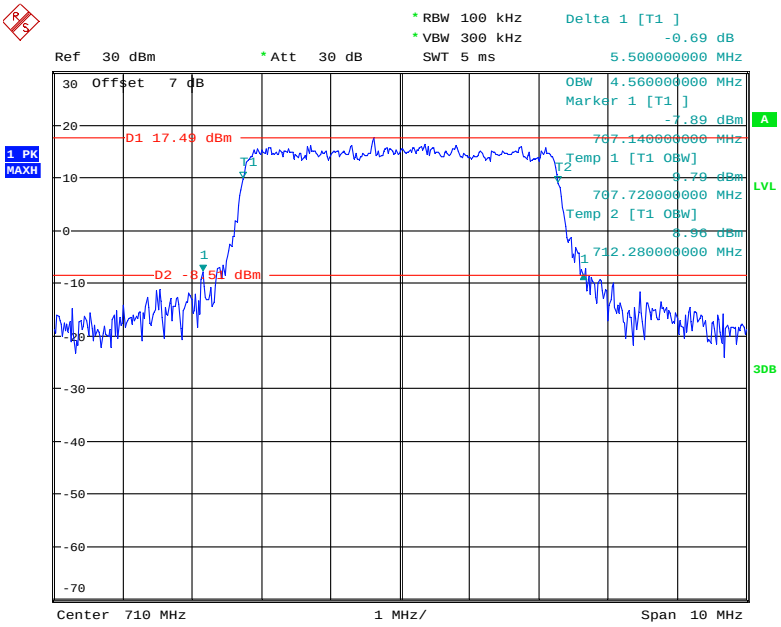
Date: 30.OCT.2020 16:55:52

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



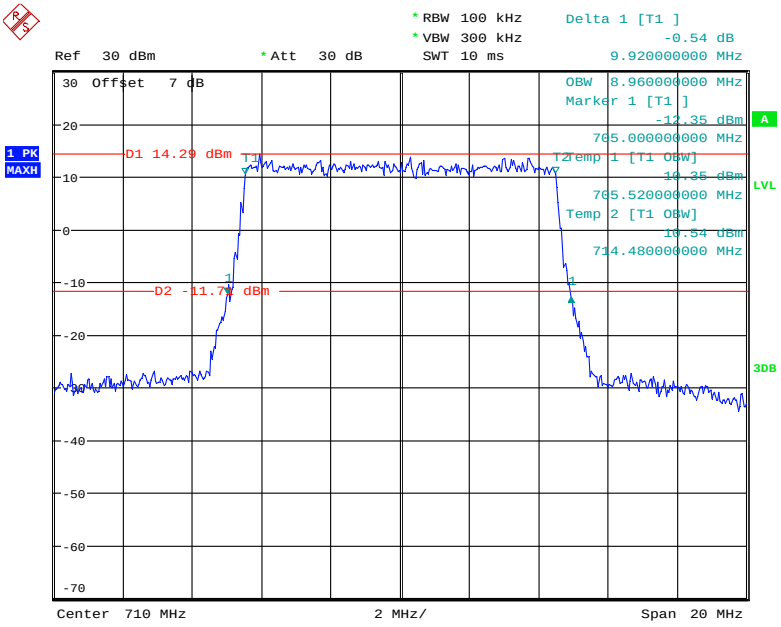
Date: 29.OCT.2020 11:15:47

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



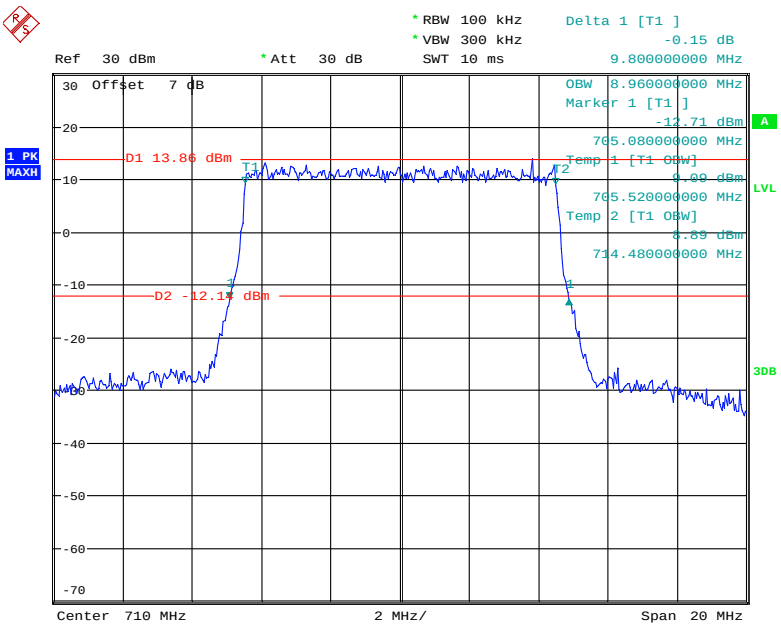
Date: 29.OCT.2020 11:16:33

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



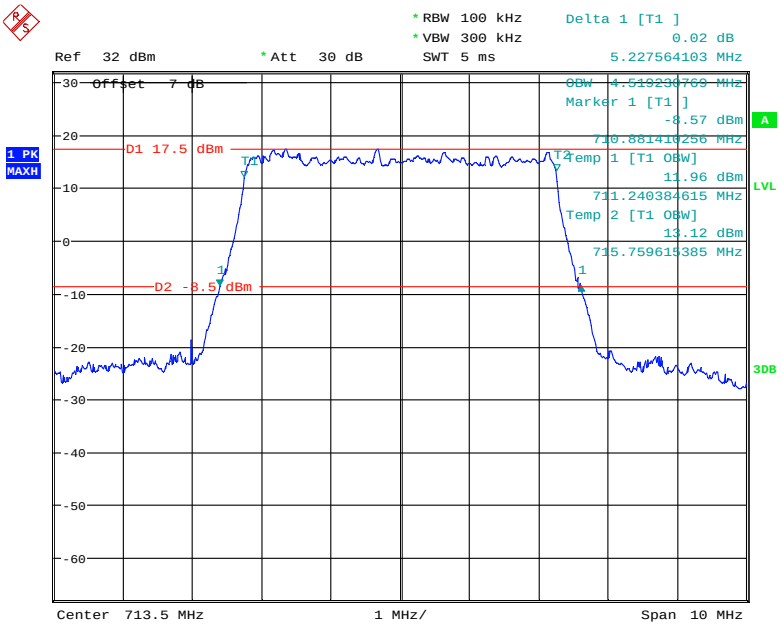
Date: 29.OCT.2020 11:16:57

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



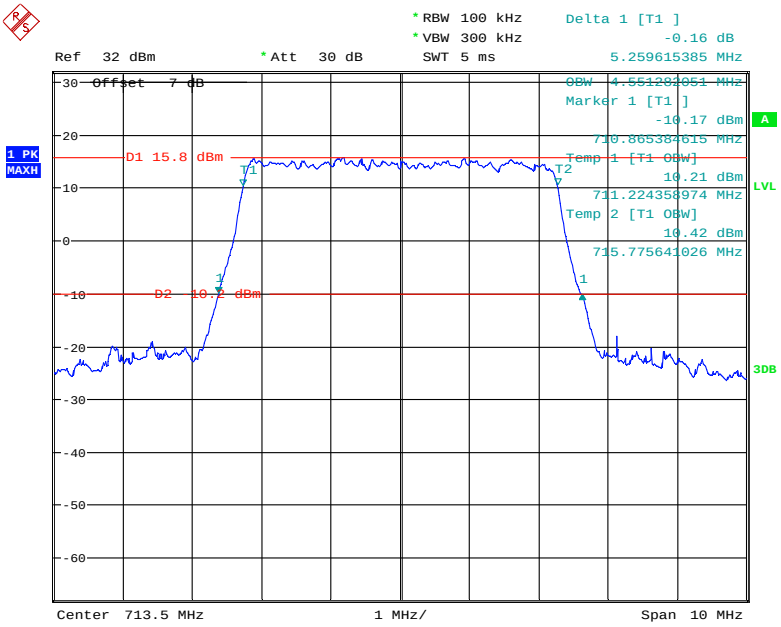
Date: 29.OCT.2020 11:17:18

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



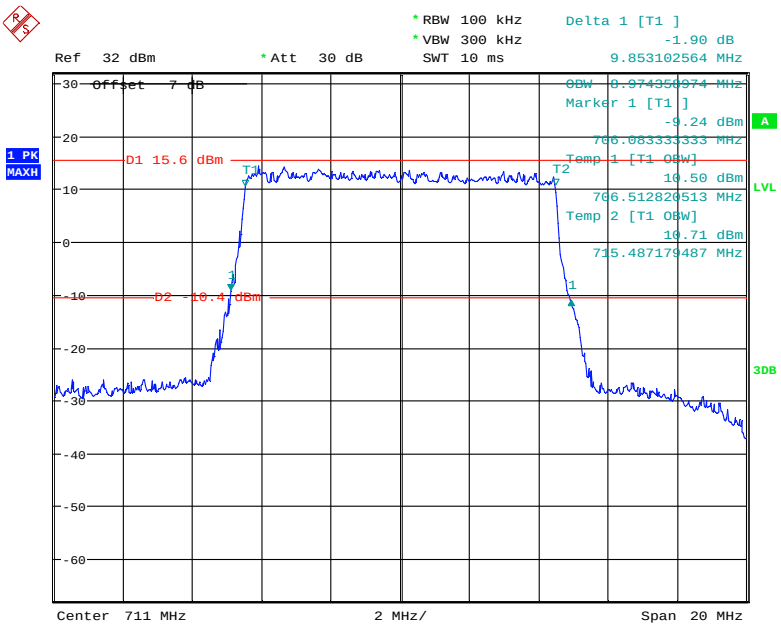
Date: 30.OCT.2020 16:52:14

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



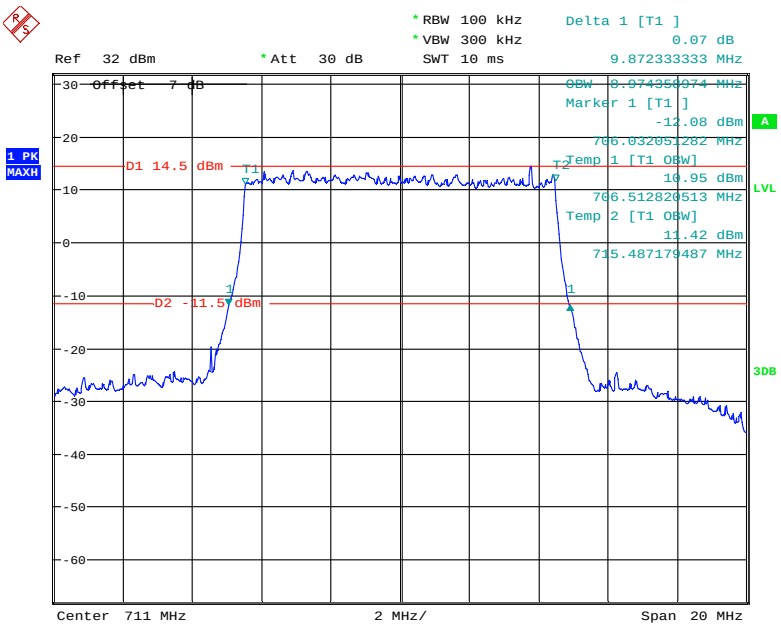
Date: 30.OCT.2020 16:51:14

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



Date: 30.OCT.2020 17:02:13

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



Date: 30.OCT.2020 16:59:17

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

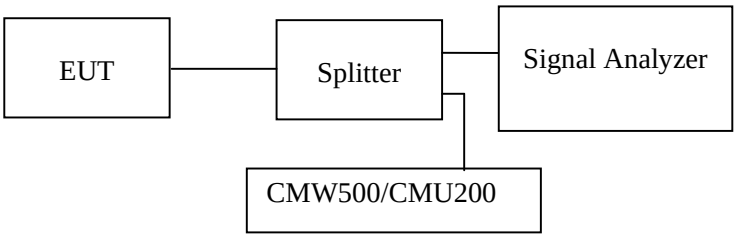
Applicable Standard

FCC §2.1051, §22.917(a) and §24.238(a) and §27.53.

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 10^{th} harmonic.



Test Data

Environmental Conditions

Temperature:	23 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Andy Yu on 2020-10-29.

EUT operation mode: Transmitting

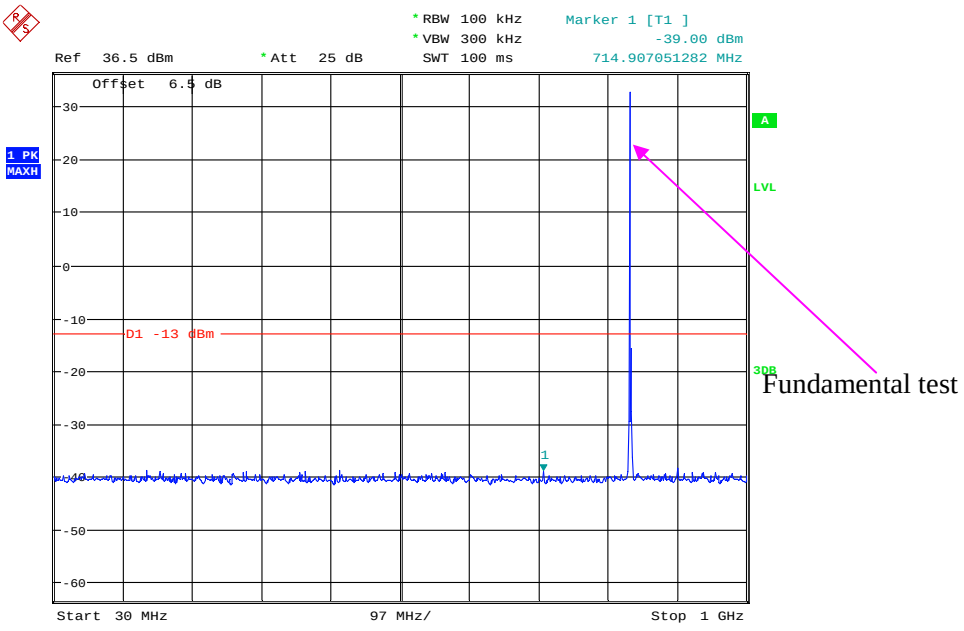
Test result: Pass

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

Please refer to the following plots.

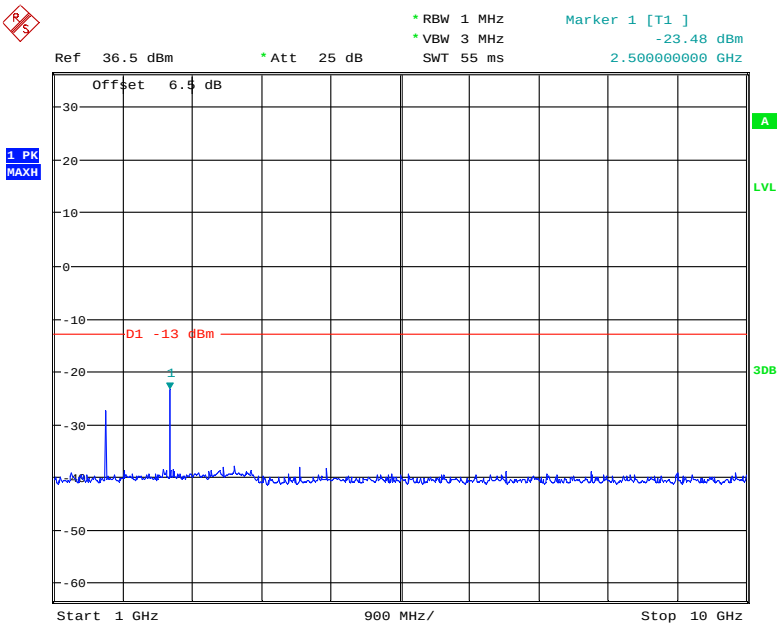
Cellular Band (Part 22H)

30 MHz – 1 GHz (GSM Mode)



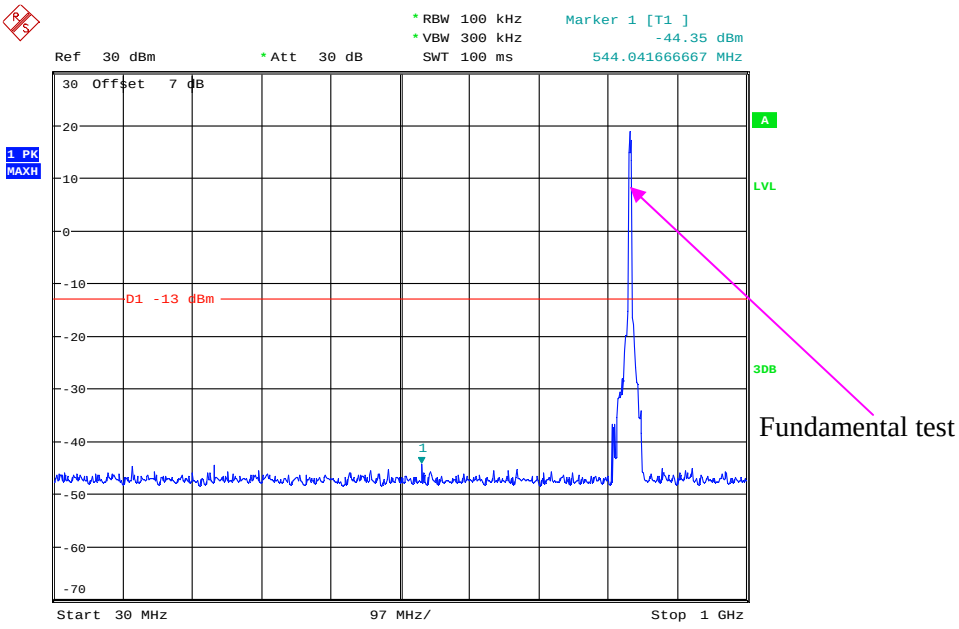
Date: 31.OCT.2020 12:21:55

1 GHz – 10 GHz (GSM Mode)



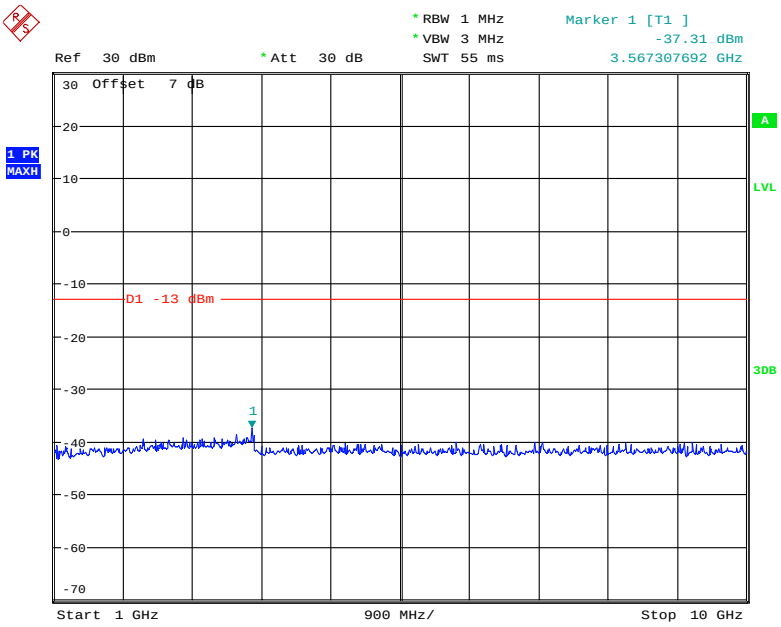
Date: 31.OCT.2020 12:23:25

30 MHz – 1 GHz (WCDMA Mode)



Date: 30.OCT.2020 19:03:05

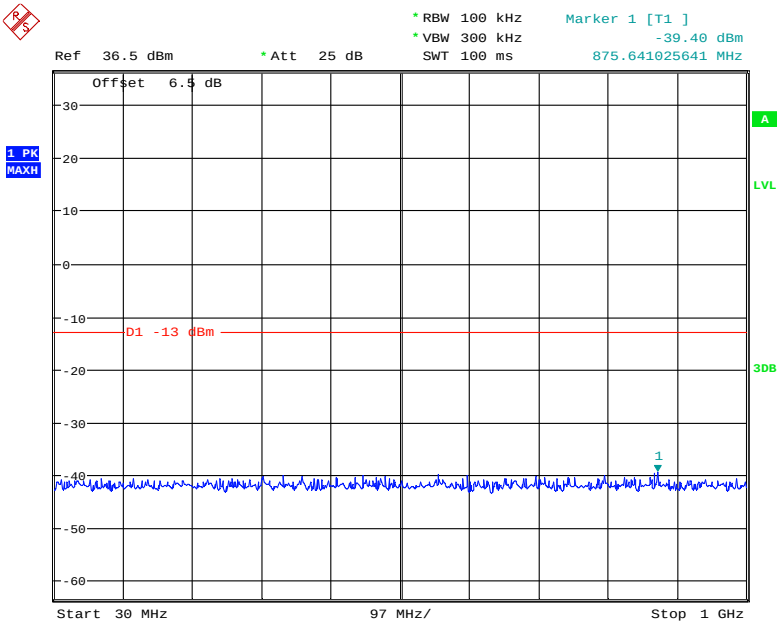
1 GHz – 10 GHz (WCDMA Mode)



Date: 30.OCT.2020 19:03:55

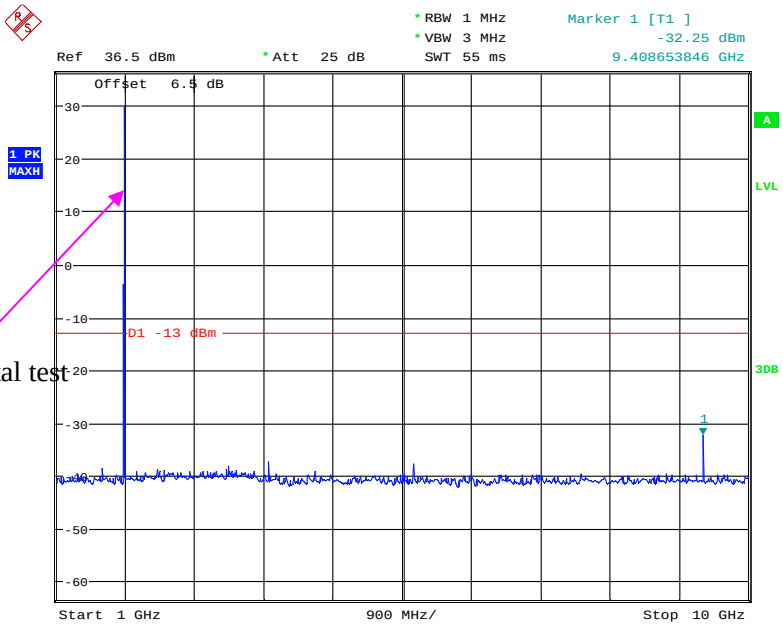
PCS Band (Part 24E)

30 MHz – 1 GHz (GSM Mode)



Date: 31.OCT.2020 12:25:54

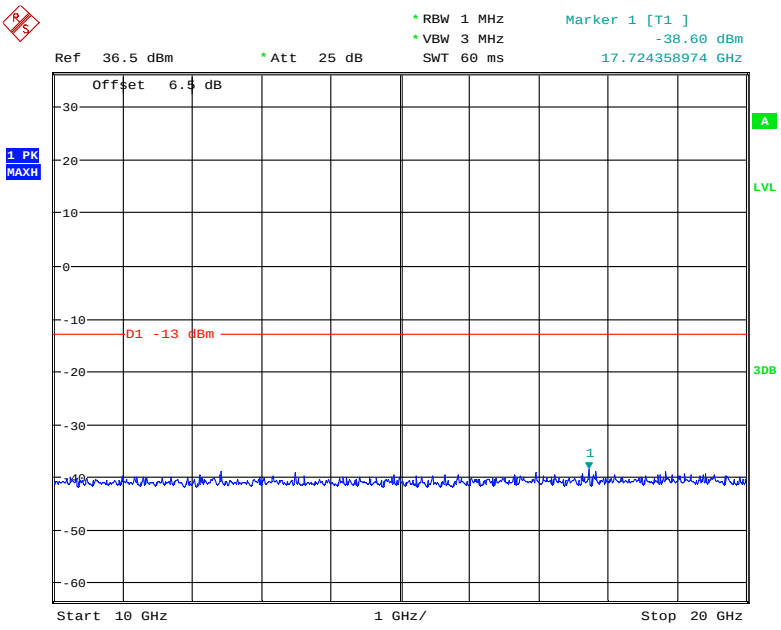
1 GHz – 10 GHz (GSM Mode)



Fundamental test

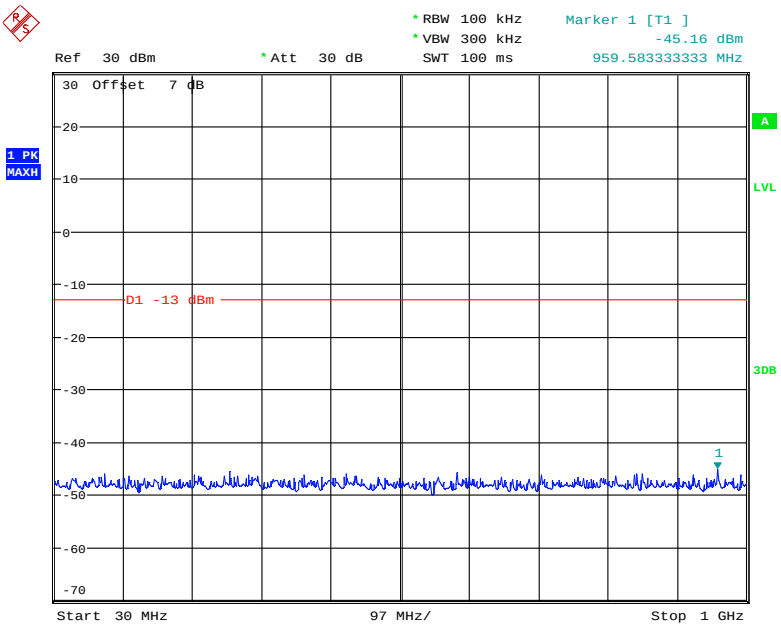
Date: 31.OCT.2020 12:26:24

10 GHz – 20 GHz (GSM Mode)



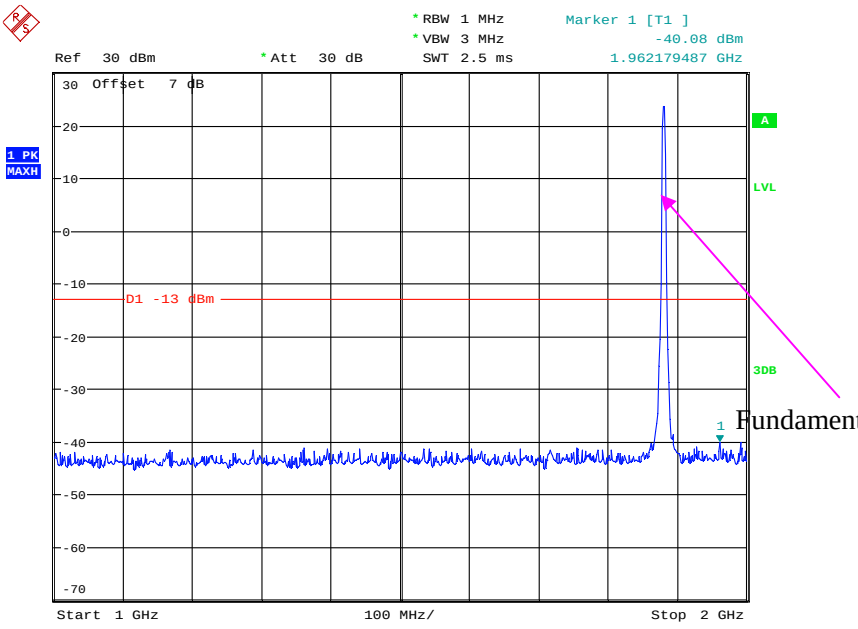
Date: 31.OCT.2020 12:27:02

30 MHz – 1 GHz (WCDMA Mode)



Date: 30.OCT.2020 19:06:45

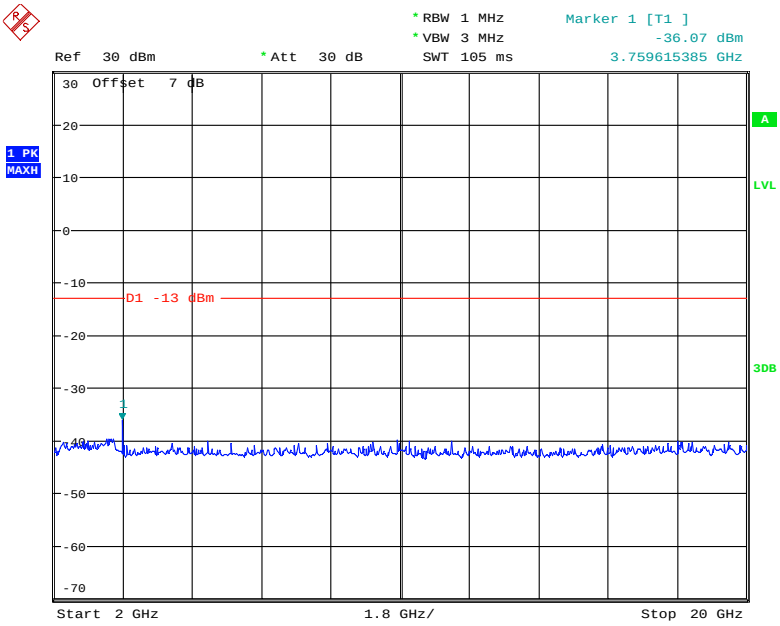
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 30.OCT.2020 19:08:26

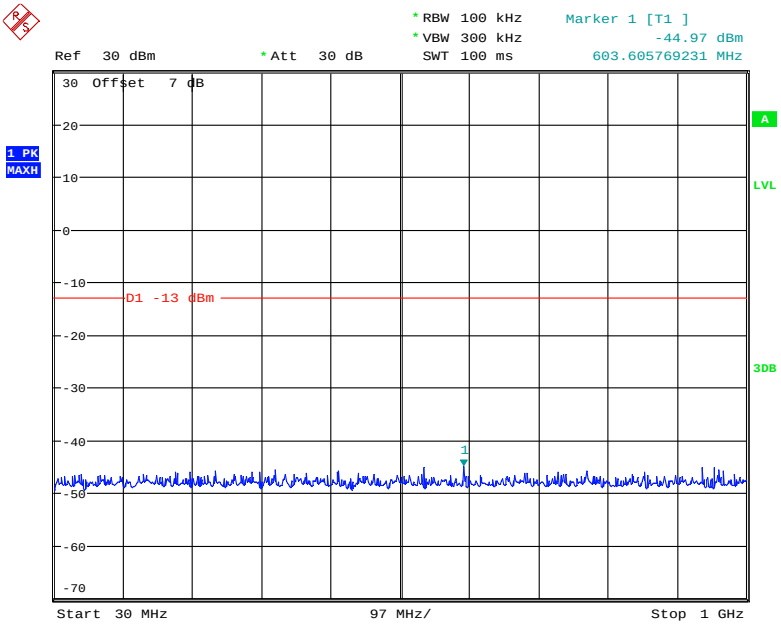
2 GHz – 20 GHz (WCDMA Mode)



Date: 30.OCT.2020 19:08:43

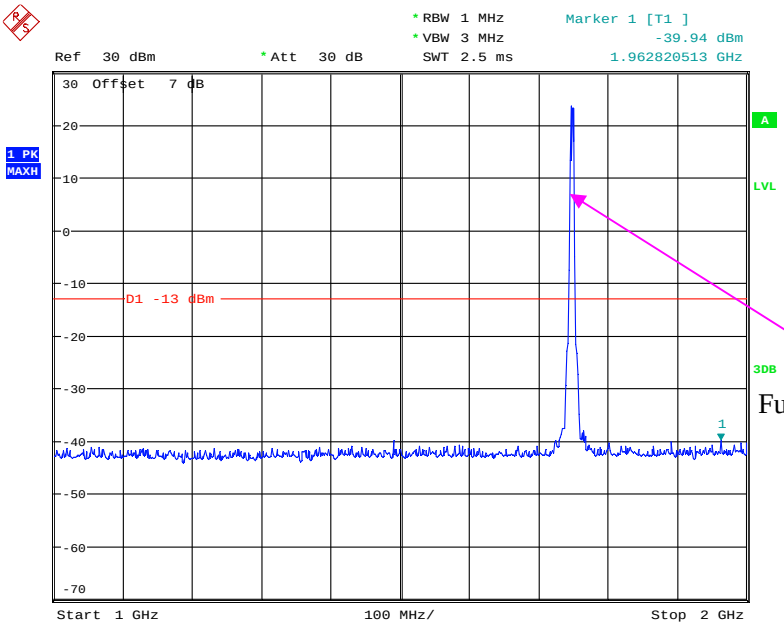
AWS Band (Part 27)

30 MHz – 1 GHz (WCDMA Mode)



Date: 30.OCT.2020 19:05:32

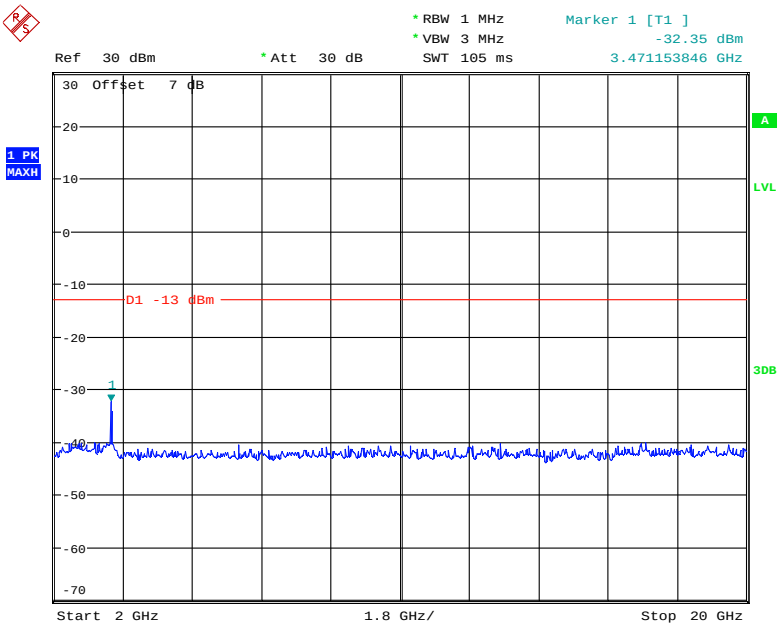
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 30.OCT.2020 19:04:53

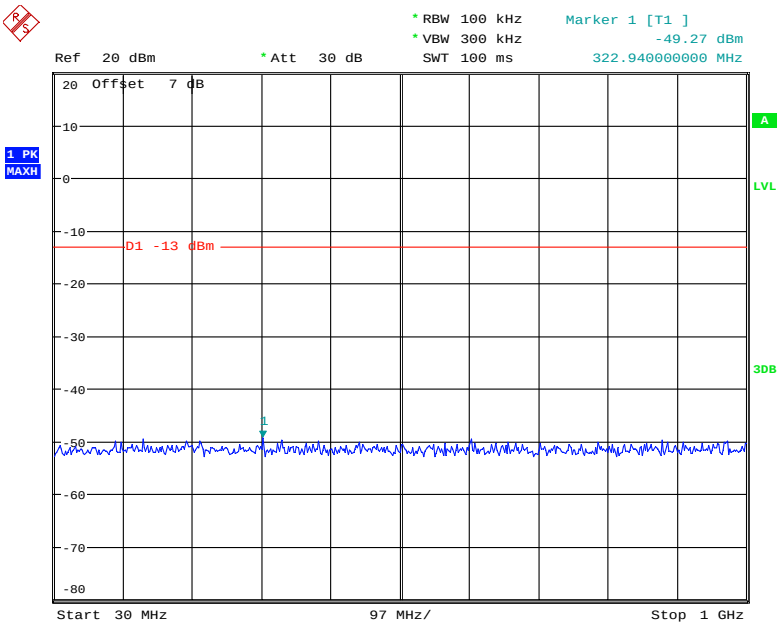
2 GHz – 20 GHz (WCDMA Mode)



Date: 30.OCT.2020 19:05:13

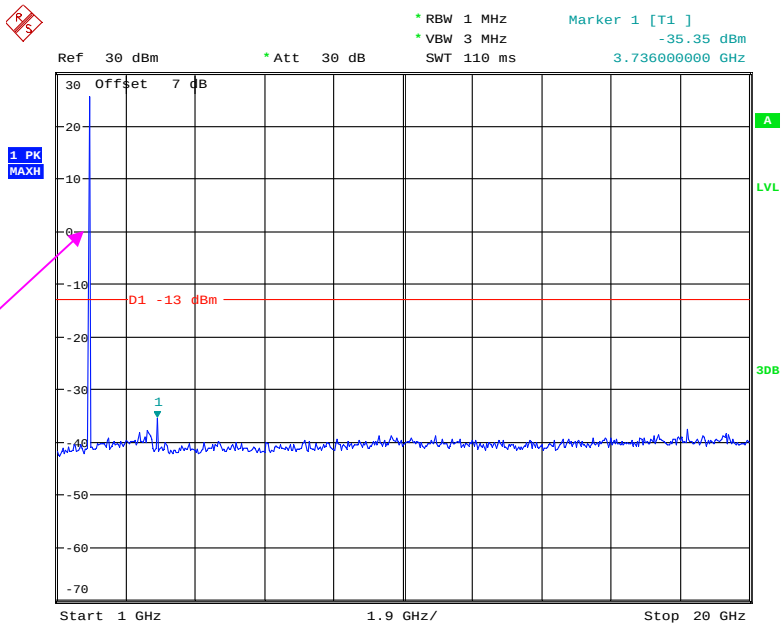
LTE Band 2:

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



Date: 29.OCT.2020 12:33:37

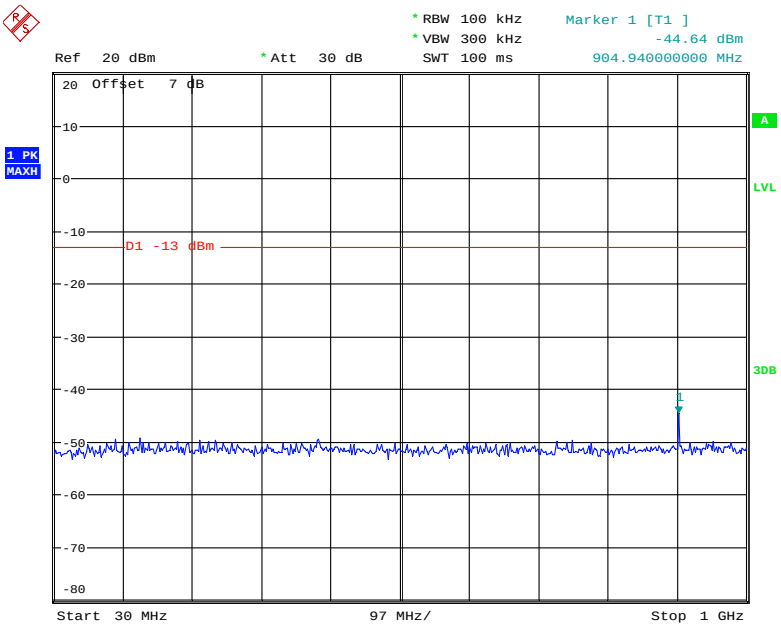
1 GHz – 20 GHz (1.4 MHz, Middle channel)



Fundamental test

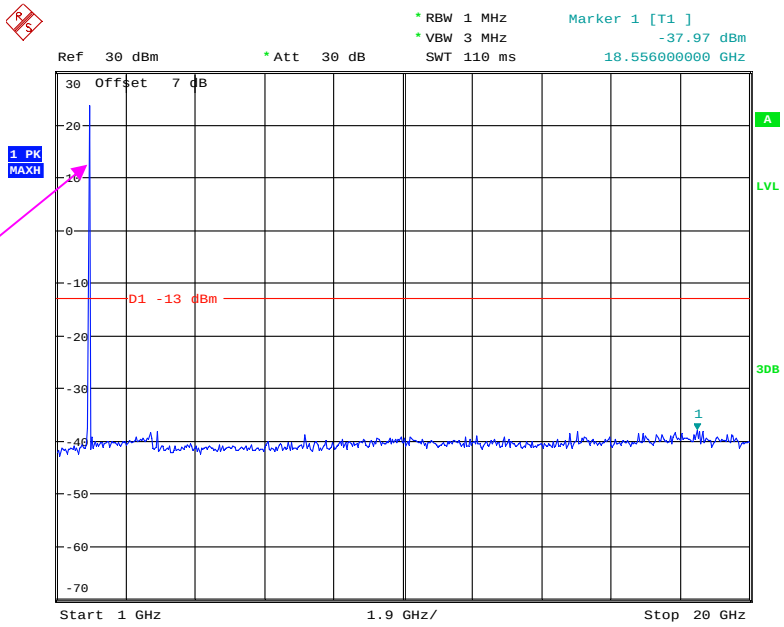
Date: 29.OCT.2020 12:33:49

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



Date: 29.OCT.2020 12:34:07

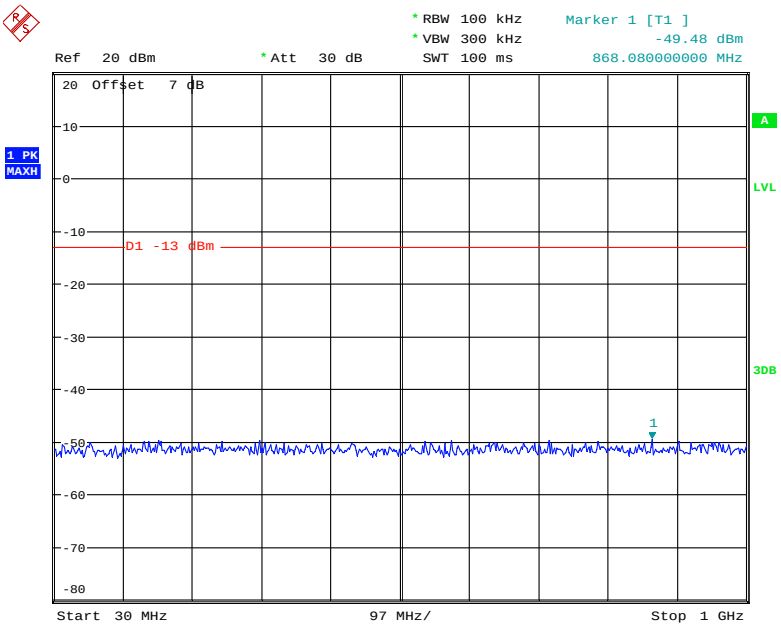
1 GHz – 20 GHz (3.0 MHz, Middle channel)



Fundamental test

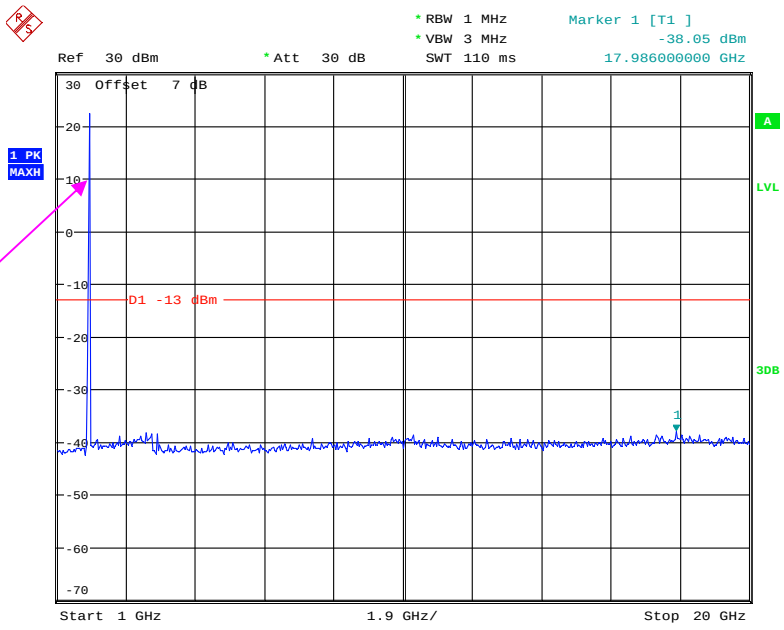
Date: 29.OCT.2020 12:34:18

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



Date: 29.OCT.2020 12:34:37

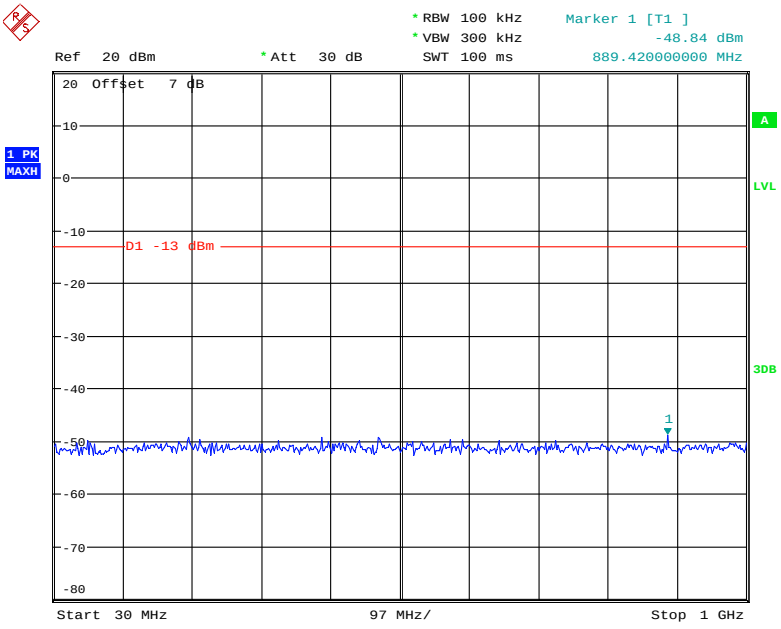
1 GHz – 20 GHz (5.0 MHz, Middle channel)



Fundamental test

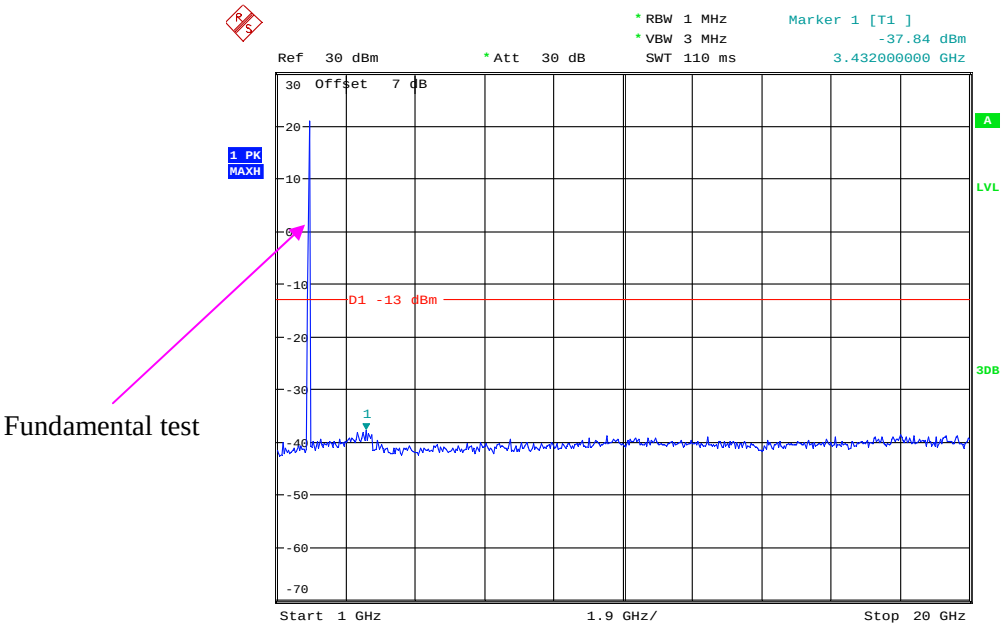
Date: 29.OCT.2020 12:34:48

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



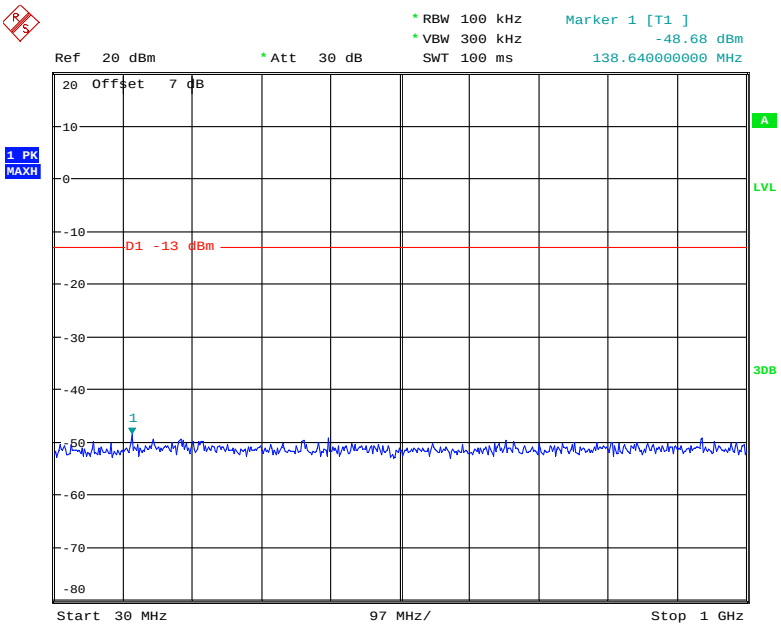
Date: 29.OCT.2020 12:35:11

1 GHz – 20 GHz (10.0 MHz, Middle channel)



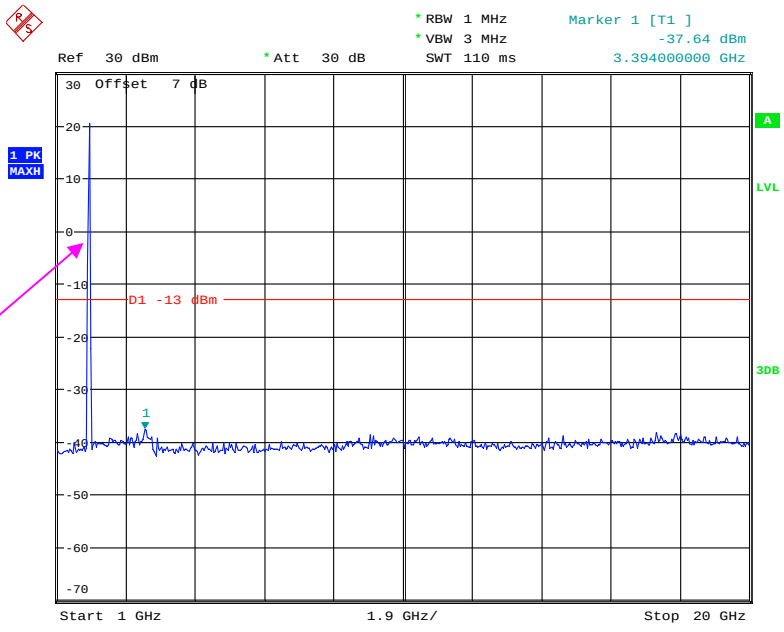
Date: 29.OCT.2020 12:35:22

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



Date: 29.OCT.2020 12:35:44

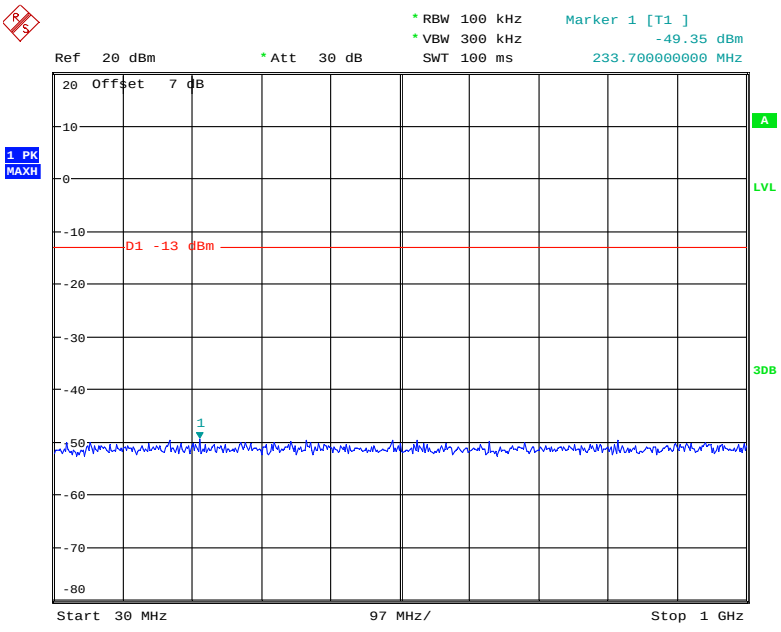
1 GHz – 20 GHz (15.0 MHz, Middle channel)



Fundamental test

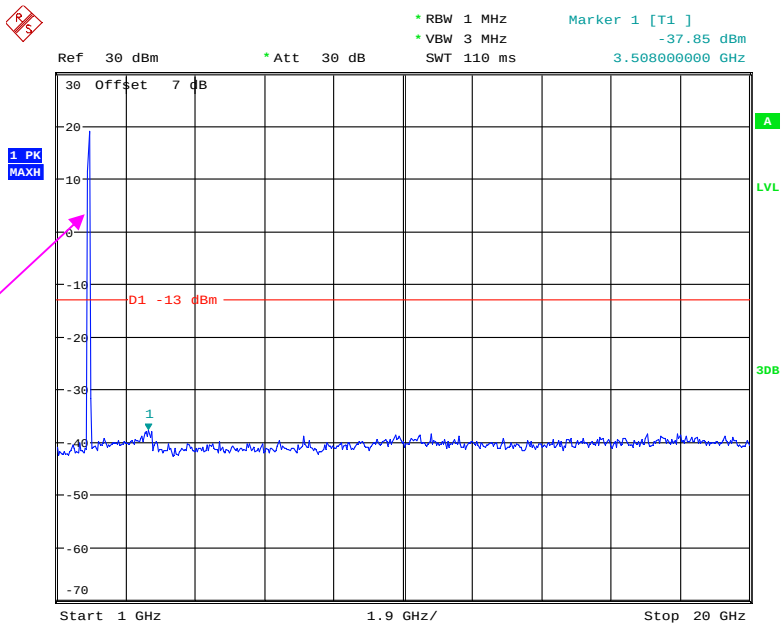
Date: 29.OCT.2020 12:35:56

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



Date: 29.OCT.2020 12:36:20

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

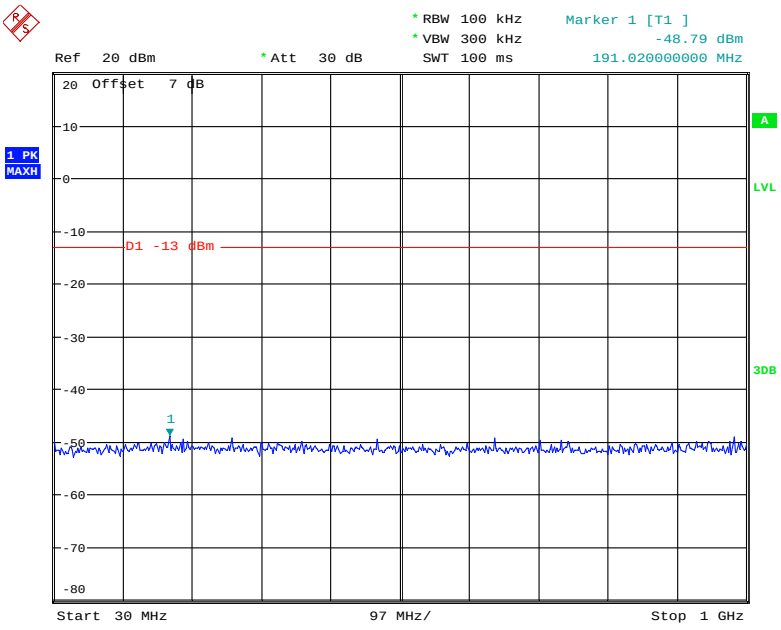


Fundamental test

Date: 29.OCT.2020 12:36:32

LTE Band 4:

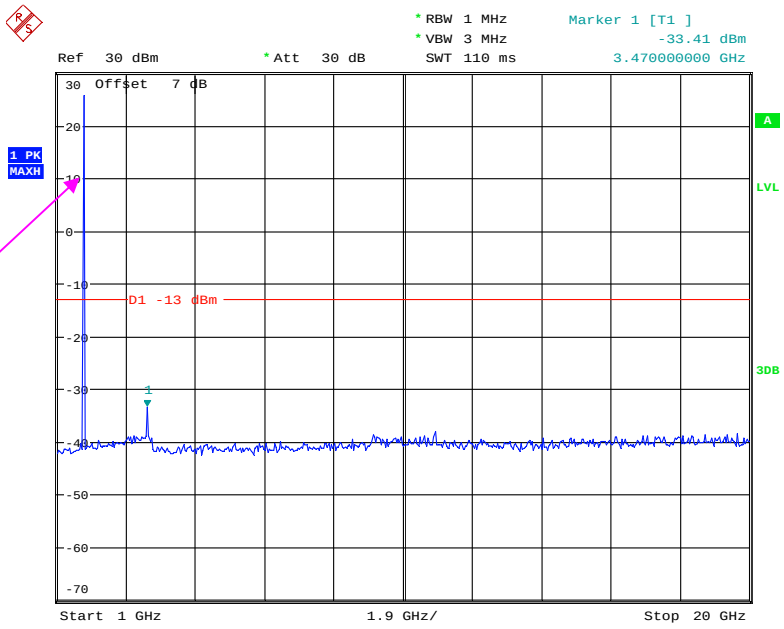
30 MHz - 1 GHz (1.4 MHz, Middle channel)



Date: 29.OCT.2020 12:36:54

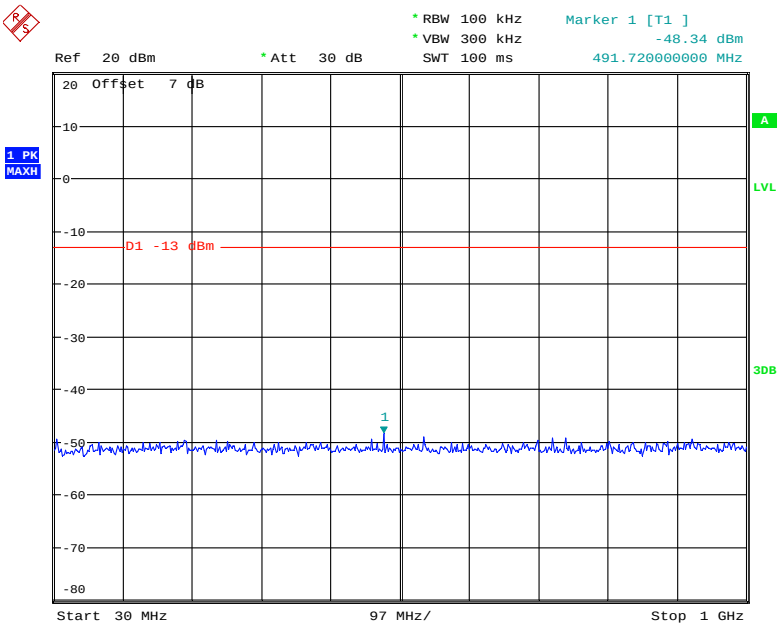
1 GHz – 20 GHz (1.4 MHz, Middle channel)

Fundamental test



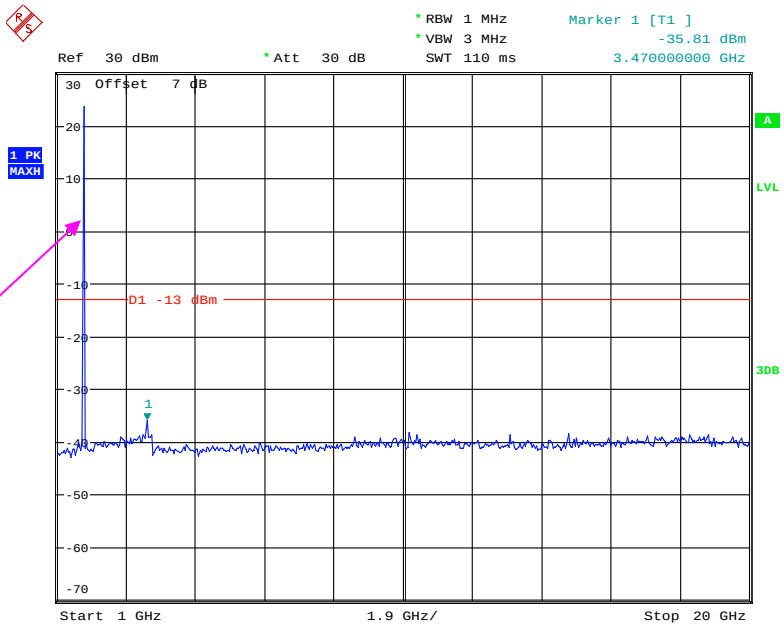
Date: 29.OCT.2020 12:37:05

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



Date: 29.OCT.2020 12:37:27

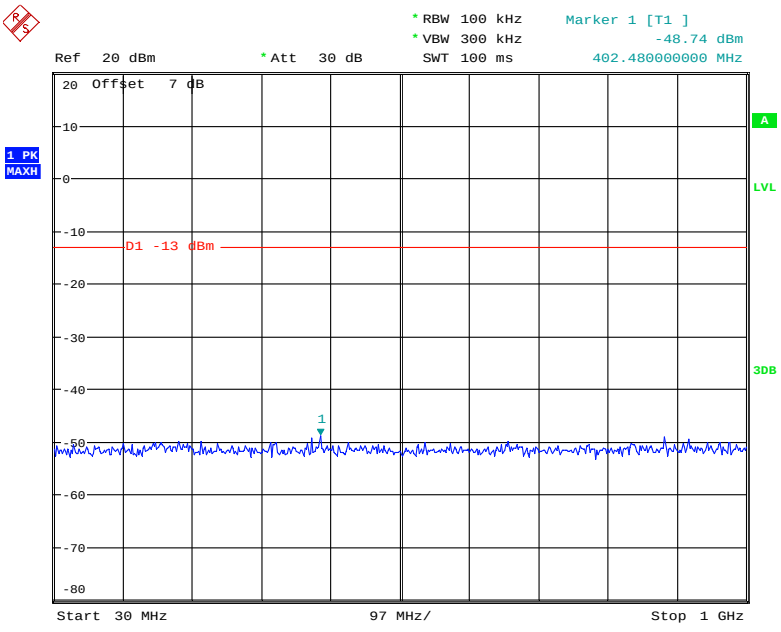
1 GHz – 20 GHz (3.0 MHz, Middle channel)



Fundamental test

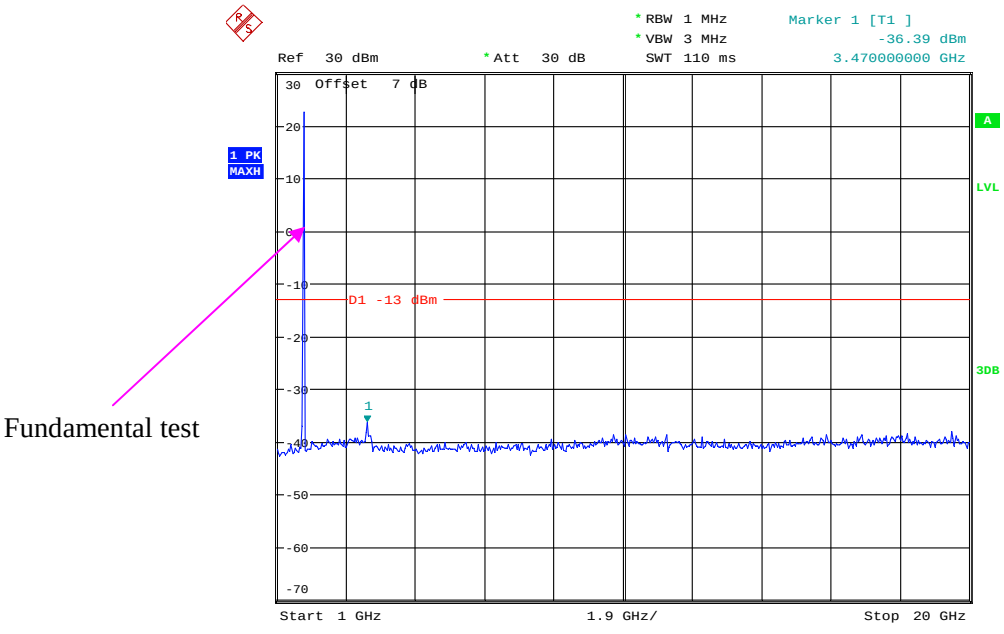
Date: 29.OCT.2020 12:37:38

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



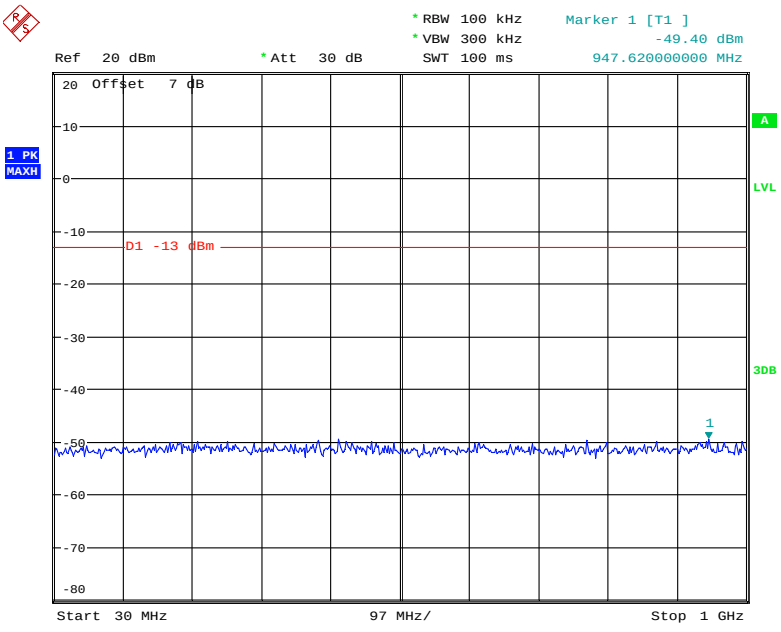
Date: 29.OCT.2020 12:37:56

1 GHz – 20 GHz (5.0 MHz, Middle channel)



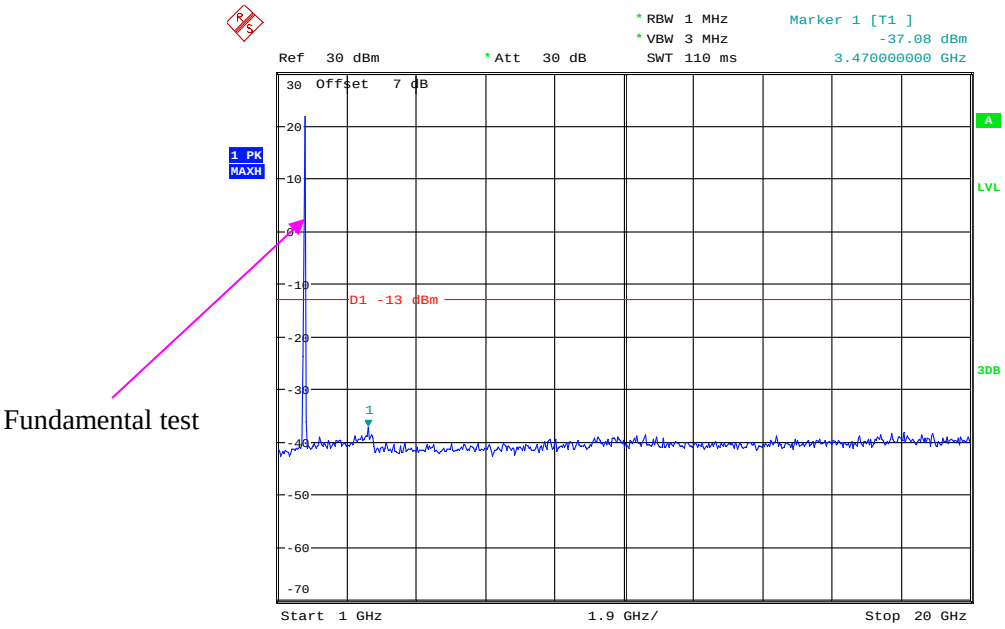
Date: 29.OCT.2020 12:38:08

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



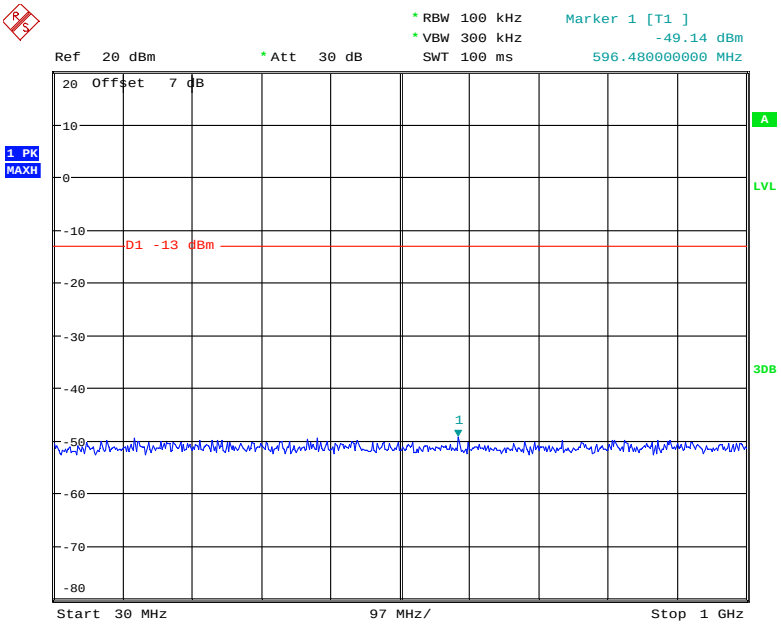
Date: 29.OCT.2020 12:38:27

1 GHz – 20 GHz (10.0 MHz, Middle channel)



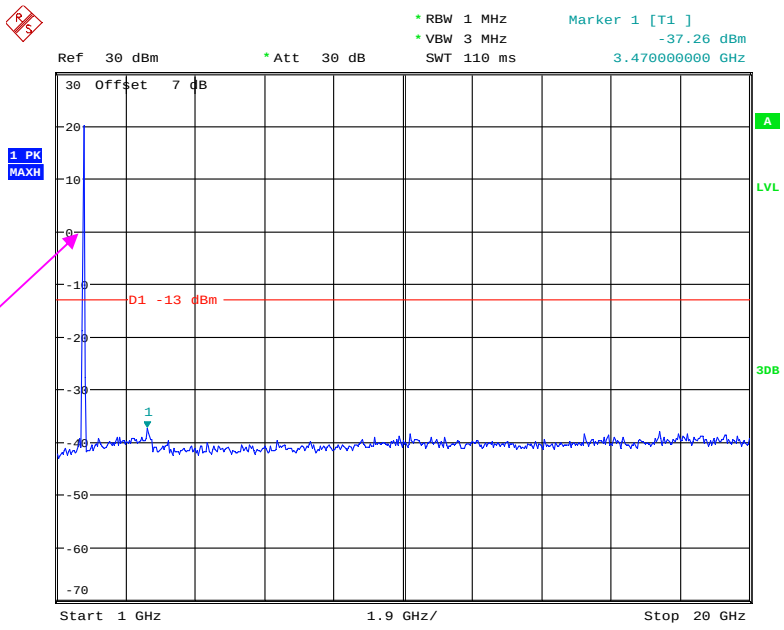
Date: 29.OCT.2020 12:38:39

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



Date: 29.OCT.2020 12:39:04

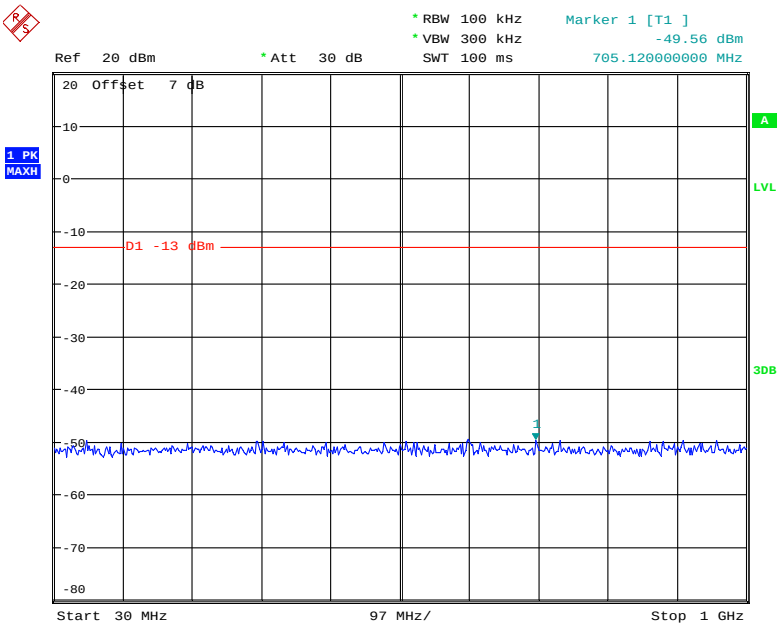
1 GHz – 20 GHz (15.0 MHz, Middle channel)



Fundamental test

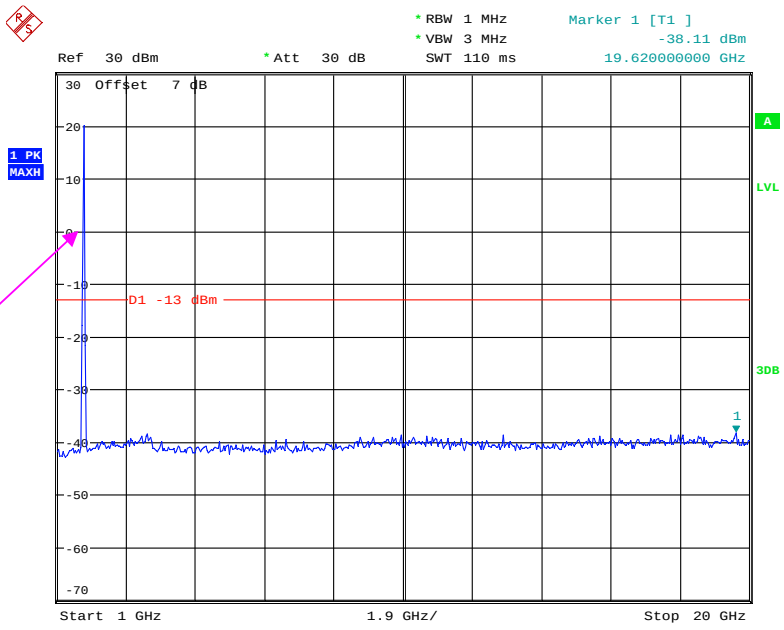
Date: 29.OCT.2020 12:39:15

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



Date: 29.OCT.2020 12:39:37

1 GHz – 20 GHz (20.0 MHz, Middle channel)

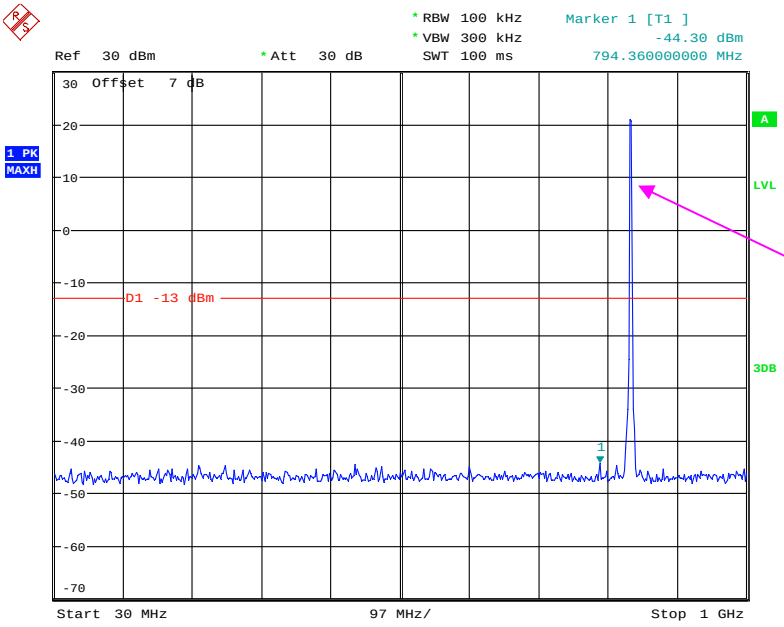


Fundamental test

Date: 29.OCT.2020 12:39:48

LTE Band 5:

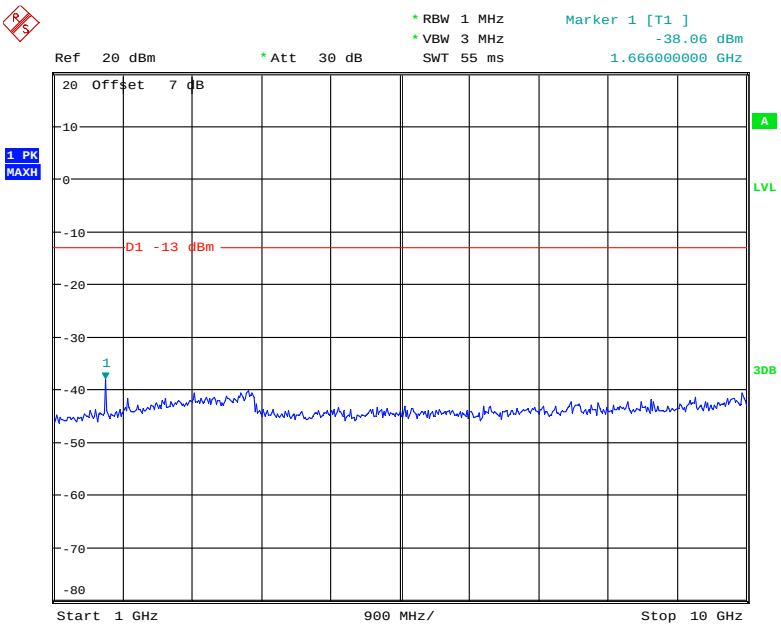
30 MHz - 1 GHz (1.4 MHz, Middle channel)



Fundamental test

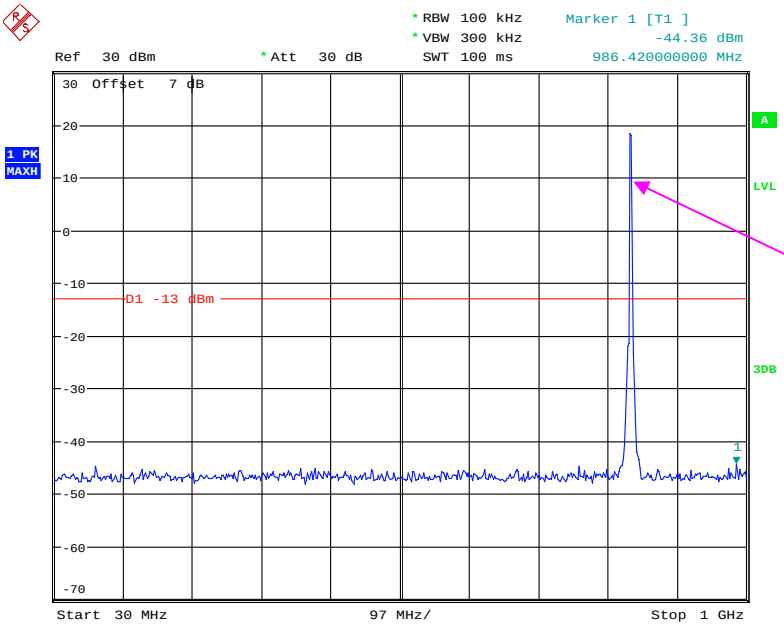
Date: 29.OCT.2020 12:40:07

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



Date: 29.OCT.2020 12:40:18

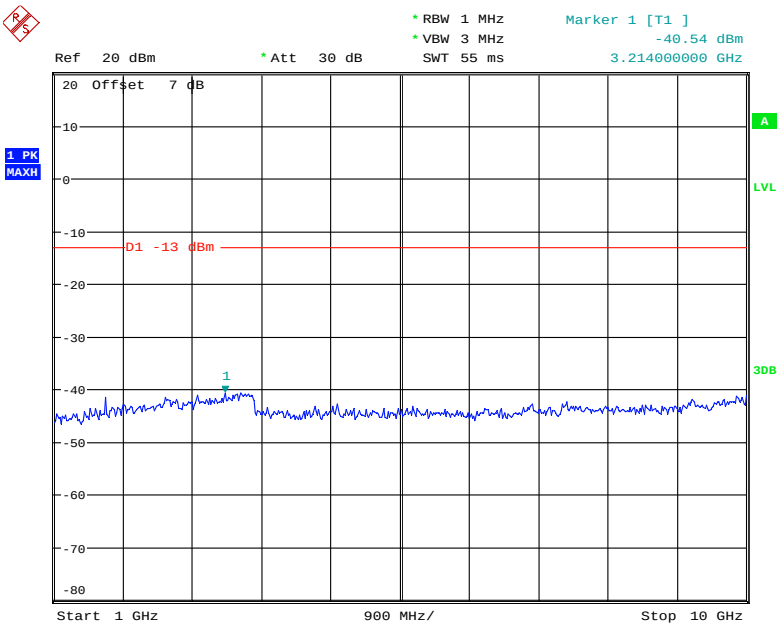
30 MHz - 1 GHz (3.0 MHz, Middle channel)



Fundamental test

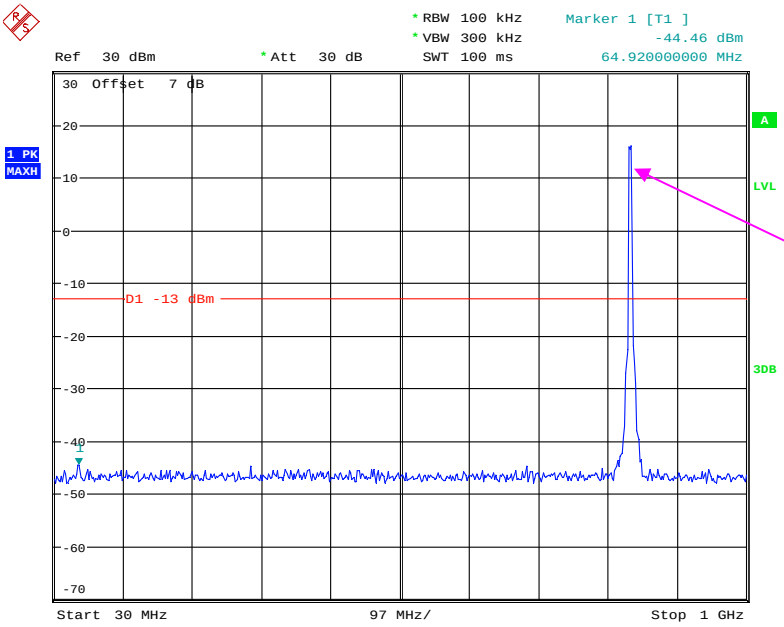
Date: 29.OCT.2020 12:40:39

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



Date: 29.OCT.2020 12:40:51

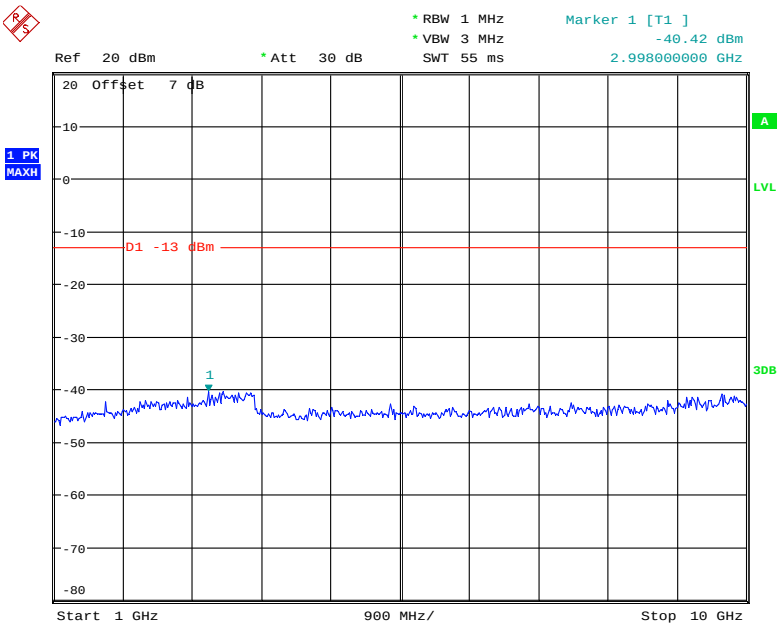
30 MHz - 1 GHz (5.0 MHz, Middle channel)



Fundamental test

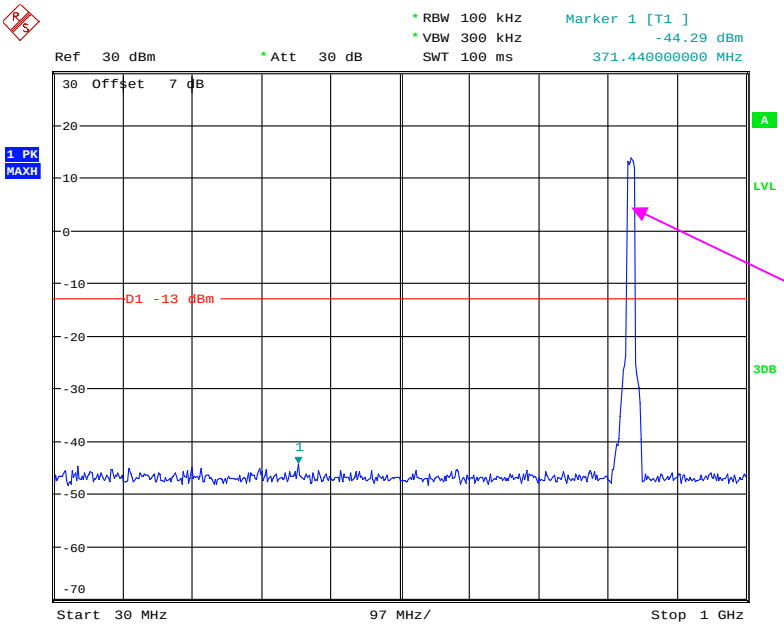
Date: 29.OCT.2020 12:41:12

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



Date: 29.OCT.2020 12:41:24

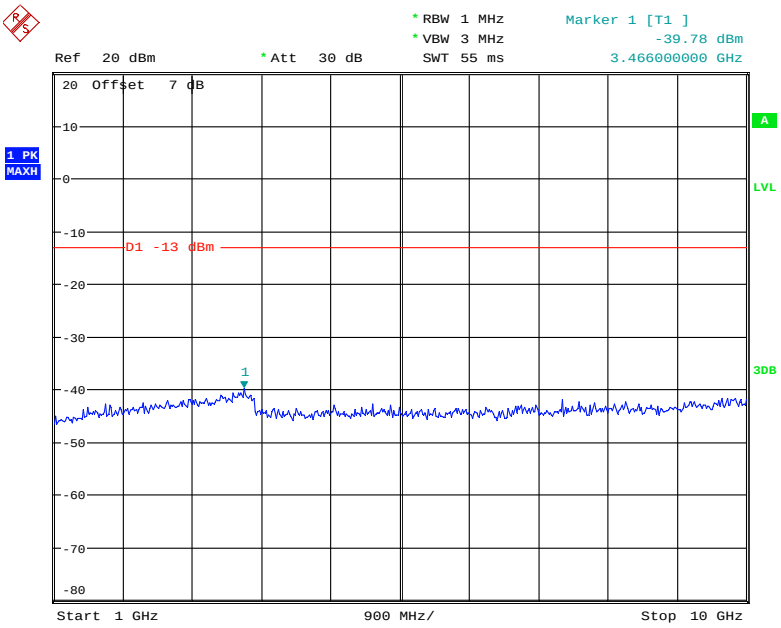
30 MHz - 1 GHz (10.0 MHz, Middle channel)



Fundamental test

Date: 29.OCT.2020 12:41:43

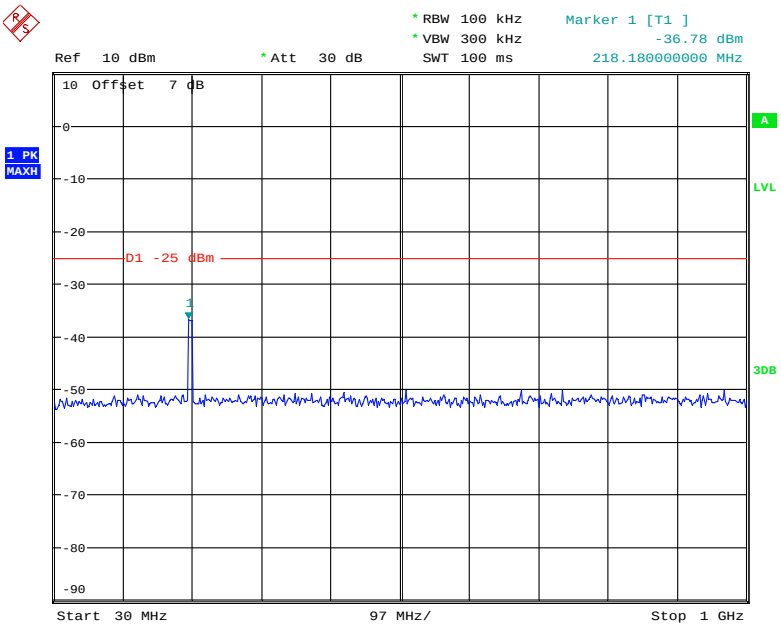
1 GHz – 10 GHz (10.0 MHz, Middle channel)



Date: 29.OCT.2020 12:41:55

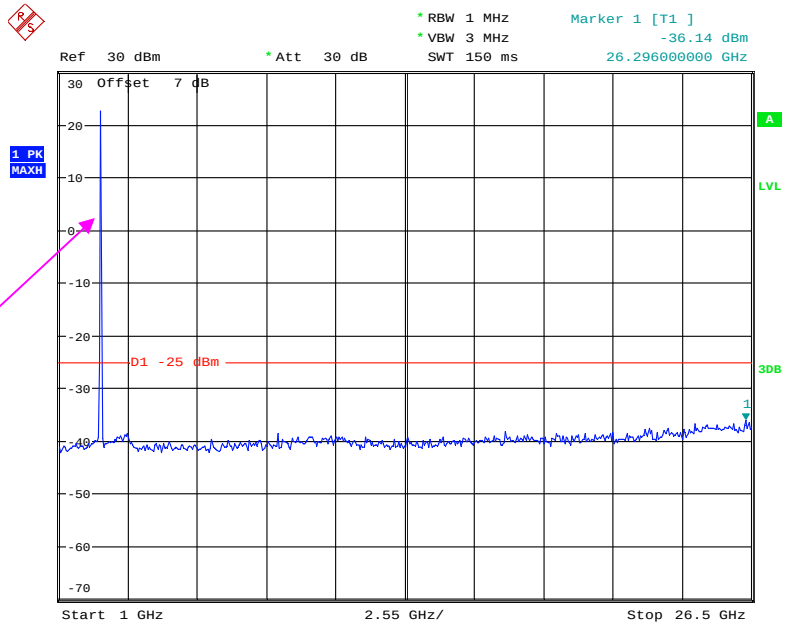
LTE Band 7:

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



Date: 29.OCT.2020 12:42:16

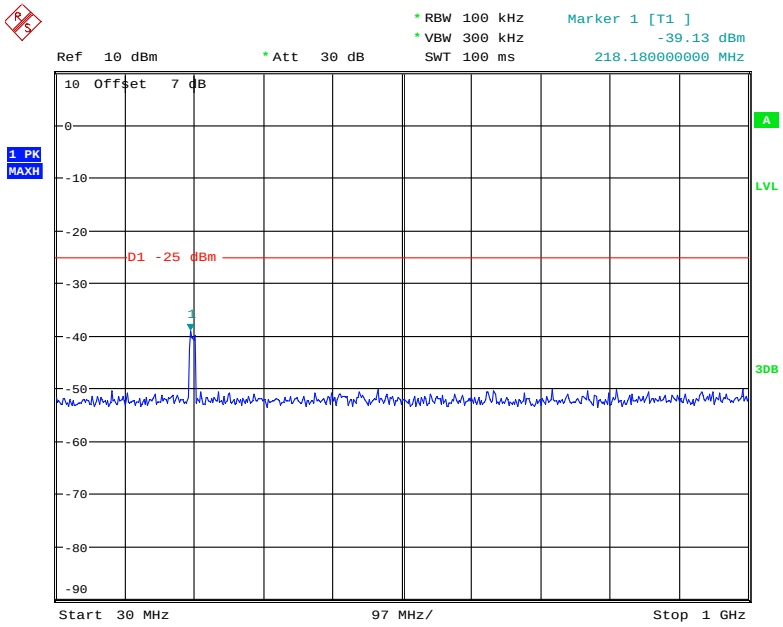
1 GHz – 26.5 GHz (5.0 MHz, Middle channel)



Fundamental test

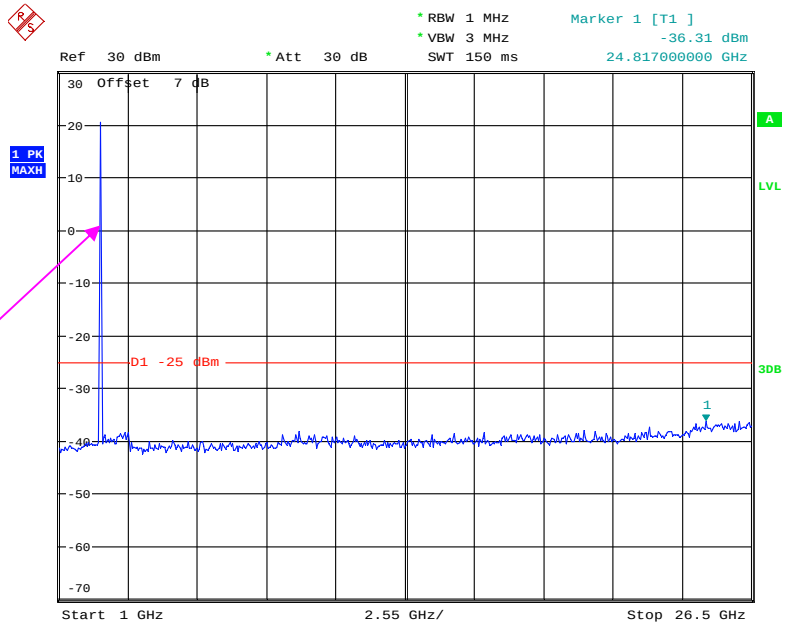
Date: 29.OCT.2020 12:42:28

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



Date: 29.OCT.2020 12:42:50

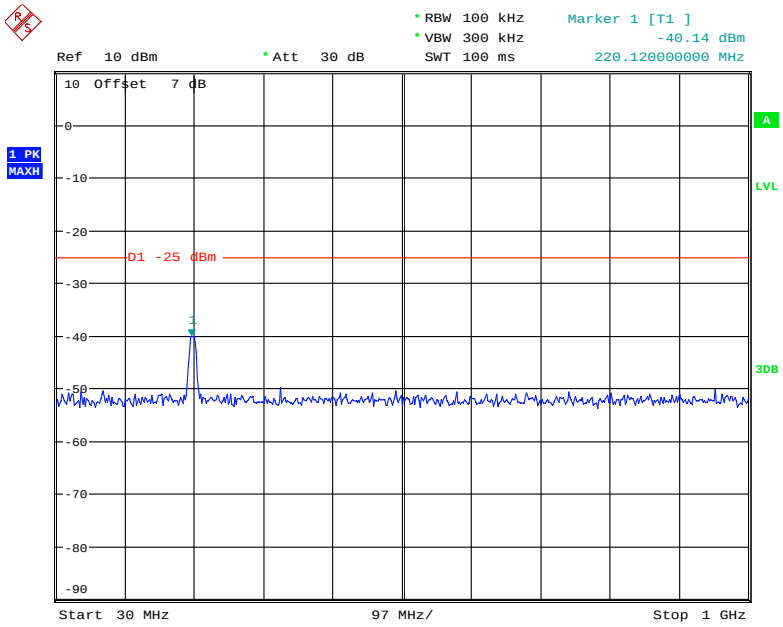
1 GHz – 26.5 GHz (10.0 MHz, Middle channel)



Fundamental test

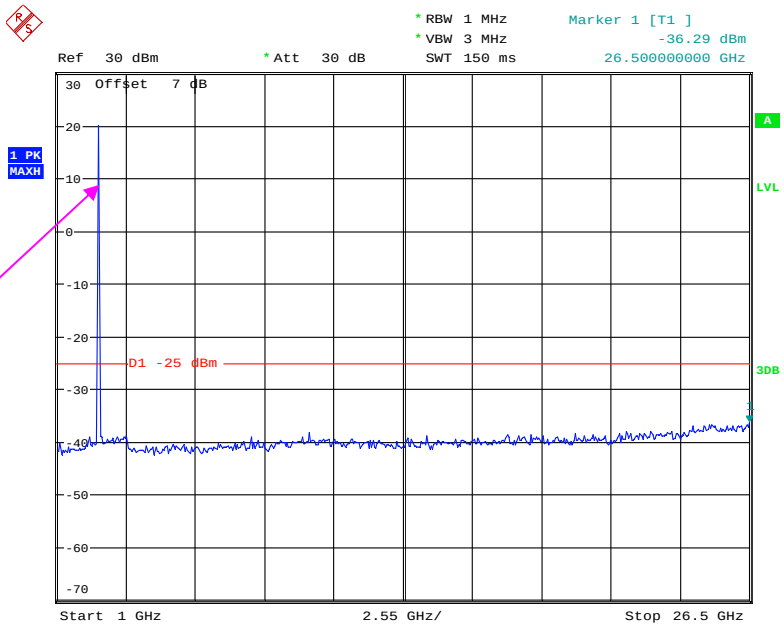
Date: 29.OCT.2020 12:43:01

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



Date: 29.OCT.2020 12:43:26

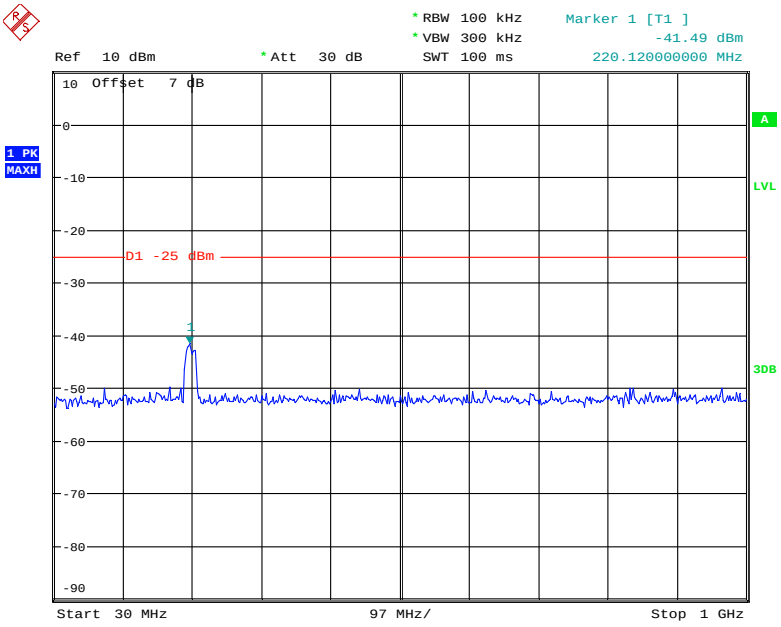
1 GHz – 26.5 GHz (15.0 MHz, Middle channel)



Fundamental test

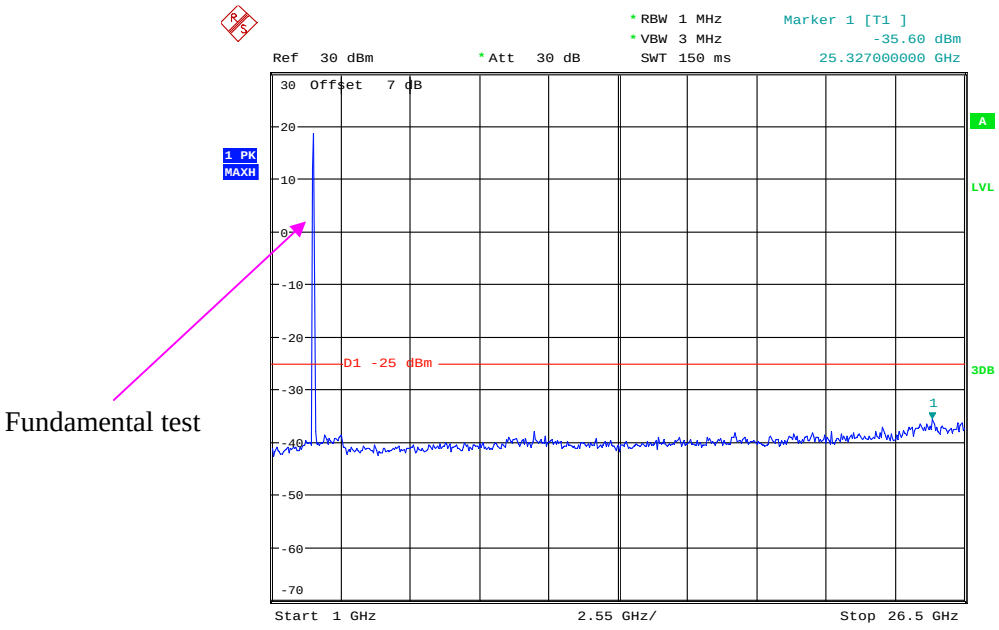
Date: 29.OCT.2020 12:43:38

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



Date: 29.OCT.2020 12:44:02

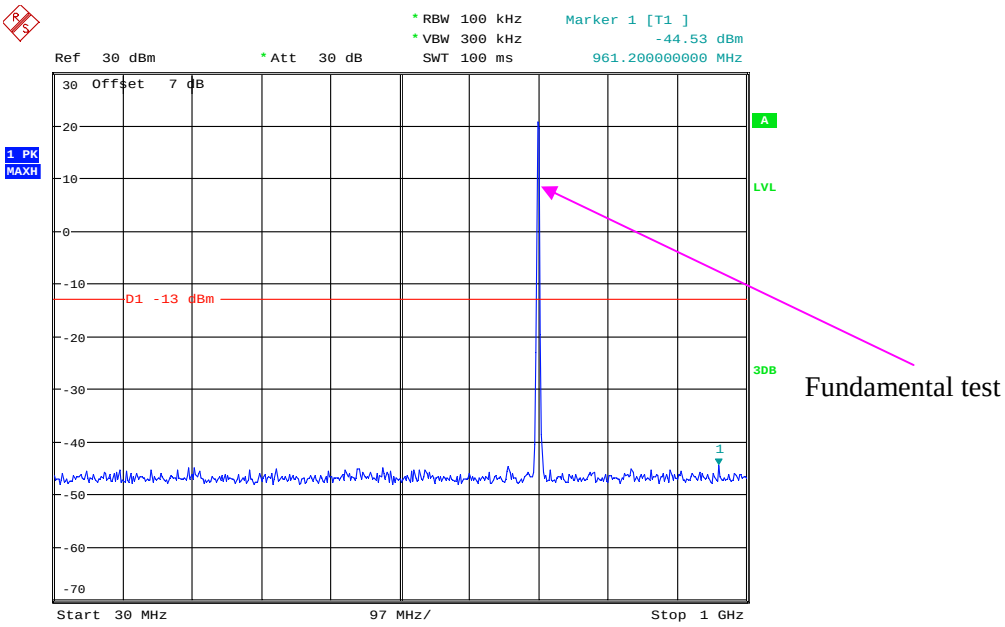
1 GHz – 26.5 GHz (20.0 MHz, Middle channel)



Date: 29.OCT.2020 12:44:14

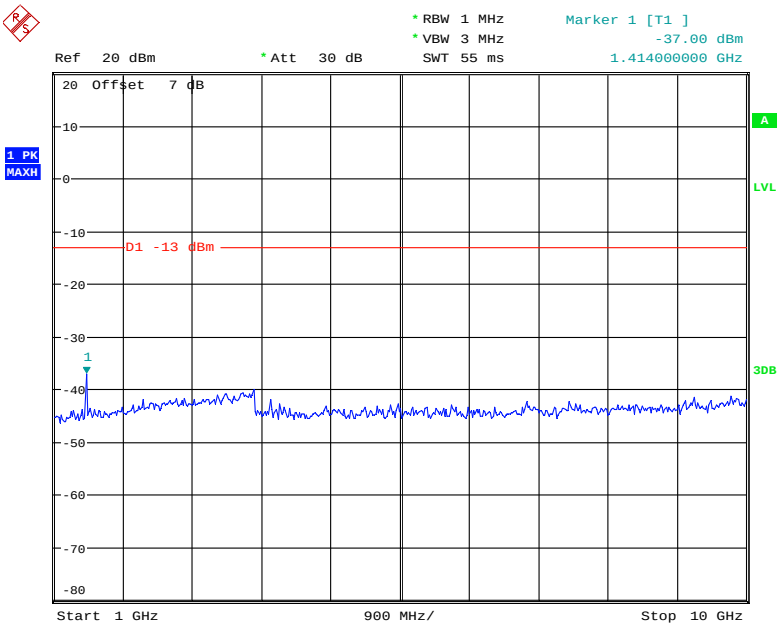
LTE Band 12:

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



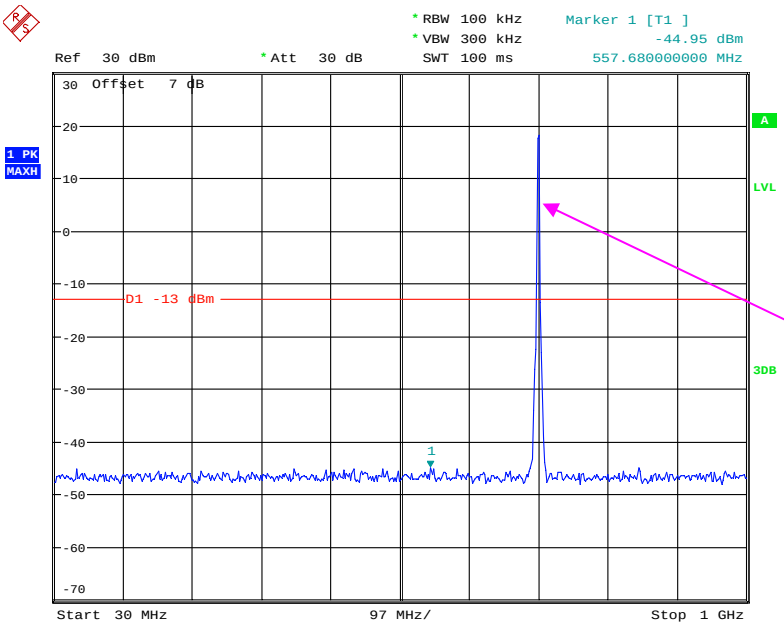
Date: 29.OCT.2020 12:44:33

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



Date: 29.OCT.2020 12:44:45

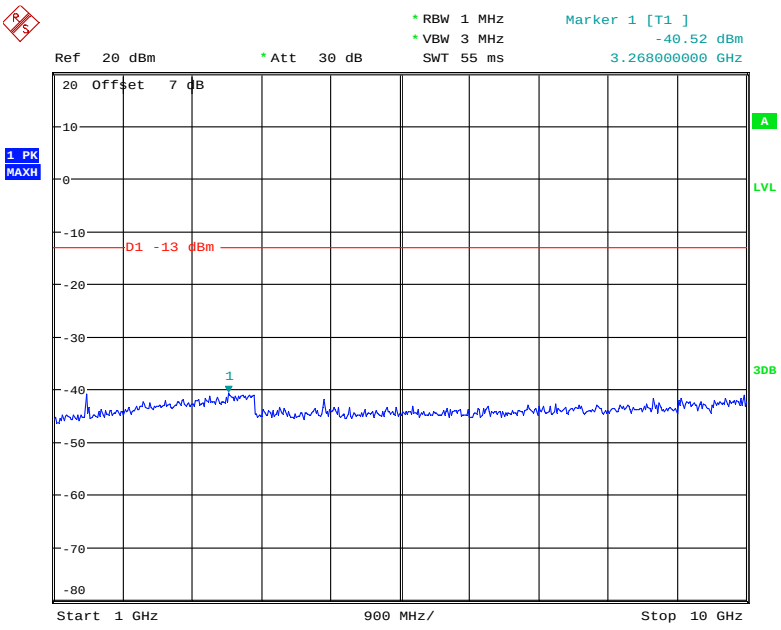
30 MHz - 1 GHz (3.0 MHz, Middle channel)



Fundamental test

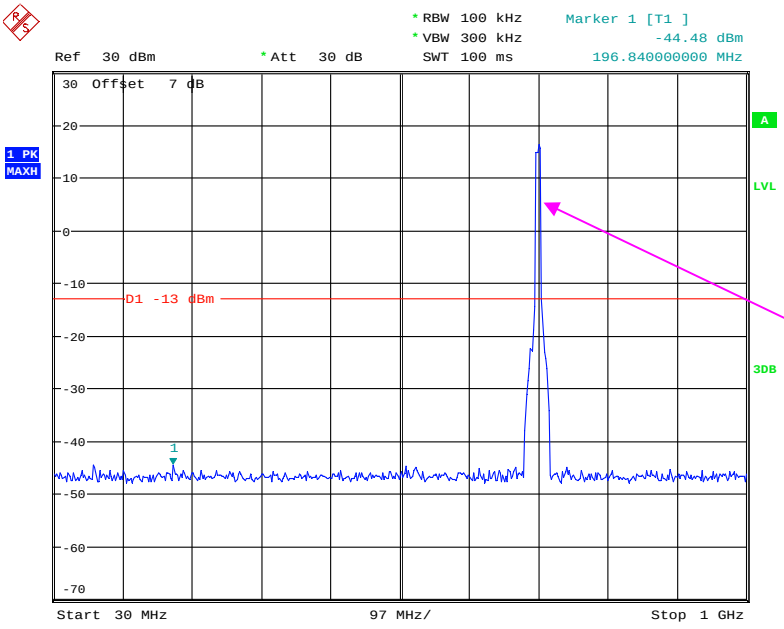
Date: 29.OCT.2020 12:45:06

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



Date: 29.OCT.2020 12:45:18

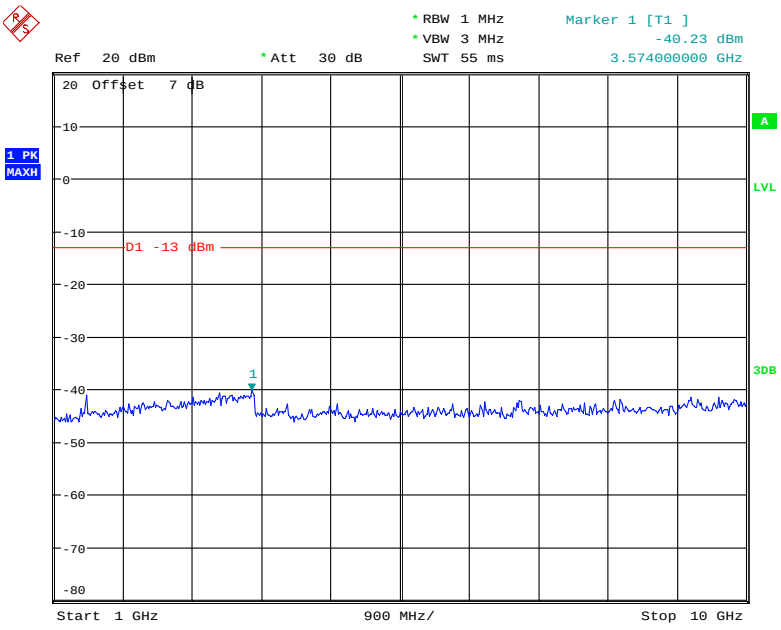
30 MHz - 1 GHz (5.0 MHz, Middle channel)



Fundamental test

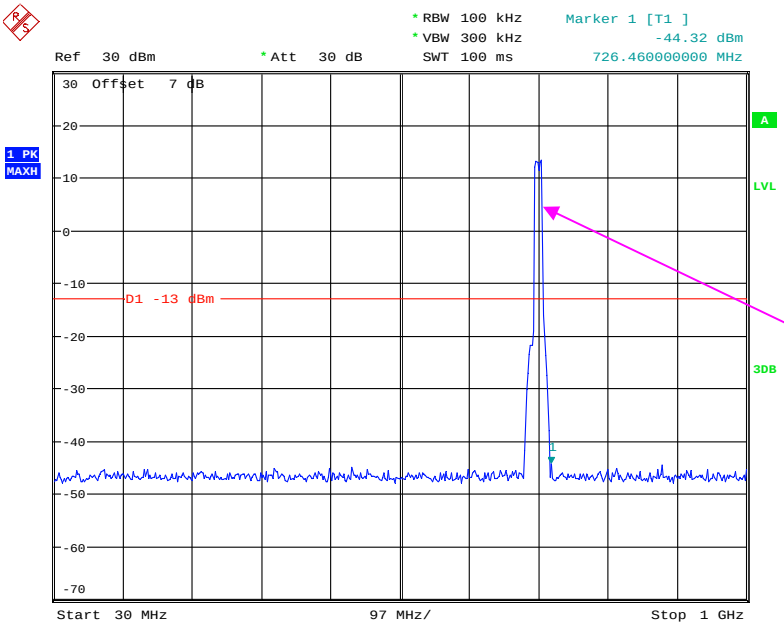
Date: 29.OCT.2020 12:45:39

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



Date: 29.OCT.2020 12:45:51

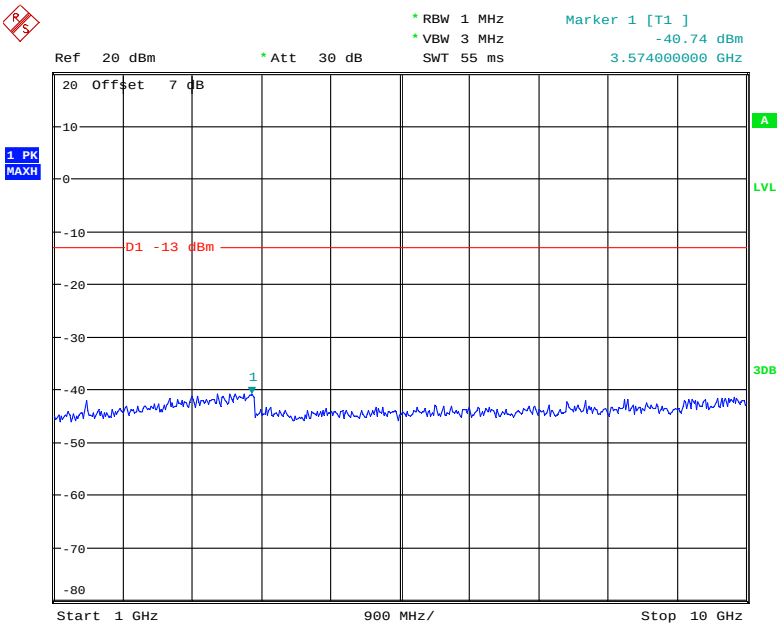
30 MHz - 1 GHz (10.0 MHz, Middle channel)



Fundamental test

Date: 29.OCT.2020 12:46:13

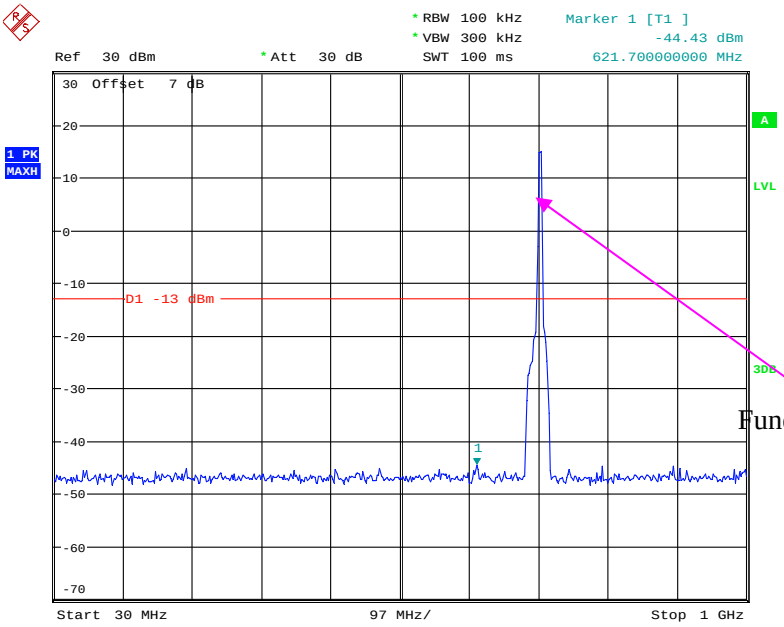
1 GHz – 10 GHz (10.0 MHz, Middle channel)



Date: 29.OCT.2020 12:46:25

LTE Band 17:

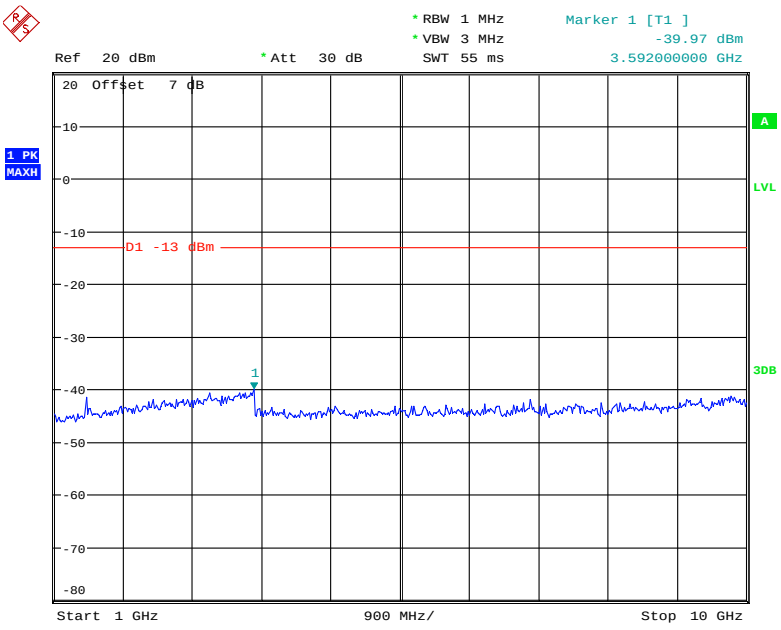
30 MHz – 1.0 GHz (5.0 MHz, Middle Channel)



Fundamental test

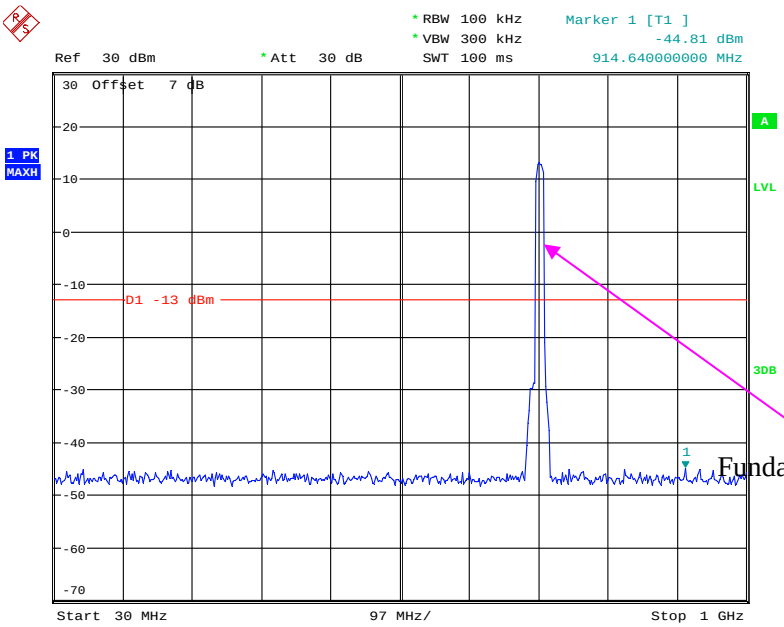
Date: 29.OCT.2020 12:46:43

1 GHz – 10GHz (5 MHz, Middle Channel)



Date: 29.OCT.2020 12:46:58

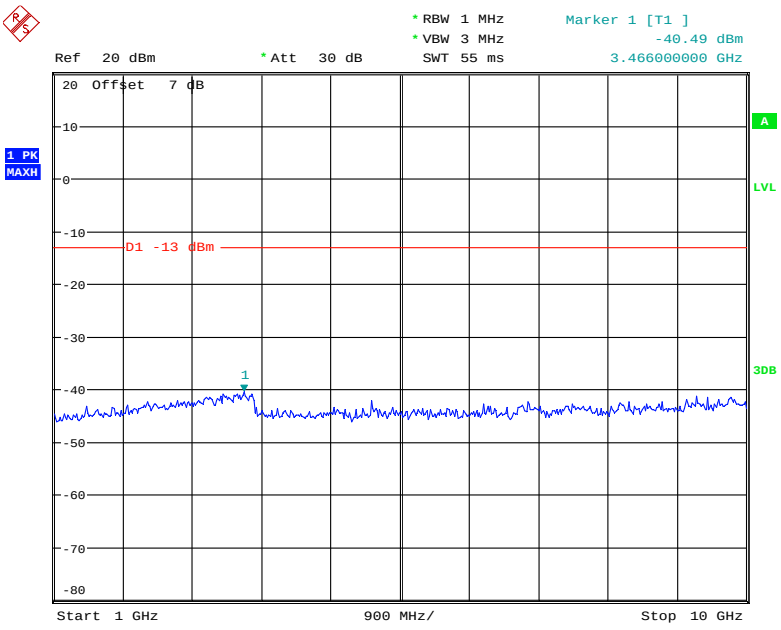
30 MHz – 1.0 GHz (10.0 MHz, Middle Channel)



Fundamental test

Date: 29.OCT.2020 12:47:17

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



Date: 29.OCT.2020 12:47:29

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

Applicable Standard

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

Test Procedure

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

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the 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:	28~29.3 ℃
Relative Humidity:	50~58 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Harris He from 2020-10-10 to 2020-10-22 for below 1GHz and Lovan Liang andAlen He from 2020-10-10 to 2020-10-23 for above 1GHz.

EUT operation mode: Transmitting

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 (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
954.7	37.68	230	1.4	H	-62.9	1.37	0.0	-64.27	-13	51.27
954.7	38.55	293	1.8	V	-60.8	1.37	0.0	-62.17	-13	49.17
1648.40	46.44	209	2.5	H	-61.6	1.40	8.70	-54.30	-13	41.30
1648.40	45.87	87	2.5	V	-62.0	1.40	8.70	-54.70	-13	41.70
2472.60	49.55	87	1.8	H	-53.8	2.60	10.20	-46.20	-13	33.20
2472.60	50.11	328	1.3	V	-52.6	2.60	10.20	-45.00	-13	32.00
3296.80	43.89	298	1.5	H	-57.0	1.50	11.70	-46.80	-13	33.80
3296.80	43.75	103	1.3	V	-57.2	1.50	11.70	-47.00	-13	34.00
Middle channel										
961.2	37.32	91	2.2	H	-63.3	1.37	0.0	-64.67	-13	51.67
961.2	38.21	123	1.9	V	-61.1	1.37	0.0	-62.47	-13	49.47
1673.20	45.22	282	1.5	H	-61.1	1.30	8.90	-53.50	-13	40.50
1673.20	46.71	233	2.3	V	-59.0	1.30	8.90	-51.40	-13	38.40
2509.80	50.87	176	2.2	H	-52.5	2.60	10.20	-44.90	-13	31.90
2509.80	50.84	2	1.5	V	-51.9	2.60	10.20	-44.30	-13	31.30
3346.40	43.22	277	1.6	H	-57.7	1.50	11.70	-47.50	-13	34.50
3346.40	43.87	55	1.2	V	-57.1	1.50	11.70	-46.90	-13	33.90
High channel										
966.8	37.51	271	2.5	H	-63.1	1.37	0.0	-64.47	-13	51.47
966.8	38.34	307	2.0	V	-61.0	1.37	0.0	-62.37	-13	49.37
1697.60	45.21	329	2.0	H	-61.1	1.30	8.90	-53.50	-13	40.50
1697.60	45.57	43	1.3	V	-60.2	1.30	8.90	-52.60	-13	39.60
2546.40	48.71	347	1.3	H	-54.6	2.60	10.20	-47.00	-13	34.00
2546.40	50.03	212	1.2	V	-52.7	2.60	10.20	-45.10	-13	32.10
3395.20	44.13	209	1.7	H	-57.1	1.40	11.80	-46.70	-13	33.70
3395.20	43.42	216	1.8	V	-57.6	1.40	11.80	-47.20	-13	34.20

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 (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
952.3	37.33	198	2.3	H	-63.3	1.37	0.0	-64.67	-13	51.67
952.3	38.40	65	1.2	V	-60.9	1.37	0.0	-62.27	-13	49.27
1652.80	46.27	268	1.4	H	-60.1	1.30	8.90	-52.50	-13	39.50
1652.80	45.18	56	2.4	V	-60.6	1.30	8.90	-53.00	-13	40.00
2479.20	44.08	294	1.7	H	-59.3	2.60	10.20	-51.70	-13	38.70
2479.20	44.24	341	1.3	V	-58.5	2.60	10.20	-50.90	-13	37.90
3305.60	44.08	255	2.4	H	-56.8	1.50	11.70	-46.60	-13	33.60
3305.60	43.67	321	1.2	V	-57.3	1.50	11.70	-47.10	-13	34.10
Middle channel										
951.6	37.22	351	1.1	H	-63.4	1.37	0.0	-64.77	-13	51.77
951.6	38.18	352	1.4	V	-61.2	1.37	0.0	-62.57	-13	49.57
1673.20	46.14	257	1.3	H	-60.2	1.30	8.90	-52.60	-13	39.60
1673.20	45.84	272	1.3	V	-59.9	1.30	8.90	-52.30	-13	39.30
2509.80	43.88	198	1.2	H	-59.5	2.60	10.20	-51.90	-13	38.90
2509.80	43.97	31	2.2	V	-58.8	2.60	10.20	-51.20	-13	38.20
3346.40	44.14	226	2.3	H	-56.8	1.50	11.70	-46.60	-13	33.60
3346.40	43.77	46	2.4	V	-57.2	1.50	11.70	-47.00	-13	34.00
High channel										
966.8	37.65	293	1.5	H	-62.9	1.37	0.0	-64.27	-13	51.27
966.8	38.71	154	2.3	V	-60.6	1.37	0.0	-61.97	-13	48.97
1693.20	46.23	223	2.5	H	-60.1	1.30	8.90	-52.50	-13	39.50
1693.20	45.91	295	1.2	V	-59.8	1.30	8.90	-52.20	-13	39.20
2539.80	44.01	159	2.0	H	-59.3	2.60	10.20	-51.70	-13	38.70
2539.80	43.86	171	1.9	V	-58.9	2.60	10.20	-51.30	-13	38.30
3386.40	43.74	54	1.2	H	-57.5	1.40	11.80	-47.10	-13	34.10
3386.40	43.82	238	1.1	V	-57.2	1.40	11.80	-46.80	-13	33.80

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 (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
957.2	37.28	79	1.6	H	-63.3	1.37	0.0	-64.67	-13	51.67
957.2	38.19	163	2.1	V	-61.2	1.37	0.0	-62.57	-13	49.57
3700.40	43.50	351	1.9	H	-58.3	1.60	11.90	-48.00	-13	35.00
3700.40	44.03	219	2.1	V	-57.2	1.60	11.90	-46.90	-13	33.90
Middle channel										
965.6	37.94	36	1.6	H	-62.7	1.37	0.0	-64.07	-13	51.07
965.6	38.76	78	1.5	V	-60.6	1.37	0.0	-61.97	-13	48.97
3760.00	43.85	285	1.4	H	-58.2	1.50	11.80	-47.90	-13	34.90
3760.00	43.77	177	2.4	V	-57.8	1.50	11.80	-47.50	-13	34.50
High channel										
957.4	37.44	75	1.5	H	-63.2	1.37	0.0	-64.57	-13	51.57
957.4	38.59	228	1.8	V	-60.8	1.37	0.0	-62.17	-13	49.17
3819.60	44.01	16	1.3	H	-58.0	1.50	11.80	-47.70	-13	34.70
3819.60	44.12	188	1.7	V	-57.5	1.50	11.80	-47.20	-13	34.20

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 (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
969.9	37.42	300	2.0	H	-63.2	1.37	0.0	-64.57	-13	51.57
969.9	38.69	180	2.1	V	-60.7	1.37	0.0	-62.07	-13	49.07
3704.80	49.08	150	1.3	H	-52.7	1.60	11.90	-42.40	-13	29.40
3704.80	50.10	16	2.3	V	-51.1	1.60	11.90	-40.80	-13	27.80
Middle channel										
958.6	37.63	306	2.4	H	-63.0	1.37	0.0	-64.37	-13	51.37
958.6	38.52	141	1.2	V	-60.8	1.37	0.0	-62.17	-13	49.17
3760.00	49.25	330	1.5	H	-52.8	1.50	11.80	-42.50	-13	29.50
3760.00	49.95	267	1.8	V	-51.6	1.50	11.80	-41.30	-13	28.30
High channel										
949.7	37.82	301	1.5	H	-62.8	1.37	0.0	-64.17	-13	51.17
949.7	38.47	29	2.2	V	-60.9	1.37	0.0	-62.27	-13	49.27
3815.20	49.52	290	1.5	H	-52.5	1.50	11.80	-42.20	-13	29.20
3815.20	49.33	189	1.1	V	-52.3	1.50	11.80	-42.00	-13	29.00

30 MHz ~ 20 GHz:

AWS Band

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 (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
956.8	37.31	39	2.1	H	-63.3	1.37	0.0	-64.67	-13	51.67
956.8	38.26	250	1.9	V	-61.1	1.37	0.0	-62.47	-13	49.47
3424.80	45.97	34	1.0	H	-54.8	1.40	11.80	-44.40	-13	31.40
3424.80	46.10	168	1.8	V	-54.5	1.40	11.80	-44.10	-13	31.10
Middle channel										
954.7	37.59	314	1.8	H	-63.0	1.37	0.0	-64.37	-13	51.37
954.7	38.62	158	1.6	V	-60.7	1.37	0.0	-62.07	-13	49.07
3465.20	46.14	272	1.0	H	-54.6	1.50	12.00	-44.10	-13	31.10
3465.20	46.78	260	1.5	V	-54.7	1.50	12.00	-44.20	-13	31.20
High channel										
961.2	37.96	153	2.0	H	-62.6	1.37	0.0	-63.97	-13	50.97
961.2	38.74	271	1.8	V	-60.6	1.37	0.0	-61.97	-13	48.97
3505.20	45.95	128	2.5	H	-54.8	1.50	12.00	-44.30	-13	31.30
3505.20	47.02	240	1.2	V	-54.5	1.50	12.00	-44.00	-13	31.00

LTE Band: *(Pre-scan with all the bandwidth, and worst 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 (dBd/dBi)			
Band 2										
Test frequency range: 30 MHz ~ 20 GHz										
1.4 MHz, Low channel										
950.1	37.43	167	1.6	H	-63.2	1.37	0.0	-64.57	-13	51.57
950.1	38.18	30	1.3	V	-61.2	1.37	0.0	-62.57	-13	49.57
3701.40	53.33	71	1.9	H	-48.5	1.60	11.90	-38.20	-13	25.20
3701.40	50.74	190	2.4	V	-50.5	1.60	11.90	-40.20	-13	27.20
1.4 MHz, Middle channel										
952.6	37.40	113	1.2	H	-63.2	1.37	0.0	-64.57	-13	51.57
952.6	38.69	343	2.4	V	-60.7	1.37	0.0	-62.07	-13	49.07
3760.00	53.10	272	2.4	H	-49.0	1.50	11.80	-38.70	-13	25.70
3760.00	48.79	149	2.0	V	-52.8	1.50	11.80	-42.50	-13	29.50
1.4 MHz, High channel										
966.2	37.35	283	2.0	H	-63.2	1.37	0.0	-64.57	-13	51.57
966.2	38.14	10	1.6	V	-61.2	1.37	0.0	-62.57	-13	49.57
3818.60	51.01	258	1.1	H	-51.0	1.50	11.80	-40.70	-13	27.70
3818.60	48.25	38	1.8	V	-53.3	1.50	11.80	-43.00	-13	30.00
Band 4										
Test frequency range:30 MHz ~ 20 GHz										
1.4 MHz, Low channel										
948.3	37.47	186	1.9	H	-63.1	1.37	0.0	-64.47	-13	51.47
948.3	38.09	139	1.0	V	-61.3	1.37	0.0	-62.67	-13	49.67
3421.40	48.32	109	1.3	H	-52.5	1.40	11.80	-42.10	-13	29.10
3421.40	47.25	74	1.2	V	-53.4	1.40	11.80	-43.00	-13	30.00
1.4 MHz, Middle channel										
961.0	37.76	272	1.7	H	-62.8	1.37	0.0	-64.17	-13	51.17
961.0	38.62	344	2.3	V	-60.7	1.37	0.0	-62.07	-13	49.07
3465.00	50.15	14	1.4	H	-50.6	1.50	12.00	-40.10	-13	27.10
3465.00	48.56	124	2.2	V	-52.9	1.50	12.00	-42.40	-13	29.40
1.4 MHz, High channel										
967.4	37.59	159	2.2	H	-63.0	1.37	0.0	-64.37	-13	51.37
967.4	38.42	67	1.3	V	-60.9	1.37	0.0	-62.27	-13	49.27
3508.60	47.79	52	2.3	H	-53.0	1.50	12.00	-42.50	-13	29.50
3508.60	46.24	359	2.2	V	-55.3	1.50	12.00	-44.80	-13	31.80

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 (dBd/dBi)			
Band 5										
Test frequency range:30 MHz ~ 10 GHz										
1.4 MHz, Low channel										
966.8	37.49	170	1.4	H	-63.1	1.37	0.0	-64.47	-13	51.47
966.8	38.65	172	1.5	V	-60.7	1.37	0.0	-62.07	-13	49.07
1649.40	44.35	191	1.7	H	-63.7	1.40	8.70	-56.40	-13	43.40
1649.40	44.12	100	1.5	V	-63.7	1.40	8.70	-56.40	-13	43.40
1.4 MHz, Middle channel										
957.9	37.34	335	2.4	H	-63.3	1.37	0.0	-64.67	-13	51.67
957.9	38.26	316	1.5	V	-61.1	1.37	0.0	-62.47	-13	49.47
1673.00	46.28	98	1.9	H	-60.1	1.30	8.90	-52.50	-13	39.50
1673.00	45.33	46	1.9	V	-60.4	1.30	8.90	-52.80	-13	39.80
1.4 MHz, High channel										
942.6	37.25	234	2.2	H	-63.3	1.37	0.0	-64.67	-13	51.67
942.6	38.11	148	2.3	V	-61.2	1.37	0.0	-62.57	-13	49.57
2544.90	46.03	258	2.4	H	-57.3	2.60	10.20	-49.70	-13	36.70
2544.90	45.16	306	1.6	V	-57.6	2.60	10.20	-50.00	-13	37.00
Band 7										
Test frequency range: 30 MHz ~ 26.5 GHz										
5 MHz, Low channel										
952.1	37.82	39	1.4	H	-62.8	1.37	0.0	-64.17	-25	39.17
952.1	38.50	333	1.5	V	-60.8	1.37	0.0	-62.17	-25	37.17
5005.00	44.56	195	1.8	H	-56.0	1.70	12.00	-45.70	-25	20.70
5005.00	44.13	142	1.3	V	-55.9	1.70	12.00	-45.60	-25	20.60
5 MHz, Middle channel										
963.5	37.55	153	1.5	H	-63.0	1.37	0.0	-64.37	-25	39.37
963.5	38.33	25	2.2	V	-61.0	1.37	0.0	-62.37	-25	37.37
5070.00	45.77	78	2.0	H	-54.2	1.60	12.10	-43.70	-25	18.70
5070.00	44.68	191	1.3	V	-55.3	1.60	12.10	-44.80	-25	19.80
5 MHz, High channel										
947.0	37.68	201	1.8	H	-62.9	1.37	0.0	-64.27	-25	39.27
947.0	38.72	347	2.0	V	-60.6	1.37	0.0	-61.97	-25	36.97
5135.00	44.36	120	2.4	H	-55.6	1.60	12.10	-45.10	-25	20.10
5135.00	44.19	344	2.4	V	-55.8	1.60	12.10	-45.30	-25	20.30

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 (dBd/dBi)			
Band 12										
Test frequency range: 30 MHz ~ 10GHz										
1.4 MHz, Low channel										
954.8	37.24	108	1.2	H	-63.4	1.37	0.0	-64.77	-13	51.77
954.8	38.17	200	2.1	V	-61.2	1.37	0.0	-62.57	-13	49.57
1399.40	45.27	28	2.3	H	-62.9	1.60	7.90	-56.60	-13	43.60
1399.40	44.36	242	1.2	V	-64.1	1.60	7.90	-57.80	-13	44.80
1.4 MHz, Middle channel										
961.2	37.91	202	1.3	H	-62.7	1.37	0.0	-64.07	-13	51.07
961.2	38.49	322	2.2	V	-60.9	1.37	0.0	-62.27	-13	49.27
1415.00	47.51	222	1.1	H	-60.7	1.60	7.90	-54.40	-13	41.40
1415.00	45.56	161	2.0	V	-62.9	1.60	7.90	-56.60	-13	43.60
1.4 MHz, High channel										
959.6	37.57	99	1.1	H	-63.0	1.37	0.0	-64.37	-13	51.37
959.6	38.23	251	2.0	V	-61.1	1.37	0.0	-62.47	-13	49.47
1430.60	46.45	302	1.7	H	-61.7	1.60	7.90	-55.40	-13	42.40
1430.60	44.92	65	1.7	V	-63.5	1.60	7.90	-57.20	-13	44.20
Band 17										
Test frequency range: 30 MHz ~ 10GHz										
5 MHz, Low channel										
957.4	37.08	337	1.7	H	-63.5	1.37	0.0	-64.87	-13	51.87
957.4	38.67	223	2.2	V	-60.7	1.37	0.0	-62.07	-13	49.07
1413.00	52.28	31	2.3	H	-55.9	1.60	7.90	-49.60	-13	36.60
1413.00	49.47	330	1.8	V	-59.0	1.60	7.90	-52.70	-13	39.70
5 MHz, Middle channel										
960.6	37.28	139	2.3	H	-63.3	1.37	0.0	-64.67	-13	51.67
960.6	38.84	162	1.8	V	-60.5	1.37	0.0	-61.87	-13	48.87
1420.00	56.21	42	1.7	H	-52.0	1.60	7.90	-45.70	-13	32.70
1420.00	54.35	36	1.8	V	-54.1	1.60	7.90	-47.80	-13	34.80
5 MHz, High channel										
962.5	37.96	252	2.4	H	-62.6	1.37	0.0	-63.97	-13	50.97
962.5	38.78	159	2.3	V	-60.6	1.37	0.0	-61.97	-13	48.97
1427.00	55.38	298	1.9	H	-52.8	1.60	7.90	-46.50	-13	33.50
1427.00	48.56	110	1.7	V	-59.9	1.60	7.90	-53.60	-13	40.60

Note:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level
dBd is for the ERP, dBi is for EIRP.

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.

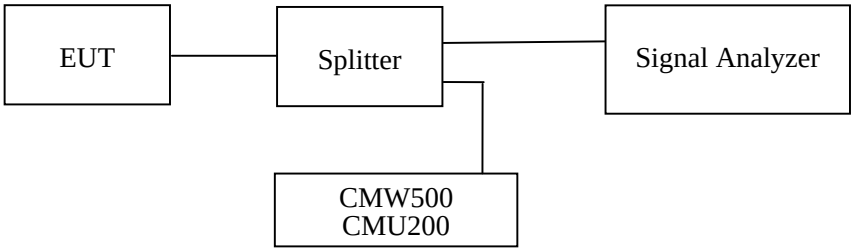
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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:	23 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

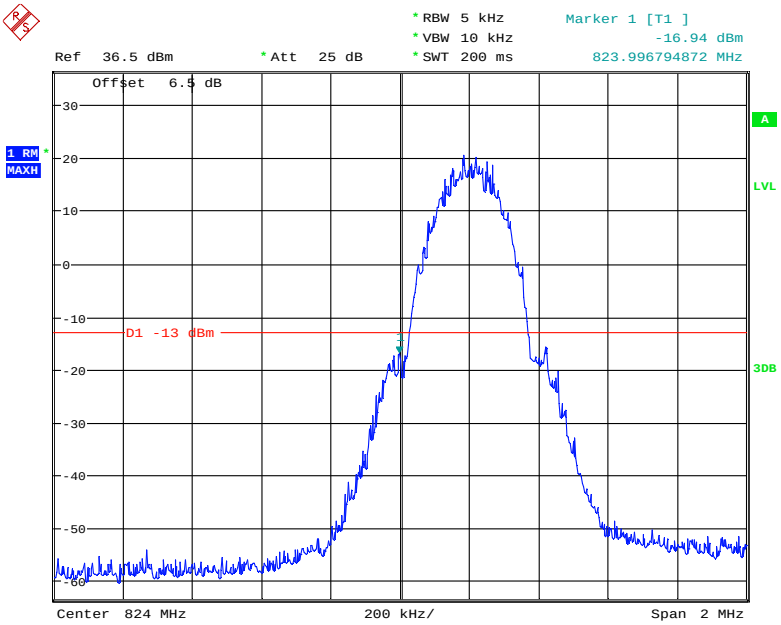
The testing was performed by Andy Yu from 2020-10-10 to 2020-11-02.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

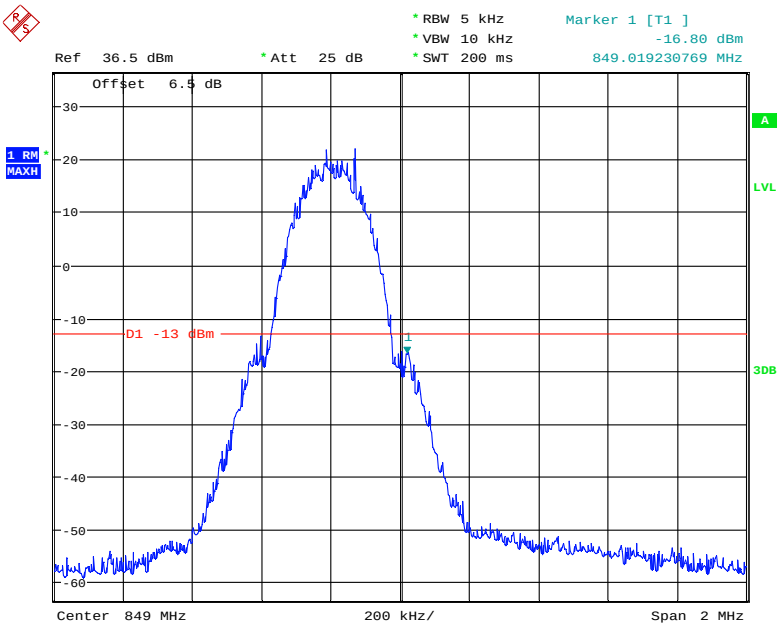
Please refer to the following plots.

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



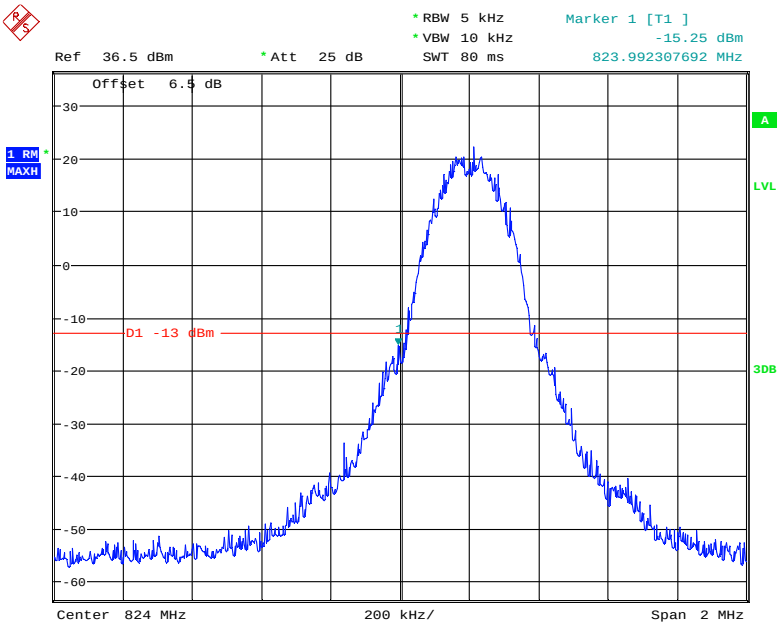
Date: 10.OCT.2020 10:01:26

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



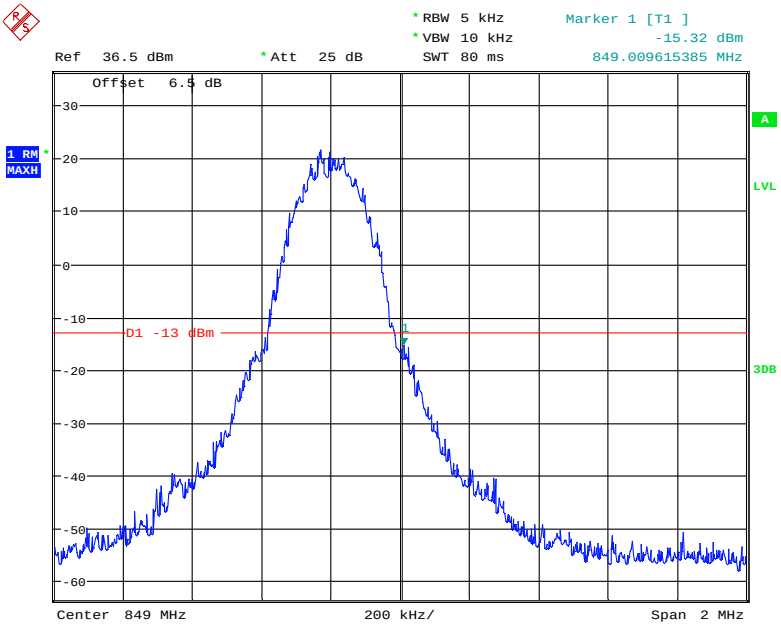
Date: 10.OCT.2020 09:58:01

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



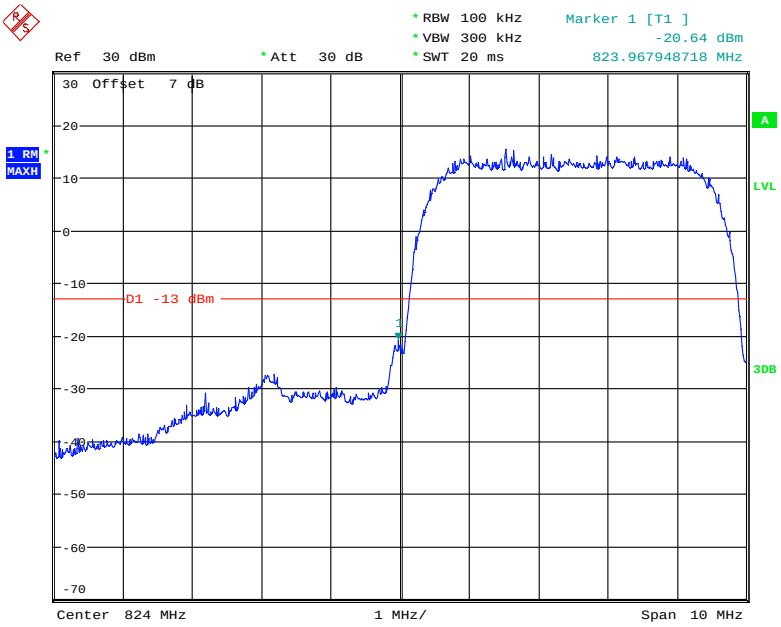
Date: 10.OCT.2020 10:51:26

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



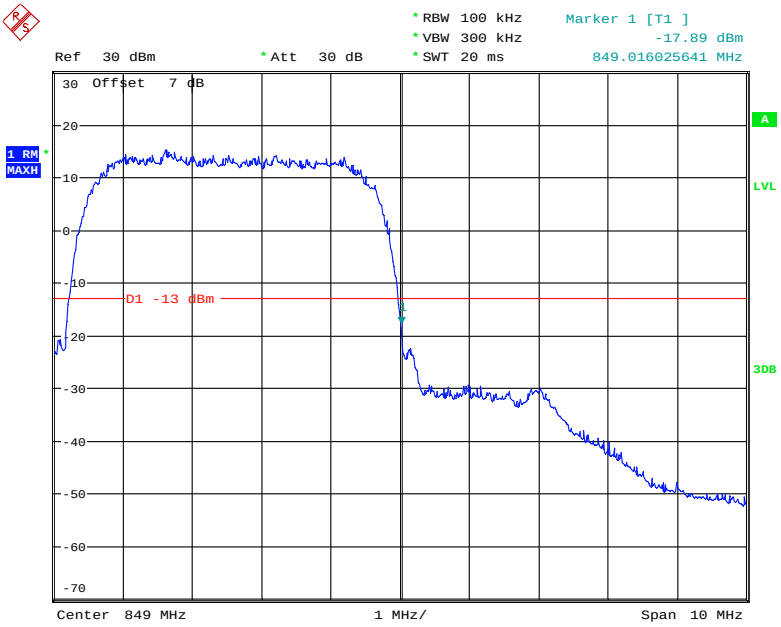
Date: 10.OCT.2020 10:50:21

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



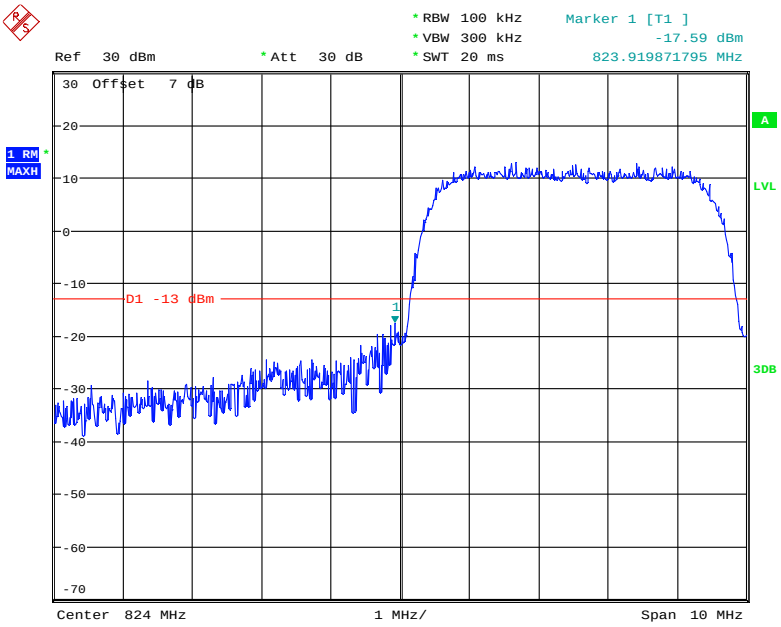
Date: 30.OCT.2020 18:33:55

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



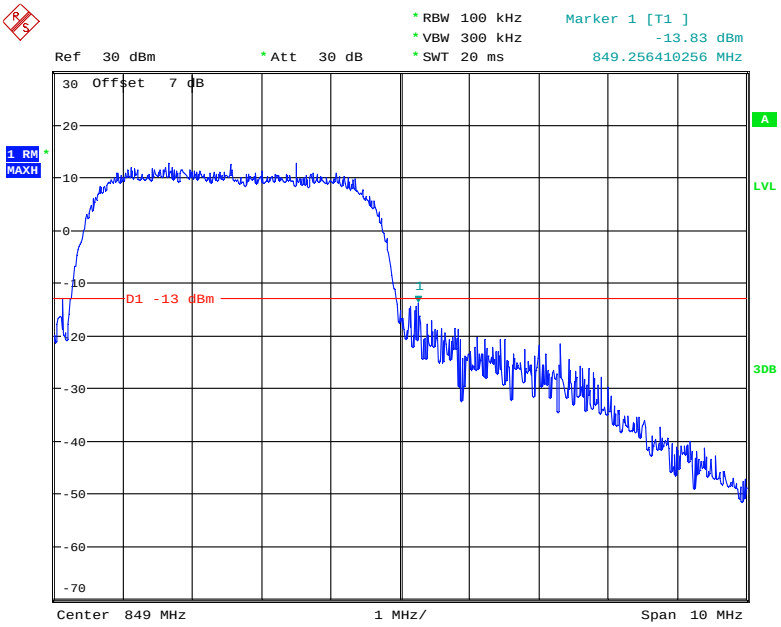
Date: 30.OCT.2020 18:33:19

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



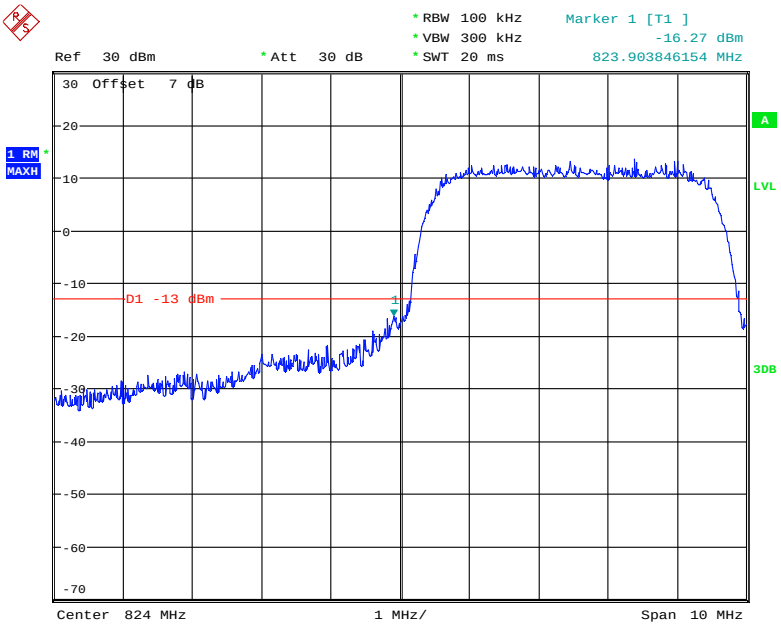
Date: 30.OCT.2020 18:29:24

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



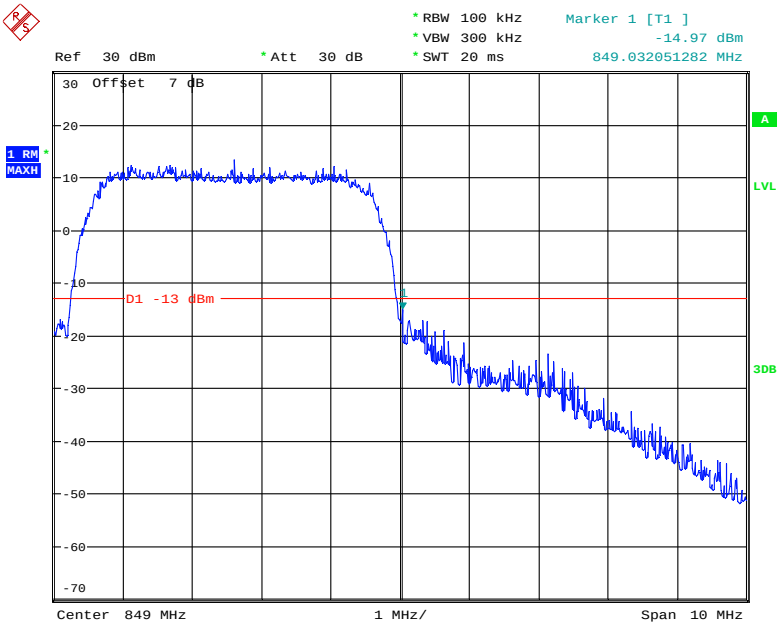
Date: 30.OCT.2020 18:30:40

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



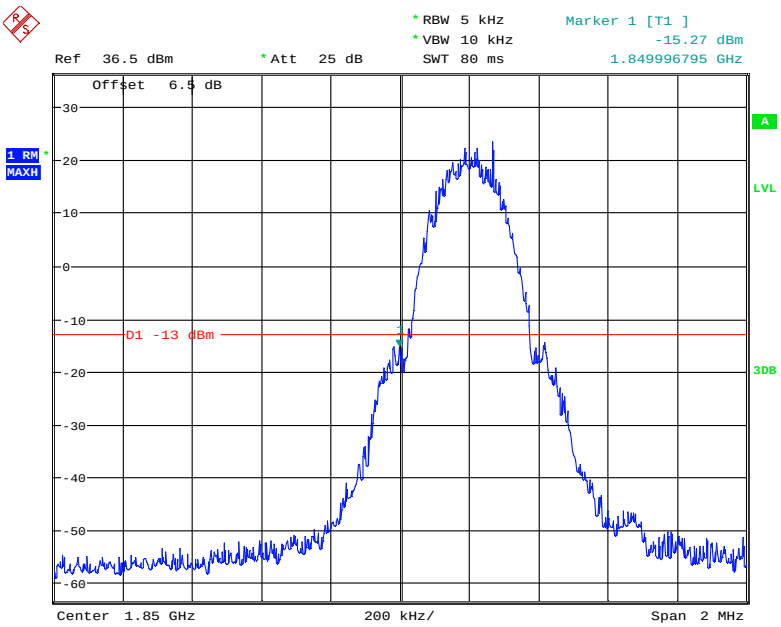
Date: 30.OCT.2020 18:59:00

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



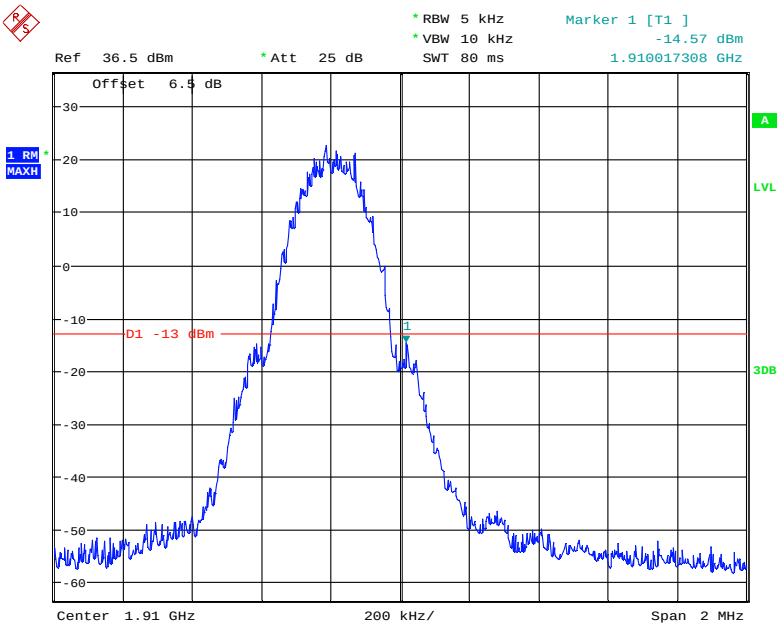
Date: 30.OCT.2020 18:59:56

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



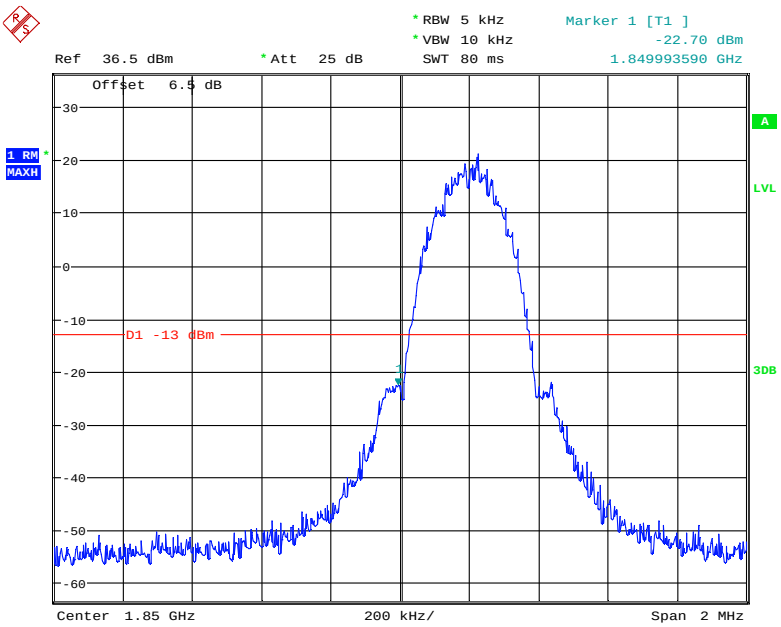
Date: 10.OCT.2020 10:59:09

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



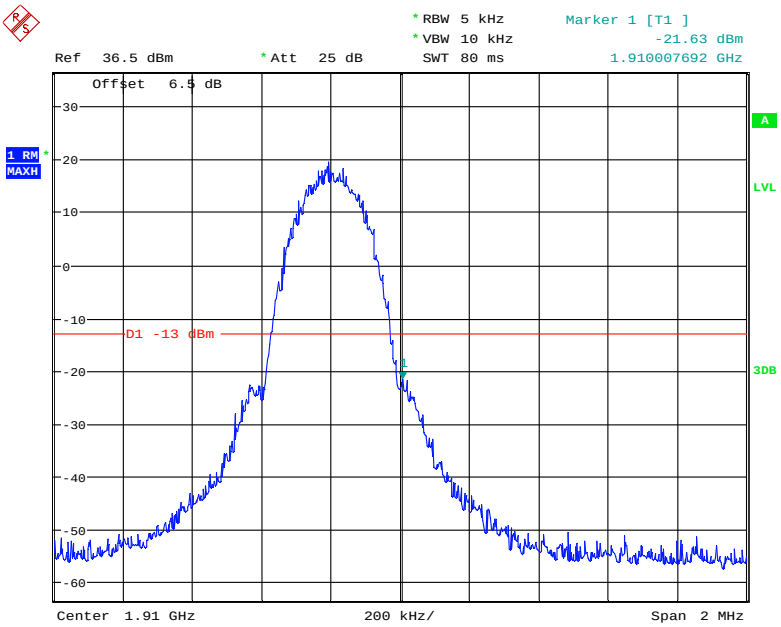
Date: 10.OCT.2020 10:58:02

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



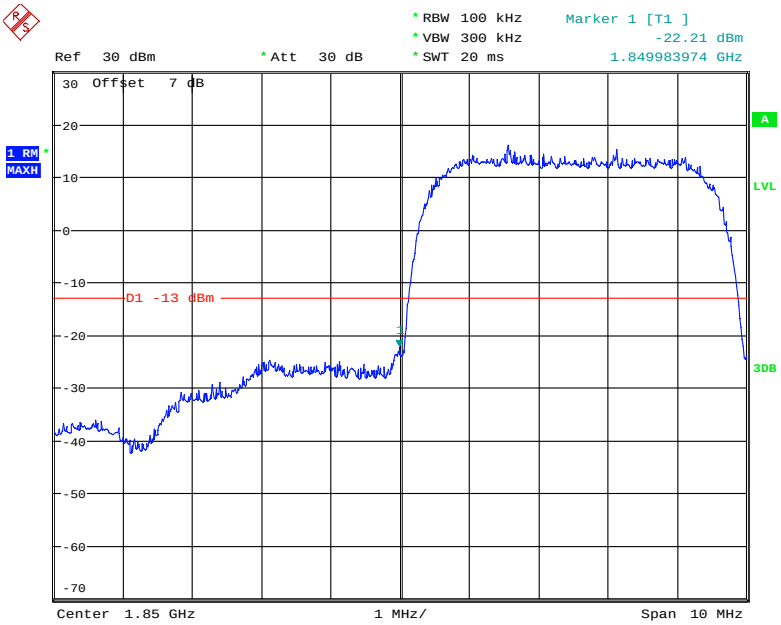
Date: 10.OCT.2020 10:54:18

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



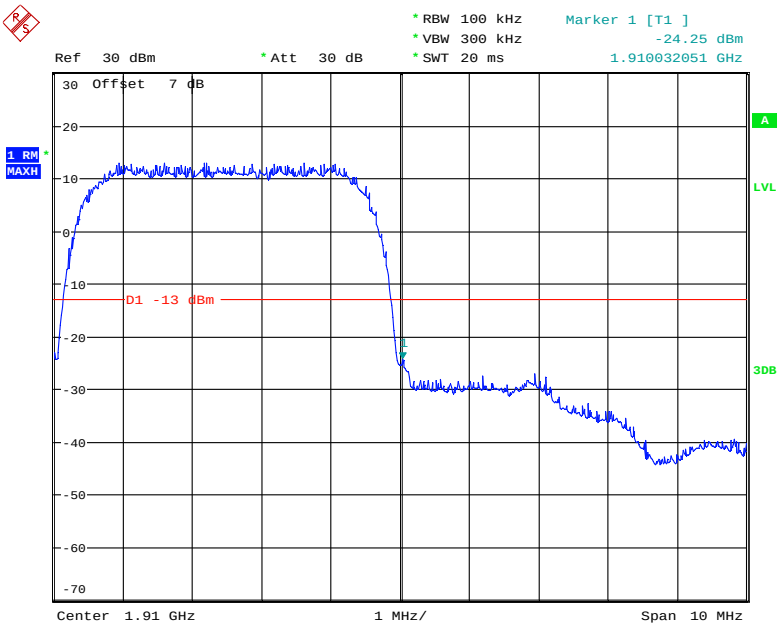
Date: 10.OCT.2020 10:56:02

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



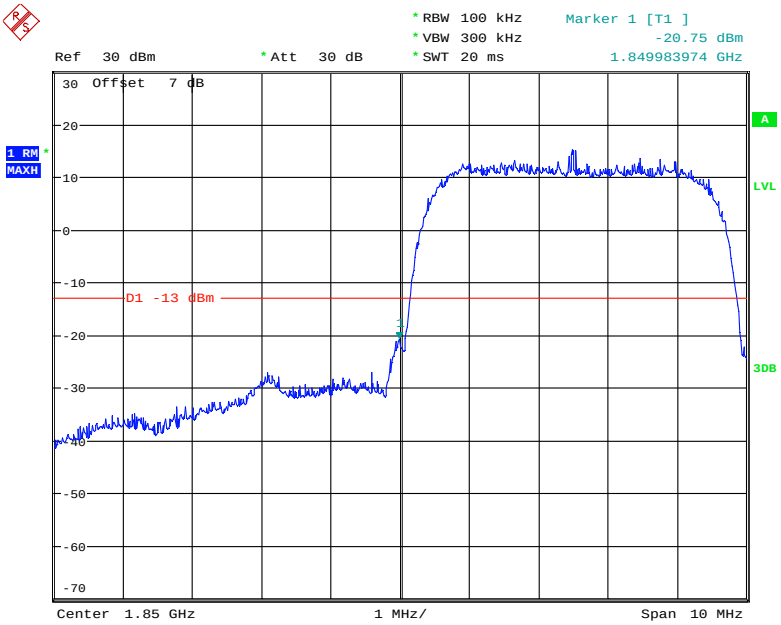
Date: 30.OCT.2020 18:36:30

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



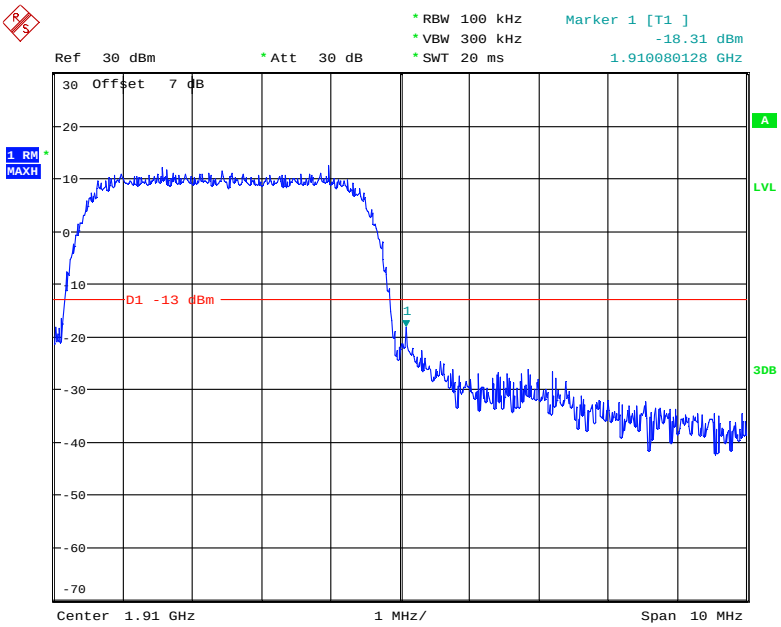
Date: 30.OCT.2020 18:35:55

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



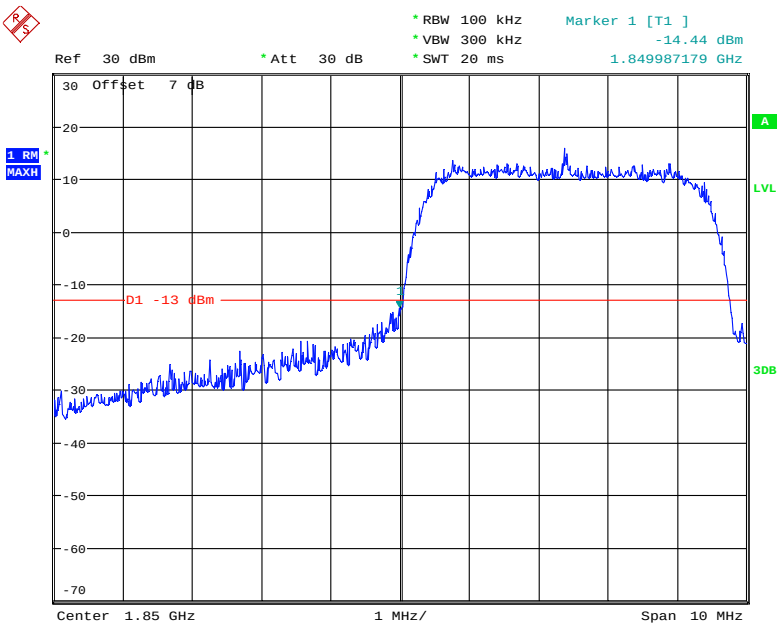
Date: 30.OCT.2020 18:38:54

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



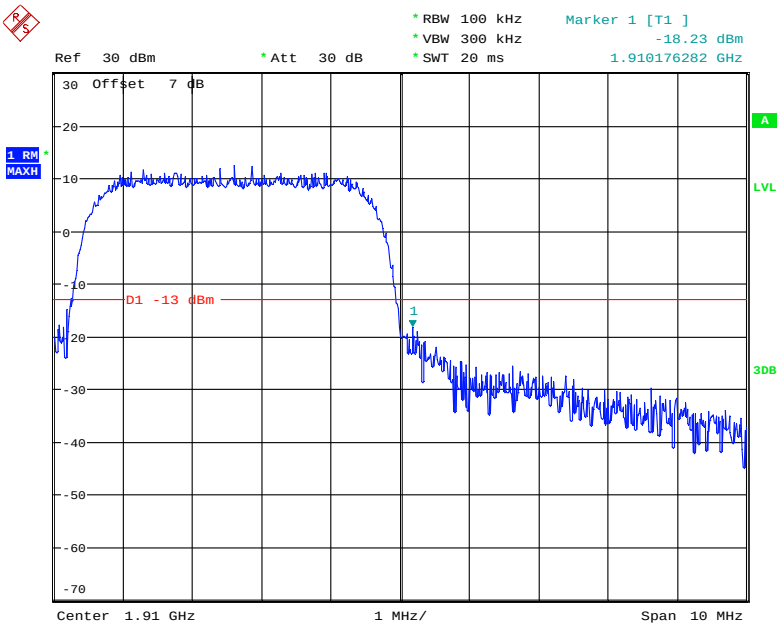
Date: 30.OCT.2020 18:26:21

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



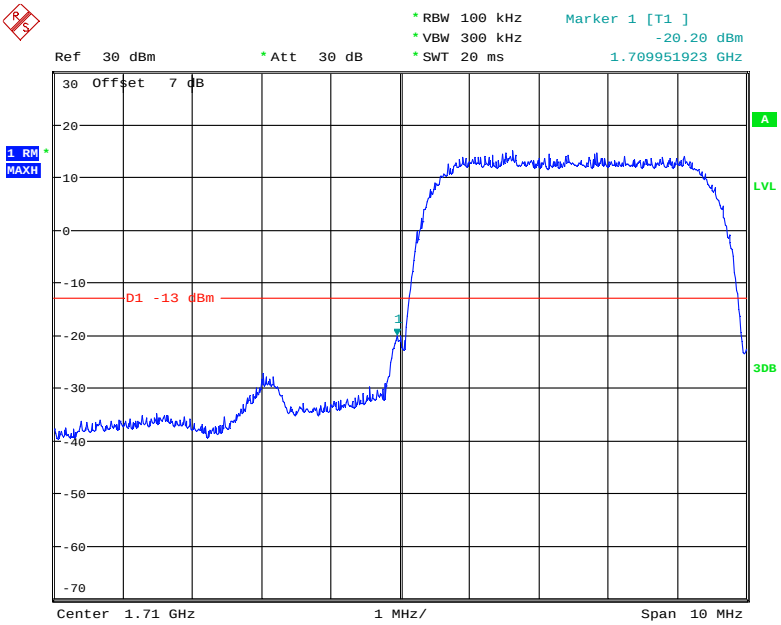
Date: 30.OCT.2020 18:45:20

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



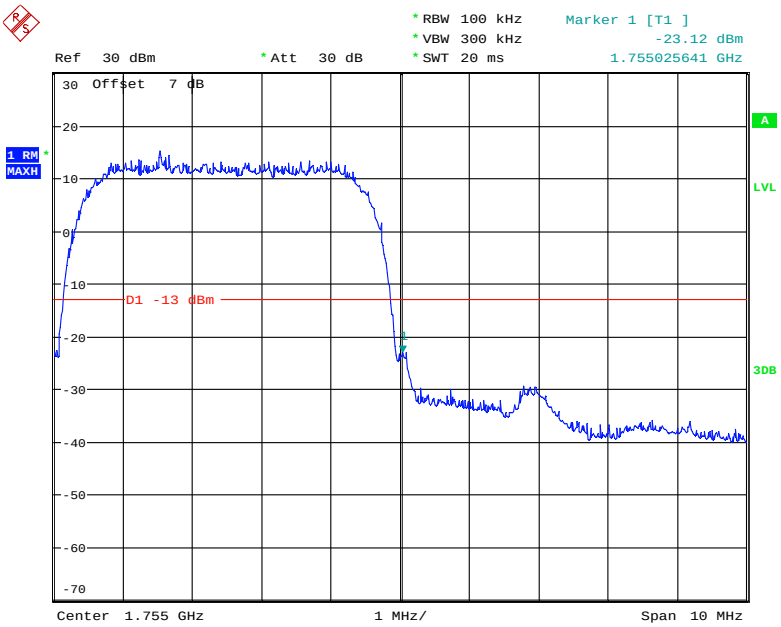
Date: 30.OCT.2020 18:55:09

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



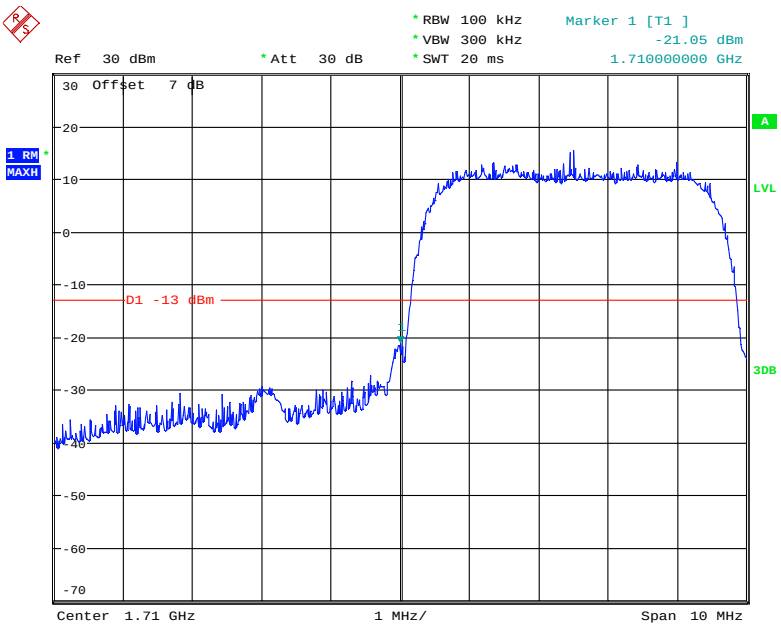
Date: 30.OCT.2020 18:35:14

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



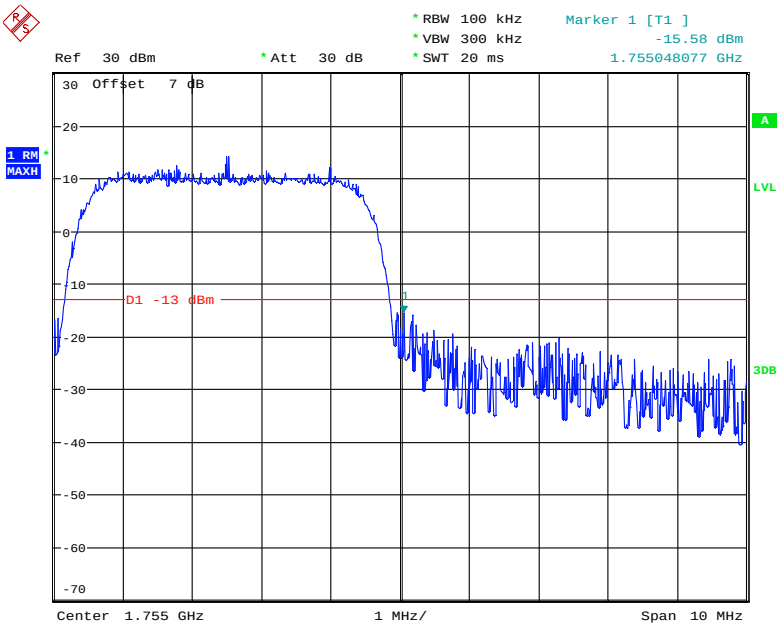
Date: 30.OCT.2020 18:34:35

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



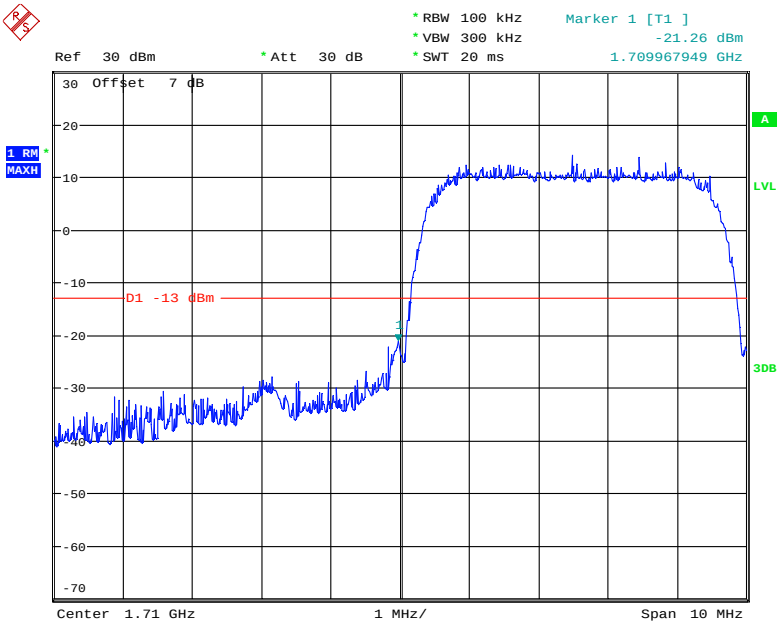
Date: 30.OCT.2020 18:27:06

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



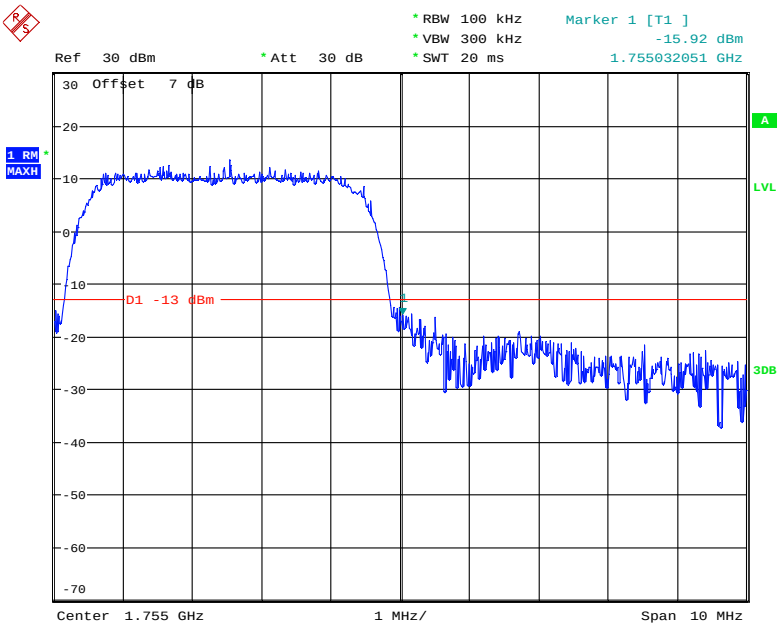
Date: 30.OCT.2020 18:28:32

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



Date: 30.OCT.2020 18:56:34

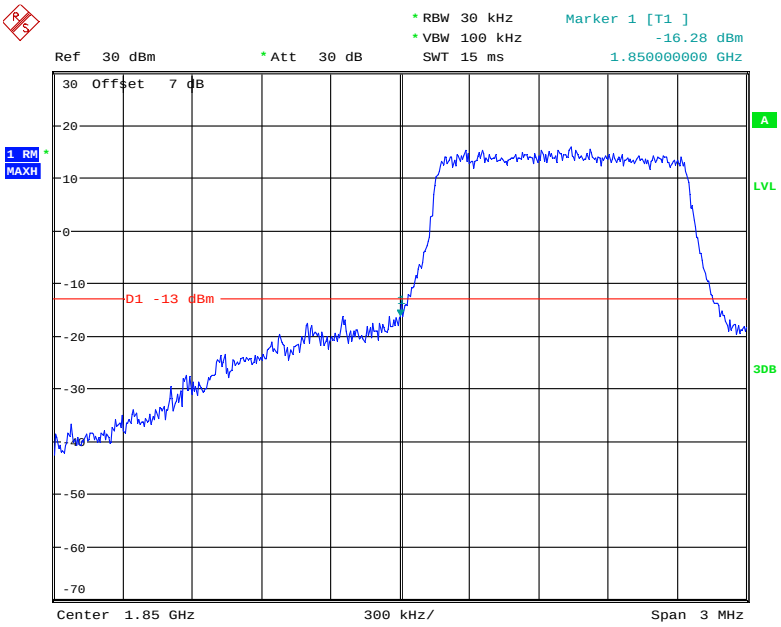
AWS Band, Right Band Edge for HSUPA (BPSK) Mode



Date: 30.OCT.2020 18:57:36

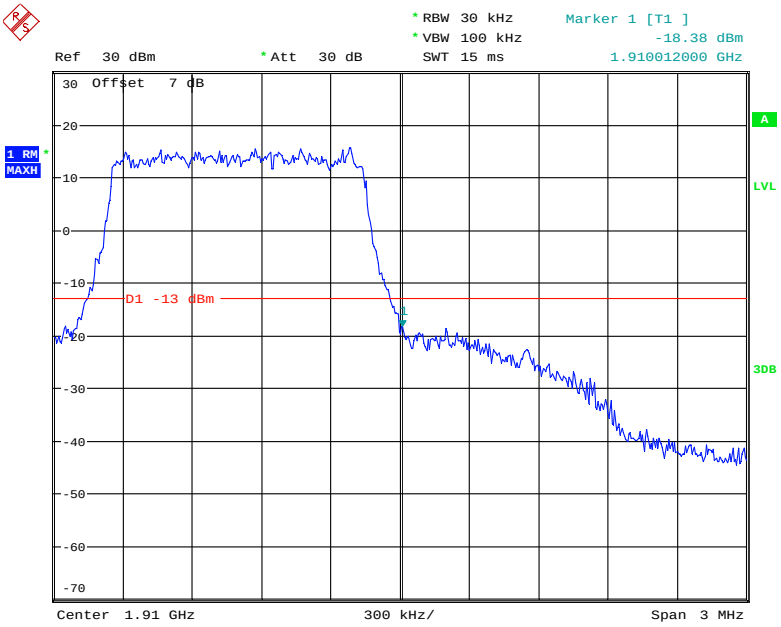
Band 2:

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



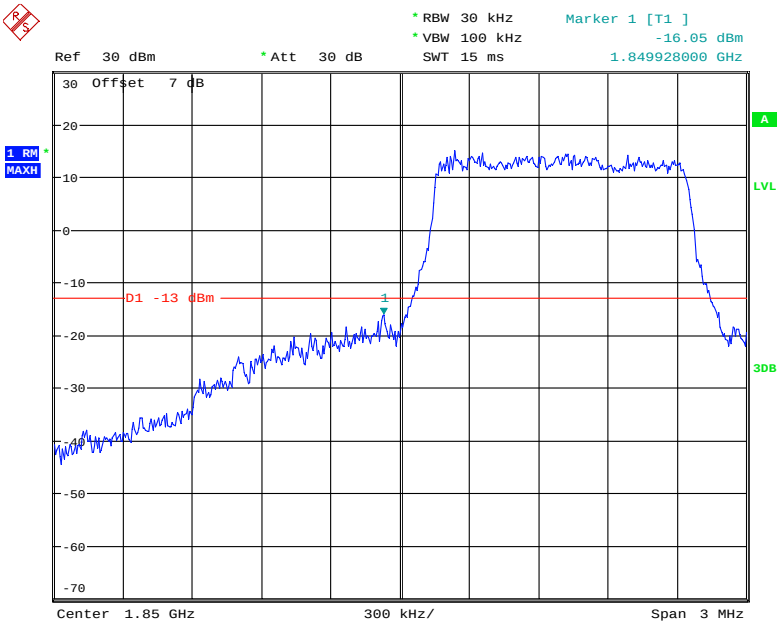
Date: 29.OCT.2020 11:18:00

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



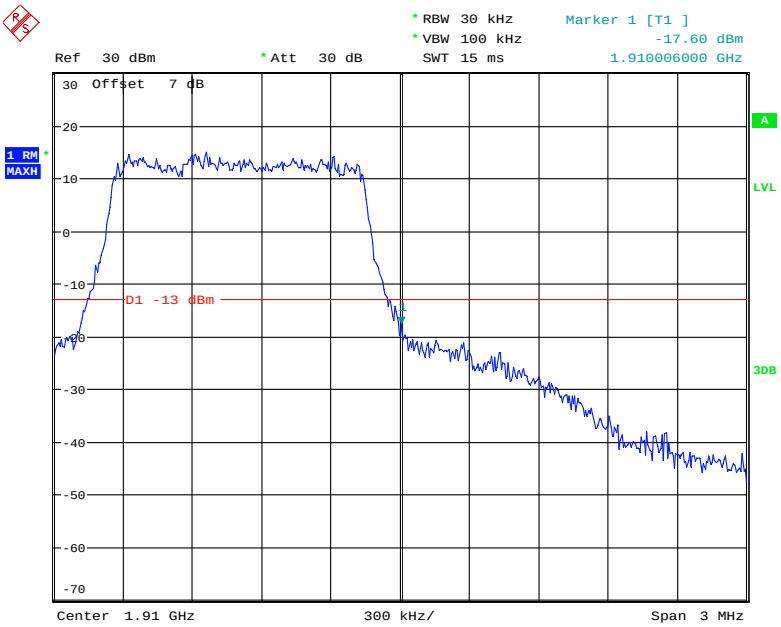
Date: 29.OCT.2020 11:18:40

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



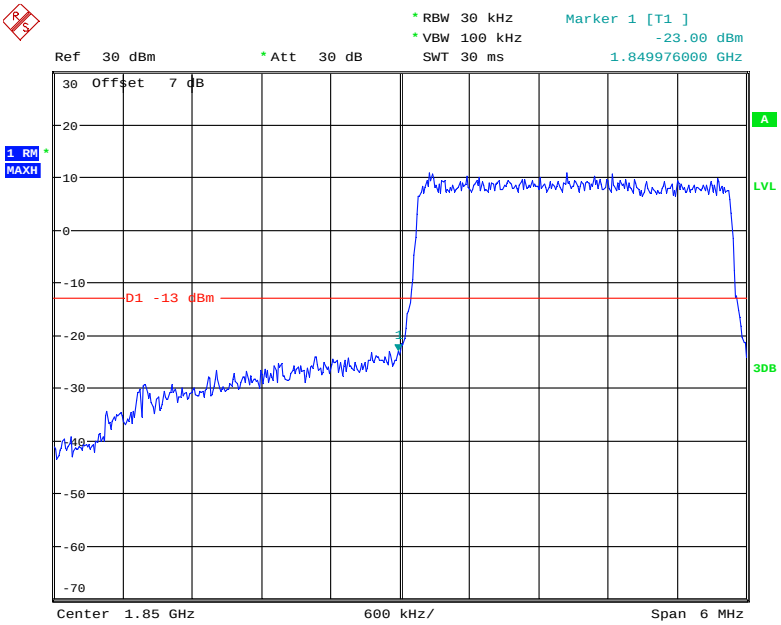
Date: 29.OCT.2020 11:18:19

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



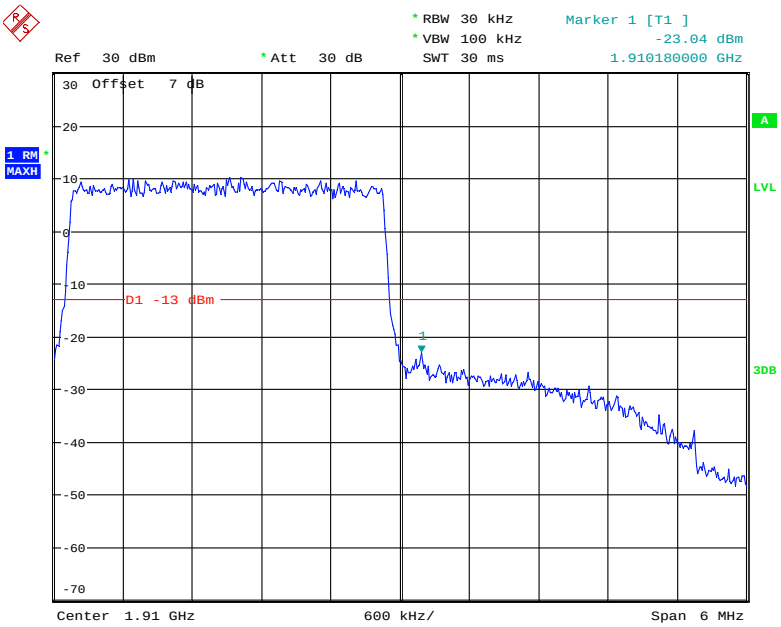
Date: 29.OCT.2020 11:18:59

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



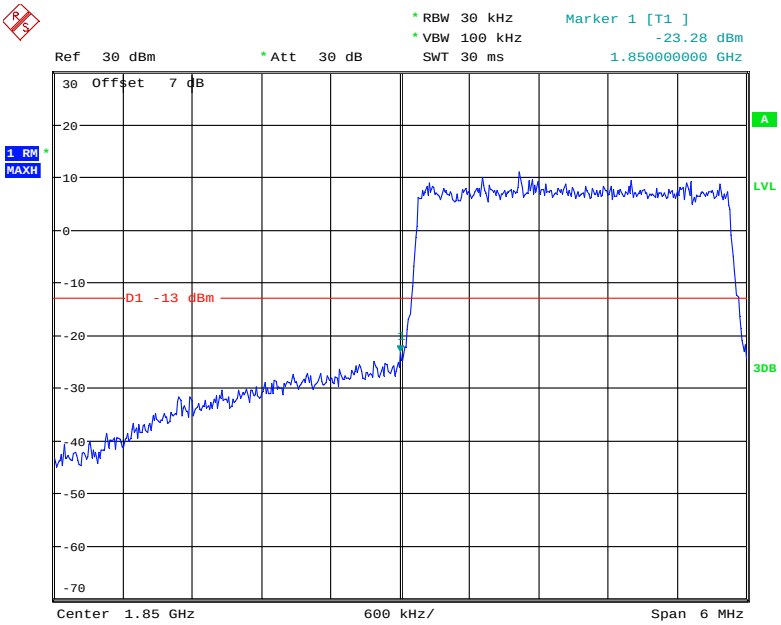
Date: 29.OCT.2020 11:19:18

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



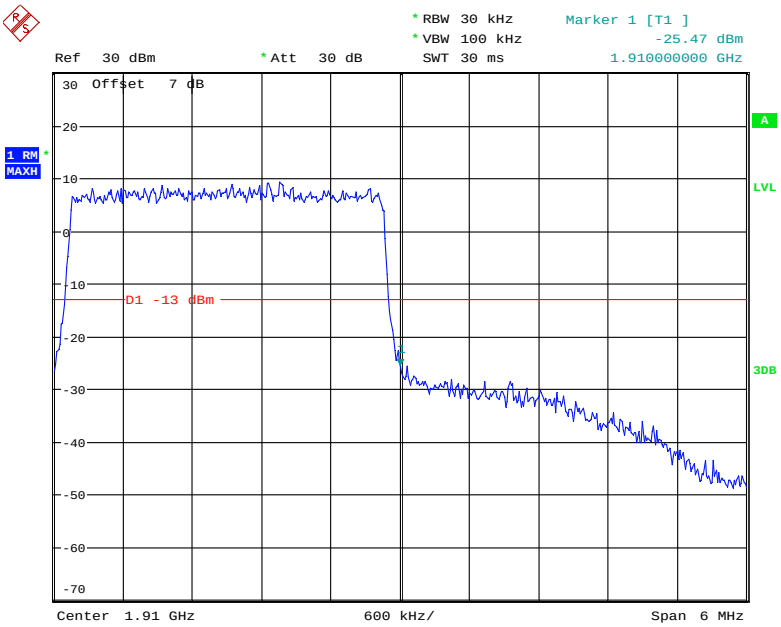
Date: 29.OCT.2020 11:19:55

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



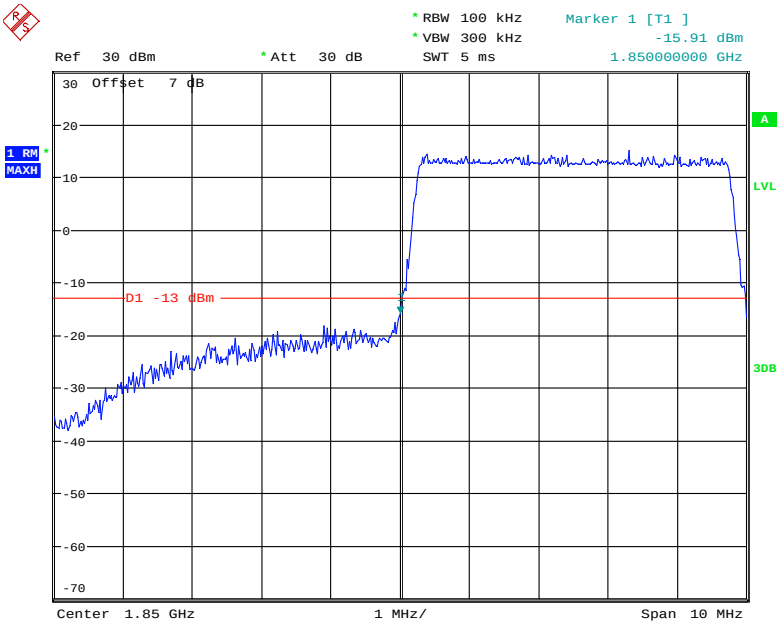
Date: 29.OCT.2020 11:19:34

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



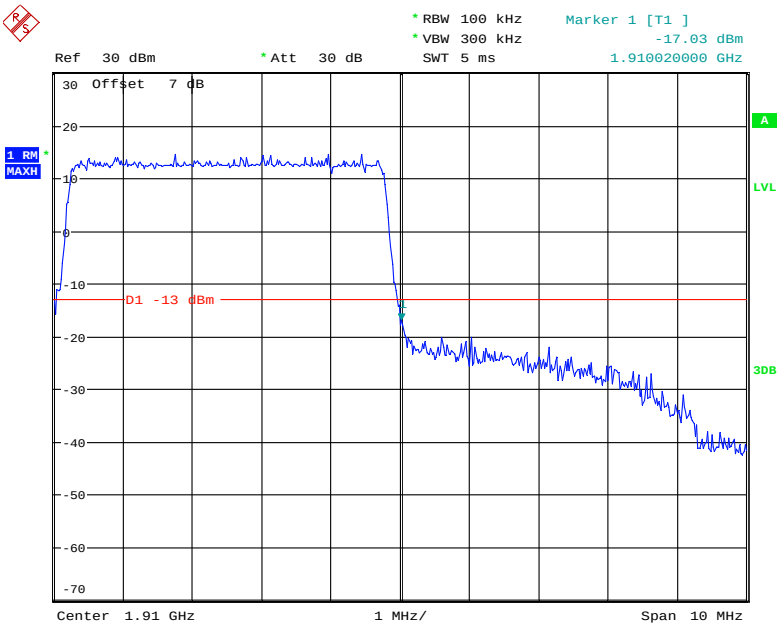
Date: 29.OCT.2020 11:20:11

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



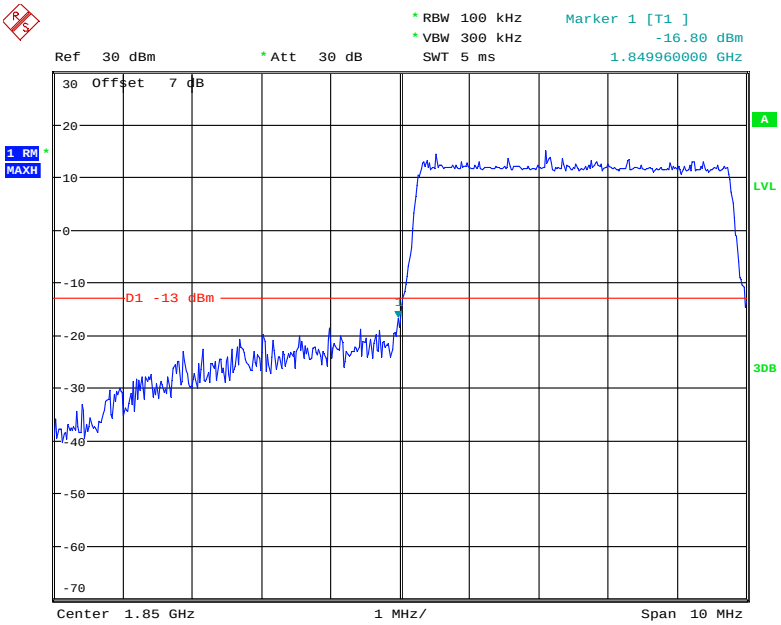
Date: 29.OCT.2020 11:20:30

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



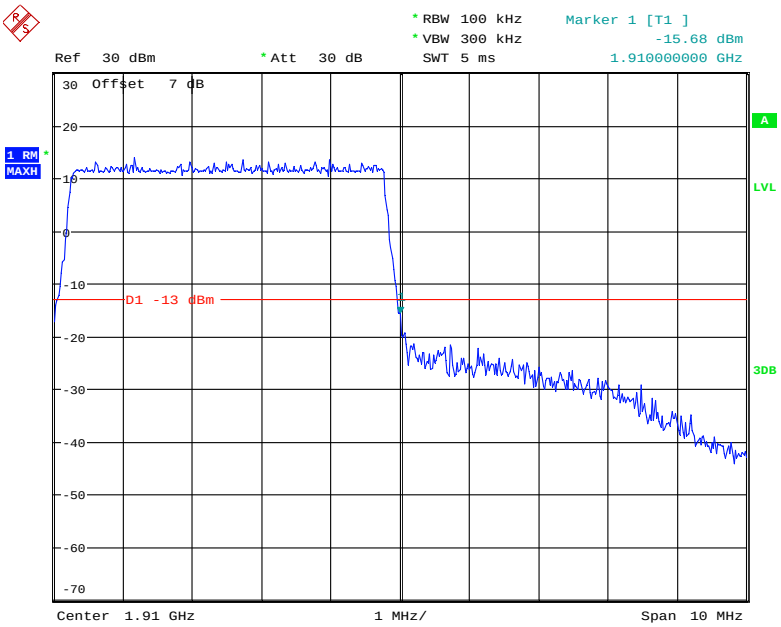
Date: 29.OCT.2020 11:21:07

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



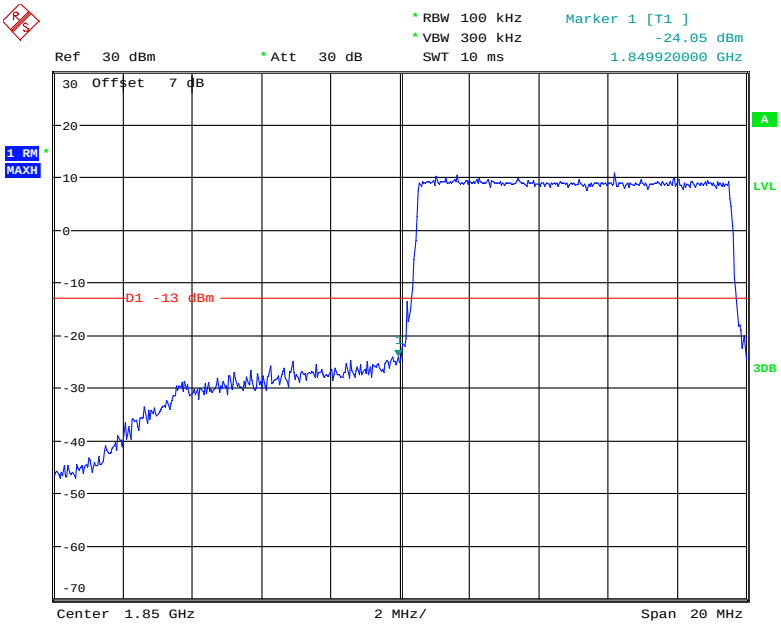
Date: 29.OCT.2020 11:20:46

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



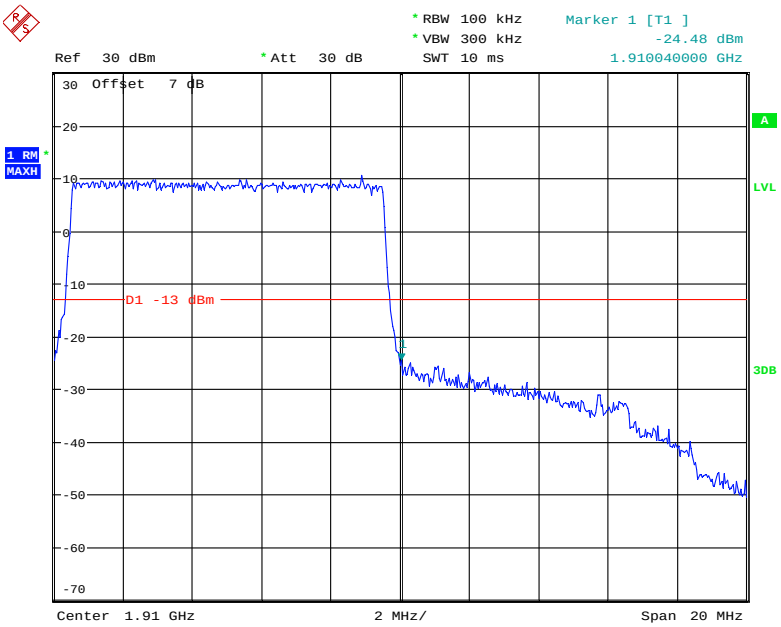
Date: 29.OCT.2020 11:21:26

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



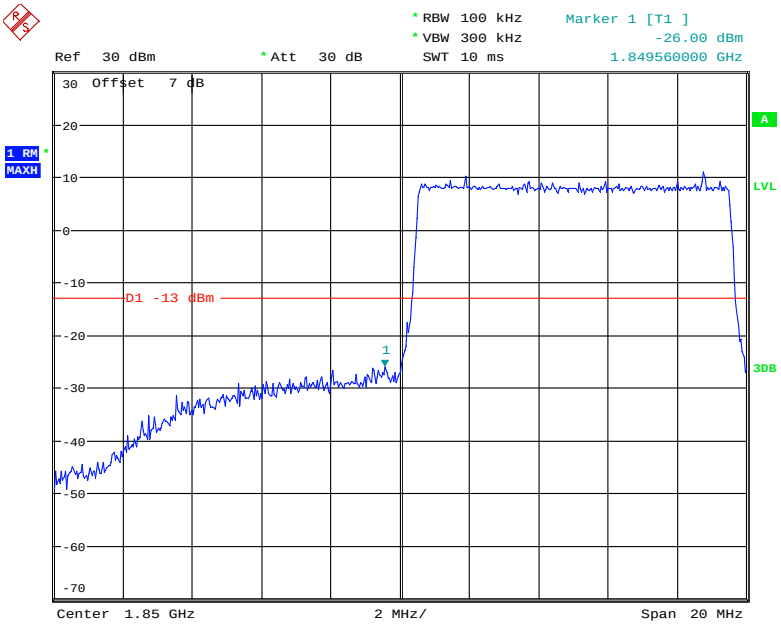
Date: 29.OCT.2020 11:21:46

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



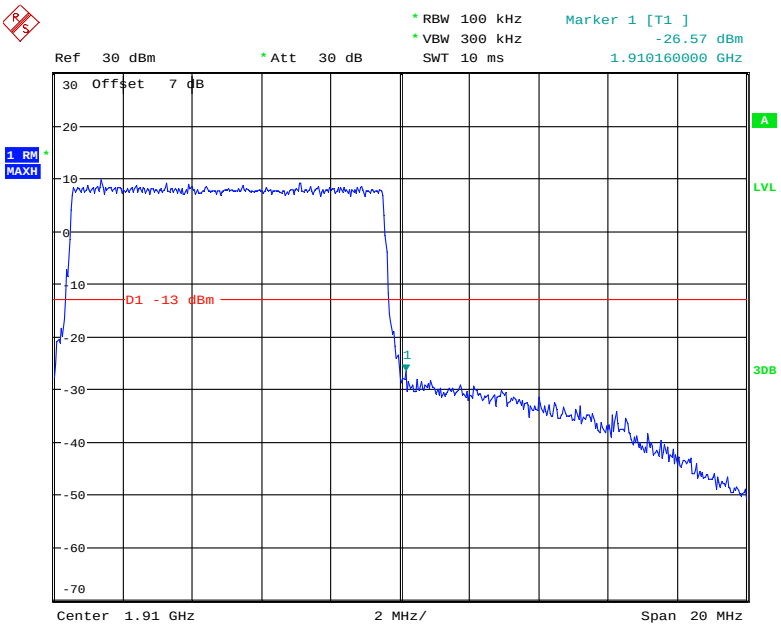
Date: 29.OCT.2020 11:22:25

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



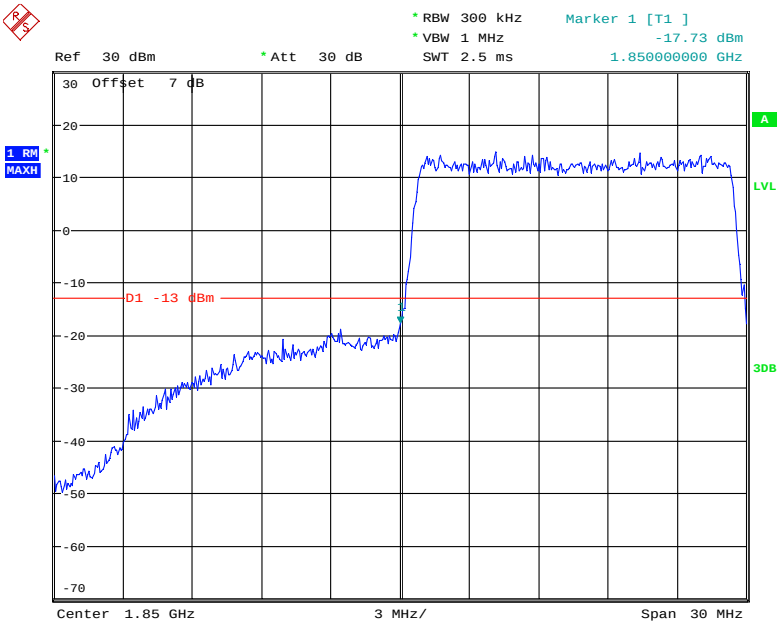
Date: 29.OCT.2020 11:22:07

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



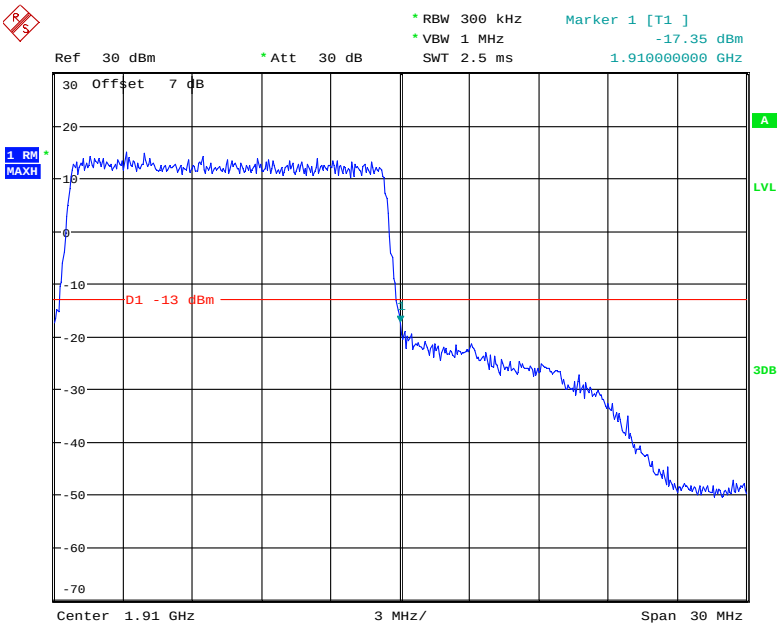
Date: 29.OCT.2020 11:22:46

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



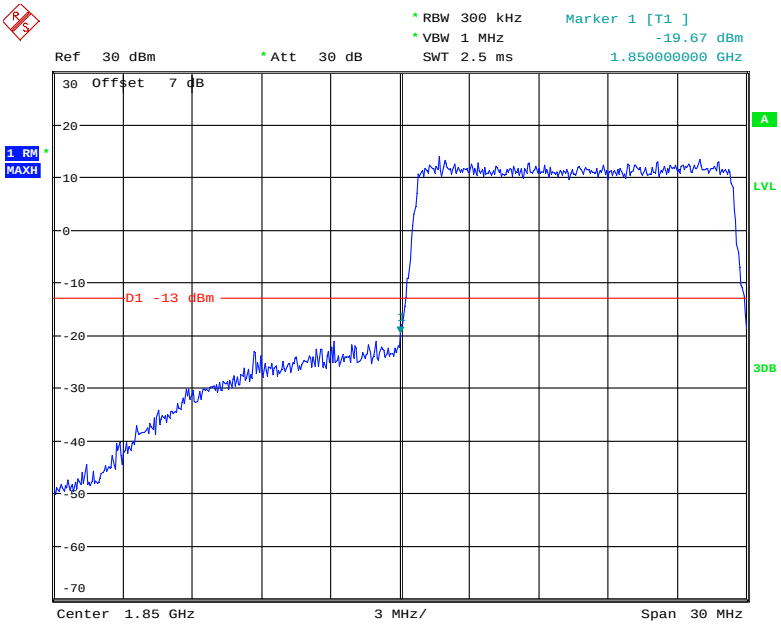
Date: 29.OCT.2020 11:23:08

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



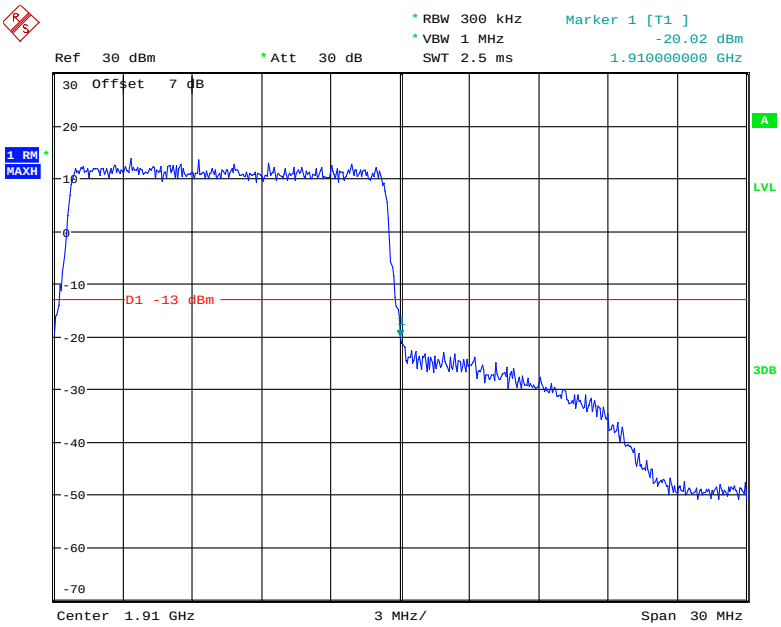
Date: 29.OCT.2020 11:23:52

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



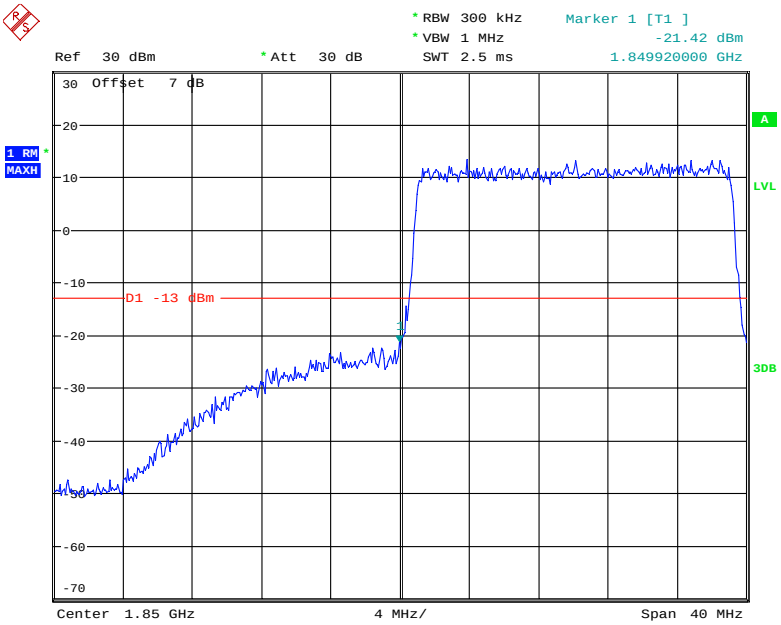
Date: 29.OCT.2020 11:23:31

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



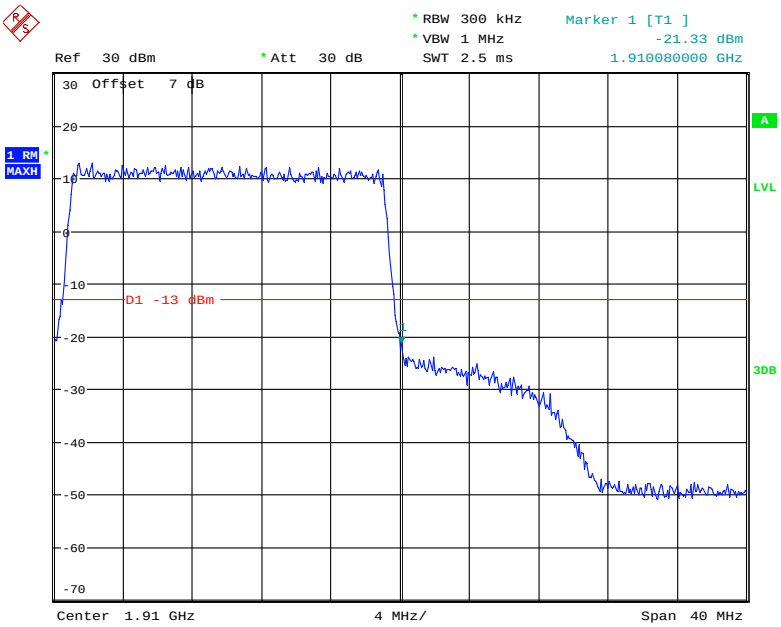
Date: 29.OCT.2020 11:24:12

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



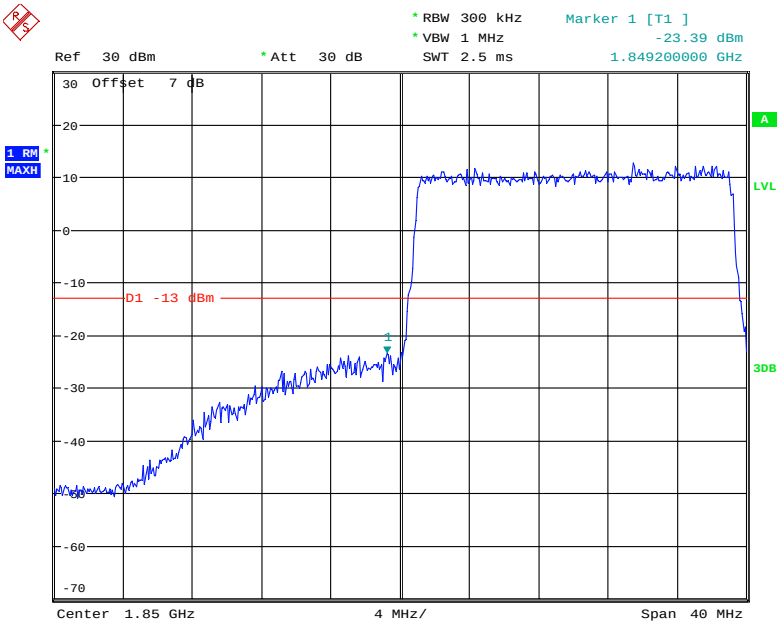
Date: 29.OCT.2020 11:24:34

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



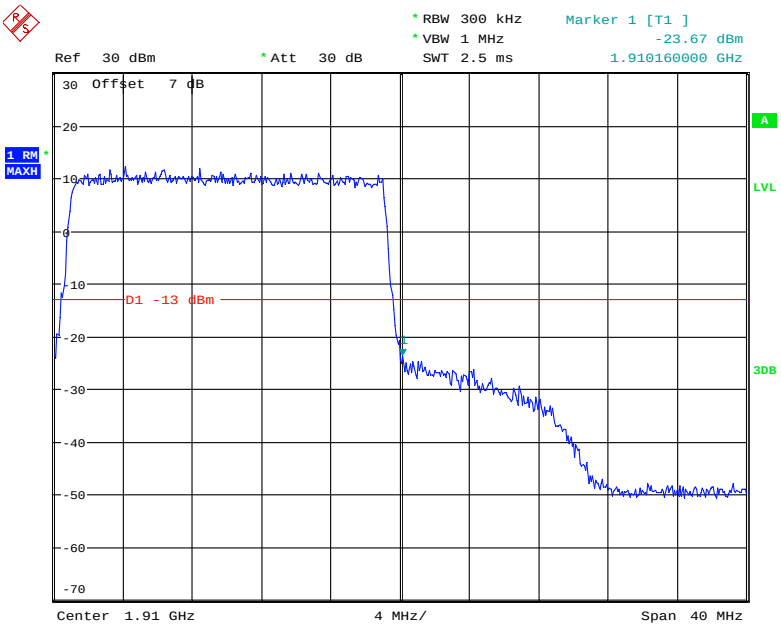
Date: 29.OCT.2020 11:25:14

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



Date: 29.OCT.2020 11:24:54

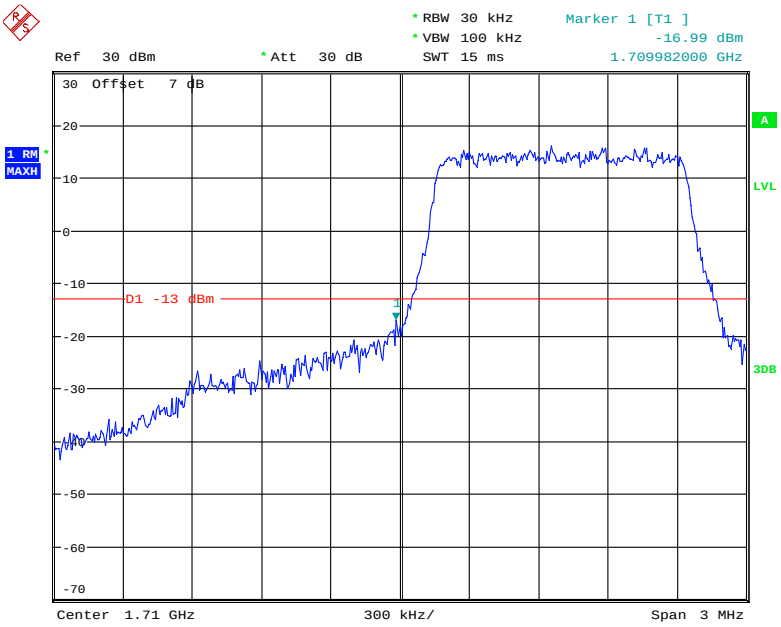
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 29.OCT.2020 11:25:34

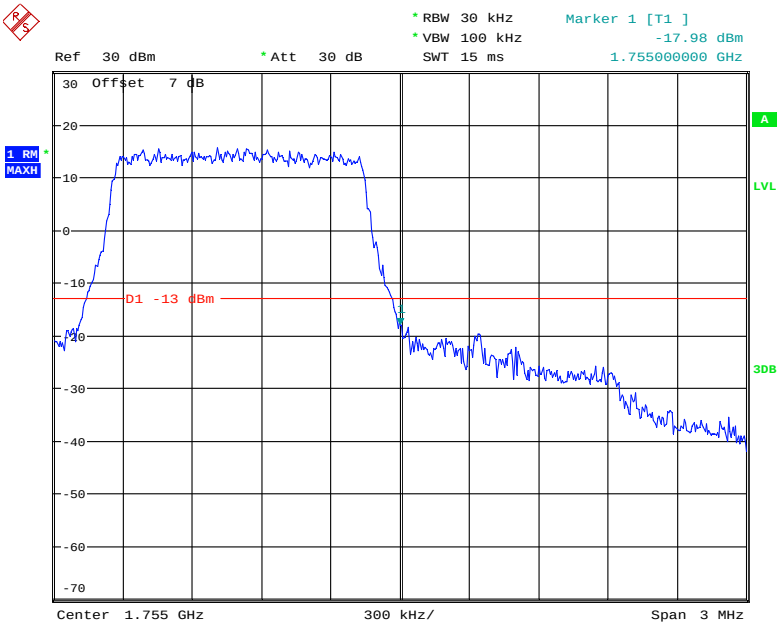
Band 4:

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



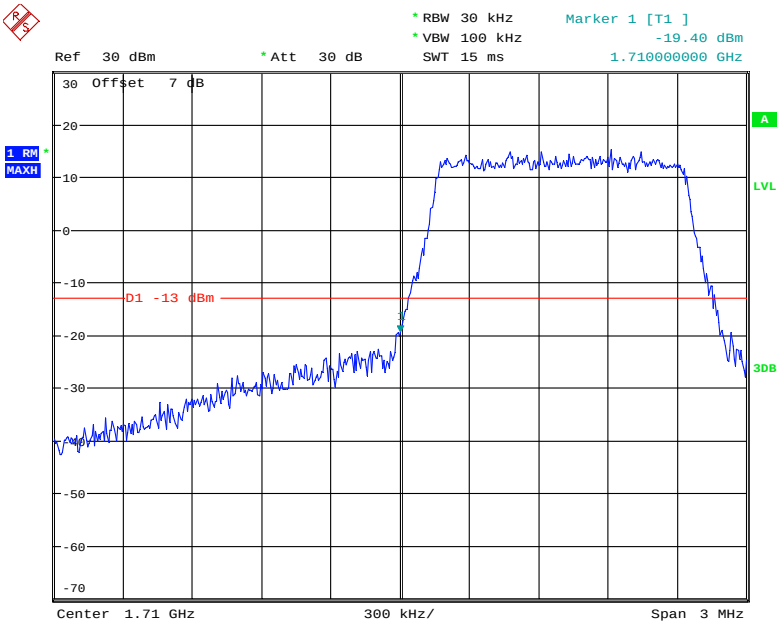
Date: 29.OCT.2020 11:26:00

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



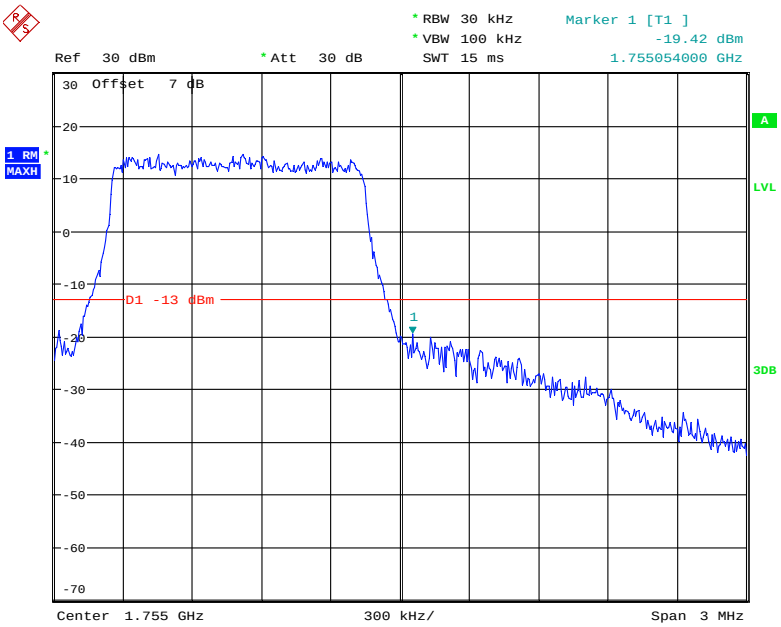
Date: 29.OCT.2020 11:26:39

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



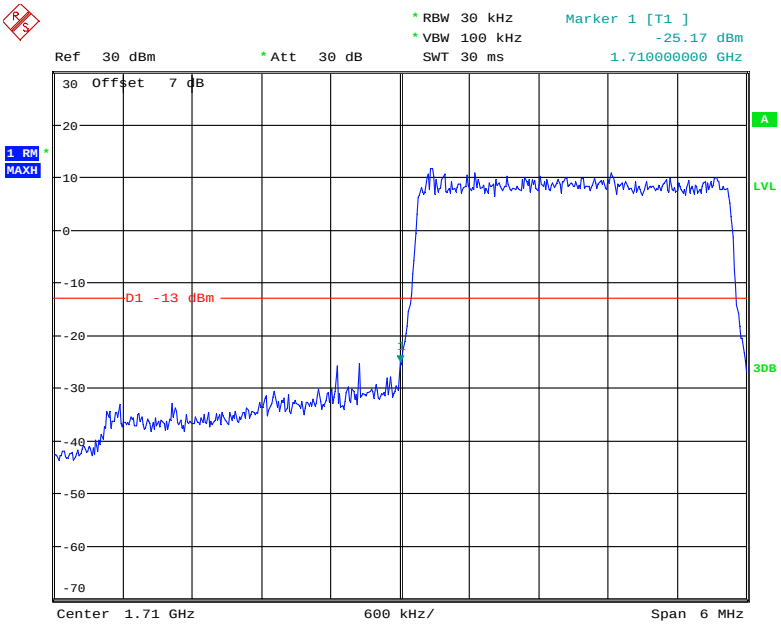
Date: 29.OCT.2020 11:26:19

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



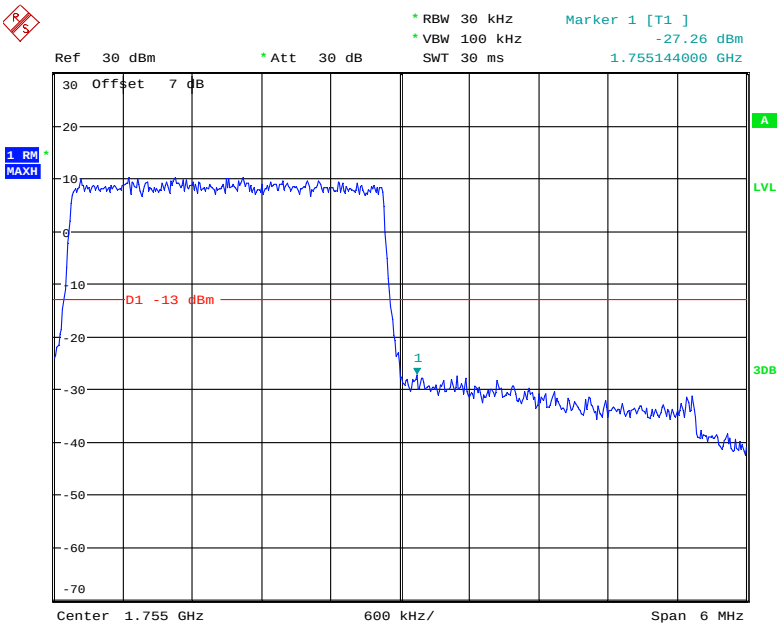
Date: 29.OCT.2020 11:26:56

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



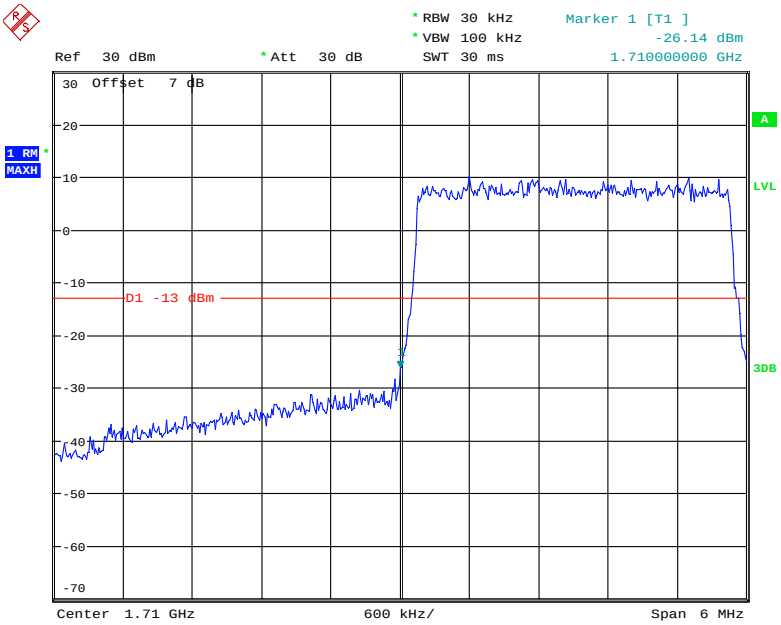
Date: 29.OCT.2020 11:27:15

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



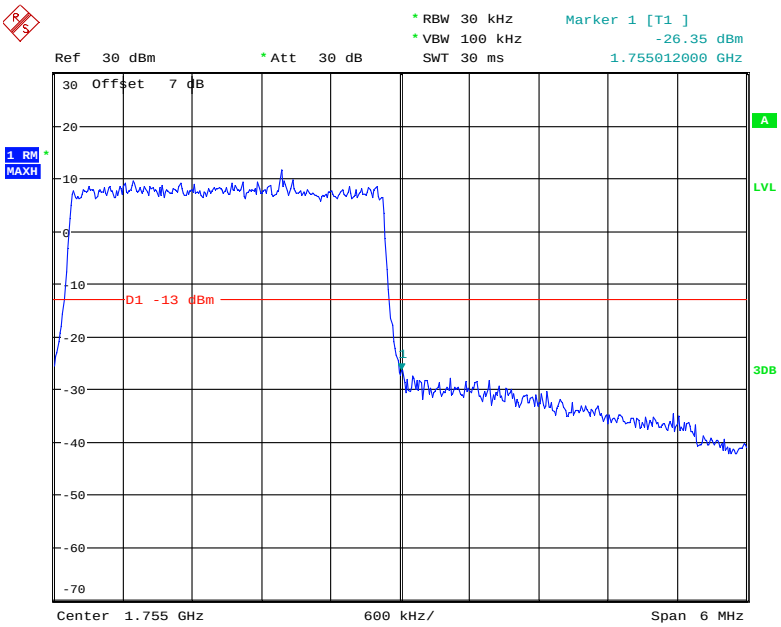
Date: 29.OCT.2020 11:27:52

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



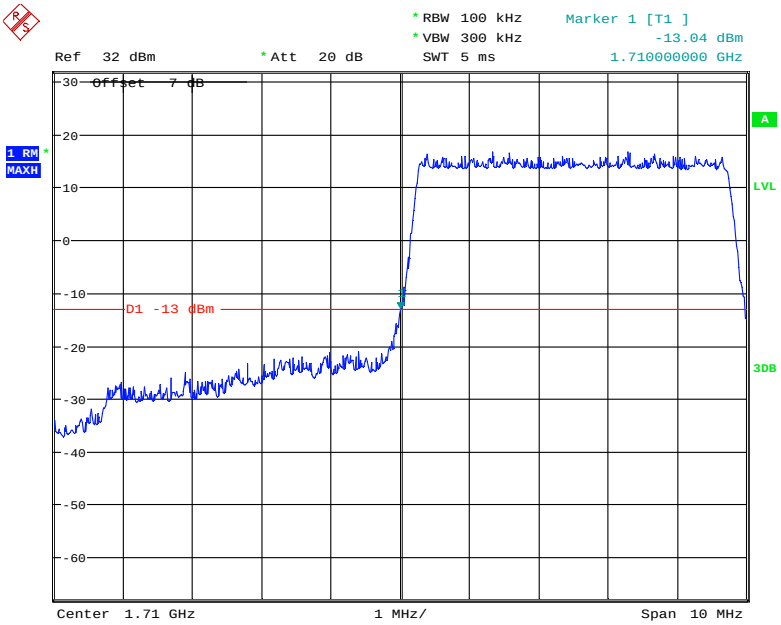
Date: 29.OCT.2020 11:27:34

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



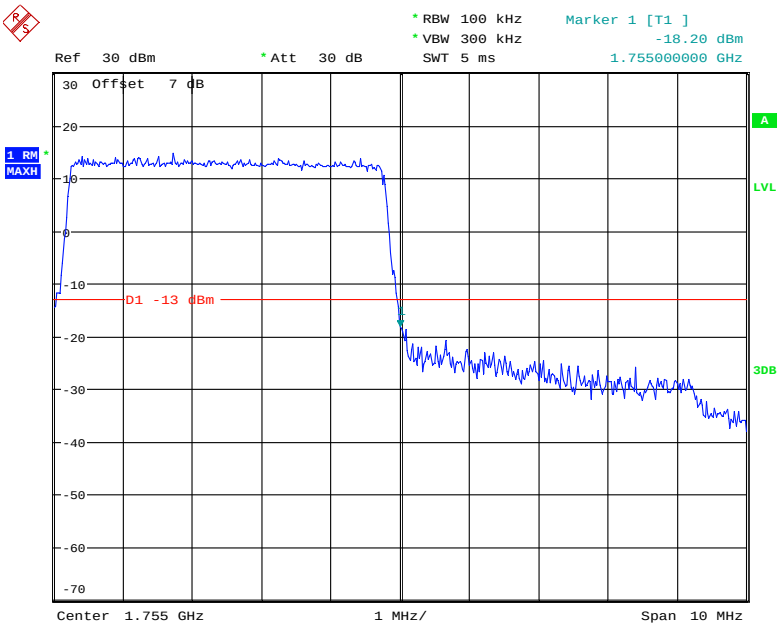
Date: 29.OCT.2020 11:28:11

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



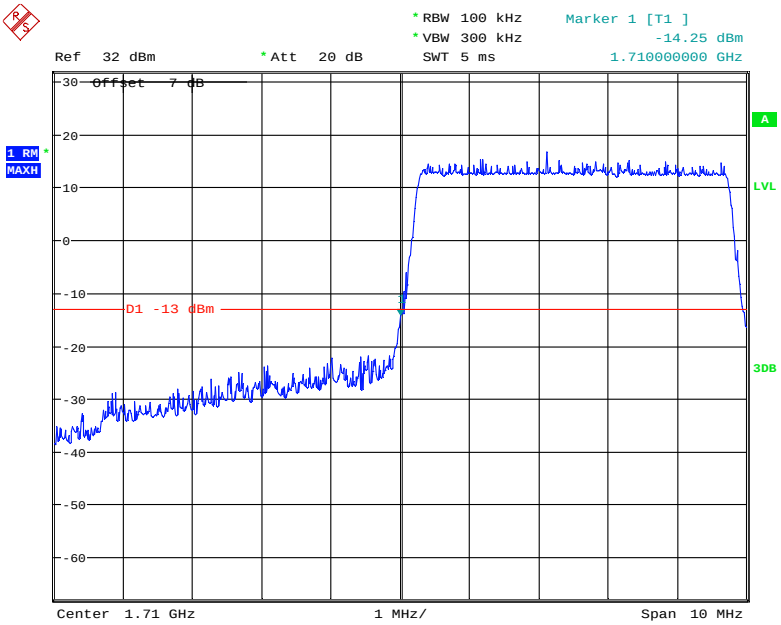
Date: 2.NOV.2020 18:21:54

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



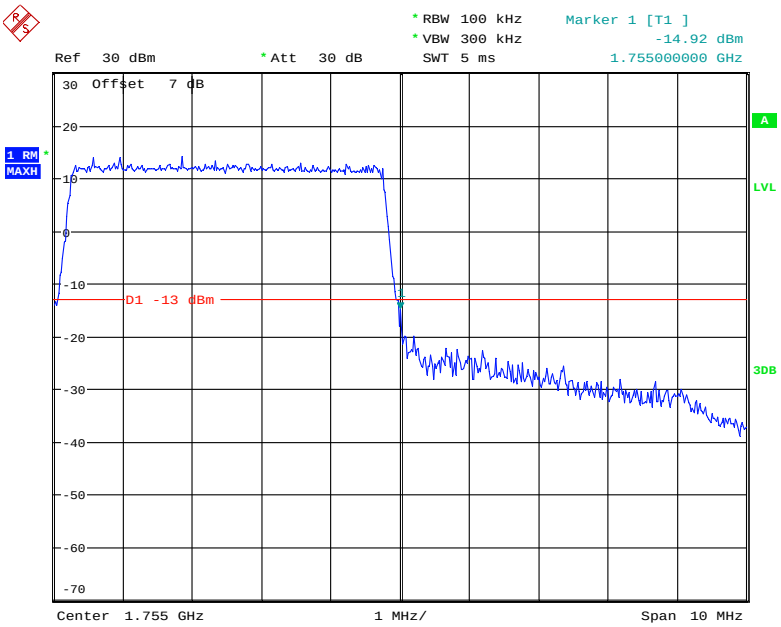
Date: 29.OCT.2020 11:29:10

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



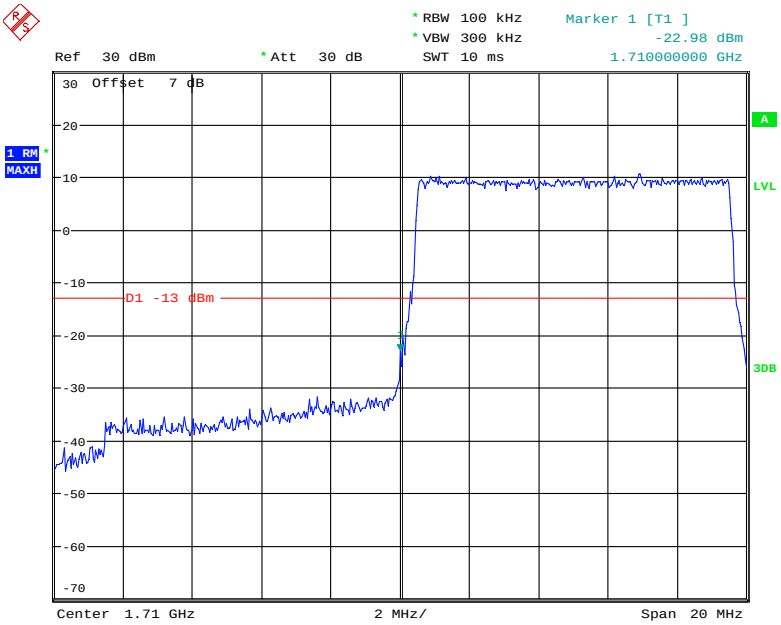
Date: 2.NOV.2020 18:23:17

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



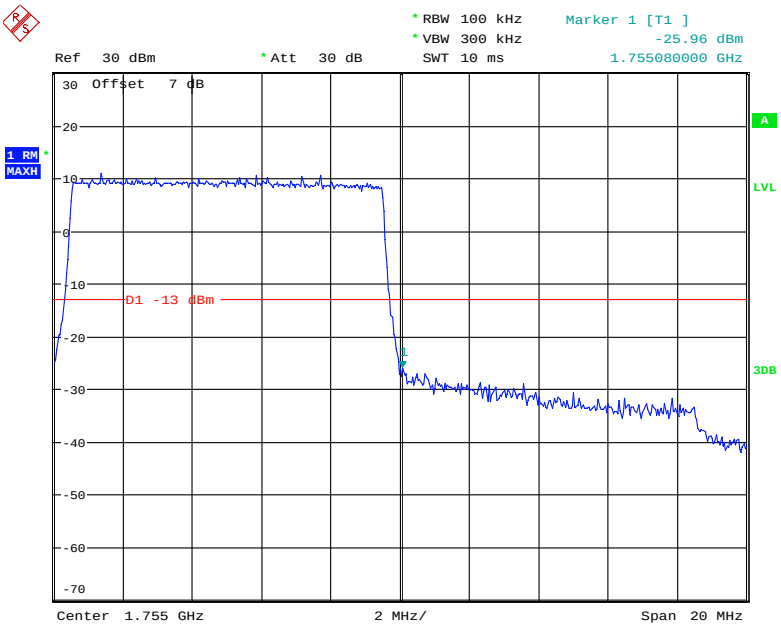
Date: 29.OCT.2020 11:29:29

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



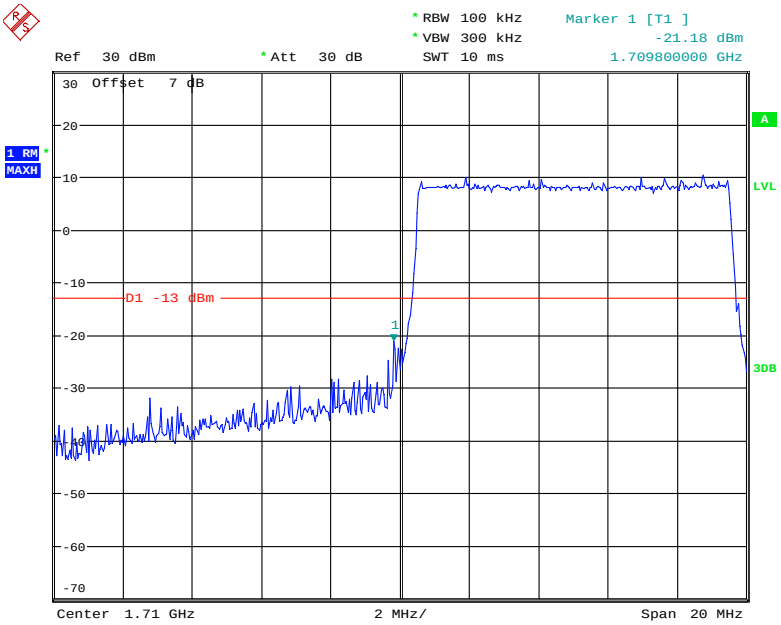
Date: 29.OCT.2020 11:29:50

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



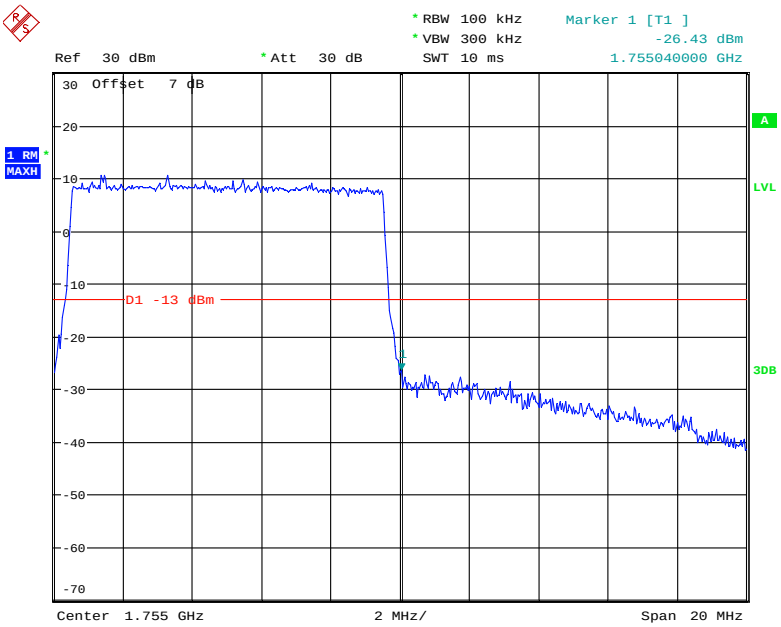
Date: 29.OCT.2020 11:30:35

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



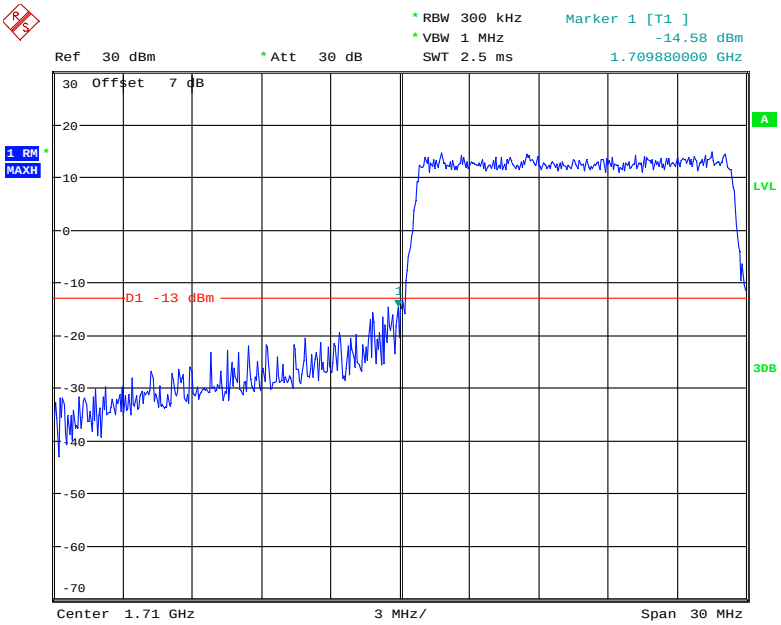
Date: 29.OCT.2020 11:30:13

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



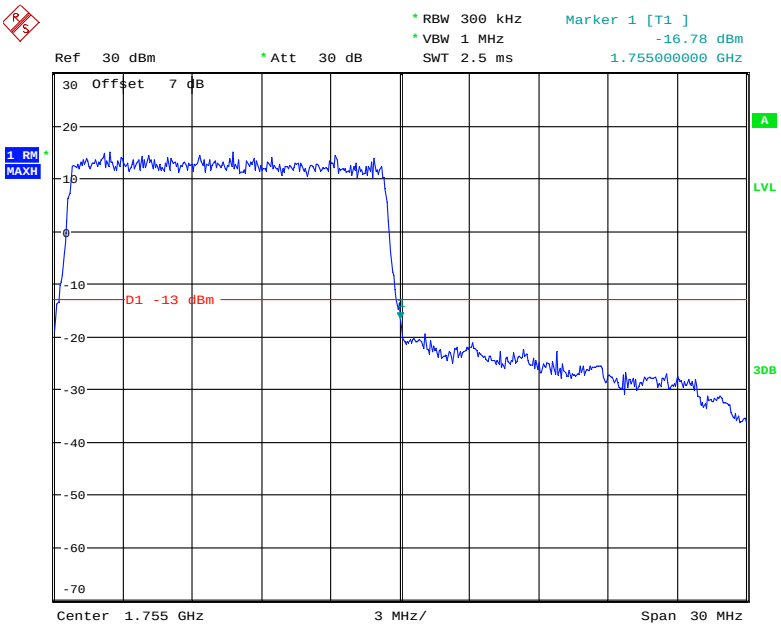
Date: 29.OCT.2020 11:30:59

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



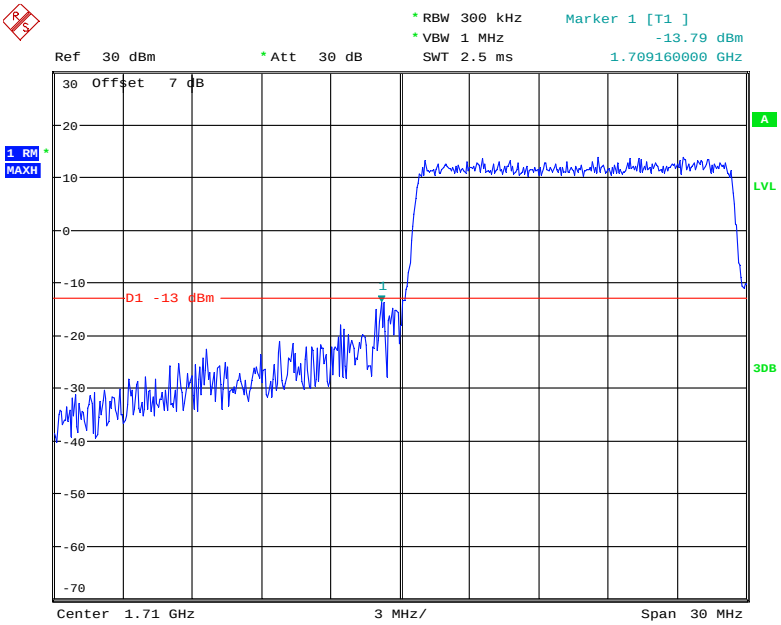
Date: 29.OCT.2020 11:31:24

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



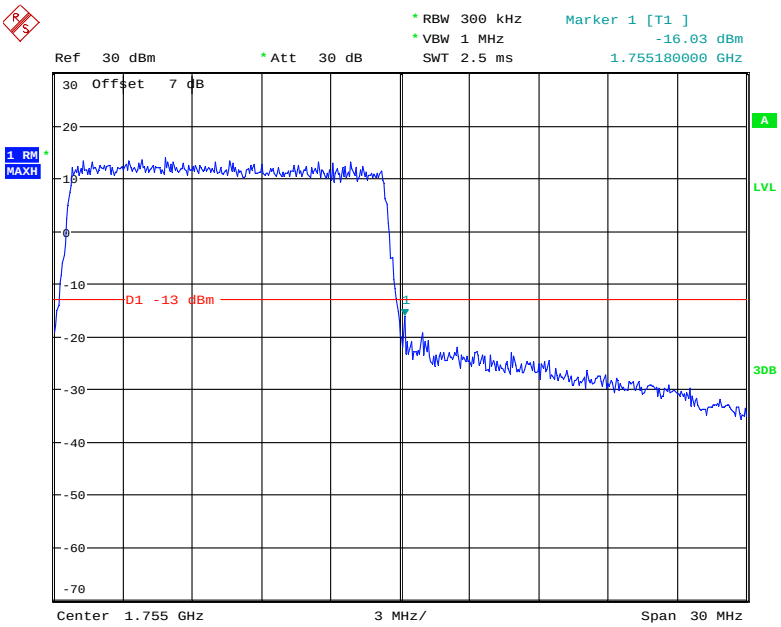
Date: 29.OCT.2020 11:32:14

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



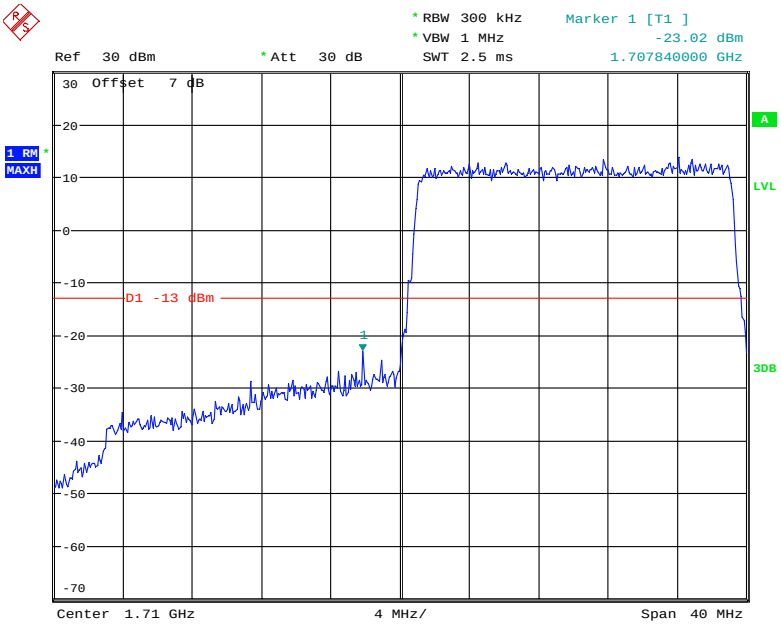
Date: 29.OCT.2020 11:31:53

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



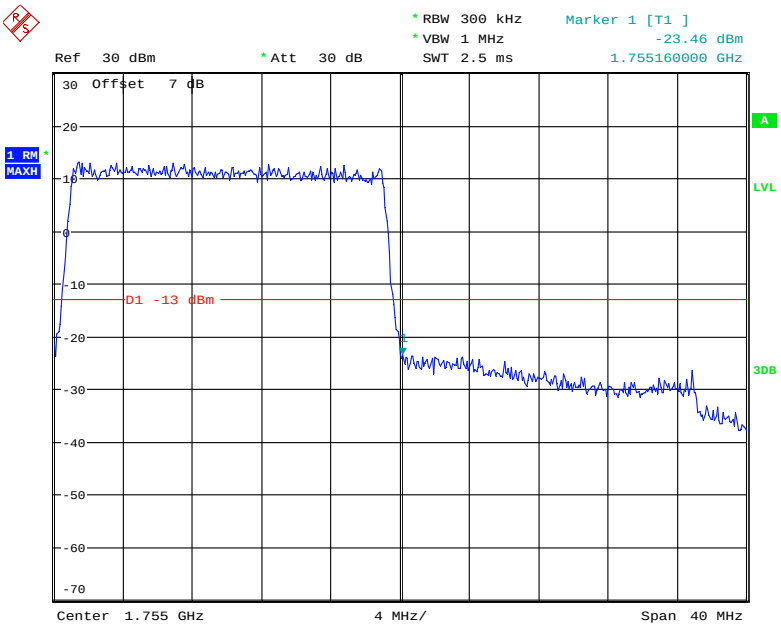
Date: 29.OCT.2020 11:32:37

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



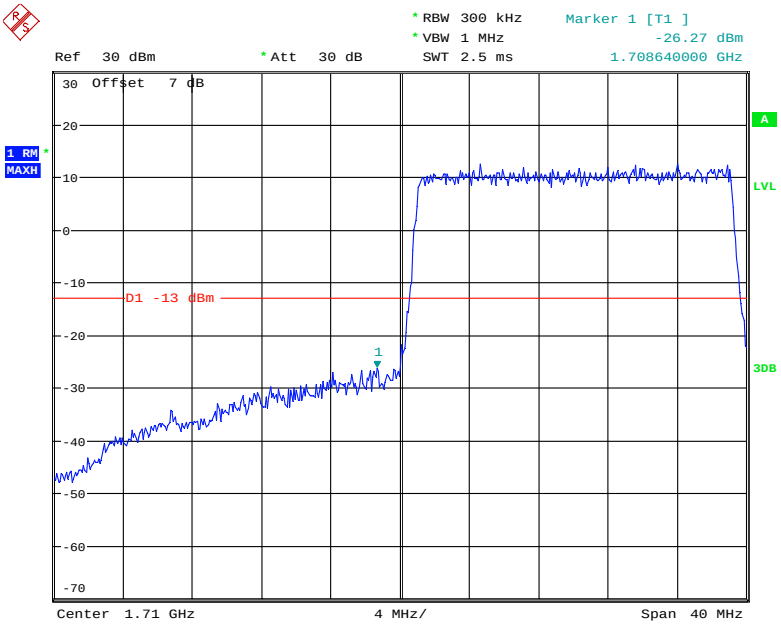
Date: 29.OCT.2020 11:33:00

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



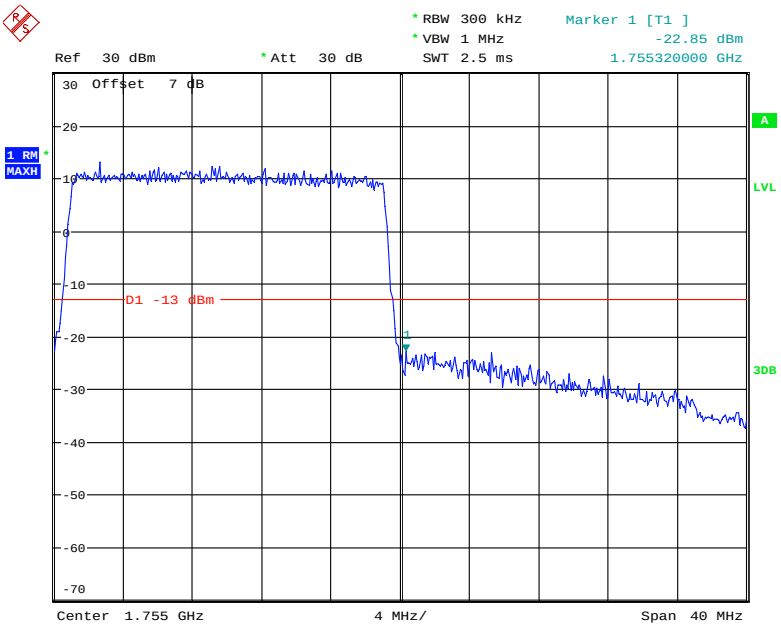
Date: 29.OCT.2020 11:33:40

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



Date: 29.OCT.2020 11:33:19

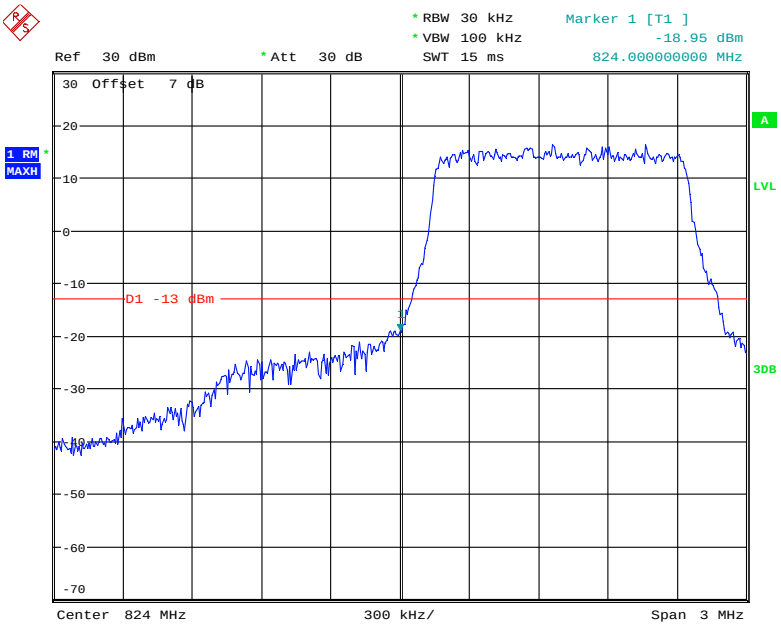
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



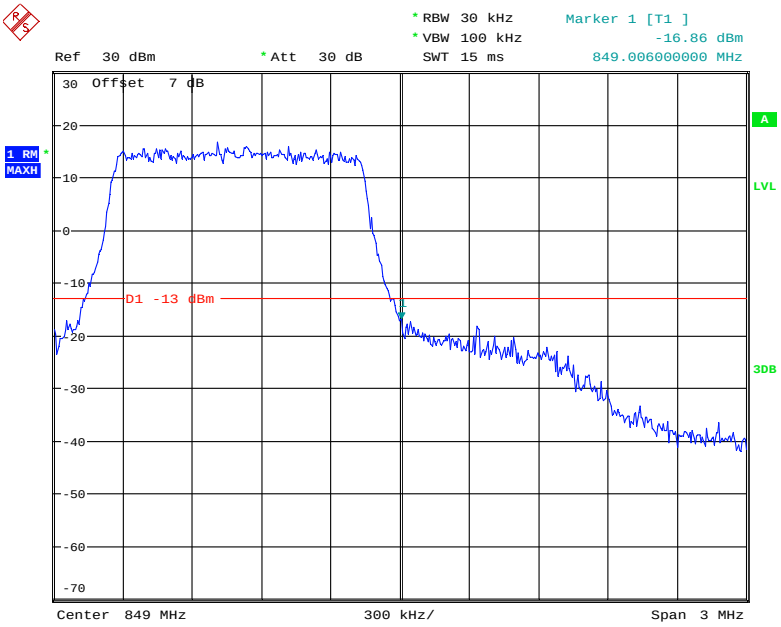
Date: 29.OCT.2020 11:34:00

Band 5:

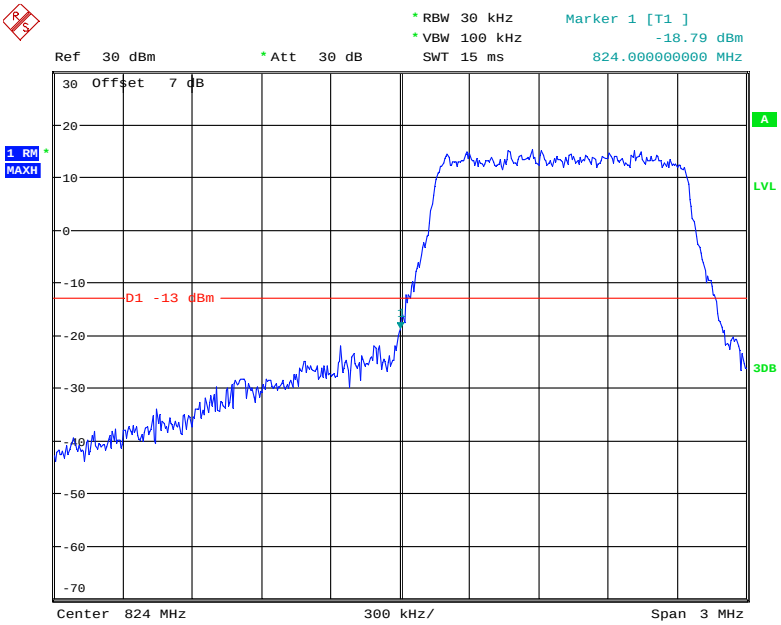
QPSK (1.4 MHz, FULL RB) - Left Band Edge



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

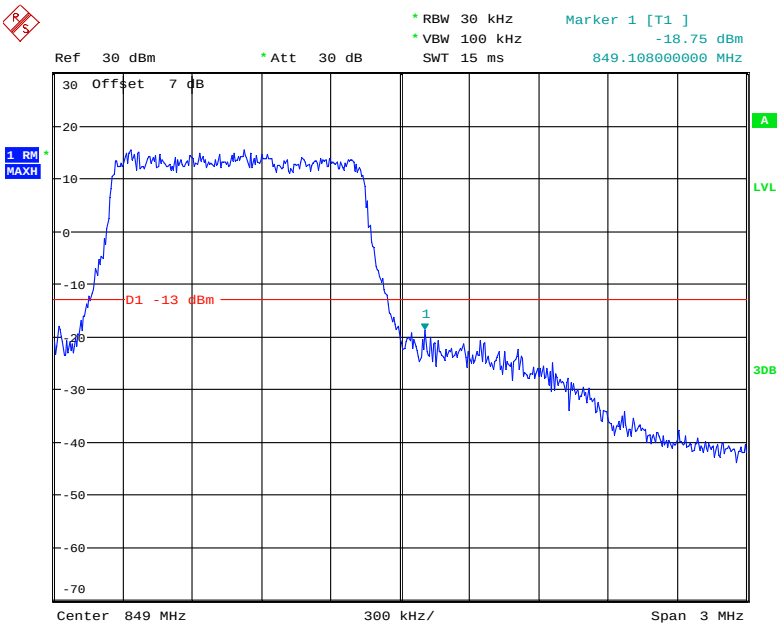


16-QAM 1.4 MHz, FULL RB) - Left Band Edge



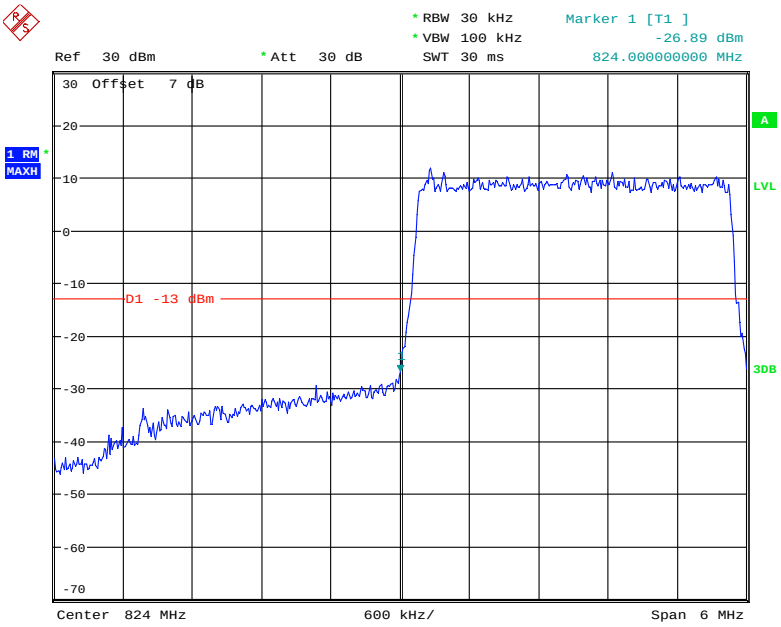
Date: 29.OCT.2020 11:34:48

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



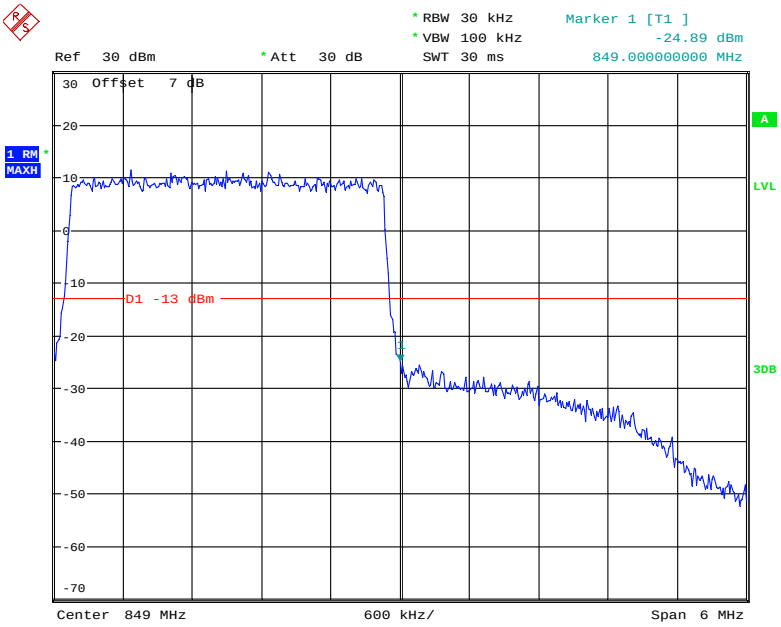
Date: 29.OCT.2020 11:35:24

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



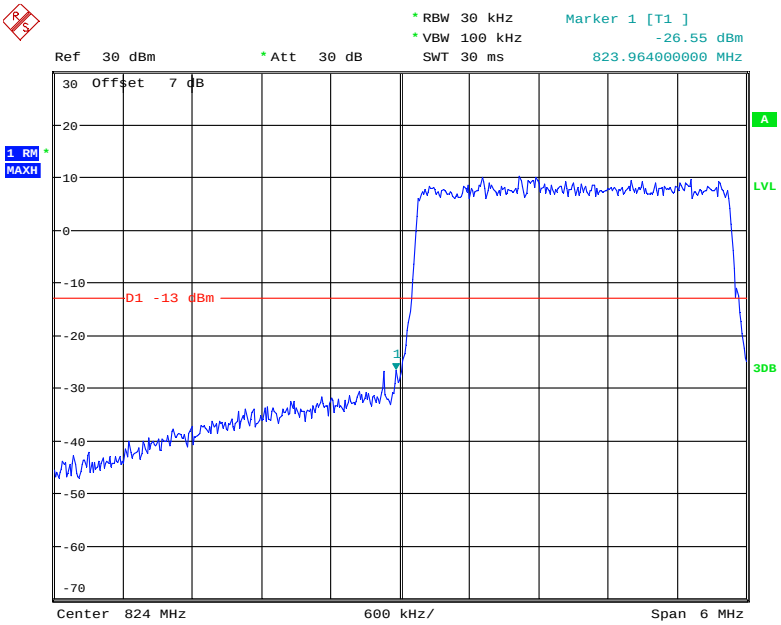
Date: 29.OCT.2020 11:35:47

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



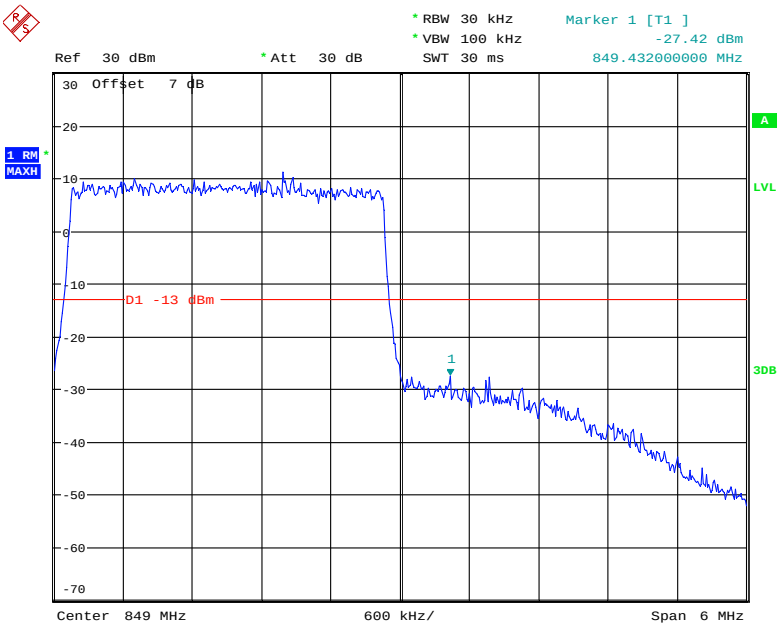
Date: 29.OCT.2020 11:36:27

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



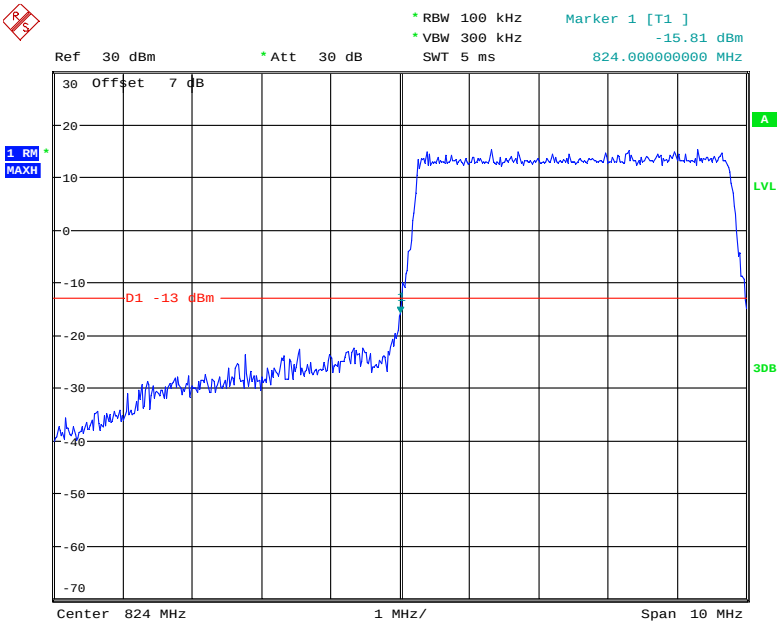
Date: 29.OCT.2020 11:36:06

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



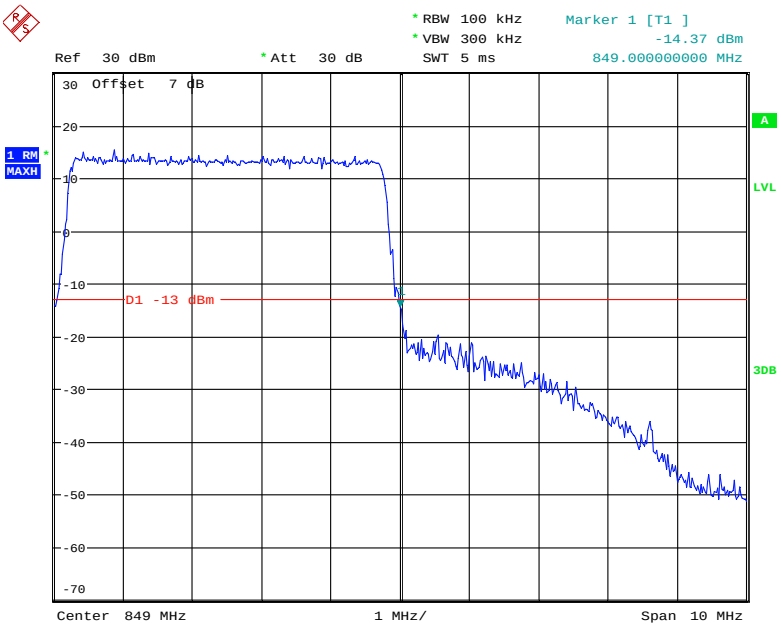
Date: 29.OCT.2020 11:36:46

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



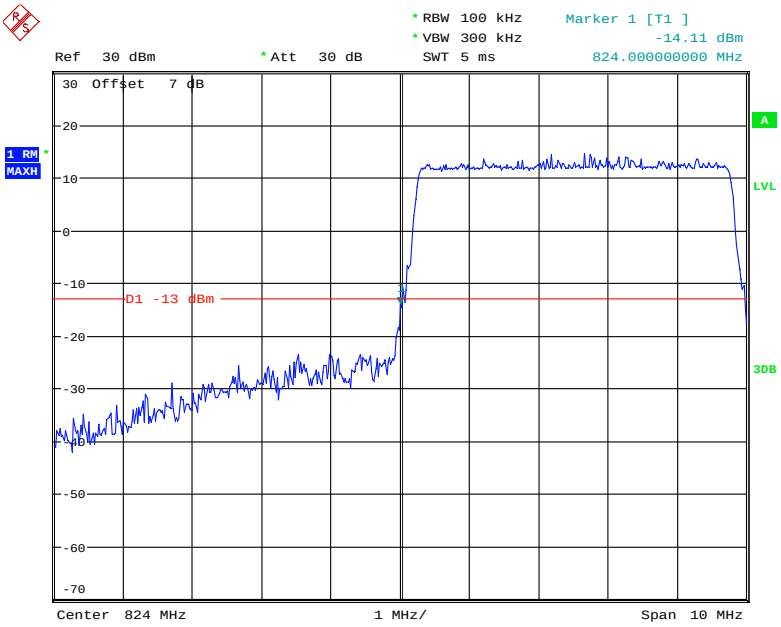
Date: 29.OCT.2020 11:37:05

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



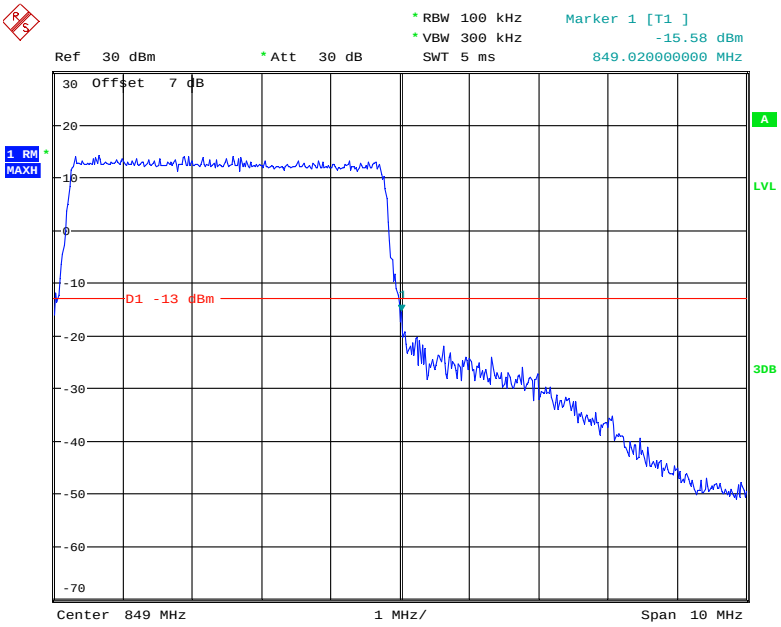
Date: 29.OCT.2020 11:37:42

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



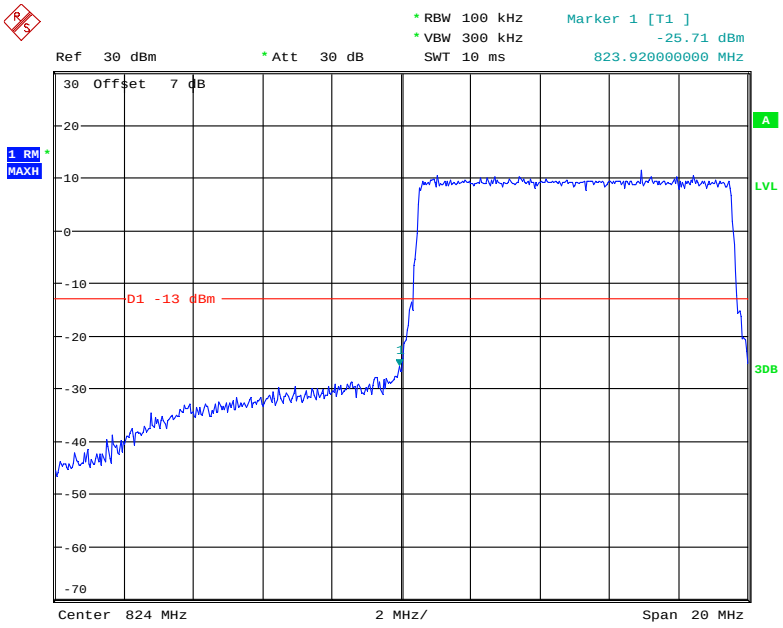
Date: 29.OCT.2020 11:37:25

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



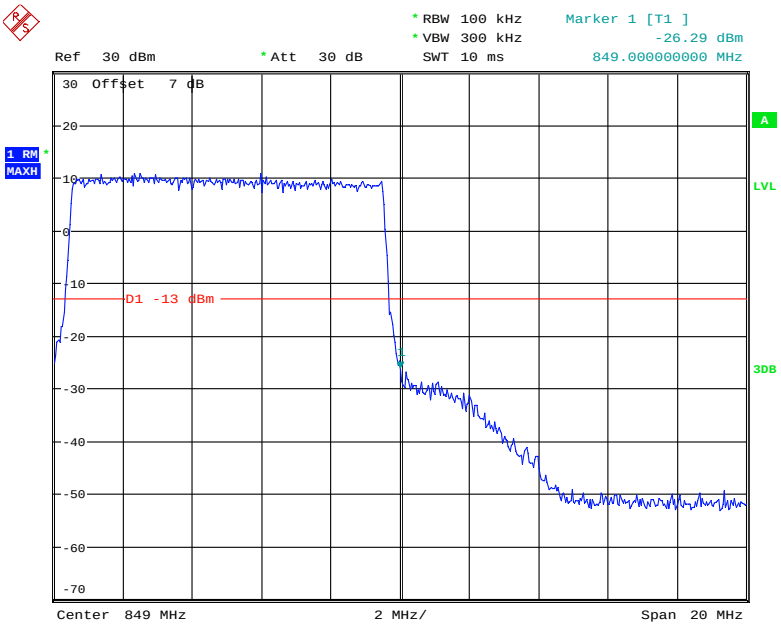
Date: 29.OCT.2020 11:38:02

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



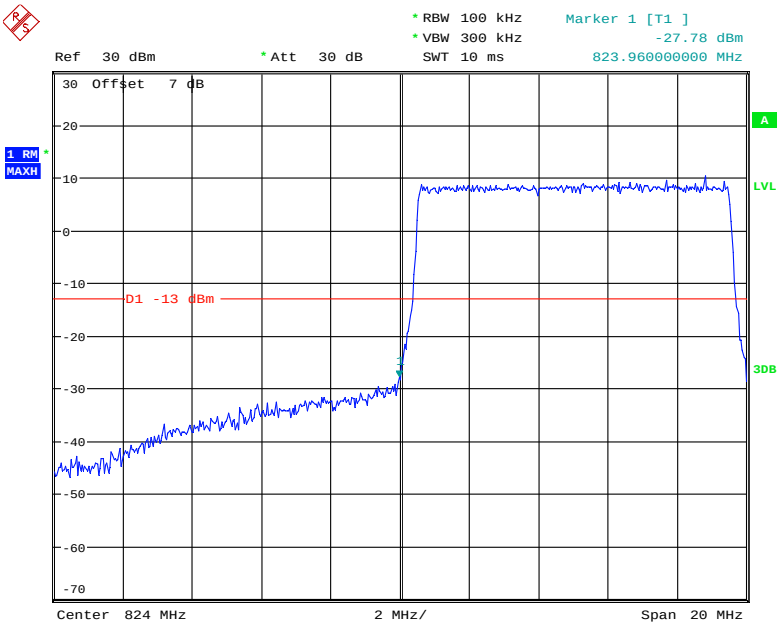
Date: 29.OCT.2020 11:38:22

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



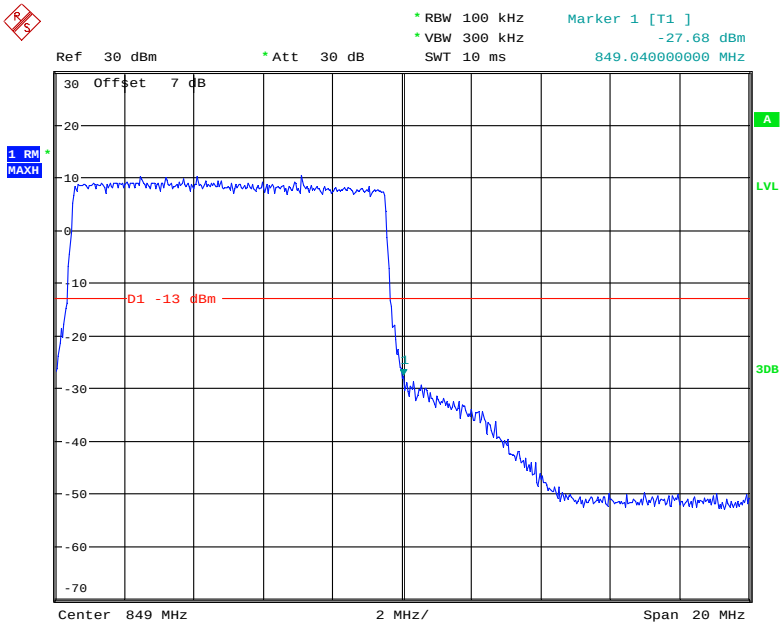
Date: 29.OCT.2020 11:38:58

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



Date: 29.OCT.2020 11:38:40

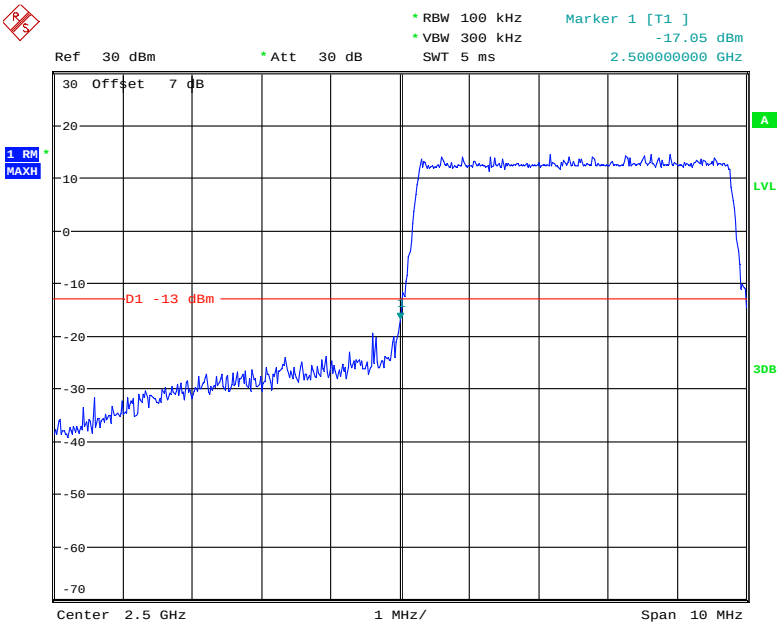
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 29.OCT.2020 11:39:19

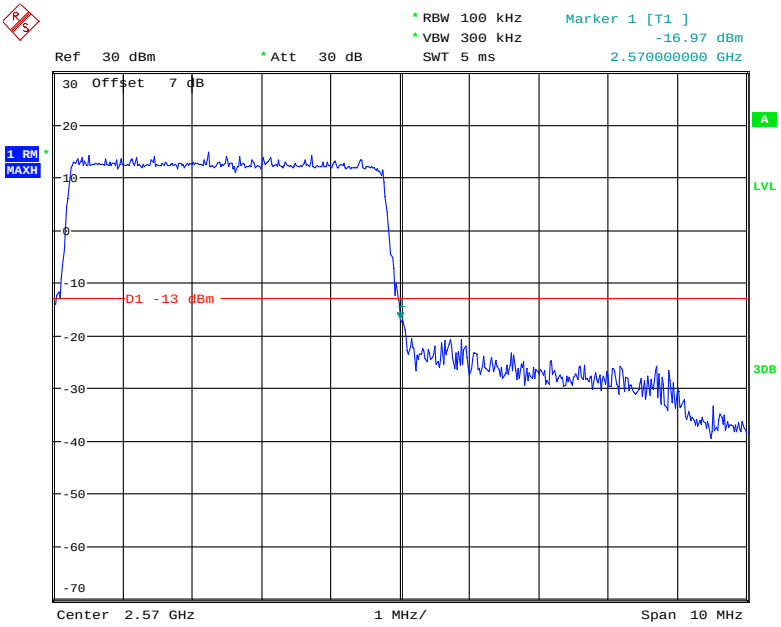
Band 7:

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



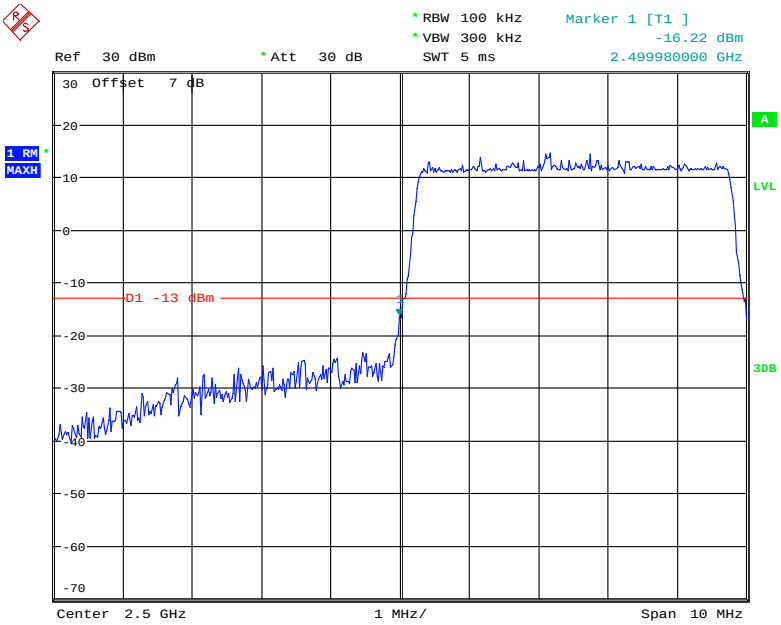
Date: 29.OCT.2020 11:39:41

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



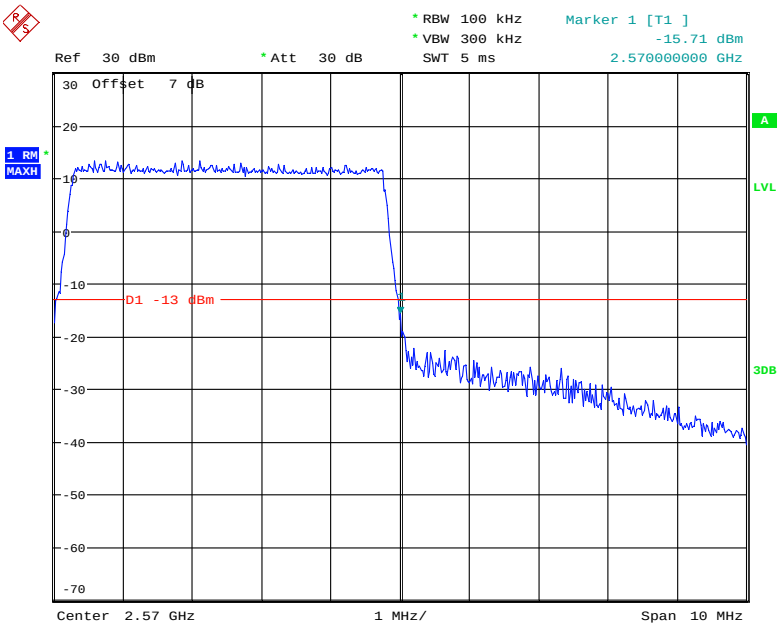
Date: 29.OCT.2020 11:40:24

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



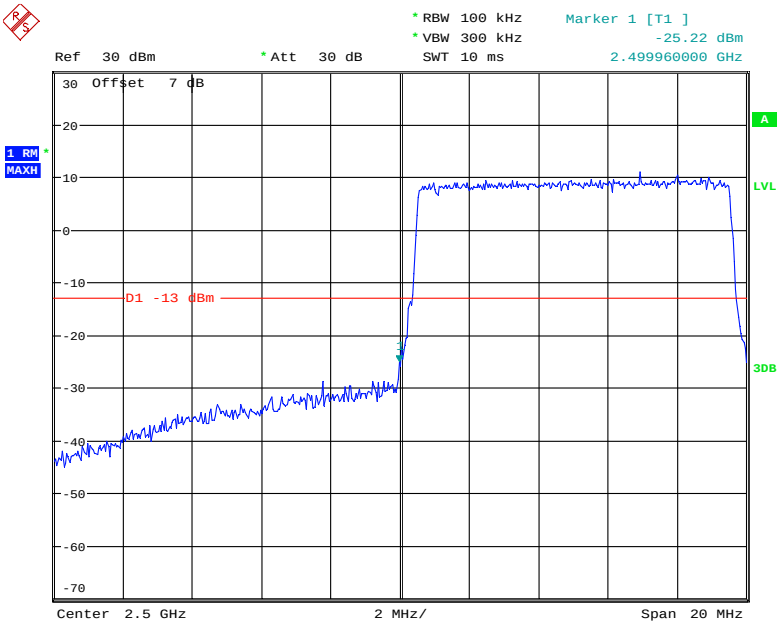
Date: 29.OCT.2020 11:40:04

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



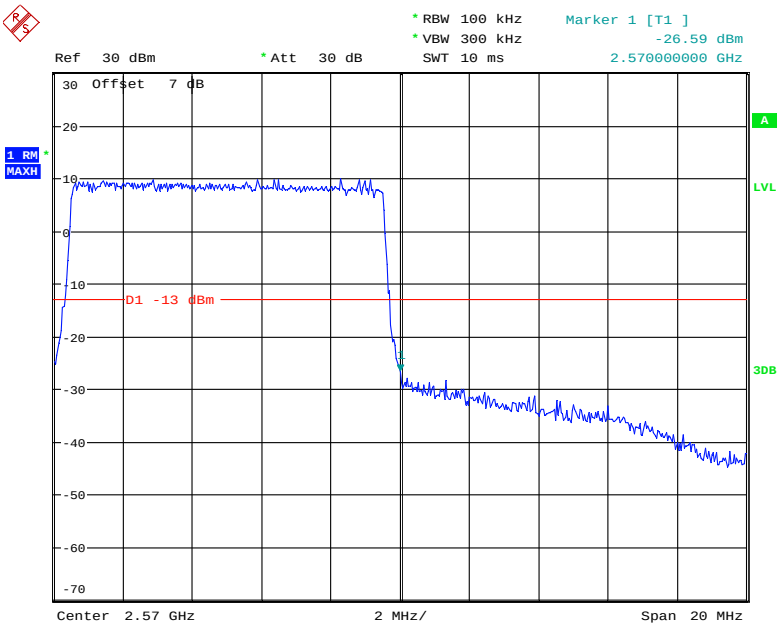
Date: 29.OCT.2020 11:40:47

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



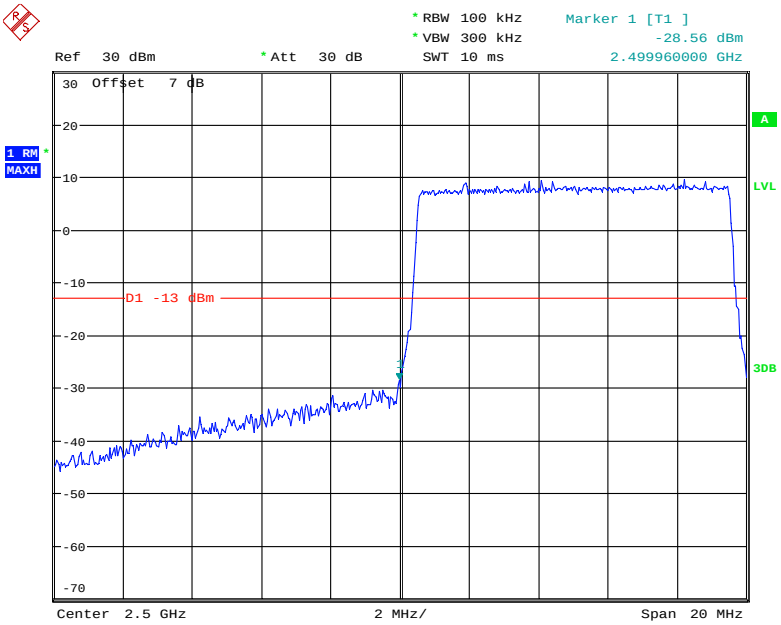
Date: 29.OCT.2020 11:41:07

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



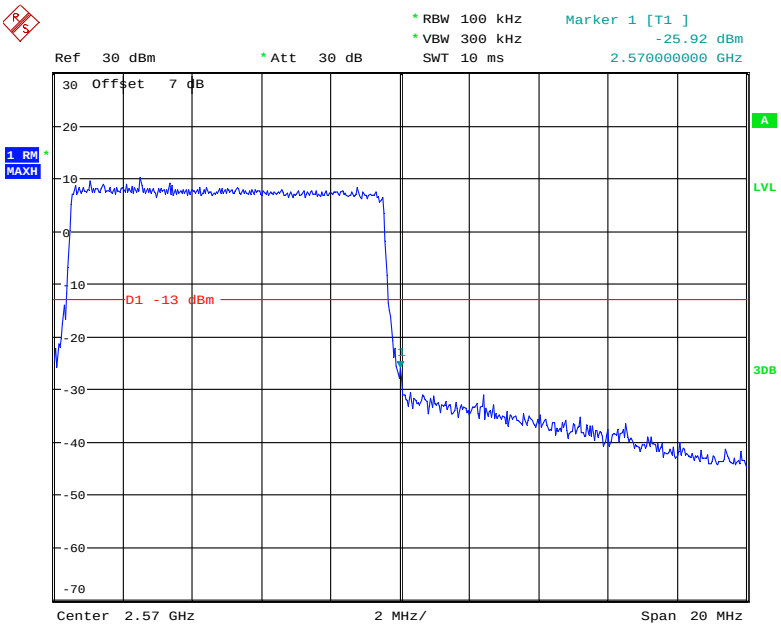
Date: 29.OCT.2020 11:41:46

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



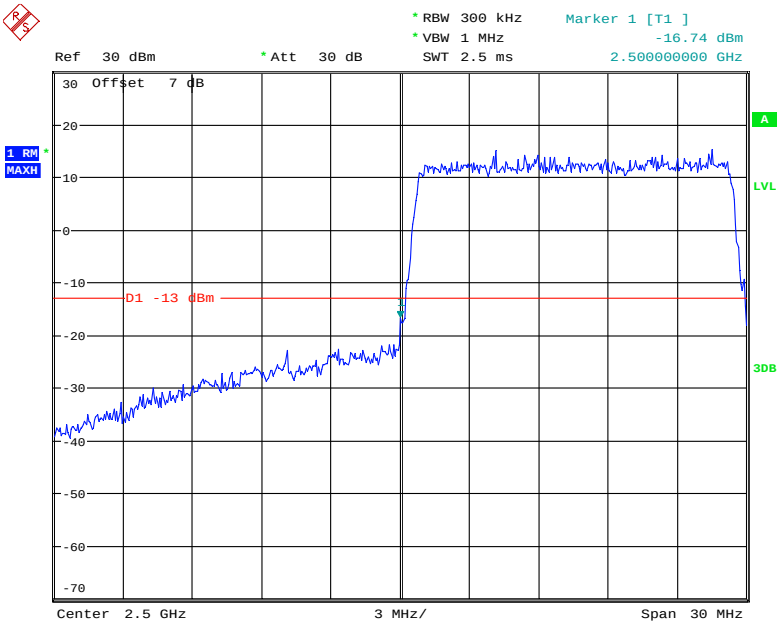
Date: 29.OCT.2020 11:41:28

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



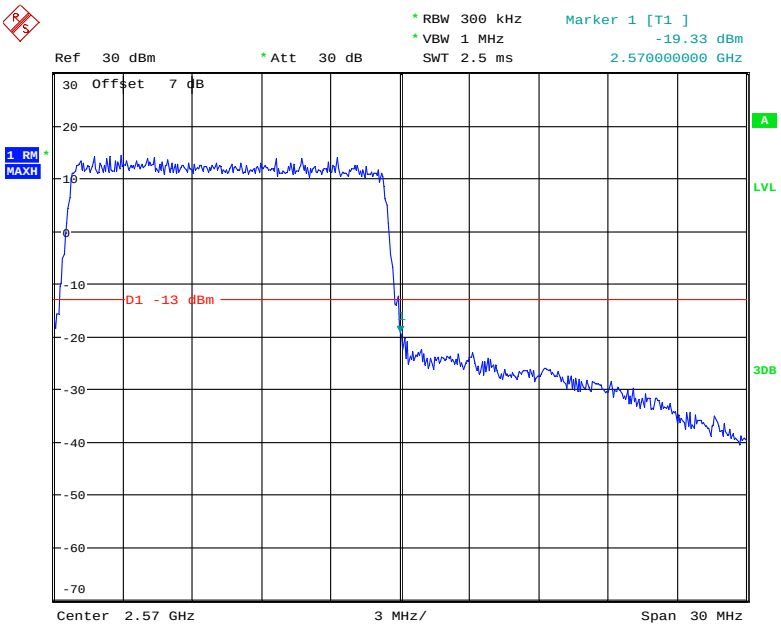
Date: 29.OCT.2020 11:42:04

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



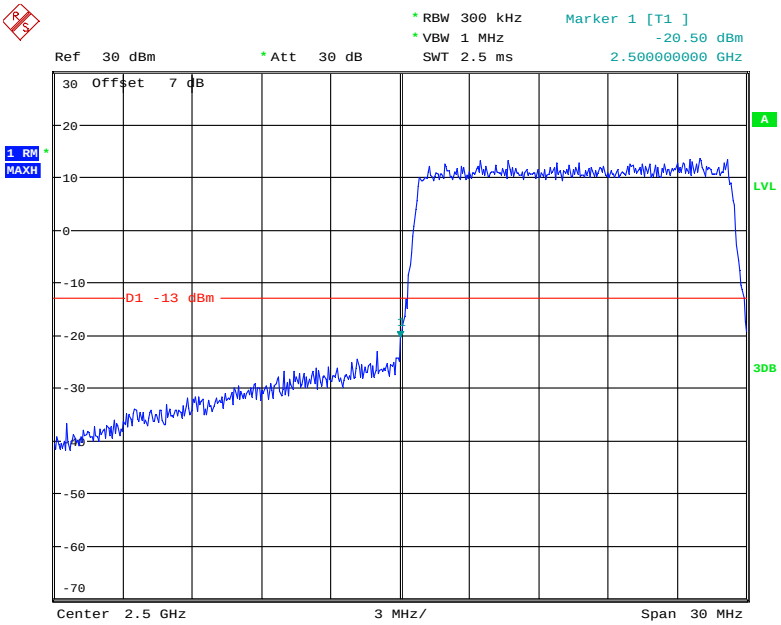
Date: 29.OCT.2020 11:42:26

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



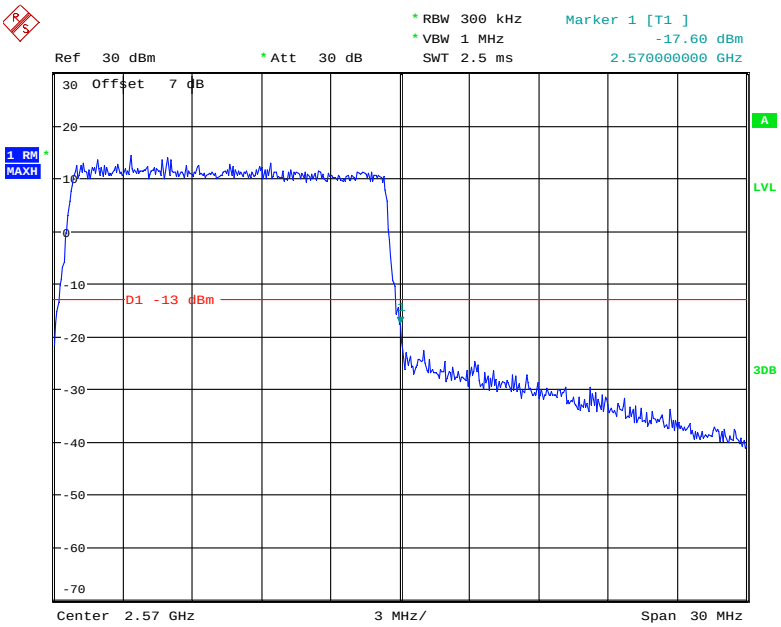
Date: 29.OCT.2020 11:43:07

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



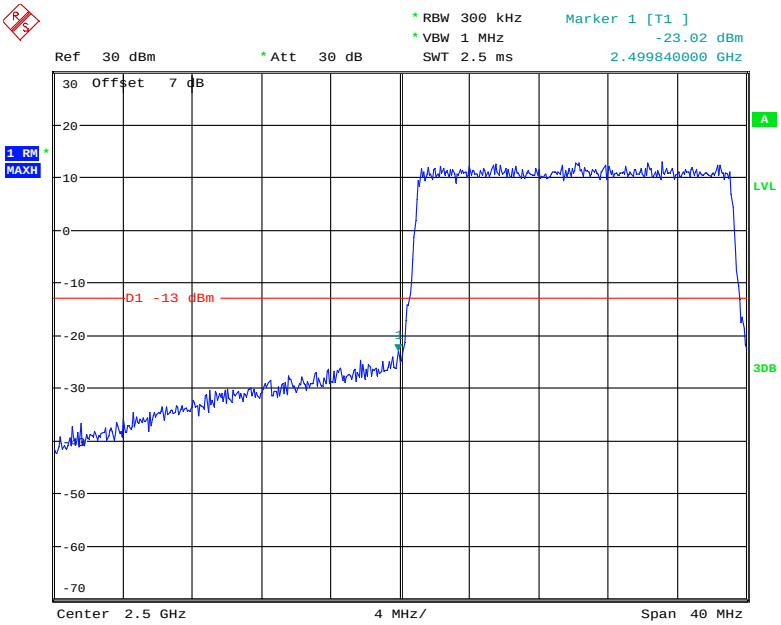
Date: 29.OCT.2020 11:42:46

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



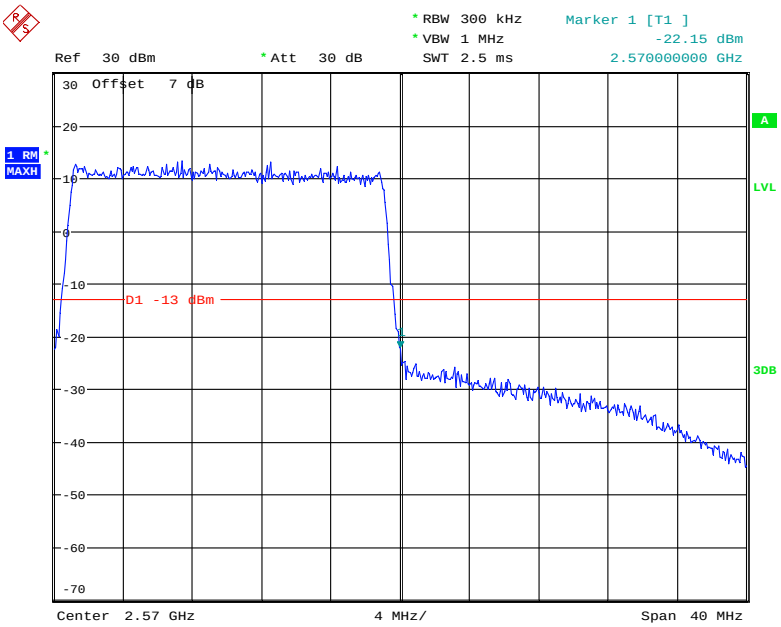
Date: 29.OCT.2020 11:43:26

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



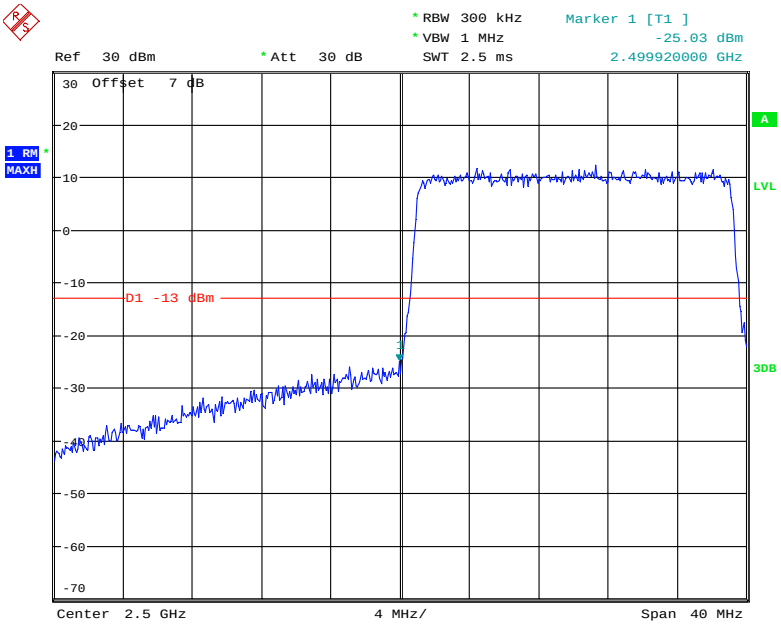
Date: 29.OCT.2020 11:43:52

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



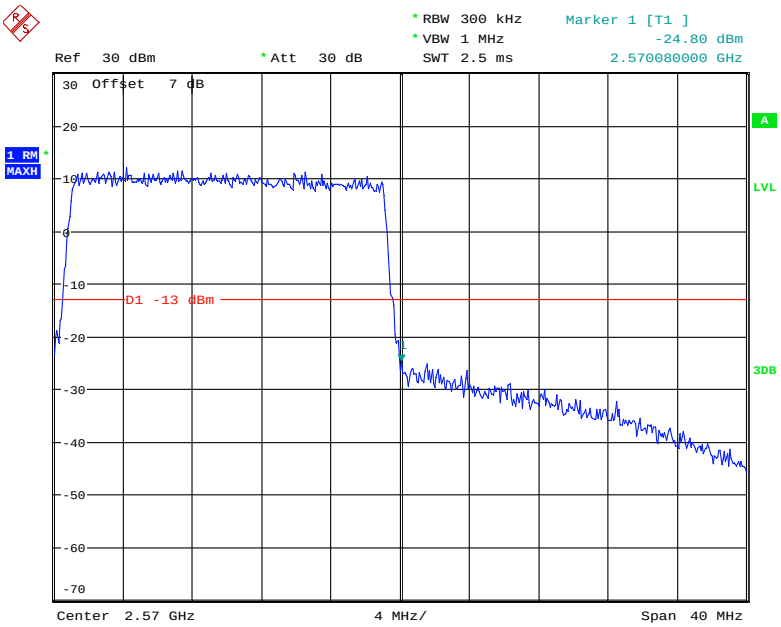
Date: 29.OCT.2020 11:44:39

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



Date: 29.OCT.2020 11:44:15

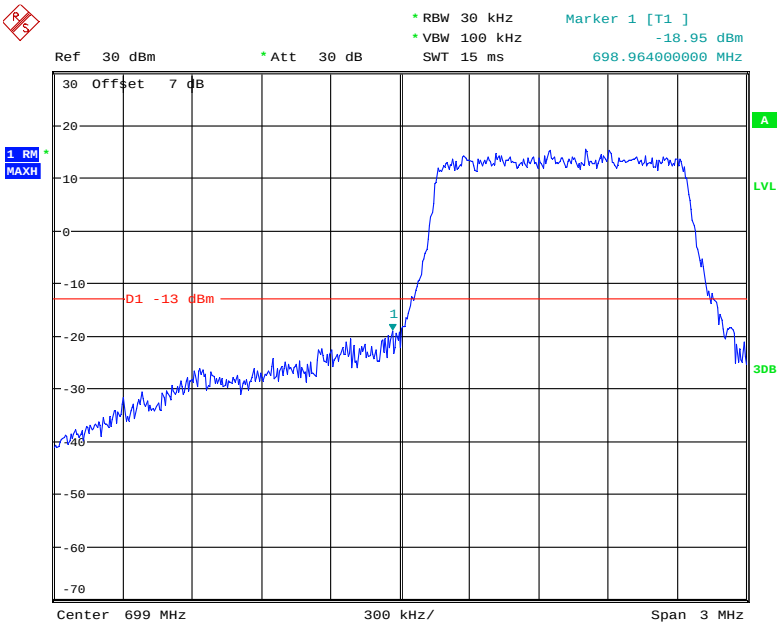
16-QAM (20.0 MHz, FULL RB) - Right Band Edge



Date: 29.OCT.2020 11:44:59

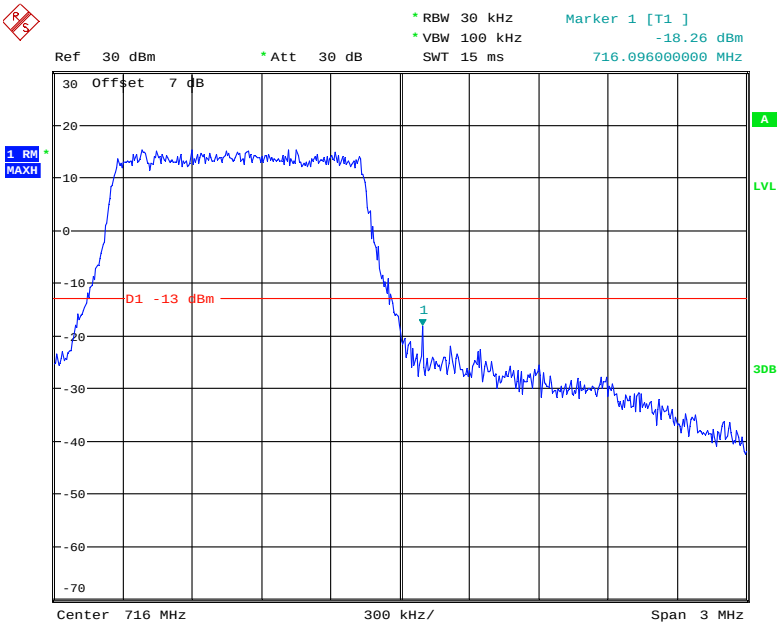
Band 12:

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



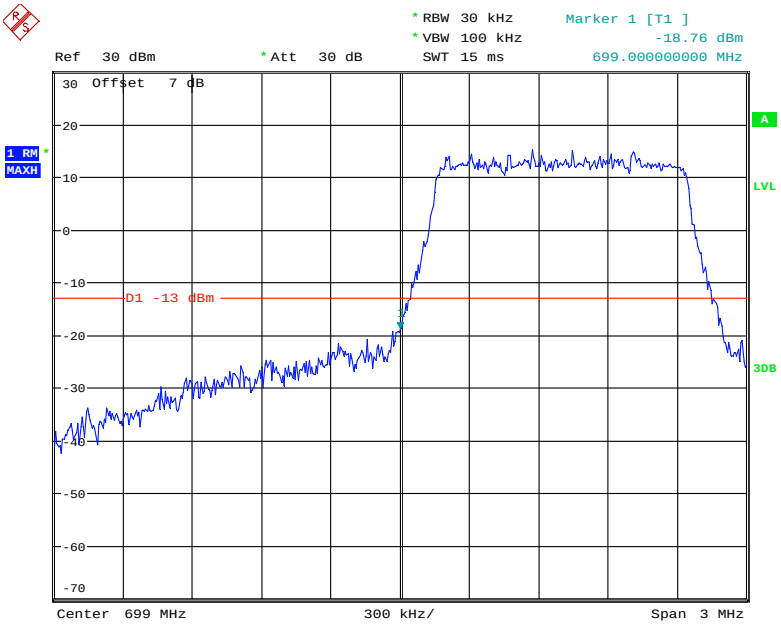
Date: 29.OCT.2020 11:45:18

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



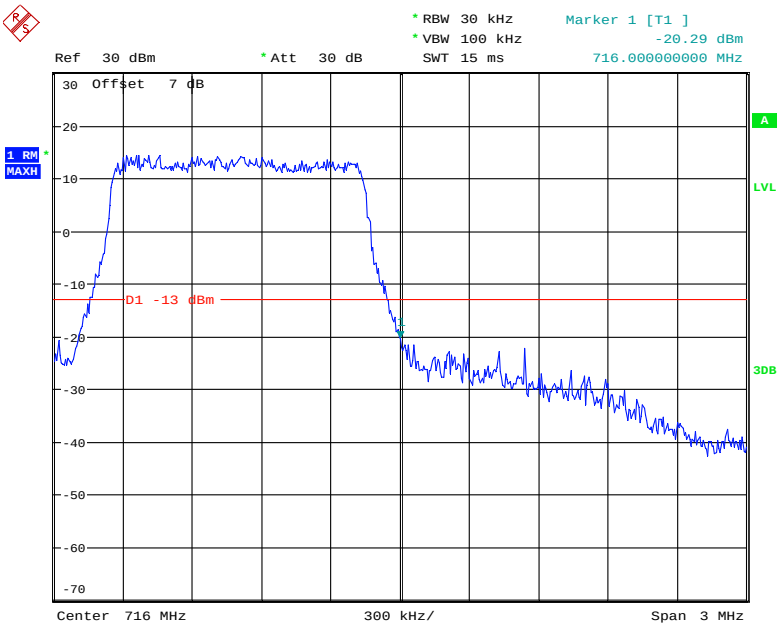
Date: 29.OCT.2020 11:45:58

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



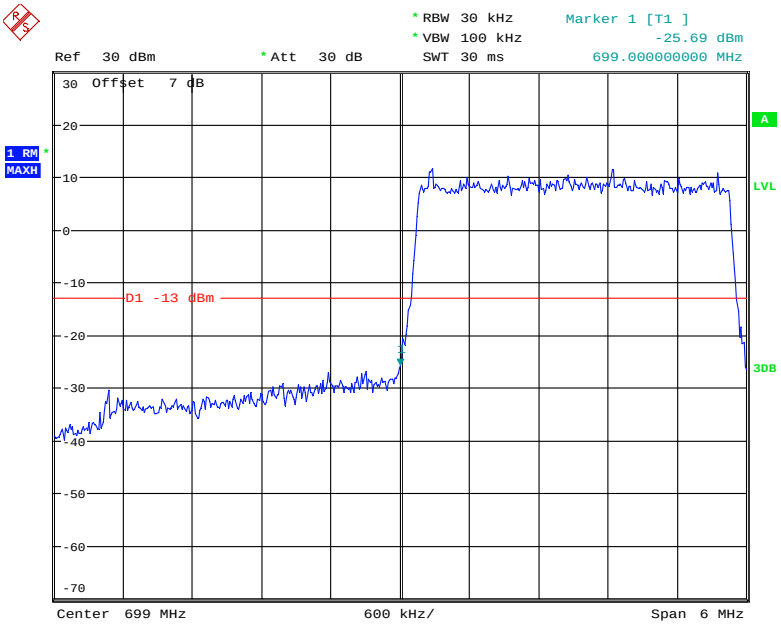
Date: 29.OCT.2020 11:45:38

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



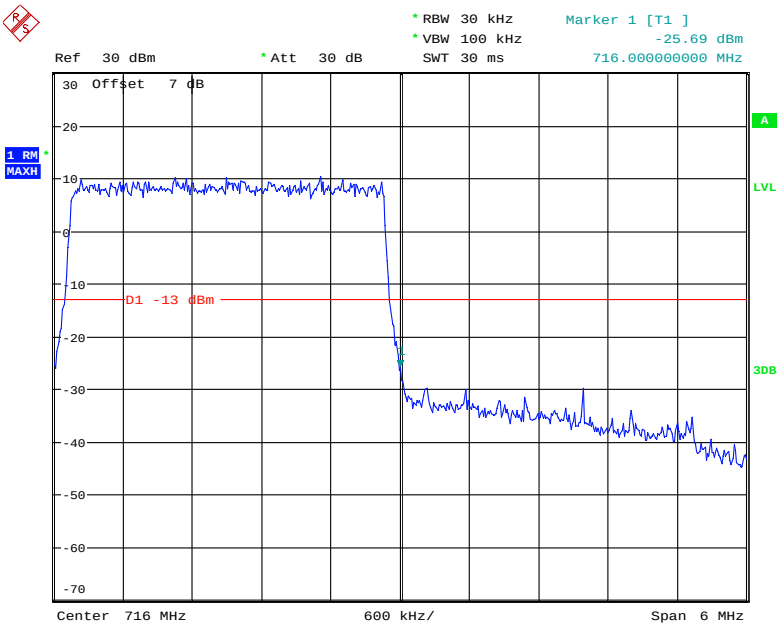
Date: 29.OCT.2020 11:46:17

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



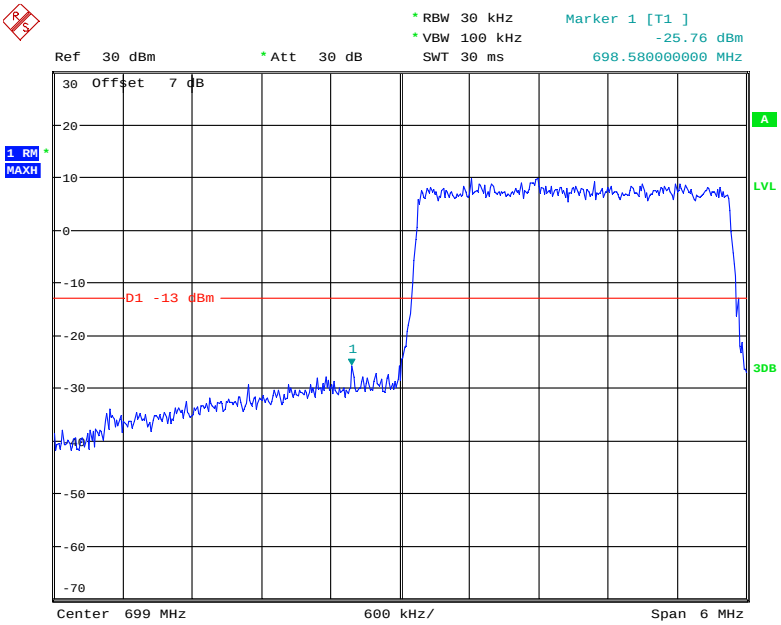
Date: 29.OCT.2020 11:46:36

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



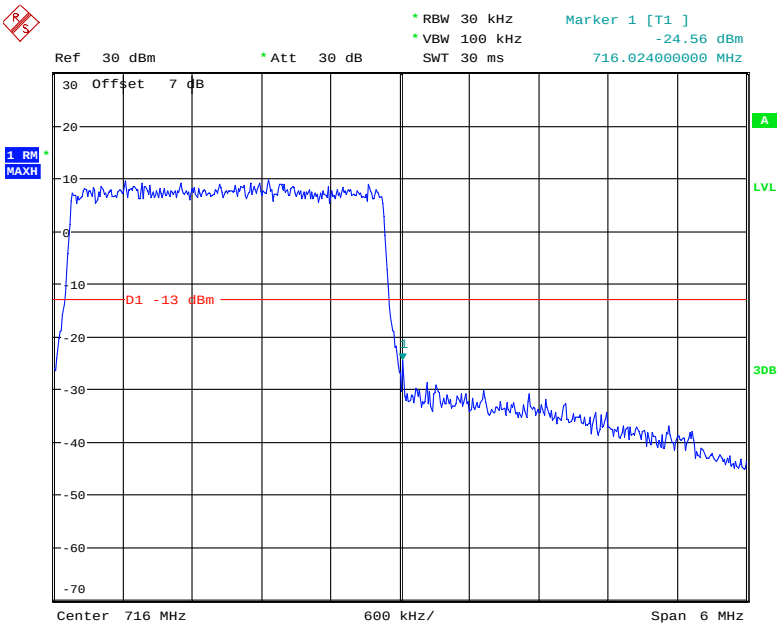
Date: 29.OCT.2020 11:47:10

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



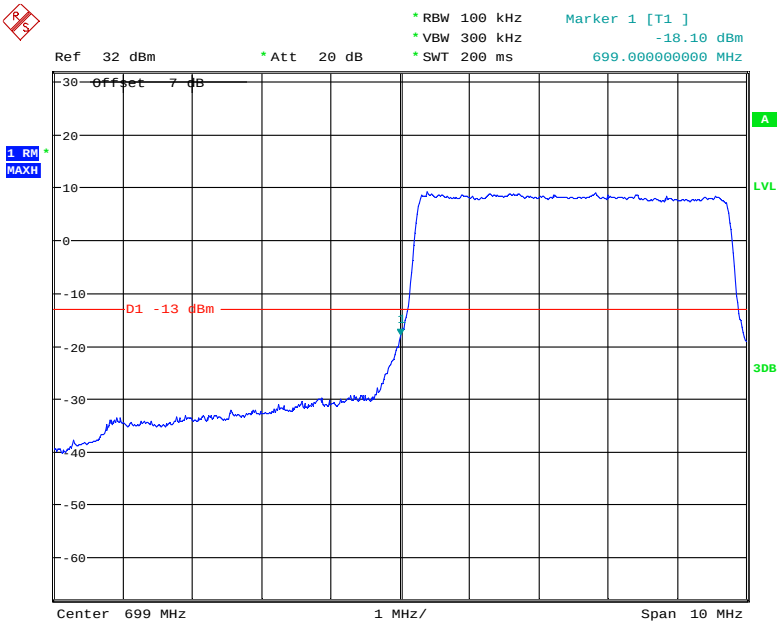
Date: 29.OCT.2020 11:46:53

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



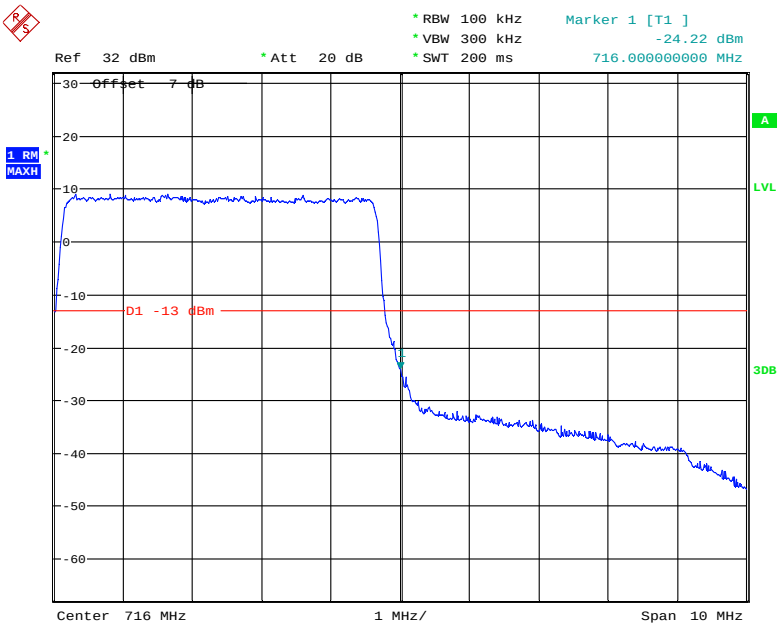
Date: 29.OCT.2020 11:47:29

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



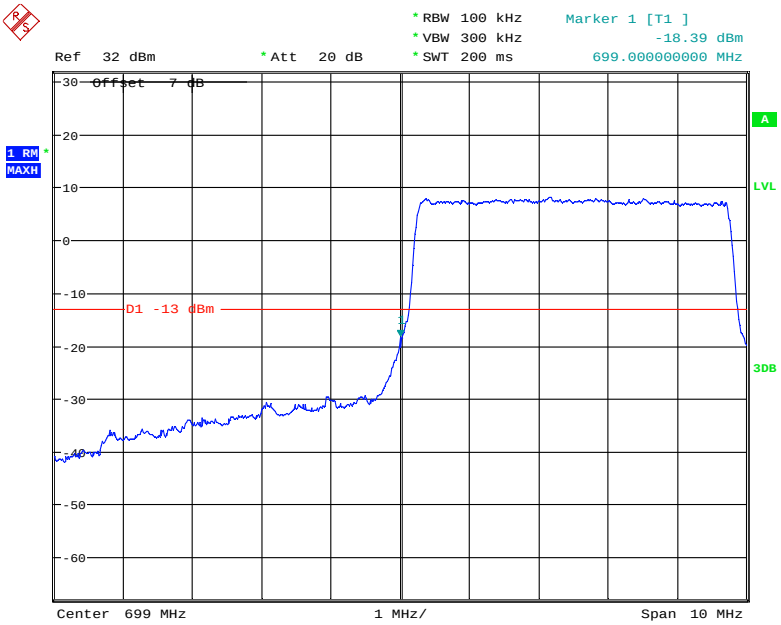
Date: 2.NOV.2020 18:29:55

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



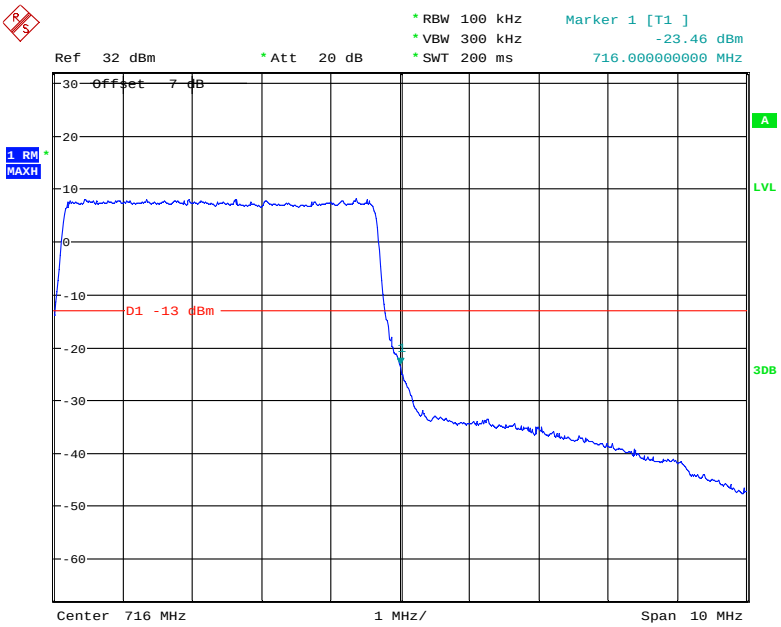
Date: 2.NOV.2020 18:32:42

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



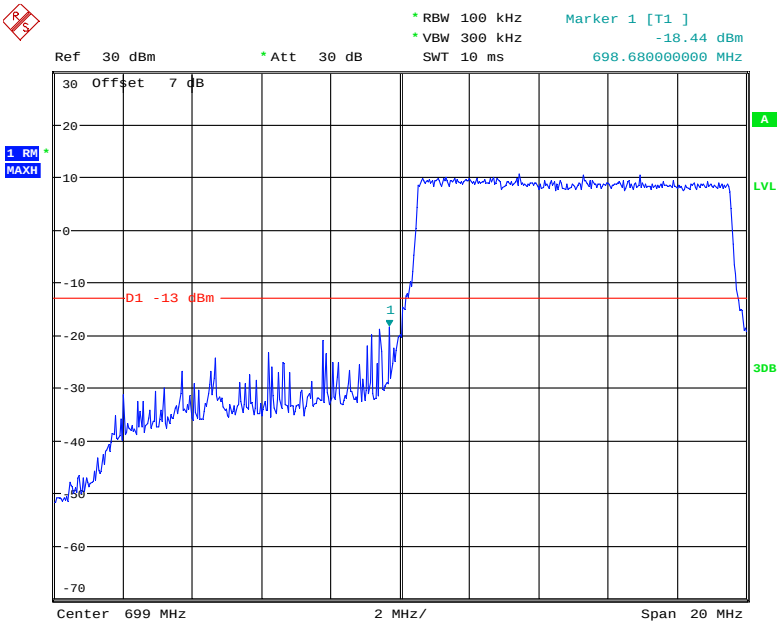
Date: 2.NOV.2020 18:30:38

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



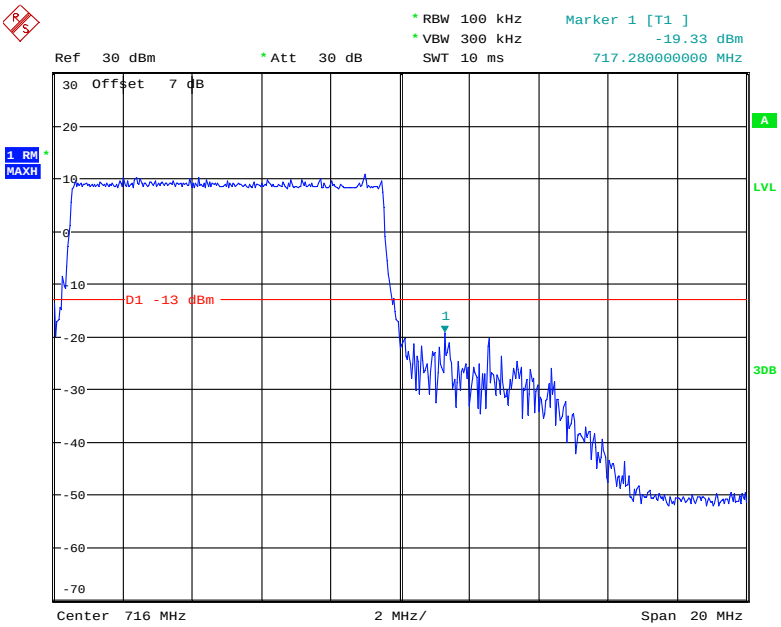
Date: 2.NOV.2020 18:31:59

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



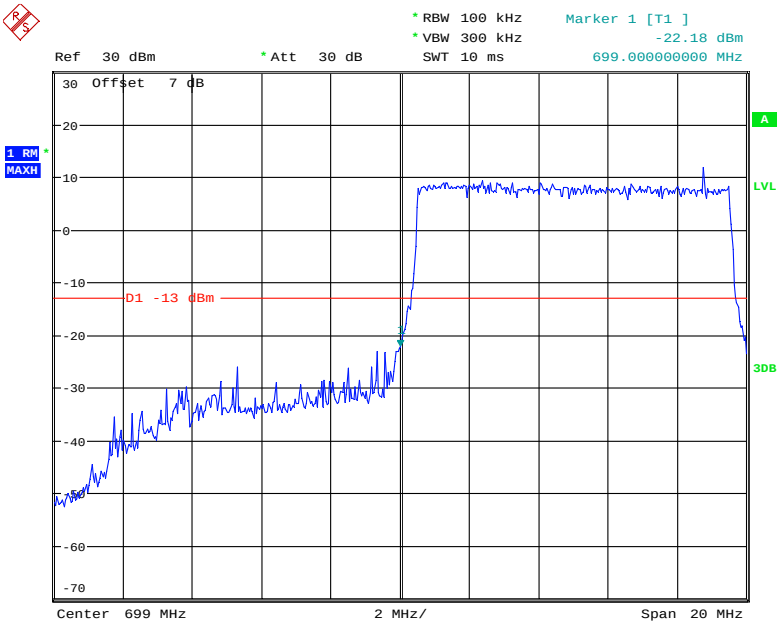
Date: 29.OCT.2020 11:49:08

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



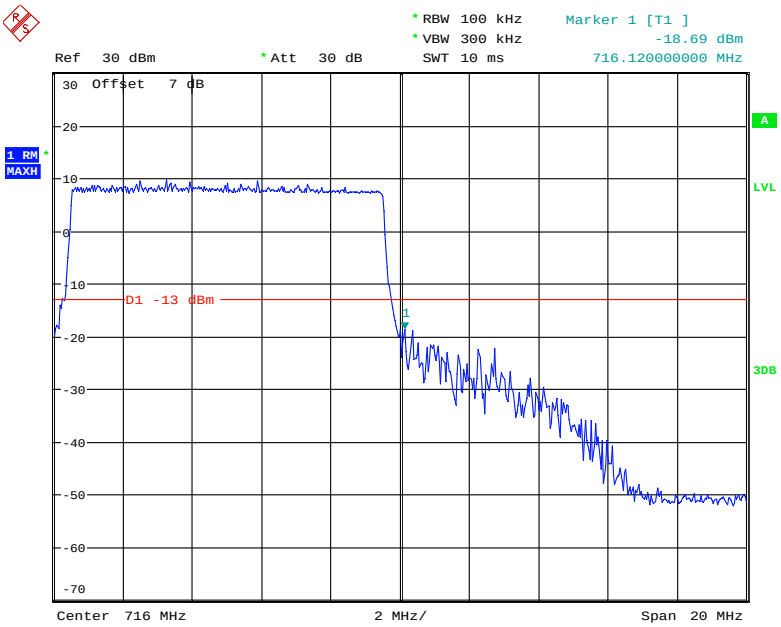
Date: 29.OCT.2020 11:49:54

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



Date: 29.OCT.2020 11:49:26

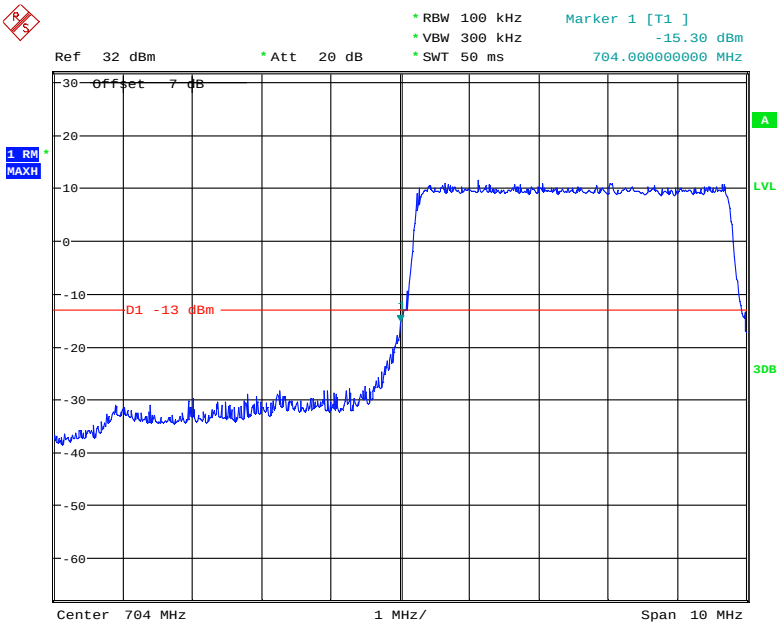
16-QAM (10.0 MHz, FULL RB) - Right Band Edge



Date: 29.OCT.2020 11:50:21

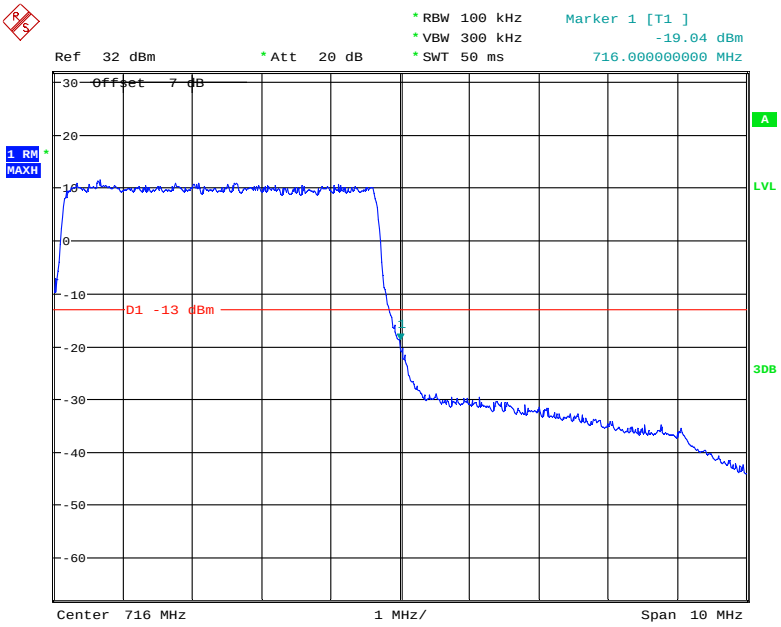
Band 17:

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



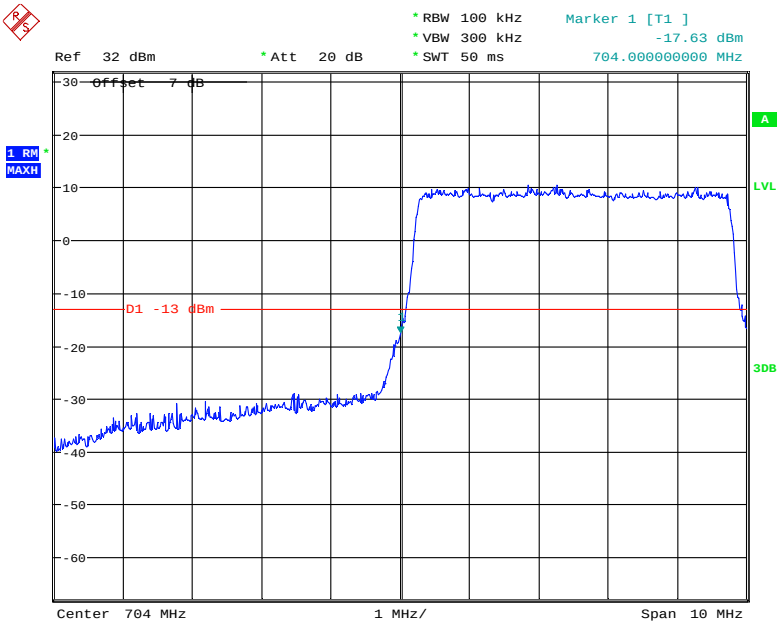
Date: 2.NOV.2020 18:37:06

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



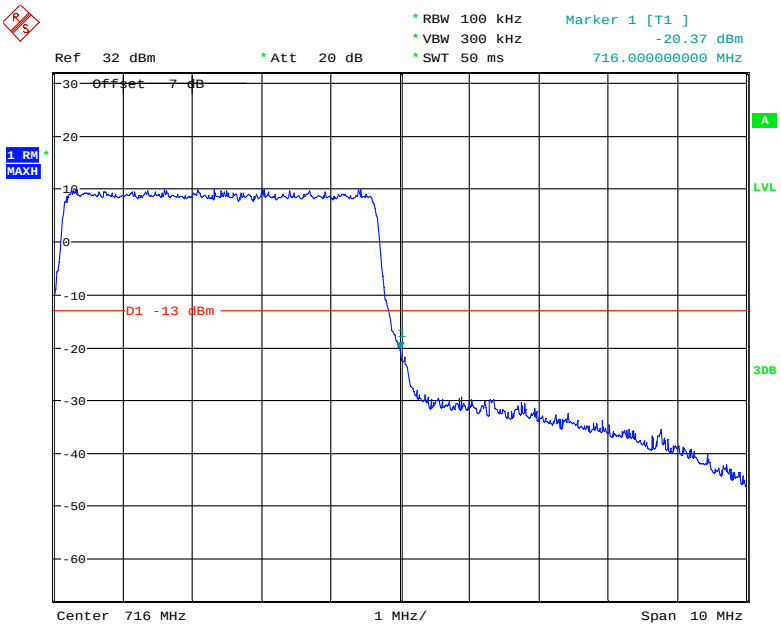
Date: 2.NOV.2020 18:39:22

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



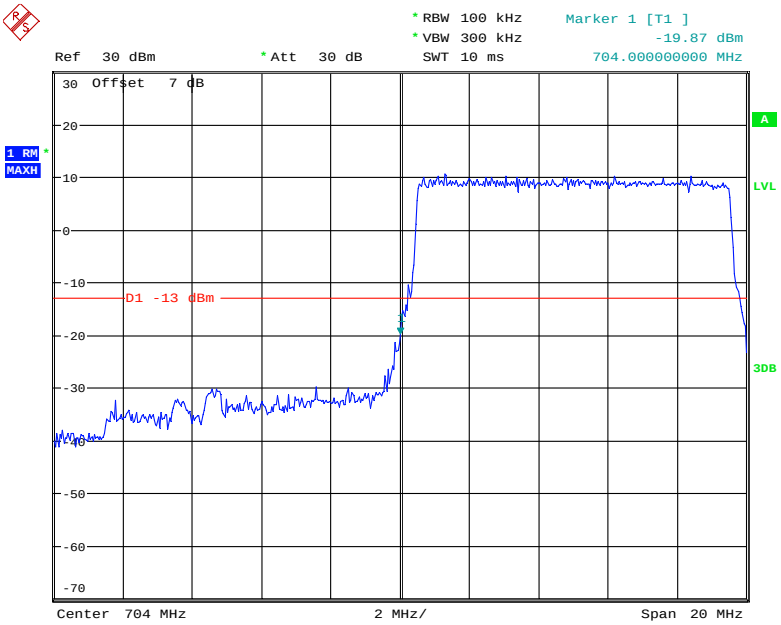
Date: 2.NOV.2020 18:37:37

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



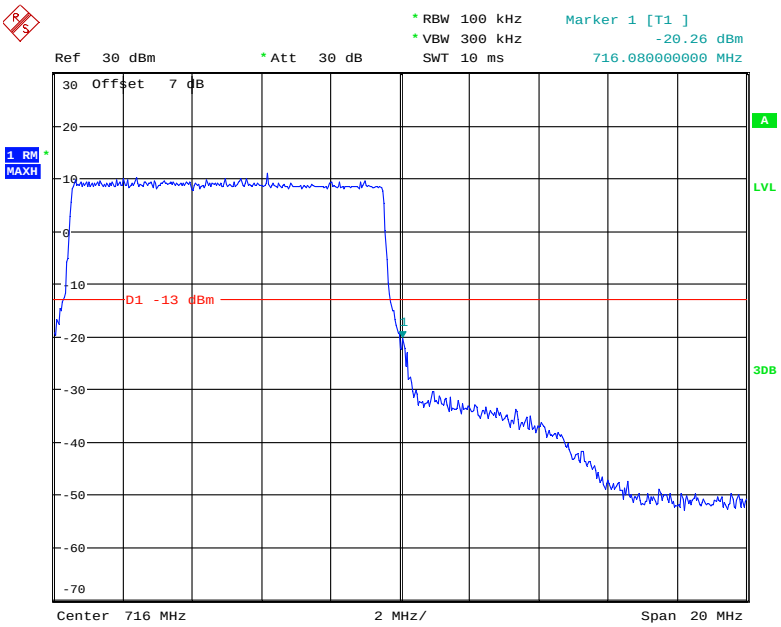
Date: 2.NOV.2020 18:39:48

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



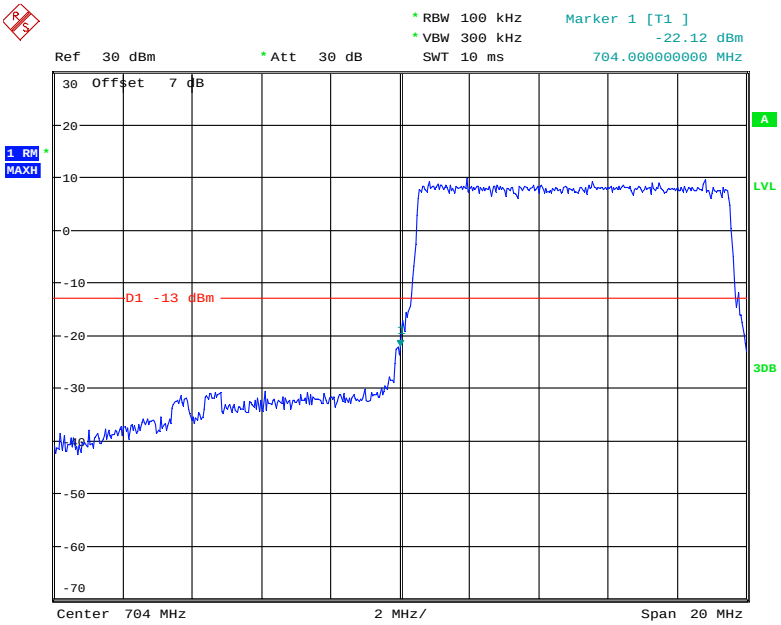
Date: 29.OCT.2020 11:52:15

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



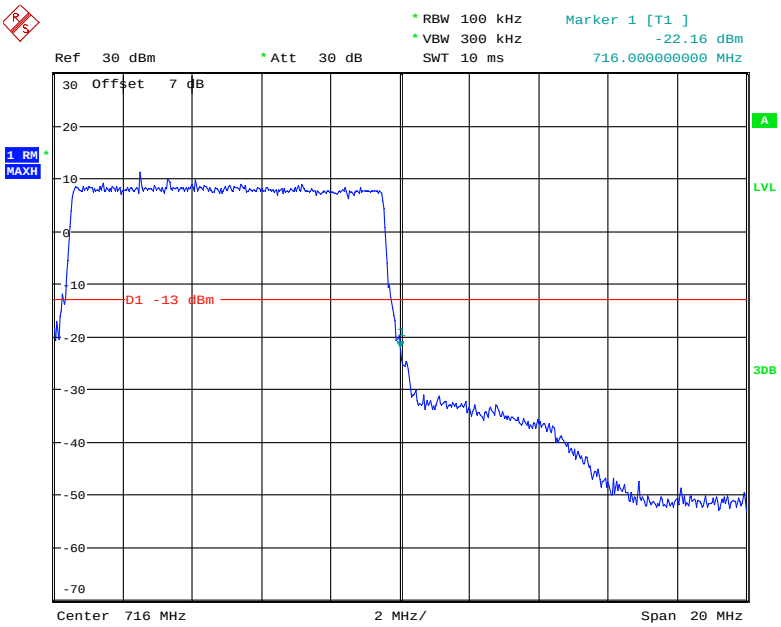
Date: 29.OCT.2020 11:52:51

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



Date: 29.OCT.2020 11:52:33

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



Date: 29.OCT.2020 11:53:09

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

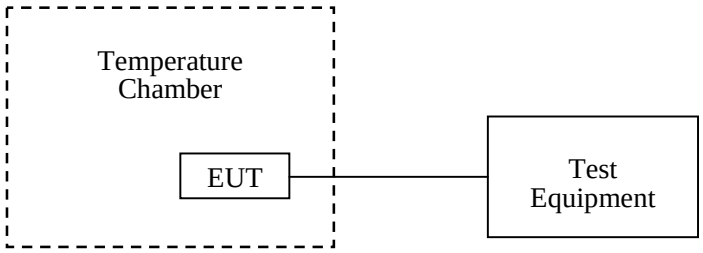
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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:	20 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Andy Yu on 2020-10-29.

EUT operation mode: Transmitting

Test Result: Pass

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	3.87	2	0.0024	2.5
-20		3	0.0036	2.5
-10		0	0.0000	2.5
0		2	0.0024	2.5
10		4	0.0048	2.5
20		5	0.0060	2.5
30		6	0.0072	2.5
40		8	0.0096	2.5
50		4	0.0048	2.5
20	V min.= 3.5	3	0.0036	2.5
	V max.= 4.45	1	0.0012	2.5

EDGE Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.87	3	0.0036	2.5
-20		5	0.0060	2.5
-10		6	0.0072	2.5
0		4	0.0048	2.5
10		5	0.0060	2.5
20		7	0.0084	2.5
30		8	0.0096	2.5
40		6	0.0072	2.5
50		9	0.0108	2.5
20	V min.= 3.5	5	0.0060	2.5
	V max.= 4.45	7	0.0084	2.5

WCDMA Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.87	-1	-0.0012	2.5
-20		1	0.0012	2.5
-10		-3	-0.0036	2.5
0		1	0.0012	2.5
10		2	0.0024	2.5
20		5	0.0060	2.5
30		6	0.0072	2.5
40		1	0.0012	2.5
50		1	0.0012	2.5
20	V min.= 3.5	4	0.0048	2.5
	V max.= 4.45	2	0.0024	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	3.87	-4	-0.0021	pass
-20		4	0.0021	pass
-10		2	0.0011	pass
0		1	0.0005	pass
10		-2	-0.0011	pass
20		-3	-0.0016	pass
30		-4	-0.0021	pass
40		-6	-0.0032	pass
50		-3	-0.0016	pass
20	V min.= 3.5	-4	-0.0021	pass
	V max.= 4.45	-1	-0.0005	pass

EDGE Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.87	-2	-0.0011	pass
-20		-7	-0.0037	pass
-10		-5	-0.0027	pass
0		-6	-0.0032	pass
10		-4	-0.0021	pass
20		-1	-0.0005	pass
30		-2	-0.0011	pass
40		-5	-0.0027	pass
50		-3	-0.0016	pass
20	V min.= 3.5	-2	-0.0011	pass
	V max.= 4.45	-6	-0.0032	pass

WCDMA Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.87	2	0.0011	pass
-20		5	0.0027	pass
-10		9	0.0048	pass
0		8	0.0043	pass
10		6	0.0032	pass
20		3	0.0016	pass
30		1	0.0005	pass
40		4	0.0021	pass
50		2	0.0011	pass
20	V min.= 3.5	5	0.0027	pass
	V max.= 4.45	1	0.0005	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	3.87	1710.0144	1754.9718	1710	1755
-20		1710.0164	1754.9773	1710	1755
-10		1710.0103	1754.9756	1710	1755
0		1710.0142	1754.9754	1710	1755
10		1710.0124	1754.9728	1710	1755
20		1710.0122	1754.9725	1710	1755
30		1710.0146	1754.9711	1710	1755
40		1710.0160	1754.9757	1710	1755
50		1710.0103	1754.9732	1710	1755
20	V min.= 3.5	1710.0139	1754.9710	1710	1755
	V max.= 4.45	1710.0171	1754.9719	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	3.87	-14	-0.0074	pass
-20		-10	-0.0053	pass
-10		-6	-0.0032	pass
0		6	0.0032	pass
10		8	0.0043	pass
20		6	0.0032	pass
30		-7	-0.0037	pass
40		7	0.0037	pass
50		-10	-0.0053	pass
20	V min.= 3.5	-8	-0.0043	pass
	V max.= 4.45	-7	-0.0037	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	3.87	1710.4464	1754.5427	1710	1755
-20		1710.4459	1754.5418	1710	1755
-10		1710.4420	1754.5462	1710	1755
0		1710.4417	1754.5418	1710	1755
10		1710.4426	1754.5431	1710	1755
20		1710.4454	1754.5424	1710	1755
30		1710.4458	1754.5441	1710	1755
40		1710.4410	1754.5435	1710	1755
50		1710.4428	1754.5451	1710	1755
20	V min.= 3.5	1710.4476	1754.5424	1710	1755
	V max.= 4.45	1710.4396	1754.5424	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	3.87	-3	-0.0036	2.5
-20		-7	-0.0084	2.5
-10		-6	-0.0072	2.5
0		6	0.0072	2.5
10		10	0.0120	2.5
20		5	0.0060	2.5
30		-7	-0.0084	2.5
40		-9	-0.0108	2.5
50		-7	-0.0084	2.5
20	V min.= 3.5	9	0.0108	2.5
	V max.= 4.45	-7	-0.0084	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	3.87	2500.4659	2569.5242	2500	2570
-20		2500.4599	2569.5281	2500	2570
-10		2500.4638	2569.5284	2500	2570
0		2500.4673	2569.5237	2500	2570
10		2500.4625	2569.5246	2500	2570
20		2500.4631	2569.5254	2500	2570
30		2500.4630	2569.5269	2500	2570
40		2500.4656	2569.5285	2500	2570
50		2500.4672	2569.5251	2500	2570
20	V min.= 3.5	2500.4613	2569.5286	2500	2570
	V max.= 4.45	2500.4643	2569.5250	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	3.87	699.5171	715.4844	699	716
-20		699.5224	715.4846	699	716
-10		699.5169	715.4825	699	716
0		699.5204	715.4859	699	716
10		699.5186	715.4813	699	716
20		699.5160	715.4852	699	716
30		699.5193	715.4837	699	716
40		699.5189	715.4849	699	716
50		699.5188	715.4840	699	716
20	V min.= 3.5	699.5207	715.4798	699	716
	V max.= 4.45	699.5180	715.4812	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	3.87	704.3709	715.6199	704	716
-20		704.3697	715.6172	704	716
-10		704.3769	715.6205	704	716
0		704.3718	715.6223	704	716
10		704.3726	715.6183	704	716
20		704.3724	715.6156	704	716
30		704.3770	715.6226	704	716
40		704.3763	715.6180	704	716
50		704.3712	715.6168	704	716
20	V min.= 3.5	704.3733	715.6156	704	716
	V max.= 4.45	704.3714	715.6184	704	716

16QAM:

Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.87	-9	-0.0048	pass
-20		-7	-0.0037	pass
-10		10	0.0053	pass
0		-8	-0.0043	pass
10		-10	-0.0053	pass
20		-10	-0.0053	pass
30		-7	-0.0037	pass
40		-9	-0.0048	pass
50		6	0.0032	pass
20	V min.= 3.5	6	0.0032	pass
	V max.= 4.45	8	0.0043	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	3.87	1710.4375	1754.5673	1710	1755
-20		1710.4358	1754.5634	1710	1755
-10		1710.4398	1754.5645	1710	1755
0		1710.4346	1754.5621	1710	1755
10		1710.4354	1754.5625	1710	1755
20		1710.4400	1754.5649	1710	1755
30		1710.4332	1754.5621	1710	1755
40		1710.4403	1754.5647	1710	1755
50		1710.4348	1754.5634	1710	1755
20	V min.= 3.5	1710.4333	1754.5668	1710	1755
	V max.= 4.45	1710.4342	1754.5674	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	3.87	-8	-0.0096	2.5
-20		8	0.0096	2.5
-10		-9	-0.0108	2.5
0		9	0.0108	2.5
10		-7	-0.0084	2.5
20		8	0.0096	2.5
30		6	0.0072	2.5
40		-6	-0.0072	2.5
50		-6	-0.0072	2.5
20	V min.= 3.5	6	0.0072	2.5
	V max.= 4.45	-7	-0.0084	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	3.87	2500.4613	2569.5232	2500	2570
-20		2500.4667	2569.5286	2500	2570
-10		2500.4606	2569.5212	2500	2570
0		2500.4653	2569.5276	2500	2570
10		2500.4633	2569.5238	2500	2570
20		2500.4676	2569.5261	2500	2570
30		2500.4643	2569.5246	2500	2570
40		2500.4627	2569.5245	2500	2570
50		2500.4635	2569.5241	2500	2570
20	V min.= 3.5	2500.4615	2569.5262	2500	2570
	V max.= 4.45	2500.4661	2569.5213	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	3.87	699.5191	715.4889	699	716
-20		699.5188	715.4869	699	716
-10		699.5142	715.4820	699	716
0		699.5198	715.4829	699	716
10		699.5154	715.4846	699	716
20		699.5193	715.4871	699	716
30		699.5133	715.4851	699	716
40		699.5169	715.4878	699	716
50		699.5202	715.4837	699	716
20	V min.= 3.5	699.5166	715.4860	699	716
	V max.= 4.45	699.5141	715.4868	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	3.87	704.3752	715.6192	704	716
-20		704.3721	715.6167	704	716
-10		704.3704	715.6196	704	716
0		704.3705	715.6180	704	716
10		704.3726	715.6148	704	716
20		704.3727	715.6164	704	716
30		704.3750	715.6126	704	716
40		704.3709	715.6177	704	716
50		704.3708	715.6158	704	716
20	V min.= 3.5	704.3760	715.6197	704	716
	V max.= 4.45	704.3774	715.6151	704	716

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