



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

For

Hytera Communications Corporation Limited

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People's Republic of China

FCC ID:YAMECENTER

Report Type: Original Report	Product Type: On-site Command and Dispatch Center
Report Number: RDG191210020-00B	
Report Date: 2020-12-15	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	On-site Command and Dispatch Center
Tested Model	E-center
Frequency Range	WCDMA B2/LTE B2: 1850-1910 MHz(TX), 1930-1990 MHz(RX) WCDMA B4/LTE B4: 1710- 1755 MHz(TX), 2110-2155 MHz(RX) WCDMA B5/LTE B5: 824-849 MHz(TX), 869-894 MHz(RX) LTE B12: 699-716 MHz(TX), 729-746 MHz(RX) LTE B13: 777-787 MHz(TX), 746-756 MHz(RX)
Conducted Tune Up Average Power	WCDMA Band 2: 24dBm WCDMA Band 4: 23dBm WCDMA Band 5: 24dBm LTE Band 2: 24dBm LTE Band 4: 23dBm LTE Band 5: 23dBm LTE Band 12: 23dBm LTE Band 13: 23dBm
Modulation Technique	3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Voltage Range	13.6V _{DC} from Battery or DC12~16.8V from adapter
Date of Test	2020-03-09 to 2020-11-29
Sample serial number	RDG191210020-RF-S1(Assigned by BACL, Shenzhen)
Received date	2019-12-10
Sample/EUT Status	Good condition
Adapter information	Model:PS10001 Input:100~240V,1.5A,50/60Hz Output:12~16.8V,6A/100.8W

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 °C
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.

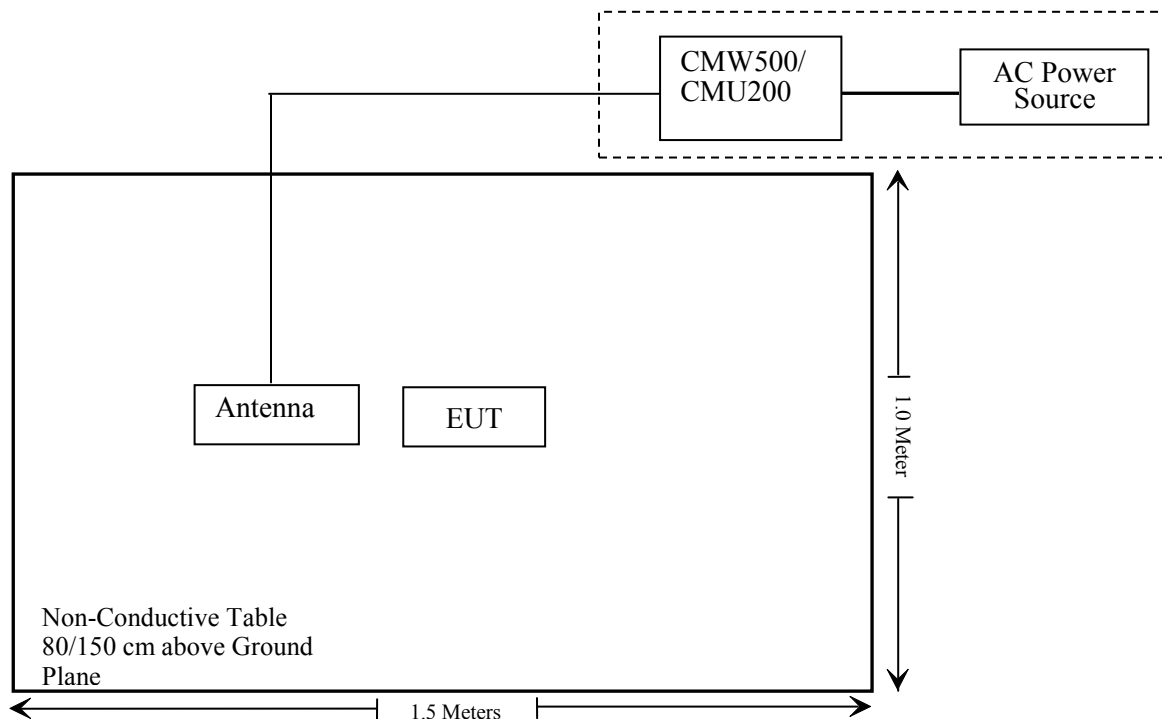
Equipment Modifications

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

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§2.1091	Maximum Permissible Exposure(MPE)	Compliance
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (b (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

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/7/9	2021/7/8
Sonoma instrument	Pre-amplifier	310 N	186238	2020/4/20	2021/4/20
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	2020/7/22	2021/7/21
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	2018/9/1	2021/8/31
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	2020/4/20	2021/4/20
Unknown	High Pass filter	1.3GHz	101120	2020/4/20	2021/4/20
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-02 1304	2017/12/6	2020/12/5
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-01 1304	2017/12/6	2020/12/5
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	2020/3/2	2021/3/1
WEINSCHTEL	3dB Attenuator	Unknown	F-03-EM121	2019/11/29	2020/11/28
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	2020/7/22	2021/7/21
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500	2019/7/22	2020/7/21
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2020/7/9	2021/7/8
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2019/7/9	2020/7/8
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
ESPEC	Temperature & Humidity Chamber	EL-10KA	9107726	2020/01/05	2021/01/05
Fluke	Digital Multimeter	287	19000011	2020/04/12	2021/04/12

* 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 §15.247 (i) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Mode	Frequency (MHz)	Antenna Gain		Max Tune Up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
Wi-Fi	2412-2472	2.0	1.58	18.0	63.1	20	0.020	1.0
LTE Data Module								
WCDMA Band 2	1850-1910	2.0	1.58	24.0	251.2	20	0.079	1.0
WCDMA Band 4	1710-1755	2.0	1.58	23.0	199.5	20	0.063	1.0
WCDMA Band 5	824-849	2.0	1.58	24.0	251.2	20	0.079	0.55
LTE Band 2	1850-1910	2.0	1.58	24.0	251.2	20	0.079	1.0
LTE Band 4	1710-1755	2.0	1.58	23.0	199.5	20	0.063	1.0
LTE Band 5	824-849	2.0	1.58	23.0	199.5	20	0.063	0.55
LTE Band 12	699-716	2.0	1.58	23.0	199.5	20	0.063	0.466
LTE Band 13	777-787	2.0	1.58	23.0	199.5	20	0.063	0.518
LTE Voice Module (FCC ID: XMR201808EC25AF)								
WCDMA Band 2	1850-1910	2.0	1.58	25.0	316.23	20	0.099	1.0
WCDMA Band 4	1710-1755	2.0	1.58	25.0	316.23	20	0.099	1.0
WCDMA Band 5	824-849	2.0	1.58	25.0	316.23	20	0.099	0.55
LTE Band 2	1850-1910	2.0	1.58	25.0	316.23	20	0.099	1.0
LTE Band 4	1710-1755	2.0	1.58	25.0	316.23	20	0.099	1.0
LTE Band 5	824-849	2.0	1.58	25.0	316.23	20	0.099	0.55
LTE Band 12	699-716	2.0	1.58	25.0	316.23	20	0.099	0.466
LTE Band 13	777-787	2.0	1.58	25.0	316.23	20	0.099	0.518
LTE Band 14	788-798	2.0	1.58	25.0	316.23	20	0.099	0.525
LTE Band 66	1710-1780	2.0	1.58	25.0	316.23	20	0.099	1.0
LTE Band 71	663-698	2.0	1.58	25.0	316.23	20	0.099	0.442

- Note: 1. the tune up conducted power was declared by the applicant
 2. the Wi-Fi, LTE Voice module and LTE Data module can transmit at the same time.
 3. Please refer to the MPE report of the FCC ID: XMR201808EC25AF for the LTE voice module output power.

So the worst simultaneous transmitting consideration:

$$\begin{aligned}
 \text{The ratio} &= \text{MPE}_{\text{Wi-Fi}}/\text{limit} + \text{MPE}_{\text{LTE Voice Module}}/\text{limit} + \text{MPE}_{\text{LTE Data Module}}/\text{limit} \\
 &= 0.02/1.0 + 0.079/0.55 + 0.099/0.442 \\
 &= 0.39 < 1.0
 \end{aligned}$$

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliance

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 (b) (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(b), Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

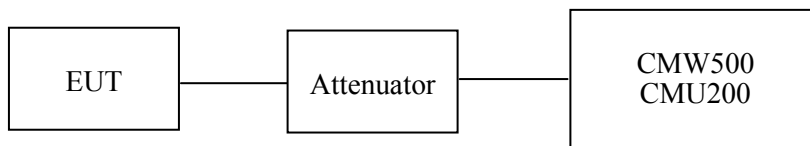
According to §27.50(c), Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

Test Procedure

Conducted method:

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



Radiated method:

ANSI C63.26-2015 section 5.5.3.

Test Data

Environmental Conditions

Temperature:	23.3-30.5 °C
Relative Humidity:	42-66%
ATM Pressure:	100.3-101.2 kPa

The testing was performed by Alan He and Gavin Guo from 2020-03-09 to 2020-10-22

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

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Freq. (826.4MHz)	Mid Freq. (836.6MHz)	High Freq. (846.6MHz)
WCDMA (Band 5)	Normal	RMC12.2k		23.48	23.08	23.02
		HSDPA	1	22.48	22.23	21.97
			2	22.48	22.12	21.87
			3	22.57	22.29	22.02
			4	22.43	22.17	21.94
		HSUPA	1	21.81	21.62	21.27
			2	21.81	21.51	21.20
			3	21.91	21.73	21.34
			4	21.76	21.59	21.18
			5	21.89	21.71	21.32
		HSPA+	1	21.59	21.63	21.24

PCS Band (Part 24E)

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Freq. (1852.4MHz)	Mid Freq. (1880MHz)	High Freq. (1907.6MHz)
WCDMA (Band 2)	Normal	RMC12.2k		23.39	23.60	22.77
		HSDPA	1	22.61	22.99	22.43
			2	22.61	22.94	22.35
			3	22.69	23.11	22.53
			4	22.53	22.87	22.34
		HSUPA	1	22.01	22.21	21.59
			2	22.01	22.09	21.56
			3	22.08	22.30	21.71
			4	21.96	22.17	21.49
			5	22.09	22.27	21.66
		HSPA+	1	21.95	22.03	21.43

AWS Band (Part 27)

Mode	Test Condition	Test Mode	3GPP Sub Test	Average Output Power (dBm)		
				Low Freq. (1712.4MHz)	Mid Freq. (1732.6MHz)	High Freq. (1752.6MHz)
WCDMA (Band 4)	Normal	RMC12.2k		22.01	22.21	21.59
		HSDPA	1	22.16	22.20	22.07
			2	22.16	22.07	21.97
			3	22.20	22.32	22.11
			4	22.11	22.15	22.00
		HSUPA	1	21.52	21.56	21.44
			2	21.52	21.47	21.33
			3	21.62	21.60	21.50
			4	21.41	21.52	21.34
			5	21.62	21.68	21.50
		HSPA+	1	21.45	21.50	21.24

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

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.87	13
	Middle	3.00	13
	High	3.70	13
HSDPA (16QAM)	Low	3.43	13
	Middle	3.47	13
	High	3.41	13
HSUPA (BPSK)	Low	3.07	13
	Middle	2.76	13
	High	2.88	13
HSPA+	Low	3.13	13
	Middle	3.42	13
	High	3.26	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.98	13
	Middle	3.17	13
	High	3.33	13
HSDPA (16QAM)	Low	3.61	13
	Middle	3.30	13
	High	3.52	13
HSUPA (BPSK)	Low	3.68	13
	Middle	3.81	13
	High	3.75	13
HSPA+	Low	3.59	13
	Middle	3.71	13
	High	3.42	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.06	13
	Middle	3.18	13
	High	2.70	13
HSDPA (16QAM)	Low	3.47	13
	Middle	3.19	13
	High	3.25	13
HSUPA (BPSK)	Low	2.77	13
	Middle	3.13	13
	High	3.26	13
HSPA+	Low	3.29	13
	Middle	3.43	13
	High	3.22	13

Radiated Power**WCDMA Mode:**

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBi)	EIRP (dBm)	Limit (dBm)	Result
EIRP for WCDMA Band II (Part 24E)					
1852.4	23.39	2	25.39	33	Pass
1880	23.60	2	25.60	33	Pass
1907.6	22.77	2	24.77	33	Pass
EIRP for WCDMA Band IV (Part 27)					
1712.4	22.20	2	24.20	30	Pass
1732.6	22.32	2	24.32	30	Pass
1752.6	22.11	2	24.11	30	Pass

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBd)	ERP (dBm)	Limit (dBm)	Result
ERP for WCDMA Band V (Part 22H)					
826.4	23.48	-0.15	23.33	38.45	Pass
836.6	23.08	-0.15	22.93	38.45	Pass
846.6	23.02	-0.15	22.87	38.45	Pass

Note:

(Antenna gain - Cable loss) is 2dBi, which was declared by manufacturer

EIRP = Conducted output power + Antenna Gain-cable loss

dBd=dBi-2.15

LTE Band 2:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.44	22.74	22.48
		RB Size=1, RB Offset=3	22.50	22.82	22.01
		RB Size=1, RB Offset=5	22.42	22.66	22.23
		RB Size=3, RB Offset=0	22.40	22.67	21.99
		RB Size=3, RB Offset=3	22.42	22.71	22.00
		RB Size=6, RB Offset=0	21.40	21.69	21.19
	16QAM	RB Size=1, RB Offset=0	21.61	21.71	21.23
		RB Size=1, RB Offset=3	21.65	22.02	21.24
		RB Size=1, RB Offset=5	21.60	21.73	21.19
		RB Size=3, RB Offset=0	21.44	21.80	21.27
		RB Size=3, RB Offset=3	21.46	21.76	21.14
		RB Size=6, RB Offset=0	20.45	20.64	20.24
3.0	QPSK	RB Size=1, RB Offset=0	22.47	22.75	22.51
		RB Size=1, RB Offset=8	22.47	22.64	22.40
		RB Size=1, RB Offset=14	22.41	22.63	22.29
		RB Size=6, RB Offset=0	21.41	21.70	21.26
		RB Size=6, RB Offset=9	21.36	21.66	20.96
		RB Size=15, RB Offset=0	21.44	21.67	21.25
	16QAM	RB Size=1, RB Offset=0	22.35	21.87	21.65
		RB Size=1, RB Offset=8	22.17	21.82	21.21
		RB Size=1, RB Offset=14	22.17	21.82	21.41
		RB Size=6, RB Offset=0	20.52	20.85	20.18
		RB Size=6, RB Offset=9	20.47	20.90	20.04
		RB Size=15, RB Offset=0	20.50	20.73	20.27

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.85	22.96	23.13
		RB Size=1, RB Offset=13	22.64	23.08	22.45
		RB Size=1, RB Offset=24	22.55	22.84	22.60
		RB Size=15, RB Offset=0	21.59	21.73	21.80
		RB Size=15, RB Offset=10	21.55	21.57	21.24
		RB Size=25, RB Offset=0	21.40	21.64	21.78
	16QAM	RB Size=1, RB Offset=0	21.73	22.17	21.85
		RB Size=1, RB Offset=13	21.46	22.10	21.37
		RB Size=1, RB Offset=24	21.50	22.12	21.22
		RB Size=15, RB Offset=0	20.58	20.75	20.89
		RB Size=15, RB Offset=10	20.54	20.59	20.31
		RB Size=25, RB Offset=0	20.49	20.75	20.83
10.0	QPSK	RB Size=1, RB Offset=0	22.75	23.05	23.29
		RB Size=1, RB Offset=25	22.58	22.67	22.90
		RB Size=1, RB Offset=49	22.50	22.80	22.56
		RB Size=25, RB Offset=0	21.58	21.80	21.72
		RB Size=25, RB Offset=24	21.46	21.72	21.86
		RB Size=50, RB Offset=0	21.52	21.78	21.77
	16QAM	RB Size=1, RB Offset=0	22.75	22.45	22.09
		RB Size=1, RB Offset=25	22.20	21.91	21.68
		RB Size=1, RB Offset=49	22.20	22.14	21.53
		RB Size=25, RB Offset=0	20.62	20.81	21.11
		RB Size=25, RB Offset=24	20.54	20.74	21.05
		RB Size=50, RB Offset=0	20.52	20.80	21.09

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.72	22.95	23.13
		RB Size=1, RB Offset=38	22.31	22.42	22.55
		RB Size=1, RB Offset=74	22.28	22.54	22.51
		RB Size=36, RB Offset=0	22.21	22.24	22.16
		RB Size=36, RB Offset=39	22.16	22.29	22.33
		RB Size=75, RB Offset=0	22.19	22.35	22.23
	16QAM	RB Size=1, RB Offset=0	22.28	22.16	22.21
		RB Size=1, RB Offset=38	22.15	22.27	22.18
		RB Size=1, RB Offset=74	22.35	22.16	22.23
		RB Size=36, RB Offset=0	21.52	21.62	21.18
		RB Size=36, RB Offset=39	21.33	21.73	21.23
		RB Size=75, RB Offset=0	21.37	21.72	21.19
20.0	QPSK	RB Size=1, RB Offset=0	22.46	22.09	22.33
		RB Size=1, RB Offset=50	22.22	22.5	22.32
		RB Size=1, RB Offset=99	22.15	22.1	22.11
		RB Size=50, RB Offset=0	21.86	21.84	21.91
		RB Size=50, RB Offset=50	21.78	21.85	21.99
		RB Size=100, RB Offset=0	21.89	21.62	21.68
	16QAM	RB Size=1, RB Offset=0	21.42	21.76	21.71
		RB Size=1, RB Offset=50	21.43	21.61	21.58
		RB Size=1, RB Offset=99	21.31	21.43	21.68
		RB Size=50, RB Offset=0	21.32	21.45	21.44
		RB Size=50, RB Offset=50	21.29	21.48	21.37
		RB Size=100, RB Offset=0	21.33	21.14	21.45

Peak-to-average ratio (PAR)**20MHz Bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.49	3.56	3.46	13	Pass
QPSK (100RB Size)	5.13	5.16	5.03	13	Pass
16QAM (1RB Size)	4.36	4.55	4.42	13	Pass
16QAM (100RB Size)	6.09	6.15	5.96	13	Pass

QPSK:

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBi)	EIRP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
1850.7	22.50	2	24.50	33	Pass
1880	22.82	2	24.82	33	Pass
1909.3	22.48	2	24.48	33	Pass
3 MHz Bandwidth					
1851.5	22.47	2	24.47	33	Pass
1880	22.75	2	24.75	33	Pass
1908.5	22.51	2	24.51	33	Pass
5 MHz Bandwidth					
1852.5	22.85	2	24.85	33	Pass
1880	23.08	2	25.08	33	Pass
1907.5	23.13	2	25.13	33	Pass
10 MHz Bandwidth					
1855	22.75	2	24.75	33	Pass
1880	23.05	2	25.05	33	Pass
1905	23.29	2	25.29	33	Pass
15 MHz Bandwidth					
1857.5	22.72	2	24.72	33	Pass
1880	22.95	2	24.95	33	Pass
1902.5	23.13	2	25.13	33	Pass
20 MHz Bandwidth					
1860	22.46	2	24.46	33	Pass
1880	22.50	2	24.50	33	Pass
1900	22.33	2	24.33	33	Pass

16QAM

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBi)	EIRP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
1850.7	21.65	2	23.65	33	Pass
1880	22.02	2	24.02	33	Pass
1909.3	21.27	2	23.27	33	Pass
3 MHz Bandwidth					
1851.5	22.35	2	24.35	33	Pass
1880	21.87	2	23.87	33	Pass
1908.5	21.65	2	23.65	33	Pass
5 MHz Bandwidth					
1852.5	21.73	2	23.73	33	Pass
1880	22.17	2	24.17	33	Pass
1907.5	21.85	2	23.85	33	Pass
10 MHz Bandwidth					
1855	22.75	2	24.75	33	Pass
1880	22.45	2	24.45	33	Pass
1905	22.09	2	24.09	33	Pass
15 MHz Bandwidth					
1857.5	22.35	2	24.35	33	Pass
1880	22.27	2	24.27	33	Pass
1902.5	22.23	2	24.23	33	Pass
20 MHz Bandwidth					
1860	21.43	2	23.43	33	Pass
1880	21.76	2	23.76	33	Pass
1900	21.71	2	23.71	33	Pass

Note:

(Antenna gain - Cable loss) is 2dBi, which was declared by manufacturer
EIRP = conducted output power + Antenna Gain-cable loss

LTE Band 4:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.45	22.07	22.35
		RB Size=1, RB Offset=3	22.31	22.48	22.38
		RB Size=1, RB Offset=5	22.28	22.01	22.47
		RB Size=3, RB Offset=0	22.18	22.11	22.45
		RB Size=3, RB Offset=3	22.47	22.30	22.48
		RB Size=6, RB Offset=0	21.78	21.53	21.81
	16QAM	RB Size=1, RB Offset=0	21.92	21.56	21.66
		RB Size=1, RB Offset=3	21.87	21.57	21.75
		RB Size=1, RB Offset=5	21.94	21.89	21.53
		RB Size=3, RB Offset=0	21.54	21.53	21.68
		RB Size=3, RB Offset=3	21.92	21.84	21.85
		RB Size=6, RB Offset=0	21.13	21.40	21.40
3.0	QPSK	RB Size=1, RB Offset=0	22.46	22.25	22.42
		RB Size=1, RB Offset=8	22.15	22.23	22.29
		RB Size=1, RB Offset=14	22.06	22.43	22.35
		RB Size=6, RB Offset=0	21.61	21.94	21.92
		RB Size=6, RB Offset=9	21.89	21.58	21.76
		RB Size=15, RB Offset=0	21.62	21.97	21.98
	16QAM	RB Size=1, RB Offset=0	21.55	21.33	21.41
		RB Size=1, RB Offset=8	21.72	21.43	21.79
		RB Size=1, RB Offset=14	21.62	21.55	21.55
		RB Size=6, RB Offset=0	21.09	21.32	21.43
		RB Size=6, RB Offset=9	21.32	21.47	21.43
		RB Size=15, RB Offset=0	21.26	21.19	21.48

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.24	22.43	22.37
		RB Size=1, RB Offset=13	22.14	22.48	22.28
		RB Size=1, RB Offset=24	22.29	22.25	22.30
		RB Size=15, RB Offset=0	21.77	21.83	21.56
		RB Size=15, RB Offset=10	21.61	21.63	21.56
		RB Size=25, RB Offset=0	21.74	21.71	21.54
	16QAM	RB Size=1, RB Offset=0	21.41	21.45	21.73
		RB Size=1, RB Offset=13	21.62	21.73	21.56
		RB Size=1, RB Offset=24	21.41	21.30	21.37
		RB Size=15, RB Offset=0	21.22	21.36	21.44
		RB Size=15, RB Offset=10	21.31	21.22	21.41
		RB Size=25, RB Offset=0	21.07	21.33	21.04
10.0	QPSK	RB Size=1, RB Offset=0	22.33	22.31	22.30
		RB Size=1, RB Offset=25	22.45	22.26	22.24
		RB Size=1, RB Offset=49	22.48	22.22	22.48
		RB Size=25, RB Offset=0	21.62	21.85	21.79
		RB Size=25, RB Offset=24	21.65	21.74	21.52
		RB Size=50, RB Offset=0	21.64	21.67	21.92
	16QAM	RB Size=1, RB Offset=0	21.53	21.44	21.79
		RB Size=1, RB Offset=25	21.45	21.50	21.31
		RB Size=1, RB Offset=49	21.56	21.37	21.47
		RB Size=25, RB Offset=0	21.47	21.32	21.46
		RB Size=25, RB Offset=24	21.16	21.37	21.36
		RB Size=50, RB Offset=0	21.29	21.24	21.34

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
15.0	QPSK	RB Size=1, RB Offset=0	22.13	22.27	22.12
		RB Size=1, RB Offset=38	22.11	22.12	22.27
		RB Size=1, RB Offset=74	22.23	22.08	22.48
		RB Size=36, RB Offset=0	21.86	21.82	21.52
		RB Size=36, RB Offset=39	21.63	21.59	21.91
		RB Size=75, RB Offset=0	21.57	21.53	21.98
	16QAM	RB Size=1, RB Offset=0	21.72	21.77	21.60
		RB Size=1, RB Offset=38	21.47	21.68	21.54
		RB Size=1, RB Offset=74	21.71	21.80	21.54
		RB Size=36, RB Offset=0	21.44	21.27	21.34
		RB Size=36, RB Offset=39	21.30	21.32	21.26
		RB Size=75, RB Offset=0	21.15	21.15	21.03
20.0	QPSK	RB Size=1, RB Offset=0	22.35	22.44	22.44
		RB Size=1, RB Offset=50	22.25	22.44	22.32
		RB Size=1, RB Offset=99	22.24	22.08	22.24
		RB Size=50, RB Offset=0	21.61	21.88	21.83
		RB Size=50, RB Offset=50	21.76	21.59	21.73
		RB Size=100, RB Offset=0	21.95	21.56	21.97
	16QAM	RB Size=1, RB Offset=0	21.72	21.55	21.33
		RB Size=1, RB Offset=50	21.34	21.32	21.65
		RB Size=1, RB Offset=99	21.46	21.53	21.44
		RB Size=50, RB Offset=0	21.24	21.11	21.42
		RB Size=50, RB Offset=50	21.11	21.08	21.23
		RB Size=100, RB Offset=0	21.01	20.95	21.07

Peak-to-average ratio (PAR)**20MHz Bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.49	3.81	3.37	13	Pass
QPSK (100RB Size)	5.22	5.26	5.16	13	Pass
16QAM (1RB Size)	4.13	4.84	4.36	13	Pass
16QAM (100RB Size)	6.12	6.19	6.19	13	Pass

QPSK:

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBi)	EIRP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
1710.7	22.47	2	24.47	30	Pass
1732.5	22.48	2	24.48	30	Pass
1754.3	22.48	2	24.48	30	Pass
3 MHz Bandwidth					
1711.5	22.46	2	24.46	30	Pass
1732.5	22.43	2	24.43	30	Pass
1753.5	22.42	2	24.42	30	Pass
5 MHz Bandwidth					
1712.5	22.29	2	24.29	30	Pass
1732.5	22.48	2	24.48	30	Pass
1752.5	22.37	2	24.37	30	Pass
10 MHz Bandwidth					
1715	22.48	2	24.48	30	Pass
1732.5	22.31	2	24.31	30	Pass
1750	22.48	2	24.48	30	Pass
15 MHz Bandwidth					
1717.5	22.23	2	24.23	30	Pass
1732.5	22.27	2	24.27	30	Pass
1747.5	22.48	2	24.48	30	Pass
20 MHz Bandwidth					
1720	22.35	2	24.35	30	Pass
1732.5	22.44	2	24.44	30	Pass
1745	22.44	2	24.44	30	Pass

16QAM

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBi)	EIRP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
1710.7	21.94	2	23.94	30	Pass
1732.5	21.89	2	23.89	30	Pass
1754.3	21.85	2	23.85	30	Pass
3 MHz Bandwidth					
1711.5	21.72	2	23.72	30	Pass
1732.5	21.55	2	23.55	30	Pass
1753.5	21.79	2	23.79	30	Pass
5 MHz Bandwidth					
1712.5	21.62	2	23.62	30	Pass
1732.5	21.73	2	23.73	30	Pass
1752.5	21.73	2	23.73	30	Pass
10 MHz Bandwidth					
1715	21.56	2	23.56	30	Pass
1732.5	21.50	2	23.50	30	Pass
1750	21.79	2	23.79	30	Pass
15 MHz Bandwidth					
1717.5	21.72	2	23.72	30	Pass
1732.5	21.80	2	23.80	30	Pass
1747.5	21.60	2	23.60	30	Pass
20 MHz Bandwidth					
1720	21.72	2	23.72	30	Pass
1732.5	21.55	2	23.55	30	Pass
1745	21.65	2	23.65	30	Pass

Note:

(Antenna gain-cable loss) is 2dBi, which was declared by manufacturer
 EIRP = conducted output power + Antenna Gain-cable loss

LTE Band 5:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.32	22.29	22.40
		RB Size=1, RB Offset=3	22.45	22.38	22.35
		RB Size=1, RB Offset=5	22.38	22.43	22.48
		RB Size=3, RB Offset=0	21.58	21.65	21.54
		RB Size=3, RB Offset=3	21.73	21.68	21.71
		RB Size=6, RB Offset=0	21.63	21.94	21.68
	16QAM	RB Size=1, RB Offset=0	21.75	21.78	21.46
		RB Size=1, RB Offset=3	21.71	21.65	21.43
		RB Size=1, RB Offset=5	21.31	21.67	21.46
		RB Size=3, RB Offset=0	21.24	21.63	21.32
		RB Size=3, RB Offset=3	21.26	21.30	21.45
		RB Size=6, RB Offset=0	21.08	21.21	21.19
3.0	QPSK	RB Size=1, RB Offset=0	22.44	22.31	22.25
		RB Size=1, RB Offset=8	22.41	22.29	22.50
		RB Size=1, RB Offset=14	22.15	22.37	22.43
		RB Size=6, RB Offset=0	21.99	21.94	21.79
		RB Size=6, RB Offset=9	21.84	21.89	21.79
		RB Size=15, RB Offset=0	21.64	21.70	21.75
	16QAM	RB Size=1, RB Offset=0	21.58	21.44	21.69
		RB Size=1, RB Offset=8	21.32	21.68	21.74
		RB Size=1, RB Offset=14	21.67	21.79	21.74
		RB Size=6, RB Offset=0	21.33	21.11	21.46
		RB Size=6, RB Offset=9	21.15	21.35	21.23
		RB Size=15, RB Offset=0	21.07	21.11	21.15

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
5.0	QPSK	RB Size=1, RB Offset=0	22.25	22.48	22.23
		RB Size=1, RB Offset=13	22.37	22.39	22.46
		RB Size=1, RB Offset=24	22.45	22.19	22.13
		RB Size=15, RB Offset=0	21.94	21.92	21.83
		RB Size=15, RB Offset=10	21.66	21.79	21.72
		RB Size=25, RB Offset=0	22.00	21.70	21.59
	16QAM	RB Size=1, RB Offset=0	21.32	21.43	21.59
		RB Size=1, RB Offset=13	21.32	21.39	21.64
		RB Size=1, RB Offset=24	21.56	21.47	21.62
		RB Size=15, RB Offset=0	21.42	21.32	21.58
		RB Size=15, RB Offset=10	21.43	21.29	21.43
		RB Size=25, RB Offset=0	21.25	21.12	21.27
10.0	QPSK	RB Size=1, RB Offset=0	22.41	22.44	22.24
		RB Size=1, RB Offset=25	22.35	22.26	22.15
		RB Size=1, RB Offset=49	22.07	22.05	22.44
		RB Size=25, RB Offset=0	21.97	21.65	21.66
		RB Size=25, RB Offset=24	21.65	21.94	21.87
		RB Size=50, RB Offset=0	21.87	21.85	21.79
	16QAM	RB Size=1, RB Offset=0	21.65	21.73	21.74
		RB Size=1, RB Offset=25	21.34	21.71	21.38
		RB Size=1, RB Offset=49	21.37	21.56	21.67
		RB Size=25, RB Offset=0	21.51	21.47	21.43
		RB Size=25, RB Offset=24	21.41	21.31	21.47
		RB Size=50, RB Offset=0	21.06	21.13	21.12

Peak-to-average ratio (PAR)**10MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.85	3.69	3.88	13	Pass
QPSK (50RB Size)	5.16	5.22	5.26	13	Pass
16QAM (1RB Size)	5.29	4.36	4.87	13	Pass
16QAM (50RB Size)	6.12	6.12	6.31	13	Pass

QPSK:

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBd)	ERP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
824.7	22.45	-0.15	22.30	38.45	Pass
836.5	22.43	-0.15	22.28	38.45	Pass
848.3	22.48	-0.15	22.33	38.45	Pass
3 MHz Bandwidth					
825.5	22.44	-0.15	22.29	38.45	Pass
836.5	22.37	-0.15	22.22	38.45	Pass
847.5	22.50	-0.15	22.35	38.45	Pass
5 MHz Bandwidth					
826.5	22.45	-0.15	22.30	38.45	Pass
836.5	22.48	-0.15	22.33	38.45	Pass
846.5	22.46	-0.15	22.31	38.45	Pass
10 MHz Bandwidth					
829	22.41	-0.15	22.26	38.45	Pass
836.5	22.44	-0.15	22.29	38.45	Pass
844	22.44	-0.15	22.29	38.45	Pass

16QAM

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBd)	ERP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
824.7	21.75	-0.15	21.60	38.45	Pass
836.5	21.78	-0.15	21.63	38.45	Pass
848.3	21.46	-0.15	21.31	38.45	Pass
3 MHz Bandwidth					
825.5	21.67	-0.15	21.52	38.45	Pass
836.5	21.79	-0.15	21.64	38.45	Pass
847.5	21.74	-0.15	21.59	38.45	Pass
5 MHz Bandwidth					
826.5	21.56	-0.15	21.41	38.45	Pass
836.5	21.47	-0.15	21.32	38.45	Pass
846.5	21.64	-0.15	21.49	38.45	Pass
10 MHz Bandwidth					
829	21.65	-0.15	21.50	38.45	Pass
836.5	21.73	-0.15	21.58	38.45	Pass
844	21.74	-0.15	21.59	38.45	Pass

Note:

(Antenna gain-cable loss) is 2dBi, which was declared by manufacturer

ERP = conducted output power + Antenna Gain-cable loss

dBd=dBi-2.15

LTE Band 12:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
1.4	QPSK	RB Size=1, RB Offset=0	22.23	22.37	22.32
		RB Size=1, RB Offset=3	22.28	22.40	22.44
		RB Size=1, RB Offset=5	22.38	22.25	22.26
		RB Size=3, RB Offset=0	21.90	21.58	21.85
		RB Size=3, RB Offset=3	21.99	21.94	21.96
		RB Size=6, RB Offset=0	21.54	21.83	21.73
	16QAM	RB Size=1, RB Offset=0	21.48	21.68	21.41
		RB Size=1, RB Offset=3	21.48	21.68	21.40
		RB Size=1, RB Offset=5	21.45	21.71	21.43
		RB Size=3, RB Offset=0	21.03	21.47	21.34
		RB Size=3, RB Offset=3	21.27	21.31	21.38
		RB Size=6, RB Offset=0	21.04	21.21	21.13
3.0	QPSK	RB Size=1, RB Offset=0	22.43	22.31	22.27
		RB Size=1, RB Offset=8	22.30	22.29	22.26
		RB Size=1, RB Offset=14	22.02	22.32	22.32
		RB Size=6, RB Offset=0	21.72	21.66	21.66
		RB Size=6, RB Offset=9	21.99	21.61	21.62
		RB Size=15, RB Offset=0	21.63	21.63	21.90
	16QAM	RB Size=1, RB Offset=0	21.52	21.44	21.48
		RB Size=1, RB Offset=8	21.62	21.79	21.52
		RB Size=1, RB Offset=14	21.57	21.67	21.50
		RB Size=6, RB Offset=0	21.08	21.30	21.12
		RB Size=6, RB Offset=9	21.25	21.18	21.39
		RB Size=15, RB Offset=0	21.05	21.14	21.47

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
5	QPSK	RB Size=1, RB Offset=0	22.47	22.42	22.33
		RB Size=1, RB Offset=13	22.35	22.14	22.41
		RB Size=1, RB Offset=24	22.35	22.32	22.22
		RB Size=15, RB Offset=0	21.84	21.97	21.82
		RB Size=15, RB Offset=10	21.93	21.51	21.68
		RB Size=25, RB Offset=0	21.66	21.89	21.65
	16QAM	RB Size=1, RB Offset=0	21.54	21.53	21.49
		RB Size=1, RB Offset=13	21.34	21.57	21.77
		RB Size=1, RB Offset=24	21.57	21.49	21.61
		RB Size=15, RB Offset=0	21.36	21.33	21.47
		RB Size=15, RB Offset=10	21.43	21.42	21.29
		RB Size=25, RB Offset=0	21.33	21.24	21.12
10	QPSK	RB Size=1, RB Offset=0	22.28	22.23	22.36
		RB Size=1, RB Offset=25	22.38	22.45	22.18
		RB Size=1, RB Offset=49	22.19	22.32	22.29
		RB Size=25, RB Offset=0	22.00	21.76	21.86
		RB Size=25, RB Offset=24	21.78	21.82	21.98
		RB Size=50, RB Offset=0	21.55	21.75	21.63
	16QAM	RB Size=1, RB Offset=0	21.82	21.56	21.77
		RB Size=1, RB Offset=25	21.34	21.71	21.73
		RB Size=1, RB Offset=49	21.74	21.54	21.60
		RB Size=25, RB Offset=0	21.49	21.33	21.13
		RB Size=25, RB Offset=24	21.33	21.43	21.14
		RB Size=50, RB Offset=0	21.21	21.42	21.38

Peak-to-average ratio (PAR)**10MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.62	3.65	3.69	13	Pass
QPSK (50RB Size)	5.22	5.10	5.51	13	Pass
16QAM (1RB Size)	4.62	4.29	4.13	13	Pass
16QAM (50RB Size)	6.06	5.90	6.22	13	Pass

QPSK:

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBd)	ERP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
699.7	22.38	-0.15	22.23	34.77	Pass
707.5	22.40	-0.15	22.25	34.77	Pass
715.3	22.44	-0.15	22.29	34.77	Pass
3 MHz Bandwidth					
700.5	22.43	-0.15	22.28	34.77	Pass
707.5	22.32	-0.15	22.17	34.77	Pass
714.5	22.32	-0.15	22.17	34.77	Pass
5 MHz Bandwidth					
701.5	22.47	-0.15	22.32	34.77	Pass
707.5	22.42	-0.15	22.27	34.77	Pass
713.5	22.41	-0.15	22.26	34.77	Pass
10 MHz Bandwidth					
704	22.38	-0.15	22.23	34.77	Pass
707.5	22.45	-0.15	22.30	34.77	Pass
711	22.36	-0.15	22.21	34.77	Pass

16QAM

Frequency (MHz)	Conducted output power (dBm)	Antenna gain- Cable loss (dBd)	ERP (dBm)	Limit (dBm)	Result
1.4 MHz Bandwidth					
699.7	21.48	-0.15	21.33	34.77	Pass
707.5	21.71	-0.15	21.56	34.77	Pass
715.3	21.43	-0.15	21.28	34.77	Pass
3 MHz Bandwidth					
700.5	21.62	-0.15	21.47	34.77	Pass
707.5	21.79	-0.15	21.64	34.77	Pass
714.5	21.52	-0.15	21.37	34.77	Pass
5 MHz Bandwidth					
701.5	21.57	-0.15	21.42	34.77	Pass
707.5	21.57	-0.15	21.42	34.77	Pass
713.5	21.77	-0.15	21.62	34.77	Pass
10 MHz Bandwidth					
704	21.82	-0.15	21.67	34.77	Pass
707.5	21.71	-0.15	21.56	34.77	Pass
711	21.77	-0.15	21.62	34.77	Pass

Note:

Antenna gain+ cable loss is 2dBi, which was declared by manufacturer

EIRP = conducted output power + Antenna Gain-cable loss

dBd=dBi-2.15

LTE Band 13:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/RB Offset	Low Channel (dBm)	Middle channel (dBm)	High Channel (dBm)
5	QPSK	RB Size=1, RB Offset=0	22.37	22.26	22.19
		RB Size=1, RB Offset=13	22.32	22.26	22.36
		RB Size=1, RB Offset=24	22.43	22.41	22.29
		RB Size=15, RB Offset=0	21.88	21.52	21.62
		RB Size=15, RB Offset=10	21.51	21.95	21.56
		RB Size=25, RB Offset=0	21.98	21.69	21.76
	16QAM	RB Size=1, RB Offset=0	21.48	21.53	21.77
		RB Size=1, RB Offset=13	21.65	21.53	21.67
		RB Size=1, RB Offset=24	21.64	21.67	21.51
		RB Size=15, RB Offset=0	21.52	21.41	21.26
		RB Size=15, RB Offset=10	21.48	21.45	21.31
		RB Size=25, RB Offset=0	21.39	21.28	21.291
10	QPSK	RB Size=1, RB Offset=0	/	22.24	/
		RB Size=1, RB Offset=25	/	22.36	/
		RB Size=1, RB Offset=49	/	22.08	/
		RB Size=25, RB Offset=0	/	21.90	/
		RB Size=25, RB Offset=24	/	21.98	/
		RB Size=50, RB Offset=0	/	21.80	/
	16QAM	RB Size=1, RB Offset=0	/	21.58	/
		RB Size=1, RB Offset=25	/	21.32	/
		RB Size=1, RB Offset=49	/	21.60	/
		RB Size=25, RB Offset=0	/	21.41	/
		RB Size=25, RB Offset=24	/	21.44	/
		RB Size=50, RB Offset=0	/	21.22	/

Peak-to-average ratio (PAR)**10MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	/	3.89	/	13	Pass
QPSK (50RB Size)	/	4.79	/	13	Pass
16QAM (1RB Size)	/	4.38	/	13	Pass
16QAM (50RB Size)	/	5.93	/	13	Pass

QPSK:

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBd)	ERP (dBm)	Limit (dBm)	Result
5 MHz Bandwidth					
779.5	22.43	-0.15	22.28	34.77	Pass
782	22.41	-0.15	22.26	34.77	Pass
784.5	22.36	-0.15	22.21	34.77	Pass
10 MHz Bandwidth					
782	22.36	-0.15	22.21	34.77	Pass

16QAM

Frequency (MHz)	Conducted output power (dBm)	Antenna gain-Cable loss (dBd)	ERP (dBm)	Limit (dBm)	Result
5 MHz Bandwidth					
779.5	21.65	-0.15	21.50	34.77	Pass
782	21.67	-0.15	21.52	34.77	Pass
784.5	21.77	-0.15	21.62	34.77	Pass
10 MHz Bandwidth					
782	21.60	-0.15	21.45	34.77	Pass

Note:

(Antenna gain-cable loss) is 2dBi, which was declared by manufacturer
 ERP = conducted output power + Antenna Gain-cable loss
 dBd=dBi-2.15

FCC §2.1049, §22.917, §22.905 & §24.238 & § 7.53 - OCCUPIED BANDWIDTH

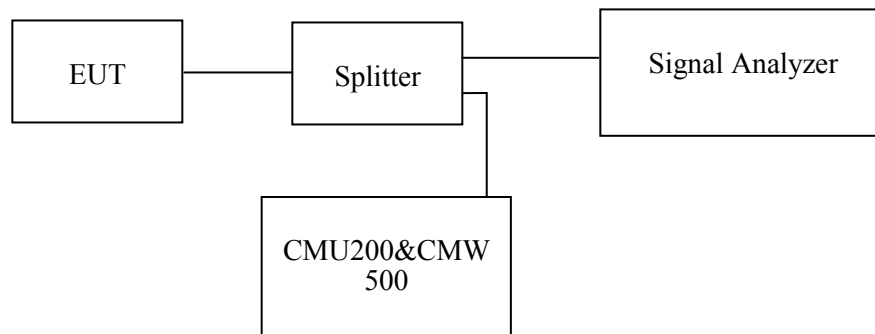
Applicable Standard

FCC 47 §2.1049, §22.917, §22.905, §24.238 and § 7.53.

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:	21.3℃
Relative Humidity:	26.4 %
ATM Pressure:	100.3~101.2 kPa

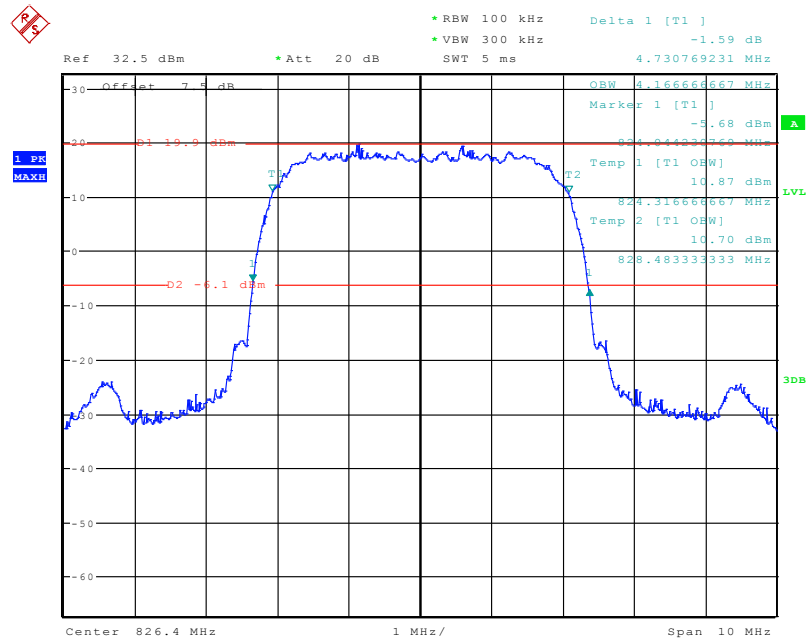
The testing was performed by Alan He and Gavin Guo from 2020-03-09 to 2020-11-29.

EUT operation mode: Transmitting

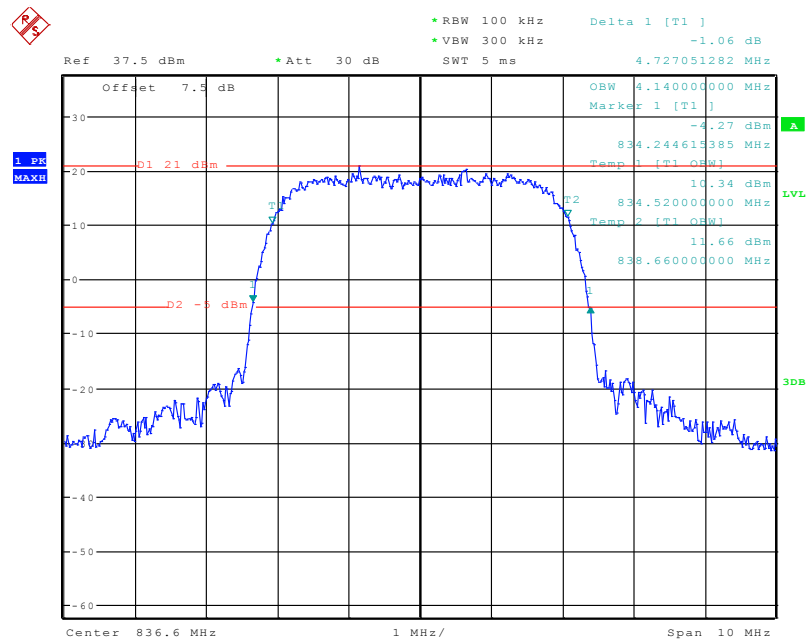
Test Result: Pass

Please refer to the following tables and plots.

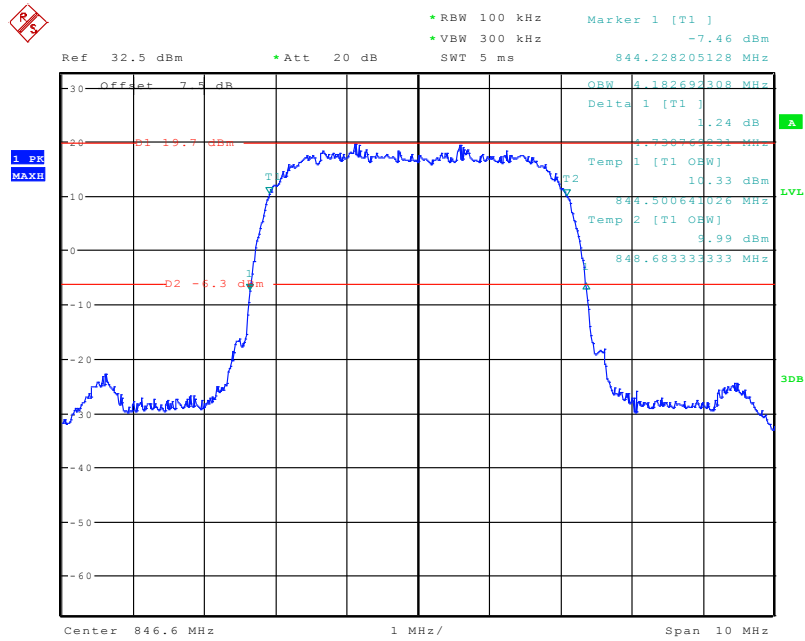
Band	Mode	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
WCDMA Band 2	RMC (BPSK)	Low	4.183	4.737
		Middle	4.160	4.793
		High	4.167	4.753
	HSUPA (BPSK)	Low	4.199	4.744
		Middle	4.160	4.729
		High	4.199	4.744
	HSDPA (16QAM)	Low	4.199	4.750
		Middle	4.160	4.745
		High	4.199	4.753
WCDMA Band 4	RMC (BPSK)	Low	4.183	4.747
		Middle	4.140	4.767
		High	4.167	4.747
	HSUPA (BPSK)	Low	4.183	4.737
		Middle	4.140	4.719
		High	4.199	4.708
	HSDPA (16QAM)	Low	4.183	4.734
		Middle	4.140	4.751
		High	4.183	4.728
WCDMA Band 5	RMC (BPSK)	Low	4.167	4.731
		Middle	4.140	4.727
		High	4.183	4.731
	HSUPA (BPSK)	Low	4.183	4.728
		Middle	4.120	4.695
		High	4.199	4.753
	HSDPA (16QAM)	Low	4.183	4.747
		Middle	4.140	4.743
		High	4.183	4.760

Cellular Band (Part 22H)**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel**

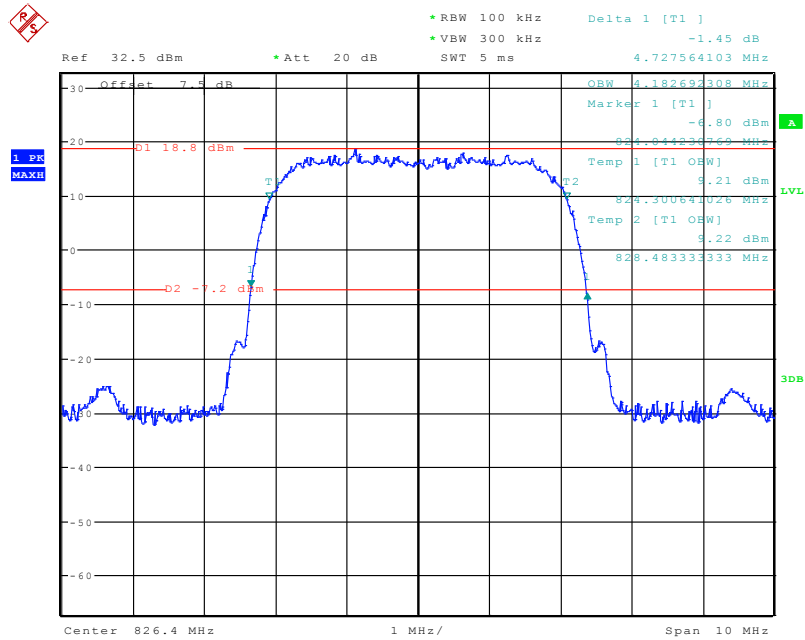
Date: 29.NOV.2020 16:41:47

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

Date: 9.MAR.2020 10:16:04

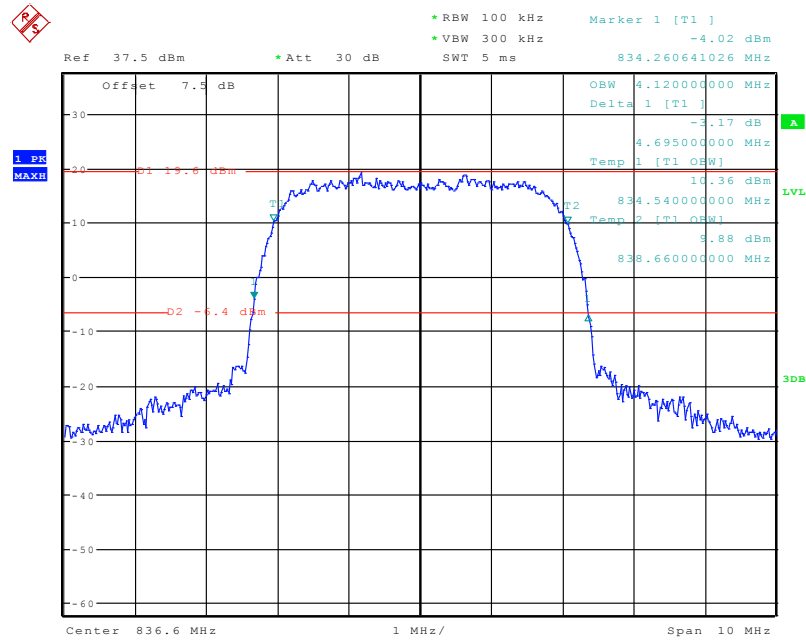
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 29.NOV.2020 16:42:38

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

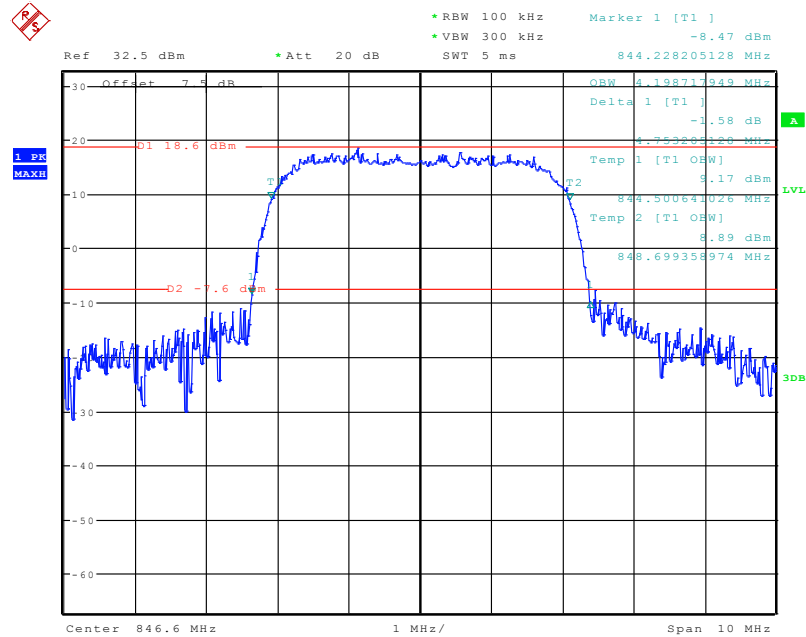
Date: 29.NOV.2020 17:15:08

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



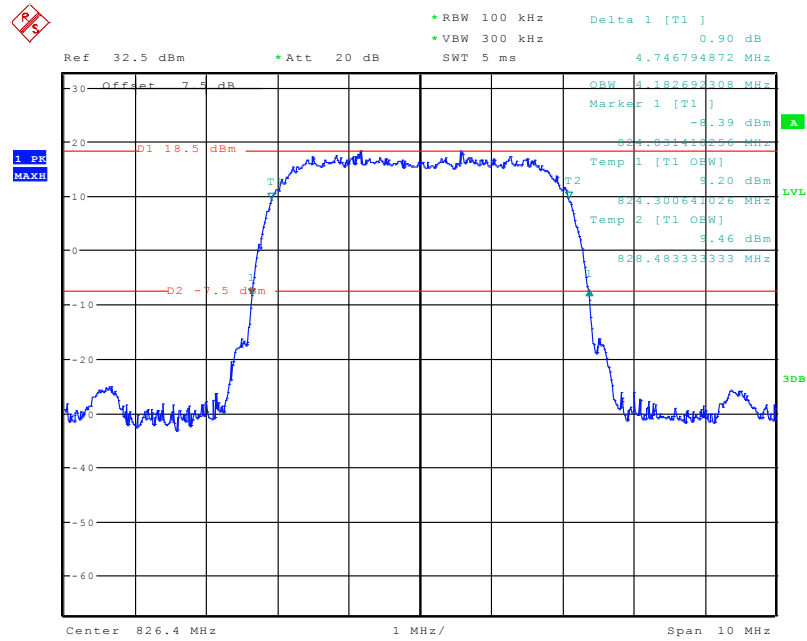
Date: 9.MAR.2020 10:21:50

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



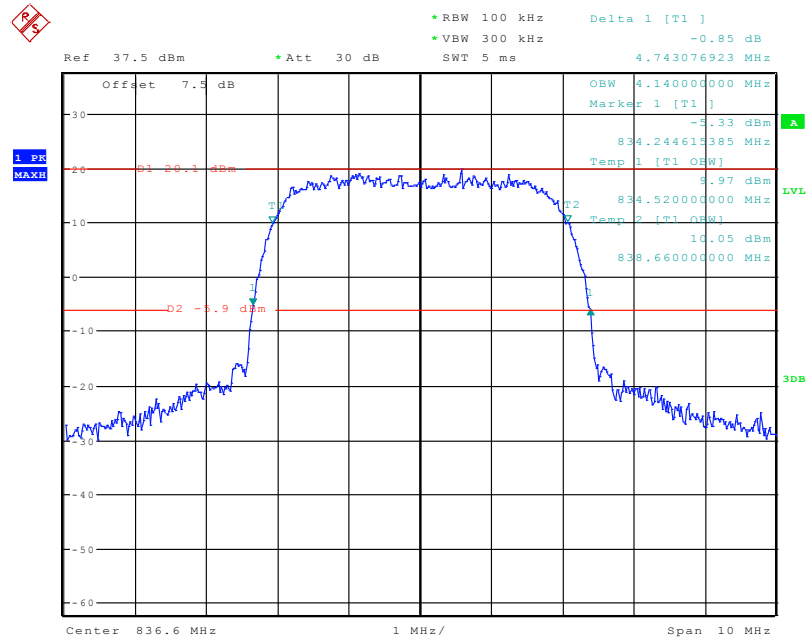
Date: 29.NOV.2020 17:13:17

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

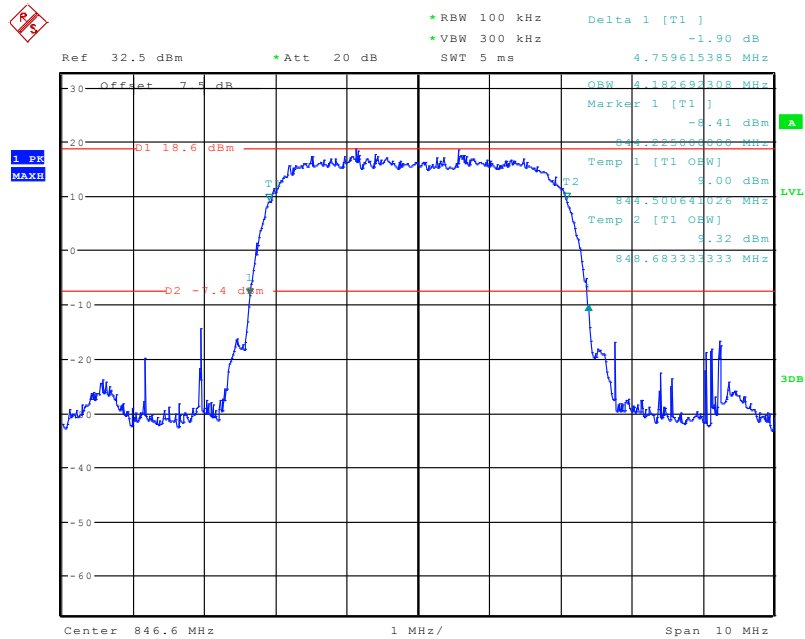


Date: 29.NOV.2020 17:02:09

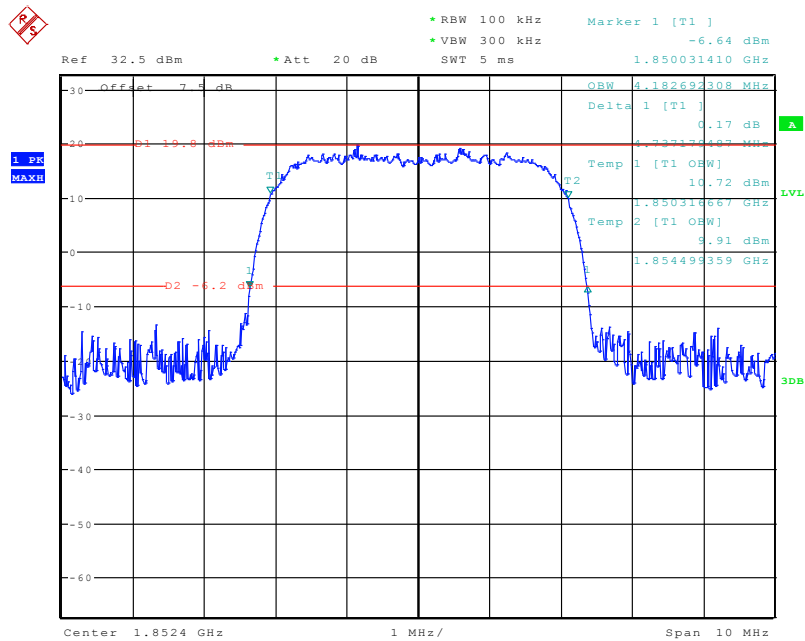
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel



Date: 9.MAR.2020 10:19:09

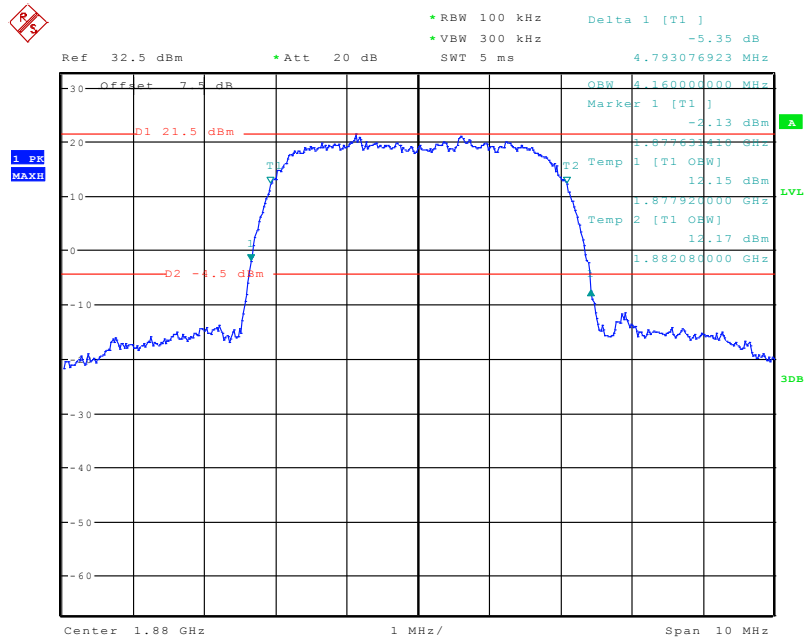
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel

Date: 29.NOV.2020 17:00:52

PCS Band (Part 24E)**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel**

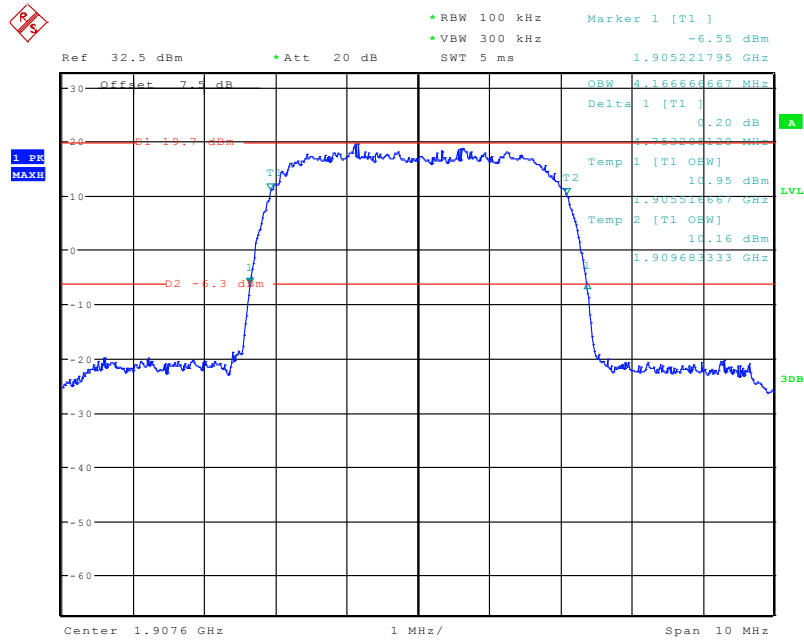
Date: 29.NOV.2020 16:35:18

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



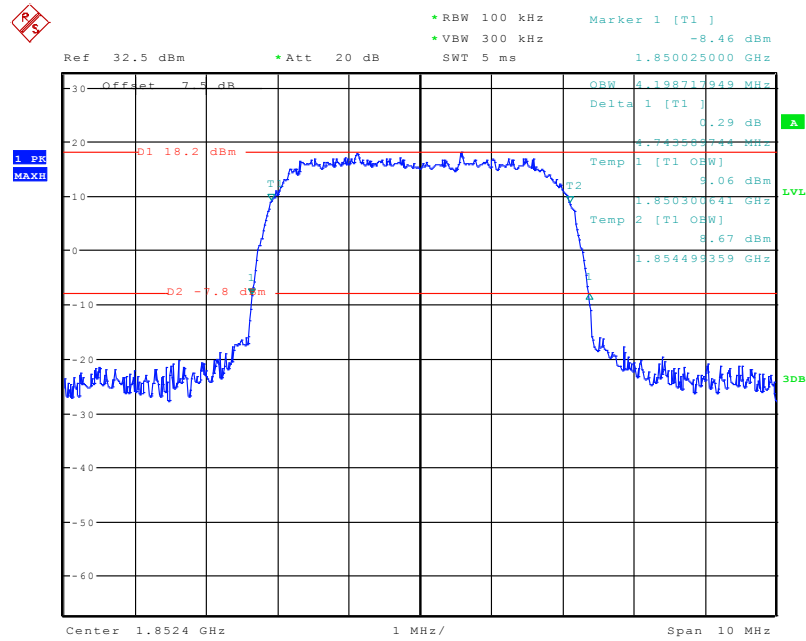
Date: 9.MAR.2020 11:18:45

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



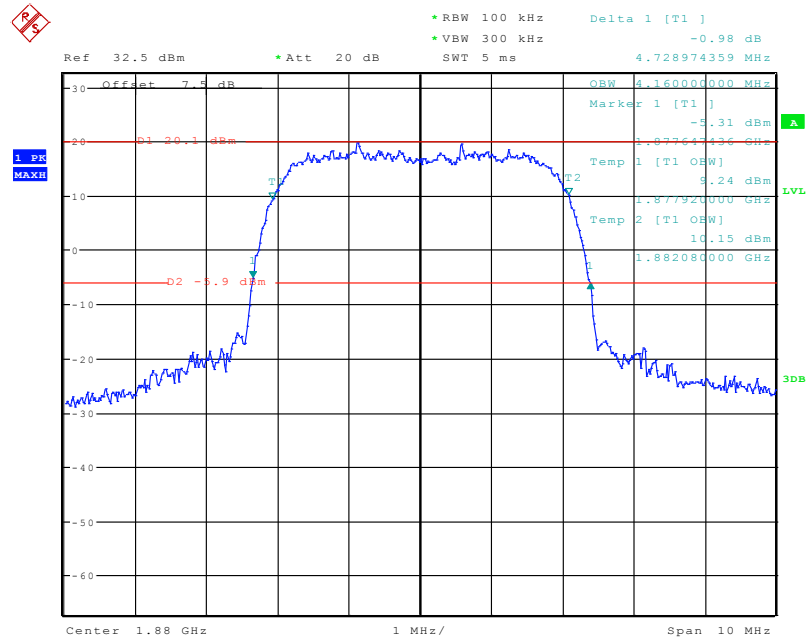
Date: 29.NOV.2020 16:37:53

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

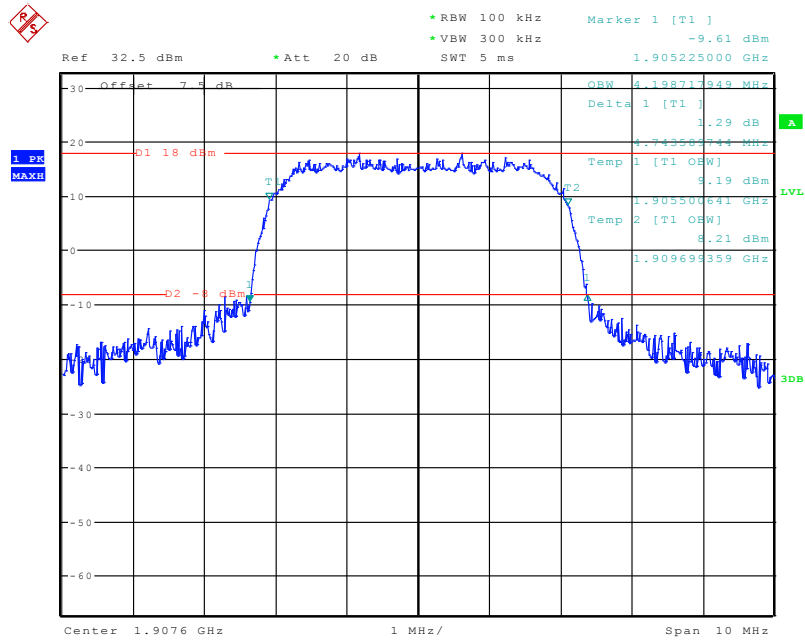


Date: 29.NOV.2020 17:09:07

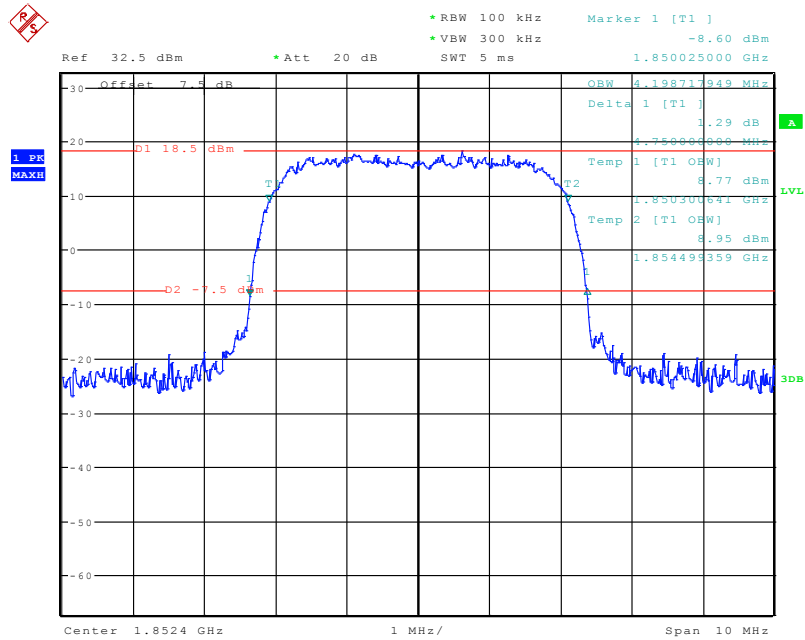
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel



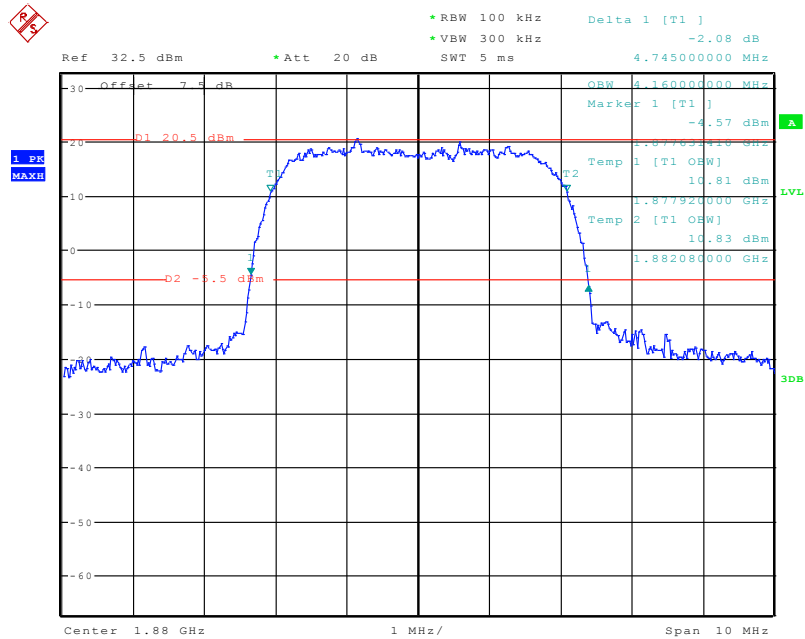
Date: 9.MAR.2020 11:22:08

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

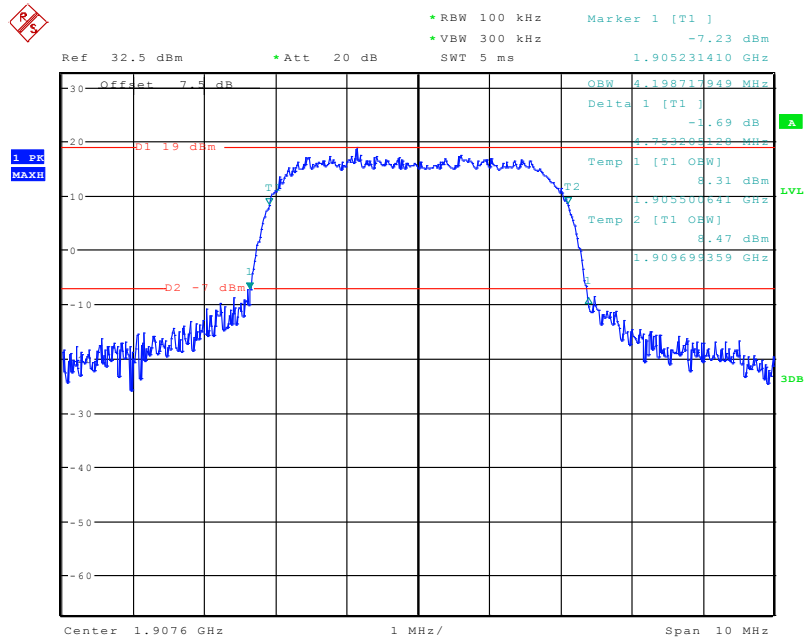
Date: 29.NOV.2020 17:07:51

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

Date: 29.NOV.2020 17:03:31

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

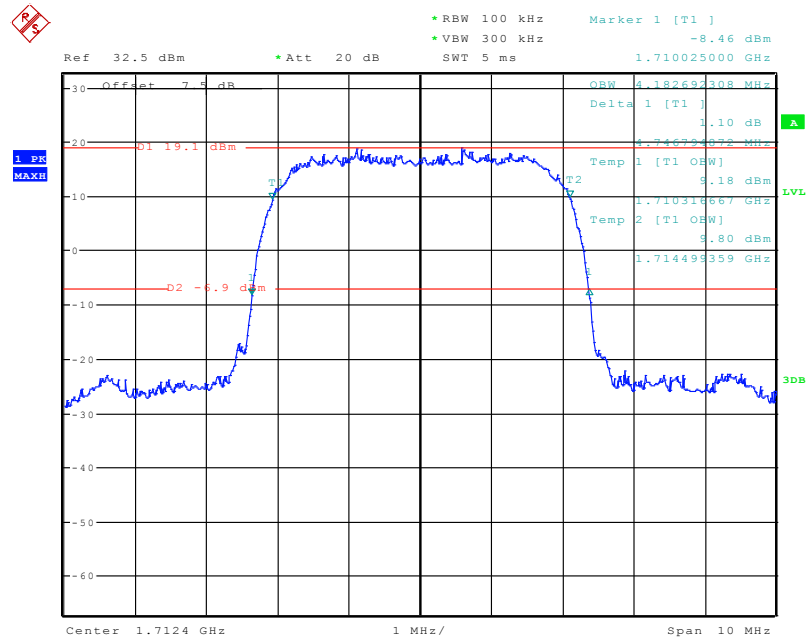
Date: 9.MAR.2020 11:20:49

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

Date: 29.NOV.2020 17:04:38

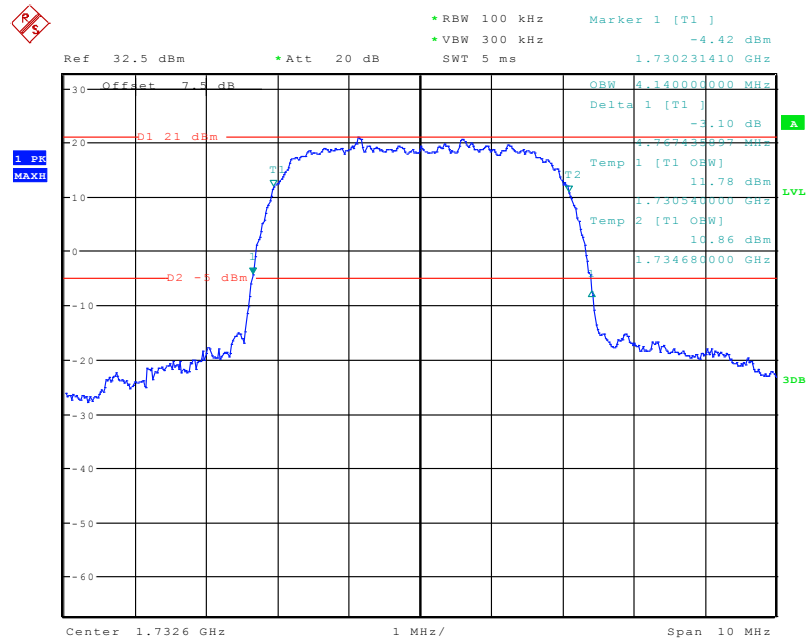
AWS Band (Part 27)

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

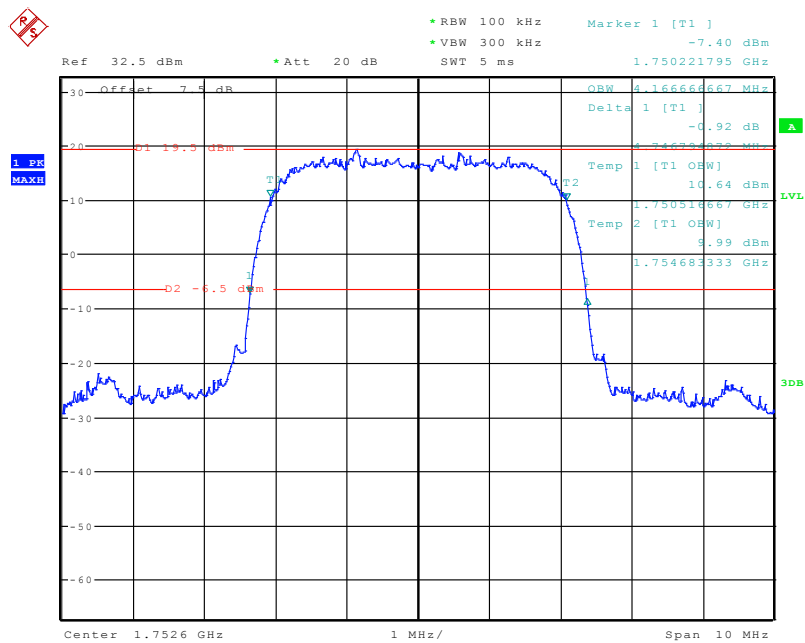


Date: 29.NOV.2020 16:39:16

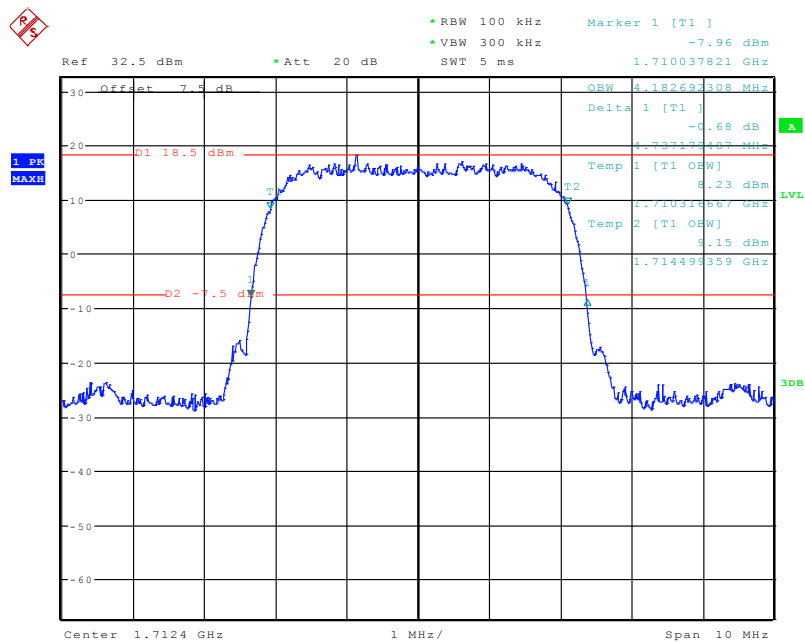
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



Date: 9.MAR.2020 10:59:35

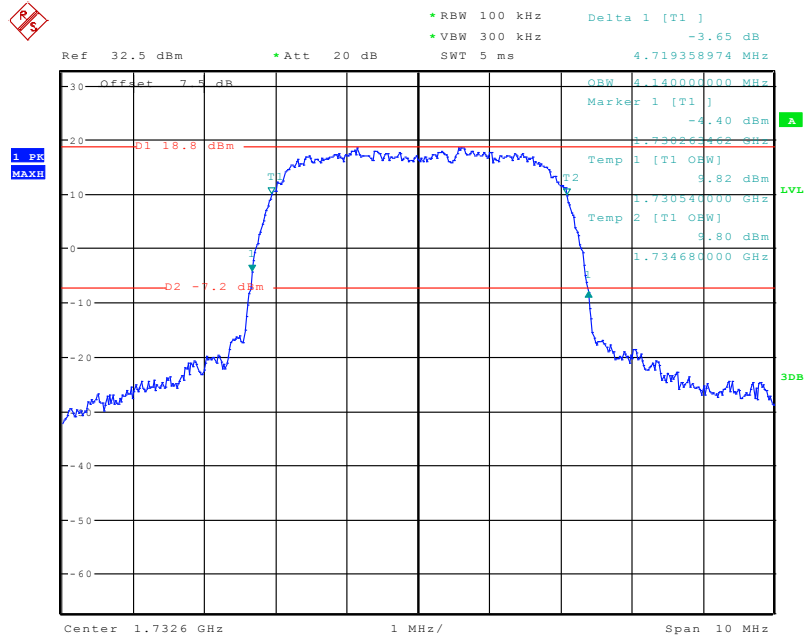
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 29.NOV.2020 16:40:06

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

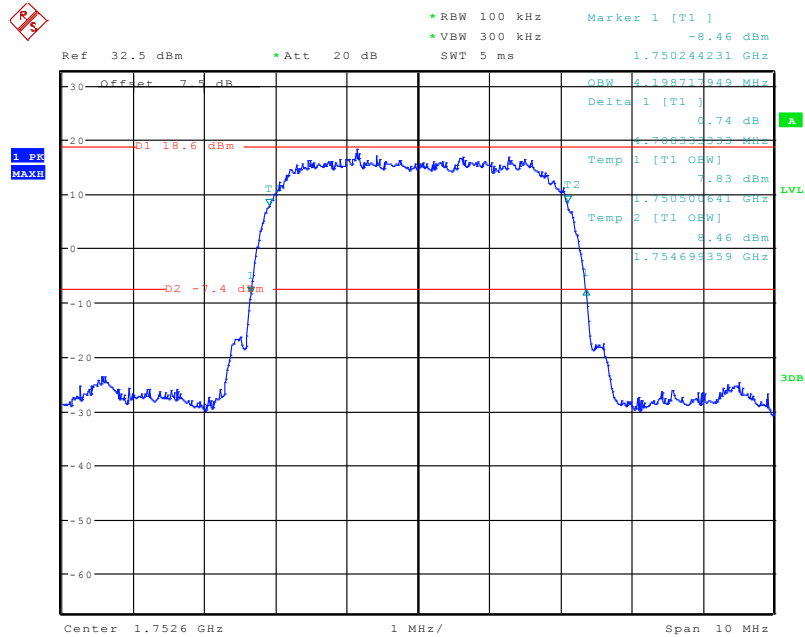
Date: 29.NOV.2020 17:16:34

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

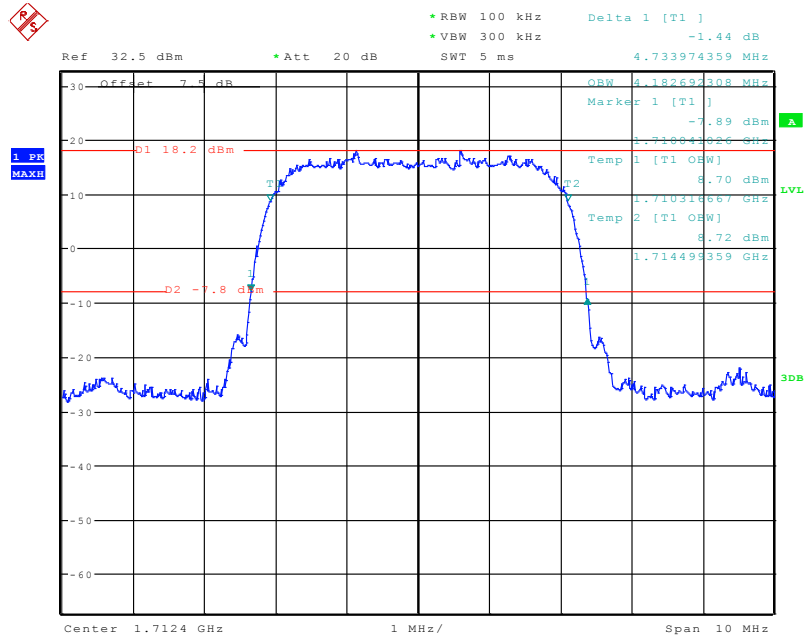


Date: 9.MAR.2020 11:02:39

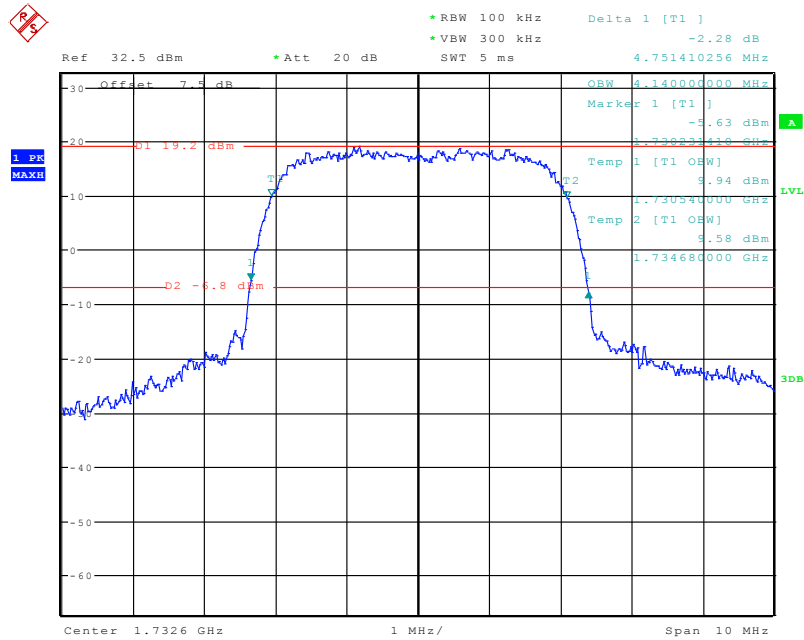
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, High channel



Date: 29.NOV.2020 17:10:29

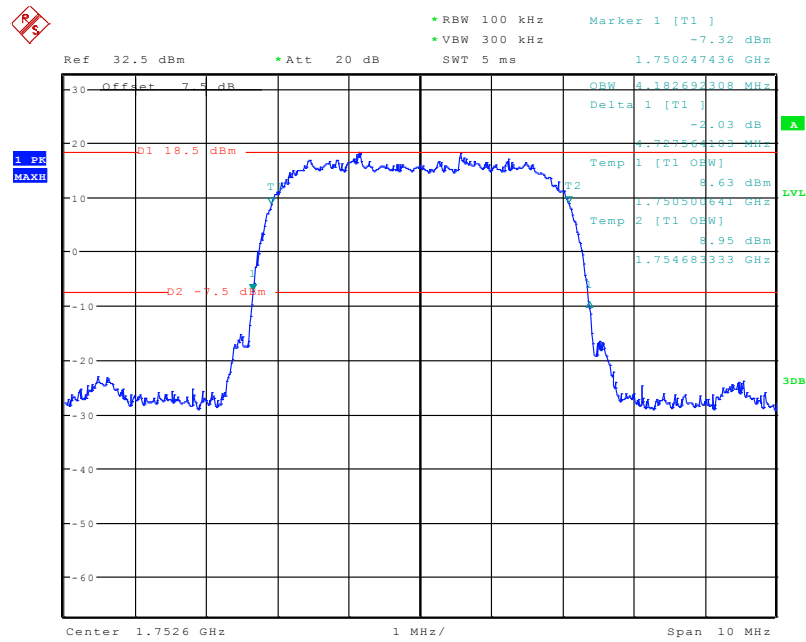
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 29.NOV.2020 16:58:32

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

Date: 9.MAR.2020 11:01:02

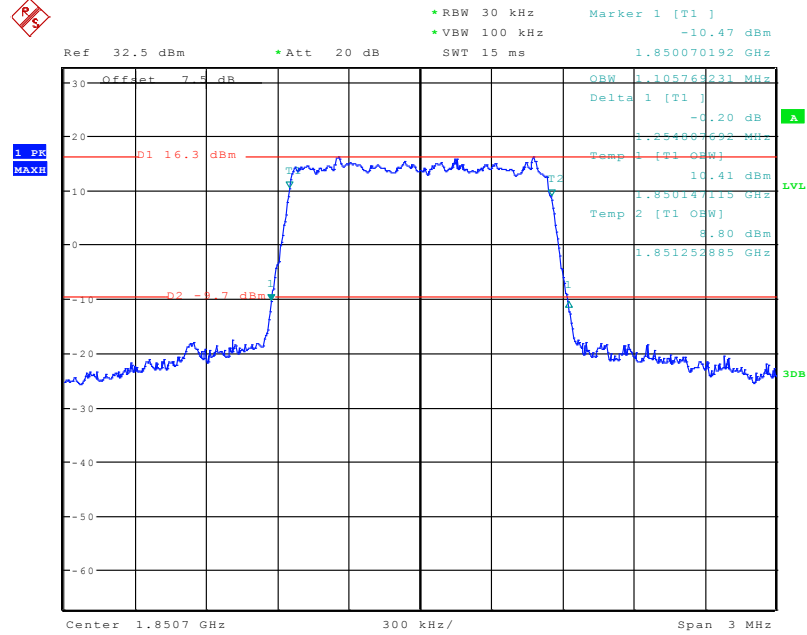
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



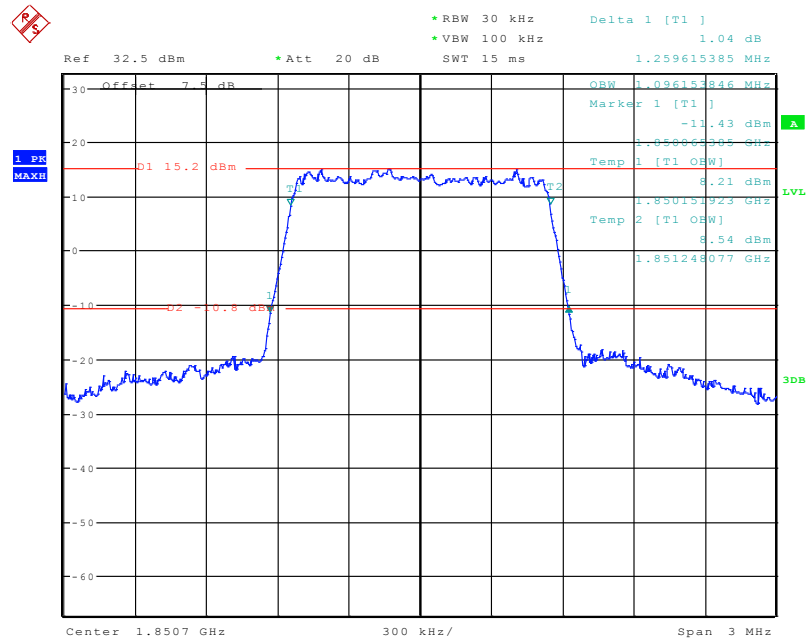
Date: 29.NOV.2020 16:59:44

LTE Band 2:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.106	1.255
		Middle	1.104	1.266
		High	1.101	1.259
	16QAM	Low	1.096	1.260
		Middle	1.098	1.242
		High	1.096	1.240
3	QPSK	Low	2.702	2.979
		Middle	2.700	2.940
		High	2.702	3.000
	16QAM	Low	2.702	3.000
		Middle	2.700	2.964
		High	2.702	2.990
5	QPSK	Low	4.519	5.032
		Middle	4.520	4.980
		High	4.519	4.997
	16QAM	Low	4.535	5.016
		Middle	4.520	4.980
		High	4.519	5.032
10	QPSK	Low	8.974	9.679
		Middle	8.960	9.720
		High	8.942	9.647
	16QAM	Low	8.974	9.679
		Middle	8.960	9.600
		High	8.942	9.647
15	QPSK	Low	13.606	15.064
		Middle	13.560	14.940
		High	13.461	14.760
	16QAM	Low	13.510	14.920
		Middle	13.500	14.760
		High	13.462	14.904
20	QPSK	Low	18.013	19.551
		Middle	18.000	19.600
		High	17.949	19.471
	16QAM	Low	18.013	19.744
		Middle	18.000	19.440
		High	18.013	19.471

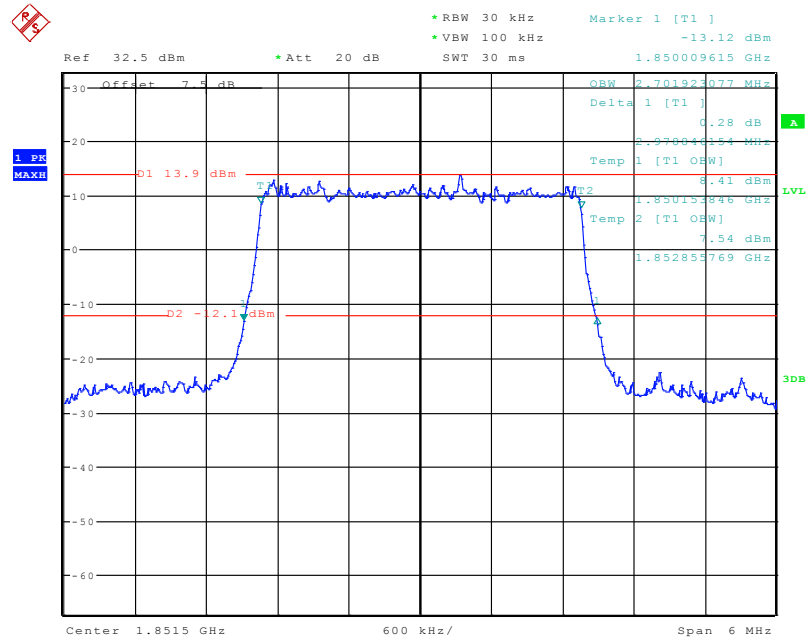
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 3.NOV.2020 09:27:27

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

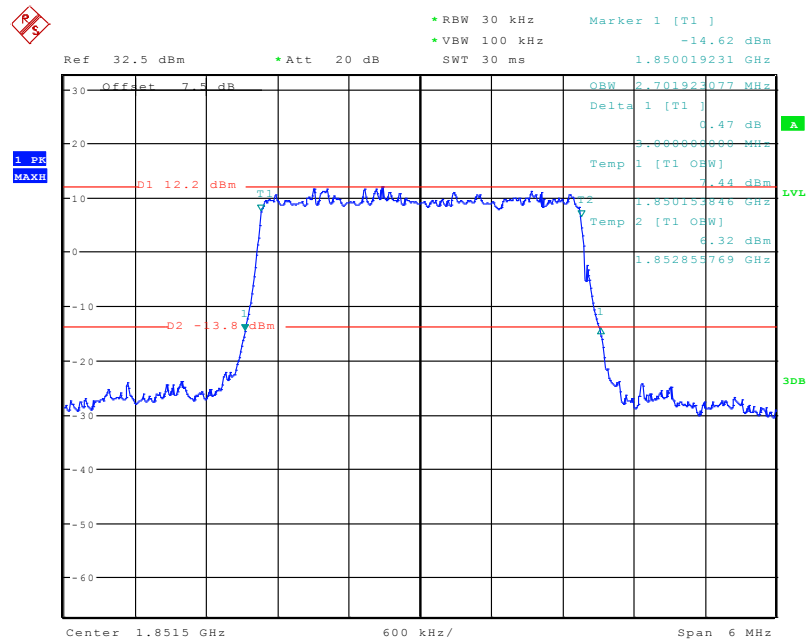
Date: 3.NOV.2020 09:26:14

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

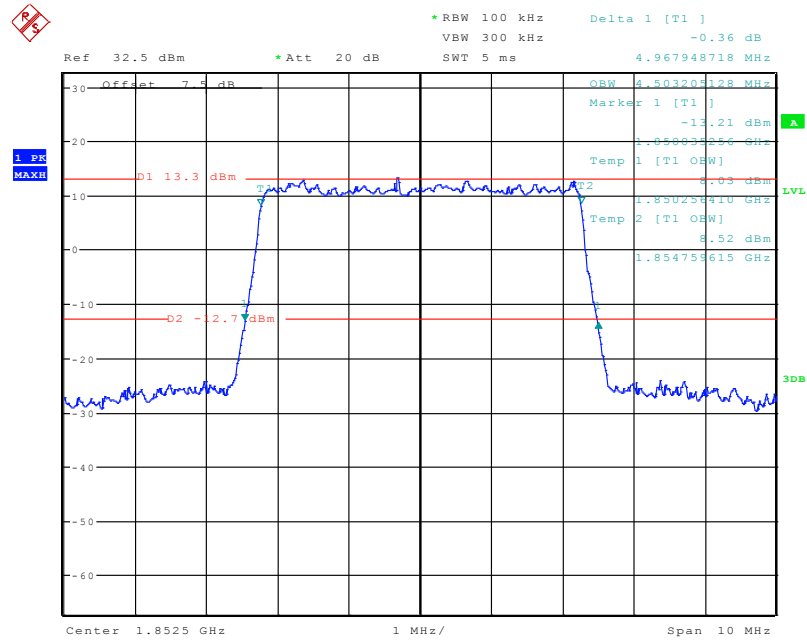


Date: 3.NOV.2020 09:28:48

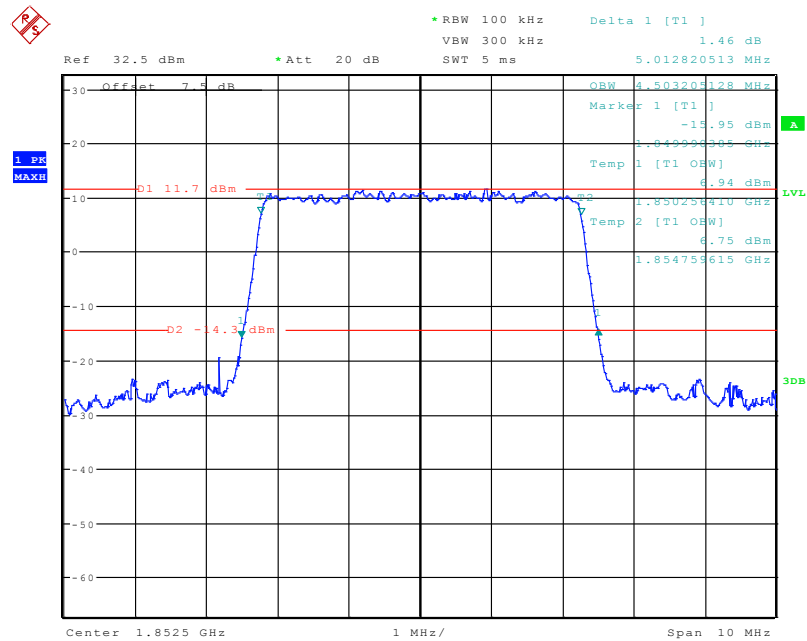
16-QAM (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel



Date: 3.NOV.2020 09:30:22

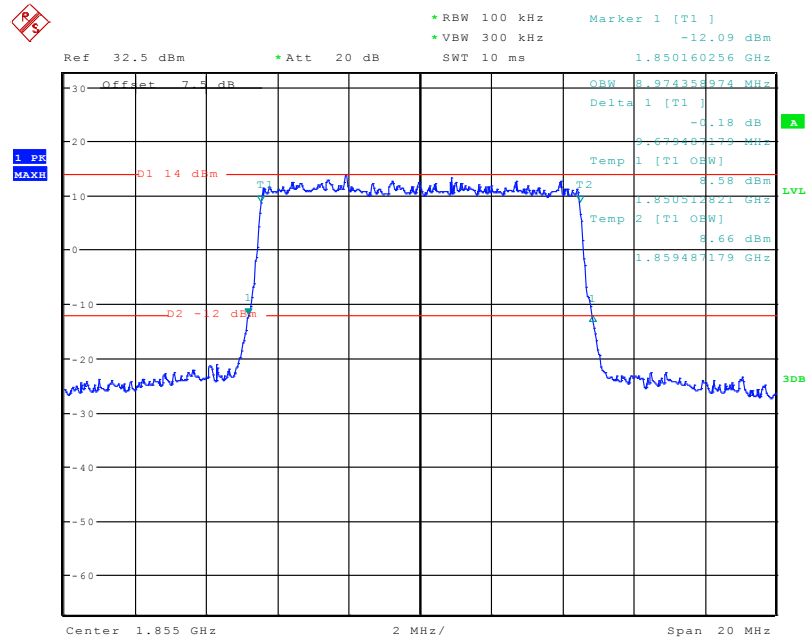
QPSK (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 5.NOV.2020 13:10:10

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

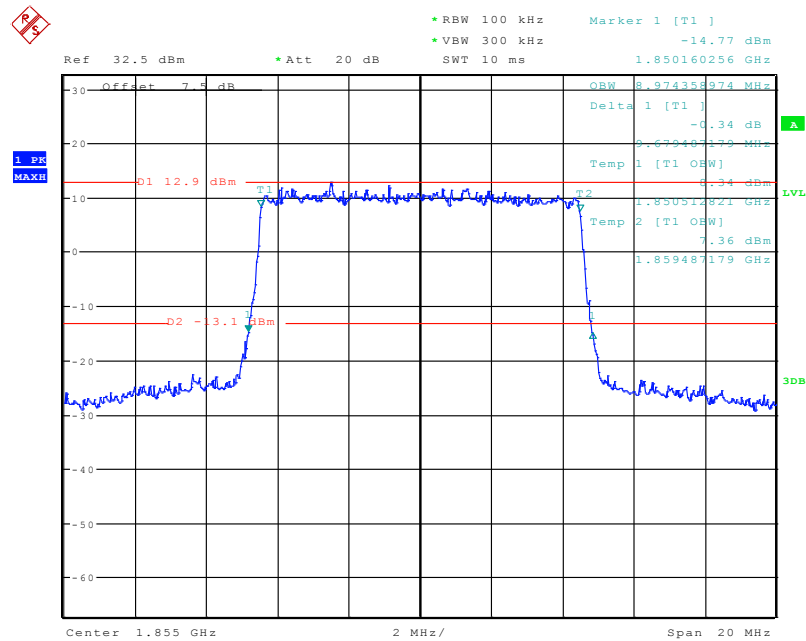
Date: 5.NOV.2020 13:11:33

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

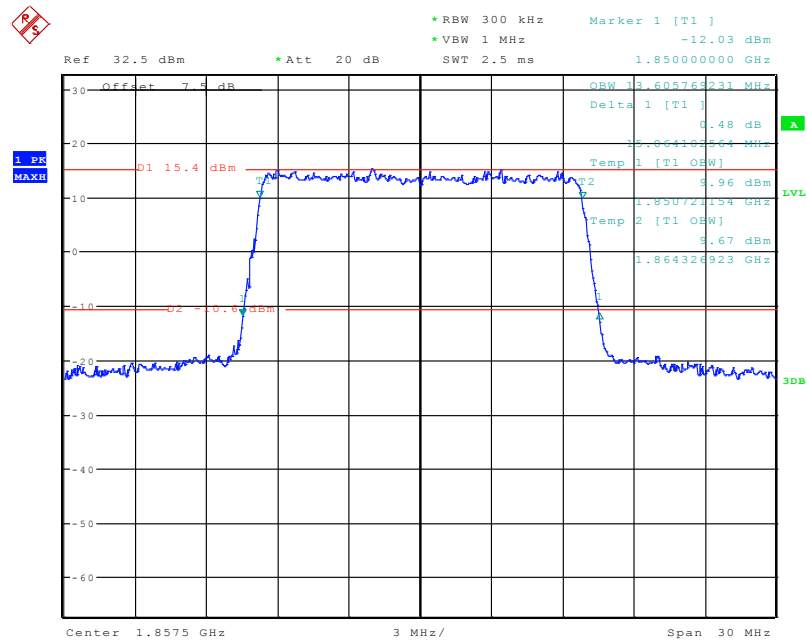


Date: 3.NOV.2020 08:52:42

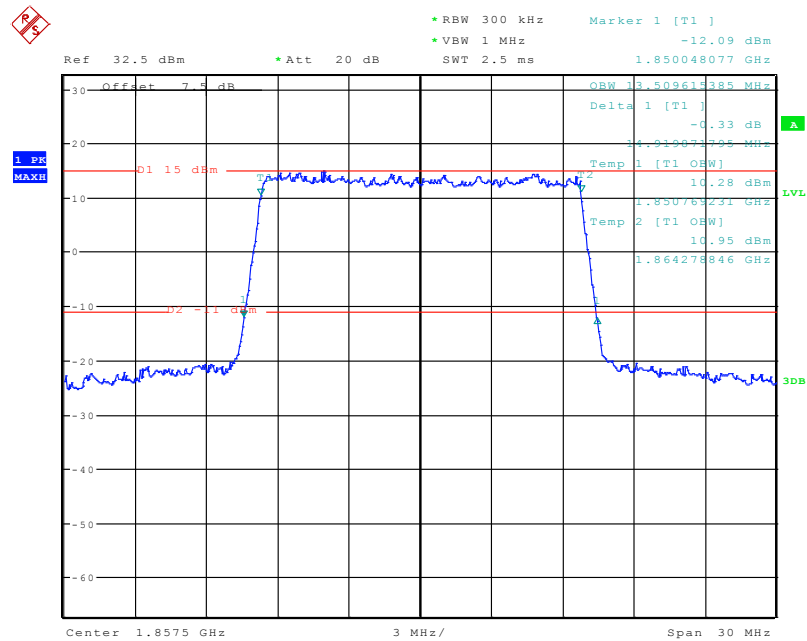
16-QAM (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel



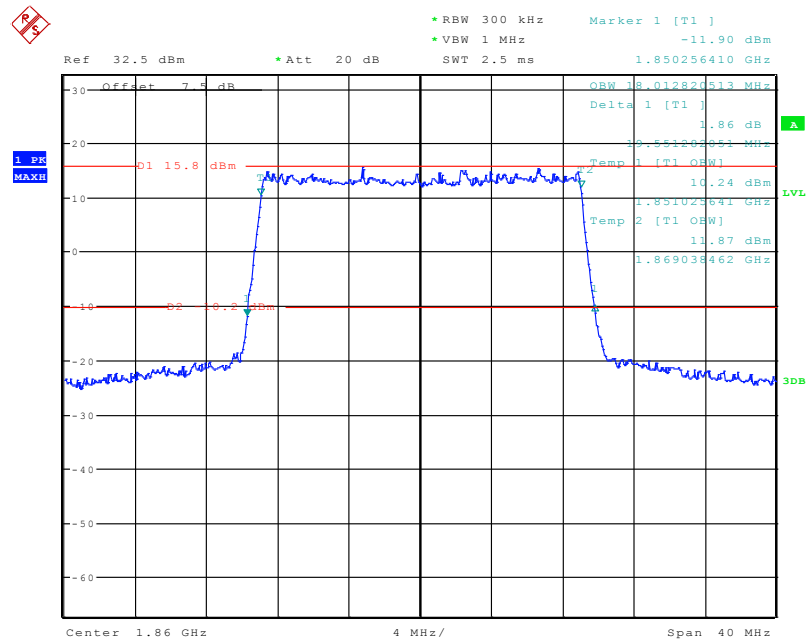
Date: 3.NOV.2020 08:54:15

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

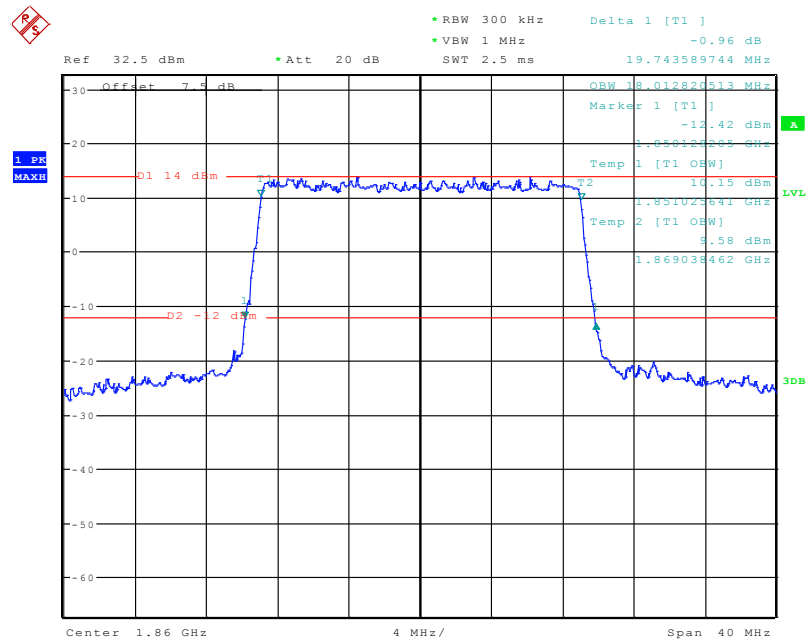
Date: 3.NOV.2020 09:41:30

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

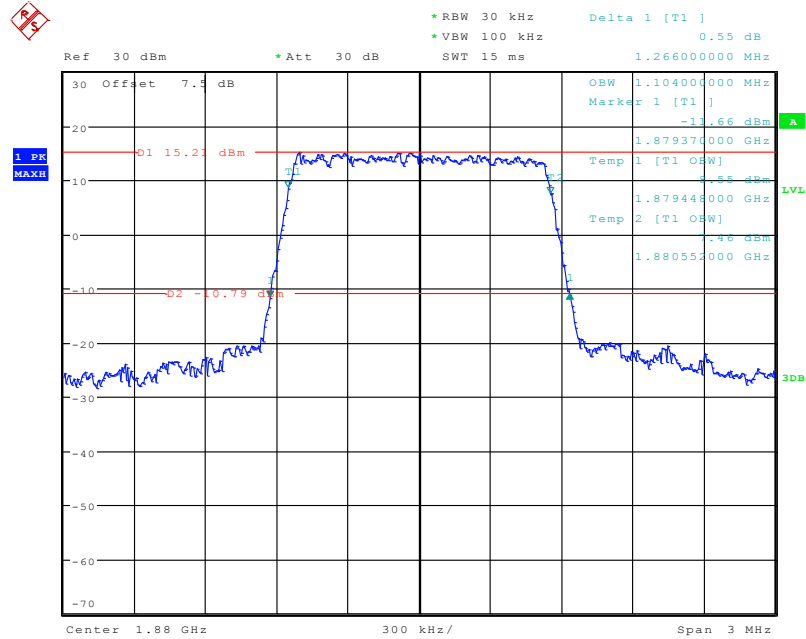
Date: 3.NOV.2020 09:43:19

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

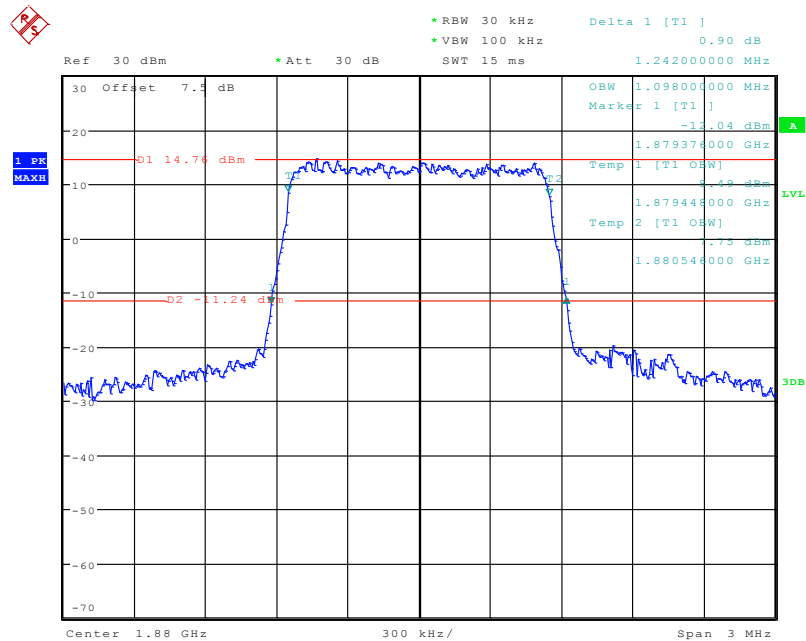
Date: 3.NOV.2020 09:52:08

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

Date: 3.NOV.2020 09:50:57

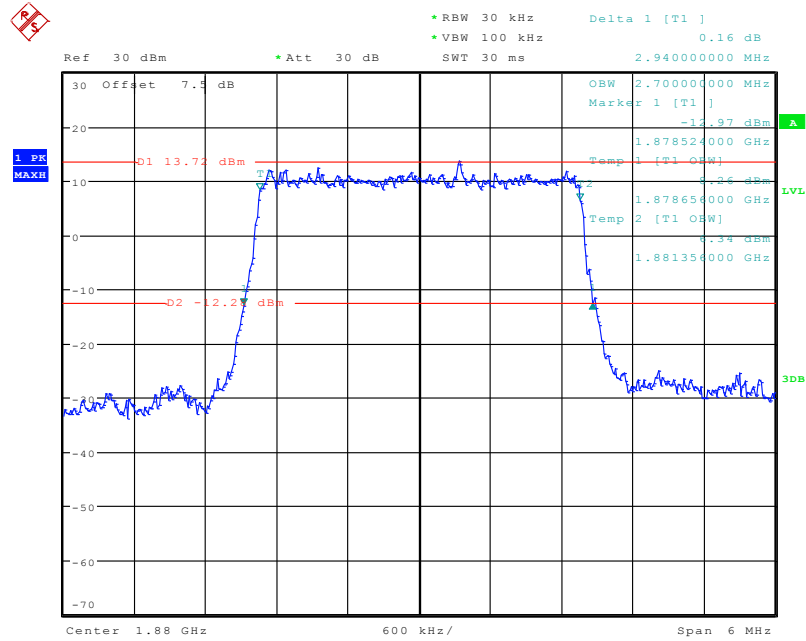
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.MAR.2020 09:38:00

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

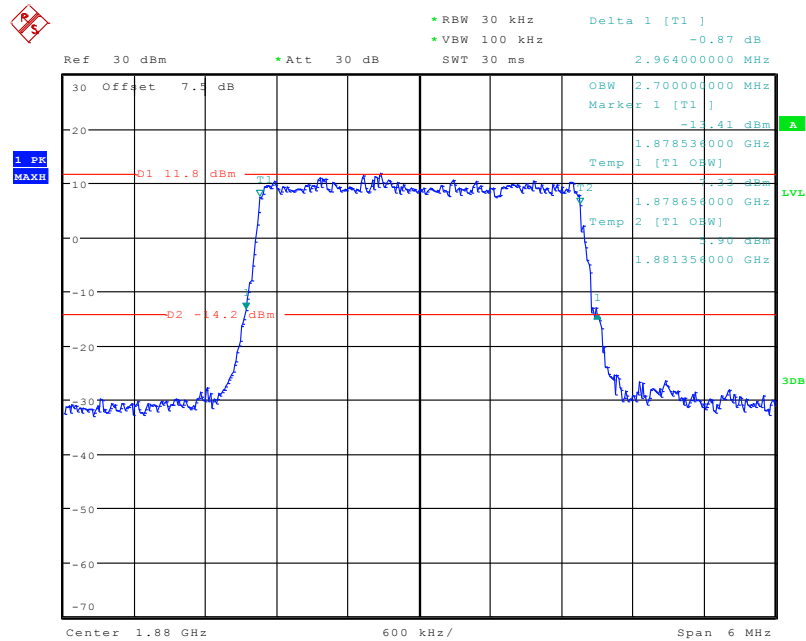
Date: 13.MAR.2020 09:38:17

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



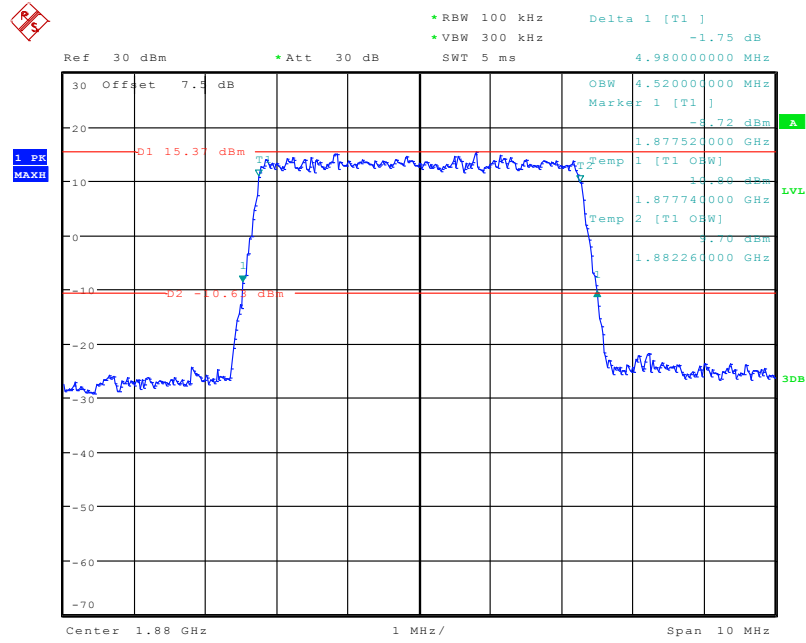
Date: 13.MAR.2020 09:38:36

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



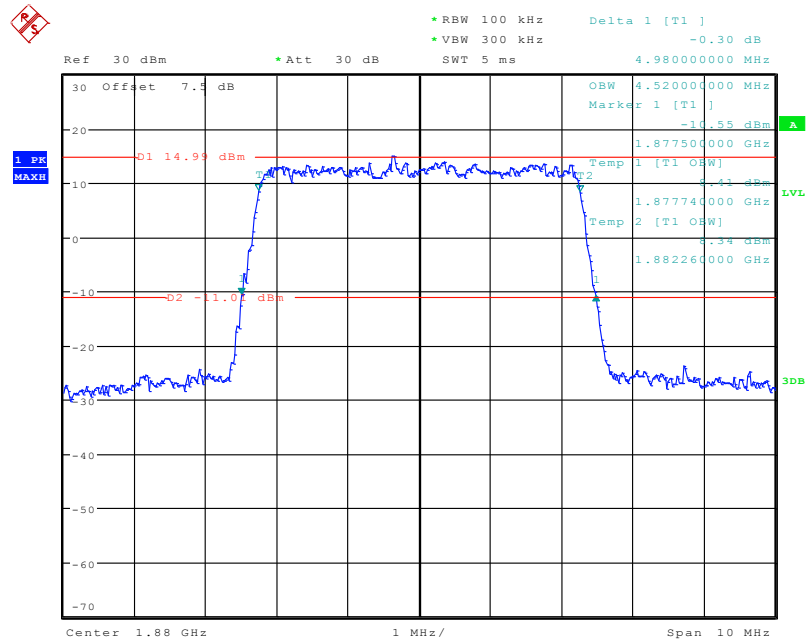
Date: 13.MAR.2020 09:38:52

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

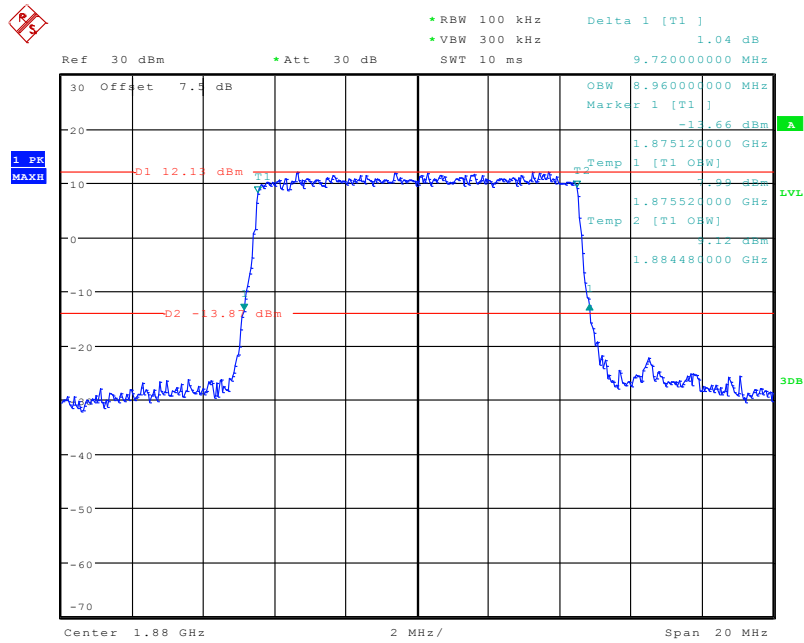


Date: 13.MAR.2020 09:39:15

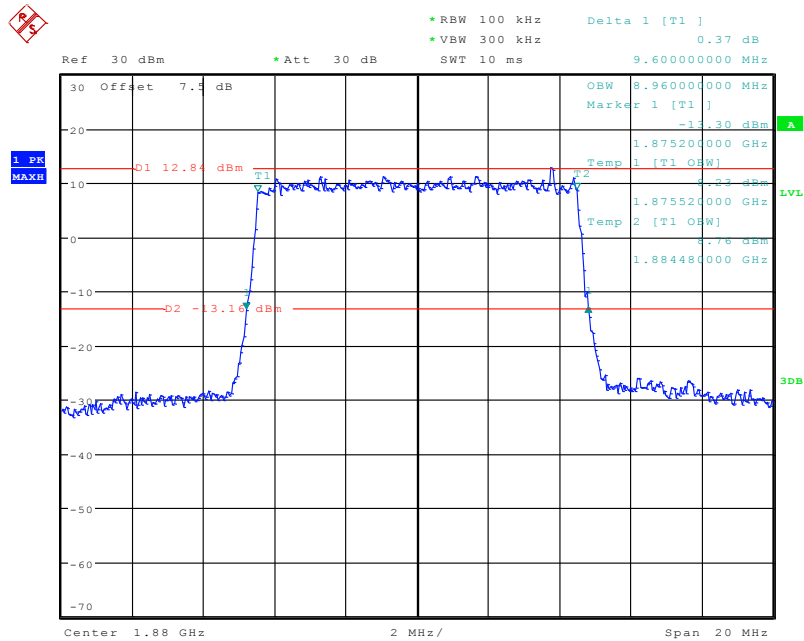
16-QAM (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



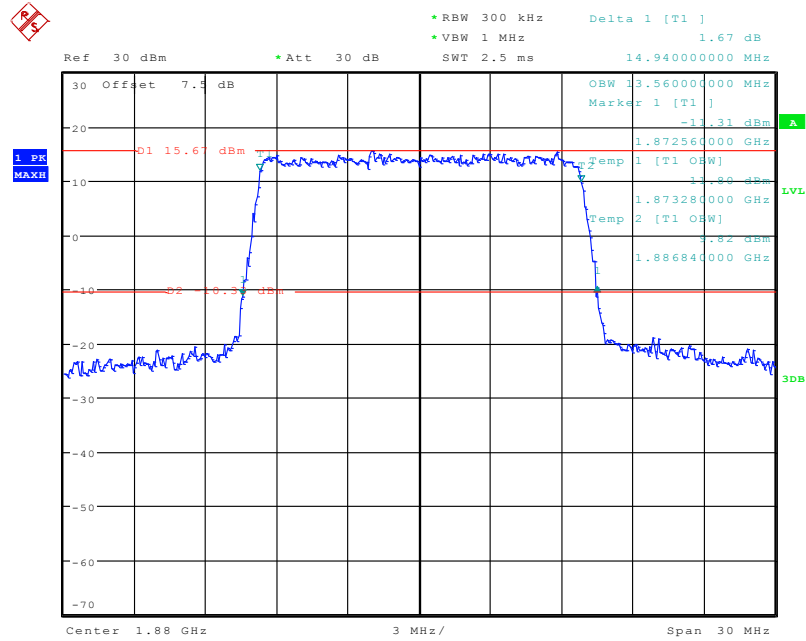
Date: 13.MAR.2020 09:39:36

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

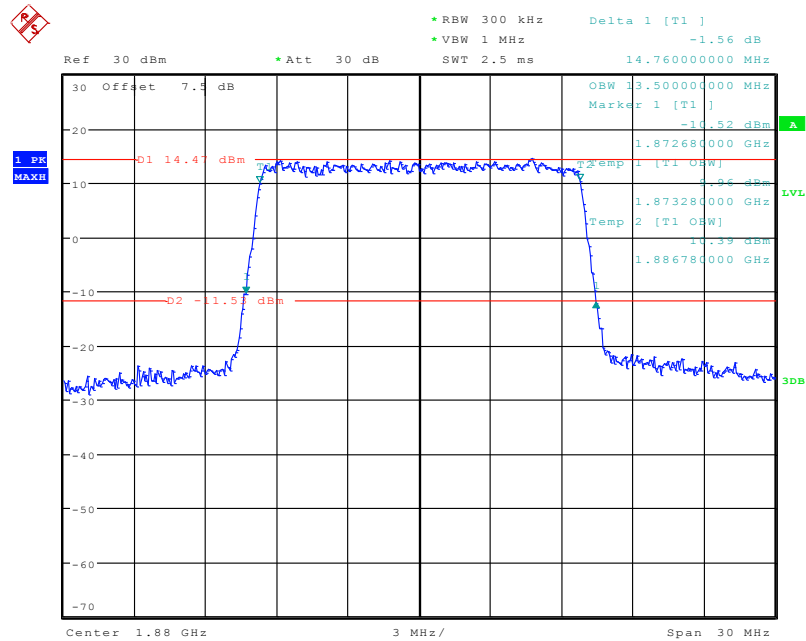
Date: 13.MAR.2020 09:39:59

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

Date: 13.MAR.2020 09:40:20

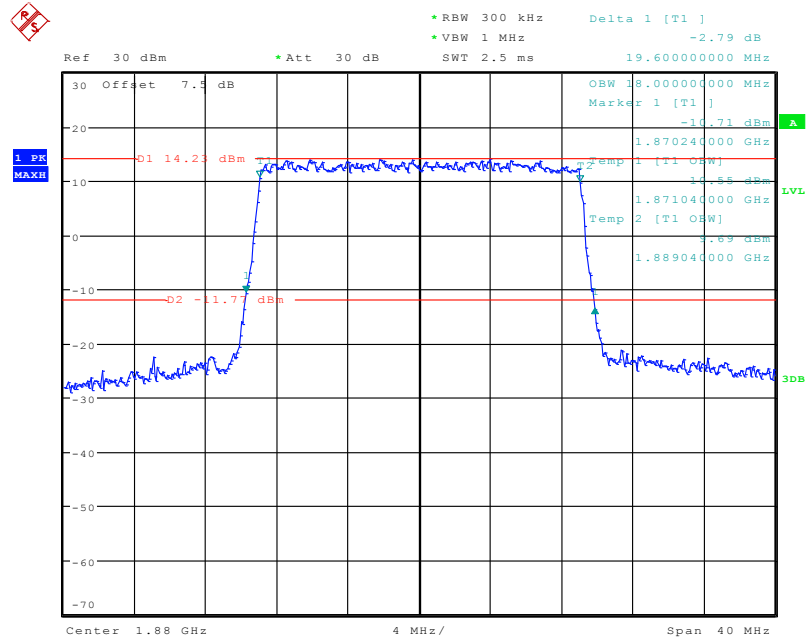
QPSK (15.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.MAR.2020 09:40:46

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

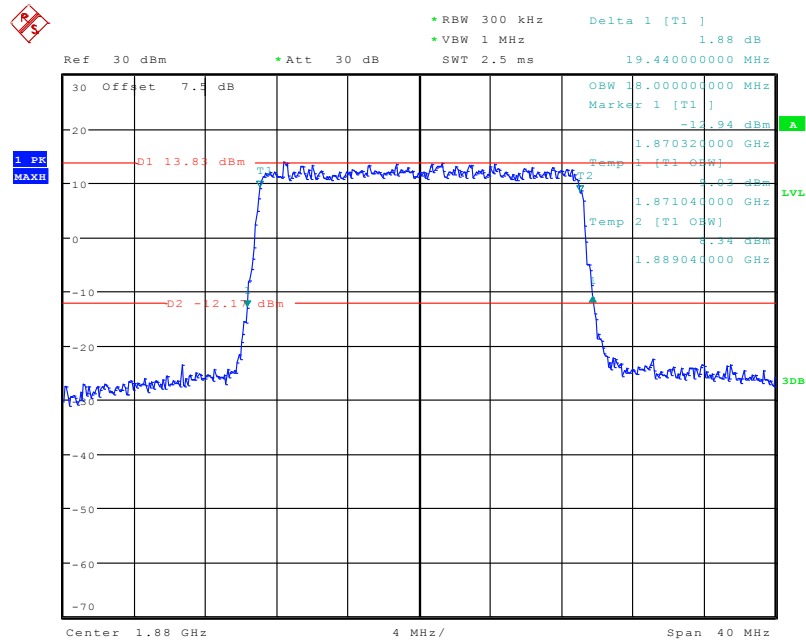
Date: 13.MAR.2020 09:41:10

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

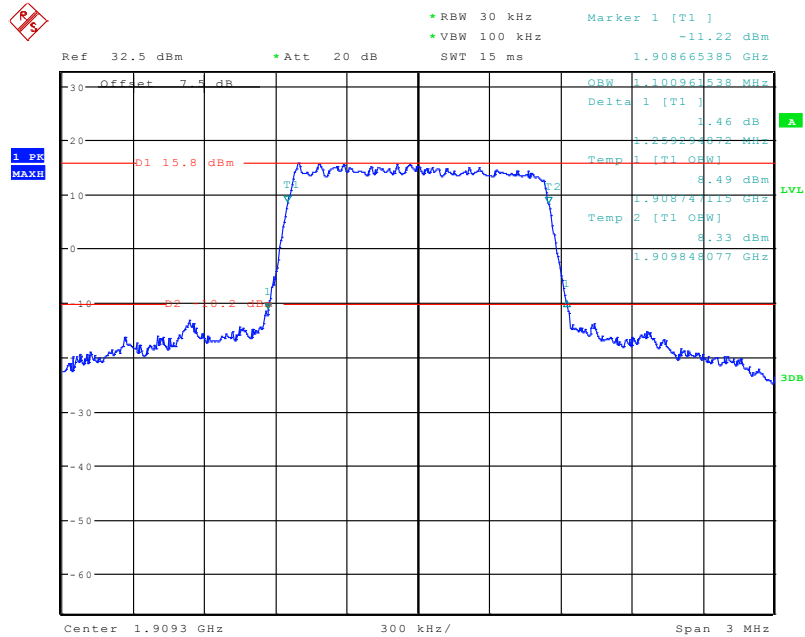


Date: 13.MAR.2020 09:41:36

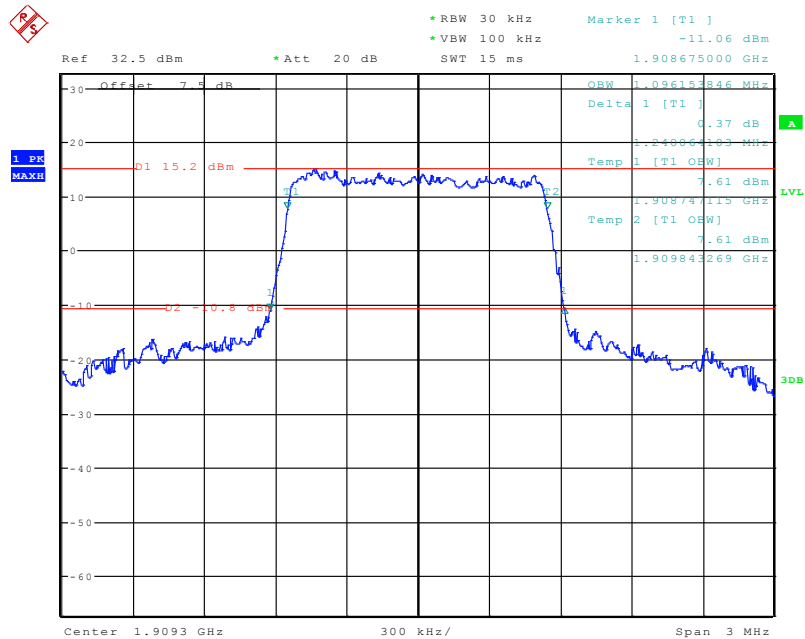
16-QAM (20.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



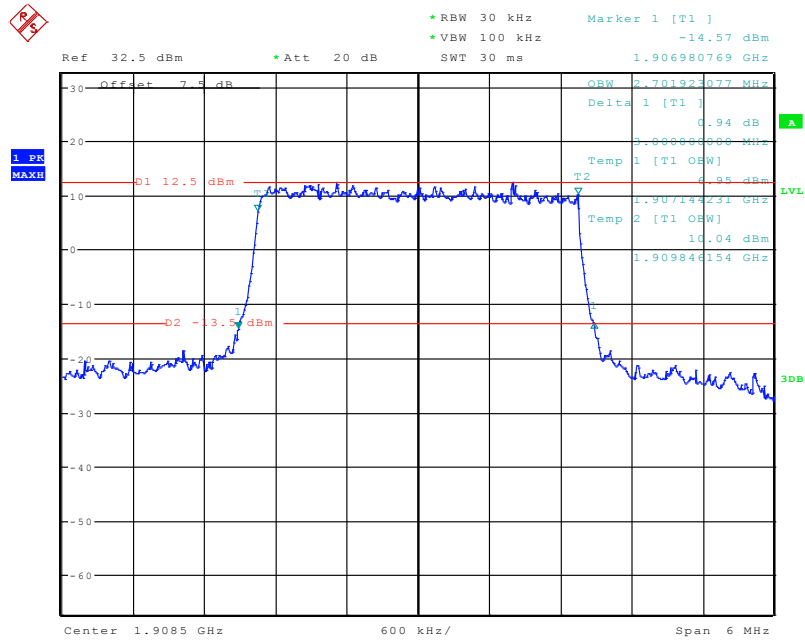
Date: 13.MAR.2020 09:42:00

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

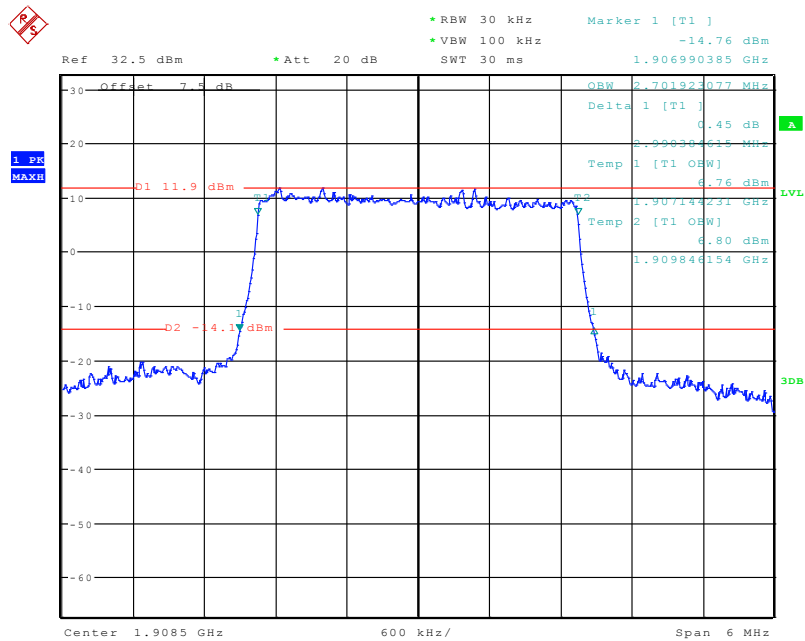
Date: 3.NOV.2020 09:22:38

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

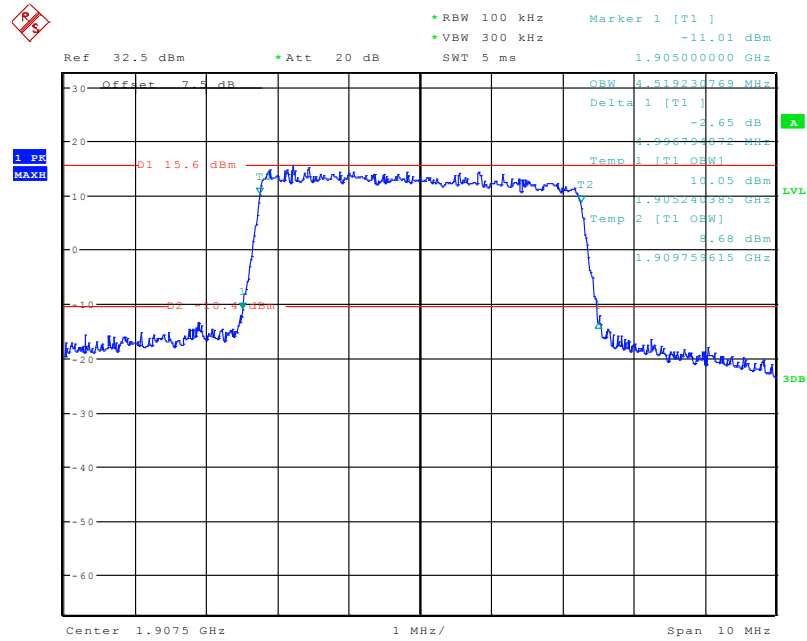
Date: 3.NOV.2020 09:24:15

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

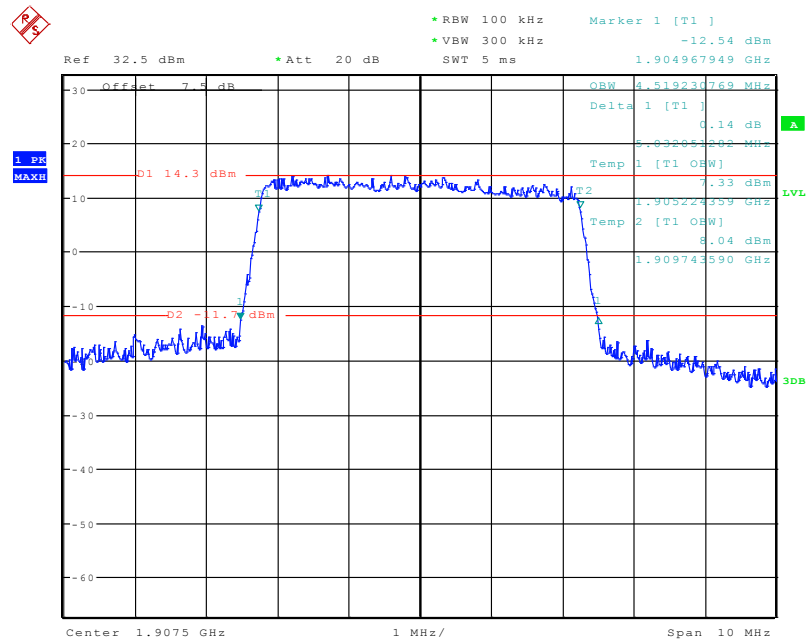
Date: 3.NOV.2020 09:32:48

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

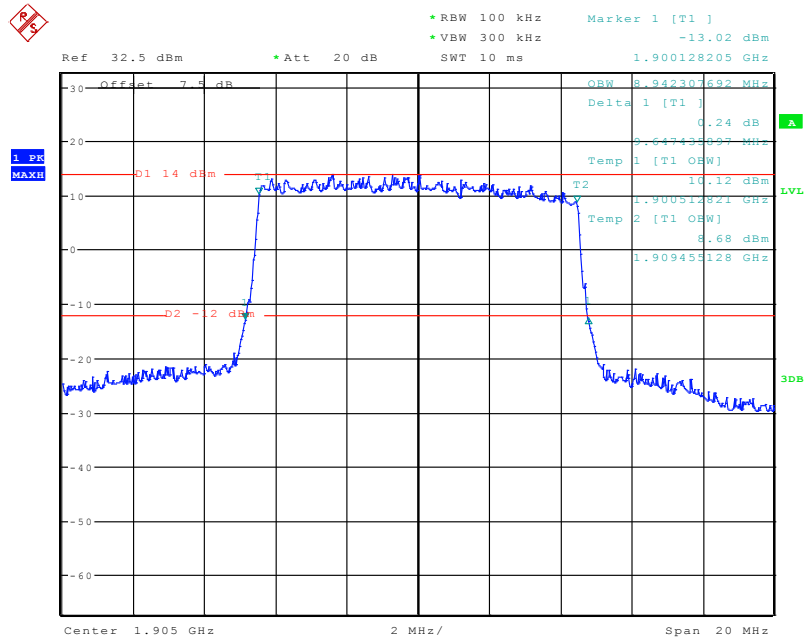
Date: 3.NOV.2020 09:31:54

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

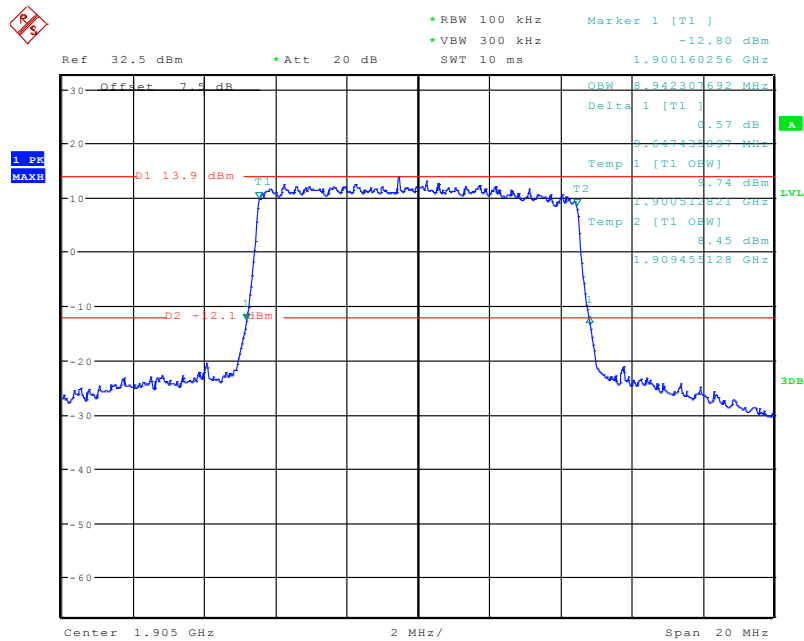
Date: 3.NOV.2020 09:35:57

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

Date: 3.NOV.2020 09:37:34

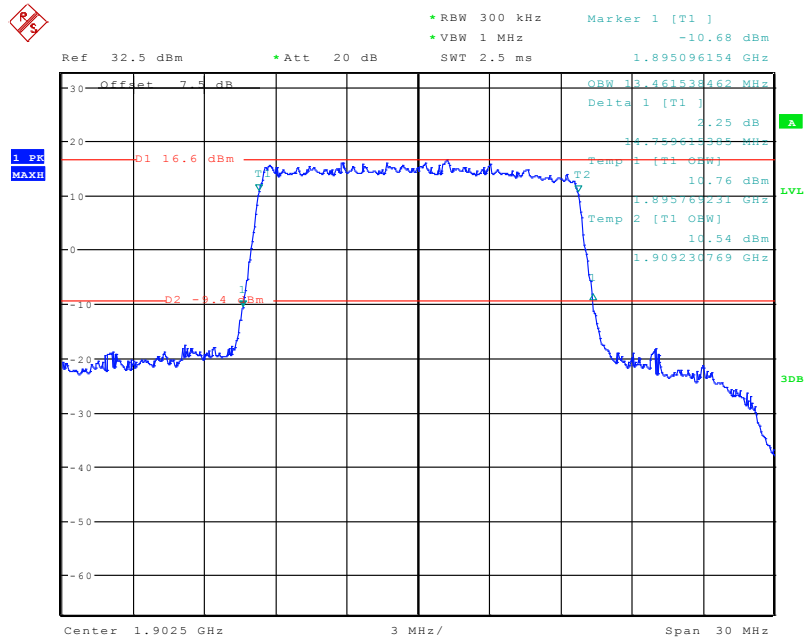
QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, High channel

Date: 3.NOV.2020 09:20:39

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

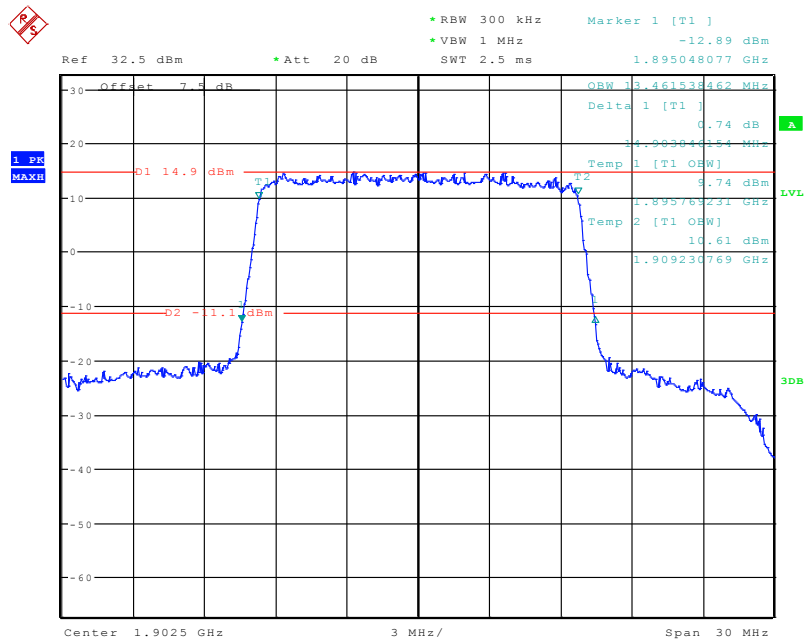
Date: 3.NOV.2020 09:01:52

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



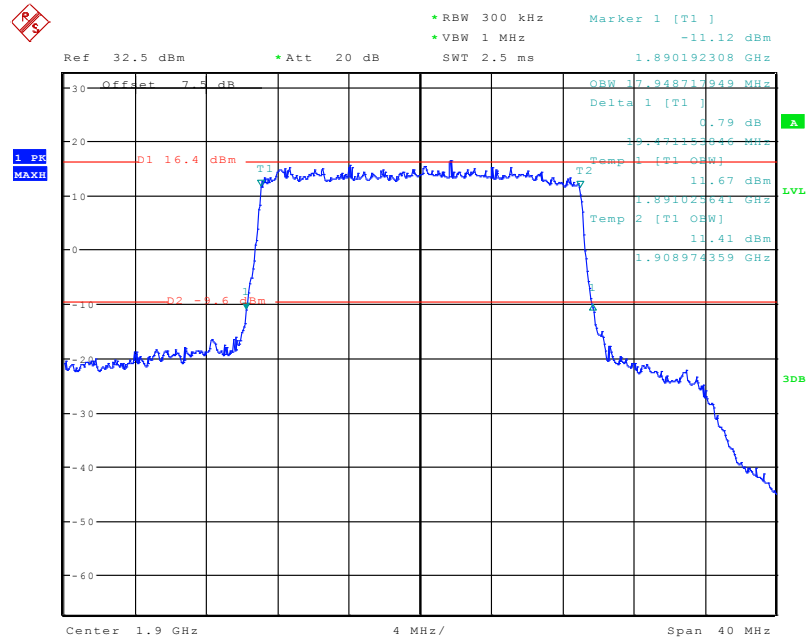
Date: 3.NOV.2020 09:46:36

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



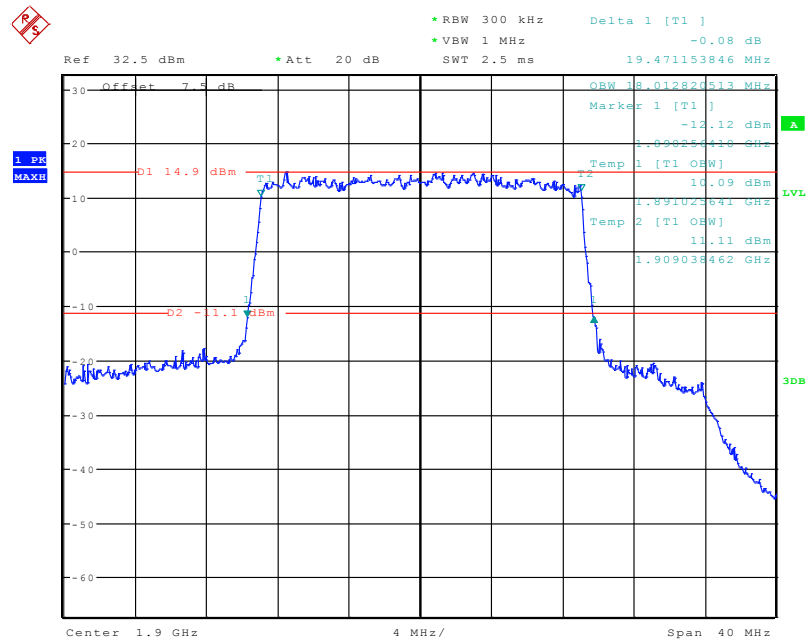
Date: 3.NOV.2020 09:44:37

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



Date: 3.NOV.2020 09:47:54

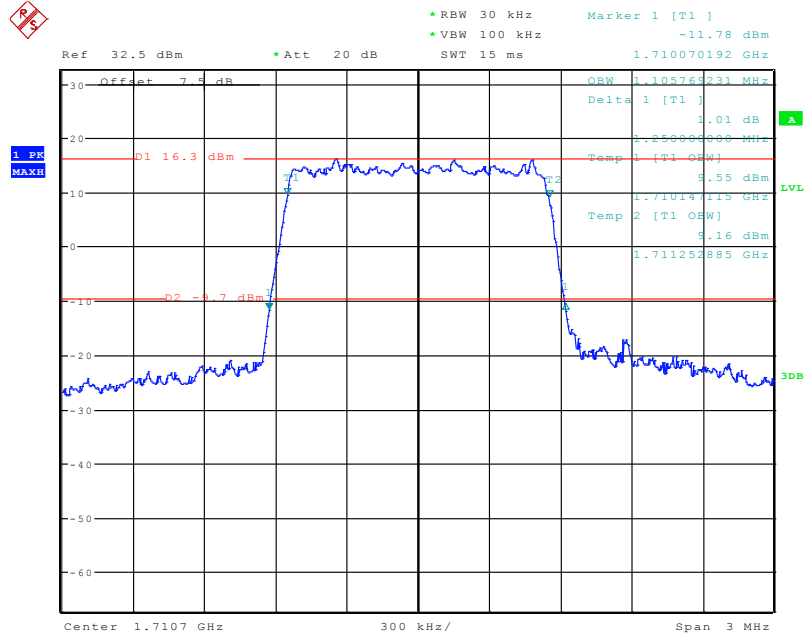
16-QAM (20.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, High channel



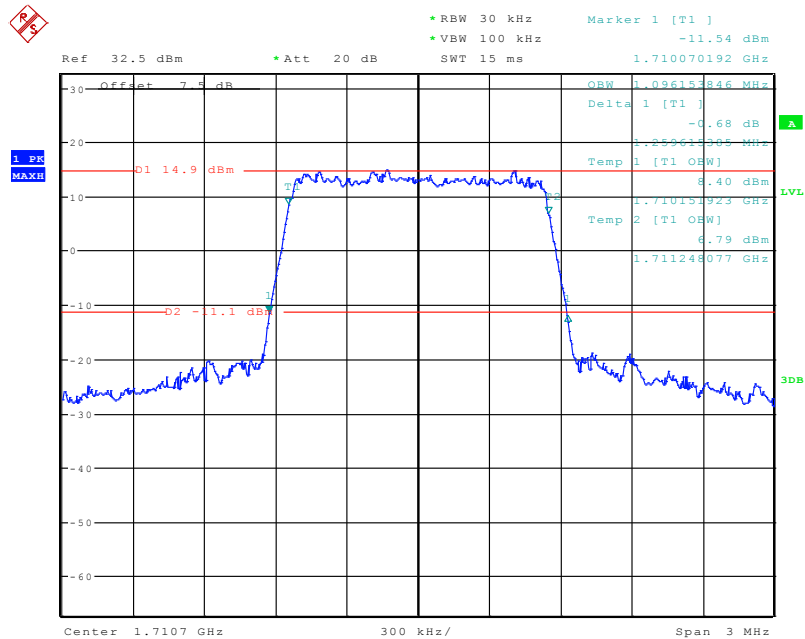
Date: 3.NOV.2020 09:49:27

Band 4:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.106	1.250
		Middle	1.098	1.254
		High	1.101	1.253
	16QAM	Low	1.096	1.260
		Middle	1.098	1.248
		High	1.091	1.234
3	QPSK	Low	2.702	2.971
		Middle	2.700	2.952
		High	2.692	2.981
	16QAM	Low	2.692	2.981
		Middle	2.700	2.940
		High	2.692	2.971
5	QPSK	Low	4.503	4.984
		Middle	4.520	5.020
		High	4.519	5.000
	16QAM	Low	4.519	5.016
		Middle	4.520	4.980
		High	4.519	5.000
10	QPSK	Low	8.974	9.679
		Middle	8.960	9.720
		High	8.974	9.744
	16QAM	Low	8.974	9.679
		Middle	8.960	9.640
		High	8.974	9.679
15	QPSK	Low	13.510	14.904
		Middle	13.560	14.760
		High	13.510	14.888
	16QAM	Low	13.558	14.856
		Middle	13.560	14.940
		High	13.510	14.792
20	QPSK	Low	17.885	19.487
		Middle	18.000	19.520
		High	18.013	19.808
	16QAM	Low	17.949	19.487
		Middle	18.000	19.520
		High	18.013	19.615

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

Date: 3.NOV.2020 11:03:02

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

Date: 3.NOV.2020 11:01:56

Ref 32.5 dBm *Att 20 dB RBW 30 kHz Marker 1 [T1] -13.76 dBm
 VBW 100 kHz SWT 30 ms 1.710009615 GHz

-30 Offset 7.5 dB
 Delta 1 [T1] 0.26 dB
 2.37115046 MHz
 Temp 1 [T1 BW] 7.89 dBm
 1.710153846 GHz
 Temp 2 [T1 BW] 8.96 dBm
 1.712855769 GHz

D1 13.3 dBm T1
 D2 -12.7 dBm T2

1.7115 GHz 600 kHz/ Span 6 MHz

Date: 3.NOV.2020 10:54:30

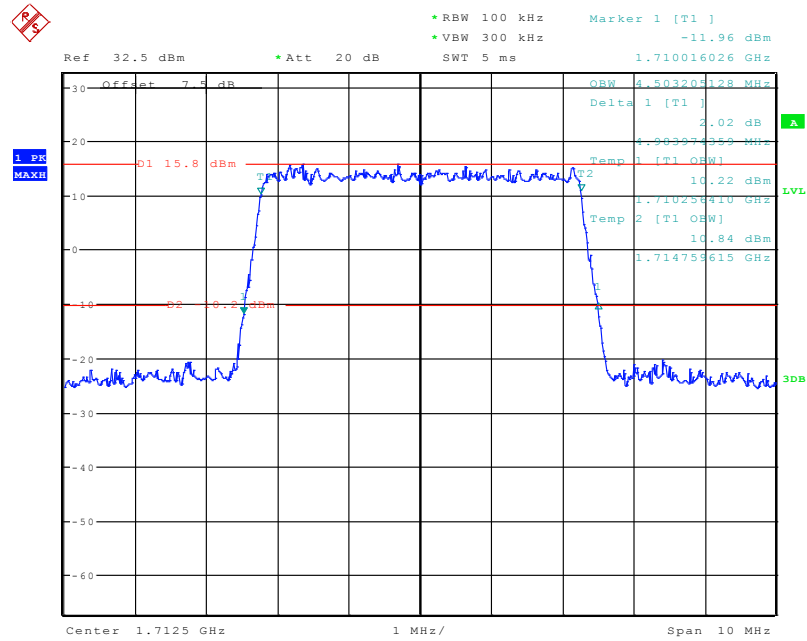
Ref 32.5 dBm *Att 20 dB RBW 30 kHz VBW 100 kHz SWT 30 ms
 Marker 1 [T1] -15.18 dBm 1.710009615 GHz

30 Offset 7 dB
 Delta 1 [T1] 0.40 dB
 2.908764231 MHz
 Temp 1 [T1 BW] 8.53 dBm
 1.710153846 GHz
 Temp 2 [T1 BW] 7.20 dBm
 1.712846154 GHz

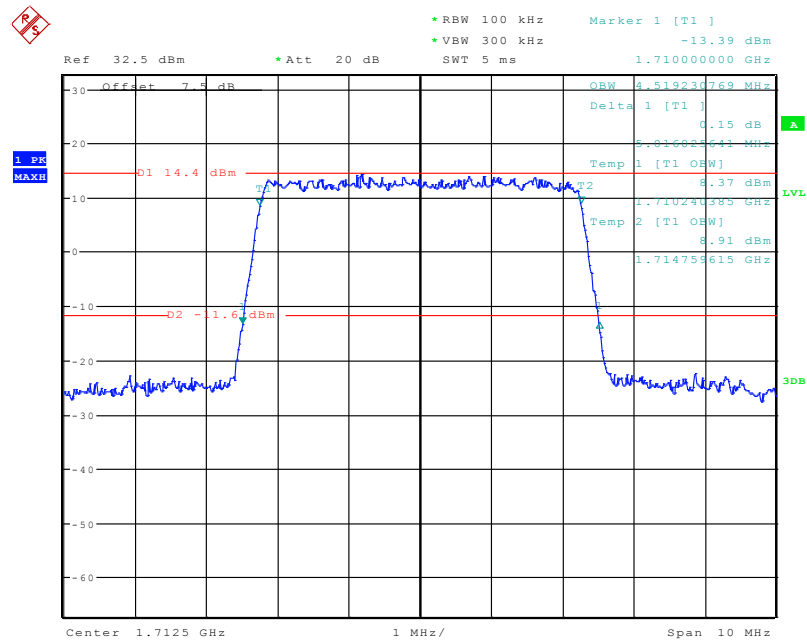
D1 12.3 dBm T1
 D2 -13.7 dBm T2

Center 1.7115 GHz 600 kHz/ Span 6 MHz

Date: 3.NOV.2020 10:55:48

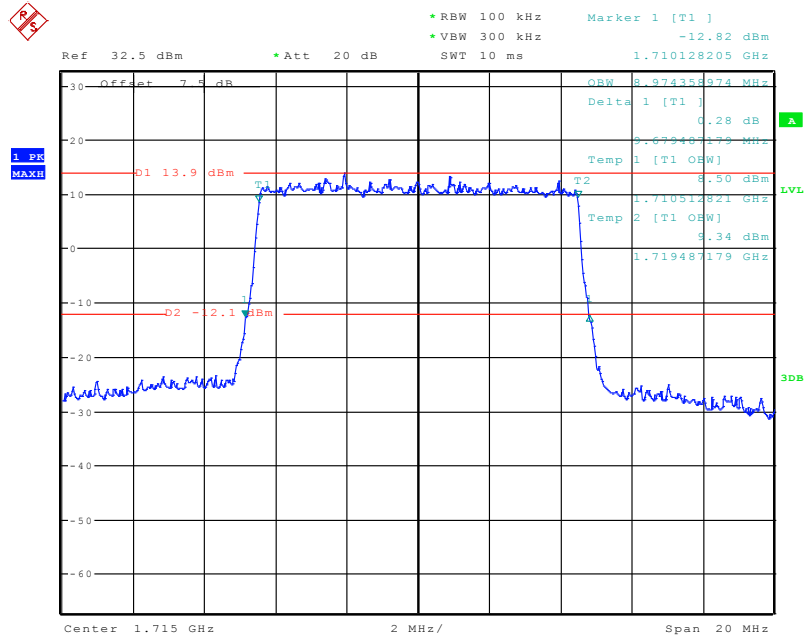
QPSK (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 3.NOV.2020 10:53:11

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

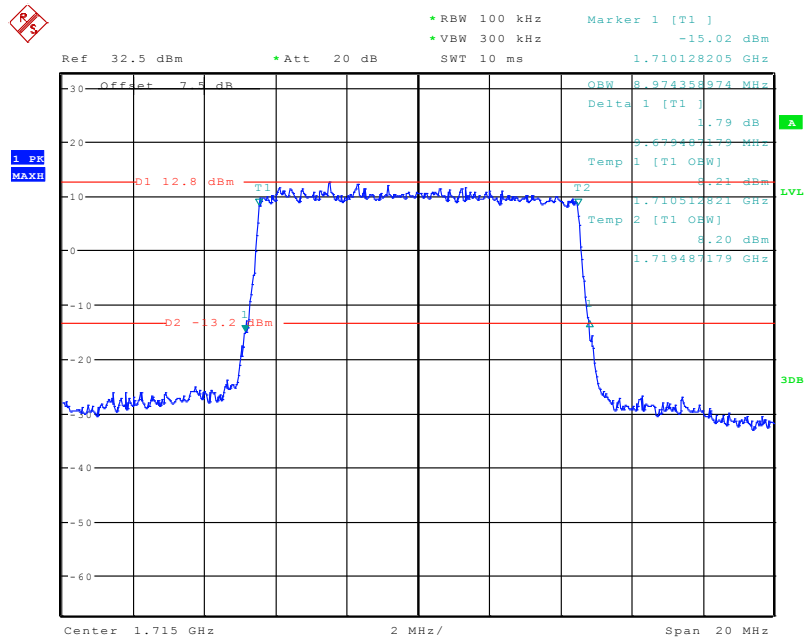
Date: 3.NOV.2020 10:52:14

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

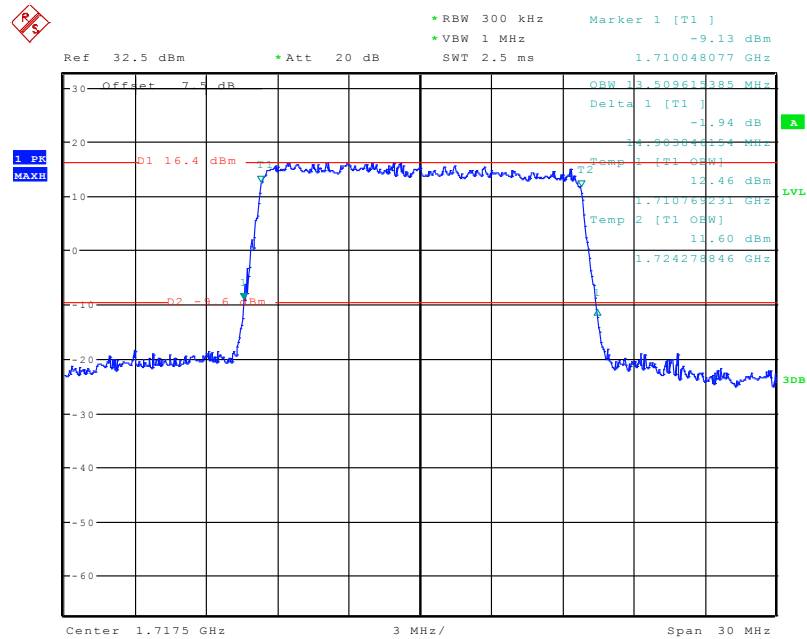


Date: 3.NOV.2020 10:45:48

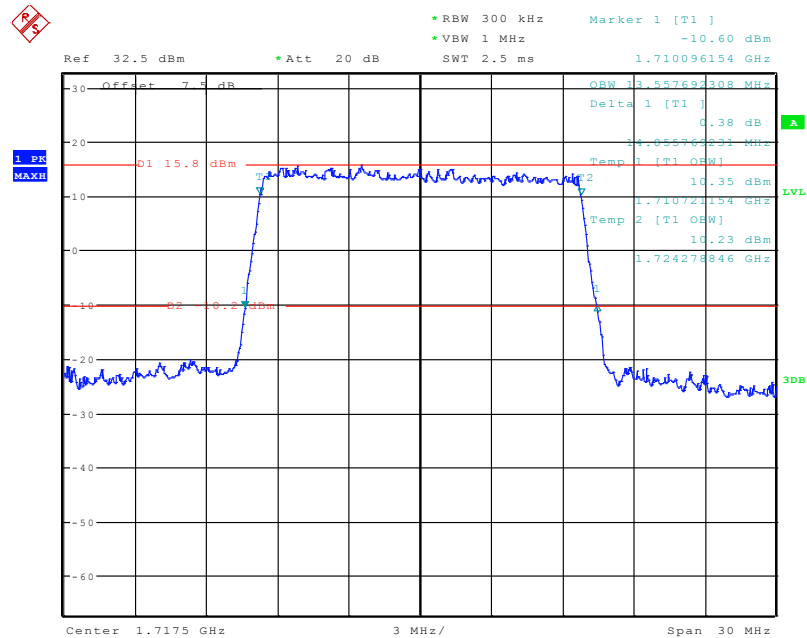
16-QAM (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel



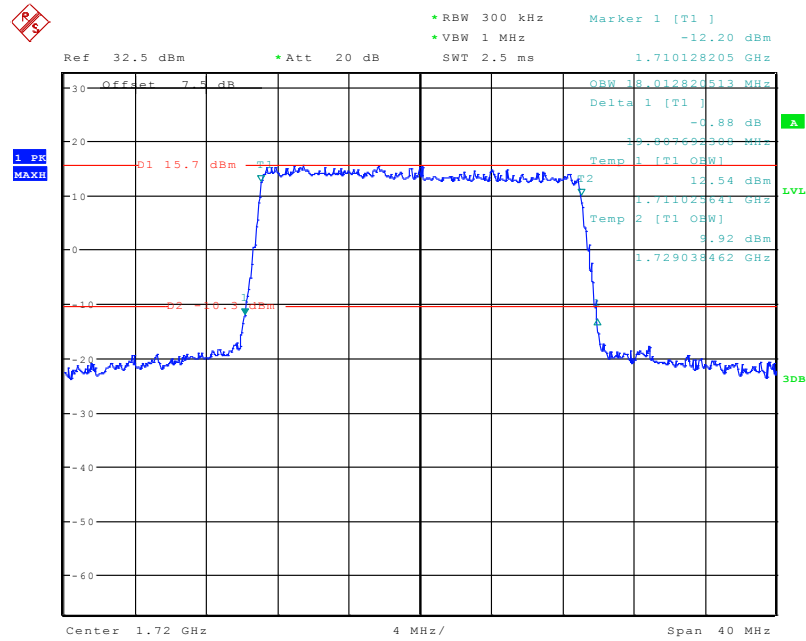
Date: 3.NOV.2020 10:47:15

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

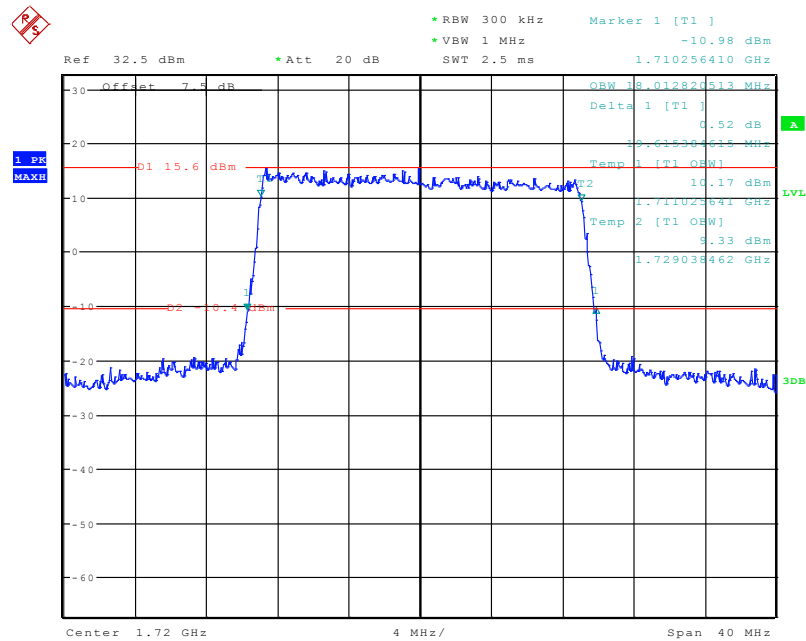
Date: 3.NOV.2020 10:43:57

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

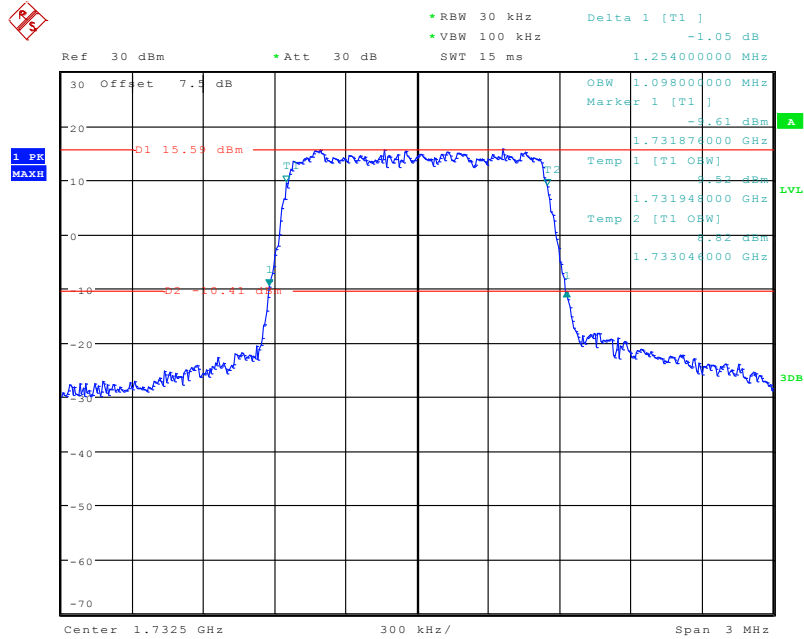
Date: 3.NOV.2020 10:42:44

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

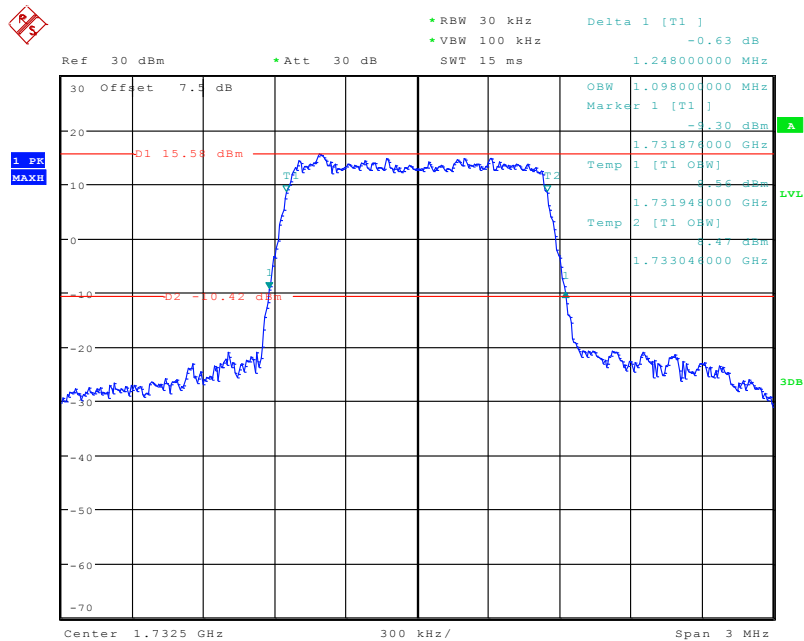
Date: 3.NOV.2020 09:58:50

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

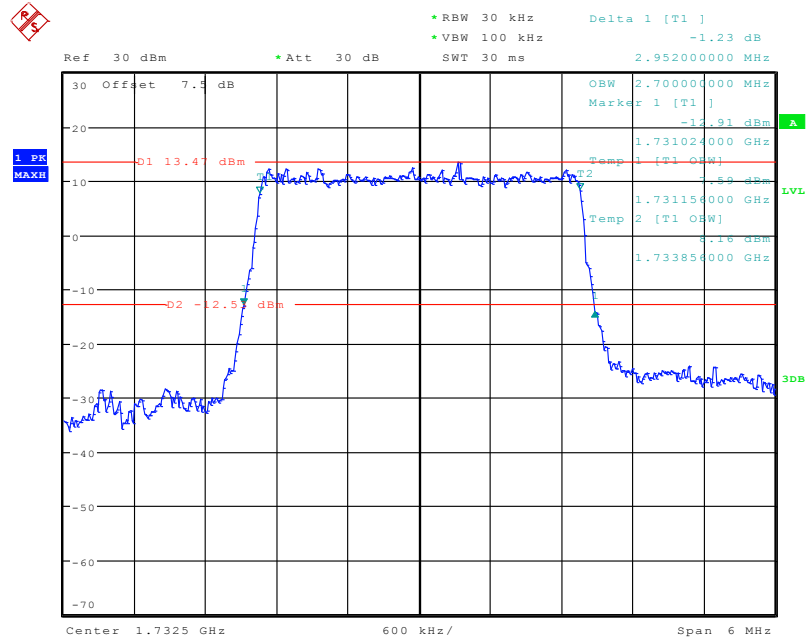
Date: 3.NOV.2020 10:00:01

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

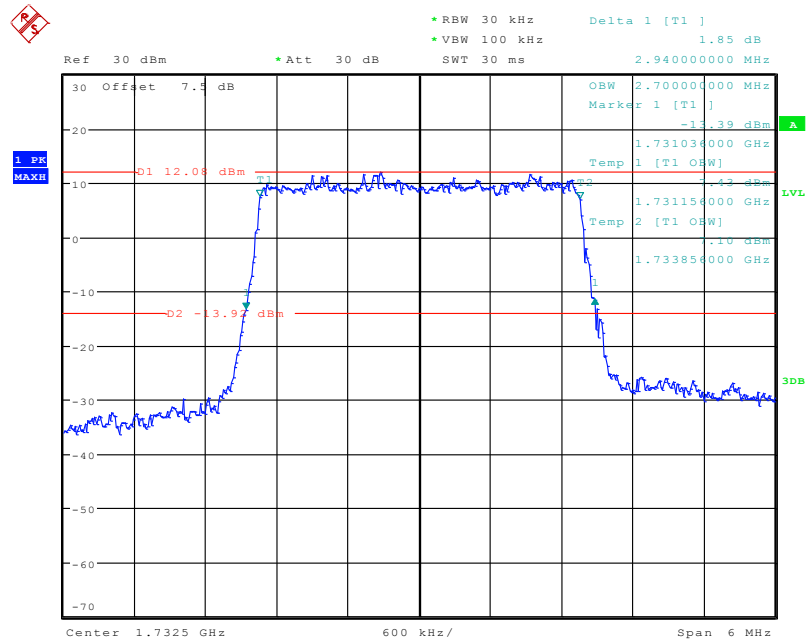
Date: 13.MAR.2020 09:42:19

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

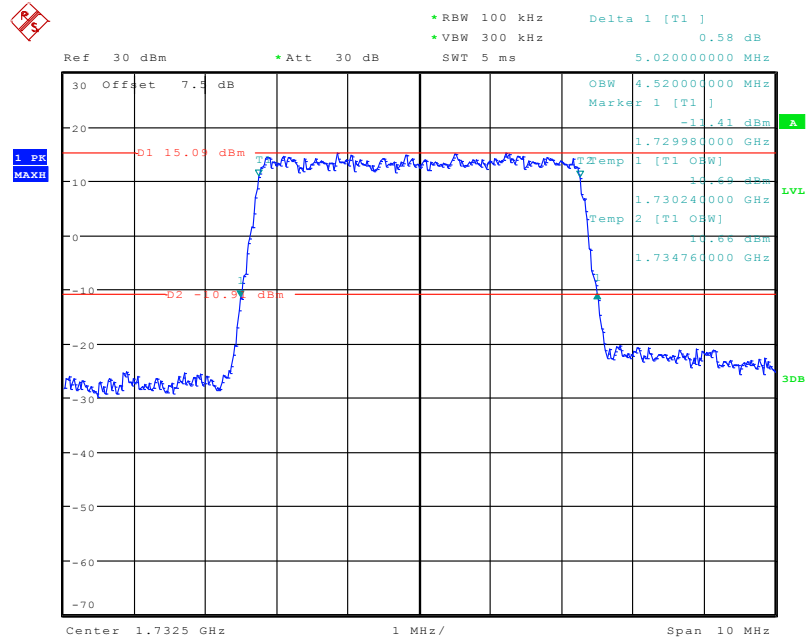
Date: 13.MAR.2020 09:42:38

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

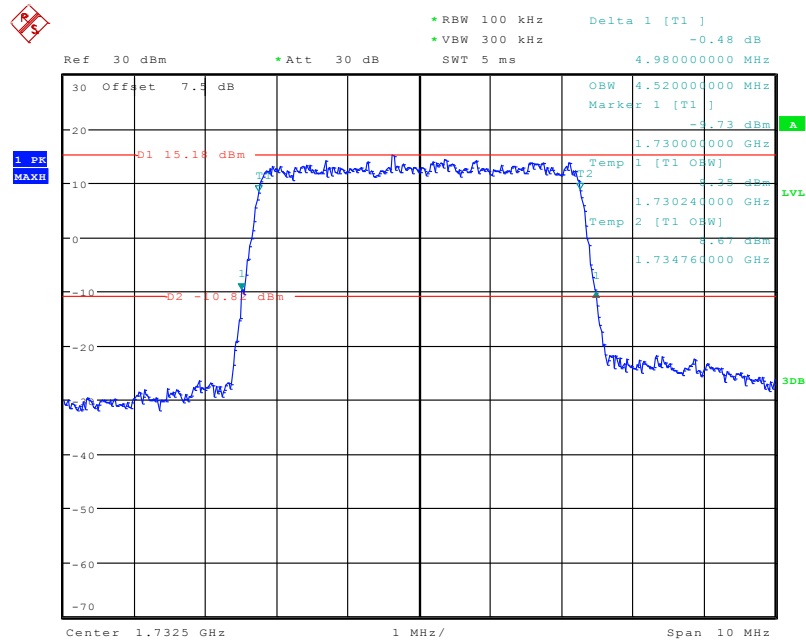
Date: 13.MAR.2020 09:42:57

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

Date: 13.MAR.2020 09:43:13

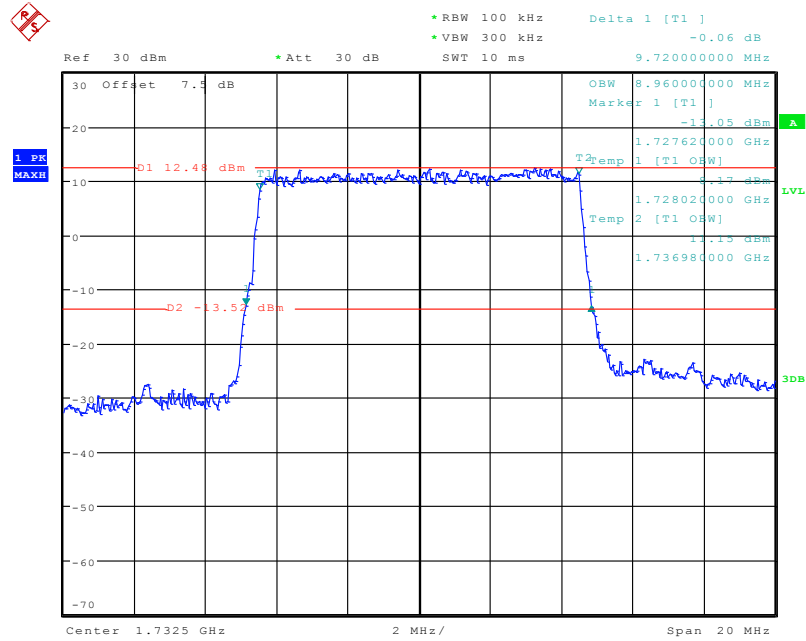
QPSK (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.MAR.2020 09:43:33

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

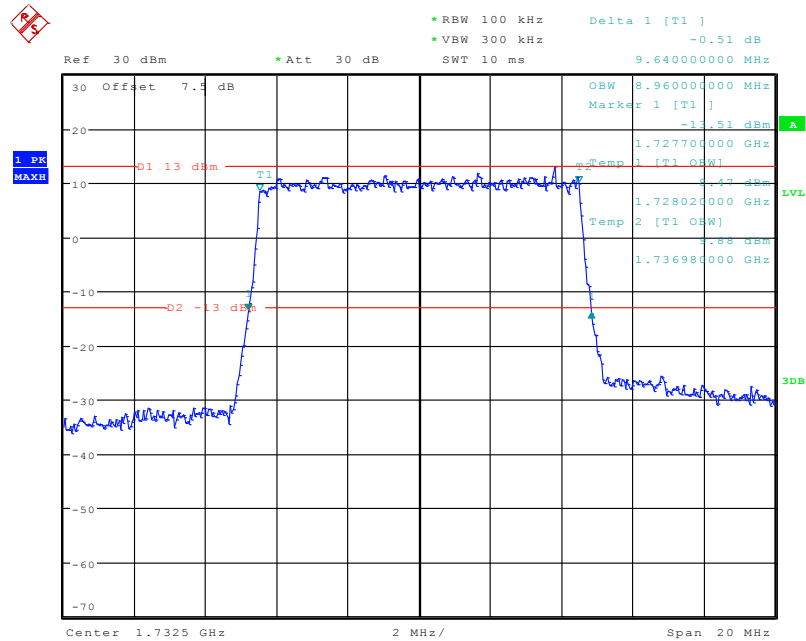
Date: 13.MAR.2020 09:43:53

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



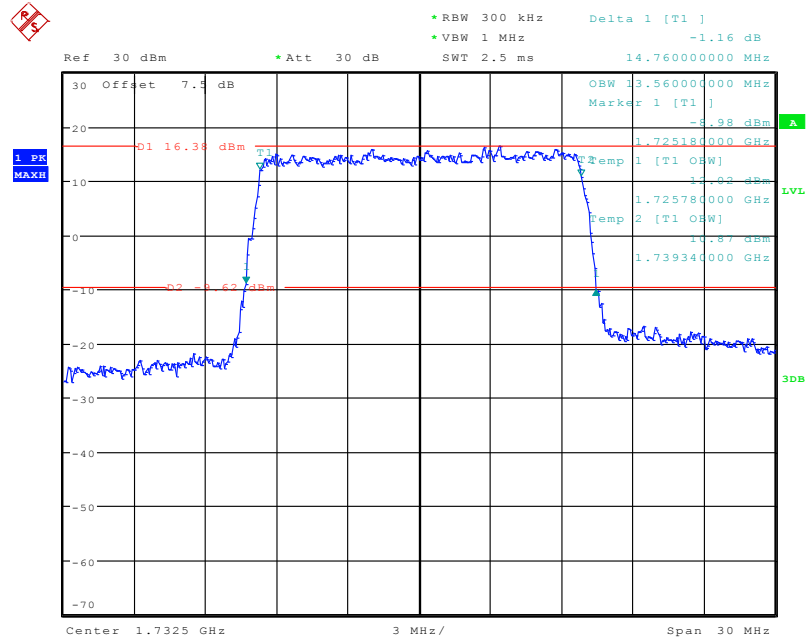
Date: 13.MAR.2020 09:44:16

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



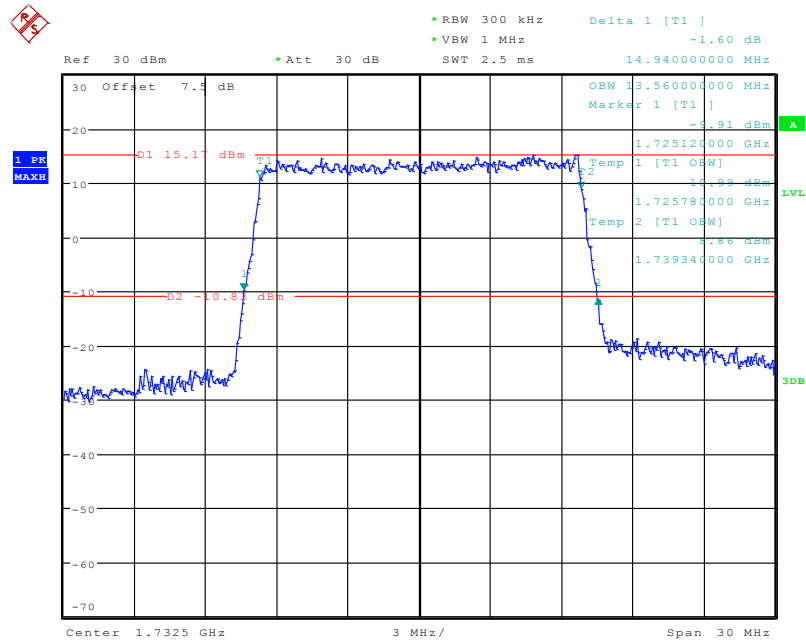
Date: 13.MAR.2020 09:44:37

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

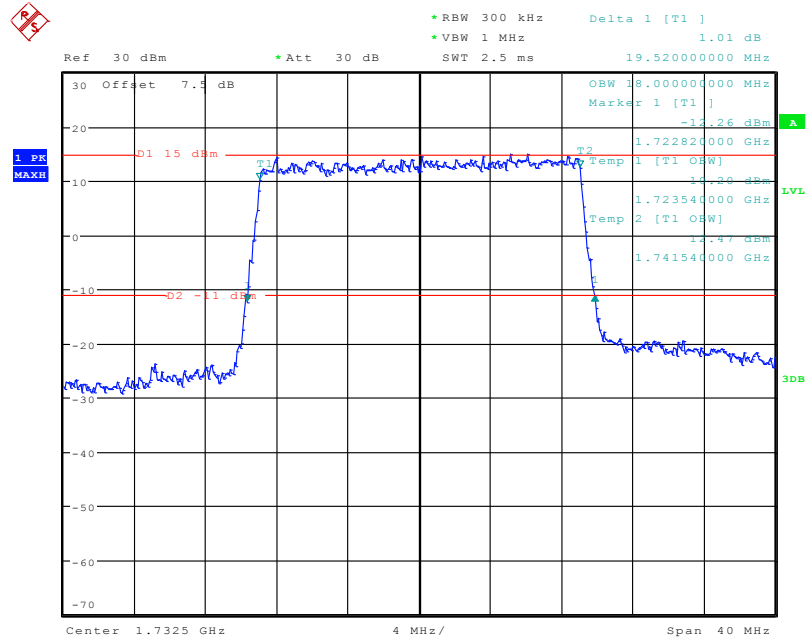


Date: 13.MAR.2020 09:45:03

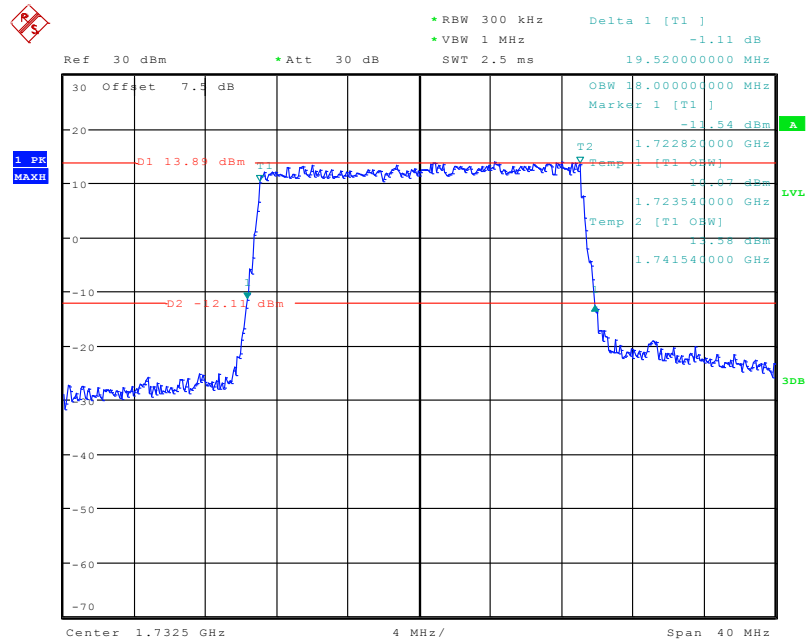
16-QAM (15.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



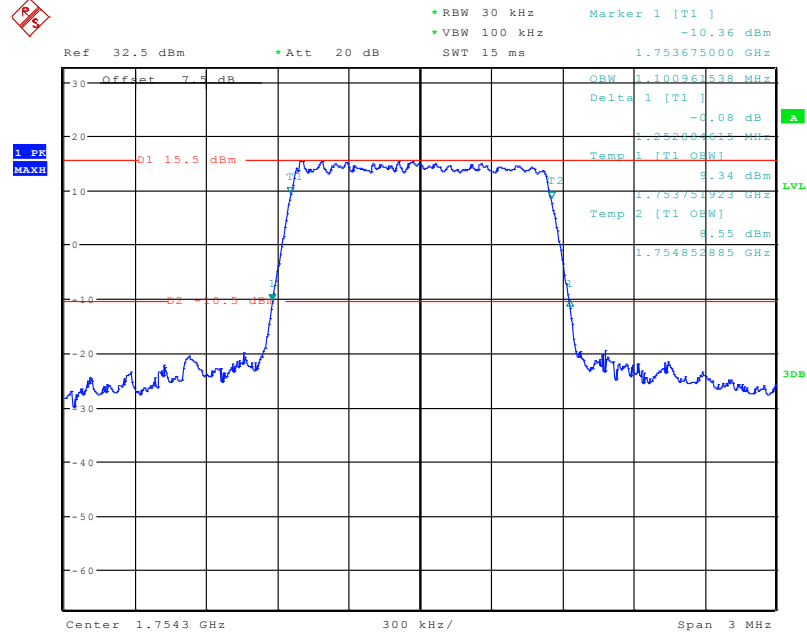
Date: 13.MAR.2020 09:45:24

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

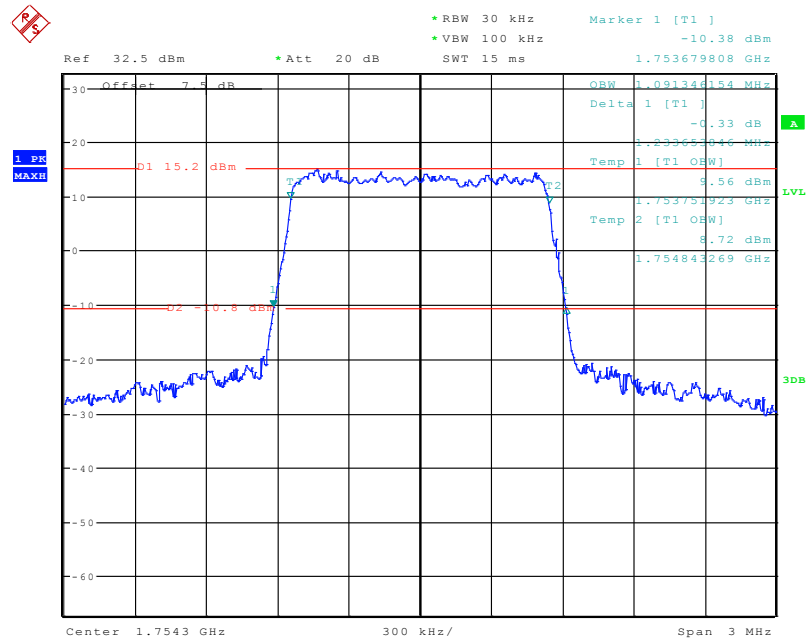
Date: 13.MAR.2020 09:45:47

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

Date: 13.MAR.2020 09:46:11

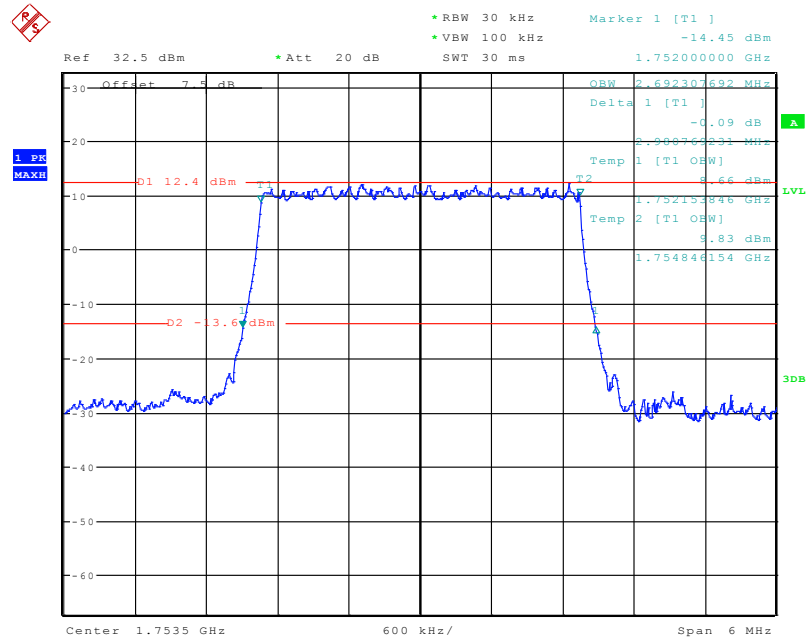
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, High channel

Date: 3.NOV.2020 10:59:39

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

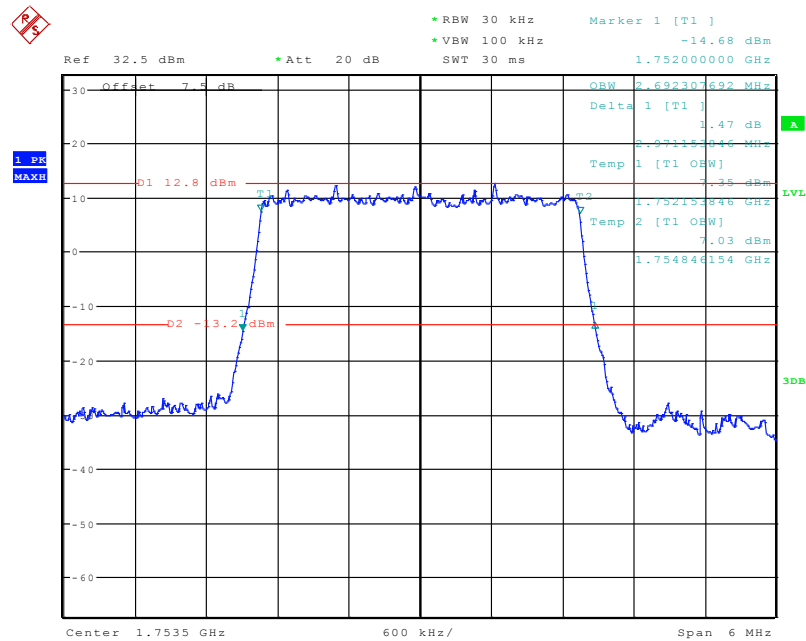
Date: 3.NOV.2020 11:00:43

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

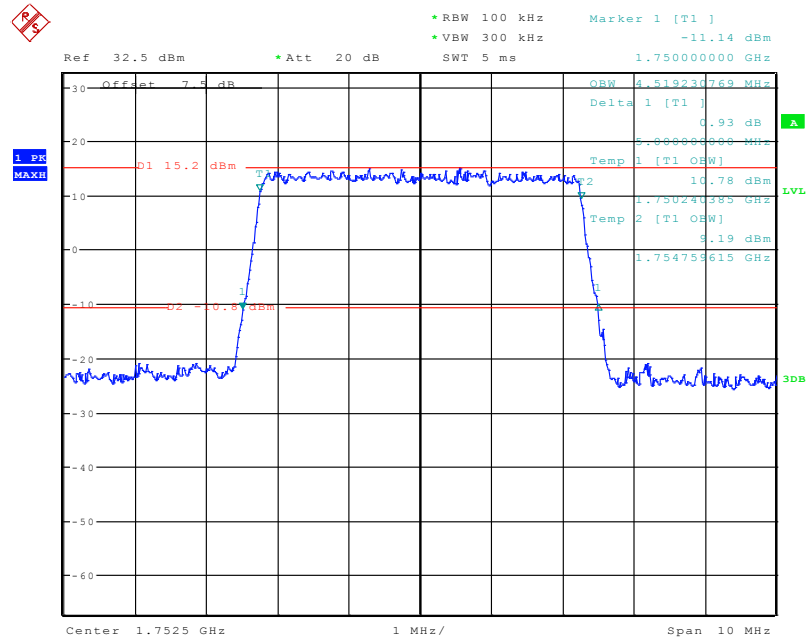


Date: 3.NOV.2020 10:58:19

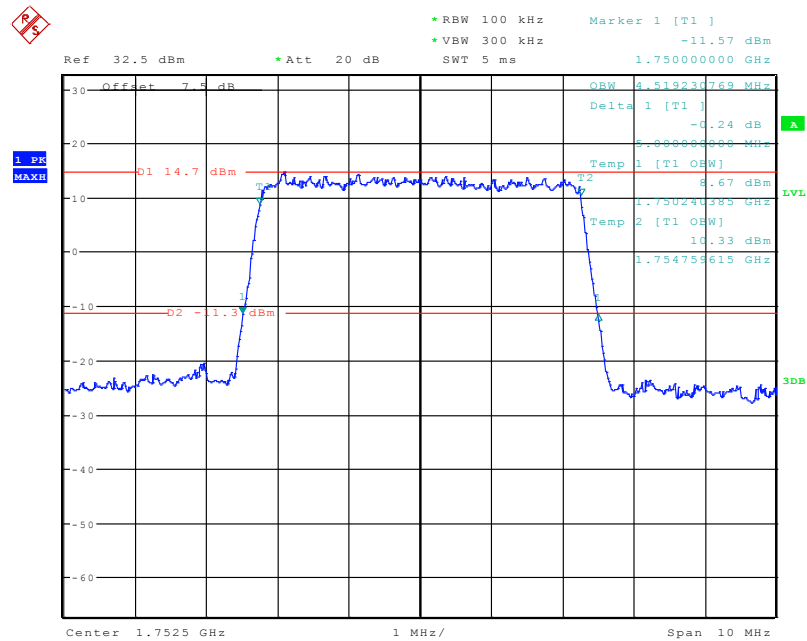
16-QAM (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, High channel



Date: 3.NOV.2020 10:57:26

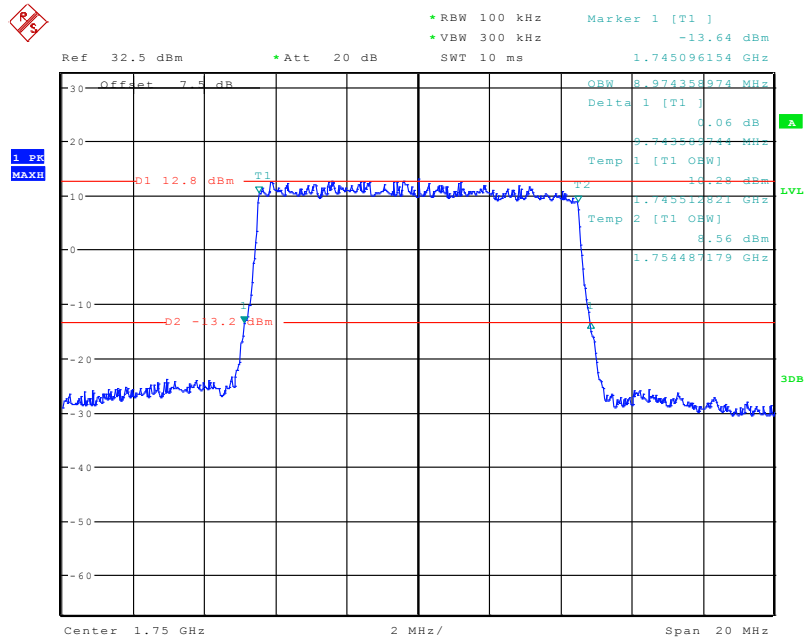
QPSK (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, High channel

Date: 3.NOV.2020 10:49:57

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

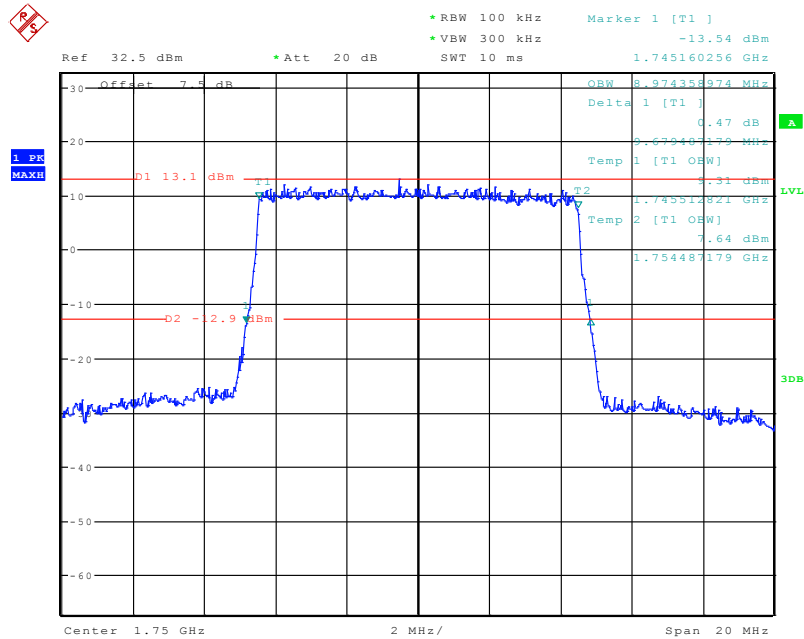
Date: 3.NOV.2020 10:51:05

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



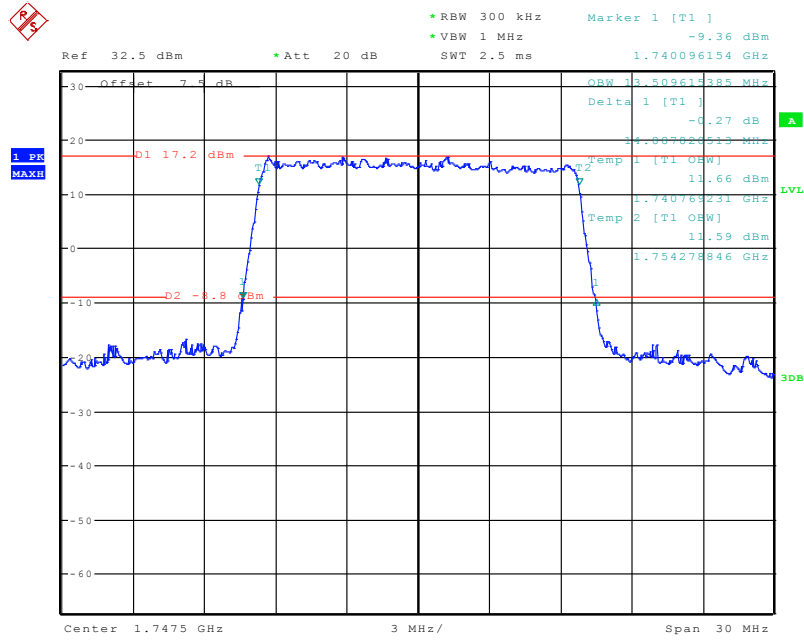
Date: 3.NOV.2020 10:48:55

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



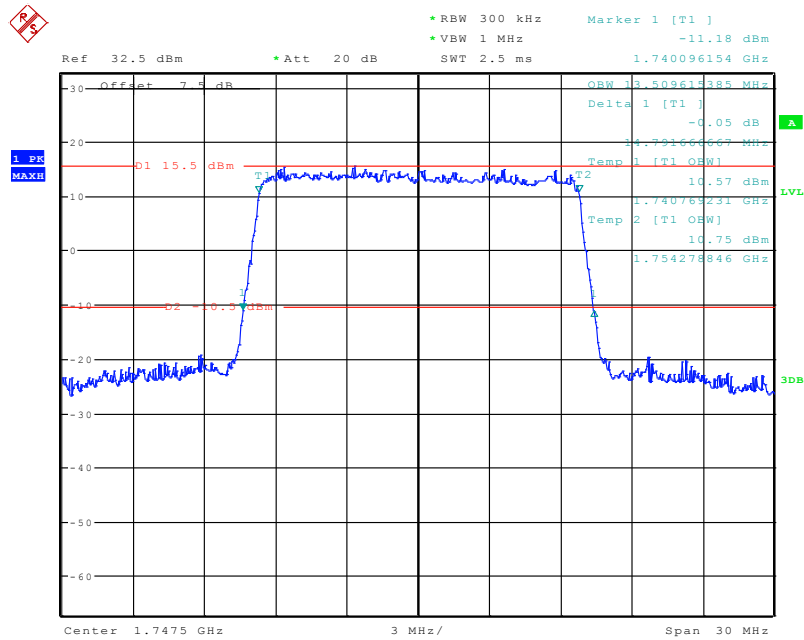
Date: 3.NOV.2020 10:48:10

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



Date: 3.NOV.2020 10:05:01

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



Date: 3.NOV.2020 10:07:06

[illegible]

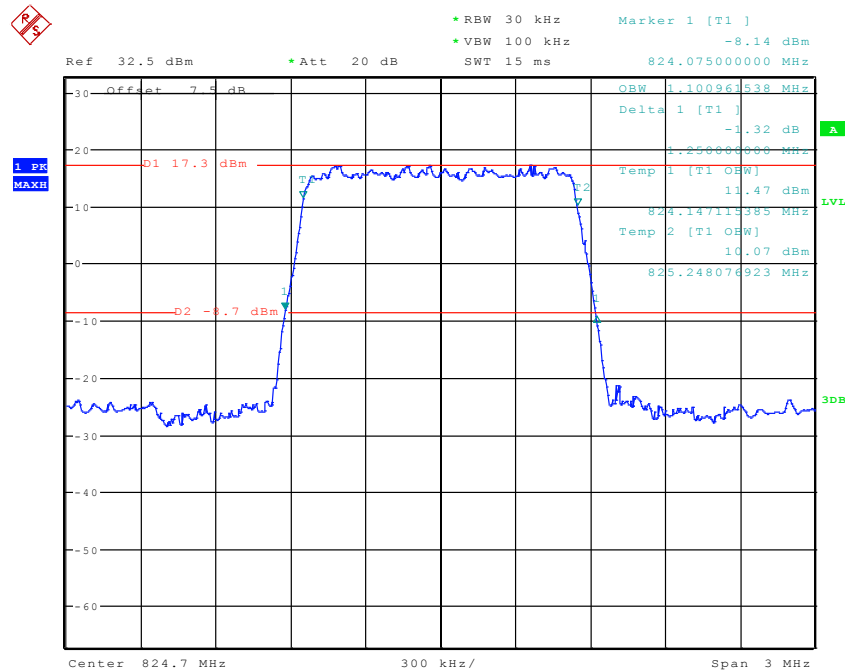
Date: 3.NOV.2020 10:01:44

[illegible]

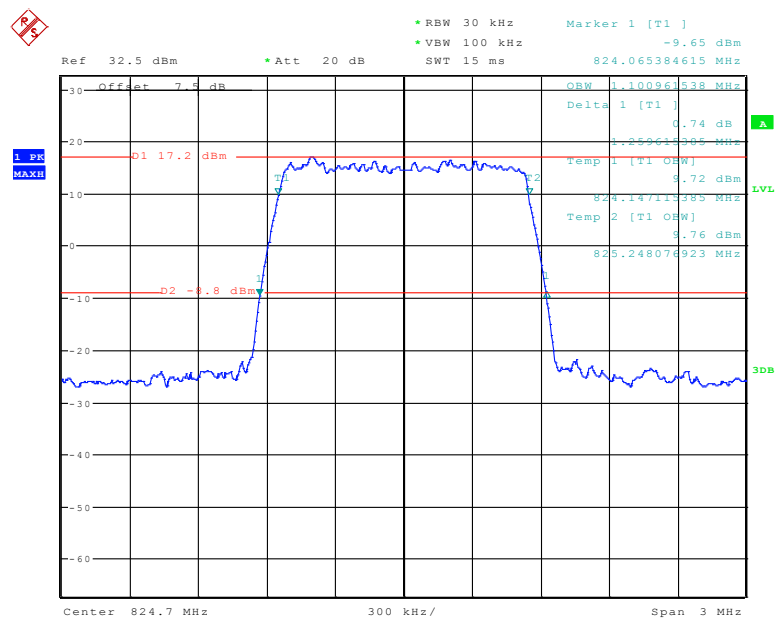
Date: 3.NOV.2020 10:02:48

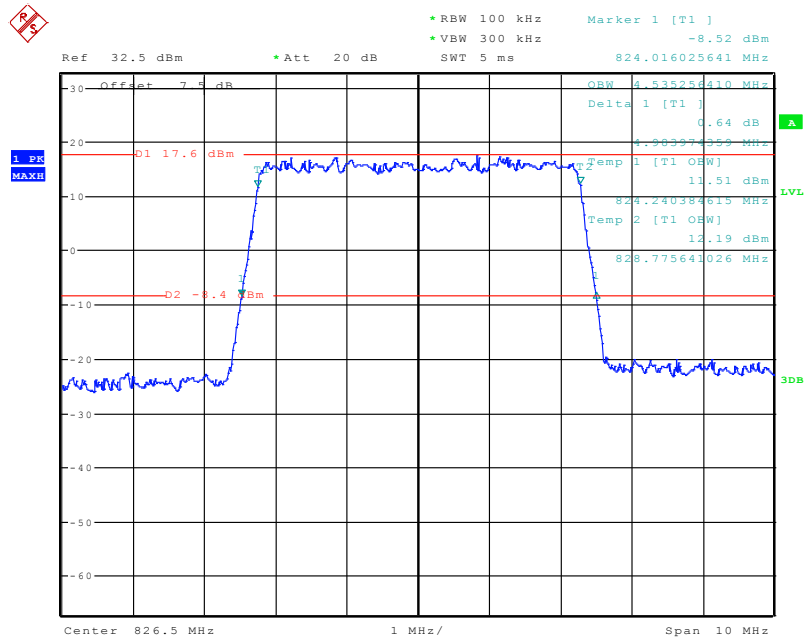
Band 5:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.101	1.250
		Middle	1.098	1.248
		High	1.101	1.260
	16QAM	Low	1.101	1.260
		Middle	1.098	1.260
		High	1.096	1.245
3	QPSK	Low	2.702	2.962
		Middle	2.688	2.940
		High	2.702	2.959
	16QAM	Low	2.692	2.981
		Middle	2.700	2.988
		High	2.702	2.990
5	QPSK	Low	4.535	4.984
		Middle	4.520	5.000
		High	4.519	5.000
	16QAM	Low	4.519	5.016
		Middle	4.500	4.920
		High	4.535	5.016
10	QPSK	Low	8.942	9.712
		Middle	8.960	9.680
		High	8.974	9.776
	16QAM	Low	8.942	9.712
		Middle	8.960	9.680
		High	8.974	9.712

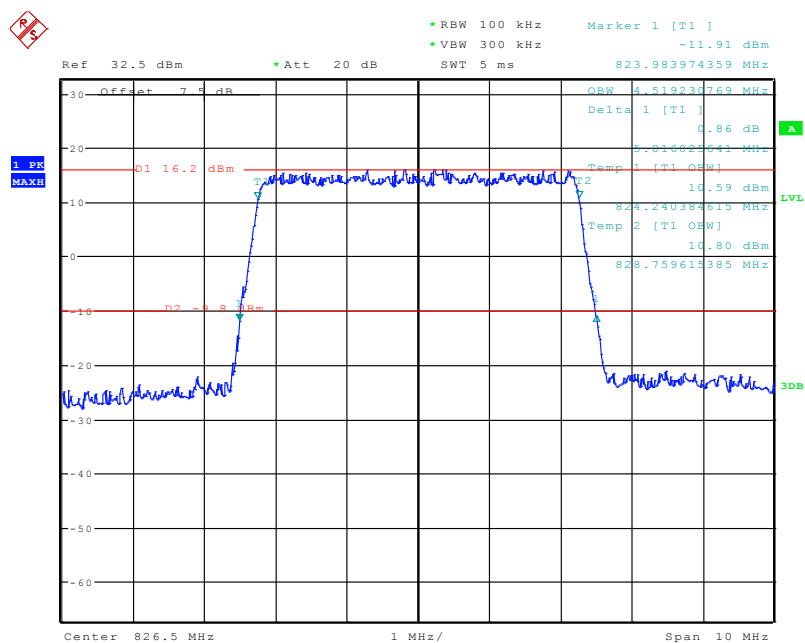
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

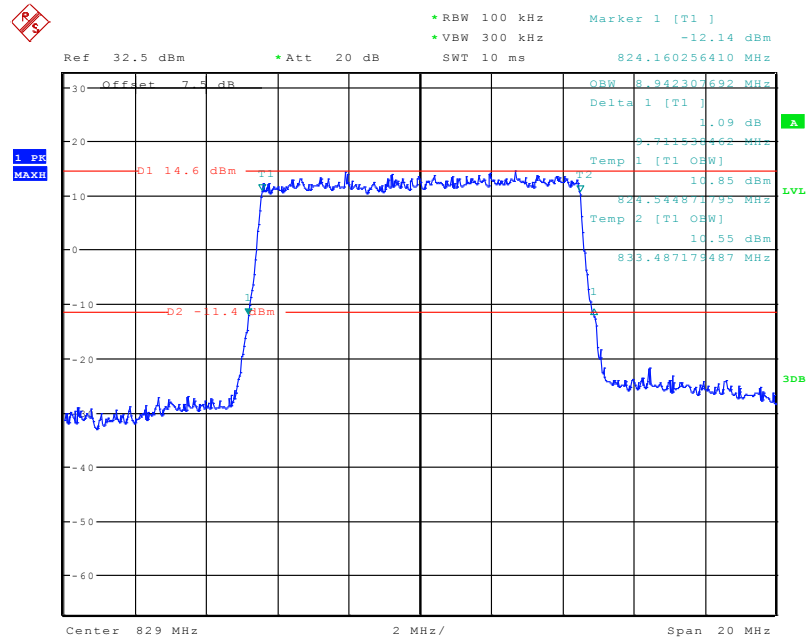
Date: 3.NOV.2020 12:03:23

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

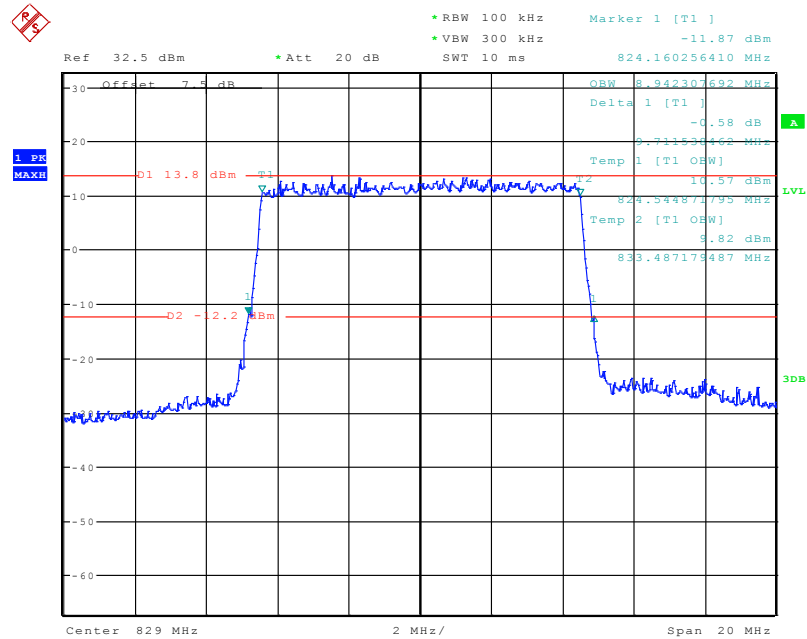
QPSK (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 3.NOV.2020 12:13:46

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

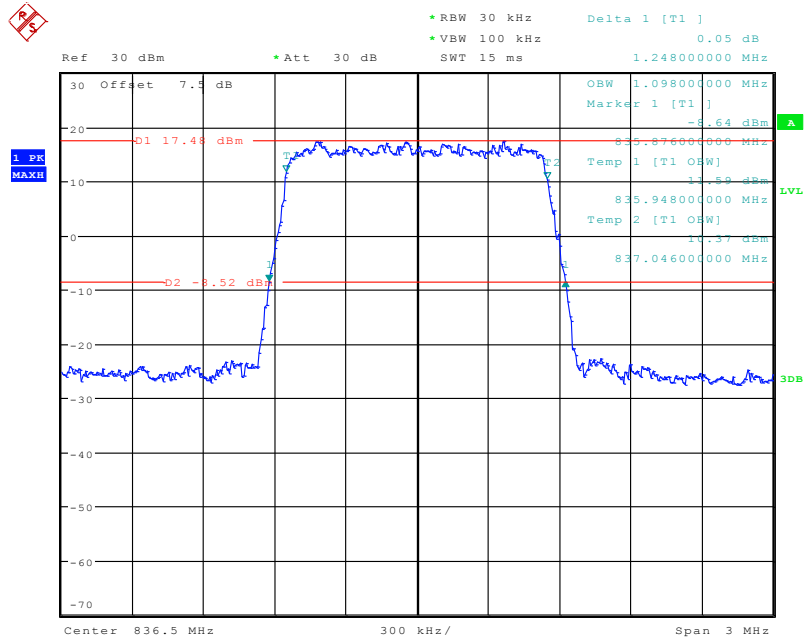
QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 3.NOV.2020 12:21:19

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

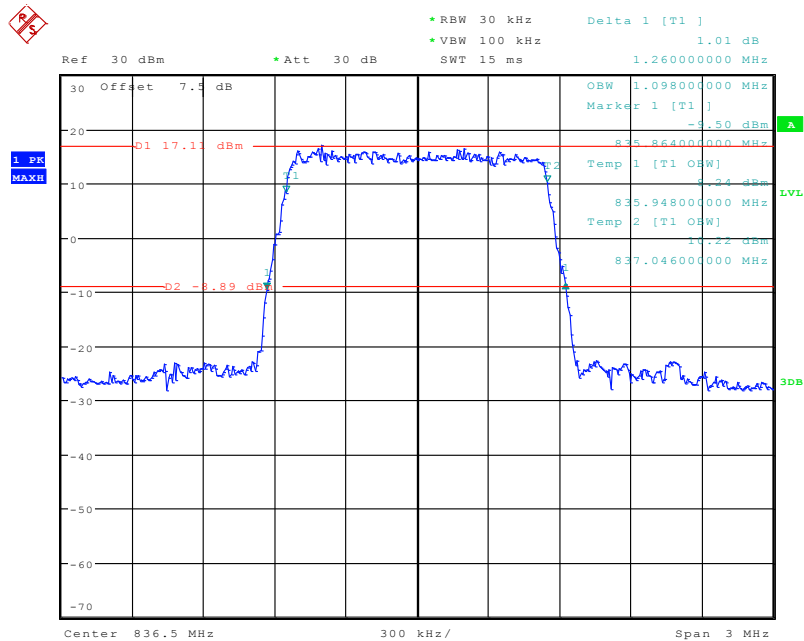
Date: 3.NOV.2020 12:20:30

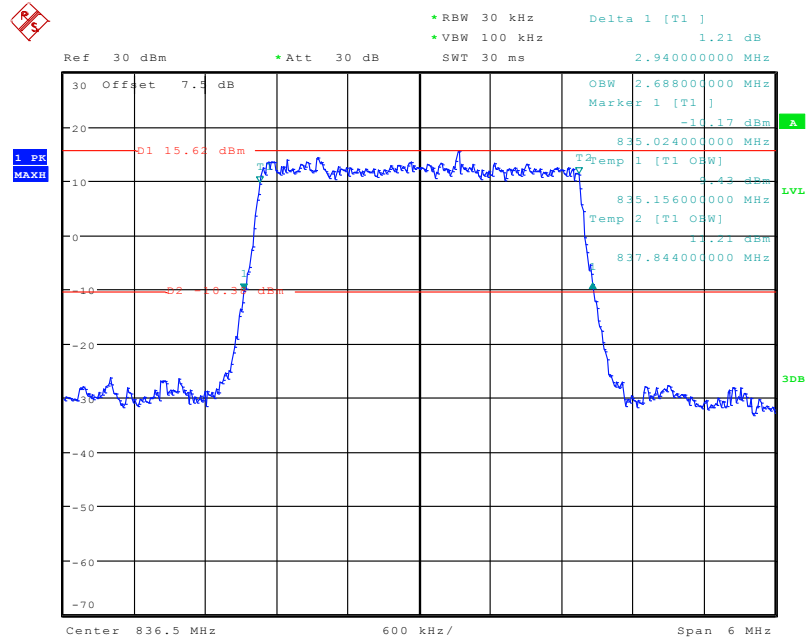
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



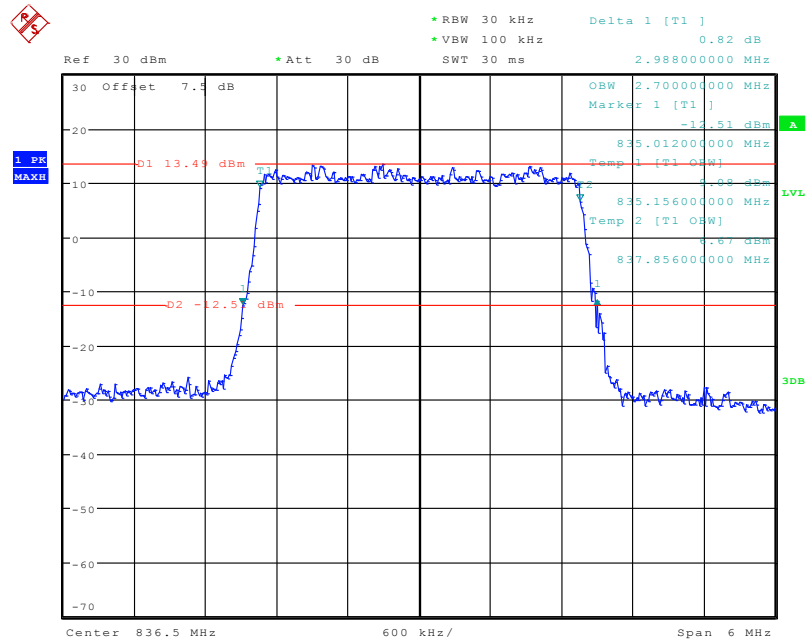
Date: 13.MAR.2020 09:46:33

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



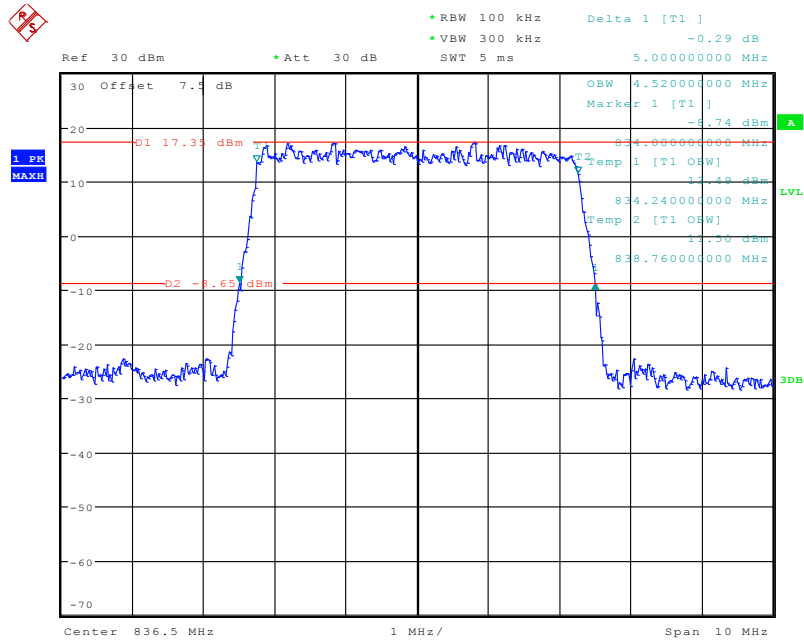
QPSK (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.MAR.2020 09:47:11

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

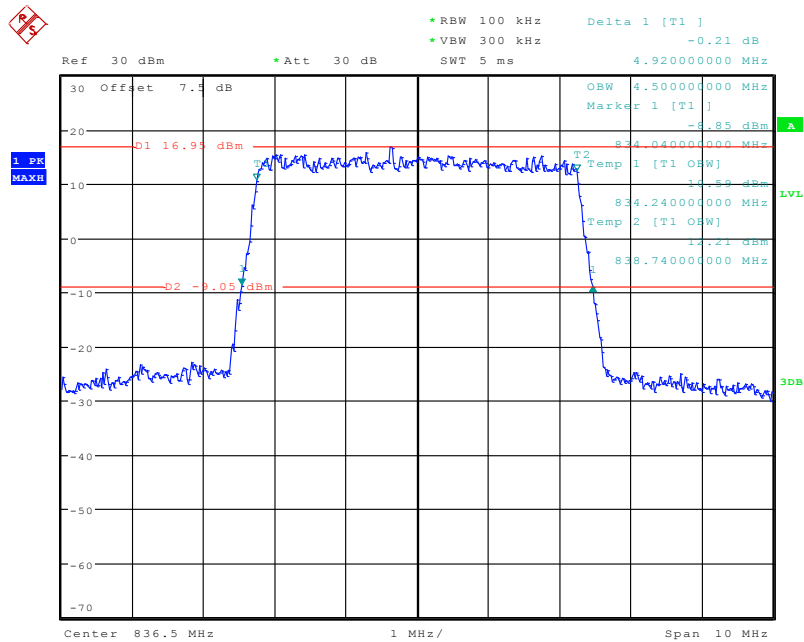
Date: 13.MAR.2020 09:47:30

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

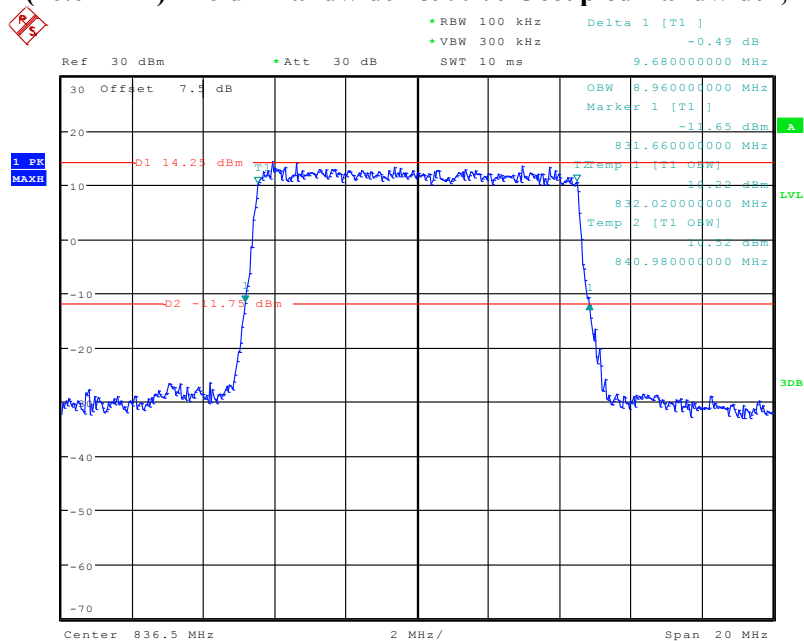


Date: 13.MAR.2020 09:47:56

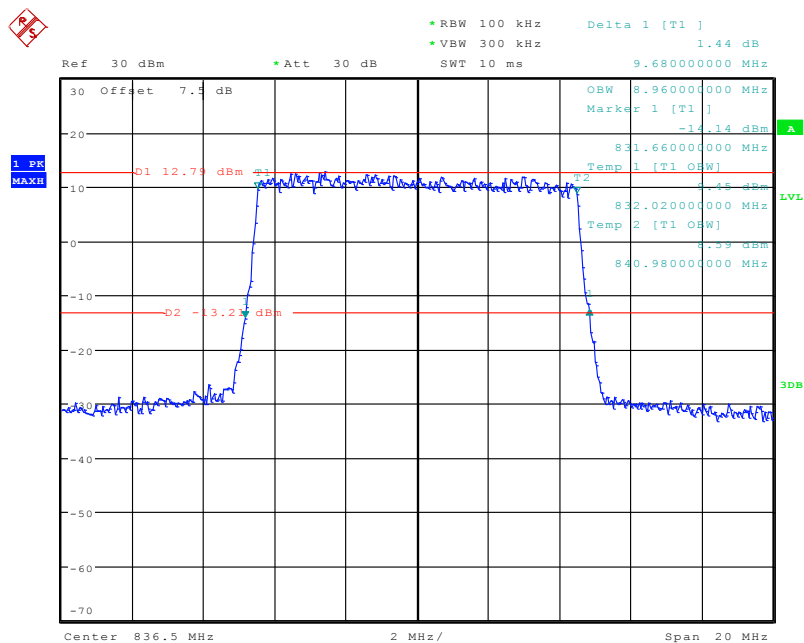
16-QAM (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



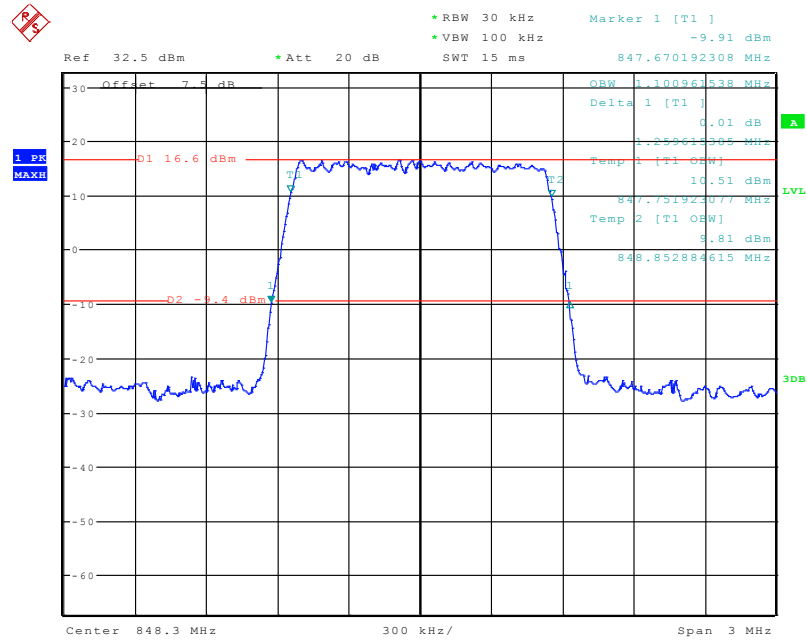
Date: 13.MAR.2020 09:48:17

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

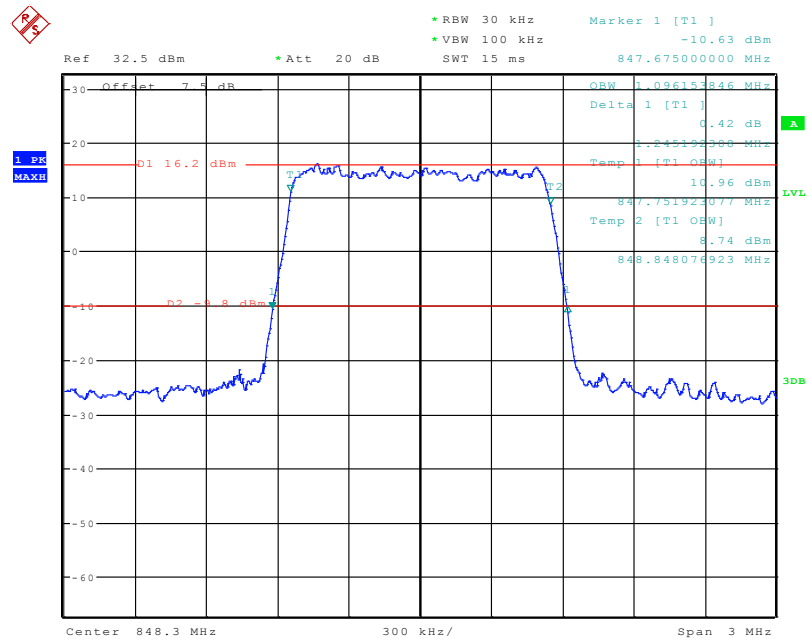
Date: 13.MAR.2020 09:48:40

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

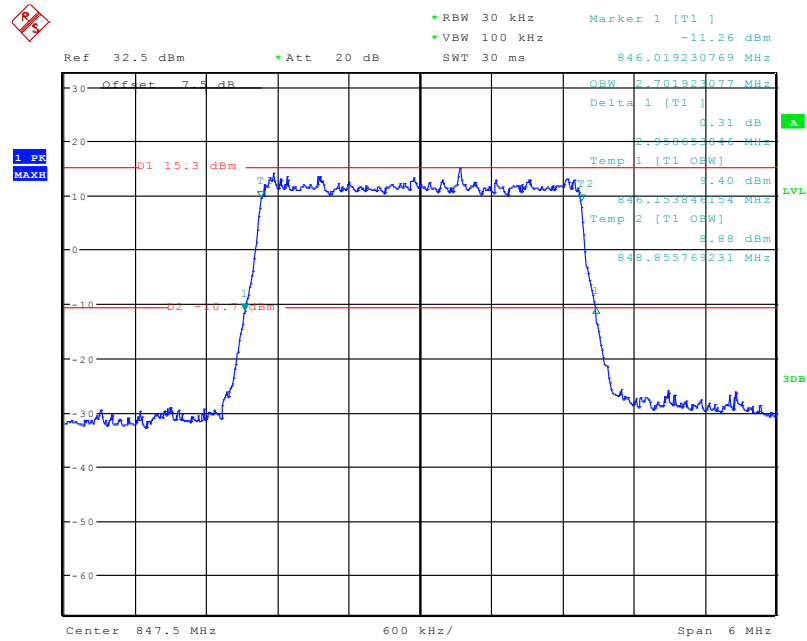
Date: 13.MAR.2020 09:48:57

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

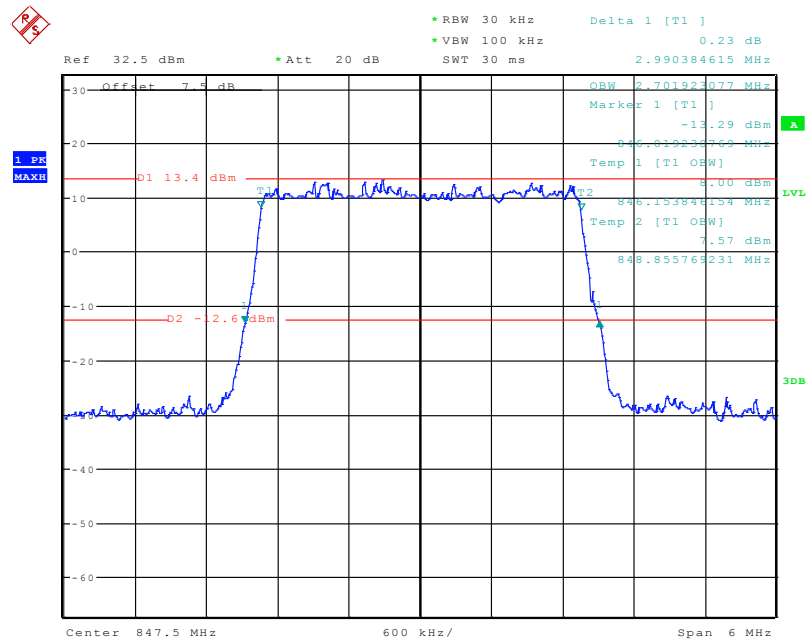
Date: 3.NOV.2020 12:07:14

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

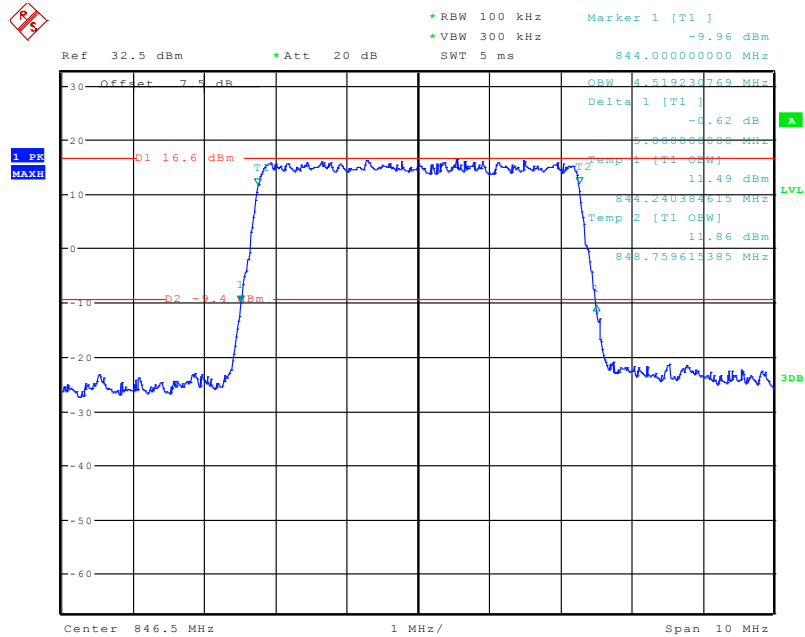
Date: 3.NOV.2020 12:06:25

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

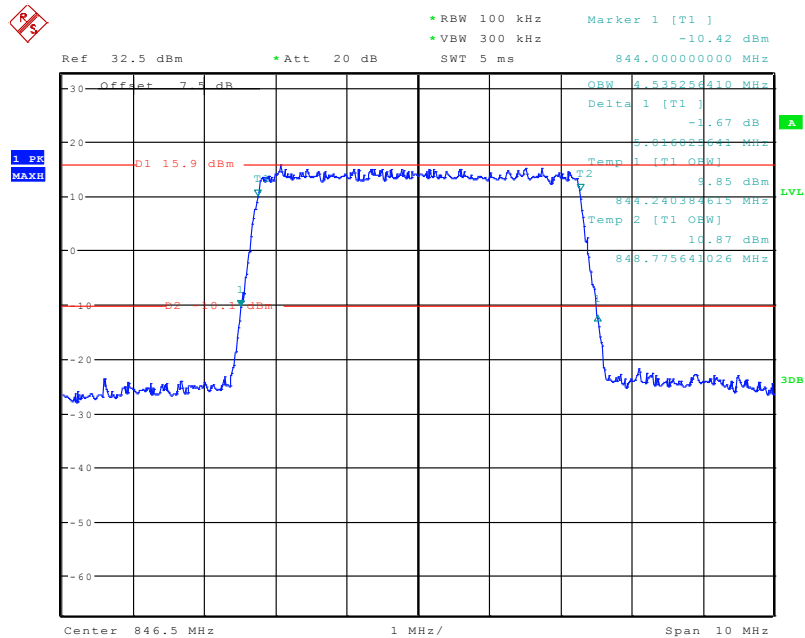
Date: 3.NOV.2020 12:08:18

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

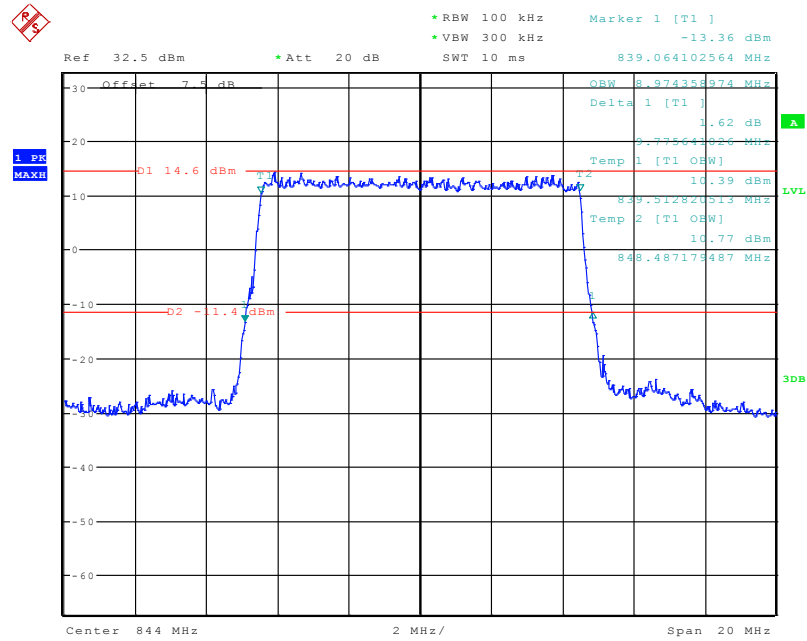
Date: 3.NOV.2020 12:09:39

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

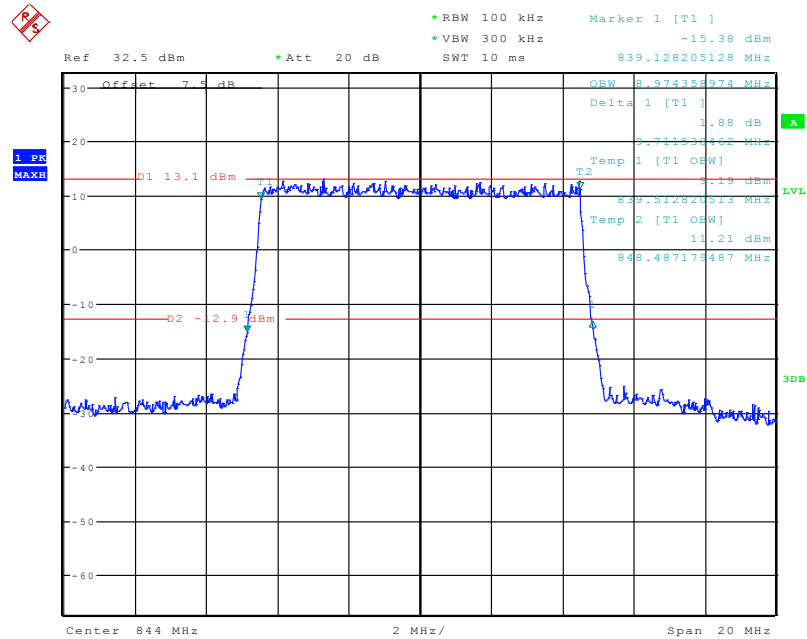
Date: 3.NOV.2020 12:16:49

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

Date: 3.NOV.2020 12:15:47

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

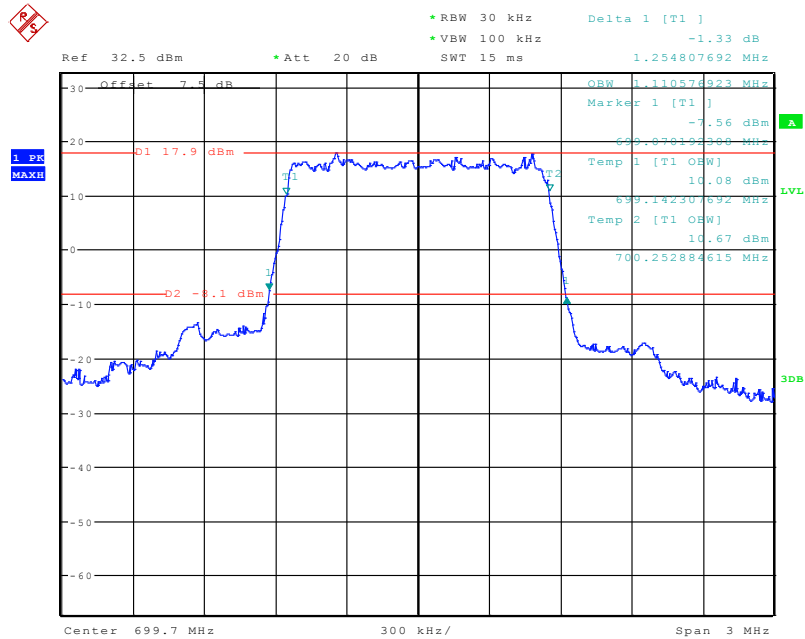
Date: 3.NOV.2020 12:18:25

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

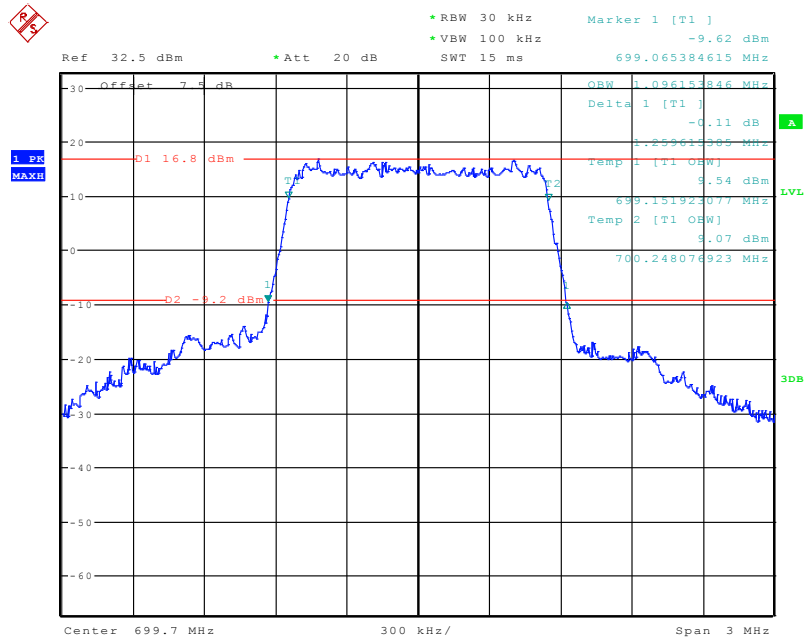
Date: 3.NOV.2020 12:19:25

Band 12:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.111	1.255
		Middle	1.098	1.248
		High	1.101	1.267
	16QAM	Low	1.096	1.260
		Middle	1.104	1.254
		High	1.096	1.248
3	QPSK	Low	2.692	2.981
		Middle	2.688	2.976
		High	2.692	2.990
	16QAM	Low	2.692	3.000
		Middle	2.688	2.988
		High	2.692	2.990
5	QPSK	Low	4.535	5.016
		Middle	4.520	4.960
		High	4.503	5.032
	16QAM	Low	4.503	5.000
		Middle	4.520	5.000
		High	4.535	5.032
10	QPSK	Low	8.942	9.647
		Middle	8.960	9.720
		High	8.974	9.840
	16QAM	Low	8.942	9.679
		Middle	8.960	9.640
		High	8.974	9.647

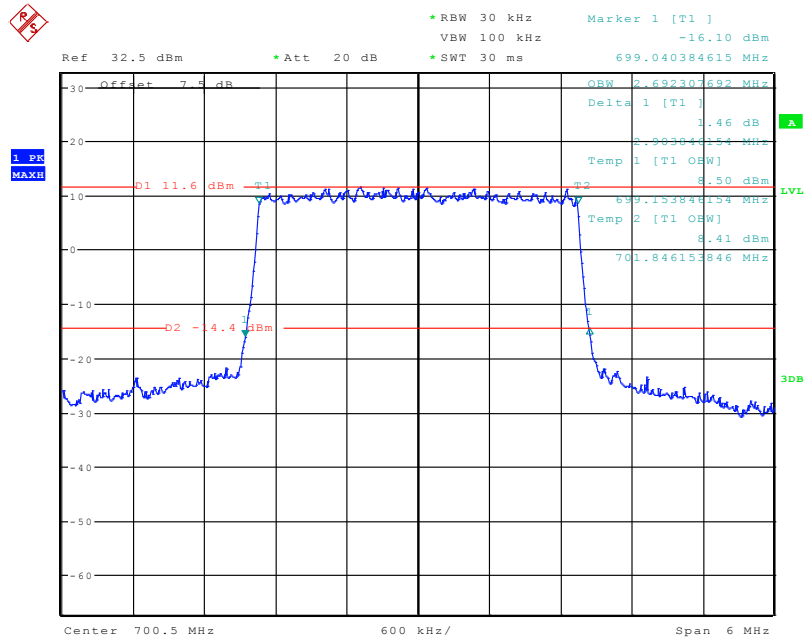
QPSK (1.4 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 3.NOV.2020 12:47:25

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

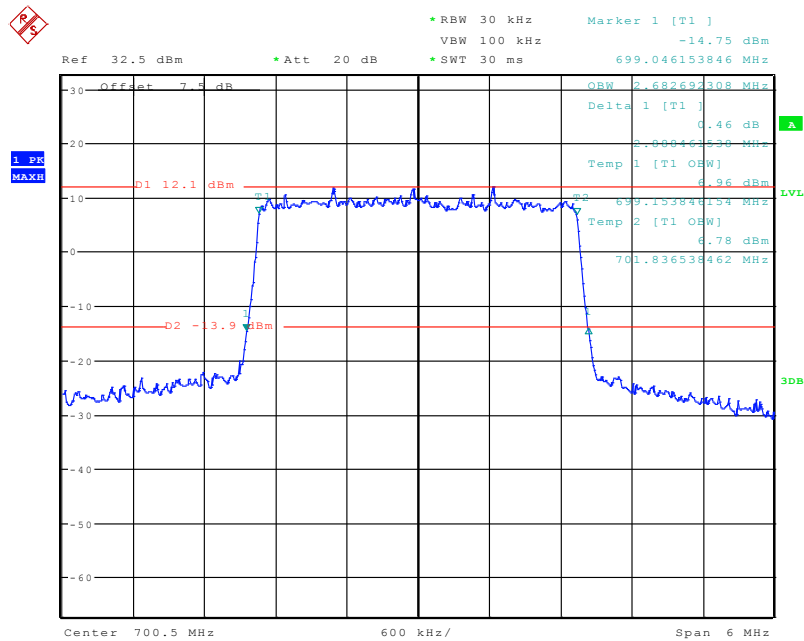
Date: 3.NOV.2020 12:46:40

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

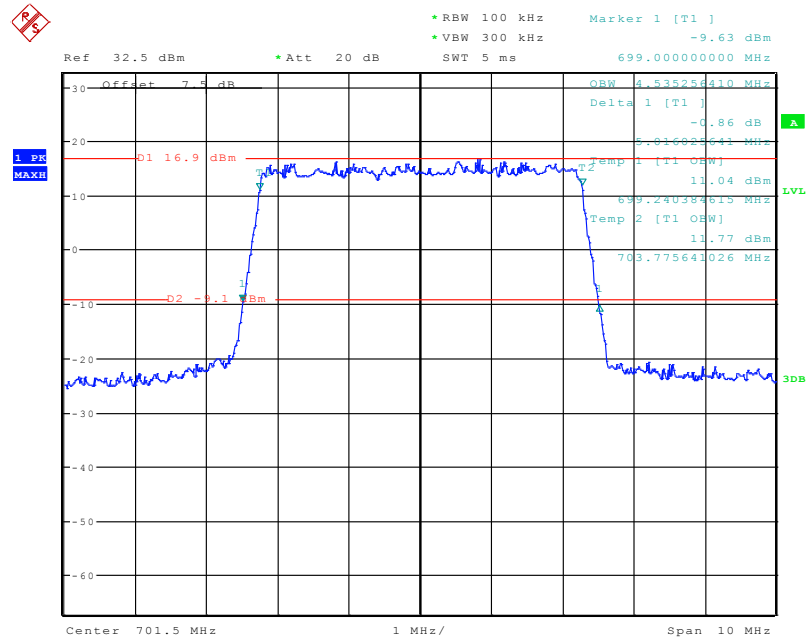


Date: 5.NOV.2020 13:14:36

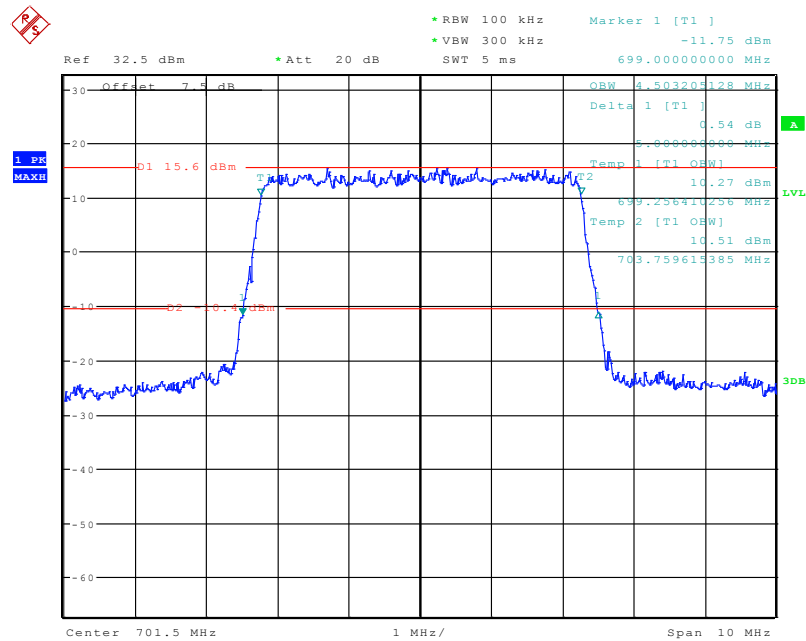
16-QAM (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel



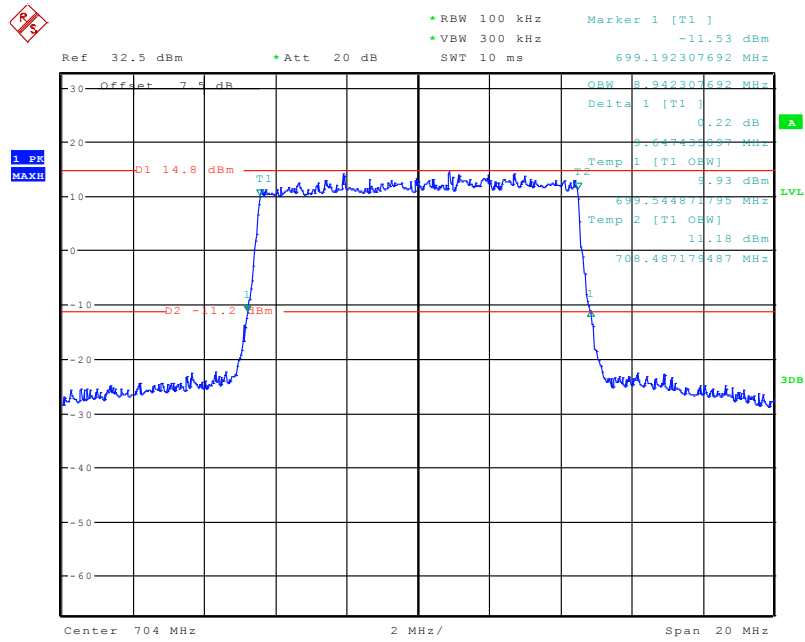
Date: 5.NOV.2020 13:15:47

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

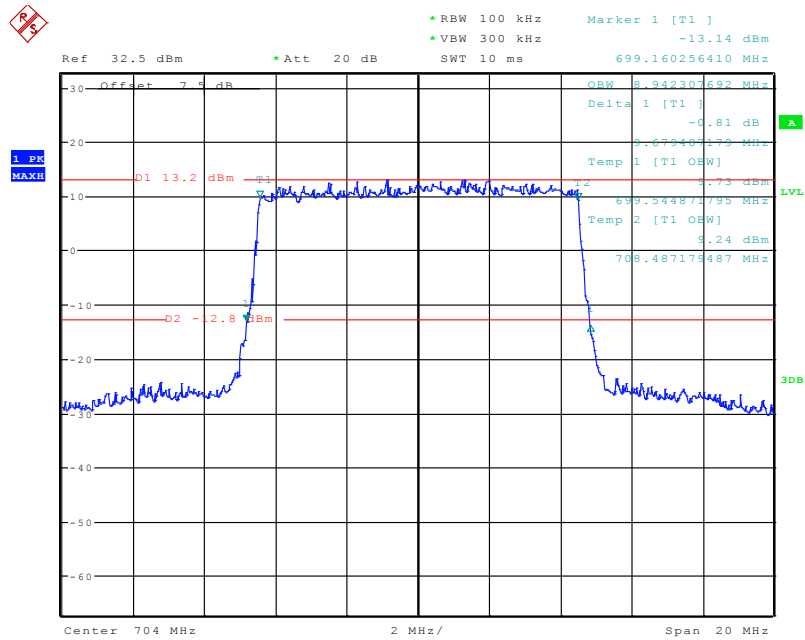
Date: 3.NOV.2020 12:31:32

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

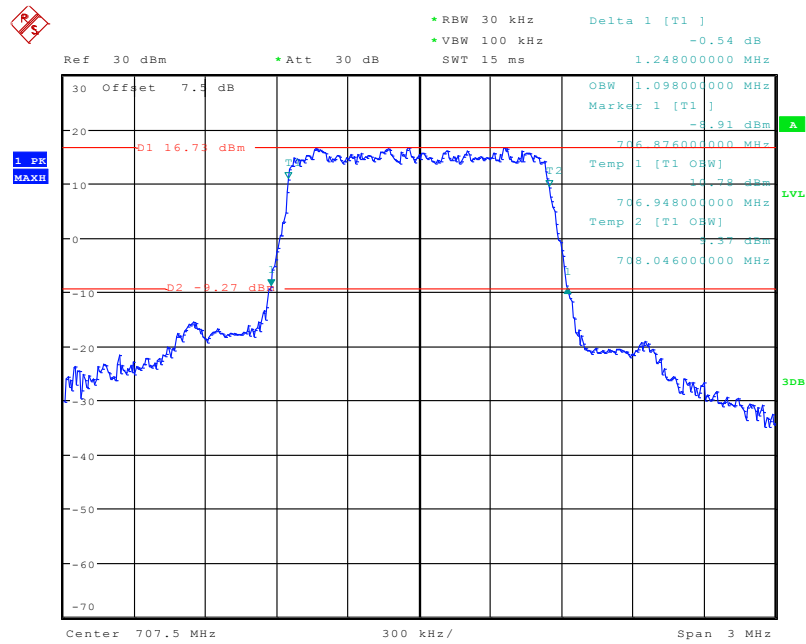
Date: 3.NOV.2020 12:32:26

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

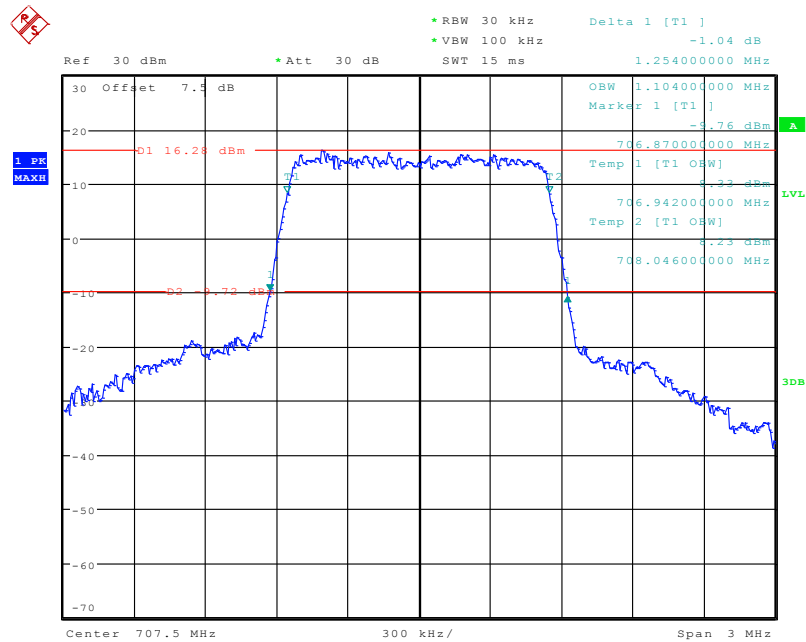
Date: 3.NOV.2020 12:39:26

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

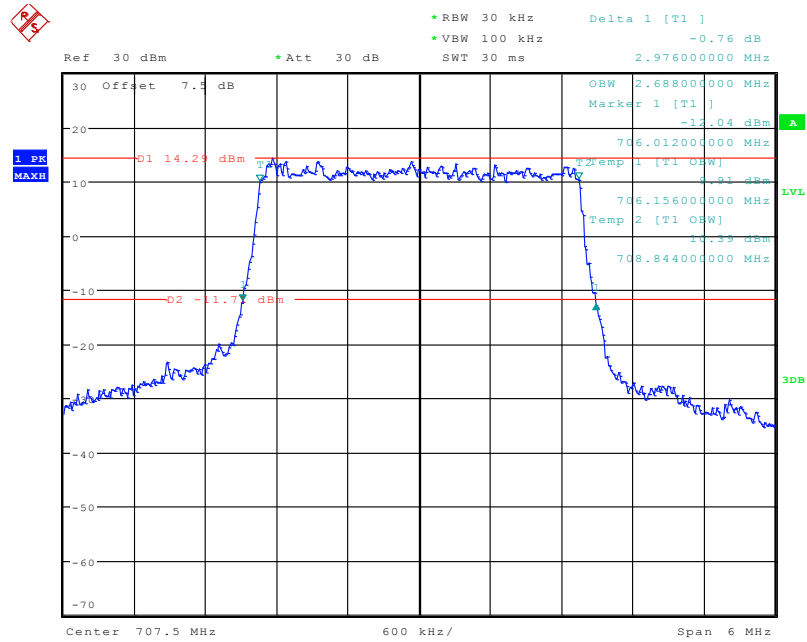
Date: 3.NOV.2020 12:38:31

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

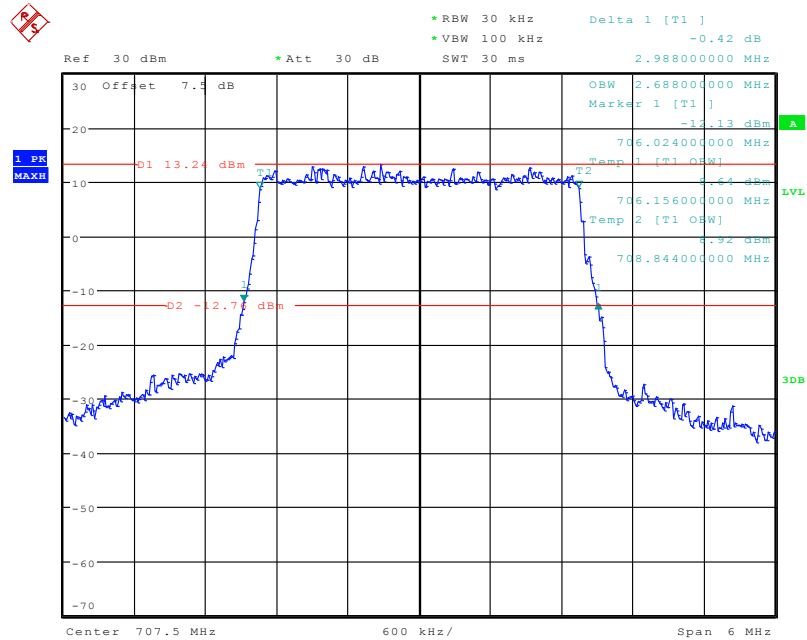
Date: 13.MAR.2020 09:49:22

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

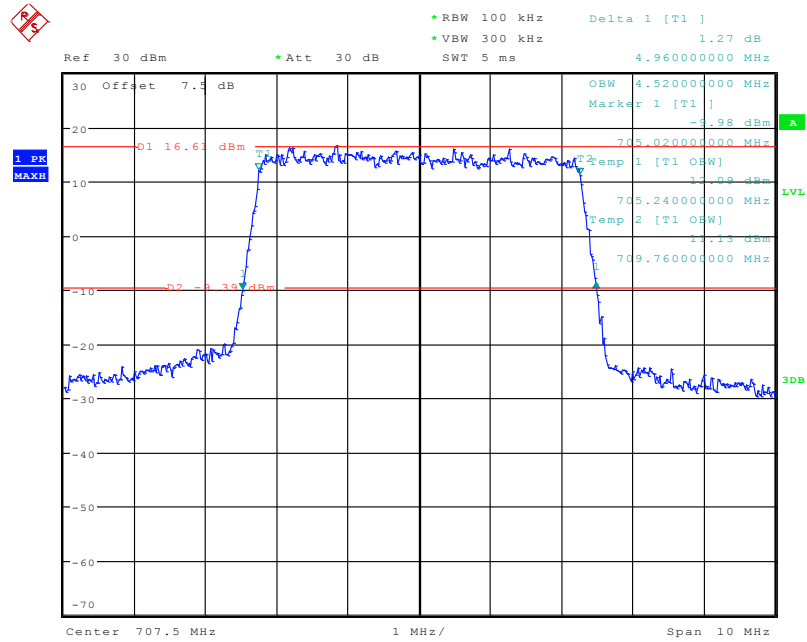
Date: 13.MAR.2020 09:49:41

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

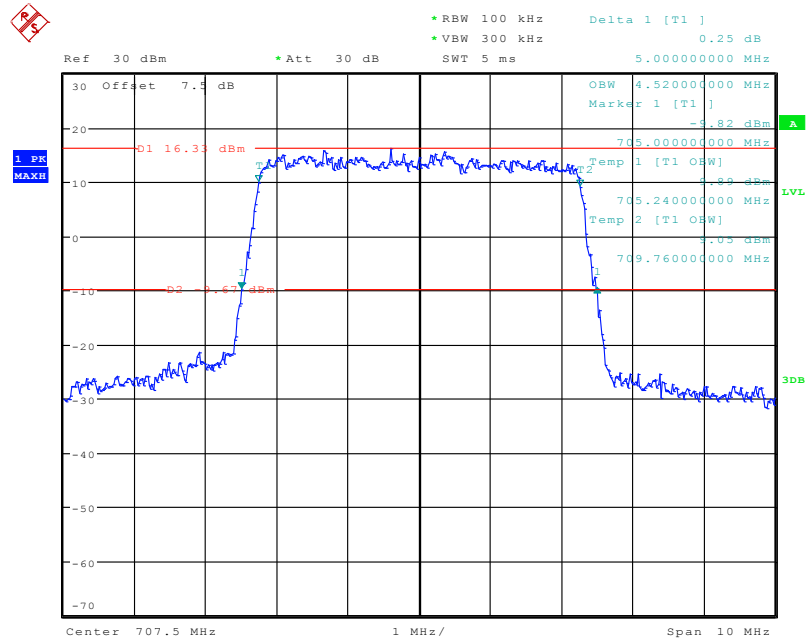
Date: 13.MAR.2020 09:50:03

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

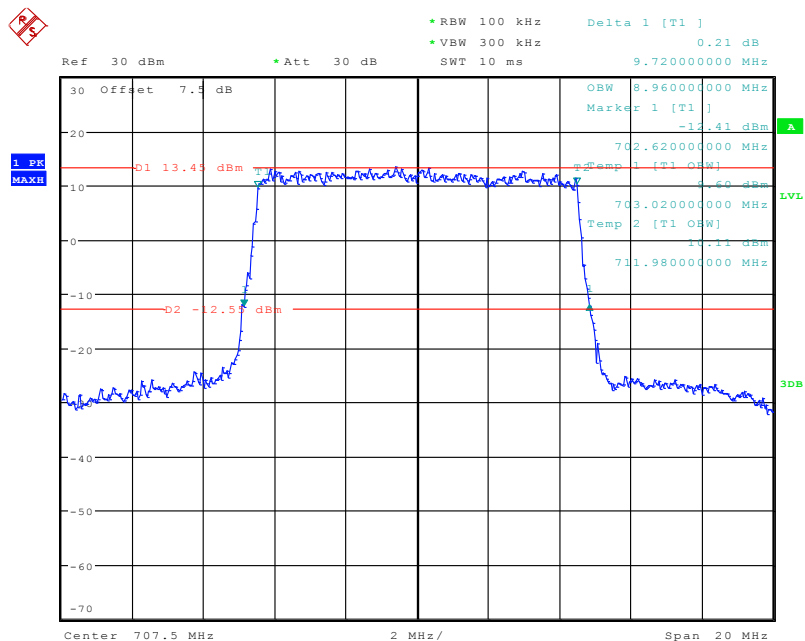
Date: 13.MAR.2020 09:50:19

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

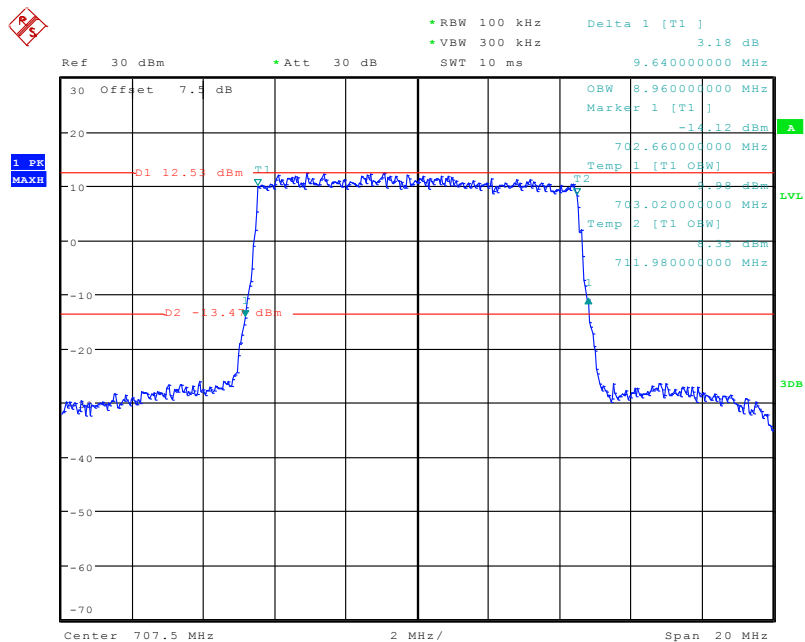
Date: 13.MAR.2020 09:50:39

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

Date: 13.MAR.2020 09:51:00

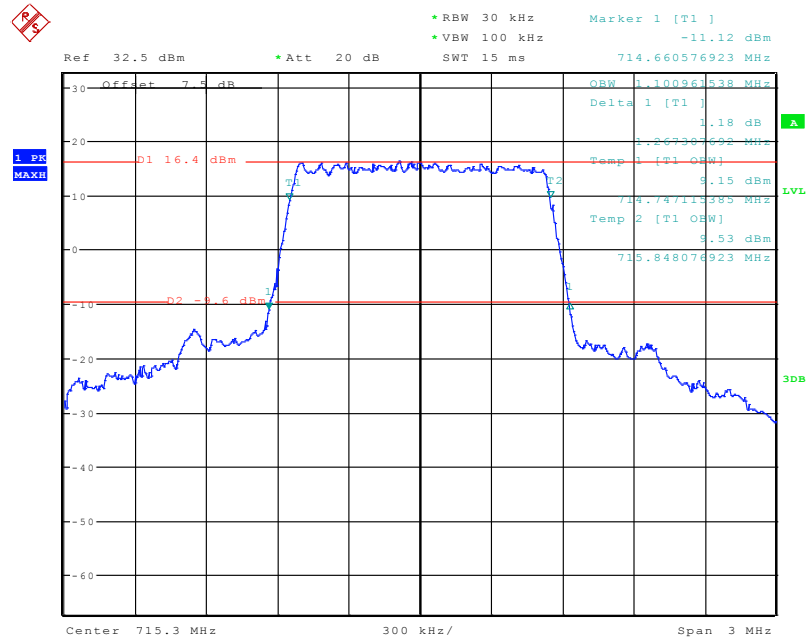
QPSK (10.0MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.MAR.2020 09:51:23

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

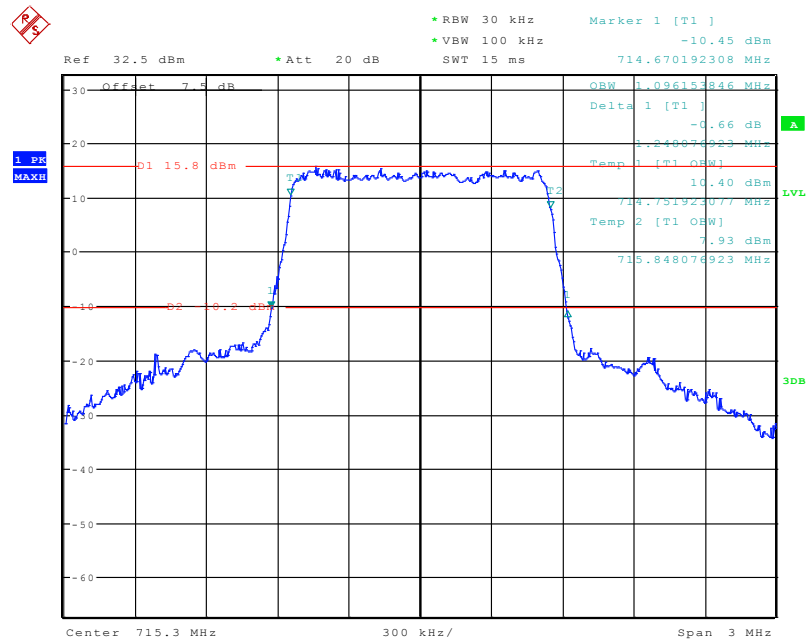
Date: 13.MAR.2020 09:51:43

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



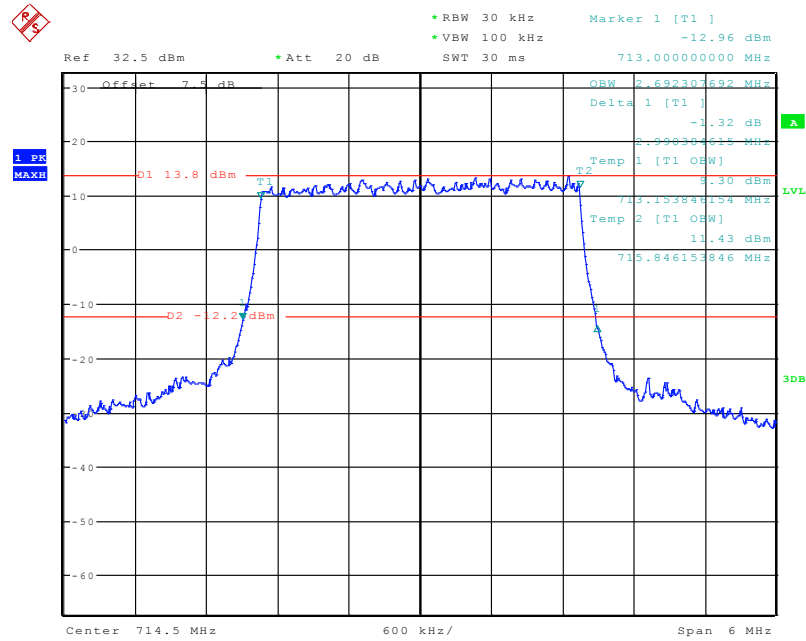
Date: 3.NOV.2020 12:45:01

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



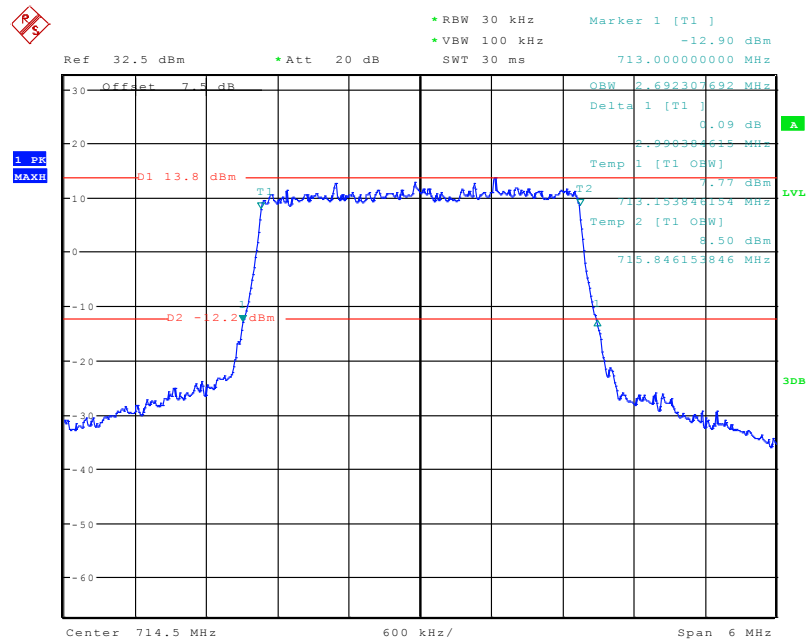
Date: 3.NOV.2020 12:45:53

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

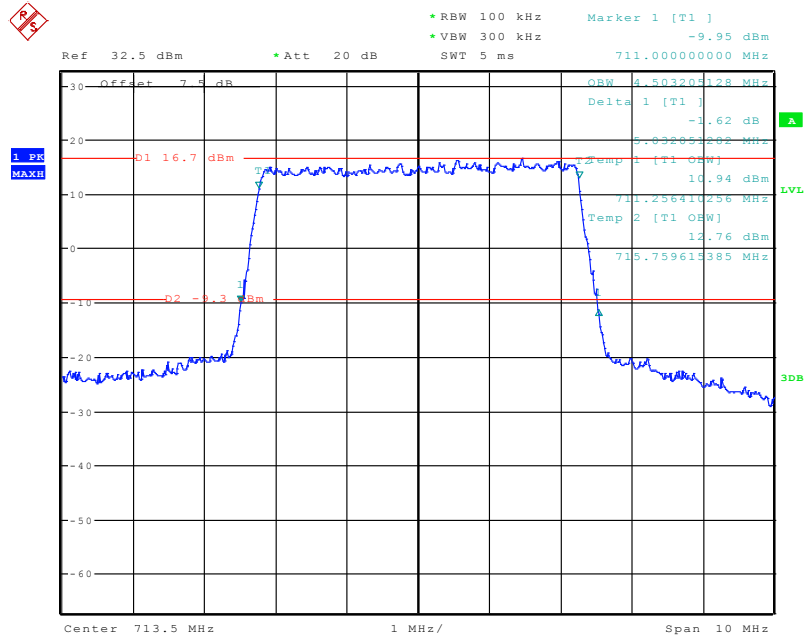


Date: 3.NOV.2020 12:43:58

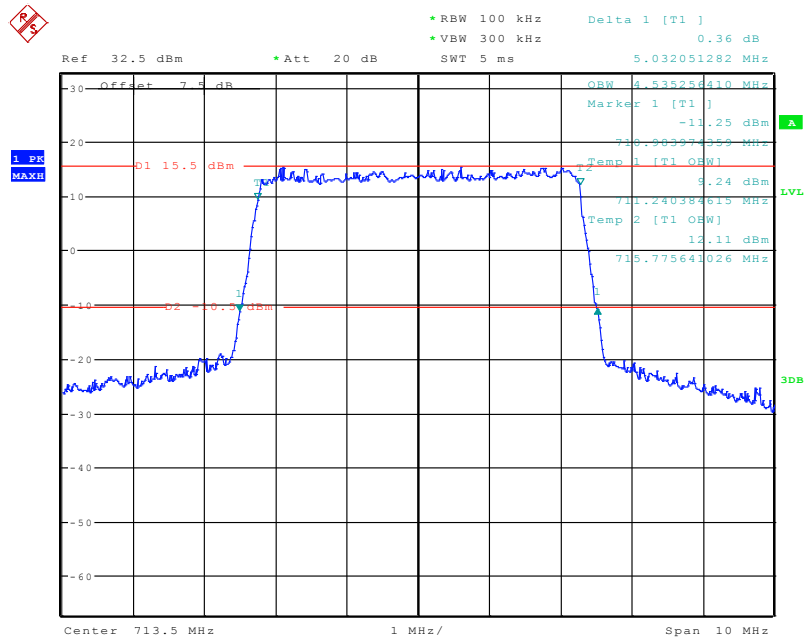
16-QAM (3.0MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, High channel



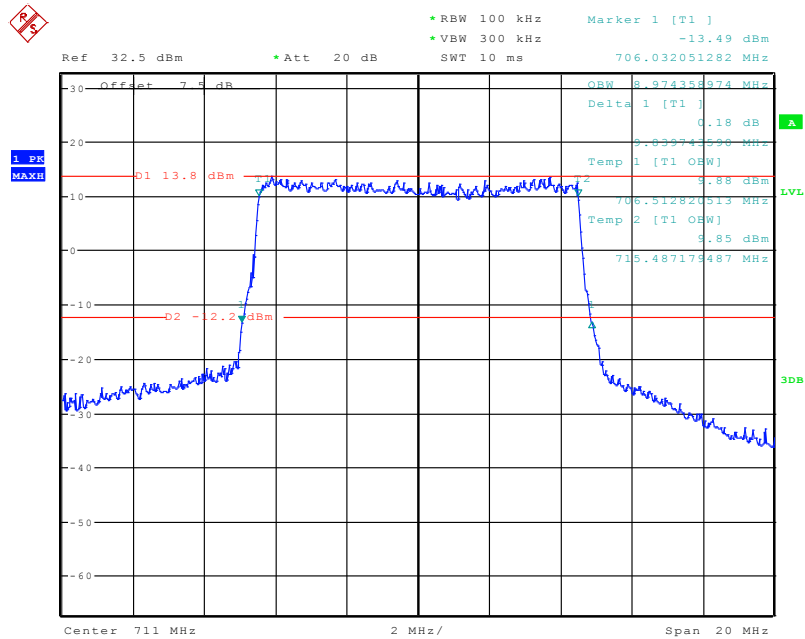
Date: 3.NOV.2020 12:43:15

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

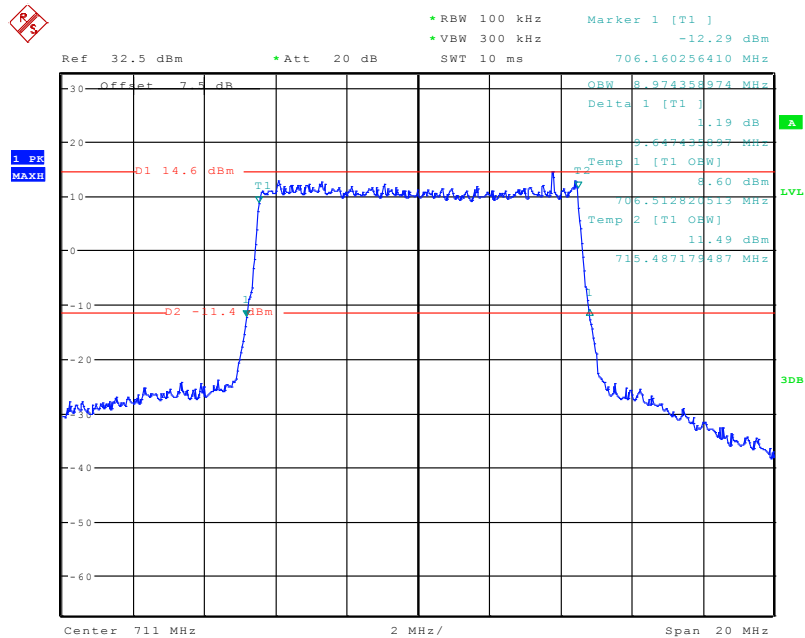
Date: 3.NOV.2020 12:34:28

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

Date: 3.NOV.2020 12:33:30

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

Date: 3.NOV.2020 12:35:46

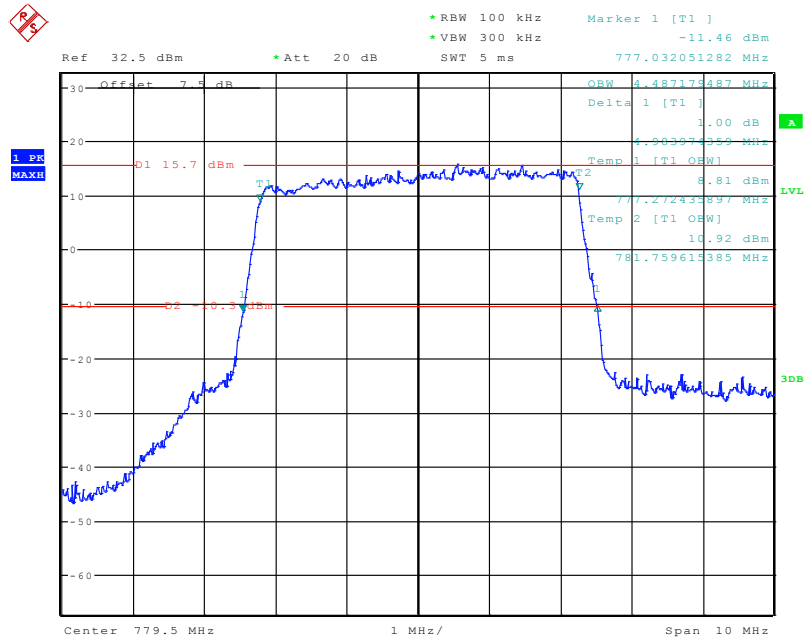
16-QAM (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, High channel

Date: 3.NOV.2020 12:37:25

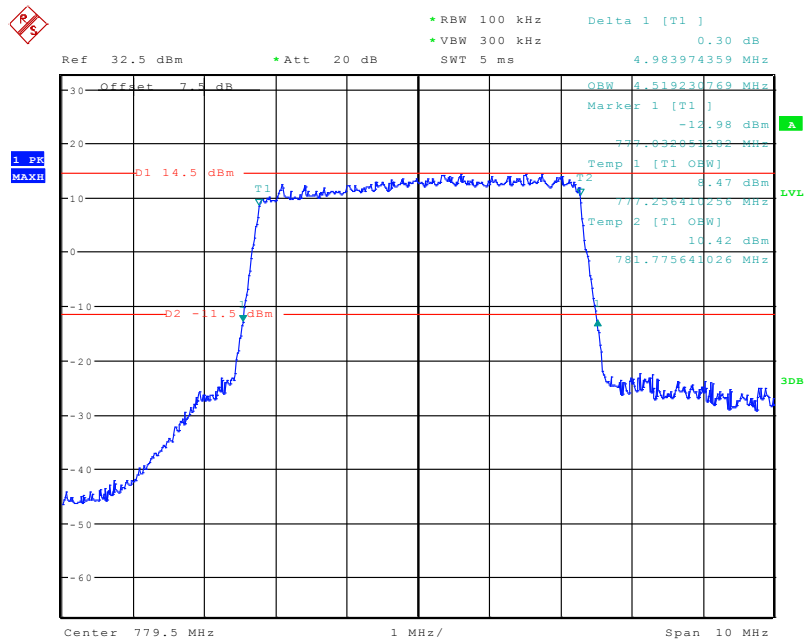
Date: 3.NOV.2020 12:25:00

Band 13:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.487	4.984
		Middle	4.520	5.000
		High	4.503	4.952
	16QAM	Low	4.519	4.984
		Middle	4.520	5.000
		High	4.535	5.016
10	QPSK	Low	/	/
		Middle	8.920	9.640
		High	/	/
	16QAM	Low	/	/
		Middle	8.920	9.560
		High	/	/

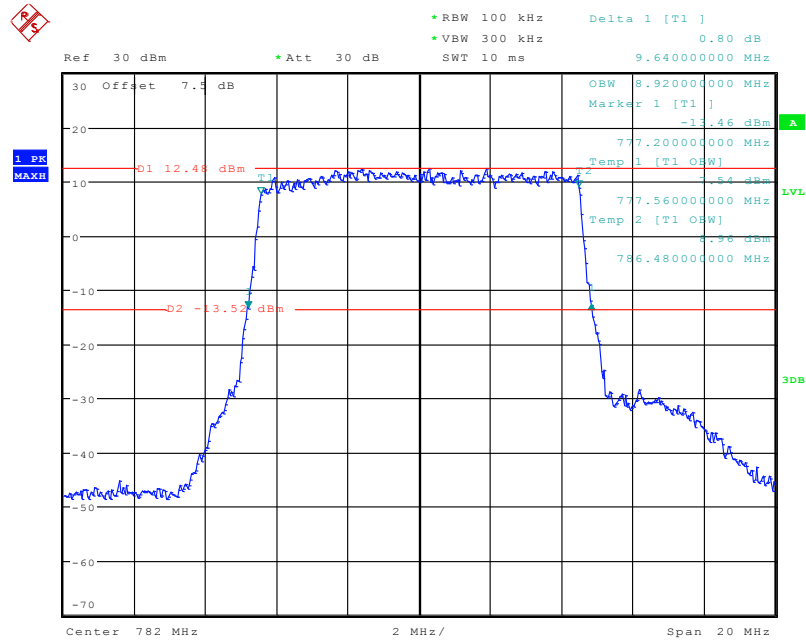
QPSK (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 3.NOV.2020 12:25:00

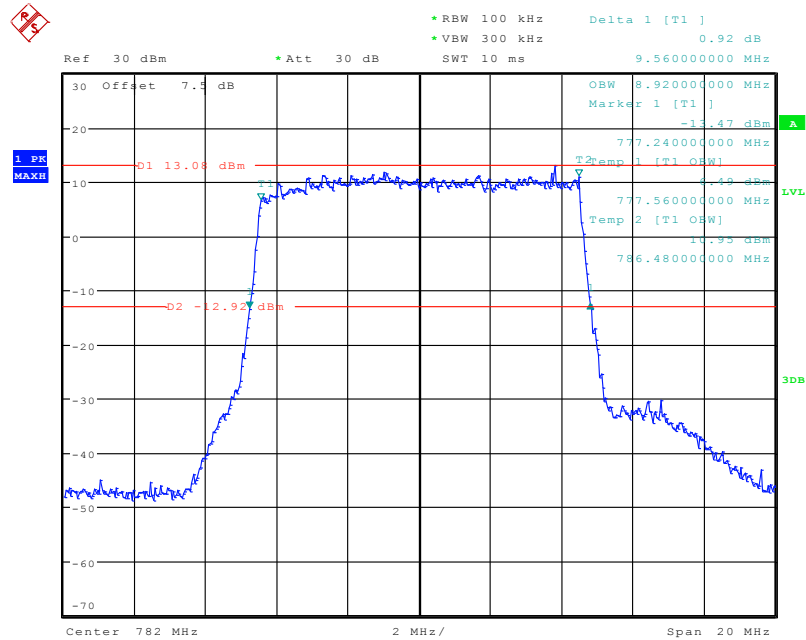
16-QAM (5.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel

Date: 3.NOV.2020 12:25:55



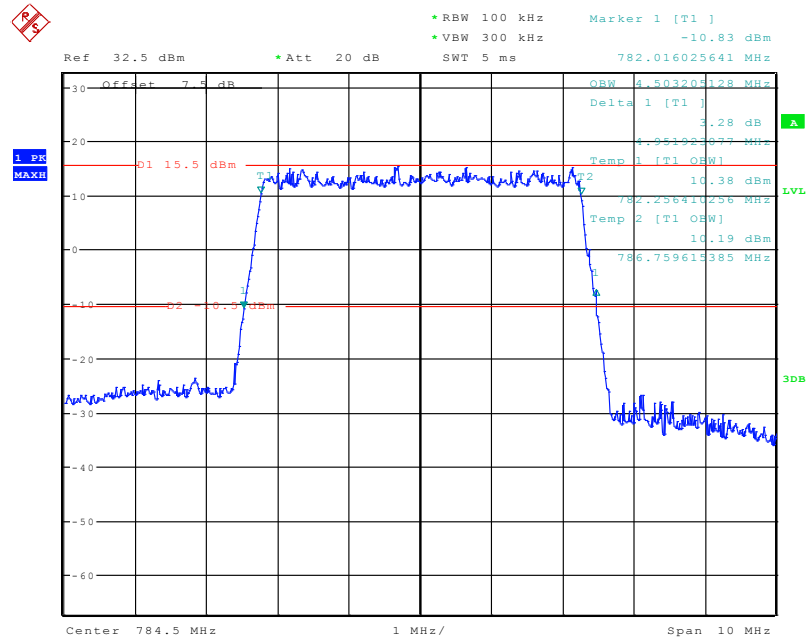
QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel

Date: 13.MAR.2020 09:53:01

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

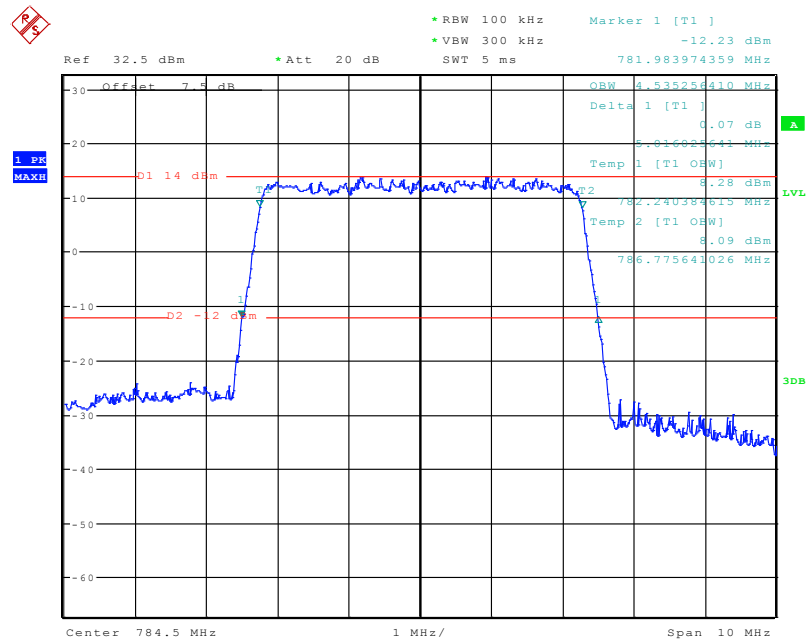
Date: 13.MAR.2020 09:53:22

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



Date: 3.NOV.2020 12:27:28

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



Date: 3.NOV.2020 12:26:55

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

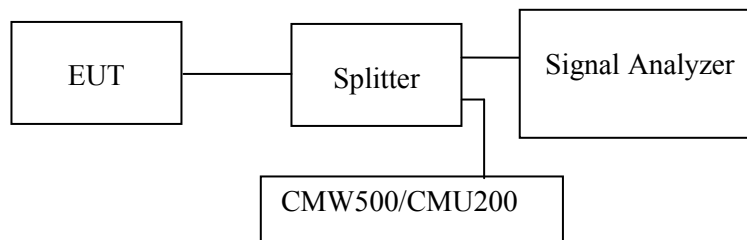
Applicable Standard

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 10th harmonic.



Test Data

Environmental Conditions

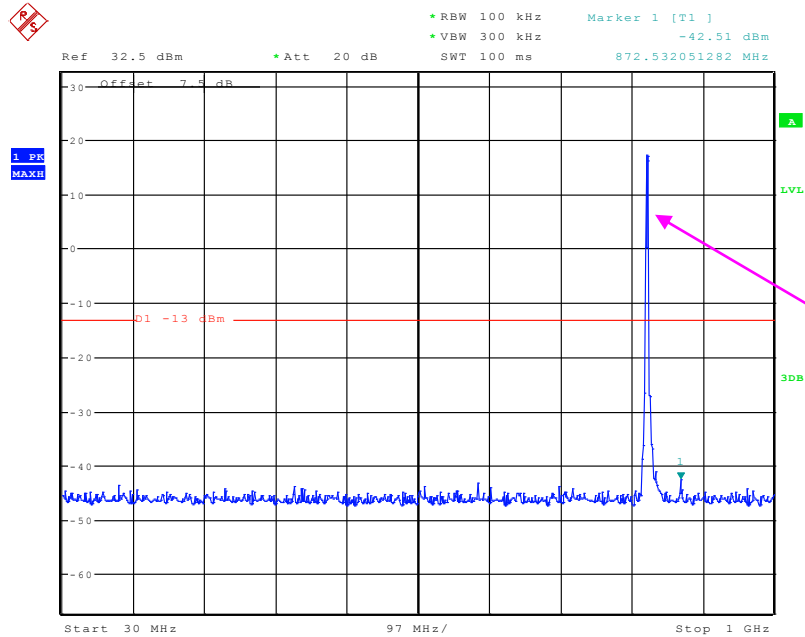
Temperature:	21.3~26.4℃
Relative Humidity:	42~68 %
ATM Pressure:	100.3~101.2 kPa

The testing was performed by Alan He and Gavin Guo from 2020-03-09 to 2020-11-29.

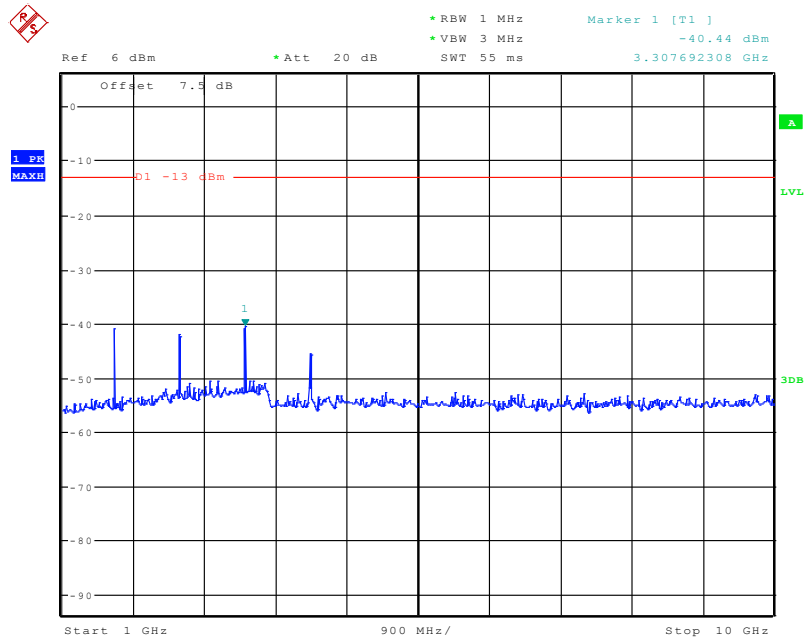
EUT operation mode: Transmitting

Test result: Pass

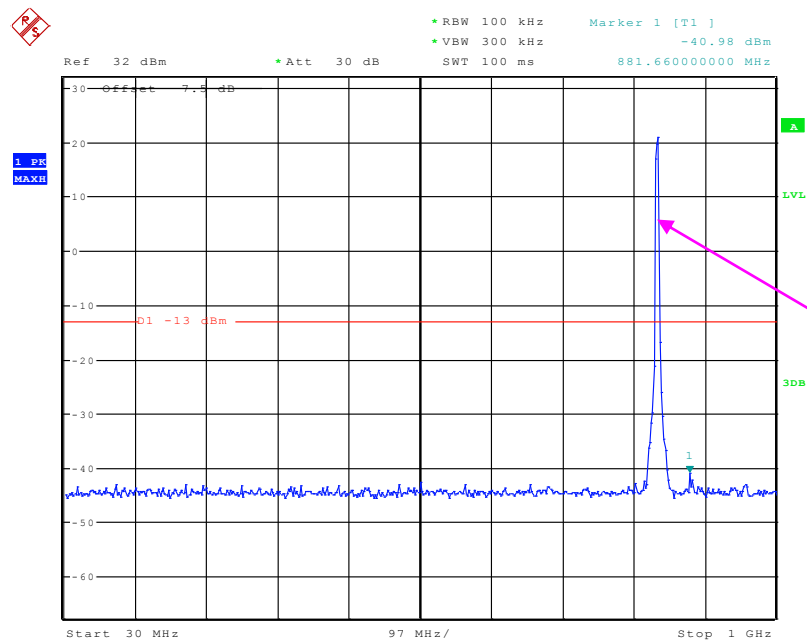
Please refer to the following plots.

Cellular Band (Part 22H)**30 MHz – 1 GHz, Low Channel (WCDMA Mode)**

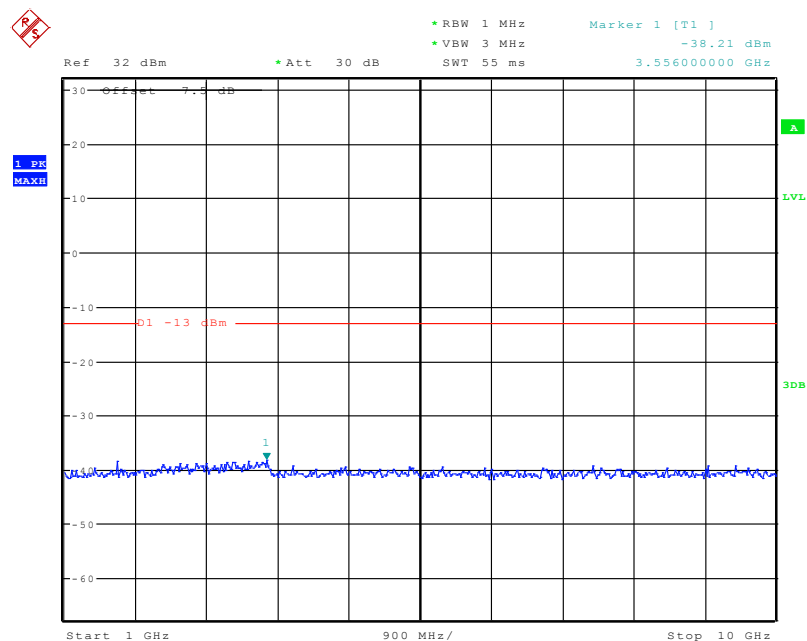
Date: 29.NOV.2020 16:45:37

1 GHz – 10 GHz, Low Channel (WCDMA Mode)

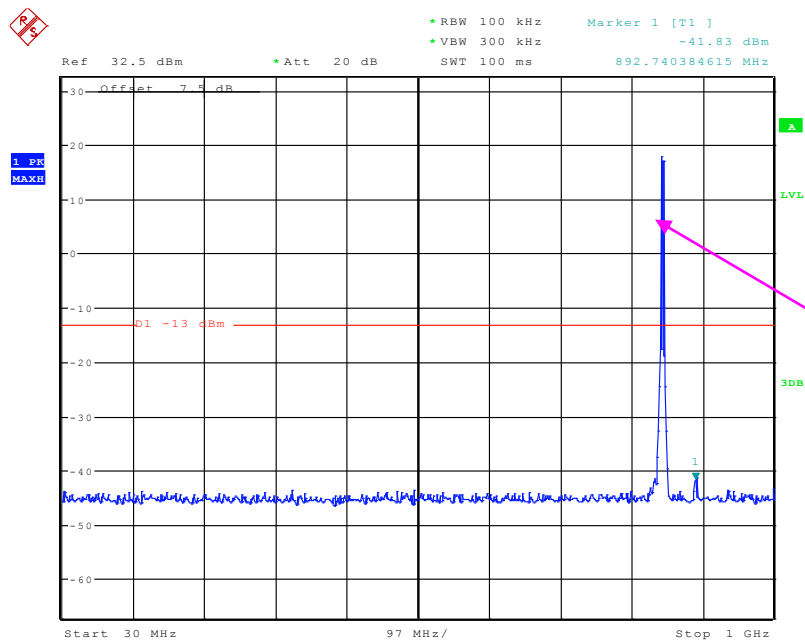
Date: 29.NOV.2020 16:46:31

30 MHz – 1 GHz, Middle Channel (WCDMA Mode)

Date: 9.MAR.2020 10:31:51

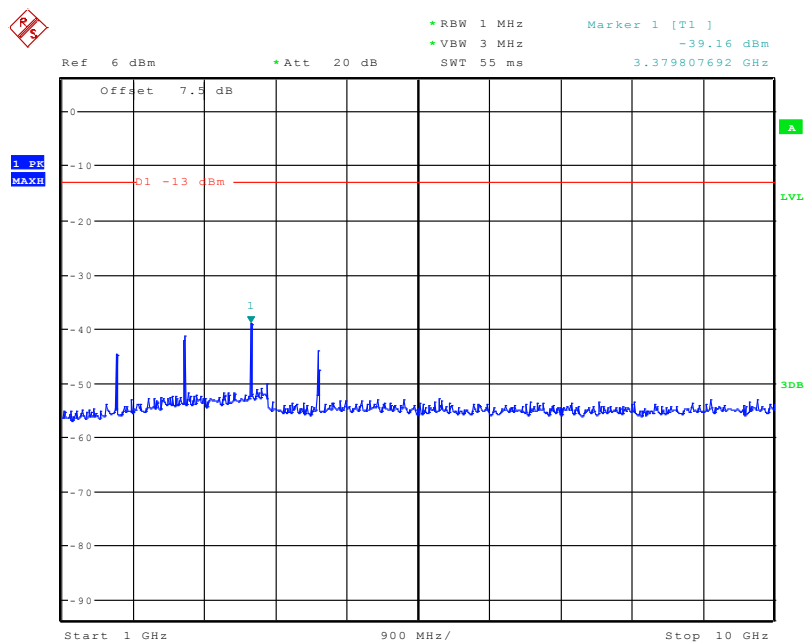
1 GHz – 10 GHz, Middle Channel (WCDMA Mode)

Date: 9.MAR.2020 10:33:05

30 MHz – 1 GHz, High Channel (WCDMA Mode)

Fundamental test

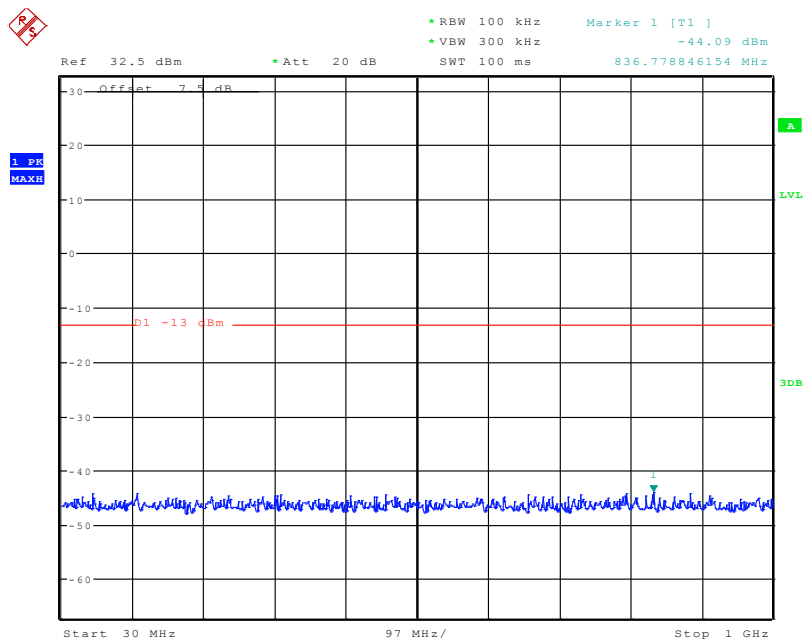
Date: 29.NOV.2020 16:44:21

1 GHz – 10 GHz, High Channel (WCDMA Mode)

Date: 29.NOV.2020 16:46:51

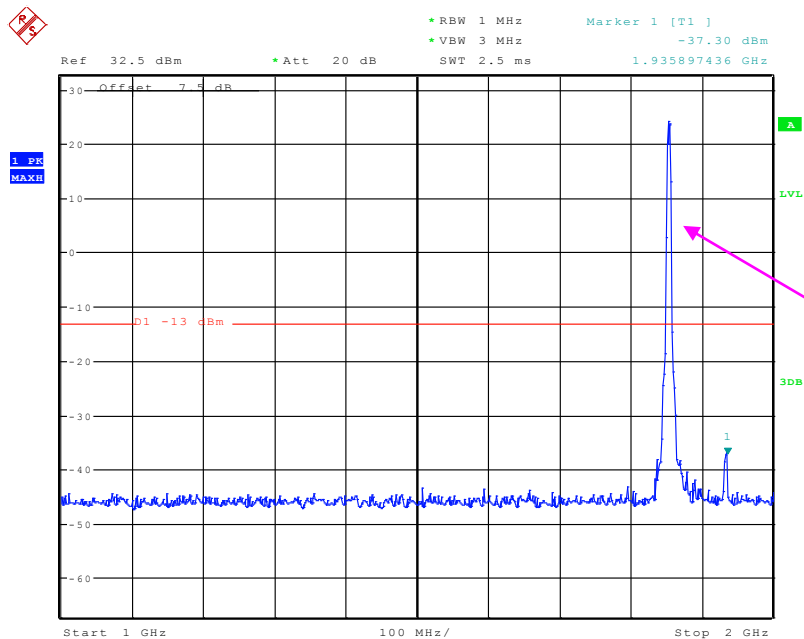
PCS Band (Part 24E)

30 MHz – 1 GHz, Low Channel (WCDMA Mode)

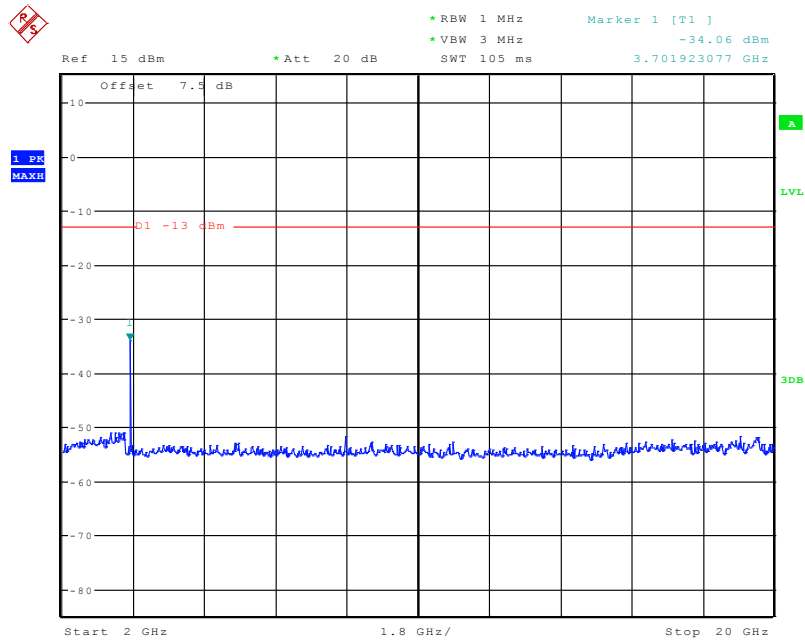


Date: 29.NOV.2020 16:55:09

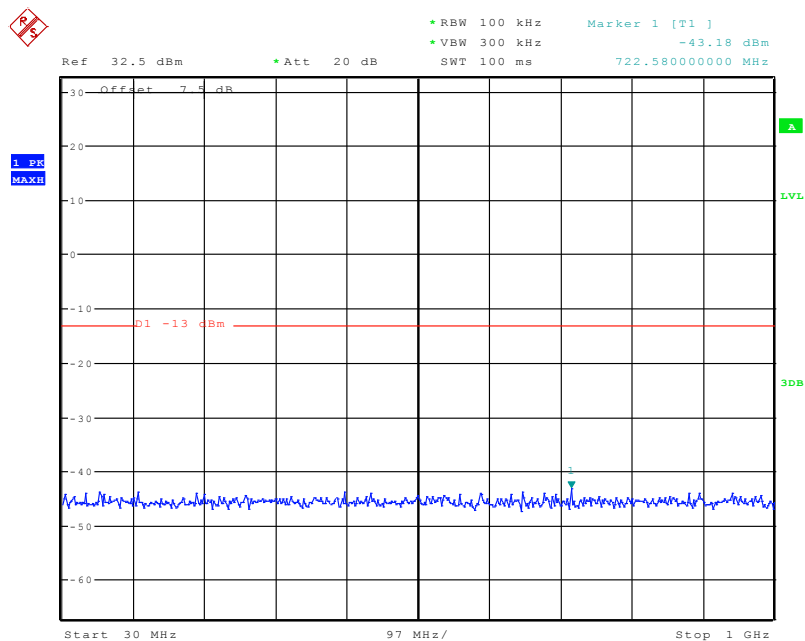
1 GHz – 2 GHz, Low Channel (WCDMA Mode)



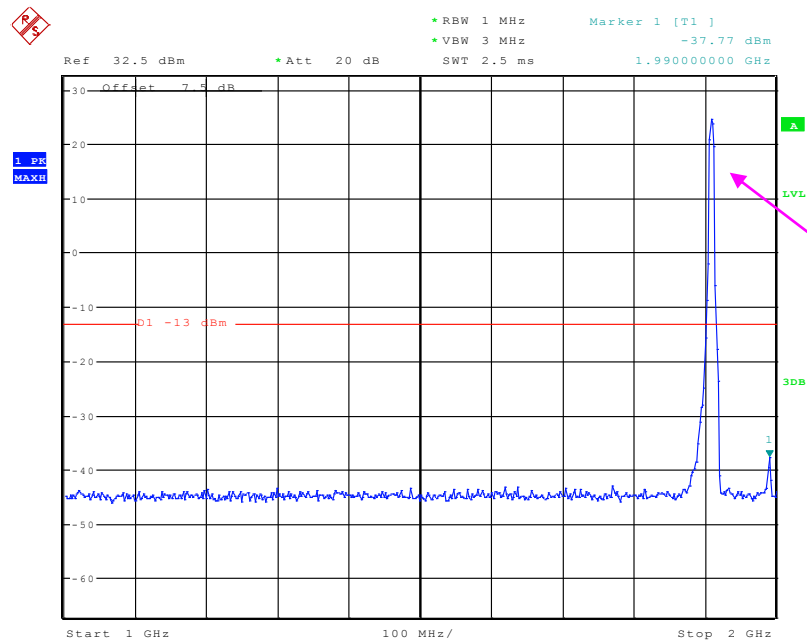
Date: 29.NOV.2020 16:50:57

2 GHz – 20 GHz , Low Channel (WCDMA Mode)

Date: 29.NOV.2020 16:51:53

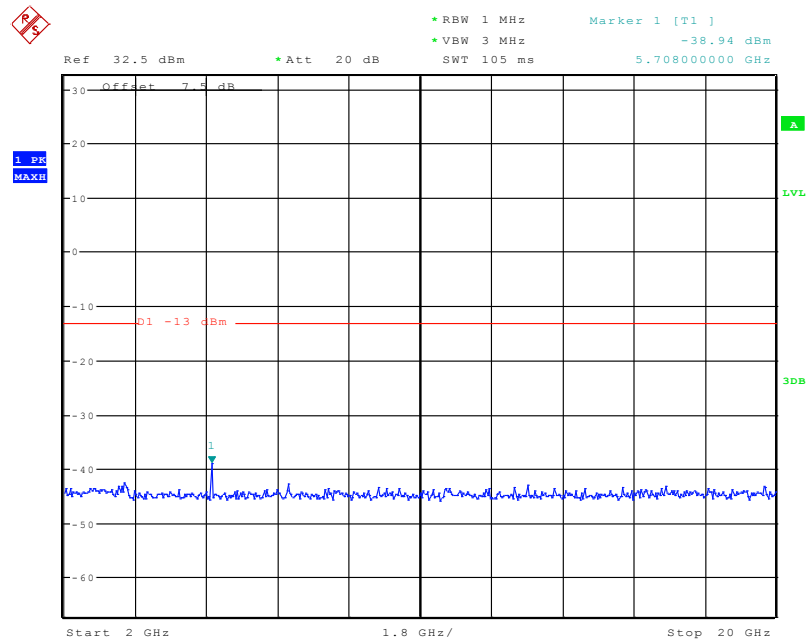
30 MHz – 1 GHz, Middle Channel (WCDMA Mode)

Date: 9.MAR.2020 11:29:01

1 GHz – 2 GHz, Middle Channel (WCDMA Mode)

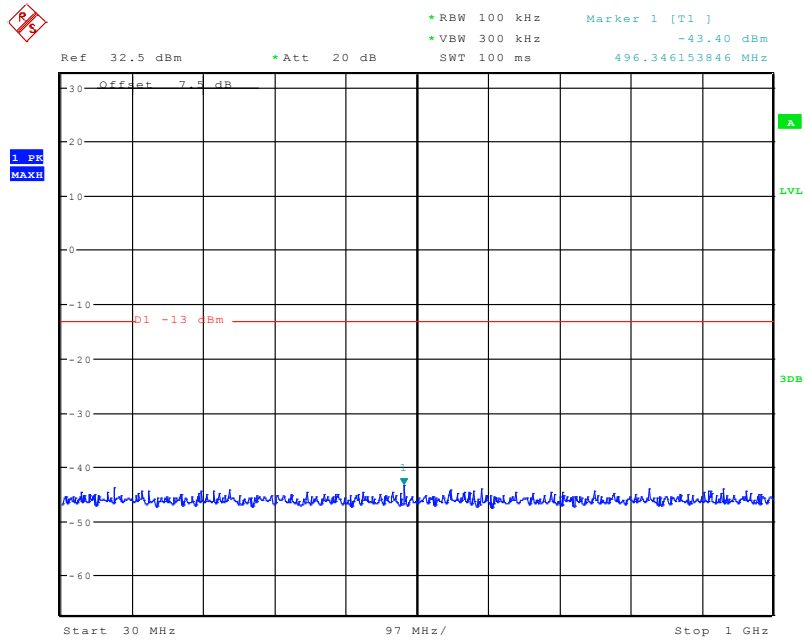
Fundamental test

Date: 9.MAR.2020 11:29:46

2 GHz – 20 GHz, Middle Channel (WCDMA Mode)

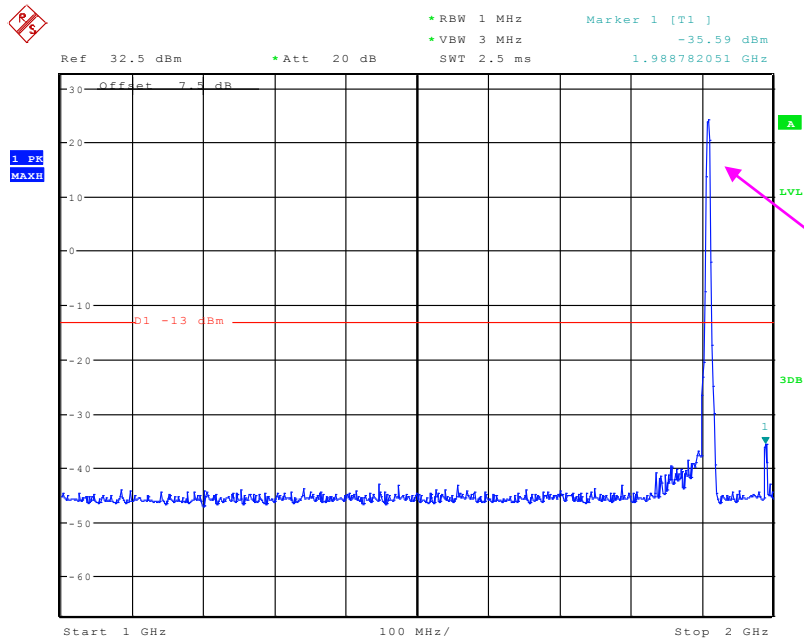
Date: 9.MAR.2020 11:30:17

30 MHz – 1 GHz, High Channel (WCDMA Mode)

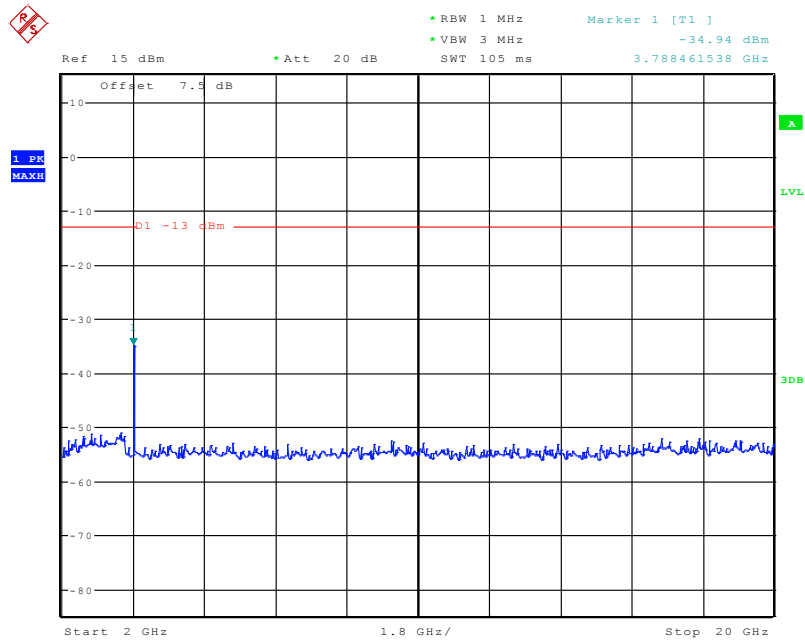


Date: 29.NOV.2020 16:54:37

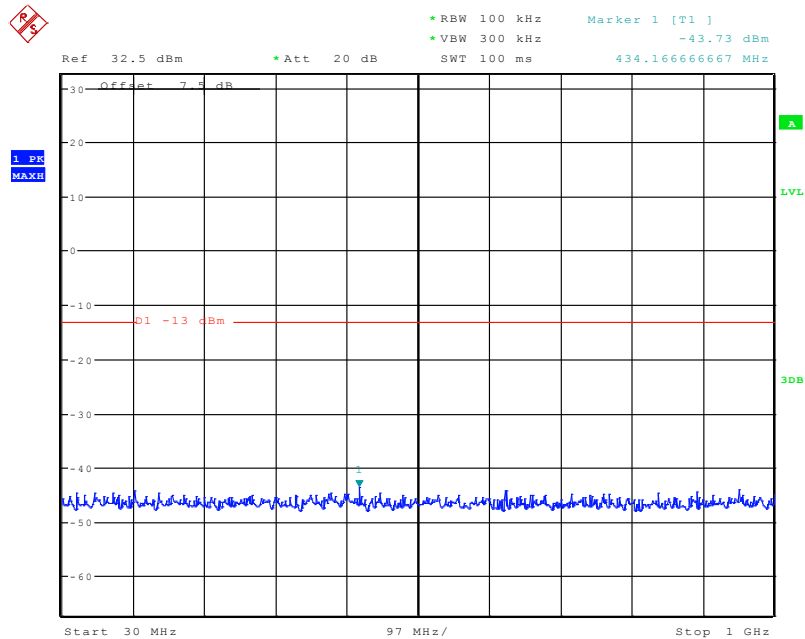
1 GHz – 2 GHz, High Channel (WCDMA Mode)



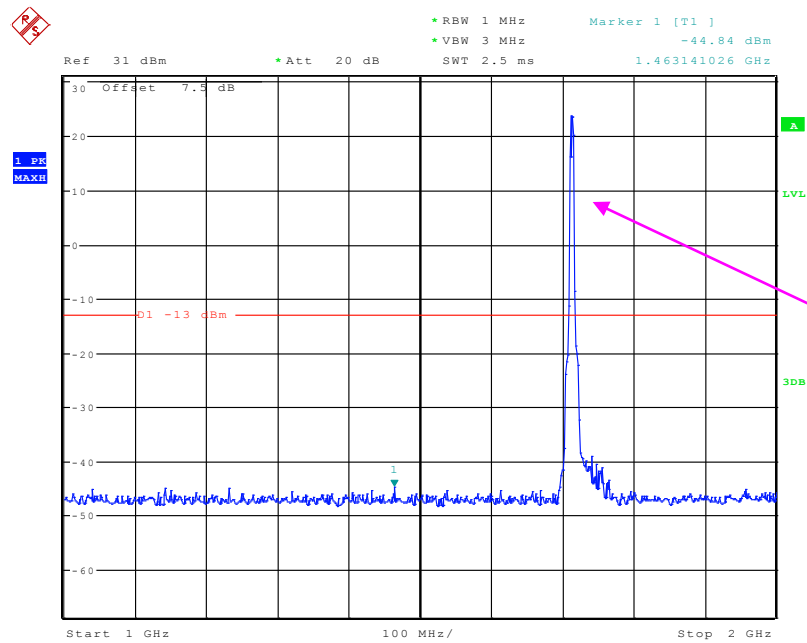
Date: 29.NOV.2020 16:51:18

2 GHz – 20 GHz , High Channel (WCDMA Mode)

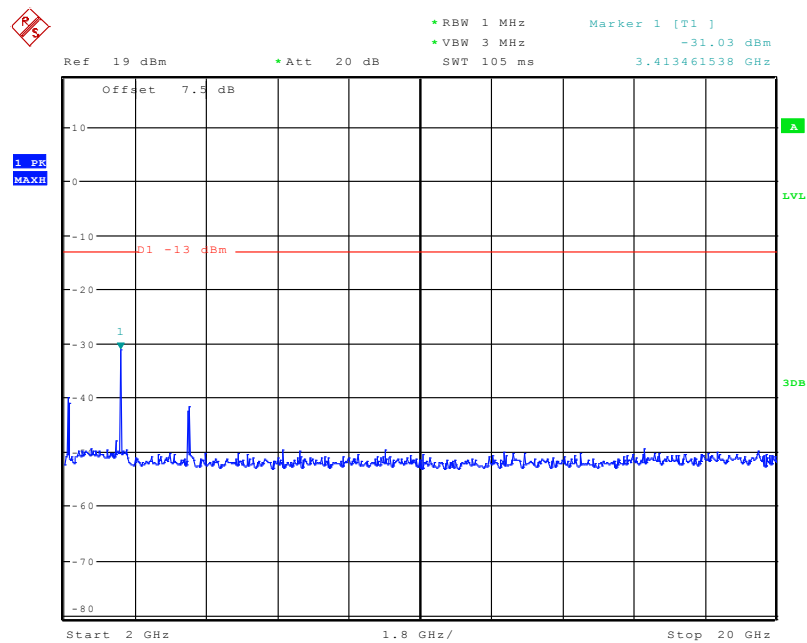
Date: 29.NOV.2020 16:51:37

AWS Band (Part 27)**30 MHz – 1 GHz, Low Channel (WCDMA Mode)**

Date: 29.NOV.2020 16:55:47

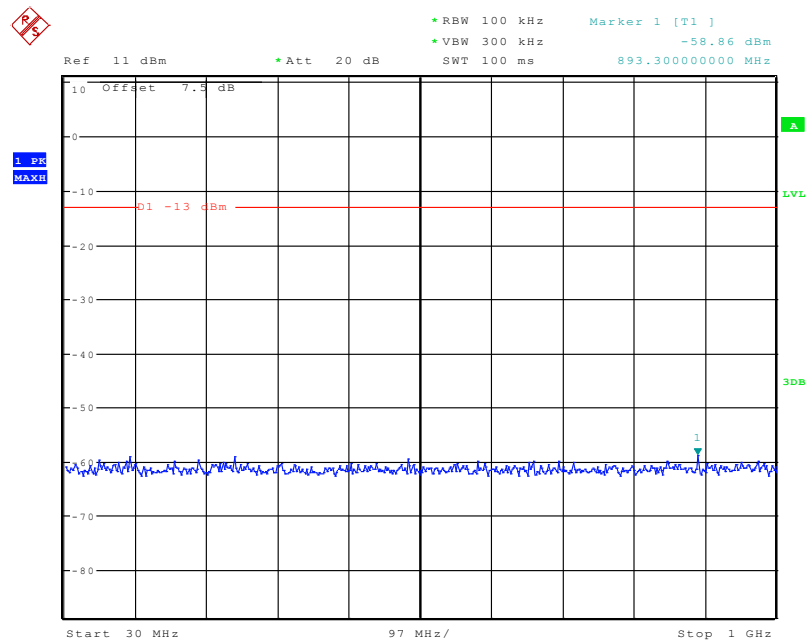
1 GHz – 2 GHz , Low Channel (WCDMA Mode)

Date: 29.NOV.2020 16:49:09

2 GHz – 20 GHz, Low Channel (WCDMA Mode)

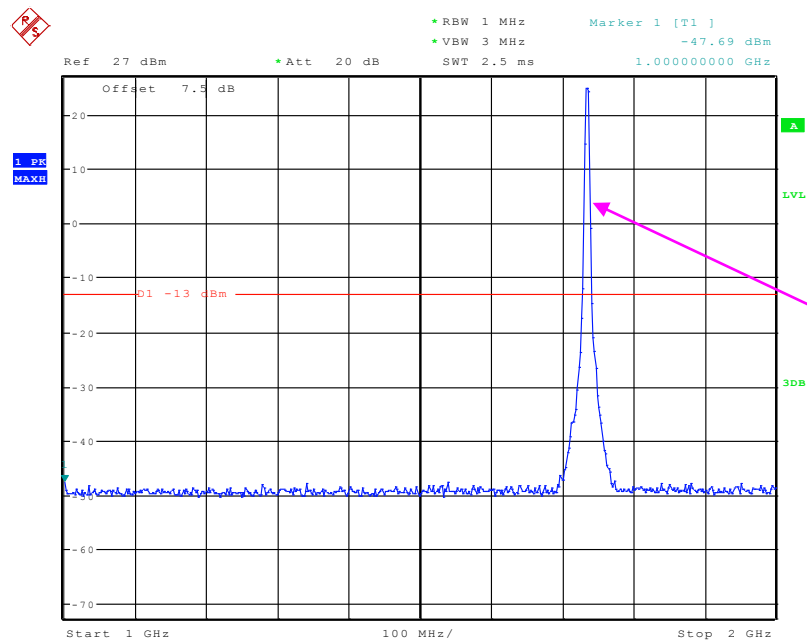
Date: 29.NOV.2020 16:48:48

30 MHz – 1 GHz, Middle Channel (WCDMA Mode)

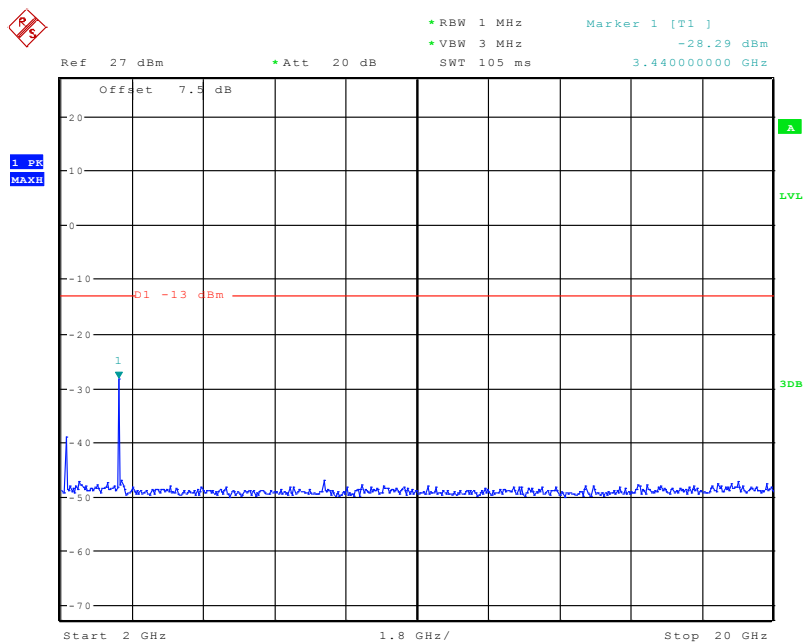


Date: 9.MAR.2020 11:12:04

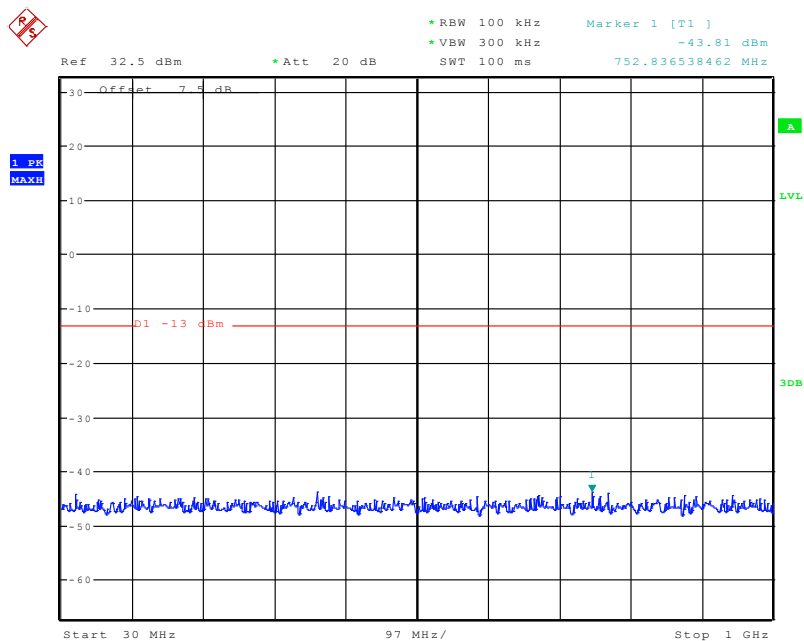
1 GHz – 2 GHz, Middle Channel (WCDMA Mode)



Date: 9.MAR.2020 11:13:27

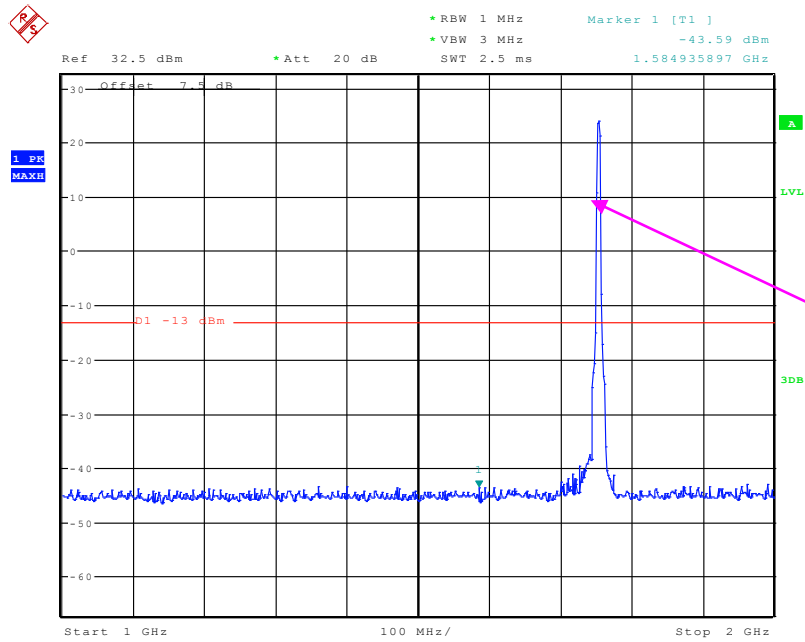
2 GHz – 20 GHz, Middle Channel (WCDMA Mode)

Date: 9.MAR.2020 11:14:22

30 MHz – 1 GHz, High Channel (WCDMA Mode)

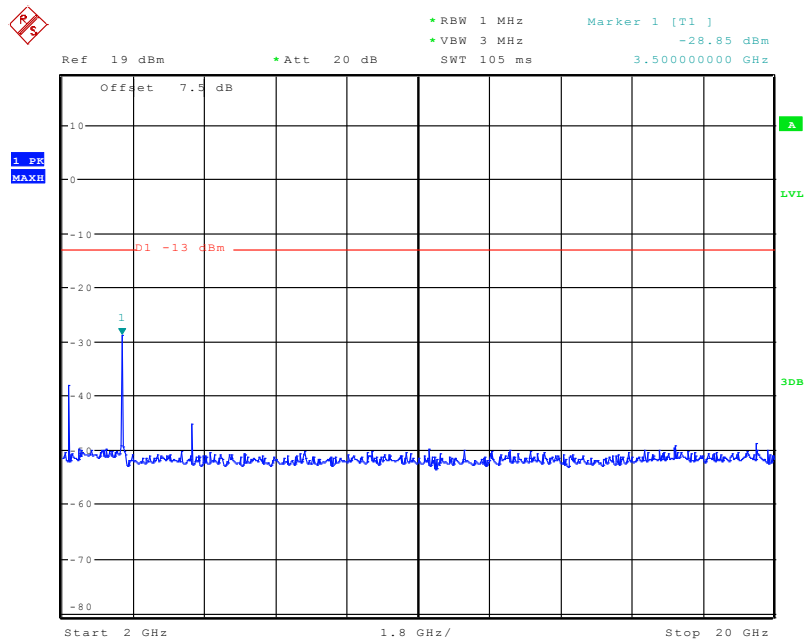
Date: 29.NOV.2020 16:55:31

1 GHz – 2 GHz, High Channel (WCDMA Mode)

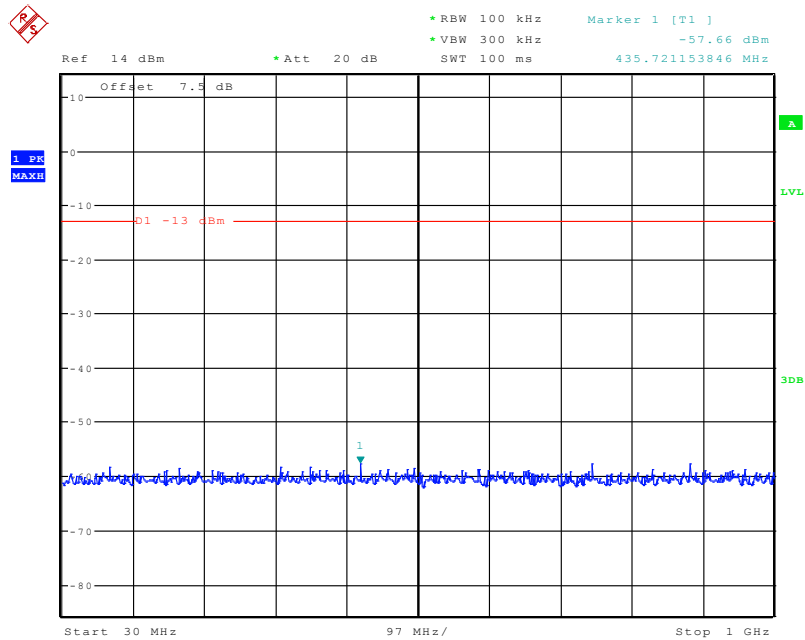


Date: 29.NOV.2020 16:47:55

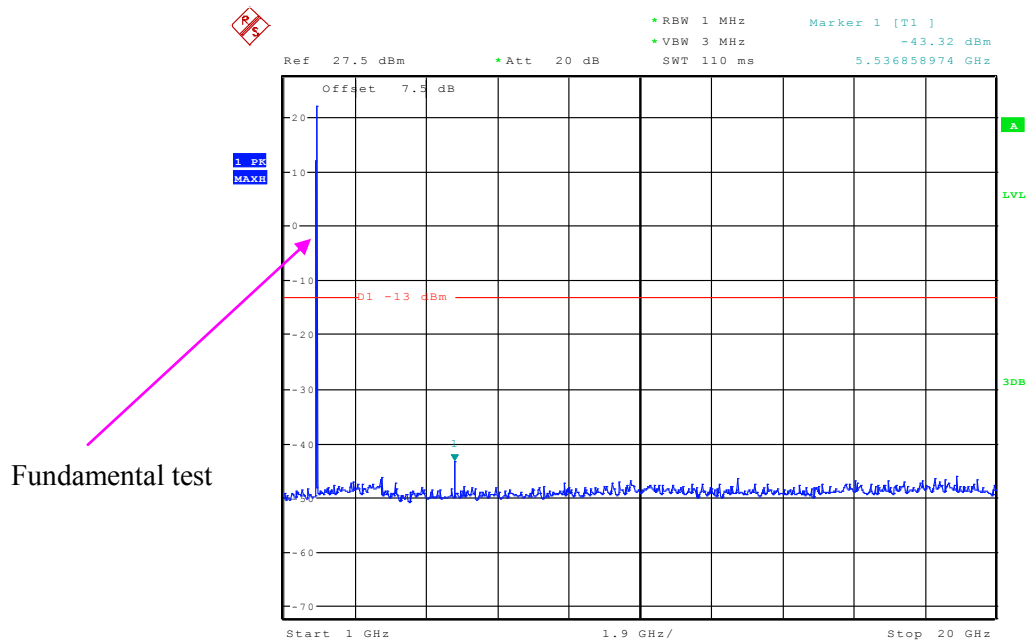
2 GHz – 20 GHz, High Channel (WCDMA Mode)



Date: 29.NOV.2020 16:48:24

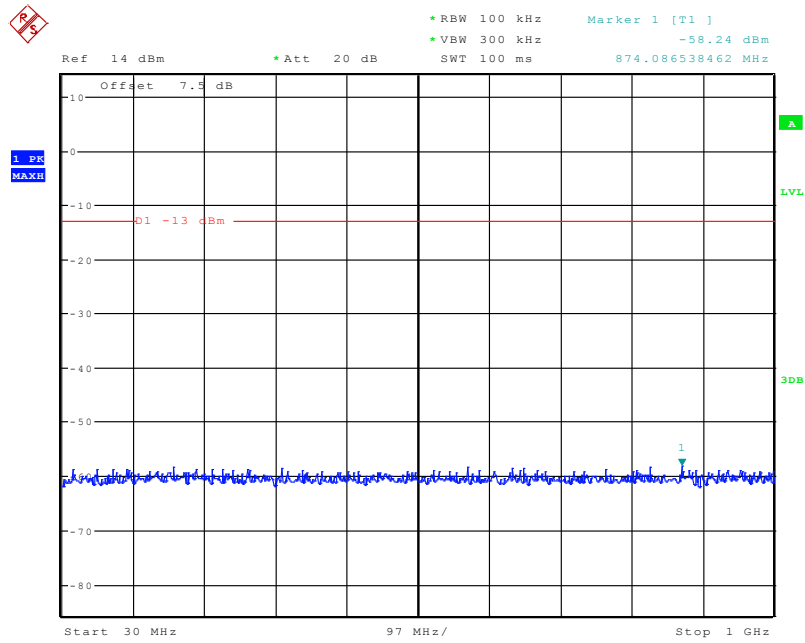
LTE Band 2:**30 MHz - 1 GHz (1.4 MHz, Low channel)**

Date: 3.NOV.2020 14:43:17

1 GHz – 20 GHz (1.4 MHz, Low channel)

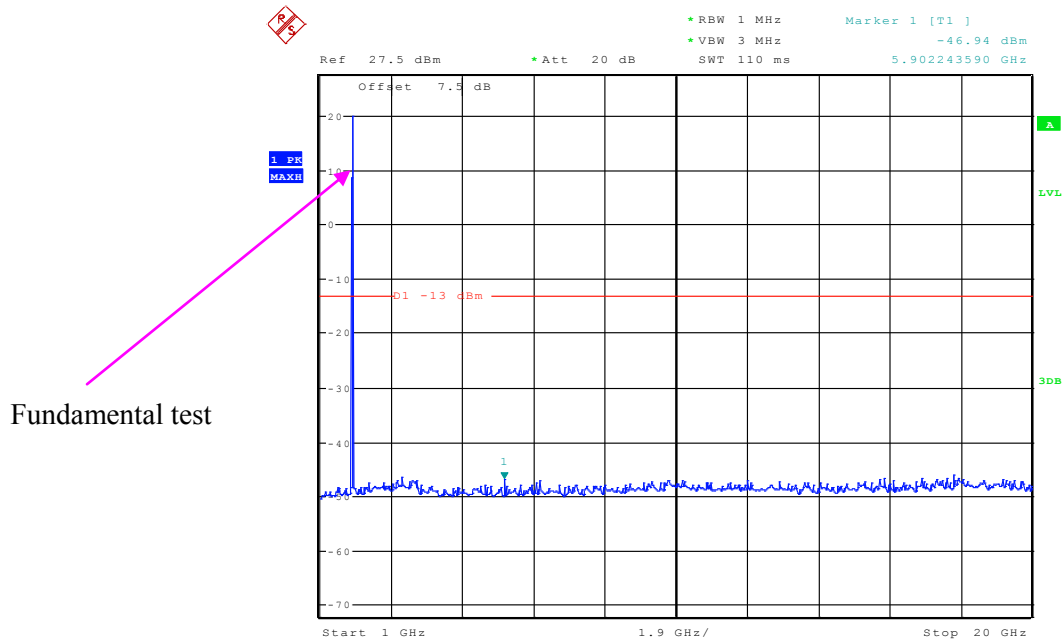
Date: 3.NOV.2020 14:40:50

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



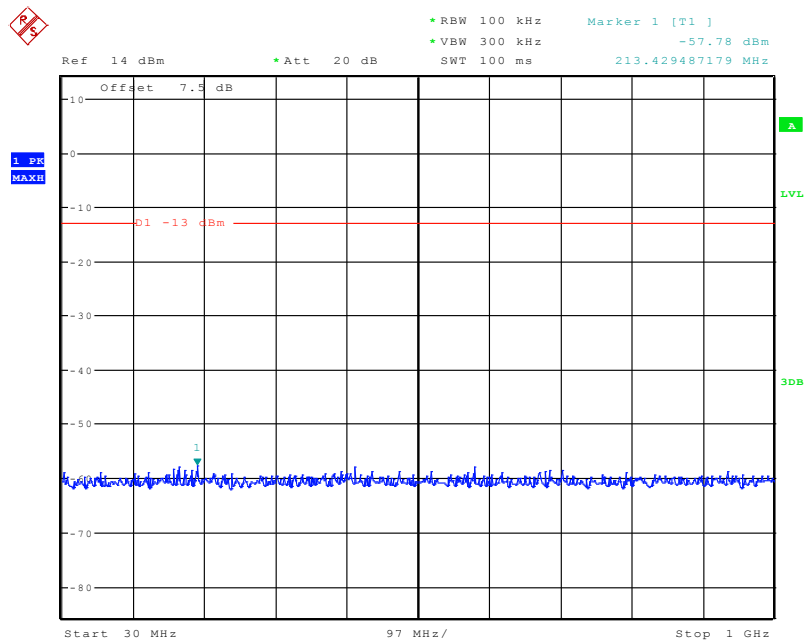
Date: 3.NOV.2020 14:42:53

1 GHz – 20 GHz (3.0 MHz, Low channel)



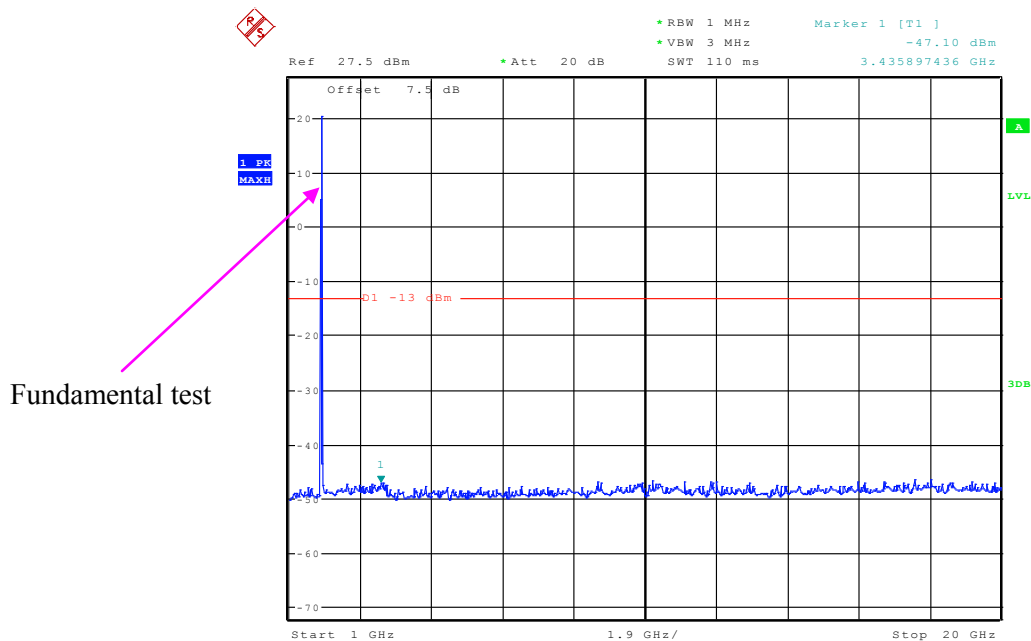
Date: 3.NOV.2020 14:38:47

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



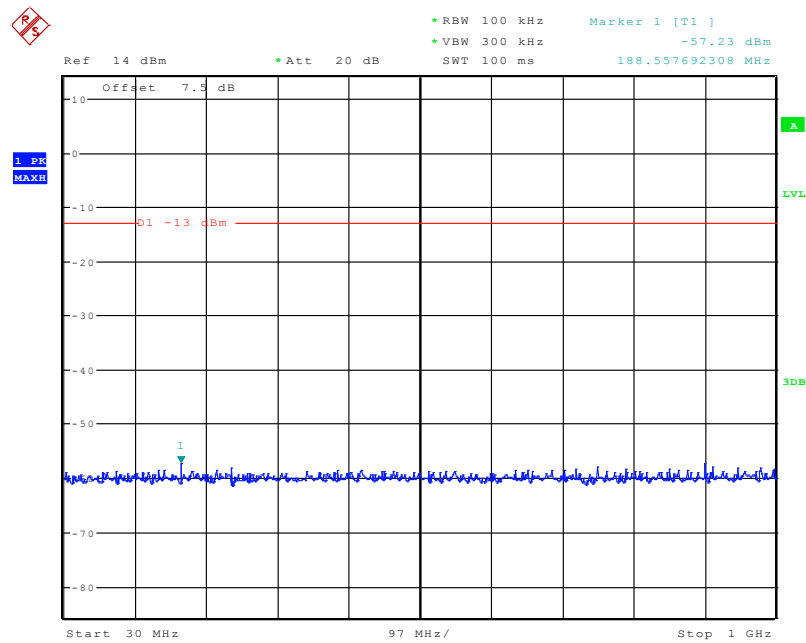
Date: 3.NOV.2020 14:45:40

1 GHz – 20 GHz (5.0 MHz, Low channel)



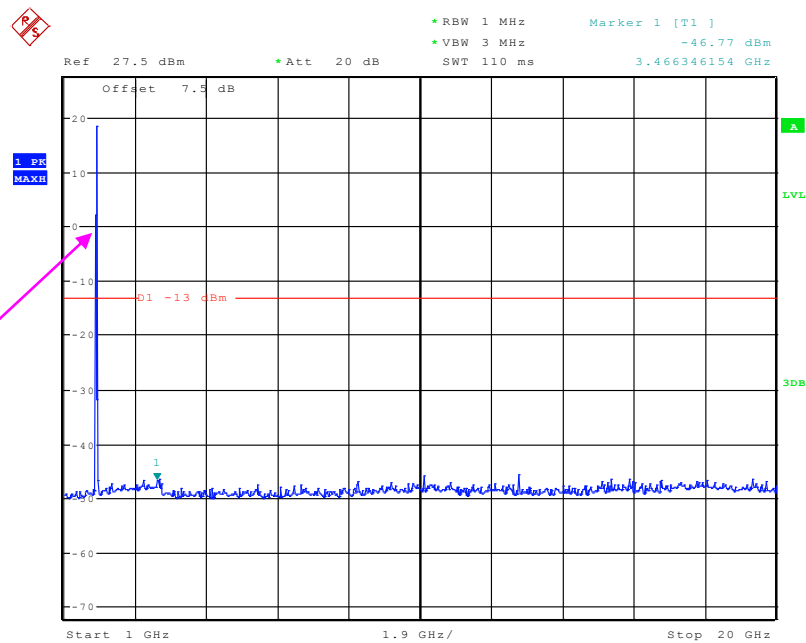
Date: 3.NOV.2020 14:37:59

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

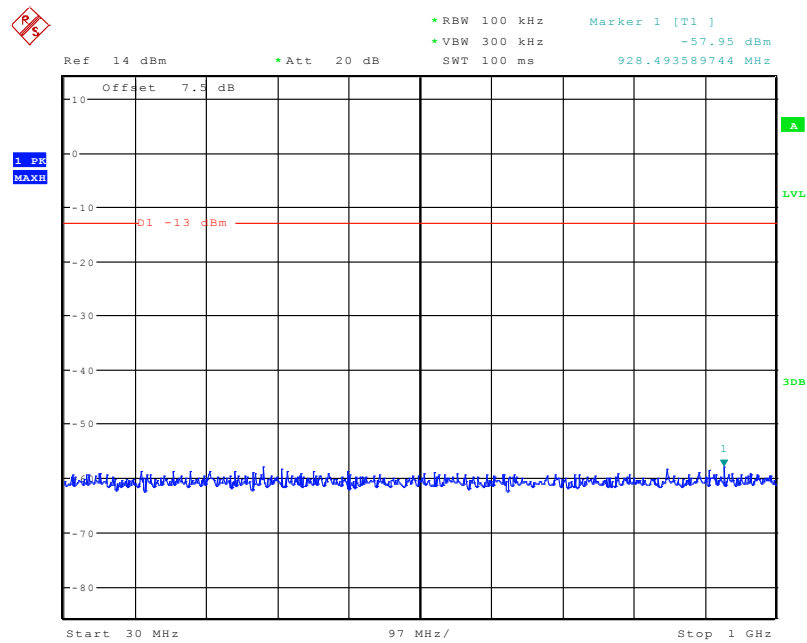


Date: 3.NOV.2020 14:47:42

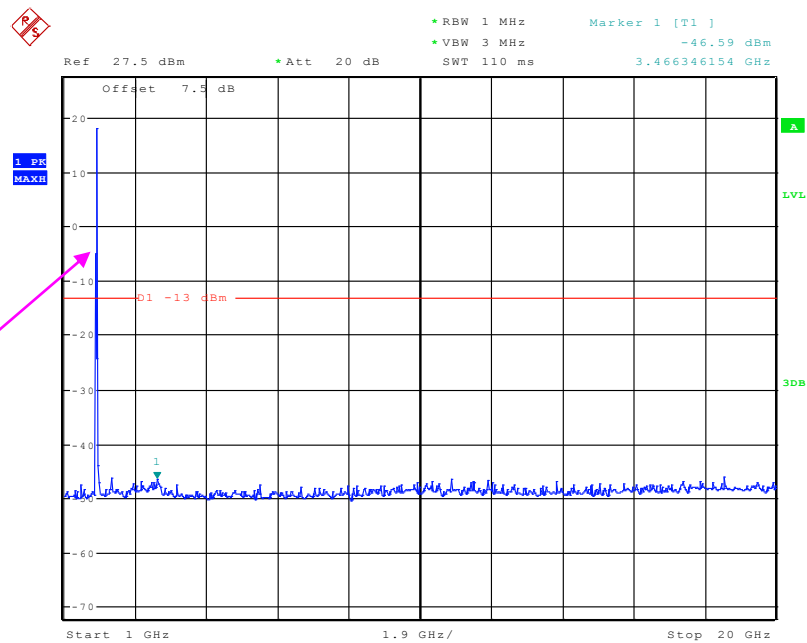
1 GHz - 20 GHz (10.0 MHz, Low channel)



Date: 3.NOV.2020 14:36:10

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

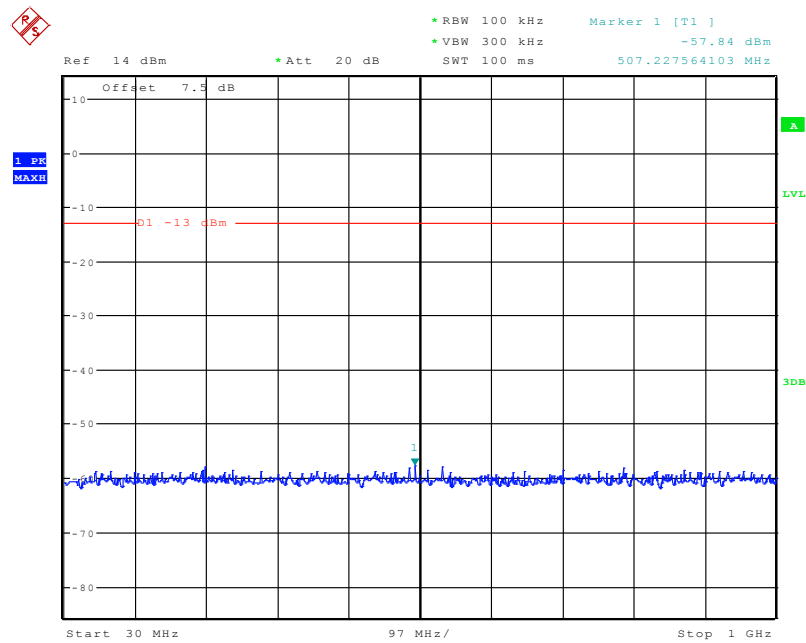
Date: 3.NOV.2020 14:50:10

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

Fundamental test

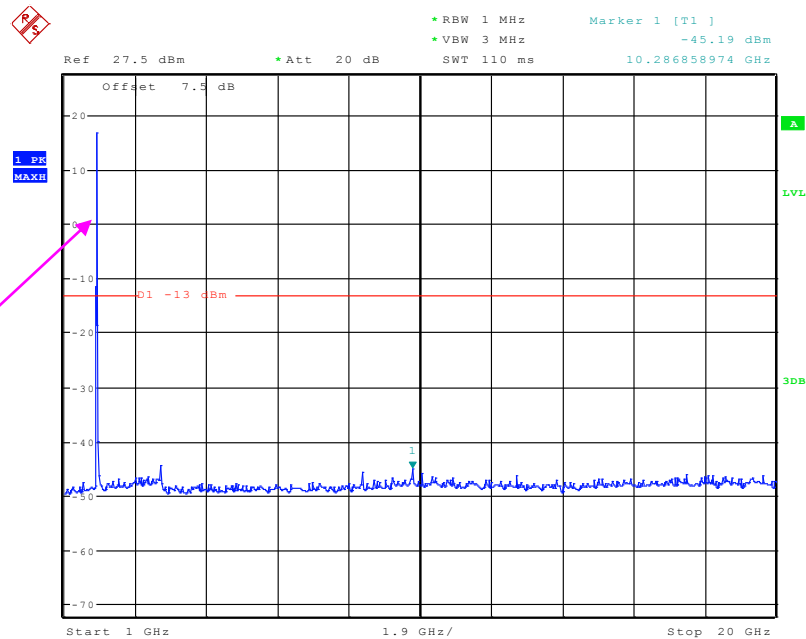
Date: 3.NOV.2020 14:34:34

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



Date: 3.NOV.2020 14:50:39

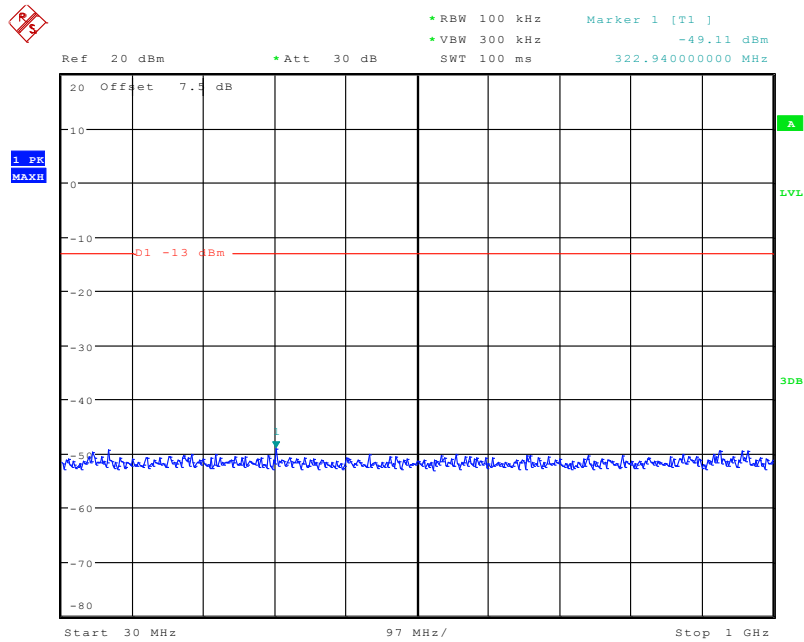
1 GHz - 2 GHz (20.0 MHz, Low channel)



Fundamental test

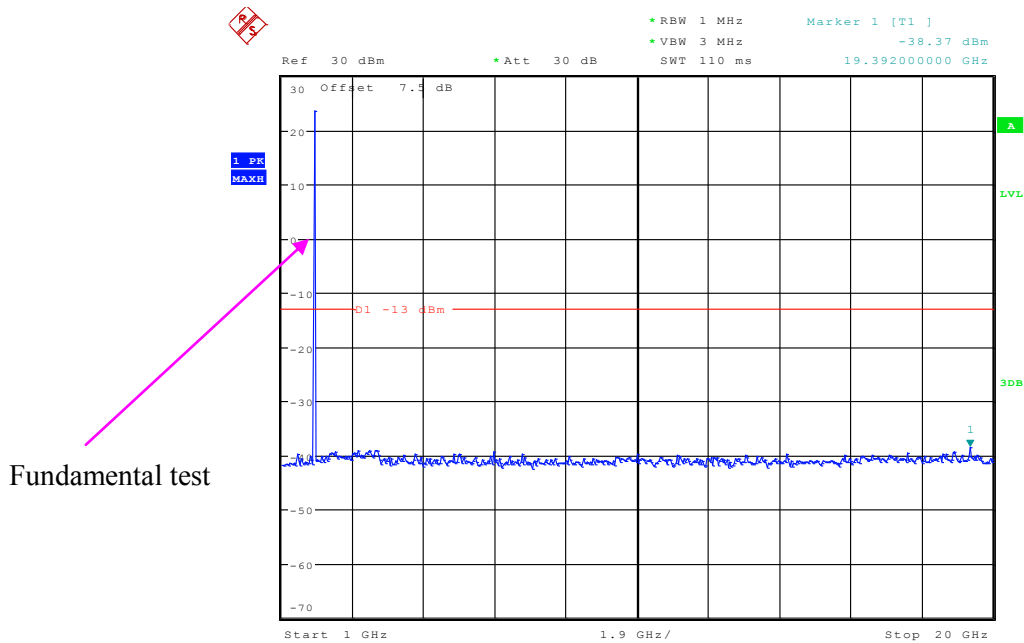
Date: 3.NOV.2020 14:25:24

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



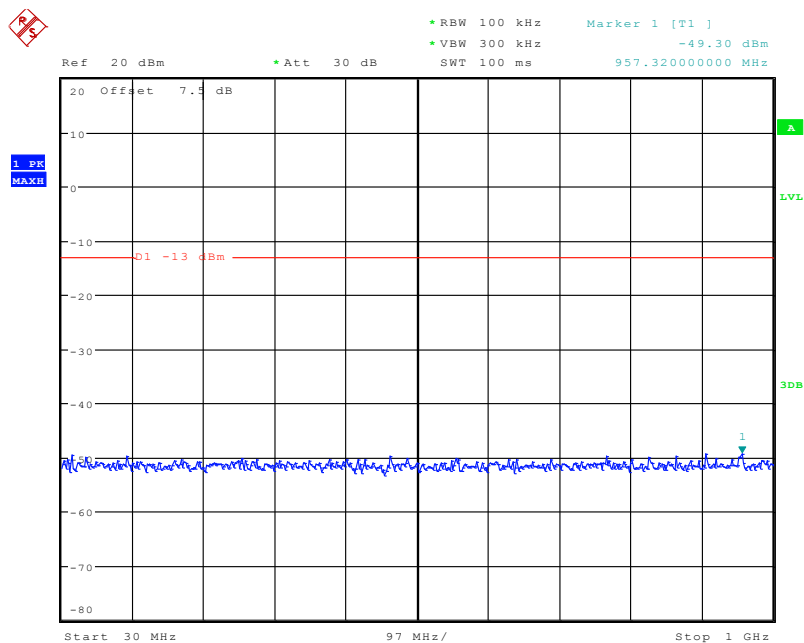
Date: 13.MAR.2020 11:38:13

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



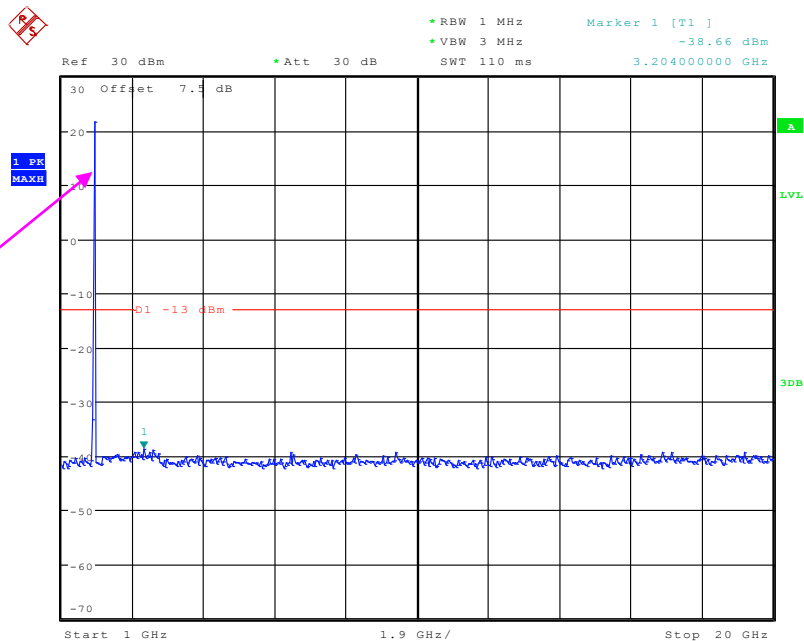
Date: 13.MAR.2020 11:38:23

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



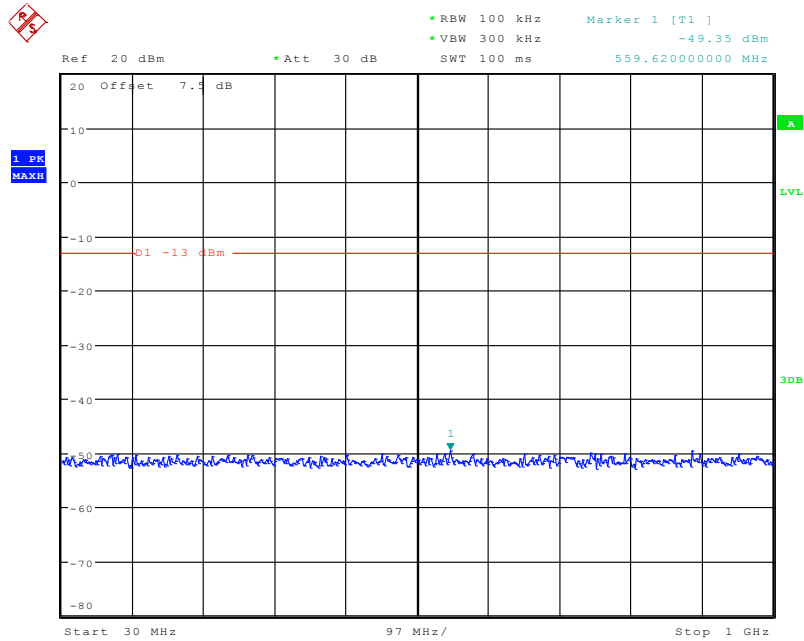
Date: 13.MAR.2020 11:38:44

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



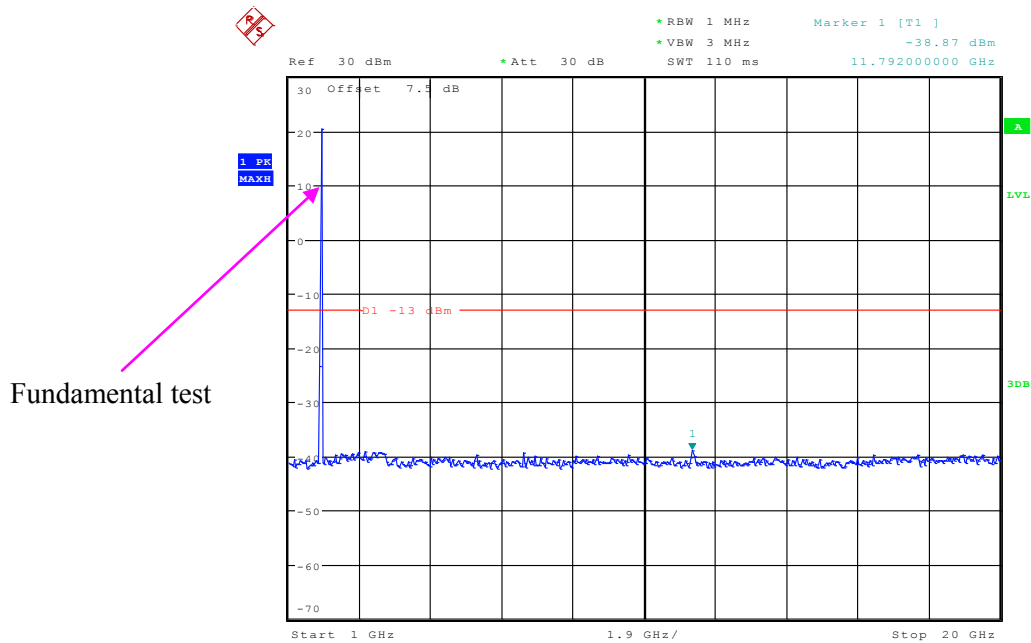
Date: 13.MAR.2020 11:38:54

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



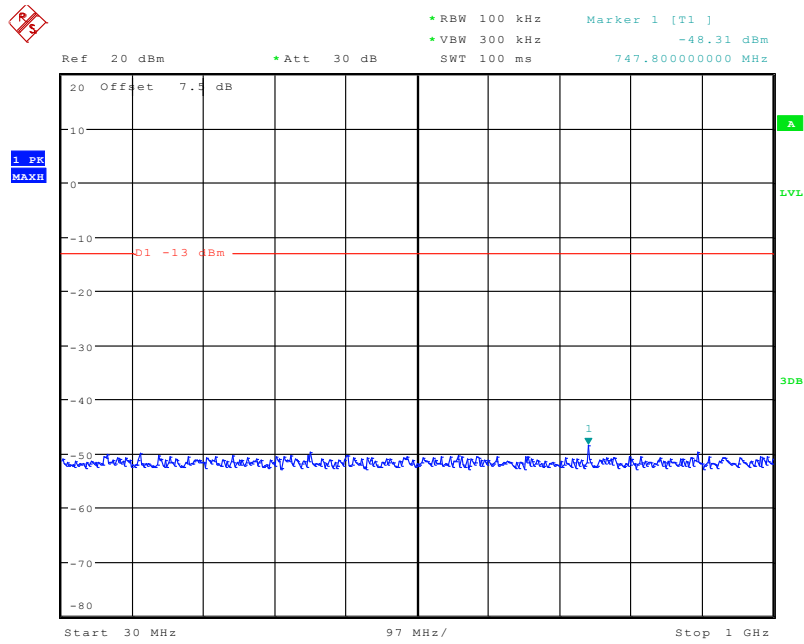
Date: 13.MAR.2020 11:39:15

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



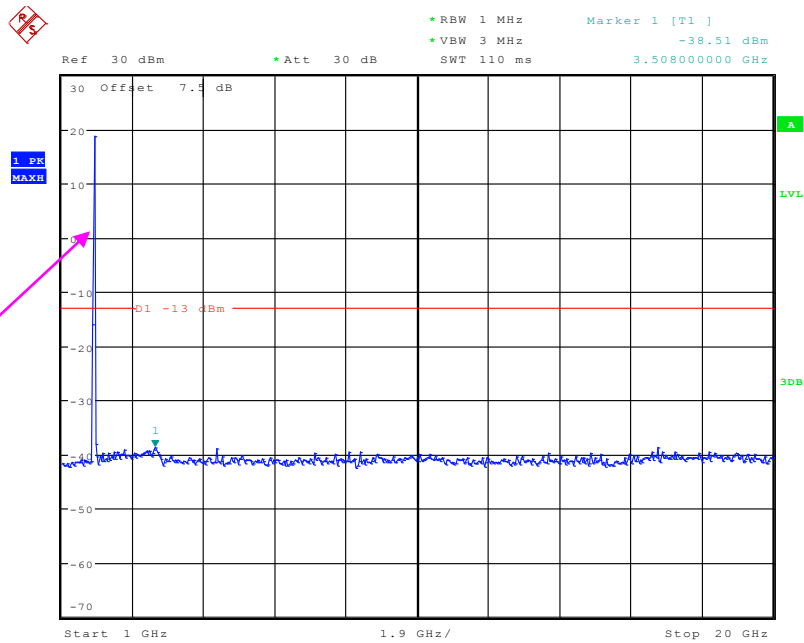
Date: 13.MAR.2020 11:39:25

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



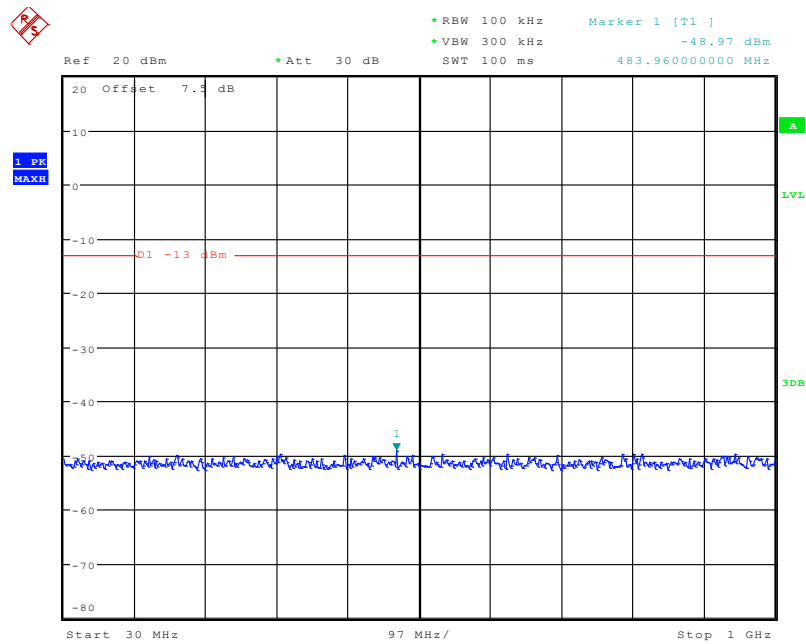
Date: 13.MAR.2020 11:39:45

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

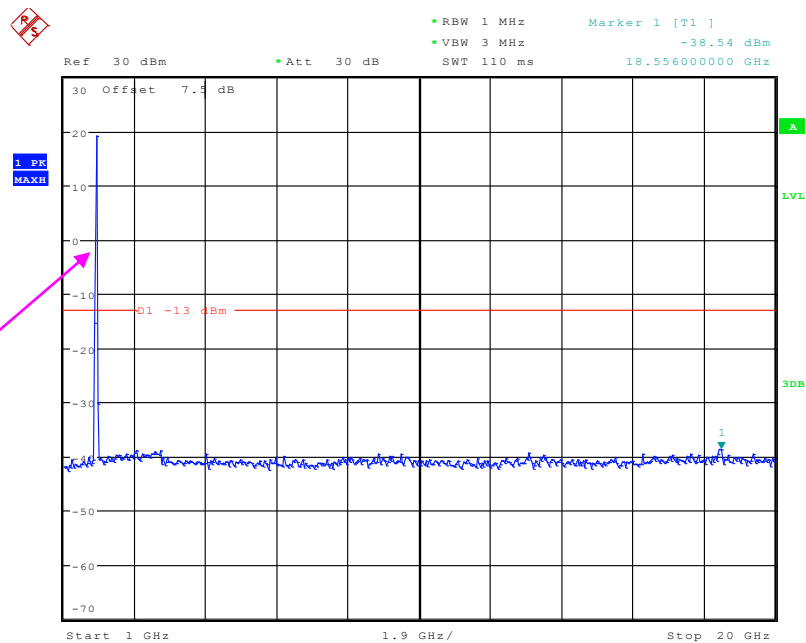


Fundamental test

Date: 13.MAR.2020 11:39:55

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

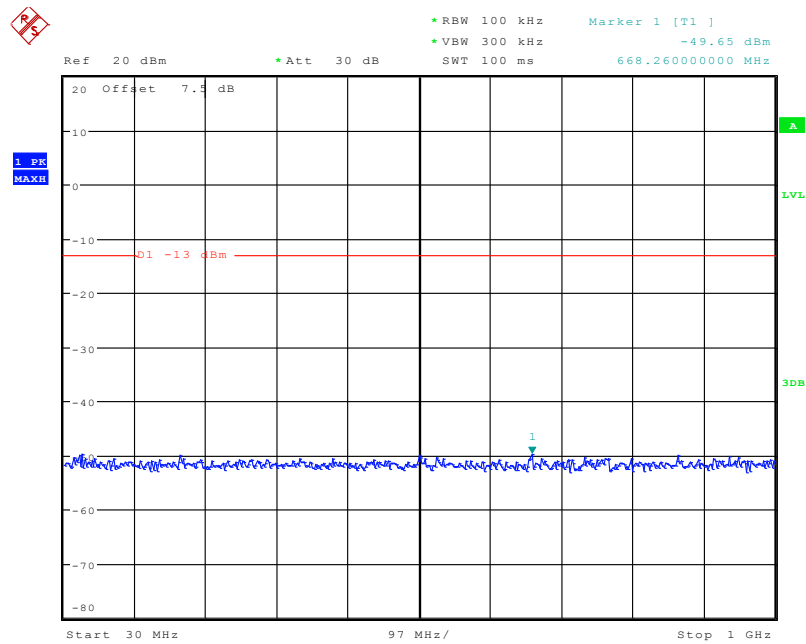
Date: 13.MAR.2020 11:40:20

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

Fundamental test

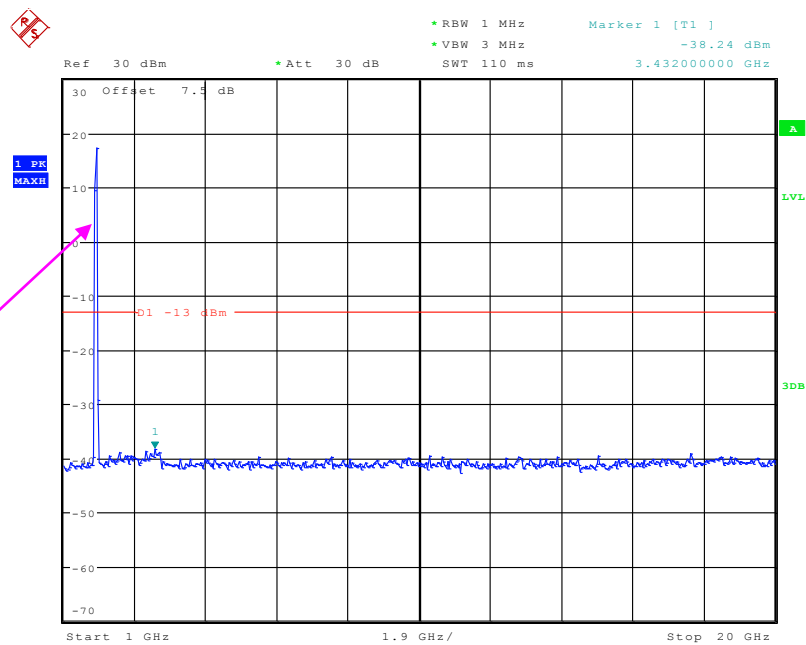
Date: 13.MAR.2020 11:40:30

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



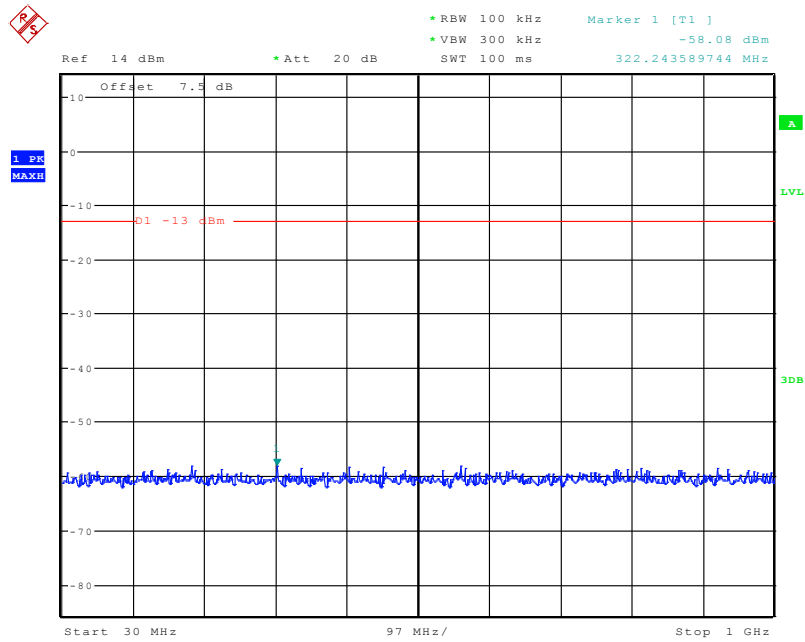
Date: 13.MAR.2020 11:40:51

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



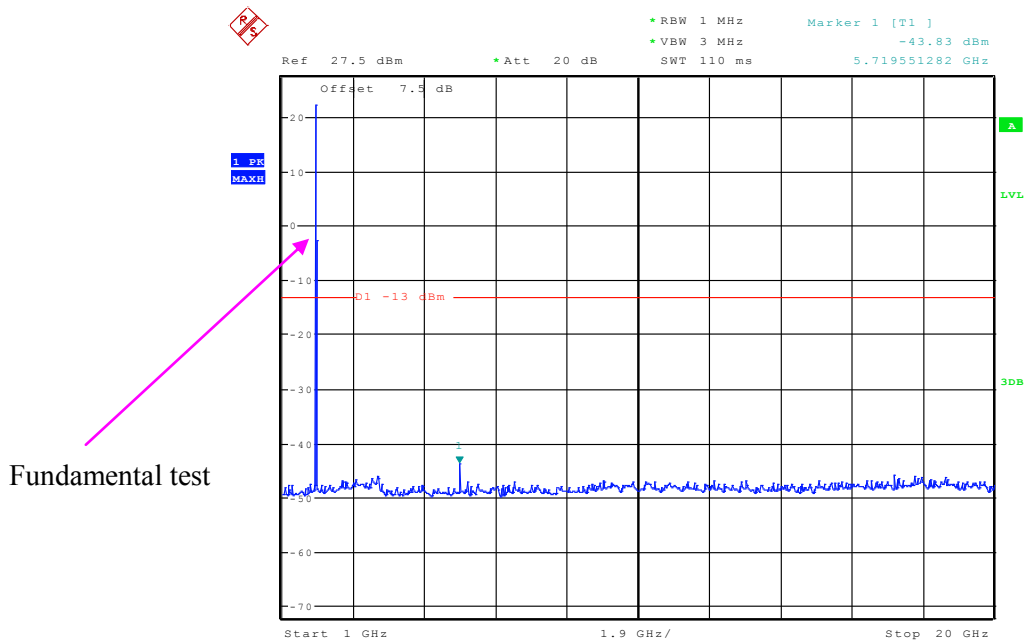
Date: 13.MAR.2020 11:41:02

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

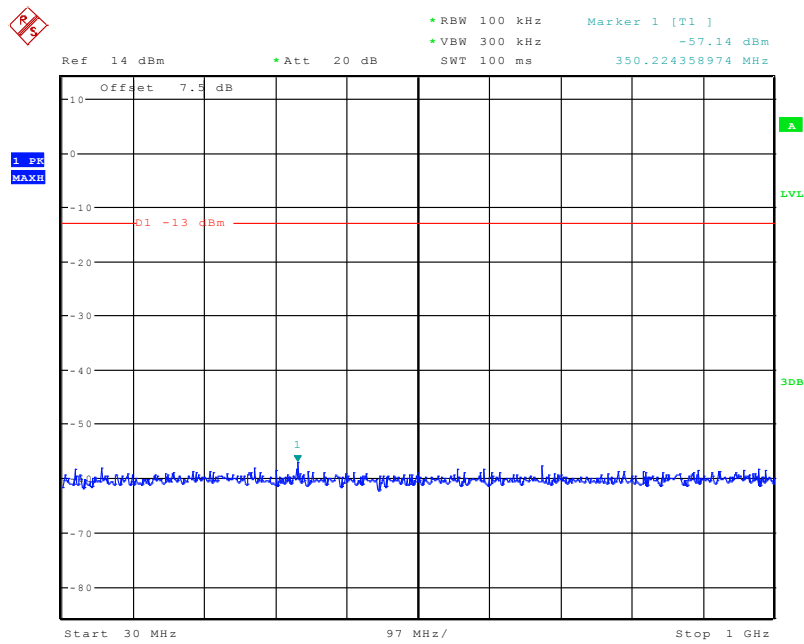


Date: 3.NOV.2020 14:43:45

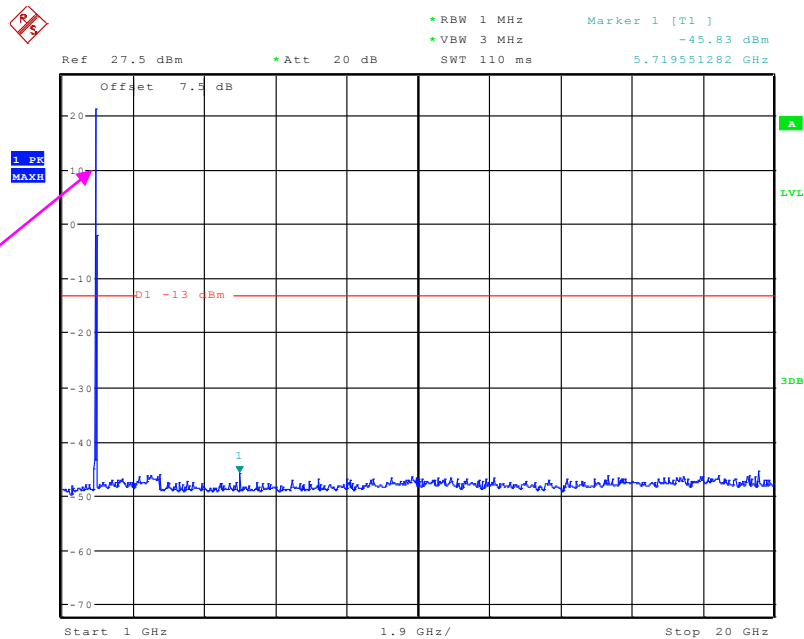
1 GHz – 20 GHz (1.4 MHz, High channel)



Date: 3.NOV.2020 14:40:20

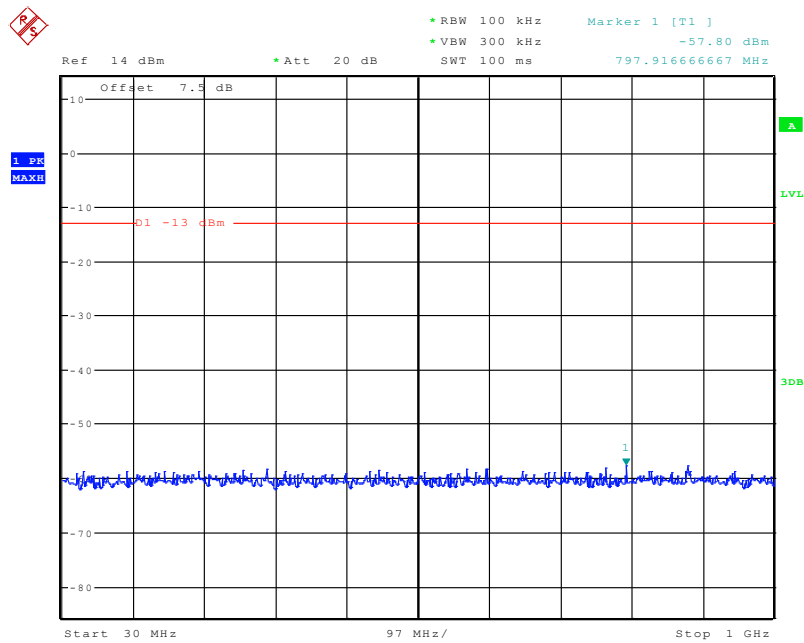
30 MHz - 1 GHz (3.0 MHz, High channel)

Date: 3.NOV.2020 14:42:20

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

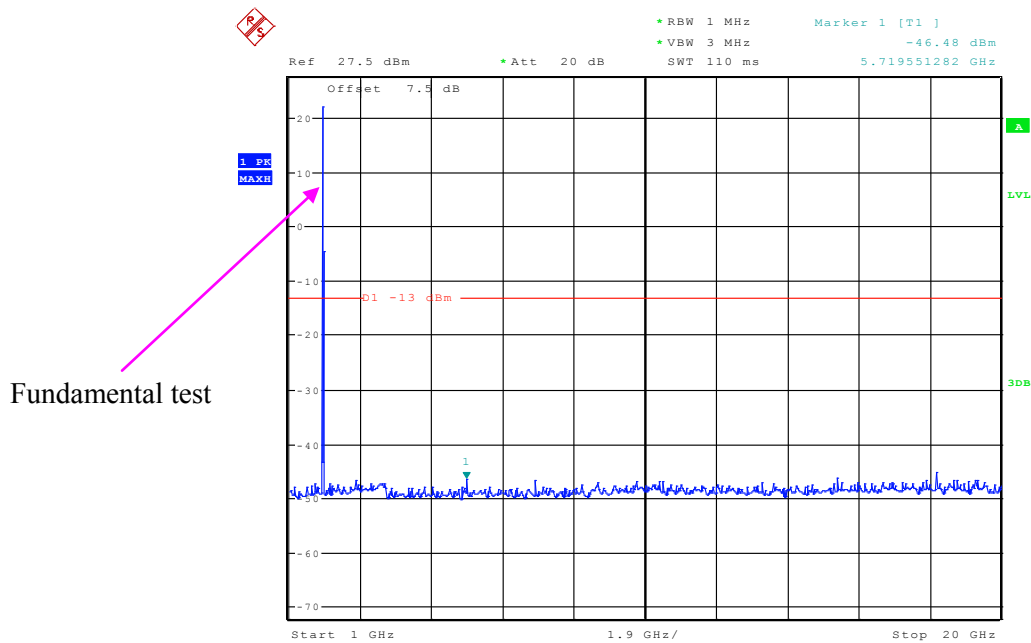
Date: 3.NOV.2020 14:41:44

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



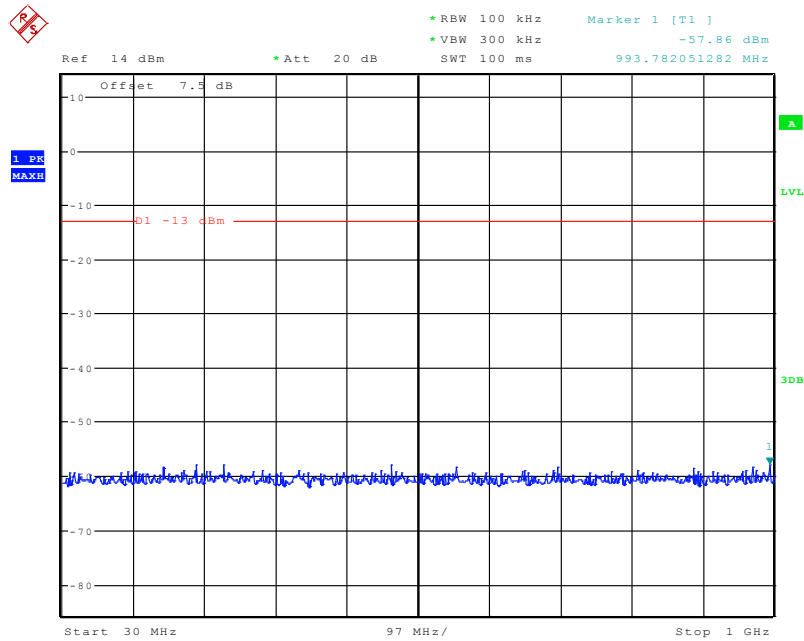
Date: 3.NOV.2020 14:45:06

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



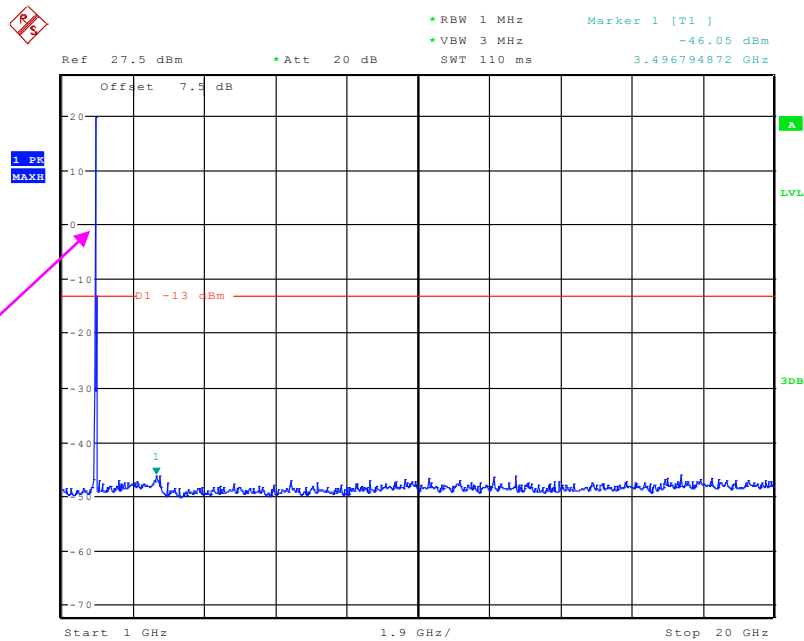
Date: 3.NOV.2020 14:37:23

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



Date: 3.NOV.2020 14:48:50

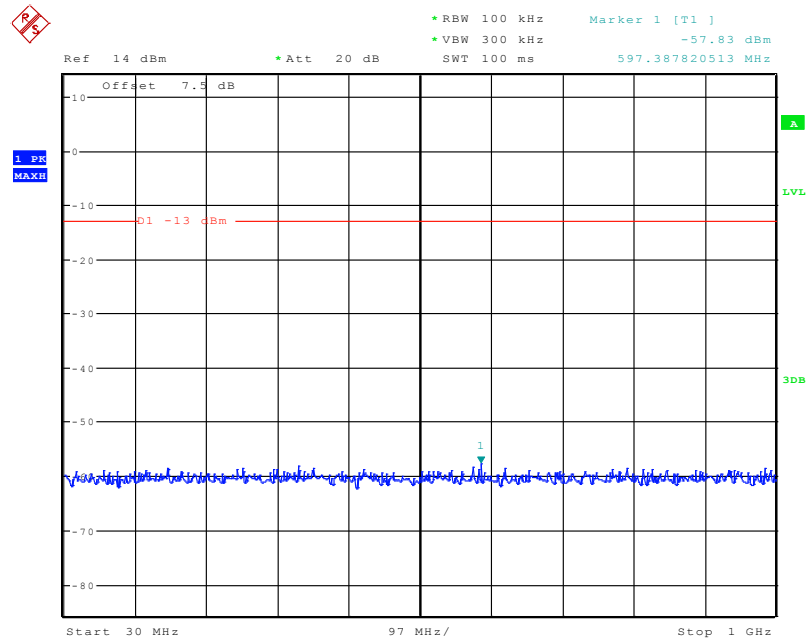
1 GHz - 20 GHz (10.0 MHz, High channel)



Fundamental test

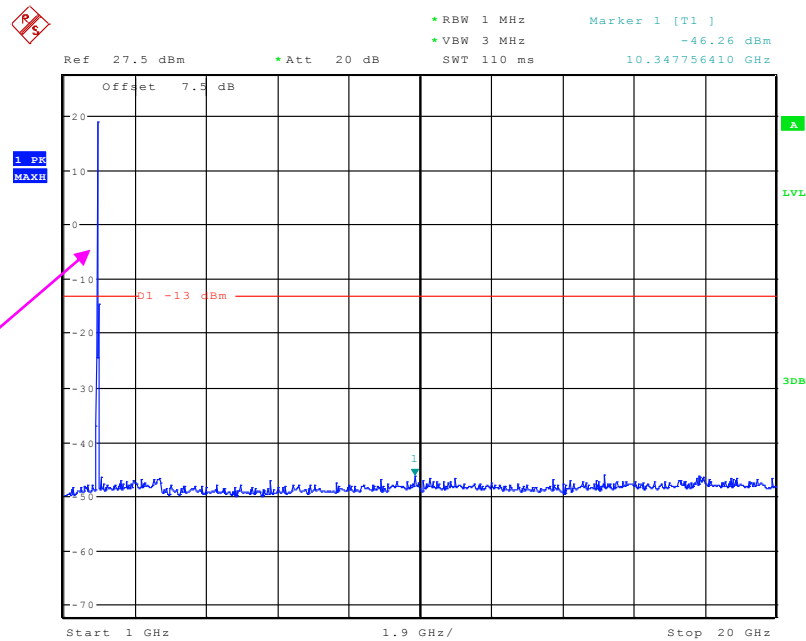
Date: 3.NOV.2020 14:36:51

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



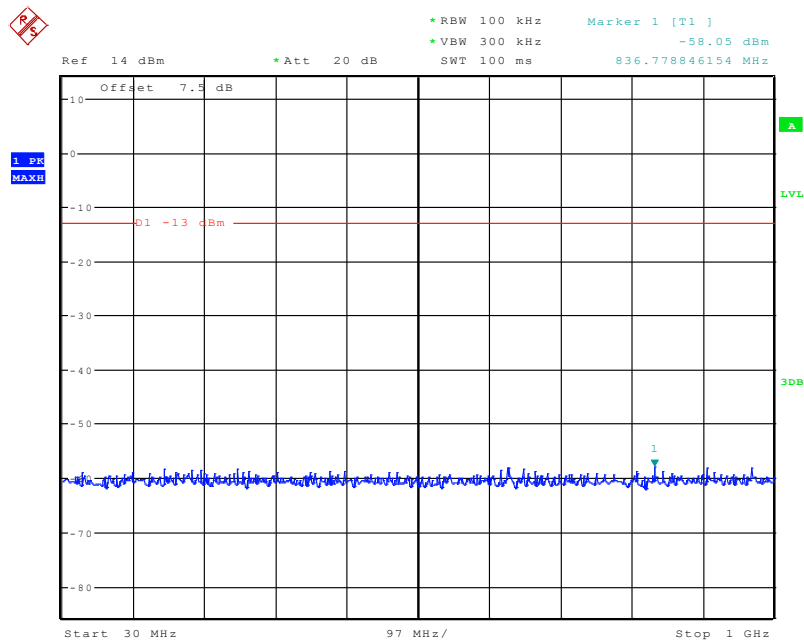
Date: 3.NOV.2020 14:49:27

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

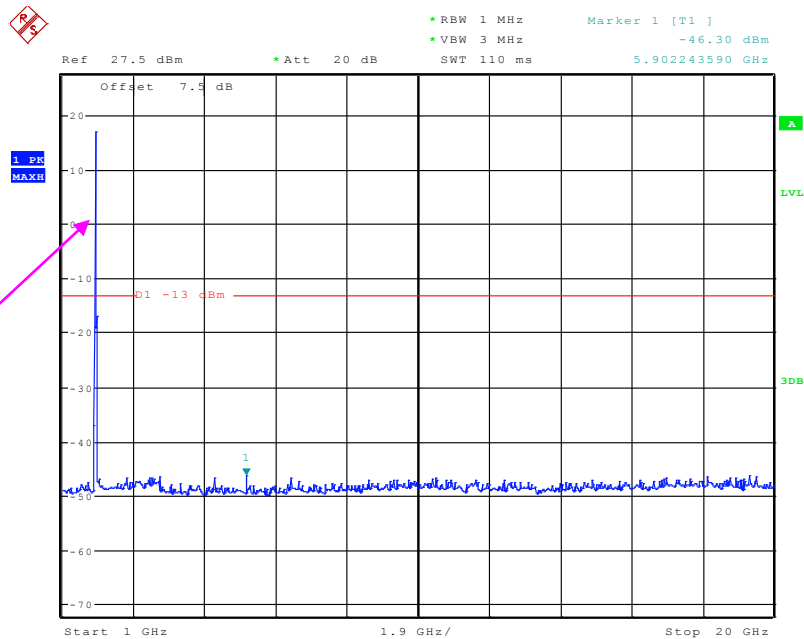


Fundamental test

Date: 3.NOV.2020 14:27:20

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

Date: 3.NOV.2020 14:51:37

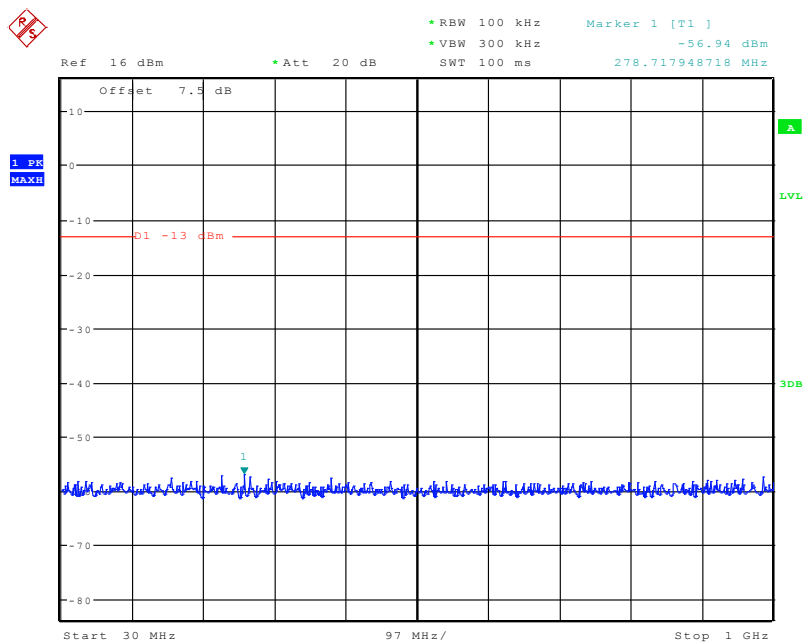
1 GHz - 2 GHz (20.0 MHz, High channel)

Fundamental test

Date: 3.NOV.2020 14:26:41

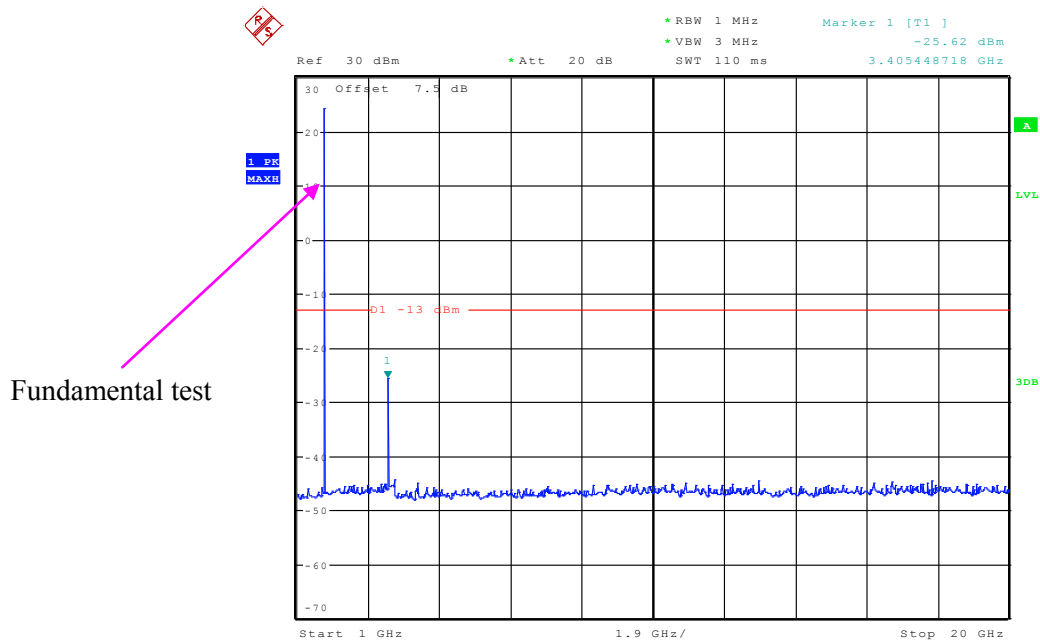
LTE Band 4:

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



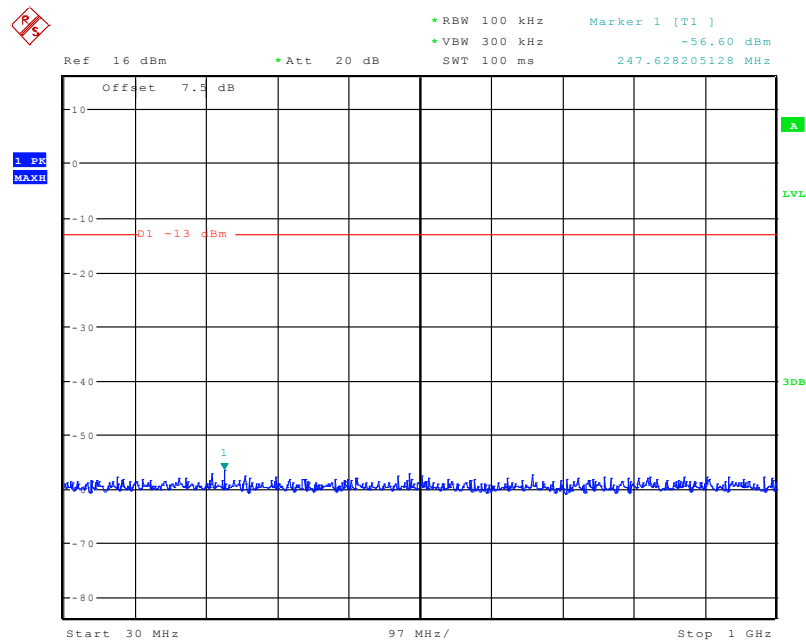
Date: 3.NOV.2020 13:58:39

1 GHz - 20 GHz (1.4 MHz, Low Channel)



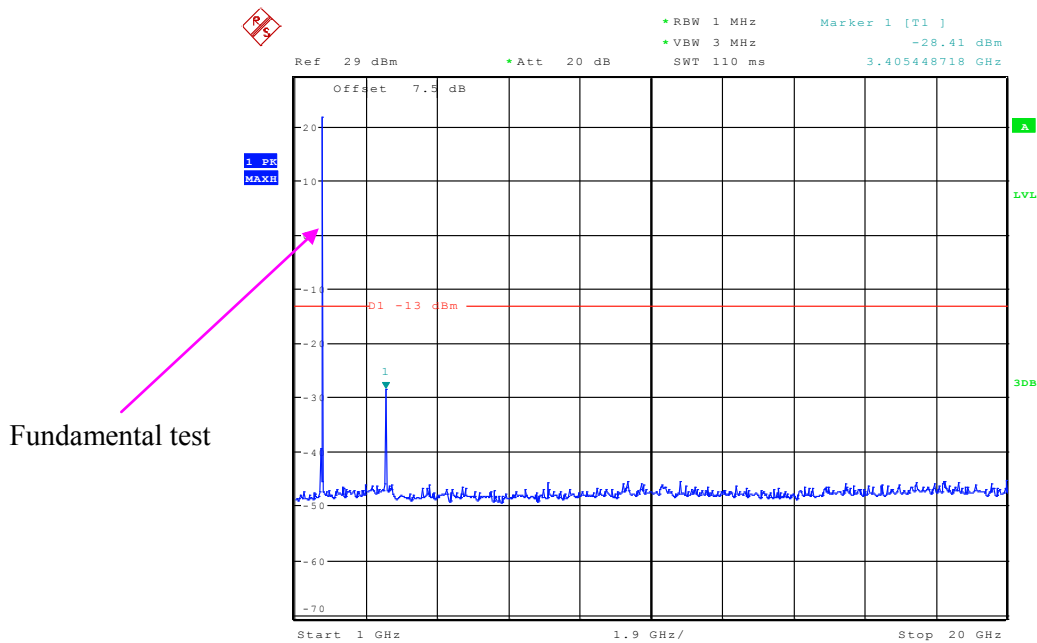
Date: 3.NOV.2020 13:57:10

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



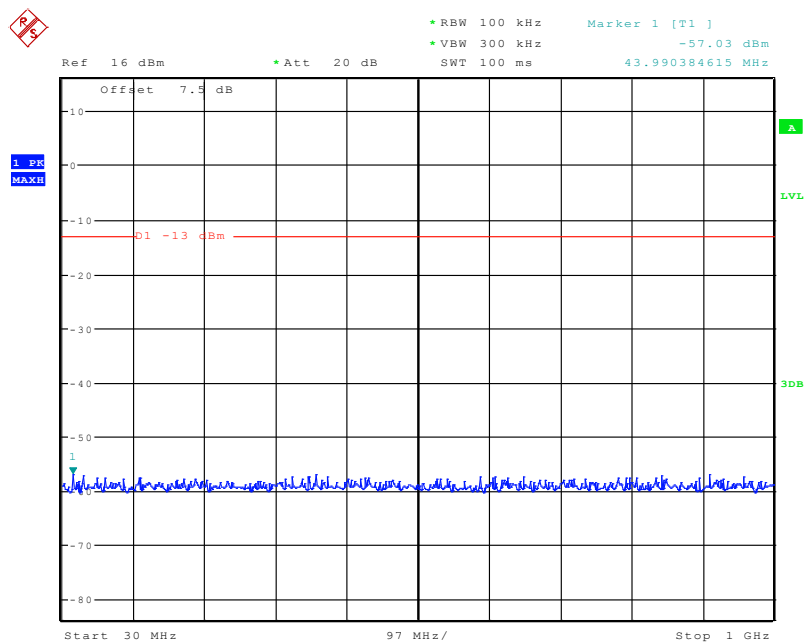
Date: 3.NOV.2020 14:00:20

1 GHz - 20 GHz (3.0 MHz, Low Channel)



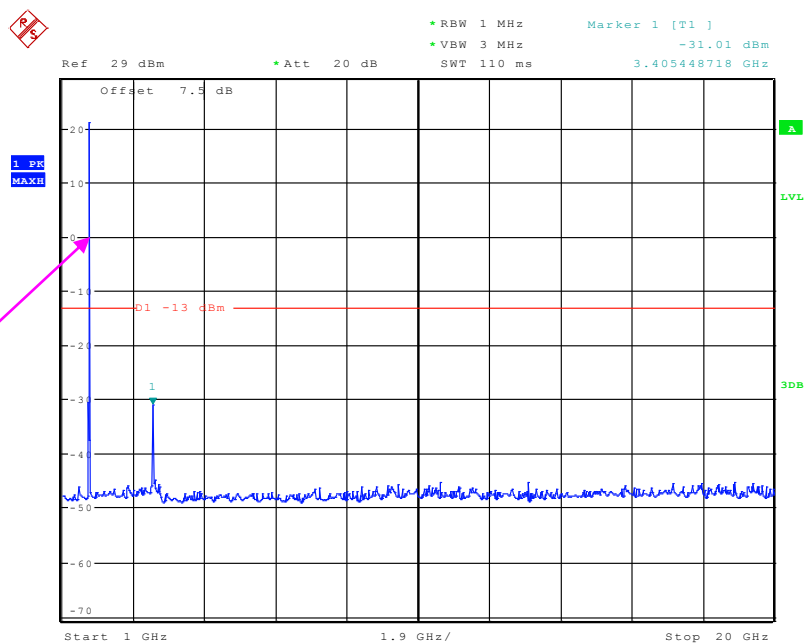
Date: 3.NOV.2020 14:19:40

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



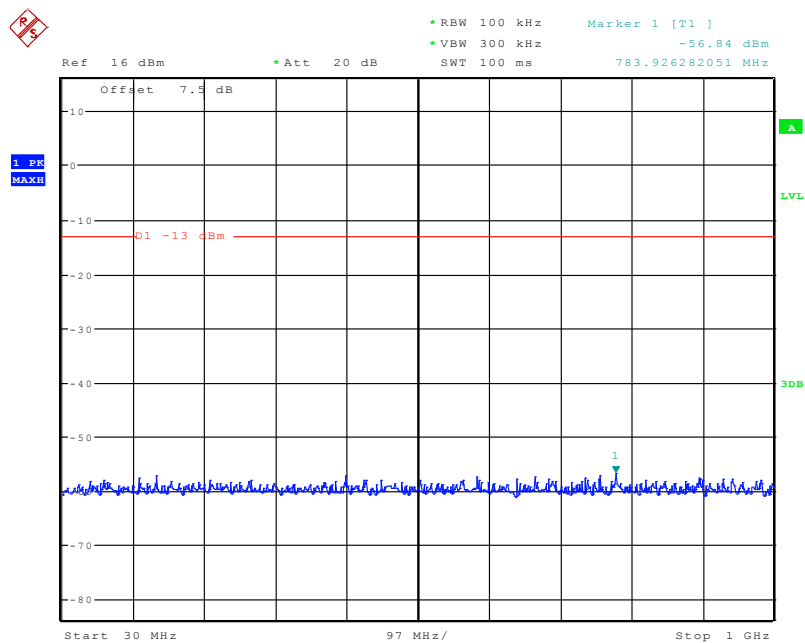
Date: 3.NOV.2020 14:03:41

1 GHz - 20 GHz (5.0 MHz, Low Channel)

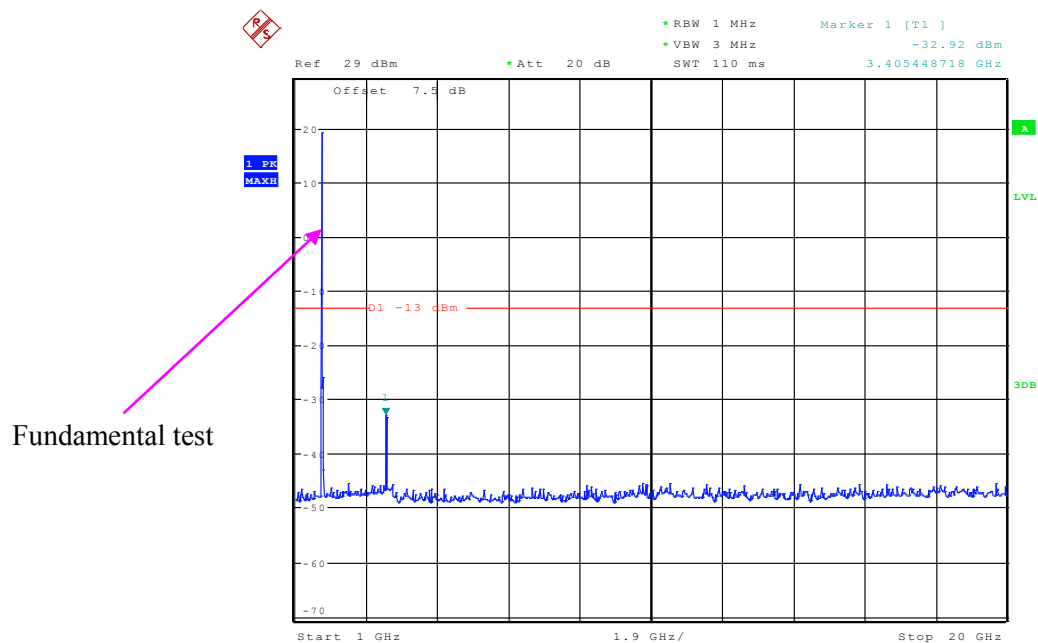


Fundamental test

Date: 3.NOV.2020 14:18:40

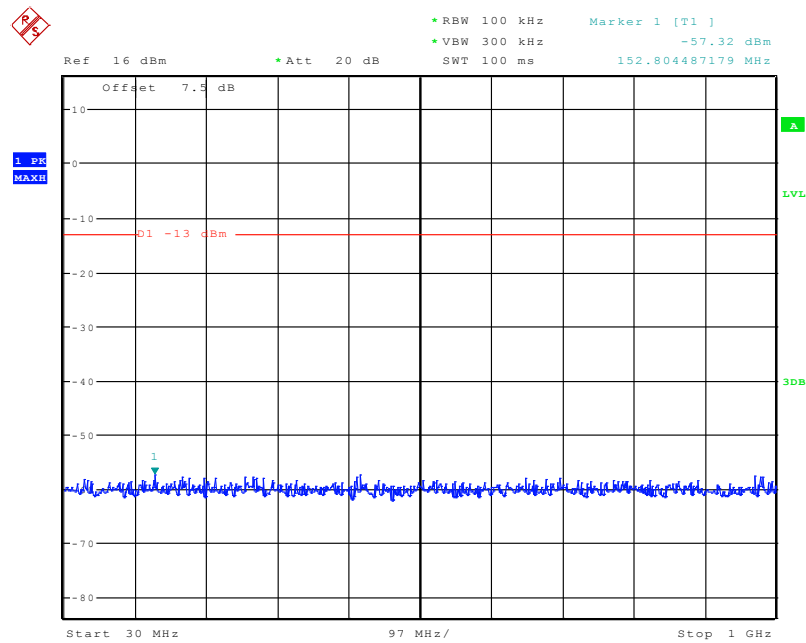
30 MHz - 1 GHz (10.0 MHz, Low Channel)

Date: 3.NOV.2020 14:04:24

1 GHz – 20 GHz (10.0 MHz, Low Channel)

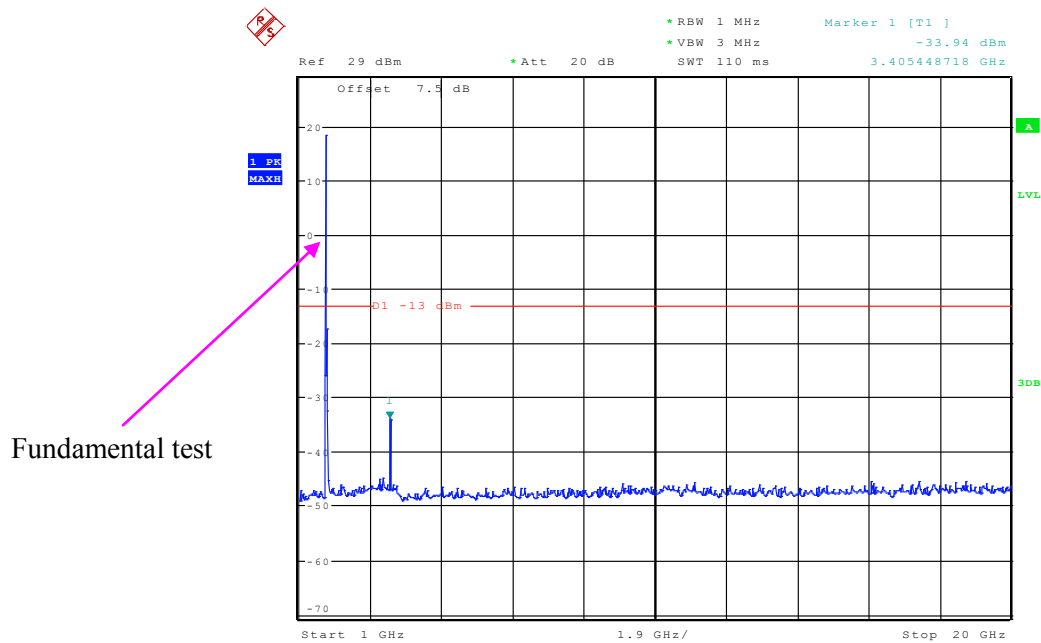
Date: 3.NOV.2020 14:12:20

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



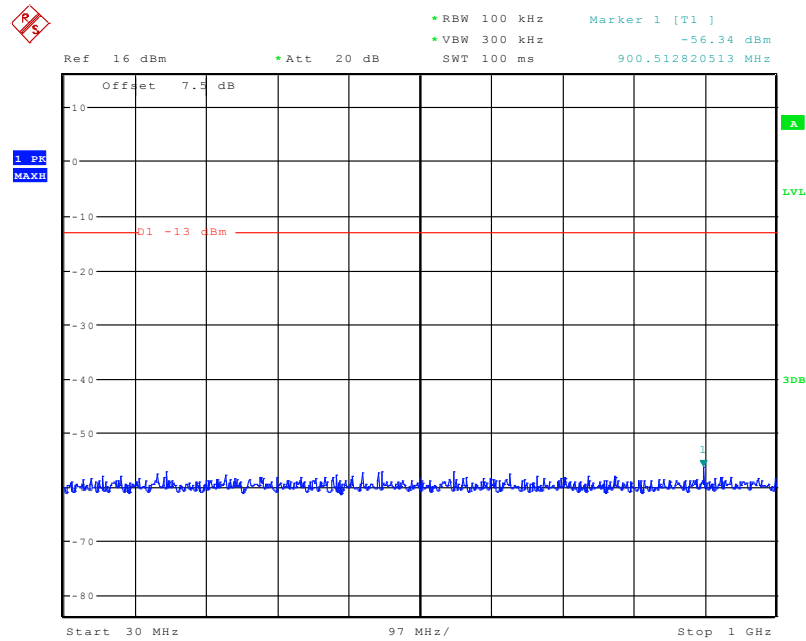
Date: 3.NOV.2020 14:05:50

1 GHz – 20 GHz (15.0 MHz, Low Channel)



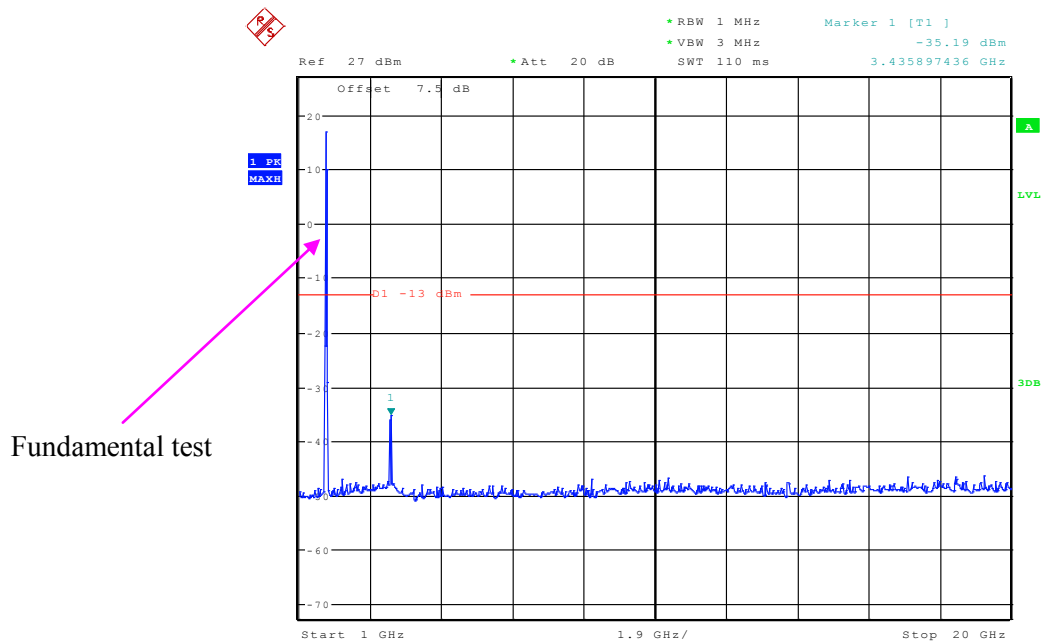
Date: 3.NOV.2020 14:10:32

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



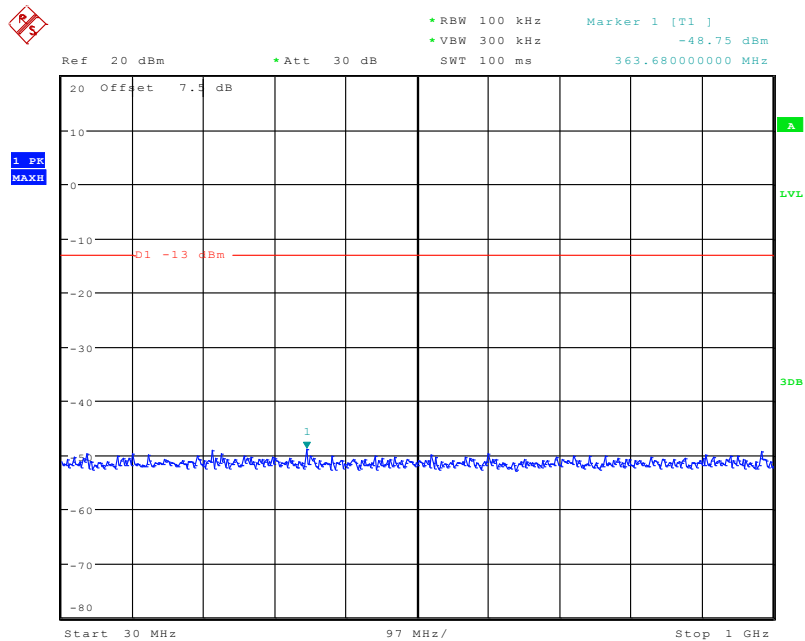
Date: 3.NOV.2020 14:06:20

1 GHz – 20 GHz (20.0 MHz, Low Channel)



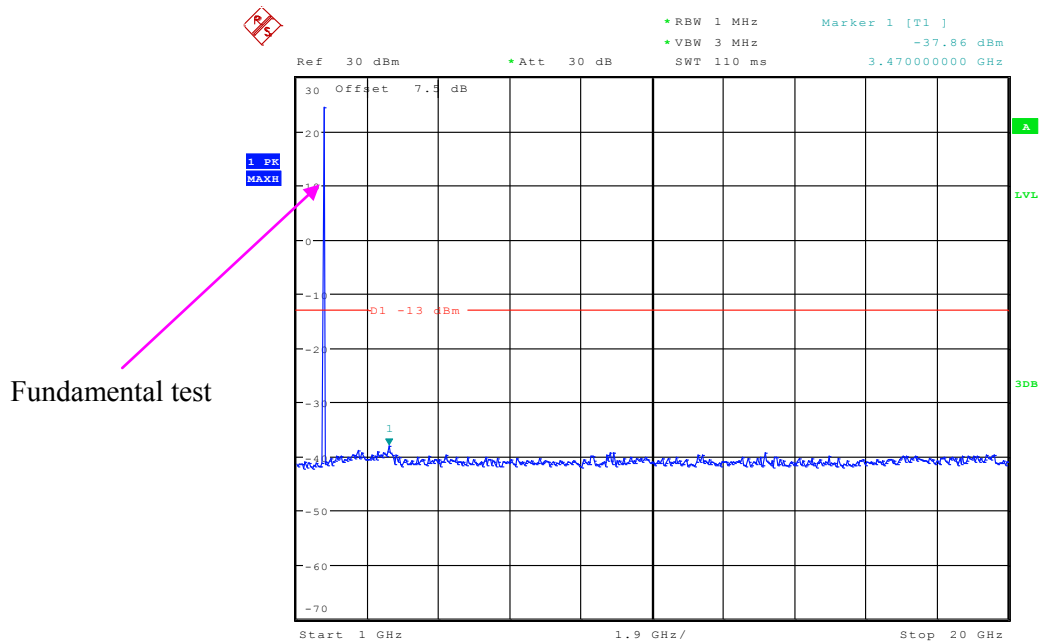
Date: 3.NOV.2020 14:08:14

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



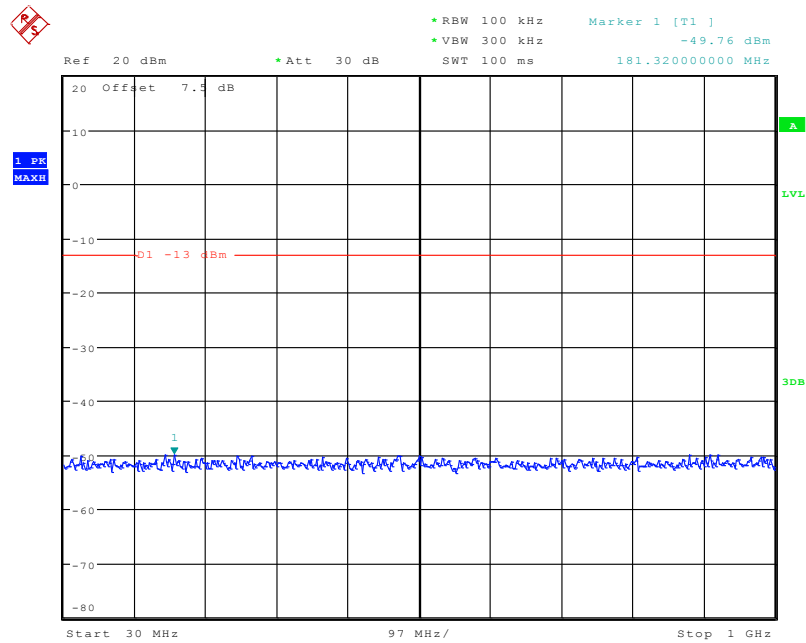
Date: 13.MAR.2020 11:41:22

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



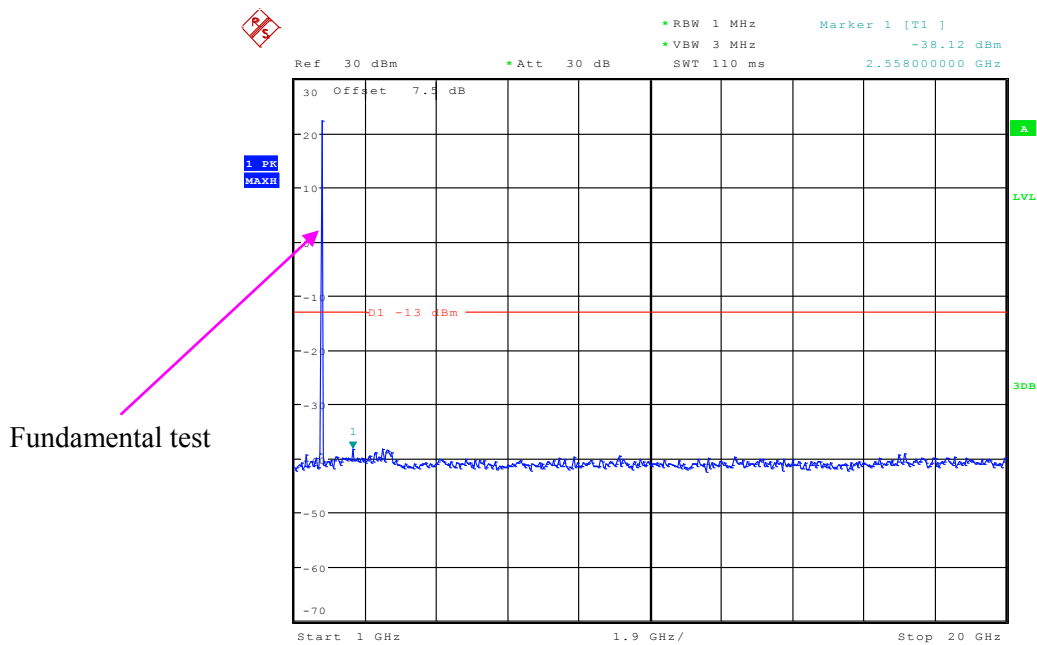
Date: 13.MAR.2020 11:41:33

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



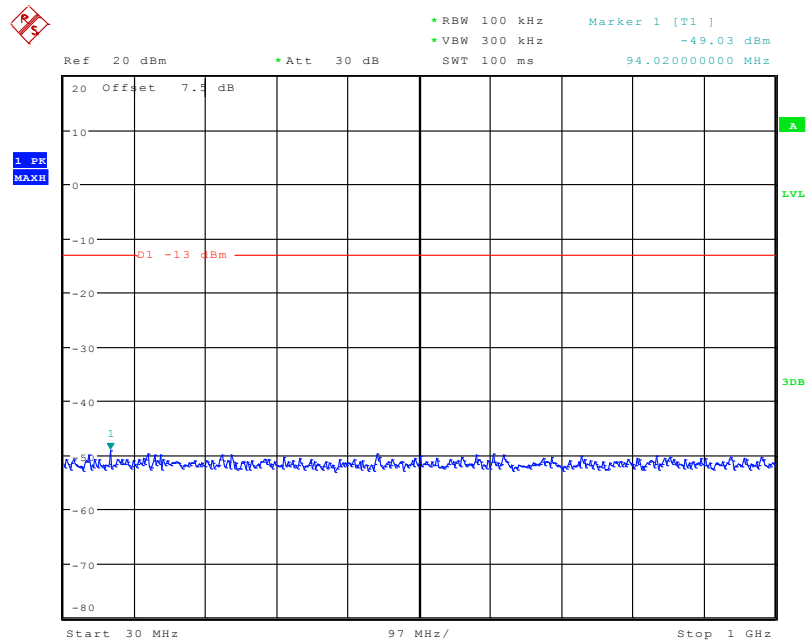
Date: 13.MAR.2020 11:41:50

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



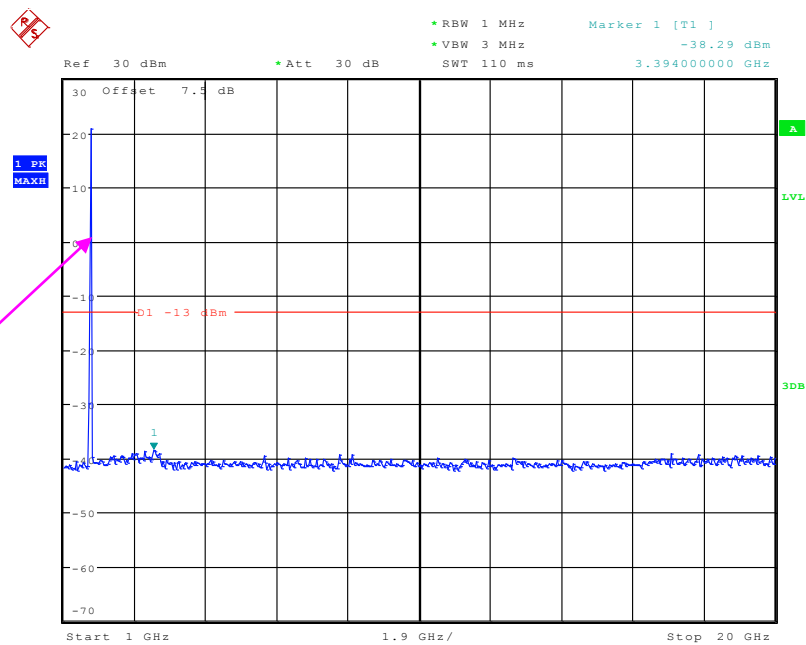
Date: 13.MAR.2020 11:42:01

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



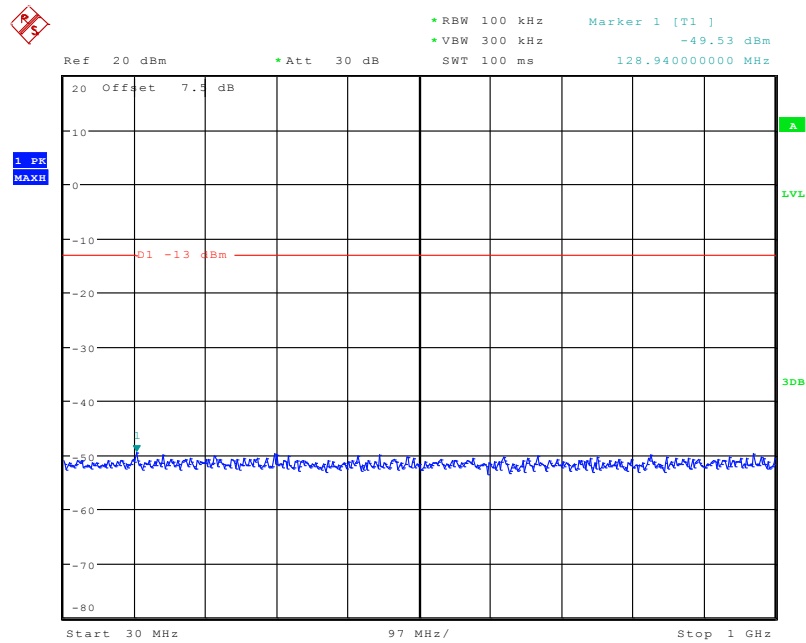
Date: 13.MAR.2020 11:42:18

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



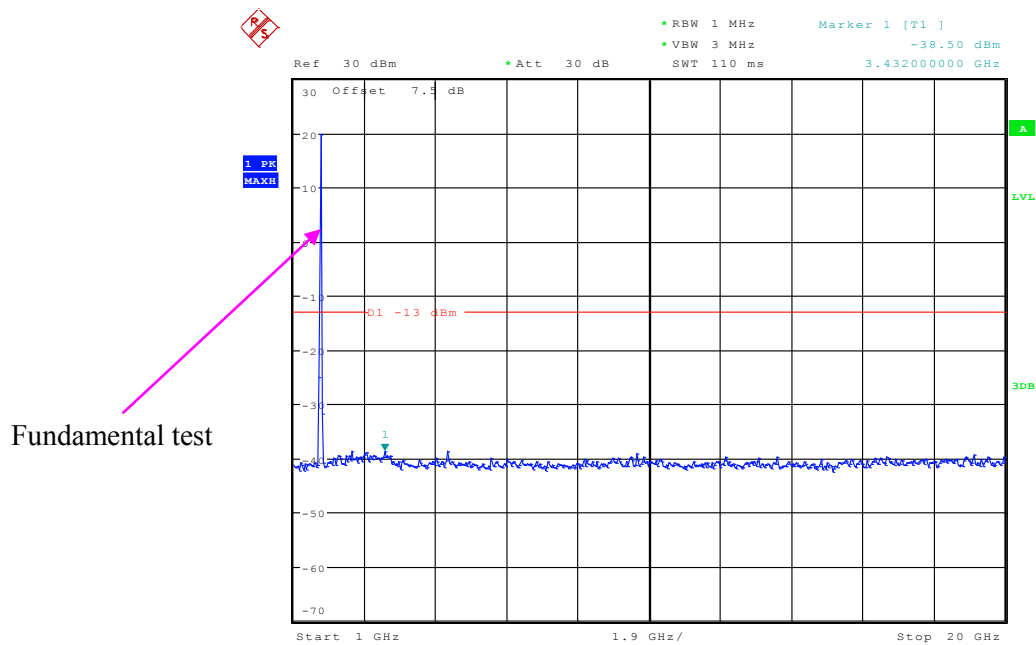
Date: 13.MAR.2020 11:42:28

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



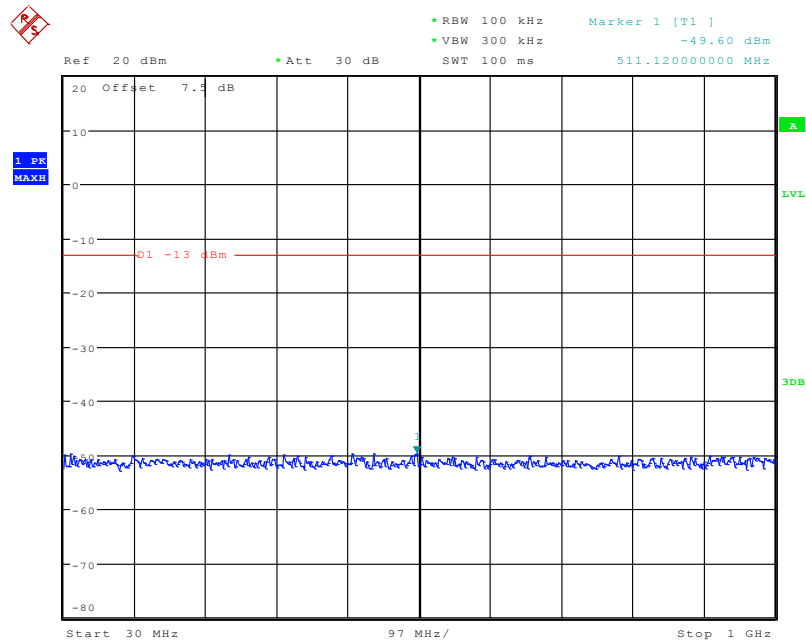
Date: 13.MAR.2020 11:42:48

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



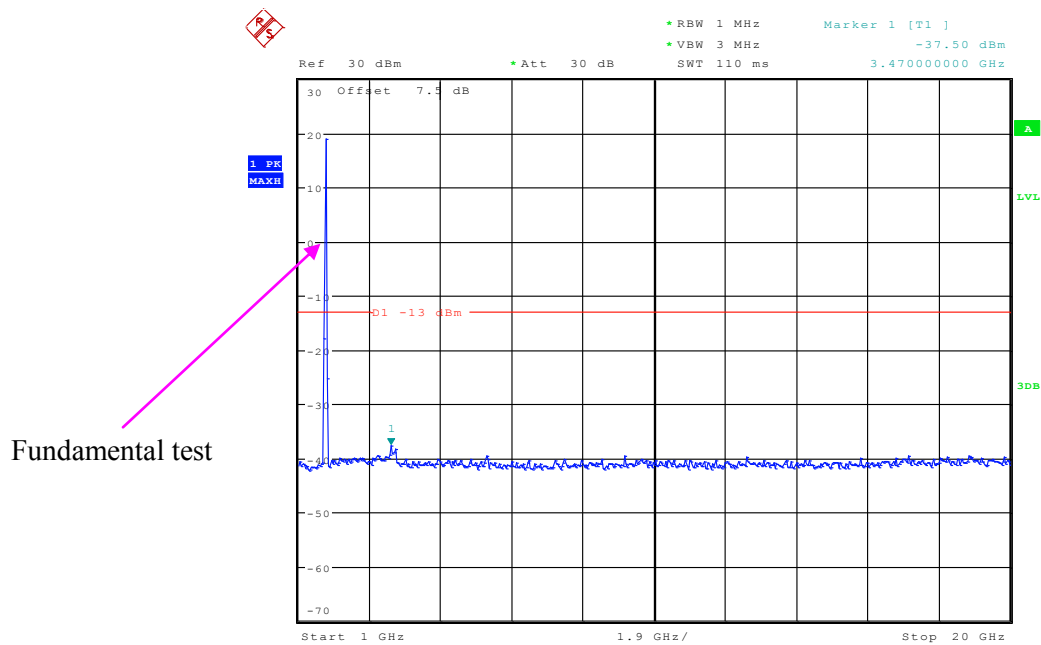
Date: 13.MAR.2020 11:42:58

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



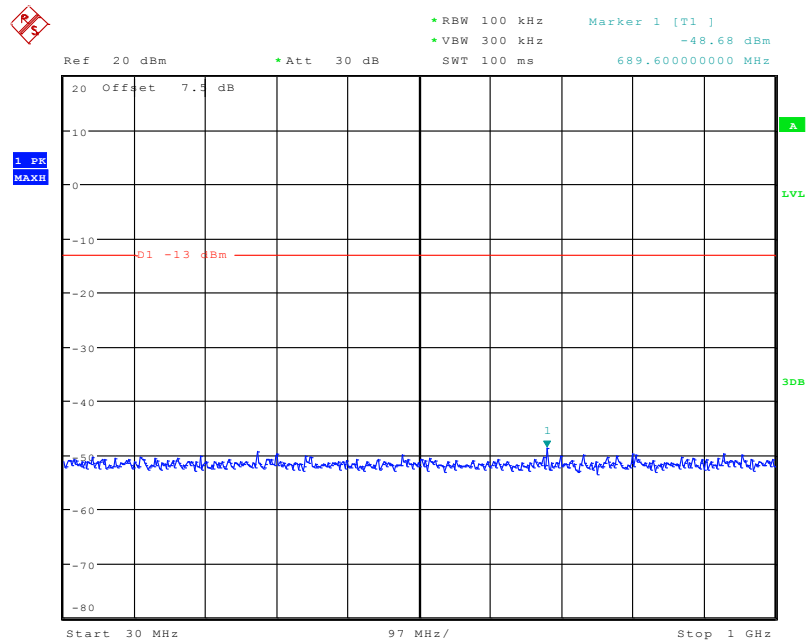
Date: 13.MAR.2020 11:43:22

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



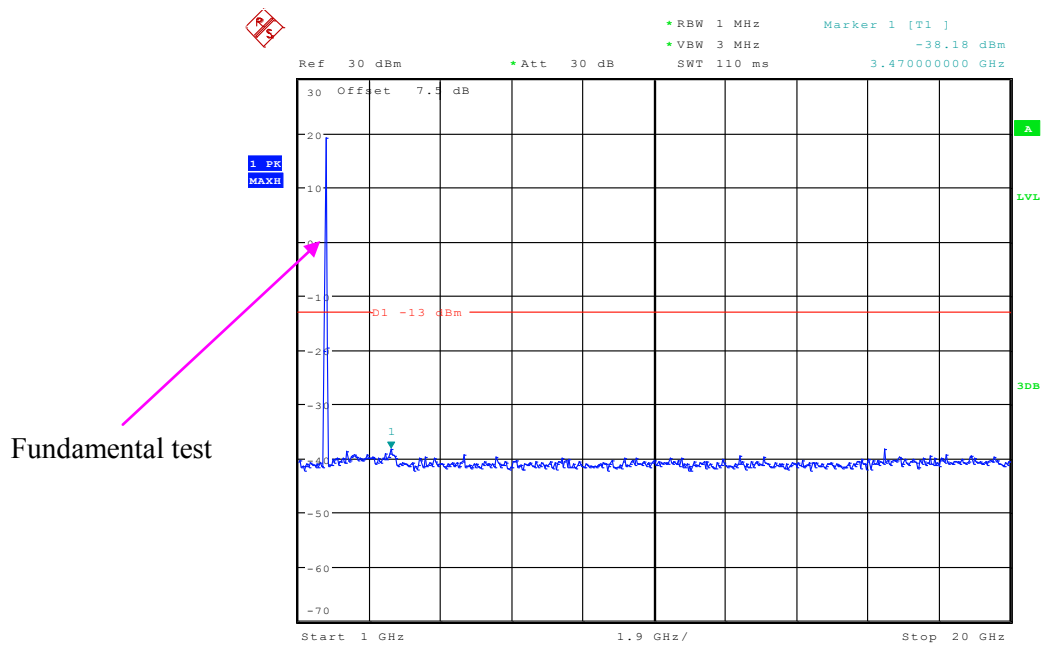
Date: 13.MAR.2020 11:43:33

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



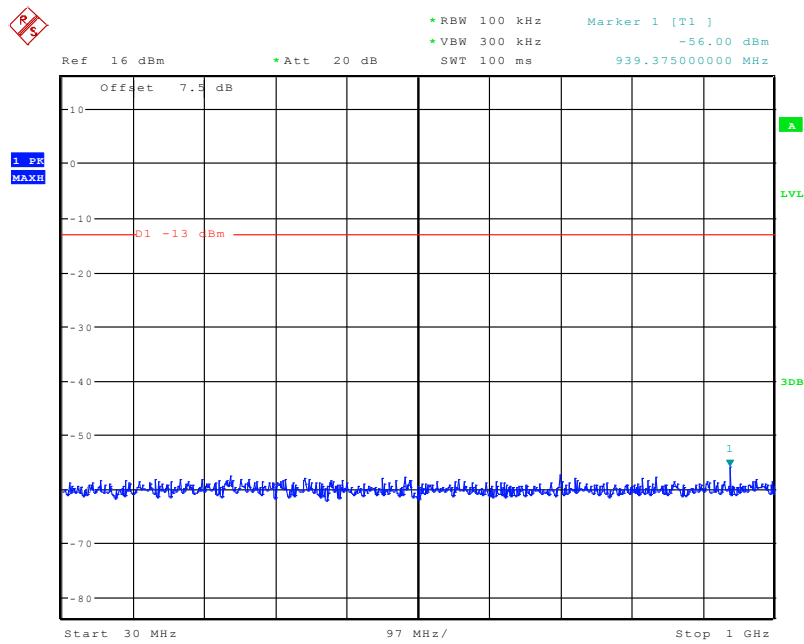
Date: 13.MAR.2020 11:43:54

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



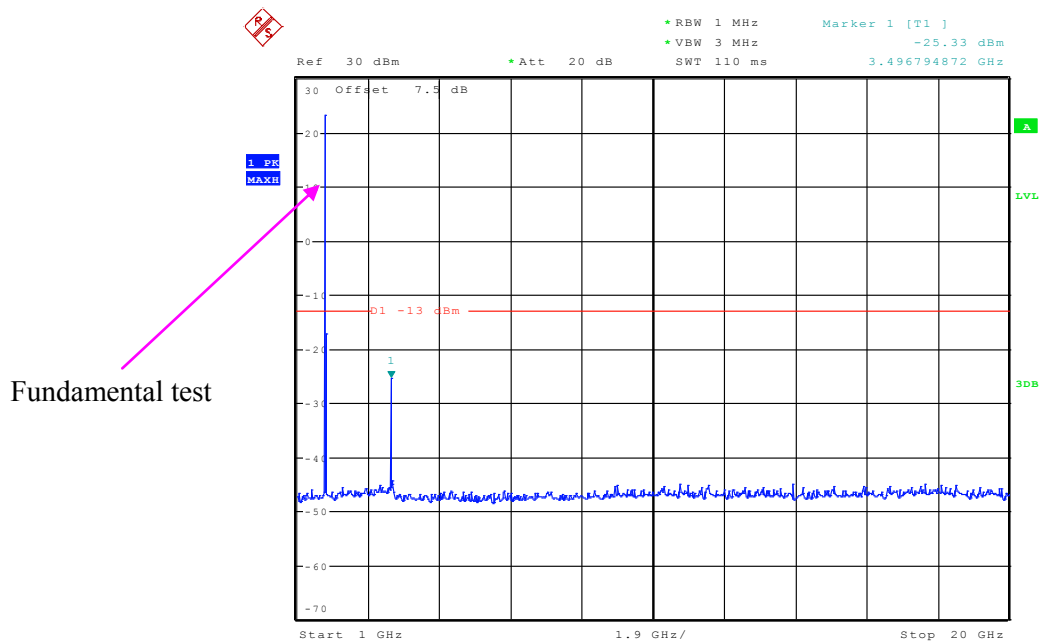
Date: 13.MAR.2020 11:44:04

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



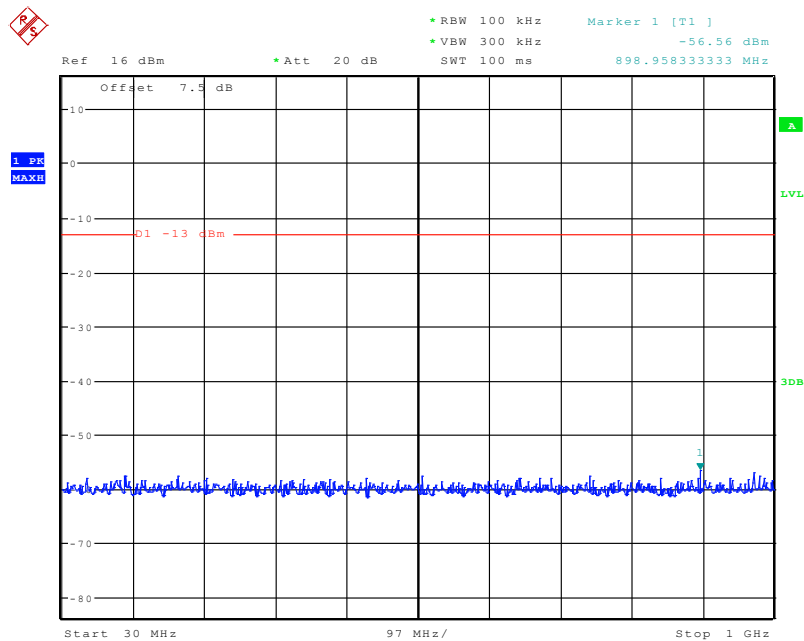
Date: 3.NOV.2020 13:58:08

1 GHz - 20 GHz (1.4 MHz, High Channel)



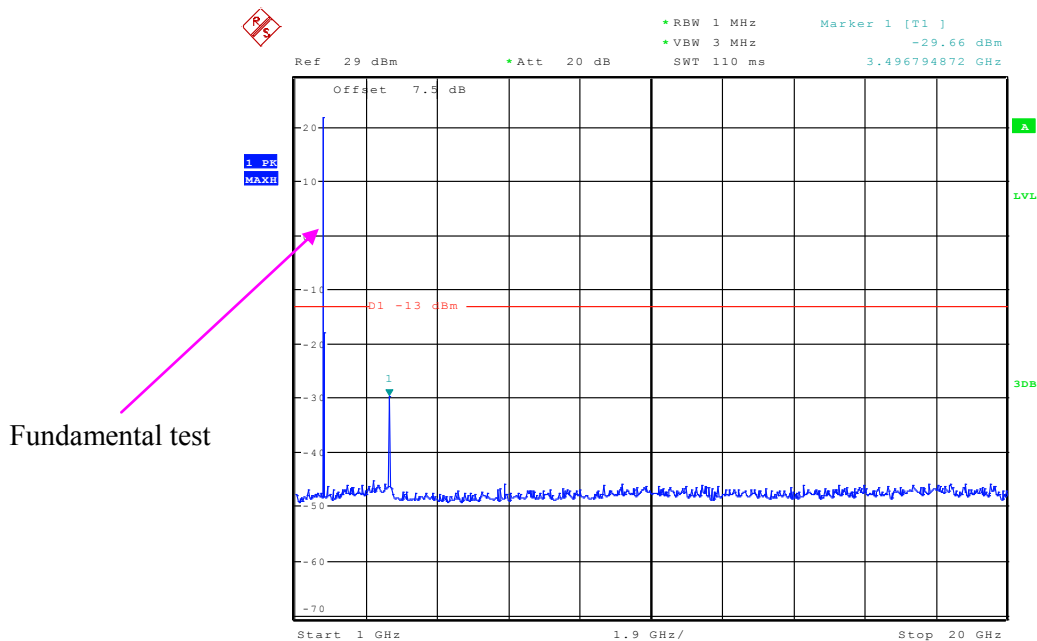
Date: 3.NOV.2020 13:57:44

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



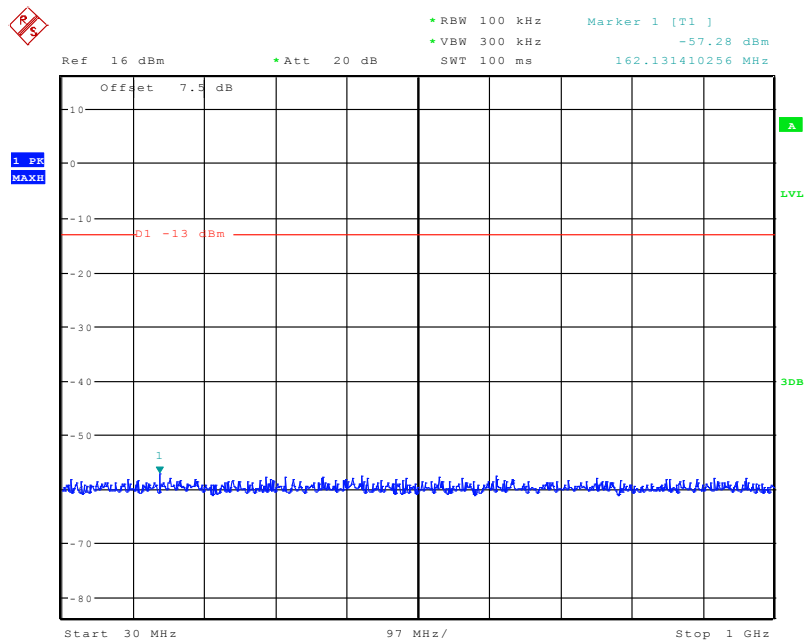
Date: 3.NOV.2020 14:00:50

1 GHz – 20 GHz (3.0 MHz, High Channel)



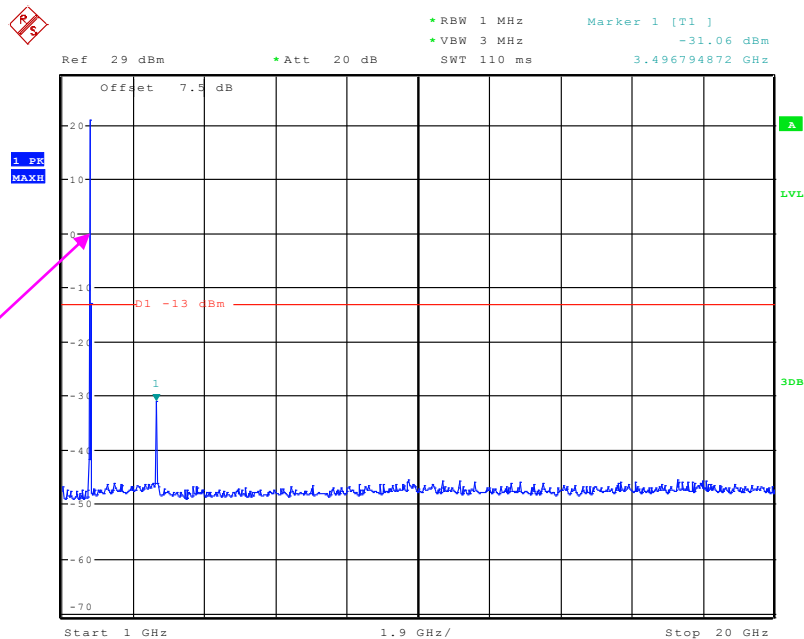
Date: 3.NOV.2020 14:20:11

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



Date: 3.NOV.2020 14:01:32

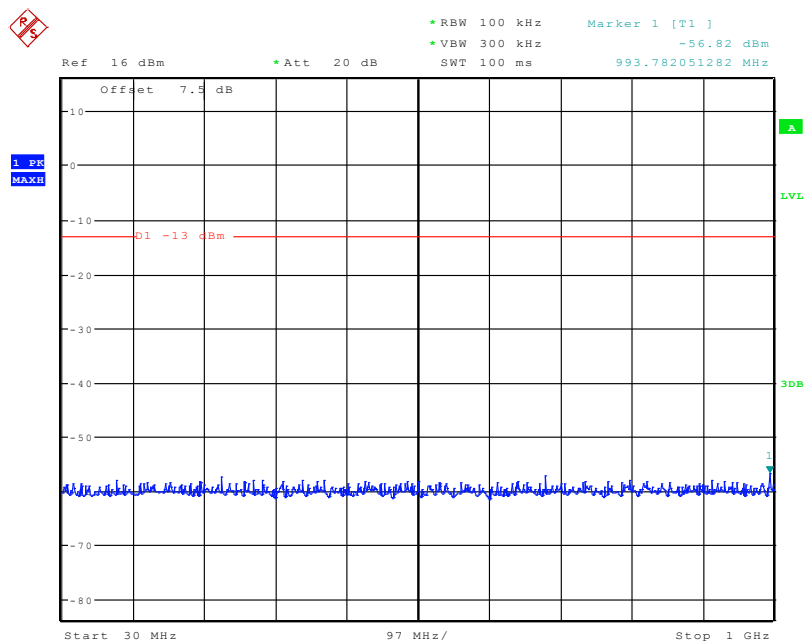
1 GHz - 20 GHz (5.0 MHz, High Channel)



Fundamental test

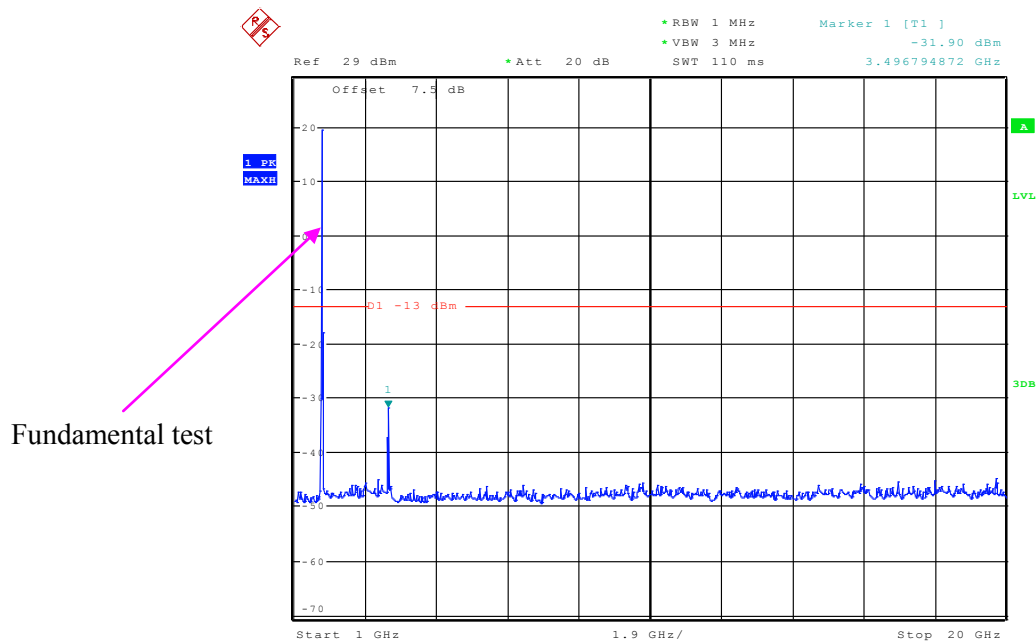
Date: 3.NOV.2020 14:17:58

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



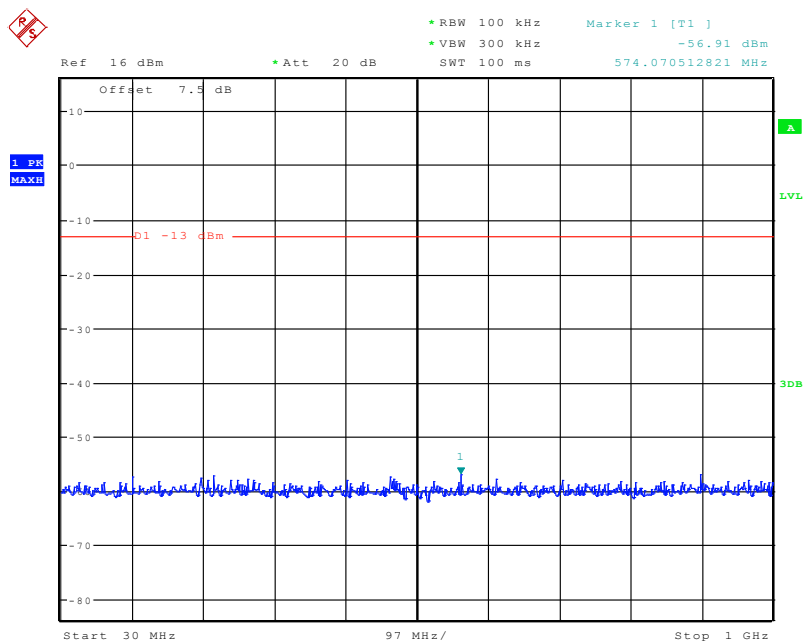
Date: 3.NOV.2020 14:04:59

1 GHz – 20 GHz (10.0 MHz, High Channel)



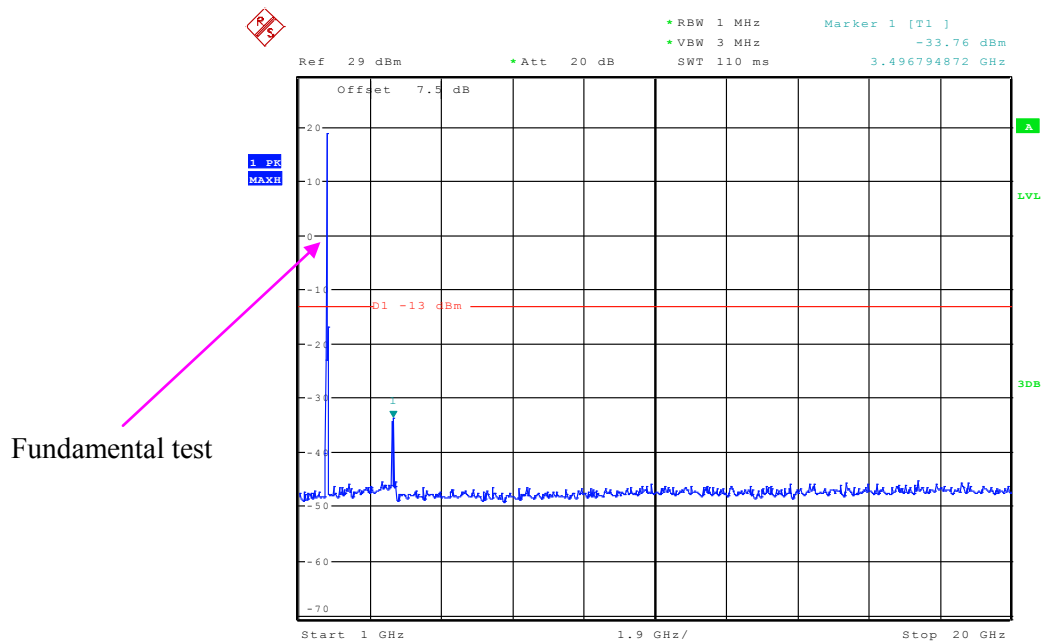
Date: 3.NOV.2020 14:12:47

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



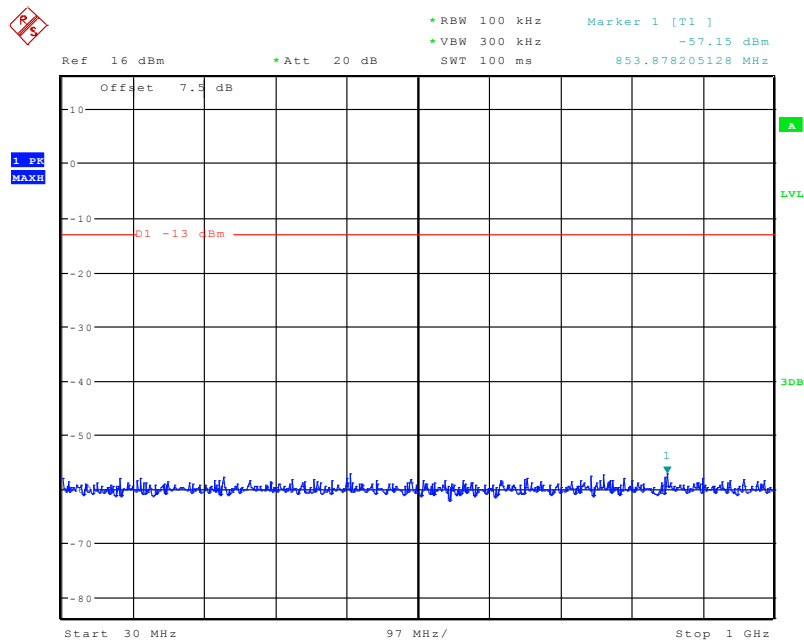
Date: 3.NOV.2020 14:05:23

1 GHz – 20 GHz (15.0 MHz, High Channel)



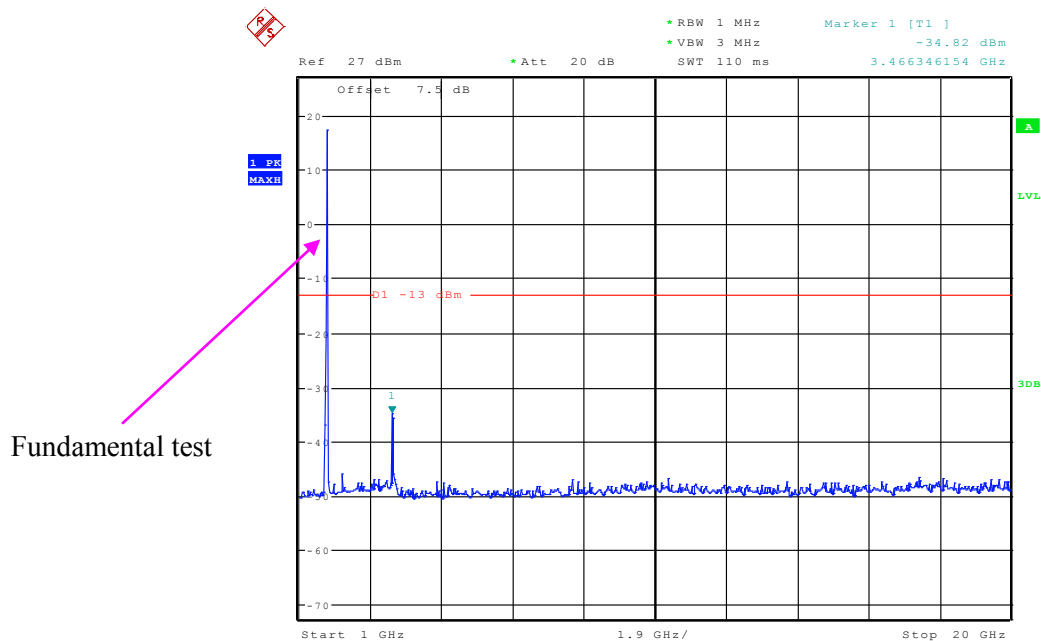
Date: 3.NOV.2020 14:11:45

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

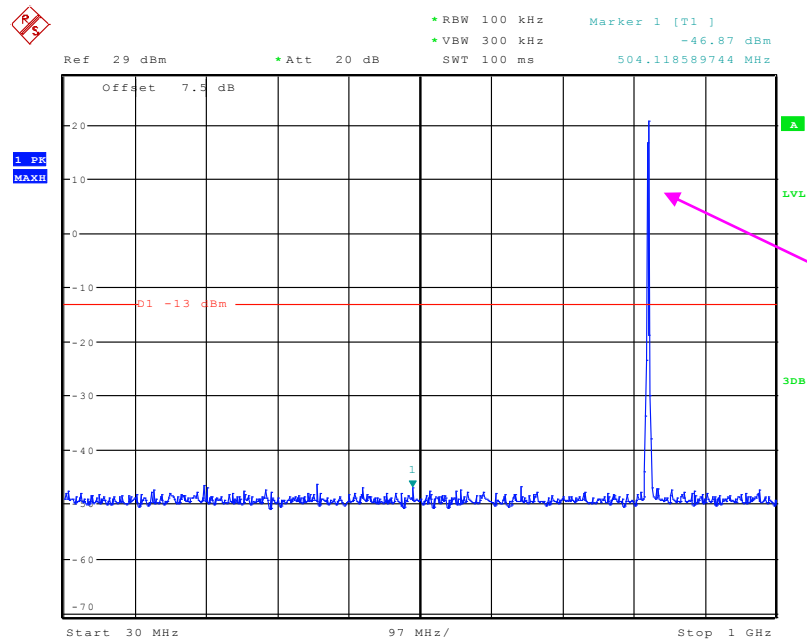


Date: 3.NOV.2020 14:06:50

1 GHz – 20 GHz (20.0 MHz, High Channel)

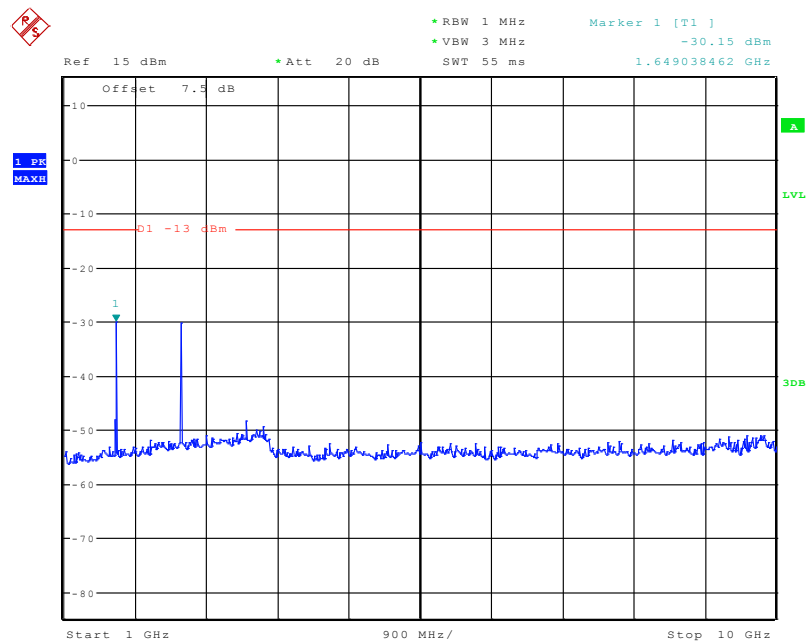


Date: 3.NOV.2020 14:07:45

LTE Band 5:**30 MHz - 1 GHz (1.4 MHz, Low Channel)**

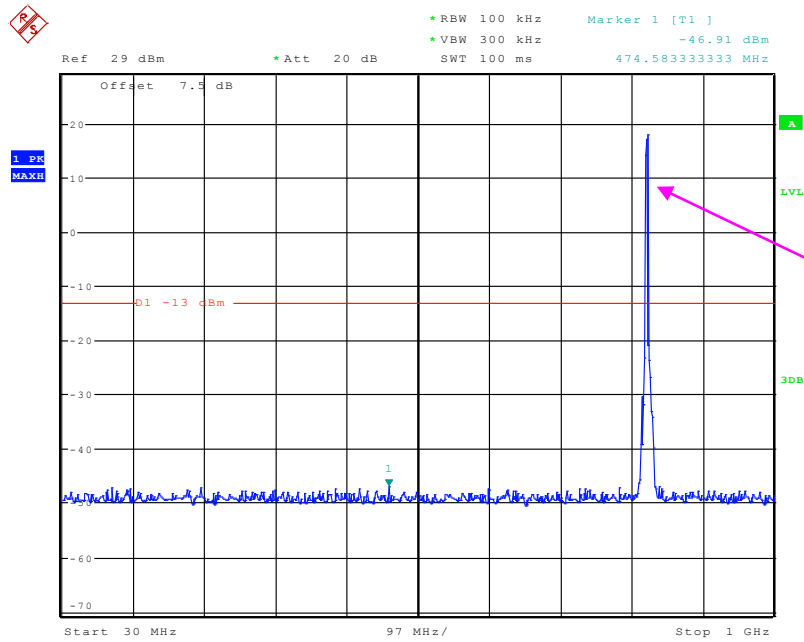
Fundamental test

Date: 3.NOV.2020 13:52:21

1 GHz - 10 GHz (1.4 MHz, Low Channel)

Date: 3.NOV.2020 13:54:09

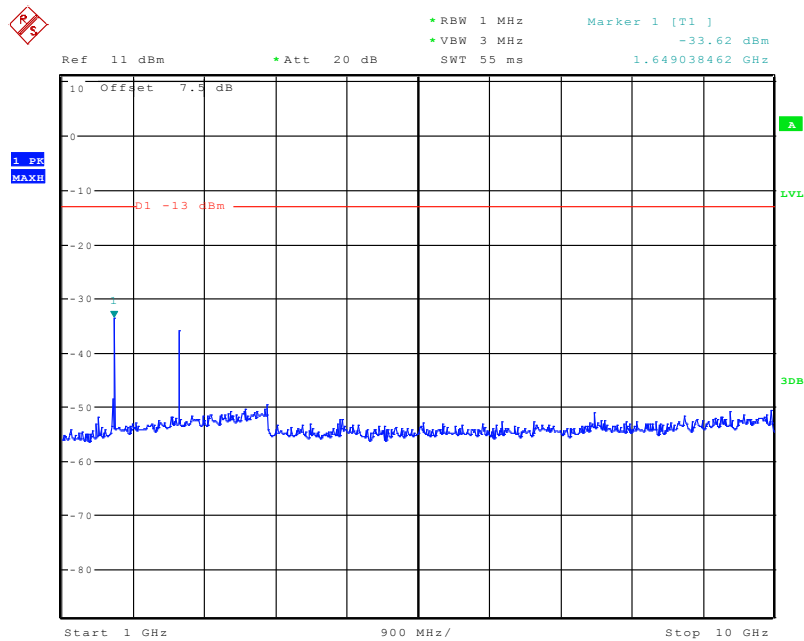
30 MHz - 1 GHz (3.0 MHz, Low Channel)



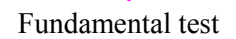
Fundamental test

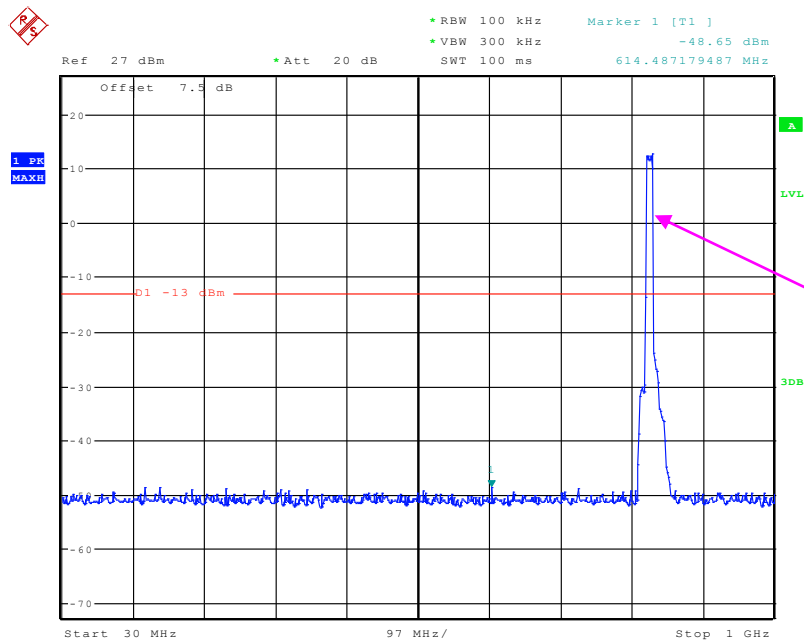
Date: 3.NOV.2020 13:51:28

1 GHz - 10 GHz (3.0 MHz, Low Channel)



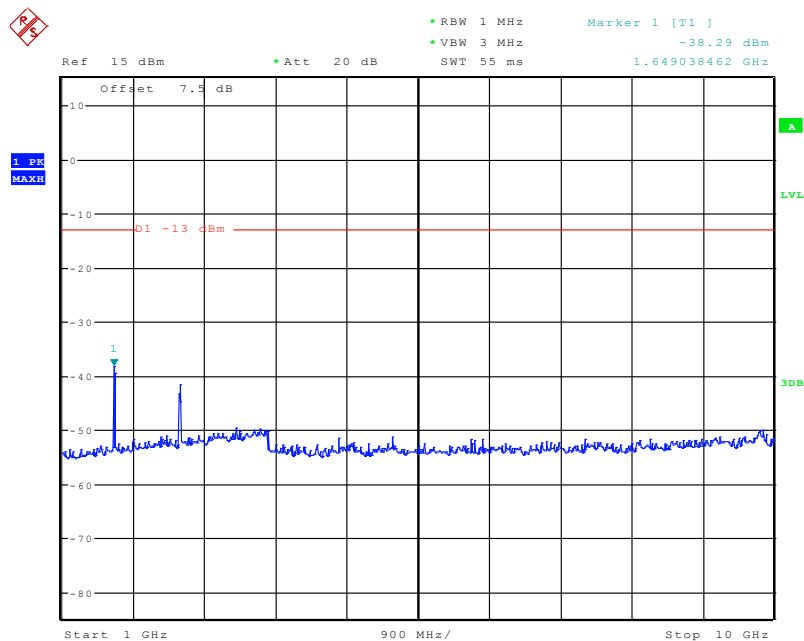
Date: 3.NOV.2020 13:48:23



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

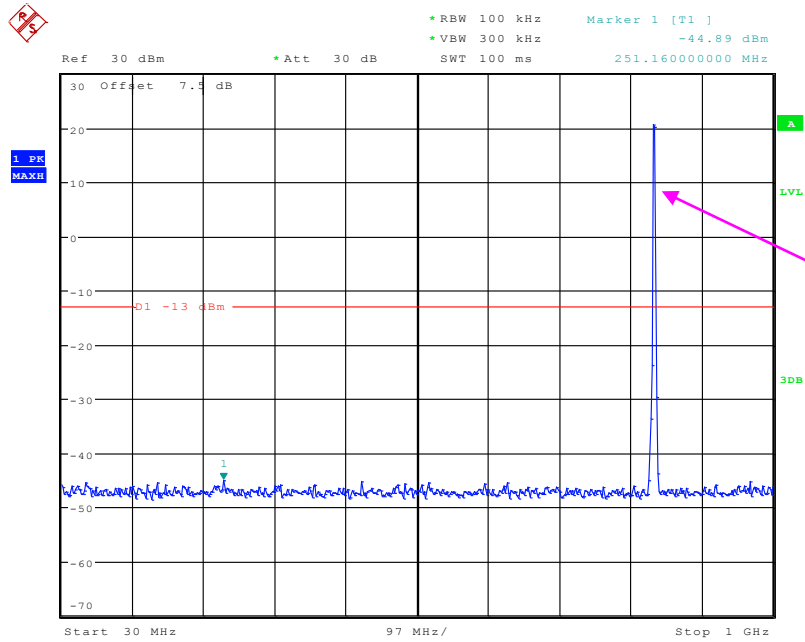
Fundamental test

Date: 3.NOV.2020 13:37:41

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

Date: 3.NOV.2020 13:35:29

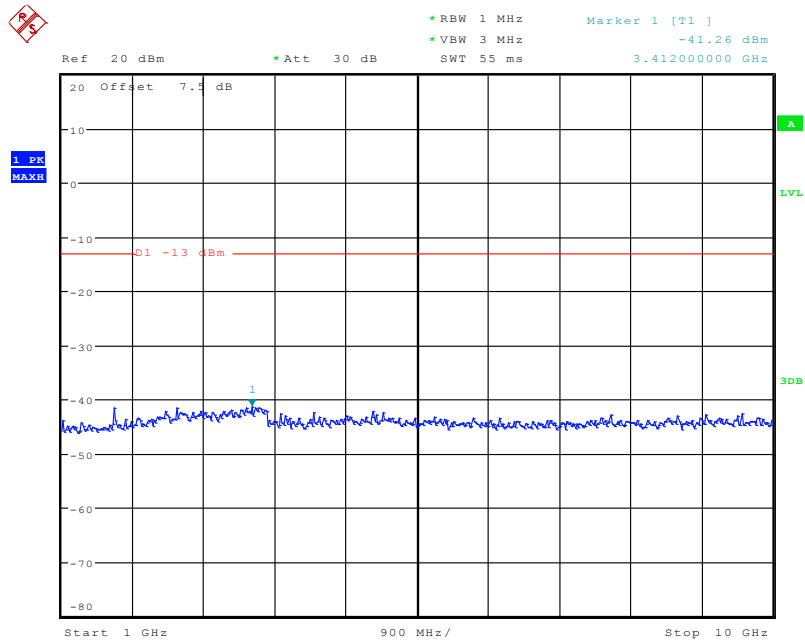
30 MHz - 1 GHz (1.4 MHz, Middle channel)



Fundamental test

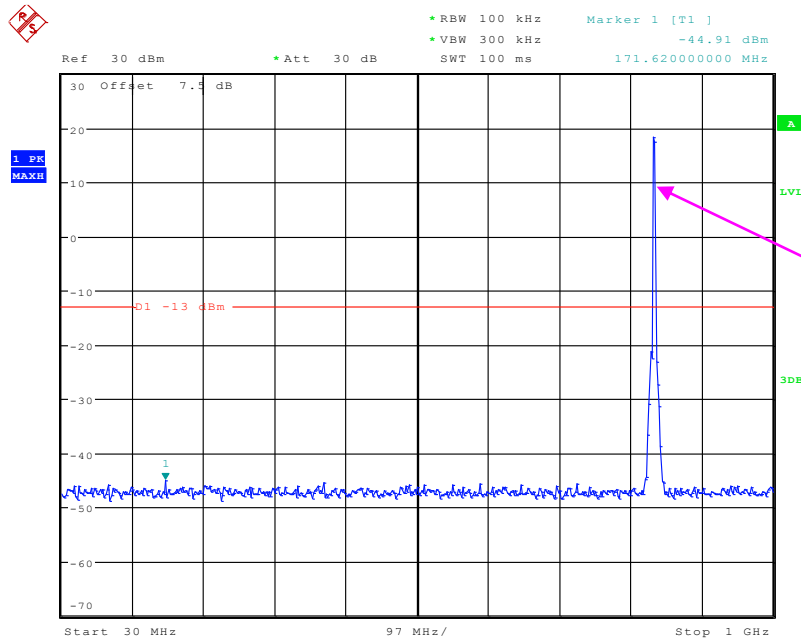
Date: 13.MAR.2020 11:44:22

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



Date: 13.MAR.2020 11:44:35

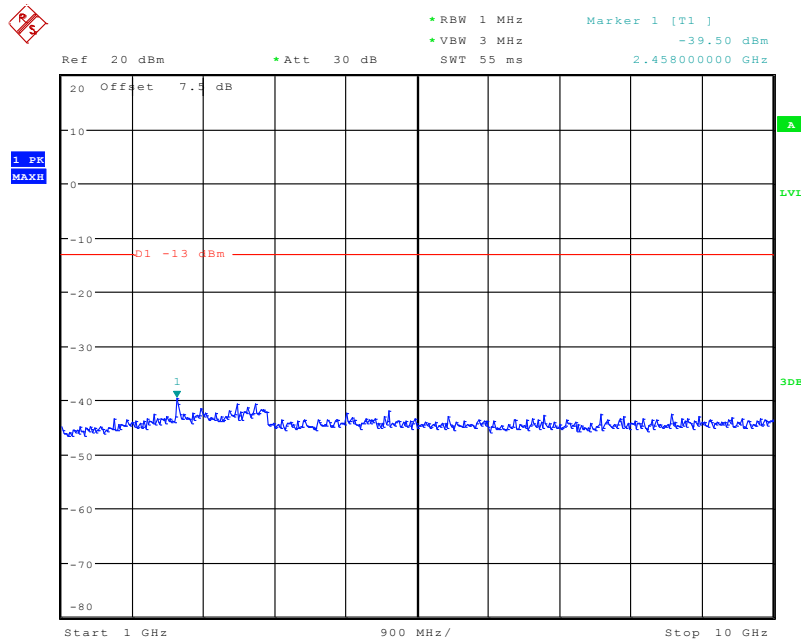
30 MHz - 1 GHz (3.0 MHz, Middle channel)



Fundamental test

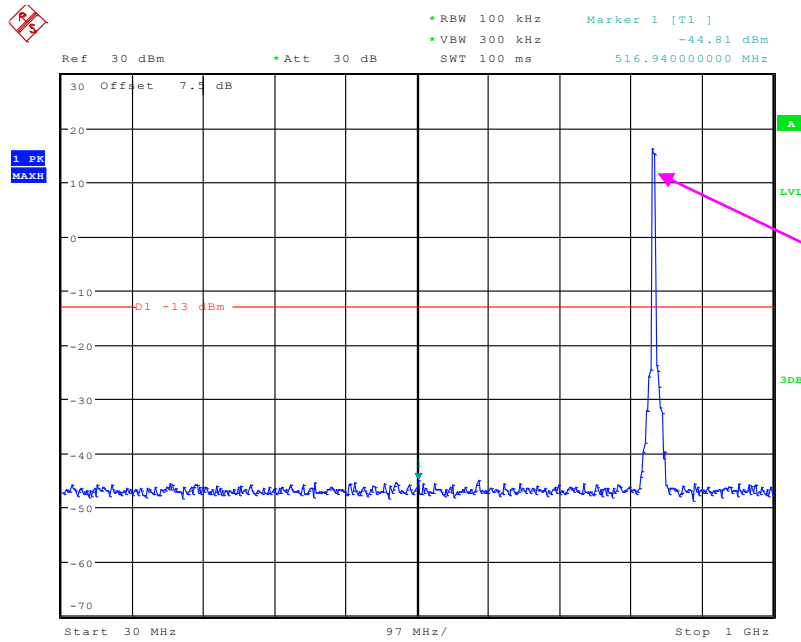
Date: 13.MAR.2020 11:44:53

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



Date: 13.MAR.2020 11:45:03

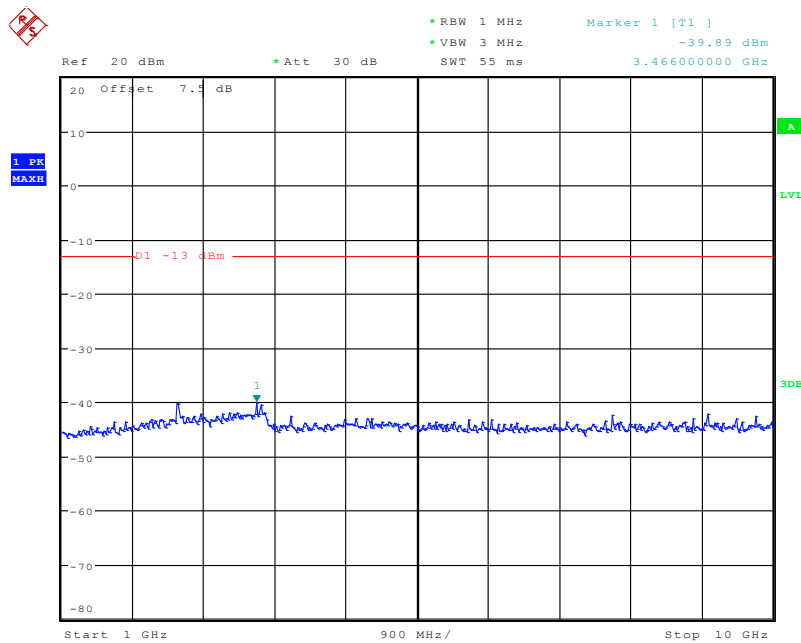
30 MHz - 1 GHz (5.0 MHz, Middle channel)



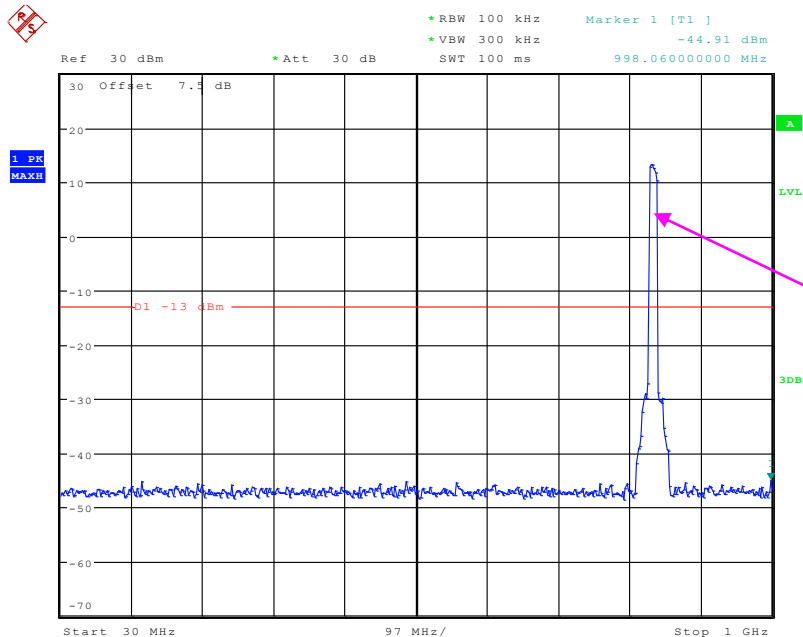
Fundamental test

Date: 13.MAR.2020 11:45:24

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

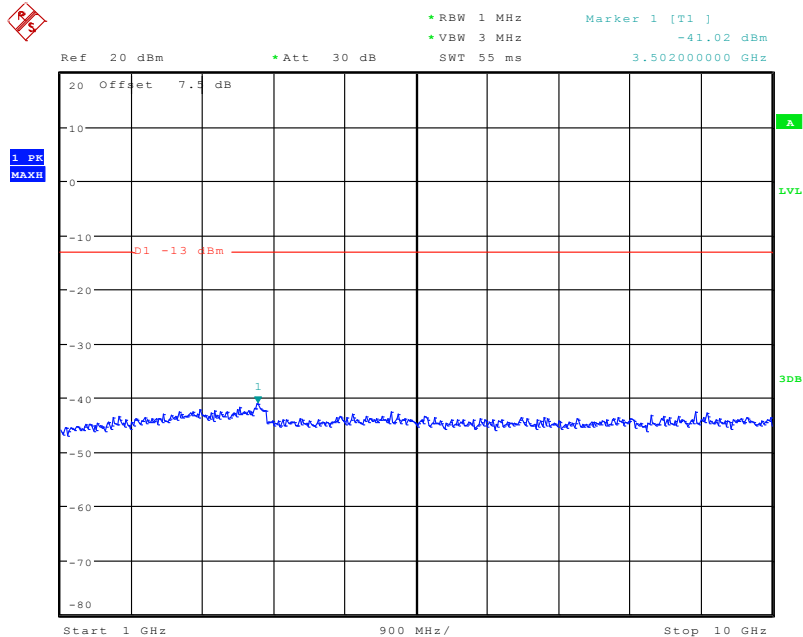


Date: 13.MAR.2020 11:45:35



Fundamental test

Date: 13.MAR.2020 11:45:53

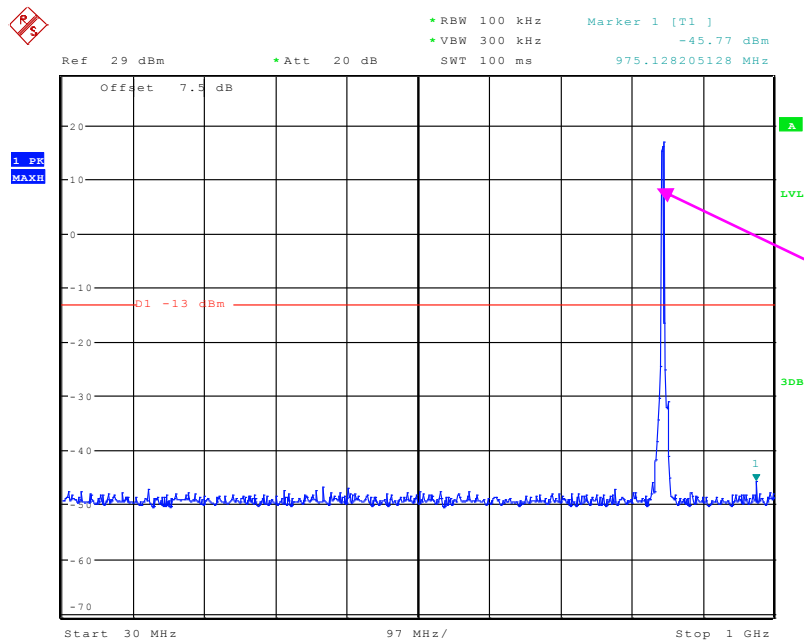


Date: 13.MAR.2020 11:46:04

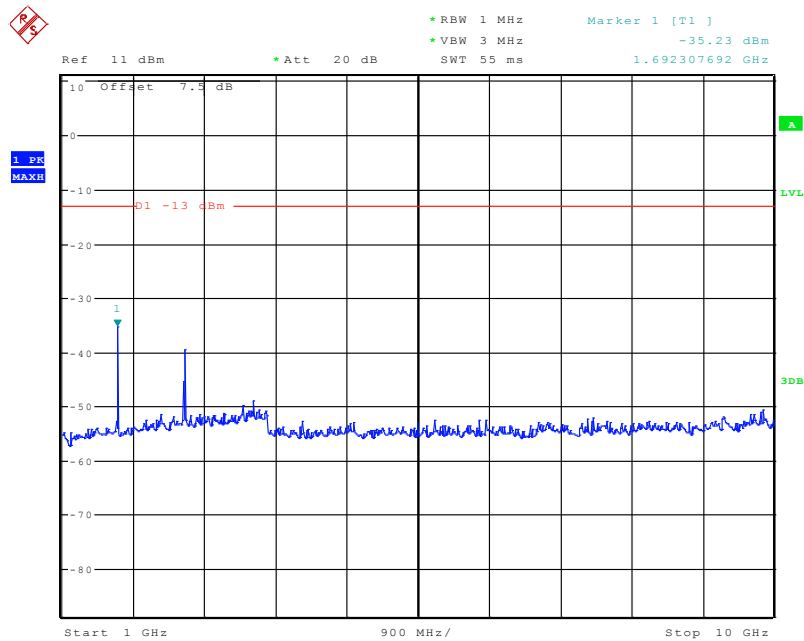


Date: 3.NOV.2020 13:53:07

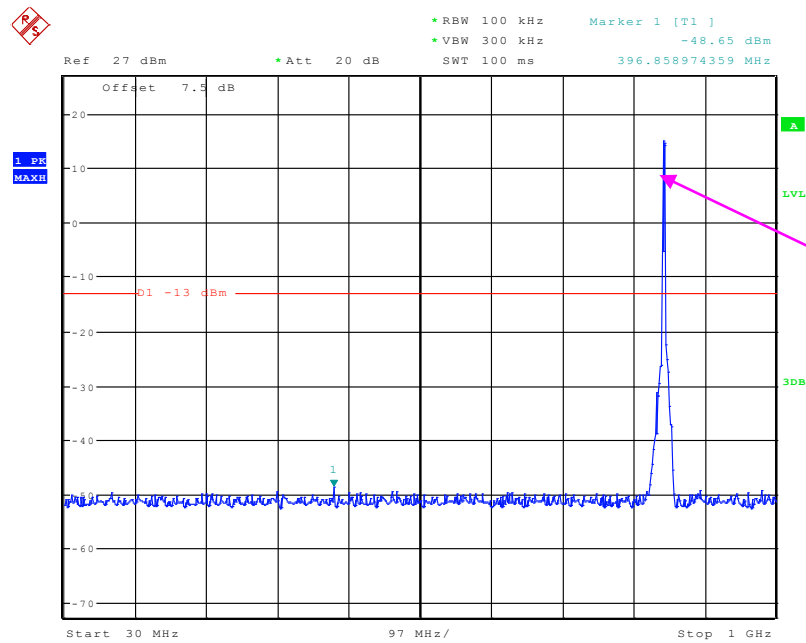


30 MHz - 1 GHz (3.0 MHz, High Channel)

Date: 3.NOV.2020 13:49:52

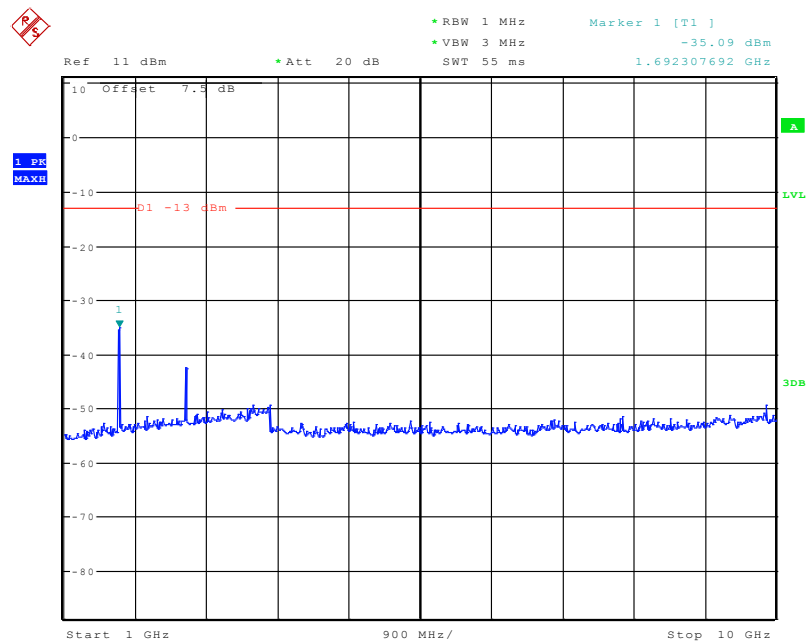
1 GHz - 10 GHz (3.0 MHz, High Channel)

Date: 3.NOV.2020 13:48:52

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

Fundamental test

Date: 3.NOV.2020 13:46:14

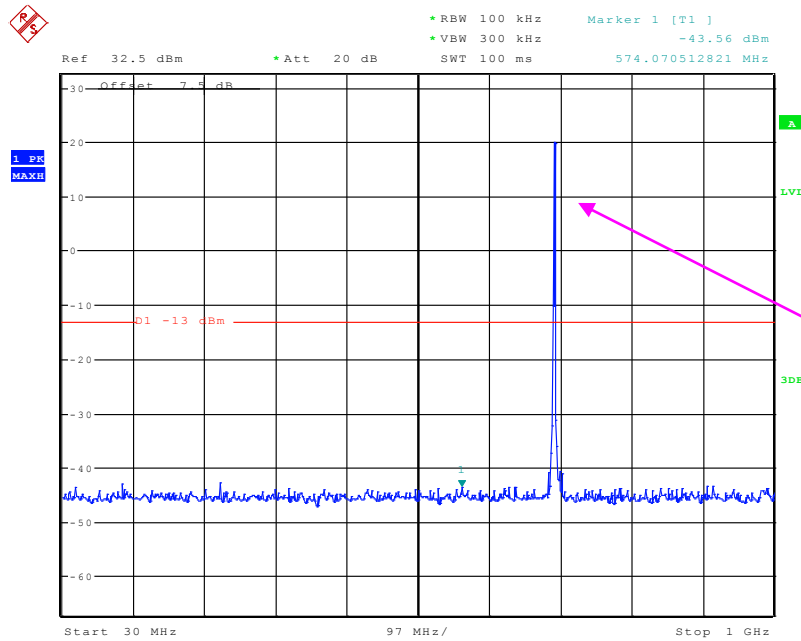
1 GHz - 10 GHz (5.0 MHz, High Channel)

Date: 3.NOV.2020 13:46:51



LTE Band 12:

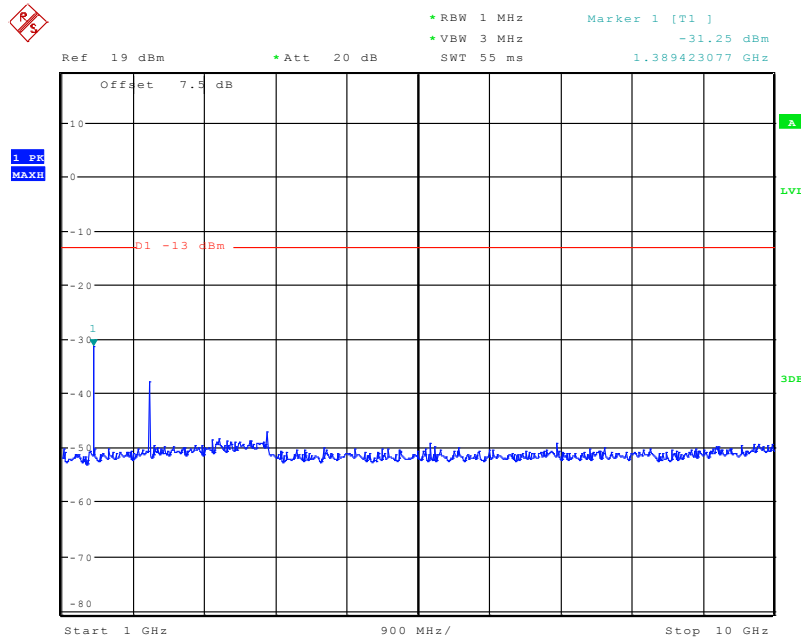
30 MHz - 1 GHz (1.4 MHz, Middle channel)



Fundamental test

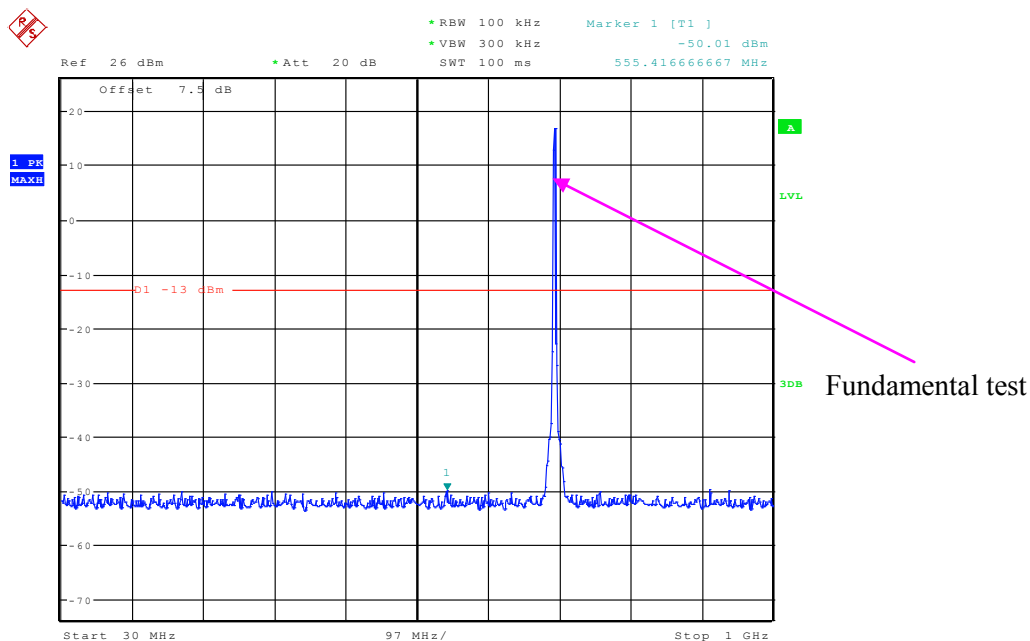
Date: 3.NOV.2020 12:59:42

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



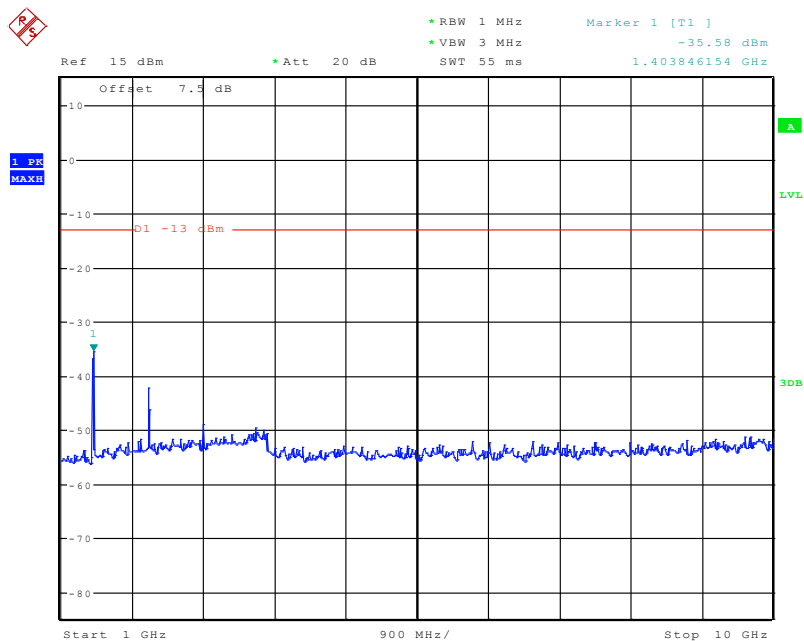
Date: 3.NOV.2020 13:00:28

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



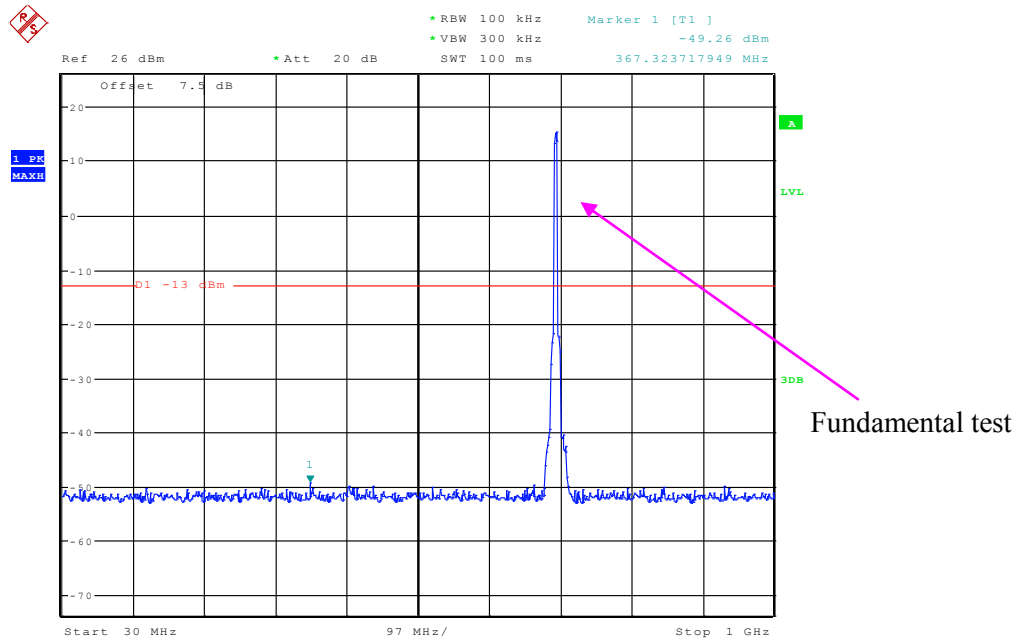
Date: 3.NOV.2020 13:06:09

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



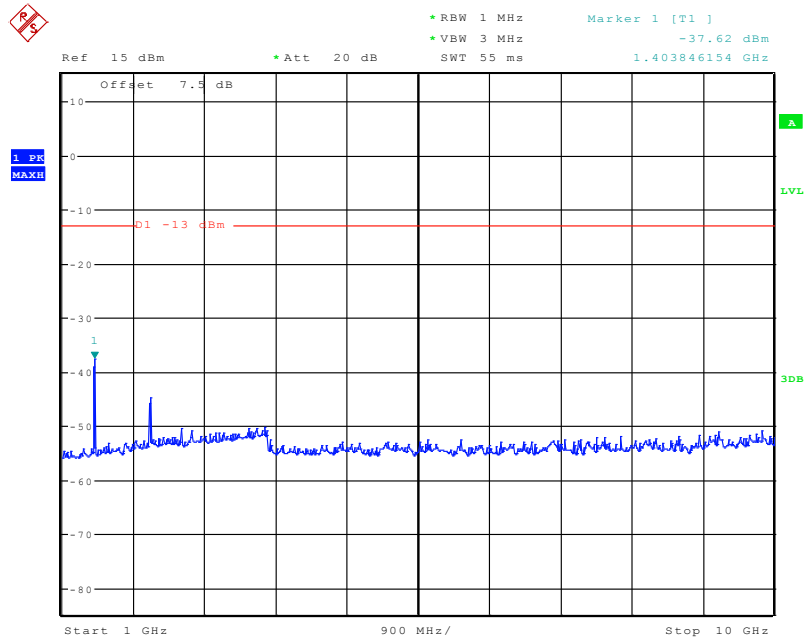
Date: 3.NOV.2020 13:05:42

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

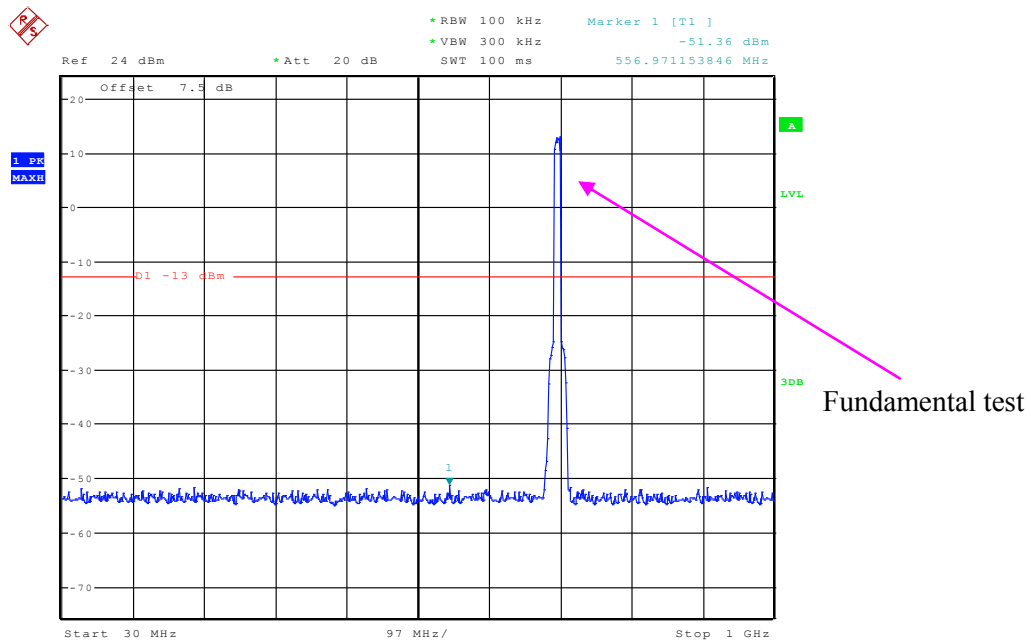


Date: 3.NOV.2020 13:07:25

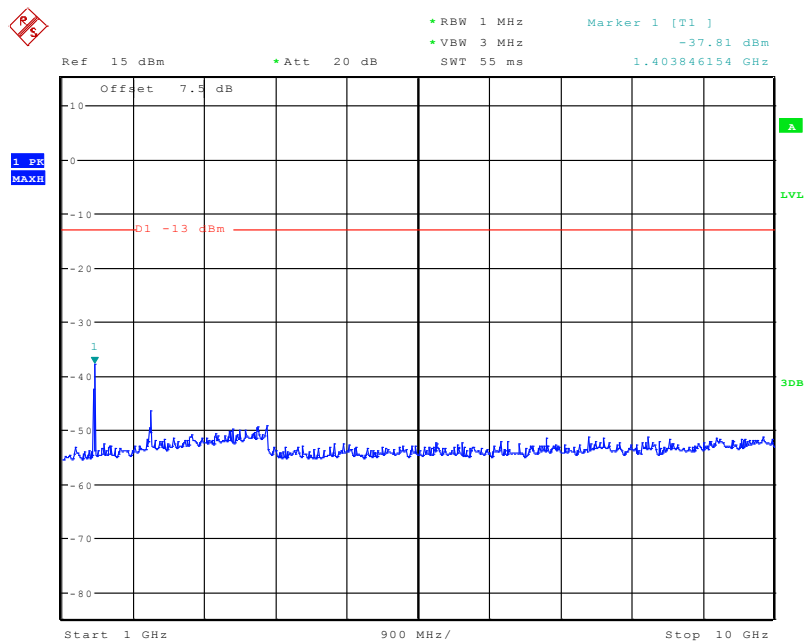
1 GHz - 10 GHz (5.0 MHz, Middle channel)



Date: 3.NOV.2020 13:11:12

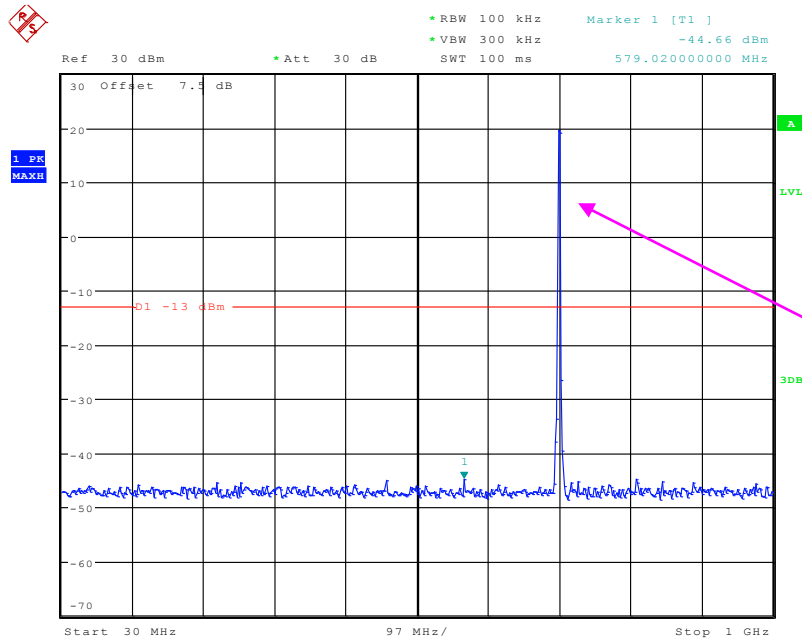
30 MHz - 1 GHz (10.0 MHz, Middle channel)

Date: 3.NOV.2020 13:14:02

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

Date: 3.NOV.2020 13:12:08

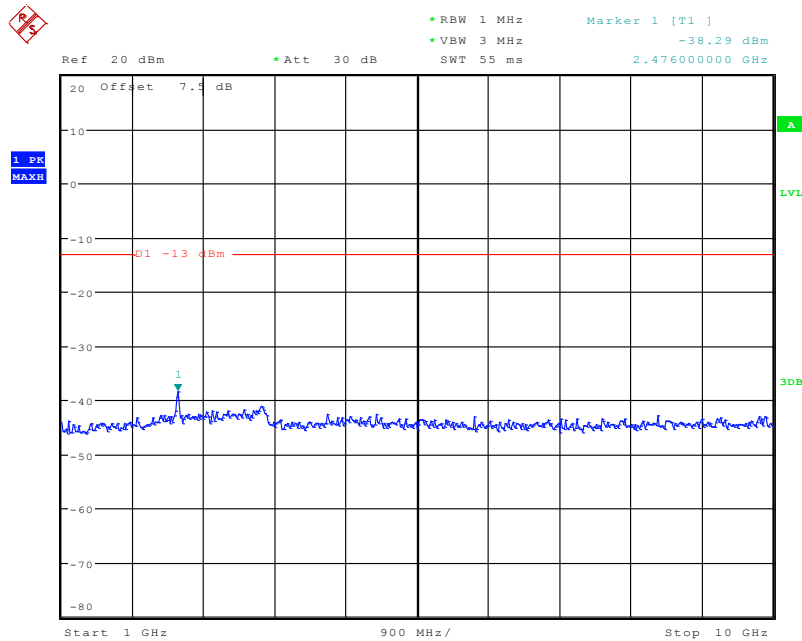
30 MHz - 1 GHz (1.4 MHz, Middle channel)



Fundamental test

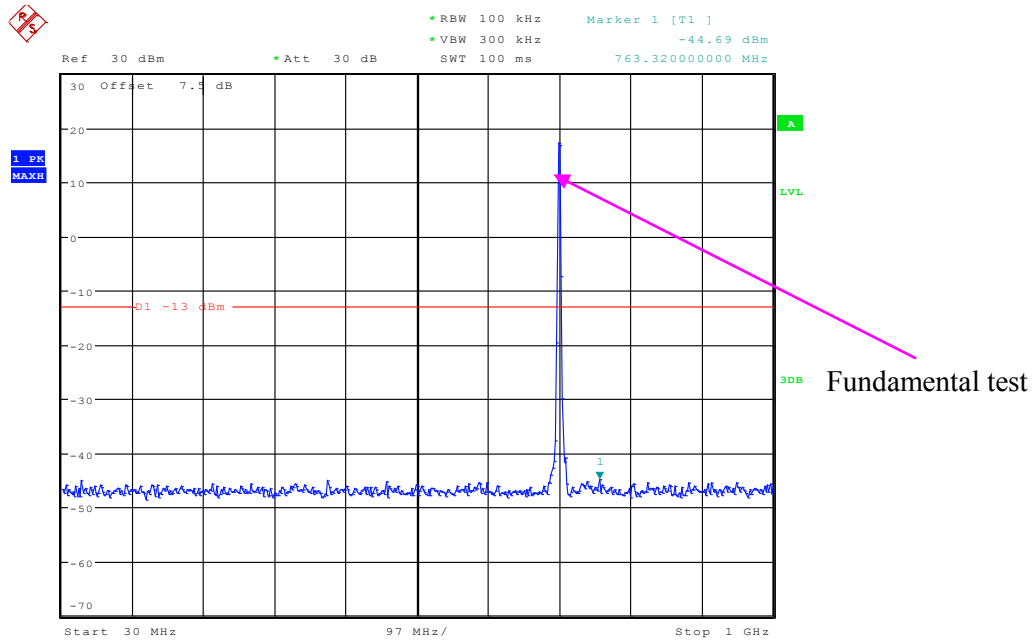
Date: 13.MAR.2020 11:46:22

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



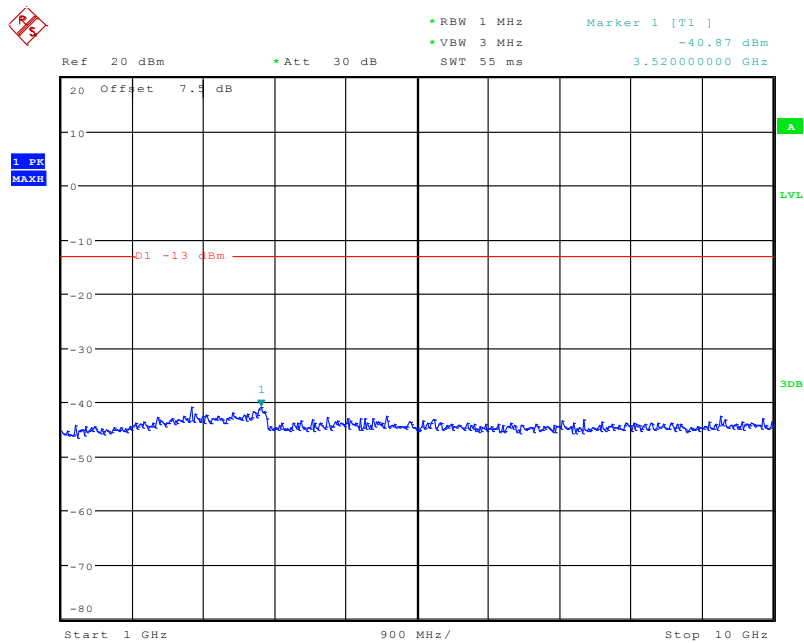
Date: 13.MAR.2020 11:46:32

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



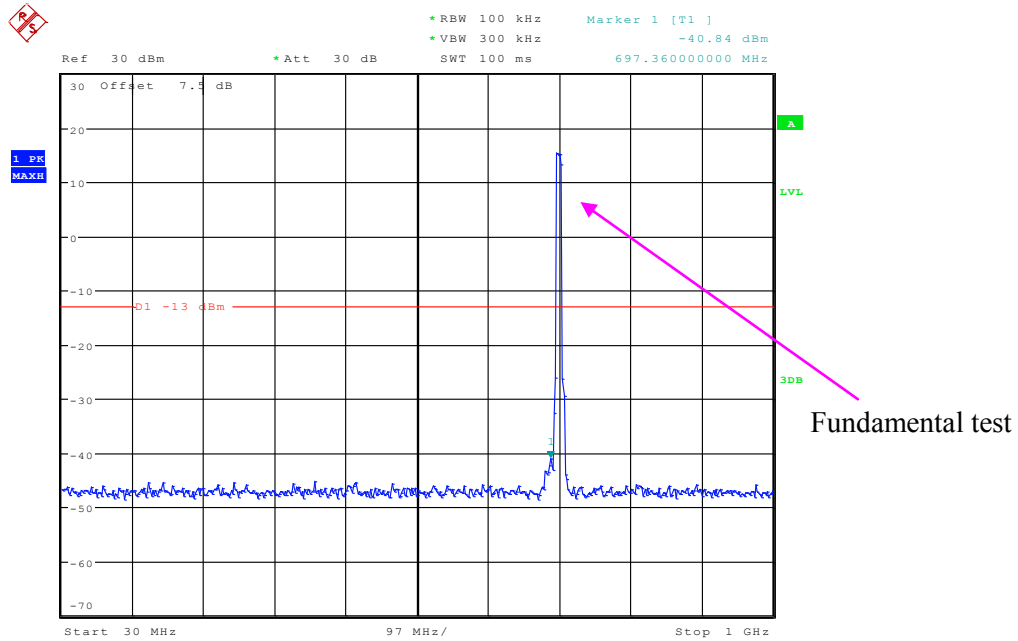
Date: 13.MAR.2020 11:46:52

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



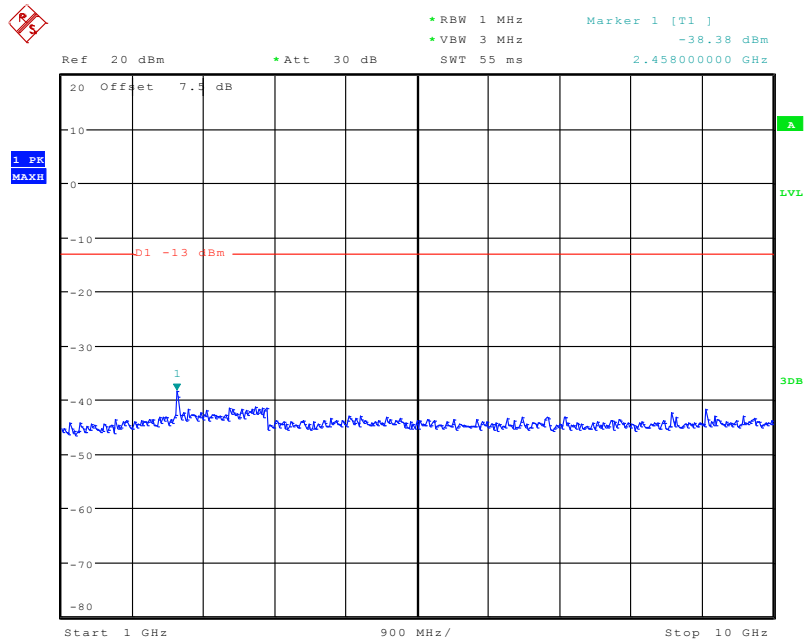
Date: 13.MAR.2020 11:47:03

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

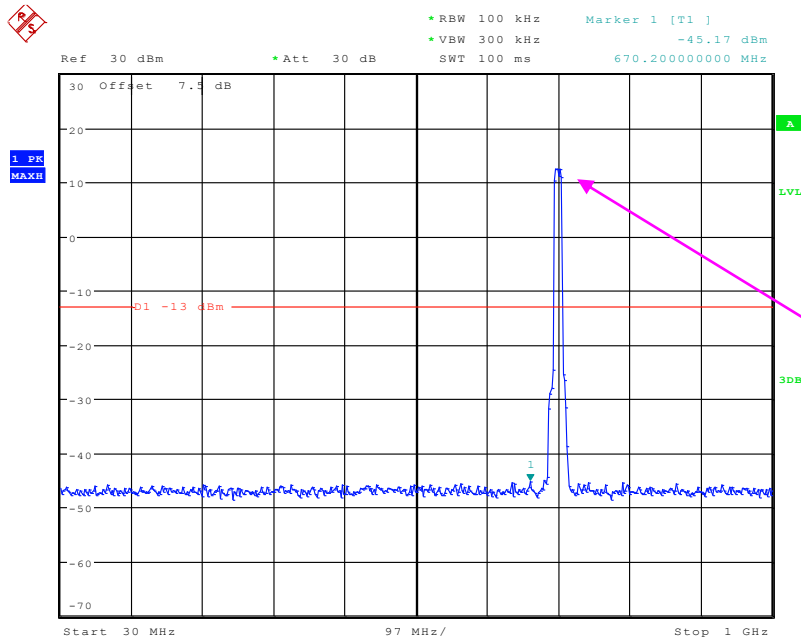


Date: 13.MAR.2020 11:47:21

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

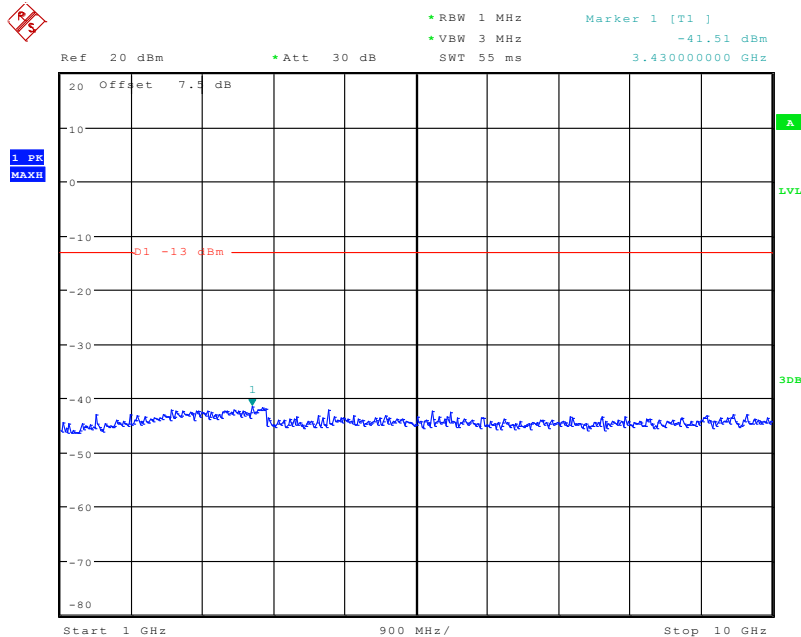


Date: 13.MAR.2020 11:47:31

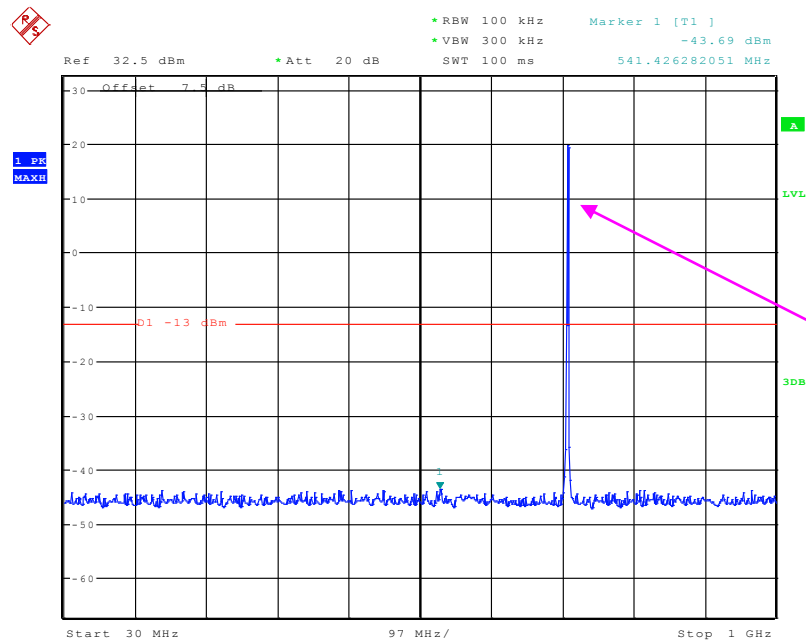


Fundamental test

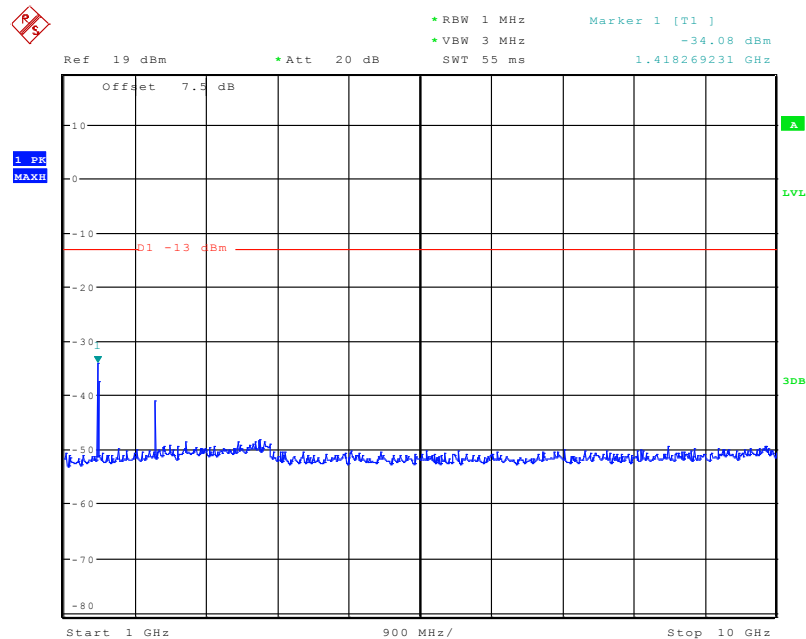
1 GHz – 10 GHz (10.0 MHz, Middle channel)



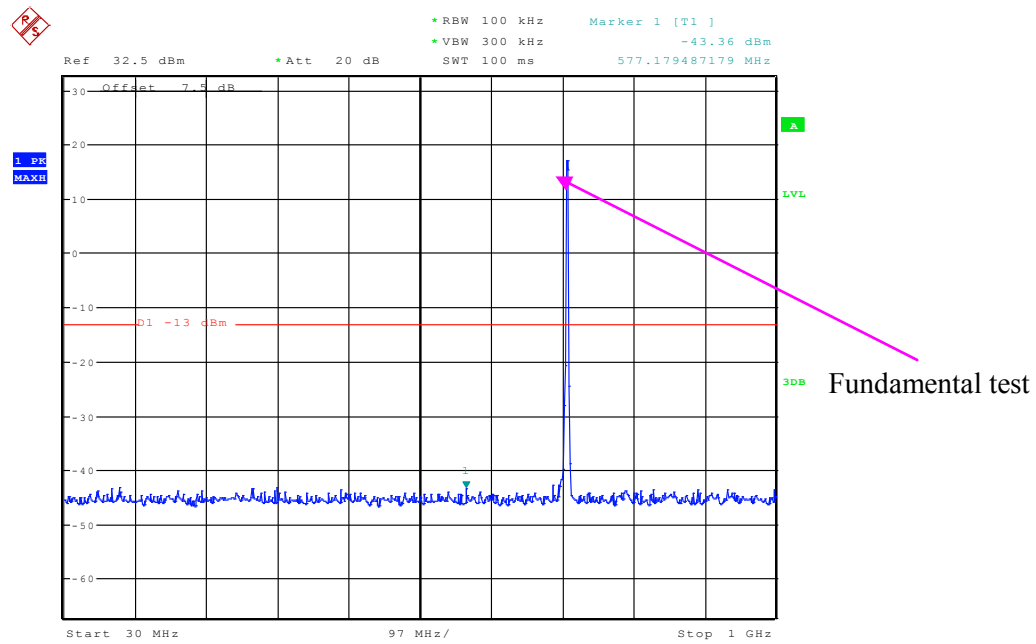
Date: 13.MAR.2020 11:48:04

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

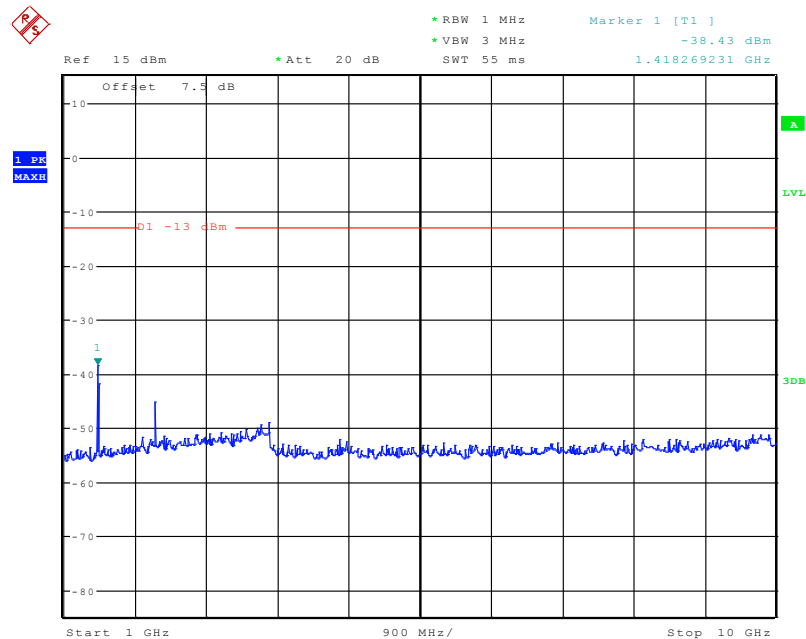
Date: 3.NOV.2020 13:02:50

1 GHz -10GHz (1.4 MHz, , High channel)

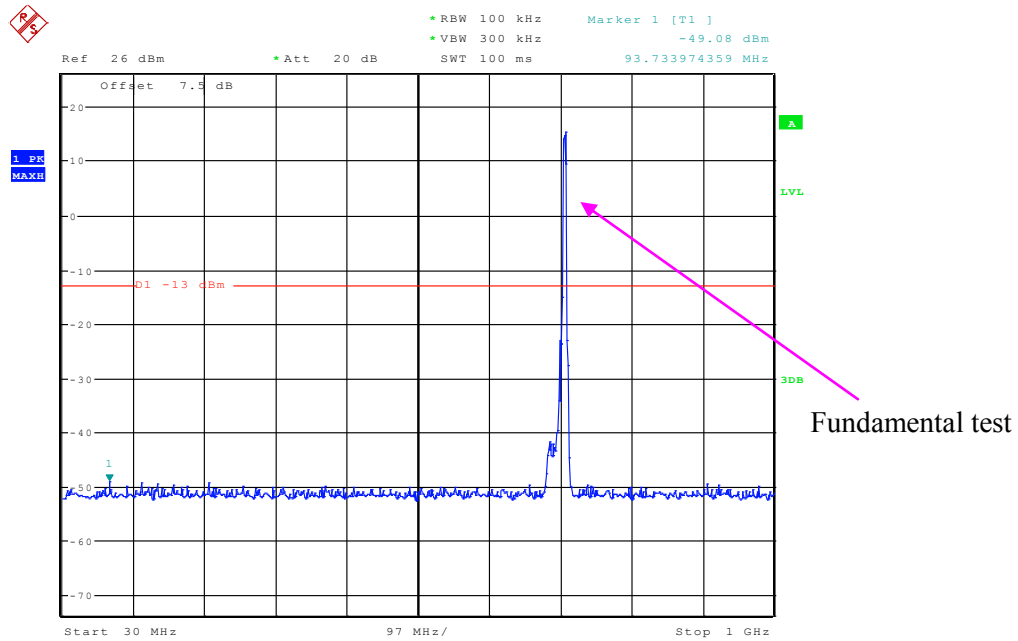
Date: 3.NOV.2020 13:01:13

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

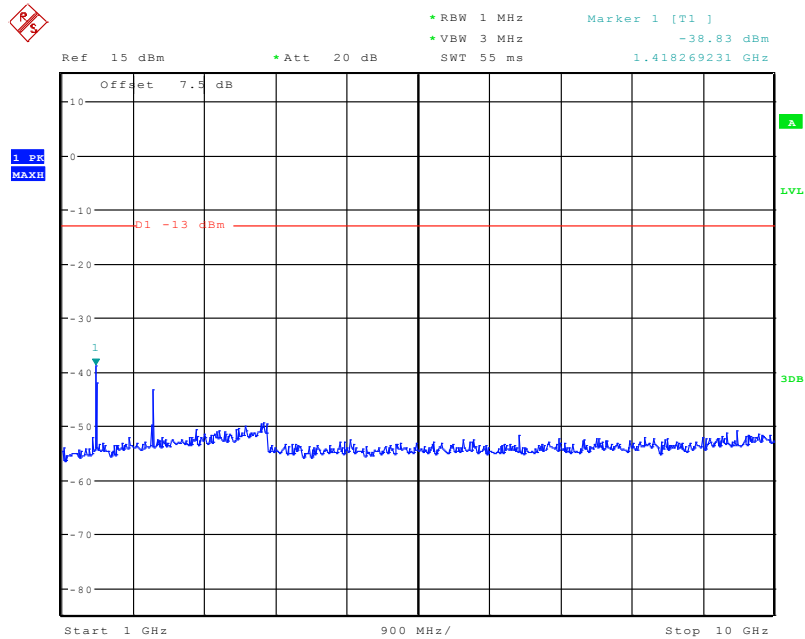
Date: 3.NOV.2020 13:03:40

1 GHz - 10 GHz (3.0 MHz, High channel)

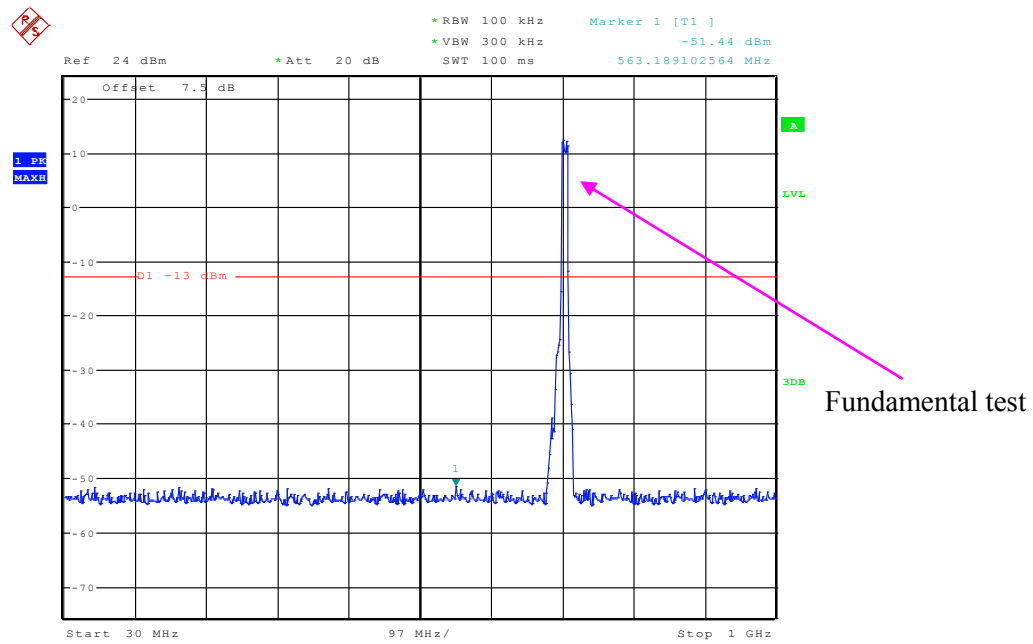
Date: 3.NOV.2020 13:04:51

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

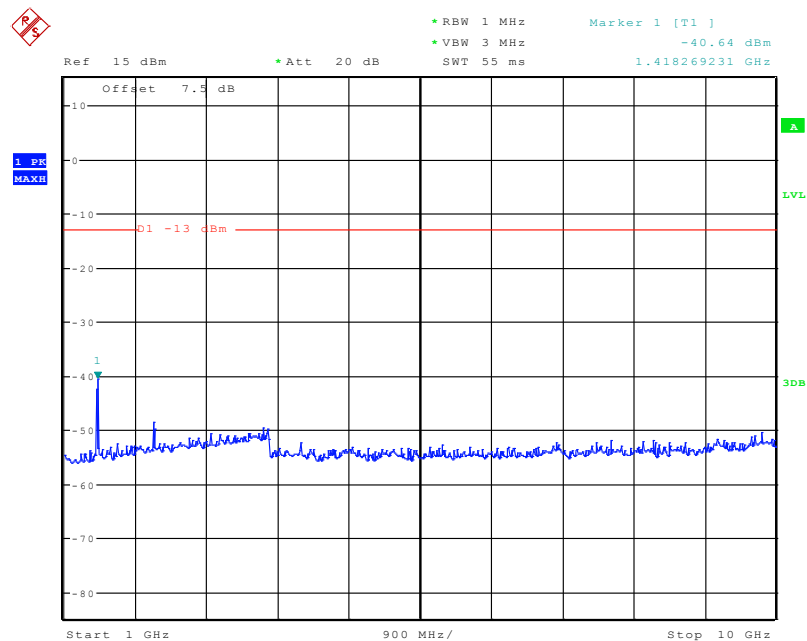
Date: 3.NOV.2020 13:08:50

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

Date: 3.NOV.2020 13:10:33

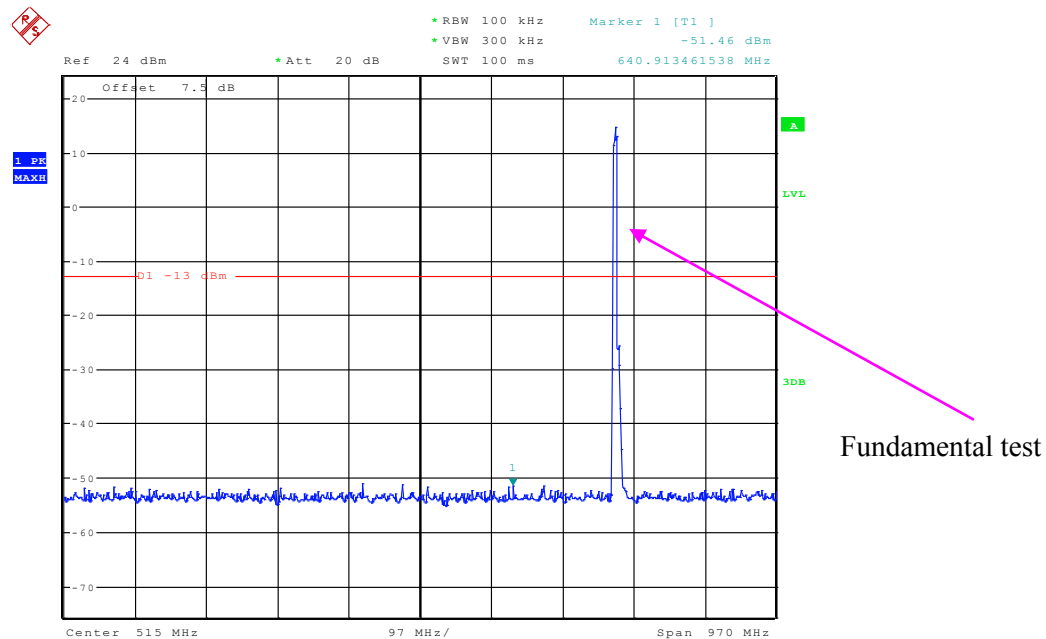
30 MHz - 1 GHz (10.0 MHz, High channel)

Date: 3.NOV.2020 13:13:15

1 GHz - 10 GHz (10.0 MHz, High channel)

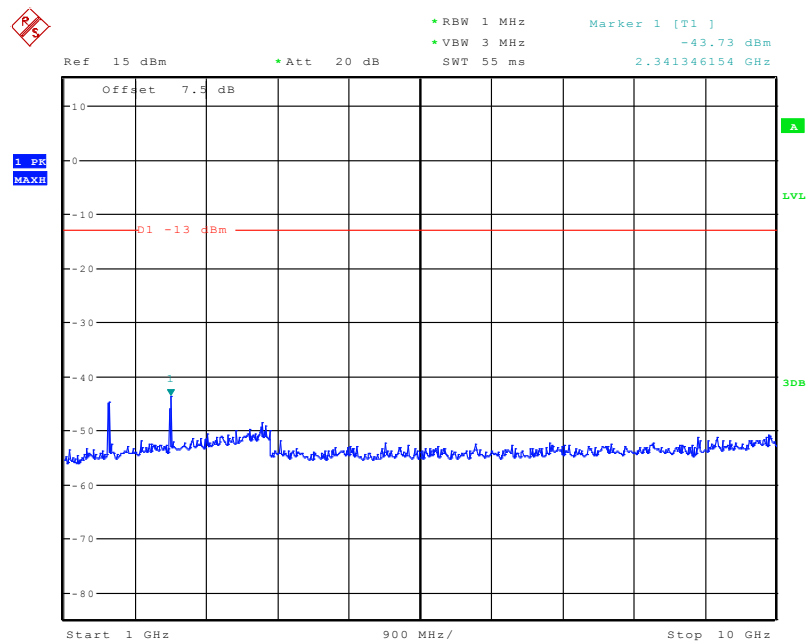
Date: 3.NOV.2020 13:12:38

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

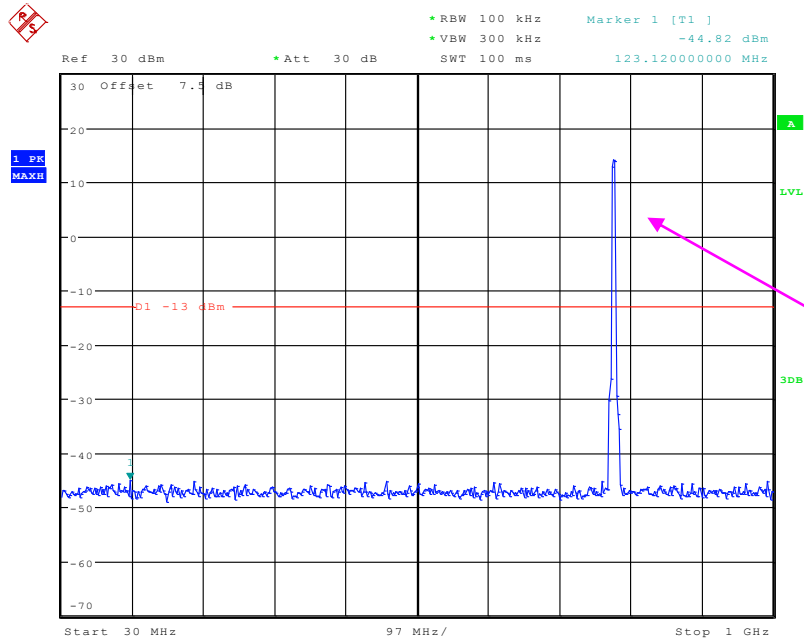


Date: 3.NOV.2020 13:15:45

1 GHz – 10 GHz (5.0 MHz, Low channel)

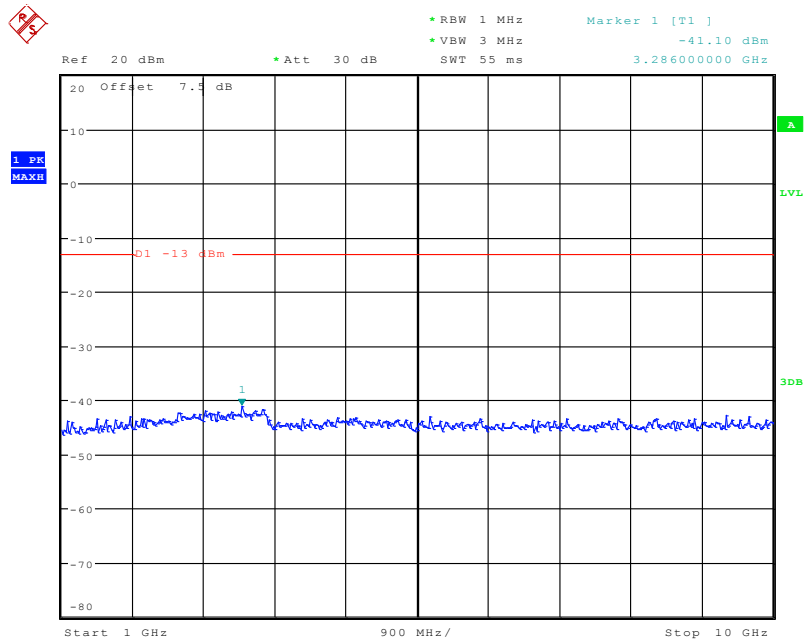


Date: 3.NOV.2020 13:31:55

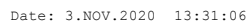
30 MHz - 1 GHz (5.0 MHz, Middle channel)

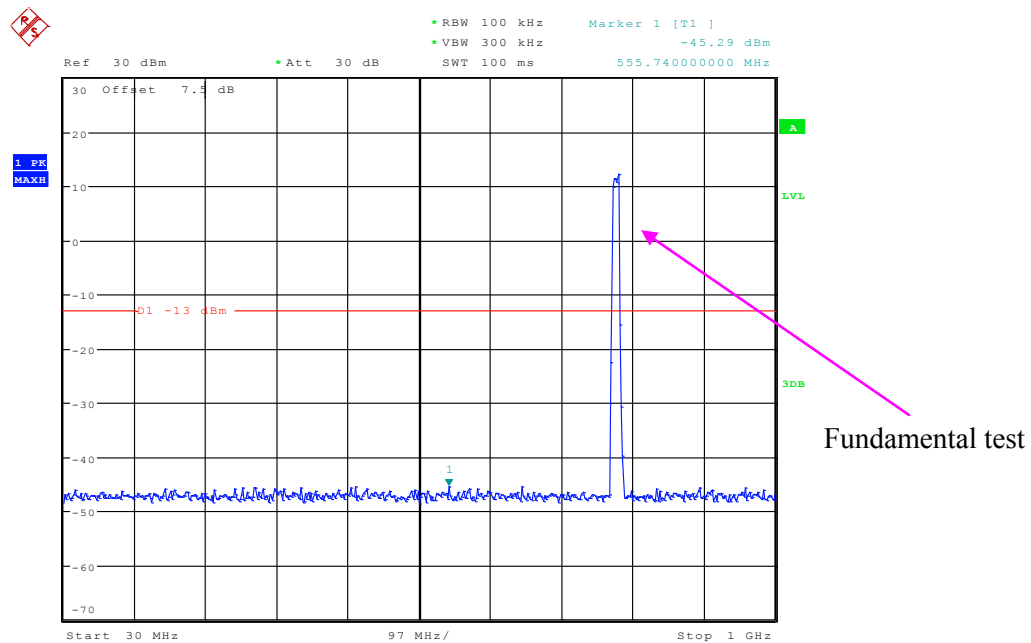
Fundamental test

Date: 13.MAR.2020 11:48:21

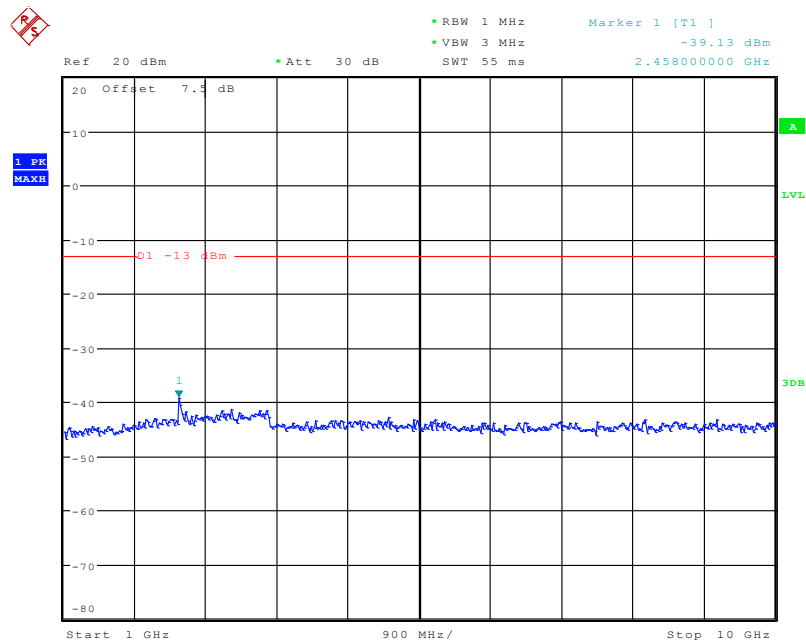
1 GHz - 10 GHz (5.0 MHz, Middle channel)

Date: 13.MAR.2020 11:48:32



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

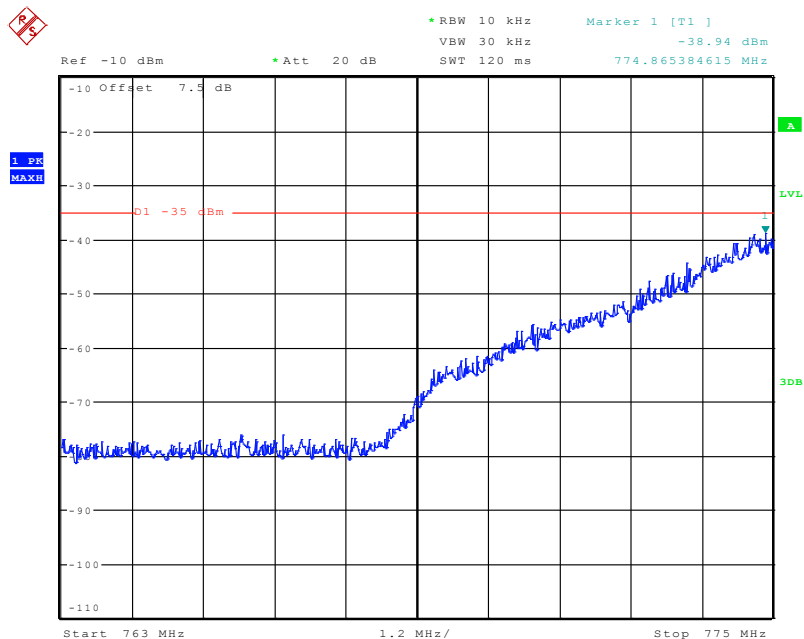
Date: 13.MAR.2020 11:48:51

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

Date: 13.MAR.2020 11:49:01

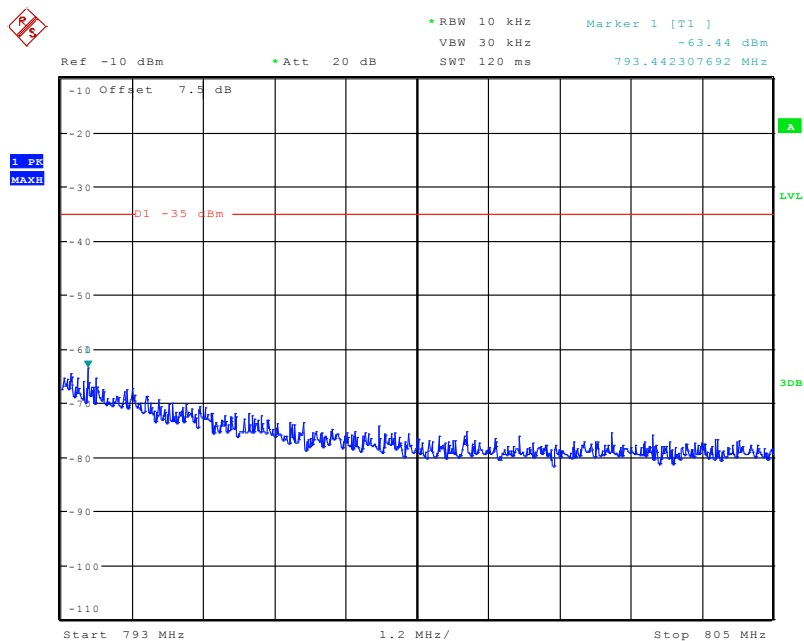
Additional for band 13:

763 MHz - 775 MHz (5.0 MHz, Low channel)



Date: 5.NOV.2020 13:19:19

793MHz – 805 MHz (5.0 MHz, Low channel)



Date: 5.NOV.2020 13:21:14