FCC PART 27

FCC PART 22H, PART 24E

FCC PART 90

TEST REPORT

For

Xiamen Milesight IoT Co., Ltd.

4/F,NO. 63-2 Wanghai Road, 2nd Software Park,Xiamen ,China

FCC ID: 2AYHY-UG65

Report Type:	**Product Type:**
Original Report	LoRaWAN Gateway

Report Number:	RXM200911054-00B
Report Date:	2021-02-04
Reviewed By:	Jacob Kong RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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

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

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	LoRaWAN Gateway
Tested Model	UG65-L00AF-915M-EA
Multiple Model	UG65-L00AF-915M,UG65-915M-EA,UG65-915M, UG65-L04AF-915M-EA,UG65-L04AF-915M
Model Differences	Refer to the DoS letter
Frequency Range	WCDMA Band 2/LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4/LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5/LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 13: 777-787MHz(TX); 746-756MHz(RX) LTE Band 14: 788-798MHz(TX); 758-768MHz(RX) LTE Band 66:1710-1780MHz(TX); 2110-2180MHz(RX) LTE Band 71: 663-698MHz(TX); 617-652MHz(RX)
Maximum Target Output Power	WCDMA Band 2/4/5: 23.0dBm, LTE Band 2/4/5/12/13/14/66/71: 23.5dBm
Modulation Technique	3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	1.5dBi (provided by the applicant)
Voltage Range	DC 12V from adapter
Date of Test	2020-10-11 to 2021-02-04
Sample serial number	RXM200911054-RF-S1(Assigned by BACL, Shenzhen)
Received date	2020-09-11
Sample/EUT Status	Good condition
Adapter information	Model: OH-1015A1201000U3-UL Input: AC 100-240V, 50/60Hz, 350mA Output: DC 12V, 1000mA

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E, Subpart 27 Subpart 90 and 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
Part 90- Private land mobile radio services

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

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

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±0.73dB
Unwanted Emission, conducted		±1.6dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, China.

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE B13	5	779.5	782	784.5
	10	/	782	/
LTE B14	5	790.5	793	795.5
	10	/	793	/
LTE B66	1.4	1710.7	1745	1779.3
	3	1711.5	1745	1778.5
	5	1712.5	1745	1777.5
	10	1715	1745	1775
	15	1717.5	1745	1772.5
	20	1720	1745	1770
LTE B71	5	665.5	680.5	695.5
	10	668	680.5	693
	15	670.5	680.5	690.5
	20	673	680.5	688

Equipment Modifications

No modification was made to the EUT.

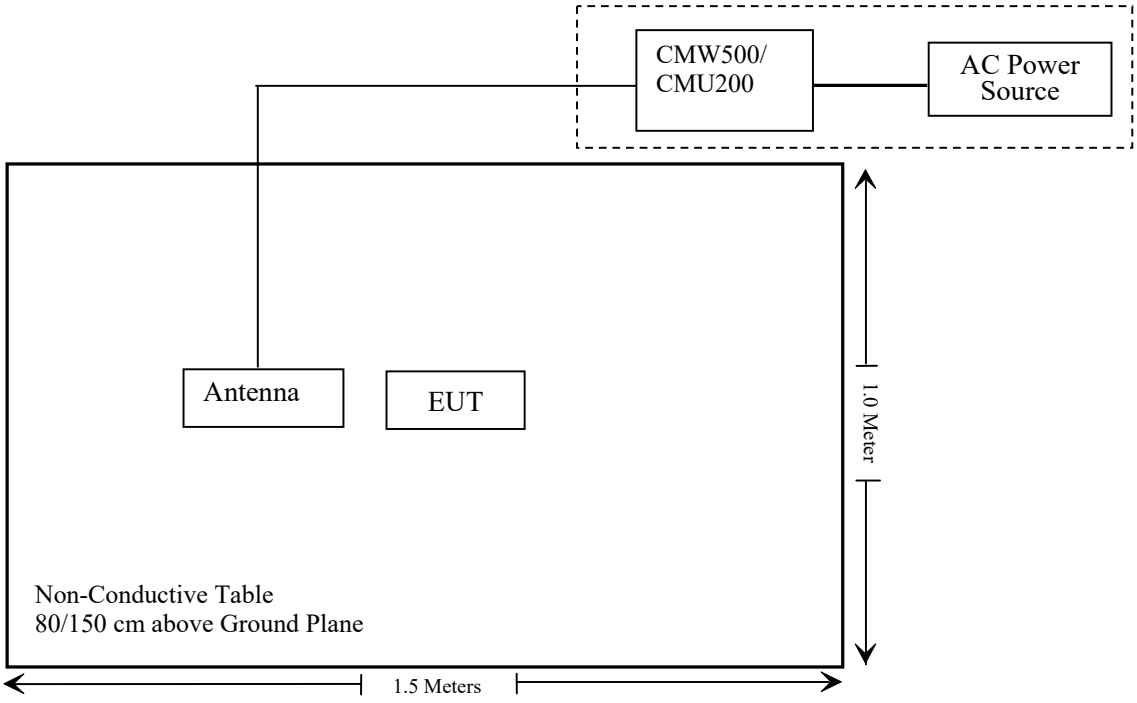
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-116218-U
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500

Support Cable Description

Cable Description	Length (m)	From / Port	To
/	/	/	/

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1037; §2.1091	Maximum Permissible Exposure(MPE)	Compliance
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (b)(c) (d) (h); §90.542	RF Output Power	Compliance
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53; §90.209	Occupied Bandwidth	Compliance
§ 2.1051; § 22.917 (a); § 24.238 (a); §27.53; §90.543	Spurious Emissions at Antenna Terminal	Compliance
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53; §90.543	Field Strength of Spurious Radiation	Compliance
§ 22.917 (a); § 24.238 (a); §27.53; §90.543	Band Edge	Compliance
§ 2.1055; § 22.355; § 24.235; §27.54; §90.539	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	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2017/12/22	2020/12/21
COM-POWER	Dipole Antenna	AD-100	721027	NCR	NCR
Unknown	Cable 2	RF Cable 2	F-03-EM197	2019/11/29	2020/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2019/11/29	2020/11/28
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2020/08/04	2021/08/03
COM-POWER	Pre-amplifier	PA-122	181919	2019/11/29	2020/11/28
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2019/11/29	2020/11/28
Sunol Sciences	Horn Antenna	DRH-118	A052604	2017/12/22	2020/12/21
A.H.System	Horn Antenna	SAS-200/571	135	2018/09/01	2021/08/31
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2019/11/29	2020/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2019/11/29	2020/11/28
MICRO-TRONICS	Passband filter	HPM50111	F-19-EM006	2020/04/20	2021/04/20
Unknown	High Pass filter	1.3GHz	101120	2020/04/20	2021/04/20
Ducommun Technolagies	Horn antenna	ARH-4223-02	1007726-02 1304	2017/12/06	2020/12/05
Ducommun Technolagies	Horn antenna	ARH-4223-02	1007726-01 1304	2017/12/06	2020/12/05
Agilent	Signal Generator	N5183A	MY51040755	2020/01/14	2021/01/13

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

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

FCC §1.1037 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 1.1037 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:

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

Mode	Frequency (MHz)	Antenna Gain		Tune up conducted power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
Wi-Fi	2412-2462	1.5	1.41	18.0	63.10	20	0.018	1.0
LoRa(External transmit antenna)	923.3-927.5	1.5	1.41	12.0	15.85	20	0.0044	0.6
LoRa(Internal transmit antenna)	923.3-927.5	0	1	12.0	15.85	20	0.0032	0.6
WCDMA B2	1850-1910	1.5	1.41	23	200	20	0.056	1.0
WCDMA B4	1710-1755	1.5	1.41	23	200	20	0.056	1.0
WCDMA B5	824-849	1.5	1.41	23	200	20	0.056	0.549
LTE B2	1850-1910	1.5	1.41	23.5	223.87	20	0.063	1.0
LTE B4	1710-1755	1.5	1.41	23.5	223.87	20	0.063	1.0
LTE B5	824-849	1.5	1.41	23.5	223.87	20	0.063	0.549
LTE B12	699-716	1.5	1.41	23.5	223.87	20	0.063	0.466
LTE B13	777-787	1.5	1.41	23.5	223.87	20	0.063	0.518
LTE B14	788-798	1.5	1.41	23.5	223.87	20	0.063	0.525
LTE B66	1710-1780	1.5	1.41	23.5	223.87	20	0.063	1.0
LTE B71	663-698	1.5	1.41	23.5	223.87	20	0.063	0.422

Note: 1. The tune up conducted power was declared by the applicant
2. LoRa, Wi-Fi and LTE can transmit simultaneously for this device..

So the worst simultaneous transmitting consideration:

The ratio=MPE_{LoRa}/limit + $MPE_{Wi\text{-}Fi}$/limit + MPE_{LTE}/limit
=0.018/1.0+0.0044/0.6+0.063/0.422=0.175＜1.0

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); §90.542(a)- 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), the maximum EIRP must not exceed 3Watts (34.77dBm) for 776-788MHz.

According to §27.50(c), the maximum EIRP must not exceed 3Watts (34.77dBm) for 600 MHz uplink band and 698-746MHz band.

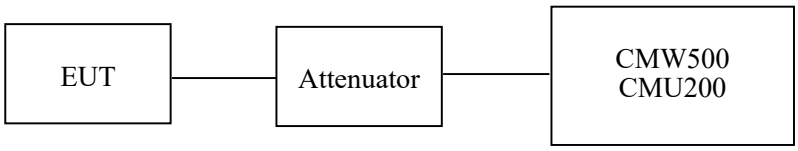
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz and 1755-1780 MHz bands.

According to §90.524(a), the maximum ERP must not exceed 3Watts (34.77dBm) for 788-798MHz.

Test Procedure

Conducted method:

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



Radiated method:

TIA 603-D section 2.2.17

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu on 2020-10-14 to 2021-01-25.

Conducted Power

Cellular Band (Part 22H)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		22.04	21.94	21.92	21.39	21.29	21.27
	HSDPA	1	20.85	21.02	20.99	20.20	20.37	20.34
		2	20.58	21.62	20.39	19.93	20.97	19.74
		3	20.84	21.58	20.48	20.19	20.93	19.83
		4	20.68	21.61	20.39	20.03	20.96	19.74
	HSUPA	1	20.50	20.44	20.32	19.85	19.79	19.67
		2	20.57	20.51	20.64	19.92	19.86	19.99
		3	20.51	20.47	20.46	19.86	19.82	19.81
		4	20.42	20.45	20.41	19.77	19.80	19.76
		5	20.47	20.52	20.56	19.82	19.87	19.91

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For WCDMA Band5: Antenna Gain = 1.5dBi = -0.65dBd (0dBd=2.15dBi),Cable Loss=0dB* (provided by the applicant)
Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		22.54	22.62	22.67	24.04	24.12	24.17
	HSDPA	1	21.42	21.55	21.35	22.92	23.05	22.85
		2	21.48	21.59	21.42	22.98	23.09	22.92
		3	21.45	21.62	21.40	22.95	23.12	22.90
		4	21.49	21.58	21.42	22.99	23.08	22.92
	HSUPA	1	20.90	21.05	20.86	22.40	22.55	22.36
		2	20.95	21.13	20.90	22.45	22.63	22.40
		3	20.94	21.08	20.90	22.44	22.58	22.40
		4	20.93	21.12	20.93	22.43	22.62	22.43
		5	20.89	21.03	20.82	22.39	22.53	22.32

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For WCDMA Band2: Antenna Gain = 1.5dBi, Cable Loss=0dB*(provided by the applicant)
Limit: EIRP≤33dBm

AWS Band (Part 27)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		22.03	22.02	21.85	23.53	23.52	23.35
	HSDPA	1	20.78	20.77	20.55	22.28	22.27	22.05
		2	20.84	20.85	20.63	22.34	22.35	22.13
		3	20.82	20.82	20.57	22.32	22.32	22.07
		4	20.86	20.81	20.62	22.36	22.31	22.12
	HSUPA	1	20.25	20.22	20.16	21.75	21.72	21.66
		2	20.51	20.28	20.20	22.01	21.78	21.70
		3	20.12	20.25	20.56	21.62	21.75	22.06
		4	20.52	20.47	20.13	22.02	21.97	21.63
		5	20.31	20.26	20.52	21.81	21.76	22.02

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band4: Antenna Gain = 1.5dBi, Cable Loss=0 dB*(provided by the applicant)
Limit: EIRP≤30dBm

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.16	13
	Middle	3.18	13
	High	3.29	13
HSDPA (16QAM)	Low	4.30	13
	Middle	4.00	13
	High	3.88	13
HSUPA (BPSK)	Low	3.52	13
	Middle	3.63	13
	High	3.69	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.23	13
	Middle	3.32	13
	High	2.99	13
HSDPA (16QAM)	Low	3.48	13
	Middle	3.99	13
	High	4.61	13
HSUPA (BPSK)	Low	3.59	13
	Middle	3.67	13
	High	3.65	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.24	13
	Middle	3.22	13
	High	3.94	13
HSDPA (16QAM)	Low	3.79	13
	Middle	4.15	13
	High	4.13	13
HSUPA (BPSK)	Low	3.43	13
	Middle	3.49	13
	High	3.76	13

LTE Band 2:

Maximum Output Power

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.91	22.46	22.79	24.41	23.96	24.29
		RB1#2	22.87	22.87	22.55	24.37	24.37	24.05
		RB1#5	22.74	22.56	22.71	24.24	24.06	24.21
		RB3#0	22.69	22.61	22.69	24.19	24.11	24.19
		RB3#1	22.72	22.26	22.11	24.22	23.76	23.61
		RB3#2	22.44	22.82	22.27	23.94	24.32	23.77
		RB6#0	22.39	22.26	22.60	23.89	23.76	24.10
	16QAM	RB1#0	22.54	22.70	22.49	24.04	24.20	23.99
		RB1#2	22.80	22.38	22.59	24.30	23.88	24.09
		RB1#5	22.42	23.02	22.66	23.92	24.52	24.16
		RB3#0	22.33	22.20	22.45	23.83	23.70	23.95
		RB3#1	22.37	22.29	22.23	23.87	23.79	23.73
		RB3#2	22.91	22.46	22.79	24.41	23.96	24.29
		RB6#0	22.87	22.87	22.55	24.37	24.37	24.05
3.0	QPSK	RB1#0	22.76	22.63	22.59	24.26	24.13	24.09
		RB1#7	22.64	23.05	22.69	24.14	24.55	24.19
		RB1#14	22.45	22.64	22.45	23.95	24.14	23.95
		RB8#0	22.72	22.66	22.59	24.22	24.16	24.09
		RB8#4	22.61	22.27	22.28	24.11	23.77	23.78
		RB8#7	22.77	22.77	22.36	24.27	24.27	23.86
		RB15#0	22.65	22.21	22.44	24.15	23.71	23.94
	16QAM	RB1#0	22.42	22.51	22.62	23.92	24.01	24.12
		RB1#7	22.50	22.49	22.41	24.00	23.99	23.91
		RB1#14	22.26	22.61	22.66	23.76	24.11	24.16
		RB8#0	22.17	22.50	22.16	23.67	24.00	23.66
		RB8#4	22.20	22.35	22.00	23.70	23.85	23.50
		RB8#7	22.76	22.63	22.59	24.26	24.13	24.09
		RB15#0	22.64	23.05	22.69	24.14	24.55	24.19

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.70	22.18	22.64	24.20	23.68	24.14
		RB1#12	22.79	22.63	22.74	24.29	24.13	24.24
		RB1#24	22.51	22.69	22.67	24.01	24.19	24.17
		RB12#0	22.64	22.75	22.35	24.14	24.25	23.85
		RB12#6	22.24	22.30	22.54	23.74	23.80	24.04
		RB12#11	22.31	22.94	22.46	23.81	24.44	23.96
		RB25#0	22.59	22.37	22.46	24.09	23.87	23.96
	16QAM	RB1#0	22.66	22.65	22.48	24.16	24.15	23.98
		RB1#12	22.45	22.38	22.47	23.95	23.88	23.97
		RB1#24	22.74	22.92	22.83	24.24	24.42	24.33
		RB12#0	22.21	22.40	22.52	23.71	23.90	24.02
		RB12#6	22.52	22.56	22.33	24.02	24.06	23.83
		RB12#11	22.70	22.18	22.64	24.20	23.68	24.14
		RB25#0	22.79	22.63	22.74	24.29	24.13	24.24
10.0	QPSK	RB1#0	22.44	22.19	22.55	23.94	23.69	24.05
		RB1#24	22.74	22.85	22.68	24.24	24.35	24.18
		RB1#49	22.53	22.68	22.76	24.03	24.18	24.26
		RB25#0	22.39	22.48	22.38	23.89	23.98	23.88
		RB25#12	22.45	22.16	22.27	23.95	23.66	23.77
		RB25#24	22.29	22.91	22.42	23.79	24.41	23.92
		RB50#0	22.58	22.23	22.20	24.08	23.73	23.70
	16QAM	RB1#0	22.53	22.63	22.78	24.03	24.13	24.28
		RB1#24	22.51	22.35	22.61	24.01	23.85	24.11
		RB1#49	22.78	22.67	22.61	24.28	24.17	24.11
		RB25#0	22.02	22.23	22.24	23.52	23.73	23.74
		RB25#12	22.15	22.35	21.95	23.65	23.85	23.45
		RB25#24	22.44	22.19	22.55	23.94	23.69	24.05
		RB50#0	22.74	22.85	22.68	24.24	24.35	24.18

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.74	22.23	22.65	24.24	23.73	24.15
		RB1#37	22.69	22.72	22.49	24.19	24.22	23.99
		RB1#74	22.56	22.66	22.59	24.06	24.16	24.09
		RB36#0	22.35	22.44	22.50	23.85	23.94	24.00
		RB36#18	22.38	22.42	22.42	23.88	23.92	23.92
		RB36#37	22.53	23.05	22.73	24.03	24.55	24.23
		RB75#0	22.47	22.11	22.57	23.97	23.61	24.07
	16QAM	RB1#0	22.50	22.62	22.65	24.00	24.12	24.15
		RB1#37	22.50	22.51	22.44	24.00	24.01	23.94
		RB1#74	22.53	22.63	22.77	24.03	24.13	24.27
		RB36#0	22.33	22.35	22.28	23.83	23.85	23.78
		RB36#18	22.40	22.17	22.14	23.90	23.67	23.64
		RB36#37	22.74	22.23	22.65	24.24	23.73	24.15
		RB75#0	22.69	22.72	22.49	24.19	24.22	23.99
20.0	QPSK	RB1#0	22.63	22.61	22.63	24.13	24.11	24.13
		RB1#49	22.89	22.94	22.50	24.39	24.44	24.00
		RB1#99	22.58	22.53	22.34	24.08	24.03	23.84
		RB50#0	22.54	22.35	22.69	24.04	23.85	24.19
		RB50#24	22.31	22.47	22.24	23.81	23.97	23.74
		RB50#49	22.56	22.66	22.54	24.06	24.16	24.04
		RB100#0	22.53	22.01	22.32	24.03	23.51	23.82
	16QAM	RB1#0	22.73	22.61	22.65	24.23	24.11	24.15
		RB1#49	22.30	22.51	22.25	23.80	24.01	23.75
		RB1#99	22.38	22.57	22.68	23.88	24.07	24.18
		RB50#0	22.27	22.35	22.37	23.77	23.85	23.87
		RB50#24	22.35	22.38	21.87	23.85	23.88	23.37
		RB50#49	22.63	22.61	22.63	24.13	24.11	24.13
		RB100#0	22.89	22.94	22.50	24.39	24.44	24.00

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band2: Antenna Gain = 1.5dBi, Cable Loss=0dB*(provided by the applicant)
Limit: EIRP≤33dBm

Peak-to-average ratio (PAR)

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.81	4.20	4.28	13	Pass
QPSK (100RB Size)	5.40	5.50	4.96	13	Pass
16QAM (1RB Size)	5.78	5.10	4.80	13	Pass
16QAM (100RB Size)	6.02	6.37	6.12	13	Pass

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.85	21.61	22.15	23.35	23.11	23.65
		RB1#2	21.68	22.14	21.87	23.18	23.64	23.37
		RB1#5	21.75	21.99	21.68	23.25	23.49	23.18
		RB3#0	21.83	22.03	21.63	23.33	23.53	23.13
		RB3#1	21.59	21.49	21.45	23.09	22.99	22.95
		RB3#2	21.71	21.77	21.34	23.21	23.27	22.84
		RB6#0	21.54	21.16	21.68	23.04	22.66	23.18
	16QAM	RB1#0	21.63	21.78	21.64	23.13	23.28	23.14
		RB1#2	20.41	20.59	20.47	21.91	22.09	21.97
		RB1#5	20.53	20.98	20.94	22.03	22.48	22.44
		RB3#0	21.14	21.33	21.17	22.64	22.83	22.67
		RB3#1	20.78	20.59	20.57	22.28	22.09	22.07
		RB3#2	21.85	21.61	22.15	23.35	23.11	23.65
		RB6#0	21.68	22.14	21.87	23.18	23.64	23.37
3.0	QPSK	RB1#0	21.80	21.48	21.89	23.30	22.98	23.39
		RB1#7	21.90	21.95	22.08	23.40	23.45	23.58
		RB1#14	21.82	21.98	21.83	23.32	23.48	23.33
		RB8#0	21.78	21.86	21.83	23.28	23.36	23.33
		RB8#4	21.46	21.27	21.44	22.96	22.77	22.94
		RB8#7	21.56	21.81	21.34	23.06	23.31	22.84
		RB15#0	21.76	21.17	21.62	23.26	22.67	23.12
	16QAM	RB1#0	21.76	21.78	21.97	23.26	23.28	23.47
		RB1#7	20.37	20.67	20.53	21.87	22.17	22.03
		RB1#14	20.58	20.82	21.01	22.08	22.32	22.51
		RB8#0	20.86	21.16	21.05	22.36	22.66	22.55
		RB8#4	20.78	20.44	20.23	22.28	21.94	21.73
		RB8#7	21.80	21.48	21.89	23.30	22.98	23.39
		RB15#0	21.90	21.95	22.08	23.40	23.45	23.58

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.91	21.71	22.14	23.41	23.21	23.64
		RB1#12	22.18	21.96	21.98	23.68	23.46	23.48
		RB1#24	21.48	21.81	21.70	22.98	23.31	23.20
		RB12#0	22.06	21.83	21.81	23.56	23.33	23.31
		RB12#6	21.68	21.43	21.32	23.18	22.93	22.82
		RB12#11	21.52	21.86	21.45	23.02	23.36	22.95
		RB25#0	21.54	21.39	21.37	23.04	22.89	22.87
	16QAM	RB1#0	21.47	21.67	22.00	22.97	23.17	23.50
		RB1#12	20.48	20.35	20.72	21.98	21.85	22.22
		RB1#24	20.86	20.86	20.90	22.36	22.36	22.40
		RB12#0	20.82	21.34	21.12	22.32	22.84	22.62
		RB12#6	20.62	20.97	20.40	22.12	22.47	21.90
		RB12#11	21.91	21.71	22.14	23.41	23.21	23.64
		RB25#0	22.18	21.96	21.98	23.68	23.46	23.48
10.0	QPSK	RB1#0	22.09	21.56	22.04	23.59	23.06	23.54
		RB1#24	22.00	22.13	21.70	23.50	23.63	23.20
		RB1#49	21.78	21.75	22.05	23.28	23.25	23.55
		RB25#0	21.85	21.75	21.93	23.35	23.25	23.43
		RB25#12	21.69	21.47	21.47	23.19	22.97	22.97
		RB25#24	21.48	21.62	21.33	22.98	23.12	22.83
		RB50#0	21.90	21.24	21.60	23.40	22.74	23.10
	16QAM	RB1#0	21.69	22.04	21.62	23.19	23.54	23.12
		RB1#24	20.82	20.67	20.46	22.32	22.17	21.96
		RB1#49	20.63	20.84	21.02	22.13	22.34	22.52
		RB25#0	21.06	21.33	21.34	22.56	22.83	22.84
		RB25#12	20.62	20.72	20.80	22.12	22.22	22.30
		RB25#24	22.09	21.56	22.04	23.59	23.06	23.54
		RB50#0	22.00	22.13	21.70	23.50	23.63	23.20

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.28	21.30	21.41	22.78	22.80	22.91
		RB1#37	21.28	21.59	21.43	22.78	23.09	22.93
		RB1#74	21.55	21.40	21.47	23.05	22.90	22.97
		RB36#0	20.32	20.43	20.54	21.82	21.93	22.04
		RB36#18	20.42	20.54	20.48	21.92	22.04	21.98
		RB36#37	20.42	20.45	20.56	21.92	21.95	22.06
		RB75#0	20.28	20.31	20.42	21.78	21.81	21.92
	16QAM	RB1#0	20.67	20.80	20.59	22.17	22.30	22.09
		RB1#37	20.43	21.60	20.37	21.93	23.10	21.87
		RB1#74	20.84	21.58	19.78	22.34	23.08	21.28
		RB36#0	19.27	19.56	19.57	20.77	21.06	21.07
		RB36#18	19.52	19.59	19.62	21.02	21.09	21.12
		RB36#37	19.53	19.73	19.72	21.03	21.23	21.22
		RB75#0	19.35	19.63	19.32	20.85	21.13	20.82
20.0	QPSK	RB1#0	21.39	21.54	22.06	22.89	23.04	23.56
		RB1#49	21.40	21.93	21.50	22.90	23.43	23.00
		RB1#99	21.74	21.92	21.60	23.24	23.42	23.10
		RB50#0	20.48	20.61	20.69	21.98	22.11	22.19
		RB50#24	20.58	20.72	20.59	22.08	22.22	22.09
		RB50#49	20.53	20.58	20.66	22.03	22.08	22.16
		RB100#0	20.23	20.33	20.42	21.73	21.83	21.92
	16QAM	RB1#0	20.90	20.59	21.40	22.40	22.09	22.90
		RB1#49	21.11	20.75	21.43	22.61	22.25	22.93
		RB1#99	20.99	20.49	21.38	22.49	21.99	22.88
		RB50#0	19.55	19.71	19.79	21.05	21.21	21.29
		RB50#24	19.75	19.87	19.46	21.25	21.37	20.96
		RB50#49	19.64	19.80	19.79	21.14	21.30	21.29
		RB100#0	19.44	19.71	19.68	20.94	21.21	21.18

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band4: Antenna Gain = 1.5dBi, Cable Loss=0dB*(provided by the applicant)
Limit: EIRP≤30dBm

Peak-to-average ratio (PAR)

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.73	5.51	4.57	13	Pass
QPSK (100RB Size)	5.19	6.34	5.38	13	Pass
16QAM (1RB Size)	4.64	4.39	5.35	13	Pass
16QAM (100RB Size)	3.73	5.51	5.94	13	Pass

LTE Band5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.80	21.50	21.90	21.15	20.85	21.25
		RB1#2	21.90	22.00	21.90	21.25	21.35	21.25
		RB1#5	21.70	21.80	21.80	21.05	21.15	21.15
		RB3#0	21.80	21.90	21.80	21.15	21.25	21.15
		RB3#1	21.60	21.30	21.50	20.95	20.65	20.85
		RB3#2	21.40	21.70	21.40	20.75	21.05	20.75
		RB6#0	21.70	21.40	21.60	21.05	20.75	20.95
	16QAM	RB1#0	21.70	21.80	21.80	21.05	21.15	21.15
		RB1#2	20.60	20.60	20.50	19.95	19.95	19.85
		RB1#5	20.70	20.90	20.90	20.05	20.25	20.25
		RB3#0	21.00	21.20	21.10	20.35	20.55	20.45
		RB3#1	20.70	20.70	20.50	20.05	20.05	19.85
		RB3#2	21.80	21.50	21.90	21.15	20.85	21.25
		RB6#0	21.90	22.00	21.90	21.25	21.35	21.25
3.0	QPSK	RB1#0	21.98	21.66	22.13	21.33	21.01	21.48
		RB1#7	21.73	22.01	21.99	21.08	21.36	21.34
		RB1#14	21.85	21.83	21.69	21.20	21.18	21.04
		RB8#0	21.96	21.91	21.84	21.31	21.26	21.19
		RB8#4	21.74	21.41	21.70	21.09	20.76	21.05
		RB8#7	21.35	21.99	21.47	20.70	21.34	20.82
		RB15#0	21.83	21.39	21.72	21.18	20.74	21.07
	16QAM	RB1#0	21.59	21.80	22.02	20.94	21.15	21.37
		RB1#7	20.62	20.62	20.55	19.97	19.97	19.90
		RB1#14	20.70	21.16	20.80	20.05	20.51	20.15
		RB8#0	20.95	21.43	20.91	20.30	20.78	20.26
		RB8#4	20.67	20.72	20.42	20.02	20.07	19.77
		RB8#7	21.98	21.66	22.13	21.33	21.01	21.48
		RB15#0	21.73	22.01	21.99	21.08	21.36	21.34

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.63	21.66	21.91	20.98	21.01	21.26
		RB1#12	21.96	21.96	22.09	21.31	21.31	21.44
		RB1#24	21.63	21.59	22.00	20.98	20.94	21.35
		RB12#0	21.68	22.08	21.81	21.03	21.43	21.16
		RB12#6	21.71	21.37	21.39	21.06	20.72	20.74
		RB12#11	21.45	21.98	21.36	20.80	21.33	20.71
		RB25#0	21.93	21.52	21.78	21.28	20.87	21.13
	16QAM	RB1#0	21.65	22.03	21.79	21.00	21.38	21.14
		RB1#12	20.64	20.68	20.64	19.99	20.03	19.99
		RB1#24	20.59	20.77	20.92	19.94	20.12	20.27
		RB12#0	21.09	21.30	20.98	20.44	20.65	20.33
		RB12#6	20.80	20.77	20.34	20.15	20.12	19.69
		RB12#11	21.63	21.66	21.91	20.98	21.01	21.26
		RB25#0	21.96	21.96	22.09	21.31	21.31	21.44
10.0	QPSK	RB1#0	21.73	21.46	21.87	21.08	20.81	21.22
		RB1#24	21.75	22.11	22.02	21.10	21.46	21.37
		RB1#49	21.64	22.04	21.71	20.99	21.39	21.06
		RB25#0	21.92	21.90	21.93	21.27	21.25	21.28
		RB25#12	21.63	21.30	21.35	20.98	20.65	20.70
		RB25#24	21.32	21.79	21.35	20.67	21.14	20.70
		RB50#0	21.67	21.56	21.35	21.02	20.91	20.70
	16QAM	RB1#0	21.77	21.81	21.65	21.12	21.16	21.00
		RB1#24	20.65	20.81	20.36	20.00	20.16	19.71
		RB1#49	20.72	20.93	20.68	20.07	20.28	20.03
		RB25#0	20.87	21.46	21.14	20.22	20.81	20.49
		RB25#12	20.57	20.47	20.56	19.92	19.82	19.91
		RB25#24	21.73	21.46	21.87	21.08	20.81	21.22
		RB50#0	21.75	22.11	22.02	21.10	21.46	21.37

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For Band5: Antenna Gain = 1.5dBi = -0.65dBd (0dBd=2.15dBi)
Cable Loss= 0dB*(provided by the applicant)
Limit: ERP≤38.45dBm

Peak-to-average ratio (PAR)

10MHz bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.76	4.76	3.72	13	Pass
QPSK (50RB Size)	5.33	5.27	5.32	13	Pass
16QAM (1RB Size)	5.57	5.76	4.71	13	Pass
16QAM (50RB Size)	6.04	5.73	6.22	13	Pass

LTE Band 12

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB 1#0	22.80	22.52	22.65	22.15	21.87	22.00
		RB 1#2	22.78	22.68	22.94	22.13	22.03	22.29
		RB 1#5	22.80	22.93	22.58	22.15	22.28	21.93
		RB 3#0	22.53	22.67	22.60	21.88	22.02	21.95
		RB 3#1	22.40	22.23	22.25	21.75	21.58	21.60
		RB 3#2	22.80	22.75	22.60	22.15	22.10	21.95
		RB 6#0	22.25	22.32	22.63	21.60	21.67	21.98
	16QAM	RB 1#0	22.61	22.60	22.53	21.96	21.95	21.88
		RB 1#2	22.70	22.44	22.52	22.05	21.79	21.87
		RB 1#5	22.37	23.01	22.67	21.72	22.36	22.02
		RB 3#0	22.28	22.57	22.22	21.63	21.92	21.57
		RB 3#1	22.24	22.27	22.21	21.59	21.62	21.56
		RB 3#2	22.80	22.52	22.65	22.15	21.87	22.00
		RB 6#0	22.78	22.68	22.94	22.13	22.03	22.29
3	QPSK	RB 1#0	22.65	22.54	22.47	22.00	21.89	21.82
		RB 1#7	22.82	22.93	22.85	22.17	22.28	22.20
		RB 1#14	22.42	22.93	22.62	21.77	22.28	21.97
		RB 8#0	22.38	22.44	22.70	21.73	21.79	22.05
		RB 8#4	22.37	22.22	22.39	21.72	21.57	21.74
		RB 8#7	22.56	22.55	22.43	21.91	21.90	21.78
		RB 15#0	22.70	22.48	22.46	22.05	21.83	21.81
	16QAM	RB 1#0	22.75	22.83	22.47	22.10	22.18	21.82
		RB 1#7	22.47	22.49	22.57	21.82	21.84	21.92
		RB 1#14	22.46	22.71	22.66	21.81	22.06	22.01
		RB 8#0	22.20	22.37	22.47	21.55	21.72	21.82
		RB 8#4	22.18	22.07	22.41	21.53	21.42	21.76
		RB 8#7	22.65	22.54	22.47	22.00	21.89	21.82
		RB 15#0	22.82	22.93	22.85	22.17	22.28	22.20

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	22.64	22.71	22.89	21.99	22.06	22.24
		RB1#12	22.56	22.86	22.69	21.91	22.21	22.04
		RB1#24	22.43	22.74	22.67	21.78	22.09	22.02
		RB12#0	22.54	22.64	22.44	21.89	21.99	21.79
		RB12#6	22.36	22.34	22.51	21.71	21.69	21.86
		RB12#11	22.82	22.92	22.32	22.17	22.27	21.67
		RB25#0	22.54	22.19	22.20	21.89	21.54	21.55
	16QAM	RB1#0	22.87	22.57	22.66	22.22	21.92	22.01
		RB1#12	22.38	22.34	22.59	21.73	21.69	21.94
		RB1#24	22.32	22.68	22.56	21.67	22.03	21.91
		RB12#0	22.47	22.37	22.39	21.82	21.72	21.74
		RB12#6	22.37	22.12	22.23	21.72	21.47	21.58
		RB12#11	22.64	22.71	22.89	21.99	22.06	22.24
		RB25#0	22.56	22.86	22.69	21.91	22.21	22.04
10	QPSK	RB1#0	22.96	22.33	22.87	22.31	21.68	22.22
		RB1#24	22.58	23.08	22.70	21.93	22.43	22.05
		RB1#49	22.32	22.81	22.69	21.67	22.16	22.04
		RB25#0	22.71	22.59	22.44	22.06	21.94	21.79
		RB25#12	22.49	21.98	22.33	21.84	21.33	21.68
		RB25#24	22.60	22.77	22.60	21.95	22.12	21.95
		RB50#0	22.53	22.11	22.64	21.88	21.46	21.99
	16QAM	RB1#0	22.31	22.82	22.76	21.66	22.17	22.11
		RB1#24	22.46	22.28	22.35	21.81	21.63	21.70
		RB1#49	22.41	22.57	22.58	21.76	21.92	21.93
		RB25#0	22.16	22.49	22.32	21.51	21.84	21.67
		RB25#12	22.32	22.28	21.95	21.67	21.63	21.30
		RB25#24	22.96	22.33	22.87	22.31	21.68	22.22
		RB50#0	22.58	23.08	22.70	21.93	22.43	22.05

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For Band12: Antenna Gain = 1.5dBi = -0.65dBd (0dBd=2.15dBi)
Cable Loss= 0dB*(provided by the applicant)
Limit: ERP≤34.77dBm

10MHz Bandwidth

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

LTE Band 13

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	22.62	22.67	22.86	21.97	22.02	22.21
		RB1#12	22.97	22.92	22.96	22.32	22.27	22.31
		RB1#24	22.68	22.75	23.10	22.03	22.10	22.45
		RB12#0	22.69	22.82	22.79	22.04	22.17	22.14
		RB12#6	22.82	22.64	22.94	22.17	21.99	22.29
		RB12#11	21.74	21.71	21.78	21.09	21.06	21.13
		RB25#0	21.21	21.31	20.41	20.56	20.66	19.76
	16QAM	RB1#0	21.97	21.61	22.00	21.32	20.96	21.35
		RB1#12	21.95	22.25	22.10	21.30	21.60	21.45
		RB1#24	21.83	21.82	21.93	21.18	21.17	21.28
		RB12#0	21.76	21.73	22.02	21.11	21.08	21.37
		RB12#6	22.10	21.96	21.91	21.45	21.31	21.26
		RB12#11	22.70	22.71	22.60	22.05	22.06	21.95
		RB25#0	23.04	23.02	23.22	22.39	22.37	22.57
10	QPSK	RB1#0	/	22.99	/	/	22.34	/
		RB1#24	/	22.91	/	/	22.26	/
		RB1#49	/	22.74	/	/	22.09	/
		RB25#0	/	22.59	/	/	21.94	/
		RB25#12	/	22.52	/	/	21.87	/
		RB25#24	/	21.88	/	/	21.23	/
		RB50#0	/	21.54	/	/	20.89	/
	16QAM	RB1#0	/	21.85	/	/	21.20	/
		RB1#24	/	22.04	/	/	21.39	/
		RB1#49	/	21.88	/	/	21.23	/
		RB25#0	/	21.60	/	/	20.95	/
		RB25#12	/	21.90	/	/	21.25	/
		RB25#24	/	23.02	/	/	22.37	/
		RB50#0	/	22.79	/	/	22.14	/

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For Band13: Antenna Gain = 1.5dBi = -0.65dBd (0dBd=2.15dBi)
Cable Loss= 0dB*(provided by the applicant)
Limit: ERP≤34.77dBm

10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	/	4.49	/	13	Pass
QPSK (50RB Size)	/	5.45	/	13	Pass
16QAM (1RB Size)	/	5.74	/	13	Pass
16QAM (50RB Size)	/	6.35	/	13	Pass

LTE Band 14

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.7	21.6	22.1	21.05	20.95	21.45
		RB1#12	21.8	22.2	22.1	21.15	21.55	21.45
		RB1#24	21.7	22.0	21.8	21.05	21.35	21.15
		RB12#0	21.8	22.0	22.1	21.15	21.35	21.45
		RB12#6	21.3	21.3	21.5	20.65	20.65	20.85
		RB12#11	21.3	21.8	21.6	20.65	21.15	20.95
		RB25#0	21.8	21.5	21.7	21.15	20.85	21.05
	16QAM	RB1#0	21.8	21.8	21.9	21.15	21.15	21.25
		RB1#12	20.5	20.4	20.2	19.85	19.75	19.55
		RB1#24	20.9	21.1	21.1	20.25	20.45	20.45
		RB12#0	20.9	20.9	21.3	20.25	20.25	20.65
		RB12#6	20.7	20.8	20.6	20.05	20.15	19.95
		RB12#11	21.7	21.6	22.1	21.05	20.95	21.45
		RB25#0	21.8	22.2	22.1	21.15	21.55	21.45
10.0	QPSK	RB1#0	/	21.7	/	/	21.05	/
		RB1#24	/	22.0	/	/	21.35	/
		RB1#49	/	21.8	/	/	21.15	/
		RB25#0	/	21.8	/	/	21.15	/
		RB25#12	/	21.2	/	/	20.55	/
		RB25#24	/	21.9	/	/	21.25	/
		RB50#0	/	21.2	/	/	20.55	/
	16QAM	RB1#0	/	21.6	/	/	20.95	/
		RB1#24	/	20.4	/	/	19.75	/
		RB1#49	/	20.8	/	/	20.15	/
		RB25#0	/	21.2	/	/	20.55	/
		RB25#12	/	21.7	/	/	21.05	/
		RB25#24	/	22.0	/	/	21.35	/
		RB50#0	/	21.8	/	/	21.15	/

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For Band14: Antenna Gain = 1.5dBi = -0.65dBd (0dBd=2.15dBi)
Cable Loss= 0dB*(provided by the applicant)
Limit: ERP≤34.77dBm

10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	/	4.64	/	13	Pass
QPSK (50RB Size)	/	5.23	/	13	Pass
16QAM (1RB Size)	/	5.74	/	13	Pass
16QAM (50RB Size)	/	6.65	/	13	Pass

LTE Band 66:

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.07	21.56	21.77	23.57	23.06	23.27
		RB1#2	21.73	22.09	21.62	23.23	23.59	23.12
		RB1#5	21.82	21.74	21.76	23.32	23.24	23.26
		RB3#0	21.10	22.07	21.66	22.60	23.57	23.16
		RB3#1	21.48	21.26	21.31	22.98	22.76	22.81
		RB3#2	21.44	21.62	21.37	22.94	23.12	22.87
		RB6#0	21.80	21.65	21.48	23.30	23.15	22.98
	16QAM	RB1#0	21.93	21.78	21.87	23.43	23.28	23.37
		RB1#2	20.79	20.61	20.45	22.29	22.11	21.95
		RB1#5	20.88	21.00	21.14	22.38	22.50	22.64
		RB3#0	21.20	21.19	21.14	22.70	22.69	22.64
		RB3#1	20.72	20.59	20.57	22.22	22.09	22.07
		RB3#2	22.07	21.56	21.77	23.57	23.06	23.27
		RB6#0	21.73	22.09	21.62	23.23	23.59	23.12
3.0	QPSK	RB1#0	21.81	21.66	21.89	23.31	23.16	23.39
		RB1#7	21.77	22.11	21.95	23.27	23.61	23.45
		RB1#14	21.77	21.91	22.02	23.27	23.41	23.52
		RB8#0	21.16	22.12	22.05	22.66	23.62	23.55
		RB8#4	21.44	21.33	21.64	22.94	22.83	23.14
		RB8#7	21.33	21.61	21.17	22.83	23.11	22.67
		RB15#0	21.66	21.31	21.60	23.16	22.81	23.10
	16QAM	RB1#0	21.90	22.02	21.70	23.40	23.52	23.20
		RB1#7	20.42	20.44	20.64	21.92	21.94	22.14
		RB1#14	20.92	21.21	20.84	22.42	22.71	22.34
		RB8#0	20.91	21.15	21.02	22.41	22.65	22.52
		RB8#4	20.77	20.72	20.54	22.27	22.22	22.04
		RB8#7	21.81	21.66	21.89	23.31	23.16	23.39
		RB15#0	21.77	22.11	21.95	23.27	23.61	23.45

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QP SK	RB1#0	21.97	21.81	22.14	23.47	23.31	23.64
		RB1#12	21.39	22.22	22.07	22.89	23.72	23.57
		RB1#24	21.64	22.06	21.92	23.14	23.56	23.42
		RB12#0	21.08	21.97	21.92	22.58	23.47	23.42
		RB12#6	21.88	21.43	21.57	23.38	22.93	23.07
		RB12#11	21.36	21.65	21.25	22.86	23.15	22.75
		RB25#0	21.51	21.44	21.33	23.01	22.94	22.83
	16QAM	RB1#0	21.63	21.89	21.70	23.13	23.39	23.20
		RB1#12	20.58	20.69	20.52	22.08	22.19	22.02
		RB1#24	20.90	20.96	21.08	22.40	22.46	22.58
		RB12#0	20.98	20.95	21.09	22.48	22.45	22.59
		RB12#6	20.89	20.79	20.46	22.39	22.29	21.96
		RB12#11	21.02	21.45	21.12	22.52	22.95	22.62
		RB25#0	20.81	20.77	20.70	22.31	22.27	22.20
10.0	QPSK	RB1#0	21.93	21.35	22.12	23.43	22.85	23.62
		RB1#24	21.77	21.87	21.99	23.27	23.37	23.49
		RB1#49	21.71	21.86	21.63	23.21	23.36	23.13
		RB25#0	21.28	21.82	21.66	22.78	23.32	23.16
		RB25#12	21.51	21.08	21.58	23.01	22.58	23.08
		RB25#24	21.29	21.70	21.20	22.79	23.20	22.70
		RB50#0	21.68	21.55	21.60	23.18	23.05	23.10
	16QAM	RB1#0	21.52	21.66	21.72	23.02	23.16	23.22
		RB1#24	20.62	20.63	20.60	22.12	22.13	22.10
		RB1#49	20.74	20.95	20.97	22.24	22.45	22.47
		RB25#0	20.91	21.18	20.97	22.41	22.68	22.47
		RB25#12	20.88	20.65	20.69	22.38	22.15	22.19
		RB25#24	22.06	21.42	21.95	23.56	22.92	23.45
		RB50#0	21.53	21.75	21.71	23.03	23.25	23.21

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.67	21.72	21.80	23.17	23.22	23.30
		RB1#37	21.88	22.06	21.90	23.38	23.56	23.40
		RB1#74	21.73	21.67	21.50	23.23	23.17	23.00
		RB36#0	21.07	21.96	21.99	22.57	23.46	23.49
		RB36#18	21.61	21.37	21.41	23.11	22.87	22.91
		RB36#37	21.43	21.58	21.62	22.93	23.08	23.12
		RB75#0	21.74	21.63	21.84	23.24	23.13	23.34
	16QAM	RB1#0	21.67	22.01	21.83	23.17	23.51	23.33
		RB1#37	20.44	20.74	20.48	21.94	22.24	21.98
		RB1#74	20.72	20.85	20.97	22.22	22.35	22.47
		RB36#0	21.11	21.05	21.16	22.61	22.55	22.66
		RB36#18	20.81	20.69	20.46	22.31	22.19	21.96
		RB36#37	21.72	21.94	21.82	23.22	23.44	23.32
		RB75#0	21.37	22.12	21.85	22.87	23.62	23.35
20.0	QPSK	RB1#0	21.64	21.77	22.08	23.14	23.27	23.58
		RB1#49	21.70	22.25	22.07	23.20	23.75	23.57
		RB1#99	21.80	21.77	22.04	23.30	23.27	23.54
		RB50#0	21.35	22.00	21.80	22.85	23.50	23.30
		RB50#24	21.70	21.35	21.53	23.20	22.85	23.03
		RB50#49	21.40	21.78	21.44	22.90	23.28	22.94
		RB100#0	21.84	21.54	21.60	23.34	23.04	23.10
	16QAM	RB1#0	21.85	21.65	21.70	23.35	23.15	23.20
		RB1#49	20.84	20.87	20.40	22.34	22.37	21.90
		RB1#99	20.83	20.97	20.98	22.33	22.47	22.48
		RB50#0	20.94	21.10	21.11	22.44	22.60	22.61
		RB50#24	20.66	20.83	20.42	22.16	22.33	21.92
		RB50#49	21.29	21.82	21.42	22.79	23.32	22.92
		RB100#0	21.72	21.41	21.59	23.22	22.91	23.09

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)
For Band 66: Antenna Gain = 1.5Bi = -0.65dBd (0dBd=2.15dBi)
Cable Loss= 0dB*(provided by the applicant)
Limit: EIRP≤30dBm

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.55	4.10	4.36	13	Pass
QPSK (100RB Size)	5.38	5.45	5.42	13	Pass
16QAM (1RB Size)	5.58	4.94	5.06	13	Pass
16QAM (100RB Size)	6.22	6.35	6.25	13	Pass

LTE Band 71:

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.66	20.63	20.75	20.01	19.98	20.10
		RB1#12	20.67	21.11	20.86	20.02	20.46	20.21
		RB1#24	20.62	20.94	20.72	19.97	20.29	20.07
		RB12#0	20.82	20.81	20.77	20.17	20.16	20.12
		RB12#6	21.02	20.88	20.72	20.37	20.23	20.07
		RB12#11	21.76	22.01	21.69	21.11	21.36	21.04
		RB25#0	21.22	21.08	21.34	20.57	20.43	20.69
	16QAM	RB1#0	19.91	20.06	19.94	19.26	19.41	19.29
		RB1#12	20.38	20.18	20.14	19.73	19.53	19.49
		RB1#24	21.87	22.03	21.99	21.22	21.38	21.34
		RB12#0	21.83	22.05	22.04	21.18	21.40	21.39
		RB12#6	21.80	21.82	21.83	21.15	21.17	21.18
		RB12#11	20.77	20.81	20.55	20.12	20.16	19.90
		RB25#0	20.93	21.11	20.97	20.28	20.46	20.32
10.0	QPSK	RB1#0	21.74	21.72	21.67	21.09	21.07	21.02
		RB1#24	22.06	22.01	21.87	21.41	21.36	21.22
		RB1#49	20.62	20.81	20.74	19.97	20.16	20.09
		RB25#0	21.78	21.88	21.89	21.13	21.23	21.24
		RB25#12	21.61	21.50	21.69	20.96	20.85	21.04
		RB25#24	21.89	21.55	21.73	21.24	20.90	21.08
		RB50#0	21.43	21.14	21.42	20.78	20.49	20.77
	16QAM	RB1#0	21.89	21.64	21.93	21.24	20.99	21.28
		RB1#24	21.17	20.92	21.07	20.52	20.27	20.42
		RB1#49	21.83	22.18	22.21	21.18	21.53	21.56
		RB25#0	21.74	21.83	21.76	21.09	21.18	21.11
		RB25#12	21.57	21.78	21.73	20.92	21.13	21.08
		RB25#24	21.84	21.87	21.87	21.19	21.22	21.22
		RB50#0	21.99	22.10	21.97	21.34	21.45	21.32

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	20.84	21.76	20.71	20.19	21.11	20.06
		RB1#37	20.94	21.89	20.80	20.29	21.24	20.15
		RB1#74	20.92	20.82	20.79	20.27	20.17	20.14
		RB36#0	20.74	21.96	20.77	20.09	21.31	20.12
		RB36#18	20.79	21.87	20.71	20.14	21.22	20.06
		RB36#37	21.89	21.82	22.06	21.24	21.17	21.41
		RB75#0	21.10	21.14	21.50	20.45	20.49	20.85
	16QAM	RB1#0	20.10	21.89	19.88	19.45	21.24	19.23
		RB1#37	20.24	21.26	19.97	19.59	20.61	19.32
		RB1#74	22.24	22.15	22.18	21.59	21.50	21.53
		RB36#0	22.16	21.48	21.86	21.51	20.83	21.21
		RB36#18	21.98	21.86	21.74	21.33	21.21	21.09
		RB36#37	20.73	21.76	20.40	20.08	21.11	19.75
		RB75#0	20.88	22.14	20.86	20.23	21.49	20.21
20.0	QPSK	RB1#0	20.58	21.95	22.16	19.93	21.30	21.51
		RB1#49	20.84	21.84	22.10	20.19	21.19	21.45
		RB1#99	20.72	20.78	21.10	20.07	20.13	20.45
		RB50#0	20.76	21.73	21.82	20.11	21.08	21.17
		RB50#24	20.68	21.81	21.66	20.03	21.16	21.01
		RB50#49	21.84	21.77	21.79	21.19	21.12	21.14
		RB100#0	21.26	21.41	21.10	20.61	20.76	20.45
	16QAM	RB1#0	20.05	21.75	21.67	19.40	21.10	21.02
		RB1#49	20.18	20.98	20.84	19.53	20.33	20.19
		RB1#99	21.95	21.78	22.18	21.30	21.13	21.53
		RB50#0	22.02	21.69	21.75	21.37	21.04	21.10
		RB50#24	21.99	21.82	21.65	21.34	21.17	21.00
		RB50#49	20.79	21.93	21.85	20.14	21.28	21.20
		RB100#0	20.92	21.98	21.88	20.27	21.33	21.23

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)
For Band 71: Antenna Gain = 1.5dBi = -0.65dBd (0dBd=2.15dBi)
Cable Loss= 0dB*(provided by the applicant)
Limit: ERP≤34.77dBm

20MHz Bandwidth

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

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

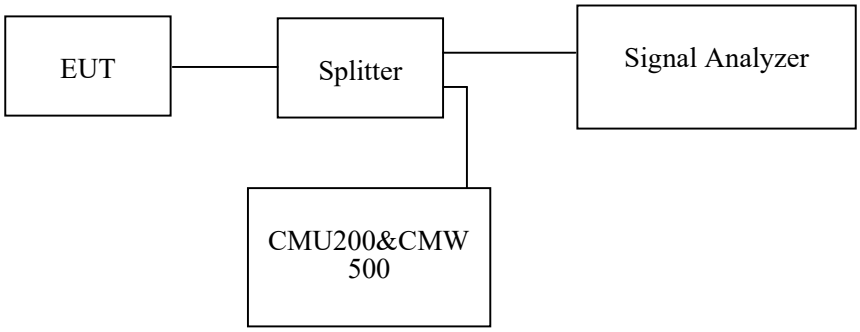
Applicable Standard

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

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:	24 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu from 2020-10-11 to 2021-02-04.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.17	4.74
	836.6	4.15	4.73
	846.6	4.15	4.71
HSUPA	826.4	4.17	4.72
	836.6	4.17	4.75
	846.6	4.15	4.71
HSDPA	826.4	4.17	4.72
	836.6	4.21	4.87
	846.6	4.17	4.72

PCS Band (Part 24E)

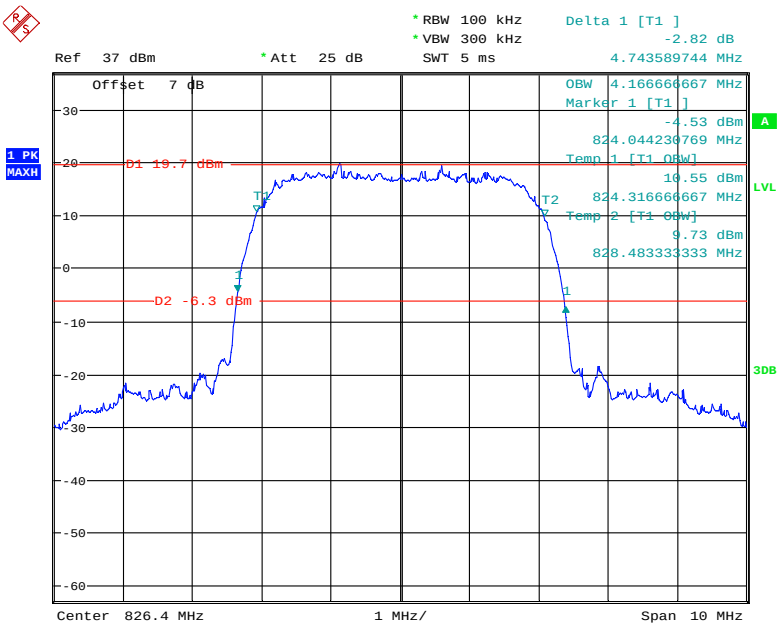
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.14	4.74
	1880.0	4.13	4.72
	1907.6	4.13	4.71
HSUPA	1852.4	4.17	4.73
	1880.0	4.13	4.73
	1907.6	4.13	4.71
HSDPA	1852.4	4.14	4.74
	1880.0	4.16	4.75
	1907.6	4.14	4.73

AWS Band (Part 27)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.12	4.72
	1732.6	4.13	4.71
	1752.6	4.13	4.73
HSUPA	1712.4	4.21	4.89
	1732.6	4.13	4.71
	1752.6	4.13	4.68
HSDPA	1712.4	4.12	4.73
	1732.6	4.15	4.71
	1752.6	4.13	4.68

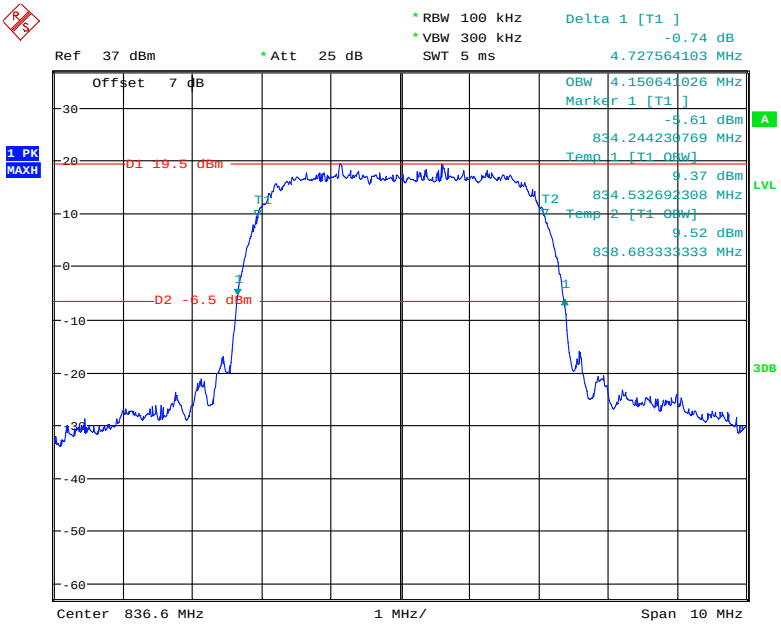
Cellular Band (Part 22H)

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



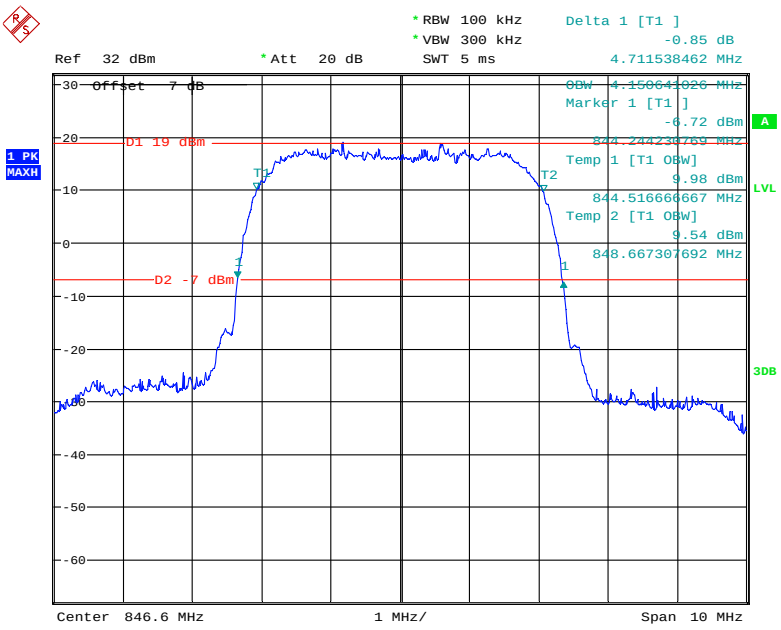
Date: 14.OCT.2020 17:40:55

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



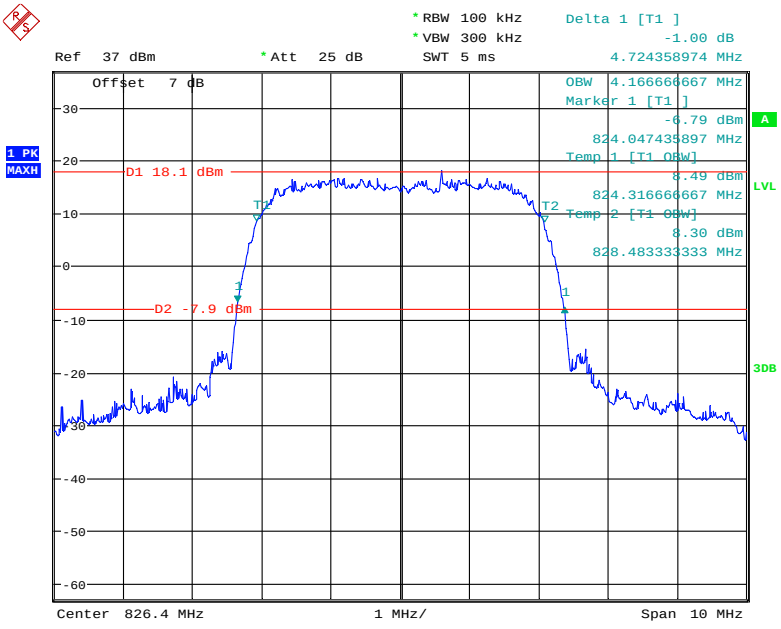
Date: 14.OCT.2020 17:34:02

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



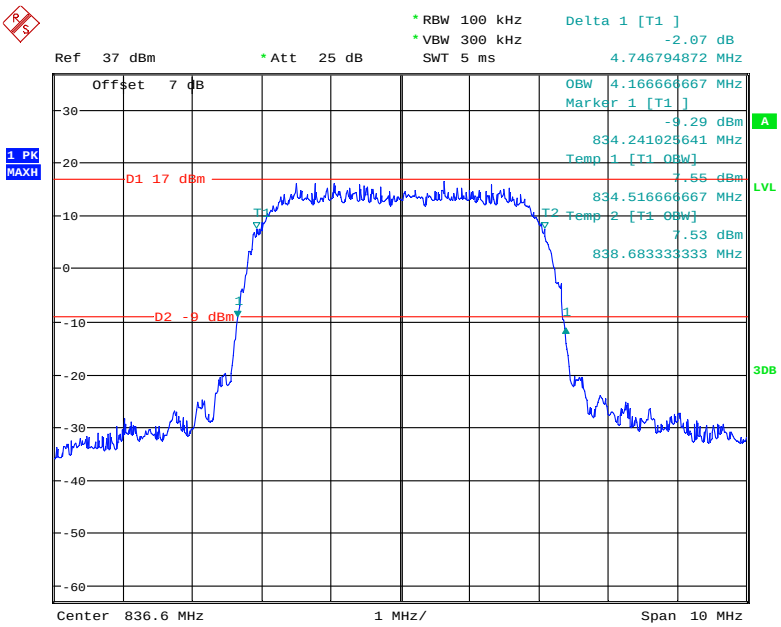
Date: 3.FEB.2021 19:30:11

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



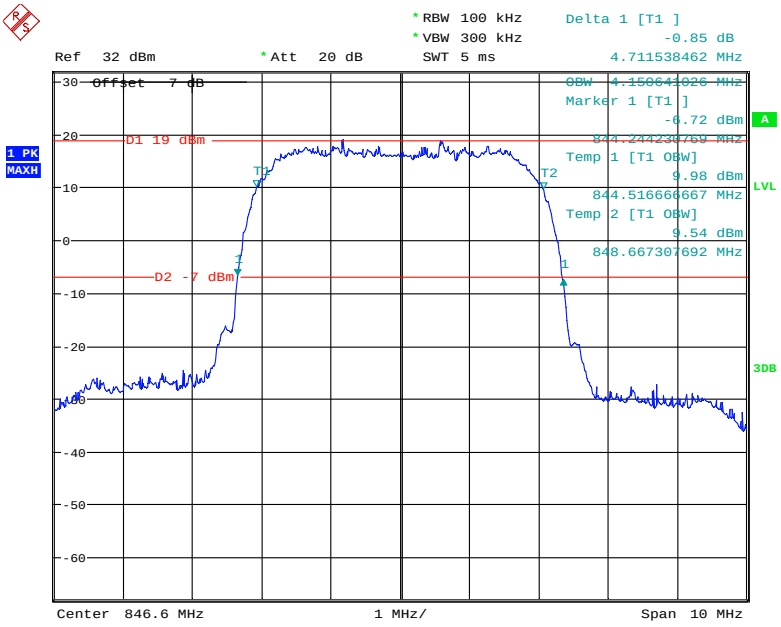
Date: 14.OCT.2020 17:37:28

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



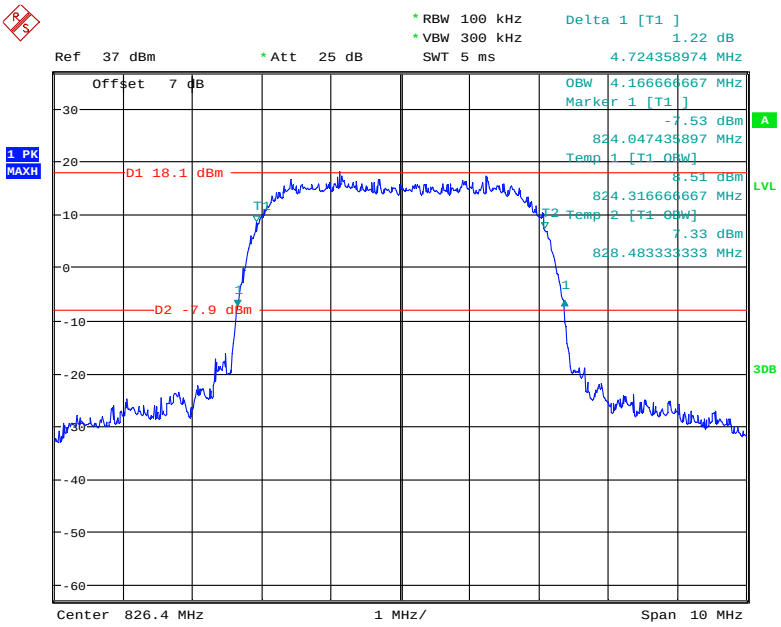
Date: 14.OCT.2020 17:36:14

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



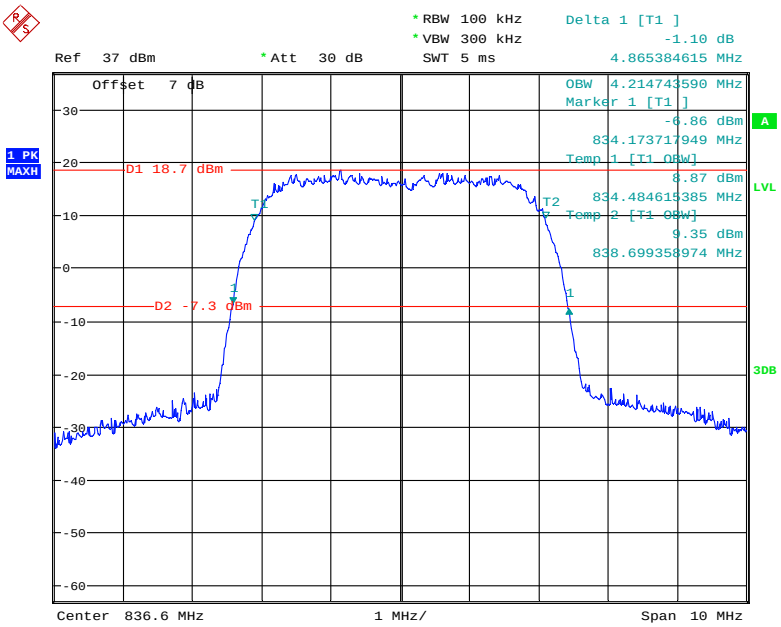
Date: 3.FEB.2021 19:30:11

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



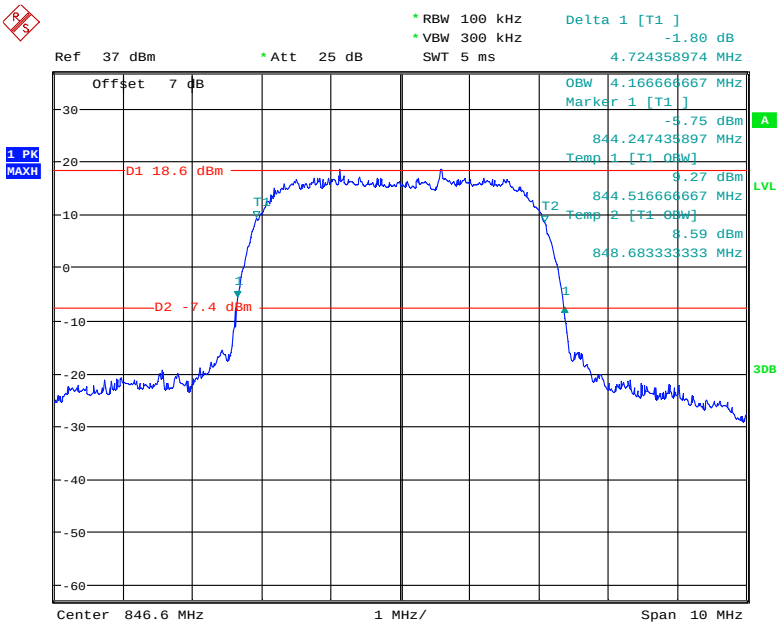
Date: 14.OCT.2020 17:38:03

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



Date: 16.JAN.2021 13:25:44

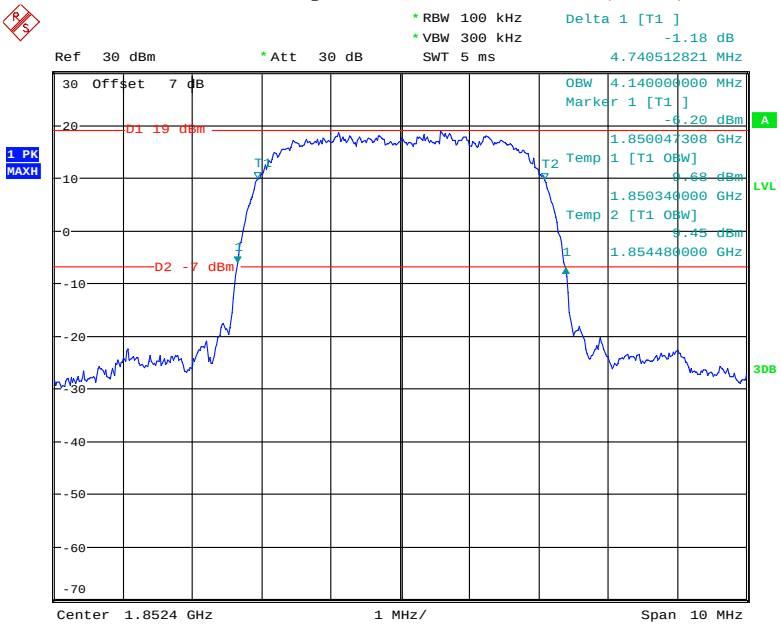
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 14.OCT.2020 17:44:15

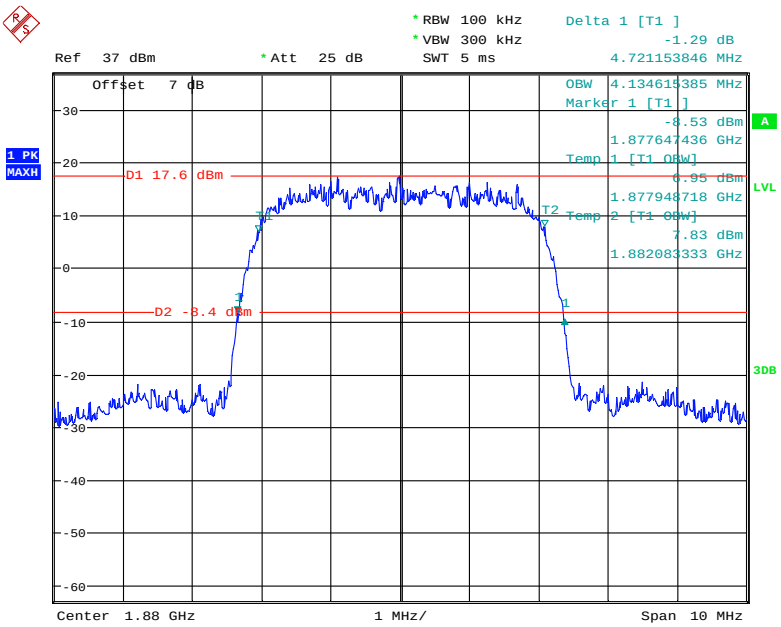
PCS Band (Part 24E)

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



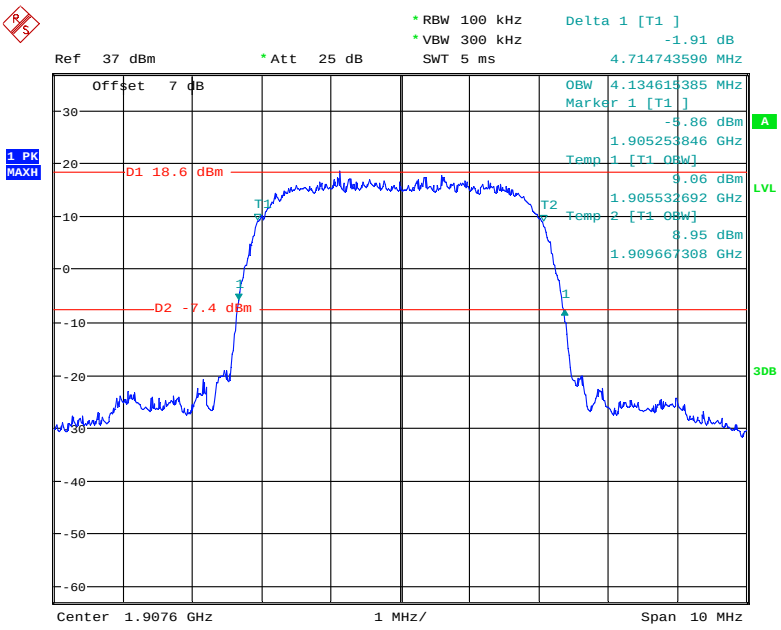
Date: 3.FEB.2021 18:47:30

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



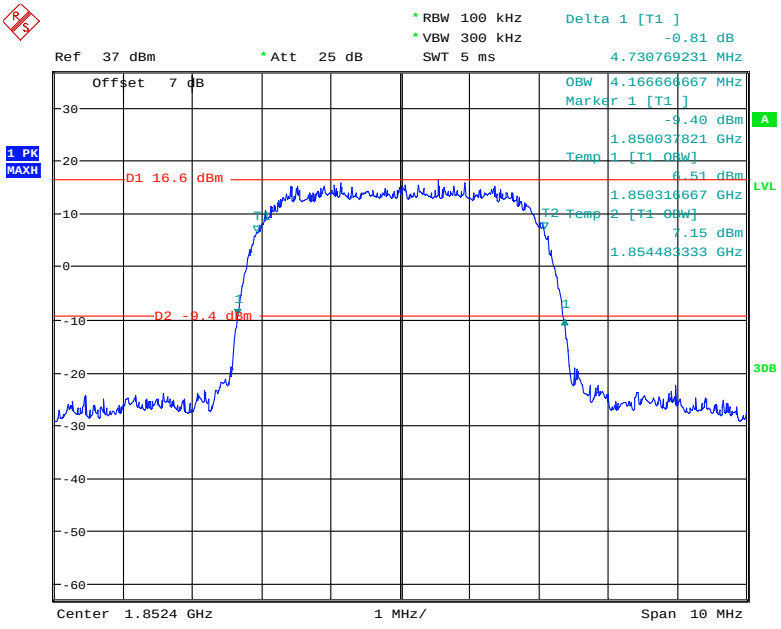
Date: 14.OCT.2020 16:49:27

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



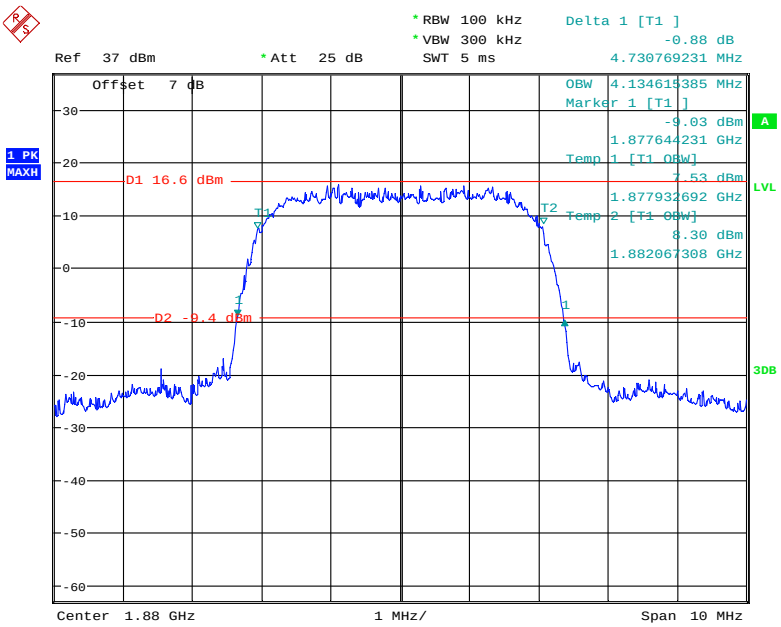
Date: 14.OCT.2020 16:53:24

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



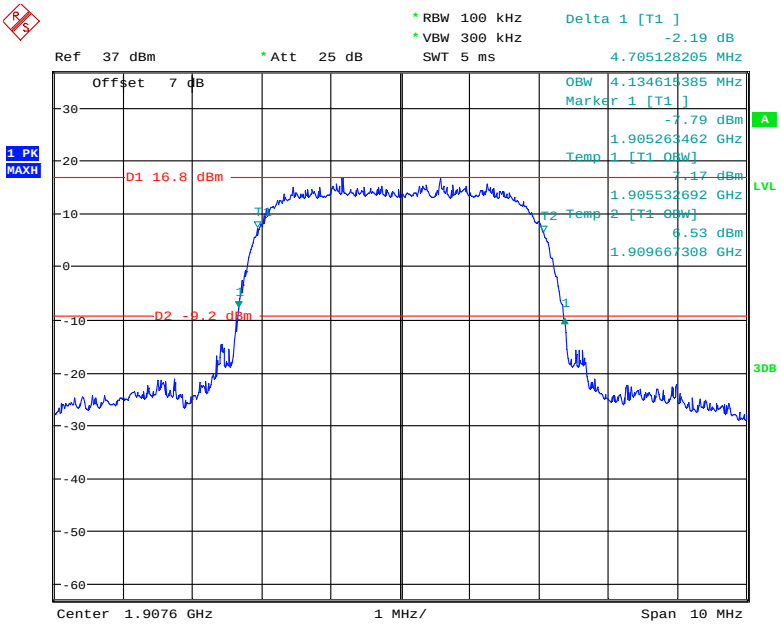
Date: 14.OCT.2020 17:08:02

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



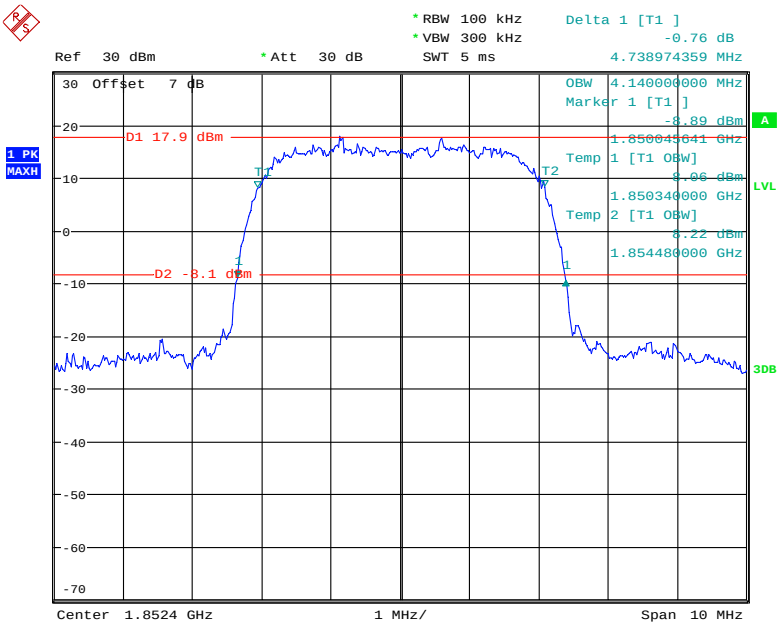
Date: 14.OCT.2020 17:09:24

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



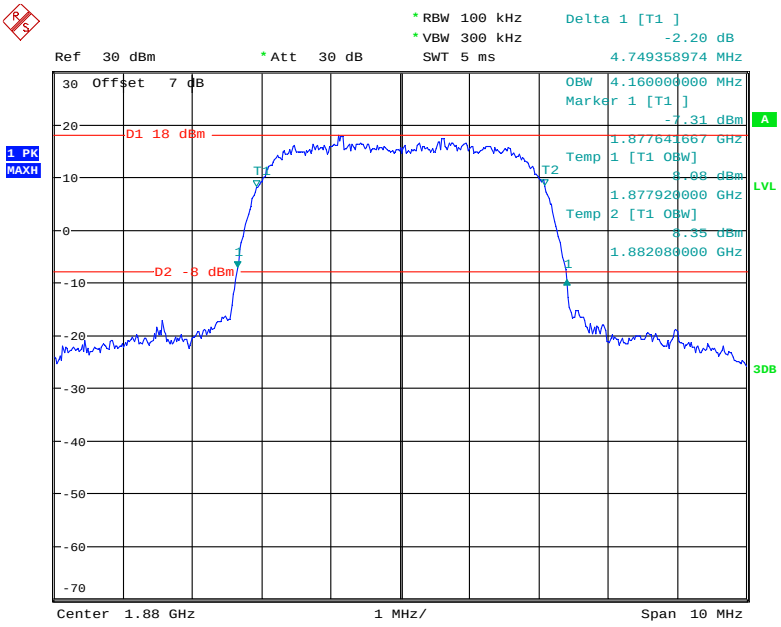
Date: 14.OCT.2020 17:10:55

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



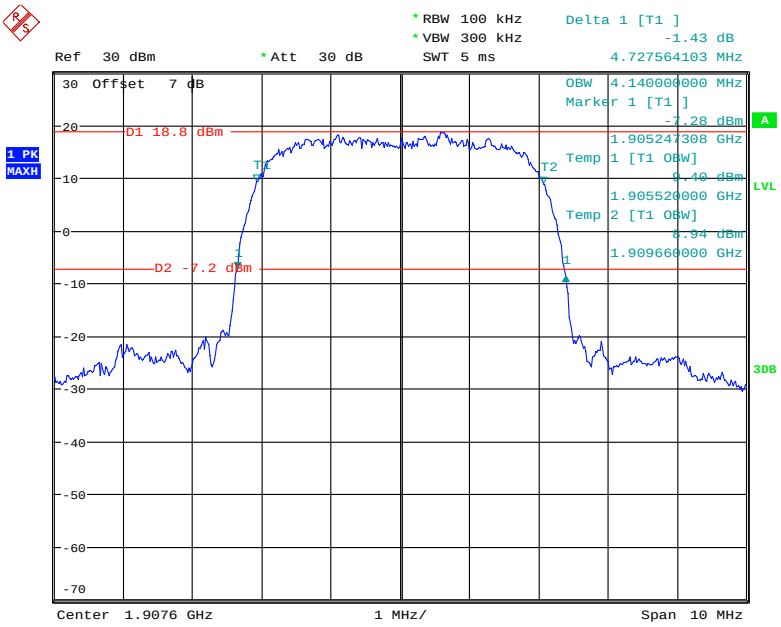
Date: 3.FEB.2021 18:50:47

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



Date: 3.FEB.2021 18:49:45

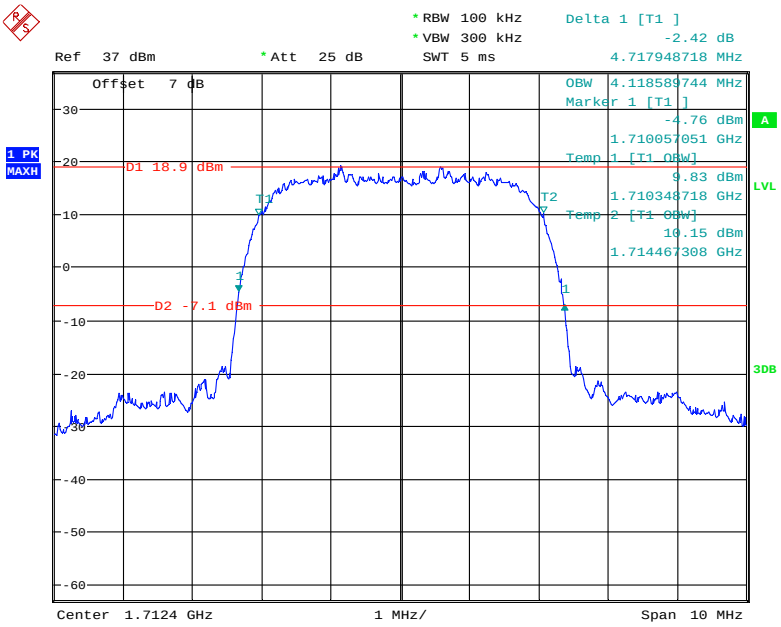
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 3.FEB.2021 18:44:01

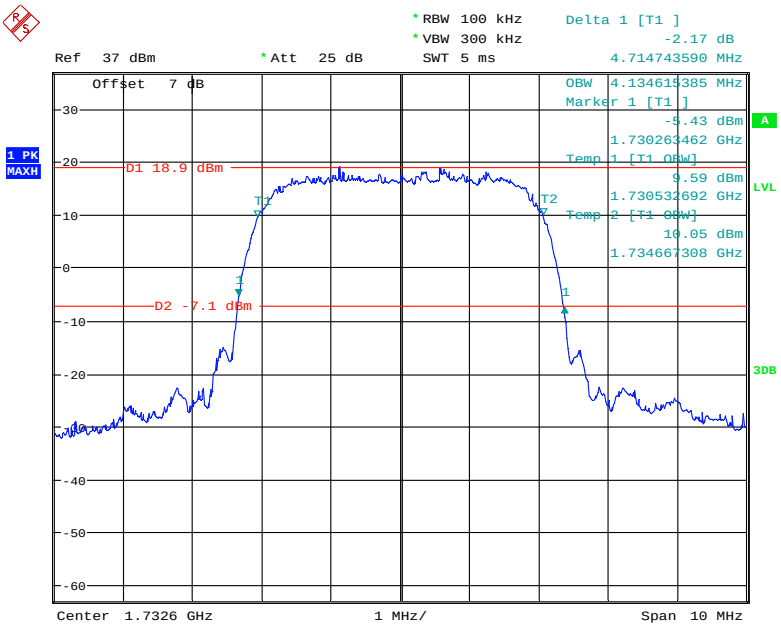
AWS Band (Part 27)

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



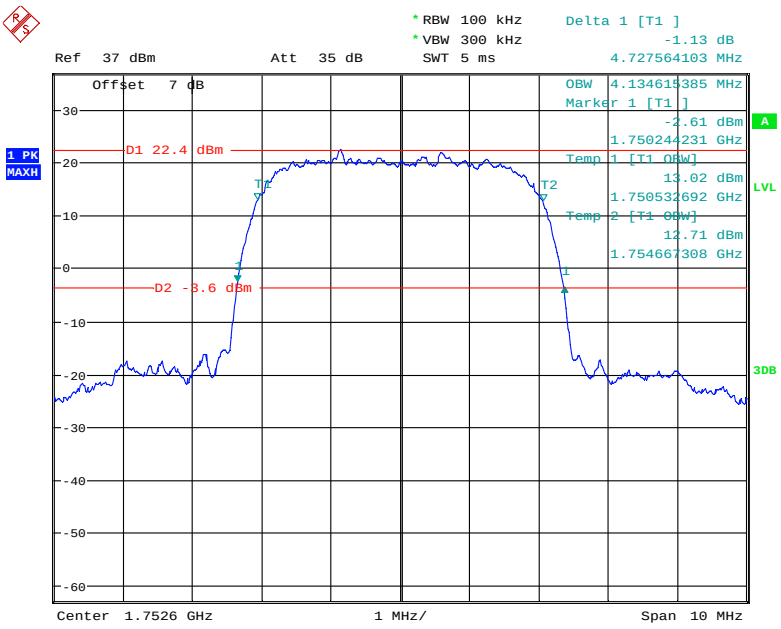
Date: 14.OCT.2020 17:12:51

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



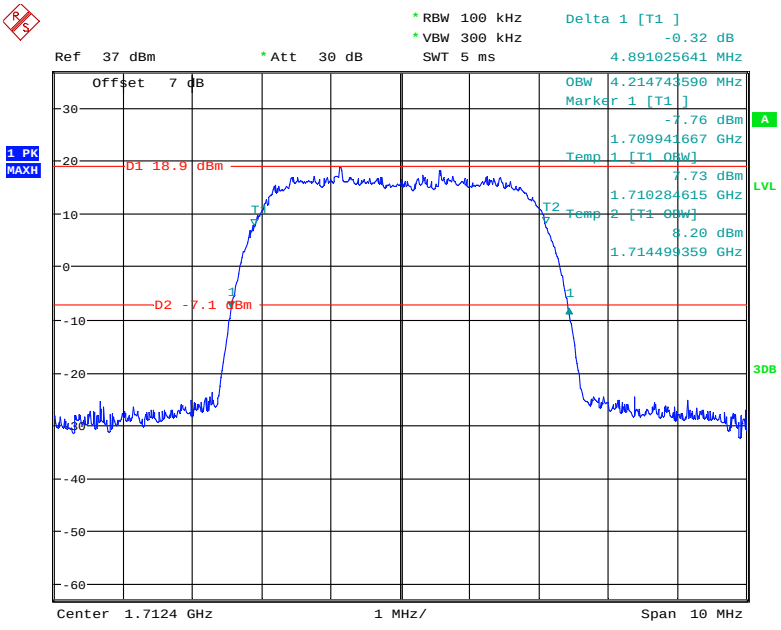
Date: 14.OCT.2020 17:25:27

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



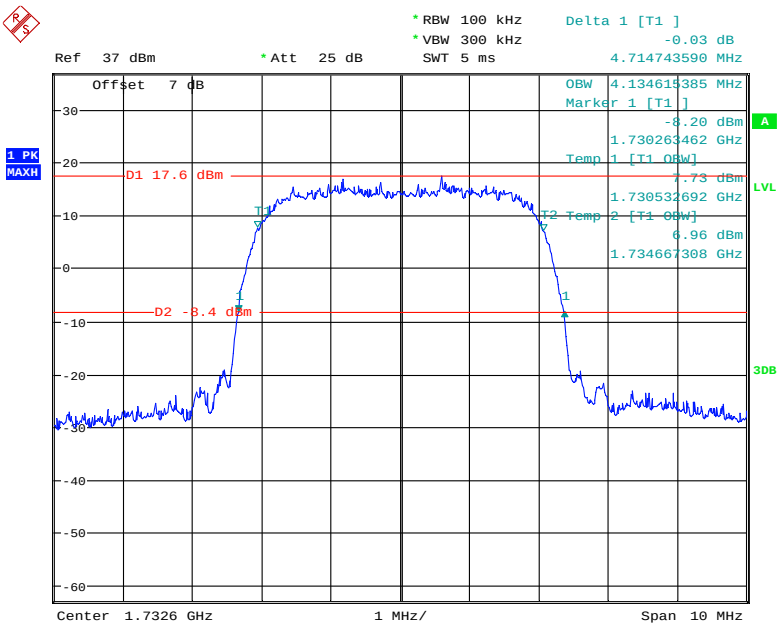
Date: 4.FEB.2021 09:09:01

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



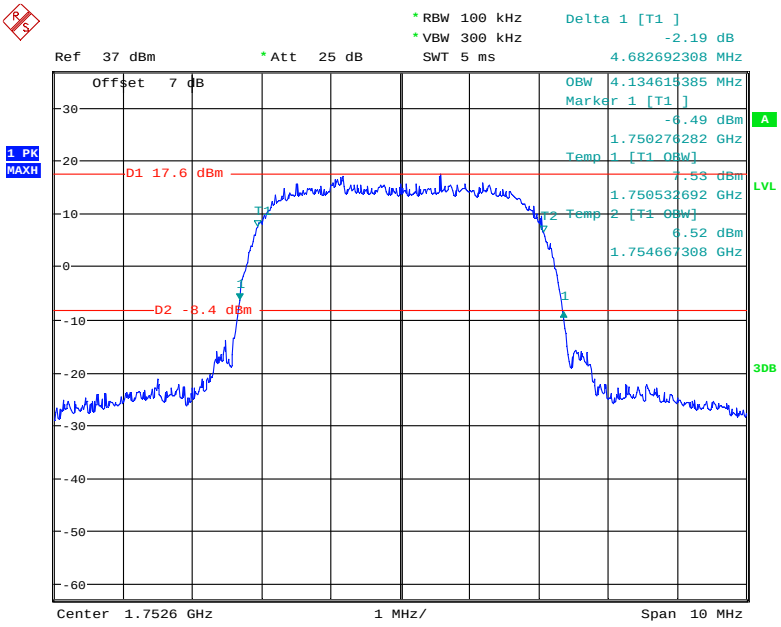
Date: 16.JAN.2021 13:52:53

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



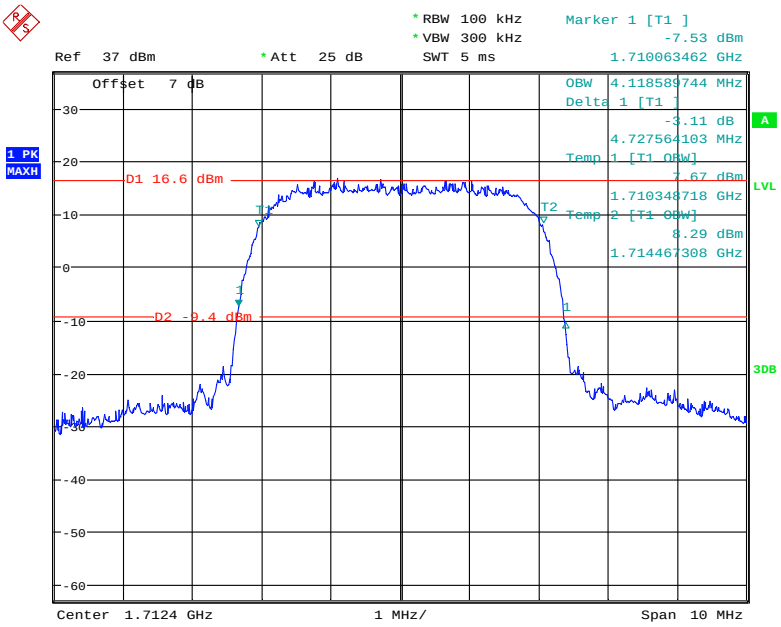
Date: 14.OCT.2020 17:27:36

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



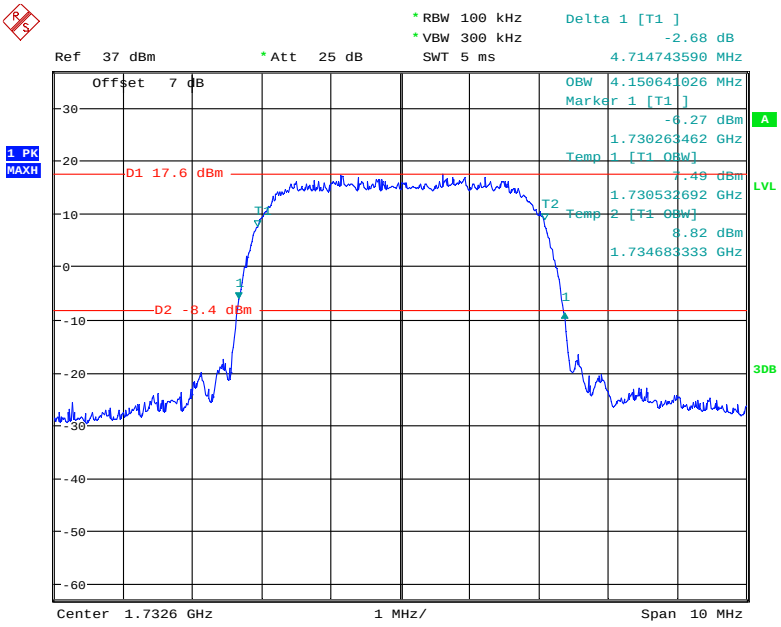
Date: 14.OCT.2020 17:28:41

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



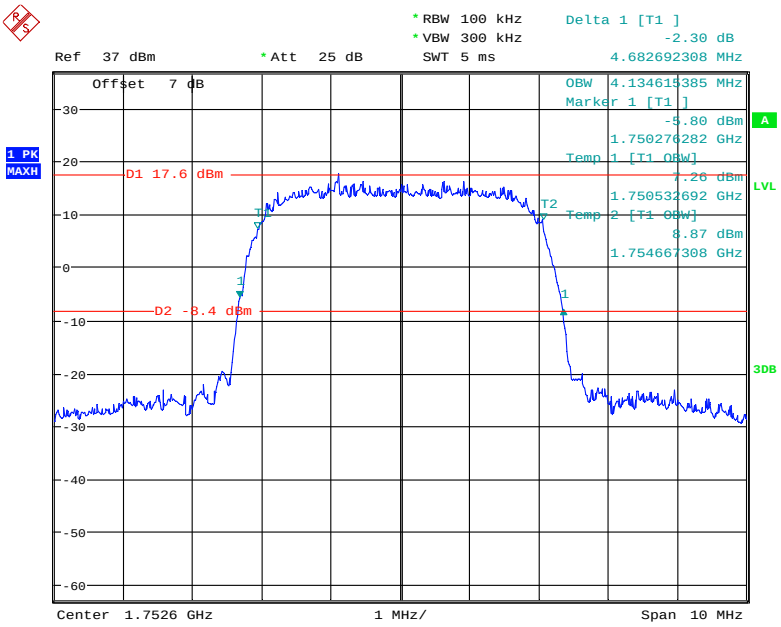
Date: 14.OCT.2020 17:23:03

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



Date: 14.OCT.2020 17:26:37

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



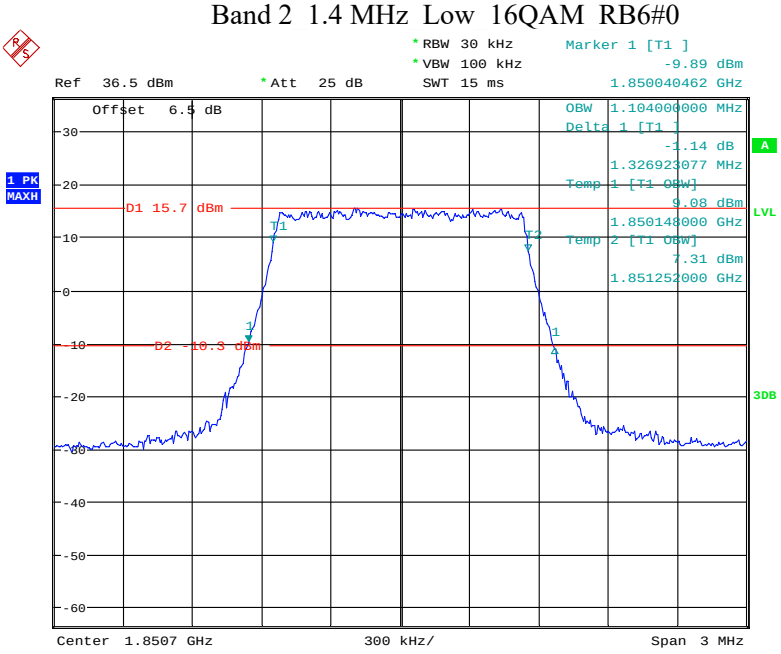
Date: 14.OCT.2020 17:29:44

LTE Band 2:

Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	Low	16QAM	1.104	1.327
		QPSK	1.104	1.343
	Middle	16QAM	1.104	1.320
		QPSK	1.104	1.308
	High	16QAM	1.096	1.322
		QPSK	1.104	1.313
3	Low	16QAM	2.688	2.981
		QPSK	2.700	2.973
	Middle	16QAM	2.688	2.952
		QPSK	2.688	2.952
	High	16QAM	2.688	2.974
		QPSK	2.700	2.966
5	Low	16QAM	4.520	5.030
		QPSK	4.540	5.029
	Middle	16QAM	4.520	4.980
		QPSK	4.520	5..040
	High	16QAM	4.520	5.070
		QPSK	4.520	5.058
10	Low	16QAM	8.960	9.758
		QPSK	8.960	9.735
	Middle	16QAM	8.960	9.680
		QPSK	8.960	9.760
	High	16QAM	8.960	9.682
		QPSK	8.960	9.753
15	Low	16QAM	13.500	14.906
		QPSK	13.500	14.967
	Middle	16QAM	13.500	14.880
		QPSK	13.500	14.700
	High	16QAM	13.500	14.894
		QPSK	13.500	14.902
20	Low	16QAM	18.000	19.536
		QPSK	18.000	19.524
	Middle	16QAM	17.920	19.440
		QPSK	17.920	19.440
	High	16QAM	17.920	19.504
		QPSK	17.920	19.498

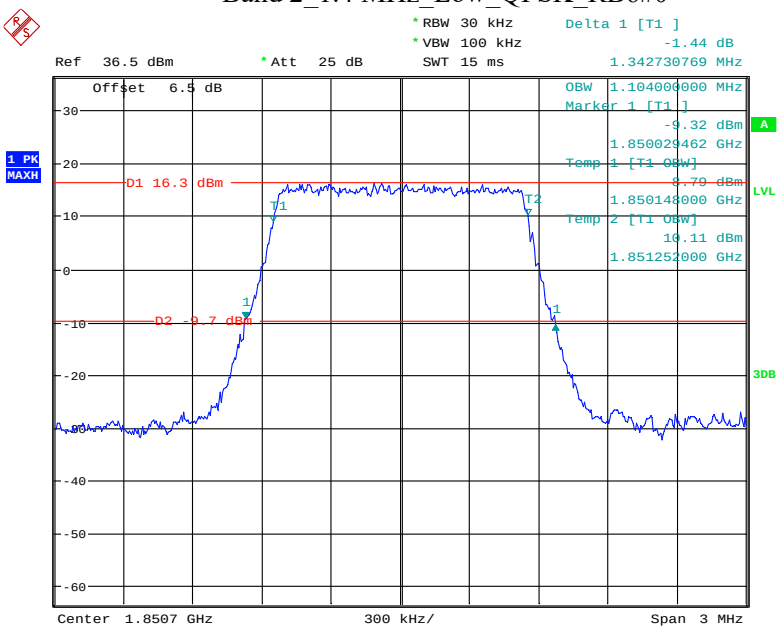
Please refer to following plots:

Band 2 1.4 MHz Low 16QAM RB6#0



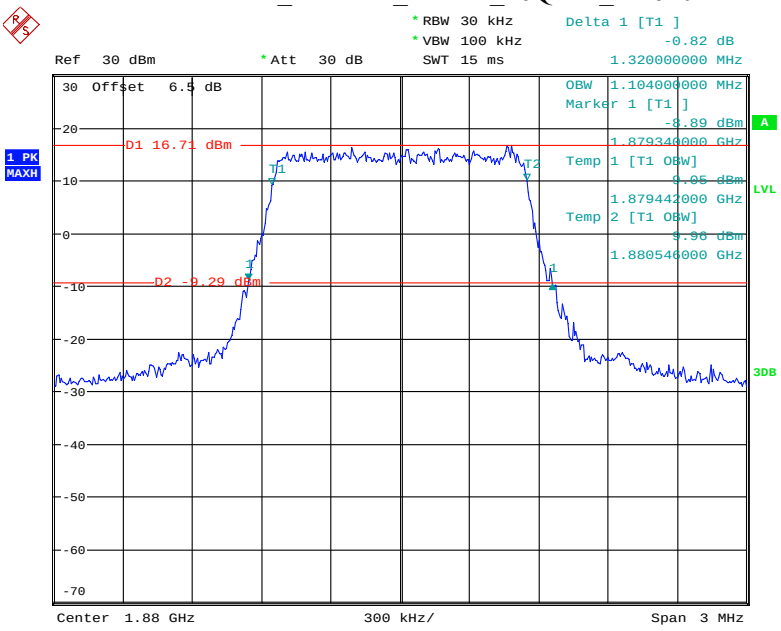
Date: 1.NOV.2020 13:43:26

Band 2_1.4 MHz_Low_QPSK_RB6#0



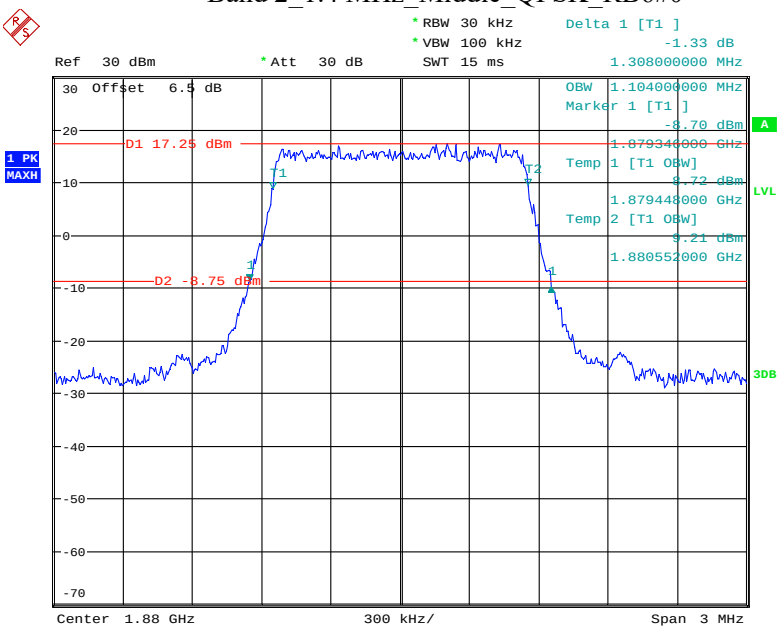
Date: 1.NOV.2020 13:45:18

Band 2_1.4 MHz_Middle_16QAM_RB6#0



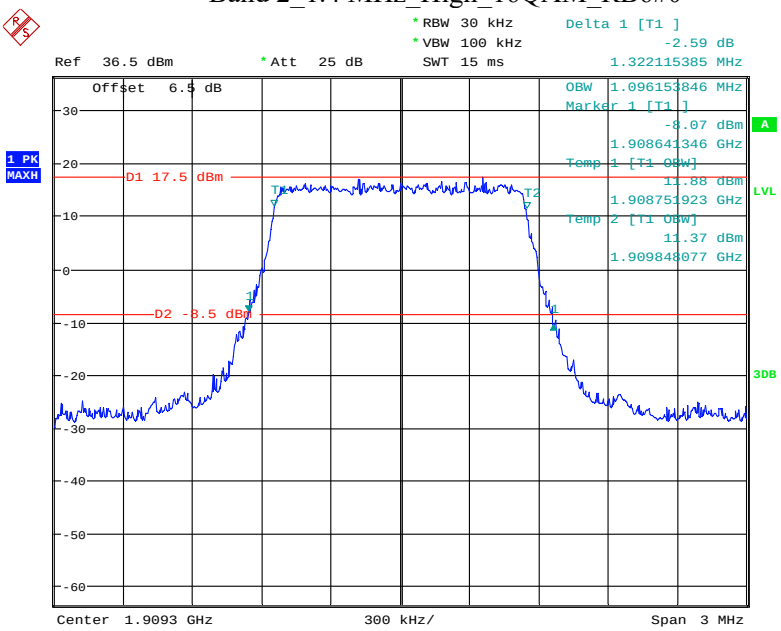
Date: 11.OCT.2020 12:18:40

Band 2_1.4 MHz_Middle_QPSK_RB6#0



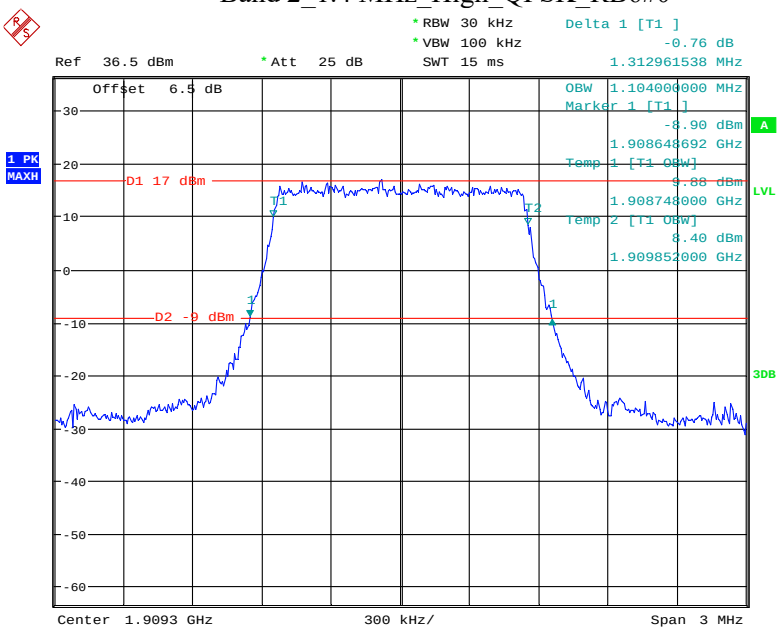
Date: 11.OCT.2020 12:18:21

Band 2_1.4 MHz_High_16QAM_RB6#0



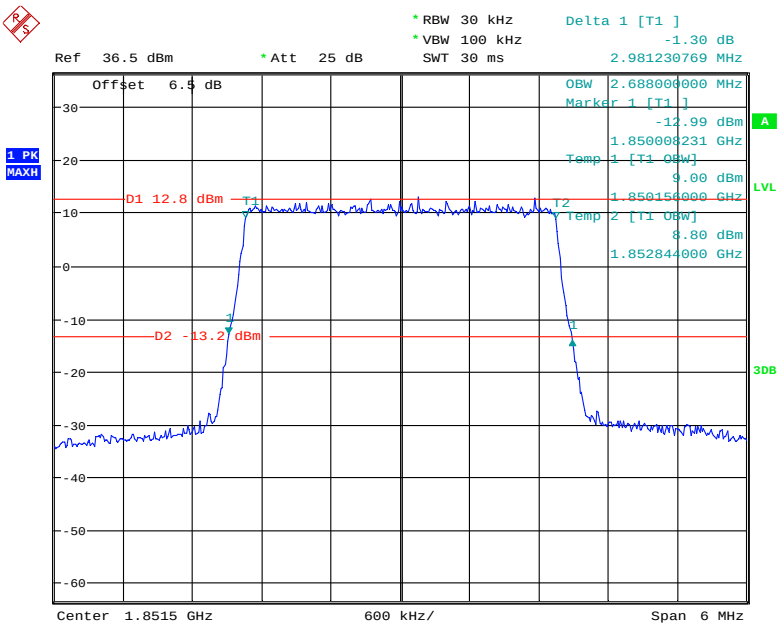
Date: 3.FEB.2021 20:56:16

Band 2_1.4 MHz_High_QPSK_RB6#0



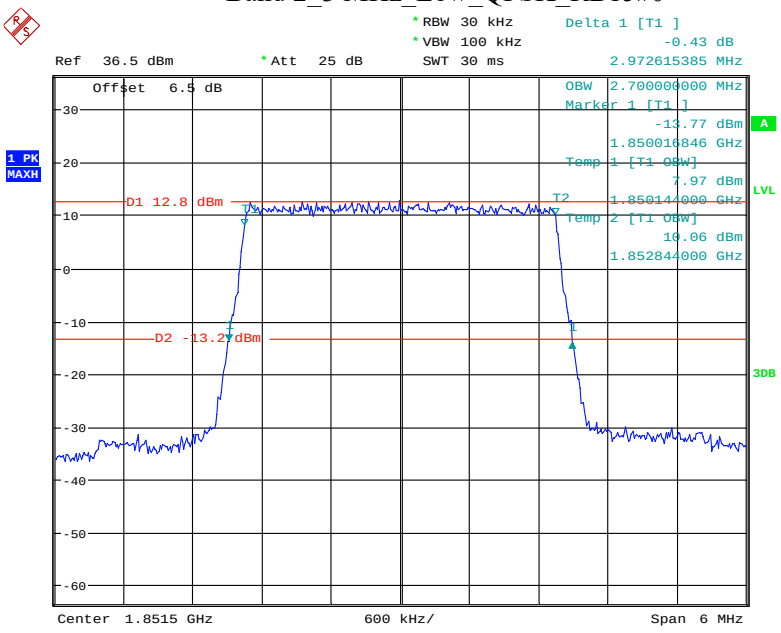
Date: 1.NOV.2020 13:47:11

Band 2_3 MHz_Low_16QAM_RB15#0



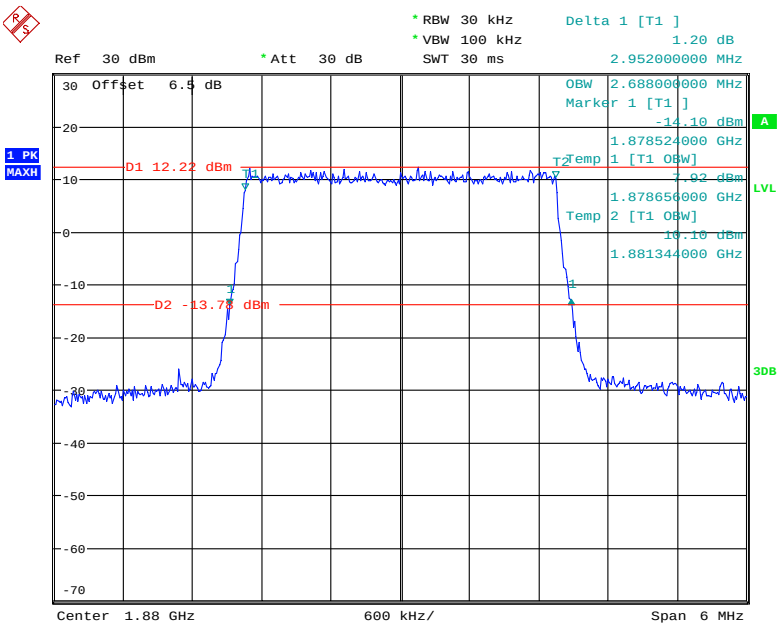
Date: 1.NOV.2020 13:51:01

Band 2_3 MHz_Low_QPSK_RB15#0



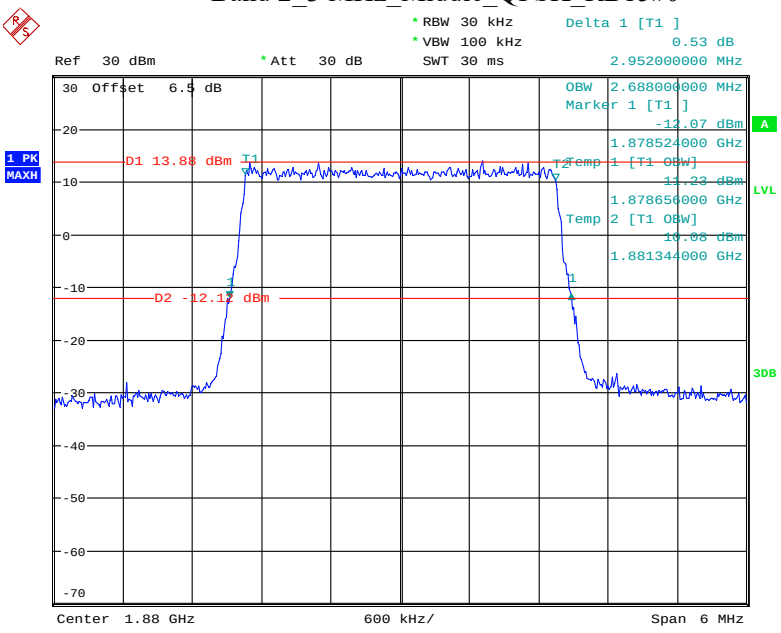
Date: 1.NOV.2020 13:52:18

Band 2_3 MHz_Middle_16QAM_RB15#0



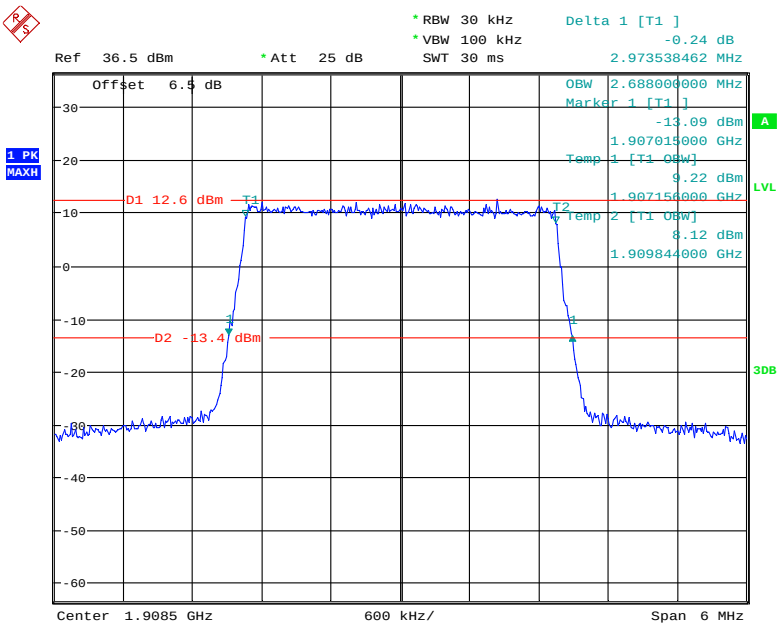
Date: 11.OCT.2020 10:03:52

Band 2_3 MHz_Middle_QPSK_RB15#0



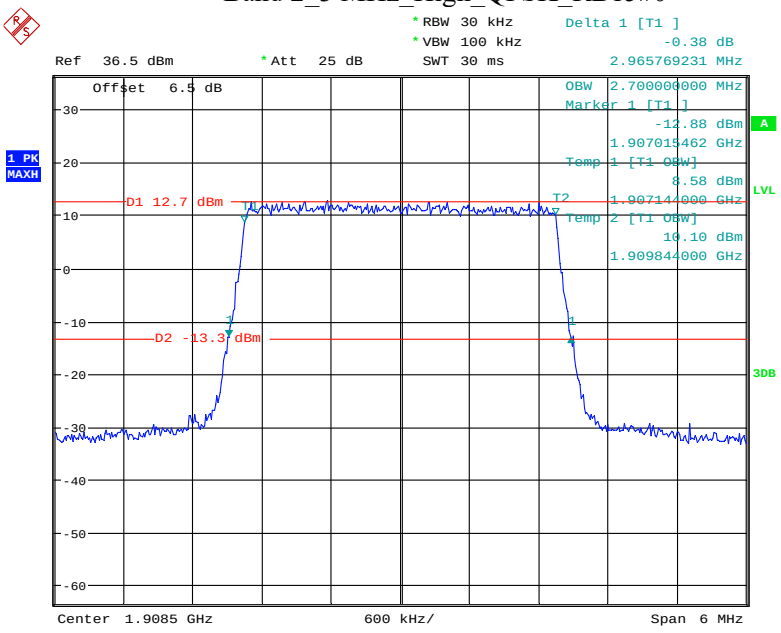
Date: 11.OCT.2020 12:19:14

Band 2_3 MHz_High_16QAM_RB15#0



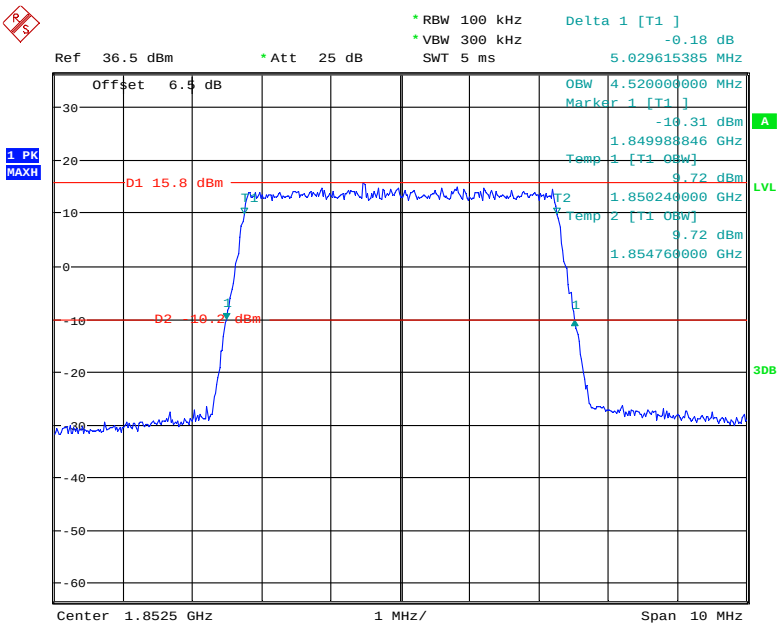
Date: 1.NOV.2020 13:54:37

Band 2_3 MHz_High_QPSK_RB15#0



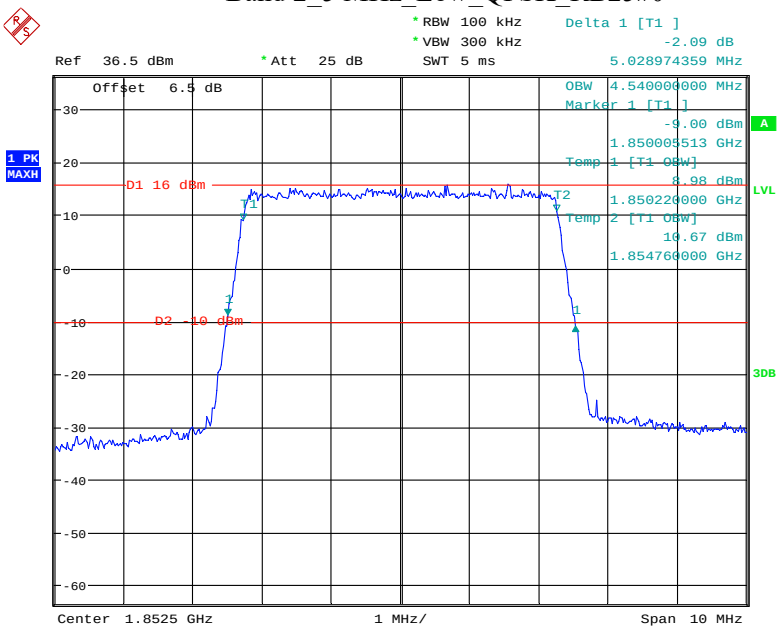
Date: 1.NOV.2020 13:53:36

Band 2_5 MHz_Low_16QAM_RB25#0



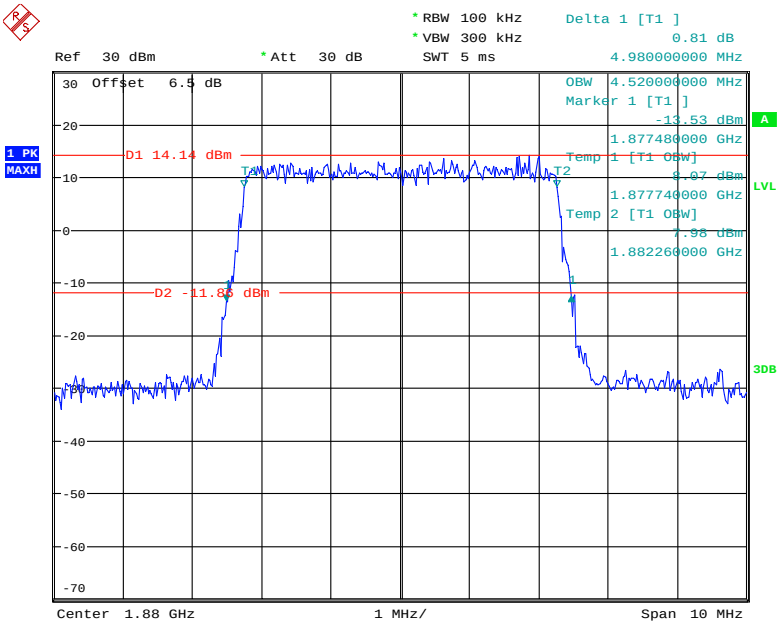
Date: 1.NOV.2020 13:57:54

Band 2_5 MHz_Low_QPSK_RB25#0



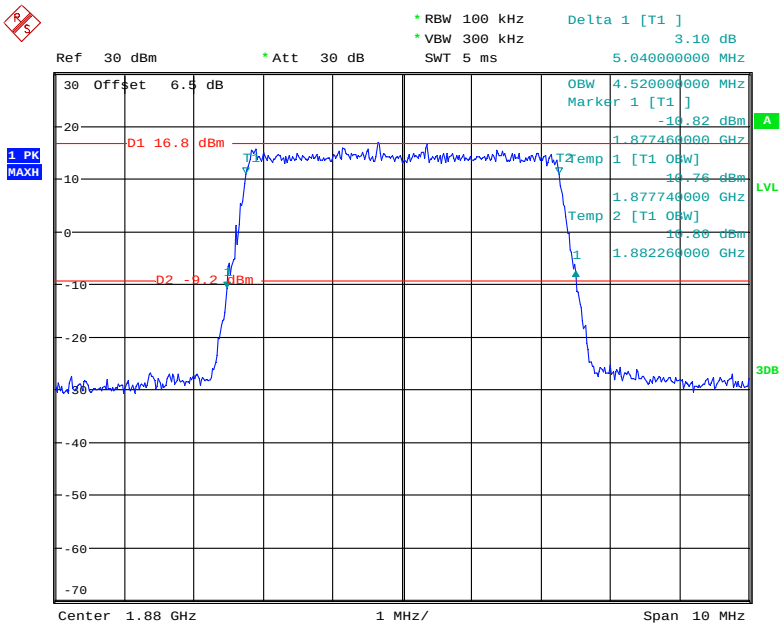
Date: 1.NOV.2020 13:59:04

Band 2_5 MHz_Middle_16QAM_RB25#0



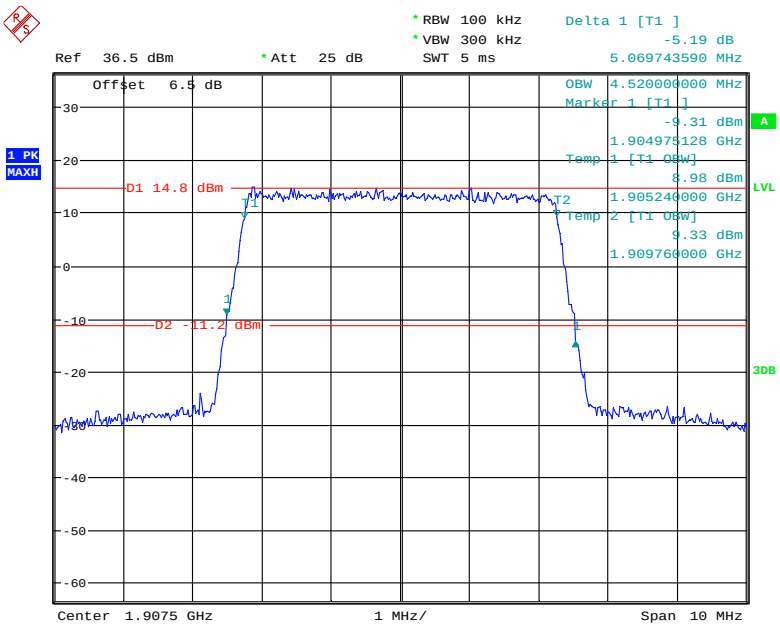
Date: 11.OCT.2020 10:04:27

Band 2_5 MHz_Middle_QPSK_RB25#0



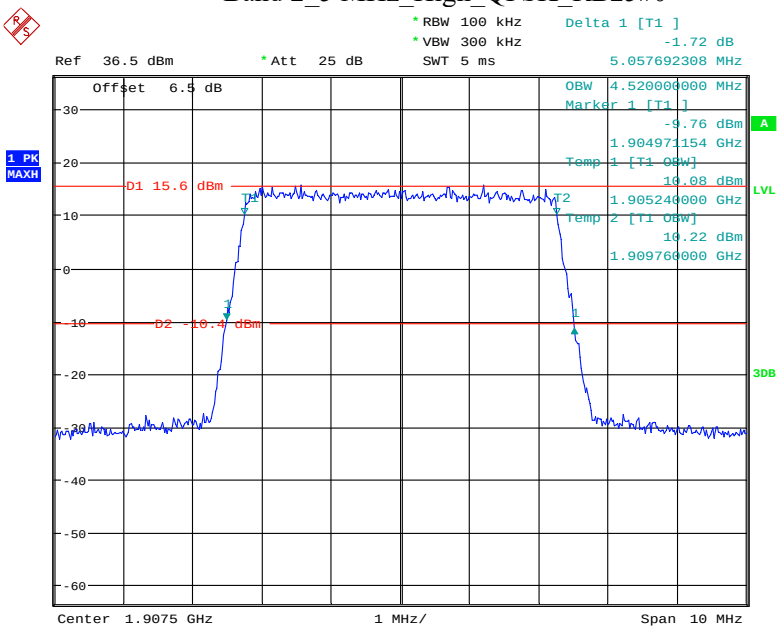
Date: 11.OCT.2020 10:04:13

Band 2_5 MHz_High_16QAM_RB25#0



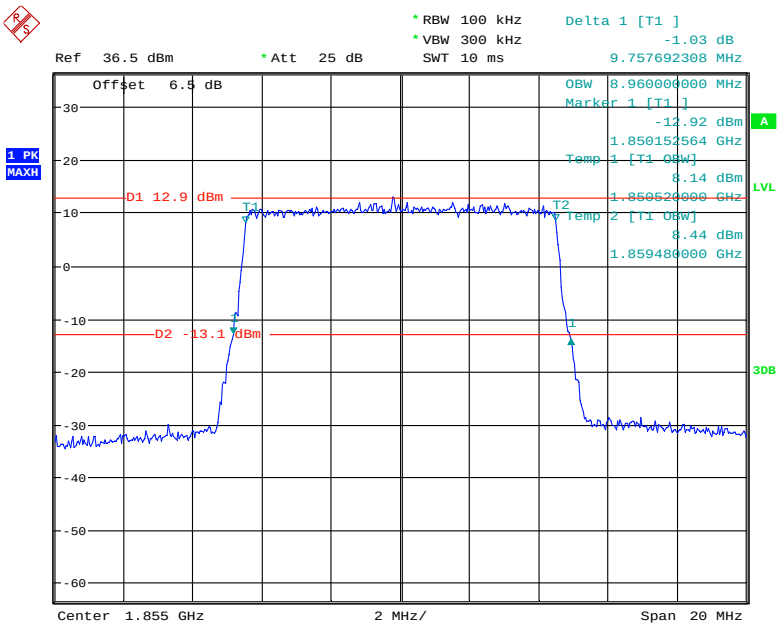
Date: 1.NOV.2020 14:02:12

Band 2_5 MHz_High_QPSK_RB25#0



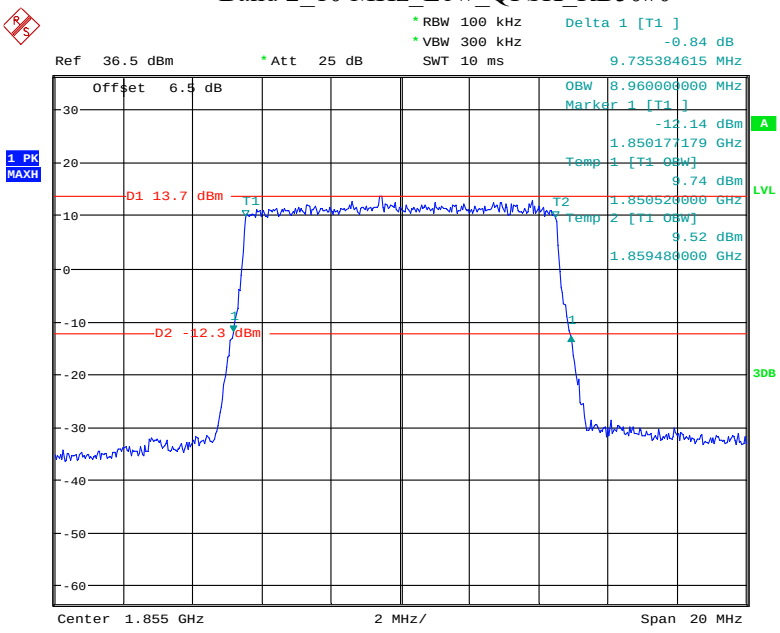
Date: 1.NOV.2020 14:01:01

Band 2_10 MHz_Low_16QAM_RB50#0



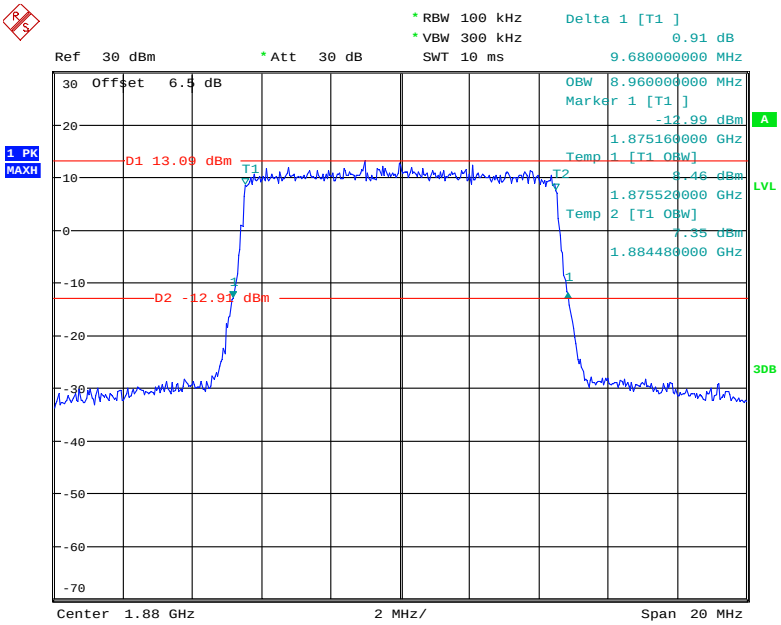
Date: 1.NOV.2020 14:11:24

Band 2_10 MHz_Low_QPSK_RB50#0



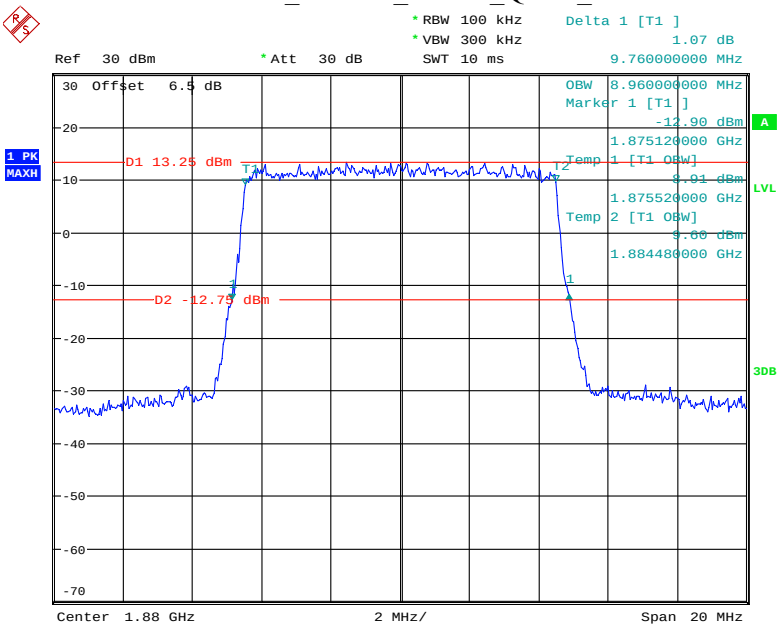
Date: 1.NOV.2020 14:06:41

Band 2_10 MHz_Middle_16QAM_RB50#0



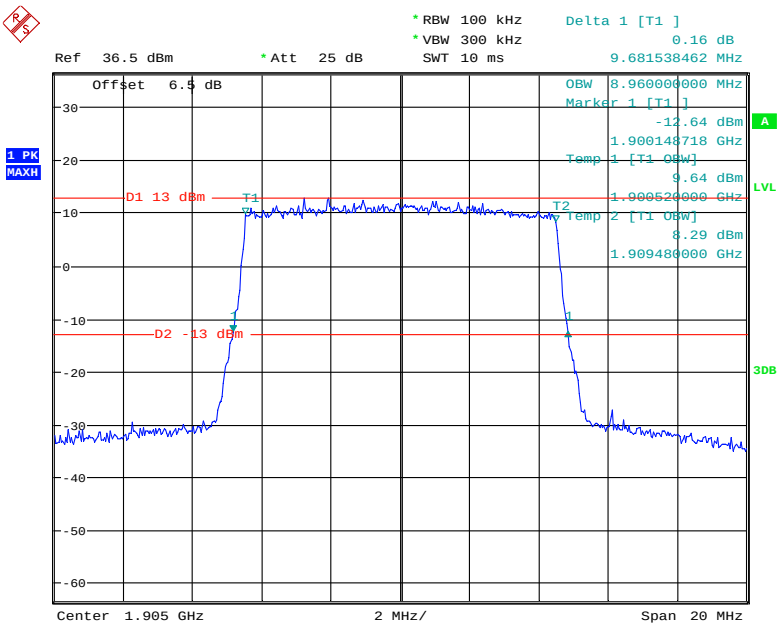
Date: 11.OCT.2020 10:05:14

Band 2_10 MHz_Middle_QPSK_RB50#0



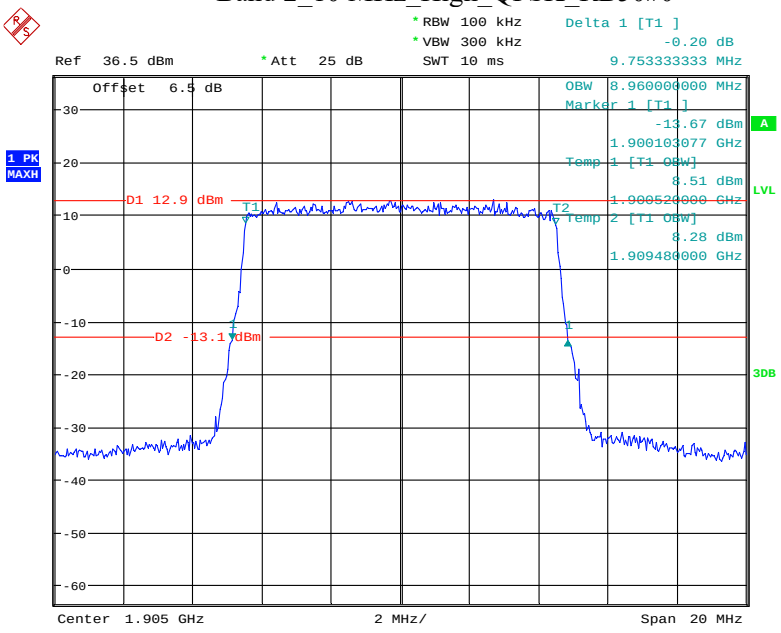
Date: 11.OCT.2020 10:04:56

Band 2_10 MHz_High_16QAM_RB50#0



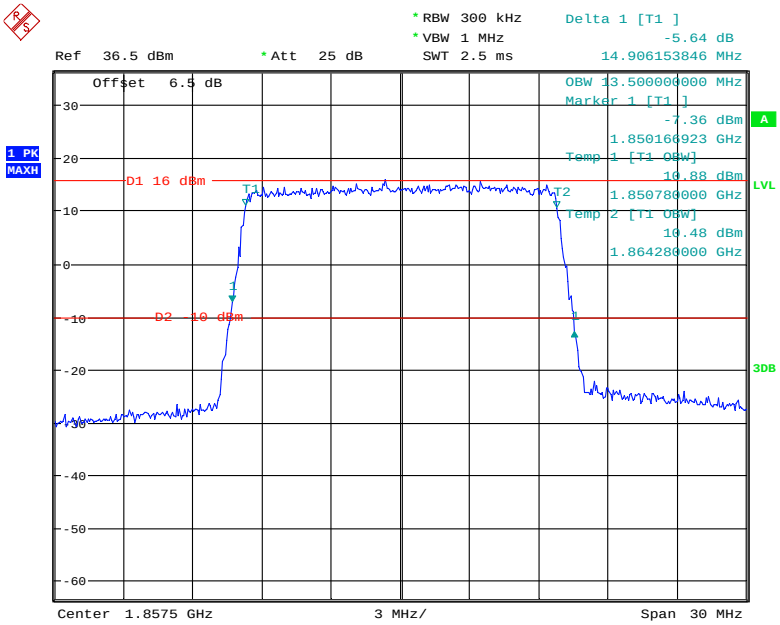
Date: 1.NOV.2020 14:09:40

Band 2_10 MHz_High_QPSK_RB50#0



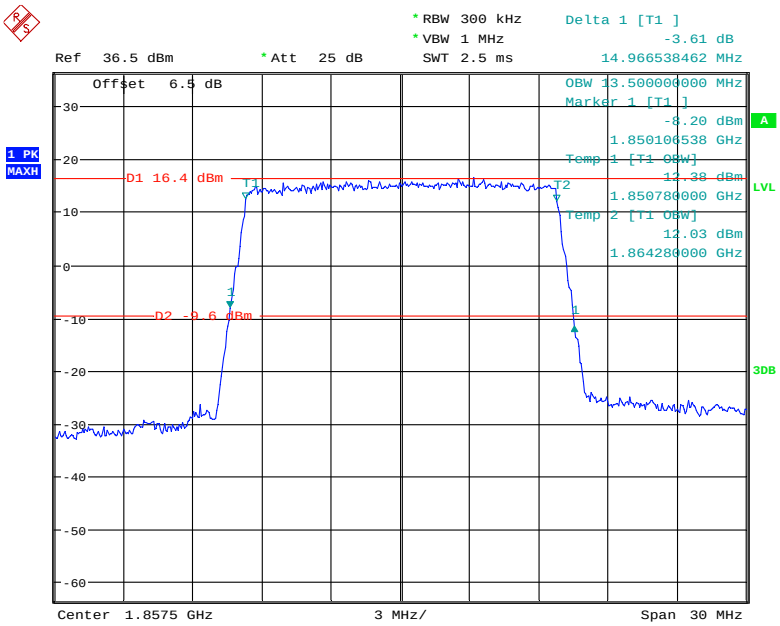
Date: 1.NOV.2020 14:08:00

Band 2_15 MHz_Low_16QAM_RB75#0



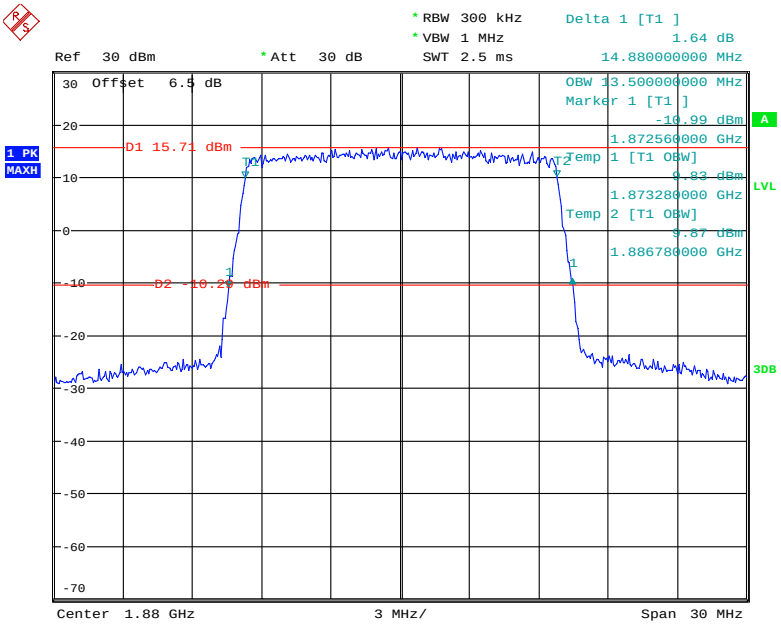
Date: 1.NOV.2020 14:16:33

Band 2_15 MHz_Low_QPSK_RB75#0



Date: 1.NOV.2020 14:15:25

Band 2_15 MHz_Middle_16QAM_RB75#0



Date: 11.OCT.2020 10:05:59

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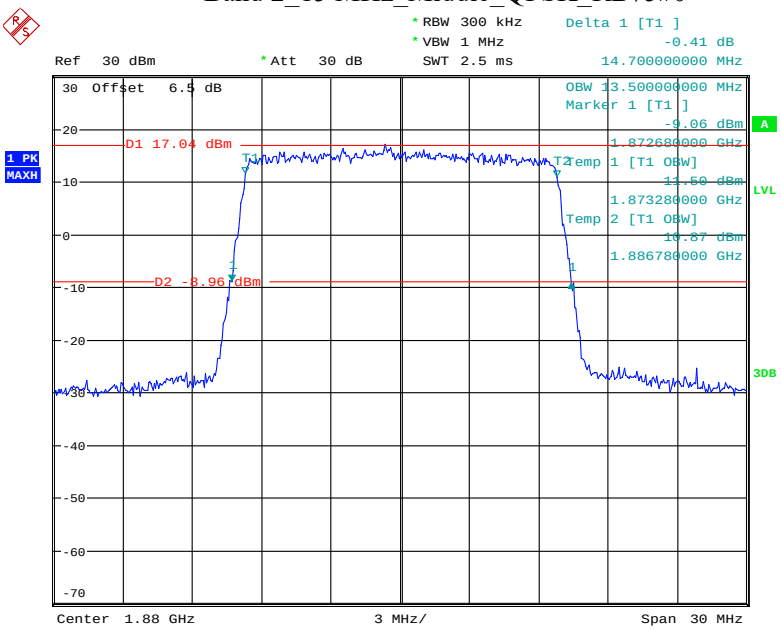
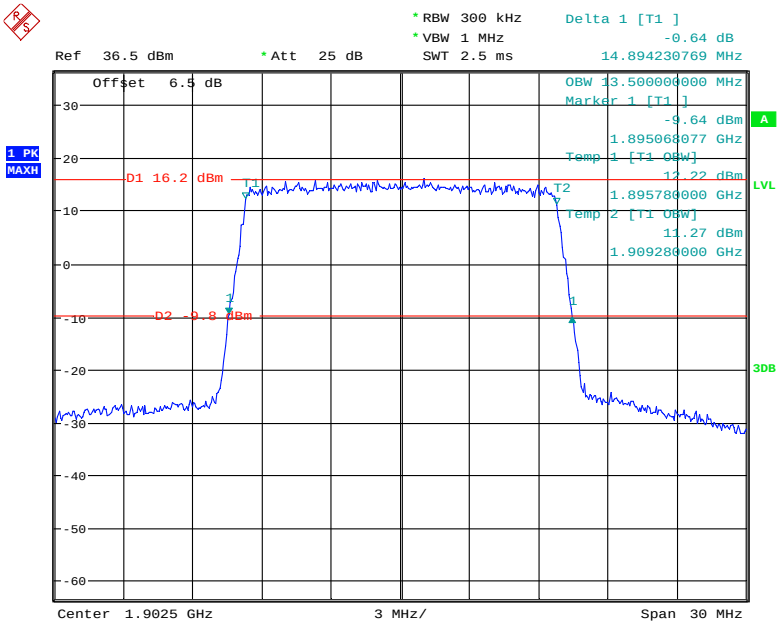


Date: 11.OCT.2020 10:05:36

Band 2_15 MHz_High_16QAM_RB75#0



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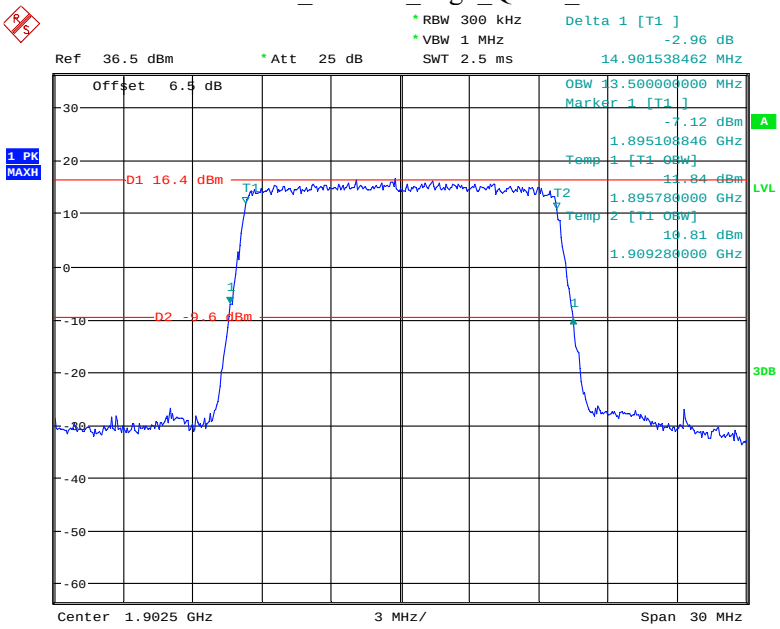
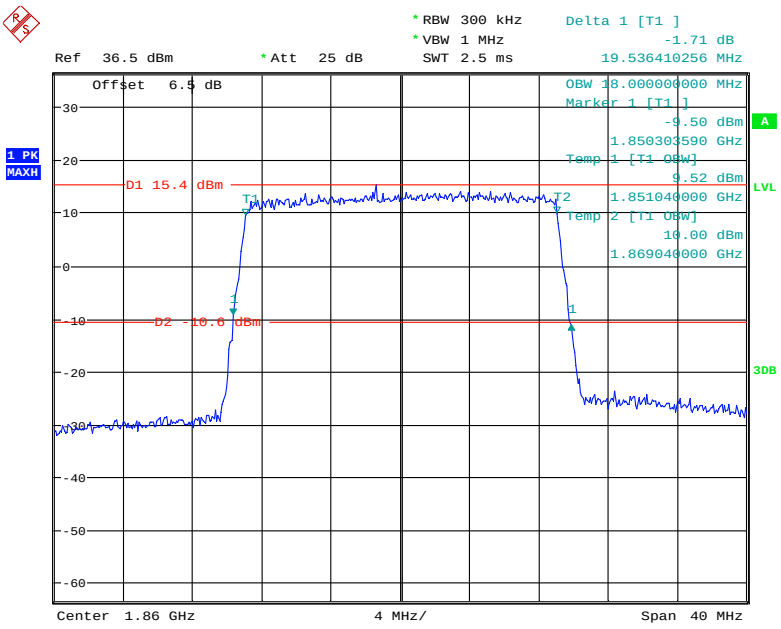
Band 2_15 MHz_High_QPSK_RB75#0



Date: 1.NOV.2020 14:20:17

Band 2_20 MHz_Low_16QAM_RB100#0



Date: 1.NOV.2020 14:23:42

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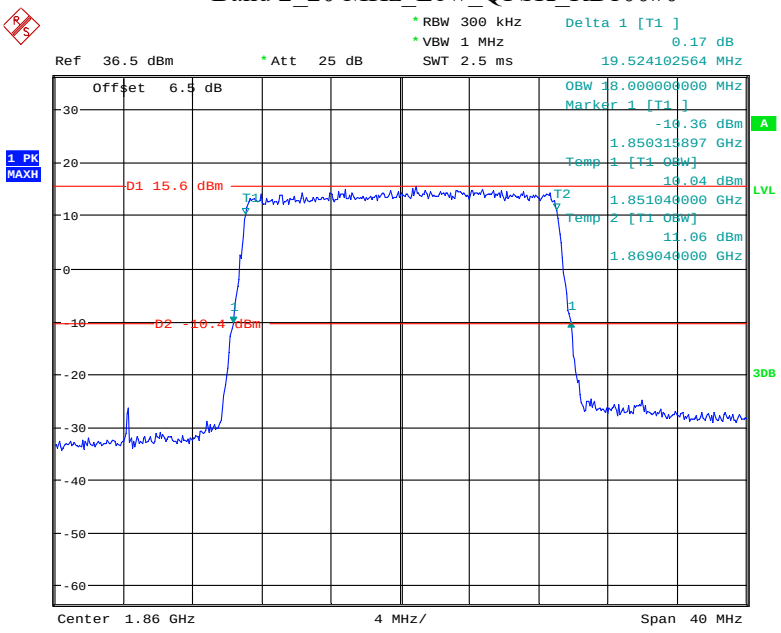
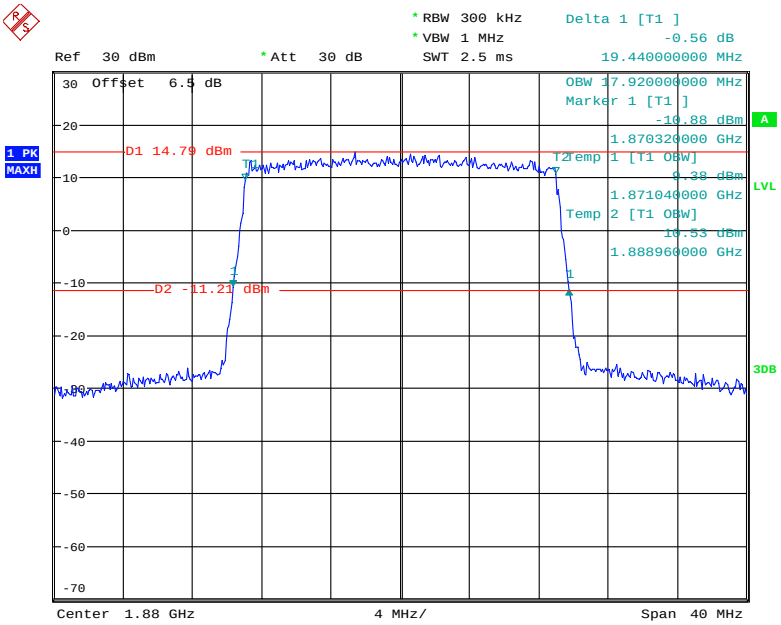


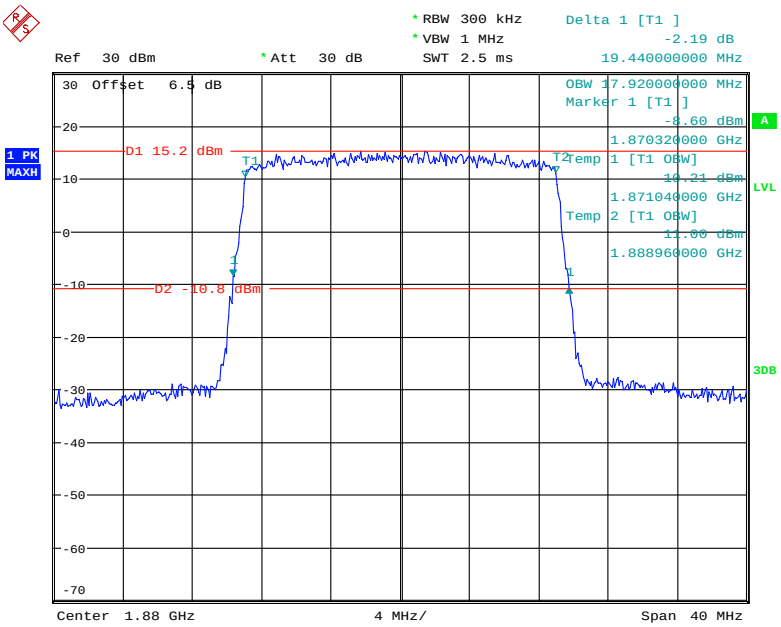
Date: 1.NOV.2020 14:22:26

Band 2_20 MHz_Middle_16QAM_RB100#0



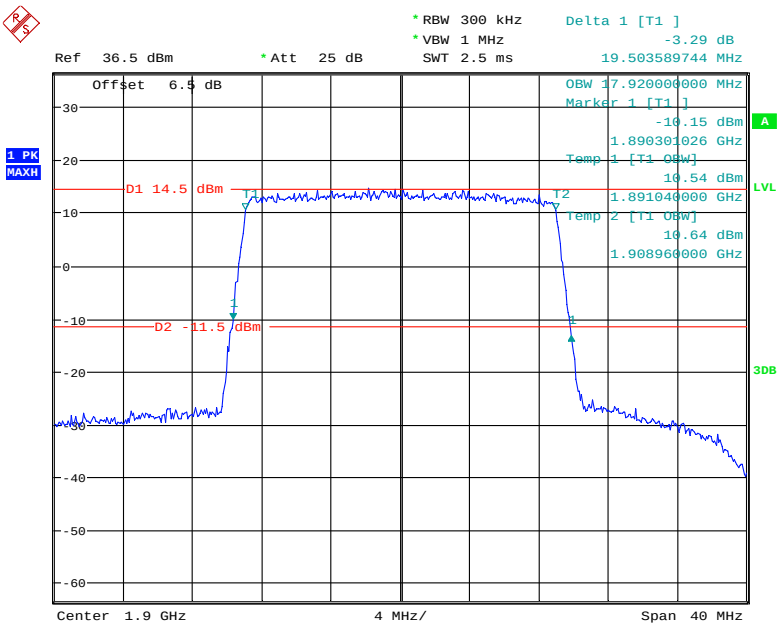
Date: 11.OCT.2020 10:07:25

Band 2_20 MHz_Middle_QPSK_RB100#0



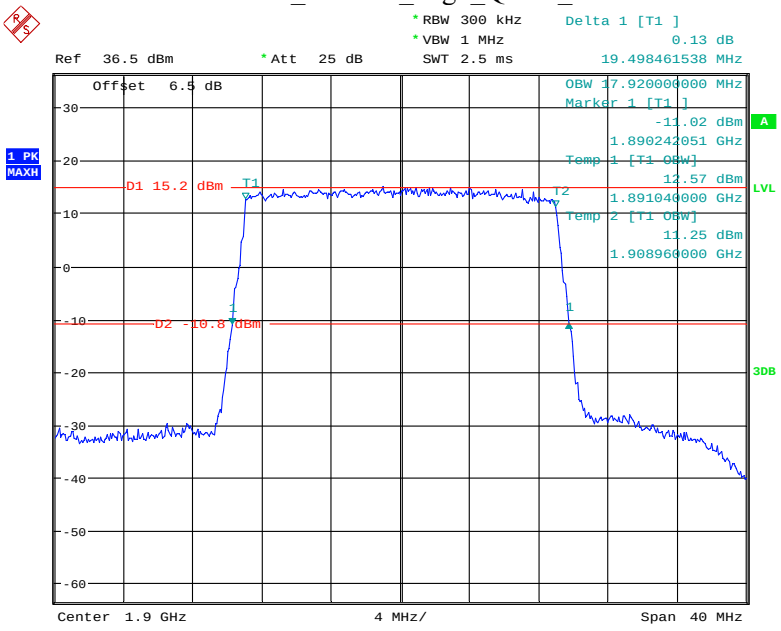
Date: 11.OCT.2020 10:07:05

Band 2_20 MHz_High_16QAM_RB100#0



Date: 1.NOV.2020 14:25:34

Band 2_20 MHz_High_QPSK_RB100#0

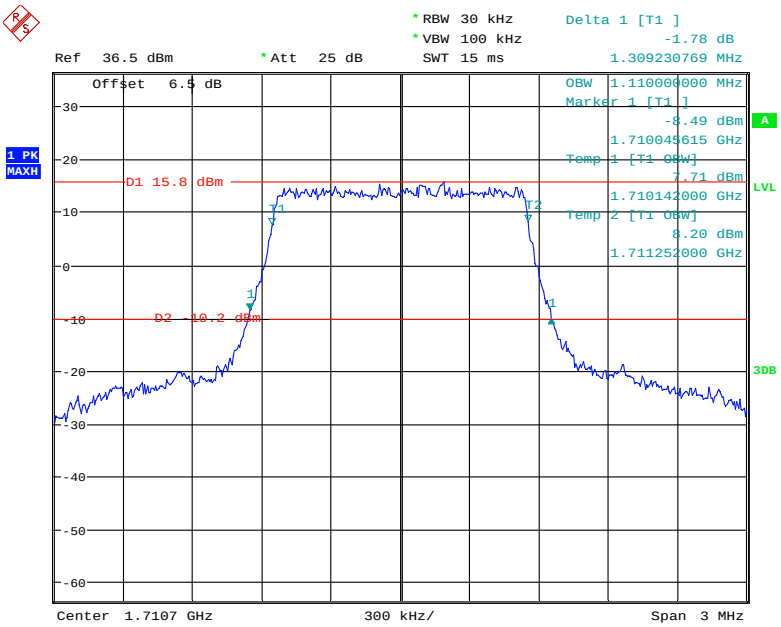


Date: 1.NOV.2020 14:26:28

LTE Band 4:

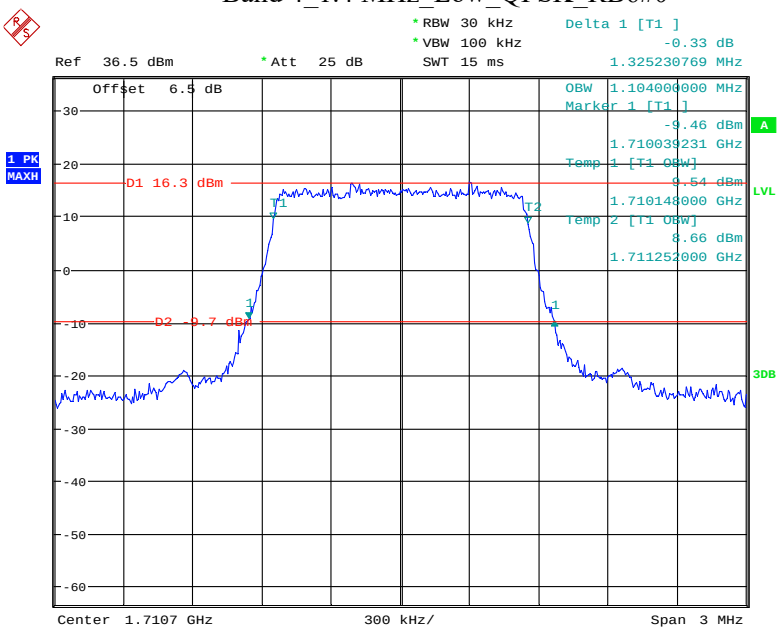
Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	Low	16QAM	1.110	1.309
		QPSK	1.104	1.325
	Middle	16QAM	1.110	1.326
		QPSK	1.104	1.314
	High	16QAM	1.104	1.308
		QPSK	1.110	1.352
3	Low	16QAM	2.688	2.966
		QPSK	2.688	2.994
	Middle	16QAM	2.688	2.976
		QPSK	2.688	2.952
	High	16QAM	2.700	2.957
		QPSK	2.700	2.984
5	Low	16QAM	4.520	5.068
		QPSK	4.540	5.025
	Middle	16QAM	4.520	5.020
		QPSK	4.540	5.020
	High	16QAM	4.540	5.074
		QPSK	4.520	5.037
10	Low	16QAM	8.960	9.731
		QPSK	8.960	9.737
	Middle	16QAM	8.960	9.720
		QPSK	8.960	9.800
	High	16QAM	8.960	9.768
		QPSK	8.960	9.815
15	Low	16QAM	13.560	14.901
		QPSK	13.560	14.897
	Middle	16QAM	13.500	14.940
		QPSK	13.500	14.820
	High	16QAM	13.500	14.792
		QPSK	13.500	14.878
20	Low	16QAM	17.920	19.559
		QPSK	17.920	19.582
	Middle	16QAM	17.920	19.520
		QPSK	18.000	19.440
	High	16QAM	17.840	19.328
		QPSK	17.840	19.431

Band 4_1.4 MHz_Low_16QAM_RB6#0



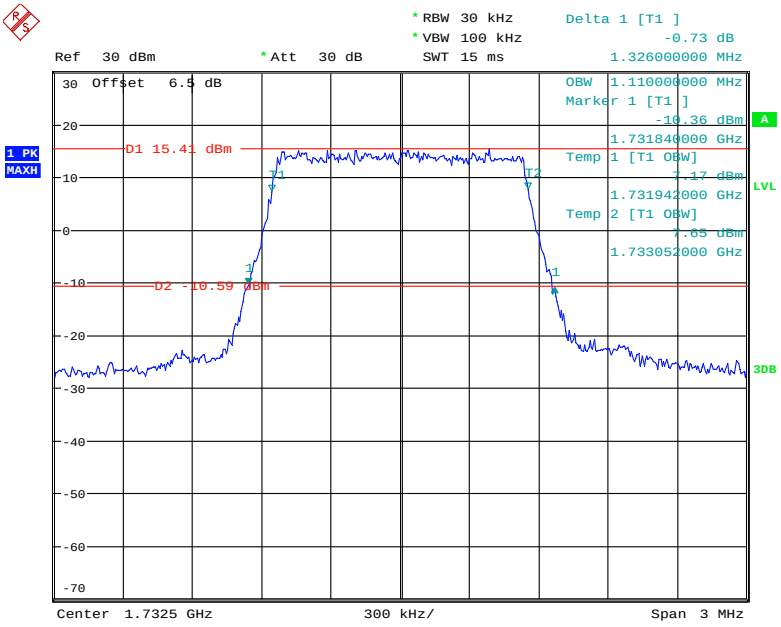
Date: 1.NOV.2020 15:19:53

Band 4_1.4 MHz_Low_QPSK_RB6#0



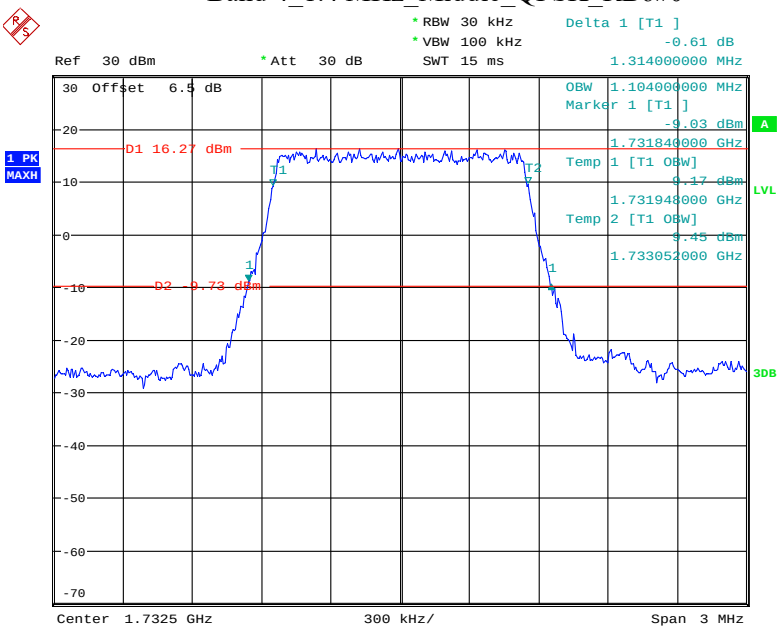
Date: 1.NOV.2020 15:18:48

Band 4_1.4 MHz_Middle_16QAM_RB6#0



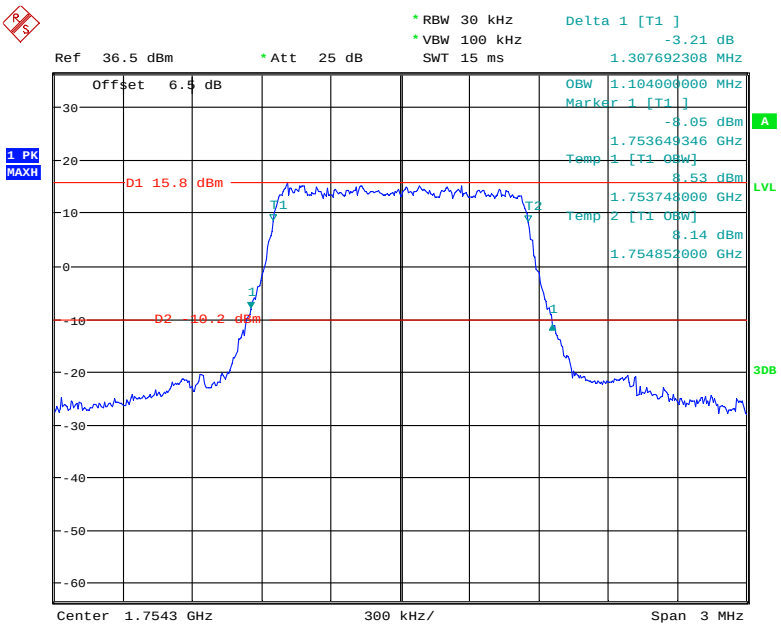
Date: 11.OCT.2020 10:08:08

Band 4_1.4 MHz_Middle_QPSK_RB6#0



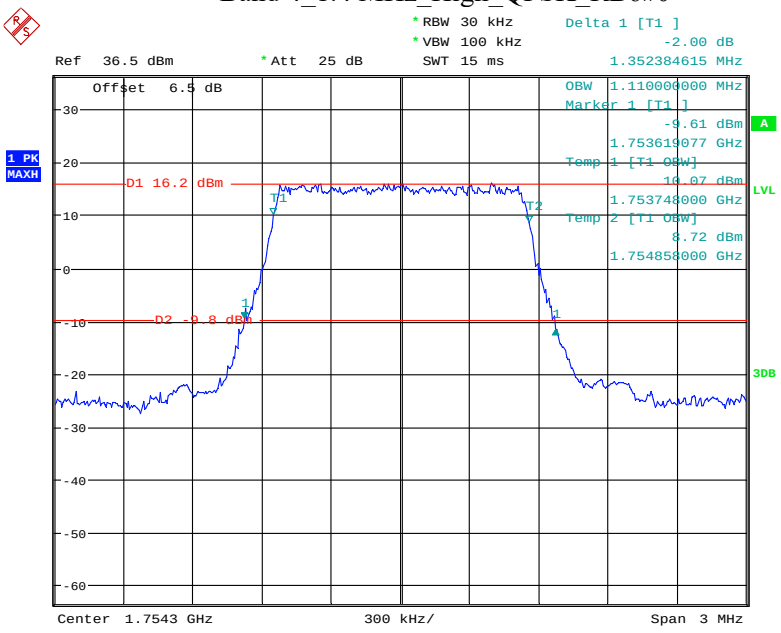
Date: 11.OCT.2020 10:07:48

Band 4_1.4 MHz_High_16QAM_RB6#0



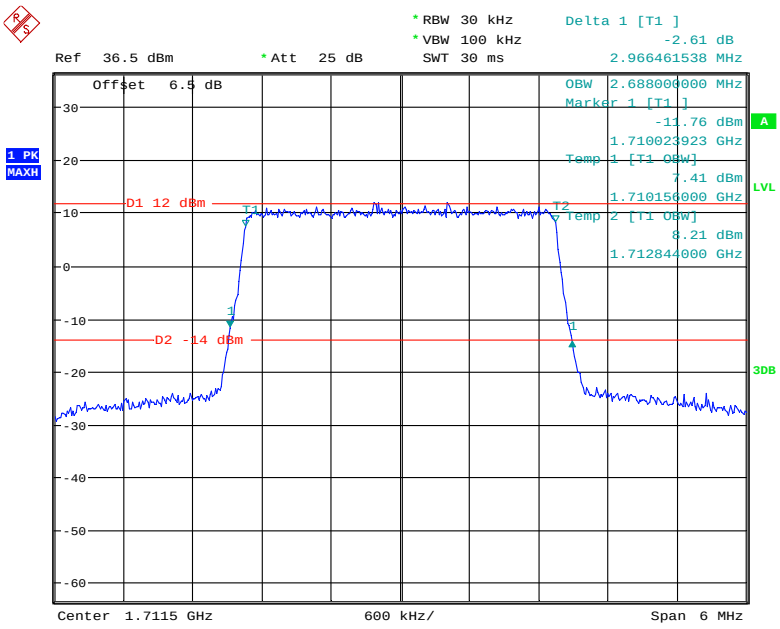
Date: 1.NOV.2020 15:15:37

Band 4_1.4 MHz_High_QPSK_RB6#0



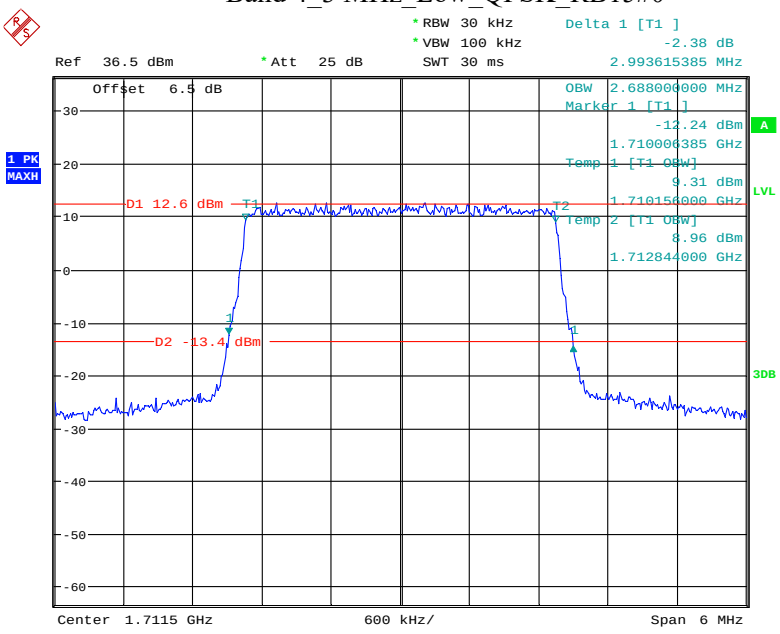
Date: 1.NOV.2020 15:17:36

Band 4_3 MHz_Low_16QAM_RB15#0



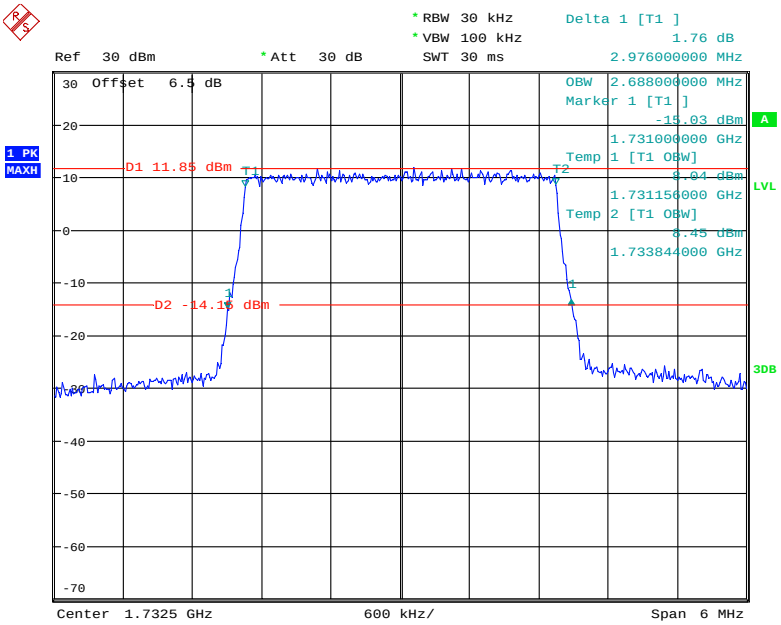
Date: 1.NOV.2020 14:53:01

Band 4_3 MHz_Low_QPSK_RB15#0



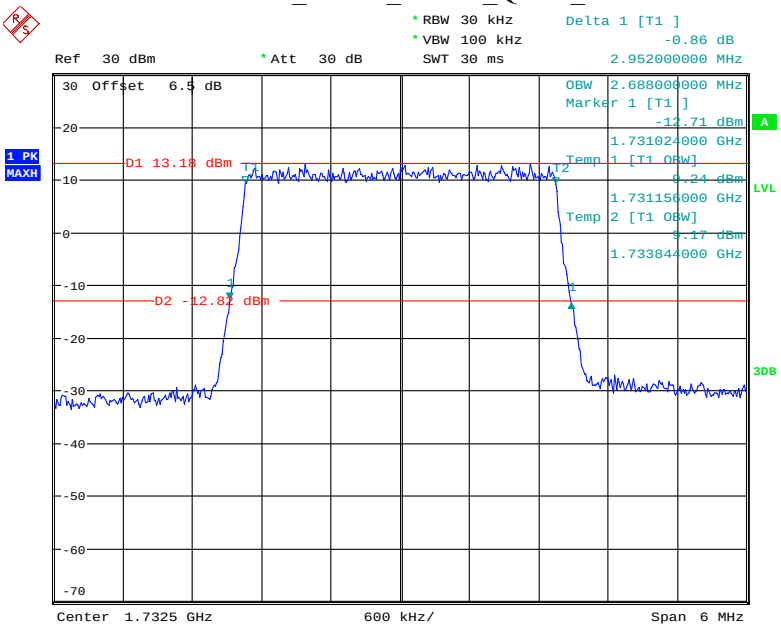
Date: 1.NOV.2020 14:54:18

Band 4_3 MHz_Middle_16QAM_RB15#0



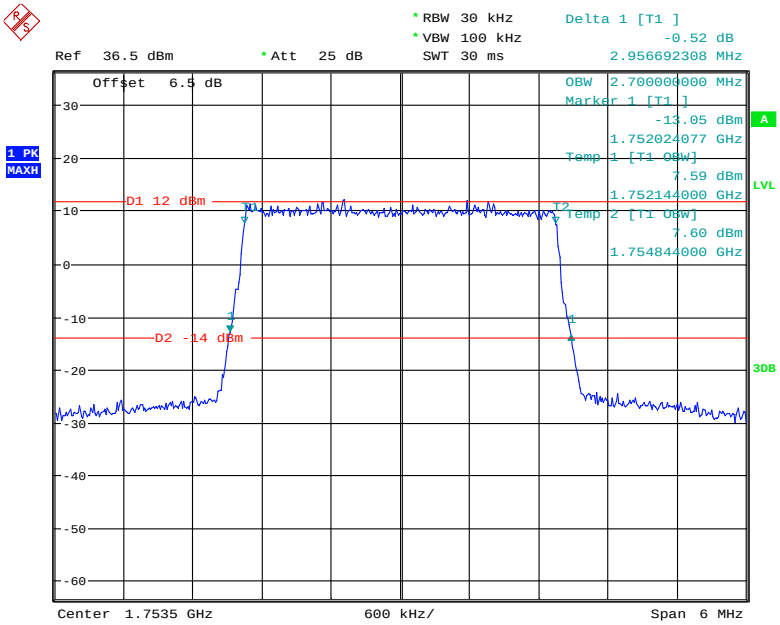
Date: 11.OCT.2020 10:08:46

Band 4_3 MHz_Middle_QPSK_RB15#0



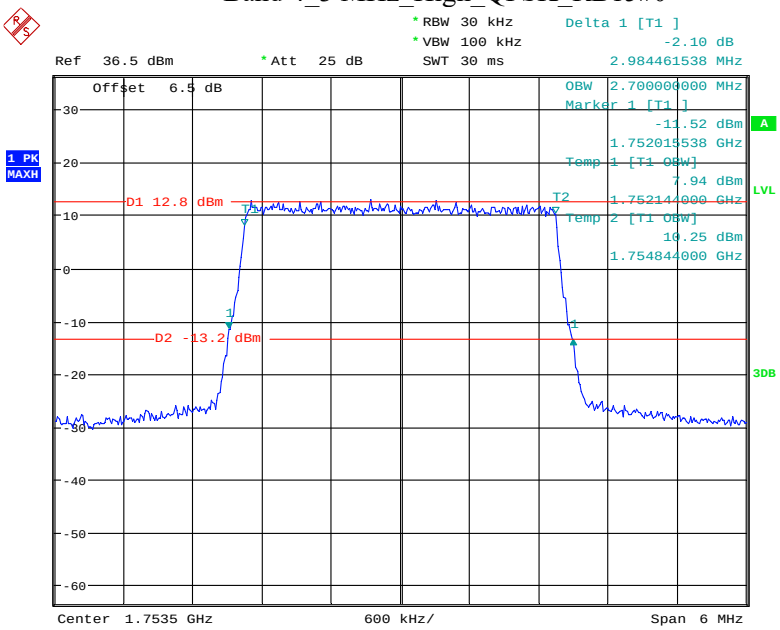
Date: 11.OCT.2020 10:08:27

Band 4_3 MHz_High_16QAM_RB15#0



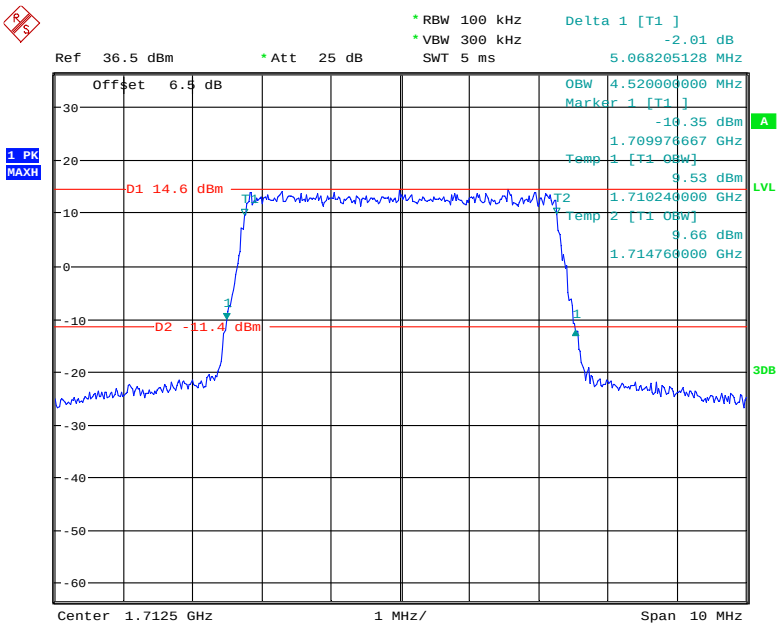
Date: 1.NOV.2020 15:12:50

Band 4_3 MHz_High_QPSK_RB15#0



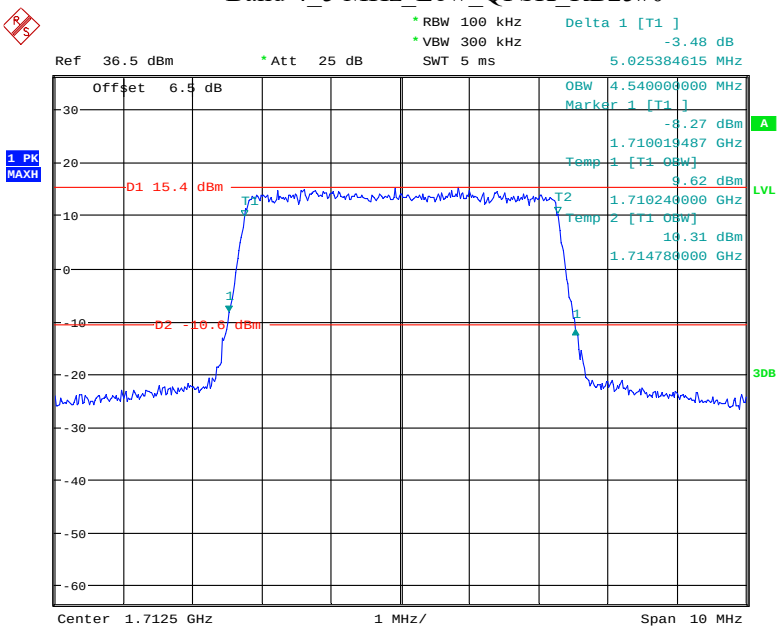
Date: 1.NOV.2020 14:56:09

Band 4_5 MHz_Low_16QAM_RB25#0



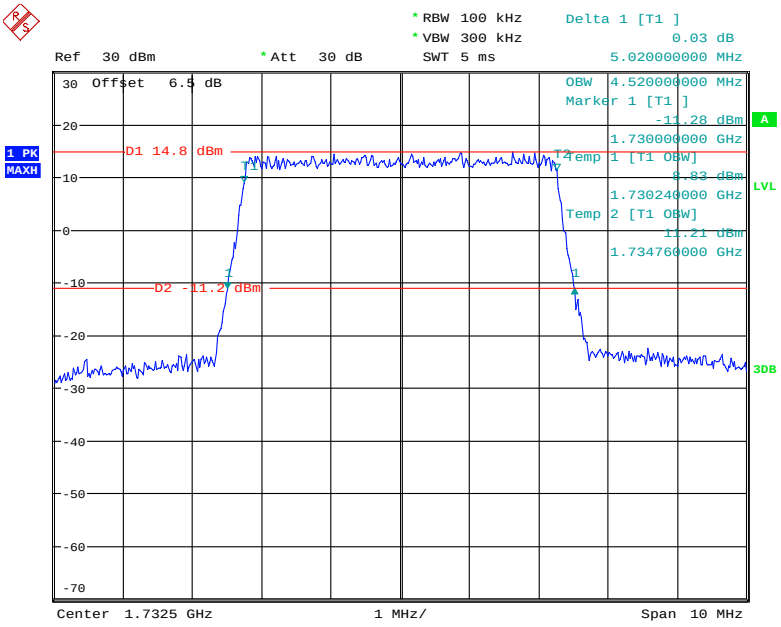
Date: 1.NOV.2020 14:51:12

Band 4_5 MHz_Low_QPSK_RB25#0



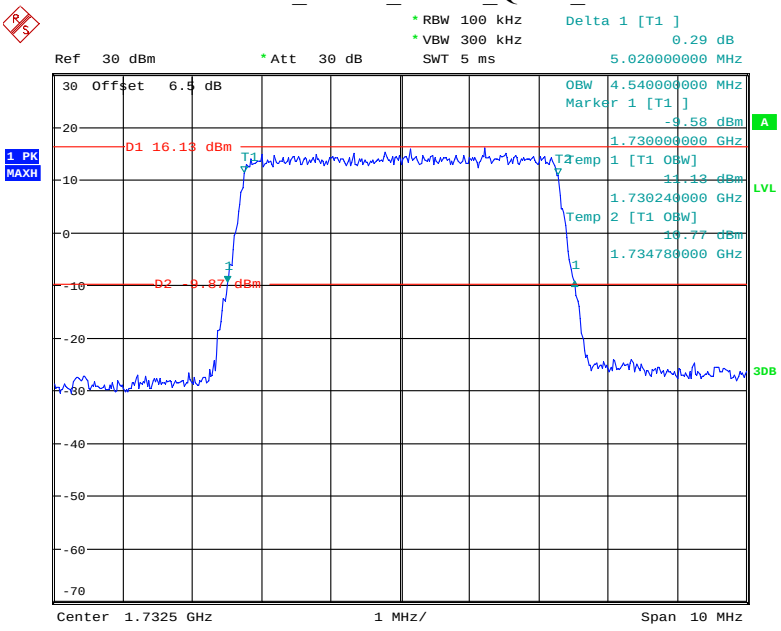
Date: 1.NOV.2020 14:50:14

Band 4_5 MHz_Middle_16QAM_RB25#0



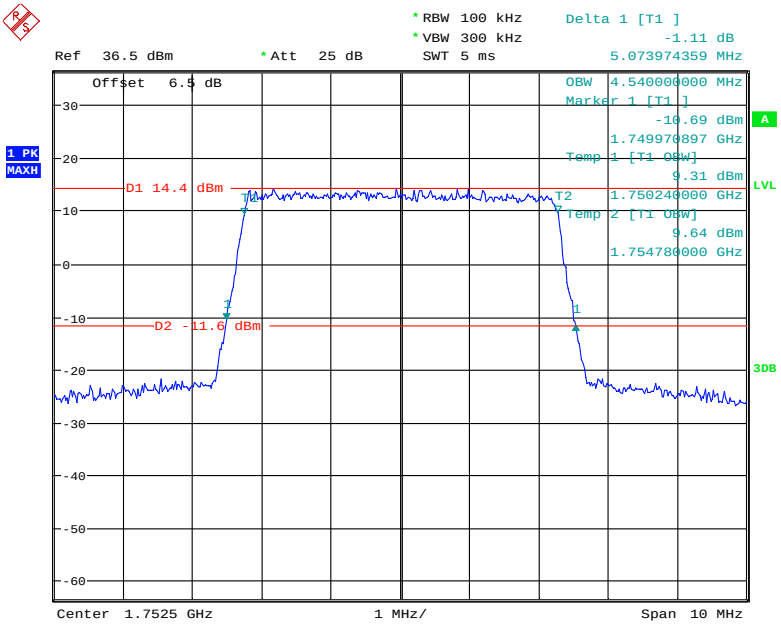
Date: 11.OCT.2020 10:09:36

Band 4_5 MHz_Middle_QPSK_RB25#0



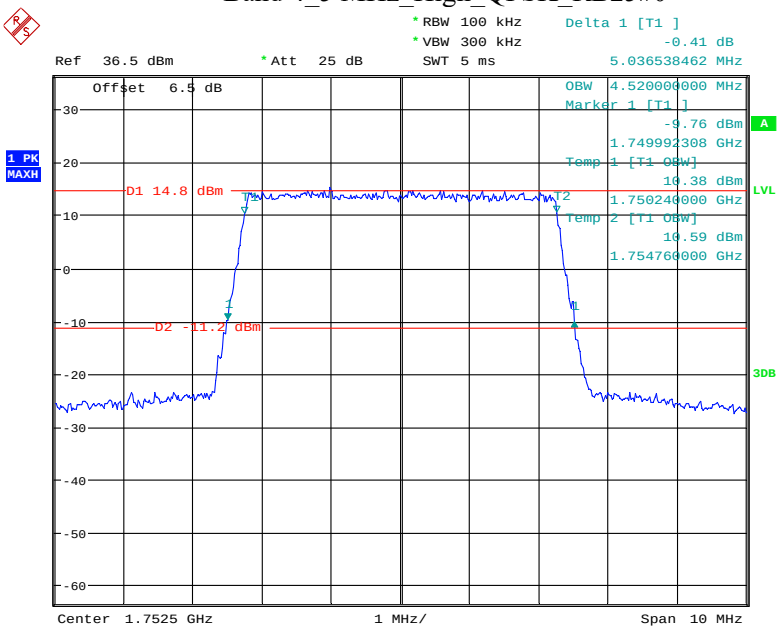
Date: 11.OCT.2020 10:09:17

Band 4_5 MHz_High_16QAM_RB25#0



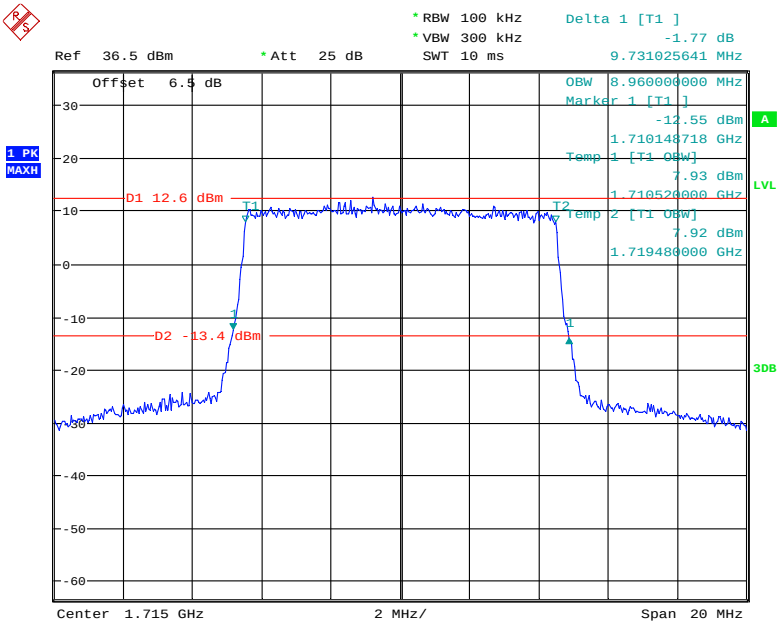
Date: 1.NOV.2020 14:47:42

Band 4_5 MHz_High_QPSK_RB25#0



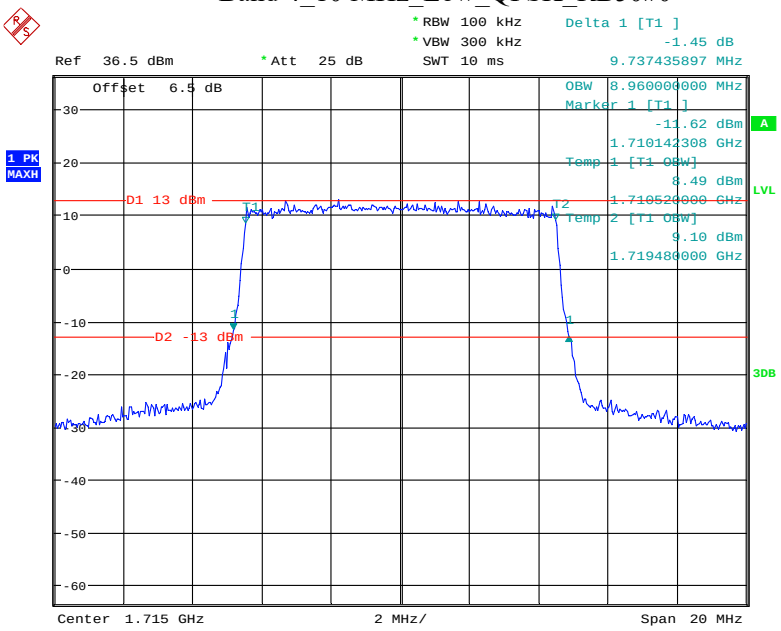
Date: 1.NOV.2020 14:48:50

Band 4_10 MHz_Low_16QAM_RB50#0



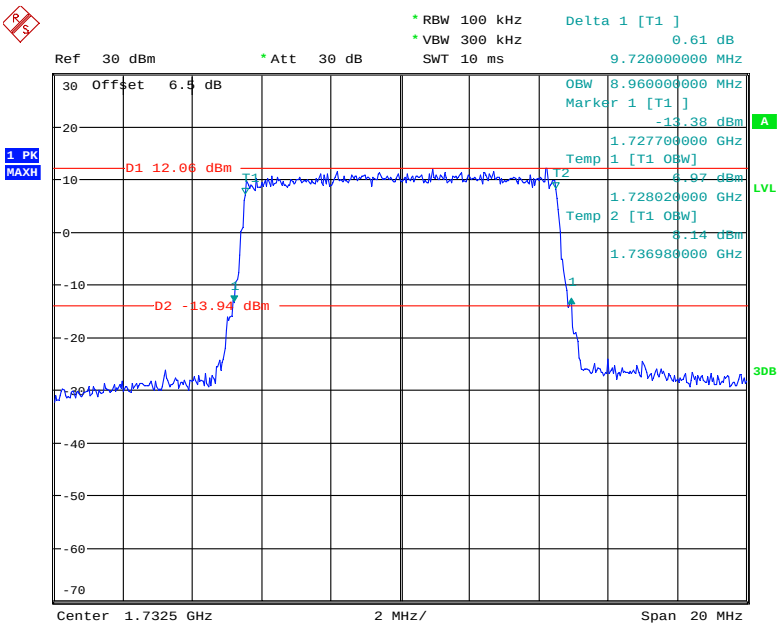
Date: 1.NOV.2020 14:44:02

Band 4_10 MHz_Low_QPSK_RB50#0



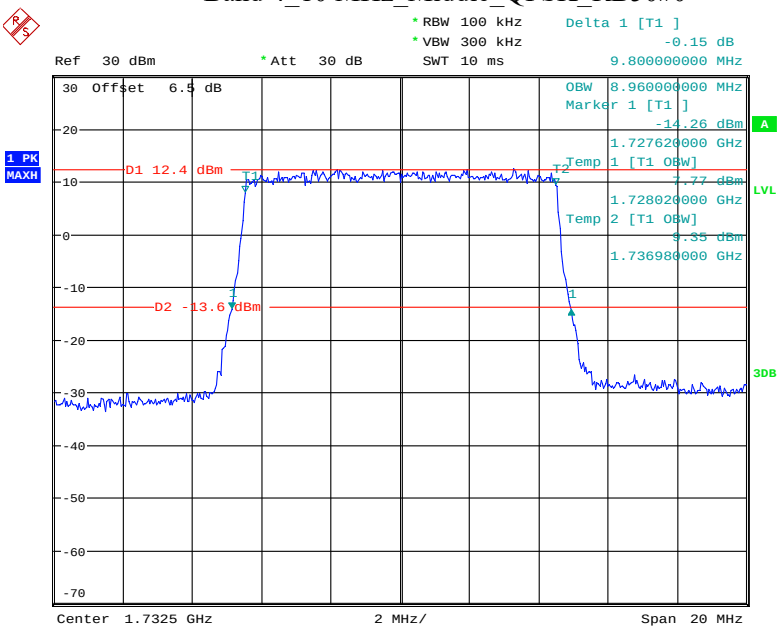
Date: 1.NOV.2020 14:43:18

Band 4_10 MHz_Middle_16QAM_RB50#0



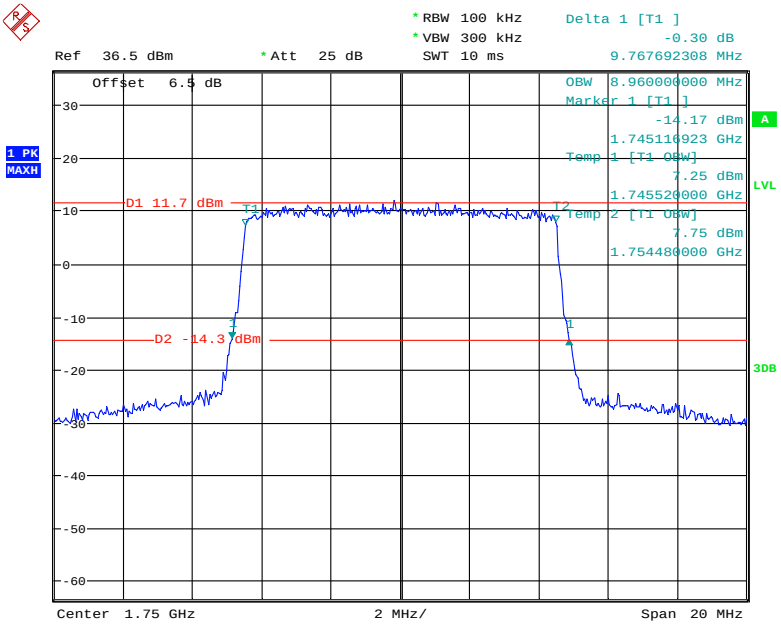
Date: 11.OCT.2020 10:10:17

Band 4_10 MHz_Middle_QPSK_RB50#0



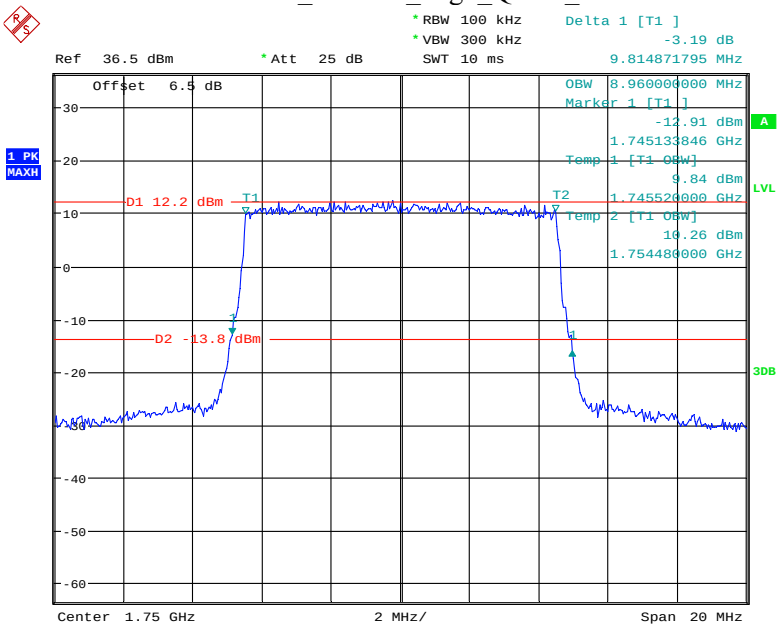
Date: 11.OCT.2020 10:10:00

Band 4_10 MHz_High_16QAM_RB50#0



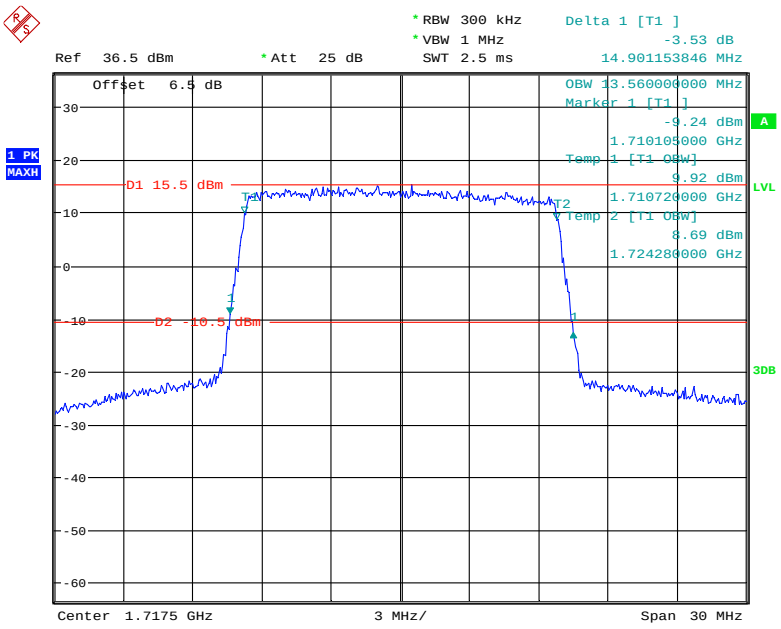
Date: 1.NOV.2020 14:45:10

Band 4_10 MHz_High_QPSK_RB50#0



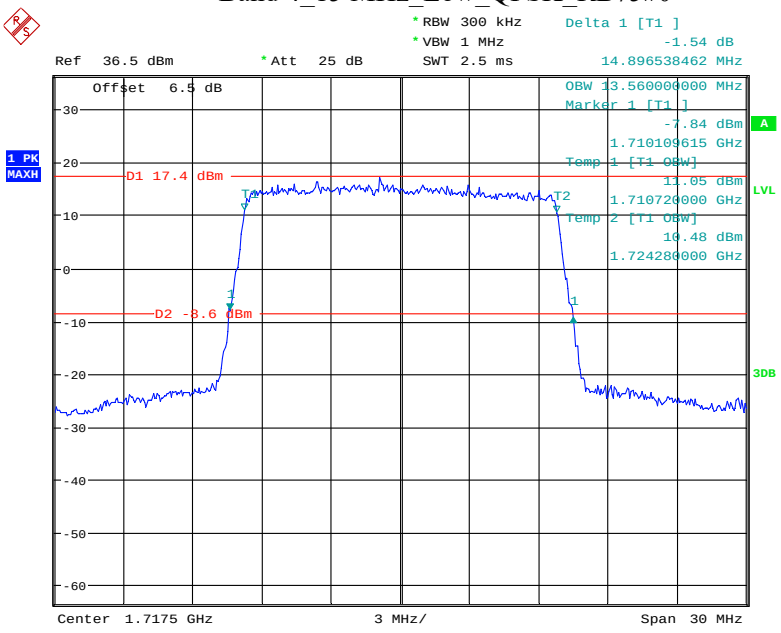
Date: 1.NOV.2020 14:46:14

Band 4_15 MHz_Low_16QAM_RB75#0



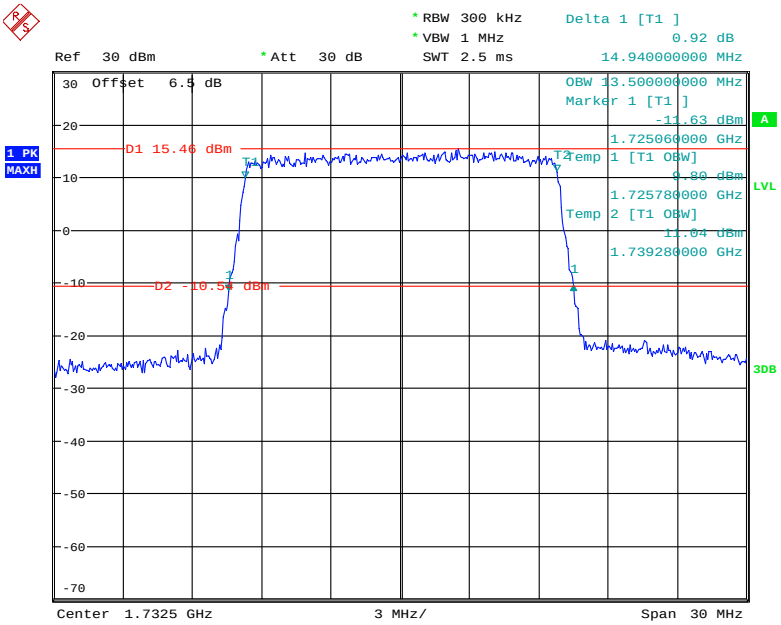
Date: 1.NOV.2020 14:35:29

Band 4_15 MHz_Low_QPSK_RB75#0



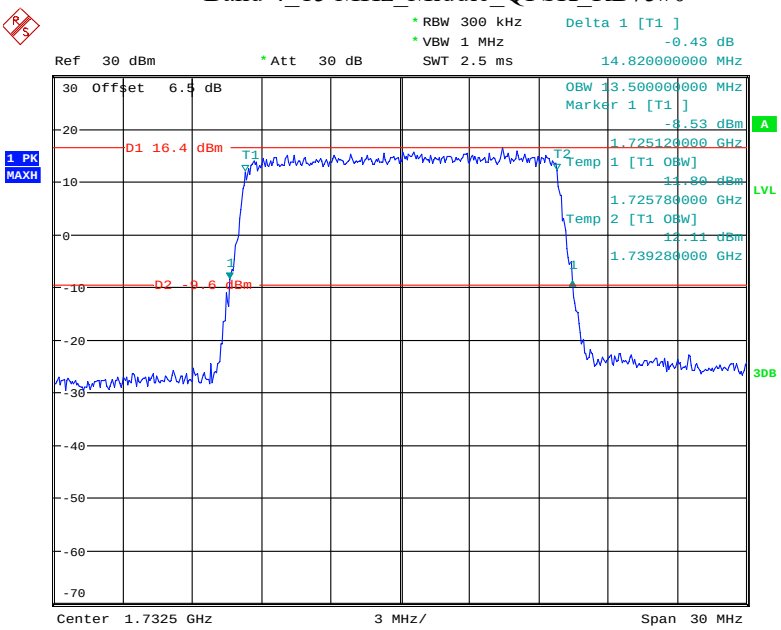
Date: 1.NOV.2020 14:34:32

Band 4_15 MHz_Middle_16QAM_RB75#0



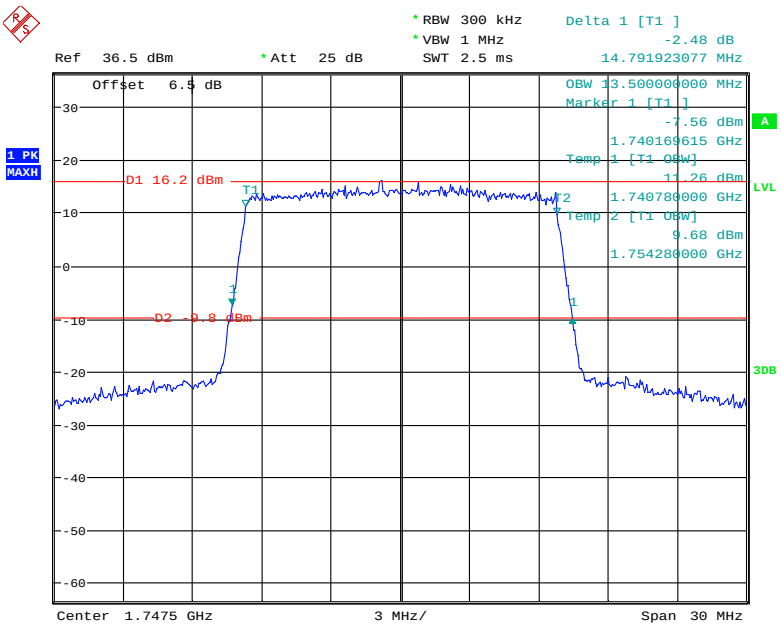
Date: 11.OCT.2020 10:11:20

Band 4_15 MHz_Middle_QPSK_RB75#0



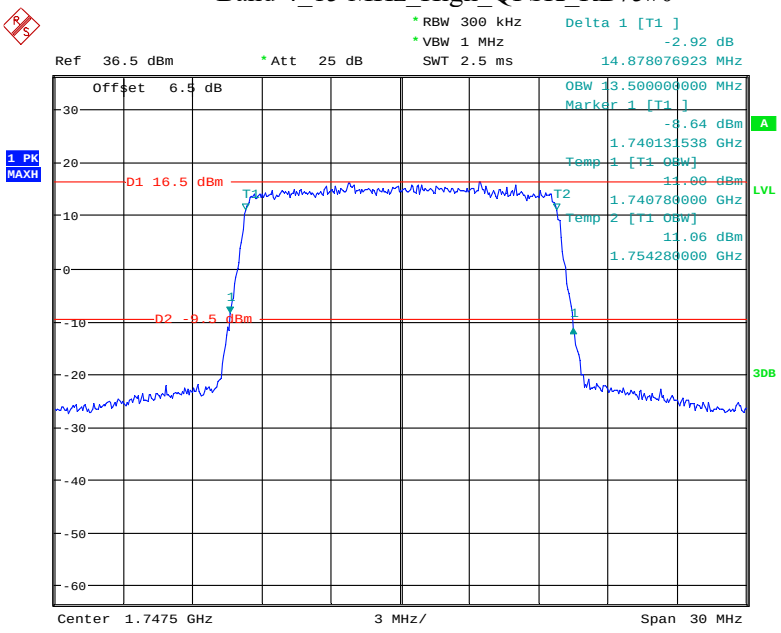
Date: 11.OCT.2020 10:10:42

Band 4_15 MHz_High_16QAM_RB75#0



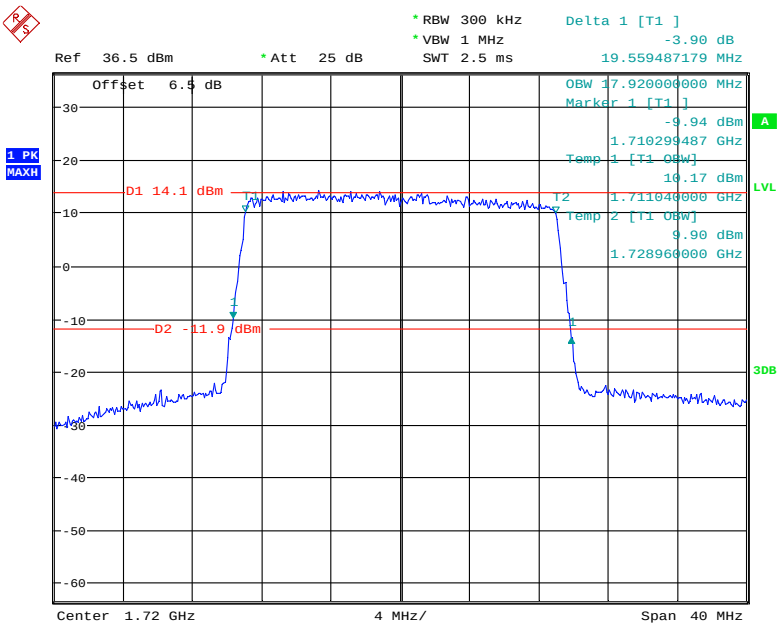
Date: 1.NOV.2020 14:38:15

Band 4_15 MHz_High_QPSK_RB75#0



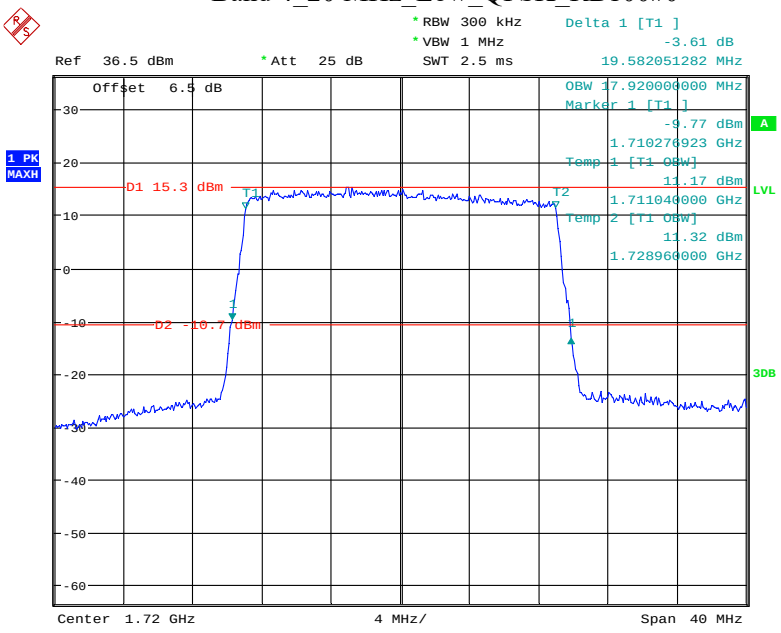
Date: 1.NOV.2020 14:39:27

Band 4_20 MHz_Low_16QAM_RB100#0



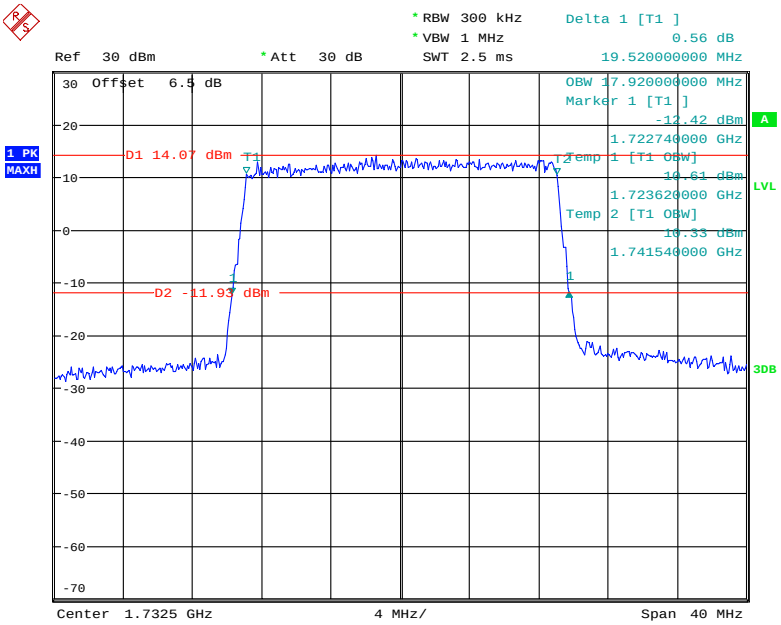
Date: 1.NOV.2020 14:31:07

Band 4_20 MHz_Low_QPSK_RB100#0



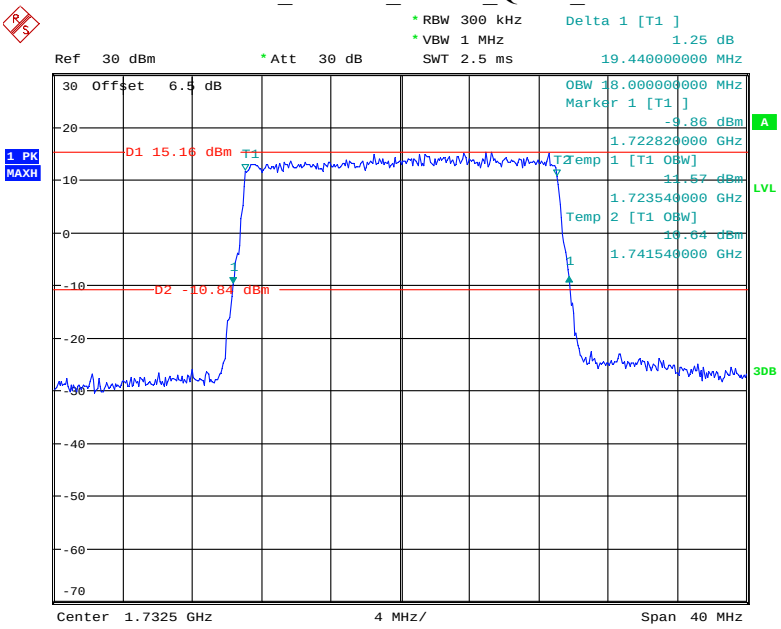
Date: 1.NOV.2020 14:32:38

Band 4_20 MHz_Middle_16QAM_RB100#0



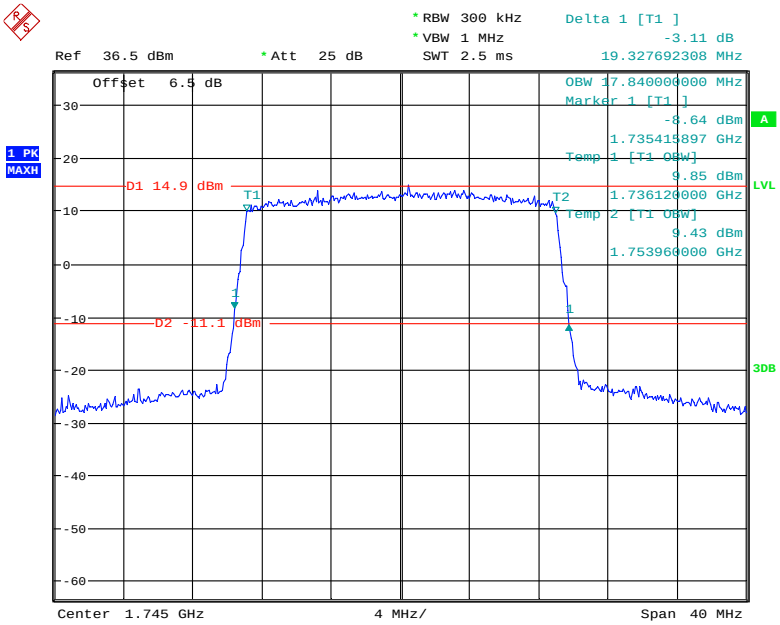
Date: 11.OCT.2020 10:12:05

Band 4_20 MHz_Middle_QPSK_RB100#0



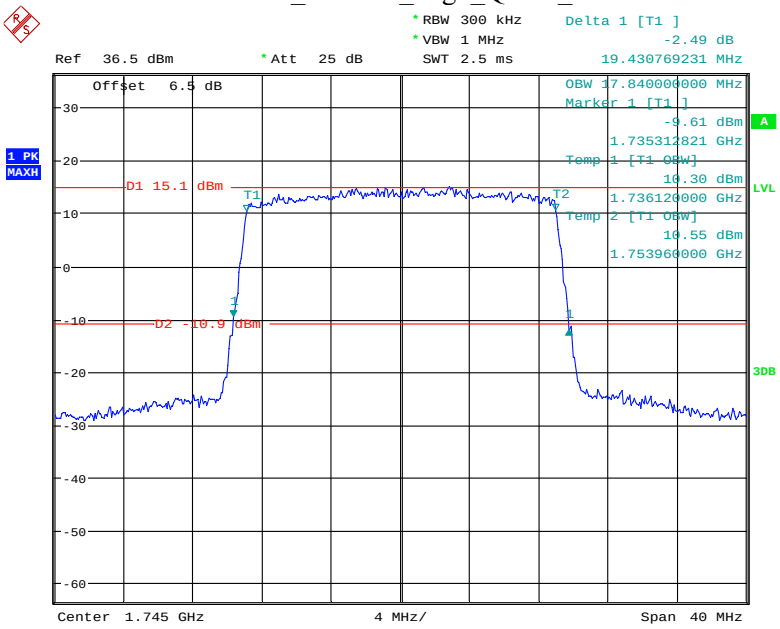
Date: 11.OCT.2020 10:11:46

Band 4_20 MHz_High_16QAM_RB100#0



Date: 1.NOV.2020 14:29:43

Band 4_20 MHz_High_QPSK_RB100#0

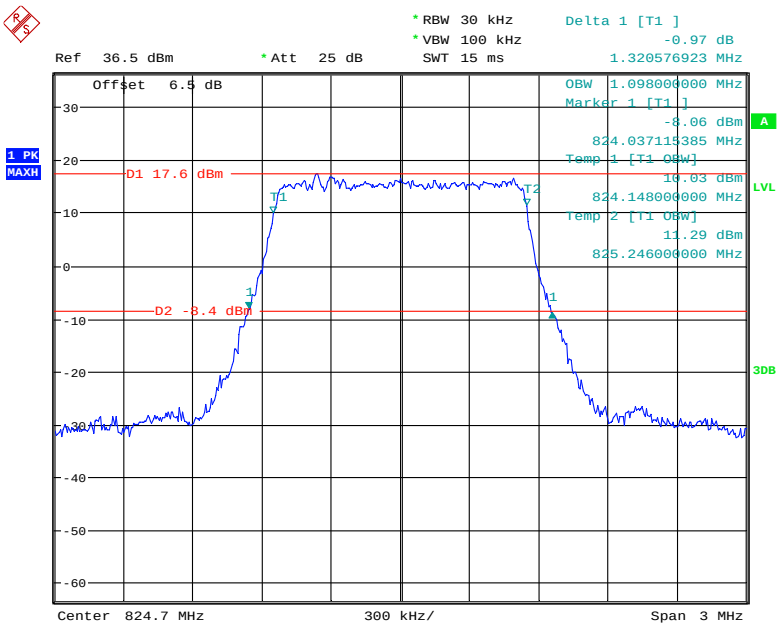


Date: 1.NOV.2020 14:28:23

LTE Band 5:

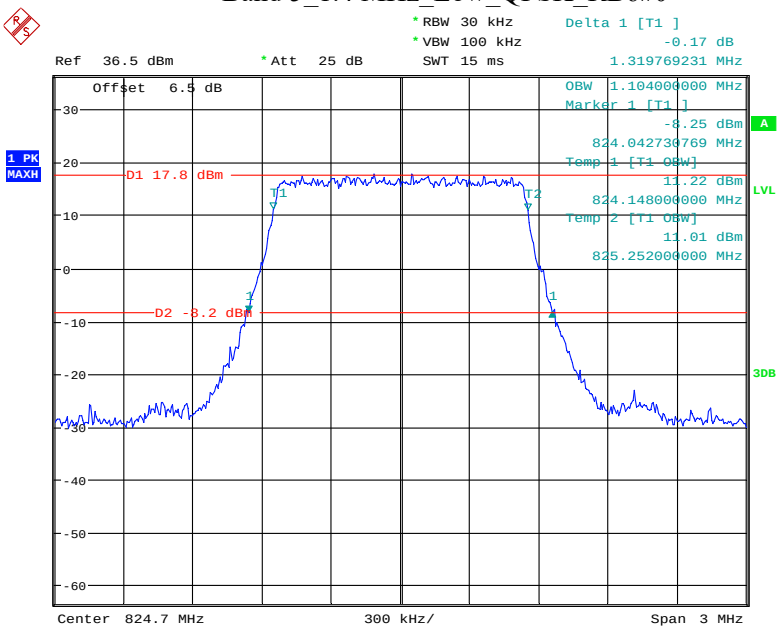
Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	Low	16QAM	1.098	1.321
		QPSK	1.104	1.320
	Middle	16QAM	1.091	1.332
		QPSK	1.091	1.317
	High	16QAM	1.110	1.307
		QPSK	1.110	1.330
3	Low	16QAM	2.688	2.956
		QPSK	2.700	2.955
	Middle	16QAM	2.683	2.952
		QPSK	2.683	2.971
	High	16QAM	2.700	2.971
		QPSK	2.688	2.960
5	Low	16QAM	4.520	5.057
		QPSK	4.520	5.054
	Middle	16QAM	4.487	5.032
		QPSK	4.503	4.984
	High	16QAM	4.520	5.044
		QPSK	4.520	5.059
10	Low	16QAM	8.960	9.773
		QPSK	8.960	9.701
	Middle	16QAM	8.910	9.712
		QPSK	8.878	9.712
	High	16QAM	8.910	9.679
		QPSK	8.910	9.744

Band 5_1.4 MHz_Low_16QAM_RB6#0



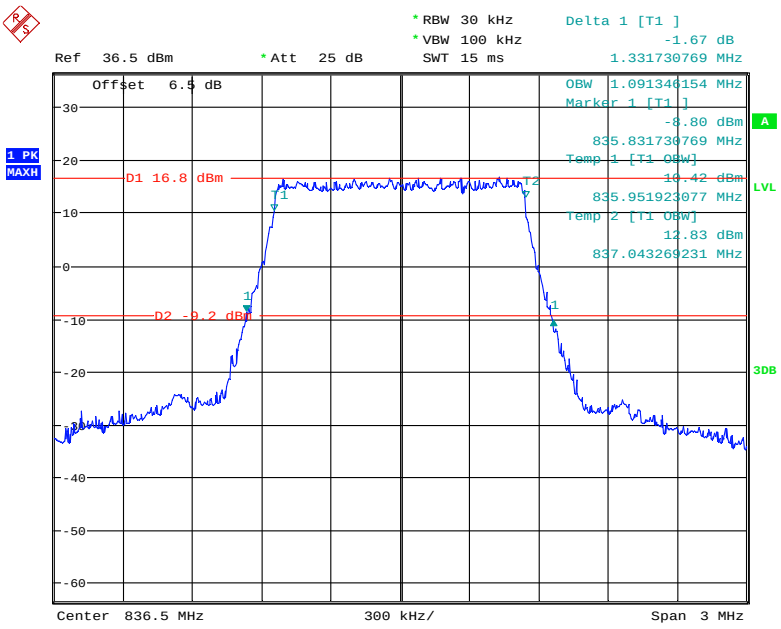
Date: 1.NOV.2020 15:21:43

Band 5_1.4 MHz_Low_QPSK_RB6#0



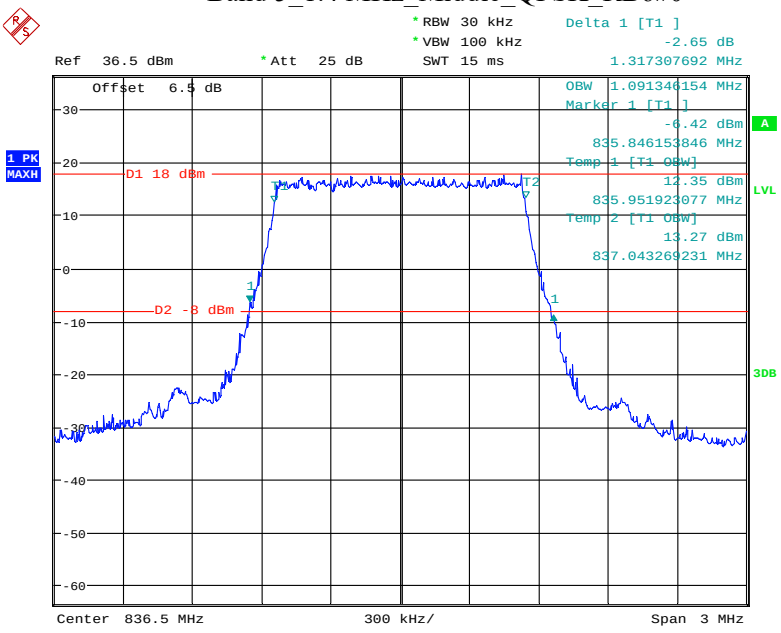
Date: 1.NOV.2020 15:22:53

Band 5_1.4 MHz_Middle_16QAM_RB6#0



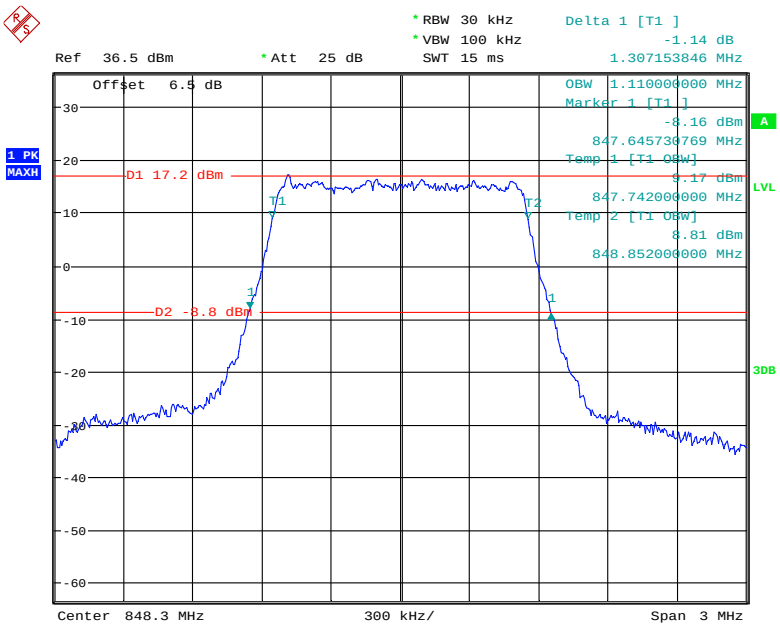
Date: 3.FEB.2021 21:13:50

Band 5_1.4 MHz_Middle_QPSK_RB6#0



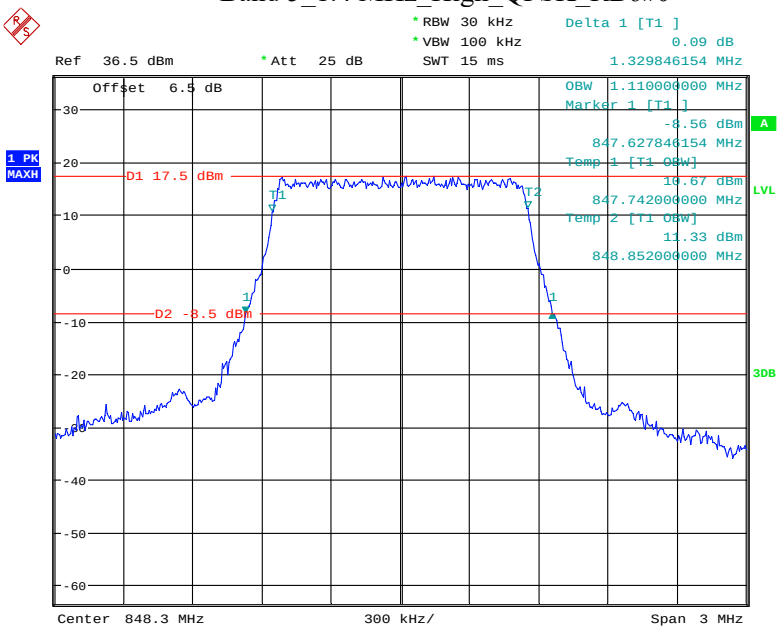
Date: 3.FEB.2021 21:12:40

Band 5_1.4 MHz_High_16QAM_RB6#0



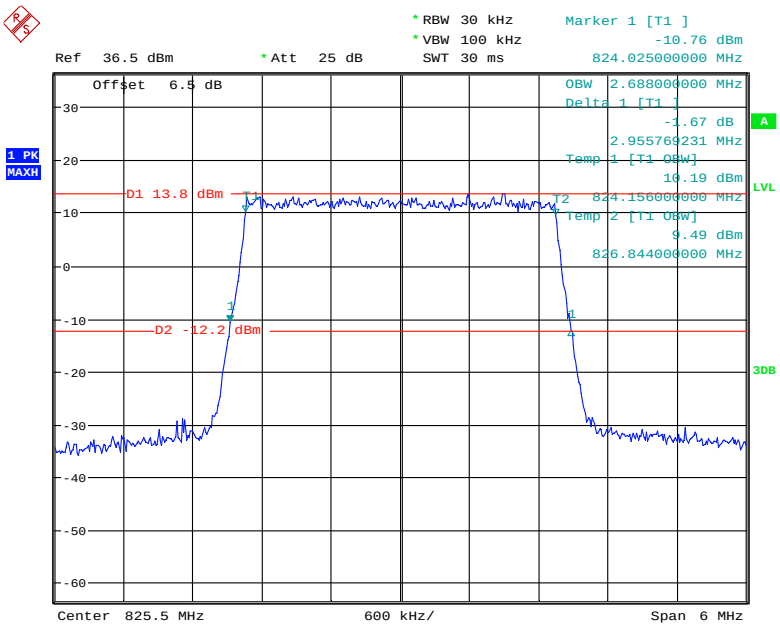
Date: 1.NOV.2020 15:25:06

Band 5_1.4 MHz_High_QPSK_RB6#0



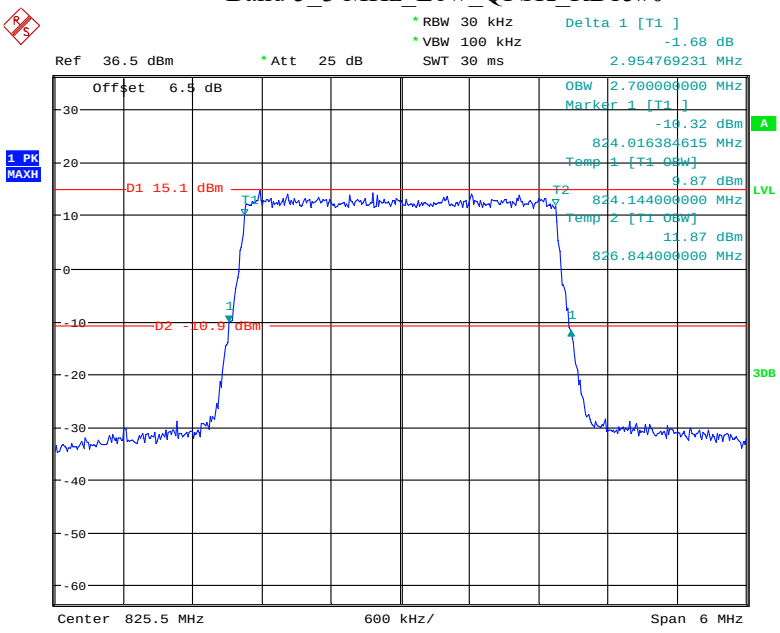
Date: 1.NOV.2020 15:23:59

Band 5_3 MHz_Low_16QAM_RB15#0



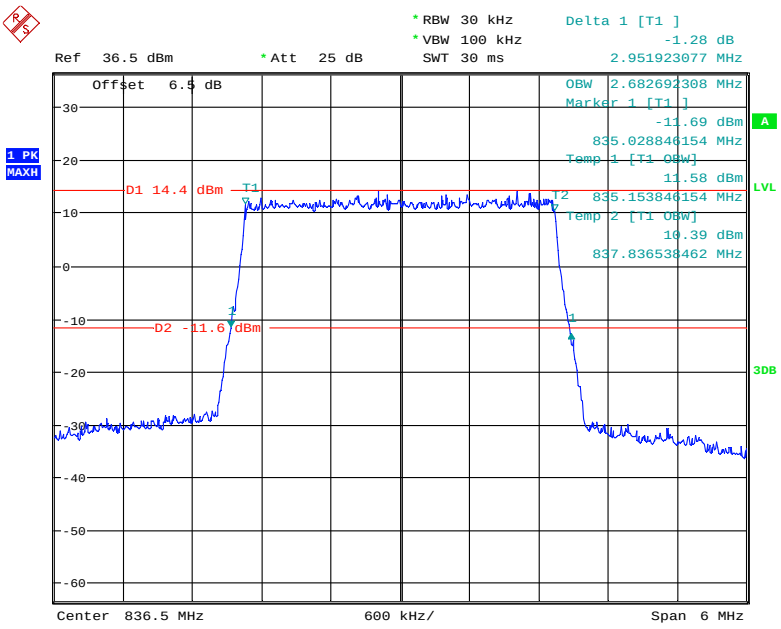
Date: 1.NOV.2020 15:31:34

Band 5_3 MHz_Low_QPSK_RB15#0



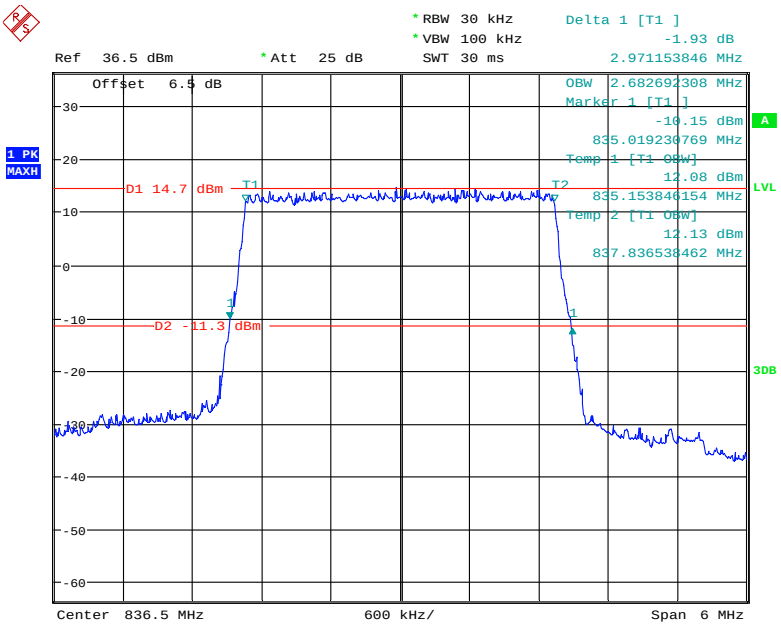
Date: 1.NOV.2020 15:32:21

Band 5_3 MHz_Middle_16QAM_RB15#0



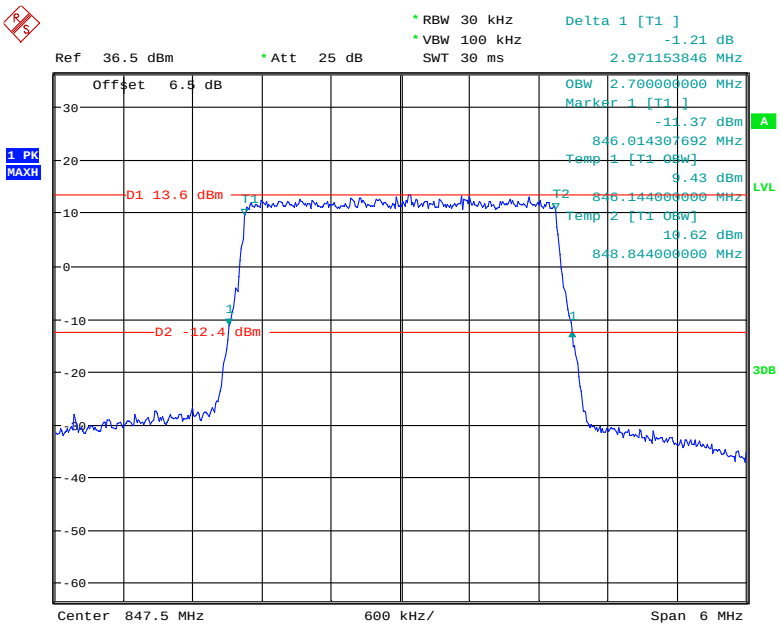
Date: 3.FEB.2021 21:11:25

Band 5_3 MHz_Middle_QPSK_RB15#0



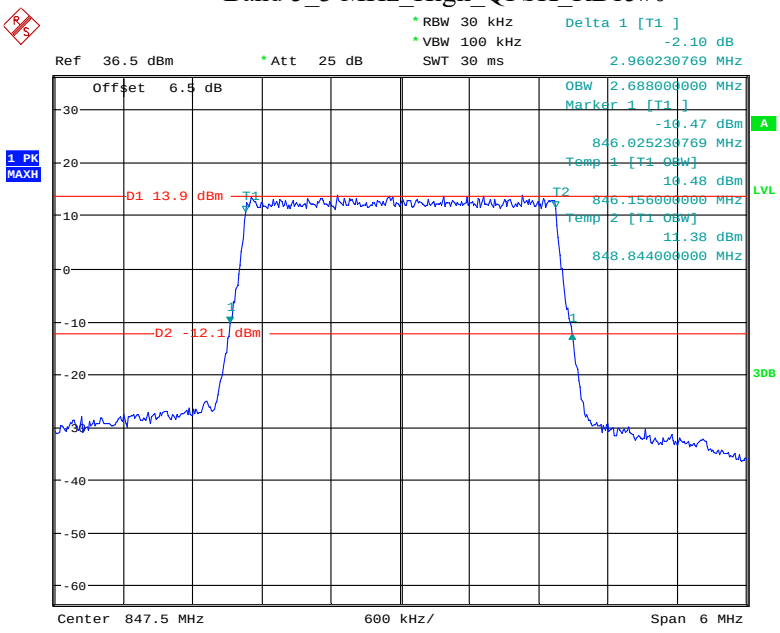
Date: 3.FEB.2021 21:10:20

Band 5_3 MHz_High_16QAM_RB15#0



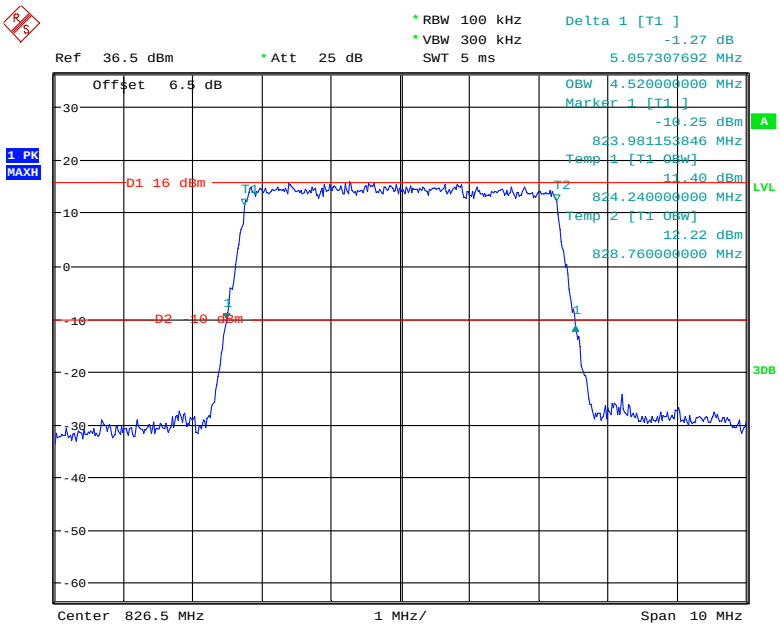
Date: 1.NOV.2020 15:28:05

Band 5_3 MHz_High_QPSK_RB15#0



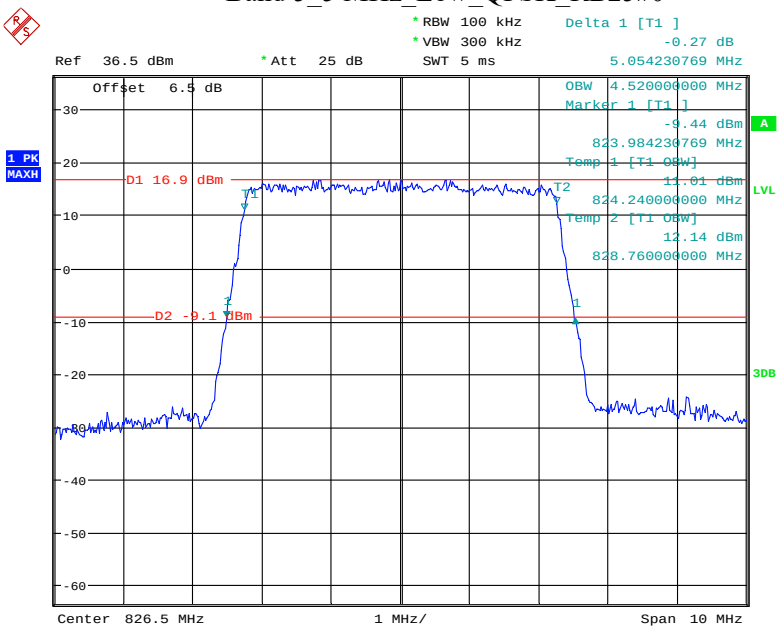
Date: 1.NOV.2020 15:29:13

Band 5_5 MHz_Low_16QAM_RB25#0



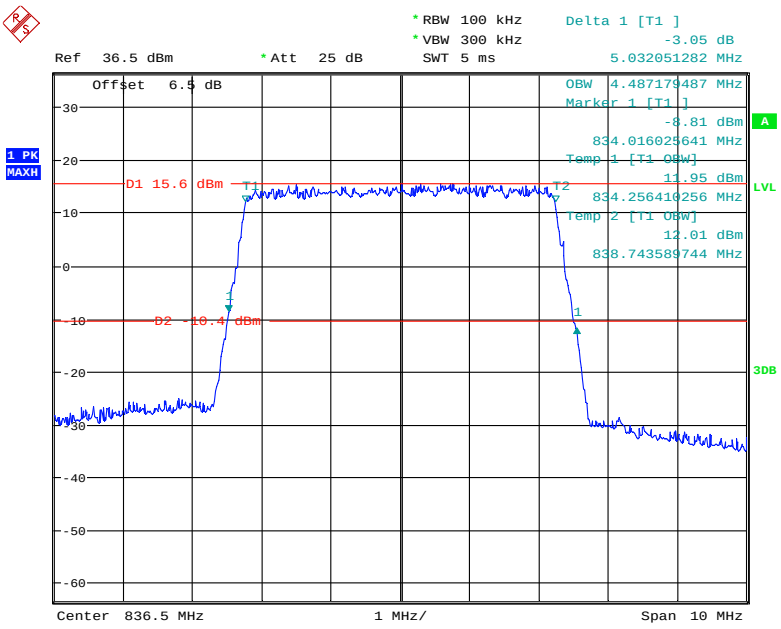
Date: 1.NOV.2020 15:34:28

Band 5_5 MHz_Low_QPSK_RB25#0



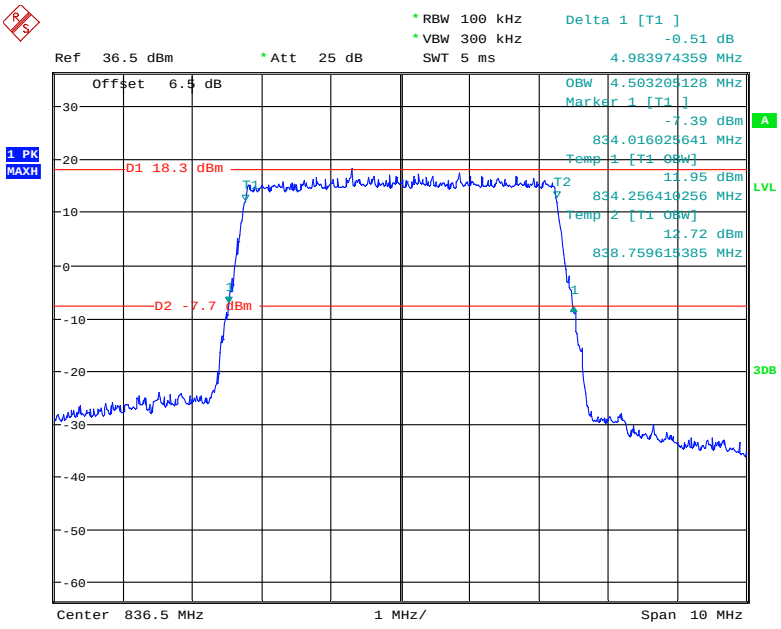
Date: 1.NOV.2020 15:35:30

Band 5_5 MHz_Middle_16QAM_RB25#0



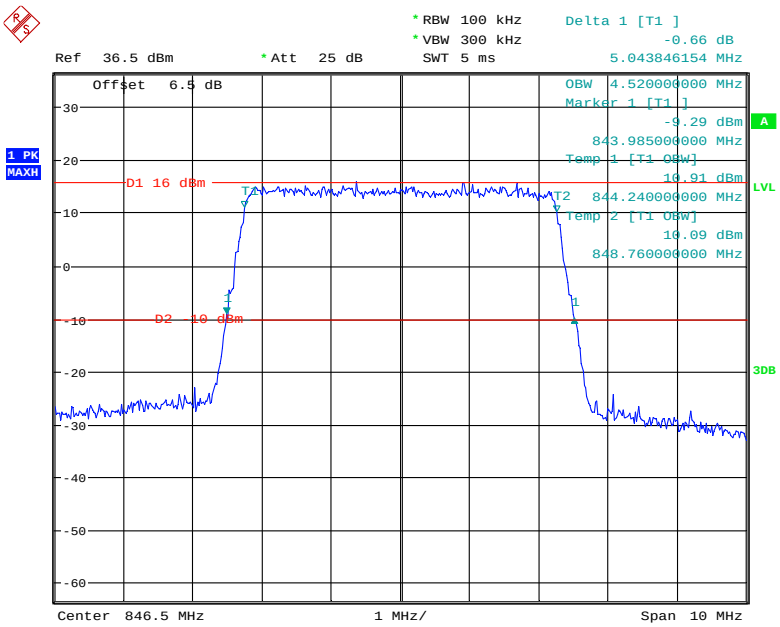
Date: 3.FEB.2021 21:08:38

Band 5_5 MHz_Middle_QPSK_RB25#0



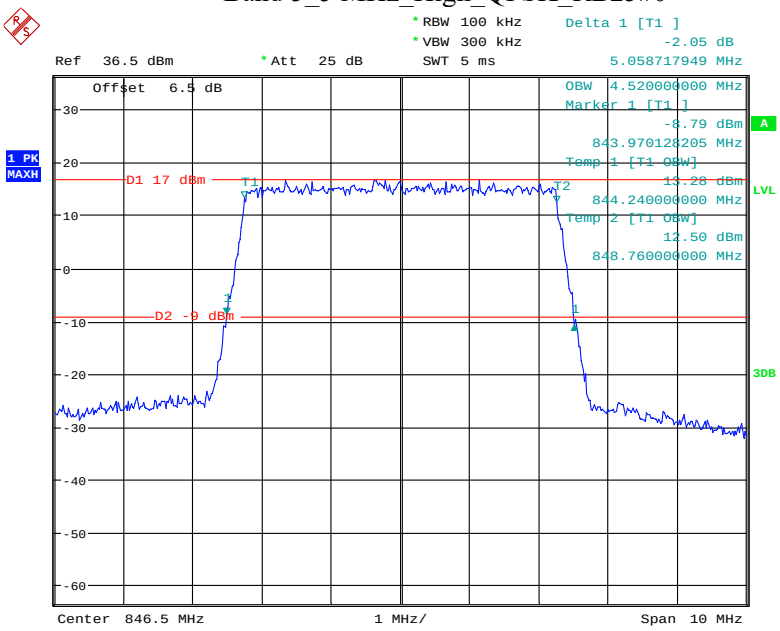
Date: 3.FEB.2021 21:07:43

Band 5_5 MHz_High_16QAM_RB25#0



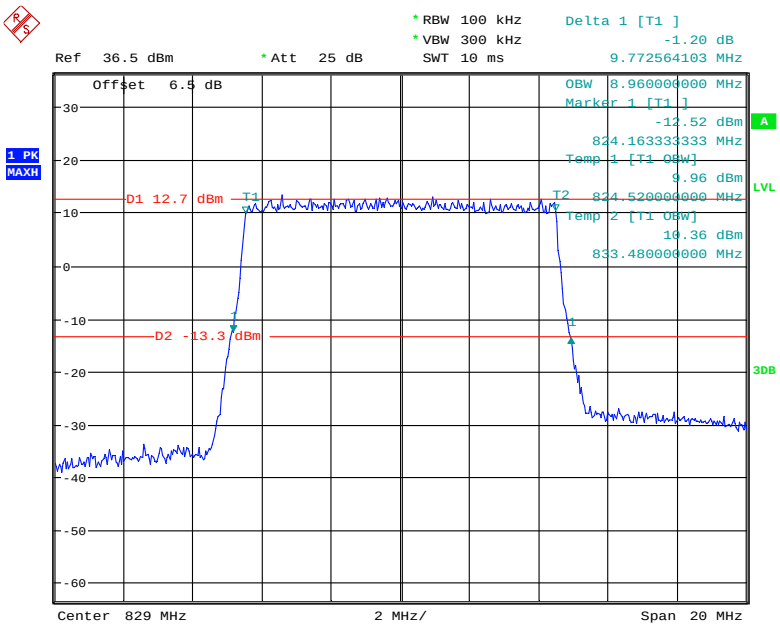
Date: 1.NOV.2020 15:46:40

Band 5_5 MHz_High_QPSK_RB25#0



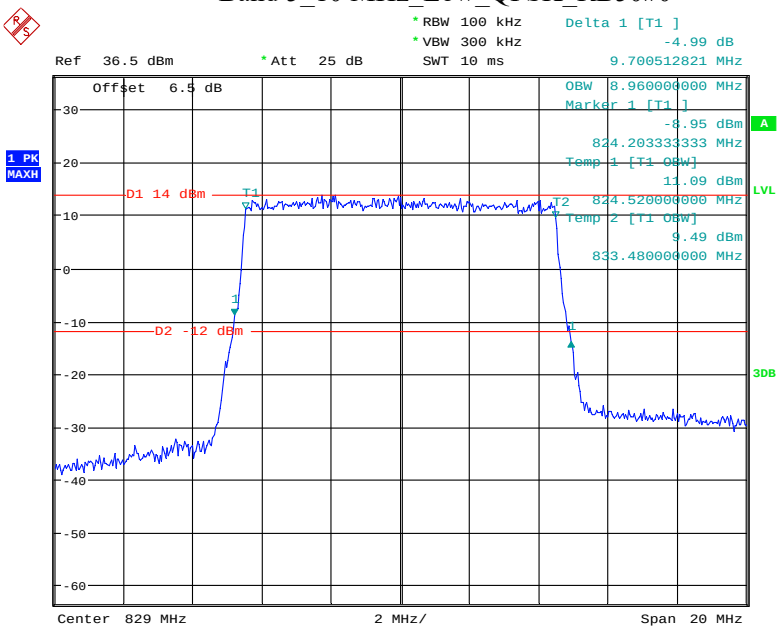
Date: 1.NOV.2020 15:45:41

Band 5_10 MHz_Low_16QAM_RB50#0



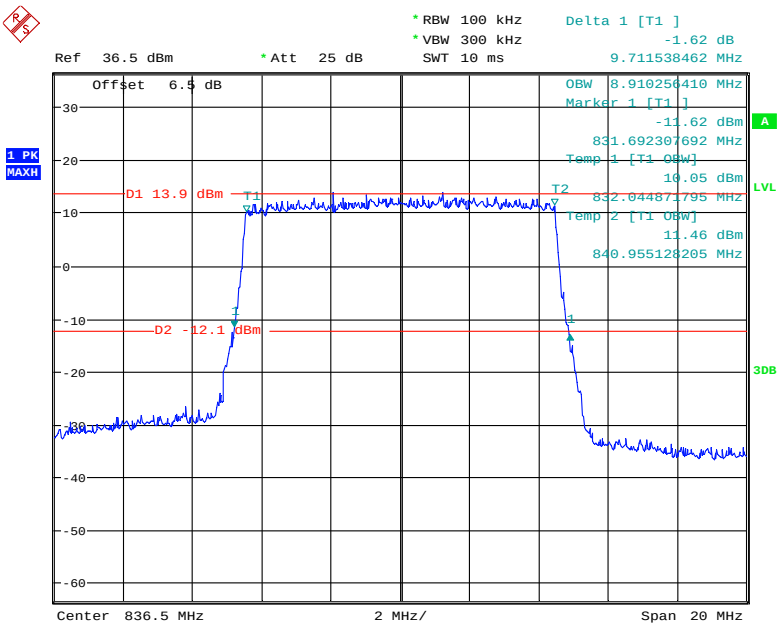
Date: 1.NOV.2020 15:50:29

Band 5_10 MHz_Low_QPSK_RB50#0



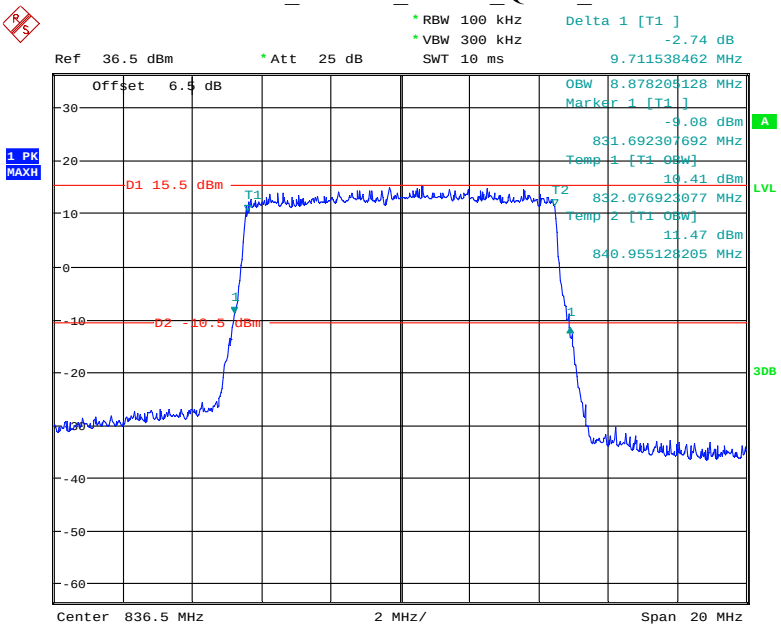
Date: 1.NOV.2020 15:51:14

Band 5_10 MHz_Middle_16QAM_RB50#0



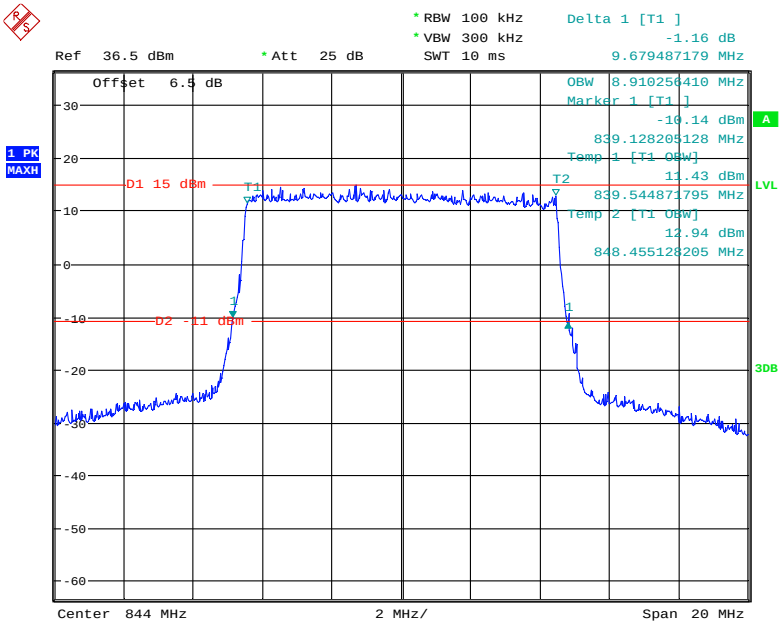
Date: 3.FEB.2021 21:04:33

Band 5_10 MHz_Middle_QPSK_RB50#0



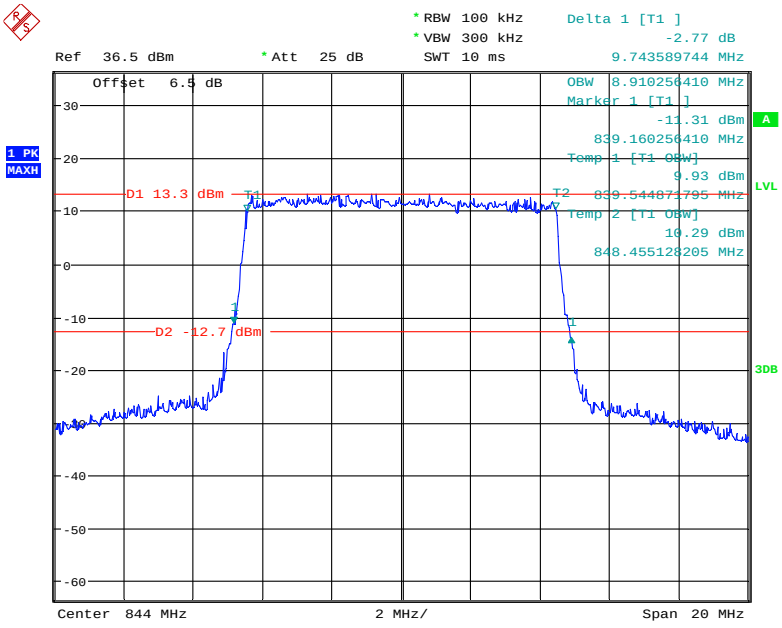
Date: 3.FEB.2021 21:06:08

Band 5_10 MHz_High_16QAM_RB50#0



Date: 3.FEB.2021 21:00:09

Band 5_10 MHz_High_QPSK_RB50#0

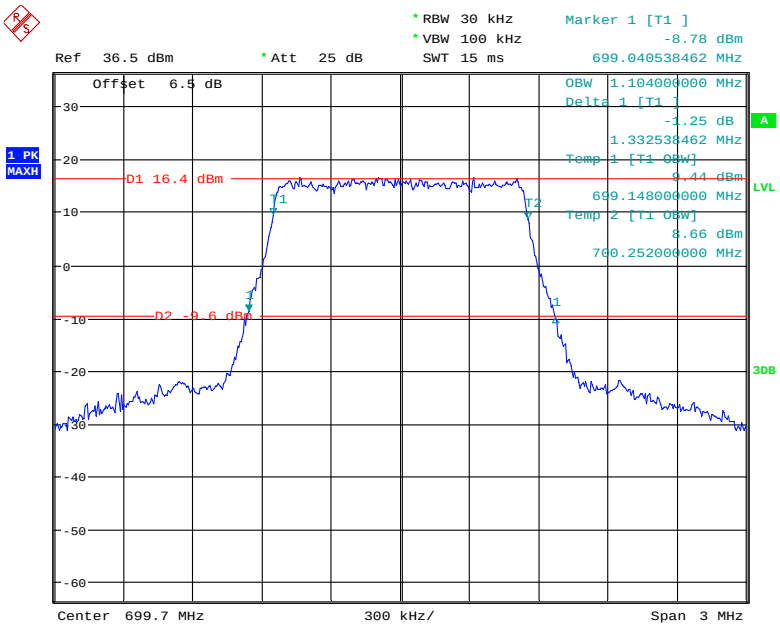


Date: 3.FEB.2021 21:01:31

LTE Band 12

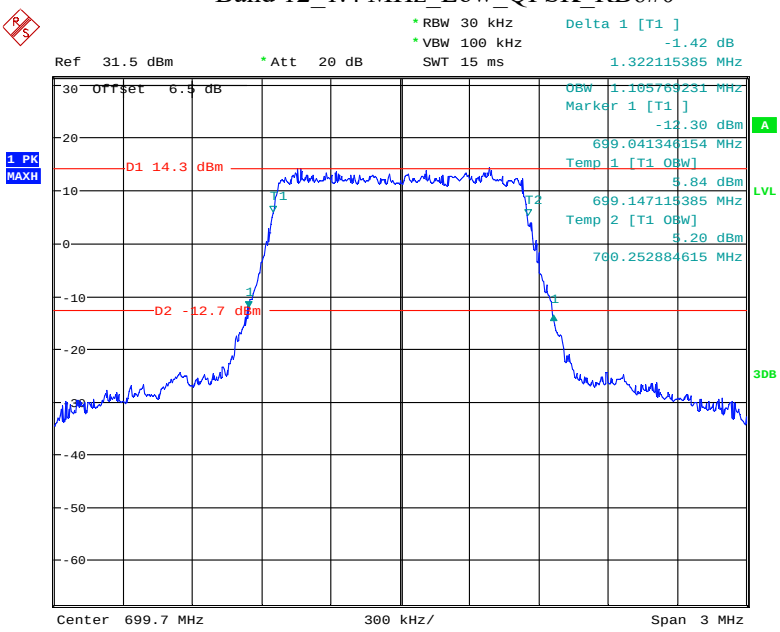
Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	Low	16QAM	1.104	1.333
		QPSK	1.106	1.322
	Middle	16QAM	1.101	1.293
		QPSK	1.101	1.327
	High	16QAM	1.104	1.319
		QPSK	1.110	1.321
3	Low	16QAM	2.700	2.969
		QPSK	2.688	2.975
	Middle	16QAM	2.692	2.962
		QPSK	2.692	2.952
	High	16QAM	2.700	2.988
		QPSK	2.688	2.965
5	Low	16QAM	4.520	5.021
		QPSK	4.520	5.057
	Middle	16QAM	4.503	5.013
		QPSK	4.503	5.029
	High	16QAM	4.520	5.049
		QPSK	4.520	5.044
10	Low	16QAM	8.960	9.727
		QPSK	8.960	9.764
	Middle	16QAM	8.942	9.644
		QPSK	8.910	9.644
	High	16QAM	8.960	9.720
		QPSK	8.960	9.793

Band 12_1.4 MHz_Low_16QAM_RB6#0



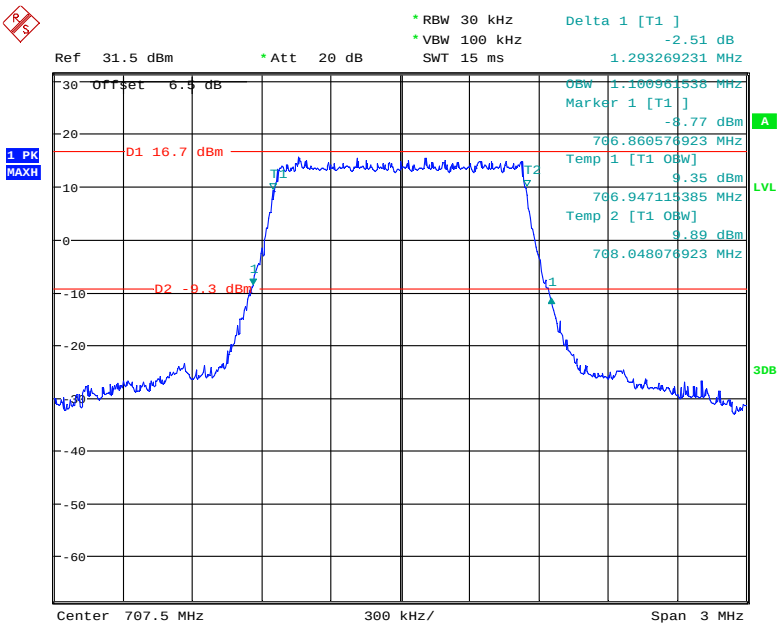
Date: 1.NOV.2020 16:14:06

Band 12_1.4 MHz_Low_QPSK_RB6#0



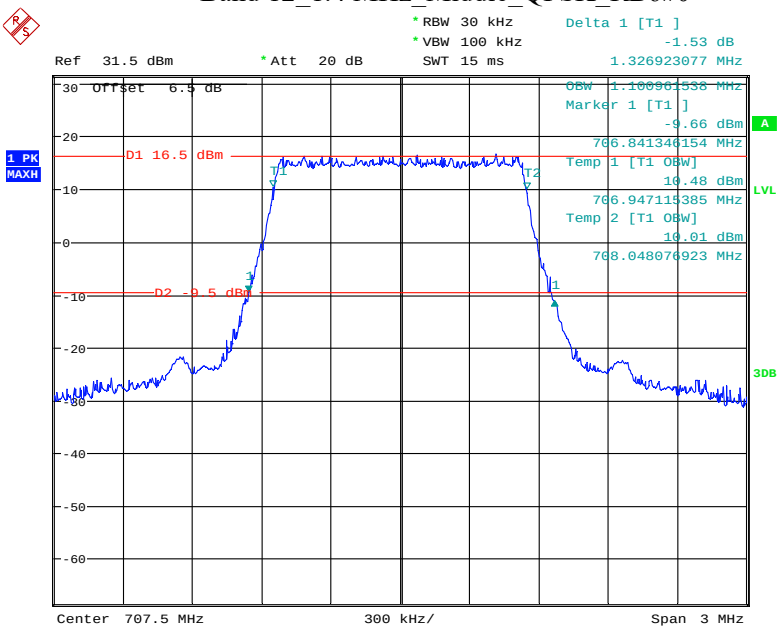
Date: 4.FEB.2021 10:51:18

Band 12_1.4 MHz_Middle_16QAM_RB6#0



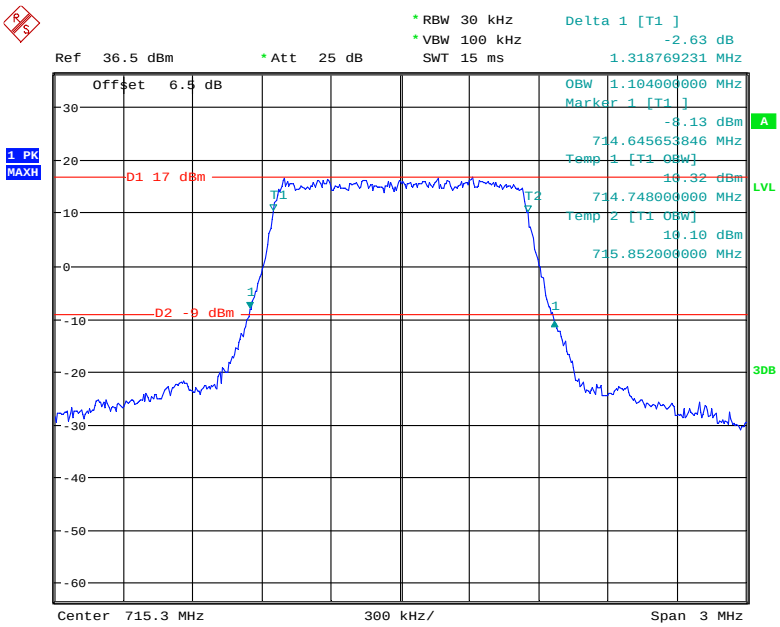
Date: 4.FEB.2021 10:46:01

Band 12_1.4 MHz_Middle_QPSK_RB6#0



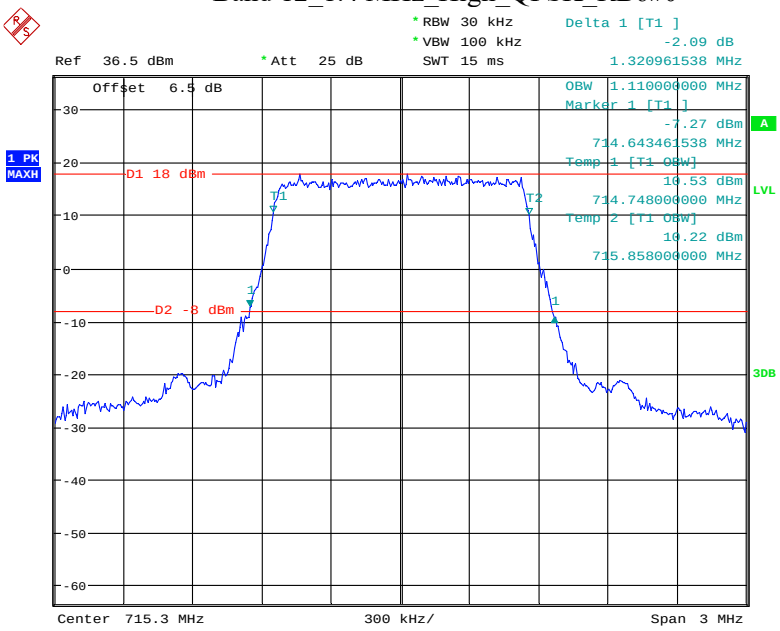
Date: 4.FEB.2021 10:45:24

Band 12_1.4 MHz_High_16QAM_RB6#0



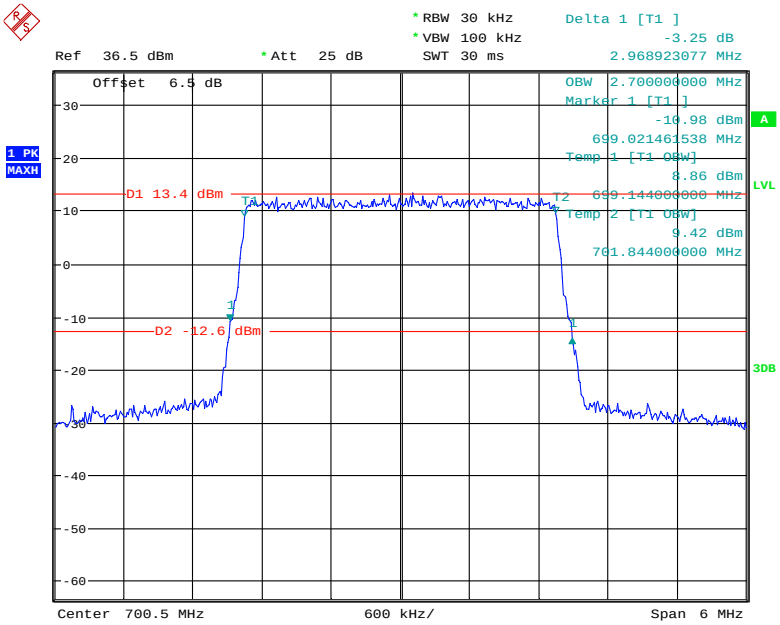
Date: 1.NOV.2020 16:10:44

Band 12_1.4 MHz_High_QPSK_RB6#0



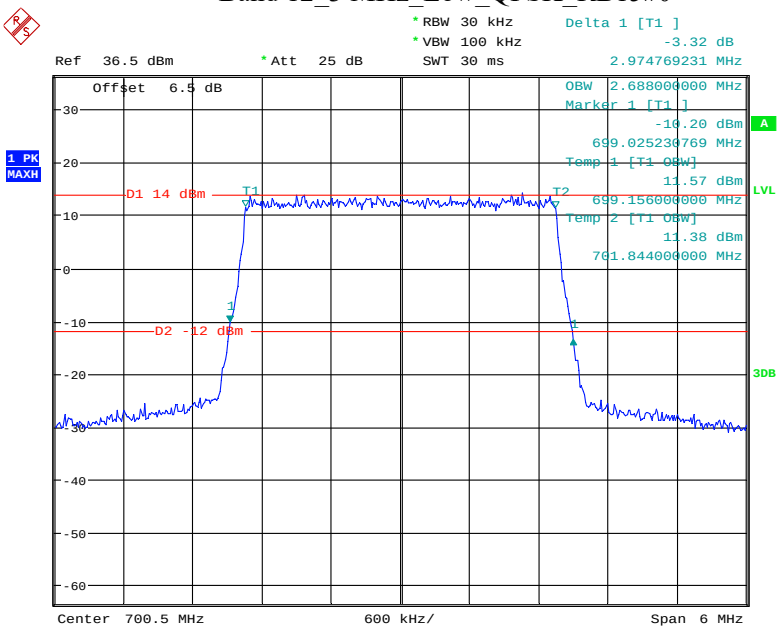
Date: 1.NOV.2020 16:11:46

Band 12_3 MHz_Low_16QAM_RB15#0



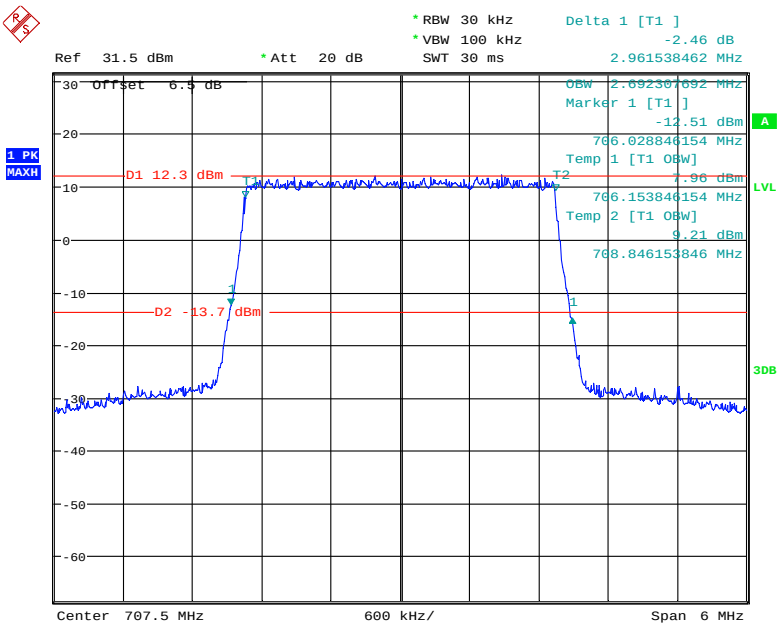
Date: 1.NOV.2020 16:06:43

Band 12_3 MHz_Low_QPSK_RB15#0



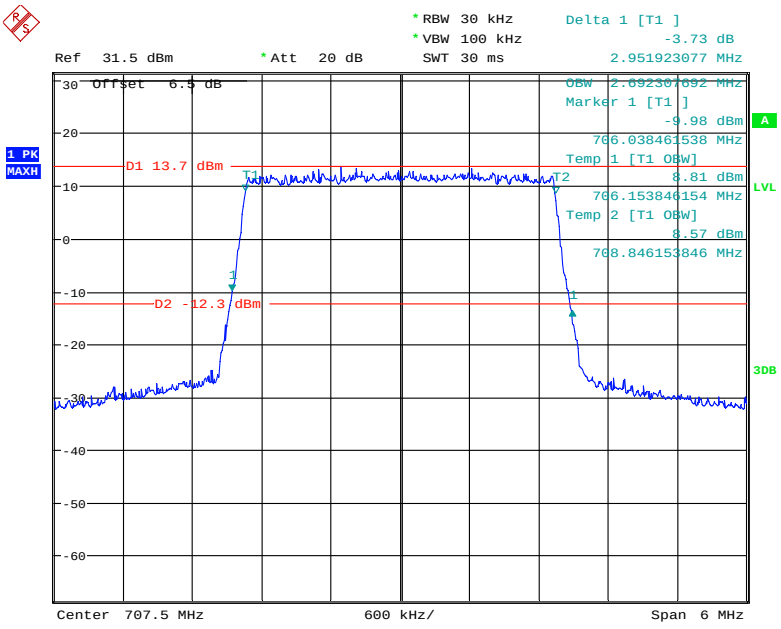
Date: 1.NOV.2020 16:05:44

Band 12_3 MHz_Middle_16QAM_RB15#0



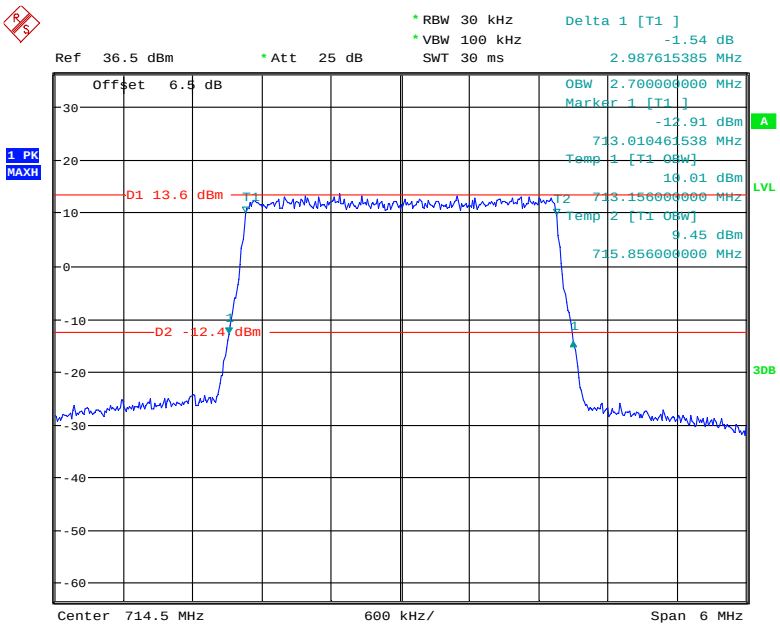
Date: 4.FEB.2021 10:44:23

Band 12_3 MHz_Middle_QPSK_RB15#0



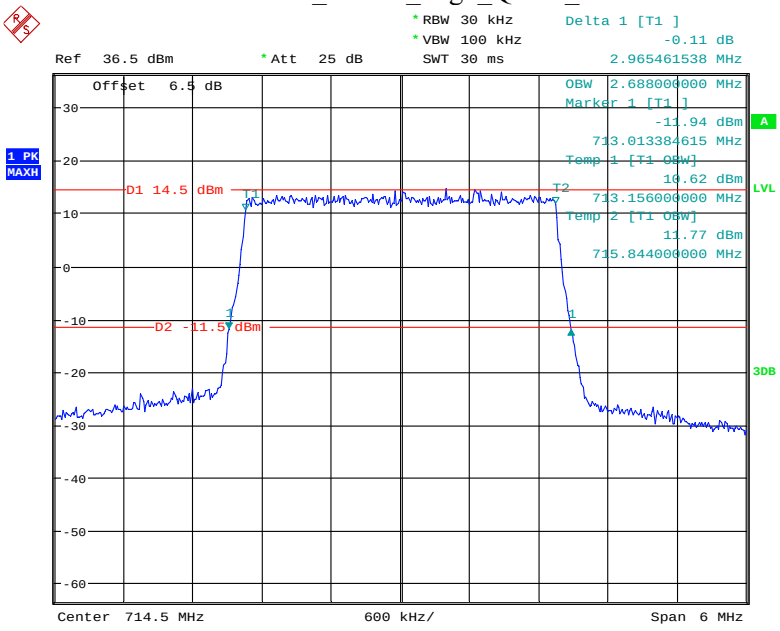
Date: 4.FEB.2021 10:43:13

Band 12_3 MHz_High_16QAM_RB15#0



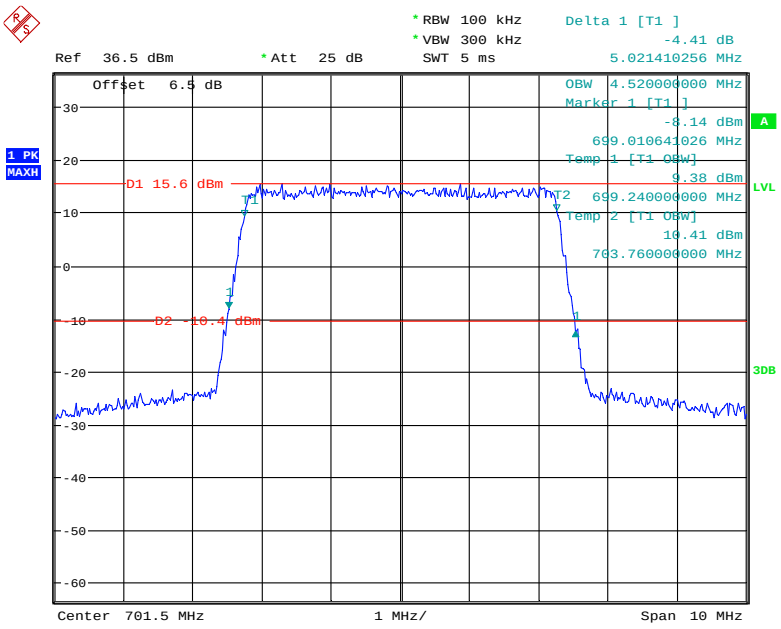
Date: 1.NOV.2020 16:08:09

Band 12_3 MHz_High_QPSK_RB15#0



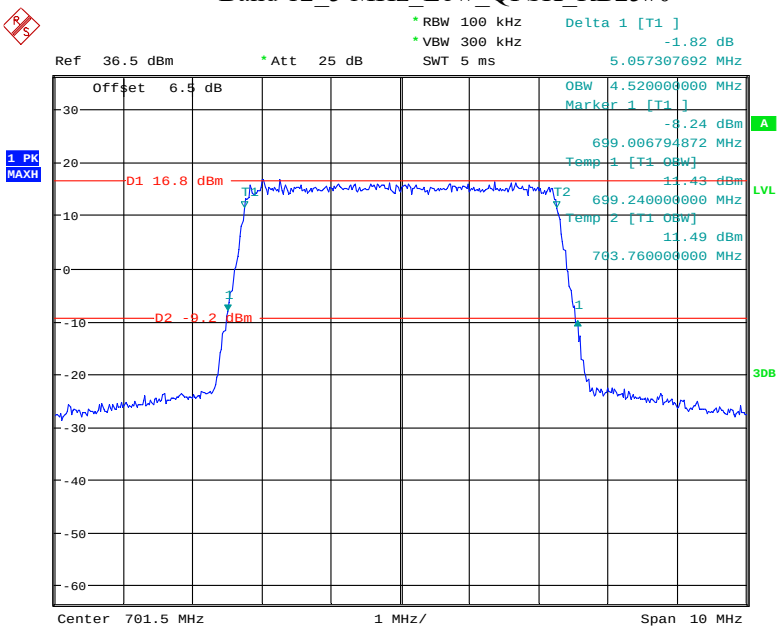
Date: 1.NOV.2020 16:09:06

Band 12_5 MHz_Low_16QAM_RB25#0



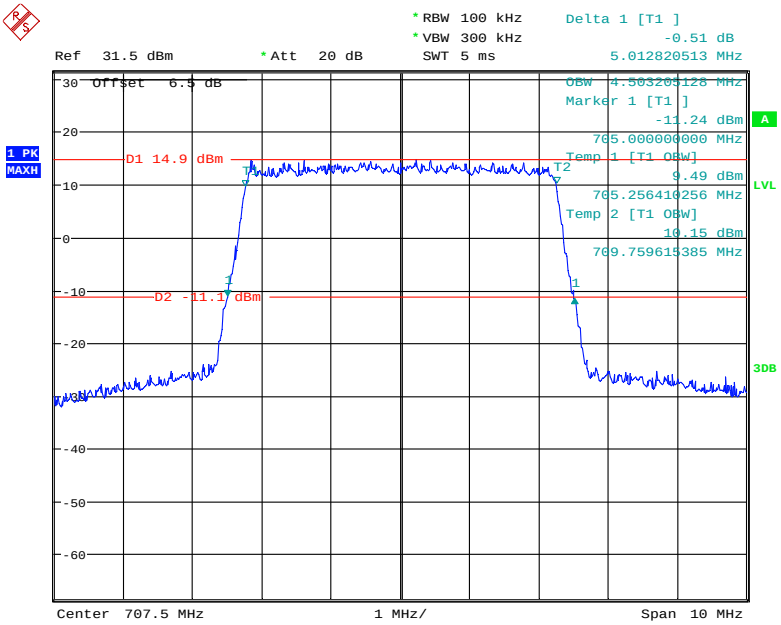
Date: 1.NOV.2020 16:04:00

Band 12_5 MHz_Low_QPSK_RB25#0



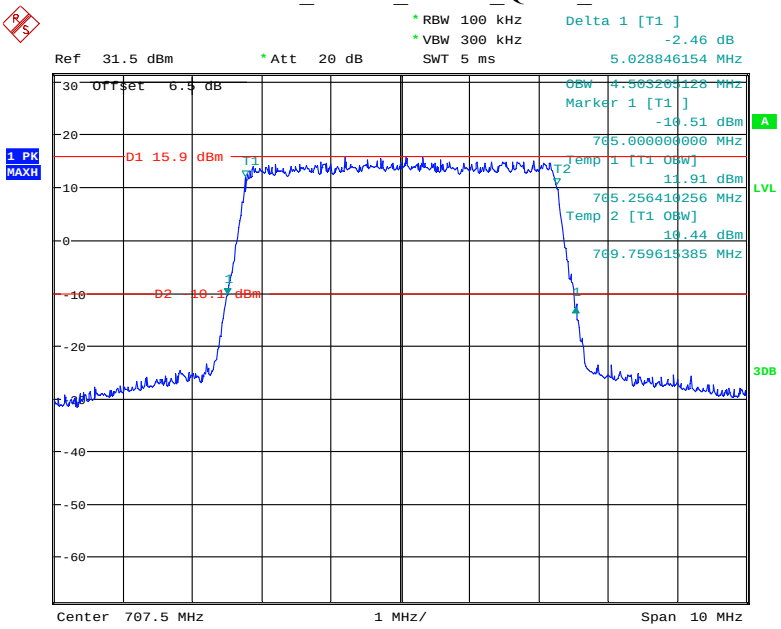
Date: 1.NOV.2020 16:03:03

Band 12_5 MHz_Middle_16QAM_RB25#0



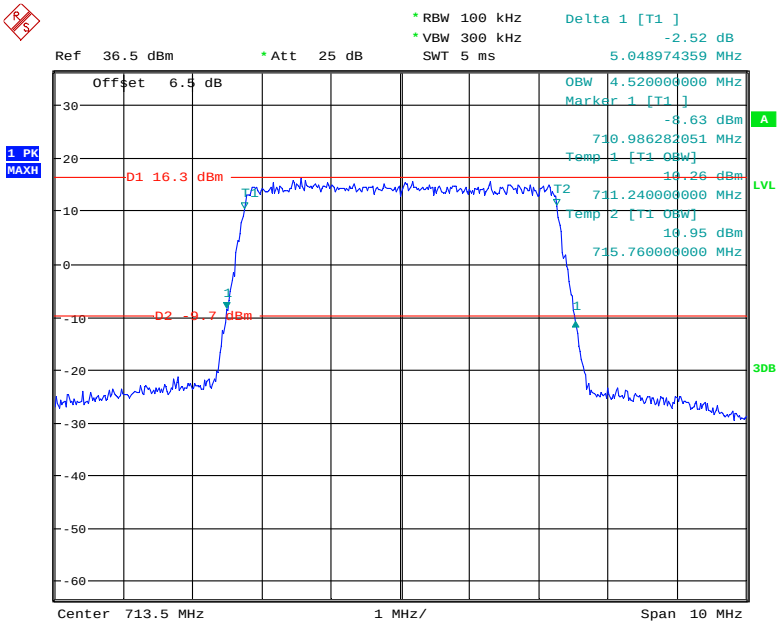
Date: 4.FEB.2021 10:47:01

Band 12_5 MHz_Middle_QPSK_RB25#0



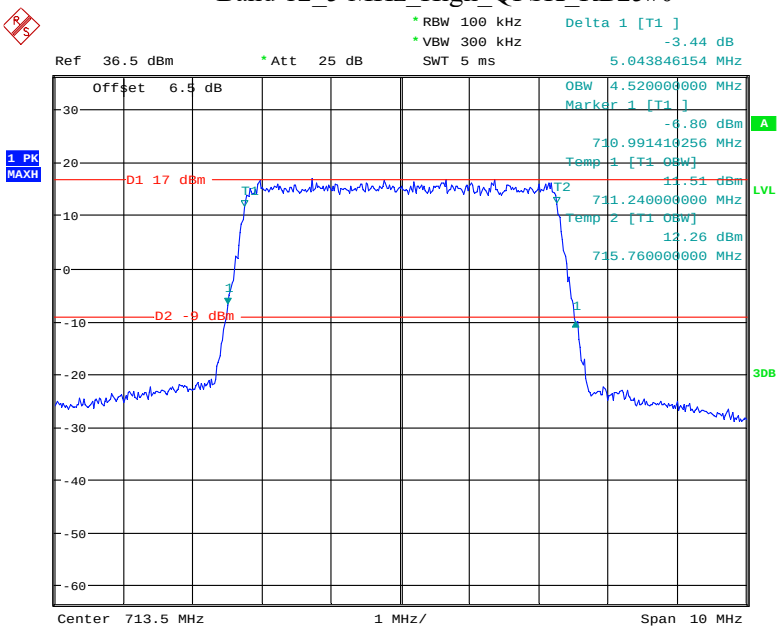
Date: 4.FEB.2021 10:47:44

Band 12_5 MHz_High_16QAM_RB25#0



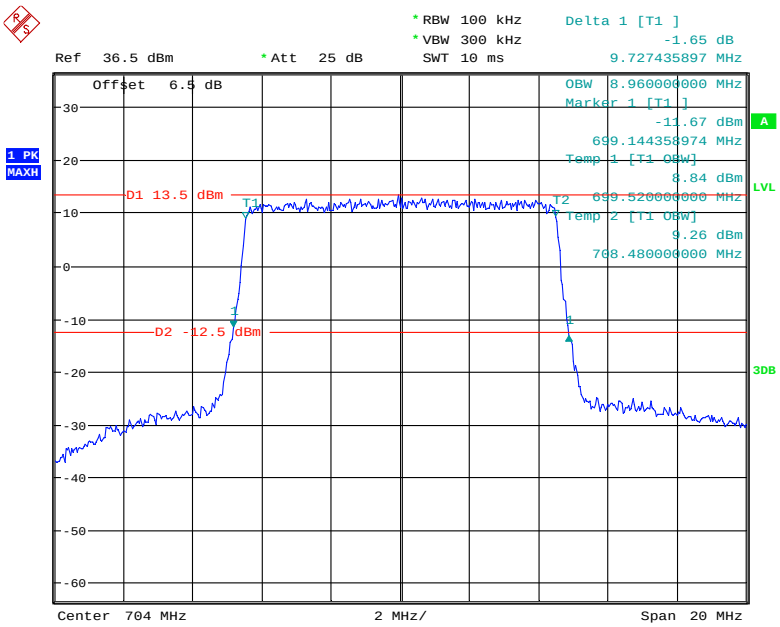
Date: 1.NOV.2020 16:00:21

Band 12_5 MHz_High_QPSK_RB25#0



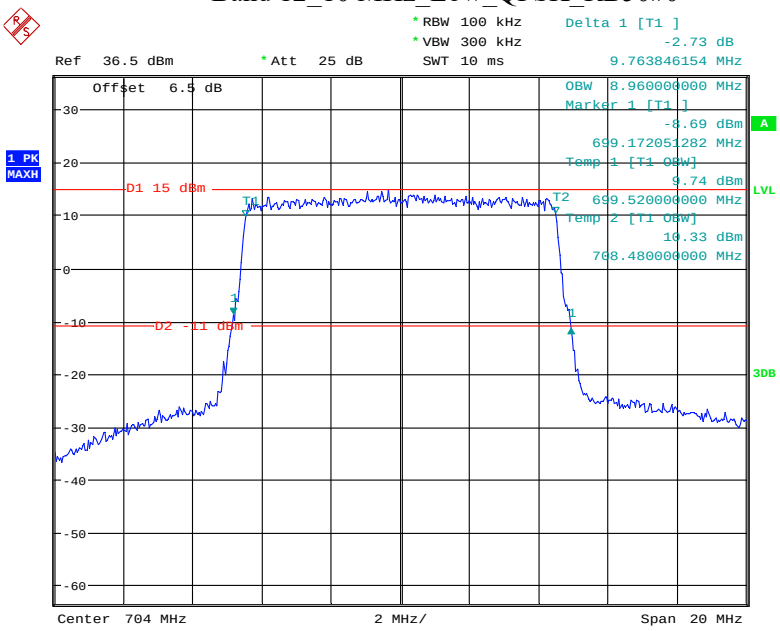
Date: 1.NOV.2020 16:01:08

Band 12_10 MHz_Low_16QAM_RB50#0



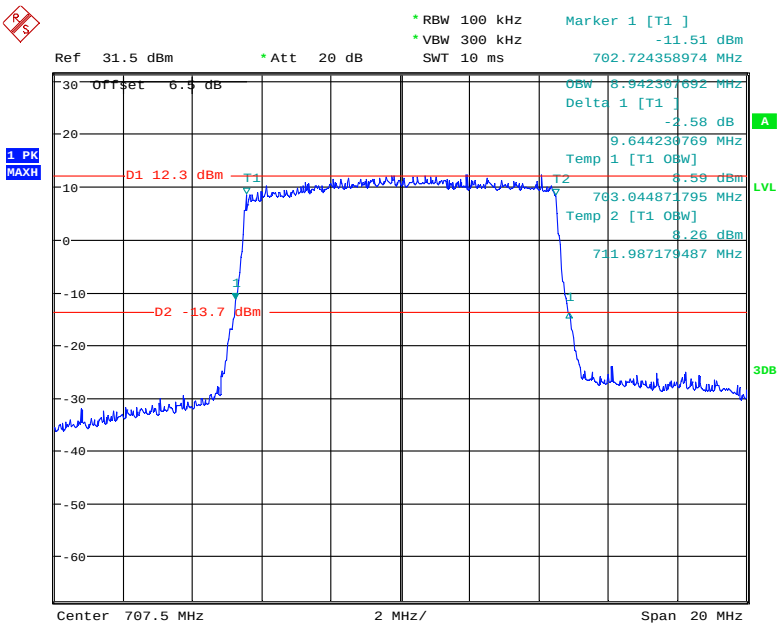
Date: 1.NOV.2020 15:55:46

Band 12_10 MHz_Low_QPSK_RB50#0



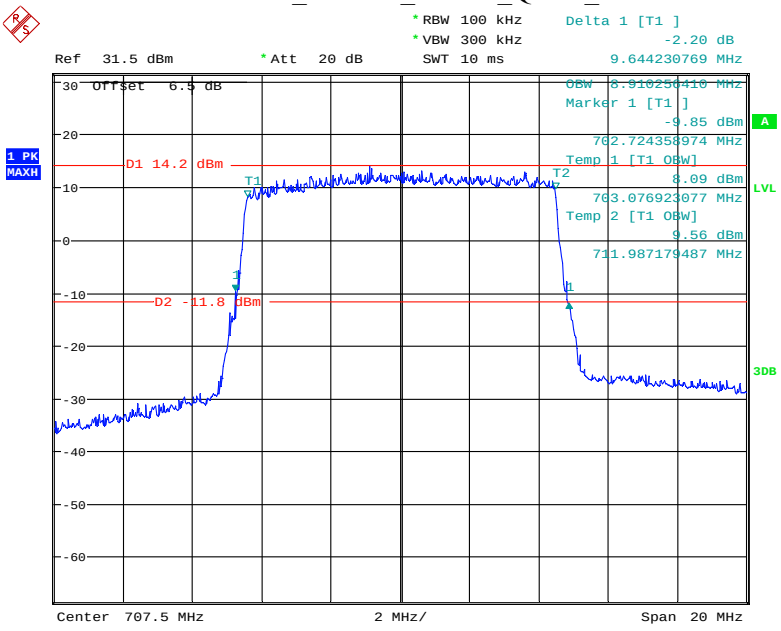
Date: 1.NOV.2020 15:53:52

Band 12_10 MHz_Middle_16QAM_RB50#0



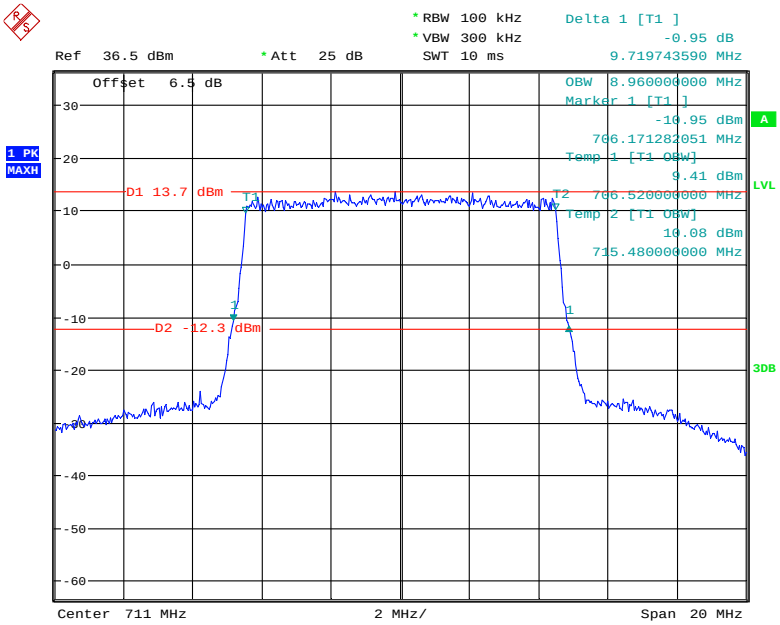
Date: 4.FEB.2021 10:49:10

Band 12_10 MHz_Middle_QPSK_RB50#0



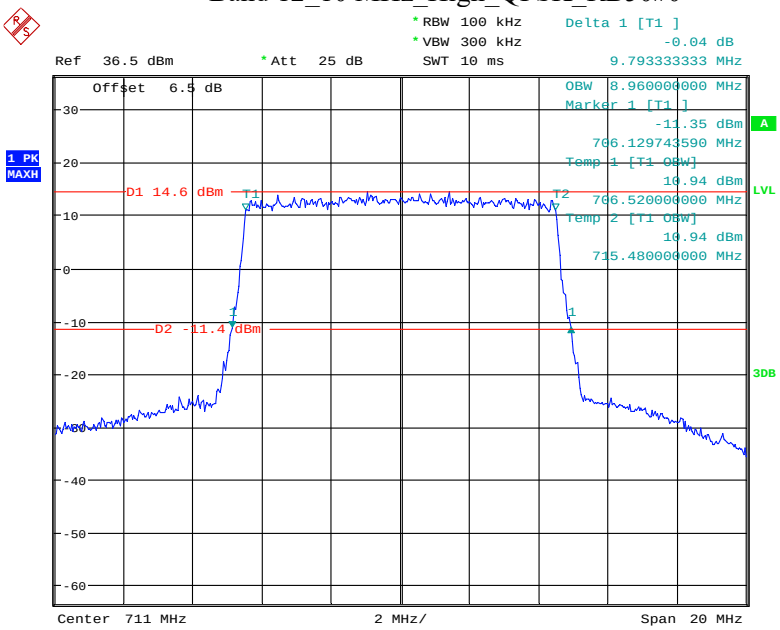
Date: 4.FEB.2021 10:48:24

Band 12_10 MHz_High_16QAM_RB50#0



Date: 1.NOV.2020 15:57:35

Band 12_10 MHz_High_QPSK_RB50#0

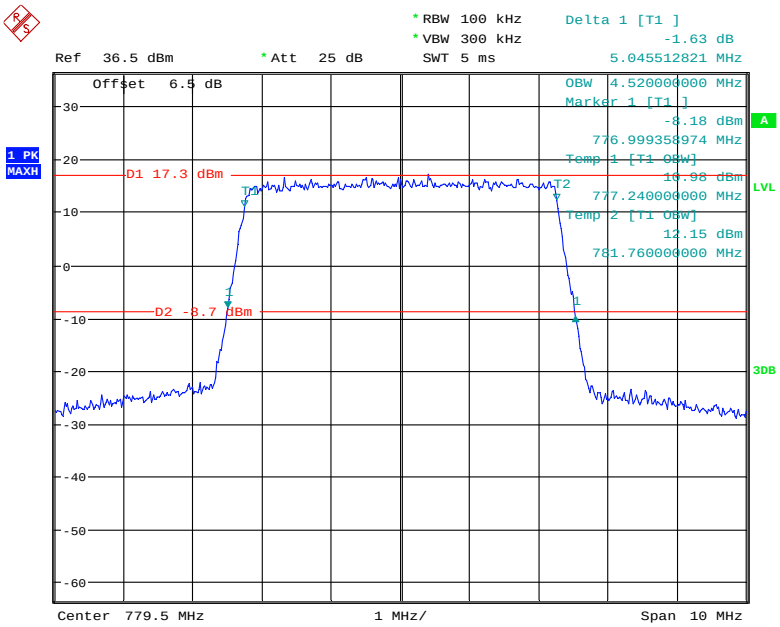


Date: 1.NOV.2020 15:59:02

LTE Band 13

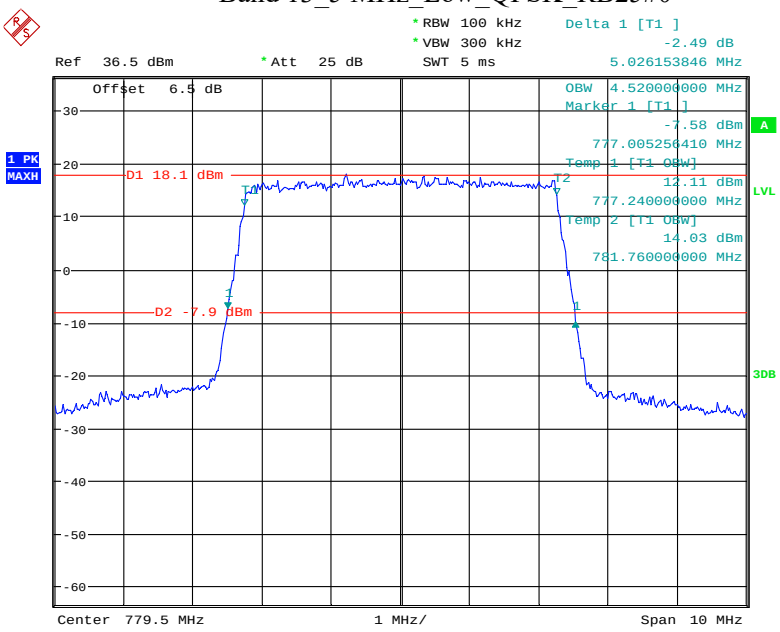
Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	Low	16QAM	4.520	5.046
		QPSK	4.520	5.026
	Middle	16QAM	4.503	5.032
		QPSK	4.519	5.048
	High	16QAM	4.520	5.027
		QPSK	4.520	5.023
10	Low	16QAM	/	/
		QPSK	/	/
	Middle	16QAM	8.910	9.679
		QPSK	8.974	9.744
	High	16QAM	/	/
		QPSK	/	/

Band 13_5 MHz_Low_16QAM_RB25#0



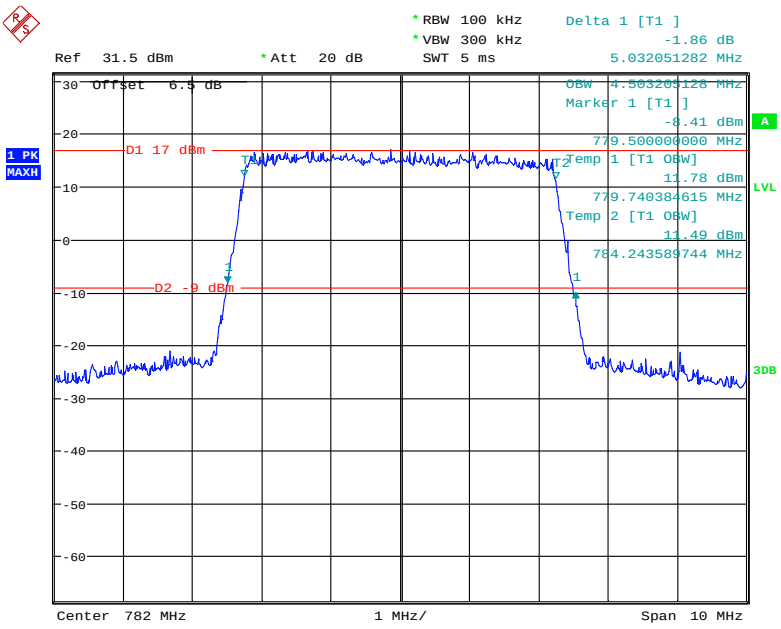
Date: 1.NOV.2020 16:17:39

Band 13_5 MHz_Low_QPSK_RB25#0



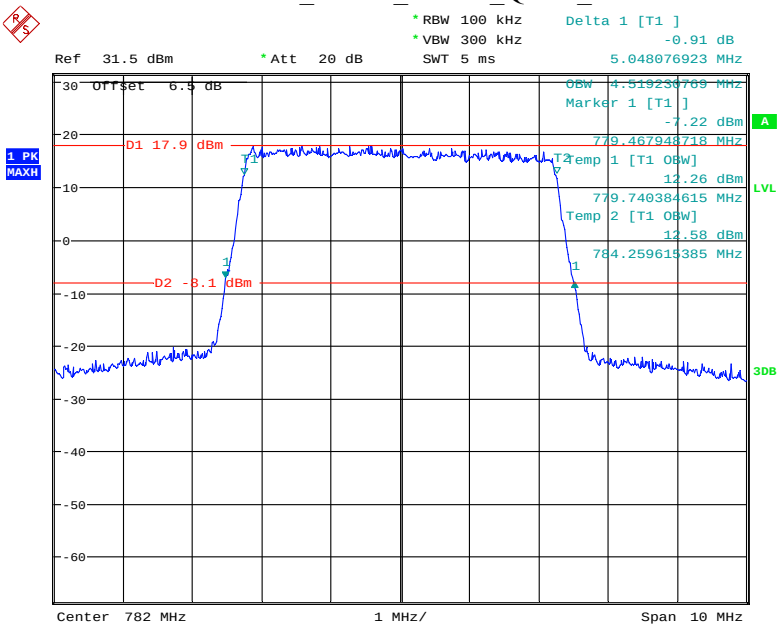
Date: 1.NOV.2020 16:19:43

Band 13_5 MHz_Middle_16QAM_RB25#0



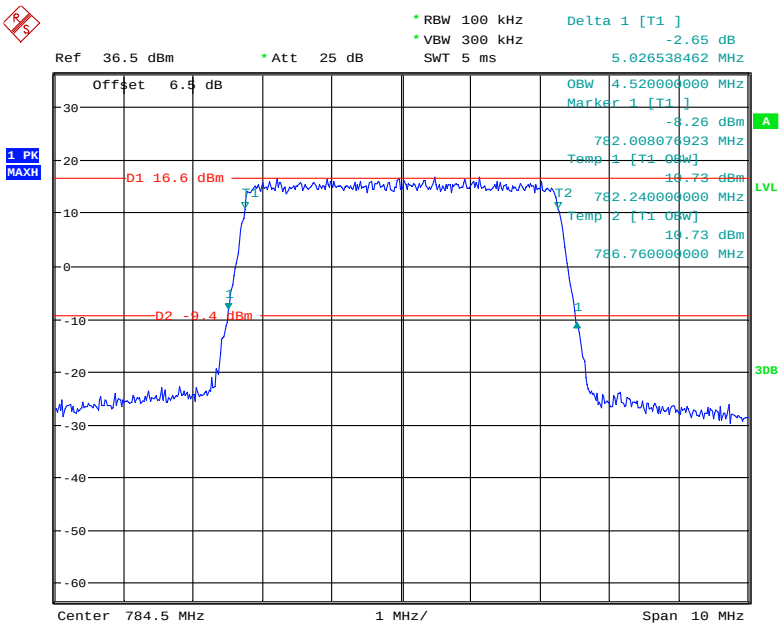
Date: 4.FEB.2021 10:07:41

Band 13_5 MHz_Middle_QPSK_RB25#0



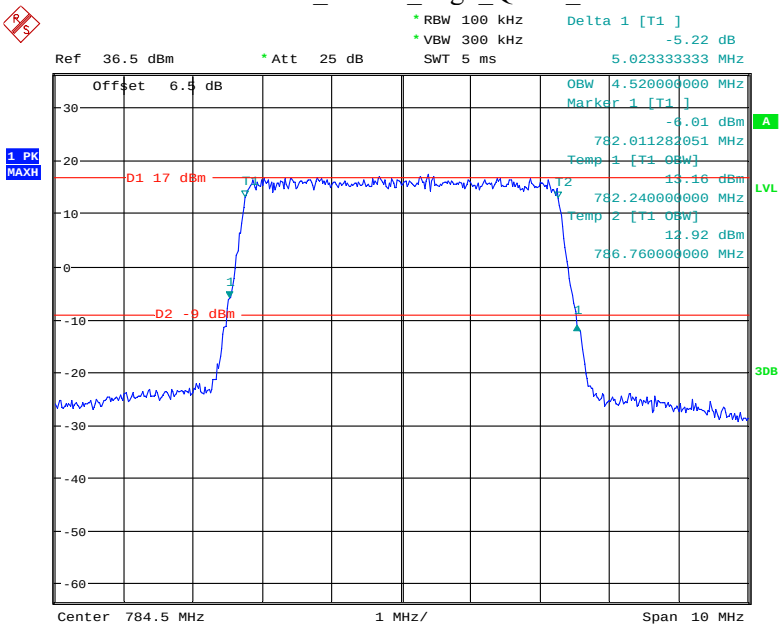
Date: 4.FEB.2021 10:05:27

Band 13_5 MHz_High_16QAM_RB25#0



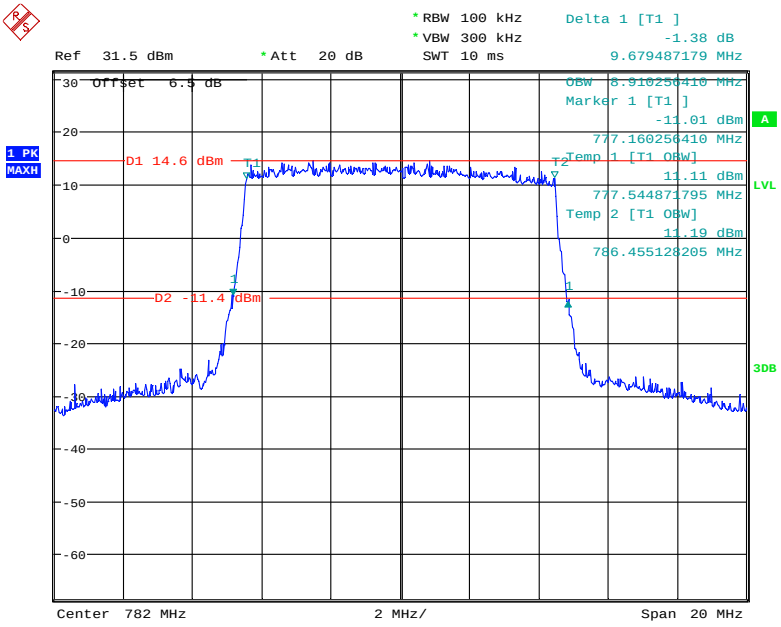
Date: 1.NOV.2020 16:22:23

Band 13_5 MHz_High_QPSK_RB25#0



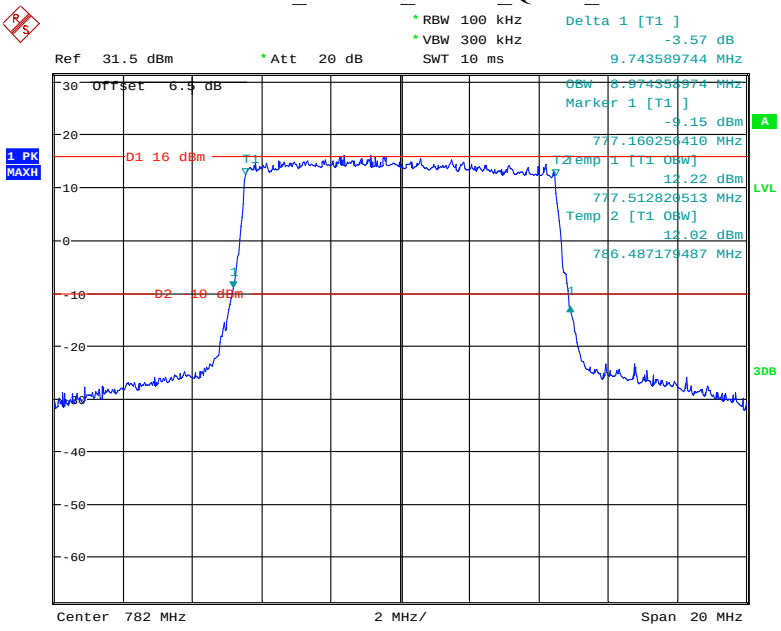
Date: 1.NOV.2020 16:21:17

Band 13_10 MHz_Middle_16QAM_RB50#0



Date: 4.FEB.2021 10:11:56

Band 13_10 MHz_Middle_QPSK_RB50#0

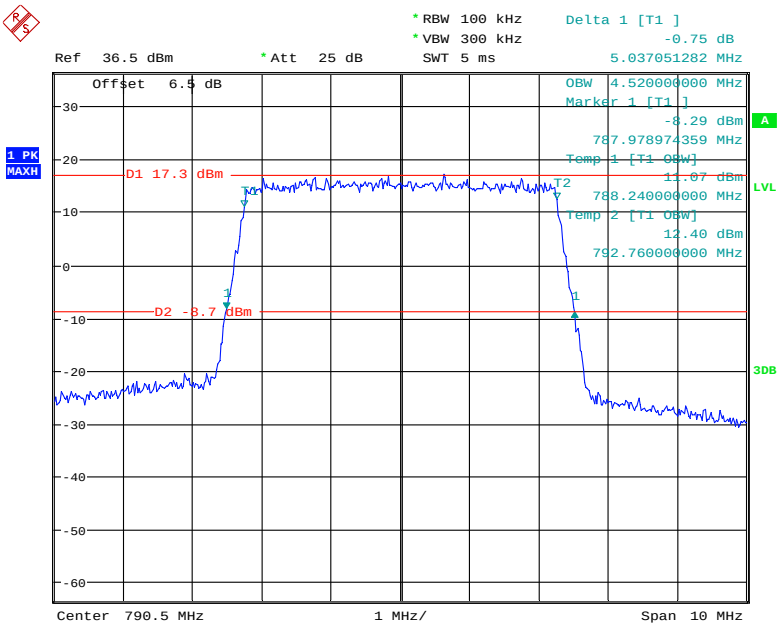


Date: 4.FEB.2021 10:11:01

LTE Band 14

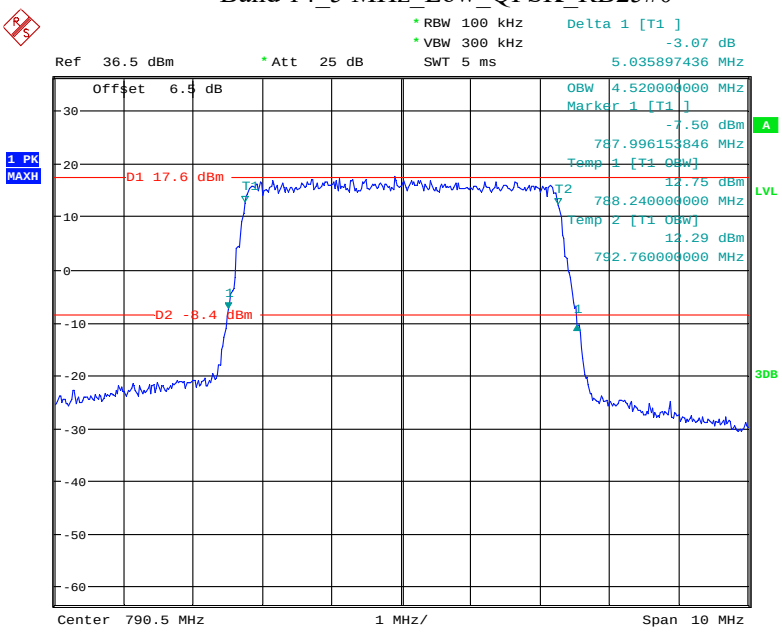
Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	Low	16QAM	4.520	5.037
		QPSK	4.520	5.036
	Middle	16QAM	4.519	5.016
		QPSK	4.519	5.016
	High	16QAM	4.540	5.025
		QPSK	4.520	5.065
10	Low	16QAM	/	/
		QPSK	/	/
	Middle	16QAM	8.942	9.583
		QPSK	8.910	9.744
	High	16QAM	/	/
		QPSK	/	/

Band 14_5 MHz_Low_16QAM_RB25#0



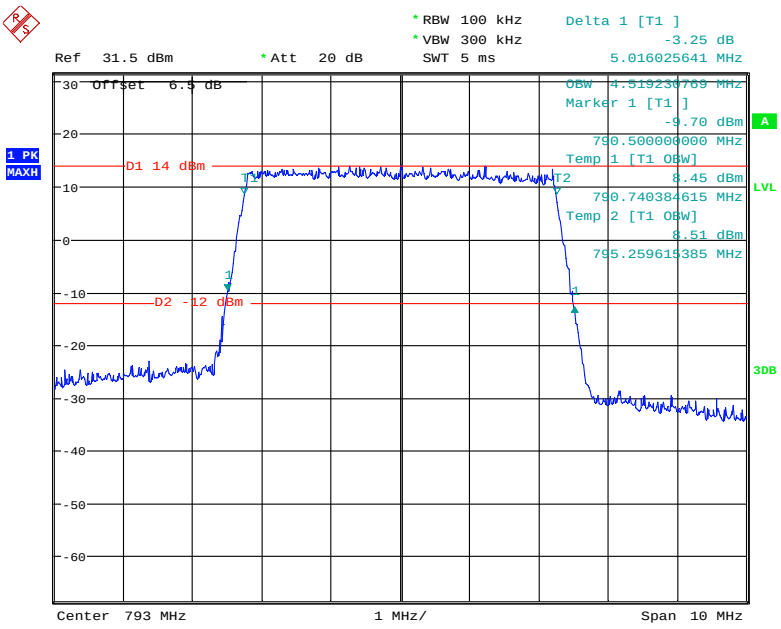
Date: 1.NOV.2020 16:41:01

Band 14_5 MHz_Low_QPSK_RB25#0



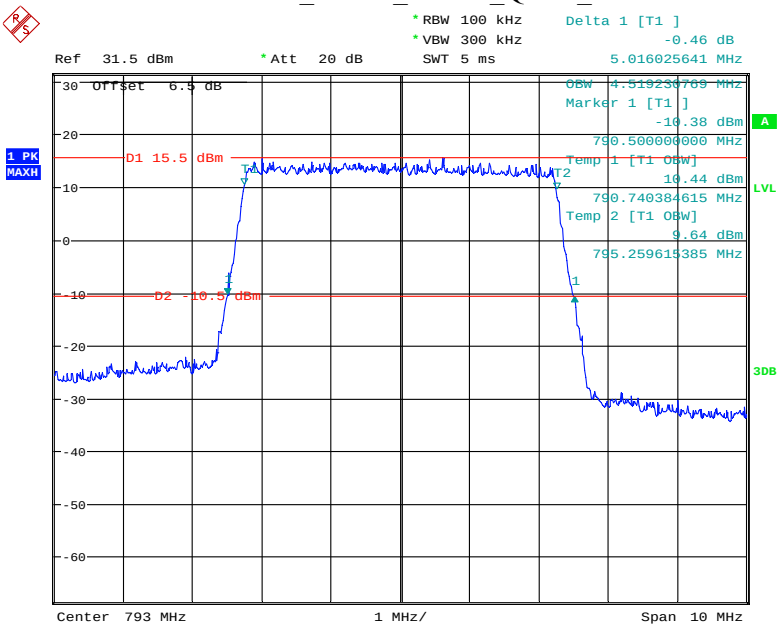
Date: 1.NOV.2020 16:41:47

Band 14_5 MHz_Middle_16QAM_RB25#0



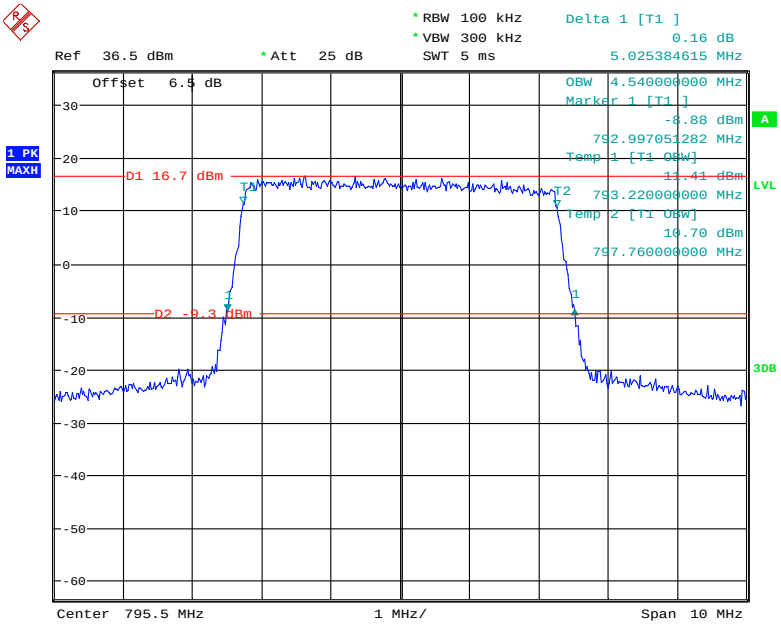
Date: 4.FEB.2021 10:37:54

Band 14_5 MHz_Middle_QPSK_RB25#0



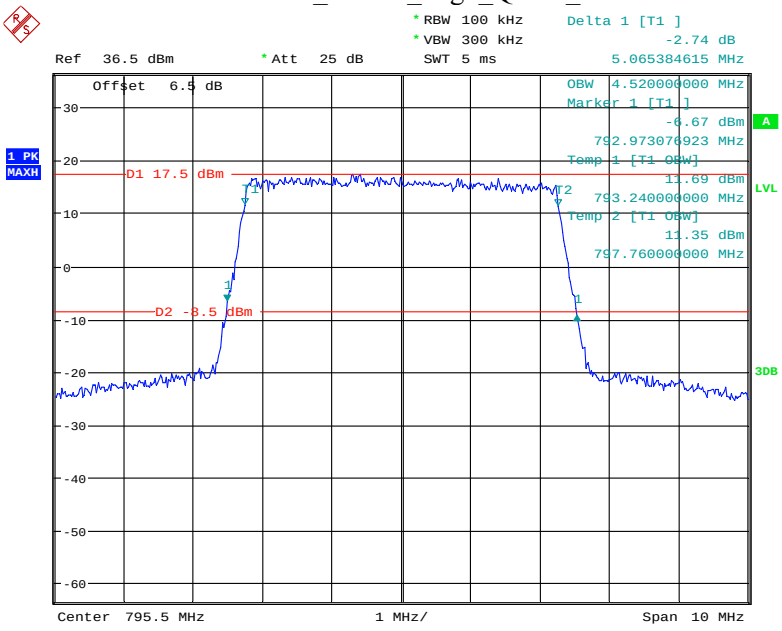
Date: 4.FEB.2021 10:37:07

Band 14_5 MHz_High_16QAM_RB25#0



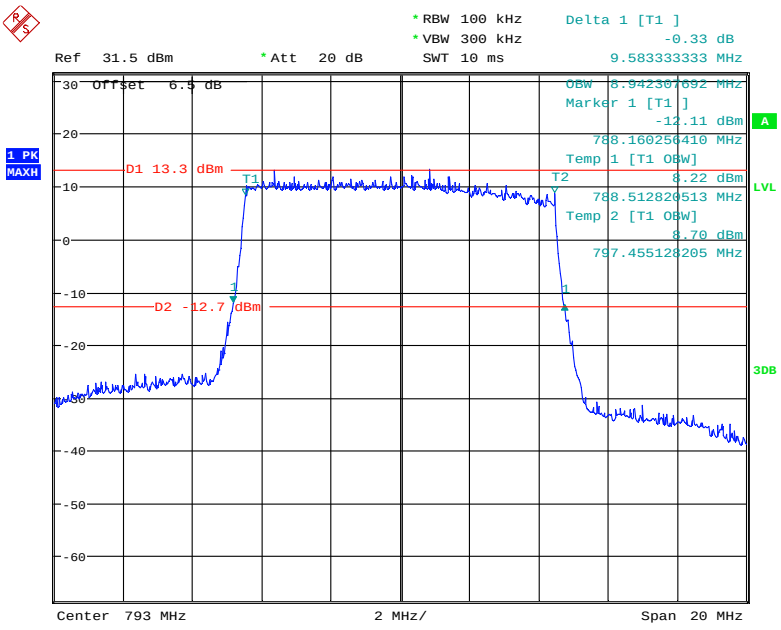
Date: 1.NOV.2020 16:36:59

Band 14_5 MHz_High_QPSK_RB25#0



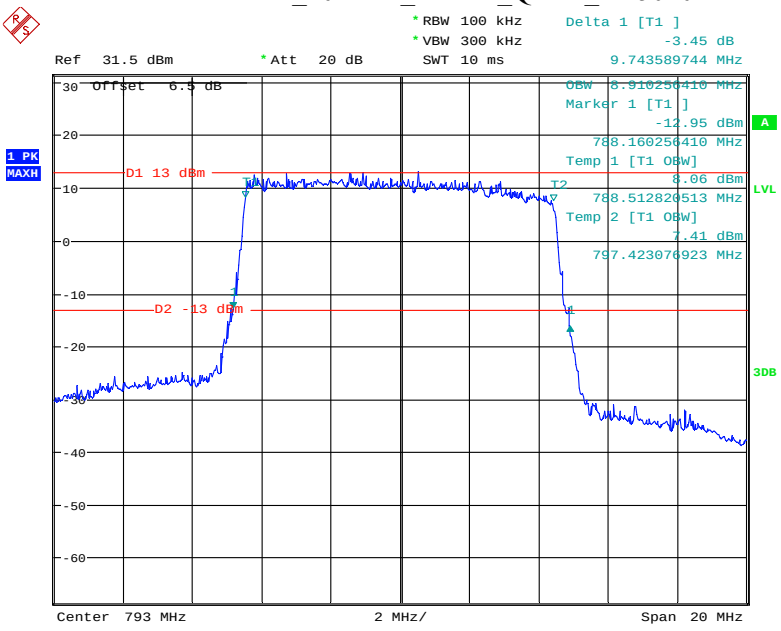
Date: 1.NOV.2020 16:38:03

Band 14_10 MHz_Middle_16QAM_RB50#0



Date: 4.FEB.2021 10:39:14

Band 14_10 MHz_Middle_QPSK_RB50#0

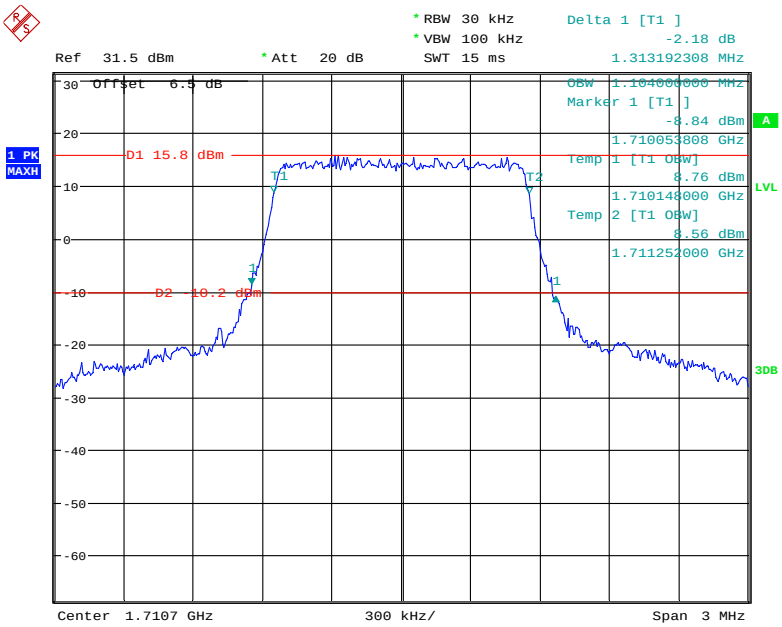


Date: 4.FEB.2021 10:40:11

LTE Band 66:

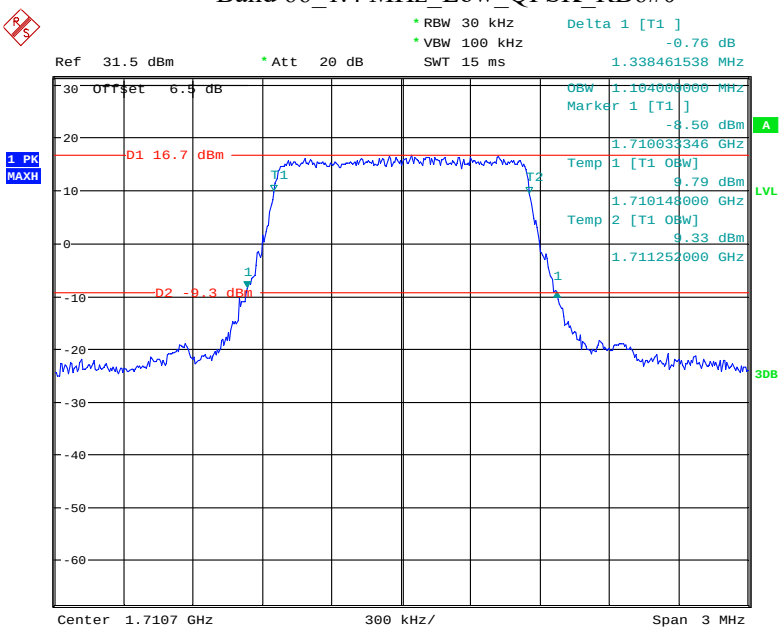
Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	Low	16QAM	1.104	1.313
		QPSK	1.104	1.338
	Middle	16QAM	1.098	1.302
		QPSK	1.104	1.314
	High	16QAM	1.110	1.332
		QPSK	1.110	1.358
3	Low	16QAM	2.700	2.987
		QPSK	2.700	2.962
	Middle	16QAM	2.688	2.940
		QPSK	2.688	2.964
	High	16QAM	2.700	2.973
		QPSK	2.712	2.961
5	Low	16QAM	4.520	5.043
		QPSK	4.520	5.052
	Middle	16QAM	4.520	5.040
		QPSK	4.520	5.040
	High	16QAM	4.540	5.054
		QPSK	4.520	5.056
10	Low	16QAM	8.960	9.870
		QPSK	8.960	9.884
	Middle	16QAM	8.960	9.600
		QPSK	8.960	9.720
	High	16QAM	8.960	9.643
		QPSK	8.960	9.693
15	Low	16QAM	13.500	14.863
		QPSK	13.500	14.911
	Middle	16QAM	13.500	14.820
		QPSK	13.500	14.880
	High	16QAM	13.500	14.840
		QPSK	13.500	14.940
20	Low	16QAM	18.000	19.545
		QPSK	17.920	19.577
	Middle	16QAM	17.840	19.440
		QPSK	17.920	19.280
	High	16QAM	18.000	19.508
		QPSK	17.885	19.359

Band 66_1.4 MHz_Low_16QAM_RB6#0



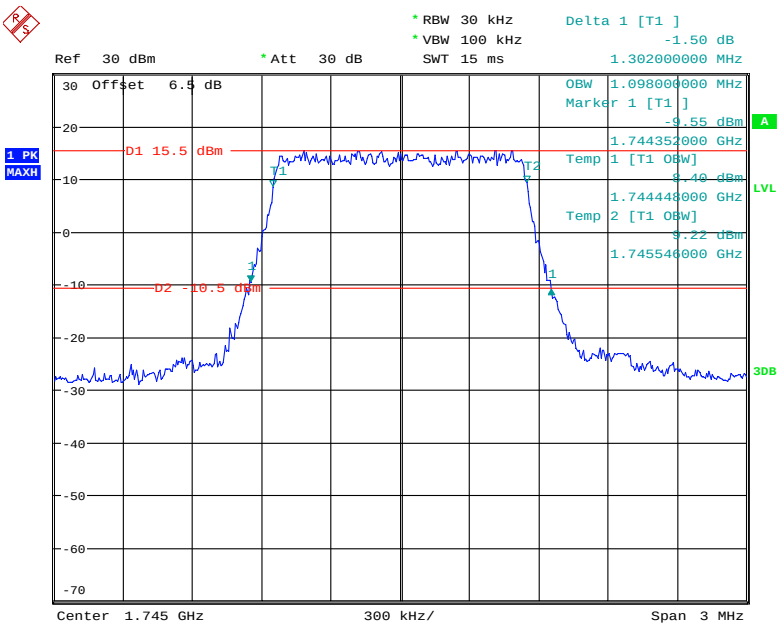
Date: 2.NOV.2020 08:19:03

Band 66_1.4 MHz_Low_QPSK_RB6#0



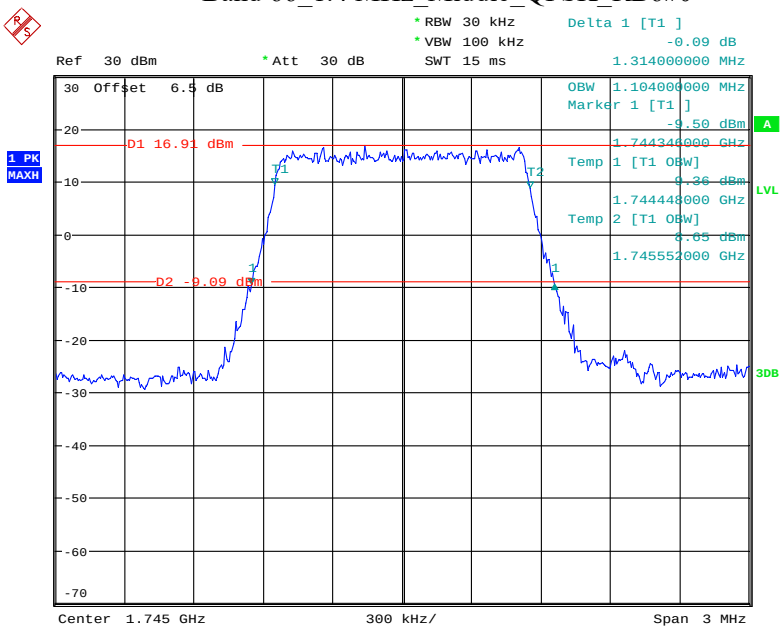
Date: 2.NOV.2020 08:17:46

Band 66_1.4 MHz_Middle_16QAM_RB6#0



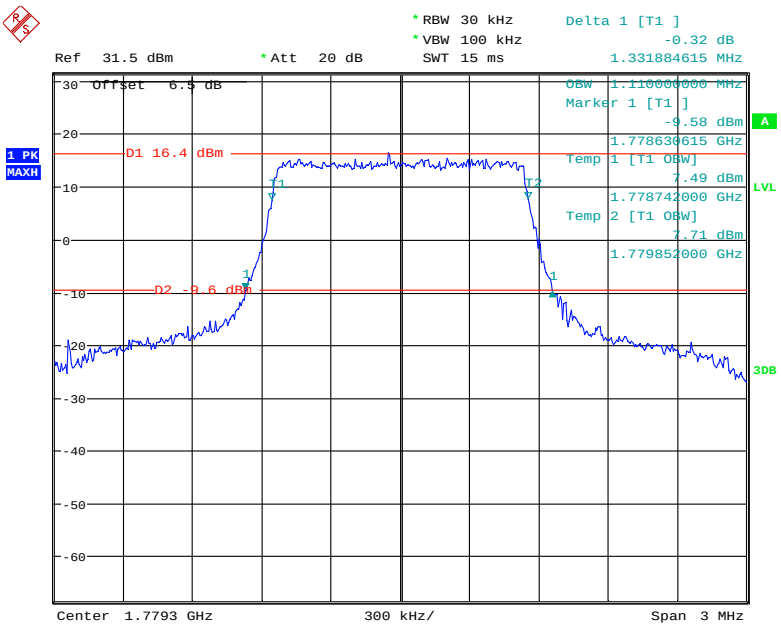
Date: 11.OCT.2020 15:33:55

Band 66_1.4 MHz_Middle_QPSK_RB6#0



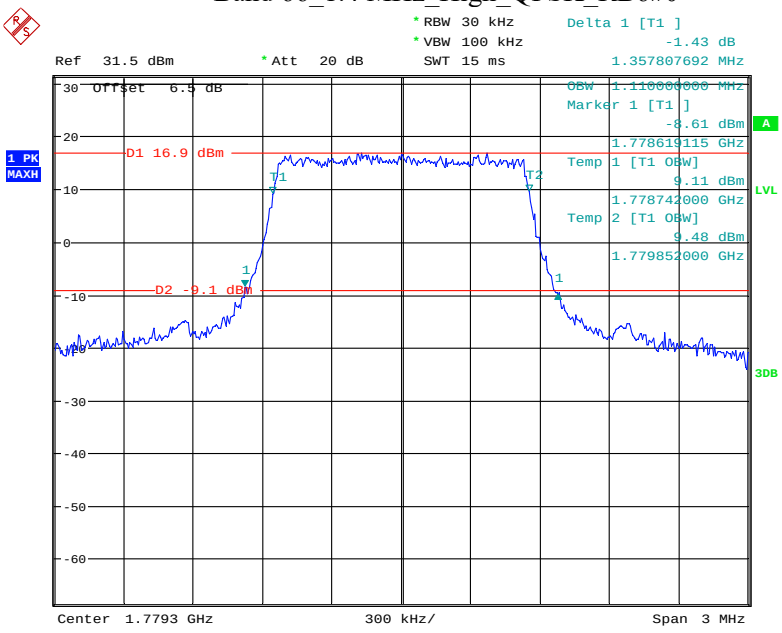
Date: 11.OCT.2020 15:33:39

Band 66_1.4 MHz_High_16QAM_RB6#0



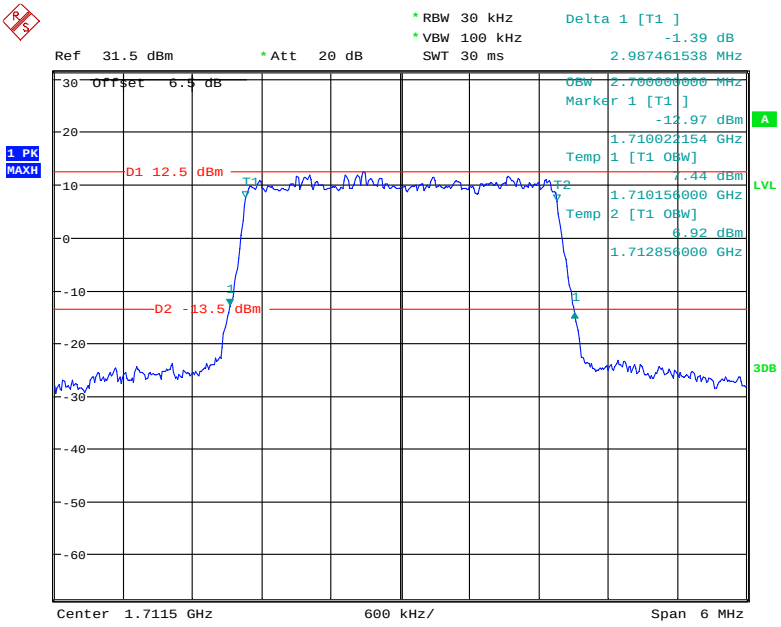
Date: 2.NOV.2020 08:20:16

Band 66_1.4 MHz_High_QPSK_RB6#0



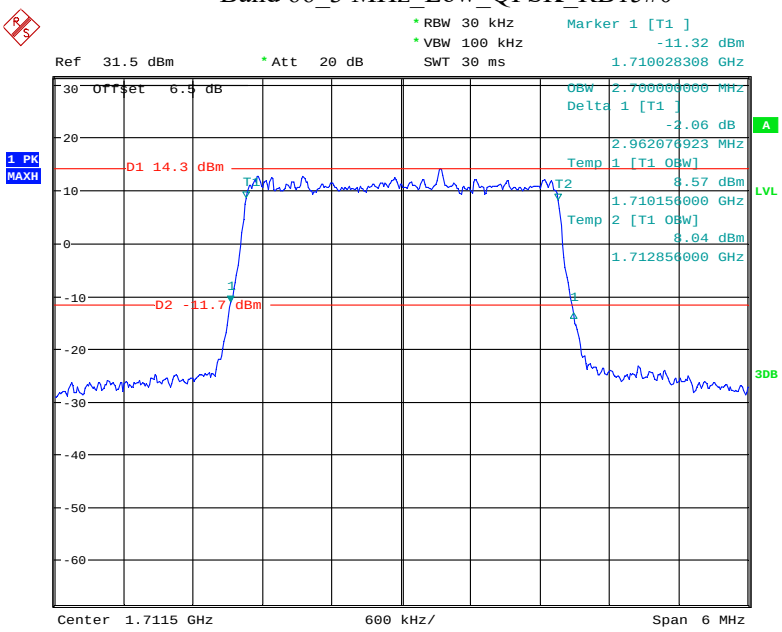
Date: 2.NOV.2020 08:21:11

Band 66_3 MHz_Low_16QAM_RB15#0



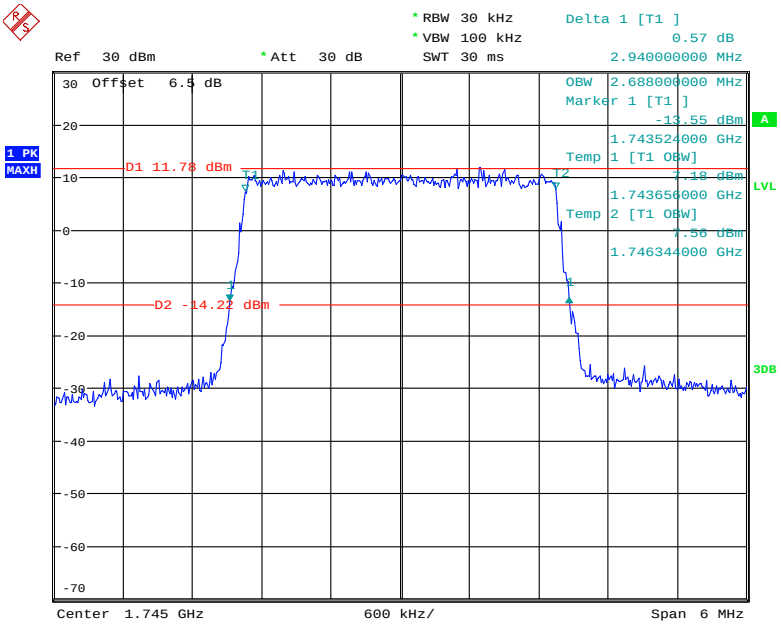
Date: 2.NOV.2020 08:25:46

Band 66_3 MHz_Low_QPSK_RB15#0



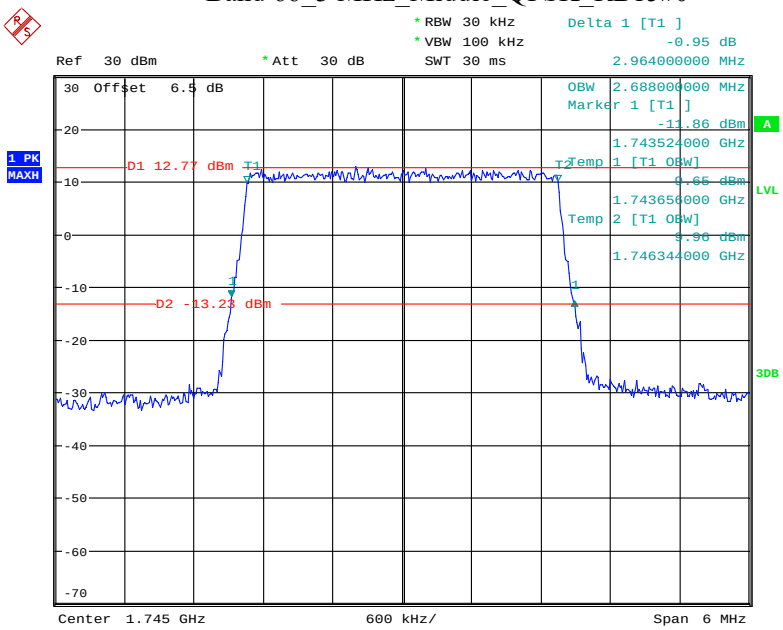
Date: 2.NOV.2020 08:24:29

Band 66_3 MHz_Middle_16QAM_RB15#0



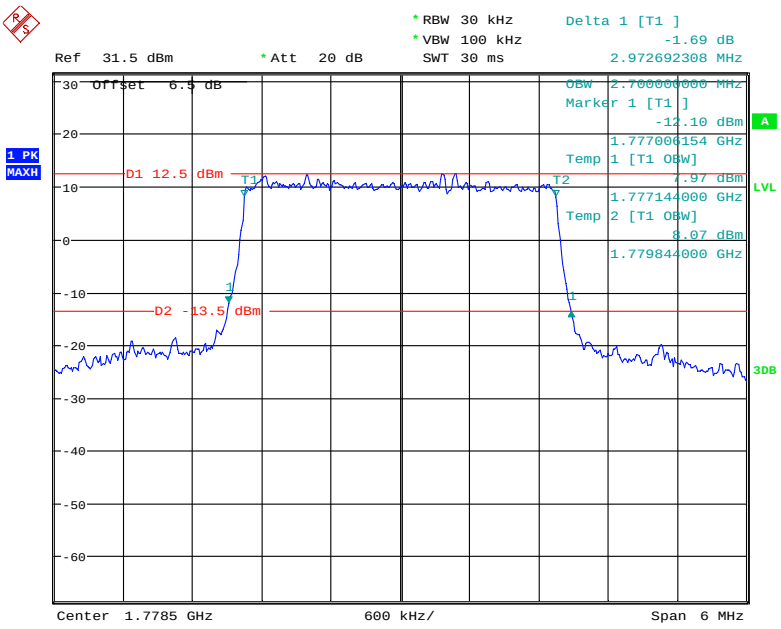
Date: 11.OCT.2020 15:34:30

Band 66_3 MHz_Middle_QPSK_RB15#0



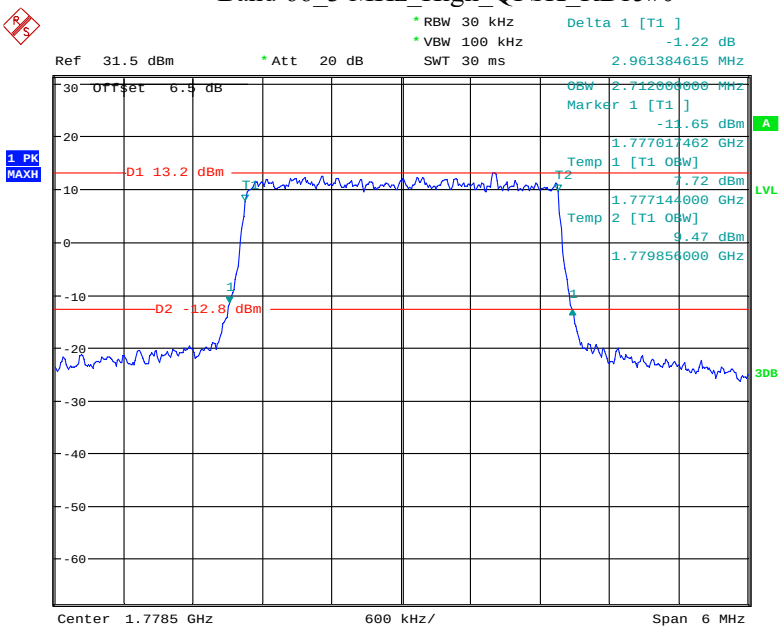
Date: 11.OCT.2020 15:34:17

Band 66_3 MHz_High_16QAM_RB15#0



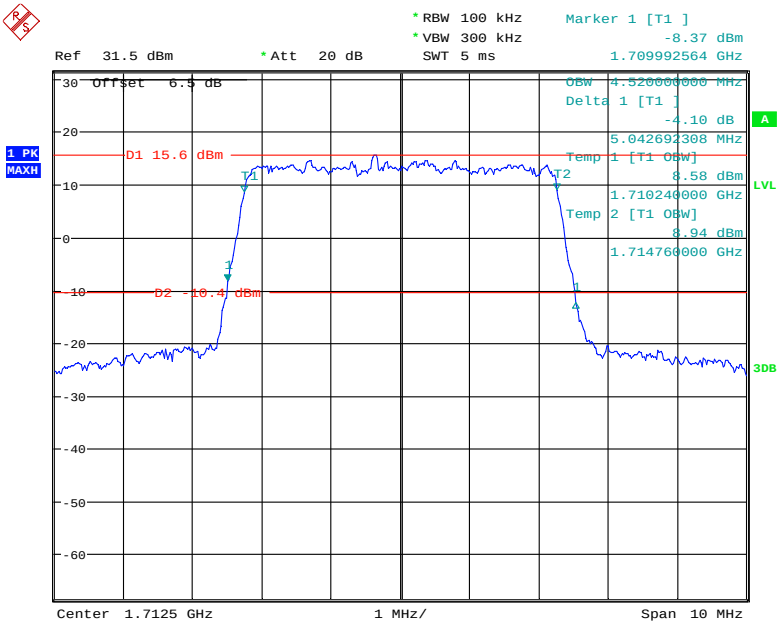
Date: 2.NOV.2020 08:27:12

Band 66_3 MHz_High_QPSK_RB15#0



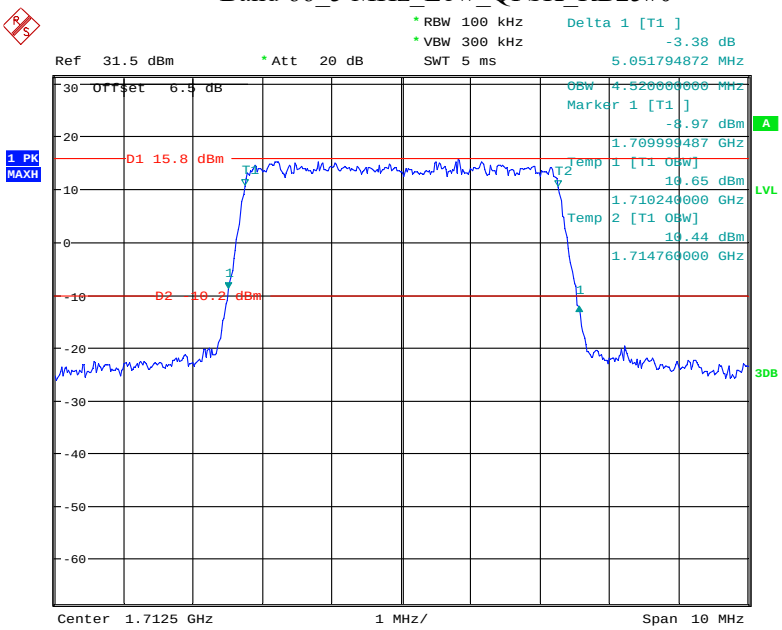
Date: 2.NOV.2020 08:28:06

Band 66_5 MHz_Low_16QAM_RB25#0



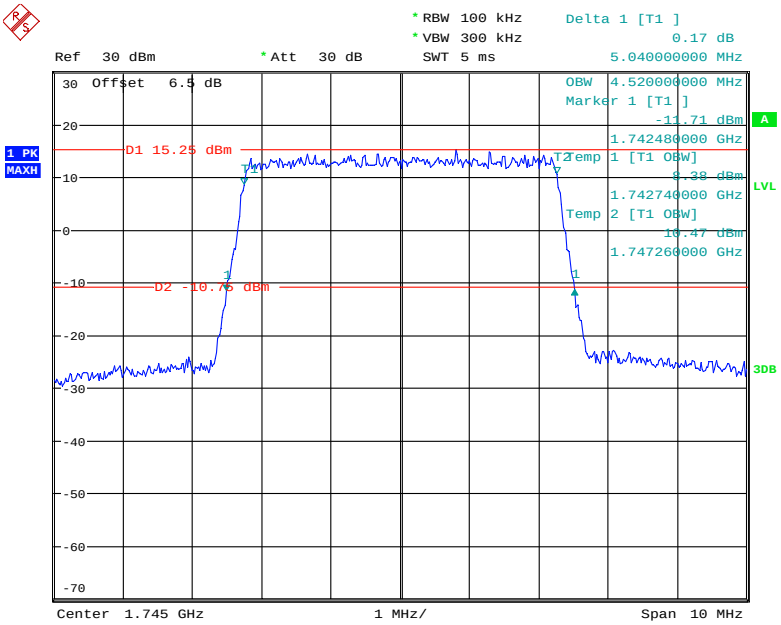
Date: 2.NOV.2020 08:31:08

Band 66_5 MHz_Low_QPSK_RB25#0



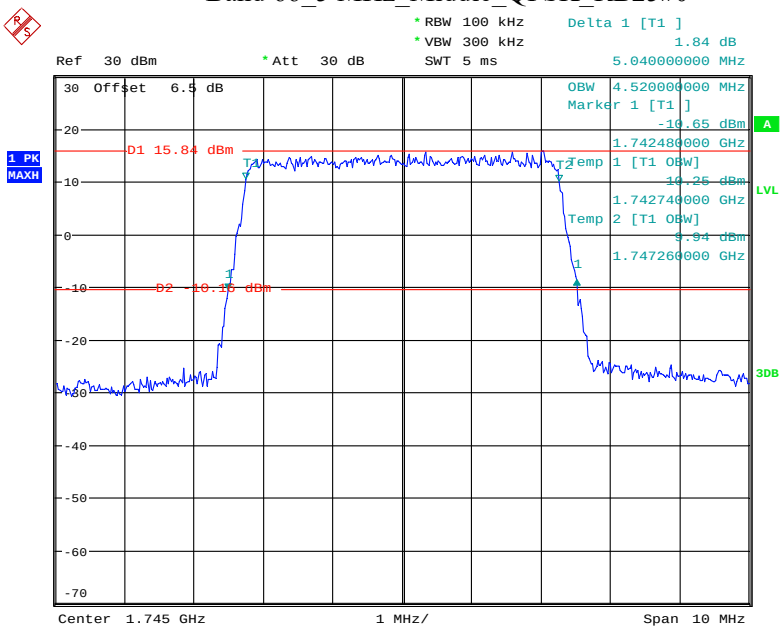
Date: 2.NOV.2020 08:29:40

Band 66_5 MHz_Middle_16QAM_RB25#0



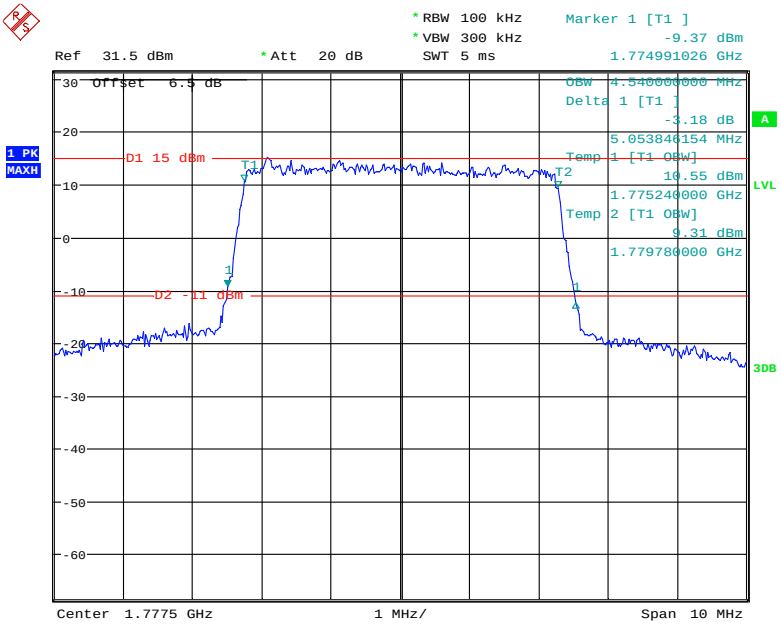
Date: 11.OCT.2020 15:35:24

Band 66_5 MHz_Middle_QPSK_RB25#0



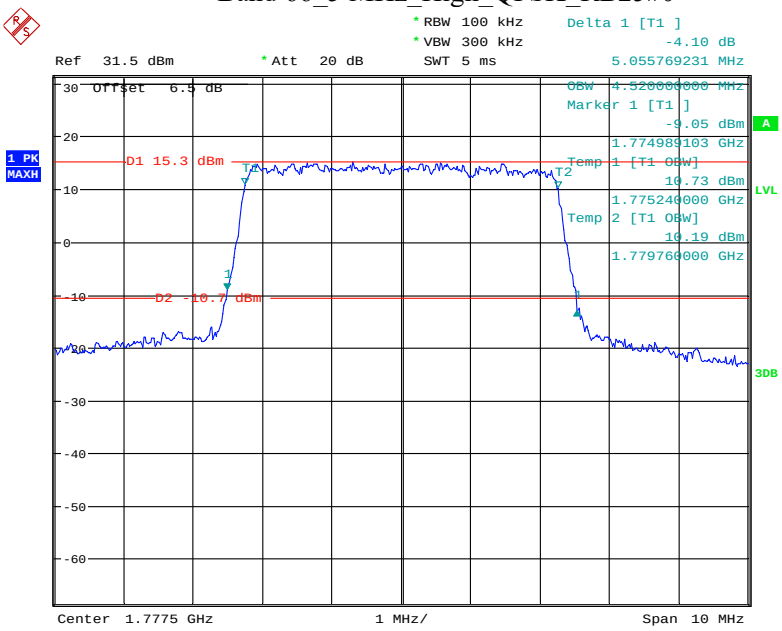
Date: 11.OCT.2020 15:34:52

Band 66_5 MHz_High_16QAM_RB25#0



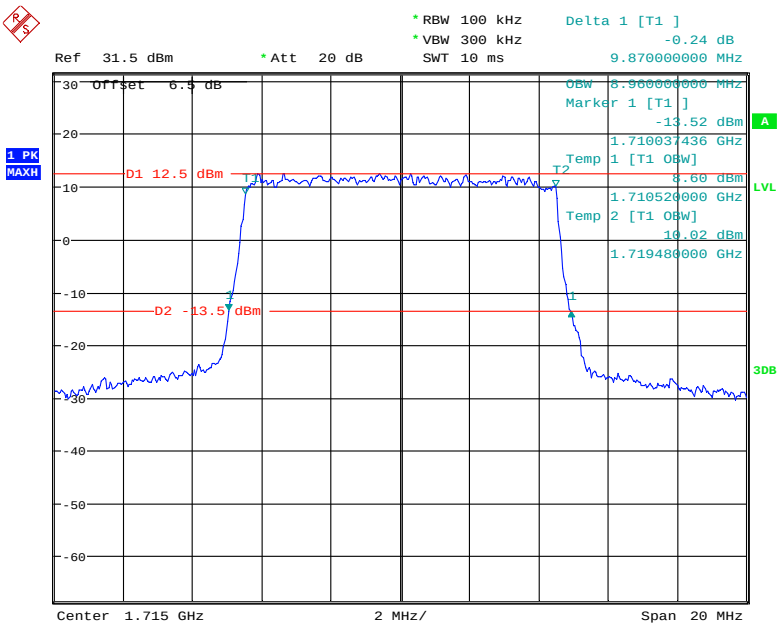
Date: 2.NOV.2020 08:34:20

Band 66_5 MHz_High_QPSK_RB25#0



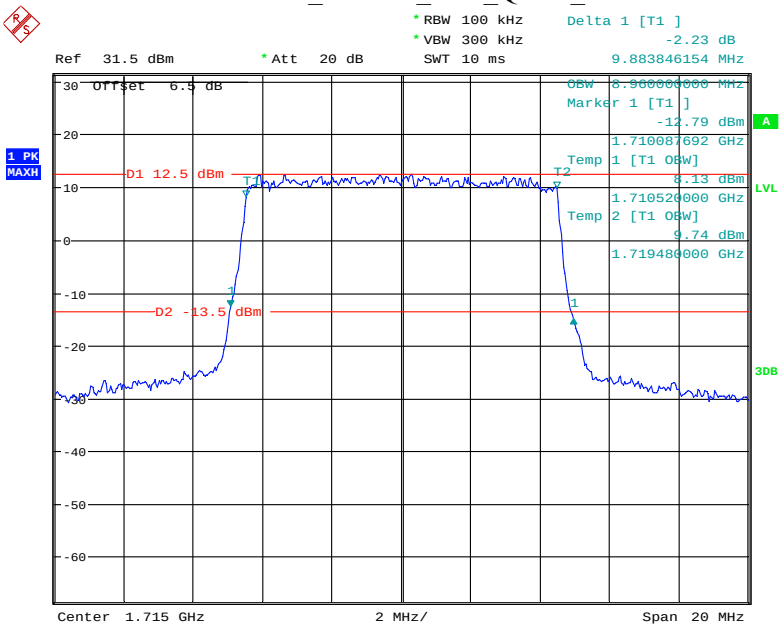
Date: 2.NOV.2020 08:33:35

Band 66_10 MHz_Low_16QAM_RB50#0



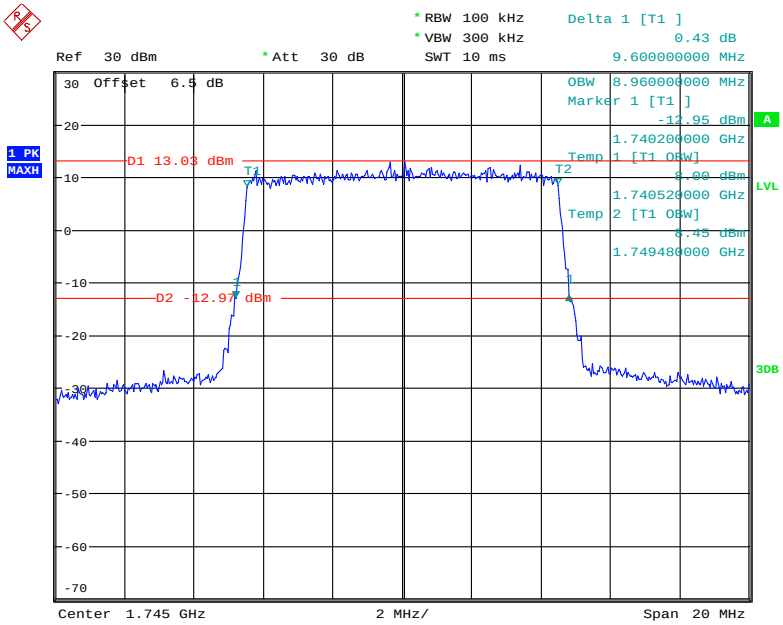
Date: 2.NOV.2020 08:45:12

Band 66_10 MHz_Low_QPSK_RB50#0



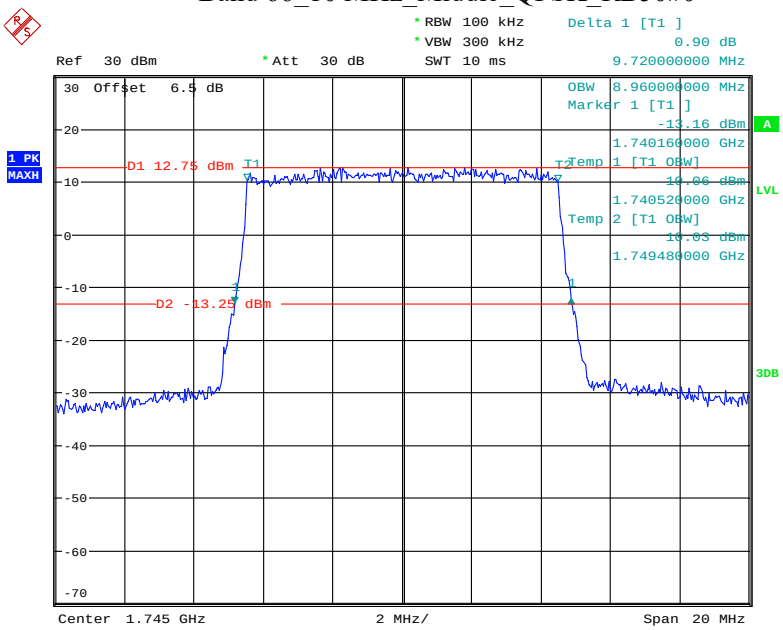
Date: 2.NOV.2020 08:36:07

Band 66_10 MHz_Middle_16QAM_RB50#0



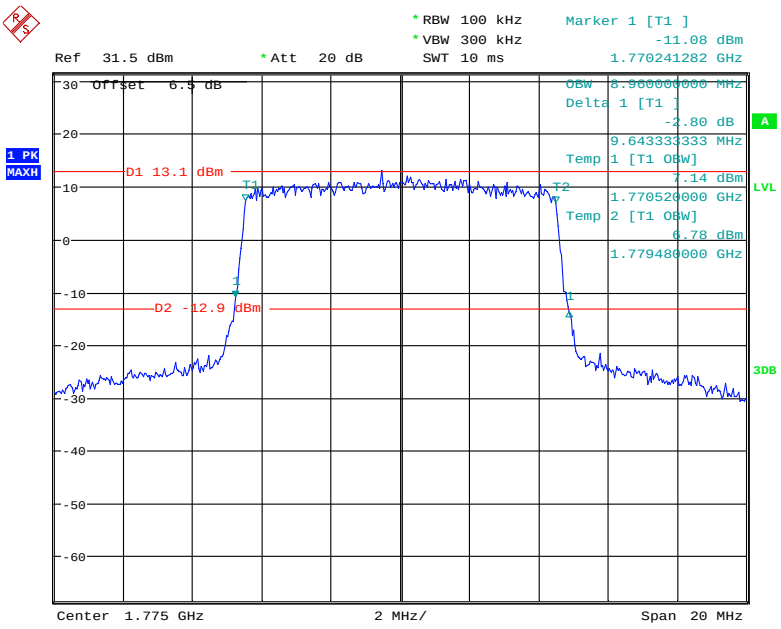
Date: 11.OCT.2020 15:36:07

Band 66_10 MHz_Middle_QPSK_RB50#0



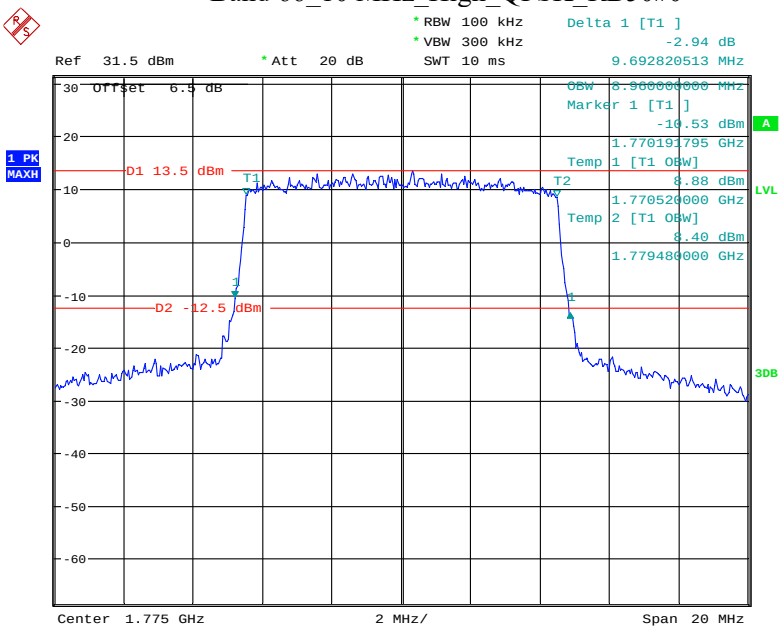
Date: 11.OCT.2020 15:35:47

Band 66_10 MHz_High_16QAM_RB50#0



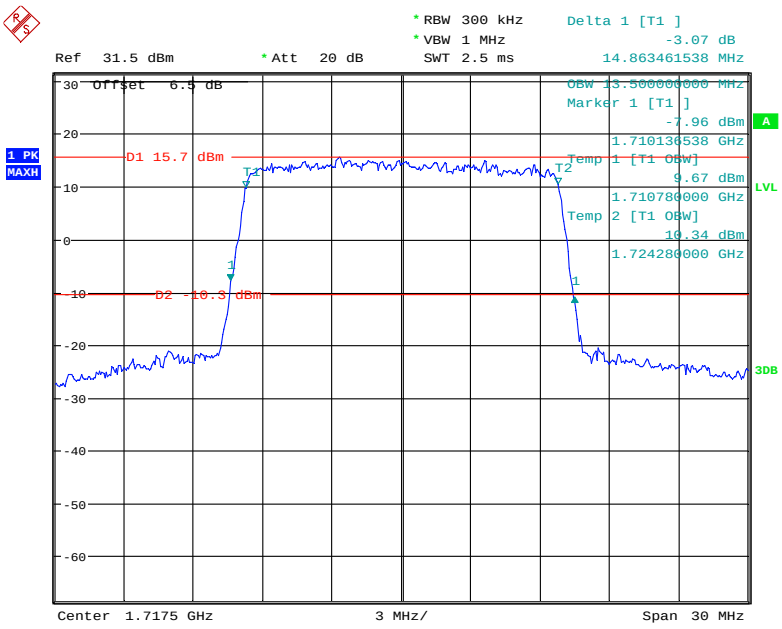
Date: 2.NOV.2020 08:47:23

Band 66_10 MHz_High_QPSK_RB50#0



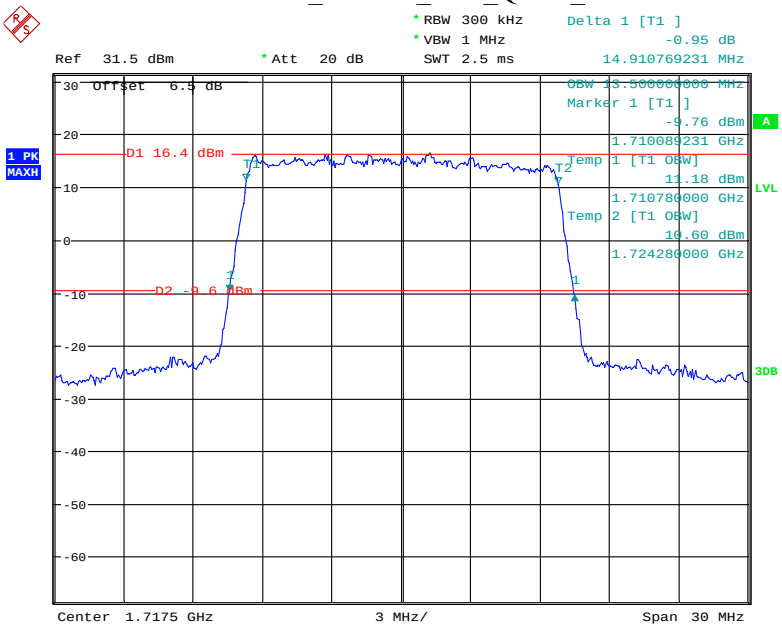
Date: 2.NOV.2020 08:48:14

Band 66_15 MHz_Low_16QAM_RB75#0



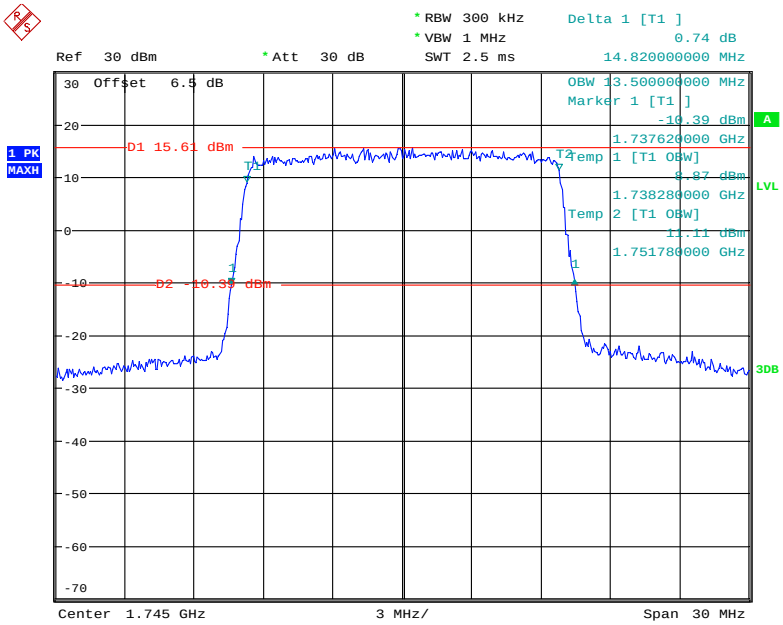
Date: 2.NOV.2020 08:53:07

Band 66_15 MHz_Low_QPSK_RB75#0



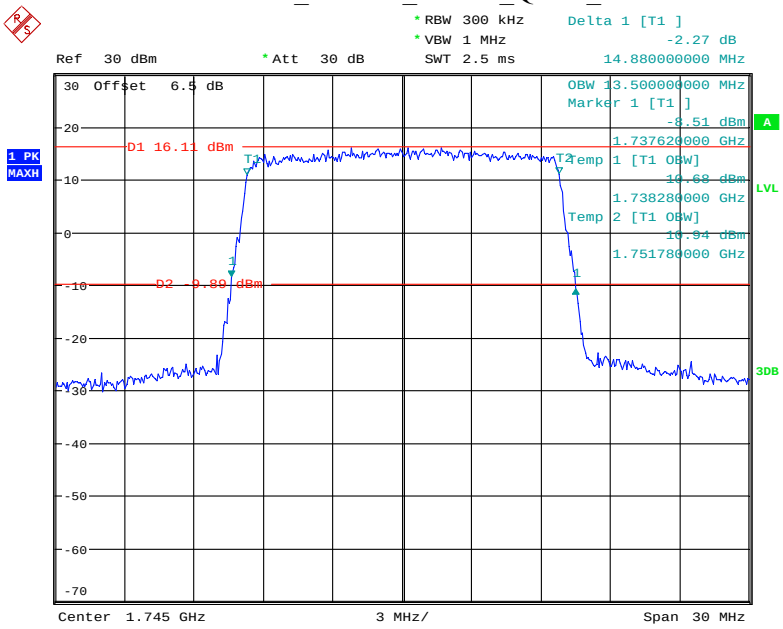
Date: 2.NOV.2020 08:53:55

Band 66_15 MHz_Middle_16QAM_RB75#0



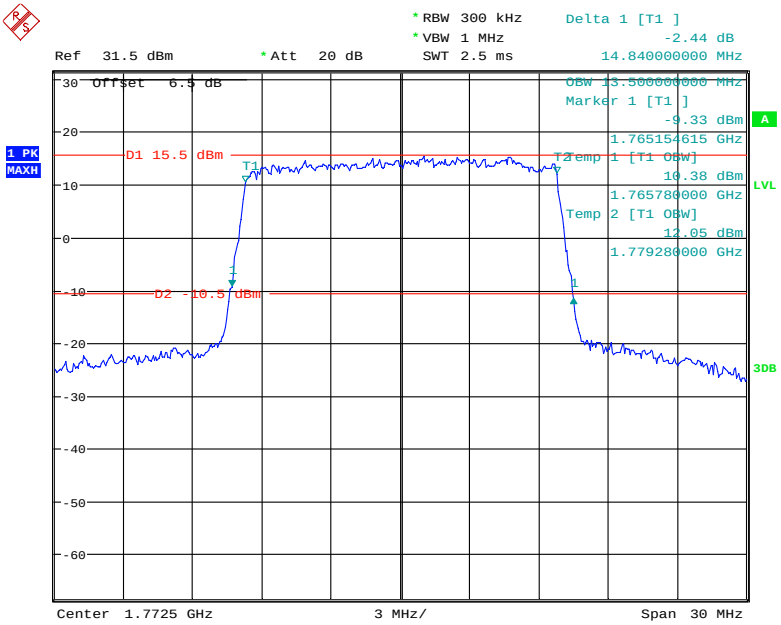
Date: 11.OCT.2020 15:36:50

Band 66_15 MHz_Middle_QPSK_RB75#0



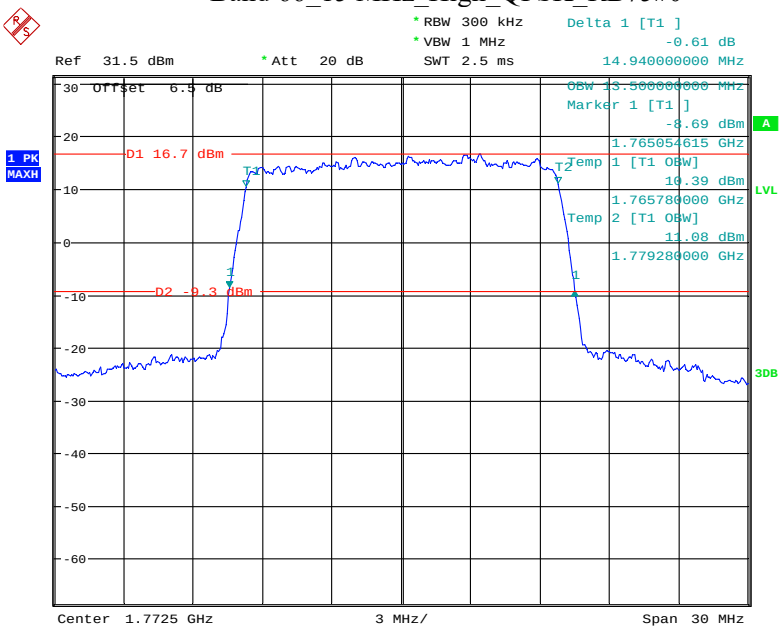
Date: 11.OCT.2020 15:36:29

Band 66_15 MHz_High_16QAM_RB75#0



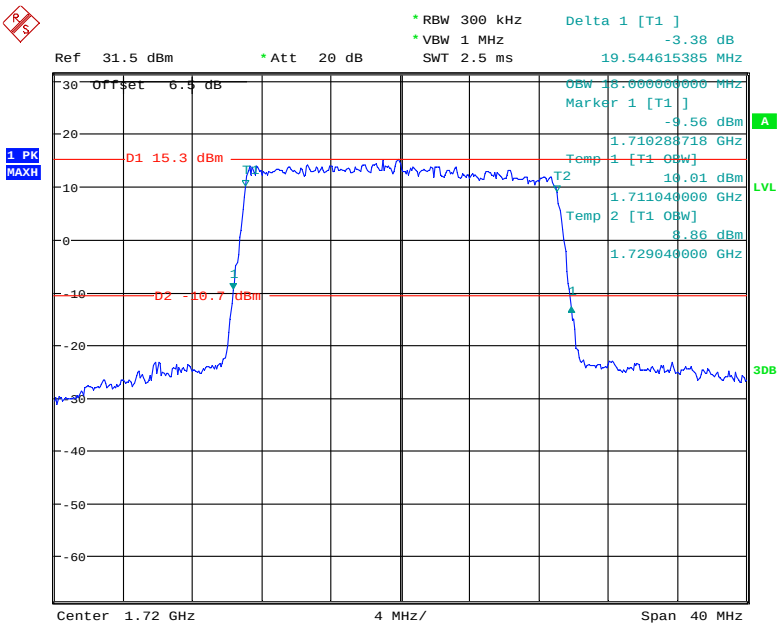
Date: 2.NOV.2020 08:51:57

Band 66_15 MHz_High_QPSK_RB75#0



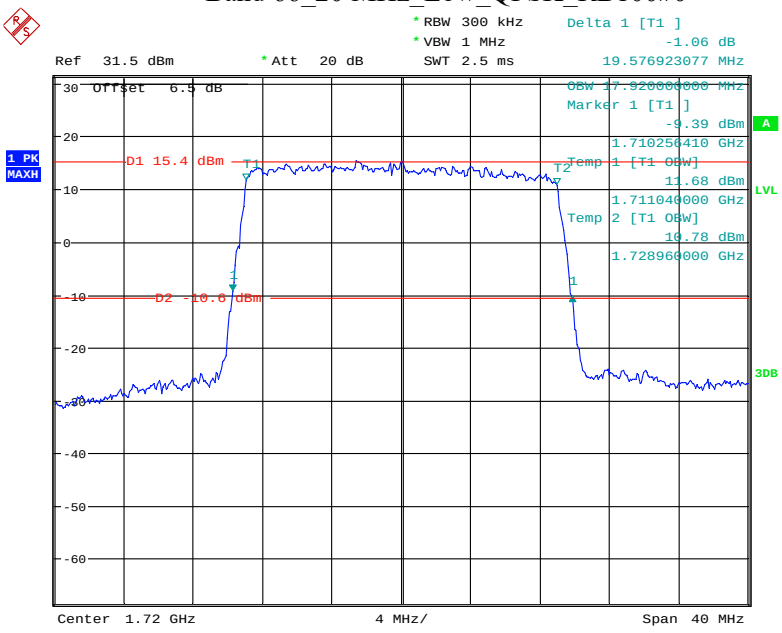
Date: 2.NOV.2020 08:51:11

Band 66_20 MHz_Low_16QAM_RB100#0



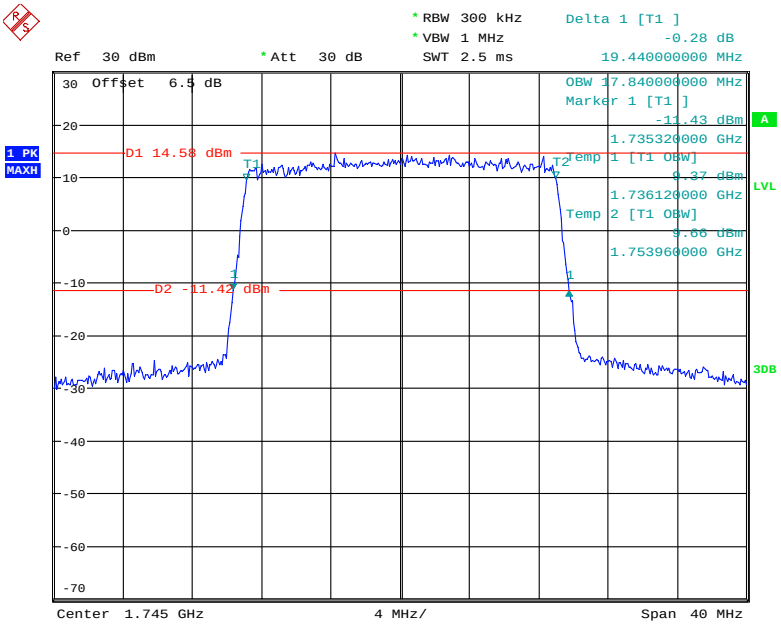
Date: 2.NOV.2020 08:57:03

Band 66_20 MHz_Low_QPSK_RB100#0



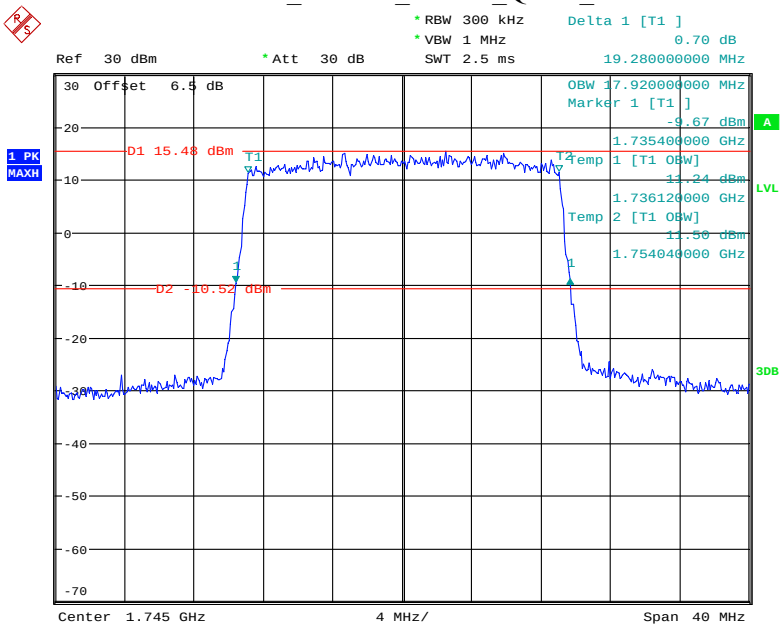
Date: 2.NOV.2020 08:55:59

Band 66_20 MHz_Middle_16QAM_RB100#0



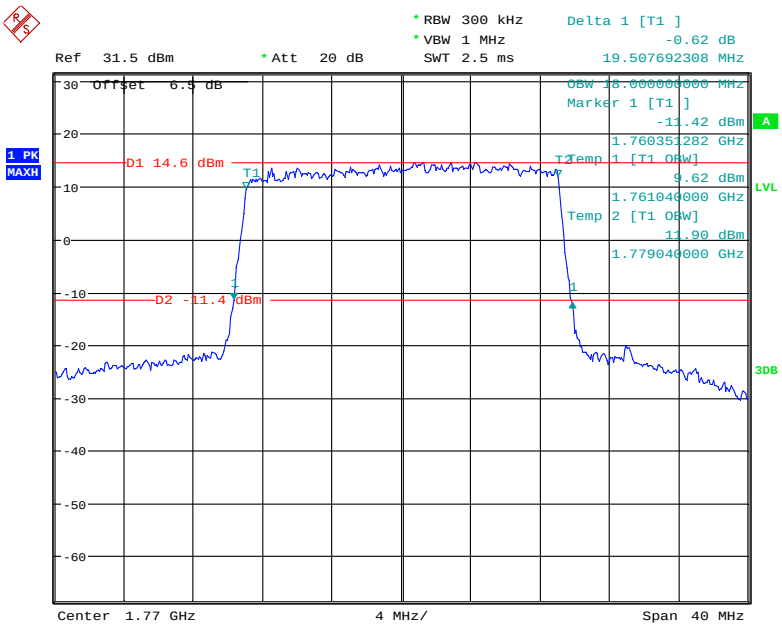
Date: 11.OCT.2020 15:37:42

Band 66_20 MHz_Middle_QPSK_RB100#0



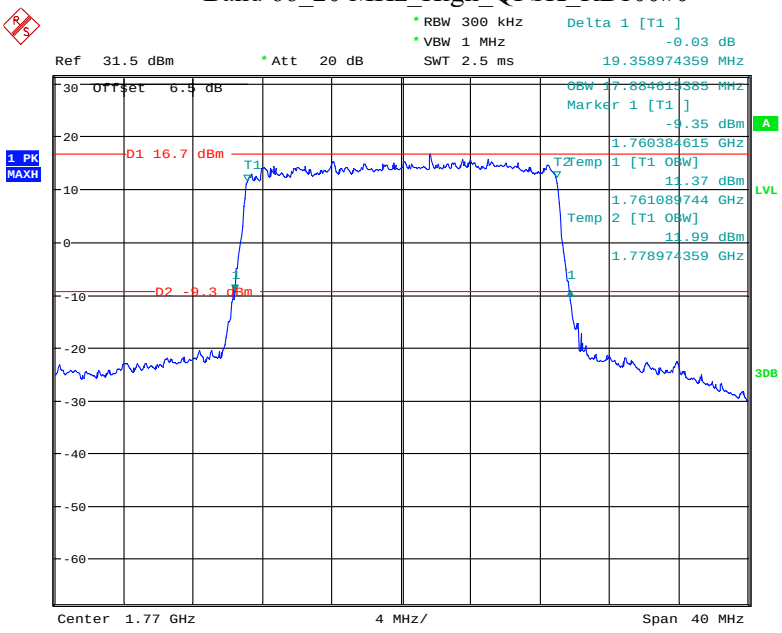
Date: 11.OCT.2020 15:37:12

Band 66_20 MHz_High_16QAM_RB100#0



Date: 2.NOV.2020 08:58:14

Band 66_20 MHz_High_QPSK_RB100#0

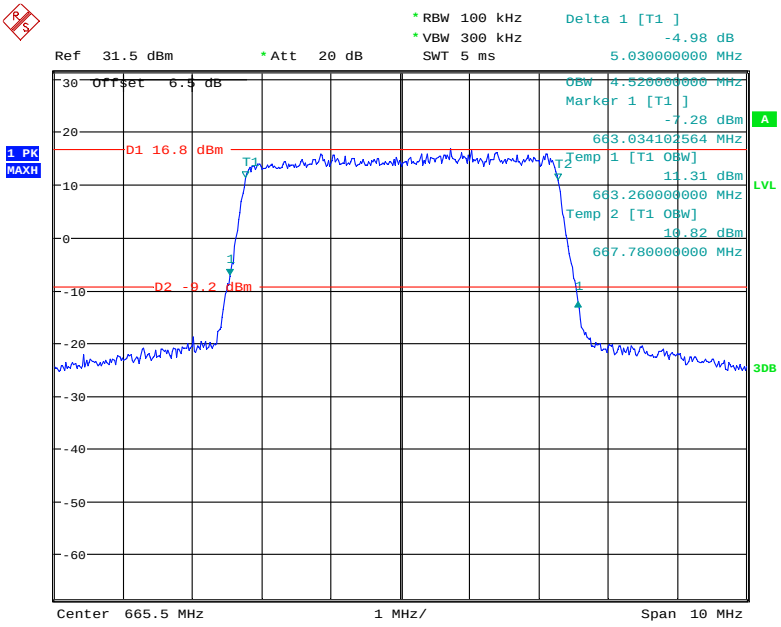


Date: 16.JAN.2021 20:01:00

LTE Band 71:

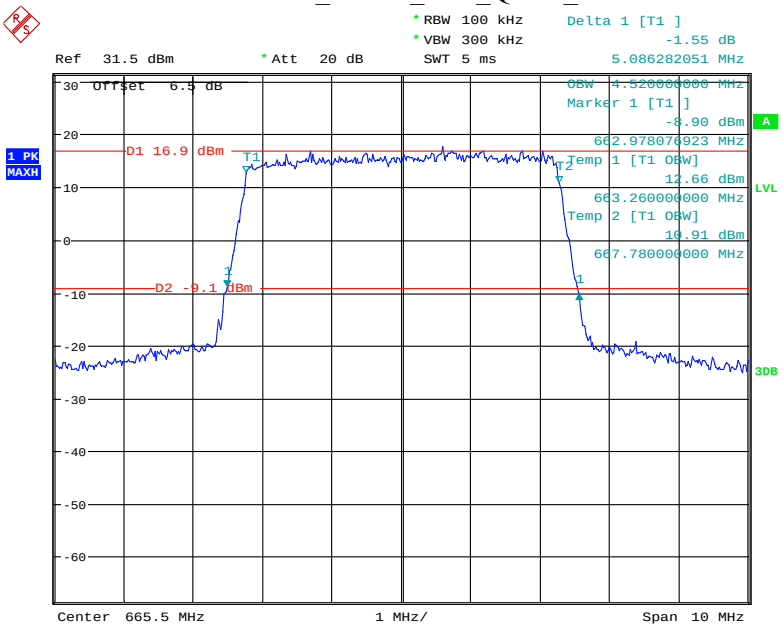
Bandwidth (MHz)	Channel	Modulation	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	Low	16QAM	4.520	5.030
		QPSK	4.520	5.086
	Middle	16QAM	4.520	5.021
		QPSK	4.520	4.997
	High	16QAM	4.520	5.042
		QPSK	4.540	5.060
10	Low	16QAM	8.960	9.614
		QPSK	8.960	9.725
	Middle	16QAM	8.920	9.666
		QPSK	8.920	9.679
	High	16QAM	8.960	9.794
		QPSK	8.960	9.840
15	Low	16QAM	13.510	14.856
		QPSK	13.510	14.856
	Middle	16QAM	13.462	14.760
		QPSK	13.462	14.856
	High	16QAM	13.510	14.904
		QPSK	13.510	14.952
20	Low	16QAM	17.949	19.551
		QPSK	17.949	19.487
	Middle	16QAM	17.949	19.462
		QPSK	17.885	19.654
	High	16QAM	17.885	19.631
		QPSK	17.949	19.567

Band 71_5 MHz_Low_16QAM_RB25#0



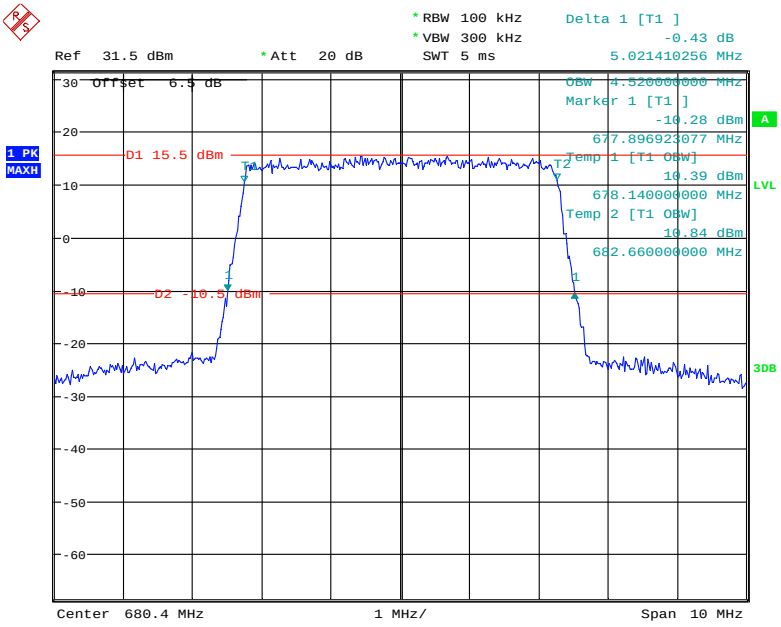
Date: 2.NOV.2020 10:06:09

Band 71_5 MHz_Low_QPSK_RB25#0



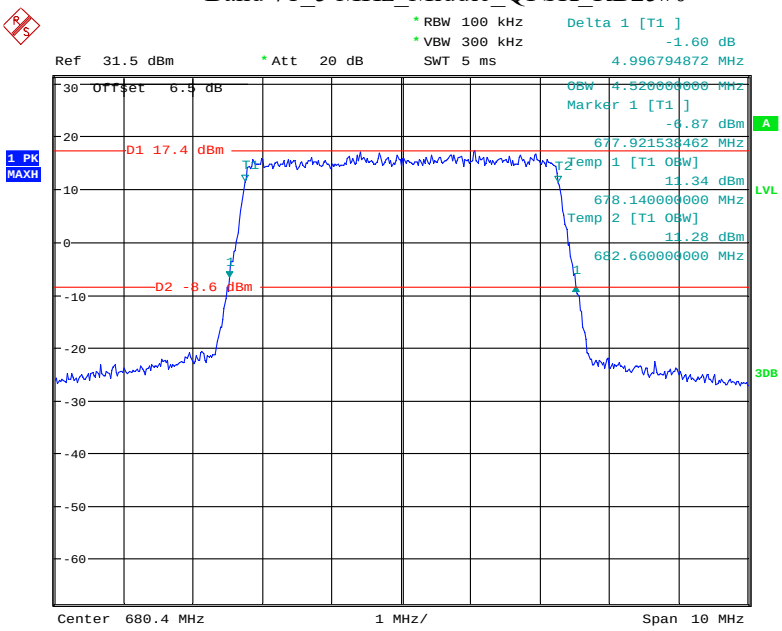
Date: 2.NOV.2020 10:07:10

Band 71_5 MHz_Middle_16QAM_RB25#0



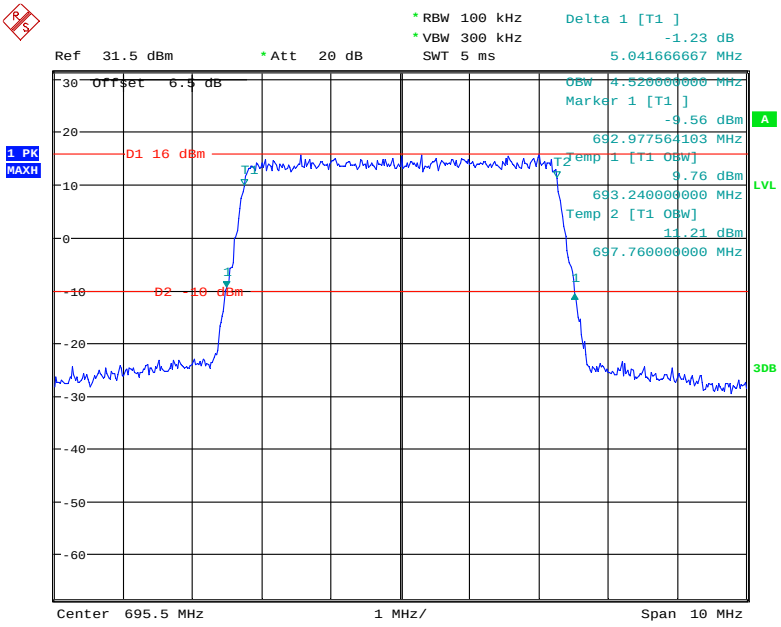
Date: 2.NOV.2020 10:09:33

Band 71_5 MHz_Middle_QPSK_RB25#0



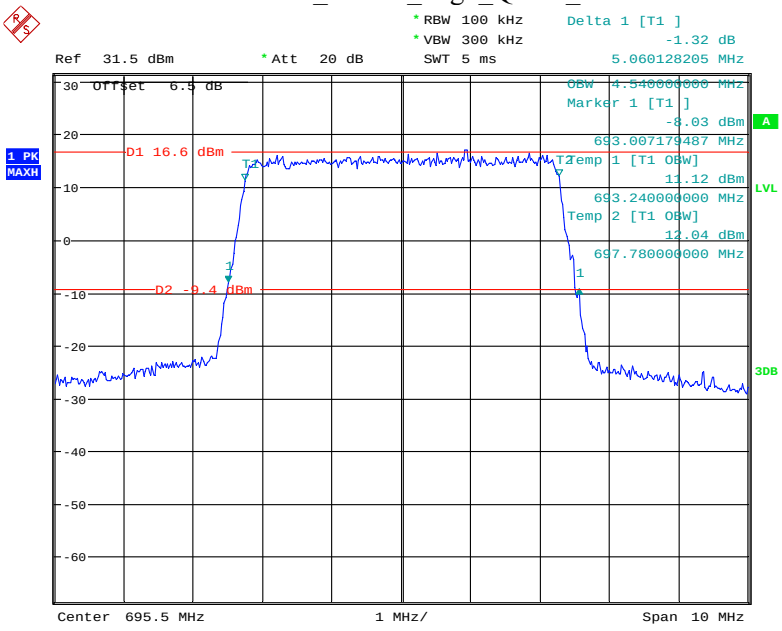
Date: 2.NOV.2020 10:08:42

Band 71_5 MHz_High_16QAM_RB25#0



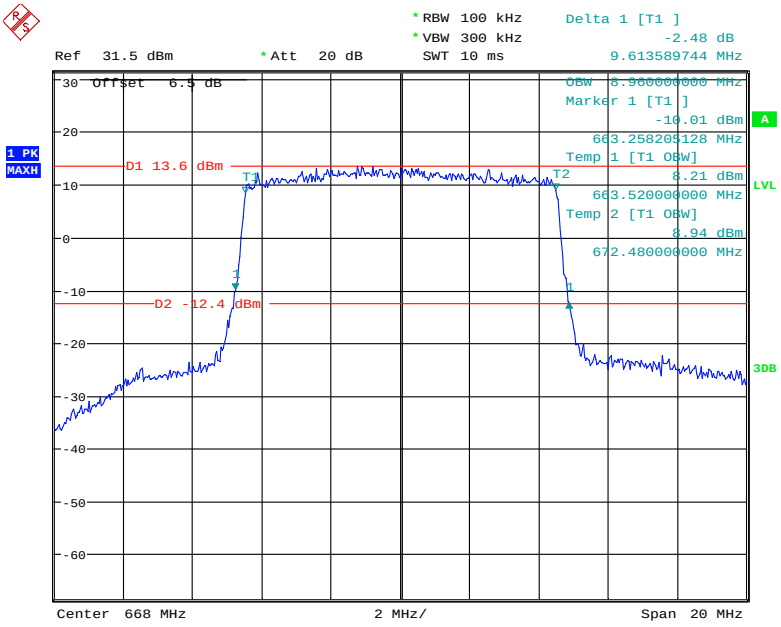
Date: 2.NOV.2020 10:10:56

Band 71_5 MHz_High_QPSK_RB25#0



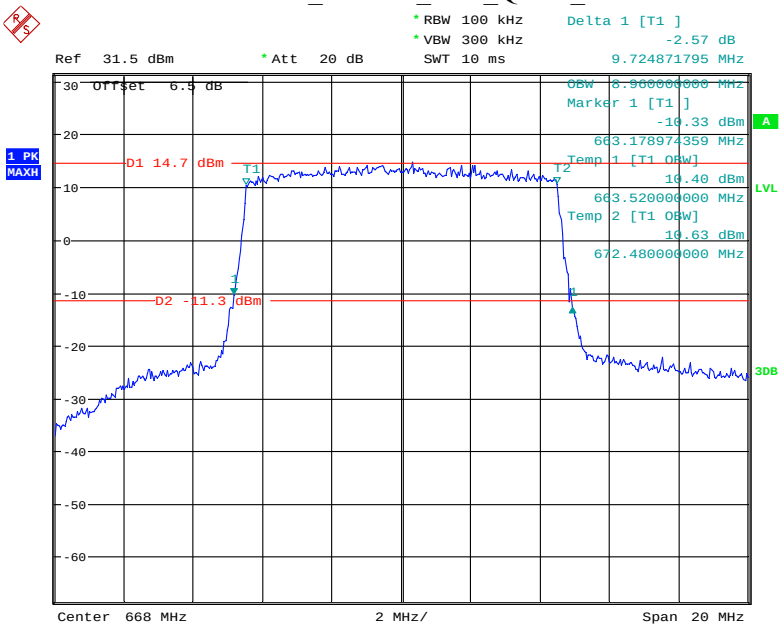
Date: 2.NOV.2020 10:11:53

Band 71_10 MHz_Low_16QAM_RB50#0



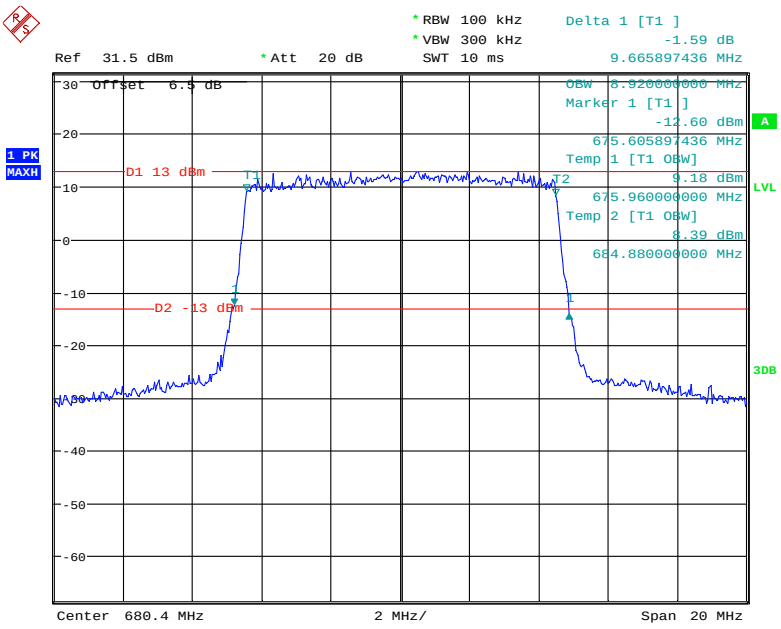
Date: 2.NOV.2020 10:03:46

Band 71_10 MHz_Low_QPSK_RB50#0



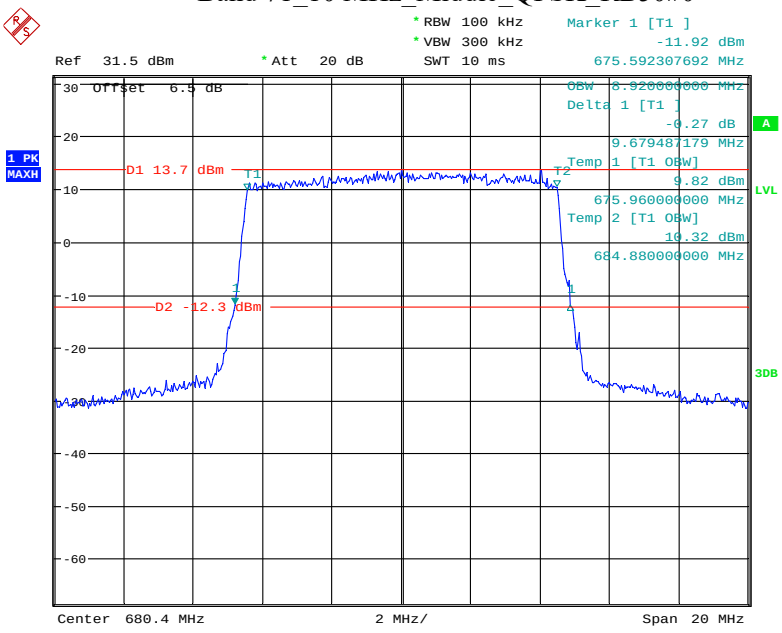
Date: 2.NOV.2020 10:03:06

Band 71_10 MHz_Middle_16QAM_RB50#0



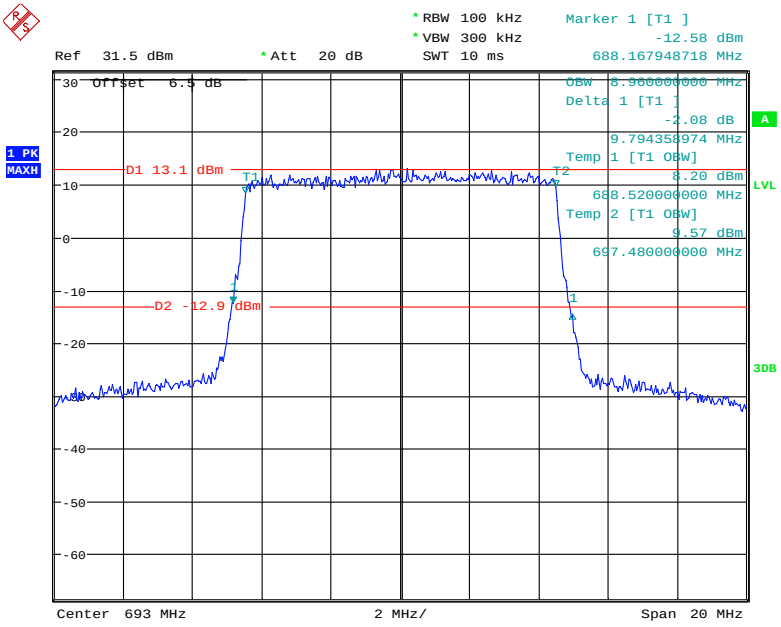
Date: 2.NOV.2020 10:00:57

Band 71_10 MHz_Middle_QPSK_RB50#0



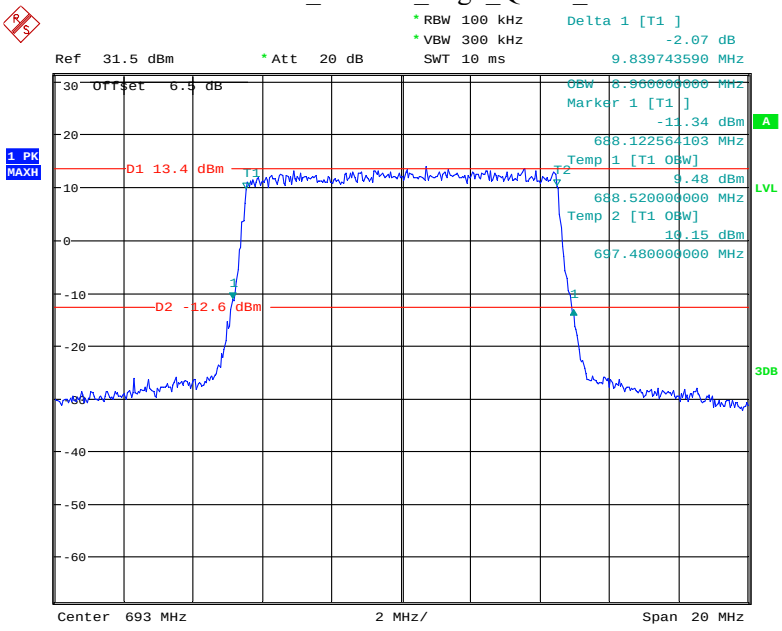
Date: 2.NOV.2020 10:01:45

Band 71_10 MHz_High_16QAM_RB50#0



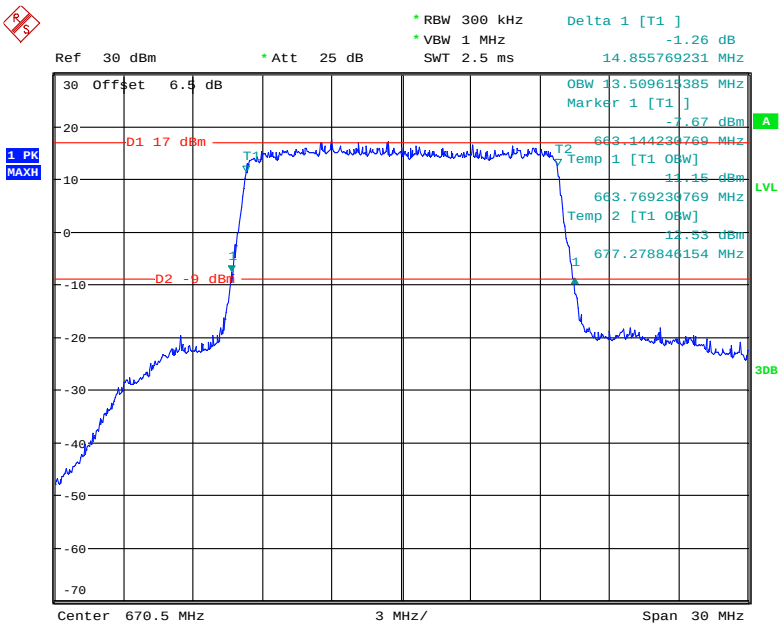
Date: 2.NOV.2020 09:59:55

Band 71_10 MHz_High_QPSK_RB50#0



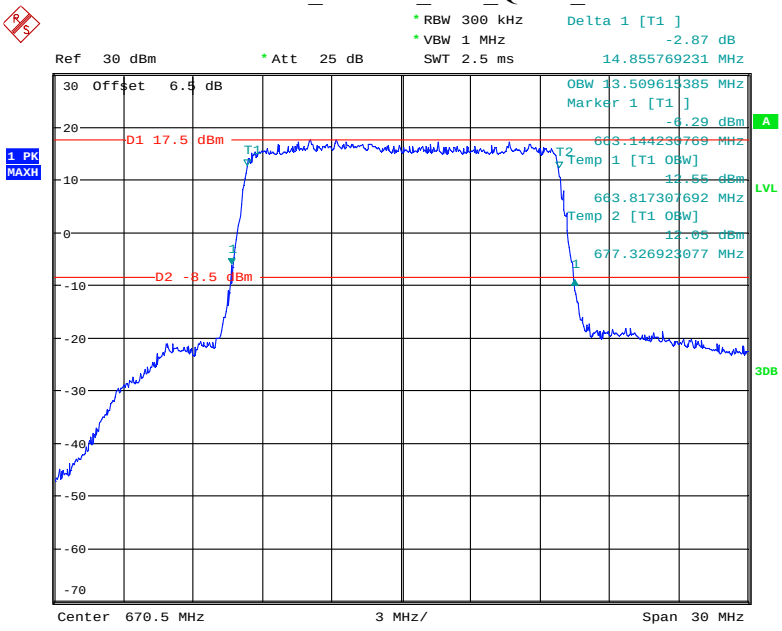
Date: 2.NOV.2020 09:59:03

Band 71_15 MHz_Low_16QAM_RB75#0



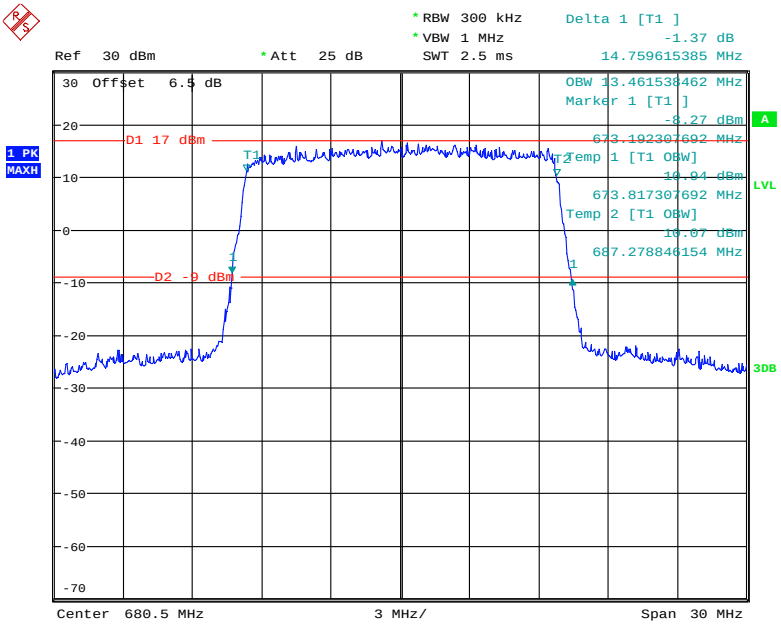
Date: 26.JAN.2021 09:40:15

Band 71_15 MHz_Low_QPSK_RB75#0



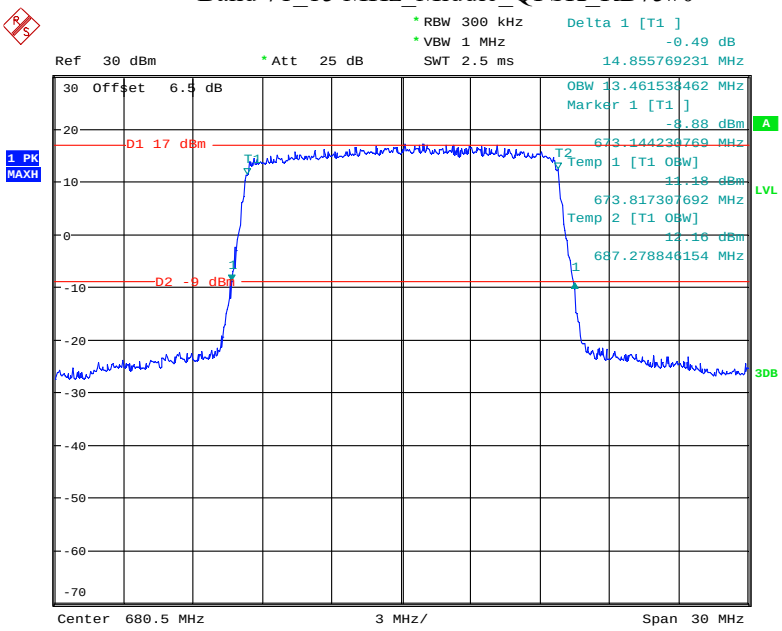
Date: 26.JAN.2021 09:41:16

Band 71_15 MHz_Middle_16QAM_RB75#0



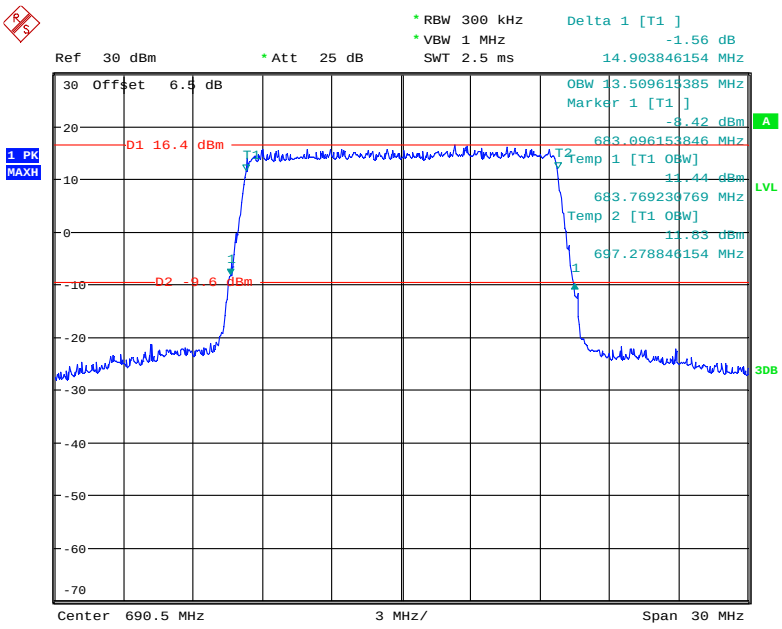
Date: 26.JAN.2021 09:45:34

Band 71_15 MHz_Middle_QPSK_RB75#0



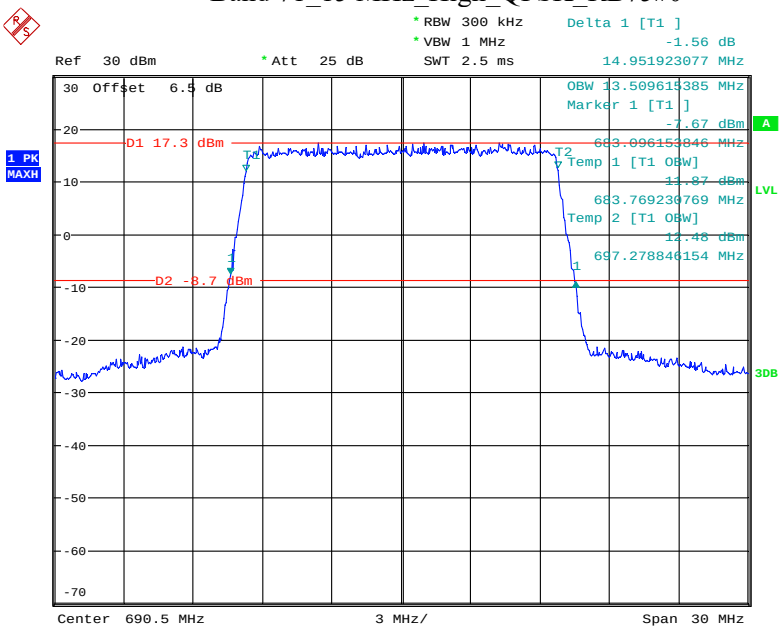
Date: 26.JAN.2021 09:44:45

Band 71_15 MHz_High_16QAM_RB75#0



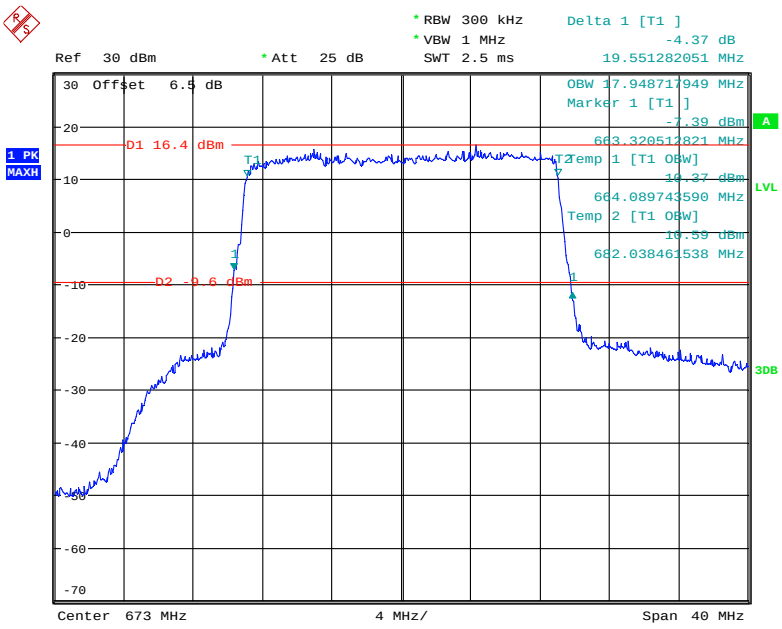
Date: 26.JAN.2021 09:38:23

Band 71_15 MHz_High_QPSK_RB75#0



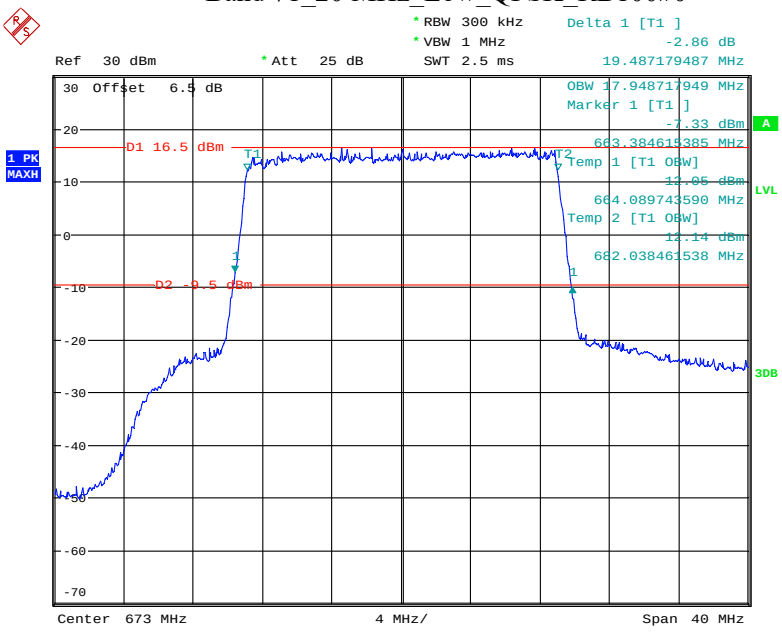
Date: 26.JAN.2021 09:37:21

Band 71_20 MHz_Low_16QAM_RB100#0



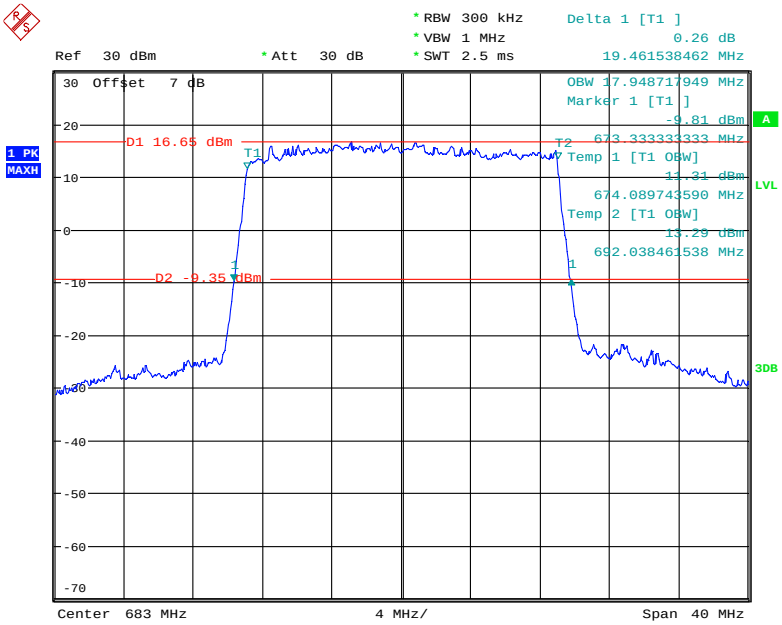
Date: 26.JAN.2021 10:02:24

Band 71_20 MHz_Low_QPSK_RB100#0



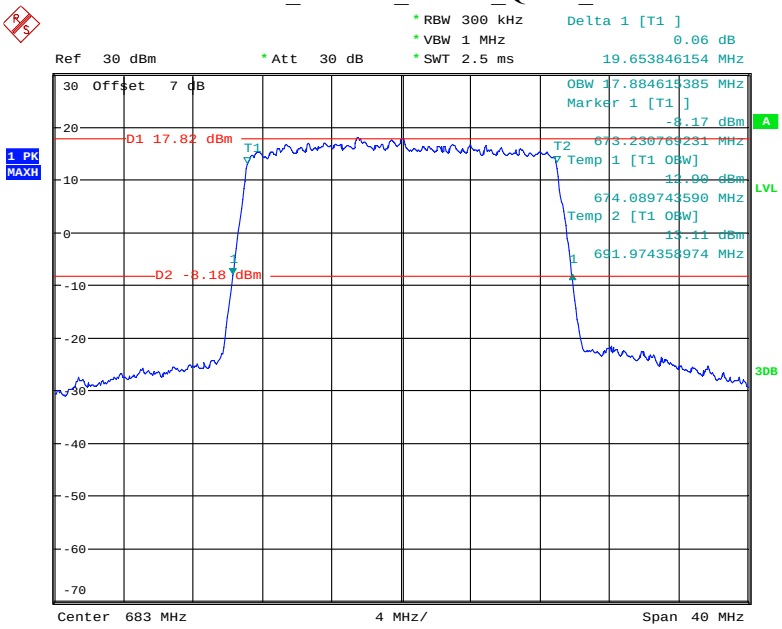
Date: 26.JAN.2021 10:03:54

Band 71_20 MHz_Middle_16QAM_RB100#0



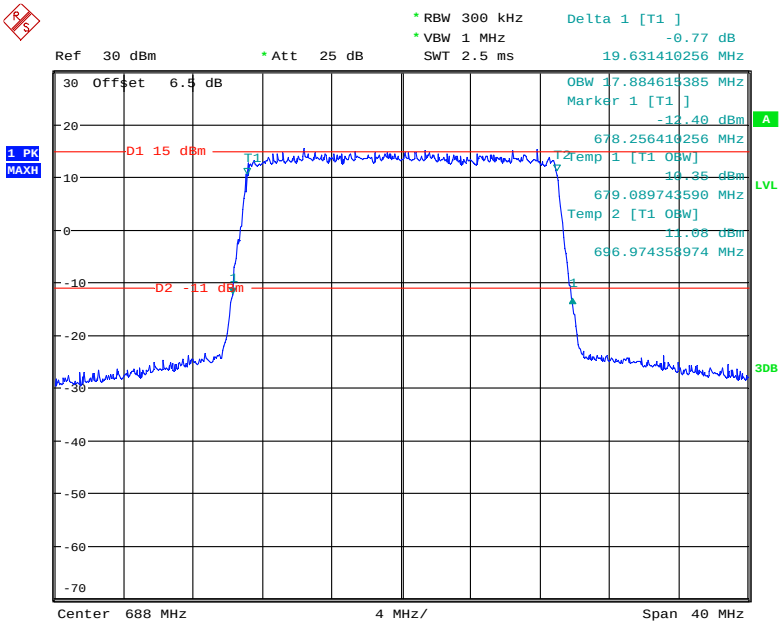
Date: 25.JAN.2021 13:54:09

Band 71_20 MHz_Middle_QPSK_RB100#0



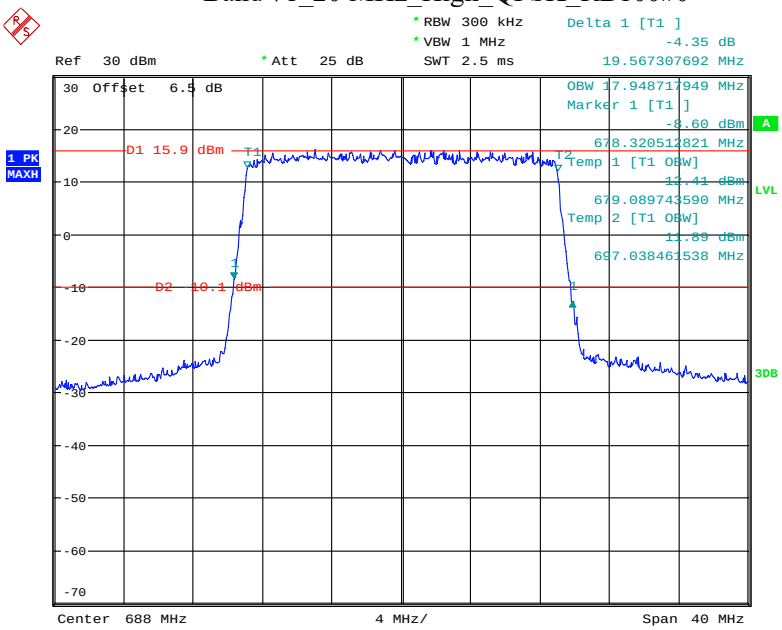
Date: 25.JAN.2021 13:45:18

Band 71_20 MHz_High_16QAM_RB100#0



Date: 26.JAN.2021 09:53:52

Band 71_20 MHz_High_QPSK_RB100#0



Date: 26.JAN.2021 09:55:12

FCC §2.1051, §22.917(a) & §24.238(a); §27.53; §90.543 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

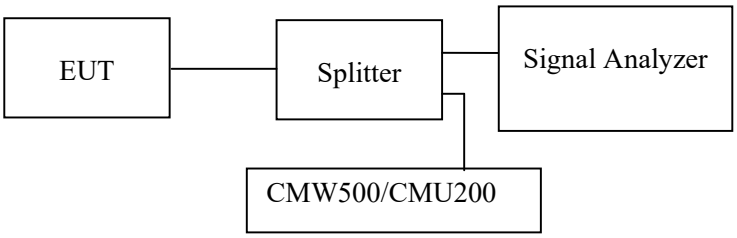
Applicable Standard

FCC §2.1051, §22.917(a) and §24.238(a) , §27.53 and §90.543.

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

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10^{th} harmonic.



Test Data

Environmental Conditions

Temperature:	25 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu from 2020-10-11 to 2021-02-04.

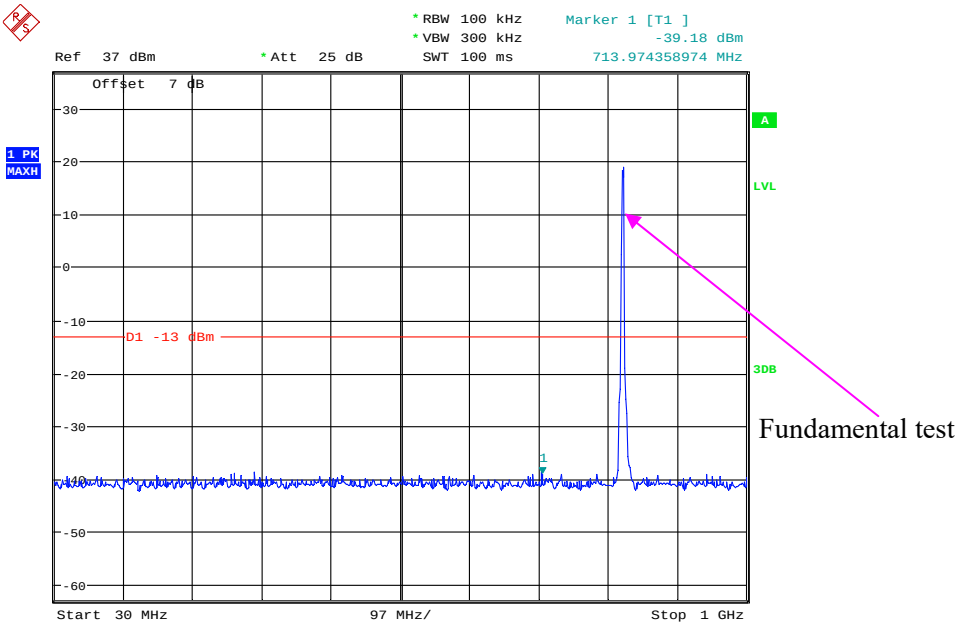
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

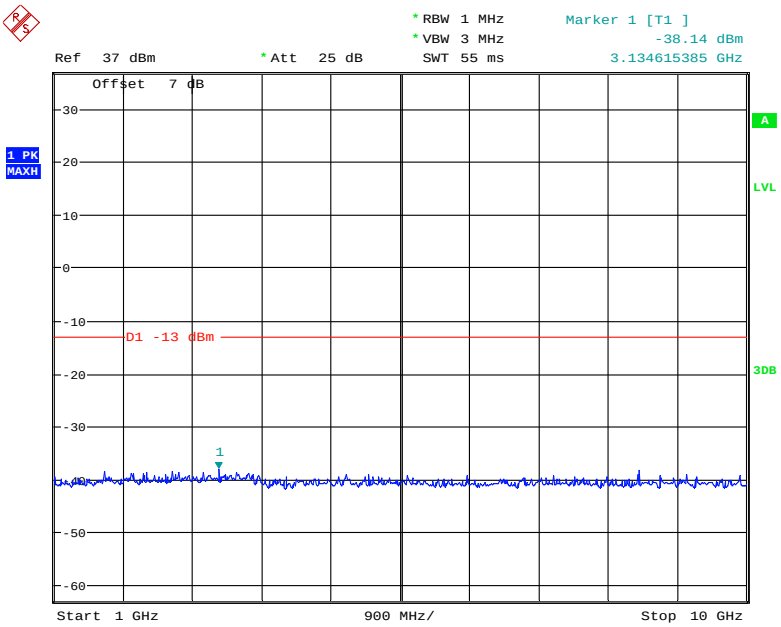
Cellular Band (Part 22H)

30 MHz – 1 GHz (WCDMA Mode) Low channel



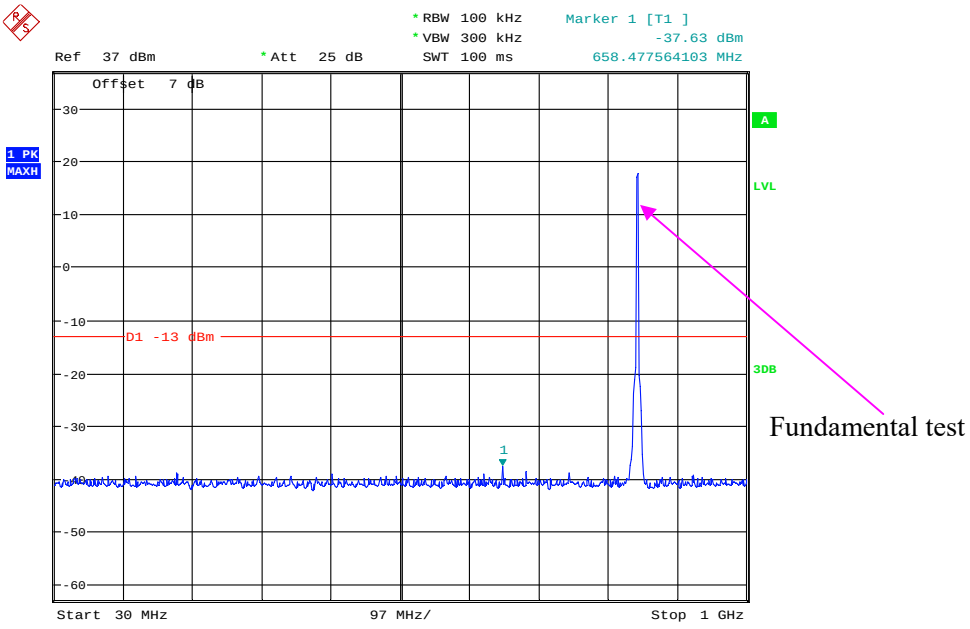
Date: 16.JAN.2021 16:12:29

1 GHz – 10 GHz (WCDMA Mode) Low channel



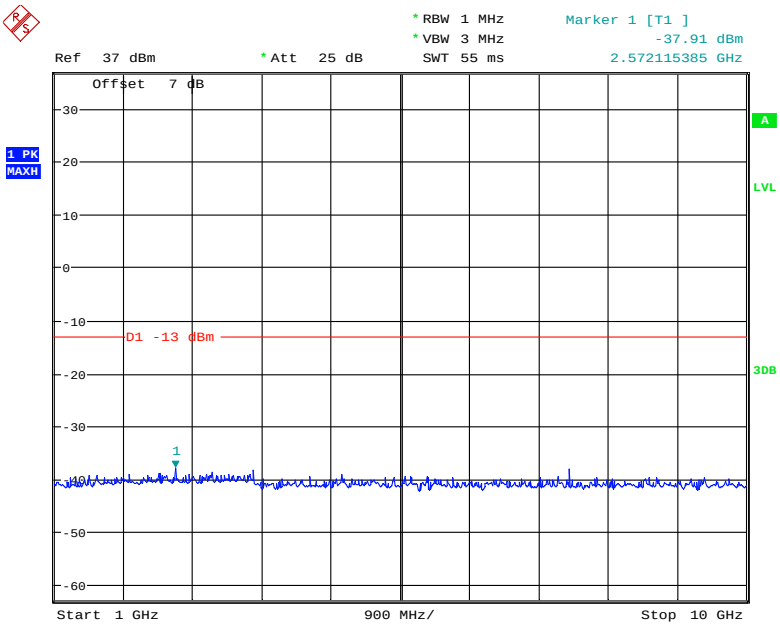
Date: 16.JAN.2021 16:13:06

30 MHz – 1 GHz (WCDMA Mode) Middle channel



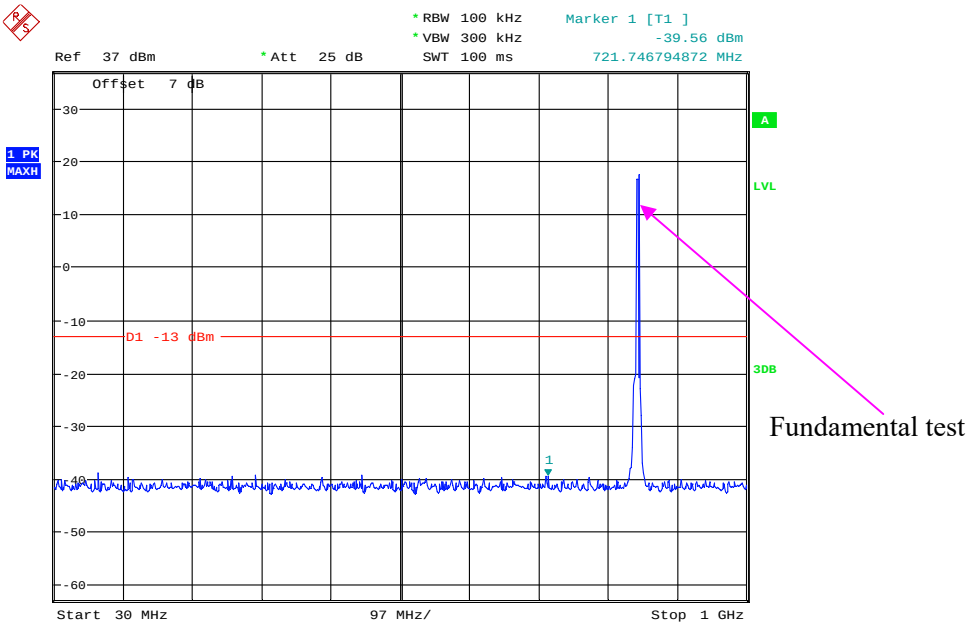
Date: 14.OCT.2020 15:57:00

1 GHz – 10 GHz (WCDMA Mode) Middle channel



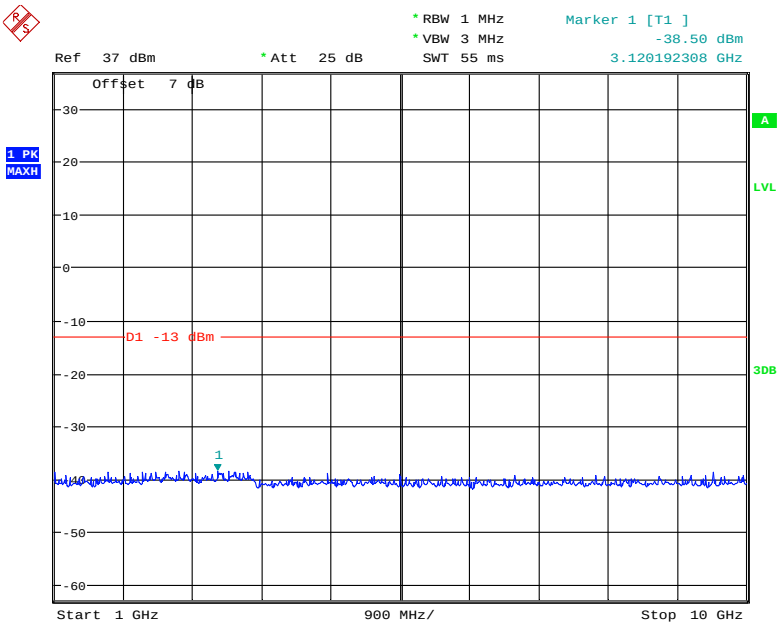
Date: 14.OCT.2020 15:55:44

30 MHz – 1 GHz (WCDMA Mode) High channel



Date: 16.JAN.2021 16:13:48

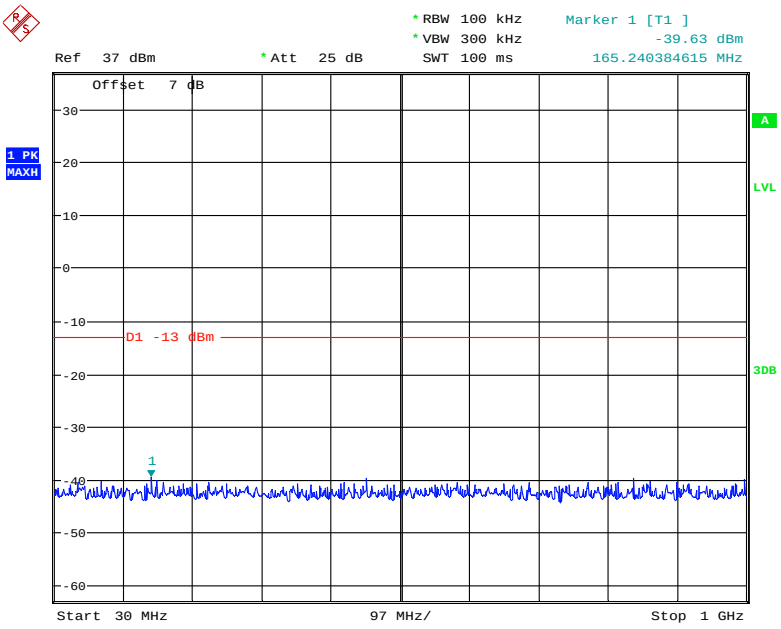
1 GHz – 10 GHz (WCDMA Mode) High channel



Date: 16.JAN.2021 16:13:24

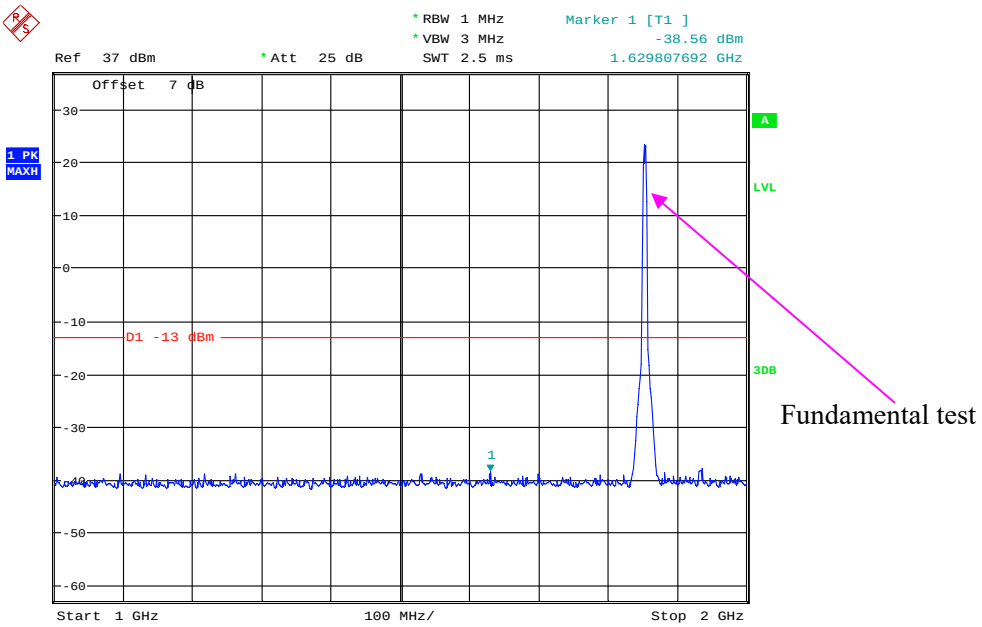
PCS Band (Part 24E)

30 MHz – 1 GHz (WCDMA Mode) Low channel



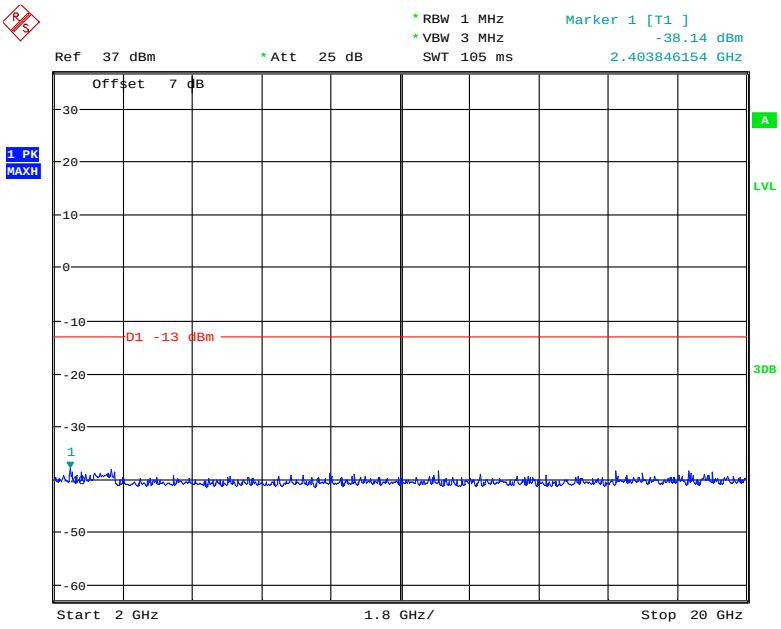
Date: 16.JAN.2021 16:06:52

1 GHz – 2 GHz (WCDMA Mode) Low channel



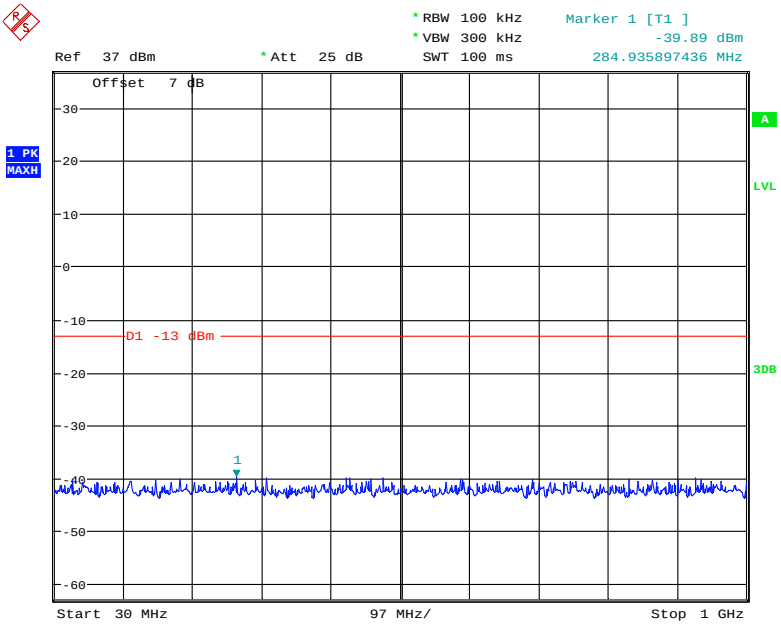
Date: 16.JAN.2021 16:06:08

2 GHz – 20 GHz (WCDMA Mode) Low channel



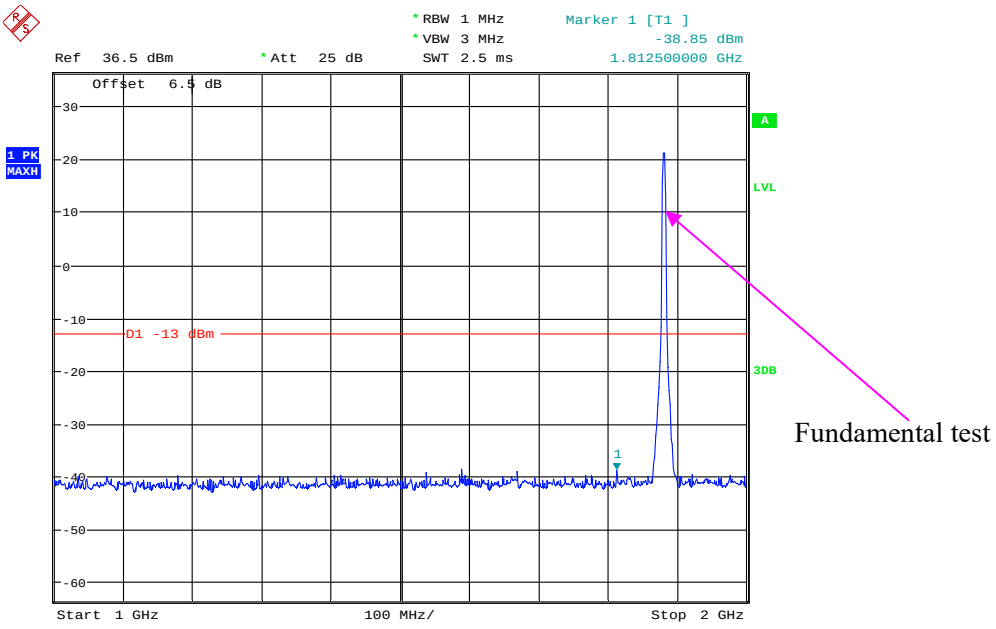
Date: 16.JAN.2021 16:06:31

30 MHz – 1 GHz (WCDMA Mode) Middle channel



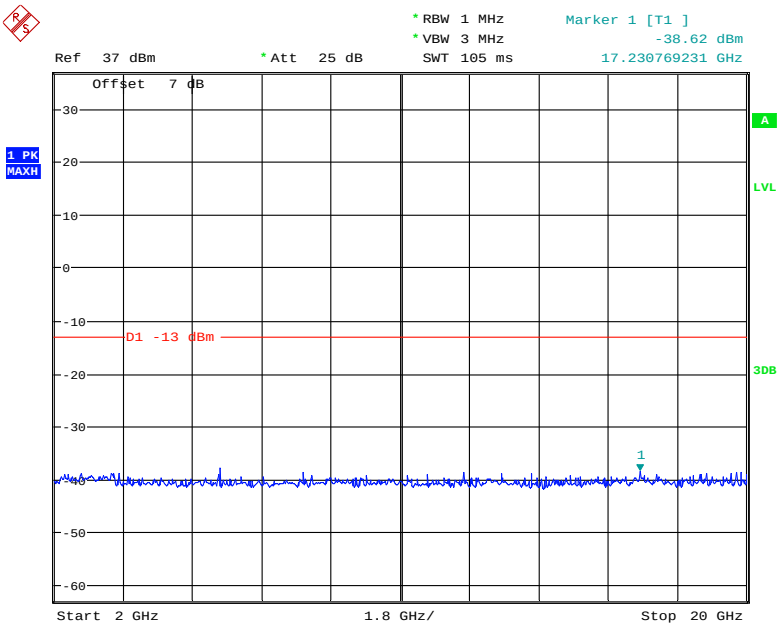
Date: 14.OCT.2020 16:07:03

1 GHz – 2 GHz (WCDMA Mode) Middle channel



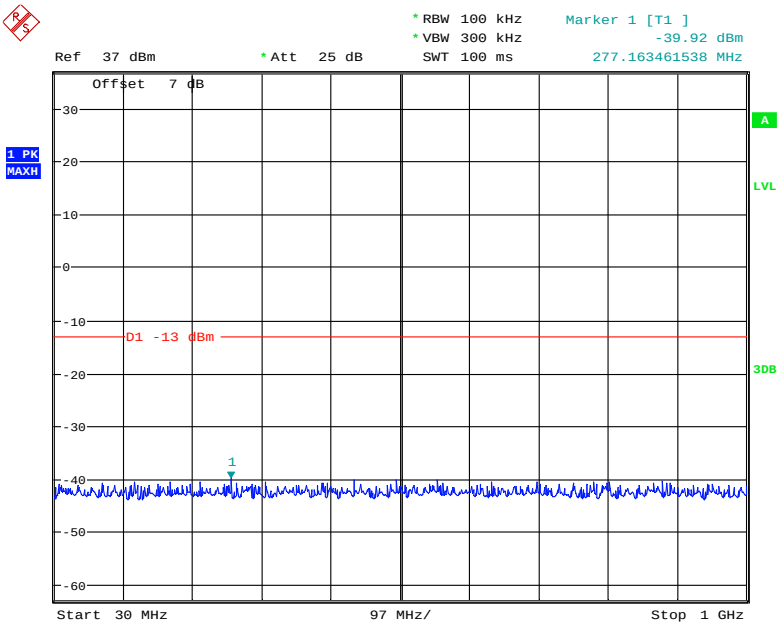
Date: 3.FEB.2021 21:18:01

2 GHz – 20 GHz (WCDMA Mode) Middle channel



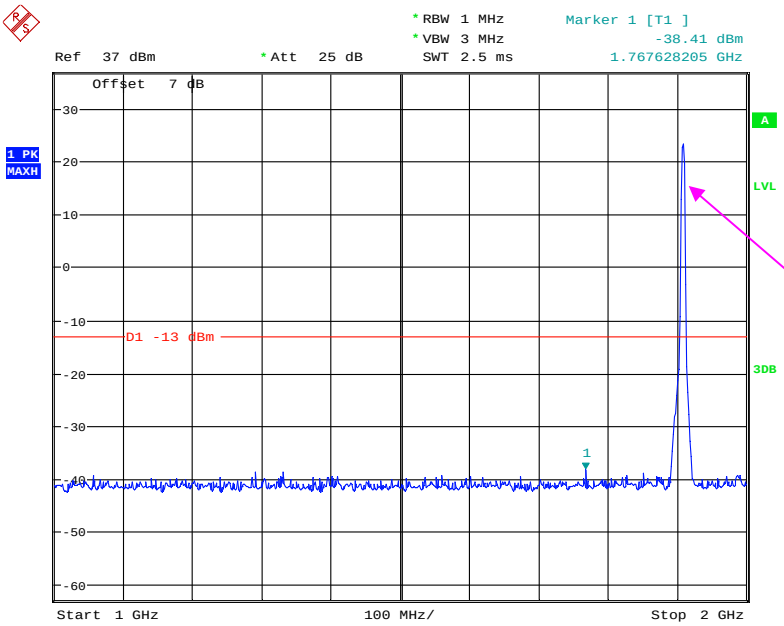
Date: 14.OCT.2020 16:05:21

30 MHz – 1 GHz (WCDMA Mode) High channel



Date: 16.JAN.2021 16:07:12

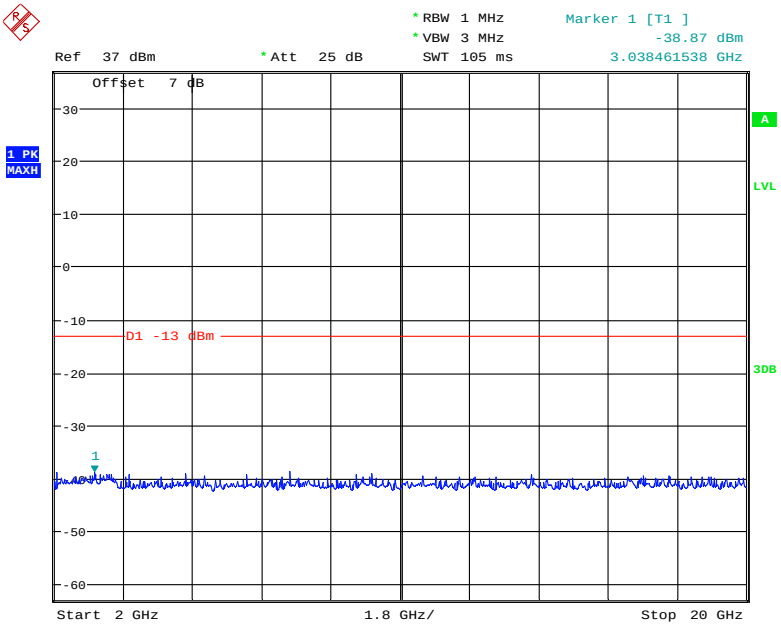
1 GHz – 2 GHz (WCDMA Mode) High channel



Fundamental test

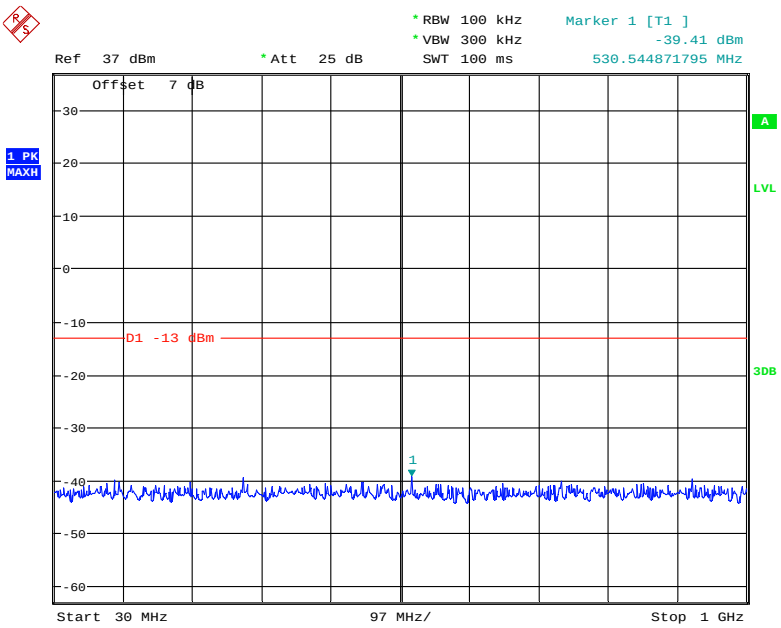
Date: 16.JAN.2021 16:07:32

2 GHz – 20 GHz (WCDMA Mode) High channel

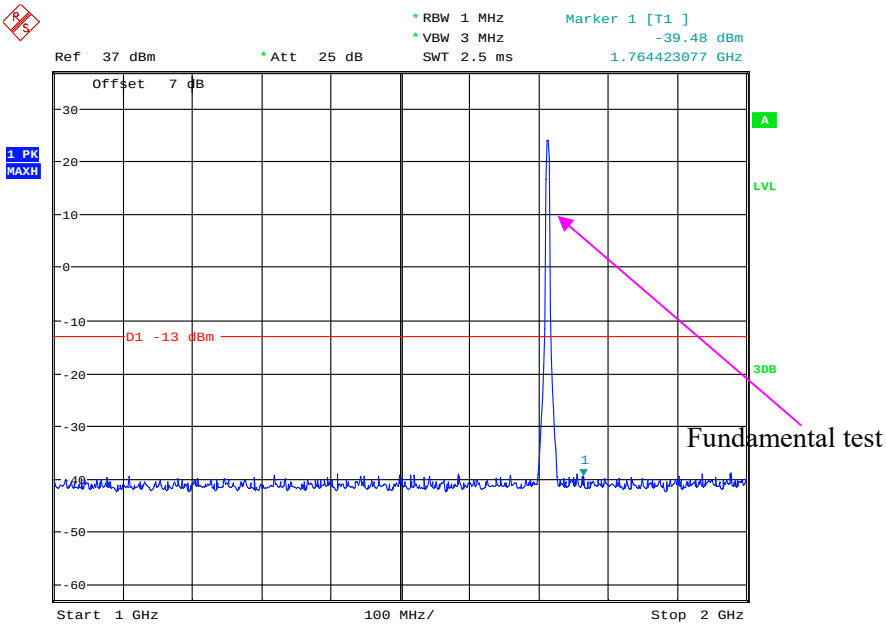


AWS Band (Part 27)

30 MHz – 1 GHz (WCDMA Mode) Low channel

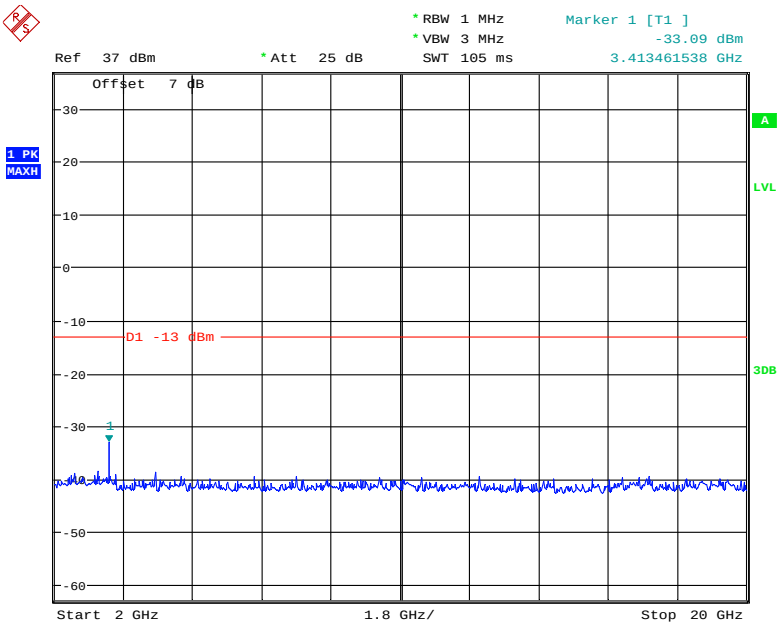


1 GHz – 2 GHz (WCDMA Mode) Low channel



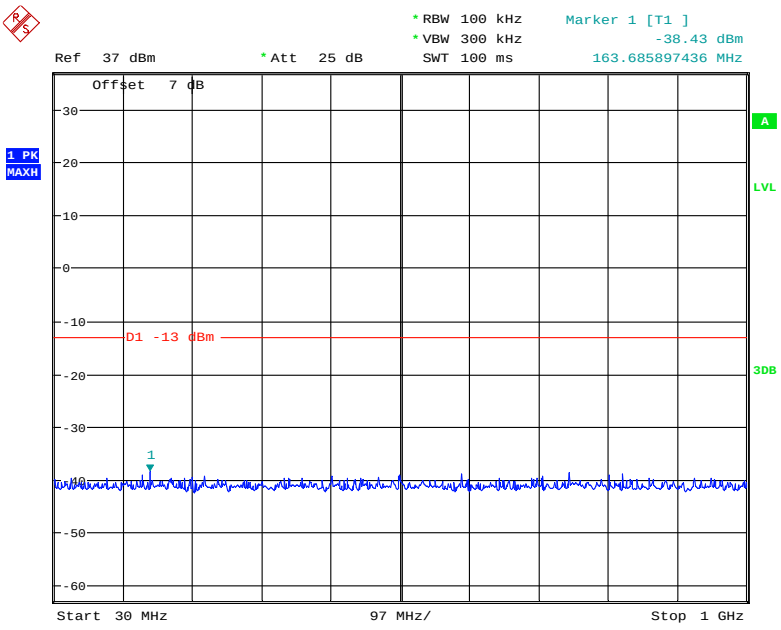
Date: 16.JAN.2021 16:09:11

2 GHz – 20 GHz (WCDMA Mode) Low channel



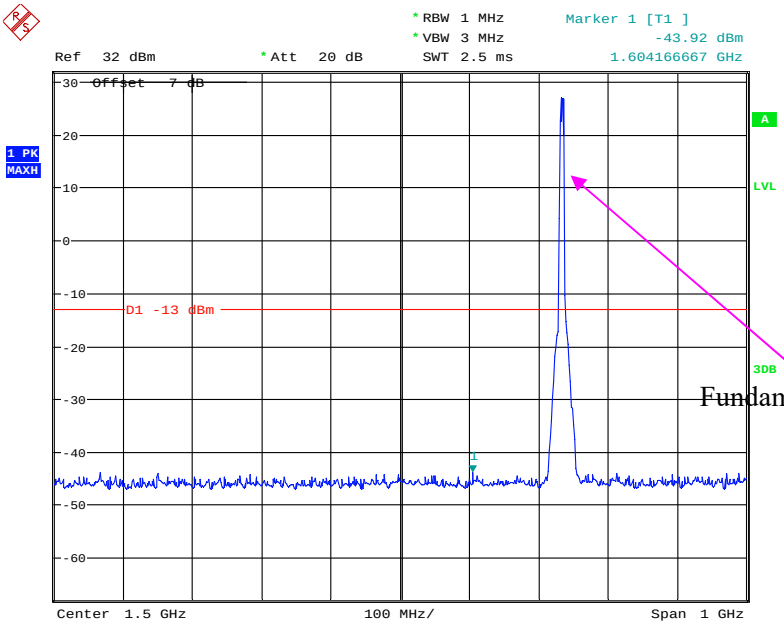
Date: 16.JAN.2021 16:08:50

30 MHz – 1 GHz (WCDMA Mode) Middle channel



Date: 14.OCT.2020 15:57:52

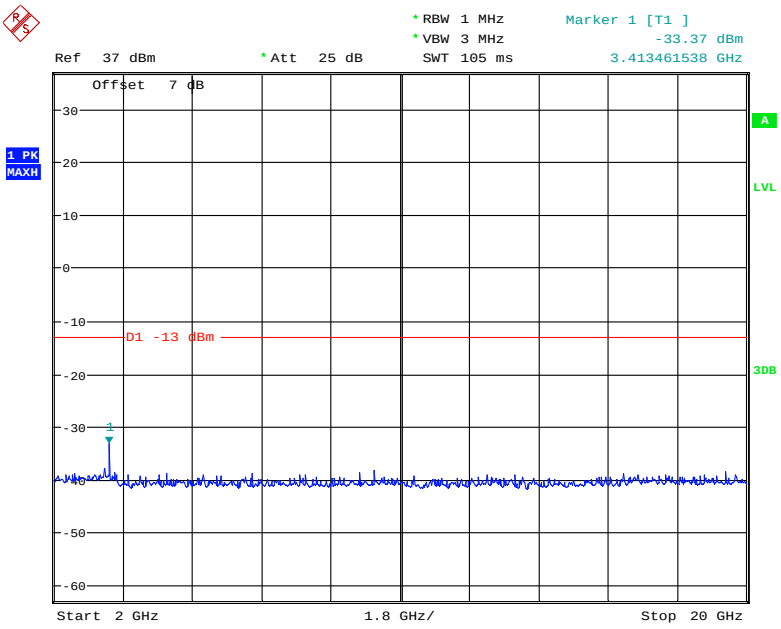
1 GHz – 2 GHz (WCDMA Mode) Middle channel



Fundamental test

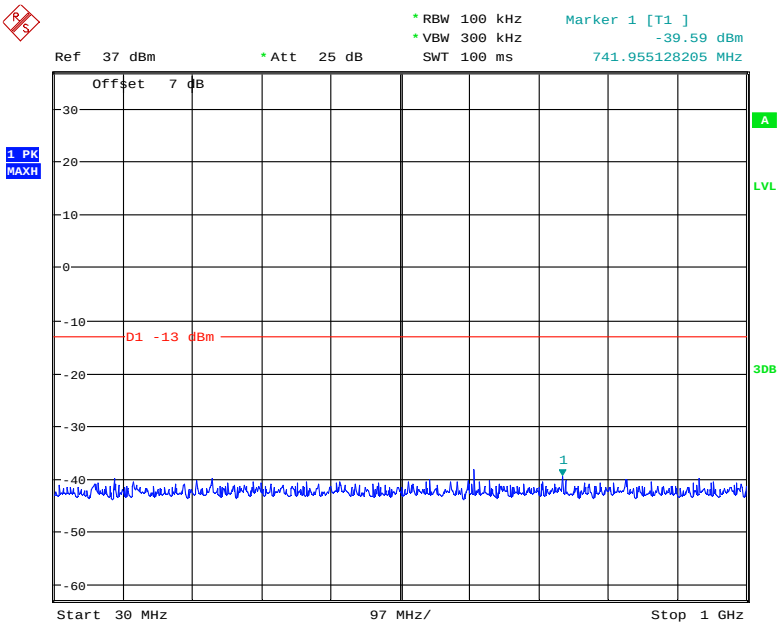
Date: 4.FEB.2021 09:10:36

2 GHz – 20 GHz (WCDMA Mode) Middle channel



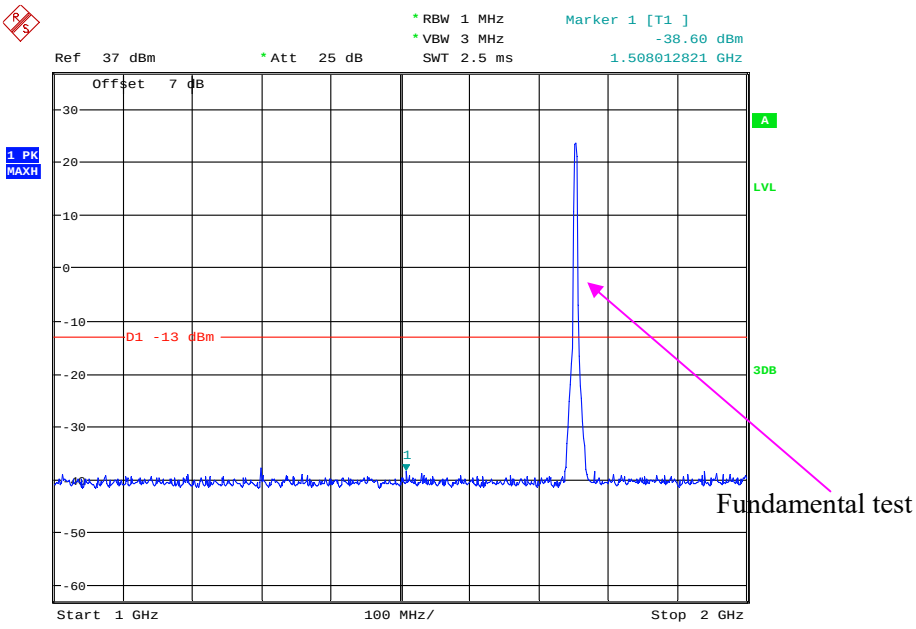
Date: 14.OCT.2020 15:59:29

30 MHz – 1 GHz (WCDMA Mode) High channel



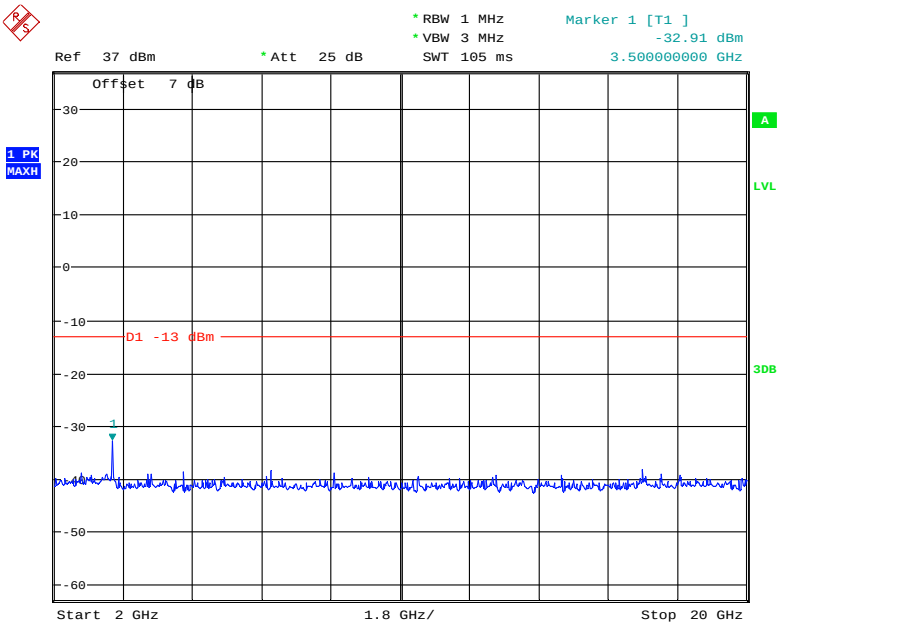
Date: 16.JAN.2021 16:09:53

1 GHz – 2 GHz (WCDMA Mode) High channel



Date: 16.JAN.2021 16:10:27

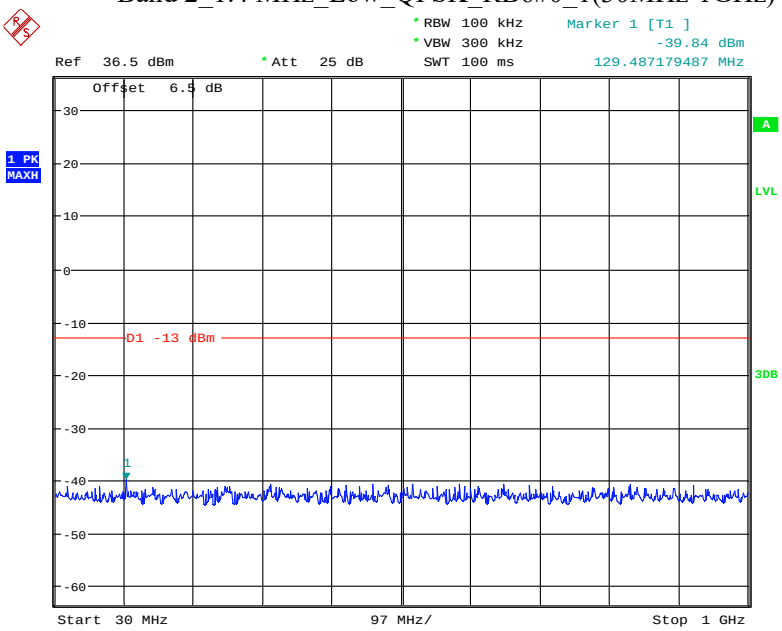
2 GHz – 20 GHz (WCDMA Mode) High channel



Date: 16.JAN.2021 16:10:43

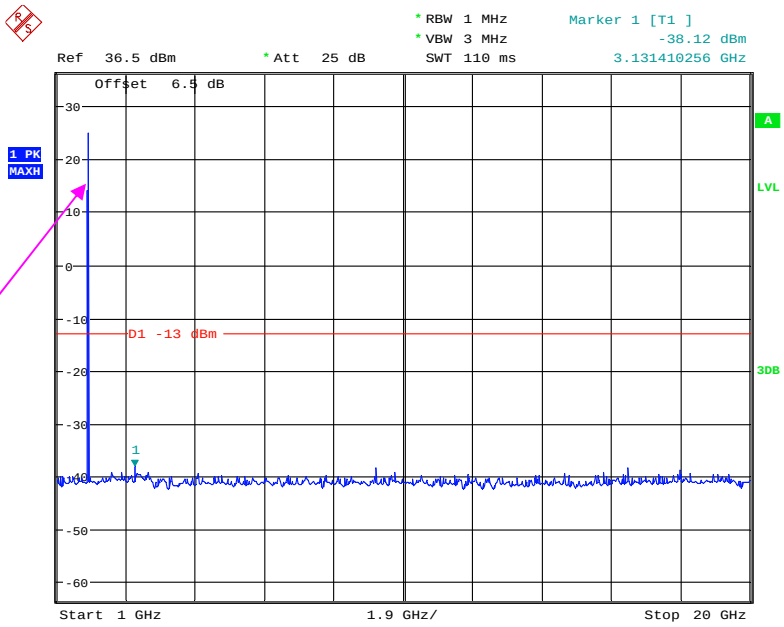
LTE Band 2:

Band 2_1.4 MHz_Low_QPSK_RB6#0_1(30MHz-1GHz)



Date: 16.JAN.2021 16:40:38

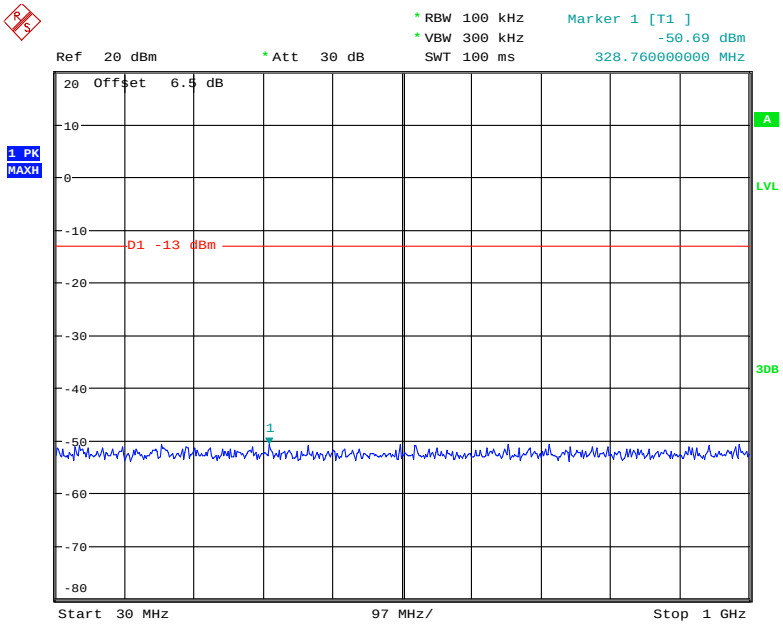
Band 2_1.4 MHz_Low_QPSK_RB6#0_2(1GHz-20GHz)



Fundamental test

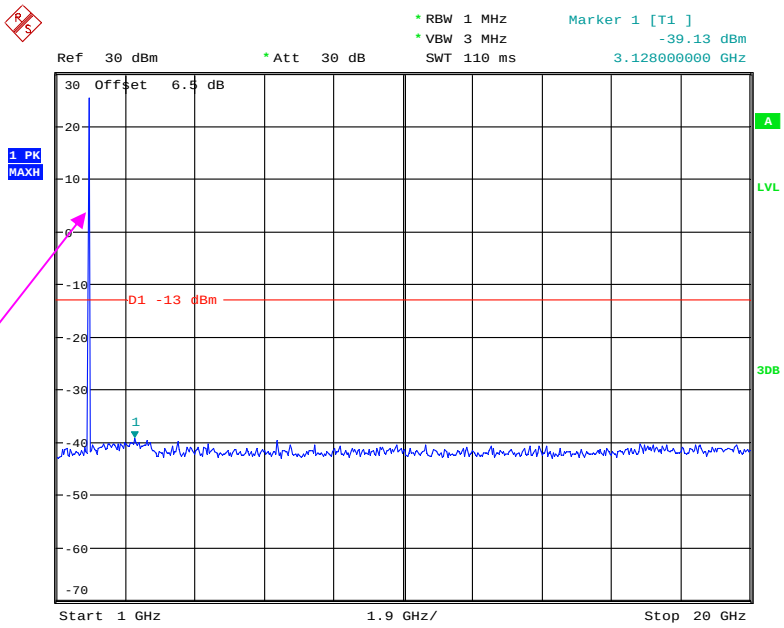
Date: 16.JAN.2021 16:40:21

Band 2_1.4 MHz_Middle_QPSK_RB6#0_1(30MHz-1GHz)



Date: 11.OCT.2020 12:05:48

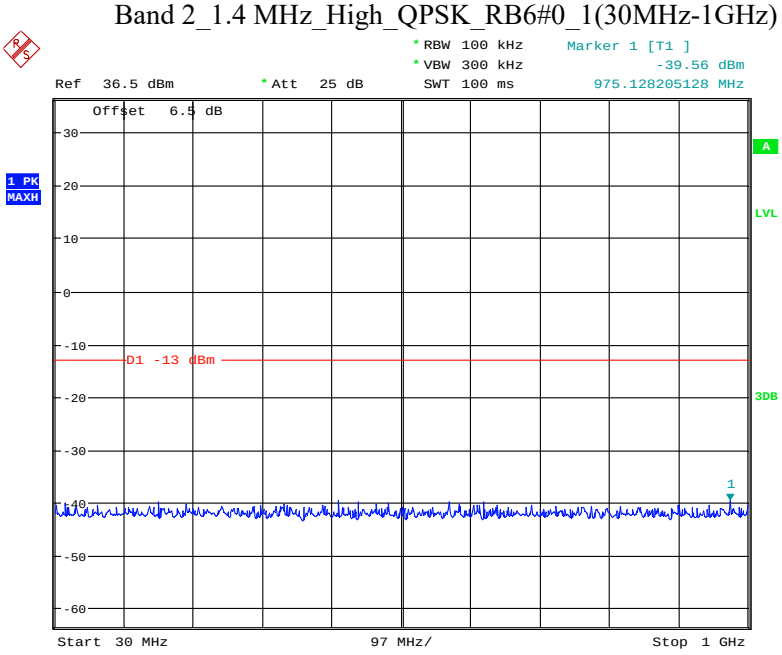
Band 2_1.4 MHz_Middle_QPSK_RB6#0_2(1GHz-20GHz)



Fundamental test

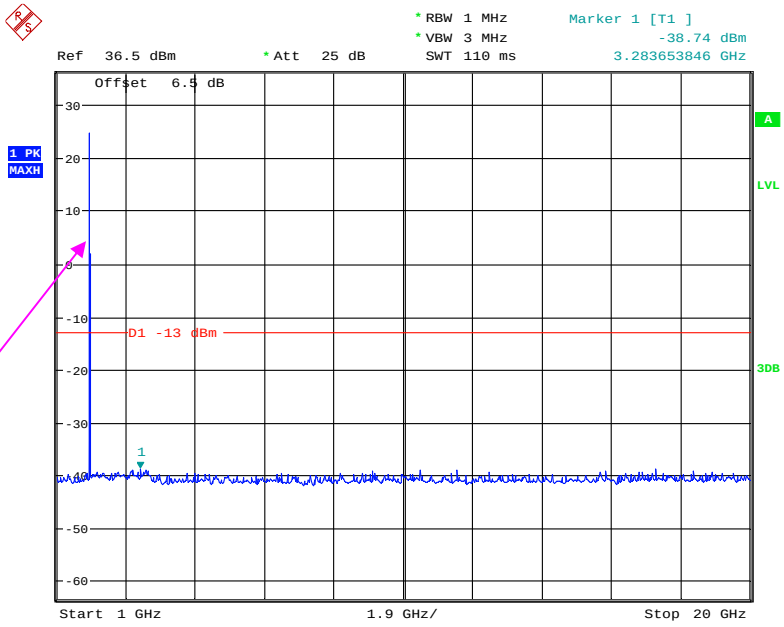
Date: 11.OCT.2020 12:05:58

Band 2_1.4 MHz_High_QPSK_RB6#0_1(30MHz-1GHz)



Date: 16.JAN.2021 16:41:31

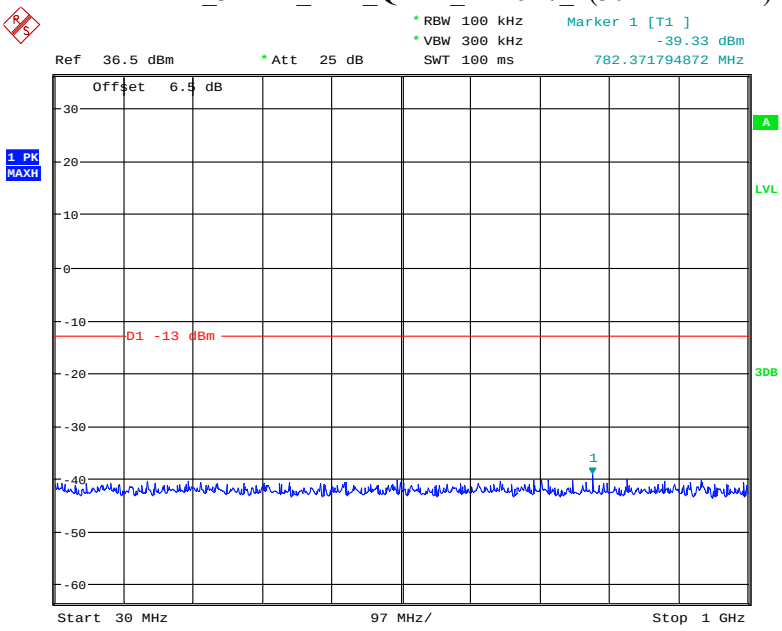
Band 2_1.4 MHz_High_QPSK_RB6#0_2(1GHz-20GHz)



Fundamental test

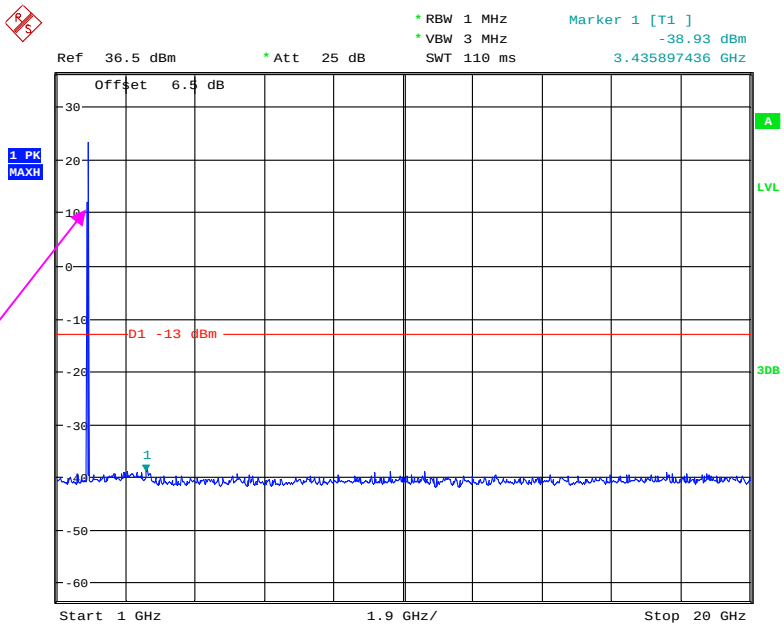
Date: 16.JAN.2021 16:42:15

Band 2_3 MHz_Low_QPSK_RB15#0_1(30MHz-1GHz)



Date: 16.JAN.2021 16:53:17

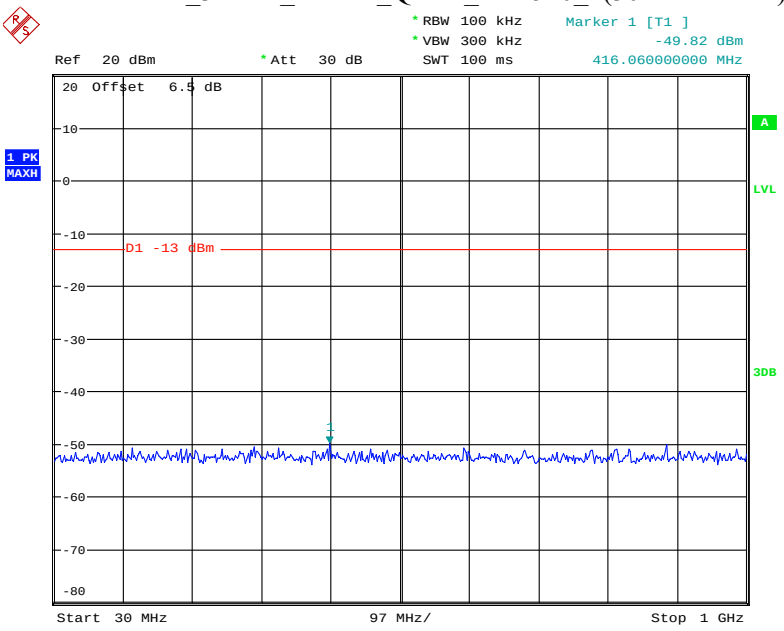
Band 2_3 MHz_Low_QPSK_RB15#0_2(1GHz-20GHz)



Fundamental test

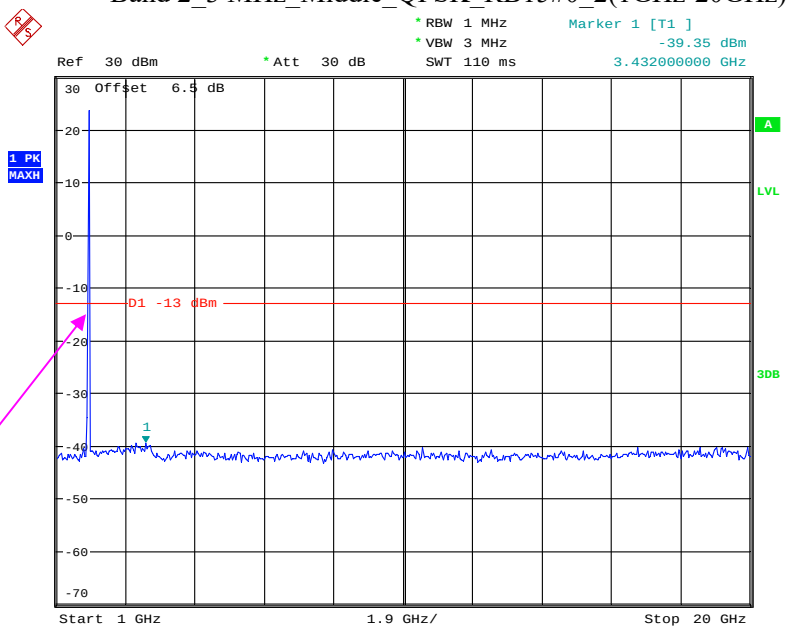
Date: 16.JAN.2021 16:51:03

Band 2_3 MHz_Middle_QPSK_RB15#0_1(30MHz-1GHz)



Date: 11.OCT.2020 12:06:15

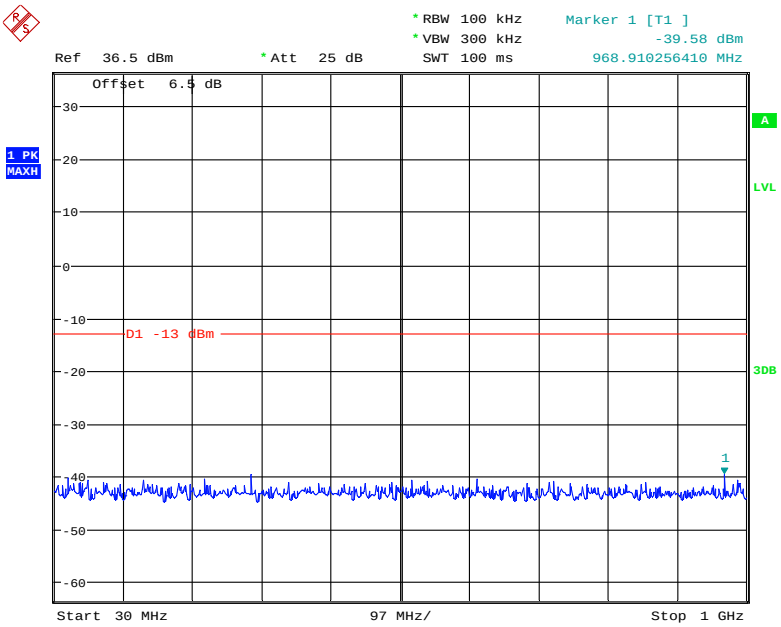
Band 2_3 MHz_Middle_QPSK_RB15#0_2(1GHz-20GHz)



Fundamental test

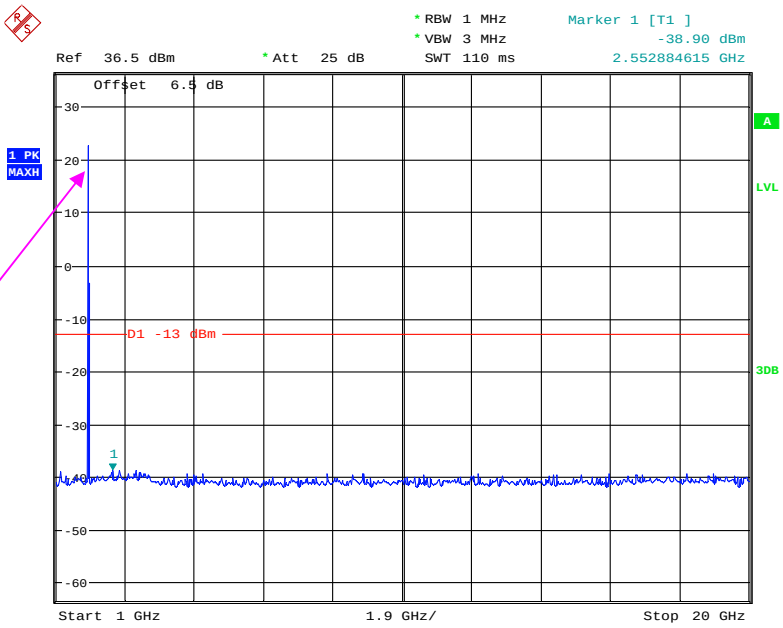
Date: 11.OCT.2020 12:06:26

Band 2_3 MHz_High_QPSK_RB15#0_1(30MHz-1GHz)



Date: 16.JAN.2021 16:52:29

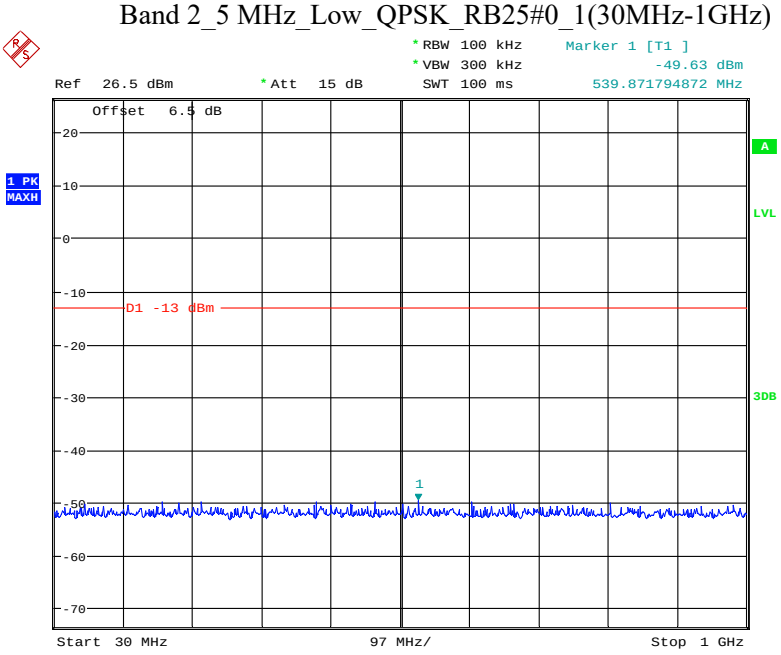
Band 2_3 MHz_High_QPSK_RB15#0_2(1GHz-20GHz)



Fundamental test

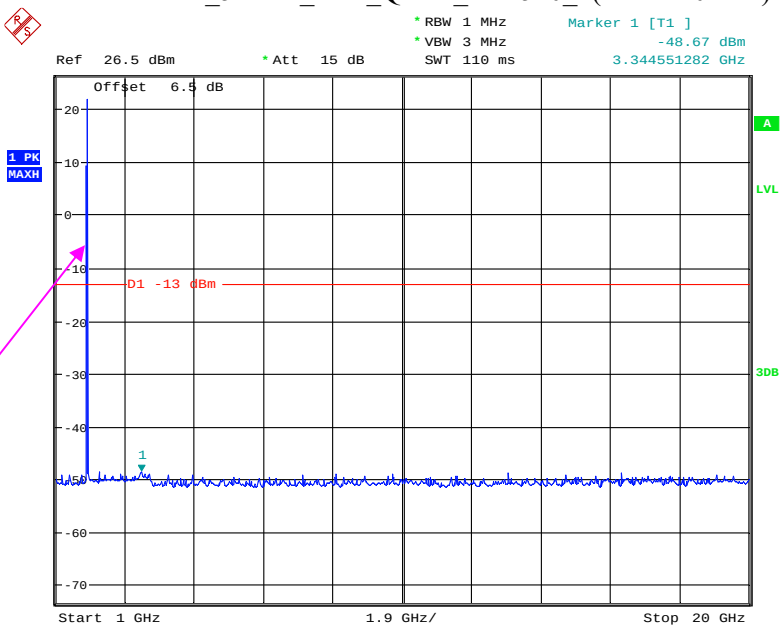
Date: 16.JAN.2021 16:52:10

Band 2_5 MHz_Low_QPSK_RB25#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:30:37

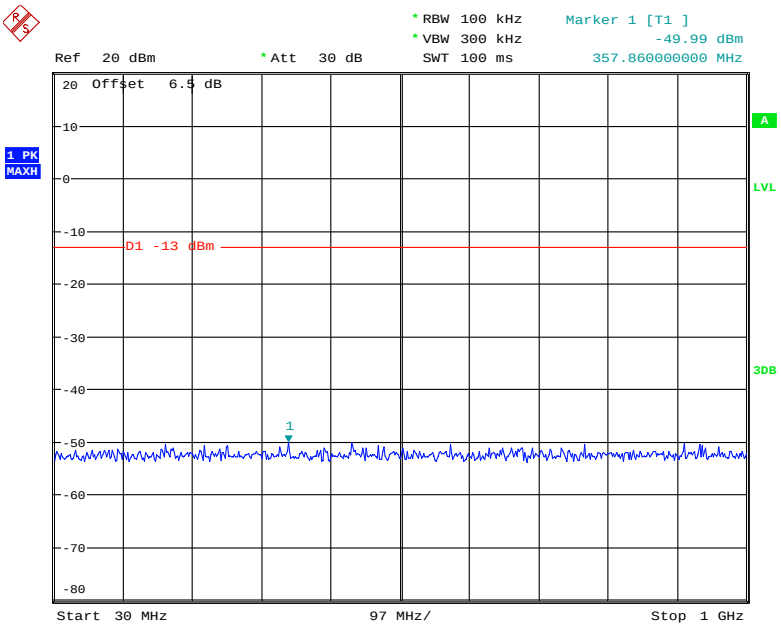
Band 2_5 MHz_Low_QPSK_RB25#0_2(1GHz-20GHz)



Fundamental test

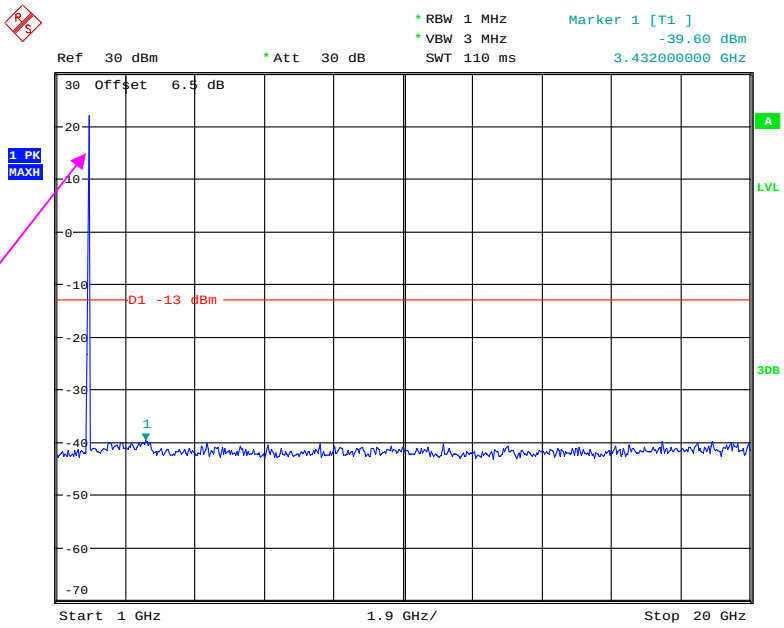
Date: 16.JAN.2021 17:31:33

Band 2_5 MHz_Middle_QPSK_RB25#0_1(30MHz-1GHz)



Date: 11.OCT.2020 12:06:43

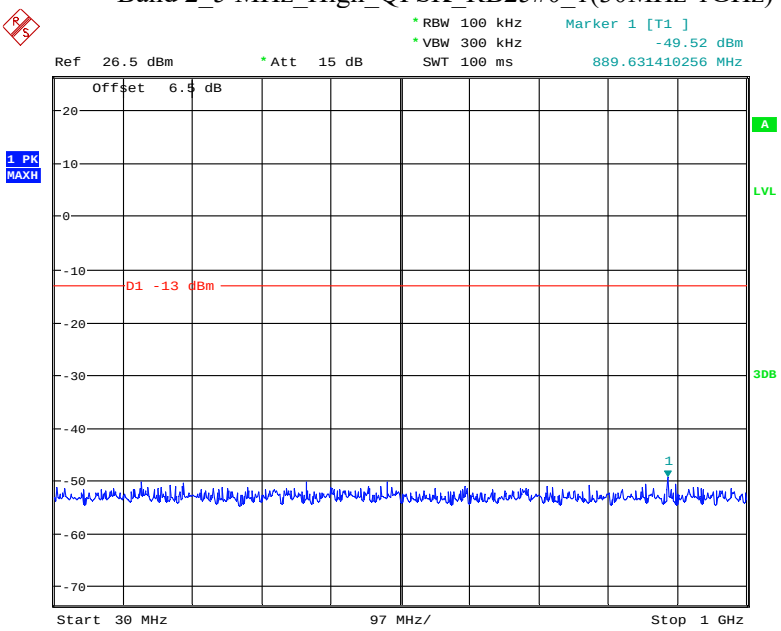
Band 2_5 MHz_Middle_QPSK_RB25#0_2(1GHz-20GHz)



Fundamental test

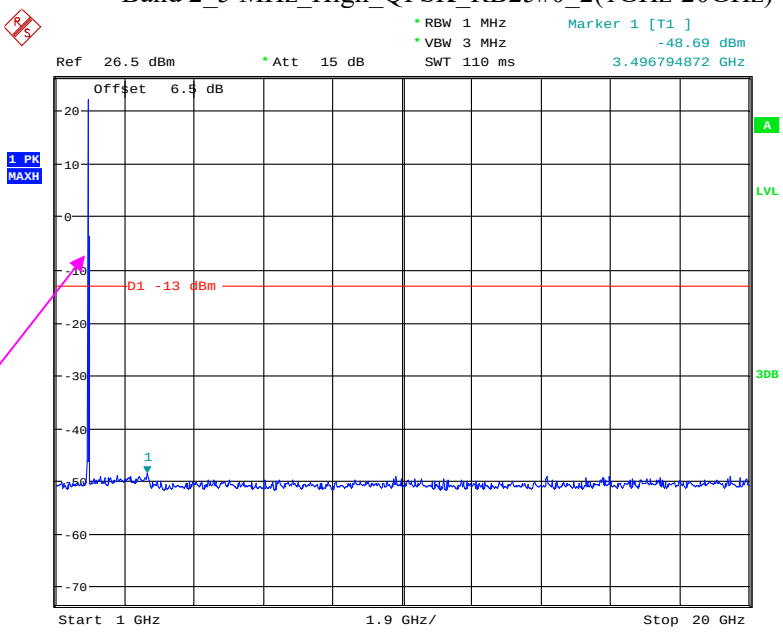
Date: 11.OCT.2020 12:06:54

Band 2_5 MHz_High_QPSK_RB25#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:33:20

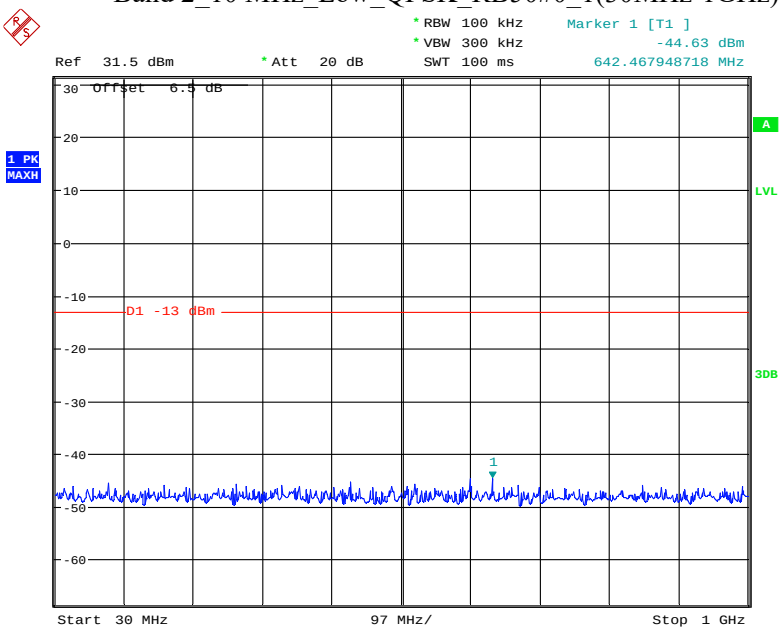
Band 2_5 MHz_High_QPSK_RB25#0_2(1GHz-20GHz)



Fundamental test

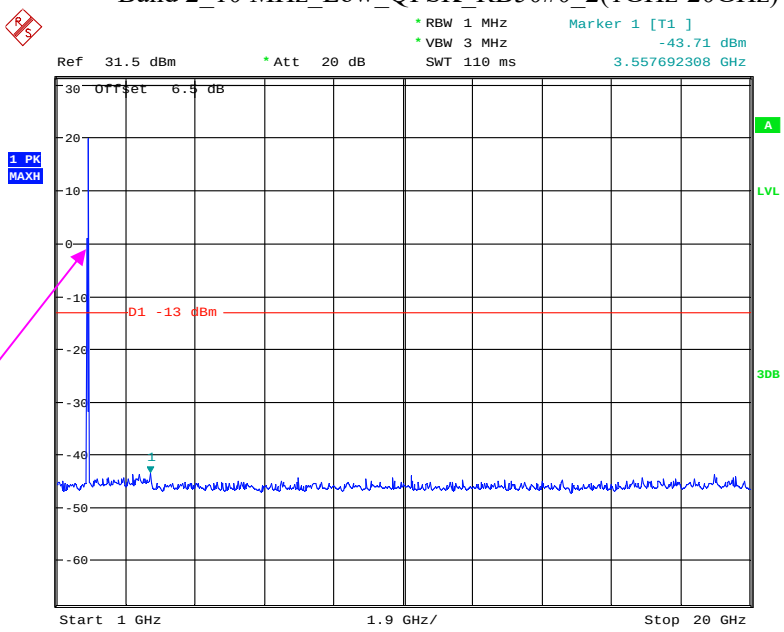
Date: 16.JAN.2021 17:32:51

Band 2_10 MHz_Low_QPSK_RB50#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:36:18

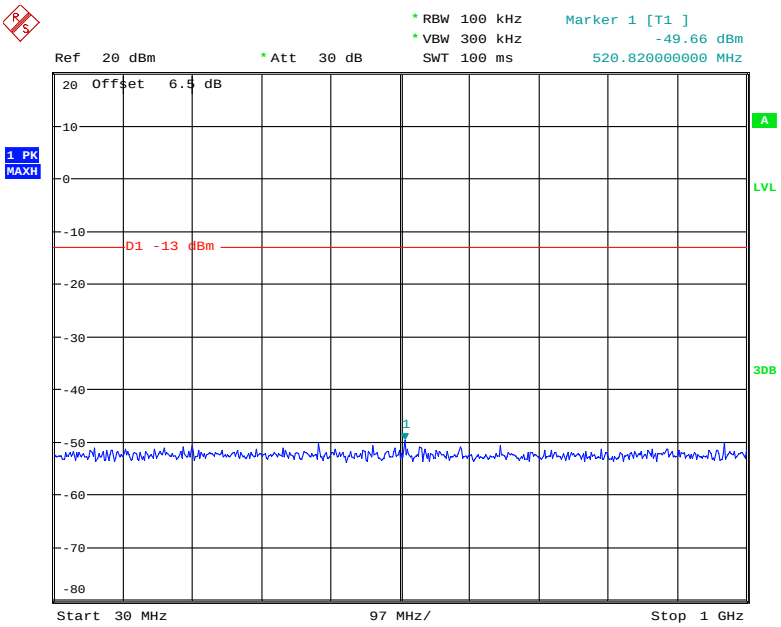
Band 2_10 MHz_Low_QPSK_RB50#0_2(1GHz-20GHz)



Fundamental test

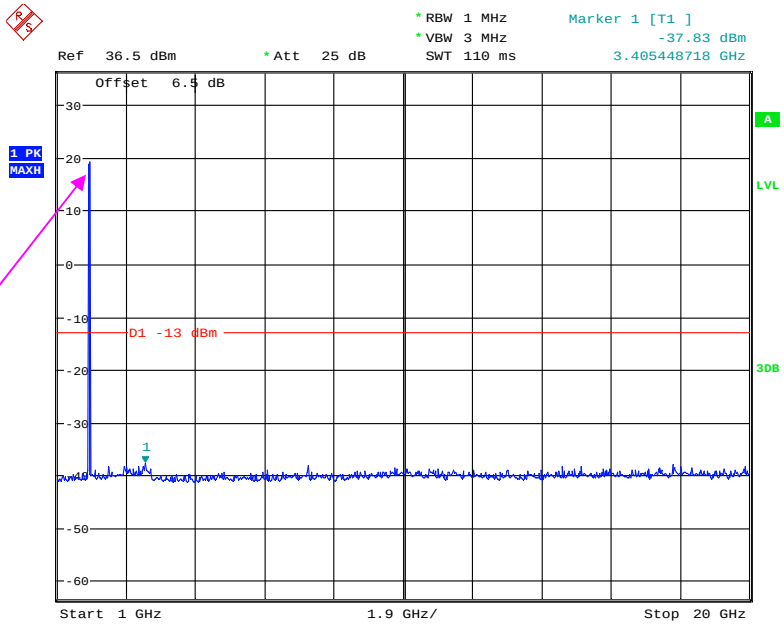
Date: 16.JAN.2021 17:35:51

Band 2_10 MHz_Middle_QPSK_RB50#0_1(30MHz-1GHz)



Date: 11.OCT.2020 12:07:12

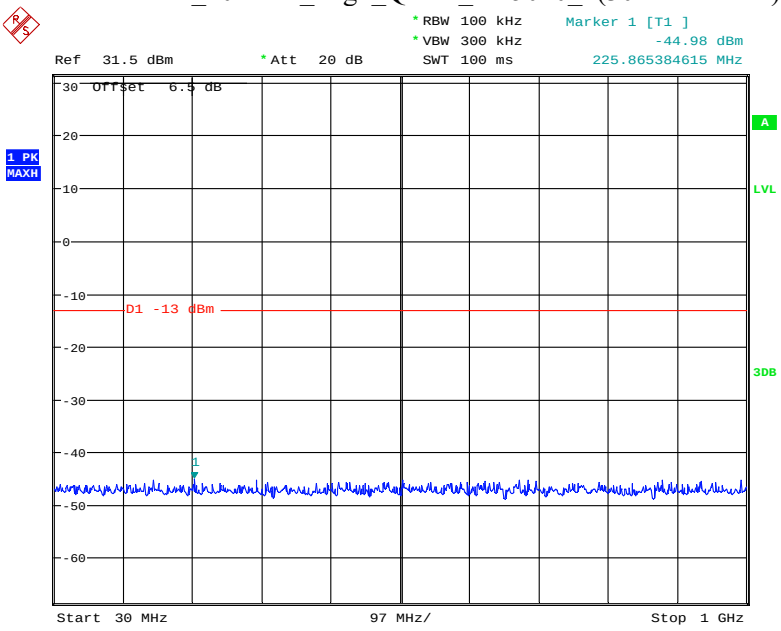
Band 2_10 MHz_Middle_QPSK_RB50#0_2(1GHz-20GHz)



Fundamental test

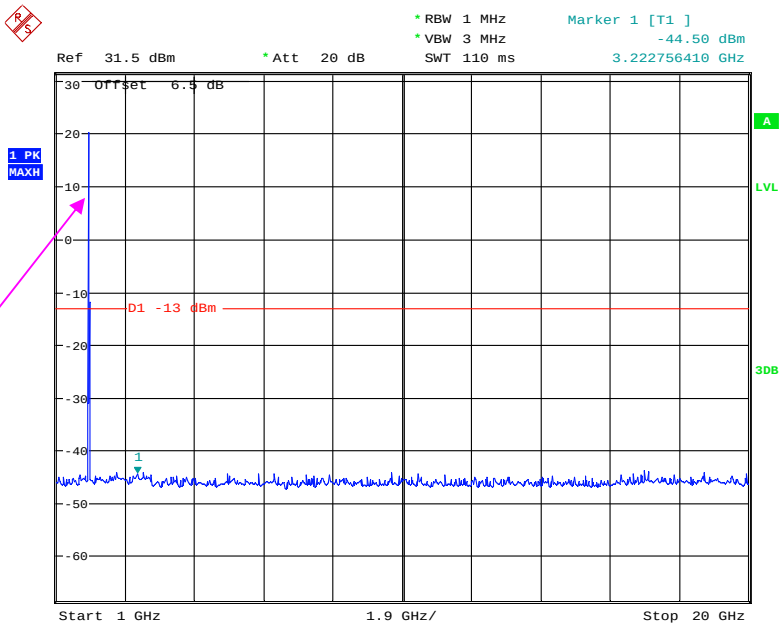
Date: 3.FEB.2021 20:53:58

Band 2_10 MHz_High_QPSK_RB50#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:34:02

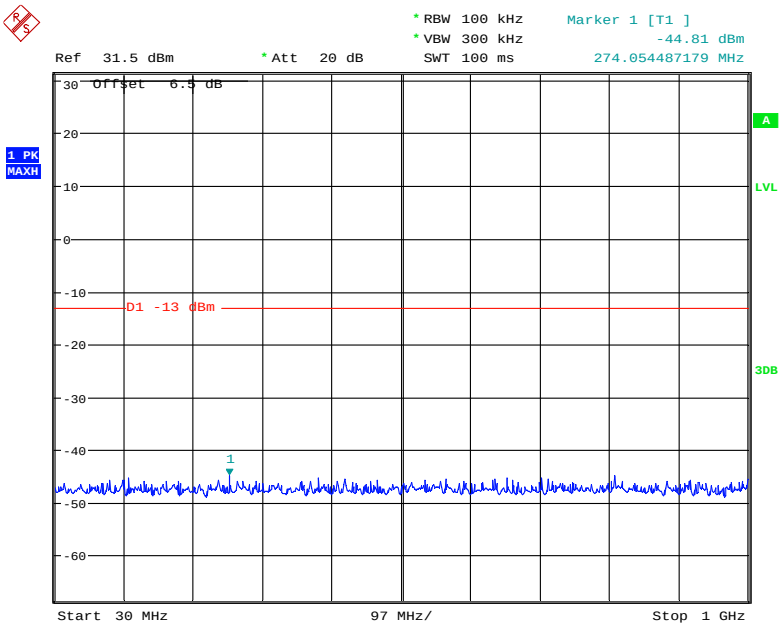
Band 2_10 MHz_High_QPSK_RB50#0_2(1GHz-20GHz)



Fundamental test

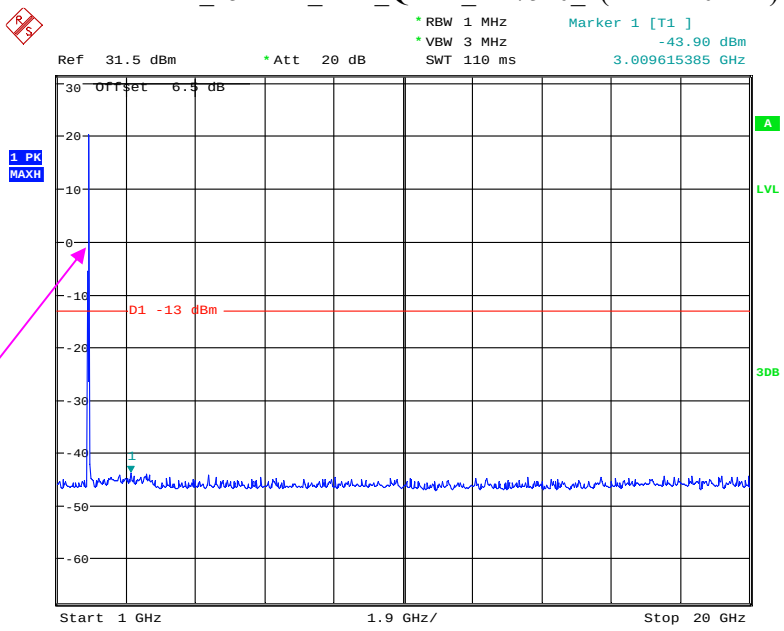
Date: 16.JAN.2021 17:35:13

Band 2_15 MHz_Low_QPSK_RB75#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:37:29

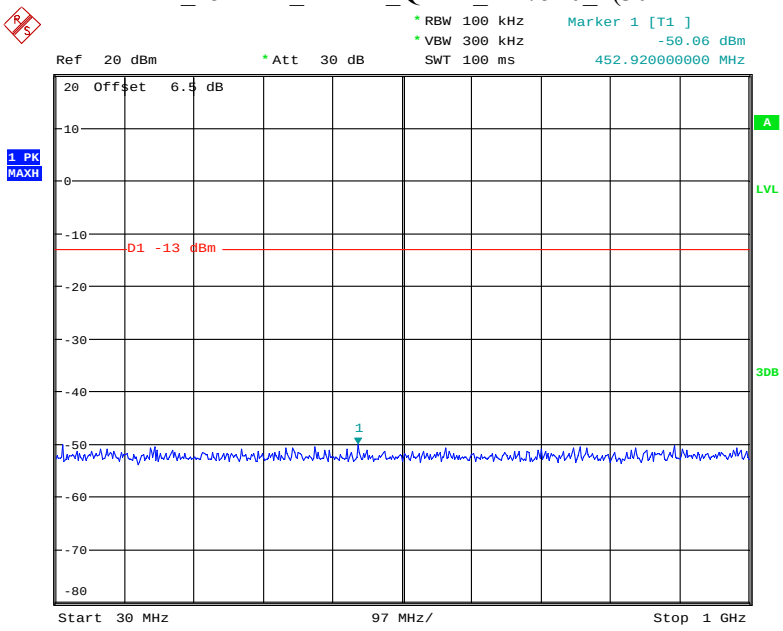
Band 2_15 MHz_Low_QPSK_RB75#0_2(1GHz-20GHz)



Fundamental test

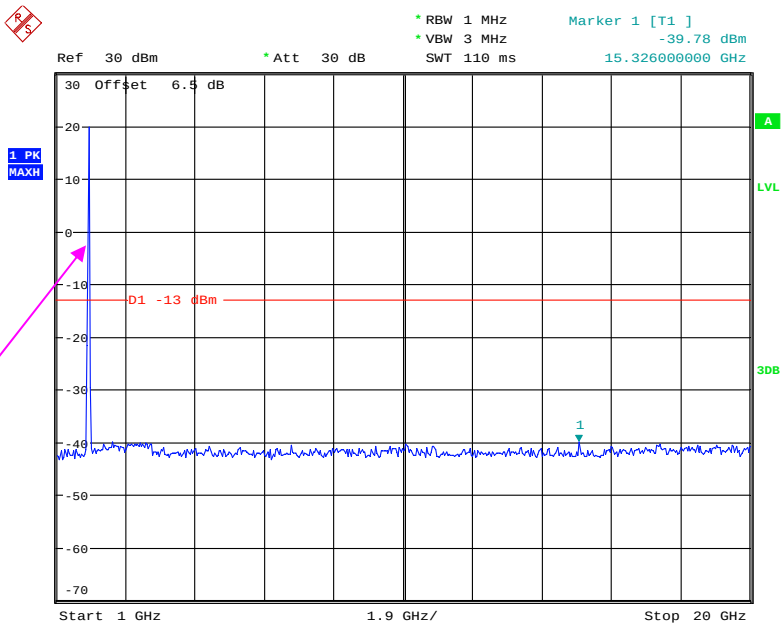
Date: 16.JAN.2021 17:38:06

Band 2_15 MHz_Middle_QPSK_RB75#0_1(30MHz-1GHz)



Date: 11.OCT.2020 12:07:47

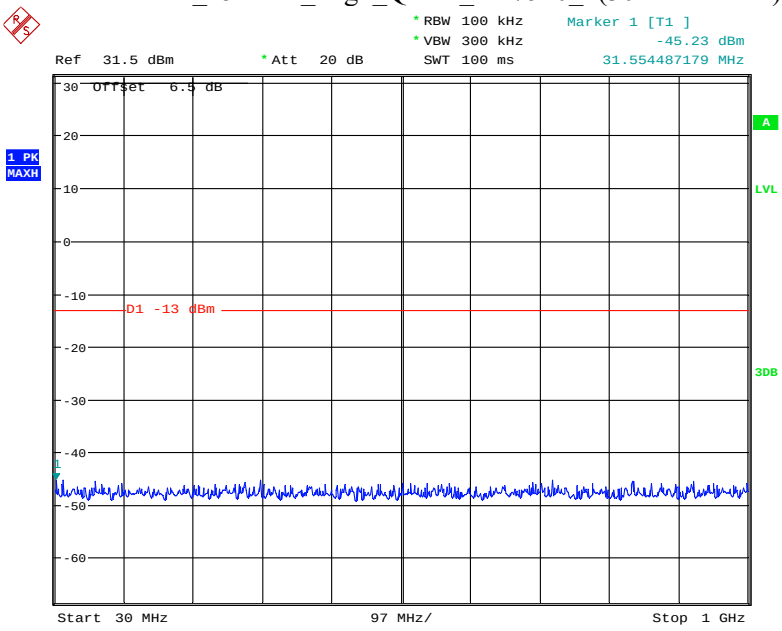
Band 2_15 MHz_Middle_QPSK_RB75#0_2(1GHz-20GHz)



Fundamental test

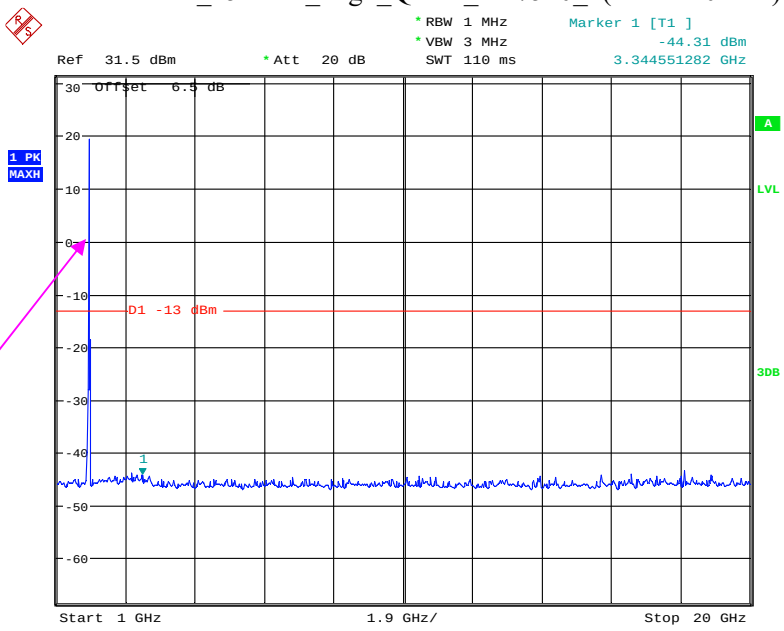
Date: 11.OCT.2020 12:07:57

Band 2_15 MHz_High_QPSK_RB75#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:39:12

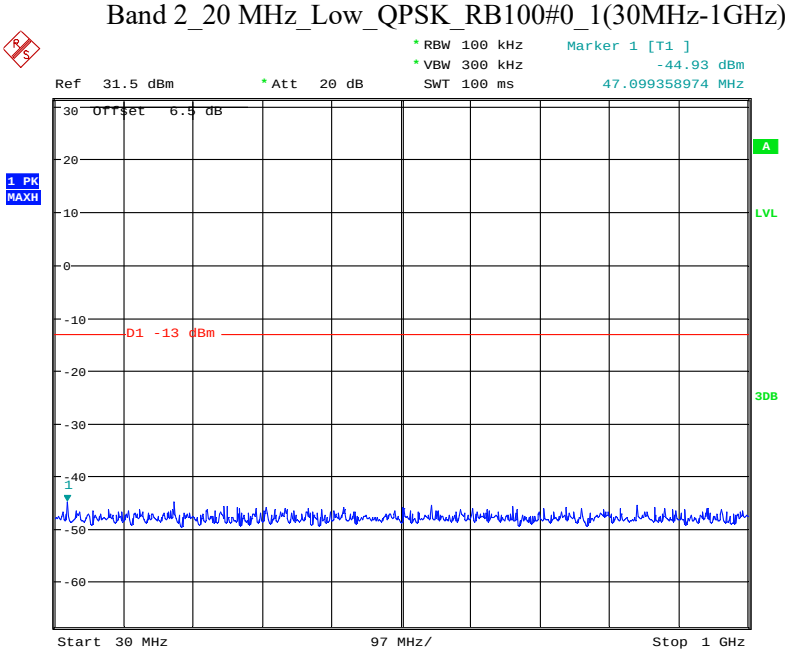
Band 2_15 MHz_High_QPSK_RB75#0_2(1GHz-20GHz)



Fundamental test

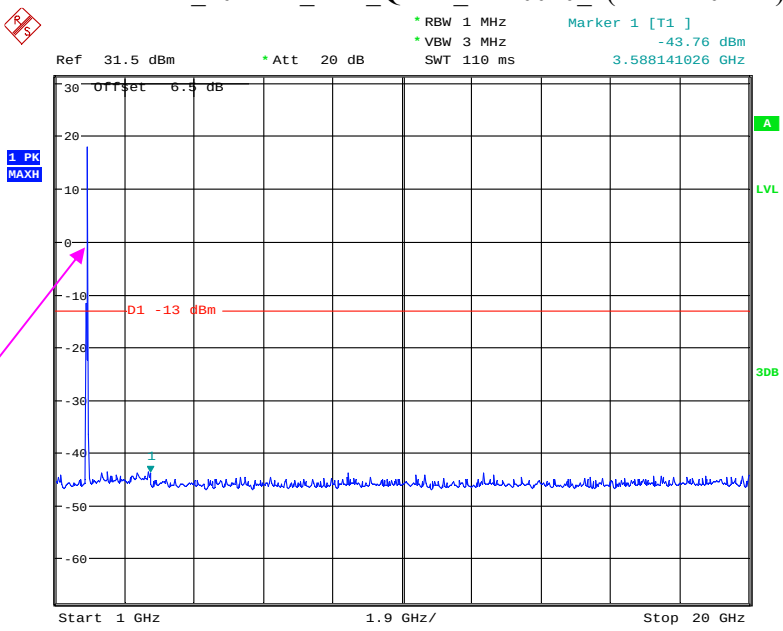
Date: 16.JAN.2021 17:38:53

Band 2_20 MHz_Low_QPSK_RB100#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:41:48

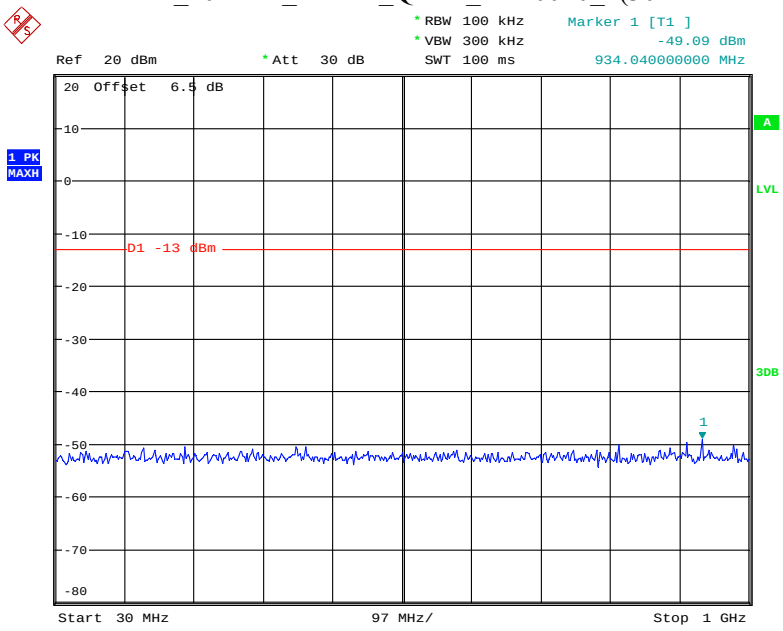
Band 2_20 MHz_Low_QPSK_RB100#0_2(1GHz-20GHz)



Fundamental test

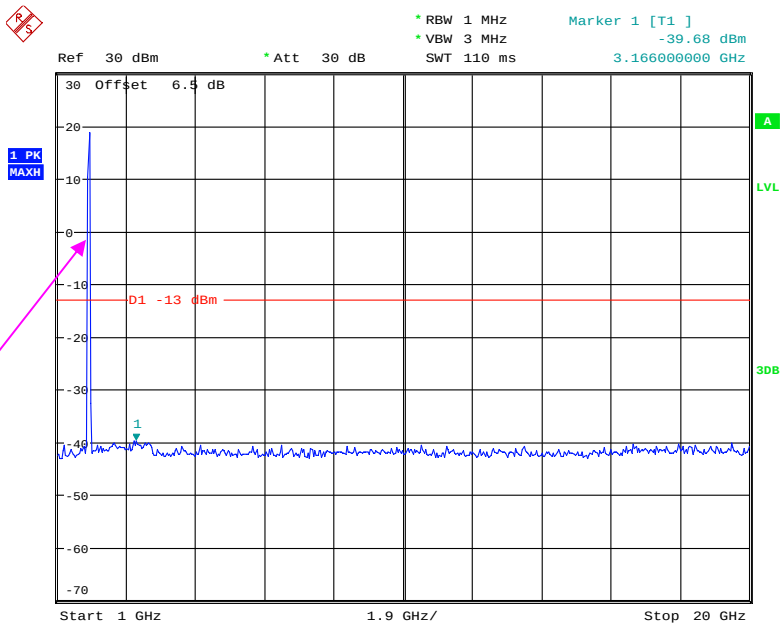
Date: 16.JAN.2021 17:41:16

Band 2_20 MHz_Middle_QPSK_RB100#0_1(30MHz-1GHz)



Date: 11.OCT.2020 12:08:18

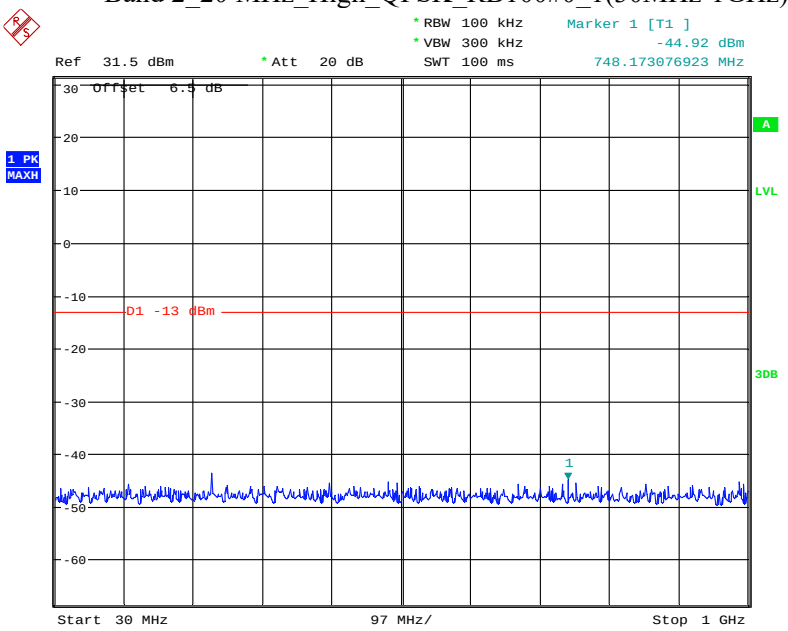
Band 2_20 MHz_Middle_QPSK_RB100#0_2(1GHz-20GHz)



Fundamental test

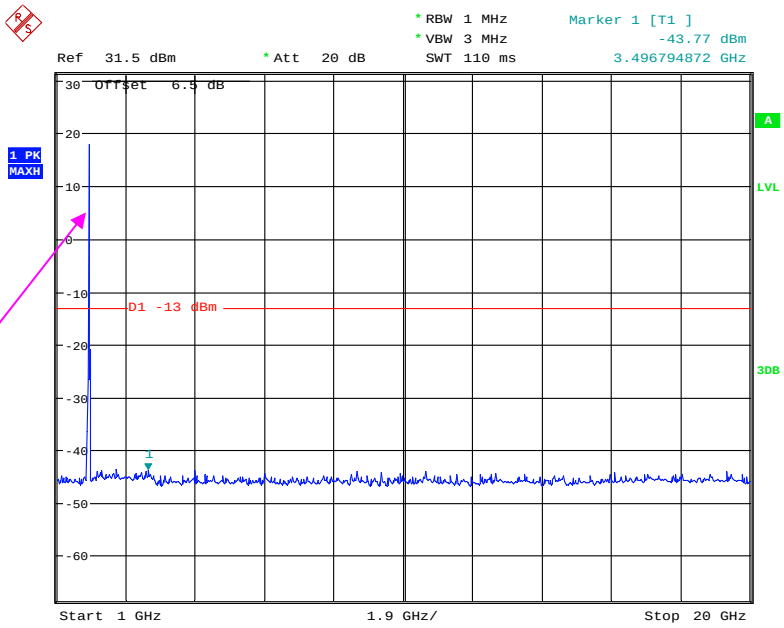
Date: 11.OCT.2020 12:08:28

Band 2_20 MHz_High_QPSK_RB100#0_1(30MHz-1GHz)



Date: 16.JAN.2021 17:42:08

Band 2_20 MHz_High_QPSK_RB100#0_2(1GHz-20GHz)

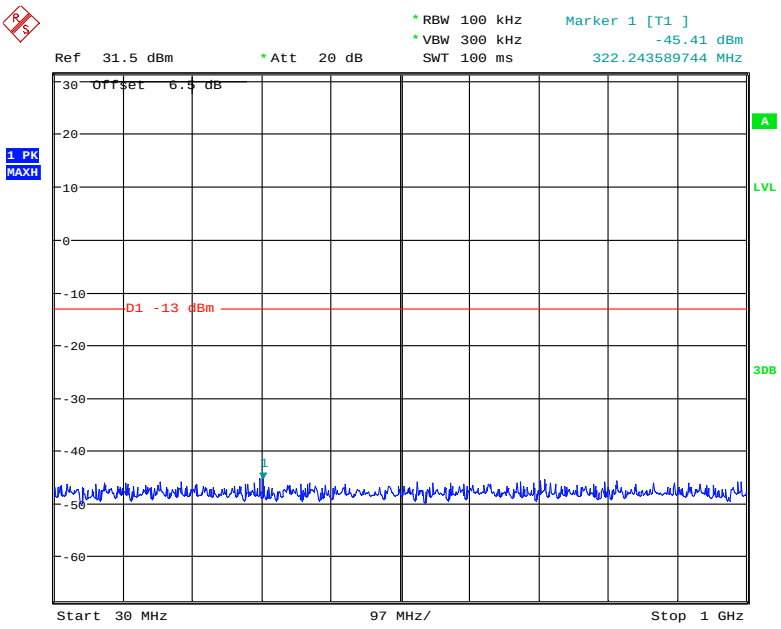


Fundamental test

Date: 16.JAN.2021 17:42:32

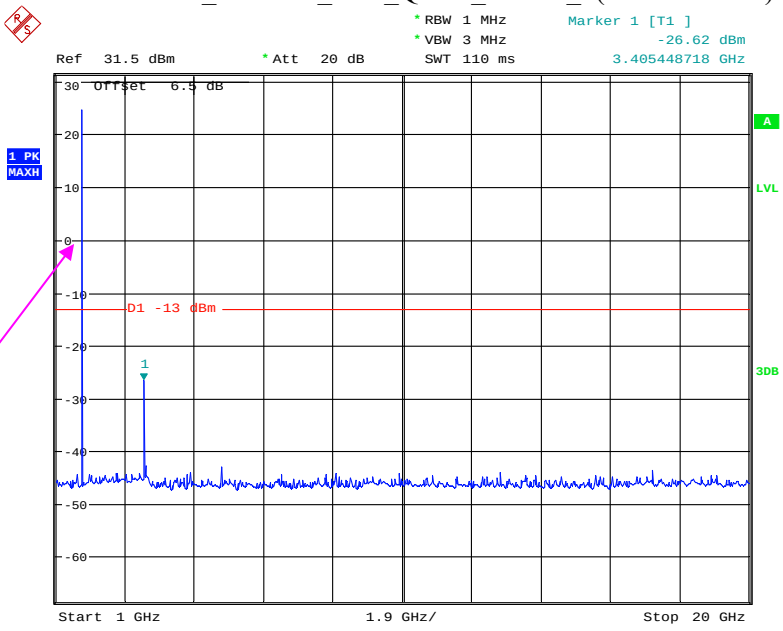
LTE Band 4:

Band 4_1.4 MHz_Low_QPSK_RB6#0_1(30MHz-1GHz)



Date: 16.JAN.2021 18:15:41

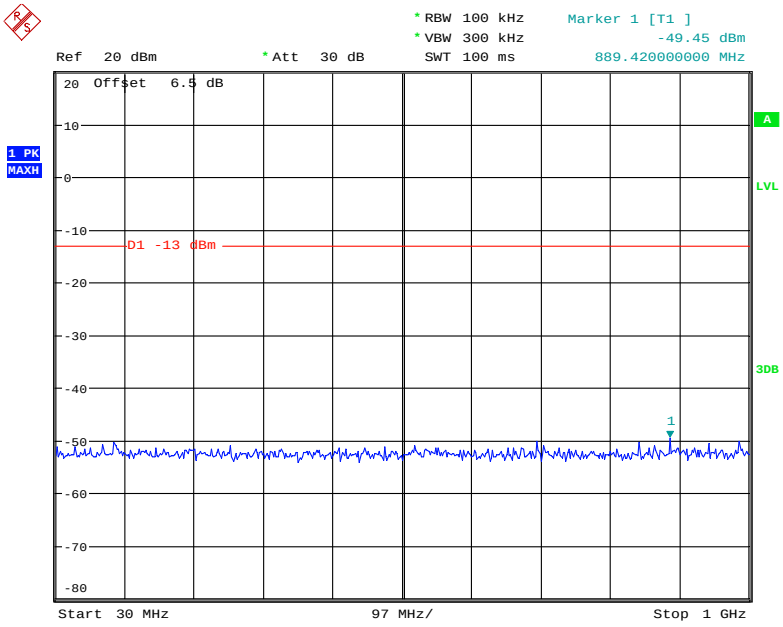
Band 4_1.4 MHz_Low_QPSK_RB6#0_2(1GHz-20GHz)



Fundamental test

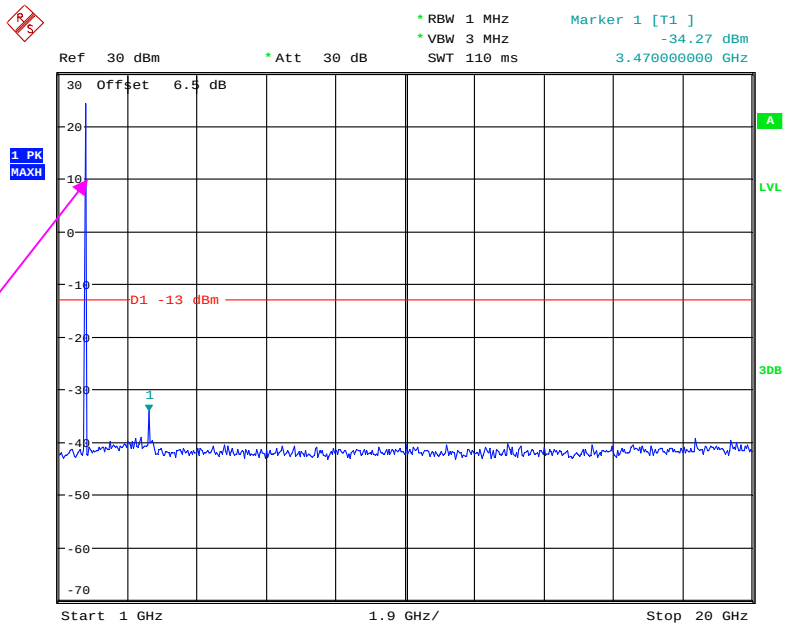
Date: 16.JAN.2021 18:15:14

Band 4_1.4 MHz_Middle_QPSK_RB6#0_1(30MHz-1GHz)



Date: 11.OCT.2020 12:08:46

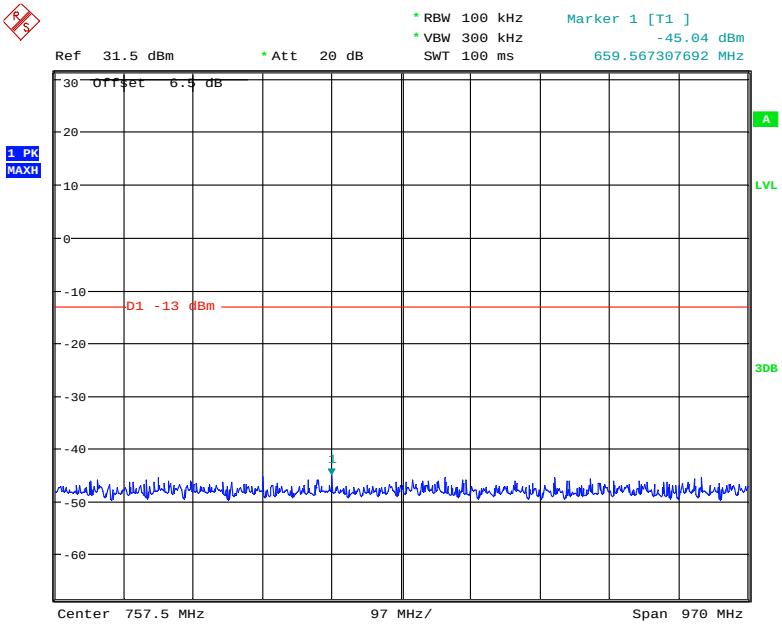
Band 4_1.4 MHz_Middle_QPSK_RB6#0_2(1GHz-20GHz)



Fundamental test

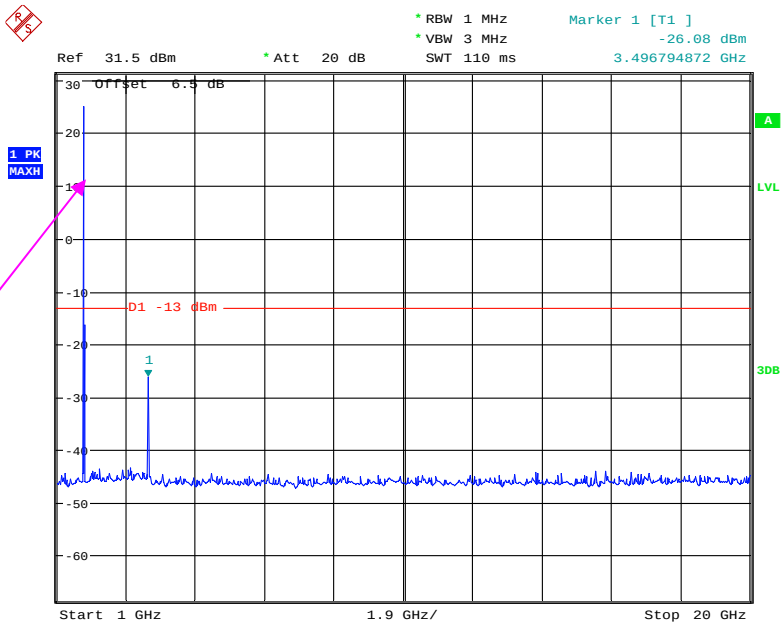
Date: 11.OCT.2020 12:08:56

Band 4_1.4 MHz_High_QPSK_RB6#0_1(30MHz-1GHz)



Date: 16.JAN.2021 18:16:23

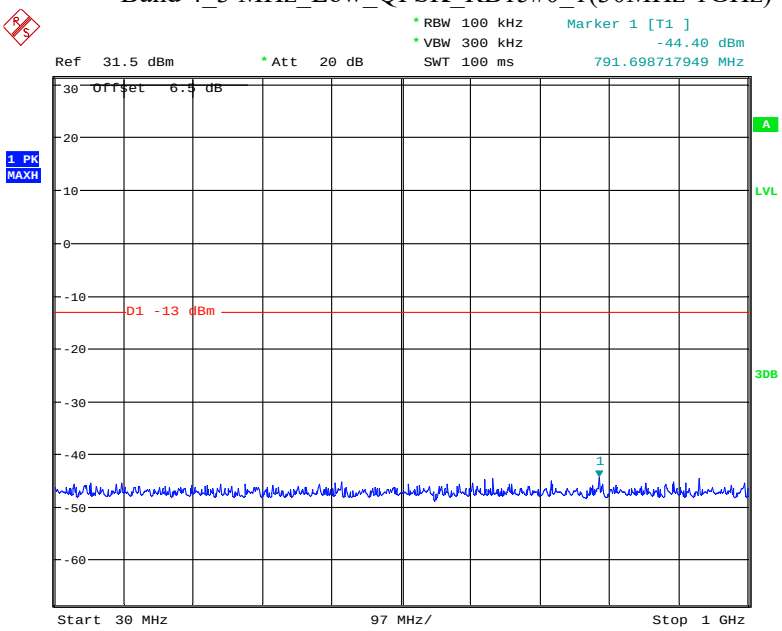
Band 4_1.4 MHz_High_QPSK_RB6#0_2(1GHz-20GHz)



Fundamental test

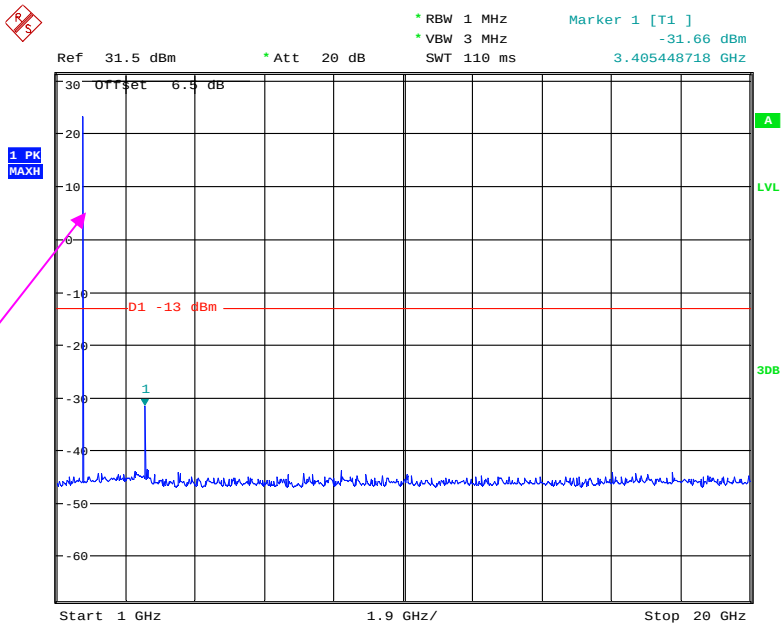
Date: 16.JAN.2021 18:16:50

Band 4_3 MHz_Low_QPSK_RB15#0_1(30MHz-1GHz)



Date: 16.JAN.2021 18:13:32

Band 4_3 MHz_Low_QPSK_RB15#0_2(1GHz-20GHz)



Fundamental test

Date: 16.JAN.2021 18:12:57