# FCC PART 27

# FCC PART 22H, PART 24E

# TEST REPORT

For

## Hytera Communications Corporation Limited

Hytera Tower, Hi-Tech Industrial Park North, 9108# Beihuan Road, Nanshan District, Shenzhen, People's Republic of China

**FCC ID:YAMECENTER**

| **Report Type:** | **Product Type:** |
|---|---|
| Original Report | On-site Command and Dispatch Center |

**Report Number:** RDG191210020-00B

**Report Date:** 2020-12-15

**Reviewed By:** Jimmy Xiao RF Engineer

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# GENERAL INFORMATION

## Product Description for Equipment under Test (EUT)

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

## Objective

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

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

## Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

Part 22 Subpart H - Public Mobile Services
Part 24 Subpart E - Personal Communication Services
Part 27 – Miscellaneous wireless communications services

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

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

## Measurement Uncertainty

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

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

## Test Facility

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

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

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

# SYSTEM TEST CONFIGURATION

## Description of Test Configuration

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

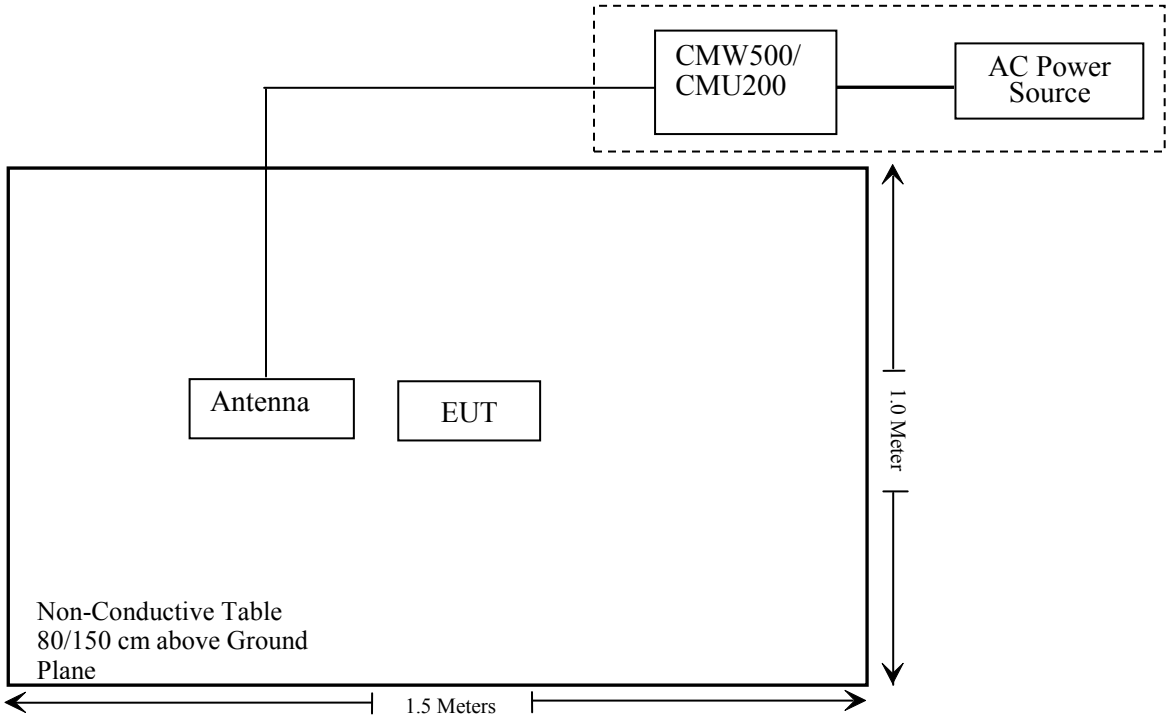
## Equipment Modifications

No modification was made to the EUT.

## Support Equipment List and Details

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

## Block Diagram of Test Setup



# SUMMARY OF TEST RESULTS

| FCC Rules | Description of Test | Result |
|---|---|---|
| §2.1091 | Maximum Permissible Exposure(MPE) | Compliance |
| §2.1046; § 22.913 (a); § 24.232 (c); §27.50 (b (c) (d) (h) | RF Output Power | Compliance |
| § 2.1047 | Modulation Characteristics | Not Applicable |
| § 2.1049; § 22.905; § 22.917; § 24.238; §27.53 | Occupied Bandwidth | Compliance |
| § 2.1051; § 22.917 (a); § 24.238 (a); §27.53 | Spurious Emissions at Antenna Terminal | Compliance |
| § 2.1053; § 22.917 (a); § 24.238 (a); §27.53 | Field Strength of Spurious Radiation | Compliance |
| § 22.917 (a); § 24.238 (a); §27.53(h) (m) | Band Edge | Compliance |
| § 2.1055; § 22.355; § 24.235; §27.54; | Frequency stability | Compliance |

# TEST EQUIPMENT LIST

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| **Radiated Emission Test** | | | | | |
| R&S | EMI Test Receiver | ESR3 | 102455 | 2020/7/9 | 2021/7/8 |
| Sonoma instrument | Pre-amplifier | 310 N | 186238 | 2020/4/20 | 2021/4/20 |
| Sunol Sciences | Broadband Antenna | JB1 | A040904-1 | 2017/12/22 | 2020/12/21 |
| COM-POWER | Dipole Antenna | AD-100 | 721027 | NCR | NCR |
| Unknown | Cable 2 | RF Cable 2 | F-03-EM197 | 2019/11/29 | 2020/11/28 |
| Unknown | Cable | Chamber Cable 1 | F-03-EM236 | 2019/11/29 | 2020/11/28 |
| Rohde & Schwarz | Spectrum Analyzer | FSV40-N | 102259 | 2020/7/22 | 2021/7/21 |
| COM-POWER | Pre-amplifier | PA-122 | 181919 | 2019/11/29 | 2020/11/28 |
| Quinstar | Amplifier | QLW-18405536-J0 | 15964001002 | 2019/11/29 | 2020/11/28 |
| Sunol Sciences | Horn Antenna | DRH-118 | A052604 | 2017/12/22 | 2020/12/21 |
| A.H.System | Horn Antenna | SAS-200/571 | 135 | 2018/9/1 | 2021/8/31 |
| Insulted Wire Inc. | RF Cable | SPS-2503-3150 | 02222010 | 2019/11/29 | 2020/11/28 |
| Unknown | RF Cable | W1101-EQ1 OUT | F-19-EM005 | 2019/11/29 | 2020/11/28 |
| MICRO-TRONICS | Passband filter | HPM50111 | F-19-EM006 | 2020/4/20 | 2021/4/20 |
| Unknown | High Pass filter | 1.3GHz | 101120 | 2020/4/20 | 2021/4/20 |
| Ducommun Technolagies | Horn antenna | ARH-4223-02 | 1007726-02 1304 | 2017/12/6 | 2020/12/5 |
| Ducommun Technolagies | Horn antenna | ARH-4223-02 | 1007726-01 1304 | 2017/12/6 | 2020/12/5 |
| Agilent | Signal Generator | N5183A | MY51040755 | 2019/12/04 | 2020/12/04 |

| Manufacturer | Description | Model | Serial Number | Calibration Date | Calibration Due Date |
|---|---|---|---|---|---|
| **RF Conducted Test** | | | | | |
| Rohde & Schwarz | SPECTRUM ANALYZER | FSU26 | 200120 | 2020/3/2 | 2021/3/1 |
| WEINSCHEL | 3dB Attenuator | Unknown | F-03-EM121 | 2019/11/29 | 2020/11/28 |
| Unknown | RF Cable | Unknown | 2301 276 | 2019/11/29 | 2020/11/28 |
| Unknown | RF Cable | Unknown | DLO J5/W6102 | 2019/11/29 | 2020/11/28 |
| Weinschel | Power divider | 1515 | MY628 | 2019/11/29 | 2020/11/28 |
| Rohde & Schwarz | Universal Radio Communication Tester | CMU200 | 115500 | 2020/7/22 | 2021/7/21 |
| Rohde & Schwarz | Universal Radio Communication Tester | CMU200 | 115500 | 2019/7/22 | 2020/7/21 |
| Rohde & Schwarz | Wideband Radio Communication Tester | CMW500 | 1201.002K50-146520-wh | 2020/7/9 | 2021/7/8 |
| Rohde & Schwarz | Wideband Radio Communication Tester | CMW500 | 1201.002K50-146520-wh | 2019/7/9 | 2020/7/8 |
| instek | DC Power Supply | GPS-3030DD | EM832096 | NCR | NCR |
| ESPEC | Temperature & Humidity Chamber | EL-10KA | 9107726 | 2020/01/05 | 2021/01/05 |
| Fluke | Digital Multimeter | 287 | 19000011 | 2020/04/12 | 2021/04/12 |

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

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

## Applicable Standard

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

Limits for General Population/Uncontrolled Exposure

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

f = frequency in MHz
* = Plane-wave equivalent power density

## Result

### Calculated Formulary:

Predication of MPE limit at a given distance

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

S = power density (in appropriate units, e.g. mW/cm2)
P = power input to the antenna (in appropriate units, e.g., mW).
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

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

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

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

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

So the worst simultaneous transmitting consideration:

The ratio=$MPE_{Wi\text{-}Fi}$/limit + $MPE_{LTE\ Voice\ Module}$/limit + $MPE_{LTE\ Data\ Module}$/limit
=0.02/1.0+0.079/0.55+0.099/0.442
=0.39＜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) (h) - RF OUTPUT POWER

## Applicable Standard

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

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

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

According to §27.50(b), Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

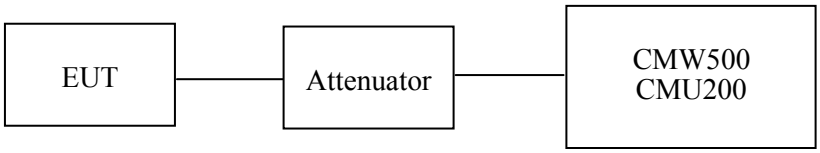
According to §27.50(c), Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

## Test Procedure

*Conducted method:*

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




*Radiated method:*

ANSI C63.26-2015 section 5.5.3.

## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 23.3-30.5 ℃ |
| **Relative Humidity:** | 42-66% |
| **ATM Pressure:** | 100.3-101.2 kPa |

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

**Conducted Power**

**Cellular Band (Part 22H)**

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

**PCS Band (Part 24E)**

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

**AWS Band (Part 27)**

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

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

**Cellular Band**

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

**PCS Band**

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

**AWS Band**

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

**Radiated Power**

**WCDMA Mode:**

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

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

Note:
(Antenna gain - Cable loss) is 2dBi, which was declared by manufacturer
EIRP = Conducted output power + Antenna Gain-cable loss
dBd=dBi-2.15

**LTE Band 2:**

## Maximum Output Power

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

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

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

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

**20MHz Bandwidth**

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

**QPSK:**

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

**16QAM**

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

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

**LTE Band 4:**

Maximum Output Power

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

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

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

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

**20MHz Bandwidth**

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

**QPSK:**

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

**16QAM**

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

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

**LTE Band 5:**

Maximum Output Power

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

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

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

**10MHz bandwidth**

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

**QPSK:**

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

**16QAM**

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

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

**LTE Band 12:**

Maximum Output Power

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

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

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

**10MHz bandwidth**

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

**QPSK:**

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

**16QAM**

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

**Note:**
Antenna gain+ cable loss is 2dBi, which was declared by manufacturer
EIRP = conducted output power + Antenna Gain-cable loss
dBd=dBi-2.15

**LTE Band 13:**

Maximum Output Power

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

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

**10MHz bandwidth**

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

**QPSK:**

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

**16QAM**

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

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

# FCC §2.1049, §22.917, §22.905 & §24.238 & §2 7.53 - OCCUPIED BANDWIDTH

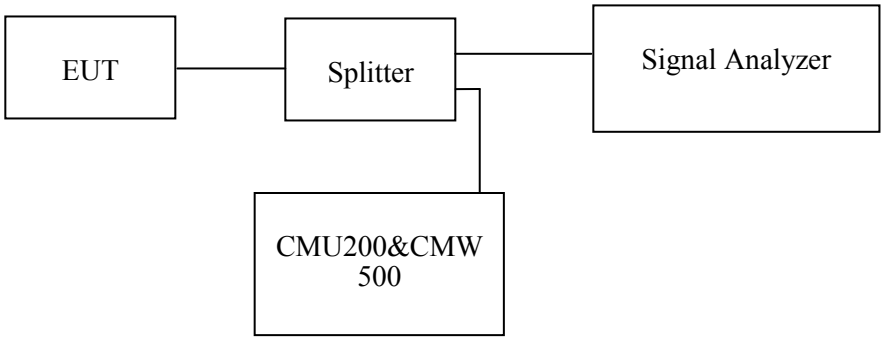
## Applicable Standard

FCC 47 §2.1049, §22.917, §22.905, §24.238 and §2 7.53.

## Test Procedure

The RF output of the transmitter was connected to the simulator and the spectrum analyzer through sufficient attenuation.

The resolution bandwidth of the spectrum analyzer was set at 1% to 5% of the anticipated emission bandwidth and the 26 dB & 99% bandwidth was recorded.




## Test Data

### Environmental Conditions

| | |
|---|---|
| **Temperature:** | 21.3℃ |
| **Relative Humidity:** | 26.4 % |
| **ATM Pressure:** | 100.3~101.2 kPa |

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

*EUT operation mode: Transmitting*

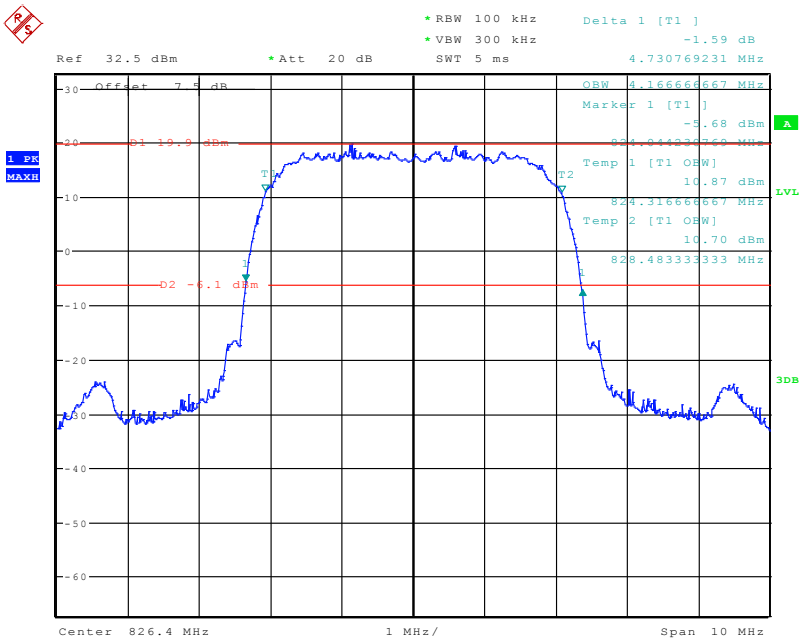
**Test Result: Pass**

*Please refer to the following tables and plots.*

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

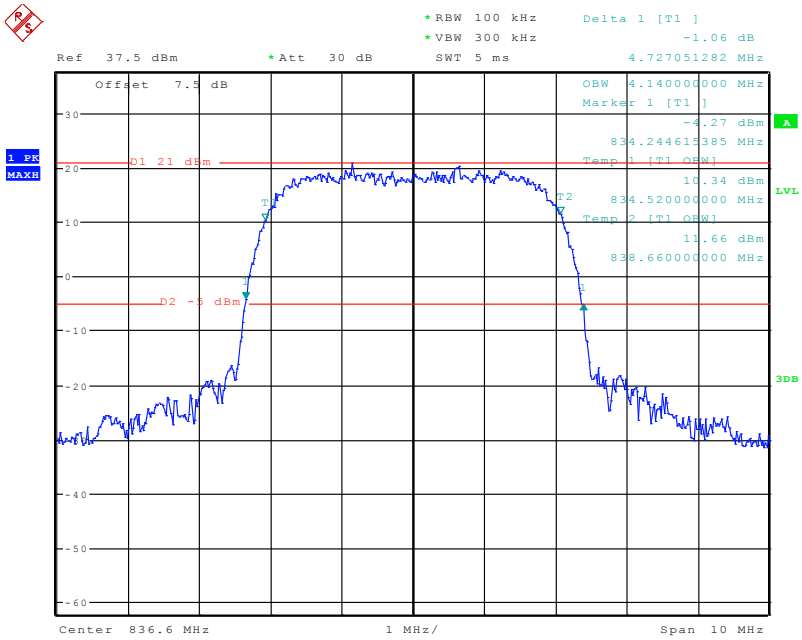
## Cellular Band (Part 22H)

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



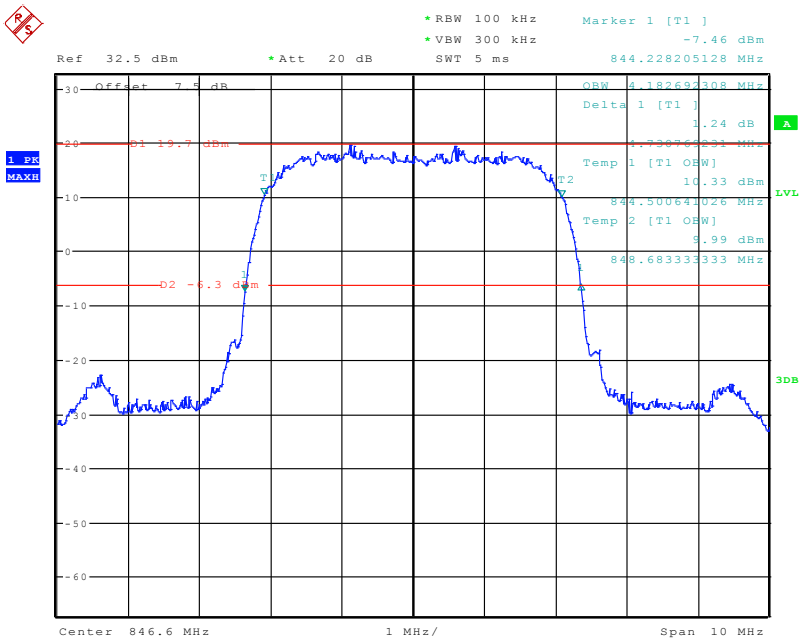

Date: 29.NOV.2020 16:41:47

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



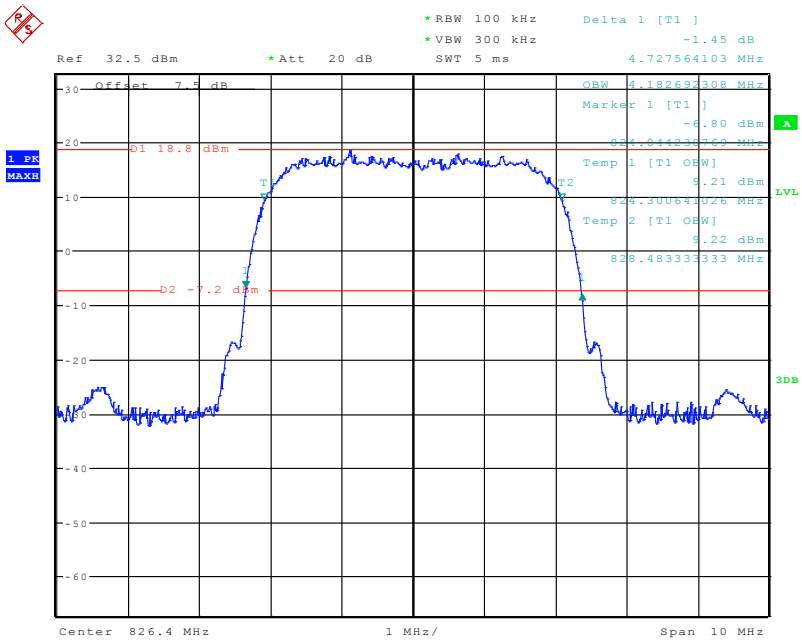

Date: 9.MAR.2020 10:16:04

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



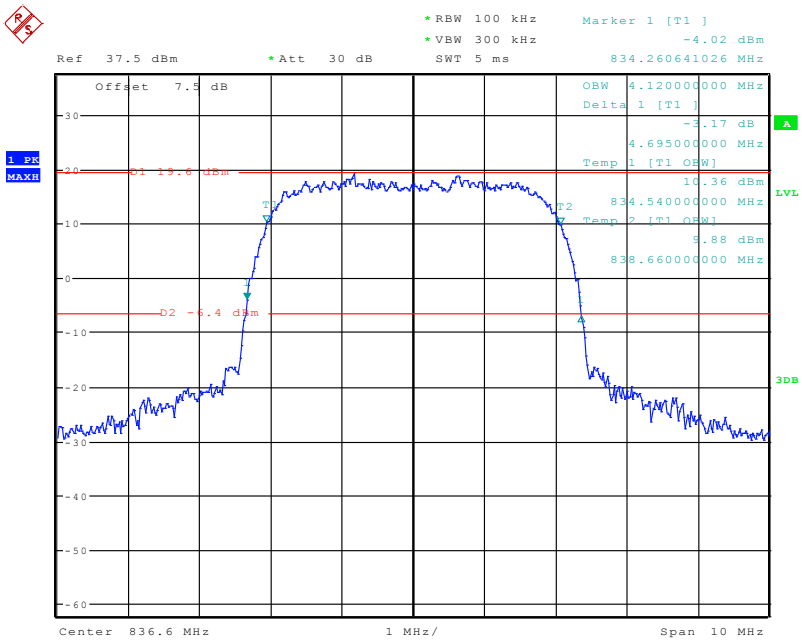

Date: 29.NOV.2020 16:42:38

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



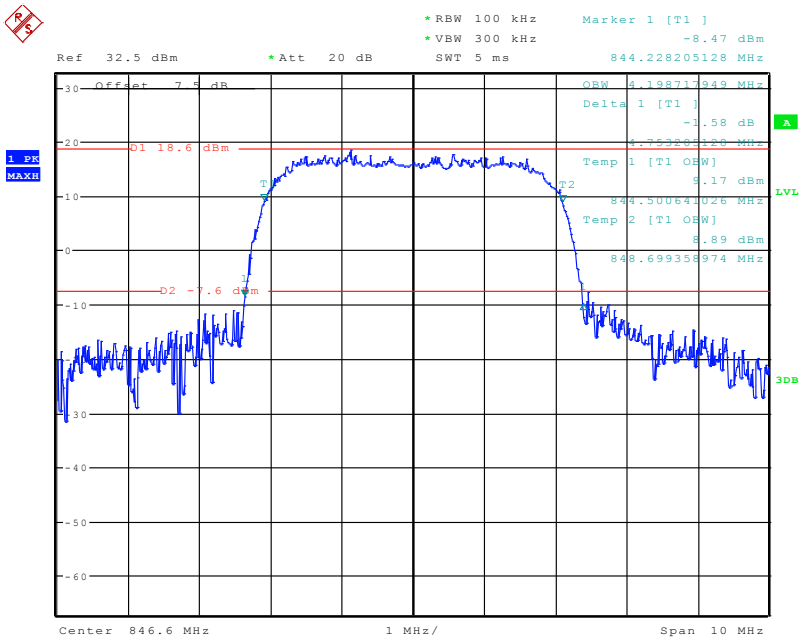

Date: 29.NOV.2020 17:15:08

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



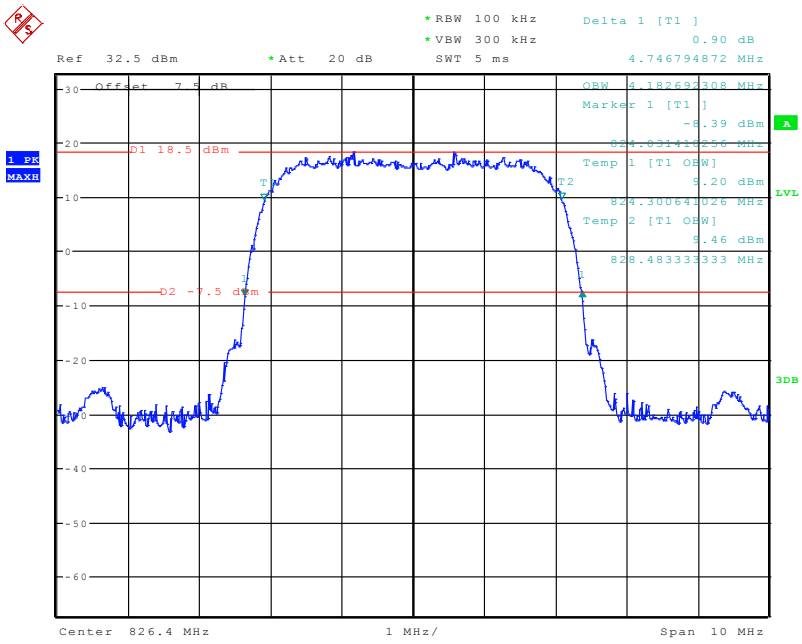

Date: 9.MAR.2020 10:21:50

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



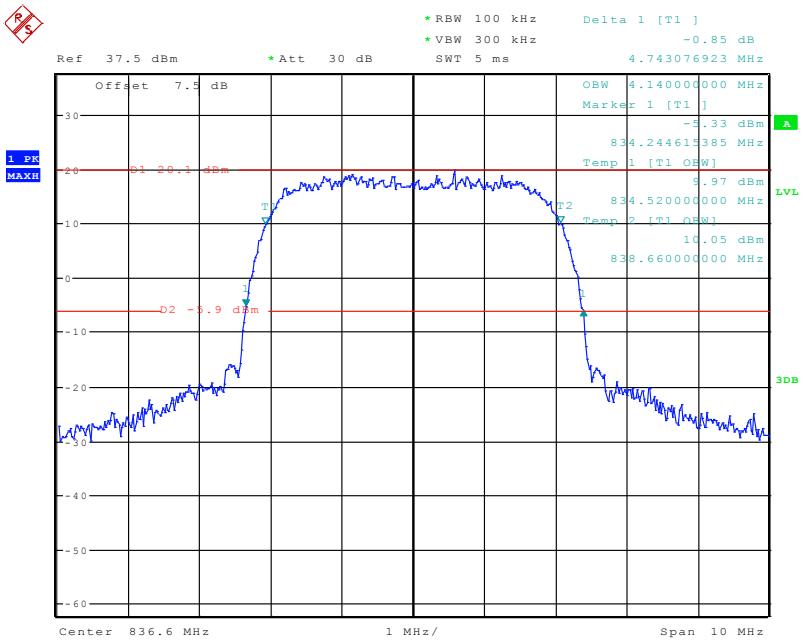

Date: 29.NOV.2020 17:13:17

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



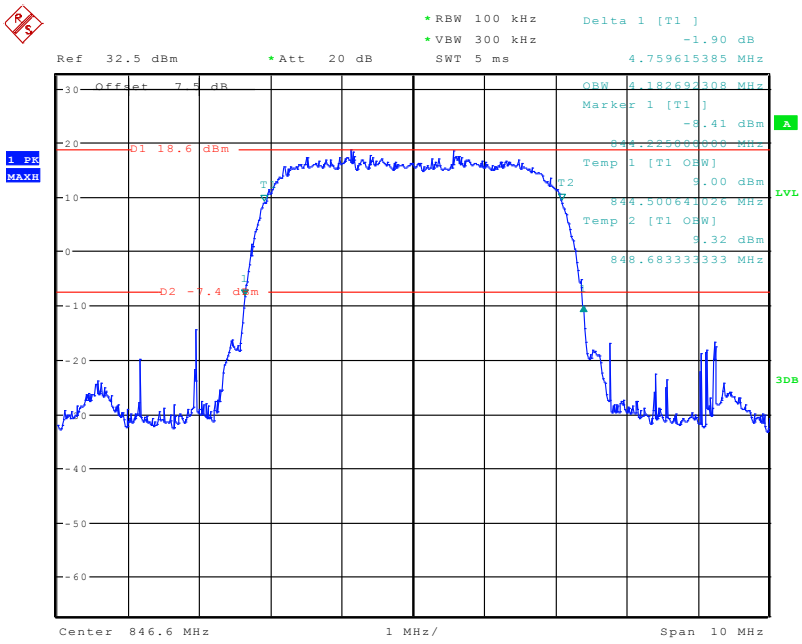

Date: 29.NOV.2020 17:02:09

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




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

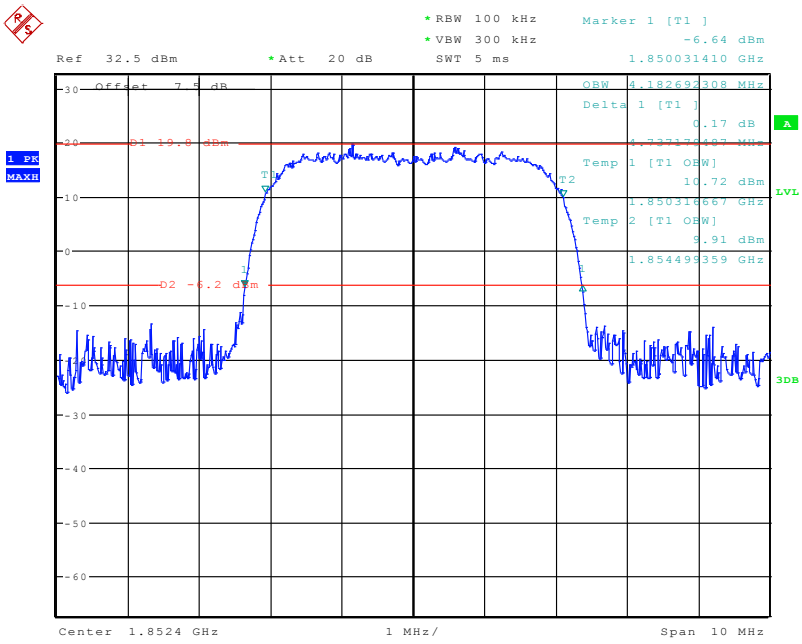
**26 dB Emissions &99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel**




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

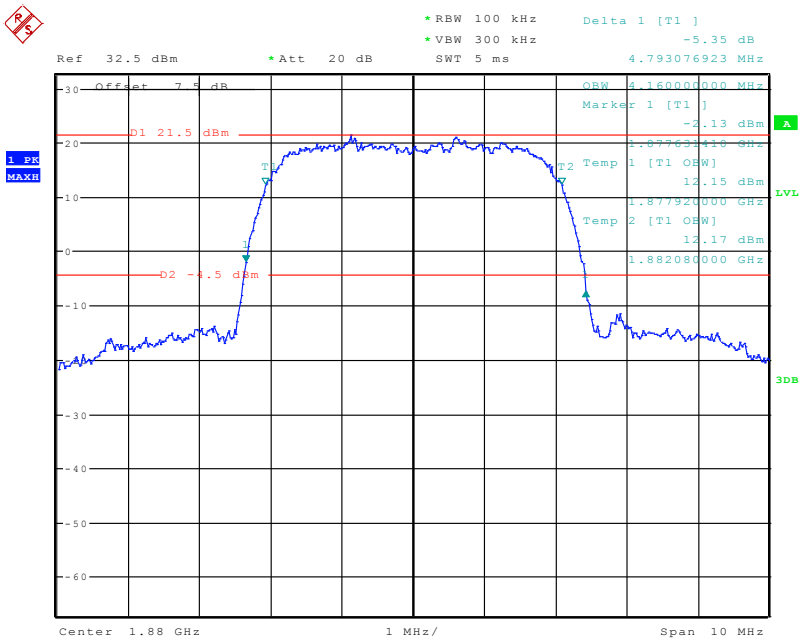
## PCS Band (Part 24E)

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



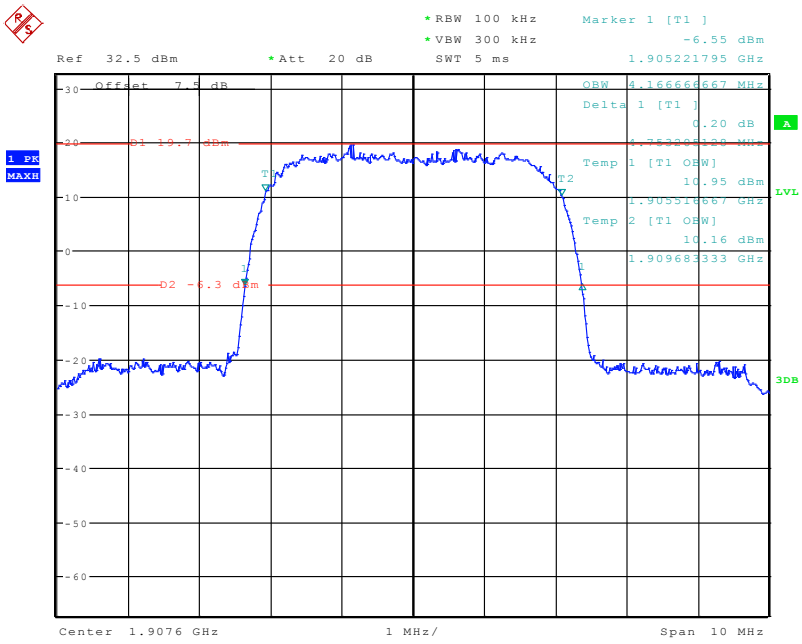

Date: 29.NOV.2020 16:35:18

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



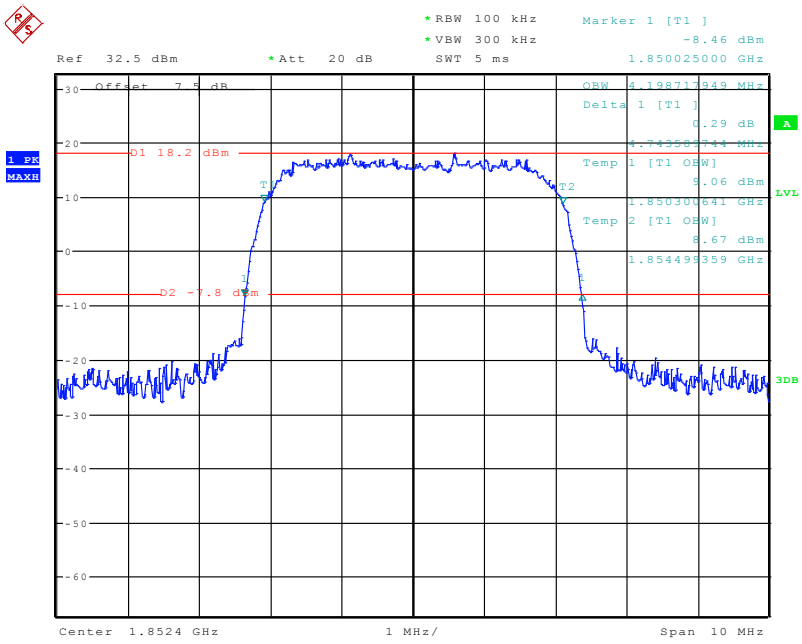

Date: 9.MAR.2020 11:18:45

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



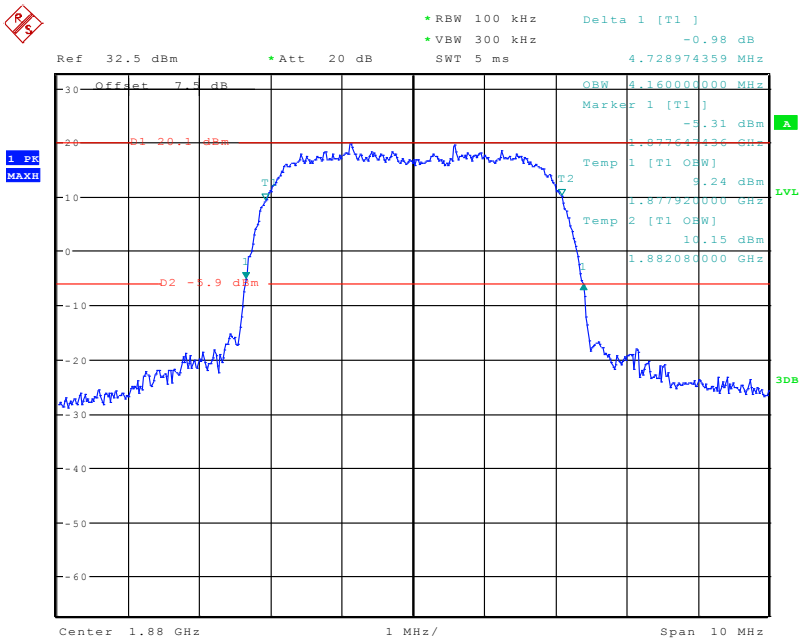

Date: 29.NOV.2020 16:37:53

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



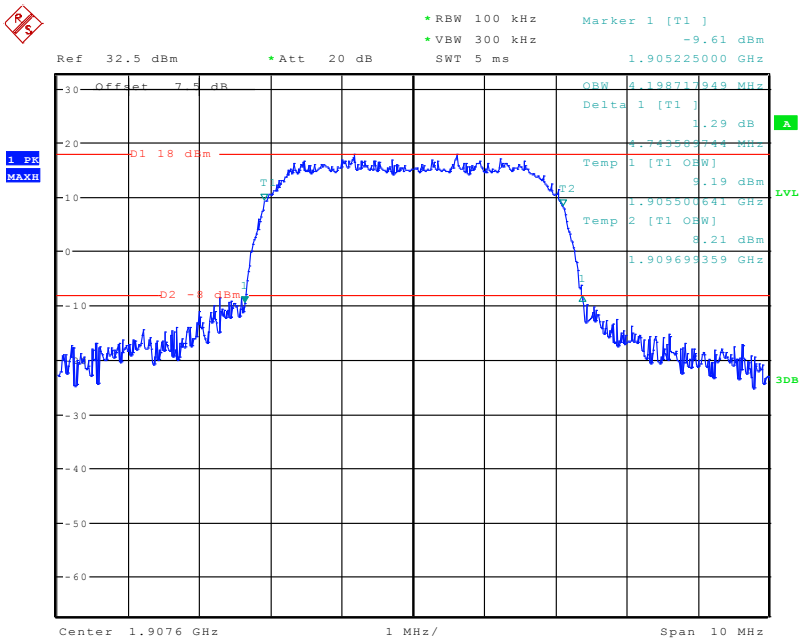

Date: 29.NOV.2020 17:09:07

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



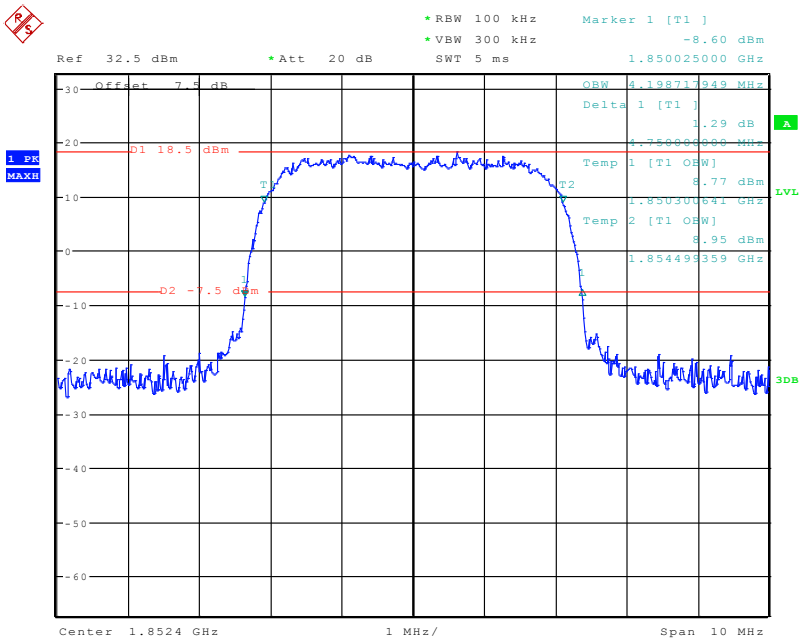

Date: 9.MAR.2020 11:22:08

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



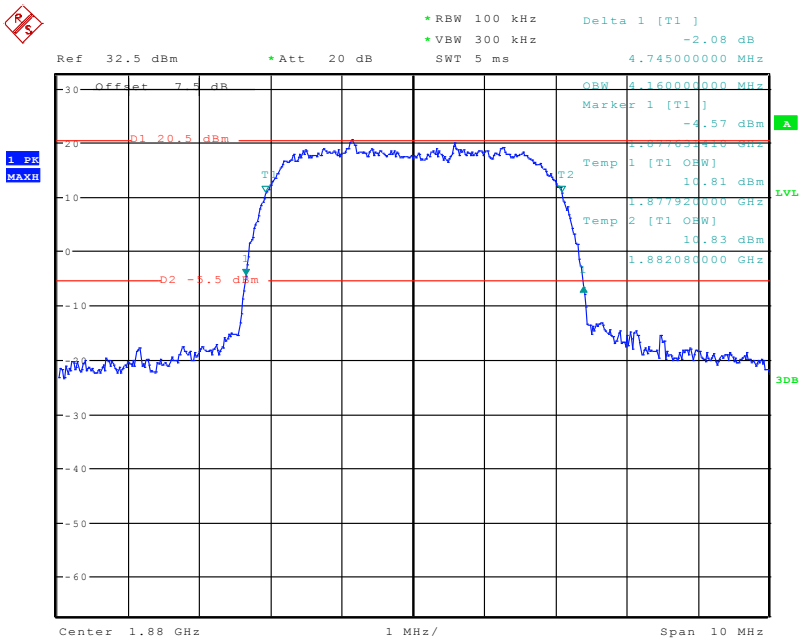

Date: 29.NOV.2020 17:07:51

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



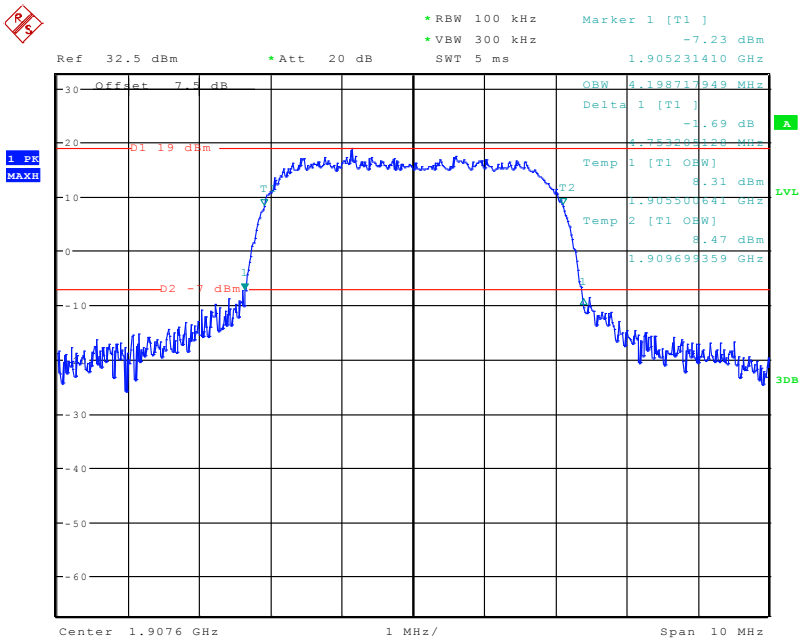

Date: 29.NOV.2020 17:03:31

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




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

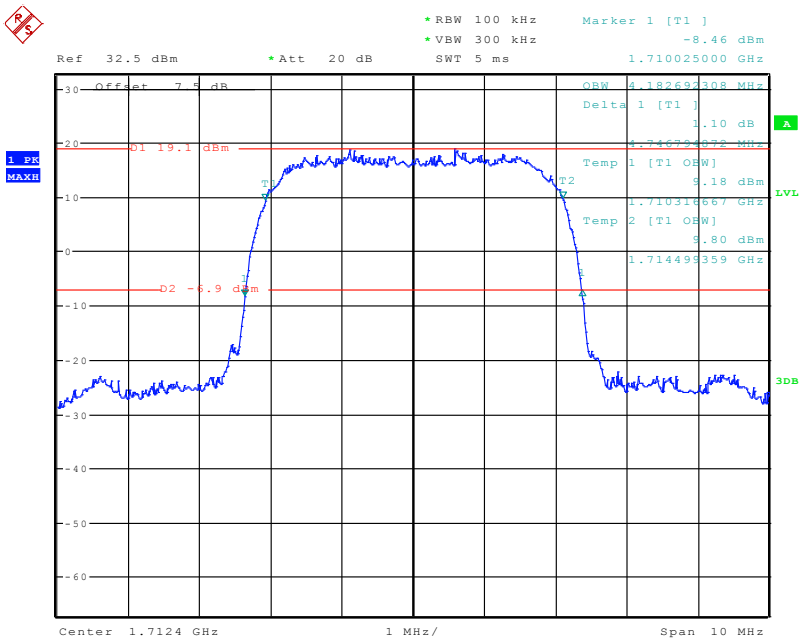
**26 dB Emissions &99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel**




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

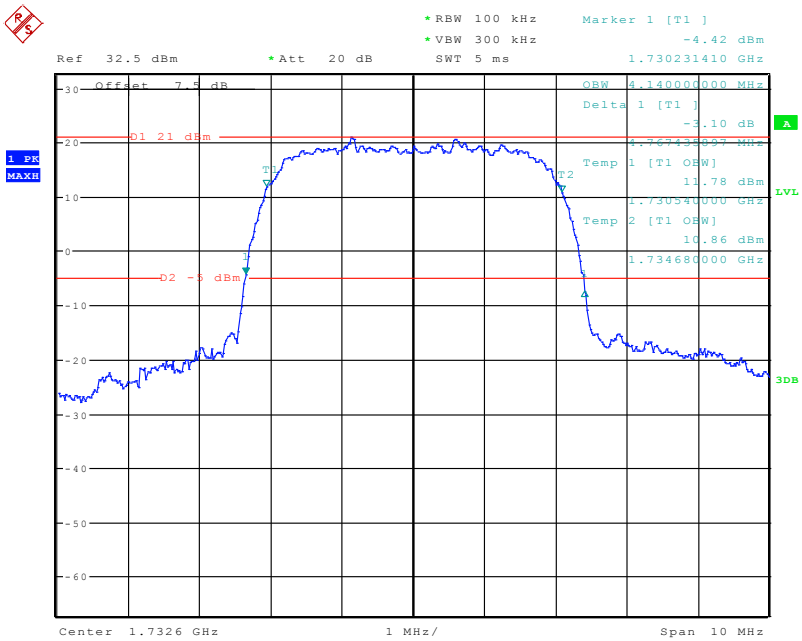
## AWS Band (Part 27)

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



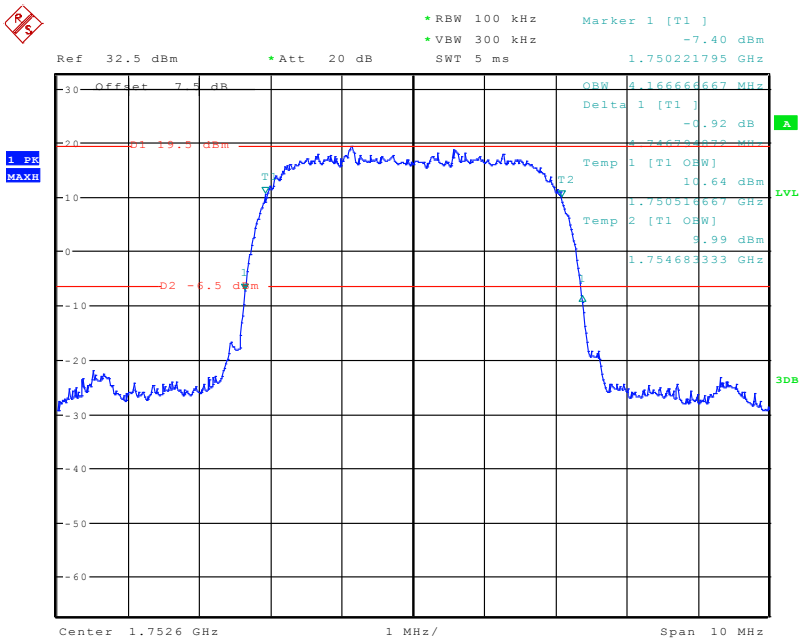

Date: 29.NOV.2020 16:39:16

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



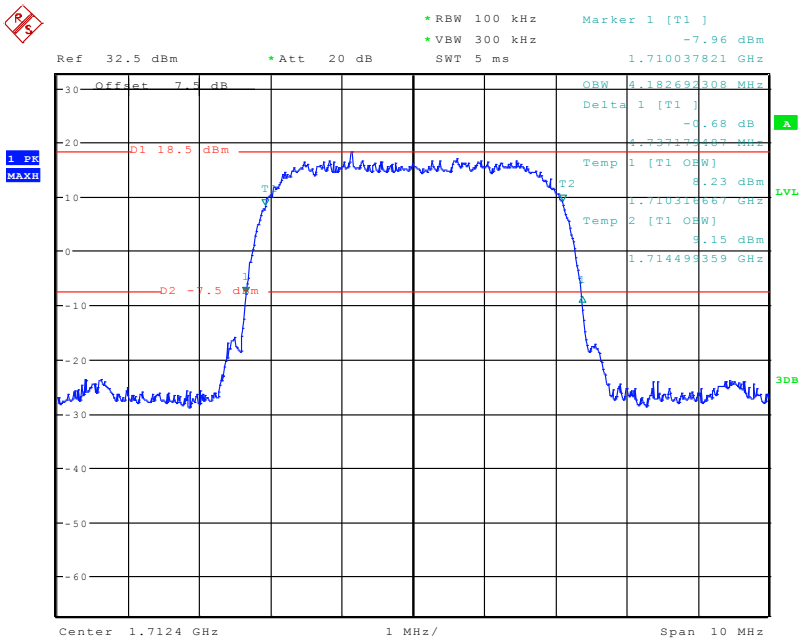

Date: 9.MAR.2020 10:59:35

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



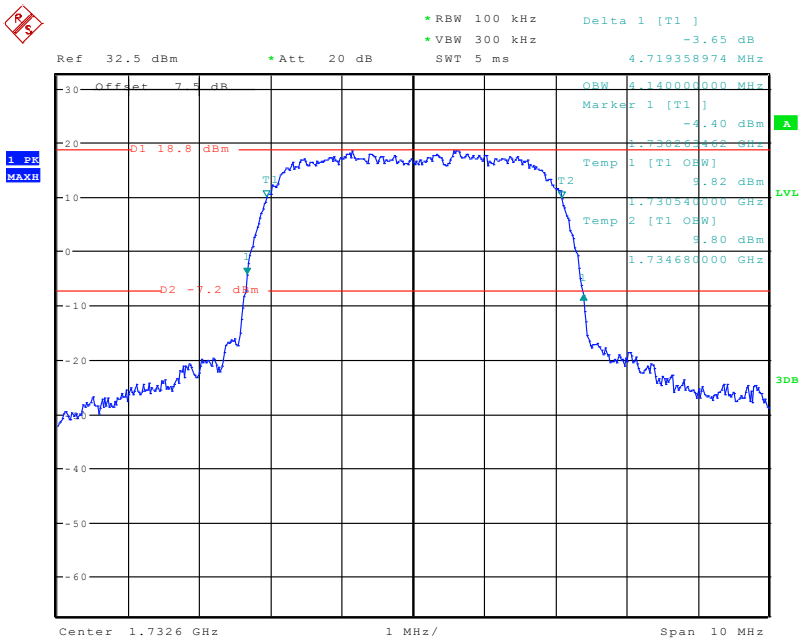

Date: 29.NOV.2020 16:40:06

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



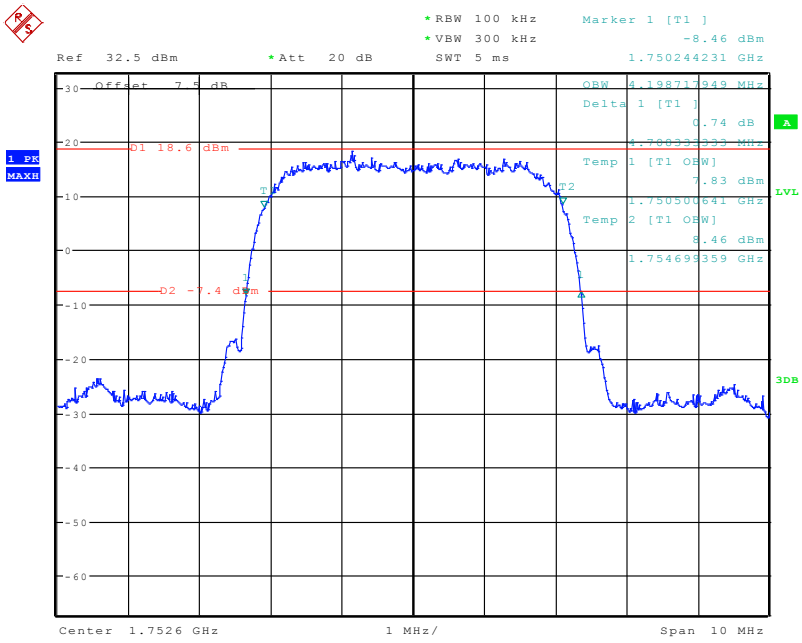

Date: 29.NOV.2020 17:16:34

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



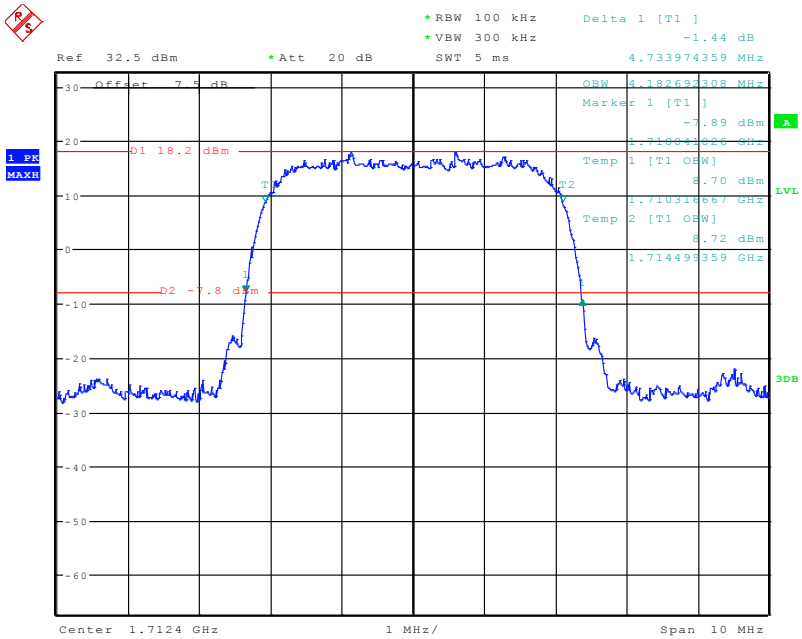

Date: 9.MAR.2020 11:02:39

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



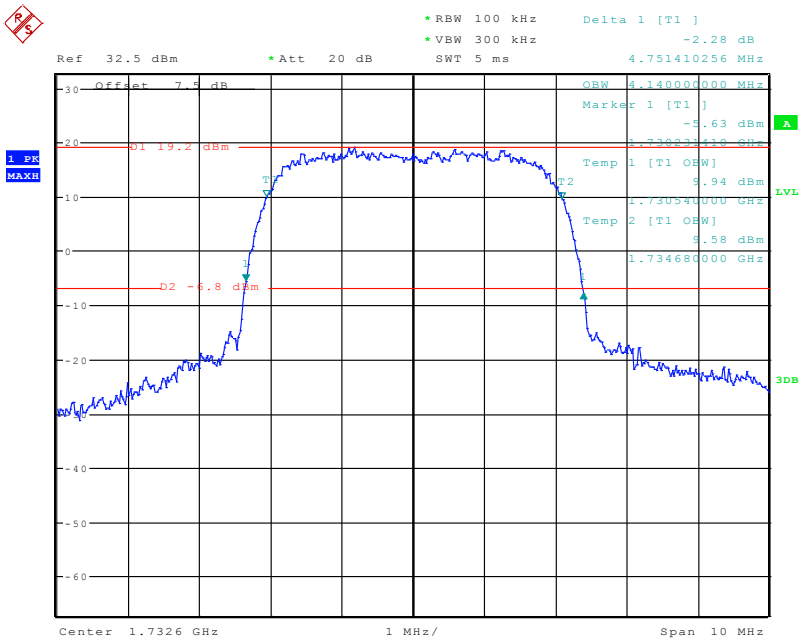

Date: 29.NOV.2020 17:10:29

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



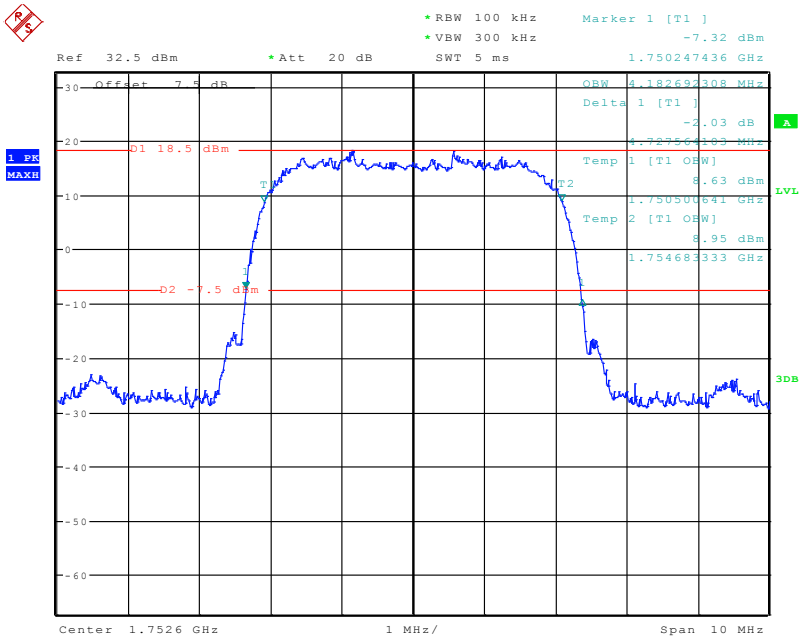

Date: 29.NOV.2020 16:58:32

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




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

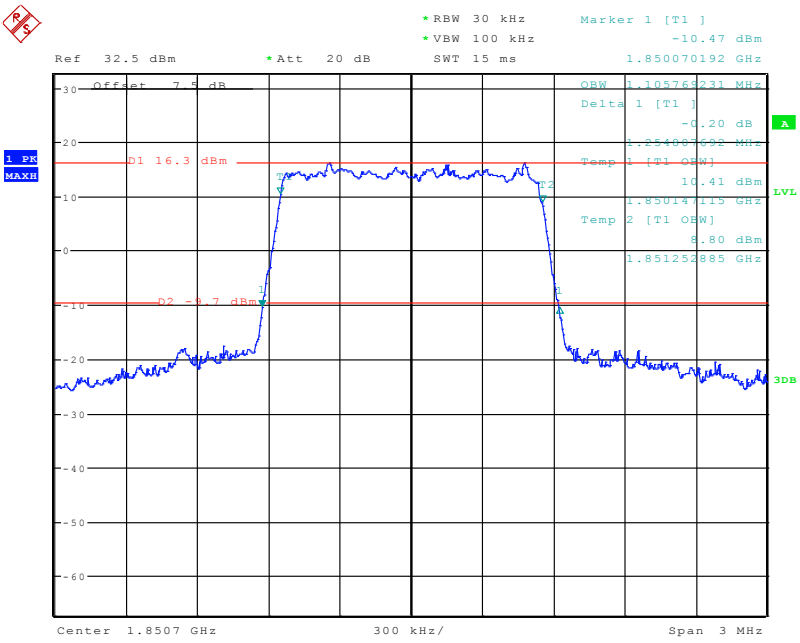
**26 dB Emissions &99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel**



## LTE Band 2:

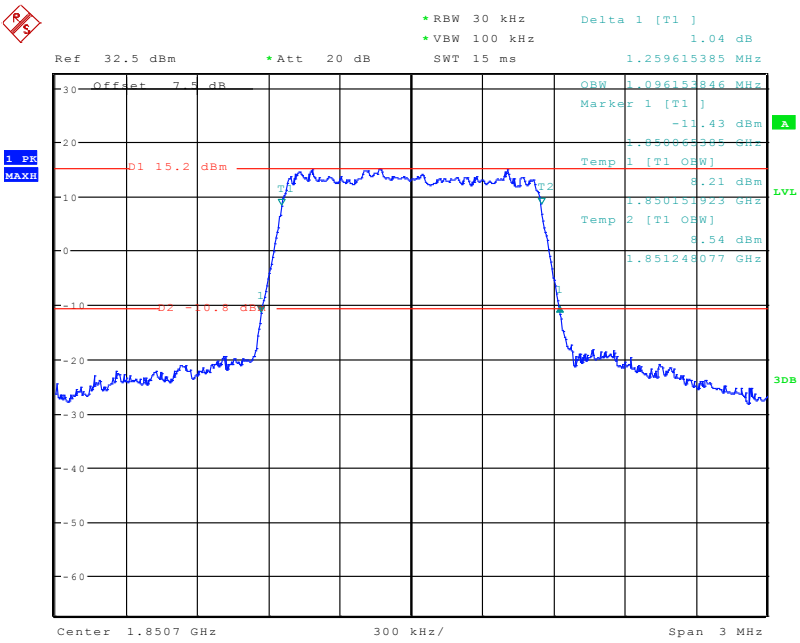
| Bandwidth (MHz) | Modulation | Channel | 99% Occupied Bandwidth (MHz) | 26 dB Emission Bandwidth (MHz) |
|---|---|---|---|---|
| 1.4 | QPSK | Low | 1.106 | 1.255 |
| | | Middle | 1.104 | 1.266 |
| | | High | 1.101 | 1.259 |
| | 16QAM | Low | 1.096 | 1.260 |
| | | Middle | 1.098 | 1.242 |
| | | High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

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



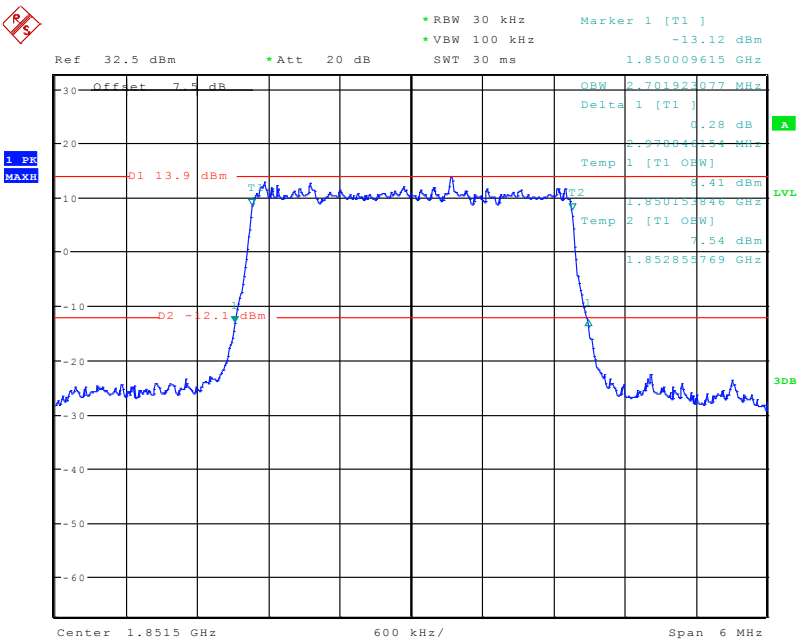

Date: 3.NOV.2020 09:27:27

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



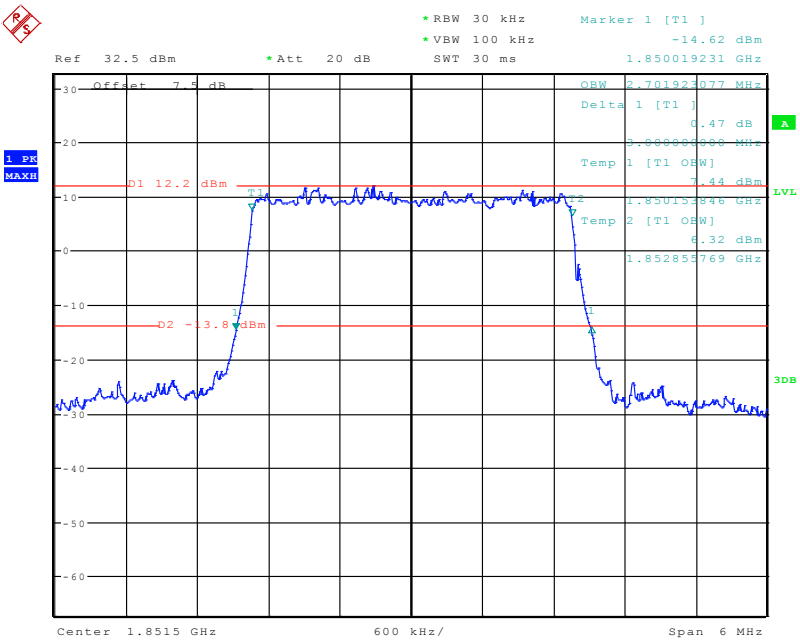

Date: 3.NOV.2020 09:26:14

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



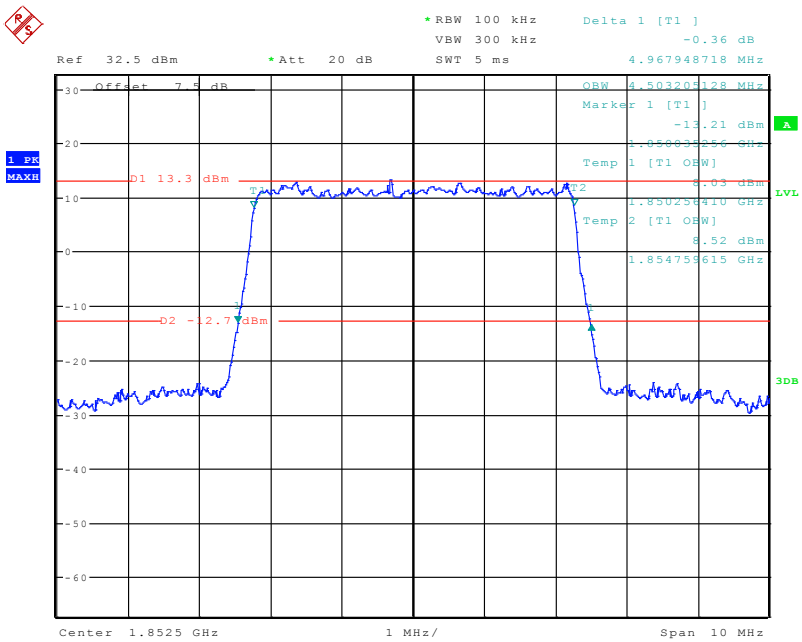

Date: 3.NOV.2020 09:28:48

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



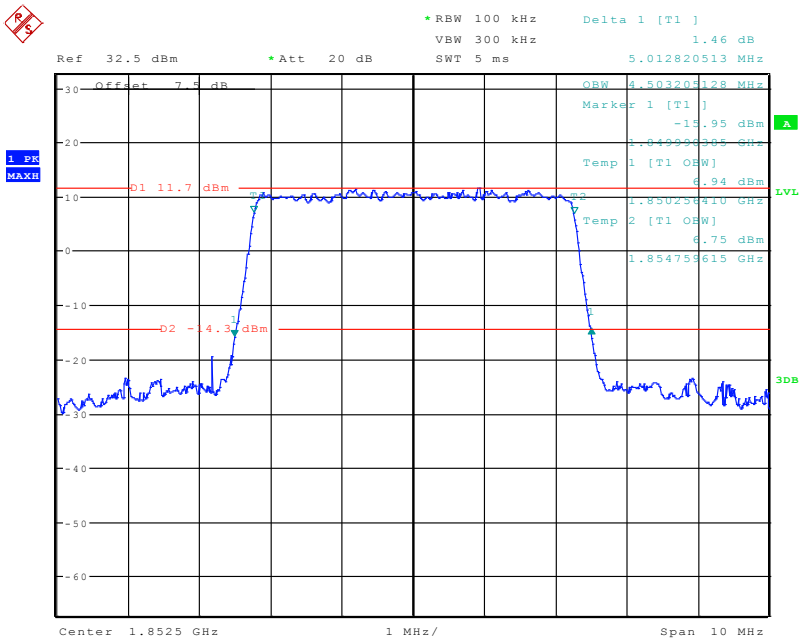

Date: 3.NOV.2020 09:30:22

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



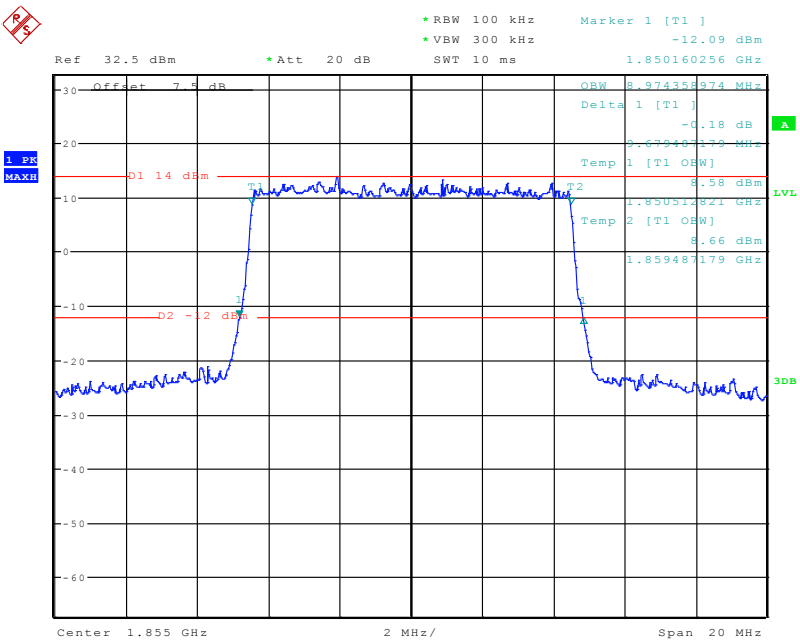

Date: 5.NOV.2020 13:10:10

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



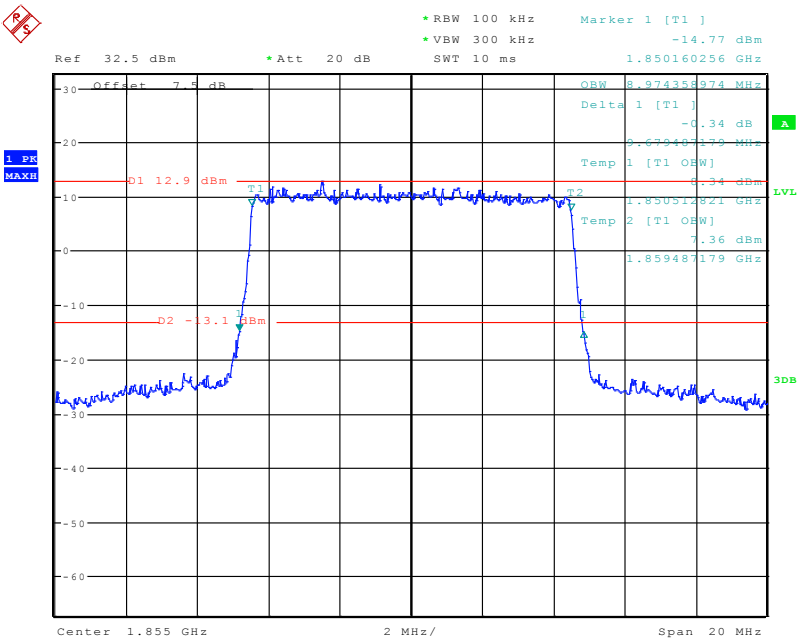

Date: 5.NOV.2020 13:11:33

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



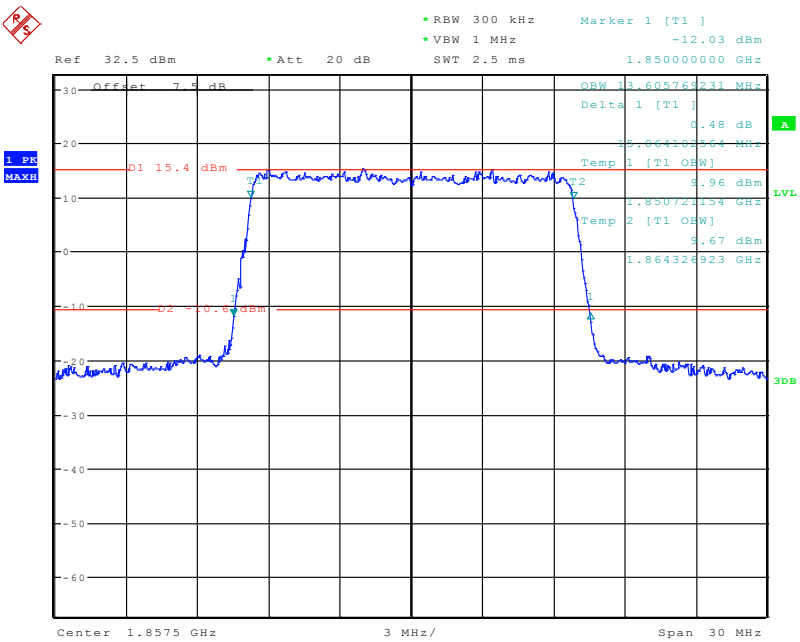

Date: 3.NOV.2020 08:52:42

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



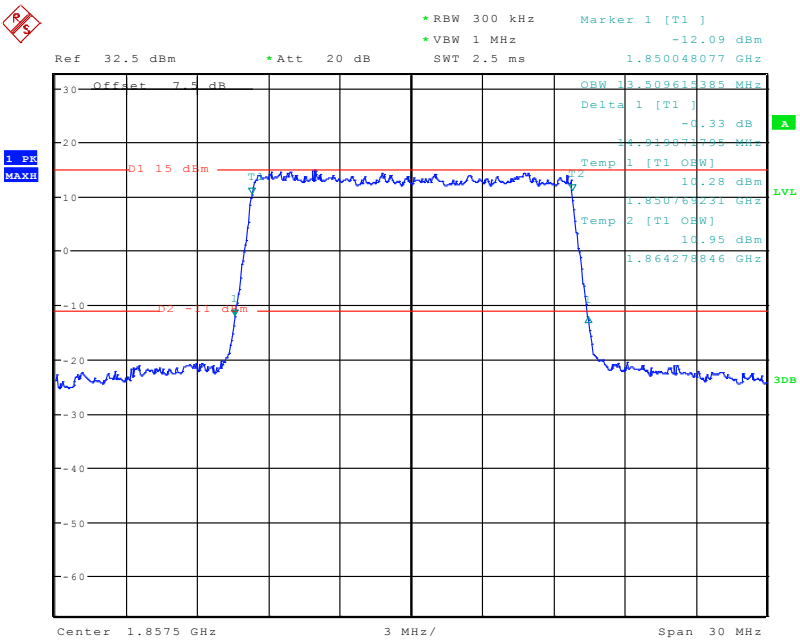

Date: 3.NOV.2020 08:54:15

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



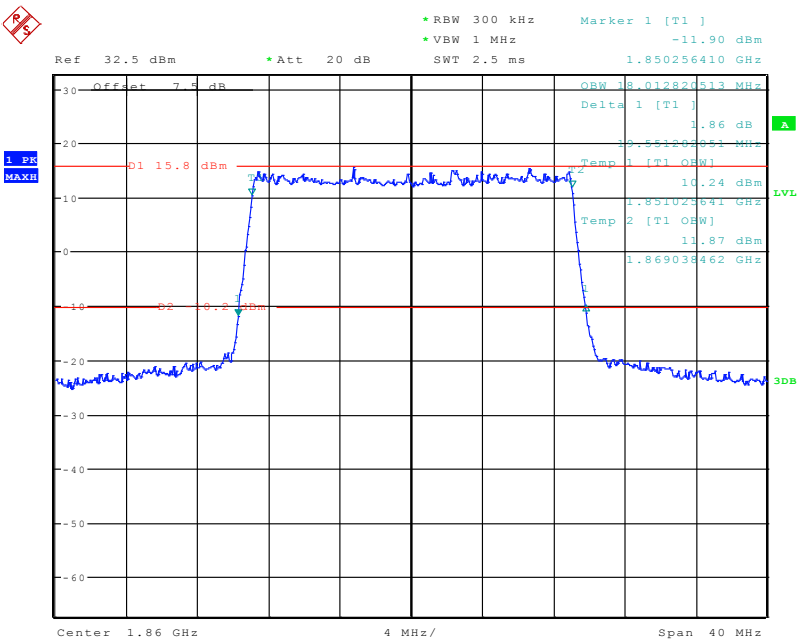

Date: 3.NOV.2020 09:41:30

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



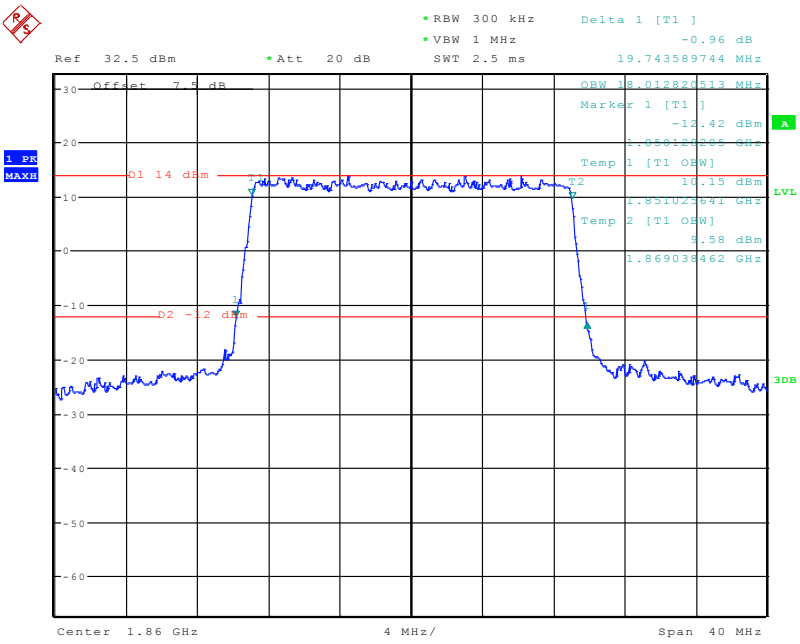

Date: 3.NOV.2020 09:43:19

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



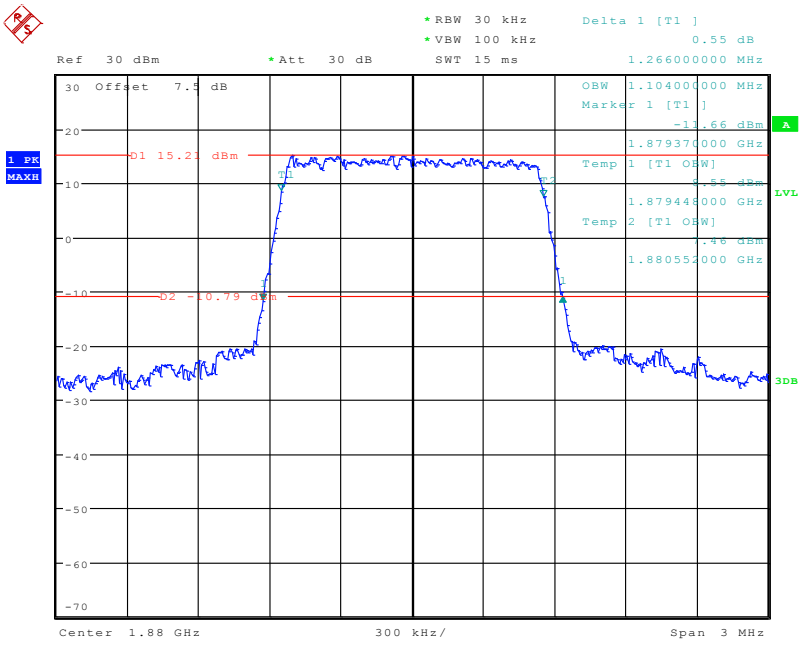

Date: 3.NOV.2020 09:52:08

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



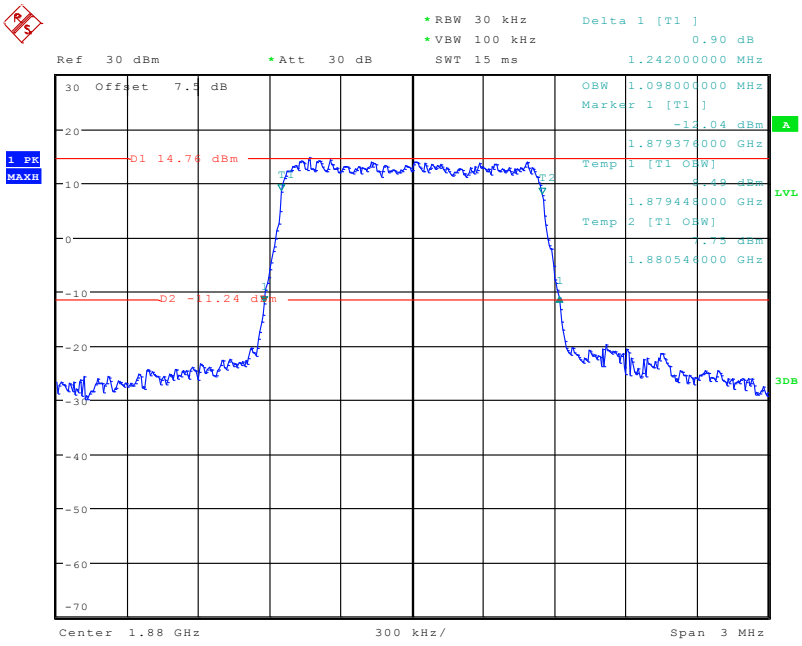

Date: 3.NOV.2020 09:50:57

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



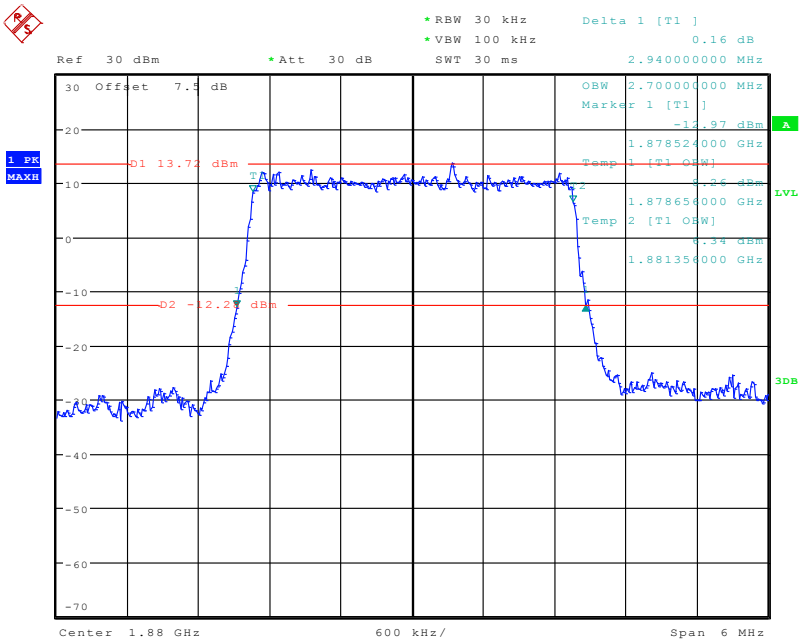

Date: 13.MAR.2020 09:38:00

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



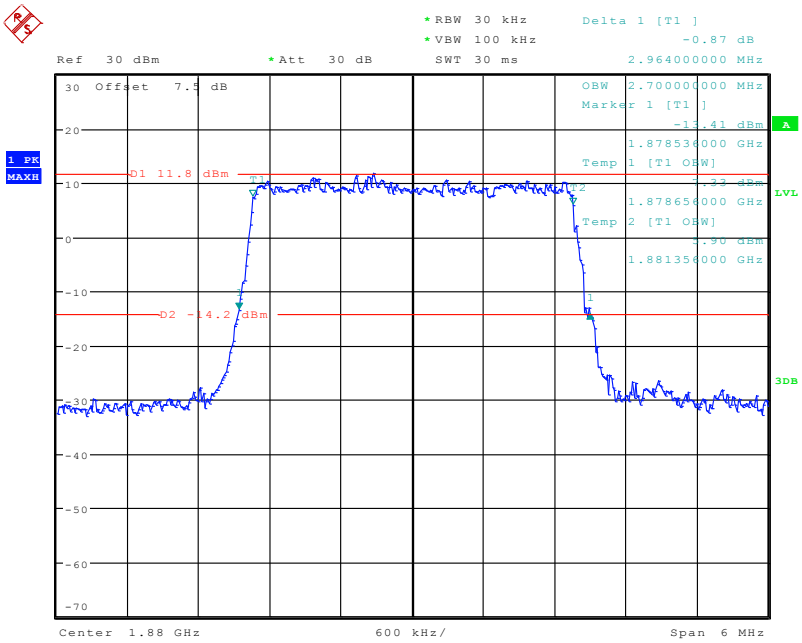

Date: 13.MAR.2020 09:38:17

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



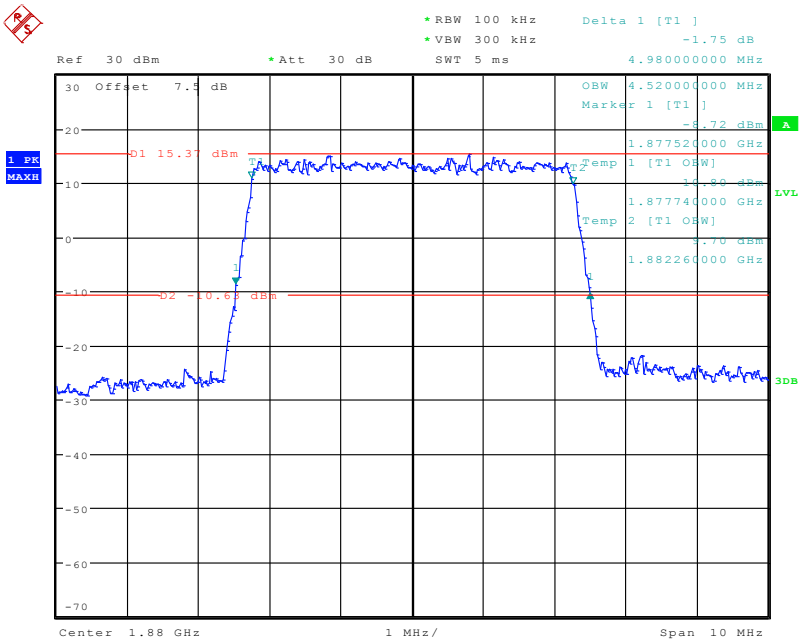

Date: 13.MAR.2020 09:38:36

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



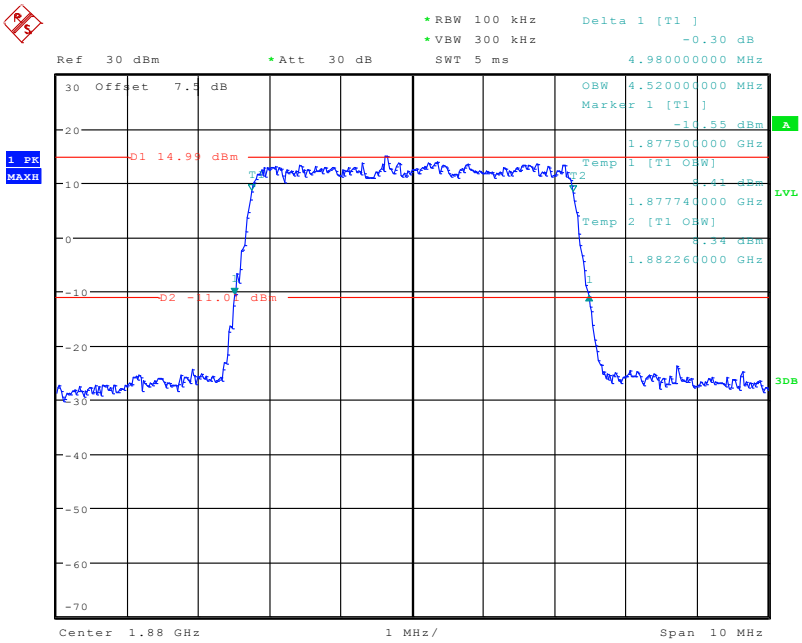

Date: 13.MAR.2020 09:38:52

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



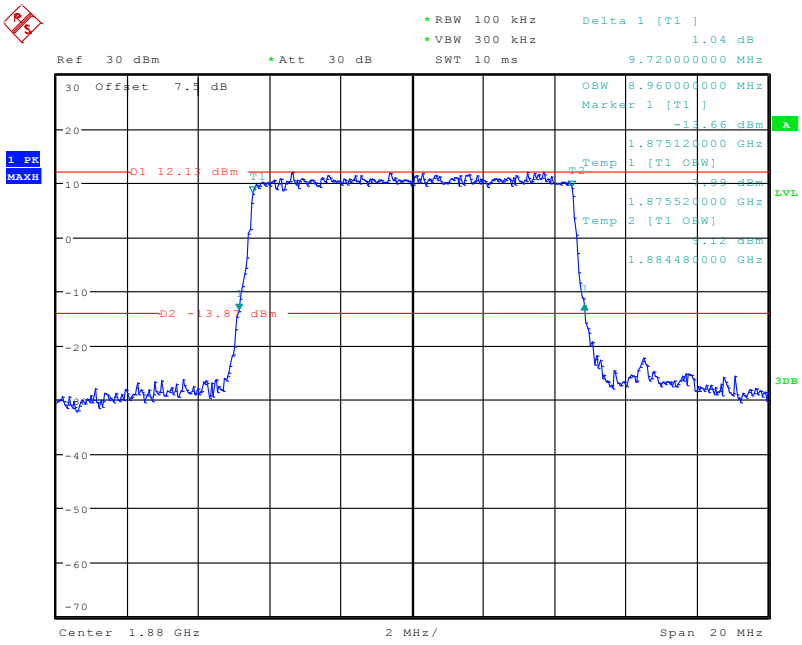

Date: 13.MAR.2020 09:39:15

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

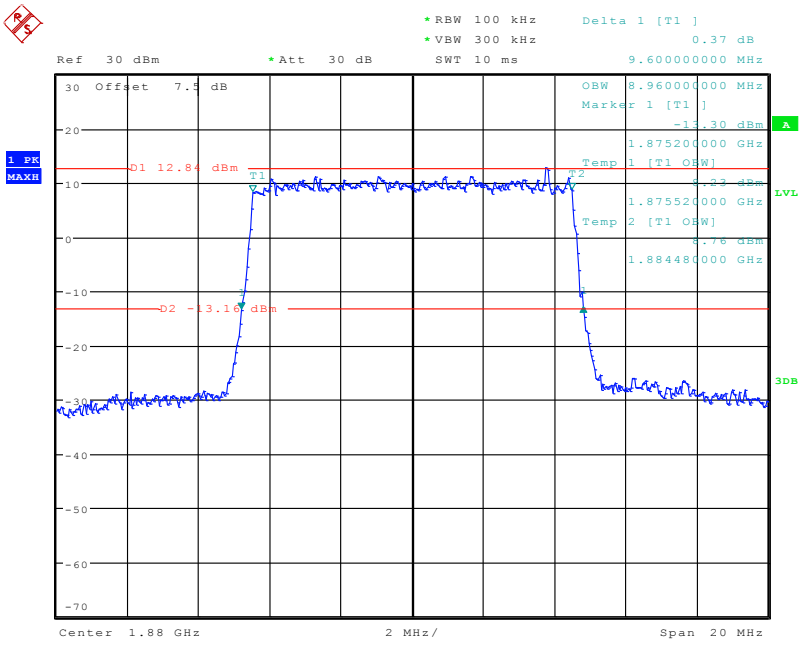



Date: 13.MAR.2020 09:39:36

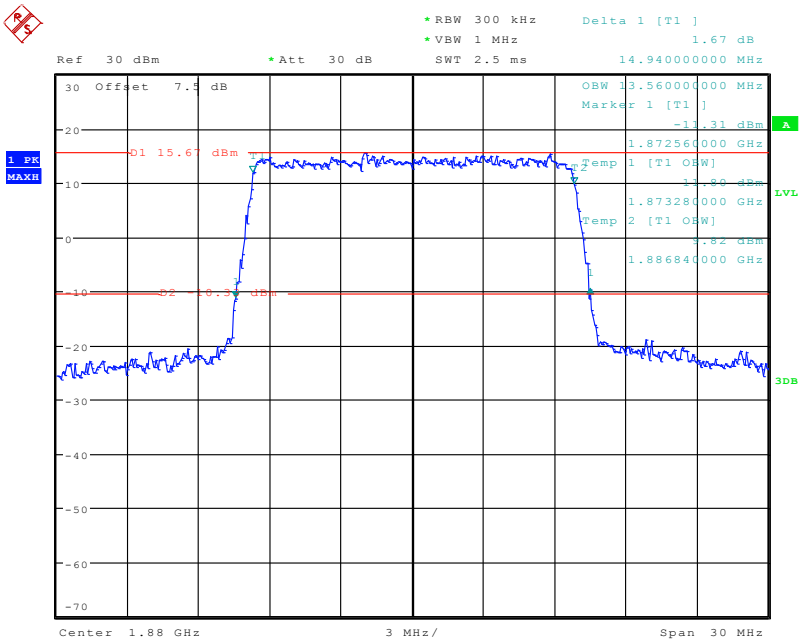
## QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel




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

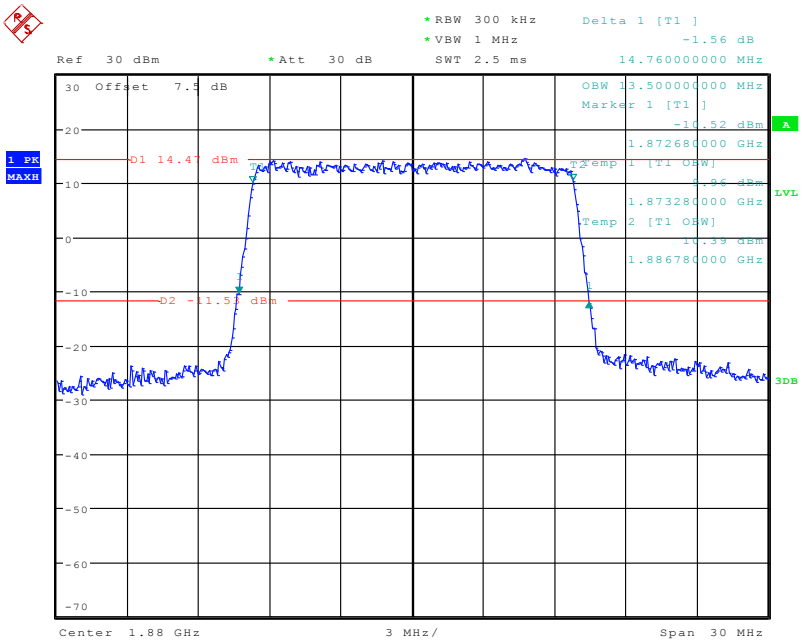


## QPSK (15.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



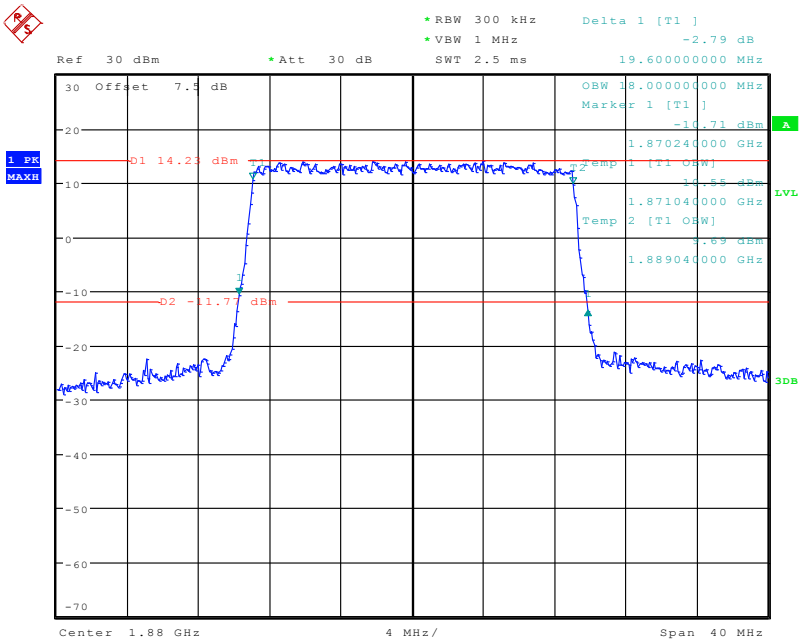

Date: 13.MAR.2020 09:40:46

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



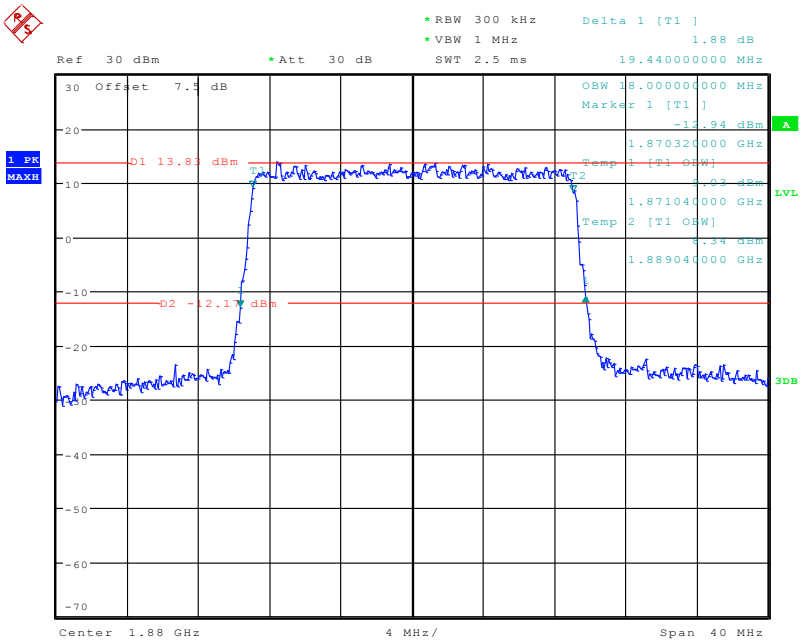

Date: 13.MAR.2020 09:41:10

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



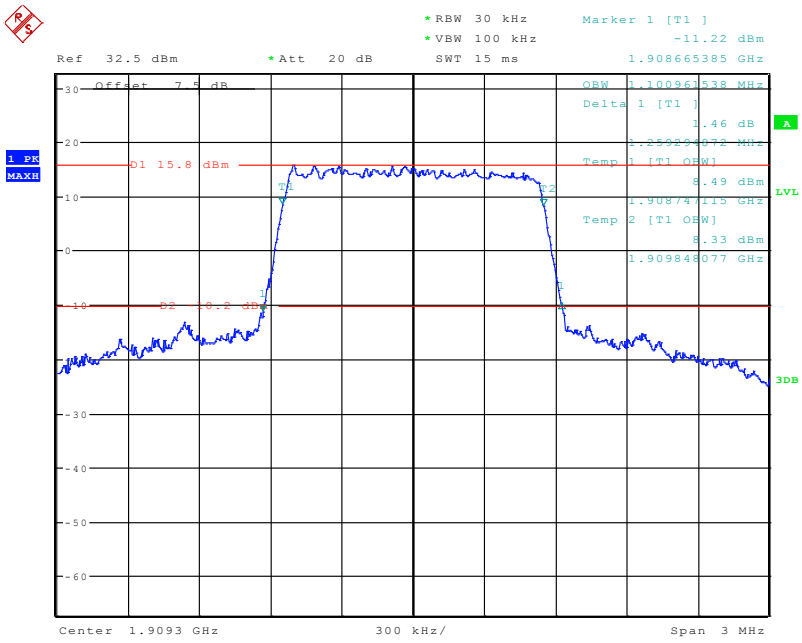

Date: 13.MAR.2020 09:41:36

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



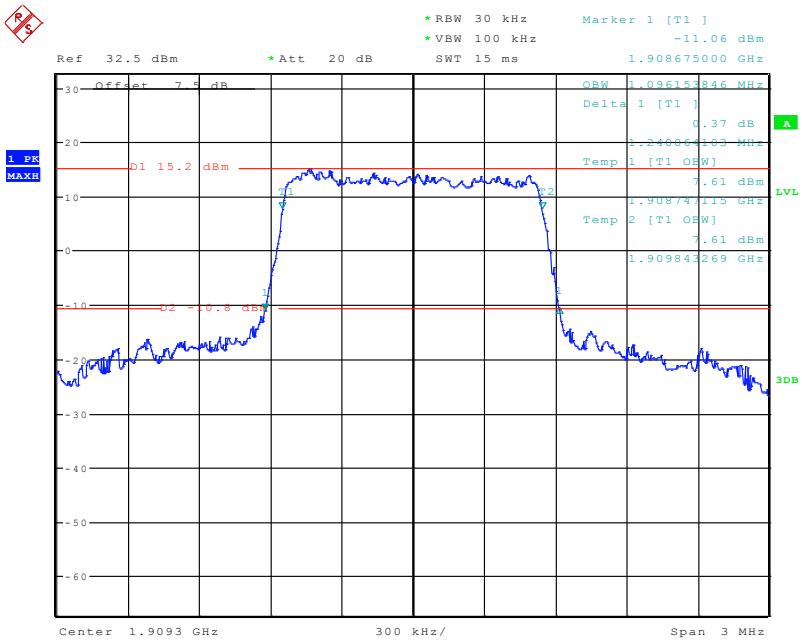

Date: 13.MAR.2020 09:42:00

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



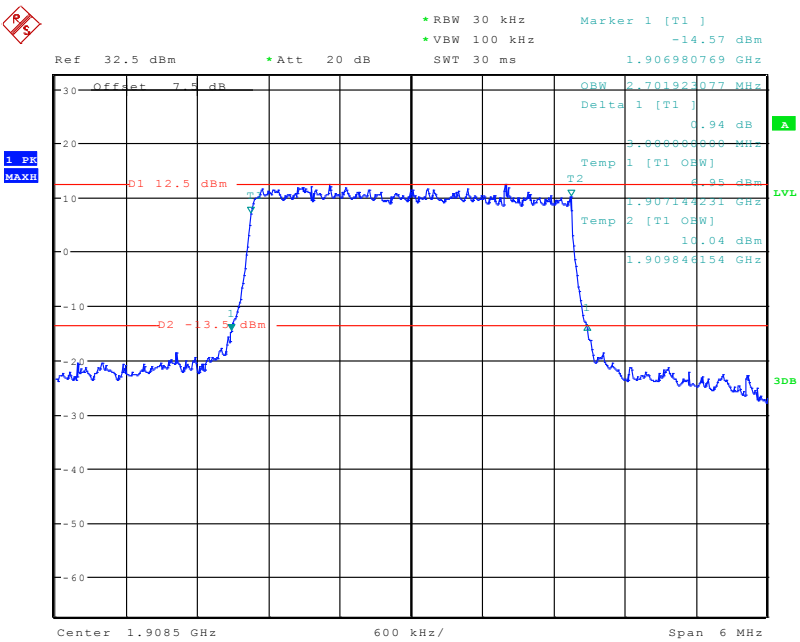

Date: 3.NOV.2020 09:22:38

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



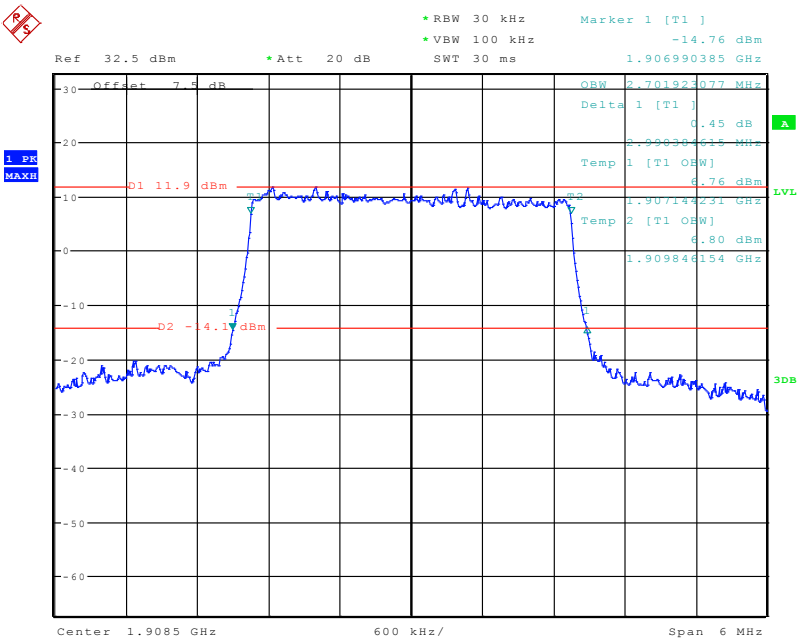

Date: 3.NOV.2020 09:24:15

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



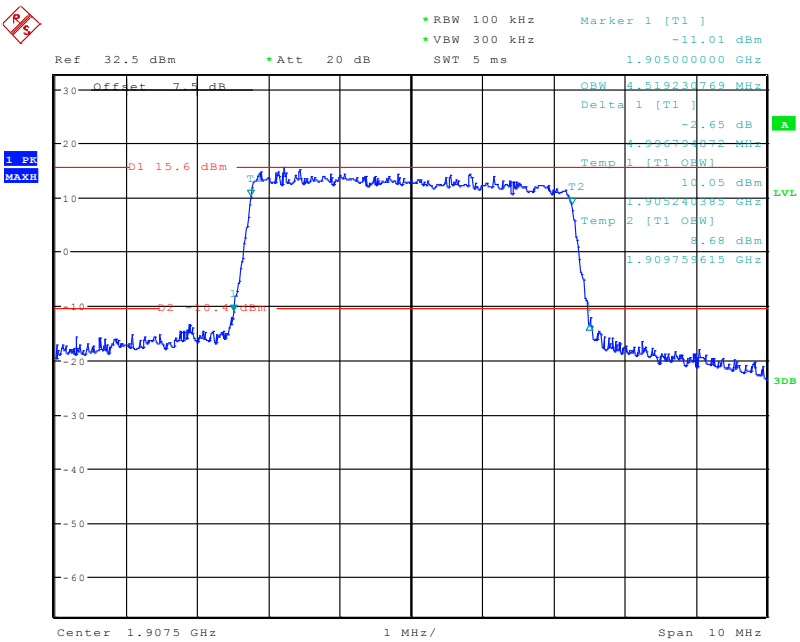

Date: 3.NOV.2020 09:32:48

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



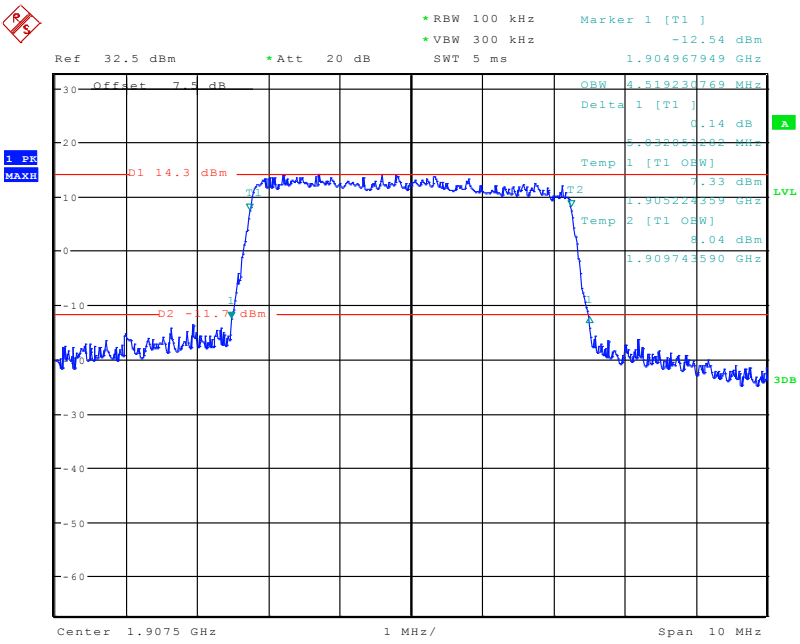

Date: 3.NOV.2020 09:31:54

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



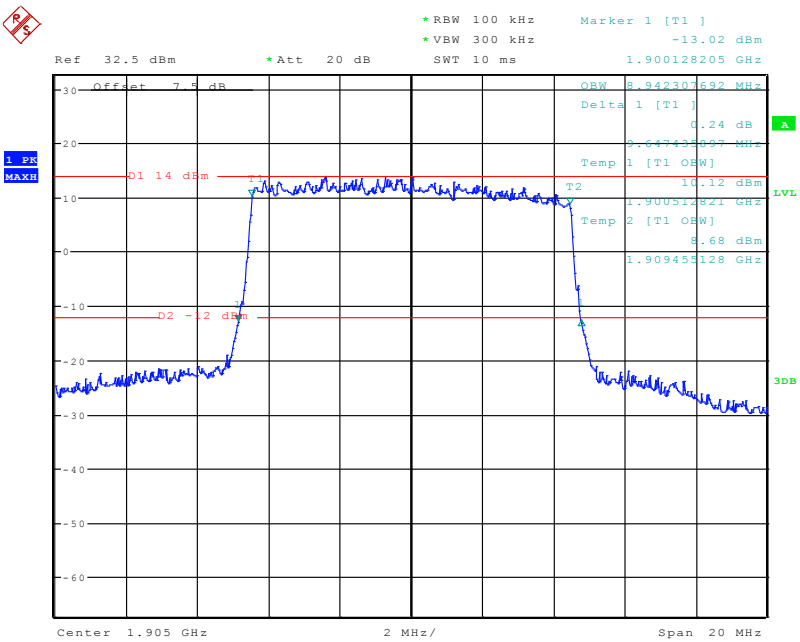

Date: 3.NOV.2020 09:35:57

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



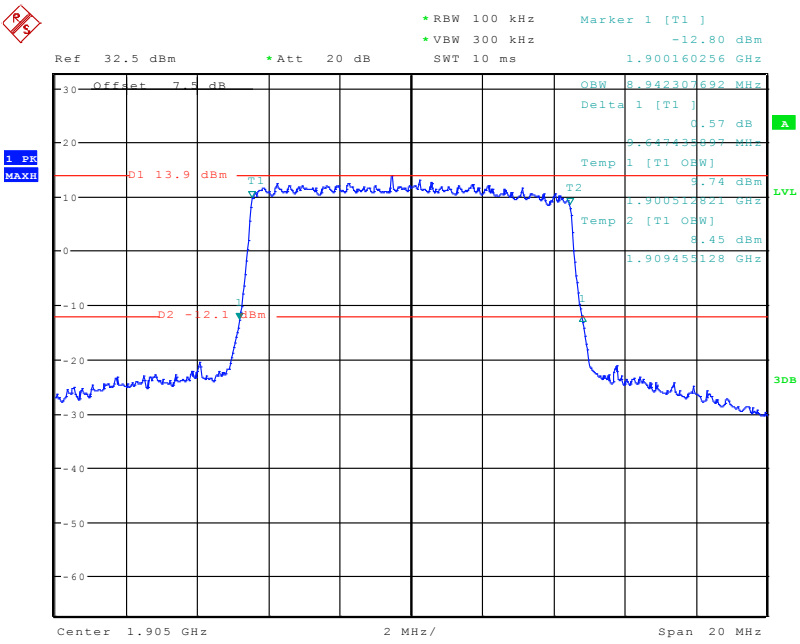

Date: 3.NOV.2020 09:37:34

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



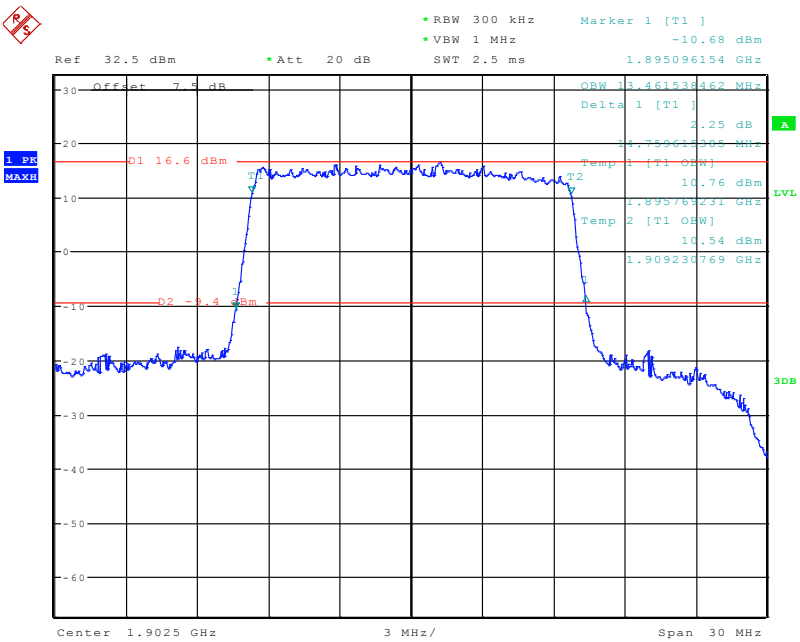

Date: 3.NOV.2020 09:20:39

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



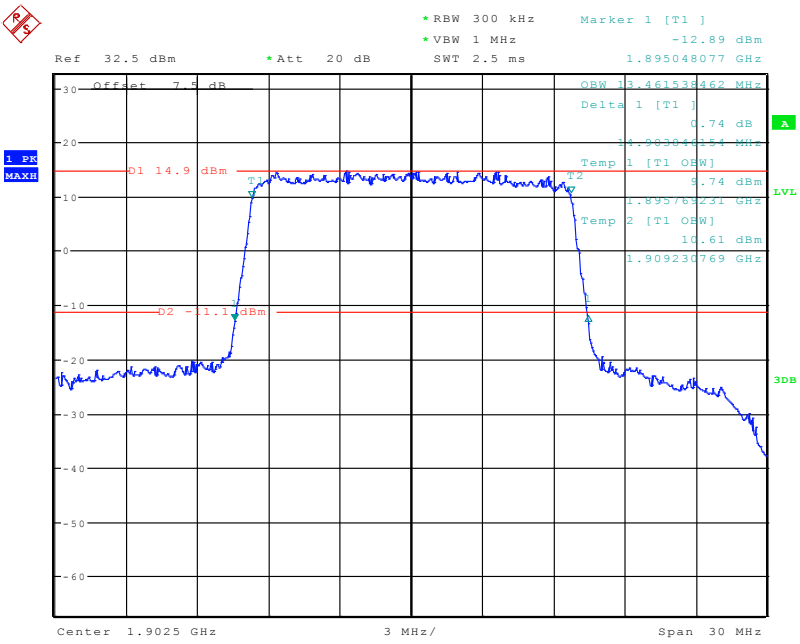

Date: 3.NOV.2020 09:01:52

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



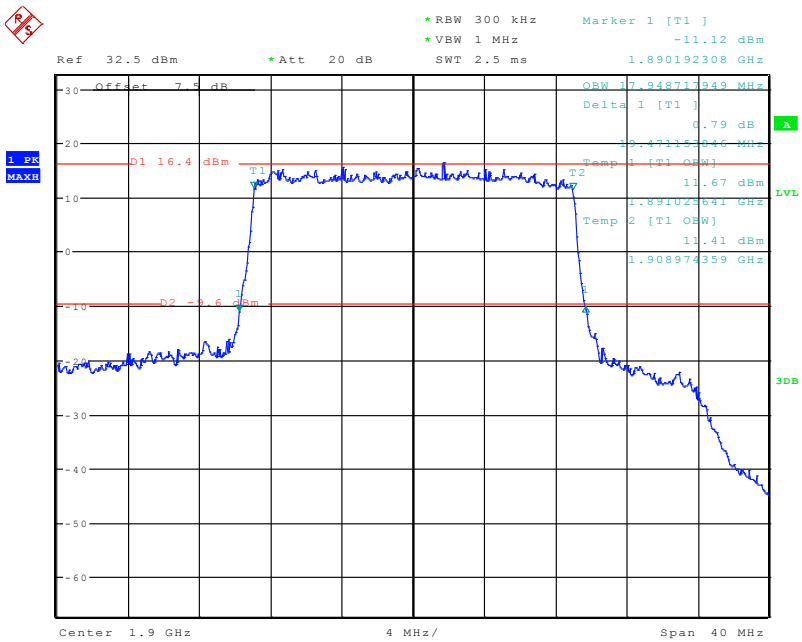

Date: 3.NOV.2020 09:46:36

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



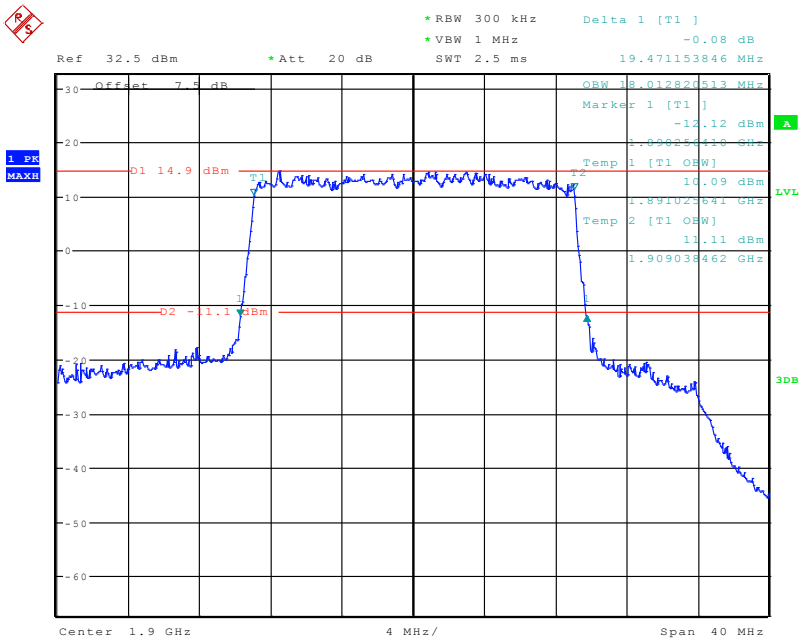

Date: 3.NOV.2020 09:44:37

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




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

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

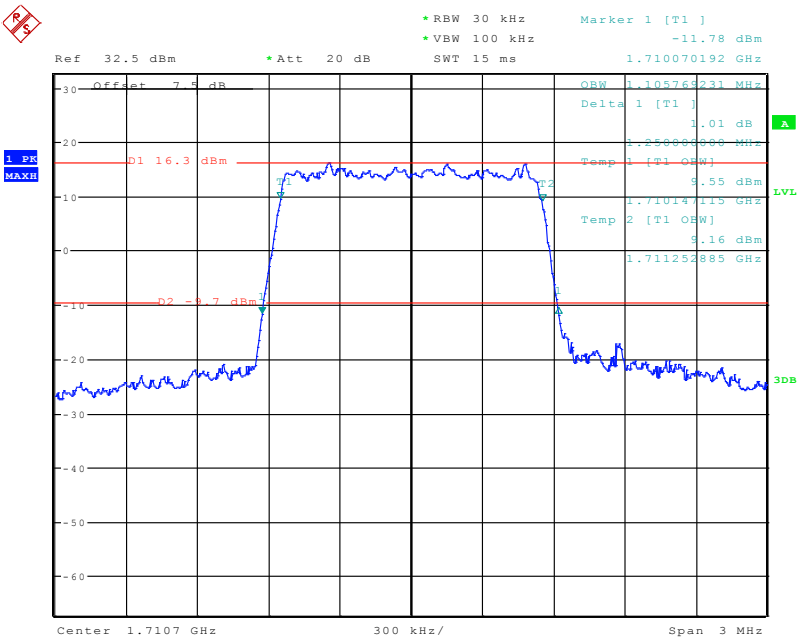



Date: 3.NOV.2020 09:49:27

**Band 4:**

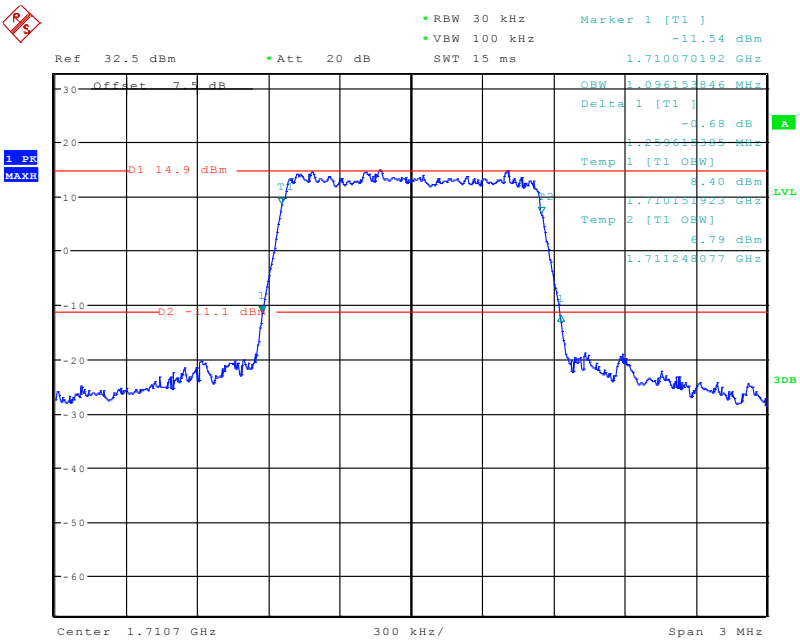
| Bandwidth (MHz) | Modulation | Channel | 99% Occupied Bandwidth (MHz) | 26 dB Emission Bandwidth (MHz) |
|---|---|---|---|---|
| 1.4 | QPSK | Low | 1.106 | 1.250 |
| | | Middle | 1.098 | 1.254 |
| | | High | 1.101 | 1.253 |
| | 16QAM | Low | 1.096 | 1.260 |
| | | Middle | 1.098 | 1.248 |
| | | High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

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



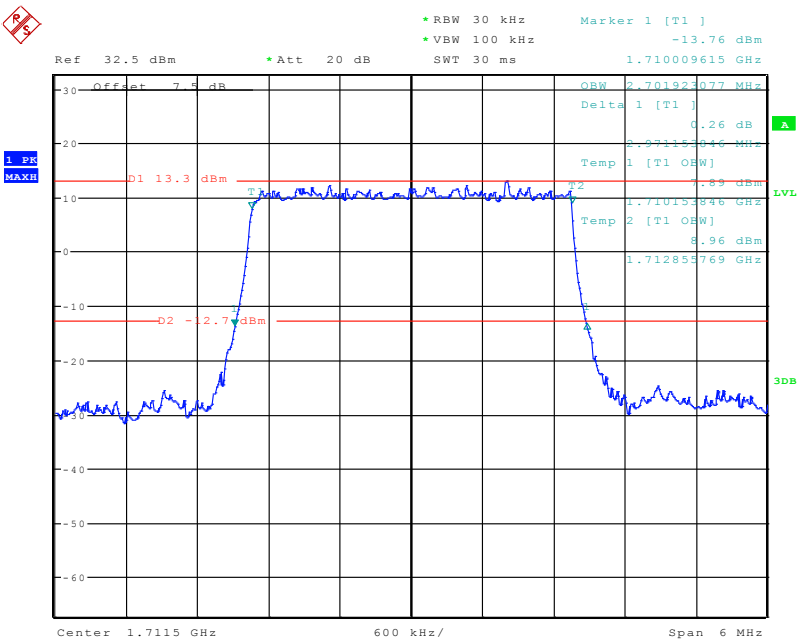

Date: 3.NOV.2020 11:03:02

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



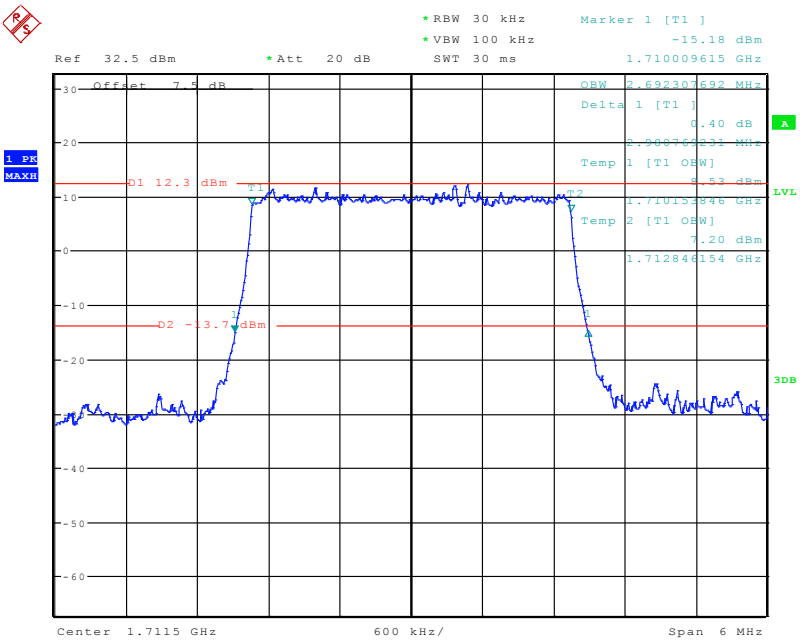

Date: 3.NOV.2020 11:01:56

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



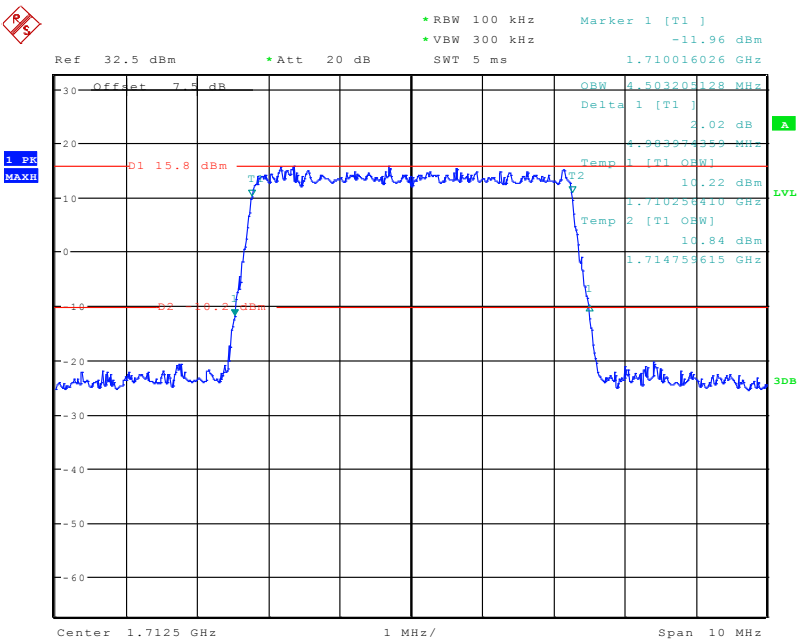

Date: 3.NOV.2020 10:54:30

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



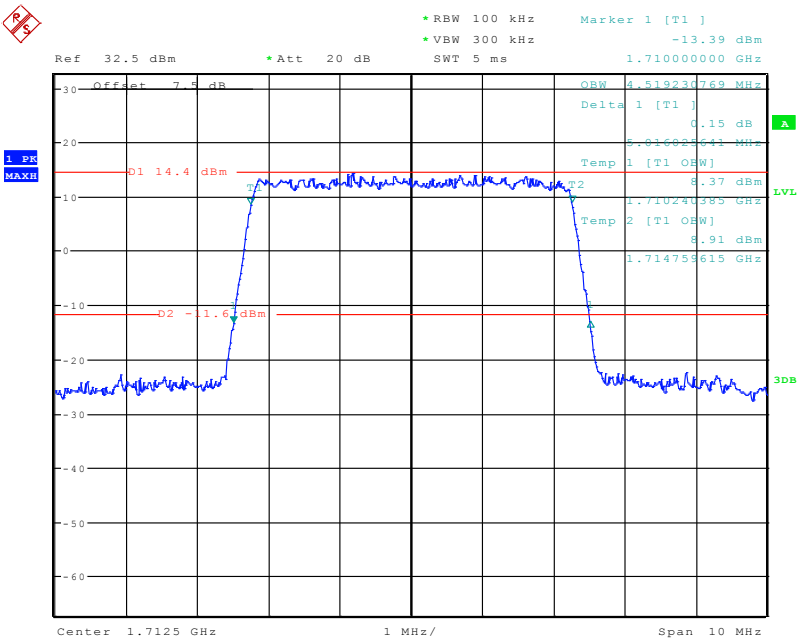

Date: 3.NOV.2020 10:55:48

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



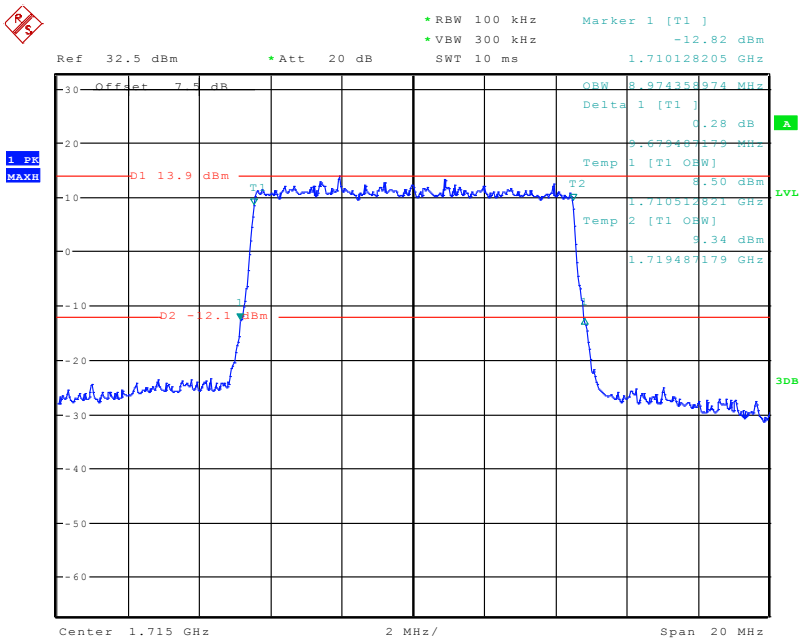

Date: 3.NOV.2020 10:53:11

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



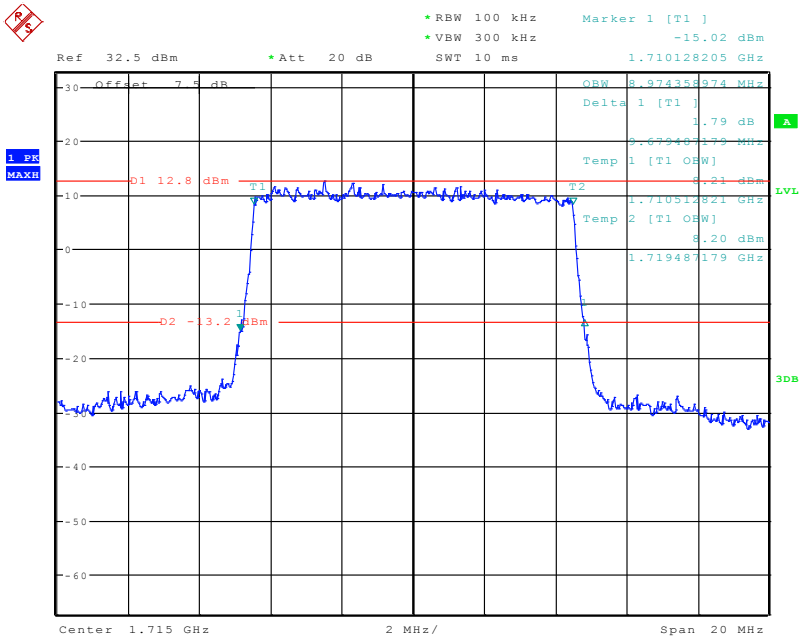

Date: 3.NOV.2020 10:52:14

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



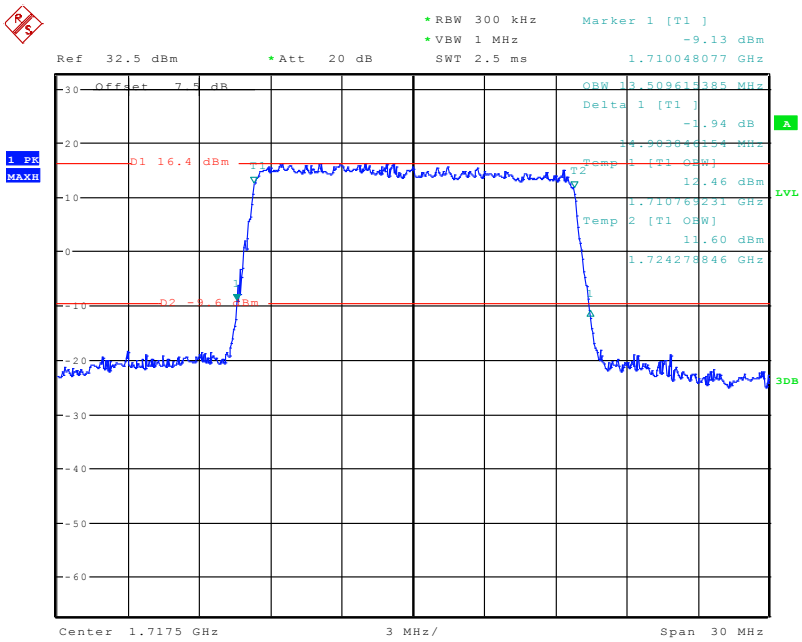

Date: 3.NOV.2020 10:45:48

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



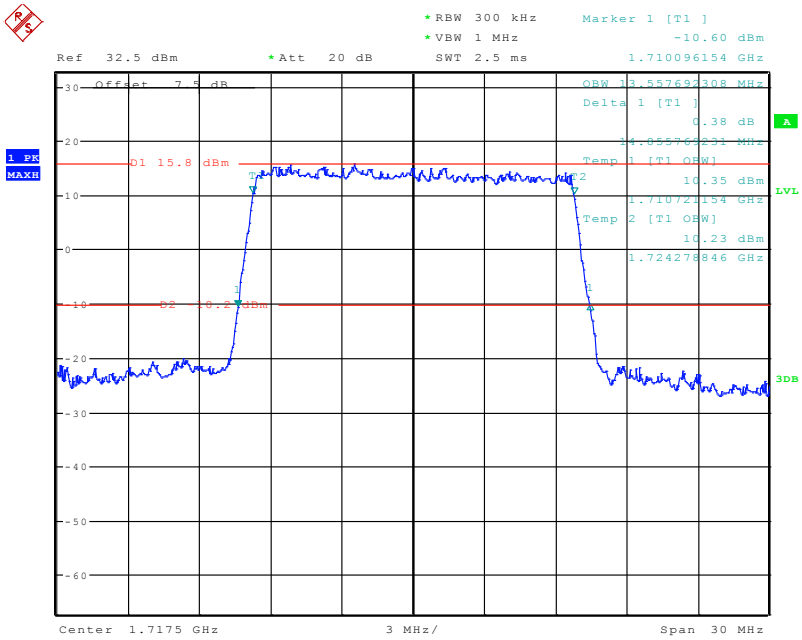

Date: 3.NOV.2020 10:47:15

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



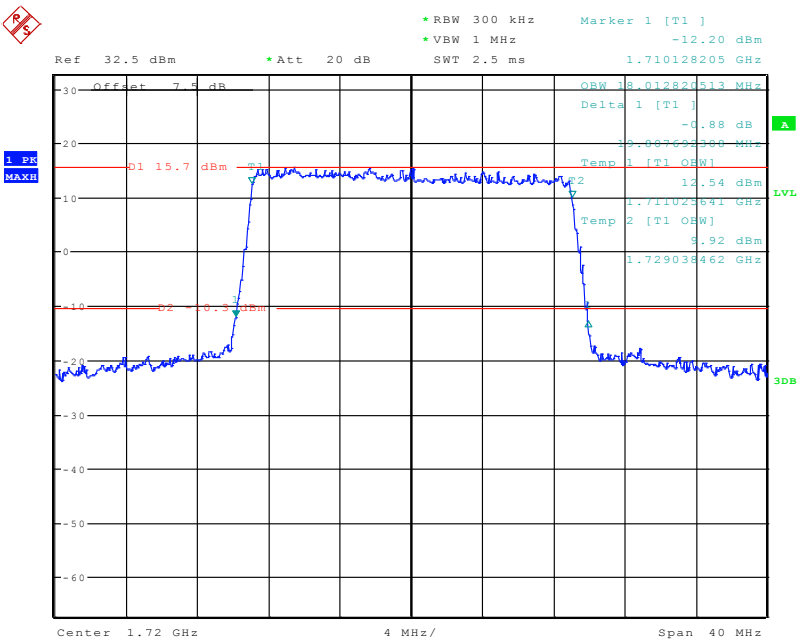

Date: 3.NOV.2020 10:43:57

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



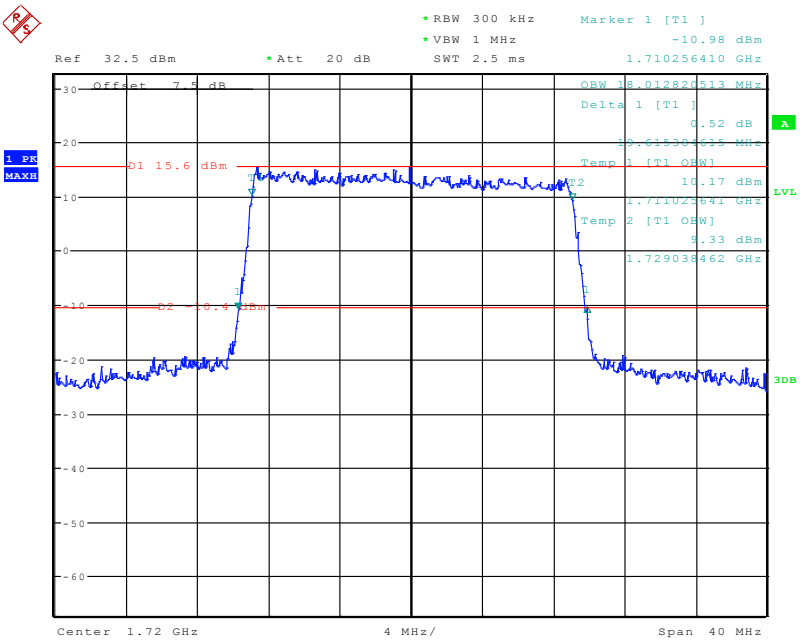

Date: 3.NOV.2020 10:42:44

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



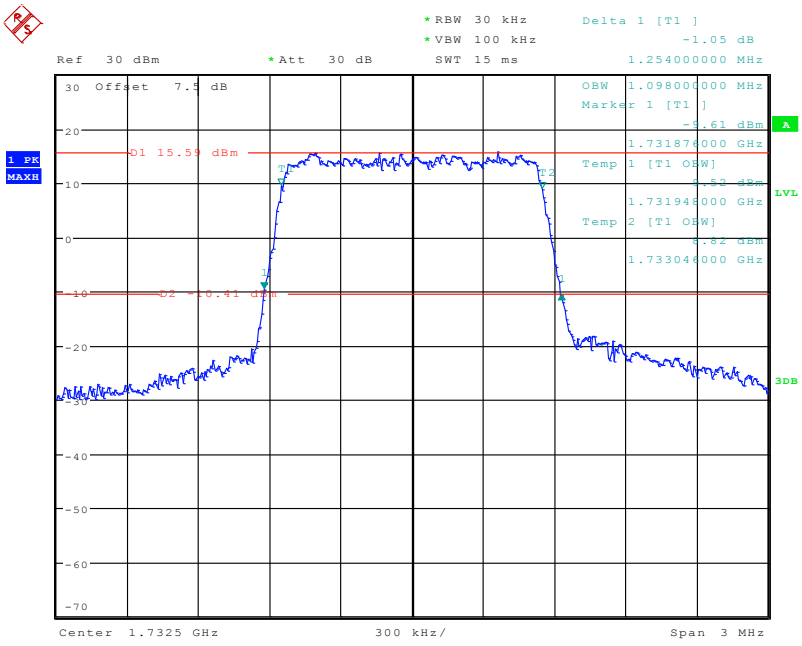

Date: 3.NOV.2020 09:58:50

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



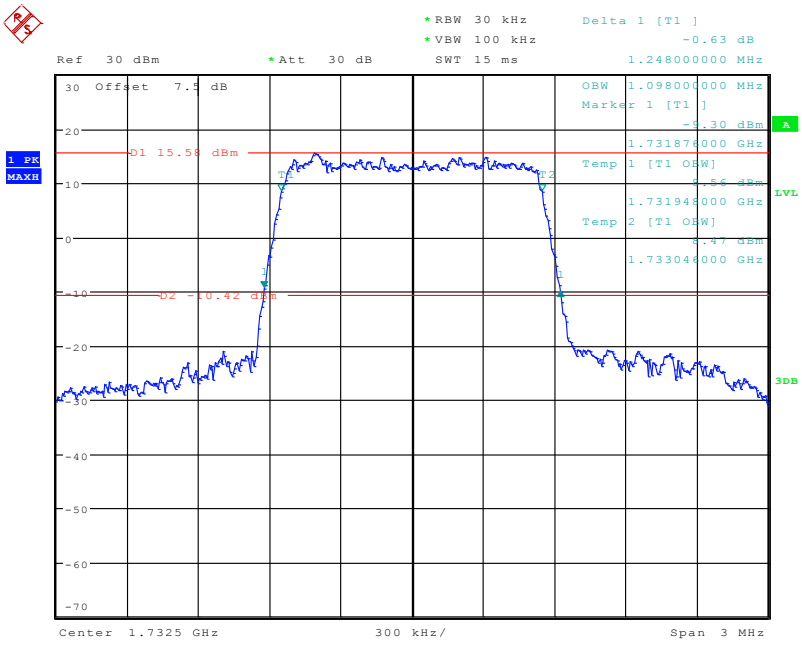

Date: 3.NOV.2020 10:00:01

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



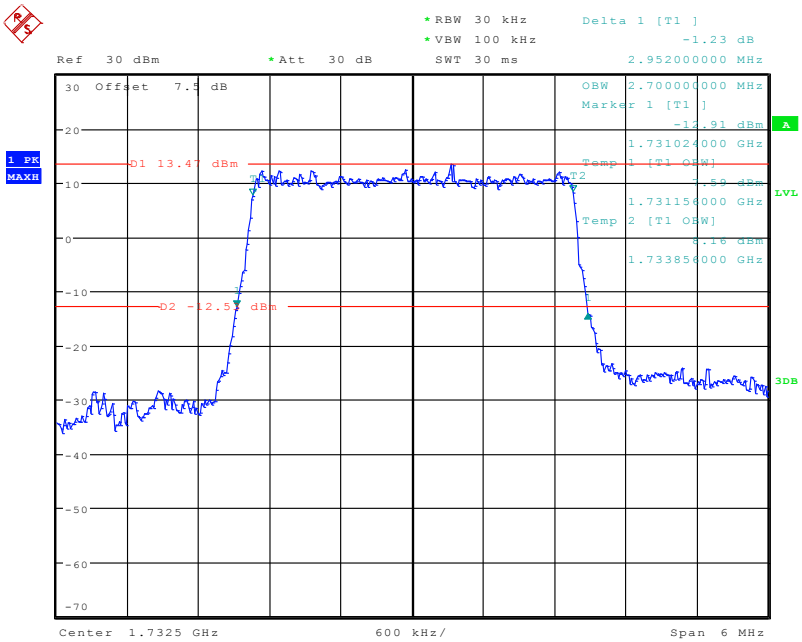

Date: 13.MAR.2020 09:42:19

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



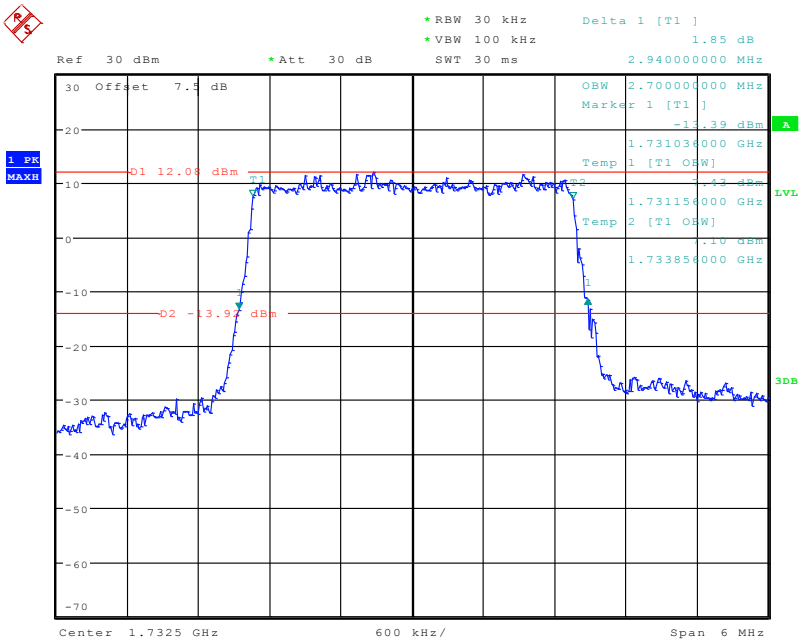

Date: 13.MAR.2020 09:42:38

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



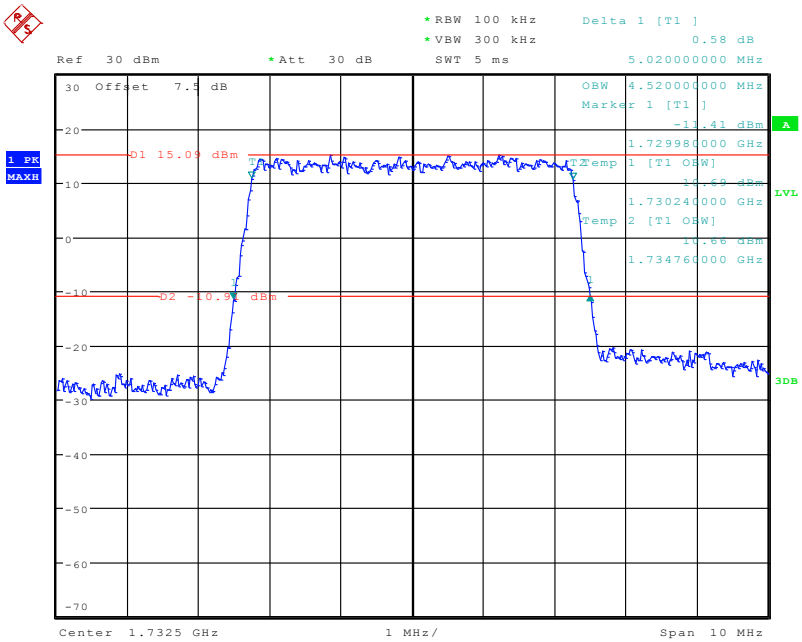

Date: 13.MAR.2020 09:42:57

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



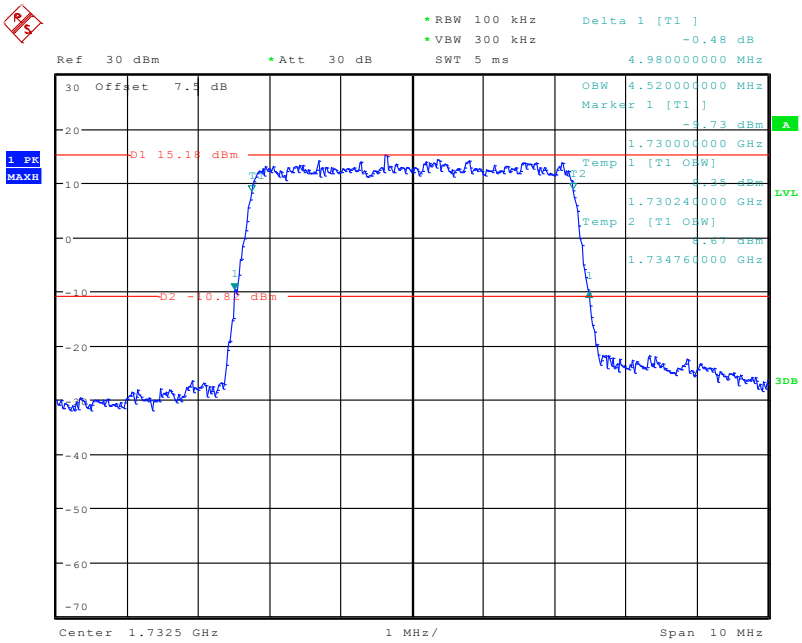

Date: 13.MAR.2020 09:43:13

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



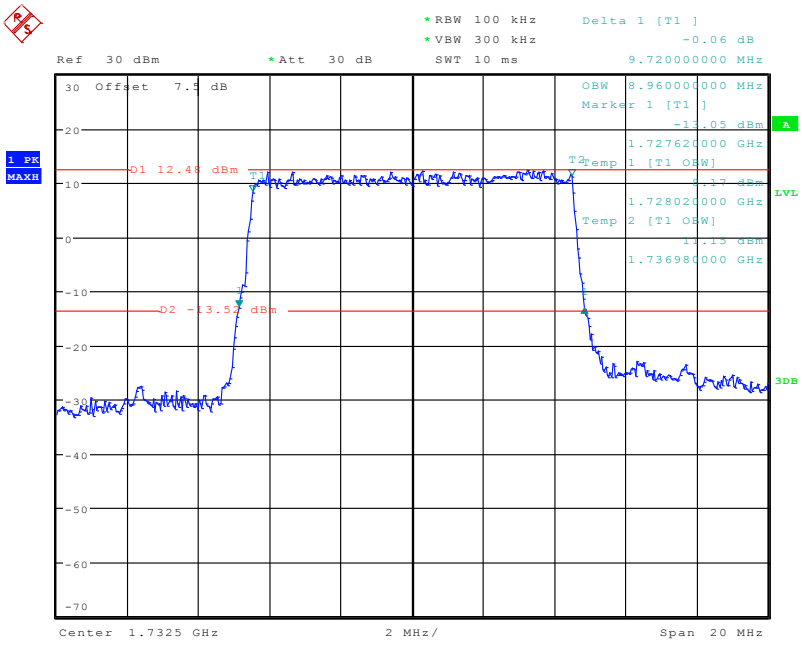

Date: 13.MAR.2020 09:43:33

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



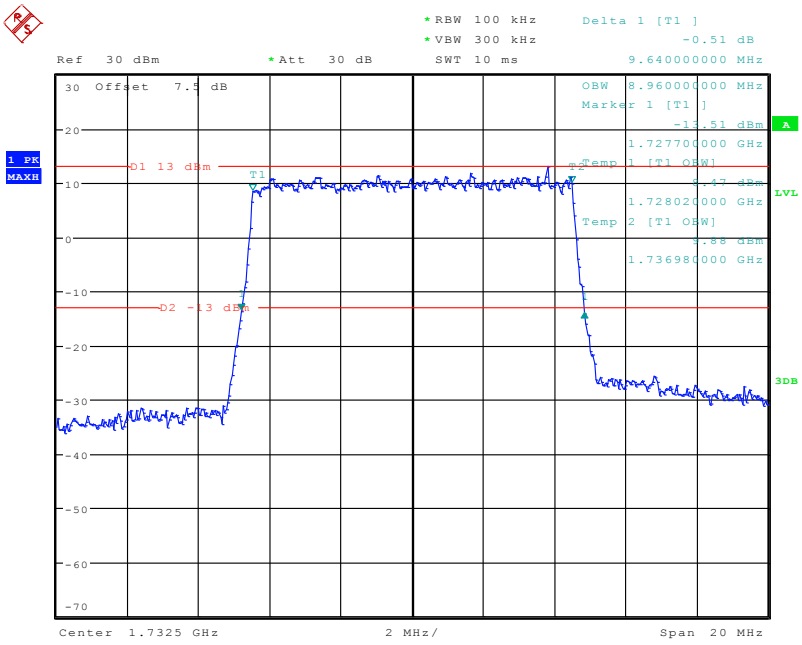

Date: 13.MAR.2020 09:43:53

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



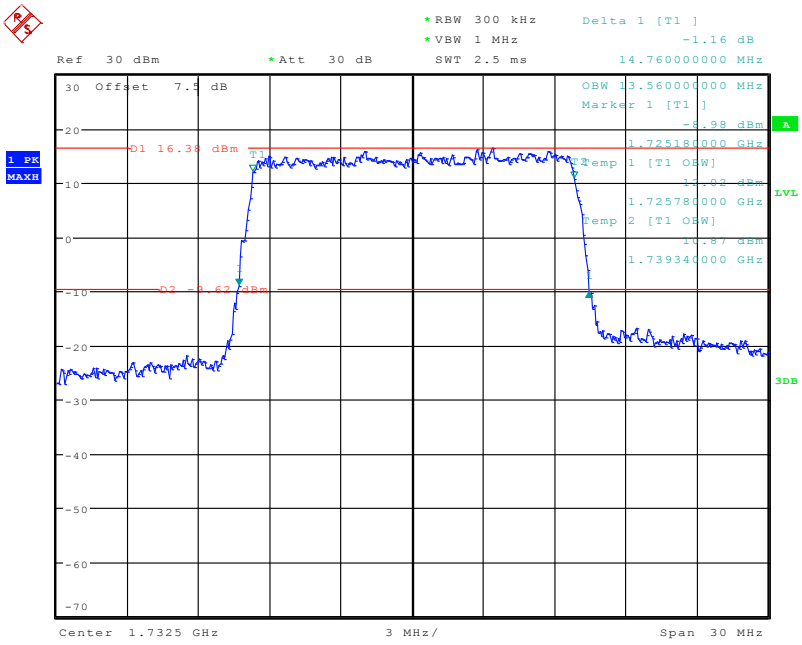

Date: 13.MAR.2020 09:44:16

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



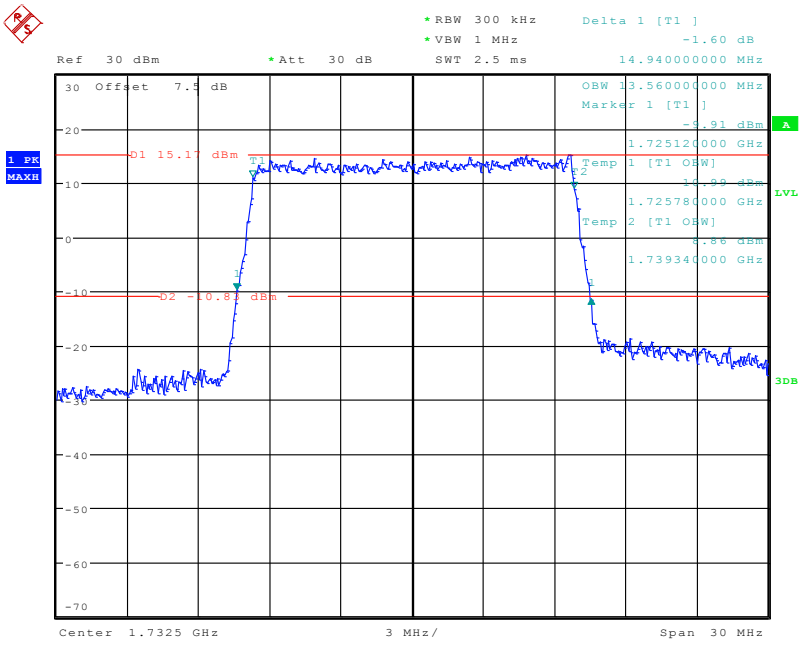

Date: 13.MAR.2020 09:44:37

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



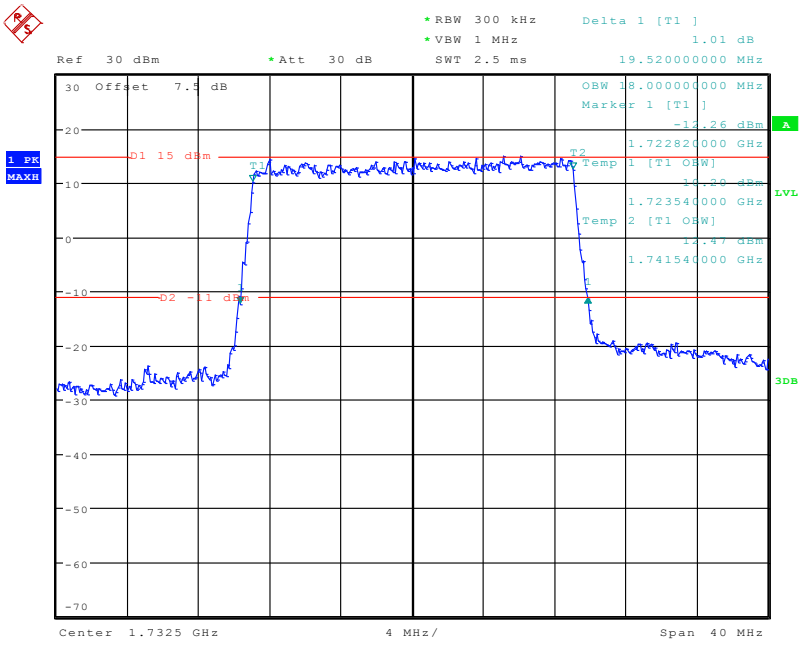

Date: 13.MAR.2020 09:45:03

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



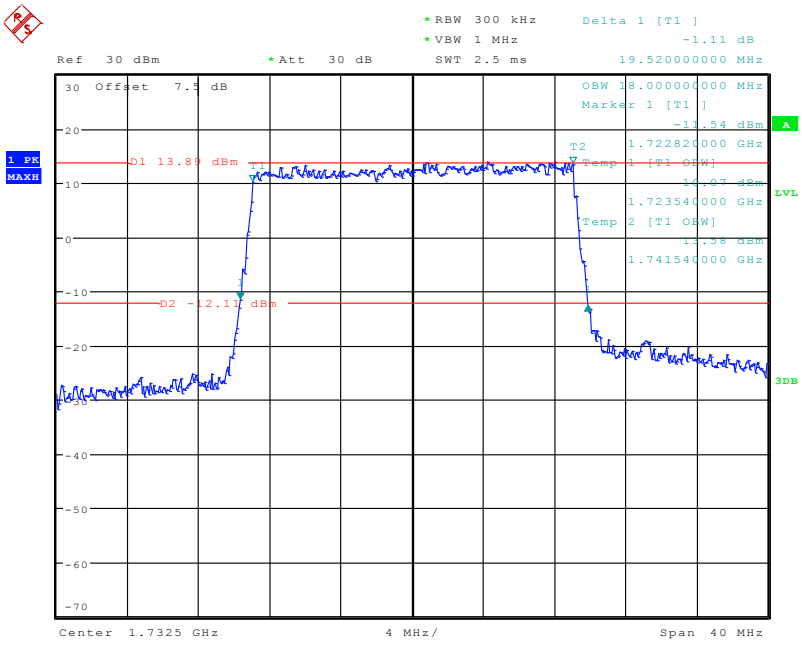

Date: 13.MAR.2020 09:45:24

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



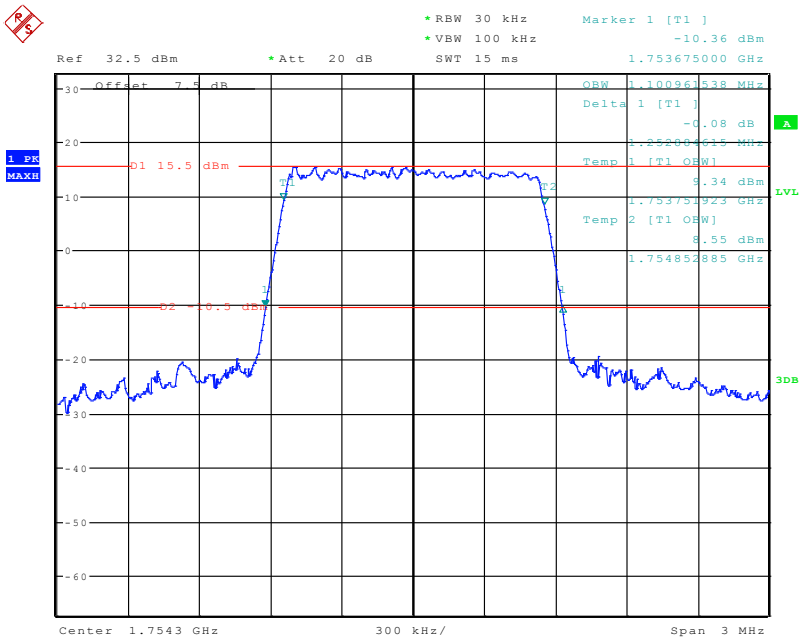

Date: 13.MAR.2020 09:45:47

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



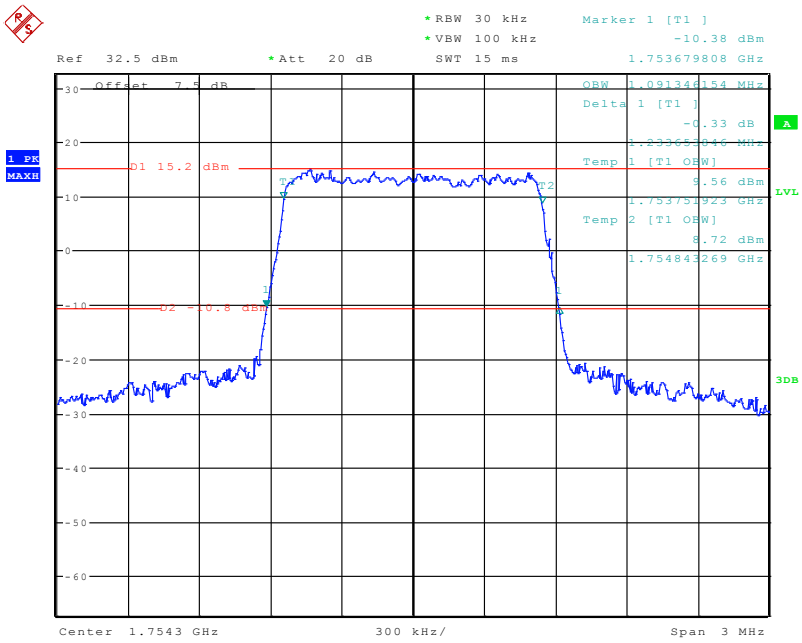

Date: 13.MAR.2020 09:46:11

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



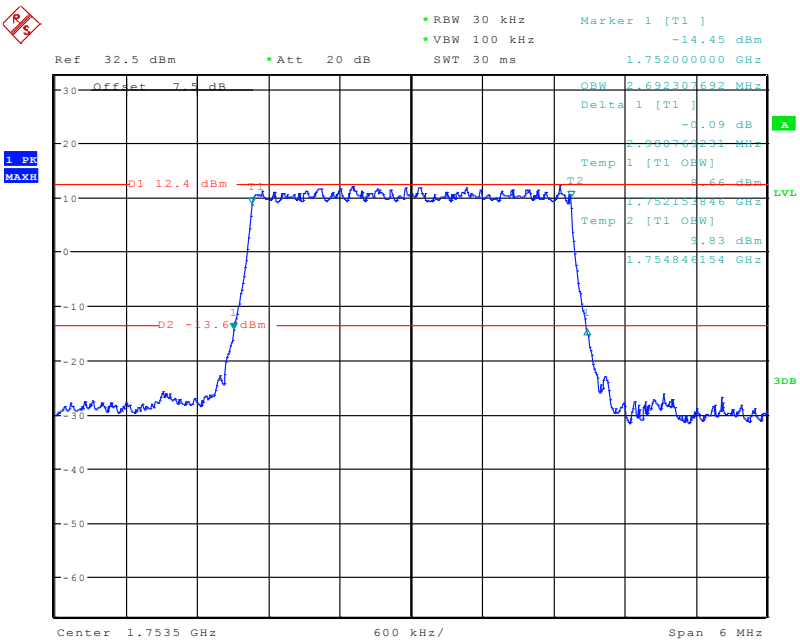

Date: 3.NOV.2020 10:59:39

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



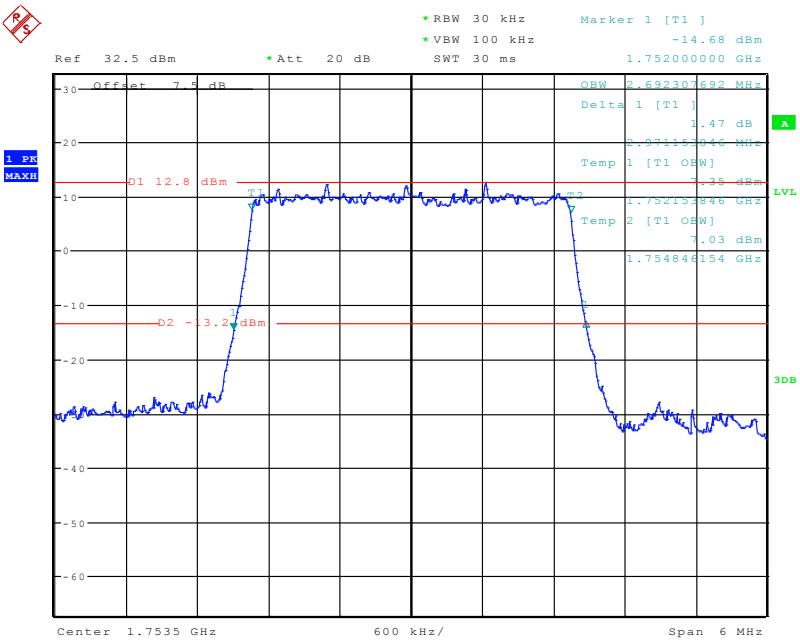

Date: 3.NOV.2020 11:00:43

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



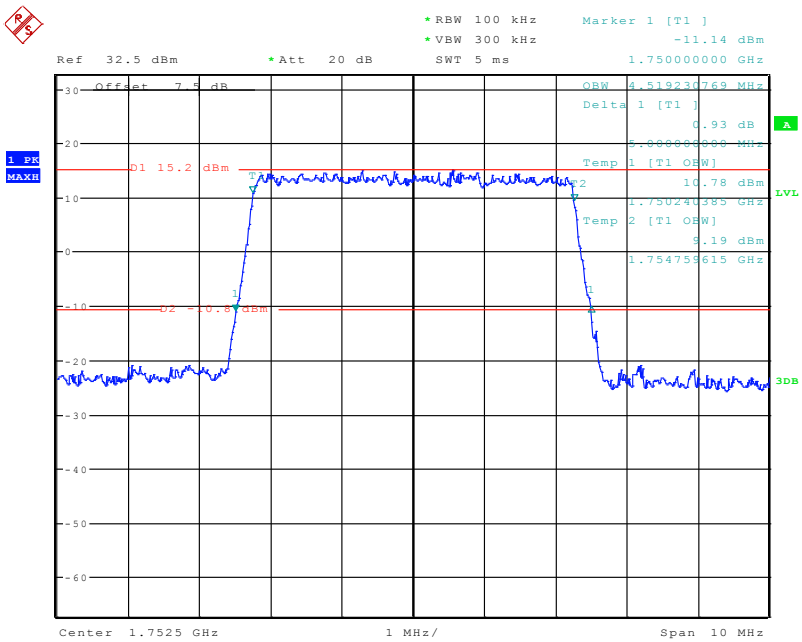

Date: 3.NOV.2020 10:58:19

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



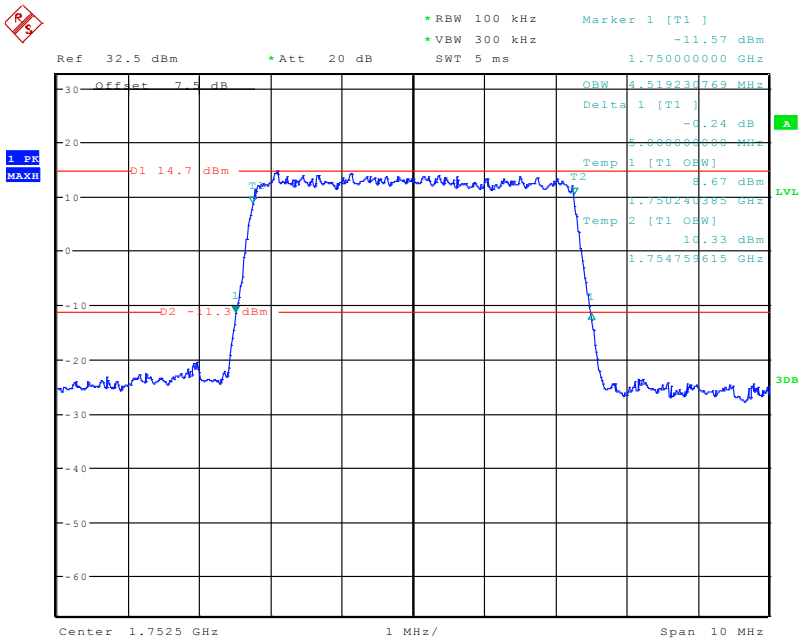

Date: 3.NOV.2020 10:57:26

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



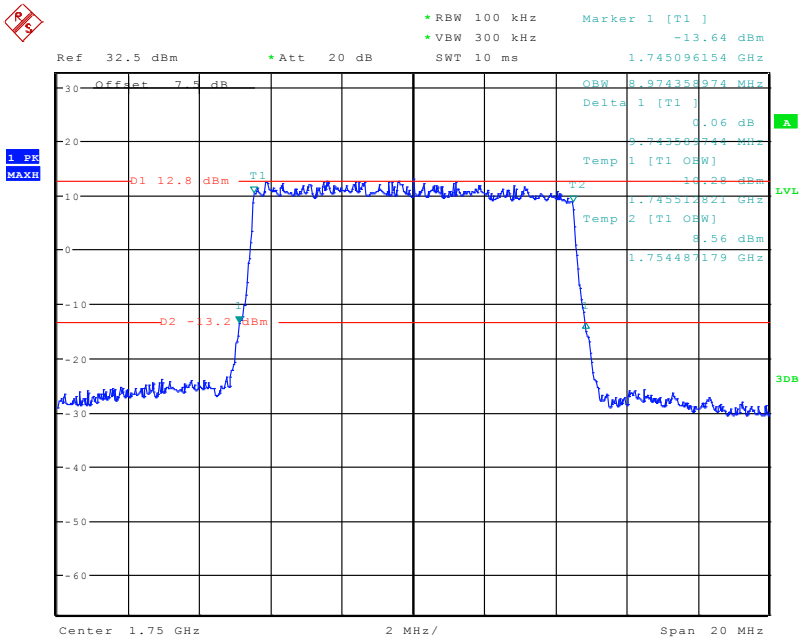

Date: 3.NOV.2020 10:49:57

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



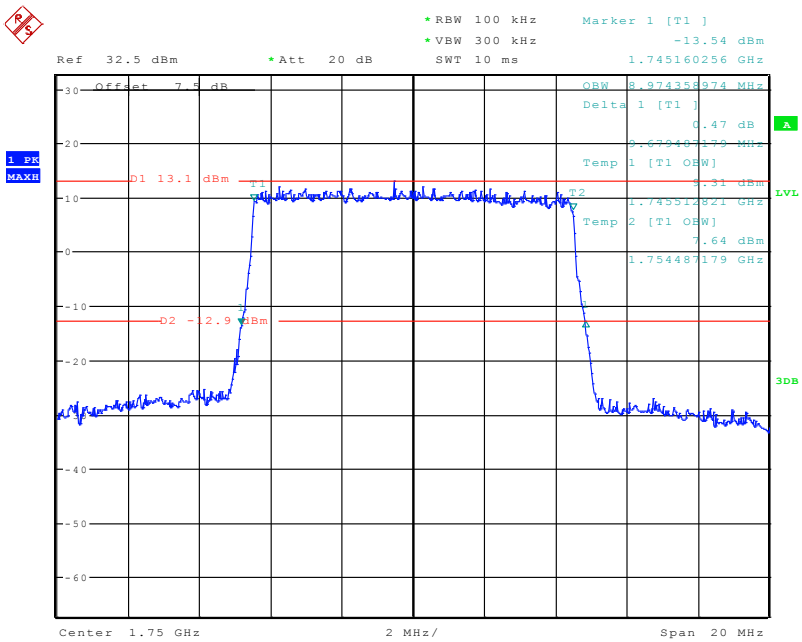

Date: 3.NOV.2020 10:51:05

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



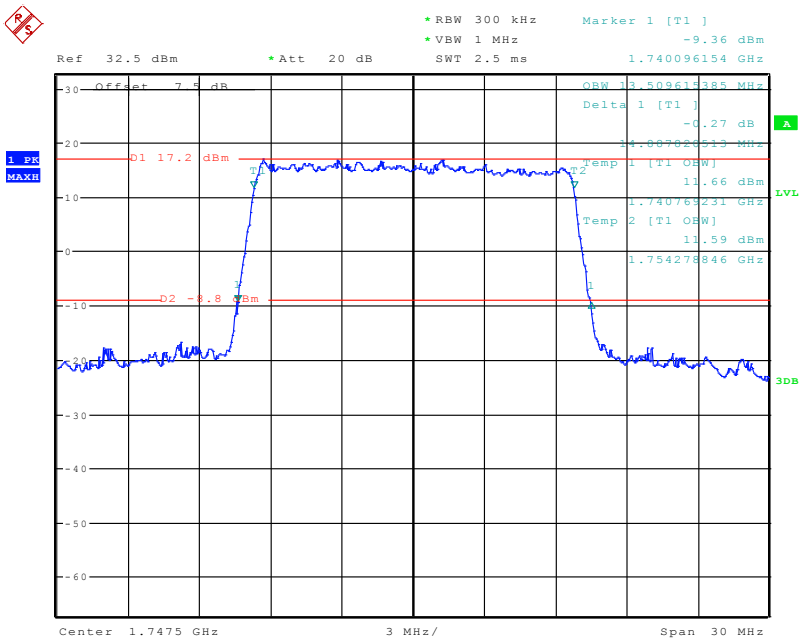

Date: 3.NOV.2020 10:48:55

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



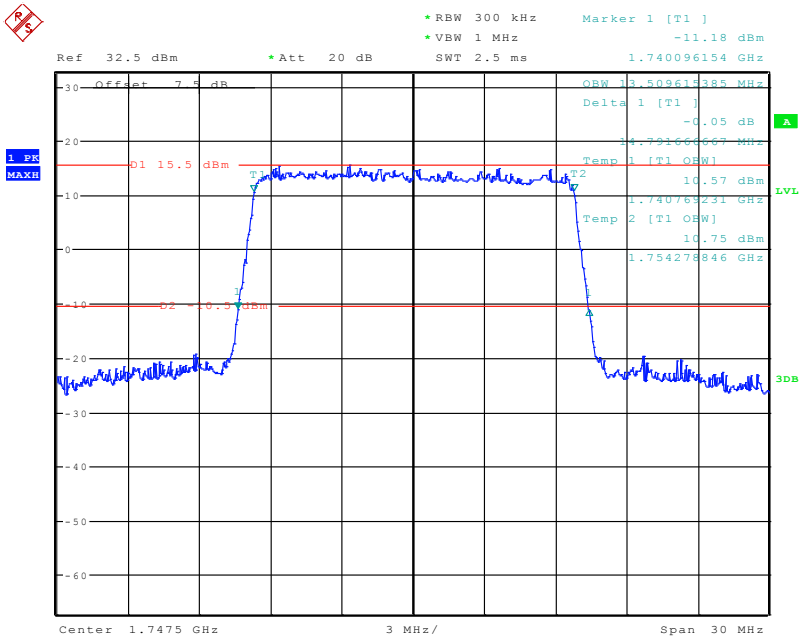

Date: 3.NOV.2020 10:48:10

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



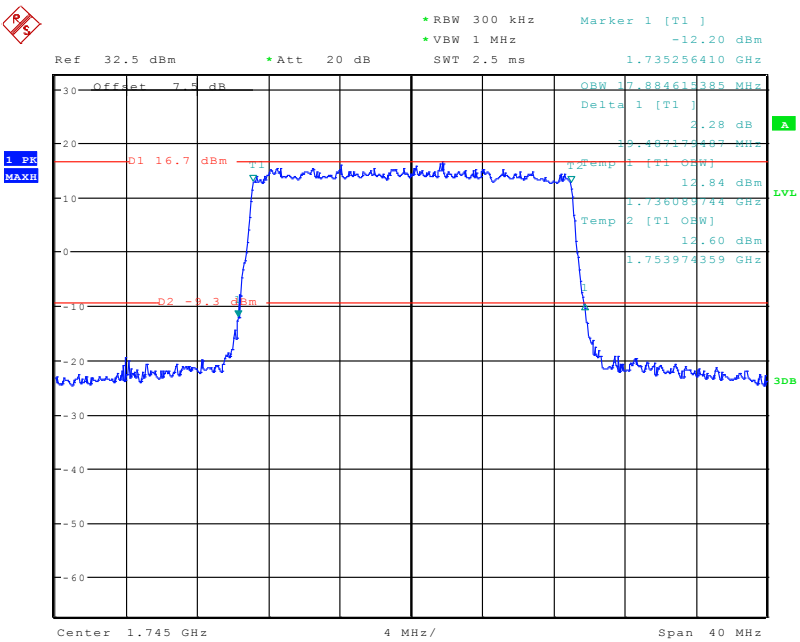

Date: 3.NOV.2020 10:05:01

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



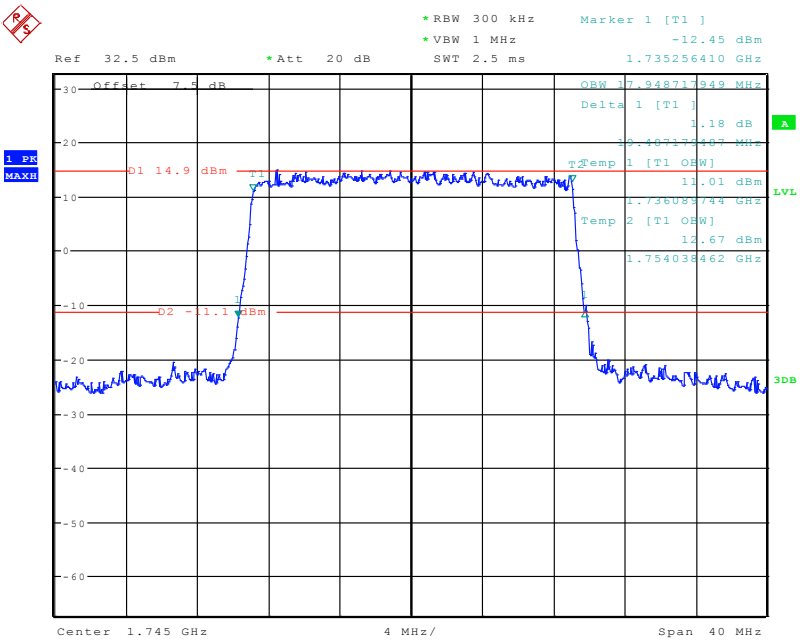

Date: 3.NOV.2020 10:07:06

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




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

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

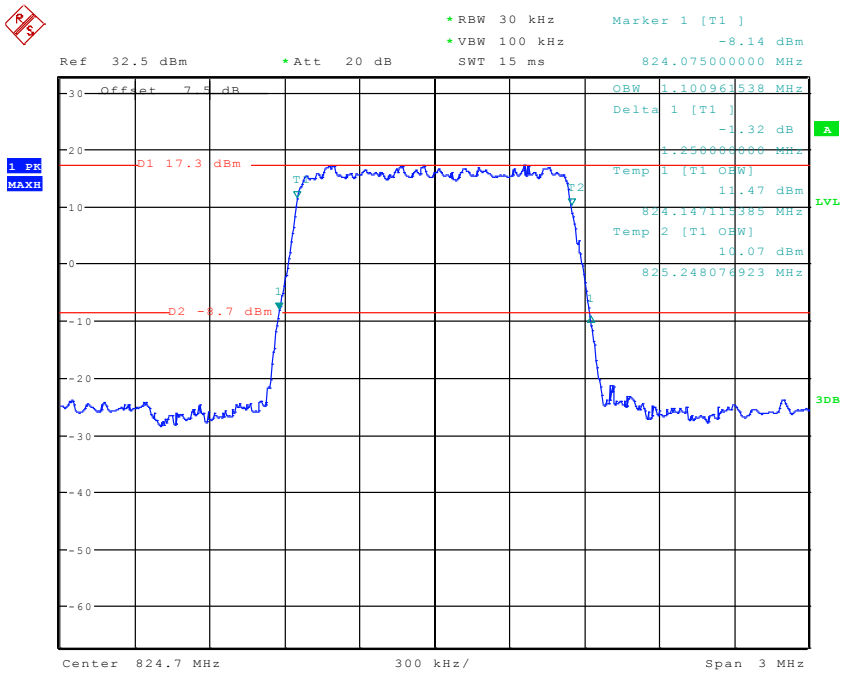



Date: 3.NOV.2020 10:02:48

**Band 5:**

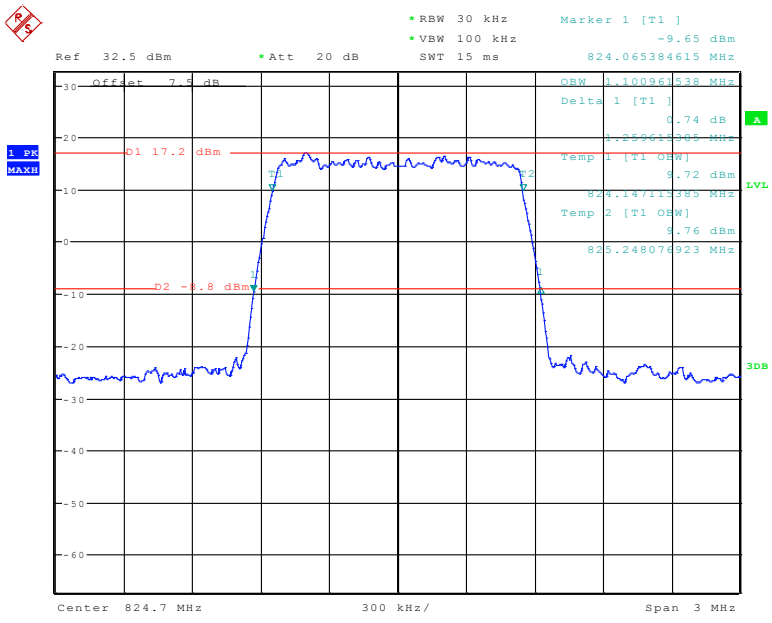
| Bandwidth (MHz) | Modulation | Channel | 99% Occupied Bandwidth (MHz) | 26 dB Emission Bandwidth (MHz) |
|---|---|---|---|---|
| 1.4 | QPSK | Low | 1.101 | 1.250 |
| | | Middle | 1.098 | 1.248 |
| | | High | 1.101 | 1.260 |
| | 16QAM | Low | 1.101 | 1.260 |
| | | Middle | 1.098 | 1.260 |
| | | High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

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

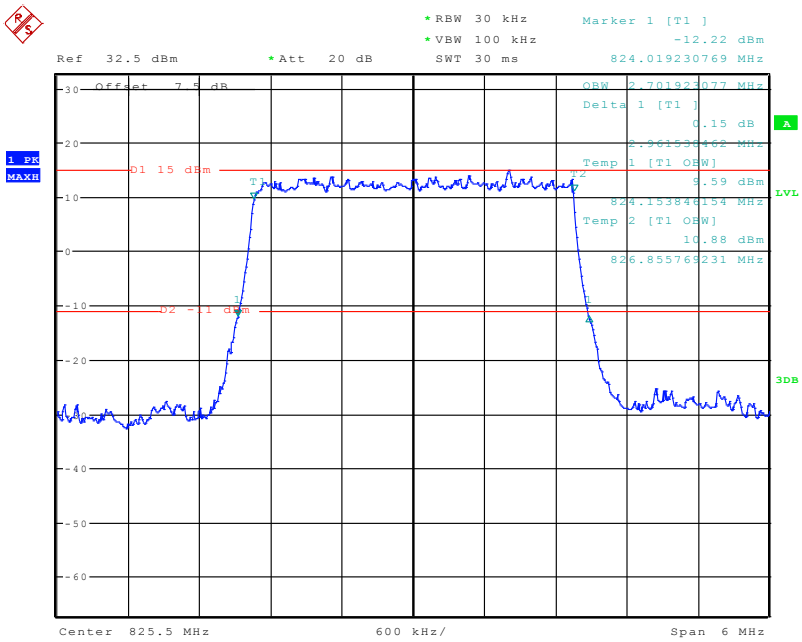



Date: 3.NOV.2020 12:03:23

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

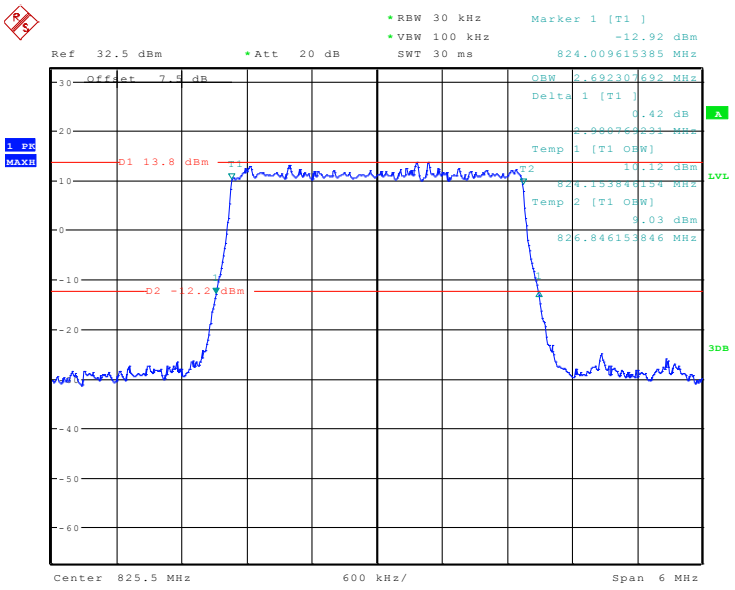


## QPSK (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel



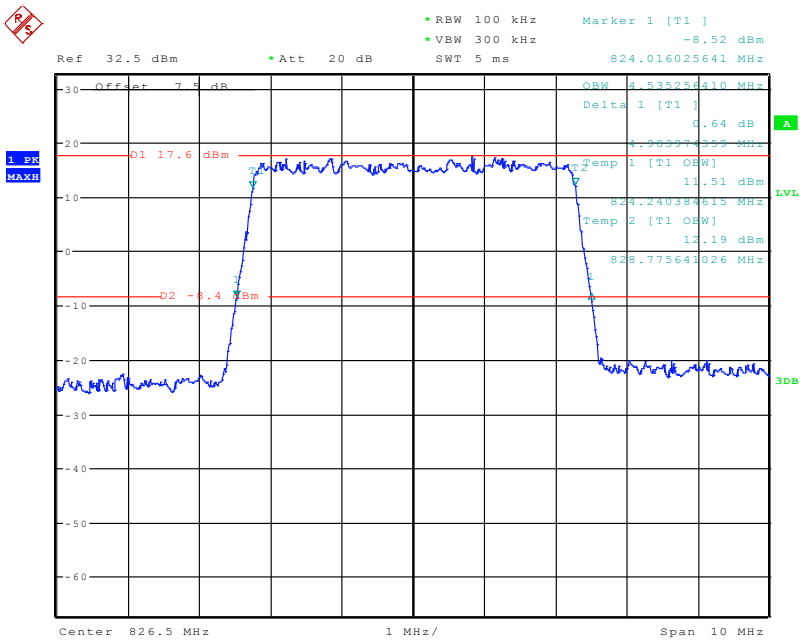

Date: 3.NOV.2020 12:11:39

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



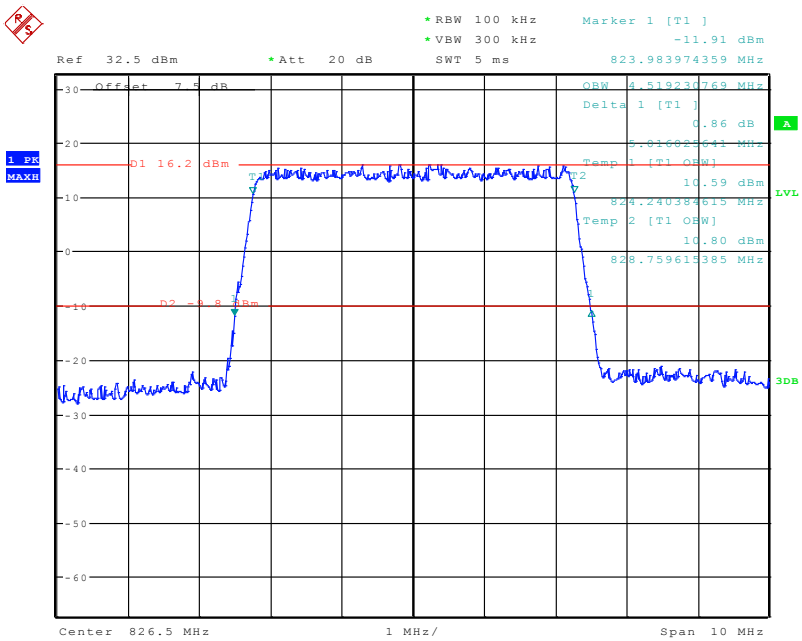

Date: 3.NOV.2020 12:10:44

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

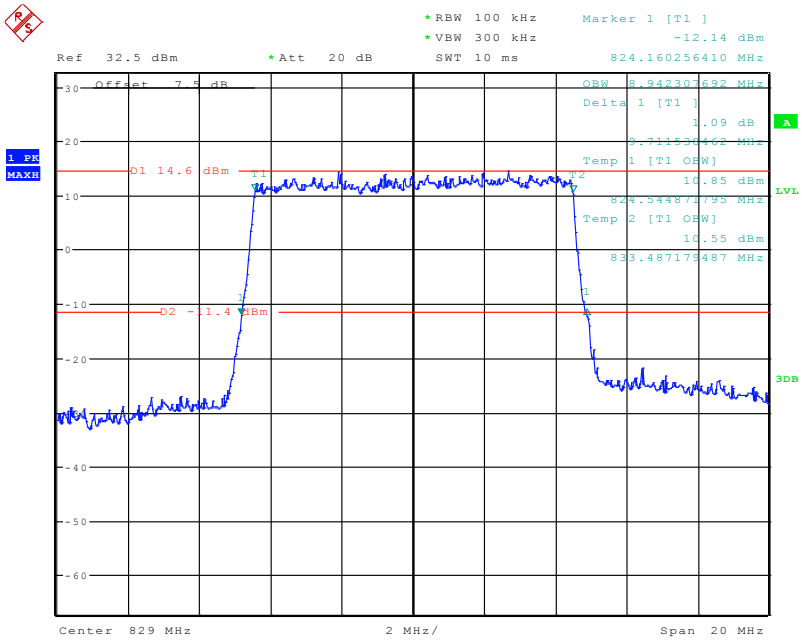



Date: 3.NOV.2020 12:13:46

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

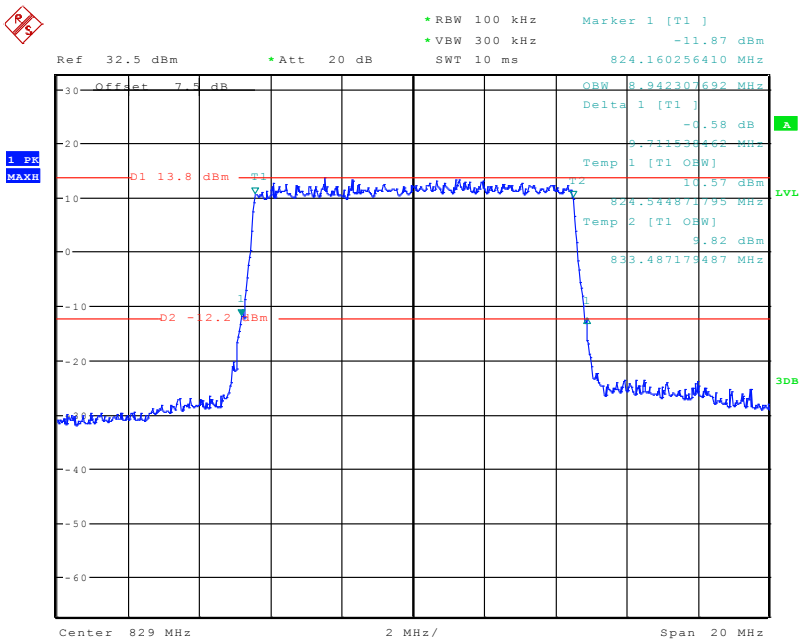


## QPSK (10.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Low channel



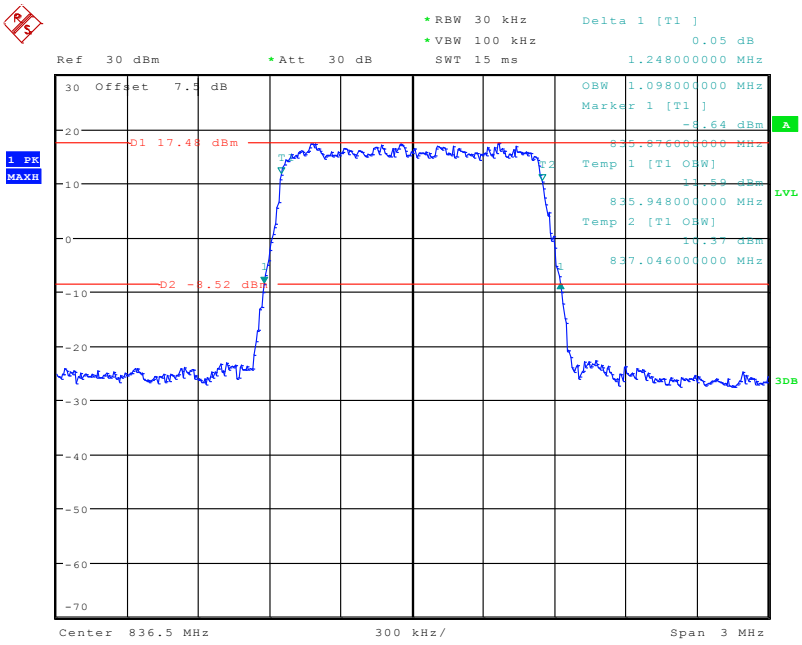

Date: 3.NOV.2020 12:21:19

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



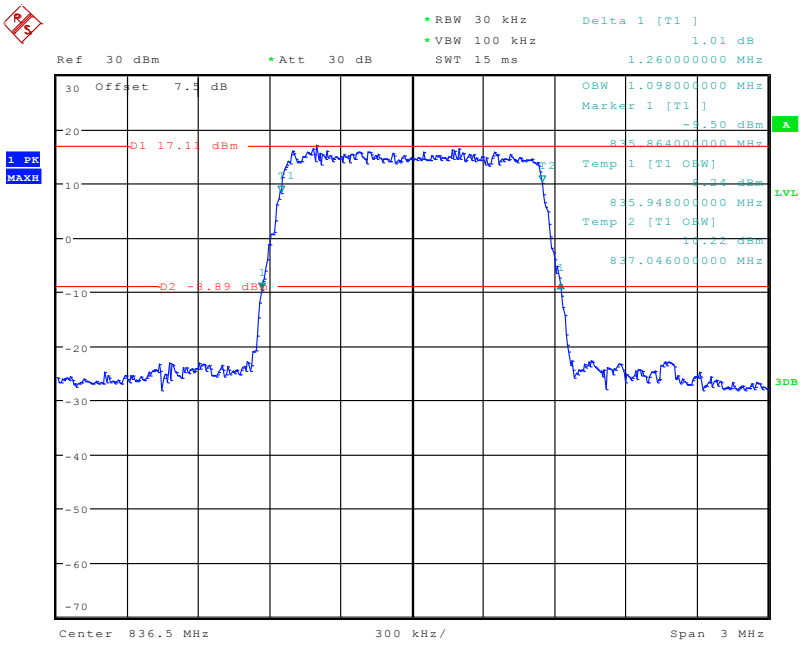

Date: 3.NOV.2020 12:20:30

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

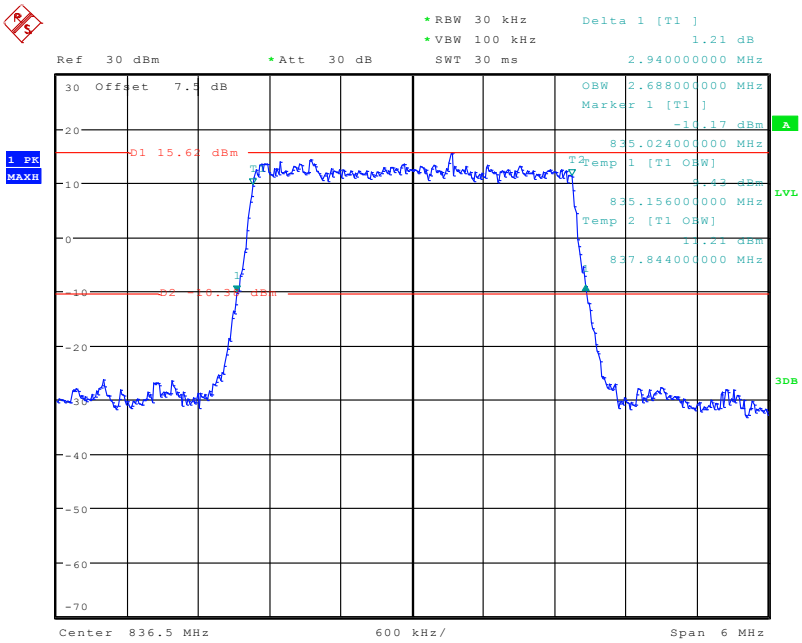



Date: 13.MAR.2020 09:46:33

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

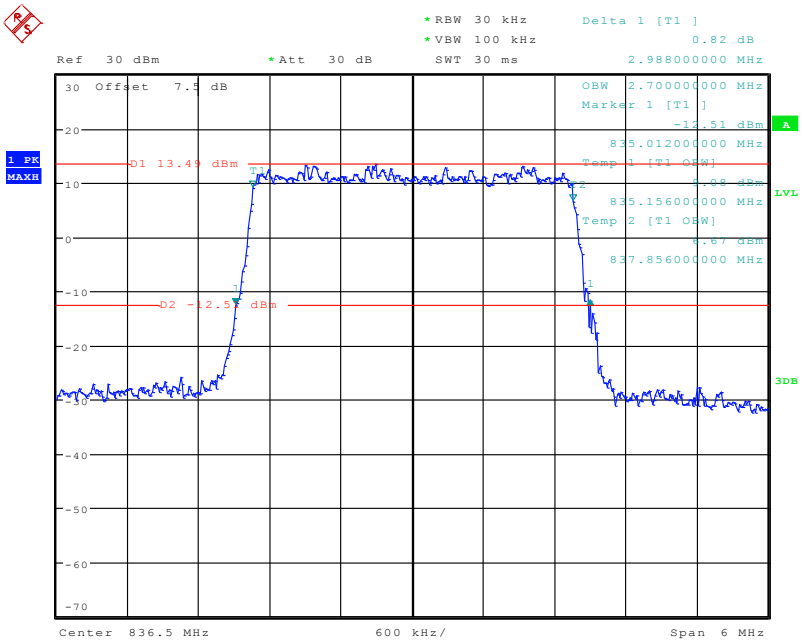


## QPSK (3.0 MHz) - 26 dB Bandwidth & 99% Occupied Bandwidth, Middle channel



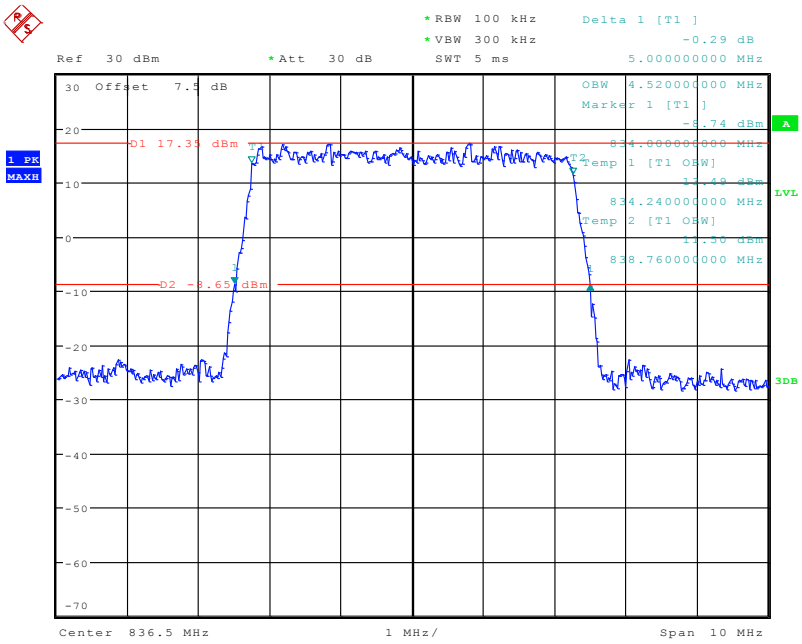

Date: 13.MAR.2020 09:47:11

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



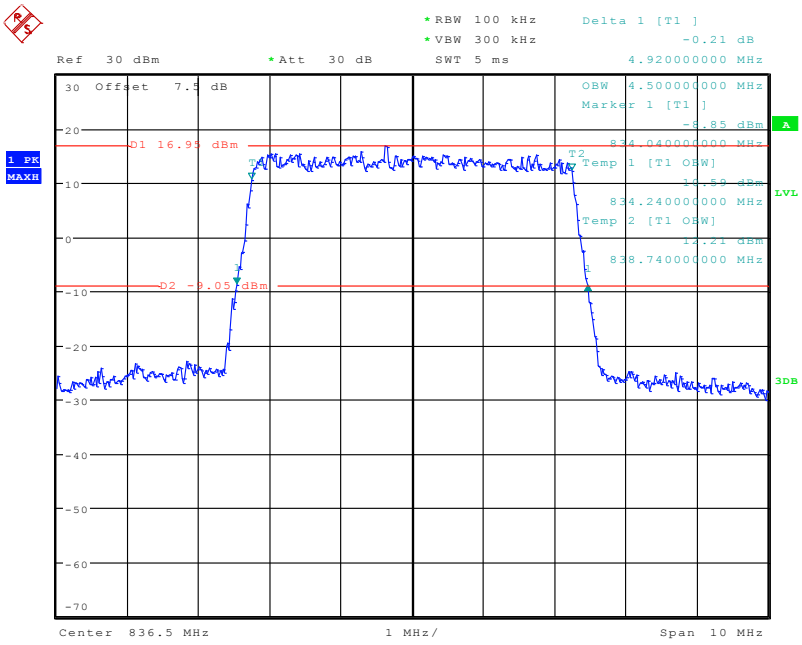

Date: 13.MAR.2020 09:47:30

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



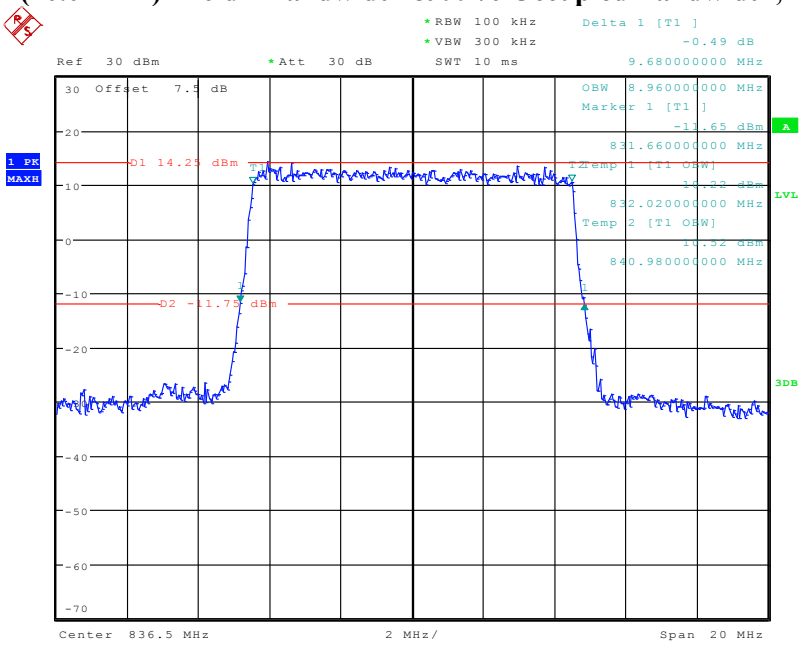

Date: 13.MAR.2020 09:47:56

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



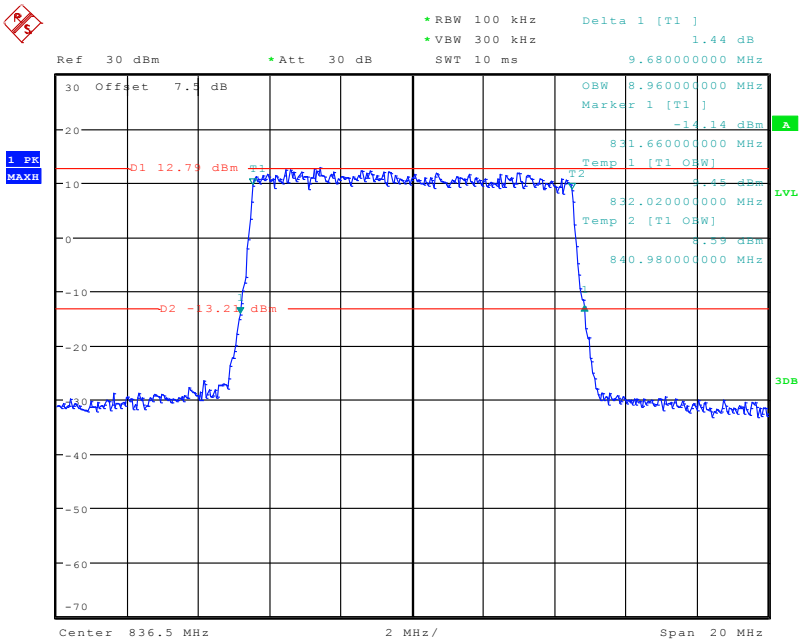

Date: 13.MAR.2020 09:48:17

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



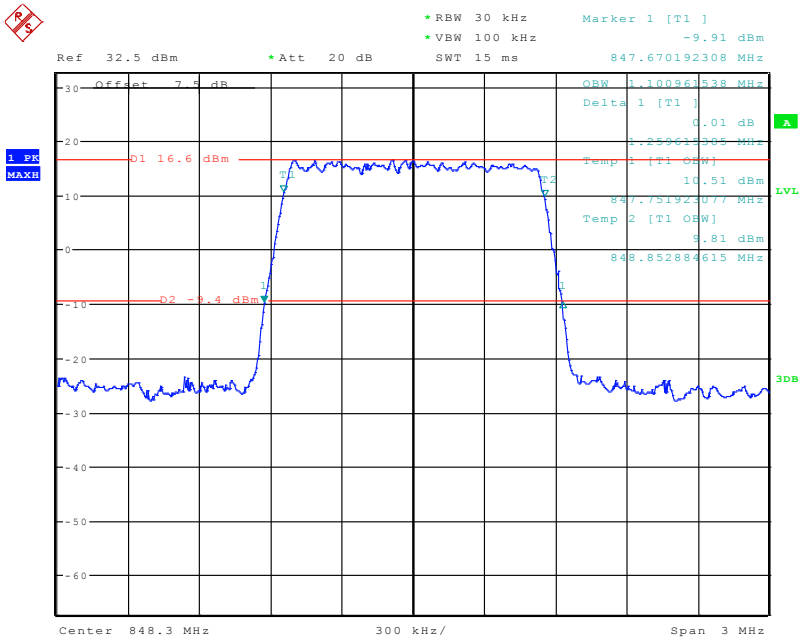

Date: 13.MAR.2020 09:48:40

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



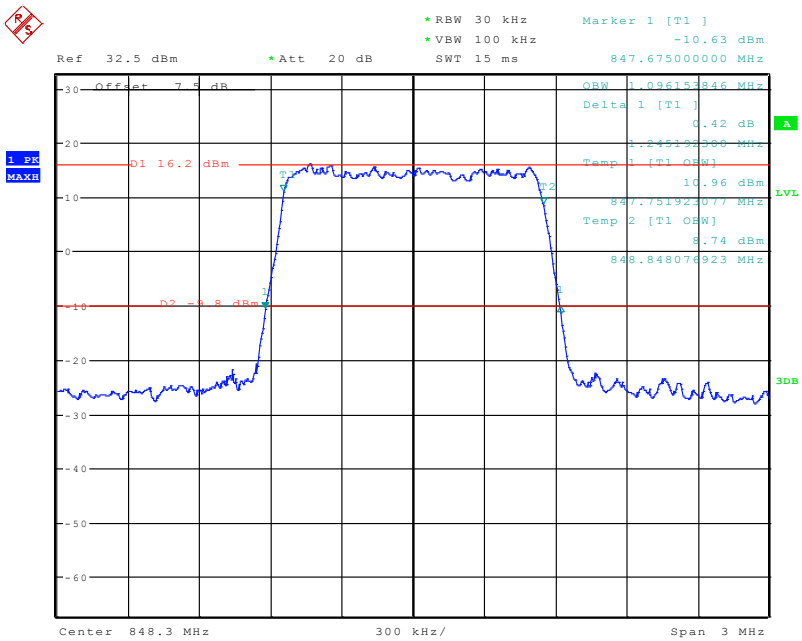

Date: 13.MAR.2020 09:48:57

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



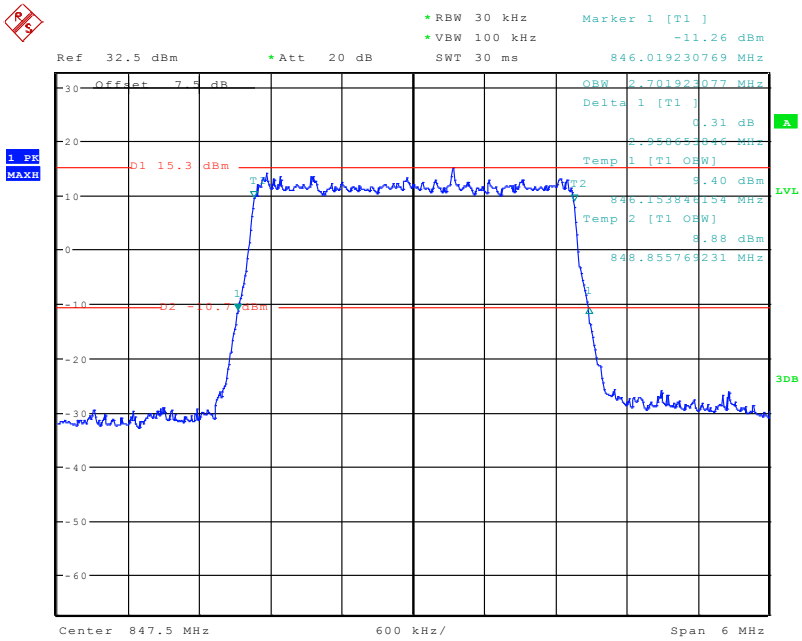

Date: 3.NOV.2020 12:07:14

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



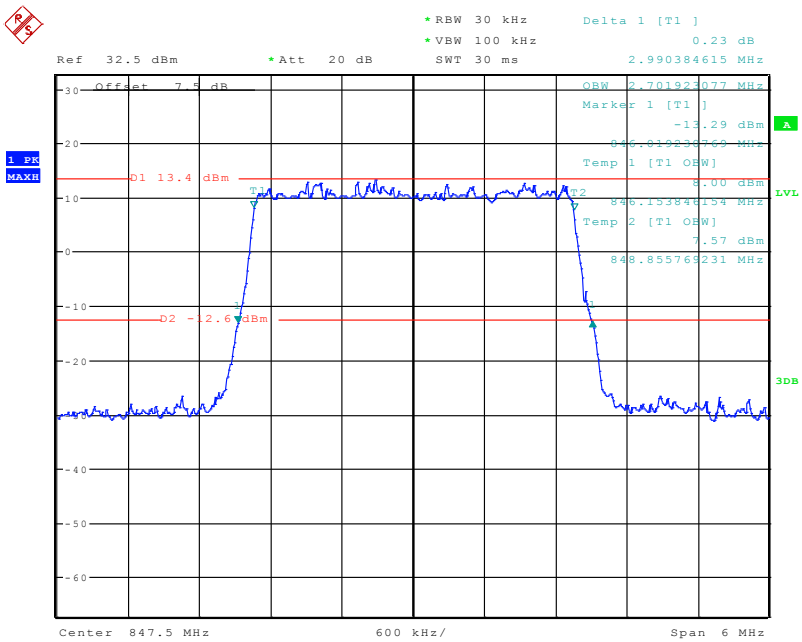

Date: 3.NOV.2020 12:06:25

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



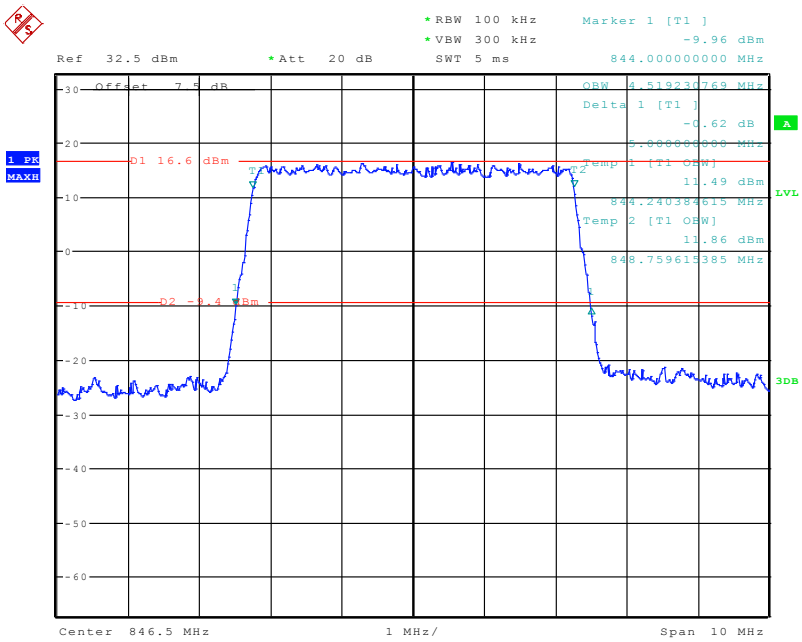

Date: 3.NOV.2020 12:08:18

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



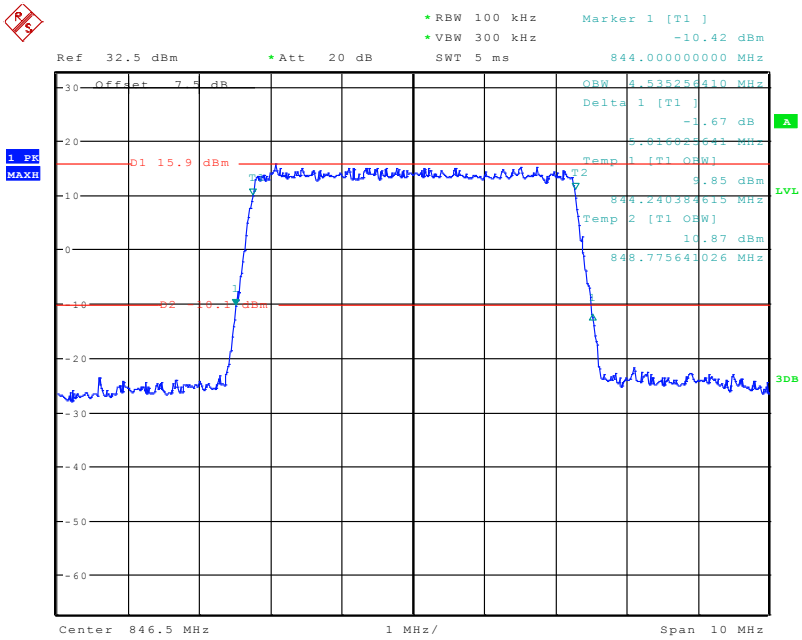

Date: 3.NOV.2020 12:09:39

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



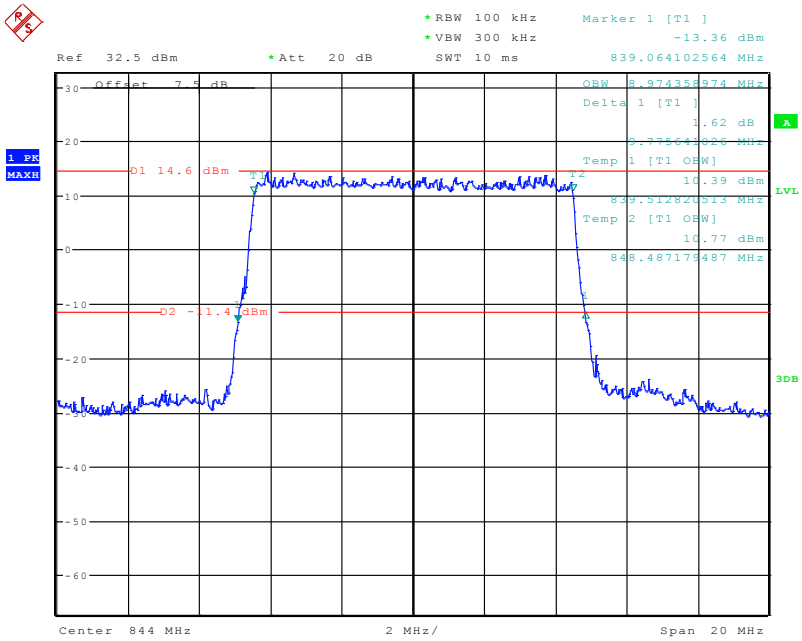

Date: 3.NOV.2020 12:16:49

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



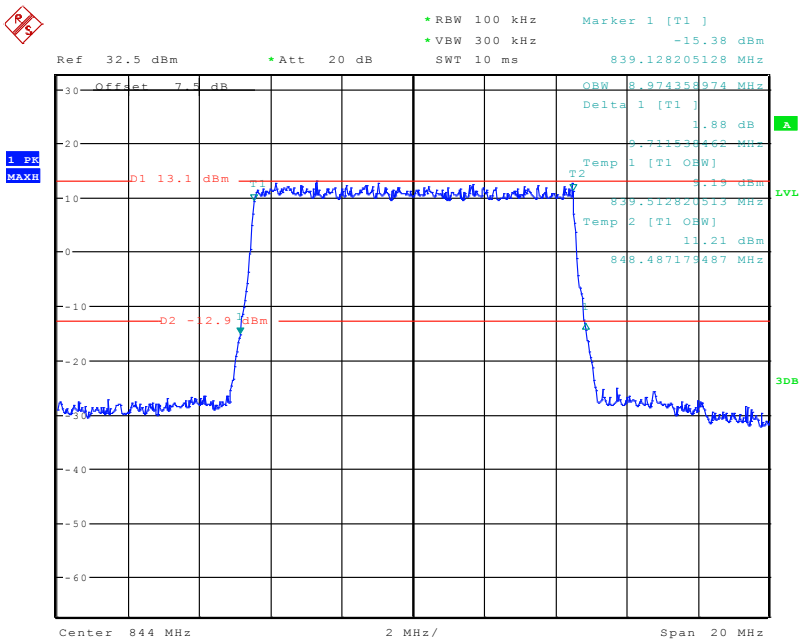

Date: 3.NOV.2020 12:15:47

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




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

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

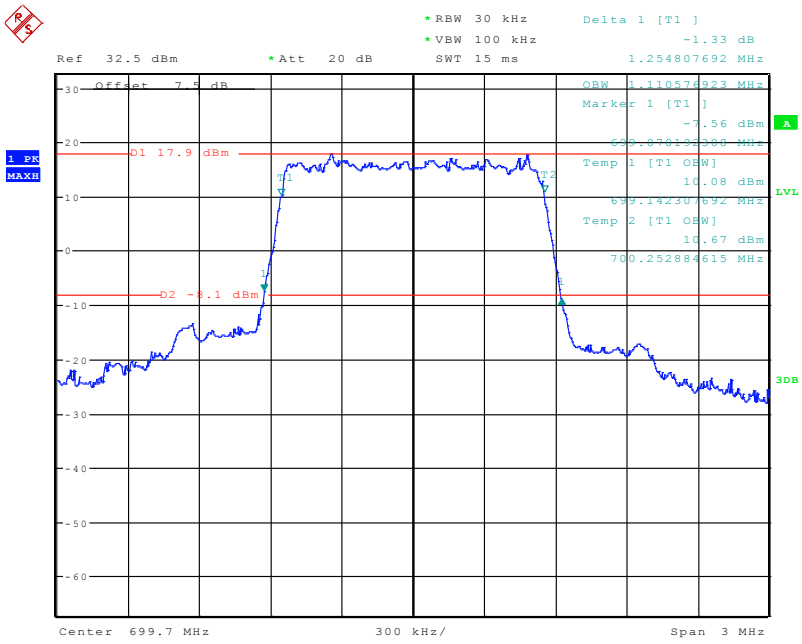



Date: 3.NOV.2020 12:19:25

**Band 12:**

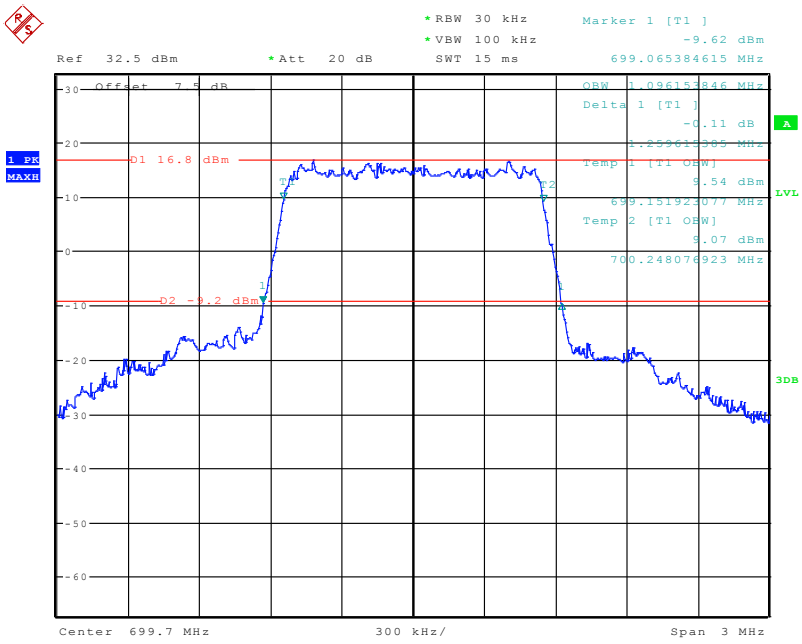
| Bandwidth (MHz) | Modulation | Channel | 99% Occupied Bandwidth (MHz) | 26 dB Emission Bandwidth (MHz) |
|---|---|---|---|---|
| 1.4 | QPSK | Low | 1.111 | 1.255 |
| | | Middle | 1.098 | 1.248 |
| | | High | 1.101 | 1.267 |
| | 16QAM | Low | 1.096 | 1.260 |
| | | Middle | 1.104 | 1.254 |
| | | High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

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



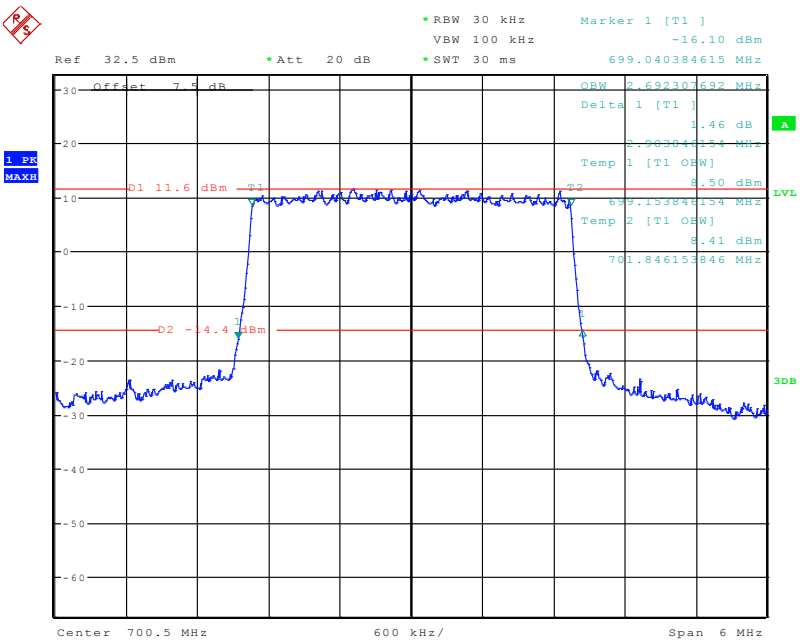

Date: 3.NOV.2020 12:47:25

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



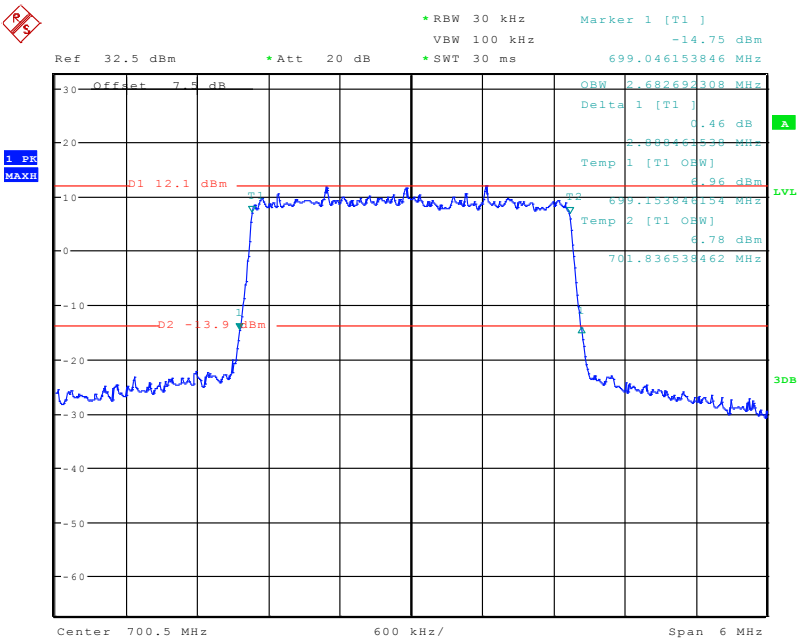

Date: 3.NOV.2020 12:46:40

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



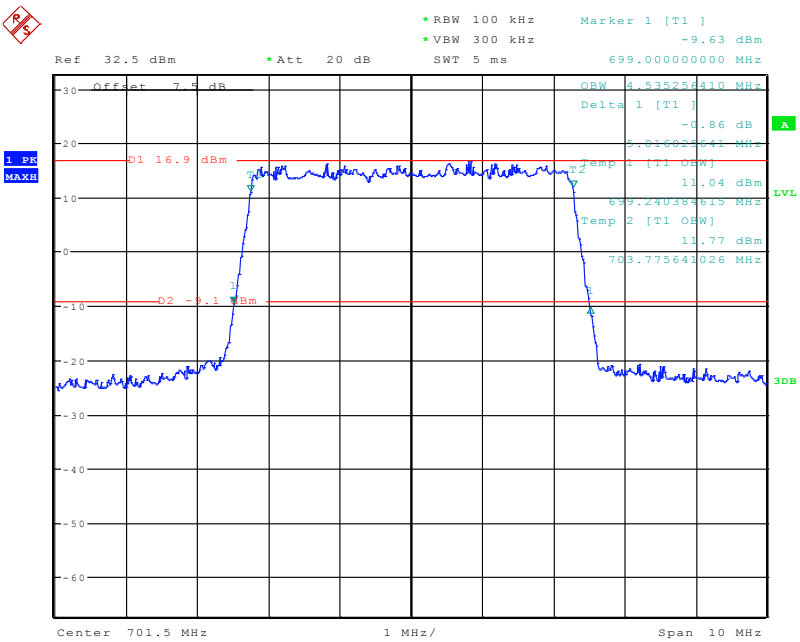

Date: 5.NOV.2020 13:14:36

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



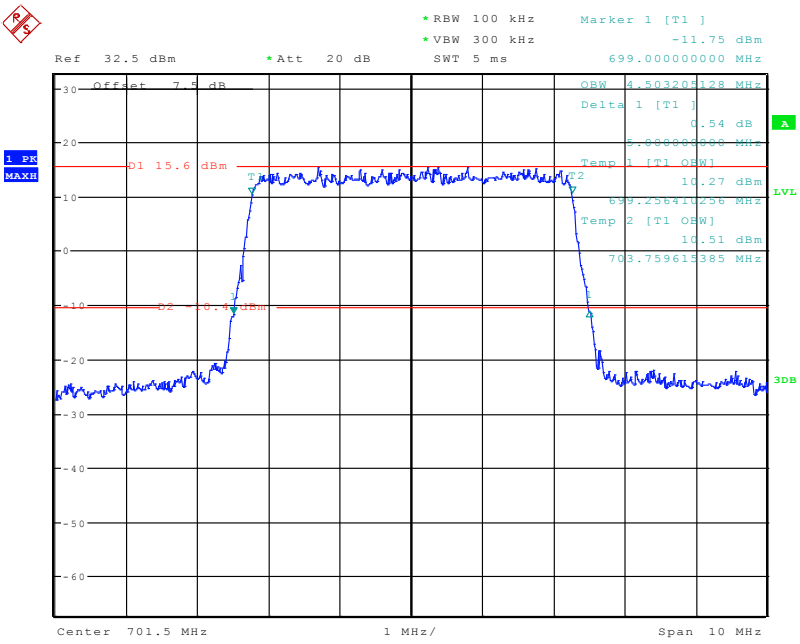

Date: 5.NOV.2020 13:15:47

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



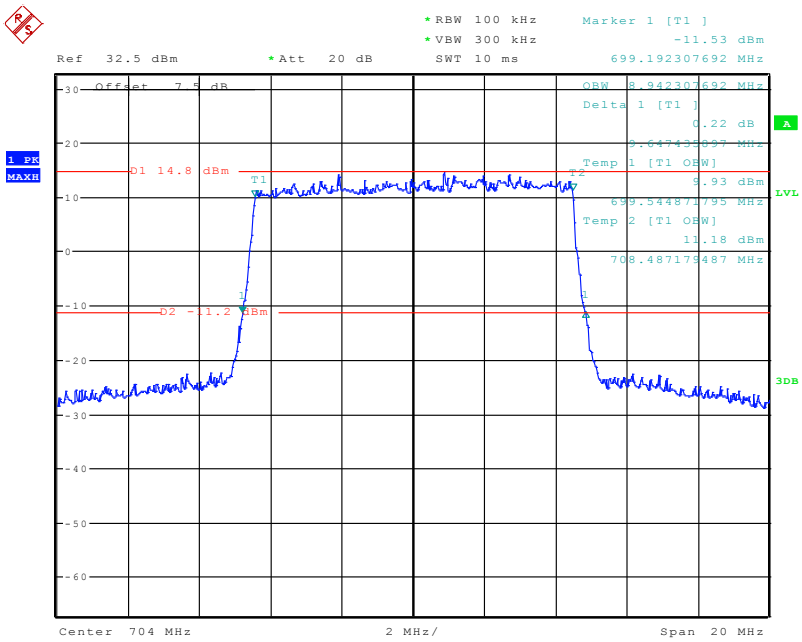

Date: 3.NOV.2020 12:31:32

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



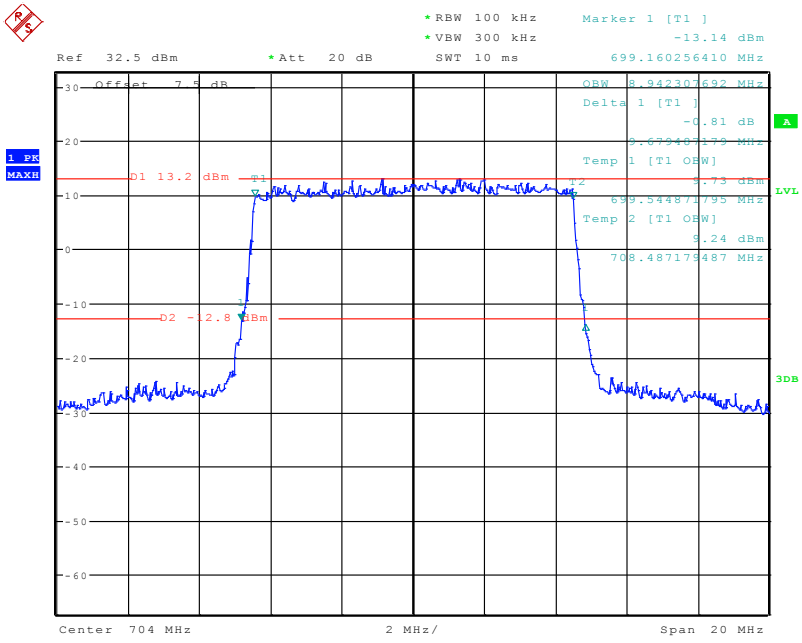

Date: 3.NOV.2020 12:32:26

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



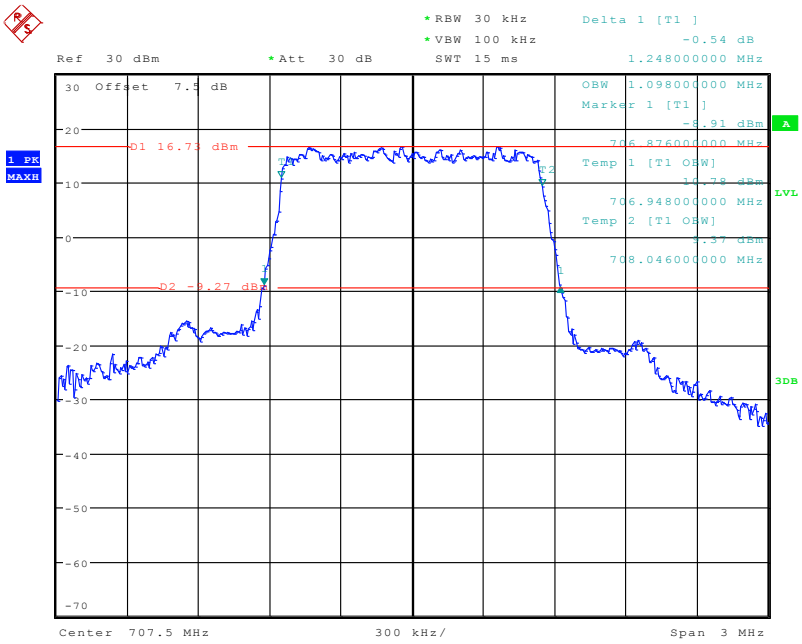

Date: 3.NOV.2020 12:39:26

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



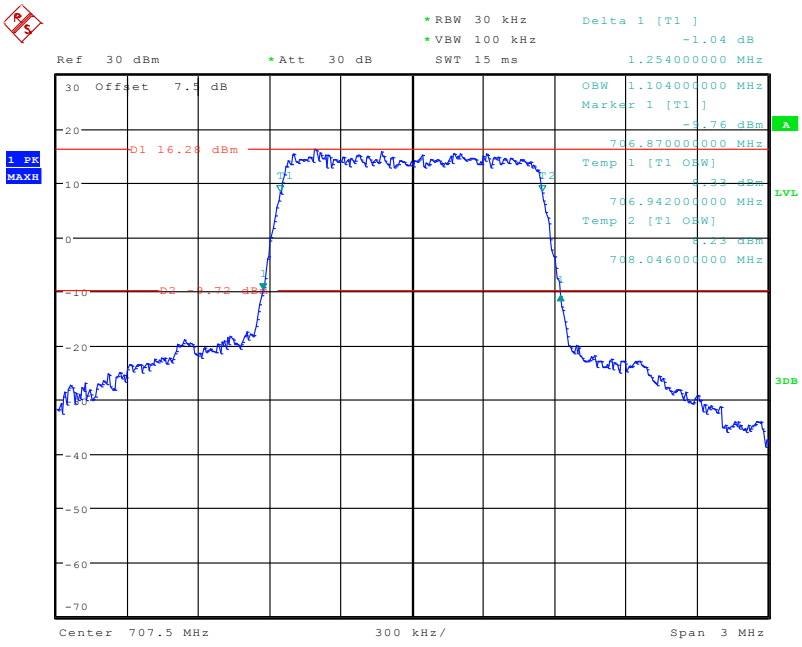

Date: 3.NOV.2020 12:38:31

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



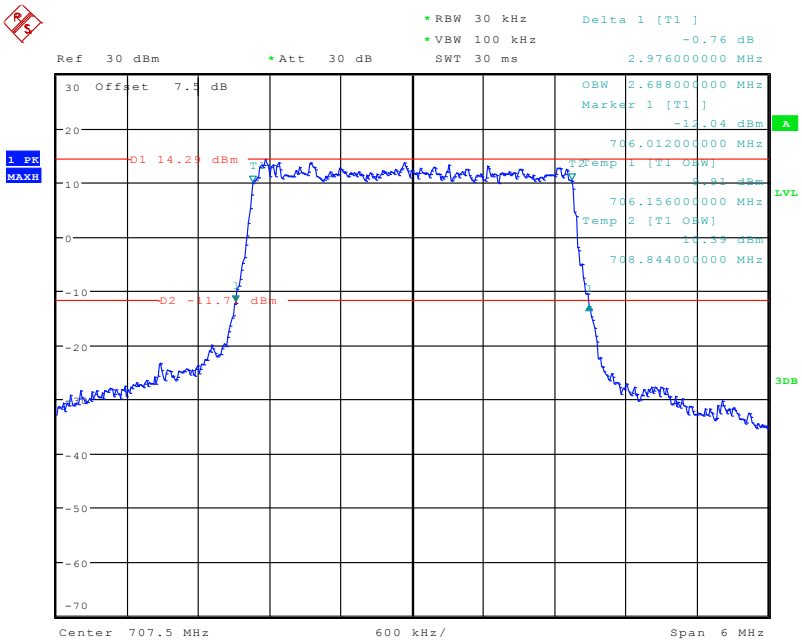

Date: 13.MAR.2020 09:49:22

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



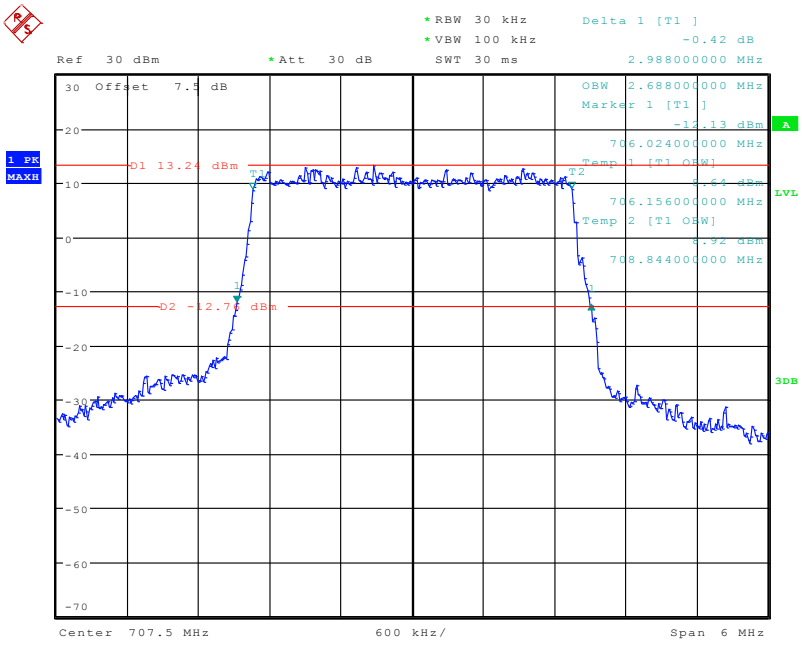

Date: 13.MAR.2020 09:49:41

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



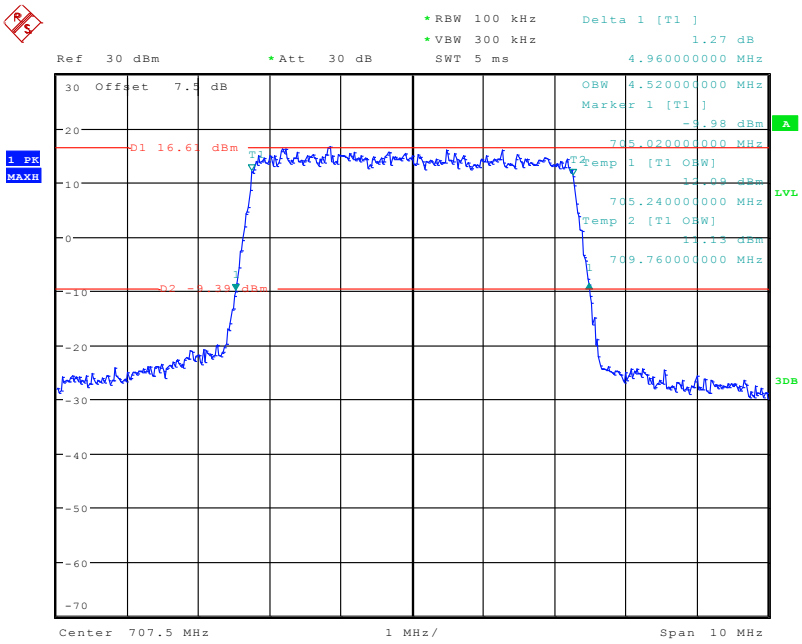

Date: 13.MAR.2020 09:50:03

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



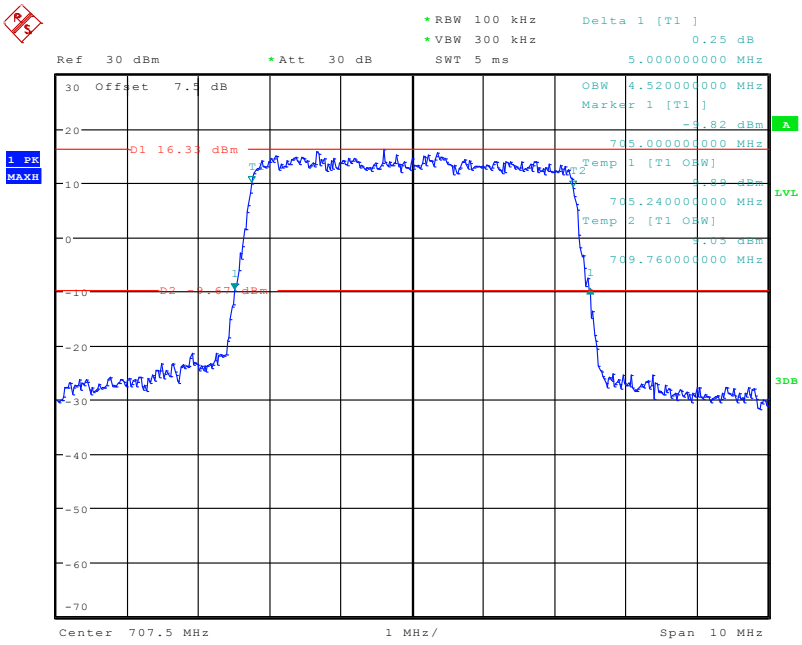

Date: 13.MAR.2020 09:50:19

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



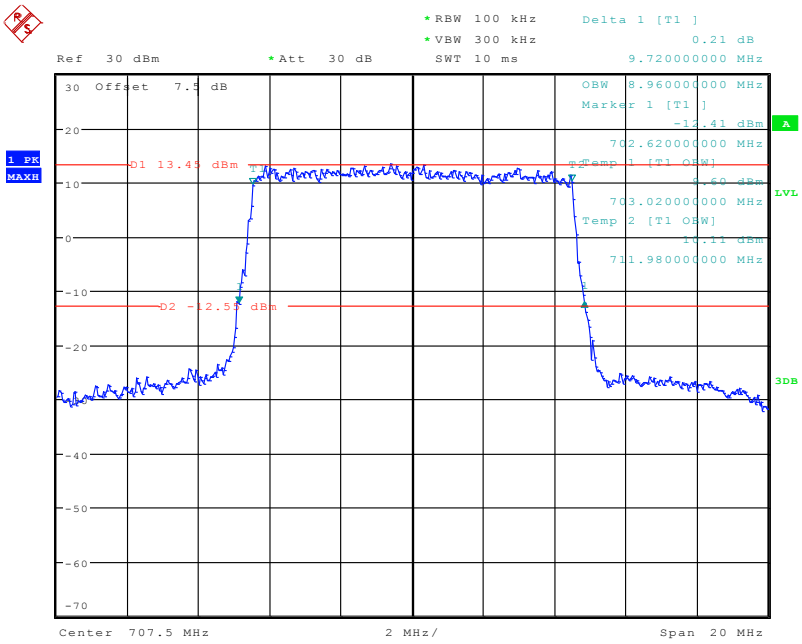

Date: 13.MAR.2020 09:50:39

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



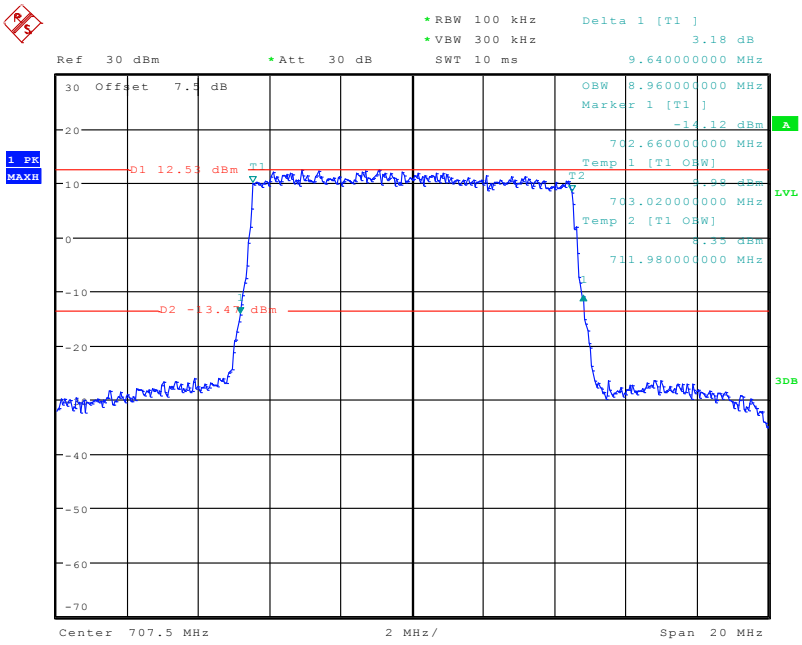

Date: 13.MAR.2020 09:51:00

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



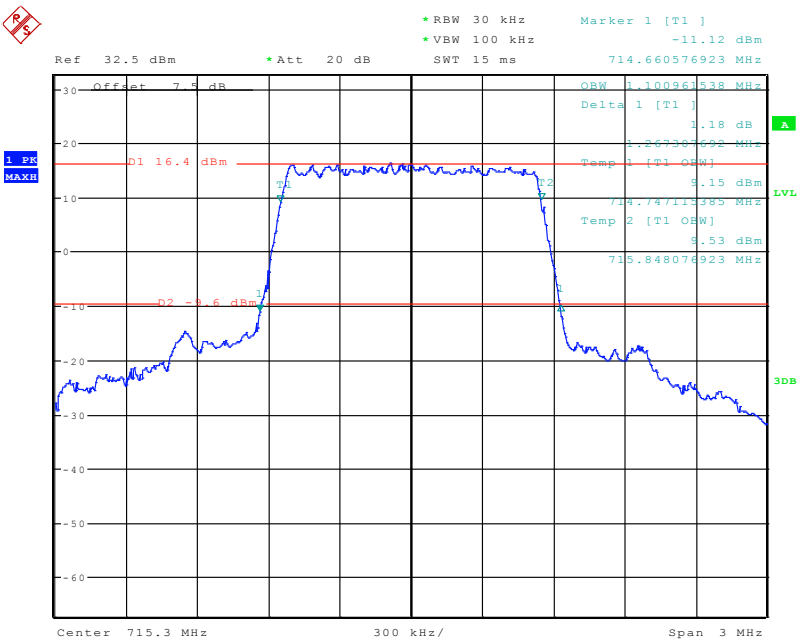

Date: 13.MAR.2020 09:51:23

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



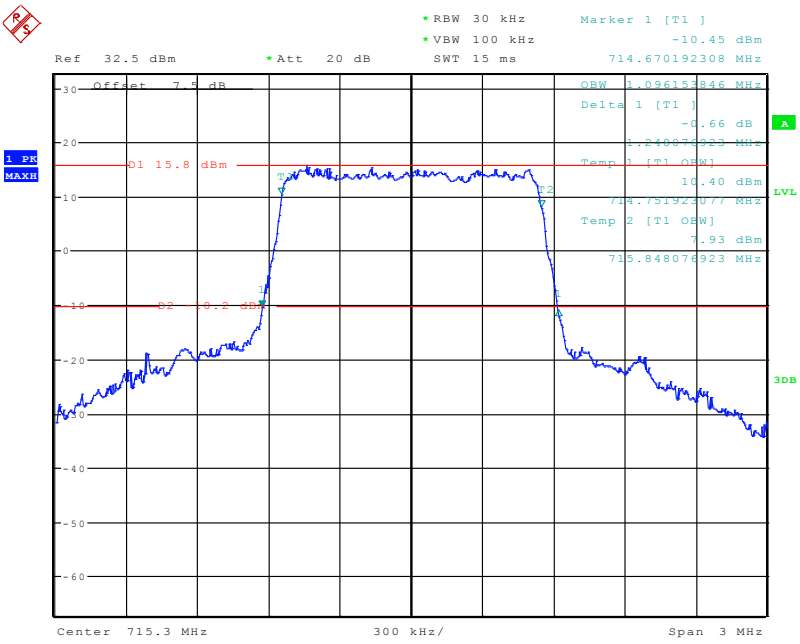

Date: 13.MAR.2020 09:51:43

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



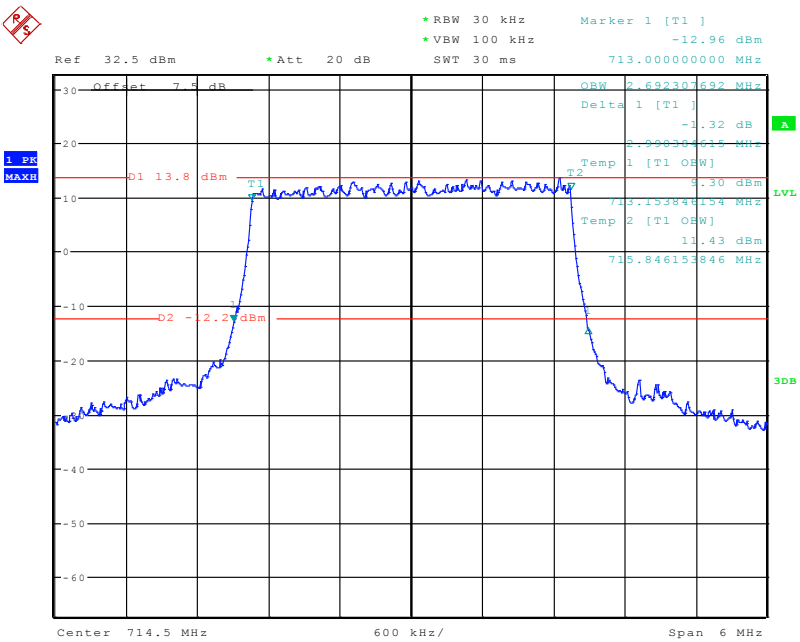

Date: 3.NOV.2020 12:45:01

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



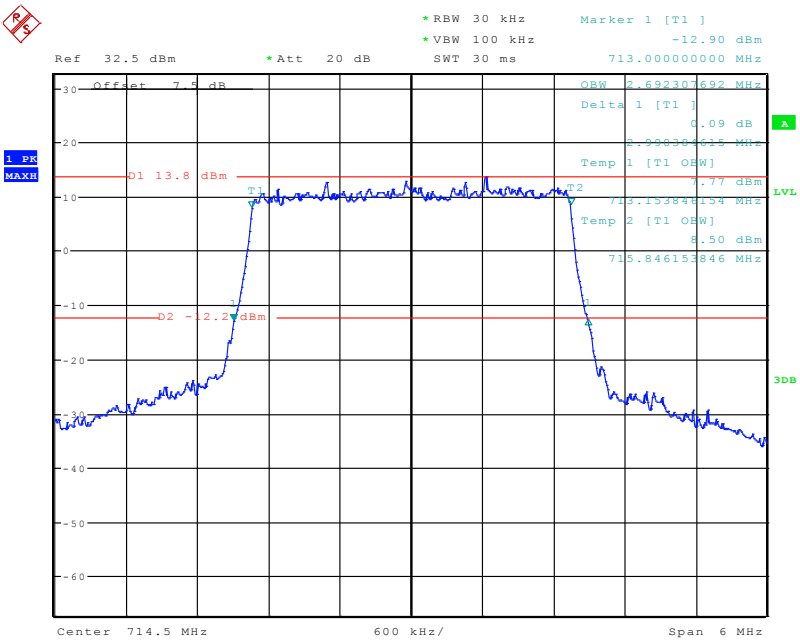

Date: 3.NOV.2020 12:45:53

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



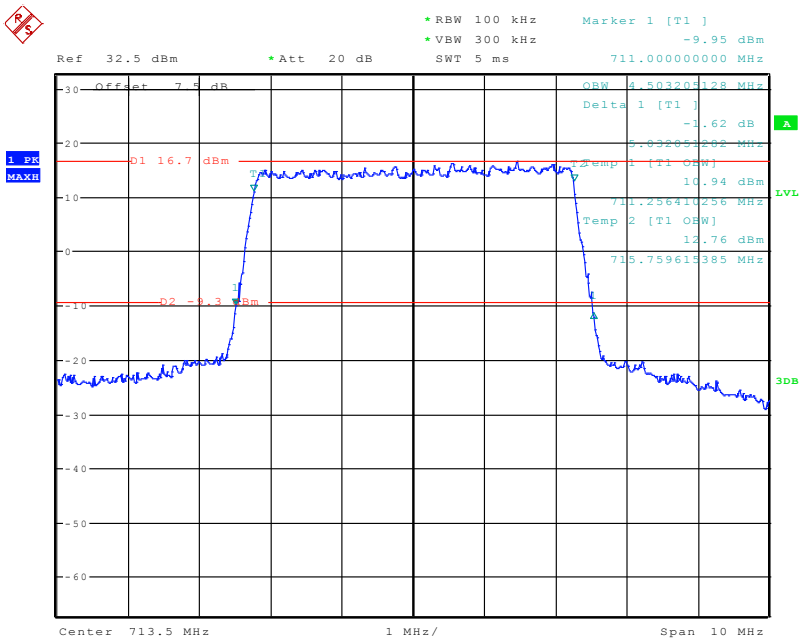

Date: 3.NOV.2020 12:43:58

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



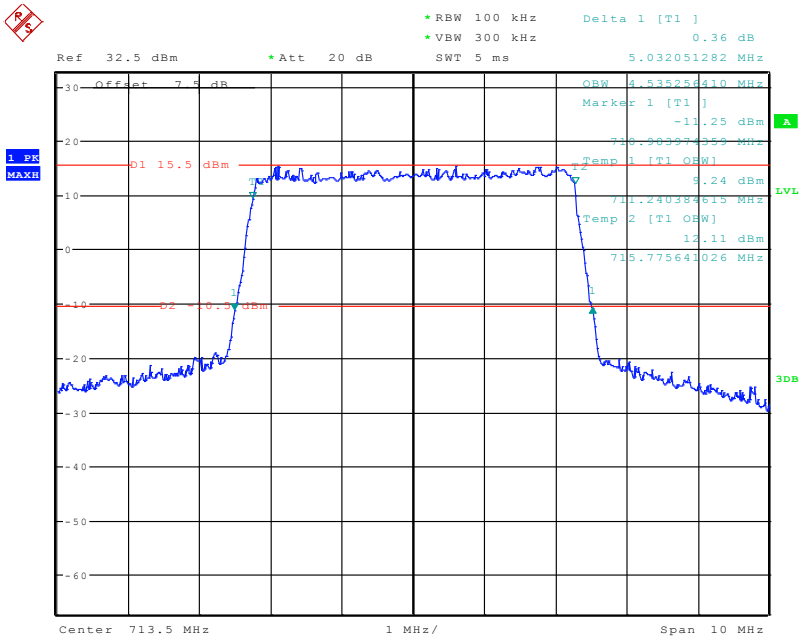

Date: 3.NOV.2020 12:43:15

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



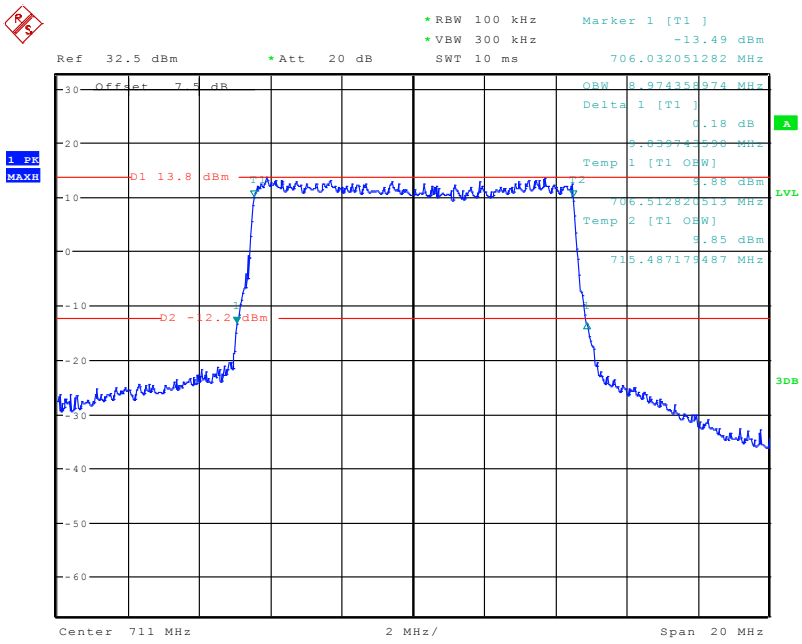

Date: 3.NOV.2020 12:34:28

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



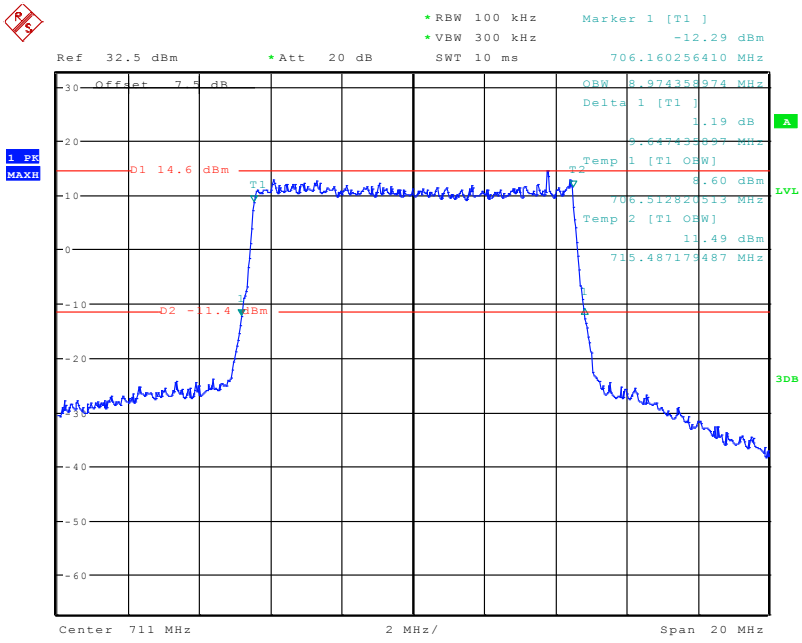

Date: 3.NOV.2020 12:33:30

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

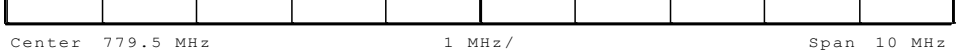



Date: 3.NOV.2020 12:35:46

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




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



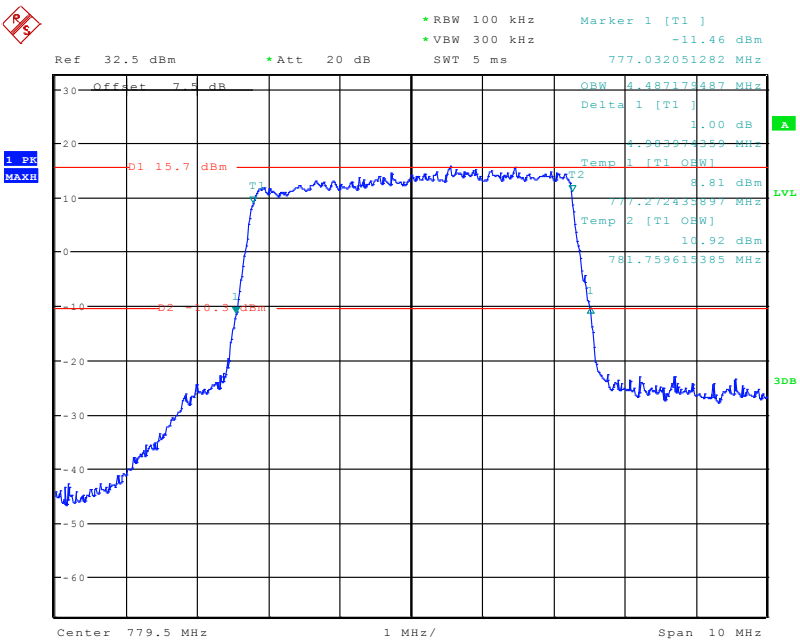



Date: 3.NOV.2020 12:25:00

**Band 13:**

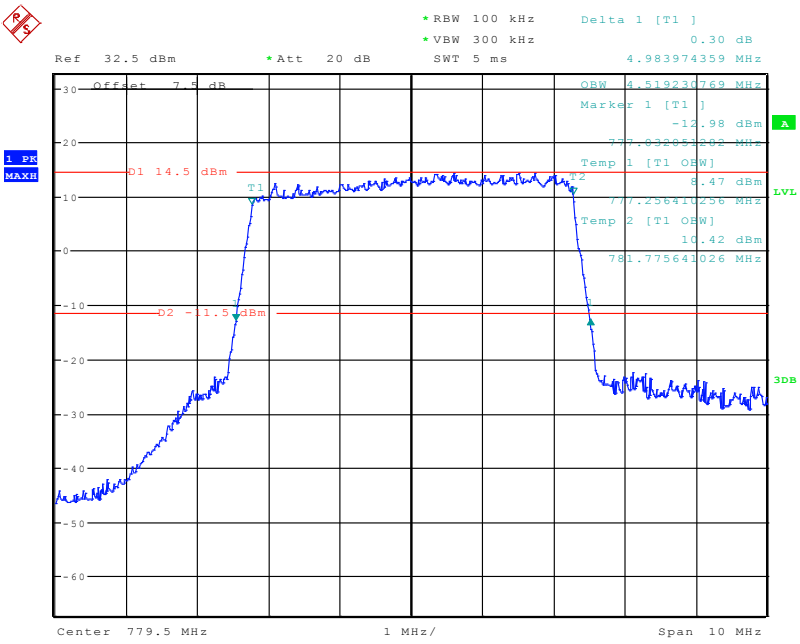
| Bandwidth (MHz) | Modulation | Channel | 99% Occupied Bandwidth (MHz) | 26 dB Emission Bandwidth (MHz) |
|---|---|---|---|---|
| 5 | QPSK | Low | 4.487 | 4.984 |
| | | Middle | 4.520 | 5.000 |
| | | High | 4.503 | 4.952 |
| | 16QAM | Low | 4.519 | 4.984 |
| | | Middle | 4.520 | 5.000 |
| | | High |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

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



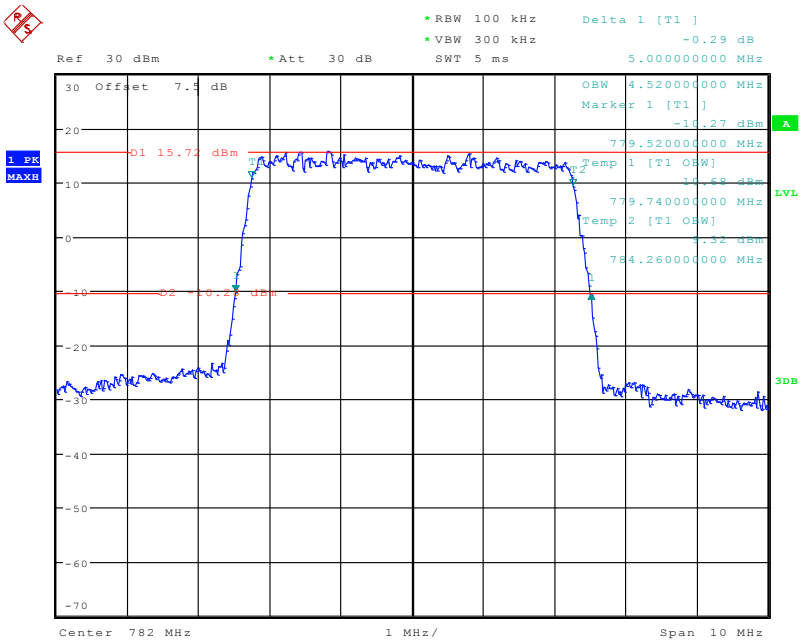

Date: 3.NOV.2020 12:25:00

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



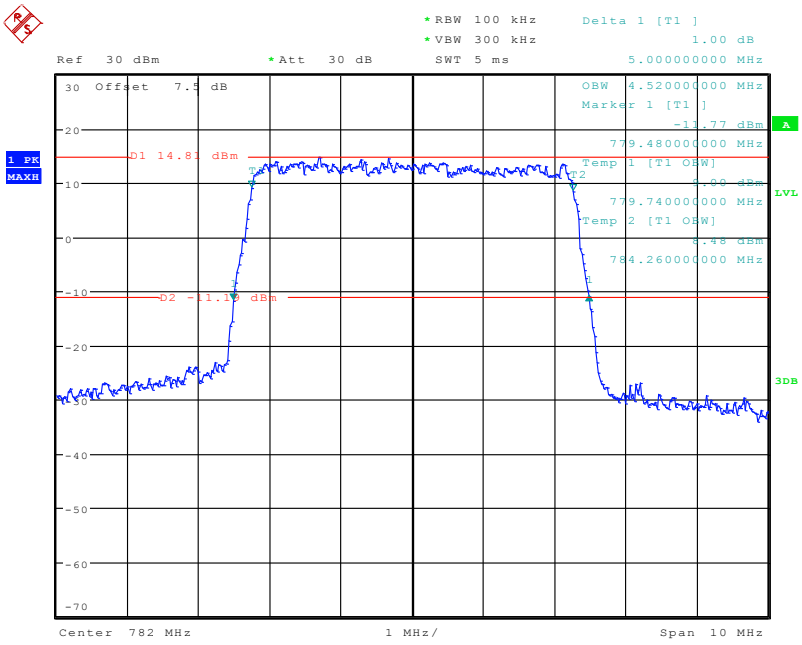

Date: 3.NOV.2020 12:25:55

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



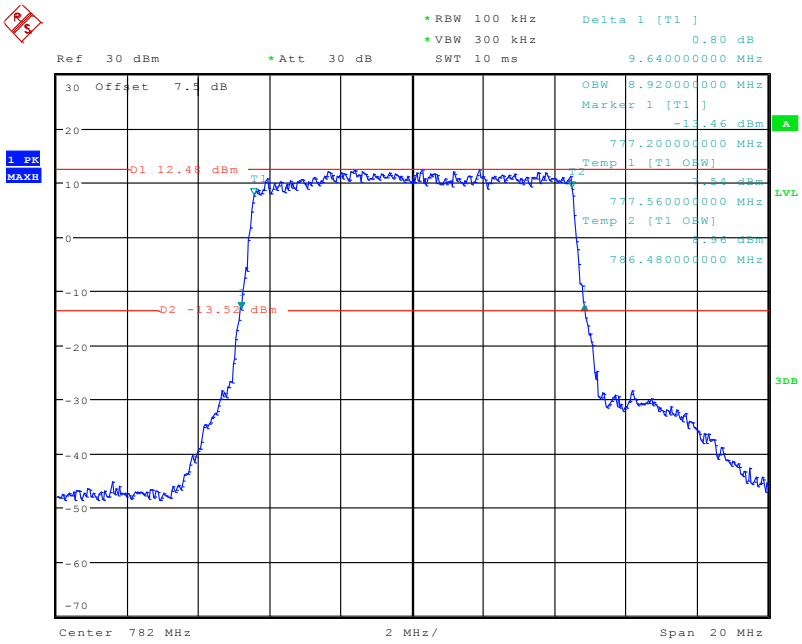

Date: 13.MAR.2020 09:52:15

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



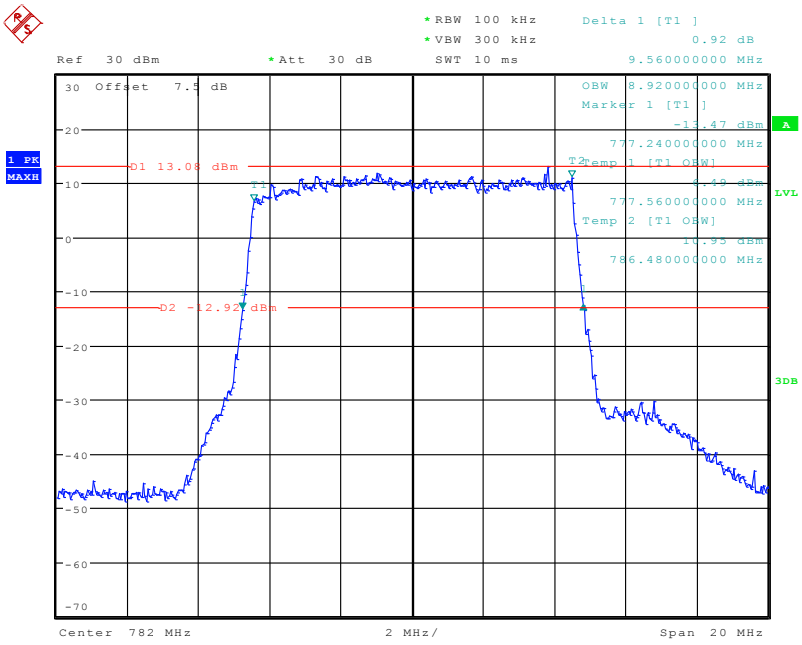

Date: 13.MAR.2020 09:52:38

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



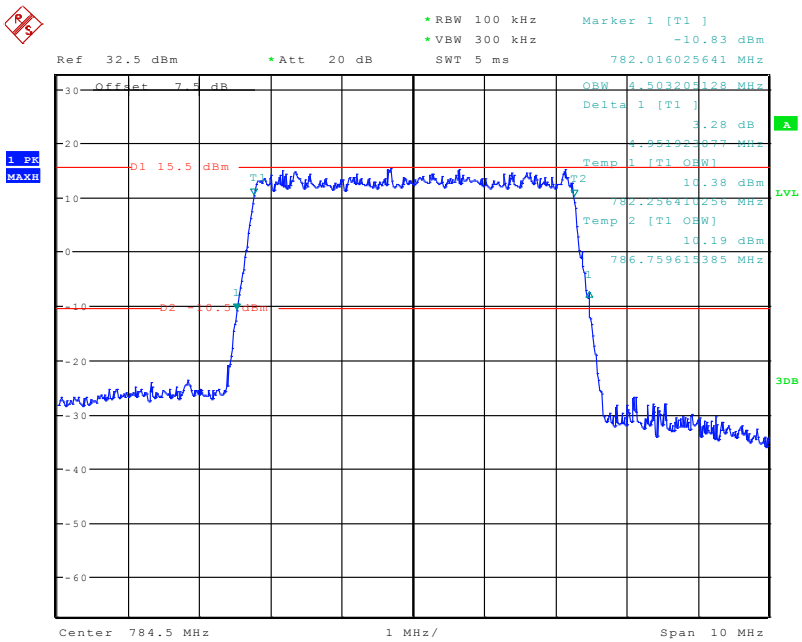

Date: 13.MAR.2020 09:53:01

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



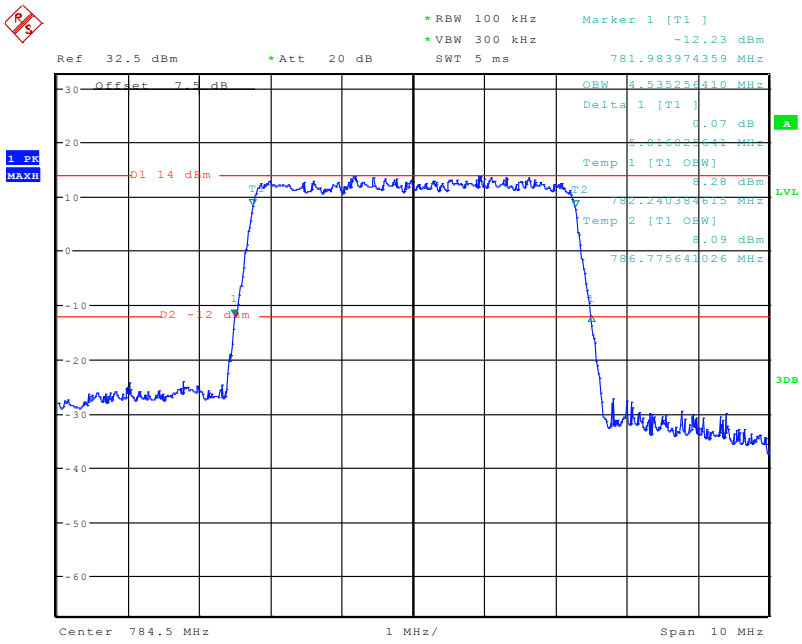

Date: 13.MAR.2020 09:53:22

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




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

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




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

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

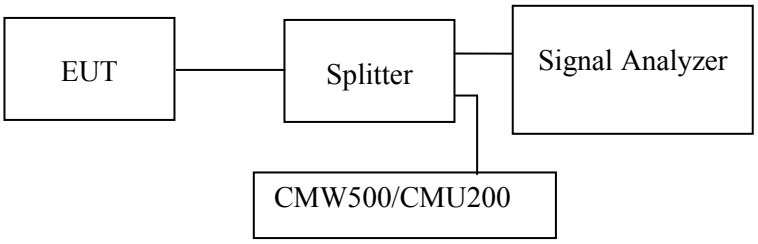
## Applicable Standard

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

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

## Test Procedure

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




## Test Data

### Environmental Conditions

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

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

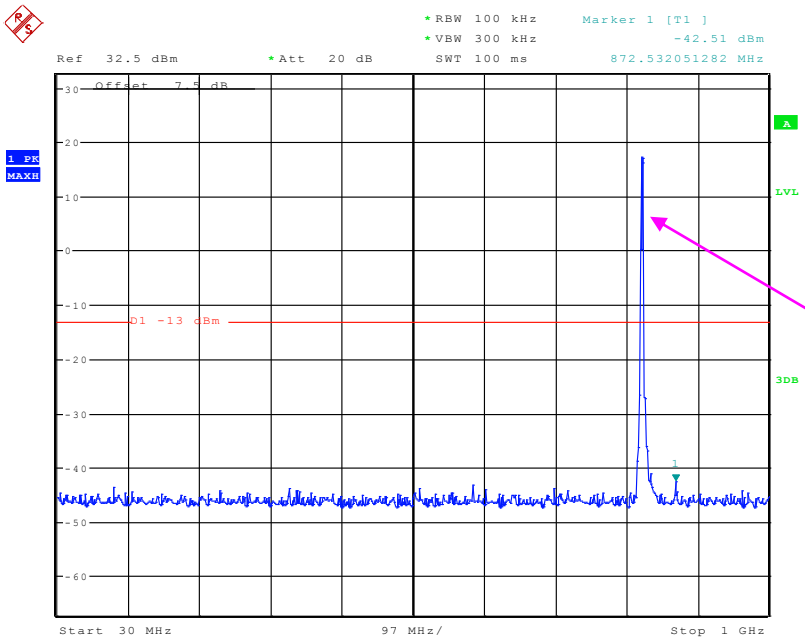
*EUT operation mode: Transmitting*

**Test result: Pass**

*Please refer to the following plots.*

**Cellular Band (Part 22H)**

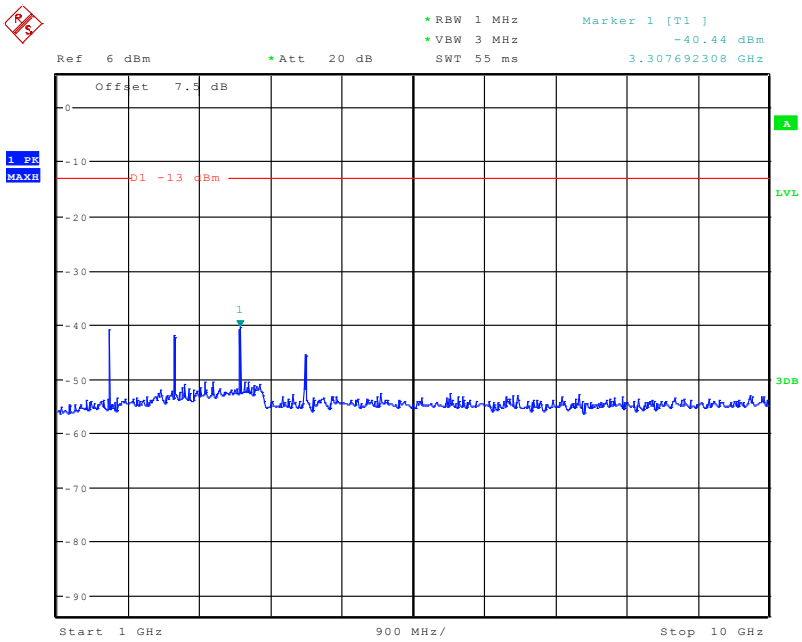
## 30 MHz – 1 GHz, Low Channel (WCDMA Mode)




Fundamental test

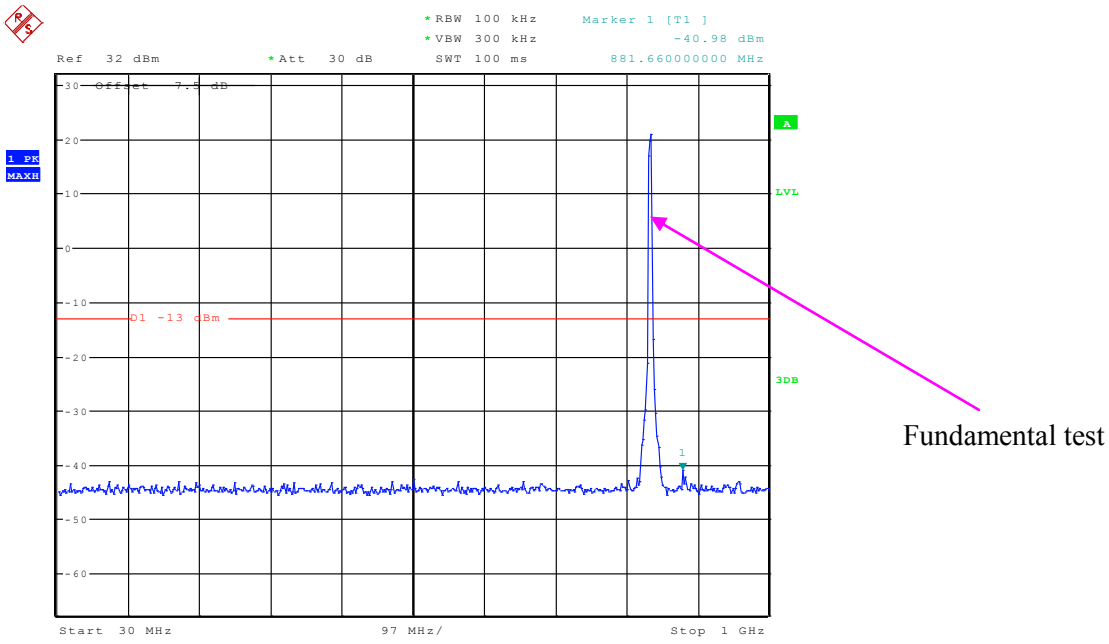
Date: 29.NOV.2020 16:45:37

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



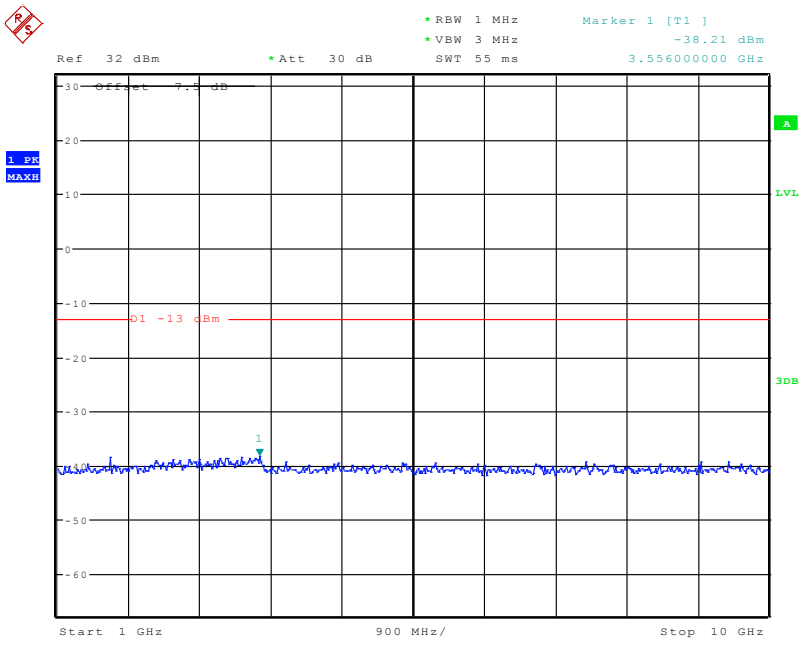

Date: 29.NOV.2020 16:46:31

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



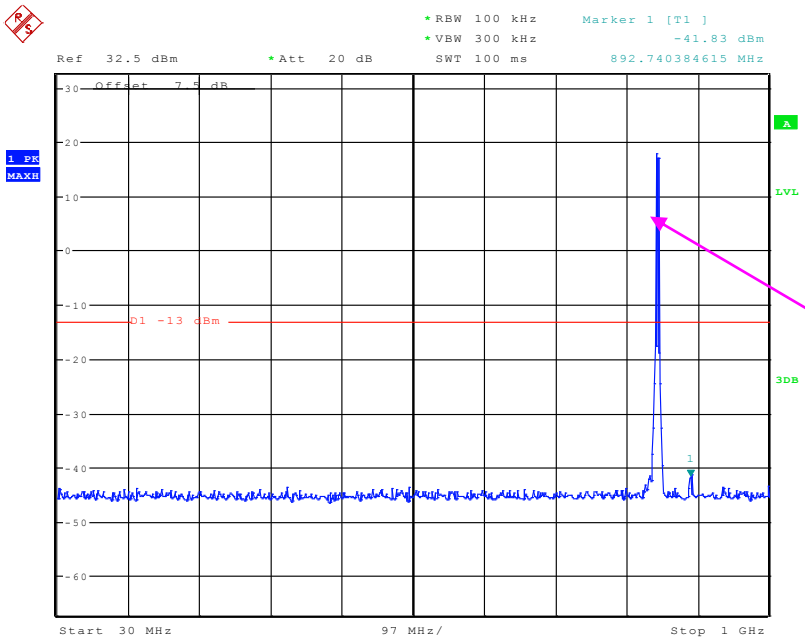

Date: 9.MAR.2020 10:31:51

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




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

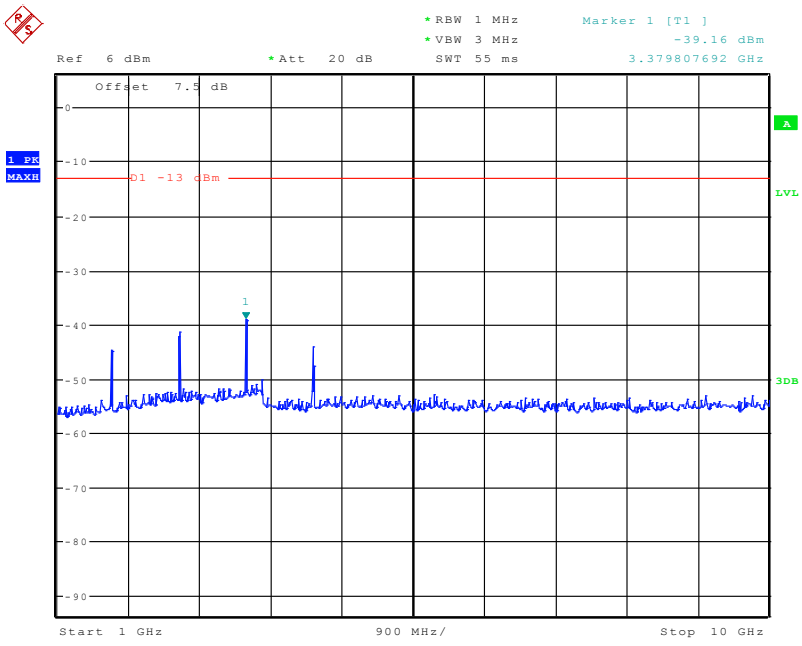
## 30 MHz – 1 GHz, High Channel (WCDMA Mode)




Fundamental test

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

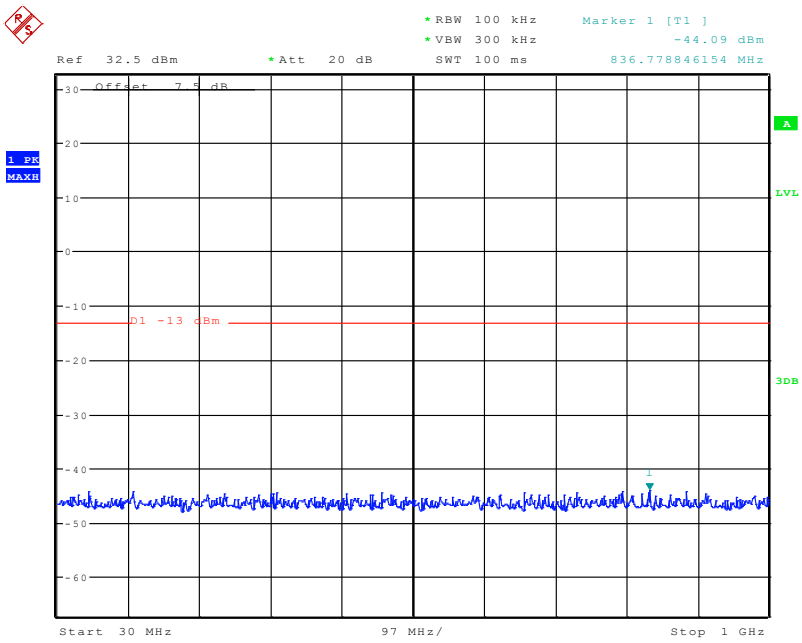
## 1 GHz – 10 GHz, High Channel (WCDMA Mode)




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

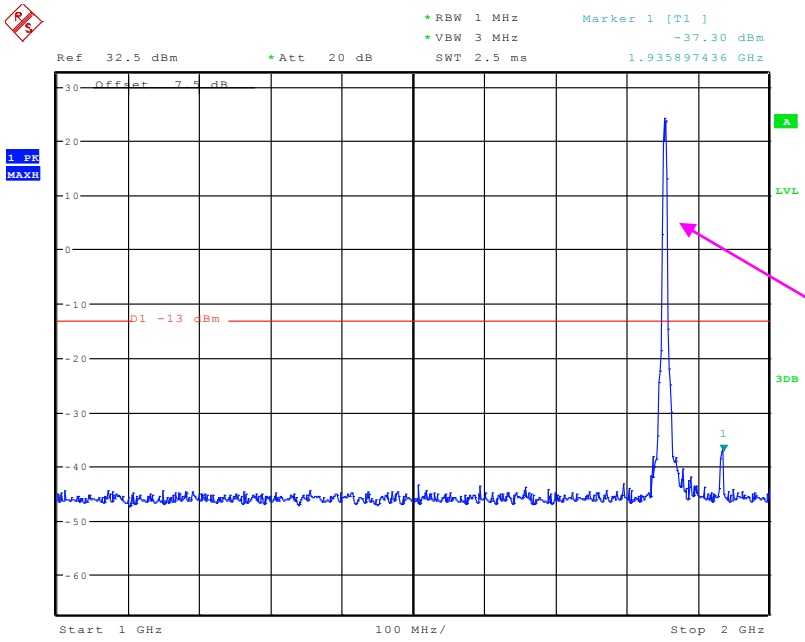
**PCS Band (Part 24E)**

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




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

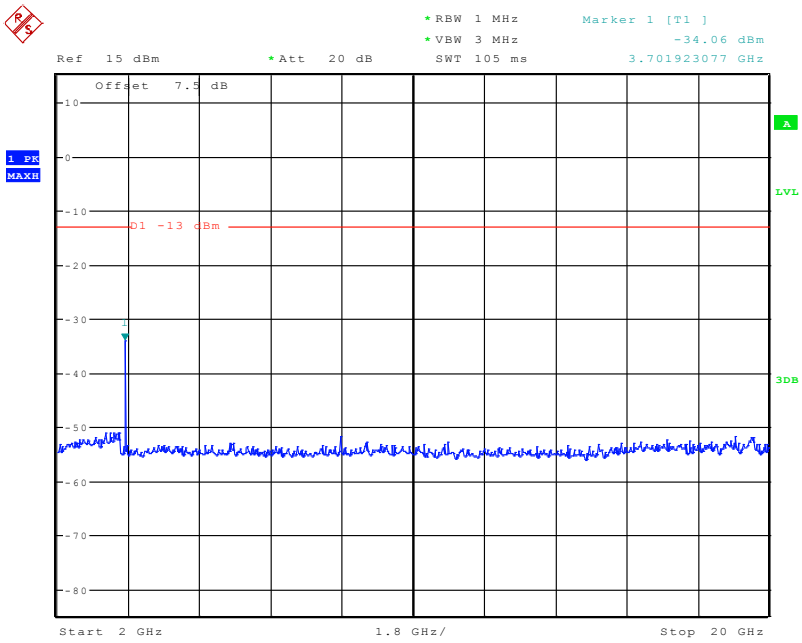
**1 GHz – 2 GHz, Low Channel (WCDMA Mode)**




Fundamental test

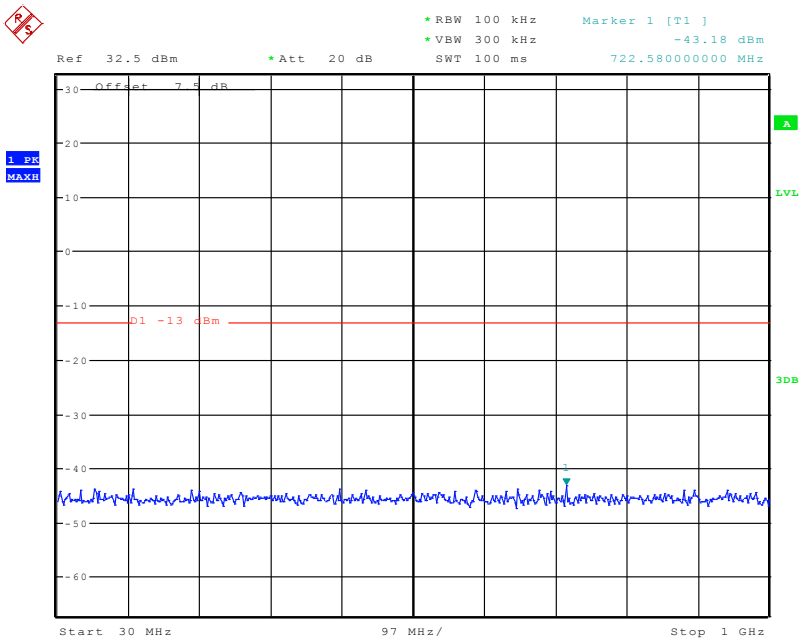
Date: 29.NOV.2020 16:50:57

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



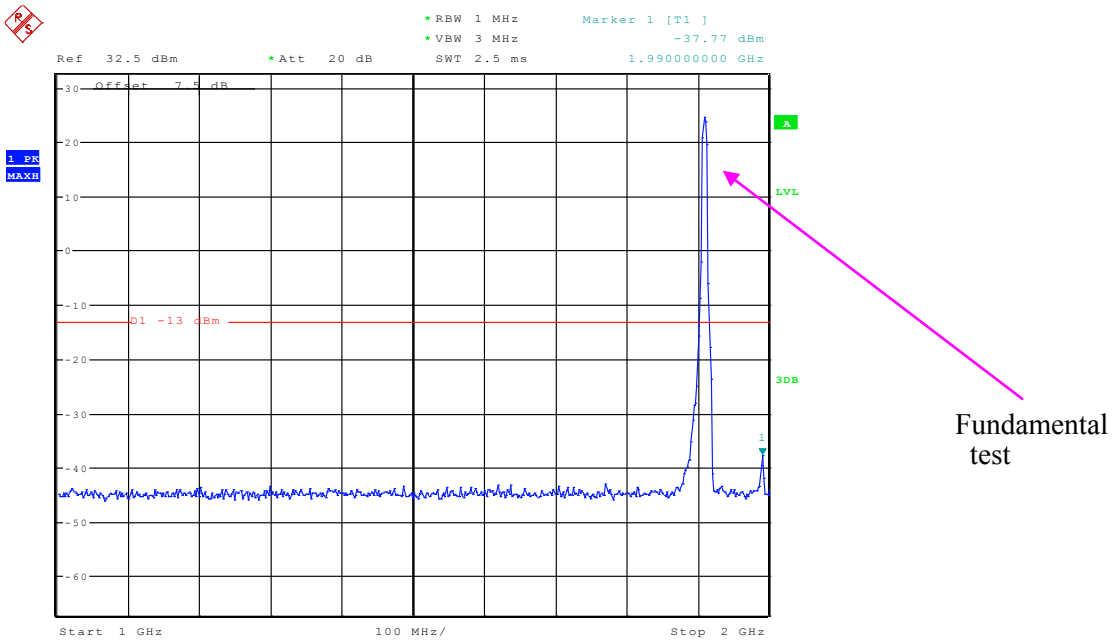

Date: 29.NOV.2020 16:51:53

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



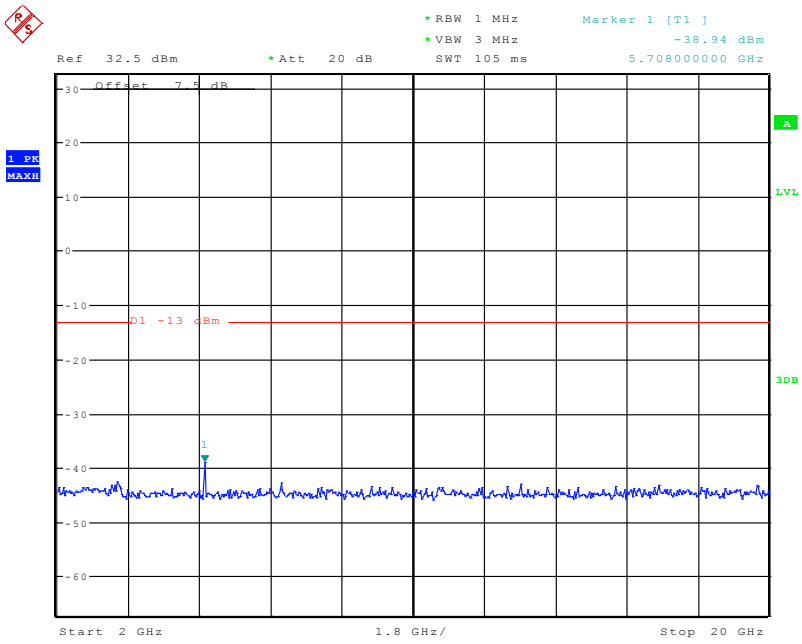

Date: 9.MAR.2020 11:29:01

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



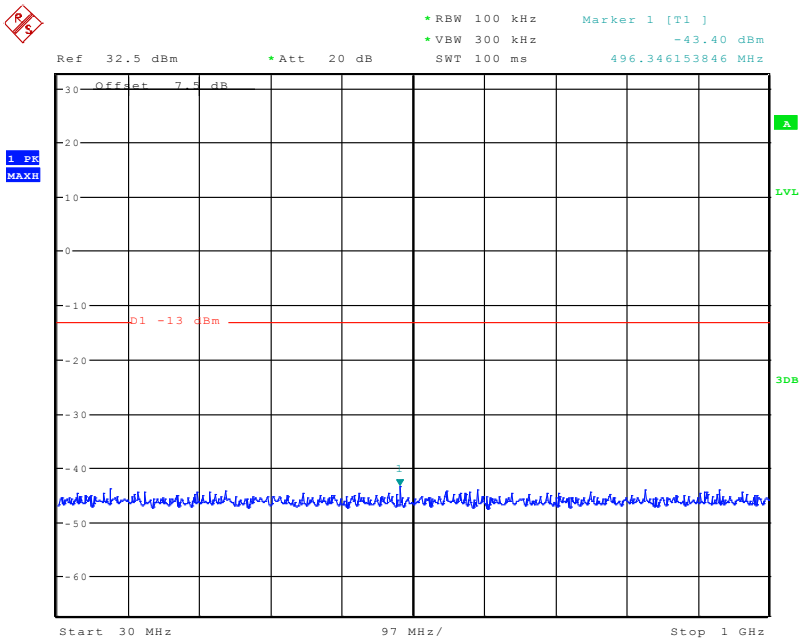

Date: 9.MAR.2020 11:29:46

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



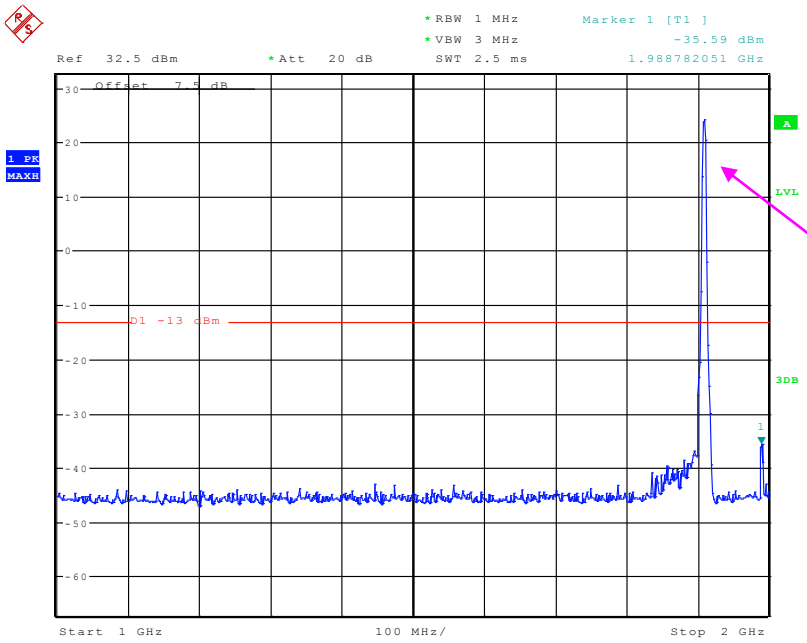

Date: 9.MAR.2020 11:30:17

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




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

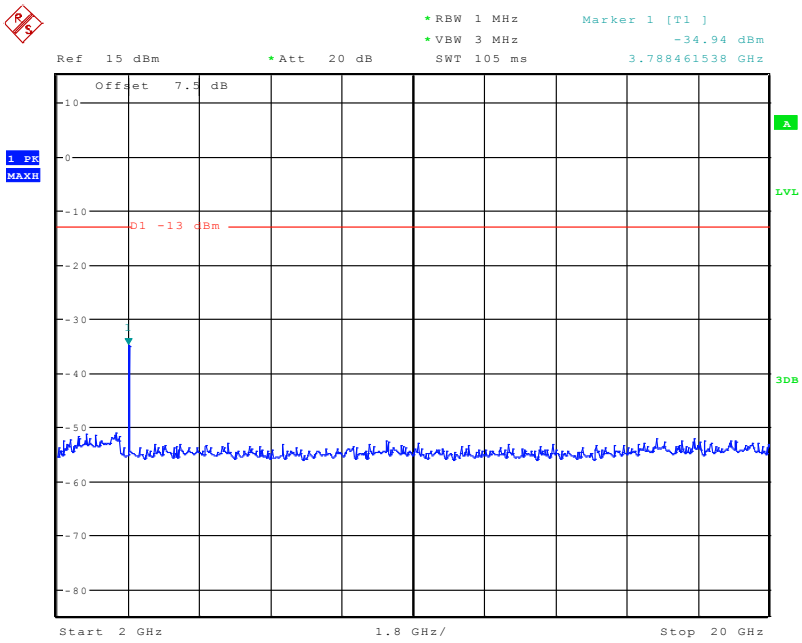
## 1 GHz – 2 GHz, High Channel (WCDMA Mode)




Fundamental test

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

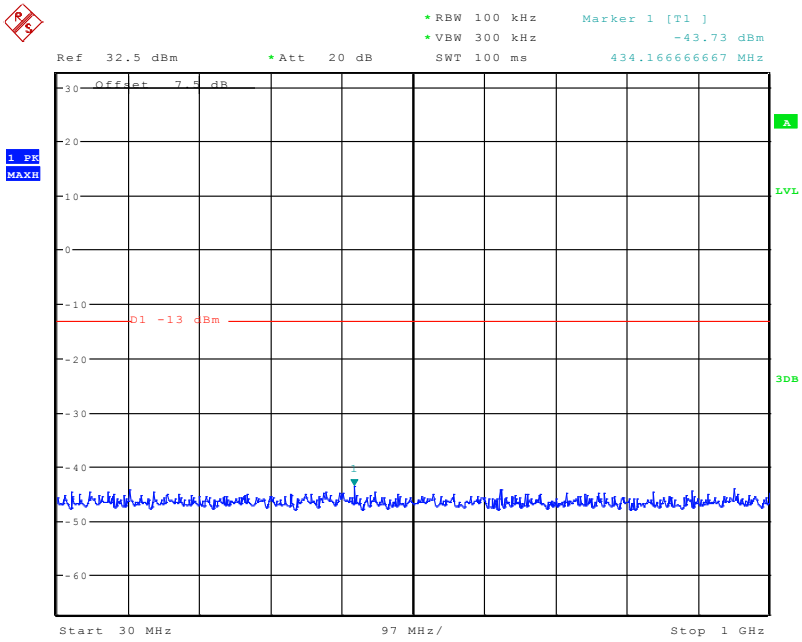
**2 GHz – 20 GHz , High Channel (WCDMA Mode)**




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

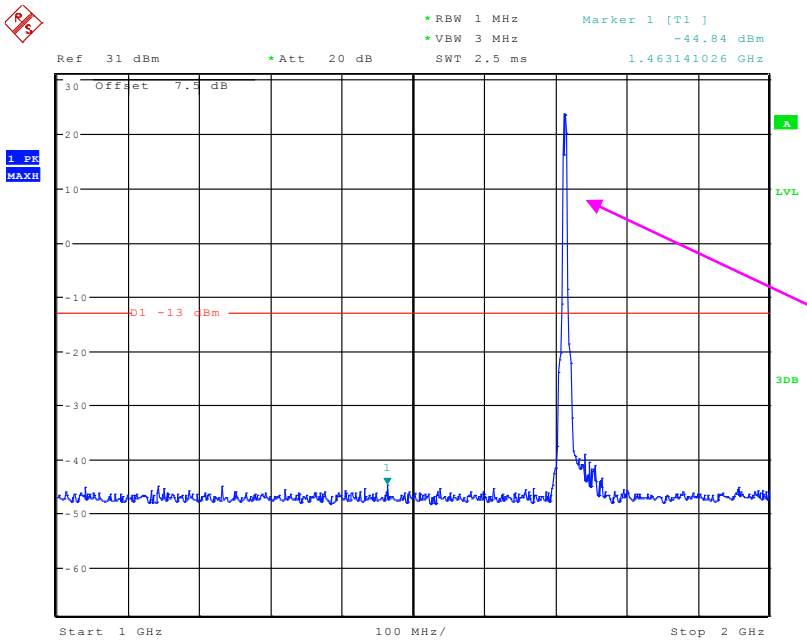
## AWS Band (Part 27)

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




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

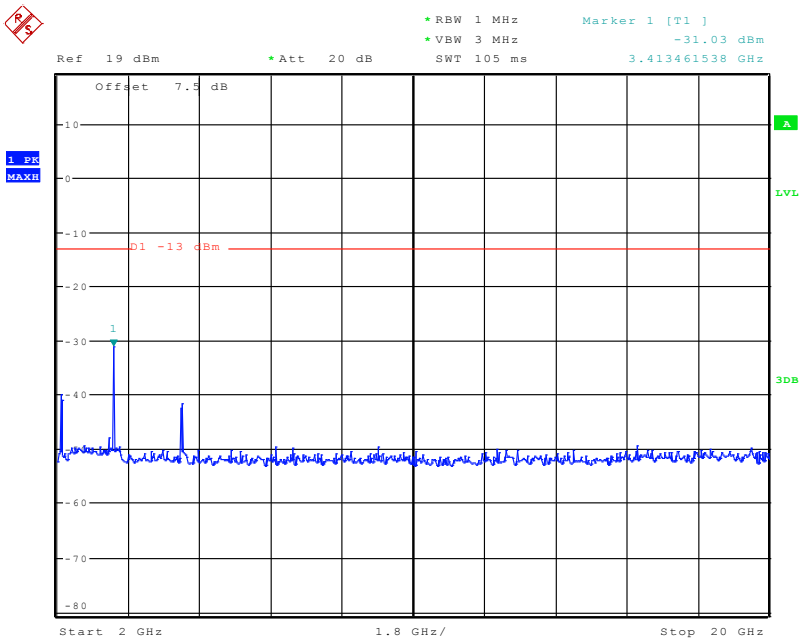
## 1 GHz – 2 GHz , Low Channel (WCDMA Mode)




Fundamental test

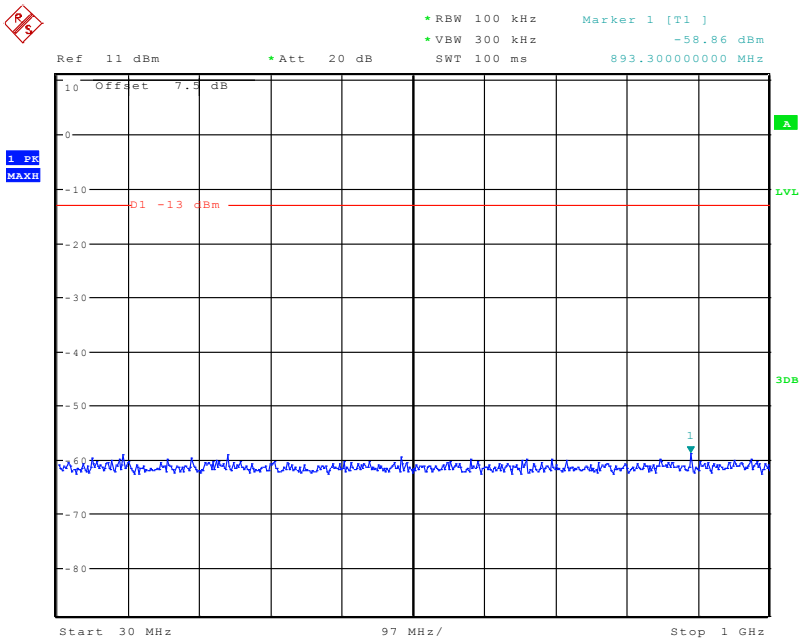
Date: 29.NOV.2020 16:49:09

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



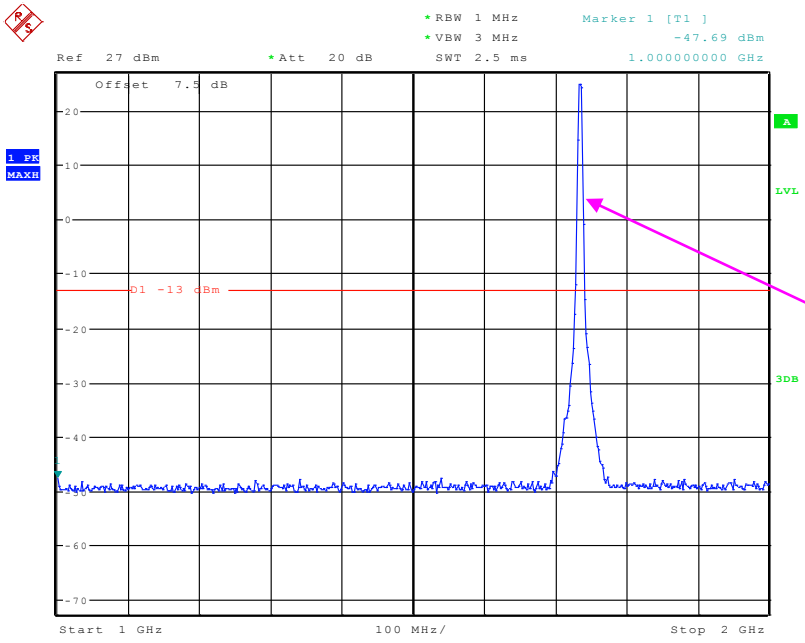

Date: 29.NOV.2020 16:48:48

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




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

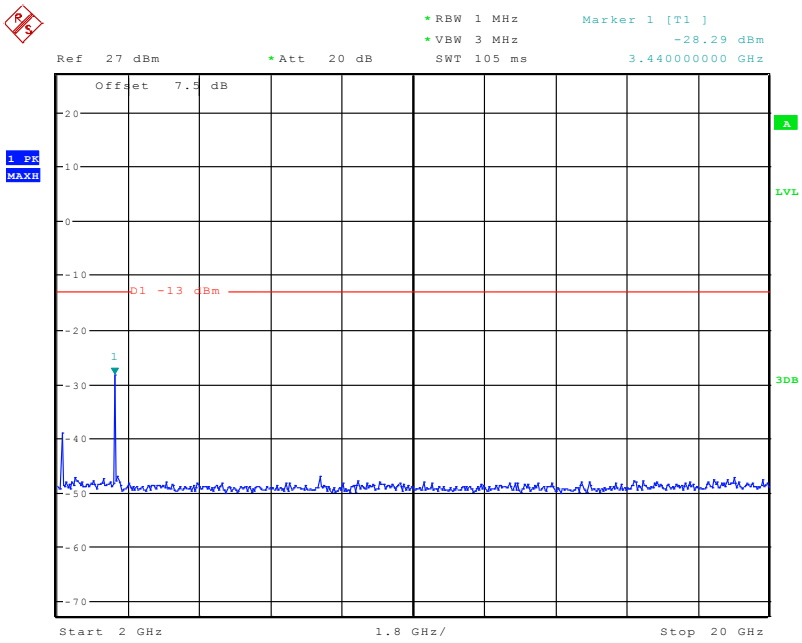
## 1 GHz – 2 GHz, Middle Channel (WCDMA Mode)




Fundamental test

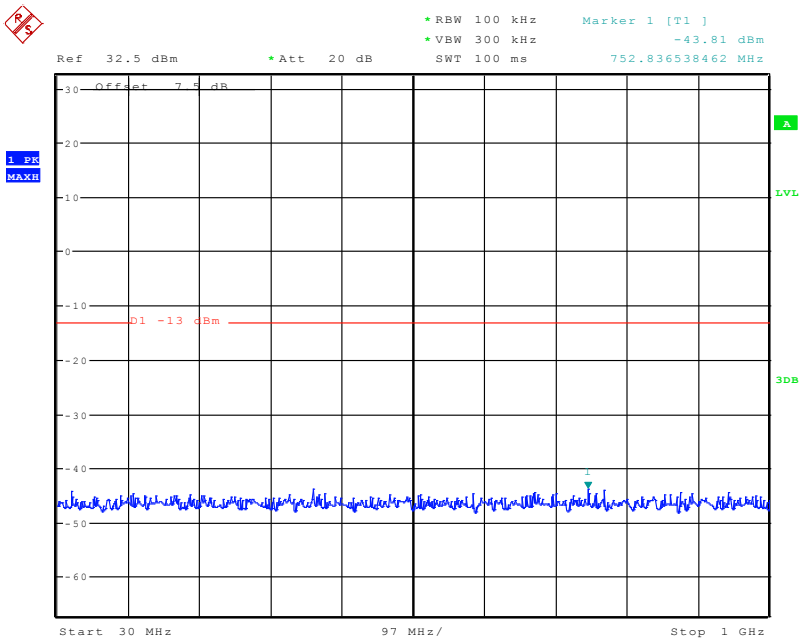
Date: 9.MAR.2020 11:13:27

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



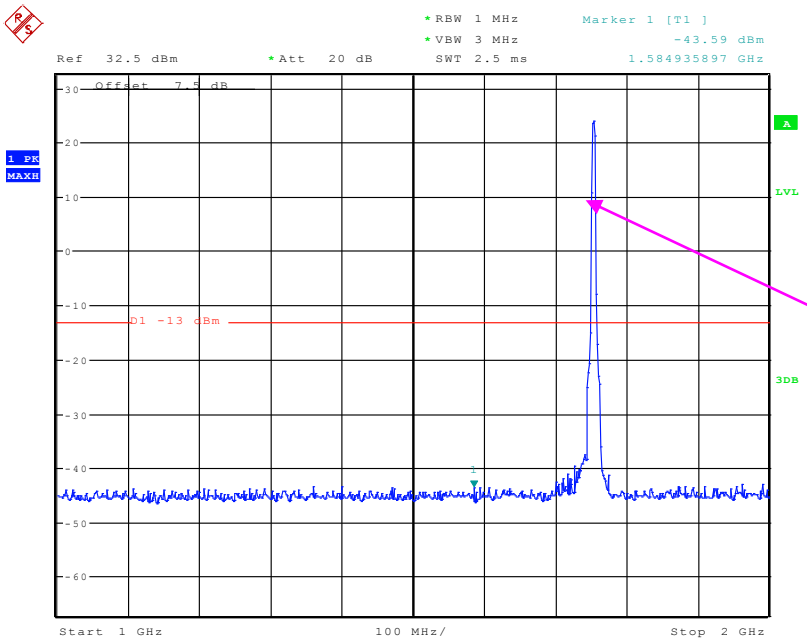

Date: 9.MAR.2020 11:14:22

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




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

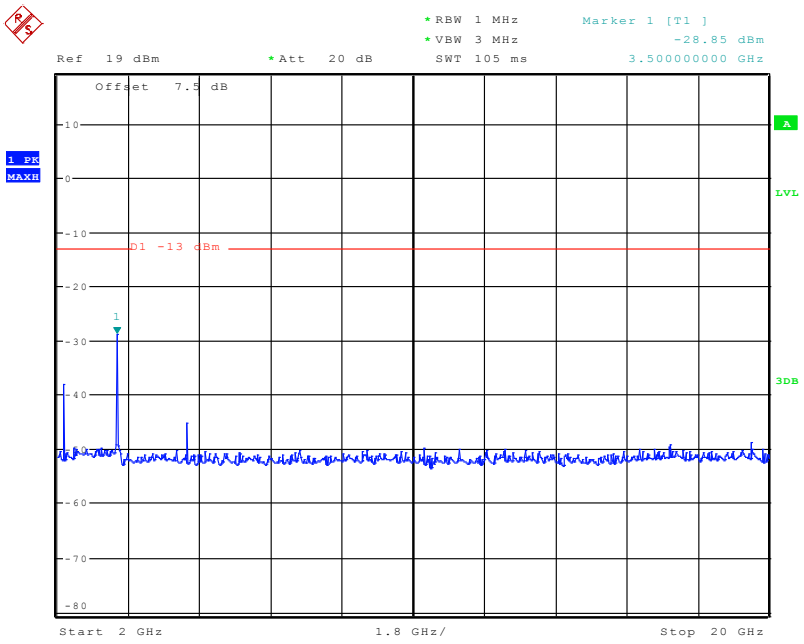
## 1 GHz – 2 GHz, High Channel (WCDMA Mode)




Fundamental test

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

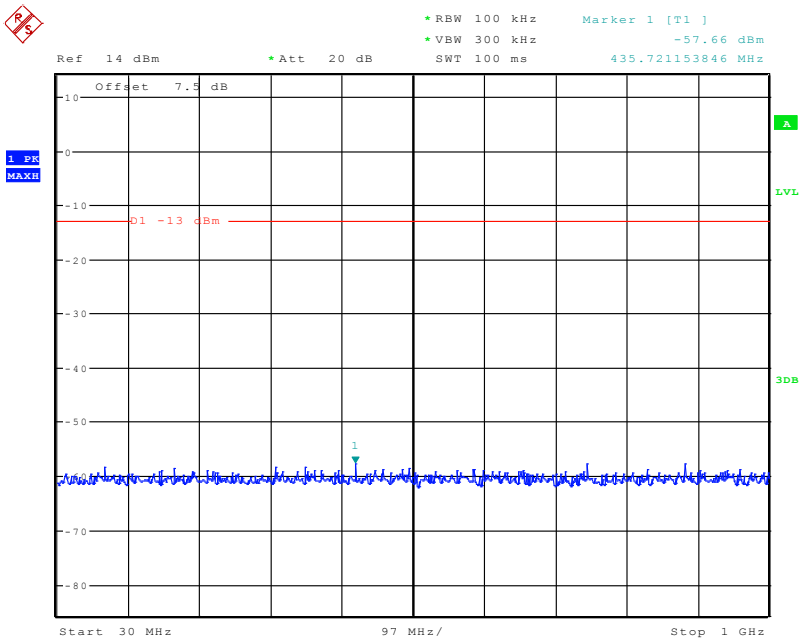
## 2 GHz – 20 GHz, High Channel (WCDMA Mode)




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

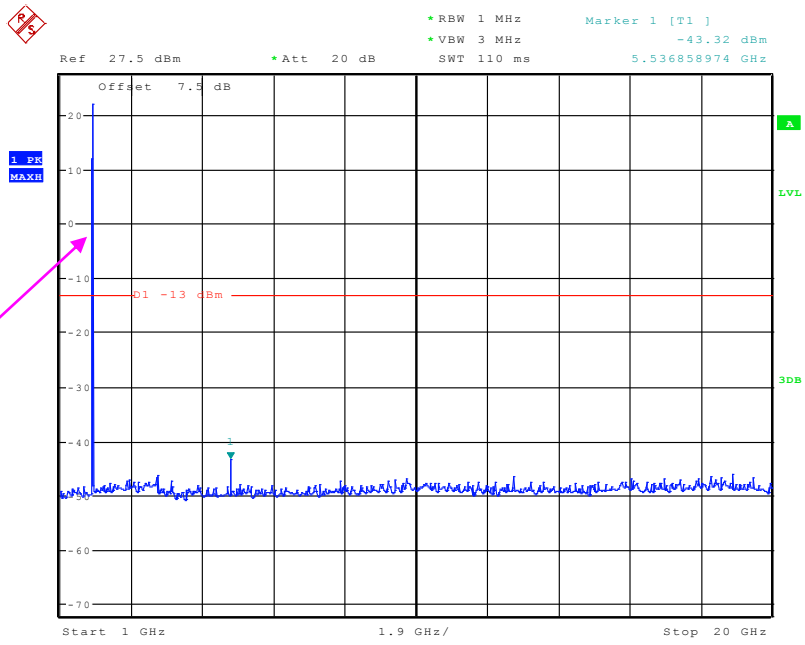
**LTE Band 2:**

**30 MHz - 1 GHz (1.4 MHz, Low channel)**




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

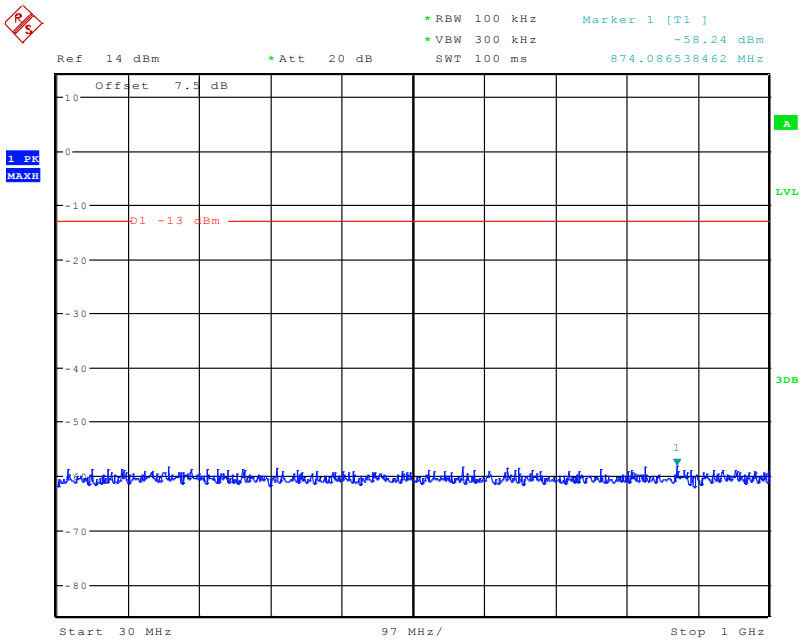
**1 GHz – 20 GHz (1.4 MHz, Low channel)**




Fundamental test

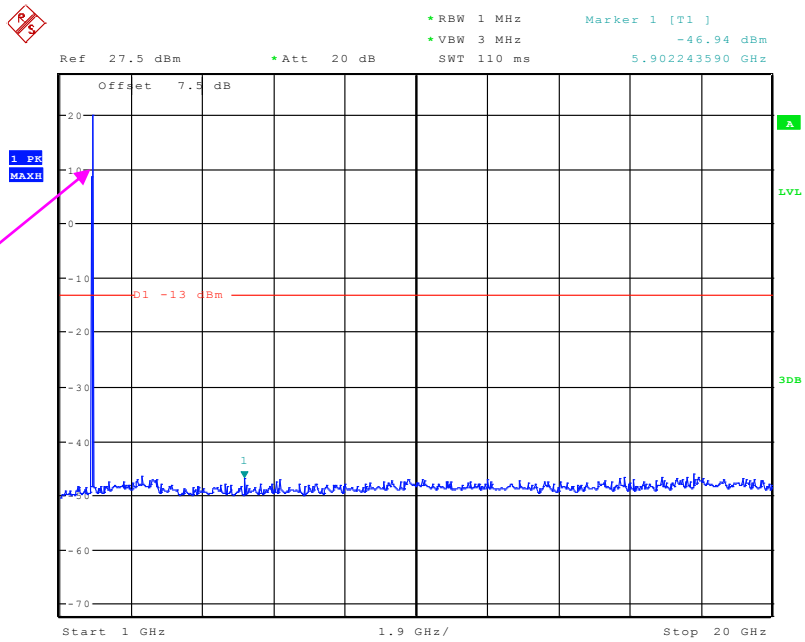
Date: 3.NOV.2020 14:40:50

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




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

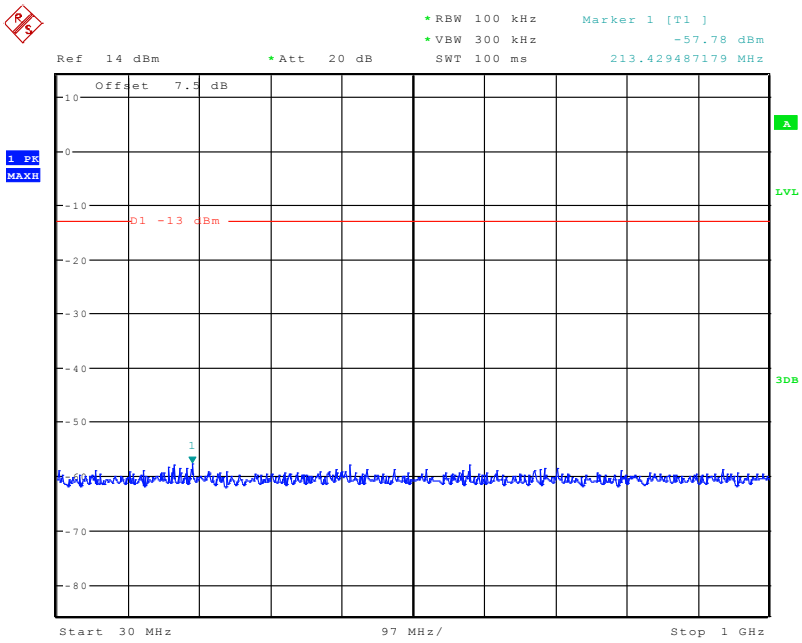
**1 GHz – 20 GHz (3.0 MHz, Low channel)**




Fundamental test

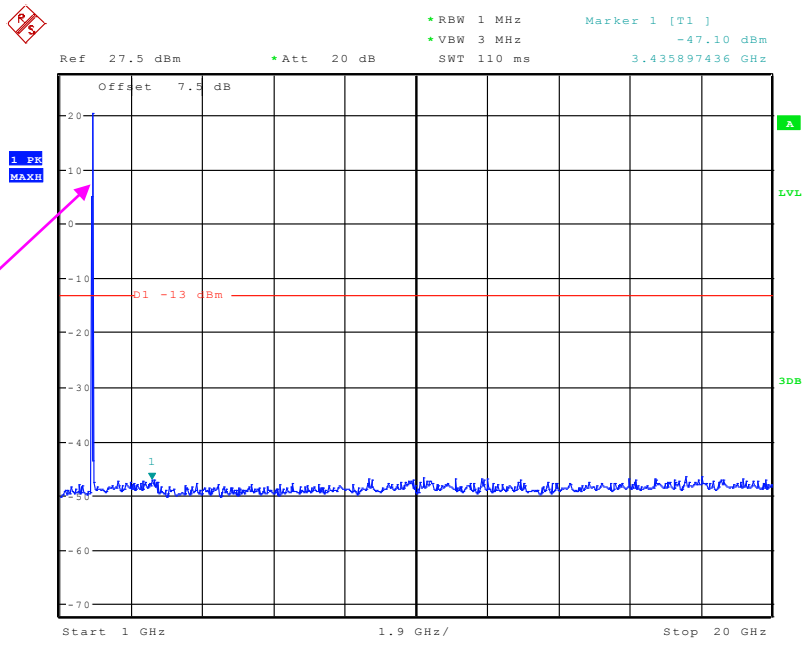
Date: 3.NOV.2020 14:38:47

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




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

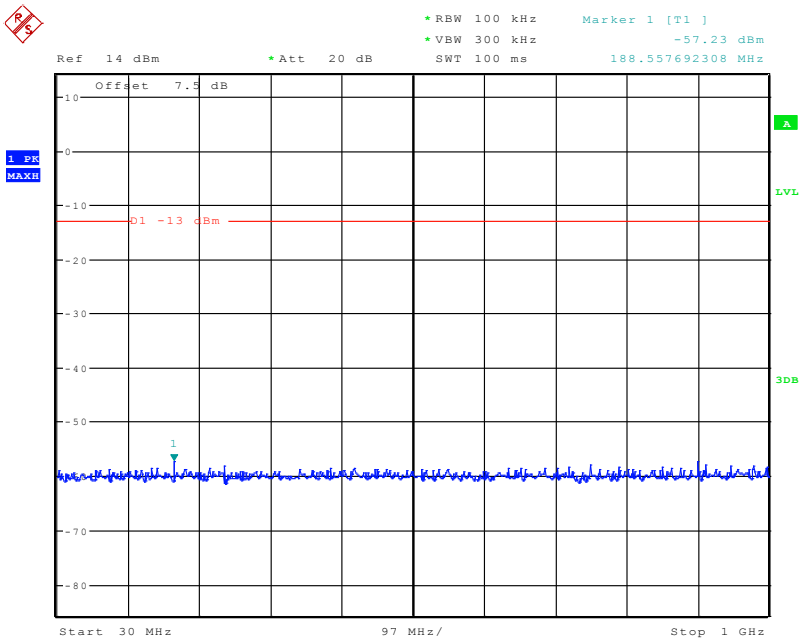
## 1 GHz – 20 GHz (5.0 MHz, Low channel)




Fundamental test

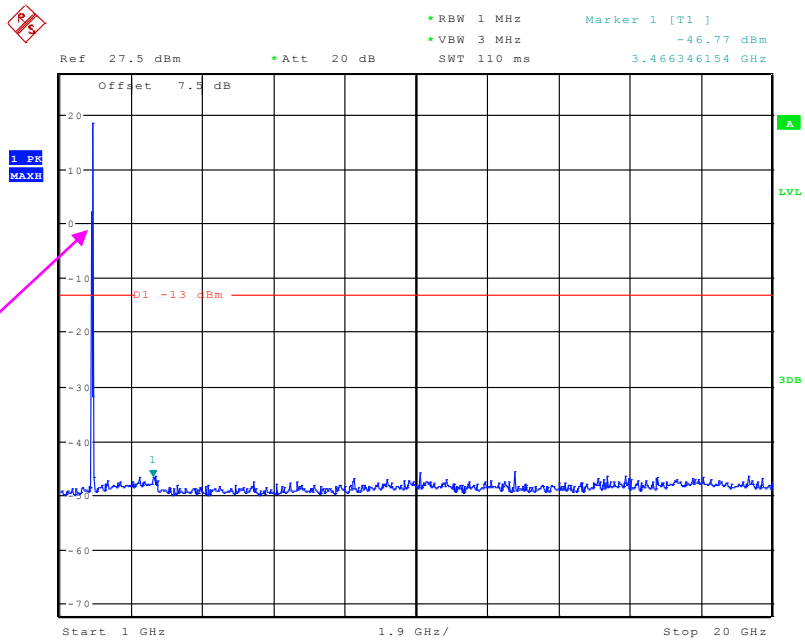
Date: 3.NOV.2020 14:37:59

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




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

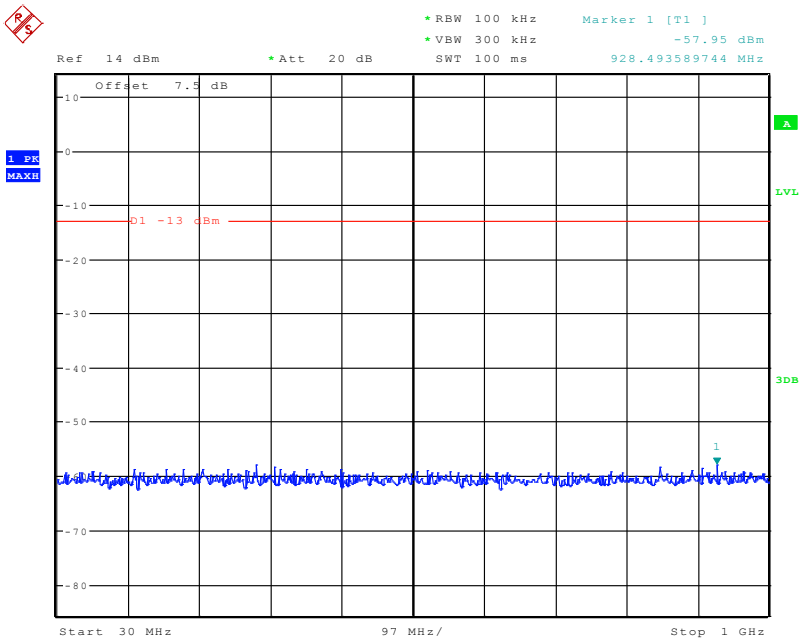
## 1 GHz – 20 GHz (10.0 MHz, Low channel)




Fundamental test

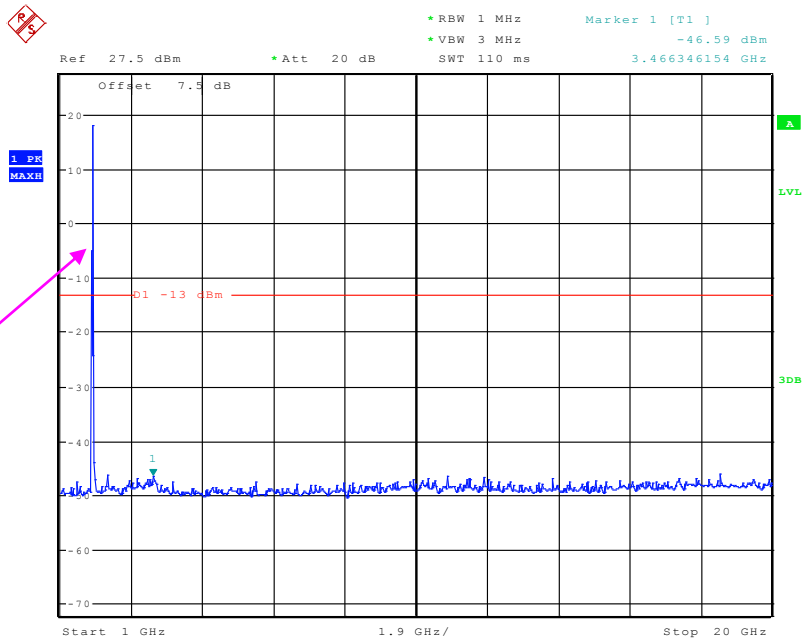
Date: 3.NOV.2020 14:36:10

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




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

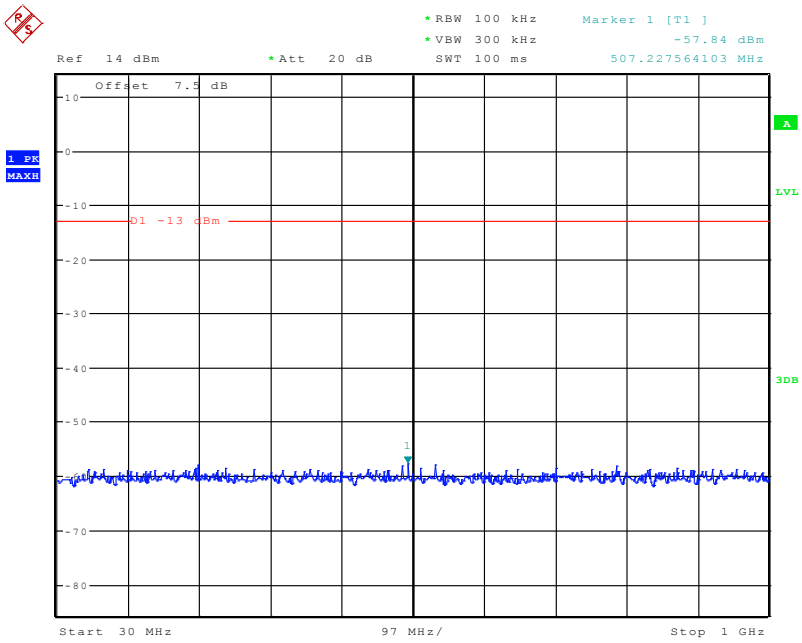
## 1 GHz – 20 GHz (15.0 MHz, Low channel)




Fundamental test

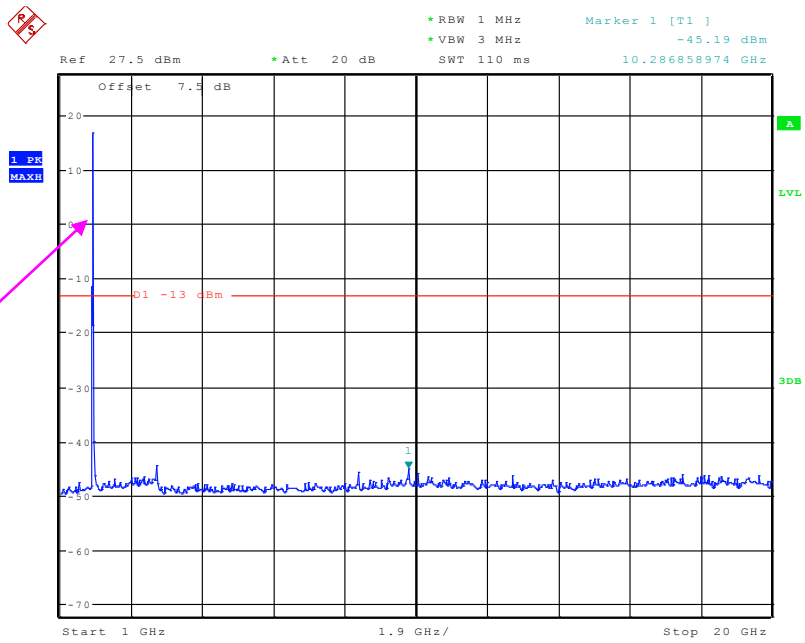
Date: 3.NOV.2020 14:34:34

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




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

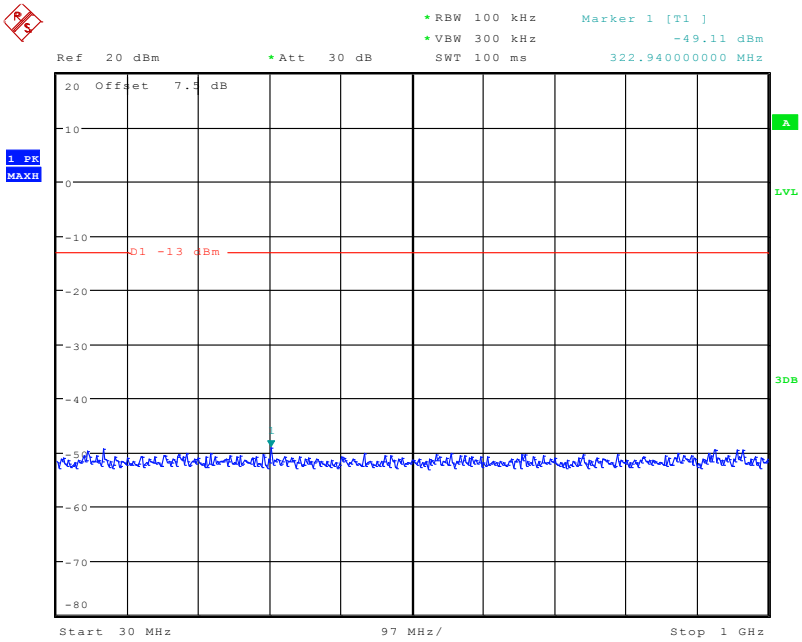
## 1 GHz – 2 GHz (20.0 MHz, Low channel)




Fundamental test

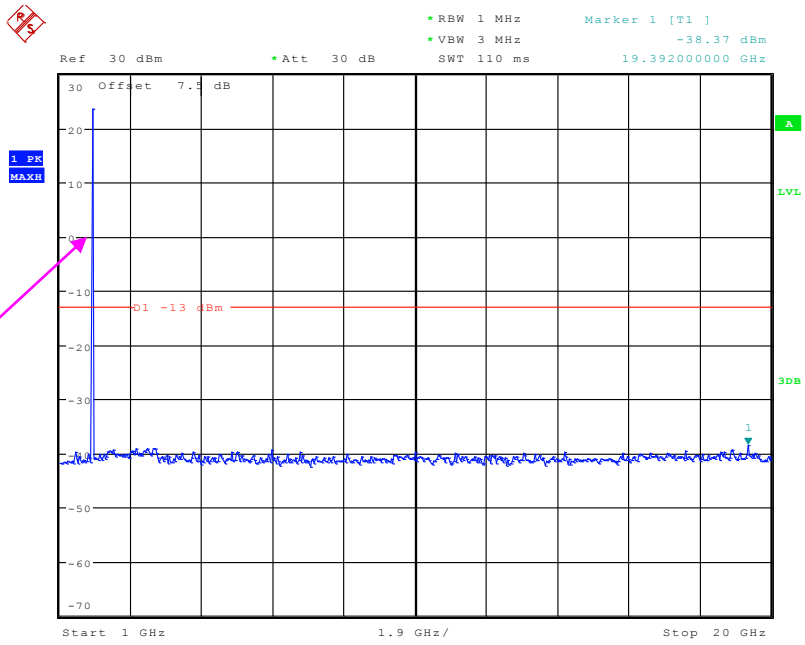
Date: 3.NOV.2020 14:25:24

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




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

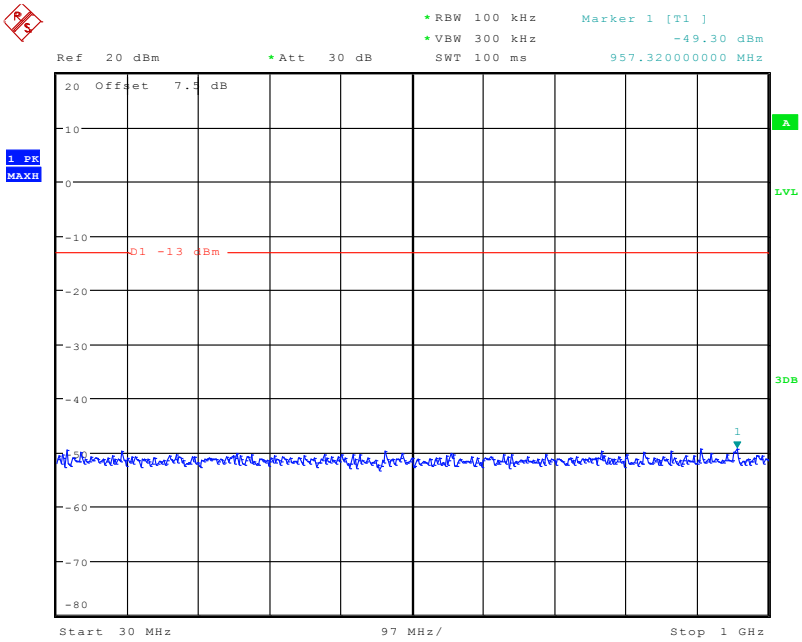
## 1 GHz – 20 GHz (1.4 MHz, Middle channel)




Fundamental test

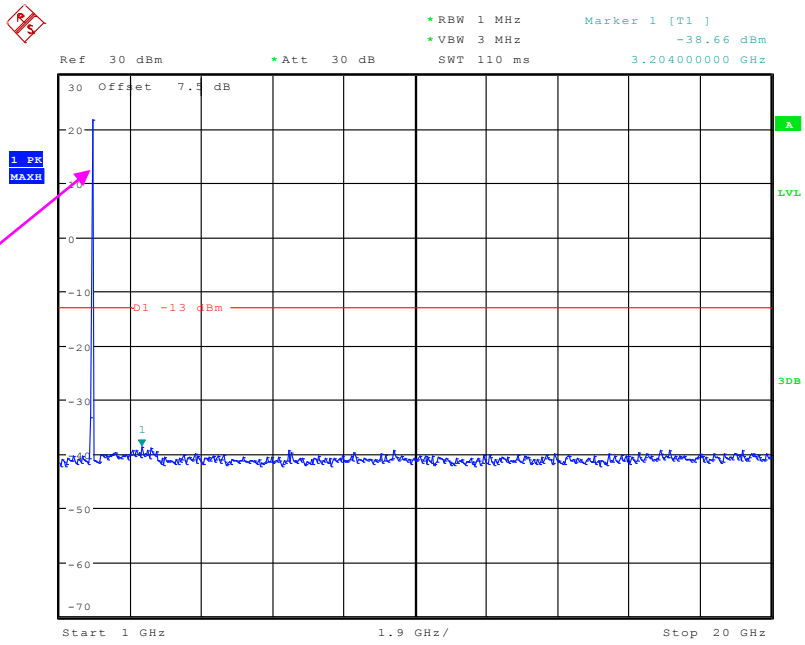
Date: 13.MAR.2020 11:38:23

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




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

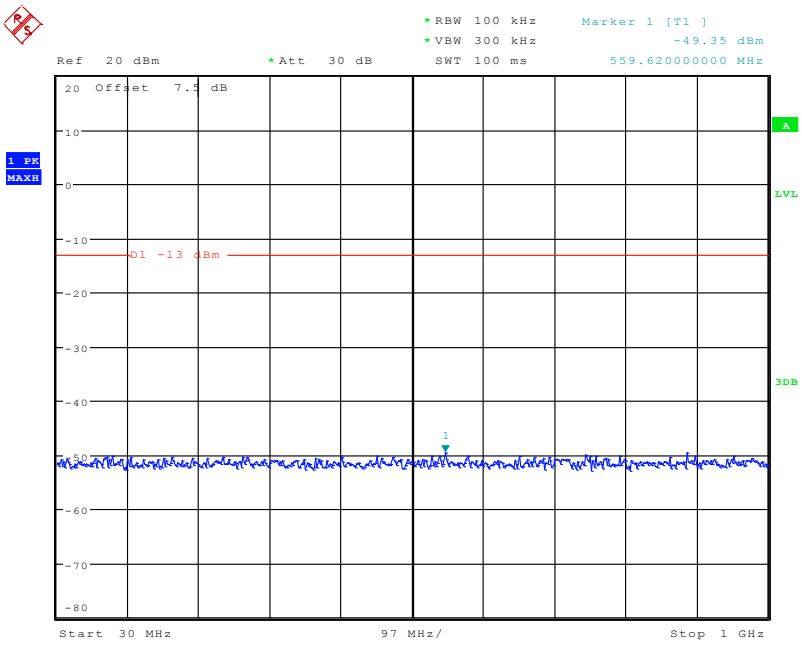
## 1 GHz – 20 GHz (3.0 MHz, Middle channel)




Fundamental test

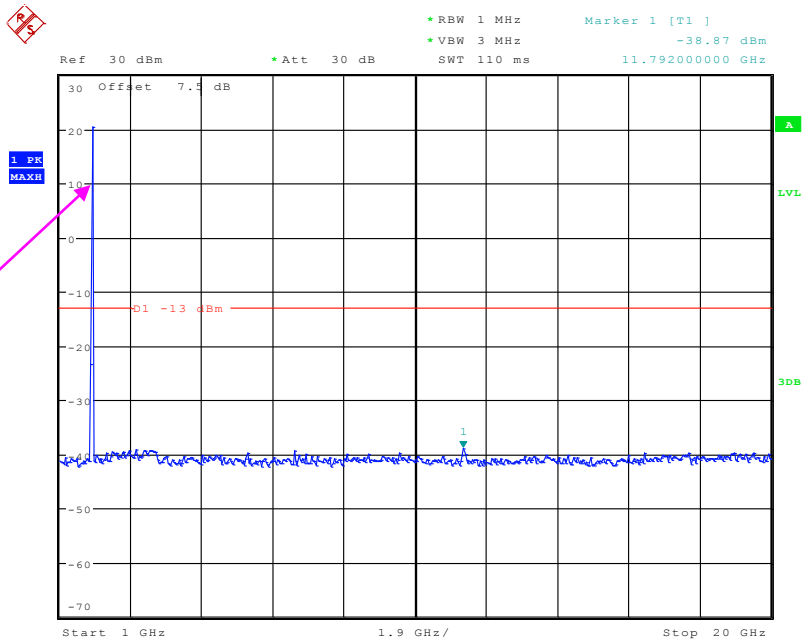
Date: 13.MAR.2020 11:38:54

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




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

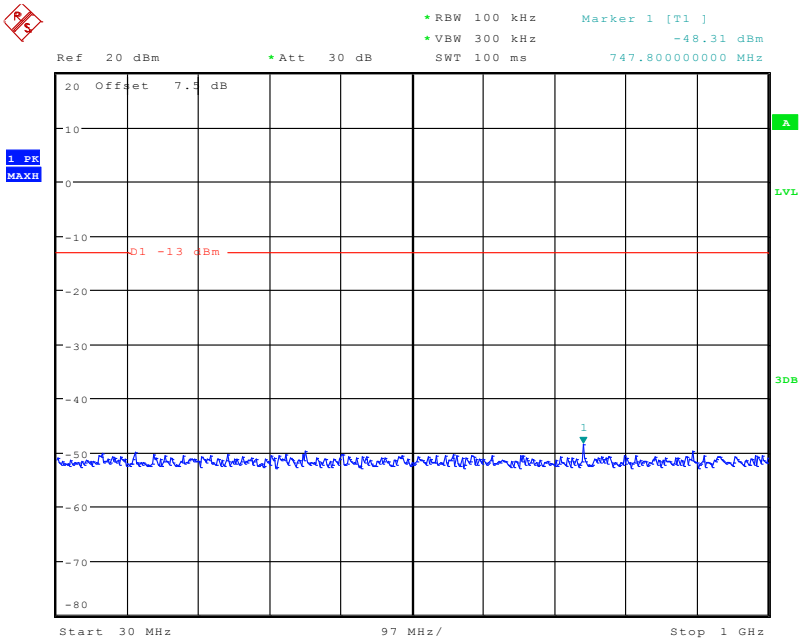
## 1 GHz – 20 GHz (5.0 MHz, Middle channel)




Fundamental test

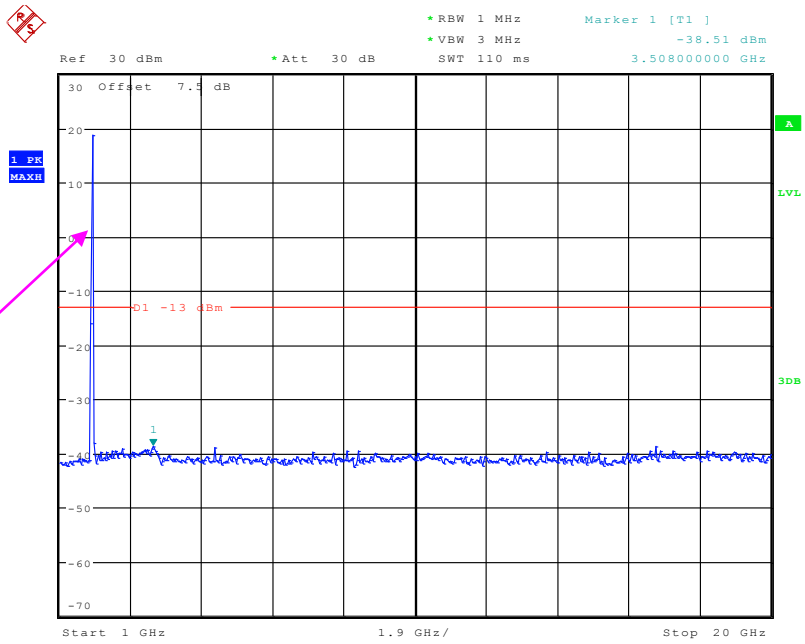
Date: 13.MAR.2020 11:39:25

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




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

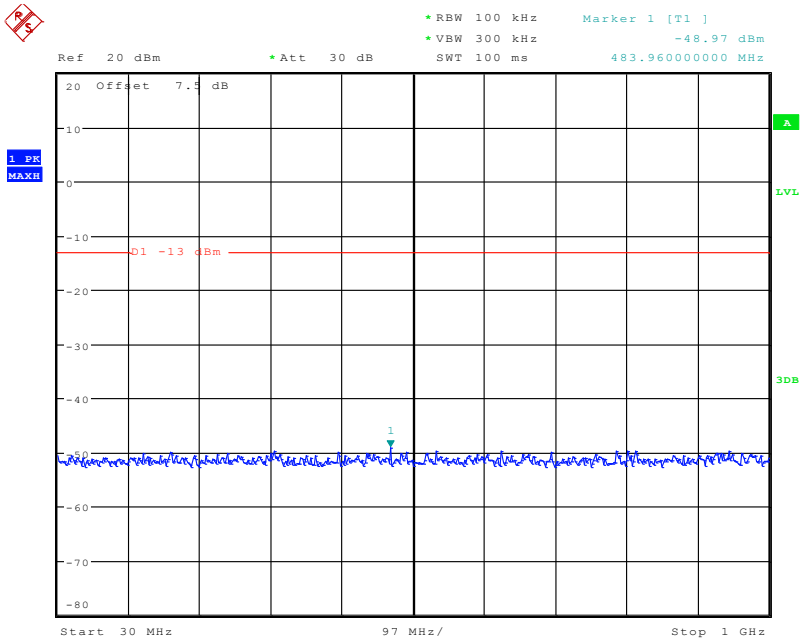
## 1 GHz – 20 GHz (10.0 MHz, Middle channel)




Fundamental test

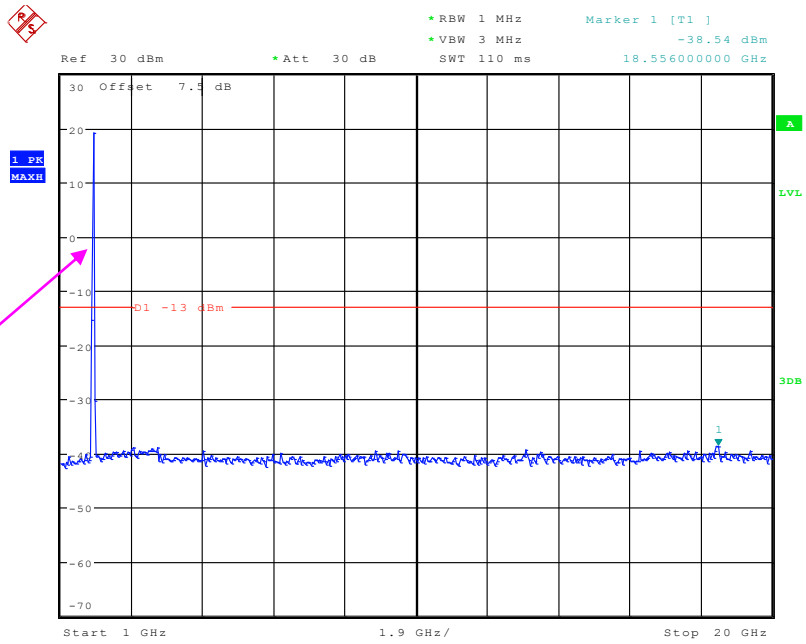
Date: 13.MAR.2020 11:39:55

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




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

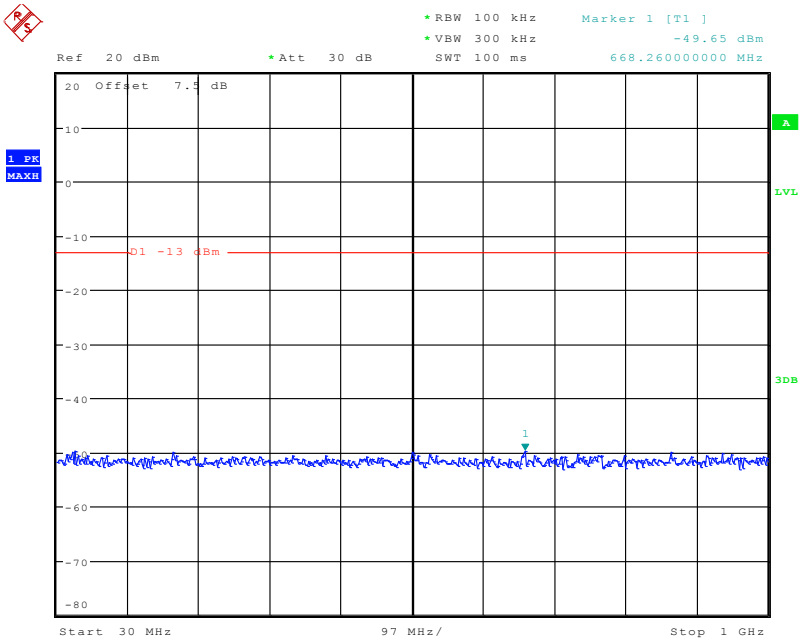
## 1 GHz – 20 GHz (15.0 MHz, Middle channel)




Fundamental test

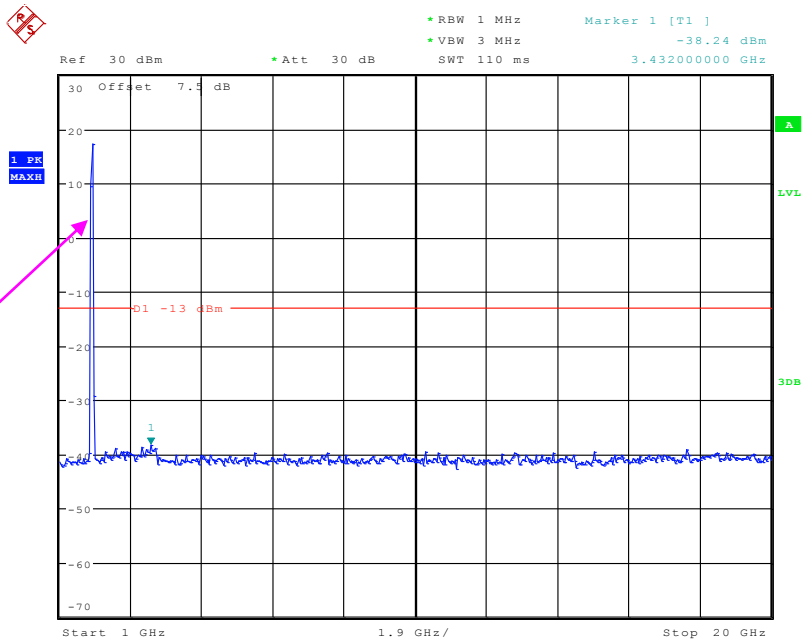
Date: 13.MAR.2020 11:40:30

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




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

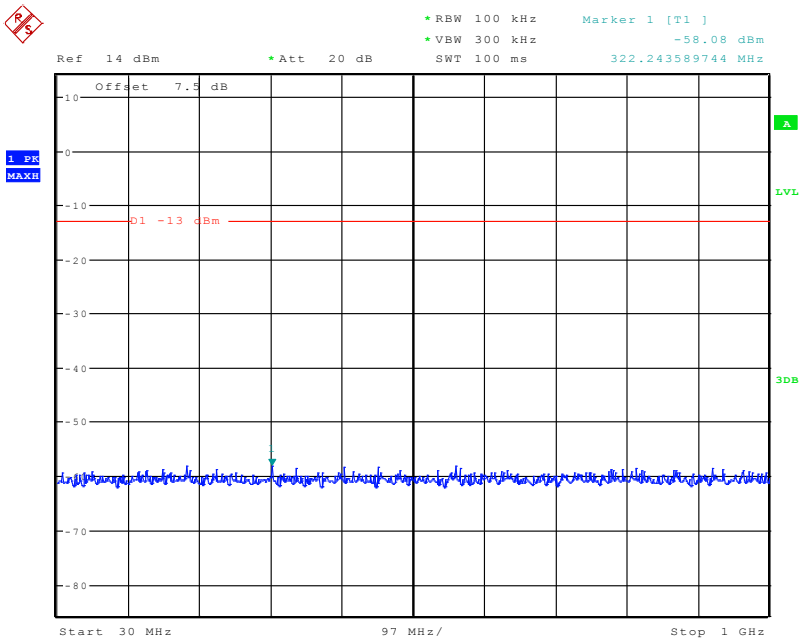
## 1 GHz – 2 GHz (20.0 MHz, Middle channel)




Fundamental test

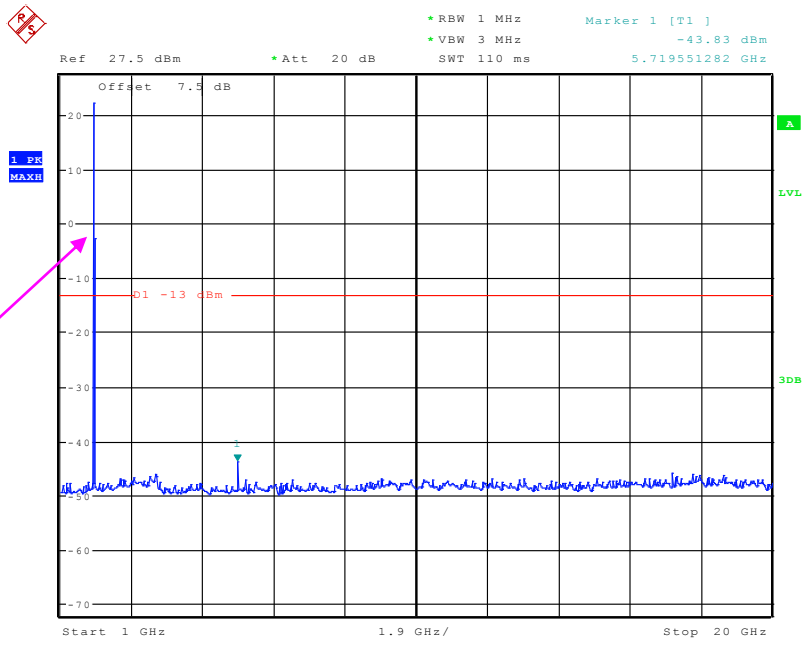
Date: 13.MAR.2020 11:41:02

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




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

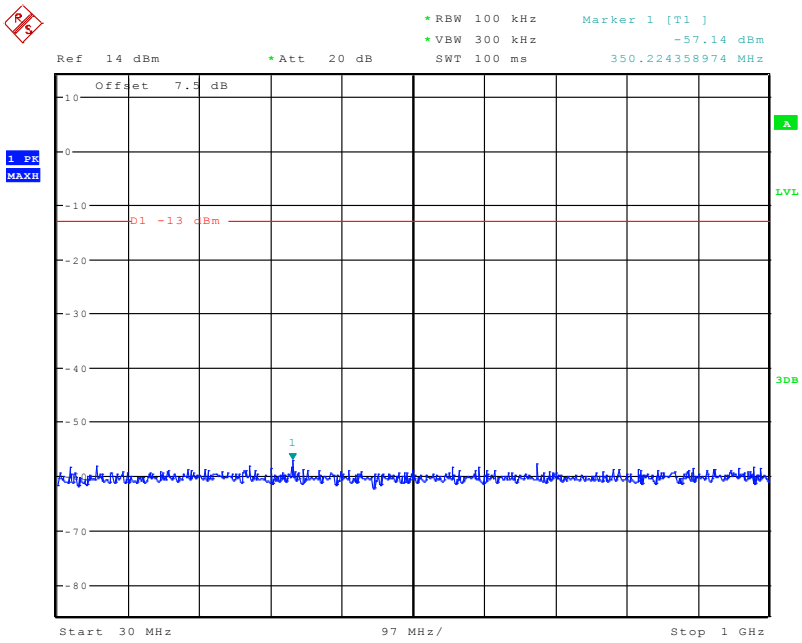
## 1 GHz – 20 GHz (1.4 MHz, High channel)




Fundamental test

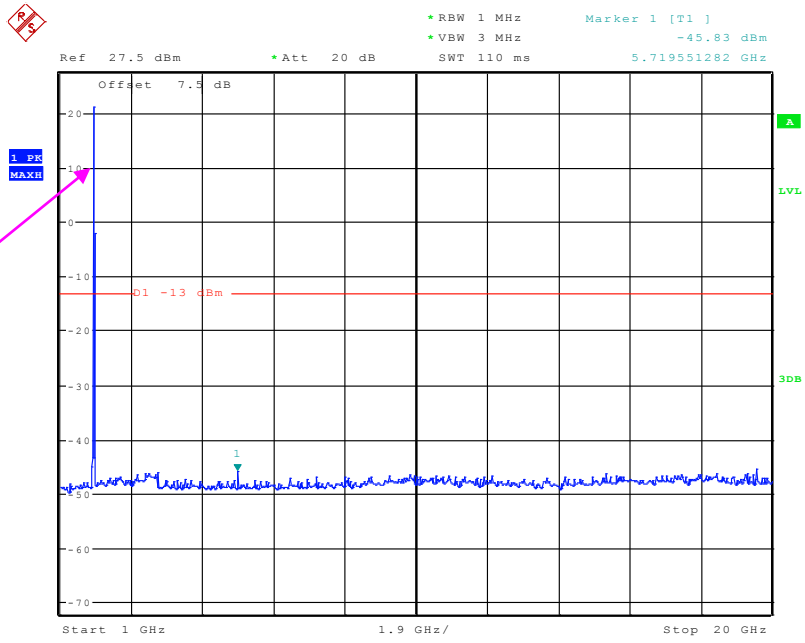
Date: 3.NOV.2020 14:40:20

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




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

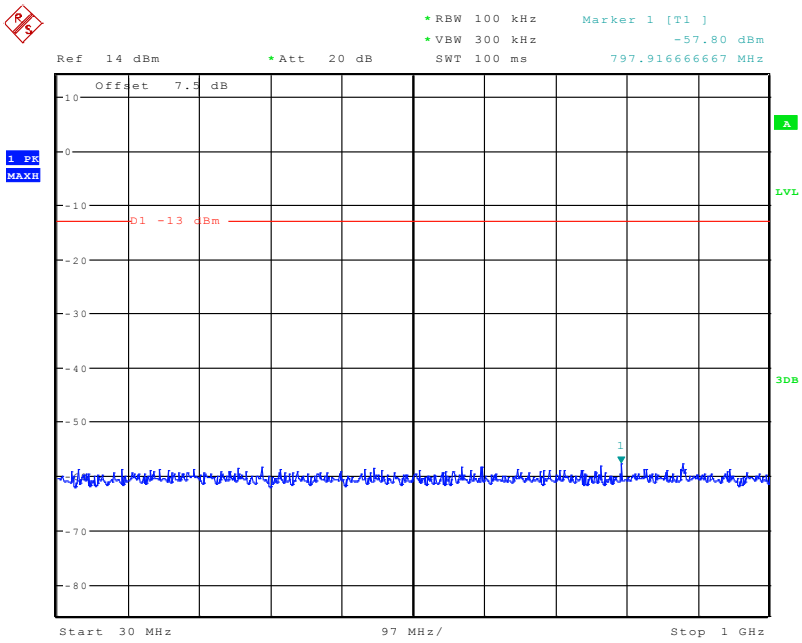
## 1 GHz – 20 GHz (3.0 MHz, High channel)




Fundamental test

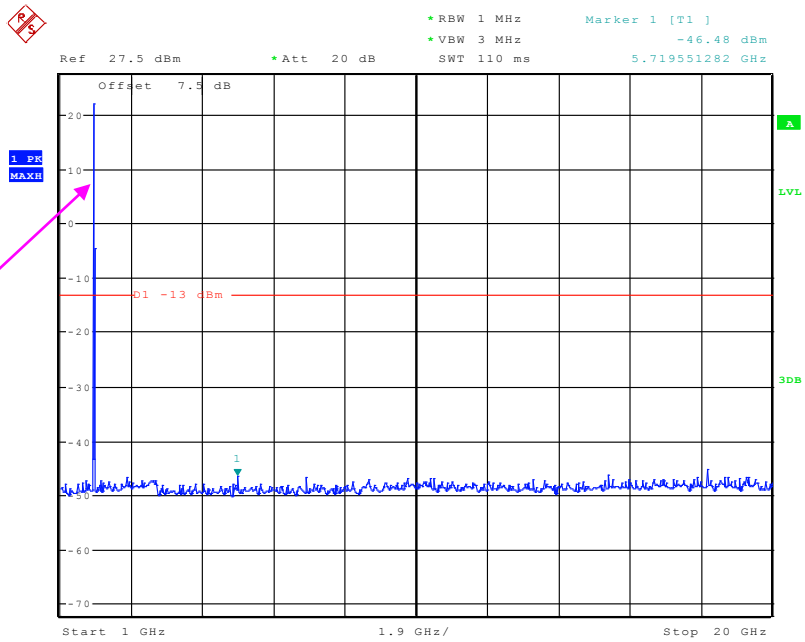
Date: 3.NOV.2020 14:41:44

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




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

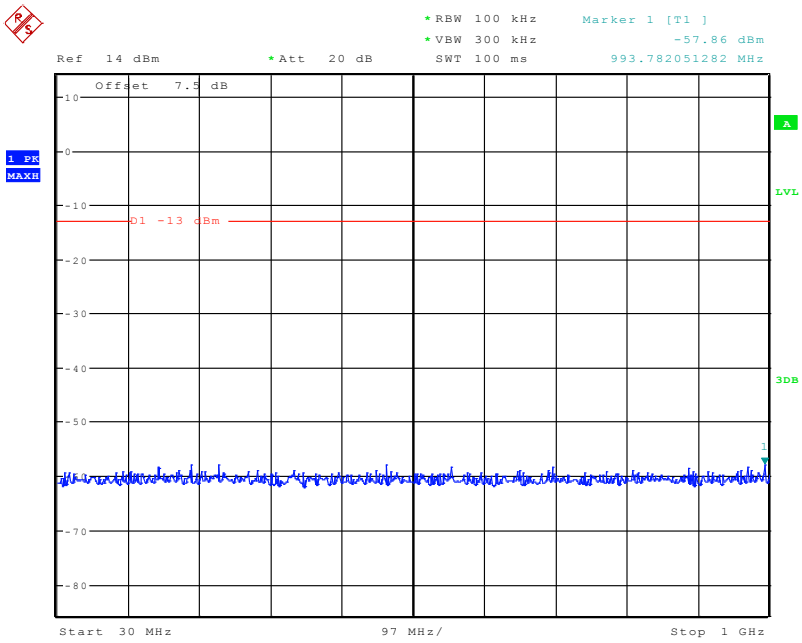
**1 GHz – 20 GHz (5.0 MHz, High channel)**




Fundamental test

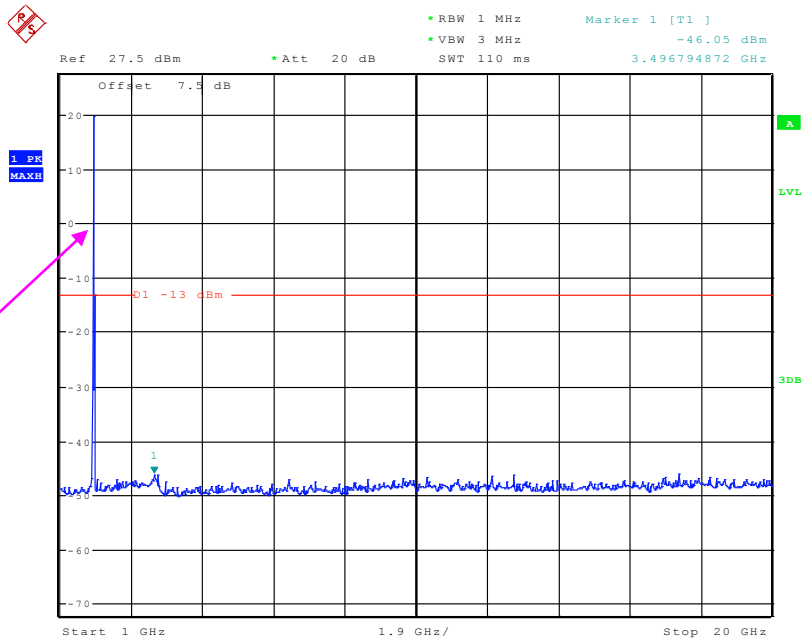
Date: 3.NOV.2020 14:37:23

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




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

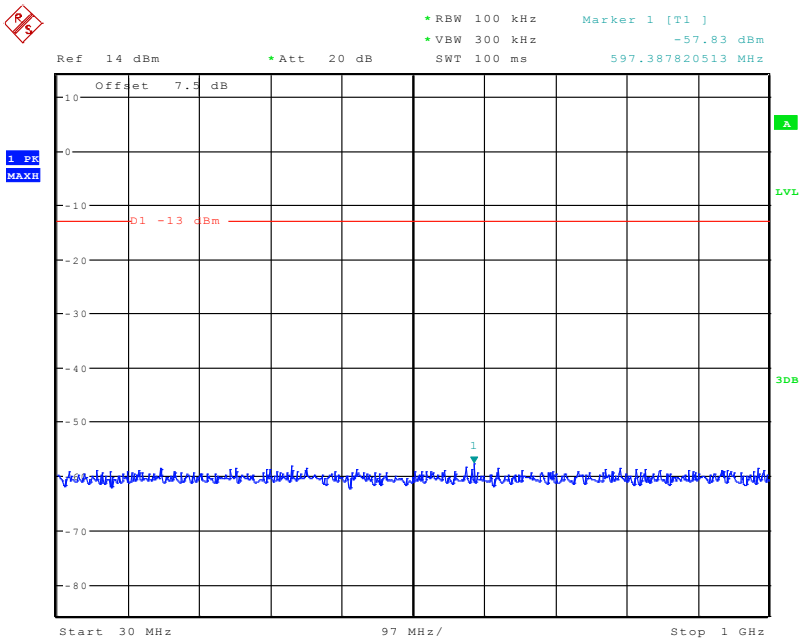
## 1 GHz – 20 GHz (10.0 MHz, High channel)




Fundamental test

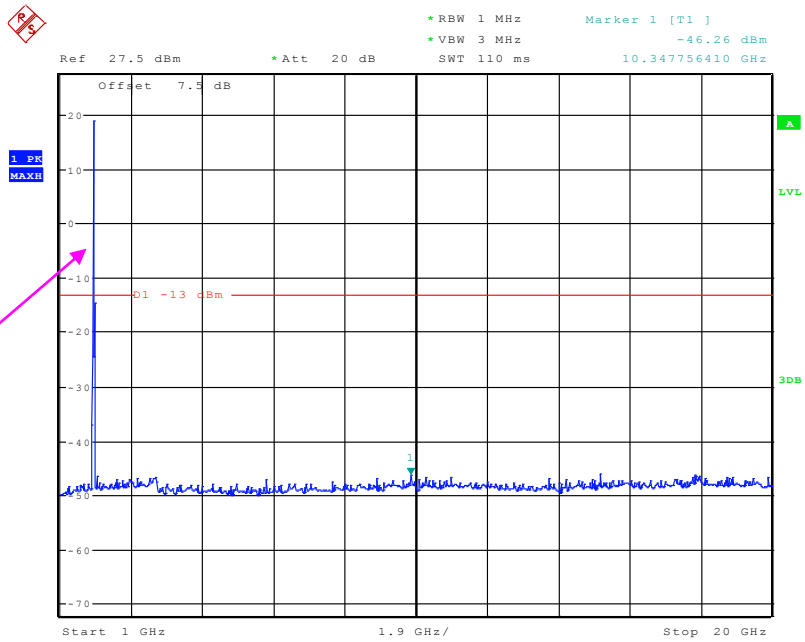
Date: 3.NOV.2020 14:36:51

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




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

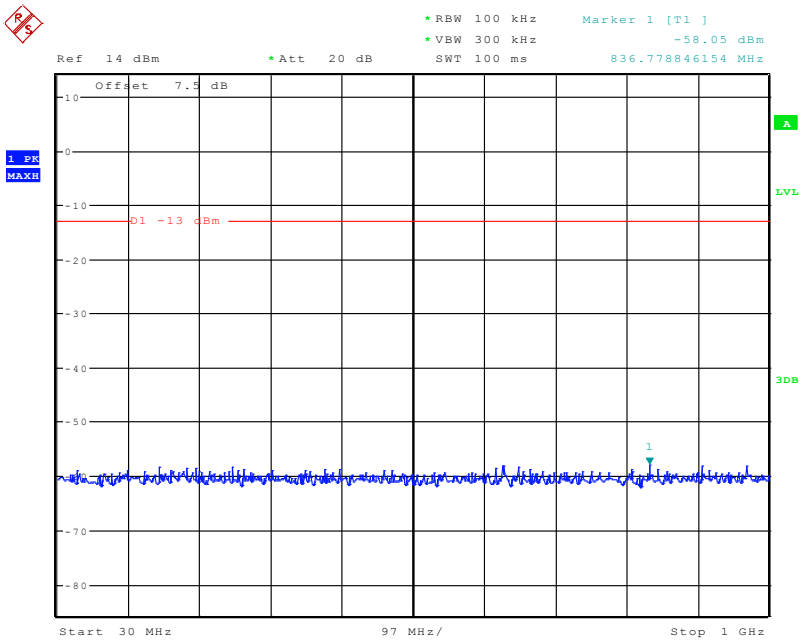
## 1 GHz – 20 GHz (15.0 MHz, High channel)




Fundamental test

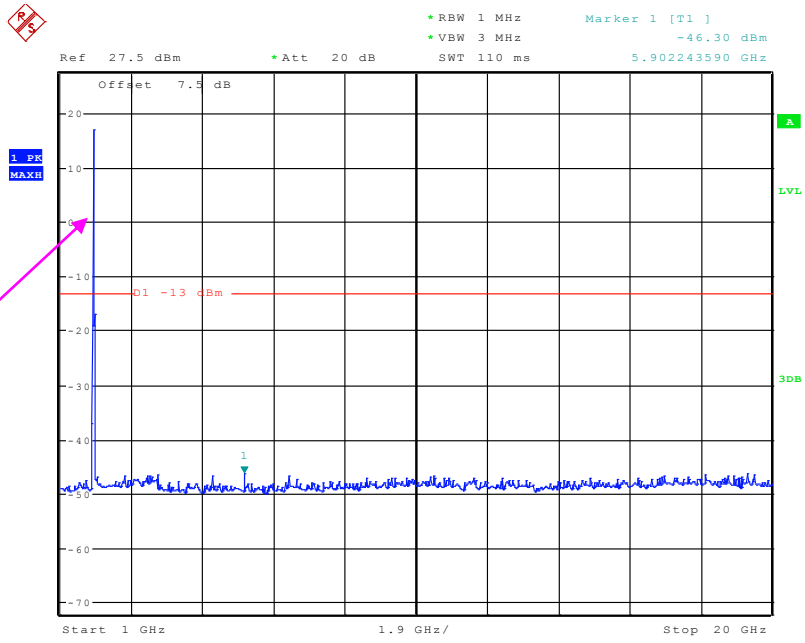
Date: 3.NOV.2020 14:27:20

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




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

## 1 GHz – 2 GHz (20.0 MHz, High channel)

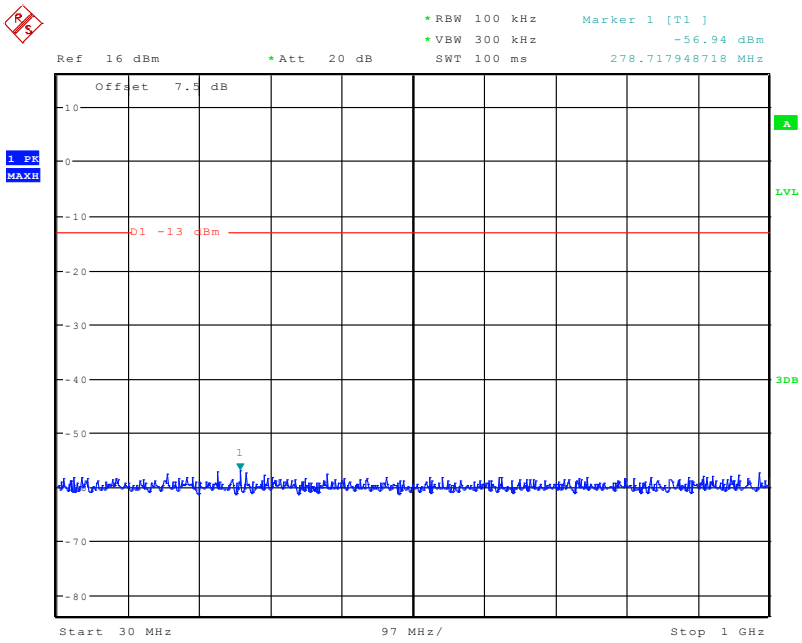



Fundamental test

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

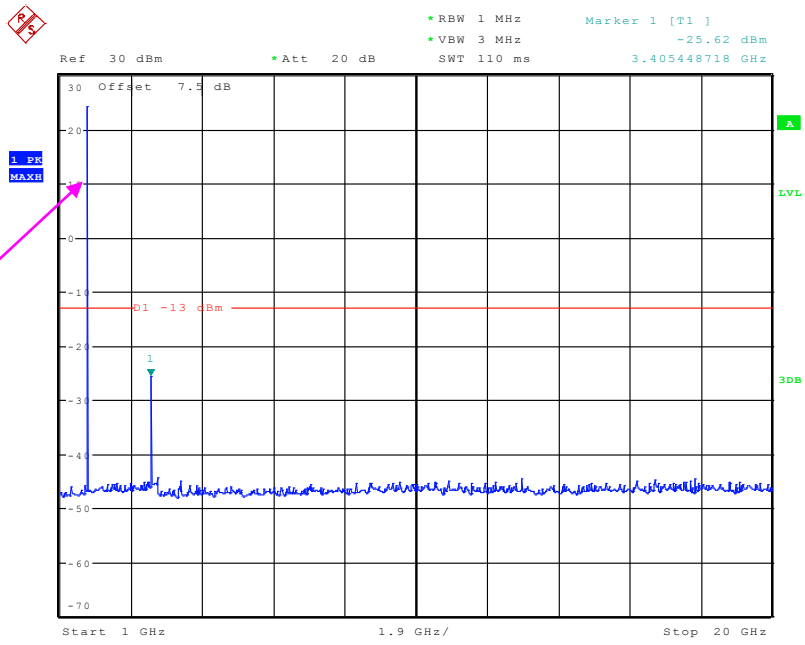
**LTE Band 4:**

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




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

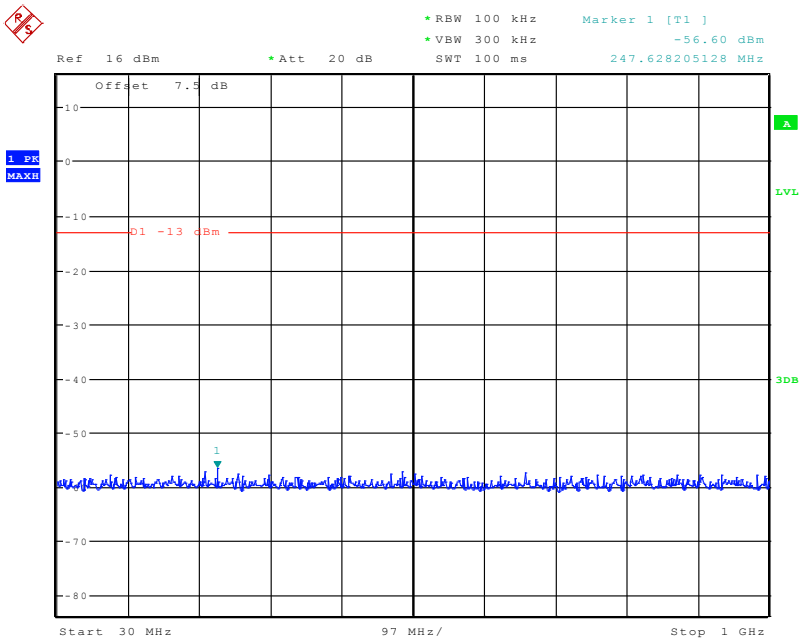
**1 GHz – 20 GHz (1.4 MHz, Low Channel)**




Fundamental test

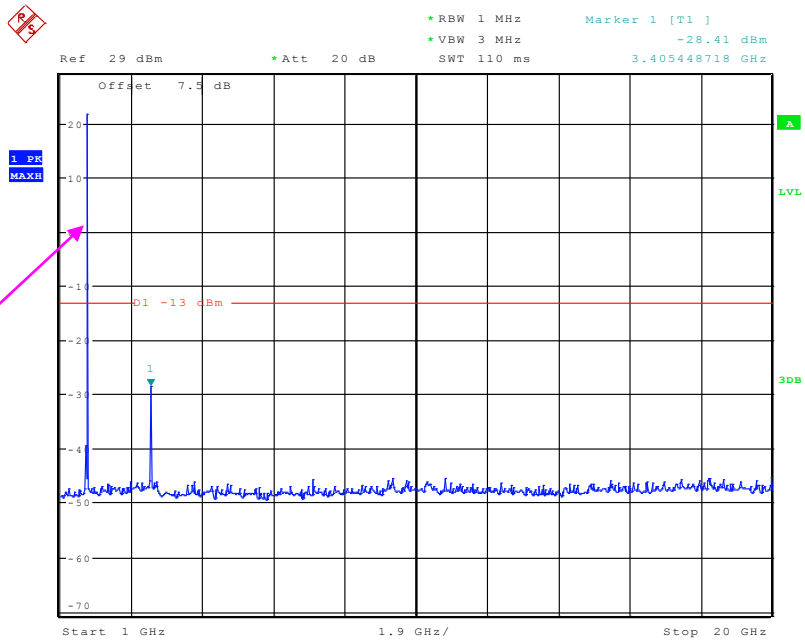
Date: 3.NOV.2020 13:57:10

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




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

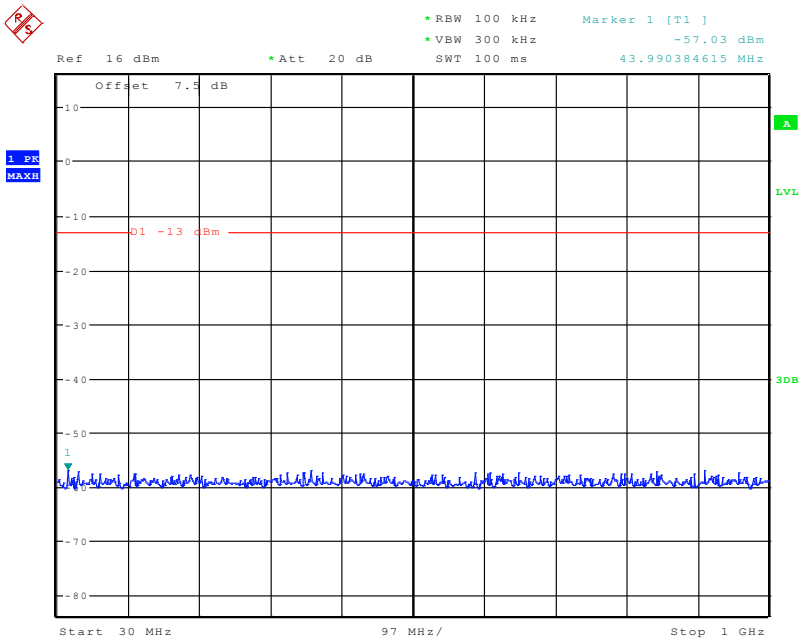
## 1 GHz – 20 GHz (3.0 MHz, Low Channel)




Fundamental test

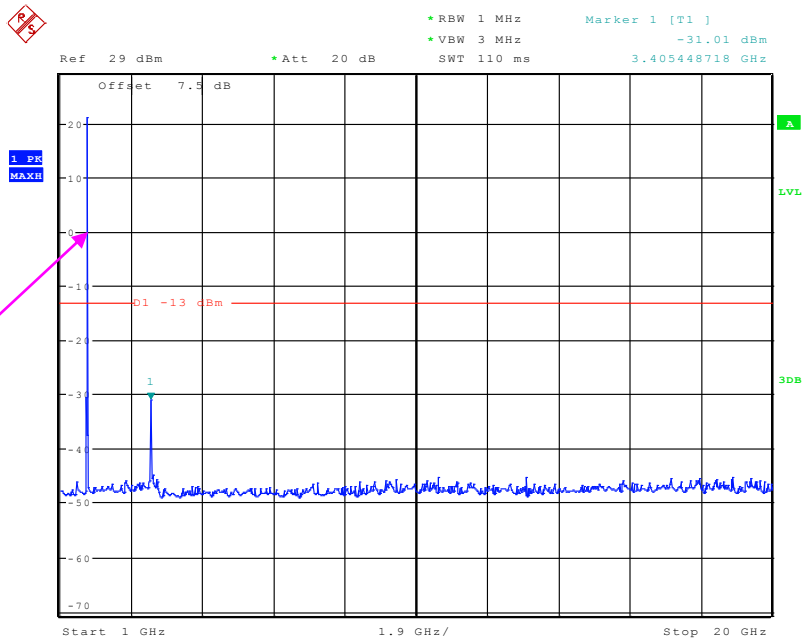
Date: 3.NOV.2020 14:19:40

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




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

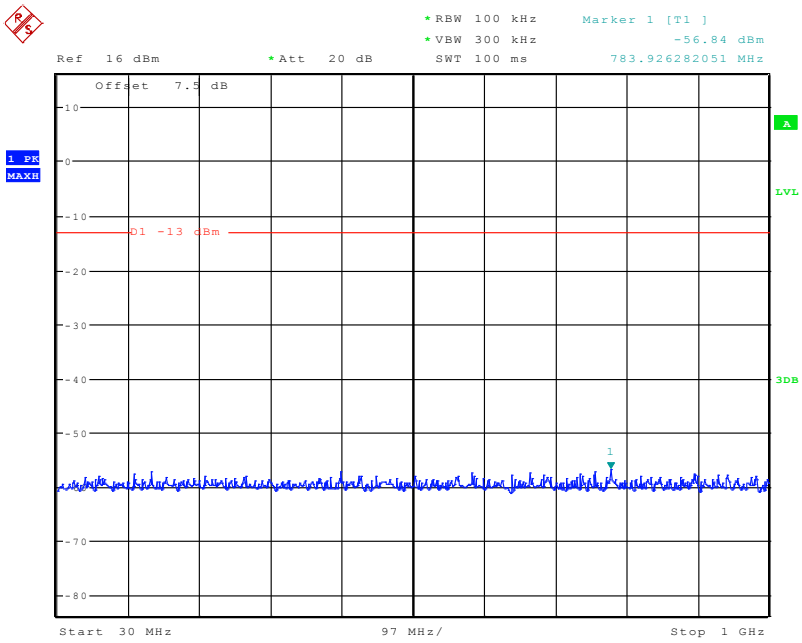
## 1 GHz – 20 GHz (5.0 MHz, Low Channel)




Fundamental test

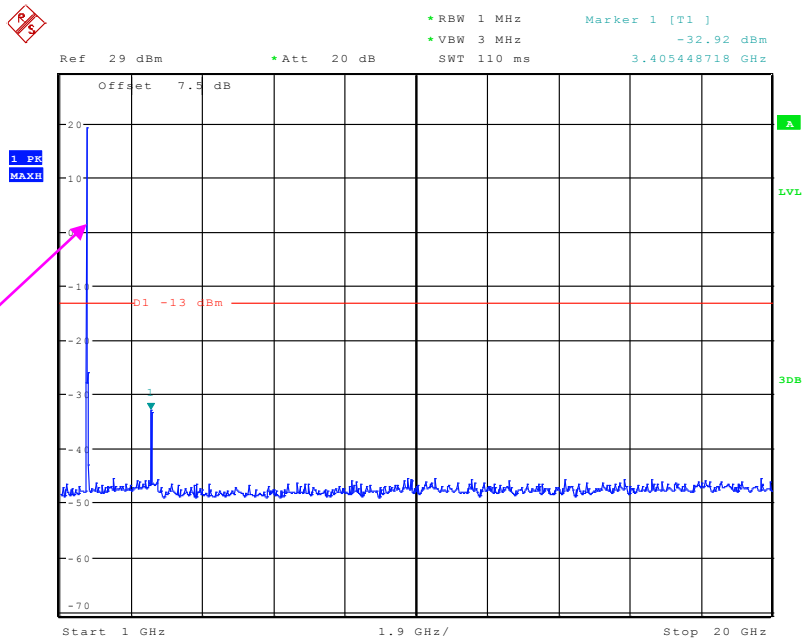
Date: 3.NOV.2020 14:18:40

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




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

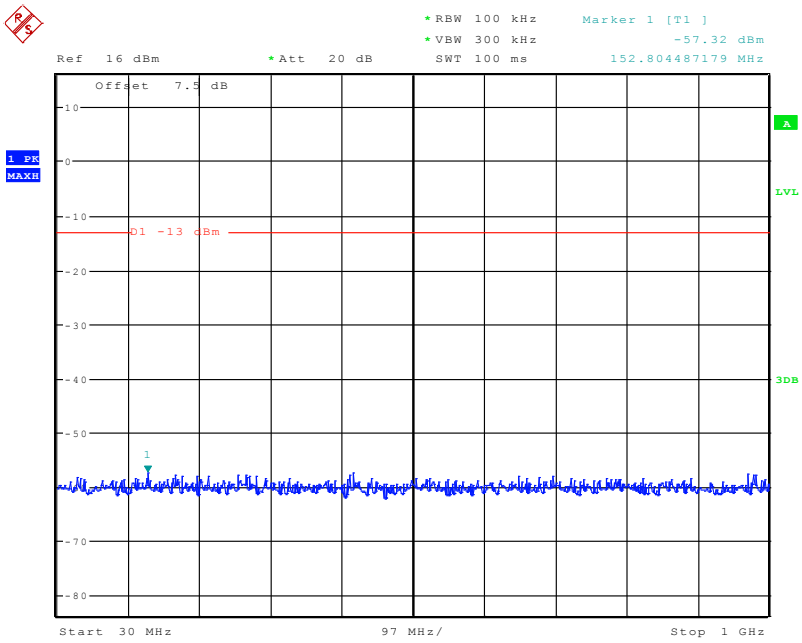
## 1 GHz – 20 GHz (10.0 MHz, Low Channel)




Fundamental test

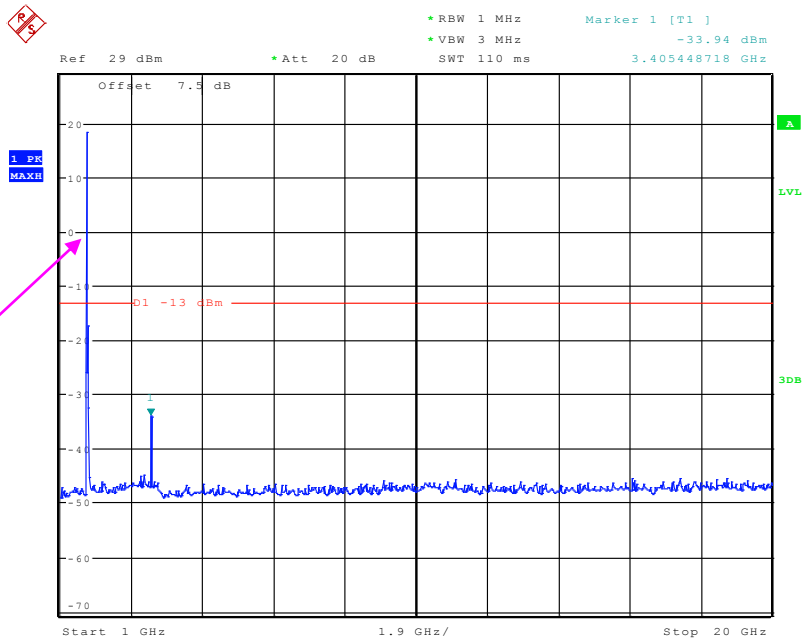
Date: 3.NOV.2020 14:12:20

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




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

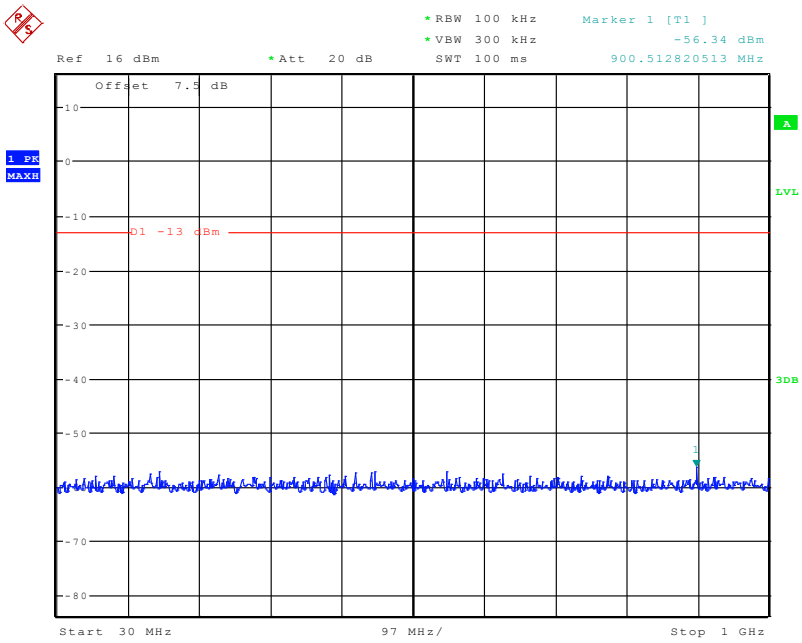
## 1 GHz – 20 GHz (15.0 MHz, Low Channel)




Fundamental test

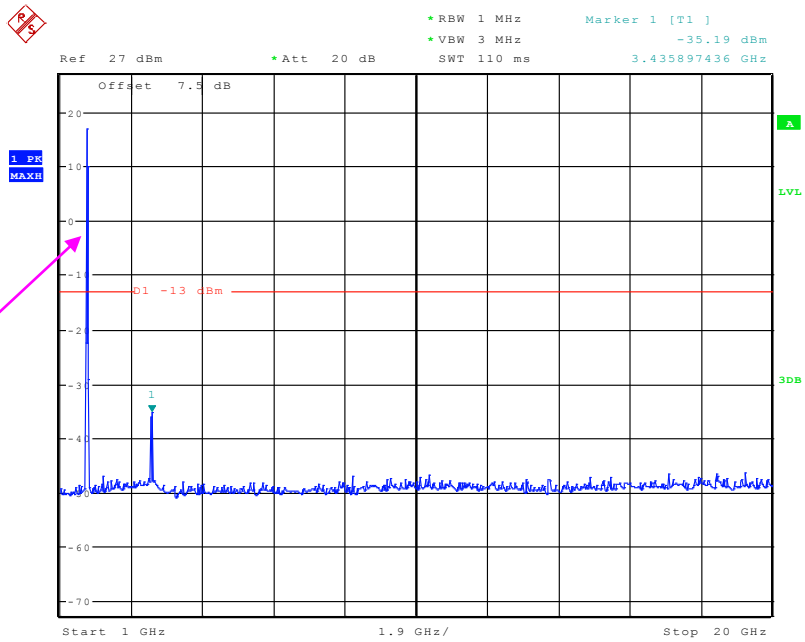
Date: 3.NOV.2020 14:10:32

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




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

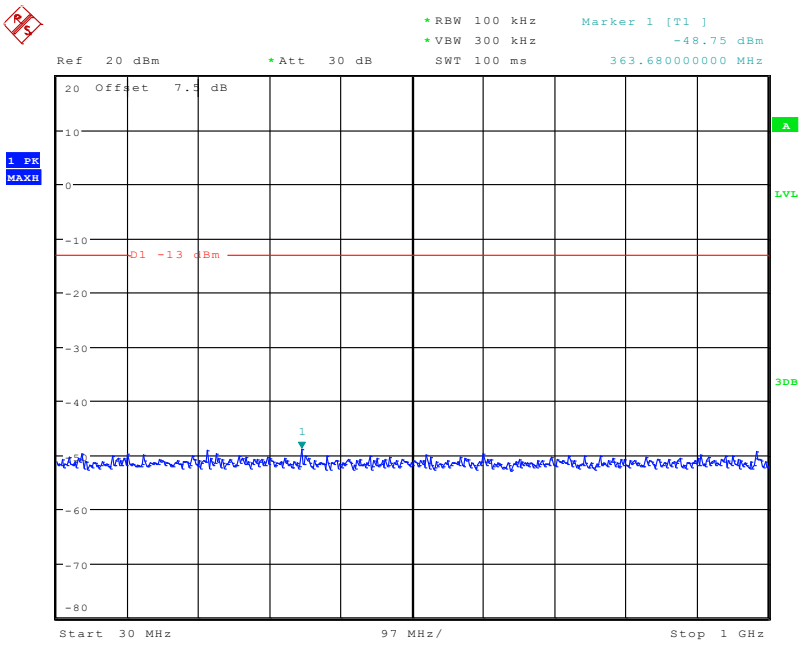
## 1 GHz – 20 GHz (20.0 MHz, Low Channel)




Fundamental test

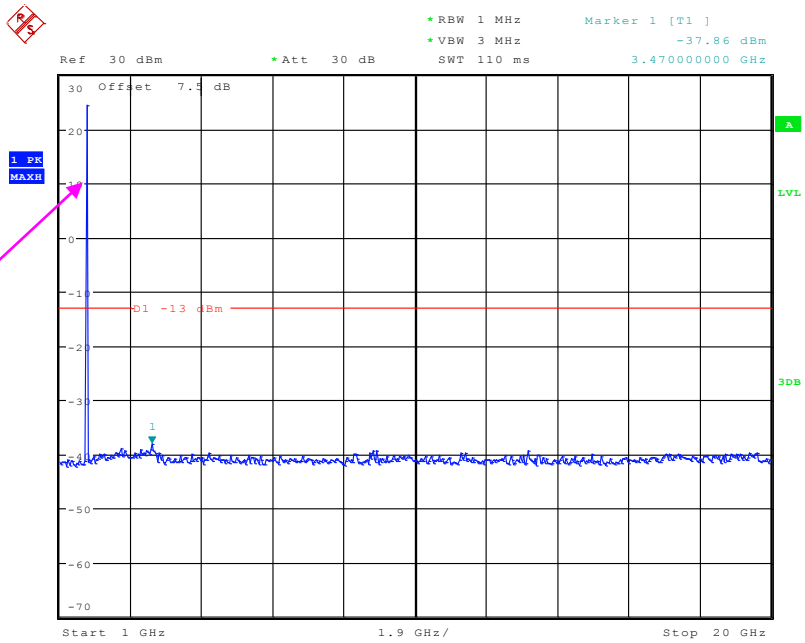
Date: 3.NOV.2020 14:08:14

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




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

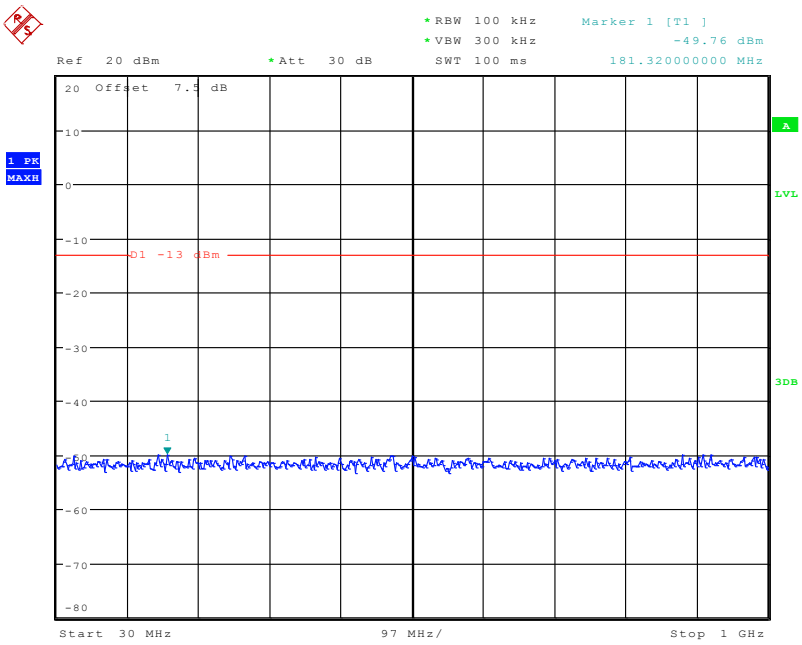
## 1 GHz – 20 GHz (1.4 MHz, Middle channel)




Fundamental test

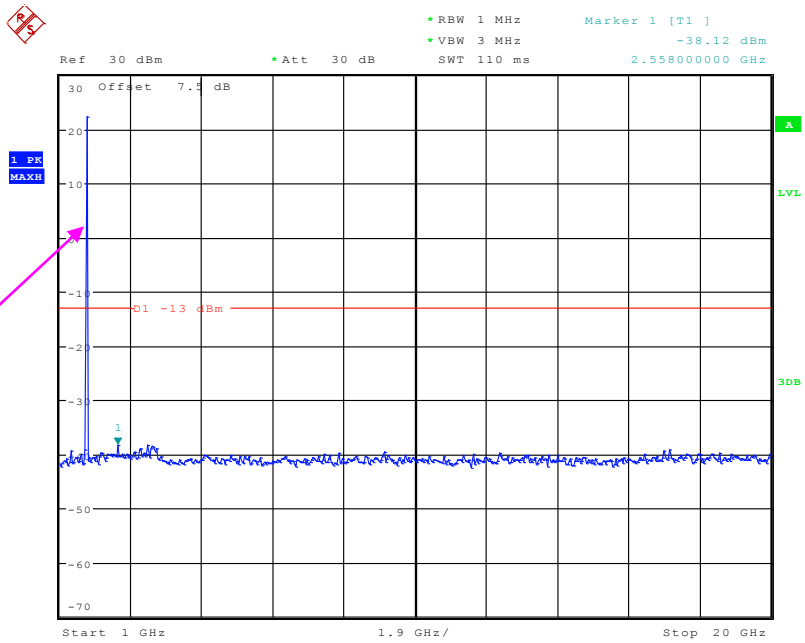
Date: 13.MAR.2020 11:41:33

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




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

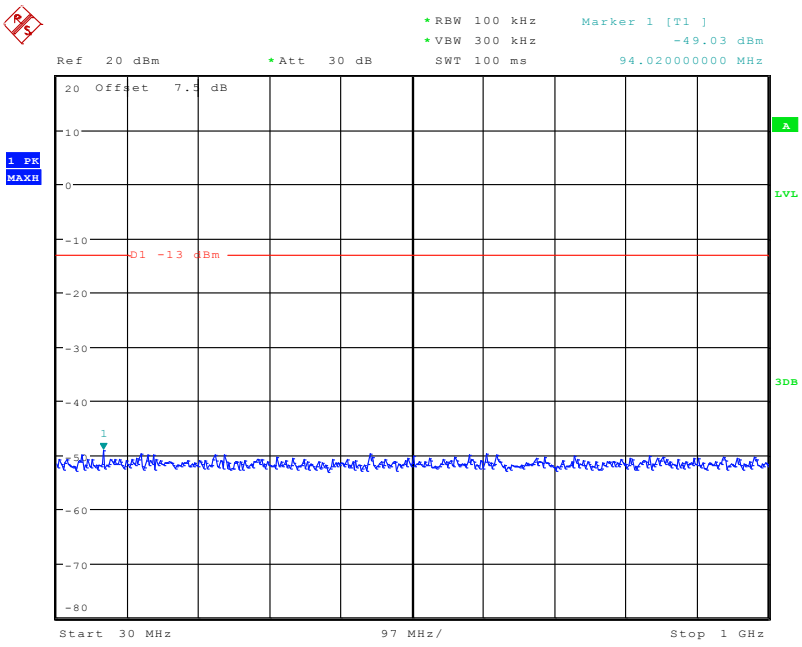
## 1 GHz – 20 GHz (3.0 MHz, Middle channel)




Fundamental test

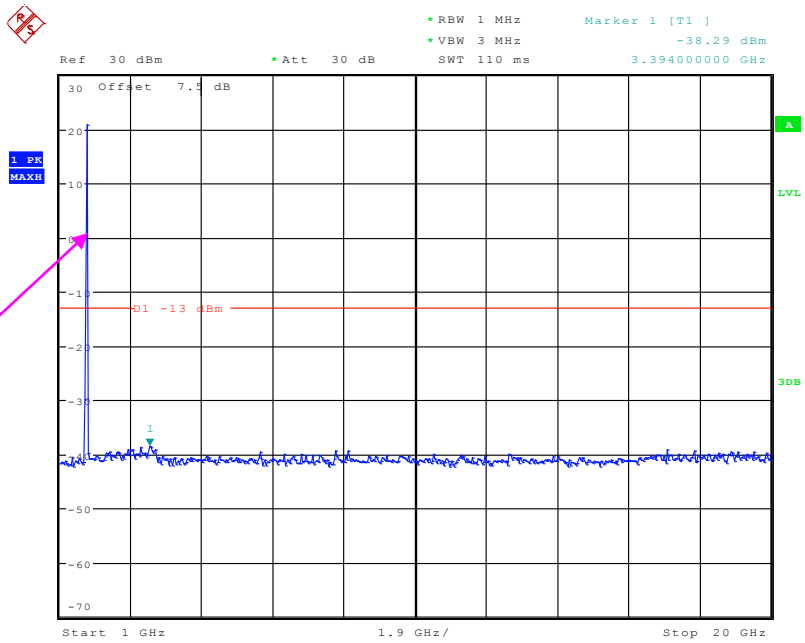
Date: 13.MAR.2020 11:42:01

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




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

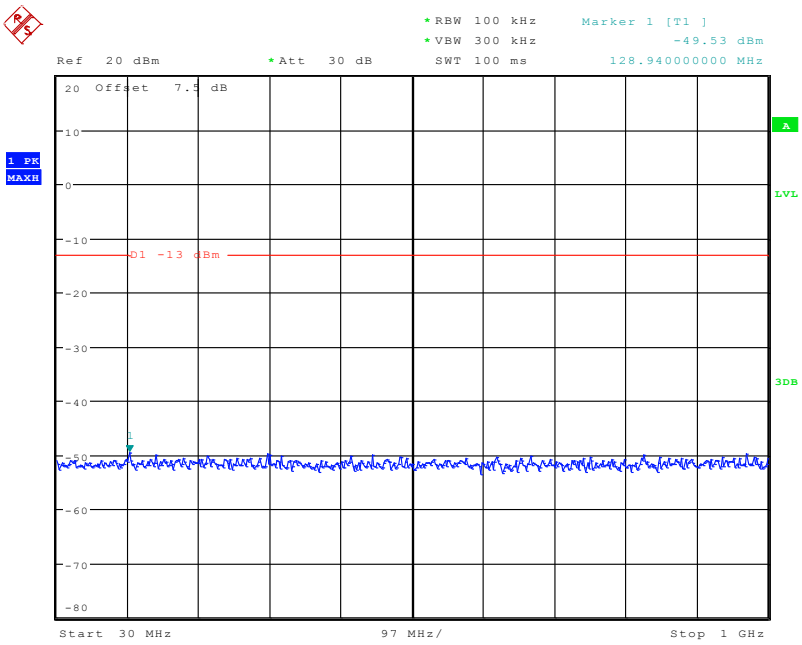
## 1 GHz – 20 GHz (5.0 MHz, Middle channel)




Fundamental test

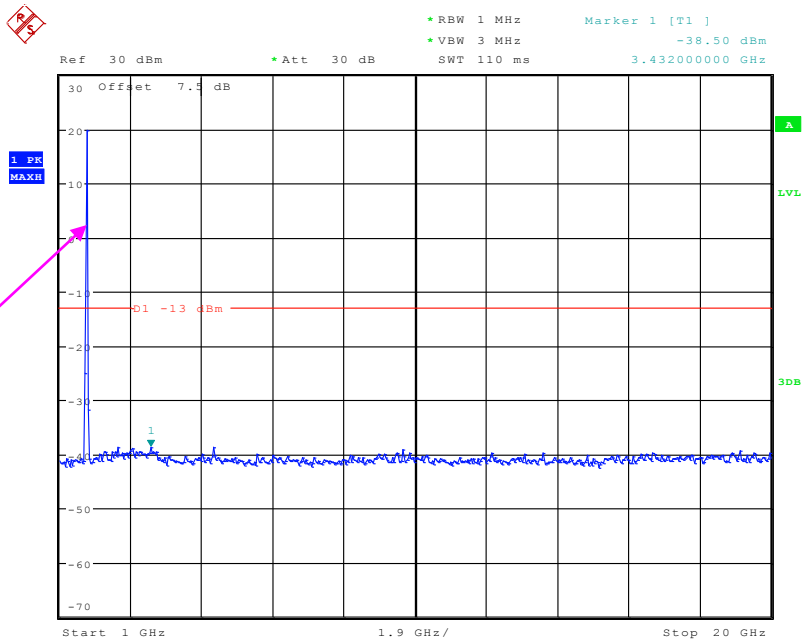
Date: 13.MAR.2020 11:42:28

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




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

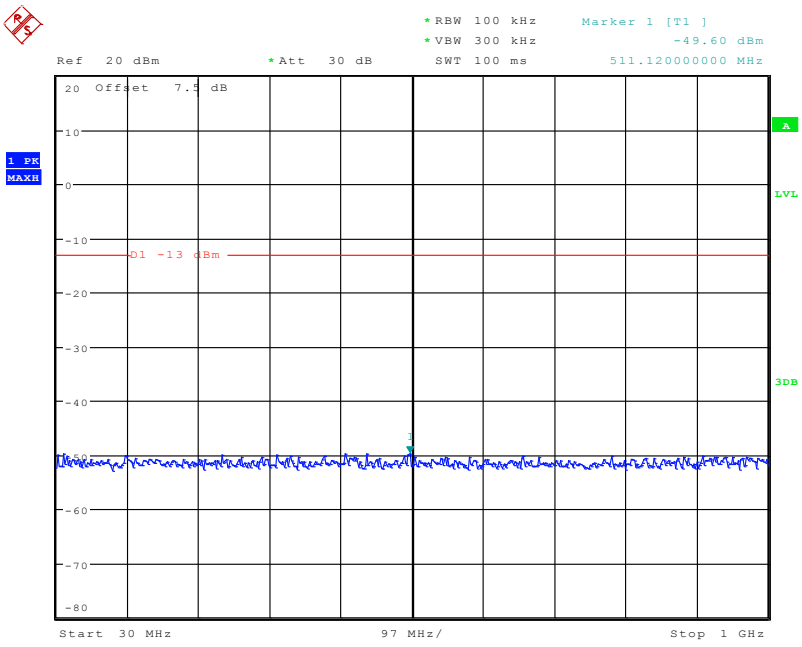
**1 GHz – 20 GHz (10.0 MHz, Middle channel)**




Fundamental test

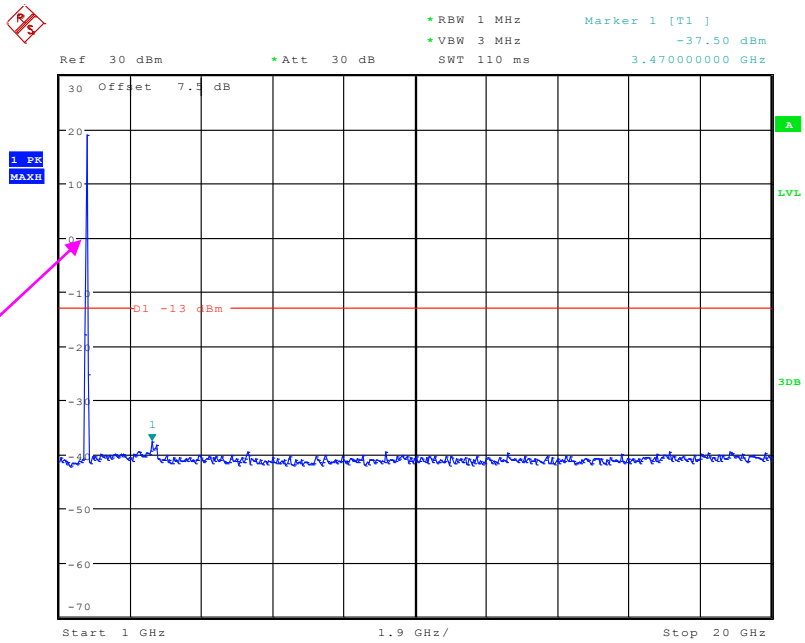
Date: 13.MAR.2020 11:42:58

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




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

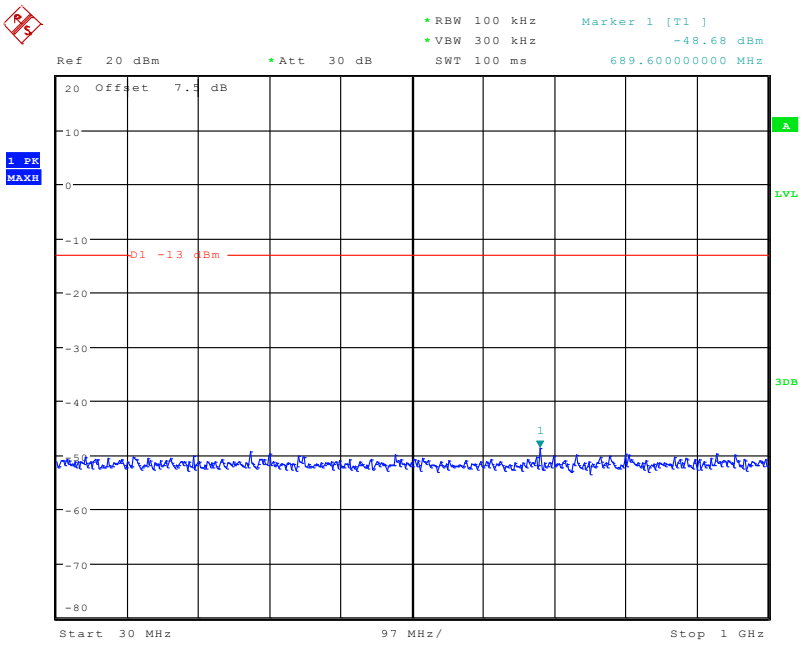
**1 GHz – 20 GHz (15.0 MHz, Middle channel)**




Fundamental test

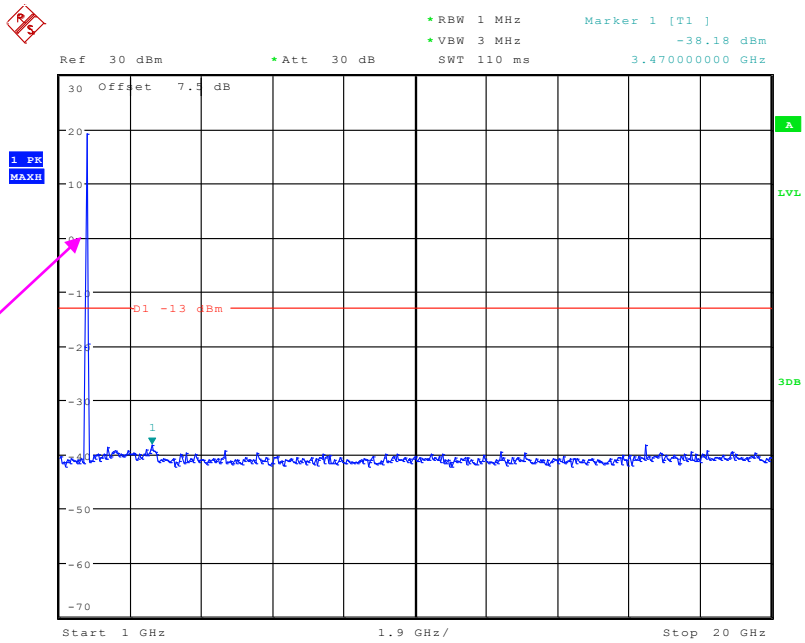
Date: 13.MAR.2020 11:43:33

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




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

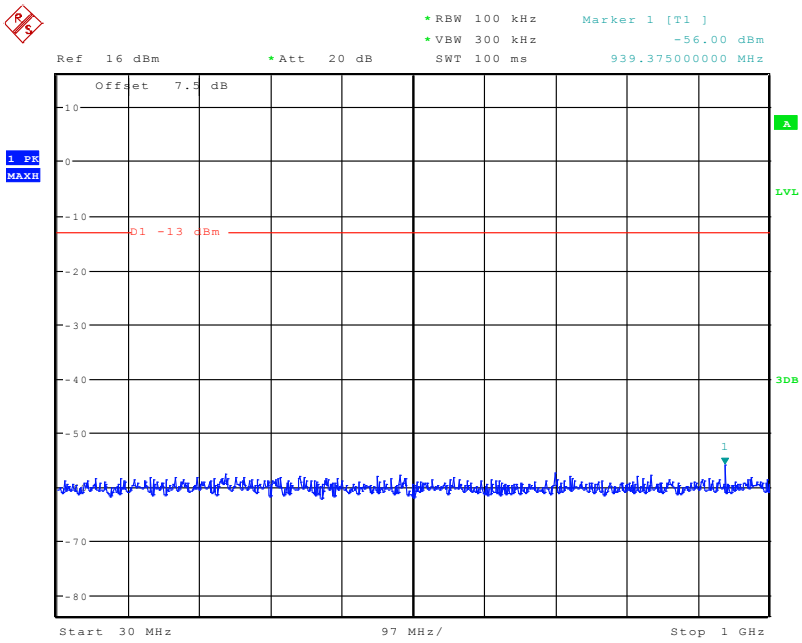
**1 GHz – 20 GHz (20.0 MHz, Middle channel)**




Fundamental test

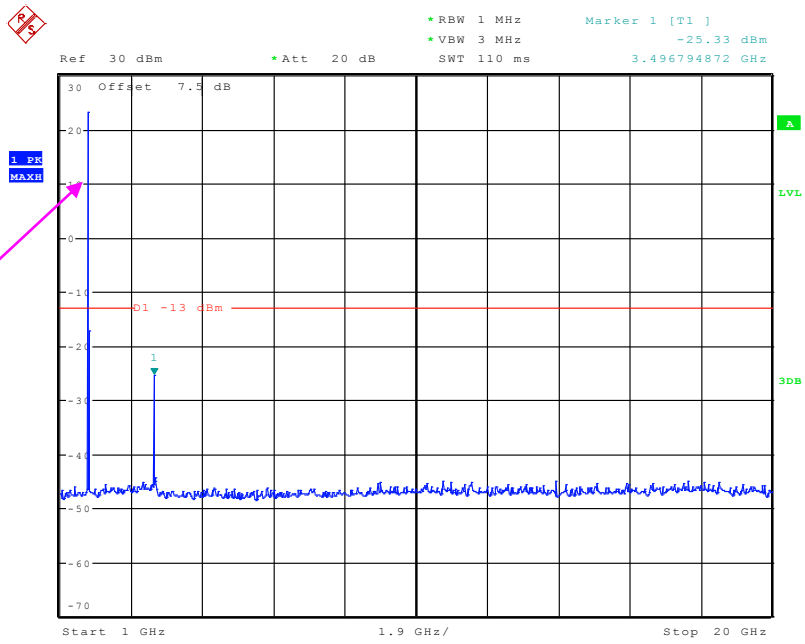
Date: 13.MAR.2020 11:44:04

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




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

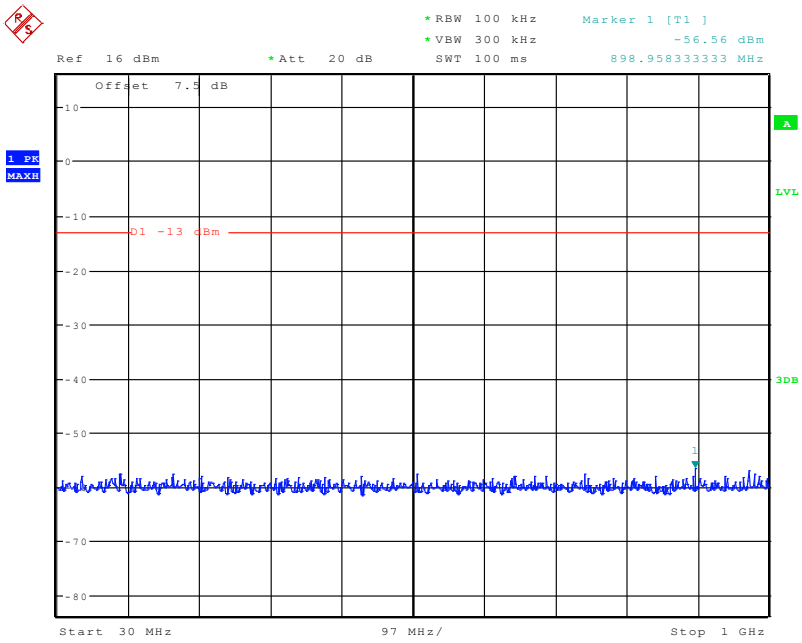
## 1 GHz – 20 GHz (1.4 MHz, High Channel)




Fundamental test

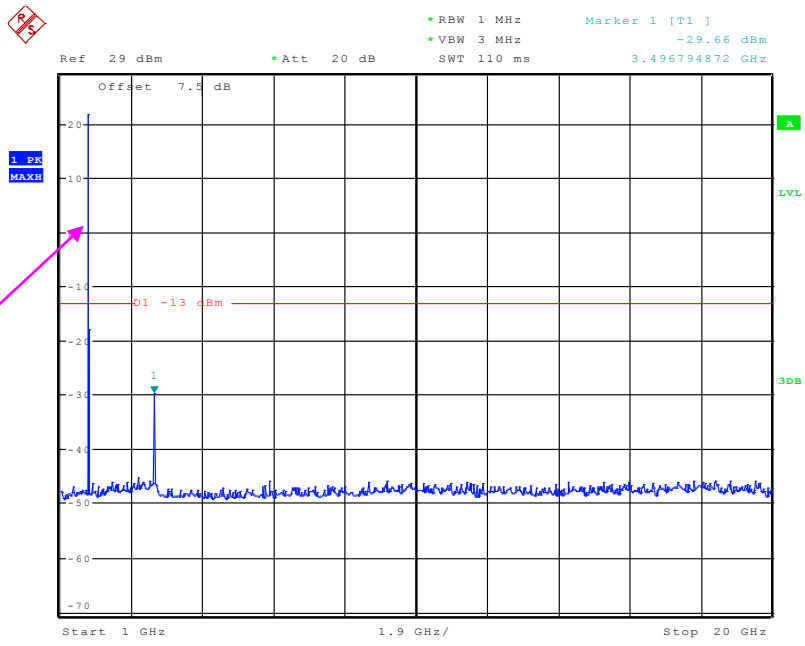
Date: 3.NOV.2020 13:57:44

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




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

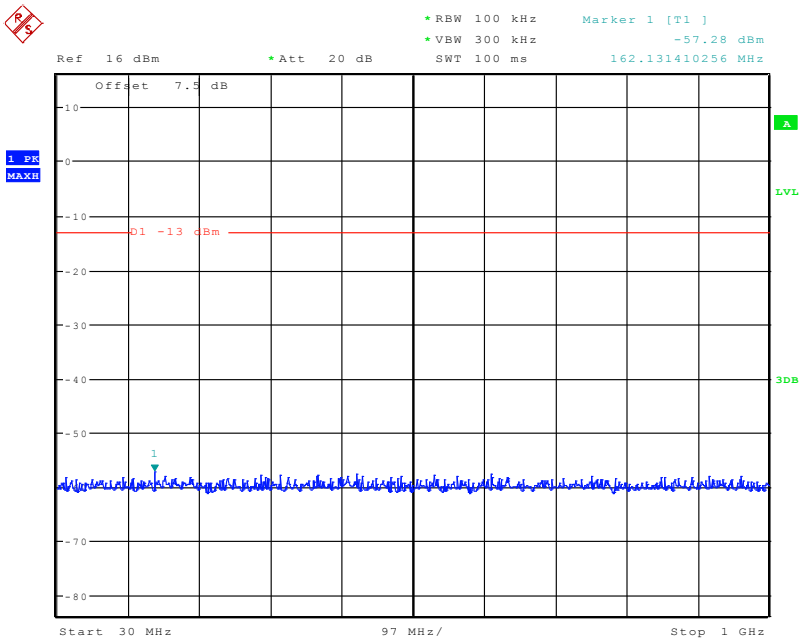
## 1 GHz – 20 GHz (3.0 MHz, High Channel)




Fundamental test

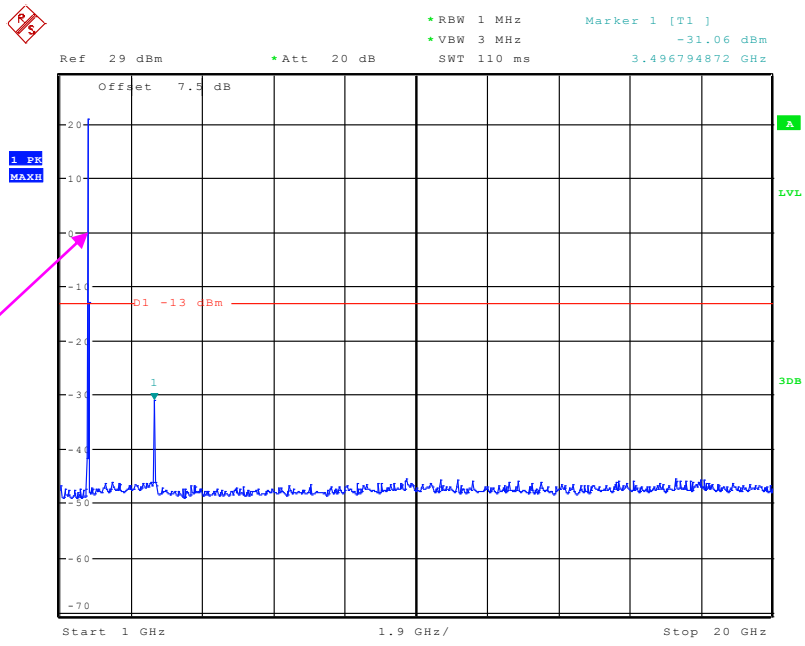
Date: 3.NOV.2020 14:20:11

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




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

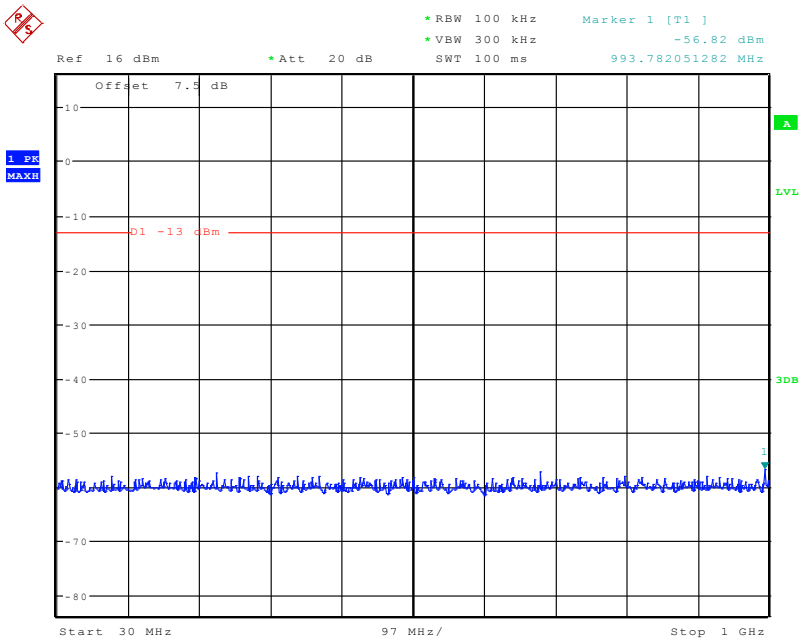
## 1 GHz – 20 GHz (5.0 MHz, High Channel)




Fundamental test

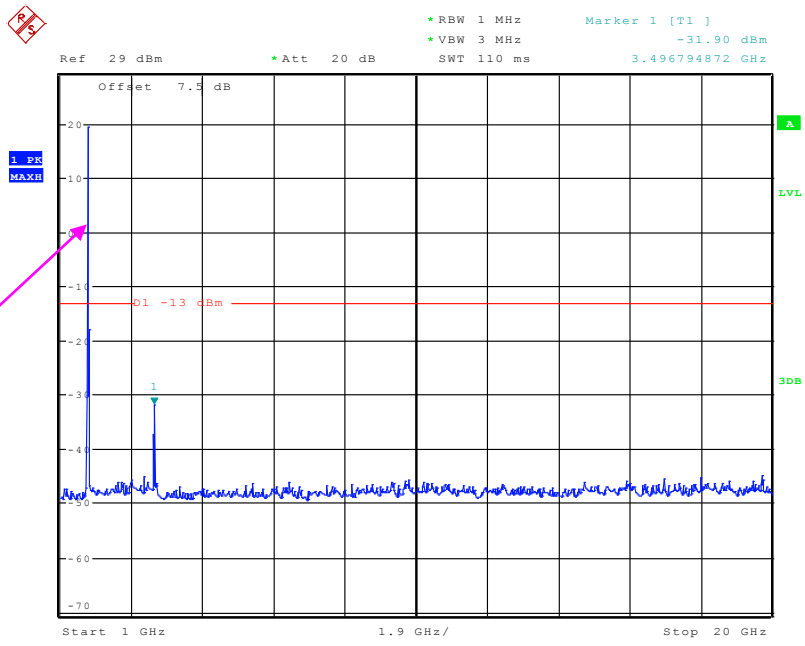
Date: 3.NOV.2020 14:17:58

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




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

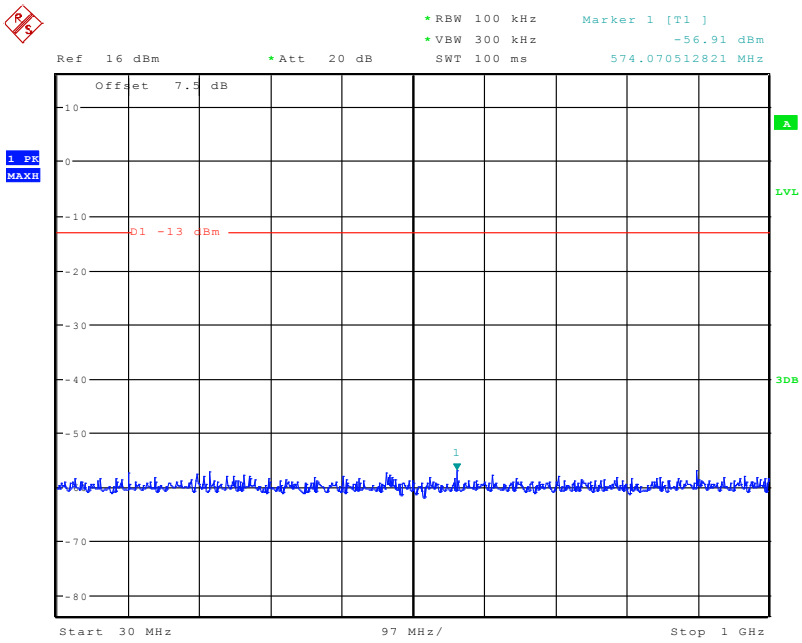
## 1 GHz – 20 GHz (10.0 MHz, High Channel)




Fundamental test

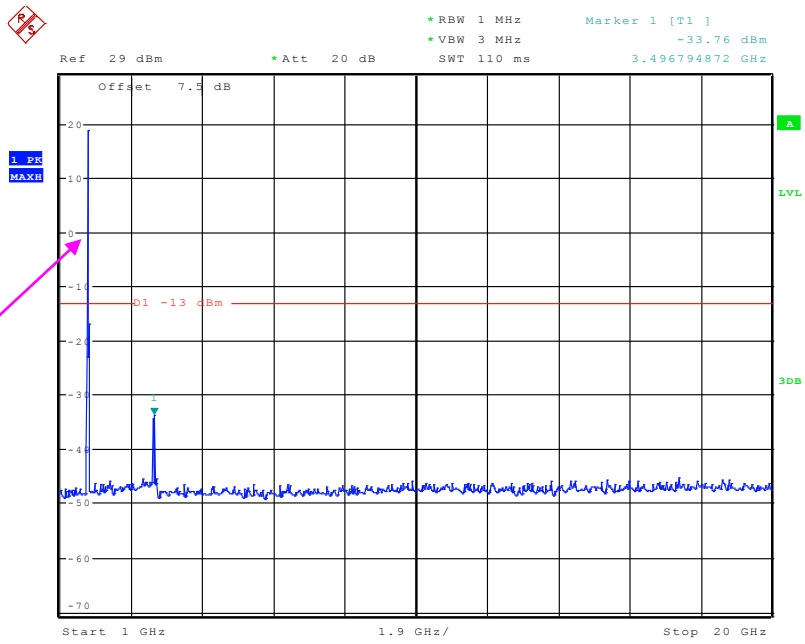
Date: 3.NOV.2020 14:12:47

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




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

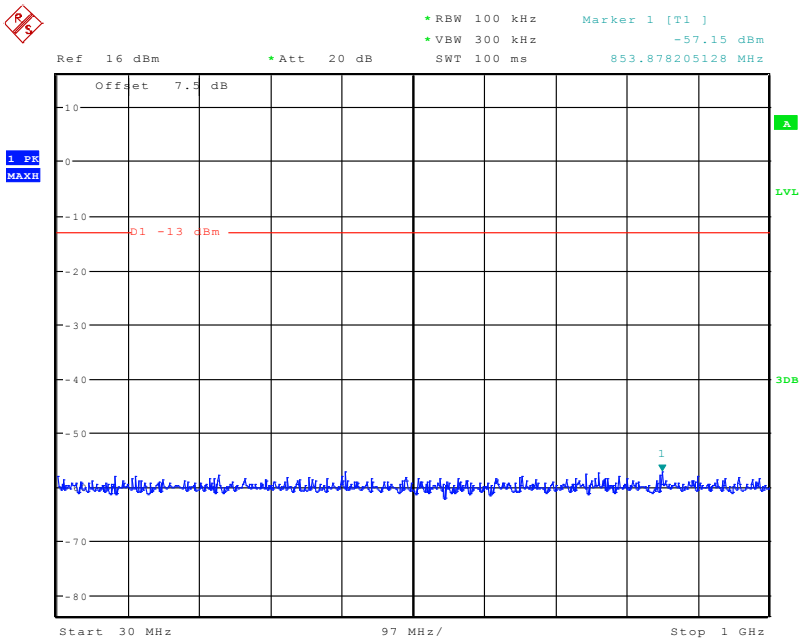
## 1 GHz – 20 GHz (15.0 MHz, High Channel)




Fundamental test

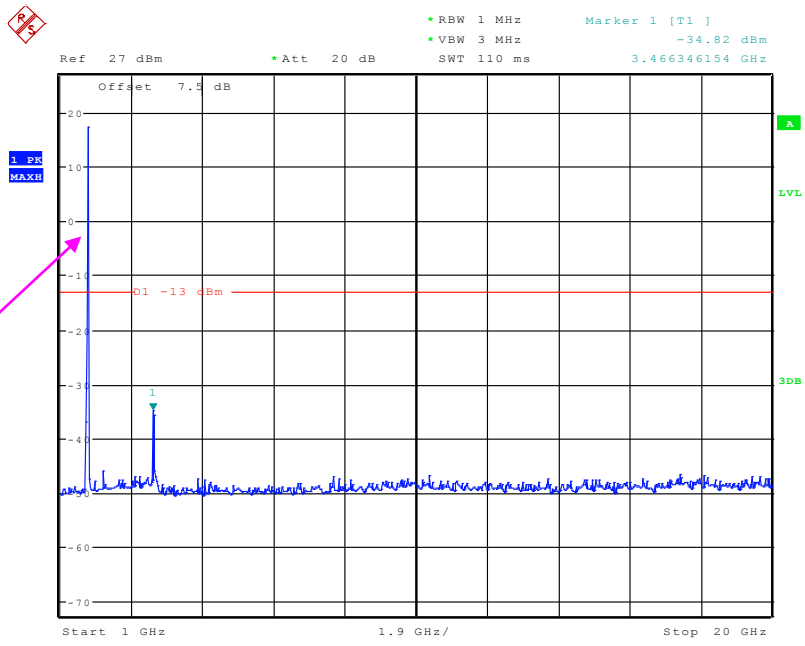
Date: 3.NOV.2020 14:11:45

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




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

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

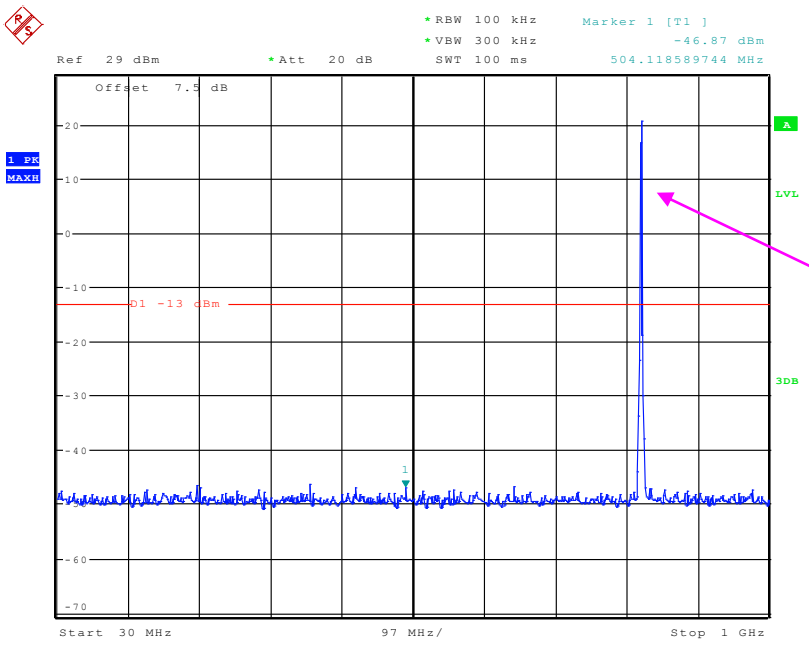



Fundamental test

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

**LTE Band 5:**

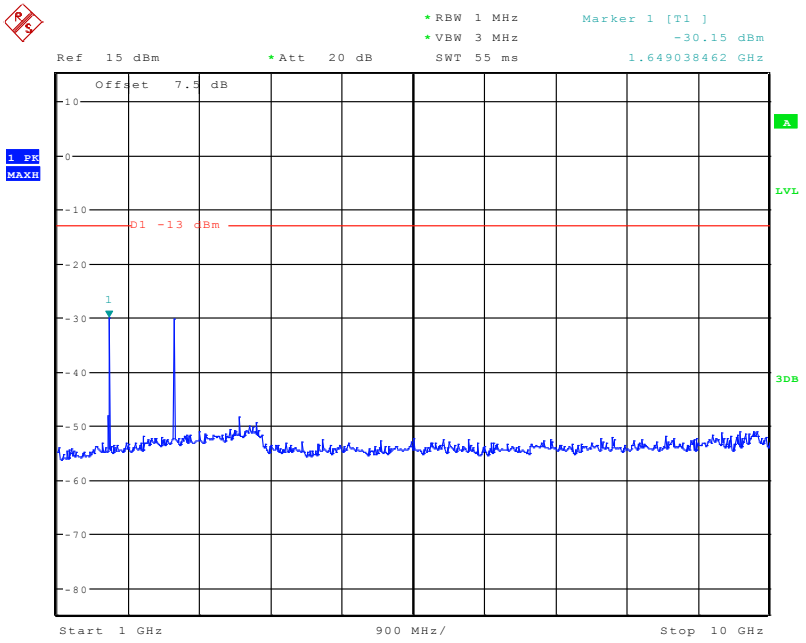
**30 MHz - 1 GHz (1.4 MHz, Low Channel)**




Fundamental test

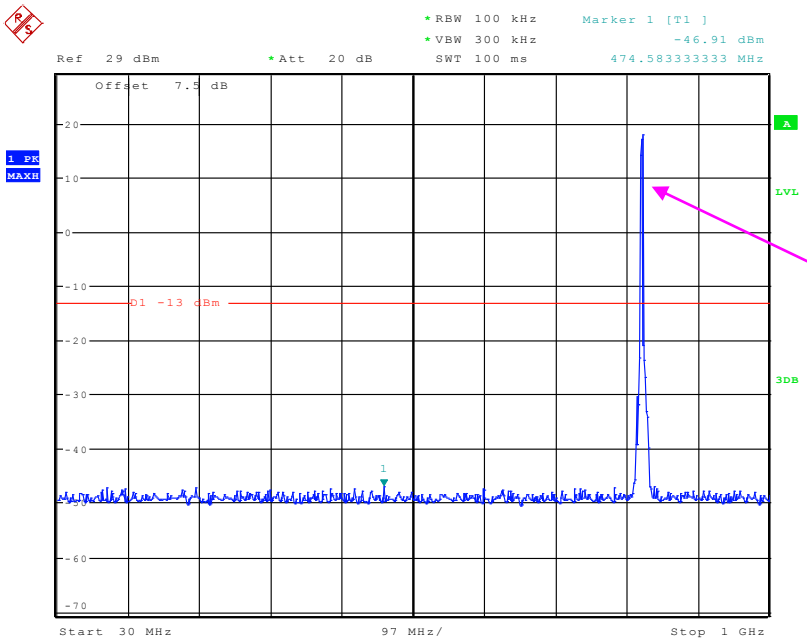
Date: 3.NOV.2020 13:52:21

**1 GHz – 10 GHz (1.4 MHz, Low Channel)**




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

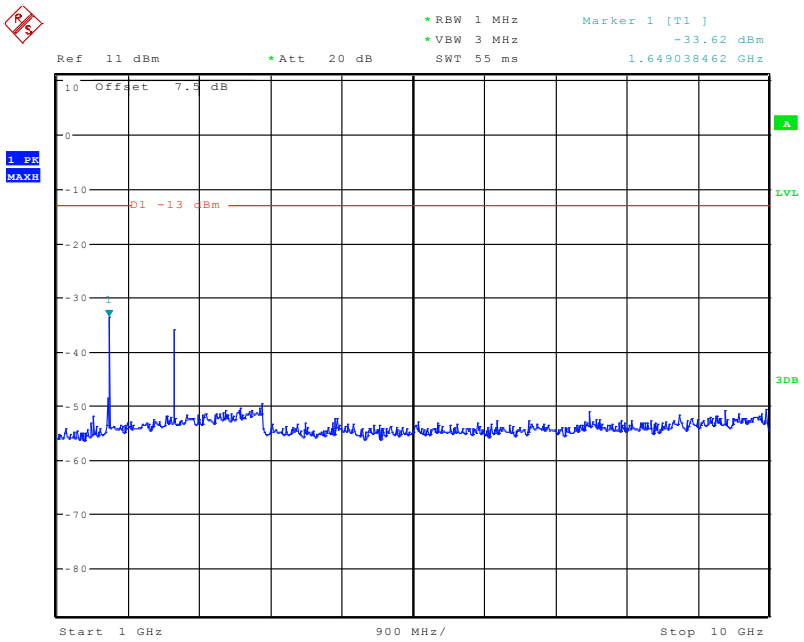
## 30 MHz - 1 GHz (3.0 MHz, Low Channel)




Fundamental test

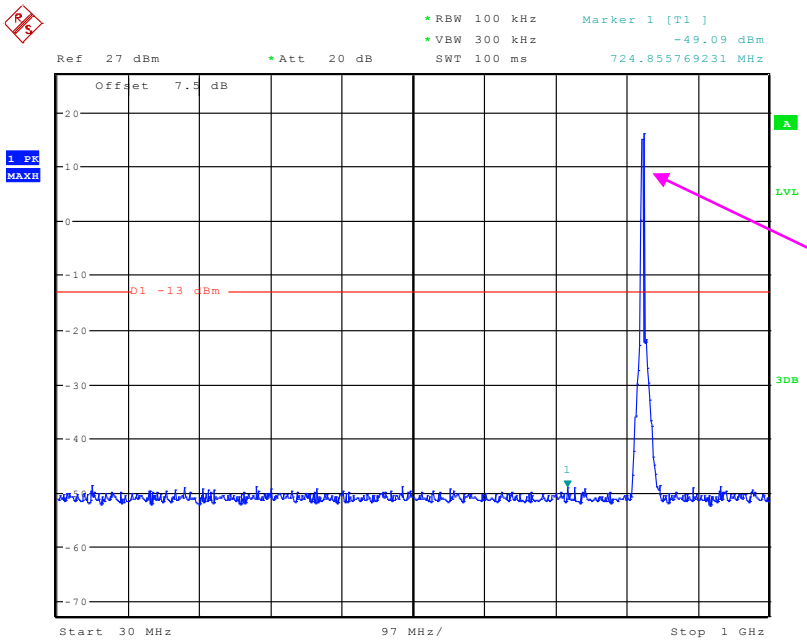
Date: 3.NOV.2020 13:51:28

## 1 GHz – 10 GHz (3.0 MHz, Low Channel)




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

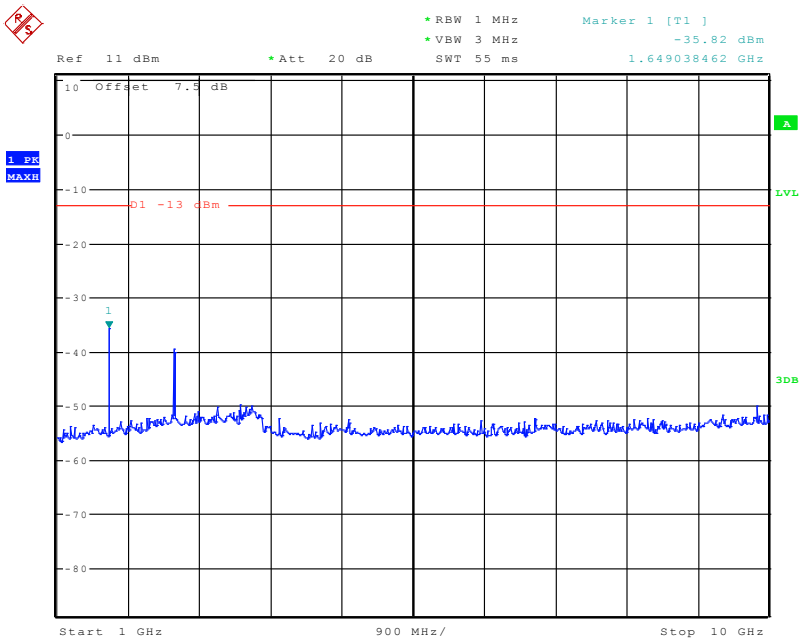
## 30 MHz - 1 GHz (5.0 MHz, Low Channel)




Fundamental test

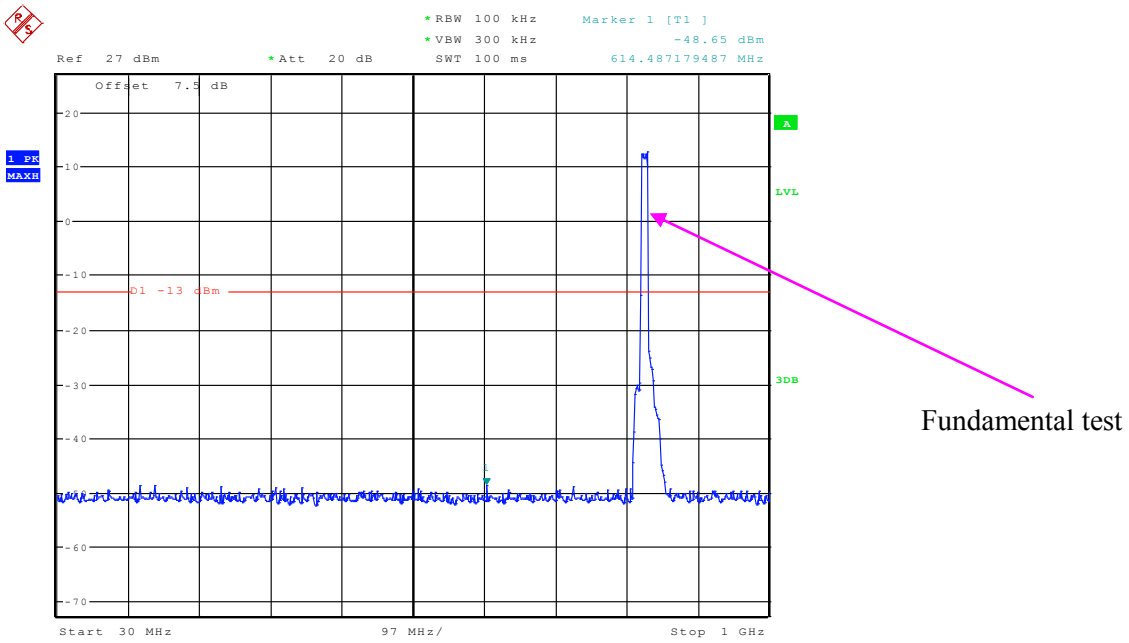
Date: 3.NOV.2020 13:45:31

## 1 GHz – 10 GHz (5.0 MHz, Low Channel)



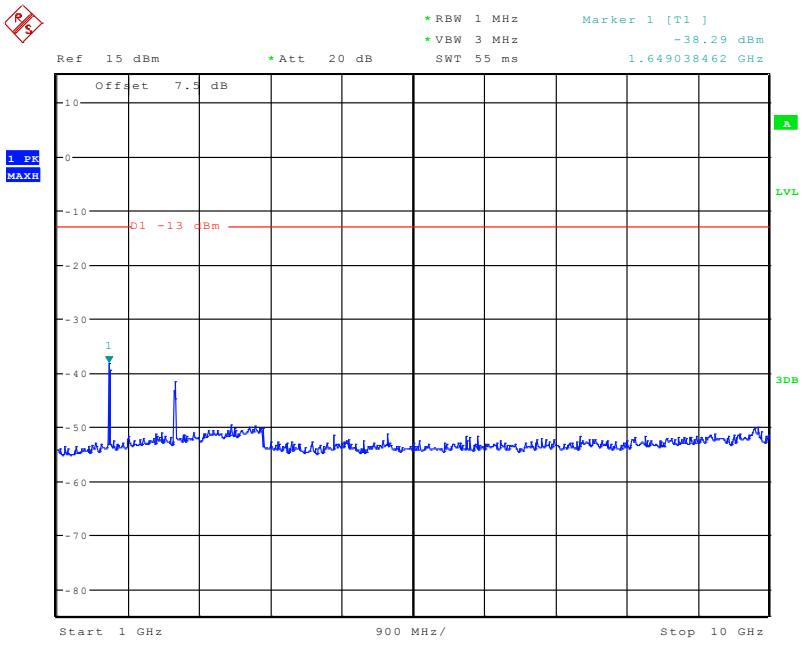

Date: 3.NOV.2020 13:47:48

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



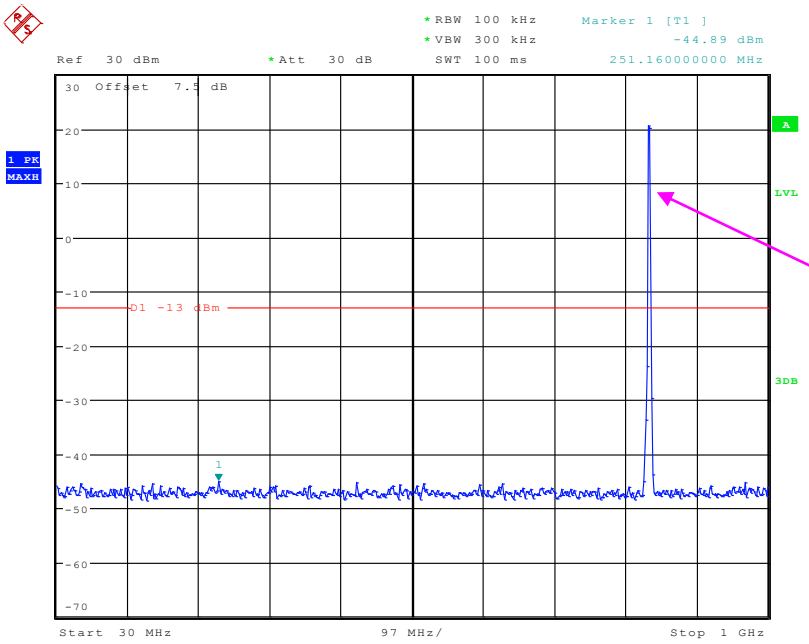

Date: 3.NOV.2020 13:37:41

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




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

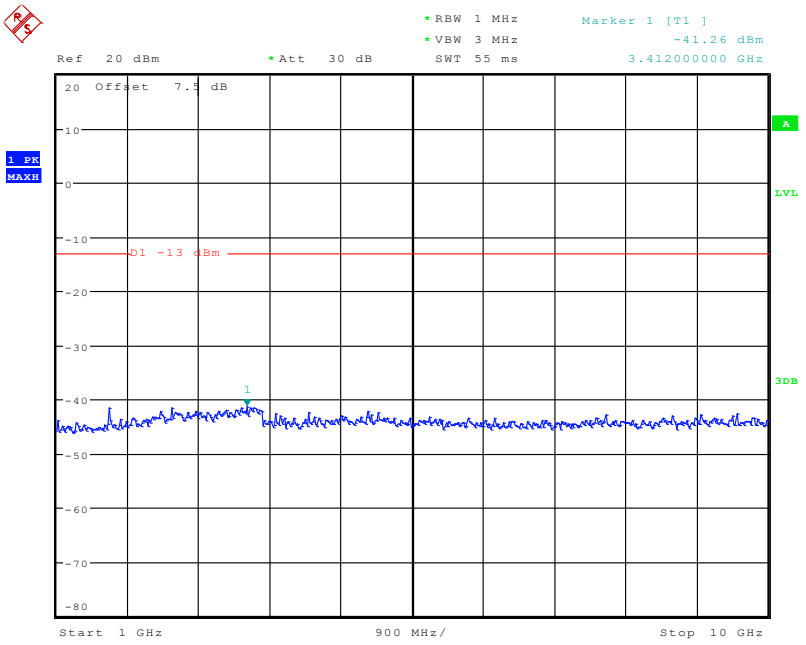
## 30 MHz - 1 GHz (1.4 MHz, Middle channel)




Fundamental test

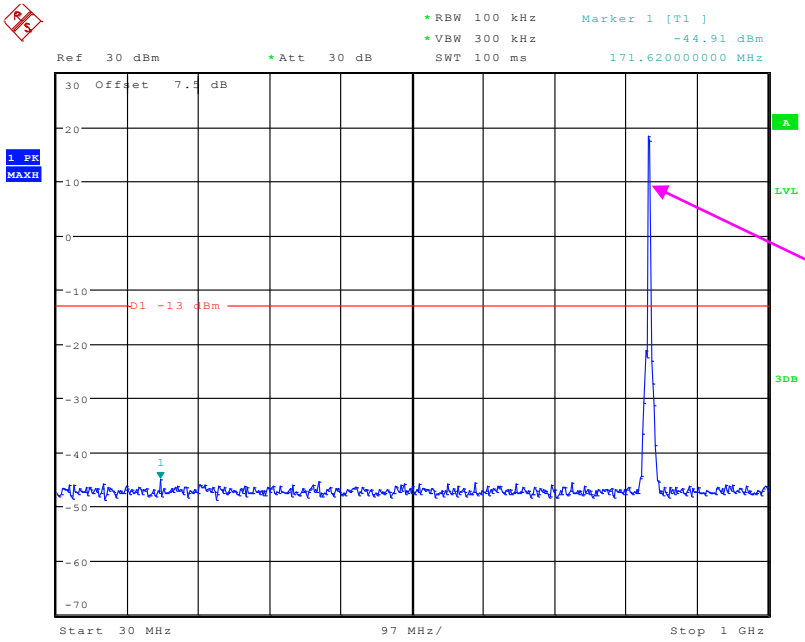
Date: 13.MAR.2020 11:44:22

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




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

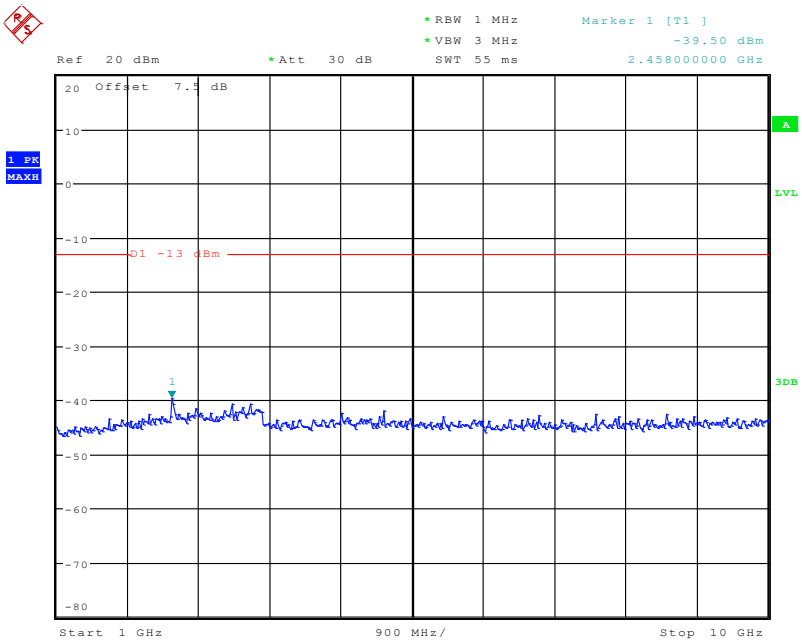
## 30 MHz - 1 GHz (3.0 MHz, Middle channel)




Fundamental test

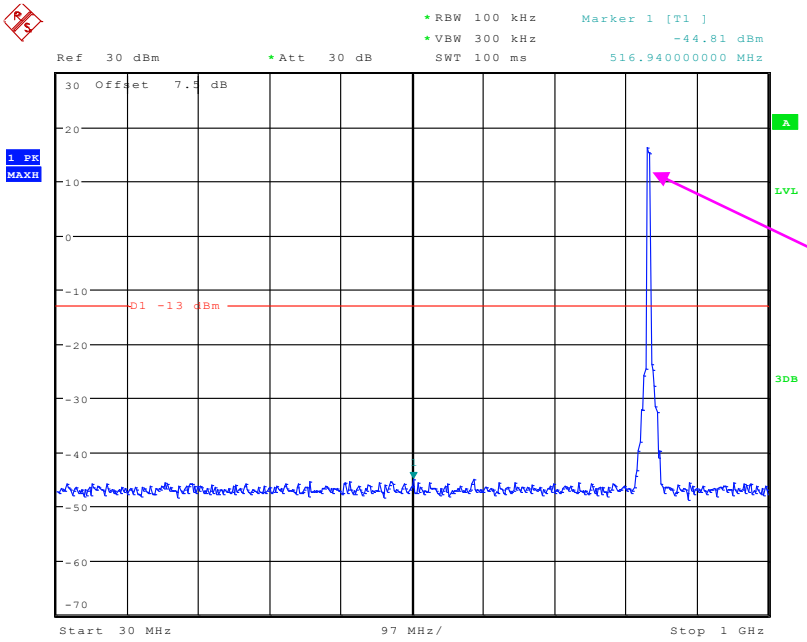
Date: 13.MAR.2020 11:44:53

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




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

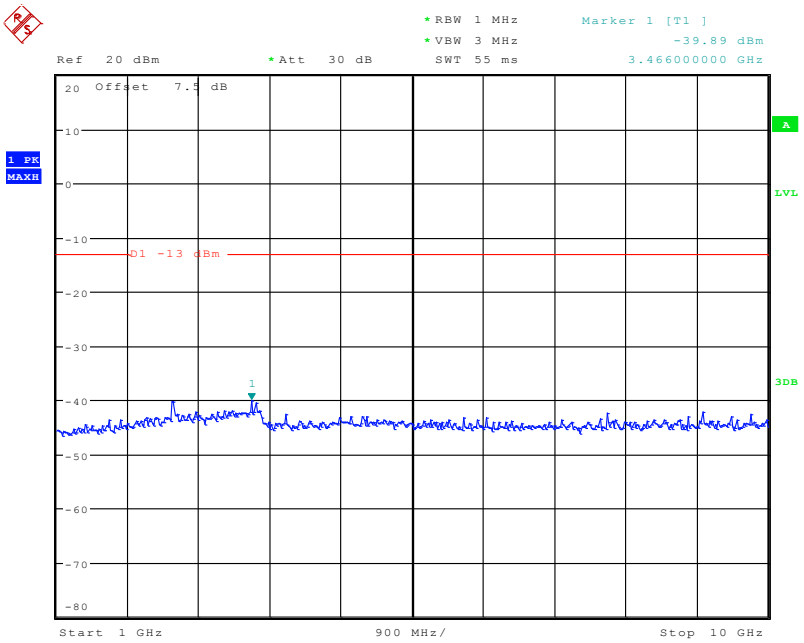
## 30 MHz - 1 GHz (5.0 MHz, Middle channel)




Fundamental test

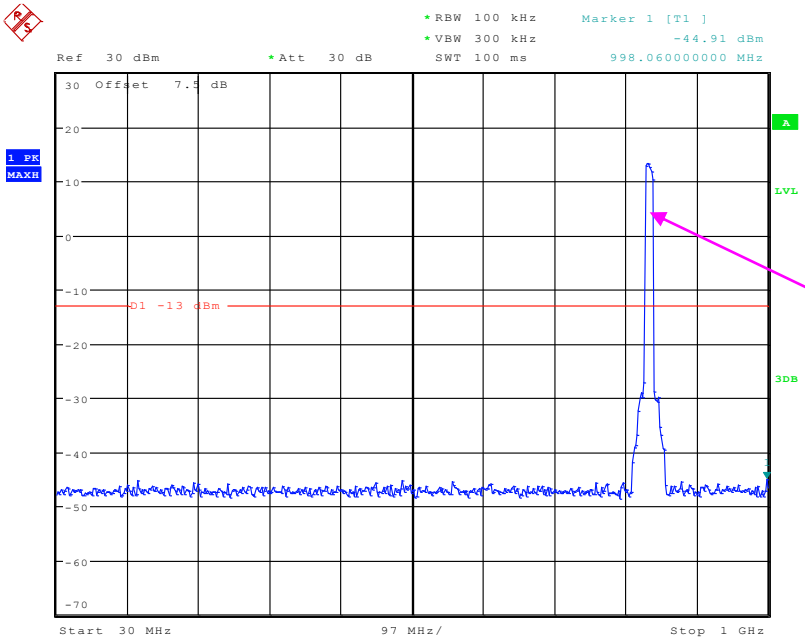
Date: 13.MAR.2020 11:45:24

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




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

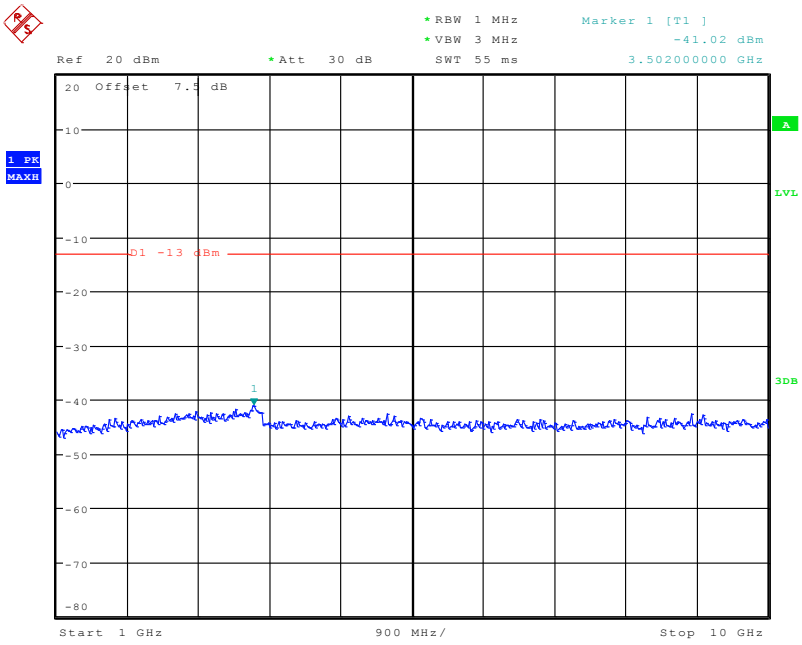
## 30 MHz - 1 GHz (10.0 MHz, Middle channel)




Fundamental test

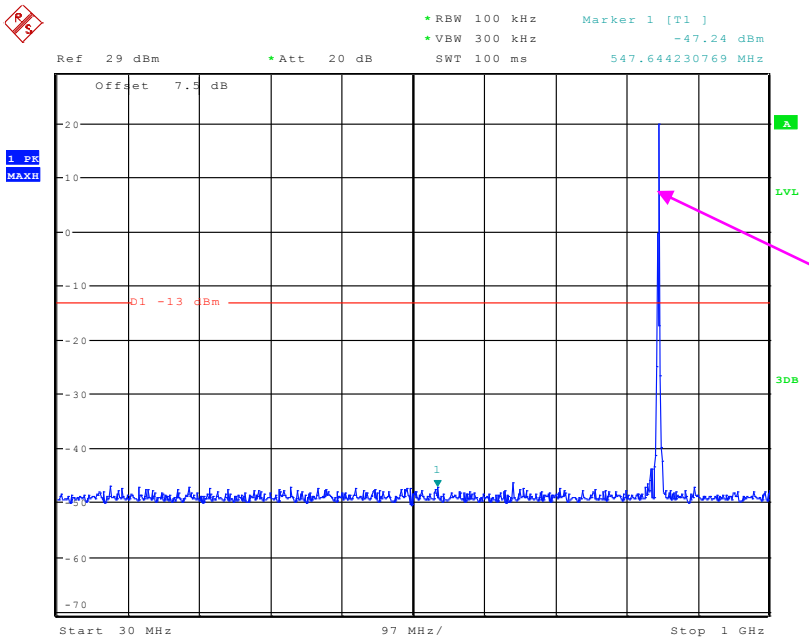
Date: 13.MAR.2020 11:45:53

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




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

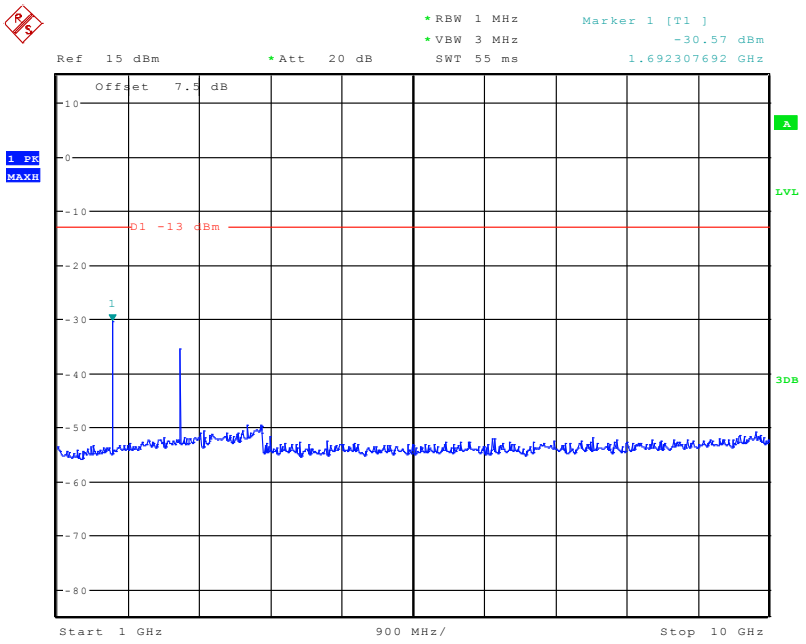
## 30 MHz - 1 GHz (1.4 MHz, High Channel)




Fundamental test

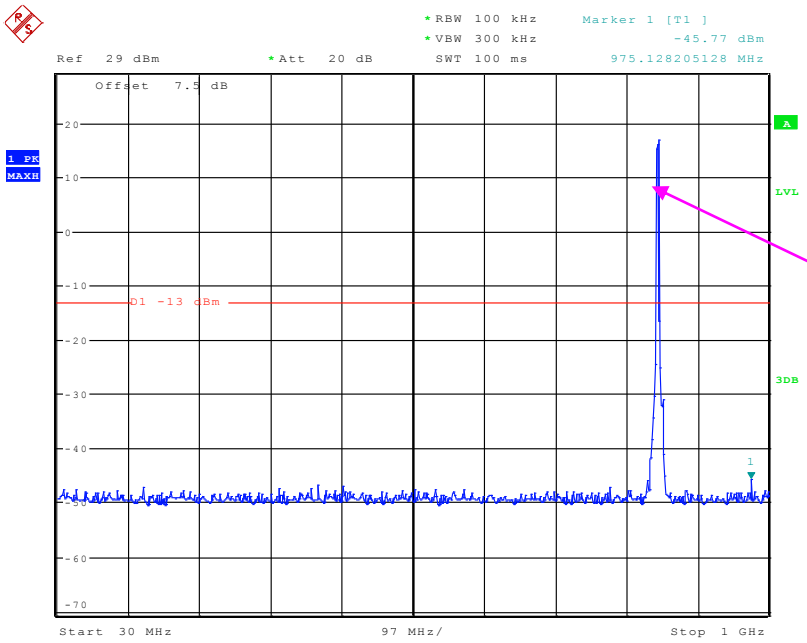
Date: 3.NOV.2020 13:53:07

## 1 GHz – 10 GHz (1.4 MHz, High Channel)




Date: 3.NOV.2020 13:53:39

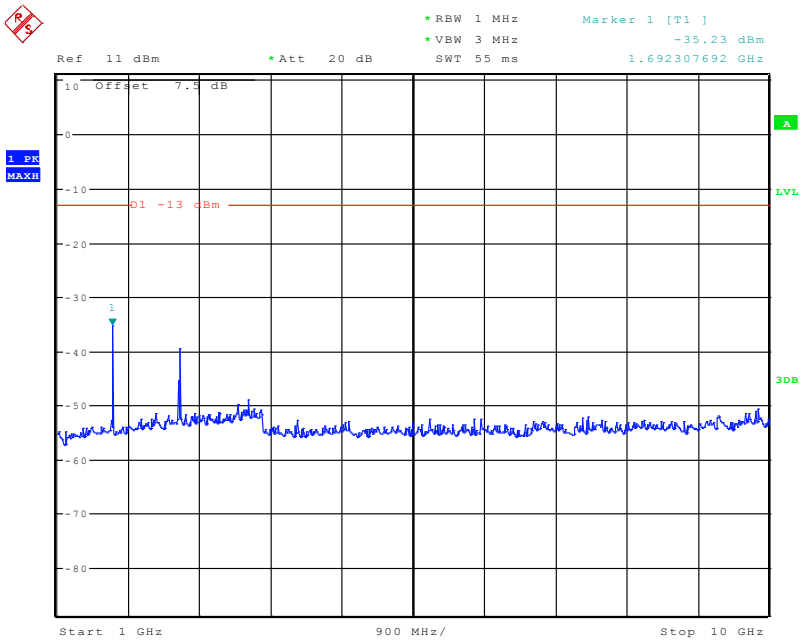
## 30 MHz - 1 GHz (3.0 MHz, High Channel)




Fundamental test

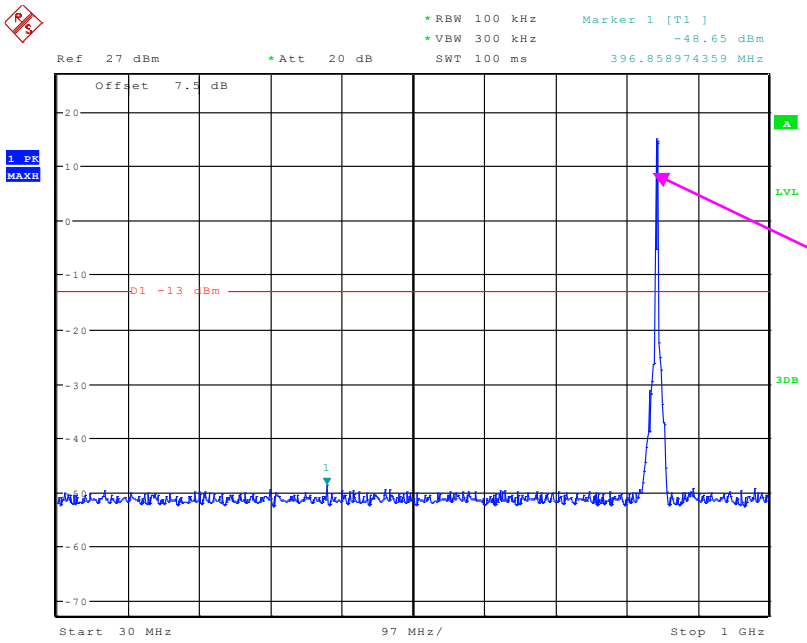
Date: 3.NOV.2020 13:49:52

## 1 GHz – 10 GHz (3.0 MHz, High Channel)




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

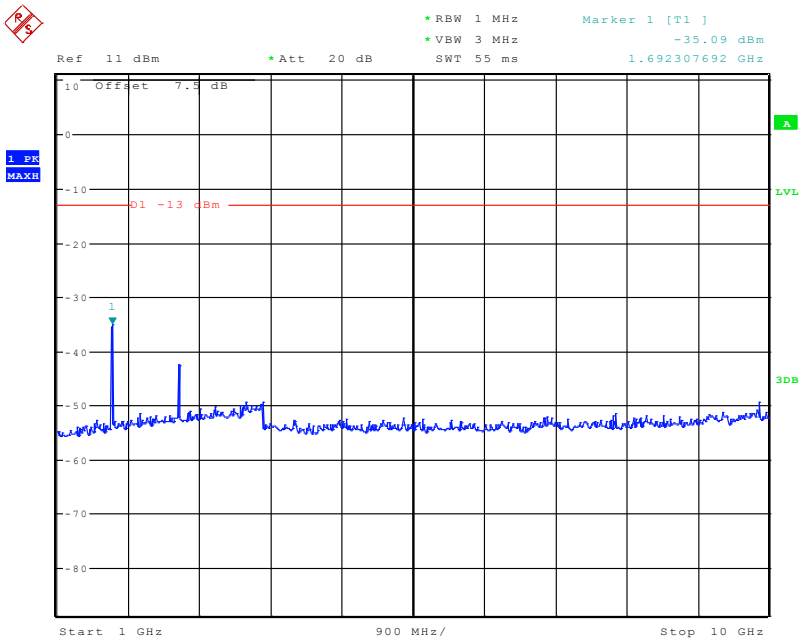
## 30 MHz - 1 GHz (5.0 MHz, High Channel)




Fundamental test

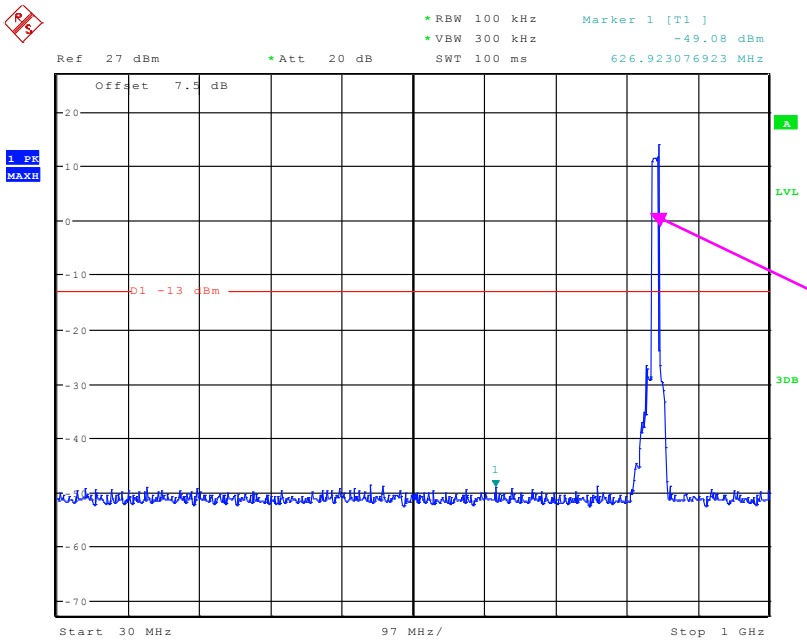
Date: 3.NOV.2020 13:46:14

## 1 GHz – 10 GHz (5.0 MHz, High Channel)




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

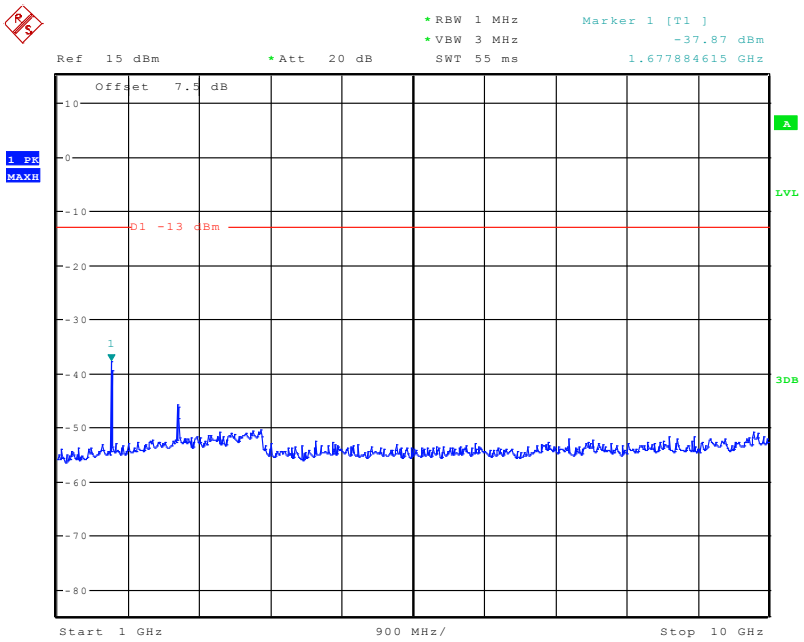
## 30 MHz - 1 GHz (10.0 MHz, High Channel)




Fundamental test

Date: 3.NOV.2020 13:36:36

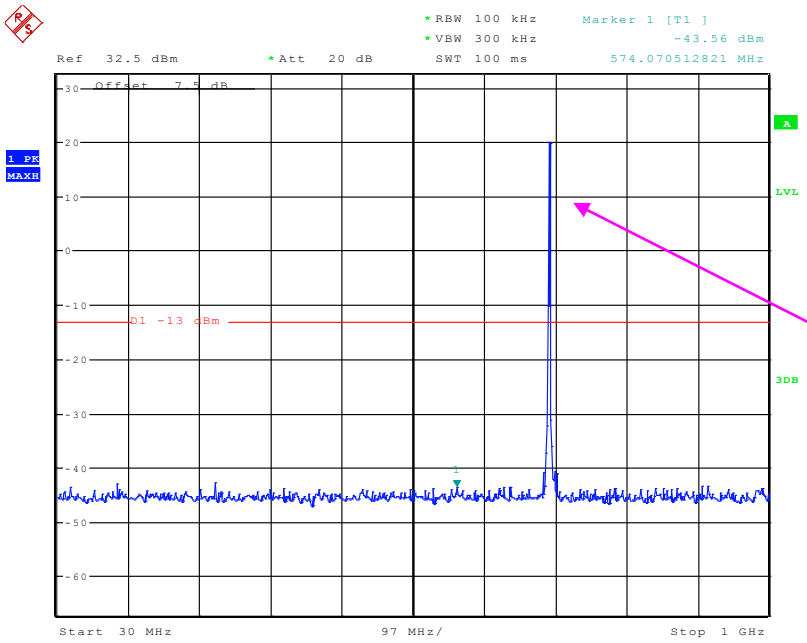
## 1 GHz – 10 GHz (10.0 MHz, High Channel)




Date: 3.NOV.2020 13:35:59

**LTE Band 12:**

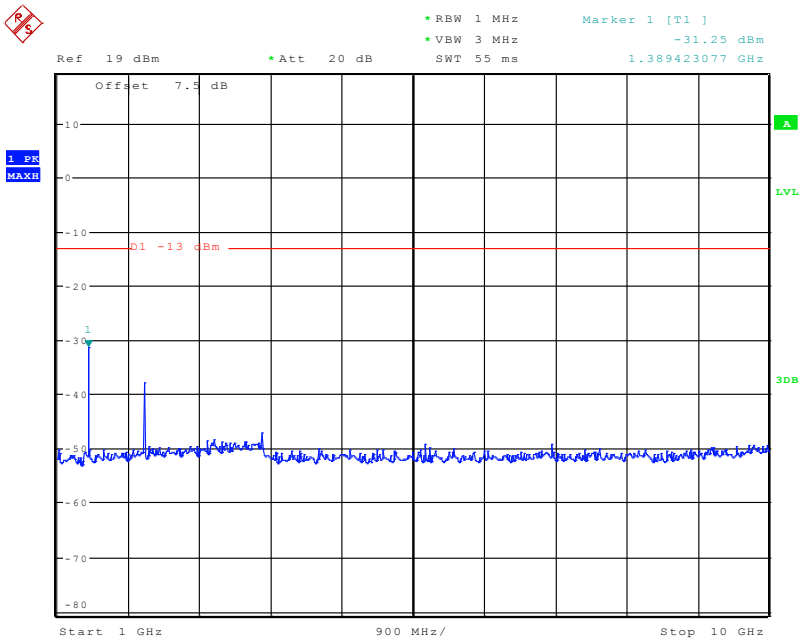
**30 MHz - 1 GHz (1.4 MHz, Middle channel)**




Fundamental test

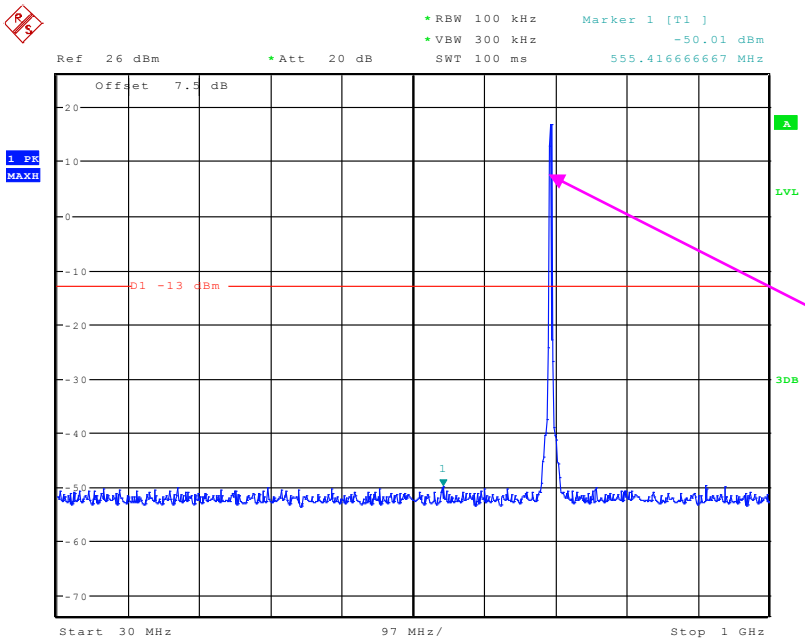
Date: 3.NOV.2020 12:59:42

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




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

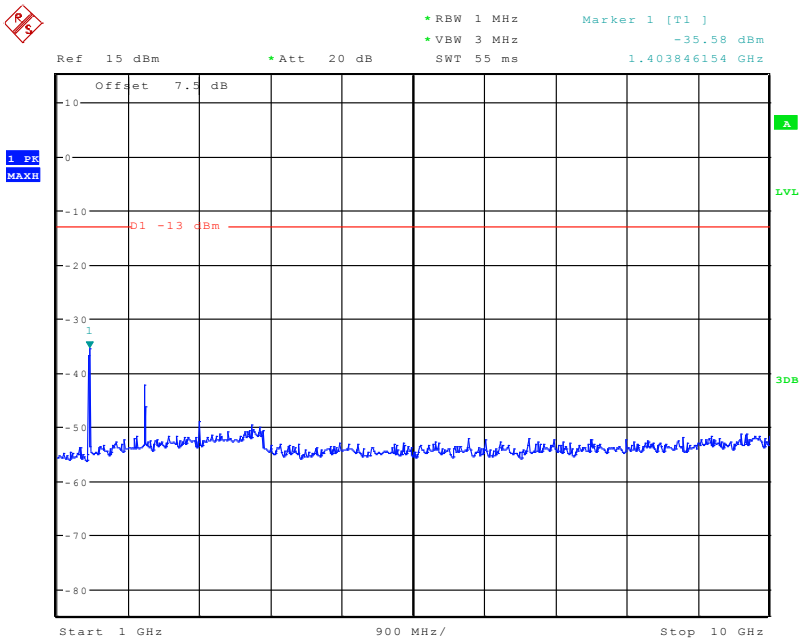
## 30 MHz - 1 GHz (3.0 MHz, Middle channel)




Fundamental test

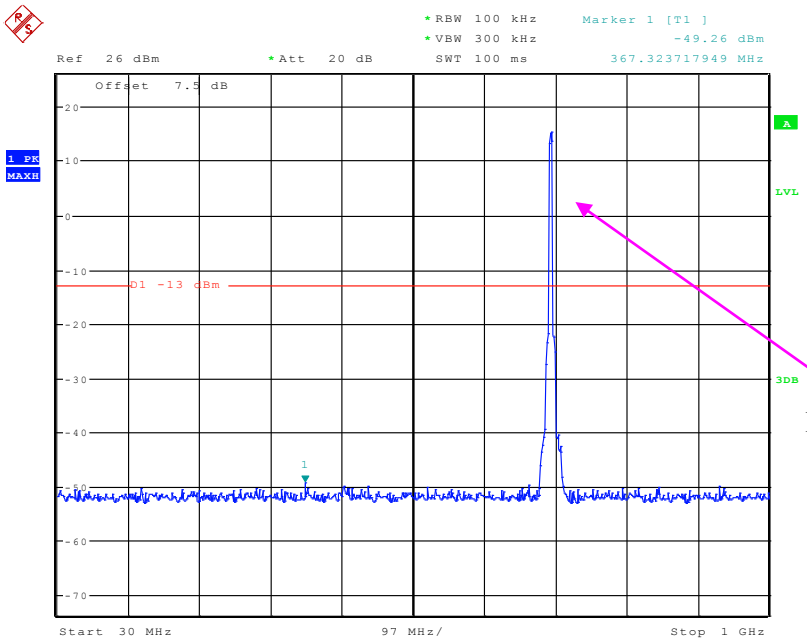
Date: 3.NOV.2020 13:06:09

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




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

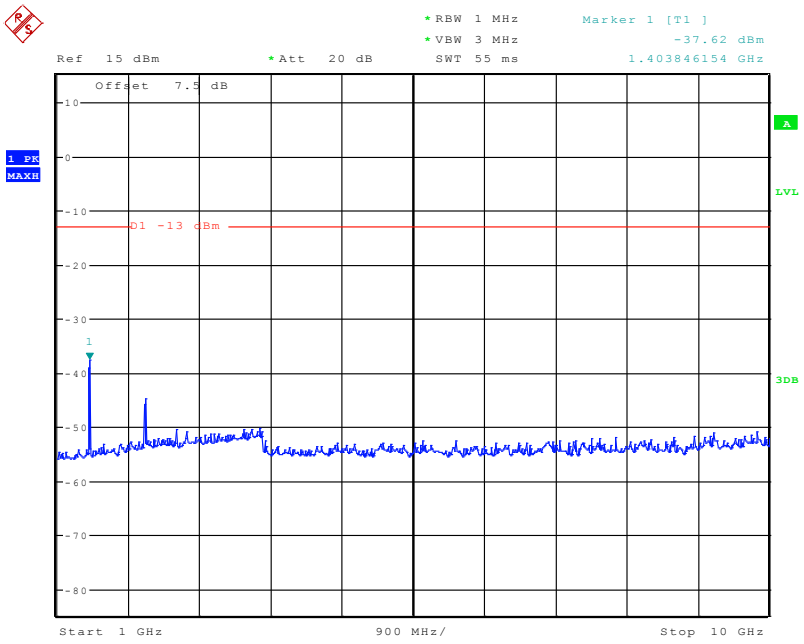
## 30 MHz - 1 GHz (5.0 MHz, Middle channel)




Fundamental test

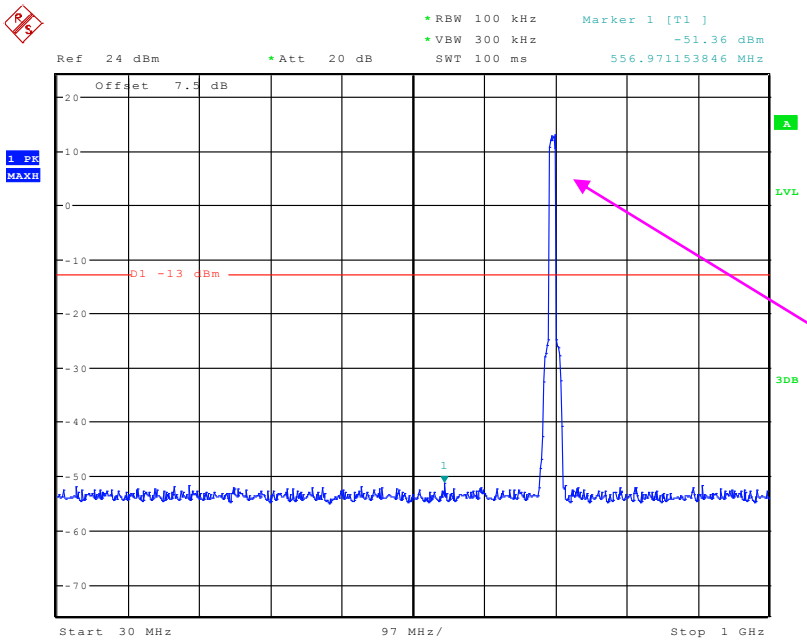
Date: 3.NOV.2020 13:07:25

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




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

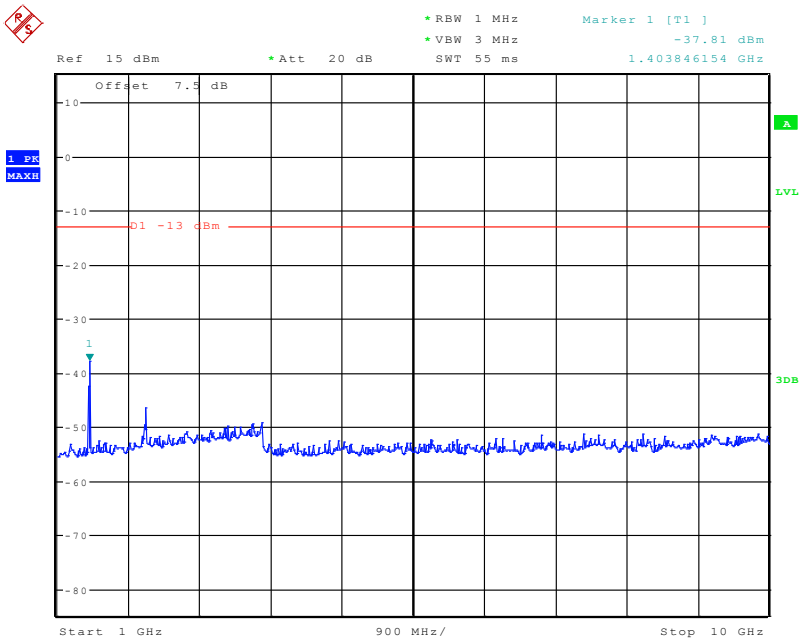
## 30 MHz - 1 GHz (10.0 MHz, Middle channel)




Fundamental test

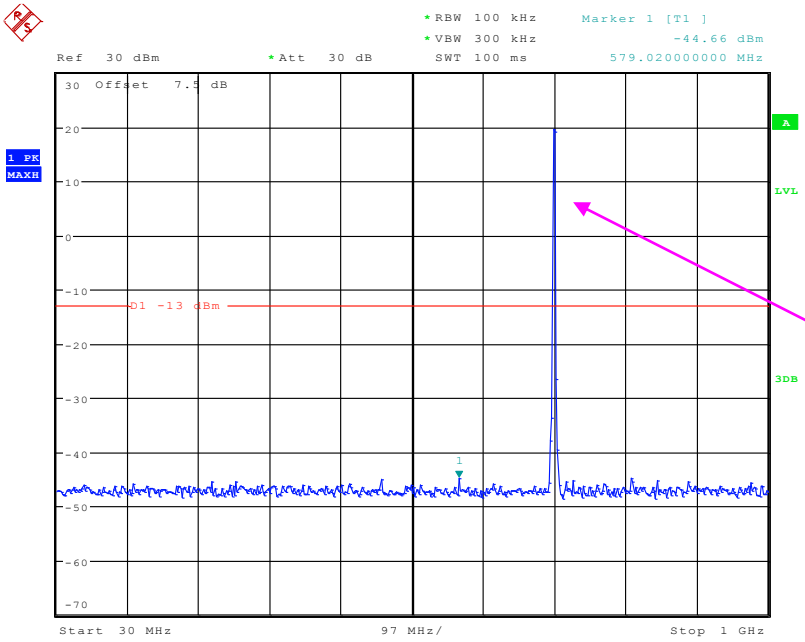
Date: 3.NOV.2020 13:14:02

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




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

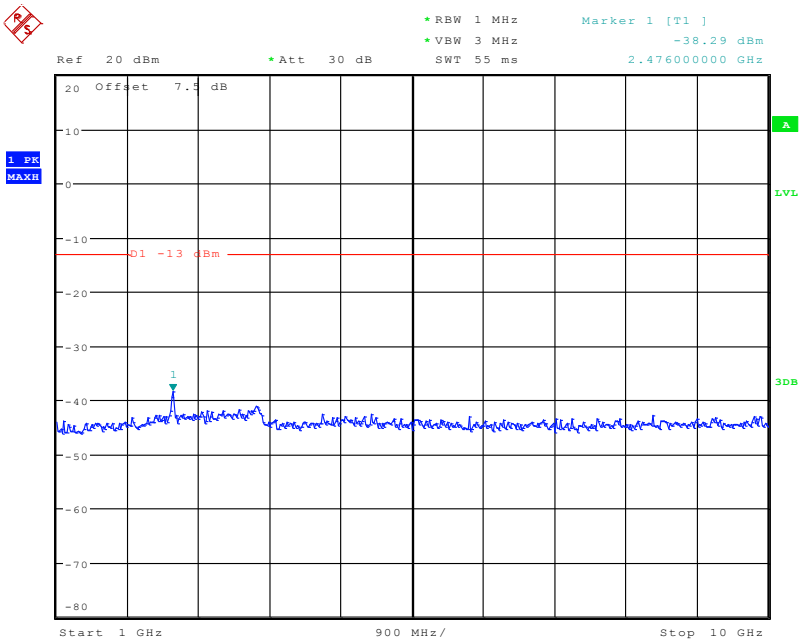
## 30 MHz - 1 GHz (1.4 MHz, Middle channel)




Fundamental test

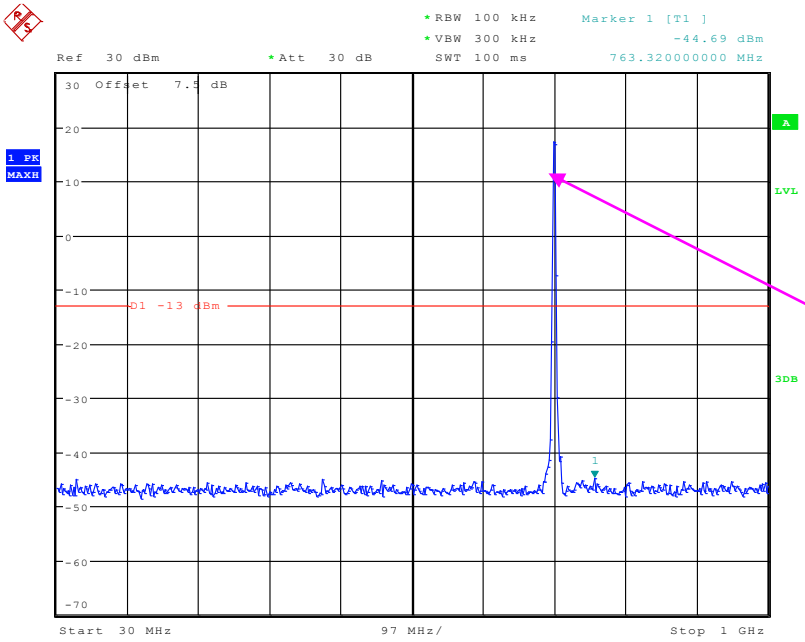
Date: 13.MAR.2020 11:46:22

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




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

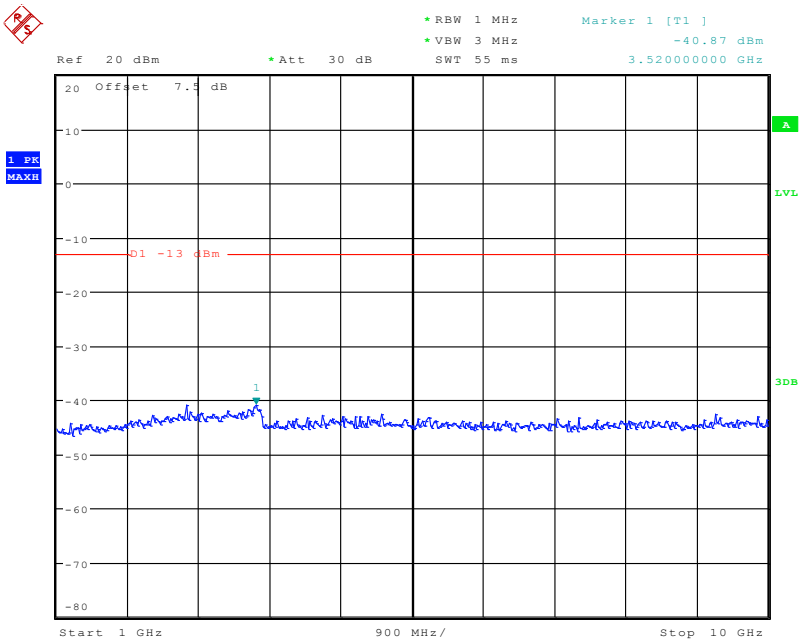
## 30 MHz - 1 GHz (3.0 MHz, Middle channel)




Fundamental test

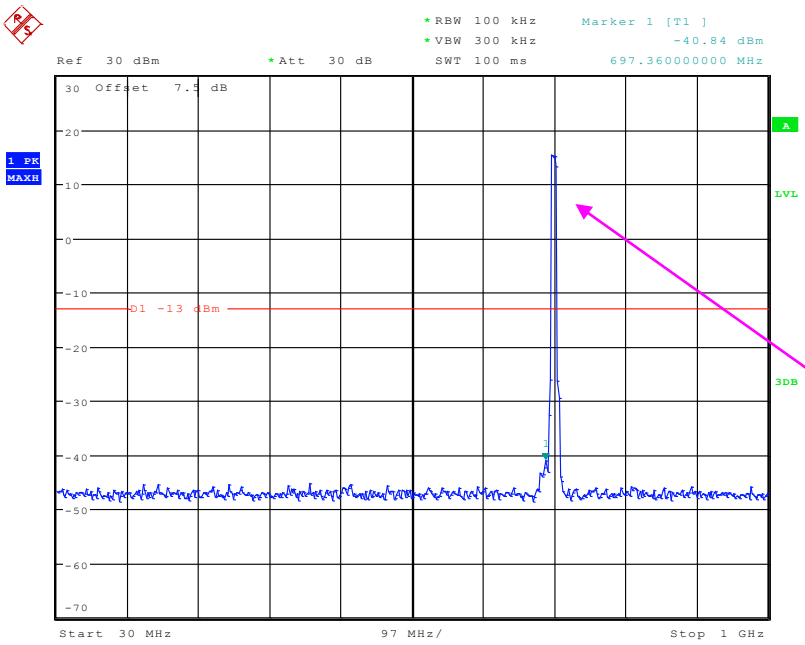
Date: 13.MAR.2020 11:46:52

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




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

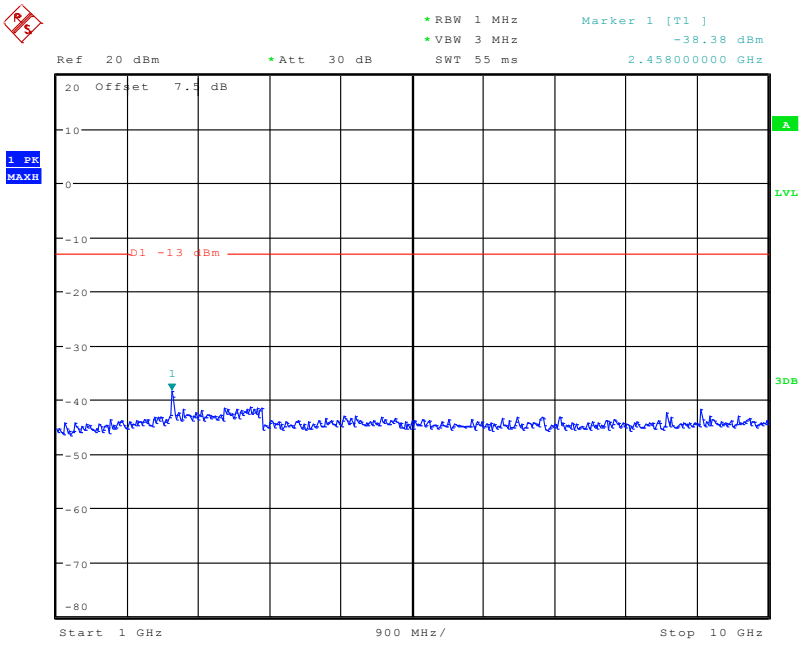
## 30 MHz - 1 GHz (5.0 MHz, Middle channel)




Fundamental test

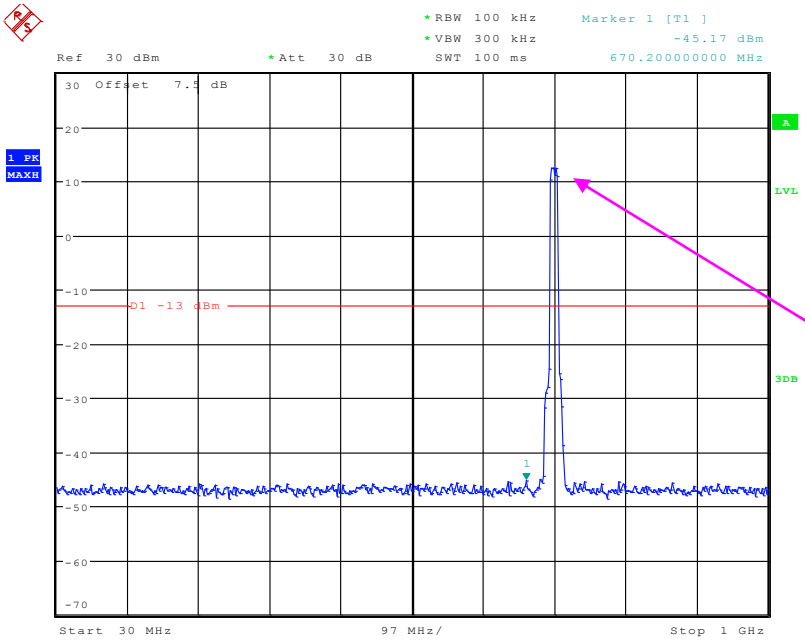
Date: 13.MAR.2020 11:47:21

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




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

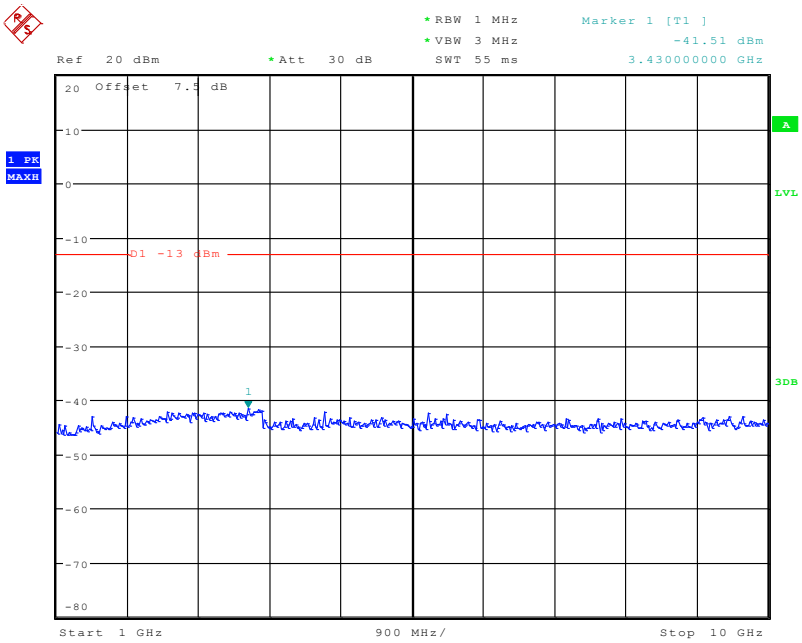
## 30 MHz - 1 GHz (10.0 MHz, Middle channel)




Fundamental test

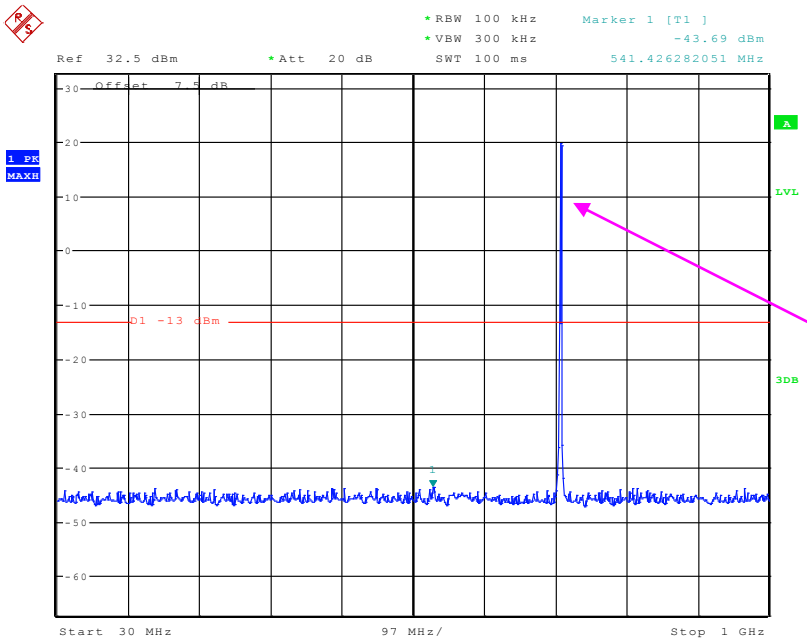
Date: 13.MAR.2020 11:47:53

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




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

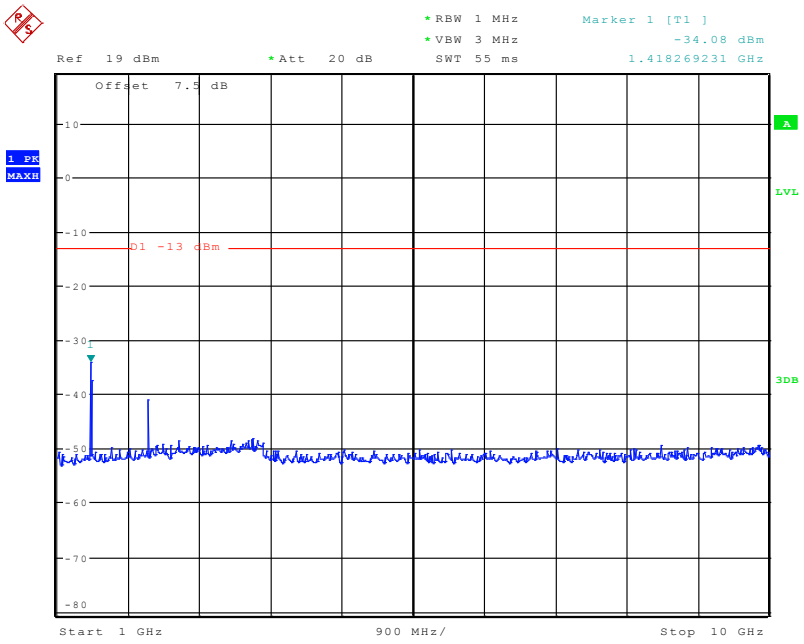
## 30 MHz - 1 GHz (1.4 MHz, , High channel)




Fundamental test

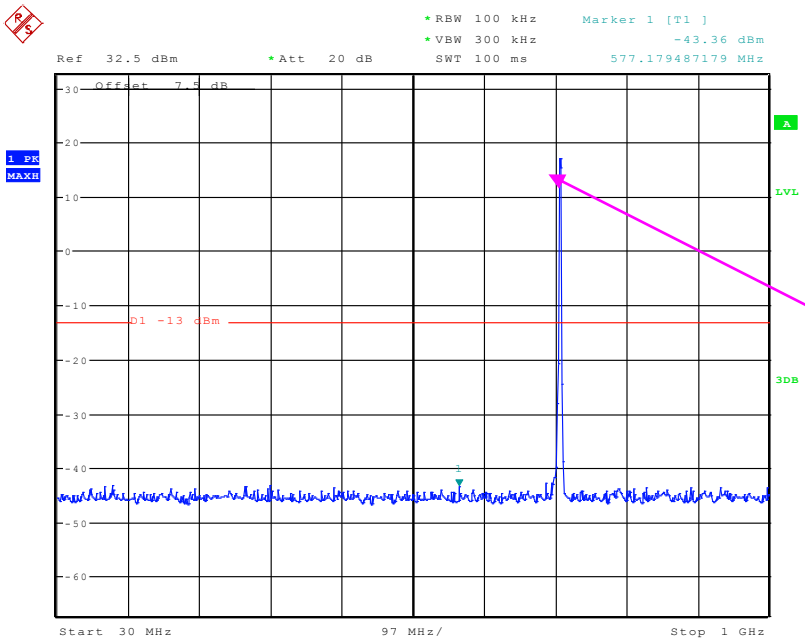
Date: 3.NOV.2020 13:02:50

## 1 GHz –10GHz (1.4 MHz, , High channel




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

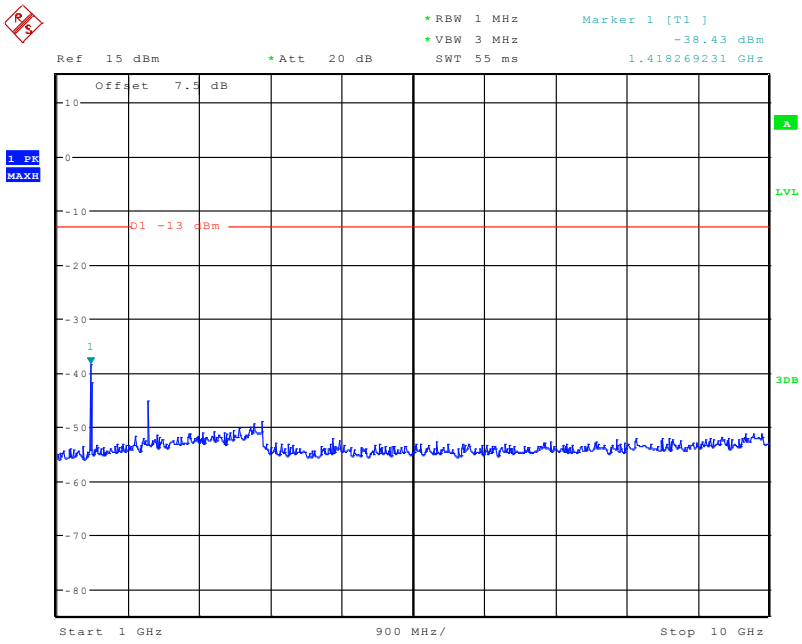
## 30 MHz - 1 GHz (3.0 MHz, , High channel)




Fundamental test

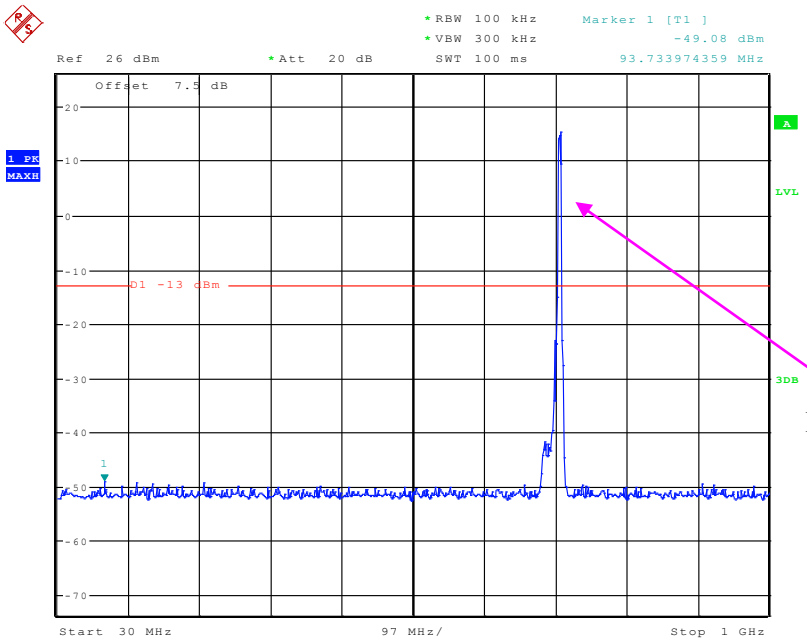
Date: 3.NOV.2020 13:03:40

## 1 GHz – 10 GHz (3.0 MHz, High channel)




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

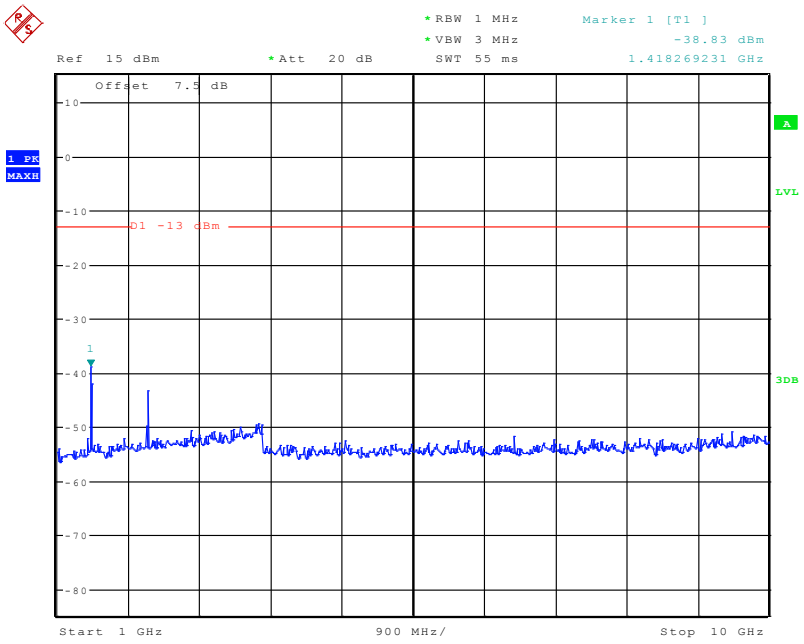
## 30 MHz - 1 GHz (5.0 MHz, High channel)




Fundamental test

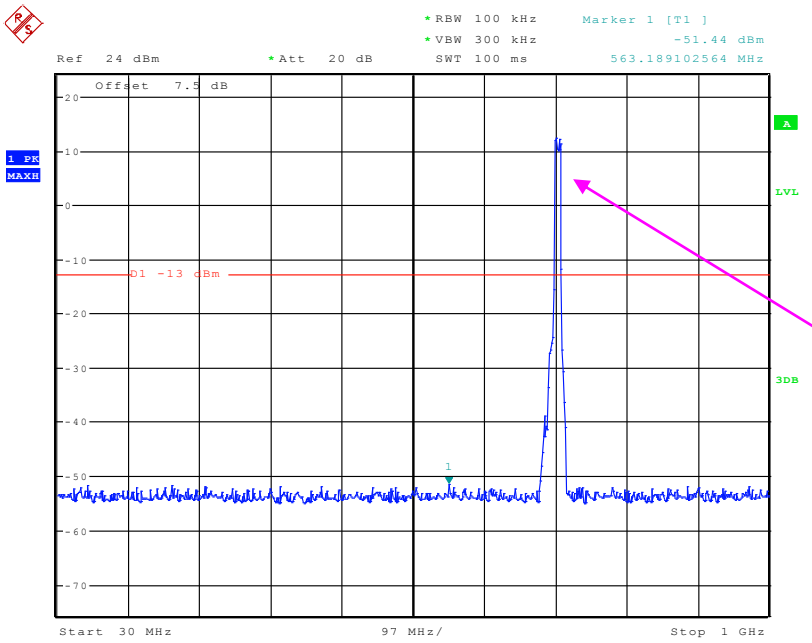
Date: 3.NOV.2020 13:08:50

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




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

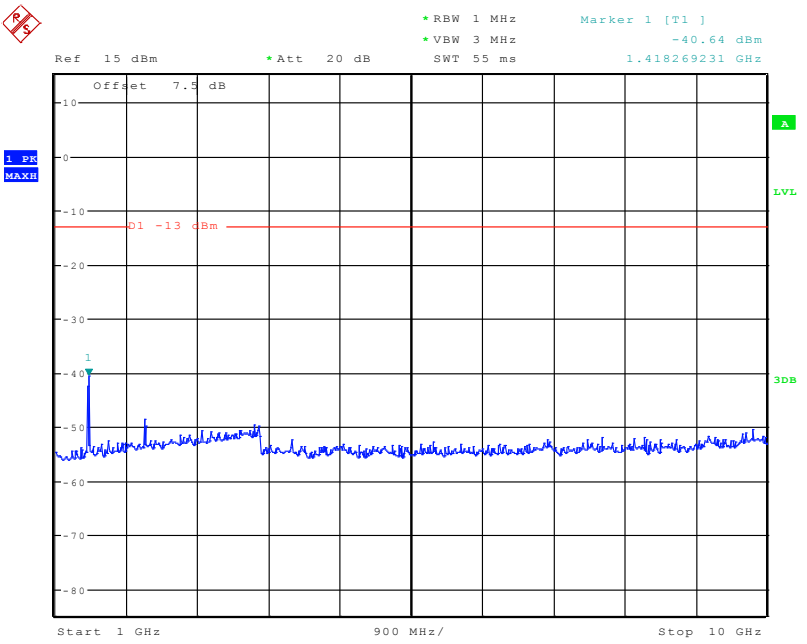
## 30 MHz - 1 GHz (10.0 MHz, High channel)




Fundamental test

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

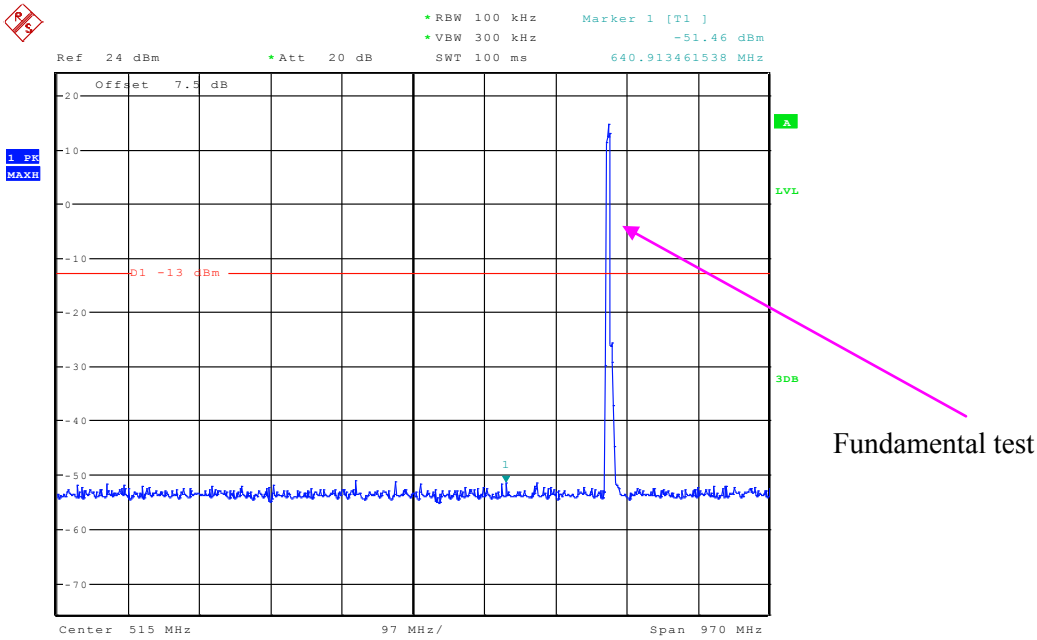
## 1 GHz – 10 GHz (10.0 MHz, High channel)




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

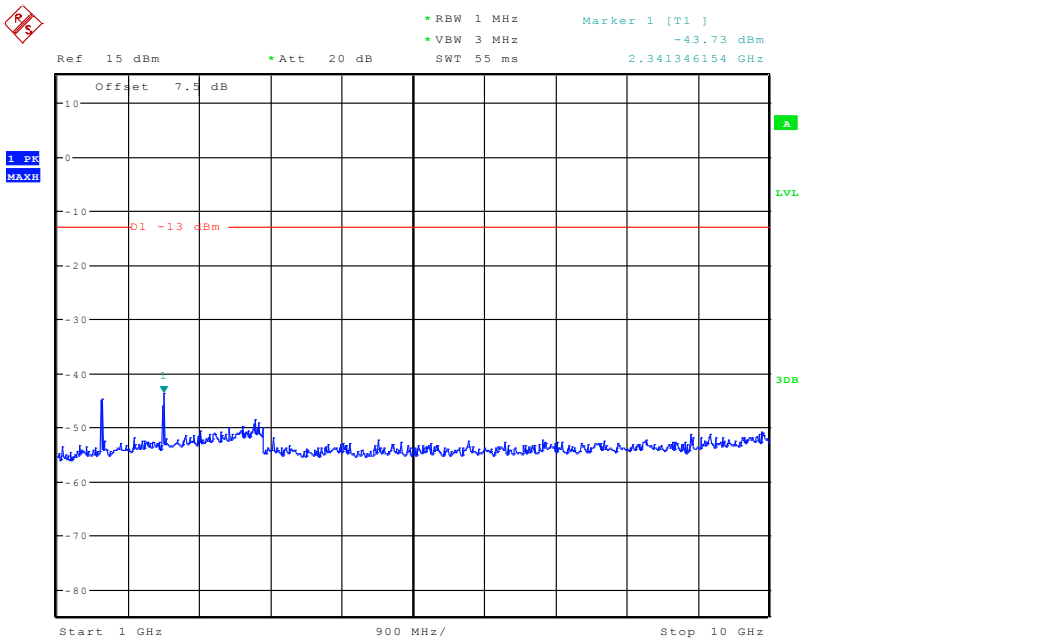
**LTE Band 13:**

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



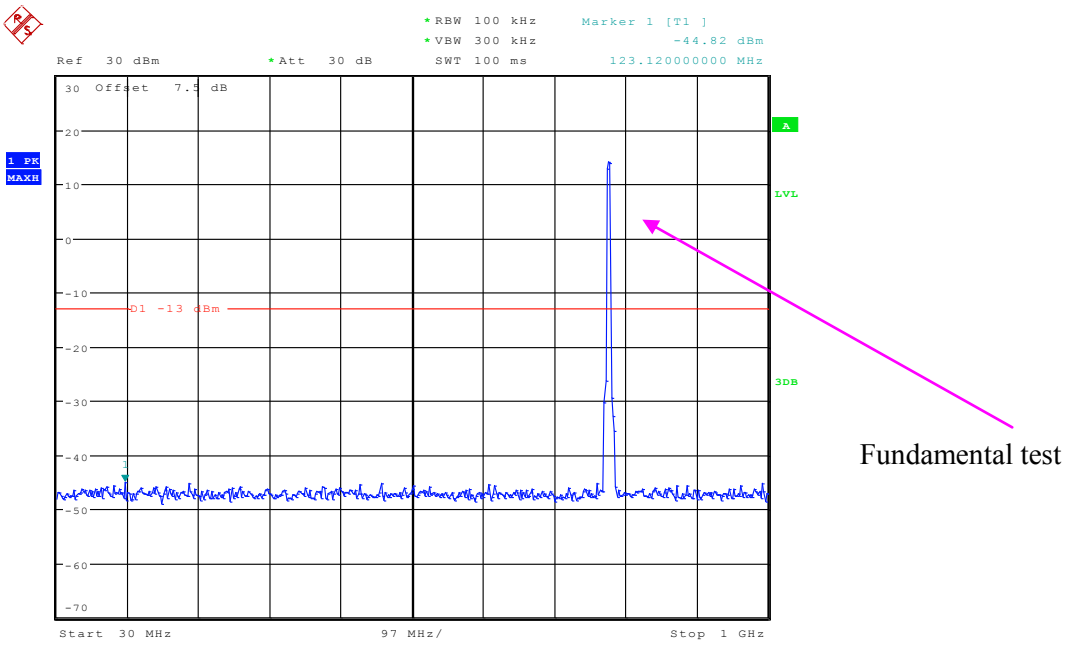

Date: 3.NOV.2020 13:15:45

**1 GHz – 10 GHz (5.0 MHz, Low channel)**



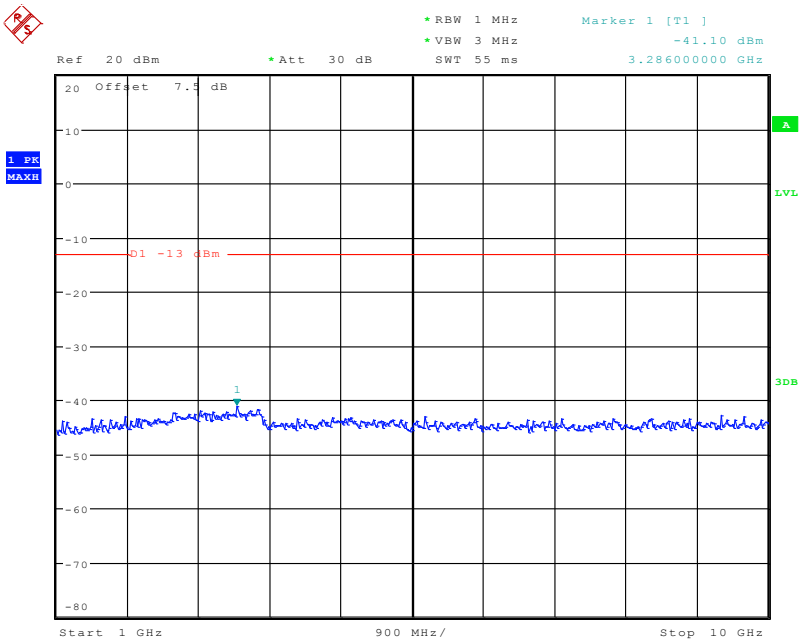

Date: 3.NOV.2020 13:31:55

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



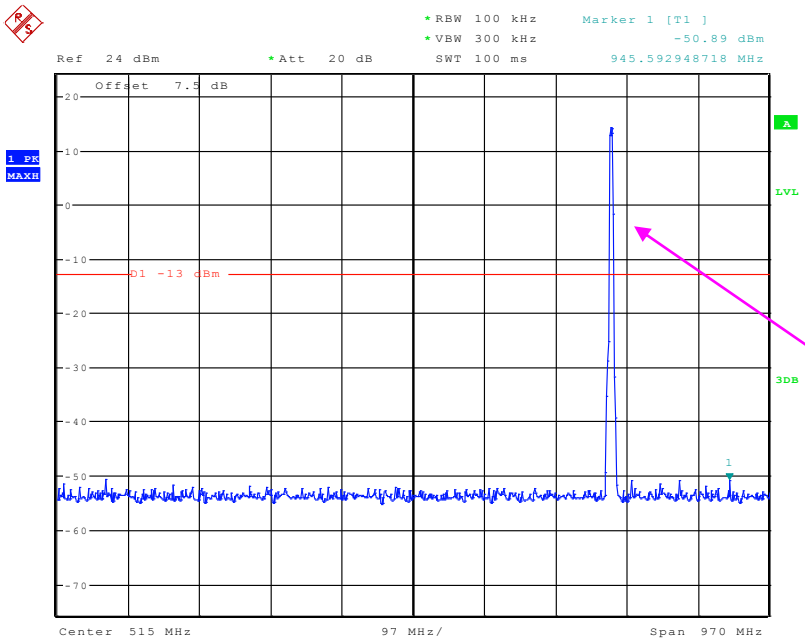

Date: 13.MAR.2020 11:48:21

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



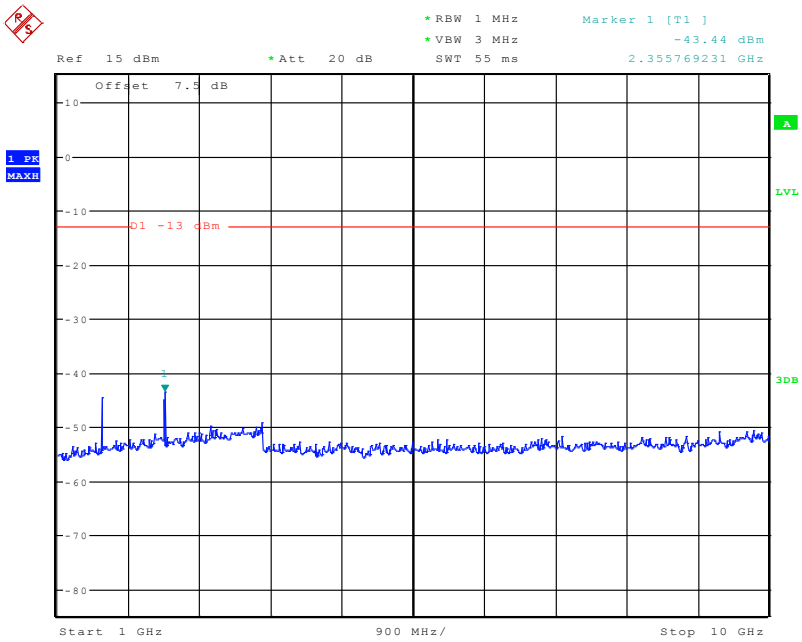

Date: 13.MAR.2020 11:48:32

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



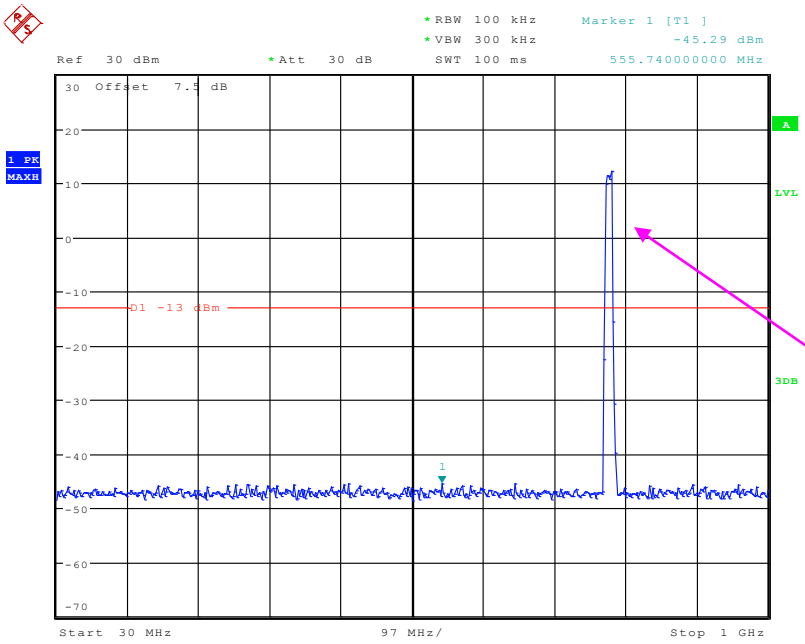

Date: 3.NOV.2020 13:16:23

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




Date: 3.NOV.2020 13:31:06

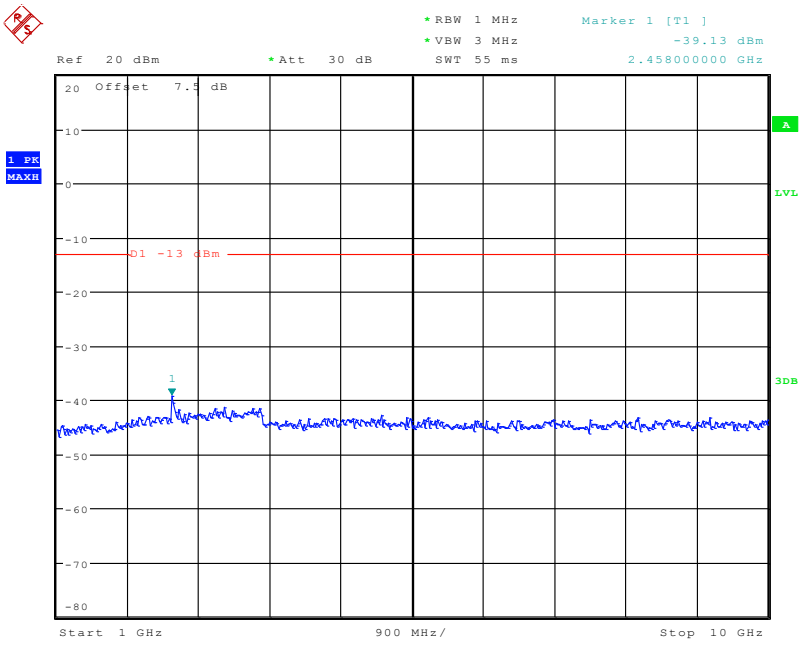
## 30 MHz - 1 GHz (10.0 MHz, Middle channel)




Fundamental test

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

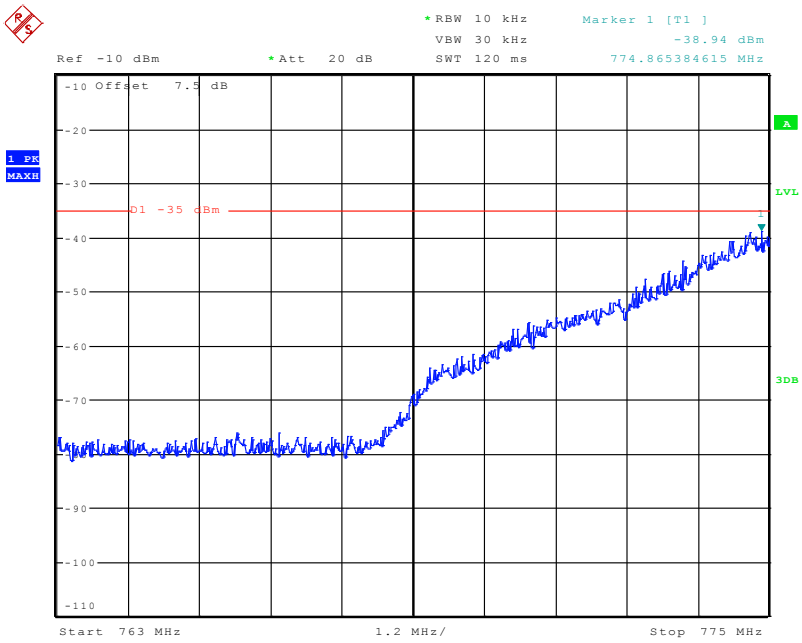
## 1 GHz – 10 GHz (10.0 MHz, Middle channel)




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

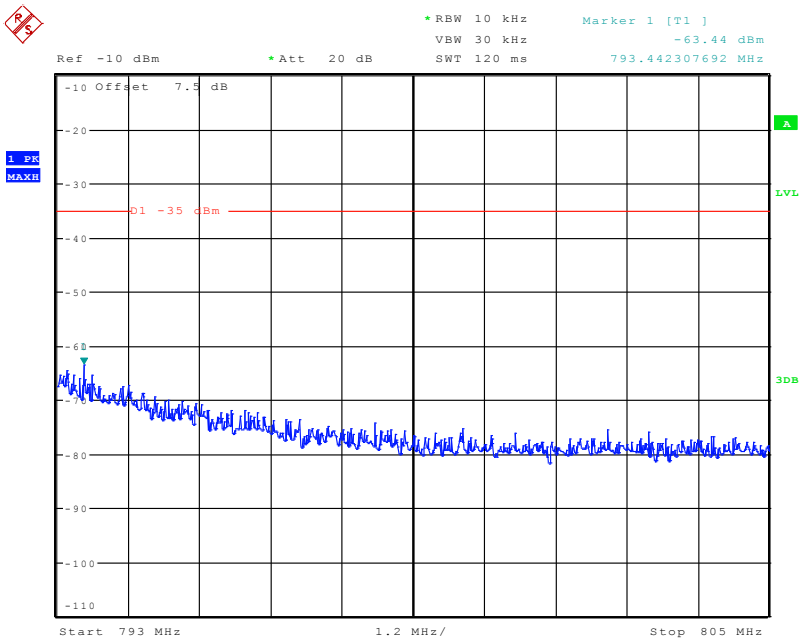
**Additional for band 13:**

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




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

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




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