



TESTREPORT

Applicant Name : TECNO MOBILE LIMITED
Address : FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35
SHAN MEI STREET FOTAN NT Hong Kong
ReportNumber: SZNS211209-63796E-RF-00C
FCC ID: 2ADYY-BD4A

Test Standard (s)

FCC PART 27; FCC PART 22H; FCC PART 24E

Sample Description

Product Type: Mobile Phone
Model No.: BD4a
Multiple Model(s) No.: N/A
Trade Mark: TECNO
Date Received: 2021/12/09
Date of Test: 2021/12/13~2021/12/16
Report Date: 2022/01/05

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Fan Yang
EMC Engineer

Approved By:

Robert Li
EMC Engineer

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

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band5/LTE Band 5: -4dBi PCS1900/WCDMA Band 2/ LTE Band 2: -1dBi WCDMA Band 4/ LTE Band 4:-1dBi LTE Band 7: 0.5dBi LTE Band 38/LTE Band 41: 1dBi (provided by the applicant)
Voltage Range	DC 3.85V from battery or DC 5V from adapter
Sample serial number	SZNS211209-63796E-RF-S1 (Assigned by ATC)
Sample/EUT Status	Good condition
Extreme condition*	LV: Low Voltage 3.6V NV: Normal Voltage 3.85V HV: High Voltage 4.4V(provided by the applicant)
Adapter information	Model: U050TSA Input: AC 100-240V, 50/60Hz, Max 0.2A Output: DC 5.0V, 1.0A

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, and Subpart 27 of the Federal Communication Commission's 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 Shenzhen Accurate Technology Co., Ltd. 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
RF Frequency		±0.082*10 ⁻⁷
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz - 18GHz	±4.98dB
	18GHz - 26.5GHz	±5.06dB
Temperature		±1 °C
Humidity		±6%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. 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.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
LTE B38	5	2572.5	2595	2617.5
	10	2575	2595	2615
	15	2577.5	2595	2612.5
	20	2580	2595	2610
LTE B41	5	2537.5	2595	2652.5
	10	2540	2595	2650
	15	2542.5	2595	2647.5
	20	2545	2595	2645

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

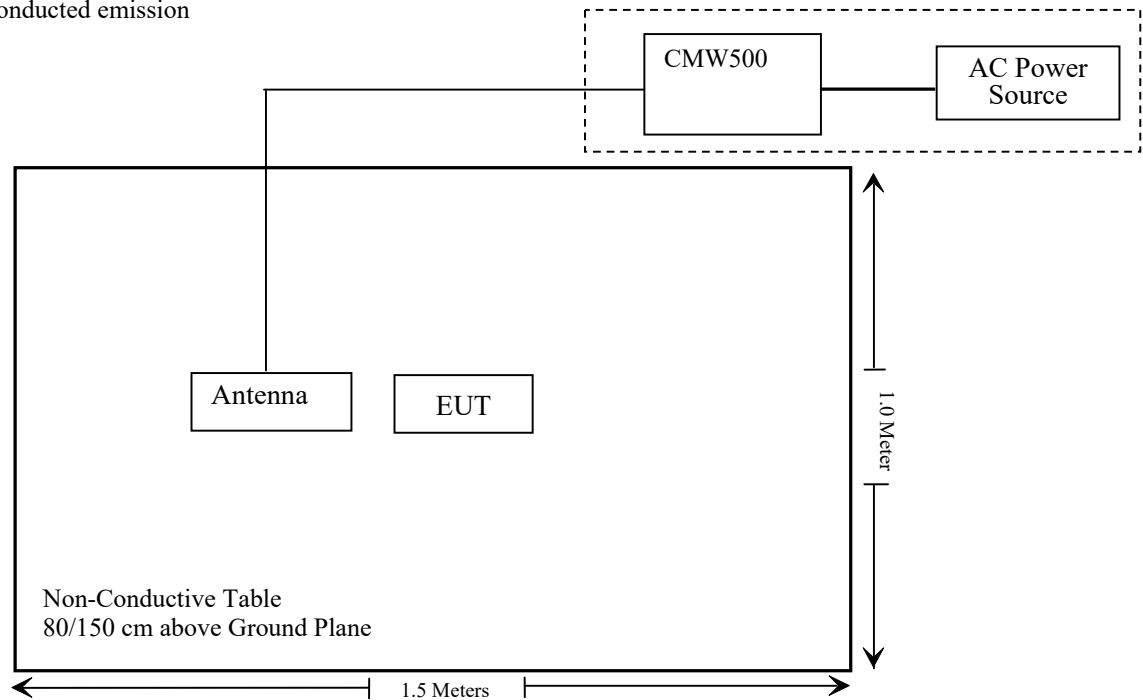
Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-11621 8-U

Support Cable Description

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

Block Diagram of Test Setup

For conducted emission



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 ,§2.1093	RF Exposure (SAR)	Compliant*
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (d) (h);	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
§ 2.1051; §22.917 (a); § 24.238 (a); §27.53;	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53 (h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Note: * Please refer to SAR report number: SZNS211209-63796E-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2021/11/11	2022/11/10
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
Radiated Emission Test Software: e3 19821b (V9)					
Unknown	Band Reject Filter	MSF824-862 MS-1147	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF1850-191 0MS-1148	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF1710-178 5MS-1150	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF2495-257 0MS-1152	201706003	2021/12/14	2022/12/13
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
Mini-Circuits	Power Splitter	DC-18000MH z	SF10944151S	2021/12/14	2022/12/13
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2021/12/13	2022/12/12
Gongwen	Temp. & Humid. Chamber	HSD-500	109	2021/10/14	2022/10/13

* Statement of Traceability: Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307(b)&§2.1093 - RF EXPOSURE INFORMATION

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: SZNS211209-63796E-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E& 27, there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC § 2.1046,§ 22.913 (a)&§ 24.232(c); §27.50(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.

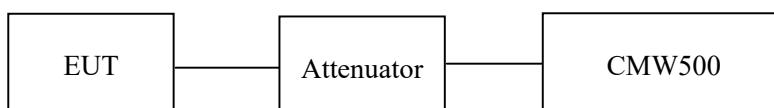
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2496-2690MHz .

Test Procedure

Conducted method:

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

**Test Data****Environmental Conditions**

Temperature:	27.2 °C
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Fan Yang from 2021-12-13 to 2021-12-15.

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

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.90	27.75	38.45
	190	836.6	33.80	27.65	38.45
	251	848.8	33.70	27.55	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	33.79	32.60	30.52	29.31	27.64	26.45	24.37	23.16	38.45
	190	836.6	33.65	32.43	30.34	29.12	27.50	26.28	24.19	22.97	38.45
	251	848.8	33.57	32.36	30.25	29.08	27.42	26.21	24.10	22.93	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	27.91	26.24	24.04	22.53	21.76	20.09	17.89	16.38	38.45
	190	836.6	27.93	26.37	24.01	22.49	21.78	20.22	17.86	16.34	38.45
	251	848.8	27.75	26.22	23.84	22.27	21.60	20.07	17.69	16.12	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		23.78	23.76	23.73	17.63	17.61	17.58
	HSDPA	1	21.87	21.73	21.76	15.72	15.58	15.61
		2	21.77	21.72	21.74	15.62	15.57	15.59
		3	21.69	21.58	21.66	15.54	15.43	15.51
		4	21.68	21.59	21.48	15.53	15.44	15.33
	HSUPA	1	22.60	22.52	22.60	16.45	16.37	16.45
		2	22.57	22.55	22.54	16.42	16.40	16.39
		3	22.38	22.44	22.61	16.23	16.29	16.46
		4	22.58	22.48	22.42	16.43	16.33	16.27
		5	22.49	22.46	22.36	16.34	16.31	16.21
	HSPA+	1	22.39	22.47	22.34	16.24	16.32	16.19

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For GSM850 / WCDMA Band5: Antenna Gain = -4dBi = -6.15dBd (0dBd=2.15dBi)
 Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	29.70	28.70	33
	661	1880.0	29.70	28.70	33
	810	1909.8	29.90	28.80	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.53	28.68	26.93	25.82	28.53	27.68	25.93	24.82	33
	661	1880.0	29.48	28.66	26.86	25.85	28.48	27.66	25.86	24.85	33
	810	1909.8	29.65	28.88	27.08	26.06	28.65	27.88	26.08	25.06	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	26.94	24.67	22.65	21.34	25.94	23.67	21.65	20.34	33
	661	1880.0	26.47	25.22	23.18	21.88	25.47	24.22	22.18	20.88	33
	810	1909.8	26.82	25.09	22.88	21.71	25.82	24.09	21.88	20.71	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.05	23.19	23.19	22.05	22.19	22.19
	HSDPA	1	20.37	20.57	20.78	19.37	19.57	19.78
		2	20.44	20.52	20.62	19.44	19.52	19.62
		3	20.42	20.48	20.63	19.42	19.48	19.63
		4	20.51	20.39	20.57	19.51	19.39	19.57
	HSUPA	1	21.90	22.05	22.00	20.90	21.05	21.00
		2	21.98	22.01	21.88	20.98	21.01	20.88
		3	21.96	22.02	21.90	20.96	21.02	20.9
		4	21.97	21.98	21.92	20.97	20.98	20.92
		5	21.94	21.97	21.89	20.94	20.97	20.89
	HSPA+	1	21.92	21.96	21.90	20.92	20.96	20.90

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For PCS1900 / WCDMA Band2: Antenna Gain = -1dBi
 Limit: EIRP ≤ 33dBm

AWS Band (Part 27)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		23.38	23.41	23.32	22.38	22.41	22.32
	HSDPA	1	20.80	20.69	20.71	19.80	19.69	19.71
		2	20.82	20.48	20.72	19.82	19.48	19.72
		3	20.65	20.55	20.64	19.65	19.55	19.64
		4	20.75	20.63	20.53	19.75	19.63	19.53
	HSUPA	1	22.16	22.25	22.13	21.16	21.25	21.13
		2	22.10	22.12	22.05	21.10	21.12	21.05
		3	22.05	22.11	22.04	21.05	21.11	21.04
		4	22.08	22.13	22.16	21.08	21.13	21.16
		5	22.13	22.14	22.08	21.13	21.14	21.08
	HSPA+	1	22.01	22.16	22.09	21.01	21.16	21.09

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band4: Antenna Gain = -1dBi

Limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	3.55	13
	Middle	3.52	13
	High	3.47	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	3.51	13
	Middle	3.48	13
	High	3.47	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.52	13
	Middle	3.46	13
	High	3.44	13
HSDPA (16QAM)	Low	3.62	13
	Middle	3.59	13
	High	3.62	13
HSUPA (BPSK)	Low	3.46	13
	Middle	3.45	13
	High	3.51	13
HSPA+	Low	3.53	13
	Middle	3.52	13
	High	3.58	13

PCS Band

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	3.52	13
	Middle	3.54	13
	High	3.56	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	3.51	13
	Middle	3.55	13
	High	3.47	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.42	13
	Middle	3.54	13
	High	3.46	13
HSDPA (16QAM)	Low	3.53	13
	Middle	3.52	13
	High	3.45	13
HSUPA (BPSK)	Low	3.46	13
	Middle	3.46	13
	High	3.47	13
HSPA+	Low	3.42	13
	Middle	3.41	13
	High	3.54	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.42	13
	Middle	3.64	13
	High	3.54	13
HSDPA (16QAM)	Low	3.56	13
	Middle	3.54	13
	High	3.55	13
HSUPA (BPSK)	Low	3.47	13
	Middle	3.52	13
	High	3.56	13
HSPA+	Low	3.56	13
	Middle	3.48	13
	High	3.49	13

LTE Band 2:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.12	22.15	22.05	21.12	21.15	21.05
		RB1#3	22.36	22.32	22.22	21.36	21.32	21.22
		RB1#5	22.14	22.16	22.04	21.14	21.16	21.04
		RB3#0	22.18	22.18	22.13	21.18	21.18	21.13
		RB3#3	22.17	22.25	22.09	21.17	21.25	21.09
		RB6#0	21.22	21.25	21.10	20.22	20.25	20.10
	16QAM	RB1#0	21.23	21.16	21.01	20.23	20.16	20.01
		RB1#3	21.42	21.26	21.12	20.42	20.26	20.12
		RB1#5	21.24	21.16	20.96	20.24	20.16	19.96
		RB3#0	21.20	21.30	21.21	20.20	20.30	20.21
		RB3#3	21.21	21.30	21.25	20.21	20.30	20.25
		RB6#0	20.22	20.13	20.11	19.22	19.13	19.11
3.0	QPSK	RB1#0	22.18	22.25	22.10	21.18	21.25	21.10
		RB1#8	22.13	22.22	22.13	21.13	21.22	21.13
		RB1#14	22.14	22.17	22.11	21.14	21.17	21.11
		RB6#0	21.16	21.25	21.04	20.16	20.25	20.04
		RB6#9	21.19	21.19	21.10	20.19	20.19	20.10
		RB15#0	21.15	21.19	21.10	20.15	20.19	20.10
	16QAM	RB1#0	21.72	21.35	21.10	20.72	20.35	20.10
		RB1#8	21.70	21.37	21.13	20.70	20.37	20.13
		RB1#14	21.65	21.33	21.03	20.65	20.33	20.03
		RB6#0	20.20	20.20	19.98	19.20	19.20	18.98
		RB6#9	20.19	20.20	20.06	19.19	19.20	19.06
		RB15#0	20.22	20.13	20.15	19.22	19.13	19.15

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.02	22.15	21.96	21.02	21.15	20.96
		RB1#13	22.19	22.25	22.14	21.19	21.25	21.14
		RB1#24	22.07	22.11	22.01	21.07	21.11	21.01
		RB15#0	21.12	21.25	21.04	20.12	20.25	20.04
		RB15#10	21.14	21.19	21.11	20.14	20.19	20.11
		RB25#0	21.13	21.15	21.08	20.13	20.15	20.08
	16QAM	RB1#0	20.92	21.43	21.03	19.92	20.43	20.03
		RB1#13	21.07	21.49	21.21	20.07	20.49	20.21
		RB1#24	20.97	21.36	20.98	19.97	20.36	19.98
		RB15#0	20.17	20.19	20.19	19.17	19.19	19.19
		RB15#10	20.22	20.14	20.06	19.22	19.14	19.06
		RB25#0	20.17	20.17	20.14	19.17	19.17	19.14
10.0	QPSK	RB1#0	22.16	22.25	22.11	21.16	21.25	21.11
		RB1#25	22.33	22.30	22.30	21.33	21.30	21.30
		RB1#49	22.20	22.18	22.15	21.20	21.18	21.15
		RB25#0	21.13	21.32	21.12	20.13	20.32	20.12
		RB25#25	21.26	21.27	21.03	20.26	20.27	20.03
		RB50#0	21.17	21.33	21.11	20.17	20.33	20.11
	16QAM	RB1#0	21.69	21.43	21.02	20.69	20.43	20.02
		RB1#25	21.81	21.46	21.27	20.81	20.46	20.27
		RB1#49	21.67	21.31	21.12	20.67	20.31	20.12
		RB25#0	20.17	20.29	20.28	19.17	19.29	19.28
		RB25#25	20.29	20.26	20.11	19.29	19.26	19.11
		RB50#0	20.24	20.25	20.13	19.24	19.25	19.13

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.02	22.19	21.98	21.02	21.19	20.98
		RB1#38	22.18	22.21	22.12	21.18	21.21	21.12
		RB1#74	22.16	22.02	21.95	21.16	21.02	20.95
		RB36#0	21.19	21.39	21.17	20.19	20.39	20.17
		RB36#39	21.29	21.28	21.14	20.29	20.28	20.14
		RB75#0	21.23	21.27	21.13	20.23	20.27	20.13
	16QAM	RB1#0	21.63	21.33	21.32	20.63	20.33	20.32
		RB1#38	21.72	21.34	21.34	20.72	20.34	20.34
		RB1#74	21.59	21.16	21.38	20.59	20.16	20.38
		RB36#0	20.07	20.29	20.11	19.07	19.29	19.11
		RB36#39	20.23	20.17	19.99	19.23	19.17	18.99
		RB75#0	20.20	20.25	20.03	19.20	19.25	19.03
20.0	QPSK	RB1#0	21.87	22.01	21.78	20.87	21.01	20.78
		RB1#50	22.40	22.36	22.21	21.40	21.36	21.21
		RB1#99	21.99	21.90	21.58	20.99	20.90	20.58
		RB50#0	21.06	21.35	20.64	20.06	20.35	19.64
		RB50#50	21.13	21.21	20.83	20.13	20.21	19.83
		RB100#0	21.14	21.29	20.93	20.14	20.29	19.93
	16QAM	RB1#0	21.21	21.17	21.35	20.21	20.17	20.35
		RB1#50	21.62	21.51	21.68	20.62	20.51	20.68
		RB1#99	21.26	21.10	21.13	20.26	20.10	20.13
		RB50#0	20.05	20.34	20.00	19.05	19.34	19.00
		RB50#50	20.09	20.15	19.86	19.09	19.15	18.86
		RB100#0	20.14	20.27	19.95	19.14	19.27	18.95

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band2: Antenna Gain = -1dBi

Limit: EIRP ≤ 33dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.72	3.74	3.74	13	Pass
QPSK (100RB Size)	5.01	4.93	4.43	13	Pass
16QAM (1RB Size)	5.59	4.43	4.70	13	Pass
16QAM (100RB Size)	5.97	5.80	5.45	13	Pass

LTE Band 4**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.46	22.43	22.37	21.46	21.43	21.37
		RB1#3	22.64	22.52	22.58	21.64	21.52	21.58
		RB1#5	22.46	22.39	22.39	21.46	21.39	21.39
		RB3#0	22.56	22.57	22.53	21.56	21.57	21.53
		RB3#3	22.55	22.54	22.39	21.55	21.54	21.39
		RB6#0	21.55	21.46	21.09	20.55	20.46	20.09
	16QAM	RB1#0	21.47	21.52	21.18	20.47	20.52	20.18
		RB1#3	21.64	21.56	21.32	20.64	20.56	20.32
		RB1#5	21.45	21.48	21.20	20.45	20.48	20.20
		RB3#0	21.72	21.47	21.41	20.72	20.47	20.41
		RB3#3	21.72	21.48	21.56	20.72	20.48	20.56
		RB6#0	20.53	20.49	20.32	19.53	19.49	19.32
3.0	QPSK	RB1#0	22.58	22.54	22.51	21.58	21.54	21.51
		RB1#8	22.52	22.48	22.49	21.52	21.48	21.49
		RB1#14	22.51	22.49	22.46	21.51	21.49	21.46
		RB6#0	21.52	21.45	21.46	20.52	20.45	20.46
		RB6#9	21.48	21.44	21.42	20.48	20.44	20.42
		RB15#0	21.54	21.51	21.49	20.54	20.51	20.49
	16QAM	RB1#0	22.10	21.62	21.51	21.10	20.62	20.51
		RB1#8	22.06	21.60	21.44	21.06	20.60	20.44
		RB1#14	22.04	21.62	21.47	21.04	20.62	20.47
		RB6#0	20.57	20.49	20.34	19.57	19.49	19.34
		RB6#9	20.55	20.49	20.38	19.55	19.49	19.38
		RB15#0	20.59	20.45	20.52	19.59	19.45	19.52

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.46	22.41	22.44	21.46	21.41	21.44
		RB1#13	22.58	22.52	22.49	21.58	21.52	21.49
		RB1#24	22.45	22.43	22.38	21.45	21.43	21.38
		RB15#0	21.56	21.44	21.54	20.56	20.44	20.54
		RB15#10	21.52	21.49	21.45	20.52	20.49	20.45
		RB25#0	21.45	21.41	21.43	20.45	20.41	20.43
	16QAM	RB1#0	21.37	21.67	21.49	20.37	20.67	20.49
		RB1#13	21.44	21.80	21.55	20.44	20.80	20.55
		RB1#24	21.36	21.66	21.46	20.36	20.66	20.46
		RB15#0	20.58	20.42	20.54	19.58	19.42	19.54
		RB15#10	20.51	20.46	20.45	19.51	19.46	19.45
		RB25#0	20.53	20.42	20.47	19.53	19.42	19.47
10.0	QPSK	RB1#0	22.52	22.46	22.48	21.52	21.46	21.48
		RB1#25	22.62	22.63	22.68	21.62	21.63	21.68
		RB1#49	22.44	22.54	22.41	21.44	21.54	21.41
		RB25#0	21.57	21.45	21.59	20.57	20.45	20.59
		RB25#25	21.49	21.49	21.38	20.49	20.49	20.38
		RB50#0	21.50	21.43	21.48	20.50	20.43	20.48
	16QAM	RB1#0	22.04	21.55	21.50	21.04	20.55	20.50
		RB1#25	22.20	21.74	21.62	21.20	20.74	20.62
		RB1#49	22.04	21.61	21.45	21.04	20.61	20.45
		RB25#0	20.60	20.48	20.70	19.60	19.48	19.70
		RB25#25	20.54	20.51	20.47	19.54	19.51	19.47
		RB50#0	20.53	20.49	20.54	19.53	19.49	19.54

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.47	22.36	22.46	21.47	21.36	21.46
		RB1#38	22.52	22.51	22.61	21.52	21.51	21.61
		RB1#74	22.39	22.45	22.35	21.39	21.45	21.35
		RB36#0	21.64	21.49	21.66	20.64	20.49	20.66
		RB36#39	21.57	21.63	21.54	20.57	20.63	20.54
		RB75#0	21.52	21.54	21.59	20.52	20.54	20.59
	16QAM	RB1#0	22.01	21.52	21.73	21.01	20.52	20.73
		RB1#38	22.09	21.63	21.93	21.09	20.63	20.93
		RB1#74	21.92	21.54	21.74	20.92	20.54	20.74
		RB36#0	20.56	20.44	20.55	19.56	19.44	19.55
		RB36#39	20.50	20.56	20.47	19.50	19.56	19.47
		RB75#0	20.55	20.56	20.55	19.55	19.56	19.55
20.0	QPSK	RB1#0	22.27	22.25	22.24	21.27	21.25	21.24
		RB1#50	22.69	22.71	22.73	21.69	21.71	21.73
		RB1#99	22.28	22.35	22.22	21.28	21.35	21.22
		RB50#0	21.60	21.49	21.58	20.60	20.49	20.58
		RB50#50	21.50	21.55	21.45	20.50	20.55	20.45
		RB100#0	21.55	21.47	21.57	20.55	20.47	20.57
	16QAM	RB1#0	21.54	21.46	21.77	20.54	20.46	20.77
		RB1#50	22.01	21.88	22.22	21.01	20.88	21.22
		RB1#99	21.57	21.47	21.80	20.57	20.47	20.80
		RB50#0	20.60	20.47	20.65	19.60	19.47	19.65
		RB50#50	20.52	20.54	20.47	19.52	19.54	19.47
		RB100#0	20.64	20.51	20.59	19.64	19.51	19.59

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band4: Antenna Gain = -1dBi

Limit: EIRP ≤ 30dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.55	4.78	4.38	13	Pass
QPSK (100RB Size)	5.01	4.87	4.99	13	Pass
16QAM (1RB Size)	5.28	5.45	5.33	13	Pass
16QAM (100RB Size)	6.06	5.88	5.97	13	Pass

LTE Band 5:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.88	23.73	23.75	17.73	17.58	17.60
		RB1#3	24.08	23.55	23.65	17.93	17.40	17.50
		RB1#5	23.63	23.31	23.29	17.48	17.16	17.14
		RB3#0	23.51	23.41	23.39	17.36	17.26	17.24
		RB3#3	23.48	23.43	23.44	17.33	17.28	17.29
		RB6#0	22.54	22.59	22.39	16.39	16.44	16.24
	16QAM	RB1#0	22.50	22.74	22.32	16.35	16.59	16.17
		RB1#3	22.70	22.73	22.53	16.55	16.58	16.38
		RB1#5	22.54	22.84	22.37	16.39	16.69	16.22
		RB3#0	22.79	22.61	22.49	16.64	16.46	16.34
		RB3#3	22.86	22.77	22.49	16.71	16.62	16.34
		RB6#0	21.75	21.91	21.36	15.60	15.76	15.21
3.0	QPSK	RB1#0	23.57	23.89	23.88	17.42	17.74	17.73
		RB1#8	23.44	23.52	23.57	17.29	17.37	17.42
		RB1#14	23.38	23.45	23.38	17.23	17.30	17.23
		RB6#0	22.47	22.81	22.30	16.32	16.66	16.15
		RB6#9	22.56	22.76	22.34	16.41	16.61	16.19
		RB15#0	22.73	22.77	22.39	16.58	16.62	16.24
	16QAM	RB1#0	23.02	22.99	22.47	16.87	16.84	16.32
		RB1#8	23.05	22.73	22.40	16.90	16.58	16.25
		RB1#14	23.07	22.69	22.39	16.92	16.54	16.24
		RB6#0	21.74	21.82	21.31	15.59	15.67	15.16
		RB6#9	21.81	21.90	21.27	15.66	15.75	15.12
		RB15#0	21.88	21.83	21.44	15.73	15.68	15.29

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.90	23.81	23.82	17.75	17.66	17.67
		RB1#13	23.53	23.77	23.67	17.38	17.62	17.52
		RB1#24	23.39	23.51	23.29	17.24	17.36	17.14
		RB15#0	22.59	22.92	22.47	16.44	16.77	16.32
		RB15#10	22.86	22.62	22.40	16.71	16.47	16.25
		RB25#0	22.98	22.79	22.37	16.83	16.64	16.22
	16QAM	RB1#0	22.39	22.98	22.46	16.24	16.83	16.31
		RB1#13	22.41	22.90	22.51	16.26	16.75	16.36
		RB1#24	22.30	22.91	22.38	16.15	16.76	16.23
		RB15#0	22.01	21.95	21.50	15.86	15.80	15.35
		RB15#10	21.99	21.85	21.41	15.84	15.70	15.26
		RB25#0	21.99	21.82	21.41	15.84	15.67	15.26
10.0	QPSK	RB1#0	23.83	23.94	23.89	17.68	17.79	17.74
		RB1#25	23.69	23.90	23.93	17.54	17.75	17.78
		RB1#49	23.42	23.46	23.38	17.27	17.31	17.23
		RB25#0	22.57	22.63	22.49	16.42	16.48	16.34
		RB25#25	22.78	22.81	22.50	16.63	16.66	16.35
		RB50#0	22.78	22.75	22.48	16.63	16.60	16.33
	16QAM	RB1#0	23.20	22.73	22.45	17.05	16.58	16.30
		RB1#25	23.22	23.07	22.60	17.07	16.92	16.45
		RB1#49	23.09	22.99	22.43	16.94	16.84	16.28
		RB25#0	21.77	21.91	21.61	15.62	15.76	15.46
		RB25#25	22.03	21.98	21.53	15.88	15.83	15.38
		RB50#0	21.98	21.99	21.56	15.83	15.84	15.41

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band5: Antenna Gain = -4dBi = -6.15dBd (0dBd=2.15dBi)
 Limit: ERP ≤ 38.45dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.55	4.12	4.84	13	Pass
QPSK (50RB Size)	5.28	5.10	5.28	13	Pass
16QAM (1RB Size)	5.83	5.19	5.33	13	Pass
16QAM (50RB Size)	5.97	5.88	6.23	13	Pass

LTE Band 7:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.33	19.88	19.95	20.83	20.38	20.45
		RB1#13	20.17	19.97	20.08	20.67	20.47	20.58
		RB1#24	20.05	19.87	20.03	20.55	20.37	20.53
		RB15#0	19.17	18.91	19.01	19.67	19.41	19.51
		RB15#10	19.24	18.93	19.01	19.74	19.43	19.51
		RB25#0	19.13	18.90	18.97	19.63	19.40	19.47
	16QAM	RB1#0	18.93	19.13	18.92	19.43	19.63	19.42
		RB1#13	19.01	19.25	19.01	19.51	19.75	19.51
		RB1#24	18.90	19.12	18.93	19.40	19.62	19.43
		RB15#0	18.24	17.91	18.02	18.74	18.41	18.52
		RB15#10	18.26	17.98	18.07	18.76	18.48	18.57
		RB25#0	18.23	18.02	18.01	18.73	18.52	18.51
10.0	QPSK	RB1#0	20.16	19.92	19.90	20.66	20.42	20.40
		RB1#25	20.27	20.11	20.20	20.77	20.61	20.70
		RB1#49	20.16	19.93	20.13	20.66	20.43	20.63
		RB25#0	19.16	19.00	19.01	19.66	19.50	19.51
		RB25#25	19.32	18.98	19.00	19.82	19.48	19.50
		RB50#0	19.19	18.95	19.01	19.69	19.45	19.51
	16QAM	RB1#0	19.58	19.07	18.91	20.08	19.57	19.41
		RB1#25	19.73	19.22	19.08	20.23	19.72	19.58
		RB1#49	19.66	19.05	18.94	20.16	19.55	19.44
		RB25#0	18.21	17.95	18.11	18.71	18.45	18.61
		RB25#25	18.32	18.12	18.10	18.82	18.62	18.60
		RB50#0	18.24	18.11	18.04	18.74	18.61	18.54

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	20.05	19.88	19.89	20.55	20.38	20.39
		RB1#38	20.19	20.00	20.04	20.69	20.50	20.54
		RB1#74	19.97	19.86	20.05	20.47	20.36	20.55
		RB36#0	19.28	19.07	19.04	19.78	19.57	19.54
		RB36#39	19.28	19.14	19.17	19.78	19.64	19.67
		RB75#0	19.28	19.13	19.09	19.78	19.63	19.59
	16QAM	RB1#0	19.50	19.03	19.26	20.00	19.53	19.76
		RB1#38	19.71	19.09	19.36	20.21	19.59	19.86
		RB1#74	19.66	18.95	19.07	20.16	19.45	19.57
		RB36#0	18.26	18.00	18.02	18.76	18.50	18.52
		RB36#39	18.24	18.21	18.09	18.74	18.71	18.59
		RB75#0	18.33	18.30	18.04	18.83	18.80	18.54
20.0	QPSK	RB1#0	19.89	19.73	19.64	20.39	20.23	20.14
		RB1#50	20.34	20.19	20.10	20.84	20.69	20.60
		RB1#99	19.89	19.72	19.80	20.39	20.22	20.30
		RB50#0	19.06	18.95	19.04	19.56	19.45	19.54
		RB50#50	19.17	19.02	18.99	19.67	19.52	19.49
		RB100#0	19.14	19.00	19.03	19.64	19.50	19.53
	16QAM	RB1#0	19.14	18.94	19.25	19.64	19.44	19.75
		RB1#50	19.68	19.37	19.63	20.18	19.87	20.13
		RB1#99	19.19	18.93	19.14	19.69	19.43	19.64
		RB50#0	18.11	17.97	18.09	18.61	18.47	18.59
		RB50#50	18.18	18.14	18.02	18.68	18.64	18.52
		RB100#0	18.24	18.10	18.07	18.74	18.60	18.57

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band7: Antenna Gain = 0.5dBi

Limit: ERP ≤ 33dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.65	3.83	4.41	13	Pass
QPSK (50RB Size)	4.58	4.43	4.46	13	Pass
16QAM (1RB Size)	4.12	4.35	5.13	13	Pass
16QAM (50RB Size)	5.57	5.59	5.48	13	Pass

LTE Band 38:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.45	20.6	20.9	21.45	21.6	21.9
		RB1#13	20.6	20.82	20.97	21.6	21.82	21.97
		RB1#24	20.49	20.71	20.85	21.49	21.71	21.85
		RB15#0	19.52	19.7	19.86	20.52	20.7	20.86
		RB15#10	19.58	19.72	19.92	20.58	20.72	20.92
		RB25#0	19.56	19.7	19.88	20.56	20.7	20.88
	16QAM	RB1#0	19.5	19.84	19.69	20.5	20.84	20.69
		RB1#13	19.66	20.01	19.97	20.66	21.01	20.97
		RB1#24	19.49	19.9	19.88	20.49	20.9	20.88
		RB15#0	18.55	18.72	18.8	19.55	19.72	19.8
		RB15#10	18.58	18.78	18.86	19.58	19.78	19.86
		RB25#0	18.58	18.68	18.9	19.58	19.68	19.9
10.0	QPSK	RB1#0	20.51	20.74	20.88	21.51	21.74	21.88
		RB1#25	20.85	21.08	21.26	21.85	22.08	22.26
		RB1#49	20.66	20.85	20.99	21.66	21.85	21.99
		RB25#0	19.56	19.71	19.87	20.56	20.71	20.87
		RB25#25	19.6	19.75	19.92	20.6	20.75	20.92
		RB50#0	19.55	19.74	19.88	20.55	20.74	20.88
	16QAM	RB1#0	19.7	19.64	19.95	20.7	20.64	20.95
		RB1#25	20.05	19.98	20.33	21.05	20.98	21.33
		RB1#49	19.73	19.75	20.06	20.73	20.75	21.06
		RB25#0	18.54	18.73	18.89	19.54	19.73	19.89
		RB25#25	18.57	18.8	18.96	19.57	19.8	19.96
		RB50#0	18.53	18.71	18.92	19.53	19.71	19.92

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	20.44	20.59	20.76	21.44	21.59	21.76
		RB1#38	20.59	20.82	20.95	21.59	21.82	21.95
		RB1#74	20.54	20.76	20.78	21.54	21.76	21.78
		RB36#0	19.54	19.72	19.87	20.54	20.72	20.87
		RB36#39	19.65	19.79	19.97	20.65	20.79	20.97
		RB75#0	19.59	19.77	19.91	20.59	20.77	20.91
	16QAM	RB1#0	19.62	19.54	19.96	20.62	20.54	20.96
		RB1#38	19.76	19.73	20.15	20.76	20.73	21.15
		RB1#74	19.71	19.62	20.09	20.71	20.62	21.09
		RB36#0	18.51	18.66	18.89	19.51	19.66	19.89
		RB36#39	18.6	18.72	18.99	19.6	19.72	19.99
		RB75#0	18.53	18.72	18.91	19.53	19.72	19.91
20.0	QPSK	RB1#0	20.28	20.31	20.56	21.28	21.31	21.56
		RB1#50	20.86	20.99	21.2	21.86	21.99	22.2
		RB1#99	20.52	20.56	20.81	21.52	21.56	21.81
		RB50#0	19.5	19.67	19.77	20.5	20.67	20.77
		RB50#50	19.7	19.79	19.92	20.7	20.79	20.92
		RB100#0	19.6	19.74	19.86	20.6	20.74	20.86
	16QAM	RB1#0	19.29	19.33	19.79	20.29	20.33	20.79
		RB1#50	19.93	19.97	20.41	20.93	20.97	21.41
		RB1#99	19.55	19.56	20	20.55	20.56	21
		RB50#0	18.45	18.7	18.8	19.45	19.7	19.8
		RB50#50	18.68	18.82	18.93	19.68	19.82	19.93
		RB100#0	18.58	18.72	18.85	19.58	19.72	19.85

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)

For Band38: Antenna Gain = 1dBi

Limit: EIRP ≤ 33dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.41	7.91	6.01	13	Pass
QPSK (50RB Size)	5.86	5.16	5.04	13	Pass
16QAM (1RB Size)	8.46	6.61	6.58	13	Pass
16QAM (50RB Size)	8.74	7.25	8.52	13	Pass

LTE Band 41:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.38	21.30	21.83	22.38	22.30	22.83
		RB1#13	21.45	21.48	21.95	22.45	22.48	22.95
		RB1#24	21.33	21.30	21.84	22.33	22.30	22.84
		RB15#0	20.44	20.37	20.88	21.44	21.37	21.88
		RB15#10	20.43	20.41	20.89	21.43	21.41	21.89
		RB25#0	20.43	20.38	20.88	21.43	21.38	21.88
	16QAM	RB1#0	20.44	20.54	20.76	21.44	21.54	21.76
		RB1#13	20.52	20.68	20.90	21.52	21.68	21.90
		RB1#24	20.37	20.62	20.83	21.37	21.62	21.83
		RB15#0	19.46	19.39	19.82	20.46	20.39	20.82
		RB15#10	19.46	19.43	19.80	20.46	20.43	20.80
		RB25#0	19.45	19.33	19.87	20.45	20.33	20.87
10.0	QPSK	RB1#0	21.43	21.40	21.92	22.43	22.40	22.92
		RB1#25	21.65	21.64	22.24	22.65	22.64	23.24
		RB1#49	21.32	21.53	21.97	22.32	22.53	22.97
		RB25#0	20.46	20.39	20.87	21.46	21.39	21.87
		RB25#25	20.44	20.45	20.92	21.44	21.45	21.92
		RB50#0	20.48	20.41	20.90	21.48	21.41	21.90
	16QAM	RB1#0	20.67	20.29	20.94	21.67	21.29	21.94
		RB1#25	20.83	20.64	21.25	21.83	21.64	22.25
		RB1#49	20.54	20.42	21.01	21.54	21.42	22.01
		RB25#0	19.45	19.40	19.88	20.45	20.40	20.88
		RB25#25	19.44	19.48	19.94	20.44	20.48	20.94
		RB50#0	19.44	19.41	19.90	20.44	20.41	20.90

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.35	21.26	21.76	22.35	22.26	22.76
		RB1#38	21.33	21.45	21.99	22.33	22.45	22.99
		RB1#74	21.15	21.39	21.85	22.15	22.39	22.85
		RB36#0	20.48	20.34	20.91	21.48	21.34	21.91
		RB36#39	20.40	20.45	21.00	21.40	21.45	22.00
		RB75#0	20.50	20.44	20.98	21.50	21.44	21.98
	16QAM	RB1#0	20.52	20.16	20.93	21.52	21.16	21.93
		RB1#38	20.50	20.36	21.10	21.50	21.36	22.10
		RB1#74	20.30	20.27	21.13	21.30	21.27	22.13
		RB36#0	19.39	19.27	19.93	20.39	20.27	20.93
		RB36#39	19.36	19.37	19.97	20.36	20.37	20.97
		RB75#0	19.36	19.39	19.92	20.36	20.39	20.92
20.0	QPSK	RB1#0	21.18	21.01	21.61	22.18	22.01	22.61
		RB1#50	21.54	21.61	22.21	22.54	22.61	23.21
		RB1#99	21.01	21.23	21.75	22.01	22.23	22.75
		RB50#0	20.36	20.27	20.78	21.36	21.27	21.78
		RB50#50	20.31	20.42	20.90	21.31	21.42	21.90
		RB100#0	20.31	20.36	20.87	21.31	21.36	21.87
	16QAM	RB1#0	20.25	19.99	20.78	21.25	20.99	21.78
		RB1#50	20.56	20.63	21.38	21.56	21.63	22.38
		RB1#99	20.02	20.22	20.96	21.02	21.22	21.96
		RB50#0	19.33	19.33	19.80	20.33	20.33	20.80
		RB50#50	19.33	19.47	19.92	20.33	20.47	20.92
		RB100#0	19.33	19.38	19.83	20.33	20.38	20.83

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For Band41: Antenna Gain = 1dBi
 Limit: EIRP ≤ 33dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.96	6.14	5.36	13	Pass
QPSK (50RB Size)	4.87	5.88	5.01	13	Pass
16QAM (1RB Size)	4.23	8.52	5.30	13	Pass
16QAM (50RB Size)	8.70	6.06	7.80	13	Pass

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

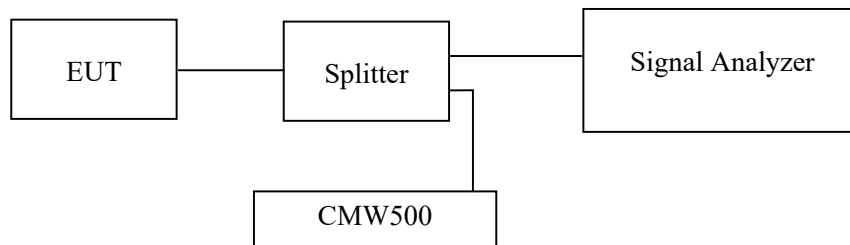
Applicable Standard

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

Test Procedure

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

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



Test Data

Environmental Conditions

Temperature:	27.2 °C
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Fan Yang from 2021-12-13 to 2021-12-15.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	246.02	316.90
	190	836.6	244.57	315.50
	251	848.8	246.02	314.00
EGPRS(8PSK)	128	824.2	253.26	322.70
	190	836.6	251.81	321.30
	251	848.8	251.81	327.10

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.17	4.73
	836.6	4.17	4.73
	846.6	4.19	4.95
HSDPA	826.4	4.23	5.25
	836.6	4.17	4.73
	846.6	4.21	5.31
HSUPA	826.4	4.25	5.47
	836.6	4.21	4.71
	846.6	4.19	4.95

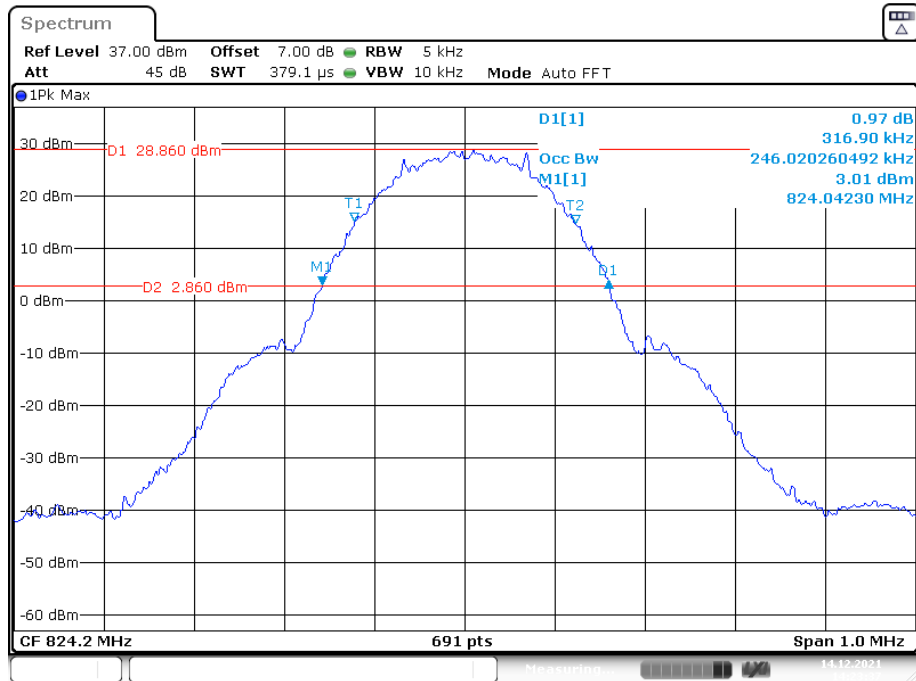
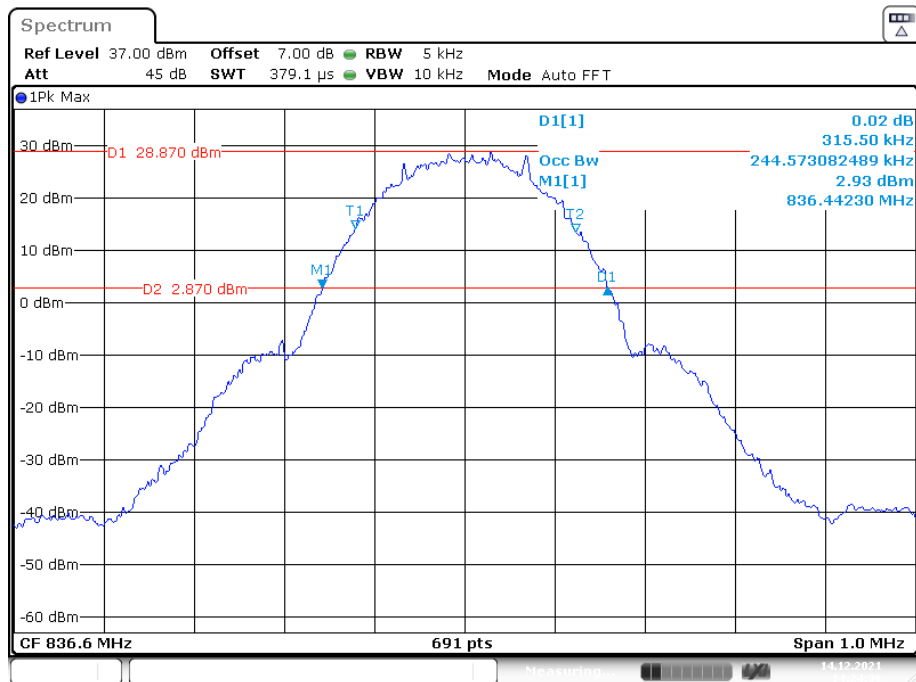
PCS Band (Part 24E)

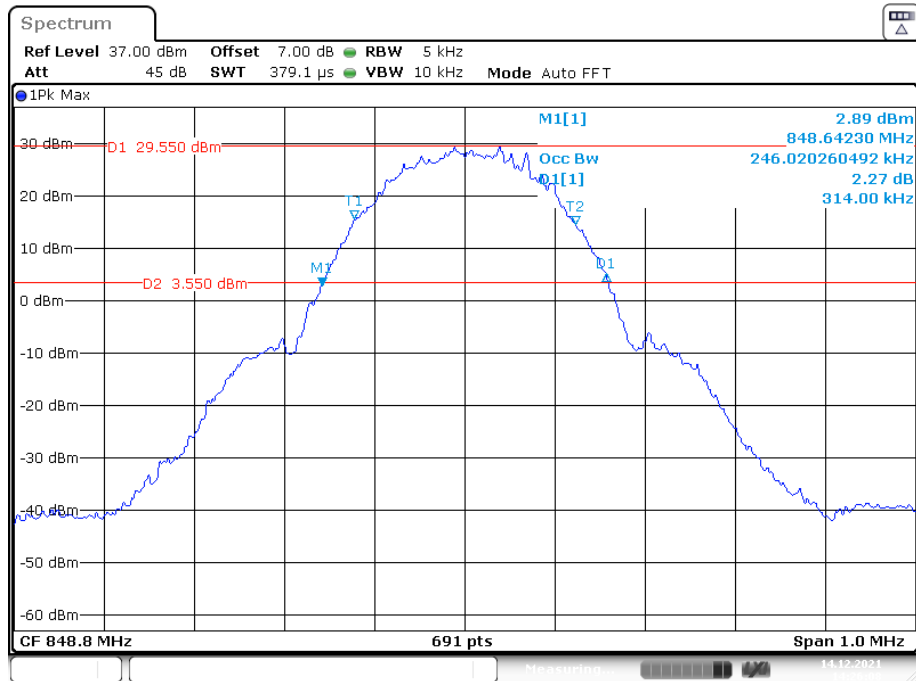
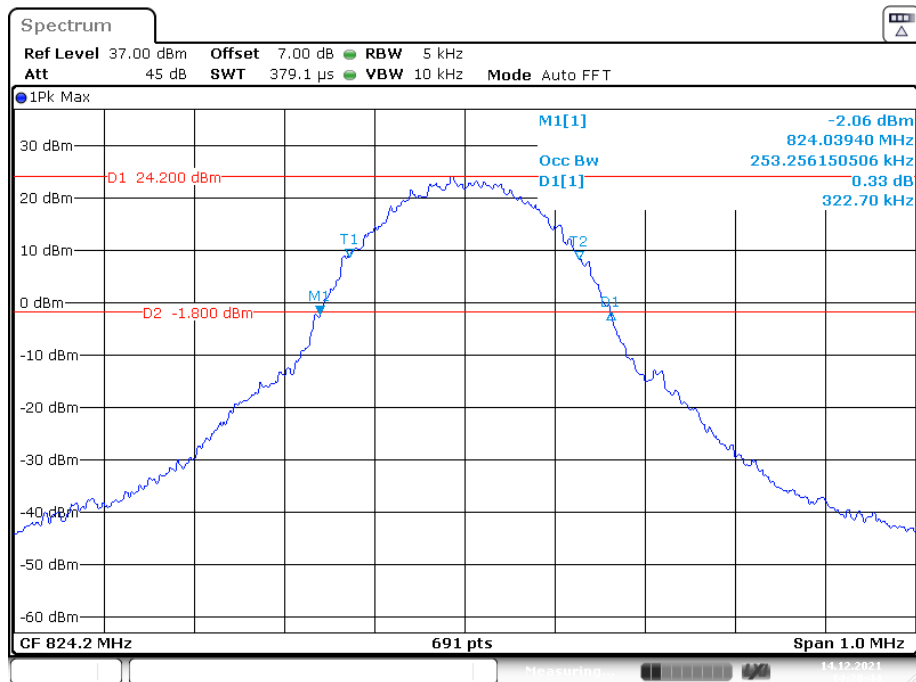
Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	241.68	318.40
	661	1880.0	241.68	312.60
	810	1909.8	244.57	314.00
EGPRS(8PSK)	512	1850.2	248.91	318.40
	661	1880.0	251.81	321.30
	810	1909.8	253.26	321.30

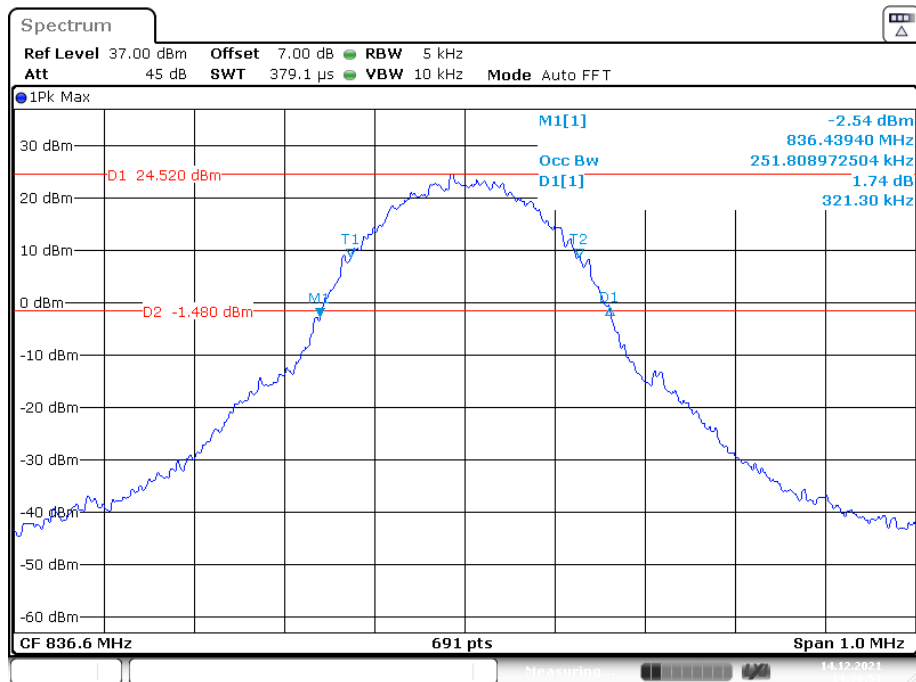
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.17	4.75
	1880.0	4.17	4.75
	1907.6	4.17	4.73
HSDPA	1852.4	4.17	4.71
	1880.0	4.23	4.87
	1907.6	4.19	4.81
HSUPA	1852.4	4.17	4.71
	1880.0	4.19	4.79
	1907.6	4.19	4.73

AWS Band (Part 27)

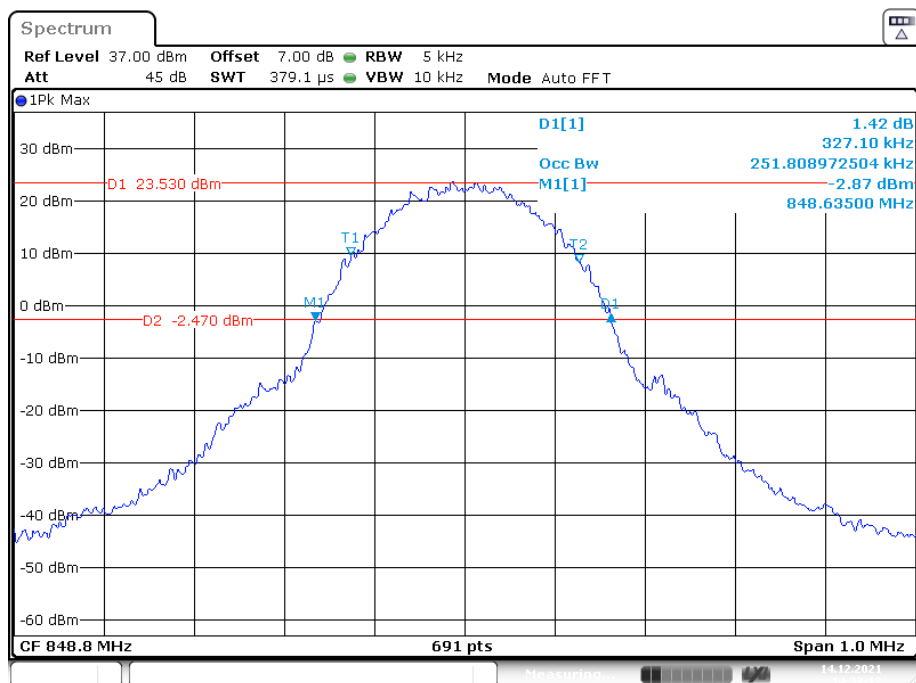
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.17	4.73
	1732.6	4.21	5.09
	1752.6	4.17	4.73
HSDPA	1712.4	4.23	5.13
	1732.6	4.25	5.59
	1752.6	4.17	4.71
HSUPA	1712.4	4.21	4.73
	1732.6	4.17	4.71
	1752.6	4.17	4.71

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

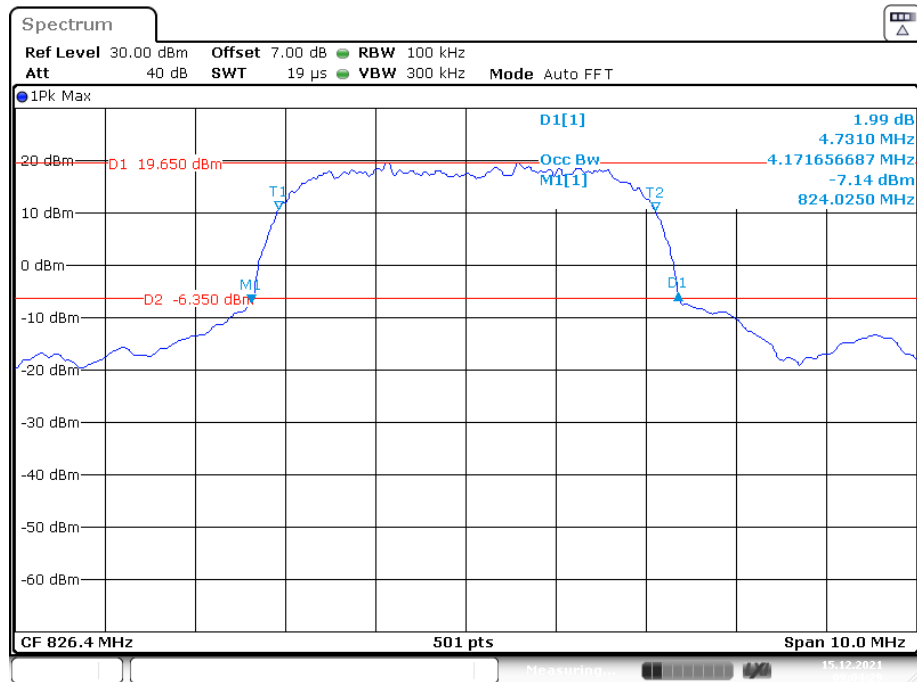
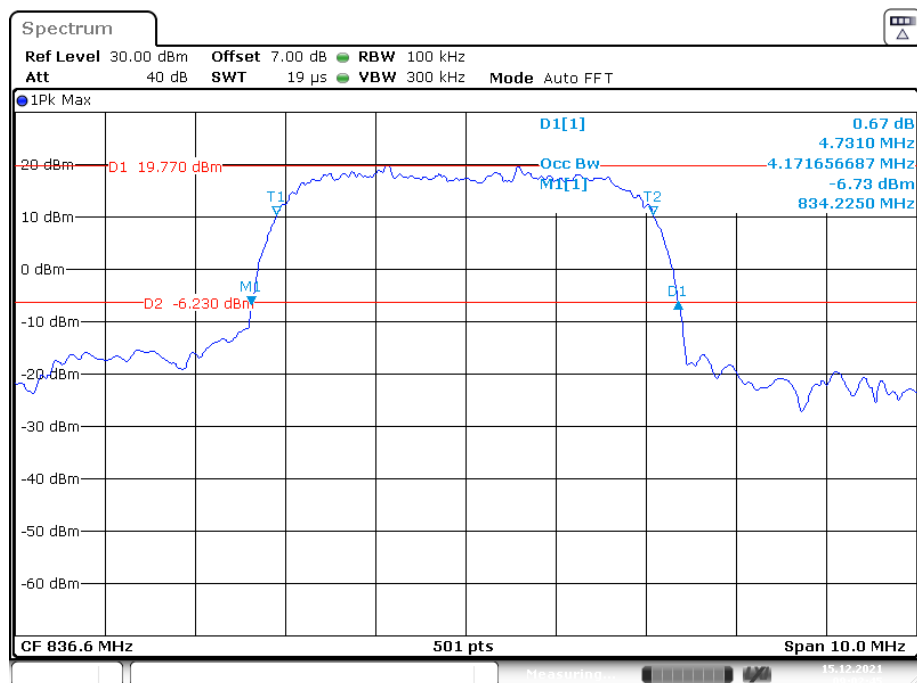
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel**26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode, Low channel**

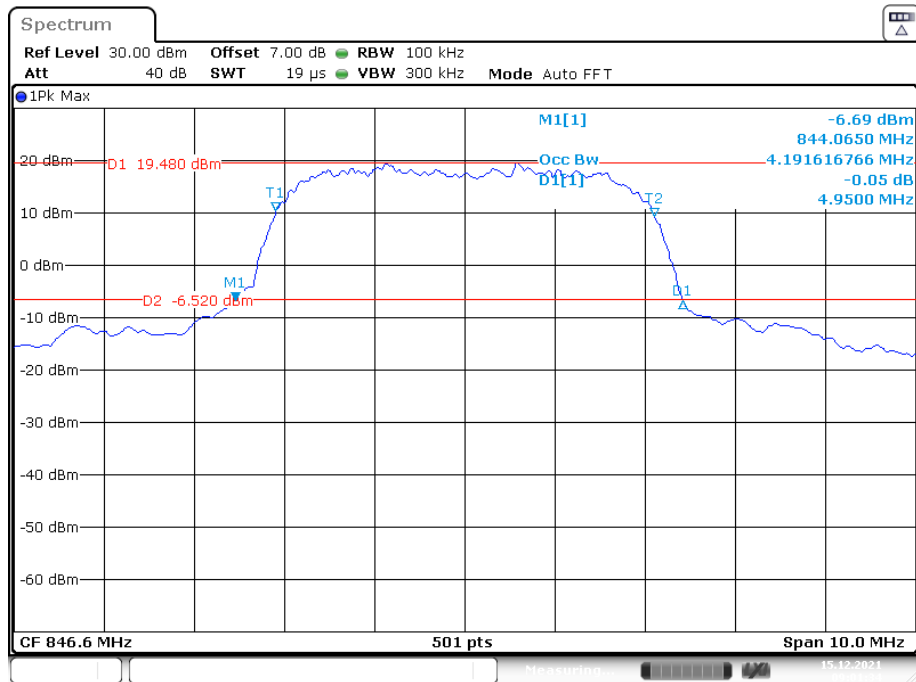
26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode, Middle channel

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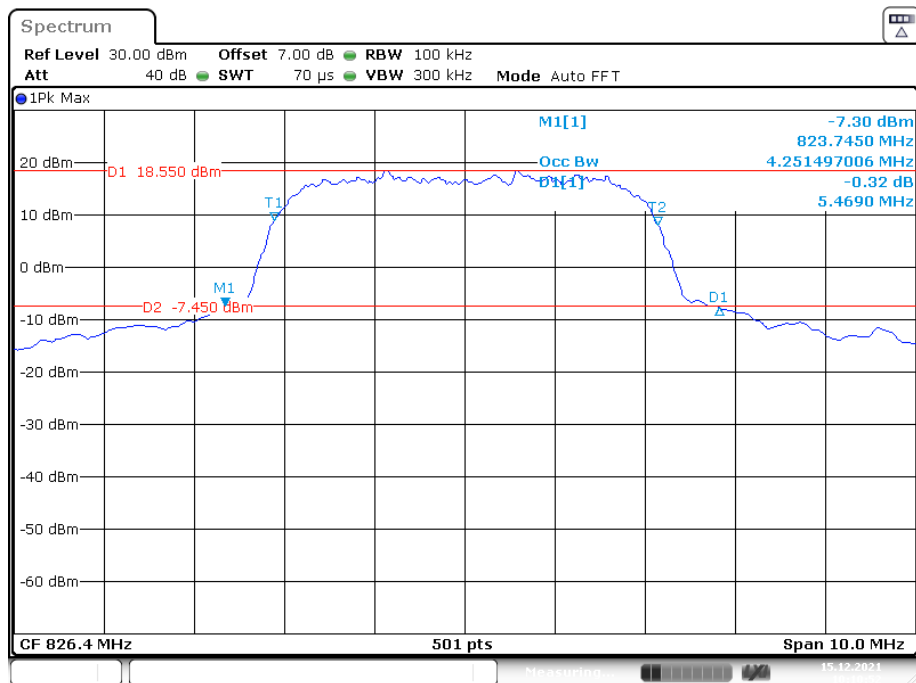
26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode, High channel

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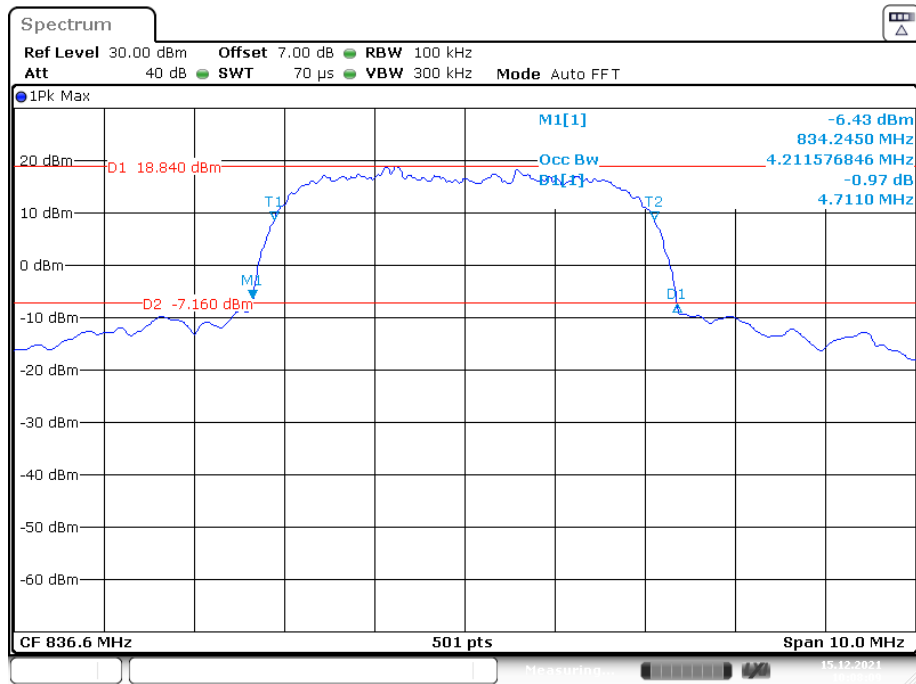
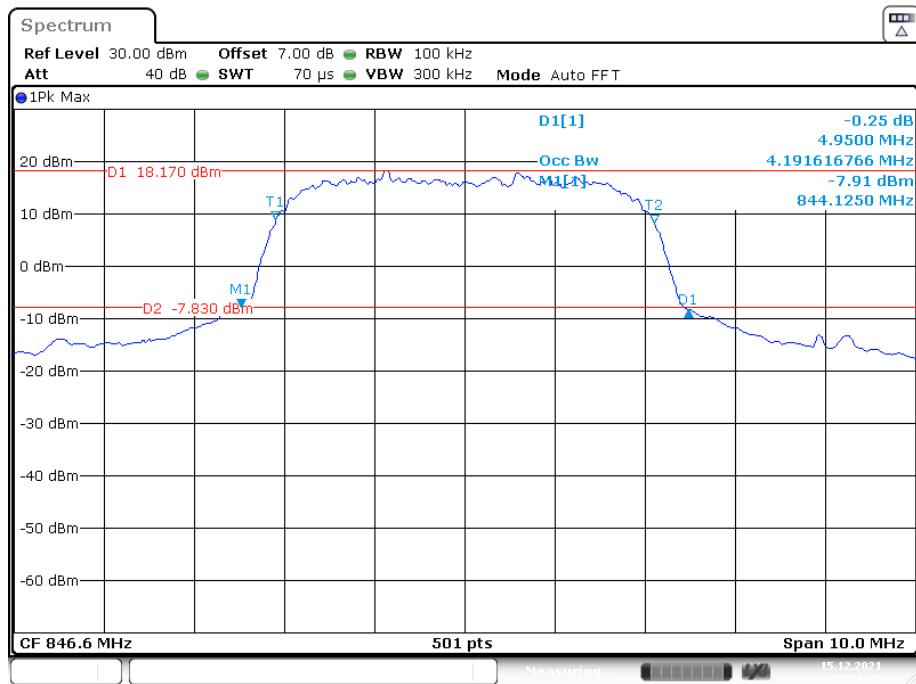
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel**

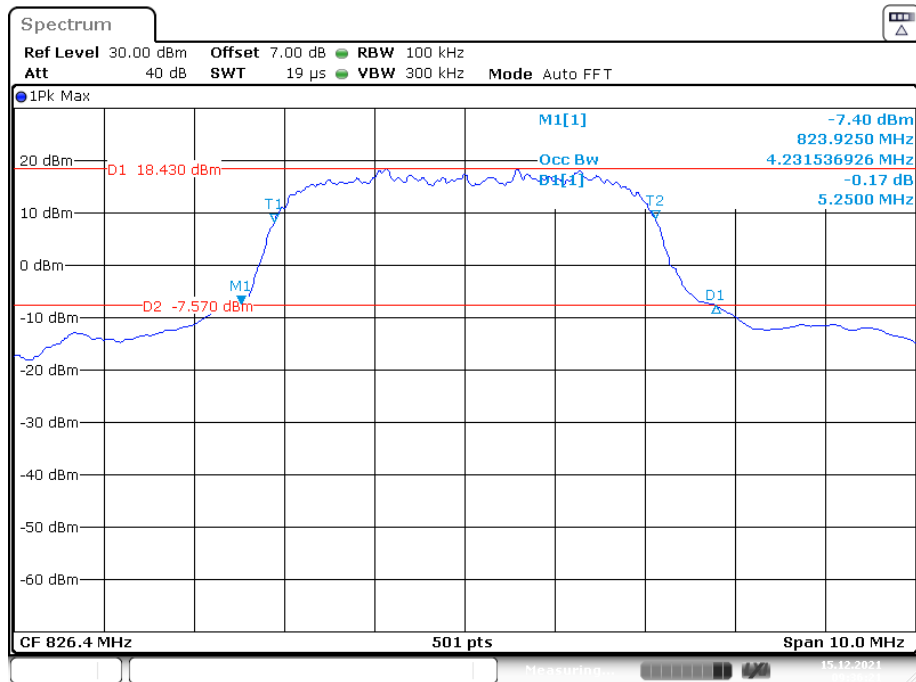
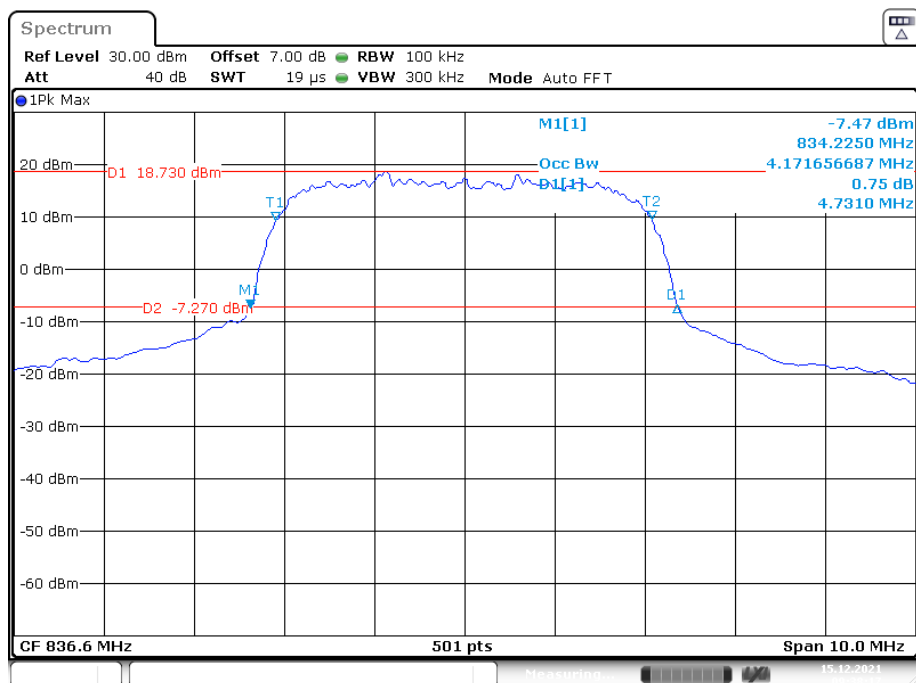
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

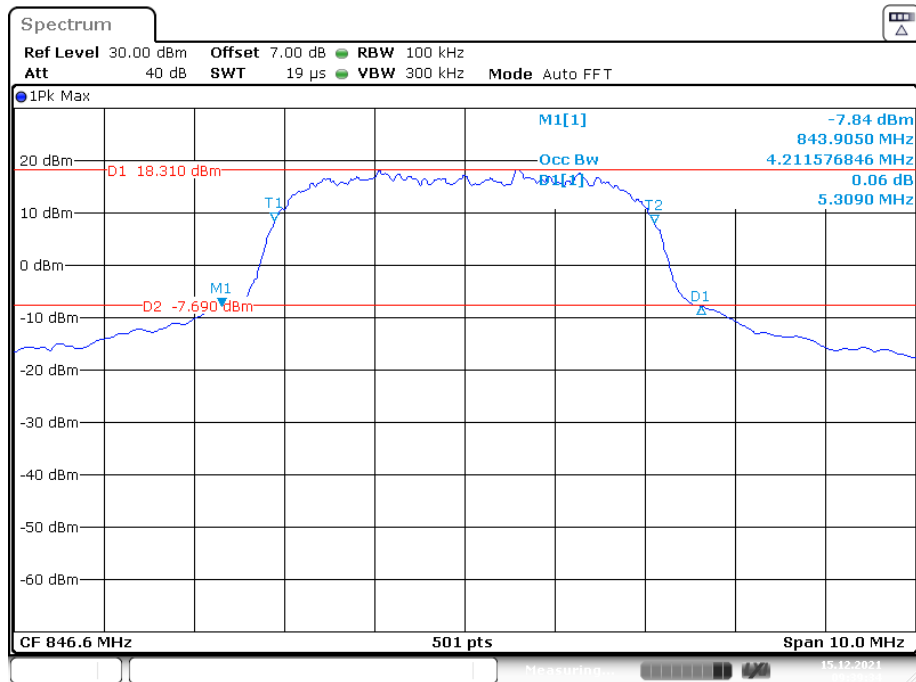
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26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel

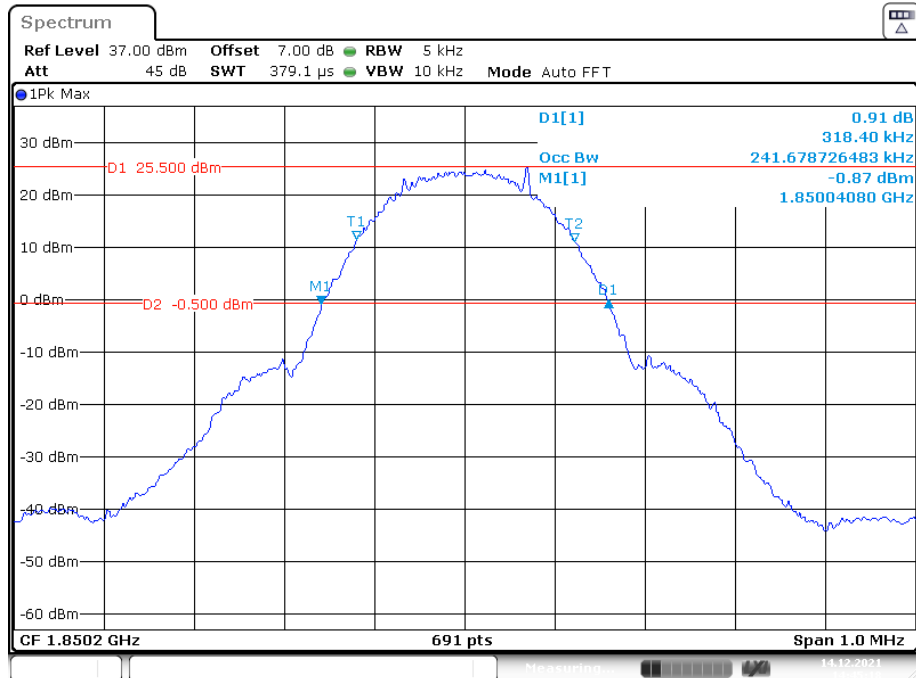
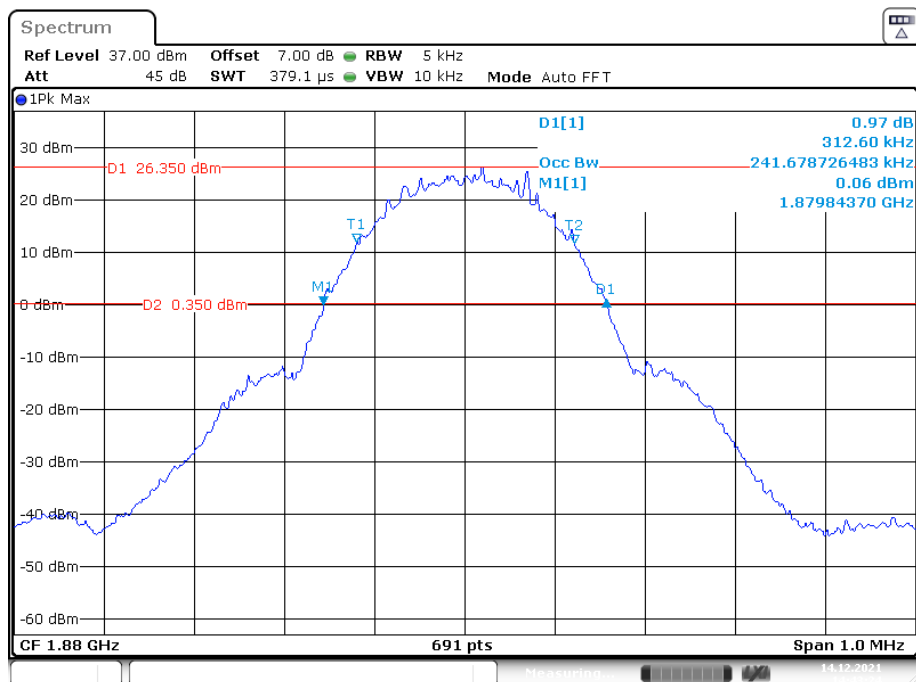
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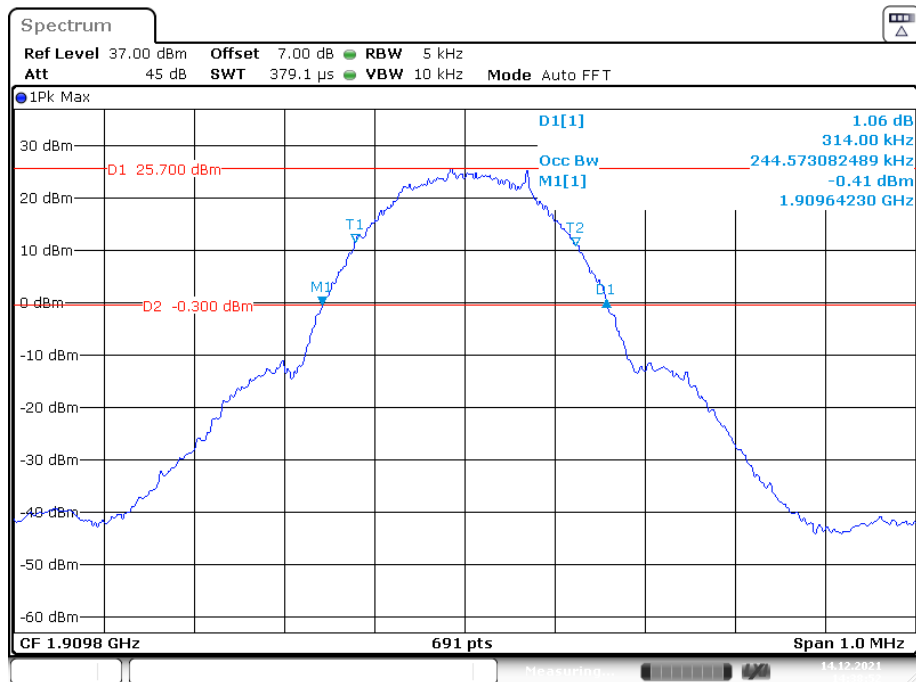
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel**26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, High channel**

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

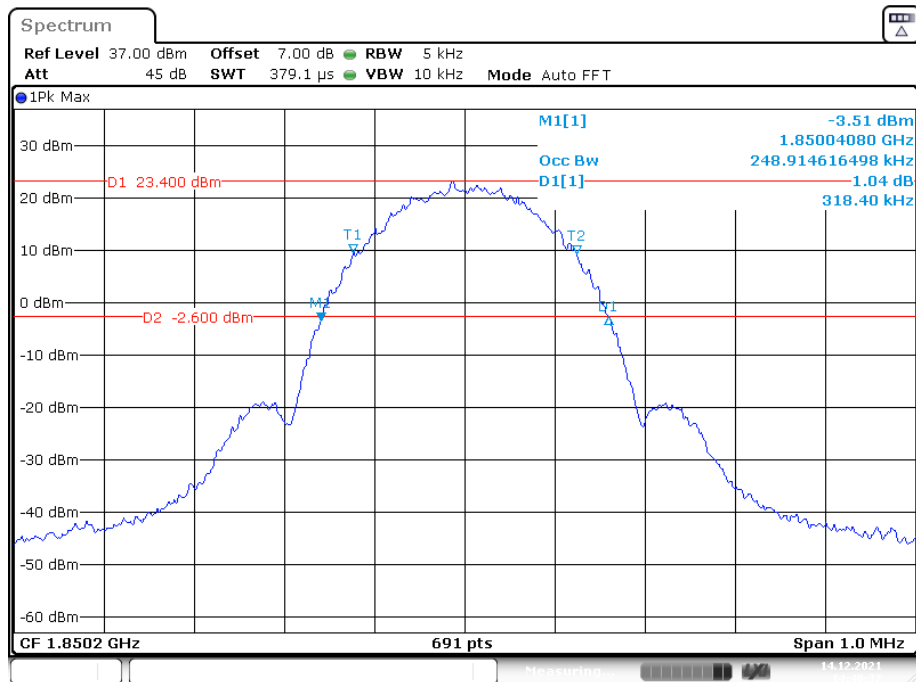
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel

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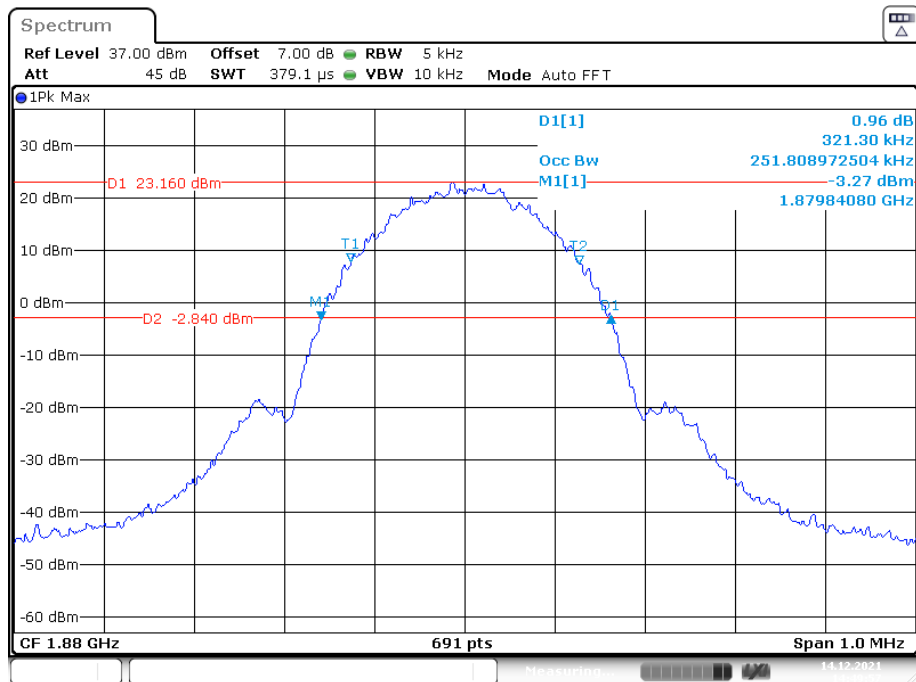
PCS Band (Part 24E)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel****26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel**

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

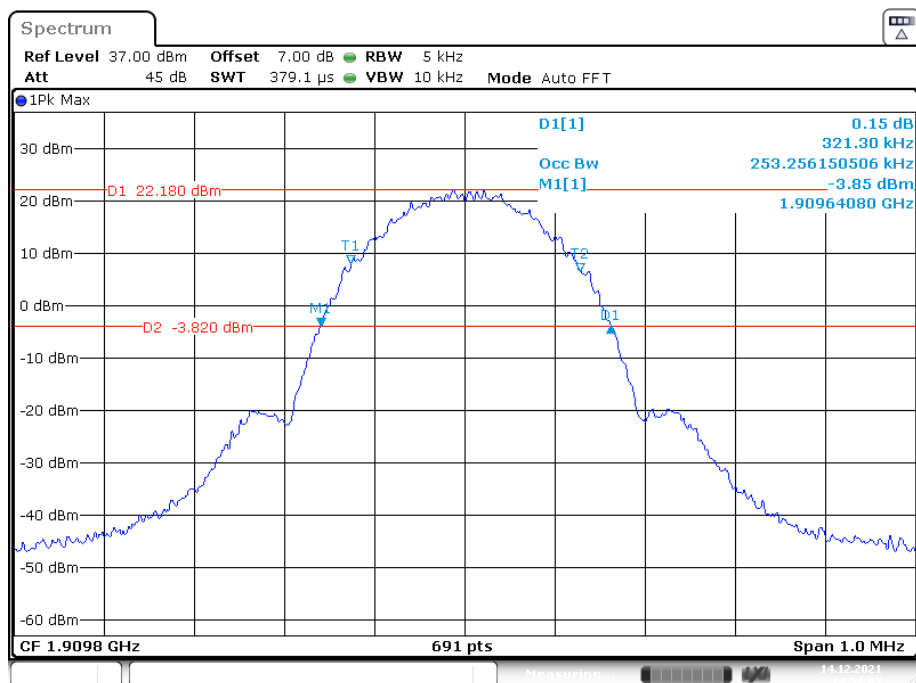
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26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode, Low channel

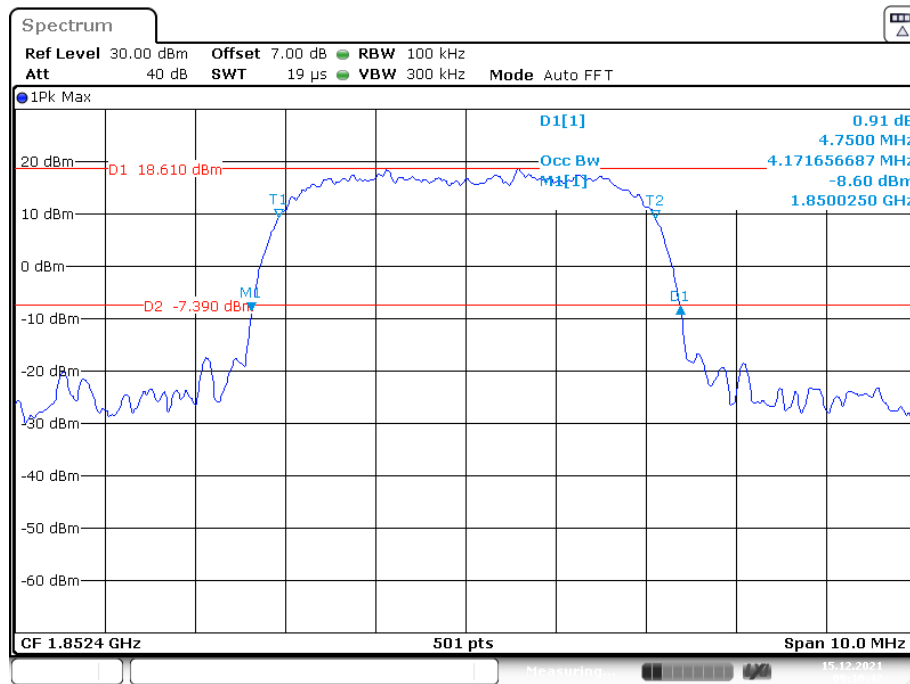
Date: 14.DEC.2021 14:48:37

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

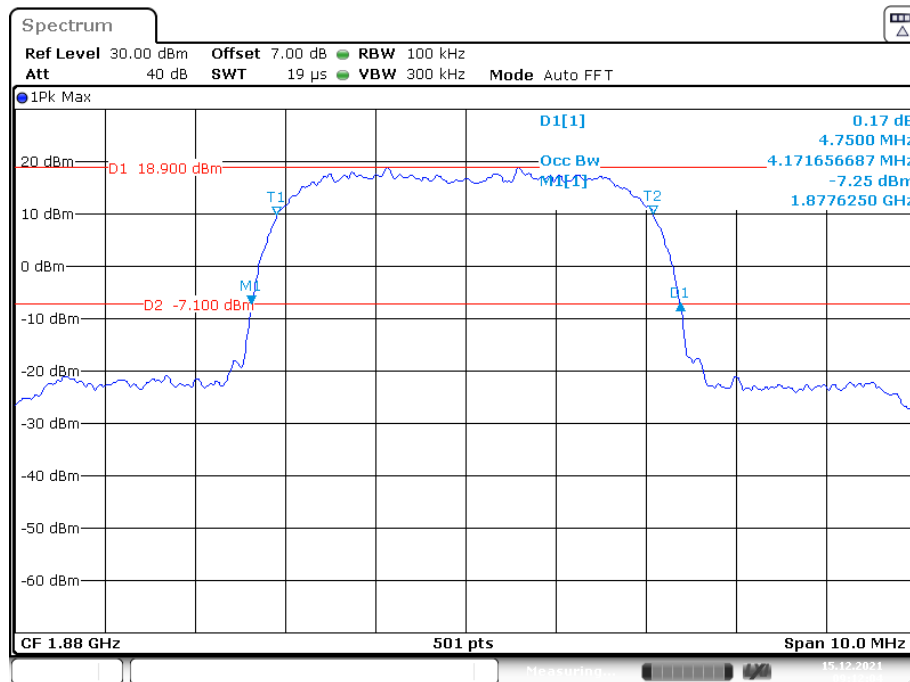
Date: 14.DEC.2021 14:49:57

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

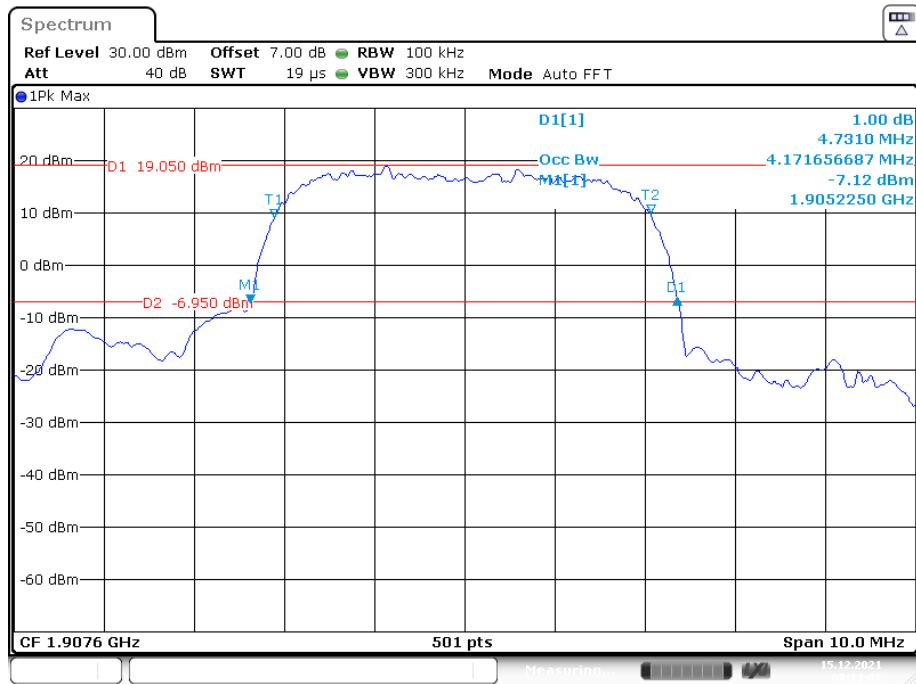
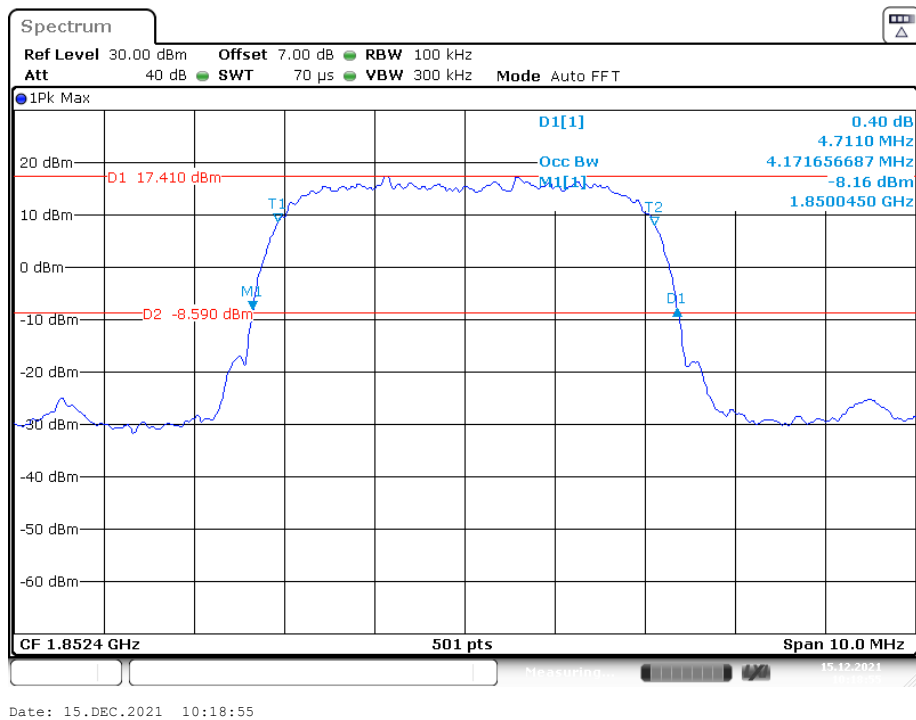
Date: 14.DEC.2021 14:51:05

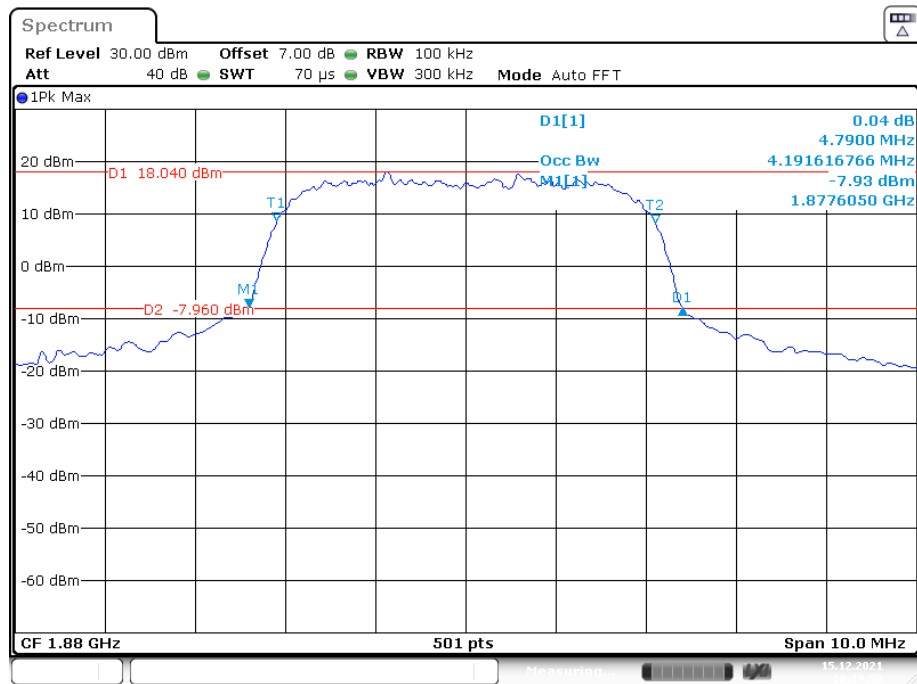
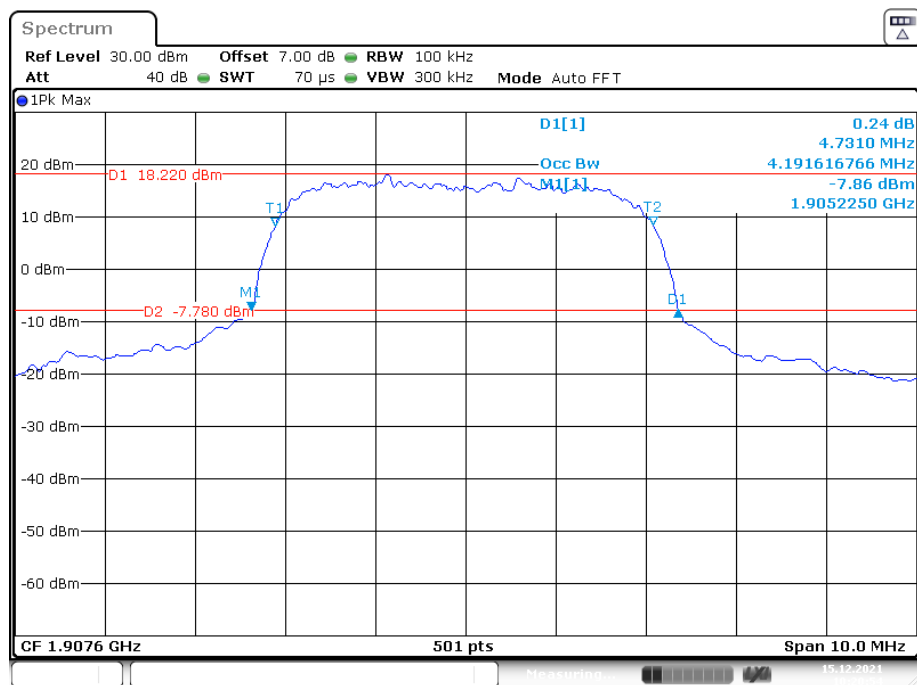
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel

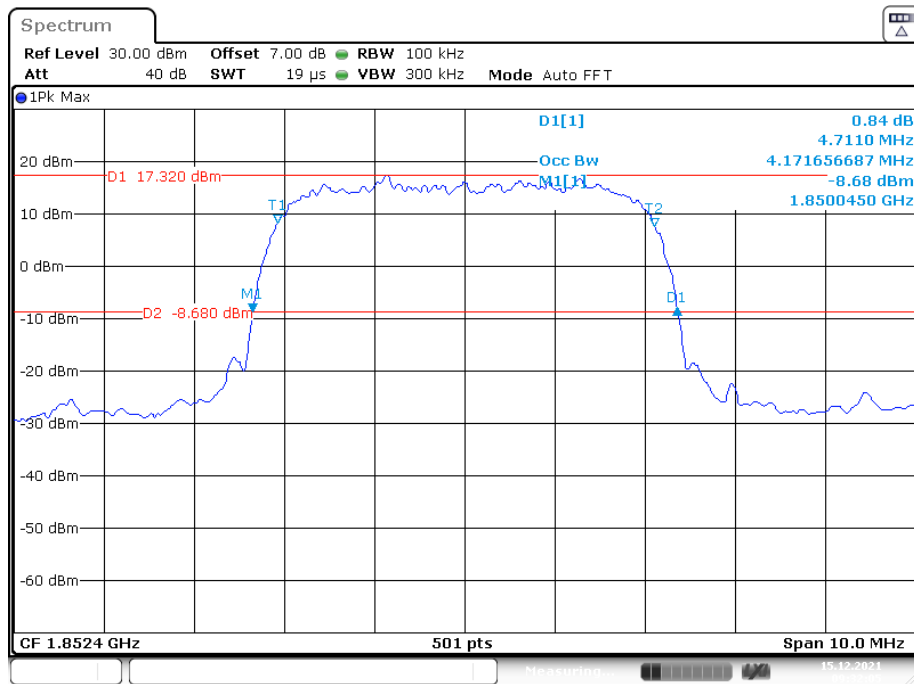
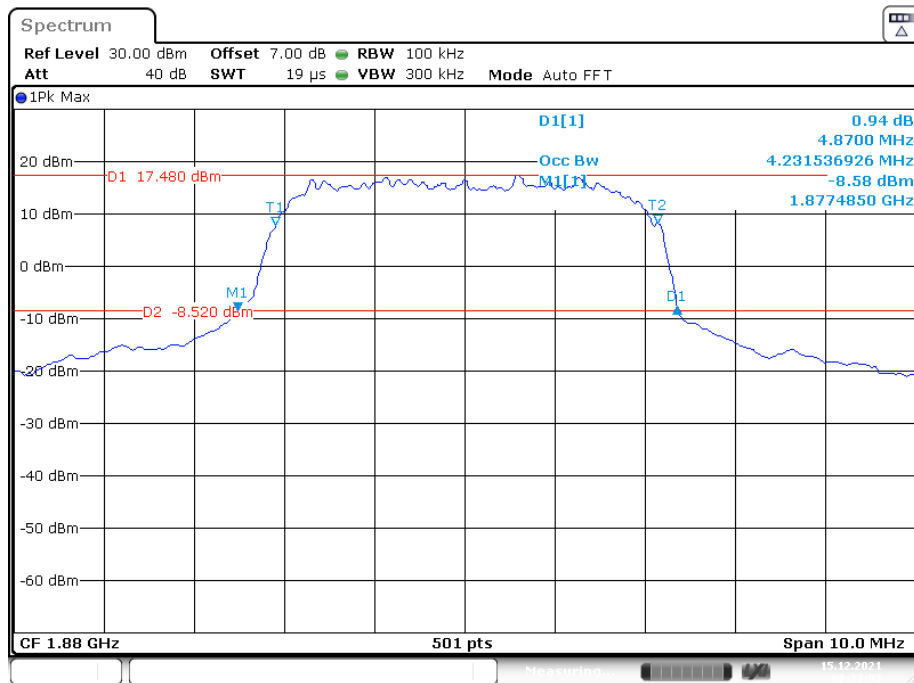
Date: 15.DEC.2021 09:10:42

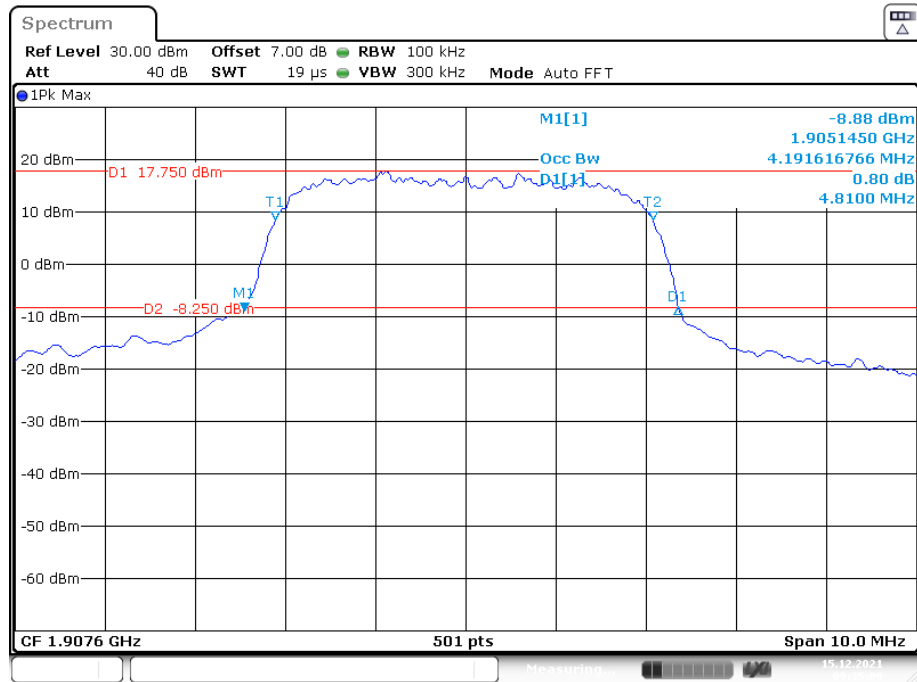
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel

Date: 15.DEC.2021 09:12:04

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

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

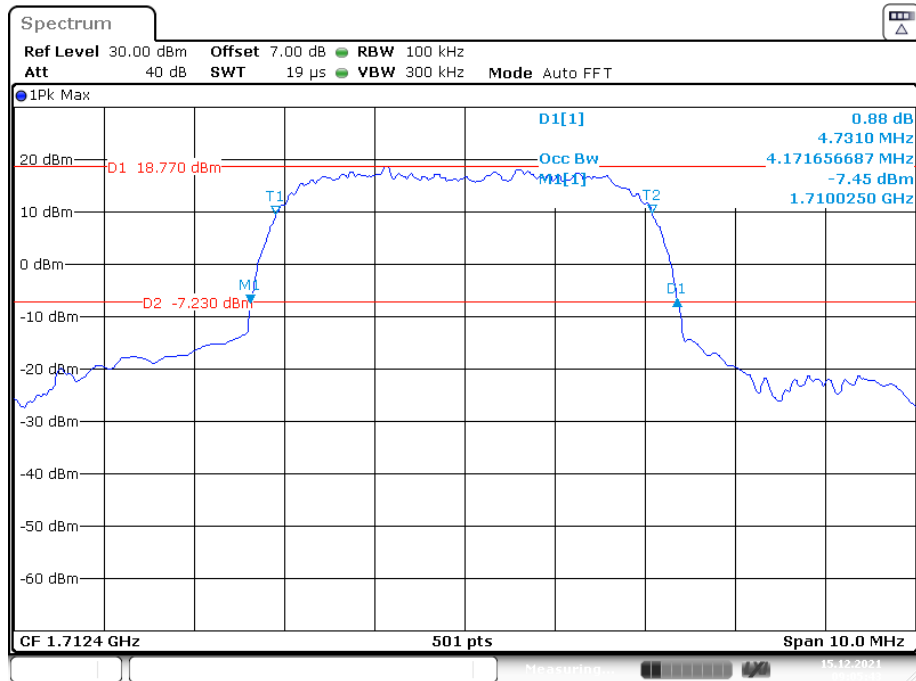
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel**26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel**

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

Date: 15.DEC.2021 09:35:09

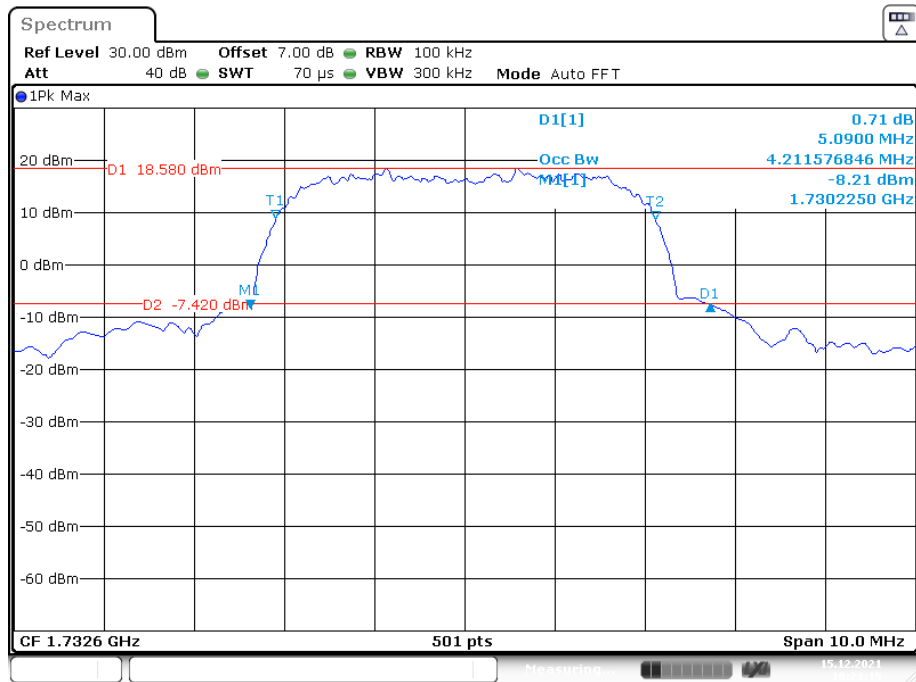
AWS Band (Part 27)

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

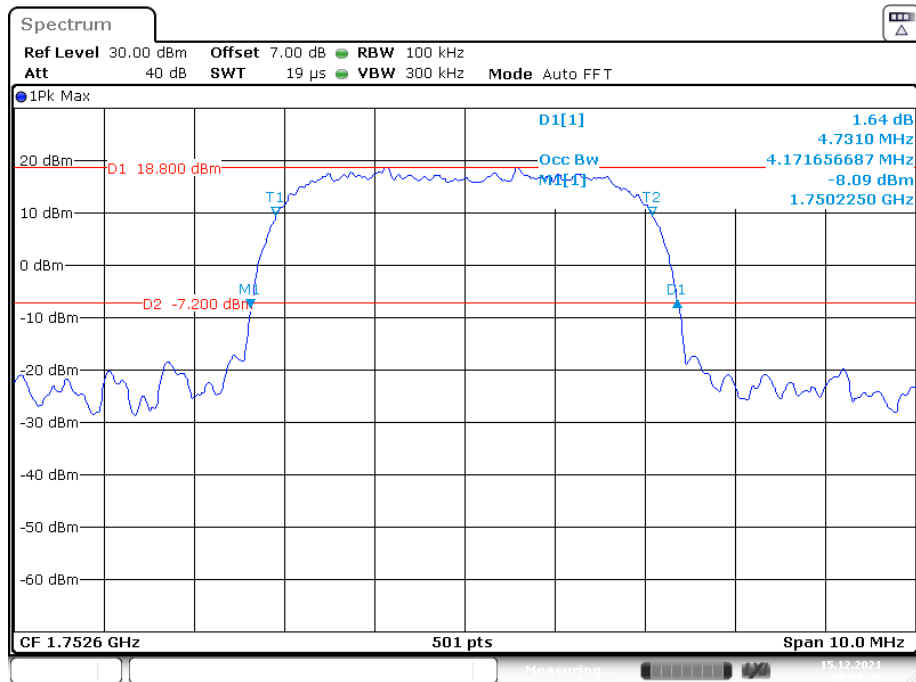


Date: 15.DEC.2021 09:05:43

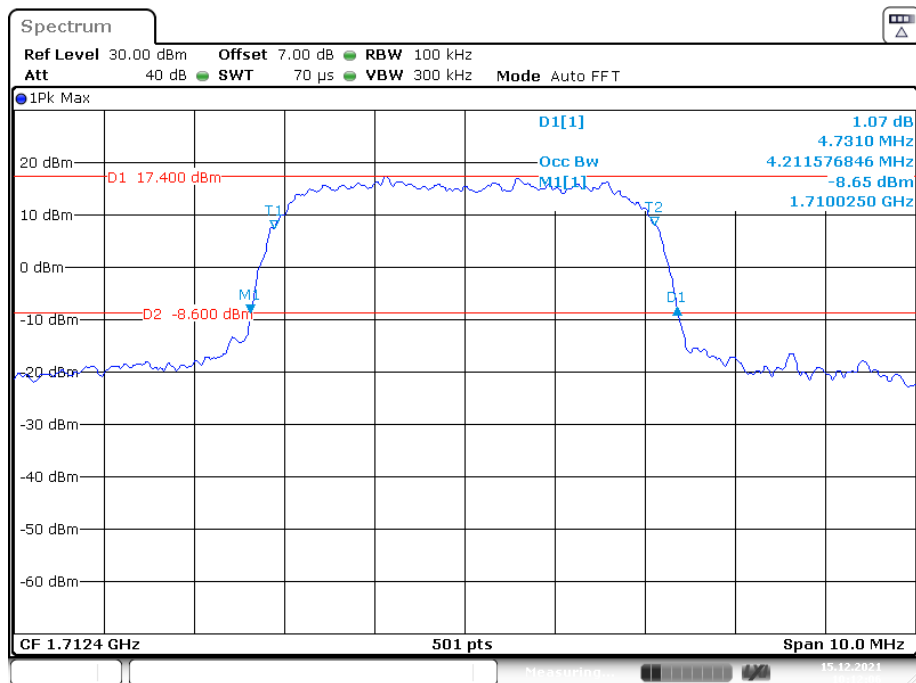
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



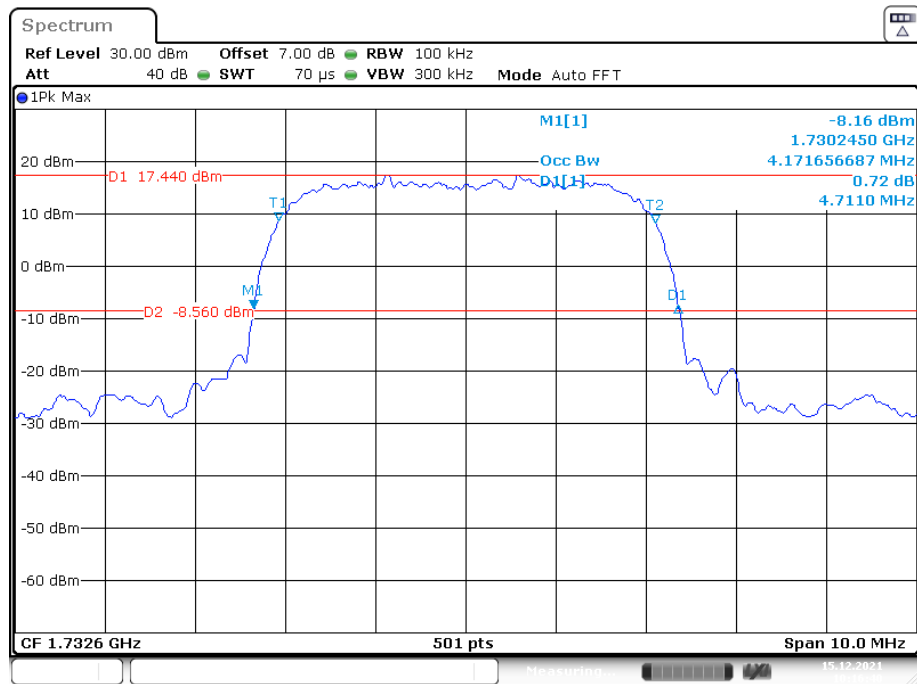
Date: 15.DEC.2021 10:23:15

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

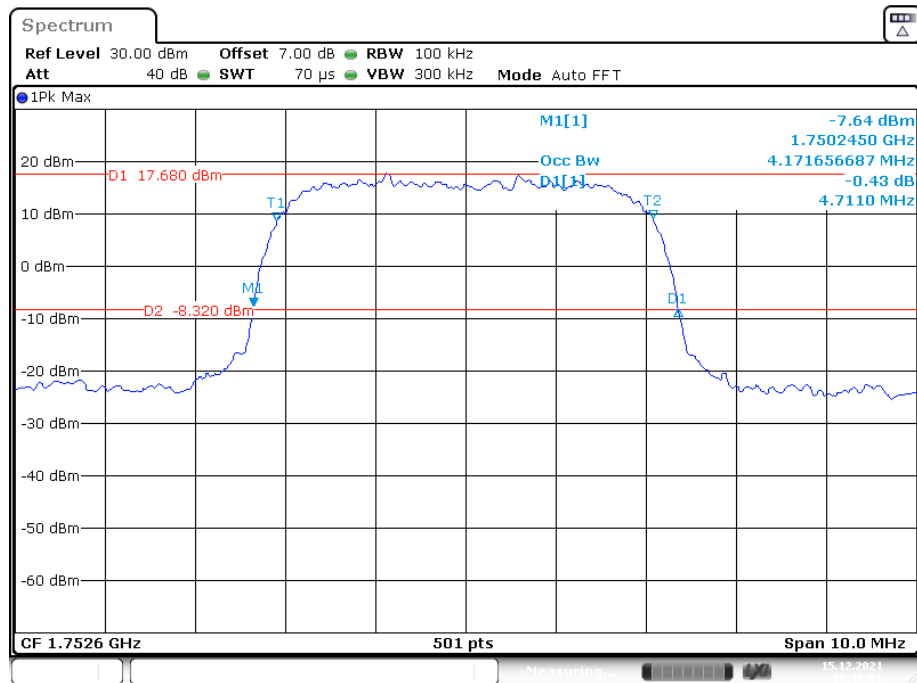
Date: 15.DEC.2021 09:08:26

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

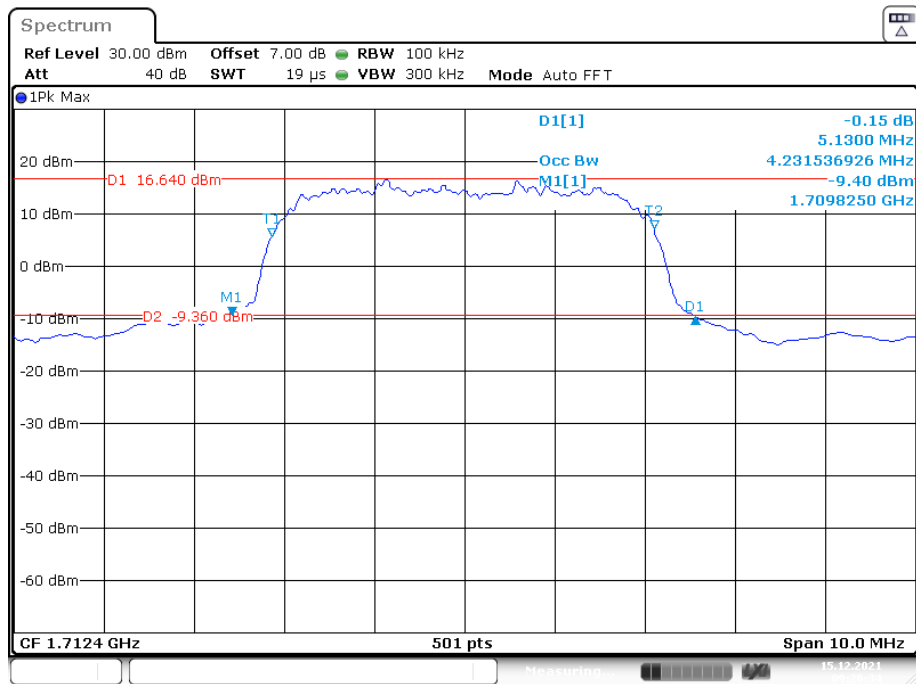
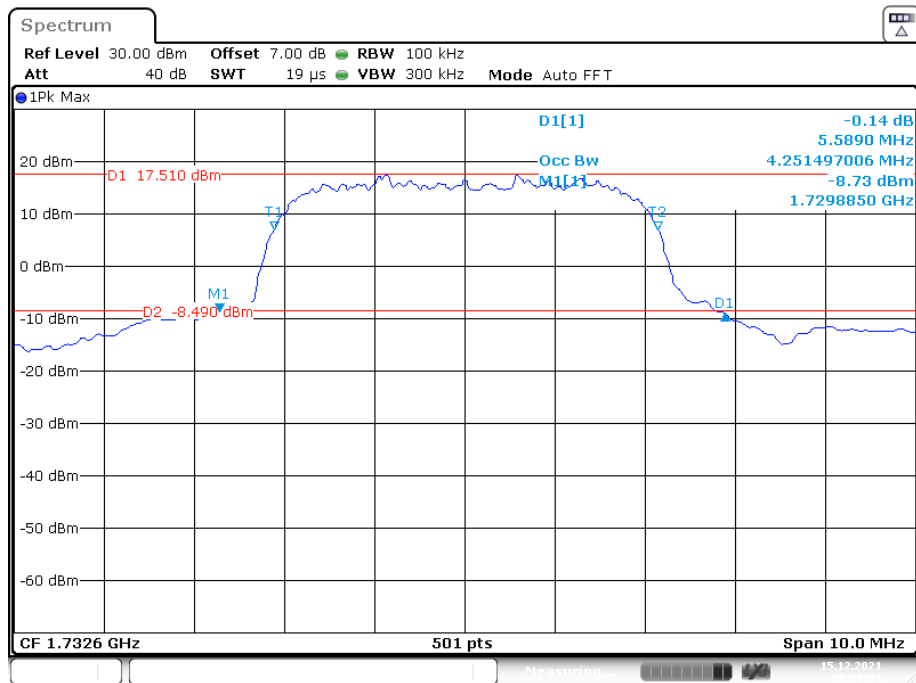
Date: 15.DEC.2021 10:12:05

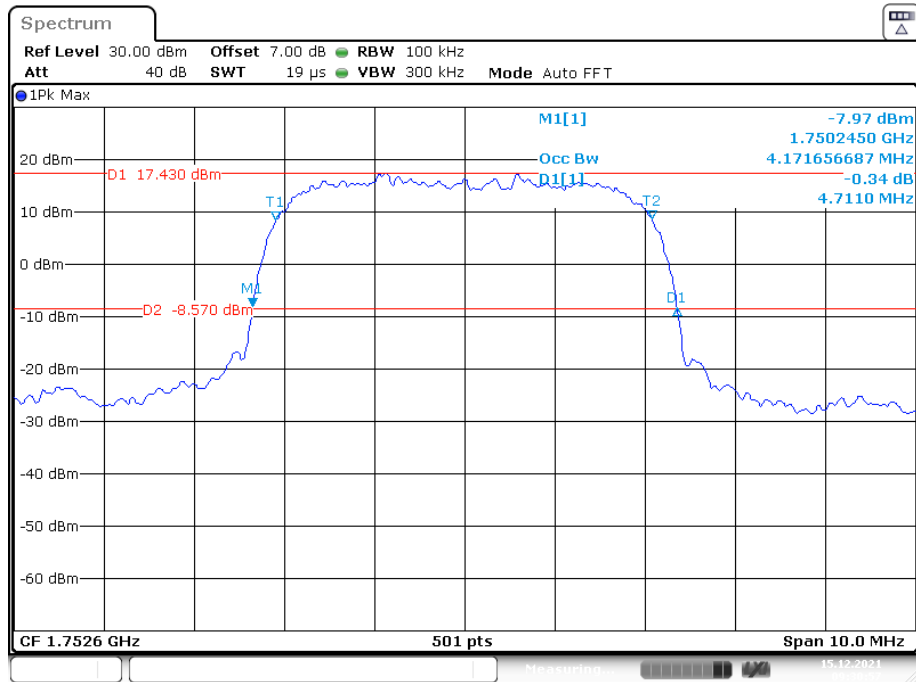
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel

Date: 15.DEC.2021 10:16:40

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

Date: 15.DEC.2021 10:18:01

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

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

Date: 15.DEC.2021 09:30:58

LTE Band 2:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.096	1.308	1.102	1.302	1.096	1.314
	16QAM	1.090	1.284	1.096	1.290	1.096	1.320
3 MHz	QPSK	2.683	2.868	2.683	2.868	2.683	2.892
	16QAM	2.683	2.892	2.683	2.880	2.683	2.868
5 MHz	QPSK	4.511	4.960	4.511	4.960	4.491	4.940
	16QAM	4.471	4.940	4.511	4.960	4.511	4.980
10 MHz	QPSK	8.942	9.720	8.942	9.600	8.942	9.600
	16QAM	8.942	9.560	8.942	9.640	8.942	9.560
15 MHz	QPSK	13.473	14.760	13.473	14.700	13.413	14.700
	16QAM	13.473	14.640	13.533	14.700	13.413	14.520
20 MHz	QPSK	17.884	19.120	17.964	19.280	17.884	19.440
	16QAM	17.884	19.200	17.964	19.280	17.804	19.200

LTE Band 4:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.096	1.296	1.096	1.308	1.102	1.284
	16QAM	1.096	1.314	1.090	1.284	1.090	1.290
3 MHz	QPSK	2.683	2.868	2.695	2.868	2.683	2.892
	16QAM	2.683	2.880	2.683	2.880	2.683	2.868
5 MHz	QPSK	4.511	4.960	4.511	4.980	4.491	4.920
	16QAM	4.471	4.940	4.511	4.960	4.511	4.980
10 MHz	QPSK	8.942	9.680	8.942	9.600	8.981	9.640
	16QAM	8.942	9.600	8.942	9.640	8.981	9.640
15 MHz	QPSK	13.533	14.940	13.413	14.640	13.473	14.880
	16QAM	13.533	14.880	13.473	14.640	13.473	14.580
20 MHz	QPSK	17.884	19.200	17.964	19.200	17.964	19.280
	16QAM	18.044	19.200	17.884	19.440	17.884	19.360

LTE Band 5:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.096	1.296	1.102	1.302	1.102	1.284
	16QAM	1.096	1.314	1.090	1.284	1.096	1.290
3 MHz	QPSK	2.683	2.868	2.683	2.868	2.683	2.880
	16QAM	2.683	2.880	2.683	2.868	2.683	2.868
5 MHz	QPSK	4.511	4.960	4.491	4.980	4.491	4.940
	16QAM	4.491	4.940	4.511	4.960	4.511	4.960
10 MHz	QPSK	8.942	9.720	8.942	9.560	8.942	9.640
	16QAM	8.942	9.560	8.942	9.560	8.942	9.600

LTE Band 7

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.511	4.960	4.511	5.120	4.491	4.960
	16QAM	4.491	4.960	4.531	5.160	4.511	5.000
10 MHz	QPSK	8.942	9.640	8.942	9.720	8.942	9.640
	16QAM	8.942	9.560	8.942	9.680	8.942	9.600
15 MHz	QPSK	13.533	14.820	13.533	15.000	13.533	14.760
	16QAM	13.473	15.060	13.533	14.820	13.533	14.760
20 MHz	QPSK	17.884	19.280	17.964	19.760	17.964	19.440
	16QAM	17.964	19.360	17.884	19.280	17.964	19.360

LTE Band 38

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.511	4.920	4.491	5.020	4.491	4.980
	16QAM	4.491	4.940	4.491	4.940	4.491	4.940
10 MHz	QPSK	8.942	9.640	8.942	9.640	8.942	9.560
	16QAM	8.942	9.520	8.942	9.480	8.942	9.720
15 MHz	QPSK	13.473	14.820	13.413	14.520	13.413	14.700
	16QAM	13.533	14.640	13.473	14.640	13.473	14.760
20 MHz	QPSK	18.044	19.200	17.884	19.280	17.884	19.280
	16QAM	17.884	19.280	17.884	19.200	17.884	19.200

LTE Band 41

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.491	4.960	4.511	4.900	4.491	4.980
	16QAM	4.511	4.920	4.491	4.960	4.491	4.940
10 MHz	QPSK	8.942	9.600	8.942	9.640	8.942	9.640
	16QAM	8.942	9.480	8.942	9.520	8.942	9.560
15 MHz	QPSK	13.473	14.640	13.413	14.580	13.413	14.640
	16QAM	13.533	14.700	13.533	14.700	13.473	14.700
20 MHz	QPSK	18.044	19.280	17.884	19.200	17.884	19.440
	16QAM	17.964	19.280	17.884	19.360	17.884	19.200

The test plots of LTE band please refer to the Appendix A.

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

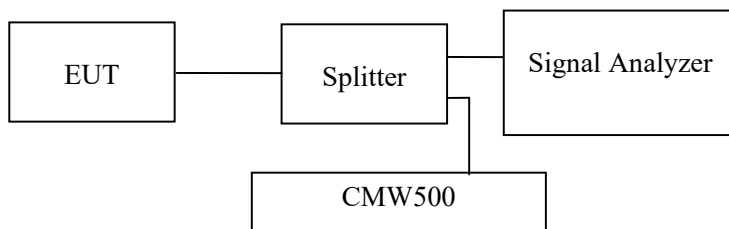
Applicable Standard

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

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

Test Procedure

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



Test Data

Environmental Conditions

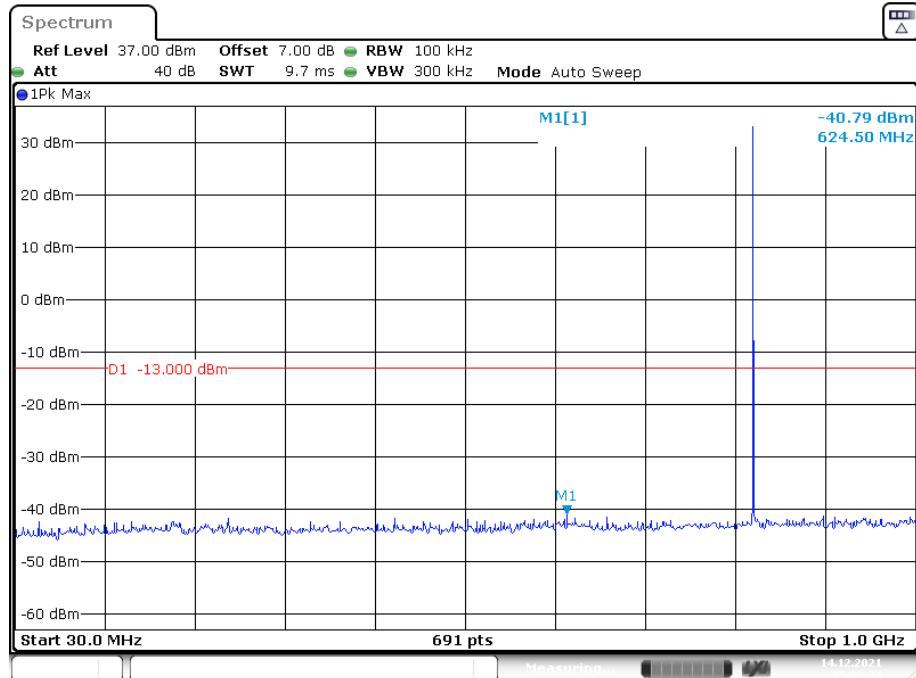
Temperature:	27.2 °C
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Fan Yang from 2021-12-14 to 2021-12-15.

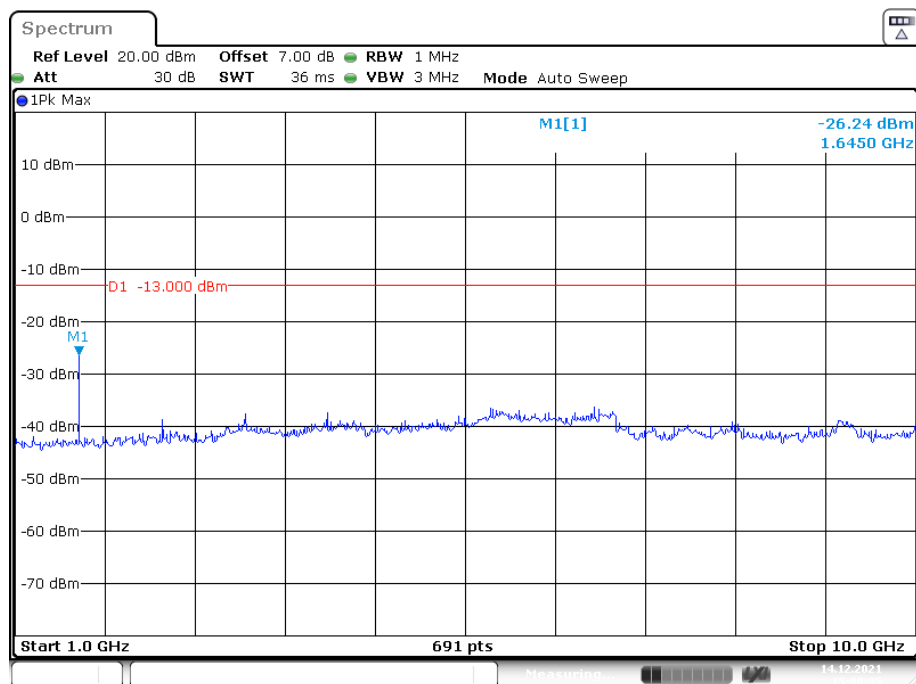
EUT operation mode: Transmitting

Test result: Pass

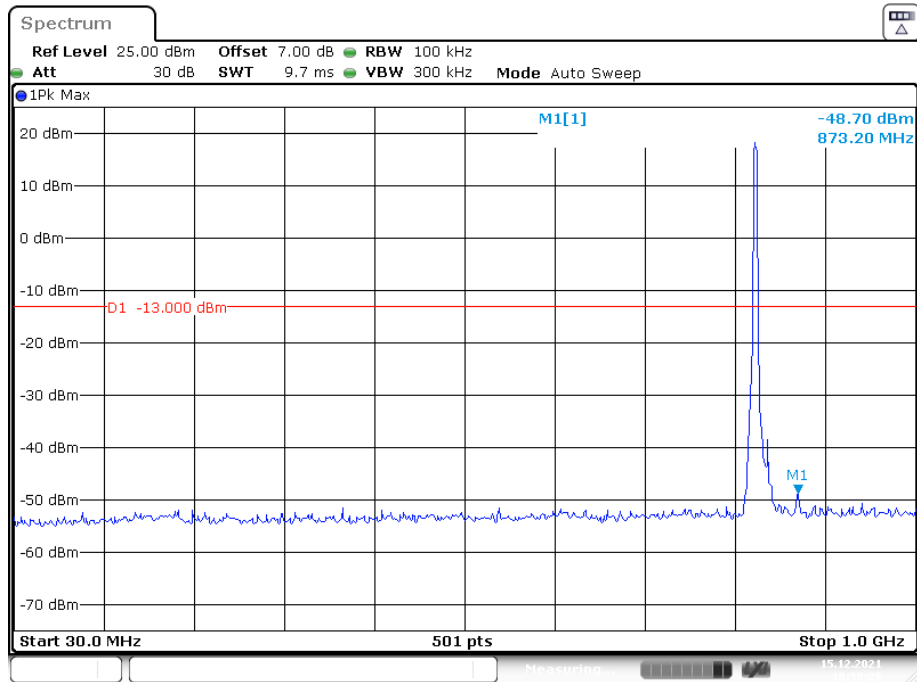
Please refer to the following plots.

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

Fundamental test

1 GHz – 10 GHz (GSM Mode)

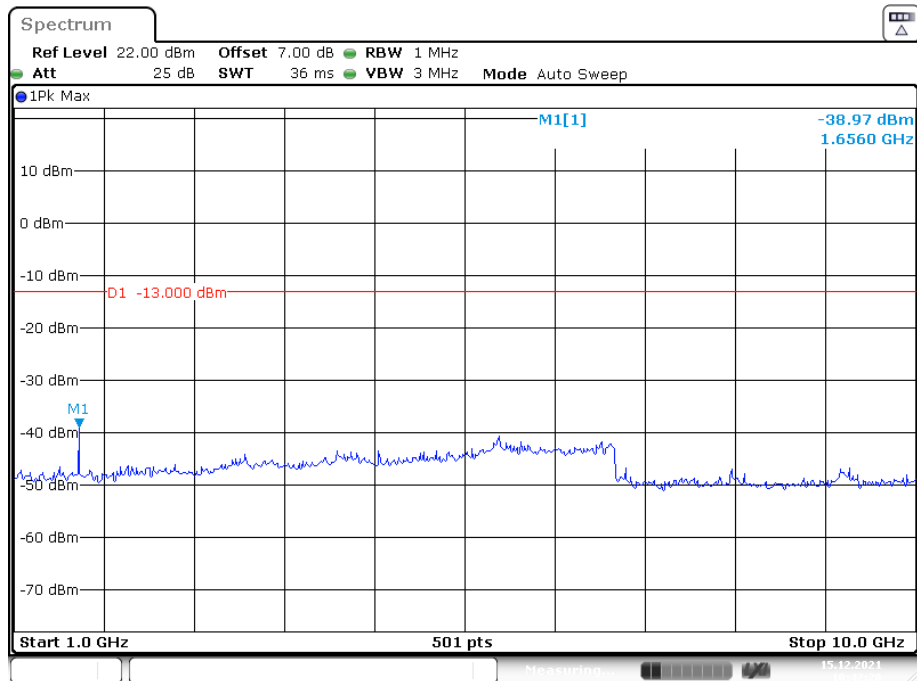
30 MHz – 1 GHz (WCDMA Mode)



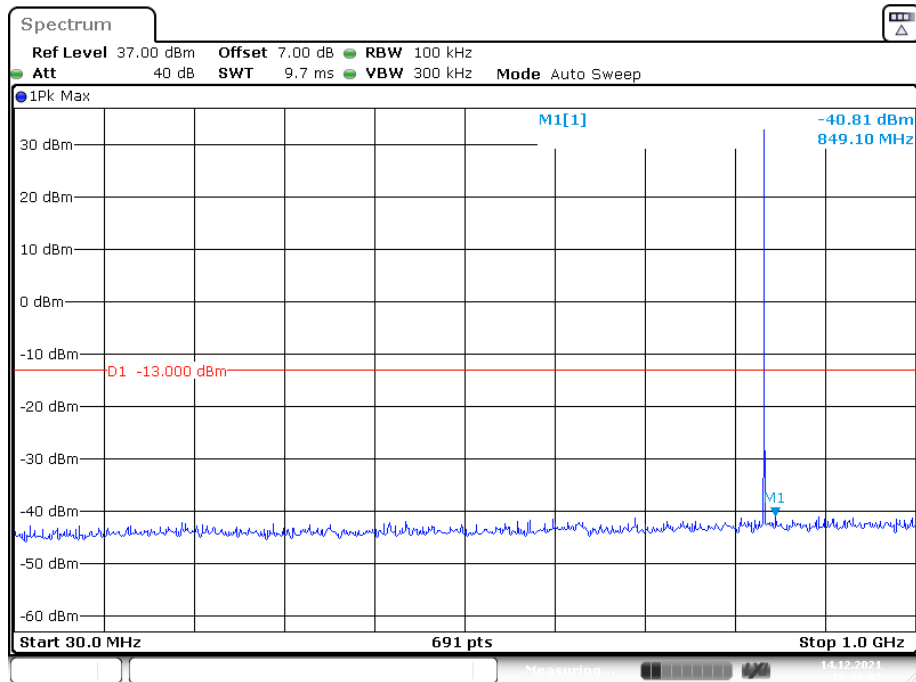
Date: 15.DEC.2021 10:39:29

fundamental test

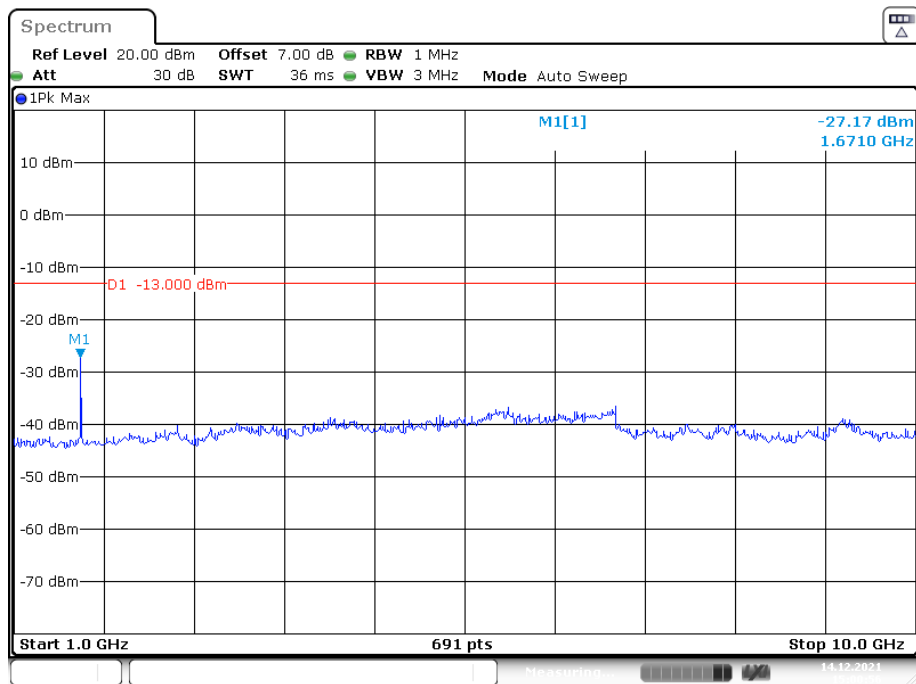
1 GHz – 10 GHz (WCDMA Mode)



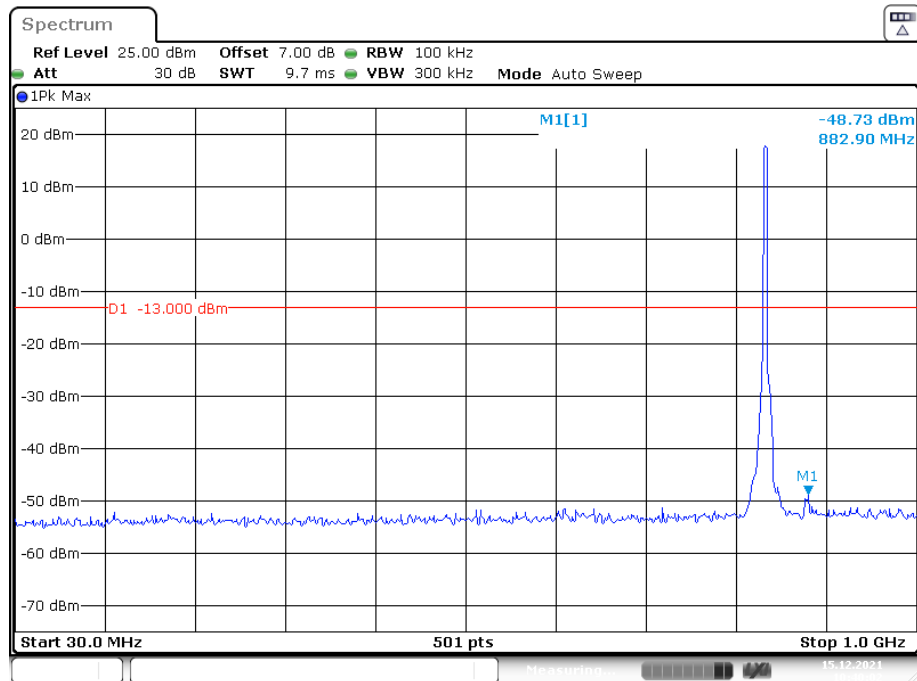
Date: 15.DEC.2021 10:42:20

Middle Channel:**30 MHz – 1 GHz (GSM Mode)**

Fundamental test

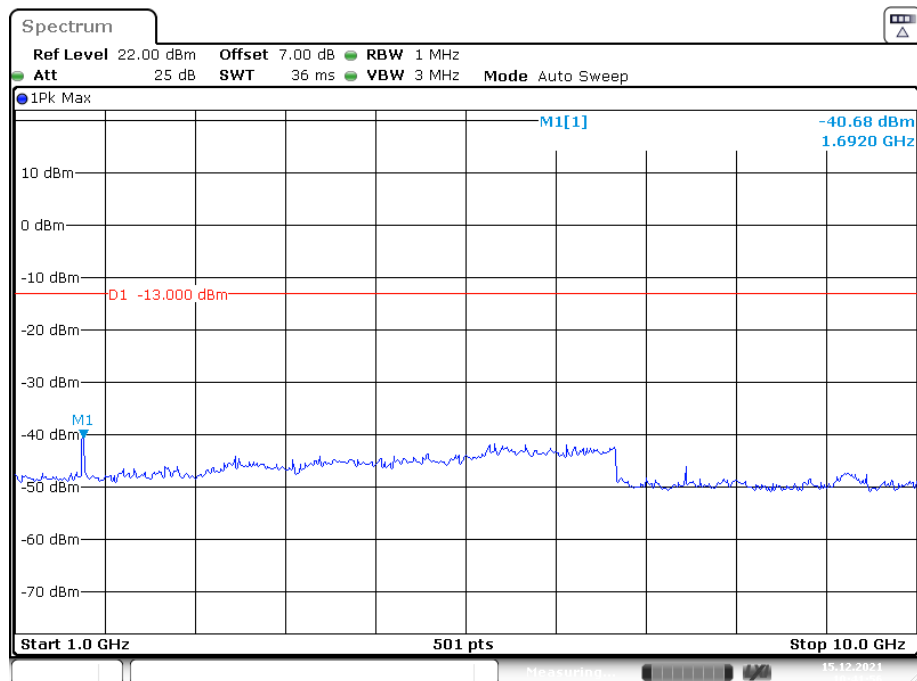
1 GHz – 10 GHz (GSM Mode)

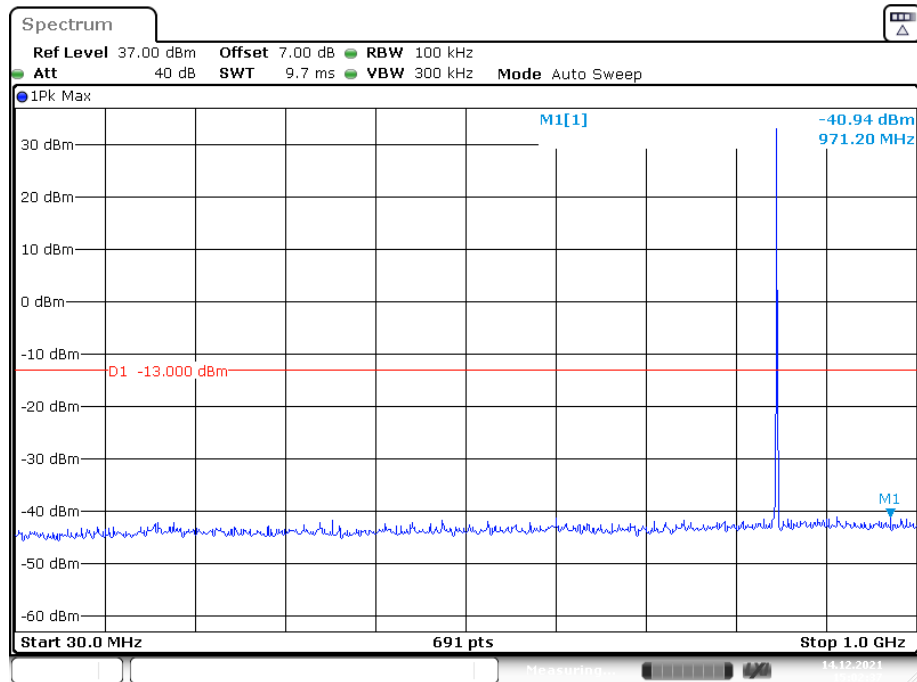
30 MHz – 1 GHz (WCDMA Mode)



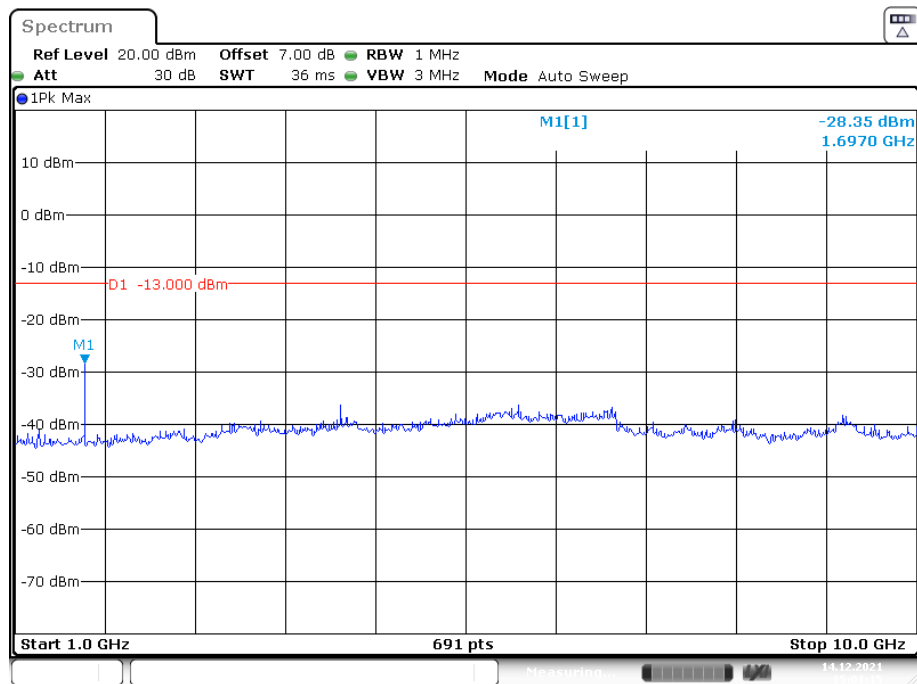
fundamental test

1 GHz – 10 GHz (WCDMA Mode)

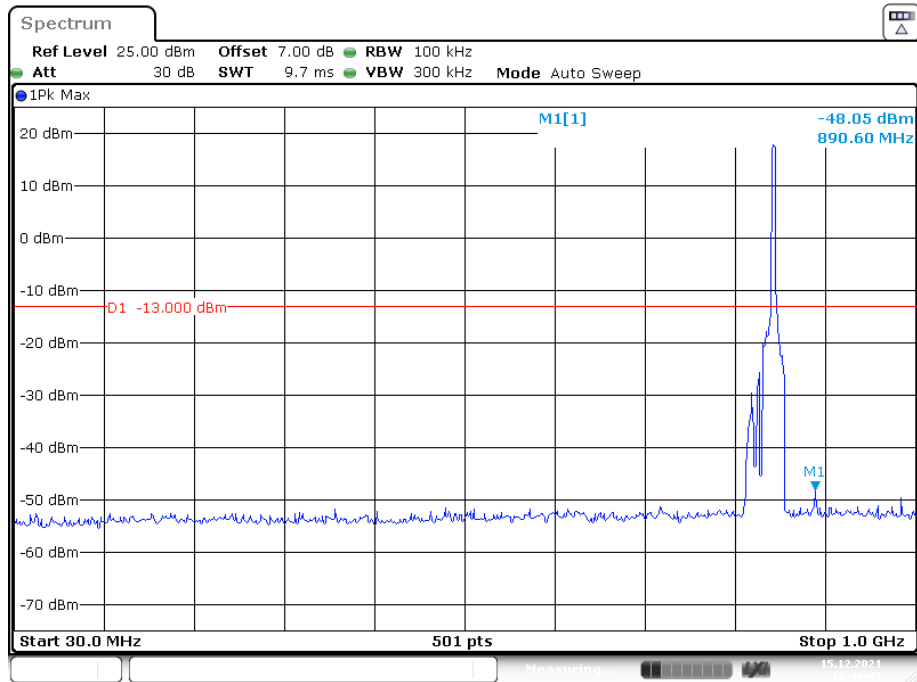


High Channel:**30 MHz – 1 GHz (GSM Mode)**

Fundamental test

1 GHz – 10 GHz (GSM Mode)

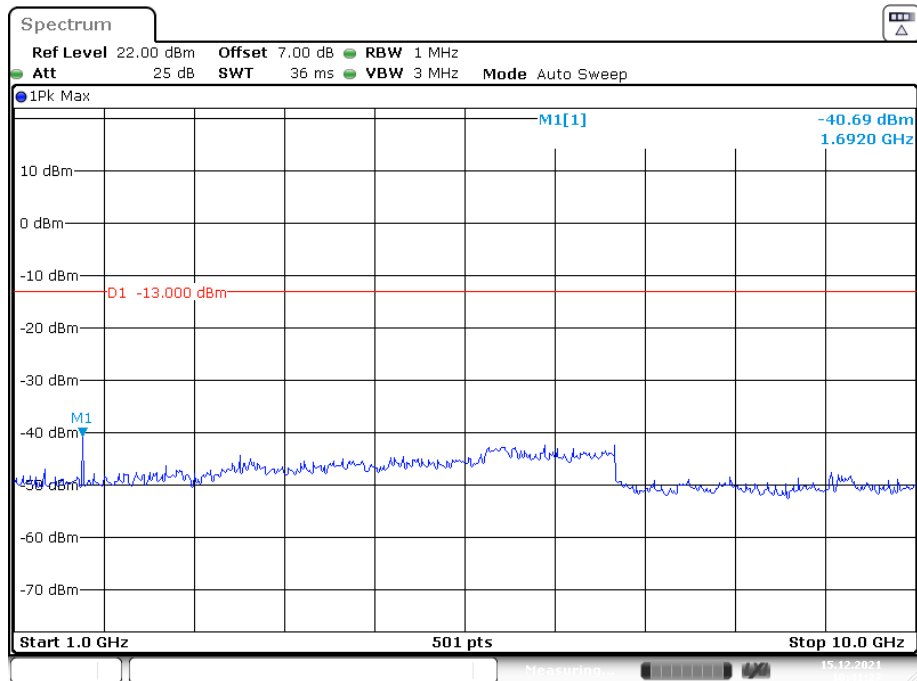
30 MHz – 1 GHz (WCDMA Mode)



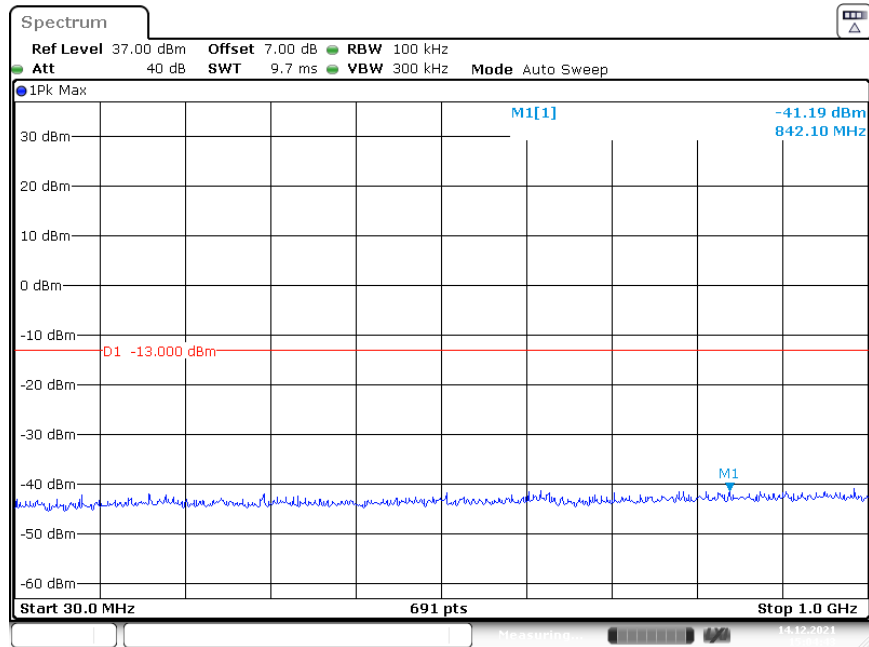
Date: 15.DEC.2021 10:40:47

Fundamental test

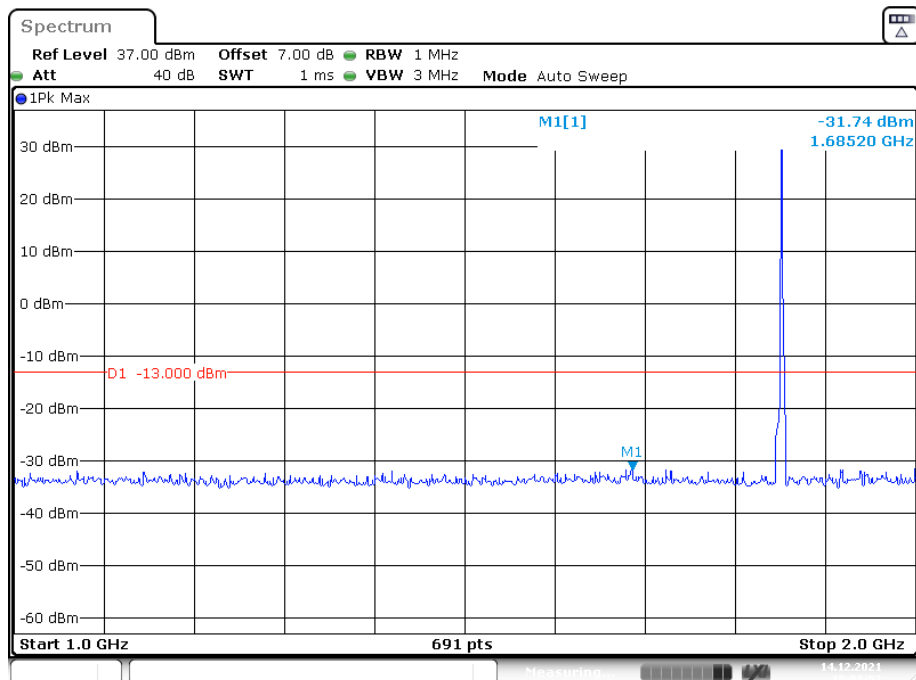
1 GHz – 10 GHz (WCDMA Mode)



Date: 15.DEC.2021 10:41:28

**PCS Band (Part 24E)
Low Channel:****30 MHz – 1 GHz (GSM Mode)**

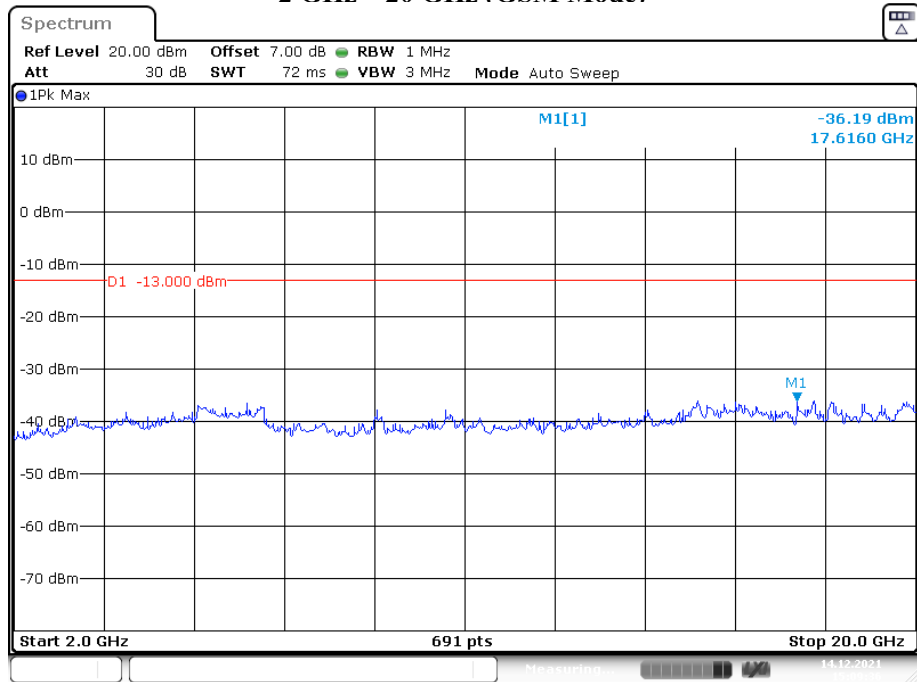
Date: 14.DEC.2021 15:04:43

1 GHz – 2 GHz (GSM Mode)

Date: 14.DEC.2021 15:08:52

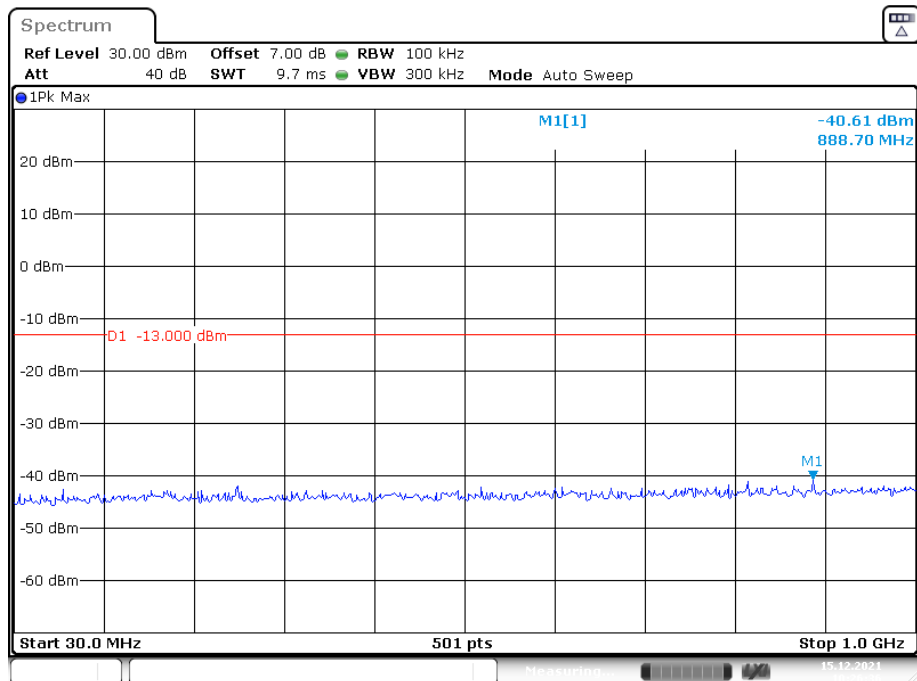
Fundamental test

2 GHz – 20 GHz (GSM Mode)



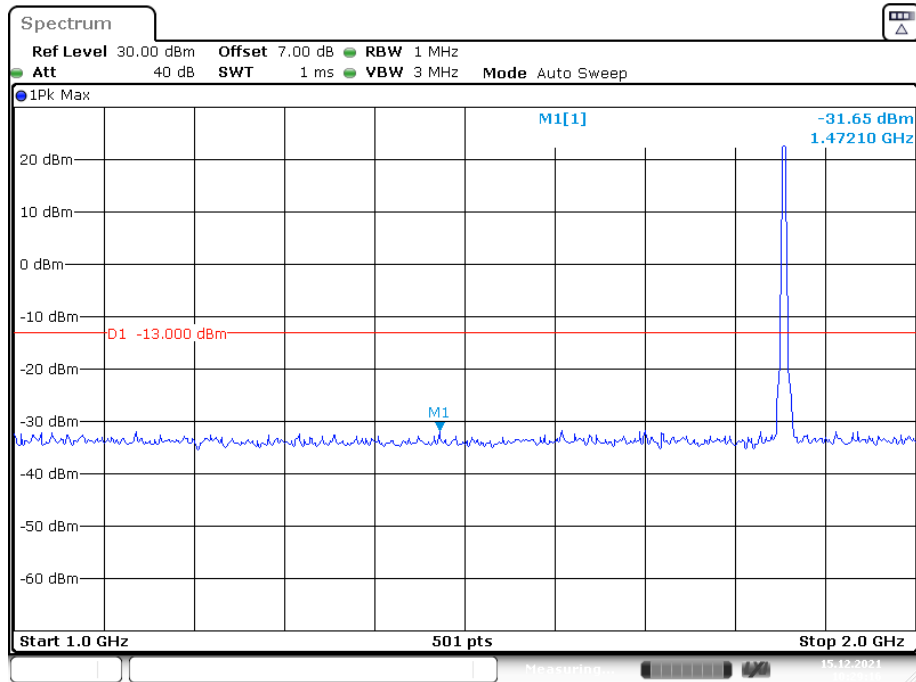
Date: 14.DEC.2021 15:09:36

30 MHz – 1 GHz (WCDMA Mode)



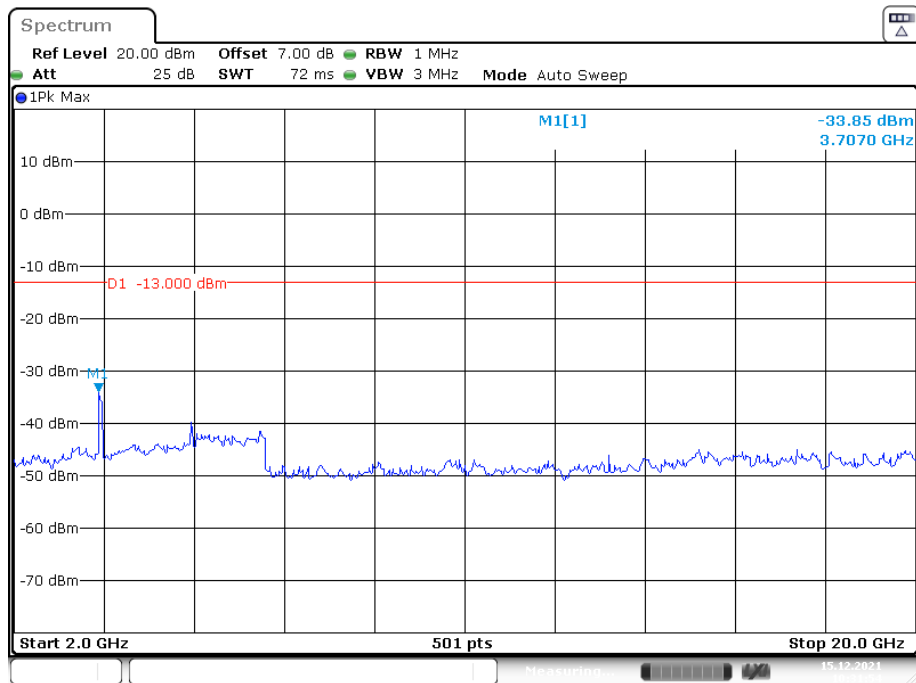
Date: 15.DEC.2021 10:26:36

1 GHz – 2 GHz (WCDMA Mode)

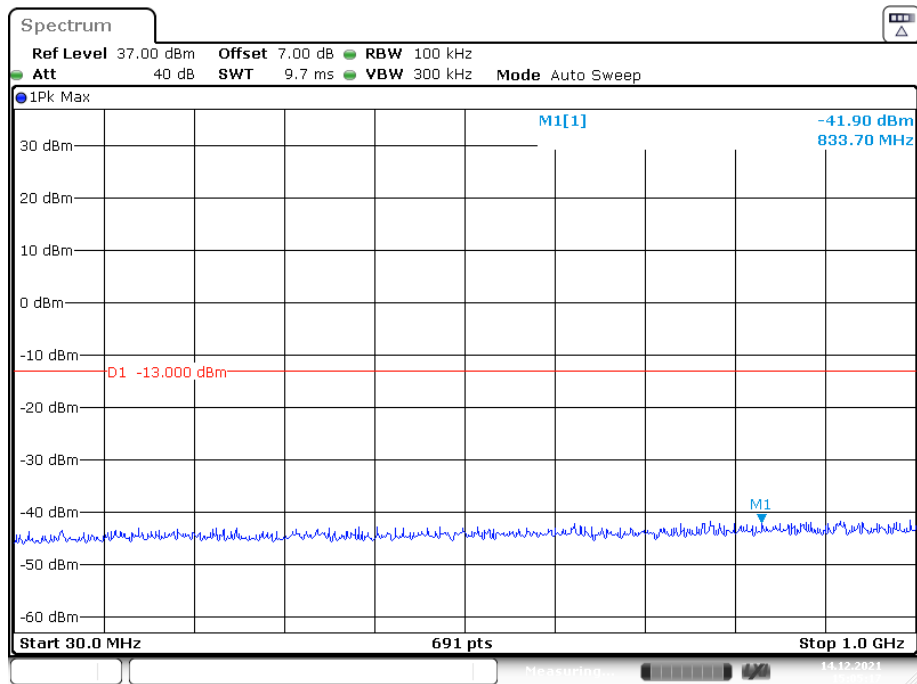


Fundamental tst

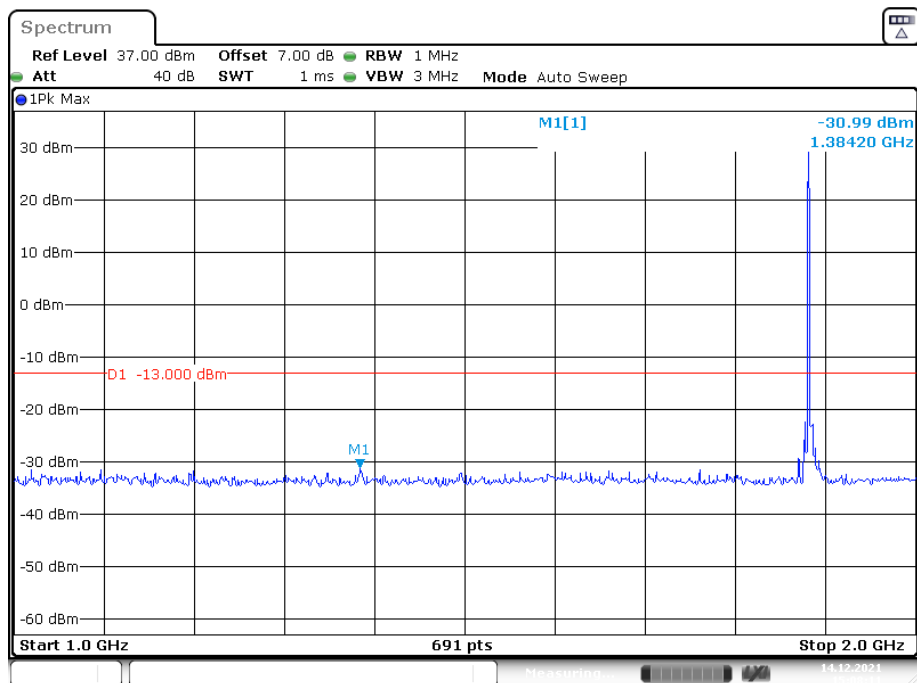
2 GHz – 20 GHz (WCDMA Mode)



Date: 15.DEC.2021 10:31:54

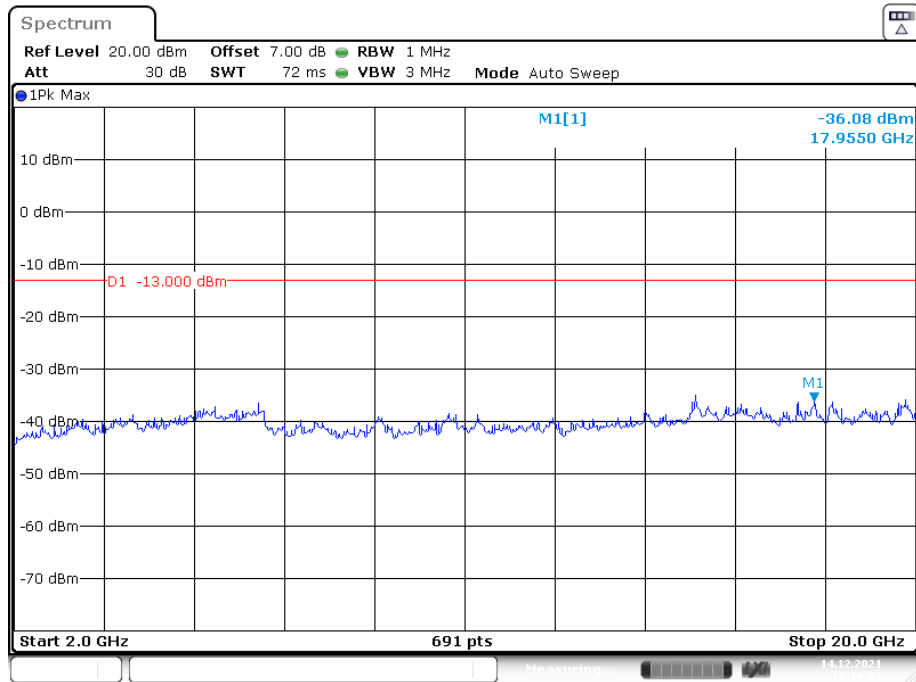
Middle Channel:**30 MHz – 1 GHz (GSM Mode)**

Date: 14.DEC.2021 15:05:17

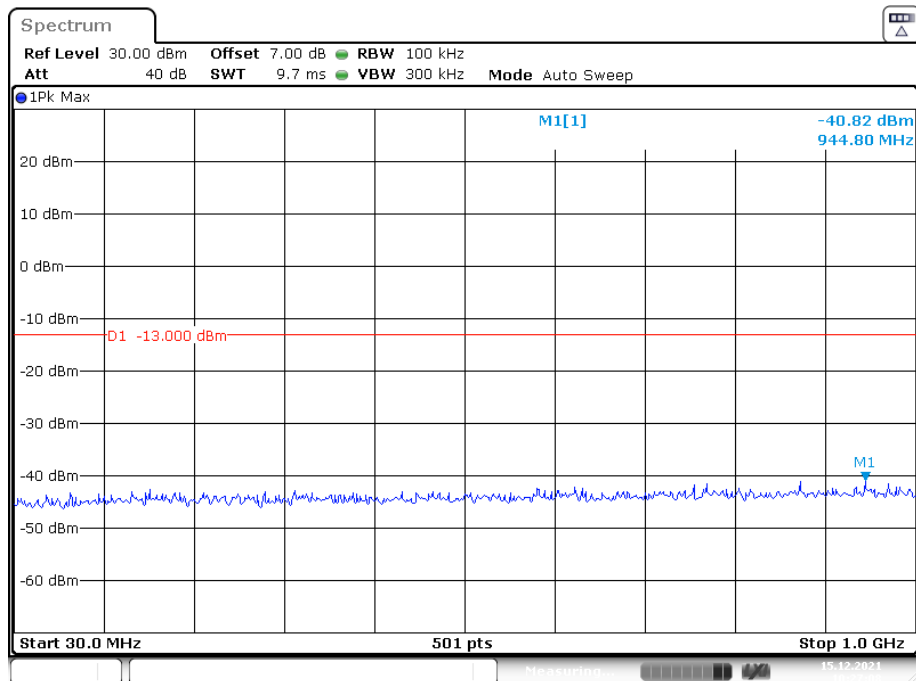
1 GHz – 2 GHz (GSM Mode)

Date: 14.DEC.2021 15:08:11

Fundamental test

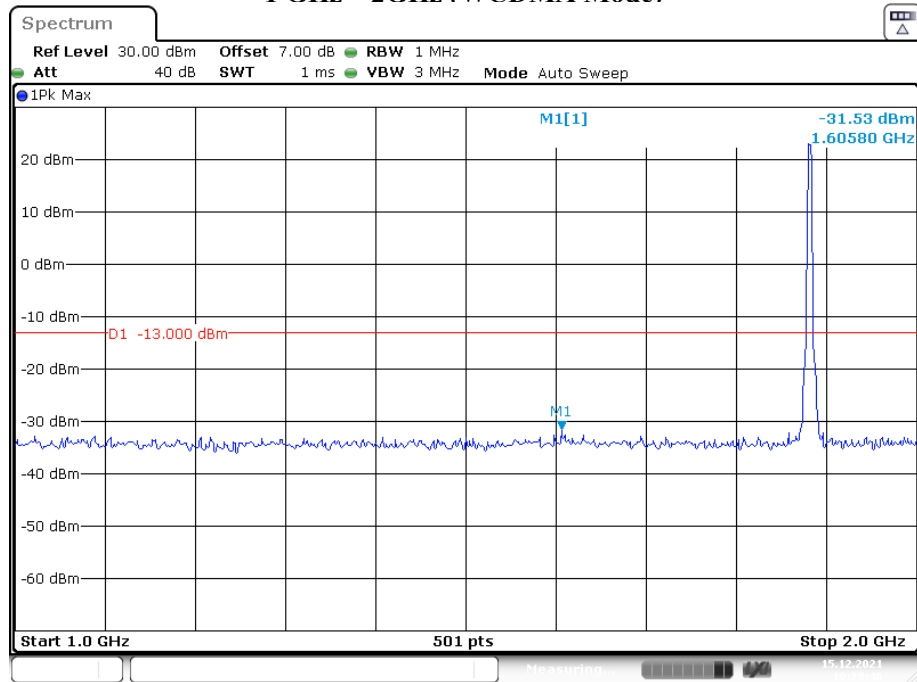
2 GHz – 20 GHz (GSM Mode)

Date: 14.DEC.2021 15:10:02

30 MHz – 1 GHz (WCDMA Mode)

Date: 15.DEC.2021 10:27:08

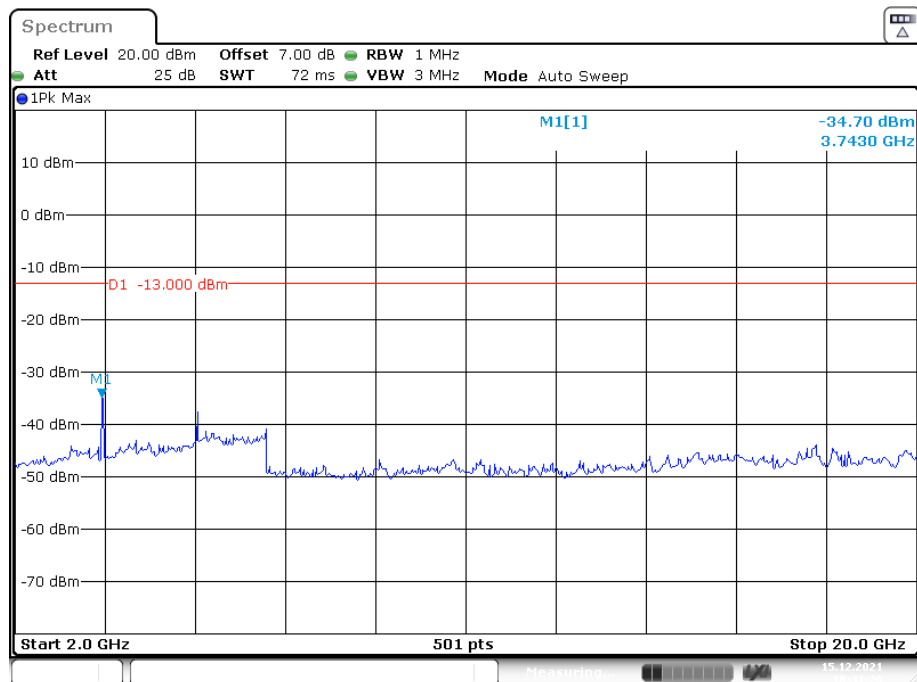
1 GHz – 2GHz (WCDMA Mode)



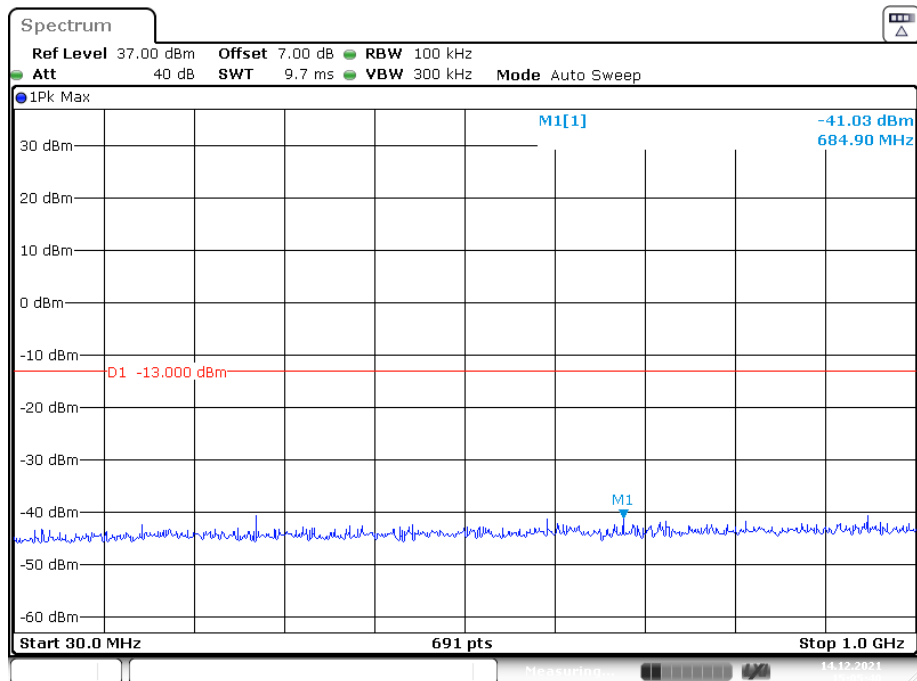
Date: 15.DEC.2021 10:29:46

Fundamental test

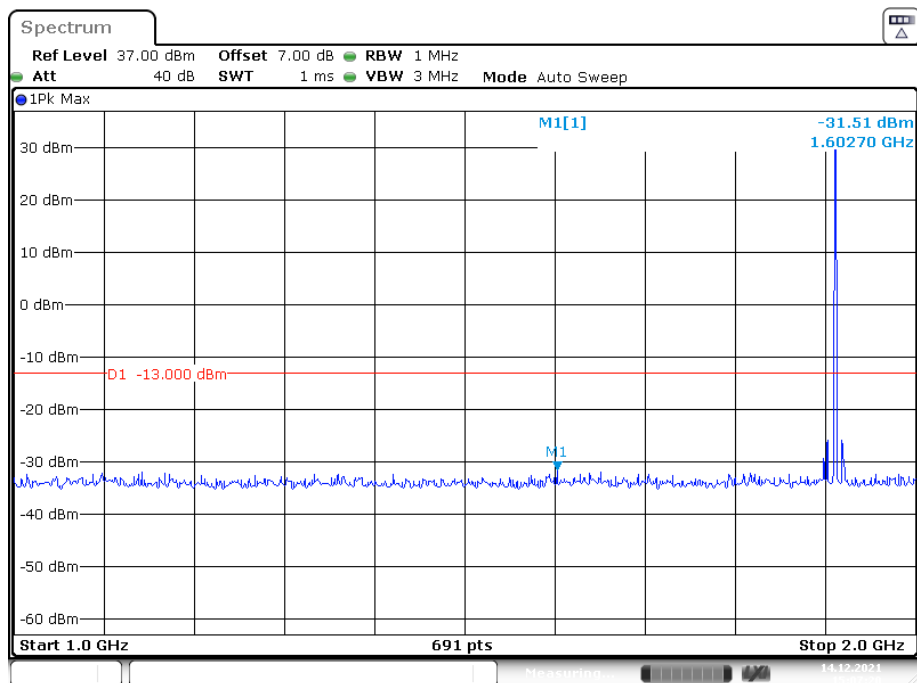
2 GHz – 20 GHz (WCDMA Mode)



Date: 15.DEC.2021 10:31:28

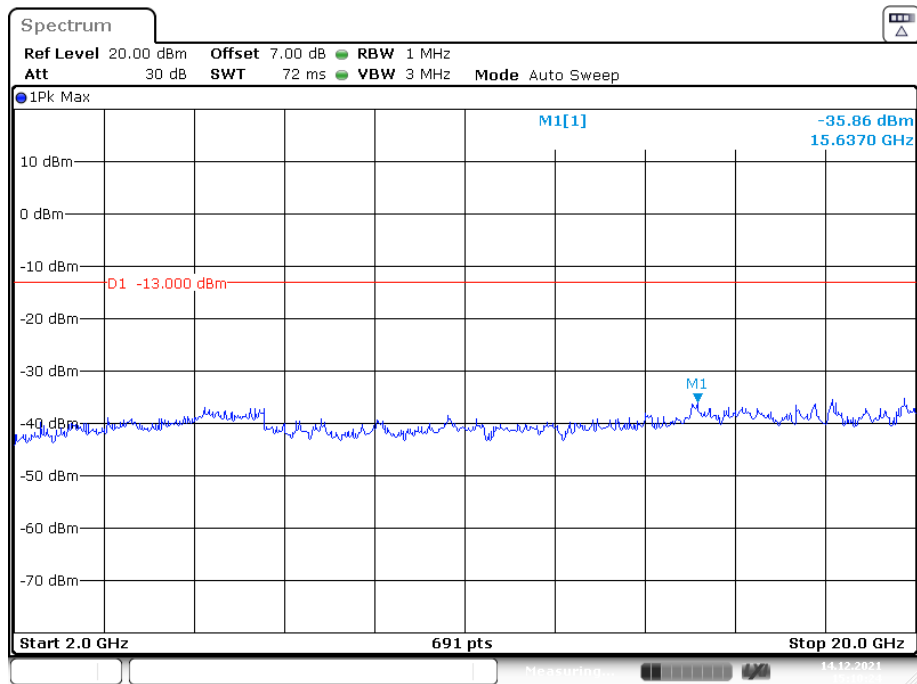
High Channel:**30 MHz – 1 GHz (GSM Mode)**

Date: 14.DEC.2021 15:05:40

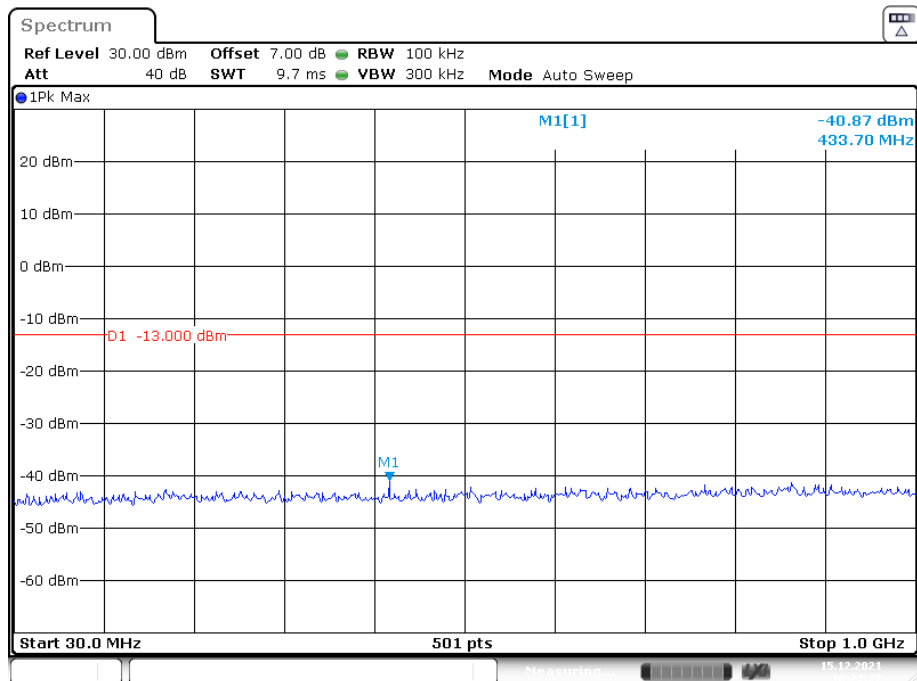
1 GHz – 2 GHz (GSM Mode)

Date: 14.DEC.2021 15:07:20

Fundamental test

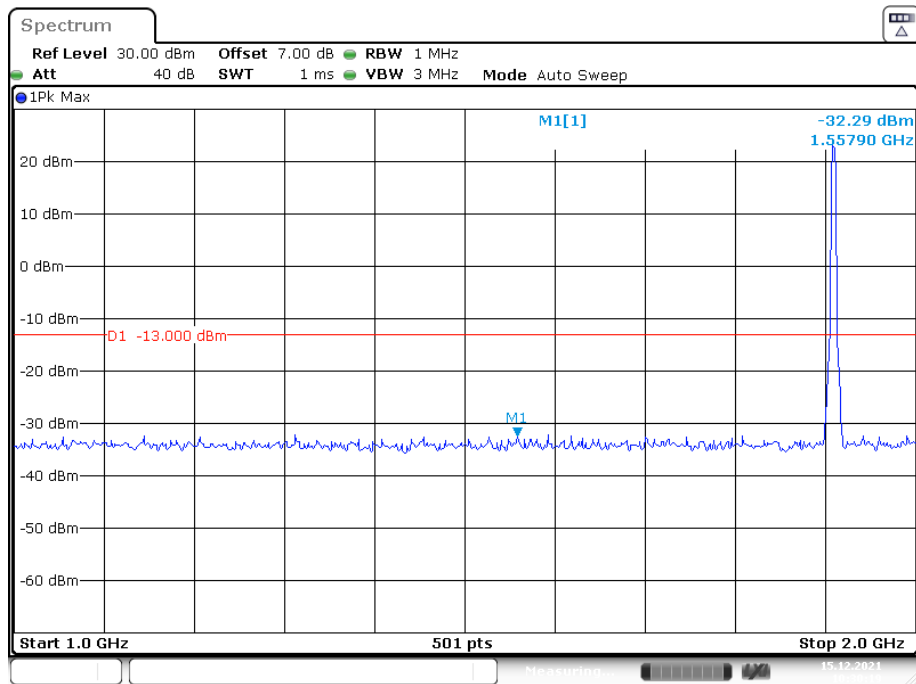
2 GHz – 20 GHz (GSM Mode)

Date: 14.DEC.2021 15:10:24

30 MHz – 1 GHz (WCDMA Mode)

Date: 15.DEC.2021 10:27:27

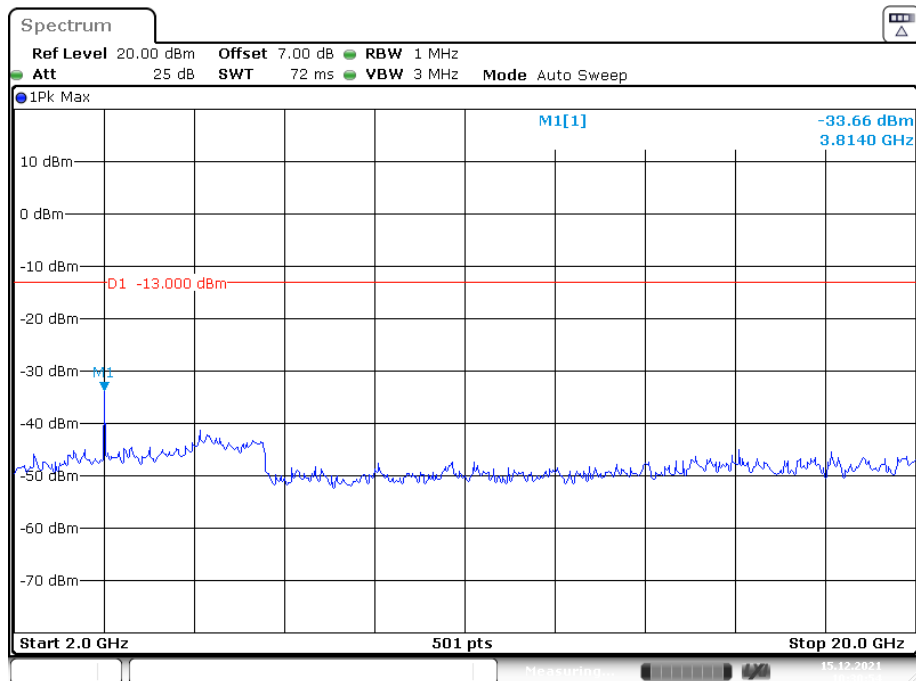
1 GHz – 2 GHz (WCDMA Mode)



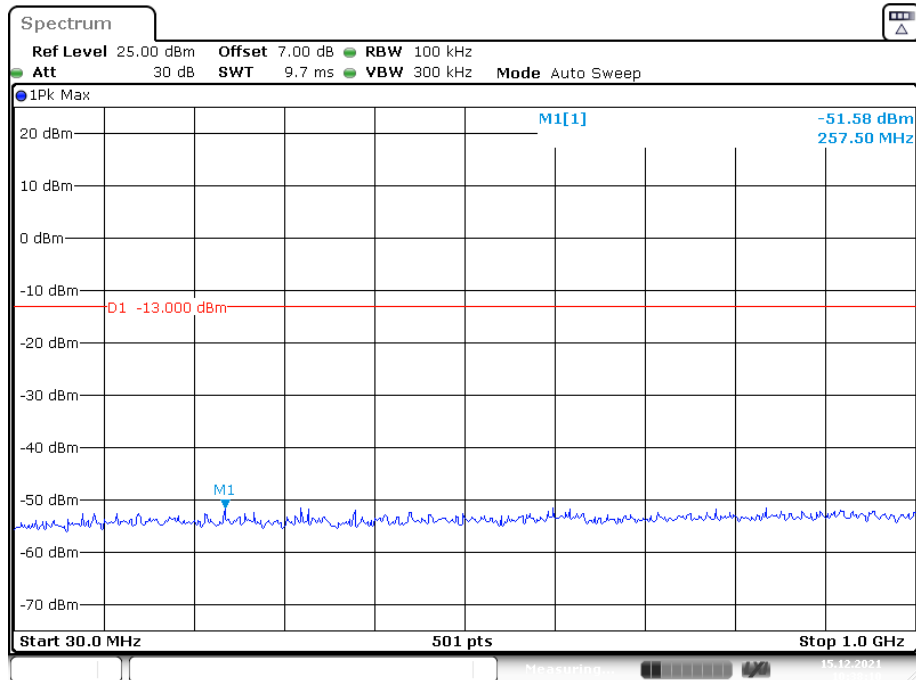
Date: 15.DEC.2021 10:30:19

Fundamental test

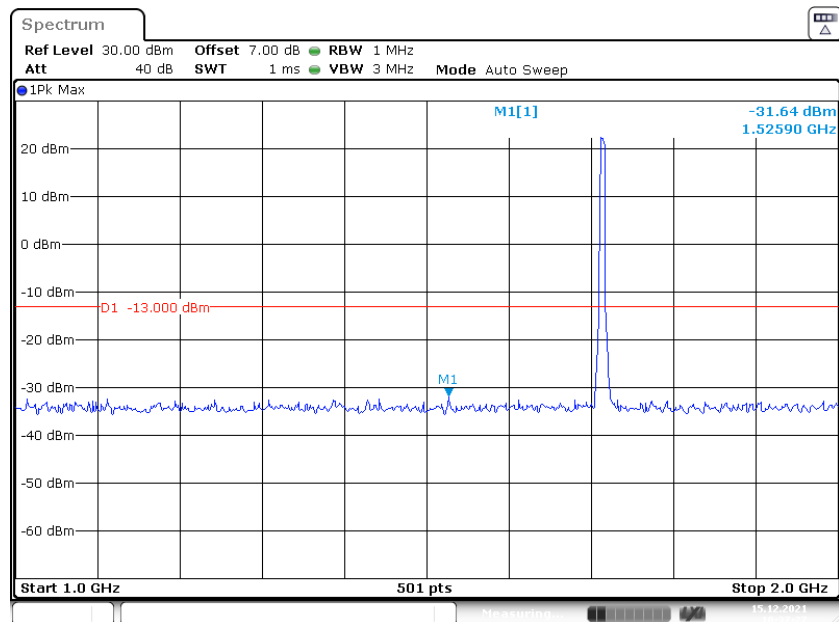
2 GHz – 20 GHz (WCDMA Mode)



Date: 15.DEC.2021 10:30:54

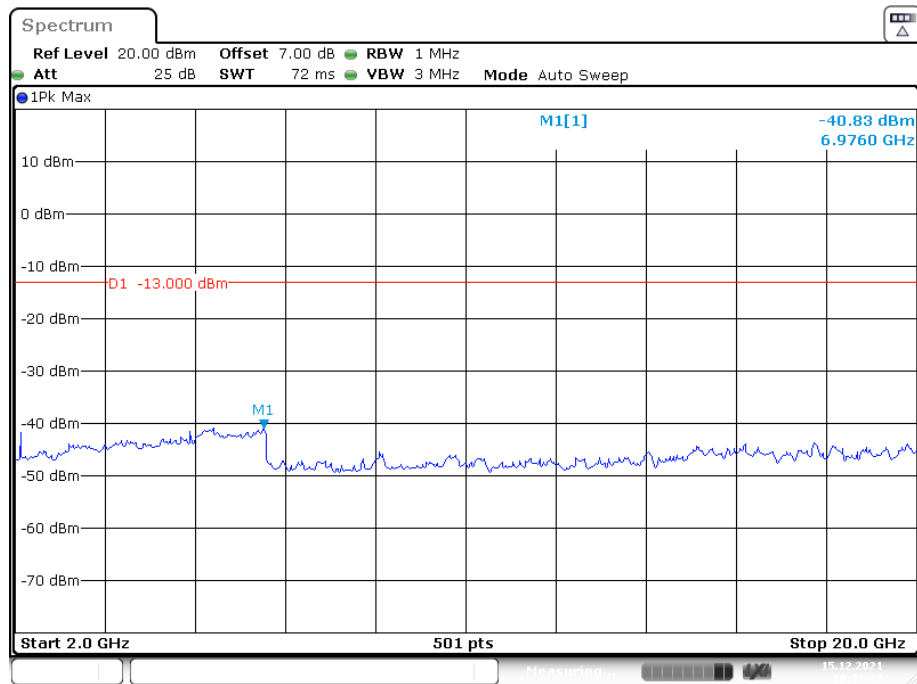
AWS Band (Part 27)
Low Channel:**30 MHz – 1 GHz (WCDMA Mode)**

Date: 15.DEC.2021 10:38:10

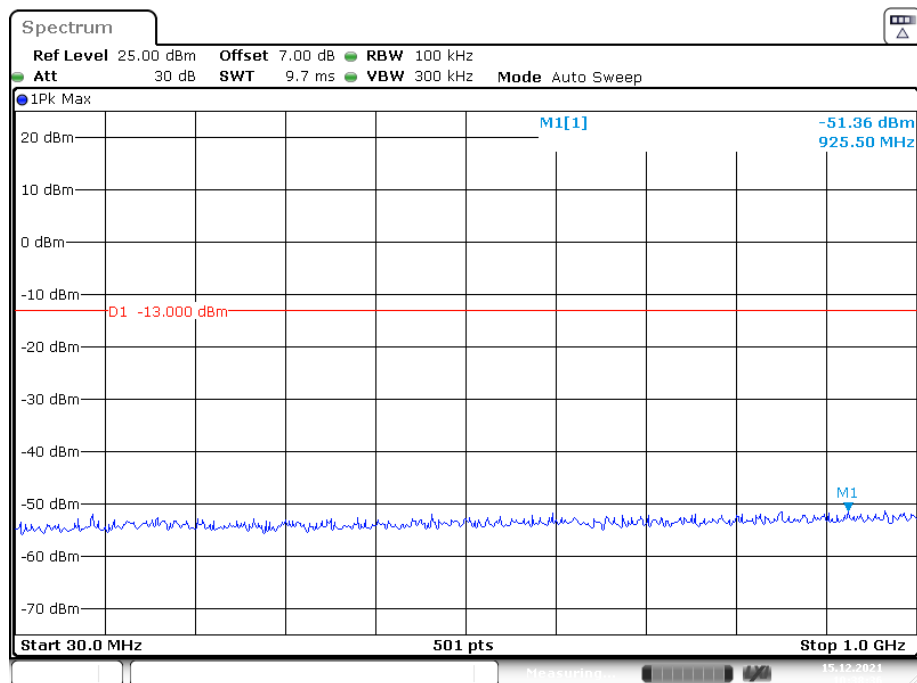
1 GHz – 20 GHz (WCDMA Mode)

Date: 15.DEC.2021 10:37:27

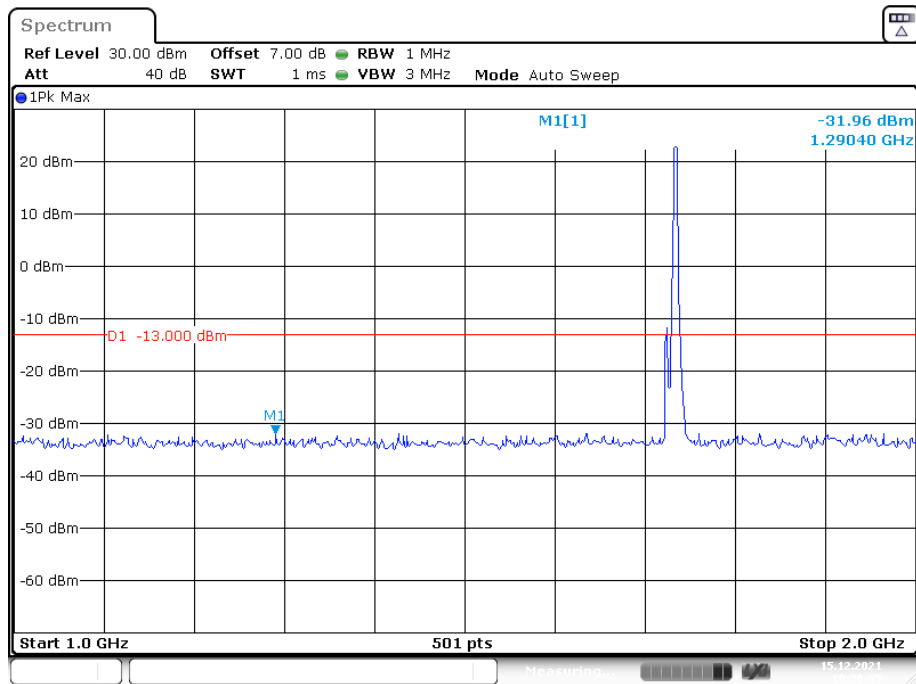
Fundamental test

2 GHz – 20 GHz (WCDMA Mode)

Date: 15.DEC.2021 10:33:32

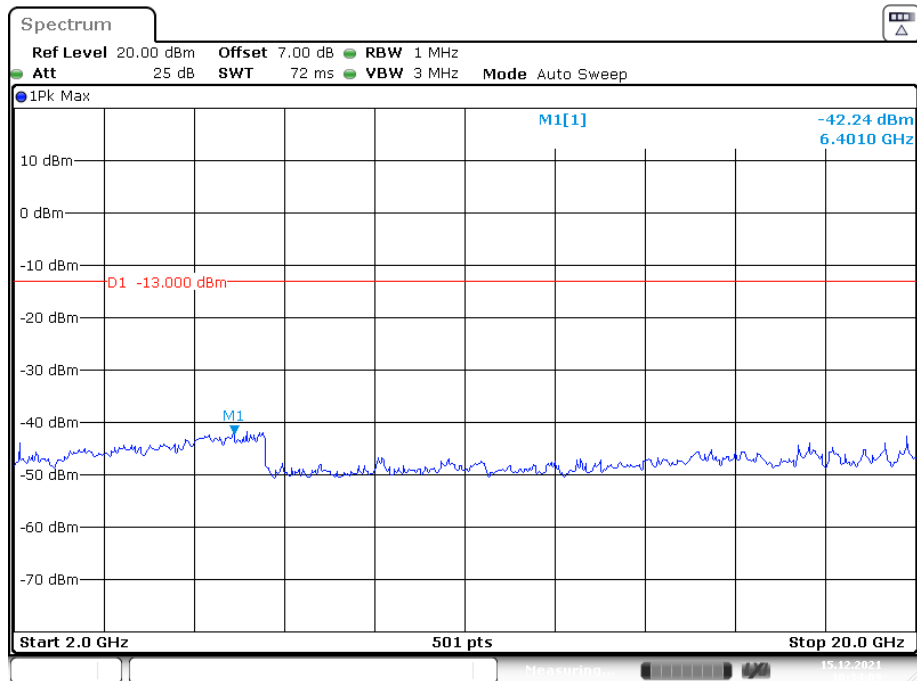
Middle Channel**30 MHz – 1 GHz (WCDMA Mode)**

Date: 15.DEC.2021 10:38:36

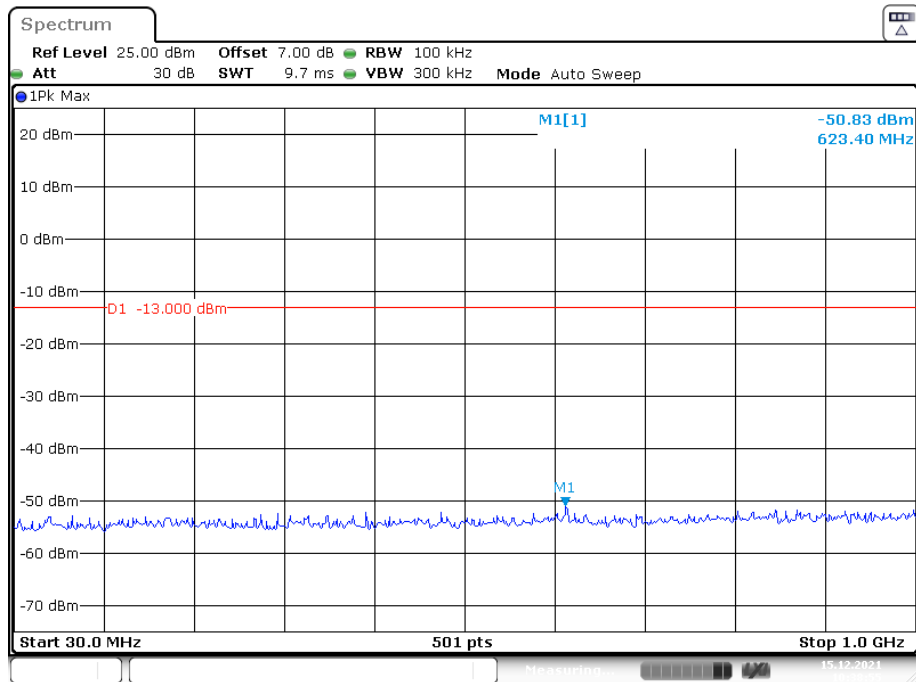
1 GHz – 20 GHz (WCDMA Mode)

Date: 15.DEC.2021 10:36:55

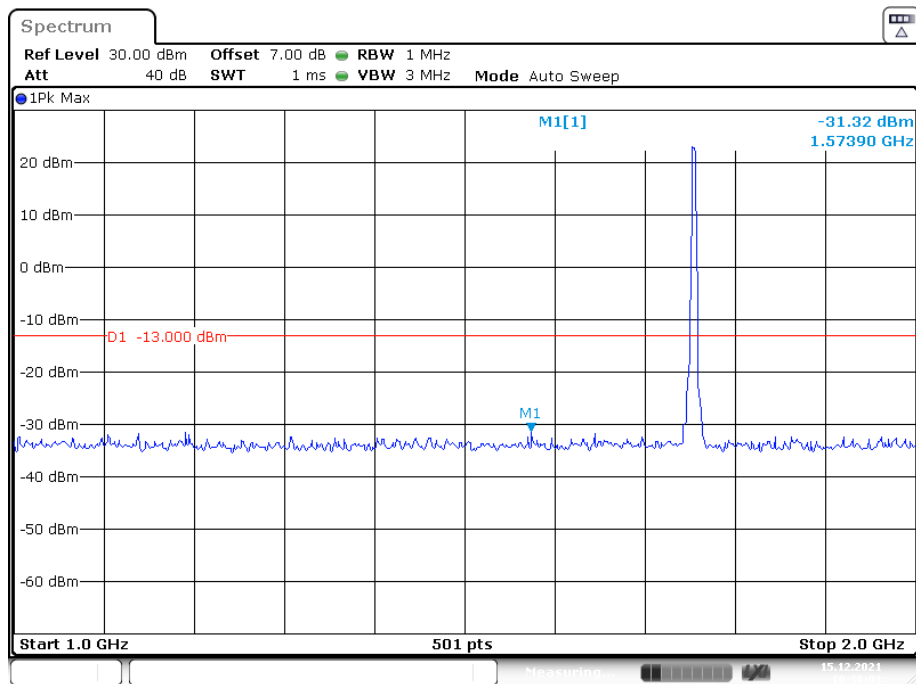
Fundamental test

2 GHz – 20 GHz (WCDMA Mode)

Date: 15.DEC.2021 10:34:09

High Channel:**30 MHz – 1 GHz (WCDMA Mode)**

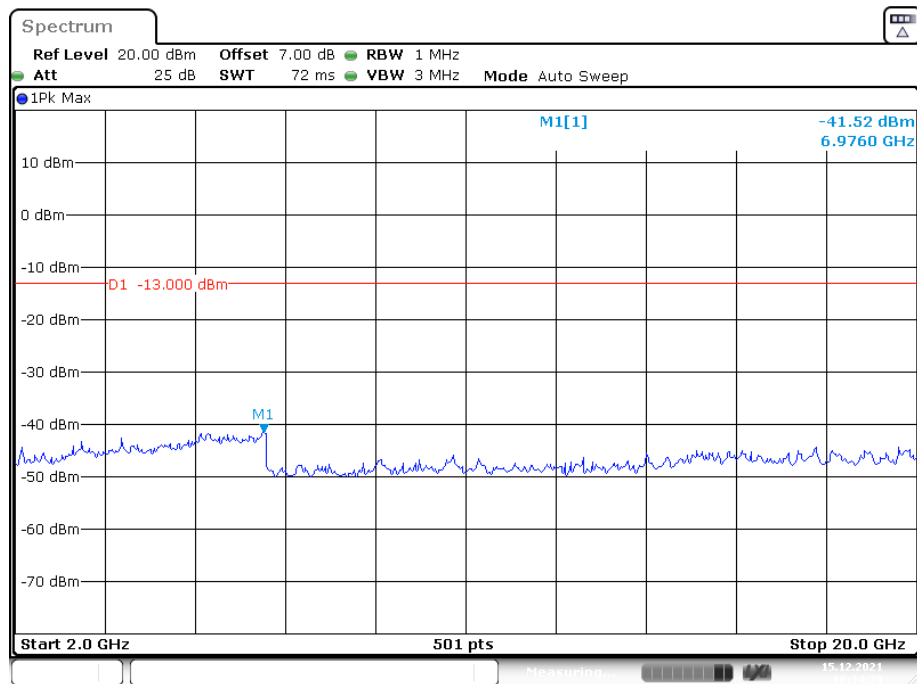
Date: 15.DEC.2021 10:38:56

1 GHz – 20 GHz (WCDMA Mode)

Date: 15.DEC.2021 10:36:03

Fundamental test

2 GHz – 20 GHz (WCDMA Mode)



The test plots of LTE band please refer to the Appendix B.

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

Applicable Standard

FCC § 2.1053, § 22.917(a) & § 24.238(a) & § 27.53.

Test Procedure

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

The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the receiving antenna height and polarization as well as EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. The test was performed by placing the EUT on 3-orthogonal axis.

The frequency range up to tenth harmonic of the fundamental frequency was investigated.

Test Data

Environmental Conditions

Temperature:	25.5 °C
Relative Humidity:	50 %
ATM Pressure:	101.0kPa

The testing was performed by Caro hu on 2021-12-16.

Test mode: Transmitting (Pre-scan in the X,Y and Z axes of orientation, the worst case Z-axis of orientation was recorded)

The worst case is as below:

30MHz-10GHz:**Cellular Band (Part 22H)**

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM850								
Low Channel								
961.15	-71.56	201	1.3	H	10	-61.56	-13	48.56
961.15	-75.17	261	1.2	V	11.7	-63.47	-13	50.47
1648.4	-54.6	26	1.5	H	3.5	-51.1	-13	38.1
1648.4	-54.9	159	1.9	V	3.1	-51.8	-13	38.8
2472.6	-40.5	259	1.2	H	7	-33.5	-13	20.5
2472.6	-47.8	302	1.1	V	6	-41.8	-13	28.8
3296.8	-50.9	348	2.1	H	6.4	-44.5	-13	31.5
3296.8	-50.6	179	1.4	V	5.7	-44.9	-13	31.9
Middle Channel								
960.44	-73.85	180	1.2	H	10	-63.85	-13	50.85
960.44	-75.09	102	2	V	11.7	-63.39	-13	50.39
1673.2	-49	99	2.1	H	3.5	-45.5	-13	32.5
1673.2	-50.8	230	1.7	V	3.1	-47.7	-13	34.7
2509.8	-37.3	312	1.6	H	6.2	-31.1	-13	18.1
2509.8	-45.4	328	1.7	V	5.5	-39.9	-13	26.9
3346.4	-52.1	279	1.6	H	6.6	-45.5	-13	32.5
3346.4	-51.2	320	1.6	V	5.4	-45.8	-13	32.8
High Channel								
961.44	-73.40	251	1.9	H	10	-63.40	-13	50.40
961.44	-73.31	95	1.9	V	11.7	-61.61	-13	48.61
1697.6	-51.9	338	1.9	H	4.1	-47.8	-13	34.8
1697.6	-48.6	244	2.2	V	3.1	-45.5	-13	32.5
2546.4	-32	320	1.8	H	6.1	-25.9	-13	12.9
2546.4	-35.7	238	1.5	V	5.8	-29.9	-13	16.9
3395.2	-54.3	155	2.1	H	9	-45.3	-13	32.3
3395.2	-54.1	137	1.6	V	8.1	-46	-13	33

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 5								
Low Channel ((826.4MHz)								
960.58	-72.19	146	1.8	H	10	-62.19	-13	49.19
960.58	-75.68	164	1.1	V	11.7	-63.98	-13	50.98
1652.8	-55.6	350	1.6	H	3.5	-52.1	-13	39.1
1652.8	-55.3	262	1.6	V	3.1	-52.2	-13	39.2
Middle Channel (836.6MHz)								
961.06	-71.66	71	1.7	H	10	-61.66	-13	48.66
961.06	-73.97	53	2.1	V	11.7	-62.27	-13	49.27
1673.2	-49.1	320	1.3	H	3.5	-45.6	-13	32.6
1673.2	-51.6	135	1.7	V	3.1	-48.5	-13	35.5
High Channel (846.6MHz)								
961.16	-72.55	261	1.6	H	10	-62.55	-13	49.55
961.16	-73.46	104	1.7	V	11.7	-61.76	-13	48.76
1693.2	-56.3	112	1.8	H	4.1	-52.2	-13	39.2
1693.2	-55.8	12	2.1	V	3.1	-52.7	-13	39.7

30MHz-20GHz:**PCS Band (Part 24E)**

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM 1900								
Low Channel								
959.33	-72.47	295	1.4	H	10	-62.47	-13	49.47
959.33	-73.06	351	2.1	V	11.7	-61.36	-13	48.36
3700.4	-54.7	75	1.1	H	8.1	-46.6	-13	33.6
3700.4	-54.5	170	1.4	V	7.6	-46.9	-13	33.9
Middle Channel								
959.89	-71.72	6	1.7	H	10	-61.72	-13	48.72
959.89	-74.01	50	1.2	V	11.7	-62.31	-13	49.31
3760	-56	26	1.1	H	8.9	-47.1	-13	34.1
3760	-55.4	268	1.9	V	8	-47.4	-13	34.4
High Channel								
961.16	-72.38	120	2.1	H	10	-62.38	-13	49.38
961.16	-75.35	318	1.4	V	11.7	-63.65	-13	50.65
3819.6	-55.8	236	2	H	8.6	-47.2	-13	34.2
3819.6	-55.1	45	1.9	V	7.8	-47.3	-13	34.3
WCDMA Band 2								
Low Channel (1852.4MHz)								
960.54	-72.44	204	1.8	H	10	-62.44	-13	49.44
960.54	-74.40	7	1.8	V	11.7	-62.70	-13	49.70
3704.8	-54.2	88	1.3	H	8.1	-46.1	-13	33.1
3704.8	-53.2	96	1	V	7.6	-45.6	-13	32.6
Middle Channel (1880MHz)								
961.09	-73.96	1	2.1	H	10	-63.96	-13	50.96
961.09	-74.21	1	1.7	V	11.7	-62.51	-13	49.51
3760	-54.9	335	1.4	H	8.9	-46	-13	33
3760	-53.8	57	1.2	V	8	-45.8	-13	32.8
High Channel (1907.6MHz)								
960.11	-73.62	163	2	H	10	-63.62	-13	50.62
960.11	-74.46	61	1.3	V	11.7	-62.76	-13	49.76
3815.2	-52.4	233	2.2	H	8.6	-43.8	-13	30.8
3815.2	-52.7	286	1.8	V	7.8	-44.9	-13	31.9

30MHz-20GHz:**AWS Band (Part 27E)**

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 4								
Low Channel (1712.4MHz)								
960.01	-72.75	350	1.2	H	10	-62.75	-13	49.75
960.01	-73.16	98	1.9	V	11.7	-61.46	-13	48.46
3424.8	-51.2	259	1.2	H	6.2	-45	-13	32
3424.8	-51	241	1.7	V	5.4	-45.6	-13	32.6
Middle Channel (1732.6MHz)								
960.10	-73.06	63	1.7	H	10	-63.06	-13	50.06
960.10	-73.18	276	2	V	11.7	-61.48	-13	48.48
3465.2	-51.6	40	1.6	H	6.6	-45	-13	32
3465.2	-50.9	106	1.8	V	5.1	-45.8	-13	32.8
High Channel (1752.6MHz)								
961.64	-73.60	58	1.8	H	10	-63.60	-13	50.60
961.64	-73.84	17	2.1	V	11.7	-62.14	-13	49.14
3505.2	-51.7	110	1.3	H	7.8	-43.9	-13	30.9
3505.2	-51.1	131	1.6	V	6.5	-44.6	-13	31.6

LTE Band: (Pre-scan with all the bandwidth, and worst case as below)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 2								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, Low Channel								
960.59	-71.80	259	2	H	10	-61.80	-13	48.80
960.59	-73.01	178	1.8	V	11.7	-61.31	-13	48.31
3701.40	-50.2	177	2.2	H	8.1	-42.1	-13	29.1
3701.40	-47.9	207	1.6	V	7.6	-40.3	-13	27.3
1.4MHz bandwidth, Middle Channel								
962.52	-73.83	60	1.1	H	10	-63.83	-13	50.83
962.52	-73.03	24	1.2	V	11.7	-61.33	-13	48.33
3760.00	-50	287	1.9	H	8.9	-41.1	-13	28.1
3760.00	-48.2	33	1.3	V	8	-40.2	-13	27.2
1.4MHz bandwidth, High Channel								
961.82	-71.34	243	1.7	H	10	-61.34	-13	48.34
961.82	-74.78	283	1.3	V	11.7	-63.08	-13	50.08
3818.60	-46.4	63	2	H	8.6	-37.8	-13	24.8
3818.60	-46.2	76	1.2	V	7.8	-38.4	-13	25.4
Band 4								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, Low Channel								
960.00	-72.06	324	1.1	H	10	-62.06	-13	49.06
960.00	-73.88	20	2	V	11.7	-62.18	-13	49.18
3421.4	-50.9	147	2.1	H	6.2	-44.7	-13	31.7
3421.4	-49.1	173	1.9	V	5.4	-43.7	-13	30.7
1.4MHz bandwidth, Middle Channel								
959.53	-72.93	129	1.7	H	10	-62.93	-13	49.93
959.53	-74.00	122	1.2	V	11.7	-62.30	-13	49.30
3465	-52.1	136	1.4	H	6.6	-45.5	-13	32.5
3465	-51.6	290	1.9	V	6.1	-45.5	-13	32.5
1.4MHz bandwidth, High Channel								
960.40	-73.73	189	1.7	H	10	-63.73	-13	50.73
960.40	-74.64	214	2	V	11.7	-62.94	-13	49.94
3508.6	-52.4	304	1.3	H	7.8	-44.6	-13	31.6
3508.6	-52	316	1.4	V	6.5	-45.5	-13	32.5

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 5								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, Low Channel								
961.20	-73.18	35	1.6	H	10	-63.18	-13	50.18
961.20	-73.92	78	1.3	V	11.7	-62.22	-13	49.22
1649.40	-56.1	272	1	H	3.5	-52.6	-13	39.6
1649.40	-55.8	236	2	V	3.1	-52.7	-13	39.7
1.4MHz bandwidth, Middle Channel								
961.36	-73.75	20	1.7	H	10	-63.75	-13	50.75
961.36	-74.61	28	1.1	V	11.7	-62.91	-13	49.91
1673.00	-49.5	251	1	H	3.5	-46	-13	33
1673.00	-51.8	187	1.7	V	3.1	-48.7	-13	35.7
1.4MHz bandwidth, High Channel								
960.38	-72.44	340	1.2	H	10	-62.44	-13	49.44
960.38	-73.69	104	1	V	11.7	-61.99	-13	48.99
1696.6	-51.1	87	1.1	H	4.1	-47	-13	34
1696.6	-50.9	288	1.5	V	3.1	-47.8	-13	34.8
Band 7								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, Low Channel								
960.96	-71.00	284	1.6	H	10	-61.00	-25	36.00
960.96	-73.72	257	1.4	V	11.7	-62.02	-25	37.02
7507.5	-55.4	260	1.5	H	20.3	-35.1	-25	10.1
7507.5	-58.9	235	1	V	19.9	-39	-25	14
5MHz bandwidth, Middle Channel								
960.03	-72.10	124	2.1	H	10	-62.10	-25	37.10
960.03	-73.45	355	1.4	V	11.7	-61.75	-25	36.75
7605	-57.6	276	1	H	21.2	-36.4	-25	11.4
7605	-61.5	338	1.6	V	20	-41.5	-25	16.5
5MHz bandwidth, High Channel								
959.26	-71.74	63	1	H	10	-61.74	-25	36.74
959.26	-72.37	163	1.7	V	11.7	-60.67	-25	35.67
7702.5	-57.3	326	1.7	H	21.3	-36	-25	11
7702.5	-63	81	1.1	V	21.1	-41.9	-25	16.9

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE BAND 38								
Test frequency range: 30MHz-26.5GHz								
5MHz, Low Channel								
959.56	-71.67	155	1.6	H	10	-61.67	-25	36.67
959.56	-74.34	213	2.1	V	11.7	-62.64	-25	37.64
7717.5	-59.2	248	2.1	H	21.3	-37.9	-25	12.9
7717.5	-63.5	309	1.5	V	21.1	-42.4	-25	17.4
5MHz, Middle Channel								
961.83	-70.60	212	1.7	H	10	-60.60	-25	35.60
961.83	-74.38	309	1.8	V	11.7	-62.68	-25	37.68
7785	-53.9	134	1.5	H	17.9	-36	-25	11
7785	-58.4	108	1.6	V	17.6	-40.8	-25	15.8
5MHz, High Channel								
961.18	-72.11	319	1.1	H	10	-62.11	-25	37.11
961.18	-71.88	181	2.1	V	11.7	-60.18	-25	35.18
7852.5	-53.5	42	1.7	H	18.2	-35.3	-25	10.3
7852.5	-57.8	149	1.3	V	17.6	-40.2	-25	15.2
BAND 41								
Test frequency range: 1-26.5GHz								
5MHz, Low Channel								
962.37	-72.40	340	1.7	H	10	-62.40	-25	37.40
962.37	-72.11	19	1.9	V	11.7	-60.41	-25	35.41
7612.5	-57.2	98	1.6	H	20.3	-36.9	-25	11.9
7612.5	-58.8	125	1.1	V	19.9	-38.9	-25	13.9
5MHz bandwidth, Middle Channel								
961.95	-70.54	349	1.7	H	10	-60.54	-25	35.54
961.95	-73.51	267	2	V	11.7	-61.81	-25	36.81
7785	-55	180	2	H	17.9	-37.1	-25	12.1
7785	-56.9	69	1.7	V	17.6	-39.3	-25	14.3
5MHz bandwidth, High Channel								
959.22	-70.57	71	1.6	H	10	-60.57	-25	35.57
959.22	-72.73	48	1.4	V	11.7	-61.03	-25	36.03
7957.5	-57.9	104	2.1	H	19.7	-38.2	-25	13.2
7957.5	-59.6	8	2.1	V	19	-40.6	-25	15.6

Note:

Absolute Level = Reading Level + Substituted Factor

Substituted Factor contains: SG Level - Cable loss+ Antenna Gain

Margin = Limit- Absolute Level

FCC§ 22.917 (a);§ 24.238 (a); §27.53 (h)(m) - BAND EDGES**Applicable Standard**

According to § 22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

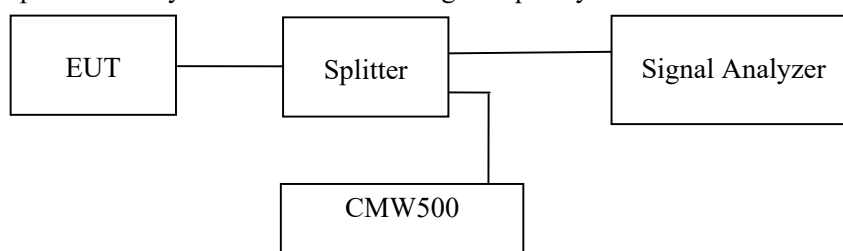
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC §27.53 (h)(m), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

Test Procedure

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

The center of the spectrum analyzer was set to block edge frequency

**Test Data****Environmental Conditions**

Temperature:	27.2 °C
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

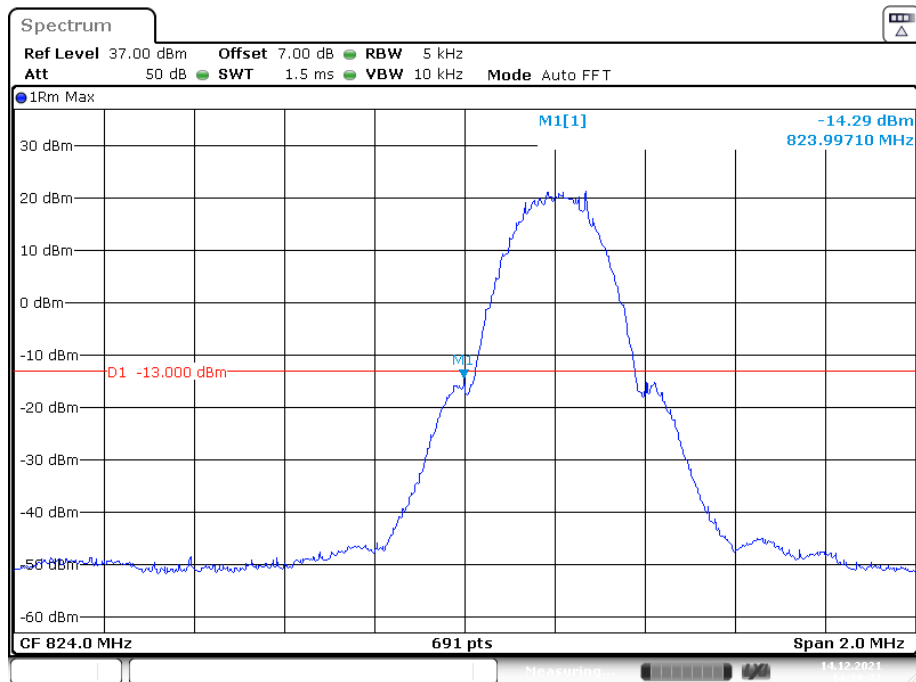
The testing was performed by Fan Yang from 2021-12-13 to 2021-12-15.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

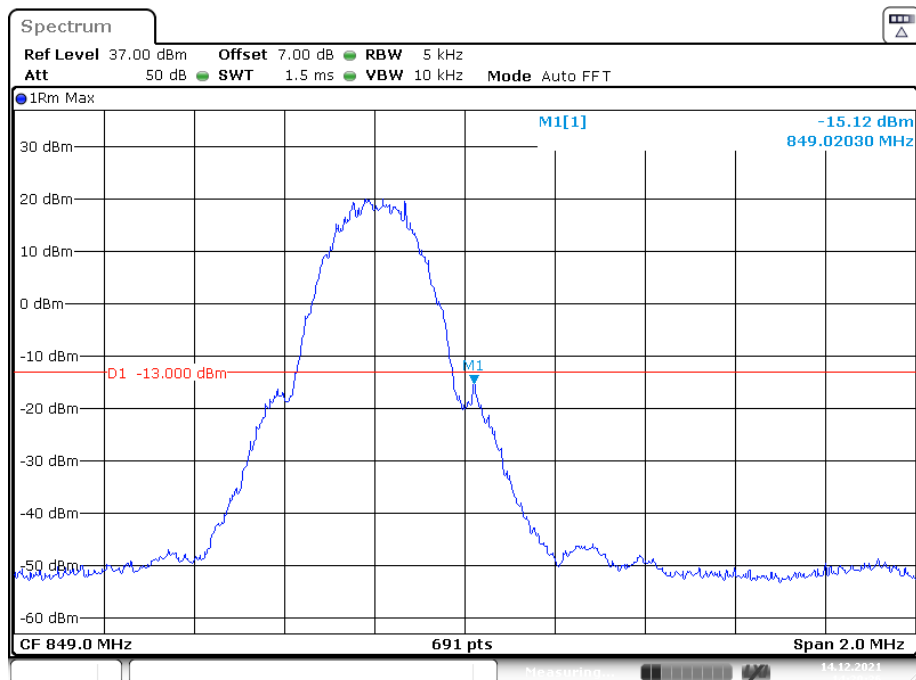
Please refer to the following plots.

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



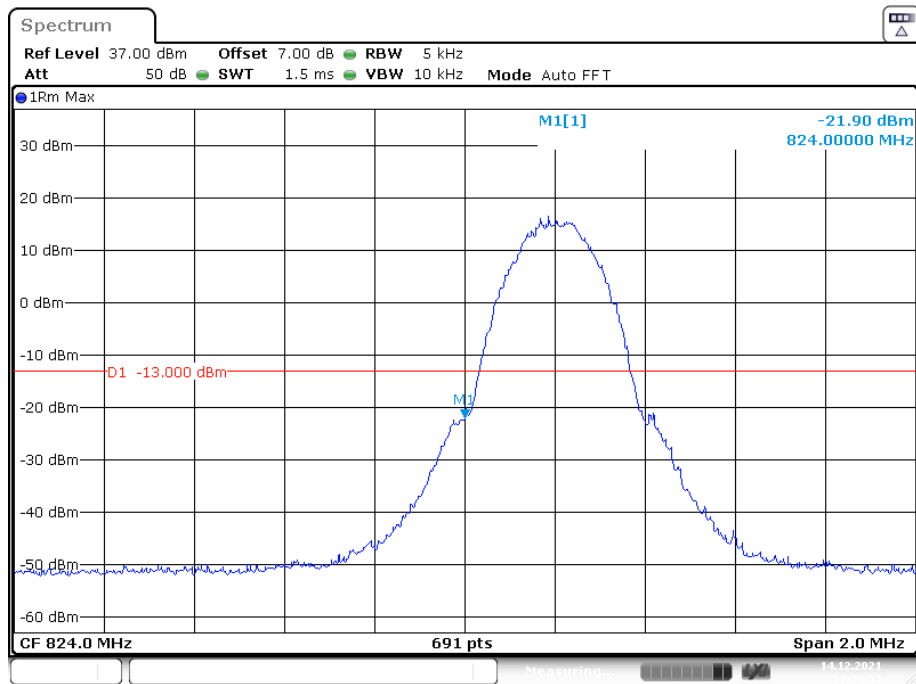
Date: 14.DEC.2021 14:19:33

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

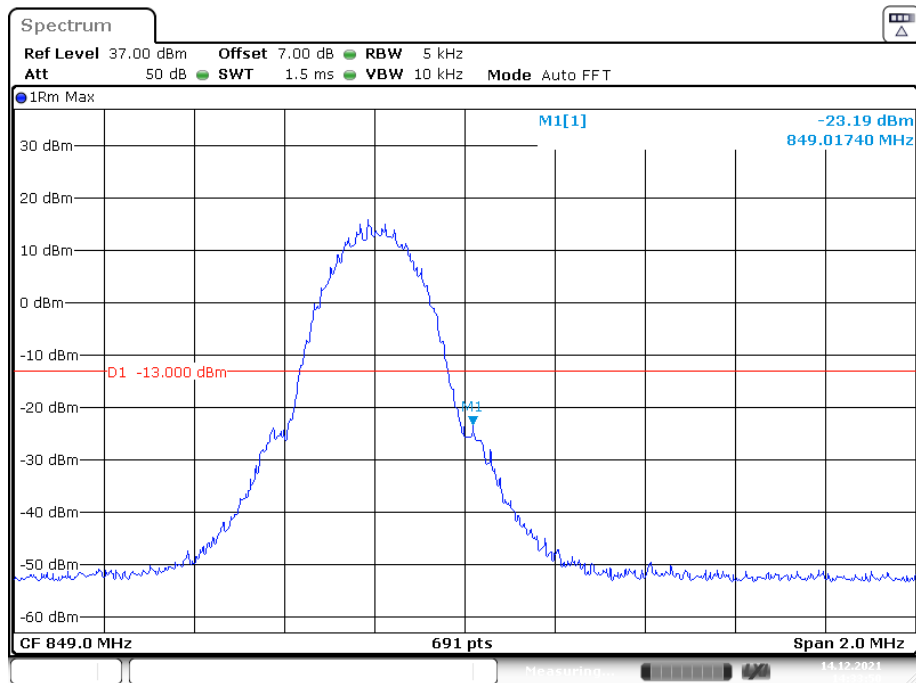


Date: 14.DEC.2021 14:20:36

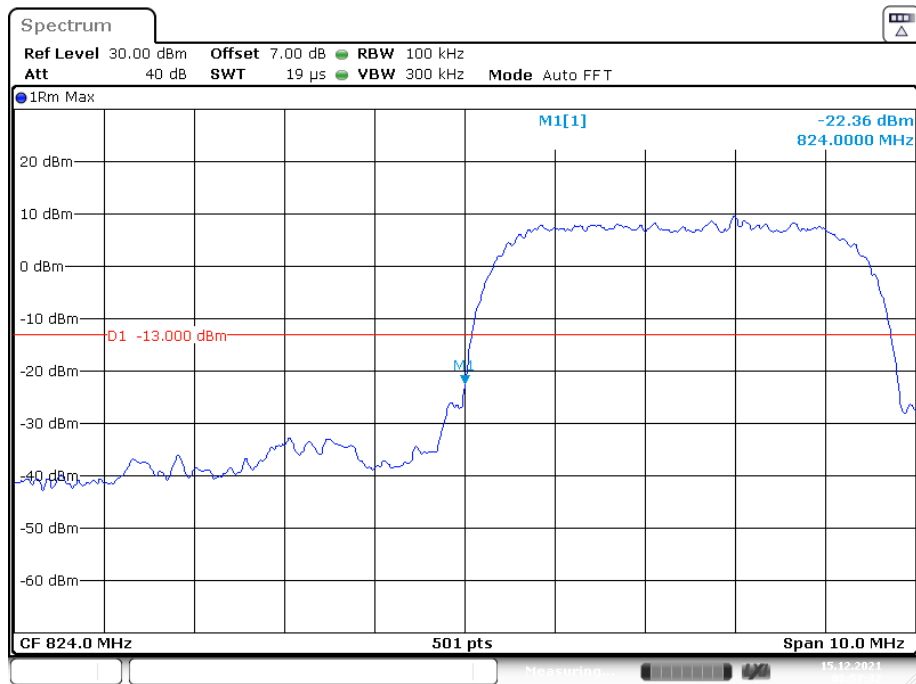
Cellular Band, Left Band Edge for EGPRS (8PSK) Mode



Cellular Band, Right Band Edge for EGPRS (8PSK) Mode

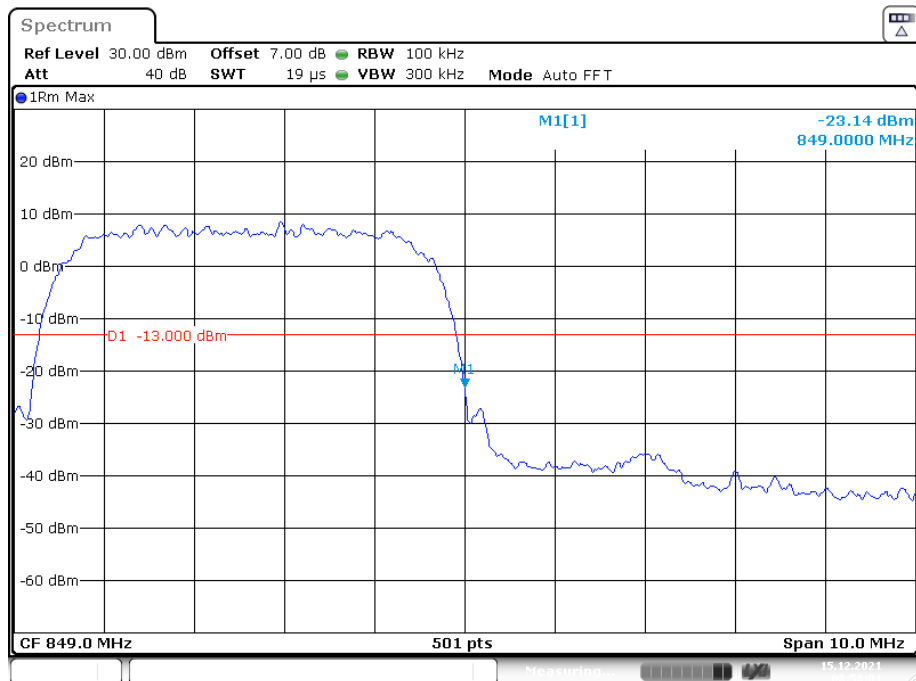


Cellular Band, Left Band Edge for RMC (BPSK) Mode

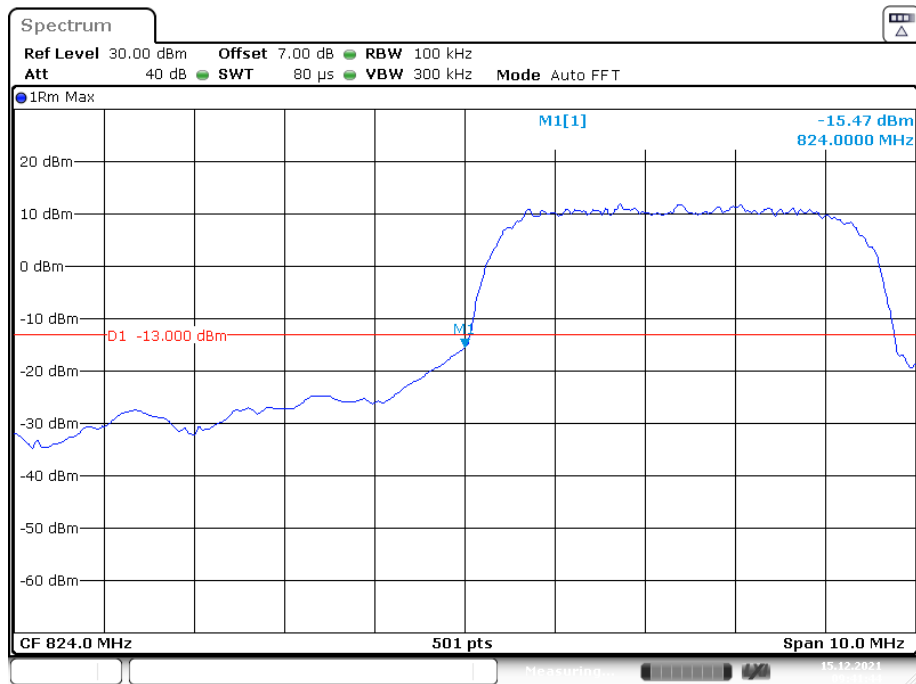


Date: 15.DEC.2021 08:57:32

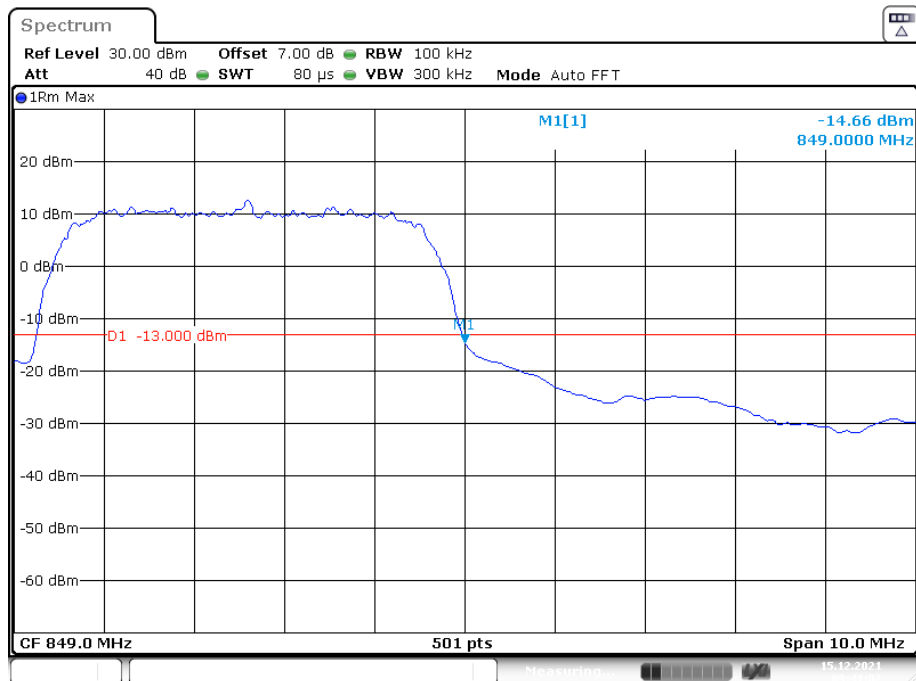
Cellular Band, Right Band Edge for RMC (BPSK) Mode



Date: 15.DEC.2021 08:58:02

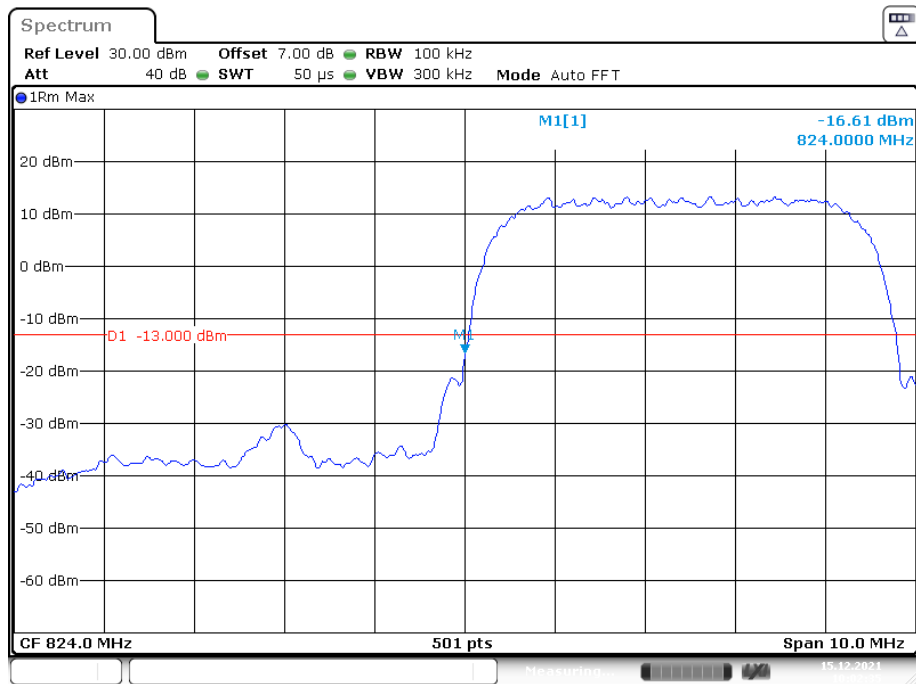
Cellular Band, Left Band Edge for HSDPA(16QAM) Mode

Date: 15.DEC.2021 09:41:45

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

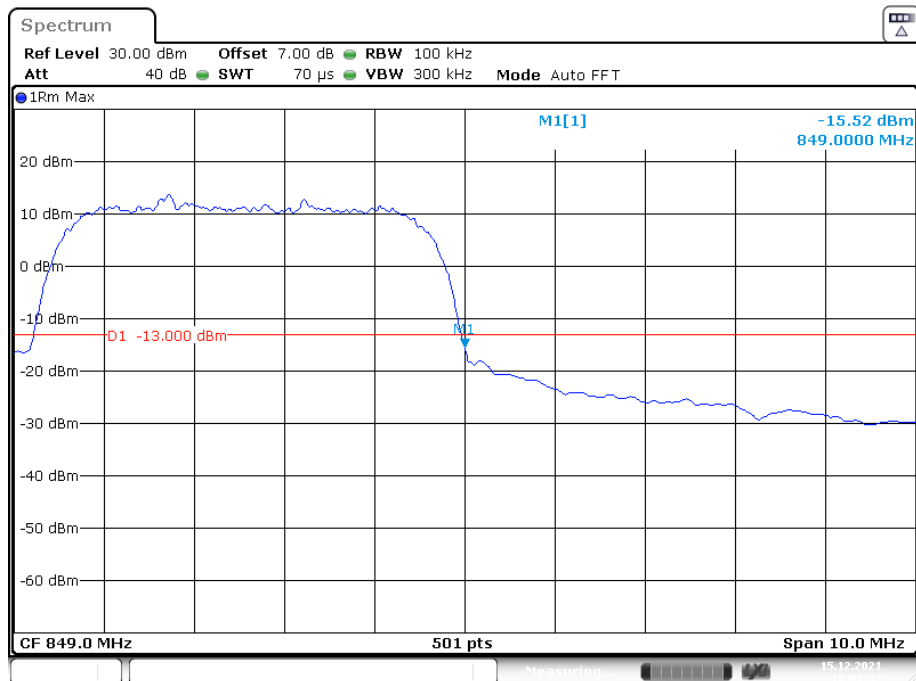
Date: 15.DEC.2021 09:41:03

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



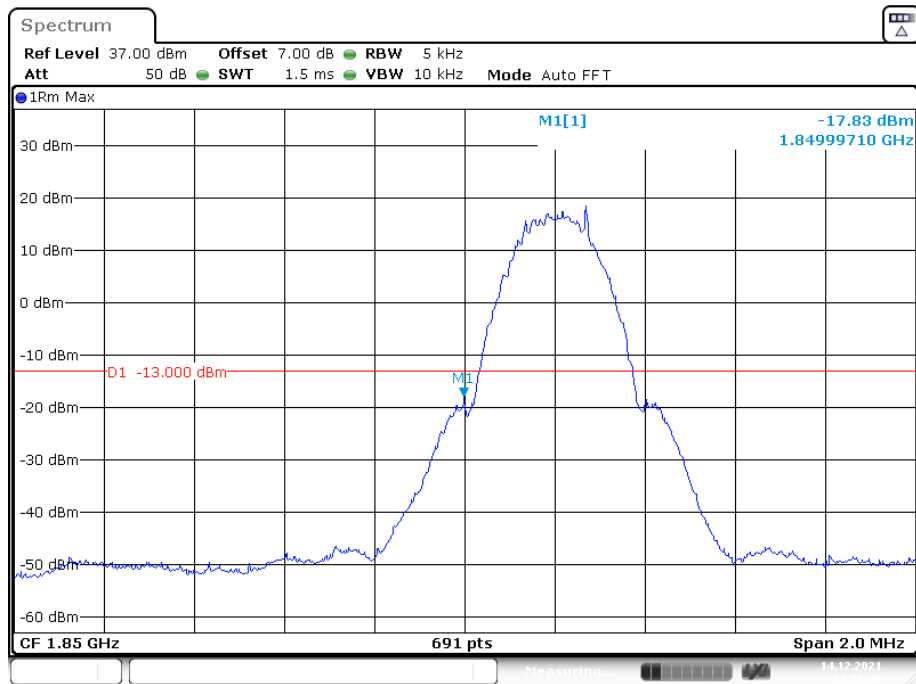
Date: 15.DEC.2021 10:02:35

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



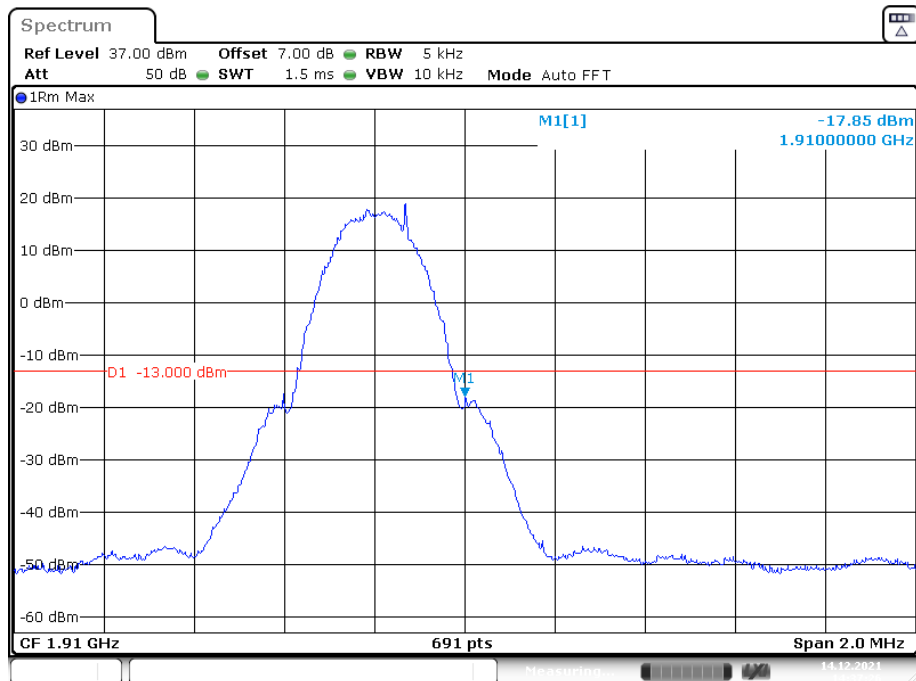
Date: 15.DEC.2021 10:03:32

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



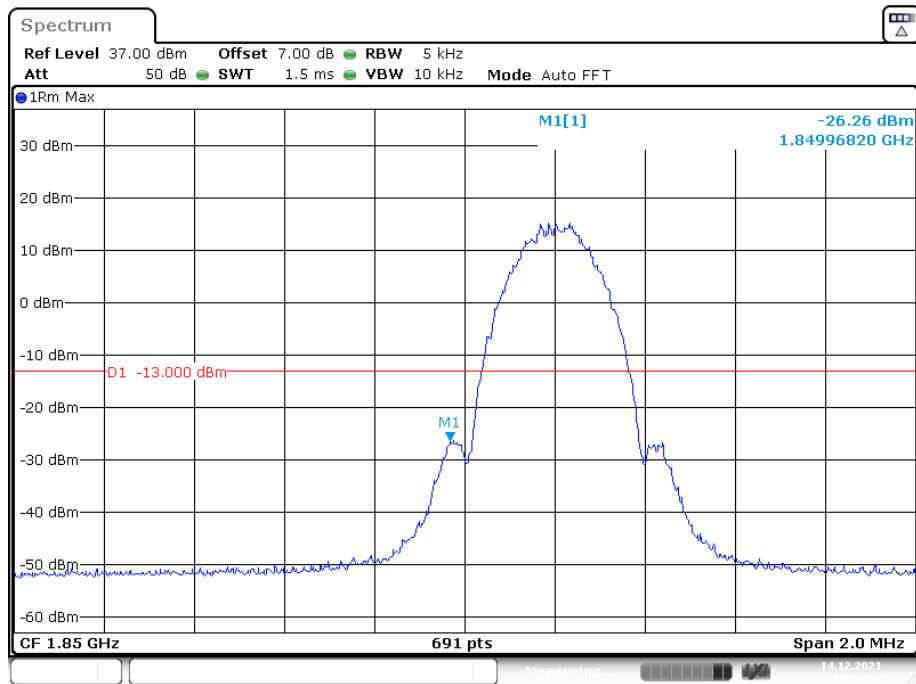
Date: 14.DEC.2021 14:36:40

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



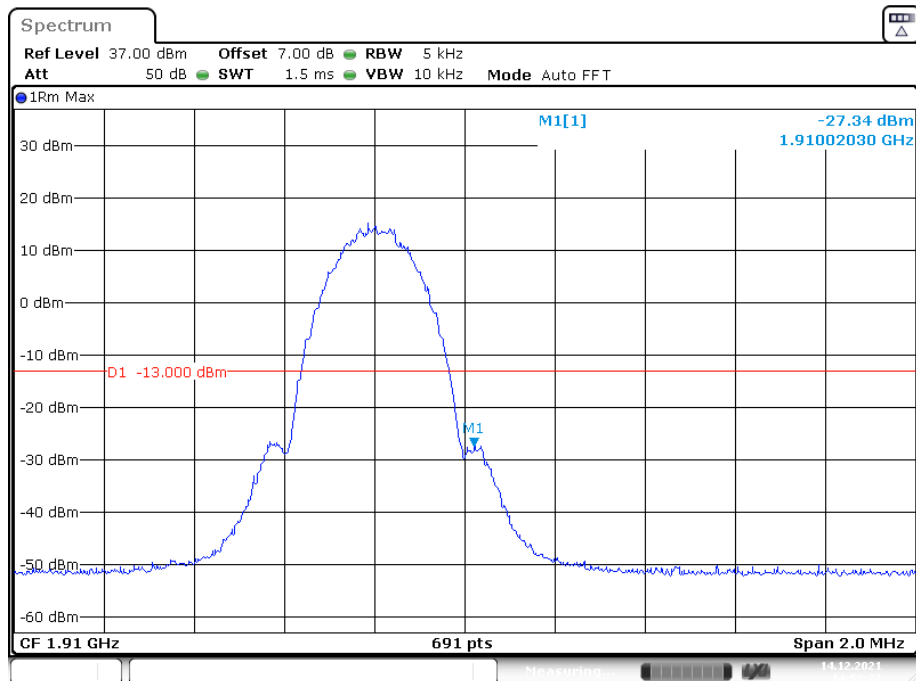
Date: 14.DEC.2021 14:37:26

PCS Band, Left Band Edge for EGPRS (8PSK) Mode



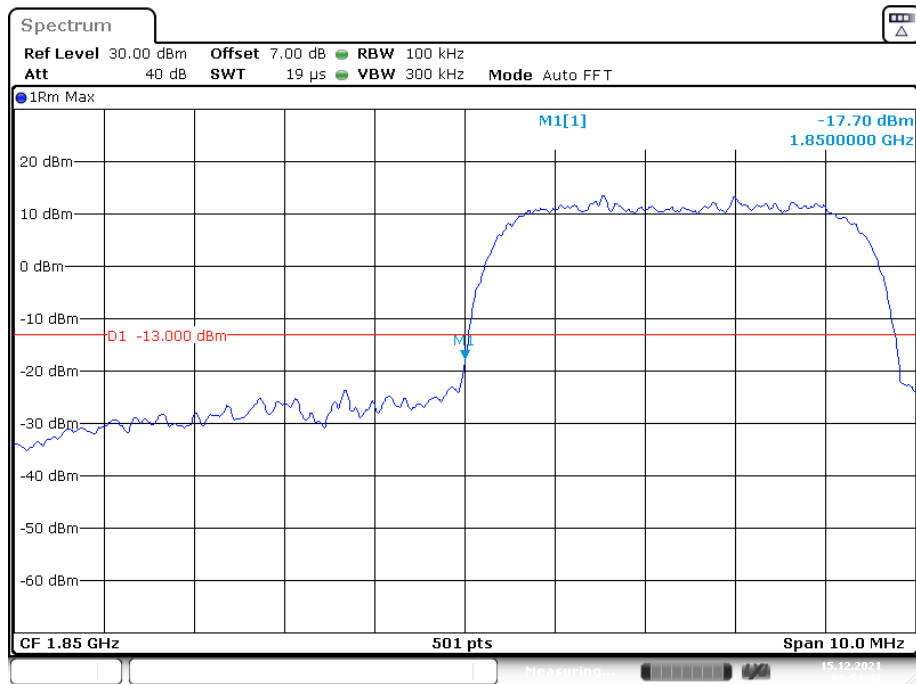
Date: 14.DEC.2021 14:53:12

PCS Band, Right Band Edge for EGPRS (8PSK) Mode



Date: 14.DEC.2021 14:52:27

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



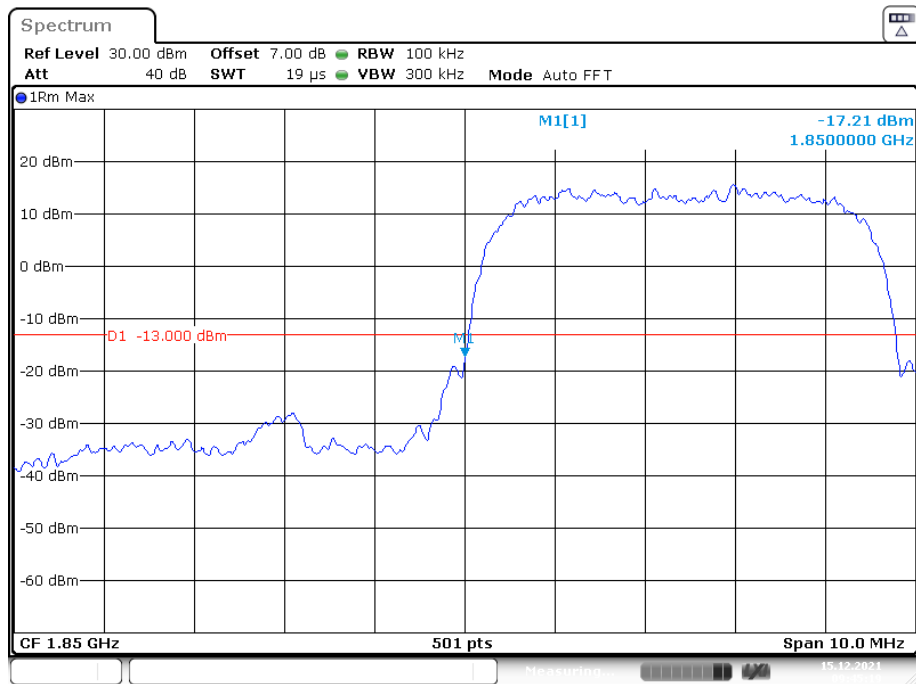
Date: 15.DEC.2021 08:54:49

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



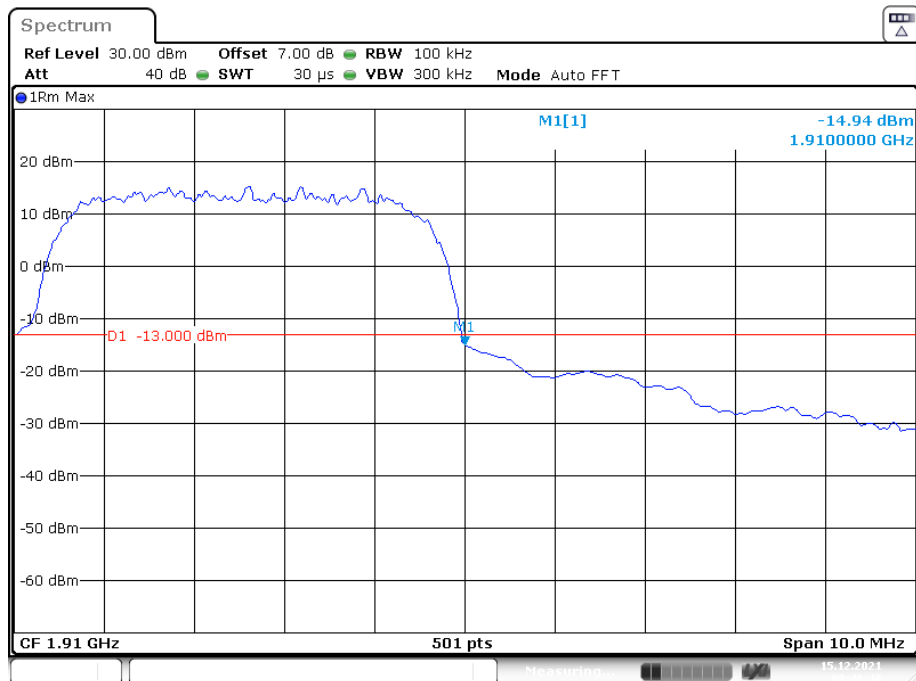
Date: 15.DEC.2021 08:55:37

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



Date: 15.DEC.2021 09:45:19

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



Date: 15.DEC.2021 09:46:48

Spectrum

Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz
 Att 40 dB SWT 19 μ s VBW 300 kHz Mode Auto FFT

● 1Rm Max

M1[1] -16.38 dBm
 1.850000 GHz

D1 -13.000 dBm

CF 1.85 GHz 501 pts Span 10.0 MHz

Measuring...

15-12-2021

Spectrum

Ref Level 30.00 dBm Offset 7.00 dB RBW 100 kHz
 Att 40 dB SWT 19 μ s VBW 300 kHz Mode Auto FFT

● 1Rm Max

M1[1] -15.05 dBm
 1.9100800 GHz

D1 -13.000 dBm

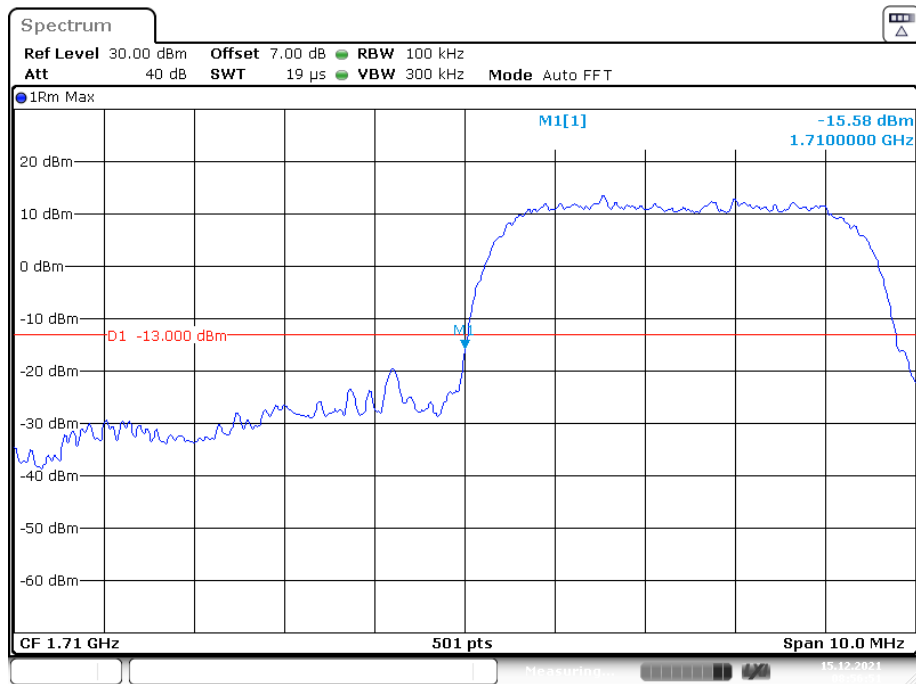
CF 1.91 GHz 501 pts Span 10.0 MHz

Measuring...

15.12.2021

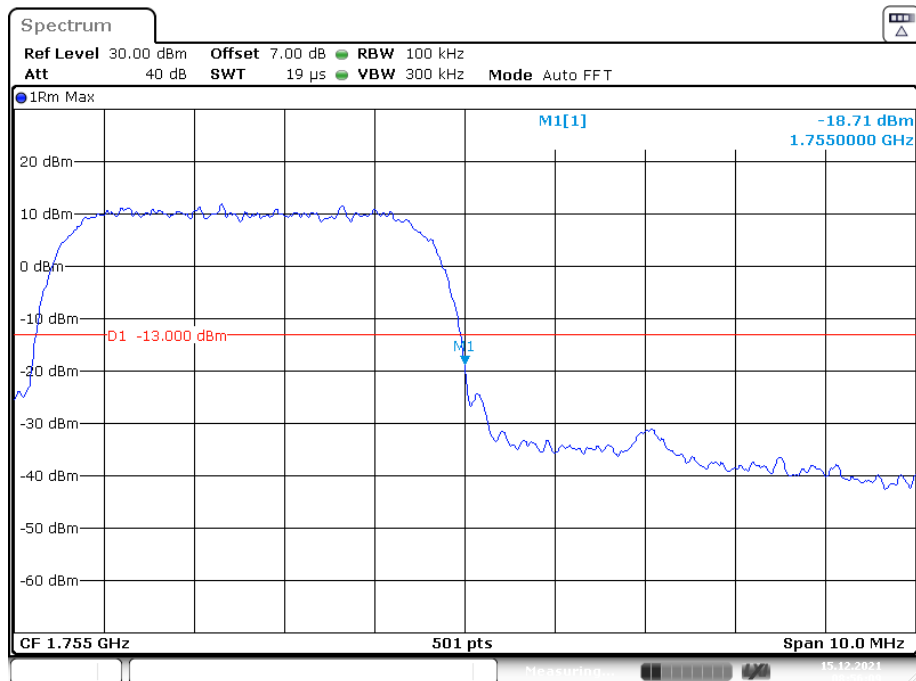
FCC -2G,3G,4G

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



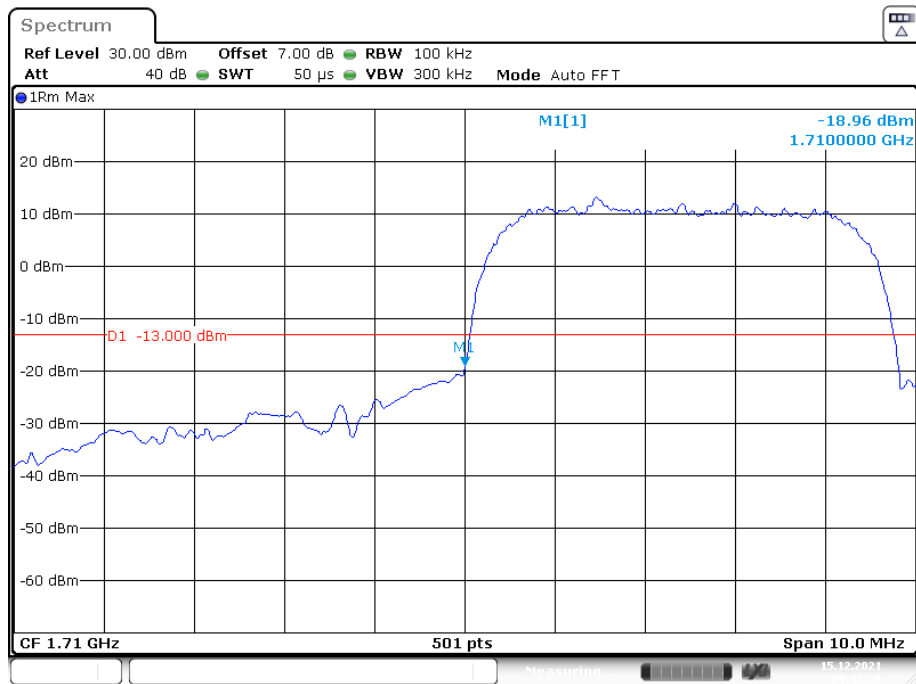
Date: 15.DEC.2021 08:56:51

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



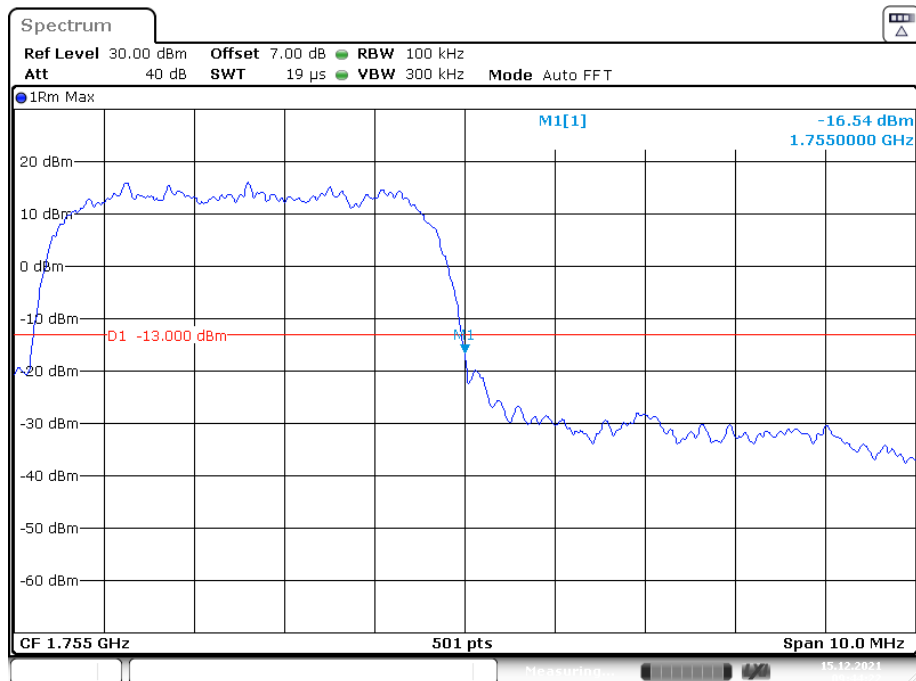
Date: 15.DEC.2021 08:56:09

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

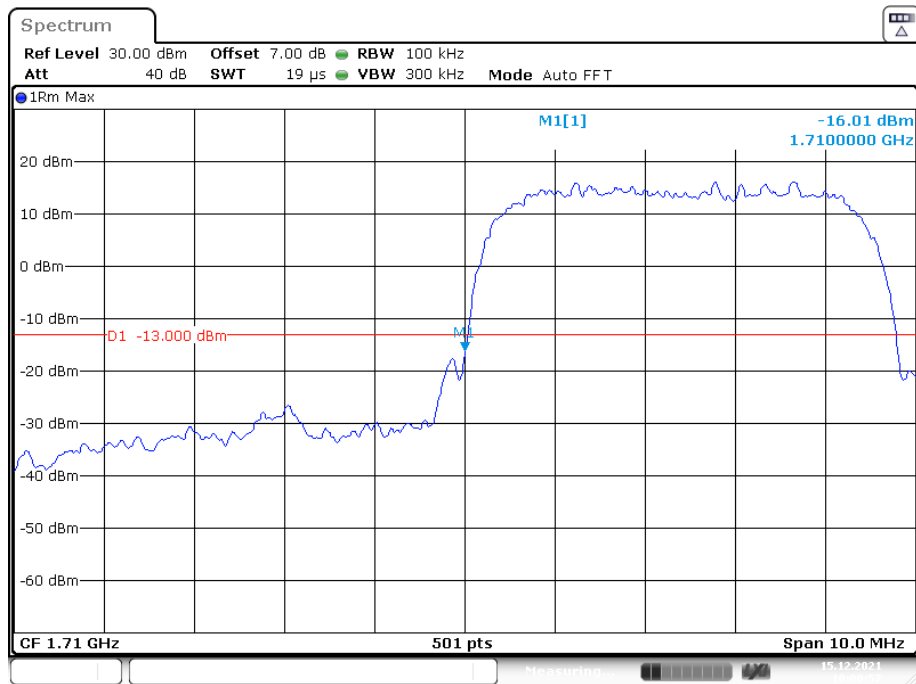
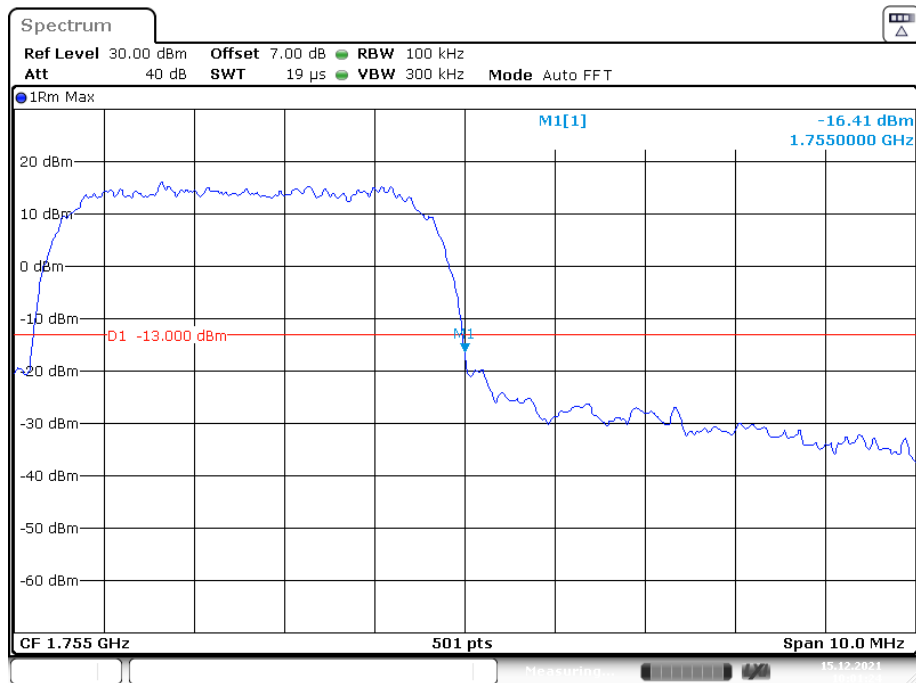


Date: 15.DEC.2021 09:43:21

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



Date: 15.DEC.2021 09:44:22

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

The test plots of LTE bands please refer to the Appendix C.

FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055, §22.355, §24.235&§27.54.

According to FCC §2.1055, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

According to §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table below:

Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency Range (MHz)	Base, fixed (ppm)	Mobile ≤ 3 watts (ppm)	Mobile > 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929.	5.0	N/A	N/A
929 to 960.	1.5	N/A	N/A
2110 to 2220	10.0	N/A	N/A

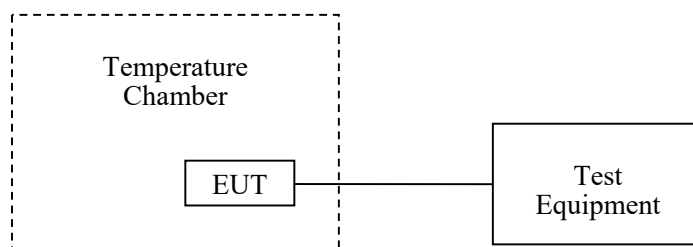
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external AC power supply and the RF output was connected to communication test set via feed-through attenuators. The EUT was placed inside the temperature chamber. The AC leads and RF output cable exited the chamber through an opening made for the purpose.

After the temperature stabilized for approximately 20 minutes, the frequency output was recorded from the communication test set.

Frequency Stability vs. Voltage: For hand carried, battery powered equipment; reduce primary supply voltage to the battery operating end point which shall be specified by the manufacturer.



Test Data**Environmental Conditions**

Temperature:	27.2 °C
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Fan Yang from 2021-12-13 to 2021-12-15.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Cellular Band (Part 22H)**GSM Mode**

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	4	0.0048	2.5
-20		8	0.0096	2.5
-10		4	0.0048	2.5
0		6	0.0072	2.5
10		3	0.0036	2.5
20		5	0.0060	2.5
30		6	0.0072	2.5
40		4	0.0048	2.5
50		7	0.0084	2.5
20	L.V.	2	0.0024	2.5
	H.V.	3	0.0036	2.5

EGPRS Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	8	0.0096	2.5
-20		6	0.0072	2.5
-10		-3	-0.0036	2.5
0		-4	-0.0048	2.5
10		6	0.0072	2.5
20		-1	-0.0012	2.5
30		7	0.0084	2.5
40		3	0.0036	2.5
50		-2	-0.0024	2.5
20	L.V.	4	0.0048	2.5
	H.V.	3	0.0036	2.5

WCDMA Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-8.45	-0.0101	2.5
-20		-9.14	-0.0109	2.5
-10		-10.12	-0.0121	2.5
0		-11.23	-0.0134	2.5
10		-9.56	-0.0114	2.5
20		-8.42	-0.0101	2.5
30		-10.29	-0.0123	2.5
40		-9.37	-0.0112	2.5
50		-8.59	-0.0103	2.5
20	L.V.	-9.12	-0.0109	2.5
	H.V.	-9.42	-0.0113	2.5

PCS Band (Part 24E)**GSM Mode**

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	13	0.0069	pass
-20		14	0.0074	pass
-10		16	0.0085	pass
0		17	0.0090	pass
10		22	0.0117	pass
20		26	0.0138	pass
30		23	0.0122	pass
40		14	0.0074	pass
50		25	0.0133	pass
20	L.V.	16	0.0085	pass
	H.V.	17	0.0090	pass

EDGE Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	24	0.0128	pass
-20		16	0.0085	pass
-10		18	0.0096	pass
0		15	0.0080	pass
10		24	0.0128	pass
20		37	0.0197	pass
30		13	0.0069	pass
40		15	0.0080	pass
50		17	0.0090	pass
20	L.V.	23	0.0122	pass
	H.V.	24	0.0128	pass

WCDMA Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-9.23	-0.0049	pass
-20		-9.12	-0.0049	pass
-10		-8.64	-0.0046	pass
0		-8.56	-0.0046	pass
10		-9.78	-0.0052	pass
20		-9.81	-0.0052	pass
30		-10.23	-0.0054	pass
40		-11.32	-0.0060	pass
50		-9.87	-0.0053	pass
20	L.V.	-10.23	-0.0054	pass
	H.V.	-10.36	-0.0055	pass

AWS Band (Part 27)

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.0173	1754.9711	1710	1755
-20		1710.0165	1754.9713	1710	1755
-10		1710.0156	1754.9724	1710	1755
0		1710.0152	1754.9732	1710	1755
10		1710.0122	1754.9731	1710	1755
20		1710.0132	1754.9725	1710	1755
30		1710.0133	1754.9721	1710	1755
40		1710.0127	1754.9732	1710	1755
50		1710.0124	1754.9731	1710	1755
20	L.V.	1710.0132	1754.9729	1710	1755
	H.V.	1710.0143	1754.9722	1710	1755

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, $f_0=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	NV	-7.40	-0.0039	pass
-20		-9.97	-0.0053	pass
-10		-6.13	-0.0033	pass
0		6.17	0.0033	pass
10		7.92	0.0042	pass
20		6.46	0.0034	pass
30		-6.52	-0.0035	pass
40		7.18	0.0038	pass
50		-9.69	-0.0052	pass
20	LV	-8.17	-0.0043	pass
	HV	-7.05	-0.0038	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1710.1325	1754.8733	1710	1755
-20		1710.1278	1754.8736	1710	1755
-10		1710.1155	1754.8635	1710	1755
0		1710.1148	1754.8728	1710	1755
10		1710.1147	1754.8754	1710	1755
20		1710.1146	1754.8751	1710	1755
30		1710.1134	1754.8733	1710	1755
40		1710.1132	1754.8728	1710	1755
50		1710.1125	1754.8718	1710	1755
20	L.V.	1710.1127	1754.8727	1710	1755
	H.V.	1710.1059	1754.8741	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_o=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-3.40	-0.0041	2.5
-20		-6.97	-0.0083	2.5
-10		-5.50	-0.0066	2.5
0		6.06	0.0072	2.5
10		9.80	0.0117	2.5
20		5.03	0.0060	2.5
30		-6.62	-0.0079	2.5
40		-8.73	-0.0104	2.5
50		-7.05	-0.0084	2.5
20	L.V.	8.99	0.0107	2.5
	H.V.	-7.17	-0.0086	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2500.8788	2569.9828	2500	2570
-20		2500.8757	2569.9944	2500	2570
-10		2500.8781	2569.9839	2500	2570
0		2500.8746	2569.9728	2500	2570
10		2500.7982	2569.9825	2500	2570
20		2500.7833	2569.9424	2500	2570
30		2500.7754	2569.9336	2500	2570
40		2500.7643	2569.9458	2500	2570
50		2500.7561	2569.9437	2500	2570
20	L.V.	2500.7528	2569.9422	2500	2570
	H.V.	2500.7457	2569.9341	2500	2570

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2570.8355	2619.9833	2570	2620
-20		2570.8274	2619.8722	2570	2620
-10		2570.7243	2619.7639	2570	2620
0		2570.6352	2619.6551	2570	2620
10		2570.5456	2619.5425	2570	2620
20		2570.3932	2619.4342	2570	2620
30		2570.2837	2619.3221	2570	2620
40		2570.1725	2619.2123	2570	2620
50		2570.1633	2619.1388	2570	2620
20	L.V.	2570.1521	2619.1279	2570	2620
	H.V.	2570.1027	2619.1155	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.9752	2654.9855	2535	2655
-20		2535.8671	2654.8852	2535	2655
-10		2535.7564	2654.7762	2535	2655
0		2535.6423	2654.6654	2535	2655
10		2535.5329	2654.5549	2535	2655
20		2535.4228	2654.4434	2535	2655
30		2535.3155	2654.3352	2535	2655
40		2535.2157	2654.2231	2535	2655
50		2535.2452	2654.1064	2535	2655
20	L.V.	2535.8621	2654.0033	2535	2655
	H.V.	2535.8520	2654.0017	2535	2655

Note: The applicant declared the operating frequency range is 2535-2655MHz.

16QAM:**Band 2:**

10.0 MHz Middle Channel, $f_0=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-8.86	-0.0047	pass
-20		-6.68	-0.0036	pass
-10		9.77	0.0052	pass
0		-7.62	-0.0041	pass
10		-9.91	-0.0053	pass
20		-9.82	-0.0052	pass
30		-6.68	-0.0036	pass
40		-8.85	-0.0047	pass
50		5.67	0.0030	pass
20	L.V.	6.05	0.0032	pass
	H.V.	7.52	0.0040	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.2953	1754.7678	1710	1755
-20		1710.2947	1754.7569	1710	1755
-10		1710.2751	1754.7672	1710	1755
0		1710.2656	1754.7454	1710	1755
10		1710.2634	1754.7436	1710	1755
20		1710.2645	1754.7627	1710	1755
30		1710.2571	1754.7624	1710	1755
40		1710.2657	1754.7655	1710	1755
50		1710.2635	1754.7756	1710	1755
20	L.V.	1710.2626	1754.7532	1710	1755
	H.V.	1710.2714	1754.7527	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-3.88	-0.0046	2.5
-20		8.10	0.0097	2.5
-10		-8.59	-0.0103	2.5
0		9.33	0.0112	2.5
10		-6.94	-0.0083	2.5
20		7.54	0.0090	2.5
30		6.43	0.0077	2.5
40		-6.17	-0.0074	2.5
50		-6.44	-0.0077	2.5
20	L.V.	6.34	0.0076	2.5
	H.V.	-6.89	-0.0082	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	2500.8466	2569.8375	2500	2570
-20		2500.8424	2569.8552	2500	2570
-10		2500.7642	2569.8427	2500	2570
0		2500.7257	2569.8536	2500	2570
10		2500.6329	2569.8278	2500	2570
20		2500.6232	2569.7826	2500	2570
30		2500.6353	2569.7836	2500	2570
40		2500.6325	2569.8414	2500	2570
50		2500.6223	2569.8452	2500	2570
20	L.V.	2500.6234	2569.8354	2500	2570
	H.V.	2500.6142	2569.8236	2500	2570

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2570.9868	2619.9828	2570	2620
-20		2570.8922	2619.8769	2570	2620
-10		2570.7824	2619.7691	2570	2620
0		2570.6732	2619.6557	2570	2620
10		2570.5631	2619.5493	2570	2620
20		2570.4525	2619.4342	2570	2620
30		2570.3413	2619.3295	2570	2620
40		2570.2374	2619.2114	2570	2620
50		2570.1282	2619.1123	2570	2620
20	L.V.	2570.2156	2619.8723	2570	2620
	H.V.	2570.2132	2619.7647	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.9452	2654.9657	2535	2655
-20		2535.8443	2654.8584	2535	2655
-10		2535.7376	2654.7485	2535	2655
0		2535.6267	2654.6372	2535	2655
10		2535.5136	2654.5283	2535	2655
20		2535.4174	2654.4184	2535	2655
30		2535.2989	2654.3586	2535	2655
40		2535.1887	2654.1987	2535	2655
50		2535.1822	2654.1883	2535	2655
20	L.V.	2535.1614	2654.0762	2535	2655
	H.V.	2535.0573	2654.0345	2535	2655

Note: The applicant declared the operating frequency range is 2535-2655MHz

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