

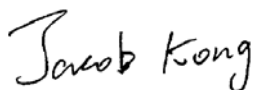
FCC PART 27
FCC PART 22H, PART 24E
TEST REPORT

For

Shenzhen CWELL Electronic Technology Co., Ltd.

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Shenzhen, Guangdong, China.

FCC ID: 2A2CNV909

Report Type: Original Report	Product Type: 4G flip phone
Report Number: SZ1210727-31380E-RF-00B	
Report Date: 2021-09-01	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	4G flip phone
Tested Model	V909T
Multiple Model	V909L, V909H
Model Differences	Refer to the DoS letter
Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA B2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA B5: 824-849MHz(TX); 869-894MHz(RX) WCDMA B4: 1710- 1755 MHz(TX); 2110-2155MHz(RX) LTE B2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE B4: 1710- 1755 MHz(TX); 2110-2155MHz(RX) LTE B5: 824-849MHz(TX); 869-894MHz(RX) LTE B7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE B12: 699-716 MHz(TX); 729 – 746 MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 41: 2555-2655Hz(TX/RX) LTE Band 66: 1710-1780MHz(TX); 2110-2180MHz(RX)
Modulation Technique	2G: GMSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850: -1.72dBi PCS1900: 1.21dBi WCDMA Band 2/ LTE Band 2: 1.21dBi WCDMA Band 4/LTE Band 4/Band 66: 1.21dBi WCDMA Band 5/LTE Band 5: -1.72dBi LTE Band 7: 1.68dBi LTE Band 12/ LTE Band 17: -2.11dBi LTE Band 41: 1.68dBi (provided by the applicant)
Voltage Range	DC 3.7V from battery or DC 5.0V from adapter
Date of Test	2021-08-12 to 2021-08-28
Sample number	SZ1210727-31380E-RF-S1(Assigned by BACL, Shenzhen)
Received date	2021-07-27
Sample/EUT Status	Good condition
Normal/Extreme Condition	L.V.: Low Voltage 3.6V _{DC} N.V.: Normal Voltage 3.7V _{DC} H.V.: High Voltage 4.2V _{DC} The extreme condition was declared by the applicant
Adapter information	Input: AC 100-240V Output: DC 5V, 500mA

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. Each test item follows test standards and with no deviation.

Measurement Uncertainty

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

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

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
LTE B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE B17	5	706.5	710	713.5
	10	709	710	711

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
LTE B41	5	2557.5	2605	2652.5
	10	2560	2605	2650
	15	2562.5	2605	2647.5
	20	2565	2605	2645
LTE B66	1.4	1710.7	1745	1779.3
	3	1711.5	1745	1778.5
	5	1712.5	1745	1777.5
	10	1715	1745	1775
	15	1717.5	1745	1772.5
	20	1720	1745	1770

Equipment Modifications

No modification was made to the EUT.

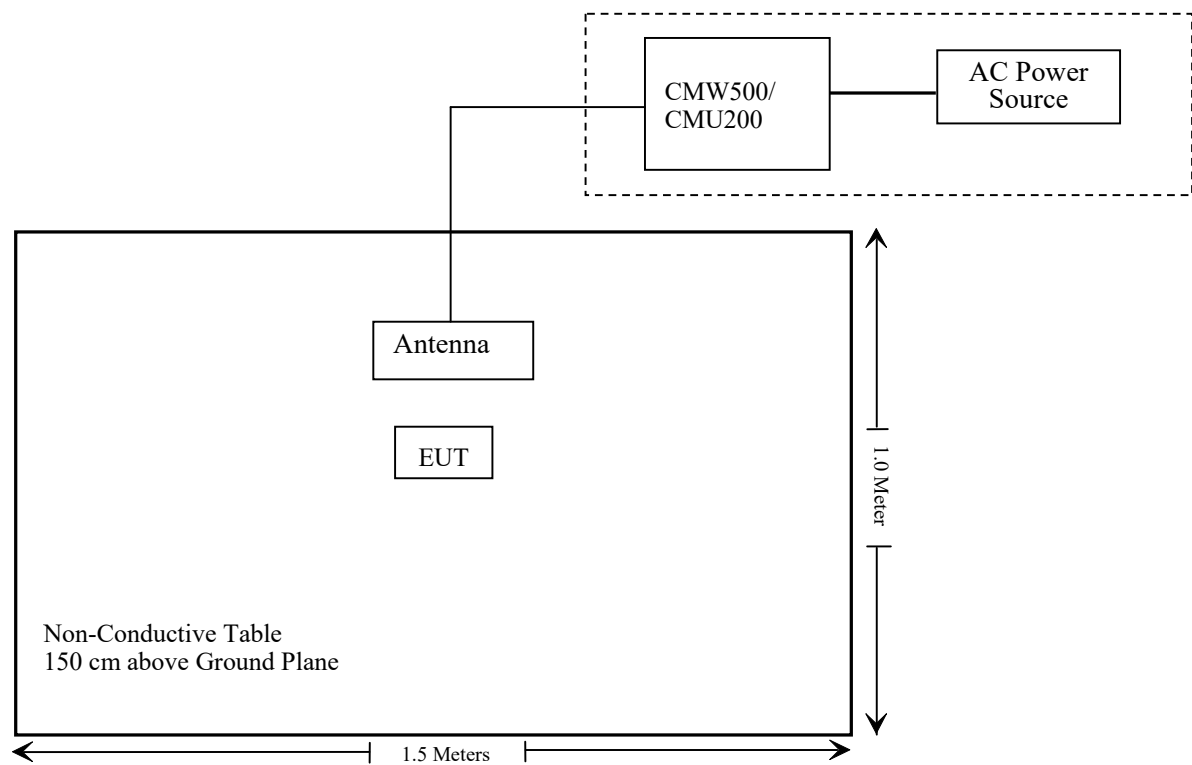
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Universal Radio Communication Tester	CMW500	1201.002K50-146520-wh
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500

Support Cable Description

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

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 , §2.1093	RF Exposure (SAR)	Compliant
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (c) (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(c)(h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2021/07/06	2022/07/05
Sonoma instrument	Pre-amplifier	310 N	186238	2021/08/03	2022/08/02
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2020/12/22	2023/12/21
COM-POWER	Dipole Antenna	AD-100	721027	NCR	NCR
Unknown	Cable 2	RF Cable 2	F-03-EM197	2020/11/29	2021/11/28
Unknown	Cable	Chamber Cable 1	F-03-EM236	2021/08/03	2022/08/02
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2021/07/06	2022/07/05
COM-POWER	Pre-amplifier	PA-122	181919	2020/11/29	2021/11/28
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/28	2021/11/27
Sunol Sciences	Horn Antenna	3115	9107-3694	2021/01/15	2024/01/14
A.H.System	Horn Antenna	SAS-200/571	135	2021/07/14	2024/07/13
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2020/11/29	2021/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2020/11/29	2021/11/28
MICRO-TRONICS	Passband filter	HPM50111	F-19-EM006	2021/04/20	2022/04/20
Unknown	High Pass filter	1.3GHz	101120	2021/04/20	2022/04/20
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-01 1304	2020/12/06	2023/12/05
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-02 1304	2020/12/06	2023/12/05
Agilent	Signal Generator	N5183A	MY51040755	2020/12/29	2021/12/28
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2021/07/06	2022/07/05
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500	2021/07/06	2022/07/05

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2021/07/06	2022/07/05
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2021/04/02	2022/04/01
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2021/07/06	2022/07/05
Unknown	RF Cable	Unknown	2301 276	2020/11/29	2021/11/28
Unknown	RF Cable	Unknown	DLO J5/W6102	2020/11/29	2021/11/28
Weinschel	Power divider	1515	MY628	2020/11/29	2021/11/28
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500	2021/07/06	2022/07/05
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
ESPEC	Temperature & Humidity Chamber	EL-10KA	9107726	2021/02/23	2022/02/22
Fluke	Digital Multimeter	287	19000011	2021/02/22	2022/02/21

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: SZ1210727-31380E-SA.

FCC §2.1047 - MODULATION CHARACTERISTIC

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

FCC § 2.1046, § 22.913 (a) & § 24.232 (c); §27.50 (c) (d) (h) - RF OUTPUT POWER

Applicable Standard

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

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

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

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

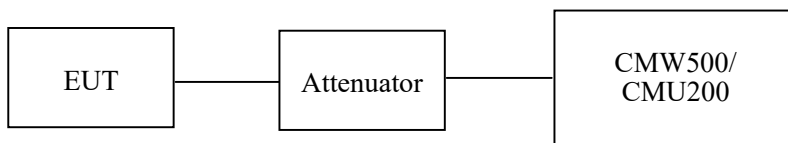
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1780MHz.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2500-2570MHz & 2496-2690MHz.

Test Procedure

Conducted method:

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



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	57 %
ATM Pressure:	101.0 kPa

The testing was performed by Nancy Wang from 2021-08-21 to 2021-08-24.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

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

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.23	29.36	38.45
	190	836.6	33.16	29.29	38.45
	251	848.8	33.03	29.16	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	33.25	31.05	29.05	27.71	29.38	27.18	25.18	23.84	38.45
	190	836.6	33.21	31.05	29.06	27.75	29.34	27.18	25.19	23.88	38.45
	251	848.8	33.11	30.94	28.96	27.72	29.24	27.07	25.09	23.85	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		22.61	22.52	22.50	18.74	18.65	18.63
	HSDPA	1	21.93	21.81	22.06	18.06	17.94	18.19
		2	21.86	21.73	22.00	17.99	17.86	18.13
		3	21.79	21.65	21.94	17.92	17.78	18.07
		4	21.72	21.57	21.88	17.85	17.70	18.01
	HSUPA	1	21.93	21.80	21.82	18.06	17.93	17.95
		2	21.86	21.72	21.76	17.99	17.85	17.89
		3	21.79	21.64	21.70	17.92	17.77	17.83
		4	21.72	21.56	21.64	17.85	17.69	17.77
		5	21.65	21.48	21.58	17.78	17.61	17.71

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For GSM850 / WCDMA Band5: Antenna Gain = -1.72dBi = -3.87dBd (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	30.15	31.36	33
	661	1880.0	30.20	31.41	33
	810	1909.8	30.18	31.39	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	30.14	28.01	26.27	24.23	31.35	29.22	27.48	25.44	33
	661	1880.0	30.20	27.74	25.97	24.68	31.41	28.95	27.18	25.89	33
	810	1909.8	30.16	27.46	25.72	24.30	31.37	28.67	26.93	25.51	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		22.68	22.69	22.77	23.89	23.90	23.98
	HSDPA	1	21.65	22.19	22.40	22.86	23.4	23.61
		2	21.59	22.13	22.34	22.80	23.34	23.55
		3	21.53	22.07	22.28	22.74	23.28	23.49
		4	21.47	22.01	22.22	22.68	23.22	23.43
	HSUPA	1	21.67	22.27	22.47	22.88	23.48	23.68
		2	21.61	22.21	22.41	22.82	23.42	23.62
		3	21.55	22.15	22.35	22.76	23.36	23.56
		4	21.49	22.09	22.29	22.70	23.30	23.50
		5	21.43	22.03	22.23	22.64	23.24	23.44

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

For PCS1900 / WCDMA Band2: Antenna Gain = 1.21dBi

Limit: EIRP ≤ 33dBm

AWS Band

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		22.72	22.71	22.67	23.93	23.92	23.88
	HSDPA	1	22.85	21.08	21.62	24.06	22.29	22.83
		2	22.79	21.02	21.56	24.00	22.23	22.77
		3	22.73	20.96	21.50	23.94	22.17	22.71
		4	22.67	20.90	21.44	23.88	22.11	22.65
	HSUPA	1	22.69	21.85	22.43	23.90	23.06	23.64
		2	22.63	21.79	22.37	23.84	23.00	23.58
		3	22.57	21.73	22.31	23.78	22.94	23.52
		4	22.51	21.67	22.25	23.72	22.88	23.46
		5	22.45	21.61	22.19	23.66	22.82	23.40

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

For Band4: Antenna Gain = 1.21dBi

Limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.21	13
	Middle	3.19	13
	High	3.41	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	4.15	13
	Middle	4.27	13
	High	4.29	13
HSDPA (16QAM)	Low	4.20	13
	Middle	4.98	13
	High	4.82	13
HSUPA (BPSK)	Low	4.57	13
	Middle	4.66	13
	High	4.67	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.35	13
	Middle	3.26	13
	High	3.17	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	4.25	13
	Middle	4.27	13
	High	4.91	13
HSDPA (16QAM)	Low	4.66	13
	Middle	4.12	13
	High	4.45	13
HSUPA (BPSK)	Low	4.69	13
	Middle	4.77	13
	High	4.82	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	4.14	13
	Middle	4.19	13
	High	4.95	13
HSDPA (16QAM)	Low	4.66	13
	Middle	4.03	13
	High	4.48	13
HSUPA (BPSK)	Low	4.74	13
	Middle	4.52	13
	High	4.99	13

LTE Band 2

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.66	23.57	23.54	24.87	24.78	24.75
		RB1#3	23.64	23.57	23.49	24.85	24.78	24.70
		RB1#5	23.72	23.58	23.52	24.93	24.79	24.73
		RB3#0	23.65	23.63	23.60	24.86	24.84	24.81
		RB3#3	23.62	23.69	23.64	24.83	24.90	24.85
		RB6#0	22.57	22.51	22.59	23.78	23.72	23.80
	16QAM	RB1#0	22.79	22.29	23.25	24.00	23.50	24.46
		RB1#3	22.85	22.37	23.22	24.06	23.58	24.43
		RB1#5	22.83	22.39	23.24	24.04	23.60	24.45
		RB3#0	22.79	22.72	22.64	24.00	23.93	23.85
		RB3#3	22.80	22.75	22.69	24.01	23.96	23.90
		RB6#0	21.89	21.72	21.97	23.10	22.93	23.18
3.0	QPSK	RB1#0	23.50	23.51	23.47	24.71	24.72	24.68
		RB1#8	23.52	23.48	23.51	24.73	24.69	24.72
		RB1#14	23.54	23.48	23.47	24.75	24.69	24.68
		RB6#0	22.58	22.63	22.55	23.79	23.84	23.76
		RB6#9	22.63	22.60	22.56	23.84	23.81	23.77
		RB15#0	22.64	22.61	22.60	23.85	23.82	23.81
	16QAM	RB1#0	22.87	23.11	22.38	24.08	24.32	23.59
		RB1#8	22.80	23.16	22.30	24.01	24.37	23.51
		RB1#14	22.78	23.12	22.32	23.99	24.33	23.53
		RB6#0	21.83	21.80	21.82	23.04	23.01	23.03
		RB6#9	21.81	21.94	22.04	23.02	23.15	23.25
		RB15#0	21.76	21.58	21.88	22.97	22.79	23.09

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.59	23.70	23.60	24.80	24.91	24.81
		RB1#13	23.51	23.69	23.62	24.72	24.90	24.83
		RB1#24	23.50	23.69	23.49	24.71	24.90	24.70
		RB15#0	22.67	22.55	22.62	23.88	23.76	23.83
		RB15#10	22.59	22.52	22.59	23.80	23.73	23.80
		RB25#0	22.52	22.58	22.59	23.73	23.79	23.80
	16QAM	RB1#0	21.80	22.71	22.27	23.01	23.92	23.48
		RB1#13	21.84	22.72	22.26	23.05	23.93	23.47
		RB1#24	21.79	22.78	22.27	23.00	23.99	23.48
		RB15#0	21.70	21.53	21.58	22.91	22.74	22.79
		RB15#10	21.74	21.74	21.91	22.95	22.95	23.12
		RB25#0	21.69	21.63	21.50	22.90	22.84	22.71
10.0	QPSK	RB1#0	23.58	23.64	23.63	24.79	24.85	24.84
		RB1#25	23.55	23.63	23.65	24.76	24.84	24.86
		RB1#49	23.59	23.63	23.59	24.80	24.84	24.80
		RB25#0	22.72	22.66	22.62	23.93	23.87	23.83
		RB25#25	22.70	22.63	22.68	23.91	23.84	23.89
		RB50#0	22.68	22.57	22.62	23.89	23.78	23.83
	16QAM	RB1#0	23.04	22.72	22.09	24.25	23.93	23.30
		RB1#25	23.04	22.72	22.11	24.25	23.93	23.32
		RB1#49	23.00	22.74	22.04	24.21	23.95	23.25
		RB25#0	21.72	21.76	21.79	22.93	22.97	23.00
		RB25#25	21.90	21.72	21.77	23.11	22.93	22.98
		RB50#0	21.65	21.73	21.62	22.86	22.94	22.83

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.59	23.57	23.51	24.80	24.78	24.72
		RB1#38	23.57	23.48	23.58	24.78	24.69	24.79
		RB1#74	23.59	23.56	23.48	24.80	24.77	24.69
		RB36#0	22.66	22.63	22.60	23.87	23.84	23.81
		RB36#39	22.60	22.63	22.61	23.81	23.84	23.82
		RB75#0	22.71	22.58	22.56	23.92	23.79	23.77
	16QAM	RB1#0	22.83	22.80	22.98	24.04	24.01	24.19
		RB1#38	22.80	22.80	23.00	24.01	24.01	24.21
		RB1#74	23.04	22.81	22.96	24.25	24.02	24.17
		RB36#0	21.69	21.65	21.91	22.90	22.86	23.12
		RB36#39	21.66	21.61	21.60	22.87	22.82	22.81
		RB75#0	21.76	21.70	21.75	22.97	22.91	22.96
20.0	QPSK	RB1#0	23.69	23.62	23.65	24.90	24.83	24.86
		RB1#50	23.70	23.64	23.73	24.91	24.85	24.94
		RB1#99	23.78	23.57	23.71	24.99	24.78	24.92
		RB50#0	22.63	22.66	22.60	23.84	23.87	23.81
		RB50#50	22.66	22.59	22.67	23.87	23.80	23.88
		RB100#0	22.71	22.50	22.51	23.92	23.71	23.72
	16QAM	RB1#0	22.60	22.56	23.39	23.81	23.77	24.60
		RB1#50	22.60	22.48	23.31	23.81	23.69	24.52
		RB1#99	22.54	22.53	23.29	23.75	23.74	24.50
		RB50#0	21.78	21.66	21.68	22.99	22.87	22.89
		RB50#50	21.75	21.89	21.61	22.96	23.10	22.82
		RB100#0	21.71	21.63	21.87	22.92	22.84	23.08

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

For Band2: Antenna Gain = 1.21dBi

Limit: EIRP ≤ 33dBm

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.26	4.99	5.02	13	Pass
QPSK (100RB Size)	5.01	5.36	5.25	13	Pass
16QAM (1RB Size)	4.22	4.36	5.25	13	Pass
16QAM (100RB Size)	5.52	5.97	5.36	13	Pass

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.05	22.99	23.09	24.26	24.20	24.30
		RB1#3	23.01	23.07	23.16	24.22	24.28	24.37
		RB1#5	22.99	23.01	23.13	24.20	24.22	24.34
		RB3#0	23.05	23.04	23.03	24.26	24.25	24.24
		RB3#3	23.11	23.06	23.02	24.32	24.27	24.23
		RB6#0	21.96	22.09	21.97	23.17	23.30	23.18
	16QAM	RB1#0	22.78	22.71	21.86	23.99	23.92	23.07
		RB1#3	22.81	22.75	21.83	24.02	23.96	23.04
		RB1#5	22.80	22.77	21.83	24.01	23.98	23.04
		RB3#0	22.11	21.87	21.95	23.32	23.08	23.16
		RB3#3	22.18	21.91	21.92	23.39	23.12	23.13
		RB6#0	21.30	21.40	21.27	22.51	22.61	22.48
3.0	QPSK	RB1#0	22.99	22.96	23.05	24.20	24.17	24.26
		RB1#8	23.01	22.97	23.17	24.22	24.18	24.38
		RB1#14	22.98	23.05	23.15	24.19	24.26	24.36
		RB6#0	22.05	22.04	21.97	23.26	23.25	23.18
		RB6#9	21.93	22.08	22.02	23.14	23.29	23.23
		RB15#0	22.04	22.03	22.07	23.25	23.24	23.28
	16QAM	RB1#0	22.46	22.68	21.94	23.67	23.89	23.15
		RB1#8	22.47	22.82	21.96	23.68	24.03	23.17
		RB1#14	22.40	22.83	21.86	23.61	24.04	23.07
		RB6#0	20.95	21.45	21.40	22.16	22.66	22.61
		RB6#9	20.93	21.44	21.32	22.14	22.65	22.53
		RB15#0	21.12	21.30	21.10	22.33	22.51	22.31

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.04	23.07	22.91	24.25	24.28	24.12
		RB1#13	23.02	23.07	22.97	24.23	24.28	24.18
		RB1#24	22.93	23.10	22.90	24.14	24.31	24.11
		RB15#0	22.08	22.03	22.00	23.29	23.24	23.21
		RB15#10	21.93	22.10	22.09	23.14	23.31	23.30
		RB25#0	22.00	21.97	21.98	23.21	23.18	23.19
	16QAM	RB1#0	21.11	22.10	21.53	22.32	23.31	22.74
		RB1#13	21.04	22.20	21.45	22.25	23.41	22.66
		RB1#24	21.06	22.20	21.52	22.27	23.41	22.73
		RB15#0	21.17	21.17	21.01	22.38	22.38	22.22
		RB15#10	21.09	21.19	21.04	22.30	22.40	22.25
		RB25#0	21.19	21.36	20.82	22.40	22.57	22.03
10.0	QPSK	RB1#0	22.86	23.10	23.09	24.07	24.31	24.30
		RB1#25	22.81	23.16	23.05	24.02	24.37	24.26
		RB1#49	22.88	23.16	23.09	24.09	24.37	24.30
		RB25#0	21.95	21.89	22.05	23.16	23.10	23.26
		RB25#25	21.96	22.05	22.05	23.17	23.26	23.26
		RB50#0	21.91	22.07	22.04	23.12	23.28	23.25
	16QAM	RB1#0	22.21	22.07	22.19	23.42	23.28	23.40
		RB1#25	22.09	22.25	21.61	23.30	23.46	22.82
		RB1#49	22.18	22.24	21.59	23.39	23.45	22.80
		RB25#0	20.97	21.50	21.50	22.18	22.71	22.71
		RB25#25	21.34	21.19	21.13	22.55	22.40	22.34
		RB50#0	21.07	21.43	20.98	22.28	22.64	22.19

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	22.88	23.17	23.09	24.09	24.38	24.30
		RB1#38	22.87	23.14	23.10	24.08	24.35	24.31
		RB1#74	22.96	23.22	23.15	24.17	24.43	24.36
		RB36#0	22.01	22.04	22.07	23.22	23.25	23.28
		RB36#39	22.11	22.04	22.04	23.32	23.25	23.25
		RB75#0	22.02	22.03	21.95	23.23	23.24	23.16
	16QAM	RB1#0	22.21	22.15	22.18	23.42	23.36	23.39
		RB1#38	22.18	22.22	22.25	23.39	23.43	23.46
		RB1#74	22.21	22.16	22.18	23.42	23.37	23.39
		RB36#0	21.17	21.09	21.00	22.38	22.30	22.21
		RB36#39	21.09	21.18	21.00	22.30	22.39	22.21
		RB75#0	21.42	21.33	21.34	22.63	22.54	22.55
20.0	QPSK	RB1#0	23.16	22.95	23.05	24.37	24.16	24.26
		RB1#50	23.08	23.03	23.10	24.29	24.24	24.31
		RB1#99	23.10	23.18	23.13	24.31	24.39	24.34
		RB50#0	22.01	21.90	21.96	23.22	23.11	23.17
		RB50#50	22.00	21.96	21.93	23.21	23.17	23.14
		RB100#0	21.94	22.09	21.99	23.15	23.30	23.20
	16QAM	RB1#0	22.23	22.06	22.62	23.44	23.27	23.83
		RB1#50	22.00	22.07	22.64	23.21	23.28	23.85
		RB1#99	21.99	22.30	22.67	23.20	23.51	23.88
		RB50#0	21.11	21.26	20.95	22.32	22.47	22.16
		RB50#50	21.10	20.98	20.98	22.31	22.19	22.19
		RB100#0	21.06	21.19	21.08	22.27	22.40	22.29

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

For Band4: Antenna Gain = 1.21dBi

Limit: EIRP ≤ 30dBm

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.25	4.90	6.04	13	Pass
QPSK (100RB Size)	5.11	4.93	4.82	13	Pass
16QAM (1RB Size)	5.56	6.25	4.99	13	Pass
16QAM (100RB Size)	5.94	6.10	5.61	13	Pass

LTE Band 5

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	23.67	23.52	23.70	19.80	19.65	19.83
		RB1#3	23.69	23.43	23.73	19.82	19.56	19.86
		RB1#5	23.68	23.45	23.83	19.81	19.58	19.96
		RB3#0	23.75	23.47	23.71	19.88	19.60	19.84
		RB3#3	23.79	23.42	23.86	19.92	19.55	19.99
		RB6#0	22.69	22.97	22.52	18.82	19.10	18.65
	16QAM	RB1#0	23.23	23.07	22.33	19.36	19.20	18.46
		RB1#3	23.16	23.59	22.35	19.29	19.72	18.48
		RB1#5	23.27	23.58	22.37	19.40	19.71	18.50
		RB3#0	22.85	22.87	22.68	18.98	19.00	18.81
		RB3#3	22.82	22.80	22.61	18.95	18.93	18.74
		RB6#0	21.66	21.99	21.86	17.79	18.12	17.99
3.0	QPSK	RB1#0	23.57	23.48	23.58	19.70	19.61	19.71
		RB1#8	23.65	23.42	23.63	19.78	19.55	19.76
		RB1#14	23.59	23.35	23.78	19.72	19.48	19.91
		RB6#0	22.66	22.43	22.66	18.79	18.56	18.79
		RB6#9	22.56	22.85	22.61	18.69	18.98	18.74
		RB15#0	22.73	22.88	22.48	18.86	19.01	18.61
	16QAM	RB1#0	22.47	22.75	23.33	18.60	18.88	19.46
		RB1#8	22.42	23.16	23.33	18.55	19.29	19.46
		RB1#14	22.29	23.18	23.22	18.42	19.31	19.35
		RB6#0	21.73	21.90	21.69	17.86	18.03	17.82
		RB6#9	21.82	21.84	21.79	17.95	17.97	17.92
		RB15#0	21.57	21.97	21.74	17.70	18.10	17.87

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	23.65	23.60	23.45	19.78	19.73	19.58
		RB1#13	23.50	23.41	23.62	19.63	19.54	19.75
		RB1#24	23.48	23.58	23.72	19.61	19.71	19.85
		RB15#0	22.78	22.48	22.90	18.91	18.61	19.03
		RB15#10	22.63	22.87	22.68	18.76	19.00	18.81
		RB25#0	22.61	22.90	22.56	18.74	19.03	18.69
	16QAM	RB1#0	21.91	22.54	22.47	18.04	18.67	18.60
		RB1#13	21.69	22.98	22.27	17.82	19.11	18.40
		RB1#24	21.74	22.77	22.29	17.87	18.90	18.42
		RB15#0	21.62	21.77	21.90	17.75	17.90	18.03
		RB15#10	21.66	21.81	21.73	17.79	17.94	17.86
		RB25#0	21.74	21.94	21.51	17.87	18.07	17.64
10.0	QPSK	RB1#0	23.72	23.58	23.44	19.85	19.71	19.57
		RB1#25	23.53	23.53	23.60	19.66	19.66	19.73
		RB1#49	23.61	23.75	23.78	19.74	19.88	19.91
		RB25#0	22.47	22.53	22.58	18.60	18.66	18.71
		RB25#25	22.74	22.62	22.62	18.87	18.75	18.75
		RB50#0	22.64	22.98	22.57	18.77	19.11	18.70
	16QAM	RB1#0	23.17	22.81	22.06	19.30	18.94	18.19
		RB1#25	22.87	23.04	21.99	19.00	19.17	18.12
		RB1#49	23.22	22.67	22.15	19.35	18.80	18.28
		RB25#0	21.62	22.08	22.12	17.75	18.21	18.25
		RB25#25	21.56	22.04	21.69	17.69	18.17	17.82
		RB50#0	21.60	22.04	21.46	17.73	18.17	17.59

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band5: Antenna Gain = -1.72dBi = -3.87dBd (0dBd=2.15dBi)
 Limit: ERP ≤ 38.45dBm

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.88	6.76	6.04	13	Pass
QPSK (50RB Size)	4.87	5.26	4.93	13	Pass
16QAM (1RB Size)	4.98	5.55	4.79	13	Pass
16QAM (50RB Size)	6.01	5.66	6.26	13	Pass

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.17	21.83	22.13	24.85	23.51	23.81
		RB1#13	23.19	22.56	23.15	24.87	24.24	24.83
		RB1#24	23.20	22.62	23.10	24.88	24.30	24.78
		RB15#0	22.27	22.23	22.47	23.95	23.91	24.15
		RB15#10	22.16	22.28	22.50	23.84	23.96	24.18
		RB25#0	22.10	22.23	22.47	23.78	23.91	24.15
	16QAM	RB1#0	21.55	21.84	22.13	23.23	23.52	23.81
		RB1#13	21.59	22.32	22.16	23.27	24.00	23.84
		RB1#24	21.54	22.38	22.16	23.22	24.06	23.84
		RB15#0	21.32	21.29	21.66	23.00	22.97	23.34
		RB15#10	21.35	21.35	21.64	23.03	23.03	23.32
		RB25#0	21.40	21.39	21.45	23.08	23.07	23.13
10.0	QPSK	RB1#0	23.09	21.59	21.69	24.77	23.27	23.37
		RB1#25	23.14	22.44	22.38	24.82	24.12	24.06
		RB1#49	23.18	23.32	23.46	24.86	25.00	25.14
		RB25#0	22.16	21.99	21.97	23.84	23.67	23.65
		RB25#25	22.22	22.35	22.53	23.90	24.03	24.21
		RB50#0	22.24	22.31	22.45	23.92	23.99	24.13
	16QAM	RB1#0	22.41	21.54	21.60	24.09	23.22	23.28
		RB1#25	22.40	22.39	22.01	24.08	24.07	23.69
		RB1#49	22.37	22.48	22.01	24.05	24.16	23.69
		RB25#0	21.36	21.43	21.76	23.04	23.11	23.44
		RB25#25	21.41	21.53	21.78	23.09	23.21	23.46
		RB50#0	21.40	21.47	21.60	23.08	23.15	23.28

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.08	21.39	22.29	24.76	23.07	23.97
		RB1#38	23.06	22.41	21.91	24.74	24.09	23.59
		RB1#74	22.94	23.42	23.35	24.62	25.10	25.03
		RB36#0	22.25	21.83	22.00	23.93	23.51	23.68
		RB36#39	22.22	22.44	22.50	23.90	24.12	24.18
		RB75#0	22.33	22.23	22.29	24.01	23.91	23.97
	16QAM	RB1#0	22.55	21.39	22.53	24.23	23.07	24.21
		RB1#38	22.65	22.36	22.15	24.33	24.04	23.83
		RB1#74	22.64	22.70	22.96	24.32	24.38	24.64
		RB36#0	21.41	21.47	21.65	23.09	23.15	23.33
		RB36#39	21.41	21.53	21.66	23.09	23.21	23.34
		RB75#0	21.33	21.50	21.61	23.01	23.18	23.29
20.0	QPSK	RB1#0	23.24	21.37	23.27	24.92	23.05	24.95
		RB1#50	23.28	22.34	21.74	24.96	24.02	23.42
		RB1#99	22.34	23.46	23.68	24.02	25.14	25.36
		RB50#0	22.28	21.65	22.33	23.96	23.33	24.01
		RB50#50	22.22	22.51	22.60	23.90	24.19	24.28
		RB100#0	22.35	22.32	22.41	24.03	24.00	24.09
	16QAM	RB1#0	22.21	21.43	23.29	23.89	23.11	24.97
		RB1#50	22.27	22.32	22.20	23.95	24.00	23.88
		RB1#99	22.30	22.88	23.29	23.98	24.56	24.97
		RB50#0	21.43	21.51	21.58	23.11	23.19	23.26
		RB50#50	21.38	21.68	21.55	23.06	23.36	23.23
		RB100#0	21.41	21.41	21.64	23.09	23.09	23.32

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

For Band7: Antenna Gain = 1.68dBi

Limit: EIRP ≤ 33dBm

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.79	6.76	6.04	13	Pass
QPSK (100RB Size)	4.37	4.25	4.93	13	Pass
16QAM (1RB Size)	6.25	5.53	6.21	13	Pass
16QAM (100RB Size)	5.20	6.39	4.62	13	Pass

LTE Band 12

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.92	23.79	23.81	19.66	19.53	19.55
		RB1#3	23.91	23.83	23.82	19.65	19.57	19.56
		RB1#5	23.87	23.86	23.81	19.61	19.60	19.55
		RB3#0	24.03	24.01	23.94	19.77	19.75	19.68
		RB3#3	24.03	23.92	23.90	19.77	19.66	19.64
		RB6#0	22.90	22.96	22.75	18.64	18.70	18.49
	16QAM	RB1#0	22.98	22.61	23.27	18.72	18.35	19.01
		RB1#3	22.95	22.56	23.10	18.69	18.30	18.84
		RB1#5	23.00	22.54	23.06	18.74	18.28	18.80
		RB3#0	22.88	23.03	23.01	18.62	18.77	18.75
		RB3#3	22.81	23.02	22.88	18.55	18.76	18.62
		RB6#0	22.00	22.46	22.38	17.74	18.20	18.12
3.0	QPSK	RB1#0	23.84	23.92	23.85	19.58	19.66	19.59
		RB1#8	23.90	24.06	23.84	19.64	19.80	19.58
		RB1#14	23.94	24.02	23.90	19.68	19.76	19.64
		RB6#0	22.95	23.19	22.92	18.69	18.93	18.66
		RB6#9	23.06	22.95	22.70	18.80	18.69	18.44
		RB15#0	22.94	22.92	22.89	18.68	18.66	18.63
	16QAM	RB1#0	23.22	23.69	22.54	18.96	19.43	18.28
		RB1#8	23.17	23.65	22.49	18.91	19.39	18.23
		RB1#14	23.30	23.57	22.32	19.04	19.31	18.06
		RB6#0	22.01	22.38	22.15	17.75	18.12	17.89
		RB6#9	22.00	22.27	22.38	17.74	18.01	18.12
		RB15#0	22.01	22.31	21.98	17.75	18.05	17.72

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	23.91	23.92	23.73	19.65	19.66	19.47
		RB1#13	23.99	23.98	23.76	19.73	19.72	19.50
		RB1#24	24.02	23.95	23.83	19.76	19.69	19.57
		RB15#0	23.06	23.09	22.73	18.80	18.83	18.47
		RB15#10	23.13	22.88	22.92	18.87	18.62	18.66
		RB25#0	23.06	22.95	22.97	18.80	18.69	18.71
	16QAM	RB1#0	21.97	22.97	22.34	17.71	18.71	18.08
		RB1#13	22.17	22.98	22.62	17.91	18.72	18.36
		RB1#24	22.15	22.88	22.37	17.89	18.62	18.11
		RB15#0	22.11	22.23	21.97	17.85	17.97	17.71
		RB15#10	22.11	22.10	21.97	17.85	17.84	17.71
		RB25#0	22.19	22.25	21.93	17.93	17.99	17.67
10.0	QPSK	RB1#0	23.85	24.04	24.04	19.59	19.78	19.78
		RB1#25	23.96	24.09	23.96	19.70	19.83	19.70
		RB1#49	23.86	23.82	24.02	19.60	19.56	19.76
		RB25#0	23.08	23.11	22.92	18.82	18.85	18.66
		RB25#25	23.13	22.88	22.98	18.87	18.62	18.72
		RB50#0	23.07	22.95	22.85	18.81	18.69	18.59
	16QAM	RB1#0	22.86	23.28	22.63	18.60	19.02	18.37
		RB1#25	23.09	23.04	22.37	18.83	18.78	18.11
		RB1#49	22.95	23.08	22.39	18.69	18.82	18.13
		RB25#0	22.02	22.43	22.36	17.76	18.17	18.10
		RB25#25	22.39	22.33	22.17	18.13	18.07	17.91
		RB50#0	22.43	22.37	22.28	18.17	18.11	18.02

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band12: Antenna Gain = -2.11dBi = -4.26dBd (0dBd=2.15dBi)
 Limit: ERP ≤ 34.77dBm

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.28	6.36	6.04	13	Pass
QPSK (50RB Size)	5.12	6.33	4.85	13	Pass
16QAM (1RB Size)	4.17	6.53	6.21	13	Pass
16QAM (50RB Size)	6.28	5.41	5.62	13	Pass

LTE Band 17:

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	24.07	24.03	23.68	19.81	19.77	19.42
		RB1#13	24.01	23.91	23.88	19.75	19.65	19.62
		RB1#24	24.01	23.73	23.83	19.75	19.47	19.57
		RB15#0	23.17	22.87	22.82	18.91	18.61	18.56
		RB15#10	23.02	22.83	23.03	18.76	18.57	18.77
		RB25#0	23.16	22.87	23.05	18.90	18.61	18.79
	16QAM	RB1#0	22.21	22.89	22.41	17.95	18.63	18.15
		RB1#13	22.25	22.80	22.68	17.99	18.54	18.42
		RB1#24	22.11	22.67	22.41	17.85	18.41	18.15
		RB15#0	22.38	22.19	22.01	18.12	17.93	17.75
		RB15#10	22.30	22.13	22.06	18.04	17.87	17.80
		RB25#0	22.38	22.21	21.95	18.12	17.95	17.69
10.0	QPSK	RB1#0	23.92	24.10	24.06	19.66	19.84	19.80
		RB1#25	23.90	23.97	23.90	19.64	19.71	19.64
		RB1#49	23.91	23.97	24.03	19.65	19.71	19.77
		RB25#0	23.19	23.00	22.98	18.93	18.74	18.72
		RB25#25	22.83	22.79	23.04	18.57	18.53	18.78
		RB50#0	22.95	22.90	22.83	18.69	18.64	18.57
	16QAM	RB1#0	23.04	23.25	22.55	18.78	18.99	18.29
		RB1#25	22.94	22.86	22.36	18.68	18.60	18.10
		RB1#49	22.96	22.96	22.36	18.70	18.70	18.10
		RB25#0	22.28	22.34	22.42	18.02	18.08	18.16
		RB25#25	22.05	22.03	22.13	17.79	17.77	17.87
		RB50#0	22.19	22.28	22.19	17.93	18.02	17.93

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band17: Antenna Gain = -2.11dBi = -4.26dBd (0dBd=2.15dBi)
 Limit: ERP ≤ 34.77dBm

LTE Band 17 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.71	6.76	5.04	13	Pass
QPSK (50RB Size)	5.12	6.15	4.85	13	Pass
16QAM (1RB Size)	5.15	5.53	6.21	13	Pass
16QAM (50RB Size)	6.20	6.39	5.62	13	Pass

LTE Band 41

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	22.09	22.36	22.31	23.77	24.04	23.99
		RB1#13	22.16	22.38	22.34	23.84	24.06	24.02
		RB1#24	22.10	22.36	22.41	23.78	24.04	24.09
		RB15#0	21.24	21.27	21.37	22.92	22.95	23.05
		RB15#10	21.12	21.39	21.35	22.80	23.07	23.03
		RB25#0	21.14	21.31	21.39	22.82	22.99	23.07
	16QAM	RB1#0	21.09	21.10	21.66	22.77	22.78	23.34
		RB1#13	21.04	21.47	21.73	22.72	23.15	23.41
		RB1#24	21.14	21.30	21.67	22.82	22.98	23.35
		RB15#0	20.52	20.43	20.48	22.20	22.11	22.16
		RB15#10	20.42	20.41	20.66	22.10	22.09	22.34
		RB25#0	20.05	20.39	20.60	21.73	22.07	22.28
10.0	QPSK	RB1#0	22.36	22.32	21.95	24.04	24.00	23.63
		RB1#25	22.46	22.25	22.03	24.14	23.93	23.71
		RB1#49	22.46	22.32	21.91	24.14	24.00	23.59
		RB25#0	21.24	21.29	21.16	22.92	22.97	22.84
		RB25#25	21.25	21.36	21.05	22.93	23.04	22.73
		RB50#0	21.25	21.27	21.20	22.93	22.95	22.88
	16QAM	RB1#0	21.43	21.10	22.19	23.11	22.78	23.87
		RB1#25	21.50	21.61	21.56	23.18	23.29	23.24
		RB1#49	21.46	21.69	21.40	23.14	23.37	23.08
		RB25#0	20.31	20.22	20.45	21.99	21.90	22.13
		RB25#25	20.32	20.21	20.44	22.00	21.89	22.12
		RB50#0	20.47	20.19	20.33	22.15	21.87	22.01

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	22.20	22.28	21.29	23.88	23.96	22.97
		RB1#38	22.31	22.32	21.38	23.99	24.00	23.06
		RB1#74	22.38	21.40	21.31	24.06	23.08	22.99
		RB36#0	21.09	20.33	20.69	22.77	22.01	22.37
		RB36#39	21.23	20.45	20.68	22.91	22.13	22.36
		RB75#0	21.20	20.41	20.67	22.88	22.09	22.35
	16QAM	RB1#0	21.23	20.62	20.76	22.91	22.30	22.44
		RB1#38	21.31	21.04	20.81	22.99	22.72	22.49
		RB1#74	21.38	21.14	20.87	23.06	22.82	22.55
		RB36#0	20.35	19.71	19.68	22.03	21.39	21.36
		RB36#39	20.48	19.66	19.81	22.16	21.34	21.49
		RB75#0	20.39	19.64	19.91	22.07	21.32	21.59
20.0	QPSK	RB1#0	21.81	22.06	22.33	23.49	23.74	24.01
		RB1#50	21.93	22.07	22.39	23.61	23.75	24.07
		RB1#99	21.93	22.13	22.47	23.61	23.81	24.15
		RB50#0	20.82	21.11	21.28	22.50	22.79	22.96
		RB50#50	20.89	21.19	20.87	22.57	22.87	22.55
		RB100#0	20.88	21.10	21.07	22.56	22.78	22.75
	16QAM	RB1#0	21.26	20.87	22.19	22.94	22.55	23.87
		RB1#50	21.31	20.90	22.10	22.99	22.58	23.78
		RB1#99	21.38	20.91	22.22	23.06	22.59	23.90
		RB50#0	20.22	20.32	20.27	21.90	22.00	21.95
		RB50#50	20.30	20.39	20.42	21.98	22.07	22.10
		RB100#0	20.14	20.32	20.45	21.82	22.00	22.13

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

For Band41: Antenna Gain = 1.68dBi

Limit: EIRP ≤ 33dBm

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.28	6.76	5.50	13	Pass
QPSK (100RB Size)	4.36	4.66	7.85	13	Pass
16QAM (1RB Size)	6.21	5.65	6.21	13	Pass
16QAM (100RB Size)	4.97	4.35	5.62	13	Pass

LTE Band 66:

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.25	21.34	21.32	22.46	22.55	22.53
		RB1#3	21.38	21.55	21.32	22.59	22.76	22.53
		RB1#5	21.24	21.34	21.62	22.45	22.55	22.83
		RB3#0	21.35	21.42	21.37	22.56	22.63	22.58
		RB3#3	21.31	21.45	21.52	22.52	22.66	22.73
		RB6#0	21.29	21.35	21.72	22.50	22.56	22.93
	16QAM	RB1#0	21.37	21.62	21.42	22.58	22.83	22.63
		RB1#3	21.53	21.63	21.62	22.74	22.84	22.83
		RB1#5	21.37	21.47	21.52	22.58	22.68	22.73
		RB3#0	21.29	21.38	21.92	22.50	22.59	23.13
		RB3#3	21.58	21.42	21.55	22.79	22.63	22.76
		RB6#0	21.33	21.43	21.29	22.54	22.64	22.50
3.0	QPSK	RB1#0	21.26	21.47	21.92	22.47	22.68	23.13
		RB1#8	21.63	21.78	21.62	22.84	22.99	22.83
		RB1#14	21.51	21.46	21.43	22.72	22.67	22.64
		RB6#0	21.46	21.62	21.59	22.67	22.83	22.80
		RB6#9	21.54	21.75	21.49	22.75	22.96	22.70
		RB15#0	21.75	21.58	21.92	22.96	22.79	23.13
	16QAM	RB1#0	21.63	21.70	21.52	22.84	22.91	22.73
		RB1#8	21.77	21.64	21.82	22.98	22.85	23.03
		RB1#14	21.49	21.60	21.49	22.70	22.81	22.70
		RB6#0	21.54	21.65	21.68	22.75	22.86	22.89
		RB6#9	21.37	21.65	21.62	22.58	22.86	22.83
		RB15#0	21.63	21.71	21.59	22.84	22.92	22.80

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QP SK	RB1#0	22.00	22.06	21.84	23.21	23.27	23.05
		RB1#13	22.09	22.09	21.91	23.30	23.30	23.12
		RB1#24	22.02	21.98	21.81	23.23	23.19	23.02
		RB15#0	21.36	21.23	21.45	22.57	22.44	22.66
		RB15#10	20.41	21.23	21.41	21.62	22.44	22.62
		RB25#0	21.10	20.79	21.13	22.31	22.00	22.34
	16QAM	RB1#0	21.28	21.35	21.15	22.49	22.56	22.36
		RB1#13	21.41	21.38	21.23	22.62	22.59	22.44
		RB1#24	21.35	21.30	21.12	22.56	22.51	22.33
		RB15#0	21.74	21.79	21.87	22.95	23.00	23.08
		RB15#10	21.91	21.86	21.72	23.12	23.07	22.93
		RB25#0	21.17	22.00	22.09	22.38	23.21	23.30
10.0	QPSK	RB1#0	21.14	22.09	21.99	22.35	23.30	23.20
		RB1#25	21.74	21.88	21.69	22.95	23.09	22.90
		RB1#49	21.38	21.40	21.24	22.59	22.61	22.45
		RB25#0	21.59	21.53	21.35	22.80	22.74	22.56
		RB25#25	21.39	21.32	21.16	22.60	22.53	22.37
		RB50#0	21.24	21.52	21.46	22.45	22.73	22.67
	16QAM	RB1#0	21.11	21.45	20.03	22.32	22.66	21.24
		RB1#25	21.56	21.42	21.62	22.77	22.63	22.83
		RB1#49	21.51	20.54	21.41	22.72	21.75	22.62
		RB25#0	20.68	20.68	21.54	21.89	21.89	22.75
		RB25#25	21.54	21.47	21.34	22.75	22.68	22.55
		RB50#0	21.96	21.91	22.15	23.17	23.12	23.36

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	21.90	21.93	22.01	23.11	23.14	23.22
		RB1#38	21.94	22.05	22.08	23.15	23.26	23.29
		RB1#74	21.86	22.00	21.98	23.07	23.21	23.19
		RB36#0	21.85	21.89	21.95	23.06	23.10	23.16
		RB36#39	21.92	21.89	21.89	23.13	23.10	23.10
		RB75#0	21.93	21.94	21.97	23.14	23.15	23.18
	16QAM	RB1#0	21.67	21.74	21.71	22.88	22.95	22.92
		RB1#38	21.64	21.70	21.65	22.85	22.91	22.86
		RB1#74	21.65	21.59	21.55	22.86	22.80	22.76
		RB36#0	21.27	21.23	21.16	22.48	22.44	22.37
		RB36#39	21.85	21.93	21.97	23.06	23.14	23.18
		RB75#0	21.83	21.94	21.88	23.04	23.15	23.09
20.0	QPSK	RB1#0	21.99	21.90	21.98	23.20	23.11	23.19
		RB1#50	21.87	21.78	21.88	23.08	22.99	23.09
		RB1#99	21.61	21.62	21.99	22.82	22.83	23.20
		RB50#0	21.86	21.91	21.95	23.07	23.12	23.16
		RB50#50	21.93	21.94	21.97	23.14	23.15	23.18
		RB100#0	21.97	21.90	21.93	23.18	23.11	23.14
	16QAM	RB1#0	21.96	21.95	21.96	23.17	23.16	23.17
		RB1#50	21.67	21.71	21.57	22.88	22.92	22.78
		RB1#99	21.79	21.70	21.61	23.00	22.91	22.82
		RB50#0	21.12	21.28	21.21	22.33	22.49	22.42
		RB50#50	21.96	21.87	21.77	23.17	23.08	22.98
		RB100#0	21.80	21.68	21.88	23.01	22.89	23.09

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

For Band 66: Antenna Gain = 1.21dBi

Limit: EIRP ≤ 30dBm

LTE Band 66 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.28	4.76	6.50	13	Pass
QPSK (100RB Size)	4.36	5.60	5.85	13	Pass
16QAM (1RB Size)	5.21	5.65	5.22	13	Pass
16QAM (100RB Size)	4.97	4.35	4.62	13	Pass

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

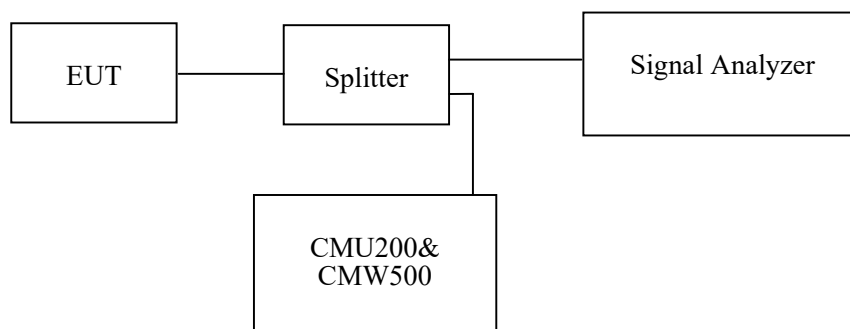
Applicable Standard

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:	26 °C
Relative Humidity:	57 %
ATM Pressure:	101.0 kPa

The testing was performed by Nancy Wang from 2021-08-21 to 2021-08-28.

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	240.23	311.10
	190	836.6	244.57	314.00
	251	848.8	241.68	306.80

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.14	4.69
	836.6	4.15	4.67
	846.6	4.14	4.69
HSDPA	826.4	4.15	4.69
	836.6	4.15	4.67
	846.6	4.15	4.66
HSUPA	826.4	4.15	4.67
	836.6	4.15	4.67
	846.6	4.14	4.67

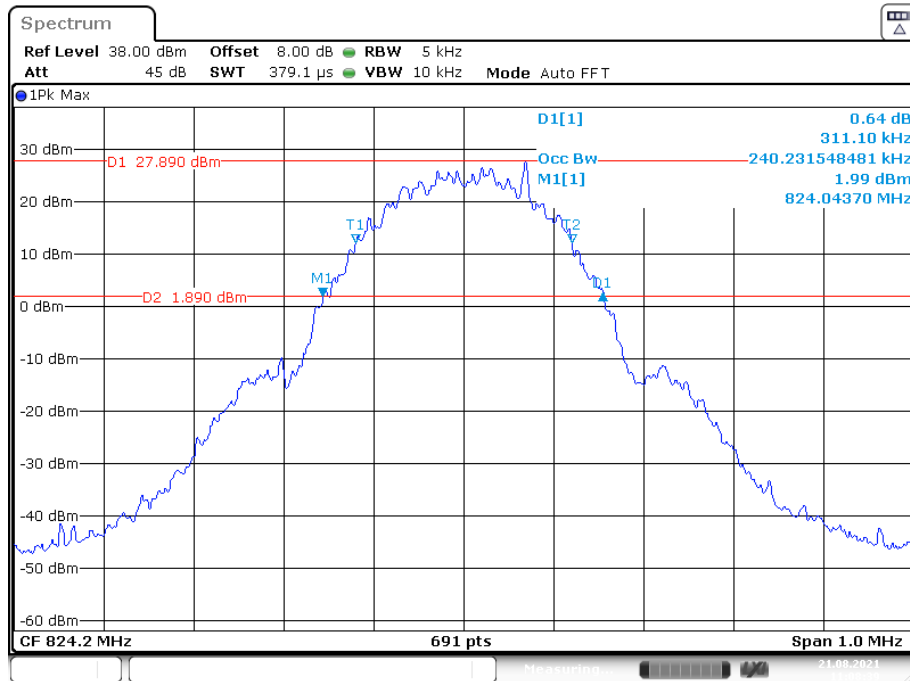
PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	243.13	312.60
	661	1880.0	244.57	309.70
	810	1909.8	246.02	314.00

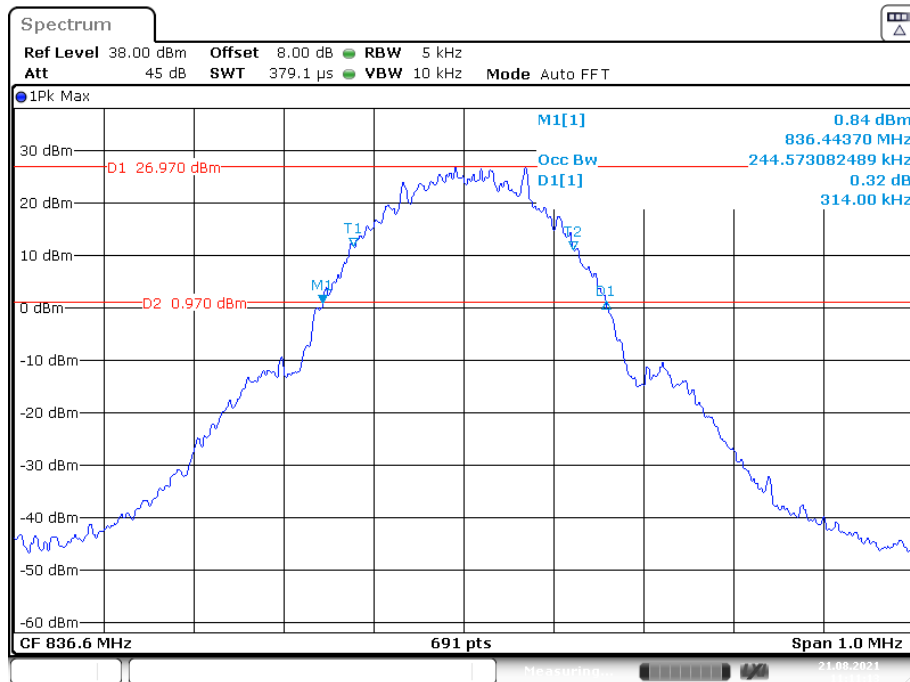
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.15	4.67
	1880.0	4.14	4.67
	1907.6	4.14	4.67
HSDPA	1852.4	4.15	4.69
	1880.0	4.14	4.69
	1907.6	4.15	4.69
HSUPA	1852.4	4.15	4.67
	1880.0	4.14	4.67
	1907.6	4.14	4.67

AWS Band (Part 27)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.14	4.66
	1732.6	4.15	4.66
	1752.6	4.15	4.67
HSDPA	1712.4	4.14	4.67
	1732.6	4.15	4.66
	1752.6	4.15	4.67
HSUPA	1712.4	4.15	4.67
	1732.6	4.15	4.69
	1752.6	4.15	4.67

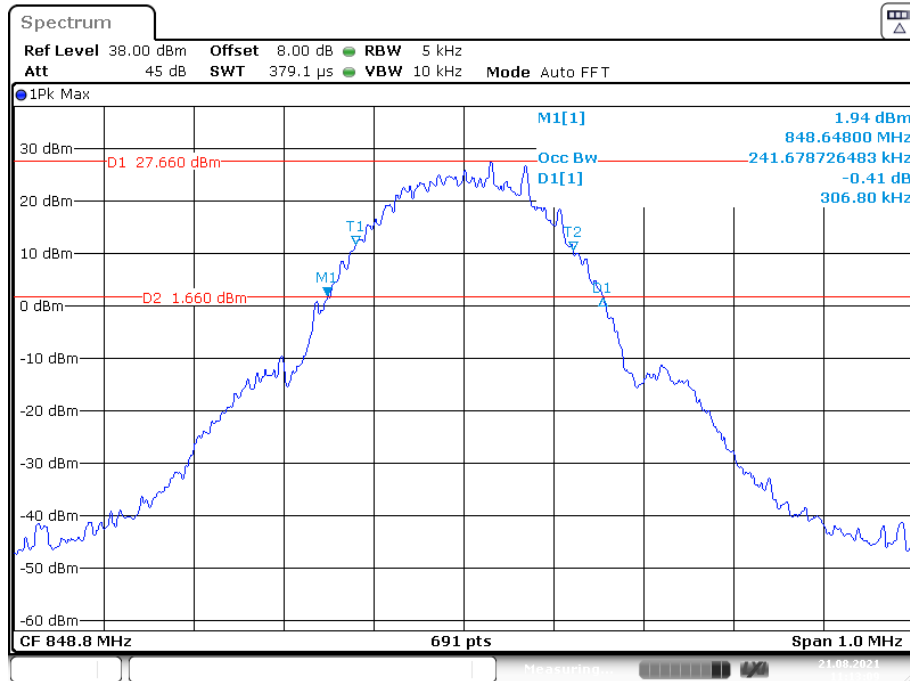
Cellular Band (Part 22H)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel**

Date: 21.AUG.2021 11:08:39

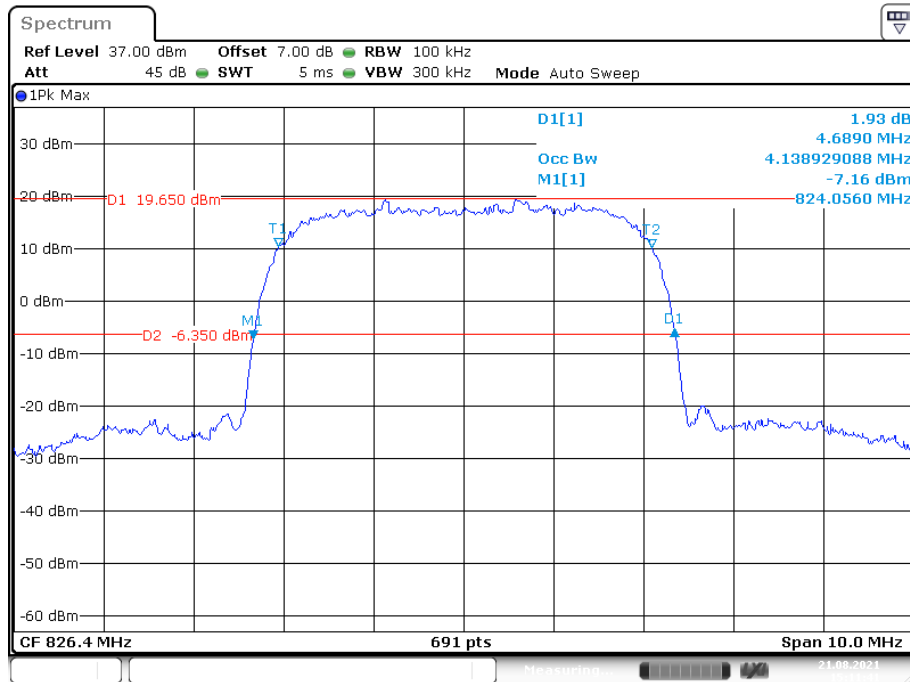
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel

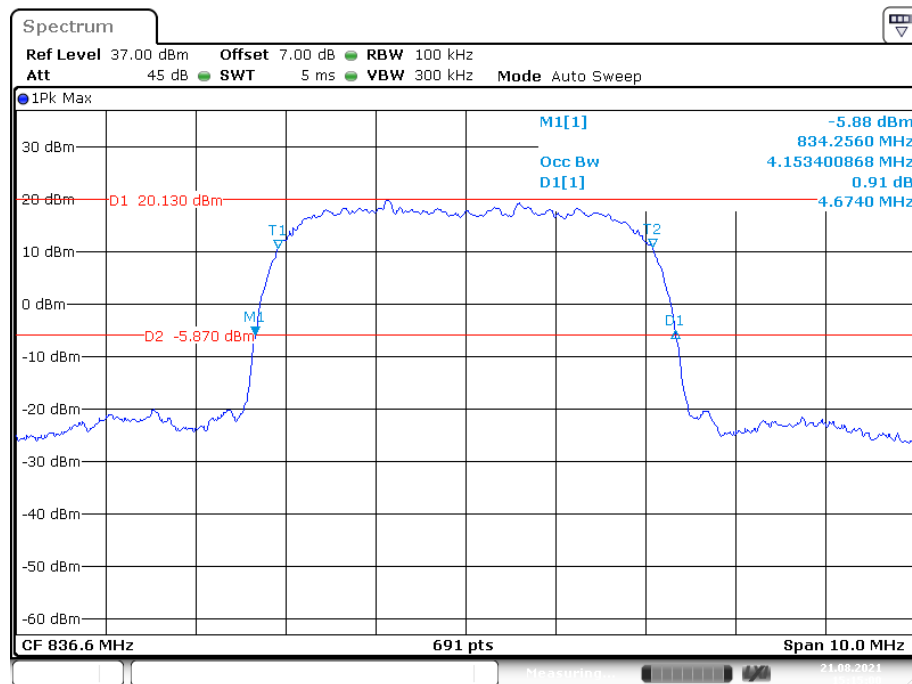
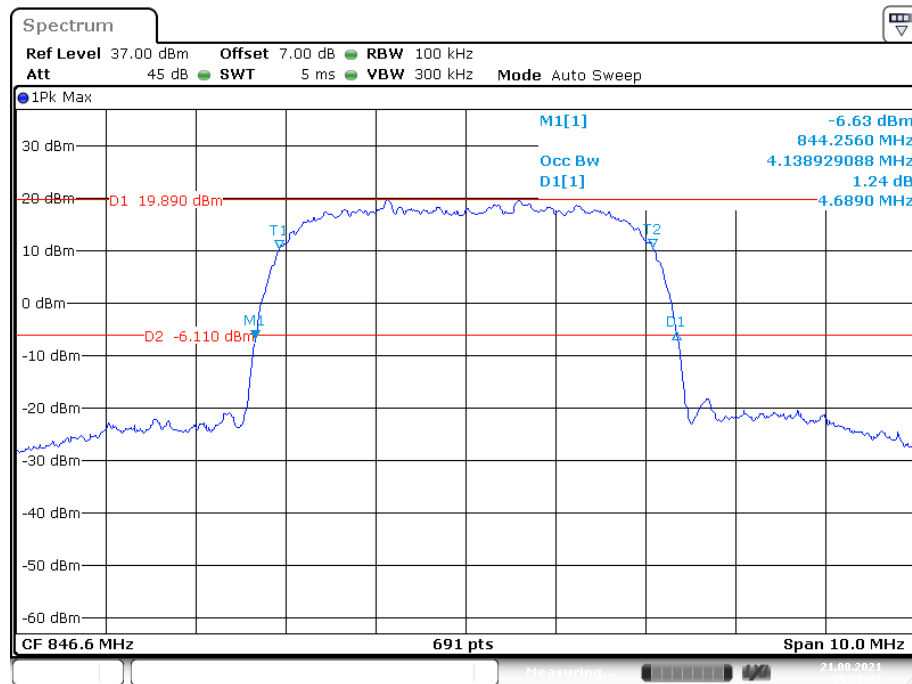
Date: 21.AUG.2021 11:11:13

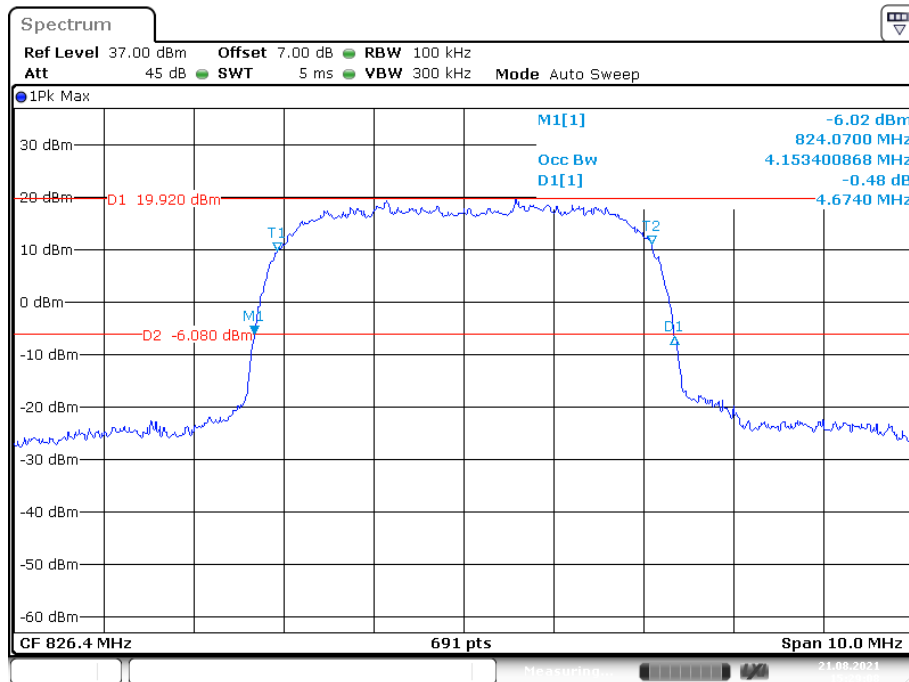
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



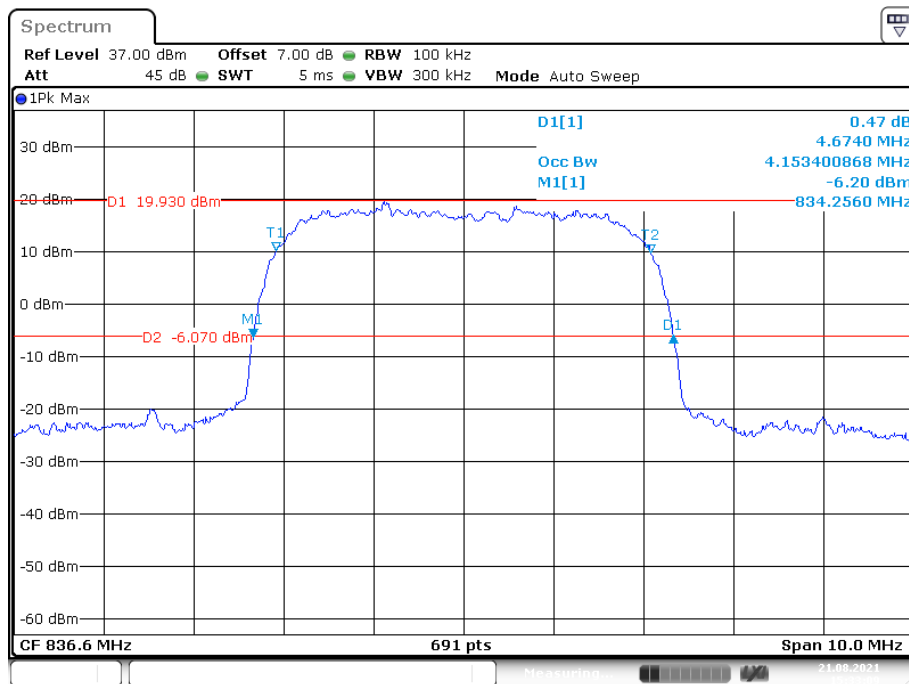
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



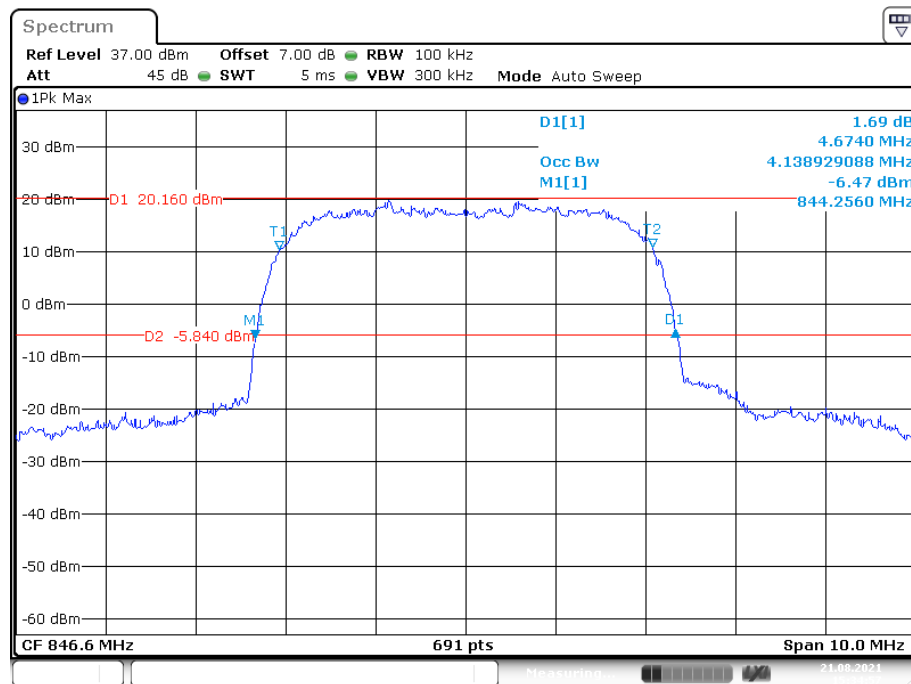
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel**

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

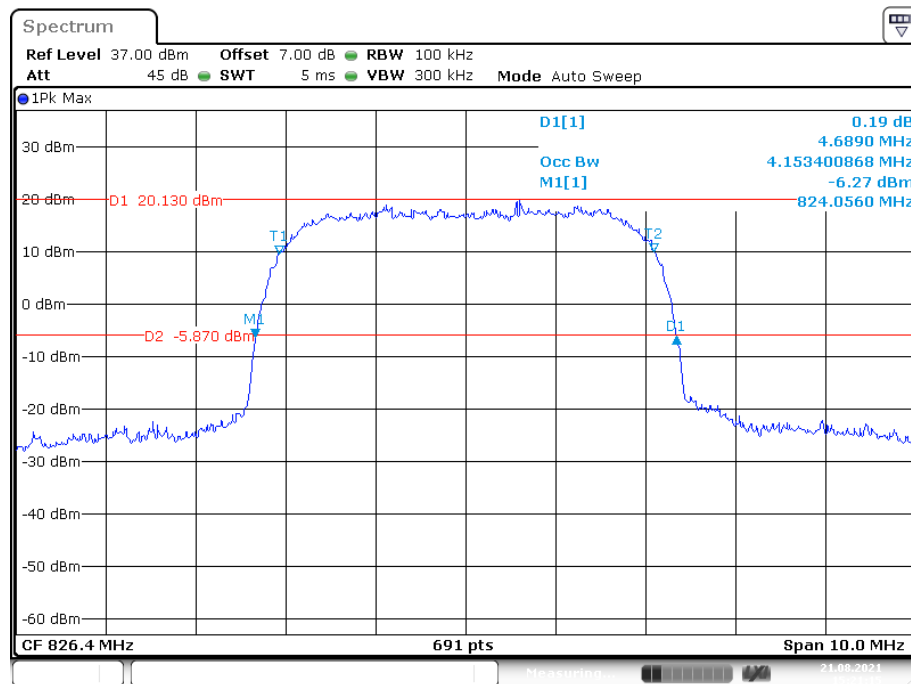
Date: 21.AUG.2021 15:29:09

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

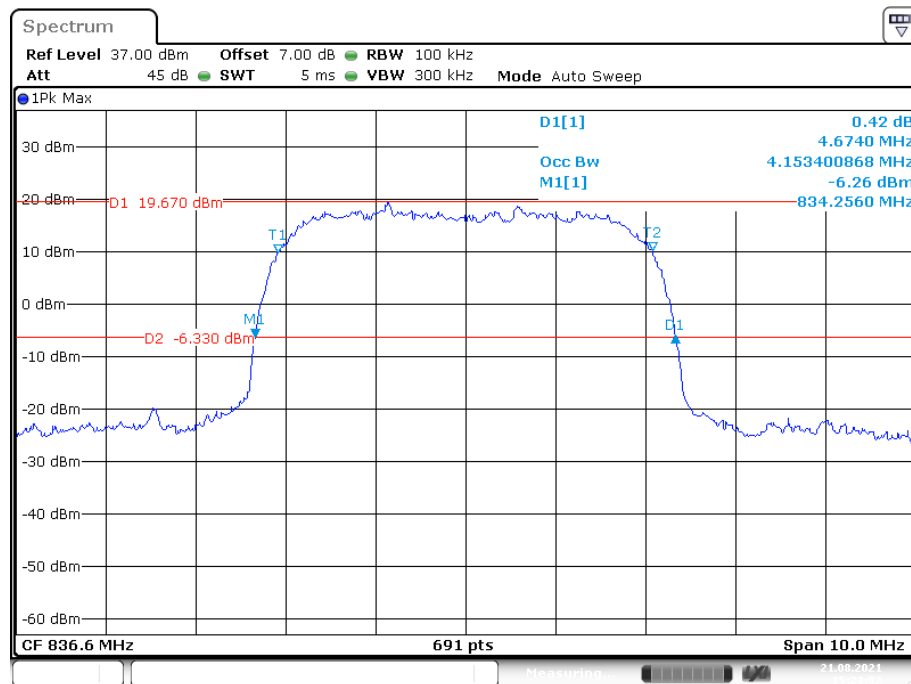
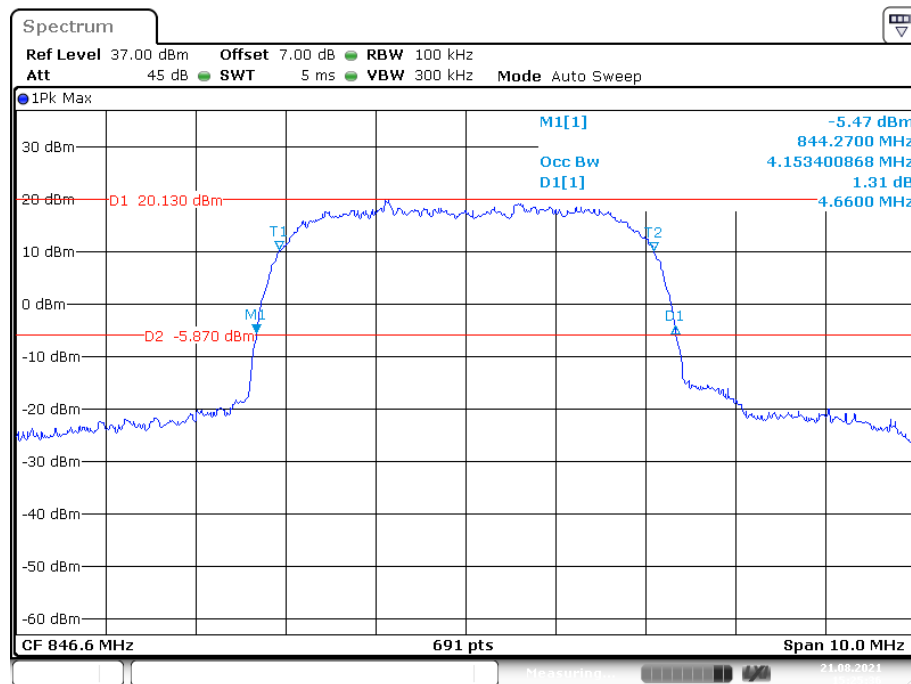
Date: 21.AUG.2021 15:33:10

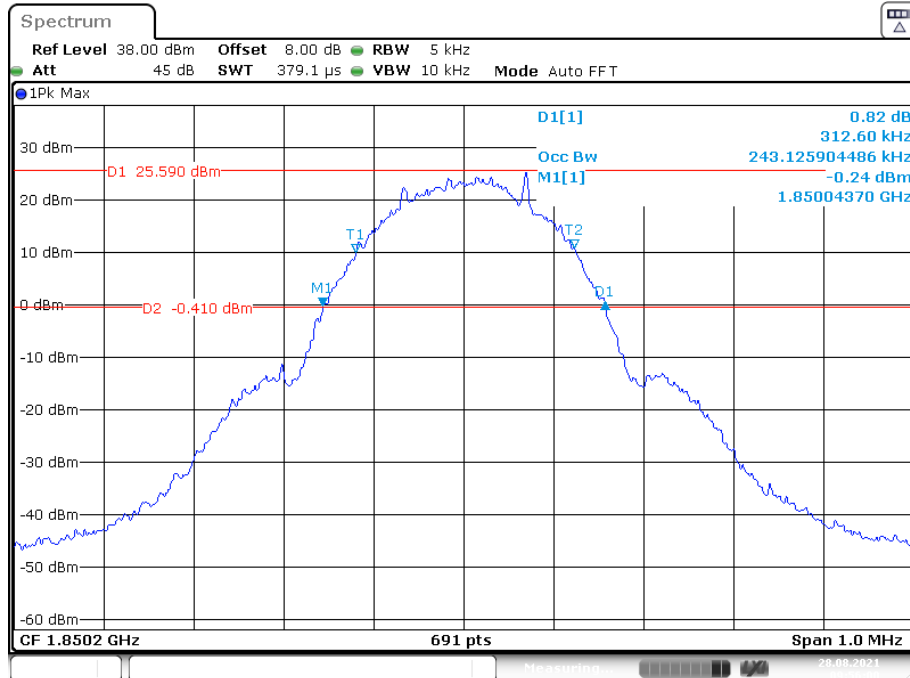
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, High channel

Date: 21.AUG.2021 15:34:58

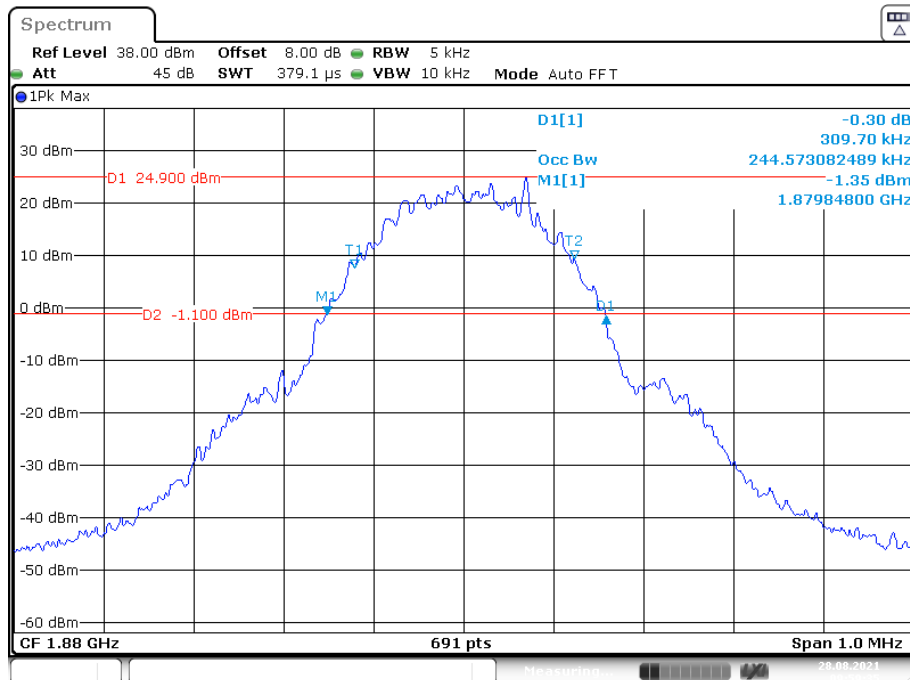
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 21.AUG.2021 15:21:16

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

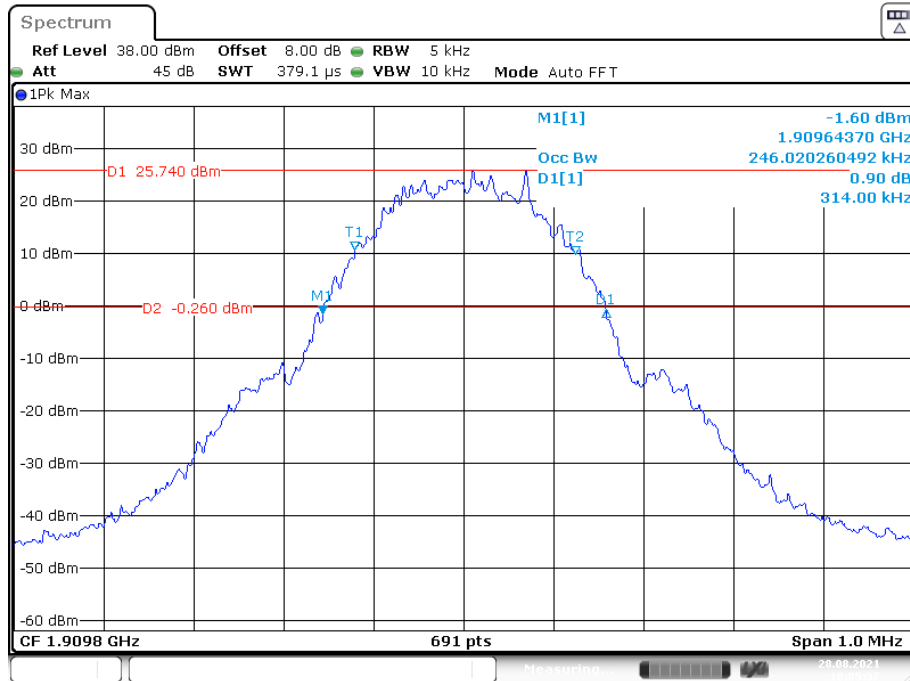
PCS Band (Part 24E)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel**

Date: 28.AUG.2021 09:56:01

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

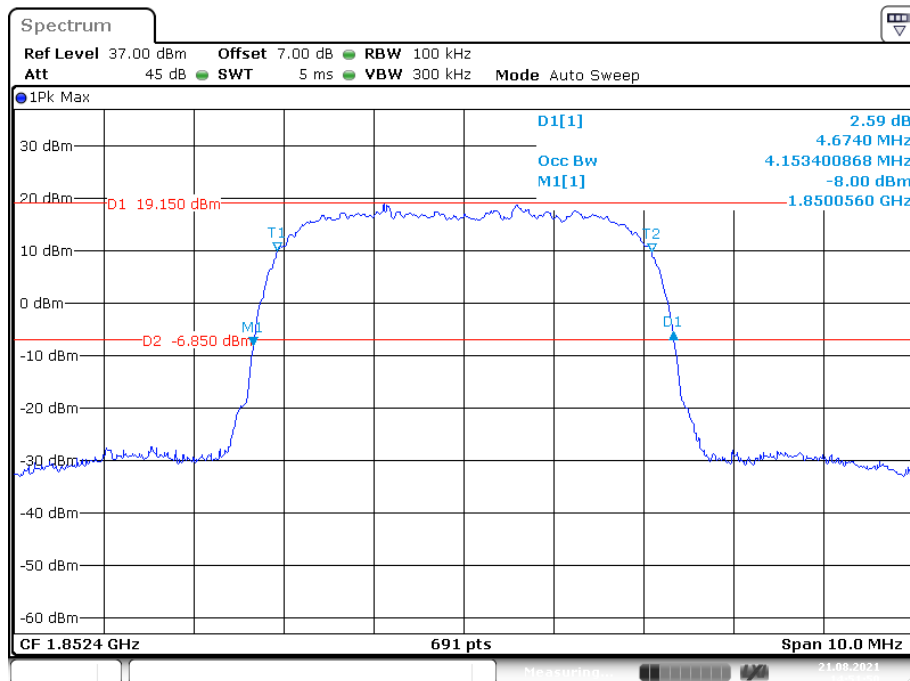
Date: 28.AUG.2021 09:59:35

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

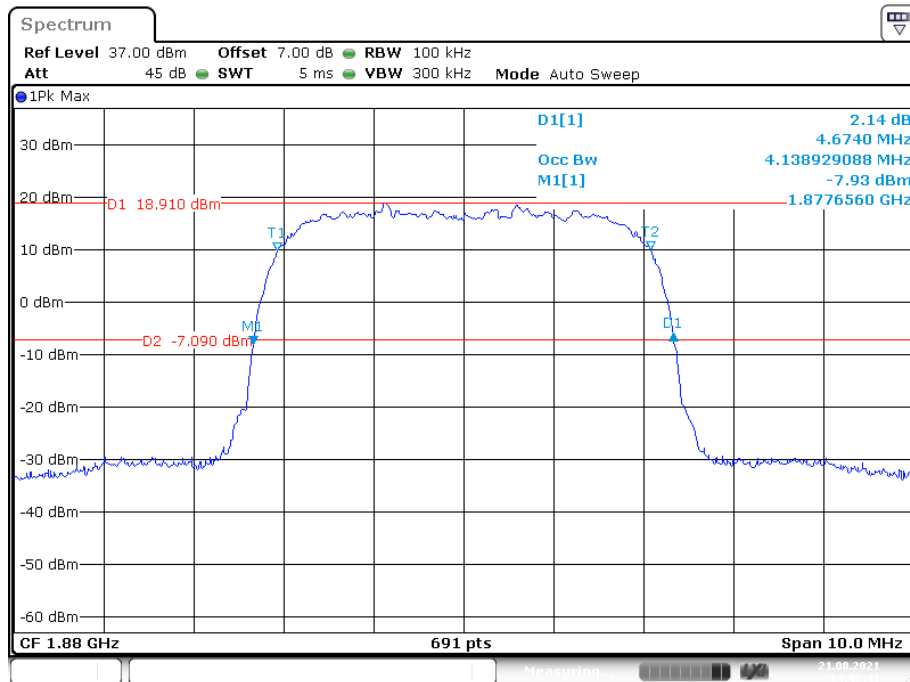


Date: 28.AUG.2021 10:05:37

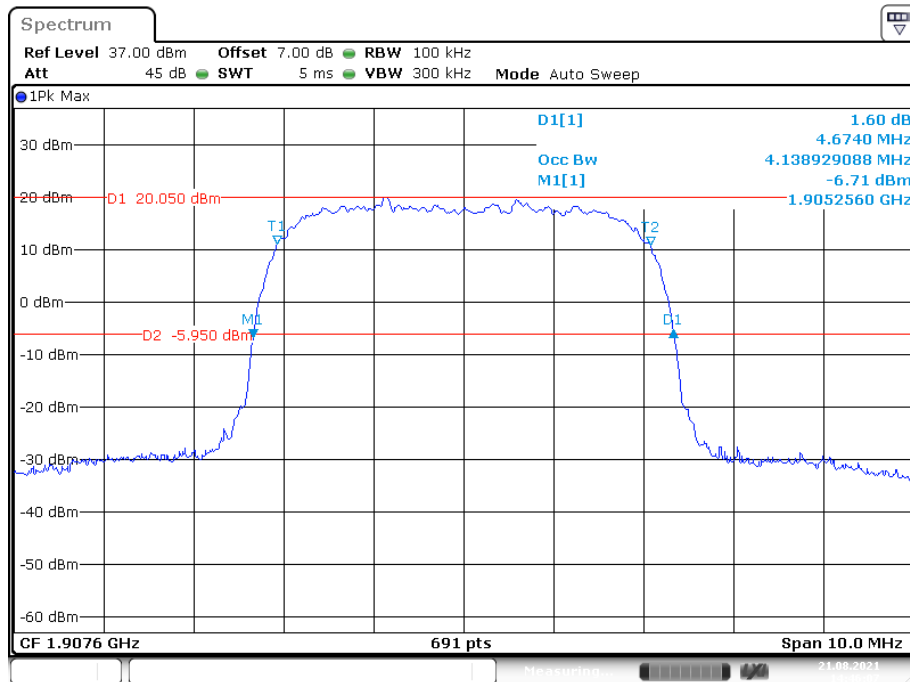
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



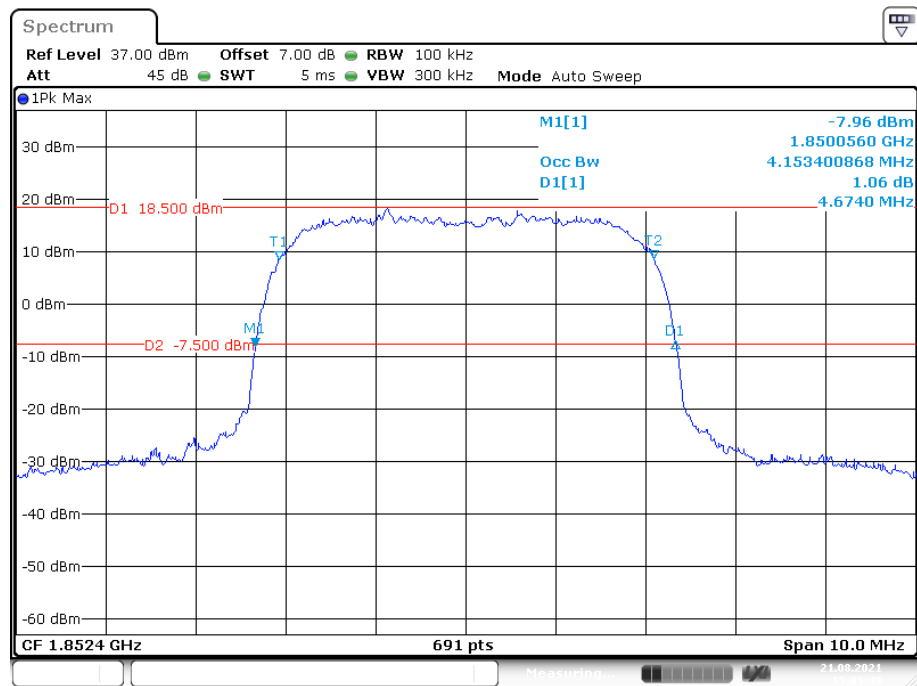
Date: 21.AUG.2021 14:51:50

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

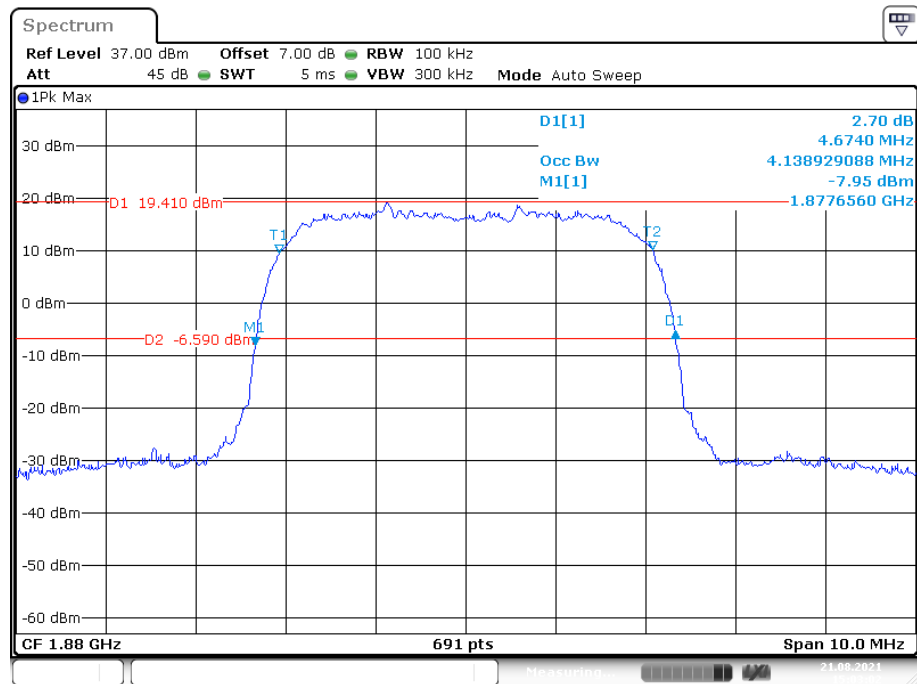
Date: 21.AUG.2021 14:48:42

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

Date: 21.AUG.2021 14:46:08

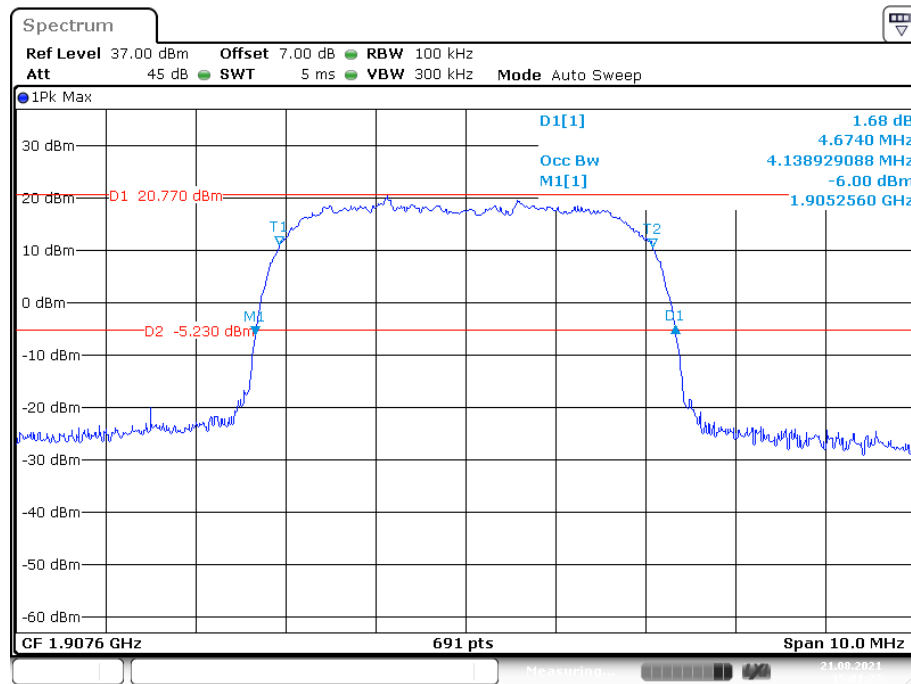
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel

Date: 21.AUG.2021 15:05:50

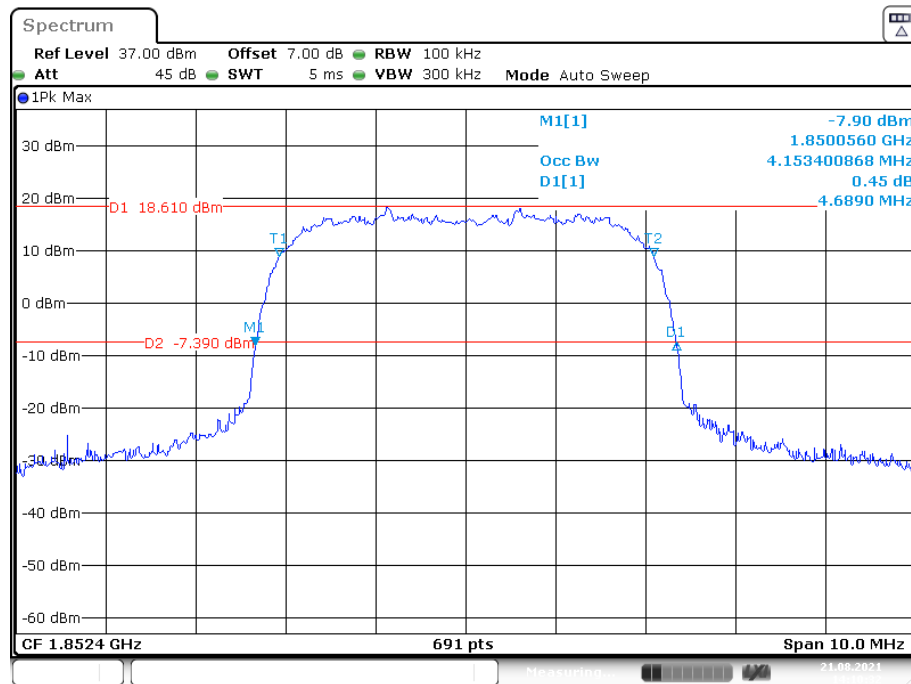
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel

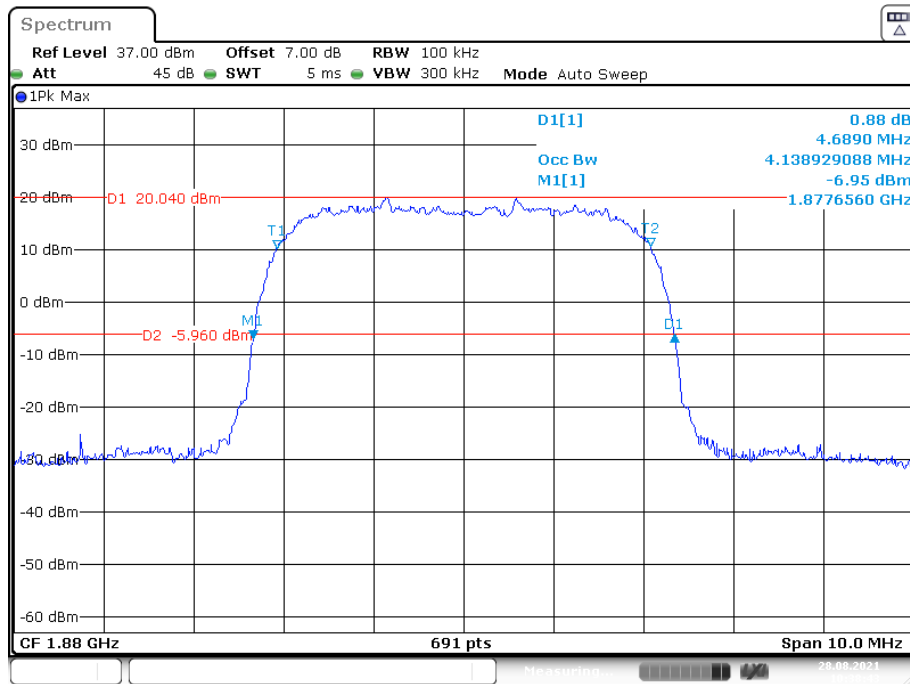
Date: 21.AUG.2021 15:03:02

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

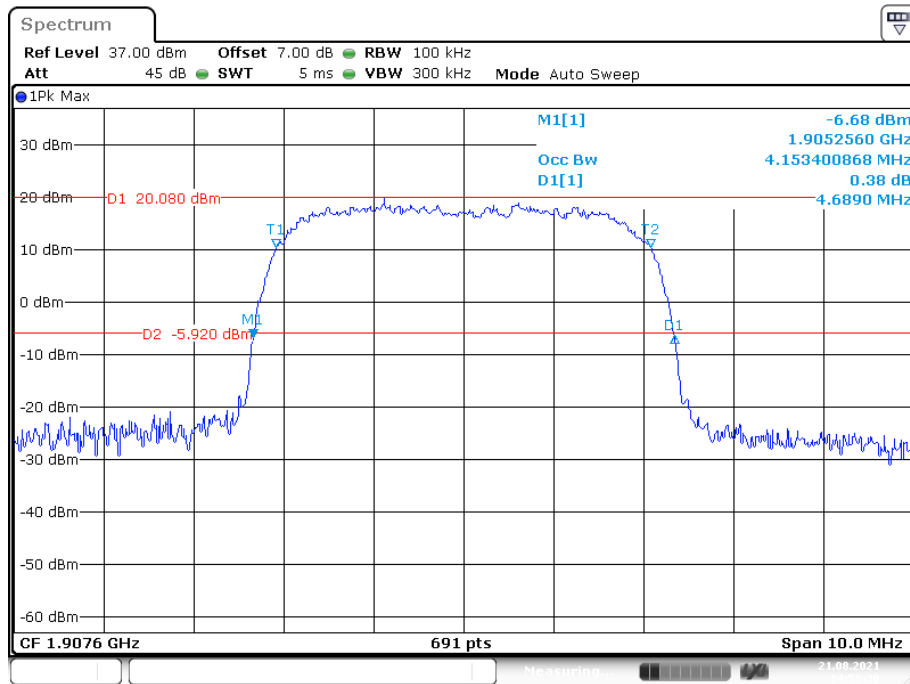


26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel



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

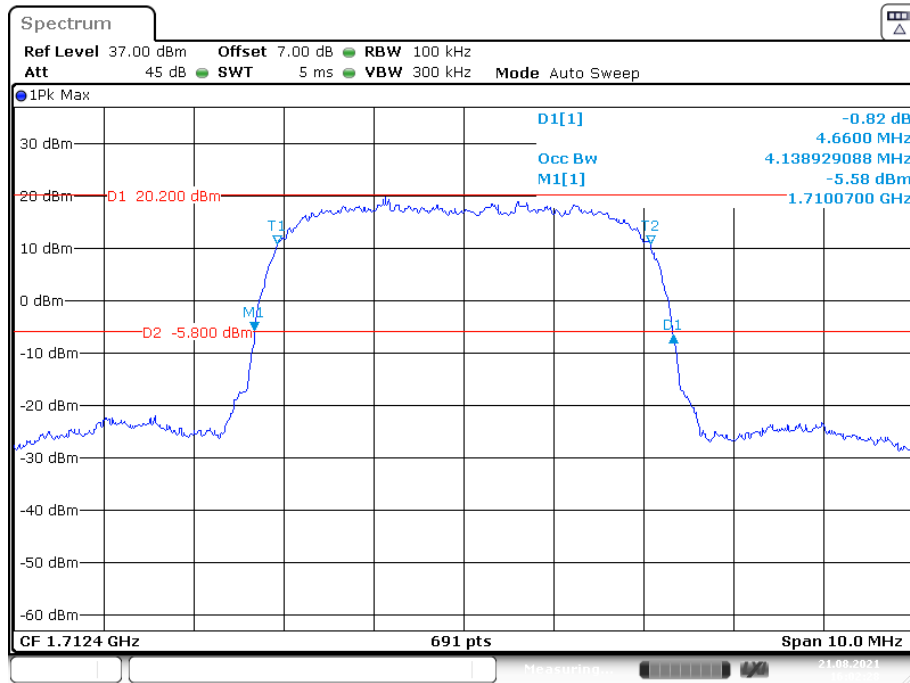
Date: 28.AUG.2021 10:38:43

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

Date: 21.AUG.2021 14:58:31

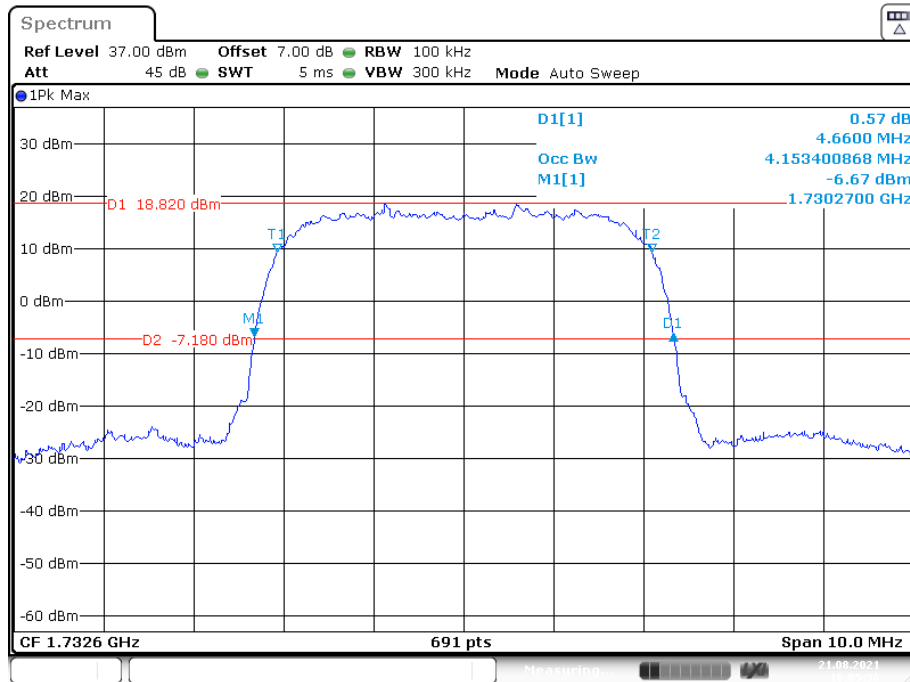
AWS Band (Part 27)

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

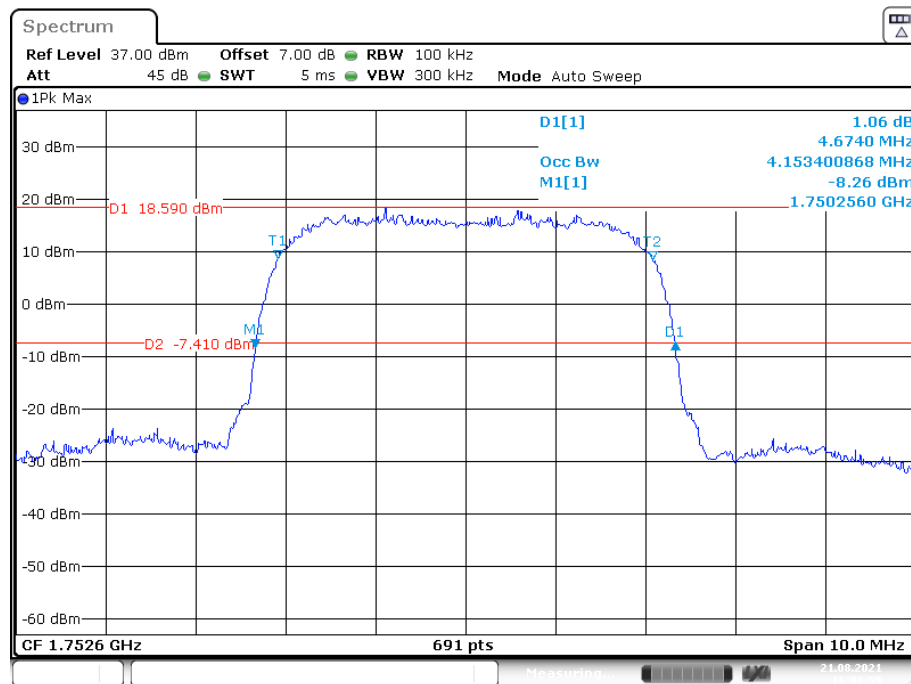


Date: 21.AUG.2021 16:02:29

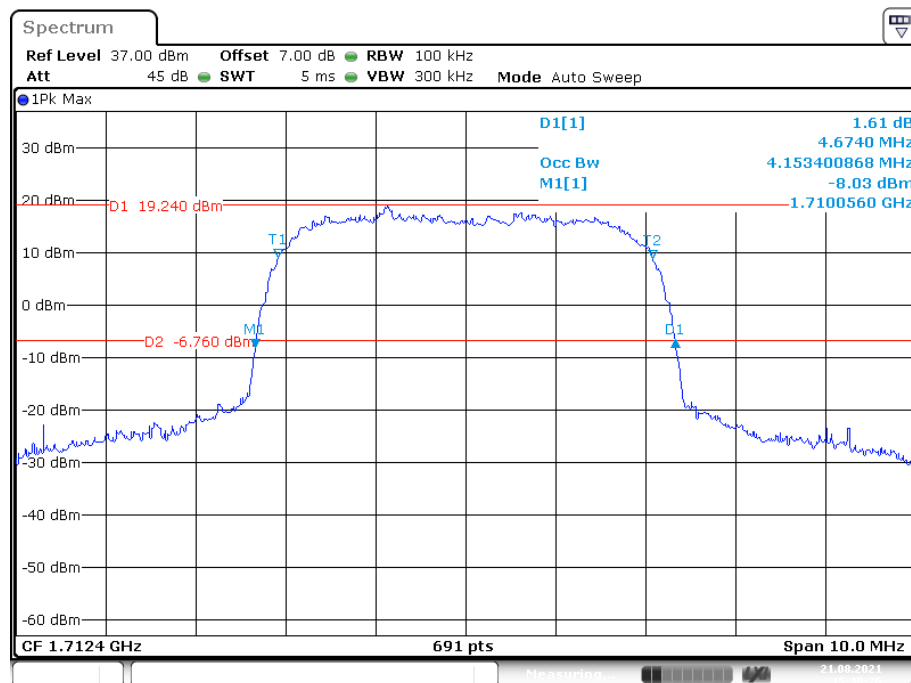
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



Date: 21.AUG.2021 16:05:37

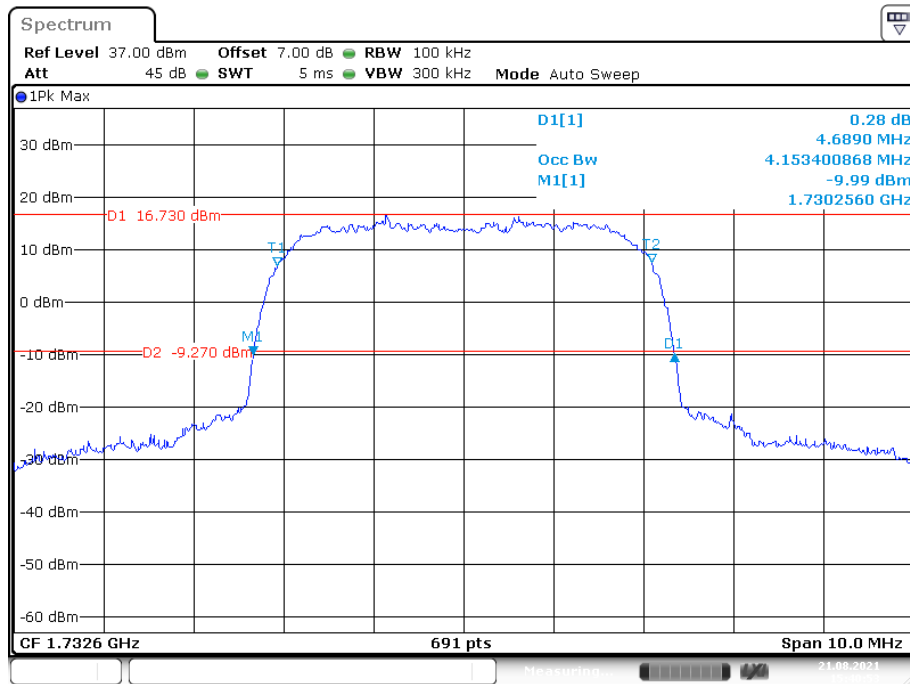
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 21.AUG.2021 16:06:59

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

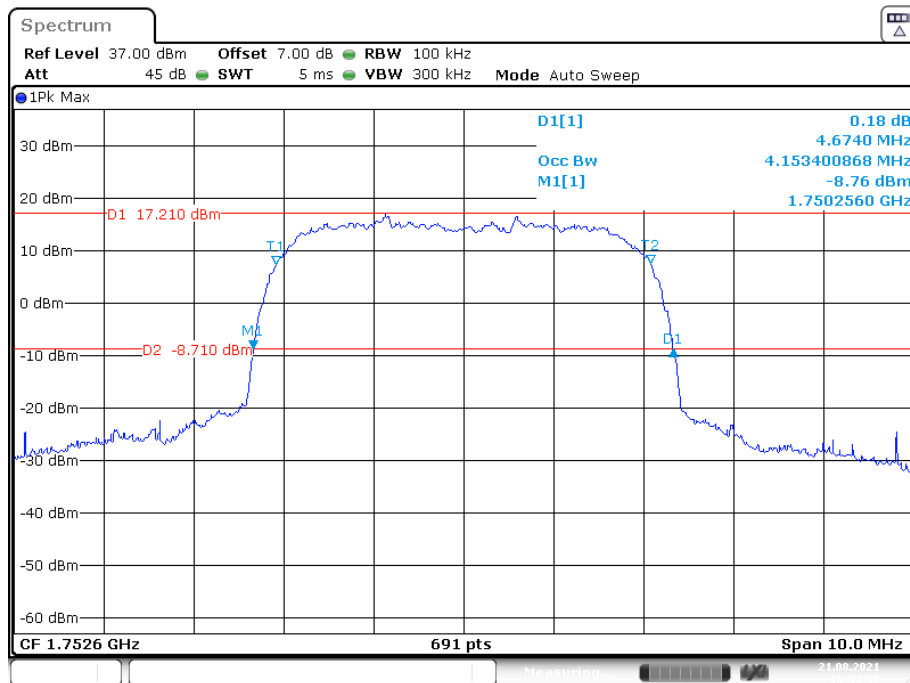
Date: 21.AUG.2021 15:38:27

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

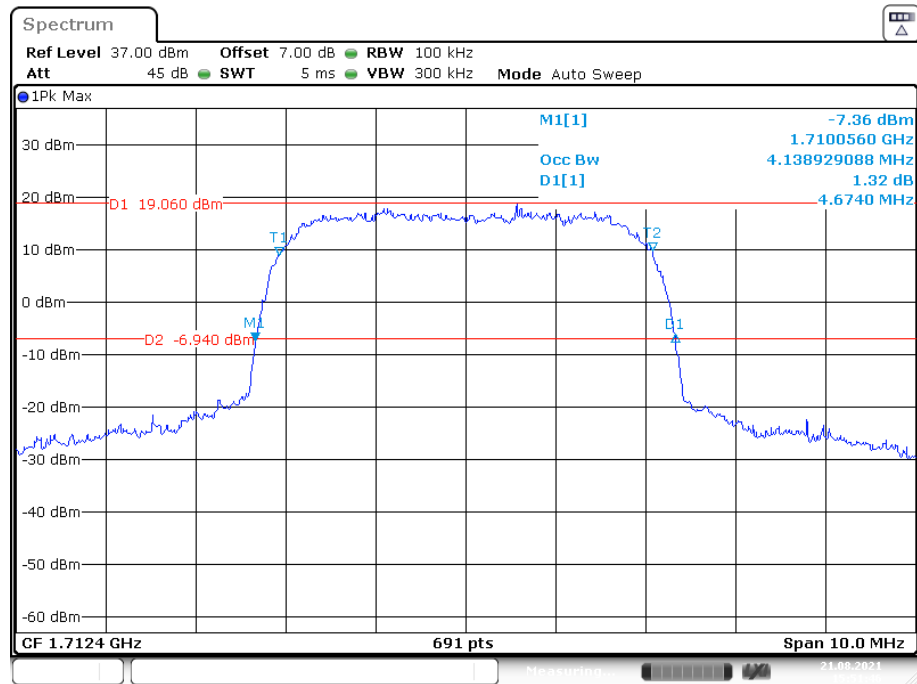


Date: 21.AUG.2021 15:40:54

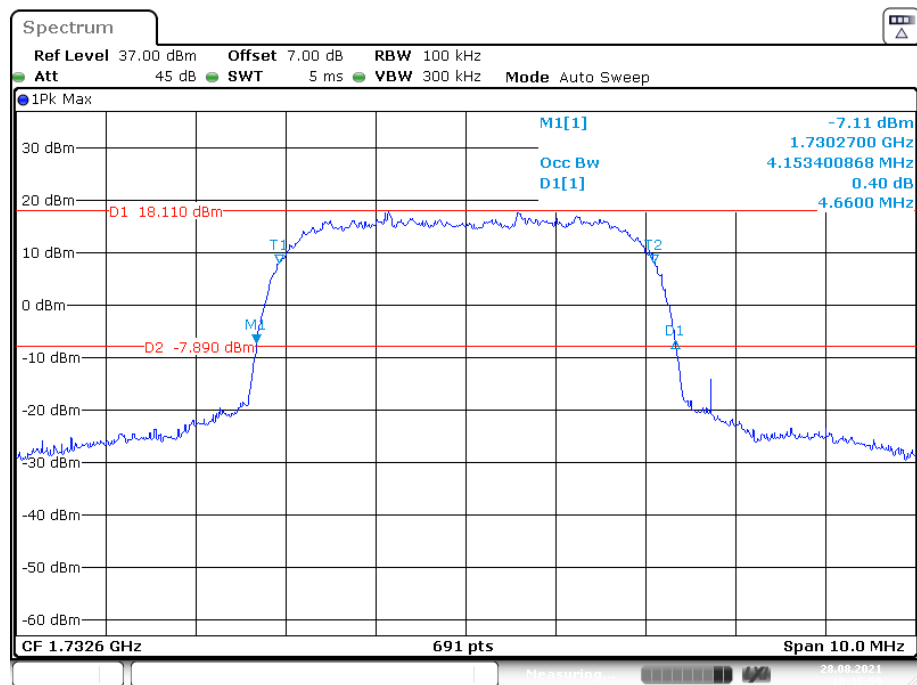
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, High channel



Date: 21.AUG.2021 15:44:37

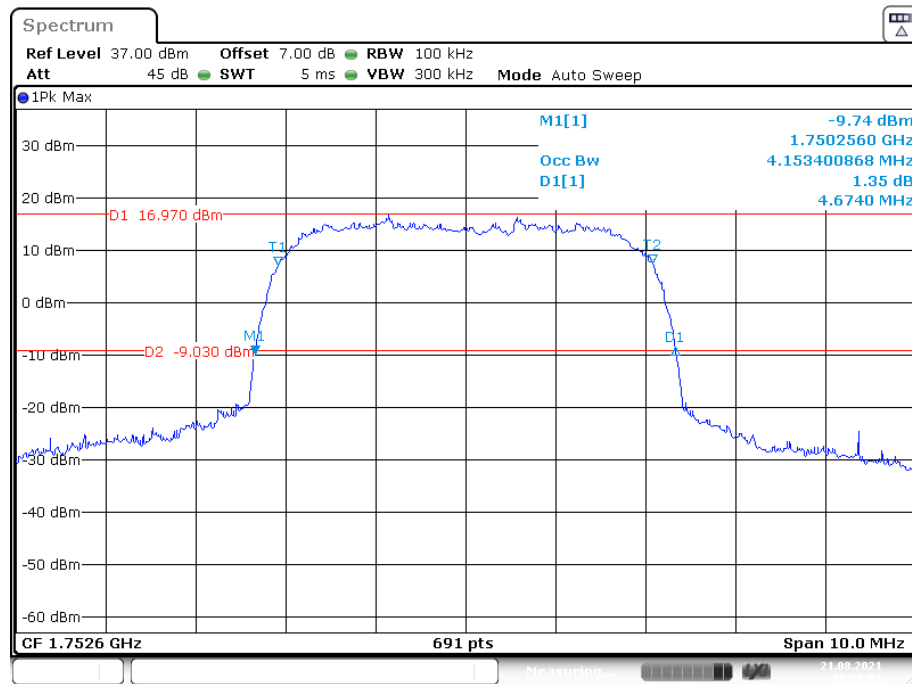
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 21.AUG.2021 15:51:47

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

Date: 28.AUG.2021 10:35:59

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



Date: 21.AUG.2021 15:58:02

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	1.104	1.260	1.110	1.260	1.104	1.254
	16QAM	1.098	1.254	1.116	1.266	1.098	1.260
3 MHz	QPSK	2.712	3.000	2.700	3.012	2.688	3.012
	16QAM	2.700	3.012	2.688	3.000	2.700	3.024
5 MHz	QPSK	4.520	5.000	4.520	5.020	4.520	4.940
	16QAM	4.520	4.960	4.540	5.020	4.520	5.000
10 MHz	QPSK	9.000	9.760	8.960	9.760	8.960	9.800
	16QAM	9.000	9.760	8.960	9.800	8.960	9.800
15 MHz	QPSK	13.560	15.120	13.500	15.000	13.560	15.120
	16QAM	13.560	15.000	13.620	15.120	13.500	15.120
20 MHz	QPSK	18.000	19.680	18.000	19.680	18.000	19.840
	16QAM	18.000	19.600	18.080	19.760	18.000	19.600

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	1.098	1.260	1.104	1.254	1.098	1.260
	16QAM	1.116	1.266	1.098	1.254	1.116	1.260
3 MHz	QPSK	2.712	3.000	2.700	3.000	2.700	3.000
	16QAM	2.700	3.000	2.688	3.012	2.700	3.036
5 MHz	QPSK	4.520	5.000	4.520	5.020	4.520	5.000
	16QAM	4.520	4.980	4.540	5.020	4.540	5.040
10 MHz	QPSK	8.960	9.720	8.960	9.720	8.960	9.800
	16QAM	8.960	9.760	9.000	9.880	8.960	9.840
15 MHz	QPSK	13.560	15.060	13.560	15.060	13.560	15.000
	16QAM	13.560	15.060	13.620	15.240	13.560	15.060
20 MHz	QPSK	18.000	19.600	18.080	19.760	18.000	19.680
	16QAM	18.080	19.760	18.000	19.760	18.000	19.600

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	1.104	1.266	1.104	1.260	1.104	1.260
	16QAM	1.116	1.260	1.098	1.254	1.110	1.266
3 MHz	QPSK	2.700	3.000	2.700	3.000	2.700	3.024
	16QAM	2.700	3.024	2.688	3.000	2.688	3.012
5 MHz	QPSK	4.540	5.000	4.540	4.980	4.500	5.020
	16QAM	4.500	5.000	4.520	5.000	4.540	4.980
10 MHz	QPSK	8.960	9.720	8.960	9.720	8.960	9.720
	16QAM	8.960	9.760	8.960	9.760	8.960	9.800

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	4.540	5.020	4.520	5.040	4.520	5.020
	16QAM	4.500	4.980	4.540	5.020	4.540	5.020
10 MHz	QPSK	8.960	9.760	9.000	9.920	9.000	9.800
	16QAM	8.960	9.720	9.000	10.040	8.960	9.800
15 MHz	QPSK	13.500	15.060	13.620	15.420	13.560	15.120
	16QAM	13.500	14.940	13.680	15.120	13.620	15.180
20 MHz	QPSK	18.000	19.520	18.080	19.840	18.160	20.080
	16QAM	18.000	19.680	18.080	20.320	18.080	19.760

LTE Band 12:

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	1.104	1.248	1.104	1.254	1.110	1.254
	16QAM	1.116	1.266	1.098	1.266	1.104	1.260
3 MHz	QPSK	2.700	3.000	2.700	3.000	2.700	3.012
	16QAM	2.688	3.000	2.688	3.012	2.700	3.012
5 MHz	QPSK	4.540	5.000	4.540	5.020	4.500	4.980
	16QAM	4.520	4.960	4.540	5.000	4.520	4.960
10 MHz	QPSK	9.000	9.680	9.000	9.720	8.960	9.680
	16QAM	8.960	9.840	9.000	9.840	8.960	9.800

LTE Band 17

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	4.540	4.980	4.520	5.020	4.500	4.960
	16QAM	4.500	5.000	4.520	5.000	4.520	5.000
10 MHz	QPSK	8.960	9.720	8.920	9.640	8.920	9.640
	16QAM	8.920	9.760	8.920	9.680	8.920	9.680

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	4.500	5.000	4.520	5.100	4.520	5.000
	16QAM	4.520	4.980	4.520	5.040	4.520	5.000
10 MHz	QPSK	9.000	9.920	9.000	9.960	8.960	10.000
	16QAM	8.960	9.680	8.960	9.800	8.960	9.800
15 MHz	QPSK	13.620	15.720	13.560	15.420	13.560	15.600
	16QAM	13.560	15.000	13.680	16.020	13.620	15.900
20 MHz	QPSK	18.000	19.680	17.920	19.840	18.000	19.680
	16QAM	18.000	19.600	17.920	20.320	18.000	19.680

LTE Band 66:

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	1.098	1.260	1.104	1.260	1.104	1.266
	16QAM	1.116	1.260	1.104	1.266	1.098	1.254
3 MHz	QPSK	2.700	2.988	2.700	3.024	2.688	3.000
	16QAM	2.700	3.024	2.700	3.012	2.700	3.024
5 MHz	QPSK	4.540	4.980	4.520	5.020	4.520	4.980
	16QAM	4.520	4.940	4.540	5.060	4.540	5.000
10 MHz	QPSK	9.000	9.760	8.960	9.800	8.960	9.720
	16QAM	8.960	9.680	9.000	9.880	8.960	9.800
15 MHz	QPSK	13.560	15.000	13.500	15.060	13.560	15.120
	16QAM	13.560	15.000	13.620	15.120	13.560	15.060
20 MHz	QPSK	18.000	19.680	18.000	19.680	18.000	19.760
	16QAM	18.000	19.760	18.000	19.760	18.000	19.840

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

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

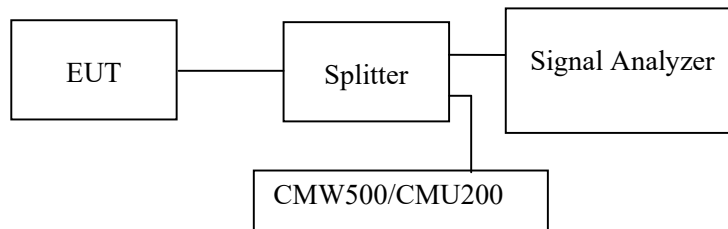
Applicable Standard

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

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

Test Procedure

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



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	57 %
ATM Pressure:	101.0 kPa

The testing was performed by Nancy Wang from 2021-08-21 to 2021-08-24.

EUT operation mode: Transmitting

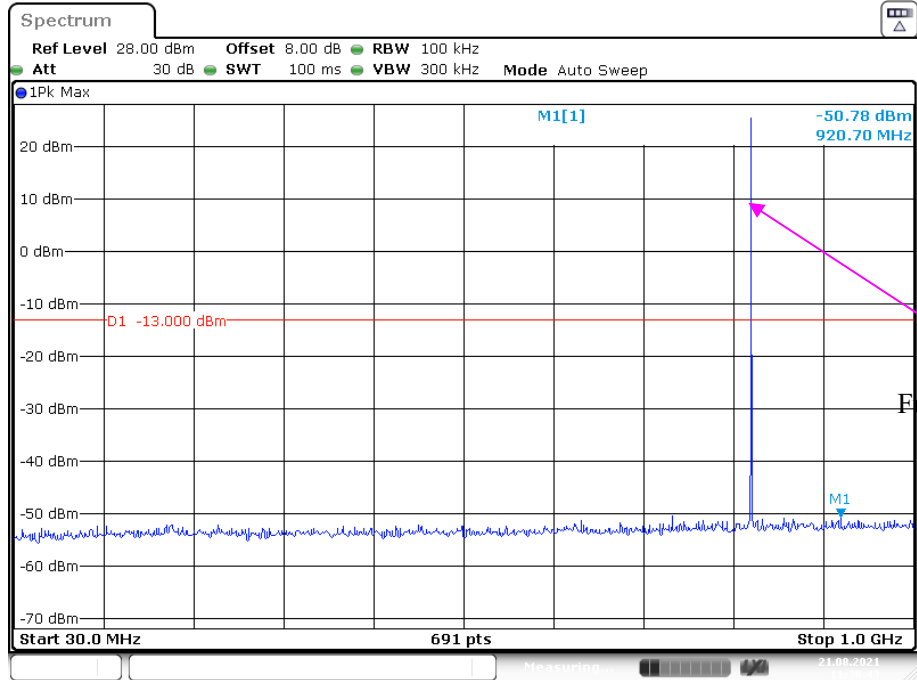
Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)

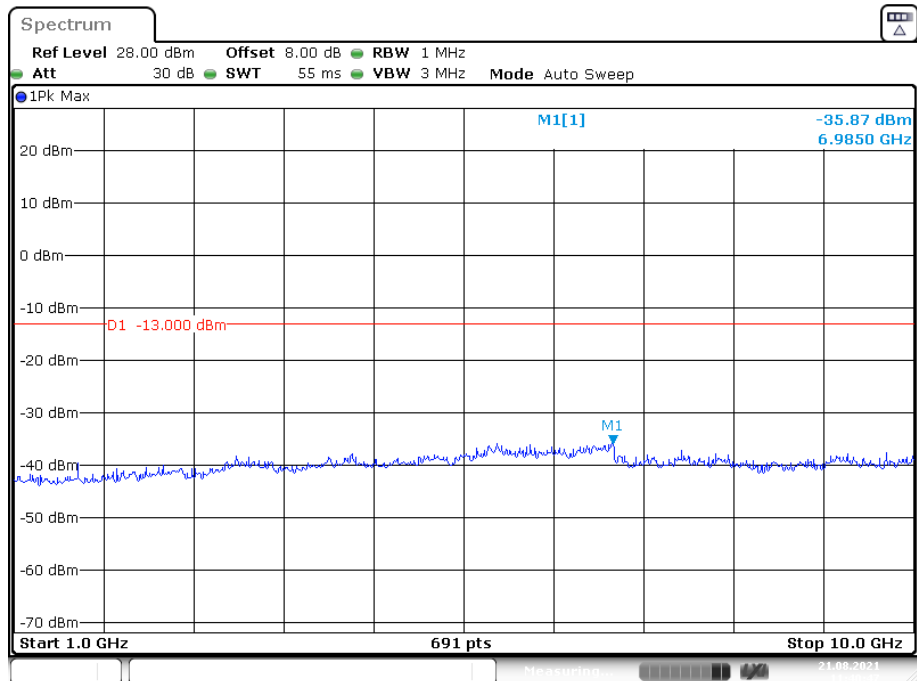
Low Channel:

30 MHz – 1 GHz (GSM Mode)



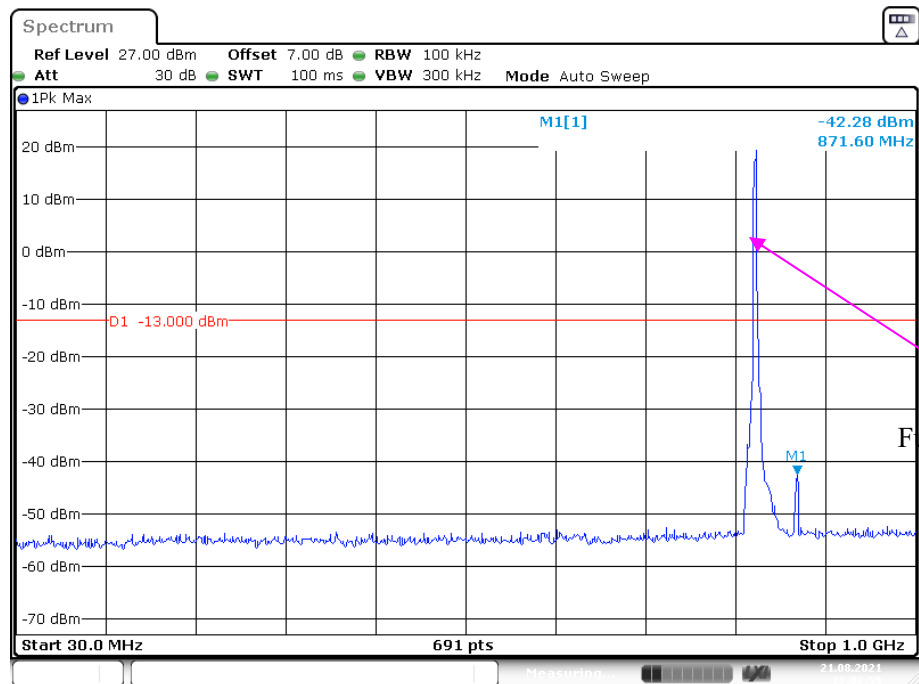
Date: 21.AUG.2021 11:38:44

1 GHz – 10 GHz (GSM Mode)



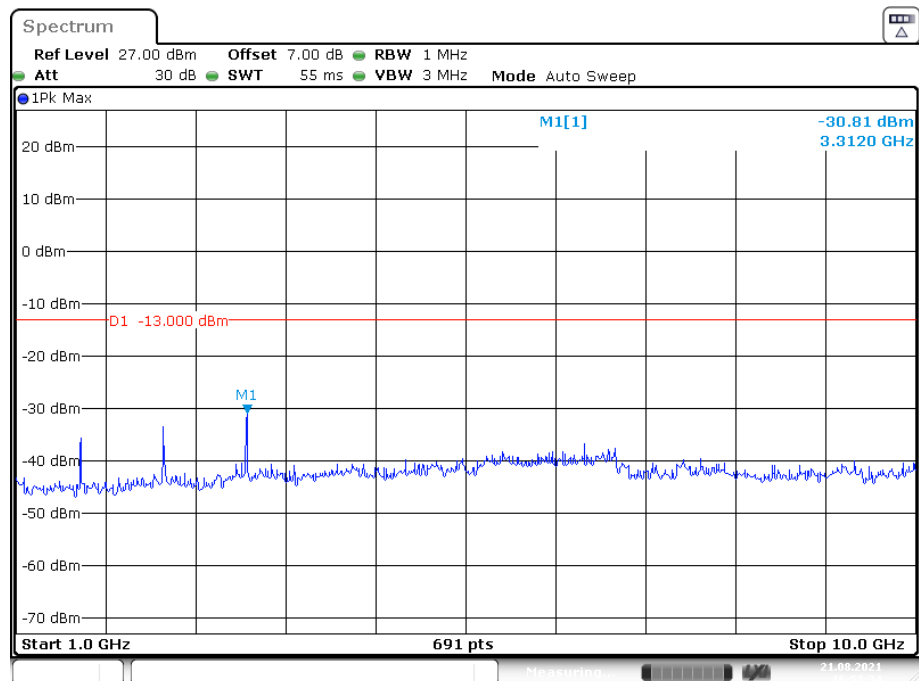
Date: 21.AUG.2021 11:40:47

30 MHz – 1 GHz (WCDMA Mode)



Date: 21.AUG.2021 17:02:59

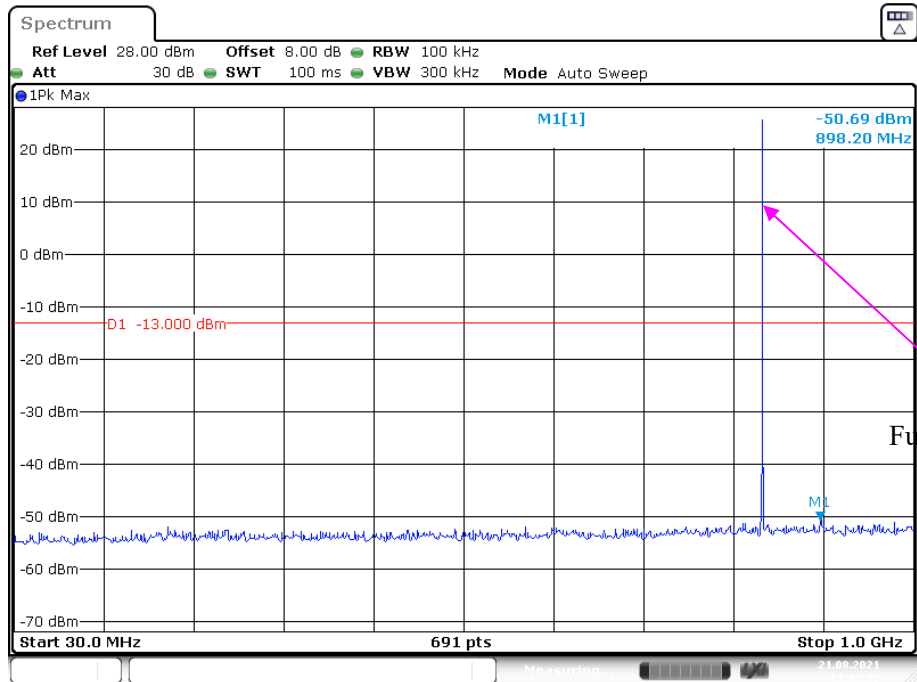
1 GHz – 10 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:57:34

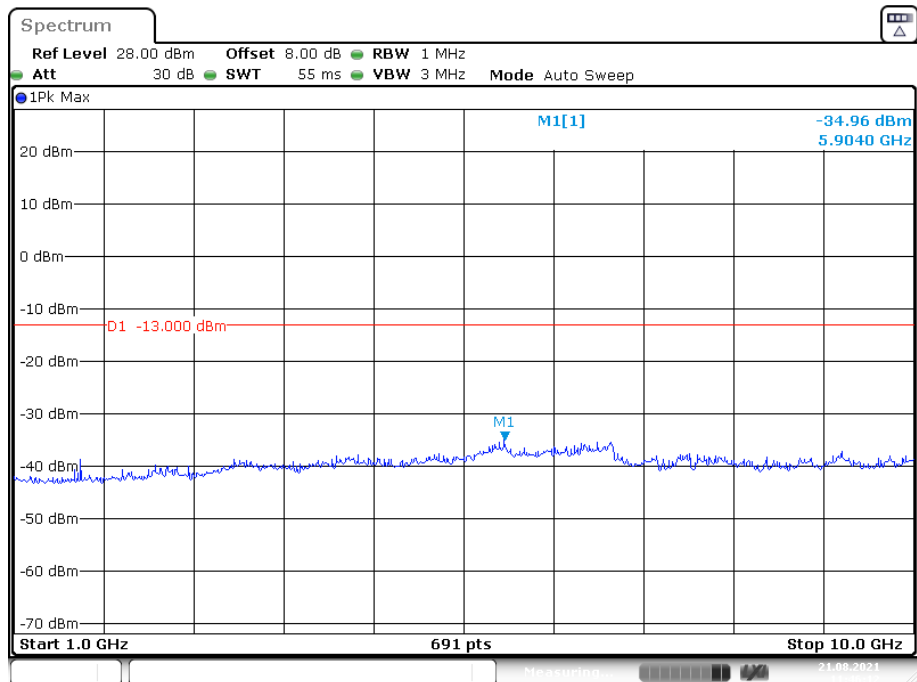
Middle Channel:

30 MHz – 1 GHz (GSM Mode)

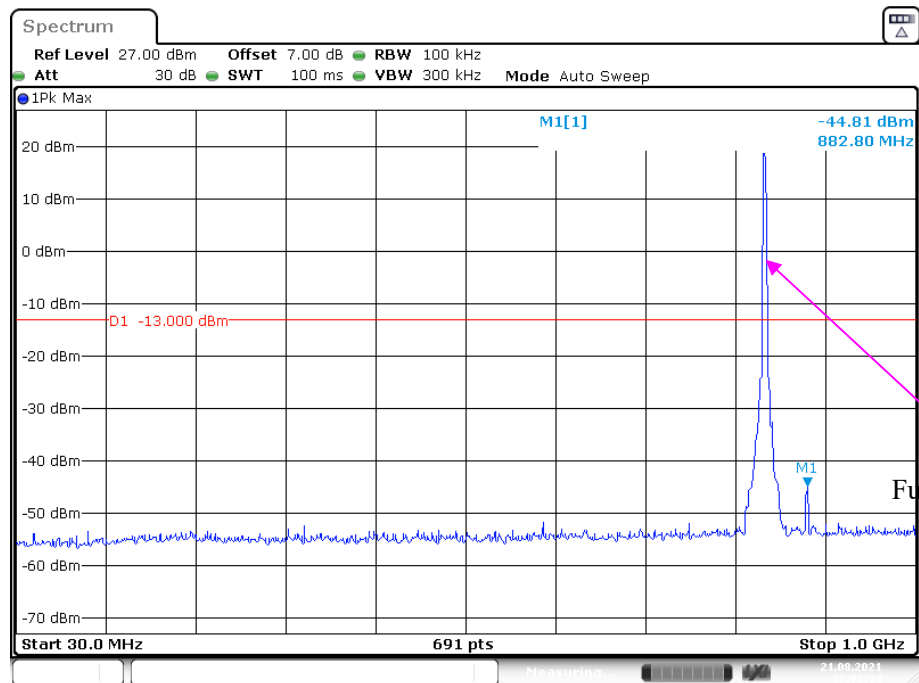


Fundamental test

1 GHz – 10 GHz (GSM Mode)

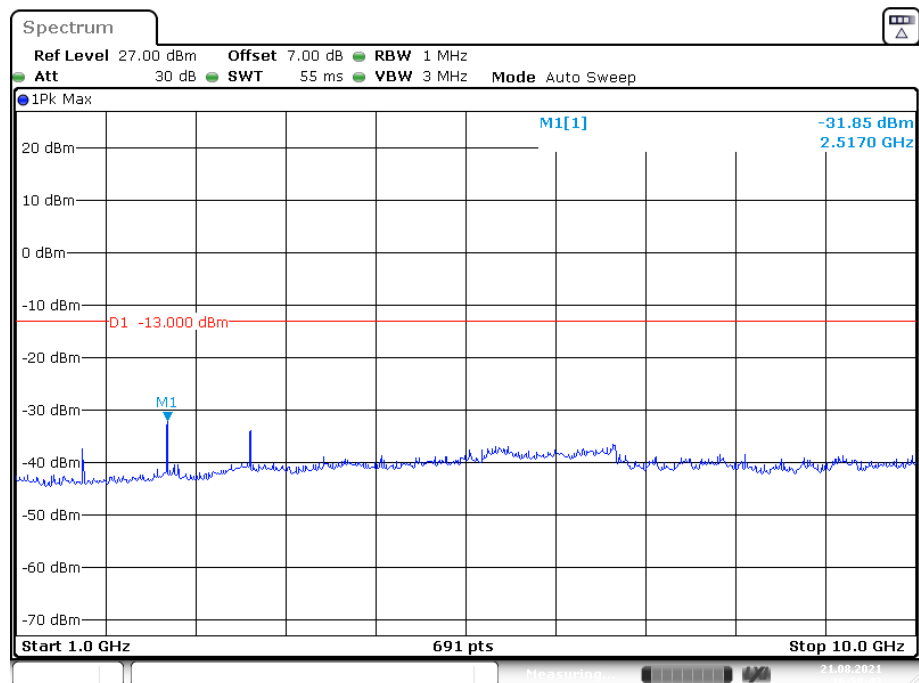


30 MHz – 1 GHz (WCDMA Mode)

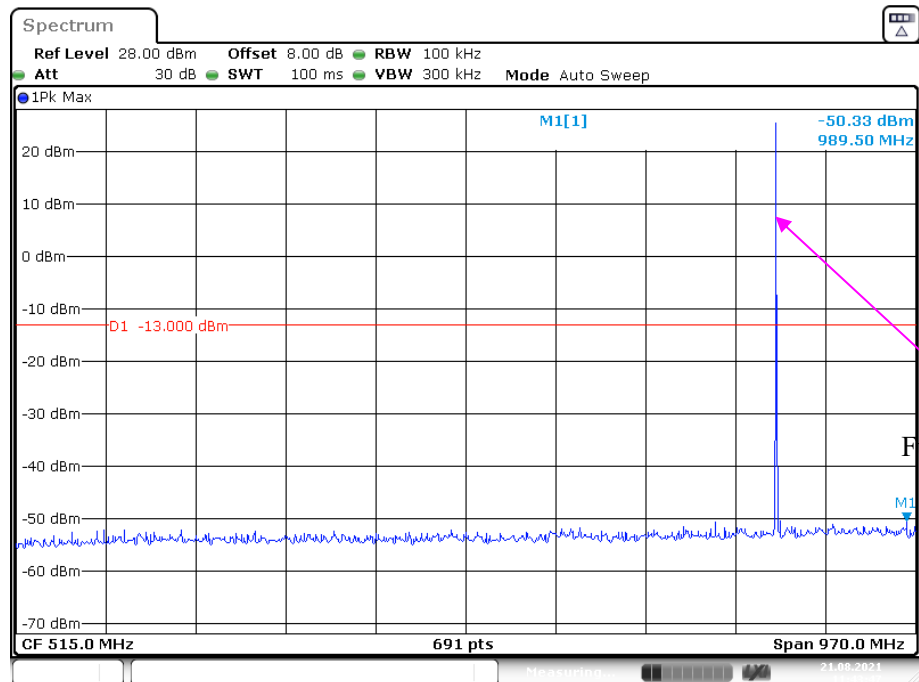


Date: 21.AUG.2021 17:02:14

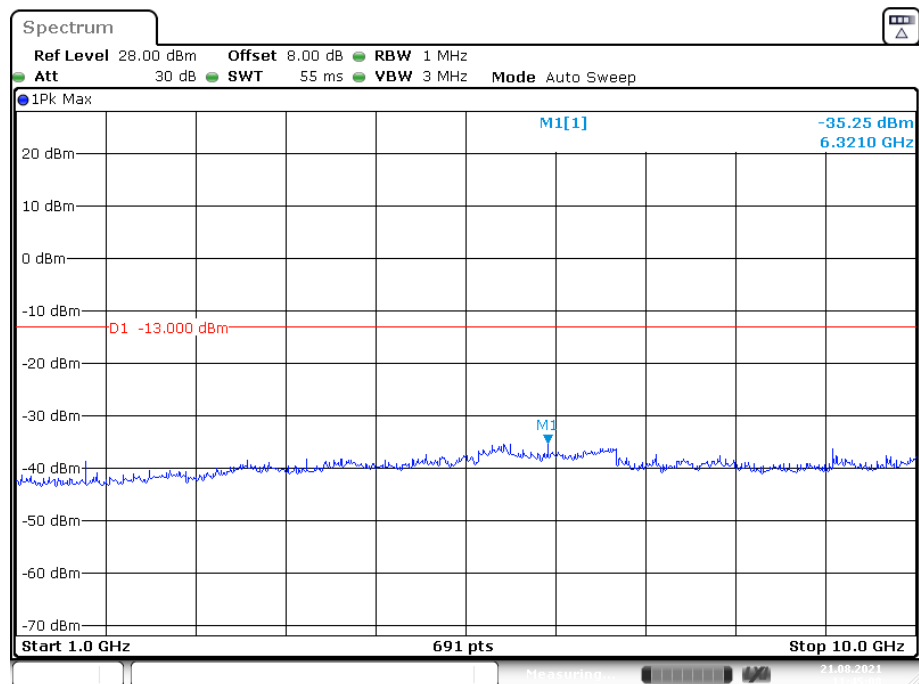
1 GHz – 10 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:58:43

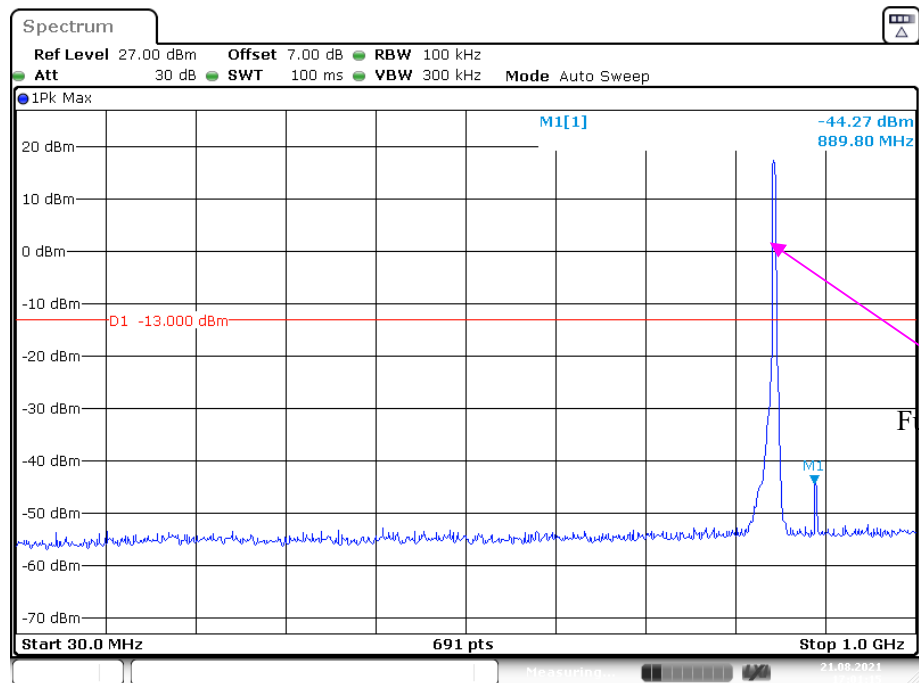
High Channel:**30 MHz – 1 GHz (GSM Mode)**

Date: 21.AUG.2021 11:43:48

1 GHz – 10 GHz (GSM Mode)

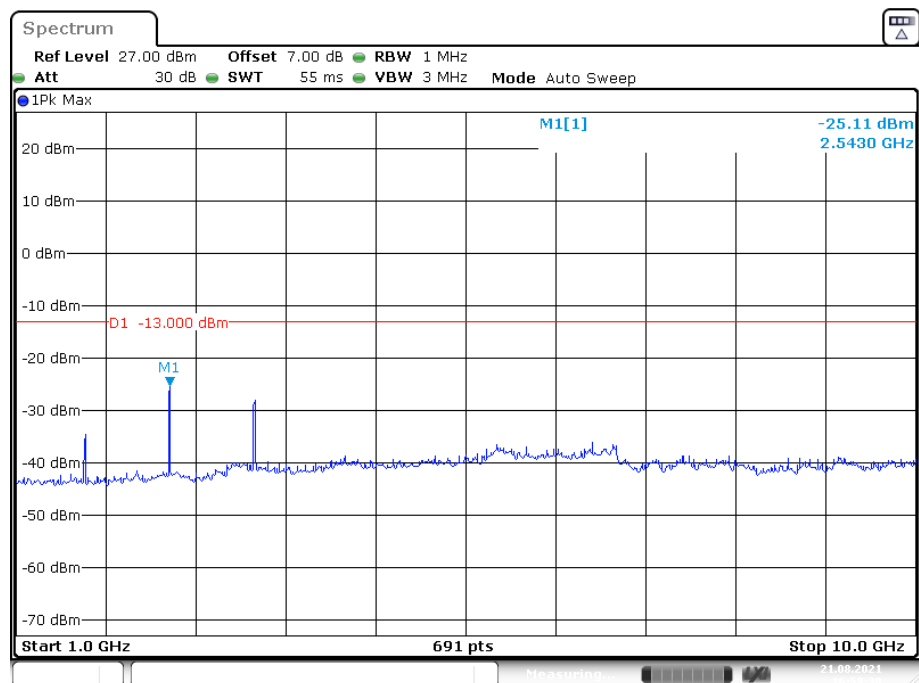
Date: 21.AUG.2021 11:45:09

30 MHz – 1 GHz (WCDMA Mode)



Date: 21.AUG.2021 17:01:15

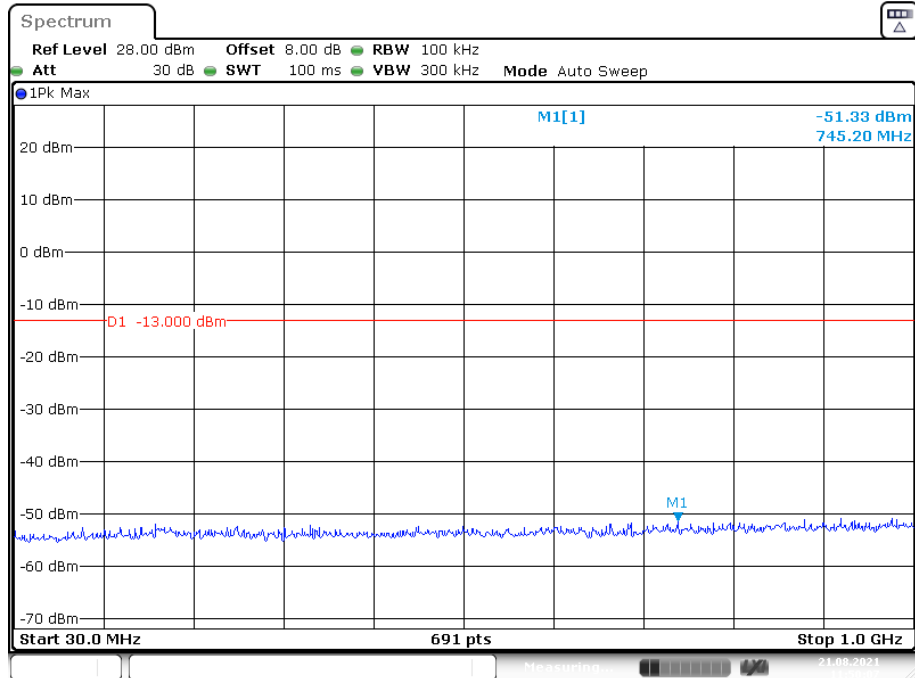
1 GHz – 10 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:59:30

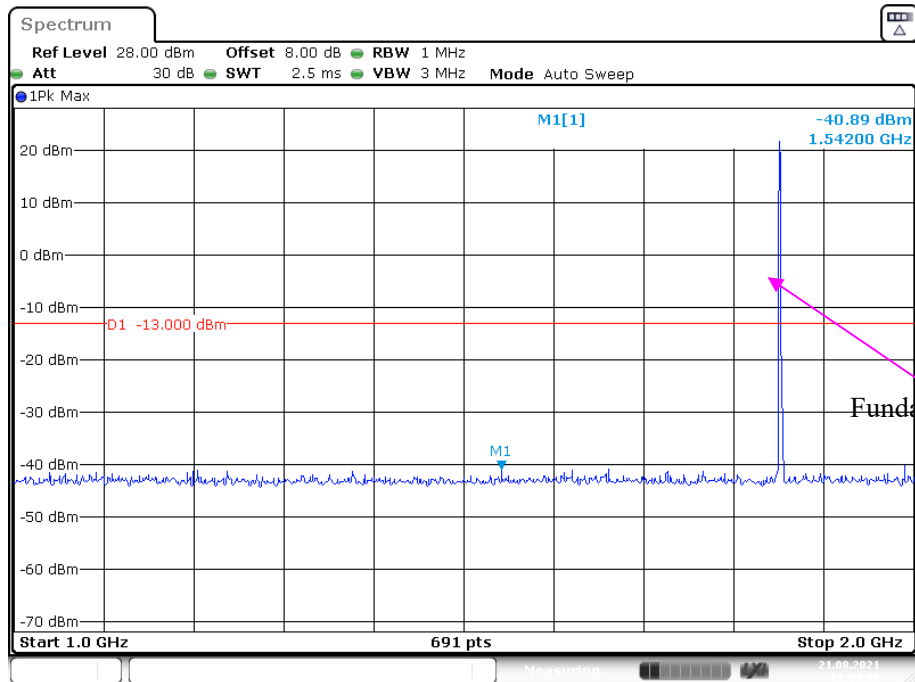
PCS Band (Part 24E)
Low Channel:

30 MHz – 1 GHz (GSM Mode)



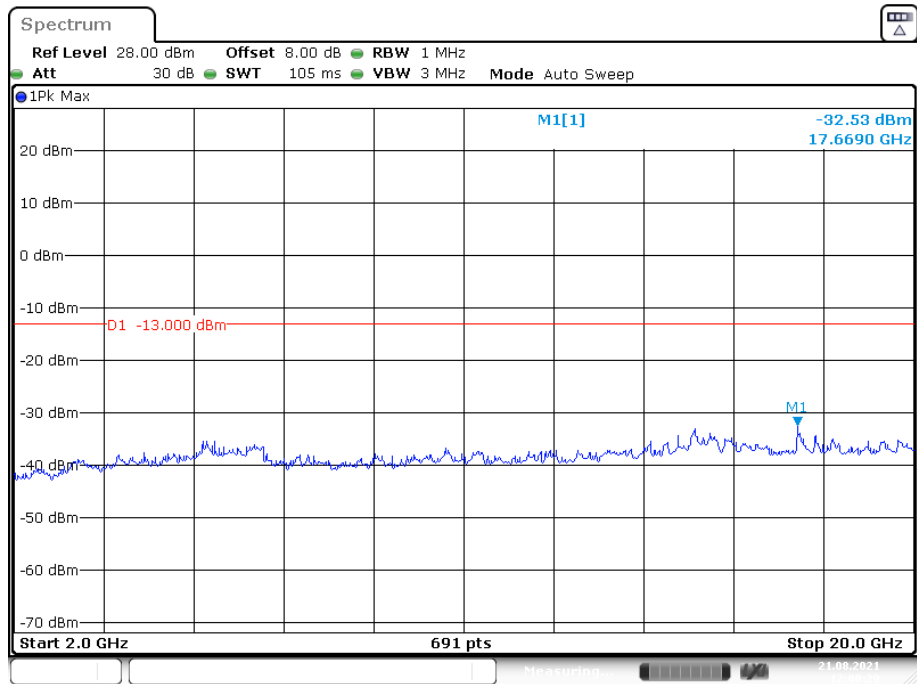
Date: 21.AUG.2021 11:50:07

1 GHz – 2 GHz (GSM Mode)



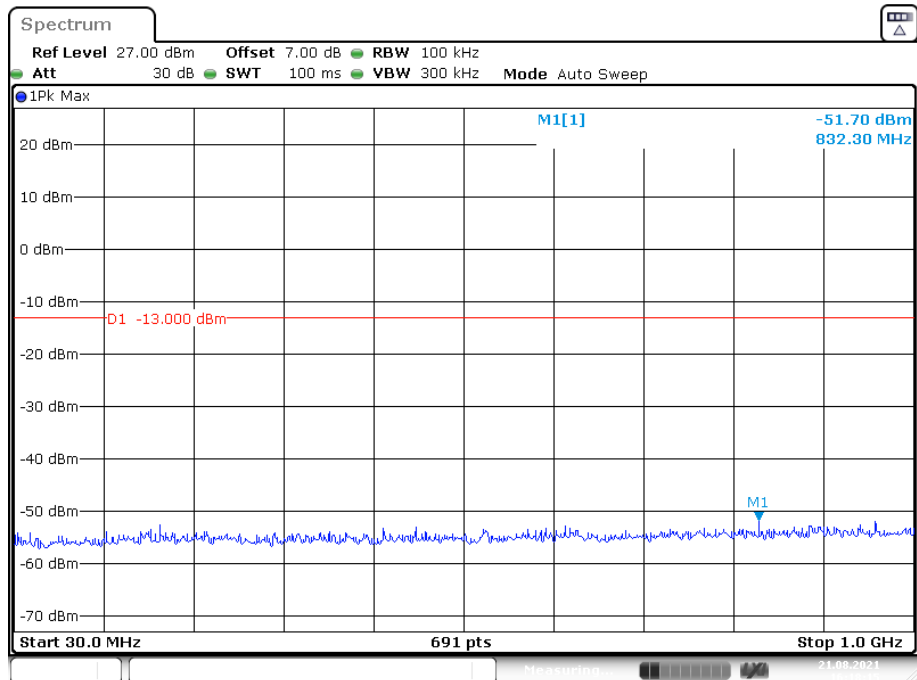
Date: 21.AUG.2021 11:54:38

2 GHz – 20 GHz (GSM Mode)



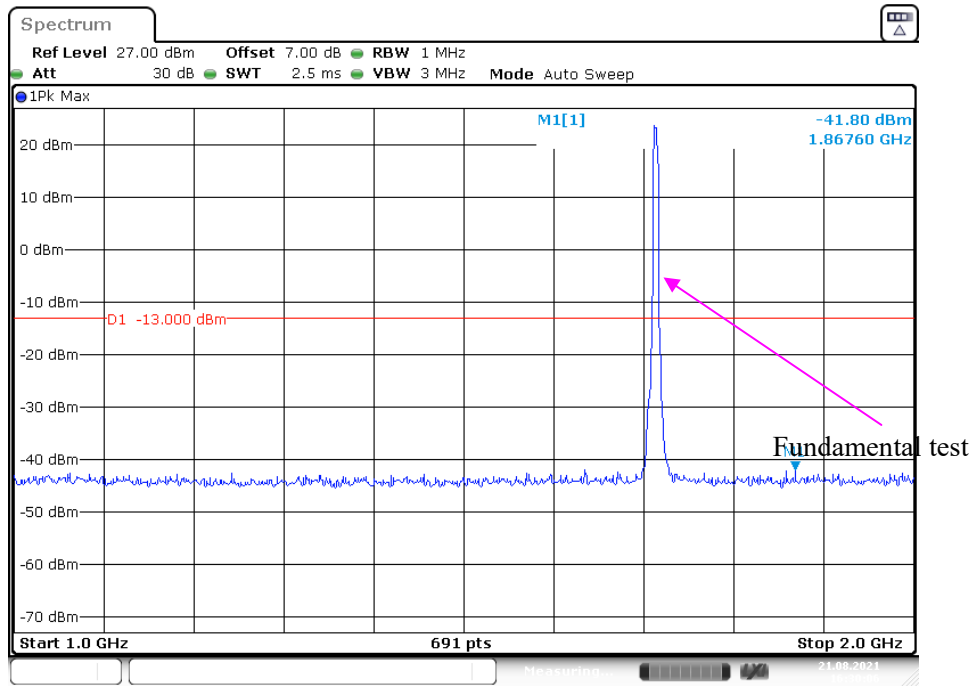
Date: 21.AUG.2021 12:00:30

30 MHz – 1 GHz (WCDMA Mode)



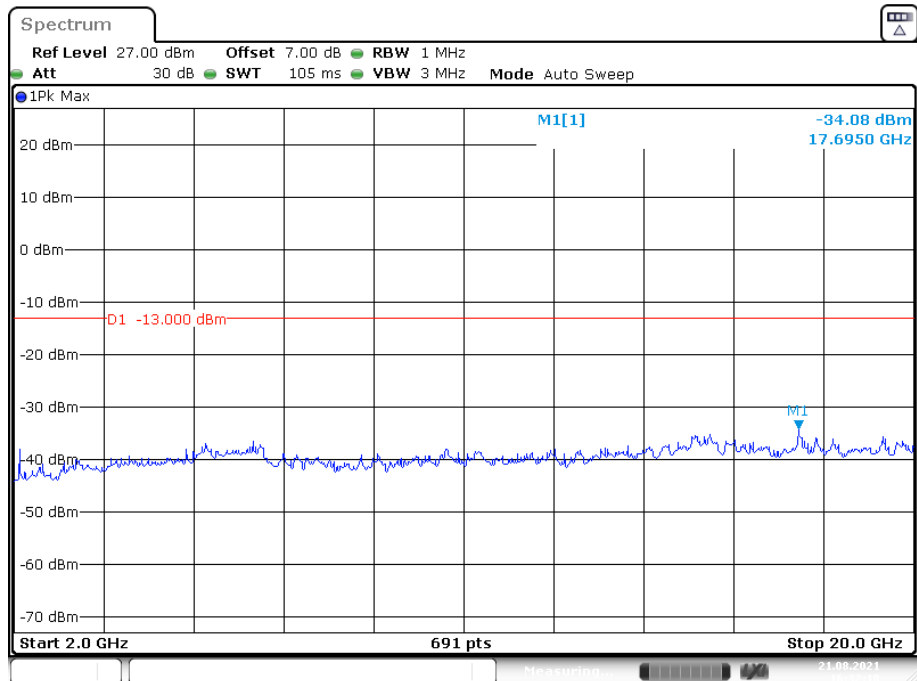
Date: 21.AUG.2021 16:18:15

1 GHz – 2 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:30:06

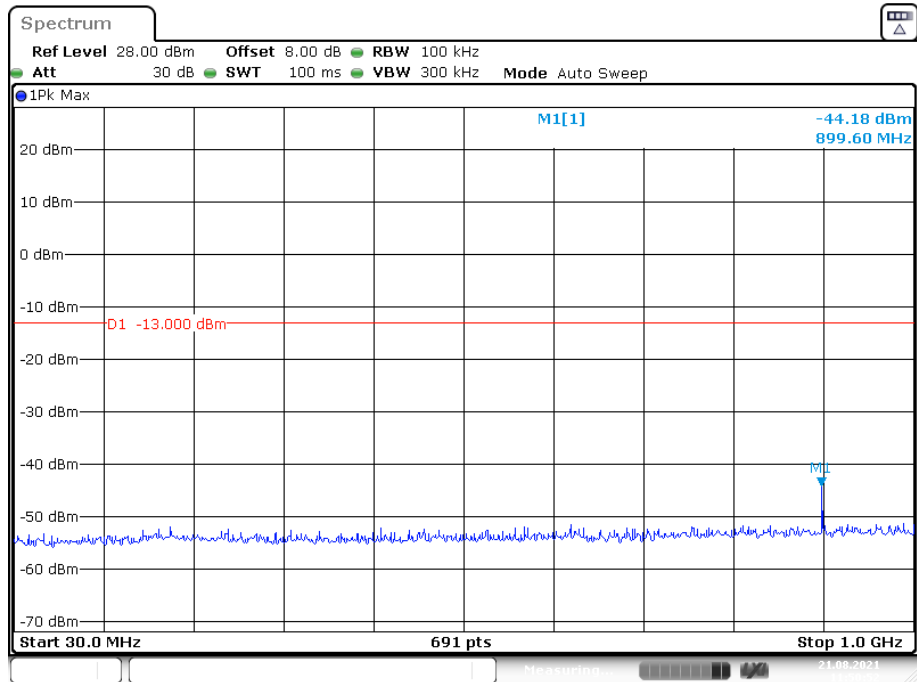
2 GHz – 20 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:32:18

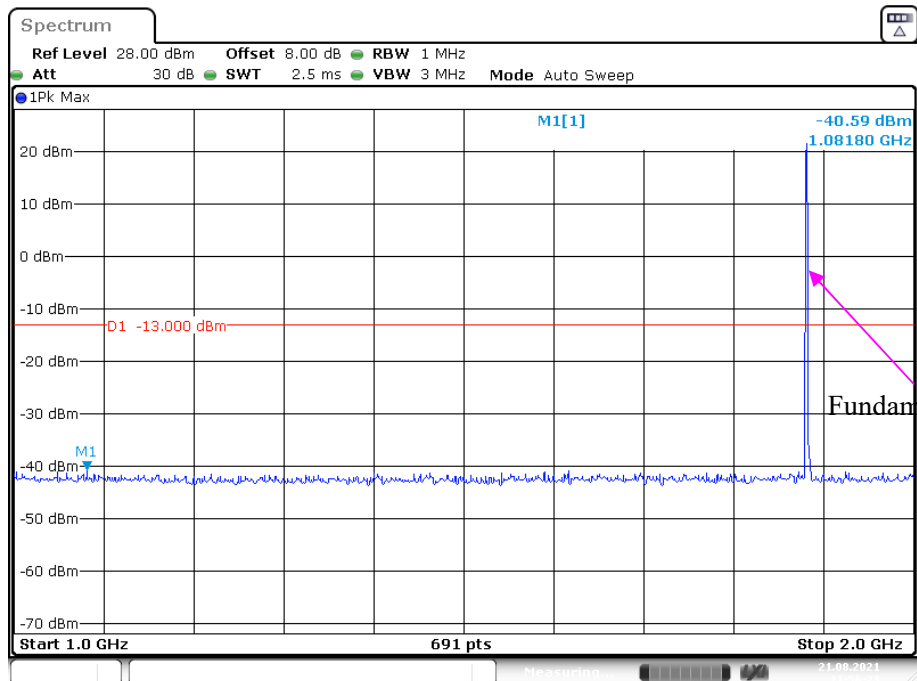
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



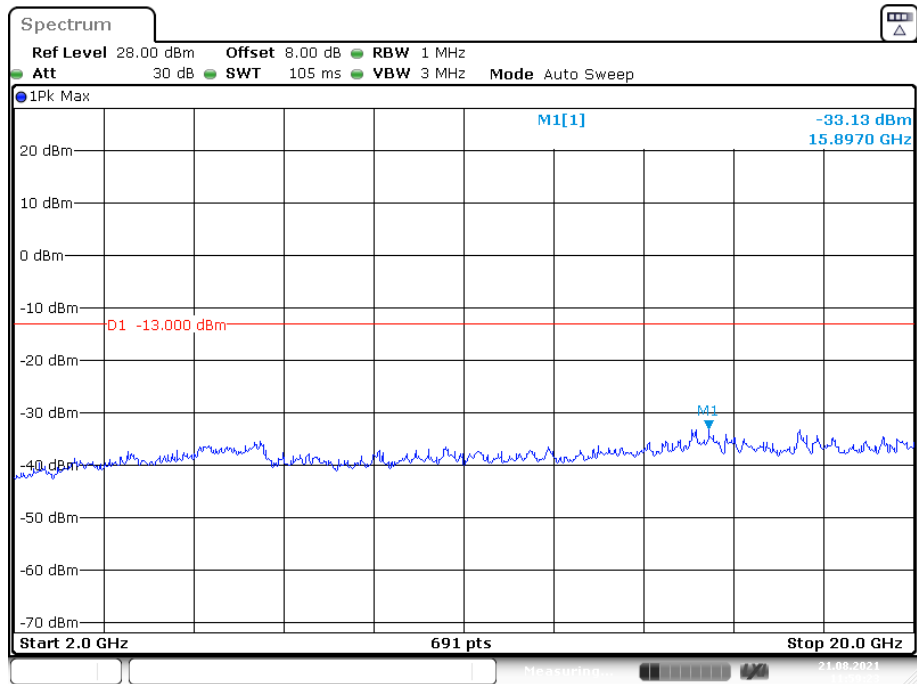
Date: 21.AUG.2021 11:50:53

1 GHz – 2 GHz (GSM Mode)



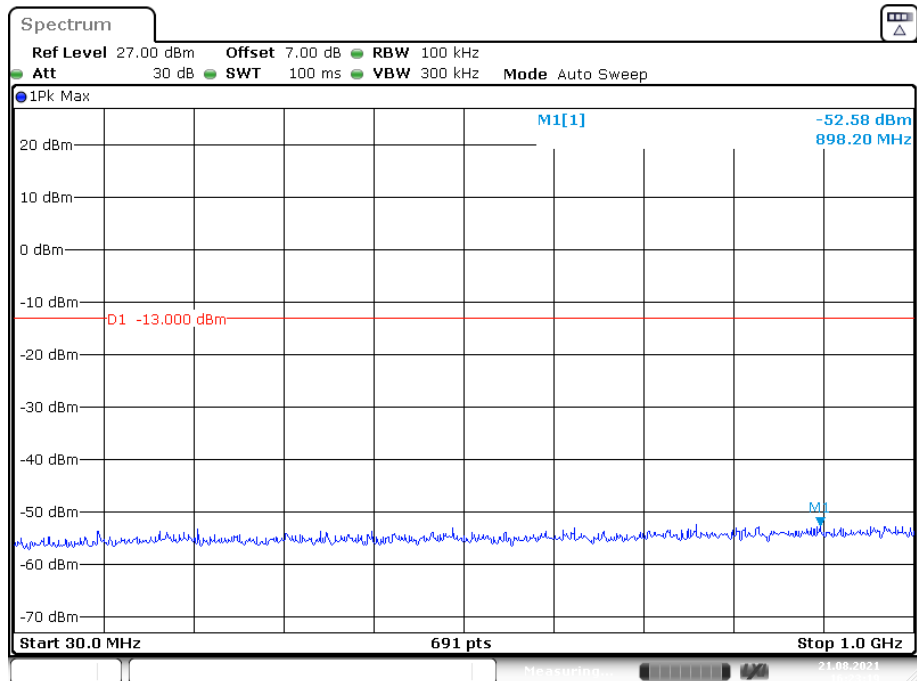
Date: 21.AUG.2021 11:56:23

2 GHz – 20 GHz (GSM Mode)



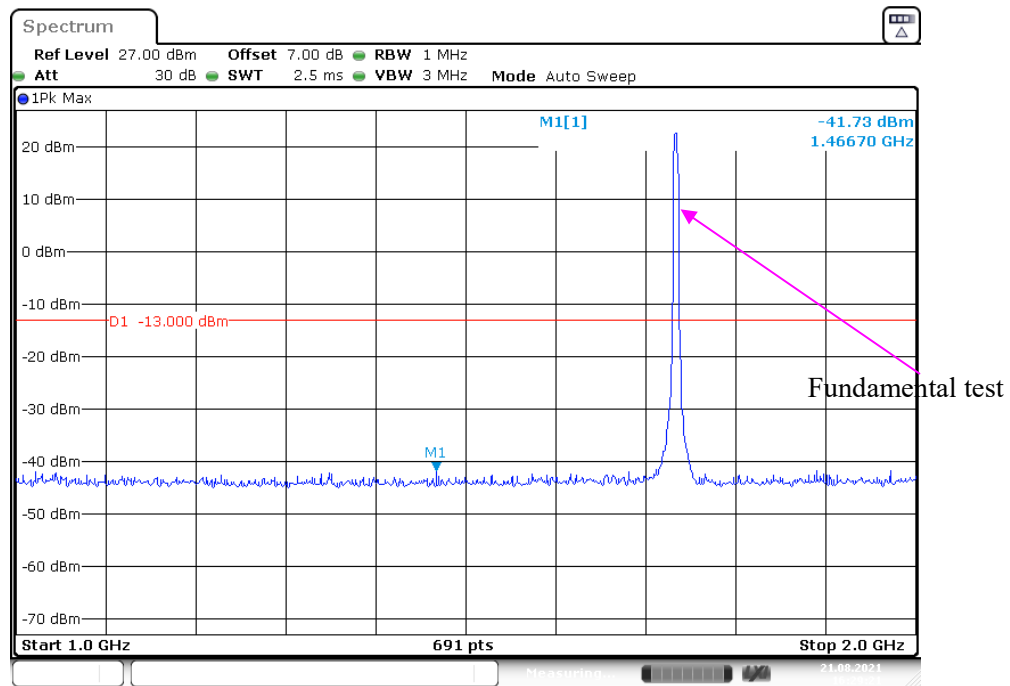
Date: 21.AUG.2021 11:59:24

30 MHz – 1 GHz (WCDMA Mode)



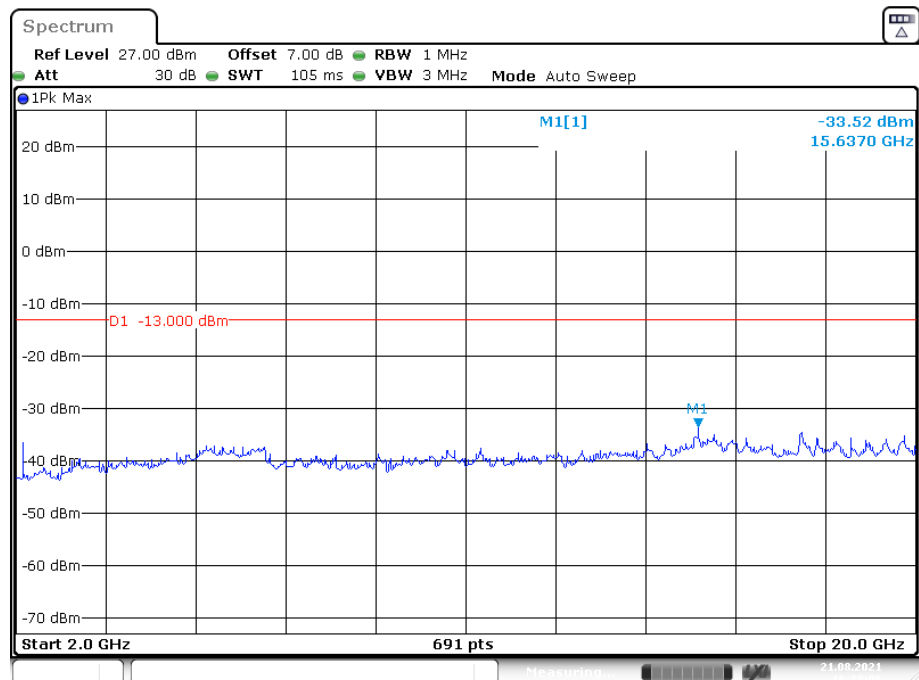
Date: 21.AUG.2021 16:23:19

1 GHz – 2 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:29:21

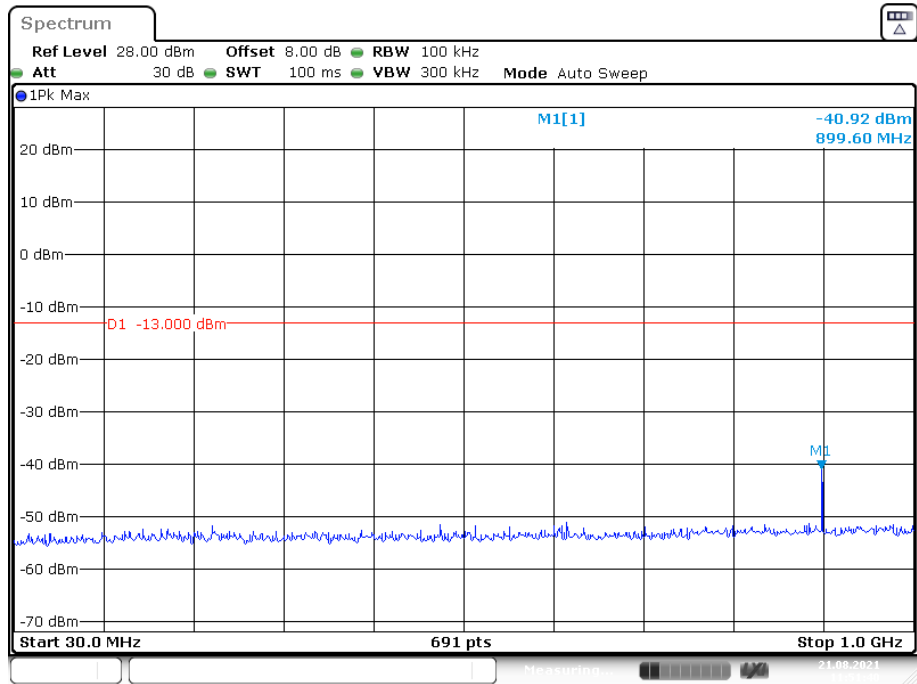
2 GHz – 20 GHz (WCDMA Mode)



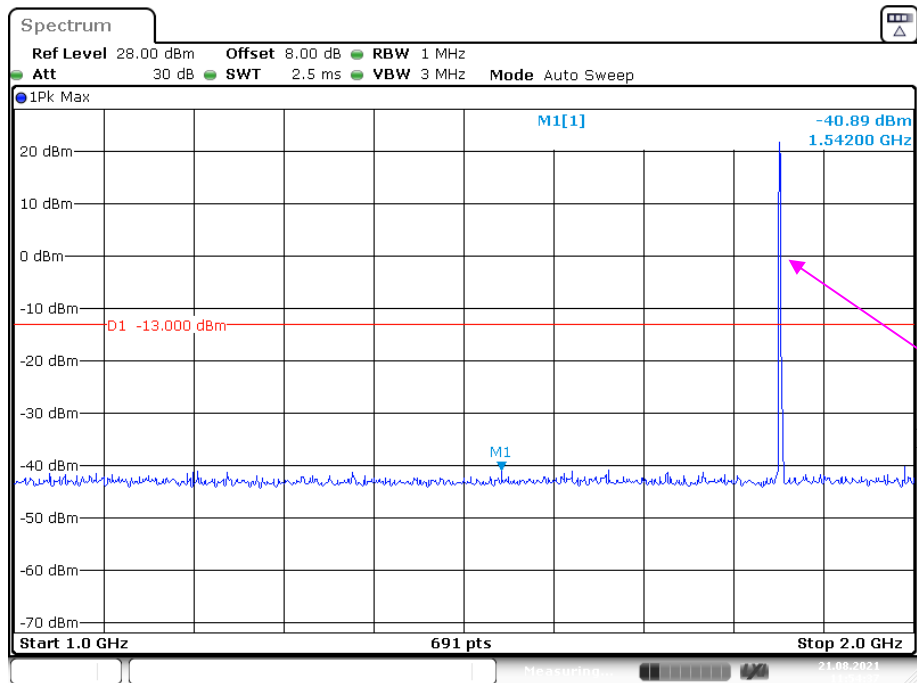
Date: 21.AUG.2021 16:33:06

High Channel:

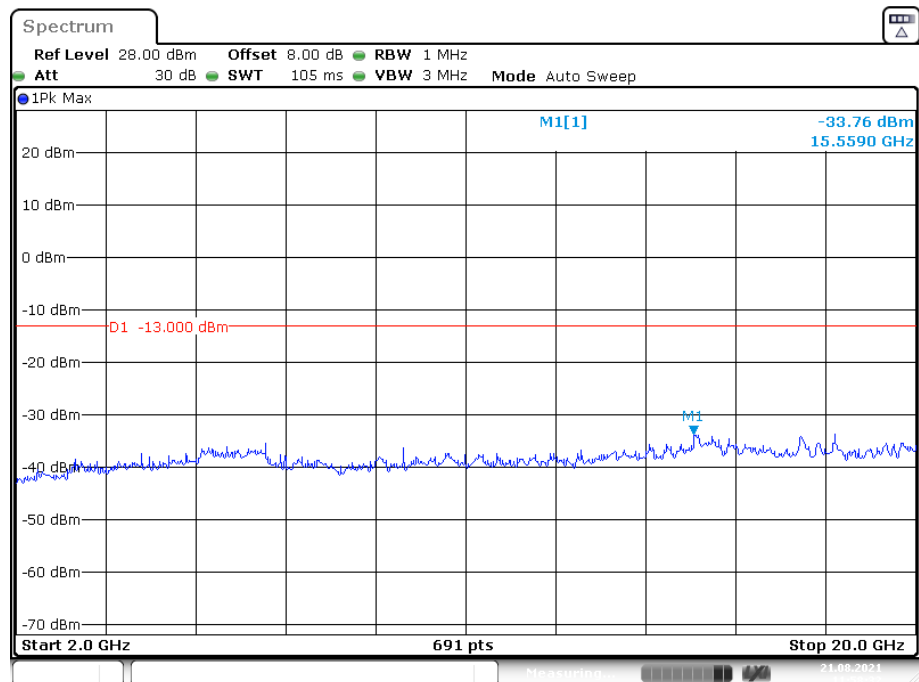
30 MHz – 1 GHz (GSM Mode)



1 GHz – 2 GHz (GSM Mode)

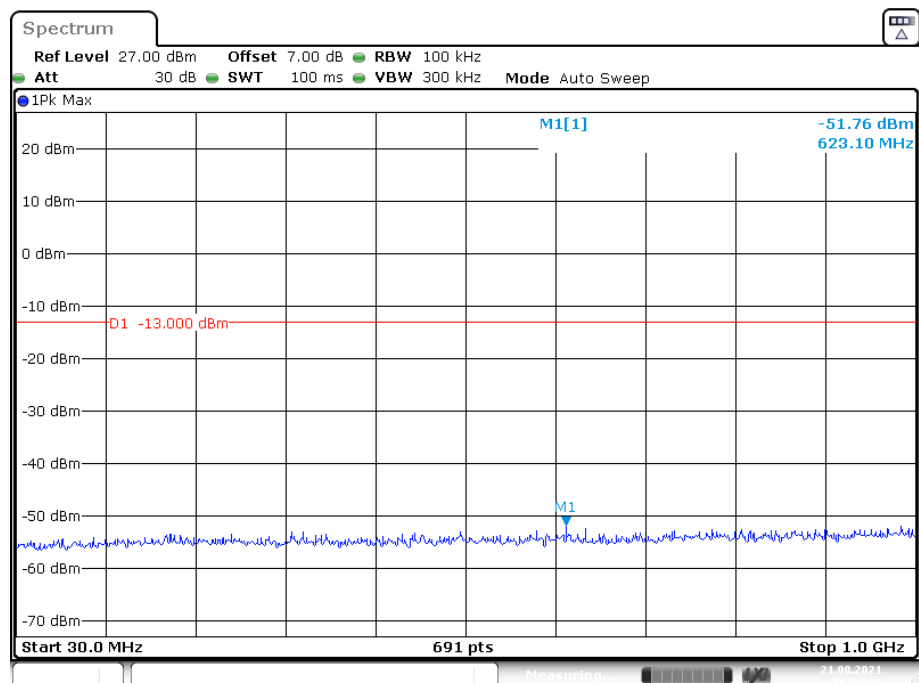


2 GHz – 20 GHz (GSM Mode)



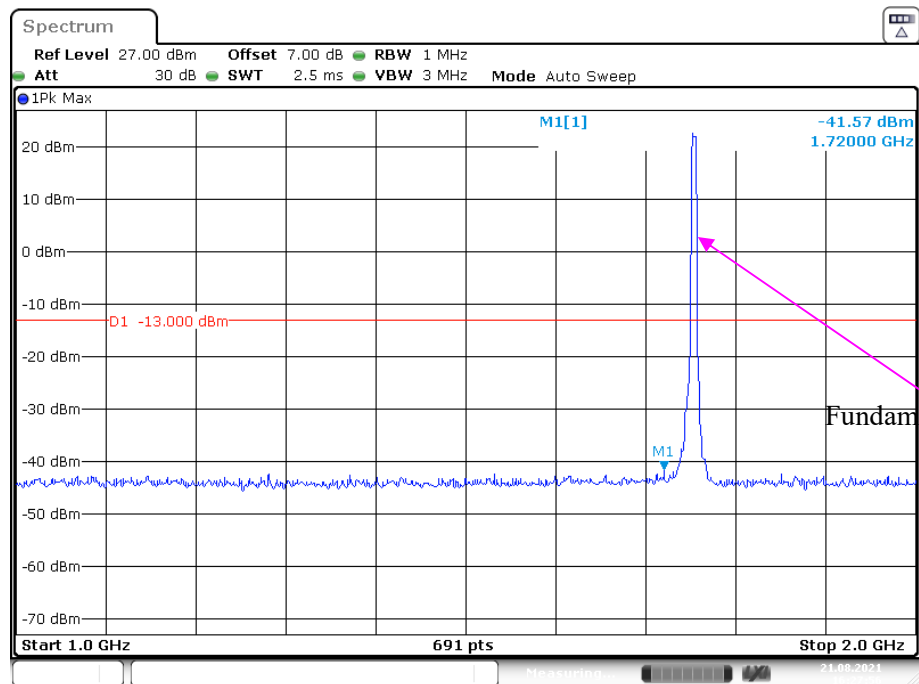
Date: 21.AUG.2021 11:58:32

30 MHz – 1 GHz (WCDMA Mode)



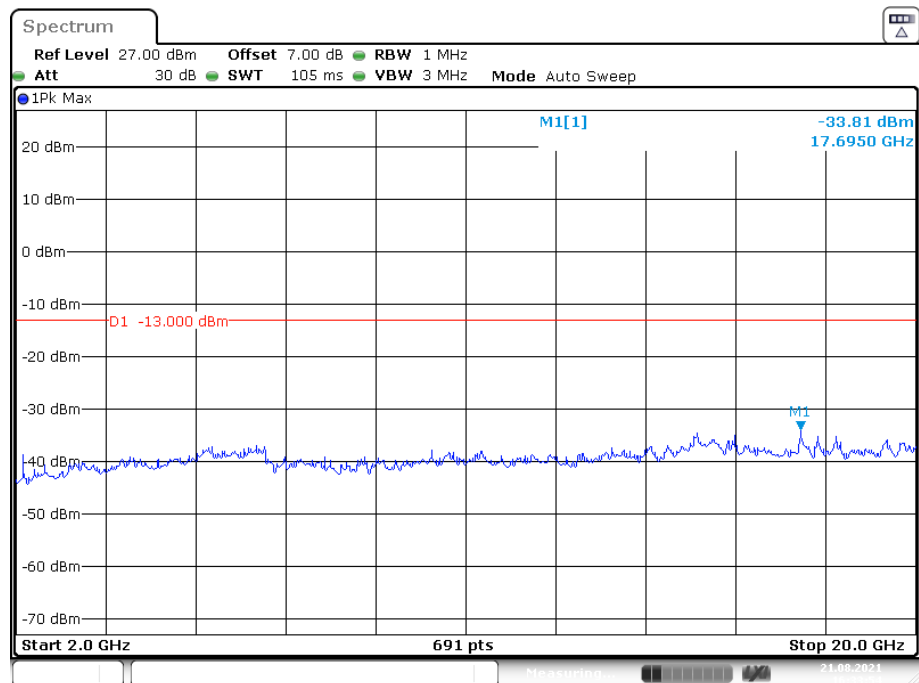
Date: 21.AUG.2021 16:24:21

1 GHz – 2 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:27:56

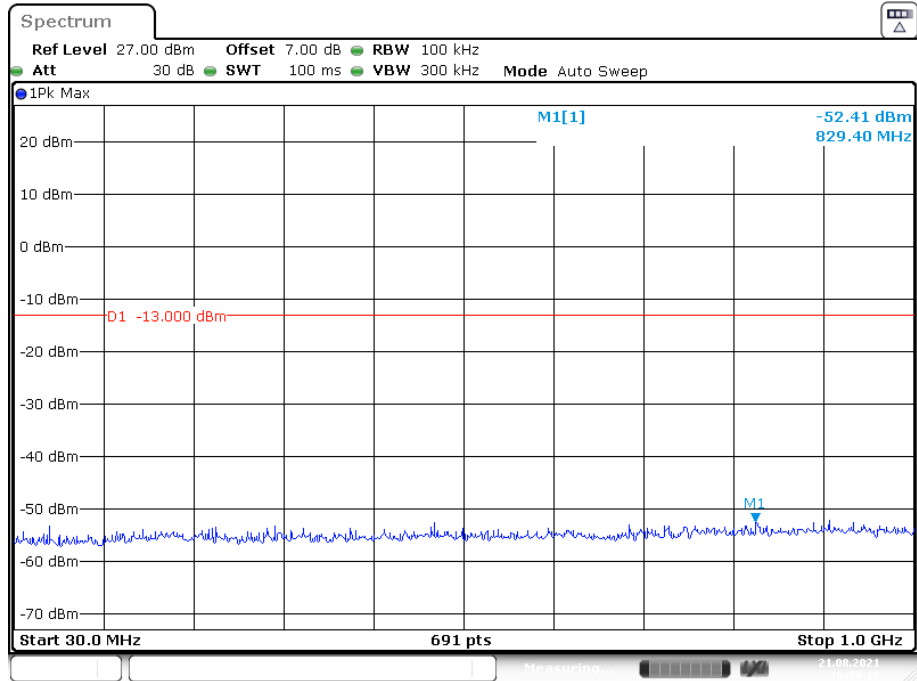
2 GHz – 20 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:33:54

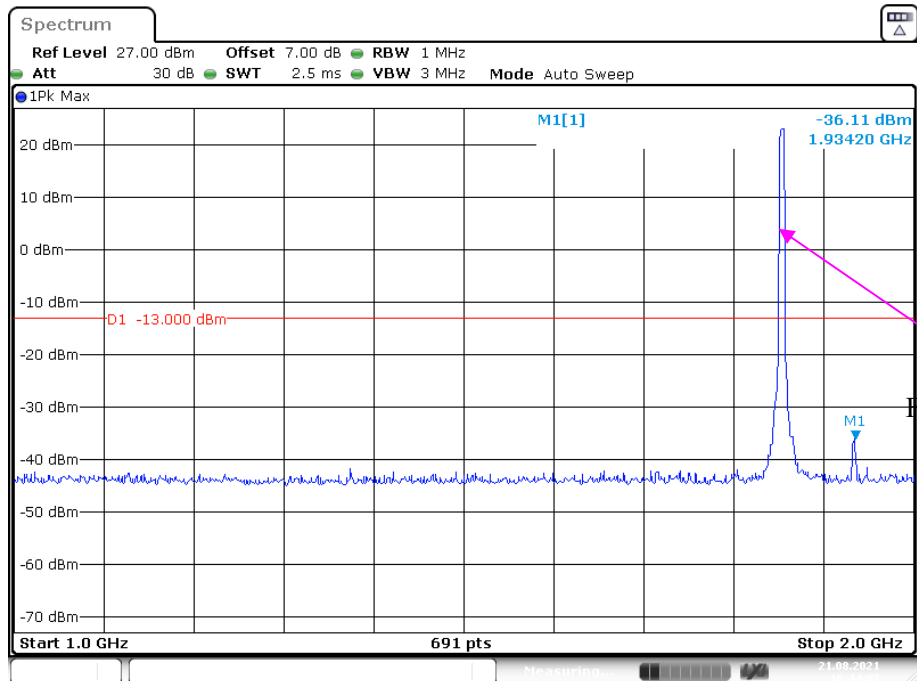
AWS Band (Part 27)
Low Channel:

30 MHz – 1 GHz (WCDMA Mode)



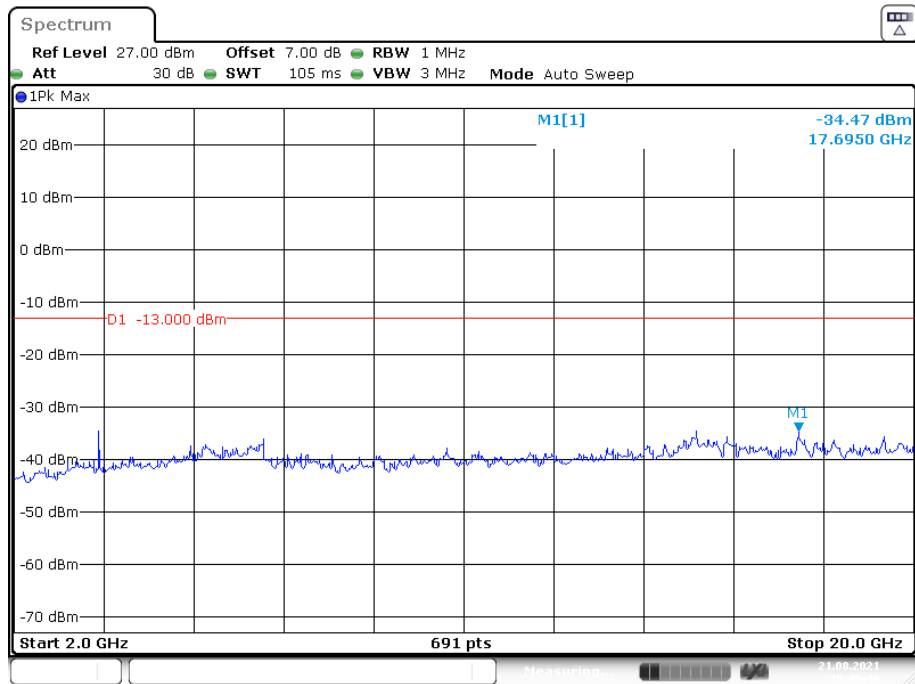
Date: 21.AUG.2021 16:39:12

1 GHz – 2 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:44:07

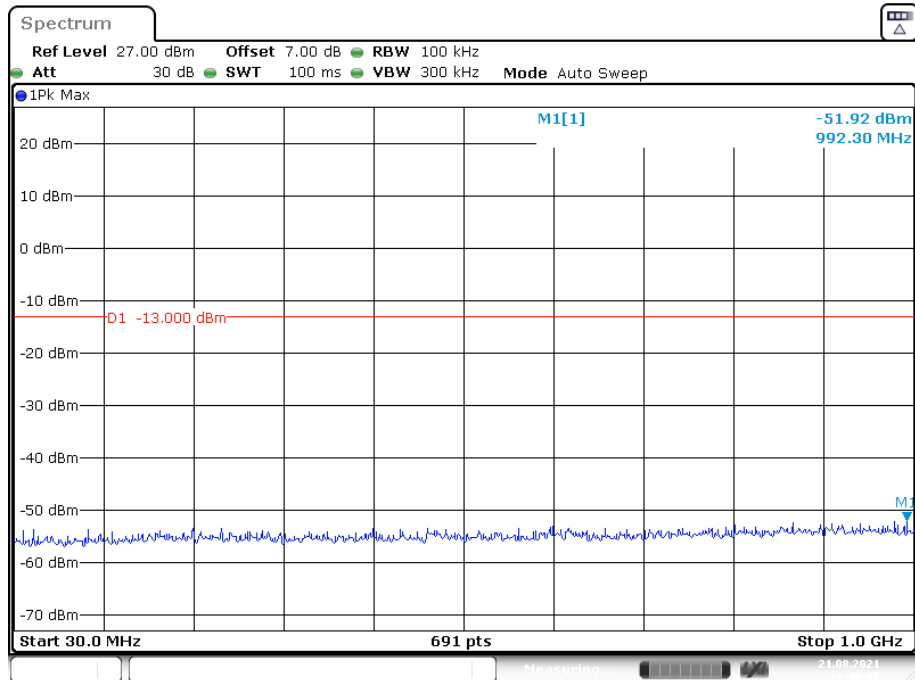
2 GHz – 20 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:45:49

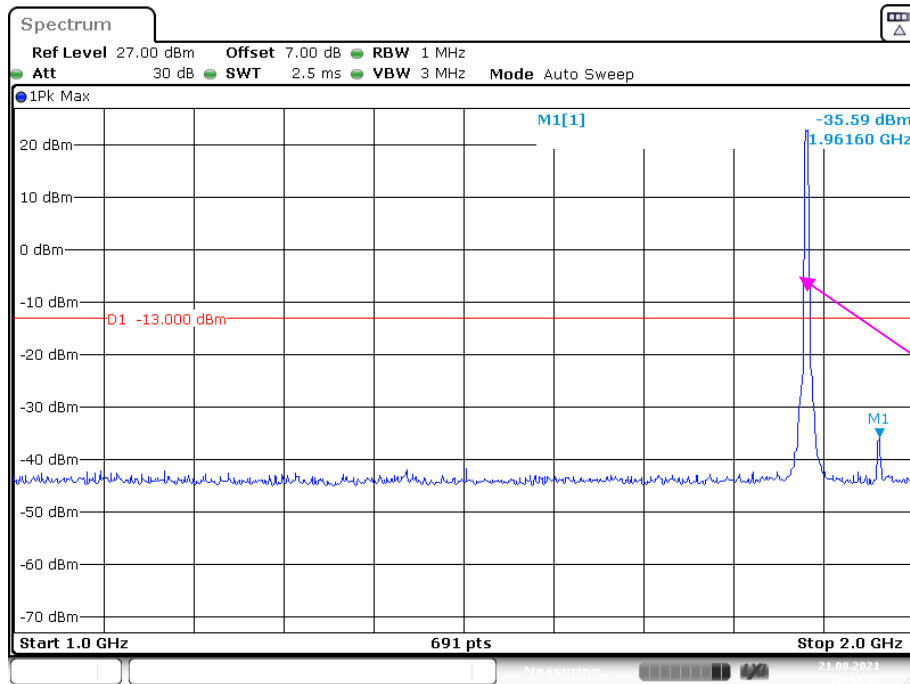
Middle Channel

30 MHz – 1 GHz (WCDMA Mode)



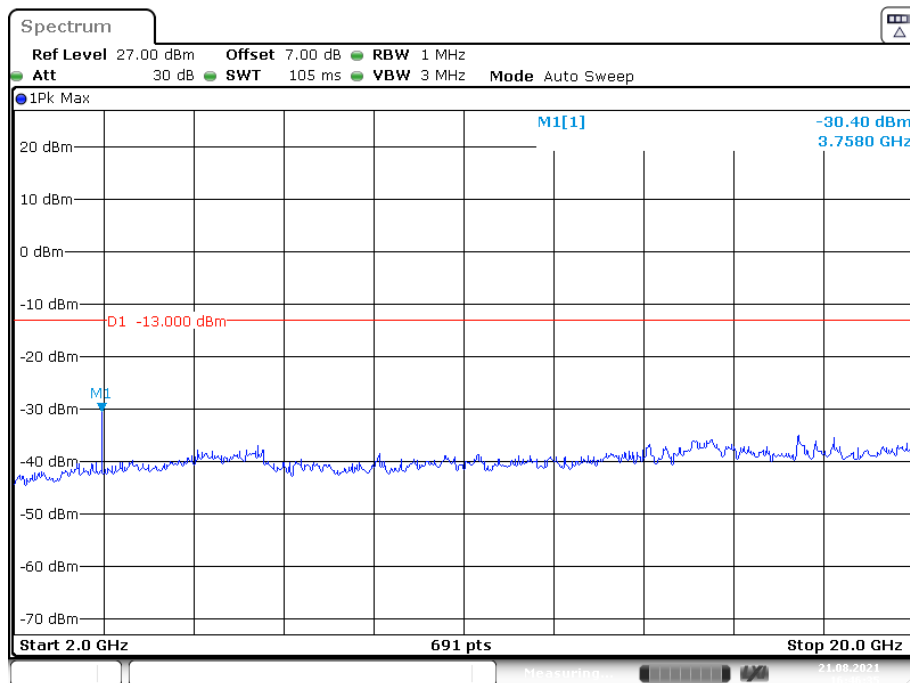
Date: 21.AUG.2021 16:40:07

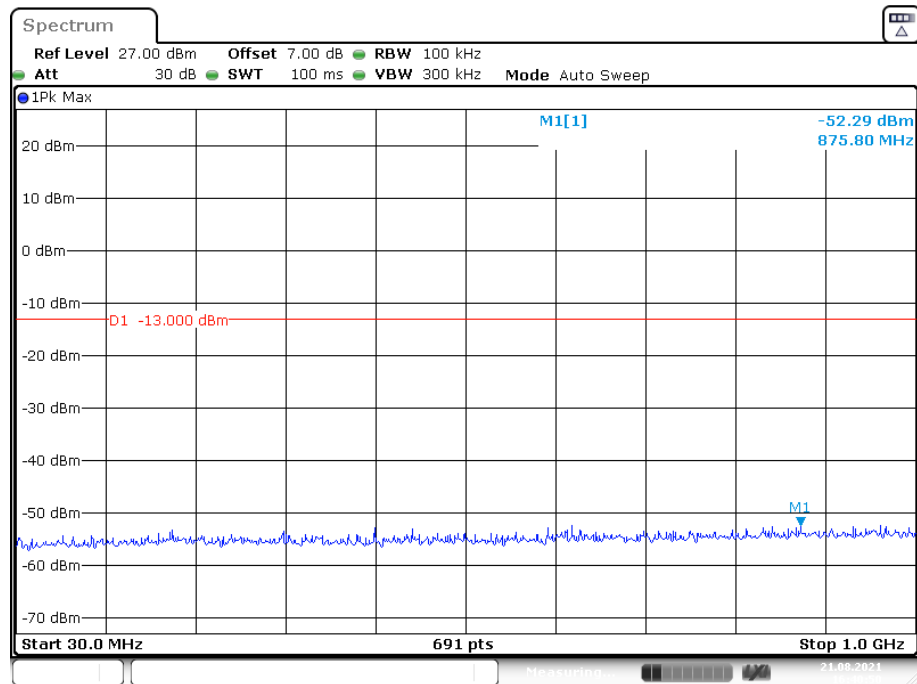
1 GHz – 2 GHz (WCDMA Mode)



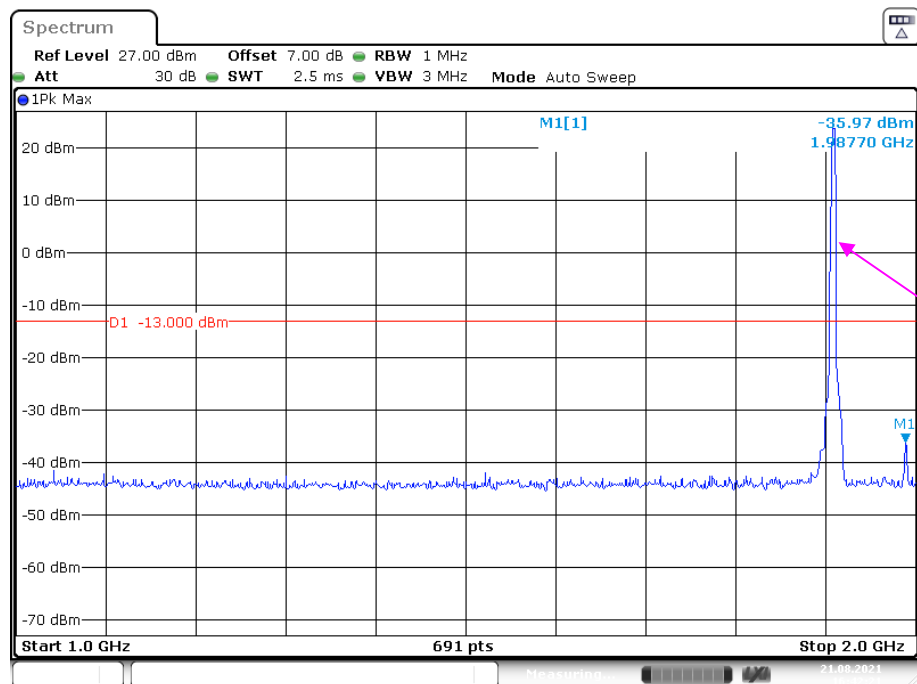
Fundamental test

2 GHz – 20 GHz (WCDMA Mode)



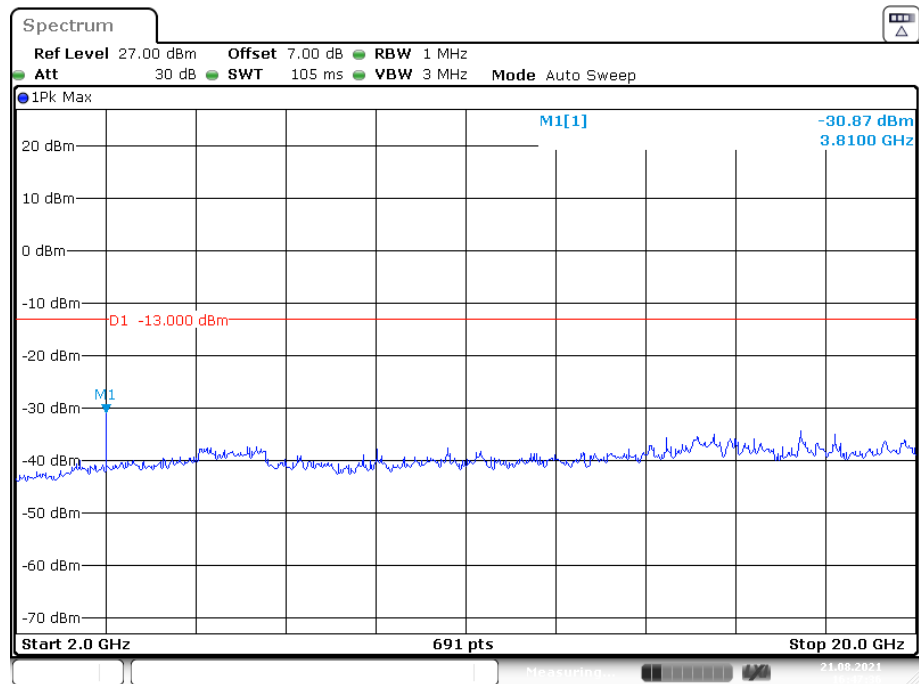
High Channel:**30 MHz – 1 GHz (WCDMA Mode)**

Date: 21.AUG.2021 16:40:50

1 GHz – 2 GHz (WCDMA Mode)

Date: 21.AUG.2021 16:42:21

2 GHz – 20 GHz (WCDMA Mode)



Date: 21.AUG.2021 16:47:36

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) and § 24.238(a) and § 27.53

Test Procedure

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

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

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

Test Data**Environmental Conditions**

Temperature:	28~28.8 °C
Relative Humidity:	51~58 %
ATM Pressure:	101.0~101.2 kPa

The testing was performed by William Wang on 2021-08-12 for below 1GHz and Bruce Lin from 2021-08-20 for above 1GHz.

EUT operation mode: Transmitting

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

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
965.3	32.69	43	2.0	H	-63.8	1.36	0.0	-65.16	-13	52.16
965.3	33.81	53	1.4	V	-60.2	1.36	0.0	-61.56	-13	48.56
1648.40	54.76	173	1.0	H	-53.3	1.40	8.70	-46.00	-13	33.00
1648.40	47.96	256	1.1	V	-59.9	1.40	8.70	-52.60	-13	39.60
2472.60	48.95	179	2.4	H	-54.4	2.60	10.20	-46.80	-13	33.80
2472.60	50.22	274	2.2	V	-52.5	2.60	10.20	-44.90	-13	31.90
3296.80	43.82	146	2.1	H	-57.1	1.50	11.70	-46.90	-13	33.90
3296.80	44.14	84	1.3	V	-56.8	1.50	11.70	-46.60	-13	33.60
Middle channel										
965.8	32.38	37	2.0	H	-64.1	1.36	0.0	-65.46	-13	52.46
965.8	33.61	329	1.8	V	-60.4	1.36	0.0	-61.76	-13	48.76
1673.20	50.14	103	2.1	H	-56.2	1.30	8.90	-48.60	-13	35.60
1673.20	47.19	30	1.0	V	-58.5	1.30	8.90	-50.90	-13	37.90
2509.80	47.58	64	1.9	H	-55.8	2.60	10.20	-48.20	-13	35.20
2509.80	48.66	43	2.0	V	-54.1	2.60	10.20	-46.50	-13	33.50
3346.40	43.87	322	2.5	H	-57.0	1.50	11.70	-46.80	-13	33.80
3346.40	43.97	127	2.0	V	-57.0	1.50	11.70	-46.80	-13	33.80
High channel										
961.8	31.19	289	1.2	H	-65.3	1.36	0.0	-66.66	-13	53.66
961.8	32.35	260	2.5	V	-61.7	1.36	0.0	-63.06	-13	50.06
1693.60	51.25	112	1.8	H	-55.1	1.30	8.90	-47.50	-13	34.50
1693.60	48.01	83	2.5	V	-57.7	1.30	8.90	-50.10	-13	37.10
2540.40	47.92	205	1.5	H	-55.4	2.60	10.20	-47.80	-13	34.80
2540.40	47.69	66	2.1	V	-55.1	2.60	10.20	-47.50	-13	34.50
3387.20	44.15	308	1.4	H	-57.1	1.40	11.80	-46.70	-13	33.70
3387.20	43.85	18	2.4	V	-57.2	1.40	11.80	-46.80	-13	33.80

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
952.3	32.69	226	1.6	H	-63.8	1.36	0.0	-65.16	-13	52.16
952.3	33.54	254	1.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
1652.80	57.66	60	1.7	H	-48.7	1.30	8.90	-41.10	-13	28.10
1652.80	50.52	11	1.4	V	-55.2	1.30	8.90	-47.60	-13	34.60
2479.20	60.25	110	1.3	H	-43.1	2.60	10.20	-35.50	-13	22.50
2479.20	63.01	184	1.4	V	-39.7	2.60	10.20	-32.10	-13	19.10
3305.60	47.68	239	2.1	H	-53.2	1.50	11.70	-43.00	-13	30.00
3305.60	45.85	95	2.0	V	-55.1	1.50	11.70	-44.90	-13	31.90
Middle channel										
951.6	32.67	62	1.9	H	-63.8	1.36	0.0	-65.16	-13	52.16
951.6	33.72	244	1.7	V	-60.3	1.36	0.0	-61.66	-13	48.66
1673.20	53.85	217	1.1	H	-52.5	1.30	8.90	-44.90	-13	31.90
1673.20	49.33	334	1.9	V	-56.4	1.30	8.90	-48.80	-13	35.80
2509.80	57.96	34	1.1	H	-45.4	2.60	10.20	-37.80	-13	24.80
2509.80	59.60	164	1.1	V	-43.1	2.60	10.20	-35.50	-13	22.50
3346.40	48.92	123	2.3	H	-52.0	1.50	11.70	-41.80	-13	28.80
3346.40	47.34	218	2.1	V	-53.6	1.50	11.70	-43.40	-13	30.40
High channel										
966.8	32.72	329	2.2	H	-63.8	1.36	0.0	-65.16	-13	52.16
966.8	33.58	205	1.6	V	-60.5	1.36	0.0	-61.86	-13	48.86
1693.20	55.22	206	2.2	H	-51.1	1.30	8.90	-43.50	-13	30.50
1693.20	50.21	59	1.1	V	-55.5	1.30	8.90	-47.90	-13	34.90
2539.80	58.64	233	1.7	H	-44.7	2.60	10.20	-37.10	-13	24.10
2539.80	60.21	48	1.5	V	-42.5	2.60	10.20	-34.90	-13	21.90
3386.40	49.14	240	1.3	H	-52.1	1.40	11.80	-41.70	-13	28.70
3386.40	46.82	126	2.1	V	-54.2	1.40	11.80	-43.80	-13	30.80

30 MHz ~ 20 GHz:

PCS Band (Part 24E)

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
962.1	32.57	216	1.1	H	-63.9	1.36	0.0	-65.26	-13	52.26
962.1	33.64	226	2.4	V	-60.4	1.36	0.0	-61.76	-13	48.76
3700.40	44.85	297	1.0	H	-57.0	1.60	11.90	-46.70	-13	33.70
3700.40	45.17	24	2.0	V	-56.1	1.60	11.90	-45.80	-13	32.80
Middle channel										
963.2	32.44	329	2.4	H	-64.1	1.36	0.0	-65.46	-13	52.46
963.2	33.66	97	2.3	V	-60.4	1.36	0.0	-61.76	-13	48.76
3760.00	44.54	223	2.3	H	-57.5	1.50	11.80	-47.20	-13	34.20
3760.00	44.37	138	1.7	V	-57.2	1.50	11.80	-46.90	-13	33.90
High channel										
962.5	32.49	354	1.2	H	-64.0	1.36	0.0	-65.36	-13	52.36
962.5	33.56	210	1.6	V	-60.5	1.36	0.0	-61.86	-13	48.86
3819.60	44.34	316	1.8	H	-57.7	1.50	11.80	-47.40	-13	34.40
3819.60	45.72	239	1.4	V	-55.9	1.50	11.80	-45.60	-13	32.60
WCDMA Mode										
Low channel										
956.8	32.58	331	2.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
956.8	33.71	211	2.1	V	-60.3	1.36	0.0	-61.66	-13	48.66
3704.80	55.24	308	2.3	H	-46.6	1.60	11.90	-36.30	-13	23.30
3704.80	53.81	80	1.8	V	-47.4	1.60	11.90	-37.10	-13	24.10
Middle channel										
954.7	32.52	32	1.4	H	-64.0	1.36	0.0	-65.36	-13	52.36
954.7	33.65	155	1.2	V	-60.4	1.36	0.0	-61.76	-13	48.76
3760.00	54.05	157	1.2	H	-48.0	1.50	11.80	-37.70	-13	24.70
3760.00	51.75	257	1.4	V	-49.8	1.50	11.80	-39.50	-13	26.50
High channel										
961.2	32.64	17	2.2	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.2	33.58	109	1.5	V	-60.5	1.36	0.0	-61.86	-13	48.86
3815.20	54.81	213	1.1	H	-47.2	1.50	11.80	-36.90	-13	23.90
3815.20	52.70	202	2.4	V	-48.9	1.50	11.80	-38.60	-13	25.60

30 MHz ~ 20 GHz:**AWS Band**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
952.3	32.59	24	1.3	H	-63.9	1.36	0.0	-65.26	-13	52.26
952.3	33.63	216	2.2	V	-60.4	1.36	0.0	-61.76	-13	48.76
3424.80	68.37	255	2.4	H	-32.4	1.40	11.80	-22.00	-13	9.00
3424.80	67.22	78	2.0	V	-33.4	1.40	11.80	-23.00	-13	10.00
5137.20	60.73	112	1.8	H	-39.3	1.60	12.10	-28.80	-13	15.80
5137.20	61.80	296	1.9	V	-38.2	1.60	12.10	-27.70	-13	14.70
Middle channel										
951.6	32.66	170	1.1	H	-63.8	1.36	0.0	-65.16	-13	52.16
951.6	33.49	322	2.0	V	-60.6	1.36	0.0	-61.96	-13	48.96
3480.00	66.14	211	1.3	H	-34.6	1.50	12.00	-24.10	-13	11.10
3480.00	64.88	16	2.2	V	-36.6	1.50	12.00	-26.10	-13	13.10
5220.00	60.21	281	2.4	H	-39.9	1.60	12.10	-29.40	-13	16.40
5220.00	58.64	21	1.3	V	-41.0	1.60	12.10	-30.50	-13	17.50
High channel										
964.8	32.52	25	1.1	H	-64.0	1.36	0.0	-65.36	-13	52.36
964.8	33.73	167	2.3	V	-60.3	1.36	0.0	-61.66	-13	48.66
3505.20	67.52	118	1.7	H	-33.2	1.50	12.00	-22.70	-13	9.70
3505.20	66.95	359	1.5	V	-34.6	1.50	12.00	-24.10	-13	11.10
5257.80	59.36	302	1.3	H	-40.4	1.60	12.20	-29.80	-13	16.80
5257.80	61.25	138	1.8	V	-37.9	1.60	12.20	-27.30	-13	14.30

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

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 2										
Test frequency range: 30 MHz ~ 20 GHz										
1.4MHz, Low channel										
956.8	32.58	331	2.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
956.8	33.71	211	2.1	V	-60.3	1.36	0.0	-61.66	-13	48.66
3701.40	50.23	56	1.5	H	-51.9	1.60	11.90	-41.60	-13	28.60
3701.40	51.43	233	1.8	V	-50.1	1.60	11.90	-39.80	-13	26.80
1.4MHz, Middle channel										
954.7	32.52	32	1.4	H	-64.0	1.36	0.0	-65.36	-13	52.36
954.7	33.65	155	1.2	V	-60.4	1.36	0.0	-61.76	-13	48.76
3760.00	51.46	224	2.5	H	-50.9	1.50	11.80	-40.60	-13	27.60
3760.00	52.10	336	1.0	V	-49.8	1.50	11.80	-39.50	-13	26.50
1.4MHz, High channel										
961.2	32.64	17	2.2	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.2	33.58	109	1.5	V	-60.5	1.36	0.0	-61.86	-13	48.86
3818.60	52.11	89	1.8	H	-50.3	1.50	11.80	-40.00	-13	27.00
3818.60	52.46	238	1.1	V	-49.5	1.50	11.80	-39.20	-13	26.20
Band 4										
Test frequency range:30 MHz ~ 20 GHz										
1.4MHz, Low channel										
952.3	32.59	24	1.3	H	-63.9	1.36	0.0	-65.26	-13	52.26
952.3	33.63	216	2.2	V	-60.4	1.36	0.0	-61.76	-13	48.76
3421.40	60.36	43	1.4	H	-40.9	1.40	11.80	-30.50	-13	17.50
3421.40	55.41	216	1.4	V	-45.6	1.40	11.80	-35.20	-13	22.20
1.4MHz, Middle channel										
951.6	32.66	170	1.1	H	-63.8	1.36	0.0	-65.16	-13	52.16
951.6	33.49	322	2.0	V	-60.6	1.36	0.0	-61.96	-13	48.96
3465.00	62.43	236	2.5	H	-38.4	1.50	12.00	-27.90	-13	14.90
3465.00	56.64	73	1.3	V	-45.0	1.50	12.00	-34.50	-13	21.50
1.4MHz, High channel										
964.8	32.52	25	1.1	H	-64.0	1.36	0.0	-65.36	-13	52.36
964.8	33.73	167	2.3	V	-60.3	1.36	0.0	-61.66	-13	48.66
3508.60	61.33	264	2.2	H	-39.5	1.50	12.00	-29.00	-13	16.00
3508.60	55.87	154	1.5	V	-45.8	1.50	12.00	-35.30	-13	22.30

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 5										
Test frequency range:30 MHz ~ 10 GHz										
1.4MHz, Low channel										
956.8	32.73	74	1.7	H	-63.8	1.36	0.0	-65.16	-13	52.16
956.8	33.59	161	2.4	V	-60.5	1.36	0.0	-61.86	-13	48.86
1649.40	57.96	160	2.1	H	-50.1	1.40	8.70	-42.80	-13	29.80
1649.40	55.21	247	2.4	V	-52.6	1.40	8.70	-45.30	-13	32.30
2474.10	64.25	168	2.1	H	-39.1	2.60	10.20	-31.50	-13	18.50
2474.10	61.08	109	2.1	V	-41.7	2.60	10.20	-34.10	-13	21.10
3298.80	58.32	79	2.3	H	-42.6	1.50	11.70	-32.40	-13	19.40
3298.80	55.17	315	1.5	V	-45.8	1.50	11.70	-35.60	-13	22.60
1.4MHz, Middle channel										
964.7	32.77	300	1.2	H	-63.7	1.36	0.0	-65.06	-13	52.06
964.7	33.62	55	1.9	V	-60.4	1.36	0.0	-61.76	-13	48.76
1673.00	58.01	83	1.9	H	-48.3	1.30	8.90	-40.70	-13	27.70
1673.00	54.60	126	1.6	V	-51.1	1.30	8.90	-43.50	-13	30.50
2509.50	63.30	186	2.1	H	-40.1	2.60	10.20	-32.50	-13	19.50
2509.50	62.10	111	1.7	V	-40.6	2.60	10.20	-33.00	-13	20.00
3346.00	56.73	282	2.5	H	-44.2	1.50	11.70	-34.00	-13	21.00
3346.00	54.22	313	2.1	V	-46.7	1.50	11.70	-36.50	-13	23.50
1.4MHz, High channel										
961.2	32.75	326	1.2	H	-63.8	1.36	0.0	-65.16	-13	52.16
961.2	33.61	155	1.1	V	-60.4	1.36	0.0	-61.76	-13	48.76
1696.60	59.35	178	2.5	H	-47.0	1.30	8.90	-39.40	-13	26.40
1696.60	54.58	238	1.4	V	-51.2	1.30	8.90	-43.60	-13	30.60
2544.90	65.92	125	1.9	H	-37.4	2.60	10.20	-29.80	-13	16.80
2544.90	63.41	171	1.7	V	-39.3	2.60	10.20	-31.70	-13	18.70
3393.20	59.32	104	2.4	H	-41.9	1.40	11.80	-31.50	-13	18.50
3393.20	56.24	247	2.0	V	-44.8	1.40	11.80	-34.40	-13	21.40

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 7										
Test frequency range: 30 MHz ~ 26.5 GHz										
10MHz, Low channel										
957.3	32.86	229	2.0	H	-63.6	1.36	0.0	-64.96	-25	39.96
957.3	33.66	79	1.6	V	-60.4	1.36	0.0	-61.76	-25	36.76
5005.00	53.21	137	2.1	H	-47.4	1.70	12.00	-37.10	-25	12.10
5005.00	51.92	217	2.4	V	-48.1	1.70	12.00	-37.80	-25	12.80
7507.50	50.42	81	1.6	H	-45.5	1.90	10.70	-36.70	-25	11.70
7507.50	48.58	186	1.9	V	-46.9	1.90	10.70	-38.10	-25	13.10
10MHz, Middle channel										
957.6	32.62	133	2.4	H	-63.9	1.36	0.0	-65.26	-25	40.26
951.6	33.73	41	2.1	V	-60.3	1.36	0.0	-61.66	-25	36.66
5070.00	51.59	243	1.8	H	-48.4	1.60	12.10	-37.90	-25	12.90
5070.00	52.18	7	1.0	V	-47.8	1.60	12.10	-37.30	-25	12.30
7605.00	47.20	78	2.0	H	-50.3	2.10	10.50	-41.90	-25	16.90
7605.00	50.19	17	1.9	V	-47.1	2.10	10.50	-38.70	-25	13.70
10MHz, High channel										
966.8	32.85	109	1.3	H	-63.7	1.36	0.0	-65.06	-25	40.06
966.8	33.71	304	2.5	V	-60.3	1.36	0.0	-61.66	-25	36.66
5135.00	54.27	282	1.8	H	-45.7	1.60	12.10	-35.20	-25	10.20
5135.00	53.25	53	2.3	V	-46.8	1.60	12.10	-36.30	-25	11.30
7702.50	49.62	246	1.4	H	-47.9	2.10	10.50	-39.50	-25	14.50
7702.50	50.20	229	1.5	V	-47.1	2.10	10.50	-38.70	-25	13.70

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 12										
Test frequency range: 30 MHz ~ 10 GHz										
1.4MHz, Low channel										
962.5	32.49	354	1.2	H	-64.0	1.36	0.0	-65.36	-13	52.36
962.5	33.56	210	1.6	V	-60.5	1.36	0.0	-61.86	-13	48.86
1399.40	58.34	18	1.7	H	-49.8	1.60	7.90	-43.50	-13	30.50
1399.40	57.69	100	1.6	V	-50.7	1.60	7.90	-44.40	-13	31.40
2099.10	59.84	164	1.3	H	-41.3	1.30	9.70	-32.90	-13	19.90
2099.10	62.11	256	1.1	V	-39.8	1.30	9.70	-31.40	-13	18.40
2798.80	66.84	357	1.6	H	-37.1	1.80	10.50	-28.40	-13	15.40
2798.80	65.41	206	2.0	V	-38.2	1.80	10.50	-29.50	-13	16.50
1.4MHz, Middle channel										
961.7	32.59	157	2.4	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.7	33.71	301	1.6	V	-60.3	1.36	0.0	-61.66	-13	48.66
1415.00	58.11	56	1.0	H	-50.1	1.60	7.90	-43.80	-13	30.80
1415.00	57.37	248	2.1	V	-51.1	1.60	7.90	-44.80	-13	31.80
2122.50	59.24	74	2.1	H	-41.9	1.30	9.70	-33.50	-13	20.50
2122.50	63.25	111	2.4	V	-38.7	1.30	9.70	-30.30	-13	17.30
2830.00	65.28	321	2.0	H	-38.7	1.80	10.50	-30.00	-13	17.00
2830.00	67.11	341	1.4	V	-36.5	1.80	10.50	-27.80	-13	14.80
1.4MHz, High channel										
963.6	32.46	200	2.1	H	-64.0	1.36	0.0	-65.36	-13	52.36
963.6	33.63	77	2.1	V	-60.4	1.36	0.0	-61.76	-13	48.76
1430.60	60.22	30	1.6	H	-48.0	1.60	7.90	-41.70	-13	28.70
1430.60	59.71	237	2.4	V	-48.7	1.60	7.90	-42.40	-13	29.40
2145.90	62.14	237	1.4	H	-39.0	1.30	9.70	-30.60	-13	17.60
2145.90	60.22	74	1.4	V	-41.7	1.30	9.70	-33.30	-13	20.30
2861.20	64.81	71	2.4	H	-39.9	1.70	10.70	-30.90	-13	17.90
2861.20	66.91	265	1.6	V	-37.8	1.70	10.70	-28.80	-13	15.80

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 17										
Test frequency range: 30 MHz ~ 10 GHz										
5MHz, Low channel										
962.3	32.58	313	1.2	H	-63.9	1.36	0.0	-65.26	-13	52.26
962.3	33.67	42	2.0	V	-60.4	1.36	0.0	-61.76	-13	48.76
1413.00	61.25	201	1.4	H	-46.9	1.60	7.90	-40.60	-13	27.60
1413.00	58.14	345	1.6	V	-50.3	1.60	7.90	-44.00	-13	31.00
2119.50	74.87	160	1.5	H	-26.3	1.30	9.70	-17.90	-13	4.90
2119.50	76.55	206	1.5	V	-25.4	1.30	9.70	-17.00	-13	4.00
2826.00	55.59	186	1.3	H	-48.4	1.80	10.50	-39.70	-13	26.70
2826.00	56.84	158	1.6	V	-46.8	1.80	10.50	-38.10	-13	25.10
5MHz, Middle channel										
959.3	32.53	129	1.3	H	-64.0	1.36	0.0	-65.36	-13	52.36
959.3	33.61	146	1.8	V	-60.4	1.36	0.0	-61.76	-13	48.76
1420.00	61.33	314	2.1	H	-46.8	1.60	7.90	-40.50	-13	27.50
1420.00	57.87	227	1.8	V	-50.6	1.60	7.90	-44.30	-13	31.30
2130.00	74.41	207	1.1	H	-26.7	1.30	9.70	-18.30	-13	5.30
2130.00	79.14	5	1.9	V	-22.8	1.30	9.70	-14.40	-13	1.40
2840.00	58.55	330	1.7	H	-45.4	1.80	10.50	-36.70	-13	23.70
2840.00	57.38	67	1.9	V	-46.2	1.80	10.50	-37.50	-13	24.50
5MHz, High channel										
960.1	32.64	251	2.4	H	-63.9	1.36	0.0	-65.26	-13	52.26
960.1	33.77	172	2.2	V	-60.3	1.36	0.0	-61.66	-13	48.66
1427.00	60.41	104	1.6	H	-47.8	1.60	7.90	-41.50	-13	28.50
1427.00	57.62	29	1.1	V	-50.8	1.60	7.90	-44.50	-13	31.50
2140.50	73.32	176	1.9	H	-27.8	1.30	9.70	-19.40	-13	6.40
2140.50	75.91	321	2.0	V	-26.0	1.30	9.70	-17.60	-13	4.60
2854.00	54.25	332	1.8	H	-50.4	1.70	10.70	-41.40	-13	28.40
2854.00	57.92	55	1.6	V	-46.8	1.70	10.70	-37.80	-13	24.80

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 41										
Test frequency range: 30 MHz ~ 26.5GHz										
5MHz, Low channel										
965.3	32.69	43	2.0	H	-63.8	1.36	0.0	-65.16	-25	40.16
965.3	33.81	53	1.4	V	-60.2	1.36	0.0	-61.56	-25	36.56
5115.00	54.59	234	1.6	H	-45.4	1.60	12.10	-34.90	-25	9.90
5115.00	51.65	154	1.8	V	-48.4	1.60	12.10	-37.90	-25	12.90
7672.50	60.52	310	1.9	H	-37.0	2.10	10.50	-28.60	-25	3.60
7672.50	58.31	289	1.6	V	-39.0	2.10	10.50	-30.60	-25	5.60
5MHz, Middle channel										
960.6	32.57	61	1.6	H	-63.9	1.36	0.0	-65.26	-25	40.26
960.6	33.69	198	1.7	V	-60.4	1.36	0.0	-61.76	-25	36.76
5210.00	55.72	302	2.3	H	-44.4	1.60	12.10	-33.90	-25	8.90
5210.00	51.93	34	1.2	V	-47.7	1.60	12.10	-37.20	-25	12.20
7815.00	61.25	345	2.2	H	-35.0	2.00	10.50	-26.50	-25	1.50
7815.00	59.23	207	1.5	V	-37.0	2.00	10.50	-28.50	-25	3.50
5MHz, High channel										
965.8	32.38	37	2.0	H	-64.1	1.36	0.0	-65.46	-25	40.46
965.8	33.61	329	1.8	V	-60.4	1.36	0.0	-61.76	-25	36.76
5305.00	52.94	282	1.1	H	-46.8	1.60	12.20	-36.20	-25	11.20
5305.00	53.13	0	1.8	V	-46.0	1.60	12.20	-35.40	-25	10.40
7957.50	59.61	221	1.8	H	-38.4	2.10	10.70	-29.80	-25	4.80
7957.50	57.33	146	1.2	V	-40.6	2.10	10.70	-32.00	-25	7.00

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 66										
Test frequency range: 30 MHz ~ 20GHz										
1.4MHz, Low channel										
963.2	32.44	329	2.4	H	-64.1	1.36	0.0	-65.46	-13	52.46
963.2	33.66	97	2.3	V	-60.4	1.36	0.0	-61.76	-13	48.76
3421.40	72.14	148	1.8	H	-28.7	1.40	11.80	-18.30	-13	5.30
3421.40	70.21	272	2.4	V	-30.4	1.40	11.80	-20.00	-13	7.00
5132.10	59.63	88	1.8	H	-40.4	1.60	12.10	-29.90	-13	16.90
5132.10	63.34	157	2.2	V	-36.7	1.60	12.10	-26.20	-13	13.20
6842.80	47.92	164	2.4	H	-50.8	1.80	11.20	-41.40	-13	28.40
6842.80	49.28	312	2.1	V	-49.8	1.80	11.20	-40.40	-13	27.40
1.4MHz, Middle channel										
962.1	32.57	216	1.1	H	-63.9	1.36	0.0	-65.26	-13	52.26
962.1	33.64	226	2.4	V	-60.4	1.36	0.0	-61.76	-13	48.76
3510.00	71.22	211	1.8	H	-29.5	1.50	12.00	-19.00	-13	6.00
3510.00	70.39	276	2.4	V	-31.1	1.50	12.00	-20.60	-13	7.60
5265.00	60.68	252	2.5	H	-39.1	1.60	12.20	-28.50	-13	15.50
5265.00	63.19	145	2.1	V	-36.0	1.60	12.20	-25.40	-13	12.40
7020.00	48.66	236	1.5	H	-50.1	1.90	11.20	-40.80	-13	27.80
7020.00	50.21	12	2.1	V	-48.8	1.90	11.20	-39.50	-13	26.50
1.4MHz, High channel										
966.0	32.63	61	2.5	H	-63.9	1.36	0.0	-65.26	-13	52.26
966.0	33.74	67	1.9	V	-60.3	1.36	0.0	-61.66	-13	48.66
3558.60	73.14	113	1.0	H	-28.4	1.50	12.10	-17.80	-13	4.80
3558.60	71.92	167	2.4	V	-29.1	1.50	12.10	-18.50	-13	5.50
5337.90	60.28	219	1.3	H	-39.5	1.60	12.20	-28.90	-13	15.90
5337.90	62.43	348	1.5	V	-36.7	1.60	12.20	-26.10	-13	13.10
7117.20	48.75	19	2.0	H	-50.1	1.80	10.80	-41.10	-13	28.10
7117.20	49.37	345	2.5	V	-49.1	1.80	10.80	-40.10	-13	27.10

Note:

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

dBd is for the ERP, dBi is for EIRP.

FCC § 22.917 (a); § 24.238 (a); §27.53(c) (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.

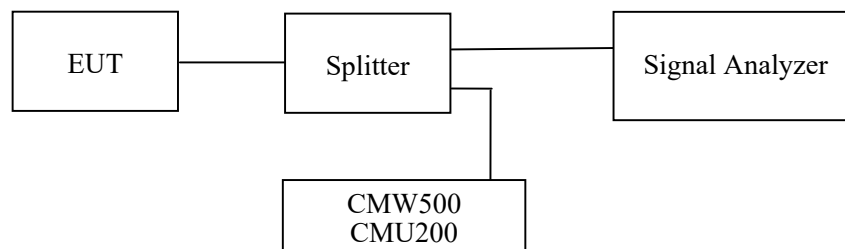
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC §27.53 (c)(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:	26 °C
Relative Humidity:	57 %
ATM Pressure:	101.0 kPa

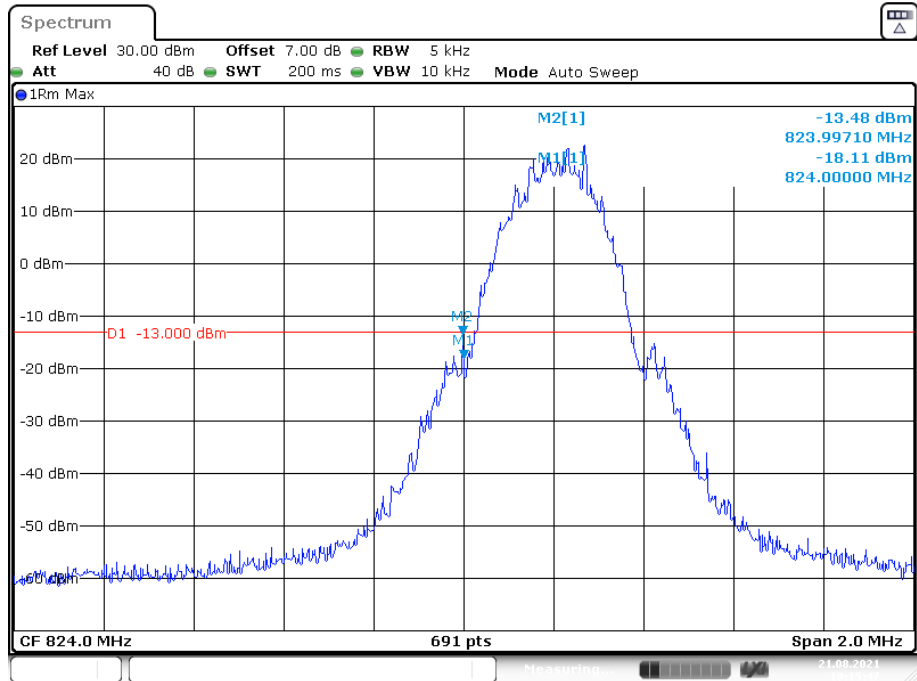
The testing was performed by Nancy Wang from 2021-08-21 to 2021-08-24.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

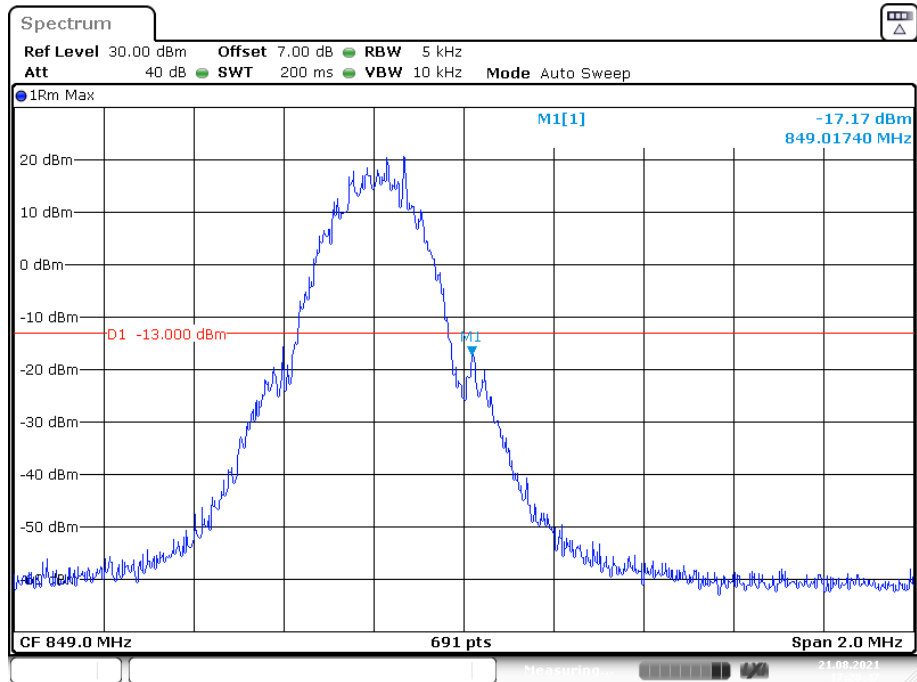
Please refer to the following plots.

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



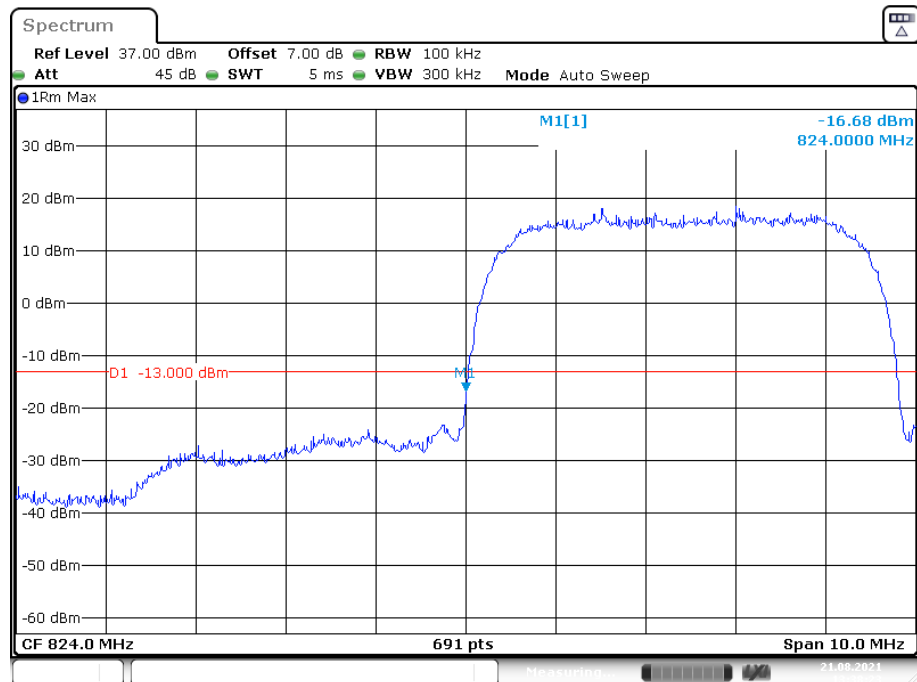
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Cellular Band, Right Band Edge for GSM (GMSK) Mode



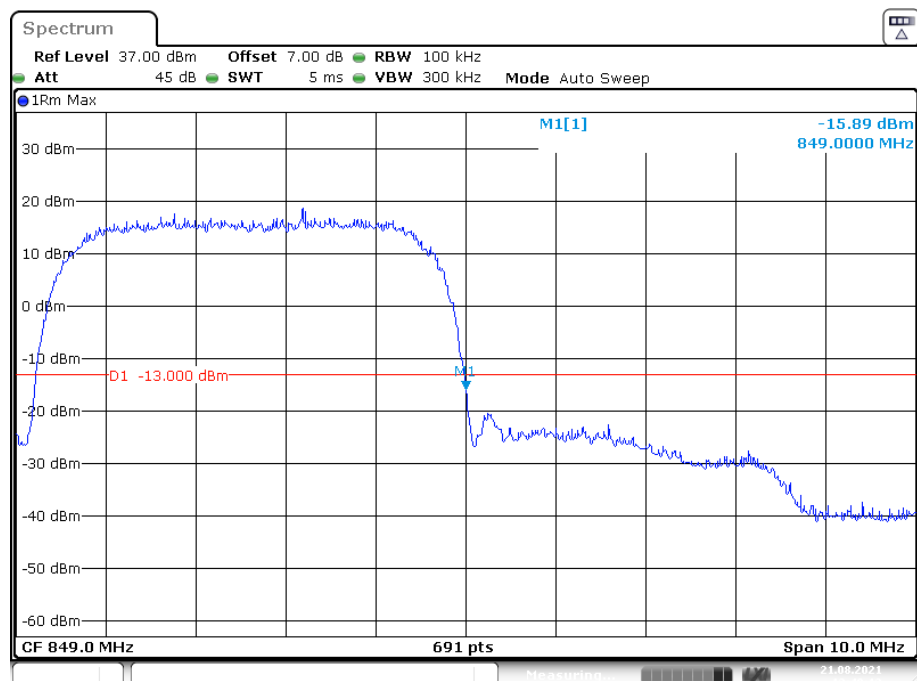
Date: 21.AUG.2021 17:28:47

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

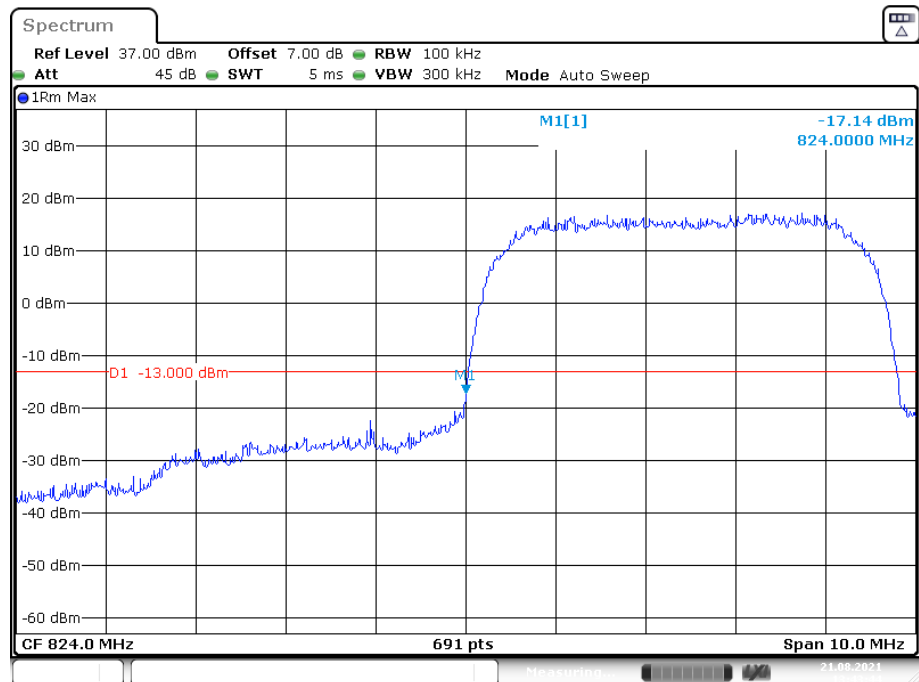


Date: 21.AUG.2021 13:38:23

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

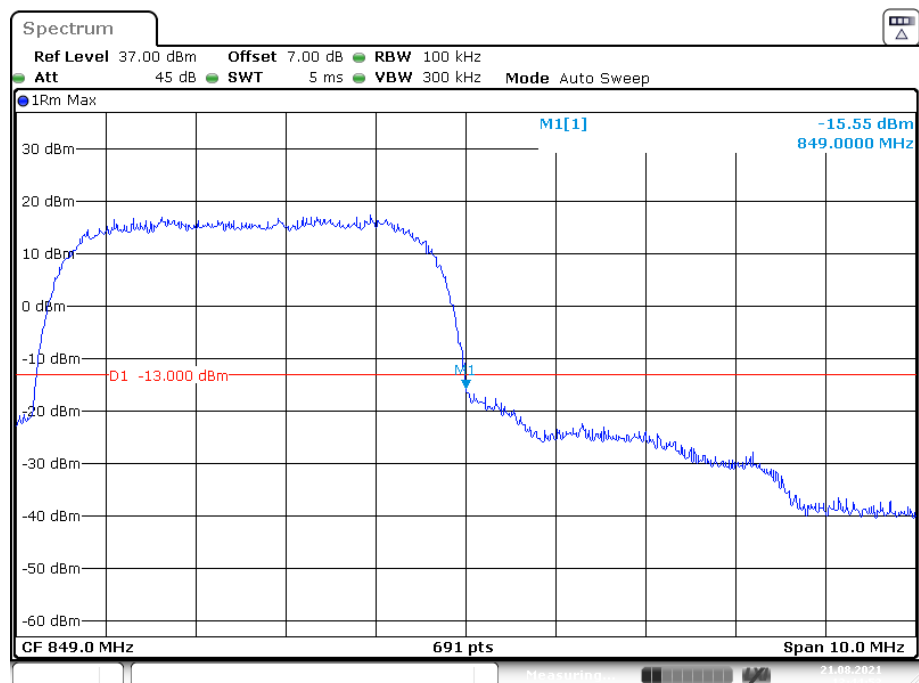


Cellular Band, Left Band Edge for HSDPA (16QAM) Mode



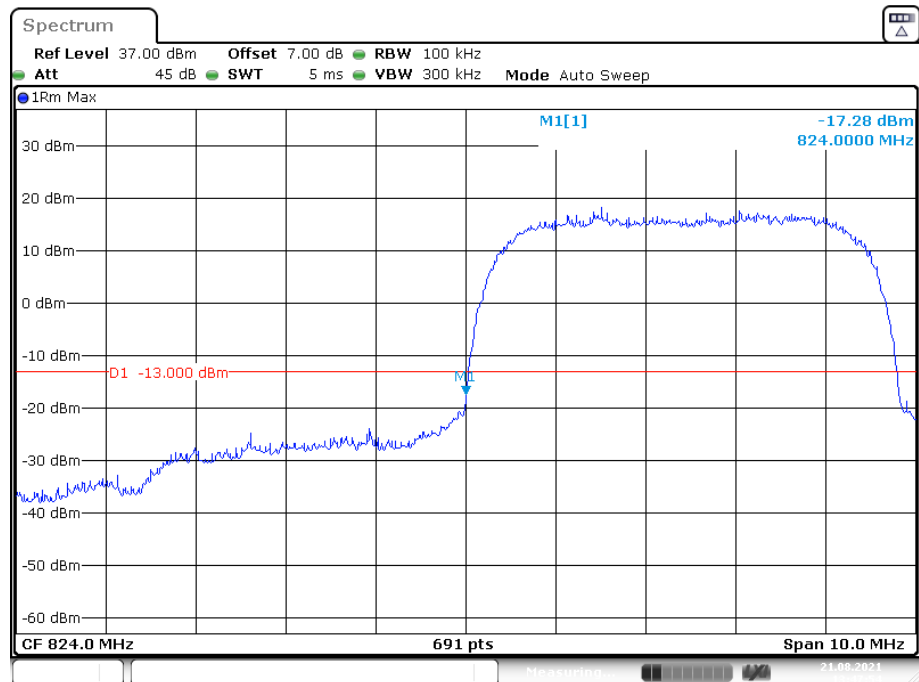
Date: 21.AUG.2021 13:43:44

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



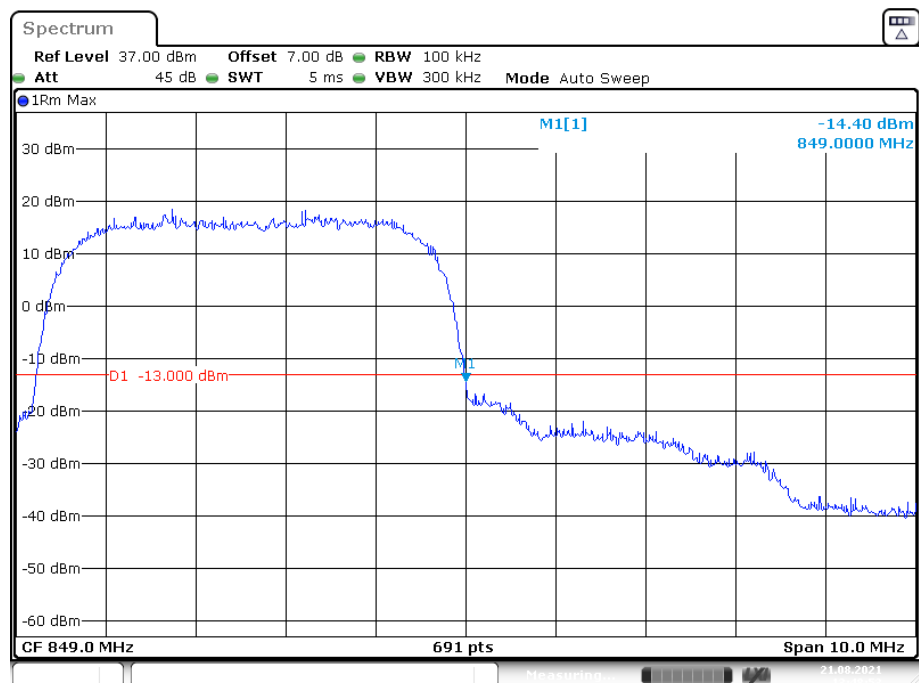
Date: 21.AUG.2021 13:44:53

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



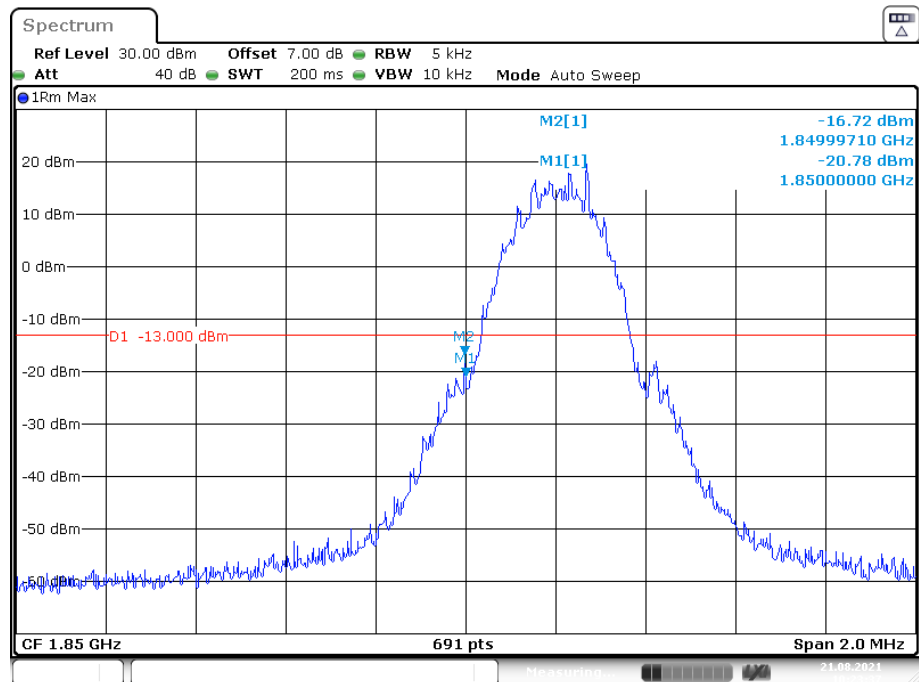
Date: 21.AUG.2021 13:47:54

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



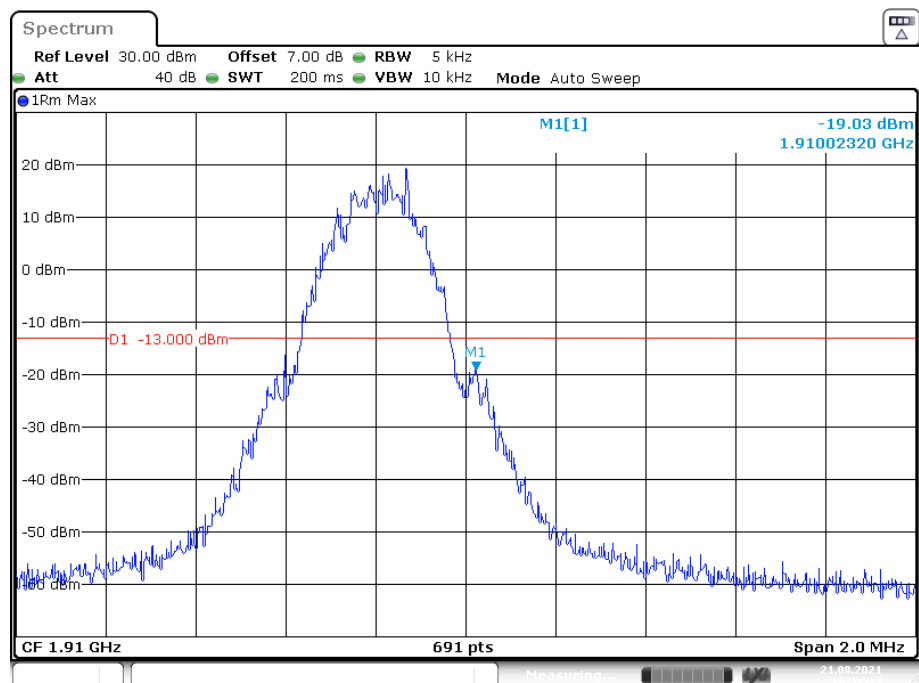
Date: 21.AUG.2021 13:48:53

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



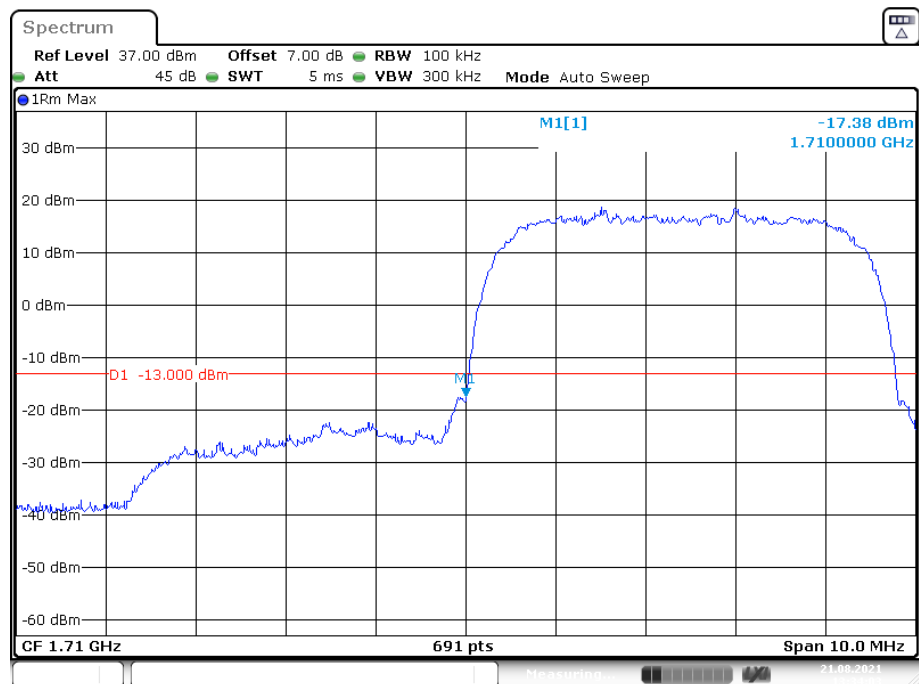
Date: 21.AUG.2021 10:23:38

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



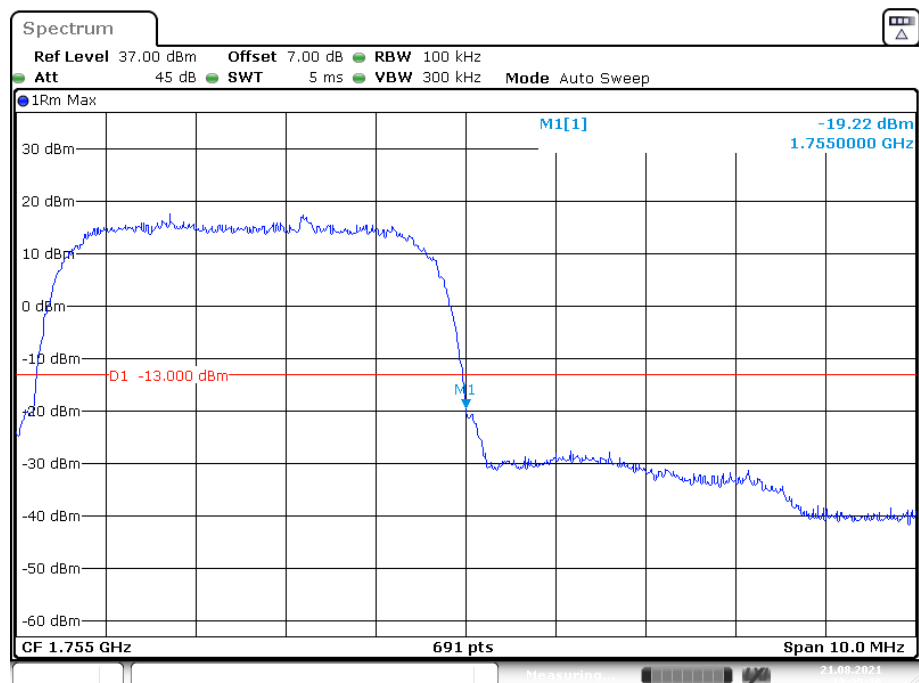
Date: 21.AUG.2021 10:25:33

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



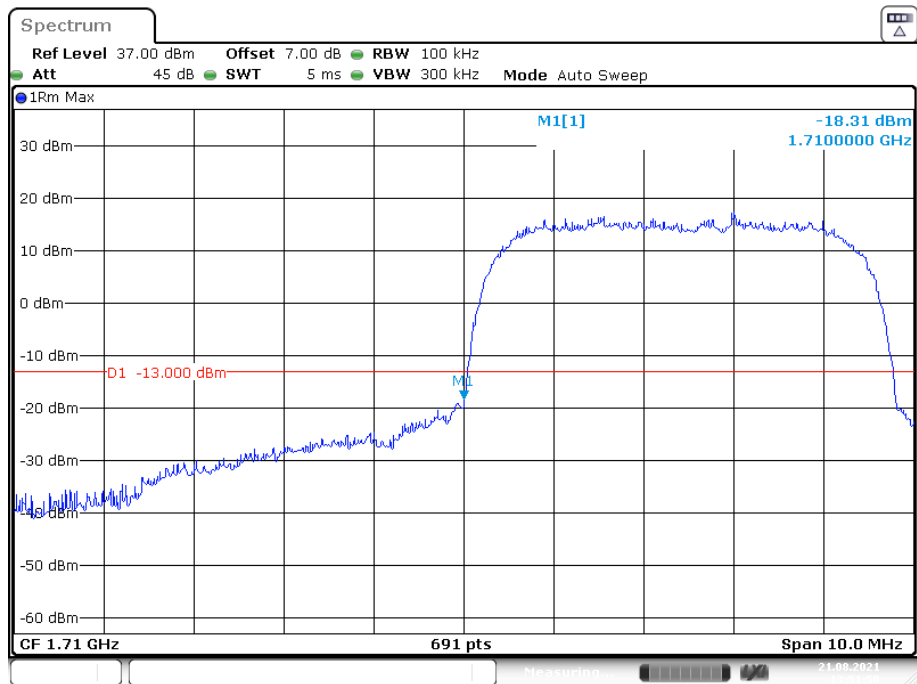
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AWS Band, Right Band Edge for WCDMA (BPSK) Mode



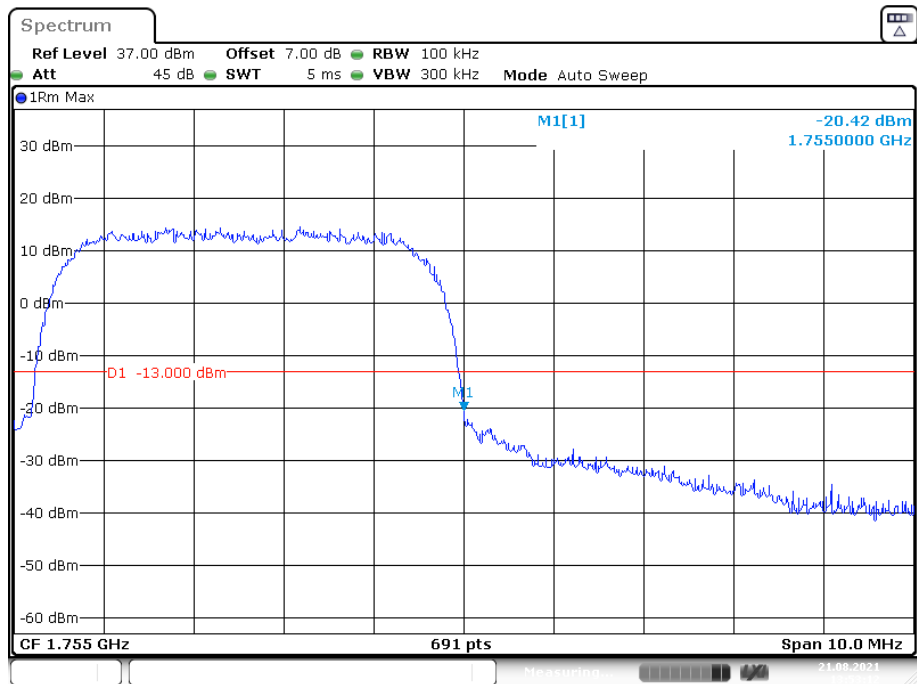
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AWS Band, Left Band Edge for HSDPA (16QAM) Mode



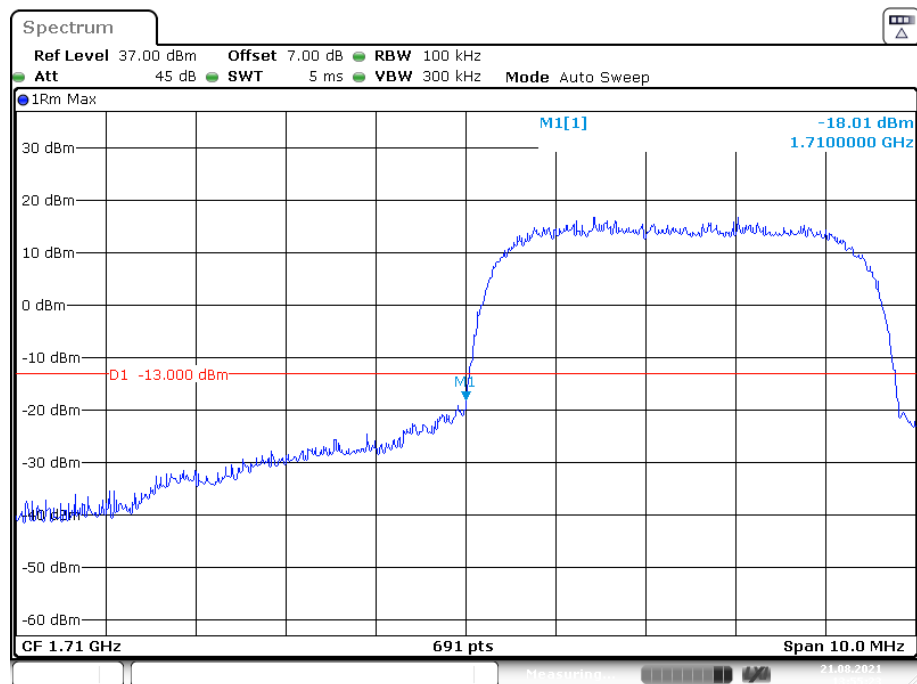
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AWS Band, Right Band Edge for HSDPA (16QAM) Mode



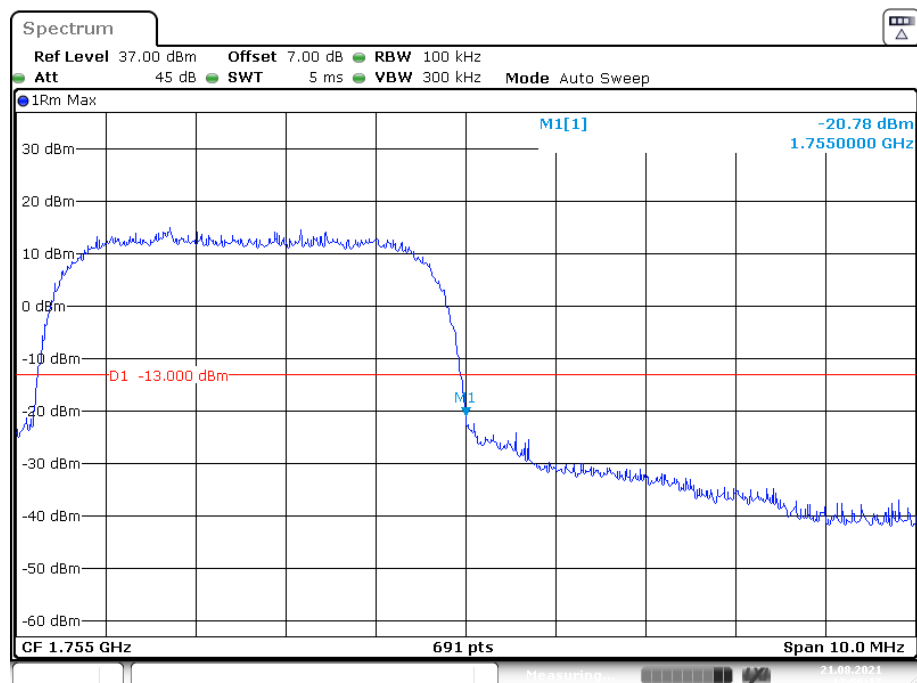
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AWS Band, Left Band Edge for HSUPA (BPSK) Mode



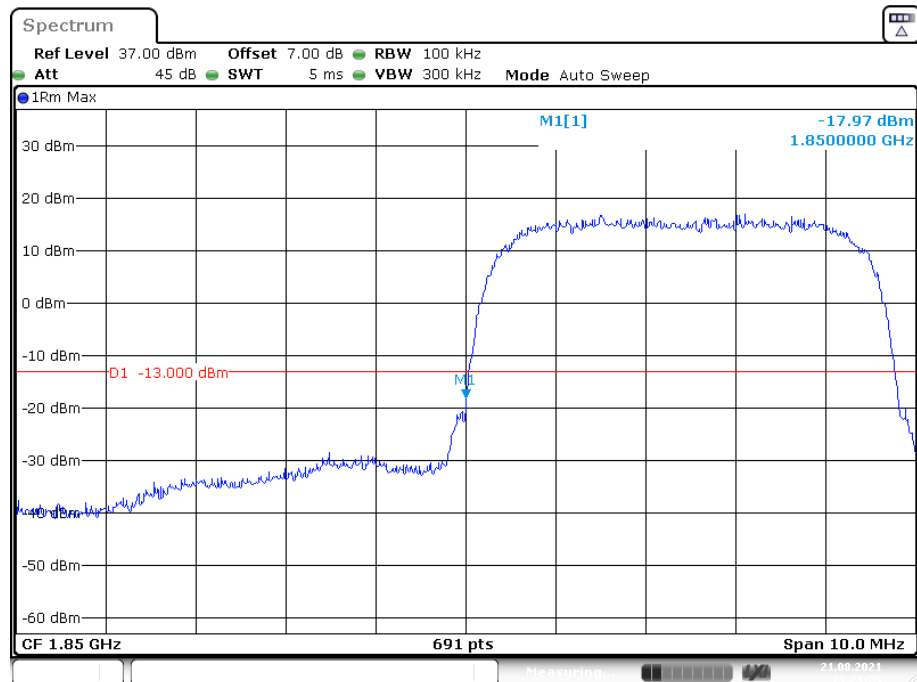
Date: 21.AUG.2021 13:55:23

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



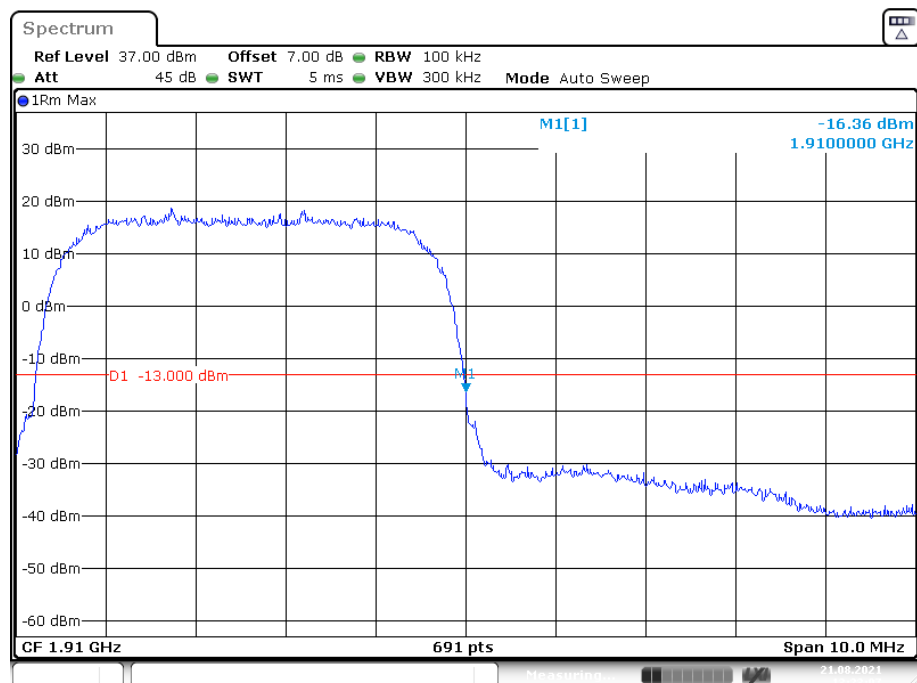
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PCS Band, Left Band Edge for WCDMA (BPSK) Mode



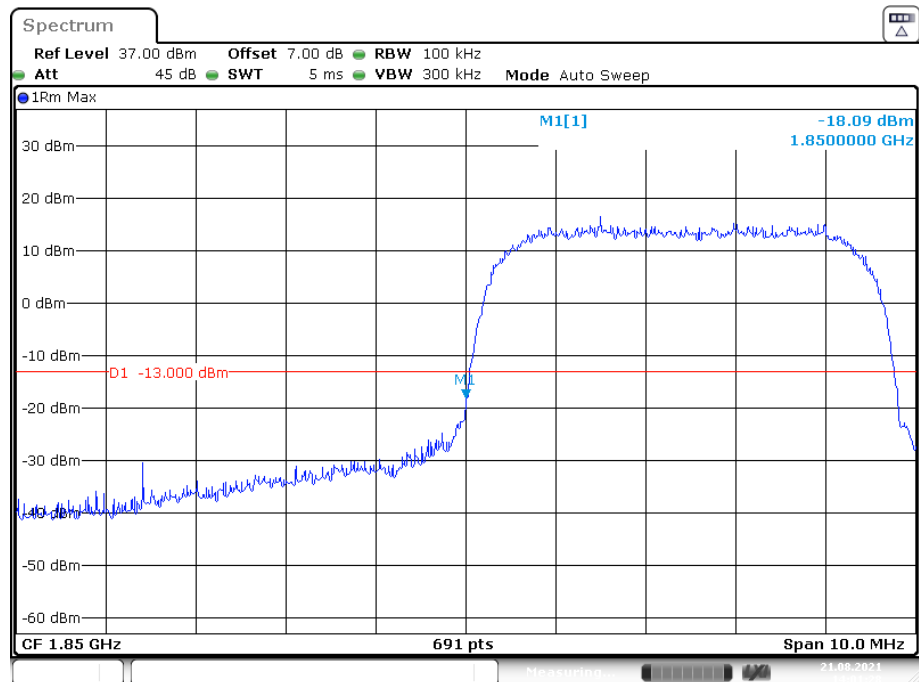
Date: 21.AUG.2021 13:21:25

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



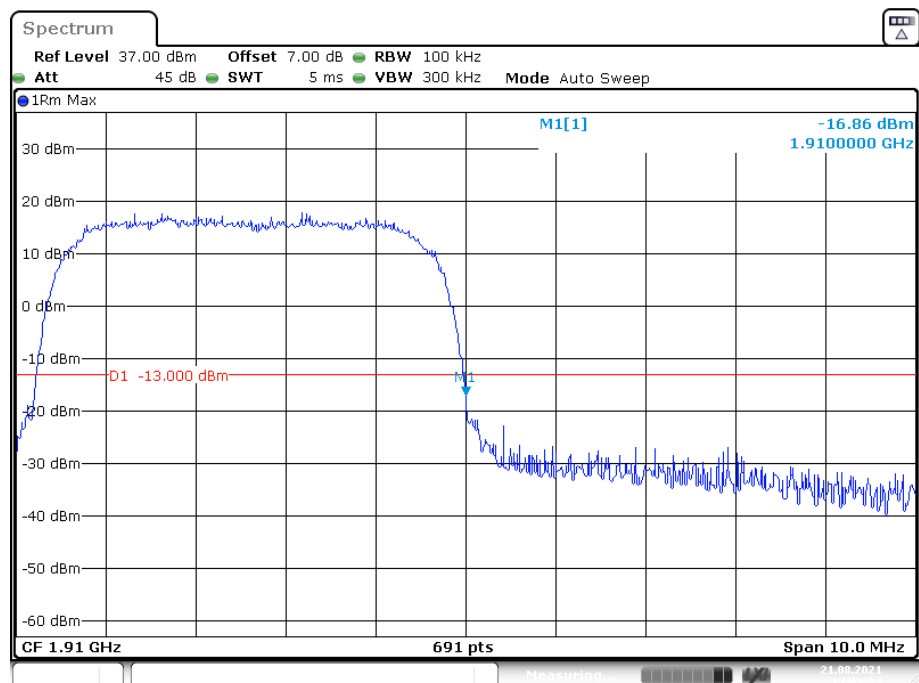
Date: 21.AUG.2021 13:23:07

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



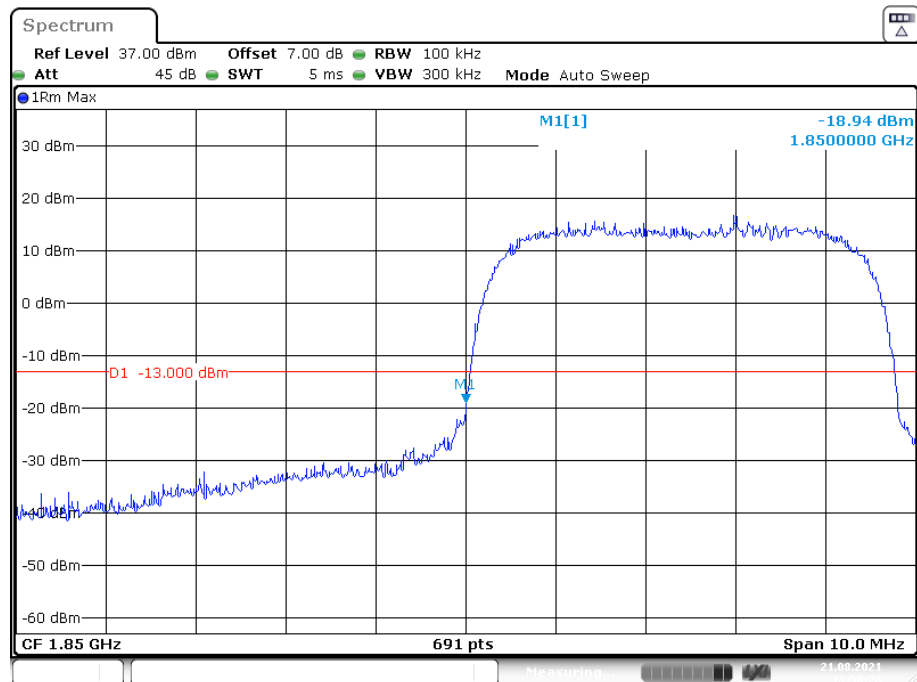
Date: 21.AUG.2021 14:01:28

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



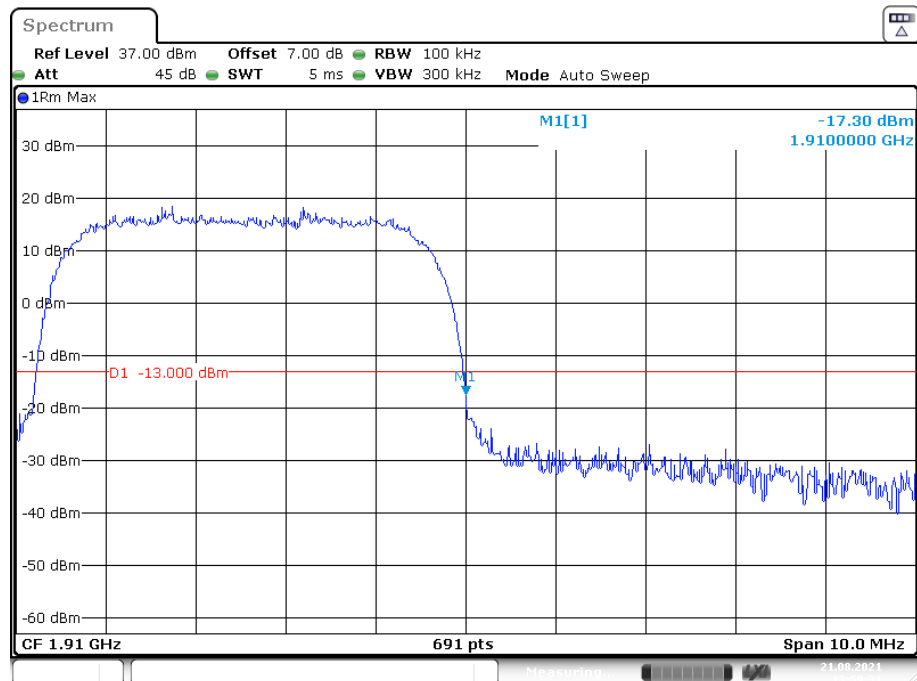
Date: 21.AUG.2021 14:02:54

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



Date: 21.AUG.2021 13:58:29

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



Date: 21.AUG.2021 13:59:31

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 and §27.54.

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

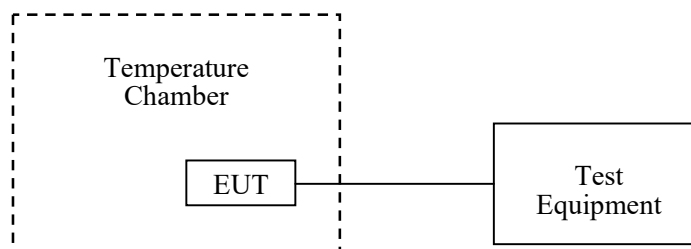
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized frequency block.

Test Procedure

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

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

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



Test Data**Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	57 %
ATM Pressure:	101.0 kPa

The testing was performed by Nancy Wang from 2021-08-21 to 2021-08-24.

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.	2	0.0024	2.5
-20		3	0.0036	2.5
-10		1	0.0012	2.5
0		2	0.0024	2.5
10		3	0.0036	2.5
20		1	0.0012	2.5
30		6	0.0072	2.5
40		4	0.0048	2.5
50		3	0.0036	2.5
20	L.V.	2	0.0024	2.5
	H.V.	10	0.0120	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.	-1	-0.0012	2.5
-20		8	0.0096	2.5
-10		6	0.0072	2.5
0		-4	-0.0048	2.5
10		-3	-0.0036	2.5
20		2	0.0024	2.5
30		4	0.0048	2.5
40		-7	-0.0084	2.5
50		-8	-0.0096	2.5
20	L.V.	2	0.0024	2.5
	H.V.	-1	-0.0012	2.5

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

Middle Channel, $f_0=1880.0\text{ MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-6	-0.0032	Pass
-20		-2	-0.0011	Pass
-10		5	0.0027	Pass
0		2	0.0011	Pass
10		-1	-0.0005	Pass
20		1	0.0005	Pass
30		-3	-0.0016	Pass
40		-6	-0.0032	Pass
50		-5	-0.0027	Pass
20	L.V.	1	0.0005	Pass
	H.V.	-2	-0.0011	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.	-10	-0.0053	Pass
-20		17	0.0090	Pass
-10		18	0.0096	Pass
0		-15	-0.0080	Pass
10		-12	-0.0064	Pass
20		7	0.0037	Pass
30		12	0.0064	Pass
40		-18	-0.0096	Pass
50		-11	-0.0059	Pass
20	L.V.	14	0.0074	Pass
	H.V.	-16	-0.0085	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.	1710.0143	1754.6818	1710	1755
-20		1710.0363	1754.7038	1710	1755
-10		1710.0583	1754.7258	1710	1755
0		1710.0803	1754.7478	1710	1755
10		1710.1023	1754.7698	1710	1755
20		1710.1243	1754.7918	1710	1755
30		1710.1463	1754.8138	1710	1755
40		1710.1683	1754.8358	1710	1755
50		1710.1903	1754.8578	1710	1755
20	L.V.	1710.2123	1754.8798	1710	1755
	H.V.	1710.2343	1754.9018	1710	1755

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, $f_o=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-8	-0.0043	Pass
-20		-11	-0.0059	Pass
-10		-7	-0.0037	Pass
0		6	0.0032	Pass
10		8	0.0043	Pass
20		5	0.0027	Pass
30		-4	-0.0021	Pass
40		3	0.0016	Pass
50		-11	-0.0059	Pass
20	L.V.	-5	-0.0027	Pass
	H.V.	-9	-0.0048	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.	1710.1840	1754.0400	1710	1755
-20		1710.2060	1754.0620	1710	1755
-10		1710.2280	1754.0840	1710	1755
0		1710.2500	1754.1060	1710	1755
10		1710.2720	1754.1280	1710	1755
20		1710.2940	1754.1500	1710	1755
30		1710.3160	1754.1720	1710	1755
40		1710.3380	1754.1940	1710	1755
50		1710.3602	1754.2160	1710	1755
20	L.V.	1710.3820	1754.2380	1710	1755
	H.V.	1710.4040	1754.2600	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.	2	0.0024	2.5
-20		1	0.0012	2.5
-10		-5	-0.0060	2.5
0		6	0.0072	2.5
10		11	0.0131	2.5
20		4	0.0048	2.5
30		-6	-0.0072	2.5
40		-8	-0.0096	2.5
50		-7	-0.0084	2.5
20	L.V.	8	0.0096	2.5
	H.V.	-4	-0.0048	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.	2500.3326	2569.1232	2500	2570
-20		2500.3546	2569.1452	2500	2570
-10		2500.3766	2569.1672	2500	2570
0		2500.3986	2569.1892	2500	2570
10		2500.4206	2569.2112	2500	2570
20		2500.4426	2569.2332	2500	2570
30		2500.4646	2569.2552	2500	2570
40		2500.4866	2569.2772	2500	2570
50		2500.5086	2569.2992	2500	2570
20	L.V.	2500.5306	2569.3212	2500	2570
	H.V.	2500.5526	2569.3432	2500	2570

Band 12:

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.	699.4638	715.6612	699	716
-20		699.4858	715.6832	699	716
-10		699.5078	715.7052	699	716
0		699.5298	715.7272	699	716
10		699.5518	715.7492	699	716
20		699.5738	715.7712	699	716
30		699.5958	715.7932	699	716
40		699.6178	715.8152	699	716
50		699.6398	715.8372	699	716
20	L.V.	699.6618	715.8592	699	716
	H.V.	699.6838	715.6832	699	716

Band 17:

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.	704.7214	715.1024	704	716
-20		704.7434	715.1244	704	716
-10		704.7654	715.1464	704	716
0		704.7874	715.1684	704	716
10		704.8094	715.1904	704	716
20		704.8314	715.2124	704	716
30		704.8534	715.2344	704	716
40		704.8754	715.2564	704	716
50		704.8974	715.2784	704	716
20	L.V.	704.9194	715.3004	704	716
	H.V.	704.9414	715.3224	704	716

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.	2555.7801	2654.0021	2555	2655
-20		2555.8021	2654.0241	2555	2655
-10		2555.8241	2654.0461	2555	2655
0		2555.8461	2654.0681	2555	2655
10		2555.8681	2654.0901	2555	2655
20		2555.8901	2654.1121	2555	2655
30		2555.9121	2654.1341	2555	2655
40		2555.9341	2654.1561	2555	2655
50		2555.9561	2654.1781	2555	2655
20	L.V.	2555.9781	2654.2001	2555	2655
	H.V.	2555.0001	2654.2221	2555	2655

Note: the frequency range 2555-2655MHz was declared by applicant.

Band 66:

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.	1710.3325	1779.1311	1710	1780
-20		1710.3545	1779.1531	1710	1780
-10		1710.3765	1779.1751	1710	1780
0		1710.3985	1779.1971	1710	1780
10		1710.4205	1779.2191	1710	1780
20		1710.4425	1779.2411	1710	1780
30		1710.4645	1779.2631	1710	1780
40		1710.4865	1779.2851	1710	1780
50		1710.5085	1779.3071	1710	1780
20	L.V.	1710.5305	1779.3291	1710	1780
	H.V.	1710.5525	1779.3511	1710	1780

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.	-9	-0.0048	Pass
-20		-7	-0.0037	Pass
-10		10	0.0053	Pass
0		-8	-0.0043	Pass
10		-10	-0.0053	Pass
20		-10	-0.0053	Pass
30		-7	-0.0037	Pass
40		-9	-0.0048	Pass
50		6	0.0032	Pass
20	L.V.	6	0.0032	Pass
	H.V.	8	0.0043	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.	1710.2794	1754.7558	1710	1755
-20		1710.2703	1754.7642	1710	1755
-10		1710.2579	1754.7588	1710	1755
0		1710.2453	1754.7579	1710	1755
10		1710.2652	1754.7581	1710	1755
20		1710.2637	1754.7625	1710	1755
30		1710.2651	1754.7616	1710	1755
40		1710.2674	1754.7492	1710	1755
50		1710.2675	1754.7513	1710	1755
20	L.V.	1710.2650	1754.7473	1710	1755
	H.V.	1710.2701	1754.7575	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.	-8	-0.0096	2.5
-20		8	0.0096	2.5
-10		-9	-0.0108	2.5
0		9	0.0108	2.5
10		-7	-0.0084	2.5
20		8	0.0096	2.5
30		6	0.0072	2.5
40		-6	-0.0072	2.5
50		-6	-0.0072	2.5
20	L.V.	6	0.0072	2.5
	H.V.	-7	-0.0084	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.	2500.3254	2569.4413	2500	2570
-20		2500.3474	2569.4633	2500	2570
-10		2500.3694	2569.4853	2500	2570
0		2500.3914	2569.5073	2500	2570
10		2500.4134	2569.5293	2500	2570
20		2500.4354	2569.5513	2500	2570
30		2500.4574	2569.5733	2500	2570
40		2500.4794	2569.5953	2500	2570
50		2500.5014	2569.6173	2500	2570
20	L.V.	2500.5234	2569.6393	2500	2570
	H.V.	2500.5454	2569.6613	2500	2570

Band 12:

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.	699.5611	715.2424	699	716
-20		699.5831	715.2644	699	716
-10		699.6051	715.2864	699	716
0		699.6271	715.3084	699	716
10		699.6491	715.3304	699	716
20		699.6711	715.3524	699	716
30		699.6931	715.3744	699	716
40		699.7151	715.3964	699	716
50		699.7371	715.4184	699	716
20	L.V.	699.7591	715.4404	699	716
	H.V.	699.7811	715.4624	699	716

Band 17:

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.	704.5433	715.2322	704	716
-20		704.5653	715.2542	704	716
-10		704.5873	715.2762	704	716
0		704.6093	715.2982	704	716
10		704.6313	715.3202	704	716
20		704.6533	715.3422	704	716
30		704.6753	715.3642	704	716
40		704.6973	715.3862	704	716
50		704.7193	715.4082	704	716
20	L.V.	704.7413	715.4302	704	716
	H.V.	704.7633	715.4522	704	716

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.	2555.5511	2654.1501	2555	2655
-20		2555.5731	2654.1721	2555	2655
-10		2555.5951	2654.1941	2555	2655
0		2555.6171	2654.2161	2555	2655
10		2555.6391	2654.2381	2555	2655
20		2555.6611	2654.2601	2555	2655
30		2555.6831	2654.2821	2555	2655
40		2555.7051	2654.3041	2555	2655
50		2555.7271	2654.3261	2555	2655
20	L.V.	2555.7491	2654.3481	2555	2655
	H.V.	2555.7711	2654.3701	2555	2655

Note: the frequency range 2555-2655MHz was declared by applicant.

Band 66:

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.	1710.7213	1779.3326	1710	1780
-20		1710.7433	1779.3546	1710	1780
-10		1710.7653	1779.3766	1710	1780
0		1710.7873	1779.3986	1710	1780
10		1710.8093	1779.4206	1710	1780
20		1710.8313	1779.4426	1710	1780
30		1710.8533	1779.4646	1710	1780
40		1710.8753	1779.4866	1710	1780
50		1710.8973	1779.5086	1710	1780
20	L.V.	1710.9193	1779.5306	1710	1780
	H.V.	1710.9413	1779.5526	1710	1780

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