



TESTREPORT

Applicant Name : TECNO MOBILE LIMITED
Address : FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35
SHAN MEI STREET FOTAN NT Hong Kong
ReportNumber: SZNS220211-04252E-RF-00C
FCC ID: 2ADYY-CG8H

Test Standard (s)

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

Sample Description

Product Type: Mobile Phone
Model No.: CG8h
Multiple Model(s) No.: N/A
Trade Mark: TECNO
Date Received: 2022/02/11
Date of Test: 2022/02/21~2022/03/25
Report Date: 2022/03/24

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

Prepared and Checked By:

Ting Lü
EMC Engineer

Approved By:

Robert Li
EMC Engineer

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

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX) LTE Band 66: 1710-1780MHz(TX); 2110-2180MHz(RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band5/LTE Band 5: -2.3dBi PCS1900/WCDMA Band 2/ LTE Band 2: 0.4dBi WCDMA Band 4/ LTE Band 4/ LTE Band 66: 0.5dBi LTE Band 7: 0.4dBi/ LTE Band 17: 0.2dBi LTE Band 38/LTE Band 41: :0.4dBi(provided by the applicant)
Voltage Range	DC 3.87V from battery, DC 5.0V or 10V from adapter
Sample serial number	SZNS220211-04252E-RF-S1 for Conducted and Radiated Emissions SZNS220211-04252E-RF-S2 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter information	Model: U330TSA Input: AC 100-240V, 50/60Hz, 1.5A Output: DC 5.0V, 3.0A, 15.0W or DC 10V, 3.3A, 33.0W MAX
Extreme condition*	L.V.: Low Voltage 3.45V N.V.: Normal Voltage 3.87V H.V.: High Voltage 4.35V (provided by the applicant)

Objective

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

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

Test Methodology

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

Part 22 Subpart H - Public Mobile Services
 Part 24 Subpart E - Personal Communication Services
 Part 27 - Miscellaneous Wireless Communications Services

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

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±0.73dB
Unwanted Emission, conducted		±1.6dB
RF Frequency		±0.082*10 ⁻⁷
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz - 18GHz	±4.98dB
	18GHz - 26.5GHz	±5.06dB
Temperature		±1 °C
Humidity		±6%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE B17	5	706.5	710	713.5
	10	709	710	711

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

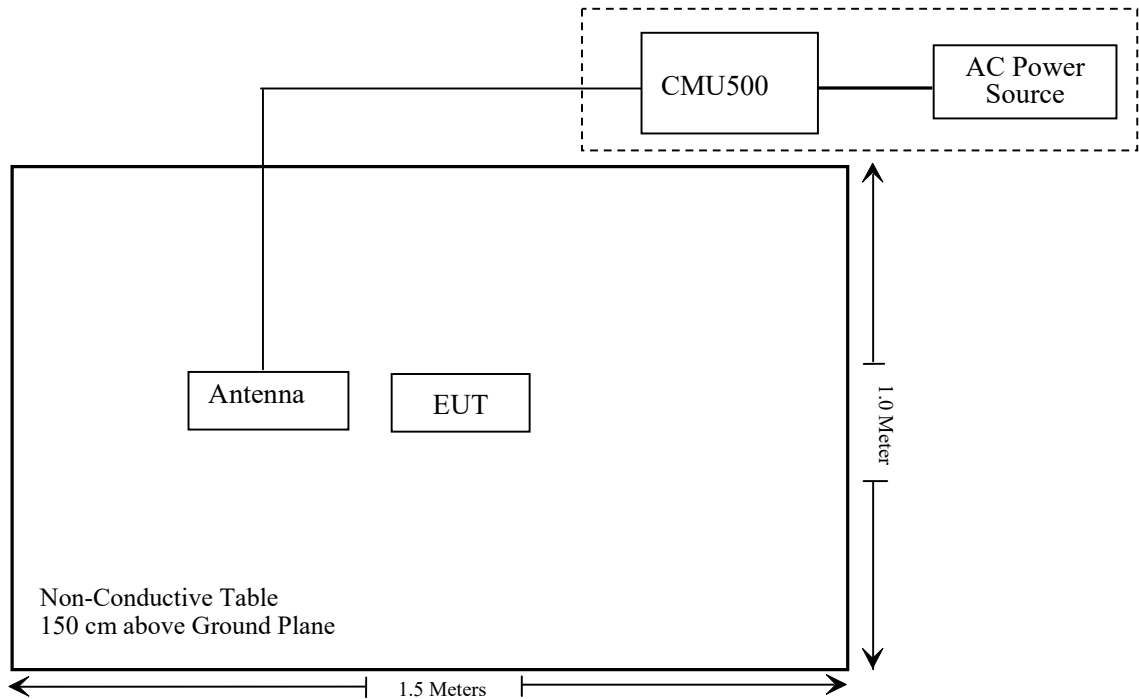
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication tester	CMW500	146520

Support Cable Description

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

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 (d) (h);	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
§ 2.1051; §22.917 (a); § 24.238 (a); §27.53;	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53 (h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Note: * Please refer to SAR report number: CR22030067-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2021/11/11	2022/11/10
Radiated Emission Test Software: e3 19821b (V9)					
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.16	N650	2021/12/14	2022/12/13
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
Wainwright	High Pass Filter	WHKX3.6/18 G-10SS	5	2021/12/14	2022/12/13
CD	High Pass Filter	HPM-1.2/18G -60	110	2021/12/14	2022/12/13
Unknown	RFCoaxialCable	No.16	N200	2021/12/14	2022/12/13
Agilent	Signal Generator	N5183A	MY51040755	2021/12/13	2022/12/12

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
SPECTRUM ANALYZER	Rohde & Schwarz	FSU26	200982	2021/07/06	2022/07/05
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2021/12/13	2022/12/12
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2021/12/14	2022/12/13
Gongwen	Temp. & Humid. Chamber	HSD-500	109	2021/10/14	2022/10/13
HP	6dB Attenuator	8493B 6dB Attenuator	2708A 04769	2021/12/14	2022/12/13
Fluke	Multi Meter	45	7664009	2021/12/14	2022/12/13
Manson	DC Power Source	KPS-6604	ATCS-205	NCR	NCR
Unknown	RF Cable	Unknown	Unknown	Each time	

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: CR22030067-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

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

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

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

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

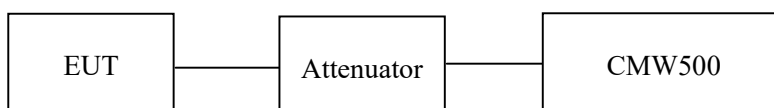
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

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

Test Procedure

Conducted method:

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

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

Temperature:	26.8 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Black Duan from 2022-02-21 to 2022-02-23.

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

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.54	29.09	38.45
	190	836.6	33.58	29.13	38.45
	251	848.8	33.56	29.11	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	33.56	32.44	30.30	29.14	29.11	27.99	25.85	24.69	38.45
	190	836.6	33.61	32.44	30.21	29.25	29.16	27.99	25.76	24.80	38.45
	251	848.8	33.58	32.36	30.12	29.12	29.13	27.91	25.67	24.67	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	26.50	25.30	23.21	22.18	22.05	20.85	18.76	17.73	38.45
	190	836.6	26.43	25.23	23.17	22.08	21.98	20.78	18.72	17.63	38.45
	251	848.8	26.25	25.05	23.01	21.88	21.80	20.60	18.56	17.43	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		24.05	24.66	24.69	19.60	20.21	20.24
	HSDPA	1	21.73	22.46	21.97	17.28	18.01	17.52
		2	21.32	21.06	21.36	16.87	16.61	16.91
		3	20.89	20.86	20.94	16.44	16.41	16.49
		4	20.72	20.68	20.71	16.27	16.23	16.26
	HSUPA	1	23.3	23.22	23.53	18.85	18.77	19.08
		2	22.57	22.65	22.48	18.12	18.20	18.03
		3	21.89	21.92	21.95	17.44	17.47	17.50
		4	22.65	21.74	22.85	18.20	17.29	18.40
		5	22.03	22.05	22.12	17.58	17.60	17.67
	HSPA+	1	21.89	21.93	21.99	17.44	17.48	17.54

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For GSM850 / WCDMA Band5: Antenna Gain = -2.3dBi = -4.45dBd (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	30.58	30.98	33
	661	1880.0	30.29	30.69	33
	810	1909.8	30.40	30.80	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	30.99	30.62	30.23	30.17	31.39	31.02	30.63	30.57	33
	661	1880.0	30.68	30.35	29.94	29.85	31.08	30.75	30.34	30.25	33
	810	1909.8	30.78	30.43	30.04	29.96	31.18	30.83	30.44	30.36	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	24.86	23.47	21.29	20.25	25.26	23.87	21.69	20.65	33
	661	1880.0	25.78	24.32	22.21	21.05	26.18	24.72	22.61	21.45	33
	810	1909.8	25.59	24.65	22.63	21.43	25.99	25.05	23.03	21.83	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		18.49	18.47	18.45	18.89	18.87	18.85
	HSDPA	1	16.03	15.69	15.94	16.43	16.09	16.34
		2	15.89	15.66	15.78	16.29	16.06	16.18
		3	15.81	15.38	15.46	16.21	15.78	15.86
		4	16.25	15.68	15.77	16.65	16.08	16.17
	HSUPA	1	17.07	17.2	16.08	17.47	17.60	16.48
		2	16.85	16.94	16.05	17.25	17.34	16.45
		3	17.02	16.93	15.99	17.42	17.33	16.39
		4	17.36	17.04	15.85	17.76	17.44	16.25
		5	16.99	17.13	15.78	17.39	17.53	16.18
	HSPA+	1	16.58	16.29	16.44	16.98	16.69	16.84

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

For PCS1900 / WCDMA Band2: Antenna Gain = 0.4dBi

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		19.05	19.06	19.02	19.55	19.56	19.52
	HSDPA	1	16.39	16.44	16.88	16.89	16.94	17.38
		2	16.25	16.33	16.78	16.75	16.83	17.28
		3	16.31	16.12	16.55	16.81	16.62	17.05
		4	16.37	16.41	16.67	16.87	16.91	17.17
	HSUPA	1	17.76	17.86	17.79	18.26	18.36	18.29
		2	17.65	17.58	17.68	18.15	18.08	18.18
		3	17.02	17.56	17.32	17.52	18.06	17.82
		4	17.36	17.04	17.53	17.86	17.54	18.03
		5	16.99	17.13	17.54	17.49	17.63	18.04
	HSPA+	1	16.38	16.09	16.34	16.88	16.59	16.84

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

For Band4: Antenna Gain = 0.5dBi

Limit: EIRP ≤ 30dBm

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	18.35	18.39	18.44	18.75	18.79	18.84
		RB1#3	18.43	18.40	18.46	18.83	18.80	18.86
		RB1#5	18.38	18.38	18.44	18.78	18.78	18.84
		RB3#0	18.51	18.50	18.54	18.91	18.90	18.94
		RB3#3	18.53	18.49	18.53	18.93	18.89	18.93
		RB6#0	17.60	17.52	17.60	18.00	17.92	18.00
	16QAM	RB1#0	17.36	17.38	17.54	17.76	17.78	17.94
		RB1#3	17.45	17.43	17.60	17.85	17.83	18.00
		RB1#5	17.39	17.39	17.54	17.79	17.79	17.94
		RB3#0	17.65	17.74	17.56	18.05	18.14	17.96
		RB3#3	17.63	17.75	17.57	18.03	18.15	17.97
		RB6#0	16.54	16.67	16.71	16.94	17.07	17.11
3.0	QPSK	RB1#0	18.27	18.28	18.30	18.67	18.68	18.70
		RB1#8	18.32	18.32	18.38	18.72	18.72	18.78
		RB1#14	18.26	18.23	18.31	18.66	18.63	18.71
		RB6#0	17.44	17.41	17.49	17.84	17.81	17.89
		RB6#9	17.46	17.45	17.51	17.86	17.85	17.91
		RB15#0	17.52	17.49	17.50	17.92	17.89	17.90
	16QAM	RB1#0	17.88	17.36	17.28	18.28	17.76	17.68
		RB1#8	17.91	17.48	17.39	18.31	17.88	17.79
		RB1#14	17.82	17.35	17.35	18.22	17.75	17.75
		RB6#0	16.59	16.45	16.48	16.99	16.85	16.88
		RB6#9	16.54	16.50	16.46	16.94	16.90	16.86
		RB15#0	16.57	16.42	16.61	16.97	16.82	17.01

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	18.58	18.51	18.53	18.98	18.91	18.93
		RB1#13	18.65	18.63	18.68	19.05	19.03	19.08
		RB1#24	18.53	18.56	18.56	18.93	18.96	18.96
		RB15#0	17.56	17.54	17.61	17.96	17.94	18.01
		RB15#10	17.59	17.60	17.63	17.99	18.00	18.03
		RB25#0	17.60	17.58	17.56	18.00	17.98	17.96
	16QAM	RB1#0	17.47	17.82	17.65	17.87	18.22	18.05
		RB1#13	17.55	17.94	17.76	17.95	18.34	18.16
		RB1#24	17.46	17.83	17.66	17.86	18.23	18.06
		RB15#0	16.63	16.55	16.65	17.03	16.95	17.05
		RB15#10	16.62	16.62	16.69	17.02	17.02	17.09
		RB25#0	16.66	16.62	16.67	17.06	17.02	17.07
10.0	QPSK	RB1#0	18.56	18.52	18.58	18.96	18.92	18.98
		RB1#25	18.58	18.61	18.64	18.98	19.01	19.04
		RB1#49	18.50	18.56	18.59	18.90	18.96	18.99
		RB25#0	17.53	17.45	17.51	17.93	17.85	17.91
		RB25#25	17.54	17.57	17.64	17.94	17.97	18.04
		RB50#0	17.54	17.51	17.59	17.94	17.91	17.99
	16QAM	RB1#0	18.18	17.64	17.56	18.58	18.04	17.96
		RB1#25	18.23	17.75	17.67	18.63	18.15	18.07
		RB1#49	18.12	17.69	17.60	18.52	18.09	18.00
		RB25#0	16.57	16.52	16.61	16.97	16.92	17.01
		RB25#25	16.64	16.62	16.76	17.04	17.02	17.16
		RB50#0	16.56	16.51	16.62	16.96	16.91	17.02

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	18.52	18.53	18.60	18.92	18.93	19.00
		RB1#38	18.57	18.64	18.70	18.97	19.04	19.10
		RB1#74	18.51	18.59	18.64	18.91	18.99	19.04
		RB36#0	17.51	17.47	17.58	17.91	17.87	17.98
		RB36#39	17.58	17.57	17.66	17.98	17.97	18.06
		RB75#0	17.53	17.53	17.63	17.93	17.93	18.03
	16QAM	RB1#0	18.14	17.64	17.98	18.54	18.04	18.38
		RB1#38	18.22	17.76	18.07	18.62	18.16	18.47
		RB1#74	18.13	17.72	18.02	18.53	18.12	18.42
		RB36#0	16.56	16.50	16.56	16.96	16.90	16.96
		RB36#39	16.58	16.56	16.66	16.98	16.96	17.06
		RB75#0	16.56	16.57	16.58	16.96	16.97	16.98
20.0	QPSK	RB1#0	18.55	18.52	18.49	18.95	18.92	18.89
		RB1#50	18.68	18.68	18.66	19.08	19.08	19.06
		RB1#99	18.54	18.64	18.59	18.94	19.04	18.99
		RB50#0	17.55	17.51	17.64	17.95	17.91	18.04
		RB50#50	17.62	17.63	17.75	18.02	18.03	18.15
		RB100#0	17.61	17.58	17.66	18.01	17.98	18.06
	16QAM	RB1#0	17.82	17.73	18.05	18.22	18.13	18.45
		RB1#50	17.95	17.91	18.22	18.35	18.31	18.62
		RB1#99	17.82	17.81	18.16	18.22	18.21	18.56
		RB50#0	16.53	16.50	16.63	16.93	16.90	17.03
		RB50#50	16.62	16.65	16.72	17.02	17.05	17.12
		RB100#0	16.62	16.59	16.68	17.02	16.99	17.08

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For Band2: Antenna Gain = 0.4dBi
 Limit: EIRP ≤ 33dBm

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	18.27	18.31	18.27	18.77	18.81	18.77
		RB1#3	18.31	18.39	18.37	18.81	18.89	18.87
		RB1#5	18.27	18.34	18.27	18.77	18.84	18.77
		RB3#0	18.39	18.46	18.47	18.89	18.96	18.97
		RB3#3	18.40	18.44	18.49	18.90	18.94	18.99
		RB6#0	17.44	17.52	17.46	17.94	18.02	17.96
	16QAM	RB1#0	17.27	17.44	17.29	17.77	17.94	17.79
		RB1#3	17.32	17.51	17.37	17.82	18.01	17.87
		RB1#5	17.30	17.43	17.33	17.80	17.93	17.83
		RB3#0	17.57	17.50	17.52	18.07	18.00	18.02
		RB3#3	17.62	17.46	17.56	18.12	17.96	18.06
		RB6#0	16.64	16.64	16.53	17.14	17.14	17.03
3.0	QPSK	RB1#0	18.09	18.18	18.17	18.59	18.68	18.67
		RB1#8	18.16	18.27	18.23	18.66	18.77	18.73
		RB1#14	18.07	18.19	18.12	18.57	18.69	18.62
		RB6#0	17.32	17.37	17.35	17.82	17.87	17.85
		RB6#9	17.33	17.38	17.37	17.83	17.88	17.87
		RB15#0	17.35	17.38	17.35	17.85	17.88	17.85
	16QAM	RB1#0	17.75	17.31	17.17	18.25	17.81	17.67
		RB1#8	17.83	17.39	17.26	18.33	17.89	17.76
		RB1#14	17.69	17.33	17.19	18.19	17.83	17.69
		RB6#0	16.49	16.43	16.40	16.99	16.93	16.90
		RB6#9	16.49	16.51	16.42	16.99	17.01	16.92
		RB15#0	16.49	16.42	16.51	16.99	16.92	17.01

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	18.41	18.45	18.43	18.91	18.95	18.93
		RB1#13	18.52	18.59	18.55	19.02	19.09	19.05
		RB1#24	18.47	18.50	18.40	18.97	19.00	18.90
		RB15#0	17.35	17.49	17.49	17.85	17.99	17.99
		RB15#10	17.46	17.53	17.55	17.96	18.03	18.05
		RB25#0	17.41	17.47	17.53	17.91	17.97	18.03
	16QAM	RB1#0	17.33	17.75	17.54	17.83	18.25	18.04
		RB1#13	17.42	17.88	17.64	17.92	18.38	18.14
		RB1#24	17.39	17.81	17.53	17.89	18.31	18.03
		RB15#0	16.50	16.55	16.60	17.00	17.05	17.10
		RB15#10	16.59	16.58	16.62	17.09	17.08	17.12
		RB25#0	16.58	16.62	16.60	17.08	17.12	17.10
10.0	QPSK	RB1#0	18.38	18.46	18.43	18.88	18.96	18.93
		RB1#25	18.44	18.54	18.49	18.94	19.04	18.99
		RB1#49	18.37	18.51	18.44	18.87	19.01	18.94
		RB25#0	17.33	17.39	17.37	17.83	17.89	17.87
		RB25#25	17.50	17.43	17.47	18.00	17.93	17.97
		RB50#0	17.41	17.47	17.49	17.91	17.97	17.99
	16QAM	RB1#0	18.04	17.58	17.45	18.54	18.08	17.95
		RB1#25	18.16	17.69	17.48	18.66	18.19	17.98
		RB1#49	18.05	17.62	17.47	18.55	18.12	17.97
		RB25#0	16.44	16.57	16.57	16.94	17.07	17.07
		RB25#25	16.61	16.57	16.66	17.11	17.07	17.16
		RB50#0	16.46	16.52	16.56	16.96	17.02	17.06

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	18.35	18.38	18.45	18.85	18.88	18.95
		RB1#38	18.50	18.58	18.55	19.00	19.08	19.05
		RB1#74	18.48	18.57	18.49	18.98	19.07	18.99
		RB36#0	17.34	17.47	17.47	17.84	17.97	17.97
		RB36#39	17.49	17.47	17.50	17.99	17.97	18.00
		RB75#0	17.42	17.46	17.52	17.92	17.96	18.02
	16QAM	RB1#0	18.00	17.55	17.88	18.50	18.05	18.38
		RB1#38	18.16	17.73	17.98	18.66	18.23	18.48
		RB1#74	18.14	17.67	17.95	18.64	18.17	18.45
		RB36#0	16.43	16.55	16.54	16.93	17.05	17.04
		RB36#39	16.60	16.60	16.58	17.10	17.10	17.08
		RB75#0	16.50	16.55	16.58	17.00	17.05	17.08
20.0	QPSK	RB1#0	18.31	18.40	18.37	18.81	18.90	18.87
		RB1#50	18.58	18.63	18.54	19.08	19.13	19.04
		RB1#99	18.49	18.55	18.43	18.99	19.05	18.93
		RB50#0	17.30	17.55	17.58	17.80	18.05	18.08
		RB50#50	17.49	17.52	17.58	17.99	18.02	18.08
		RB100#0	17.40	17.51	17.54	17.90	18.01	18.04
	16QAM	RB1#0	17.64	17.62	17.99	18.14	18.12	18.49
		RB1#50	17.90	17.87	18.16	18.40	18.37	18.66
		RB1#99	17.80	17.75	18.05	18.30	18.25	18.55
		RB50#0	16.36	16.58	16.58	16.86	17.08	17.08
		RB50#50	16.53	16.56	16.67	17.03	17.06	17.17
		RB100#0	16.47	16.57	16.58	16.97	17.07	17.08

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

For Band4: Antenna Gain = 0.5dBi

Limit: EIRP ≤ 30dBm

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	24.81	24.85	24.89	20.36	20.40	20.44
		RB1#3	24.82	24.86	24.95	20.37	20.41	20.50
		RB1#5	24.79	24.85	24.93	20.34	20.40	20.48
		RB3#0	24.90	24.93	24.96	20.45	20.48	20.51
		RB3#3	24.84	24.90	24.98	20.39	20.45	20.53
		RB6#0	23.91	23.93	24.04	19.46	19.48	19.59
	16QAM	RB1#0	23.73	23.90	23.85	19.28	19.45	19.40
		RB1#3	23.74	23.97	23.94	19.29	19.52	19.49
		RB1#5	23.71	23.90	23.89	19.26	19.45	19.44
		RB3#0	24.02	23.86	24.03	19.57	19.41	19.58
		RB3#3	24.05	23.83	24.01	19.60	19.38	19.56
		RB6#0	22.99	23.03	22.97	18.54	18.58	18.52
3.0	QPSK	RB1#0	24.66	24.71	24.81	20.21	20.26	20.36
		RB1#8	24.76	24.80	24.90	20.31	20.35	20.45
		RB1#14	24.67	24.78	24.80	20.22	20.33	20.35
		RB6#0	23.81	23.81	23.90	19.36	19.36	19.45
		RB6#9	23.80	23.84	23.96	19.35	19.39	19.51
		RB15#0	23.85	23.88	23.93	19.40	19.43	19.48
	16QAM	RB1#0	24.13	23.77	23.73	19.68	19.32	19.28
		RB1#8	24.19	23.85	23.82	19.74	19.40	19.37
		RB1#14	24.07	23.82	23.74	19.62	19.37	19.29
		RB6#0	22.97	22.93	22.86	18.52	18.48	18.41
		RB6#9	22.91	22.99	22.90	18.46	18.54	18.45
		RB15#0	22.96	22.90	23.01	18.51	18.45	18.56

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	24.92	24.96	25.04	20.47	20.51	20.59
		RB1#13	25.03	25.06	25.12	20.58	20.61	20.67
		RB1#24	24.91	25.07	25.03	20.46	20.62	20.58
		RB15#0	23.92	23.97	24.08	19.47	19.52	19.63
		RB15#10	23.96	23.97	24.08	19.51	19.52	19.63
		RB25#0	23.90	23.97	24.04	19.45	19.52	19.59
	16QAM	RB1#0	23.76	24.20	24.04	19.31	19.75	19.59
		RB1#13	23.88	24.23	24.13	19.43	19.78	19.68
		RB1#24	23.78	24.20	24.10	19.33	19.75	19.65
		RB15#0	23.04	23.00	23.14	18.59	18.55	18.69
		RB15#10	23.02	23.02	23.12	18.57	18.57	18.67
		RB25#0	23.03	23.07	23.10	18.58	18.62	18.65
10.0	QPSK	RB1#0	24.96	24.97	25.10	20.51	20.52	20.65
		RB1#25	25.01	25.01	25.17	20.56	20.56	20.72
		RB1#49	24.93	25.07	25.12	20.48	20.62	20.67
		RB25#0	23.93	23.93	24.04	19.48	19.48	19.59
		RB25#25	23.99	23.94	23.99	19.54	19.49	19.54
		RB50#0	23.95	24.00	24.07	19.50	19.55	19.62
	16QAM	RB1#0	24.37	24.07	23.95	19.92	19.62	19.50
		RB1#25	24.48	24.13	24.05	20.03	19.68	19.60
		RB1#49	24.44	24.11	24.04	19.99	19.66	19.59
		RB25#0	23.01	23.03	23.14	18.56	18.58	18.69
		RB25#25	23.10	23.05	23.09	18.65	18.60	18.64
		RB50#0	22.99	23.05	23.10	18.54	18.60	18.65

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band5: Antenna Gain = -2.3dBi = -4.45dBd (0dBd=2.15dBi)
 Limit: ERP≤38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	16.63	16.60	16.49	17.03	17	16.89
		RB1#13	16.80	16.67	16.60	17.2	17.07	17
		RB1#24	16.67	16.55	16.46	17.07	16.95	16.86
		RB15#0	15.69	15.63	15.60	16.09	16.03	16
		RB15#10	15.65	15.61	15.57	16.05	16.01	15.97
		RB25#0	15.68	15.63	15.60	16.08	16.03	16
	16QAM	RB1#0	15.56	15.95	15.63	15.96	16.35	16.03
		RB1#13	15.67	16.01	15.70	16.07	16.41	16.1
		RB1#24	15.57	15.91	15.64	15.97	16.31	16.04
		RB15#0	14.82	14.67	14.66	15.22	15.07	15.06
		RB15#10	14.76	14.61	14.65	15.16	15.01	15.05
		RB25#0	14.77	14.70	14.67	15.17	15.1	15.07
10	QPSK	RB1#0	16.54	16.57	16.45	16.94	16.97	16.85
		RB1#25	16.59	16.62	16.57	16.99	17.02	16.97
		RB1#49	16.58	16.53	16.50	16.98	16.93	16.9
		RB25#0	15.67	15.69	15.58	16.07	16.09	15.98
		RB25#25	15.66	15.57	15.52	16.06	15.97	15.92
		RB50#0	15.68	15.66	15.58	16.08	16.06	15.98
	16QAM	RB1#0	16.27	15.76	15.50	16.67	16.16	15.9
		RB1#25	16.37	15.81	15.58	16.77	16.21	15.98
		RB1#49	16.30	15.73	15.52	16.7	16.13	15.92
		RB25#0	14.79	14.73	14.73	15.19	15.13	15.13
		RB25#25	14.75	14.61	14.67	15.15	15.01	15.07
		RB50#0	14.74	14.64	14.61	15.14	15.04	15.01

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	16.53	16.53	16.42	16.93	16.93	16.82
		RB1#38	16.68	16.66	16.52	17.08	17.06	16.92
		RB1#74	16.59	16.56	16.46	16.99	16.96	16.86
		RB36#0	15.65	15.57	15.46	16.05	15.97	15.86
		RB36#39	15.70	15.56	15.42	16.1	15.96	15.82
		RB75#0	15.67	15.57	15.46	16.07	15.97	15.86
	16QAM	RB1#0	16.26	15.72	15.91	16.66	16.12	16.31
		RB1#38	16.39	15.81	15.99	16.79	16.21	16.39
		RB1#74	16.32	15.76	15.94	16.72	16.16	16.34
		RB36#0	14.70	14.63	14.49	15.1	15.03	14.89
		RB36#39	14.75	14.61	14.45	15.15	15.01	14.85
		RB75#0	14.68	14.60	14.46	15.08	15	14.86
20	QPSK	RB1#0	15.51	15.48	15.35	15.91	15.88	15.75
		RB1#50	16.65	16.61	16.49	17.05	17.01	16.89
		RB1#99	16.55	16.50	16.36	16.95	16.9	16.76
		RB50#0	15.60	15.66	15.45	16.00	16.06	15.85
		RB50#50	15.87	15.58	15.40	16.27	15.98	15.8
		RB100#0	15.71	15.65	15.45	16.11	16.05	15.85
	16QAM	RB1#0	14.84	14.73	14.95	15.24	15.13	15.35
		RB1#50	16.08	15.94	16.16	16.48	16.34	16.56
		RB1#99	15.94	15.78	16.03	16.34	16.18	16.43
		RB50#0	14.63	14.66	14.48	15.03	15.06	14.88
		RB50#50	14.88	14.56	14.45	15.28	14.96	14.85
		RB100#0	14.76	14.60	14.46	15.16	15	14.86

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

For Band7: Antenna Gain = 0.4dBi

Limit: EIRP ≤ 33dBm

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	24.16	24.08	24.04	22.21	22.13	22.09
		RB1#13	24.17	24.20	24.17	22.22	22.25	22.22
		RB1#24	24.08	24.08	24.10	22.13	22.13	22.15
		RB15#0	23.02	23.19	23.17	21.07	21.24	21.22
		RB15#10	23.07	23.02	23.21	21.12	21.07	21.26
		RB25#0	23.06	23.12	23.14	21.11	21.17	21.19
	16QAM	RB1#0	23.08	23.33	23.10	21.13	21.38	21.15
		RB1#13	23.06	23.44	23.21	21.11	21.49	21.26
		RB1#24	22.98	23.38	23.17	21.03	21.43	21.22
		RB15#0	22.07	22.14	22.19	20.12	20.19	20.24
		RB15#10	22.14	22.02	22.22	20.19	20.07	20.27
		RB25#0	22.11	22.13	22.20	20.16	20.18	20.25
10.0	QPSK	RB1#0	24.10	24.11	24.08	22.15	22.16	22.13
		RB1#25	24.11	24.14	24.17	22.16	22.19	22.22
		RB1#49	24.07	24.11	24.15	22.12	22.16	22.2
		RB25#0	23.00	23.10	23.15	21.05	21.15	21.2
		RB25#25	22.89	23.03	23.05	20.94	21.08	21.1
		RB50#0	22.98	23.12	23.18	21.03	21.17	21.23
	16QAM	RB1#0	23.69	23.21	23.08	21.74	21.26	21.13
		RB1#25	23.58	23.24	23.14	21.63	21.29	21.19
		RB1#49	23.63	23.26	23.13	21.68	21.31	21.18
		RB25#0	22.02	22.12	22.28	20.07	20.17	20.33
		RB25#25	22.01	22.04	22.22	20.06	20.09	20.27
		RB50#0	21.99	22.07	22.18	20.04	20.12	20.23

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band17: Antenna Gain = 0.2dBi = -1.95dBd (0dBd=2.15dBi)
 Limit: ERP≤34.77dBm

LTE Band 38

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	19.58	19.60	19.69	19.98	20	20.09
		RB1#13	19.65	19.67	19.81	20.05	20.07	20.21
		RB1#24	19.61	19.58	19.76	20.01	19.98	20.16
		RB15#0	18.53	18.63	18.68	18.93	19.03	19.08
		RB15#10	18.58	18.63	18.71	18.98	19.03	19.11
		RB25#0	18.53	18.61	18.74	18.93	19.01	19.14
	16QAM	RB1#0	18.55	18.68	18.90	18.95	19.08	19.3
		RB1#13	18.68	18.75	19.03	19.08	19.15	19.43
		RB1#24	18.61	18.70	19.00	19.01	19.1	19.4
		RB15#0	17.50	17.61	17.70	17.9	18.01	18.1
		RB15#10	17.53	17.60	17.75	17.93	18	18.15
		RB25#0	17.59	17.64	17.70	17.99	18.04	18.1
10.0	QPSK	RB1#0	19.53	19.61	19.69	19.93	20.01	20.09
		RB1#25	19.62	19.72	19.80	20.02	20.12	20.2
		RB1#49	19.59	19.71	19.78	19.99	20.11	20.18
		RB25#0	18.47	18.59	18.62	18.87	18.99	19.02
		RB25#25	18.58	18.59	18.74	18.98	18.99	19.14
		RB50#0	18.57	18.62	18.72	18.97	19.02	19.12
	16QAM	RB1#0	18.77	18.52	18.78	19.17	18.92	19.18
		RB1#25	18.84	18.58	18.87	19.24	18.98	19.27
		RB1#49	18.83	18.56	18.84	19.23	18.96	19.24
		RB25#0	17.46	17.62	17.67	17.86	18.02	18.07
		RB25#25	17.61	17.65	17.77	18.01	18.05	18.17
		RB50#0	17.54	17.56	17.69	17.94	17.96	18.09

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	19.55	19.64	19.70	19.95	20.04	20.1
		RB1#38	19.71	19.73	19.83	20.11	20.13	20.23
		RB1#74	19.66	19.73	19.82	20.06	20.13	20.22
		RB36#0	18.49	18.54	18.63	18.89	18.94	19.03
		RB36#39	18.60	18.61	18.75	19	19.01	19.15
		RB75#0	18.52	18.60	18.71	18.92	19	19.11
	16QAM	RB1#0	18.74	18.53	18.87	19.14	18.93	19.27
		RB1#38	18.91	18.67	18.97	19.31	19.07	19.37
		RB1#74	18.86	18.62	18.98	19.26	19.02	19.38
		RB36#0	17.51	17.57	17.71	17.91	17.97	18.11
		RB36#39	17.58	17.57	17.78	17.98	17.97	18.18
		RB75#0	17.48	17.58	17.67	17.88	17.98	18.07
20	QPSK	RB1#0	19.45	19.51	19.63	19.85	19.91	20.03
		RB1#50	19.70	19.67	19.85	20.1	20.07	20.25
		RB1#99	19.63	19.63	19.82	20.03	20.03	20.22
		RB50#0	18.51	18.64	18.61	18.91	19.04	19.01
		RB50#50	18.55	18.61	18.78	18.95	19.01	19.18
		RB100#0	18.52	18.58	18.70	18.92	18.98	19.1
	16QAM	RB1#0	18.54	18.48	18.81	18.94	18.88	19.21
		RB1#50	18.77	18.69	19.04	19.17	19.09	19.44
		RB1#99	18.70	18.58	18.99	19.1	18.98	19.39
		RB50#0	17.46	17.66	17.63	17.86	18.06	18.03
		RB50#50	17.56	17.61	17.76	17.96	18.01	18.16
		RB100#0	17.50	17.58	17.65	17.9	17.98	18.05

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For Band38: Antenna Gain = 0.4dBi
 Limit: EIRP ≤ 33dBm

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	19.18	19.09	19.44	19.58	19.49	19.84
		RB1#13	19.29	19.19	19.57	19.69	19.59	19.97
		RB1#24	19.20	19.12	19.53	19.6	19.52	19.93
		RB15#0	18.21	18.11	18.51	18.61	18.51	18.91
		RB15#10	18.14	18.09	18.56	18.54	18.49	18.96
		RB25#0	18.16	18.12	18.47	18.56	18.52	18.87
	16QAM	RB1#0	18.42	18.06	18.51	18.82	18.46	18.91
		RB1#13	18.51	18.18	18.65	18.91	18.58	19.05
		RB1#24	18.47	18.12	18.59	18.87	18.52	18.99
		RB15#0	17.30	17.08	17.53	17.7	17.48	17.93
		RB15#10	17.23	17.09	17.53	17.63	17.49	17.93
		RB25#0	17.25	17.16	17.55	17.65	17.56	17.95
10.0	QPSK	RB1#0	19.16	19.10	19.49	19.56	19.5	19.89
		RB1#25	19.24	19.22	19.62	19.64	19.62	20.02
		RB1#49	19.14	19.20	19.59	19.54	19.6	19.99
		RB25#0	18.18	18.10	18.46	18.58	18.5	18.86
		RB25#25	18.12	18.12	18.48	18.52	18.52	18.88
		RB50#0	18.19	18.13	18.51	18.59	18.53	18.91
	16QAM	RB1#0	18.37	18.01	18.58	18.77	18.41	18.98
		RB1#25	18.48	18.09	18.69	18.88	18.49	19.09
		RB1#49	18.39	18.10	18.68	18.79	18.5	19.08
		RB25#0	17.26	17.17	17.52	17.66	17.57	17.92
		RB25#25	17.19	17.16	17.53	17.59	17.56	17.93
		RB50#0	17.19	17.15	17.54	17.59	17.55	17.94

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	19.18	19.08	19.45	19.58	19.48	19.85
		RB1#38	19.29	19.25	19.61	19.69	19.65	20.01
		RB1#74	19.20	19.24	19.61	19.6	19.64	20.01
		RB36#0	18.20	18.06	18.41	18.6	18.46	18.81
		RB36#39	18.14	18.09	18.49	18.54	18.49	18.89
		RB75#0	18.21	18.11	18.49	18.61	18.51	18.89
	16QAM	RB1#0	18.39	18.03	18.65	18.79	18.43	19.05
		RB1#38	18.46	18.14	18.84	18.86	18.54	19.24
		RB1#74	18.39	18.13	18.83	18.79	18.53	19.23
		RB36#0	17.24	17.11	17.48	17.64	17.51	17.88
		RB36#39	17.15	17.10	17.58	17.55	17.5	17.98
		RB75#0	17.21	17.14	17.49	17.61	17.54	17.89
20	QPSK	RB1#0	19.07	18.97	19.39	19.47	19.37	19.79
		RB1#50	19.23	19.17	19.69	19.63	19.57	20.09
		RB1#99	19.10	19.12	19.63	19.5	19.52	20.03
		RB50#0	18.17	18.11	18.38	18.57	18.51	18.78
		RB50#50	18.16	18.07	18.53	18.56	18.47	18.93
		RB100#0	18.23	18.11	18.44	18.63	18.51	18.84
	16QAM	RB1#0	18.16	17.93	18.57	18.56	18.33	18.97
		RB1#50	18.31	18.16	18.87	18.71	18.56	19.27
		RB1#99	18.18	18.08	18.86	18.58	18.48	19.26
		RB50#0	17.24	17.21	17.39	17.64	17.61	17.79
		RB50#50	17.20	17.13	17.54	17.6	17.53	17.94
		RB100#0	17.20	17.12	17.42	17.6	17.52	17.82

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For Band41: Antenna Gain = 0.4dBi
 Limit: EIRP ≤ 33dBm

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	18.19	17.93	17.80	18.69	18.43	18.3
		RB1#3	18.20	18.15	17.83	18.7	18.65	18.33
		RB1#5	18.17	18.00	17.76	18.67	18.5	18.26
		RB3#0	18.28	18.09	17.80	18.78	18.59	18.3
		RB3#3	18.29	18.11	17.92	18.79	18.61	18.42
		RB6#0	17.37	17.17	16.97	17.87	17.67	17.47
	16QAM	RB1#0	17.17	17.13	16.85	17.67	17.63	17.35
		RB1#3	17.22	17.30	17.02	17.72	17.8	17.52
		RB1#5	17.17	17.20	16.87	17.67	17.7	17.37
		RB3#0	17.47	17.05	16.87	17.97	17.55	17.37
		RB3#3	17.49	17.12	16.93	17.99	17.62	17.43
		RB6#0	16.48	16.28	16.03	16.98	16.78	16.53
3.0	QPSK	RB1#0	18.00	18.07	17.82	18.5	18.57	18.32
		RB1#8	18.08	18.10	17.93	18.58	18.6	18.43
		RB1#14	18.03	17.99	17.82	18.53	18.49	18.32
		RB6#0	17.21	17.17	17.01	17.71	17.67	17.51
		RB6#9	17.25	17.21	17.02	17.75	17.71	17.52
		RB15#0	17.28	17.26	17.04	17.78	17.76	17.54
	16QAM	RB1#0	17.67	17.23	16.86	18.17	17.73	17.36
		RB1#8	17.74	17.22	16.90	18.24	17.72	17.4
		RB1#14	17.60	17.15	16.82	18.1	17.65	17.32
		RB6#0	16.41	16.30	16.05	16.91	16.8	16.55
		RB6#9	16.38	16.35	16.02	16.88	16.85	16.52
		RB15#0	16.39	16.29	16.20	16.89	16.79	16.7

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	18.36	18.40	18.16	18.86	18.9	18.66
		RB1#13	18.48	18.50	18.23	18.98	19	18.73
		RB1#24	18.34	18.43	18.16	18.84	18.93	18.66
		RB15#0	17.33	17.43	17.23	17.83	17.93	17.73
		RB15#10	17.40	17.41	17.15	17.9	17.91	17.65
		RB25#0	17.41	17.40	17.17	17.91	17.9	17.67
	16QAM	RB1#0	17.24	17.72	17.29	17.74	18.22	17.79
		RB1#13	17.35	17.75	17.30	17.85	18.25	17.8
		RB1#24	17.28	17.74	17.29	17.78	18.24	17.79
		RB15#0	16.41	16.45	16.33	16.91	16.95	16.83
		RB15#10	16.53	16.46	16.26	17.03	16.96	16.76
		RB25#0	16.49	16.52	16.30	16.99	17.02	16.8
10.0	QPSK	RB1#0	18.31	18.48	18.28	18.81	18.98	18.78
		RB1#25	18.39	18.53	18.31	18.89	19.03	18.81
		RB1#49	18.33	18.46	18.26	18.83	18.96	18.76
		RB25#0	17.26	17.37	17.20	17.76	17.87	17.7
		RB25#25	17.36	17.44	17.17	17.86	17.94	17.67
		RB50#0	17.36	17.41	17.23	17.86	17.91	17.73
	16QAM	RB1#0	17.90	17.62	17.31	18.4	18.12	17.81
		RB1#25	18.02	17.65	17.34	18.52	18.15	17.84
		RB1#49	17.95	17.60	17.25	18.45	18.1	17.75
		RB25#0	16.39	16.49	16.38	16.89	16.99	16.88
		RB25#25	16.54	16.55	16.33	17.04	17.05	16.83
		RB50#0	16.43	16.49	16.33	16.93	16.99	16.83

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	18.28	18.43	18.25	18.78	18.93	18.75
		RB1#38	18.46	18.50	18.31	18.96	19	18.81
		RB1#74	18.45	18.47	18.28	18.95	18.97	18.78
		RB36#0	17.28	17.37	17.23	17.78	17.87	17.73
		RB36#39	17.44	17.43	17.18	17.94	17.93	17.68
		RB75#0	17.37	17.46	17.24	17.87	17.96	17.74
	16QAM	RB1#0	17.93	17.56	17.71	18.43	18.06	18.21
		RB1#38	18.07	17.63	17.75	18.57	18.13	18.25
		RB1#74	18.07	17.60	17.67	18.57	18.1	18.17
		RB36#0	16.37	16.47	16.30	16.87	16.97	16.8
		RB36#39	16.53	16.56	16.26	17.03	17.06	16.76
		RB75#0	16.43	16.56	16.28	16.93	17.06	16.78
20	QPSK	RB1#0	18.27	18.44	18.26	18.77	18.94	18.76
		RB1#50	18.46	18.56	18.32	18.96	19.06	18.82
		RB1#99	18.43	18.51	18.21	18.93	19.01	18.71
		RB50#0	17.23	17.44	17.26	17.73	17.94	17.76
		RB50#50	17.43	17.54	17.21	17.93	18.04	17.71
		RB100#0	17.34	17.48	17.23	17.84	17.98	17.73
	16QAM	RB1#0	17.57	17.65	17.82	18.07	18.15	18.32
		RB1#50	17.79	17.79	17.92	18.29	18.29	18.42
		RB1#99	17.74	17.68	17.78	18.24	18.18	18.28
		RB50#0	16.28	16.51	16.37	16.78	17.01	16.87
		RB50#50	16.47	16.57	16.29	16.97	17.07	16.79
		RB100#0	16.41	16.57	16.33	16.91	17.07	16.83

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For Band66: Antenna Gain = 0.5dBi
 Limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.12	13
	Middle	3.35	13
	High	3.27	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.15	13
	Middle	3.69	13
	High	3.21	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.11	13
	Middle	3.34	13
	High	3.27	13
HSDPA (16QAM)	Low	4.28	13
	Middle	3.86	13
	High	3.78	13
HSUPA (QPSK)	Low	3.39	13
	Middle	3.57	13
	High	3.64	13
HSPA+	Low	3.46	13
	Middle	3.35	13
	High	3.48	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.35	13
	Middle	3.27	13
	High	3.74	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.29	13
	Middle	3.36	13
	High	3.44	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.24	13
	Middle	3.39	13
	High	2.98	13
HSDPA (16QAM)	Low	3.58	13
	Middle	4.19	13
	High	4.31	13
HSUPA (QPSK)	Low	3.67	13
	Middle	3.79	13
	High	3.69	13
HSPA+	Low	3.93	13
	Middle	3.75	13
	High	3.69	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.65	13
	Middle	3.72	13
	High	3.86	13
HSDPA (16QAM)	Low	3.63	13
	Middle	3.85	13
	High	3.73	13
HSUPA (BPSK)	Low	3.69	13
	Middle	3.64	13
	High	3.89	13
HSPA+	Low	3.65	13
	Middle	3.76	13
	High	3.83	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.52	5.61	5.74	13	Pass
QPSK (100RB Size)	5.83	6.09	5.83	13	Pass
16QAM (1RB Size)	6.22	6.51	6.38	13	Pass
16QAM (100RB Size)	6.92	6.76	6.76	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.80	6.06	5.87	13	Pass
QPSK (100RB Size)	5.96	6.12	6.06	13	Pass
16QAM (1RB Size)	7.53	6.44	6.86	13	Pass
16QAM (100RB Size)	6.89	6.92	6.92	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.97	4.33	3.40	13	Pass
QPSK (50RB Size)	5.67	5.48	5.58	13	Pass
16QAM (1RB Size)	4.84	5.48	4.20	13	Pass
16QAM (50RB Size)	6.38	6.28	6.41	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.85	4.04	3.78	13	Pass
QPSK (100RB Size)	5.51	5.54	5.45	13	Pass
16QAM (1RB Size)	5.06	4.97	4.84	13	Pass
16QAM (100RB Size)	6.47	6.41	6.31	13	Pass

LTE Band 17 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.16	4.87	4.97	13	Pass
QPSK (50RB Size)	5.54	5.58	5.77	13	Pass
16QAM (1RB Size)	6.31	5.64	5.90	13	Pass
16QAM (50RB Size)	6.41	6.47	6.51	13	Pass

LTE Band 38 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.86	7.72	7.63	13	Pass
QPSK (100RB Size)	7.60	7.88	7.56	13	Pass
16QAM (1RB Size)	8.19	8.75	8.04	13	Pass
16QAM (100RB Size)	8.62	8.24	8.62	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.43	9.68	8.67	13	Pass
QPSK (100RB Size)	8.63	7.40	9.25	13	Pass
16QAM (1RB Size)	8.11	8.81	9.68	13	Pass
16QAM (100RB Size)	8.56	8.15	9.26	13	Pass

LTE Band 66 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.80	5.32	6.03	13	Pass
QPSK (100RB Size)	5.93	5.67	5.64	13	Pass
16QAM (1RB Size)	6.67	6.09	8.43	13	Pass
16QAM (100RB Size)	6.79	6.57	8.43	13	Pass

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

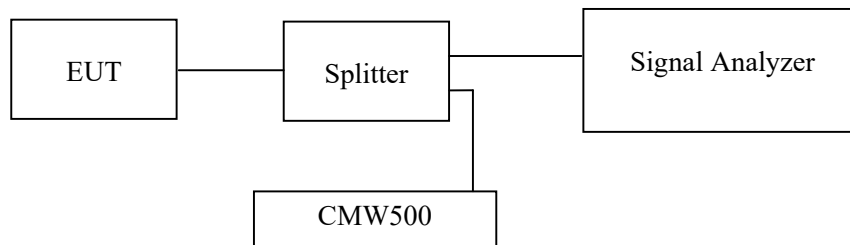
Applicable Standard

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:	26.8 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Black Duan from 2022-02-21 to 2022-03-25.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	246.80	315.71
	190	836.6	241.99	312.50
	251	848.8	246.00	332.60

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EGPRS(8PSK)	128	824.2	242.00	303.79
	190	836.6	248.00	312.59
	251	848.8	240.00	307.69

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.17	4.71
	836.6	4.17	4.71
	846.6	4.17	4.71
HSDPA	826.4	4.17	4.71
	836.6	4.17	4.70
	846.6	4.17	4.71
HSUPA	826.4	4.17	4.71
	836.6	4.17	4.71
	846.6	4.18	4.71

PCS Band (Part 24E)

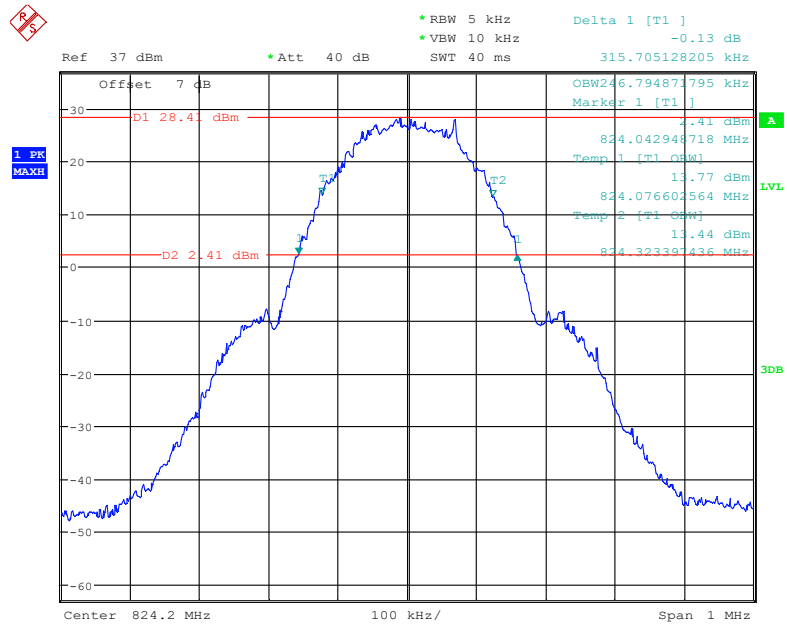
Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	246.80	314.10
	661	1880.0	241.99	315.71
	810	1909.8	243.59	314.10

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EGPRS(8PSK)	512	1850.2	246.00	312.96
	661	1880.0	248.00	312.50
	810	1909.8	252.00	309.29

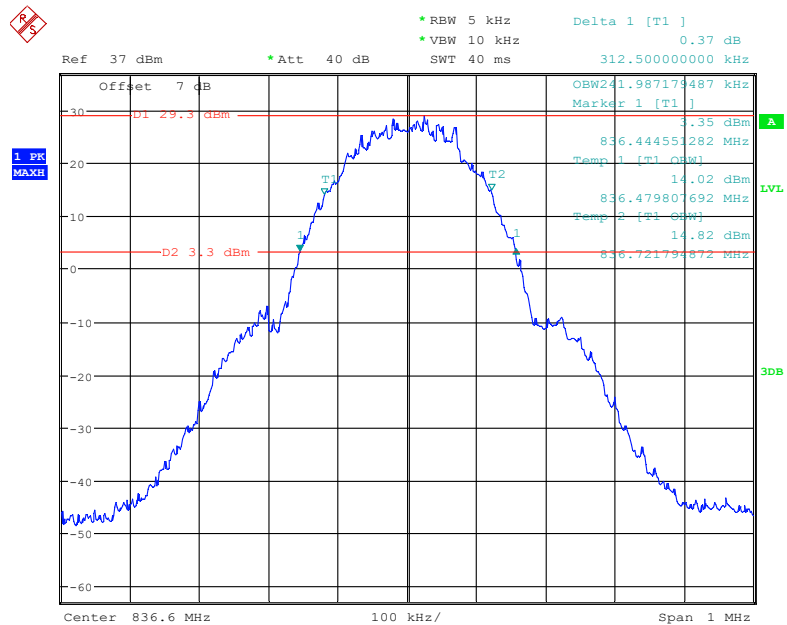
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.15	4.70
	1880.0	4.15	4.71
	1907.6	4.15	4.71
HSDPA	1852.4	4.18	4.70
	1880.0	4.17	4.71
	1907.6	4.17	4.71
HSUPA	1852.4	4.18	4.71
	1880.0	4.17	4.71
	1907.6	4.17	4.71

AWS Band (Part 27)

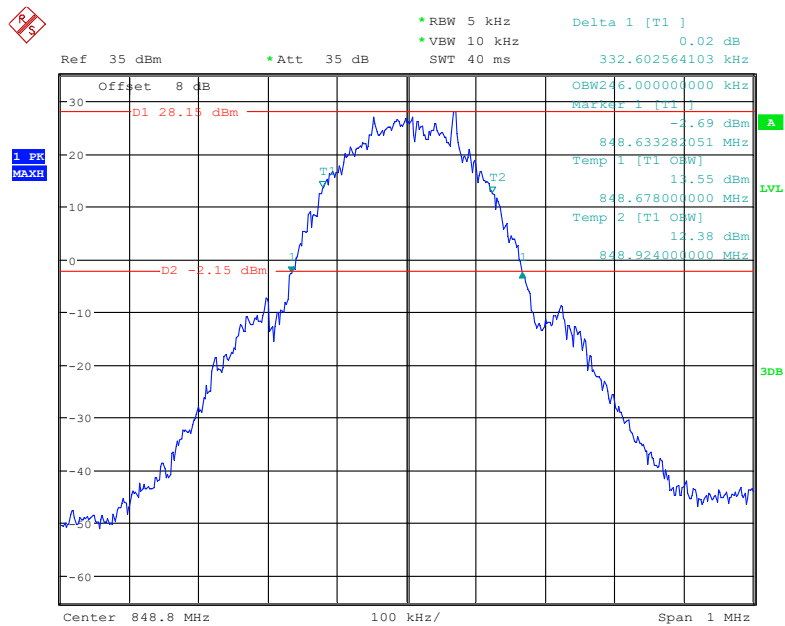
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.17	4.73
	1732.6	4.15	4.71
	1752.6	4.15	4.71
HSDPA	1712.4	4.18	4.70
	1732.6	4.18	4.70
	1752.6	4.18	4.71
HSUPA	1712.4	4.18	4.71
	1732.6	4.17	4.73
	1752.6	4.18	4.71

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

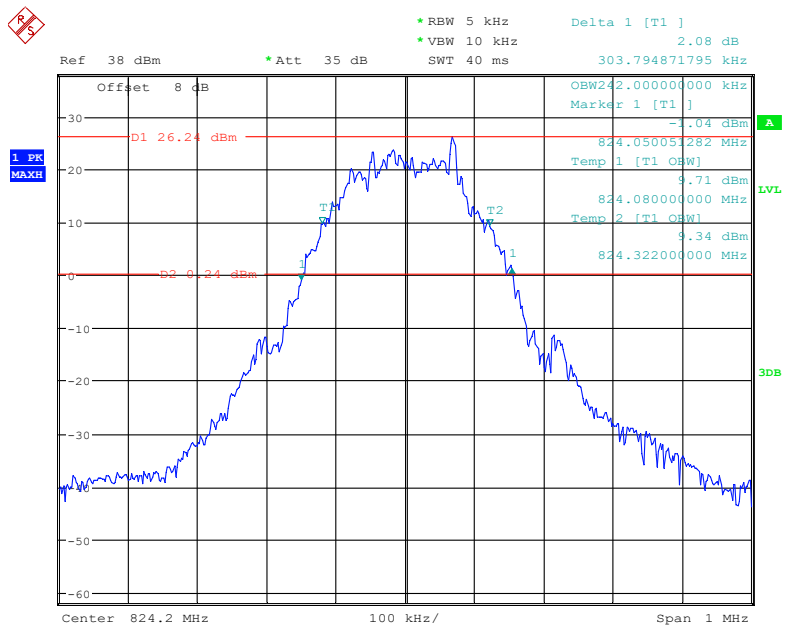
Date: 22.FEB.2022 15:37:46

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

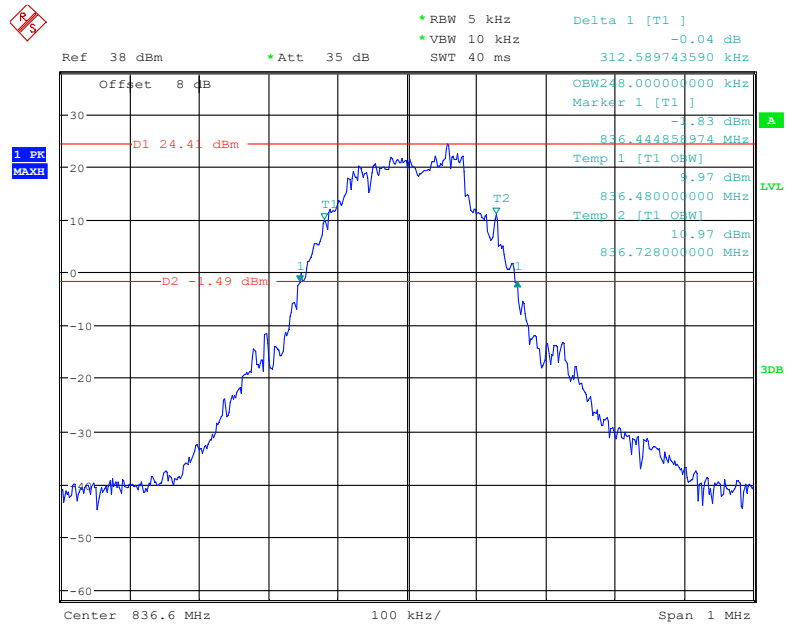
Date: 22.FEB.2022 15:40:48

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

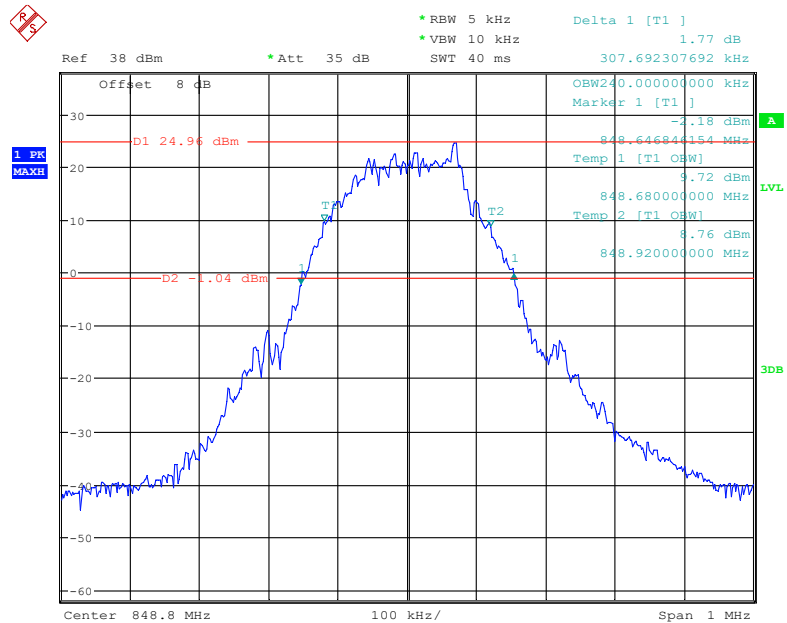
Date: 25.MAR.2022 17:37:23

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

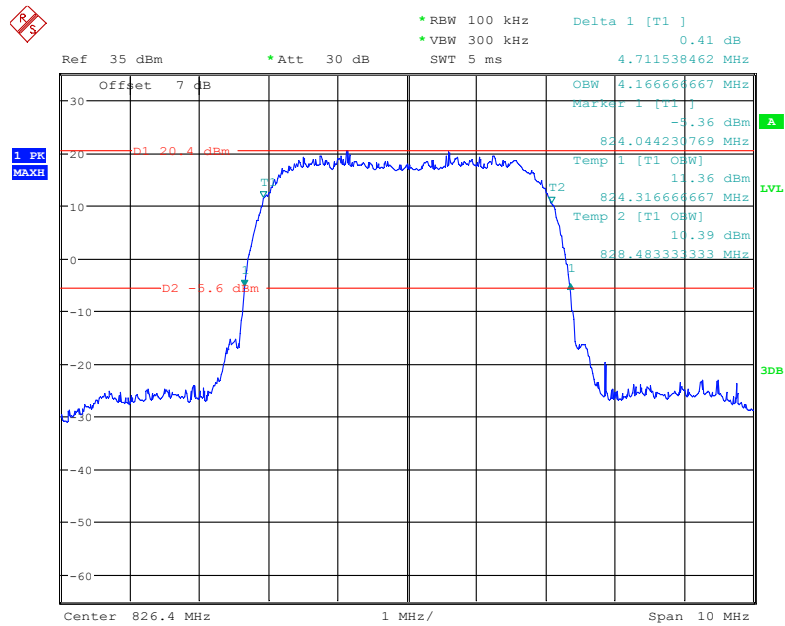
Date: 23.MAR.2022 13:42:45

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

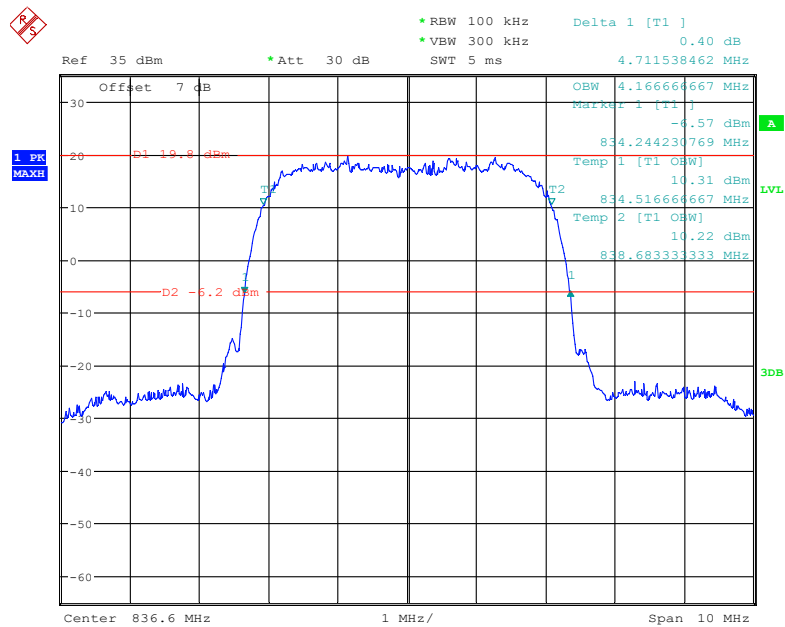
Date: 23.MAR.2022 13:44:30

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

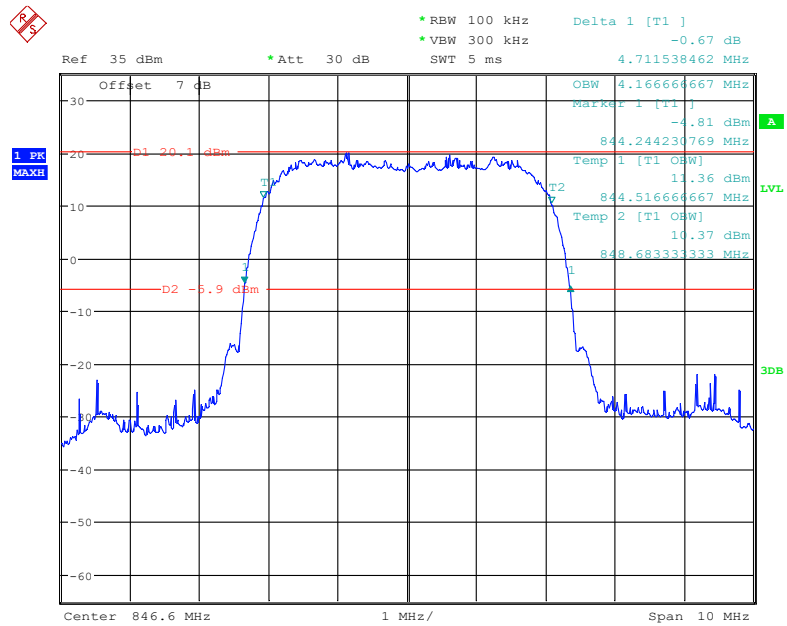
Date: 23.MAR.2022 13:46:32

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

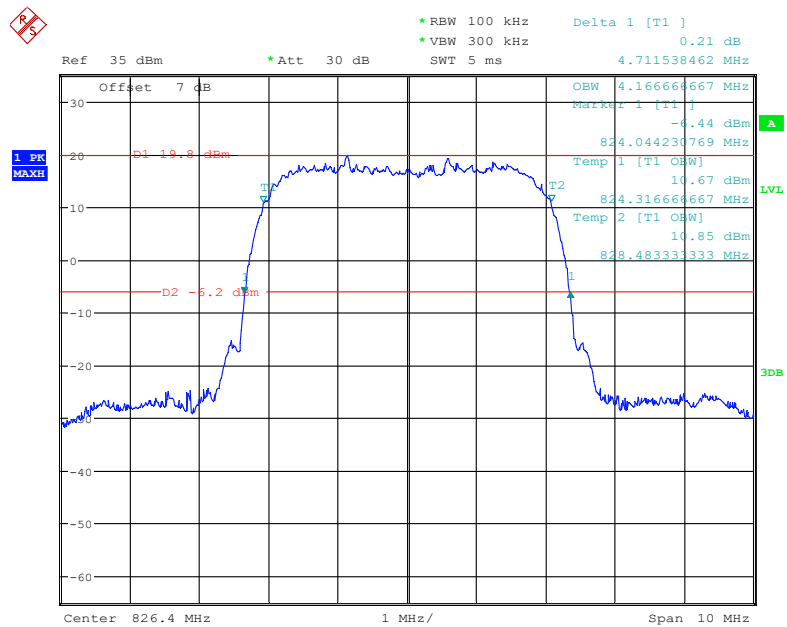
Date: 23.FEB.2022 12:04:03

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

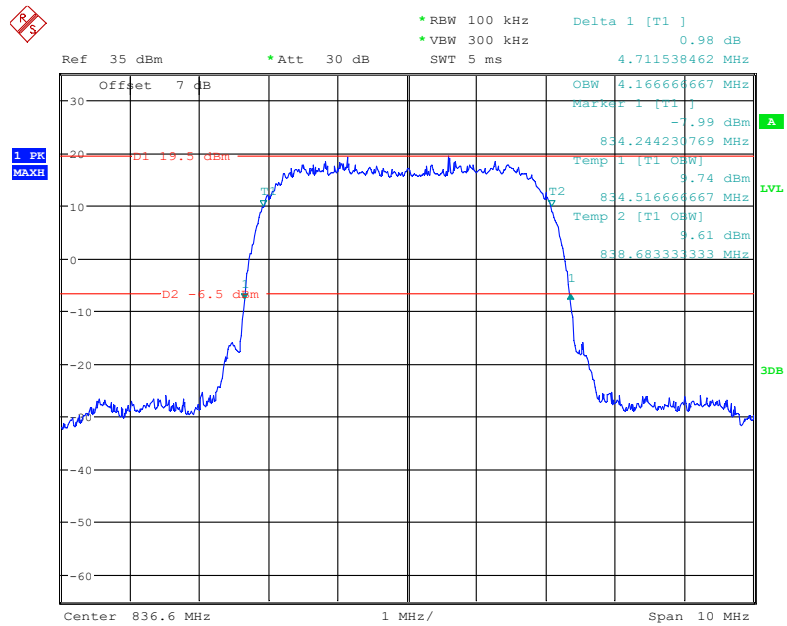
Date: 23.FEB.2022 12:02:08

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

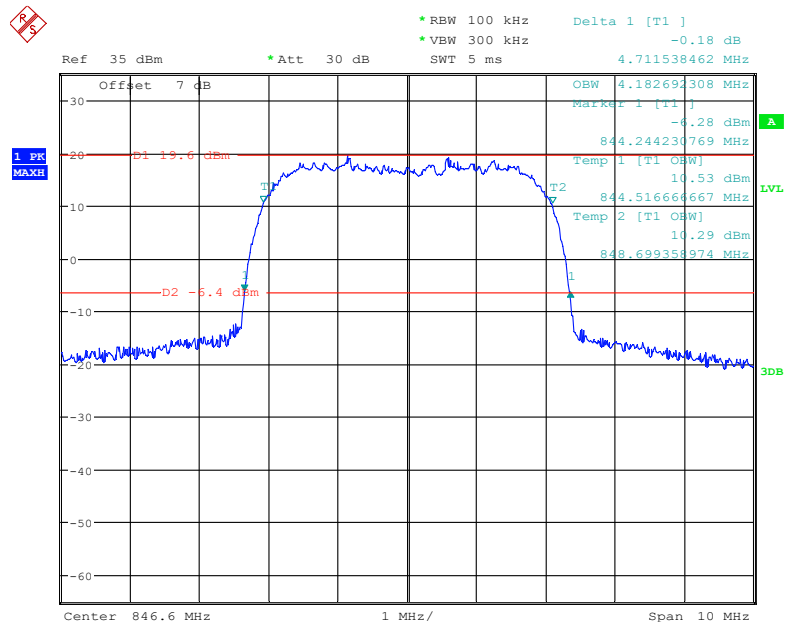
Date: 23.FEB.2022 12:00:04

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

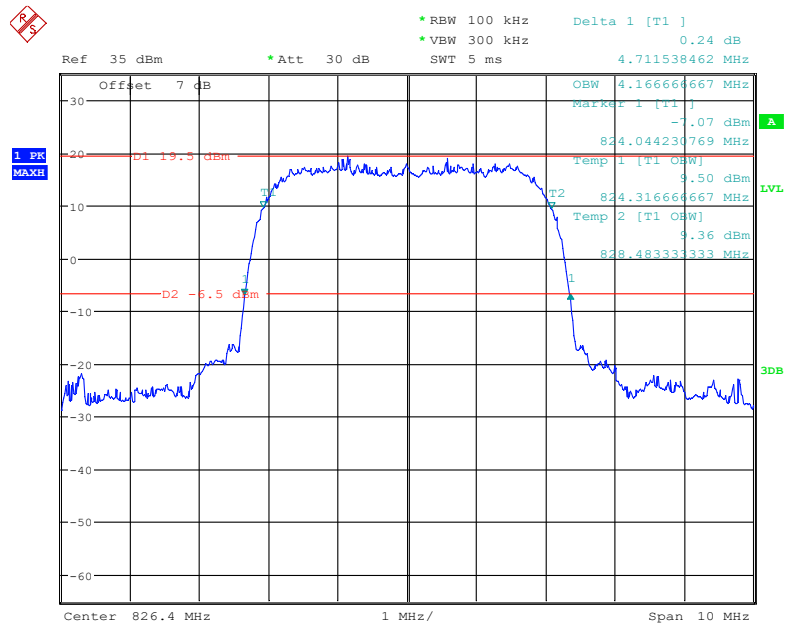
Date: 23.FEB.2022 13:40:38

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

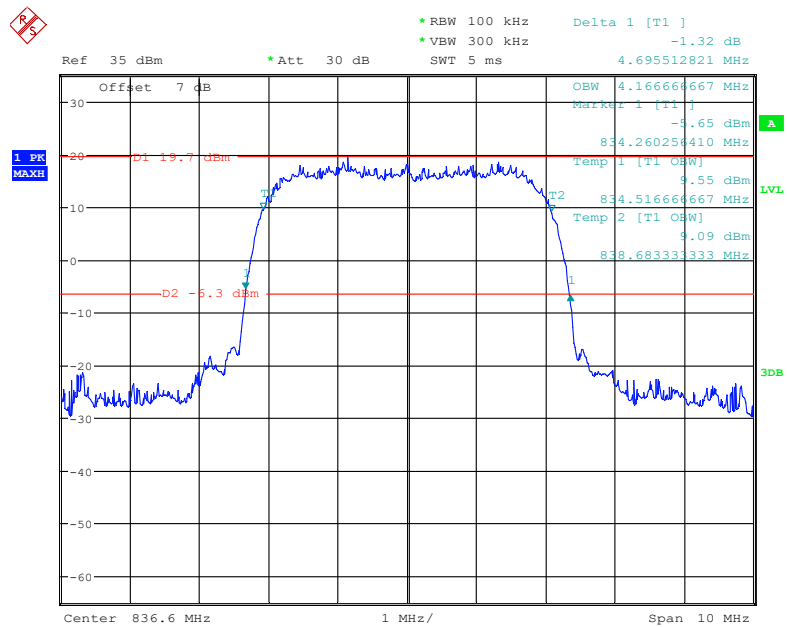
Date: 23.FEB.2022 13:38:07

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

Date: 23.FEB.2022 13:36:26

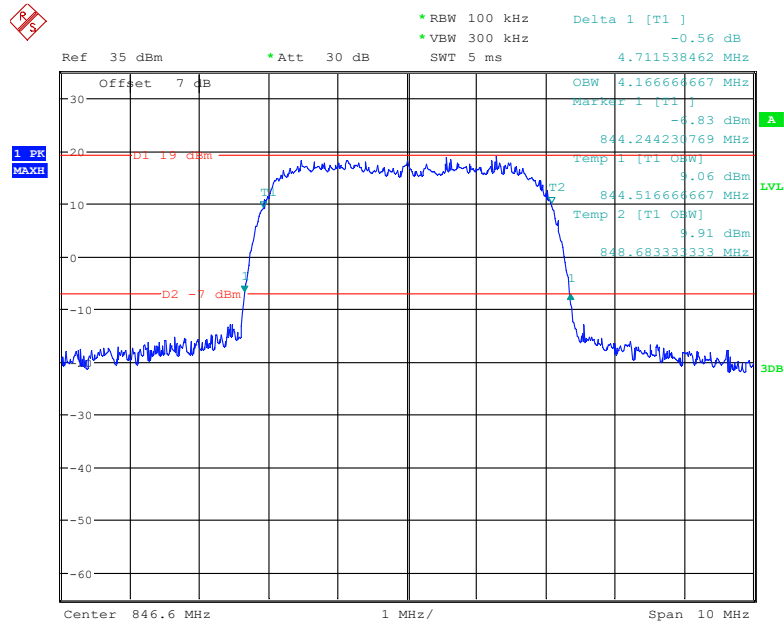
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 23.FEB.2022 13:13:30

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

Date: 23.FEB.2022 13:16:27

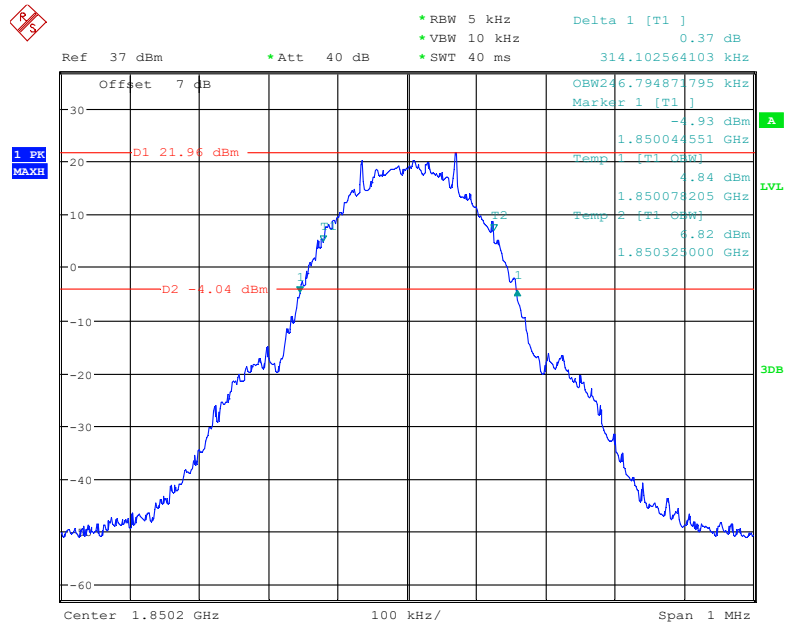
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 23.FEB.2022 13:19:12

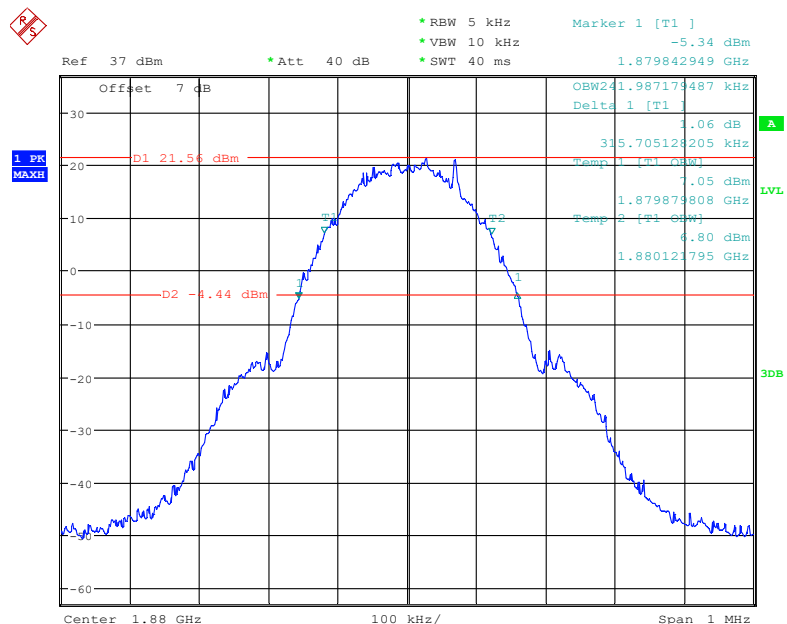
PCS Band (Part 24E)

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

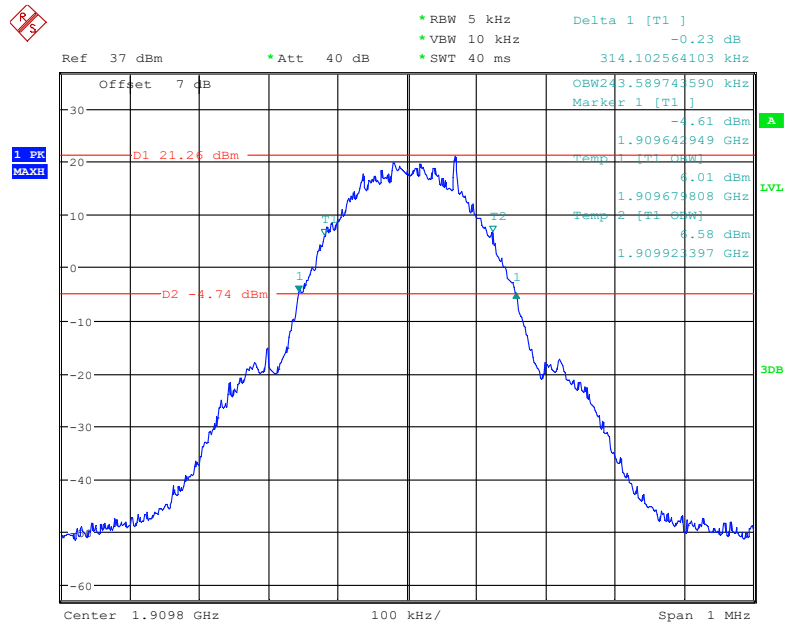


Date: 22.FEB.2022 16:36:10

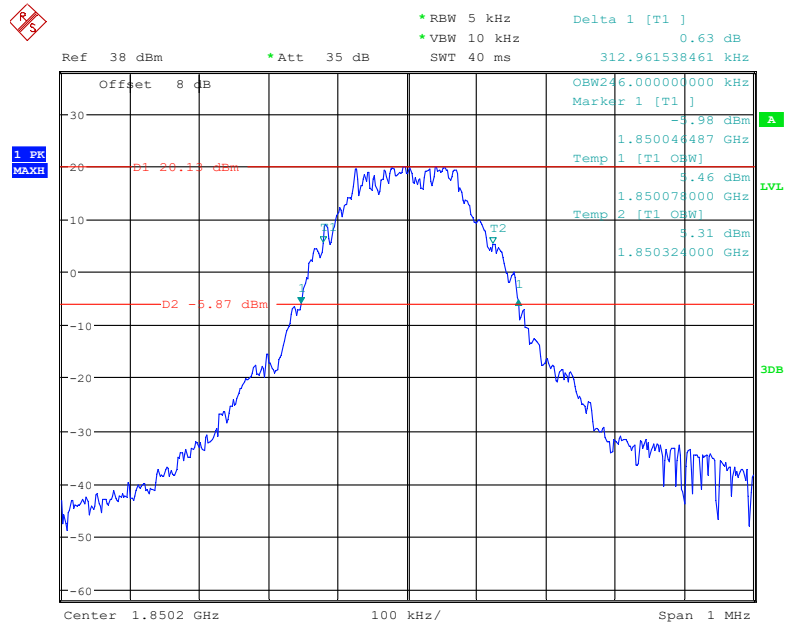
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



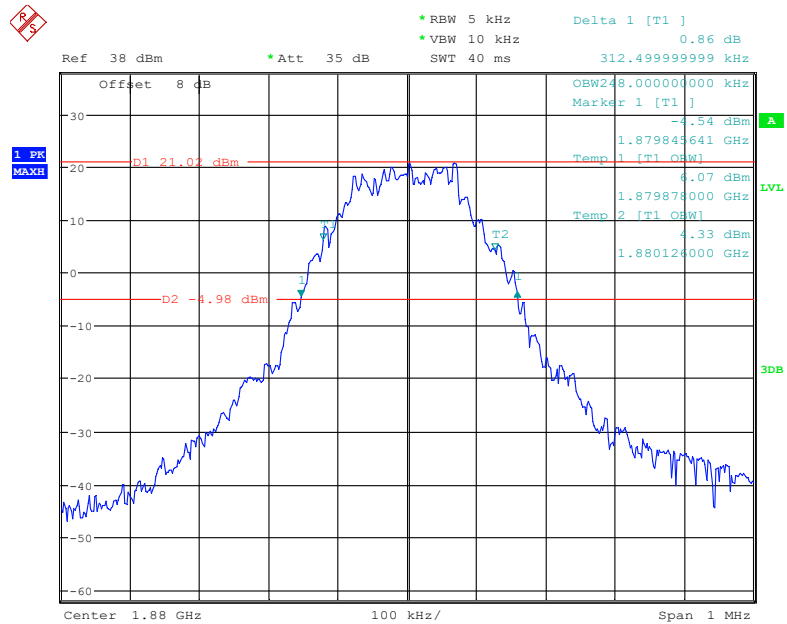
Date: 22.FEB.2022 16:42:37

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

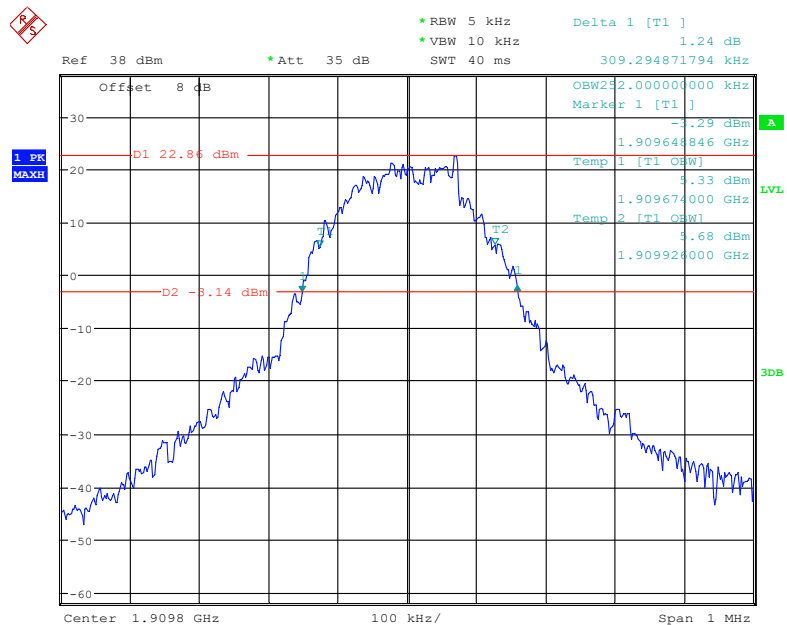
Date: 22.FEB.2022 16:33:35

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

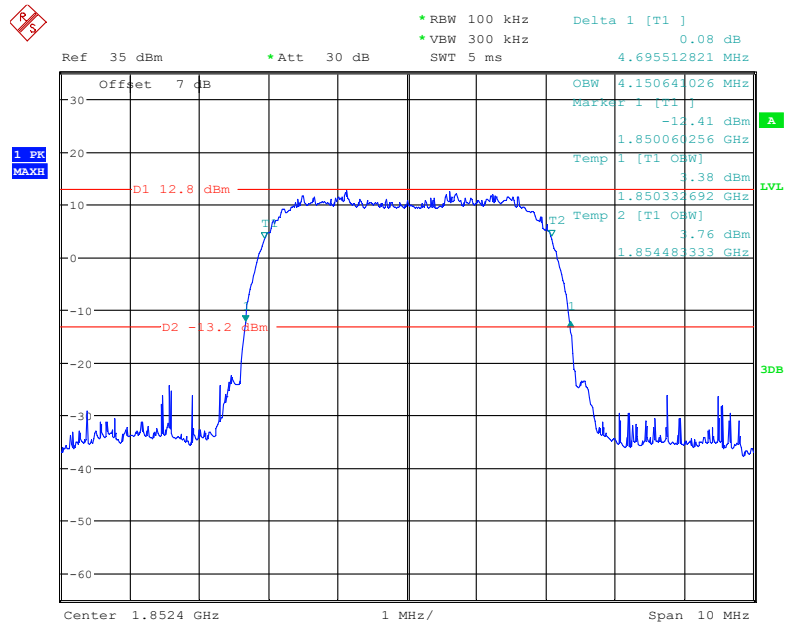
Date: 23.MAR.2022 13:57:27

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

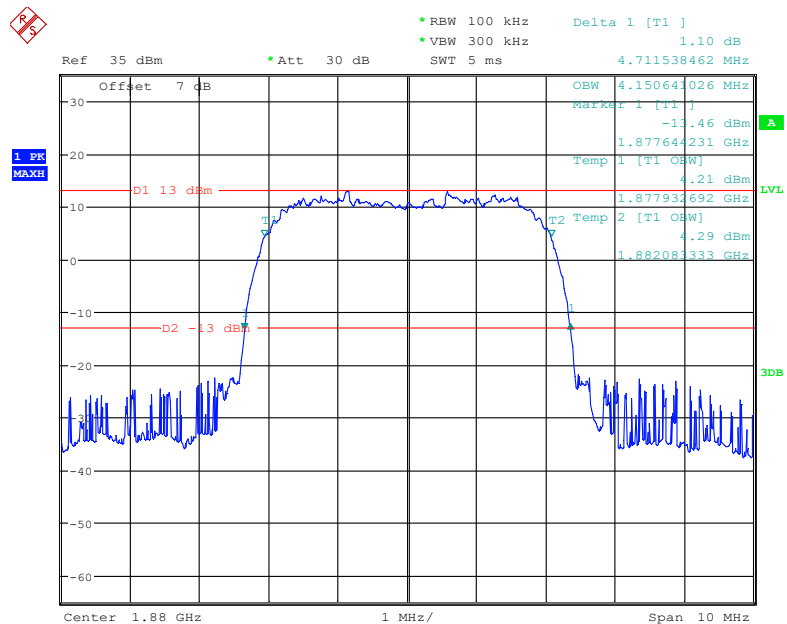
Date: 23.MAR.2022 13:58:50

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

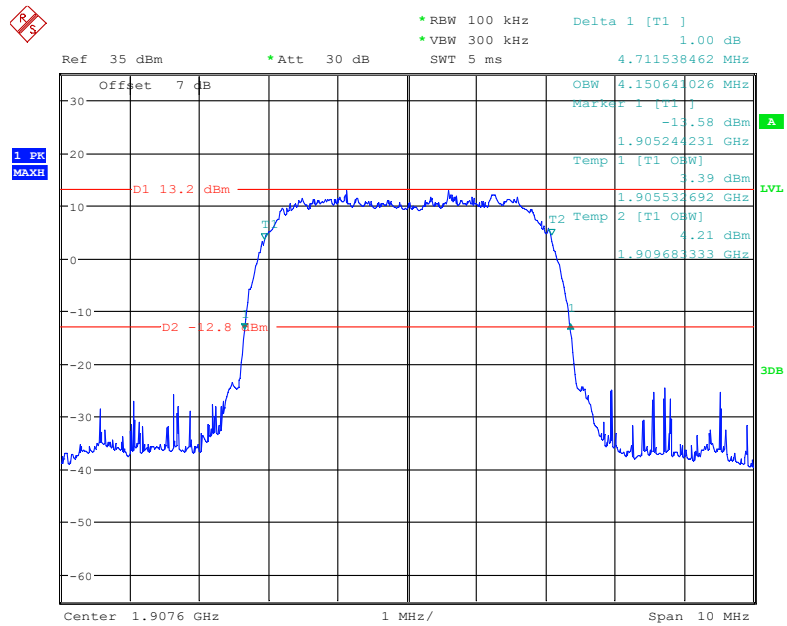
Date: 23.MAR.2022 14:00:55

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

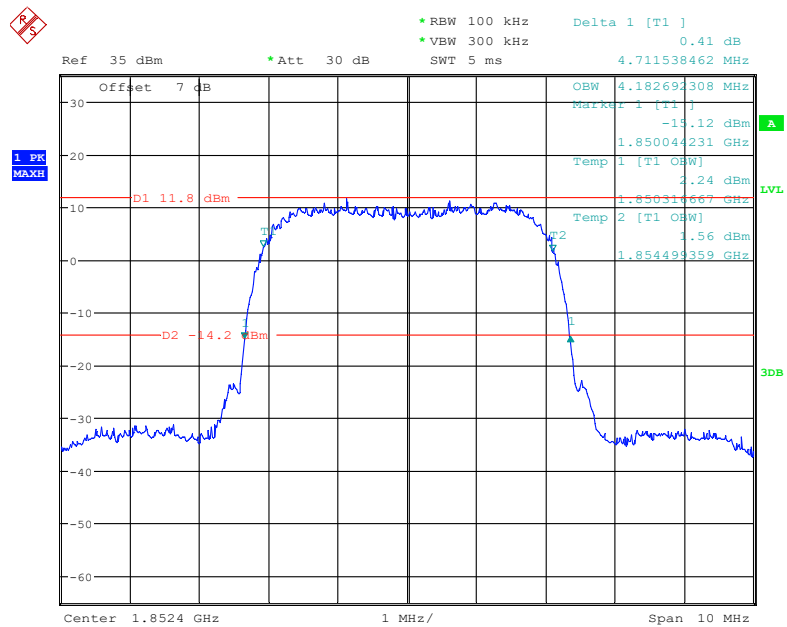
Date: 23.FEB.2022 11:43:45

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

Date: 23.FEB.2022 11:48:54

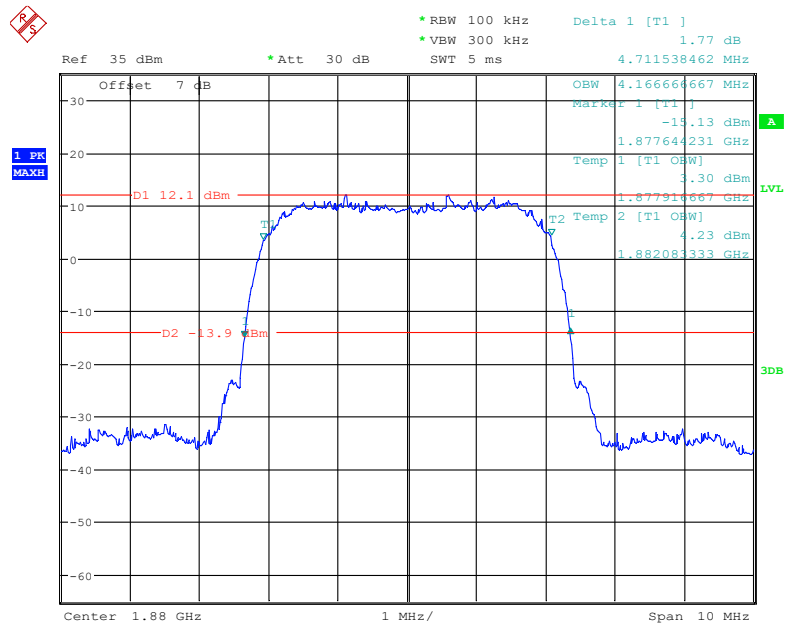
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 23.FEB.2022 11:51:08

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

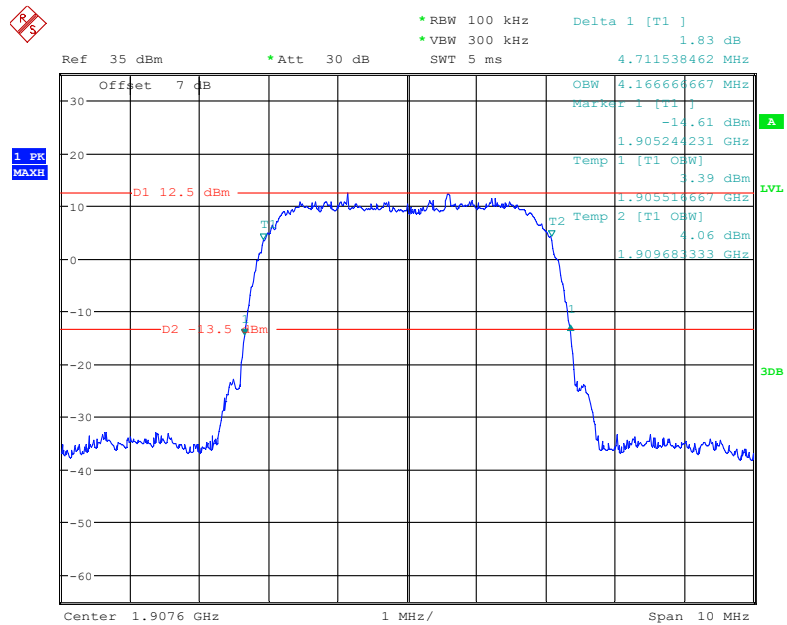
Date: 23.FEB.2022 13:25:00

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

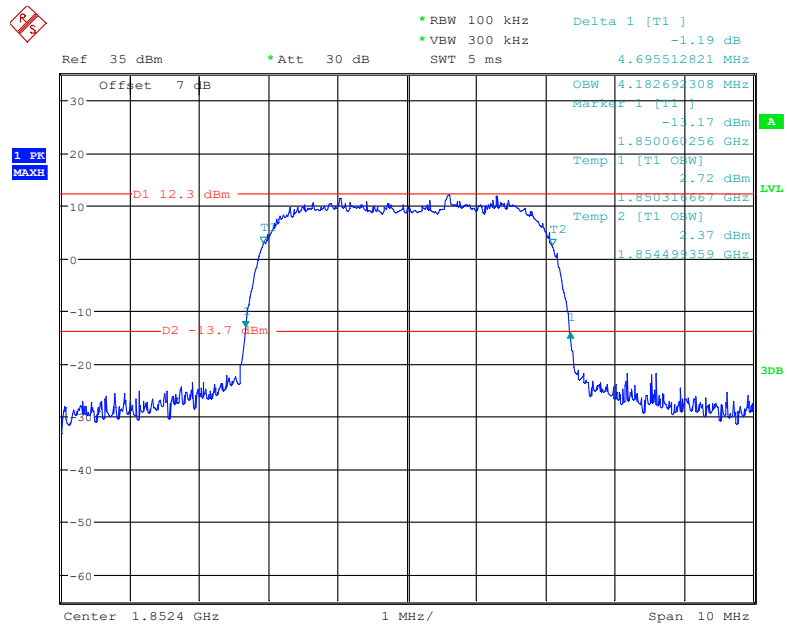


Date: 23.FEB.2022 13:26:20

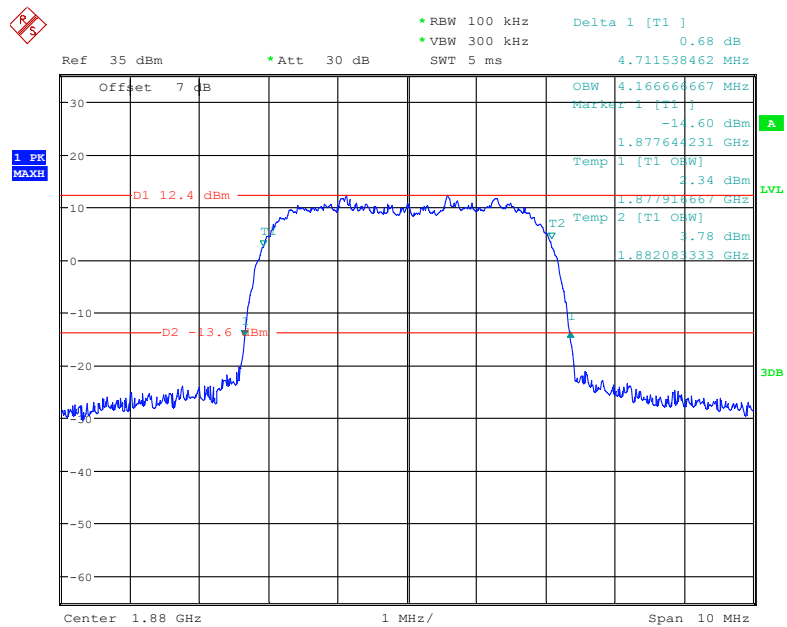
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (QPSK) Mode, High channel



Date: 23.FEB.2022 13:28:08

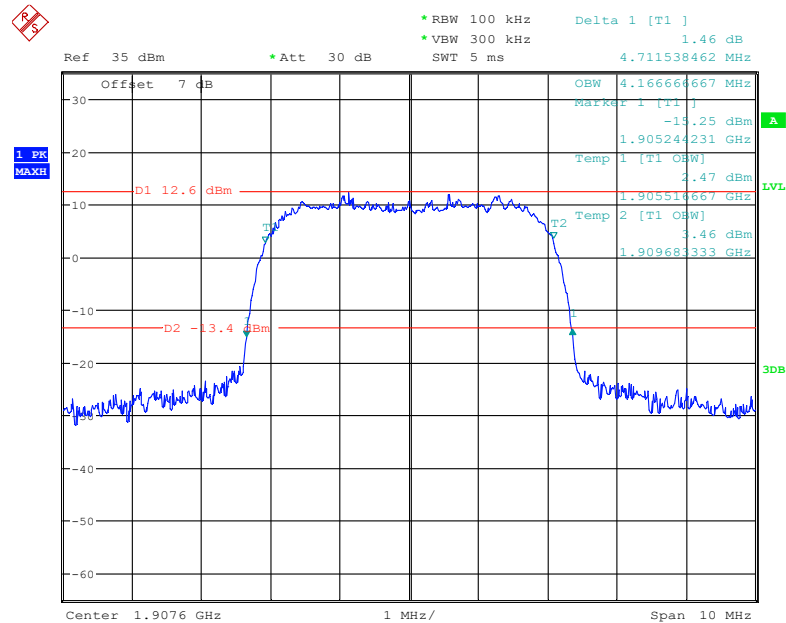
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 23.FEB.2022 12:26:43

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

Date: 23.FEB.2022 12:23:24

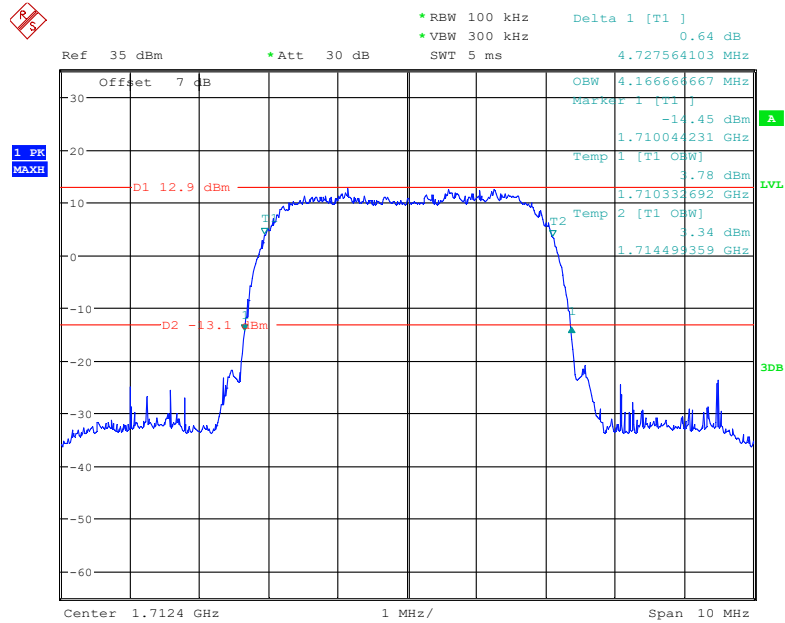
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 23.FEB.2022 12:17:23

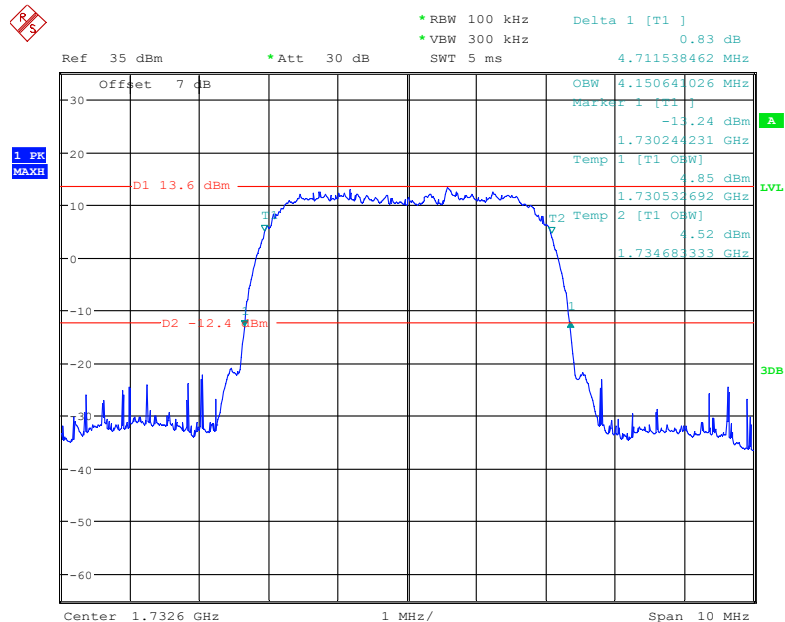
AWS Band (Part 27)

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

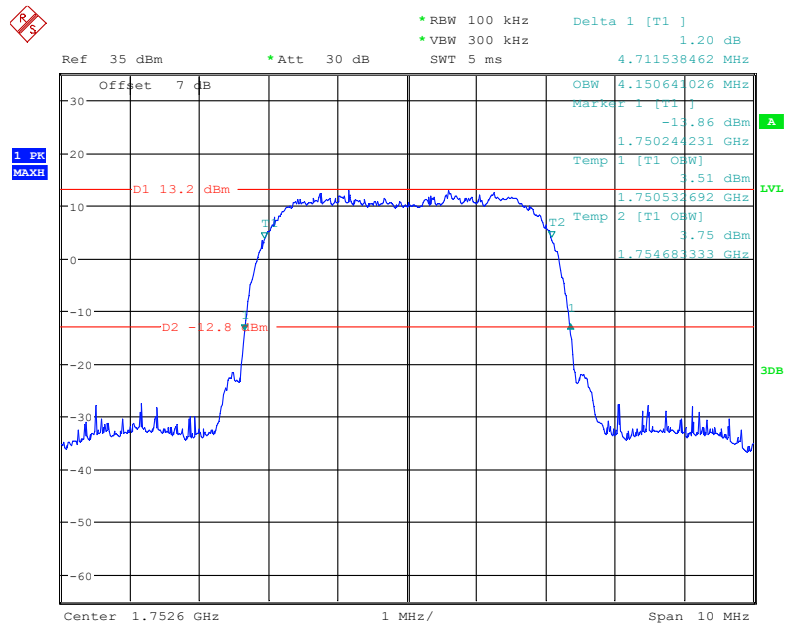


Date: 23.FEB.2022 11:55:34

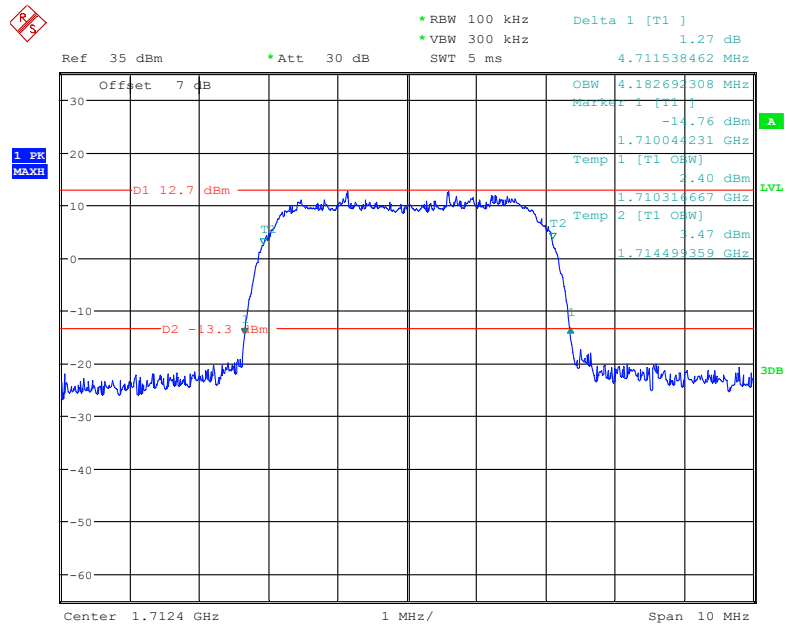
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



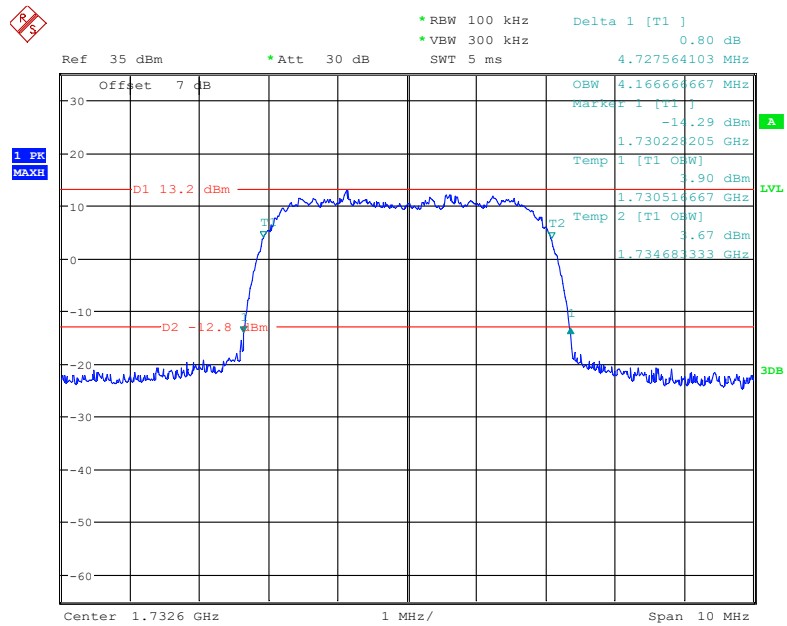
Date: 23.FEB.2022 11:53:16

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

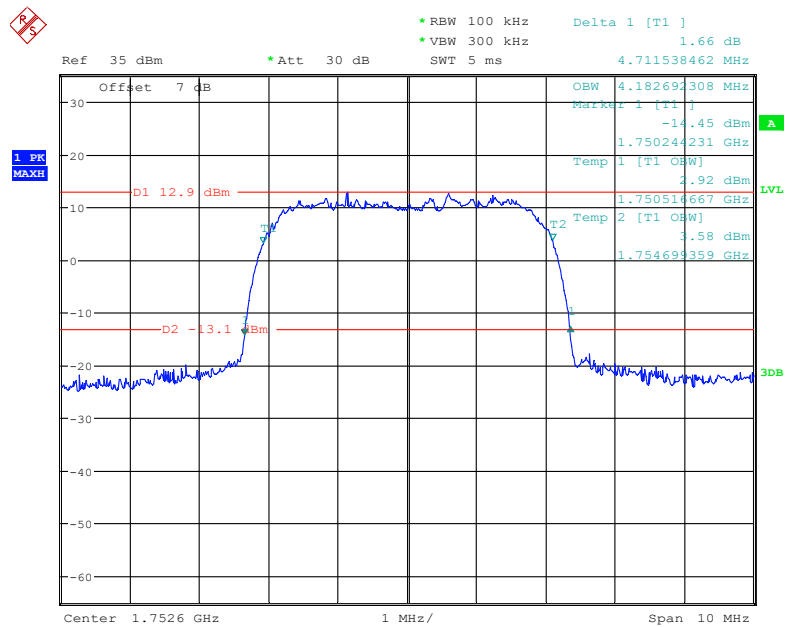
Date: 23.FEB.2022 11:57:30

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

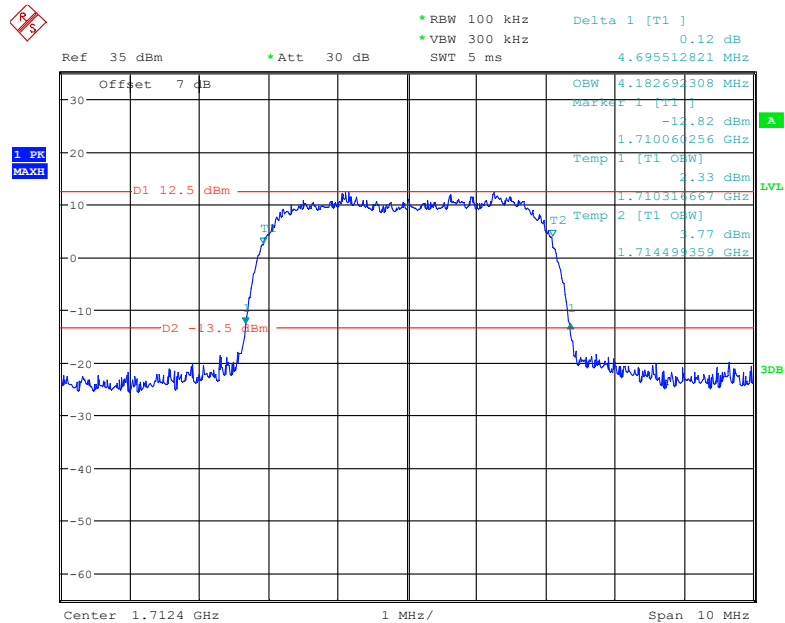
Date: 23.FEB.2022 13:29:23

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

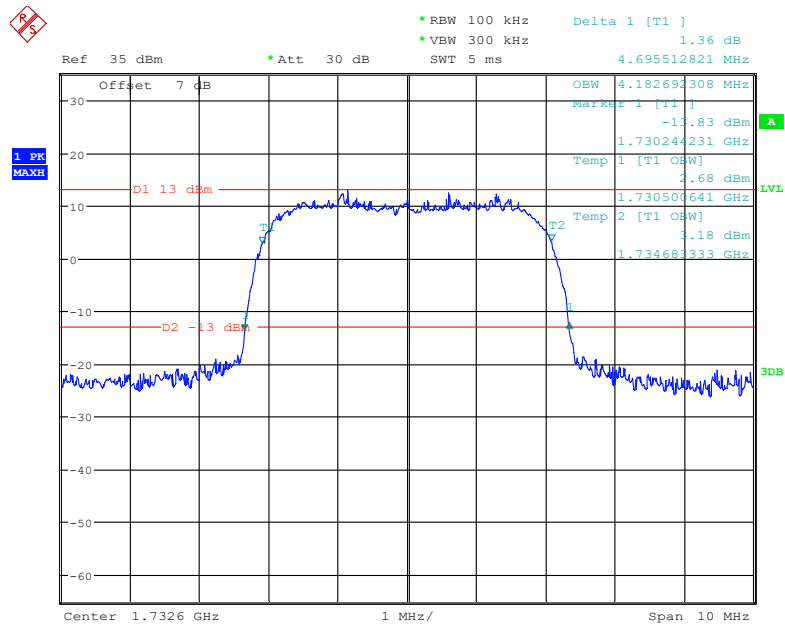
Date: 23.FEB.2022 13:31:23

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

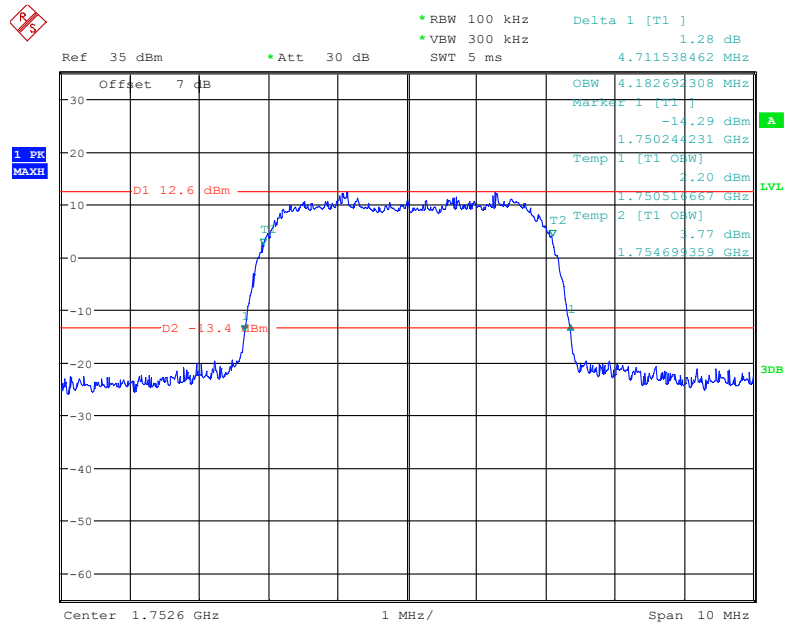
Date: 23.FEB.2022 13:33:52

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

Date: 23.FEB.2022 13:10:55

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

Date: 23.FEB.2022 13:07:52

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

Date: 23.FEB.2022 13:05:00

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	1.296	1.110	1.302	1.104	1.308
	16QAM	1.104	1.284	1.110	1.302	1.110	1.314
3 MHz	QPSK	2.700	2.904	2.688	2.940	2.688	2.940
	16QAM	2.688	2.952	2.688	2.964	2.688	2.940
5 MHz	QPSK	4.540	4.940	4.520	4.940	4.500	4.920
	16QAM	4.500	4.900	4.540	4.960	4.540	4.960
10 MHz	QPSK	9.000	9.640	8.960	9.600	8.960	9.680
	16QAM	8.960	9.720	8.960	9.600	8.960	9.680
15 MHz	QPSK	13.560	14.820	13.500	14.700	13.500	14.760
	16QAM	13.500	14.700	13.500	14.880	13.560	14.700
20 MHz	QPSK	18.000	19.280	17.920	19.280	18.000	19.520
	16QAM	18.000	19.280	18.000	19.360	18.000	19.280

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	1.104	1.290	1.116	1.320	1.110	1.296
	16QAM	1.116	1.302	1.104	1.332	1.110	1.302
3 MHz	QPSK	2.688	2.952	2.688	2.964	2.688	2.940
	16QAM	2.688	2.952	2.688	2.940	2.688	2.940
5 MHz	QPSK	4.520	4.920	4.520	4.940	4.520	4.920
	16QAM	4.500	4.900	4.520	4.920	4.540	4.960
10 MHz	QPSK	9.000	9.680	8.960	9.600	8.960	9.560
	16QAM	8.920	9.520	8.960	9.600	8.960	9.680
15 MHz	QPSK	13.560	14.760	13.500	14.700	13.500	14.760
	16QAM	13.560	14.700	13.560	14.760	13.560	14.640
20 MHz	QPSK	18.000	19.280	18.000	19.440	18.000	19.440
	16QAM	17.920	19.360	18.000	19.280	18.000	19.280

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	1.284	1.104	1.302	1.110	1.284
	16QAM	1.110	1.308	1.098	1.272	1.104	1.284
3 MHz	QPSK	2.688	2.928	2.688	2.928	2.688	2.940
	16QAM	2.688	2.940	2.688	2.940	2.676	2.928
5 MHz	QPSK	4.520	4.900	4.520	4.920	4.500	4.940
	16QAM	4.500	4.900	4.520	4.940	4.520	4.960
10 MHz	QPSK	8.960	9.640	8.960	9.560	8.960	9.600
	16QAM	8.960	9.600	8.960	9.600	8.960	9.600

LTE Band 7:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	4.960	4.520	4.960	4.520	4.940
	16QAM	4.520	4.940	4.520	4.920	4.520	4.960
10 MHz	QPSK	8.960	9.680	8.960	9.640	8.960	9.600
	16QAM	8.960	9.560	8.960	9.680	8.960	9.600
15 MHz	QPSK	13.560	14.820	13.500	14.700	13.500	14.760
	16QAM	13.620	14.760	13.620	14.760	13.500	14.640
20 MHz	QPSK	18.000	19.280	17.920	19.200	18.000	19.200
	16QAM	18.080	19.360	17.920	19.280	18.000	19.280

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	4.520	4.940	4.520	4.900	4.520	4.920
	16QAM	4.500	4.900	4.520	4.920	4.540	4.960
10 MHz	QPSK	8.960	9.640	8.920	9.520	8.960	9.600
	16QAM	8.960	9.560	8.960	9.600	8.960	9.640

LTE Band 38:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.500	4.980	4.520	4.920	4.520	5.020
	16QAM	4.500	4.860	4.520	4.980	4.520	4.920
10 MHz	QPSK	9.000	9.640	8.960	9.600	8.960	9.560
	16QAM	8.960	9.520	8.960	9.600	8.960	9.840
15 MHz	QPSK	13.500	14.940	13.500	14.820	13.500	14.880
	16QAM	13.500	15.000	13.560	14.820	13.560	15.420
20 MHz	QPSK	17.920	19.120	17.920	19.200	18.000	19.280
	16QAM	17.920	19.280	18.000	19.360	17.920	19.360

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	4.520	4.940	4.520	5.080	4.520	4.900
	16QAM	4.520	4.920	4.520	4.940	4.500	4.920
10 MHz	QPSK	8.960	9.520	8.960	9.680	8.960	9.560
	16QAM	8.960	9.600	8.960	9.520	8.960	9.840
15 MHz	QPSK	13.620	15.120	13.500	15.060	13.500	15.000
	16QAM	13.560	15.600	13.560	14.880	13.500	14.880
20 MHz	QPSK	18.000	19.280	17.920	19.200	17.920	19.360
	16QAM	17.920	19.360	18.000	19.600	17.920	19.360

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	1.104	1.302	1.110	1.308	1.110	1.290
	16QAM	1.110	1.314	1.098	1.284	1.104	1.290
3 MHz	QPSK	2.688	2.916	2.688	2.928	2.688	2.940
	16QAM	2.688	2.952	2.688	2.964	2.688	2.928
5 MHz	QPSK	4.520	4.920	4.520	4.940	4.500	4.880
	16QAM	4.500	4.900	4.520	4.940	4.540	4.940
10 MHz	QPSK	9.000	9.720	8.960	9.560	8.960	9.600
	16QAM	8.960	9.520	8.960	9.560	8.960	9.560
15 MHz	QPSK	13.560	14.880	13.500	14.700	13.500	14.820
	16QAM	13.560	14.760	13.560	14.760	13.500	14.700
20 MHz	QPSK	17.920	19.280	17.920	19.360	18.000	19.280
	16QAM	17.920	19.280	18.000	19.440	18.000	19.440

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

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

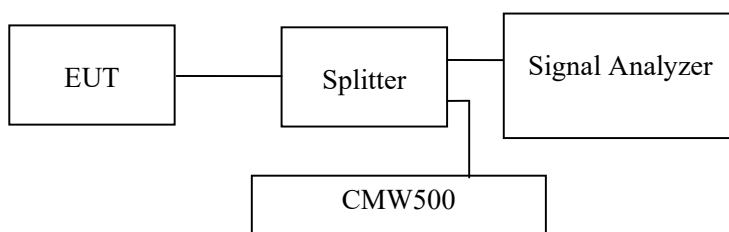
Applicable Standard

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

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

Test Procedure

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



Test Data

Environmental Conditions

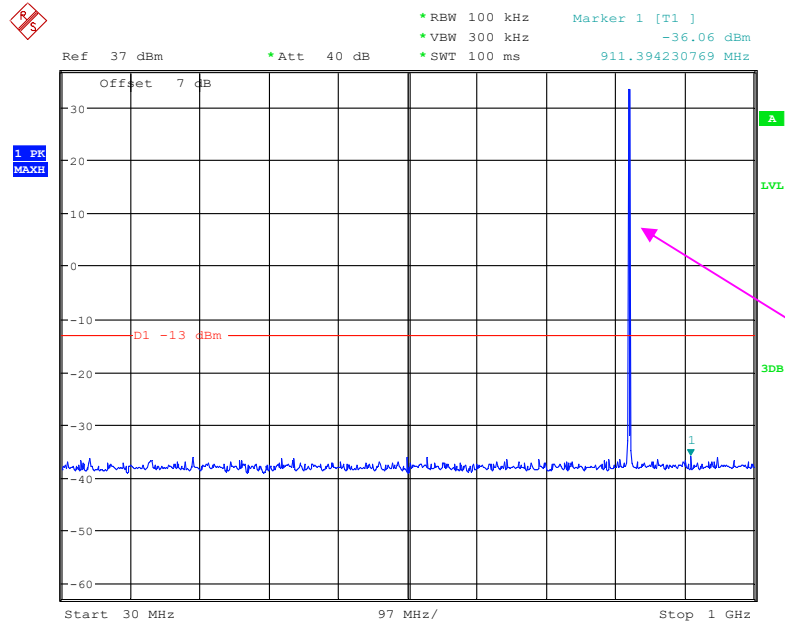
Temperature:	26.8 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Black Duan from 2022-02-21 to 2022-02-23.

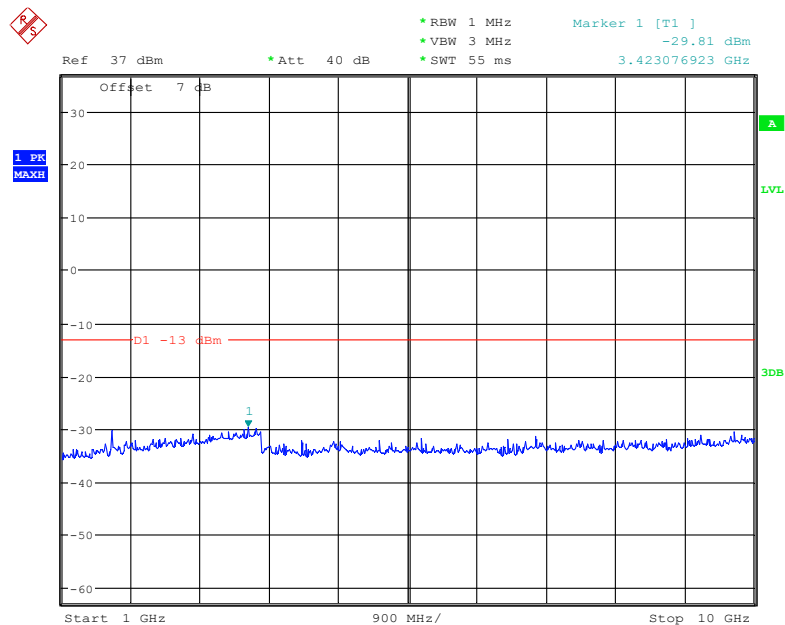
EUT operation mode: Transmitting

Test result: Pass

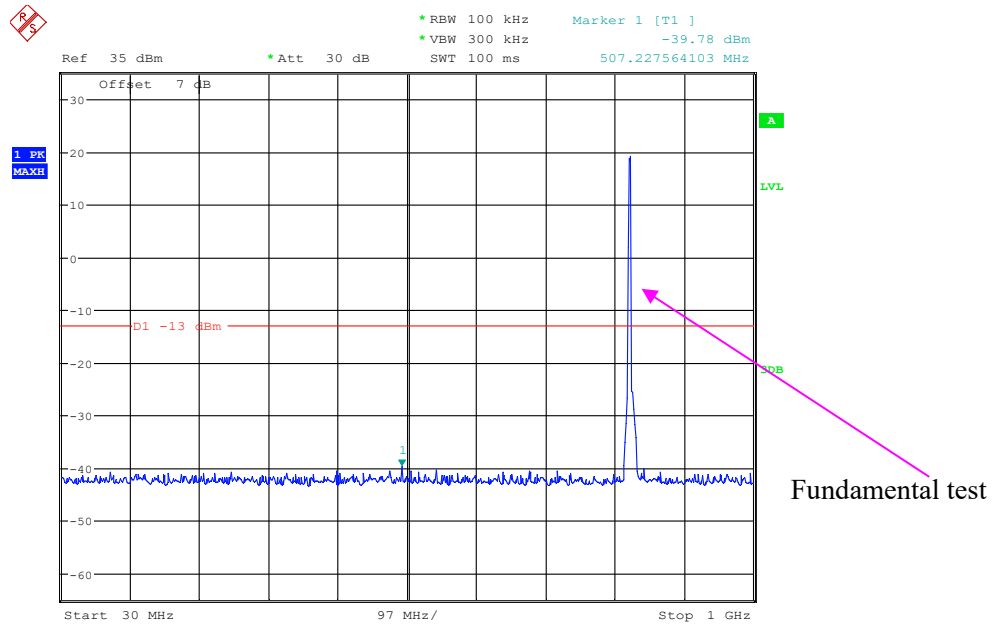
Please refer to the following plots.

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

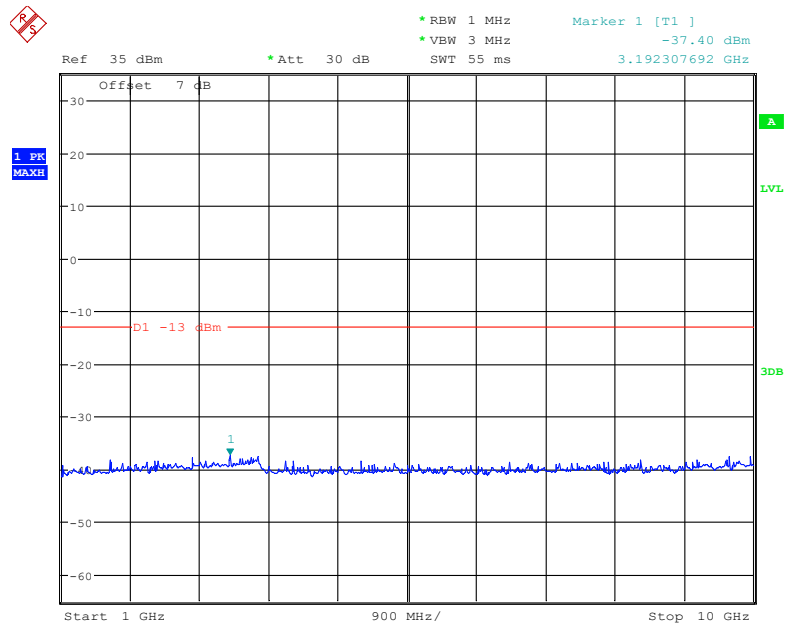
Date: 22.FEB.2022 16:00:50

1 GHz – 10 GHz (GSM Mode)

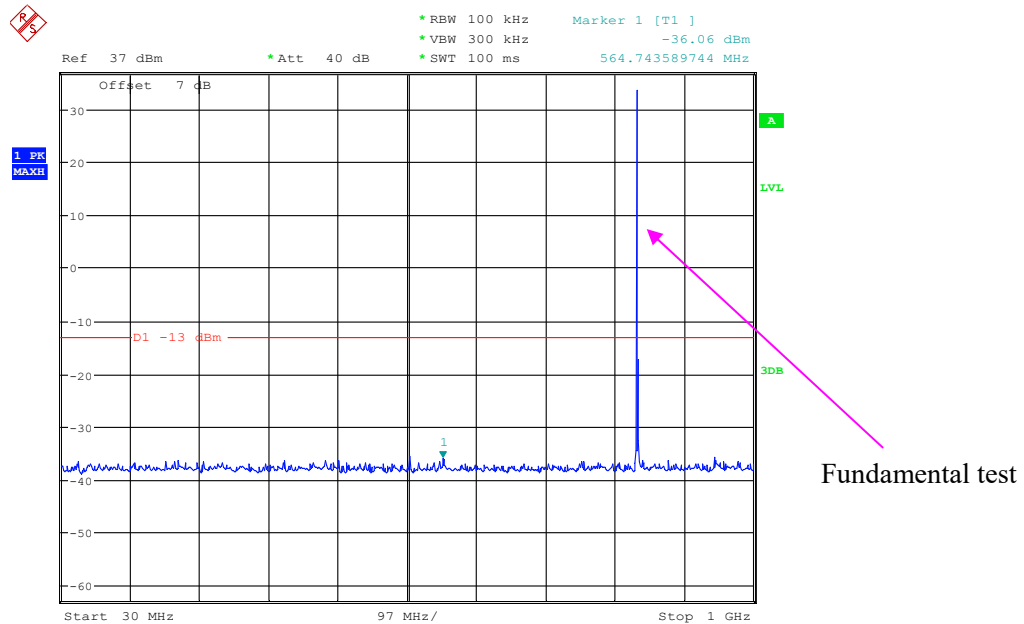
Date: 22.FEB.2022 16:09:45

30 MHz – 1 GHz (WCDMA Mode)

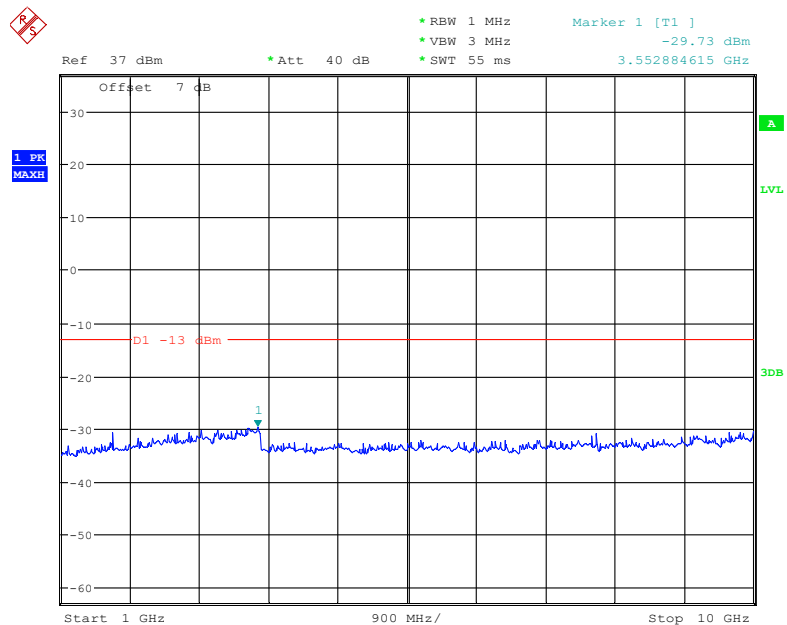
Date: 23.FEB.2022 14:27:15

1 GHz – 10 GHz (WCDMA Mode)

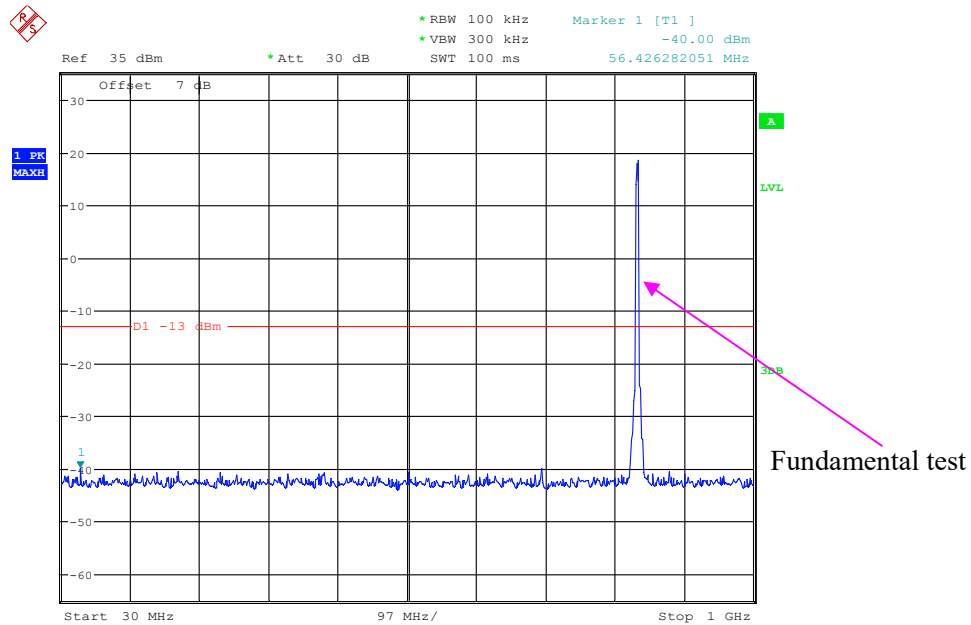
Date: 23.FEB.2022 14:41:17

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

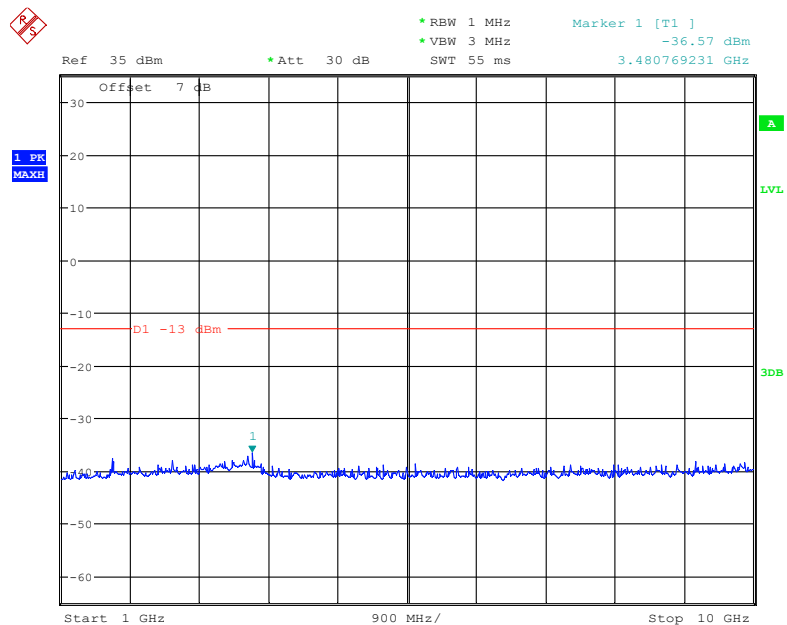
Date: 22.FEB.2022 16:02:58

1 GHz – 10 GHz (GSM Mode)

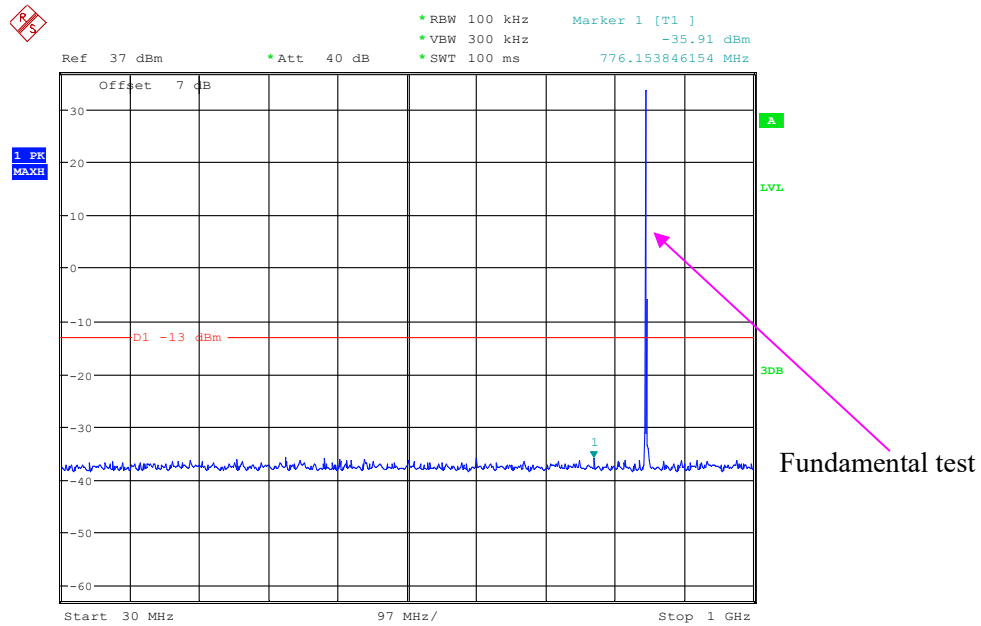
Date: 22.FEB.2022 16:09:19

30 MHz – 1 GHz (WCDMA Mode)

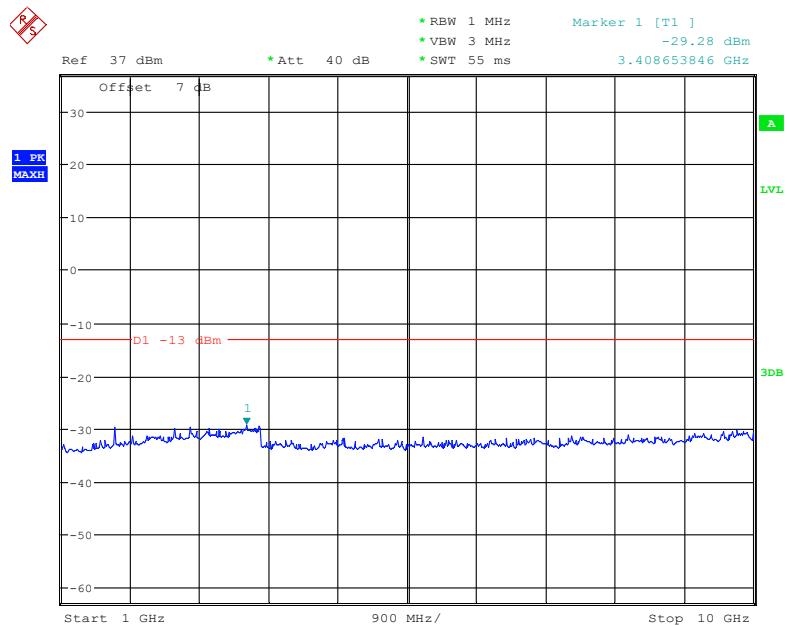
Date: 23.FEB.2022 14:28:03

1 GHz – 10 GHz (WCDMA Mode)

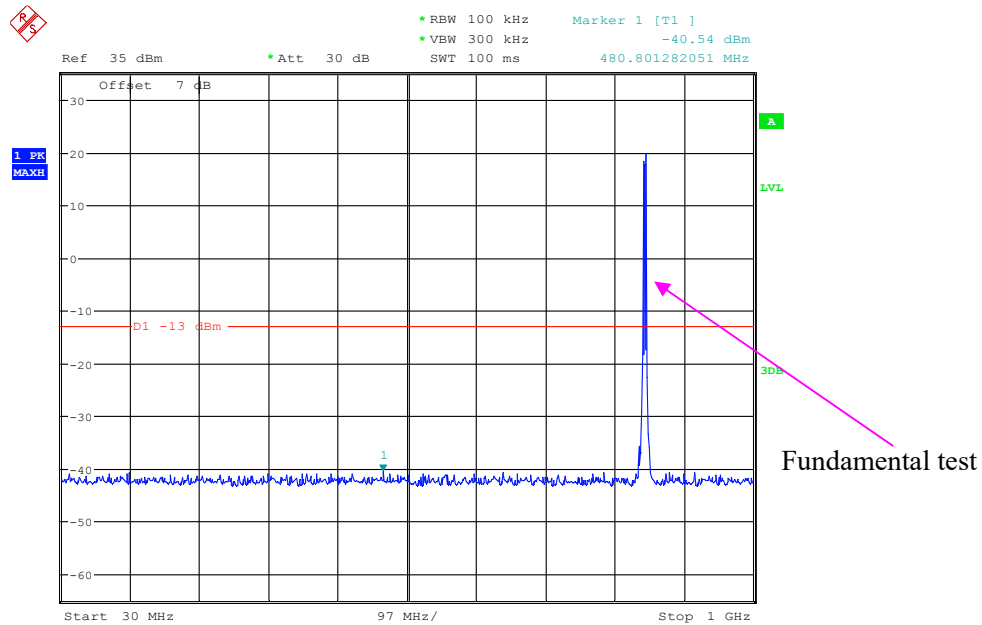
Date: 23.FEB.2022 14:40:39

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

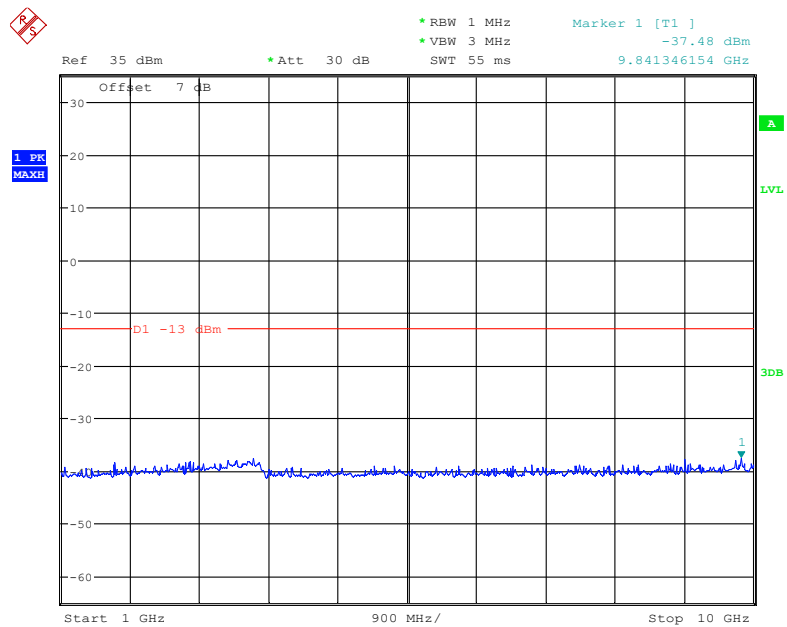
Date: 22.FEB.2022 16:05:54

1 GHz – 10 GHz (GSM Mode)

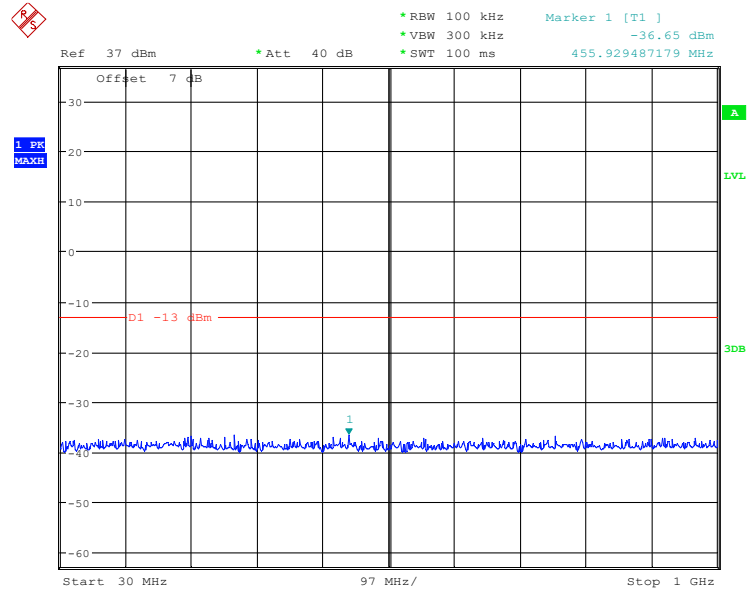
Date: 22.FEB.2022 16:08:41

30 MHz – 1 GHz (WCDMA Mode)

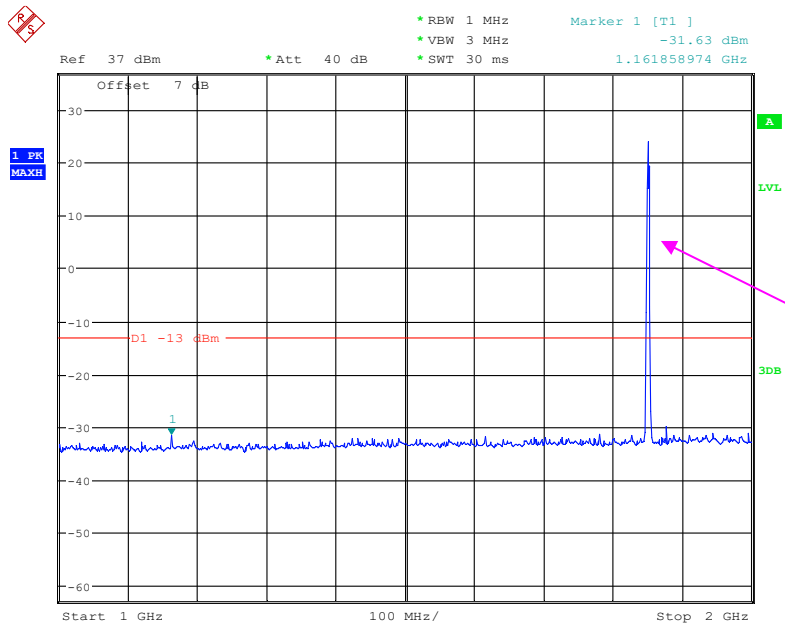
Date: 23.FEB.2022 14:28:49

1 GHz – 10 GHz (WCDMA Mode)

Date: 23.FEB.2022 14:39:57

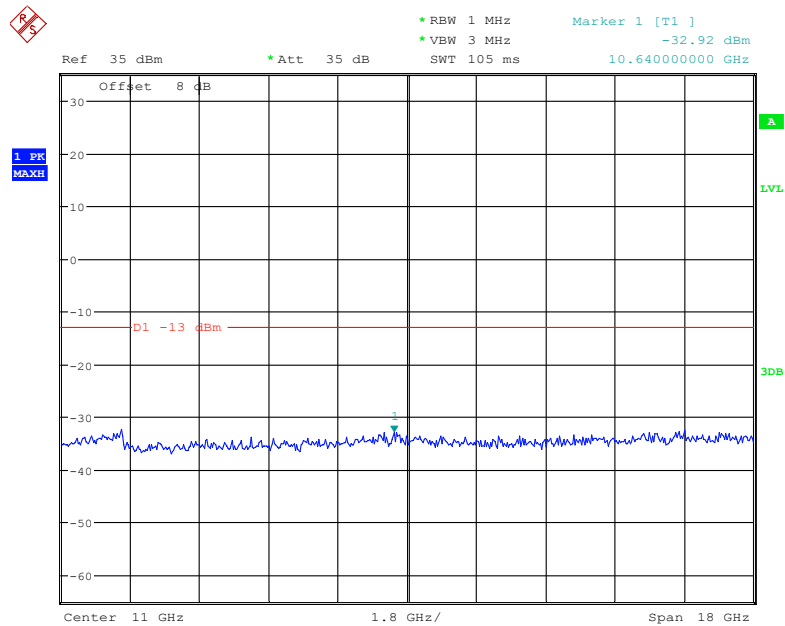
**PCS Band (Part 24E)
Low Channel:****30 MHz – 1 GHz (GSM Mode)**

Date: 22.FEB.2022 16:17:04

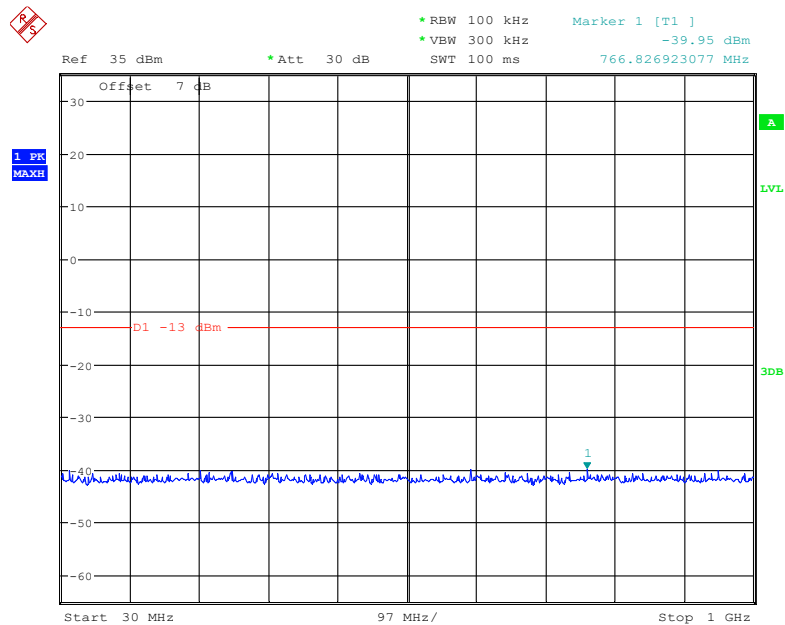
1 GHz – 2 GHz (GSM Mode)

Fundamental test

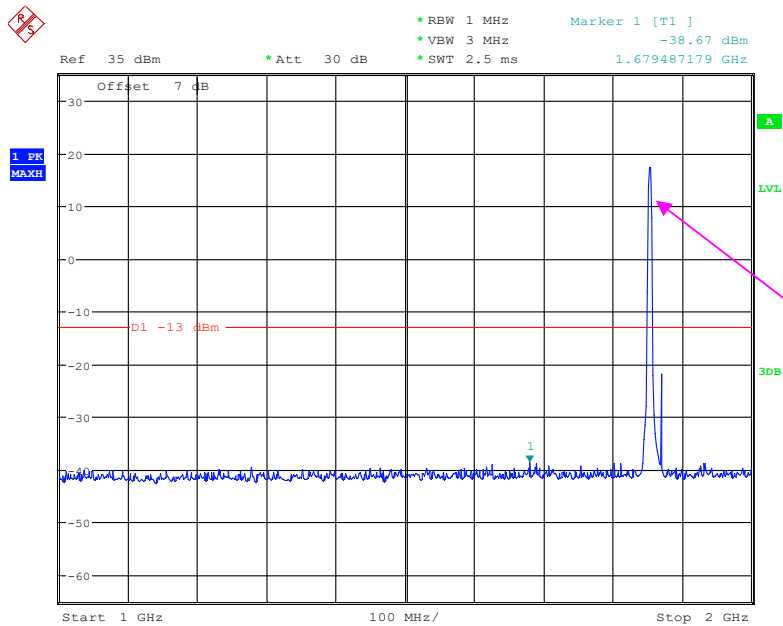
Date: 22.FEB.2022 16:22:39

2 GHz – 20 GHz (GSM Mode)

Date: 23.MAR.2022 11:03:36

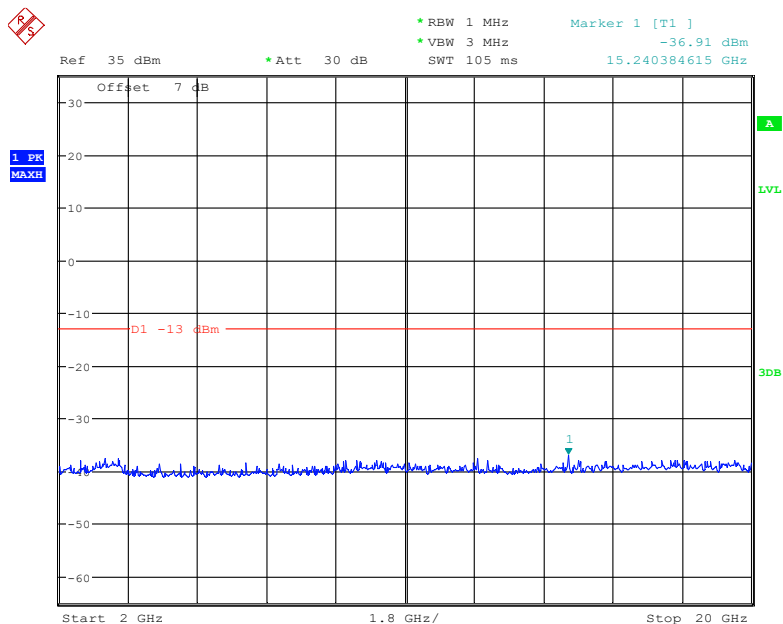
30 MHz – 1 GHz (WCDMA Mode)

Date: 23.FEB.2022 14:23:05

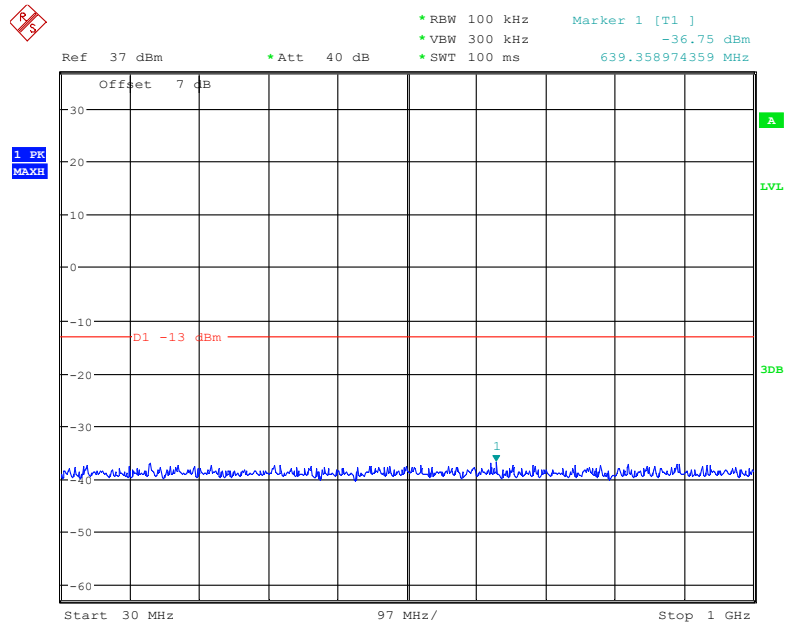
1 GHz – 2 GHz (WCDMA Mode)

Fundamental test

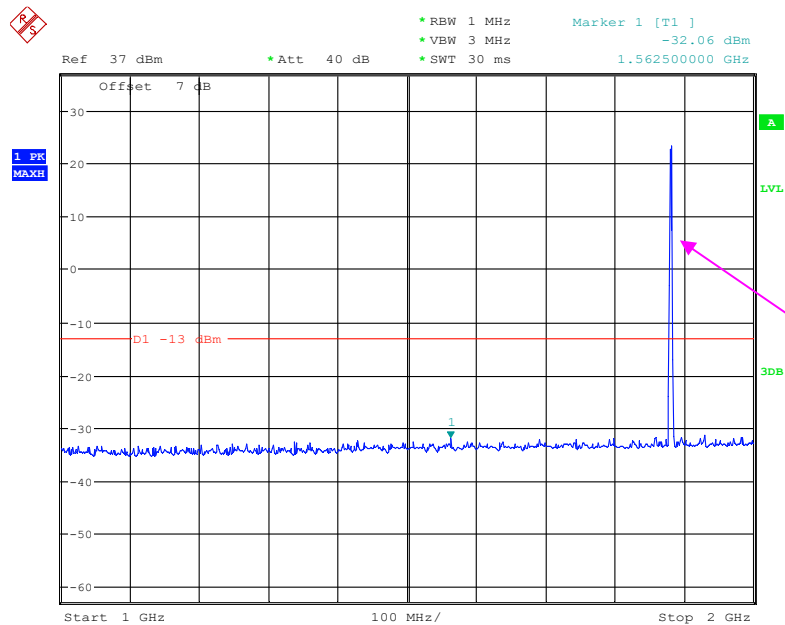
Date: 23.FEB.2022 14:30:19

2 GHz – 20 GHz (WCDMA Mode)

Date: 23.FEB.2022 14:39:07

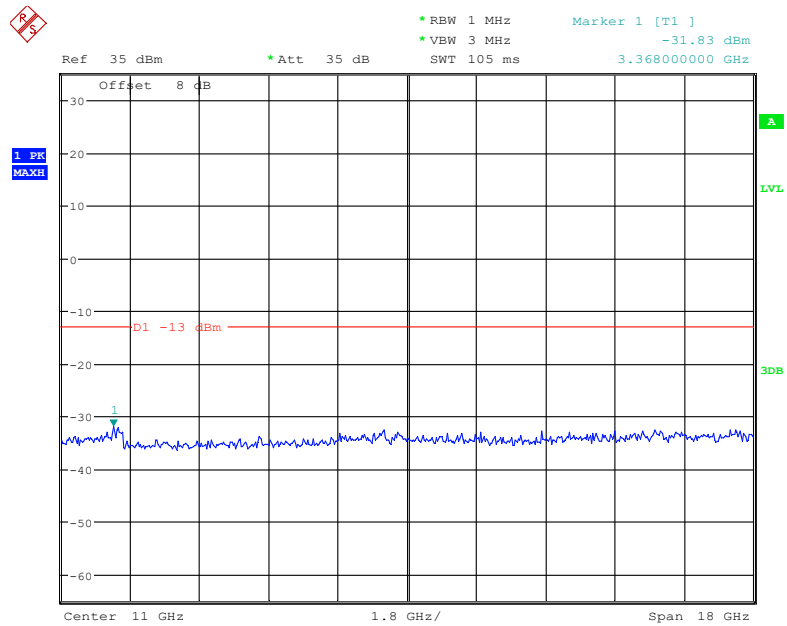
Middle Channel:**30 MHz – 1 GHz (GSM Mode)**

Date: 22.FEB.2022 16:17:48

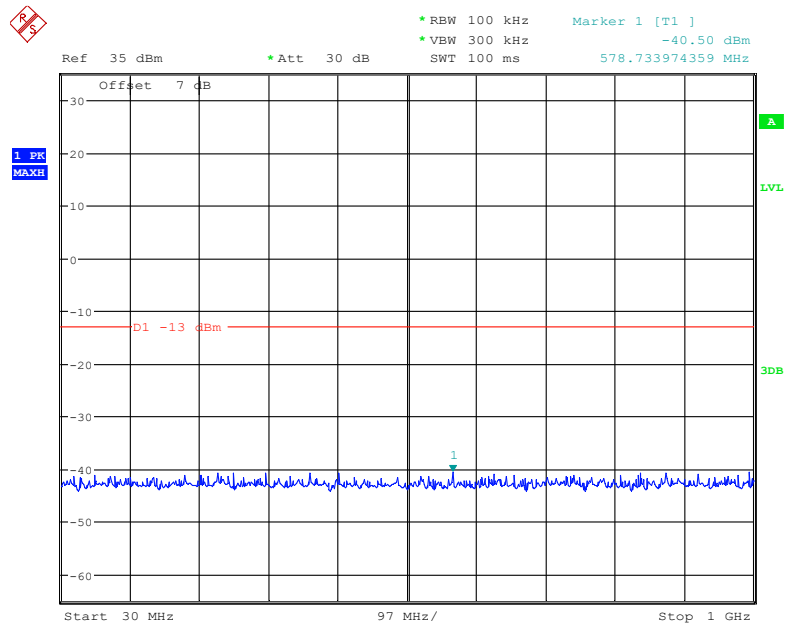
1 GHz – 2 GHz (GSM Mode)

Fundamental test

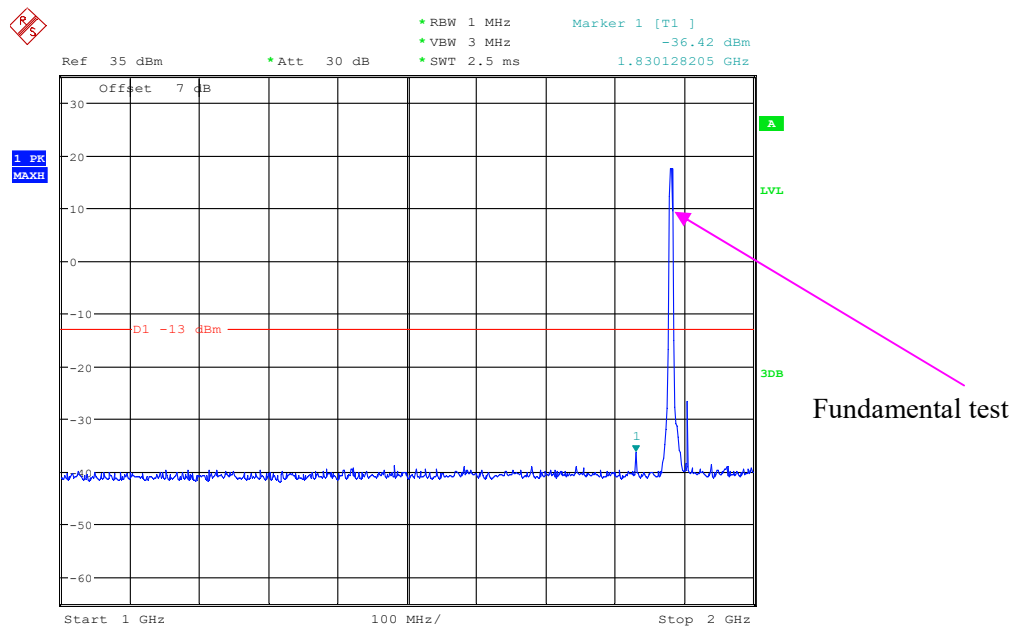
Date: 22.FEB.2022 16:21:10

2 GHz – 20 GHz (GSM Mode)

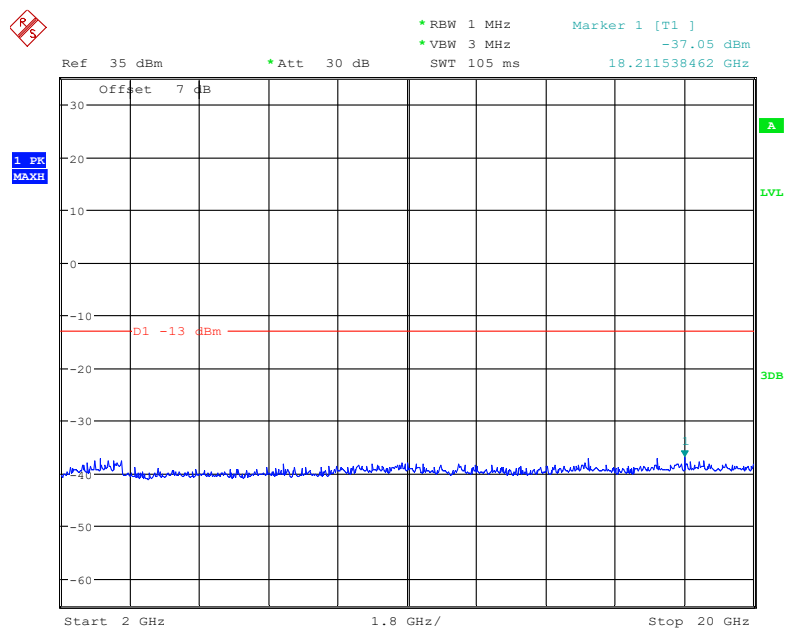
Date: 23.MAR.2022 11:04:01

30 MHz – 1 GHz (WCDMA Mode)

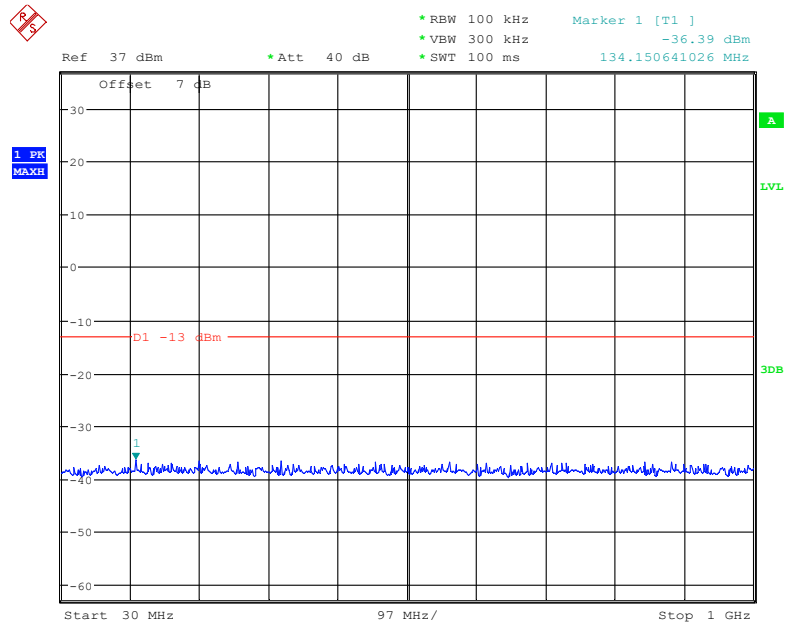
Date: 23.FEB.2022 14:24:13

1 GHz – 2GHz (WCDMA Mode)

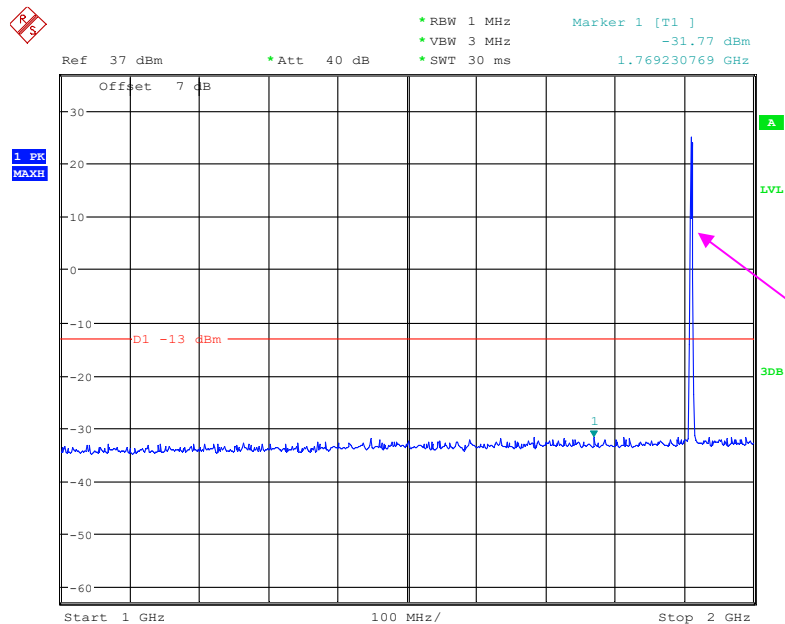
Date: 23.FEB.2022 14:31:31

2 GHz – 20GHz (WCDMA Mode)

Date: 23.FEB.2022 14:38:41

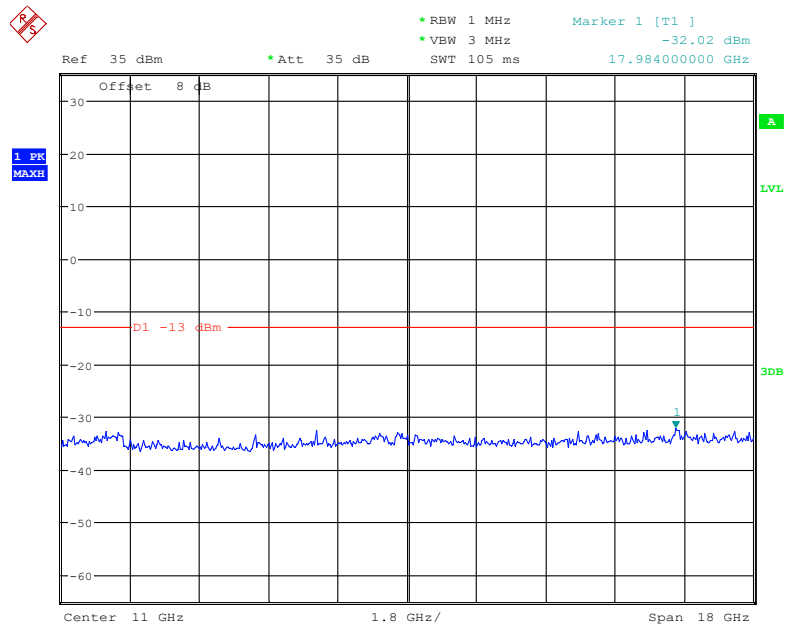
High Channel:**30 MHz – 1 GHz (GSM Mode)**

Date: 22.FEB.2022 16:18:22

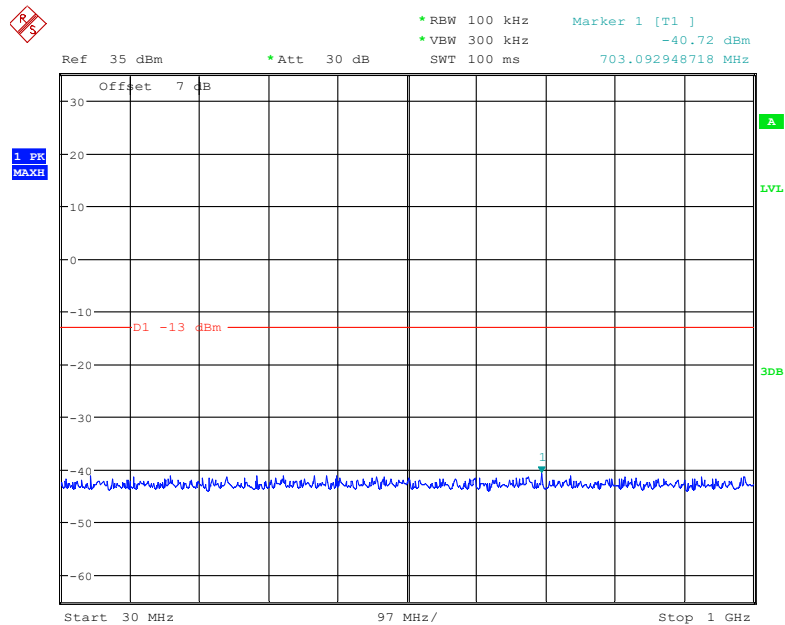
1 GHz – 2 GHz (GSM Mode)

Fundamental test

Date: 22.FEB.2022 16:20:27

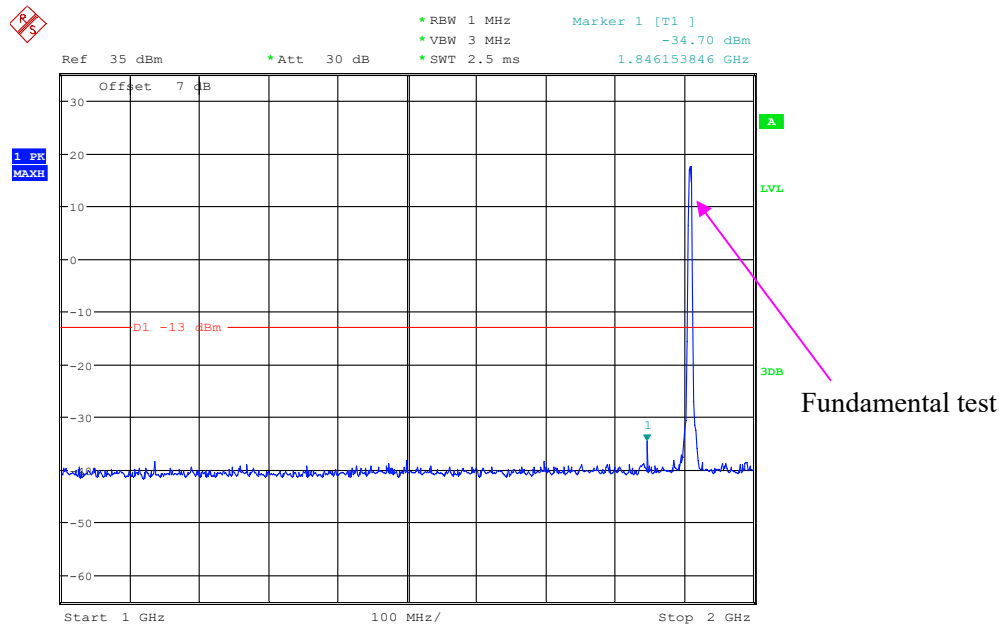
2 GHz– 20 GHz (GSM Mode)

Date: 23.MAR.2022 11:04:18

30 MHz – 1 GHz (WCDMA Mode)

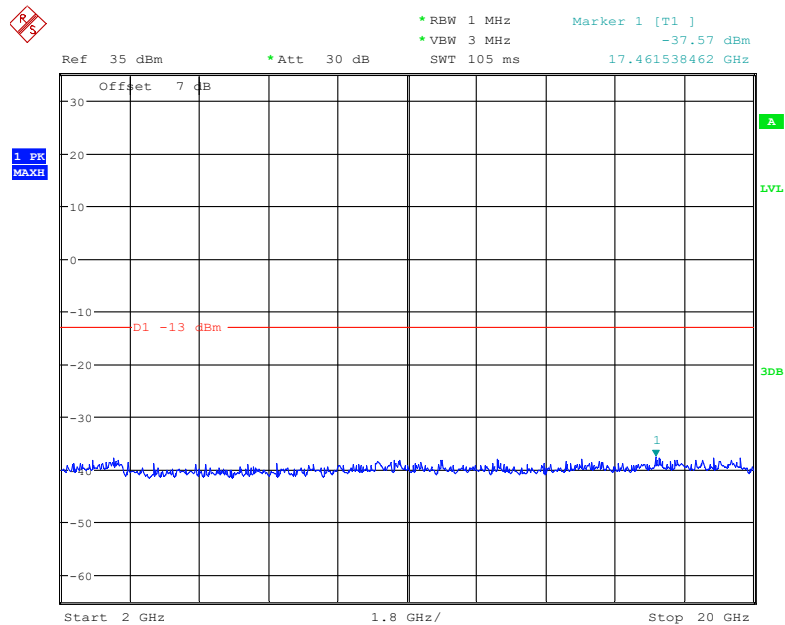
Date: 23.FEB.2022 14:24:48

1 GHz – 2 GHz (WCDMA Mode)

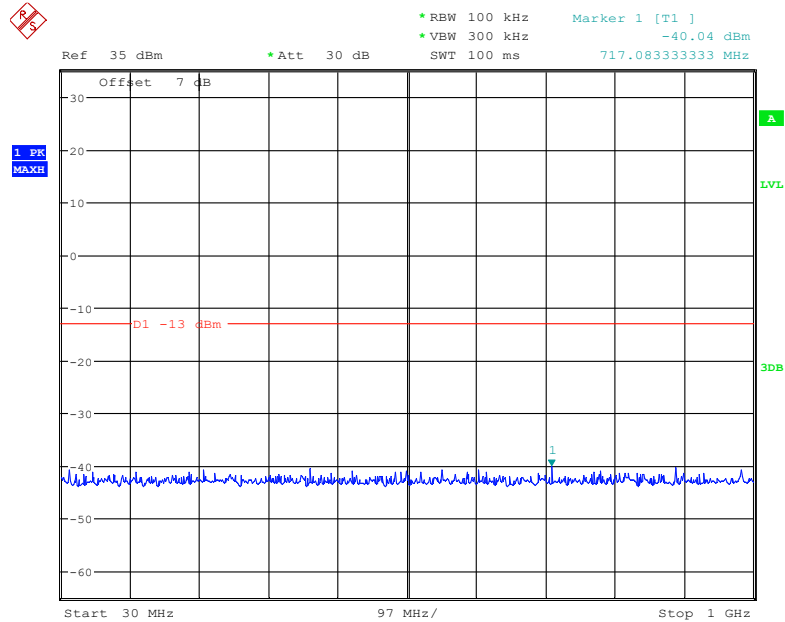


Date: 23.FEB.2022 14:32:40

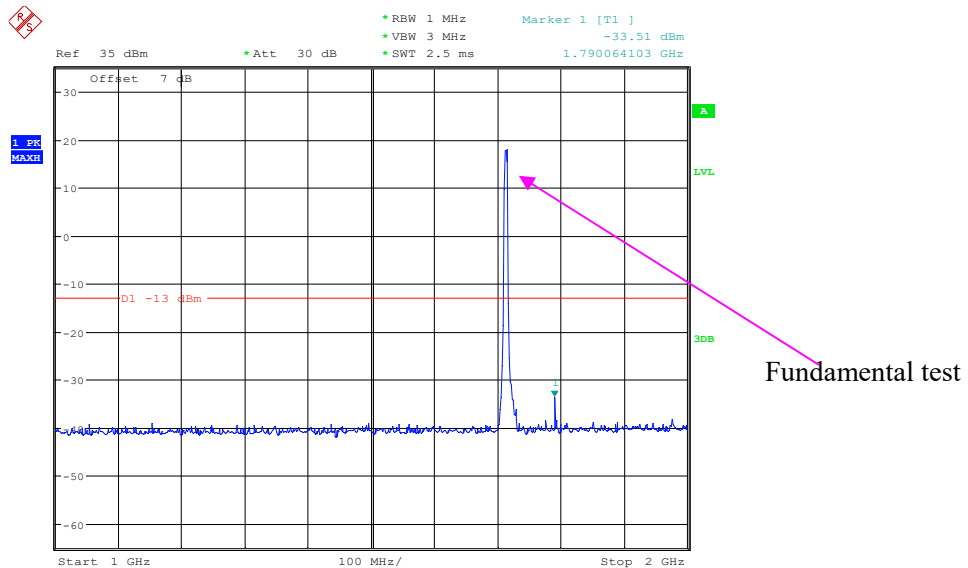
2GHz – 20 GHz (WCDMA Mode)



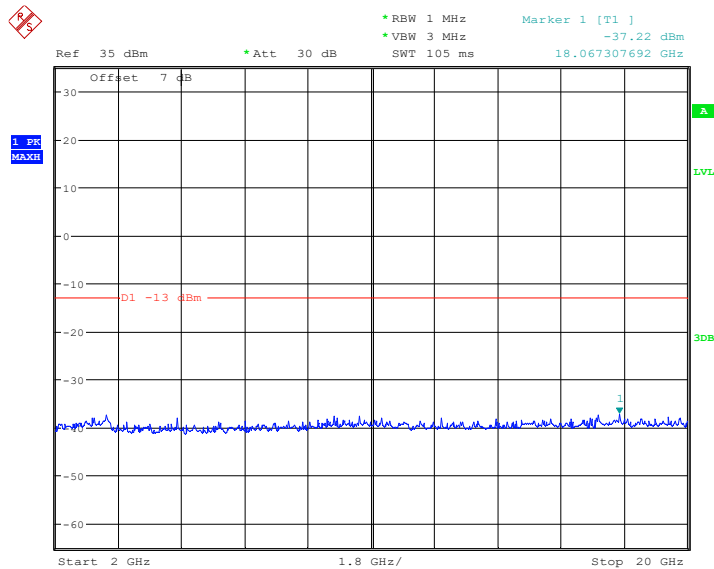
Date: 23.FEB.2022 14:38:08

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

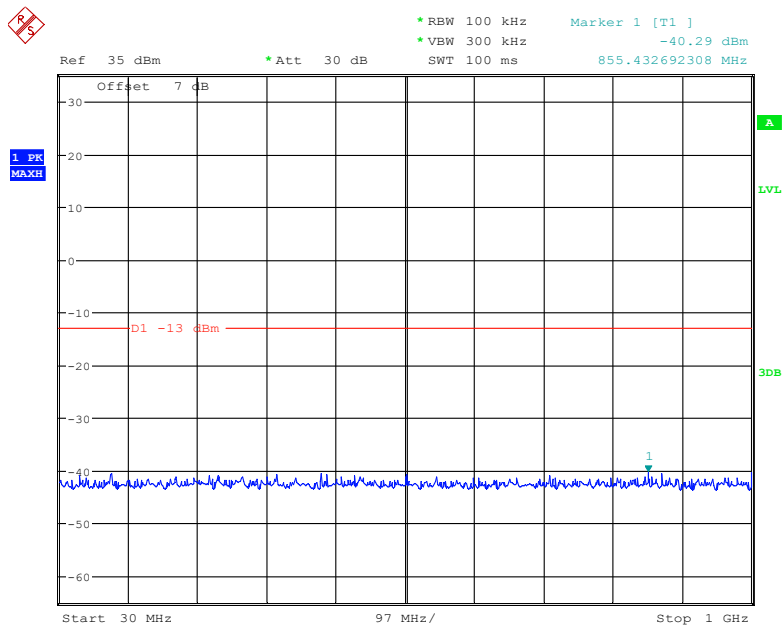
Date: 23.FEB.2022 14:25:19

1 GHz – 2 GHz (WCDMA Mode)

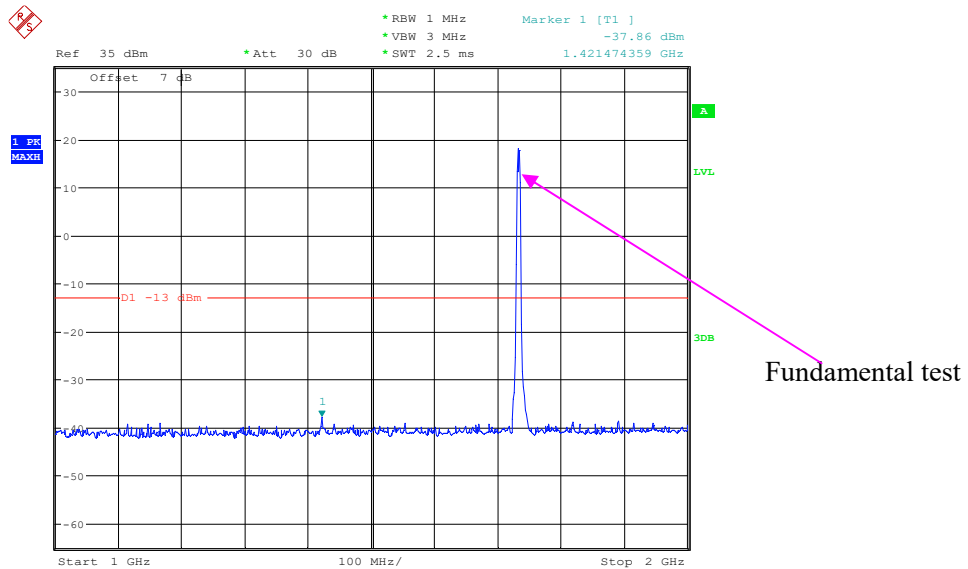
Date: 23.FEB.2022 14:35:45

2 GHz – 20 GHz (WCDMA Mode)

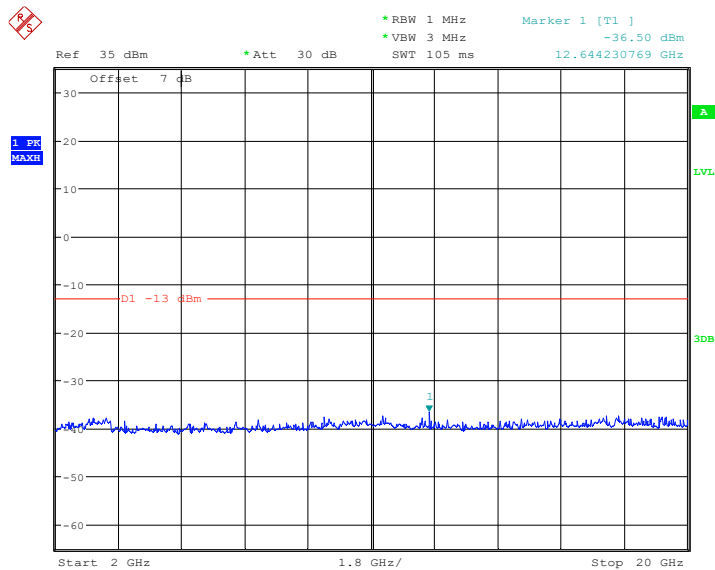
Date: 23.FEB.2022 14:36:19

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

Date: 23.FEB.2022 14:25:58

1 GHz – 2 GHz (WCDMA Mode)

Date: 23.FEB.2022 14:34:40

2 GHz – 20 GHz (WCDMA Mode)

Date: 23.FEB.2022 14:37:58

30 MHz – 1 GHz (WCDMA Mode)



Ref 35 dBm * Att 30 dB * RBW 1 MHz Marker 1 [T1] -38.59 dBm 1.576923077 GHz

Offset 7 dB

1.57 MHz

D1 -13 dBm

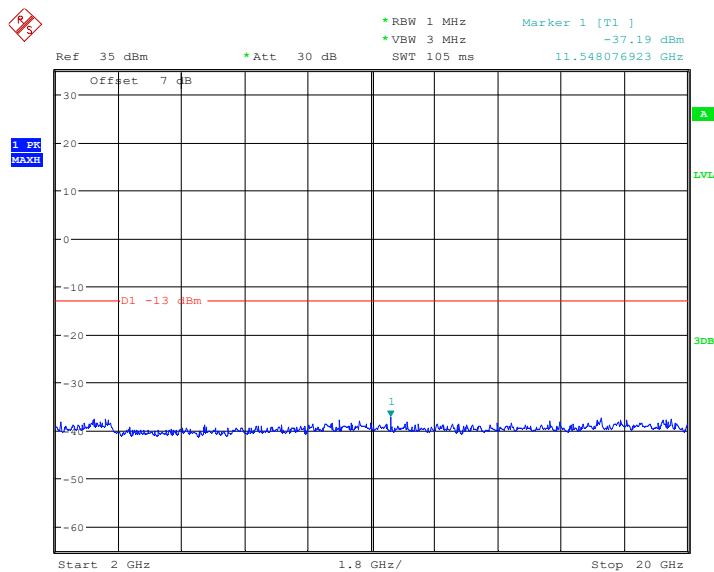
30 dB

3dB

Fundamental test

Start 1 GHz 100 MHz/ Stop 2 GHz

Date: 23.FEB.2022 14:33:43

2 GHz – 20 GHz (WCDMA Mode)

Date: 23.FEB.2022 14:37:48

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

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

Applicable Standard

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

Test Procedure

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

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

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

Test Data

Environmental Conditions

Temperature:	23~25.5 °C
Relative Humidity:	50~52 %
ATM Pressure:	101.0kPa

The testing was performed by Chao Mo from 2022-02-22 to 2022-02-24

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

The worst case is as below:

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM850								
Low Channel								
959.72	-61.45	77	1.7	H	10	-51.45	-13	-38.45
959.72	-61.45	140	2.3	V	11.7	-49.75	-13	-36.75
1648.4	-48.30	178	1.9	H	3.5	-44.80	-13	-31.80
1648.4	-50.50	229	1.6	V	3.1	-47.40	-13	-34.40
2472.6	-32.80	294	2.4	H	6.6	-26.20	-13	-13.20
2472.6	-33.30	161	1.9	V	5.8	-27.50	-13	-14.50
3296.8	-51.30	202	2.4	H	6.4	-44.90	-13	-31.90
3296.8	-51.30	234	2.3	V	5.7	-45.60	-13	-32.60
Middle Channel								
959.81	-60.89	305	1.3	H	10	-50.89	-13	-37.89
959.81	-61.25	323	1.4	V	11.7	-49.55	-13	-36.55
1673.2	-50.10	89	2	H	3.8	-46.30	-13	-33.30
1673.2	-50.00	328	1.8	V	3.1	-46.90	-13	-33.90
2509.8	-36.70	100	2	H	6.2	-30.50	-13	-17.50
2509.8	-35.30	291	1.8	V	5.6	-29.70	-13	-16.70
3346.4	-50.00	327	1.2	H	6.6	-43.40	-13	-30.40
3346.4	-48.00	134	2.1	V	5.4	-42.60	-13	-29.60
High Channel								
959.33	-61.58	60	2.2	H	10	-51.58	-13	-38.58
959.33	-61.8	194	2.2	V	11.7	-50.1	-13	-37.1
1697.6	-53.10	229	2.0	H	4.1	-49.00	-13	-36.00
1697.6	-52.90	2	1.2	V	3.1	-49.80	-13	-36.80
2546.4	-34.30	54	1.1	H	6.1	-28.20	-13	-15.20
2546.4	-35.00	134	2.0	V	5.8	-29.20	-13	-16.20
3395.2	-50.10	3	1.8	H	6.2	-43.90	-13	-30.90
3395.2	-49.10	250	1.8	V	5.4	-43.70	-13	-30.70

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 5								
Low Channel								
959.54	-61.66	320	2.4	H	10	-51.66	-13	-38.66
959.54	-61.51	77	1.3	V	11.7	-49.81	-13	-36.81
1652.8	-56.20	157	1.9	H	3.5	-52.70	-13	-39.70
1652.8	-53.60	279	1.8	V	3.1	-50.50	-13	-37.50
2479.2	-43.50	186	1.5	H	6.6	-36.90	-13	-23.90
2479.2	-42.40	5	2	V	5.8	-36.60	-13	-23.60
3305.6	-51.60	81	1.5	H	6.4	-45.20	-13	-32.20
3305.6	-51.30	206	1.5	V	5.7	-45.60	-13	-32.60
Middle Channel								
960.08	-61.1	22	2.4	H	10	-51.1	-13	-38.1
960.08	-60.99	234	2.2	V	11.7	-49.29	-13	-36.29
1673.2	-53.30	72	1.9	H	3.8	-49.50	-13	-36.50
1673.2	-50.80	37	2.2	V	3.1	-47.70	-13	-34.70
2509.8	-53.10	182	1.1	H	6.2	-46.90	-13	-33.90
2509.8	-51.30	123	1.6	V	5.6	-45.70	-13	-32.70
3346.4	-51.40	54	1.4	H	6.6	-44.80	-13	-31.80
3346.4	-50.50	190	1.4	V	5.4	-45.10	-13	-32.10
High Channel								
959.88	-60.96	125	1.6	H	10	-50.96	-13	-37.96
959.88	-61.56	315	1.8	V	11.7	-49.86	-13	-36.86
1693.2	-56.10	168	1.6	H	4.1	-52.00	-13	-39.00
1693.2	-52.90	55	1.4	V	3.1	-49.80	-13	-36.80
2539.8	-53.20	109	2.3	H	6.1	-47.10	-13	-34.10
2539.8	-53.50	322	1.2	V	5.8	-47.70	-13	-34.70
3386.4	-51.40	144	1.8	H	6.2	-45.20	-13	-32.20
3386.4	-50.69	141	1.5	V	5.4	-45.29	-13	-32.29

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM 1900								
Low Channel								
959.78	-61.59	92	1.7	H	10	-51.59	-13	-38.59
959.78	-61.26	7	1.1	V	11.7	-49.56	-13	-36.56
3700.4	-55.60	150	2.5	H	8.1	-47.50	-13	-34.50
3700.4	-54.40	92	1.0	V	7.6	-46.80	-13	-33.80
5550.6	-53.10	174	2.4	H	9.6	-43.50	-13	-30.50
5550.6	-52.00	223	1.5	V	9.1	-42.90	-13	-29.90
Middle Channel								
960.25	-61.58	212	2.1	H	10	-51.58	-13	-38.58
960.25	-61.45	276	1	V	11.7	-49.75	-13	-36.75
3760	-56.90	355	1.9	H	8.8	-48.10	-13	-35.10
3760	-55.40	113	1.2	V	8	-47.40	-13	-34.40
5640	-54.40	47	1.3	H	10.2	-44.20	-13	-31.20
5640	-53.10	16	2.2	V	9.4	-43.70	-13	-30.70
High Channel								
959.84	-60.85	218	1	H	10	-50.85	-13	-37.85
959.84	-61.07	37	2.1	V	11.7	-49.37	-13	-36.37
3819.6	-56.60	316	1.6	H	8.7	-47.90	-13	-34.90
3819.6	-55.20	102	1.5	V	7.9	-47.30	-13	-34.30
5729.4	-55.10	46	1.6	H	10.6	-44.50	-13	-31.50
5729.4	-53.80	163	2.5	V	10.2	-43.60	-13	-30.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 2								
Low Channel								
960.3	-61.43	78	2	H	10	-51.43	-13	-38.43
960.3	-61.21	357	1.6	V	11.7	-49.51	-13	-36.51
3704.8	-54.00	305	1.3	H	8.1	-45.90	-13	-32.90
3704.8	-54.00	108	1.5	V	7.6	-46.40	-13	-33.40
5557.2	-51.60	60	1.8	H	9.6	-42.00	-13	-29.00
5557.2	-51.90	344	2.0	V	9.1	-42.80	-13	-29.80
Middle Channel								
959.64	-61.19	268	1.5	H	10	-51.19	-13	-38.19
959.64	-60.86	29	1.5	V	11.7	-49.16	-13	-36.16
3760	-55.80	160	2.3	H	8.8	-47.00	-13	-34.00
3760	-55.80	164	1	V	8	-47.80	-13	-34.80
5640	-53.90	35	1.4	H	10.2	-43.70	-13	-30.70
5640	-53.40	148	1.3	V	9.4	-44.00	-13	-31.00
High Channel								
959.96	-61.55	183	1.5	H	10	-51.55	-13	-38.55
959.96	-61.64	39	1.5	V	11.7	-49.94	-13	-36.94
3815.2	-54.10	248	1.6	H	8.7	-45.40	-13	-32.40
3815.2	-55.10	153	1.4	V	7.9	-47.20	-13	-34.20
5722.8	-54.70	332	1.7	H	10.6	-44.10	-13	-31.10
5722.8	-54.60	348	2.3	V	10.2	-44.40	-13	-31.40

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 4								
Low Channel								
959.86	-61.38	213	1.3	H	10	-51.38	-13	-38.38
959.86	-61.48	133	1.4	V	11.7	-49.78	-13	-36.78
3424.8	-51.40	242	1.3	H	6.4	-45.00	-13	-32.00
3424.8	-50.70	319	2.1	V	5.8	-44.90	-13	-31.90
5137.2	-56.60	297	1.8	H	11.4	-45.20	-13	-32.20
5137.2	-55.60	172	2	V	10.8	-44.80	-13	-31.80
Middle Channel								
959.75	-61.77	7	2.5	H	10	-51.77	-13	-38.77
959.75	-60.83	346	1.7	V	11.7	-49.13	-13	-36.13
3465.2	-51	340	1.2	H	7	-44.00	-13	-31.00
3465.2	-50.3	146	1.2	V	6.2	-44.10	-13	-31.10
5197.8	-54.3	115	1.8	H	10.4	-43.90	-13	-30.90
5197.8	-53.75	238	1.5	V	9.8	-43.95	-13	-30.95
High Channel								
959.96	-61.46	305	1.7	H	10	-51.46	-13	-38.46
959.96	-61.34	174	2	V	11.7	-49.64	-13	-36.64
3505.2	-51.50	355	1.8	H	7.8	-43.70	-13	-30.70
3505.2	-51.00	214	2.4	V	6.5	-44.50	-13	-31.50
5257.8	-52.70	86	2.1	H	9.4	-43.30	-13	-30.30
5257.8	-51.90	158	1.8	V	9	-42.90	-13	-29.90

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 2								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, Low Channel								
959.31	-61.25	173	2.4	H	10	-51.25	-13	-38.25
959.31	-61.4	98	1.8	V	11.7	-49.7	-13	-36.7
3701.4	-50.40	347	1.3	H	8.1	-42.30	-13	-29.30
3701.4	-52.20	17	1.4	V	7.6	-44.60	-13	-31.60
5552.1	-42.70	91	1.9	H	9.6	-33.10	-13	-20.10
5552.1	-44.80	33	1.3	V	9.1	-35.70	-13	-22.70
1.4MHz bandwidth, Middle Channel								
959.71	-61.48	354	2	H	10	-51.48	-13	-38.48
959.71	-61.39	153	1.8	V	11.7	-49.69	-13	-36.69
3760	-49.30	50	2	H	8.8	-40.50	-13	-27.50
3760	-52.20	235	2.3	V	8	-44.20	-13	-31.20
5640	-44.60	264	2.3	H	10.2	-34.40	-13	-21.40
5640	-47.70	258	1.2	V	9.4	-38.30	-13	-25.30
1.4MHz bandwidth, High Channel								
959.98	-60.83	266	1.9	H	10	-50.83	-13	-37.83
959.98	-61.48	217	1.3	V	11.7	-49.78	-13	-36.78
3818.6	-46.30	101	1.2	H	8.7	-37.60	-13	-24.60
3818.6	-51.20	229	1.4	V	7.9	-43.30	-13	-30.30
5727.9	-46.40	96	1.2	H	10.6	-35.80	-13	-22.80
5727.9	-48.50	316	1.9	V	10.2	-38.30	-13	-25.30

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 4								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, Low Channel								
959.36	-60.91	257	1.1	H	10	-50.91	-13	-37.91
959.36	-61.3	278	1.7	V	11.7	-49.6	-13	-36.6
3421.4	-49.70	296	1.3	H	6.4	-43.30	-13	-30.30
3421.4	-49.60	193	1.8	V	5.8	-43.80	-13	-30.80
5132.1	-44.60	110	2.3	H	11.4	-33.20	-13	-20.20
5132.1	-47.20	195	1.5	V	10.8	-36.40	-13	-23.40
1.4MHz bandwidth, Middle Channel								
959.33	-61.47	49	1.2	H	10	-51.47	-13	-38.47
959.33	-61.29	43	2.1	V	11.7	-49.59	-13	-36.59
3465	-47.6	228	2.3	H	7	-40.60	-13	-27.60
3465	-48.4	184	2.2	V	6.2	-42.20	-13	-29.20
5197.5	-44.1	185	1.3	H	10.4	-33.70	-13	-20.70
5197.5	-44.1	139	2	V	9.8	-34.30	-13	-21.30
1.4MHz bandwidth, High Channel								
959.47	-61.24	13	1.6	H	10	-51.24	-13	-38.24
959.47	-61.61	238	2.1	V	11.7	-49.91	-13	-36.91
3508.6	-50.40	129	1.7	H	7.8	-42.60	-13	-29.60
3508.6	-50.60	308	1.8	V	6.5	-44.10	-13	-31.10
5262.9	-43.00	304	1.3	H	9.4	-33.60	-13	-20.60
5262.9	-43.30	83	2.1	V	9	-34.30	-13	-21.30

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 5								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, Low Channel								
959.5	-61.23	234	1.2	H	10	-51.23	-13	-38.23
959.5	-60.92	186	2.3	V	11.7	-49.22	-13	-36.22
1649.4	-56.50	298	1.1	H	3.5	-53.00	-13	-40.00
1649.4	-54.70	13	1.7	V	3.1	-51.60	-13	-38.60
2474.1	-43.40	203	2.4	H	6.6	-36.80	-13	-23.80
2474.1	-50.70	193	2.2	V	5.8	-44.90	-13	-31.90
3298.8	-51.40	80	1.3	H	6.4	-45.00	-13	-32.00
3298.8	-50.90	172	2.2	V	5.7	-45.20	-13	-32.20
1.4MHz bandwidth, Middle Channel								
959.7	-61.16	170	2.2	H	10	-51.16	-13	-38.16
959.7	-61.22	138	2.3	V	11.7	-49.52	-13	-36.52
1673.0	-52.90	68	1.6	H	3.8	-49.10	-13	-36.10
1673.0	-50.40	355	1.1	V	3.1	-47.30	-13	-34.30
2509.5	-40.90	52	1.3	H	6.2	-34.70	-13	-21.70
2509.5	-45.60	107	2.1	V	5.6	-40.00	-13	-27.00
3346.0	-51.90	323	2.3	H	6.6	-45.30	-13	-32.30
3346.0	-50.80	9	2.3	V	5.4	-45.40	-13	-32.40
1.4MHz bandwidth, High Channel								
959.31	-61.05	252	1.8	H	10	-51.05	-13	-38.05
959.31	-61.37	190	1.9	V	11.7	-49.67	-13	-36.67
1696.6	-52.80	136	1.8	H	4.1	-48.70	-13	-35.70
1696.6	-51.70	293	2.2	V	3.1	-48.60	-13	-35.60
2544.9	-37.50	210	2.2	H	6.1	-31.40	-13	-18.40
2544.9	-42.50	213	1.7	V	5.8	-36.70	-13	-23.70
3393.2	-51.20	154	1.3	H	6.2	-45.00	-13	-32.00
3393.2	-50.60	61	2.4	V	5.4	-45.20	-13	-32.20

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 7								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, Low Channel								
960.21	-61.48	4	1.6	H	10	-51.48	-25	-26.48
960.21	-60.95	26	2.3	V	11.7	-49.25	-25	-24.25
5005	-47.60	103	1.6	H	10.8	-36.80	-25	-11.80
5005	-48.20	235	1.6	V	10.2	-38.00	-25	-13.00
7507.5	-55.10	177	2	H	20.4	-34.70	-25	-9.70
7507.5	-56.00	156	2.4	V	20.1	-35.90	-25	-10.90
5MHz bandwidth, Middle Channel								
960.22	-61	246	2.2	H	10	-51	-25	-26
960.22	-61.54	36	2.5	V	11.7	-49.84	-25	-24.84
5070	-49.80	178	2	H	11.1	-38.70	-25	-13.70
5070	-48.90	271	2.3	V	10.8	-38.10	-25	-13.10
7605	-56.20	268	1.2	H	21.2	-35.00	-25	-10.00
7605	-59.00	190	1.4	V	20.1	-38.90	-25	-13.90
5MHz bandwidth, High Channel								
959.96	-61.43	331	1.6	H	10	-51.43	-25	-26.43
959.96	-61.32	13	1.7	V	11.7	-49.62	-25	-24.62
5135	-51.90	75	1.9	H	11.3	-40.60	-25	-15.60
5135	-49.00	9	1.1	V	10.8	-38.20	-25	-13.20
7702.5	-59.80	327	2	H	21.2	-38.60	-25	-13.60
7702.5	-62.50	300	2.4	V	21	-41.50	-25	-16.50

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 17								
Test frequency range: 30MHz-10GHz								
5MHz bandwidth, Low Channel								
959.4	-60.8	355	2.3	H	10	-50.8	-13	-37.8
959.4	-61.77	331	2.3	V	11.7	-50.07	-13	-37.07
1413	-54.57	327	1.6	H	-0.53	-55.10	-13	-42.10
1413	-55.06	164	1.7	V	-0.74	-55.80	-13	-42.80
2119.5	-34.01	175	1.7	H	-0.89	-34.90	-13	-21.90
2119.5	-38.18	90	1.7	V	-1.12	-39.30	-13	-26.30
2826	-50.94	354	2.5	H	2.24	-48.70	-13	-35.70
2826	-50.63	121	1.2	V	2.33	-48.30	-13	-35.30
5MHz bandwidth, Middle Channel								
959.66	-61.28	216	2.4	H	10	-51.28	-13	-38.28
959.66	-61.24	127	1.4	V	11.7	-49.54	-13	-36.54
1420	-54.67	124	1.2	H	-0.53	-55.20	-13	-42.20
1420	-55.26	138	2.1	V	-0.74	-56.00	-13	-43.00
2130	-32.71	147	1.8	H	-0.89	-33.60	-13	-20.60
2130	-38.68	9	1.8	V	-1.12	-39.80	-13	-26.80
2840	-51.34	59	1.7	H	2.24	-49.10	-13	-36.10
2840	-50.73	147	1	V	2.33	-48.40	-13	-35.40
5MHz bandwidth, High Channel								
959.42	-61.55	175	1.4	H	10	-51.55	-13	-38.55
959.42	-60.96	96	2.2	V	11.7	-49.26	-13	-36.26
1427	-54.77	147	1.4	H	-0.53	-55.30	-13	-42.30
1427	-55.36	53	1.8	V	-0.74	-56.10	-13	-43.10
2140.5	-35.81	330	1.5	H	-0.89	-36.70	-13	-23.70
2140.5	-41.68	202	1.4	V	-1.12	-42.80	-13	-29.80
2854	-51.84	85	1.8	H	2.24	-49.60	-13	-36.60
2854	-51.83	257	1.4	V	2.33	-49.50	-13	-36.50

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 38								
Test frequency range: 30MHz-26.5GHz								
5MHz, Low Channel								
960.16	-61.76	136	2.4	H	10	-51.76	-25	-26.76
960.16	-61.63	69	2.5	V	11.7	-49.93	-25	-24.93
5145	-50.2	262	1	H	11.4	-38.80	-25	-13.80
5145	-48	213	2	V	10.7	-37.30	-25	-12.30
7717.5	-54	85	1.4	H	20.5	-33.50	-25	-8.50
7717.5	-59.2	60	2.3	V	20.3	-38.90	-25	-13.90
5MHz, Middle Channel								
959.66	-61.14	241	1.3	H	10	-51.14	-25	-26.14
959.66	-60.9	240	2.4	V	11.7	-49.2	-25	-24.2
5190	-48.3	14	2.3	H	10.5	-37.80	-25	-12.80
5190	-47.2	47	2.3	V	10	-37.20	-25	-12.20
7785	-50.9	70	1.4	H	18.3	-32.60	-25	-7.60
7785	-55.6	223	1.7	V	18	-37.60	-25	-12.60
5MHz, High Channel								
960.2	-61.37	1	1.1	H	10	-51.37	-25	-26.37
960.2	-61.35	222	1.9	V	11.7	-49.65	-25	-24.65
5235	-44.8	262	1.2	H	9.7	-35.10	-25	-10.10
5235	-44.7	68	1.4	V	9.2	-35.50	-25	-10.50
7852.5	-50	358	1.2	H	18.2	-31.80	-25	-6.80
7852.5	-57.3	103	2.3	V	17.6	-39.70	-25	-14.70

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 41								
Test frequency range: 1-26.5GHz								
5MHz, Low Channel								
959.58	-61.4	41	1.4	H	10	-51.4	-25	-26.4
959.58	-61.22	153	1.5	V	11.7	-49.52	-25	-24.52
5075	-49.8	19	1.8	H	11.2	-38.60	-25	-13.60
5075	-49.1	298	2.2	V	10.8	-38.30	-25	-13.30
7612.5	-58.6	187	2.2	H	21.2	-37.40	-25	-12.40
7612.5	-60.8	41	1.8	V	20.2	-40.60	-25	-15.60
5MHz bandwidth, Middle Channel								
959.35	-61.59	279	2.3	H	10	-51.59	-25	-26.59
959.35	-61.38	224	1.1	V	11.7	-49.68	-25	-24.68
5190	-48.7	350	1.5	H	10.5	-38.20	-25	-13.20
5190	-47.1	24	1.1	V	10	-37.10	-25	-12.10
7785	-52.6	213	1.4	H	18.3	-34.30	-25	-9.30
7785	-57.1	136	1.1	V	18	-39.10	-25	-14.10
5MHz bandwidth, High Channel								
959.82	-61.66	206	2.4	H	10	-51.66	-25	-26.66
959.82	-61.46	194	2.3	V	11.7	-49.76	-25	-24.76
5305	-45.8	351	2.4	H	9.6	-36.20	-25	-11.20
5305	-44.2	72	1.4	V	8.8	-35.40	-25	-10.40
7957.5	-56.6	32	1.8	H	18.9	-37.70	-25	-12.70
7957.5	-60.4	287	1	V	18.5	-41.90	-25	-16.90

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 66								
Test frequency range: 1-20GHz								
1.4MHz, Low Channel								
959.82	-61.14	329	1.3	H	10	-51.14	-13	-38.14
959.82	-60.87	66	2.3	V	11.7	-49.17	-13	-36.17
3421.4	-49.6	353	1.9	H	6.4	-43.20	-13	-30.20
3421.4	-49.4	147	2.5	V	5.7	-43.70	-13	-30.70
5132.1	-43.9	304	1.3	H	11.3	-32.60	-13	-19.60
5132.1	-45.9	189	2.1	V	10.8	-35.10	-13	-22.10
1.4MHz bandwidth, Middle Channel								
959.73	-61.65	328	1.4	H	10	-51.65	-13	-38.65
959.73	-61.43	57	2.5	V	11.7	-49.73	-13	-36.73
3490	-50.8	300	2.1	H	7.8	-43.00	-13	-30.00
3490	-51	18	1.5	V	6.6	-44.40	-13	-31.40
5235	-43.1	305	1	H	9.5	-33.60	-13	-20.60
5235	-43.5	115	2	V	8.9	-34.60	-13	-21.60
1.4MHz bandwidth, High Channel								
960.07	-61.3	151	1.8	H	10	-51.3	-13	-38.3
960.07	-61.07	296	1.3	V	11.7	-49.37	-13	-36.37
3598.6	-50.3	282	2.4	H	7.8	-42.50	-13	-29.50
3598.6	-49.7	137	1.1	V	7	-42.70	-13	-29.70
5397.9	-42.4	73	2	H	9.4	-33.00	-13	-20.00
5397.9	-45	18	1.8	V	8.7	-36.30	-13	-23.30

Note:

Absolute Level = Reading Level + Substituted Factor

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

Margin = Limit- Absolute Level

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

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

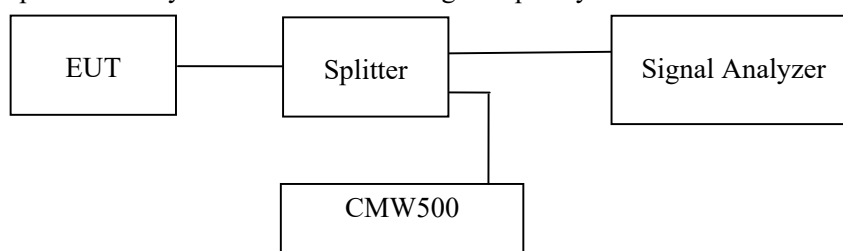
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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

Test Procedure

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

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

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

Temperature:	26.8 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

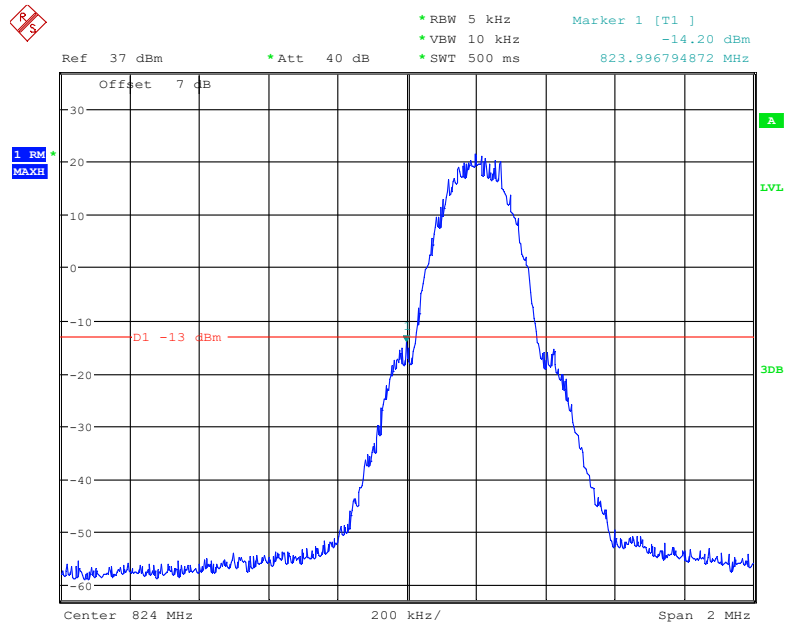
The testing was performed by Black Duan from 2022-02-21 to 2022-02-23.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

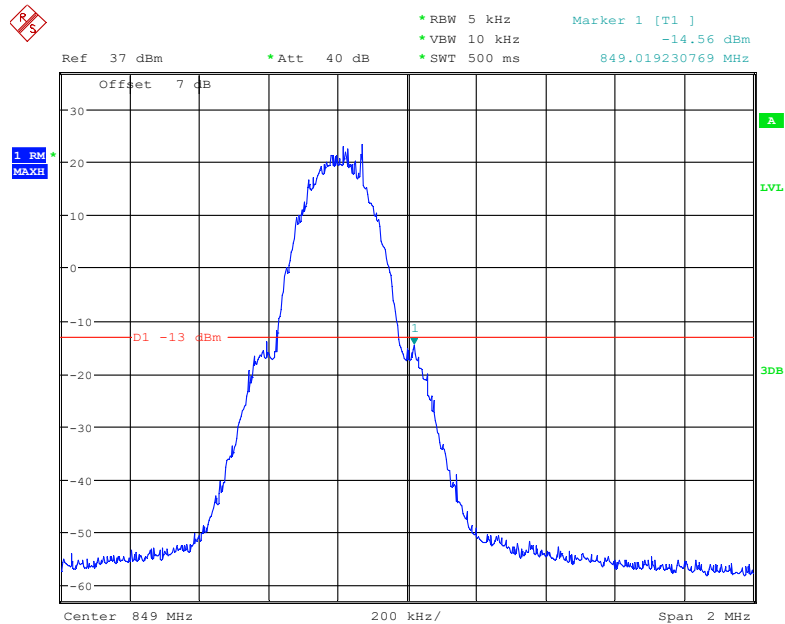
Please refer to the following plots.

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

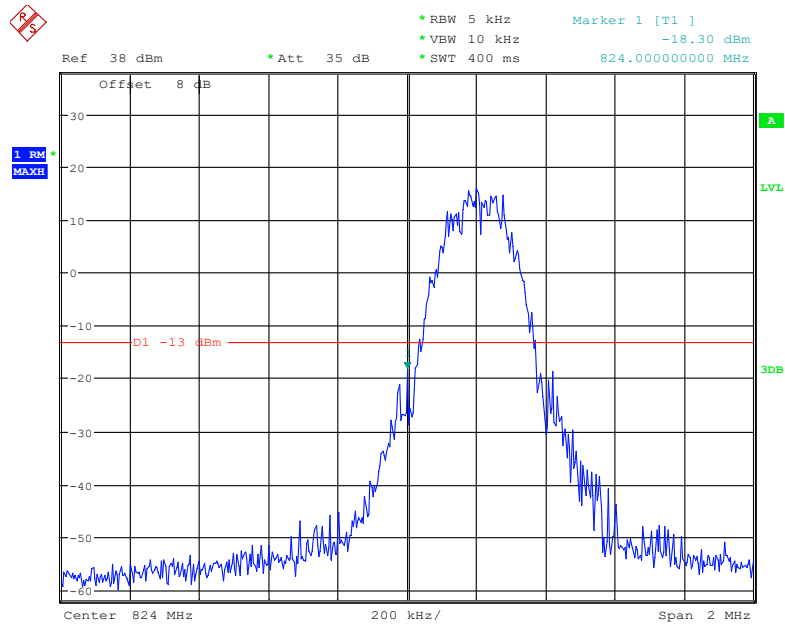


Date: 22.FEB.2022 15:53:07

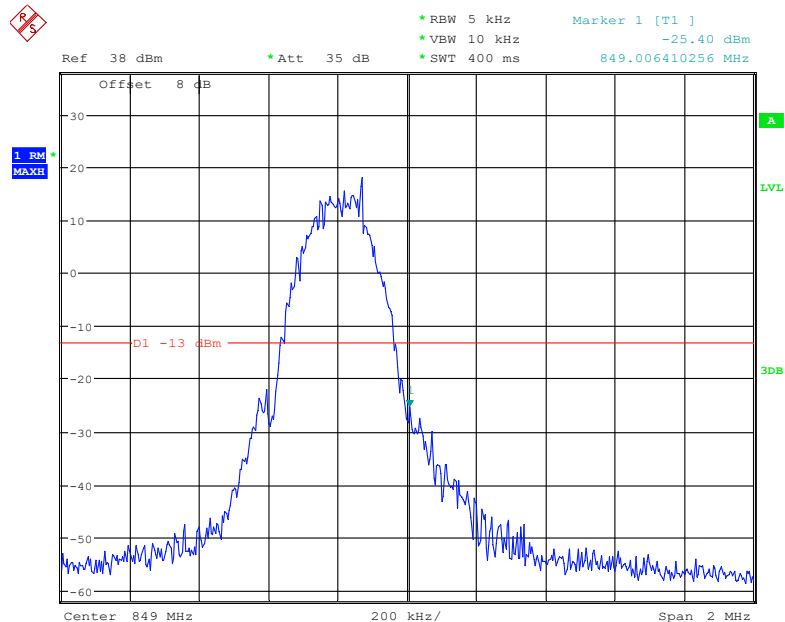
Cellular Band, Right Band Edge for GSM (GMSK) Mode



Date: 22.FEB.2022 15:50:23

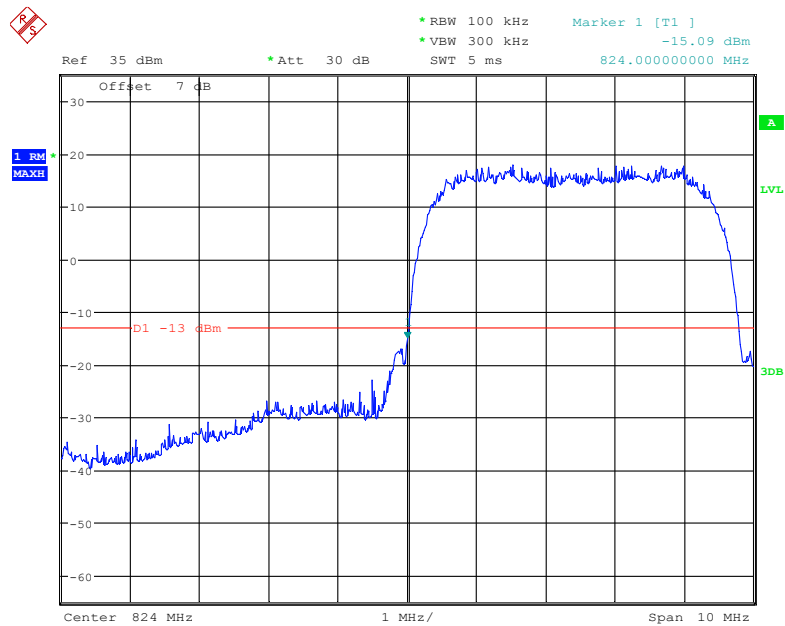
Cellular Band, Left Band Edge for EGPRS (8PSK) Mode

Date: 23.MAR.2022 13:49:26

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

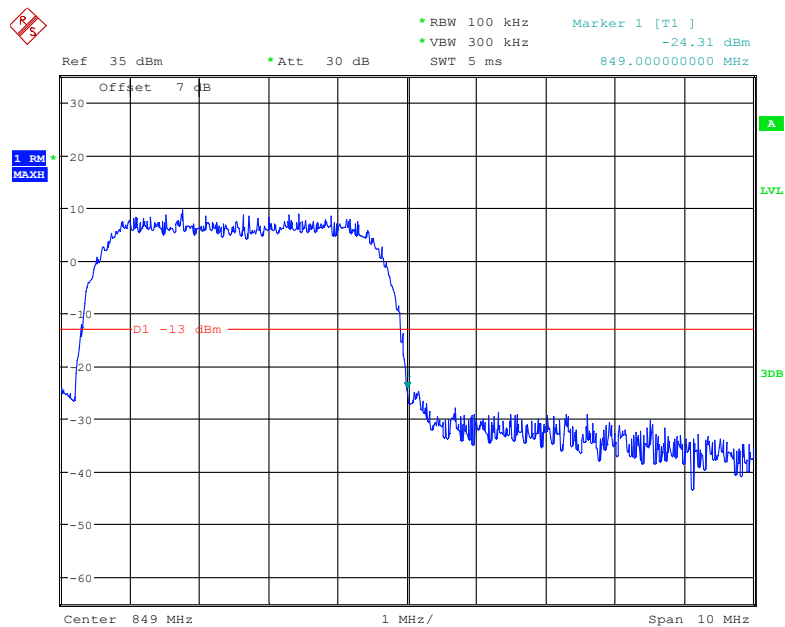
Date: 23.MAR.2022 13:48:02

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



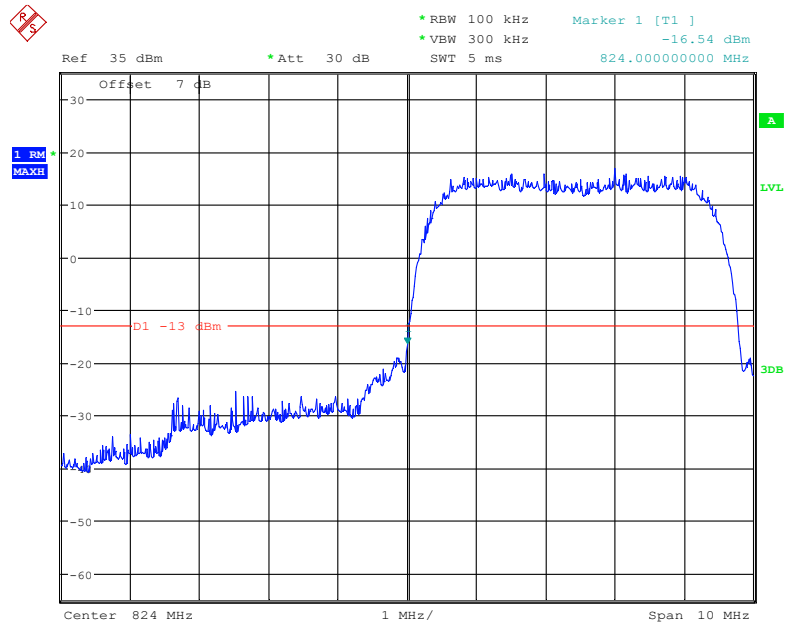
Date: 23.FEB.2022 14:08:59

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



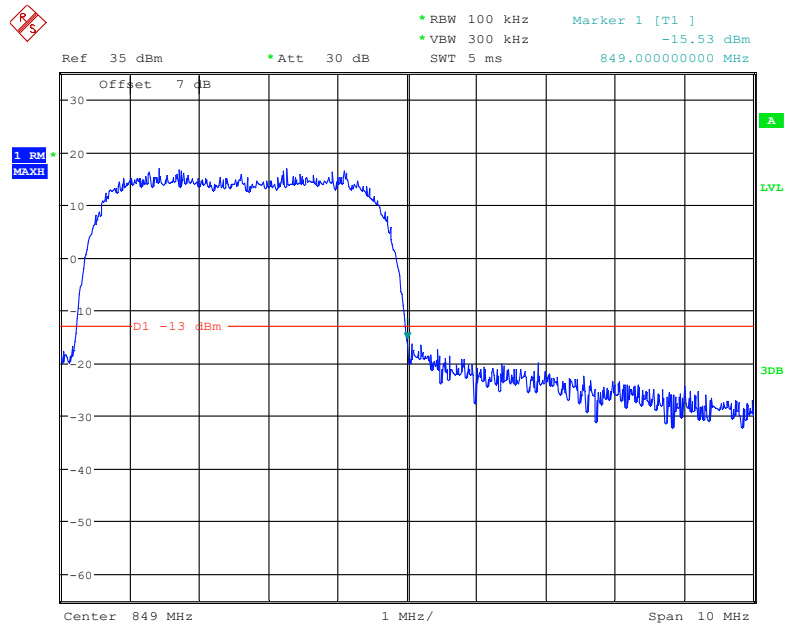
Date: 23.FEB.2022 14:07:39

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



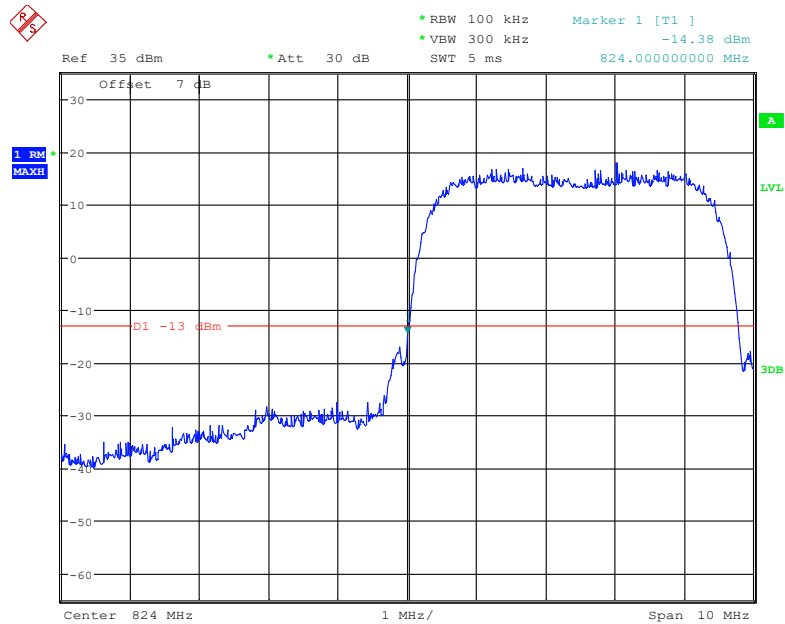
Date: 23.FEB.2022 14:04:59

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

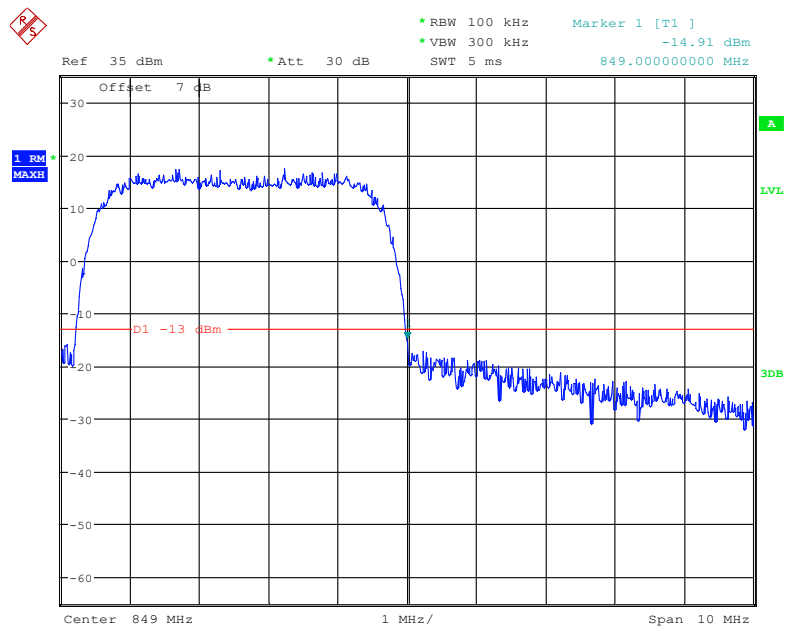


Date: 23.FEB.2022 14:06:10

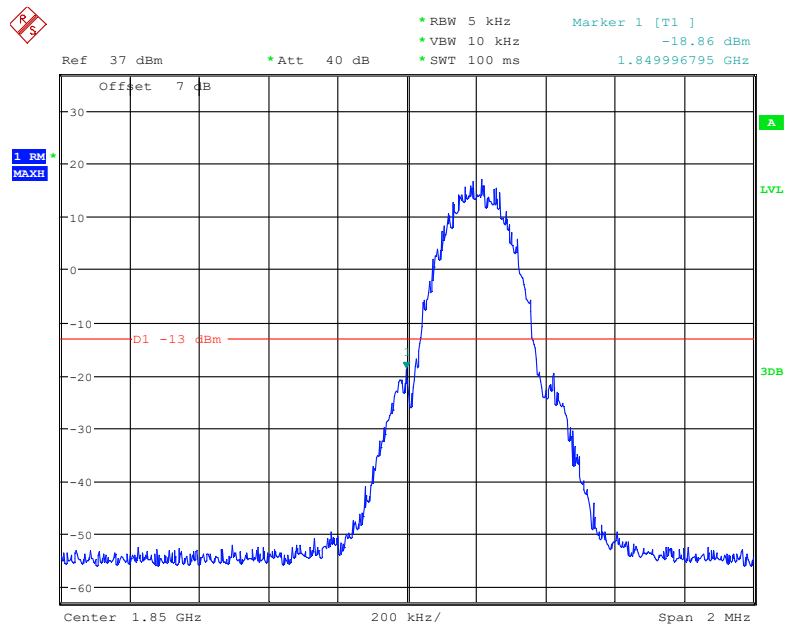
Cellular Band, Left Band Edge for HSUPA (BPSK) Mode



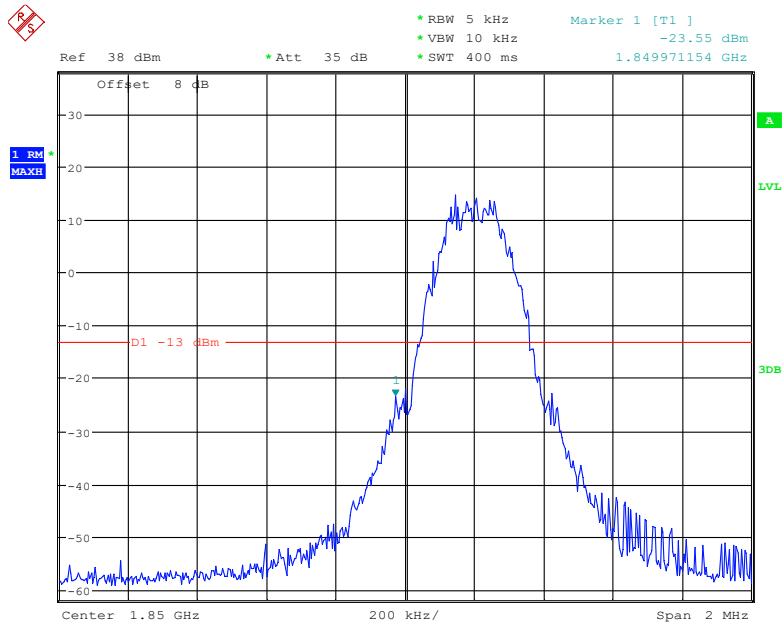
Cellular Band, Right Band Edge for HSUPA (BPSK) Mode



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

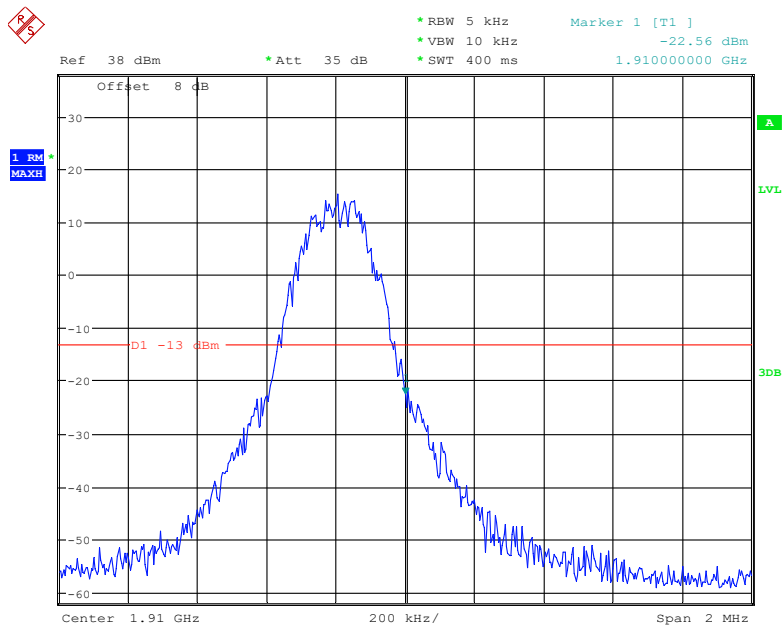


PCS Band, Left Band Edge for EGPRS (8PSK) Mode



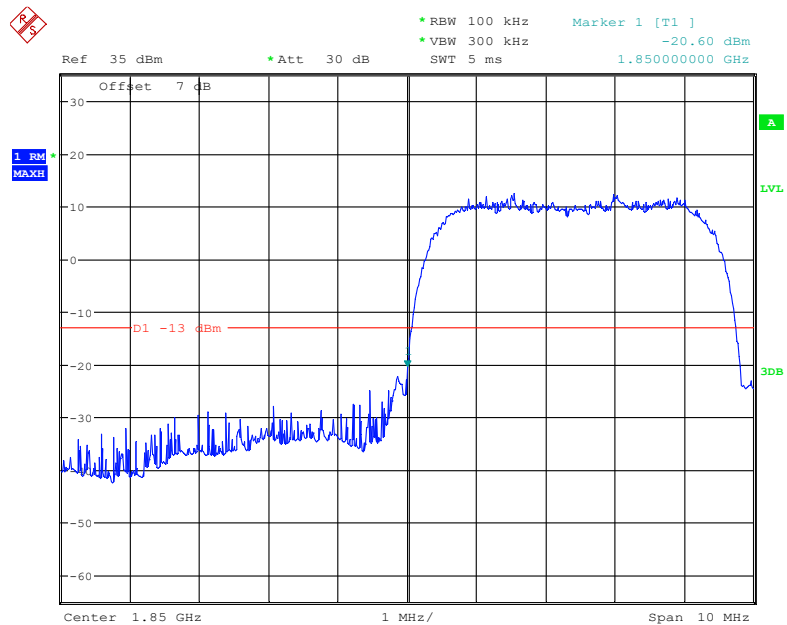
Date: 23.MAR.2022 13:52:27

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



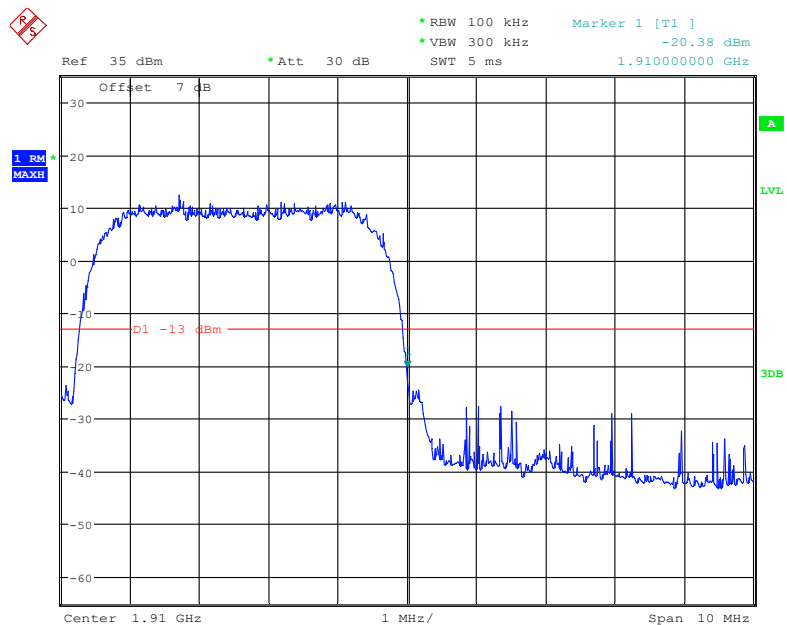
Date: 23.MAR.2022 13:54:13

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

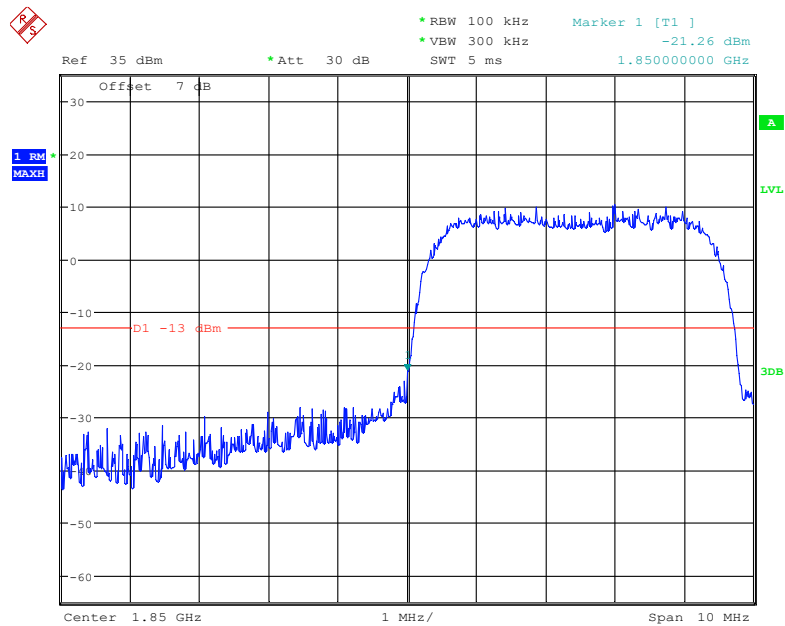


Date: 23.FEB.2022 14:20:35

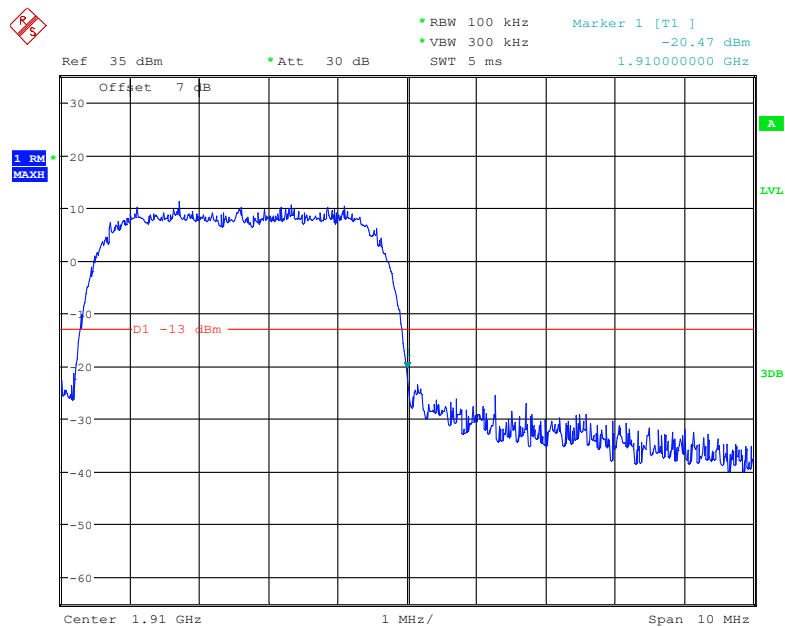
PCS Band, Right Band Edge for RMC (BPSK) Mode



Date: 23.FEB.2022 14:14:57

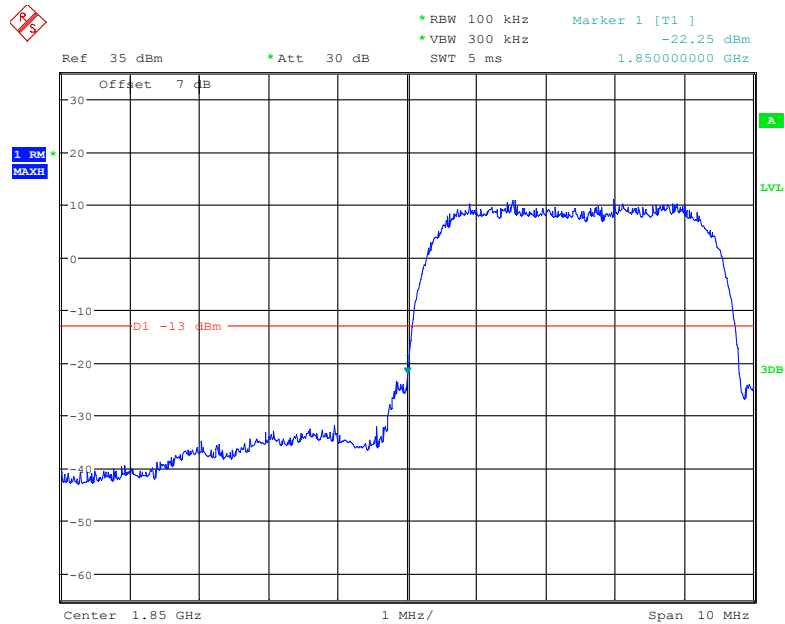
PCS Band, Left Band Edge for HSDPA(16QAM) Mode

Date: 23.FEB.2022 13:52:32

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

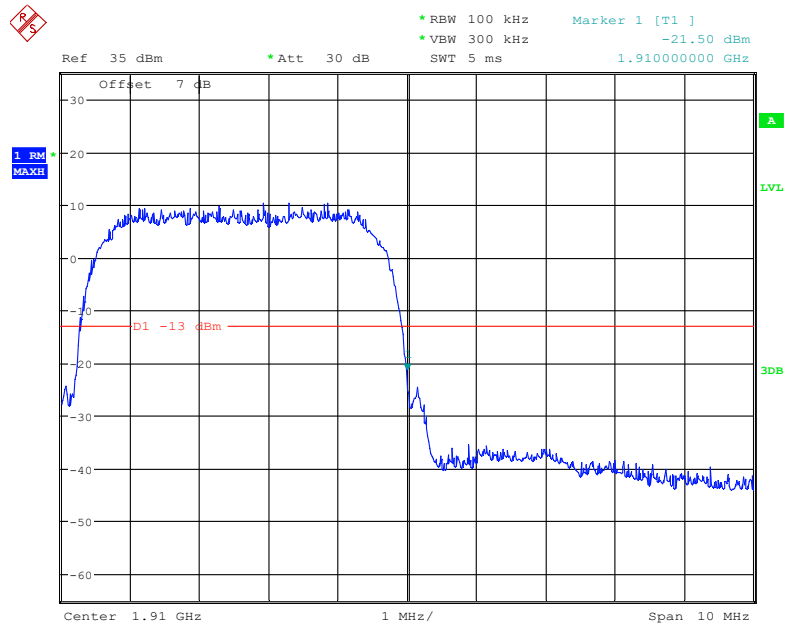
Date: 23.FEB.2022 13:55:41

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



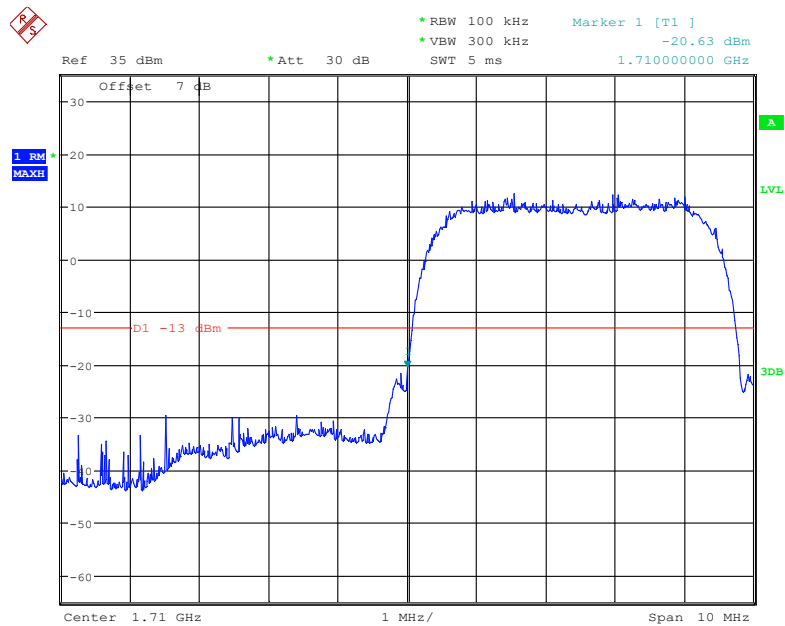
Date: 23.FEB.2022 13:50:36

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



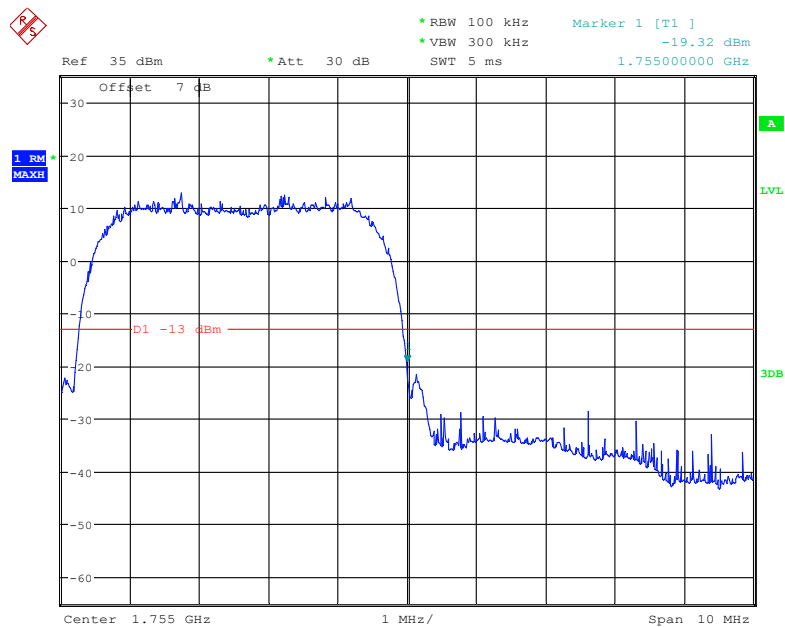
Date: 23.FEB.2022 13:48:47

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



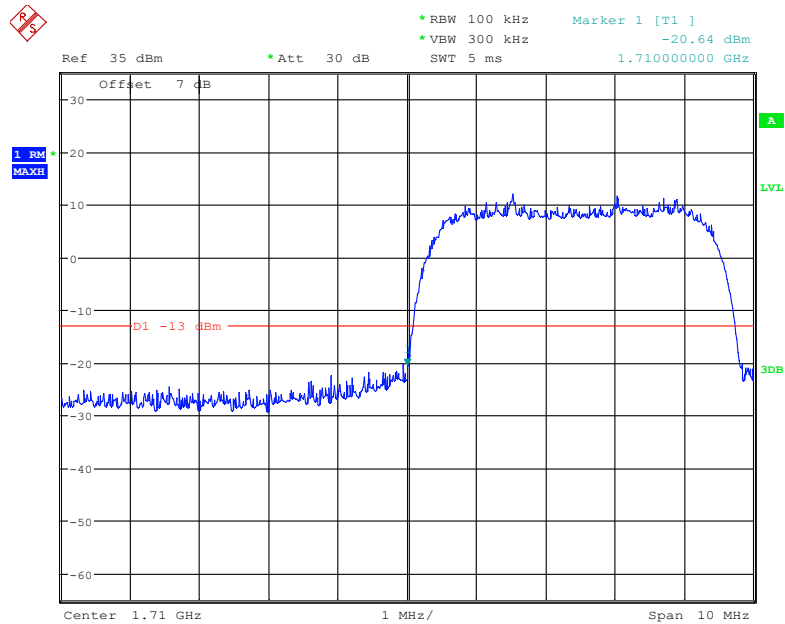
Date: 23.FEB.2022 14:13:38

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



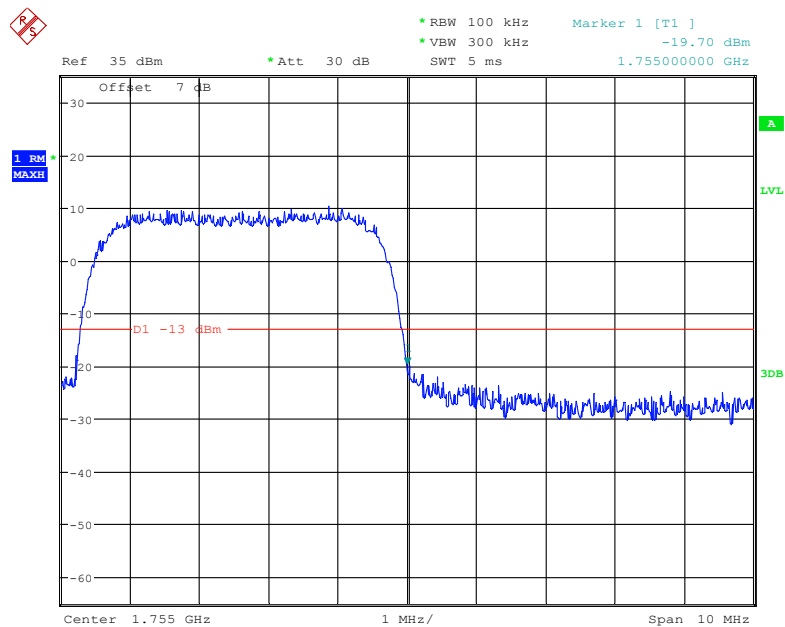
Date: 23.FEB.2022 14:11:15

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

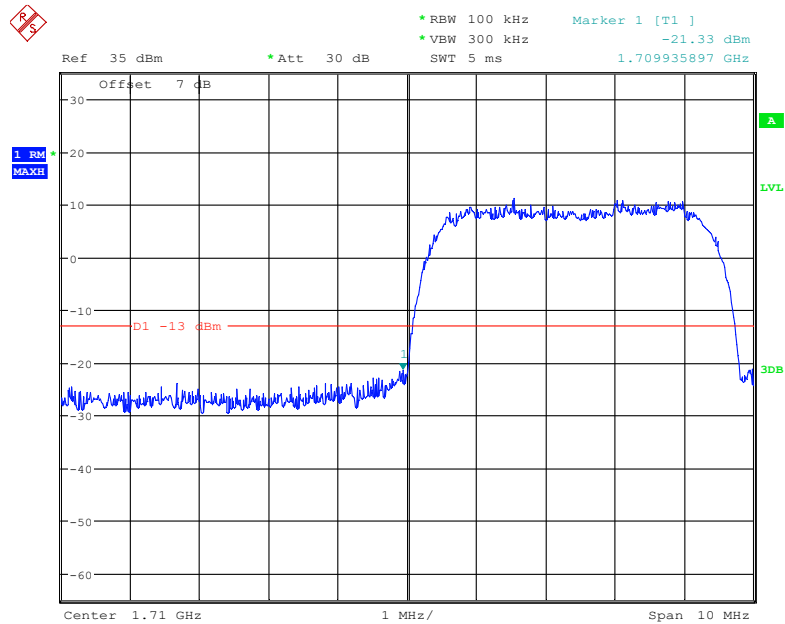


Date: 23.FEB.2022 13:59:06

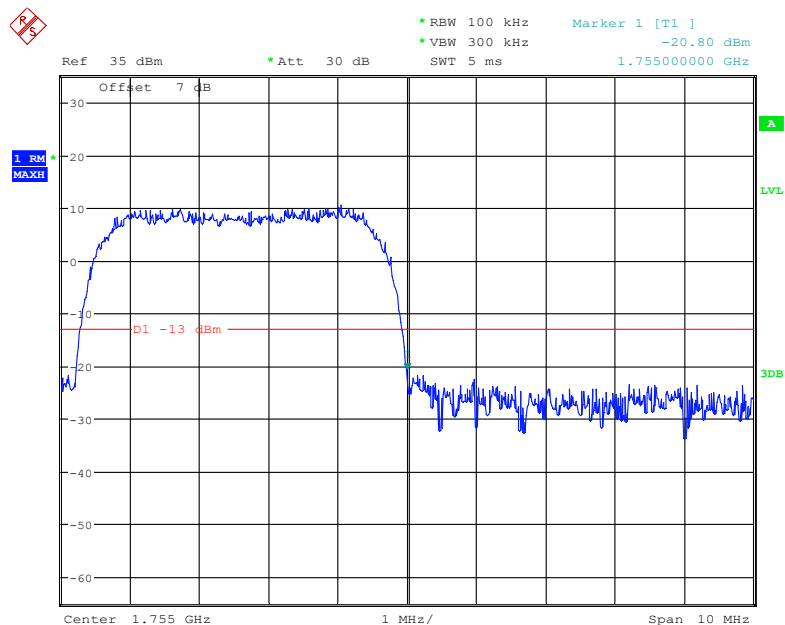
AWS Band, Right Band Edge for HSDPA (16QAM) Mode



Date: 23.FEB.2022 14:02:06

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

Date: 23.FEB.2022 13:47:52

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

Date: 23.FEB.2022 13:46:32

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

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

Applicable Standard

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

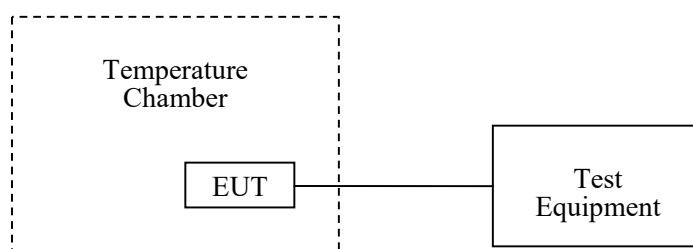
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

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

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

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



Test Data**Environmental Conditions**

Temperature:	26.8 °C
Relative Humidity:	52 %
ATM Pressure:	101.0 kPa

The testing was performed by Black Duan from 2022-02-21 to 2022-02-23.

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.	12	0.0143	2.5
-20		13	0.0155	2.5
-10		12	0.0143	2.5
0		13	0.0155	2.5
10		13	0.0155	2.5
20		14	0.0167	2.5
30		15	0.0179	2.5
40		12	0.0143	2.5
50		19	0.0227	2.5
20	L.V.	10	0.0120	2.5
	H.V.	11	0.0131	2.5

EDGE 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.	28	0.0335	2.5
-20		26	0.0311	2.5
-10		18	0.0215	2.5
0		19	0.0227	2.5
10		17	0.0203	2.5
20		12	0.0143	2.5
30		14	0.0167	2.5
40		16	0.0191	2.5
50		12	0.0143	2.5
20	L.V.	8	0.0096	2.5
	H.V.	9	0.0108	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.	6	0.0072	2.5
-20		5	0.0060	2.5
-10		-9	-0.0108	2.5
0		-6	-0.0072	2.5
10		-7	-0.0084	2.5
20		-2	-0.0024	2.5
30		3	0.0036	2.5
40		-1	-0.0012	2.5
50		-9	-0.0108	2.5
20	L.V.	4	0.0048	2.5
	H.V.	-4	-0.0048	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.	79	0.0420	2.5
-20		81	0.0431	2.5
-10		80	0.0426	2.5
0		86	0.0457	2.5
10		84	0.0447	2.5
20		87	0.0463	2.5
30		81	0.0431	2.5
40		79	0.0420	2.5
50		68	0.0362	2.5
20	L.V.	72	0.0383	2.5
	H.V.	77	0.0410	2.5

EDGE Mode

Middle Channel, $f_0=1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	86	0.0457	2.5
-20		83	0.0441	2.5
-10		72	0.0383	2.5
0		73	0.0388	2.5
10		72	0.0383	2.5
20		70	0.0372	2.5
30		75	0.0399	2.5
40		71	0.0378	2.5
50		68	0.0362	2.5
20	L.V.	72	0.0383	2.5
	H.V.	74	0.0394	2.5

WCDMA Mode

Middle Channel, $f_0=1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	9	0.0048	2.5
-20		6	0.0032	2.5
-10		-1	-0.0005	2.5
0		6	0.0032	2.5
10		2	0.0011	2.5
20		-1	-0.0005	2.5
30		-3	-0.0016	2.5
40		1	0.0005	2.5
50		5	0.0027	2.5
20	L.V.	2	0.0011	2.5
	H.V.	6	0.0032	2.5

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.	1710.8984	1754.9885	1710	1755
-20		1710.8563	1754.9764	1710	1755
-10		1710.8476	1754.9719	1710	1755
0		1710.8129	1754.9657	1710	1755
10		1710.7792	1754.9535	1710	1755
20		1710.7685	1754.9439	1710	1755
30		1710.7621	1754.9446	1710	1755
40		1710.7579	1754.9348	1710	1755
50		1710.7486	1754.9377	1710	1755
20	L.V.	1710.6924	1754.9289	1710	1755
	H.V.	1710.6822	1754.9278	1710	1755

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, f ₀ =1880MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-1	-0.0005	2.5
-20		-2	-0.0011	2.5
-10		-6	-0.0032	2.5
0		6	0.0032	2.5
10		7	0.0037	2.5
20		6	0.0032	2.5
30		-6	-0.0032	2.5
40		7	0.0037	2.5
50		-9	-0.0048	2.5
20	L.V.	-3	-0.0016	2.5
	H.V.	-5	-0.0027	2.5

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.	1710.1135	1754.5662	1710	1755
-20		1710.1144	1754.5685	1710	1755
-10		1710.1147	1754.5617	1710	1755
0		1710.1135	1754.5654	1710	1755
10		1710.1127	1754.5662	1710	1755
20		1710.1131	1754.5639	1710	1755
30		1710.1159	1754.5648	1710	1755
40		1710.1139	1754.5665	1710	1755
50		1710.1152	1754.5637	1710	1755
20	L.V.	1710.1157	1754.5646	1710	1755
	H.V.	1710.1159	1754.5648	1710	1755

Band 5:

10.0 MHz Middle Channel, f ₀ =836.5MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-4	-0.0048	2.5
-20		-6	-0.0072	2.5
-10		-5	-0.0060	2.5
0		6	0.0072	2.5
10		9	0.0108	2.5
20		5	0.0060	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.	-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.	2500.8876	2569.9837	2500	2570
-20		2500.8756	2569.9953	2500	2570
-10		2500.8743	2569.9822	2500	2570
0		2500.8712	2569.9938	2500	2570
10		2500.7921	2569.9871	2500	2570
20		2500.7812	2569.9419	2500	2570
30		2500.7771	2569.9363	2500	2570
40		2500.7629	2569.9922	2500	2570
50		2500.7524	2569.9931	2500	2570
20	L.V.	2500.7537	2569.9829	2500	2570
	H.V.	2500.7446	2569.9741	2500	2570

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.	704.3366	715.3825	704	716
-20		704.3183	715.3869	704	716
-10		704.2591	715.3823	704	716
0		704.2622	715.3813	704	716
10		704.5166	715.4482	704	716
20		704.5088	715.4423	704	716
30		704.4522	715.4346	704	716
40		704.3543	715.4328	704	716
50		704.3385	715.4235	704	716
20	L.V.	704.2946	715.4249	704	716
	H.V.	704.3129	715.4314	704	716

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2570.8359	2619.9866	2570	2620
-20		2570.8173	2619.8763	2570	2620
-10		2570.7255	2619.7651	2570	2620
0		2570.6156	2619.6568	2570	2620
10		2570.5145	2619.5447	2570	2620
20		2570.3952	2619.4351	2570	2620
30		2570.2874	2619.3249	2570	2620
40		2570.1767	2619.2157	2570	2620
50		2570.1694	2619.1361	2570	2620
20	L.V.	2570.1541	2619.1257	2570	2620
	H.V.	2570.1358	2619.1159	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.9764	2654.9842	2535	2655
-20		2535.8681	2654.8857	2535	2655
-10		2535.7572	2654.7754	2535	2655
0		2535.6457	2654.6675	2535	2655
10		2535.5363	2654.5548	2535	2655
20		2535.4267	2654.4467	2535	2655
30		2535.3149	2654.3359	2535	2655
40		2535.2156	2654.2257	2535	2655
50		2535.2935	2654.1764	2535	2655
20	L.V.	2535.8642	2654.0157	2535	2655
	H.V.	2535.8538	2654.0251	2535	2655

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

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.	1710.0229	1779.9763	1710	1780
-20		1710.0218	1779.9743	1710	1780
-10		1710.0228	1779.9818	1710	1780
0		1710.0251	1779.9754	1710	1780
10		1710.0235	1779.9758	1710	1780
20		1710.0226	1779.9747	1710	1780
30		1710.0261	1779.9756	1710	1780
40		1710.0256	1779.9763	1710	1780
50		1710.0236	1779.9804	1710	1780
20	L.V.	1710.0251	1779.9712	1710	1780
	H.V.	1710.0262	1779.9776	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.	-1	-0.0005	2.5
-20		-8	-0.0043	2.5
-10		7	0.0037	2.5
0		-2	-0.0011	2.5
10		1	0.0005	2.5
20		-2	-0.0011	2.5
30		-8	-0.0043	2.5
40		-5	-0.0027	2.5
50		7	0.0037	2.5
20	L.V.	5	0.0027	2.5
	H.V.	2	0.0011	2.5

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.	1710.2679	1754.7569	1710	1755
-20		1710.2765	1754.7642	1710	1755
-10		1710.2662	1754.7599	1710	1755
0		1710.2653	1754.7567	1710	1755
10		1710.2657	1754.7572	1710	1755
20		1710.2646	1754.7635	1710	1755
30		1710.2662	1754.7617	1710	1755
40		1710.2667	1754.7592	1710	1755
50		1710.2678	1754.7628	1710	1755
20	L.V.	1710.2669	1754.7583	1710	1755
	H.V.	1710.2746	1754.7594	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-3	-0.0036	2.5
-20		8	0.0096	2.5
-10		-9	-0.0108	2.5
0		3	0.0036	2.5
10		-4	-0.0048	2.5
20		5	0.0060	2.5
30		3	0.0036	2.5
40		-6	-0.0072	2.5
50		-4	-0.0048	2.5
20	L.V.	3	0.0036	2.5
	H.V.	8	0.0096	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.	2500.7353	2569.8342	2500	2570
-20		2500.7257	2569.8441	2500	2570
-10		2500.7215	2569.8331	2500	2570
0		2500.7216	2569.8425	2500	2570
10		2500.6452	2569.8368	2500	2570
20		2500.6339	2569.7973	2500	2570
30		2500.6247	2569.7859	2500	2570
40		2500.6128	2569.8436	2500	2570
50		2500.6026	2569.8428	2500	2570
20	L.V.	2500.6029	2569.8337	2500	2570
	H.V.	2500.5931	2569.8248	2500	2570

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.	704.3369	715.4876	704	716
-20		704.4586	715.4754	704	716
-10		704.4287	715.4682	704	716
0		704.3288	715.4638	704	716
10		704.3422	715.5483	704	716
20		704.3491	715.5481	704	716
30		704.4631	715.5538	704	716
40		704.4582	715.4532	704	716
50		704.4299	715.5231	704	716
20	L.V.	704.4253	715.4564	704	716
	H.V.	704.4324	715.5529	704	716

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2570.9876	2619.9854	2570	2620
-20		2570.8964	2619.8736	2570	2620
-10		2570.7897	2619.7681	2570	2620
0		2570.6799	2619.6549	2570	2620
10		2570.5637	2619.5479	2570	2620
20		2570.4558	2619.4353	2570	2620
30		2570.3457	2619.3287	2570	2620
40		2570.2373	2619.2153	2570	2620
50		2570.1283	2619.1957	2570	2620
20	L.V.	2570.2177	2619.8769	2570	2620
	H.V.	2570.2139	2619.7669	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.9458	2654.9648	2535	2655
-20		2535.8447	2654.8572	2535	2655
-10		2535.7369	2654.7441	2535	2655
0		2535.6264	2654.6362	2535	2655
10		2535.5167	2654.5268	2535	2655
20		2535.4162	2654.4578	2535	2655
30		2535.2966	2654.3569	2535	2655
40		2535.1878	2654.1877	2535	2655
50		2535.1837	2654.1872	2535	2655
20	L.V.	2535.1653	2654.0745	2535	2655
	H.V.	2535.0567	2654.0368	2535	2655

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

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.	1710.0284	1779.8381	1710	1780
-20		1710.0247	1779.8411	1710	1780
-10		1710.0268	1779.8376	1710	1780
0		1710.0274	1779.8361	1710	1780
10		1710.0249	1779.8363	1710	1780
20		1710.0245	1779.8343	1710	1780
30		1710.0229	1779.8347	1710	1780
40		1710.0257	1779.8353	1710	1780
50		1710.0223	1779.8363	1710	1780
20	L.V.	1710.0274	1779.8365	1710	1780
	H.V.	1710.0263	1779.8337	1710	1780

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