



TEST REPORT

Applicant Name : Shenzhen Youmi Intelligent Technology Co., Ltd.
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Report Number : SZNS220822-38161E-RF-00C
FCC ID: 2ATZ4-F3P5G

Test Standard (s)

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

Sample Description

Product Type: Smart Phone
Test Model No.: F3 5G
Multiple Model(s) No.: F3 Pro 5G (Please refer to DOS for Model difference)
Trade Mark: UMIDIGI
Date Received: 2022/08/22
Report Date: 2022/09/13

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

Prepared and Checked By:

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EMC Engineer

Approved By:

Candy 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 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 13: 777-787MHz(TX); 746-756MHz(RX) LTE Band 41: 2496-2690MHz(TX/RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA 850/LTE B5: -0.67Bi WCDMA 1900/PCS1900/LTE B2: -0.37dBi LTE B12: -0.67dBi, LTE B13: -0.71dBi ,LTE B41: -0.42dBi (provided by the applicant)
Voltage Range	DC 3.85V from battery or DC 5/7/9/12V from adapter
Sample serial number	SZNS220822-38161E-RF-S1(Assigned by ATC)
Sample/EUT Status	Good condition
Normal/Extreme Condition	L.V.: Low Voltage 3.45V _{DC} N.V.: Normal Voltage 3.85V _{DC} H.V.: High Voltage 4.4V _{DC}
Adapter information	Model: HJ-FC017K7-US Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 5.0V, 2.0A or 7.0V,2.0A or 9.0V,2.0A or 12.0V,1.5A,18.0W

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part24-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.
 Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF Frequency		0.082×10^{-7}
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	9kHz - 30MHz	2.66dB
	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz -26.5GHz	5.06dB
	26.5GHz -40GHz	4.72dB
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.

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
PCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
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 B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704.0	707.5	711.0
LTE B13	5	779.5	782	784.5
	10	/	782	/
LTE B41	5	2498.5	2593	2687.5
	10	2501	2593	2685
	15	2503.5	2593	2682.5
	20	2506	2593	2680

Equipment Modifications

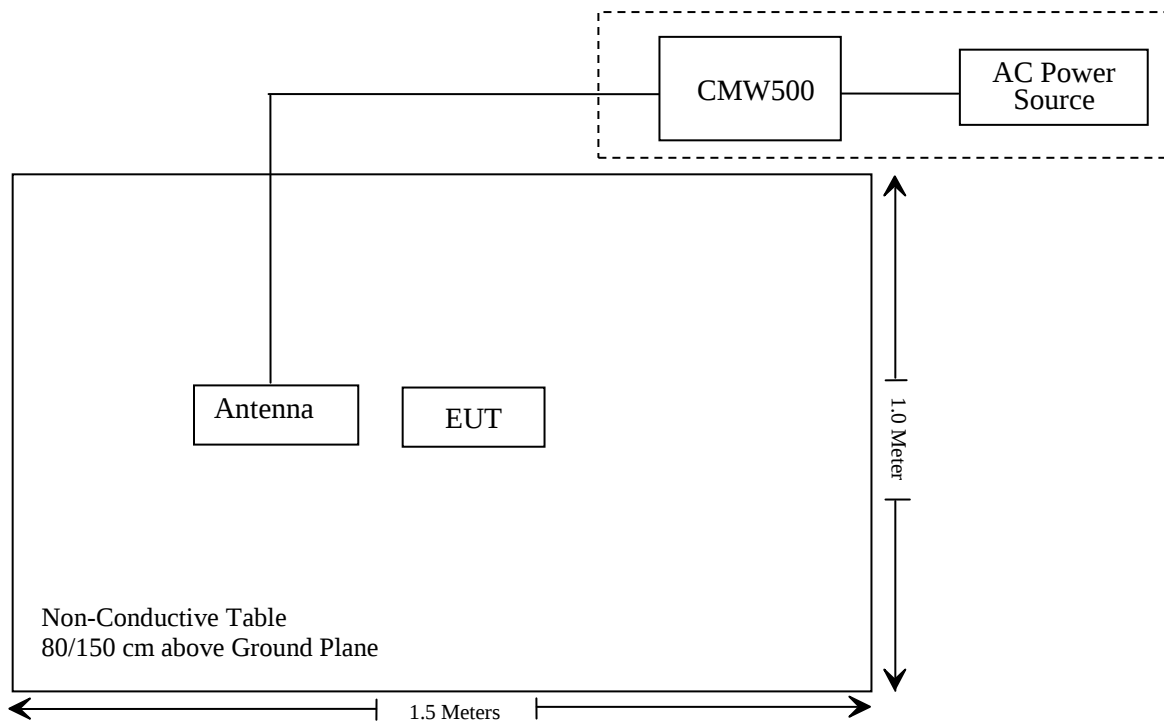
No modification was made to the EUT.

Support Equipment List and Details

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

Support Cable Description

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

Block Diagram of Test Setup

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

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
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-18405536-J0	15964001002	2021/11/11	2022/11/10
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
Unknown	Band Reject Filter	MSF824-862MS-1147	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF1850-1910MS-1148	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF2495-2570MS-1152	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF700-800MS-1153	201706003	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 Antenna	PE9852/2F-20	1120 (ATC-BA-024-1)	2020/01/05	2023/01/04
PASTERNAK	Horn Antenna	PE9852/2F-20	1120 (ATC-BA-025-1)	2020/01/05	2023/01/04
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	2022/07/06	2023/07/05
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
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	1	Each time	
HP	6dB Attenuator	8493B	06151	2021/12/14	2022/12/13

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: SZNS220822-38161E-20.

FCC §2.1047 - MODULATION CHARACTERISTIC

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

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

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

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

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

According to §27.50(c), Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP. And Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

Test Procedure

Conducted method:

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



ANSI C63.26-2015 Section 5.5.

Test Data**Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang from 2022-08-30 to 2022-09-11.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	31.40	28.08	38.45
	190	836.6	31.60	28.28	38.45
	251	848.8	31.70	28.38	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	31.45	30.55	29.23	28.68	28.13	27.23	25.91	25.36	38.45
	190	836.6	31.62	30.73	29.38	28.82	28.3	27.41	26.06	25.5	38.45
	251	848.8	31.71	30.82	29.49	28.99	28.39	27.5	26.17	25.67	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	
EDGE	128	824.2	27.32	25.76	23.57	22.48	24.00	22.44	20.25	19.16	38.45
	190	836.6	27.34	25.79	23.62	22.53	24.02	22.47	20.30	19.21	38.45
	251	848.8	27.25	25.66	23.53	22.51	23.93	22.34	20.21	19.19	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		24.57	24.00	24.48	21.25	20.68	21.16
	HSDPA	1	23.78	23.17	23.55	20.46	19.85	20.23
		2	23.55	23.22	23.45	20.23	19.90	20.13
		3	23.64	23.18	23.41	20.32	19.86	20.09
		4	23.49	23.14	23.36	20.17	19.82	20.04
	HSUPA	1	23.41	22.78	23.19	20.09	19.46	19.87
		2	23.42	22.58	23.14	20.10	19.26	19.82
		3	23.28	22.59	23.25	19.96	19.27	19.93
		4	23.25	22.34	23.16	19.93	19.02	19.84
		5	23.41	22.46	23.22	20.09	19.14	19.90
	HSPA+	1	23.49	22.47	23.41	20.17	19.15	20.09

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)

For GSM850 / WCDMA Band5: Antenna Gain = -0.67dBi = -2.82dBd (0dBd=2.15dBi)

Cable Loss=0.5dB* (provided by the applicant)

Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	30.30	29.93	33
	661	1880.0	30.30	29.93	33
	810	1909.8	30.10	29.73	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	30.37	29.32	27.69	27.15	30.00	28.95	27.32	26.78	33
	661	1880.0	30.29	29.24	27.62	27.08	29.92	28.87	27.25	26.71	33
	810	1909.8	30.10	29.05	27.46	26.97	29.73	28.68	27.09	26.60	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	
EDGE	512	1850.2	25.51	24.32	22.22	20.76	25.14	23.95	21.85	20.39	33
	661	1880.0	25.59	24.60	22.36	21.14	25.22	24.23	21.99	20.77	33
	810	1909.8	25.56	24.46	22.22	20.95	25.19	24.09	21.85	20.58	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		22.51	22.36	22.40	22.14	21.99	22.03
	HSDPA	1	21.71	21.59	21.63	21.34	21.22	21.26
		2	21.55	21.18	21.56	21.18	20.81	21.19
		3	21.44	21.33	21.38	21.07	20.96	21.01
		4	21.32	21.22	21.37	20.95	20.85	21.00
	HSUPA	1	21.22	21.02	21.10	20.85	20.65	20.73
		2	21.11	21.01	21.08	20.74	20.64	20.71
		3	21.09	21.07	21.06	20.72	20.70	20.69
		4	21.15	21.21	21.07	20.78	20.84	20.70
		5	21.27	21.06	21.05	20.90	20.69	20.68
	HSPA+	1	21.19	21.07	21.09	20.82	20.70	20.72

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For PCS1900 / WCDMA Band2: Antenna Gain = -0.37dBi; Cable Loss = 0 dBi
Limit: EIRP ≤ 33dBm

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	20.38	20.15	19.98	20.01	19.78	19.61
		RB1#3	20.43	20.15	20.02	20.06	19.78	19.65
		RB1#5	20.42	20.14	20.01	20.05	19.77	19.64
		RB3#0	20.58	20.32	20.07	20.21	19.95	19.7
		RB3#3	20.58	20.27	20.10	20.21	19.9	19.73
		RB6#0	19.66	19.40	19.28	19.29	19.03	18.91
	16QAM	RB1#0	19.70	19.50	19.40	19.33	19.13	19.03
		RB1#3	19.71	19.55	19.45	19.34	19.18	19.08
		RB1#5	19.72	19.52	19.44	19.35	19.15	19.07
		RB3#0	19.71	19.59	19.15	19.34	19.22	18.78
		RB3#3	19.70	19.60	19.20	19.33	19.23	18.83
		RB6#0	18.60	18.40	18.33	18.23	18.03	17.96
3.0	QPSK	RB1#0	20.57	19.72	20.28	20.2	19.35	19.91
		RB1#8	20.50	19.74	20.25	20.13	19.37	19.88
		RB1#14	20.49	19.77	20.33	20.12	19.4	19.96
		RB6#0	19.63	19.06	19.59	19.26	18.69	19.22
		RB6#9	19.62	19.01	19.53	19.25	18.64	19.16
		RB15#0	19.61	19.01	19.55	19.24	18.64	19.18
	16QAM	RB1#0	20.07	19.22	19.56	19.7	18.85	19.19
		RB1#8	20.05	19.15	19.53	19.68	18.78	19.16
		RB1#14	20.05	19.17	19.60	19.68	18.8	19.23
		RB6#0	18.73	18.10	18.49	18.36	17.73	18.12
		RB6#9	18.72	18.02	18.42	18.35	17.65	18.05
		RB15#0	18.71	17.95	18.62	18.34	17.58	18.25

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.73	19.70	19.84	20.36	19.33	19.47
		RB1#13	20.66	19.67	19.70	20.29	19.3	19.33
		RB1#24	20.65	19.69	19.76	20.28	19.32	19.39
		RB15#0	19.68	18.97	18.99	19.31	18.6	18.62
		RB15#10	19.60	18.87	18.73	19.23	18.5	18.36
		RB25#0	19.66	18.90	18.85	19.29	18.53	18.48
	16QAM	RB1#0	19.56	19.17	18.92	19.19	18.8	18.55
		RB1#13	19.52	19.12	18.88	19.15	18.75	18.51
		RB1#24	19.56	19.12	18.97	19.19	18.75	18.6
		RB15#0	18.76	17.99	17.98	18.39	17.62	17.61
		RB15#10	18.66	17.88	17.77	18.29	17.51	17.4
		RB25#0	18.73	17.94	17.89	18.36	17.57	17.52
10.0	QPSK	RB1#0	20.36	19.83	20.42	19.99	19.46	20.05
		RB1#25	20.40	19.85	20.43	20.03	19.48	20.06
		RB1#49	20.35	19.75	20.33	19.98	19.38	19.96
		RB25#0	19.61	18.97	19.44	19.24	18.6	19.07
		RB25#25	19.61	18.87	19.38	19.24	18.5	19.01
		RB50#0	19.61	18.92	19.46	19.24	18.55	19.09
	16QAM	RB1#0	19.62	19.39	19.65	19.25	19.02	19.28
		RB1#25	19.60	19.34	19.63	19.23	18.97	19.26
		RB1#49	19.60	19.31	19.69	19.23	18.94	19.32
		RB25#0	18.71	18.02	18.52	18.34	17.65	18.15
		RB25#25	18.70	17.91	18.42	18.33	17.54	18.05
		RB50#0	18.60	17.94	18.45	18.23	17.57	18.08

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	20.50	19.80	19.54	20.13	19.43	19.17
		RB1#38	20.47	19.81	19.50	20.10	19.44	19.13
		RB1#74	20.41	19.73	19.37	20.04	19.36	19.00
		RB36#0	19.60	19.00	18.54	19.23	18.63	18.17
		RB36#39	19.49	18.88	18.51	19.12	18.51	18.14
		RB75#0	19.59	18.96	18.55	19.22	18.59	18.18
	16QAM	RB1#0	20.08	19.09	18.98	19.71	18.72	18.61
		RB1#38	20.07	19.15	18.88	19.70	18.78	18.51
		RB1#74	20.05	19.07	18.97	19.68	18.70	18.60
		RB36#0	18.61	18.06	17.60	18.24	17.69	17.23
		RB36#39	18.57	17.95	17.52	18.20	17.58	17.15
		RB75#0	18.57	17.97	17.57	18.20	17.60	17.20
20.0	QPSK	RB1#0	20.31	19.94	19.90	19.94	19.57	19.53
		RB1#50	20.37	19.98	20.00	20.00	19.61	19.63
		RB1#99	20.27	19.92	19.78	19.90	19.55	19.41
		RB50#0	19.60	19.28	19.17	19.23	18.91	18.80
		RB50#50	19.53	19.15	19.03	19.16	18.78	18.66
		RB100#0	19.58	19.18	19.05	19.21	18.81	18.68
	16QAM	RB1#0	19.79	19.39	19.76	19.42	19.02	19.39
		RB1#50	19.84	19.36	19.68	19.47	18.99	19.31
		RB1#99	19.71	19.31	19.67	19.34	18.94	19.30
		RB50#0	18.60	18.25	18.10	18.23	17.88	17.73
		RB50#50	18.52	18.11	18.02	18.15	17.74	17.65
		RB100#0	18.62	18.17	18.05	18.25	17.80	17.68

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)

For Band2: Antenna Gain = -0.37dBi; Cable Loss=0 dBi

Limit: EIRP≤33dBm

LTE Band 5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.52	21.73	21.54	19.20	18.41	18.22
		RB1#3	22.52	21.77	21.48	19.20	18.45	18.16
		RB1#5	22.55	21.77	21.49	19.23	18.45	18.17
		RB3#0	22.66	21.92	21.71	19.34	18.60	18.39
		RB3#3	22.64	21.89	21.68	19.32	18.57	18.36
		RB6#0	21.67	20.90	20.73	18.35	17.58	17.41
	16QAM	RB1#0	21.80	20.87	20.74	18.48	17.55	17.42
		RB1#3	21.80	20.88	20.74	18.48	17.56	17.42
		RB1#5	21.83	20.88	20.70	18.51	17.56	17.38
		RB3#0	21.59	20.90	20.81	18.27	17.58	17.49
		RB3#3	21.59	20.87	20.85	18.27	17.55	17.53
		RB6#0	20.73	19.77	19.65	17.41	16.45	16.33
3.0	QPSK	RB1#0	22.71	21.79	22.19	19.39	18.47	18.87
		RB1#8	22.68	21.76	22.23	19.36	18.44	18.91
		RB1#14	22.70	21.75	22.19	19.38	18.43	18.87
		RB6#0	21.64	20.89	21.39	18.32	17.57	18.07
		RB6#9	21.63	20.92	21.29	18.31	17.60	17.97
		RB15#0	21.64	20.88	21.32	18.32	17.56	18.00
	16QAM	RB1#0	22.13	21.07	21.43	18.81	17.75	18.11
		RB1#8	22.13	20.99	21.33	18.81	17.67	18.01
		RB1#14	22.10	20.96	21.30	18.78	17.64	17.98
		RB6#0	20.69	19.90	20.26	17.37	16.58	16.94
		RB6#9	20.68	19.87	20.19	17.36	16.55	16.87
		RB15#0	20.73	19.84	20.38	17.41	16.52	17.06

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.62	21.75	21.92	19.30	18.43	18.60
		RB1#13	22.58	21.7	21.91	19.26	18.38	18.59
		RB1#24	22.58	21.67	21.85	19.26	18.35	18.53
		RB15#0	21.66	20.76	20.84	18.34	17.44	17.52
		RB15#10	21.62	20.65	20.59	18.30	17.33	17.27
		RB25#0	21.61	20.67	20.67	18.29	17.35	17.35
	16QAM	RB1#0	21.93	20.79	20.64	18.61	17.47	17.32
		RB1#13	21.90	20.70	20.60	18.58	17.38	17.28
		RB1#24	21.93	20.69	20.54	18.61	17.37	17.22
		RB15#0	20.65	19.71	19.85	17.33	16.39	16.53
		RB15#10	20.61	19.65	19.64	17.29	16.33	16.32
		RB25#0	20.68	19.73	19.79	17.36	16.41	16.47
10.0	QPSK	RB1#0	22.75	21.90	22.33	19.43	18.58	19.01
		RB1#25	22.70	21.86	22.30	19.38	18.54	18.98
		RB1#49	22.68	21.77	22.23	19.36	18.45	18.91
		RB25#0	21.67	20.95	21.45	18.35	17.63	18.13
		RB25#25	21.70	20.79	21.23	18.38	17.47	17.91
		RB50#0	21.70	20.95	21.39	18.38	17.63	18.07
	16QAM	RB1#0	22.15	21.10	21.41	18.83	17.78	18.09
		RB1#25	22.13	21.03	21.36	18.81	17.71	18.04
		RB1#49	22.05	20.94	21.29	18.73	17.62	17.97
		RB25#0	20.72	20.01	20.53	17.40	16.69	17.21
		RB25#25	20.72	19.87	20.34	17.40	16.55	17.02
		RB50#0	20.70	19.90	20.38	17.38	16.58	17.06

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For Band5: Antenna Gain = -0.67dBi = -2.82dBd (0dBd=2.15dBi)

Cable Loss=0.5dB*(provided by the applicant)

Limit: ERP ≤ 38.45dBm

LTE Band 12

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.28	22.60	22.39	19.96	19.28	19.07
		RB1#3	23.36	22.61	22.44	20.04	19.29	19.12
		RB1#5	23.29	22.63	22.48	19.97	19.31	19.16
		RB3#0	23.32	22.67	22.52	20.00	19.35	19.20
		RB3#3	23.26	22.67	22.53	19.94	19.35	19.21
		RB6#0	22.35	21.68	21.56	19.03	18.36	18.24
	16QAM	RB1#0	22.45	21.68	21.52	19.13	18.36	18.20
		RB1#3	22.51	21.69	21.55	19.19	18.37	18.23
		RB1#5	22.41	21.71	21.54	19.09	18.39	18.22
		RB3#0	22.31	21.72	21.65	18.99	18.40	18.33
		RB3#3	22.33	21.68	21.70	19.01	18.36	18.38
		RB6#0	21.39	20.58	20.53	18.07	17.26	17.21
3.0	QPSK	RB1#0	23.51	23.23	22.58	20.19	19.91	19.26
		RB1#8	23.44	23.20	22.53	20.12	19.88	19.21
		RB1#14	23.43	23.18	22.56	20.11	19.86	19.24
		RB6#0	22.53	22.31	21.62	19.21	18.99	18.30
		RB6#9	22.52	22.21	21.60	19.20	18.89	18.28
		RB15#0	22.49	22.25	21.56	19.17	18.93	18.24
	16QAM	RB1#0	23.11	22.41	22.17	19.79	19.09	18.85
		RB1#8	23.05	22.34	22.11	19.73	19.02	18.79
		RB1#14	23.01	22.32	22.08	19.69	19.00	18.76
		RB6#0	21.61	21.30	20.65	18.29	17.98	17.33
		RB6#9	21.58	21.25	20.64	18.26	17.93	17.32
		RB15#0	21.59	21.32	20.64	18.27	18.00	17.32

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.56	23.08	22.79	20.24	19.76	19.47
		RB1#13	23.51	23.04	22.75	20.19	19.72	19.43
		RB1#24	23.58	23.05	22.83	20.26	19.73	19.51
		RB15#0	22.35	22.06	21.81	19.03	18.74	18.49
		RB15#10	22.40	21.98	21.75	19.08	18.66	18.43
		RB25#0	22.38	22.00	21.80	19.06	18.68	18.48
	16QAM	RB1#0	22.31	22.38	21.81	18.99	19.06	18.49
		RB1#13	22.24	22.34	21.77	18.92	19.02	18.45
		RB1#24	22.31	22.29	21.81	18.99	18.97	18.49
		RB15#0	21.40	21.01	20.81	18.08	17.69	17.49
		RB15#10	21.46	20.93	20.78	18.14	17.61	17.46
		RB25#0	21.42	20.99	20.82	18.10	17.67	17.50
10.0	QPSK	RB1#0	23.42	22.82	22.89	20.10	19.50	19.57
		RB1#25	23.28	22.80	22.88	19.96	19.48	19.56
		RB1#49	23.28	22.77	22.84	19.96	19.45	19.52
		RB25#0	22.20	21.85	21.99	18.88	18.53	18.67
		RB25#25	22.29	21.71	21.85	18.97	18.39	18.53
		RB50#0	22.29	21.80	21.93	18.97	18.48	18.61
	16QAM	RB1#0	22.44	22.35	22.05	19.12	19.03	18.73
		RB1#25	22.31	22.32	22.01	18.99	19.00	18.69
		RB1#49	22.30	22.30	21.98	18.98	18.98	18.66
		RB25#0	21.30	20.85	20.98	17.98	17.53	17.66
		RB25#25	21.41	20.75	20.89	18.09	17.43	17.57
		RB50#0	21.28	20.77	20.90	17.96	17.45	17.58

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For Band12: Antenna Gain = -0.67dBi = -2.82dBd (0dBd=2.15dBi)

Cable Loss=0.5dB* (provided by the applicant)

Limit: ERP ≤ 34.77dBm

LTE Band 13

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	22.39	22.75	23.15	19.03	19.39	19.79
		RB1#13	22.36	22.68	23.16	19.00	19.32	19.80
		RB1#24	22.34	22.66	23.10	18.98	19.30	19.74
		RB15#0	21.37	21.69	22.05	18.01	18.33	18.69
		RB15#10	21.39	21.58	21.90	18.03	18.22	18.54
		RB25#0	21.37	21.61	21.99	18.01	18.25	18.63
	16QAM	RB1#0	21.71	21.75	21.88	18.35	18.39	18.52
		RB1#13	21.66	21.68	21.83	18.30	18.32	18.47
		RB1#24	21.60	21.70	21.82	18.24	18.34	18.46
		RB15#0	20.35	20.69	21.10	16.99	17.33	17.74
		RB15#10	20.37	20.57	20.92	17.01	17.21	17.56
		RB25#0	20.39	20.63	21.03	17.03	17.27	17.67
10.0	QPSK	RB1#0	/	22.92	/	/	19.56	/
		RB1#25	/	22.89	/	/	19.53	/
		RB1#49	/	22.84	/	/	19.48	/
		RB25#0	/	21.87	/	/	18.51	/
		RB25#25	/	21.83	/	/	18.47	/
		RB50#0	/	21.86	/	/	18.50	/
	16QAM	RB1#0	/	22.00	/	/	18.64	/
		RB1#25	/	21.95	/	/	18.59	/
		RB1#49	/	21.90	/	/	18.54	/
		RB25#0	/	20.97	/	/	17.61	/
		RB25#25	/	20.90	/	/	17.54	/
		RB50#0	/	20.89	/	/	17.53	/

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)
 For Band13: Antenna Gain = -0.71dBi = -2.86dBd (0dBd=2.15dBi)
 Cable Loss=0.5dB* (provided by the applicant)
 Limit: ERP≤34.77dBm

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	19.27	18.94	18.55	18.05	17.72	17.33
		RB1#13	19.27	18.97	18.56	18.05	17.75	17.34
		RB1#24	19.29	18.95	18.57	18.07	17.73	17.35
		RB15#0	19.29	18.80	18.63	18.07	17.58	17.41
		RB15#10	19.28	18.79	18.63	18.06	17.57	17.41
		RB25#0	19.28	18.77	18.59	18.06	17.55	17.37
	16QAM	RB1#0	19.45	18.72	18.55	18.23	17.50	17.33
		RB1#13	19.44	18.77	18.57	18.22	17.55	17.35
		RB1#24	19.48	18.70	18.56	18.26	17.48	17.34
		RB15#0	19.30	18.75	18.68	18.08	17.53	17.46
		RB15#10	19.33	18.73	18.68	18.11	17.51	17.46
		RB25#0	19.30	18.82	18.70	18.08	17.60	17.48
10.0	QPSK	RB1#0	19.24	18.84	18.52	18.02	17.62	17.30
		RB1#25	19.27	18.84	18.54	18.05	17.62	17.32
		RB1#49	19.19	18.76	18.54	17.97	17.54	17.32
		RB25#0	19.24	18.77	18.58	18.02	17.55	17.36
		RB25#25	19.34	18.73	18.61	18.12	17.51	17.39
		RB50#0	19.28	18.79	18.63	18.06	17.57	17.41
	16QAM	RB1#0	19.41	18.93	18.46	18.19	17.71	17.24
		RB1#25	19.43	18.96	18.46	18.21	17.74	17.24
		RB1#49	19.37	18.89	18.44	18.15	17.67	17.22
		RB25#0	19.31	18.85	18.69	18.09	17.63	17.47
		RB25#25	19.41	18.83	18.69	18.19	17.61	17.47
		RB50#0	19.30	18.81	18.66	18.08	17.59	17.44

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	19.16	19.24	18.86	17.94	18.02	17.64
		RB1#38	19.24	19.28	18.94	18.02	18.06	17.72
		RB1#74	19.13	19.11	18.89	17.91	17.89	17.67
		RB36#0	19.16	19.15	18.90	17.94	17.93	17.68
		RB36#39	19.24	19.11	18.90	18.02	17.89	17.68
		RB75#0	19.24	19.14	18.90	18.02	17.92	17.68
	16QAM	RB1#0	19.09	19.37	18.97	17.87	18.15	17.75
		RB1#38	19.15	19.41	19.09	17.93	18.19	17.87
		RB1#74	19.09	19.26	19.03	17.87	18.04	17.81
		RB36#0	19.18	19.28	18.93	17.96	18.06	17.71
		RB36#39	19.25	19.21	18.93	18.03	17.99	17.71
		RB75#0	19.27	19.18	18.90	18.05	17.96	17.68
20.0	QPSK	RB1#0	19.15	19.03	18.70	17.93	17.81	17.48
		RB1#50	19.23	19.16	18.85	18.01	17.94	17.63
		RB1#99	19.11	18.95	18.79	17.89	17.73	17.57
		RB50#0	19.19	19.19	18.97	17.97	17.97	17.75
		RB50#50	19.35	19.15	18.89	18.13	17.93	17.67
		RB100#0	19.27	19.16	18.94	18.05	17.94	17.72
	16QAM	RB1#0	19.18	19.08	19.14	17.96	17.86	17.92
		RB1#50	19.25	19.18	19.28	18.03	17.96	18.06
		RB1#99	19.16	18.96	19.18	17.94	17.74	17.96
		RB50#0	19.20	19.30	19.04	17.98	18.08	17.82
		RB50#50	19.39	19.22	18.91	18.17	18.00	17.69
		RB100#0	19.28	19.19	18.95	18.06	17.97	17.73

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For Band 41: Antenna Gain = -0.42dBi

Cable Loss=0.8dB* (provided by the applicant)

Limit: ERP ≤ 33.0dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.22	13
	Middle	3.35	13
	High	3.42	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.28	13
	Middle	3.52	13
	High	3.25	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.17	13
	Middle	3.32	13
	High	3.25	13
HSDPA (16QAM)	Low	4.22	13
	Middle	3.52	13
	High	3.71	13
HSUPA (QPSK)	Low	3.45	13
	Middle	3.67	13
	High	3.63	13
HSPA+	Low	3.35	13
	Middle	3.24	13
	High	3.52	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.37	13
	Middle	3.25	13
	High	3.72	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.26	13
	Middle	3.25	13
	High	3.42	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.25	13
	Middle	3.24	13
	High	3.52	13
HSDPA (16QAM)	Low	4.67	13
	Middle	4.22	13
	High	4.49	13
HSUPA (QPSK)	Low	3.65	13
	Middle	3.72	13
	High	3.87	13
HSPA+	Low	3.33	13
	Middle	3.25	13
	High	3.64	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.81	5.19	4.87	13	Pass
QPSK (100RB Size)	5.51	5.58	5.51	13	Pass
16QAM (1RB Size)	5.80	6.22	5.80	13	Pass
16QAM (100RB Size)	6.25	6.44	6.41	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.01	7.40	7.28	13	Pass
QPSK (50RB Size)	8.04	8.04	7.40	13	Pass
16QAM (1RB Size)	7.44	8.33	8.49	13	Pass
16QAM (50RB Size)	4.87	2.18	8.08	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.22	5.10	4.42	13	Pass
QPSK (50RB Size)	5.51	5.48	5.45	13	Pass
16QAM (1RB Size)	6.28	5.87	5.58	13	Pass
16QAM (50RB Size)	6.41	6.25	6.28	13	Pass

LTE Band 13 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	/	3.77	/	13	Pass
QPSK (50RB Size)	/	4.64	/	13	Pass
16QAM (1RB Size)	/	4.96	/	13	Pass
16QAM (50RB Size)	/	5.54	/	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.29	4.17	4.03	13	Pass
QPSK (100RB Size)	4.81	4.75	4.58	13	Pass
16QAM (1RB Size)	5.19	5.10	4.49	13	Pass
16QAM (100RB Size)	5.62	5.65	5.59	13	Pass

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

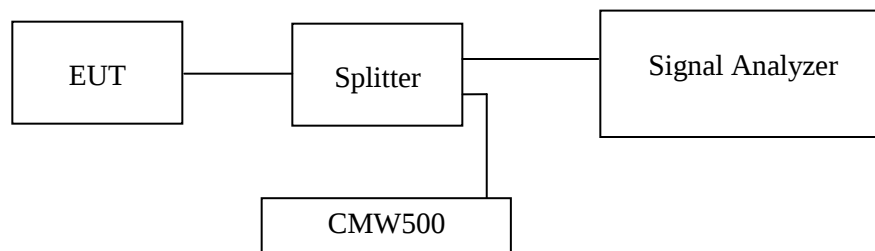
Applicable Standard

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

Test Procedure

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

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



Test Data

Environmental Conditions

Temperature:	26 °C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang from 2022-08-30 to 2022-09-12.

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	244.00	318.00
	190	836.6	245.00	318.00
	251	848.8	245.00	317.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	128	824.2	251.00	311.00
	190	836.6	251.00	315.00
	251	848.8	248.00	311.00

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.19	4.82
	836.6	4.19	4.77
	846.6	4.19	4.82
HSDPA	826.4	4.16	4.74
	836.6	4.17	4.73
	846.6	4.16	4.77
HSUPA	826.4	4.19	4.74
	836.6	4.17	4.74
	846.6	4.17	4.76

PCS Band (Part 24E)

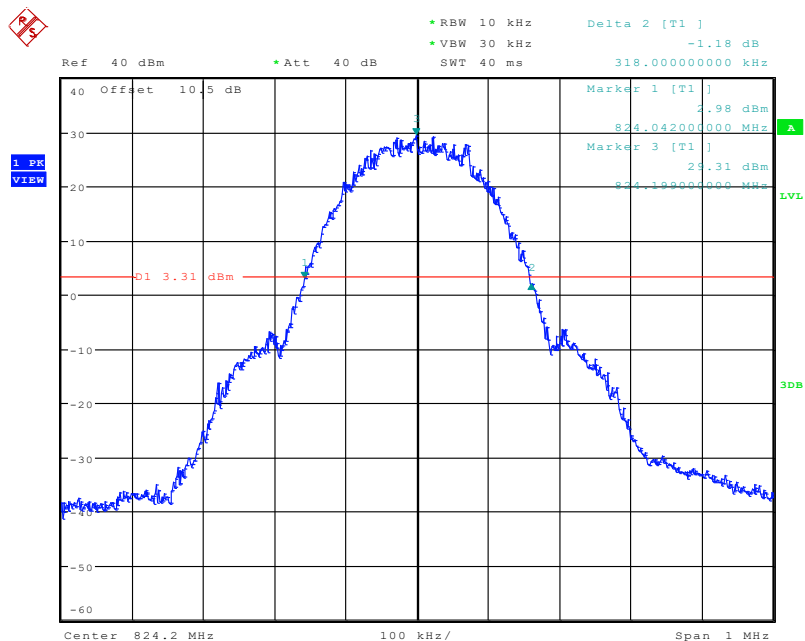
Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	244.00	312.00
	661	1880.0	246.00	315.00
	810	1909.8	243.00	321.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	512	1850.2	279.00	378.00
	661	1880.0	278.00	373.00
	810	1909.8	276.00	371.00

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.305	7.485
	1880.0	4.305	7.530
	1907.6	4.290	6.330
HSDPA	1852.4	4.215	5.610
	1880.0	4.215	4.980
	1907.6	4.215	5.295
HSUPA	1852.4	4.200	4.785
	1880.0	4.185	4.785
	1907.6	4.185	4.905

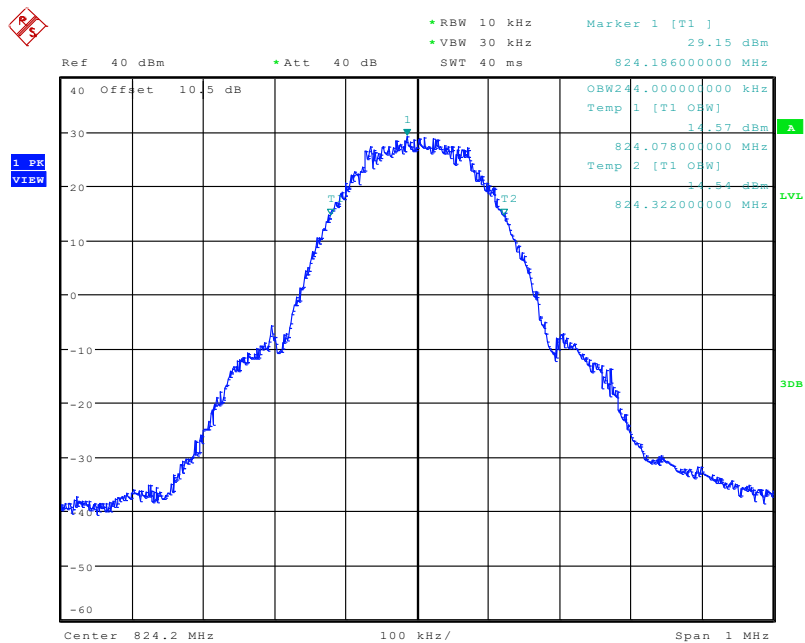
Cellular Band

26 dB Emission Bandwidth for GSM(GMSK) Mode, Low channel



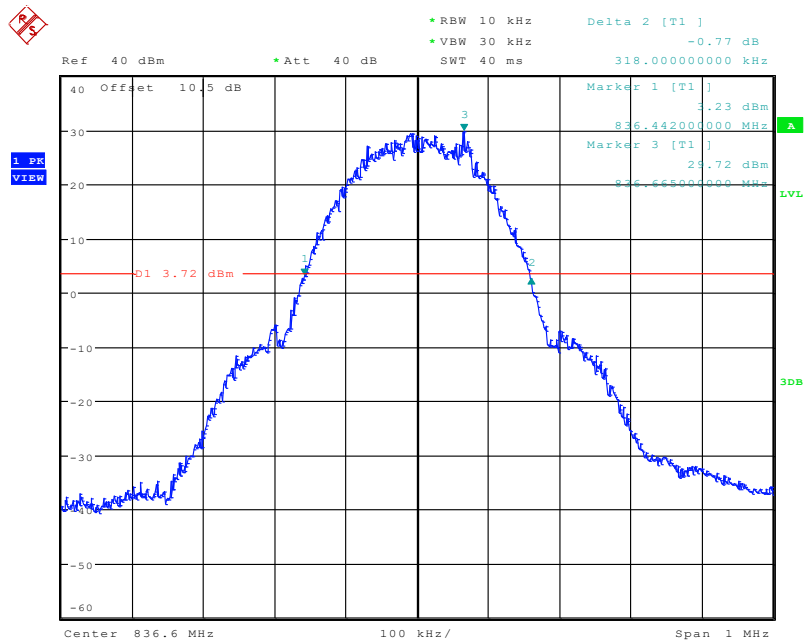
Date: 30.AUG.2022 09:59:52

99% Occupied Bandwidth for GSM(GMSK) Mode, Low channel



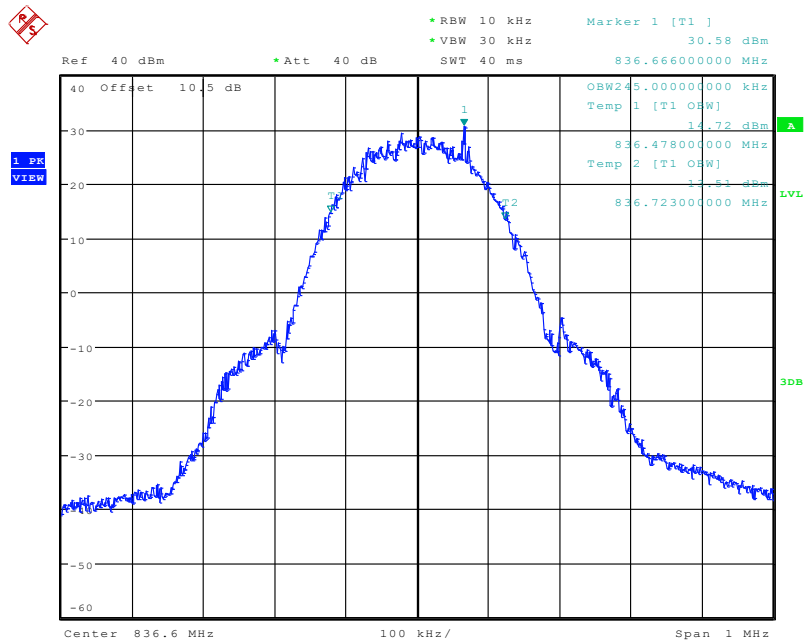
Date: 30.AUG.2022 09:59:14

26 dB Emission Bandwidth for GSM(GMSK) Mode, Middle channel



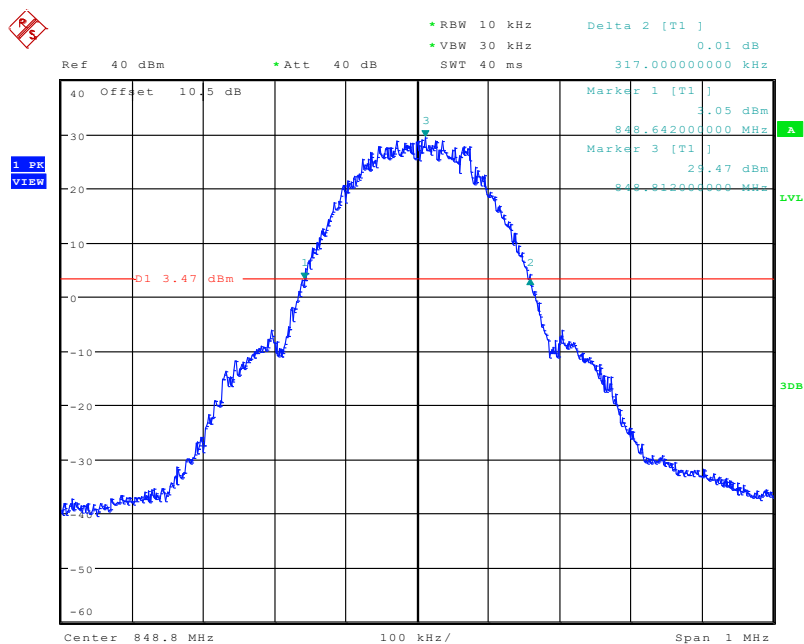
Date: 30.AUG.2022 10:04:26

99% Occupied Bandwidth for GSM(GMSK) Mode, Middle channel



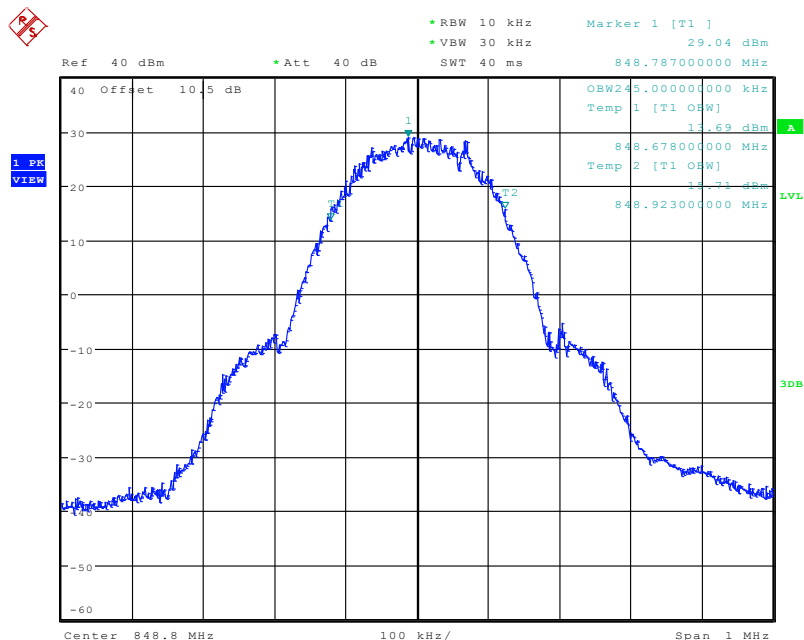
Date: 30.AUG.2022 10:03:49

26 dB Emission Bandwidth for GSM(GMSK) Mode, High channel



Date: 30.AUG.2022 10:26:03

99% Occupied Bandwidth for GSM(GMSK) Mode, High channel



Date: 30.AUG.2022 10:25:24

Ref 40 dBm *Att 40 dB RBW 10 kHz VBW 30 kHz SWT 40 ms Delta 2 [T1] 0.16 dB 311.000000000 kHz

40 Offset 10.5 dB

Marker 1 [T1] -0.11 dBm 824.046000000 MHz

Marker 3 [T1] 26.19 dBm 824.250000000 MHz

30dB

Center 824.2 MHz 100 kHz/ Span 1 MHz

Date: 30.AUG.2022 10:44:28

Ref 40 dBm

*Att 40 dB

*RBW 10 kHz

*VBW 30 kHz

SWT 40 ms

Marker 1 [T1]

25.32 dBm

824.237000000 MHz

40 Offset 10.5 dB

OBW2 1.000000000 kHz

Temp 1 [T1 OSW]

11.12 dBm

824.075000000 MHz

Temp 2 [T1 OSW]

11.26 dBm

824.326000000 MHz

1

T1

T2

Center 824.2 MHz

100 kHz/

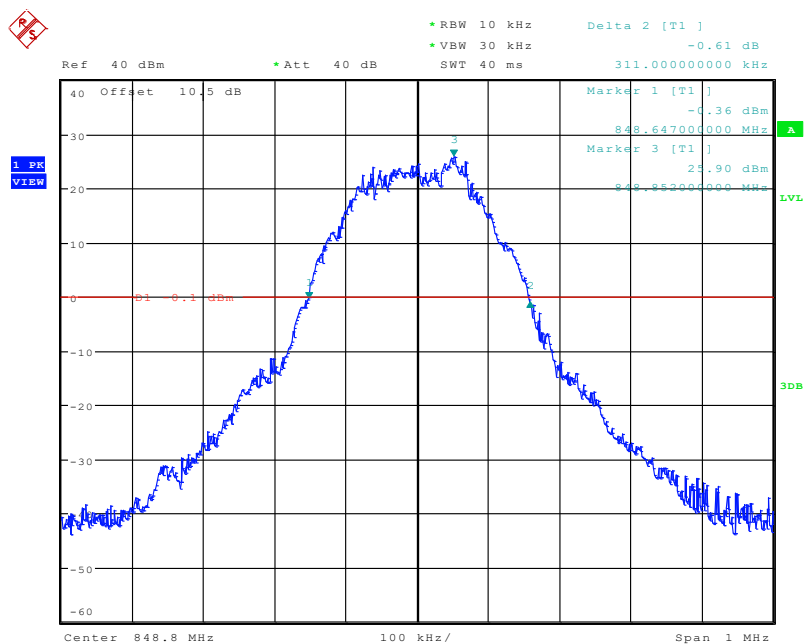
Span 1 MHz

Date: 30.AUG.2022 10:43:49



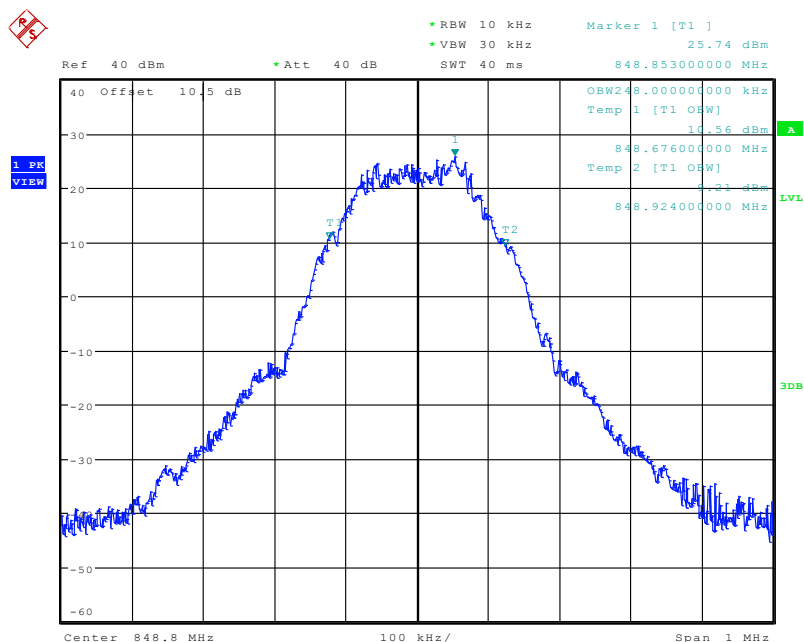
FCC -2G,3G,4G

26 dB Emission Bandwidth for GSM(8PSK) Mode, High channel



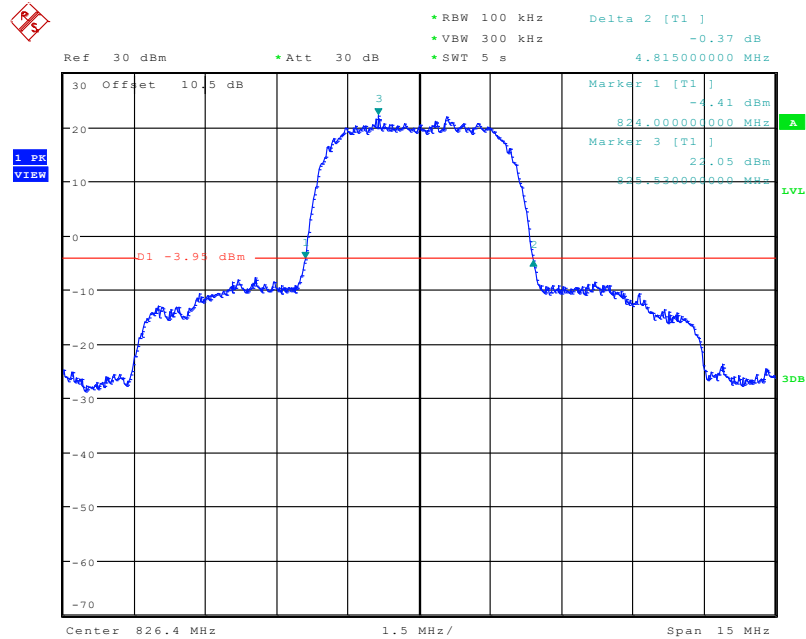
Date: 30.AUG.2022 10:54:52

99% Occupied Bandwidth for GSM(8PSK) Mode, High channel



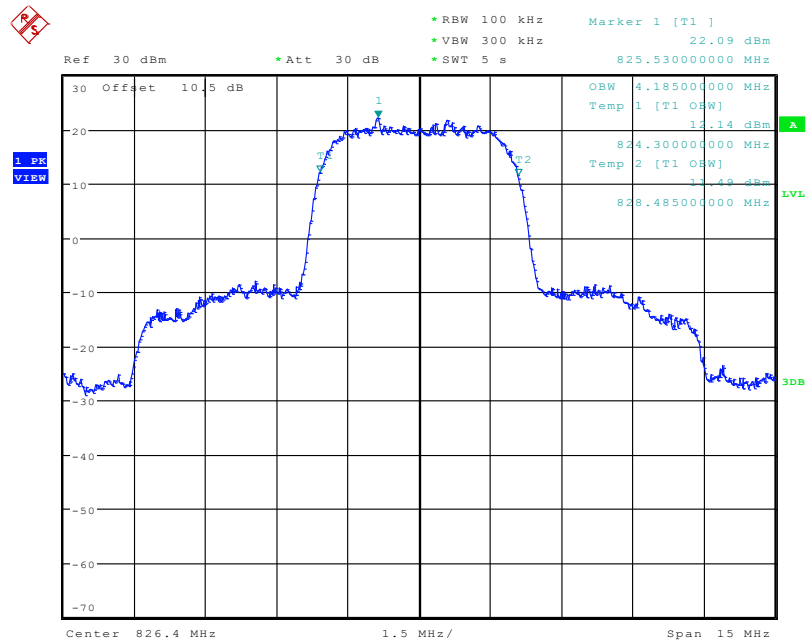
Date: 30.AUG.2022 10:54:14

26 dB Emission Bandwidth for RMC (BPSK) Mode, Low channel

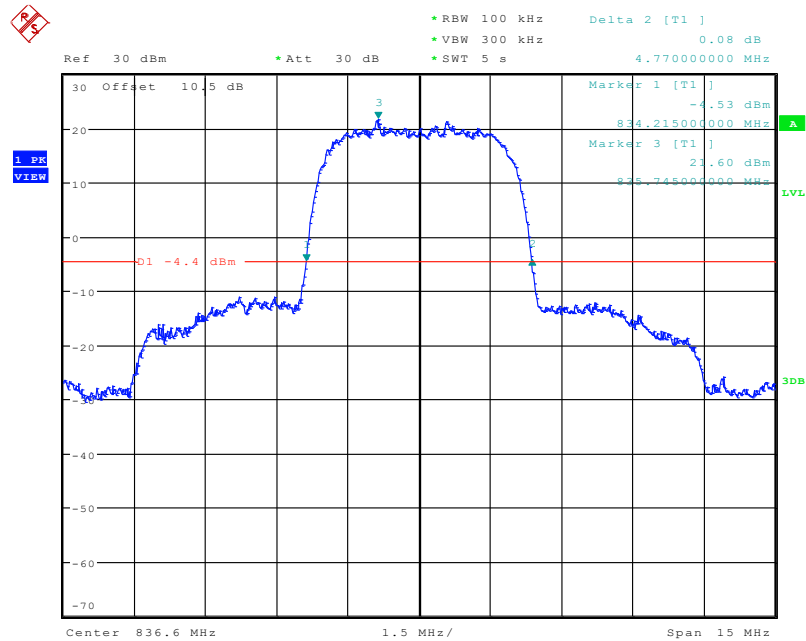


Date: 30.AUG.2022 15:19:43

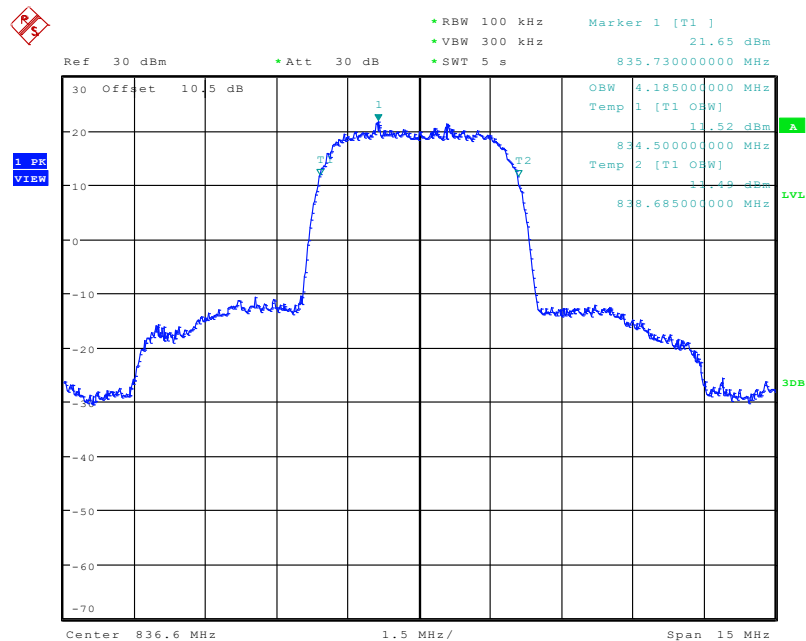
99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



Date: 30.AUG.2022 15:19:05

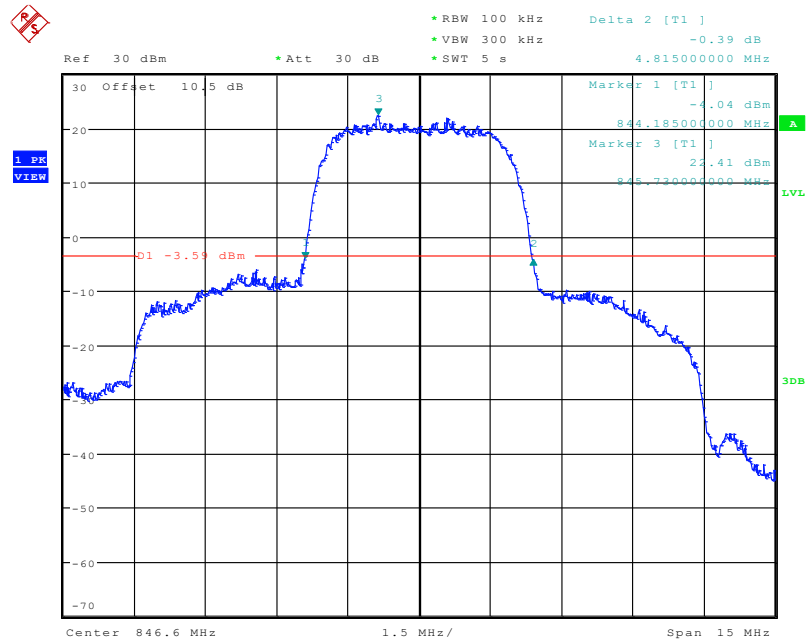
26 dB Emission Bandwidth for RMC (BPSK) Mode, Middle channel

Date: 30.AUG.2022 15:25:16

99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel

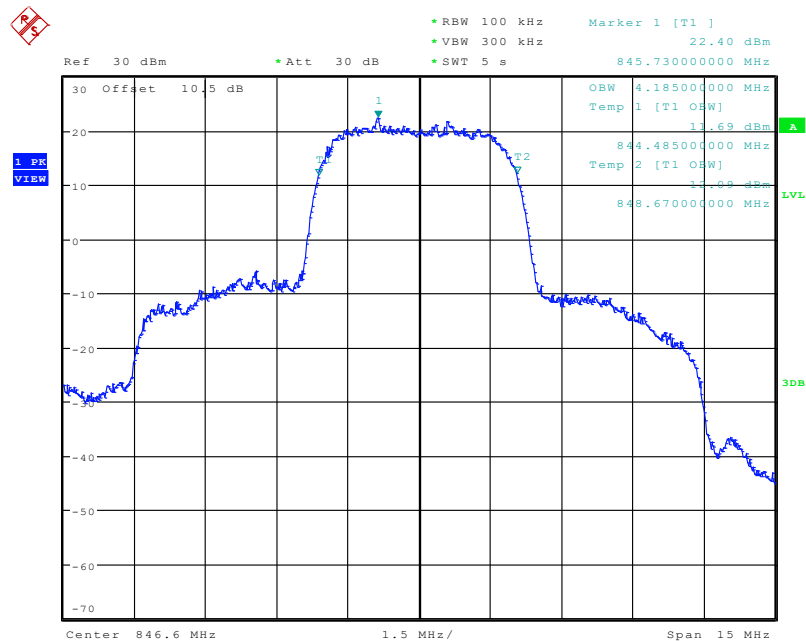
Date: 30.AUG.2022 15:24:38

26 dB Emission Bandwidth for RMC (BPSK) Mode, High channel

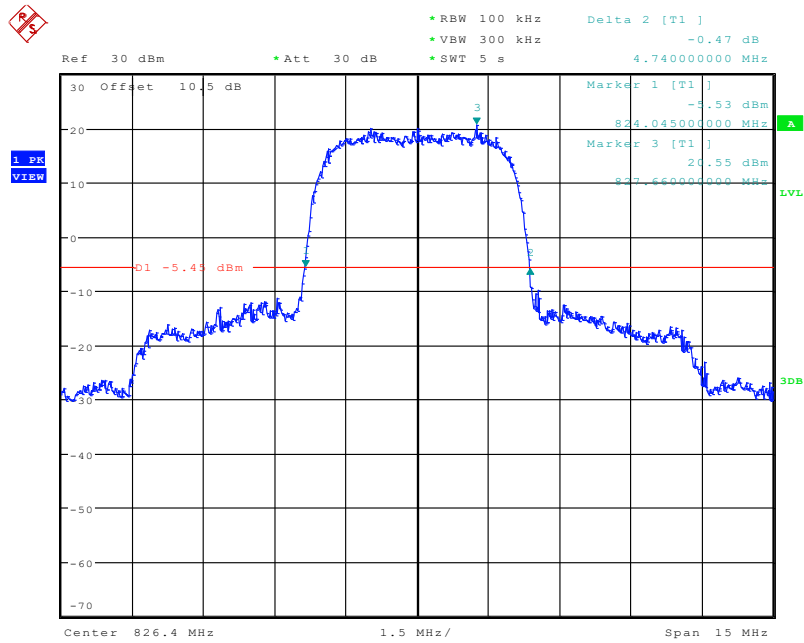


Date: 30.AUG.2022 15:28:35

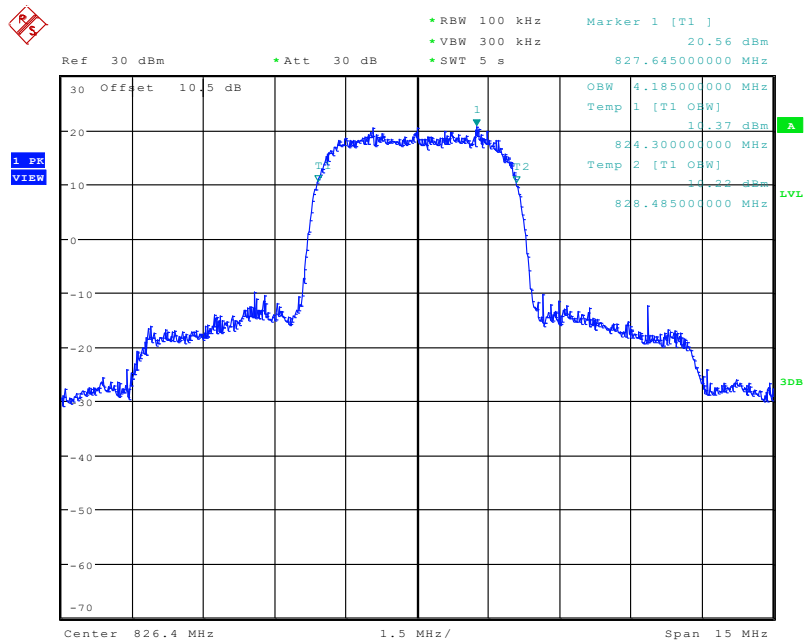
99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



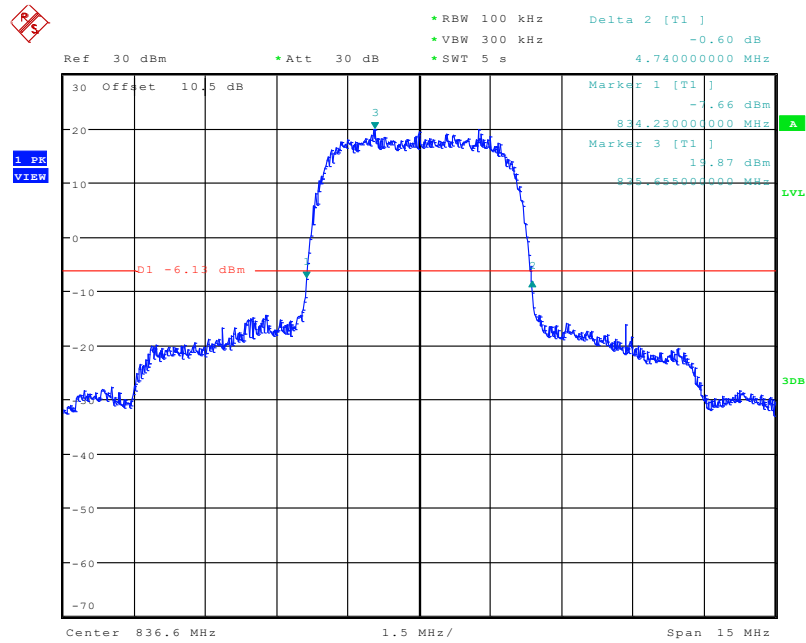
Date: 30.AUG.2022 15:27:58

26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Low channel

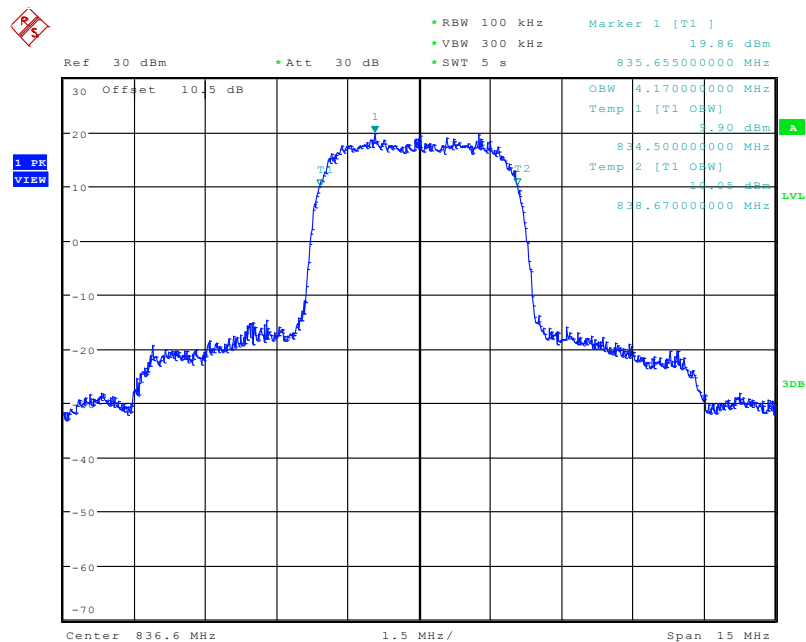
Date: 30.AUG.2022 19:45:10

99% Occupied Bandwidth for HSUPA (QPSK) Mode, Low channel

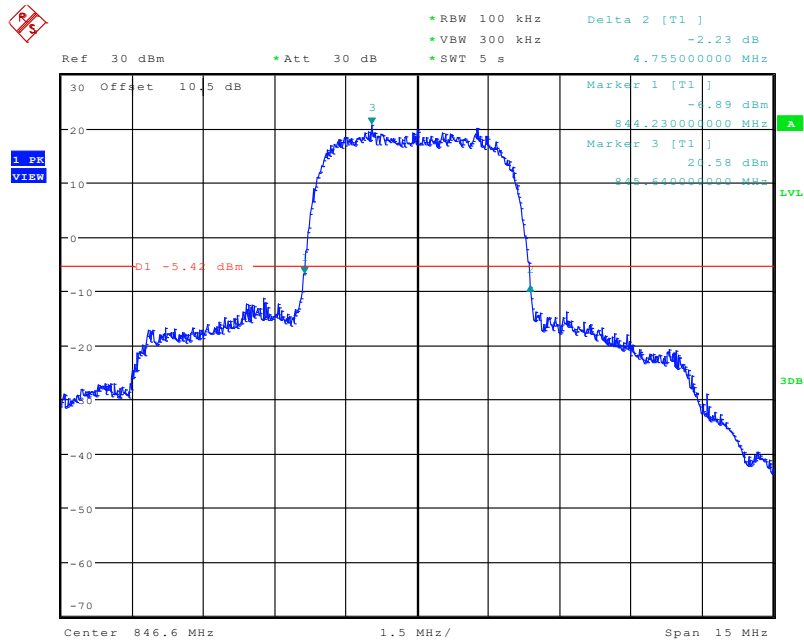
Date: 30.AUG.2022 19:44:33

26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Middle channel

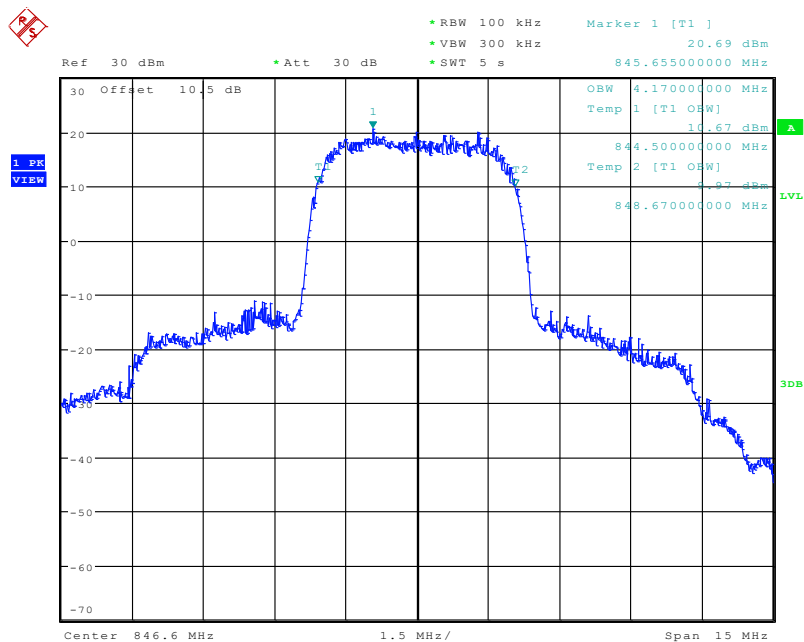
Date: 30.AUG.2022 19:50:03

99% Occupied Bandwidth for HSUPA (QPSK) Mode, Middle channel

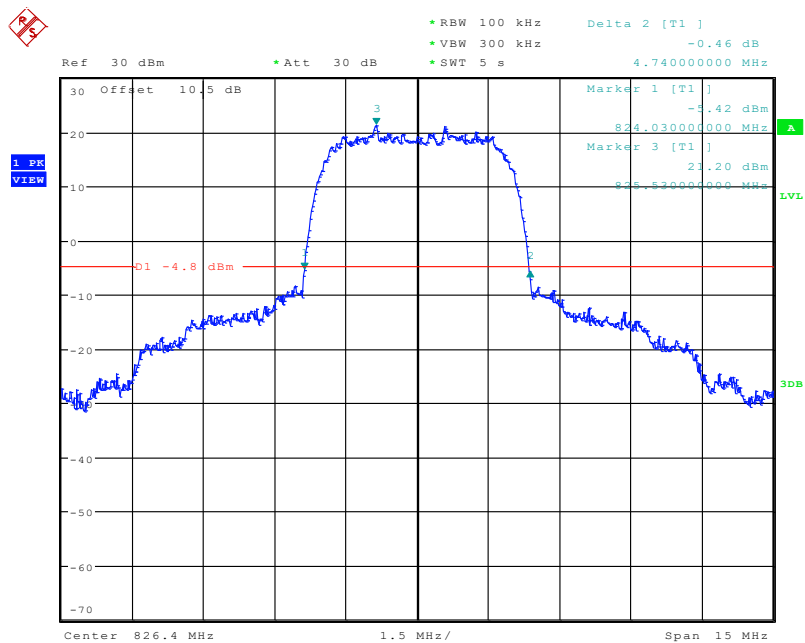
Date: 30.AUG.2022 19:49:24

26 dB Emission Bandwidth for HSUPA (QPSK) Mode, High channel

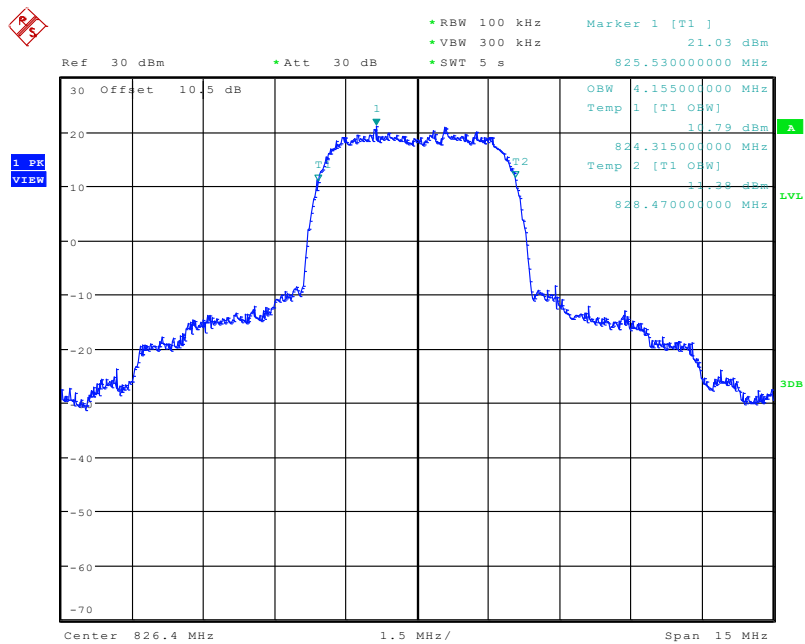
Date: 30.AUG.2022 19:56:48

99% Occupied Bandwidth for HSUPA (QPSK) Mode, High channel

Date: 30.AUG.2022 19:56:09

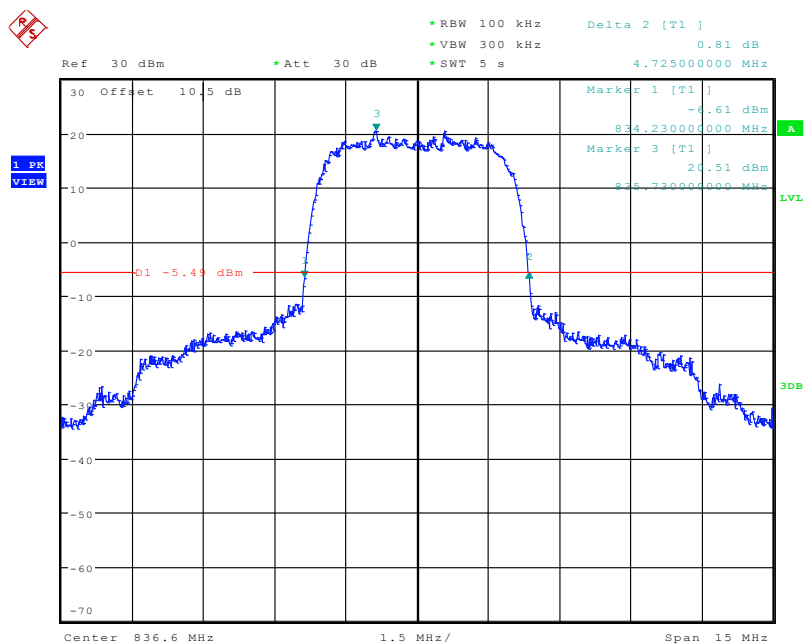
26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 30.AUG.2022 15:51:27

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

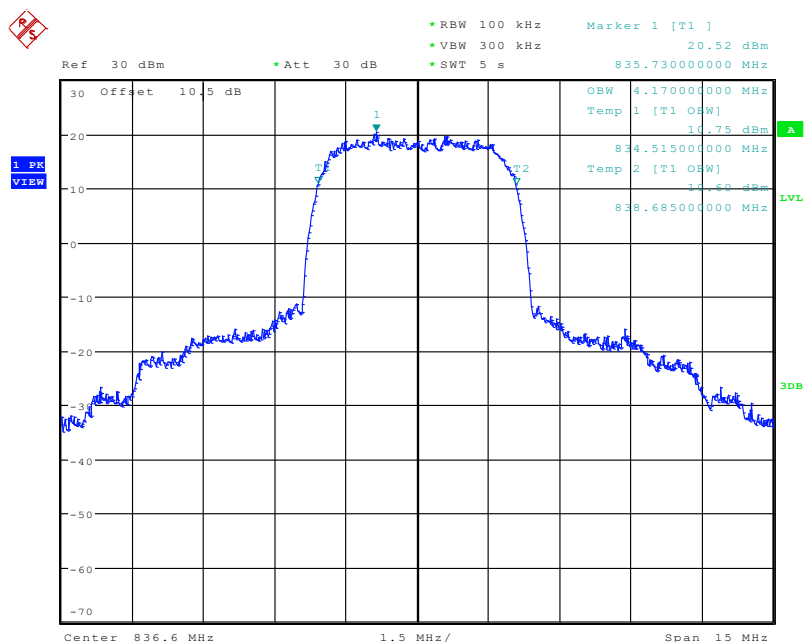
Date: 30.AUG.2022 15:50:51

26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Middle channel

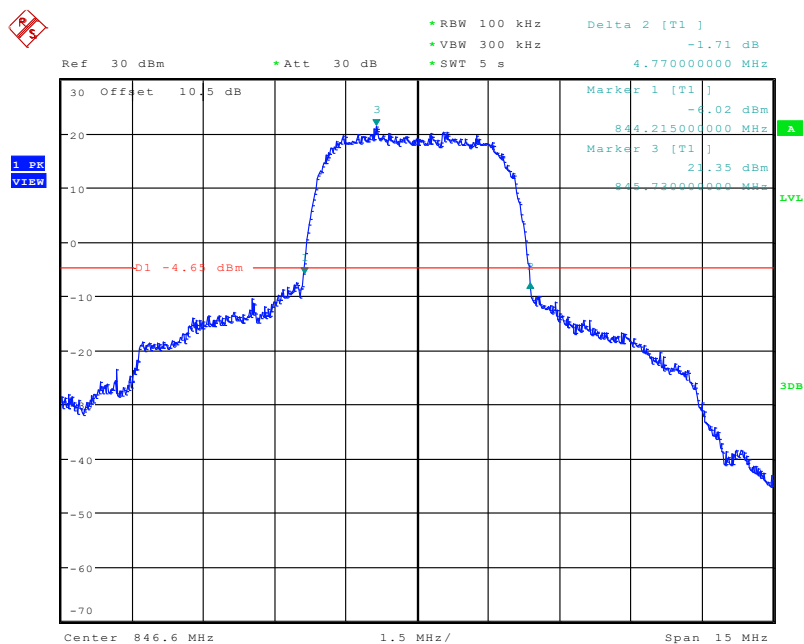


Date: 30.AUG.2022 15:43:33

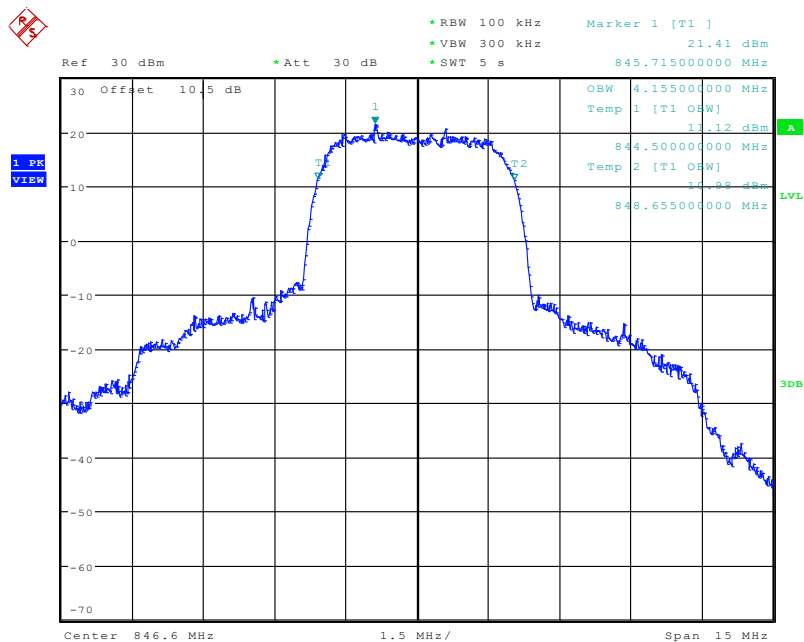
99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel



Date: 30.AUG.2022 15:42:56

26 dB Emission Bandwidth for HSDPA (16QAM) Mode, High channel

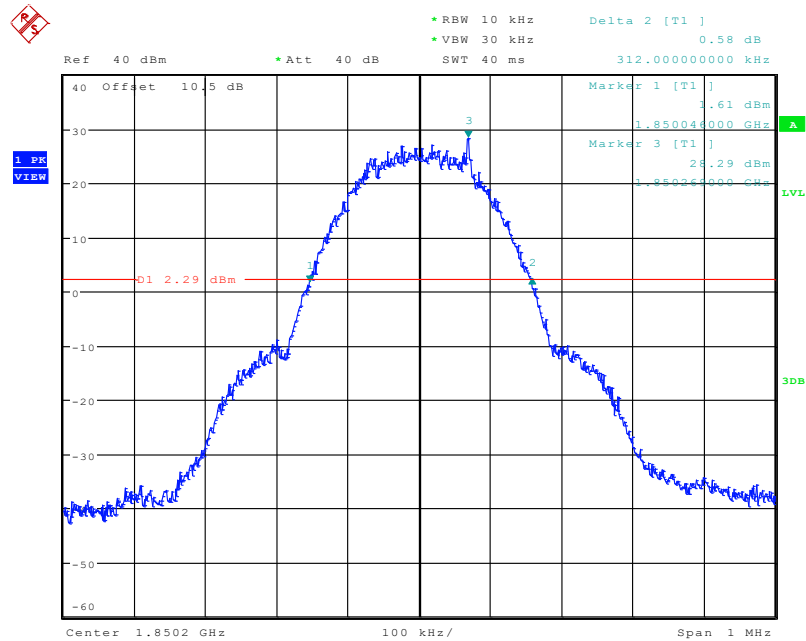
Date: 30.AUG.2022 15:47:02

99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel

Date: 30.AUG.2022 15:46:24

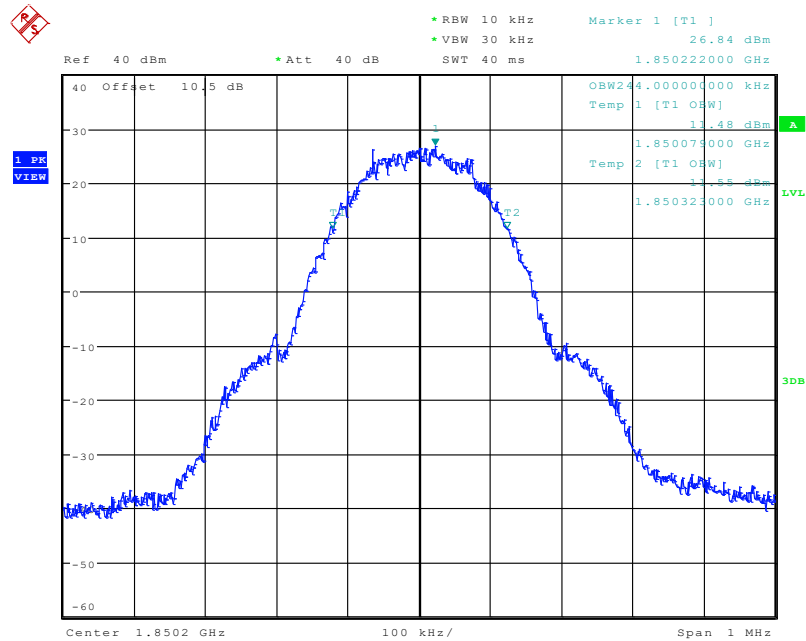
PCS Band

26 dB Emission Bandwidth for GSM(GMSK) Mode, Low channel



Date: 30.AUG.2022 11:06:11

99% Occupied Bandwidth for GSM(GMSK) Mode, Low channel

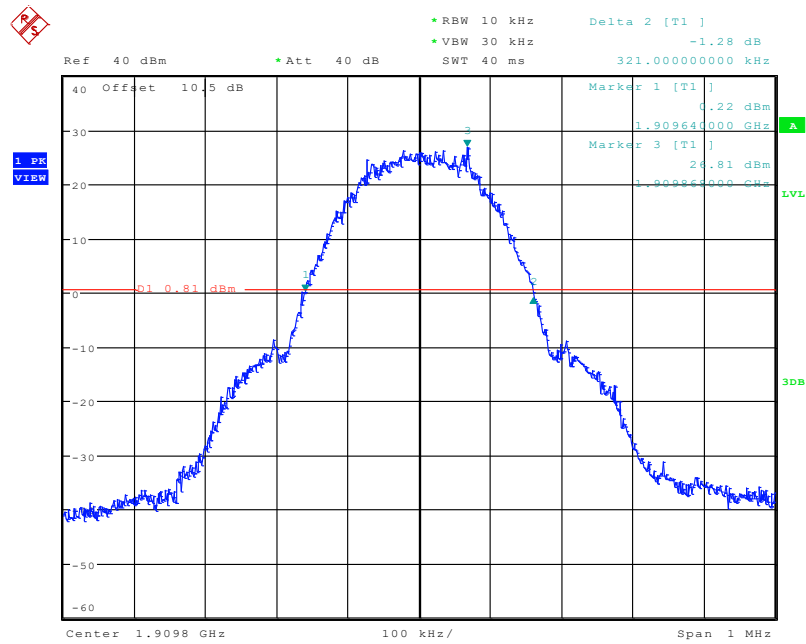


Date: 30.AUG.2022 11:05:32



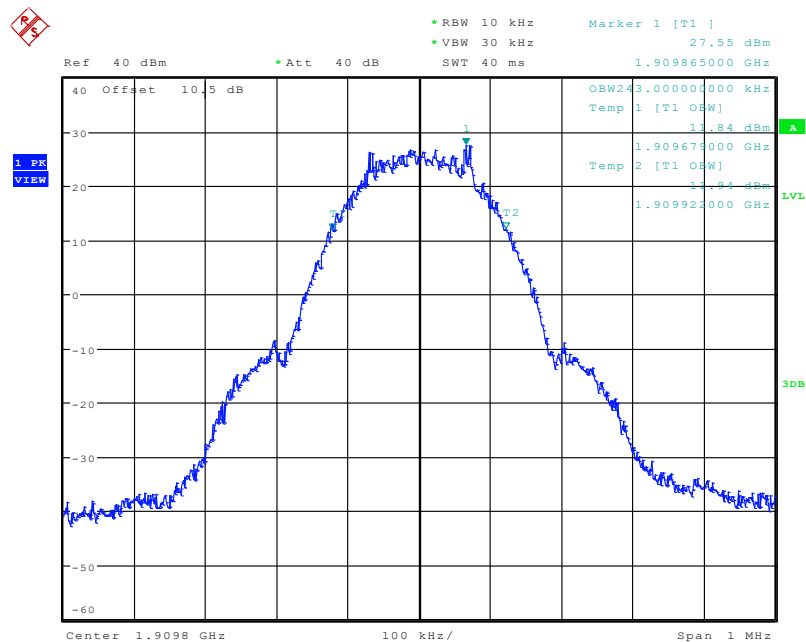
FCC -2G,3G,4G

26 dB Emission Bandwidth for GSM(GMSK) Mode, High channel



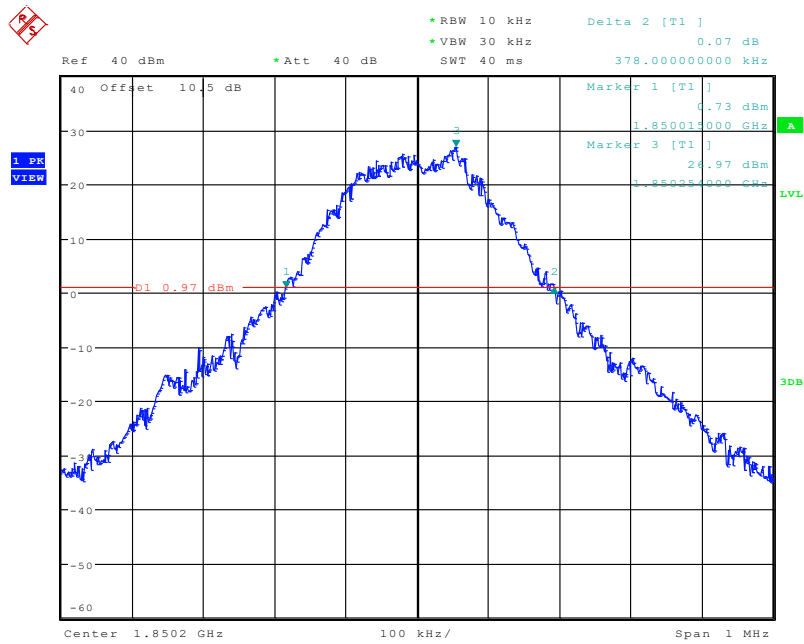
Date: 30.AUG.2022 11:17:15

99% Occupied Bandwidth for GSM(GMSK) Mode, High channel



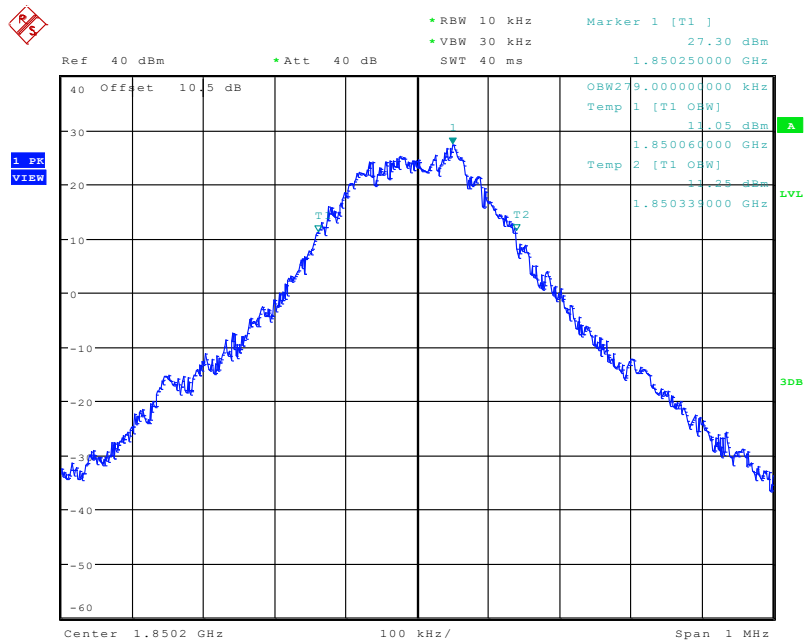
Date: 30.AUG.2022 11:16:37

26 dB Emission Bandwidth for GSM(8PSK) Mode, Low channel



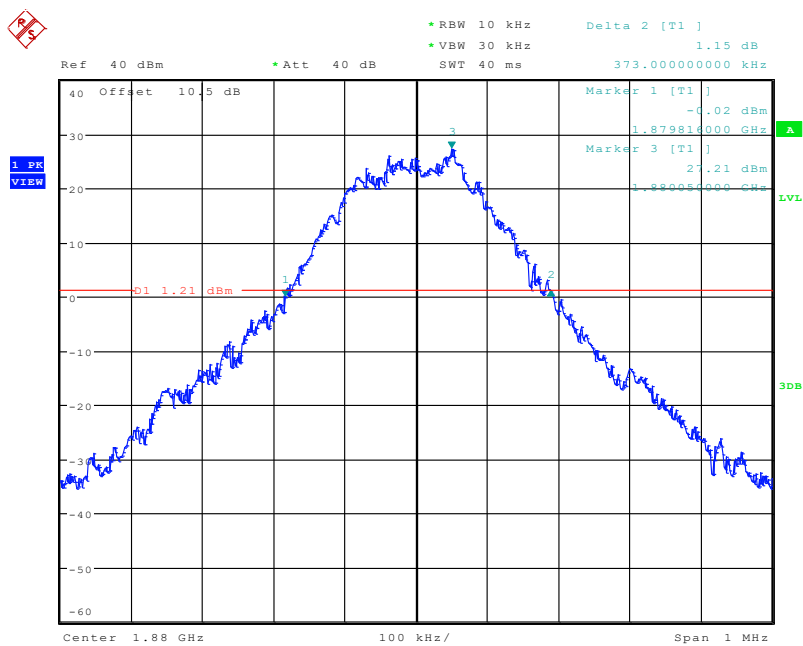
Date: 30.AUG.2022 11:25:32

99% Occupied Bandwidth for GSM(8PSK) Mode, Low channel



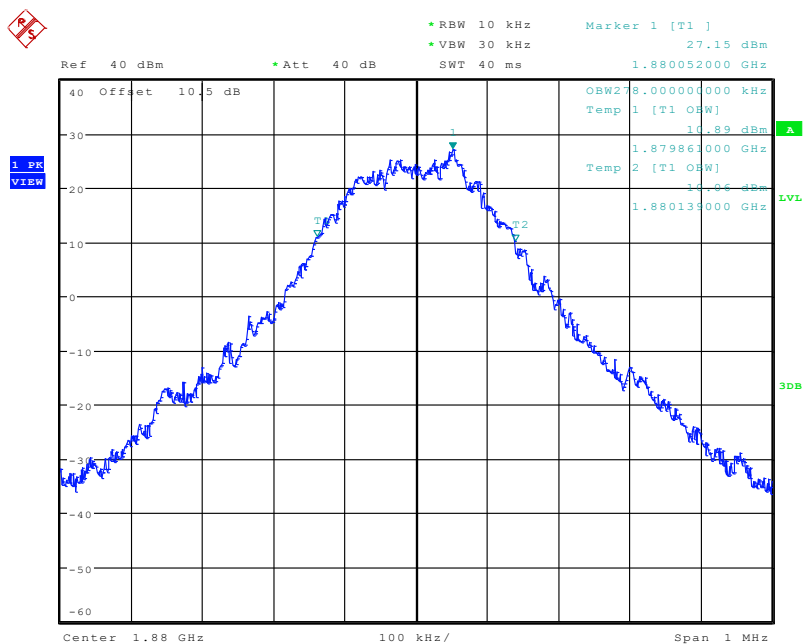
Date: 30.AUG.2022 11:24:54

26 dB Emission Bandwidth for GSM(8PSK) Mode, Middle channel

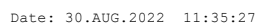


Date: 30.AUG.2022 11:31:52

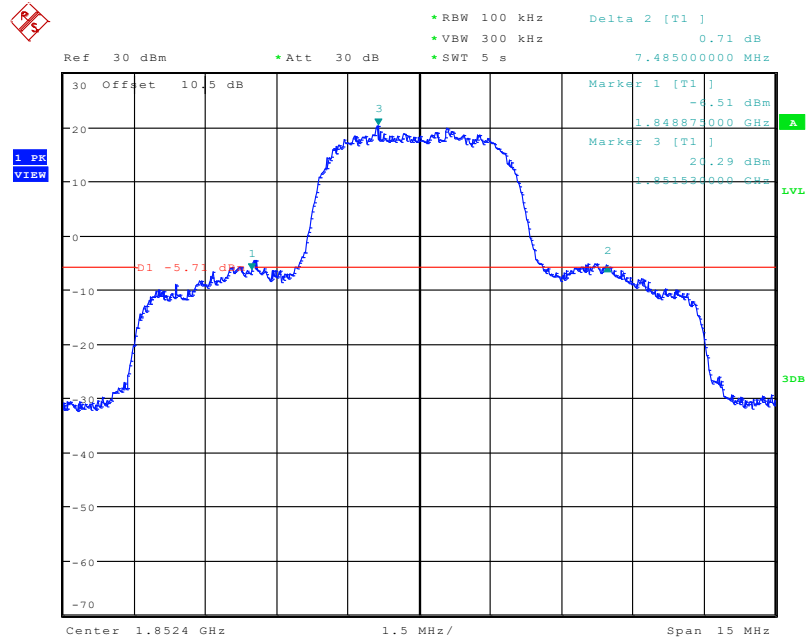
99% Occupied Bandwidth for GSM(8PSK) Mode, Middle channel



Date: 30.AUG.2022 11:31:12

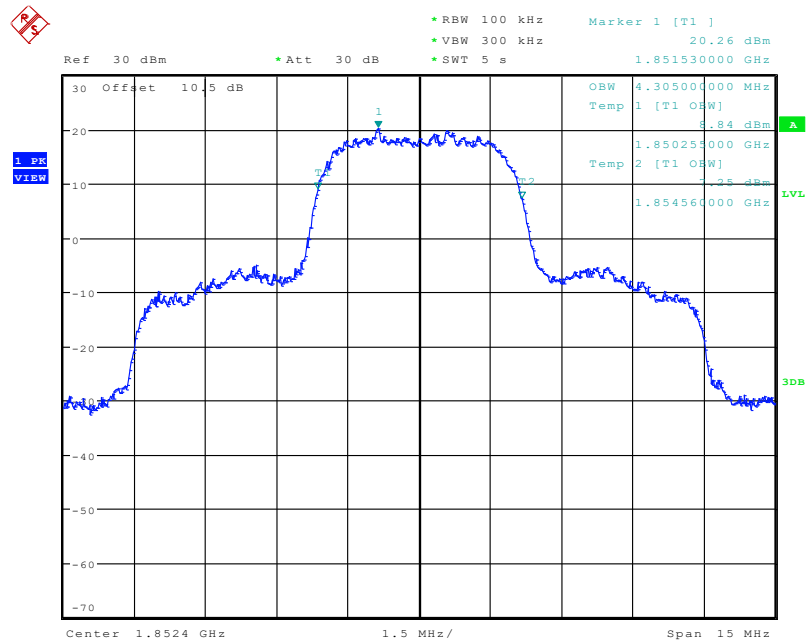


26 dB Emission Bandwidth for RMC (BPSK) Mode, Low channel

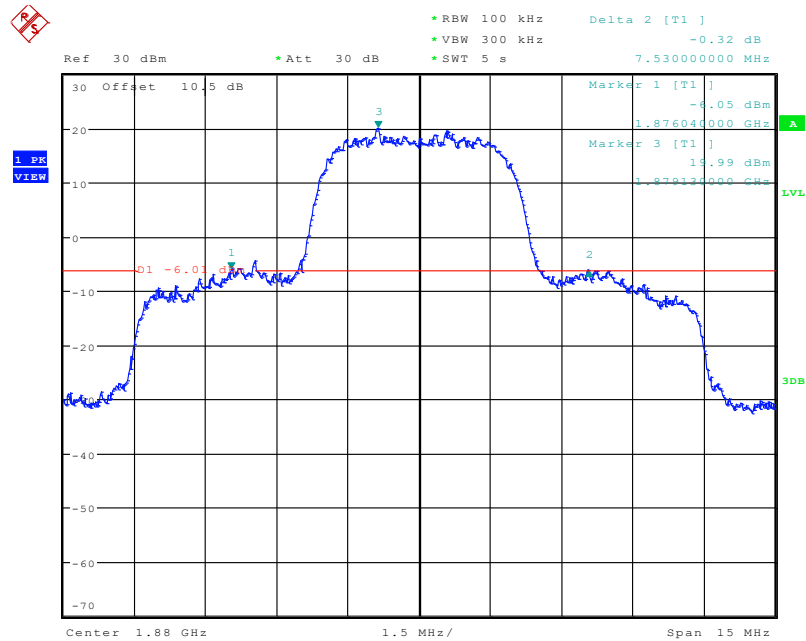


Date: 9.SEP.2022 13:45:58

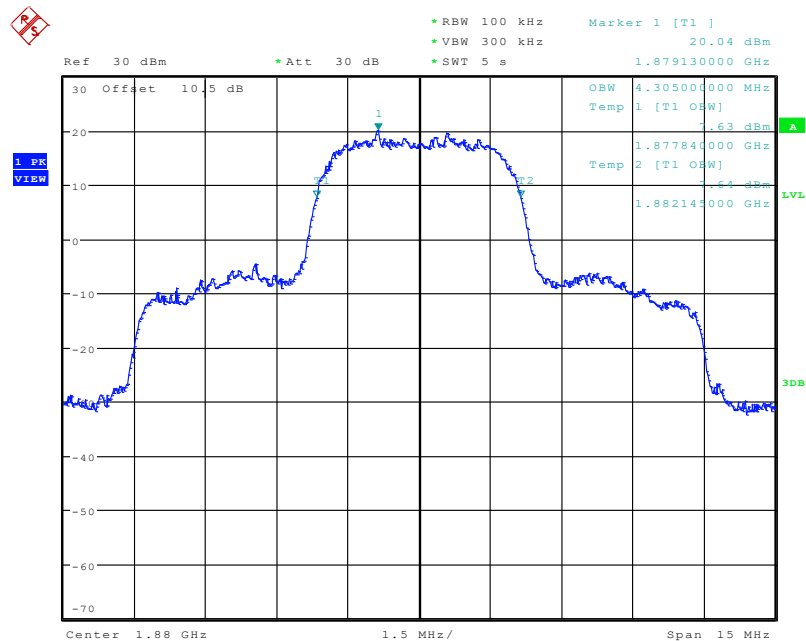
99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



Date: 9.SEP.2022 13:45:20

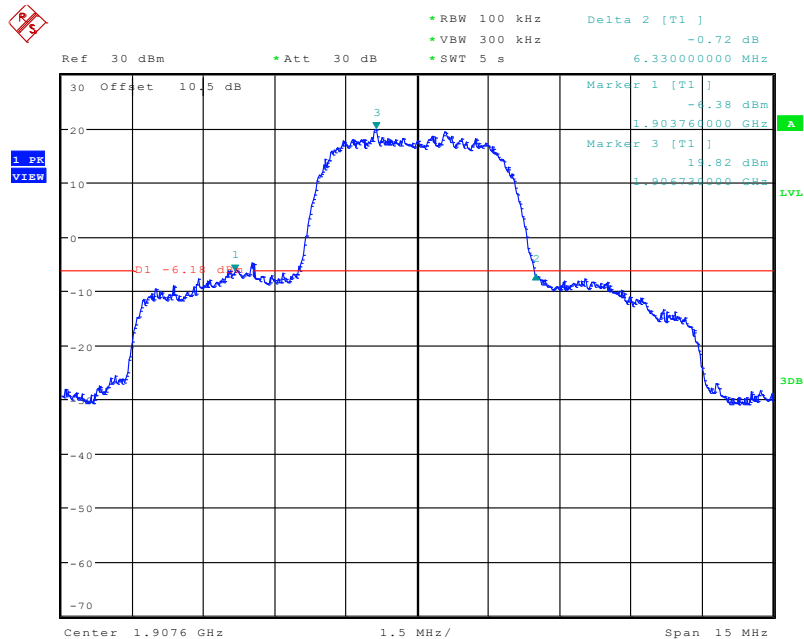
26 dB Emission Bandwidth for RMC (BPSK) Mode, Middle channel

Date: 9.SEP.2022 13:50:05

99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel

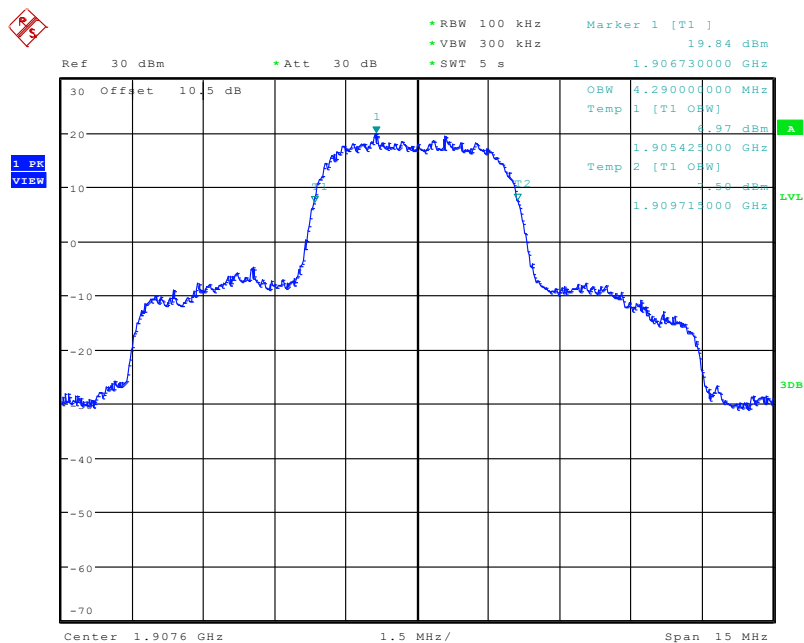
Date: 9.SEP.2022 13:49:27

26 dB Emission Bandwidth for RMC (BPSK) Mode, High channel

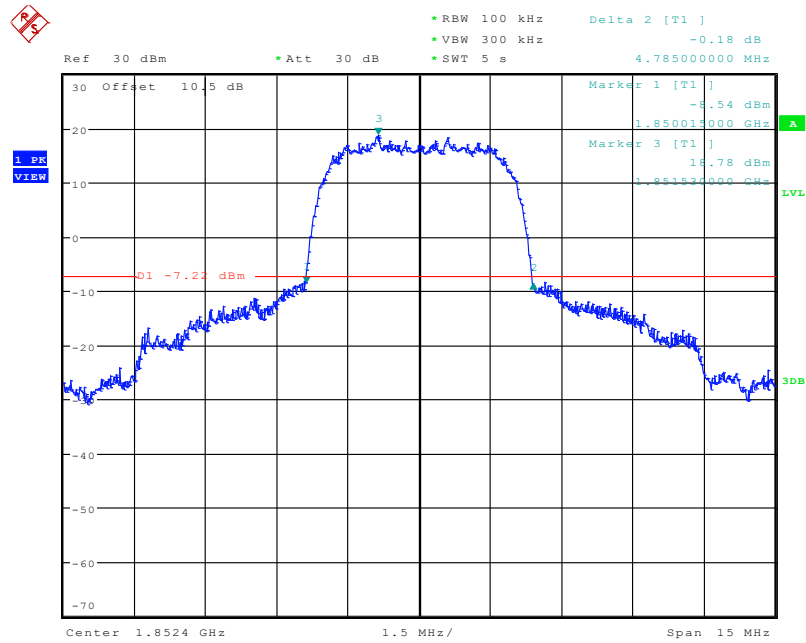


Date: 9.SEP.2022 13:53:17

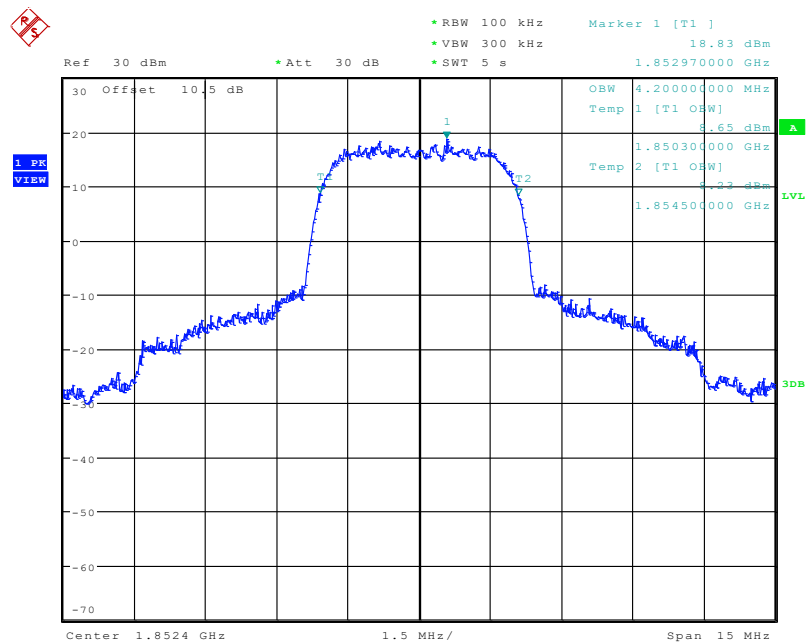
99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



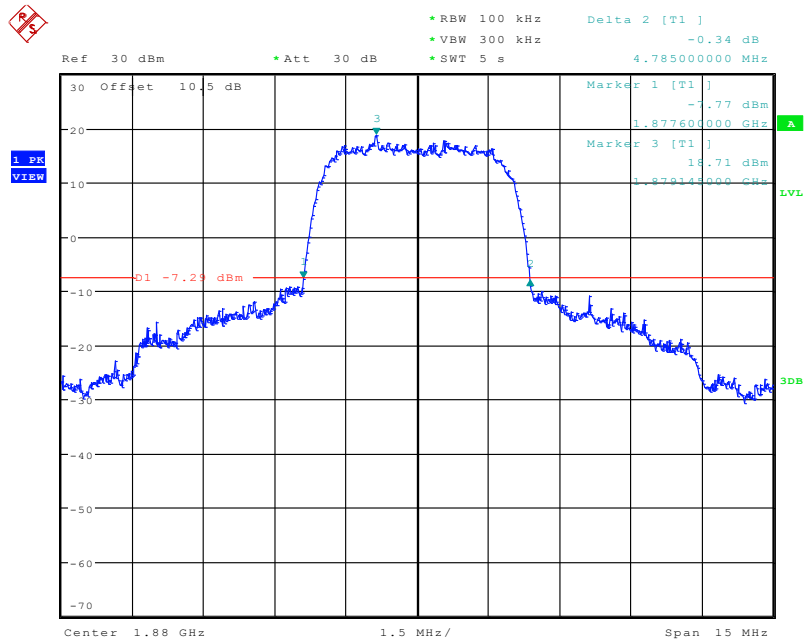
Date: 9.SEP.2022 13:52:39

26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Low channel

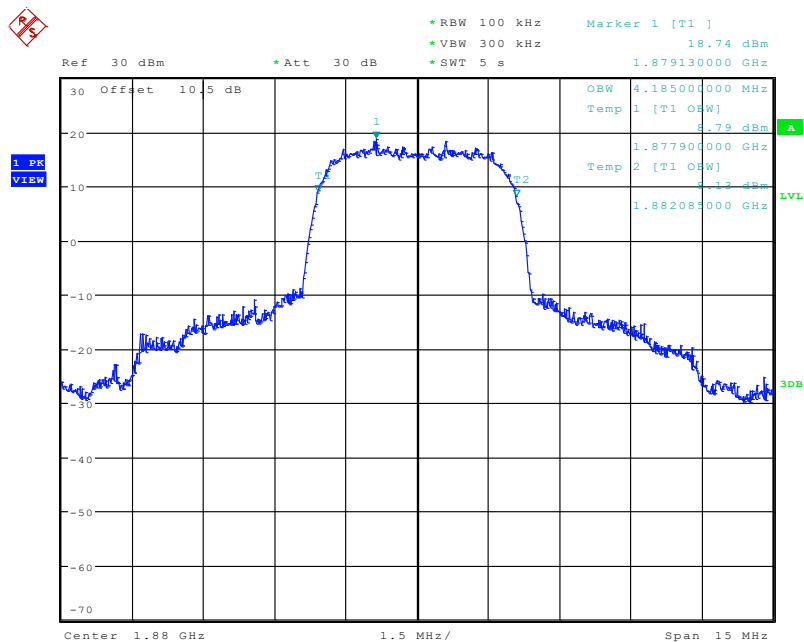
Date: 9.SEP.2022 13:11:50

99% Occupied Bandwidth for HSUPA (QPSK) Mode, Low channel

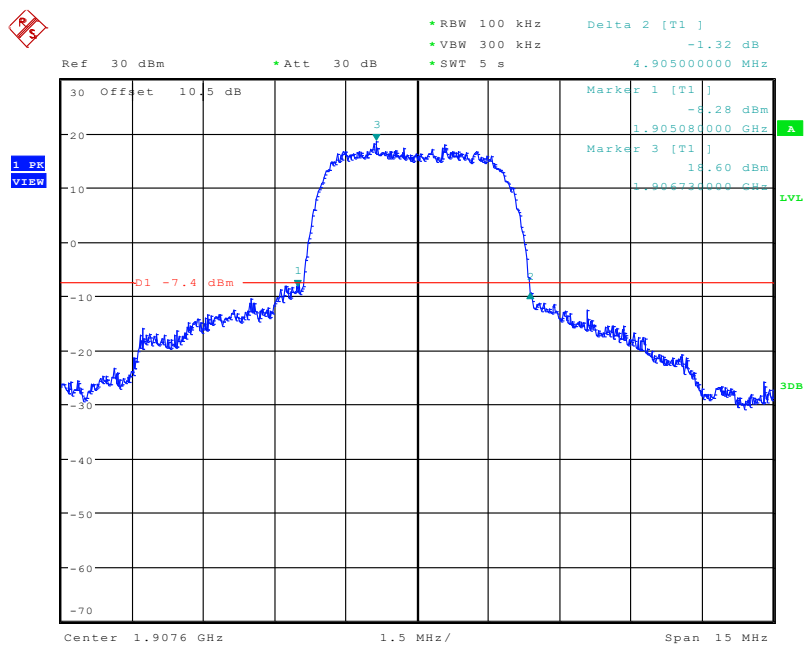
Date: 9.SEP.2022 13:11:11

26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Middle channel

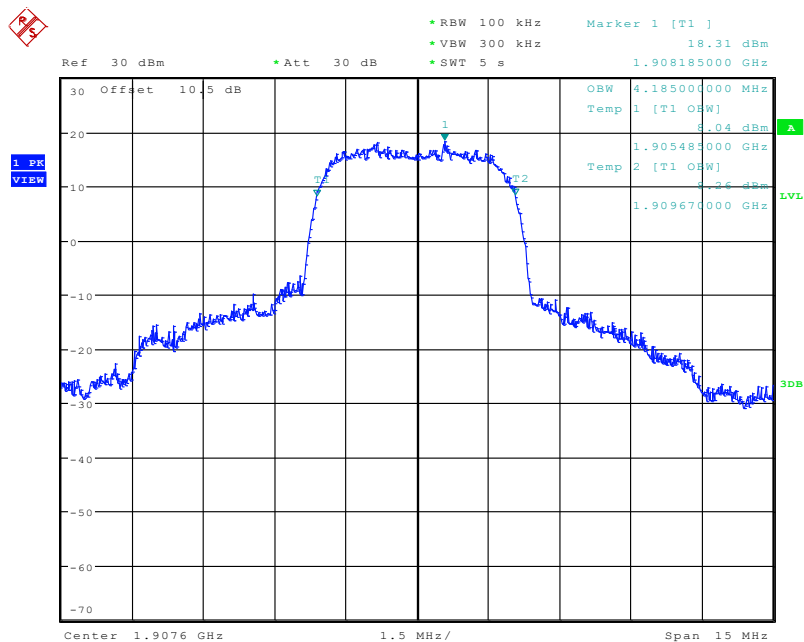
Date: 9.SEP.2022 13:15:54

99% Occupied Bandwidth for HSUPA (QPSK) Mode, Middle channel

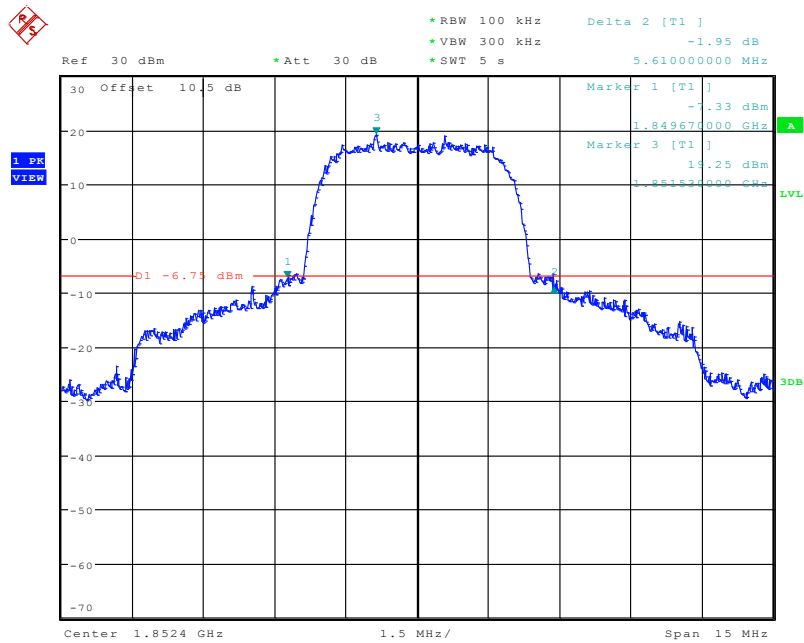
Date: 9.SEP.2022 13:15:16

26 dB Emission Bandwidth for HSUPA (QPSK) Mode, High channel

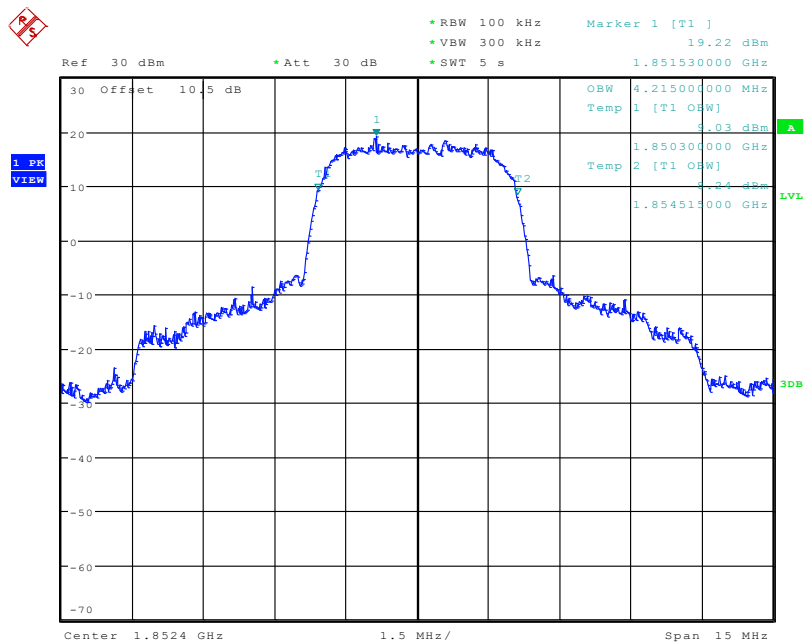
Date: 9.SEP.2022 13:19:29

99% Occupied Bandwidth for HSUPA (QPSK) Mode, High channel

Date: 9.SEP.2022 13:18:51

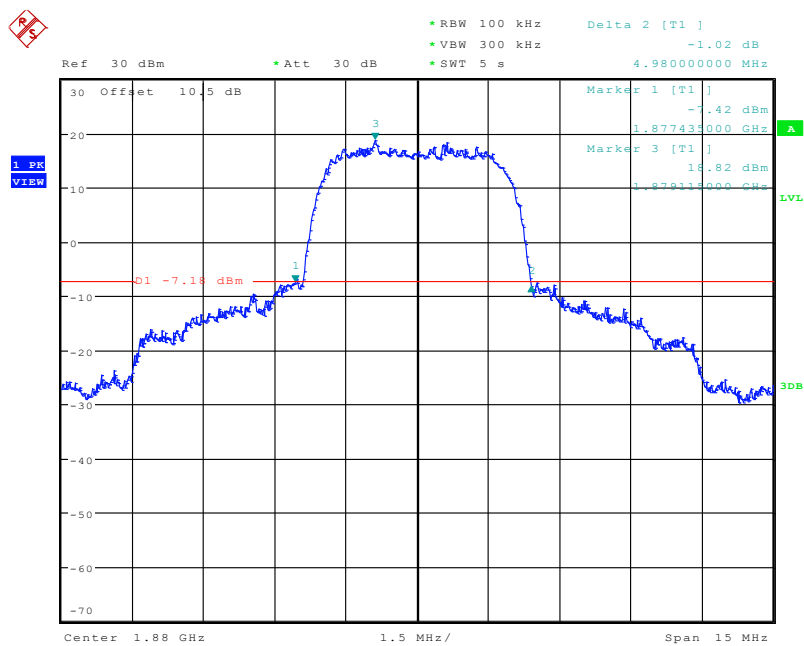
26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 9.SEP.2022 13:29:40

99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

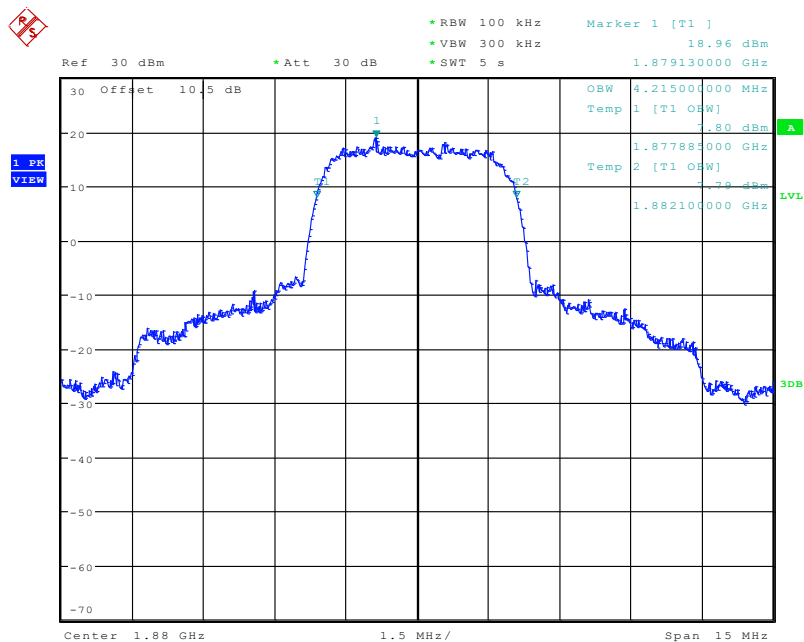
Date: 9.SEP.2022 13:29:02

26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Middle channel

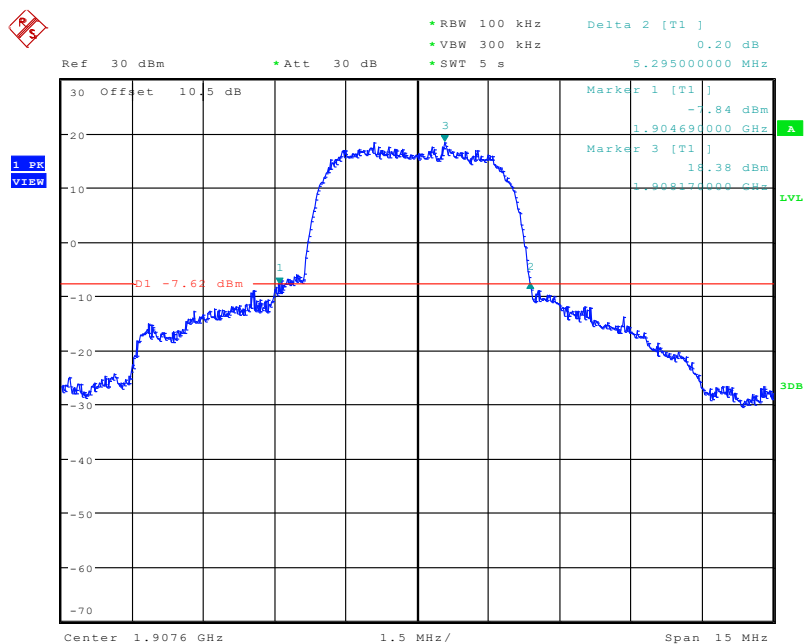


Date: 9.SEP.2022 13:34:01

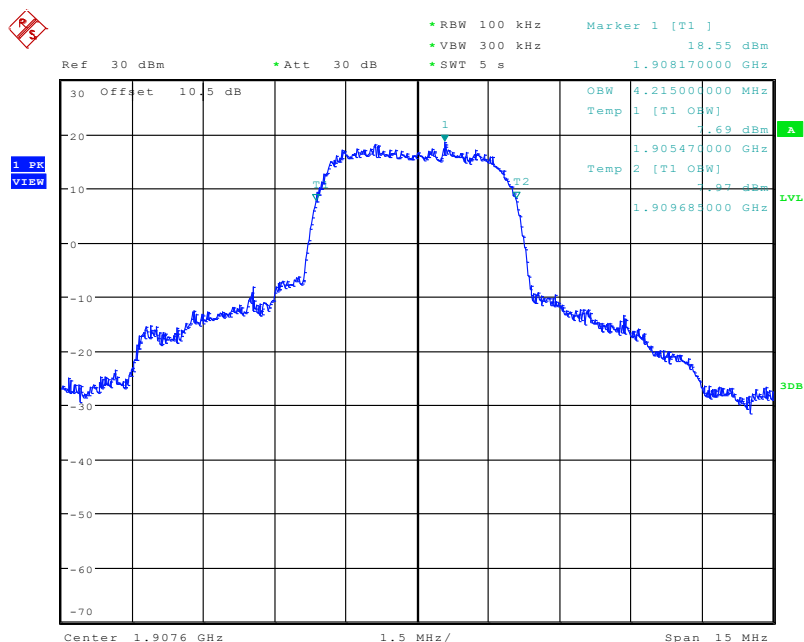
99% Occupied Bandwidth for HSDPA (16QAM) Mode, Middle channel



Date: 9.SEP.2022 13:33:22

26 dB Emission Bandwidth for HSDPA (16QAM) Mode, High channel

Date: 9.SEP.2022 13:37:29

99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel

Date: 9.SEP.2022 13:36:51

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	1.320	1.104	1.320	1.110	1.290
	16QAM	1.110	1.314	1.104	1.302	1.104	1.296
3 MHz	QPSK	2.700	2.880	2.688	2.916	2.688	2.892
	16QAM	2.688	2.892	2.688	2.904	2.688	2.904
5 MHz	QPSK	4.520	4.960	4.520	4.960	4.520	4.960
	16QAM	4.540	4.980	4.520	5.020	4.500	4.980
10 MHz	QPSK	8.960	9.600	8.960	9.680	8.920	9.560
	16QAM	8.960	9.640	8.960	9.560	8.920	9.520
15 MHz	QPSK	13.560	14.820	13.440	14.820	13.440	14.820
	16QAM	13.500	14.760	13.500	14.940	13.500	14.880
20 MHz	QPSK	17.920	19.280	18.000	19.360	17.920	19.440
	16QAM	17.920	19.440	17.920	19.360	17.920	19.120

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	1.290	1.104	1.308	1.104	1.332
	16QAM	1.104	1.296	1.110	1.320	1.092	1.290
3 MHz	QPSK	2.688	2.904	2.688	2.892	2.688	2.916
	16QAM	2.688	2.916	2.688	2.904	2.688	2.892
5 MHz	QPSK	4.500	4.960	4.500	4.960	4.520	4.940
	16QAM	4.520	4.980	4.500	4.960	4.520	4.960
10 MHz	QPSK	8.960	9.600	8.960	9.680	8.920	9.480
	16QAM	8.960	9.600	8.960	9.600	8.960	9.560

LTE Band 12:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.098	1.290	1.098	1.296	1.104	1.332
	16QAM	1.104	1.302	1.110	1.326	1.092	1.296
3 MHz	QPSK	2.688	2.916	2.688	2.892	2.688	2.892
	16QAM	2.688	2.904	2.688	2.880	2.688	2.904
5 MHz	QPSK	4.520	4.960	4.520	4.940	4.500	4.960
	16QAM	4.500	5.000	4.520	4.960	4.520	4.980
10 MHz	QPSK	8.960	9.640	8.960	9.560	8.920	9.560
	16QAM	8.920	9.520	8.960	9.560	8.960	9.600

LTE Band 13:

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	4.980	4.520	5.000
	16QAM	4.500	5.000	4.520	5.000	4.520	4.980
10 MHz	QPSK	/	/	8.960	9.640	/	/
	16QAM	/	/	8.960	9.560	/	/

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	5.300	4.520	5.040	4.520	5.360
	16QAM	4.520	6.480	4.520	6.020	4.520	5.100
10 MHz	QPSK	8.960	9.520	8.960	9.680	9.000	9.840
	16QAM	8.960	9.640	9.000	9.560	9.000	10.080
15 MHz	QPSK	13.500	16.260	13.560	15.540	13.560	15.060
	16QAM	13.620	15.660	13.560	16.500	13.620	17.312
20 MHz	QPSK	17.920	20.720	17.920	19.200	18.000	21.520
	16QAM	18.000	21.520	18.000	22.960	18.080	20.505

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

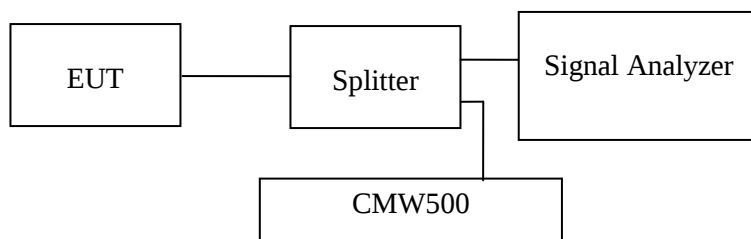
Applicable Standard

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.



Note: the worst path loss (cable loss and splitter inset loss) among the test frequency range was added into plots.

Test Data

Environmental Conditions

Temperature:	26°C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang from 2022-08-30 to 2022-09-11.

EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

Low Channel:

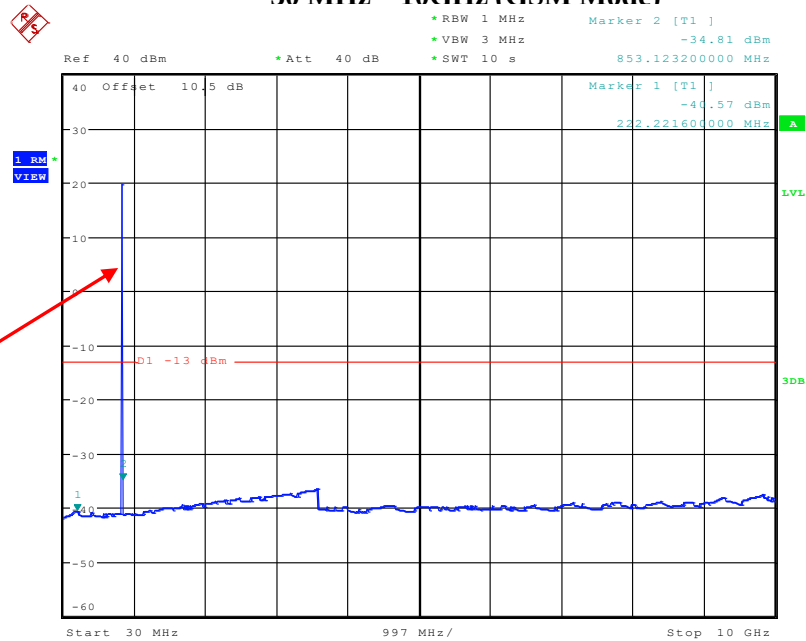


Middle Channel:

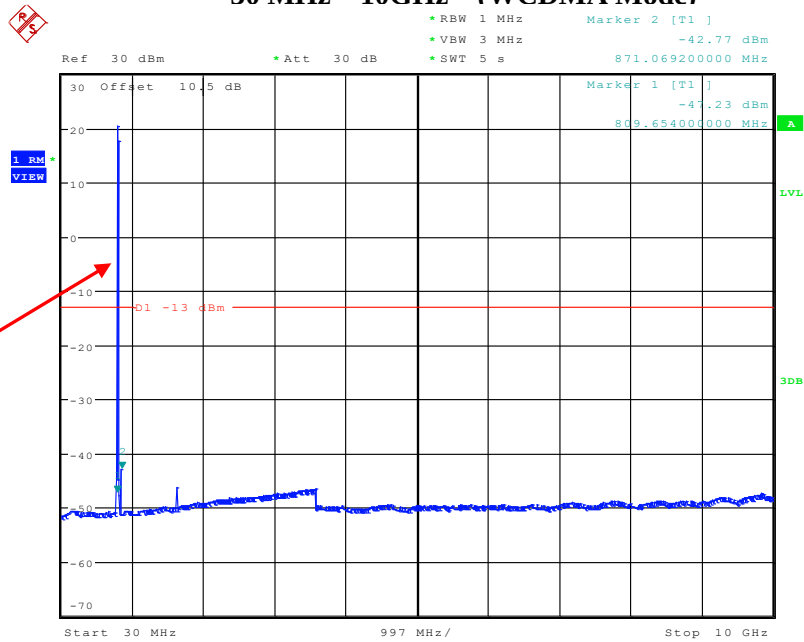


FCC -2G,3G,4G

30 MHz – 10GHz (GSM Mode)

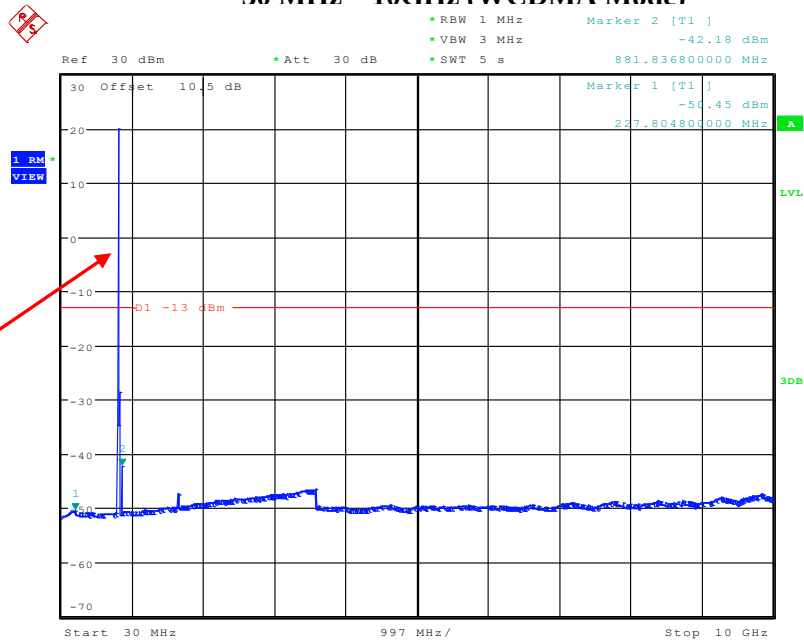


Date: 30.AUG.2022 10:28:43

Low Channel:**30 MHz – 10GHz (WCDMA Mode)**

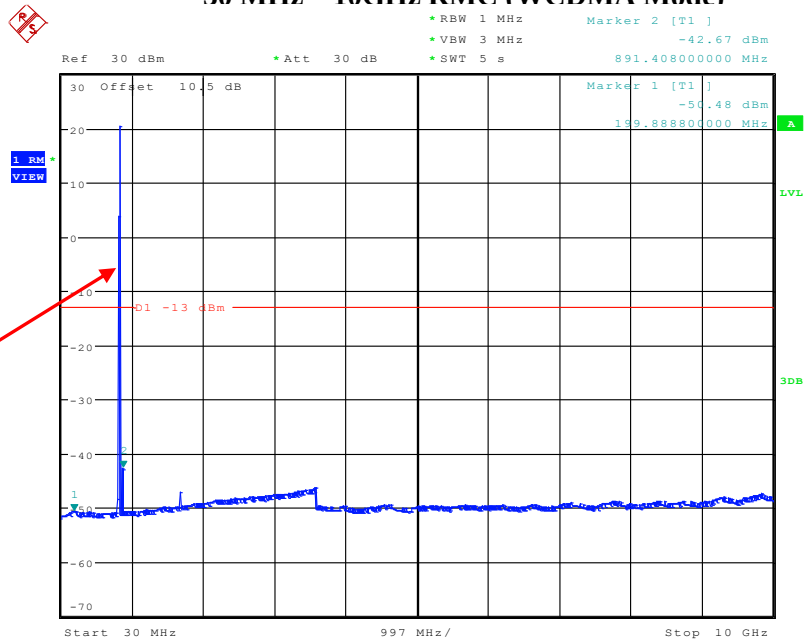
Fundamental test

Date: 30.AUG.2022 15:20:59

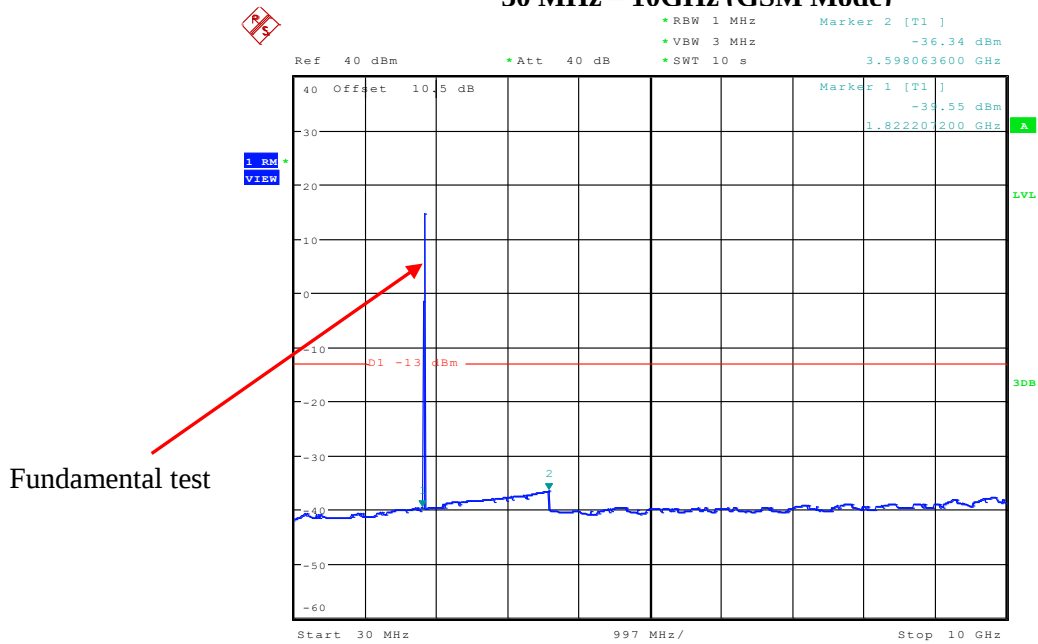
Middle Channel:**30 MHz – 10GHz (WCDMA Mode)**

Fundamental test

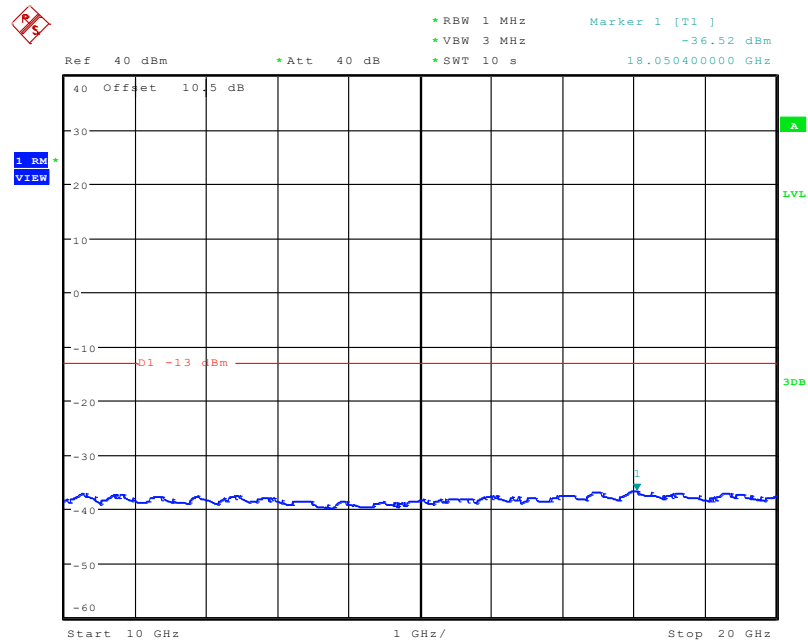
Date: 30.AUG.2022 15:25:55

High Channel:**30 MHz – 10GHz RMC (WCDMA Mode)**

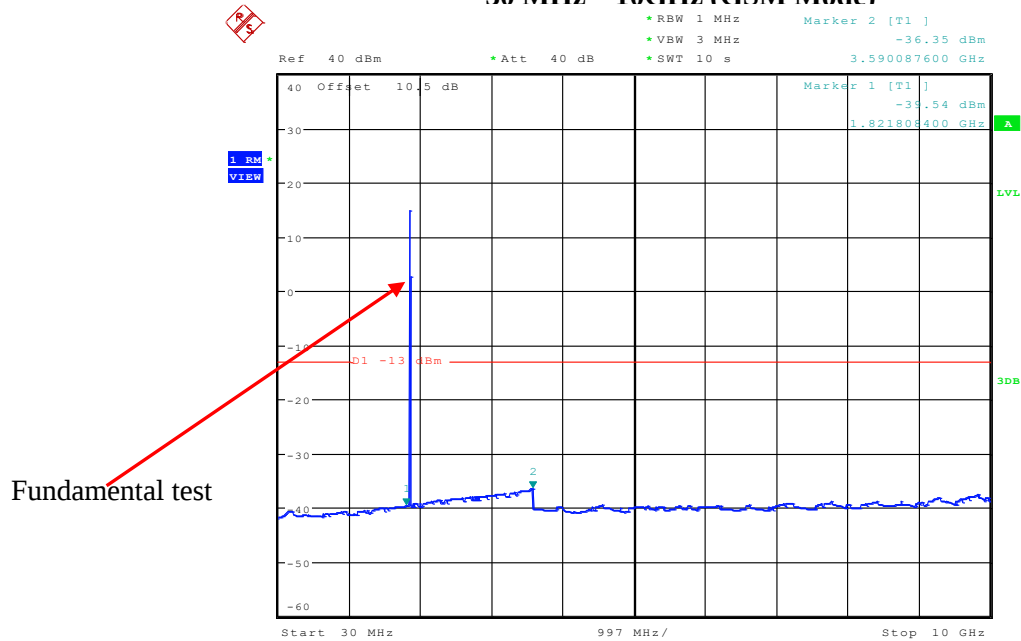
Date: 30.AUG.2022 15:29:52

PCS Band**Low Channel:****30 MHz – 10GHz (GSM Mode)**

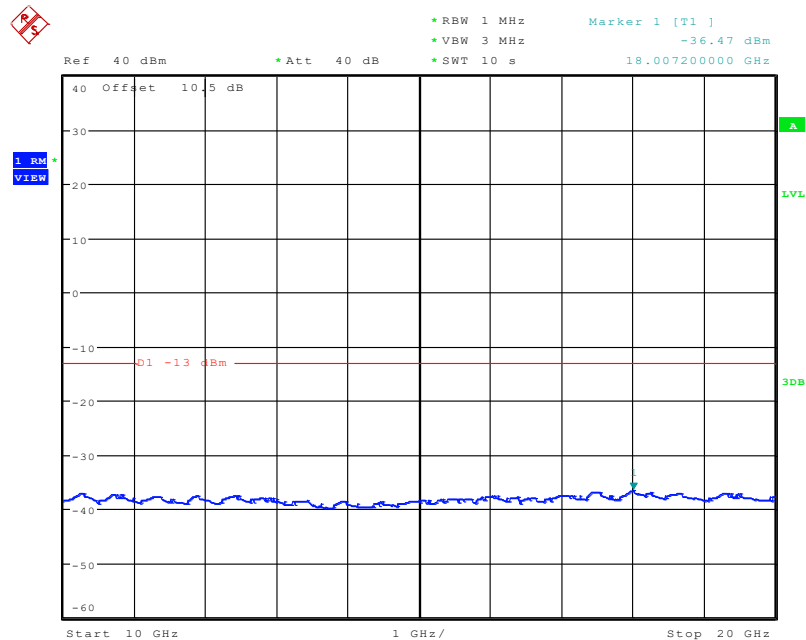
Date: 30.AUG.2022 11:08:51

10 GHz – 20GHz (GSM Mode)

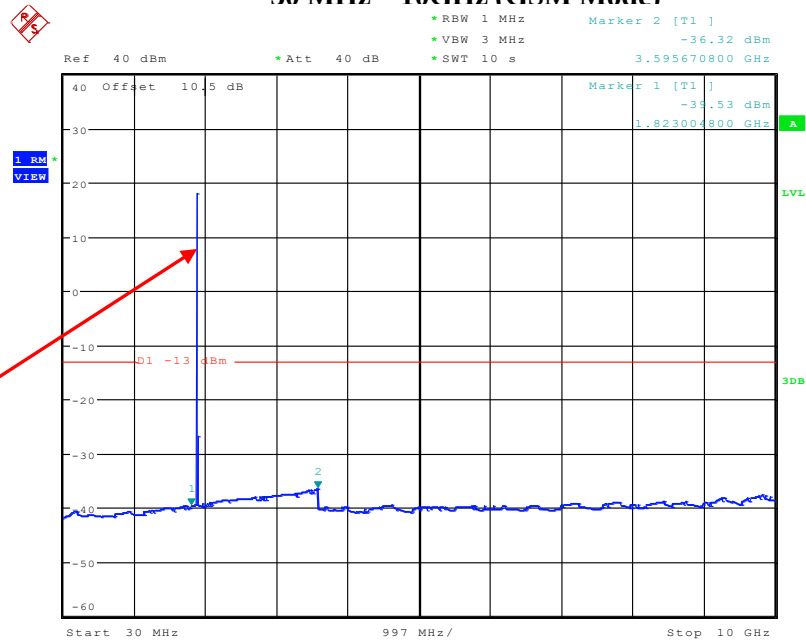
Date: 30.AUG.2022 11:10:01

Middle Channel:**30 MHz – 10GHz (GSM Mode)**

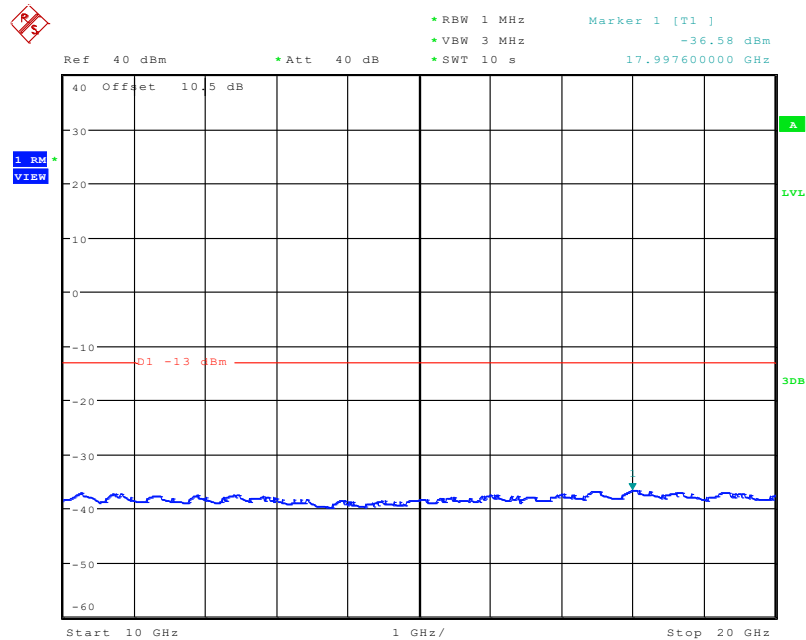
Date: 30.AUG.2022 11:14:00

10 GHz – 20GHz (GSM Mode)

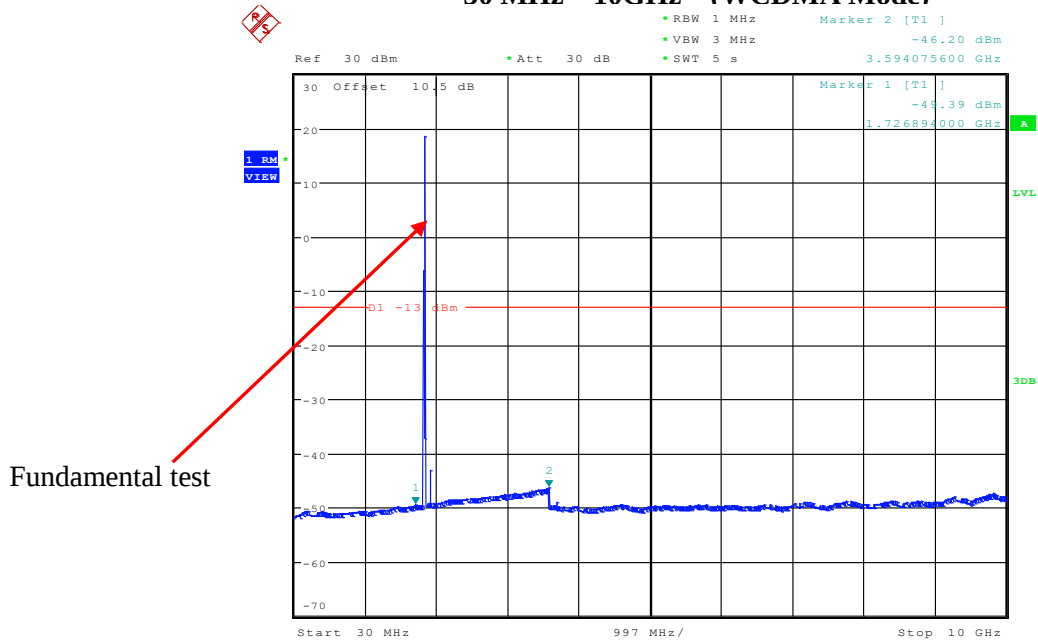
Date: 30.AUG.2022 11:15:10

High Channel:**30 MHz – 10GHz (GSM Mode)**

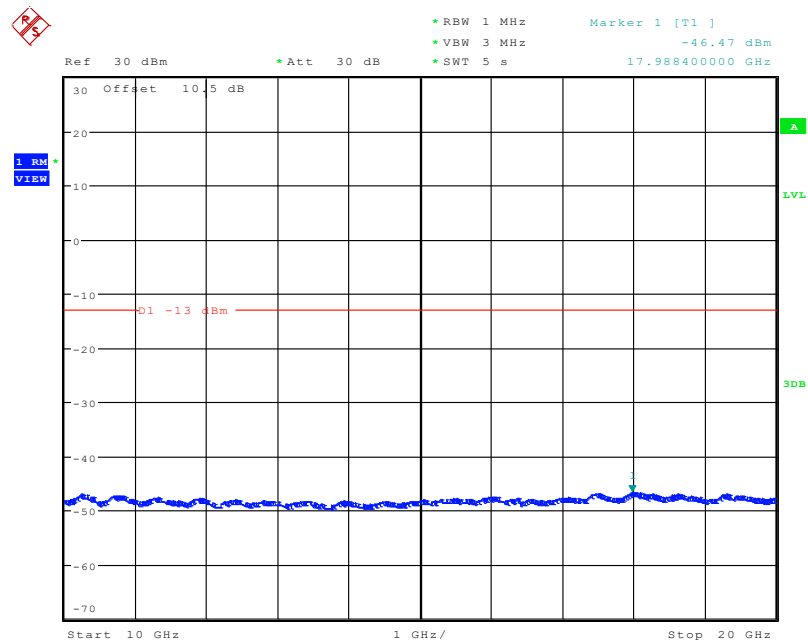
Date: 30.AUG.2022 11:19:55

10 GHz – 20GHz (GSM Mode)

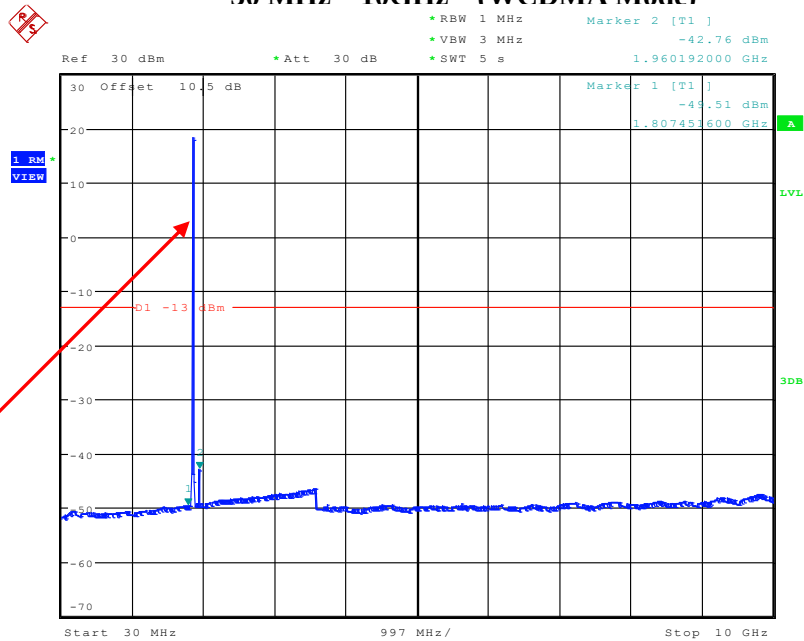
Date: 30.AUG.2022 11:21:07

Low Channel:**30 MHz – 10GHz (WCDMA Mode)**

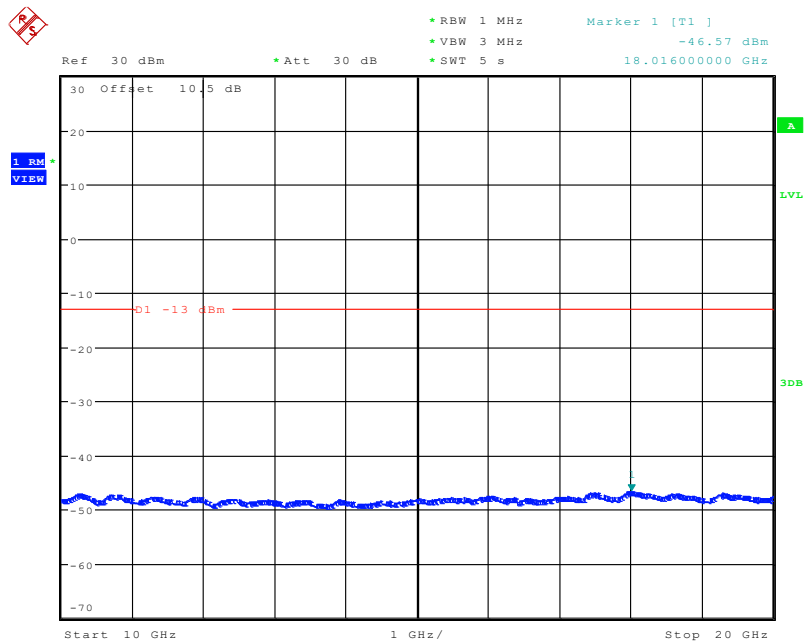
Date: 9.SEP.2022 13:47:15

10 GHz – 20GHz (WCDMA Mode)

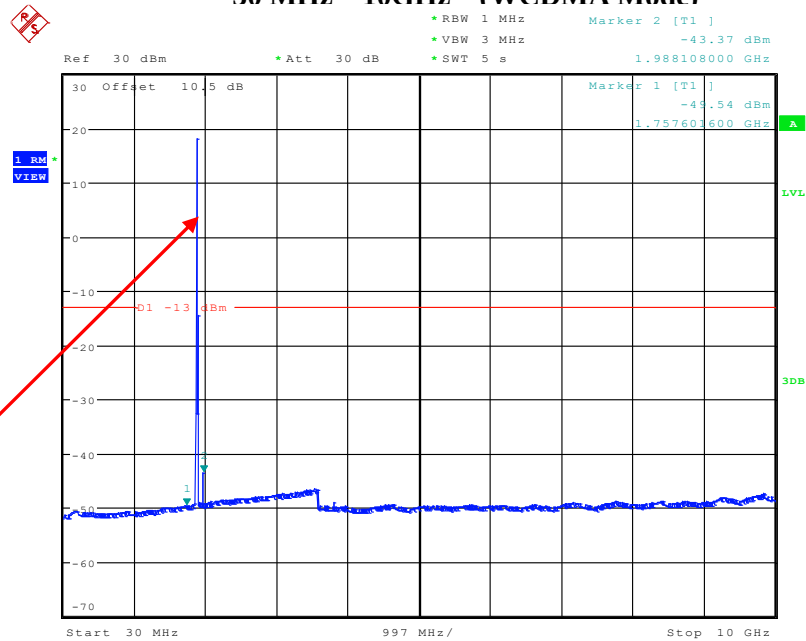
Date: 9.SEP.2022 13:47:55

Middle Channel:**30 MHz – 10GHz (WCDMA Mode)**

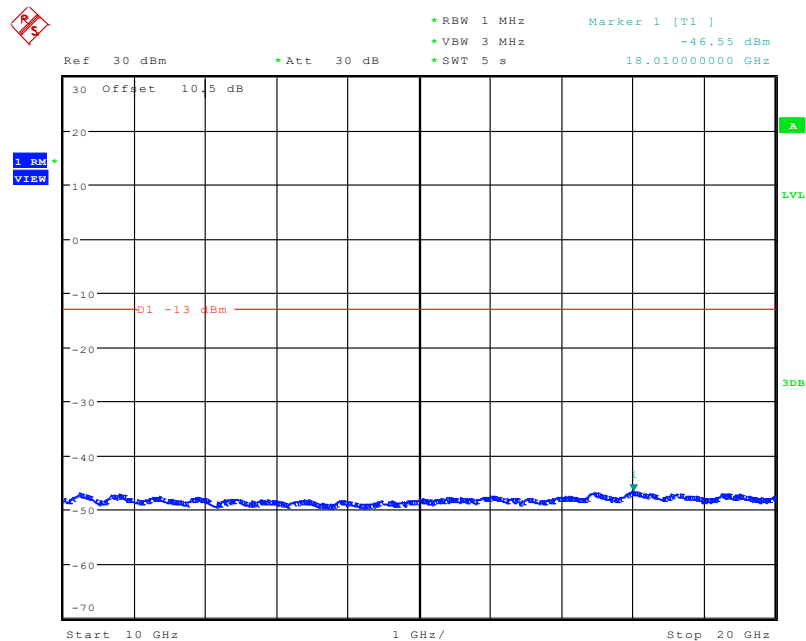
Date: 9.SEP.2022 13:50:45

10 GHz – 20GHz (WCDMA Mode)

Date: 9.SEP.2022 13:51:24

High Channel:**30 MHz – 10GHz (WCDMA Mode)**

Date: 9.SEP.2022 13:54:34

10 GHz – 20GHz (WCDMA Mode)

Date: 9.SEP.2022 13:55:14

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:	28.8 °C
Relative Humidity:	52%
ATM Pressure:	101.0 kPa

The testing was performed by level Li on 2022-06-19.

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

Radiated Emission (Scan with X-AXIS, Y-AXIS, Z-AXIS, the worst case was recorded)

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								
Test frequency range: 30MHz-10GHz								
Low channel								
948.9	-75.1	11	1.2	H	10	-65.1	-13	52.1
948.9	-75	173	1.3	V	11.7	-63.3	-13	50.3
1648.4	-53.1	236	1.4	H	3.5	-49.6	-13	36.6
1648.4	-51.5	32	2.1	V	3.1	-48.4	-13	35.4
2472.6	-36.8	61	2	H	6.6	-30.2	-13	17.2
2472.6	-33.1	302	1.2	V	5.8	-27.3	-13	14.3
3296.8	-52	245	1.2	H	6.4	-45.6	-13	32.6
3296.8	-51.8	290	1	V	5.7	-46.1	-13	33.1
Middle channel								
946.9	-73.5	327	1.3	H	10	-63.5	-13	50.5
946.9	-75.5	347	1.8	V	11.7	-63.8	-13	50.8
1673.2	-50.5	152	1.8	H	3.8	-46.7	-13	33.7
1673.2	-47.7	285	1.5	V	3.1	-44.6	-13	31.6
2509.8	-35.7	58	1.6	H	6.2	-29.5	-13	16.5
2509.8	-31.7	342	1.4	V	5.6	-26.1	-13	13.1
3346.4	-51.9	49	1.2	H	6.6	-45.3	-13	32.3
3346.4	-51.2	168	1	V	5.4	-45.8	-13	32.8
High channel								
954.8	-73.3	186	1.4	H	10	-63.3	-13	50.3
954.8	-75.3	18	1	V	11.7	-63.6	-13	50.6
1697.6	-51.2	311	1.3	H	4.1	-47.1	-13	34.1
1697.6	-49.3	207	1.6	V	3.1	-46.2	-13	33.2
2546.4	-36	340	1.3	H	6.1	-29.9	-13	16.9
2546.4	-32.4	249	2	V	5.8	-26.6	-13	13.6
3395.2	-51.5	310	1	H	6.2	-45.3	-13	32.3
3395.2	-50.9	90	1.6	V	5.4	-45.5	-13	32.5

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM1900								
Test frequency range: 30MHz-20GHz								
Low channel								
945.1	-74.9	115	1.4	H	10	-64.9	-13	51.9
945.1	-75.6	69	1.2	V	11.7	-63.9	-13	50.9
3700.4	-48.6	89	1.3	H	8.1	-40.5	-13	27.5
3700.4	-47.2	69	1.7	V	7.6	-39.6	-13	26.6
5550.6	-50.9	140	1.2	H	9.6	-41.3	-13	28.3
5550.6	-49.7	106	1.5	V	9.1	-40.6	-13	27.6
Middle channel								
948.6	-74	38	1.8	H	10	-64	-13	51
948.6	-75.9	38	1.2	V	11.7	-64.2	-13	51.2
3760	-52.8	37	1.7	H	8.8	-44	-13	31
3760	-48.9	141	2	V	8	-40.9	-13	27.9
5640	-50.7	278	1.2	H	10.2	-40.5	-13	27.5
5640	-48.4	3	1.2	V	9.4	-39	-13	26
High channel								
949.7	-74.6	259	1.8	H	10	-64.6	-13	51.6
949.7	-76.8	258	1.6	V	11.7	-65.1	-13	52.1
3819.6	-53.5	247	1.3	H	8.7	-44.8	-13	31.8
3819.6	-47.4	320	1.8	V	8	-39.4	-13	26.4
5729.4	-50.1	174	1.9	H	10.6	-39.5	-13	26.5
5729.4	-48.4	229	2.1	V	10.2	-38.2	-13	25.2

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 Band2								
Test frequency range: 30MHz-20GHz								
Low channel								
949.4	-74.9	291	2.1	H	10	-64.9	-13	51.9
949.4	-75.6	307	1.5	V	11.7	-63.9	-13	50.9
3704.8	-54.2	291	1.6	H	8.2	-46	-13	33
3704.8	-52.7	174	1.7	V	7.6	-45.1	-13	32.1
5557.2	-53.9	250	1.9	H	9.7	-44.2	-13	31.2
5557.2	-53.1	51	1.7	V	9.1	-44	-13	31
Middle channel								
953.3	-73.6	284	2	H	10	-63.6	-13	50.6
953.3	-76.4	135	1.4	V	11.7	-64.7	-13	51.7
3760	-55.7	194	1.1	H	8.8	-46.9	-13	33.9
3760	-53.7	146	1	V	8	-45.7	-13	32.7
5640	-54.8	77	2.1	H	10.2	-44.6	-13	31.6
5640	-54.1	270	2.2	V	9.4	-44.7	-13	31.7
High channel								
950.2	-74.2	193	1.8	H	10	-64.2	-13	51.2
950.2	-76.5	262	1.8	V	11.7	-64.8	-13	51.8
3815.2	-55	71	1.2	H	8.7	-46.3	-13	33.3
3815.2	-53.5	10	1.7	V	7.9	-45.6	-13	32.6
5722.8	-55.2	339	1	H	10.6	-44.6	-13	31.6
5722.8	-54.3	199	1.5	V	10.1	-44.2	-13	31.2

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 Band5								
Test frequency range: 30MHz-10GHz								
Low channel								
954.3	-75	123	1.8	H	10	-65	-13	52
954.3	-74.9	239	1.9	V	11.7	-63.2	-13	50.2
1652.8	-53.1	225	1.4	H	3.5	-49.6	-13	36.6
1652.8	-54.3	265	2	V	3.1	-51.2	-13	38.2
2479.2	-54.2	284	1.2	H	6.5	-47.7	-13	34.7
2479.2	-52.5	255	1.5	V	5.7	-46.8	-13	33.8
3305.6	-51.4	250	1.1	H	6.4	-45	-13	32
3305.6	-51.1	296	2	V	5.7	-45.4	-13	32.4
Middle channel								
951.7	-73.8	171	1.3	H	10	-63.8	-13	50.8
951.7	-76.1	219	1.4	V	11.7	-64.4	-13	51.4
1673.2	-49.7	159	1.3	H	3.8	-45.9	-13	32.9
1673.2	-49.9	272	2.2	V	3.1	-46.8	-13	33.8
2509.8	-50.1	75	1.8	H	6.2	-43.9	-13	30.9
2509.8	-51.3	197	1.1	V	5.7	-45.6	-13	32.6
3346.4	-51.9	105	1.9	H	6.6	-45.3	-13	32.3
3346.4	-51.1	57	1.3	V	5.4	-45.7	-13	32.7
High channel								
954.8	-74.8	253	1.7	H	10	-64.8	-13	51.8
954.8	-76.3	14	1.4	V	11.7	-64.6	-13	51.6
1693.2	-55.4	352	1	H	4	-51.4	-13	38.4
1693.2	-55.1	71	1.3	V	3.1	-52	-13	39
2509.8	-56.4	246	1.2	H	6.1	-50.3	-13	37.3
2509.8	-55.1	7	1	V	5.7	-49.4	-13	36.4
3386.4	-52	69	1.5	H	6.3	-45.7	-13	32.7
3386.4	-51.2	349	2.2	V	5.4	-45.8	-13	32.8

LTE Bands: (pre-scan QPSK & 16QAM with all bandwidths, the 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)				
LTE Band 2								
Test frequency range: 30MHz-20GHz								
QPSK 1.4MHz Bandwidth, Low channel								
945.9	-75	328	1.5	H	10	-65	-13	52
945.9	-76.5	257	2.1	V	11.7	-64.8	-13	51.8
3701.4	-52.5	265	1.9	H	8.1	-44.4	-13	31.4
3701.4	-49.7	347	1.5	V	7.6	-42.1	-13	29.1
5552.1	-50.4	189	1.9	H	9.6	-40.8	-13	27.8
5552.1	-46.1	157	2.1	V	9.1	-37	-13	24
QPSK 1.4MHz Bandwidth, Middle channel								
945.7	-74	348	1.4	H	10	-64	-13	51
945.7	-75.4	261	2.2	V	11.7	-63.7	-13	50.7
3760	-53.6	60	1.3	H	8.8	-44.8	-13	31.8
3760	-50.1	145	1.7	V	8	-42.1	-13	29.1
5640	-50	281	1.7	H	10.2	-39.8	-13	26.8
5640	-44.8	233	1.4	V	9.4	-35.4	-13	22.4
QPSK 1.4MHz Bandwidth, High channel								
951.5	-73.1	301	1.6	H	10	-63.1	-13	50.1
951.5	-75.6	140	1.5	V	11.7	-63.9	-13	50.9
3818.6	-50.8	219	1.4	H	8.7	-42.1	-13	29.1
3818.6	-47	187	1.5	V	8	-39	-13	26
5727.9	-48.7	357	1.8	H	10.6	-38.1	-13	25.1
5727.9	-47.1	93	1.8	V	10.2	-36.9	-13	23.9

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 5								
Test frequency range: 30MHz-10GHz								
QPSK 1.4MHz Bandwidth, Low channel								
952.9	-74.3	237	1	H	10	-64.3	-13	51.3
952.9	-76.1	286	1.4	V	11.7	-64.4	-13	51.4
1649.4	-58.5	174	1.5	H	3.2	-55.3	-13	42.3
1649.4	-56.3	57	2	V	3.1	-53.2	-13	40.2
2474.1	-52.4	163	1.6	H	6.6	-45.8	-13	32.8
2474.1	-50.4	339	2	V	5.8	-44.6	-13	31.6
3298.8	-51.9	134	1.8	H	6.4	-45.5	-13	32.5
3298.8	-51.5	229	1.9	V	5.7	-45.8	-13	32.8
QPSK 1.4MHz Bandwidth, Middle channel								
945	-74.9	297	1	H	10	-64.9	-13	51.9
945	-75.1	241	1.8	V	11.7	-63.4	-13	50.4
1673.0	-49.6	3	1.2	H	3.8	-45.8	-13	32.8
1673.0	-49.9	303	1.9	V	3.1	-46.8	-13	33.8
2509.5	-53.4	178	2.1	H	6.2	-47.2	-13	34.2
2509.5	-50.4	122	1.9	V	5.6	-44.8	-13	31.8
3346.0	-51.7	234	1.1	H	6.6	-45.1	-13	32.1
3346.0	-51	193	1.3	V	5.4	-45.6	-13	32.6
QPSK 1.4MHz Bandwidth, High channel								
946.7	-73.6	110	1.9	H	10	-63.6	-13	50.6
946.7	-76.7	227	2.1	V	11.7	-65	-13	52
1696.6	-58	151	1.9	H	4.1	-53.9	-13	40.9
1696.6	-55.3	113	1.2	V	3.1	-52.2	-13	39.2
2544.9	-56	21	1.1	H	6.1	-49.9	-13	36.9
2544.9	-54.6	236	1.8	V	5.8	-48.8	-13	35.8
3393.2	-51.6	226	1.2	H	6.3	-45.3	-13	32.3
3393.2	-51.3	296	1.7	V	5.4	-45.9	-13	32.9

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band12								
Test frequency range: 30MHz-10GHz								
QPSK 1.4MHz Bandwidth, Low channel								
953	-74	117	1.7	H	10	-64	-13	51
953	-75.6	19	1.5	V	11.7	-63.9	-13	50.9
1399.4	-55.7	53	1.8	H	5.9	-49.8	-13	36.8
1399.4	-58.7	124	1.8	V	5.9	-52.8	-13	39.8
2099.1	-52.8	226	1.2	H	6.3	-46.5	-13	33.5
2099.1	-52	31	2.1	V	5.1	-46.9	-13	33.9
QPSK 1.4MHz Bandwidth, Middle channel								
951.5	-73.2	266	1.8	H	10	-63.2	-13	50.2
951.5	-76.7	306	1.8	V	11.7	-65	-13	52
1415	-62	353	1.8	H	5.7	-56.3	-13	43.3
1415	-61.7	220	1.2	V	5.4	-56.3	-13	43.3
2122.5	-52.8	267	1.5	H	6.7	-46.1	-13	33.1
2122.5	-53.1	172	2.1	V	5.8	-47.3	-13	34.3
QPSK 1.4MHz Bandwidth, High channel								
948.2	-75.2	112	2.1	H	10	-65.2	-13	52.2
948.2	-76.3	191	2	V	11.7	-64.6	-13	51.6
1430.6	-58.8	341	1.3	H	5.4	-53.4	-13	40.4
1430.6	-57.2	157	1.7	V	4.8	-52.4	-13	39.4
2145.9	-53.9	286	1.8	H	7	-46.9	-13	33.9
2145.9	-53.1	255	1.3	V	6.6	-46.5	-13	33.5

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band13								
Test frequency range: 30MHz-10GHz								
QPSK 5MHz Bandwidth, Low channel								
945.6	-75	160	1.5	H	10	-65	-13	52
945.6	-76.1	156	2.1	V	11.7	-64.4	-13	51.4
1559	-54.2	335	1.3	H	4.2	-50	-40	10
1559	-55.8	89	1.1	V	3.3	-52.5	-40	12.5
2338.5	-55.5	76	1	H	7.3	-48.2	-13	35.2
2338.5	-52.6	175	1.1	V	6.5	-46.1	-13	33.1
3118	-53.5	226	1.8	H	7.3	-46.2	-13	33.2
3118	-52.6	82	1.1	V	6.5	-46.1	-13	33.1
QPSK 5MHz Bandwidth, Middle channel								
946.5	-73.9	351	1.6	H	10	-63.9	-13	50.9
946.5	-76.2	216	1.7	V	11.7	-64.5	-13	51.5
1564	-56.4	253	1.8	H	4.2	-52.2	-40	12.2
1564	-56.6	7	2	V	3.3	-53.3	-40	13.3
2346	-58.1	279	1.5	H	7.3	-50.8	-13	37.8
2346	-55.5	239	1.5	V	6.4	-49.1	-13	36.1
3128	-54.1	51	2.1	H	7.3	-46.8	-13	33.8
3128	-52.9	65	1.9	V	6.6	-46.3	-13	33.3
QPSK 5MHz Bandwidth, High channel								
953.8	-75.2	229	2.2	H	10	-65.2	-13	52.2
953.8	-75.4	349	2	V	11.7	-63.7	-13	50.7
1569	-57.6	82	1.9	H	4.2	-53.4	-40	13.4
1569	-56.7	87	1	V	3.3	-53.4	-40	13.4
2353.5	-58.5	8	1	H	7.3	-51.2	-13	38.2
2353.5	-55	19	1.4	V	6.4	-48.6	-13	35.6
3138	-54.3	126	1.4	H	7.4	-46.9	-13	33.9
3138	-53.2	54	2.1	V	6.6	-46.6	-13	33.6

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band41								
Test frequency range: 30MHz-26.5GHz								
QPSK 5MHz Bandwidth, Low channel								
946.4	-74.5	138	1.1	H	10	-64.5	-25	39.5
946.4	-75.8	268	1.9	V	11.7	-64.1	-25	39.1
5075	-50.4	285	1.4	H	11.2	-39.2	-25	14.2
5075	-47.9	277	2	V	10.8	-37.1	-25	12.1
7612.5	-62.4	30	2	H	21.2	-41.2	-25	16.2
7612.5	-60.9	206	1.9	V	20.2	-40.7	-25	15.7
QPSK 5MHz Bandwidth, Middle channel								
947.9	-73.1	100	1.9	H	10	-63.1	-25	38.1
947.9	-75.8	219	1.5	V	11.7	-64.1	-25	39.1
5190	-48.52	222	1.2	H	10.52	-38	-25	13
5190	-42.9	221	1.9	V	10	-32.9	-25	7.9
7785	-60.3	205	1.6	H	18.3	-42	-25	17
7785	-56.4	356	1.1	V	18	-38.4	-25	13.4
QPSK 5MHz Bandwidth, High channel								
947.5	-73.9	336	1.9	H	10	-63.9	-25	38.9
947.5	-75.4	300	1.1	V	11.7	-63.7	-25	38.7
5305	-41.8	110	1	H	9.6	-32.2	-25	7.2
5305	-42.5	13	1	V	8.8	-33.7	-25	8.7
7957.5	-59.6	288	2	H	18.9	-40.7	-25	15.7
7957.5	-57	31	1.1	V	18.5	-38.5	-25	13.5

Note:

Absolute Level = Reading Level + Substituted Factor

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

Margin = Absolute Level - Limit

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.

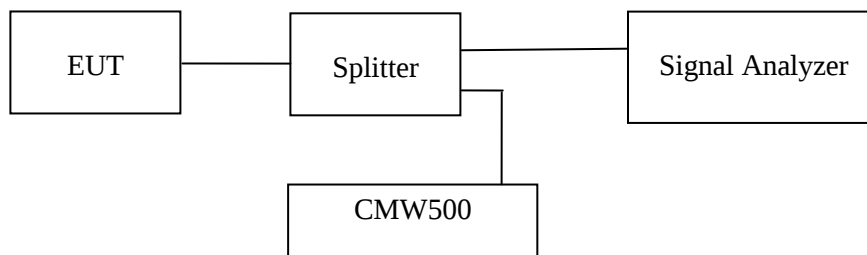
According to FCC §27.53 (h), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

According to FCC §27.53 (m), For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5MHz.

Test Procedure

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

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



Test Data**Environmental Conditions**

Temperature:	26 °C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

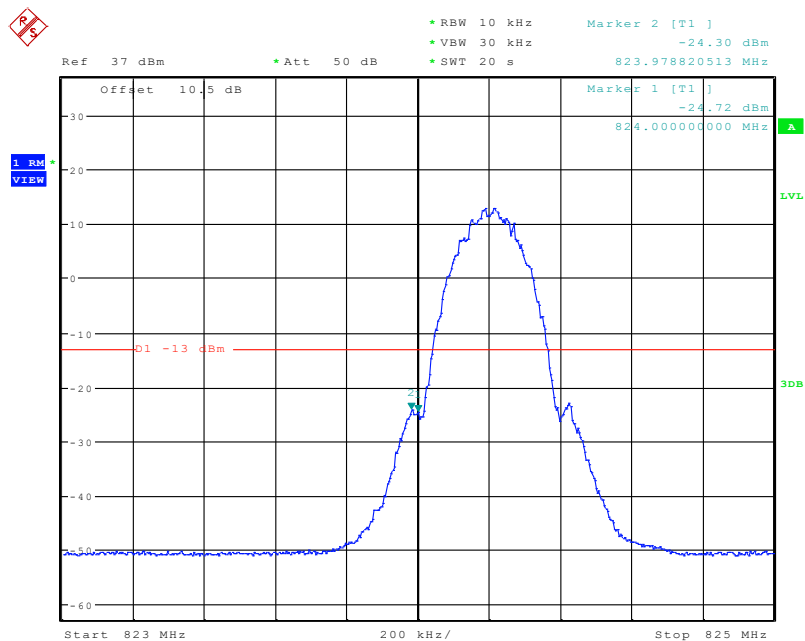
The testing was performed by Cat Kang from 2022-08-30 to 2022-09-11.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

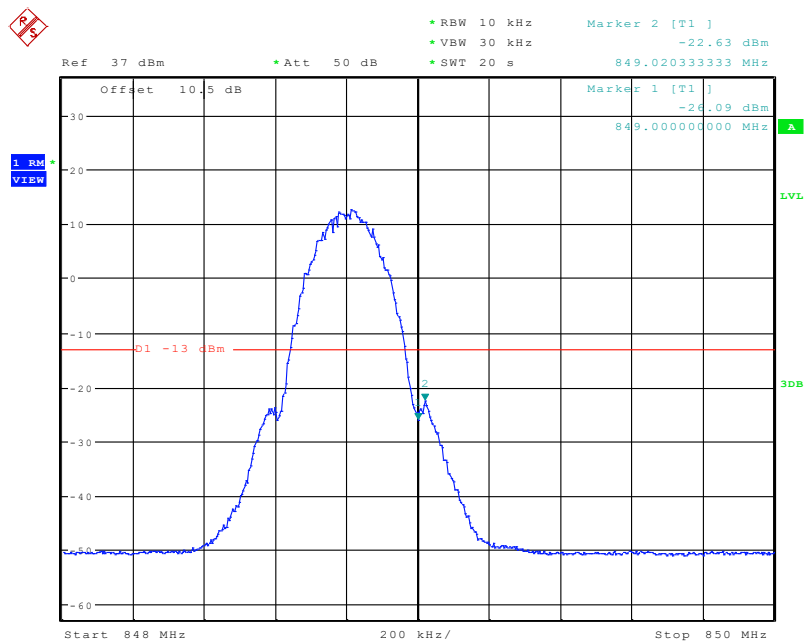
Please refer to the following plots.

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



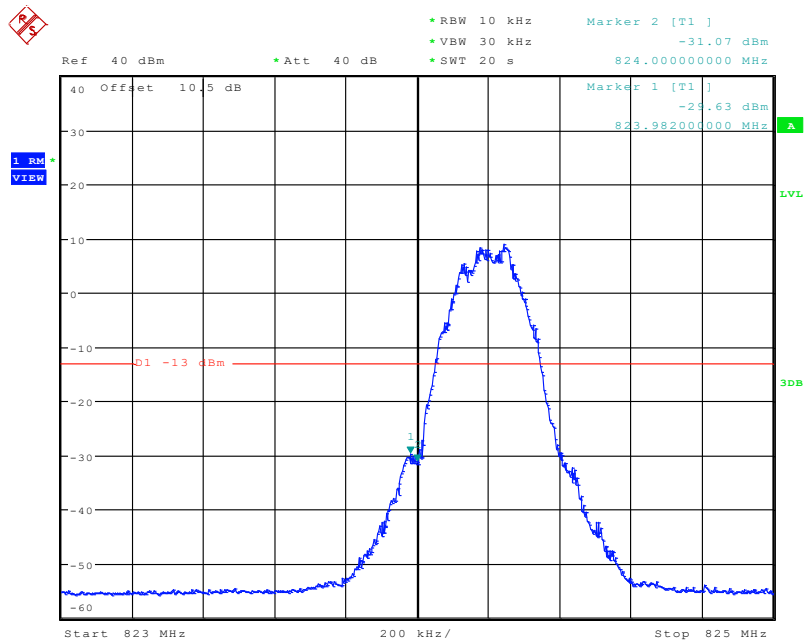
Date: 9.SEP.2022 11:56:33

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



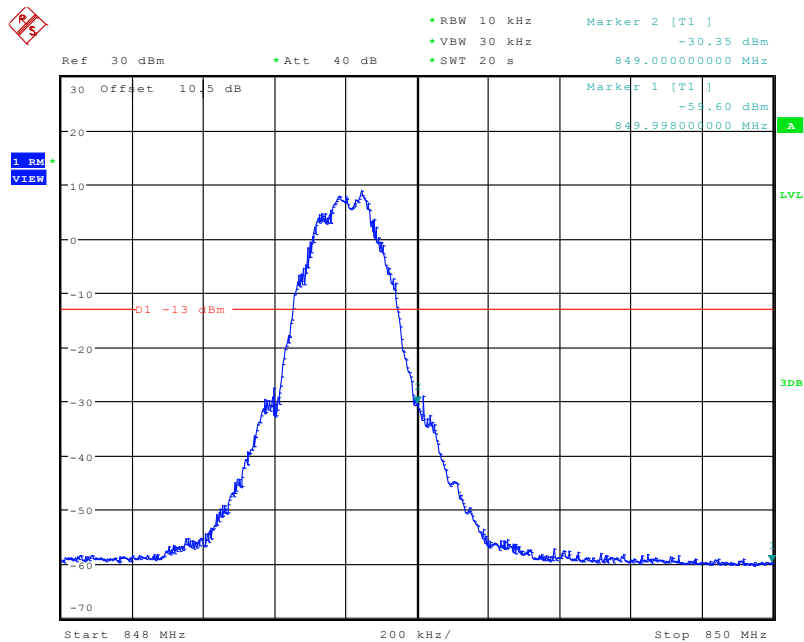
Date: 9.SEP.2022 11:58:40

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



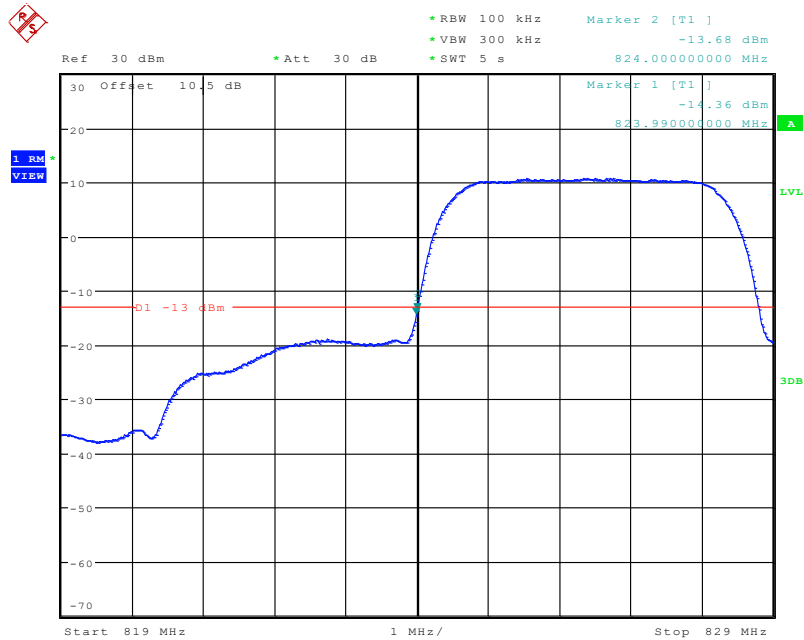
Date: 30.AUG.2022 10:45:58

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



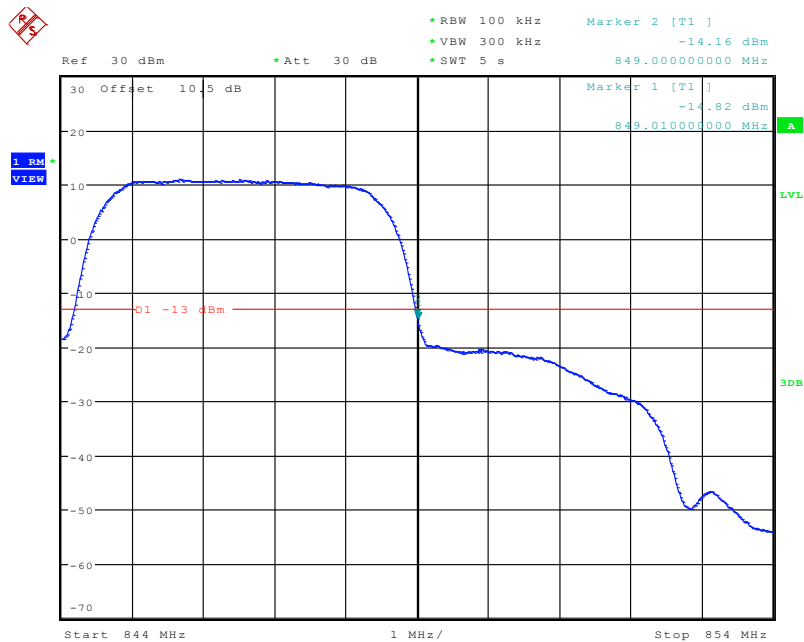
Date: 30.AUG.2022 10:56:22

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



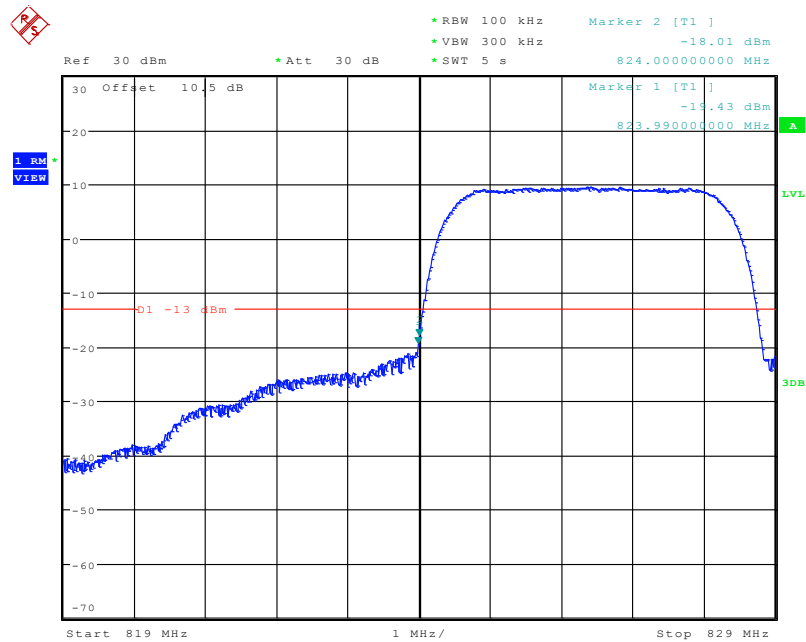
Date: 30.AUG.2022 15:20:21

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



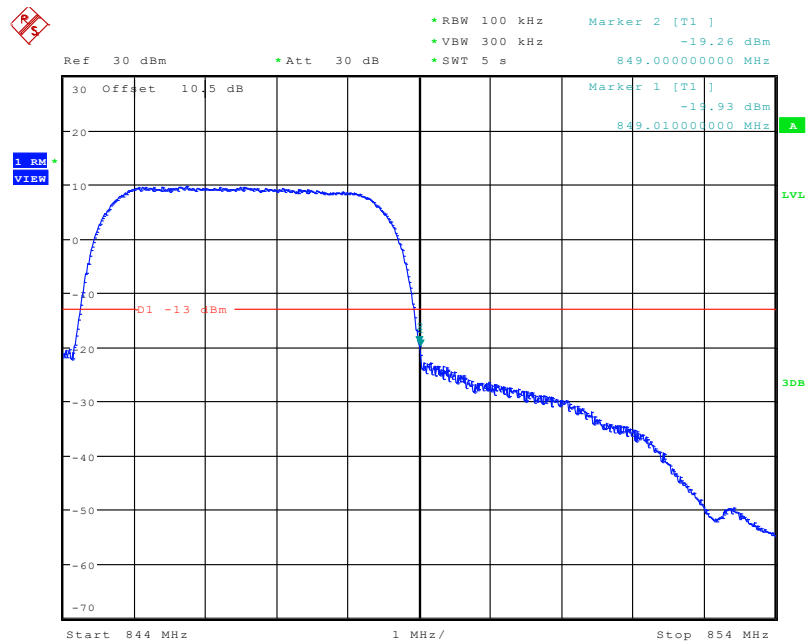
Date: 30.AUG.2022 15:29:13

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

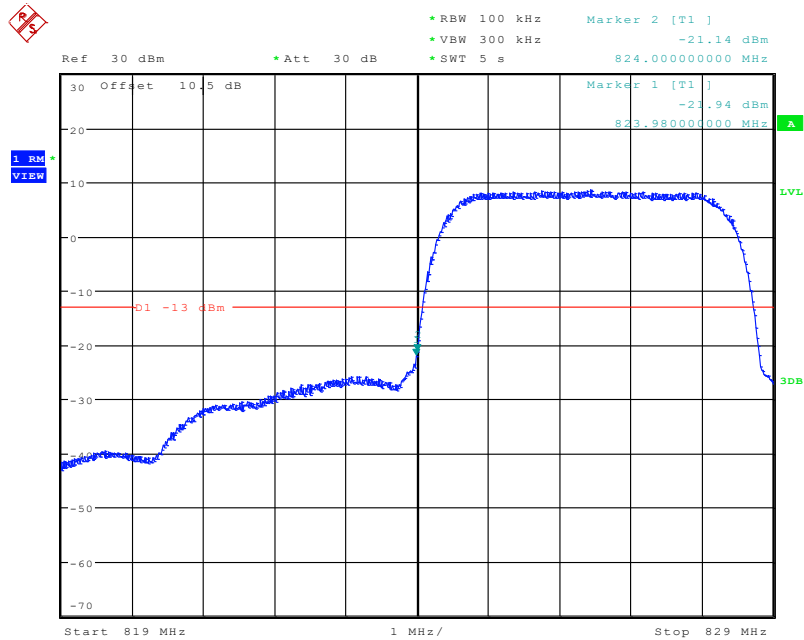


Date: 30.AUG.2022 15:52:05

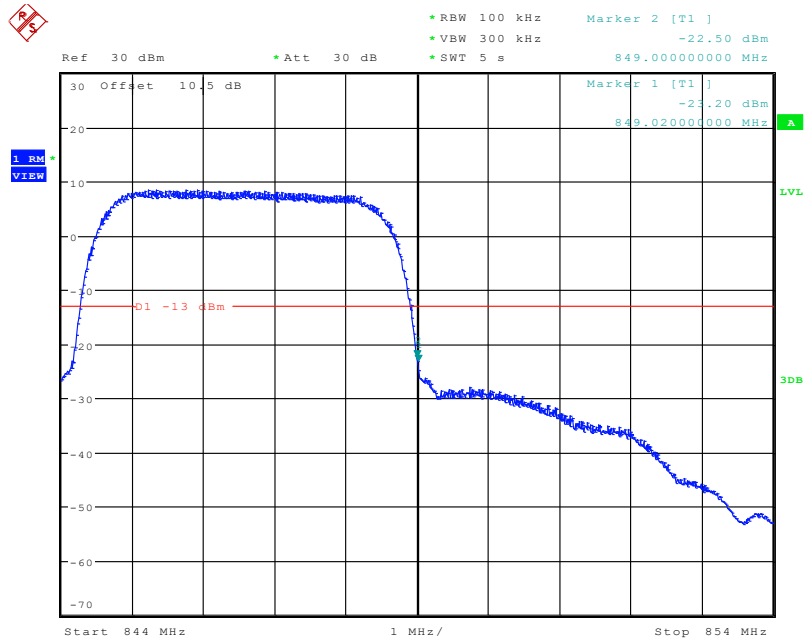
Cellular Band, Right Band Edge for HSDPA (16QAM) Mode



Date: 30.AUG.2022 15:47:39

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

Date: 30.AUG.2022 19:45:50

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

Date: 30.AUG.2022 19:57:27

Ref 30 dBm *Att 40 dB *RBW 10 kHz *VBW 30 kHz *SWT 20 s Marker 1 [T1] -26.35 dB 1.84998000 GHz

30 Offset 10.5 dB

Marker 1 [T1] -26.35 dB 1.84998000 GHz

1.84998 GHz 3dB

Start 1.849 GHz 200 kHz/ Stop 1.851 GHz

Ref 30 dBm Att 40 dB

- RBW 10 kHz
- VBW 30 kHz
- SWT 20 s

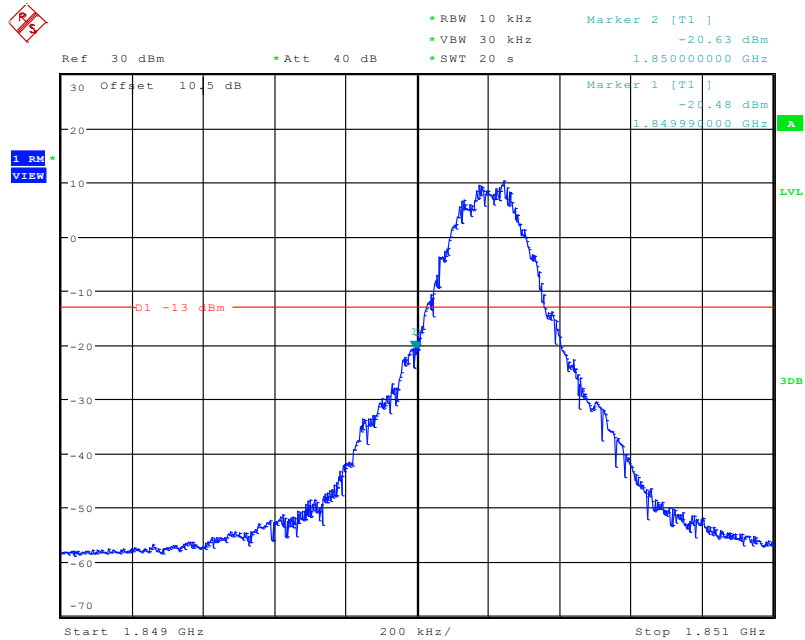
Marker 2 [T1] -29.17 dBm 1.91000000 GHz

Marker 1 [T1] -25.14 dBm 1.91018000 GHz

Start 1.909 GHz 200 kHz/ Stop 1.911 GHz

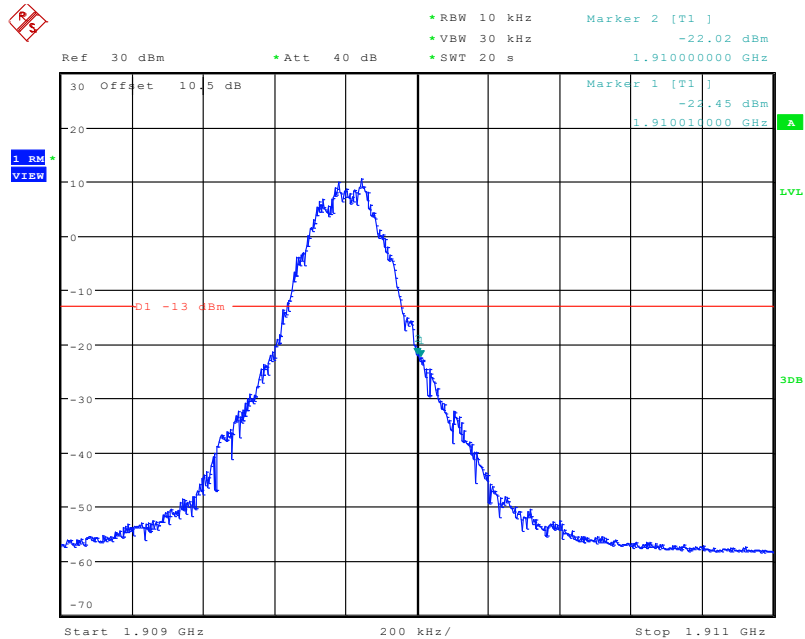
FCC -2G,3G,4G

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



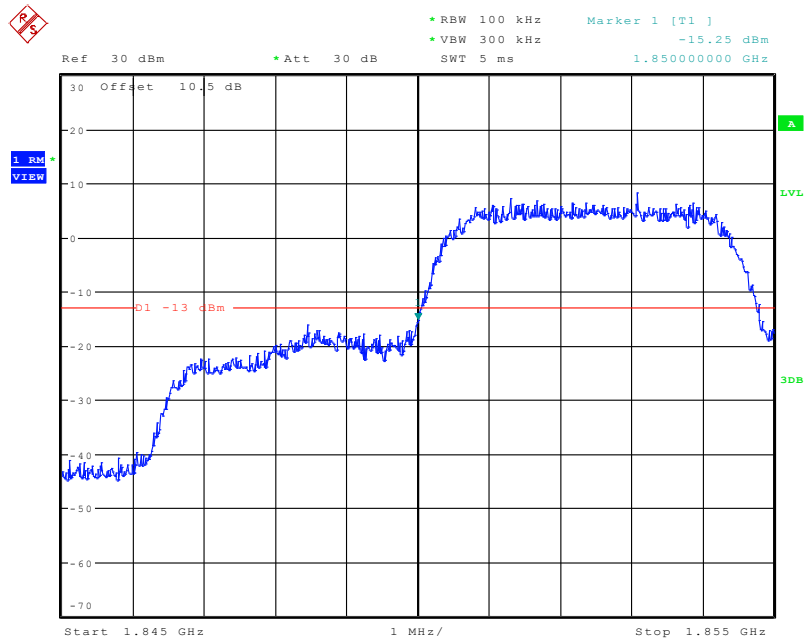
Date: 30.AUG.2022 11:27:03

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



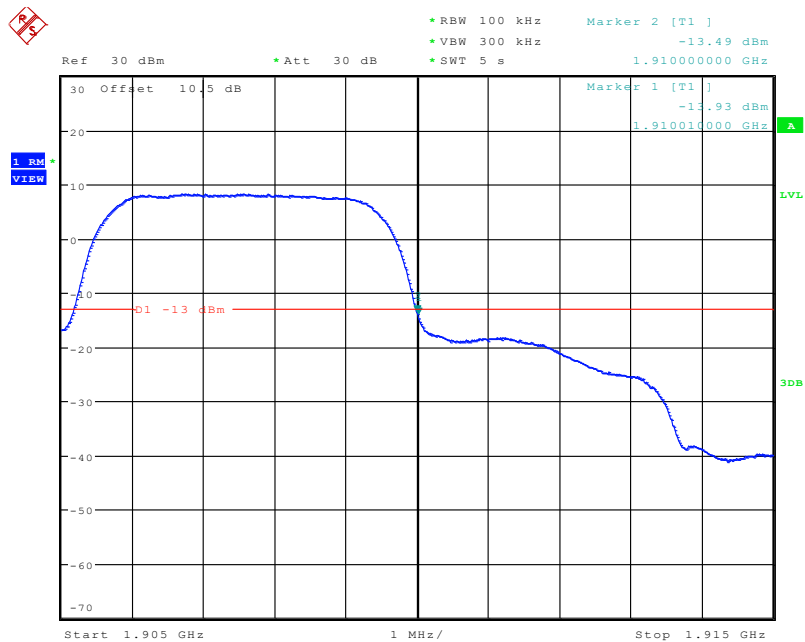
Date: 30.AUG.2022 11:37:36

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

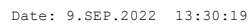


Date: 9.SEP.2022 14:13:20

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



Date: 9.SEP.2022 13:53:55



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



FCC -2G,3G,4G

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

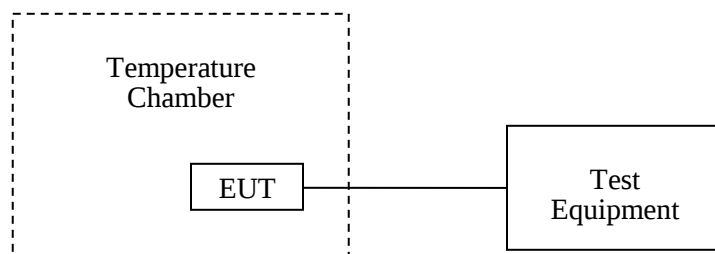
According to § 24.235 & § 27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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 °C
Relative Humidity:	56 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang from 2022-08-30 to 2022-09-11.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

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

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	4	0.0048	2.5
-20		2	0.0024	2.5
-10		3	0.0036	2.5
0		7	0.0084	2.5
10		3	0.0036	2.5
20		-1	-0.0012	2.5
30		4	0.0048	2.5
40		5	0.0060	2.5
50		2	0.0024	2.5
20	L.V.	3	0.0036	2.5
	H.V.	2	0.0024	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.	4	0.0048	2.5
-20		2	0.0024	2.5
-10		7	0.0084	2.5
0		3	0.0036	2.5
10		5	0.0060	2.5
20		-6	-0.0072	2.5
30		5	0.0060	2.5
40		3	0.0036	2.5
50		6	0.0072	2.5
20	L.V.	5	0.0060	2.5
	H.V.	4	0.0048	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.	3.55	0.0042	2.5
-20		2.51	0.0030	2.5
-10		3.42	0.0041	2.5
0		3.68	0.0044	2.5
10		2.33	0.0028	2.5
20		1.74	0.0021	2.5
30		2.35	0.0028	2.5
40		3.39	0.0041	2.5
50		1.33	0.0016	2.5
20	L.V.	3.25	0.0039	2.5
	H.V.	1.52	0.0018	2.5

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

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	6	0.0032	pass
-20		5	0.0027	pass
-10		4	0.0021	pass
0		3	0.0016	pass
10		2	0.0011	pass
20		-6	-0.0032	pass
30		7	0.0037	pass
40		3	0.0016	pass
50		4	0.0021	pass
20	L.V.	5	0.0027	pass
	H.V.	2	0.0011	pass

EDGE Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	3	0.0016	pass
-20		5	0.0027	pass
-10		4	0.0021	pass
0		2	0.0011	pass
10		6	0.0032	pass
20		-1	-0.0005	pass
30		4	0.0021	pass
40		2	0.0011	pass
50		3	0.0016	pass
20	L.V.	5	0.0027	pass
	H.V.	4	0.0021	pass

WCDMA Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	3.87	0.0021	pass
-20		3.69	0.0020	pass
-10		3.58	0.0019	pass
0		3.64	0.0019	pass
10		3.58	0.0019	pass
20		2.54	0.0014	pass
30		2.53	0.0013	pass
40		3.28	0.0017	pass
50		4.21	0.0022	pass
20	L.V.	4.65	0.0025	pass
	H.V.	4.57	0.0024	pass

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, $f_0 = 1880$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	3.49	0.0019	pass
-20		-7.82	-0.0042	pass
-10		-6.72	-0.0036	pass
0		-7.47	-0.0040	pass
10		5.79	0.0031	pass
20		7.02	0.0037	pass
30		8.25	0.0044	pass
40		-9.25	-0.0049	pass
50		8.00	0.0043	pass
20	L.V.	-7.35	-0.0039	pass
	H.V.	5.24	0.0028	pass

Band 5:

10.0 MHz Middle Channel, $f_o = 836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-4.61	-0.0055	2.5
-20		-5.65	-0.0068	2.5
-10		6.23	0.0074	2.5
0		5.90	0.0071	2.5
10		7.27	0.0087	2.5
20		-7.07	-0.0085	2.5
30		5.68	0.0068	2.5
40		-8.67	-0.0104	2.5
50		6.27	0.0075	2.5
20	L.V.	7.77	0.0093	2.5
	H.V.	7.63	0.0091	2.5

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.0374	715.9632	699	716
-20		699.0362	715.9627	699	716
-10		699.0362	715.9671	699	716
0		699.0318	715.9665	699	716
10		699.0345	715.9647	699	716
20		699.0384	715.9672	699	716
30		699.0378	715.9665	699	716
40		699.0377	715.9691	699	716
50		699.0362	715.9654	699	716
20	L.V.	699.0338	715.9672	699	716
	H.V.	699.0375	715.9647	699	716

Band 13:

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.	777.1295	786.8467	777	787
-20		777.1237	786.8437	777	787
-10		777.1276	786.8445	777	787
0		777.1216	786.8465	777	787
10		777.1248	786.8456	777	787
20		777.1297	786.8482	777	787
30		777.1256	786.8487	777	787
40		777.1295	786.8495	777	787
50		777.1264	786.8452	777	787
20	L.V.	777.1212	786.8461	777	787
	H.V.	777.1267	786.8445	777	787

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.	2496.0567	2689.9455	2496	2690
-20		2496.0558	2689.9468	2496	2690
-10		2496.0525	2689.9406	2496	2690
0		2496.0539	2689.9427	2496	2690
10		2496.0528	2689.9425	2496	2690
20		2496.0526	2689.9472	2496	2690
30		2496.0512	2689.9467	2496	2690
40		2496.0565	2689.9452	2496	2690
50		2496.0574	2689.9395	2496	2690
20	L.V.	2496.0497	2689.9414	2496	2690
	H.V.	2496.0512	2689.9422	2496	2690

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.	-0.40	-0.0002	pass
-20		8.59	0.0046	pass
-10		-7.10	-0.0038	pass
0		-7.50	-0.0040	pass
10		8.40	0.0045	pass
20		-9.26	-0.0049	pass
30		5.09	0.0027	pass
40		7.93	0.0042	pass
50		5.07	0.0027	pass
20	L.V.	5.26	0.0028	pass
	H.V.	-9.63	-0.0051	pass

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.	1.19	0.0014	2.5
-20		9.93	0.0119	2.5
-10		9.98	0.0119	2.5
0		5.86	0.0070	2.5
10		8.10	0.0097	2.5
20		-5.28	-0.0063	2.5
30		7.25	0.0087	2.5
40		5.47	0.0065	2.5
50		-6.87	-0.0082	2.5
20	L.V.	-5.60	-0.0067	2.5
	H.V.	-5.79	-0.0069	2.5

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.0387	715.9688	699	716
-20		699.0355	715.9627	699	716
-10		699.0398	715.9674	699	716
0		699.0345	715.9676	699	716
10		699.0355	715.9657	699	716
20		699.0407	715.9628	699	716
30		699.0355	715.9626	699	716
40		699.0342	715.9644	699	716
50		699.0385	715.9636	699	716
20	L.V.	699.0367	715.9665	699	716
	H.V.	699.0345	715.9676	699	716

Band 13:

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.	777.0316	786.9217	777	787
-20		777.0362	786.9243	777	787
-10		777.0357	786.9245	777	787
0		777.0365	786.9276	777	787
10		777.0317	786.9237	777	787
20		777.0328	786.9248	777	787
30		777.0332	786.9217	777	787
40		777.0315	786.9249	777	787
50		777.0297	786.9247	777	787
20	L.V.	777.0342	786.9253	777	787
	H.V.	777.0346	786.9214	777	787

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.	2496.0512	2689.8539	2496	2690
-20		2496.0495	2689.8532	2496	2690
-10		2496.0432	2689.8556	2496	2690
0		2496.0458	2689.8582	2496	2690
10		2496.0457	2689.8548	2496	2690
20		2496.0433	2689.8555	2496	2690
30		2496.0472	2689.8562	2496	2690
40		2496.0445	2689.8536	2496	2690
50		2496.0462	2689.8595	2496	2690
20	L.V.	2496.0487	2689.8547	2496	2690
	H.V.	2496.0428	2689.8553	2496	2690

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