



TEST REPORT

Applicant Name : Shenzhen Youmi Intelligent Technology Co., Ltd.
Address : 406-407 Jinqi Zhigu Building, 4/F, 1 Tangling Road, Nanshan District, Shenzhen City, China
Report Number : RA230620-35489E-RF-00C
FCC ID: 2ATZ4-G5Z23

Test Standard (s)

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

Sample Description

Product Type: Smart phone
Test Model No.: G5A
Multiple Model(s) No.: N/A
Trade Mark: UMIDIGI
Date Received: 2023/06/20
Report Date: 2023/07/21

Test Result:	Pass*
--------------	-------

* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Roger Ling

Roger Ling
EMC Engineer

Approved By:

Candy Li

Candy Li
EMC Engineer

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

Shenzhen Accurate Technology Co., Ltd. is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk "★". Customer model name, addresses, names, trademarks etc. are not considered data.

This report cannot be reproduced except in full, without prior written approval of the Company. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

Shenzhen Accurate Technology Co., Ltd.

1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China

Tel: +86 755-26503290

Fax: +86-755-26503290

Web: www.atc-lab.com

Version 31: 2023-01-30

Page 1 of 108

FCC -2G,3G,4G

TABLE OF CONTENTS

DOCUMENT REVISION HISTORY	3
GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
TEST METHODOLOGY	5
MEASUREMENT UNCERTAINTY.....	5
TEST FACILITY	6
SYSTEM TEST CONFIGURATION	7
DESCRIPTION OF TEST CONFIGURATION	7
EQUIPMENT MODIFICATIONS	7
SUPPORT EQUIPMENT LIST AND DETAILS	8
SUPPORT CABLE DESCRIPTION	8
BLOCK DIAGRAM OF TEST SETUP	8
SUMMARY OF TEST RESULTS	9
TEST EQUIPMENT LIST	10
FCC §1.1307(B)&§2.1093 - RF EXPOSURE INFORMATION.....	12
FCC§2.1047 - MODULATION CHARACTERISTIC	13
FCC § 2.1046,§ 22.913 (A)&§ 24.232 (C); §27.50 (C)(D)(H)- RF OUTPUT POWER.....	14
APPLICABLE STANDARD	14
TEST PROCEDURE	14
TEST DATA	14
FCC §2.1049, §22.917, §22.905 & §24.238&§27.53 - OCCUPIED BANDWIDTH	32
APPLICABLE STANDARD	32
TEST PROCEDURE	32
TEST DATA	32
FCC §2.1051, §22.917(A) & §24.238(A)& §27.53 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS ...	67
APPLICABLE STANDARD	67
TEST PROCEDURE	67
TEST DATA	67
FCC § 2.1053; § 22.917 (A);§ 24.238 (A); §27.53 - SPURIOUS RADIATED EMISSIONS.....	78
APPLICABLE STANDARD	78
TEST PROCEDURE	78
TEST DATA	78
FCC§ 22.917 (A);§ 24.238 (A); §27.53 (H)(M) - BAND EDGES	87
APPLICABLE STANDARD	87
TEST PROCEDURE	87
TEST DATA	88
FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY	99
APPLICABLE STANDARD	99
TEST PROCEDURE	99
TEST DATA	100

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA230620-35489E-RF-00C	Original Report	2023/07/21

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 7: 2500-2570MHz(TX); 2620-2690MHz(TX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 41: 2535-2655MHz(TX/RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA 850/LTE B5: -1.15dBi WCDMA 1900/PCS1900/LTE B2: 0.91dBi LTE B7: 1.78dBi, LTE B12: -1.92dBi, LTE B41: 1.79dBi (provided by the applicant)
Voltage Range	DC3.85V from battery or DC5V from adapter
Sample serial number	RE: 281O-1 RF: 281O-2 (Assigned by ATC)
Sample/EUT Status	Good condition
Normal/Extreme Condition	L.V.: Low Voltage 3.5V _{DC} N.V.: Normal Voltage 3.85V _{DC} H.V.: High Voltage 4.4V _{DC}
Adapter 1 information	Model: HF-0502000U Input: AC 100-240V~50/60Hz, 0.3A Output: DC 5.0V, 2A
Adapter 2 information	Model: HJ-0502000W2-US Input: AC 100-240V~50/60Hz, 0.3A Output: DC 5V, 2A

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
 KDB 971168 D01: Power Meas License Digital Systems v03r01

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		0.71dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	9kHz - 30MHz	2.06dB
	30MHz - 1GHz	5.08dB
	1GHz - 18GHz	4.96dB
	18GHz - 26.5GHz	5.16dB
	26.5GHz - 40GHz	4.64dB
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 Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

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

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0016. The Registration Number is 30241.

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 B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704.0	707.5	711.0
LTE B41	5	2537.5	2595	2652.5
	10	2540	2595	2650
	15	2542.5	2595	2647.5
	20	2545	2595	2645

Note: for PCS1900/WCDMA B2/LTE B2 transmit on the DIV antenna, for other bands transmit on the main antenna.

Equipment Modifications

No modification was made to the EUT.

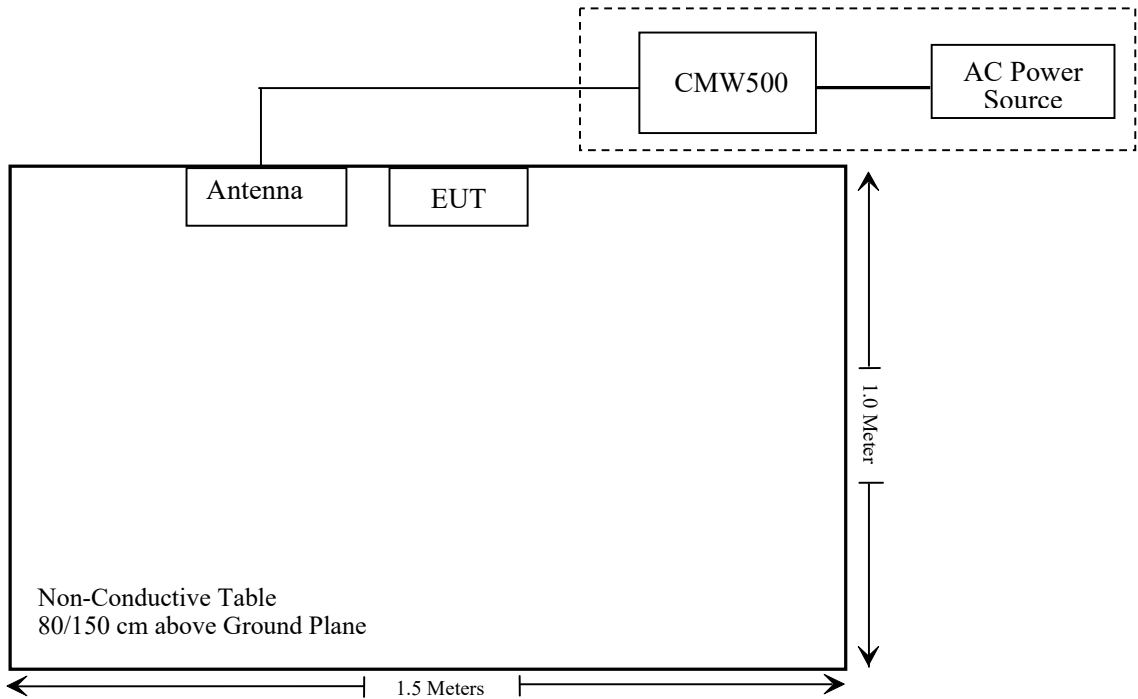
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606

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



Note: the support table edge was flush with the center of turntable

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	2022/11/25	2023/11/24
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2022/11/25	2023/11/24
SONOMA INSTRUMENT	Amplifier	310 N	186131	2022/11/08	2023/11/07
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2022/11/08	2023/11/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2022/11/08	2023/11/07
Unknown	RF Coaxial Cable	No.10	N050	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.11	N1000	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.12	N040	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.13	N300	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.14	N800	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.15	N600	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.16	N650	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF824-862MS-1147	ATCE-141	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF1850-1910MS-1148	ATCE-142	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF2495-2570MS-1152	ATCE-146	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF700-800MS-1153	ATCE-147	2022/11/25	2023/11/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2022/11/30	2025/11/29
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2022/12/26	2025/12/25
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2022/11/30	2025/11/29
PASTERNAK	Horn Antenna	PE9852/2F-20	1120 (ATC-BA-024-1)	2023/01/04	2026/01/03
PASTERNAK	Horn Antenna	PE9852/2F-20	1120 (ATC-BA-025-1)	2023/01/04	2026/01/03
PASTERNAK	Horn Antenna	PE9850/2F-20	720 (ATC-BA-024)	2023/01/04	2026/01/03
PASTERNAK	Horn Antenna	PE9850/2F-20	720 (ATC-BA-025)	2023/01/04	2026/01/03
Unknown	RF Coaxial Cable	No.16	N200	2022/11/25	2023/11/24
Agilent	Signal Generator	N5183A	MY51040755	2022/11/25	2023/11/24

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101948	2022/11/25	2023/11/24
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2022/11/25	2023/11/24
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2022/11/25	2023/11/24
REALE	Temp. & Humid. Chamber	RHP-800BT	R20170318310	2022/11/23	2023/11/22
Fluke	Multi Meter	45	7664009	2022/11/23	2023/11/22
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
Unknown	RF Coaxial Cable	No.31	RF-01	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: RA230620-35489E-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

According to §27.50(c), 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.

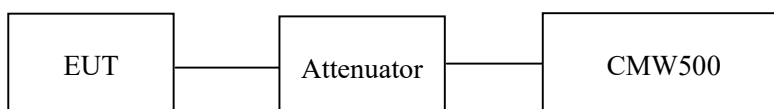
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695–1710 MHz and 1755–1780 MHz bands are limited to 1 watt EIRP.

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

Test Procedure

Conducted method: ANSI C63.26-2015 Section 5.2

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



Test Data

Environmental Conditions

Temperature:	24.9 °C
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-07-13 to 2023-07-17.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.9	30.10	38.45
	190	836.6	33.6	29.80	38.45
	251	848.8	33.4	29.60	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	33.86	32.88	30.92	29.83	30.06	29.08	27.12	26.03	38.45
	190	836.6	33.53	32.38	30.45	29.25	29.73	28.58	26.65	25.45	38.45
	251	848.8	33.39	32.19	30.30	29.05	29.59	28.39	26.50	25.25	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	28.14	26.92	24.91	23.80	24.34	23.12	21.11	20.00	38.45
	190	836.6	28.02	26.82	24.81	23.82	24.22	23.02	21.01	20.02	38.45
	251	848.8	27.80	26.55	24.47	23.43	24.00	22.75	20.67	19.63	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA	RMC12.2k		24.27	24.23	24.30	20.47	20.43	20.50
	HSDPA	1	23.19	23.22	23.23	19.39	19.42	19.43
		2	22.97	23.11	22.89	19.17	19.31	19.09
		3	22.93	23.19	22.95	19.13	19.39	19.15
		4	22.94	23.14	22.96	19.14	19.34	19.16
	HSUPA	1	22.80	22.75	22.81	19.00	18.95	19.01
		2	22.88	22.41	22.80	19.08	18.61	19.00
		3	22.81	22.85	22.76	19.01	19.05	18.96
		4	22.97	22.75	22.79	19.17	18.95	18.99
		5	22.92	22.83	22.74	19.12	19.03	18.94
	HSPA+	1	22.41	22.36	22.53	18.61	18.56	18.73

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) – cable loss

WCDMA Band5: Antenna Gain = -1.15dBi = -3.3dBd (0dBd=2.15(dBi)

Cable loss=0.5dB(provide d by 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	29.50	30.41	33
	661	1880.0	29.30	30.21	33
	810	1909.8	29.20	30.11	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	31.21	30.47	28.80	27.66	32.12	31.38	29.71	28.57	33
	661	1880.0	30.78	29.96	28.32	27.21	31.69	30.87	29.23	28.12	33
	810	1909.8	30.35	29.49	27.86	26.55	31.26	30.40	28.77	27.46	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	27.97	26.49	24.03	23.10	28.88	27.40	24.94	24.01	33
	661	1880.0	27.91	26.37	24.00	22.87	28.82	27.28	24.91	23.78	33
	810	1909.8	28.02	26.58	24.39	23.12	28.93	27.49	25.30	24.03	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		19.76	19.77	19.76	20.67	20.68	20.67
	HSDPA	1	19.16	19.18	19.09	20.07	20.09	20.00
		2	18.75	19.03	18.92	19.66	19.94	19.83
		3	18.98	19.11	18.96	19.89	20.02	19.87
		4	19.05	19.14	18.96	19.96	20.05	19.87
	HSUPA	1	19.79	19.74	19.72	20.70	20.65	20.63
		2	19.85	19.41	19.84	20.76	20.32	20.75
		3	19.81	19.89	19.76	20.72	20.80	20.67
		4	19.77	19.77	19.79	20.68	20.68	20.70
		5	19.78	19.71	19.74	20.69	20.62	20.65
	HSPA+	1	19.35	19.42	19.39	20.26	20.33	20.30

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

WCDMA Band2: Antenna Gain = 0.91dBi

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	19.04	19.08	19.02	19.95	19.99	19.93
		RB1#3	19.22	19.28	19.21	20.13	20.19	20.12
		RB1#5	19.02	19.11	19.02	19.93	20.02	19.93
		RB3#0	19.10	19.15	19.10	20.01	20.06	20.01
		RB3#3	19.12	19.18	19.11	20.03	20.09	20.02
		RB6#0	19.04	19.08	19.02	19.95	19.99	19.93
	16QAM	RB1#0	18.96	19.17	19.00	19.87	20.08	19.91
		RB1#3	19.21	19.31	19.06	20.12	20.22	19.97
		RB1#5	18.96	19.18	19.04	19.87	20.09	19.95
		RB3#0	19.21	19.07	19.13	20.12	19.98	20.04
		RB3#3	19.21	19.12	19.14	20.12	20.03	20.05
		RB6#0	18.05	18.18	17.98	18.96	19.09	18.89
3.0	QPSK	RB1#0	19.16	19.23	19.12	20.07	20.14	20.03
		RB1#8	19.19	19.19	19.13	20.10	20.10	20.04
		RB1#14	19.18	19.16	19.13	20.09	20.07	20.04
		RB6#0	19.03	19.13	19.02	19.94	20.04	19.93
		RB6#9	19.10	19.13	19.04	20.01	20.04	19.95
		RB15#0	19.11	19.18	19.09	20.02	20.09	20.00
	16QAM	RB1#0	19.15	19.69	19.20	20.06	20.60	20.11
		RB1#8	19.09	19.66	19.21	20.00	20.57	20.12
		RB1#14	19.09	19.63	19.22	20.00	20.54	20.13
		RB6#0	18.02	18.24	18.09	18.93	19.15	19.00
		RB6#9	18.02	18.19	18.16	18.93	19.10	19.07
		RB15#0	18.15	18.22	18.09	19.06	19.13	19.00

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	18.96	19.03	19.02	19.87	19.94	19.93
		RB1#13	19.10	19.16	19.11	20.01	20.07	20.02
		RB1#24	19.05	19.02	19.00	19.96	19.93	19.91
		RB15#0	17.98	18.12	18.09	18.89	19.03	19.00
		RB15#10	18.09	18.11	17.99	19.00	19.02	18.90
		RB25#0	19.03	19.10	19.06	19.94	20.01	19.97
	16QAM	RB1#0	19.00	18.94	19.24	19.91	19.85	20.15
		RB1#13	19.16	19.01	19.41	20.07	19.92	20.32
		RB1#24	19.02	18.92	19.26	19.93	19.83	20.17
		RB15#0	18.03	18.18	18.10	18.94	19.09	19.01
		RB15#10	18.11	18.15	18.01	19.02	19.06	18.92
		RB25#0	18.06	18.19	18.07	18.97	19.10	18.98
10.0	QPSK	RB1#0	19.04	19.10	19.08	19.95	20.01	19.99
		RB1#25	19.38	19.33	19.27	20.29	20.24	20.18
		RB1#49	19.12	19.05	19.01	20.03	19.96	19.92
		RB25#0	19.01	19.16	19.23	19.92	20.07	20.14
		RB25#25	19.11	19.18	19.01	20.02	20.09	19.92
		RB50#0	19.09	19.18	19.15	20.00	20.09	20.06
	16QAM	RB1#0	18.98	19.60	19.14	19.89	20.51	20.05
		RB1#25	19.23	19.79	19.38	20.14	20.70	20.29
		RB1#49	18.97	19.59	19.14	19.88	20.50	20.05
		RB25#0	18.14	18.25	18.23	19.05	19.16	19.14
		RB25#25	18.24	18.26	18.08	19.15	19.17	18.99
		RB50#0	18.15	18.22	18.13	19.06	19.13	19.04

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	18.90	19.01	18.92	19.81	19.92	19.83
		RB1#38	19.14	19.15	19.14	20.05	20.06	20.05
		RB1#74	18.92	18.95	18.88	19.83	19.86	19.79
		RB36#0	18.08	18.12	18.23	18.99	19.03	19.14
		RB36#39	18.12	18.15	18.00	19.03	19.06	18.91
		RB75#0	19.09	19.15	19.10	20.00	20.06	20.01
	16QAM	RB1#0	19.39	19.07	19.20	20.30	19.98	20.11
		RB1#38	19.50	19.27	19.37	20.41	20.18	20.28
		RB1#74	19.33	19.02	19.20	20.24	19.93	20.11
		RB36#0	18.05	18.16	18.13	18.96	19.07	19.04
		RB36#39	18.11	18.17	17.95	19.02	19.08	18.86
		RB75#0	18.10	18.18	18.05	19.01	19.09	18.96
20.0	QPSK	RB1#0	18.76	18.86	18.84	19.67	19.77	19.75
		RB1#50	19.29	19.30	19.31	20.20	20.21	20.22
		RB1#99	18.77	18.82	18.83	19.68	19.73	19.74
		RB50#0	19.00	19.18	19.15	19.91	20.09	20.06
		RB50#50	18.98	19.13	18.83	19.89	20.04	19.74
		RB100#0	18.98	19.14	19.06	19.89	20.05	19.97
	16QAM	RB1#0	19.22	19.08	18.95	20.13	19.99	19.86
		RB1#50	19.62	19.56	19.35	20.53	20.47	20.26
		RB1#99	19.27	19.07	18.97	20.18	19.98	19.88
		RB50#0	18.52	18.69	18.64	19.43	19.60	19.55
		RB50#50	18.47	18.66	18.35	19.38	19.57	19.26
		RB100#0	18.53	18.71	18.54	19.44	19.62	19.45

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

For Band2: Antenna Gain = 0.91Bi

Limit: EIRP ≤ 33dBm

LTE Band5

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	24.12	23.96	23.99	20.32	20.16	20.19
		RB1#3	24.27	24.16	24.13	20.47	20.36	20.33
		RB1#5	24.12	23.99	24.00	20.32	20.19	20.20
		RB3#0	24.04	24.07	24.04	20.24	20.27	20.24
		RB3#3	24.07	24.06	24.03	20.27	20.26	20.23
		RB6#0	23.16	23.09	23.12	19.36	19.29	19.32
	16QAM	RB1#0	23.02	23.00	23.11	19.22	19.20	19.31
		RB1#3	23.24	23.15	23.29	19.44	19.35	19.49
		RB1#5	23.02	23.00	23.10	19.22	19.20	19.30
		RB3#0	23.08	23.22	23.03	19.28	19.42	19.23
		RB3#3	23.01	23.20	23.03	19.21	19.40	19.23
		RB6#0	21.98	22.09	22.09	18.18	18.29	18.29
3.0	QPSK	RB1#0	24.24	24.17	24.10	20.44	20.37	20.30
		RB1#8	24.17	24.10	24.11	20.37	20.30	20.31
		RB1#14	24.18	24.13	24.10	20.38	20.33	20.30
		RB6#0	23.20	23.13	23.16	19.40	19.33	19.36
		RB6#9	23.14	23.18	23.10	19.34	19.38	19.30
		RB15#0	23.14	23.20	23.14	19.34	19.40	19.34
	16QAM	RB1#0	23.18	23.71	23.29	19.38	19.91	19.49
		RB1#8	23.11	23.62	23.29	19.31	19.82	19.49
		RB1#14	23.11	23.65	23.26	19.31	19.85	19.46
		RB6#0	22.05	22.16	22.14	18.25	18.36	18.34
		RB6#9	22.01	22.18	22.10	18.21	18.38	18.30
		RB15#0	22.12	22.21	22.08	18.32	18.41	18.28

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	24.05	24.01	23.89	20.25	20.21	20.09
		RB1#13	24.12	24.08	24.09	20.32	20.28	20.29
		RB1#24	24.02	23.97	23.93	20.22	20.17	20.13
		RB15#0	23.08	23.13	23.15	19.28	19.33	19.35
		RB15#10	23.00	23.09	22.97	19.20	19.29	19.17
		RB25#0	23.03	23.10	23.02	19.23	19.30	19.22
	16QAM	RB1#0	23.24	23.07	22.82	19.44	19.27	19.02
		RB1#13	23.36	23.13	22.97	19.56	19.33	19.17
		RB1#24	23.30	23.03	22.87	19.50	19.23	19.07
		RB15#0	22.01	22.08	22.15	18.21	18.28	18.35
		RB15#10	21.99	22.08	21.98	18.19	18.28	18.18
		RB25#0	22.01	22.05	22.06	18.21	18.25	18.26
10.0	QPSK	RB1#0	24.04	24.00	24.05	20.24	20.20	20.25
		RB1#25	24.20	24.21	24.20	20.40	20.41	20.40
		RB1#49	23.97	24.00	23.97	20.17	20.20	20.17
		RB25#0	23.06	23.12	23.16	19.26	19.32	19.36
		RB25#25	23.00	23.11	22.91	19.20	19.31	19.11
		RB50#0	23.06	23.12	23.07	19.26	19.32	19.27
	16QAM	RB1#0	23.44	23.19	23.02	19.64	19.39	19.22
		RB1#25	23.72	23.34	23.16	19.92	19.54	19.36
		RB1#49	23.55	23.09	23.01	19.75	19.29	19.21
		RB25#0	22.09	22.09	22.22	18.29	18.29	18.42
		RB25#25	22.06	22.06	21.94	18.26	18.26	18.14
		RB50#0	22.05	22.09	22.07	18.25	18.29	18.27

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

For Band5: Antenna Gain = -1.15dBi = -3.3dBd (0dBd=2.15dBi)

Cable loss=0.5dB(provide d by applicant)

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
5.0	QPSK	RB1#0	22.59	22.54	22.60	23.57	23.52	23.58
		RB1#13	22.66	22.68	22.74	23.64	23.66	23.72
		RB1#24	22.60	22.58	22.63	23.58	23.56	23.61
		RB15#0	21.72	21.71	21.76	22.70	22.69	22.74
		RB15#10	21.66	21.67	21.68	22.64	22.65	22.66
		RB25#0	21.67	21.67	21.65	22.65	22.65	22.63
	16QAM	RB1#0	21.88	21.61	21.44	22.86	22.59	22.42
		RB1#13	21.96	21.76	21.58	22.94	22.74	22.56
		RB1#24	21.85	21.66	21.49	22.83	22.64	22.47
		RB15#0	20.71	20.72	20.74	21.69	21.70	21.72
		RB15#10	20.65	20.71	20.66	21.63	21.69	21.64
		RB25#0	20.71	20.67	20.70	21.69	21.65	21.68
10.0	QPSK	RB1#0	22.64	22.69	22.30	23.62	23.67	23.28
		RB1#25	22.82	22.86	22.56	23.80	23.84	23.54
		RB1#49	22.65	22.42	22.26	23.63	23.40	23.24
		RB25#0	21.81	21.62	21.25	22.79	22.60	22.23
		RB25#25	21.80	21.44	21.23	22.78	22.42	22.21
		RB50#0	21.79	21.34	21.27	22.77	22.32	22.25
	16QAM	RB1#0	21.83	21.17	21.56	22.81	22.15	22.54
		RB1#25	22.01	21.40	21.95	22.99	22.38	22.93
		RB1#49	21.80	21.17	21.71	22.78	22.15	22.69
		RB25#0	20.83	20.53	20.35	21.81	21.51	21.33
		RB25#25	20.80	20.41	20.43	21.78	21.39	21.41
		RB50#0	20.85	20.55	20.66	21.83	21.53	21.64

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.58	22.05	22.05	23.56	23.03	23.03
		RB1#38	22.70	22.25	22.29	23.68	23.23	23.27
		RB1#74	22.45	22.00	22.10	23.43	22.98	23.08
		RB36#0	21.77	21.32	21.32	22.75	22.30	22.30
		RB36#39	21.75	21.20	21.32	22.73	22.18	22.30
		RB75#0	21.81	21.26	21.28	22.79	22.24	22.26
	16QAM	RB1#0	21.89	21.51	21.13	22.87	22.49	22.11
		RB1#38	21.95	21.73	21.37	22.93	22.71	22.35
		RB1#74	21.73	21.58	21.22	22.71	22.56	22.20
		RB36#0	20.33	20.28	20.21	21.31	21.26	21.19
		RB36#39	20.39	20.18	20.24	21.37	21.16	21.22
		RB75#0	20.41	20.26	20.25	21.39	21.24	21.23
20.0	QPSK	RB1#0	22.34	22.38	21.89	23.32	23.36	22.87
		RB1#50	22.74	22.82	22.39	23.72	23.80	23.37
		RB1#99	22.28	22.15	21.99	23.26	23.13	22.97
		RB50#0	21.70	21.65	21.09	22.68	22.63	22.07
		RB50#50	21.75	21.27	21.08	22.73	22.25	22.06
		RB100#0	21.71	21.42	21.05	22.69	22.40	22.03
	16QAM	RB1#0	21.91	21.19	21.06	22.89	22.17	22.04
		RB1#50	22.35	21.74	21.48	23.33	22.72	22.46
		RB1#99	21.82	21.22	21.15	22.80	22.20	22.13
		RB50#0	20.76	20.27	20.04	21.74	21.25	21.02
		RB50#50	20.73	20.01	20.04	21.71	20.99	21.02
		RB100#0	20.76	20.25	20.08	21.74	21.23	21.06

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

For Band7: Antenna Gain = 1.78dBi

Cable loss=0.8dB(provide d by applicant)

Limit: EIRP≤30dBm

LTE Band 12

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.61	23.58	23.53	19.04	19.01	18.96
		RB1#3	23.71	23.80	23.77	19.14	19.23	19.20
		RB1#5	23.62	23.59	23.59	19.05	19.02	19.02
		RB3#0	23.66	23.69	23.68	19.09	19.12	19.11
		RB3#3	23.69	23.70	23.67	19.12	19.13	19.10
		RB6#0	22.69	22.70	22.71	18.12	18.13	18.14
	16QAM	RB1#0	22.74	22.62	22.57	18.17	18.05	18.00
		RB1#3	22.92	22.83	22.76	18.35	18.26	18.19
		RB1#5	22.77	22.68	22.61	18.20	18.11	18.04
		RB3#0	22.66	22.84	22.83	18.09	18.27	18.26
		RB3#3	22.67	22.77	22.85	18.10	18.20	18.28
		RB6#0	21.73	21.62	21.68	17.16	17.05	17.11
3.0	QPSK	RB1#0	23.67	23.75	23.79	19.10	19.18	19.22
		RB1#8	23.66	23.69	23.65	19.09	19.12	19.08
		RB1#14	23.70	23.68	23.69	19.13	19.11	19.12
		RB6#0	22.63	22.71	22.73	18.06	18.14	18.16
		RB6#9	22.68	22.69	22.69	18.11	18.12	18.12
		RB15#0	22.73	22.73	22.75	18.16	18.16	18.18
	16QAM	RB1#0	23.24	22.89	22.71	18.67	18.32	18.14
		RB1#8	23.18	22.86	22.67	18.61	18.29	18.10
		RB1#14	23.21	22.86	22.70	18.64	18.29	18.13
		RB6#0	21.73	21.76	21.71	17.16	17.19	17.14
		RB6#9	21.80	21.77	21.65	17.23	17.20	17.08
		RB15#0	21.79	21.72	21.79	17.22	17.15	17.22

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	23.52	23.54	23.58	18.95	18.97	19.01
		RB1#13	23.67	23.68	23.67	19.10	19.11	19.10
		RB1#24	23.54	23.53	23.54	18.97	18.96	18.97
		RB15#0	22.60	22.69	22.67	18.03	18.12	18.10
		RB15#10	22.62	22.69	22.53	18.05	18.12	17.96
		RB25#0	22.55	22.66	22.57	17.98	18.09	18.00
	16QAM	RB1#0	22.60	22.46	22.84	18.03	17.89	18.27
		RB1#13	22.76	22.56	22.90	18.19	17.99	18.33
		RB1#24	22.64	22.49	22.83	18.07	17.92	18.26
		RB15#0	21.60	21.77	21.68	17.03	17.20	17.11
		RB15#10	21.65	21.74	21.53	17.08	17.17	16.96
		RB25#0	21.60	21.76	21.62	17.03	17.19	17.05
10.0	QPSK	RB1#0	23.61	23.60	23.63	19.04	19.03	19.06
		RB1#25	23.83	23.79	23.79	19.26	19.22	19.22
		RB1#49	23.60	23.58	23.59	19.03	19.01	19.02
		RB25#0	22.66	22.83	22.63	18.09	18.26	18.06
		RB25#25	22.59	22.90	22.58	18.02	18.33	18.01
		RB50#0	22.64	22.87	22.64	18.07	18.30	18.07
	16QAM	RB1#0	22.58	23.17	22.77	18.01	18.60	18.20
		RB1#25	22.83	23.37	22.99	18.26	18.80	18.42
		RB1#49	22.60	23.14	22.77	18.03	18.57	18.20
		RB25#0	21.80	21.95	21.70	17.23	17.38	17.13
		RB25#25	21.71	21.97	21.65	17.14	17.40	17.08
		RB50#0	21.72	21.91	21.65	17.15	17.34	17.08

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

For Band12: Antenna Gain = -1.92dBi = -4.07dBd (0dBd=2.15dBi)

Cable loss=0.5dB (provide d by 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	22.60	22.90	23.21	23.59	23.89	24.20
		RB1#13	22.72	23.03	23.35	23.71	24.02	24.34
		RB1#24	22.60	22.96	23.24	23.59	23.95	24.23
		RB15#0	21.65	21.97	22.32	22.64	22.96	23.31
		RB15#10	21.69	21.97	22.26	22.68	22.96	23.25
		RB25#0	21.63	21.98	22.25	22.62	22.97	23.24
	16QAM	RB1#0	21.55	21.90	22.41	22.54	22.89	23.40
		RB1#13	21.64	22.07	22.51	22.63	23.06	23.50
		RB1#24	21.56	21.97	22.42	22.55	22.96	23.41
		RB15#0	20.58	20.99	21.35	21.57	21.98	22.34
		RB15#10	20.61	20.99	21.26	21.60	21.98	22.25
		RB25#0	20.63	21.03	21.27	21.62	22.02	22.26
10.0	QPSK	RB1#0	22.65	22.98	23.22	23.64	23.97	24.21
		RB1#25	22.98	23.32	23.50	23.97	24.31	24.49
		RB1#49	22.67	23.01	23.19	23.66	24.00	24.18
		RB25#0	21.67	22.08	22.39	22.66	23.07	23.38
		RB25#25	21.72	22.06	22.27	22.71	23.05	23.26
		RB50#0	21.65	22.05	22.31	22.64	23.04	23.30
	16QAM	RB1#0	21.45	22.04	22.38	22.44	23.03	23.37
		RB1#25	21.82	22.40	22.66	22.81	23.39	23.65
		RB1#49	21.49	22.10	22.37	22.48	23.09	23.36
		RB25#0	20.69	21.08	21.38	21.68	22.07	22.37
		RB25#25	20.75	21.09	21.27	21.74	22.08	22.26
		RB50#0	20.69	21.09	21.32	21.68	22.08	22.31

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.53	22.81	23.11	23.52	23.80	24.10
		RB1#38	22.71	23.06	23.26	23.70	24.05	24.25
		RB1#74	22.53	22.86	23.10	23.52	23.85	24.09
		RB36#0	21.78	22.01	22.42	22.77	23.00	23.41
		RB36#39	21.79	22.05	22.35	22.78	23.04	23.34
		RB75#0	21.76	22.03	22.41	22.75	23.02	23.40
	16QAM	RB1#0	21.40	22.03	22.25	22.39	23.02	23.24
		RB1#38	21.61	22.24	22.40	22.60	23.23	23.39
		RB1#74	21.43	22.03	22.24	22.42	23.02	23.23
		RB36#0	20.64	21.05	21.33	21.63	22.04	22.32
		RB36#39	20.64	21.10	21.26	21.63	22.09	22.25
		RB75#0	20.70	21.01	21.30	21.69	22.00	22.29
20.0	QPSK	RB1#0	22.36	22.67	22.92	23.35	23.66	23.91
		RB1#50	22.87	23.27	23.52	23.86	24.26	24.51
		RB1#99	22.37	22.82	23.00	23.36	23.81	23.99
		RB50#0	21.58	21.95	22.35	22.57	22.94	23.34
		RB50#50	21.56	21.96	22.14	22.55	22.95	23.13
		RB100#0	21.55	21.93	22.26	22.54	22.92	23.25
	16QAM	RB1#0	21.25	21.90	21.93	22.24	22.89	22.92
		RB1#50	21.82	22.49	22.53	22.81	23.48	23.52
		RB1#99	21.36	22.04	22.02	22.35	23.03	23.01
		RB50#0	20.64	20.97	21.32	21.63	21.96	22.31
		RB50#50	20.64	20.98	21.14	21.63	21.97	22.13
		RB100#0	20.60	20.95	21.27	21.59	21.94	22.26

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

For Band41: Antenna Gain = 1.79dBi

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

Limit: EIRP≤33dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.38	13
	Middle	3.12	13
	High	3.28	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.23	13
	Middle	3.26	13
	High	3.41	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.85	13
	Middle	2.95	13
	High	3.01	13
HSDPA (16QAM)	Low	3.72	13
	Middle	3.81	13
	High	3.75	13
HSUPA (BPSK)	Low	3.81	13
	Middle	3.85	13
	High	3.75	13
HSPA+	Low	3.86	13
	Middle	3.88	13
	High	3.81	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.22	13
	Middle	3.16	13
	High	3.32	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.24	13
	Middle	3.19	13
	High	3.61	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.95	13
	Middle	3.01	13
	High	3.01	13
HSDPA (16QAM)	Low	3.75	13
	Middle	3.75	13
	High	3.81	13
HSUPA (BPSK)	Low	3.81	13
	Middle	3.85	13
	High	3.85	13
HSPA+	Low	3.96	13
	Middle	3.98	13
	High	3.92	13

LTE Band: (pre-scan all bandwidth, the worst case as below)

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.91	4.42	3.59	13	Pass
QPSK (100RB Size)	5.19	5.51	5.35	13	Pass
16QAM (1RB Size)	4.84	5.54	4.58	13	Pass
16QAM (100RB Size)	6.03	6.31	6.19	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.30	4.58	3.75	13	Pass
QPSK (50RB Size)	5.26	5.42	5.26	13	Pass
16QAM (1RB Size)	4.07	5.58	4.71	13	Pass
16QAM (50RB Size)	6.09	6.15	6.19	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.29	4.65	4.97	13	Pass
QPSK (100RB Size)	5.45	5.71	5.48	13	Pass
16QAM (1RB Size)	5.03	5.48	6.25	13	Pass
16QAM (100RB Size)	6.31	6.44	6.41	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.00	5.54	5.42	13	Pass
QPSK (50RB Size)	5.42	5.57	5.51	13	Pass
16QAM (1RB Size)	6.78	6.61	6.20	13	Pass
16QAM (50RB Size)	6.29	6.49	6.43	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	7.46	7.42	6.43	13	Pass
QPSK (100RB Size)	7.28	6.94	4.99	13	Pass
16QAM (1RB Size)	6.85	7.23	6.69	13	Pass
16QAM (100RB Size)	7.29	7.62	6.49	13	Pass

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

Applicable Standard

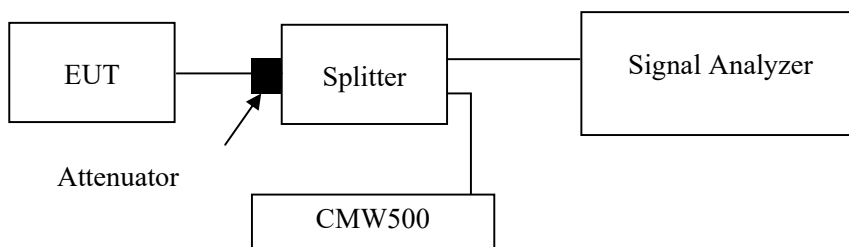
FCC 47 §2.1049, §22.917, §22.905, §24.238 and §27.53.

Test Procedure

ANSI C63.26-2015 Section 5.4.4

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:	24.9 °C
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-07-13 to 2023-07-17.

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	247.00	319.00
	190	836.6	246.00	318.00
	251	848.8	246.00	318.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	128	824.2	248.00	309.00
	190	836.6	248.00	318.00
	251	848.8	247.00	312.00

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.200	4.815
	836.6	4.170	4.725
	846.6	4.170	4.725
HSDPA	826.4	4.200	4.905
	836.6	4.170	4.725
	846.6	4.170	4.725
HSUPA	826.4	4.200	4.905
	836.6	4.200	4.875
	846.6	4.170	4.725

PCS Band (Part 24E)

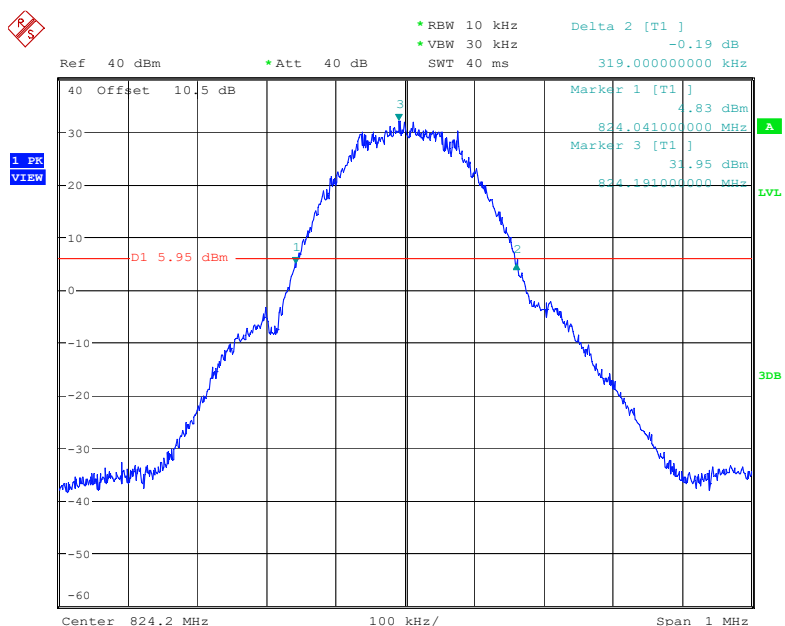
Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	245.00	318.00
	661	1880.0	247.00	311.00
	810	1909.8	246.00	320.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	512	1850.2	246.00	319.00
	661	1880.0	249.00	323.00
	810	1909.8	253.00	323.00

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.185	4.725
	1880.0	4.170	4.725
	1907.6	4.185	4.740
HSDPA	1852.4	4.185	4.770
	1880.0	4.200	4.740
	1907.6	4.200	4.845
HSUPA	1852.4	4.200	4.830
	1880.0	4.170	4.725
	1907.6	4.215	4.920

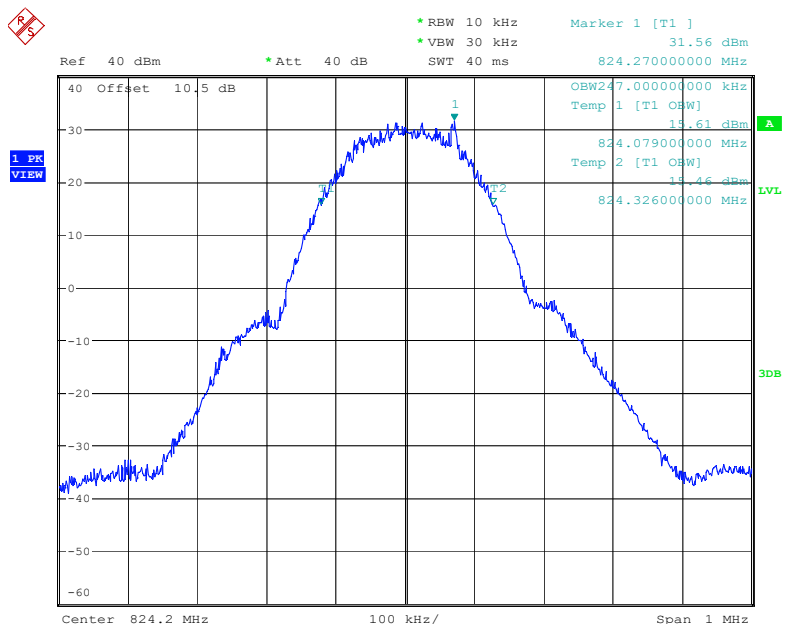
Cellular Band

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

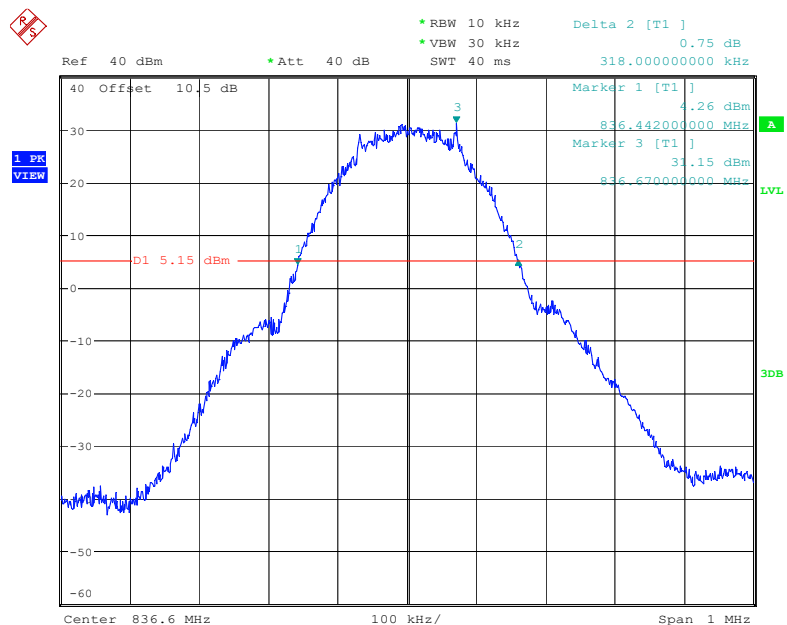


Date: 17.JUL.2023 19:12:56

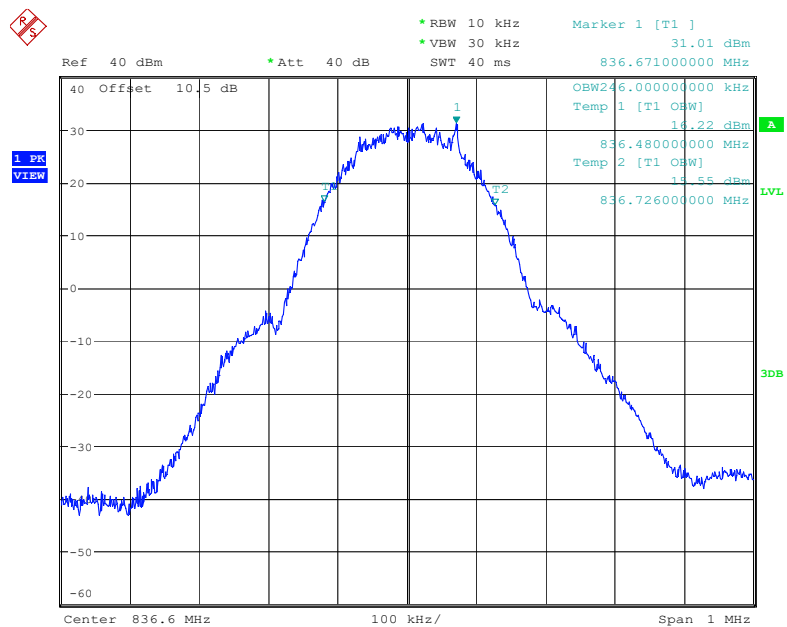
99% Occupied Bandwidth for GSM(GMSK) Mode, Low channel



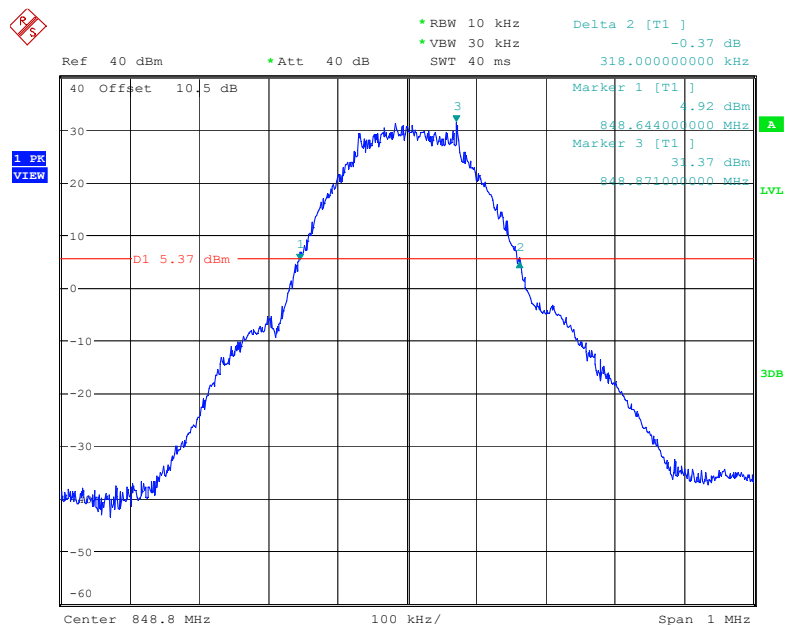
Date: 17.JUL.2023 19:12:05

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

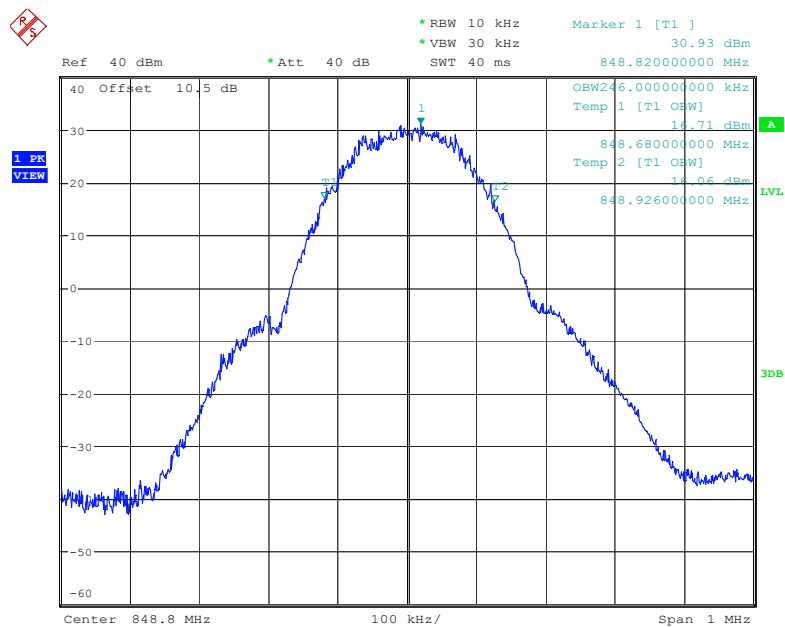
Date: 17.JUL.2023 19:06:57

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

Date: 17.JUL.2023 19:06:06

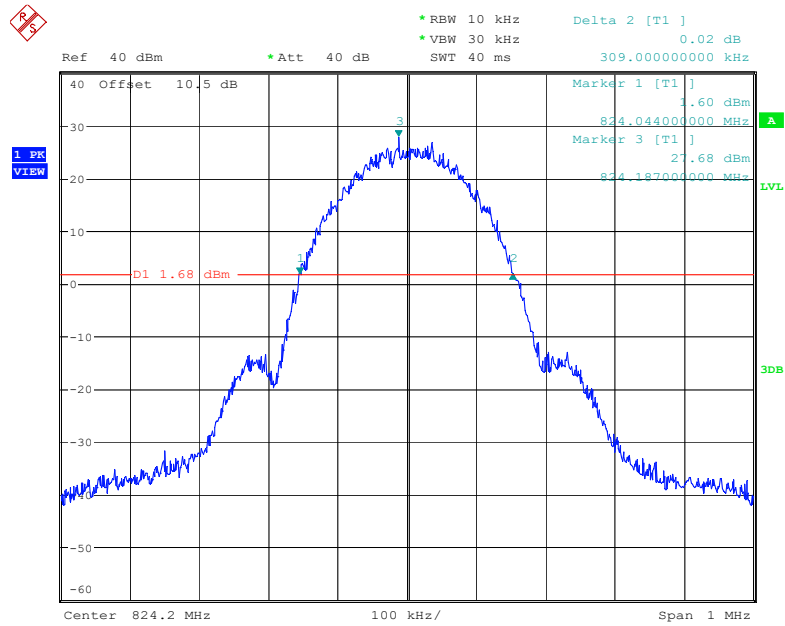
26 dB Emission Bandwidth for GSM(GMSK) Mode, High channel

Date: 17.JUL.2023 19:19:17

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

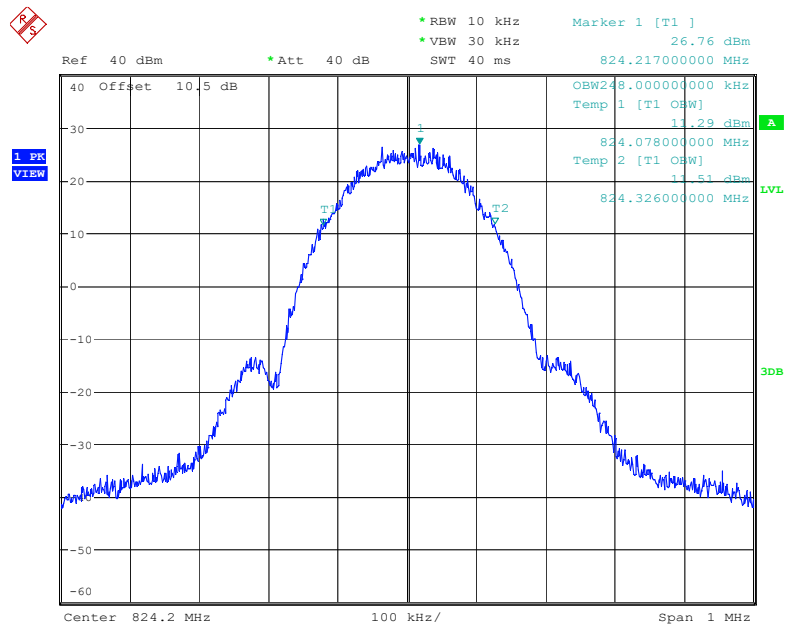
Date: 17.JUL.2023 19:18:26

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

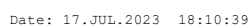


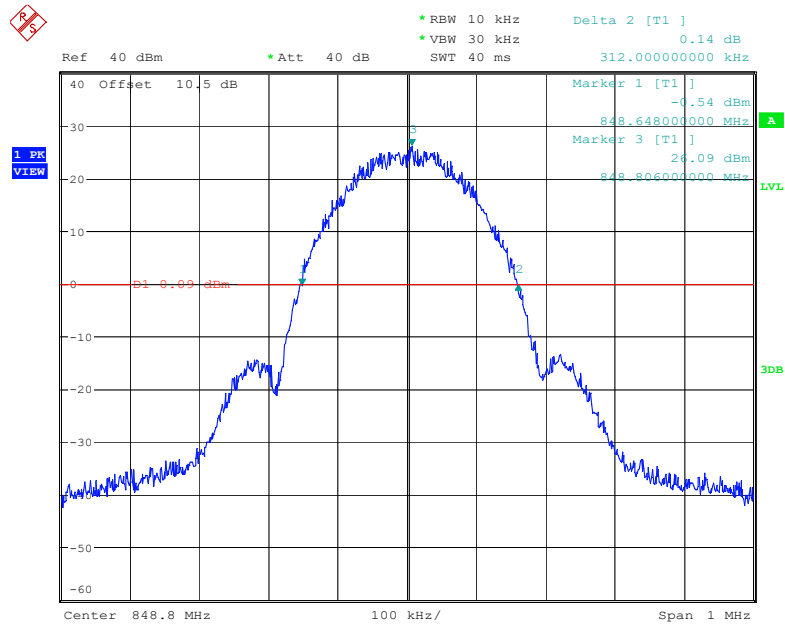
Date: 17.JUL.2023 18:24:58

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

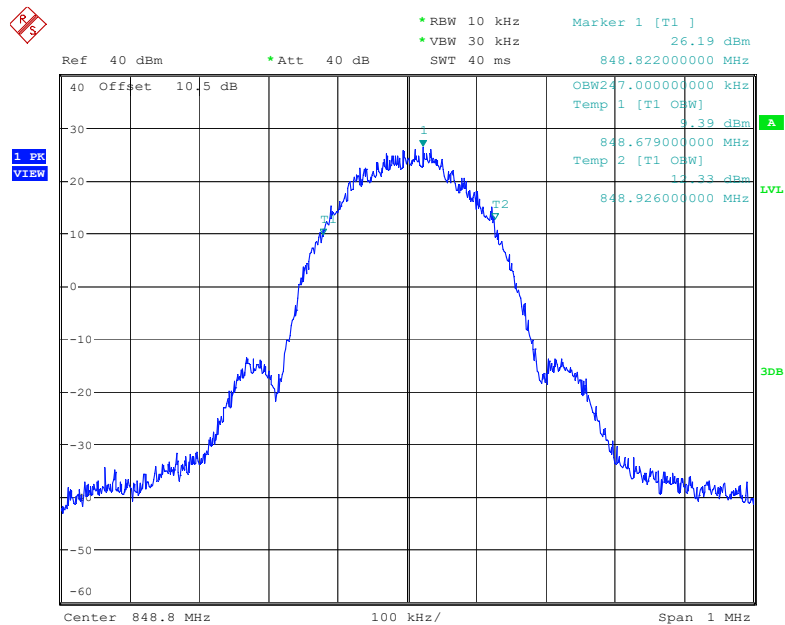


Date: 17.JUL.2023 18:24:07



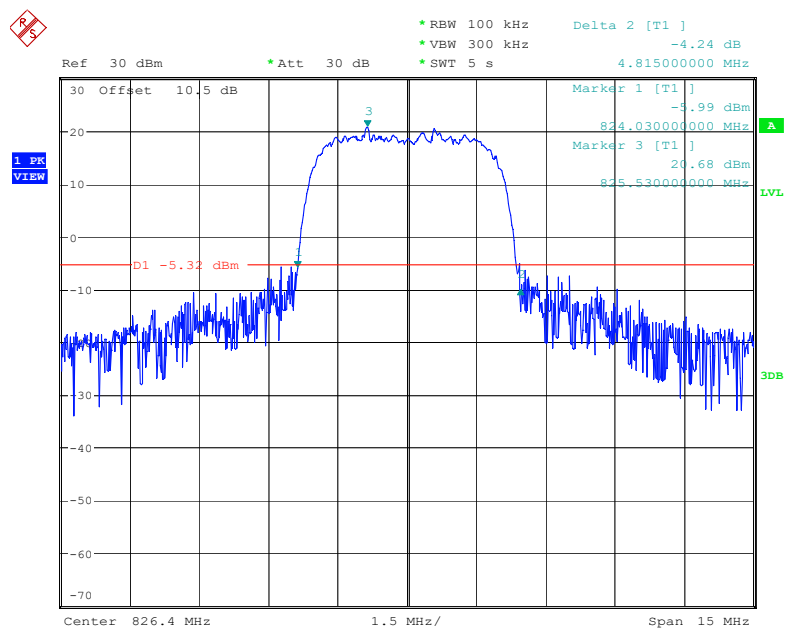
26 dB Emission Bandwidth for EDGE(8PSK) Mode, High channel

Date: 17.JUL.2023 18:18:32

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

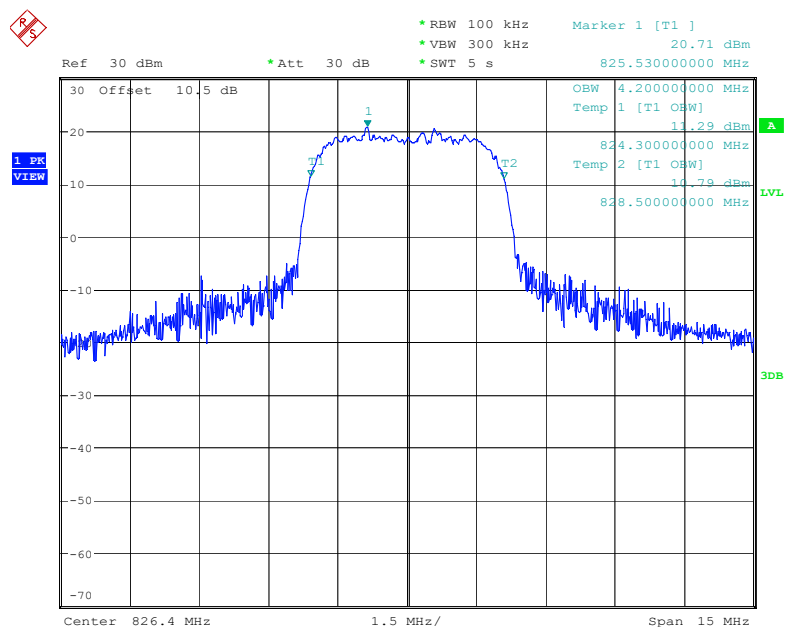
Date: 17.JUL.2023 18:17:50

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

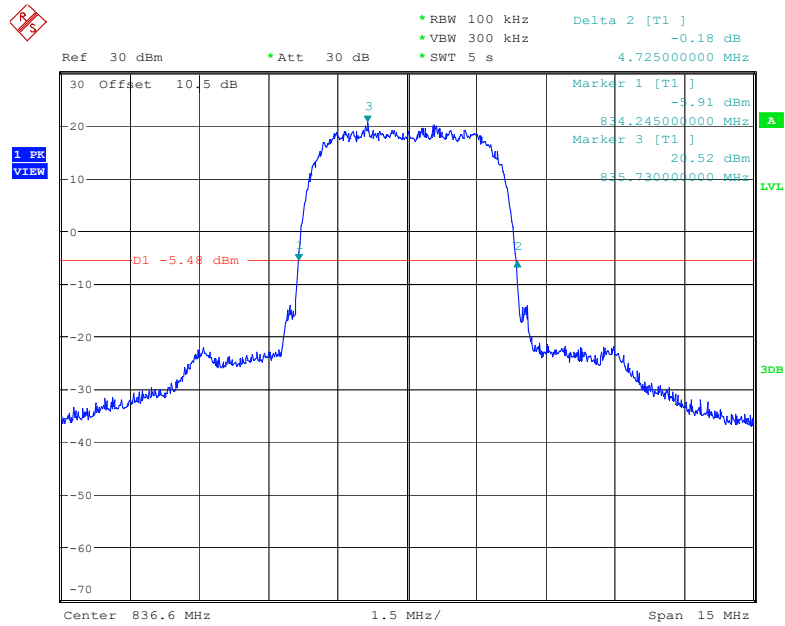


Date: 16.JUL.2023 20:00:07

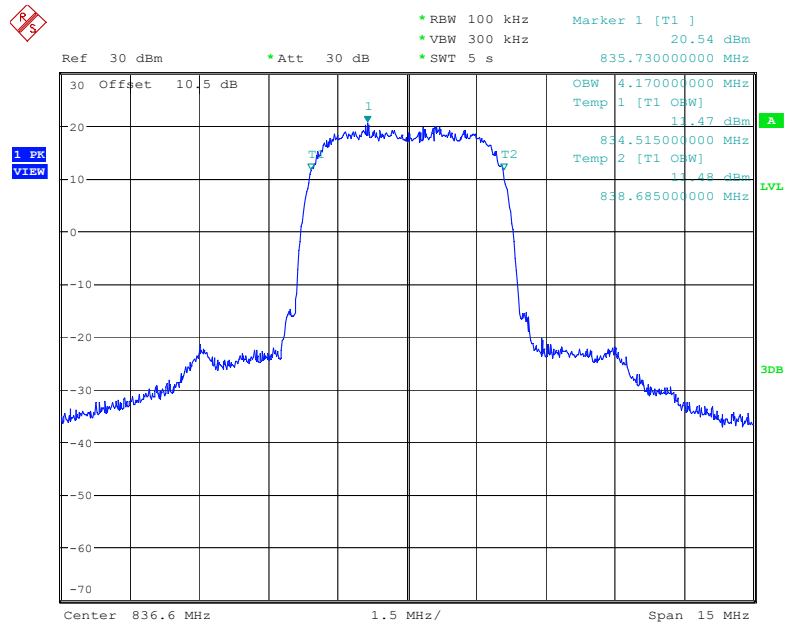
99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



Date: 16.JUL.2023 19:56:13

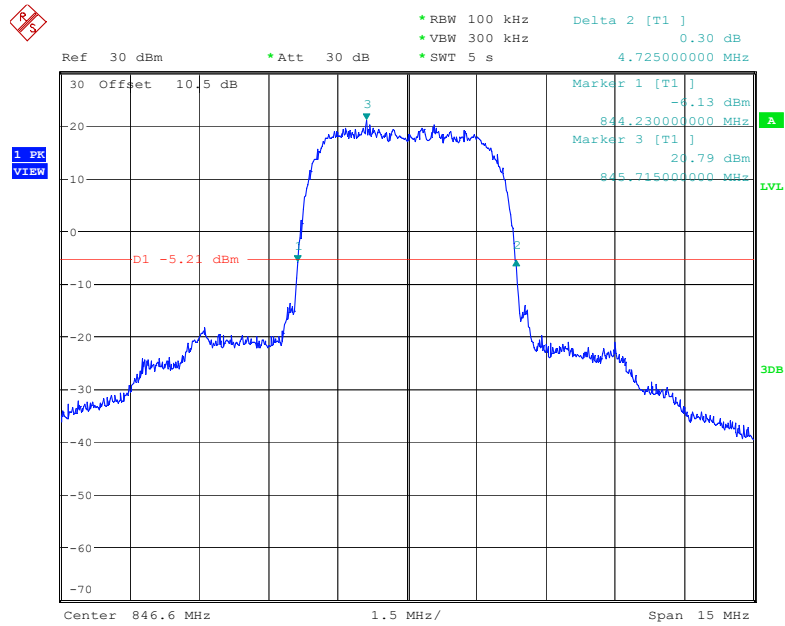
26 dB Emission Bandwidth for RMC (BPSK) Mode, Middle channel

Date: 16.JUL.2023 19:50:46

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

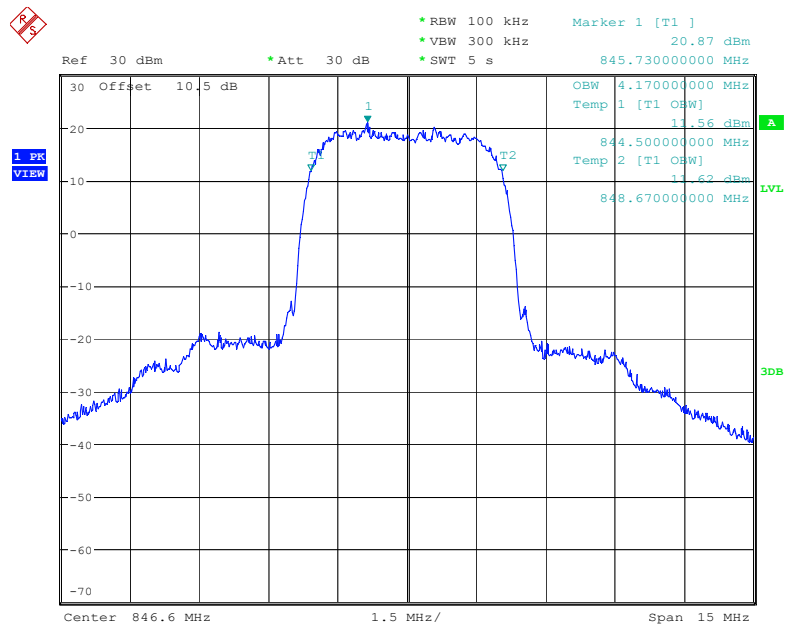
Date: 16.JUL.2023 19:50:22

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

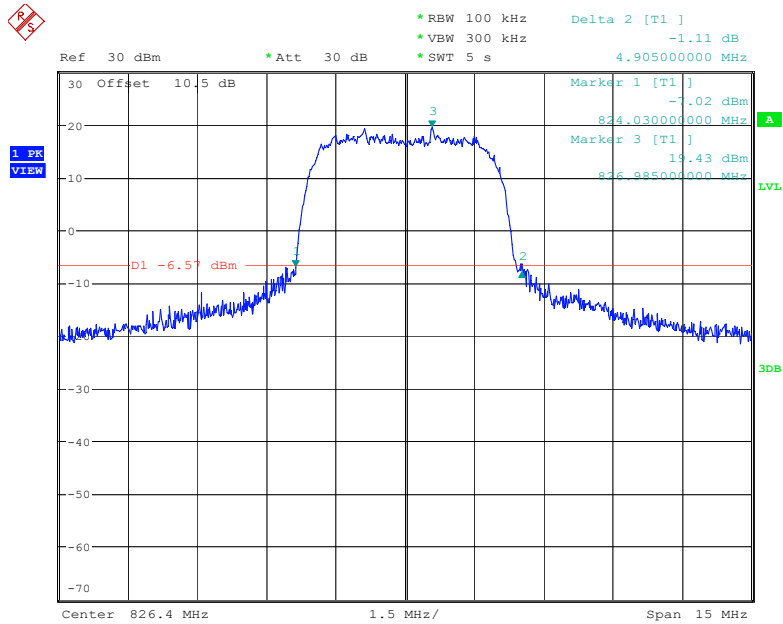


Date: 16.JUL.2023 19:47:36

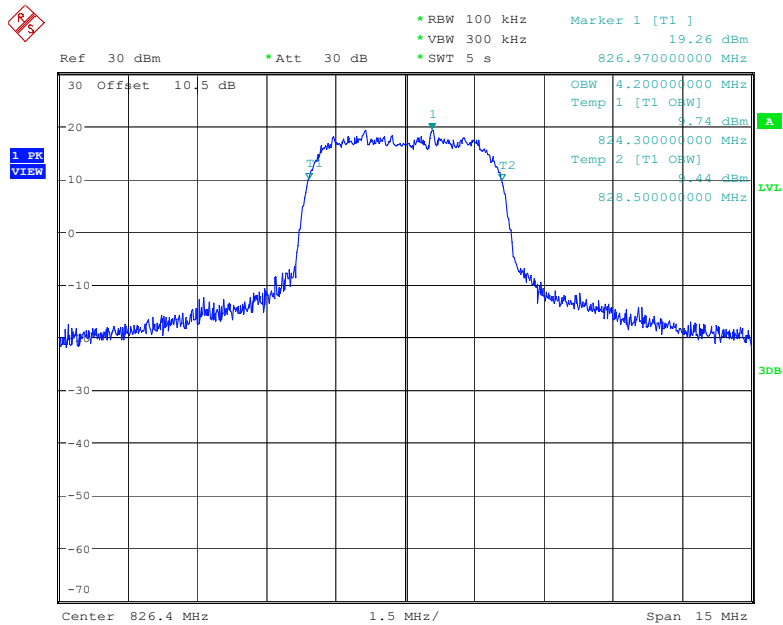
99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



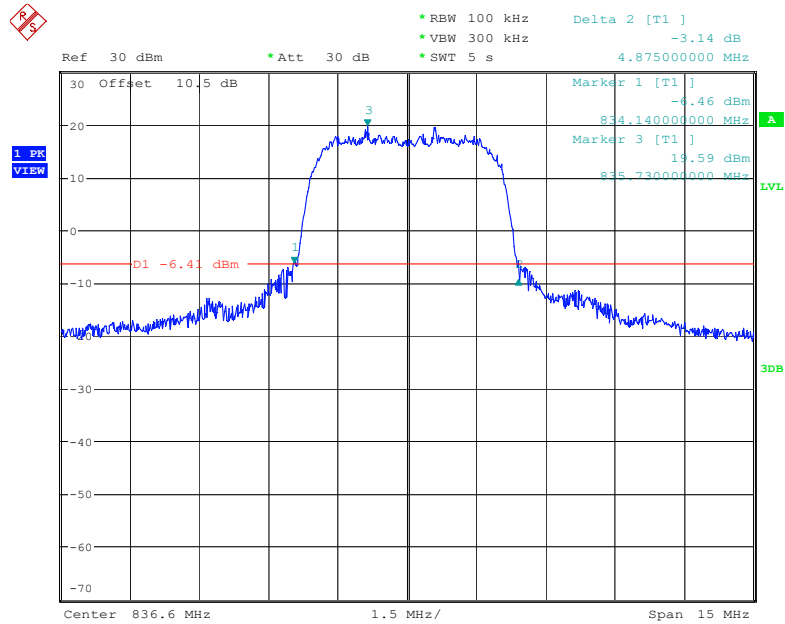
Date: 16.JUL.2023 19:47:10

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

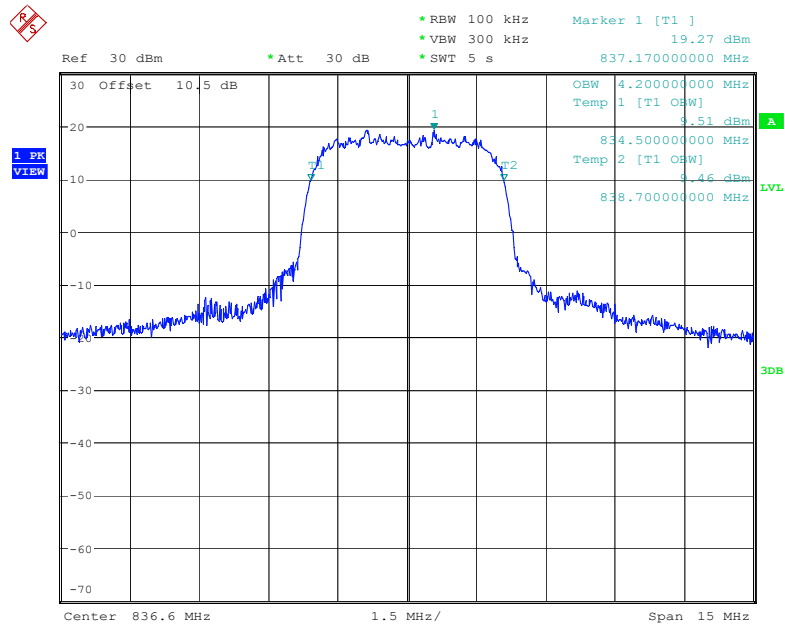
Date: 16.JUL.2023 20:28:28

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

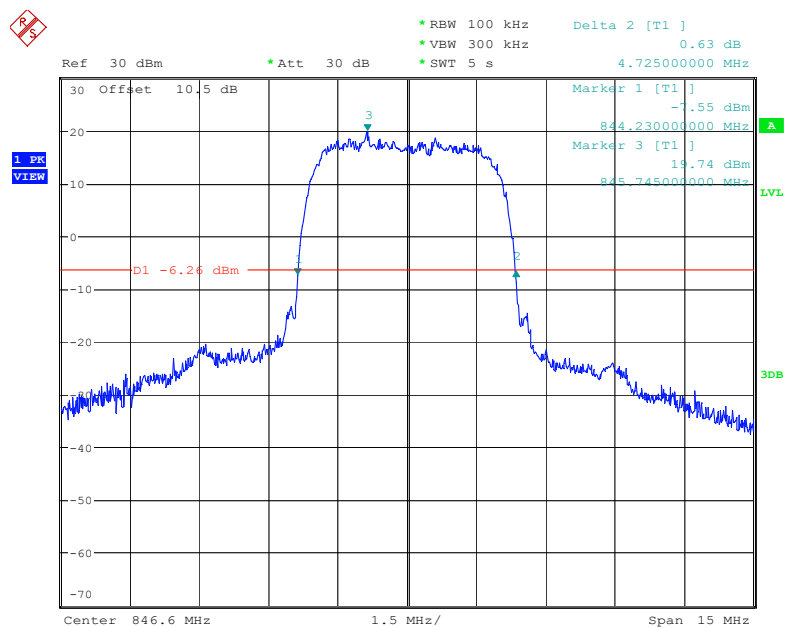
Date: 16.JUL.2023 20:27:32

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

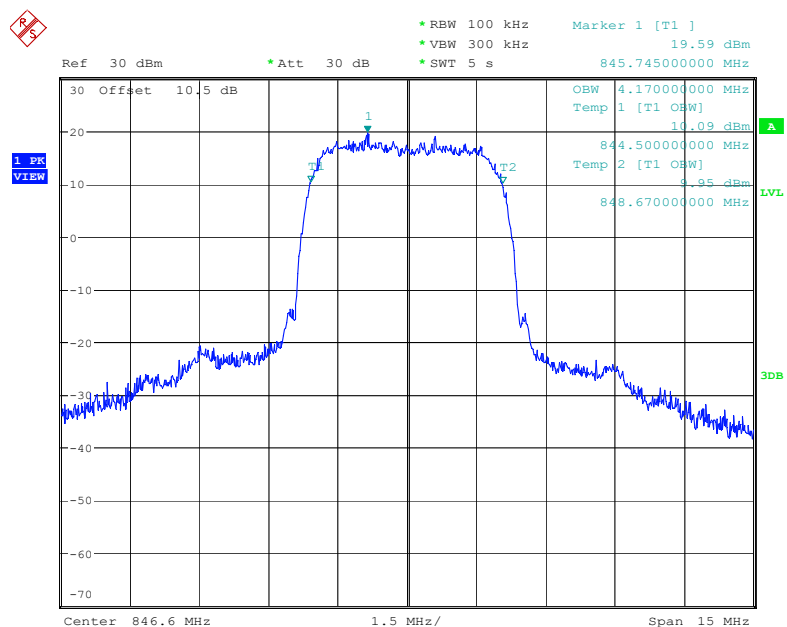
Date: 16.JUL.2023 20:23:56

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

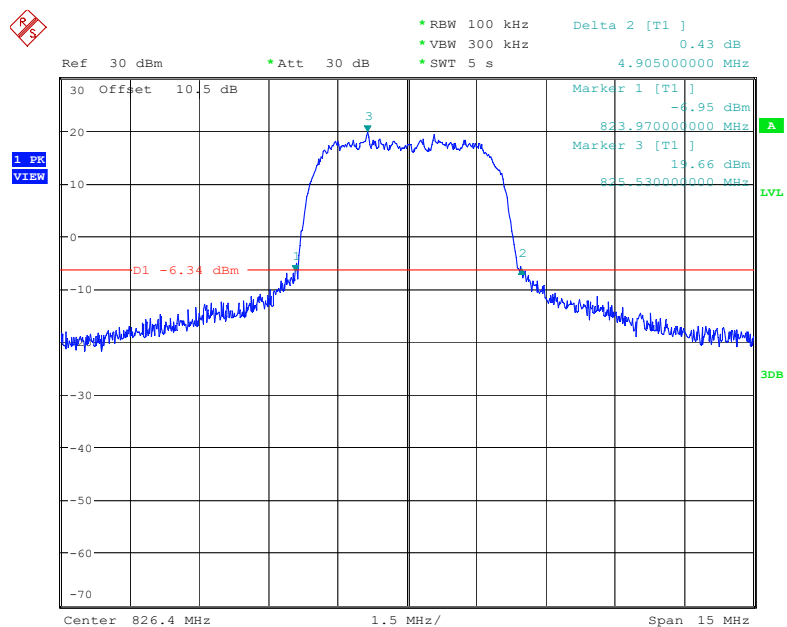
Date: 16.JUL.2023 20:22:59

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

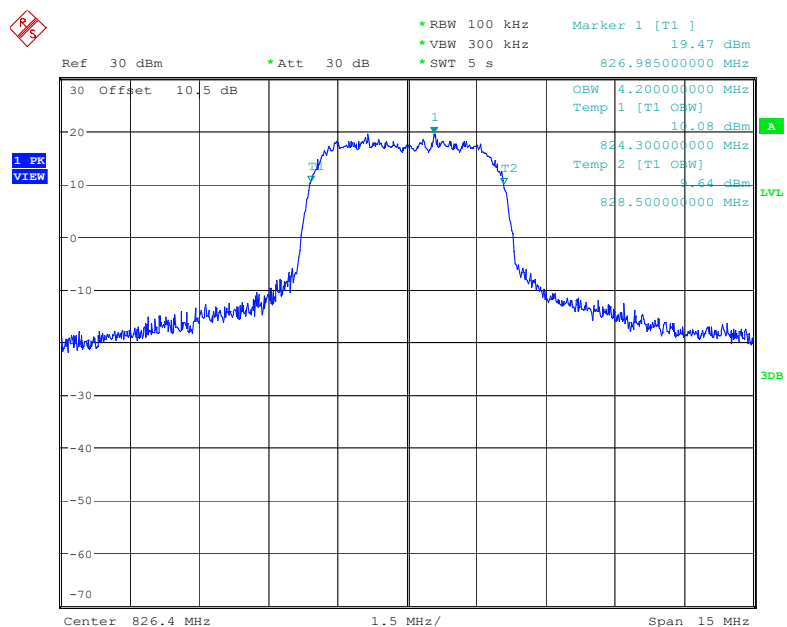
Date: 16.JUL.2023 20:18:46

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

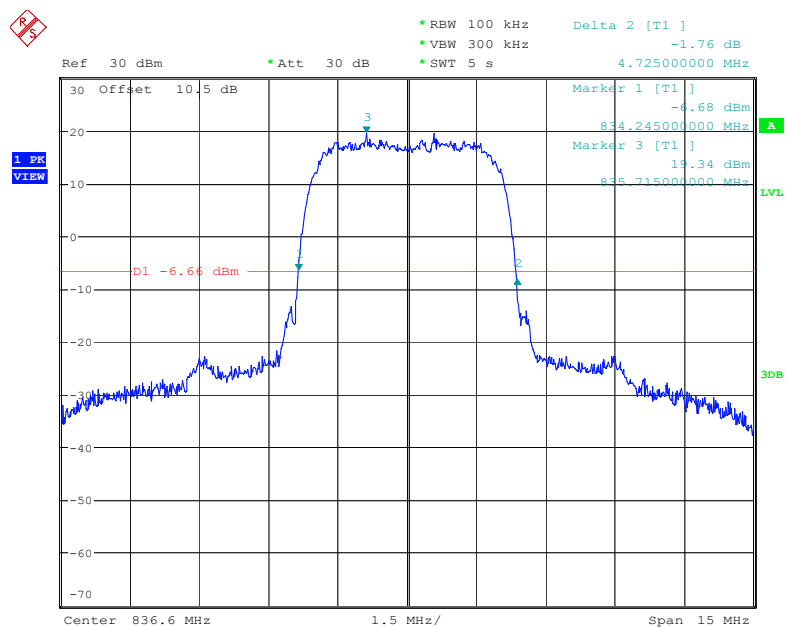
Date: 16.JUL.2023 20:17:50

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

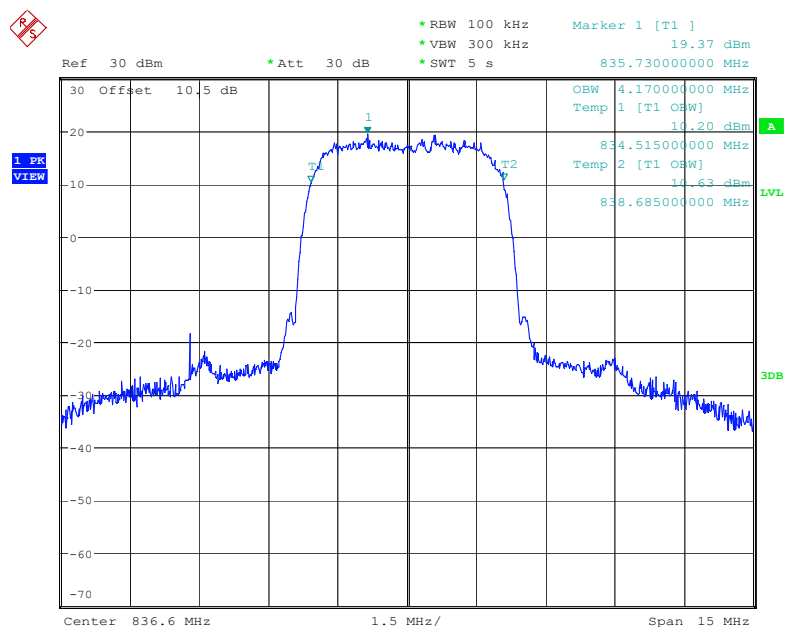
Date: 16.JUL.2023 20:04:32

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

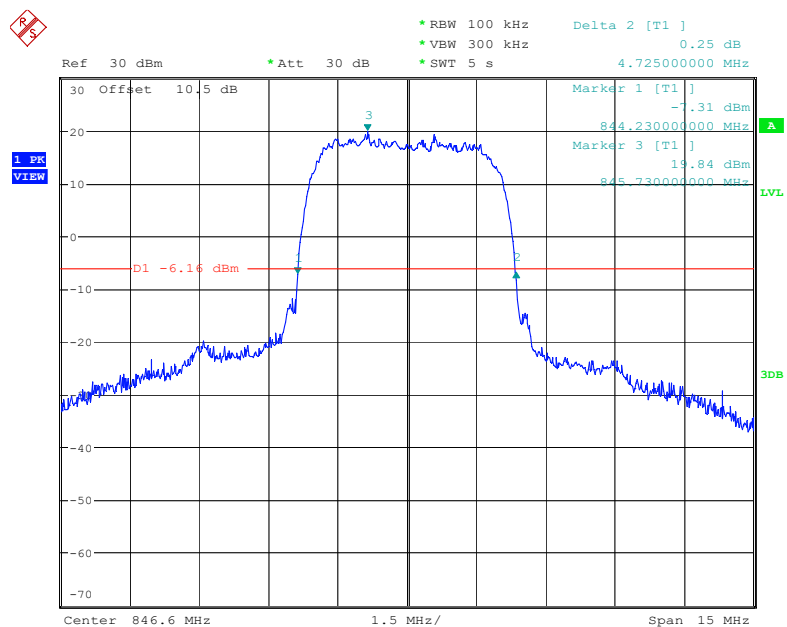
Date: 16.JUL.2023 20:03:37

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

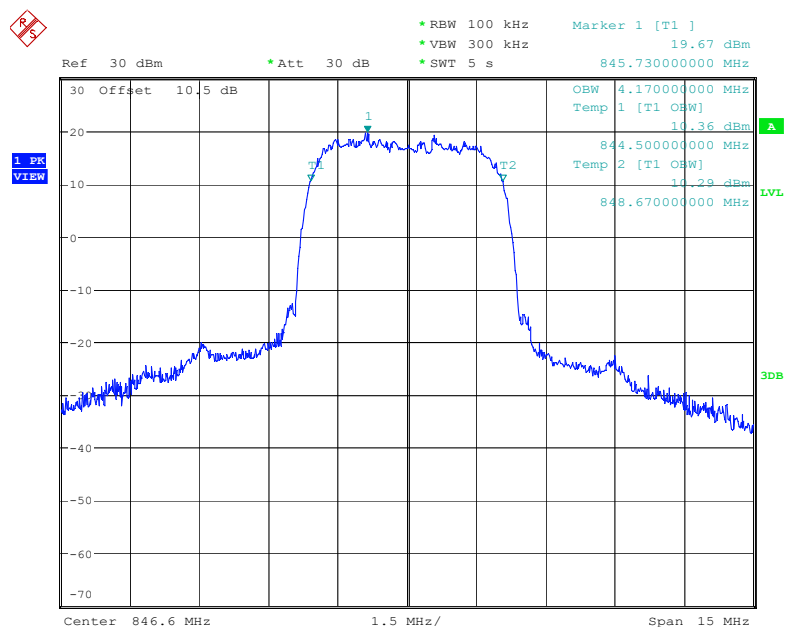
Date: 16.JUL.2023 20:08:36

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

Date: 16.JUL.2023 20:07:55

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

Date: 16.JUL.2023 20:14:30

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

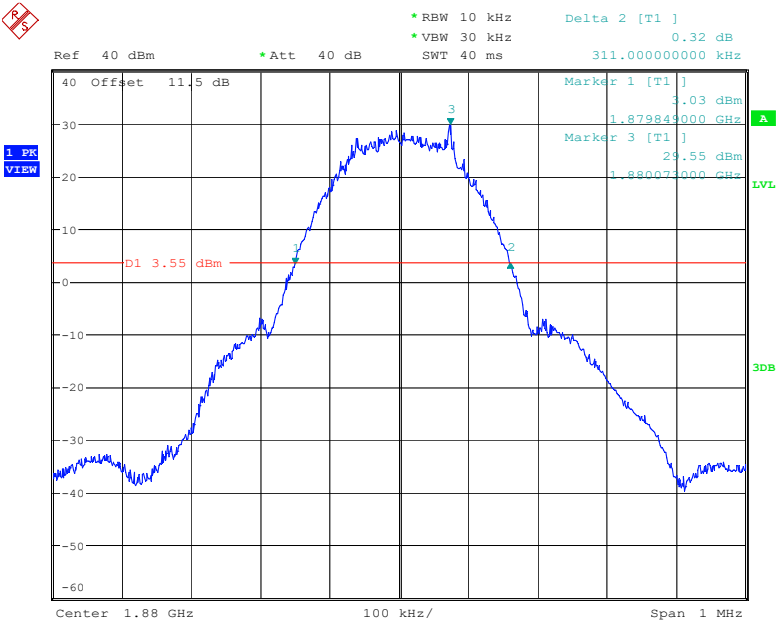
Date: 16.JUL.2023 20:13:18

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



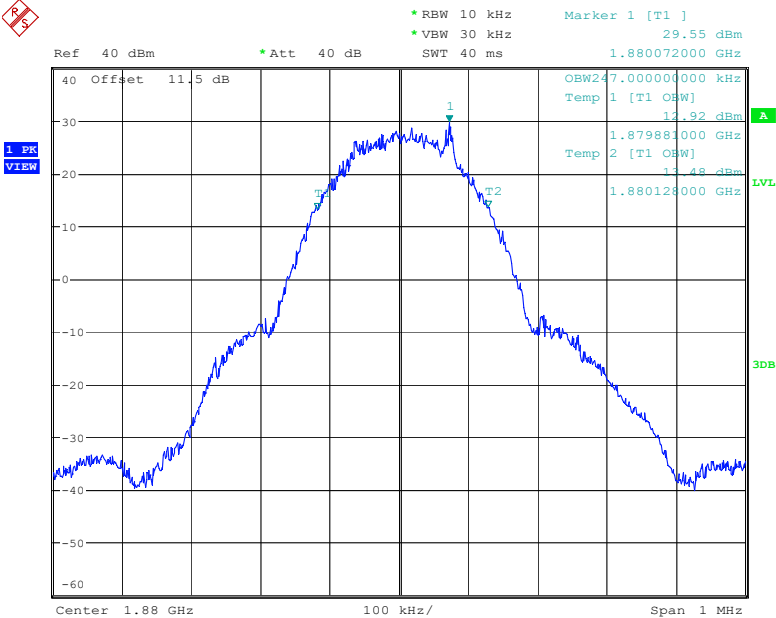
Date: 17.JUL.2023 20:16:04

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

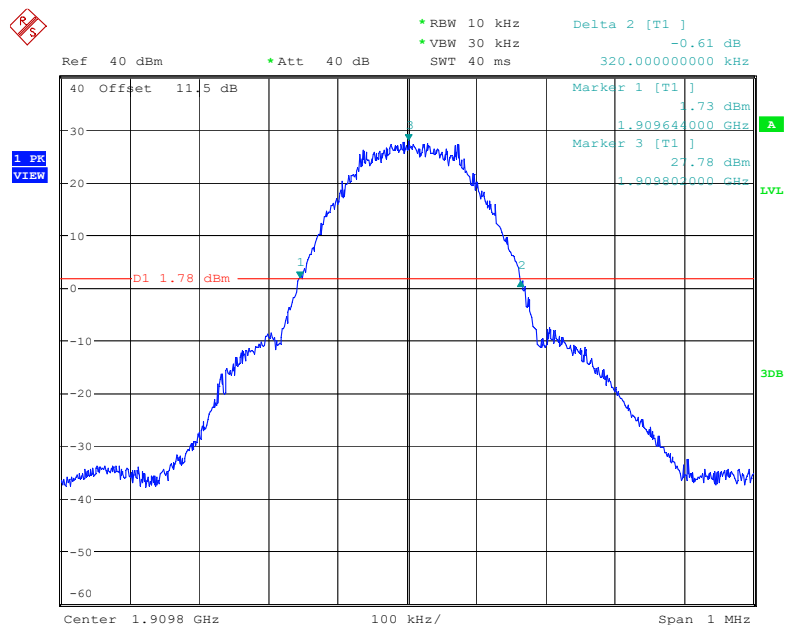


Date: 17.JUL.2023 20:26:25

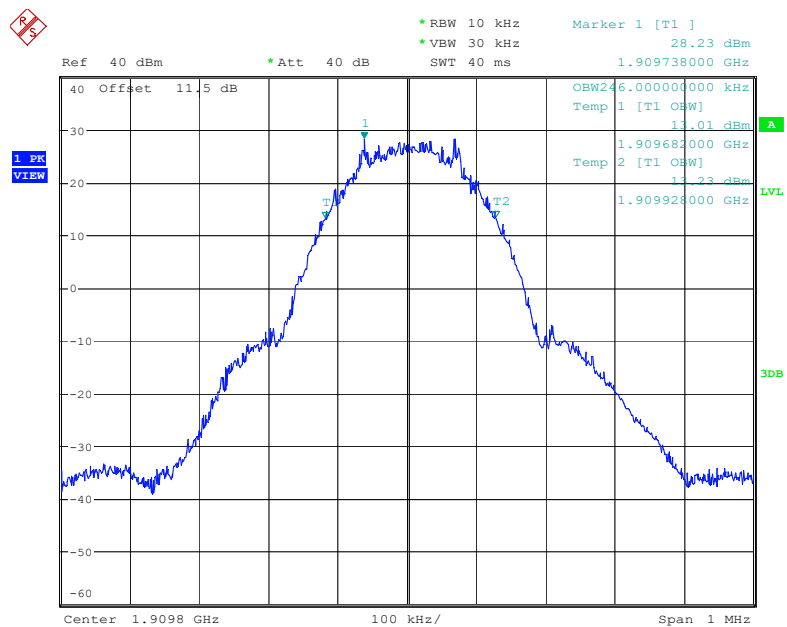
99% Occupied Bandwidth for GSM(GMSK) Mode, Middle channel



Date: 17.JUL.2023 20:25:03

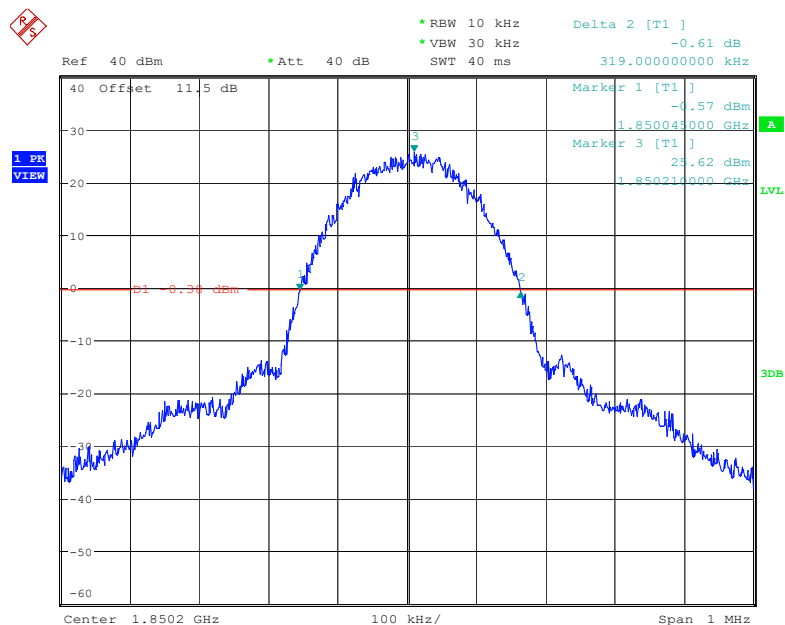
26 dB Emission Bandwidth for GSM(GMSK) Mode, High channel

Date: 17.JUL.2023 20:33:35

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

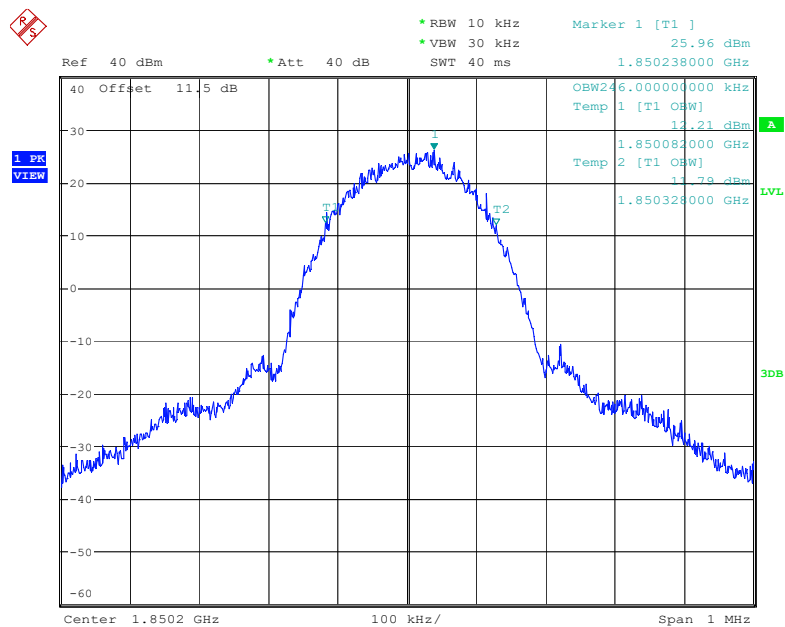
Date: 17.JUL.2023 20:32:54

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

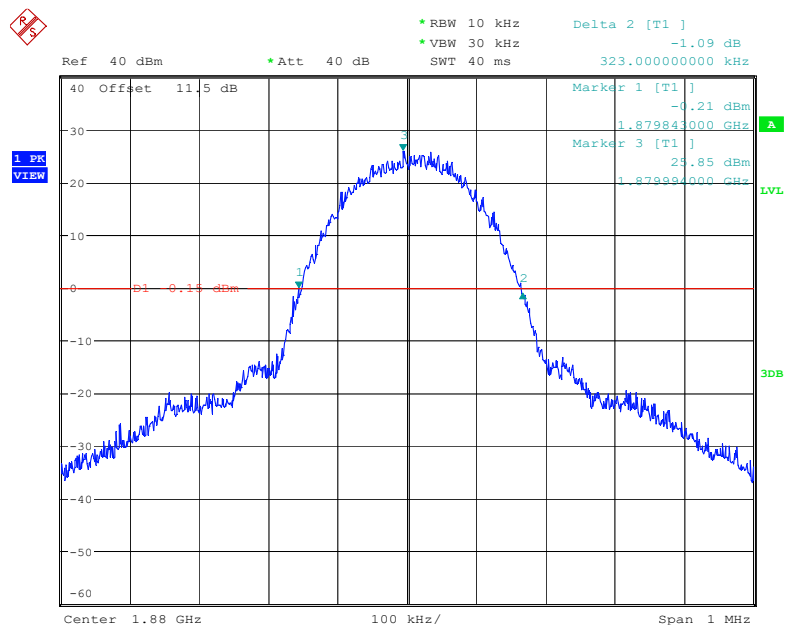


Date: 17.JUL.2023 19:59:55

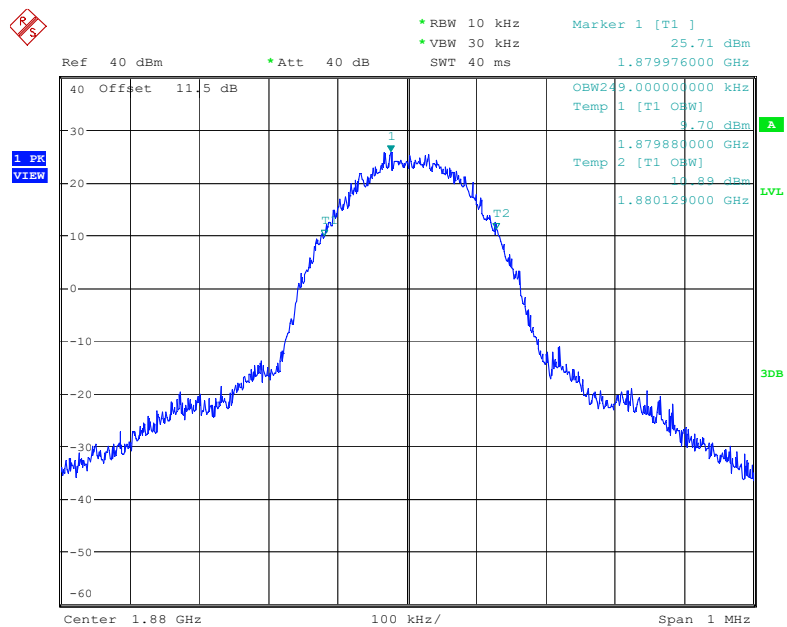
99% Occupied Bandwidth for EDGE(8PSK) Mode, Low channel



Date: 17.JUL.2023 19:59:04

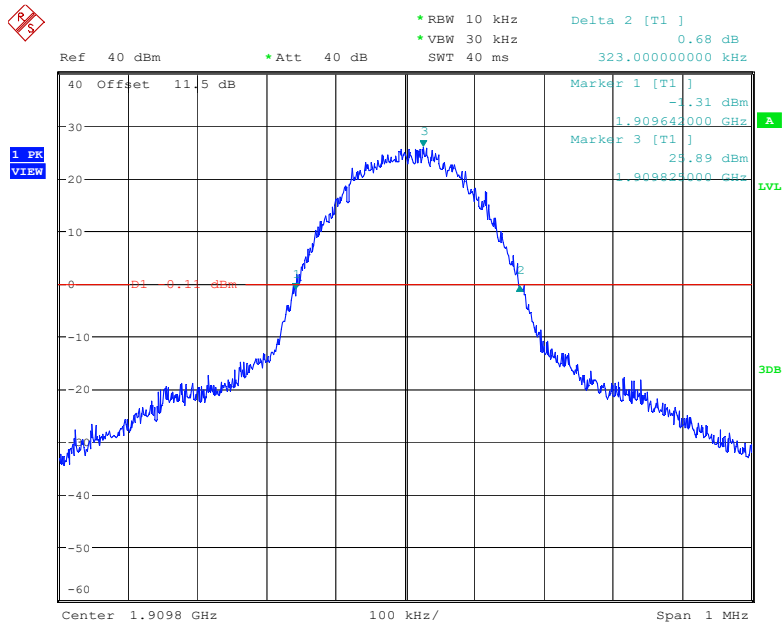
26 dB Emission Bandwidth for EDGE(8PSK) Mode, Middle channel

Date: 17.JUL.2023 19:53:22

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

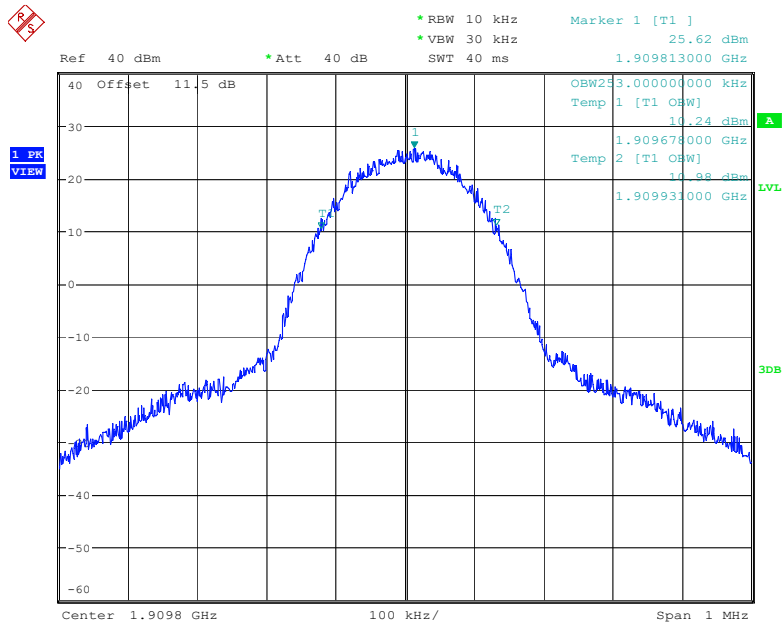
Date: 17.JUL.2023 19:52:30

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

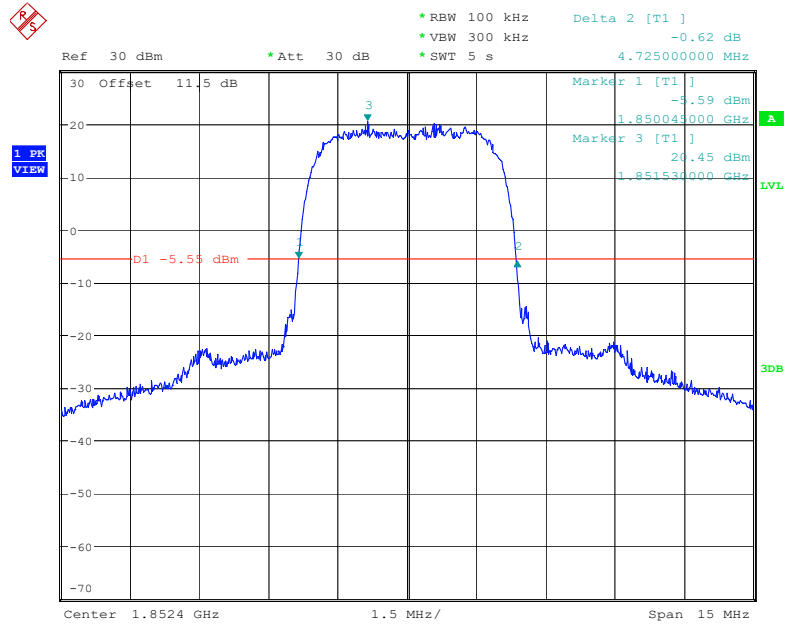


Date: 17.JUL.2023 20:07:54

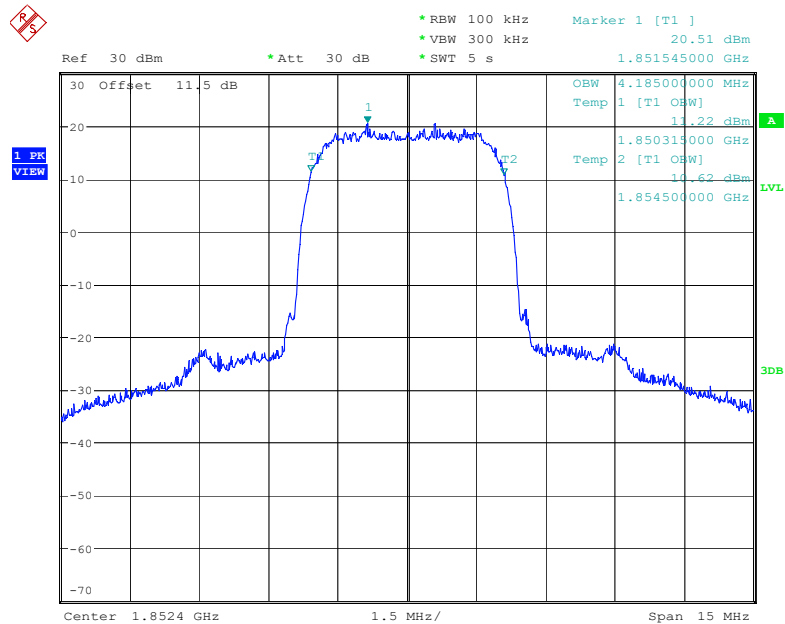
99% Occupied Bandwidth for EDGE(8PSK) Mode, High channel



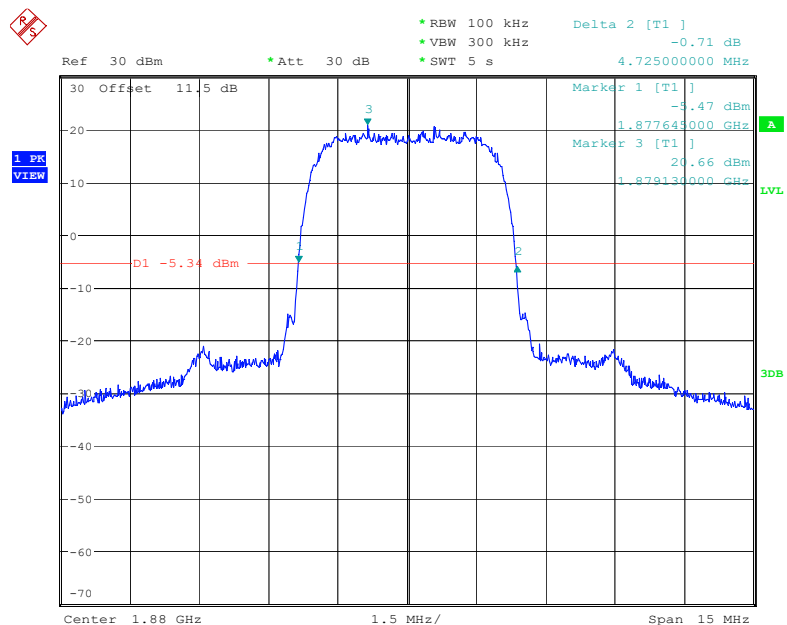
Date: 17.JUL.2023 20:07:02

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

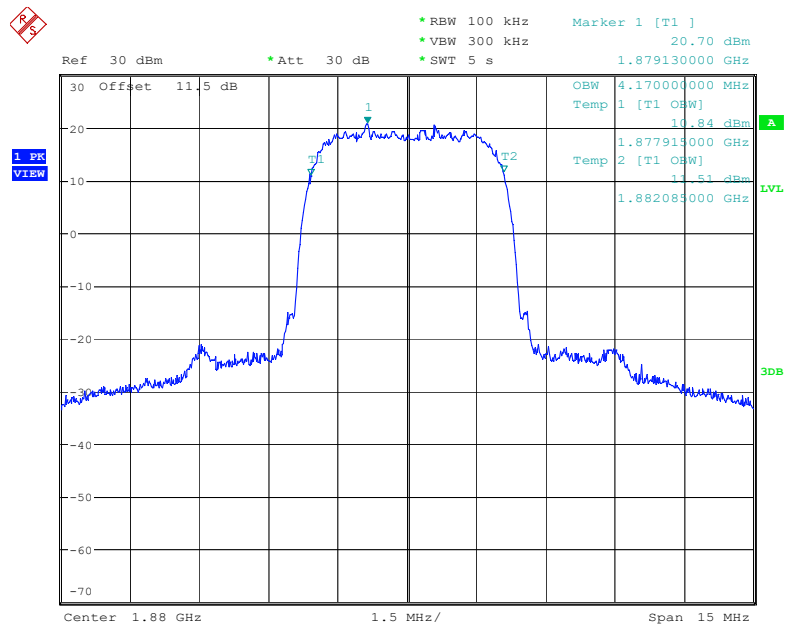
Date: 16.JUL.2023 20:41:32

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

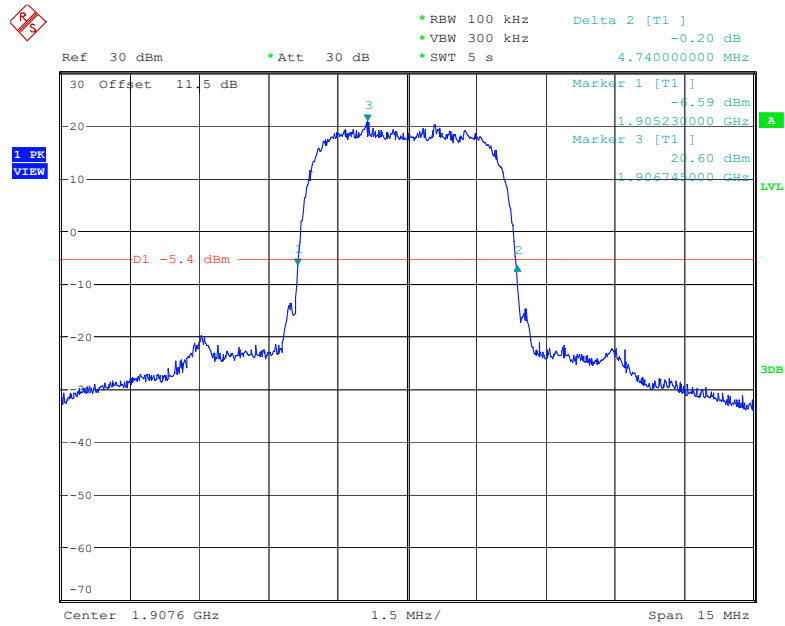
Date: 16.JUL.2023 20:41:05

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

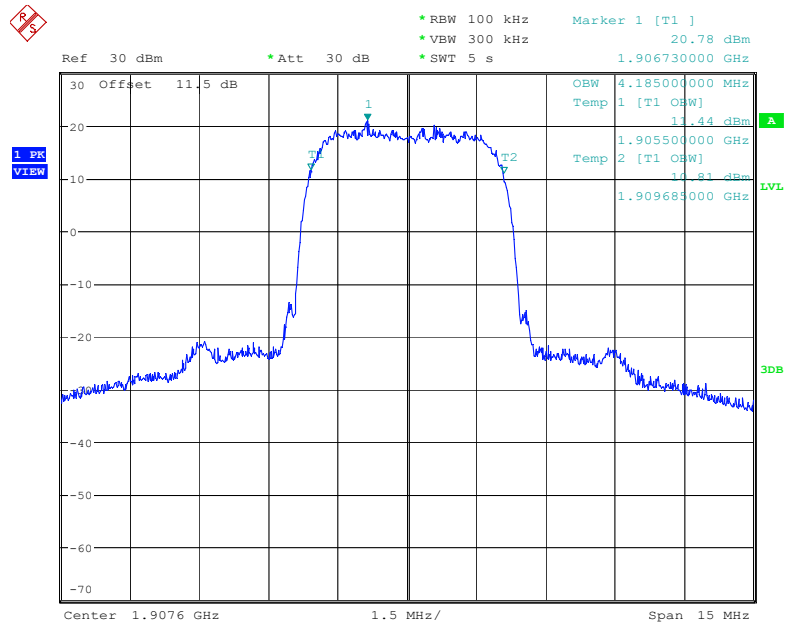
Date: 16.JUL.2023 20:38:26

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

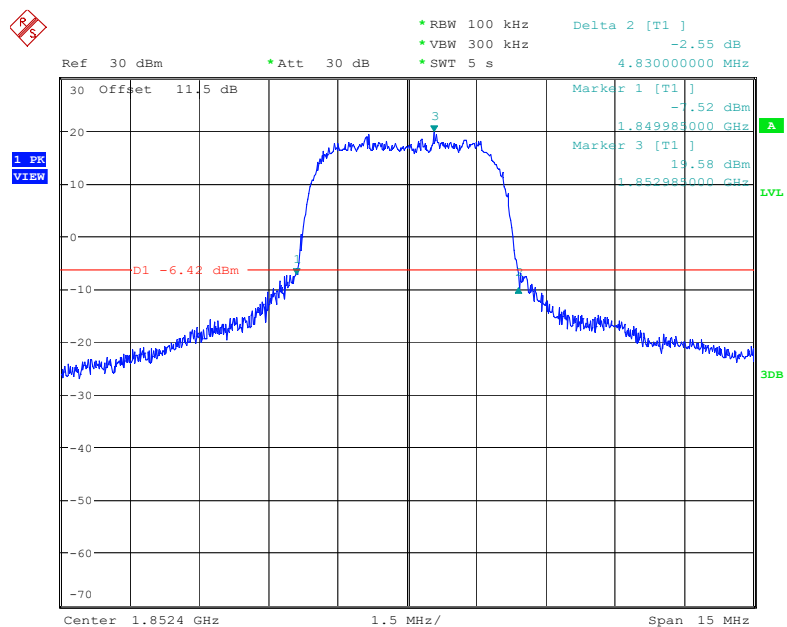
Date: 16.JUL.2023 20:38:00

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

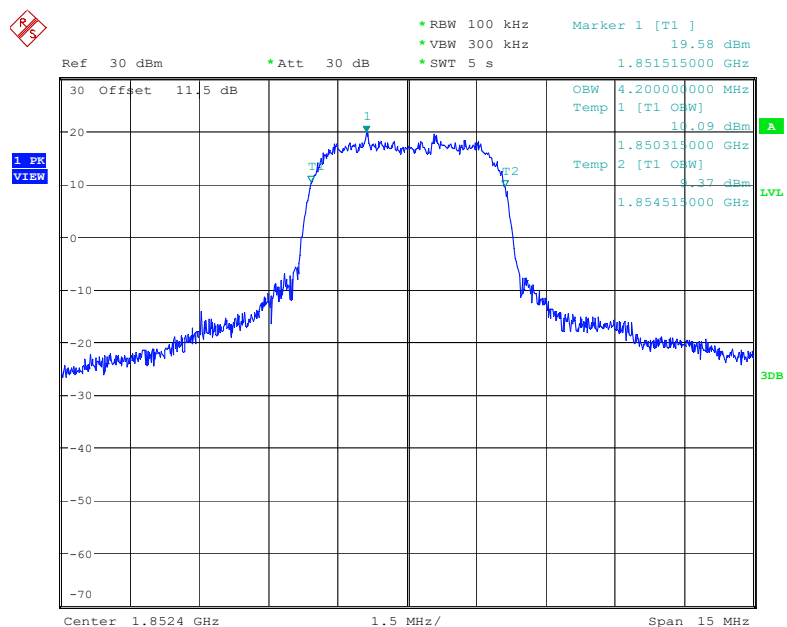
Date: 16.JUL.2023 20:34:04

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

Date: 16.JUL.2023 20:33:38

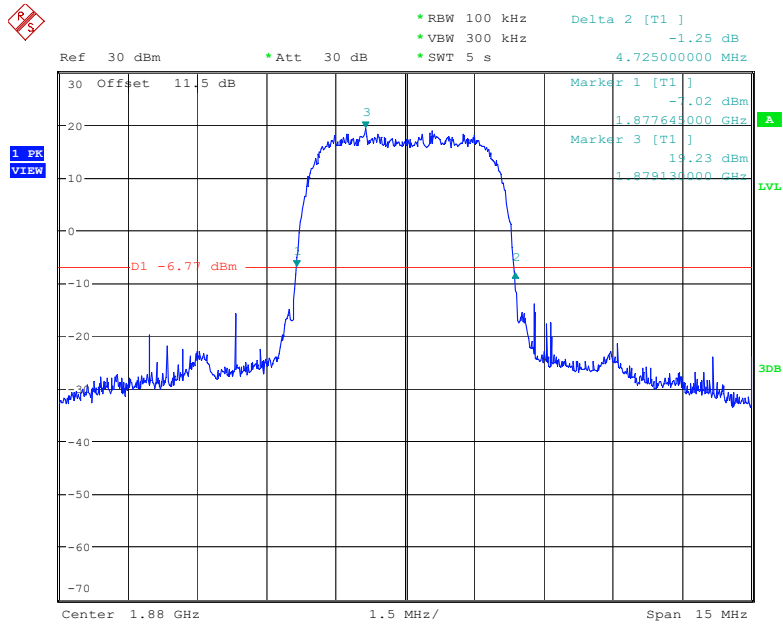
26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Low channel

Date: 16.JUL.2023 20:46:49

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

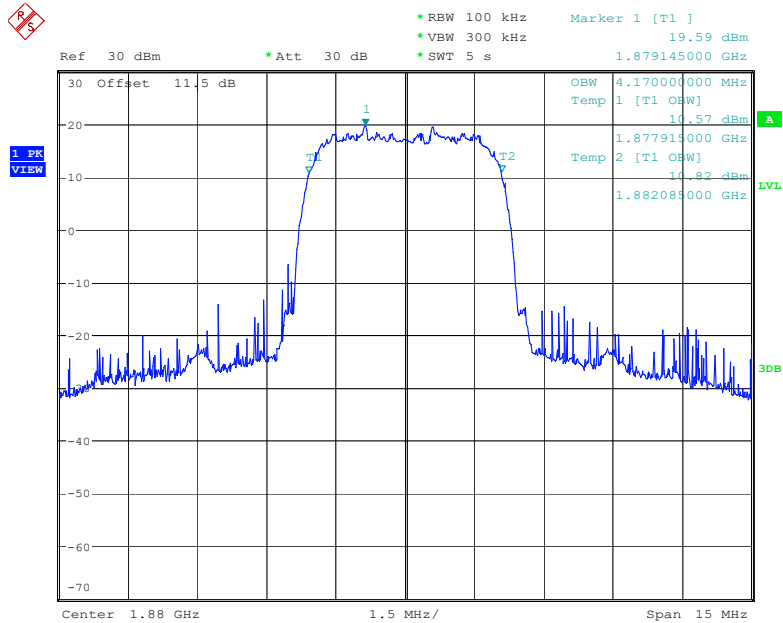
Date: 16.JUL.2023 20:45:53

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

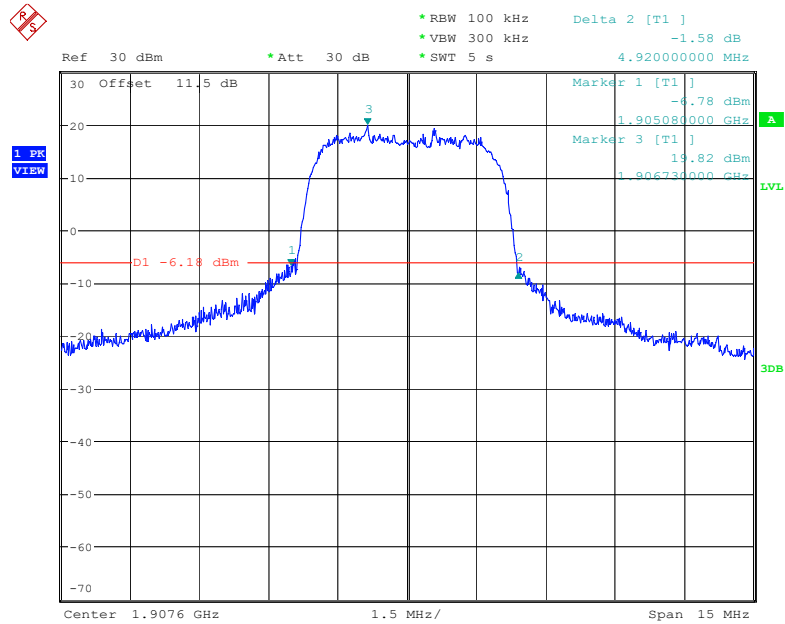


Date: 16.JUL.2023 20:51:57

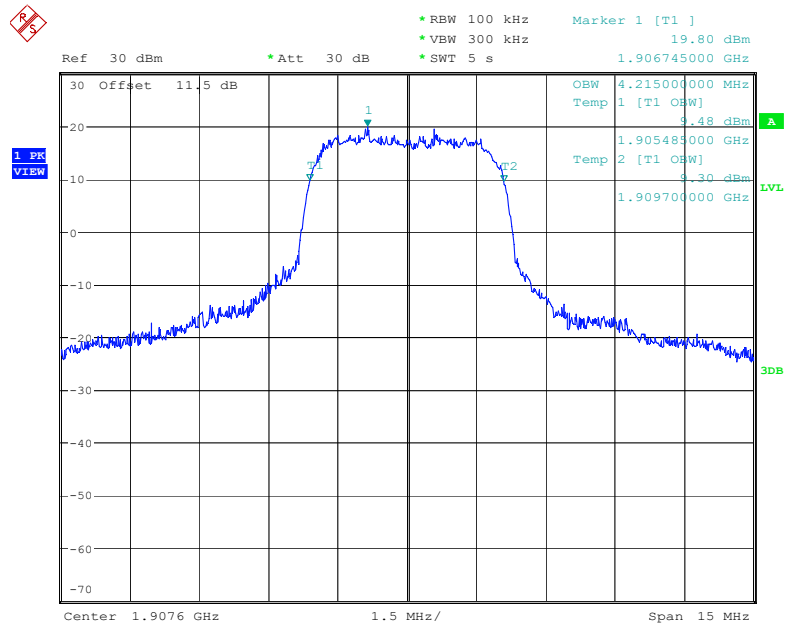
99% Occupied Bandwidth for HSUPA (QPSK) Mode, Middle channel



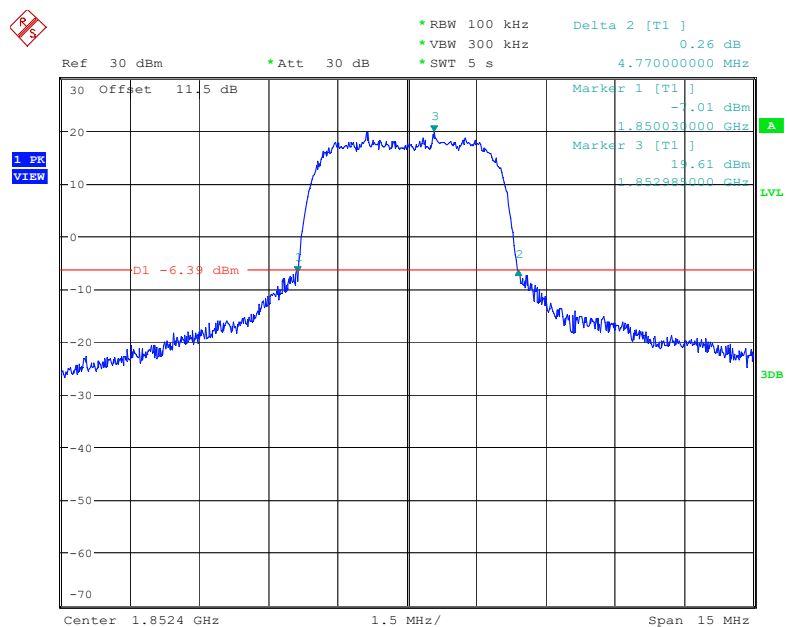
Date: 16.JUL.2023 20:51:24

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

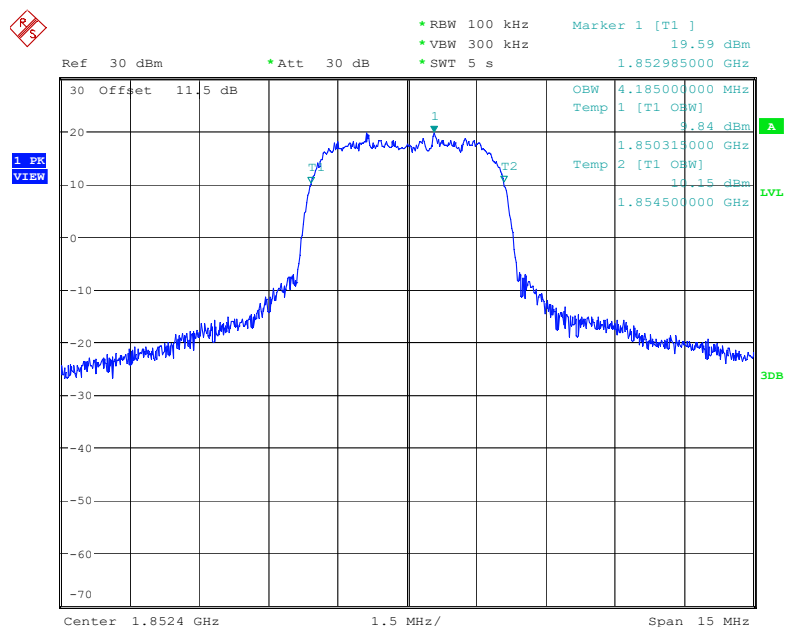
Date: 16.JUL.2023 20:55:45

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

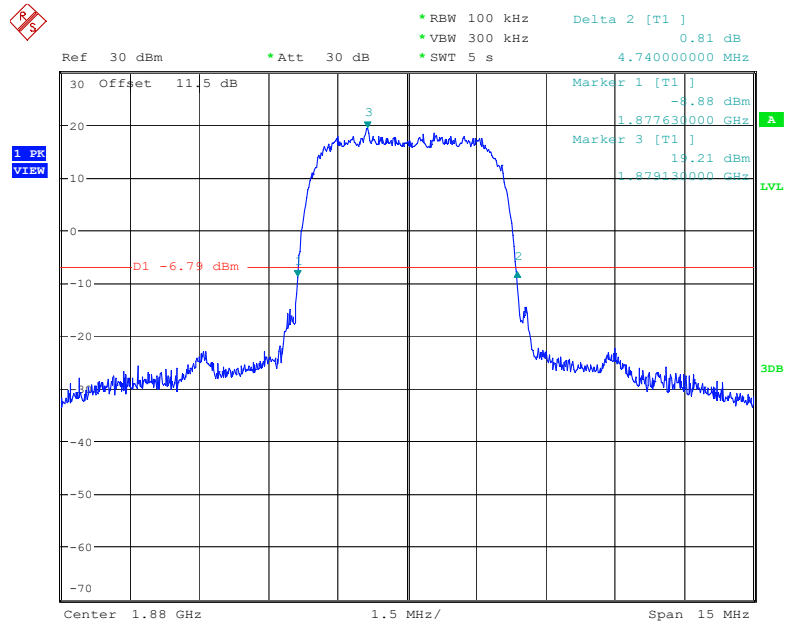
Date: 16.JUL.2023 20:54:48

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

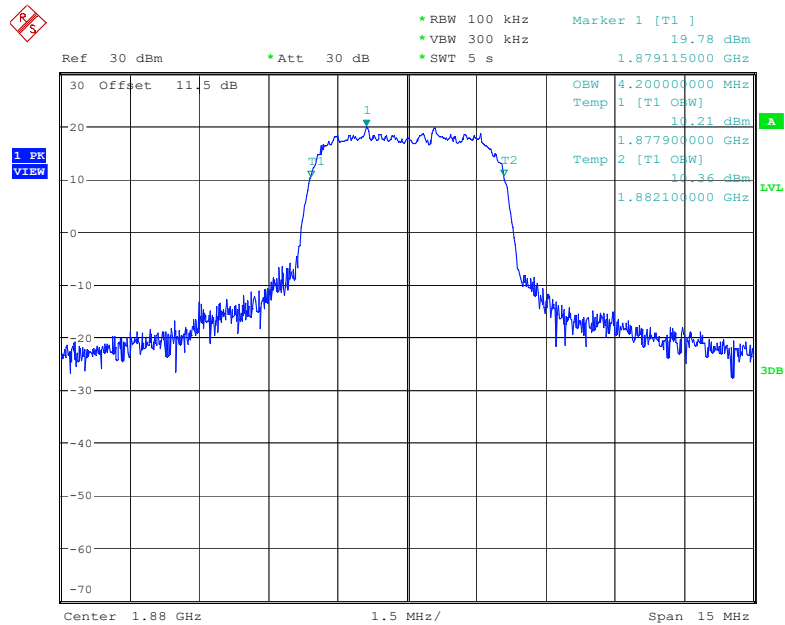
Date: 16.JUL.2023 21:11:02

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

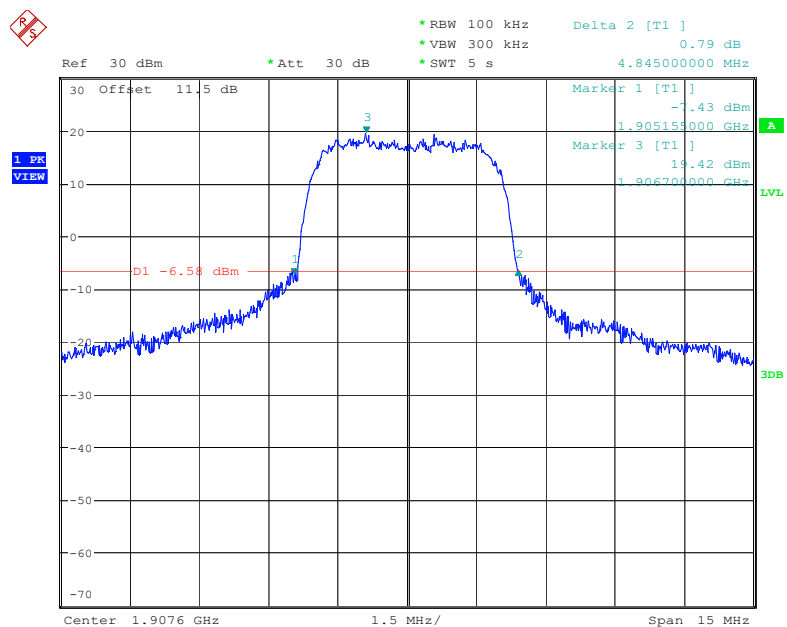
Date: 16.JUL.2023 21:10:06

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

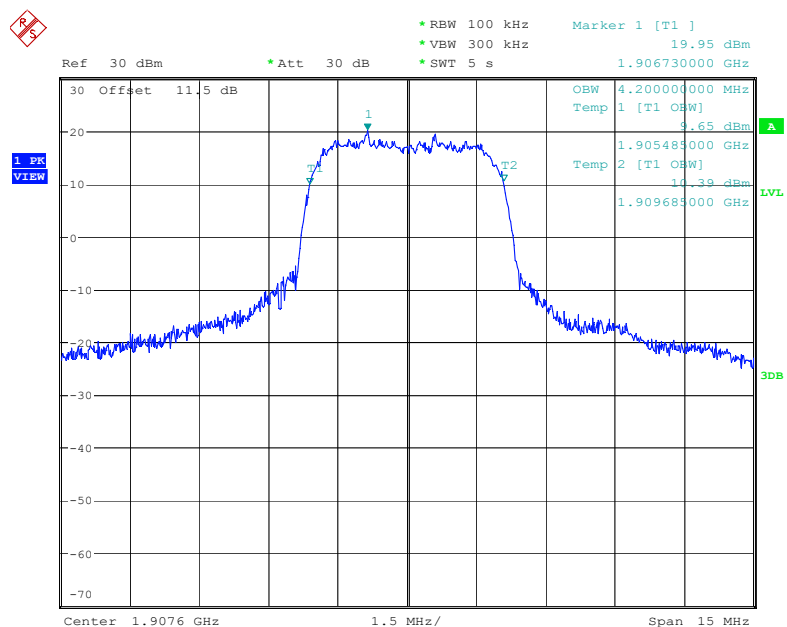
Date: 17.JUL.2023 21:08:01

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

Date: 16.JUL.2023 21:05:49

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

Date: 16.JUL.2023 21:00:08

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

Date: 16.JUL.2023 20:59:27

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	1.098	1.314	1.110	1.296	1.104	1.314
	16QAM	1.098	1.290	1.098	1.302	1.104	1.314
3 MHz	QPSK	2.688	2.892	2.688	2.880	2.688	2.880
	16QAM	2.676	2.880	2.676	2.892	2.688	2.880
5 MHz	QPSK	4.540	4.940	4.520	4.980	4.500	4.960
	16QAM	4.500	4.940	4.520	4.980	4.500	4.980
10 MHz	QPSK	8.960	9.560	8.960	9.680	8.960	9.560
	16QAM	8.960	9.560	8.960	9.560	8.960	9.560
15 MHz	QPSK	13.560	14.880	13.500	14.640	13.560	14.760
	16QAM	13.560	14.820	13.560	14.820	13.560	14.760
20 MHz	QPSK	18.000	19.520	18.000	19.440	18.000	19.360
	16QAM	18.000	20.000	18.080	19.360	17.920	19.440

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	1.320	1.104	1.314	1.104	1.296
	16QAM	1.110	1.314	1.098	1.284	1.098	1.296
3 MHz	QPSK	2.688	2.880	2.676	2.892	2.688	2.904
	16QAM	2.688	2.892	2.688	2.880	2.688	2.880
5 MHz	QPSK	4.500	4.940	4.500	4.940	4.520	4.920
	16QAM	4.520	4.960	4.500	4.920	4.520	4.940
10 MHz	QPSK	8.960	9.520	8.960	9.560	8.920	9.600
	16QAM	8.960	9.640	8.960	9.560	8.920	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	4.500	4.940	4.520	4.940	4.520	4.920
	16QAM	4.520	4.960	4.500	4.920	4.520	4.940
10 MHz	QPSK	8.960	9.600	8.960	9.600	8.960	9.720
	16QAM	9.000	9.600	8.960	9.600	8.960	9.640
15 MHz	QPSK	13.560	15.060	13.560	14.820	13.500	14.760
	16QAM	13.560	14.820	13.500	14.760	13.560	14.760
20 MHz	QPSK	18.000	19.440	17.920	19.200	17.920	19.360
	16QAM	18.000	19.520	18.000	19.360	18.000	19.360

LTE Band 12:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.314	1.104	1.290	1.104	1.314
	16QAM	1.098	1.290	1.098	1.296	1.110	1.320
3 MHz	QPSK	2.688	2.880	2.688	2.892	2.688	2.880
	16QAM	2.676	2.868	2.688	2.880	2.688	2.880
5 MHz	QPSK	4.500	5.120	4.540	5.240	4.520	5.180
	16QAM	4.540	5.200	4.520	5.180	4.540	5.180
10 MHz	QPSK	8.960	9.800	9.000	9.960	8.960	9.760
	16QAM	8.960	9.840	8.960	9.880	8.960	9.680

LTE Band 41:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	4.920	4.540	4.880	4.520	5.040
	16QAM	4.500	5.100	4.500	5.060	4.500	4.960
10 MHz	QPSK	8.960	9.880	8.960	9.920	9.000	9.600
	16QAM	8.960	9.520	8.960	9.600	8.960	9.560
15 MHz	QPSK	13.500	14.700	13.500	15.360	13.560	15.060
	16QAM	13.560	15.240	13.620	16.200	13.560	15.660
20 MHz	QPSK	18.000	19.200	18.000	20.080	18.000	19.440
	16QAM	17.920	20.400	18.000	19.280	17.920	19.520

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

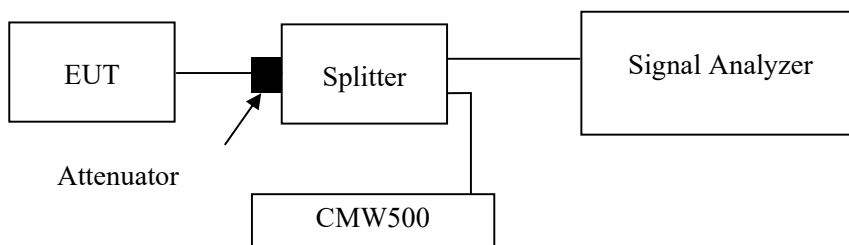
FCC §2.1051, §22.917(a) & §24.238(a)&§27.53.

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

Test Procedure

ANSI C63.26-2015 Section 5.7

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

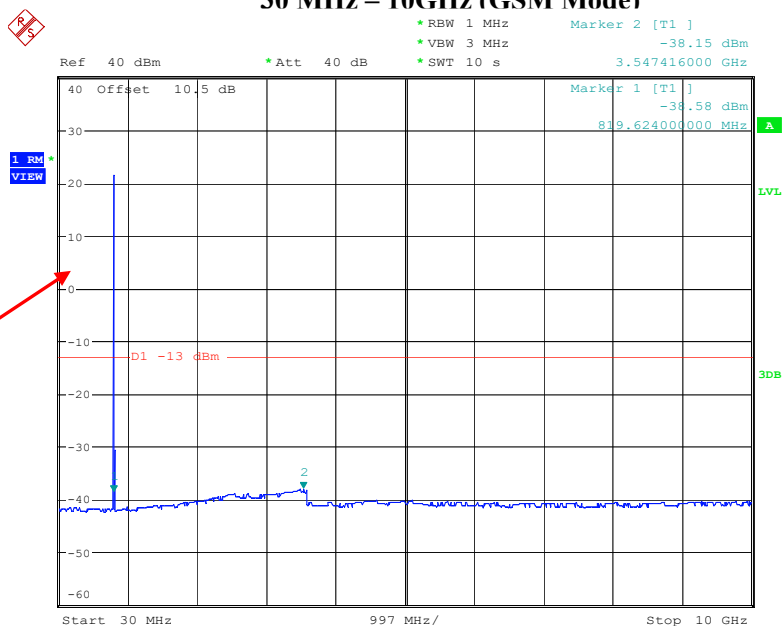
Temperature:	24.9 °C
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-07-13 to 2023-07-17.

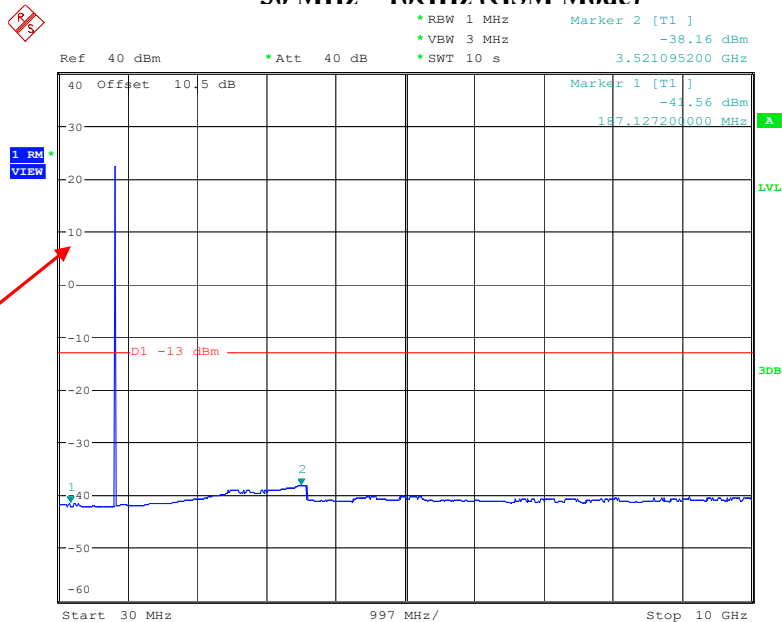
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

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

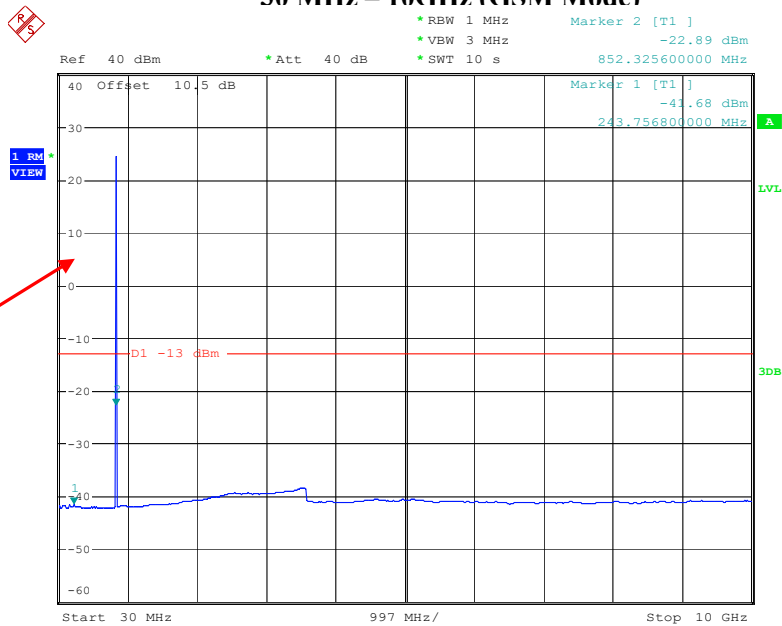
Date: 17.JUL.2023 19:15:58

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

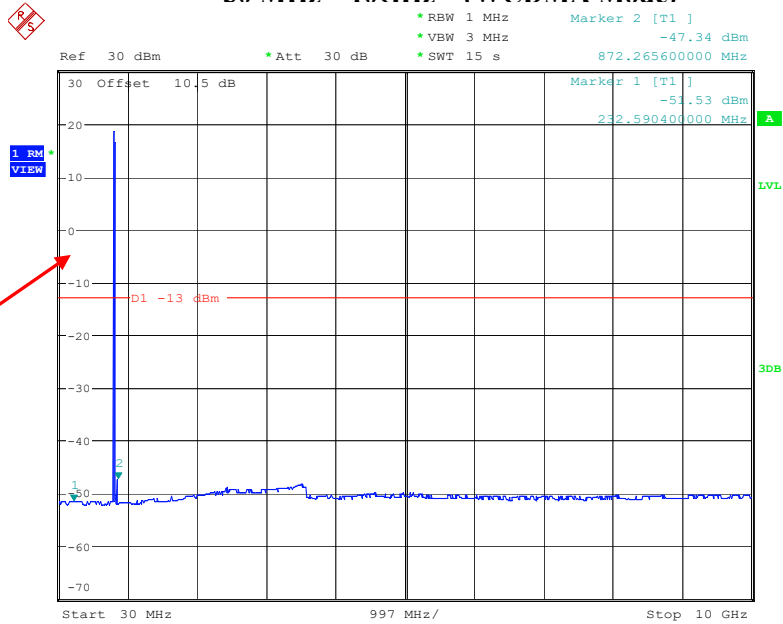
Date: 17.JUL.2023 19:08:25

High Channel:

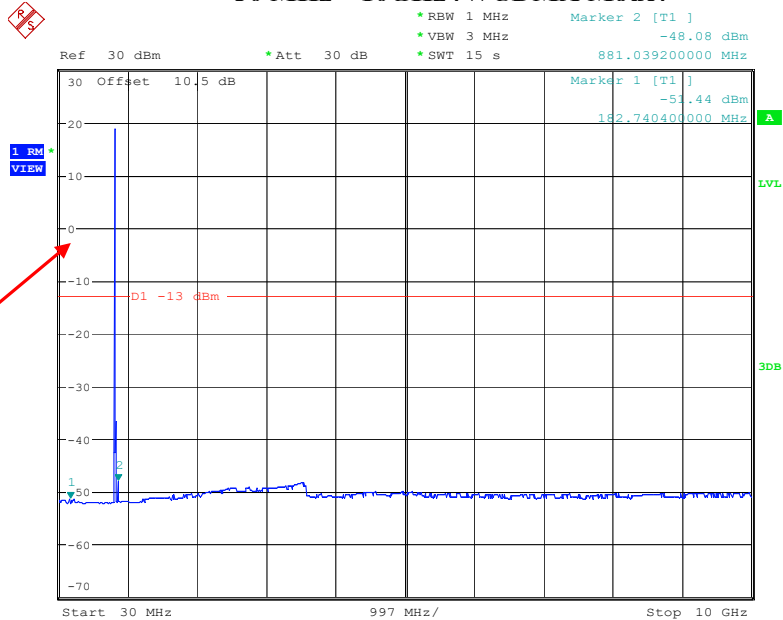
30 MHz – 10GHz (GSM Mode)



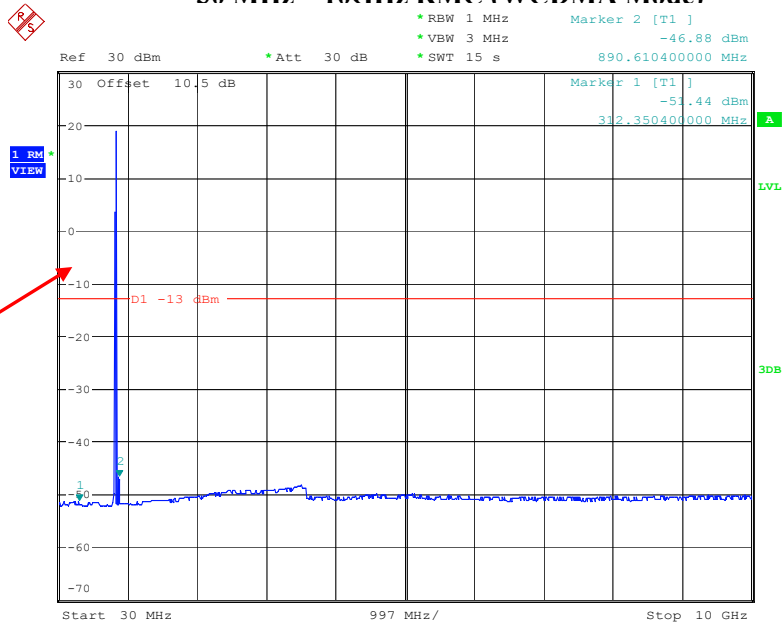
Date: 17.JUL.2023 19:24:39

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

Date: 16.JUL.2023 20:01:18

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

Date: 16.JUL.2023 19:51:34

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

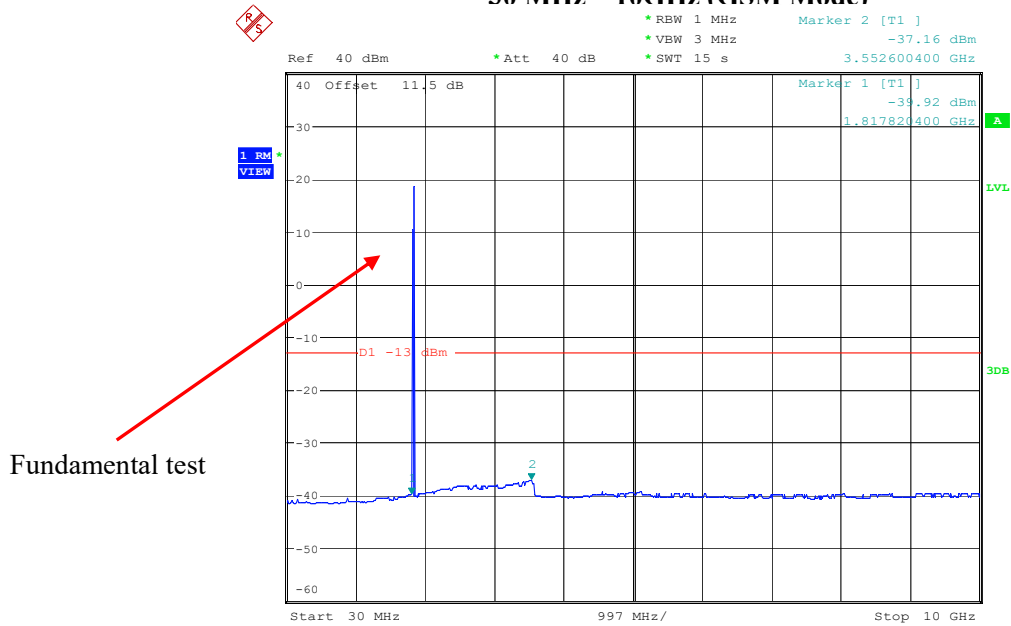
Fundamental test

Date: 16.JUL.2023 19:48:47

PCS Band

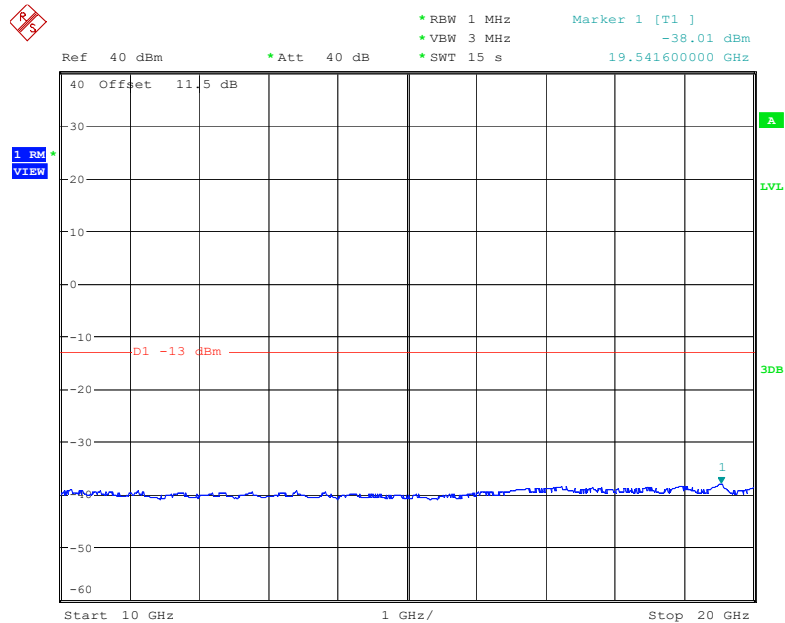
Low Channel:

30 MHz – 10GHz (GSM Mode)

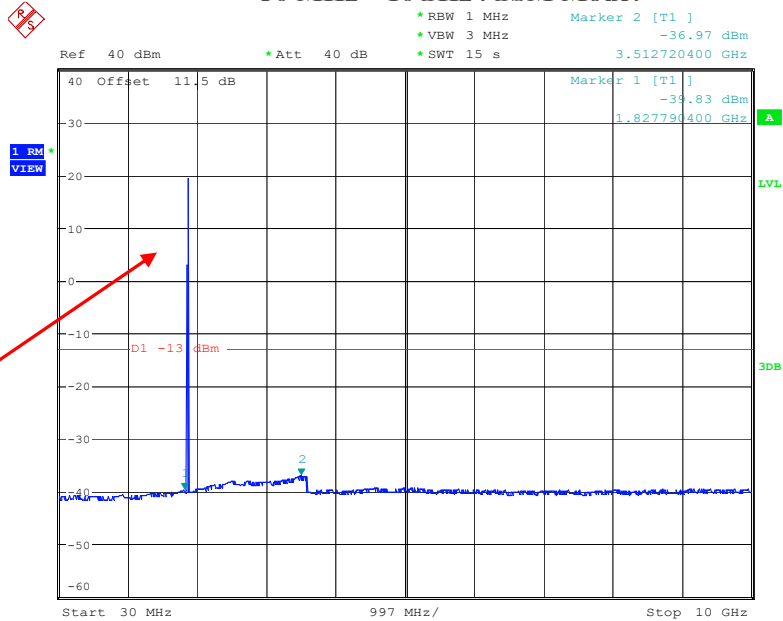


Date: 17.JUL.2023 23:11:59

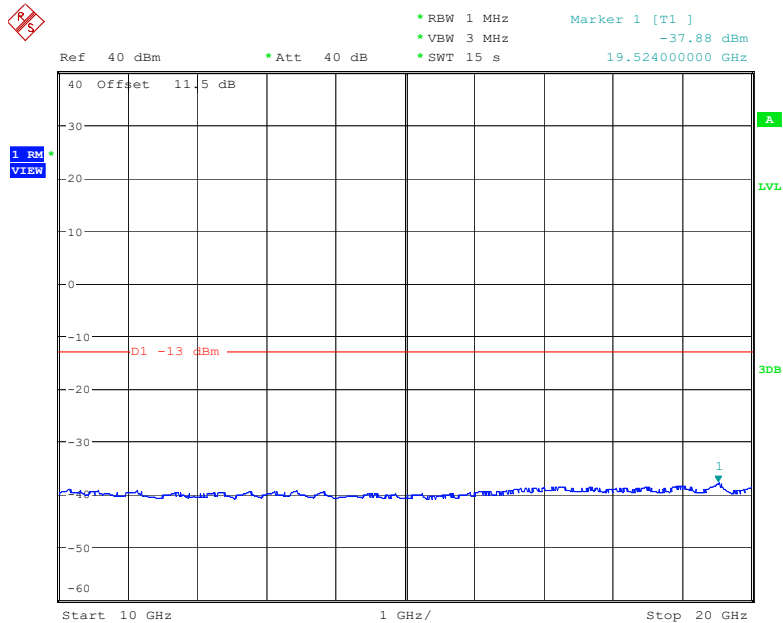
10 GHz – 20GHz (GSM Mode)



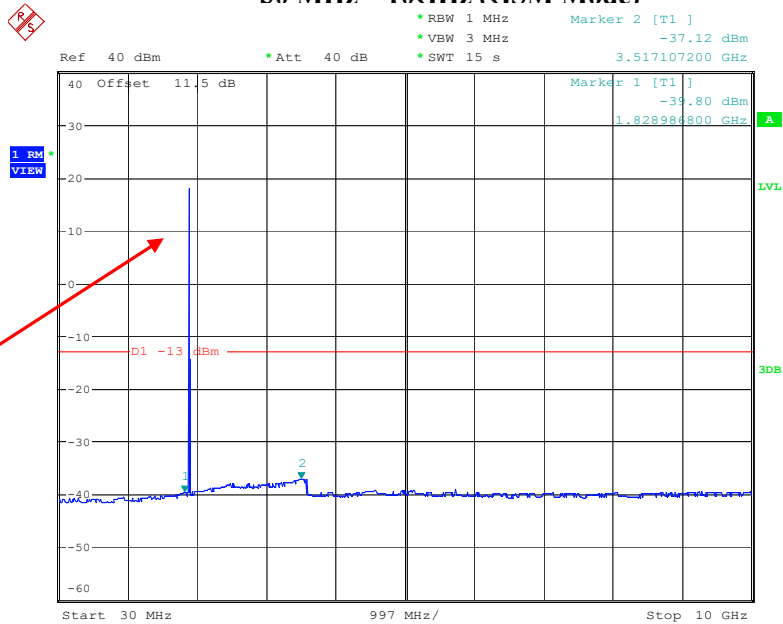
Date: 17.JUL.2023 20:22:43

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

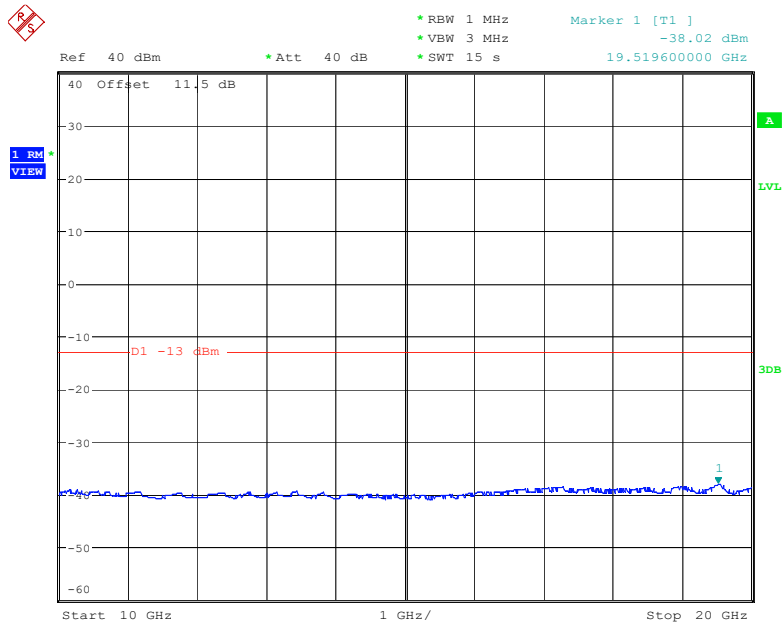
Date: 17.JUL.2023 23:26:04

10 GHz – 20GHz (GSM Mode)

Date: 17.JUL.2023 20:31:00

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

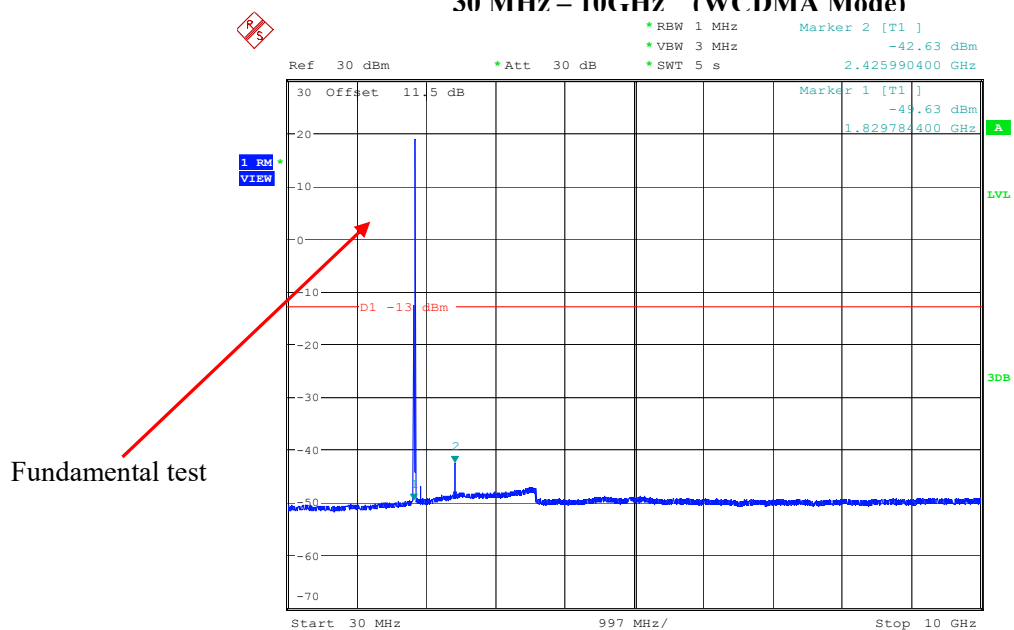
Date: 17.JUL.2023 23:20:41

10 GHz – 20GHz (GSM Mode)

Date: 17.JUL.2023 20:38:30

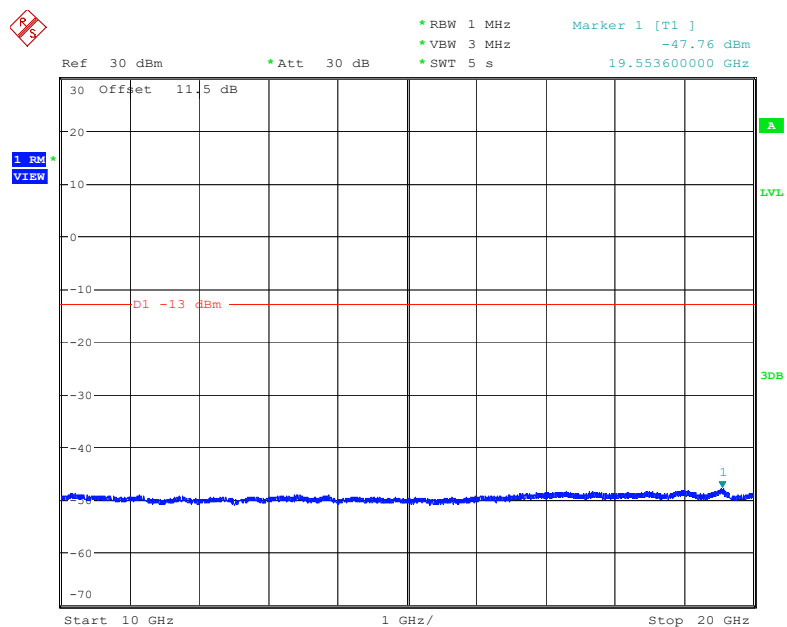
Low Channel:

30 MHz – 10GHz (WCDMA Mode)



Date: 16.JUL.2023 20:42:23

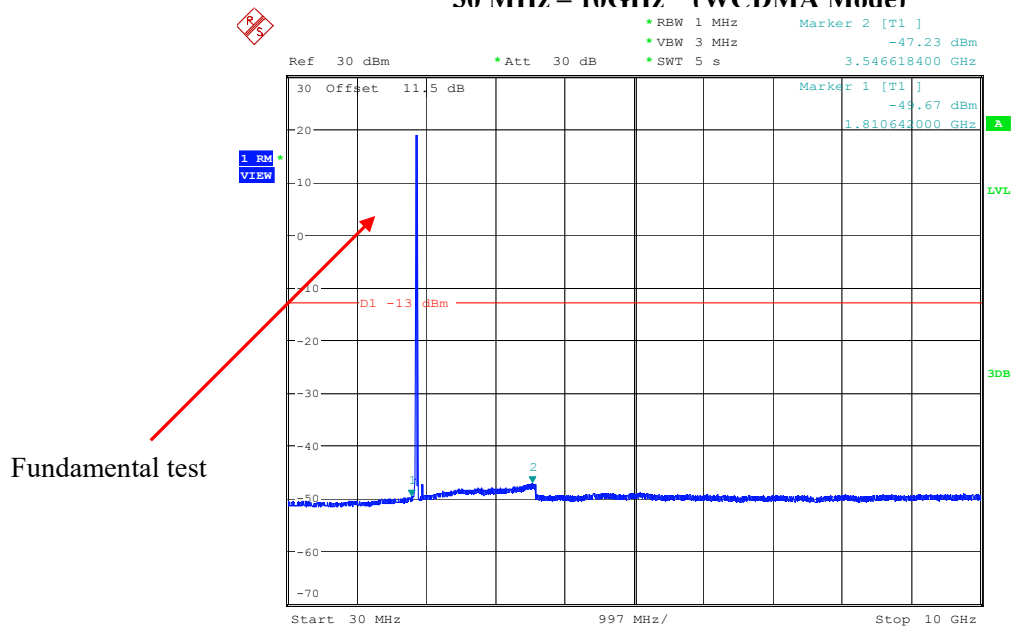
10 GHz – 20GHz (WCDMA Mode)



Date: 16.JUL.2023 20:42:52

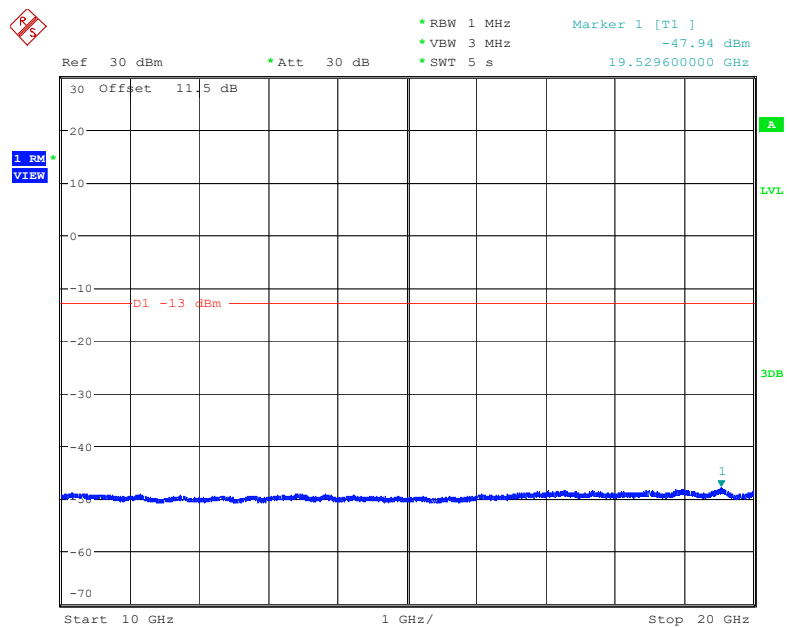
Middle Channel:

30 MHz – 10GHz (WCDMA Mode)

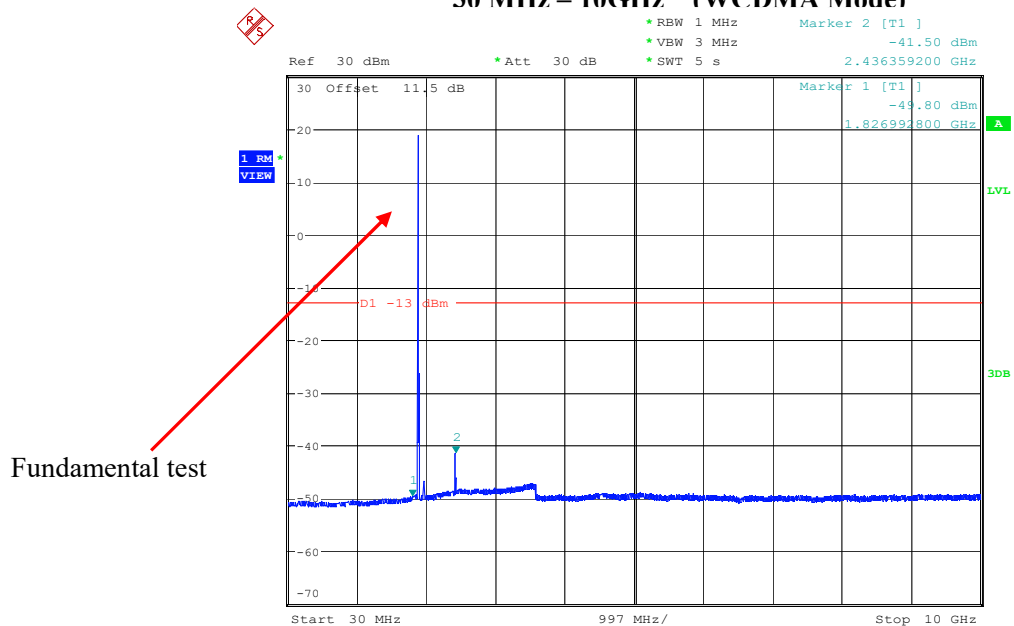


Date: 16.JUL.2023 20:38:53

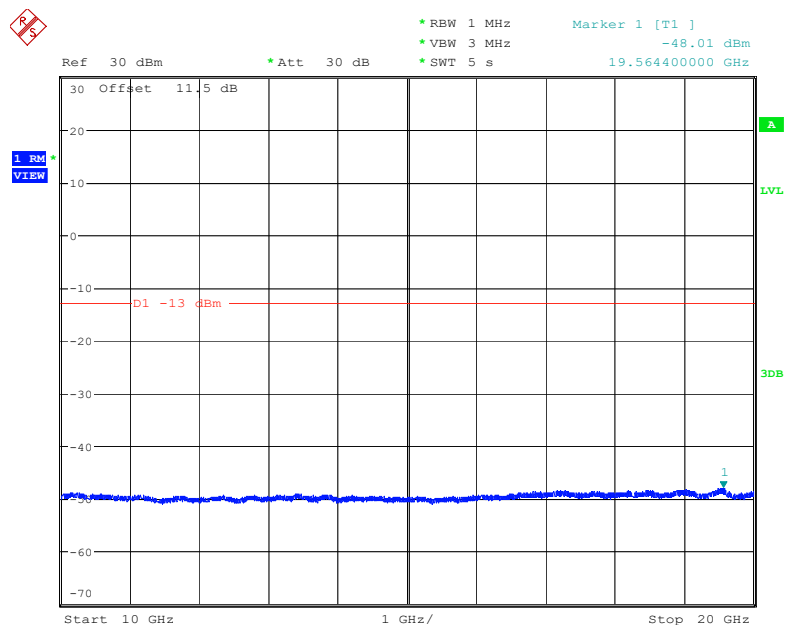
10 GHz – 20GHz (WCDMA Mode)



Date: 16.JUL.2023 20:39:21

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

Date: 16.JUL.2023 20:34:55

10 GHz – 20GHz (WCDMA Mode)

Date: 16.JUL.2023 20:35:24

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

ANSI/TIA-603-E-2016 Section 2.2.12
KDB 671168 D01 v03r01 Section 6.2

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:	24~26.5 °C
Relative Humidity:	48~52 %
ATM Pressure:	101.0 kPa

The testing was performed by Jimi Zheng from 2023-07-19 to 2023-07-21.

EUT operation mode: Transmitting (Pre-scan in the X, Y and Z axes of orientation, the worst case Y-axis 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								
1648.4	-47.60	32	1.8	H	0.4	-47.20	-13	-34.20
1648.4	-48.20	346	2.1	V	0.1	-48.10	-13	-35.10
2472.6	-38.10	12	1.9	H	3.6	-34.50	-13	-21.50
2472.6	-36.90	173	2.2	V	4.2	-32.70	-13	-19.70
3296.8	-47.10	274	2.1	H	4.1	-43.00	-13	-30.00
3296.8	-46.40	234	2.2	V	4.4	-42.00	-13	-29.00
Middle channel								
1673.2	-45.30	295	2.2	H	0.5	-44.80	-13	-31.80
1673.2	-45.90	40	1.8	V	0.5	-45.40	-13	-32.40
2509.8	-37.40	289	1.5	H	3.6	-33.80	-13	-20.80
2509.8	-35.80	92	1.5	V	3.9	-31.90	-13	-18.90
3346.4	-46.50	356	1.5	H	4.1	-42.40	-13	-29.40
3346.4	-45.40	200	1.9	V	4.1	-41.30	-13	-28.30
High channel								
1697.6	-44.50	180	1.8	H	0.5	-44.00	-13	-31.00
1697.6	-45.40	150	2.4	V	0.9	-44.50	-13	-31.50
2546.4	-36.70	235	1.5	H	3.5	-33.20	-13	-20.20
2546.4	-35.20	21	1.4	V	3.8	-31.40	-13	-18.40
3395.2	-46.70	261	1.5	H	4.5	-42.20	-13	-29.20
3395.2	-46.00	98	1.8	V	5.1	-40.90	-13	-27.90

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM1900								
Test frequency range: 30MHz-20GHz								
Low channel								
3700.4	-46.10	251	1.7	H	5.9	-40.20	-13	-27.20
3700.4	-45.60	32	1.8	V	6.4	-39.20	-13	-26.20
5550.6	-42.30	193	1.8	H	9.1	-33.20	-13	-20.20
5550.6	-44.50	172	1.7	V	9.5	-35.00	-13	-22.00
Middle channel								
3760.0	-46.00	88	1.2	H	6.2	-39.80	-13	-26.80
3760.0	-45.80	143	2.3	V	6.7	-39.10	-13	-26.10
5640.0	-41.70	294	1.8	H	9.1	-32.60	-13	-19.60
5640.0	-43.70	341	1.7	V	9.3	-34.40	-13	-21.40
High channel								
3819.6	-45.00	186	1.4	H	6.1	-38.90	-13	-25.90
3819.6	-44.30	279	1.2	V	6.4	-37.90	-13	-24.90
5729.4	-40.40	99	2.1	H	9.1	-31.30	-13	-18.30
5729.4	-43.30	67	1.4	V	9.5	-33.80	-13	-20.80

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								
Test frequency range: 30MHz-20GHz								
Low channel								
3704.8	-49.30	354	2.3	H	5.9	-43.40	-13	-30.40
3704.8	-49.50	92	1.1	V	6.4	-43.10	-13	-30.10
5557.2	-45.80	240	2.5	H	9.1	-36.70	-13	-23.70
5557.2	-49.50	340	1.5	V	9.5	-40.00	-13	-27.00
Middle channel								
3760.0	-49.50	304	1.2	H	6.2	-43.30	-13	-30.30
3760.0	-49.80	104	1.5	V	6.7	-43.10	-13	-30.10
5640.0	-44.90	13	1.1	H	9.1	-35.80	-13	-22.80
5640.0	-48.70	161	1.4	V	9.3	-39.40	-13	-26.40
High channel								
3815.2	-48.40	220	1.6	H	6.2	-42.20	-13	-29.20
3815.2	-48.40	203	2.1	V	6.4	-42.00	-13	-29.00
5722.8	-44.00	281	2	H	9.1	-34.90	-13	-21.90
5722.8	-47.70	38	2.3	V	9.5	-38.20	-13	-25.20

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 5								
Test frequency range: 30MHz-10GHz								
Low channel								
1652.8	-52.30	45	1.4	H	0.4	-51.90	-13	-38.90
1652.8	-50.90	144	2.4	V	0.2	-50.70	-13	-37.70
2479.2	-50.90	17	2.4	H	3.6	-47.30	-13	-34.30
2479.2	-50.20	351	2.2	V	4.1	-46.10	-13	-33.10
3305.6	-47.80	222	1.7	H	4.1	-43.70	-13	-30.70
3305.6	-47.60	198	1.4	V	4.3	-43.30	-13	-30.30
Middle channel								
1673.2	-52.00	335	1.3	H	0.5	-51.50	-13	-38.50
1673.2	-50.80	11	2.4	V	0.5	-50.30	-13	-37.30
2509.8	-50.50	151	1.8	H	3.6	-46.90	-13	-33.90
2509.8	-49.60	109	1.5	V	3.9	-45.70	-13	-32.70
3346.4	-47.40	32	1.1	H	4.1	-43.30	-13	-30.30
3346.4	-47.00	120	1.9	V	4.1	-42.90	-13	-29.90
High channel								
1693.2	-51.20	321	1.7	H	0.5	-50.70	-13	-37.70
1693.2	-50.30	357	1.8	V	0.9	-49.40	-13	-36.40
2539.8	-49.60	0	1.6	H	3.5	-46.10	-13	-33.10
2539.8	-48.50	188	2.2	V	3.8	-44.70	-13	-31.70
3386.4	-47.50	247	1.7	H	4.4	-43.10	-13	-30.10
3386.4	-47.20	142	1.9	V	4.9	-42.30	-13	-29.30

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								
3701.4	-48.20	117	1.1	H	5.9	-42.30	-13	-29.30
3701.4	-47.30	110	1	V	6.4	-40.90	-13	-27.90
5552.1	-42.90	214	1.1	H	9.1	-33.80	-13	-20.80
5552.1	-46.80	144	2.1	V	9.5	-37.30	-13	-24.30
QPSK 1.4MHz Bandwidth, Middle channel								
3760.0	-48.30	227	1.5	H	6.2	-42.10	-13	-29.10
3760.0	-47.60	274	1.8	V	6.7	-40.90	-13	-27.90
5640.0	-42.50	306	2.4	H	9.1	-33.40	-13	-20.40
5640.0	-46.30	298	2.4	V	9.3	-37.00	-13	-24.00
QPSK 1.4MHz Bandwidth, High channel								
3818.6	-47.60	249	1.7	H	6.1	-41.50	-13	-28.50
3818.6	-46.60	8	1.4	V	6.4	-40.20	-13	-27.20
5727.9	-41.70	184	1.4	H	9.1	-32.60	-13	-19.60
5727.9	-45.30	145	2.3	V	9.5	-35.80	-13	-22.80

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								
1649.4	-52.40	158	1.8	H	0.4	-52.00	-13	-39.00
1649.4	-52.20	291	1.9	V	0.1	-52.10	-13	-39.10
2474.1	-50.10	30	1.6	H	3.6	-46.50	-13	-33.50
2474.1	-48.80	94	2.4	V	4.2	-44.60	-13	-31.60
3298.8	-47.00	256	2.4	H	4.1	-42.90	-13	-29.90
3298.8	-46.60	201	1.7	V	4.3	-42.30	-13	-29.30
QPSK 1.4MHz Bandwidth, Middle channel								
1673.0	-50.10	308	1.3	H	0.5	-49.60	-13	-36.60
1673.0	-49.90	358	1.6	V	0.5	-49.40	-13	-36.40
2509.5	-49.70	164	1.2	H	3.6	-46.10	-13	-33.10
2509.5	-48.30	288	1.7	V	3.9	-44.40	-13	-31.40
3346.0	-46.60	236	1.9	H	4.1	-42.50	-13	-29.50
3346.0	-46.10	168	1.7	V	4.1	-42.00	-13	-29.00
QPSK 1.4MHz Bandwidth, High channel								
1696.6	-49.40	137	2.4	H	0.5	-48.90	-13	-35.90
1696.6	-49.60	92	2.4	V	0.9	-48.70	-13	-35.70
2544.9	-49.10	193	1.9	H	3.5	-45.60	-13	-32.60
2544.9	-47.70	85	1.7	V	3.8	-43.90	-13	-30.90
3393.2	-46.90	126	1.1	H	4.5	-42.40	-13	-29.40
3393.2	-46.70	154	2.2	V	5.1	-41.60	-13	-28.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 7								
Test frequency range: 30MHz-26GHz								
QPSK 5MHz Bandwidth, Low channel								
5005.0	-51.60	204	1.5	H	9.3	-42.30	-25	-17.30
5005.0	-50.50	173	2.4	V	9.2	-41.30	-25	-16.30
7507.5	-54.70	128	2.1	H	15.4	-39.30	-25	-14.30
7507.5	-54.40	232	2.1	V	15.7	-38.70	-25	-13.70
QPSK 5MHz Bandwidth, Middle channel								
5070.0	-50.30	253	1.4	H	9.1	-41.20	-25	-16.20
5070.0	-50.10	90	1.9	V	9.3	-40.80	-25	-15.80
7605.0	-56.10	117	1.9	H	15.7	-40.40	-25	-15.40
7605.0	-55.30	305	1.8	V	15.6	-39.70	-25	-14.70
QPSK 5MHz Bandwidth, High channel								
5135.0	-49.50	219	1.3	H	9	-40.50	-25	-15.50
5135.0	-49.30	189	2.3	V	9.3	-40.00	-25	-15.00
7702.5	-55.10	326	1.5	H	15.5	-39.60	-25	-14.60
7702.5	-54.60	213	2.3	V	15.8	-38.80	-25	-13.80

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 12								
Test frequency range: 30MHz-10GHz								
QPSK 1.4MHz Bandwidth, Low channel								
1399.4	-55.40	296	1.2	H	1.6	-53.80	-13	-40.80
1399.4	-56.20	101	2.4	V	1.8	-54.40	-13	-41.40
2099.1	-48.40	18	2.2	H	3.8	-44.60	-13	-31.60
2099.1	-49.70	287	2.1	V	3.8	-45.90	-13	-32.90
2798.8	-50.00	170	1.1	H	3.8	-46.20	-13	-33.20
2798.8	-48.60	347	1.6	V	4.5	-44.10	-13	-31.10
QPSK 1.4MHz Bandwidth, Middle channel								
1415.0	-55.00	275	1.9	H	1.7	-53.30	-13	-40.30
1415.0	-55.70	188	1.7	V	1.8	-53.90	-13	-40.90
2122.5	-48.10	238	1.7	H	4	-44.10	-13	-31.10
2122.5	-49.60	341	2.2	V	4	-45.60	-13	-32.60
2830.0	-49.80	305	1.1	H	4.2	-45.60	-13	-32.60
2830.0	-48.30	231	2.1	V	4.7	-43.60	-13	-30.60
QPSK 1.4MHz Bandwidth, High channel								
1430.6	-54.50	272	2.3	H	1.7	-52.80	-13	-39.80
1430.6	-55.20	345	1.1	V	1.8	-53.40	-13	-40.40
2145.9	-47.60	202	1.2	H	4.2	-43.40	-13	-30.40
2145.9	-49.00	200	2.5	V	4.2	-44.80	-13	-31.80
2861.2	-49.90	20	1.1	H	4.6	-45.30	-13	-32.30
2861.2	-48.50	14	1.2	V	4.8	-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)				
LTE Band 41								
Test frequency range: 30MHz-27GHz								
QPSK 5MHz Bandwidth, Low channel								
5075.0	-51.20	235	2.1	H	9	-42.20	-25	-17.20
5075.0	-51.00	15	1.5	V	9.3	-41.70	-25	-16.70
7612.5	-56.90	204	1	H	15.7	-41.20	-25	-16.20
7612.5	-57.20	318	1.5	V	15.7	-41.50	-25	-16.50
QPSK 5MHz Bandwidth, Middle channel								
5190.0	-50.40	53	1.4	H	8.5	-41.90	-25	-16.90
5190.0	-50.00	104	2.2	V	9	-41.00	-25	-16.00
7785.0	-55.80	313	1.2	H	15.5	-40.30	-25	-15.30
7785.0	-55.40	246	2	V	15.6	-39.80	-25	-14.80
QPSK 5MHz Bandwidth, High channel								
5305.0	-49.70	218	1.2	H	8.6	-41.10	-25	-16.10
5305.0	-48.60	241	1.1	V	8.6	-40.00	-25	-15.00
7957.5	-57.10	63	2.1	H	16.7	-40.40	-25	-15.40
7957.5	-56.30	351	1.7	V	16.8	-39.50	-25	-14.50

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.

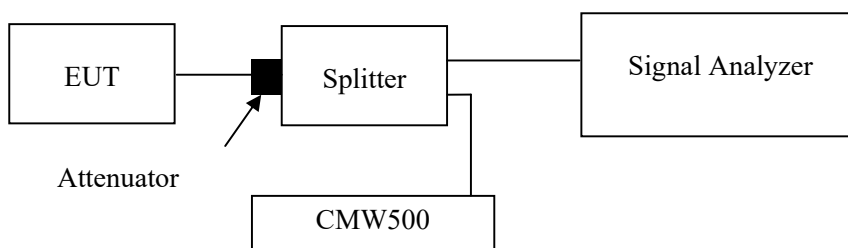
According to FCC §27.53 (m), For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel 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

ANSI C63.26-2015 Section 5.7

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:	24.9 °C
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

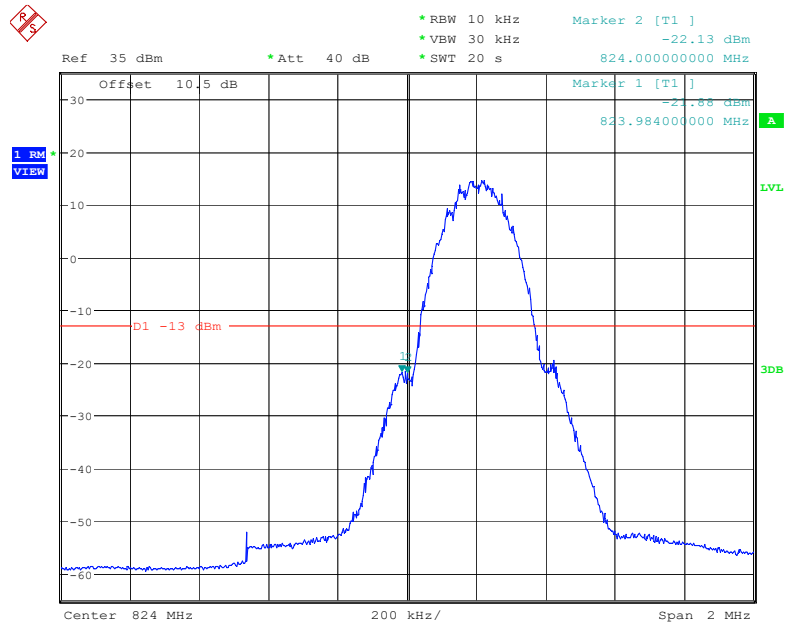
The testing was performed by Jacob Huang from 2023-07-13 to 2023-07-17.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

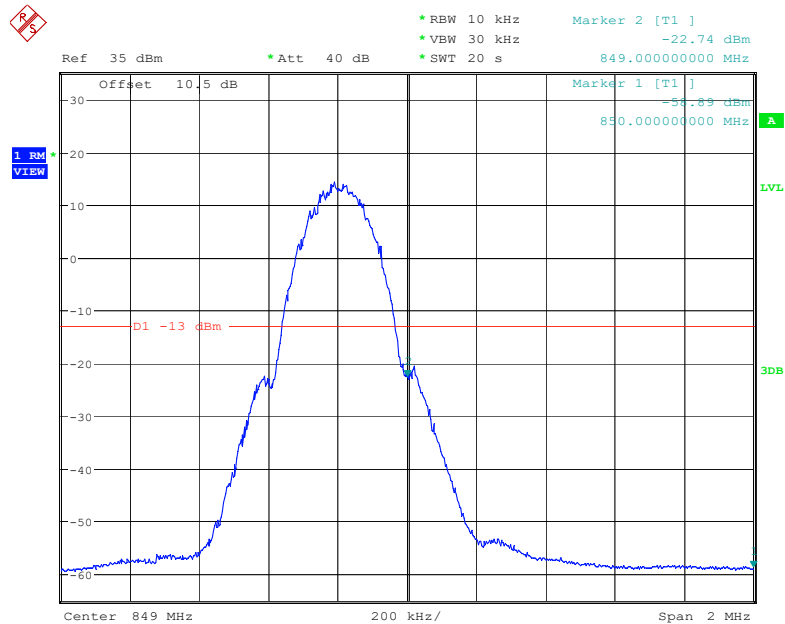
Please refer to the following plots.

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



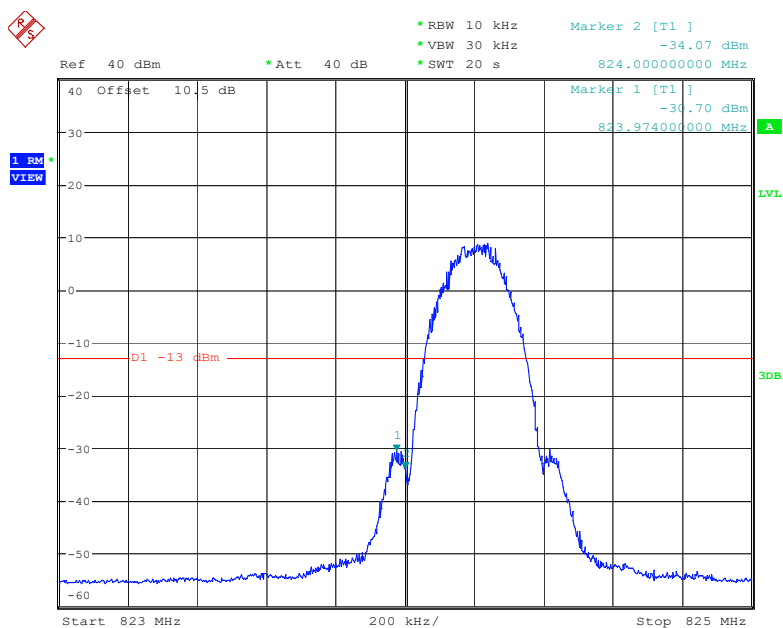
Date: 17.JUL.2023 19:15:01

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



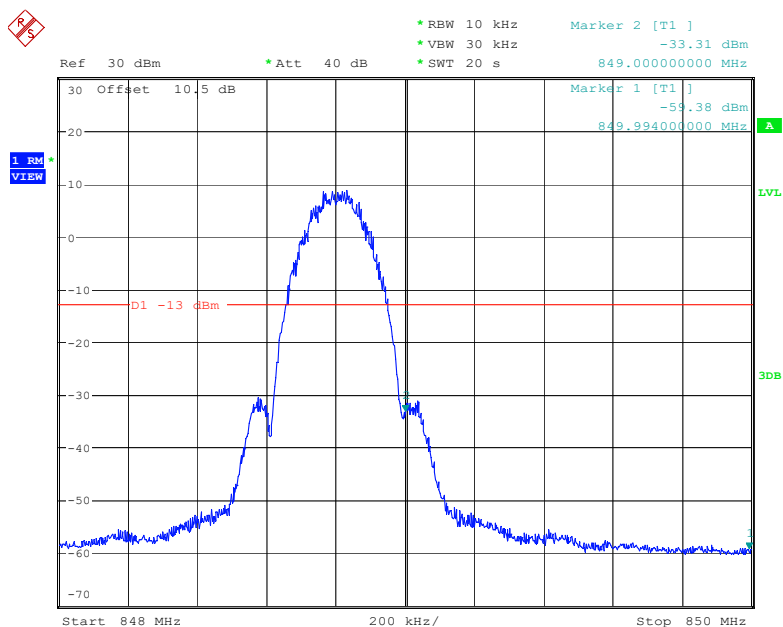
Date: 17.JUL.2023 19:22:40

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



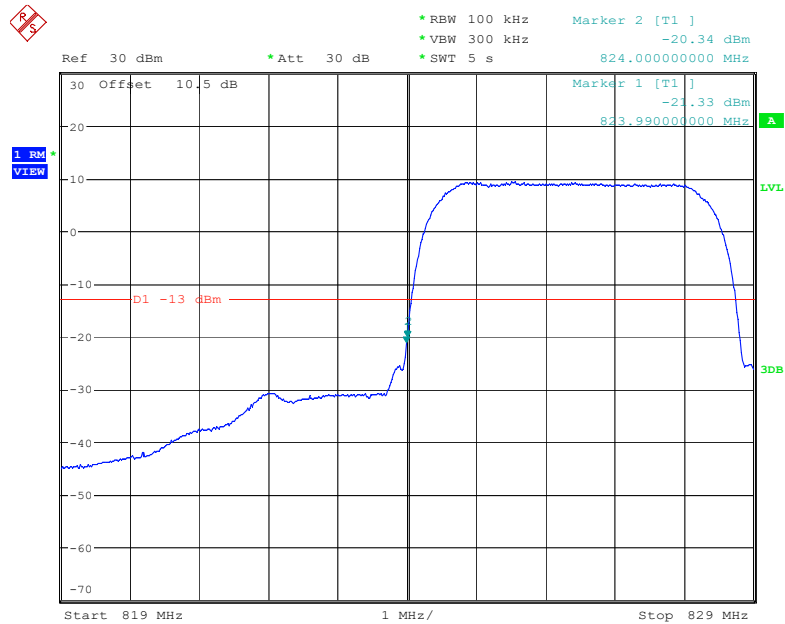
Date: 17.JUL.2023 18:26:31

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



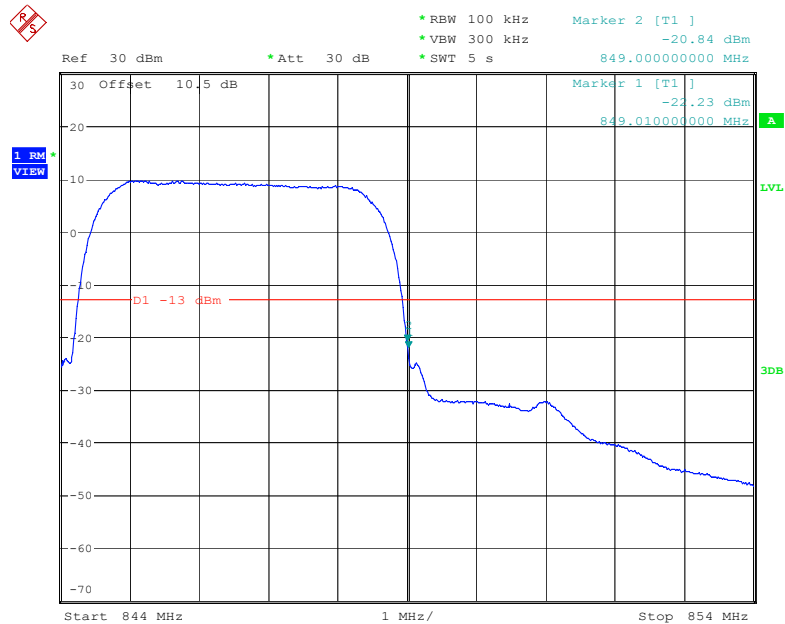
Date: 17.JUL.2023 18:19:29

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



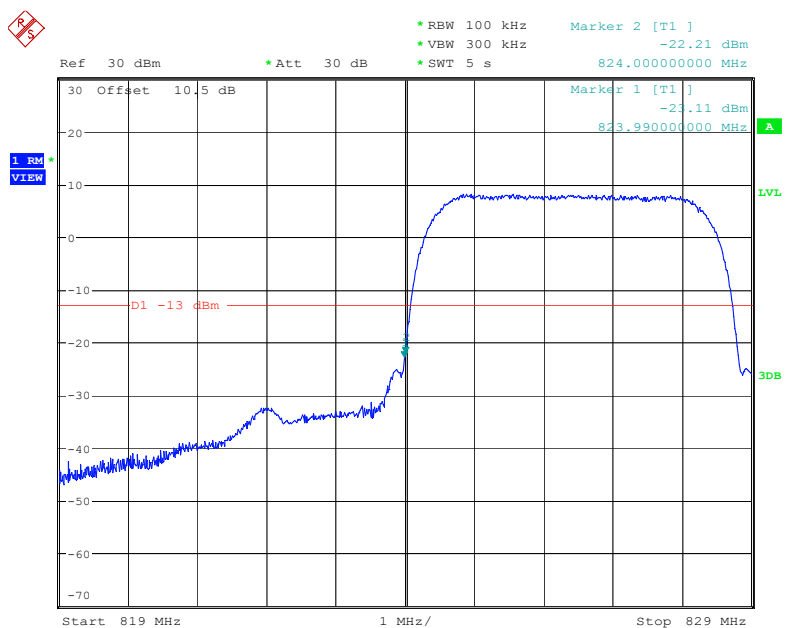
Date: 16.JUL.2023 20:00:31

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



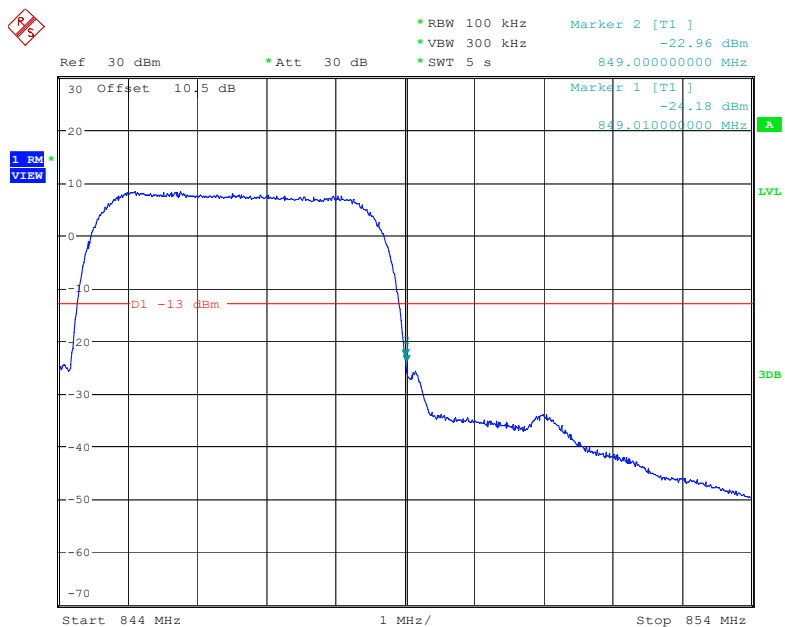
Date: 16.JUL.2023 19:48:02

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



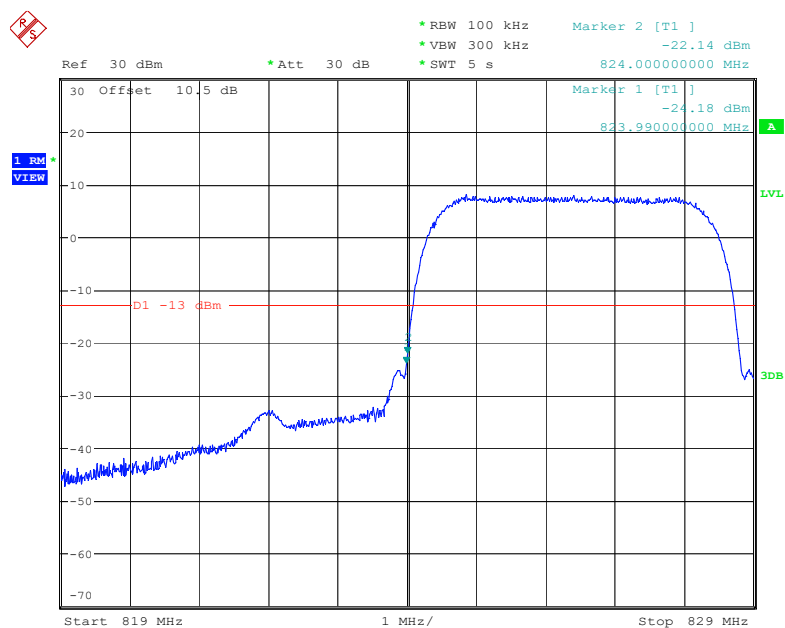
Date: 16.JUL.2023 20:04:58

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



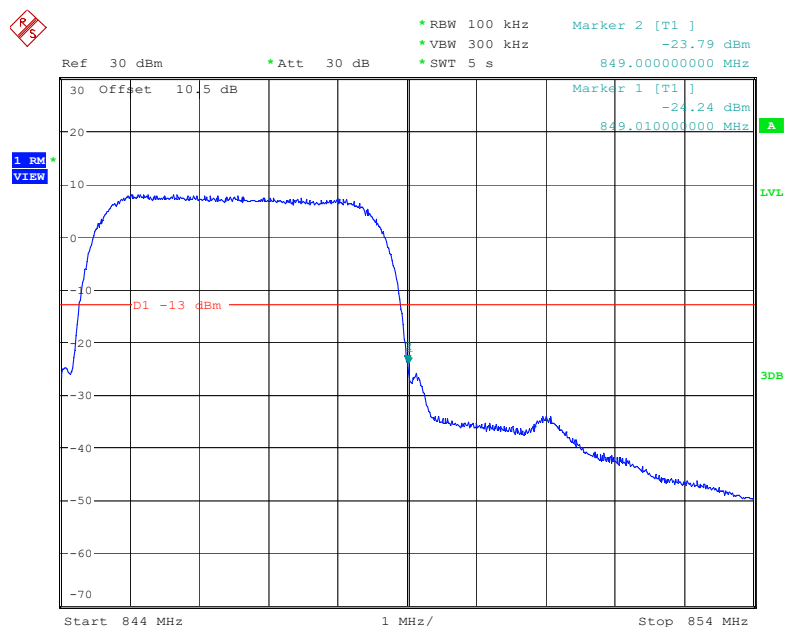
Date: 16.JUL.2023 20:14:55

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



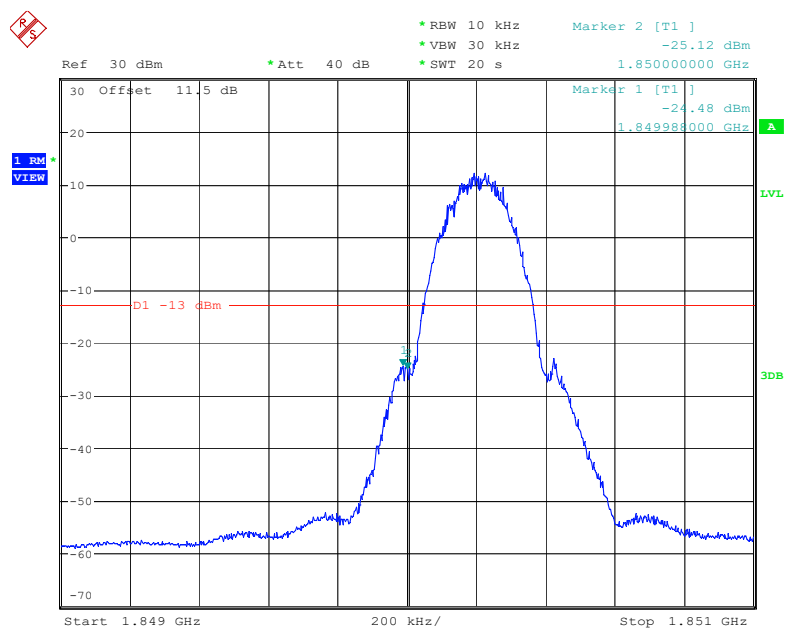
Date: 16.JUL.2023 20:28:53

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



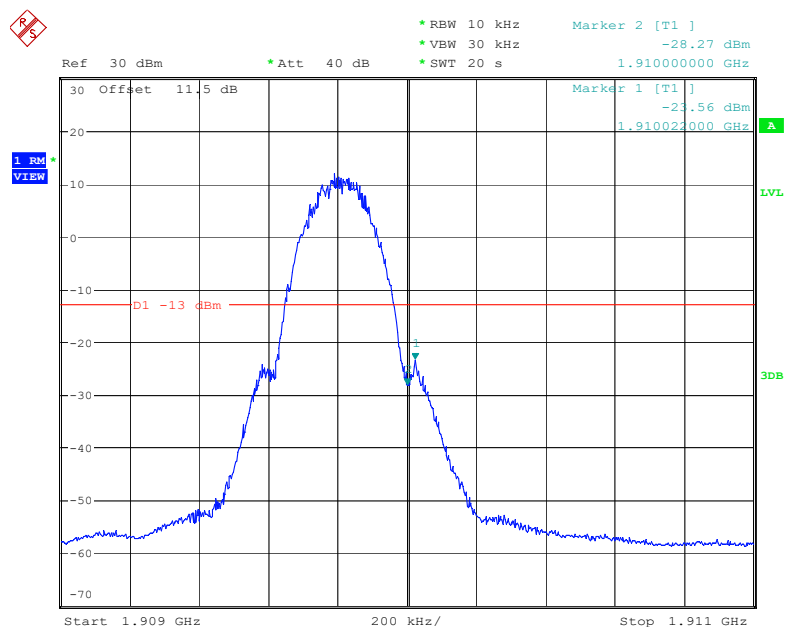
Date: 16.JUL.2023 20:19:12

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



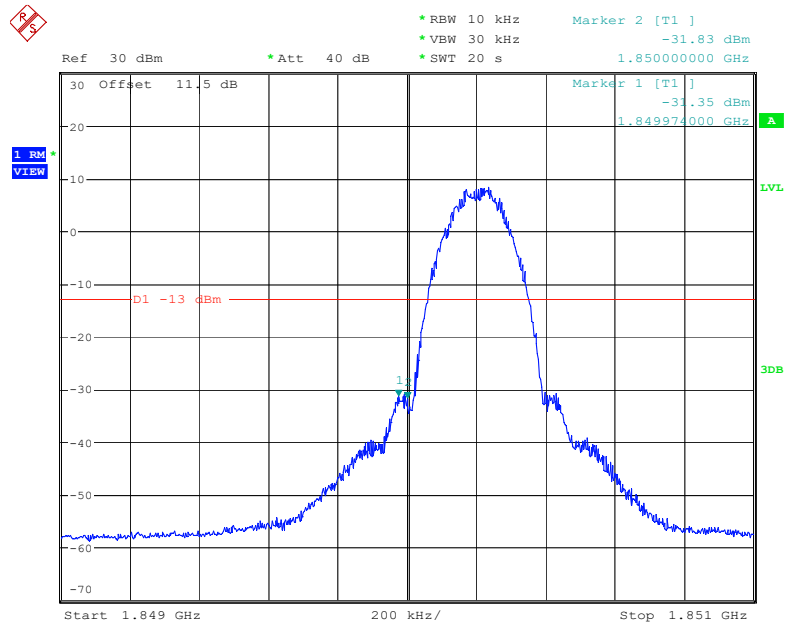
Date: 17.JUL.2023 20:18:09

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



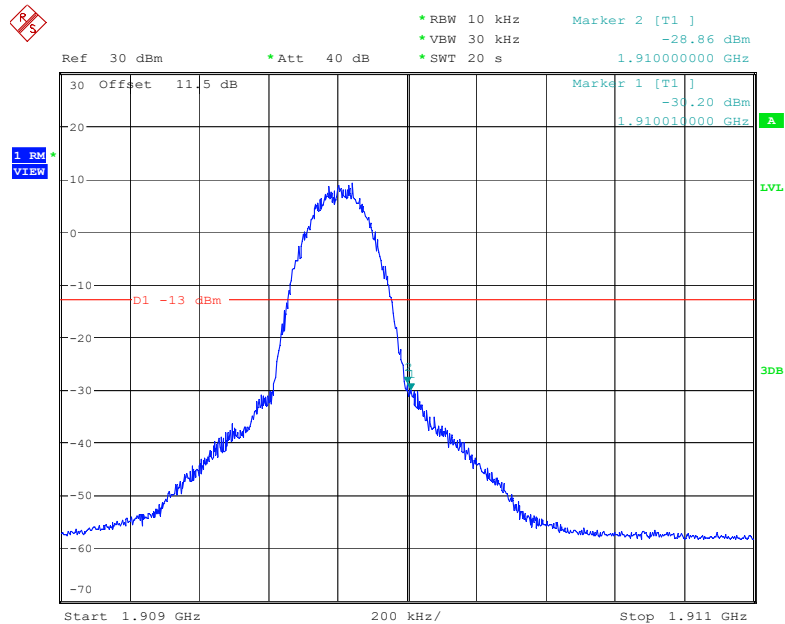
Date: 17.JUL.2023 20:35:08

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



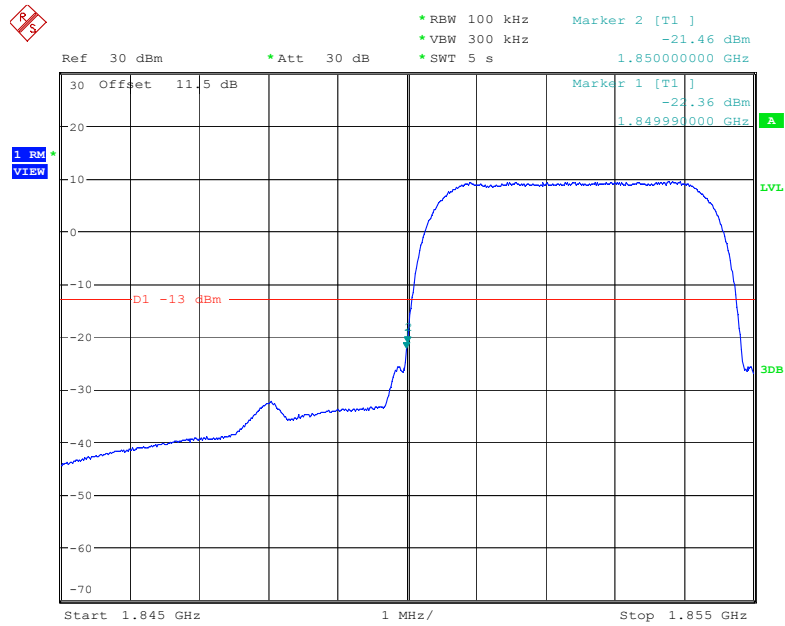
Date: 17.JUL.2023 20:01:28

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



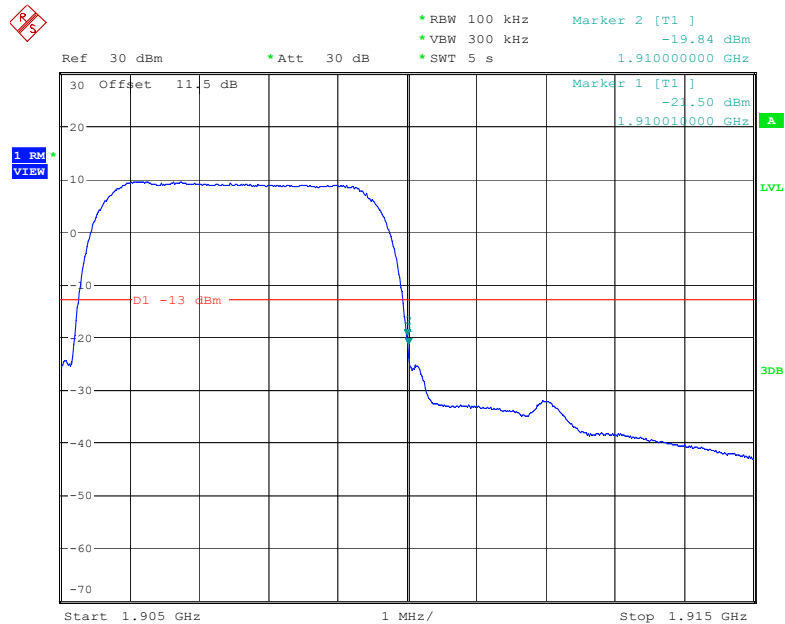
Date: 17.JUL.2023 20:09:26

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



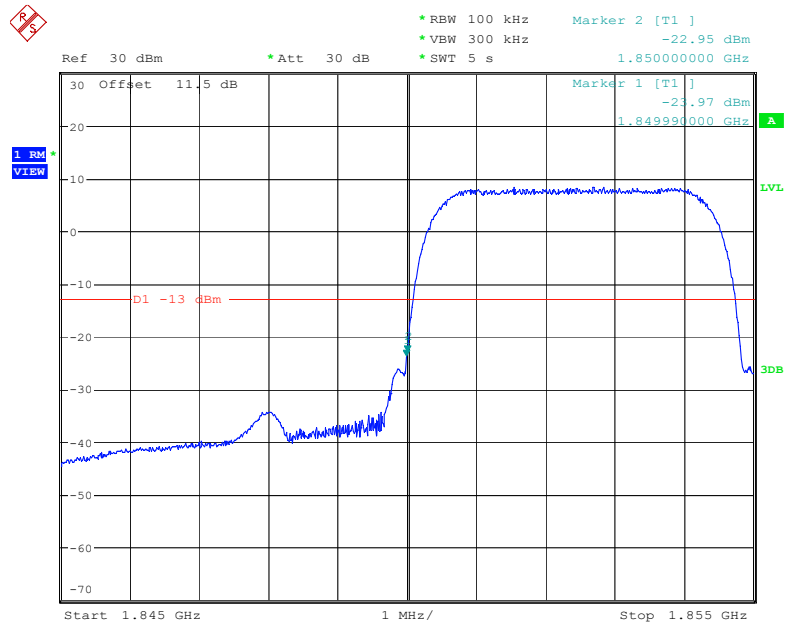
Date: 16.JUL.2023 20:41:58

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



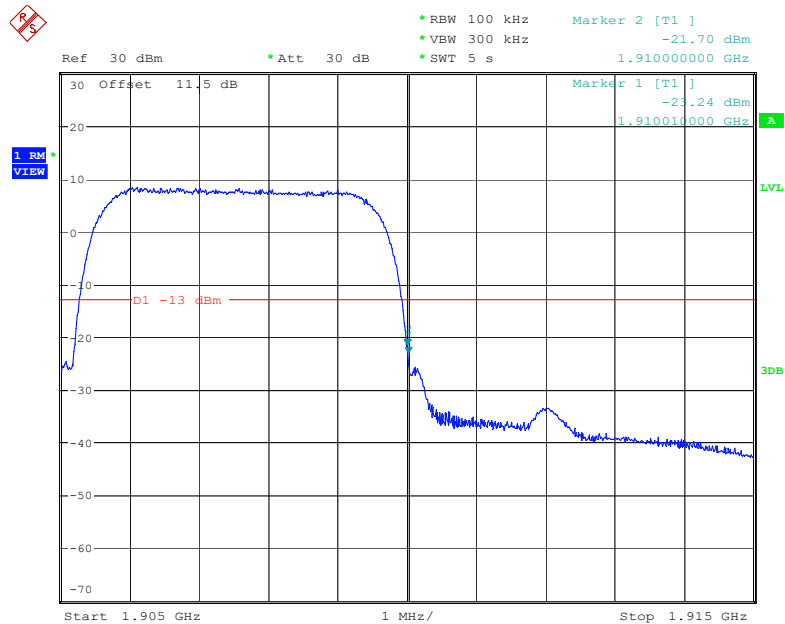
Date: 16.JUL.2023 20:34:29

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



Date: 16.JUL.2023 21:11:28

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



Date: 16.JUL.2023 21:00:34

Ref 30 dBm * Att 30 dB * RBW 100 kHz * VBW 300 kHz * SWT 5 s

Marker 2 [T1] -23.37 dBm 1.850000000 GHz

Offset 11.5 dB

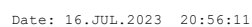
Marker 1 [T1] -24.58 dBm 1.849990000 GHz

D1 -13 dBm

1 RM VIEW

Start 1.845 GHz 1 MHz/ Stop 1.855 GHz

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.

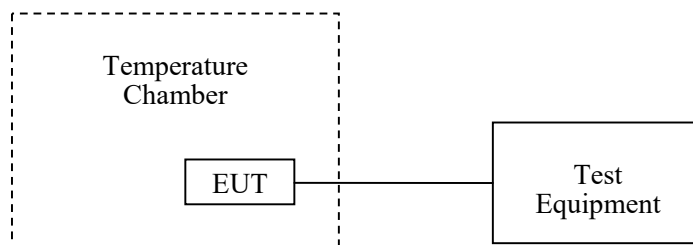
Test Procedure

ANSI C63.26-2015 Section 5.6

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

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

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



Test Data**Environmental Conditions**

Temperature:	24.9 °C
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-07-13 to 2023-07-17.

EUT operation mode: Transmitting (Worst Case)

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.	6.90	0.0082	2.5
-20		4.77	0.0057	2.5
-10		-2.79	-0.0033	2.5
0		1.68	0.0020	2.5
10		-0.09	-0.0001	2.5
20		-4.00	-0.0048	2.5
30		-4.29	-0.0051	2.5
40		-1.81	-0.0022	2.5
50		-0.92	-0.0011	2.5
20	L.V.	-0.83	-0.0010	2.5
	H.V.	-0.12	-0.0001	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.	14.15	0.0169	2.5
-20		7.59	0.0091	2.5
-10		-1.85	-0.0022	2.5
0		-3.00	-0.0036	2.5
10		2.90	0.0035	2.5
20		-6.50	-0.0078	2.5
30		-0.85	-0.0010	2.5
40		-1.17	-0.0014	2.5
50		0.17	0.0002	2.5
20	L.V.	0.57	0.0007	2.5
	H.V.	0.57	0.0007	2.5

WCDMA Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	8.25	0.0099	2.5
-20		0.93	0.0011	2.5
-10		-5.17	-0.0062	2.5
0		-0.70	-0.0008	2.5
10		3.85	0.0046	2.5
20		-5.74	-0.0069	2.5
30		3.19	0.0038	2.5
40		0.99	0.0012	2.5
50		3.62	0.0043	2.5
20	L.V.	4.10	0.0049	2.5
	H.V.	4.73	0.0057	2.5

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

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.0103	1909.9823	1850	1910
-20		1850.0128	1909.9844	1850	1910
-10		1850.0163	1909.9849	1850	1910
0		1850.0135	1909.9863	1850	1910
10		1850.0122	1909.9825	1850	1910
20		1850.0119	1909.9855	1850	1910
30		1850.0094	1909.9864	1850	1910
40		1850.0114	1909.9830	1850	1910
50		1850.0148	1909.9844	1850	1910
20	L.V.	1850.0152	1909.9871	1850	1910
	H.V.	1850.0111	1909.9805	1850	1910

EDGE Mode

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.0093	1909.9801	1850	1910
-20		1850.0094	1909.9867	1850	1910
-10		1850.0156	1909.9819	1850	1910
0		1850.0143	1909.9828	1850	1910
10		1850.0146	1909.9885	1850	1910
20		1850.0156	1909.9807	1850	1910
30		1850.0133	1909.9796	1850	1910
40		1850.0127	1909.9802	1850	1910
50		1850.0144	1909.9853	1850	1910
20	L.V.	1850.0140	1909.9870	1850	1910
	H.V.	1850.0125	1909.9845	1850	1910

WCDMA Mode

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.0134	1909.9825	1850	1910
-20		1850.0119	1909.9836	1850	1910
-10		1850.0142	1909.9863	1850	1910
0		1850.0149	1909.9840	1850	1910
10		1850.0131	1909.9905	1850	1910
20		1850.0107	1909.9828	1850	1910
30		1850.0111	1909.9848	1850	1910
40		1850.0099	1909.9846	1850	1910
50		1850.0131	1909.9837	1850	1910
20	L.V.	1850.0166	1909.9835	1850	1910
	H.V.	1850.0109	1909.9806	1850	1910

LTE:
QPSK:
Band 2:

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.	1850.0139	1909.9878	1850	1910
-20		1850.0083	1909.9889	1850	1910
-10		1850.0116	1909.9863	1850	1910
0		1850.0127	1909.9867	1850	1910
10		1850.0111	1909.9877	1850	1910
20		1850.0139	1909.9912	1850	1910
30		1850.0151	1909.9884	1850	1910
40		1850.0098	1909.9921	1850	1910
50		1850.0086	1909.9855	1850	1910
20	L.V.	1850.0127	1909.9881	1850	1910
	H.V.	1850.0112	1909.9907	1850	1910

Band 5:

10.0 MHz Middle Channel, f ₀ =836.5MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	2.30	0.0027	2.5
-20		-0.34	-0.0004	2.5
-10		-3.45	-0.0041	2.5
0		-2.73	-0.0033	2.5
10		-3.50	-0.0042	2.5
20		-5.34	-0.0064	2.5
30		3.55	0.0042	2.5
40		1.58	0.0019	2.5
50		-0.46	-0.0005	2.5
20	L.V.	-0.43	-0.0005	2.5
	H.V.	-0.13	-0.0001	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.	2500.0737	2569.9493	2500	2570
-20		2500.0770	2569.9499	2500	2570
-10		2500.0784	2569.9523	2500	2570
0		2500.0789	2569.9500	2500	2570
10		2500.0714	2569.9485	2500	2570
20		2500.0741	2569.9524	2500	2570
30		2500.0751	2569.9493	2500	2570
40		2500.0776	2569.9465	2500	2570
50		2500.0717	2569.9449	2500	2570
20	L.V.	2500.0775	2569.9452	2500	2570
	H.V.	2500.0764	2569.9497	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.1405	715.8668	699	716
-20		699.1385	715.8664	699	716
-10		699.1393	715.8688	699	716
0		699.1364	715.8656	699	716
10		699.1391	715.8682	699	716
20		699.1431	715.8665	699	716
30		699.1403	715.8721	699	716
40		699.1423	715.8678	699	716
50		699.1367	715.8691	699	716
20	L.V.	699.1373	715.8729	699	716
	H.V.	699.1405	715.8683	699	716

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.0779	2654.9643	2535	2655
-20		2535.0817	2654.9647	2535	2655
-10		2535.0767	2654.9708	2535	2655
0		2535.0767	2654.9666	2535	2655
10		2535.0786	2654.9662	2535	2655
20		2535.0795	2654.9678	2535	2655
30		2535.0807	2654.9711	2535	2655
40		2535.0832	2654.9654	2535	2655
50		2535.0797	2654.9676	2535	2655
20	L.V.	2535.0763	2654.9711	2535	2655
	H.V.	2535.0811	2654.9680	2535	2655

16QAM:**Band 2:**

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.	1850.1082	1909.8803	1850	1910
-20		1850.1156	1909.8738	1850	1910
-10		1850.1088	1909.8784	1850	1910
0		1850.1150	1909.8764	1850	1910
10		1850.1109	1909.8761	1850	1910
20		1850.1095	1909.8767	1850	1910
30		1850.1139	1909.8732	1850	1910
40		1850.1127	1909.8749	1850	1910
50		1850.1139	1909.8747	1850	1910
20	L.V.	1850.1088	1909.8792	1850	1910
	H.V.	1850.1141	1909.8749	1850	1910

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.	12.18	0.0146	2.5
-20		6.81	0.0081	2.5
-10		5.72	0.0068	2.5
0		0.36	0.0004	2.5
10		2.27	0.0027	2.5
20		-3.34	-0.0040	2.5
30		-3.30	-0.0039	2.5
40		5.03	0.0060	2.5
50		1.10	0.0013	2.5
20	L.V.	1.37	0.0016	2.5
	H.V.	1.51	0.0018	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.	2500.0761	2569.9261	2500	2570
-20		2500.0830	2569.9298	2500	2570
-10		2500.0804	2569.9281	2500	2570
0		2500.0759	2569.9293	2500	2570
10		2500.0773	2569.9281	2500	2570
20		2500.0785	2569.9262	2500	2570
30		2500.0771	2569.9256	2500	2570
40		2500.0755	2569.9330	2500	2570
50		2500.0773	2569.9314	2500	2570
20	L.V.	2500.0798	2569.9271	2500	2570
	H.V.	2500.0820	2569.9308	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.1312	715.8350	699	716
-20		699.1291	715.8315	699	716
-10		699.1300	715.8339	699	716
0		699.1279	715.8373	699	716
10		699.1301	715.8324	699	716
20		699.1326	715.8356	699	716
30		699.1331	715.8318	699	716
40		699.1284	715.8304	699	716
50		699.1333	715.8366	699	716
20	L.V.	699.1292	715.8315	699	716
	H.V.	699.1316	715.8302	699	716

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.0724	2654.9569	2535	2655
-20		2535.0752	2654.9584	2535	2655
-10		2535.0761	2654.9595	2535	2655
0		2535.0774	2654.9641	2535	2655
10		2535.0735	2654.9596	2535	2655
20		2535.0774	2654.9606	2535	2655
30		2535.0768	2654.9605	2535	2655
40		2535.0716	2654.9572	2535	2655
50		2535.0740	2654.9579	2535	2655
20	L.V.	2535.0759	2654.9643	2535	2655
	H.V.	2535.0742	2654.9600	2535	2655

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