TESTREPORT

Applicant Name :	INFINIX MOBILITY LIMITED
Address :	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONG KONG
Report Number :	RA230116-02640E-RF-00C
FCC ID:	2AIZN-X678B

Test Standard (s)

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

Sample Description

Product Type:	Mobile Phone
Model No.:	X678B
Multiple Model(s) No.:	N/A
Trade Mark:	Infinix
Date Received:	2023/01/16
Report Date:	2023/02/21

Test Result:	Pass*

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

Prepared and Checked By:

Nick Fang
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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TABLE OF CONTENTS

DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA230116-02640E-RF-00C	Original Report	2023/02/21

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 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band5/LTE Band 5: -4.3dBi PCS1900/WCDMA Band 2/ LTE Band 2: -1dBi WCDMA Band 4/ LTE Band 4: -0.8dBi LTE Band 7/LTE Band 38/LTE Band 41: 1.2dBi (provided by the applicant)
Voltage Range	DC 3.87V from battery or DC 5V/11V/4~21V from adapter
Sample serial number	1Z0S for Radiated Emissions Test 1Z0T for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter information	Model: U680XSA Input: AC 100-240V, 50/60Hz, 2.0A Output: DC 5.0V, 2.0A or 11.0V, 6.2A or 4.0-21.0V, 3.25A, 68.0W Max
Extreme condition*	L.V.: Low Voltage 3.45V_{DC} N.V.: Normal Voltage 3.87V_{DC} H.V.: High Voltage 4.45V_{DC} (provided by the applicant)

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part24-Subpart E, and Part 27 of the Federal Communication Commission's rules.

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

Test Methodology

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

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

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

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

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±0.73dB
Unwanted Emission, conducted		±1.6dB
RF Frequency		$\pm 0.082*10^{-7}$
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz - 18GHz	±4.98dB
	18GHz - 26.5GHz	±5.06dB
Temperature		±1℃
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 (ISEDC), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

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

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

Equipment Modifications

No modification was made to the EUT.

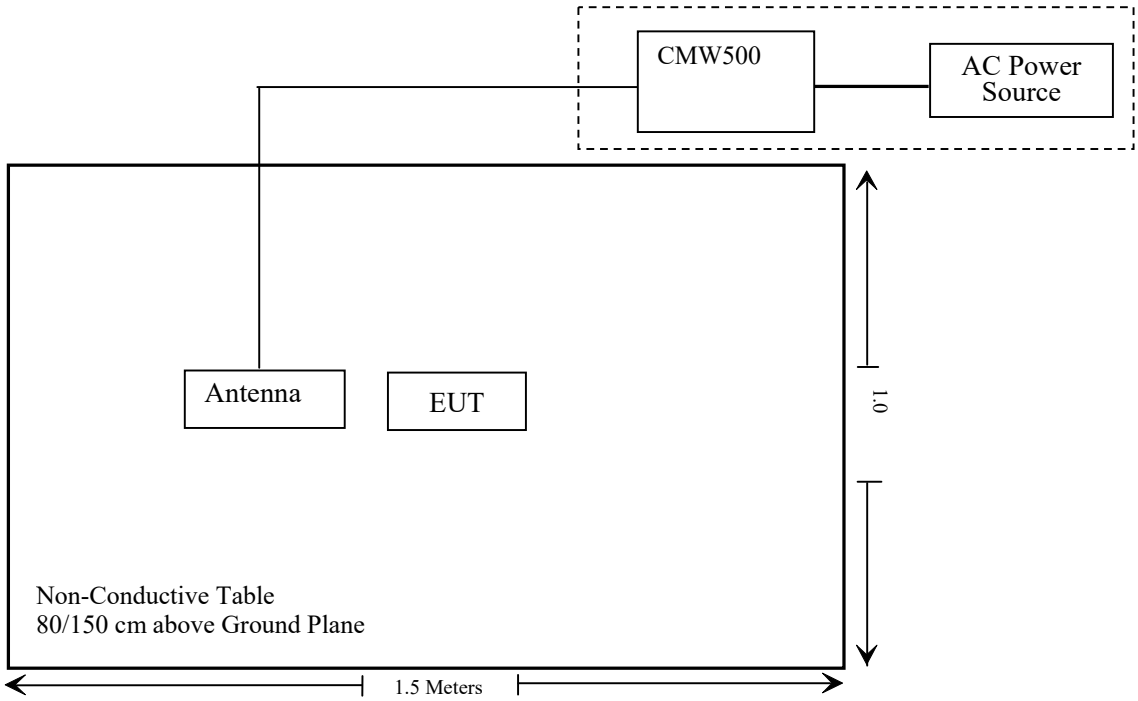
Support Equipment List and Details

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

Support Cable Description

Cable Description	Length (m)	From / Port	To
Unshielded 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) (d); § 24.232 (c) (d); §27.50 (d) (h);	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
§ 2.1051; §22.917 (a); § 24.238 (a); §27.53;	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53 (h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Note: * Please refer to SAR report number: RA230116-02640E-SA.

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-184055 36-J0	15964001002	2022/11/08	2023/11/07
Radiated Emission Test Software: e3 19821b (V9)					
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
Wainwright	High Pass Filter	WHKX3.6/18 G-10SS	5	2022/11/25	2023/11/24
CD	High Pass Filter	HPM-1.2/18G -60	110	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
PASTERNACK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-024-1)	2023/01/04	2026/01/03
PASTERNACK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-025-1)	2023/01/04	2026/01/03
PASTERNACK	Horn Antenn	PE9850/2F-20	720 (ATC-BA-024)	2023/01/04	2026/01/03
PASTERNACK	Horn Antenn	PE9850/2F-20	720 (ATC-BA-025)	2023/01/04	2026/01/03
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	Spectrum Analyzer	FSU26	200982	2022/07/04	2023/07/03
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
Unknown	RF Coaxial Cable	No.31	RF-01	Each time	
Fluke	Multi Meter	45	7664009	2022/12/14	2023/12/13
Manson	DC Power Source	KPS-6604	ATCS-205	NCR	NCR

* 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: RA230116-02640E-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) (d) & § 24.232(c) (d); §27.50(d)(h)- RF OUTPUT POWER

Applicable Standard

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

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

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

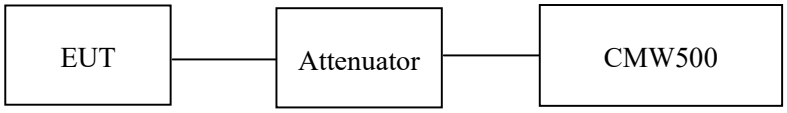
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

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

Test Procedure

Conducted method:

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



Note: the path loss (cable loss and attenuator) has included in the result.

Test Data

Environmental Conditions

Temperature:	27.2 ℃
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2023-02-04 to 2023-02-11.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	32.80	26.35	38.45
	190	836.6	32.90	**26.45**	38.45
	251	848.8	32.90	26.45	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	32.77	31.78	29.82	28.82	26.32	25.33	23.37	22.37	38.45
	190	836.6	32.85	31.92	29.98	28.95	26.40	25.47	23.53	22.50	38.45
	251	848.8	32.84	31.89	30.00	28.91	26.39	25.44	23.55	22.46	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	26.85	25.59	23.47	22.30	20.40	19.14	17.02	15.85	38.45
	190	836.6	27.07	25.77	23.65	22.48	20.62	19.32	17.20	16.03	38.45
	251	848.8	27.22	25.92	23.77	22.60	**20.77**	19.47	17.32	16.15	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		23.45	23.49	23.57	17.00	17.04	**17.12**
	HSDPA	1	22.42	22.41	22.50	15.97	15.96	16.05
		2	22.36	22.33	22.41	15.91	15.88	15.96
		3	22.18	22.38	22.26	15.73	15.93	15.81
		4	22.17	22.19	22.34	15.72	15.74	15.89
	HSUPA	1	21.64	21.61	21.56	15.19	15.16	15.11
		2	21.52	21.52	21.48	15.07	15.07	15.03
		3	21.34	21.46	21.37	14.89	15.01	14.92
		4	21.62	21.49	21.28	15.17	15.04	14.83
		5	21.29	21.58	21.49	14.84	15.13	15.04
	HSPA+	1	21.34	21.54	21.28	14.89	15.09	14.83

Note: ERP (dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
For GSM850 / WCDMA Band5: Antenna Gain = -4.30Bi = -6.45dBd (0dBd=2.15dBi)
Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	30.10	29.10	33
	661	1880.0	30.10	29.10	33
	810	1909.8	30.00	29.00	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	30.16	28.94	26.60	25.54	**29.16**	27.94	25.60	24.54	33
	661	1880.0	30.13	28.97	26.65	25.61	29.13	27.97	25.65	24.61	33
	810	1909.8	29.99	28.88	26.65	25.56	28.99	27.88	25.65	24.56	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	25.52	24.49	22.39	21.22	24.52	23.49	21.39	20.22	33
	661	1880.0	25.75	24.66	22.61	21.44	**24.75**	23.66	21.61	20.44	33
	810	1909.8	25.62	24.55	22.57	21.26	24.62	23.55	21.57	20.26	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.47	23.43	23.44	**22.47**	22.43	22.44
	HSDPA	1	22.44	22.38	22.42	21.44	21.38	21.42
		2	22.38	22.35	22.38	21.38	21.35	21.38
		3	22.51	22.48	22.26	21.51	21.48	21.26
		4	22.46	22.26	22.43	21.46	21.26	21.43
	HSUPA	1	22.05	22.07	21.97	21.05	21.07	20.97
		2	22.02	22.06	21.95	21.02	21.06	20.95
		3	22.01	22.04	21.89	21.01	21.04	20.89
		4	22.05	22.18	21.96	21.05	21.18	20.96
		5	22.31	22.05	21.98	21.31	21.05	20.98
	HSPA+	1	22.18	22.04	21.94	21.18	21.04	20.94

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

AWS Band

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		23.44	23.40	23.37	**22.64**	22.60	22.57
	HSDPA	1	22.41	22.40	22.38	21.61	21.60	21.58
		2	22.38	22.25	22.24	21.58	21.45	21.44
		3	22.25	22.36	22.31	21.45	21.56	21.51
		4	22.35	22.28	22.26	21.55	21.48	21.46
	HSUPA	1	22.01	21.99	21.94	21.21	21.19	21.14
		2	22.02	21.97	21.87	21.22	21.17	21.07
		3	22.06	21.89	21.84	21.26	21.09	21.04
		4	22.02	21.84	21.92	21.22	21.04	21.12
		5	22.07	21.97	21.86	21.27	21.17	21.06
	HSPA+	1	22.08	21.86	21.93	21.28	21.06	21.13

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band4: Antenna Gain = -0.80dBi
Limit: EIRP≤30dBm

LTE Band 2

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.48	21.25	21.20	20.48	20.25	20.20
		RB1#3	21.49	21.29	21.23	20.49	20.29	20.23
		RB1#5	21.46	21.26	21.18	20.46	20.26	20.18
		RB3#0	21.56	21.37	21.25	20.56	20.37	20.25
		RB3#3	21.56	21.35	21.27	20.56	20.35	20.27
		RB6#0	20.61	20.43	20.32	19.61	19.43	19.32
	16QAM	RB1#0	20.45	20.36	20.16	19.45	19.36	19.16
		RB1#3	20.50	20.43	20.21	19.50	19.43	19.21
		RB1#5	20.43	20.32	20.17	19.43	19.32	19.17
		RB3#0	20.71	20.29	20.28	19.71	19.29	19.28
		RB3#3	20.71	20.31	20.25	19.71	19.31	19.25
		RB6#0	19.66	19.46	19.27	18.66	18.46	18.27
3.0	QPSK	RB1#0	21.36	21.17	21.08	20.36	20.17	20.08
		RB1#8	21.42	21.22	21.19	20.42	20.22	20.19
		RB1#14	21.35	21.10	21.10	20.35	20.10	20.10
		RB6#0	20.55	20.35	20.24	19.55	19.35	19.24
		RB6#9	20.54	20.34	20.26	19.54	19.34	19.26
		RB15#0	20.54	20.36	20.22	19.54	19.36	19.22
	16QAM	RB1#0	20.87	20.26	20.03	19.87	19.26	19.03
		RB1#8	20.94	20.37	20.14	19.94	19.37	19.14
		RB1#14	20.82	20.28	20.07	19.82	19.28	19.07
		RB6#0	19.64	19.37	19.23	18.64	18.37	18.23
		RB6#9	19.60	19.43	19.19	18.60	18.43	18.19
		RB15#0	19.58	19.29	19.30	18.58	18.29	18.30

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.61	21.42	21.33	20.61	20.42	20.33
		RB1#13	21.70	21.52	21.46	**20.70**	20.52	20.46
		RB1#24	21.56	21.38	21.31	20.56	20.38	20.31
		RB15#0	20.63	20.44	20.38	19.63	19.44	19.38
		RB15#10	20.62	20.44	20.35	19.62	19.44	19.35
		RB25#0	20.60	20.43	20.37	19.60	19.43	19.37
	16QAM	RB1#0	20.63	20.31	20.59	19.63	19.31	19.59
		RB1#13	20.77	20.41	20.71	**19.77**	19.41	19.71
		RB1#24	20.64	20.27	20.57	19.64	19.27	19.57
		RB15#0	19.66	19.46	19.32	18.66	18.46	18.32
		RB15#10	19.68	19.47	19.30	18.68	18.47	18.30
		RB25#0	19.67	19.48	19.37	18.67	18.48	18.37
10.0	QPSK	RB1#0	21.63	21.49	21.42	20.63	20.49	20.42
		RB1#25	21.64	21.48	21.48	20.64	20.48	20.48
		RB1#49	21.60	21.43	21.40	20.60	20.43	20.40
		RB25#0	20.59	20.42	20.33	19.59	19.42	19.33
		RB25#25	20.60	20.46	20.35	19.60	19.46	19.35
		RB50#0	20.62	20.46	20.36	19.62	19.46	19.36
	16QAM	RB1#0	21.17	20.62	20.37	20.17	19.62	19.37
		RB1#25	21.19	20.6	20.42	20.19	19.60	19.42
		RB1#49	21.14	20.52	20.35	20.14	19.52	19.35
		RB25#0	19.65	19.44	19.39	18.65	18.44	18.39
		RB25#25	19.65	19.49	19.46	18.65	18.49	18.46
		RB50#0	19.61	19.44	19.36	18.61	18.44	18.36

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.61	21.48	21.36	20.61	20.48	20.36
		RB1#38	21.68	21.54	21.47	20.68	20.54	20.47
		RB1#74	21.50	21.41	21.35	20.50	20.41	20.35
		RB36#0	20.66	20.48	20.41	19.66	19.48	19.41
		RB36#39	20.59	20.49	20.44	19.59	19.49	19.44
		RB75#0	20.67	20.54	20.45	19.67	19.54	19.45
	16QAM	RB1#0	21.08	20.59	20.75	20.08	19.59	19.75
		RB1#38	21.19	20.64	20.87	20.19	19.64	19.87
		RB1#74	21.01	20.52	20.67	20.01	19.52	19.67
		RB36#0	19.66	19.49	19.38	18.66	18.49	18.38
		RB36#39	19.61	19.49	19.41	18.61	18.49	18.41
		RB75#0	19.62	19.56	19.37	18.62	18.56	18.37
20.0	QPSK	RB1#0	21.54	21.42	21.32	20.54	20.42	20.32
		RB1#50	21.68	21.57	21.54	**20.68**	20.57	20.54
		RB1#99	21.49	21.36	21.34	20.49	20.36	20.34
		RB50#0	20.63	20.49	20.45	19.63	19.49	19.45
		RB50#50	20.55	20.53	20.44	19.55	19.53	19.44
		RB100#0	20.63	20.53	20.42	19.63	19.53	19.42
	16QAM	RB1#0	21.03	20.72	20.50	20.03	19.72	19.50
		RB1#50	21.19	20.82	20.71	**20.19**	19.82	19.71
		RB1#99	20.98	20.62	20.48	19.98	19.62	19.48
		RB50#0	19.63	19.47	19.43	18.63	18.47	18.43
		RB50#50	19.59	19.53	19.43	18.59	18.53	18.43
		RB100#0	19.60	19.52	19.45	18.60	18.52	18.45

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band2: Antenna Gain =-1.0dB
Limit: EIRP≤33dBm

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.38	21.31	21.15	20.58	20.51	20.35
		RB1#3	21.42	21.39	21.24	20.62	20.59	20.44
		RB1#5	21.35	21.31	21.16	20.55	20.51	20.36
		RB3#0	21.45	21.38	21.30	20.65	20.58	20.50
		RB3#3	21.43	21.38	21.28	20.63	20.58	20.48
		RB6#0	20.56	20.46	20.35	19.76	19.66	19.55
	16QAM	RB1#0	20.46	20.28	20.18	19.66	19.48	19.38
		RB1#3	20.53	20.32	20.26	19.73	19.52	19.46
		RB1#5	20.42	20.28	20.19	19.62	19.48	19.39
		RB3#0	20.41	20.39	20.41	19.61	19.59	19.61
		RB3#3	20.40	20.38	20.45	19.60	19.58	19.65
		RB6#0	19.62	19.43	19.43	18.82	18.63	18.63
3.0	QPSK	RB1#0	21.16	21.20	21.10	20.36	20.40	20.30
		RB1#8	21.26	21.27	21.10	20.46	20.47	20.30
		RB1#14	21.19	21.15	21.05	20.39	20.35	20.25
		RB6#0	20.40	20.36	20.26	19.60	19.56	19.46
		RB6#9	20.43	20.37	20.21	19.63	19.57	19.41
		RB15#0	20.41	20.32	20.25	19.61	19.52	19.45
	16QAM	RB1#0	20.73	20.23	20.05	19.93	19.43	19.25
		RB1#8	20.82	20.33	20.17	20.02	19.53	19.37
		RB1#14	20.69	20.26	20.06	19.89	19.46	19.26
		RB6#0	19.51	19.39	19.27	18.71	18.59	18.47
		RB6#9	19.51	19.43	19.23	18.71	18.63	18.43
		RB15#0	19.49	19.28	19.35	18.69	18.48	18.55

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.42	21.43	21.32	20.62	20.63	20.52
		RB1#13	21.56	21.52	21.41	20.76	20.72	20.61
		RB1#24	21.47	21.38	21.24	20.67	20.58	20.44
		RB15#0	20.45	20.40	20.39	19.65	19.60	19.59
		RB15#10	20.49	20.42	20.31	19.69	19.62	19.51
		RB25#0	20.46	20.39	20.33	19.66	19.59	19.53
	16QAM	RB1#0	20.36	20.67	20.38	19.56	19.87	19.58
		RB1#13	20.46	20.77	20.53	19.66	19.97	19.73
		RB1#24	20.37	20.63	20.35	19.57	19.83	19.55
		RB15#0	19.51	19.36	19.41	18.71	18.56	18.61
		RB15#10	19.56	19.42	19.42	18.76	18.62	18.62
		RB25#0	19.55	19.43	19.42	18.75	18.63	18.62
10.0	QPSK	RB1#0	21.52	21.49	21.42	20.72	20.69	20.62
		RB1#25	21.55	21.53	21.42	**20.75**	20.73	20.62
		RB1#49	21.53	21.44	21.37	20.73	20.64	20.57
		RB25#0	20.40	20.37	20.42	19.60	19.57	19.62
		RB25#25	20.51	20.42	20.31	19.71	19.62	19.51
		RB50#0	20.46	20.42	20.34	19.66	19.62	19.54
	16QAM	RB1#0	21.01	20.59	20.42	20.21	19.79	19.62
		RB1#25	21.10	20.60	20.43	**20.30**	19.80	19.63
		RB1#49	21.05	20.56	20.33	20.25	19.76	19.53
		RB25#0	19.49	19.43	19.52	18.69	18.63	18.72
		RB25#25	19.61	19.50	19.50	18.81	18.70	18.70
		RB50#0	19.50	19.43	19.40	18.70	18.63	18.60

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.44	21.42	21.31	20.64	20.62	20.51
		RB1#38	21.58	21.51	21.43	20.78	20.71	20.63
		RB1#74	21.48	21.29	21.25	20.68	20.49	20.45
		RB36#0	20.44	20.42	20.43	19.64	19.62	19.63
		RB36#39	20.50	20.44	20.34	19.70	19.64	19.54
		RB75#0	20.50	20.42	20.38	19.70	19.62	19.58
	16QAM	RB1#0	20.98	20.50	20.67	20.18	19.70	19.87
		RB1#38	21.06	20.62	20.80	20.26	19.82	20.00
		RB1#74	20.94	20.43	20.64	20.14	19.63	19.84
		RB36#0	19.45	19.45	19.39	18.65	18.65	18.59
		RB36#39	19.55	19.43	19.35	18.75	18.63	18.55
		RB75#0	19.53	19.46	19.40	18.73	18.66	18.60
20.0	QPSK	RB1#0	21.35	21.39	21.25	20.55	20.59	20.45
		RB1#50	21.56	21.58	21.45	20.76	**20.78**	20.65
		RB1#99	21.38	21.30	21.17	20.58	20.50	20.37
		RB50#0	20.36	20.32	20.42	19.56	19.52	19.62
		RB50#50	20.53	20.39	20.32	19.73	19.59	19.52
		RB100#0	20.44	20.36	20.31	19.64	19.56	19.51
	16QAM	RB1#0	20.63	20.55	20.74	19.83	19.75	19.94
		RB1#50	20.88	20.70	20.95	20.08	19.90	**20.15**
		RB1#99	20.63	20.48	20.72	19.83	19.68	19.92
		RB50#0	19.36	19.36	19.43	18.56	18.56	18.63
		RB50#50	19.48	19.41	19.35	18.68	18.61	18.55
		RB100#0	19.46	19.37	19.37	18.66	18.57	18.57

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band4: Antenna Gain = -0.80dBi
Limit: EIRP≤30dBm

LTE Band 5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.22	22.15	22.25	15.77	15.70	15.80
		RB1#3	22.29	22.25	22.30	15.84	15.80	15.85
		RB1#5	22.25	22.18	22.29	15.80	15.73	15.84
		RB3#0	22.32	22.28	22.35	15.87	15.83	15.90
		RB3#3	22.37	22.27	22.36	15.92	15.82	15.91
		RB6#0	21.42	21.35	21.43	14.97	14.90	14.98
	16QAM	RB1#0	21.27	21.15	21.33	14.82	14.70	14.88
		RB1#3	21.35	21.22	21.45	14.90	14.77	15.00
		RB1#5	21.25	21.15	21.36	14.80	14.70	14.91
		RB3#0	21.42	21.41	21.32	14.97	14.96	14.87
		RB3#3	21.40	21.43	21.32	14.95	14.98	14.87
		RB6#0	20.38	20.36	20.50	13.93	13.91	14.05
3.0	QPSK	RB1#0	22.13	22.00	22.16	15.68	15.55	15.71
		RB1#8	22.22	22.15	22.20	15.77	15.70	15.75
		RB1#14	22.10	22.08	22.11	15.65	15.63	15.66
		RB6#0	21.24	21.24	21.3	14.79	14.79	14.85
		RB6#9	21.32	21.27	21.34	14.87	14.82	14.89
		RB15#0	21.28	21.28	21.31	14.83	14.83	14.86
	16QAM	RB1#0	21.13	21.65	21.24	14.68	15.20	14.79
		RB1#8	21.27	21.66	21.37	14.82	15.21	14.92
		RB1#14	21.15	21.55	21.30	14.70	15.10	14.85
		RB6#0	20.31	20.34	20.34	13.86	13.89	13.89
		RB6#9	20.30	20.33	20.42	13.85	13.88	13.97
		RB15#0	20.34	20.31	20.25	13.89	13.86	13.80

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	22.42	22.32	22.33	15.97	15.87	15.88
		RB1#13	22.51	22.47	22.48	16.06	16.02	16.03
		RB1#24	22.39	22.34	22.39	15.94	15.89	15.94
		RB15#0	21.40	21.34	21.39	14.95	14.89	14.94
		RB15#10	21.47	21.34	21.33	15.02	14.89	14.88
		RB25#0	21.44	21.34	21.38	14.99	14.89	14.93
	16QAM	RB1#0	21.47	21.19	21.61	15.02	14.74	15.16
		RB1#13	21.60	21.32	21.71	15.15	14.87	15.26
		RB1#24	21.49	21.21	21.66	15.04	14.76	15.21
		RB15#0	20.40	20.39	20.38	13.95	13.94	13.93
		RB15#10	20.47	20.39	20.30	14.02	13.94	13.85
		RB25#0	20.47	20.41	20.41	14.02	13.96	13.96
10.0	QPSK	RB1#0	22.45	22.44	22.41	16.00	15.99	15.96
		RB1#25	22.55	22.43	22.44	**16.10**	15.98	15.99
		RB1#49	22.39	22.40	22.44	15.94	15.95	15.99
		RB25#0	21.35	21.33	21.41	14.90	14.88	14.96
		RB25#25	21.39	21.35	21.36	14.94	14.90	14.91
		RB50#0	21.39	21.37	21.36	14.94	14.92	14.91
	16QAM	RB1#0	21.62	21.37	22.01	15.17	14.92	15.56
		RB1#25	21.66	21.43	22.03	15.21	14.98	**15.58**
		RB1#49	21.52	21.40	22.00	15.07	14.95	15.55
		RB25#0	20.39	20.40	20.48	13.94	13.95	14.03
		RB25#25	20.40	20.40	20.42	13.95	13.95	13.97
		RB50#0	20.38	20.33	20.39	13.93	13.88	13.94

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
For Band5: Antenna Gain = -4.30dBi = -6.45dBd (0dBd=2.15dBi)
Limit: ERP≤38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.65	20.63	20.65	21.85	21.83	21.85
		RB1#13	20.79	20.74	20.85	21.99	21.94	22.05
		RB1#24	20.68	20.63	20.71	21.88	21.83	21.91
		RB15#0	19.58	19.63	19.78	20.78	20.83	20.98
		RB15#10	19.70	19.67	19.73	20.90	20.87	20.93
		RB25#0	19.60	19.63	19.70	20.80	20.83	20.90
	16QAM	RB1#0	19.80	19.67	19.53	21.00	20.87	20.73
		RB1#13	19.95	19.77	19.71	21.15	20.97	20.91
		RB1#24	19.82	19.67	19.62	21.02	20.87	20.82
		RB15#0	18.51	18.68	18.79	19.71	19.88	19.99
		RB15#10	18.64	18.67	18.72	19.84	19.87	19.92
		RB25#0	18.56	18.68	18.80	19.76	19.88	20.00
10.0	QPSK	RB1#0	20.78	20.72	20.69	21.98	21.92	21.89
		RB1#25	20.85	20.75	20.78	22.05	21.95	21.98
		RB1#49	20.81	20.69	20.74	22.01	21.89	21.94
		RB25#0	19.59	19.66	19.71	20.79	20.86	20.91
		RB25#25	19.71	19.71	19.70	20.91	20.91	20.90
		RB50#0	19.69	19.65	19.69	20.89	20.85	20.89
	16QAM	RB1#0	19.67	20.18	19.81	20.87	21.38	21.01
		RB1#25	19.74	20.24	19.91	20.94	21.44	21.11
		RB1#49	19.74	20.18	19.88	20.94	21.38	21.08
		RB25#0	18.65	18.69	18.71	19.85	19.89	19.91
		RB25#25	18.83	18.75	18.73	20.03	19.95	19.93
		RB50#0	18.68	18.66	18.68	19.88	19.86	19.88

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	20.68	20.64	20.67	21.88	21.84	21.87
		RB1#38	20.86	20.77	20.81	**22.06**	21.97	22.01
		RB1#74	20.75	20.68	20.76	21.95	21.88	21.96
		RB36#0	19.73	19.69	19.72	20.93	20.89	20.92
		RB36#39	19.79	19.75	19.77	20.99	20.95	20.97
		RB75#0	19.79	19.75	19.76	20.99	20.95	20.96
	16QAM	RB1#0	19.99	19.73	19.96	21.19	20.93	21.16
		RB1#38	20.21	19.85	20.12	**21.41**	21.05	21.32
		RB1#74	20.19	19.79	20.04	21.39	20.99	21.24
		RB36#0	18.65	18.61	18.66	19.85	19.81	19.86
		RB36#39	18.76	18.69	18.74	19.96	19.89	19.94
		RB75#0	18.73	18.71	18.69	19.93	19.91	19.89
20.0	QPSK	RB1#0	20.57	20.59	20.51	21.77	21.79	21.71
		RB1#50	20.84	20.78	20.74	**22.04**	21.98	21.94
		RB1#99	20.67	20.67	20.62	21.87	21.87	21.82
		RB50#0	19.57	19.58	19.66	20.77	20.78	20.86
		RB50#50	19.81	19.64	19.70	21.01	20.84	20.90
		RB100#0	19.67	19.59	19.69	20.87	20.79	20.89
	16QAM	RB1#0	19.71	19.72	19.98	20.91	20.92	21.18
		RB1#50	20.06	19.91	20.26	21.26	21.11	**21.46**
		RB1#99	19.95	19.78	20.15	21.15	20.98	21.35
		RB50#0	18.50	18.53	18.63	19.70	19.73	19.83
		RB50#50	18.73	18.60	18.64	19.93	19.80	19.84
		RB100#0	18.64	18.56	18.65	19.84	19.76	19.85

Note: EIRP (dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band7: Antenna Gain = 1.2dBi
Limit: EIRP≤33dBm

LTE Band 38

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.22	21.21	21.23	22.42	22.41	22.43
		RB1#13	21.35	21.34	21.34	22.55	22.54	22.54
		RB1#24	21.23	21.22	21.23	22.43	22.42	22.43
		RB15#0	20.20	20.21	20.22	21.40	21.41	21.42
		RB15#10	20.22	20.23	20.22	21.42	21.43	21.42
		RB25#0	20.19	20.20	20.19	21.39	21.40	21.39
	16QAM	RB1#0	20.40	20.15	20.21	21.60	21.35	21.41
		RB1#13	20.51	20.30	20.35	21.71	21.50	21.55
		RB1#24	20.42	20.20	20.23	21.62	21.40	21.43
		RB15#0	19.21	19.12	19.20	20.41	20.32	20.40
		RB15#10	19.20	19.14	19.19	20.40	20.34	20.39
		RB25#0	19.17	19.20	19.20	20.37	20.40	20.40
10.0	QPSK	RB1#0	21.30	21.22	21.30	22.50	22.42	22.50
		RB1#25	21.37	21.30	21.37	22.57	22.50	22.57
		RB1#49	21.33	21.29	21.30	22.53	22.49	22.50
		RB25#0	20.22	20.16	20.20	21.42	21.36	21.40
		RB25#25	20.23	20.21	20.22	21.43	21.41	21.42
		RB50#0	20.22	20.20	20.21	21.42	21.40	21.41
	16QAM	RB1#0	20.33	20.38	20.12	21.53	21.58	21.32
		RB1#25	20.36	20.44	20.21	21.56	21.64	21.41
		RB1#49	20.34	20.43	20.21	21.54	21.63	21.41
		RB25#0	19.22	19.14	19.23	20.42	20.34	20.43
		RB25#25	19.25	19.22	19.24	20.45	20.42	20.44
		RB50#0	19.24	19.14	19.19	20.44	20.34	20.39

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.21	21.19	21.22	22.41	22.39	22.42
		RB1#38	21.32	21.34	21.38	22.52	22.54	22.58
		RB1#74	21.25	21.26	21.28	22.45	22.46	22.48
		RB36#0	20.24	20.21	20.22	21.44	21.41	21.42
		RB36#39	20.23	20.27	20.27	21.43	21.47	21.47
		RB75#0	20.24	20.26	20.28	21.44	21.46	21.48
	16QAM	RB1#0	20.35	20.09	20.36	21.55	21.29	21.56
		RB1#38	20.46	20.27	20.54	21.66	21.47	21.74
		RB1#74	20.37	20.13	20.42	21.57	21.33	21.62
		RB36#0	19.19	19.14	19.25	20.39	20.34	20.45
		RB36#39	19.20	19.18	19.29	20.40	20.38	20.49
		RB75#0	19.15	19.21	19.23	20.35	20.41	20.43
20.0	QPSK	RB1#0	21.08	21.16	21.12	22.28	22.36	22.32
		RB1#50	21.33	21.45	21.39	22.53	**22.65**	22.59
		RB1#99	21.17	21.26	21.17	22.37	22.46	22.37
		RB50#0	20.16	20.13	20.18	21.36	21.33	21.38
		RB50#50	20.19	20.19	20.19	21.39	21.39	21.39
		RB100#0	20.15	20.14	20.17	21.35	21.34	21.37
	16QAM	RB1#0	20.04	20.34	20.11	21.24	21.54	21.31
		RB1#50	20.27	20.59	20.37	21.47	**21.79**	21.57
		RB1#99	20.13	20.43	20.20	21.33	21.63	21.40
		RB50#0	19.18	19.13	19.15	20.38	20.33	20.35
		RB50#50	19.21	19.18	19.17	20.41	20.38	20.37
		RB100#0	19.14	19.12	19.13	20.34	20.32	20.33

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band38: Antenna Gain = 1.20dBi
Limit: EIRP≤33dBm

LTE Band 41

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.15	21.18	21.05	22.35	22.38	22.25
		RB1#13	21.25	21.28	21.17	22.45	22.48	22.37
		RB1#24	21.17	21.19	21.06	22.37	22.39	22.26
		RB15#0	20.13	20.16	20.07	21.33	21.36	21.27
		RB15#10	20.22	20.14	20.07	21.42	21.34	21.27
		RB25#0	20.15	20.13	20.04	21.35	21.33	21.24
	16QAM	RB1#0	20.21	20.33	20.06	21.41	21.53	21.26
		RB1#13	20.31	20.46	20.16	21.51	21.66	21.36
		RB1#24	20.20	20.37	20.06	21.40	21.57	21.26
		RB15#0	19.09	19.15	18.99	20.29	20.35	20.19
		RB15#10	19.20	19.14	18.98	20.40	20.34	20.18
		RB25#0	19.21	19.11	19.08	20.41	20.31	20.28
10.0	QPSK	RB1#0	21.20	21.25	21.12	22.40	22.45	22.32
		RB1#25	21.24	21.31	21.17	22.44	22.51	22.37
		RB1#49	21.22	21.31	21.15	22.42	22.51	22.35
		RB25#0	20.01	20.15	20.09	21.21	21.35	21.29
		RB25#25	20.19	20.19	20.05	21.39	21.39	21.25
		RB50#0	20.13	20.21	20.10	21.33	21.41	21.30
	16QAM	RB1#0	20.07	20.27	20.28	21.27	21.47	21.48
		RB1#25	20.15	20.32	20.36	21.35	21.52	21.56
		RB1#49	20.12	20.35	20.33	21.32	21.55	21.53
		RB25#0	19.08	19.18	19.08	20.28	20.38	20.28
		RB25#25	19.24	19.22	19.05	20.44	20.42	20.25
		RB50#0	19.13	19.19	19.08	20.33	20.39	20.28

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.13	21.19	21.10	22.33	22.39	22.30
		RB1#38	21.24	21.31	21.23	22.44	22.51	22.43
		RB1#74	21.14	21.24	21.08	22.34	22.44	22.28
		RB36#0	20.04	20.18	20.09	21.24	21.38	21.29
		RB36#39	20.15	20.22	20.08	21.35	21.42	21.28
		RB75#0	20.14	20.23	20.13	21.34	21.43	21.33
	16QAM	RB1#0	20.08	20.33	20.27	21.28	21.53	21.47
		RB1#38	20.16	20.46	20.40	21.36	21.66	21.60
		RB1#74	20.03	20.37	20.27	21.23	21.57	21.47
		RB36#0	19.01	19.20	19.07	20.21	20.40	20.27
		RB36#39	19.11	19.22	19.07	20.31	20.42	20.27
		RB75#0	19.10	19.19	19.05	20.30	20.39	20.25
20.0	QPSK	RB1#0	21.12	21.04	20.98	22.32	22.24	22.18
		RB1#50	21.33	21.31	21.21	**22.53**	22.51	22.41
		RB1#99	21.14	21.17	21.03	22.34	22.37	22.23
		RB50#0	19.97	20.08	20.07	21.17	21.28	21.27
		RB50#50	20.15	20.14	20.04	21.35	21.34	21.24
		RB100#0	20.06	20.14	20.07	21.26	21.34	21.27
	16QAM	RB1#0	20.31	20.06	19.97	21.51	21.26	21.17
		RB1#50	20.53	20.3	20.14	**21.73**	21.50	21.34
		RB1#99	20.35	20.18	19.99	21.55	21.38	21.19
		RB50#0	18.98	19.05	19.12	20.18	20.25	20.32
		RB50#50	19.17	19.15	19.07	20.37	20.35	20.27
		RB100#0	19.07	19.09	19.05	20.27	20.29	20.25

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band41: Antenna Gain = 1.20dBi
Limit: EIRP≤33dBm

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	4.60	13
	Middle	4.62	13
	High	4.05	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	4.54	13
	Middle	4.37	13
	High	4.12	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.13	13
	Middle	3.07	13
	High	3.04	13
HSDPA (16QAM)	Low	3.59	13
	Middle	3.57	13
	High	3.48	13
HSUPA (BPSK)	Low	3.74	13
	Middle	3.30	13
	High	3.28	13
HSPA+	Low	3.22	13
	Middle	3.15	13
	High	3.17	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	4.29	13
	Middle	3.94	13
	High	4.69	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	4.83	13
	Middle	4.35	13
	High	4.66	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.16	13
	Middle	3.19	13
	High	3.19	13
HSDPA (16QAM)	Low	3.51	13
	Middle	3.57	13
	High	3.57	13
HSUPA (BPSK)	Low	3.74	13
	Middle	3.68	13
	High	3.74	13
HSPA+	Low	3.52	13
	Middle	3.56	13
	High	3.48	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.14	13
	Middle	3.08	13
	High	3.14	13
HSDPA (16QAM)	Low	4.84	13
	Middle	4.71	13
	High	5.00	13
HSUPA (BPSK)	Low	3.43	13
	Middle	3.40	13
	High	3.53	13
HSPA+	Low	3.42	13
	Middle	3.36	13
	High	3.52	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.71	5.94	5.94	13	Pass
QPSK (100RB Size)	3.65	4.87	4.29	13	Pass
16QAM (1RB Size)	4.78	5.88	4.84	13	Pass
16QAM (100RB Size)	4.75	5.80	4.84	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.67	4.84	4.55	13	Pass
QPSK (100RB Size)	4.93	4.46	4.43	13	Pass
16QAM (1RB Size)	5.54	5.13	5.45	13	Pass
16QAM (100RB Size)	5.19	5.62	5.51	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.26	5.19	5.22	13	Pass
QPSK (50RB Size)	5.61	5.61	5.51	13	Pass
16QAM (1RB Size)	6.06	6.38	6.44	13	Pass
16QAM (50RB Size)	6.47	6.47	6.44	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.58	4.67	4.81	13	Pass
QPSK (100RB Size)	4.61	4.70	4.87	13	Pass
16QAM (1RB Size)	5.62	5.68	5.80	13	Pass
16QAM (100RB Size)	5.59	5.71	5.86	13	Pass

LTE Band 38 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.86	5.94	5.07	13	Pass
QPSK (100RB Size)	5.59	6.32	5.01	13	Pass
16QAM (1RB Size)	7.13	5.91	7.59	13	Pass
16QAM (100RB Size)	5.86	5.59	6.81	13	Pass

LTE Band 41 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.64	5.13	5.07	13	Pass
QPSK (100RB Size)	6.93	5.04	5.13	13	Pass
16QAM (1RB Size)	6.64	6.61	6.72	13	Pass
16QAM (100RB Size)	6.70	6.12	7.10	13	Pass

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

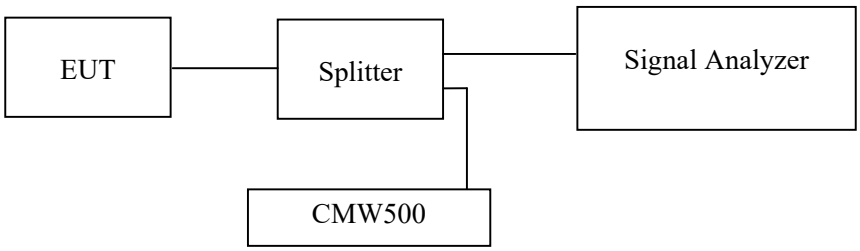
Applicable Standard

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.



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:	27.2 ℃
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2023-02-04 to 2023-02-17.

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	245.00	314.00
	190	836.6	246.00	316.00
	251	848.8	245.00	317.00
EGPRS(8PSK)	128	824.2	244.00	307.00
	190	836.6	243.00	307.00
	251	848.8	243.00	317.00

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.15	4.71
	836.6	4.15	4.73
	846.6	4.15	4.74
HSDPA	826.4	4.15	4.71
	836.6	4.17	4.74
	846.6	4.17	4.73
HSUPA	826.4	4.15	4.73
	836.6	4.17	4.71
	846.6	4.15	4.73

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM (GMSK)	512	1850.2	244.00	316.00
	661	1880.0	250.00	316.00
	810	1909.8	244.00	323.00
EGPRS(8PSK)	512	1850.2	248.00	322.00
	661	1880.0	248.00	314.00
	810	1909.8	248.00	314.00

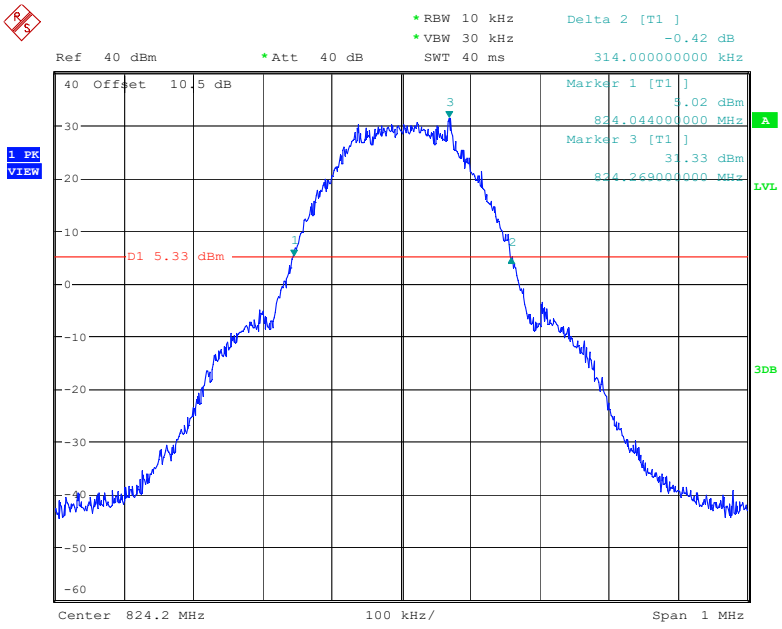
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.15	4.71
	1880.0	4.15	4.73
	1907.6	4.14	4.73
HSDPA	1852.4	4.17	4.73
	1880.0	4.17	4.73
	1907.6	4.17	4.71
HSUPA	1852.4	4.17	4.73
	1880.0	4.17	4.71
	1907.6	4.17	4.73

AWS Band (Part 27)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.16	4.73
	1732.6	4.16	4.73
	1752.6	4.14	4.73
HSDPA	1712.4	4.17	4.70
	1732.6	4.20	4.73
	1752.6	4.20	4.71
HSUPA	1712.4	4.16	4.73
	1732.6	4.16	4.73
	1752.6	4.17	4.71

Cellular Band (Part 22H)

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



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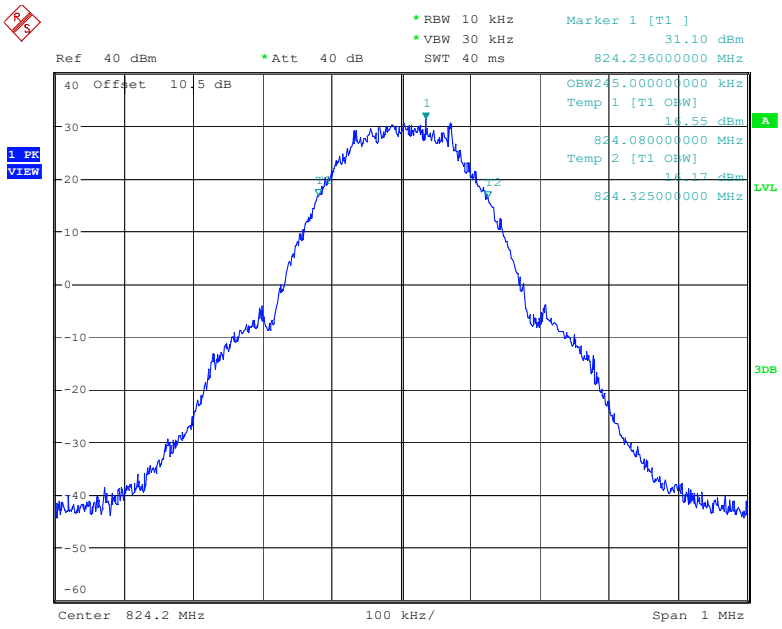

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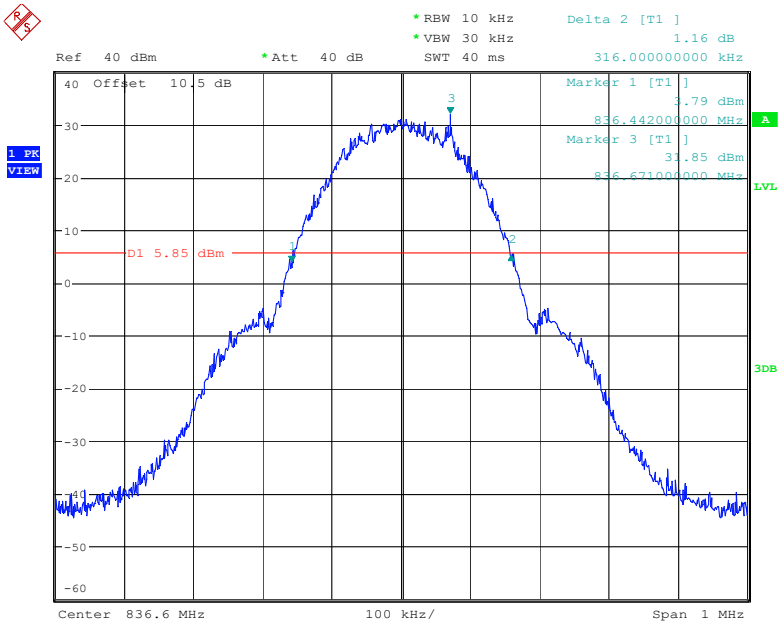
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



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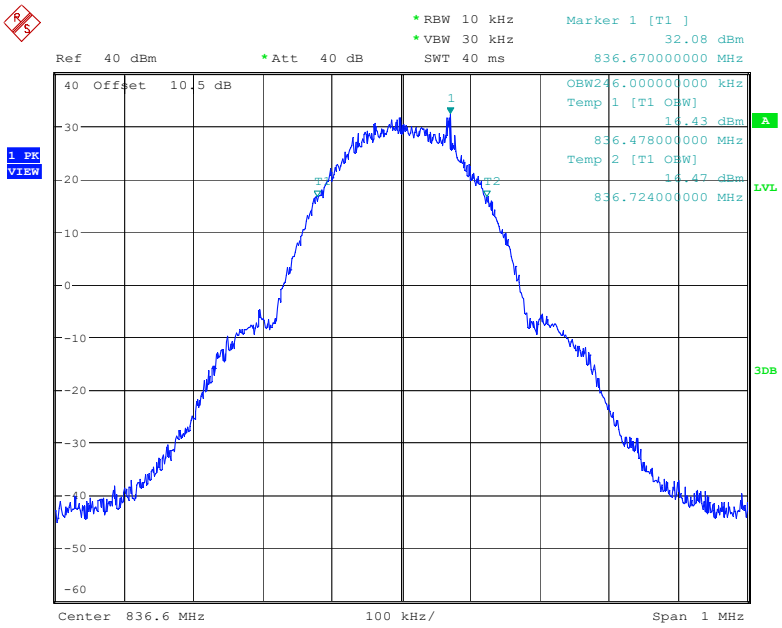

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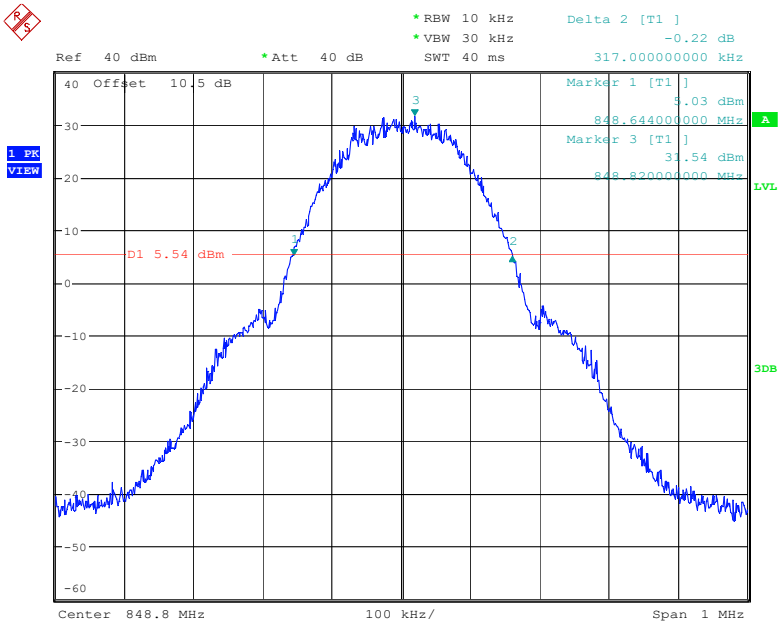
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



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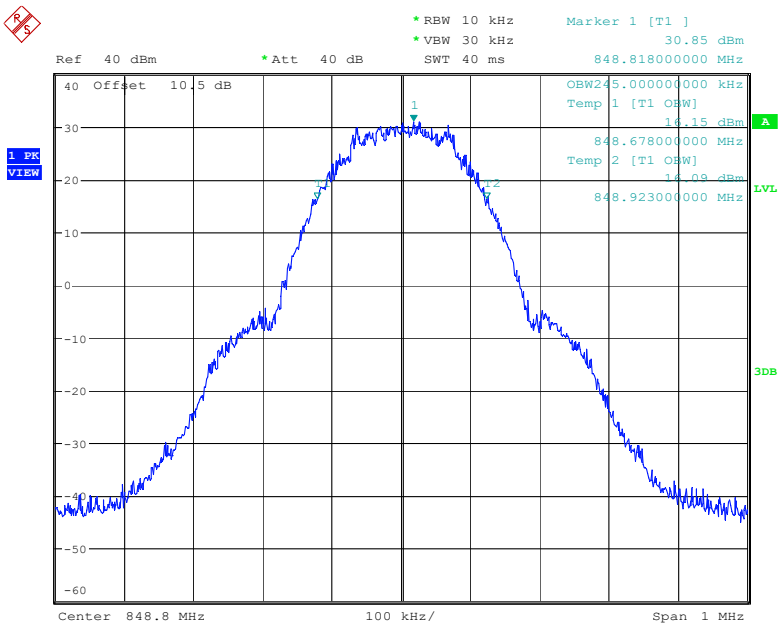

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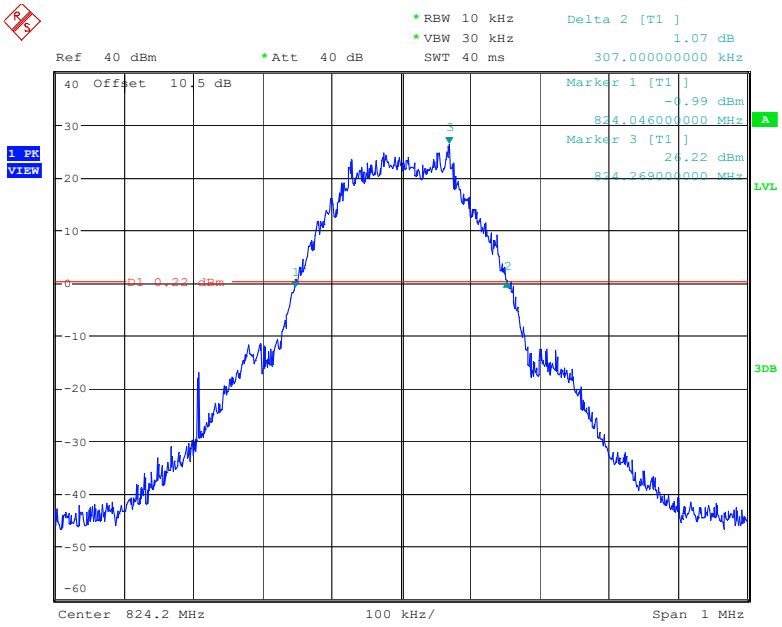
26 dB Emissions &99% Occupied Bandwidth for GSM(8PSK) Mode, Low channel



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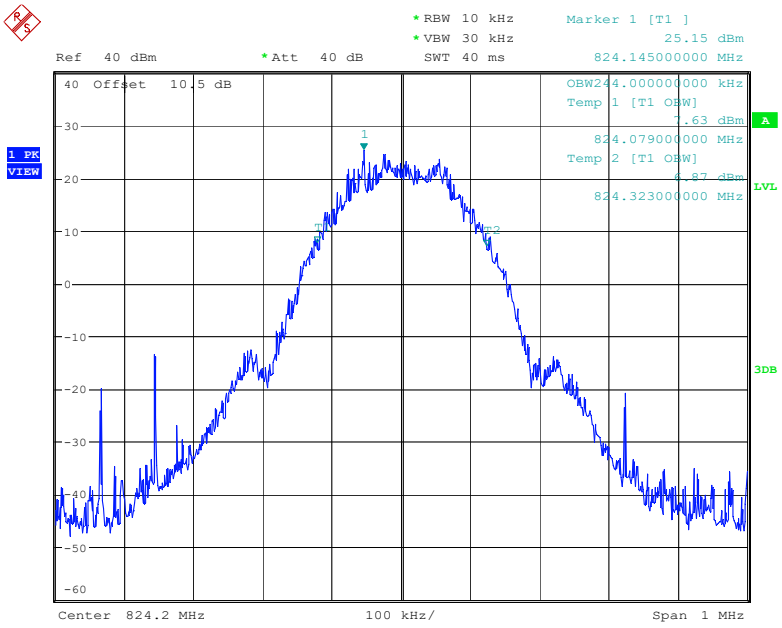

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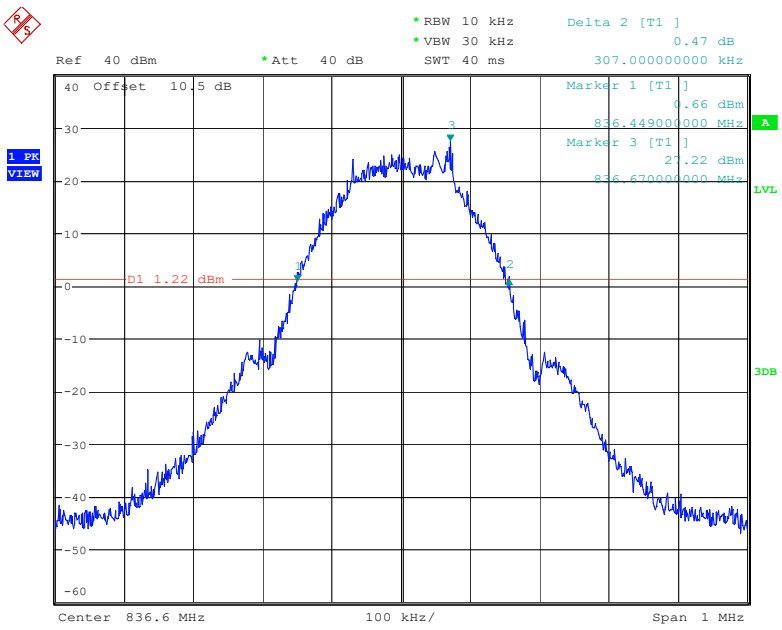
26 dB Emissions &99% Occupied Bandwidth for GSM(8PSK) Mode, Middle channel



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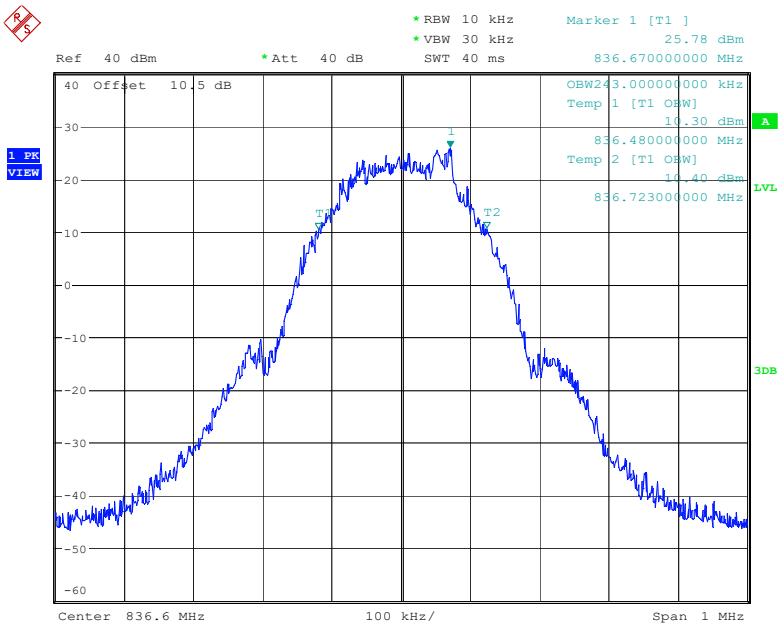

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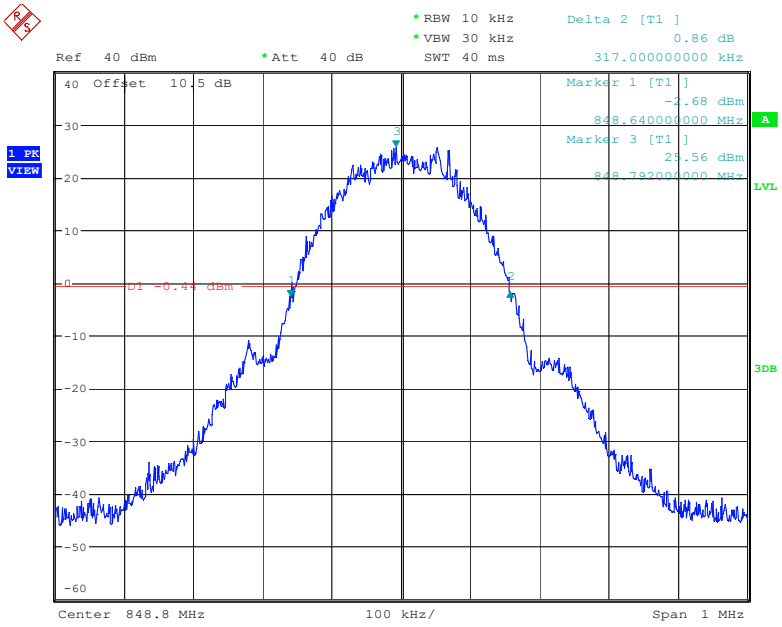
26 dB Emissions &99% Occupied Bandwidth for GSM(8PSK) Mode, High channel



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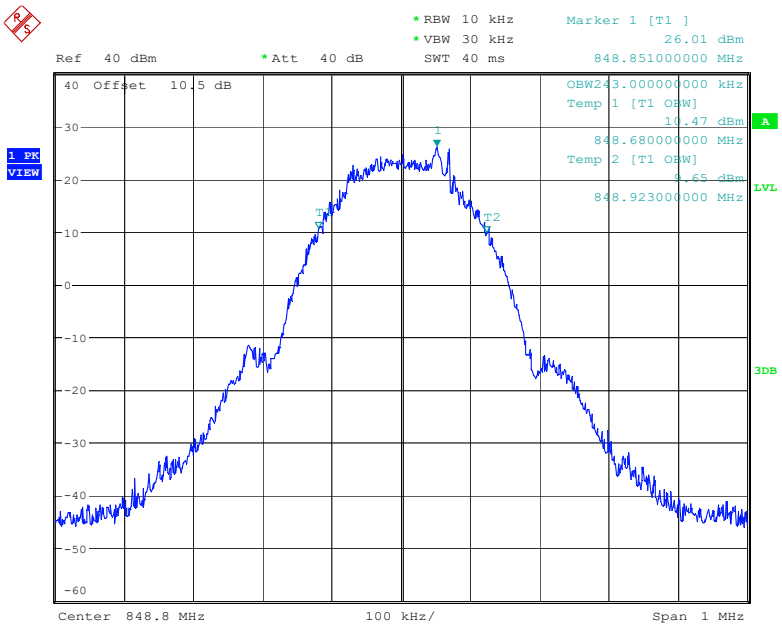

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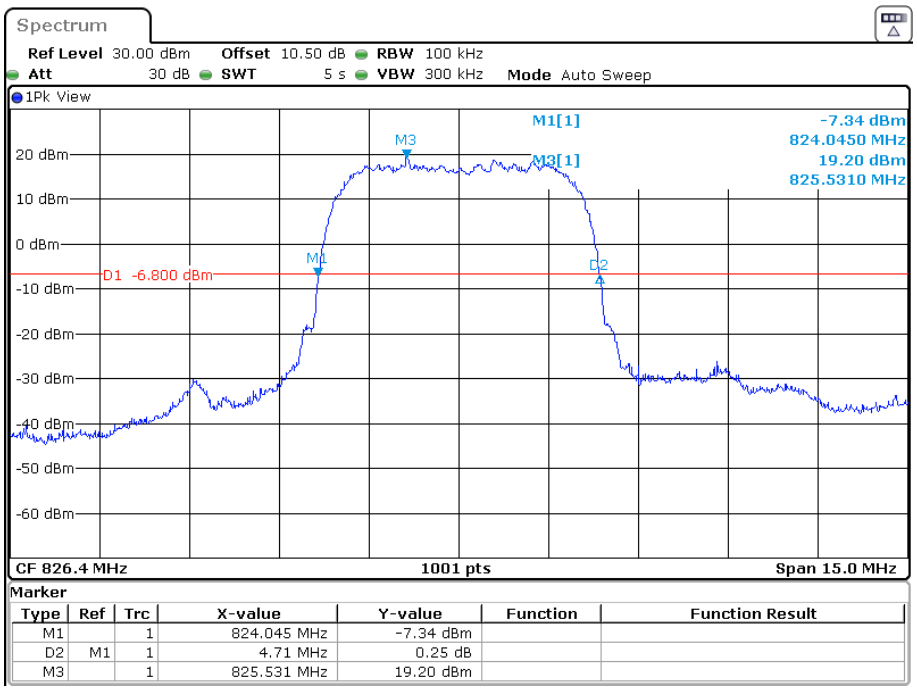
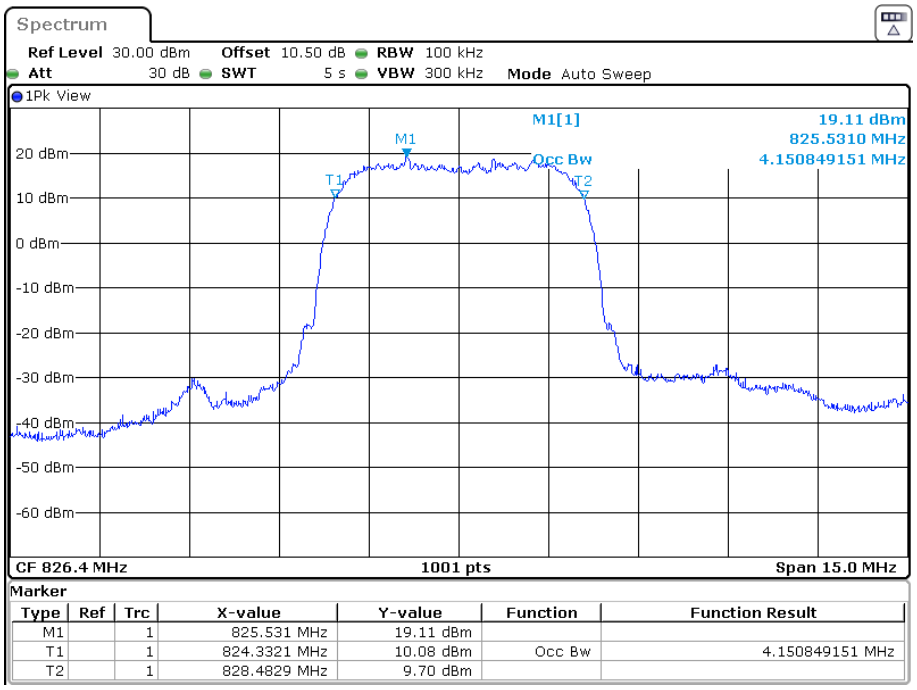
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	824.045 MHz	-7.34 dBm		
D2	M1	1	4.71 MHz	0.25 dB		
M3		1	825.531 MHz	19.20 dBm		

Date: 6.FEB.2023 10:44:54

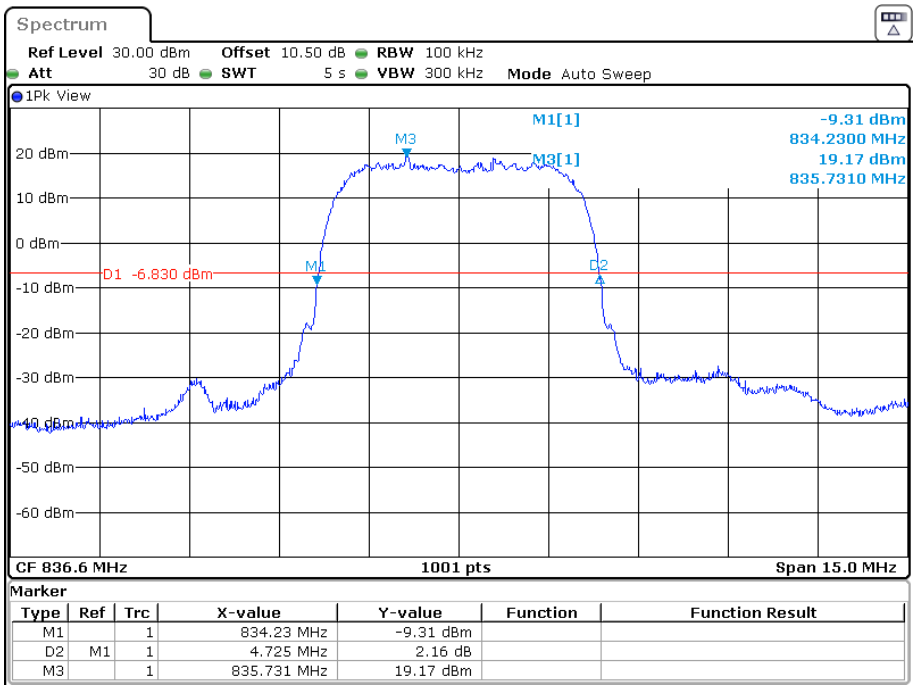


Marker

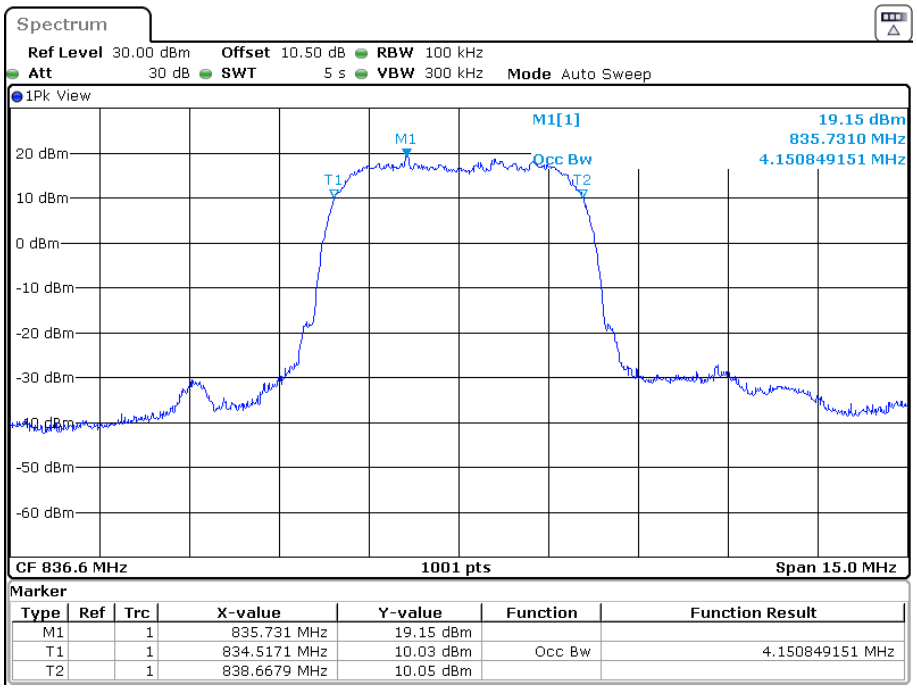
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	825.531 MHz	19.11 dBm		
T1		1	824.3321 MHz	10.08 dBm	Occ Bw	4.150849151 MHz
T2		1	828.4829 MHz	9.70 dBm		

Date: 6.FEB.2023 10:44:16

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

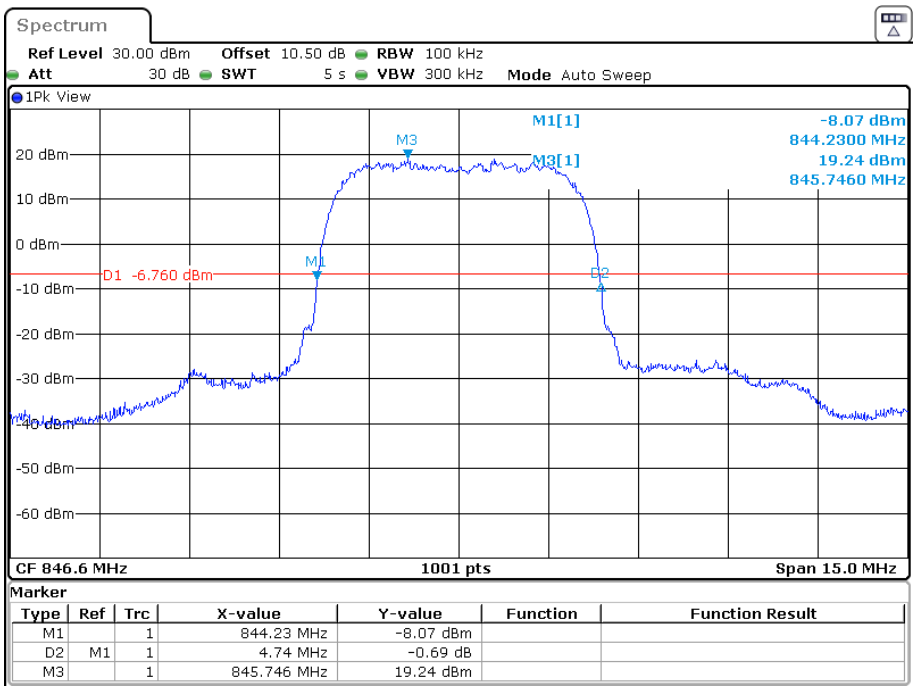


Date: 6.FEB.2023 10:48:27

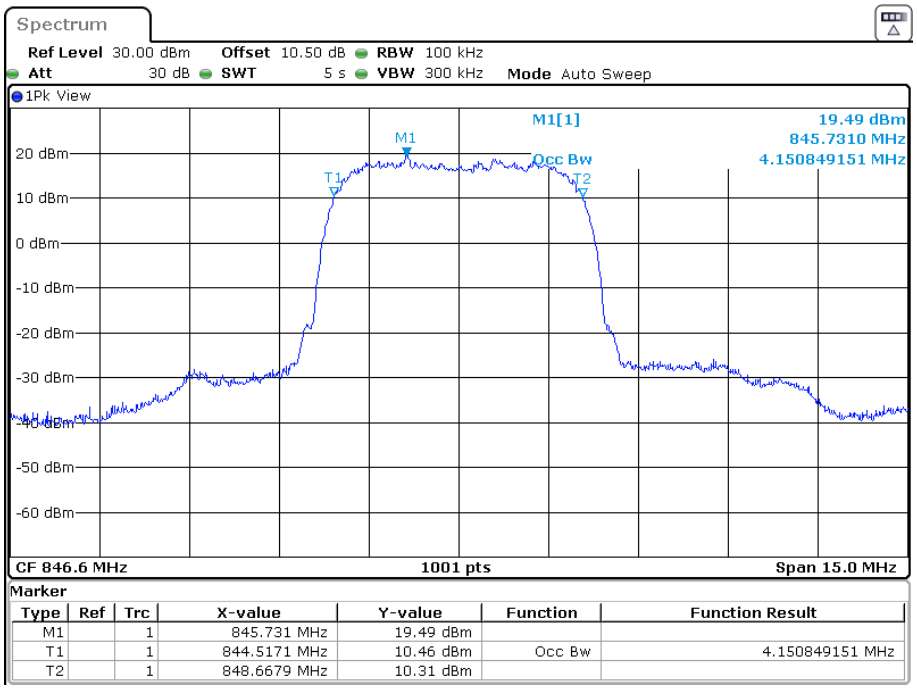


Date: 6.FEB.2023 10:47:49

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

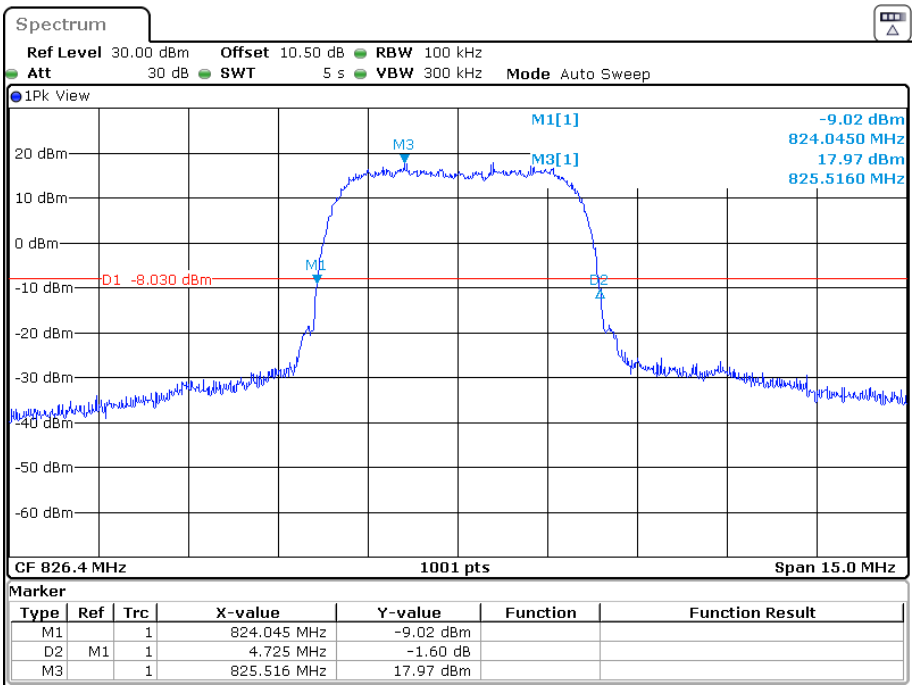


Date: 6.FEB.2023 10:55:50

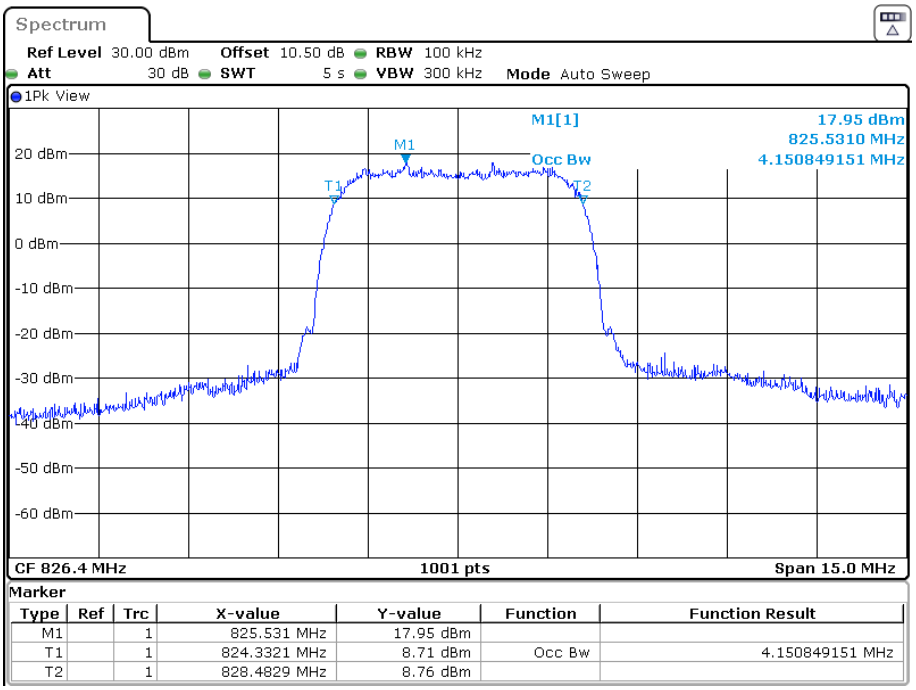


Date: 6.FEB.2023 10:55:12

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

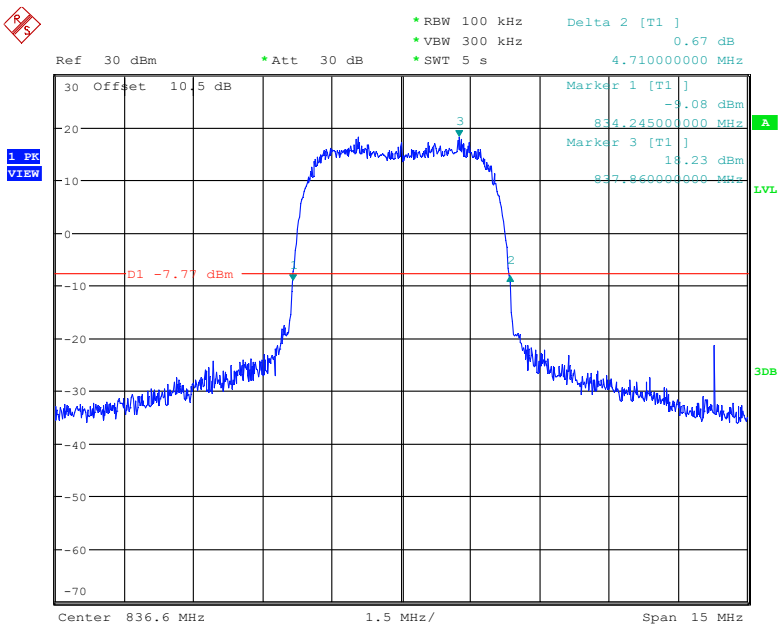


Date: 6.FEB.2023 11:17:43

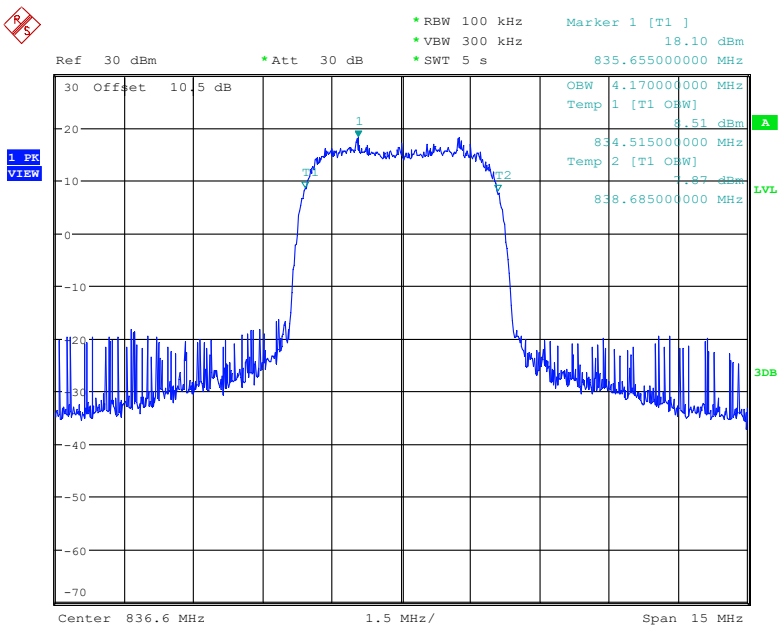


Date: 6.FEB.2023 11:17:04

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

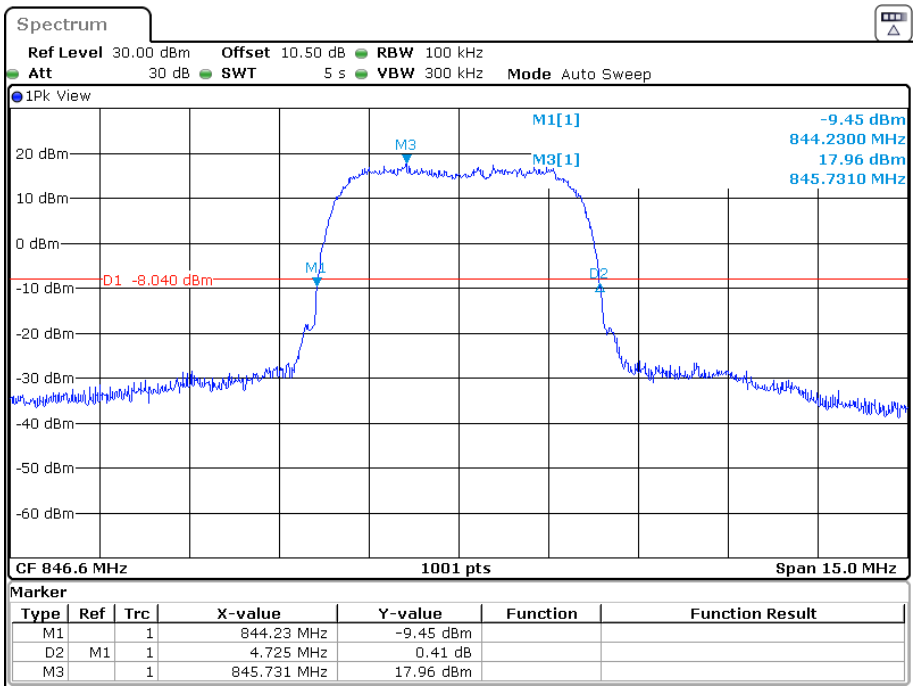


Date: 17.FEB.2023 14:43:14

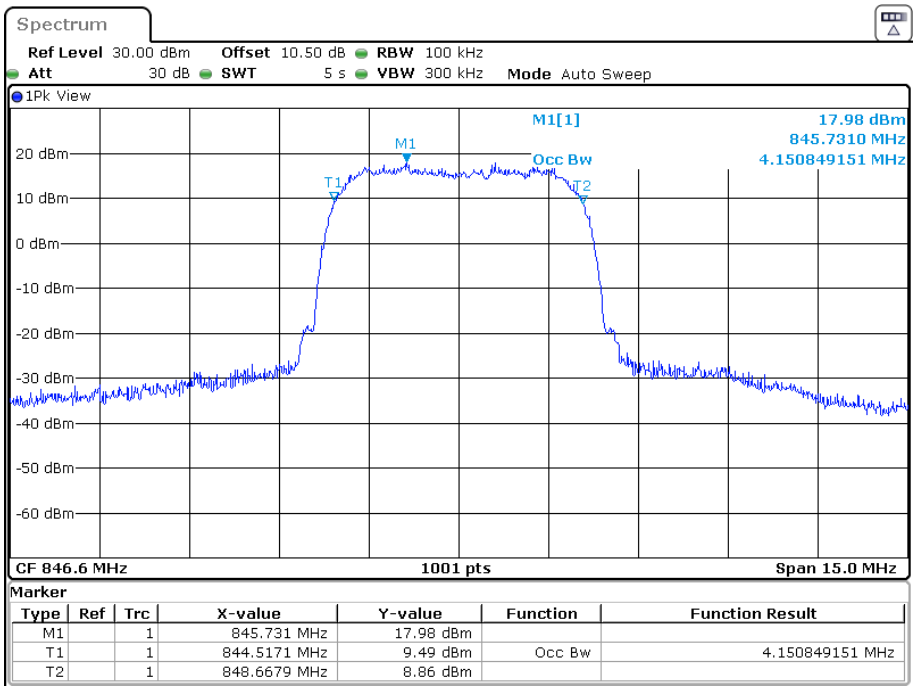


Date: 17.FEB.2023 14:42:39

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

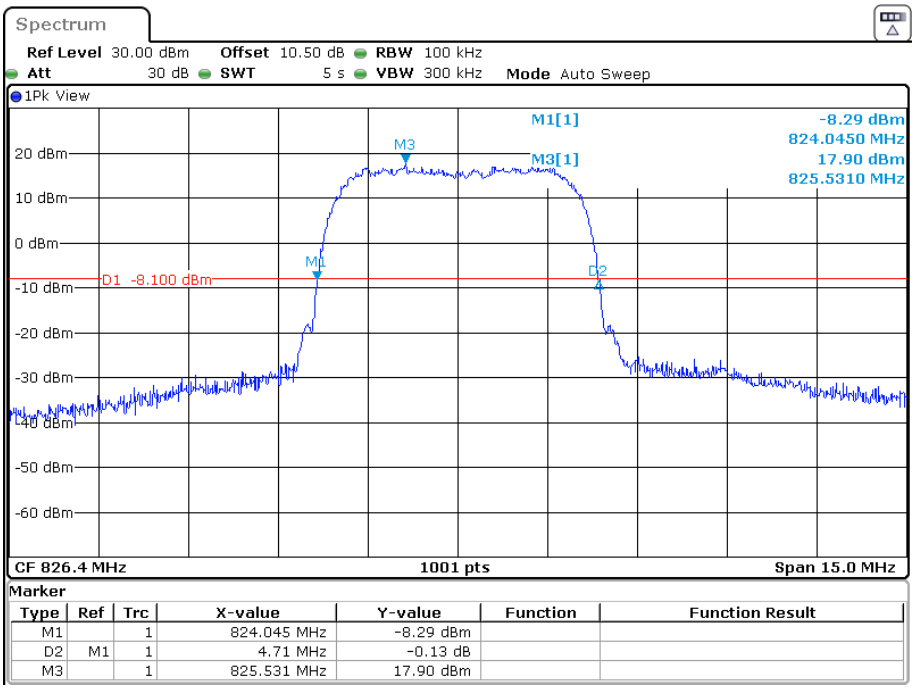


Date: 6.FEB.2023 11:50:57

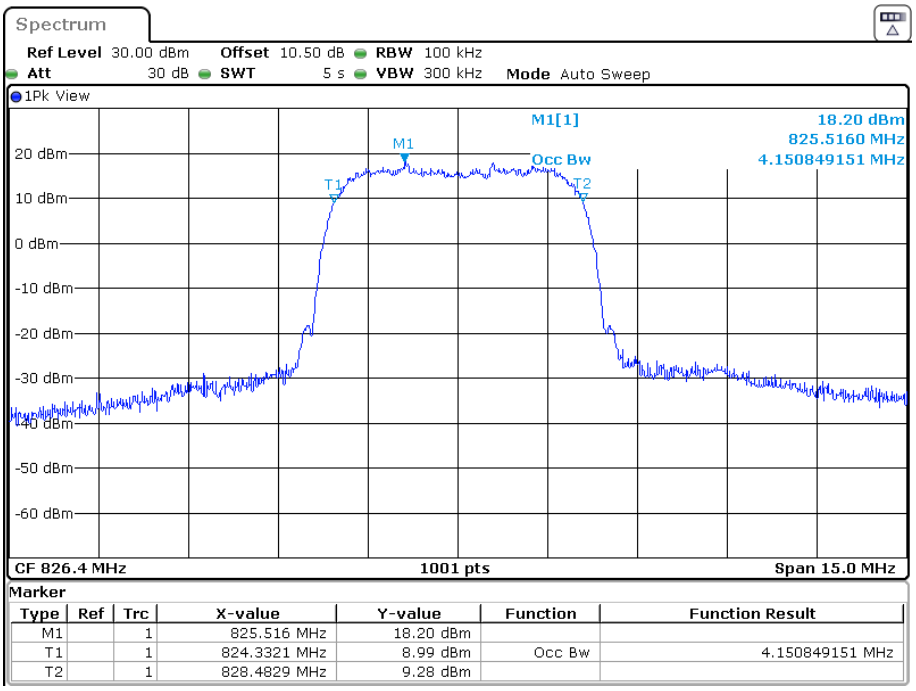


Date: 6.FEB.2023 11:50:18

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

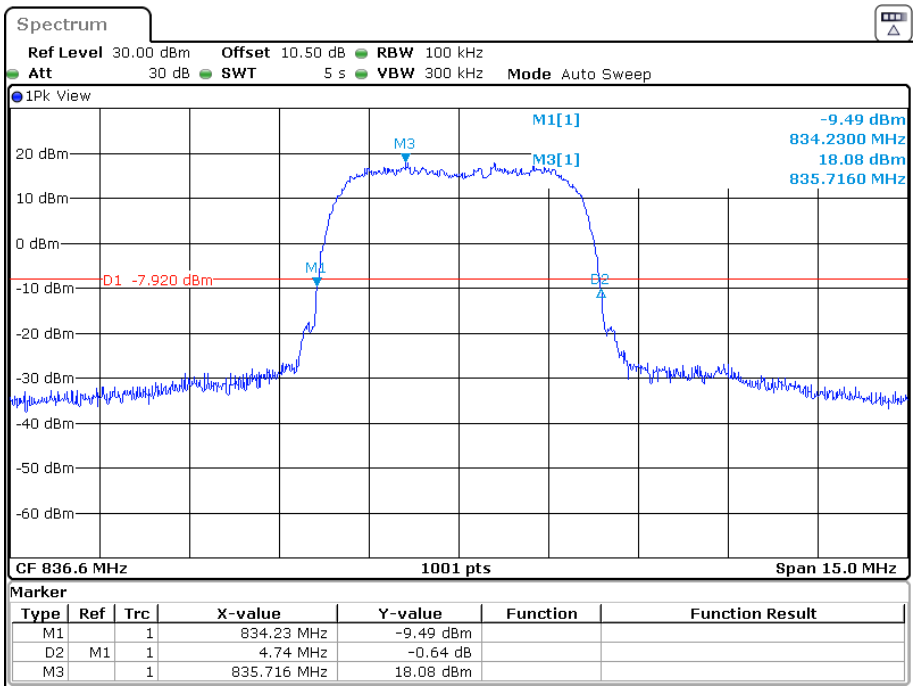


Date: 6.FEB.2023 11:05:57

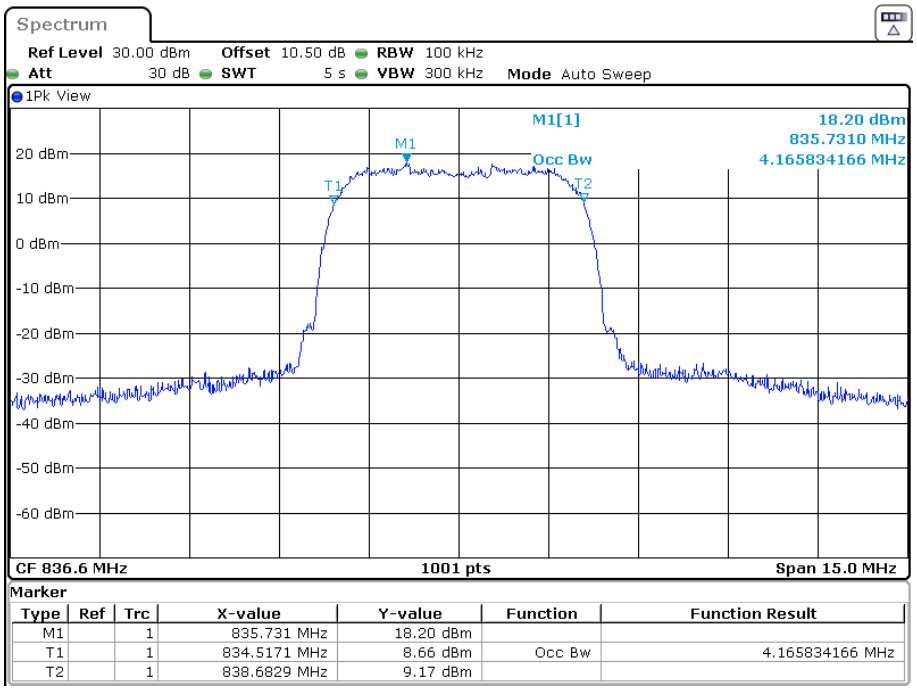


Date: 6.FEB.2023 11:05:19

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

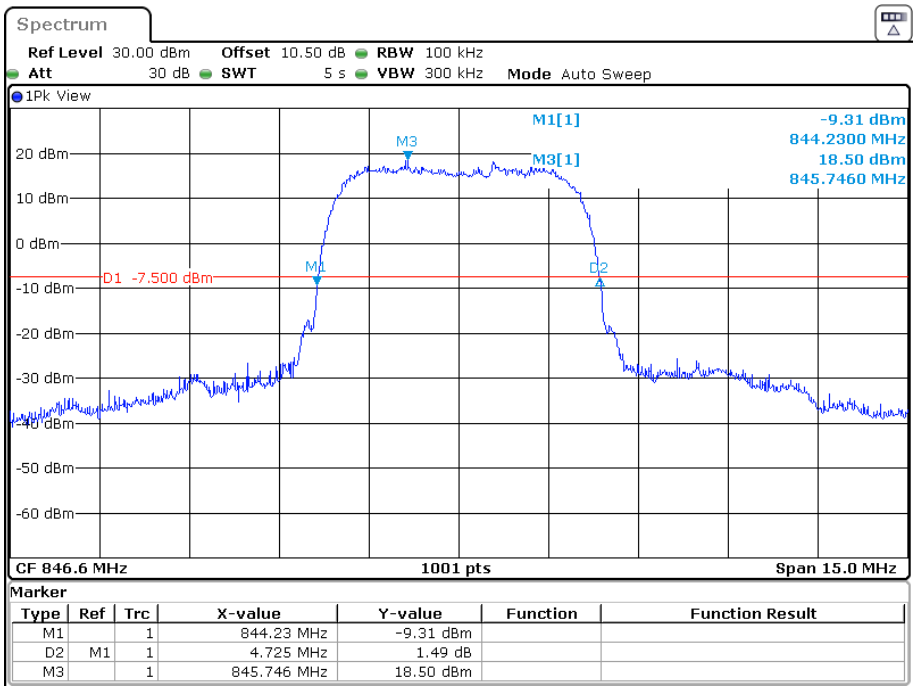


Date: 6.FEB.2023 11:09:29

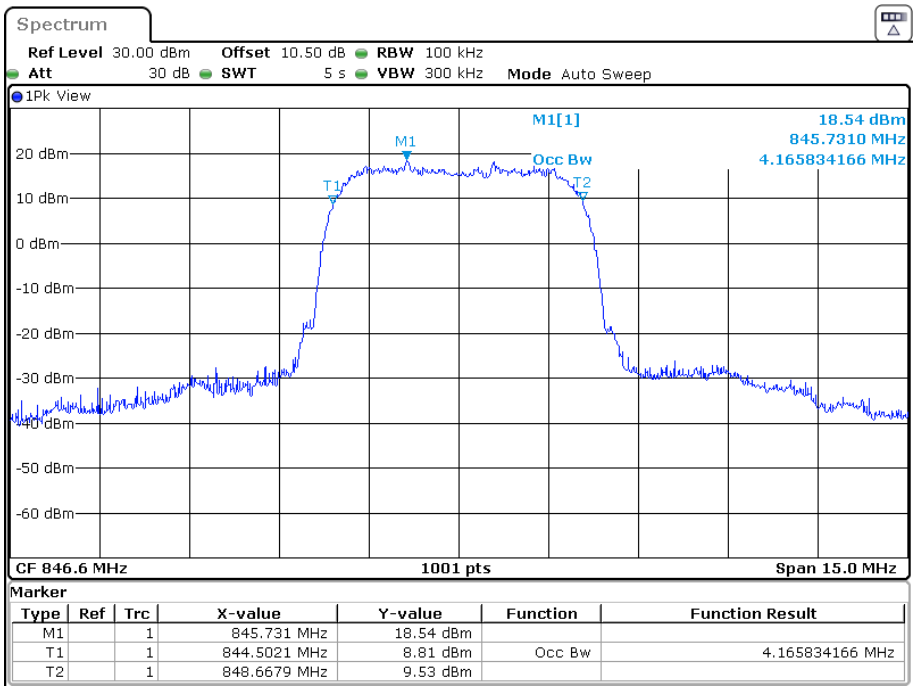


Date: 6.FEB.2023 11:08:50

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



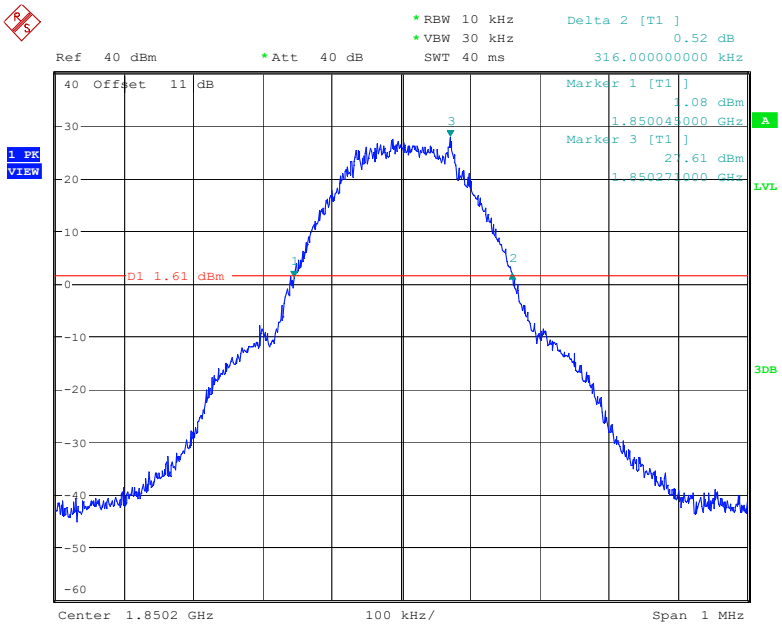
Date: 6.FEB.2023 11:12:16



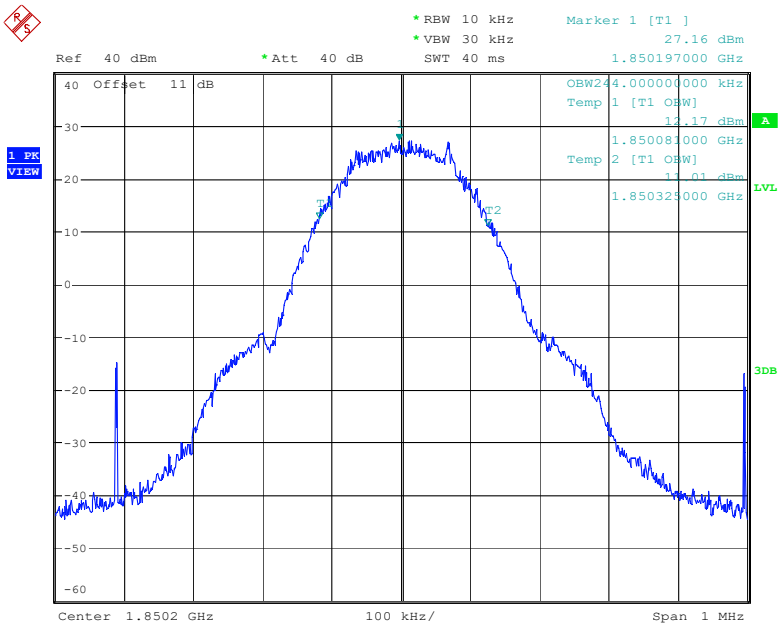
Date: 6.FEB.2023 11:11:37

PCS Band (Part 24E)

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

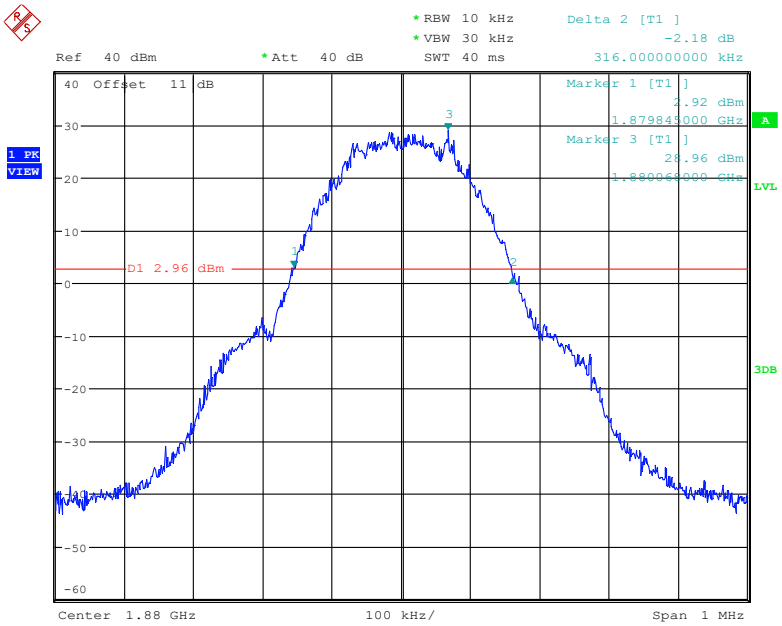


Date: 10.FEB.2023 13:37:46

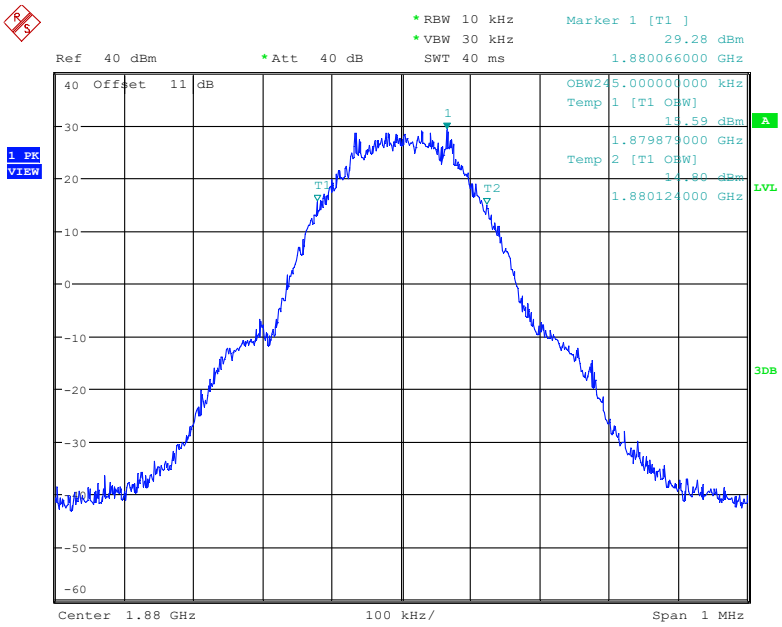


Date: 10.FEB.2023 13:37:06

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

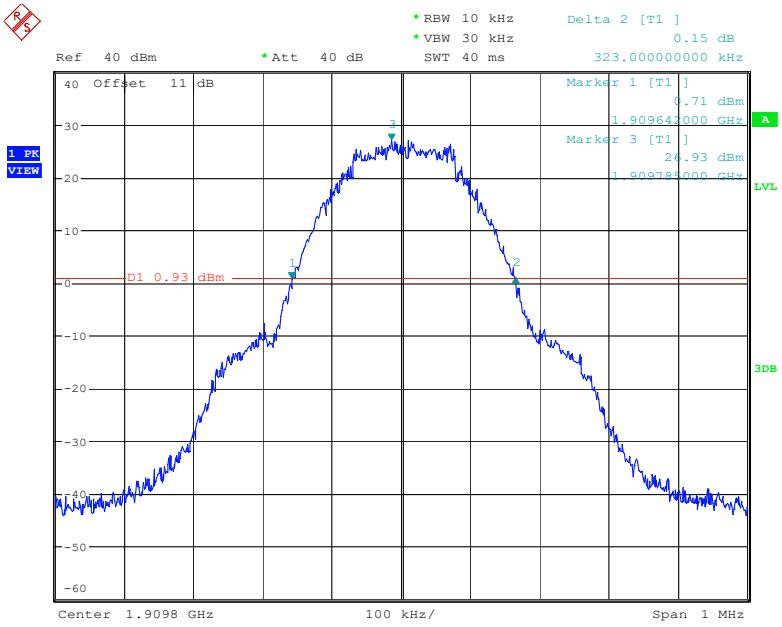


Date: 17.FEB.2023 14:36:40

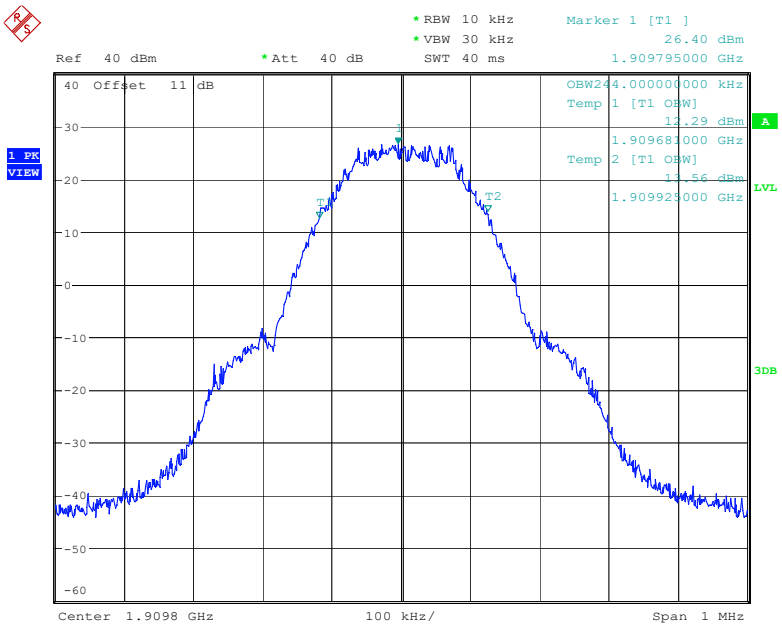


Date: 17.FEB.2023 14:35:58

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

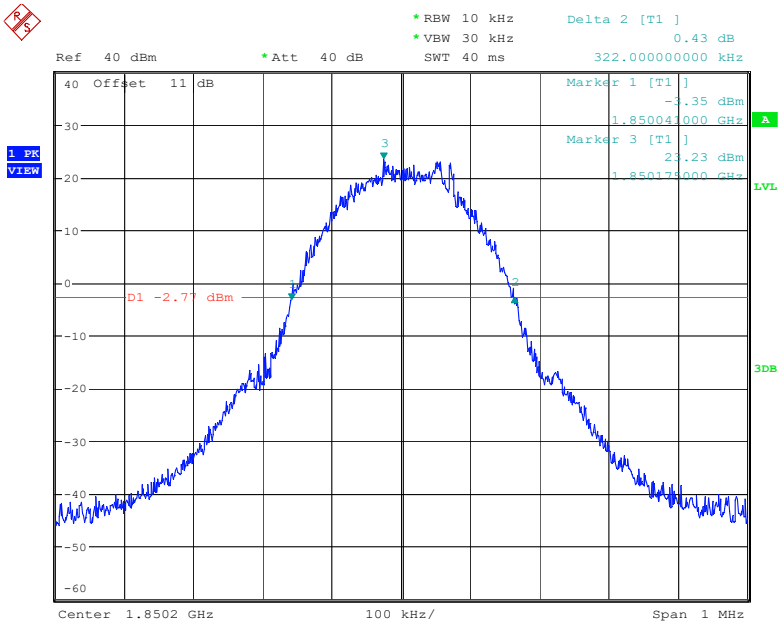


Date: 10.FEB.2023 13:48:21

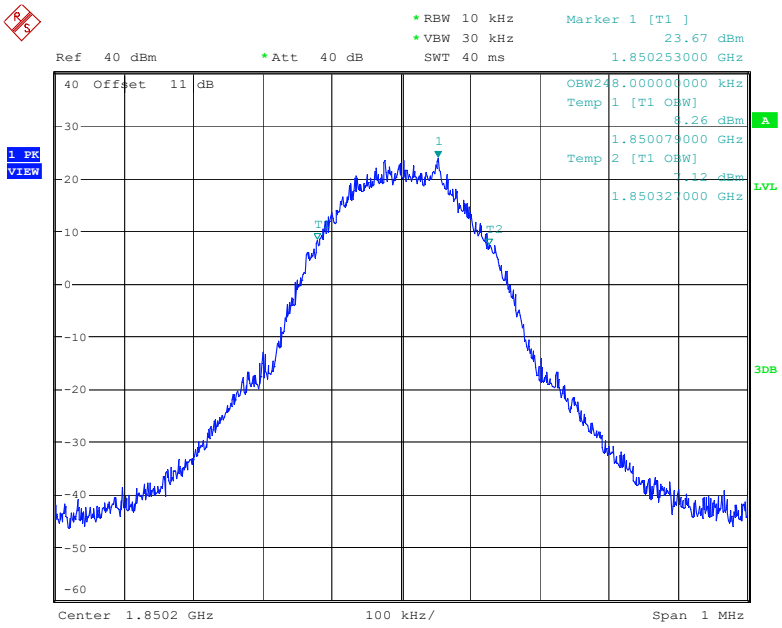


Date: 10.FEB.2023 13:47:42

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

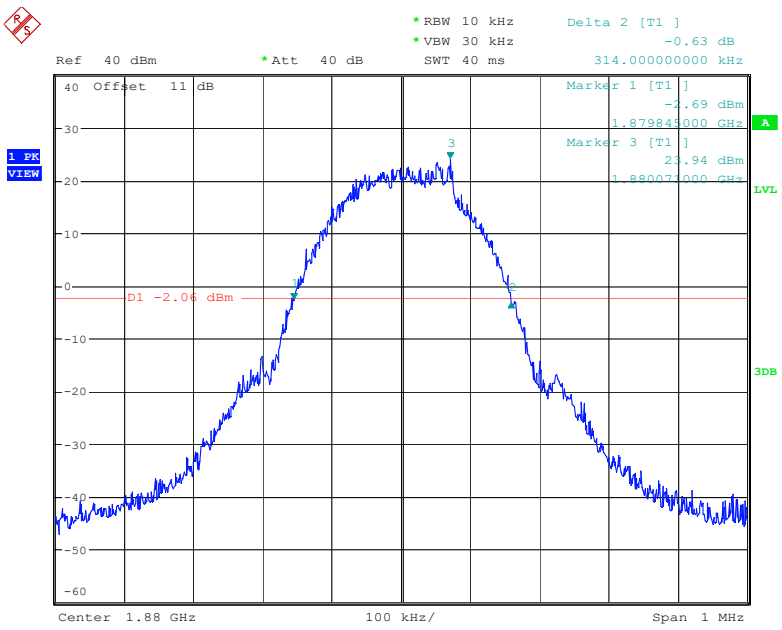


Date: 10.FEB.2023 13:18:38

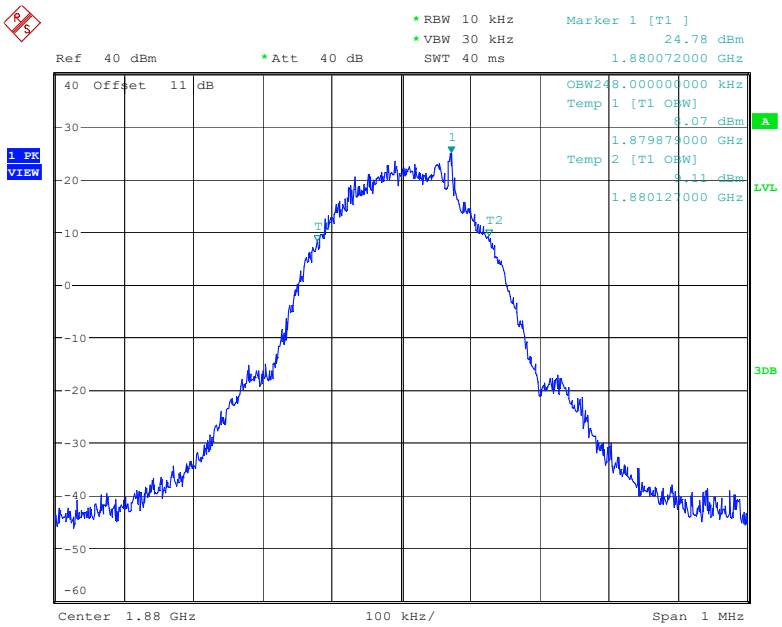


Date: 10.FEB.2023 13:17:59

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

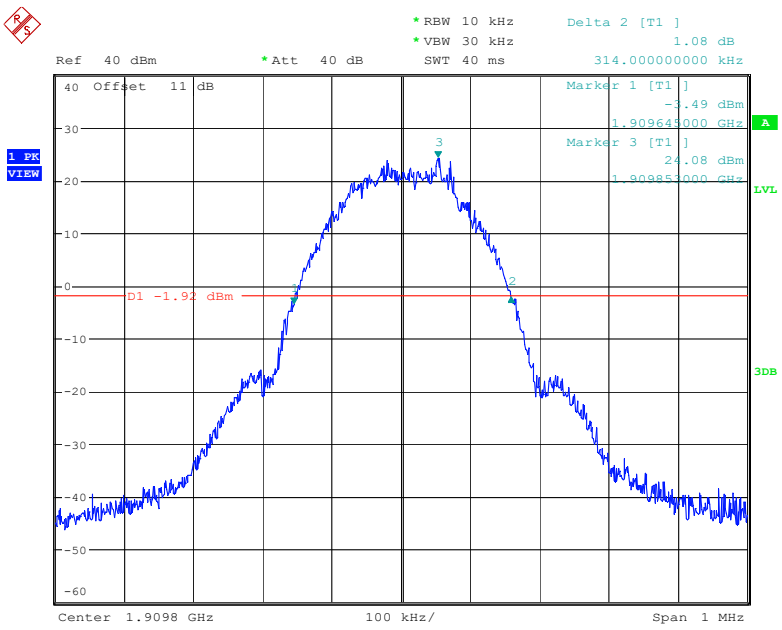


Date: 10.FEB.2023 13:23:07

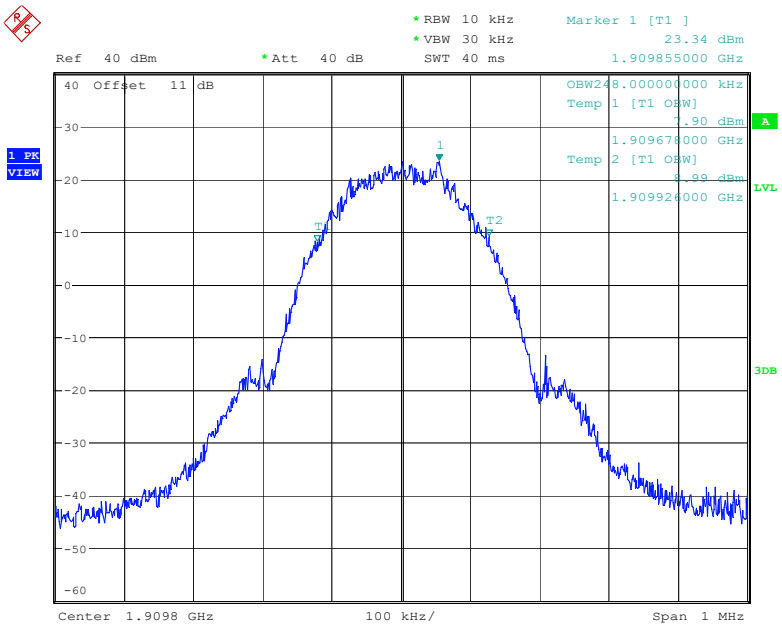


Date: 10.FEB.2023 13:22:28

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

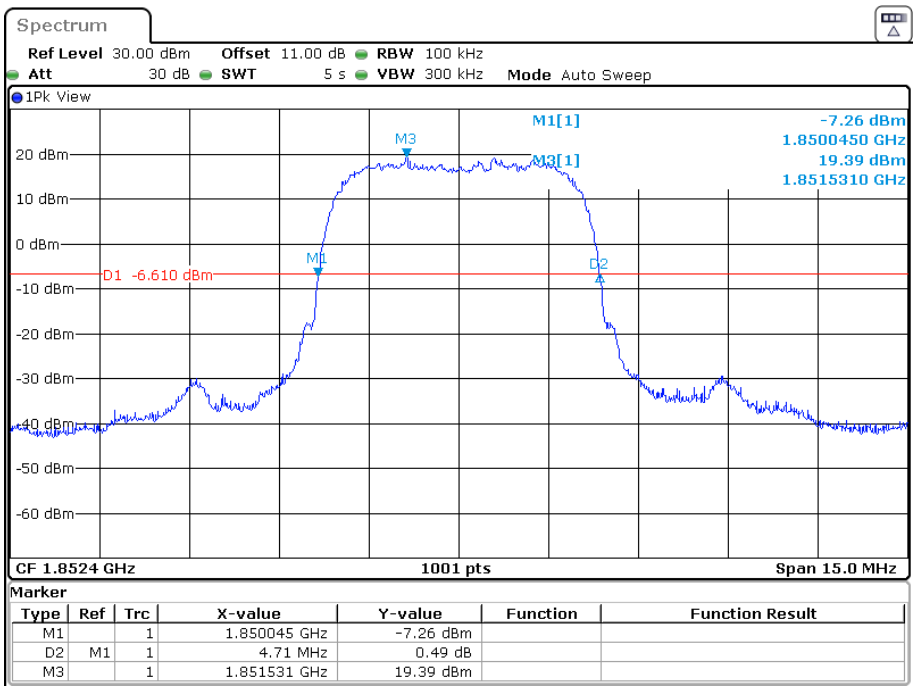


Date: 10.FEB.2023 13:28:29

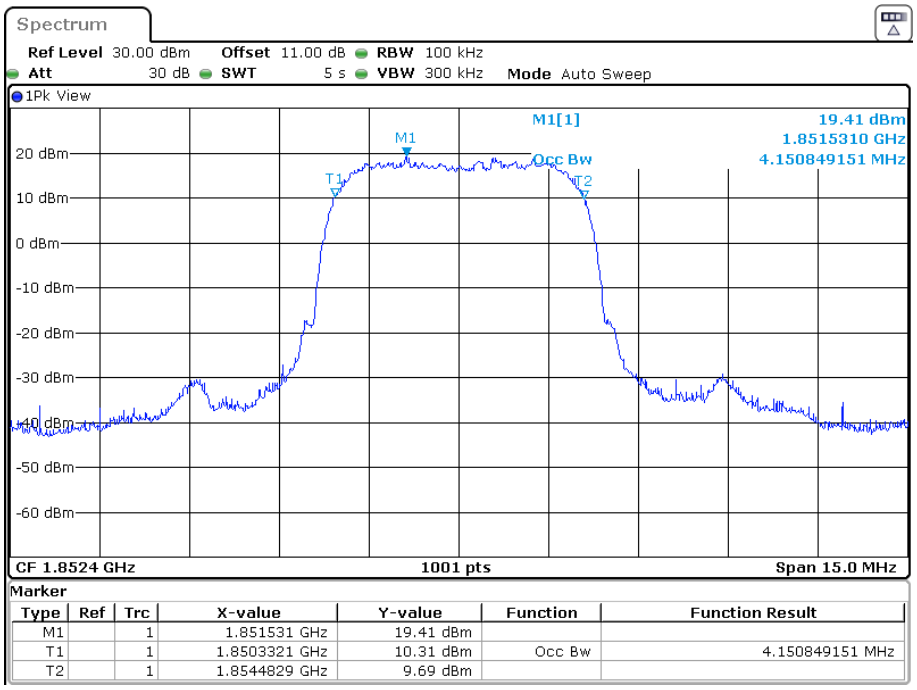


Date: 10.FEB.2023 13:27:50

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

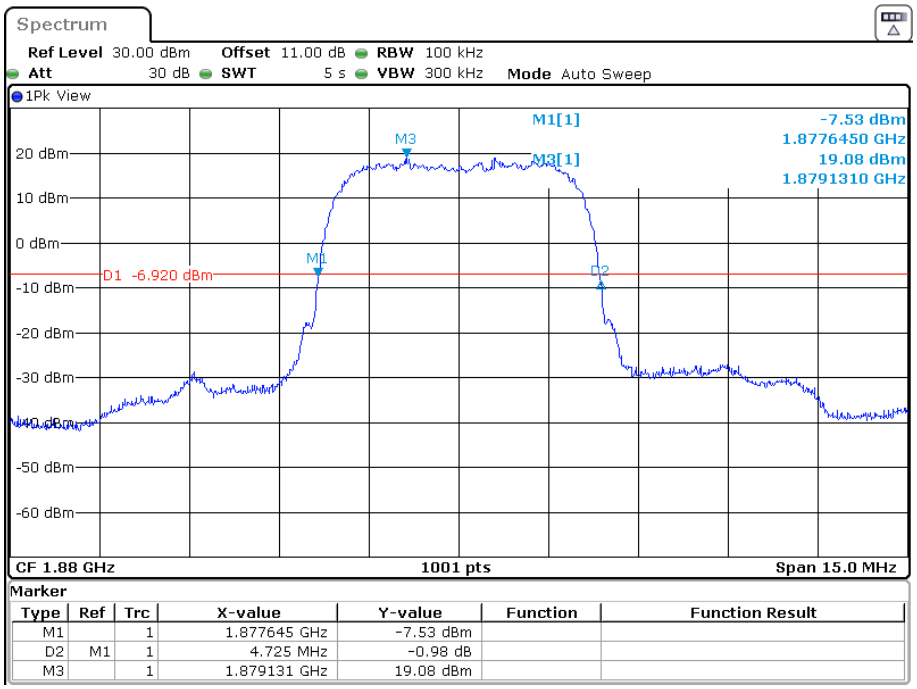


Date: 6.FEB.2023 09:58:15

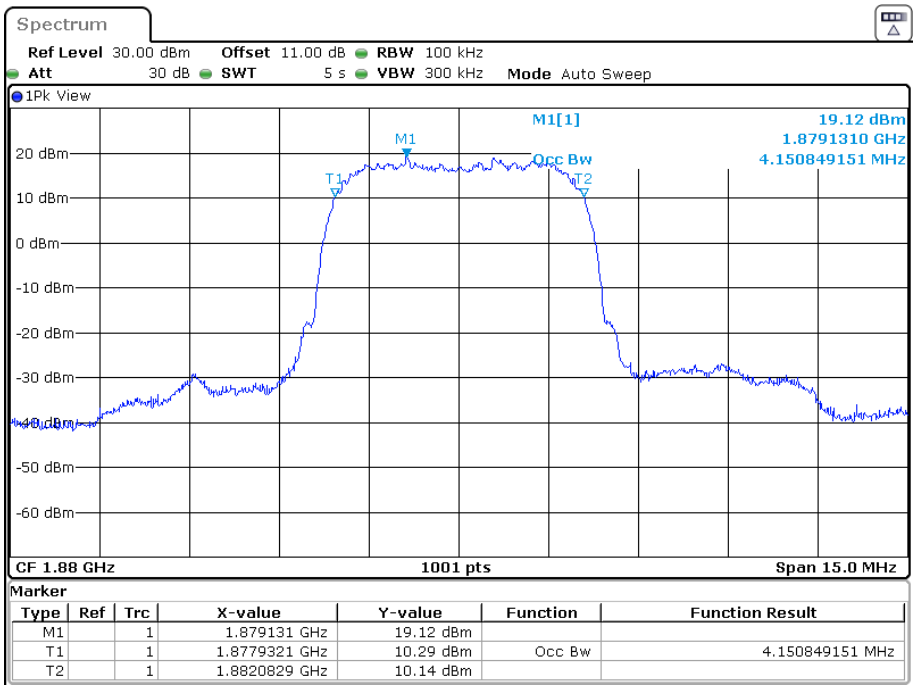


Date: 6.FEB.2023 09:57:36

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

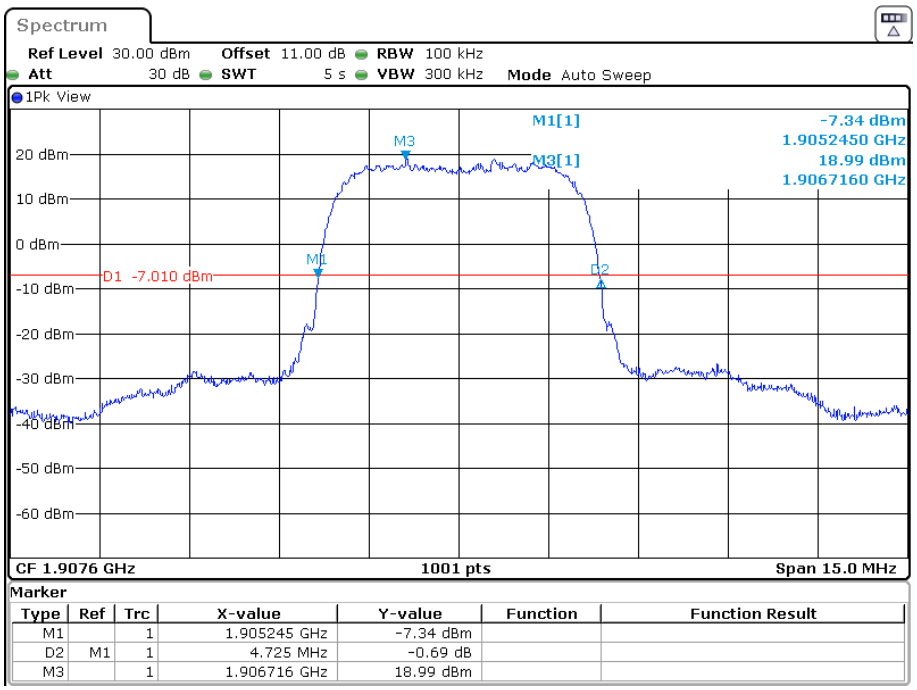


Date: 6.FEB.2023 10:03:03

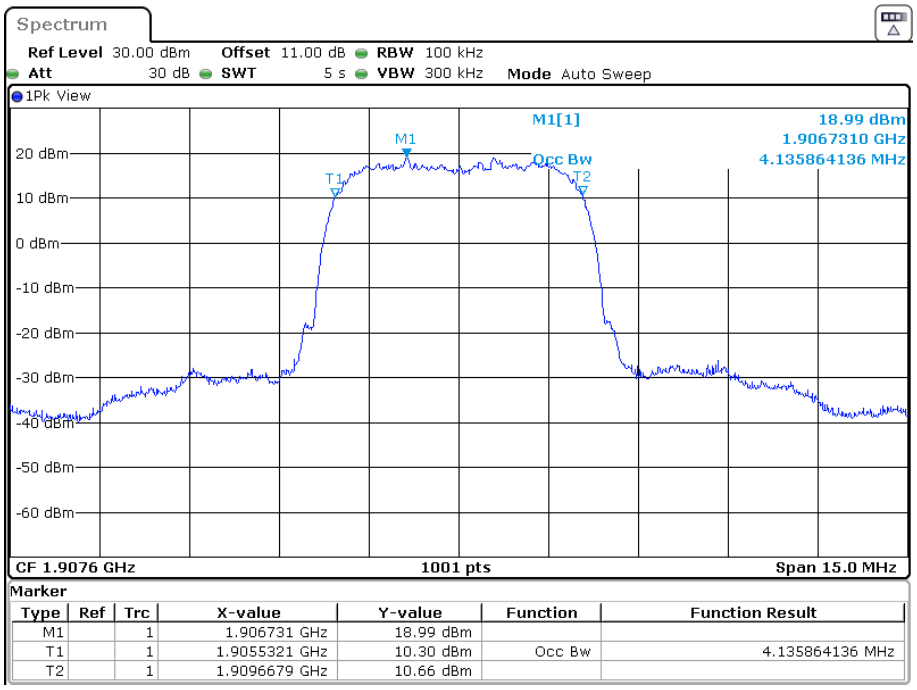


Date: 6.FEB.2023 10:02:24

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

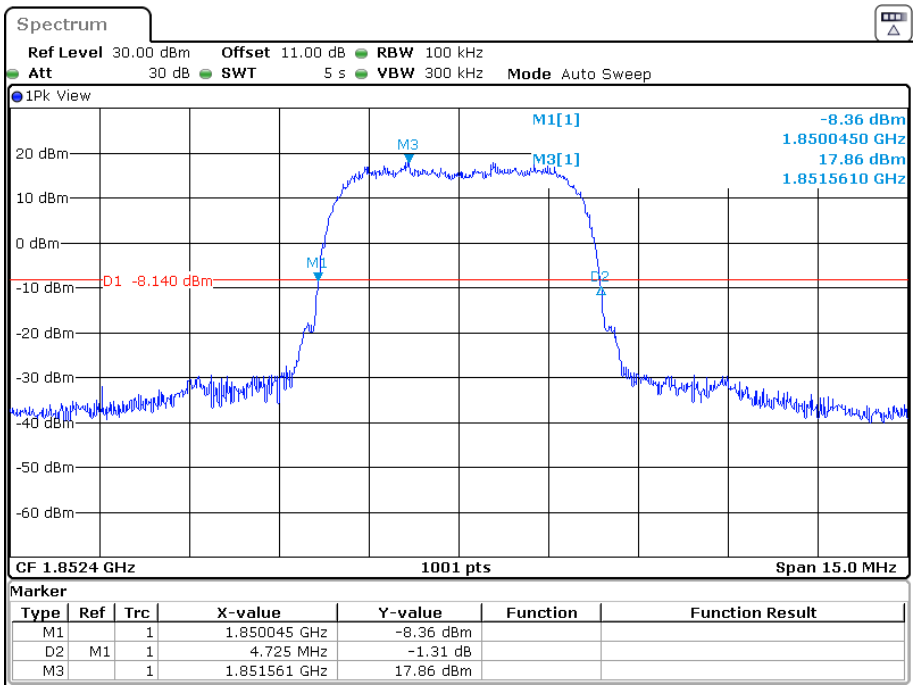


Date: 6.FEB.2023 10:07:41

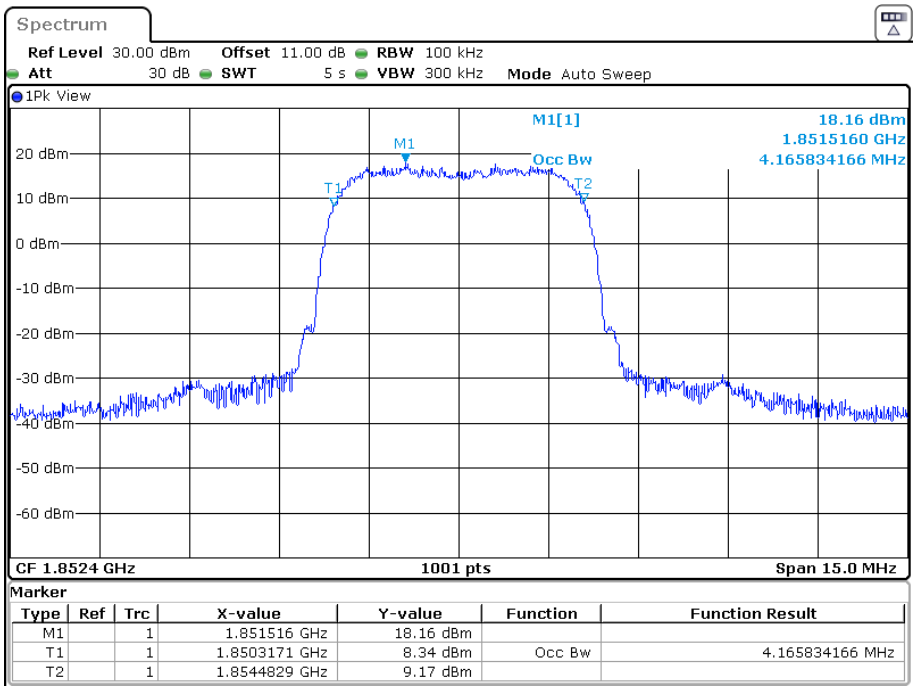


Date: 6.FEB.2023 10:07:02

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

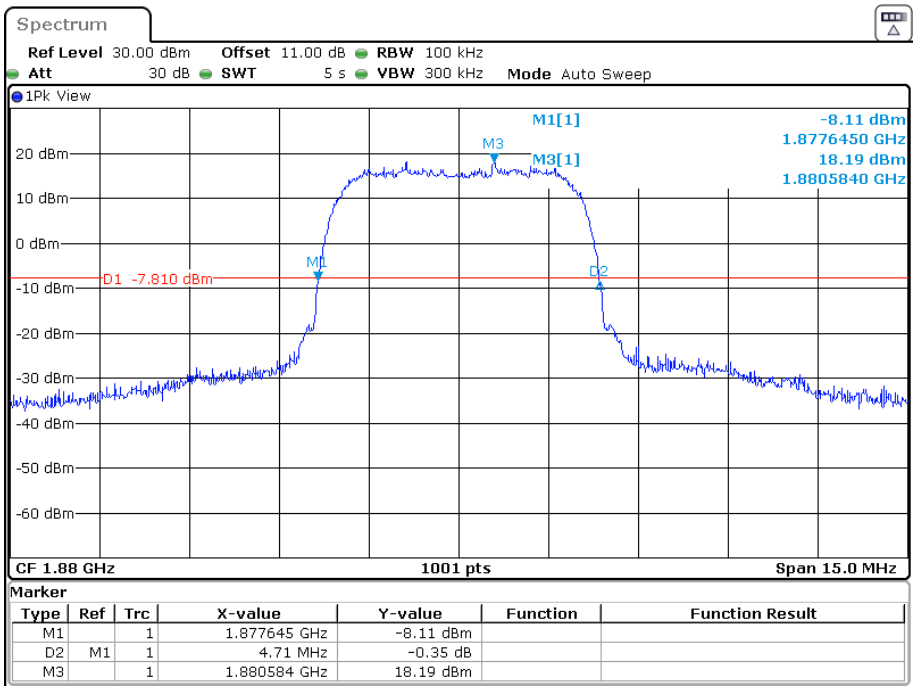


Date: 6.FEB.2023 10:27:40



Date: 6.FEB.2023 10:27:01

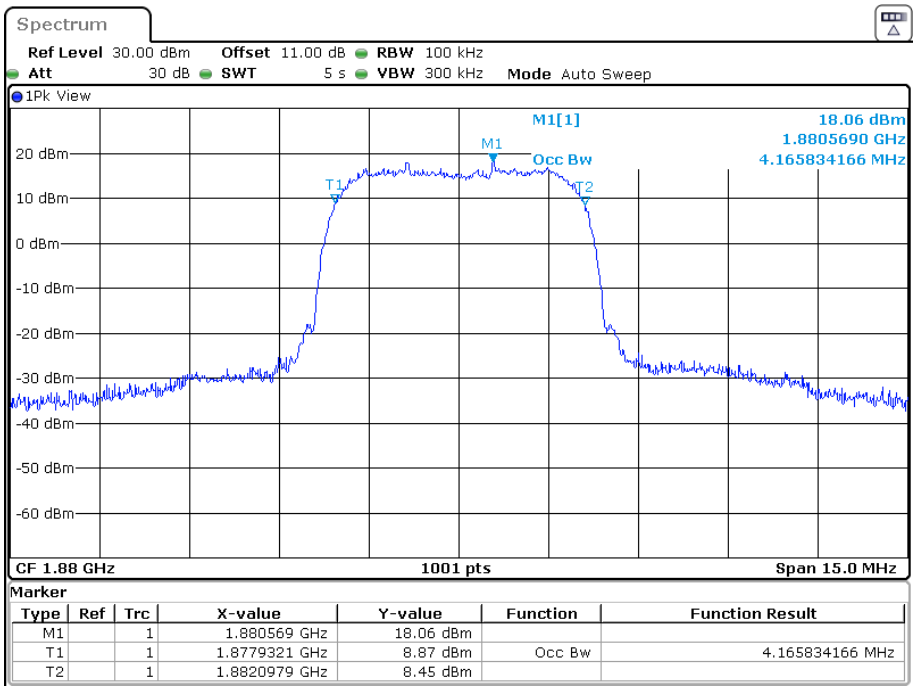
26 dB Emissions &99% Occupied Bandwidth for HSUPA (QPSK) Mode, Middle channel



Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.877645 GHz	-8.11 dBm		
D2	M1	1	4.71 MHz	-0.35 dB		
M3		1	1.880584 GHz	18.19 dBm		

Date: 6.FEB.2023 10:31:39

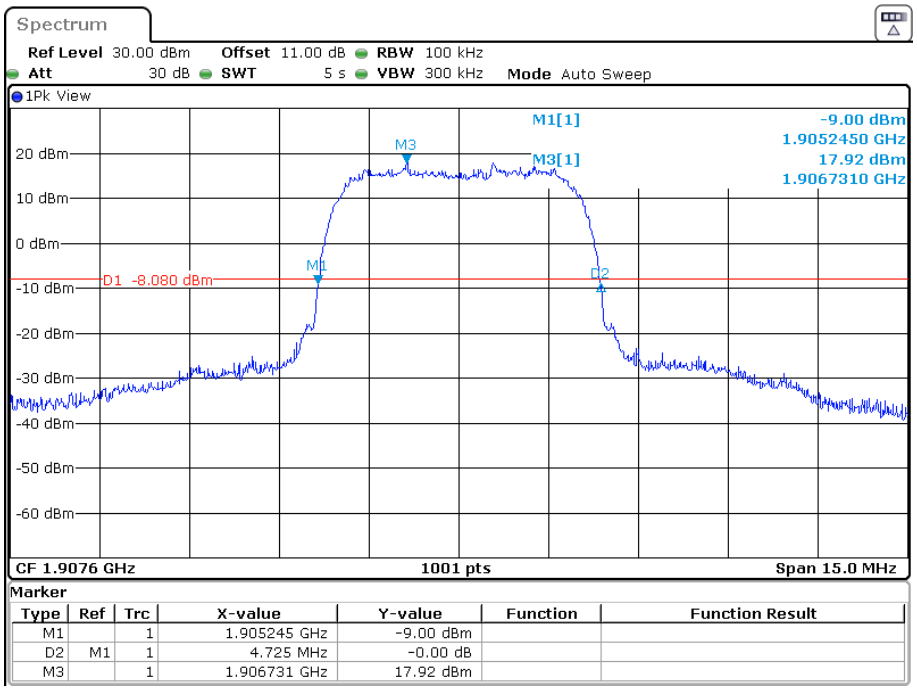


Marker

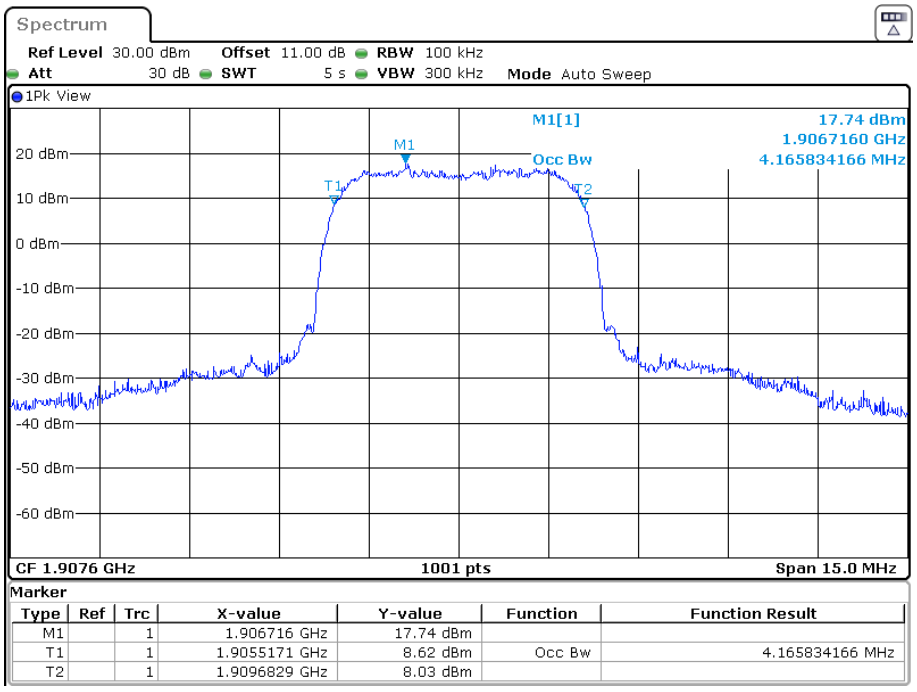
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.880569 GHz	18.06 dBm		
T1		1	1.8779321 GHz	8.87 dBm	Occ Bw	4.165834166 MHz
T2		1	1.8820979 GHz	8.45 dBm		

Date: 6.FEB.2023 10:31:00

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

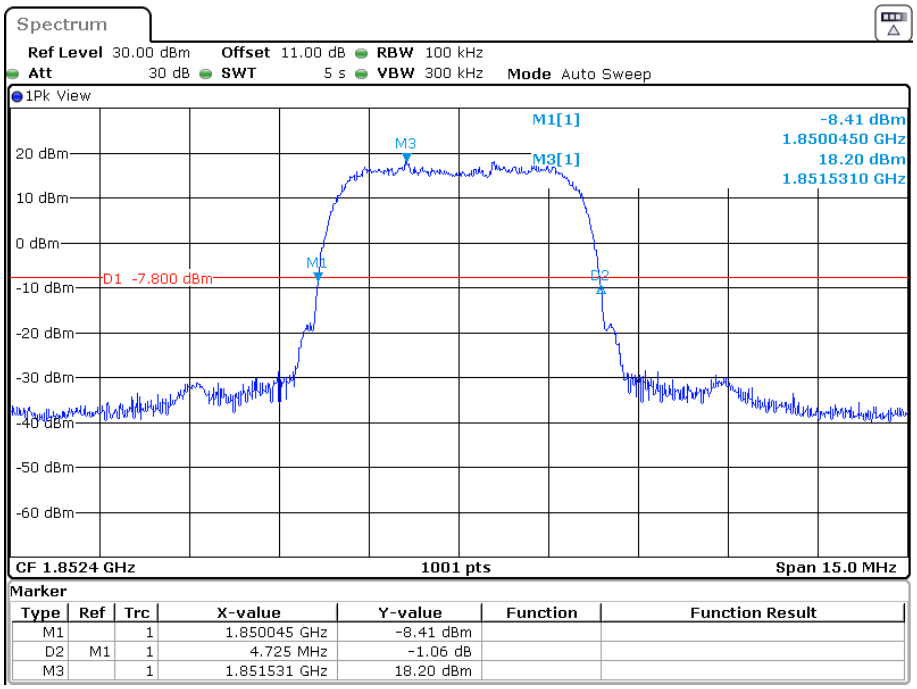


Date: 6.FEB.2023 10:35:15

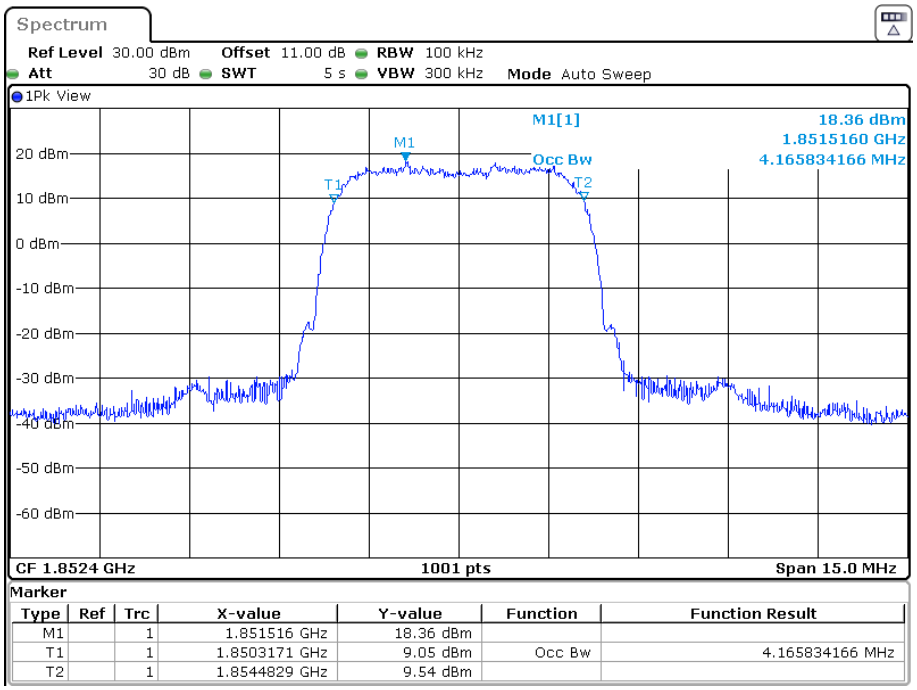


Date: 6.FEB.2023 10:34:36

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

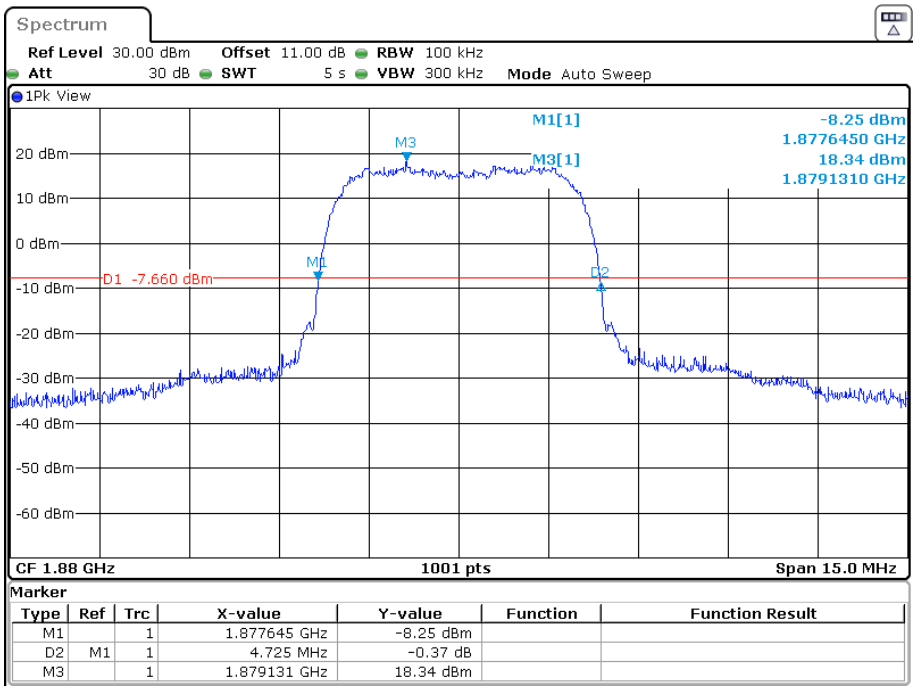


Date: 6.FEB.2023 10:13:30

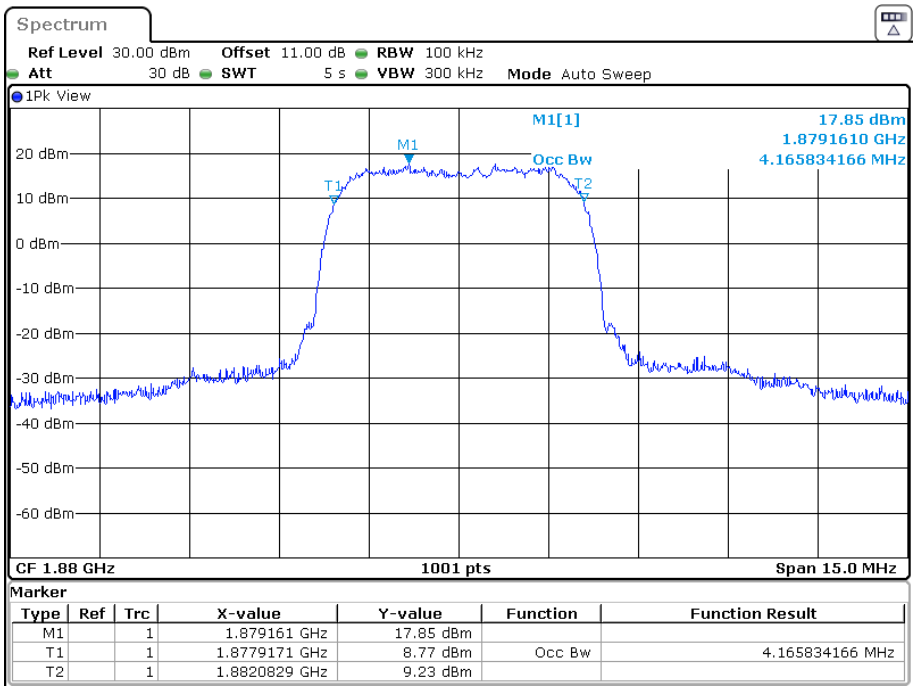


Date: 6.FEB.2023 10:12:50

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

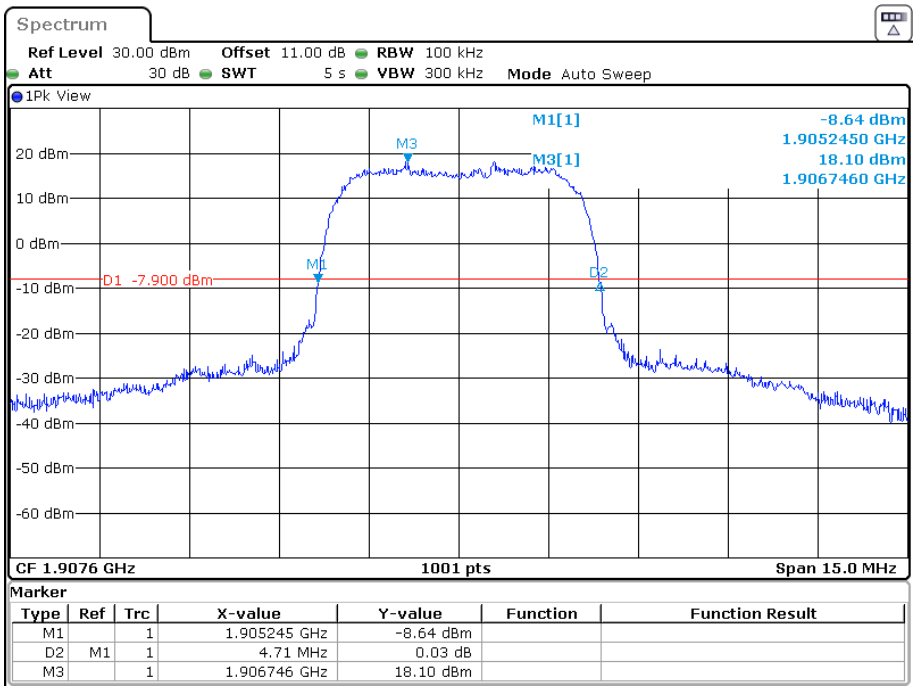


Date: 6.FEB.2023 10:17:32

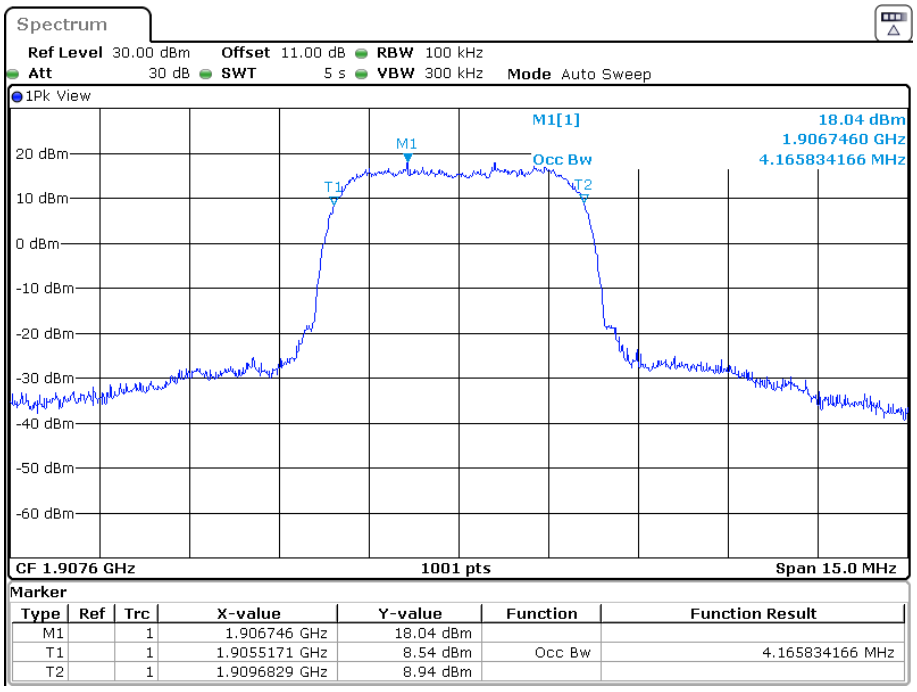


Date: 6.FEB.2023 10:16:54

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



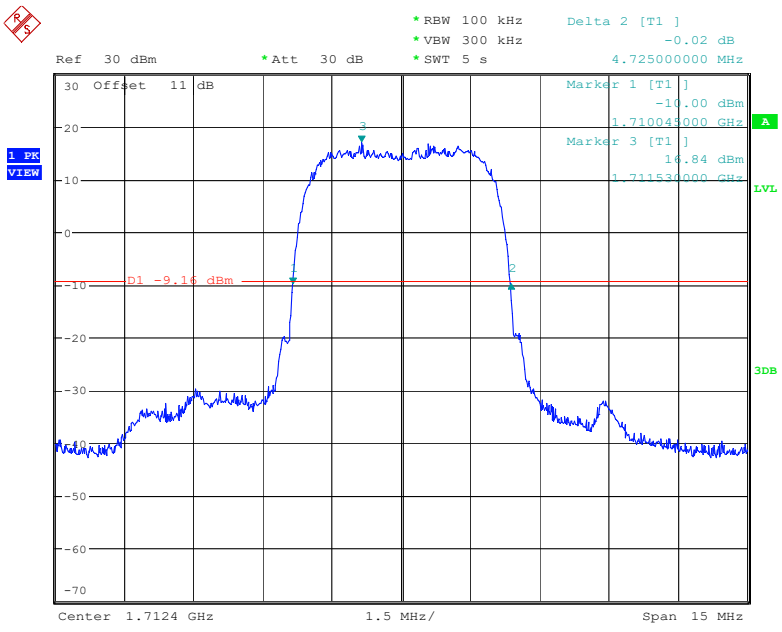
Date: 6.FEB.2023 10:21:23



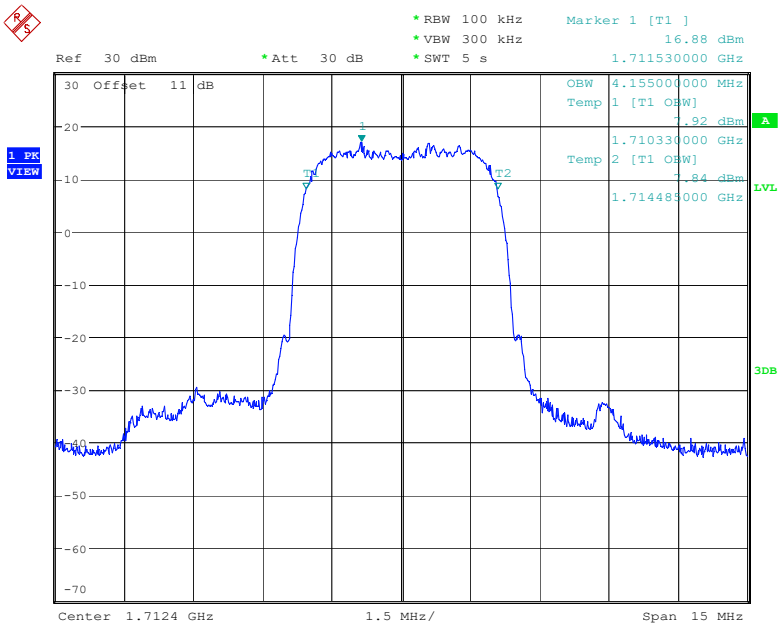
Date: 6.FEB.2023 10:20:44

AWS Band (Part 27)

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

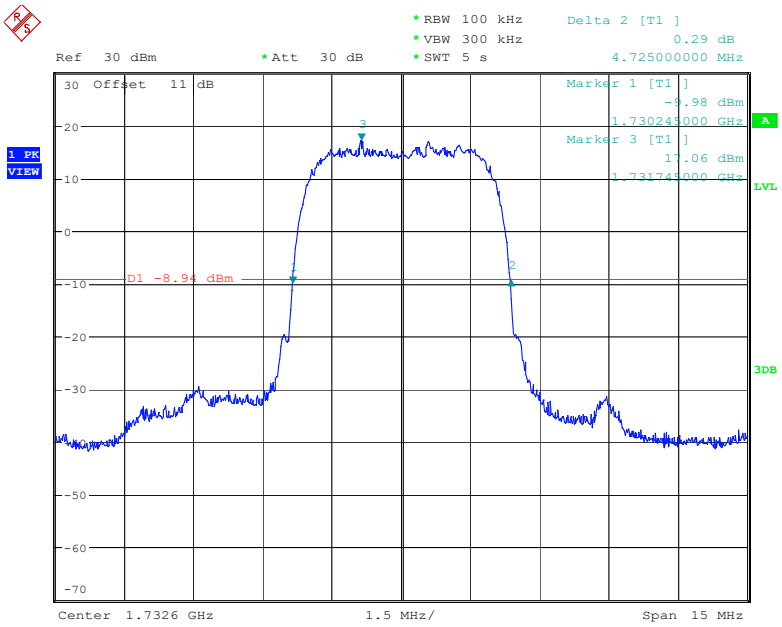


Date: 6.FEB.2023 18:27:22

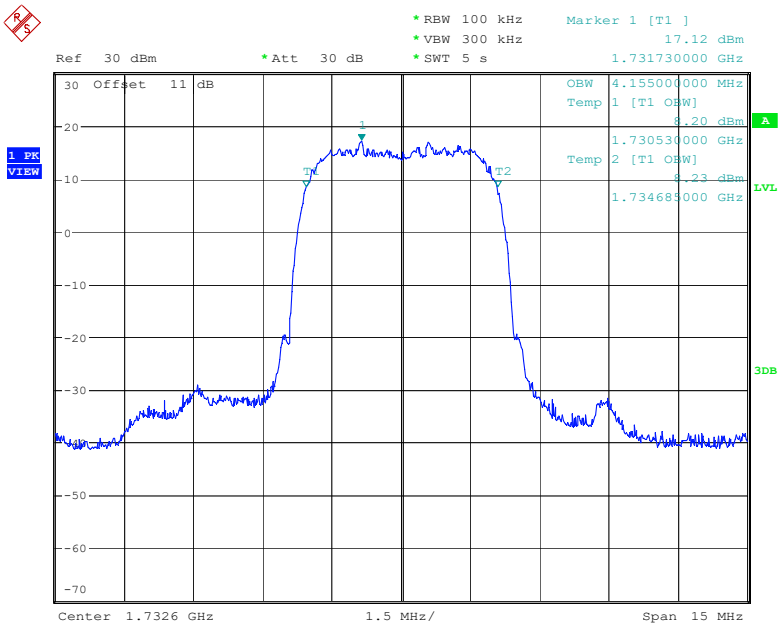


Date: 6.FEB.2023 18:26:42

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

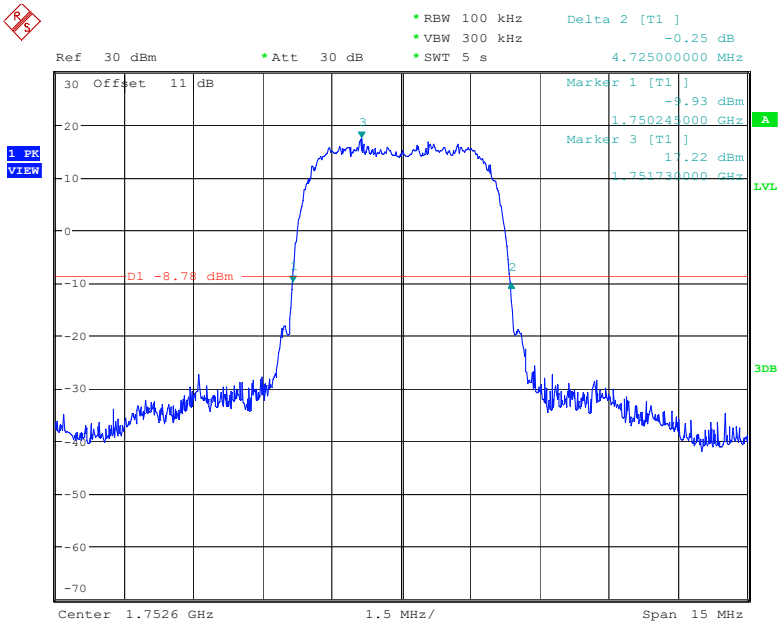


Date: 6.FEB.2023 18:32:17

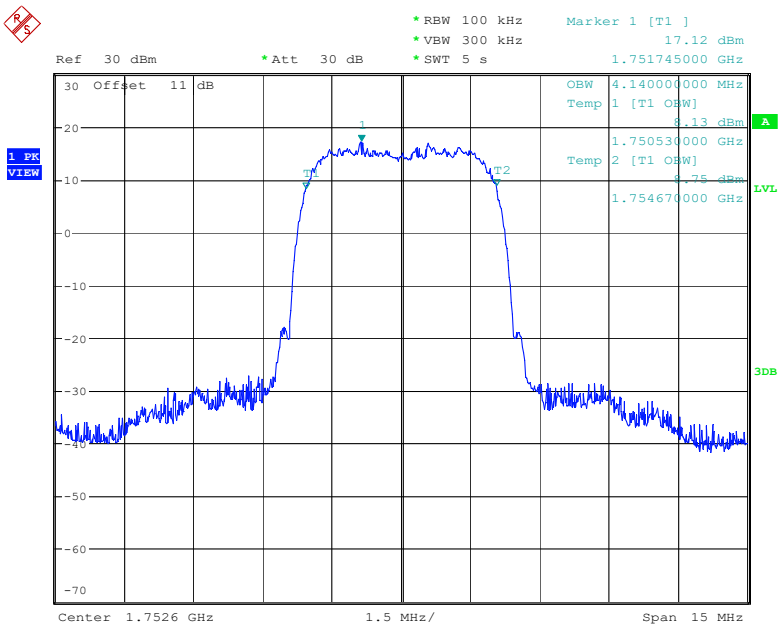


Date: 6.FEB.2023 18:31:38

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

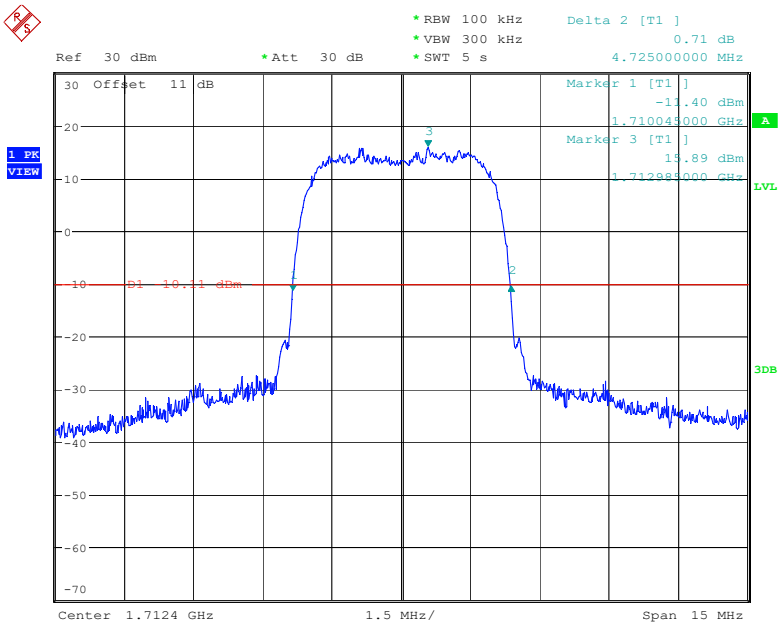


Date: 6.FEB.2023 18:35:48

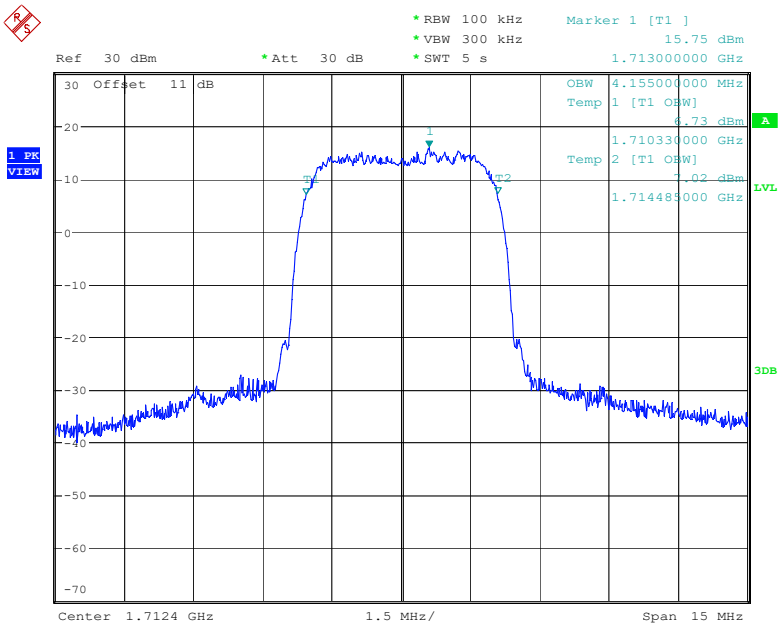


Date: 6.FEB.2023 18:35:09

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

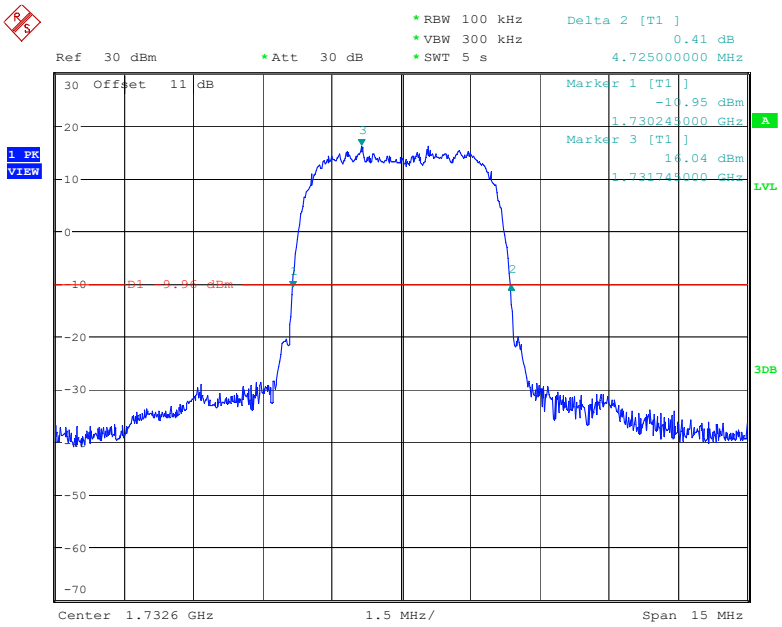


Date: 6.FEB.2023 18:54:35

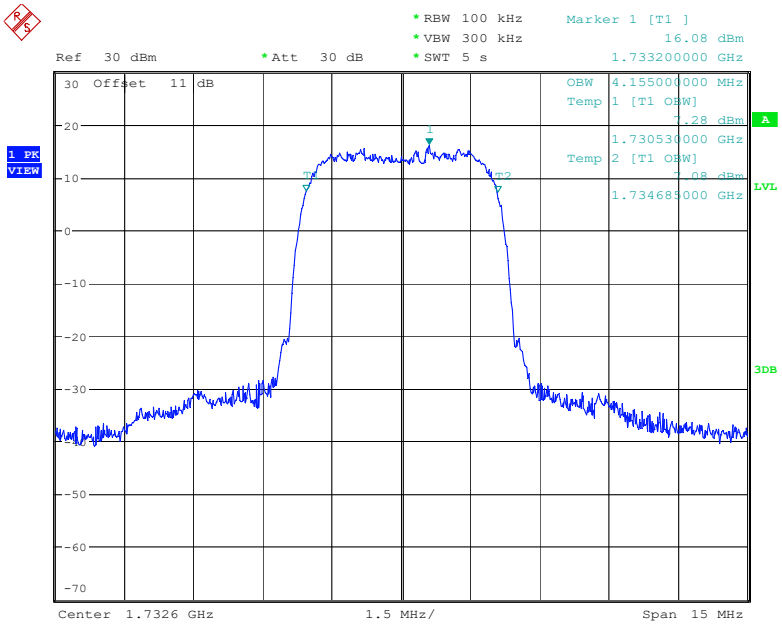


Date: 6.FEB.2023 18:53:55

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

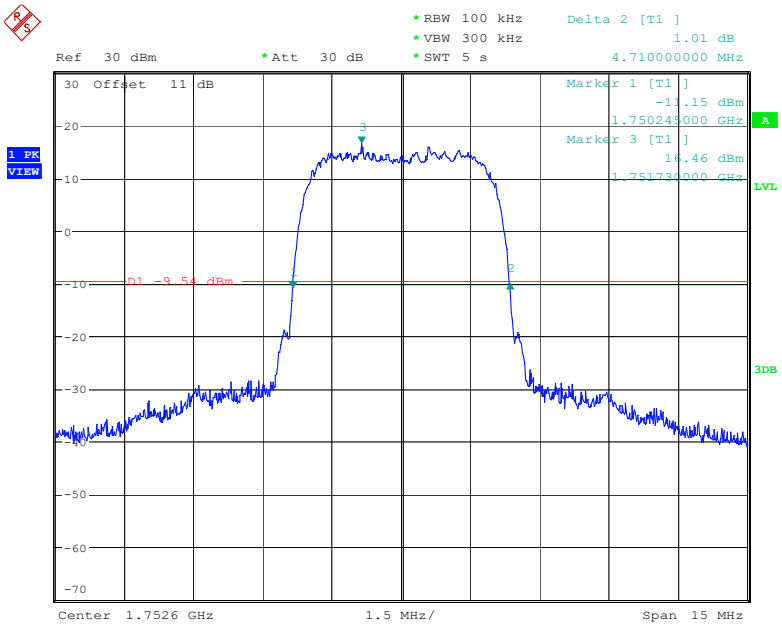


Date: 6.FEB.2023 18:59:12

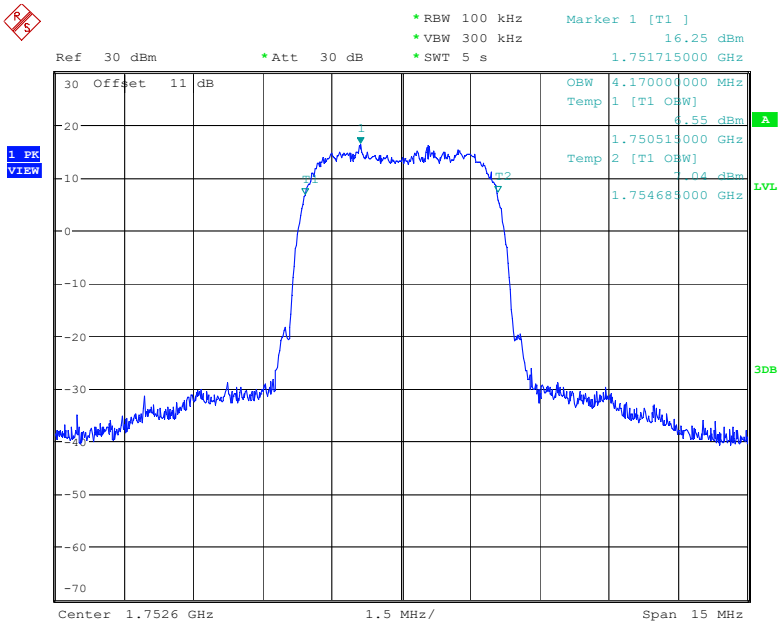


Date: 6.FEB.2023 18:58:33

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

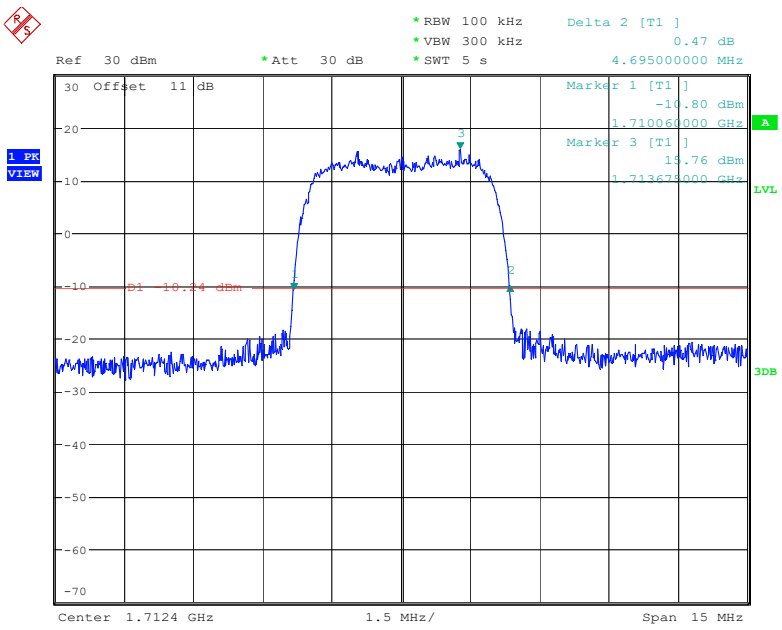


Date: 6.FEB.2023 19:04:07

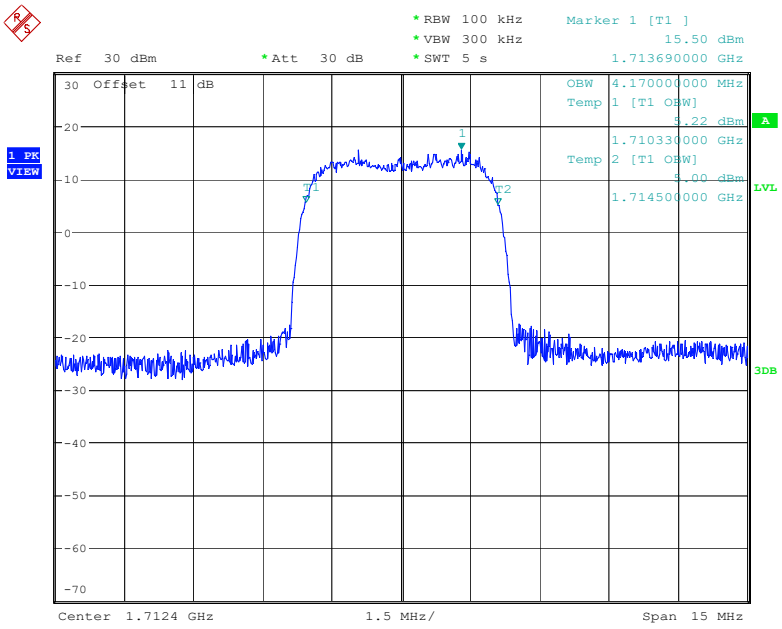


Date: 6.FEB.2023 19:03:28

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

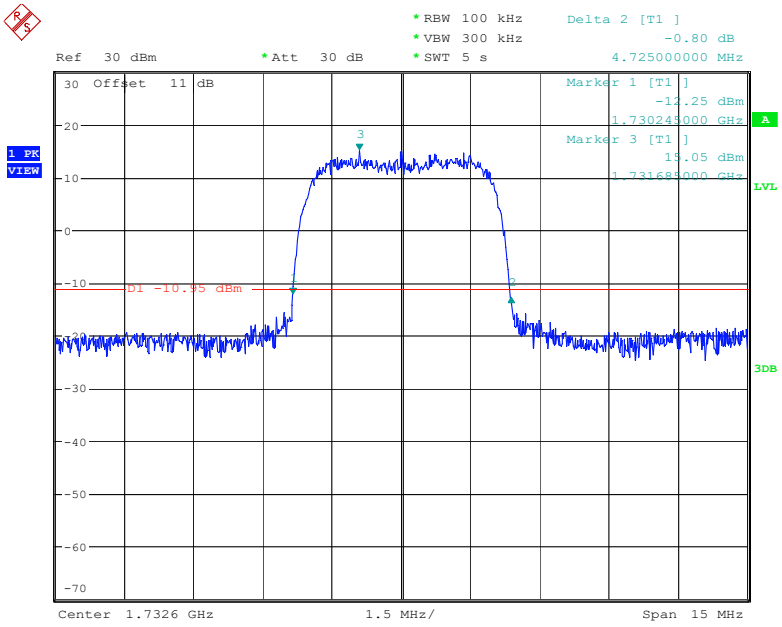


Date: 6.FEB.2023 18:41:25

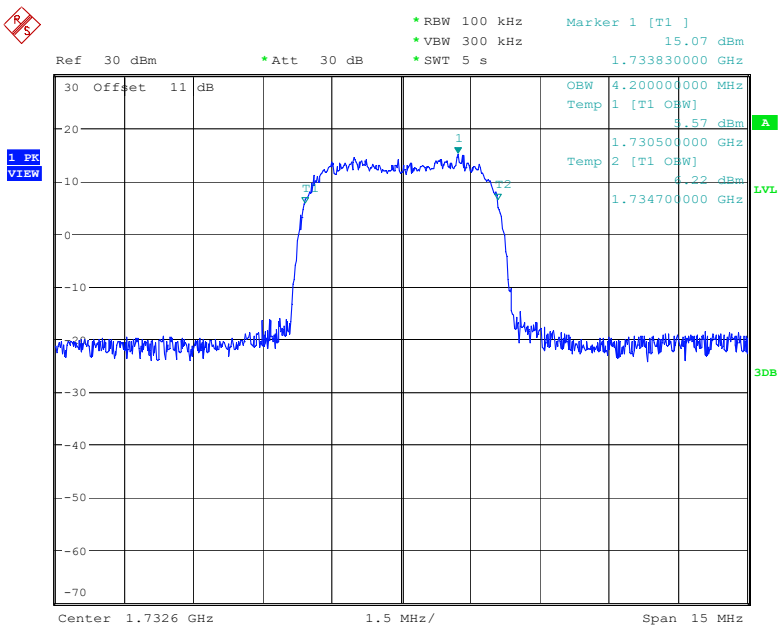


Date: 6.FEB.2023 18:40:46

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

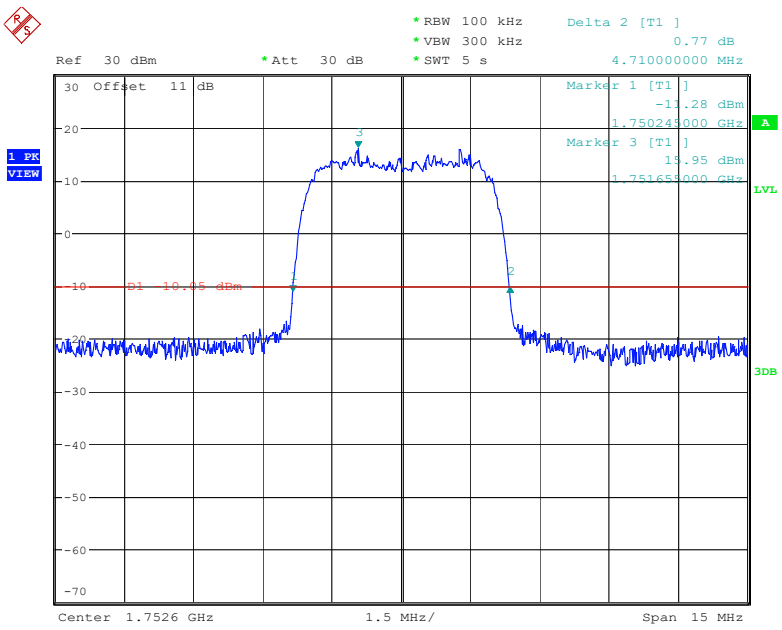


Date: 6.FEB.2023 18:45:35

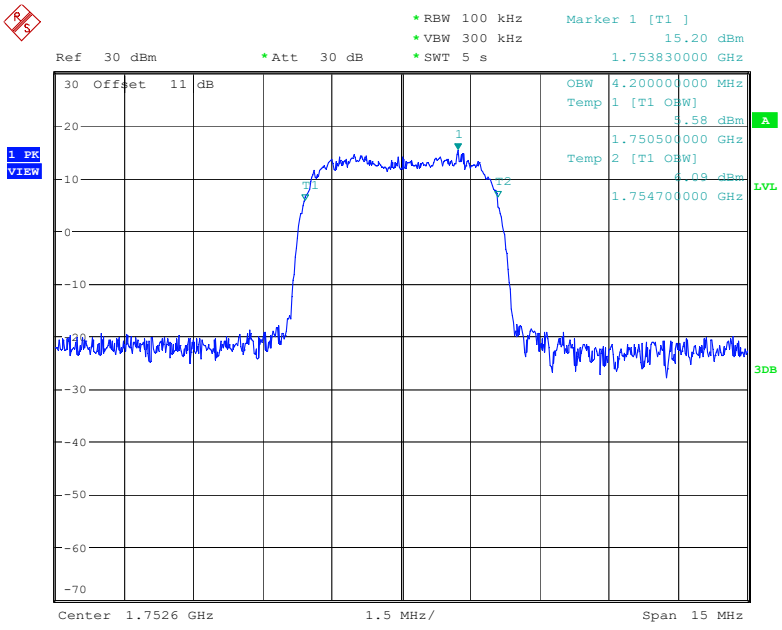


Date: 6.FEB.2023 18:44:57

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



Date: 6.FEB.2023 18:49:14



Date: 6.FEB.2023 18:48:34

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	1.284	1.104	1.290	1.104	1.302
	16QAM	1.104	1.290	1.104	1.290	1.104	1.278
3 MHz	QPSK	2.688	2.940	2.688	2.916	2.688	2.928
	16QAM	2.688	2.940	2.676	2.964	2.688	2.952
5 MHz	QPSK	4.540	4.940	4.520	4.920	4.500	4.940
	16QAM	4.500	4.900	4.520	4.940	4.520	4.940
10 MHz	QPSK	8.960	9.640	8.960	9.600	8.960	9.520
	16QAM	8.960	9.640	8.920	9.480	8.920	9.640
15 MHz	QPSK	13.500	14.760	13.560	14.880	13.500	14.820
	16QAM	13.500	14.700	13.500	14.760	13.500	14.760
20 MHz	QPSK	18.000	19.280	18.000	19.360	17.920	19.280
	16QAM	18.000	19.280	18.080	19.360	18.000	19.440

LTE Band 4:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.302	1.104	1.284	1.098	1.290
	16QAM	1.092	1.284	1.098	1.290	1.110	1.296
3 MHz	QPSK	2.676	2.928	2.676	2.916	2.688	2.940
	16QAM	2.676	2.940	2.676	2.952	2.688	2.952
5 MHz	QPSK	4.500	4.900	4.520	4.920	4.520	4.940
	16QAM	4.540	4.940	4.520	4.920	4.540	4.920
10 MHz	QPSK	8.920	9.600	9.000	9.680	8.960	9.560
	16QAM	8.920	9.640	9.000	9.560	8.960	9.560
15 MHz	QPSK	13.560	14.700	13.500	14.640	13.500	14.700
	16QAM	13.560	15.120	13.500	14.580	13.500	14.760
20 MHz	QPSK	17.920	19.280	18.000	19.280	18.000	19.360
	16QAM	18.000	19.360	17.920	19.280	18.000	19.360

LTE Band 5:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.284	1.110	1.308	1.110	1.290
	16QAM	1.104	1.290	1.098	1.278	1.104	1.290
3 MHz	QPSK	2.676	2.916	2.700	2.928	2.688	2.940
	16QAM	2.676	2.964	2.688	2.940	2.688	2.940
5 MHz	QPSK	4.520	4.940	4.500	4.940	4.520	4.900
	16QAM	4.500	4.940	4.520	4.940	4.520	4.920
10 MHz	QPSK	8.920	9.560	8.960	9.560	8.960	9.520
	16QAM	8.960	9.520	8.960	9.560	8.960	9.560

LTE Band 7:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.540	4.940	4.500	4.880	4.520	4.940
	16QAM	4.520	4.920	4.500	4.940	4.520	4.920
10 MHz	QPSK	8.960	9.640	8.960	9.680	8.960	9.600
	16QAM	8.960	9.640	8.960	9.480	8.960	9.600
15 MHz	QPSK	13.500	15.480	13.560	14.760	13.500	14.700
	16QAM	13.500	14.880	13.500	14.700	13.500	14.700
20 MHz	QPSK	17.920	19.360	17.920	19.120	17.920	19.280
	16QAM	17.920	19.120	17.840	19.280	17.920	19.360

LTE Band 38

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.500	5.000	4.520	4.940	4.520	4.920
	16QAM	4.520	4.940	4.520	5.020	4.520	4.940
10 MHz	QPSK	8.960	9.600	8.960	9.480	8.960	9.600
	16QAM	8.960	9.560	8.960	9.720	8.960	9.520
15 MHz	QPSK	13.500	15.120	13.500	14.880	13.500	14.700
	16QAM	13.560	15.360	13.500	15.120	13.560	15.300
20 MHz	QPSK	17.920	19.360	17.920	19.280	17.920	19.200
	16QAM	17.920	19.200	17.920	19.360	18.000	19.280

LTE Band 41

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.500	4.900	4.520	4.920	4.520	5.040
	16QAM	4.500	4.960	4.500	4.960	4.500	4.920
10 MHz	QPSK	8.960	9.600	8.960	9.520	8.960	9.640
	16QAM	8.960	9.520	8.960	9.880	8.960	9.520
15 MHz	QPSK	13.440	15.000	13.500	14.820	13.500	14.760
	16QAM	13.500	14.700	13.500	15.240	13.500	15.120
20 MHz	QPSK	17.920	19.280	17.920	19.440	17.920	19.200
	16QAM	17.920	19.280	17.920	19.280	17.920	19.440

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

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

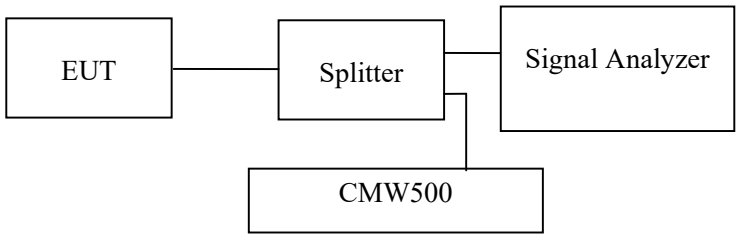
Applicable Standard

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

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

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10^{th} 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:	27.2 ℃
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2023-02-04 to 2023-02-13.

EUT operation mode: Transmitting

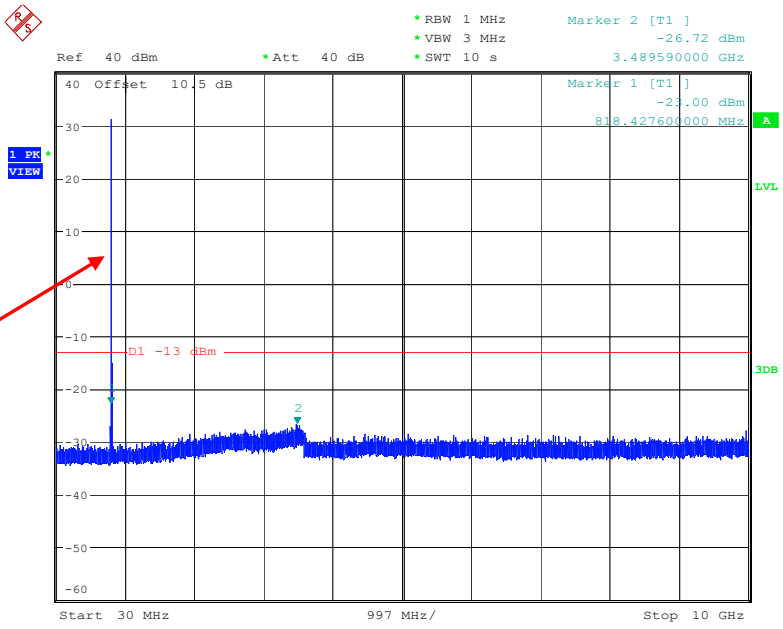
Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)

Low Channel:

30 MHz – 10GHz (GSM Mode)

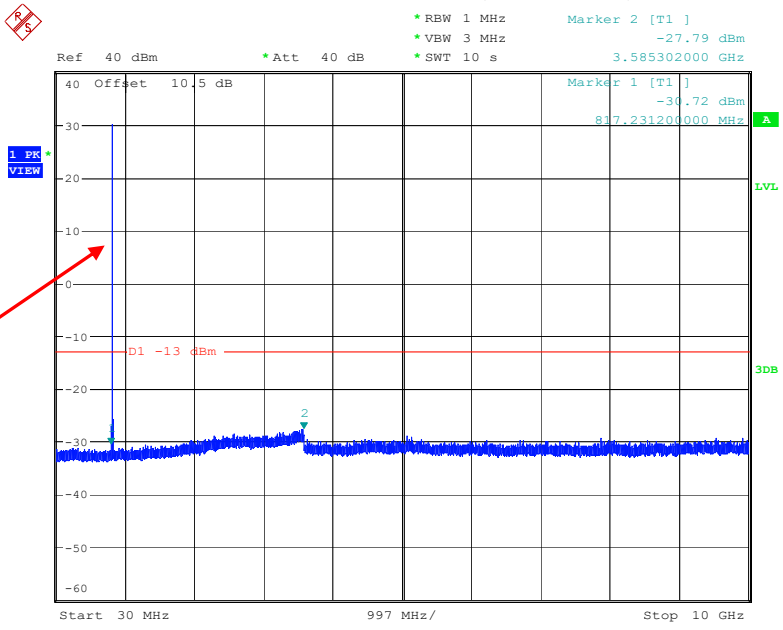


Fundamental test

Date: 10.FEB.2023 11:27:27

Middle Channel:

30 MHz – 10GHz (GSM Mode)

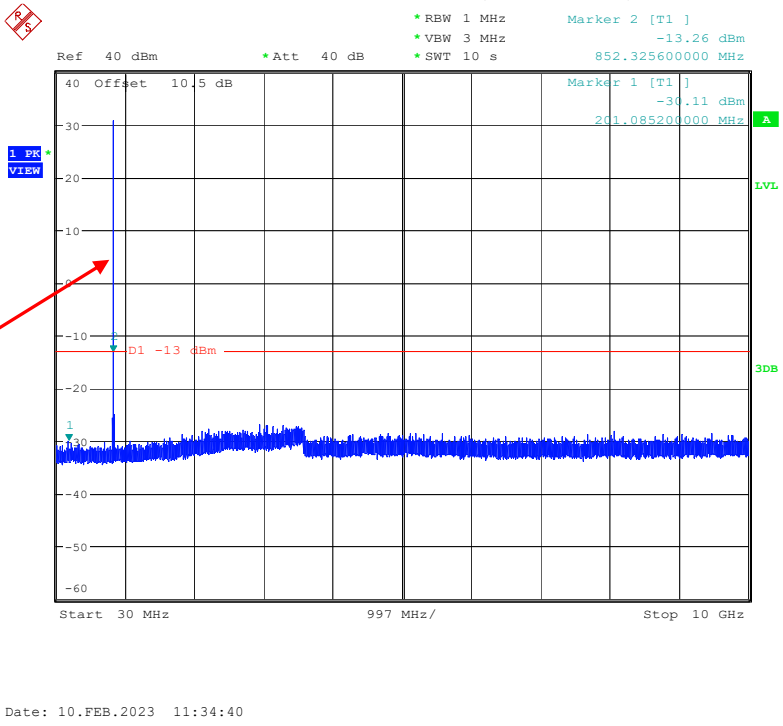


Fundamental test

Date: 10.FEB.2023 11:30:51

High Channel:

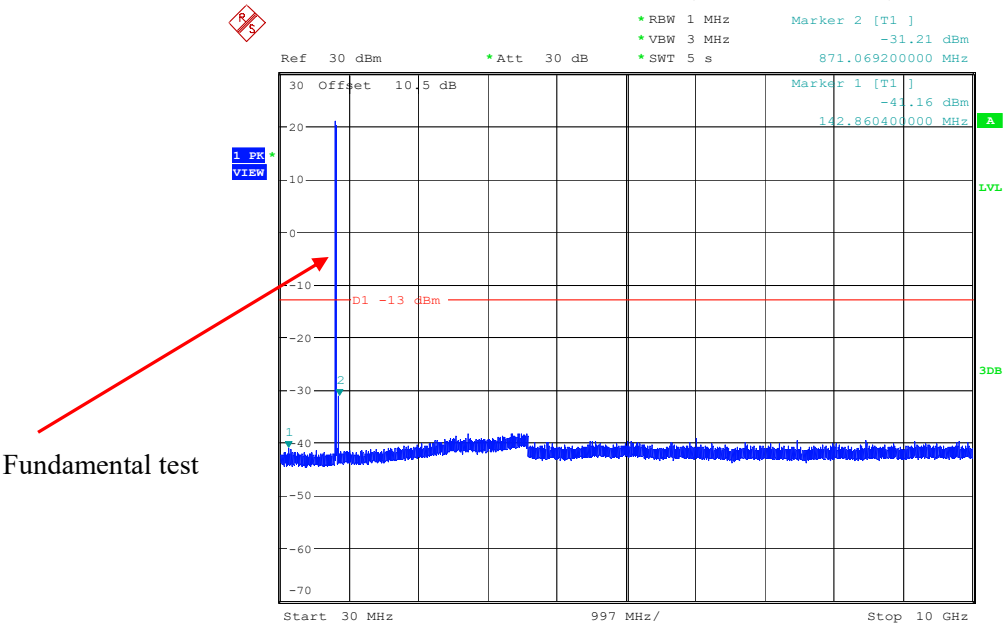
30 MHz – 10GHz (GSM Mode)



Fundamental test

Low Channel:

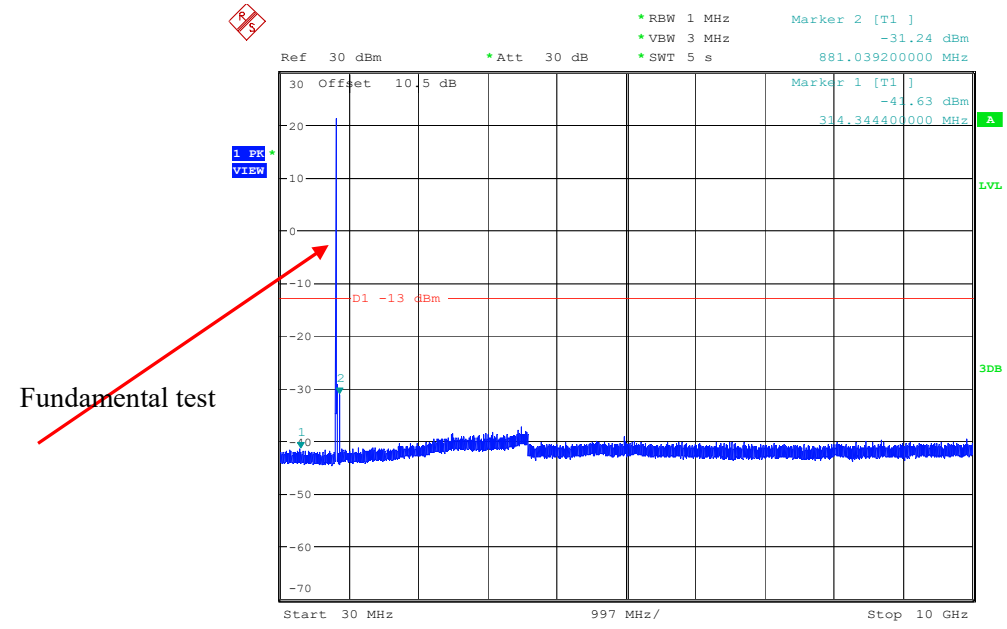
30 MHz – 10GHz (WCDMA Mode)



Date: 8.FEB.2023 09:48:04

Middle Channel:

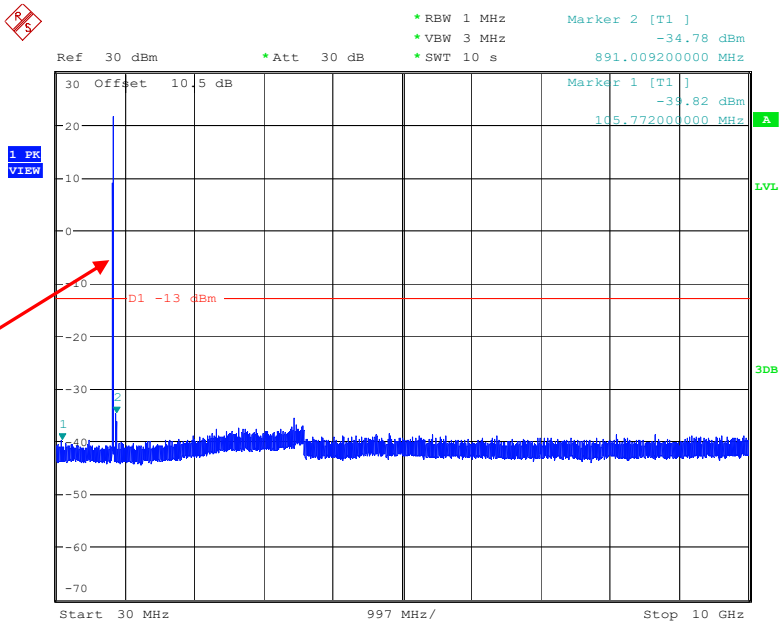
30 MHz – 10GHz (WCDMA Mode)



Date: 8.FEB.2023 09:50:32

High Channel:

30 MHz – 10GHz (WCDMA Mode)

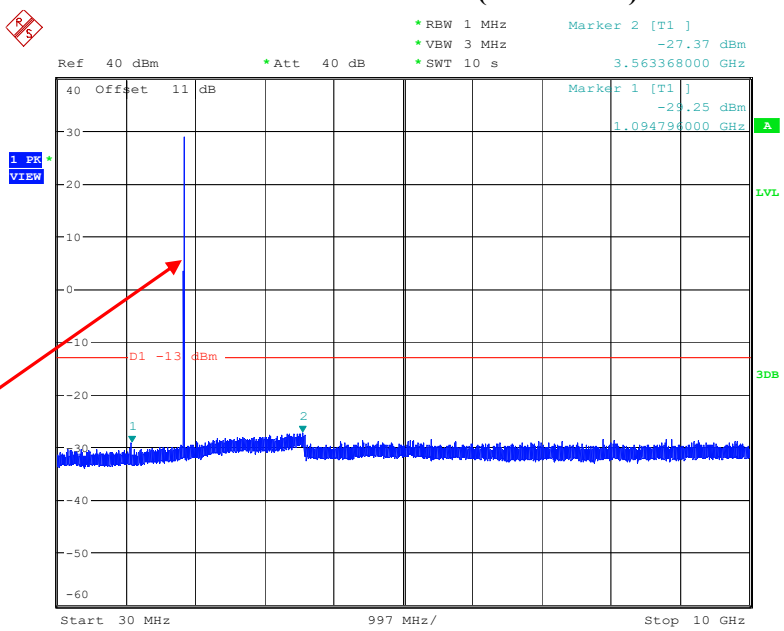


Fundamental test

PCS Band (Part 24E)

Low Channel:

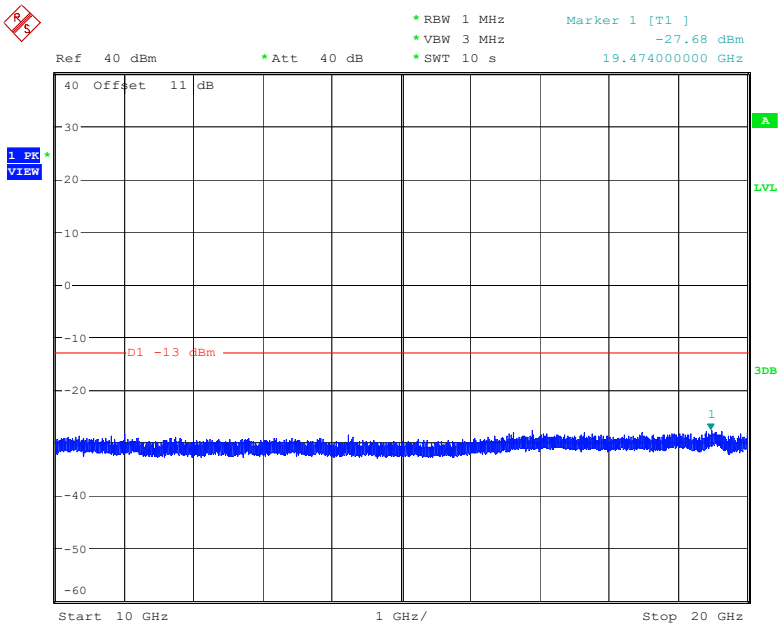
30 MHz – 10GHz (GSM Mode)



Fundamental test

Date: 10.FEB.2023 13:40:02

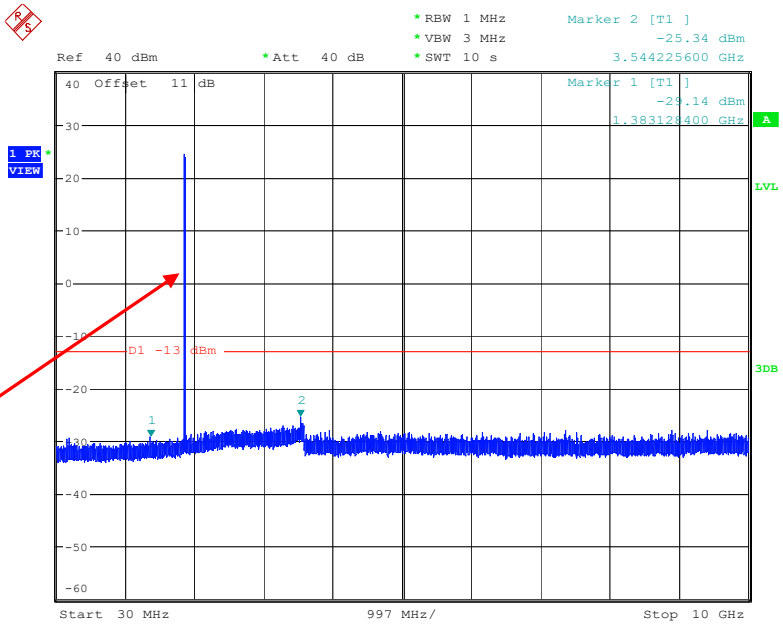
10 GHz – 20GHz (GSM Mode)



Date: 10.FEB.2023 13:40:51

Middle Channel:

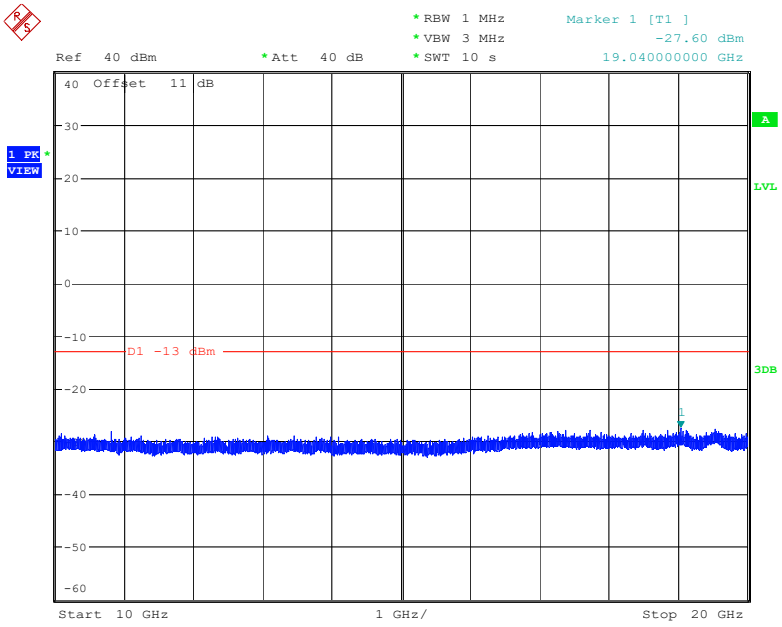
30 MHz – 10GHz (GSM Mode)



Fundamental test

Date: 10.FEB.2023 13:44:41

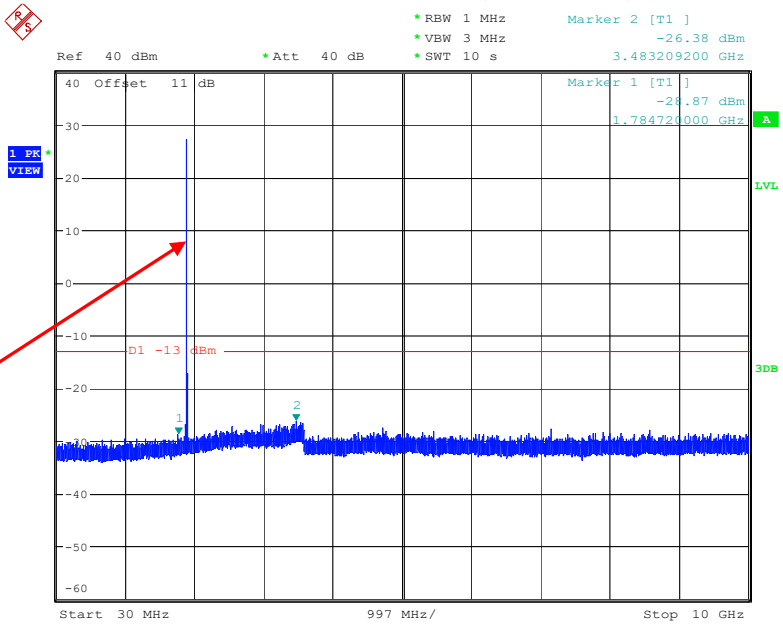
10 GHz – 20GHz (GSM Mode)



Date: 10.FEB.2023 13:45:40

High Channel:

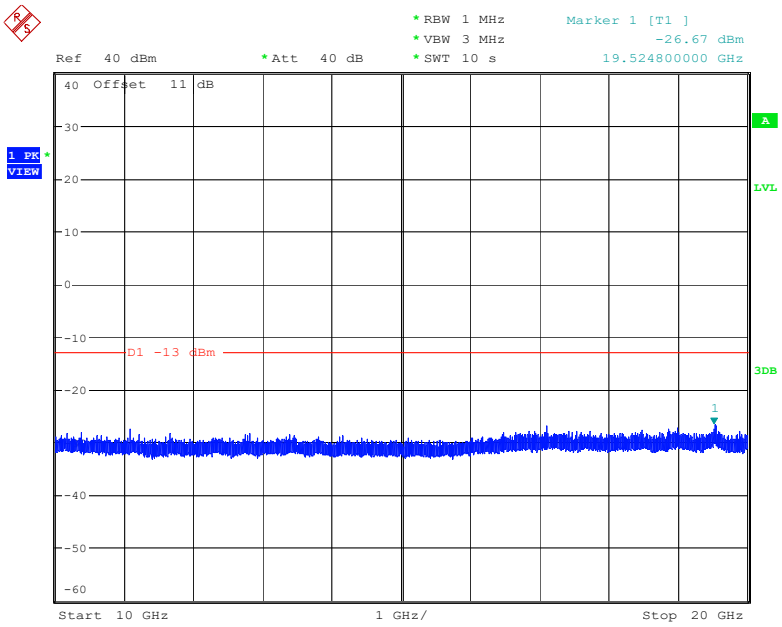
30 MHz – 10GHz (GSM Mode)



Fundamental test

Date: 10.FEB.2023 13:50:38

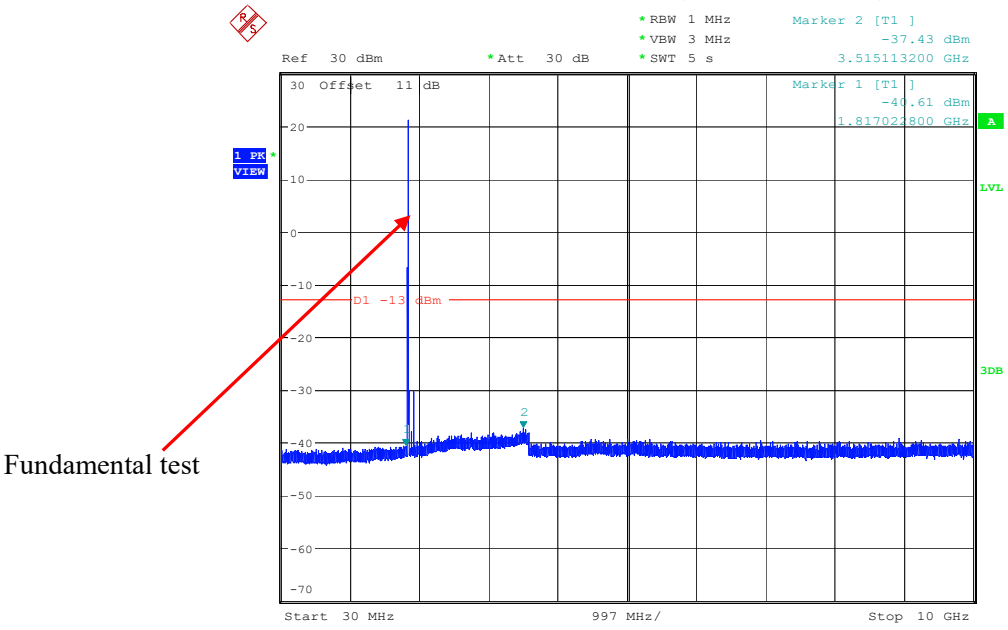
10 GHz – 20GHz (GSM Mode)



Date: 10.FEB.2023 13:51:12

Low Channel:

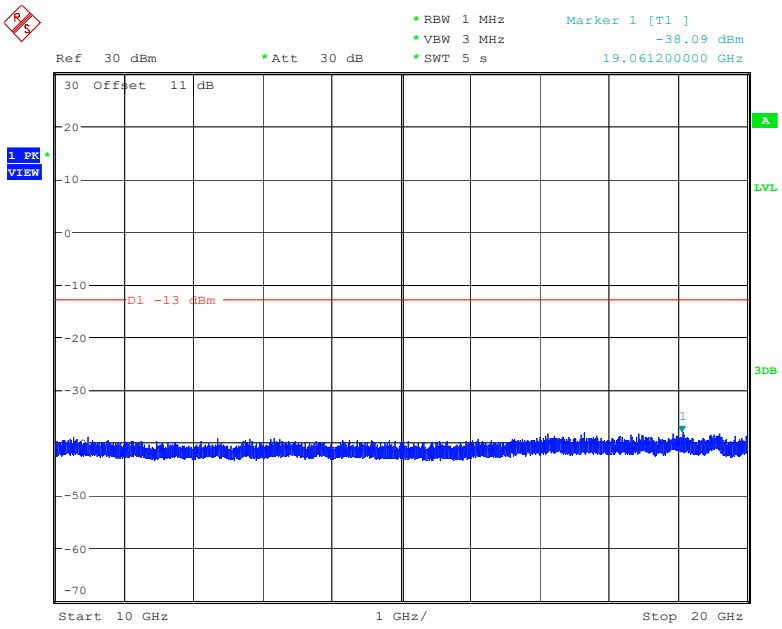
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 8.FEB.2023 09:26:30

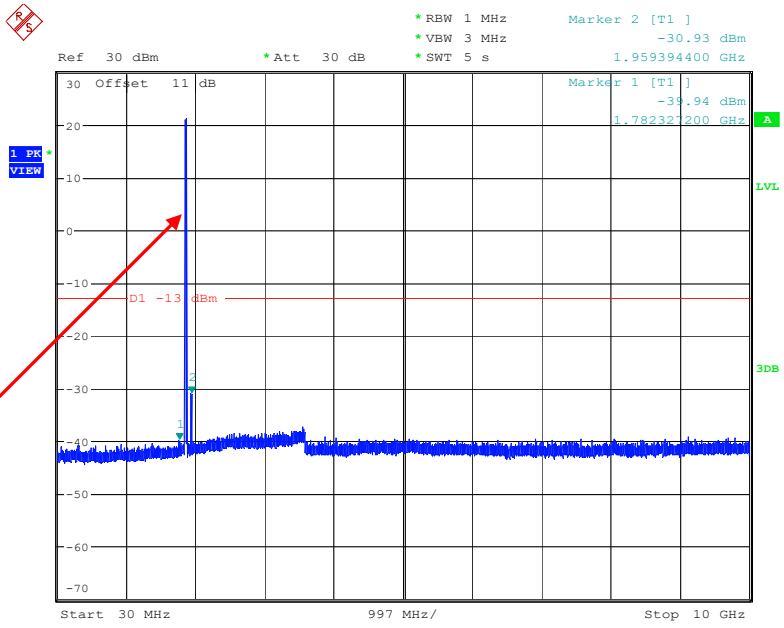
10 GHz – 20GHz (WCDMA Mode)



Date: 8.FEB.2023 09:27:06

Middle Channel:

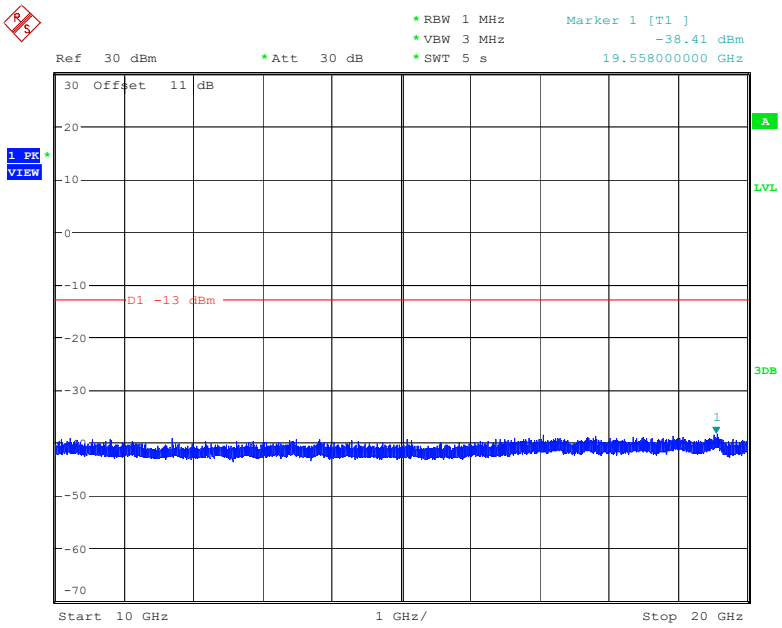
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 8.FEB.2023 09:29:22

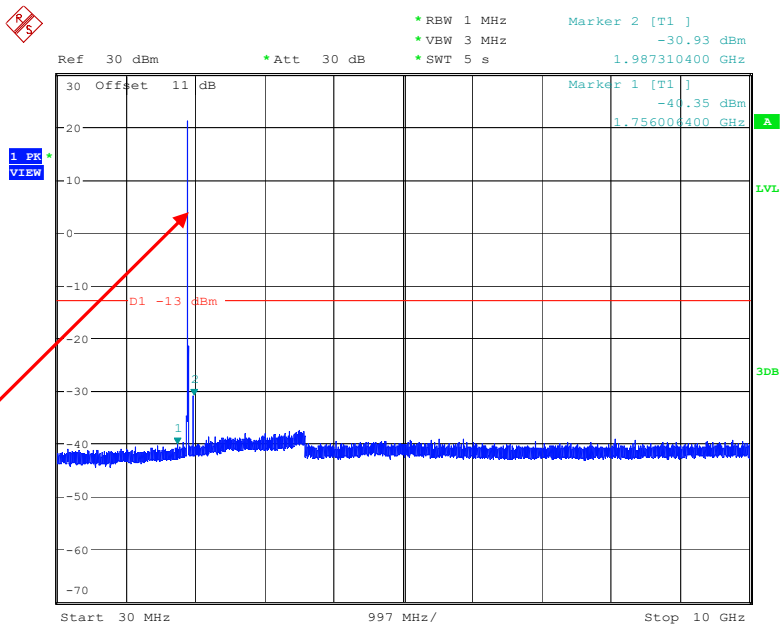
10 GHz – 20GHz (WCDMA Mode)



Date: 8.FEB.2023 09:30:03

High Channel:

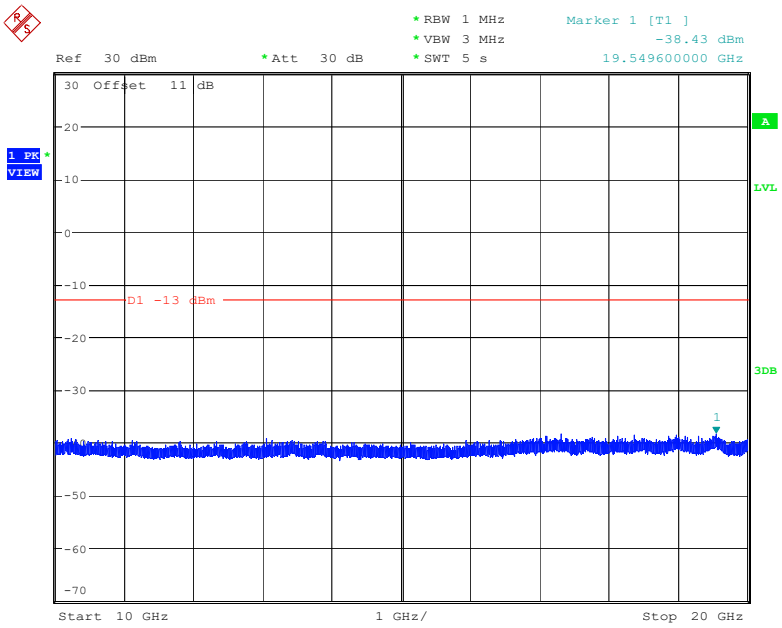
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 8.FEB.2023 09:31:47

10 GHz – 20GHz (WCDMA Mode)

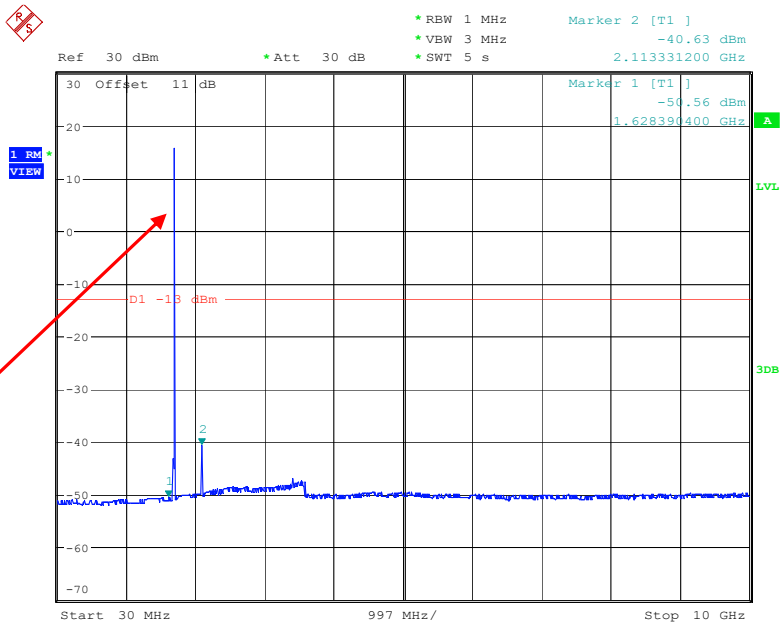


Date: 8.FEB.2023 09:32:28

AWS Band (Part 27)

Low Channel:

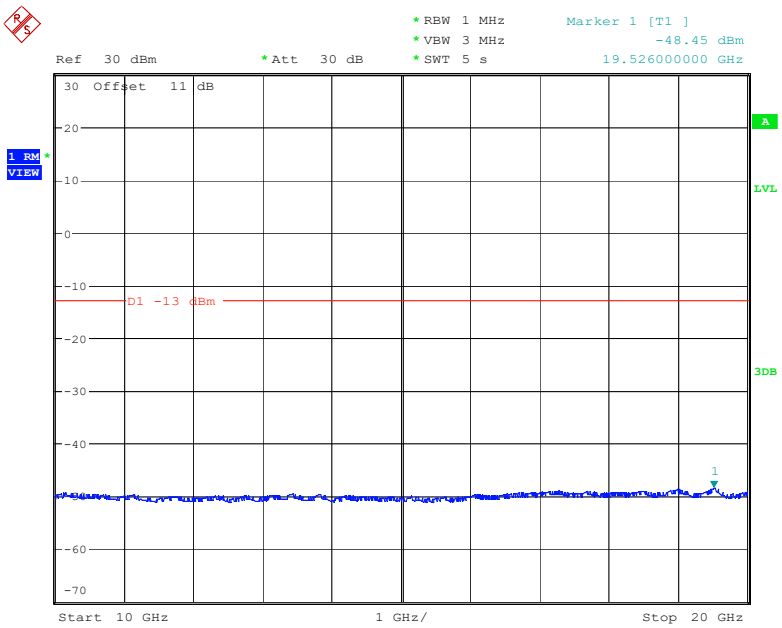
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 8.FEB.2023 09:36:00

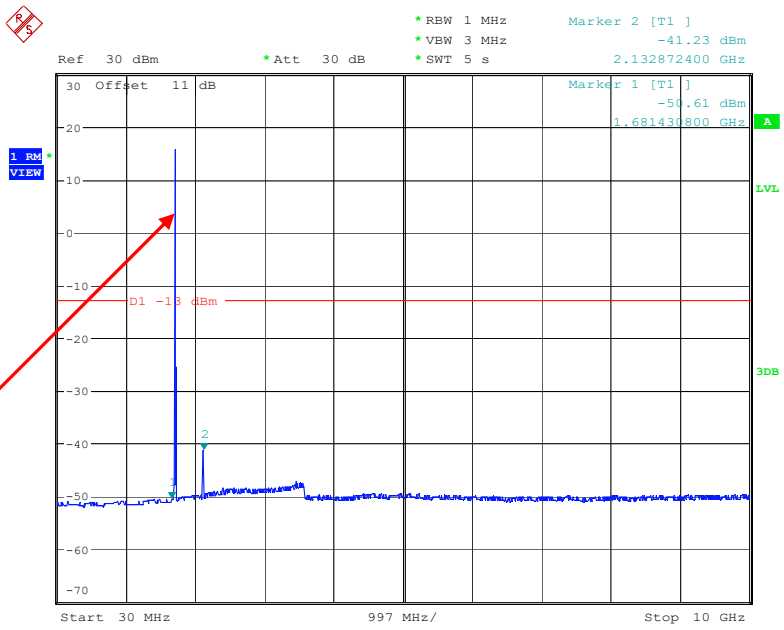
10 GHz – 20GHz (WCDMA Mode)



Date: 8.FEB.2023 09:36:41

Middle Channel:

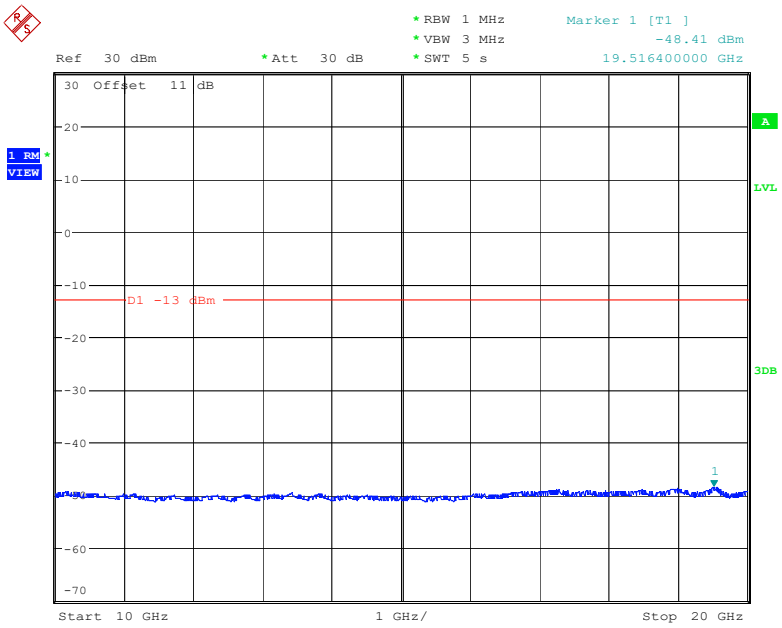
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 8.FEB.2023 09:38:16

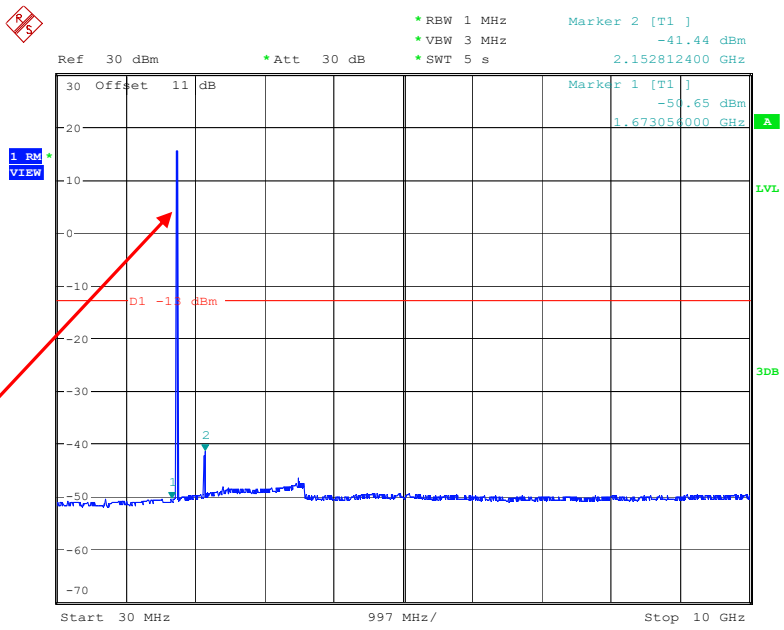
10 GHz – 20GHz (WCDMA Mode)



Date: 8.FEB.2023 09:38:58

High Channel:

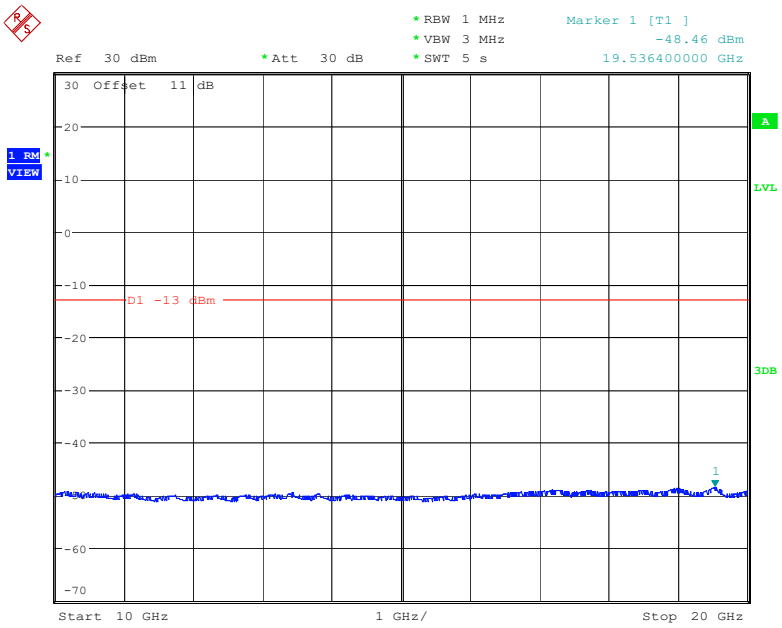
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 8.FEB.2023 09:41:36

10 GHz – 20GHz (WCDMA Mode)



Date: 8.FEB.2023 09:42:17

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

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

Applicable Standard

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

Test Procedure

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

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

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

Test Data

Environmental Conditions

Temperature:	25.5 ℃
Relative Humidity:	52 %
ATM Pressure:	101.0kPa

The testing was performed by Leo Li on 2023-02-05 for above 1GHz.

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

The worst case is as below:

30MHz-10GHz:

Cellular Band (Part 22H)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM850								
Low Channel								
1648.4	-56.80	322	1.7	H	3.5	-53.30	-13	-40.30
1648.4	-55.20	236	1.3	V	3.1	-52.10	-13	-39.10
2472.6	-53.70	261	1.4	H	6.6	-47.10	-13	-34.10
2472.6	-51.70	11	1.7	V	5.8	-45.90	-13	-32.90
3296.8	-50.10	96	2	H	6.4	-43.70	-13	-30.70
3296.8	-48.70	153	2.5	V	5.7	-43.00	-13	-30.00
Middle Channel								
1673.2	-54.50	172	1.2	H	3.8	-50.70	-13	-37.70
1673.2	-54.20	61	1	V	3.1	-51.10	-13	-38.10
2509.8	-53.10	13	2.1	H	6.2	-46.90	-13	-33.90
2509.8	-52.20	246	1.8	V	5.6	-46.60	-13	-33.60
3346.4	-50.10	92	1.5	H	6.6	-43.50	-13	-30.50
3346.4	-48.20	326	1.8	V	5.4	-42.80	-13	-29.80
High Channel								
1697.6	-56.10	327	1.3	H	4.1	-52.00	-13	-39.00
1697.6	-54.10	325	1.9	V	3.1	-51.00	-13	-38.00
2546.4	-51.80	30	2.3	H	6.1	-45.70	-13	-32.70
2546.4	-51.70	19	1.2	V	5.8	-45.90	-13	-32.90
3395.2	-50.00	6	2.1	H	6.2	-43.80	-13	-30.80
3395.2	-47.60	146	2.1	V	5.4	-42.20	-13	-29.20

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								
Low Channel								
1652.8	-56.00	242	2.1	H	3.5	-52.50	-13	-39.50
1652.8	-56.10	103	1.8	V	3.1	-53.00	-13	-40.00
2479.2	-55.90	18	2.2	H	6.6	-49.30	-13	-36.30
2479.2	-53.20	15	1.9	V	5.8	-47.40	-13	-34.40
3305.6	-51.90	291	1.9	H	6.4	-45.50	-13	-32.50
3305.6	-49.90	84	1.1	V	5.7	-44.20	-13	-31.20
Middle Channel								
1673.2	-56.00	100	1.1	H	3.8	-52.20	-13	-39.20
1673.2	-55.50	201	2.4	V	3.1	-52.40	-13	-39.40
2509.8	-54.30	229	2.1	H	6.2	-48.10	-13	-35.10
2509.8	-52.80	38	1.4	V	5.6	-47.20	-13	-34.20
3346.4	-51.10	19	1.9	H	6.6	-44.50	-13	-31.50
3346.4	-50.40	108	1.5	V	5.4	-45.00	-13	-32.00
High Channel								
1693.2	-57.40	324	2.3	H	4.1	-53.30	-13	-40.30
1693.2	-56.50	195	1.8	V	3.1	-53.40	-13	-40.40
2539.8	-54.10	232	1.4	H	6.1	-48.00	-13	-35.00
2539.8	-53.10	230	1.8	V	5.8	-47.30	-13	-34.30
3386.4	-50.70	358	2.0	H	6.2	-44.50	-13	-31.50
3386.4	-50.70	1	1.4	V	5.4	-45.30	-13	-32.30

30MHz-20GHz:

PCS Band (Part 24E)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM 1900								
Low Channel								
3700.4	-48.70	97	1.2	H	8.1	-40.60	-13	-27.60
3700.4	-50.00	231	2.2	V	7.6	-42.40	-13	-29.40
Middle Channel								
3760	-48.80	6	1	H	8.8	-40.00	-13	-27.00
3760	-49.60	0	1.1	V	8	-41.60	-13	-28.60
High Channel								
3819.6	-47.70	341	1.1	H	8.7	-39.00	-13	-26.00
3819.6	-48.50	91	2.5	V	7.9	-40.60	-13	-27.60
WCDMA Band 2								
Low Channel								
3704.8	-52.20	200	1.8	H	8.1	-44.10	-13	-31.10
3704.8	-50.40	332	2.4	V	7.6	-42.80	-13	-29.80
Middle Channel								
3760	-52.90	213	2.3	H	8.8	-44.10	-13	-31.10
3760	-52.00	93	1.7	V	8	-44.00	-13	-31.00
High Channel								
3815.2	-52.40	225	1	H	8.7	-43.70	-13	-30.70
3815.2	-50.50	101	2.4	V	7.9	-42.60	-13	-29.60

30MHz-20GHz:

AWS Band (Part 27E)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 4								
Low Channel								
3424.8	-47.90	139	2	H	6.4	-41.50	-13	-28.50
3424.8	-47.70	177	1.8	V	5.8	-41.90	-13	-28.90
Middle Channel								
3465.2	-50	204	2	H	7	-43.00	-13	-30.00
3465.2	-49.6	220	1.2	V	6.2	-43.40	-13	-30.40
High Channel								
3505.2	-50.20	320	1.2	H	7.8	-42.40	-13	-29.40
3505.2	-49.00	193	1.8	V	6.5	-42.50	-13	-29.50

LTE Band: (Pre-scan all bandwidth/modulation, 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								
1.4MHz bandwidth, QPSK, Low channel								
3701.4	-51.10	137	2.0	H	8.1	-43.00	-13	-30.00
3701.4	-51.20	357	2.3	V	7.6	-43.60	-13	-30.60
1.4MHz bandwidth, QPSK, Middle channel								
3760	-52.20	203	1.5	H	8.8	-43.40	-13	-30.40
3760	-51.20	43	1.8	V	8	-43.20	-13	-30.20
1.4MHz bandwidth, QPSK, High channel								
3818.6	-53.20	130	2.4	H	8.7	-44.50	-13	-31.50
3818.6	-51.10	262	1.6	V	7.9	-43.20	-13	-30.20
LTE Band 4								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, QPSK, Low channel								
3421.4	-48.30	345	1.5	H	6.4	-41.90	-13	-28.90
3421.4	-47.60	44	1.6	V	5.8	-41.80	-13	-28.80
1.4MHz bandwidth, QPSK, Middle channel								
3465	-48.6	93	2.1	H	7	-41.60	-13	-28.60
3465	-49.8	283	1.8	V	6.2	-43.60	-13	-30.60
1.4MHz bandwidth, QPSK, High channel								
3508.6	-49.10	330	2.3	H	7.8	-41.30	-13	-28.30
3508.6	-48.40	149	2.1	V	6.5	-41.90	-13	-28.90

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 5								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, QPSK, Low channel								
1649.4	-55.50	30	2.3	H	3.5	-52.00	-13	-39.00
1649.4	-54.40	288	1.4	V	3.1	-51.30	-13	-38.30
2474.1	-48.30	21	1.9	H	6.6	-41.70	-13	-28.70
2474.1	-44.70	325	2.3	V	5.8	-38.90	-13	-25.90
3298.8	-48.40	128	1.9	H	6.4	-42.00	-13	-29.00
3298.8	-46.70	295	2.4	V	5.7	-41.00	-13	-28.00
1.4MHz bandwidth, QPSK, Middle channel								
1673.0	-54.40	249	1.5	H	3.8	-50.60	-13	-37.60
1673.0	-53.50	288	2.4	V	3.1	-50.40	-13	-37.40
2509.5	-47.70	19	1.7	H	6.2	-41.50	-13	-28.50
2509.5	-45.70	81	2.4	V	5.6	-40.10	-13	-27.10
3346.0	-48.70	118	1.8	H	6.6	-42.10	-13	-29.10
3346.0	-47.00	83	1.2	V	5.4	-41.60	-13	-28.60
1.4MHz bandwidth, QPSK, High channel								
1696.6	-54.30	231	1.1	H	4.1	-50.20	-13	-37.20
1696.6	-52.40	256	1.3	V	3.1	-49.30	-13	-36.30
2544.9	-49.20	189	2.2	H	6.1	-43.10	-13	-30.10
2544.9	-44.70	70	1.6	V	5.8	-38.90	-13	-25.90
3393.2	-48.70	150	1.3	H	6.2	-42.50	-13	-29.50
3393.2	-47.90	50	2.1	V	5.4	-42.50	-13	-29.50

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 7								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, QPSK, Low channel								
5005	-53.30	180	2.4	H	10.8	-42.50	-25	-17.50
5005	-52.80	308	2	V	10.2	-42.60	-25	-17.60
5MHz bandwidth, QPSK, Middle channel								
5070	-53.20	291	1	H	11.1	-42.10	-25	-17.10
5070	-53.10	183	2.3	V	10.8	-42.30	-25	-17.30
5MHz bandwidth, QPSK, High channel								
5135	-53.30	351	1.6	H	11.3	-42.00	-25	-17.00
5135	-52.90	244	1	V	10.8	-42.10	-25	-17.10
LTE Band 38								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, QPSK, Low channel								
5145	-53.6	144	1.8	H	11.4	-42.20	-25	-17.20
5145	-53.6	162	1.2	V	10.7	-42.90	-25	-17.90
5MHz bandwidth, QPSK, Middle channel								
5190	-52.2	283	1.3	H	10.5	-41.70	-25	-16.70
5190	-51.6	47	2.4	V	10	-41.60	-25	-16.60
5MHz bandwidth, QPSK, High channel								
5235	-52	103	2	H	9.7	-42.30	-25	-17.30
5235	-51	340	2.4	V	9.2	-41.80	-25	-16.80
LTE Band 41								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, QPSK, Low channel								
5075	-51.7	154	1.1	H	10.8	-40.90	-25	-15.90
5075	-50.6	114	1.9	V	10.1	-40.50	-25	-15.50
5MHz bandwidth, QPSK, Middle channel								
5190	-51	165	1.1	H	10.5	-40.50	-25	-15.50
5190	-50.1	322	1.3	V	10	-40.10	-25	-15.10
5MHz bandwidth, QPSK, High channel								
5305	-50.7	336	2.2	H	9.5	-41.20	-25	-16.20
5305	-50.4	143	1.4	V	8.9	-41.50	-25	-16.50

Note:
Absolute Level = Reading Level + Substituted Factor
Substituted Factor contains: Substituted 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.

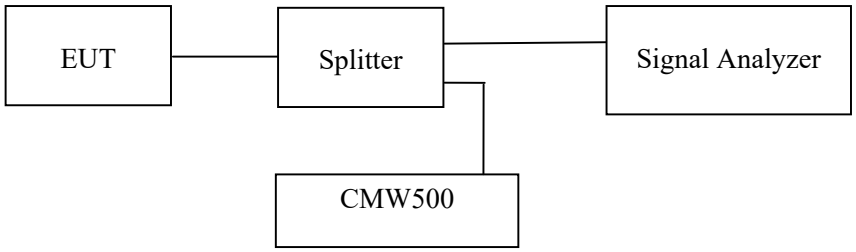
According to FCC §27.53 (h) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to FCC §27.53 (m), 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 that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz.

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



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:	27.2 ℃
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

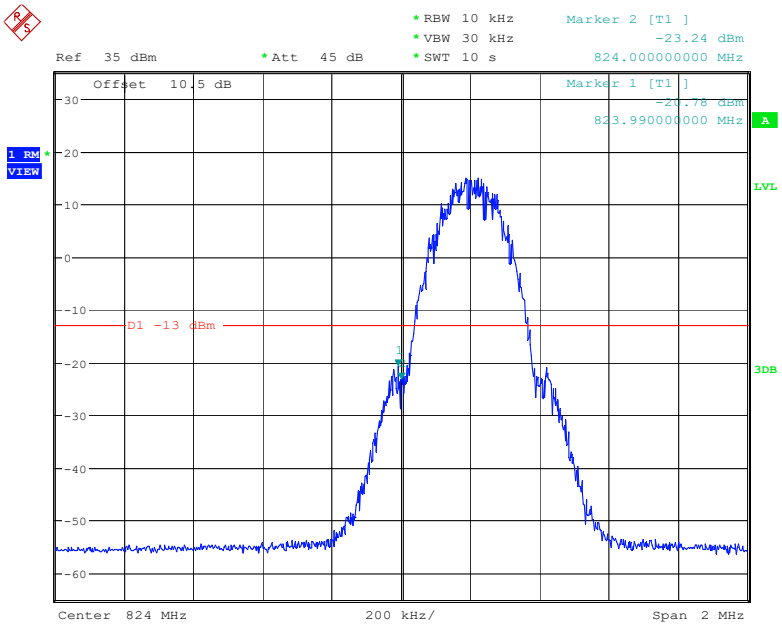
The testing was performed by Jesse from 2023-02-04 to 2023-02-13.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

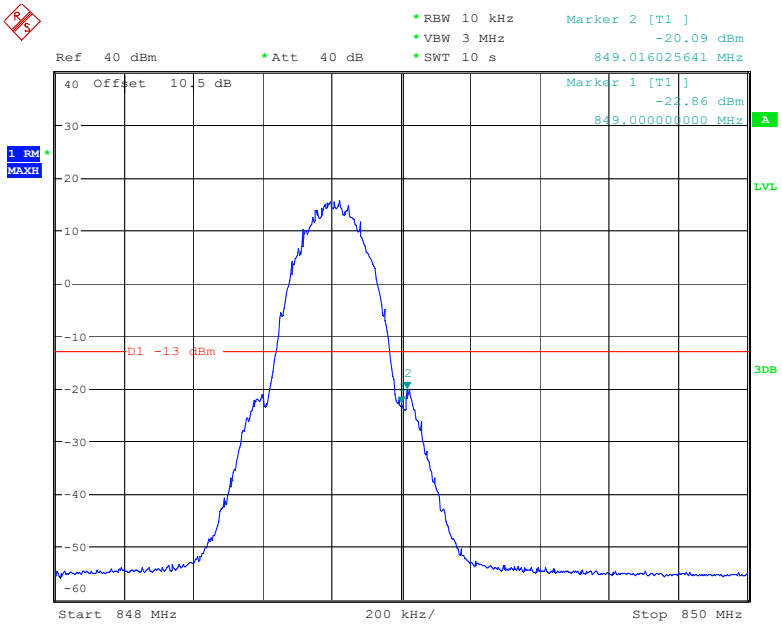
Please refer to the following plots.

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



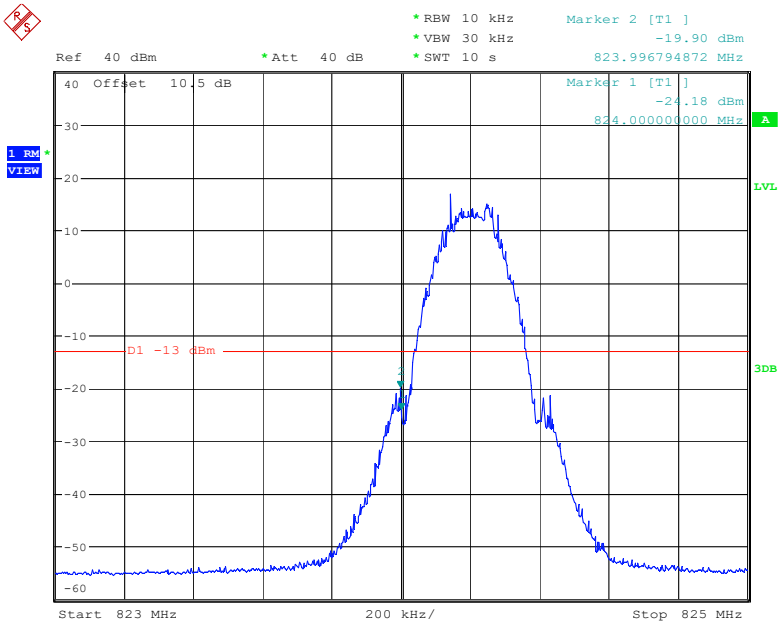
Date: 10.FEB.2023 11:26:27

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



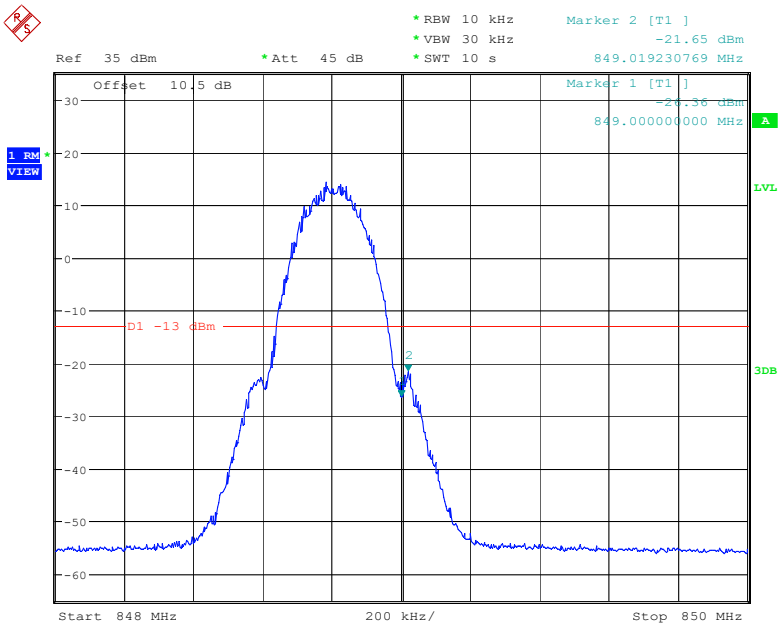
Date: 13.FEB.2023 16:33:16

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



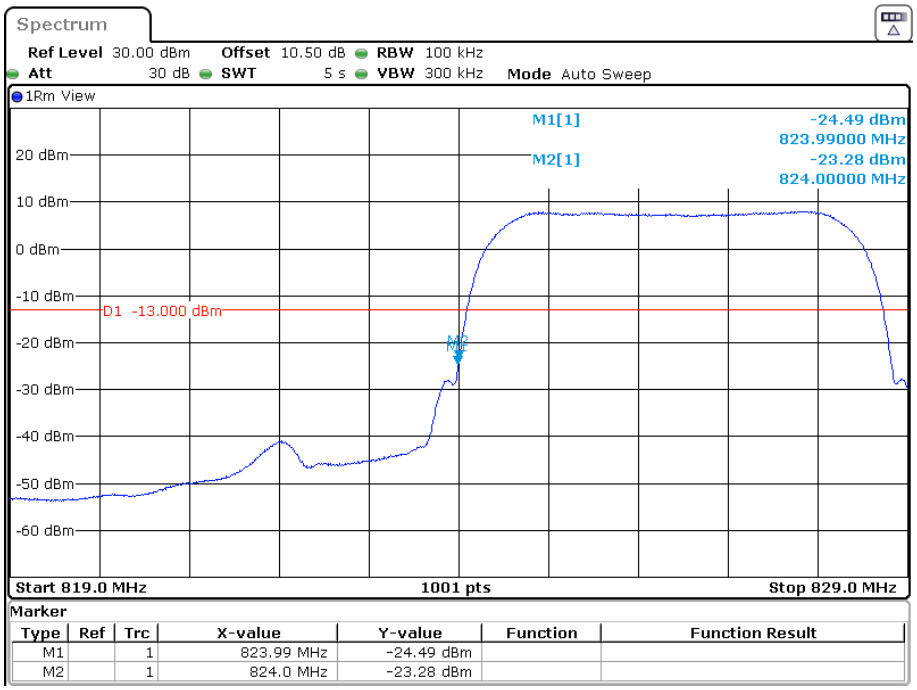
Date: 10.FEB.2023 14:06:59

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



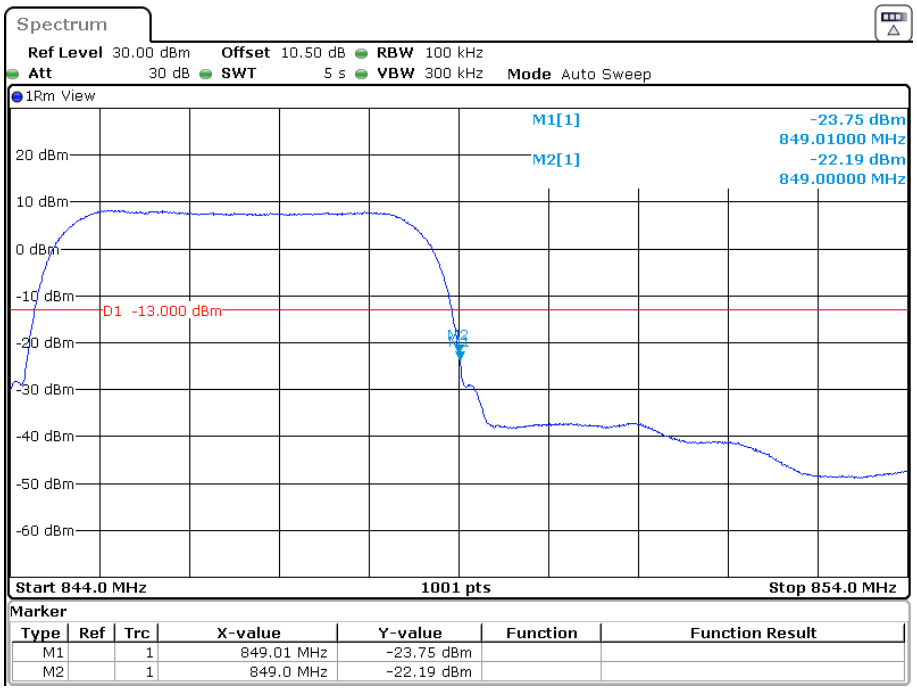
Date: 10.FEB.2023 13:59:04

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



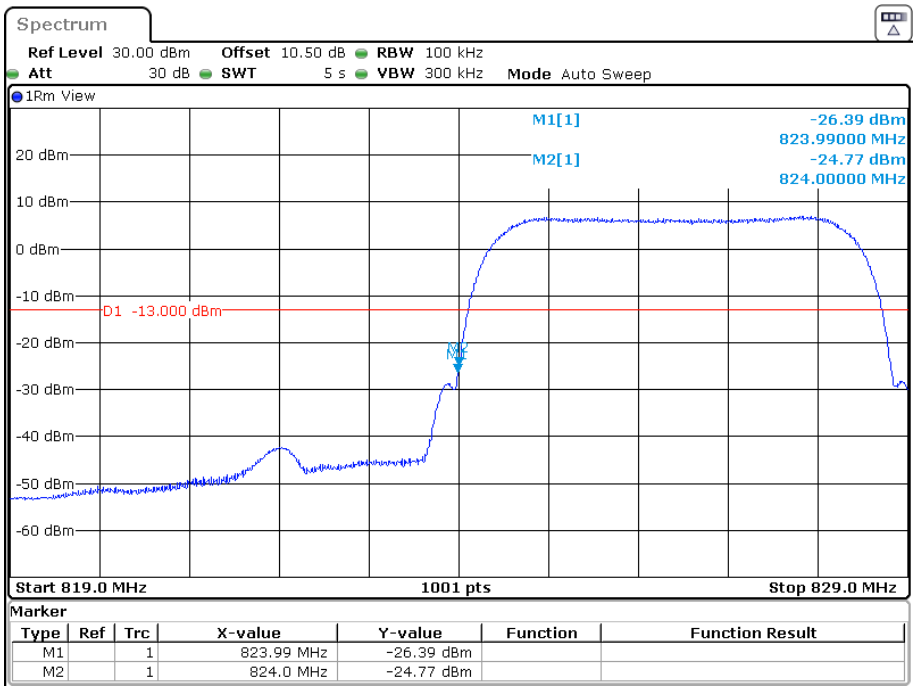
Date: 6.FEB.2023 10:45:33

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



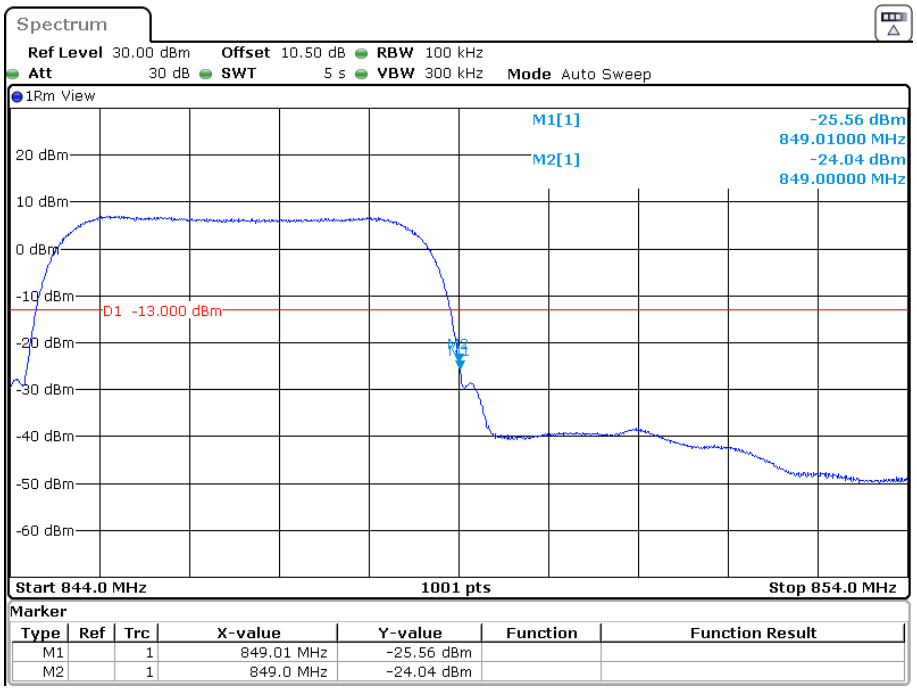
Date: 6.FEB.2023 10:56:30

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



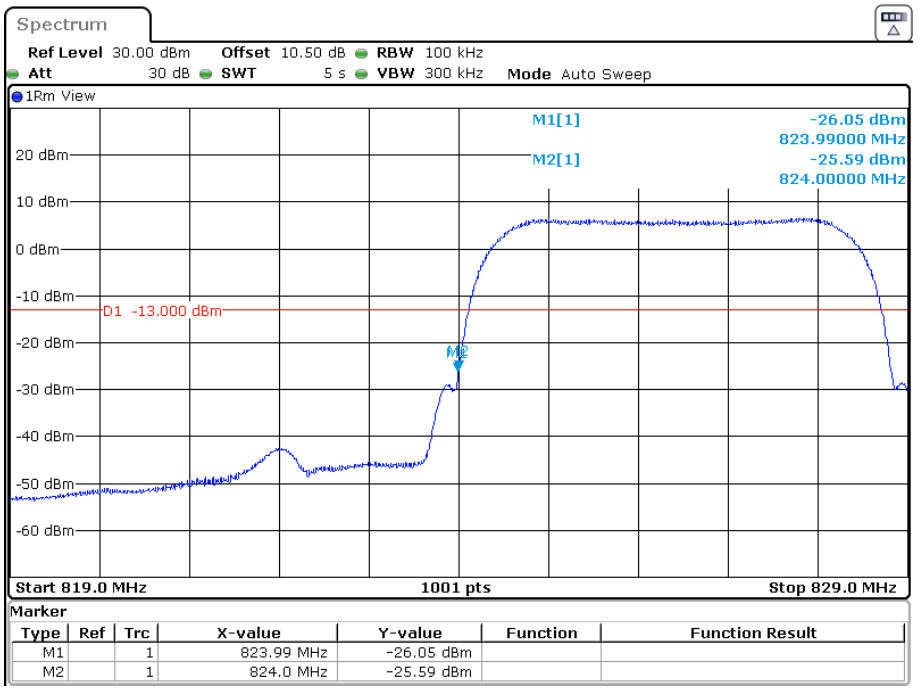
Date: 6.FEB.2023 11:06:37

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



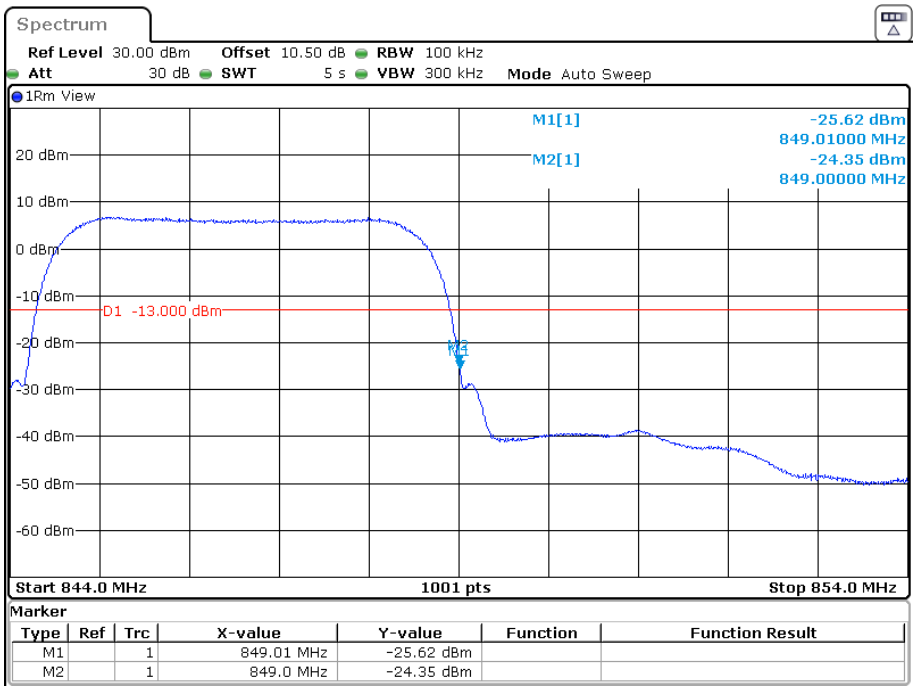
Date: 6.FEB.2023 11:12:55

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



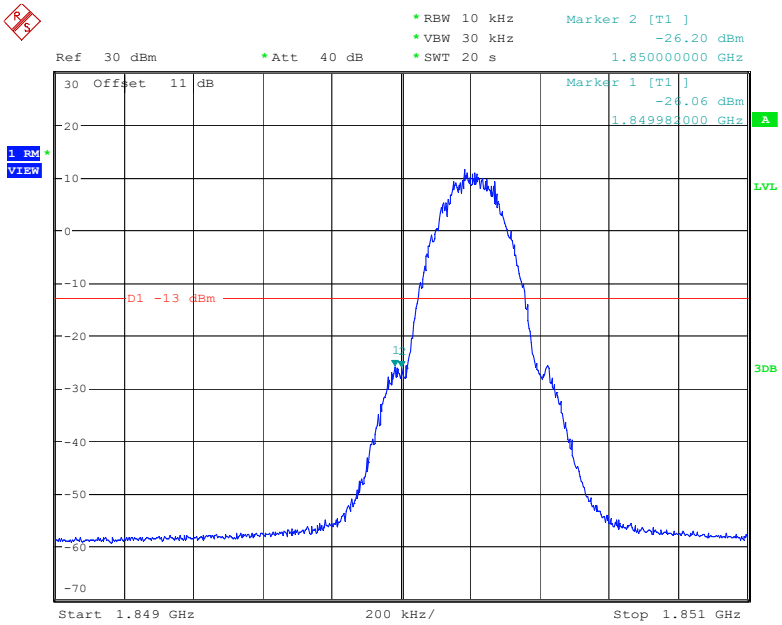
Date: 6.FEB.2023 11:18:22

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



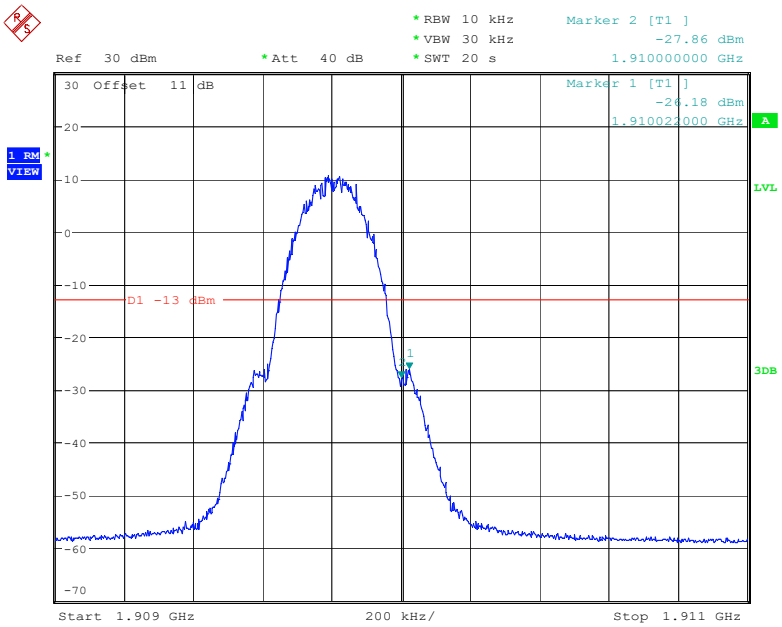
Date: 6.FEB.2023 11:51:35

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



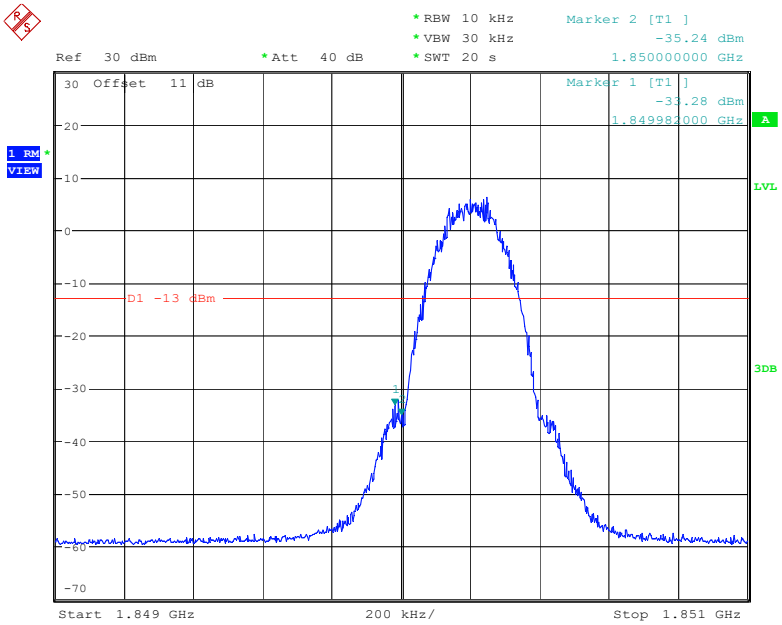
Date: 10.FEB.2023 13:39:17

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



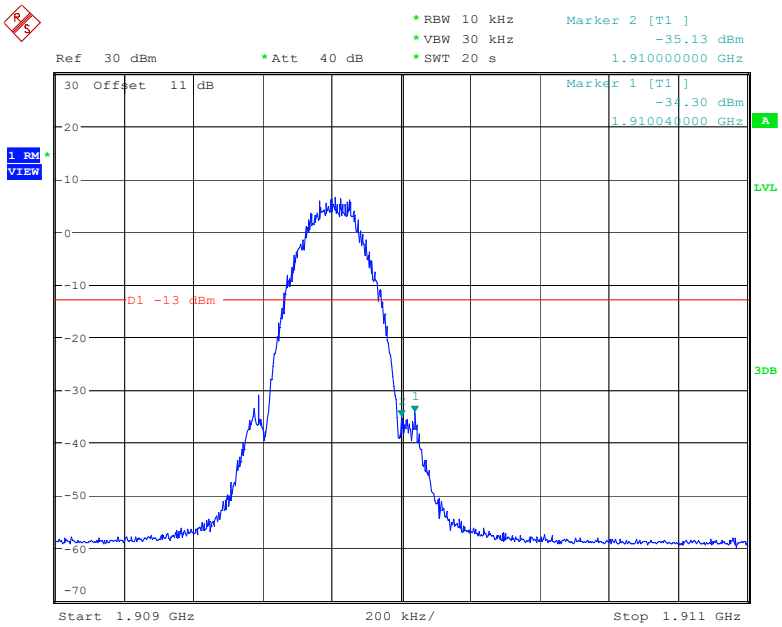
Date: 10.FEB.2023 13:49:51

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



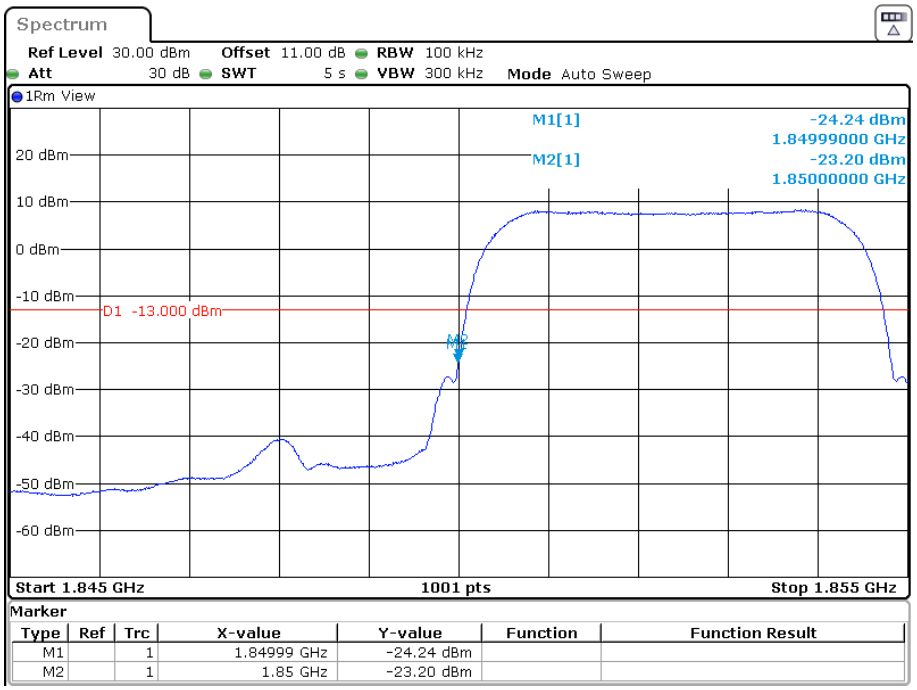
Date: 10.FEB.2023 13:19:10

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



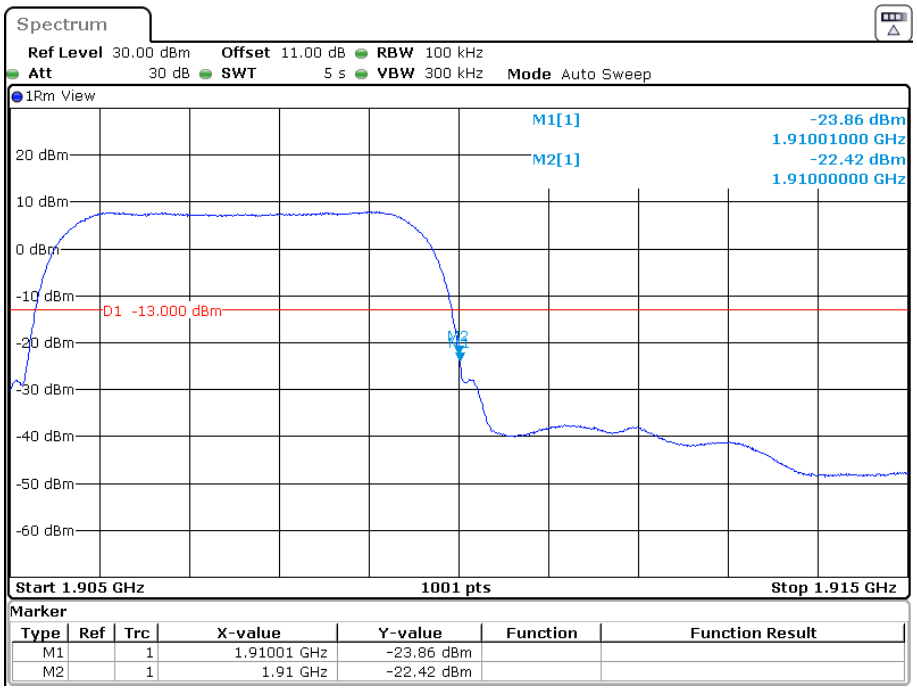
Date: 10.FEB.2023 13:29:06

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



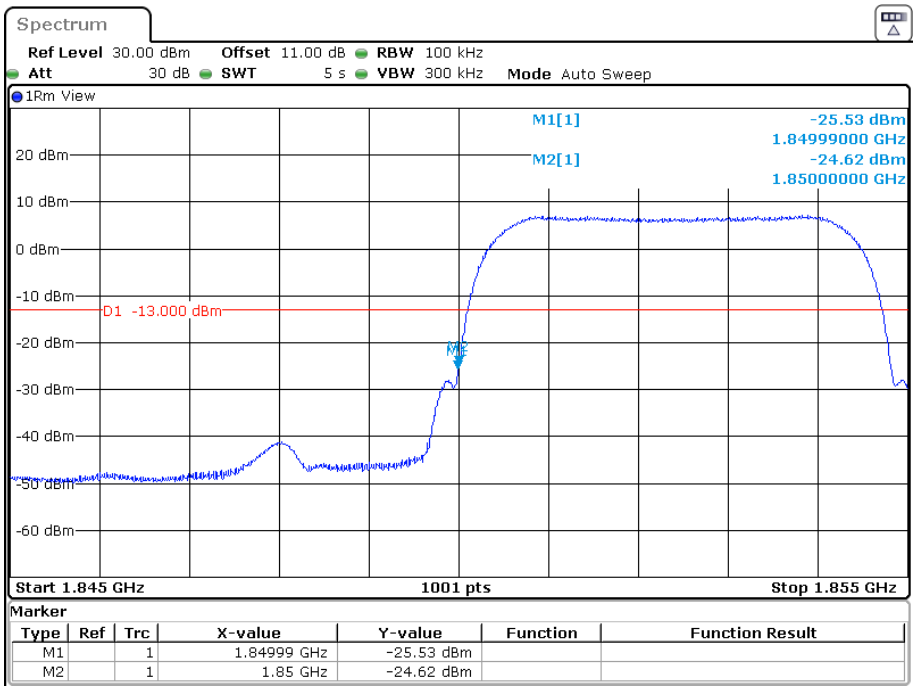
Date: 6.FEB.2023 09:58:53

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



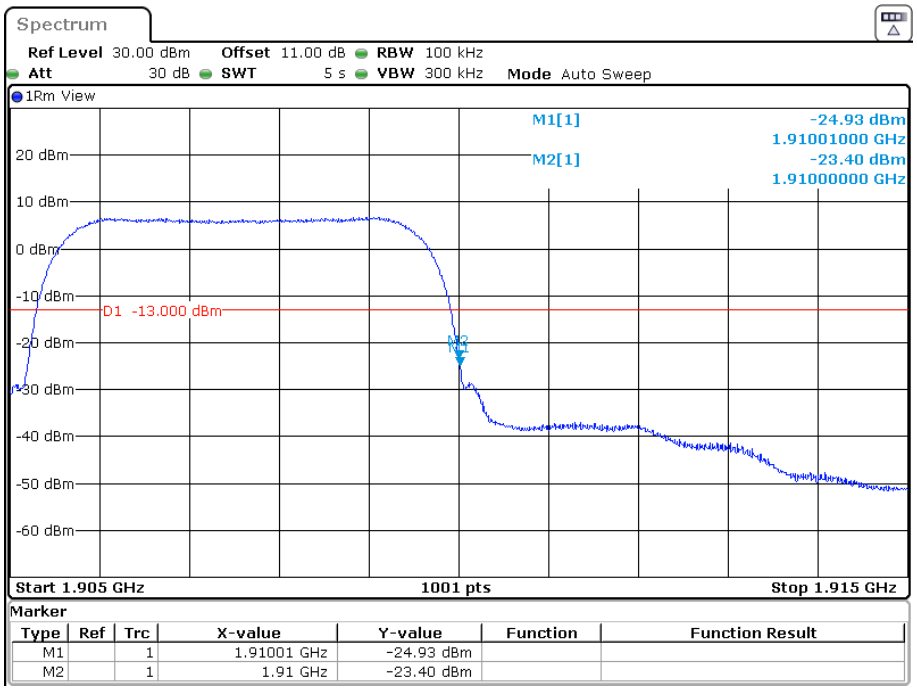
Date: 6.FEB.2023 10:08:20

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



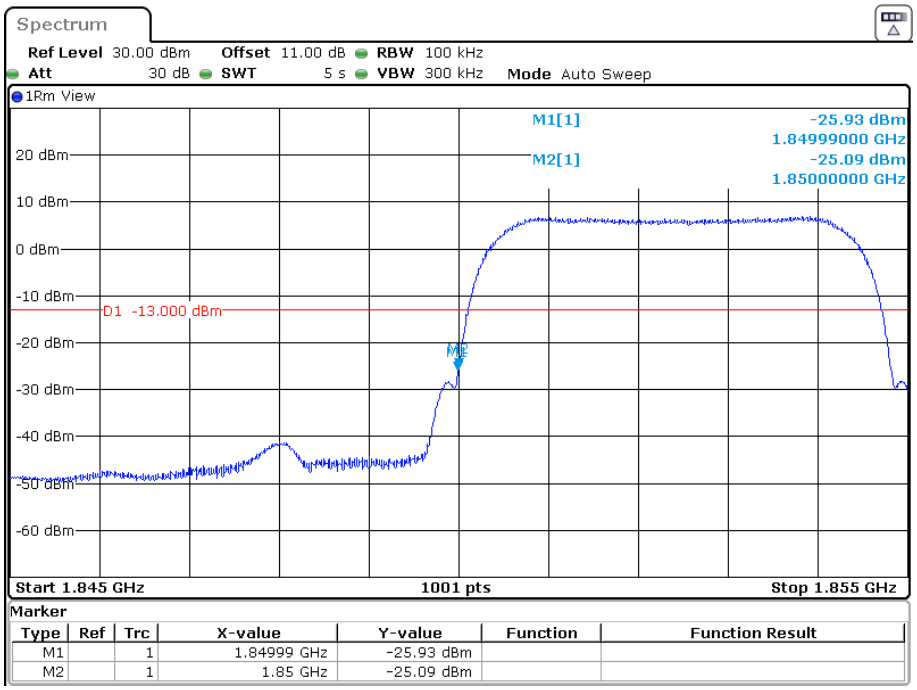
Date: 6.FEB.2023 10:14:09

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



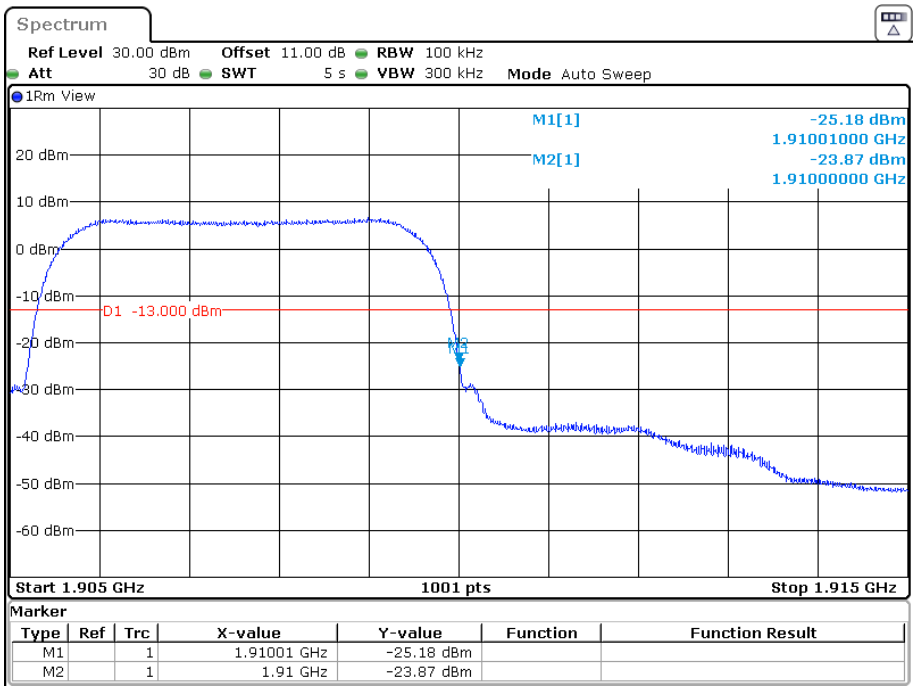
Date: 6.FEB.2023 10:22:02

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



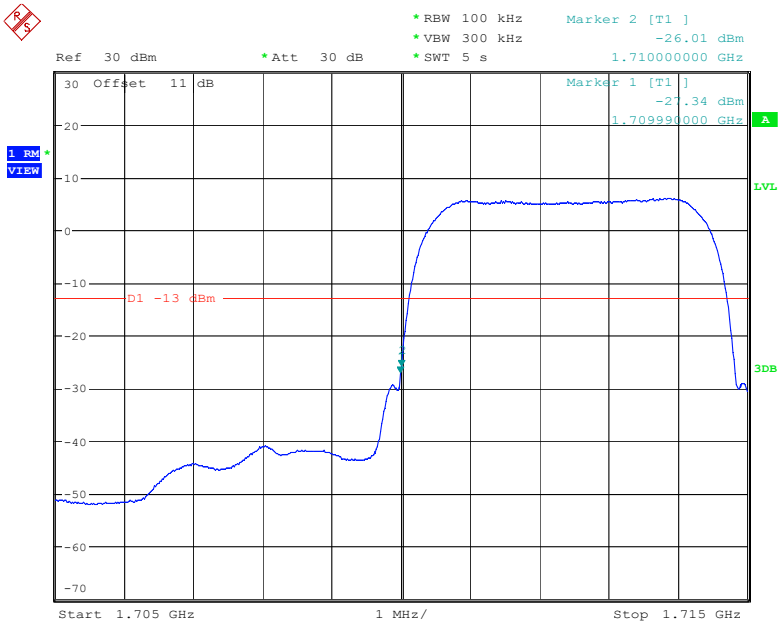
Date: 6.FEB.2023 10:28:18

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



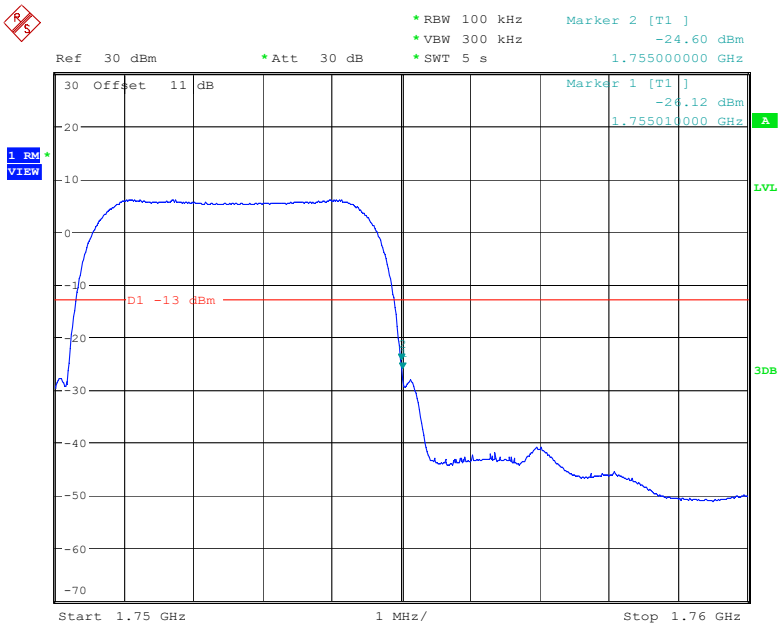
Date: 6.FEB.2023 10:35:56

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



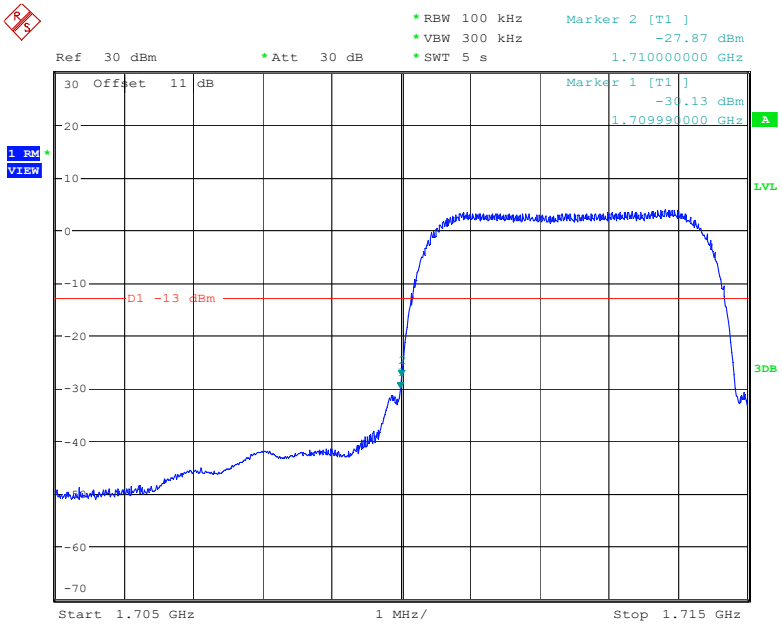
Date: 6.FEB.2023 18:28:01

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



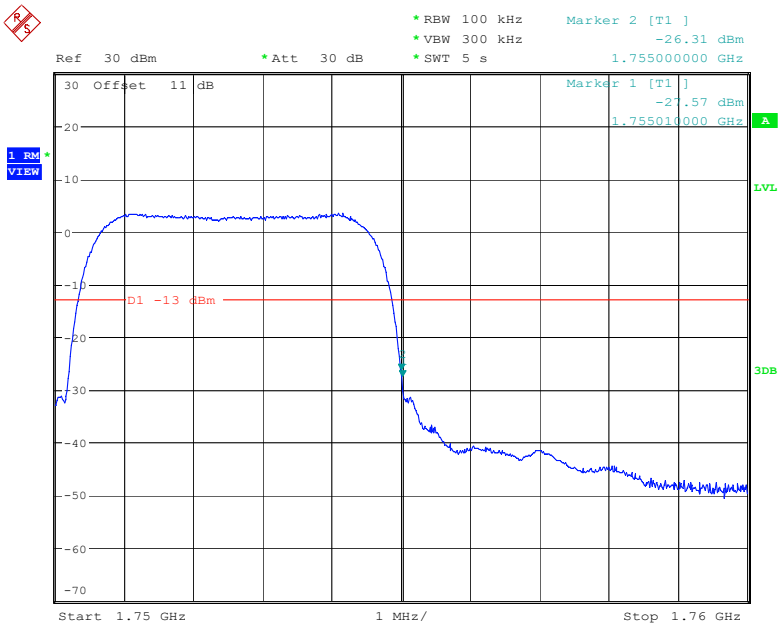
Date: 6.FEB.2023 18:36:28

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



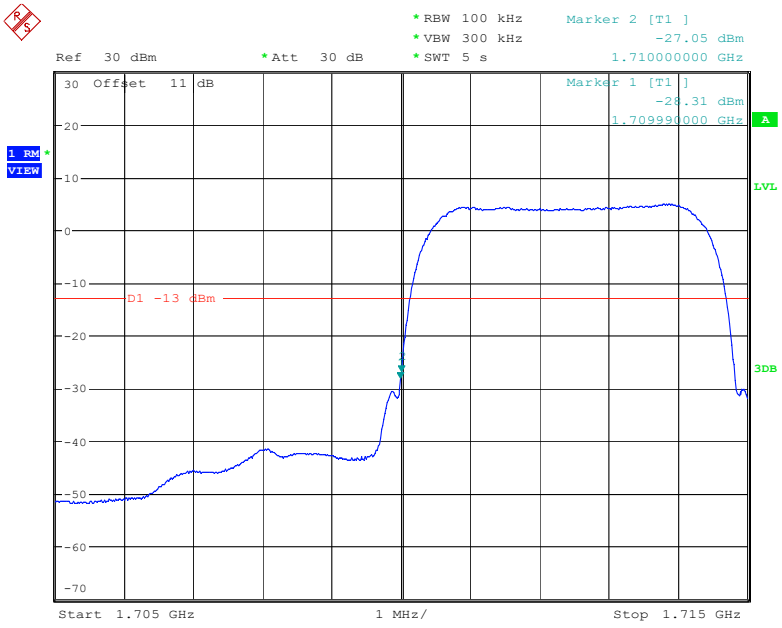
Date: 6.FEB.2023 18:42:05

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



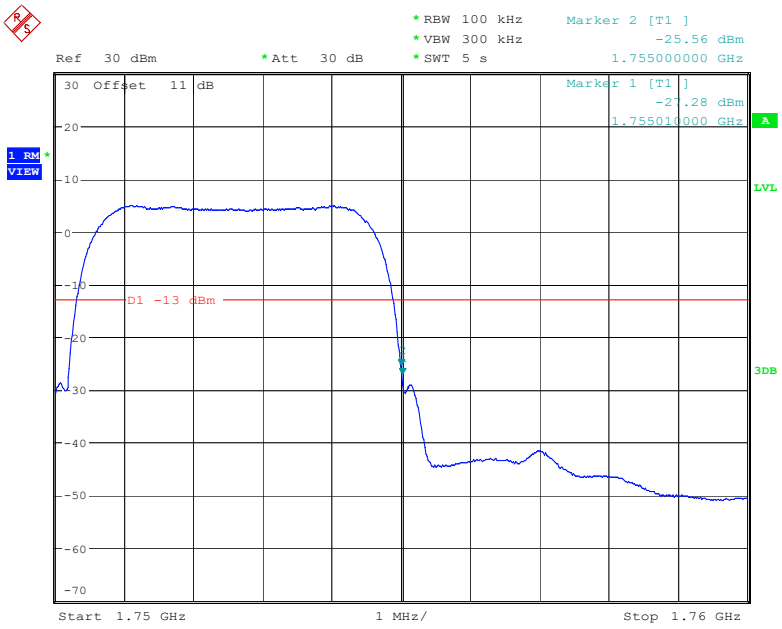
Date: 6.FEB.2023 18:49:53

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



Date: 6.FEB.2023 18:55:13

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



Date: 6.FEB.2023 19:04:47

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

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

Applicable Standard

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

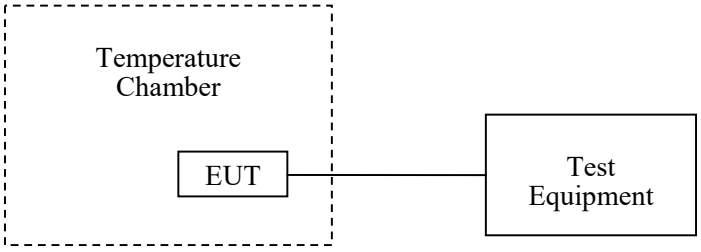
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external 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:	27.2 ℃
Relative Humidity:	56.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2023-02-04 to 2023-02-11.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Cellular Band (Part 22H)
GSM Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	7	0.0084	2.5
-20		6	0.0072	2.5
-10		-5	-0.0060	2.5
0		3	0.0036	2.5
10		-2	-0.0024	2.5
20		-18	-0.0216	2.5
30		3	0.0036	2.5
40		4	0.0048	2.5
50		-5	-0.0060	2.5
20	L.V.	8	0.0096	2.5
	H.V.	6	0.0072	2.5

EDGE Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	3	0.0036	2.5
-20		4	0.0048	2.5
-10		6	0.0072	2.5
0		8	0.0096	2.5
10		-9	-0.0108	2.5
20		-14	-0.0167	2.5
30		8	0.0096	2.5
40		7	0.0084	2.5
50		6	0.0072	2.5
20	L.V.	5	0.0060	2.5
	H.V.	-3	-0.0040	2.5

WCDMA Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	9	0.0108	2.5
-20		12	0.0143	2.5
-10		6	0.0072	2.5
0		7	0.0084	2.5
10		3	0.0036	2.5
20		-5	-0.0060	2.5
30		11	0.0131	2.5
40		-8	-0.0096	2.5
50		-6	-0.0072	2.5
20	L.V.	4	0.0048	2.5
	H.V.	8	0.0096	2.5

PCS Band (Part 24E)

GSM Mode

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.0152	1909.9734	1850	1910
-20		1850.0136	1909.9745	1850	1910
-10		1850.0148	1909.9716	1850	1910
0		1850.0122	1909.9732	1850	1910
10		1850.0135	1909.9726	1850	1910
20		1850.0125	1909.9747	1850	1910
30		1850.0146	1909.9725	1850	1910
40		1850.0125	1909.9736	1850	1910
50		1850.0133	1909.9744	1850	1910
20	L.V.	1850.0132	1909.9728	1850	1910
	H.V.	1850.0141	1909.9737	1850	1910

EDGE Mode

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.0143	1909.9726	1850	1910
-20		1850.0166	1909.9742	1850	1910
-10		1850.0136	1909.9714	1850	1910
0		1850.0142	1909.9736	1850	1910
10		1850.0134	1909.9735	1850	1910
20		1850.0126	1909.9727	1850	1910
30		1850.0134	1909.9723	1850	1910
40		1850.0117	1909.9732	1850	1910
50		1850.0116	1909.9726	1850	1910
20	L.V.	1850.0122	1909.9722	1850	1910
	H.V.	1850.0134	1909.9735	1850	1910

WCDMA Mode

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.0146	1909.9736	1850	1910
-20		1850.0162	1909.9725	1850	1910
-10		1850.0134	1909.9716	1850	1910
0		1850.0143	1909.9733	1850	1910
10		1850.0135	1909.9734	1850	1910
20		1850.0124	1909.9725	1850	1910
30		1850.0145	1909.9716	1850	1910
40		1850.0113	1909.9734	1850	1910
50		1850.0116	1909.9723	1850	1910
20	L.V.	1850.0124	1909.9715	1850	1910
	H.V.	1850.0135	1909.9724	1850	1910

AWS Band (Part 27)

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1710.0163	1754.9736	1710	1755
-20		1710.0156	1754.9725	1710	1755
-10		1710.0157	1754.9733	1710	1755
0		1710.0143	1754.9734	1710	1755
10		1710.0134	1754.9745	1710	1755
20		1710.0123	1754.9722	1710	1755
30		1710.0132	1754.9723	1710	1755
40		1710.0124	1754.9733	1710	1755
50		1710.0113	1754.9734	1710	1755
20	L.V.	1710.0136	1754.9726	1710	1755
	H.V.	1710.0145	1754.9735	1710	1755

QPSK:
Band 2:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1850.1143	1909.8722	1850	1910
-20		1850.1155	1909.8735	1850	1910
-10		1850.1126	1909.8734	1850	1910
0		1850.1152	1909.8723	1850	1910
10		1850.1134	1909.8738	1850	1910
20		1850.1143	1909.8745	1850	1910
30		1850.1132	1909.8756	1850	1910
40		1850.1125	1909.8735	1850	1910
50		1850.1123	1909.8746	1850	1910
20	L.V.	1850.1136	1909.8727	1850	1910
	H.V.	1850.1043	1909.8746	1850	1910

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1710.1165	1754.8712	1710	1755
-20		1710.1154	1754.8736	1710	1755
-10		1710.1196	1754.8727	1710	1755
0		1710.1153	1754.8723	1710	1755
10		1710.1125	1754.8756	1710	1755
20		1710.1144	1754.8744	1710	1755
30		1710.1133	1754.8755	1710	1755
40		1710.1128	1754.8733	1710	1755
50		1710.1123	1754.8741	1710	1755
20	L.V.	1710.1134	1754.8732	1710	1755
	H.V.	1710.1046	1754.8745	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o =836.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	-3.13	-0.0037	2.5
-20		8.04	0.0096	2.5
-10		-5.41	-0.0065	2.5
0		-9.55	-0.0114	2.5
10		-5.35	-0.0064	2.5
20		8.31	0.0099	2.5
30		6.43	0.0077	2.5
40		7.60	0.0091	2.5
50		6.10	0.0073	2.5
20	L.V.	-7.40	-0.0088	2.5
	H.V.	9.58	0.0115	2.5

Band 7:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2500.1733	2569.8851	2500	2570
-20		2500.1741	2569.8935	2500	2570
-10		2500.1752	2569.8852	2500	2570
0		2500.1781	2569.8762	2500	2570
10		2500.1935	2569.8823	2500	2570
20		2500.1874	2569.8424	2500	2570
30		2500.1752	2569.8335	2500	2570
40		2500.1653	2569.8924	2500	2570
50		2500.1542	2569.8873	2500	2570
20	L.V.	2500.1522	2569.8834	2500	2570
	H.V.	2500.1436	2569.8742	2500	2570

Band 38:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2570.8371	2619.1828	2570	2620
-20		2570.8066	2619.1723	2570	2620
-10		2570.8243	2619.1634	2570	2620
0		2570.8155	2619.1553	2570	2620
10		2570.8053	2619.1427	2570	2620
20		2570.8932	2619.1326	2570	2620
30		2570.8831	2619.1227	2570	2620
40		2570.8726	2619.1122	2570	2620
50		2570.8617	2619.1327	2570	2620
20	L.V.	2570.8523	2619.1256	2570	2620
	H.V.	2570.8822	2619.1123	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2535.8715	2654.1876	2535	2655
-20		2535.8671	2654.1852	2535	2655
-10		2535.8565	2654.1763	2535	2655
0		2535.8428	2654.1651	2535	2655
10		2535.8321	2654.1553	2535	2655
20		2535.8223	2654.1435	2535	2655
30		2535.8152	2654.1353	2535	2655
40		2535.8152	2654.1232	2535	2655
50		2535.8933	2654.1064	2535	2655
20	L.V.	2535.8623	2654.1036	2535	2655
	H.V.	2535.8527	2654.1016	2535	2655

16QAM:

Band 2:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1850.1164	1909.8737	1850	1910
-20		1850.1154	1909.8732	1850	1910
-10		1850.1195	1909.8725	1850	1910
0		1850.1156	1909.8724	1850	1910
10		1850.1145	1909.8754	1850	1910
20		1850.1156	1909.8743	1850	1910
30		1850.1134	1909.8754	1850	1910
40		1850.1126	1909.8735	1850	1910
50		1850.1124	1909.8743	1850	1910
20	L.V.	1850.1137	1909.8734	1850	1910
	H.V.	1850.1142	1909.8743	1850	1910

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1710.2931	1754.7673	1710	1755
-20		1710.2952	1754.7564	1710	1755
-10		1710.2751	1754.7676	1710	1755
0		1710.2652	1754.7453	1710	1755
10		1710.2632	1754.7434	1710	1755
20		1710.2644	1754.7623	1710	1755
30		1710.2573	1754.7622	1710	1755
40		1710.2654	1754.7659	1710	1755
50		1710.2617	1754.7751	1710	1755
20	L.V.	1710.2621	1754.7533	1710	1755
	H.V.	1710.2712	1754.7523	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o =836.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	-4.66	-0.0056	2.5
-20		5.11	0.0061	2.5
-10		-7.28	-0.0087	2.5
0		-7.82	-0.0093	2.5
10		-8.80	-0.0105	2.5
20		7.89	0.0094	2.5
30		9.60	0.0115	2.5
40		6.88	0.0082	2.5
50		-7.47	-0.0089	2.5
20	L.V.	6.20	0.0074	2.5
	H.V.	6.53	0.0078	2.5

Band 7:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2500.1454	2569.8372	2500	2570
-20		2500.1425	2569.8552	2500	2570
-10		2500.1646	2569.8423	2500	2570
0		2500.1257	2569.8534	2500	2570
10		2500.1324	2569.8287	2500	2570
20		2500.1232	2569.7826	2500	2570
30		2500.1356	2569.7831	2500	2570
40		2500.1227	2569.8422	2500	2570
50		2500.1218	2569.8451	2500	2570
20	L.V.	2500.1237	2569.8357	2500	2570
	H.V.	2500.1146	2569.8260	2500	2570

Band 38:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2570.1872	2619.8852	2570	2620
-20		2570.1925	2619.8762	2570	2620
-10		2570.1823	2619.8693	2570	2620
0		2570.1734	2619.8552	2570	2620
10		2570.1633	2619.8491	2570	2620
20		2570.1527	2619.8345	2570	2620
30		2570.1411	2619.8291	2570	2620
40		2570.1375	2619.8116	2570	2620
50		2570.1284	2619.8125	2570	2620
20	L.V.	2570.1173	2619.8786	2570	2620
	H.V.	2570.1132	2619.8647	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2535.1435	2654.8654	2535	2655
-20		2535.1447	2654.8587	2535	2655
-10		2535.1372	2654.8483	2535	2655
0		2535.1266	2654.8376	2535	2655
10		2535.1132	2654.8287	2535	2655
20		2535.1175	2654.8182	2535	2655
30		2535.1982	2654.8582	2535	2655
40		2535.1886	2654.8983	2535	2655
50		2535.1821	2654.8884	2535	2655
20	L.V.	2535.1613	2654.8767	2535	2655
	H.V.	2535.1574	2654.8345	2535	2655

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