



TESTREPORT

Applicant Name : LAVA International Limited
Address : A-56, Sector 64, Noida Uttar Pradesh (U.P.) 201301, India
Report Number : SZNS220829-39091E-RF-00D
FCC ID: 2ARTX-Z21PRO

Test Standard (s)

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

Sample Description

Product Type: Mobile Phone
Model No.: LZG404
Multiple Model(s) No.: LZX405,YUVA
Trade Mark: LAVA
Date Received: 2022/08/29
Report Date: 2022/11/08

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

Prepared and Checked By:

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EMC Engineer

Approved By:

Candy Li

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

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Version 2: 2021-11-09

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FCC -2G,3G,4G

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mobile Phone
Tested Model	LZG404
Multiple Models	LZX405,YUVA (model difference see product declaration letter of similarity)
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 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 66: 1710-1780MHz(TX); 2110-2180MHz(RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band5/LTE Band 5: -1.5dBi PCS1900/WCDMA Band 2/ LTE Band 2: 0.3dBi WCDMA Band 4/ LTE Band 4: 0.3dBi LTE Band 7: 0.8dBi; LTE Band 12:-1.6dBi LTE Band 17:-1.6dBi, LTE Band 66: 0.6dBi (provided by the applicant)
Voltage Range	DC3.85V from battery or DC5V from adapter
Sample serial number	SZNS220829-39091E-RF-S1 for Conducted and Radiation Emissions SZNS220829-39091E-RF-S2 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter information	Model: TOP-804-050200 Input: AC 100-240V, 50/60Hz, 0.3A Max Output: DC 5.0V, 2000mA
Extreme condition*	L.V.: Low Voltage 3.5V _{DC} N.V.: Normal Voltage 3.85V _{DC} H.V.: High Voltage 4.4V _{DC} (provided by the applicant)

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, and 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		±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 (ISED), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.4	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 B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE B17	5	706.5	710	713.5
	10	709	710	711
LTE B66	1.4	1710.7	1745	1779.3
	3	1711.5	1745	1778.5
	5	1712.5	1745	1777.5
	10	1715	1745	1775
	15	1717.5	1745	1772.5
	20	1720	1745	1770

Equipment Modifications

No modification was made to the EUT.

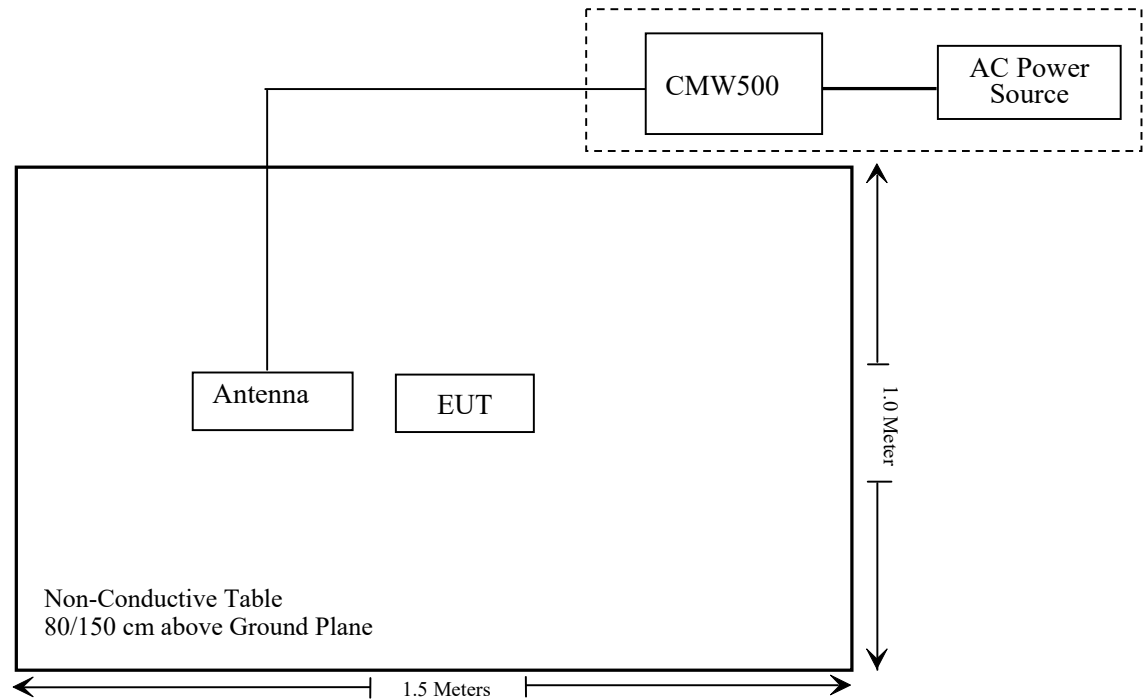
Support Equipment List and Details

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

Support Cable Description

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

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 ,§2.1093	RF Exposure (SAR)	Compliant*
§2.1046; § 22.913 (a); § 24.232 (c); §27.50(c) (d) (h);	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
§ 2.1051; §22.917 (a); § 24.238 (a); §27.53;	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53(g) (h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Note: * Please refer to SAR report number: SZNS220829-39091E-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2021/11/11	2022/11/10
Radiated Emission Test Software: e3 19821b (V9)					
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.16	N650	2021/12/14	2022/12/13
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-024-1)	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-025-1)	2020/01/05	2023/01/04
Wainwright	High Pass Filter	WHKX3.6/18 G-10SS	5	2021/12/14	2022/12/13
CD	High Pass Filter	HPM-1.2/18G -60	110	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.16	N200	2021/12/14	2022/12/13
Agilent	Signal Generator	N5183A	MY51040755	2021/12/13	2022/12/12

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
SPECTRUM ANALYZER	Rohde & Schwarz	FSU26	200982	2022/07/06	2023/07/05
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2021/12/13	2022/12/12
WEINSCHEL	10dB Attenuator	5324	AU 3842	2021/12/14	2022/12/13
Mini-Circuits	Power Splitter	DC-18000MH Z	SF10944151S	2021/12/14	2022/12/13
Gongwen	Temp. & Humid. Chamber	HSD-500	109	2021/10/14	2022/10/13
Fluke	Multi Meter	45	7664009	2021/12/14	2022/12/13
Manson	DC Power Source	KPS-6604	ATCS-205	NCR	NCR
Unknown	RF Coaxial Cable	No.33	RF-03	Each time	

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: SZNS220829-39091E-SA..

FCC§2.1047 - MODULATION CHARACTERISTIC

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

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

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

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

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

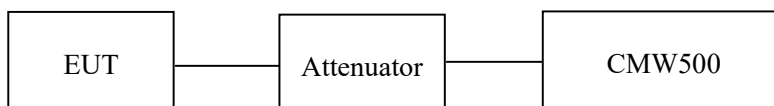
According to §27.50(c), Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP. And Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

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

Test Procedure*Conducted method:*

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



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

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	60%
ATM Pressure:	101.0 kPa

The testing was performed by Andy Yu from 2022-09-17 to 2022-10-08.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	32.42	28.77	38.45
	190	836.6	32.37	28.72	38.45
	251	848.8	32.16	28.51	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	32.05	31.22	29.48	28.42	28.40	27.57	25.83	24.77	38.45
	190	836.6	31.99	31.18	29.42	28.39	28.34	27.53	25.77	24.74	38.45
	251	848.8	31.82	30.99	29.26	28.19	28.17	27.34	25.61	24.54	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EDGE	128	824.2	26.71	25.29	22.93	21.67	23.06	21.64	19.28	18.02	38.45
	190	836.6	26.99	25.50	23.32	21.64	23.34	21.85	19.67	17.99	38.45
	251	848.8	26.83	25.67	23.50	22.09	23.18	22.02	19.85	18.44	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		21.75	21.81	21.70	18.10	18.16	18.05
	HSDPA	1	20.64	20.71	20.60	16.99	17.06	16.95
		2	20.58	20.58	20.54	16.93	16.93	16.89
		3	20.63	20.64	20.53	16.98	16.99	16.88
		4	20.39	20.77	20.58	16.74	17.12	16.93
	HSUPA	1	20.50	20.56	20.42	16.85	16.91	16.77
		2	20.46	20.53	20.43	16.81	16.88	16.78
		3	20.44	20.39	20.55	16.79	16.74	16.90
		4	20.52	20.44	20.51	16.87	16.79	16.86
		5	20.53	20.41	20.46	16.88	16.76	16.81
	HSPA+	1	20.44	20.57	20.44	16.79	16.92	16.79

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

For GSM850 / WCDMA Band5: Antenna Gain = -1.5dBi = -3.65dBd (0dBd=2.15dBd)

Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	30.42	30.72	33
	661	1880.0	30.36	30.66	33
	810	1909.8	30.28	30.58	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	30.20	29.68	27.96	26.76	30.50	29.98	28.26	27.06	33
	661	1880.0	30.06	29.20	27.44	26.41	30.36	29.50	27.74	26.71	33
	810	1909.8	30.25	29.40	27.63	26.42	30.55	29.70	27.93	26.72	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EDGE	512	1850.2	26.98	25.22	22.89	21.81	27.28	25.52	23.19	22.11	33
	661	1880.0	26.81	24.69	22.97	21.77	27.11	24.99	23.27	22.07	33
	810	1909.8	26.82	24.66	22.91	21.75	27.12	24.96	23.21	22.05	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		22.19	21.81	21.70	22.49	22.11	22.00
	HSDPA	1	21.10	21.10	21.03	21.40	21.40	21.33
		2	21.08	21.22	21.08	21.38	21.52	21.38
		3	21.09	21.14	21.07	21.39	21.44	21.37
		4	21.12	21.16	21.06	21.42	21.46	21.36
	HSUPA	1	20.83	20.73	20.75	21.13	21.03	21.05
		2	20.82	20.75	20.72	21.12	21.05	21.02
		3	20.77	20.64	20.68	21.07	20.94	20.98
		4	20.64	20.56	20.59	20.94	20.86	20.89
		5	20.76	20.71	20.64	21.06	21.01	20.94
	HSPA+	1	20.81	20.68	20.71	21.11	20.98	21.01

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

For PCS1900 / WCDMA Band2: Antenna Gain = 0.3dBi

Limit: EIRP ≤ 33dBm

AWS Band

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
23.18WCDMA (Band 4)	RMC12.2k		22.30	22.32	22.30	22.60	22.62	22.60
	HSDPA	1	21.18	21.22	21.13	21.48	21.52	21.43
		2	21.58	21.58	21.64	21.88	21.88	21.94
		3	21.61	21.64	21.36	21.91	21.94	21.66
		4	21.38	21.37	22.75	21.68	21.67	23.05
	HSUPA	1	20.85	20.75	22.38	21.15	21.05	22.68
		2	22.31	22.35	22.28	22.61	22.65	22.58
		3	22.25	22.41	22.36	22.55	22.71	22.66
		4	22.24	22.34	22.25	22.54	22.64	22.55
		5	22.18	22.41	22.33	22.48	22.71	22.63
	HSPA+	1	22.22	22.36	22.14	22.52	22.66	22.44

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

For Band4: Antenna Gain =0.30dBi

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	19.27	19.76	19.64	19.57	20.06	19.94
		RB1#3	20.47	19.90	19.75	20.77	20.20	20.05
		RB1#5	20.23	19.69	19.61	20.53	19.99	19.91
		RB3#0	20.38	19.94	19.77	20.68	20.24	20.07
		RB3#3	20.37	19.88	19.71	20.67	20.18	20.01
		RB6#0	19.37	18.85	18.69	19.67	19.15	18.99
	16QAM	RB1#0	19.35	18.78	18.79	19.65	19.08	19.09
		RB1#3	19.49	19.04	18.95	19.79	19.34	19.25
		RB1#5	19.30	18.78	18.78	19.60	19.08	19.08
		RB3#0	19.54	19.08	18.73	19.84	19.38	19.03
		RB3#3	19.50	19.09	18.80	19.80	19.39	19.10
		RB6#0	18.29	17.83	17.71	18.59	18.13	18.01
3.0	QPSK	RB1#0	20.86	19.83	19.71	21.16	20.13	20.01
		RB1#8	20.50	19.80	19.70	20.80	20.10	20.00
		RB1#14	20.30	19.82	19.71	20.60	20.12	20.01
		RB6#0	19.32	18.81	18.69	19.62	19.11	18.99
		RB6#9	19.30	18.84	18.68	19.60	19.14	18.98
		RB15#0	19.36	18.88	18.75	19.66	19.18	19.05
	16QAM	RB1#0	19.49	19.50	18.90	19.79	19.80	19.20
		RB1#8	19.40	19.46	18.87	19.70	19.76	19.17
		RB1#14	19.34	19.42	18.85	19.64	19.72	19.15
		RB6#0	18.31	17.87	17.69	18.61	18.17	17.99
		RB6#9	18.25	17.90	17.73	18.55	18.20	18.03
		RB15#0	18.43	17.96	17.70	18.73	18.26	18.00

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.66	19.69	19.53	20.96	19.99	19.83
		RB1#13	20.43	19.75	19.64	20.73	20.05	19.94
		RB1#24	20.16	19.59	19.48	20.46	19.89	19.78
		RB15#0	19.20	18.77	18.67	19.50	19.07	18.97
		RB15#10	19.21	18.64	18.62	19.51	18.94	18.92
		RB25#0	19.18	18.72	18.62	19.48	19.02	18.92
	16QAM	RB1#0	19.10	18.97	18.64	19.40	19.27	18.94
		RB1#13	19.10	19.06	18.74	19.40	19.36	19.04
		RB1#24	18.99	18.91	18.61	19.29	19.21	18.91
		RB15#0	18.27	17.75	17.72	18.57	18.05	18.02
		RB15#10	18.23	17.67	17.68	18.53	17.97	17.98
		RB25#0	18.28	17.71	17.64	18.58	18.01	17.94
10.0	QPSK	RB1#0	20.69	19.73	19.58	20.99	20.03	19.88
		RB1#25	20.52	19.90	19.84	20.82	20.20	20.14
		RB1#49	20.04	19.61	19.53	20.34	19.91	19.83
		RB25#0	19.21	18.89	18.82	19.51	19.19	19.12
		RB25#25	19.23	18.75	18.71	19.53	19.05	19.01
		RB50#0	19.20	18.81	18.77	19.50	19.11	19.07
	16QAM	RB1#0	19.83	18.90	18.66	20.13	19.20	18.96
		RB1#25	19.92	19.07	18.85	20.22	19.37	19.15
		RB1#49	19.73	18.76	18.59	20.03	19.06	18.89
		RB25#0	18.32	17.92	17.90	18.62	18.22	18.20
		RB25#25	18.27	17.78	17.78	18.57	18.08	18.08
		RB50#0	18.27	17.82	17.79	18.57	18.12	18.09

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	20.40	19.57	19.37	20.70	19.87	19.67
		RB1#38	20.15	19.67	19.66	20.45	19.97	19.96
		RB1#74	19.77	19.35	19.38	20.07	19.65	19.68
		RB36#0	19.14	18.78	18.72	19.44	19.08	19.02
		RB36#39	19.09	18.62	18.57	19.39	18.92	18.87
		RB75#0	19.10	18.68	18.66	19.40	18.98	18.96
	16QAM	RB1#0	19.45	19.21	18.57	19.75	19.51	18.87
		RB1#38	19.57	19.40	18.81	19.87	19.70	19.11
		RB1#74	19.22	19.00	18.59	19.52	19.30	18.89
		RB36#0	18.13	17.78	17.71	18.43	18.08	18.01
		RB36#39	18.08	17.63	17.55	18.38	17.93	17.85
		RB75#0	18.07	17.68	17.64	18.37	17.98	17.94
20.0	QPSK	RB1#0	20.37	19.51	19.07	20.67	19.81	19.37
		RB1#50	20.64	19.88	19.81	20.94	20.18	20.11
		RB1#99	19.81	19.17	19.32	20.11	19.47	19.62
		RB50#0	19.21	18.93	18.60	19.51	19.23	18.90
		RB50#50	19.30	18.65	18.48	19.60	18.95	18.78
		RB100#0	19.28	18.80	18.53	19.58	19.10	18.83
	16QAM	RB1#0	19.49	18.90	18.25	19.79	19.20	18.55
		RB1#50	19.85	19.22	19.06	20.15	19.52	19.36
		RB1#99	19.17	18.48	18.53	19.47	18.78	18.83
		RB50#0	18.09	17.91	17.55	18.39	18.21	17.85
		RB50#50	18.09	17.58	17.46	18.39	17.88	17.76
		RB100#0	18.14	17.80	17.55	18.44	18.10	17.85

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

For Band2: Antenna Gain = 0.3dBi

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	20.54	20.18	20.13	20.84	20.48	20.43
		RB1#3	20.71	20.36	20.26	21.01	20.66	20.56
		RB1#5	20.56	20.18	20.12	20.86	20.48	20.42
		RB3#0	20.68	20.33	20.37	20.98	20.63	20.67
		RB3#3	20.66	20.39	20.29	20.96	20.69	20.59
		RB6#0	19.65	19.26	19.20	19.95	19.56	19.50
	16QAM	RB1#0	19.67	19.28	19.24	19.97	19.58	19.54
		RB1#3	19.88	19.44	19.37	20.18	19.74	19.67
		RB1#5	19.70	19.31	19.22	20.00	19.61	19.52
		RB3#0	19.69	19.47	19.56	19.99	19.77	19.86
		RB3#3	19.71	19.45	19.66	20.01	19.75	19.96
		RB6#0	18.67	18.17	18.52	18.97	18.47	18.82
3.0	QPSK	RB1#0	21.16	20.59	20.52	21.46	20.89	20.82
		RB1#8	21.05	20.68	20.69	21.35	20.98	20.99
		RB1#14	21.01	20.64	20.66	21.31	20.94	20.96
		RB6#0	20.08	19.73	19.66	20.38	20.03	19.96
		RB6#9	20.05	19.74	19.65	20.35	20.04	19.95
		RB15#0	20.13	19.77	19.78	20.43	20.07	20.08
	16QAM	RB1#0	20.19	20.39	19.90	20.49	20.69	20.20
		RB1#8	20.06	20.41	19.92	20.36	20.71	20.22
		RB1#14	20.02	20.38	19.88	20.32	20.68	20.18
		RB6#0	18.97	18.82	18.64	19.27	19.12	18.94
		RB6#9	18.99	18.78	18.78	19.29	19.08	19.08
		RB15#0	19.22	18.89	18.73	19.52	19.19	19.03

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	20.94	20.62	20.50	21.24	20.92	20.80
		RB1#13	21.01	20.71	20.63	21.31	21.01	20.93
		RB1#24	20.89	20.56	20.56	21.19	20.86	20.86
		RB15#0	20.10	19.77	19.69	20.40	20.07	19.99
		RB15#10	19.99	19.71	19.68	20.29	20.01	19.98
		RB25#0	19.98	19.75	19.65	20.28	20.05	19.95
	16QAM	RB1#0	20.09	19.53	19.90	20.39	19.83	20.20
		RB1#13	20.12	19.64	20.01	20.42	19.94	20.31
		RB1#24	19.99	19.49	19.91	20.29	19.79	20.21
		RB15#0	19.12	18.86	18.67	19.42	19.16	18.97
		RB15#10	19.03	18.76	18.69	19.33	19.06	18.99
		RB25#0	19.02	18.81	18.70	19.32	19.11	19.00
10.0	QPSK	RB1#0	21.02	20.64	20.55	21.32	20.94	20.85
		RB1#25	21.11	20.81	20.80	21.41	21.11	21.10
		RB1#49	20.83	20.48	20.61	21.13	20.78	20.91
		RB25#0	20.08	19.84	19.76	20.38	20.14	20.06
		RB25#25	20.04	19.74	19.76	20.34	20.04	20.06
		RB50#0	20.12	19.78	19.77	20.42	20.08	20.07
	16QAM	RB1#0	20.08	20.34	19.80	20.38	20.64	20.10
		RB1#25	20.16	20.52	19.94	20.46	20.82	20.24
		RB1#49	19.89	20.18	19.78	20.19	20.48	20.08
		RB25#0	19.15	18.91	18.81	19.45	19.21	19.11
		RB25#25	19.14	18.83	18.76	19.44	19.13	19.06
		RB50#0	19.12	18.81	18.80	19.42	19.11	19.10

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	20.86	20.53	20.05	21.16	20.83	20.35
		RB1#38	20.94	20.67	20.66	21.24	20.97	20.96
		RB1#74	20.59	20.22	20.46	20.89	20.52	20.76
		RB36#0	19.97	19.78	19.49	20.27	20.08	19.79
		RB36#39	19.84	19.60	19.69	20.14	19.90	19.99
		RB75#0	19.92	19.67	19.59	20.22	19.97	19.89
	16QAM	RB1#0	20.28	20.25	19.33	20.58	20.55	19.63
		RB1#38	20.35	20.34	19.78	20.65	20.64	20.08
		RB1#74	20.01	19.92	19.63	20.31	20.22	19.93
		RB36#0	18.94	18.74	18.52	19.24	19.04	18.82
		RB36#39	18.79	18.60	18.71	19.09	18.90	19.01
		RB75#0	18.90	18.68	18.61	19.20	18.98	18.91
20.0	QPSK	RB1#0	20.68	20.58	20.20	20.98	20.88	20.50
		RB1#50	21.00	20.87	20.82	21.30	21.17	21.12
		RB1#99	20.33	20.01	20.33	20.63	20.31	20.63
		RB50#0	20.00	19.81	19.58	20.30	20.11	19.88
		RB50#50	19.81	19.61	19.79	20.11	19.91	20.09
		RB100#0	19.90	19.72	19.74	20.20	20.02	20.04
	16QAM	RB1#0	20.34	19.90	19.65	20.64	20.20	19.95
		RB1#50	20.64	20.20	19.94	20.94	20.50	20.24
		RB1#99	19.99	19.36	19.62	20.29	19.66	19.92
		RB50#0	18.98	18.86	18.59	19.28	19.16	18.89
		RB50#50	18.84	18.61	18.79	19.14	18.91	19.09
		RB100#0	18.94	18.74	18.69	19.24	19.04	18.99

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

For Band4: Antenna Gain = 0.3dBi

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	22.40	22.48	22.42	18.75	18.83	18.77
		RB1#3	25.09	22.67	22.61	21.44	19.02	18.96
		RB1#5	22.80	22.53	22.44	19.15	18.88	18.79
		RB3#0	22.81	22.24	22.30	19.16	18.59	18.65
		RB3#3	22.78	22.57	22.32	19.13	18.92	18.67
		RB6#0	22.83	22.53	22.35	19.18	18.88	18.70
	16QAM	RB1#0	22.85	22.47	22.19	19.20	18.82	18.54
		RB1#3	22.04	22.62	22.46	18.39	18.97	18.81
		RB1#5	22.83	22.52	22.23	19.18	18.87	18.58
		RB3#0	22.71	22.60	22.44	19.06	18.95	18.79
		RB3#3	22.71	22.61	22.45	19.06	18.96	18.80
		RB6#0	22.78	22.50	22.32	19.13	18.85	18.67
3.0	QPSK	RB1#0	22.05	22.59	22.58	18.40	18.94	18.93
		RB1#8	22.99	22.61	22.57	19.34	18.96	18.92
		RB1#14	22.99	22.61	22.54	19.34	18.96	18.89
		RB6#0	22.84	22.60	22.44	19.19	18.95	18.79
		RB6#9	22.82	22.64	22.42	19.17	18.99	18.77
		RB15#0	22.84	22.61	22.44	19.19	18.96	18.79
	16QAM	RB1#0	22.86	22.01	22.60	19.21	18.36	18.95
		RB1#8	22.84	22.06	22.57	19.19	18.41	18.92
		RB1#14	22.80	22.07	22.52	19.15	18.42	18.87
		RB6#0	22.76	22.63	22.41	19.11	18.98	18.76
		RB6#9	22.73	22.68	22.40	19.08	19.03	18.75
		RB15#0	22.91	22.67	22.37	19.26	19.02	18.72

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	22.74	22.36	22.31	19.09	18.71	18.66
		RB1#13	22.79	22.49	22.47	19.14	18.84	18.82
		RB1#24	22.63	22.44	22.31	18.98	18.79	18.66
		RB15#0	22.73	22.52	22.34	19.08	18.87	18.69
		RB15#10	22.65	22.46	22.24	19.00	18.81	18.59
		RB25#0	22.65	22.49	22.26	19.00	18.84	18.61
	16QAM	RB1#0	22.69	22.21	22.48	19.04	18.56	18.83
		RB1#13	22.73	22.34	22.54	19.08	18.69	18.89
		RB1#24	22.53	22.30	22.38	18.88	18.65	18.73
		RB15#0	22.73	22.52	22.35	19.08	18.87	18.70
		RB15#10	22.70	22.51	22.20	19.05	18.86	18.55
		RB25#0	22.69	22.59	22.26	19.04	18.94	18.61
10	QPSK	RB1#0	22.87	22.57	22.60	19.22	18.92	18.95
		RB1#25	22.00	22.69	22.67	18.35	19.04	19.02
		RB1#49	22.55	22.62	22.38	18.90	18.97	18.73
		RB25#0	22.70	22.57	22.66	19.05	18.92	19.01
		RB25#25	22.51	22.55	22.32	18.86	18.90	18.67
		RB50#0	22.64	22.60	22.48	18.99	18.95	18.83
	16QAM	RB1#0	22.68	22.90	22.70	19.03	19.25	19.05
		RB1#25	22.79	22.09	22.69	19.14	18.44	19.04
		RB1#49	22.45	22.06	22.40	18.80	18.41	18.75
		RB25#0	22.78	22.64	22.74	19.13	18.99	19.09
		RB25#25	22.63	22.65	22.35	18.98	19.00	18.70
		RB50#0	22.68	22.66	22.53	19.03	19.01	18.88

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band5: Antenna Gain = -1.5dBi=-3.65dBd (0dBd=2.15dBi)
 Limit: EIRP≤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	18.94	17.71	17.82	19.74	18.51	18.62
		RB1#13	18.44	17.80	17.93	19.24	18.60	18.73
		RB1#24	18.17	17.65	17.82	18.97	18.45	18.62
		RB15#0	17.61	16.76	16.94	18.41	17.56	17.74
		RB15#10	17.46	16.78	16.91	18.26	17.58	17.71
		RB25#0	17.47	16.75	16.93	18.27	17.55	17.73
	16QAM	RB1#0	17.68	16.64	17.13	18.48	17.44	17.93
		RB1#13	17.57	16.69	17.24	18.37	17.49	18.04
		RB1#24	17.31	16.59	17.12	18.11	17.39	17.92
		RB15#0	16.61	15.84	15.88	17.41	16.64	16.68
		RB15#10	16.48	15.81	15.92	17.28	16.61	16.72
		RB25#0	16.49	15.79	15.93	17.29	16.59	16.73
10.0	QPSK	RB1#0	19.04	17.75	17.86	19.84	18.55	18.66
		RB1#25	18.90	17.89	18.03	19.70	18.69	18.83
		RB1#49	18.57	17.69	17.80	19.37	18.49	18.60
		RB25#0	17.86	16.82	17.06	18.66	17.62	17.86
		RB25#25	17.38	16.88	17.00	18.18	17.68	17.80
		RB50#0	17.42	16.90	17.02	18.22	17.70	17.82
	16QAM	RB1#0	17.60	17.41	17.06	18.40	18.21	17.86
		RB1#25	17.45	17.57	17.21	18.25	18.37	18.01
		RB1#49	17.13	17.34	16.99	17.93	18.14	17.79
		RB25#0	16.62	15.89	16.07	17.42	16.69	16.87
		RB25#25	16.33	15.93	16.06	17.13	16.73	16.86
		RB50#0	16.41	15.91	16.02	17.21	16.71	16.82

bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	18.93	17.67	17.73	19.73	18.47	18.53
		RB1#38	18.26	17.73	17.89	19.06	18.53	18.69
		RB1#74	17.93	17.51	17.67	18.73	18.31	18.47
		RB36#0	17.42	16.83	16.94	18.22	17.63	17.74
		RB36#39	17.11	16.80	16.89	17.91	17.60	17.69
		RB75#0	17.20	16.84	16.93	18.00	17.64	17.73
	16QAM	RB1#0	17.89	17.34	16.94	18.69	18.14	17.74
		RB1#38	17.62	17.41	17.09	18.42	18.21	17.89
		RB1#74	17.36	17.21	16.88	18.16	18.01	17.68
		RB36#0	16.34	15.79	16.00	17.14	16.59	16.80
		RB36#39	16.12	15.79	15.93	16.92	16.59	16.73
		RB75#0	16.21	15.82	15.91	17.01	16.62	16.71
20.0	QPSK	RB1#0	18.33	17.58	17.25	19.13	18.38	18.05
		RB1#50	18.26	17.83	18.05	19.06	18.63	18.85
		RB1#99	17.84	17.40	17.56	18.64	18.20	18.36
		RB50#0	17.40	16.86	17.07	18.20	17.66	17.87
		RB50#50	17.14	16.87	16.98	17.94	17.67	17.78
		RB100#0	17.37	16.89	17.09	18.17	17.69	17.89
	16QAM	RB1#0	17.59	17.26	16.58	18.39	18.06	17.38
		RB1#50	17.52	17.50	17.44	18.32	18.30	18.24
		RB1#99	17.11	17.05	16.92	17.91	17.85	17.72
		RB50#0	16.38	15.87	16.11	17.18	16.67	16.91
		RB50#50	16.16	15.84	15.96	16.96	16.64	16.76
		RB100#0	16.34	15.88	16.07	17.14	16.68	16.87

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

For Band7: Antenna Gain = 0.8dBi

Limit: ERP ≤ 33dBm

LTE Band 12

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.29	22.04	22.04	18.54	18.29	18.29
		RB1#3	22.44	22.25	22.12	18.69	18.50	18.37
		RB1#5	22.21	22.18	22.01	18.46	18.43	18.26
		RB3#0	22.14	22.94	22.80	18.39	19.19	19.05
		RB3#3	22.11	22.97	22.79	18.36	19.22	19.04
		RB6#0	22.33	22.13	22.07	18.58	18.38	18.32
	16QAM	RB1#0	22.20	22.86	22.73	18.45	19.11	18.98
		RB1#3	22.30	22.07	22.88	18.55	18.32	19.13
		RB1#5	22.15	22.93	22.73	18.40	19.18	18.98
		RB3#0	22.00	22.94	22.84	18.25	19.19	19.09
		RB3#3	22.00	22.94	22.82	18.25	19.19	19.07
		RB6#0	22.21	22.92	22.84	18.46	19.17	19.09
3	QPSK	RB1#0	22.50	22.19	22.14	18.75	18.44	18.39
		RB1#8	22.42	22.20	22.14	18.67	18.45	18.39
		RB1#14	22.38	22.32	22.15	18.63	18.57	18.40
		RB6#0	22.38	22.09	22.11	18.63	18.34	18.36
		RB6#9	22.29	22.18	22.13	18.54	18.43	18.38
		RB15#0	22.24	22.08	22.98	18.49	18.33	19.23
	16QAM	RB1#0	22.26	22.42	22.06	18.51	18.67	18.31
		RB1#8	22.19	22.40	22.03	18.44	18.65	18.28
		RB1#14	22.19	22.45	22.01	18.44	18.70	18.26
		RB6#0	22.19	22.01	22.96	18.44	18.26	19.21
		RB6#9	22.11	22.12	22.96	18.36	18.37	19.21
		RB15#0	22.25	22.12	22.85	18.50	18.37	19.10

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	22.22	22.95	22.14	18.47	19.20	18.39
		RB1#13	22.28	22.11	22.01	18.53	18.36	18.26
		RB1#24	22.02	22.13	22.89	18.27	18.38	19.14
		RB15#0	22.15	22.99	22.00	18.40	19.24	18.25
		RB15#10	22.09	22.06	22.87	18.34	18.31	19.12
		RB25#0	22.08	22.94	22.85	18.33	19.19	19.10
	16QAM	RB1#0	22.29	22.90	22.82	18.54	19.15	19.07
		RB1#13	22.32	22.99	22.72	18.57	19.24	18.97
		RB1#24	22.12	22.04	22.60	18.37	18.29	18.85
		RB15#0	22.13	22.95	22.99	18.38	19.20	19.24
		RB15#10	22.06	22.06	22.83	18.31	18.31	19.08
		RB25#0	22.07	22.98	22.90	18.32	19.23	19.15
10	QPSK	RB1#0	22.24	22.15	22.02	18.49	18.40	18.27
		RB1#25	22.22	22.36	22.53	18.47	18.61	18.78
		RB1#49	22.10	22.23	22.09	18.35	18.48	18.34
		RB25#0	22.13	22.06	22.12	18.38	18.31	18.37
		RB25#25	22.03	22.09	22.95	18.28	18.34	19.20
		RB50#0	22.09	22.07	22.02	18.34	18.32	18.27
	16QAM	RB1#0	22.21	22.95	22.30	18.46	19.20	18.55
		RB1#25	22.25	22.11	22.72	18.50	18.36	18.97
		RB1#49	22.08	22.93	22.15	18.33	19.18	18.40
		RB25#0	22.15	22.10	22.17	18.40	18.35	18.42
		RB25#25	22.06	22.17	22.97	18.31	18.42	19.22
		RB50#0	22.09	22.11	22.02	18.34	18.36	18.27

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band12: Antenna Gain = -1.6dBi = -3.75dBd (0dBd=2.15dBi)
 Limit: ERP≤34.77dBm

LTE Band 17

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	22.31	21.84	21.63	18.56	18.09	17.88
		RB1#13	22.02	21.77	21.53	18.27	18.02	17.78
		RB1#24	21.84	21.62	21.02	18.09	17.87	17.27
		RB15#0	21.37	21.45	21.49	17.62	17.70	17.74
		RB15#10	21.41	21.50	21.33	17.66	17.75	17.58
		RB25#0	21.34	21.40	21.33	17.59	17.65	17.58
	16QAM	RB1#0	21.47	21.35	21.22	17.72	17.60	17.47
		RB1#13	21.65	21.47	21.20	17.90	17.72	17.45
		RB1#24	21.55	21.42	20.81	17.80	17.67	17.06
		RB15#0	20.32	20.43	20.45	16.57	16.68	16.70
		RB15#10	20.34	20.46	20.27	16.59	16.71	16.52
		RB25#0	20.32	20.38	20.33	16.57	16.63	16.58
10	QPSK	RB1#0	22.43	22.07	21.94	18.68	18.32	18.19
		RB1#25	22.17	21.79	21.68	18.42	18.04	17.93
		RB1#49	21.89	21.49	21.20	18.14	17.74	17.45
		RB25#0	21.41	21.42	21.48	17.66	17.67	17.73
		RB25#25	21.45	21.46	21.45	17.70	17.71	17.70
		RB50#0	21.47	21.47	21.45	17.72	17.72	17.70
	16QAM	RB1#0	21.29	21.73	21.49	17.54	17.98	17.74
		RB1#25	21.56	21.98	21.71	17.81	18.23	17.96
		RB1#49	21.36	21.69	21.19	17.61	17.94	17.44
		RB25#0	20.49	20.46	20.44	16.74	16.71	16.69
		RB25#25	20.51	20.45	20.36	16.76	16.70	16.61
		RB50#0	20.44	20.45	20.40	16.69	16.70	16.65

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band17: Antenna Gain = -1.6dBi = -3.75dBd (0dBd=2.15dBi)
 Limit: ERP≤34.77dBm

LTE Band 66

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	19.49	18.42	18.74	20.09	19.02	19.34
		RB1#3	19.60	18.66	18.86	20.20	19.26	19.46
		RB1#5	19.46	18.50	18.72	20.06	19.10	19.32
		RB3#0	19.61	18.69	18.92	20.21	19.29	19.52
		RB3#3	19.55	18.66	18.93	20.15	19.26	19.53
		RB6#0	18.46	17.58	17.78	19.06	18.18	18.38
	16QAM	RB1#0	18.59	17.60	17.80	19.19	18.20	18.40
		RB1#3	18.77	17.74	17.90	19.37	18.34	18.50
		RB1#5	18.56	17.60	17.83	19.16	18.20	18.43
		RB3#0	18.60	17.81	18.21	19.20	18.41	18.81
		RB3#3	18.56	17.83	18.18	19.16	18.43	18.78
		RB6#0	17.53	16.57	16.86	18.13	17.17	17.46
3	QPSK	RB1#0	19.61	18.60	18.86	20.21	19.20	19.46
		RB1#8	19.48	18.58	18.81	20.08	19.18	19.41
		RB1#14	19.41	18.58	18.83	20.01	19.18	19.43
		RB6#0	18.48	17.58	17.84	19.08	18.18	18.44
		RB6#9	18.37	17.60	17.81	18.97	18.20	18.41
		RB15#0	18.47	17.63	17.94	19.07	18.23	18.54
	16QAM	RB1#0	18.71	17.74	18.53	19.31	18.34	19.13
		RB1#8	18.59	17.71	18.49	19.19	18.31	19.09
		RB1#14	18.55	17.66	18.46	19.15	18.26	19.06
		RB6#0	17.56	16.58	16.97	18.16	17.18	17.57
		RB6#9	17.44	16.58	16.95	18.04	17.18	17.55
		RB15#0	17.48	16.83	17.06	18.08	17.43	17.66

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	19.39	18.55	18.76	19.99	19.15	19.36
		RB1#13	19.39	18.67	18.84	19.99	19.27	19.44
		RB1#24	18.96	18.47	18.79	19.56	19.07	19.39
		RB15#0	18.40	17.62	17.87	19.00	18.22	18.47
		RB15#10	18.24	17.60	17.80	18.84	18.20	18.40
		RB25#0	18.28	17.60	17.85	18.88	18.20	18.45
	16QAM	RB1#0	18.50	17.45	18.06	19.10	18.05	18.66
		RB1#13	18.42	17.51	18.19	19.02	18.11	18.79
		RB1#24	18.13	17.40	18.09	18.73	18.00	18.69
		RB15#0	17.47	16.73	16.90	18.07	17.33	17.50
		RB15#10	17.34	16.75	16.87	17.94	17.35	17.47
		RB25#0	17.39	16.71	16.91	17.99	17.31	17.51
10	QPSK	RB1#0	19.92	18.54	18.75	20.52	19.14	19.35
		RB1#25	19.64	18.68	18.95	20.24	19.28	19.55
		RB1#49	19.05	18.51	18.77	19.65	19.11	19.37
		RB25#0	18.50	17.71	17.99	19.10	18.31	18.59
		RB25#25	18.12	17.69	17.89	18.72	18.29	18.49
		RB50#0	18.24	17.70	17.97	18.84	18.30	18.57
	16QAM	RB1#0	18.43	18.29	17.92	19.03	18.89	18.52
		RB1#25	18.28	18.41	18.14	18.88	19.01	18.74
		RB1#49	17.93	18.23	17.91	18.53	18.83	18.51
		RB25#0	17.49	16.87	17.05	18.09	17.47	17.65
		RB25#25	17.28	16.83	16.98	17.88	17.43	17.58
		RB50#0	17.36	16.84	17.01	17.96	17.44	17.61

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	19.32	18.51	18.57	19.92	19.11	19.17
		RB1#38	18.98	18.55	18.75	19.58	19.15	19.35
		RB1#74	18.75	18.33	18.56	19.35	18.93	19.16
		RB36#0	18.21	17.67	17.86	18.81	18.27	18.46
		RB36#39	17.97	17.59	17.78	18.57	18.19	18.38
		RB75#0	18.05	17.62	17.82	18.65	18.22	18.42
	16QAM	RB1#0	18.48	18.04	18.29	19.08	18.64	18.89
		RB1#38	18.16	18.07	18.43	18.76	18.67	19.03
		RB1#74	17.94	17.86	18.29	18.54	18.46	18.89
		RB36#0	17.25	16.68	16.90	17.85	17.28	17.50
		RB36#39	17.01	16.58	16.87	17.61	17.18	17.47
		RB75#0	17.11	16.62	16.87	17.71	17.22	17.47
20	QPSK	RB1#0	19.63	18.55	18.16	20.23	19.15	18.76
		RB1#50	19.52	19.03	18.94	20.12	19.63	19.54
		RB1#99	19.11	18.56	18.49	19.71	19.16	19.09
		RB50#0	18.74	18.06	17.89	19.34	18.66	18.49
		RB50#50	18.51	17.91	17.84	19.11	18.51	18.44
		RB100#0	18.68	17.91	17.90	19.28	18.51	18.50
	16QAM	RB1#0	19.21	18.01	17.46	19.81	18.61	18.06
		RB1#50	19.12	18.01	18.17	19.72	18.61	18.77
		RB1#99	18.73	17.65	17.79	19.33	18.25	18.39
		RB50#0	17.78	16.90	16.98	18.38	17.50	17.58
		RB50#50	17.61	16.78	16.88	18.21	17.38	17.48
		RB100#0	17.64	16.96	16.94	18.24	17.56	17.54

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

For Band66: Antenna Gain = 0.6dBi

Limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.64	13
	Middle	3.80	13
	High	3.92	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.27	13
	Middle	3.51	13
	High	3.44	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	4.68	13
	Middle	4.87	13
	High	4.78	13
HSDPA (16QAM)	Low	5.71	13
	Middle	4.49	13
	High	4.28	13
HSUPA (QPSK)	Low	5.98	13
	Middle	4.17	13
	High	4.11	13
HSPA+	Low	5.87	13
	Middle	5.69	13
	High	4.05	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.84	13
	Middle	3.71	13
	High	4.23	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.28	13
	Middle	3.27	13
	High	3.49	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	4.74	13
	Middle	5.78	13
	High	5.42	13
HSDPA (16QAM)	Low	4.17	13
	Middle	4.52	13
	High	4.97	13
HSUPA (QPSK)	Low	4.14	13
	Middle	4.24	13
	High	4.39	13
HSPA+	Low	5.83	13
	Middle	5.77	13
	High	4.19	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.44	13
	Middle	3.52	13
	High	3.56	13
HSDPA (16QAM)	Low	3.47	13
	Middle	3.52	13
	High	3.41	13
HSUPA (QPSK)	Low	3.44	13
	Middle	3.35	13
	High	3.47	13
HSPA+	Low	3.46	13
	Middle	3.51	13
	High	3.48	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.71	5.71	6.03	13	Pass
QPSK (100RB Size)	5.57	5.62	5.45	13	Pass
16QAM (1RB Size)	6.26	7.42	7.19	13	Pass
16QAM (100RB Size)	6.52	6.46	6.46	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.57	6.26	6.2	13	Pass
QPSK (100RB Size)	5.62	5.68	5.65	13	Pass
16QAM (1RB Size)	6.14	6.52	7.22	13	Pass
16QAM (100RB Size)	6.55	6.52	6.72	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.01	3.39	3.77	13	Pass
QPSK (50RB Size)	4.32	4.72	4.52	13	Pass
16QAM (1RB Size)	3.45	4.26	4.55	13	Pass
16QAM (50RB Size)	4.81	5.77	5.62	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.8	5.77	6.23	13	Pass
QPSK (100RB Size)	5.59	5.59	5.65	13	Pass
16QAM (1RB Size)	6.32	7.54	7.42	13	Pass
16QAM (100RB Size)	6.49	6.38	6.64	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	2.32	2.67	2.58	13	Pass
QPSK (50RB Size)	3.88	3.91	3.8	13	Pass
16QAM (1RB Size)	3.59	3.62	3.62	13	Pass
16QAM (50RB Size)	4.87	4.9	4.84	13	Pass

LTE Band 17 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.42	3.68	3.65	13	Pass
QPSK (50RB Size)	4.17	4.17	4.12	13	Pass
16QAM (1RB Size)	3.97	3.57	3.65	13	Pass
16QAM (50RB Size)	5.28	5.16	5.19	13	Pass

LTE Band 66 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.71	5.74	6.17	13	Pass
QPSK (100RB Size)	5.57	5.88	5.77	13	Pass
16QAM (1RB Size)	6	7.57	7.51	13	Pass
16QAM (100RB Size)	6.46	6.64	6.84	13	Pass

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

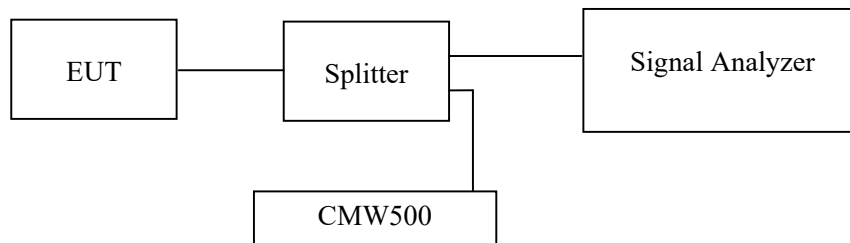
Applicable Standard

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 has added into plot.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	60%
ATM Pressure:	101.0 kPa

The testing was performed by Andy Yu from 2022-09-15 to 2022-09-29.

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	242.76	322.00
	190	836.6	242.76	321.00
	251	848.8	243.76	321.00
EGPRS(8PSK)	128	824.2	247.75	310.00
	190	836.6	246.75	312.00
	251	848.8	244.76	313.00

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.17	4.74
	836.4	4.19	4.74
	846.6	4.16	4.73
HSDPA	826.4	4.22	4.98
	836.4	4.20	5.00
	846.6	4.20	4.76
HSUPA	826.4	4.20	4.79
	836.4	4.20	4.73
	846.6	4.16	4.73

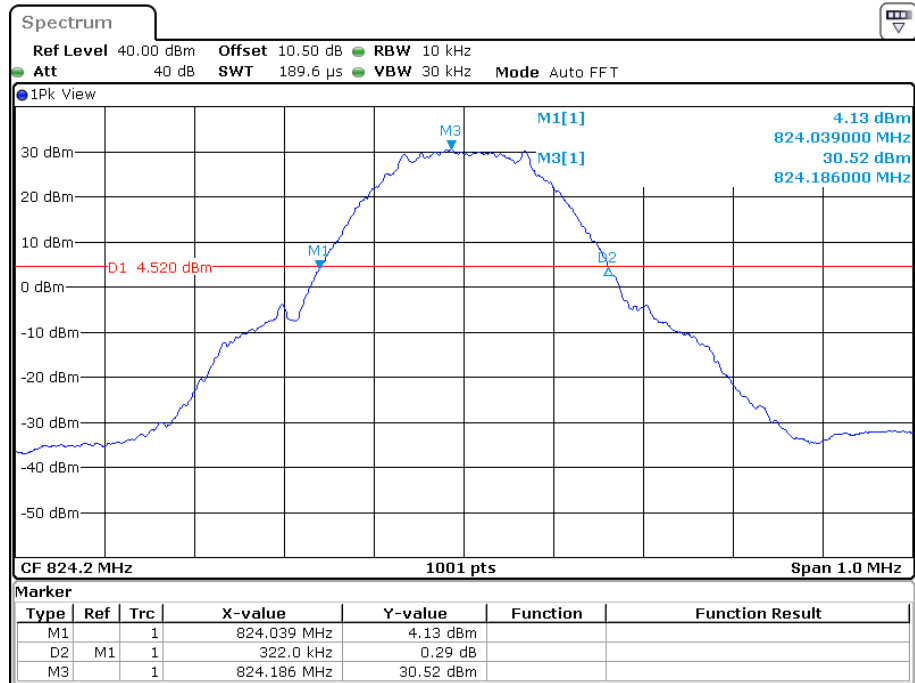
PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	241.76	311.00
	661	1880.0	242.76	321.00
	810	1909.8	247.00	321.00
EGPRS(8PSK)	512	1850.2	248.75	319.00
	661	1880.0	253.75	336.00
	810	1909.8	262.74	269.00

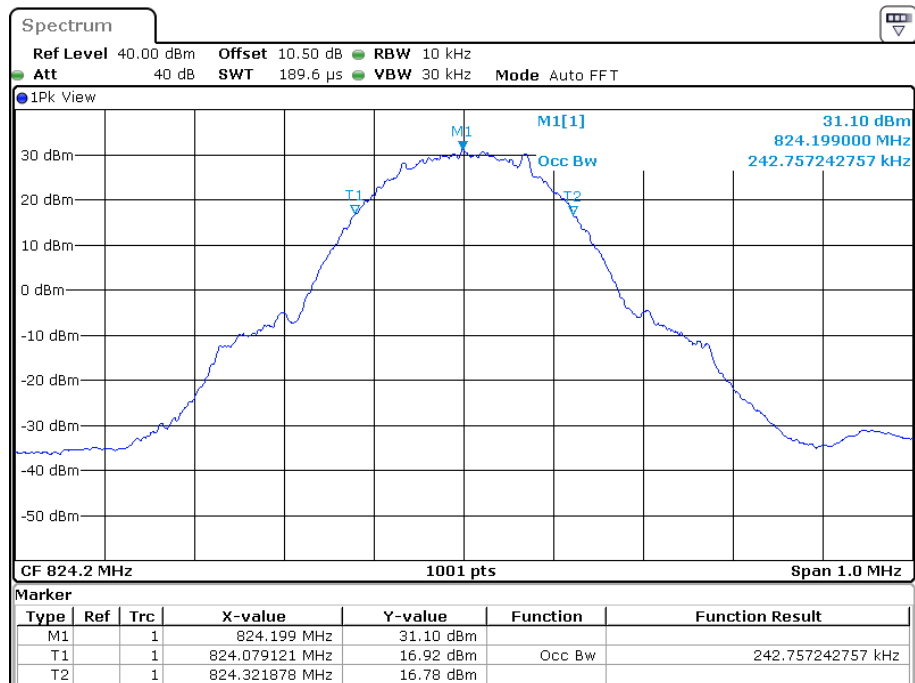
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.17	5.31
	1880.0	4.17	4.74
	1907.6	4.17	4.74
HSDPA	1852.4	4.23	5.09
	1880.0	4.25	5.34
	1907.6	4.22	5.01
HSUPA	1852.4	4.19	4.73
	1880.0	4.20	4.91
	1907.6	4.22	4.74

AWS Band (Part 27)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.20	4.82
	1732.6	4.17	4.73
	1752.6	4.17	4.73
HSDPA	1712.4	4.22	5.21
	1732.6	4.22	5.25
	1752.6	4.20	4.82
HSUPA	1712.4	4.20	5.06
	1732.6	4.22	4.94
	1752.6	4.19	4.82

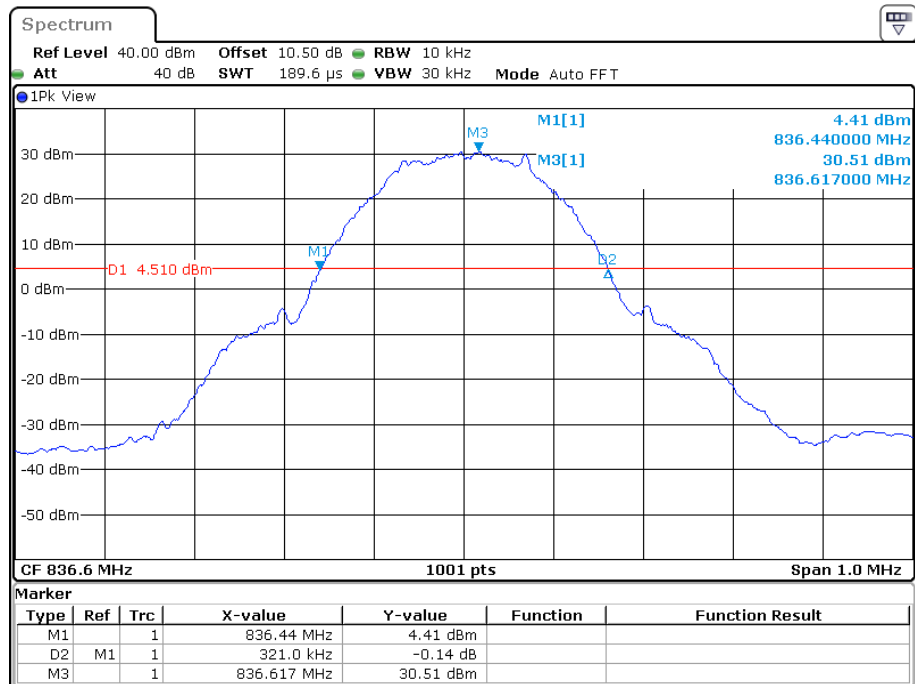
Cellular Band (Part 22H)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel**

Date: 15.SEP.2022 16:08:39

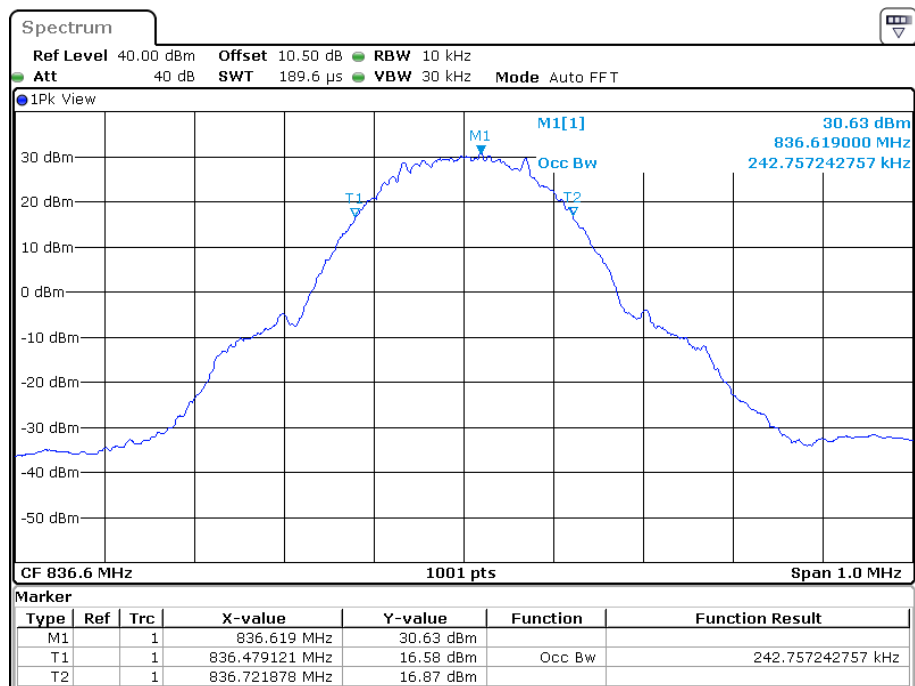


Date: 15.SEP.2022 16:07:56

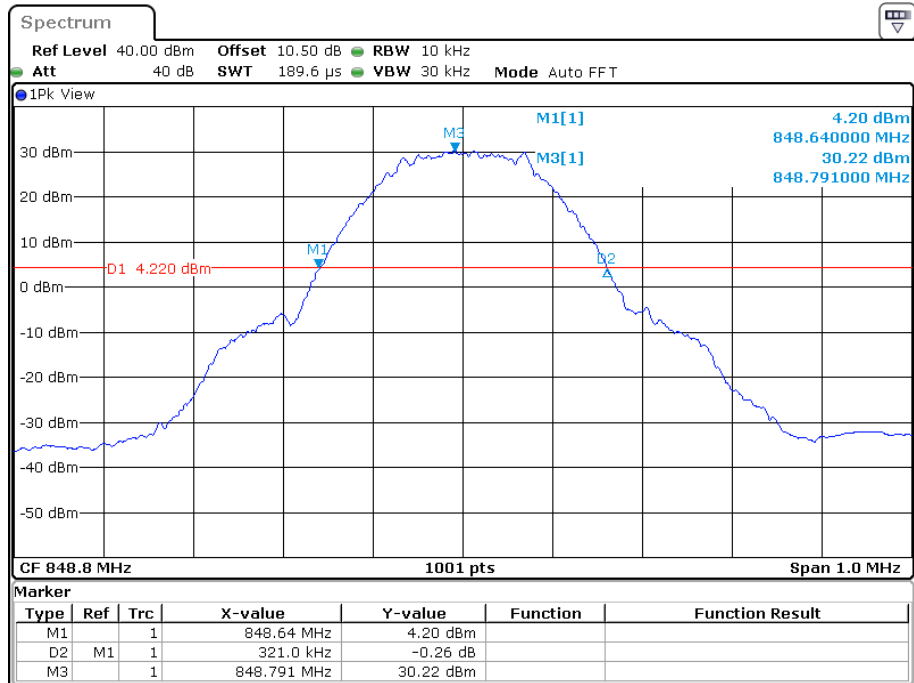
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



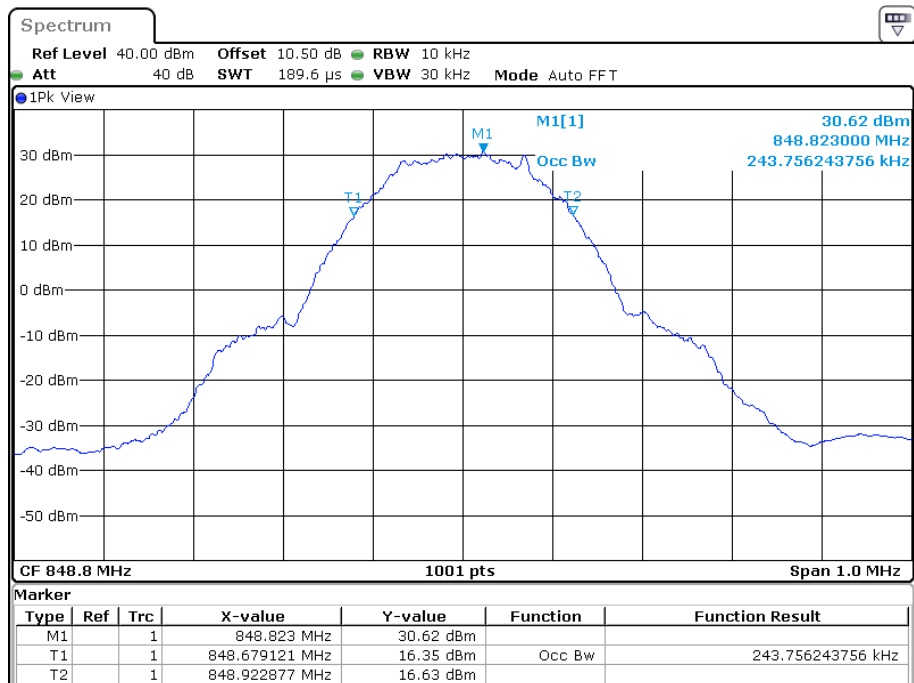
Date: 15.SEP.2022 16:20:15



Date: 15.SEP.2022 16:19:32

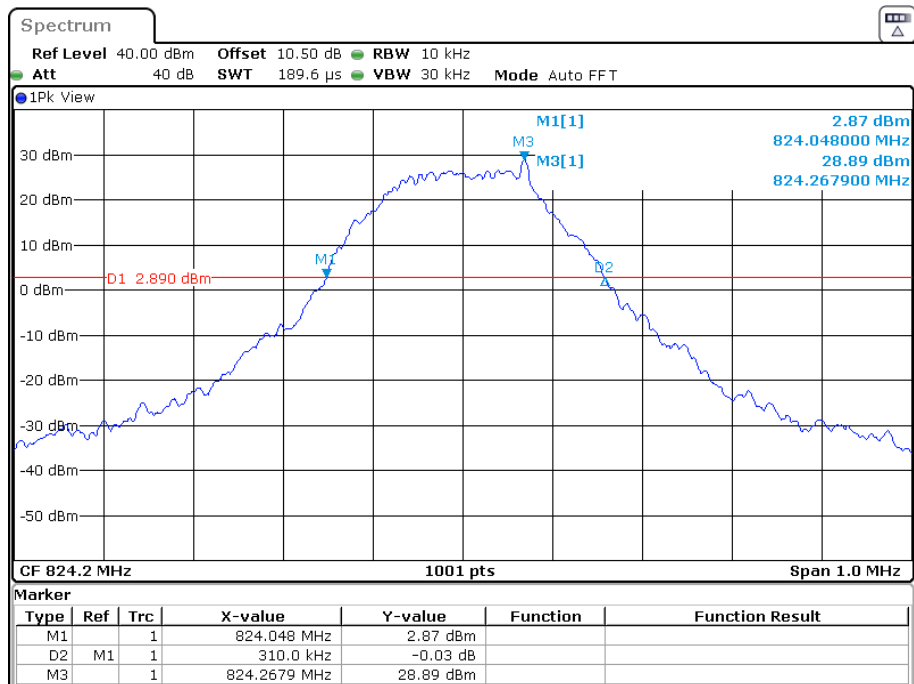
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel

Date: 15.SEP.2022 16:23:53

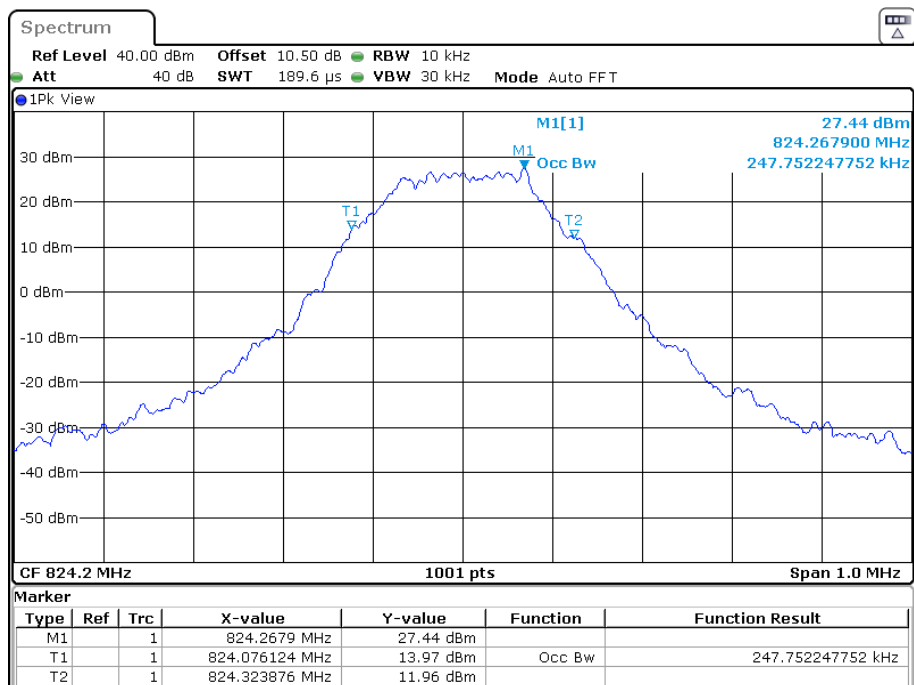


Date: 15.SEP.2022 16:23:10

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

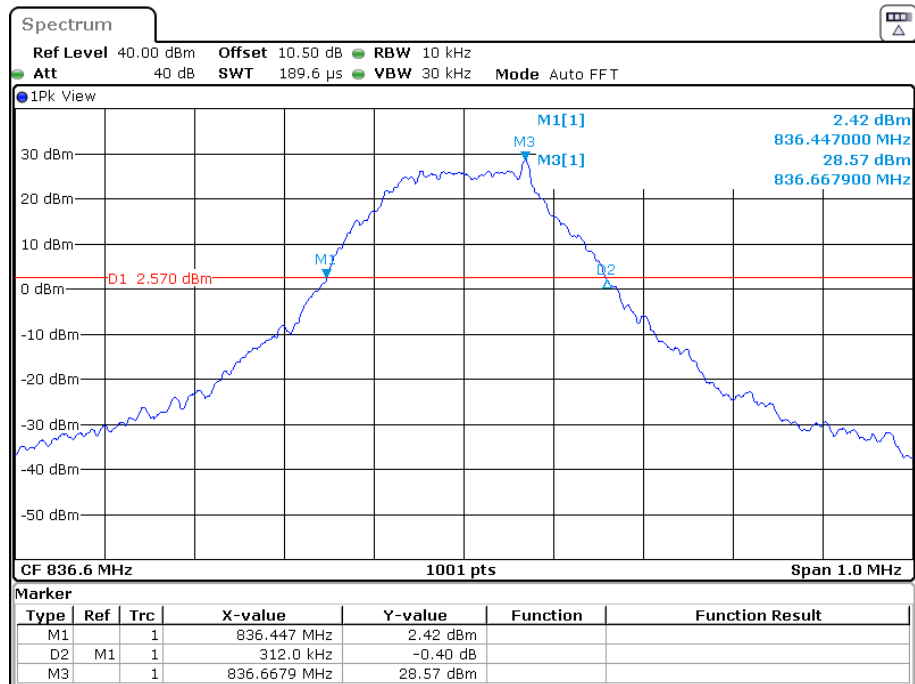


Date: 16.SEP.2022 10:45:00

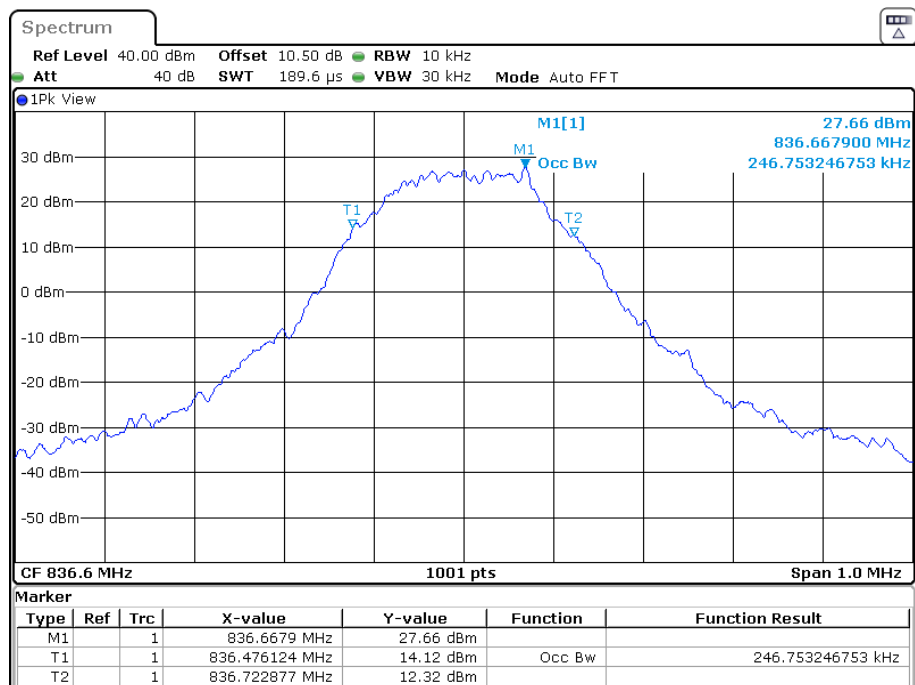


Date: 16.SEP.2022 10:44:21

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

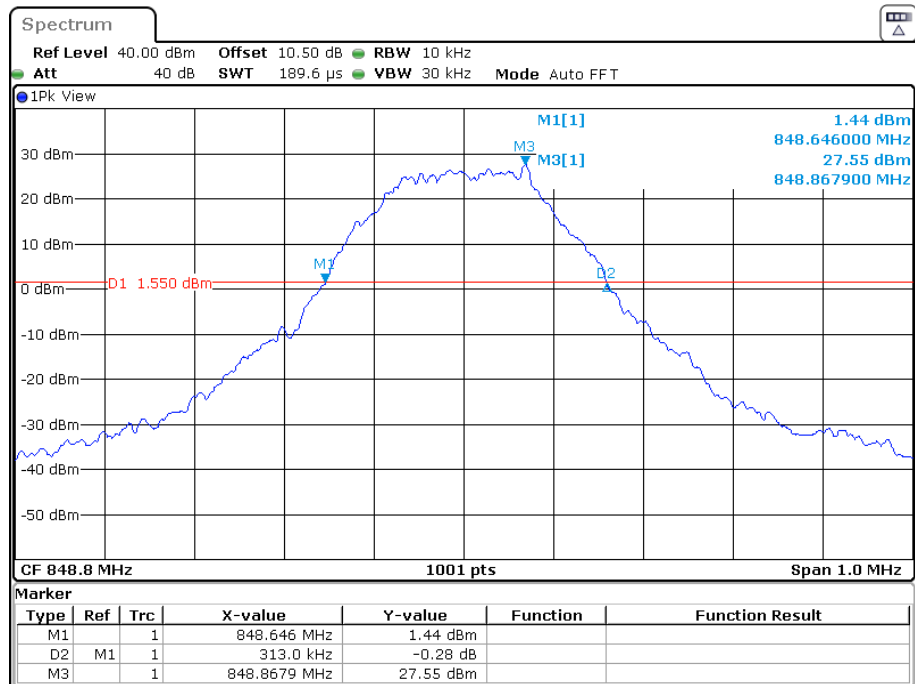


Date: 16.SEP.2022 10:50:23

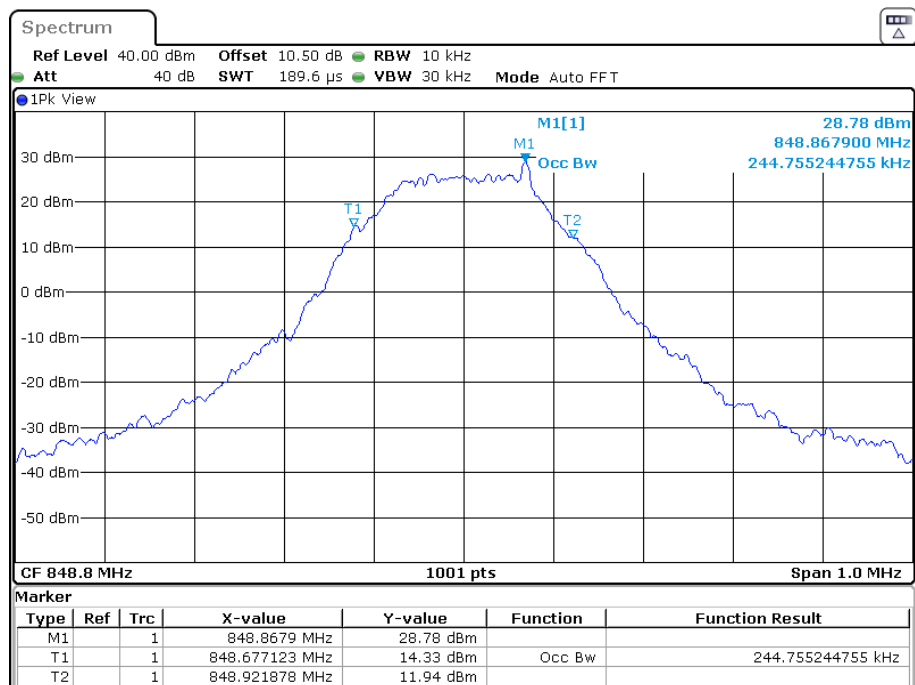


Date: 16.SEP.2022 10:49:43

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

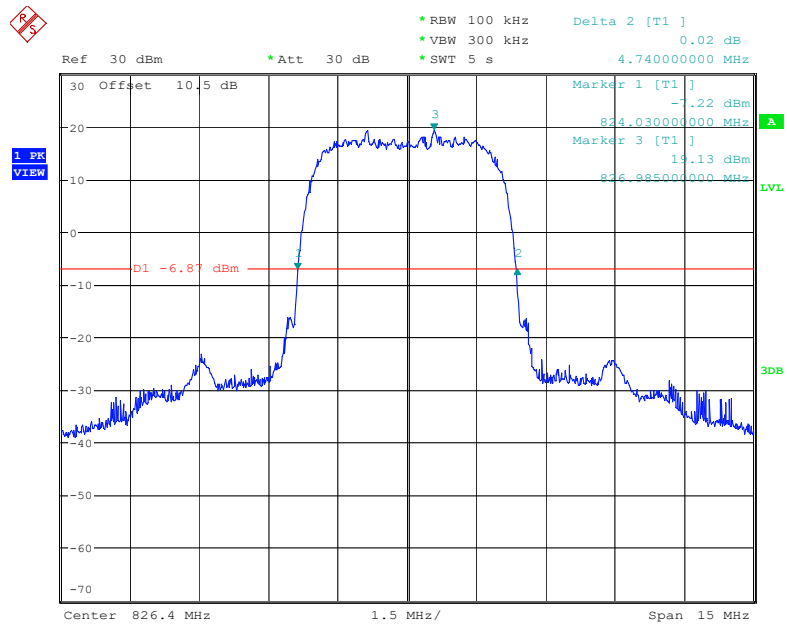


Date: 16.SEP.2022 10:57:35

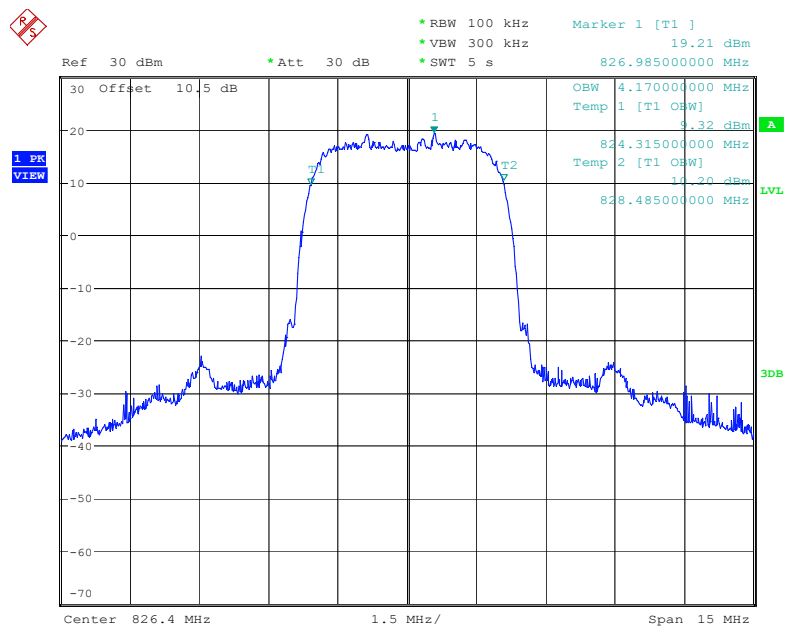


Date: 16.SEP.2022 10:56:54

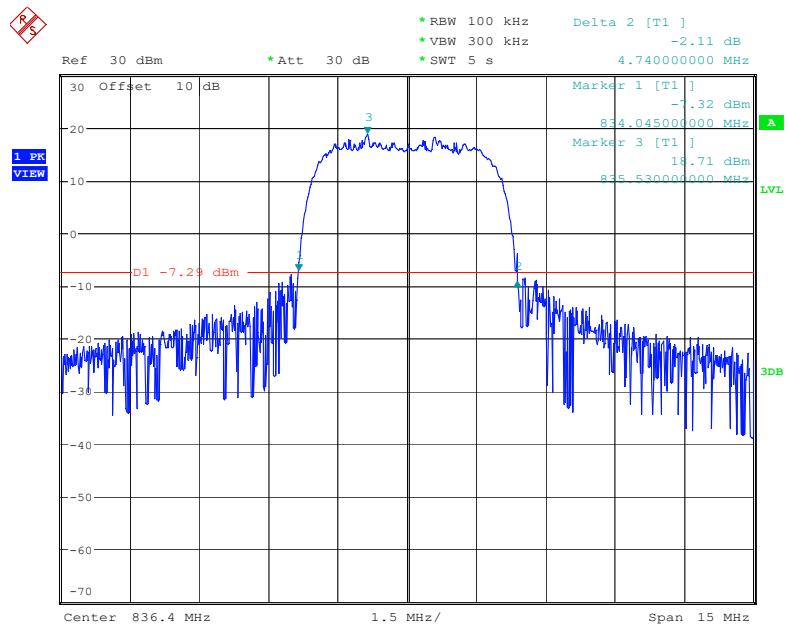
26 dB Emission Bandwidth for RMC (BPSK) Mode, Low channel



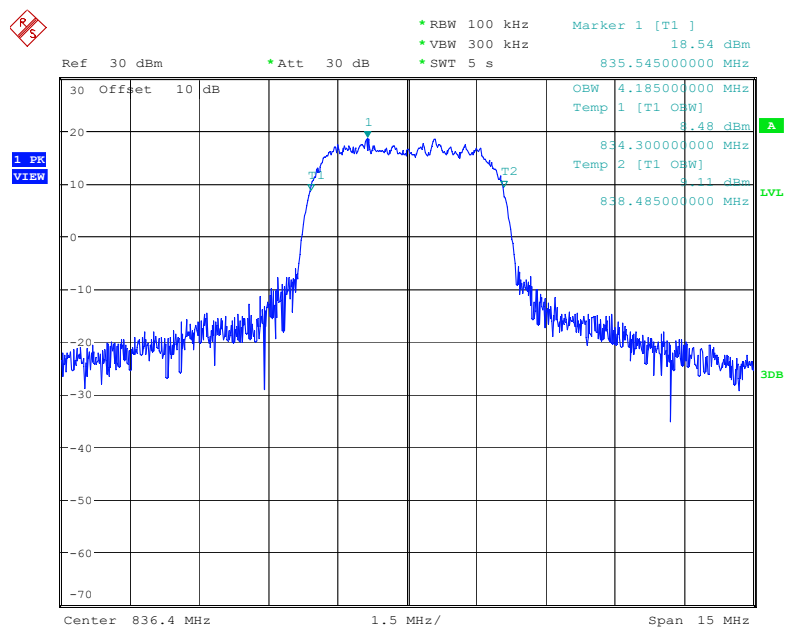
Date: 29.SEP.2022 16:24:51



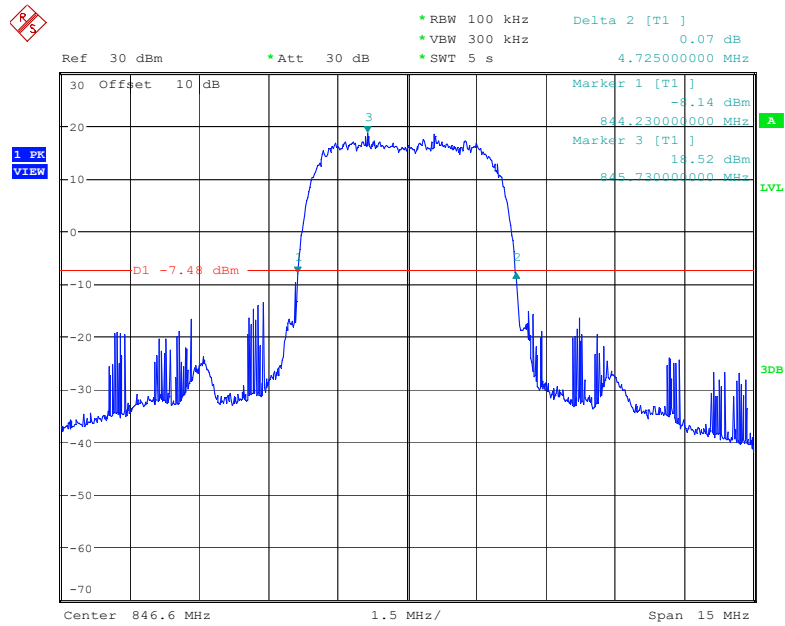
Date: 29.SEP.2022 16:24:12

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

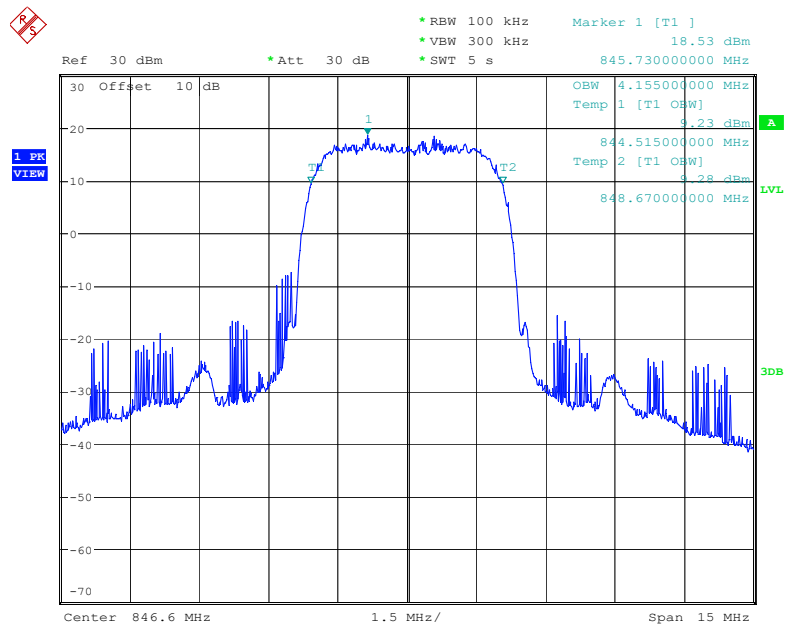
Date: 29.SEP.2022 16:29:21



Date: 29.SEP.2022 16:28:41

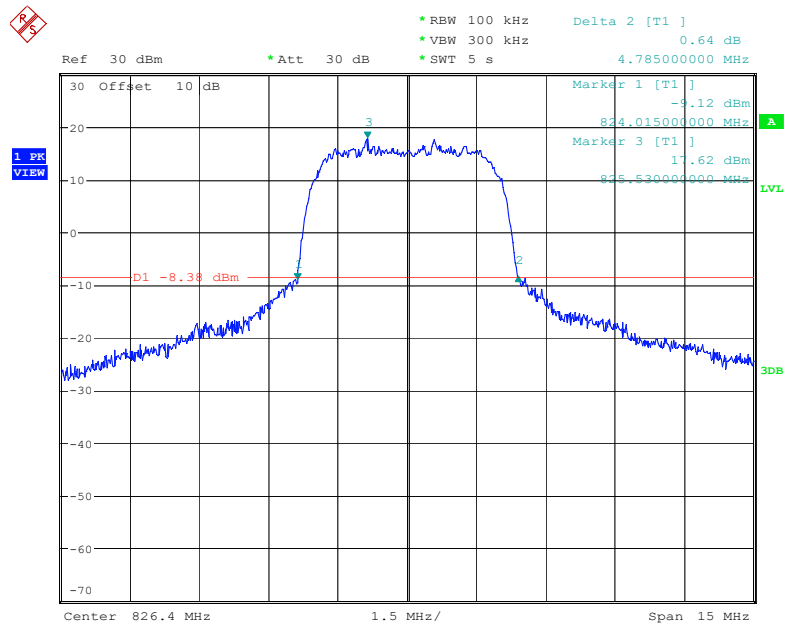
26 dB Emission Bandwidth for RMC (BPSK) Mode, High channel

Date: 29.SEP.2022 16:32:37

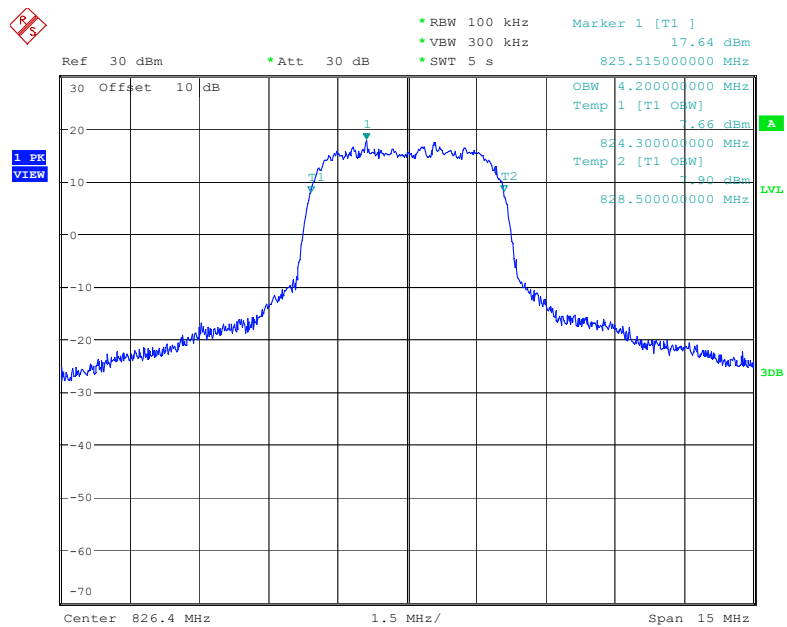


Date: 29.SEP.2022 16:31:57

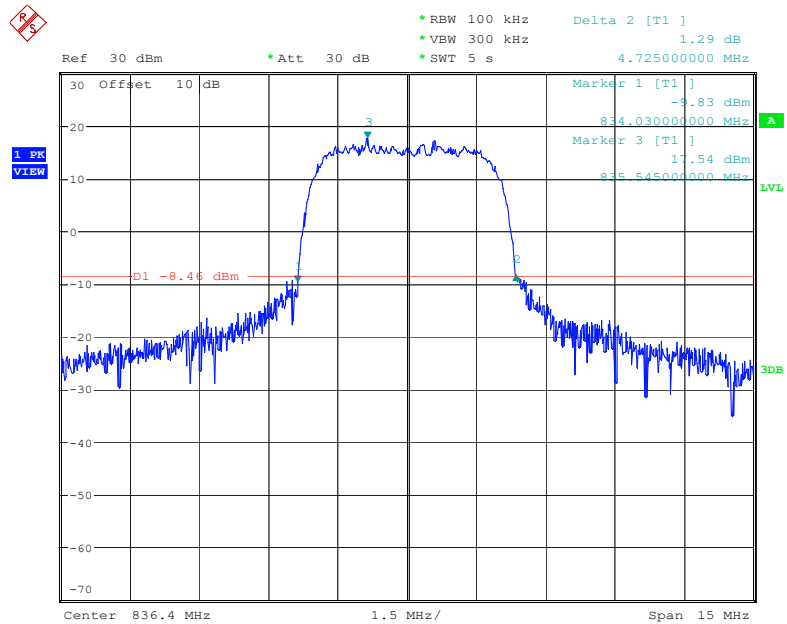
26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Low channel



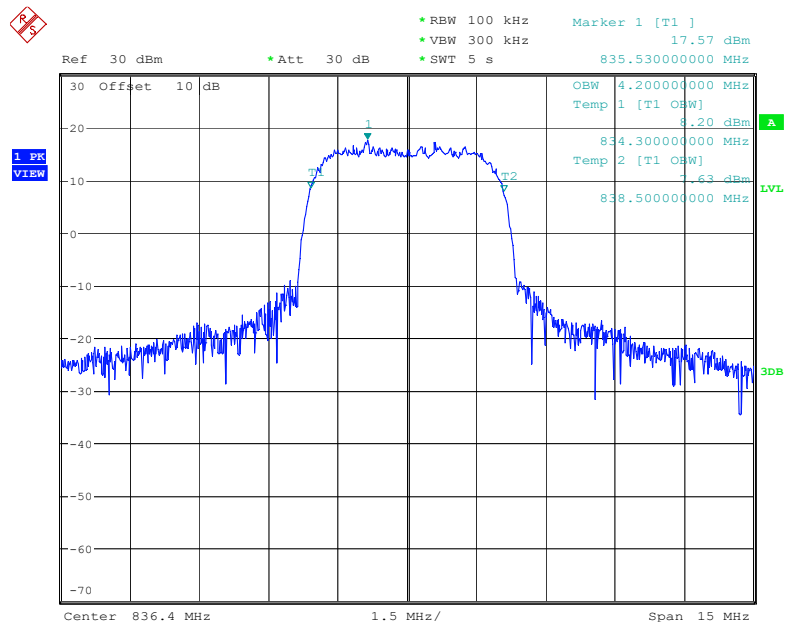
Date: 29.SEP.2022 17:56:13



Date: 29.SEP.2022 17:55:33

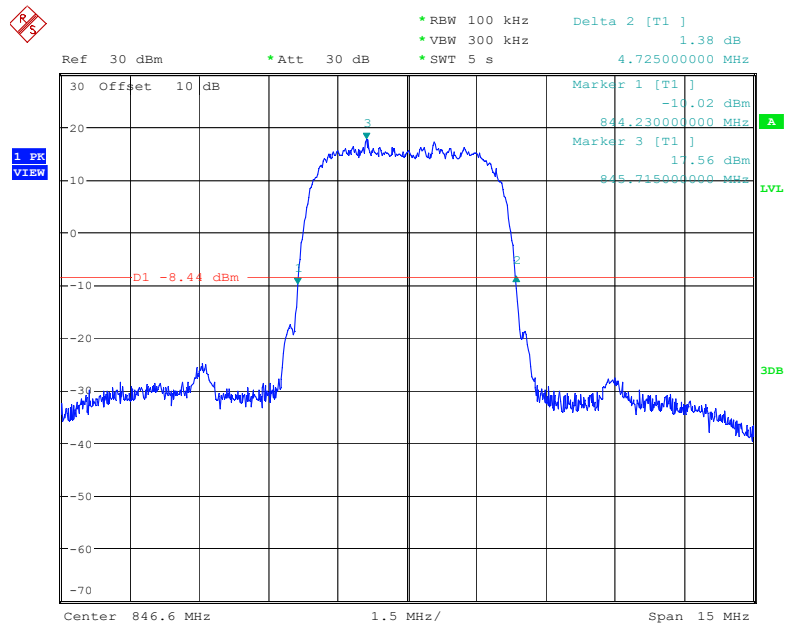
26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Middle channel

Date: 29.SEP.2022 17:59:54

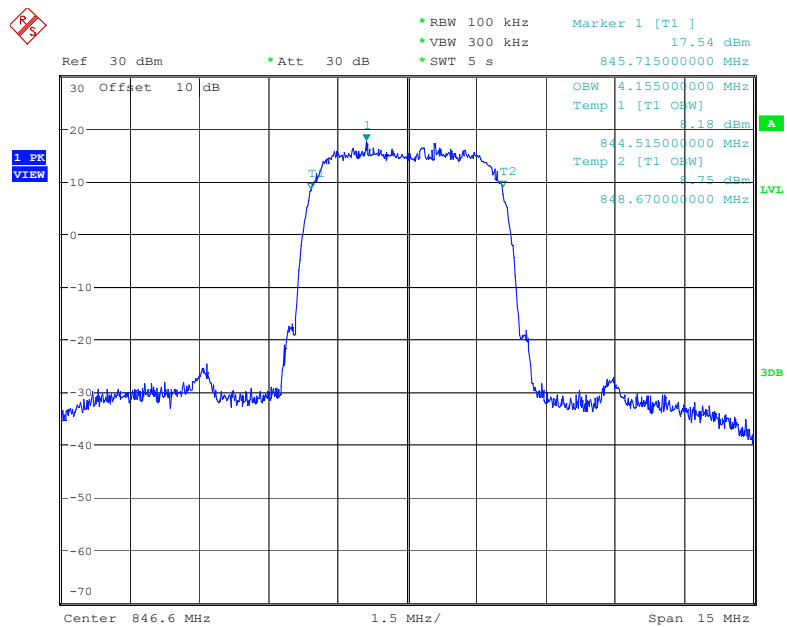


Date: 29.SEP.2022 17:59:15

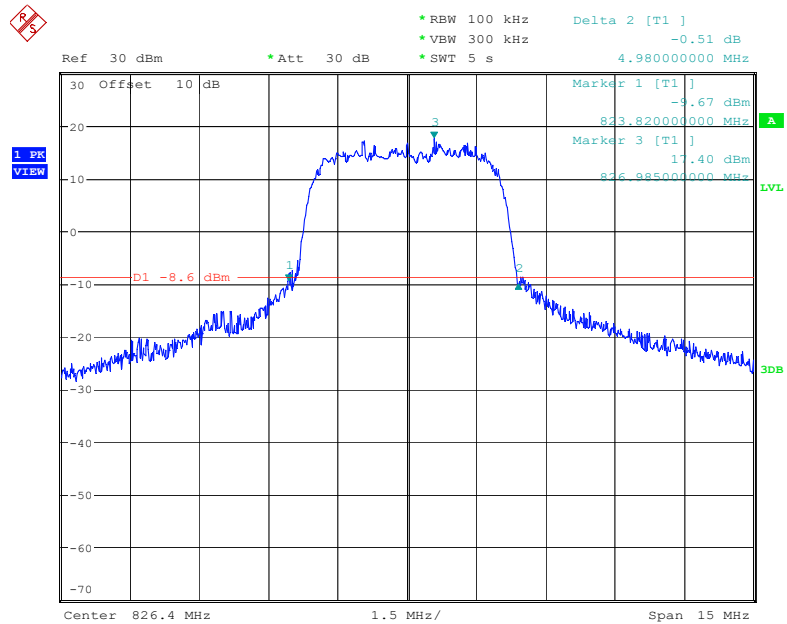
26 dB Emission Bandwidth for HSUPA (QPSK) Mode, High channel



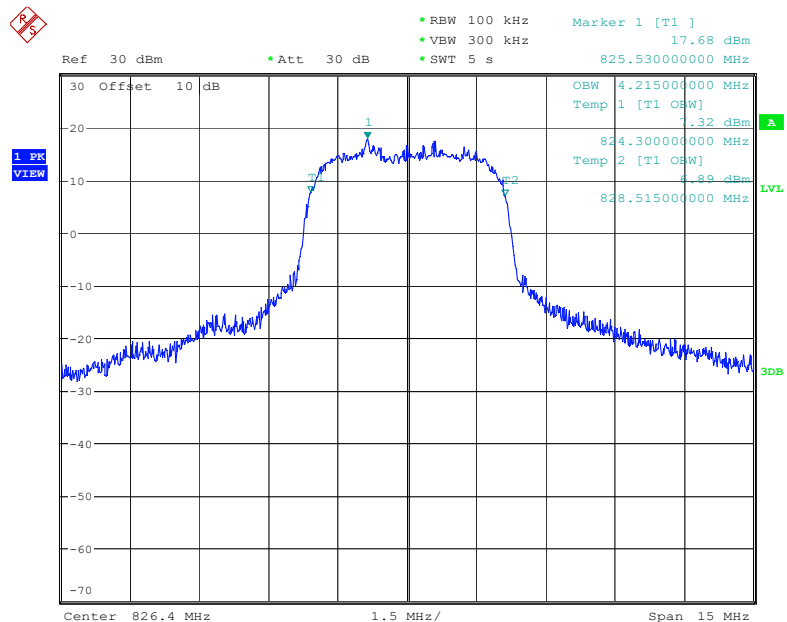
Date: 29.SEP.2022 18:02:53



Date: 29.SEP.2022 18:02:15

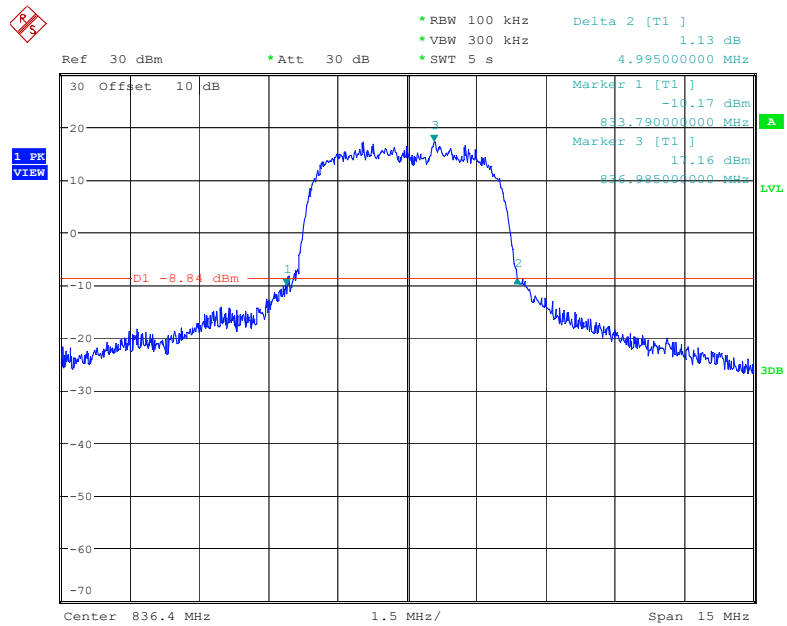
26 dB Emission Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 29.SEP.2022 16:46:11

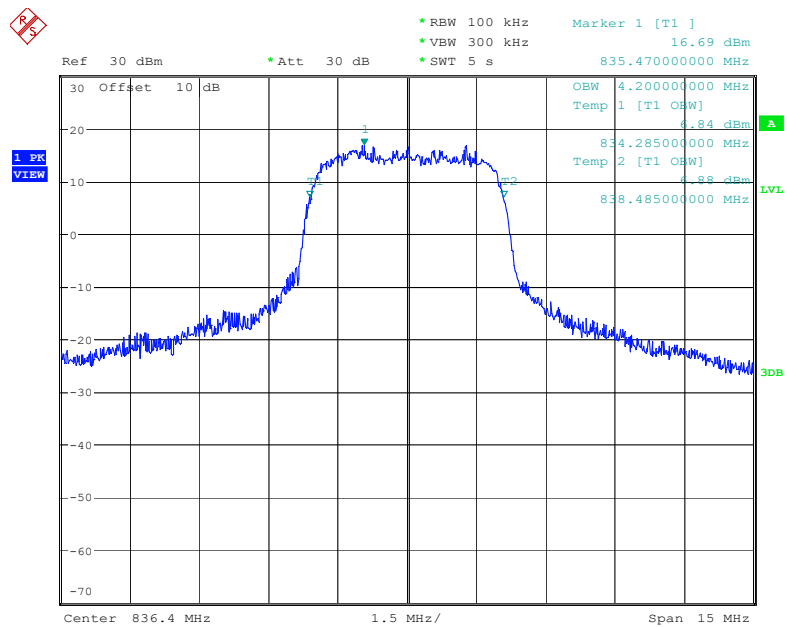


Date: 29.SEP.2022 16:45:32

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

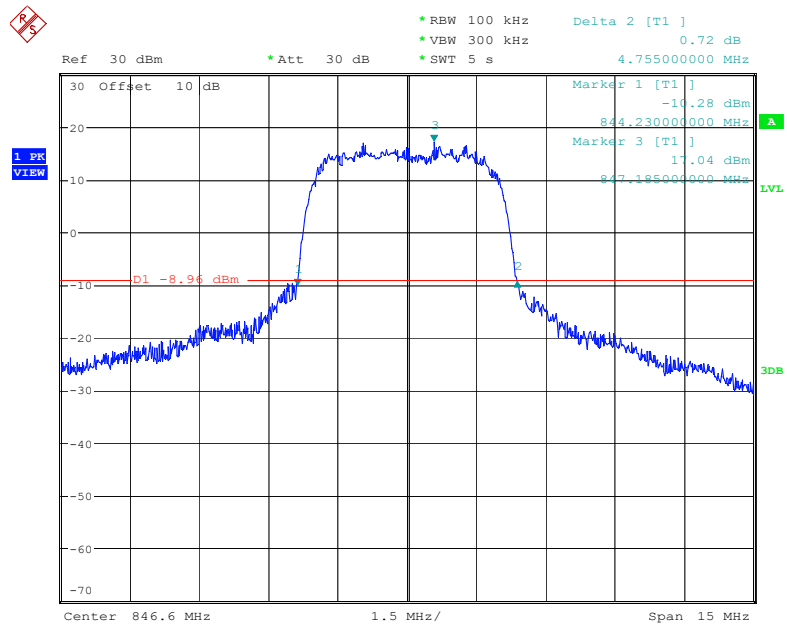


Date: 29.SEP.2022 16:42:47

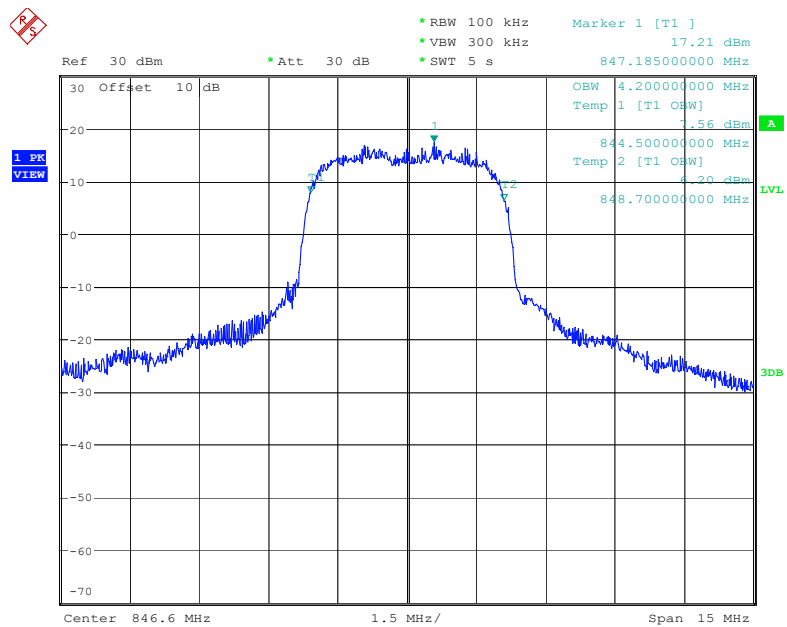


Date: 29.SEP.2022 16:42:07

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



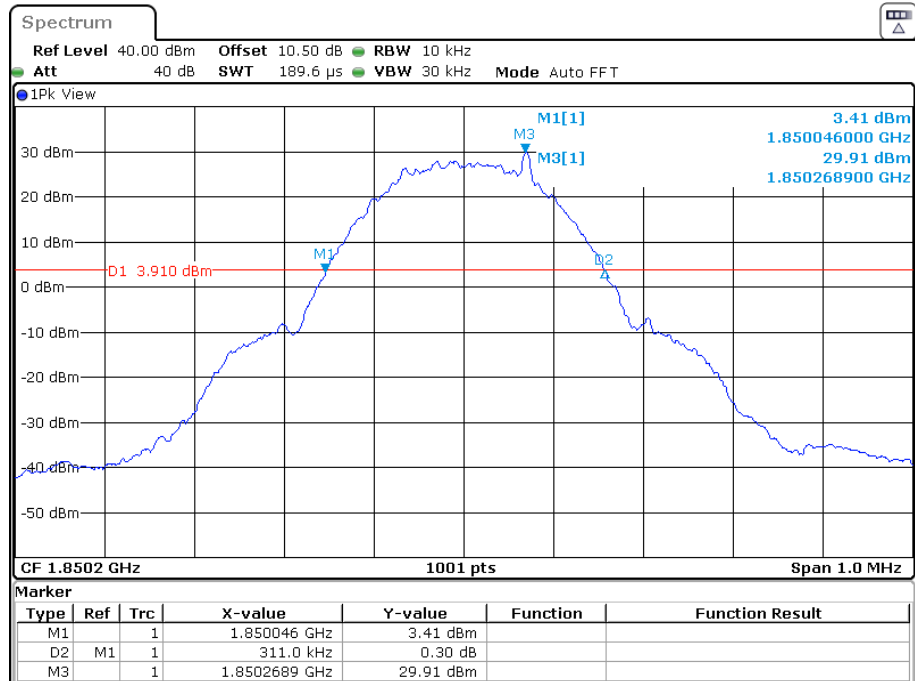
Date: 29.SEP.2022 16:38:09



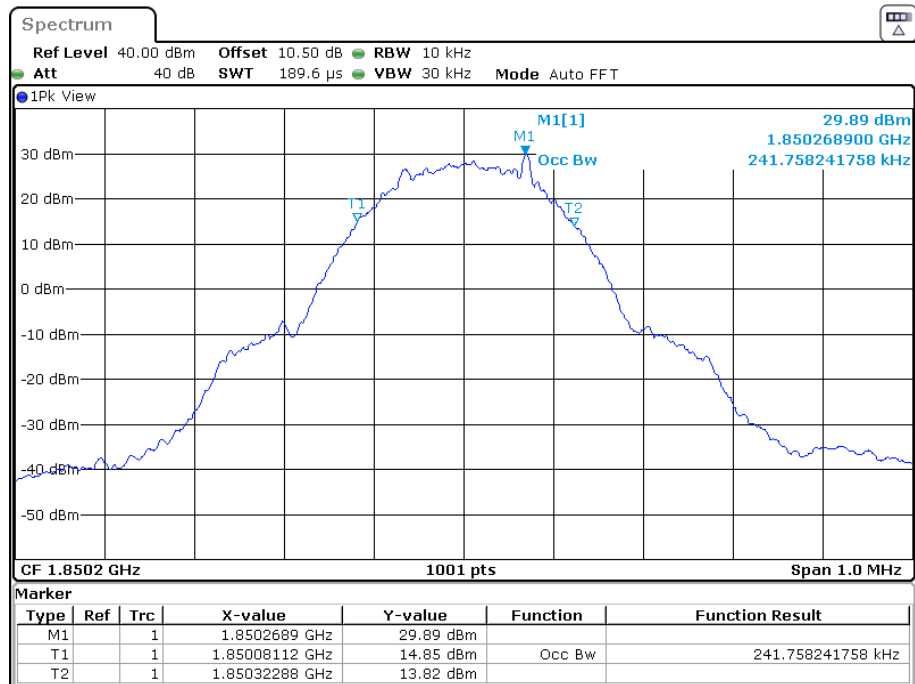
Date: 29.SEP.2022 16:37:30

PCS Band (Part 24E)

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

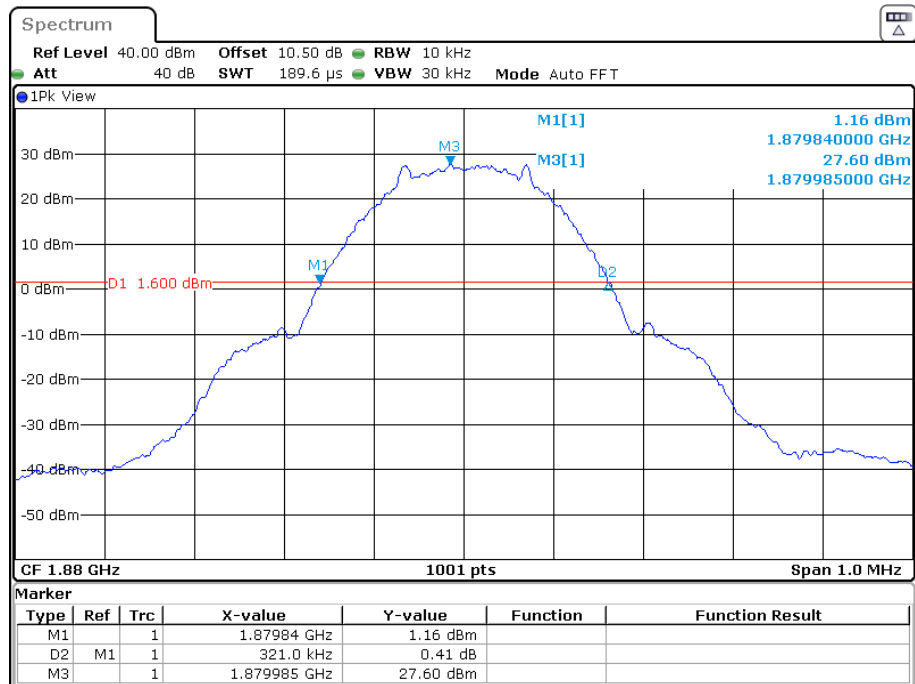


Date: 16.SEP.2022 11:23:45

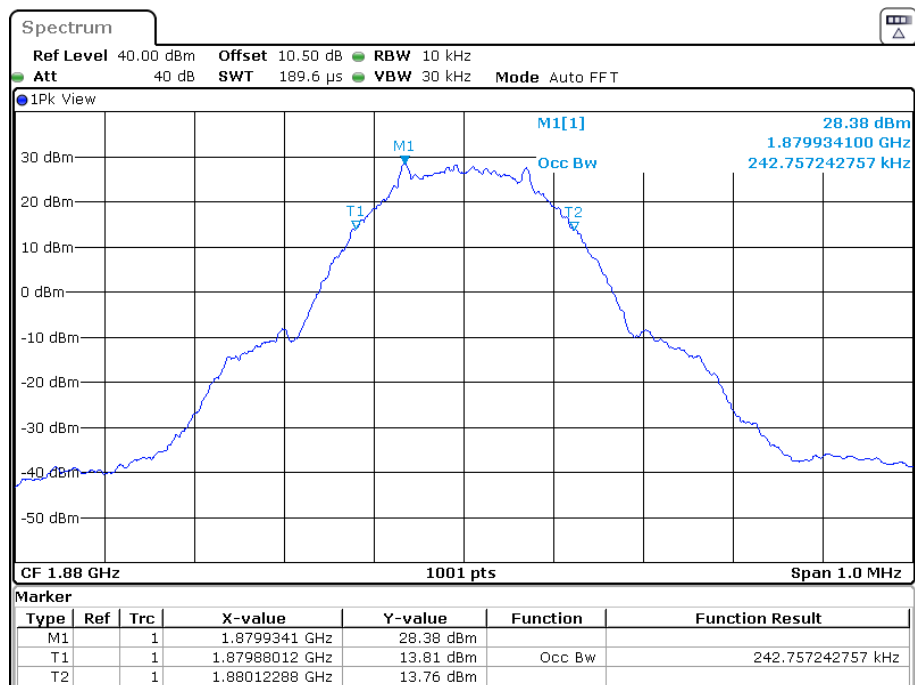


Date: 16.SEP.2022 11:23:05

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

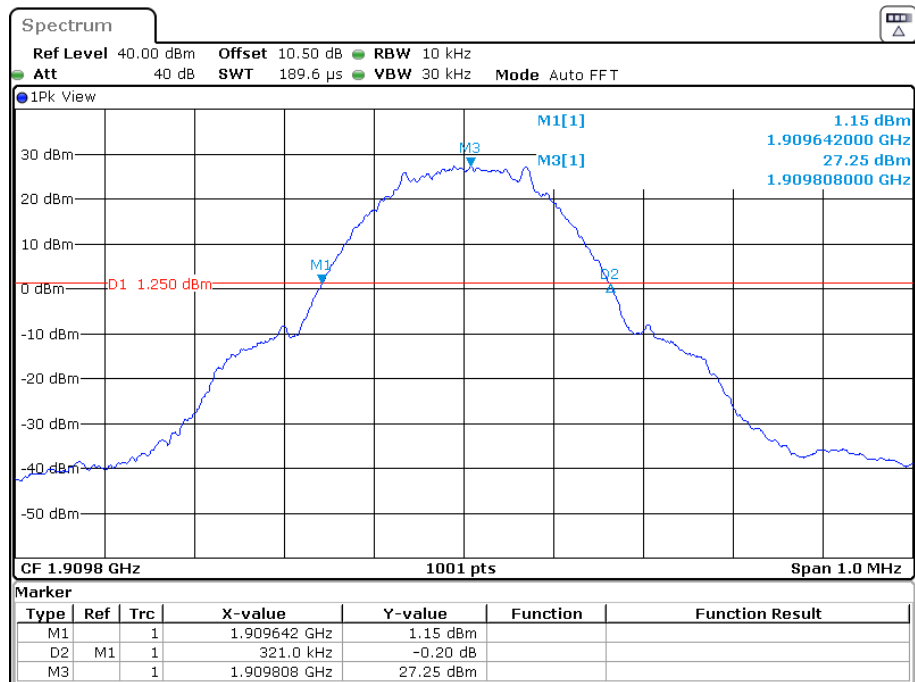


Date: 16.SEP.2022 11:38:01

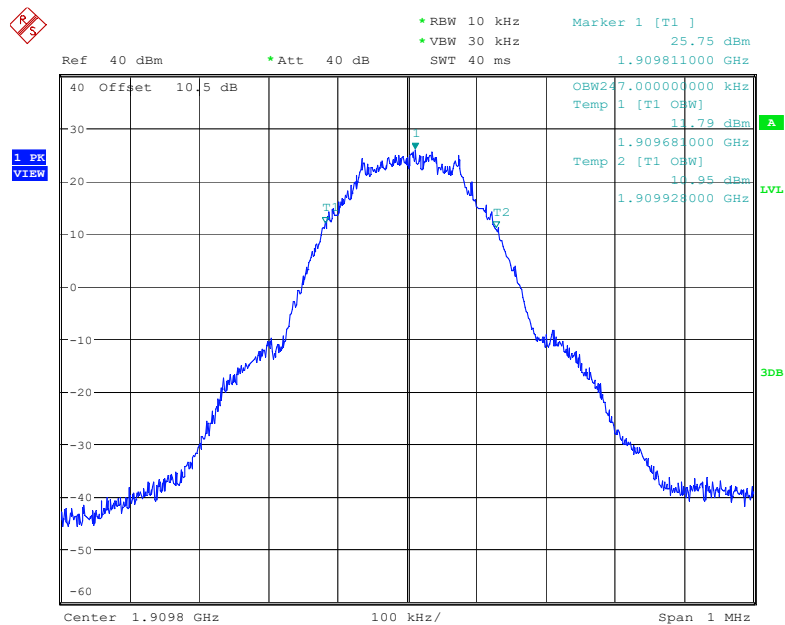


Date: 16.SEP.2022 11:37:21

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

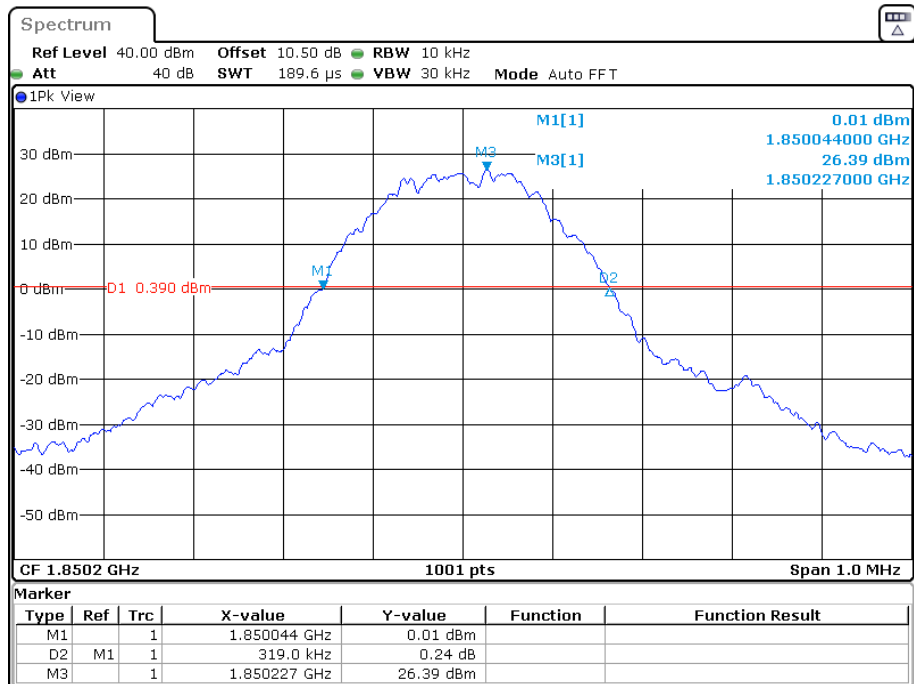


Date: 16.SEP.2022 11:46:55

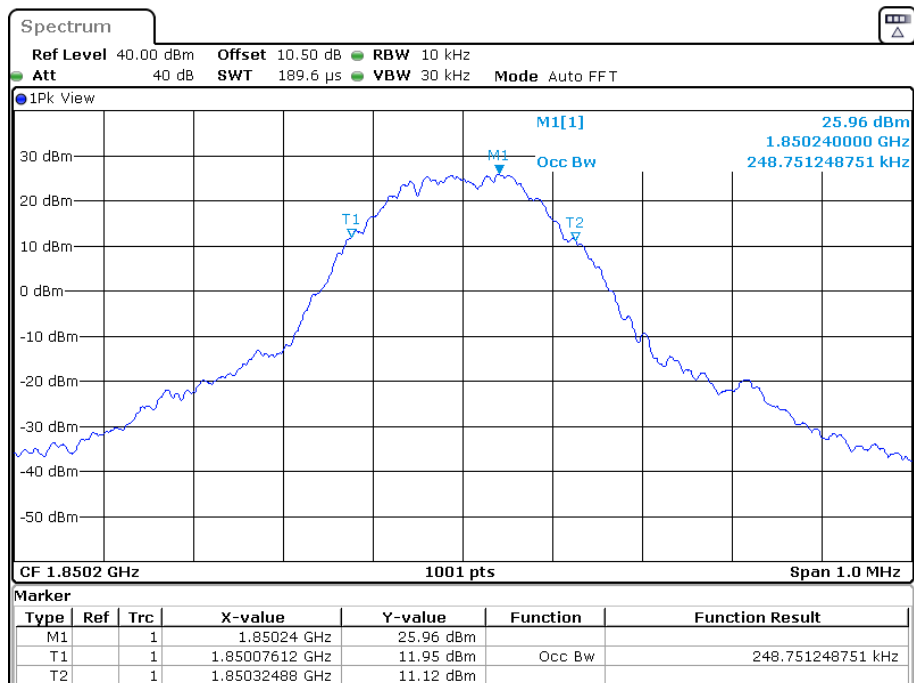


Date: 1.NOV.2022 10:44:04

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

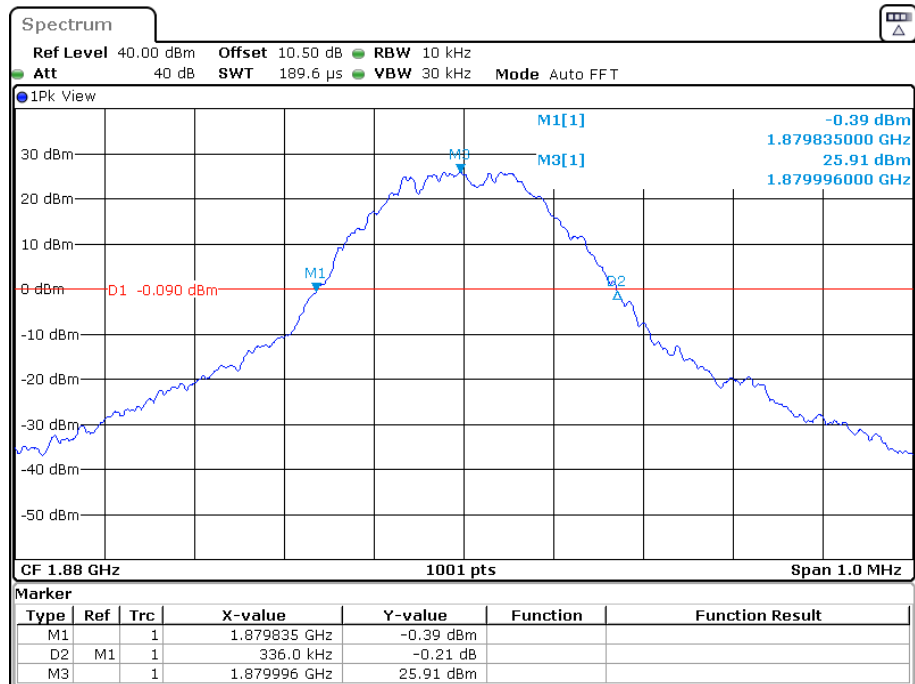


Date: 16.SEP.2022 12:57:03

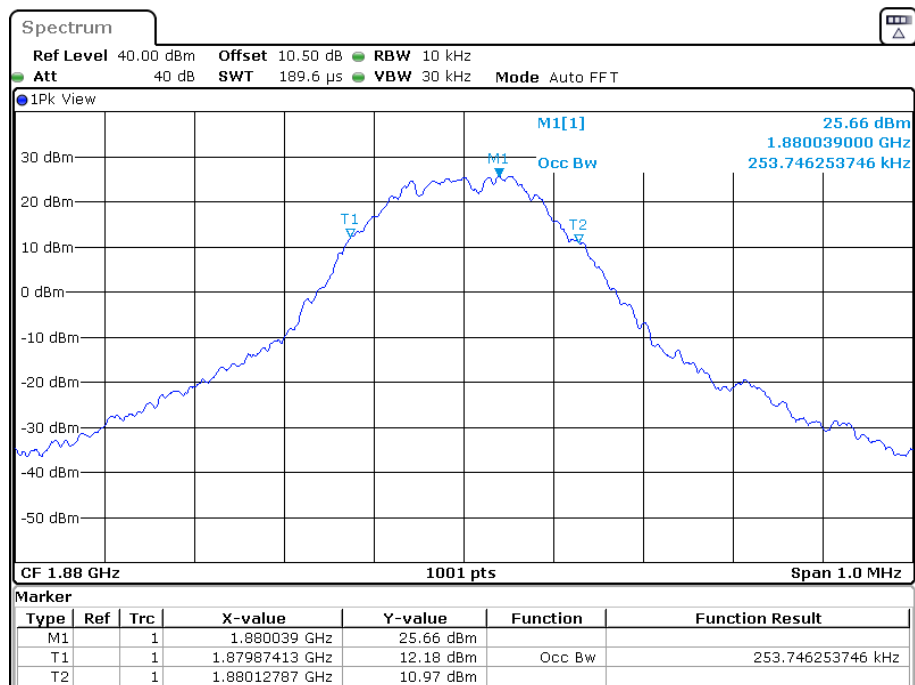


Date: 16.SEP.2022 12:56:24

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

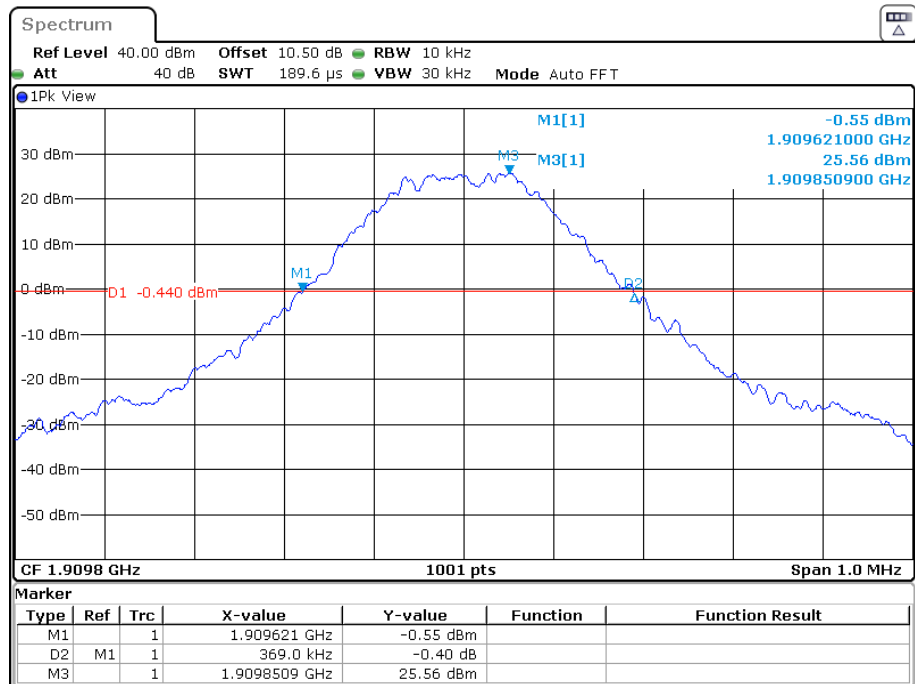


Date: 16.SEP.2022 13:03:10

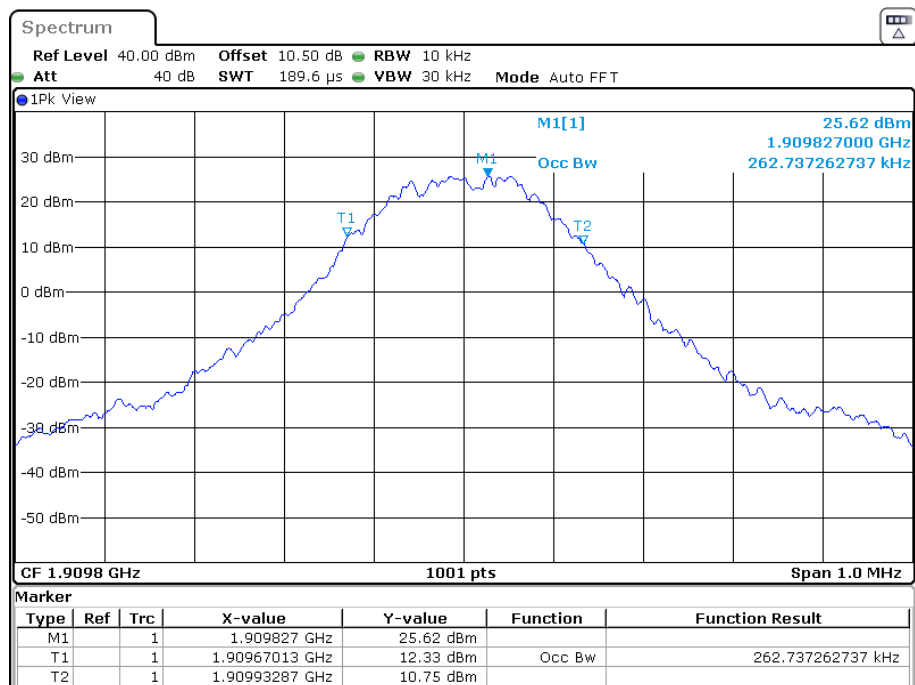


Date: 16.SEP.2022 13:02:30

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

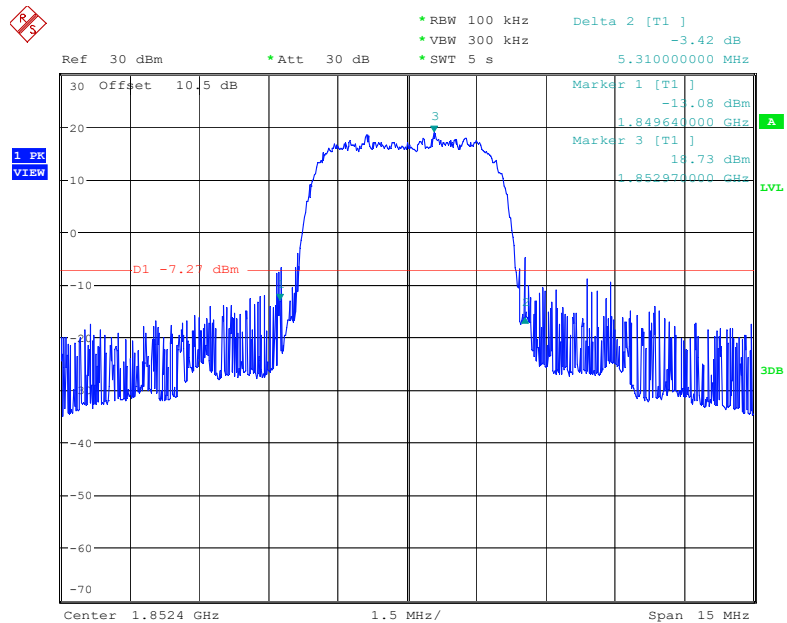


Date: 16.SEP.2022 13:12:57

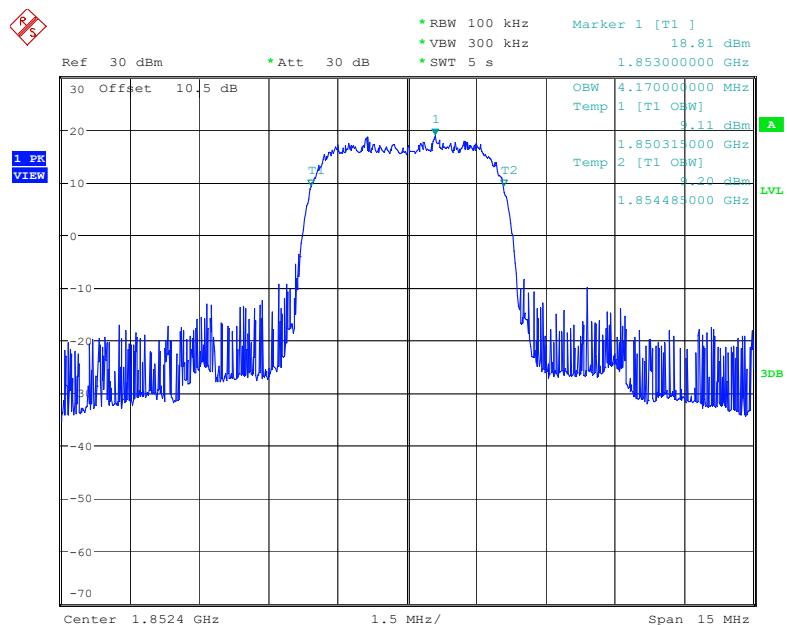


Date: 16.SEP.2022 13:12:17

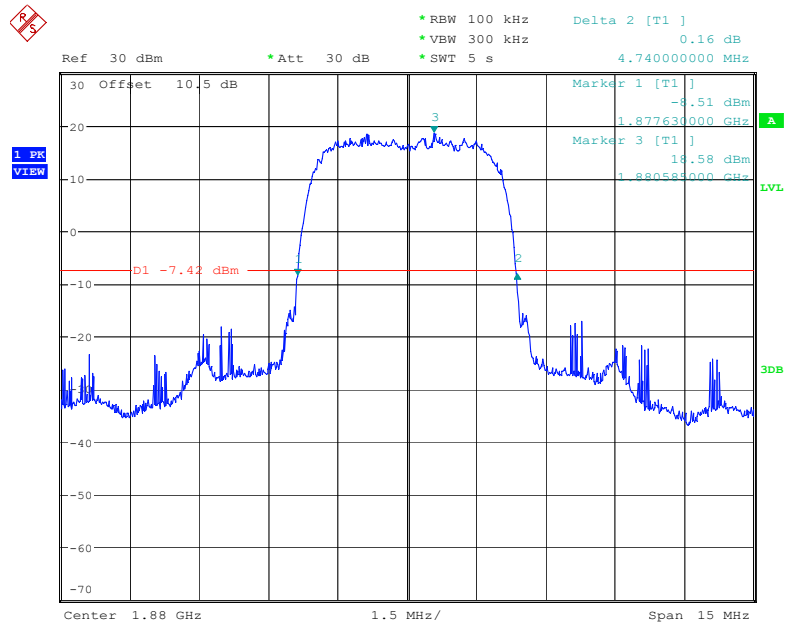
26 dB Emission Bandwidth for RMC (BPSK) Mode, Low channel



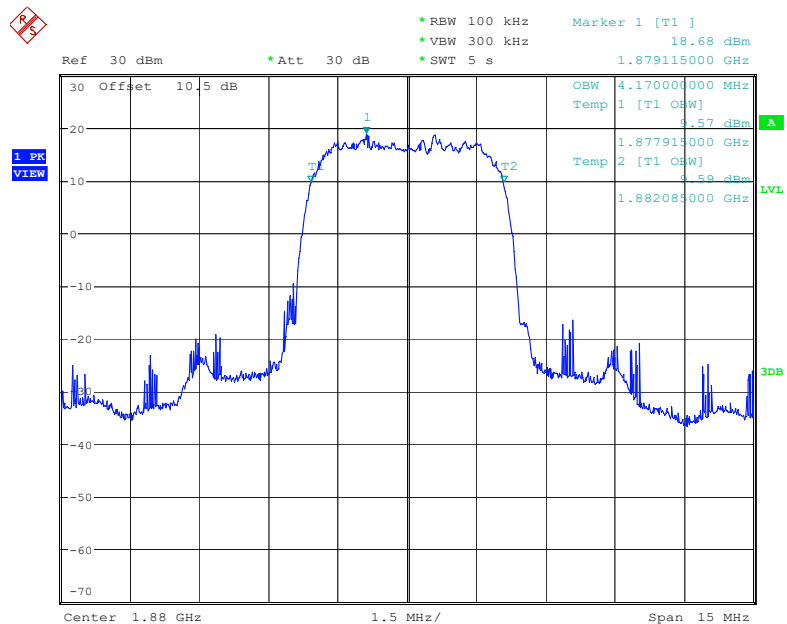
Date: 29.SEP.2022 15:59:26



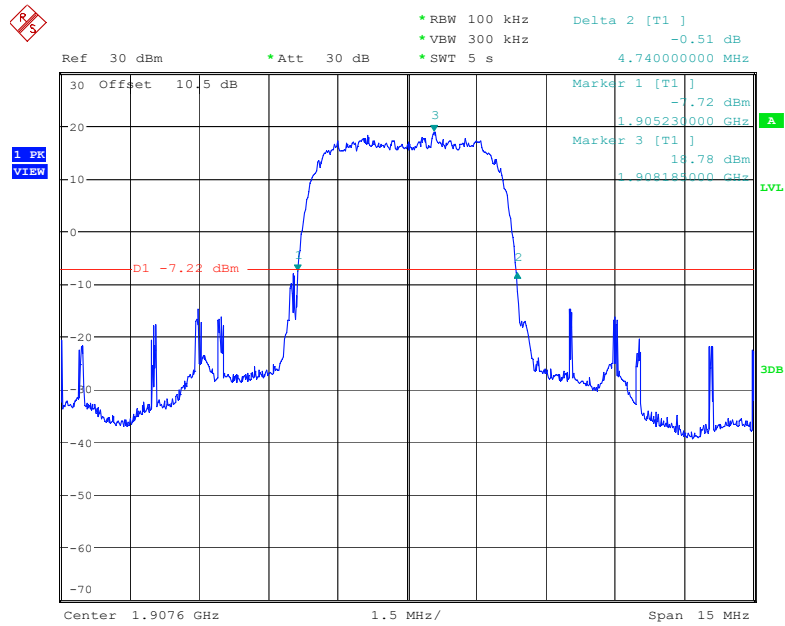
Date: 29.SEP.2022 15:58:45

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

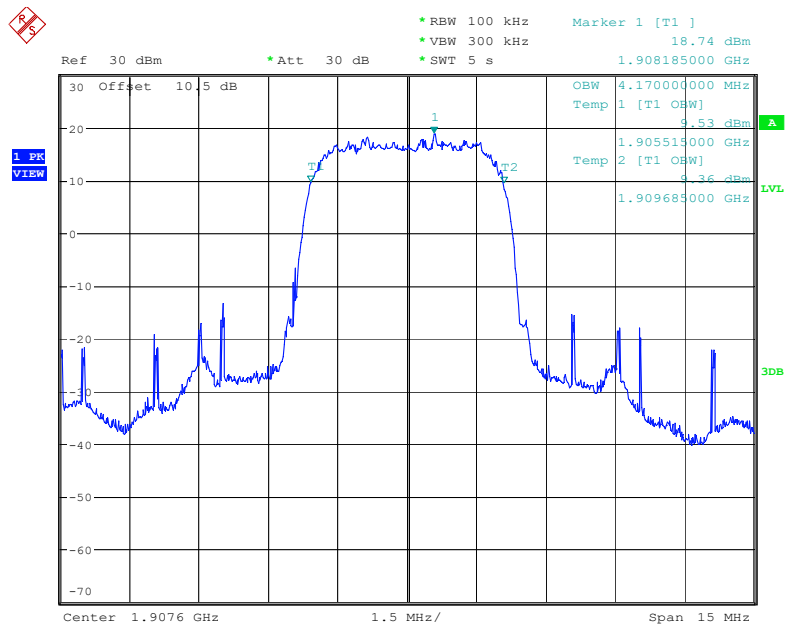
Date: 29.SEP.2022 16:03:46



Date: 29.SEP.2022 16:03:07

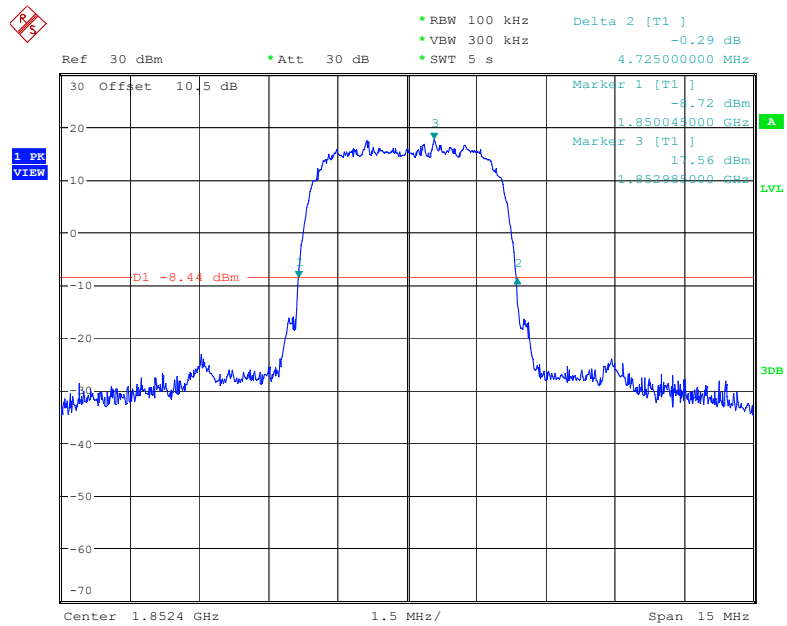
26 dB Emission Bandwidth for RMC (BPSK) Mode, High channel

Date: 29.SEP.2022 16:07:37

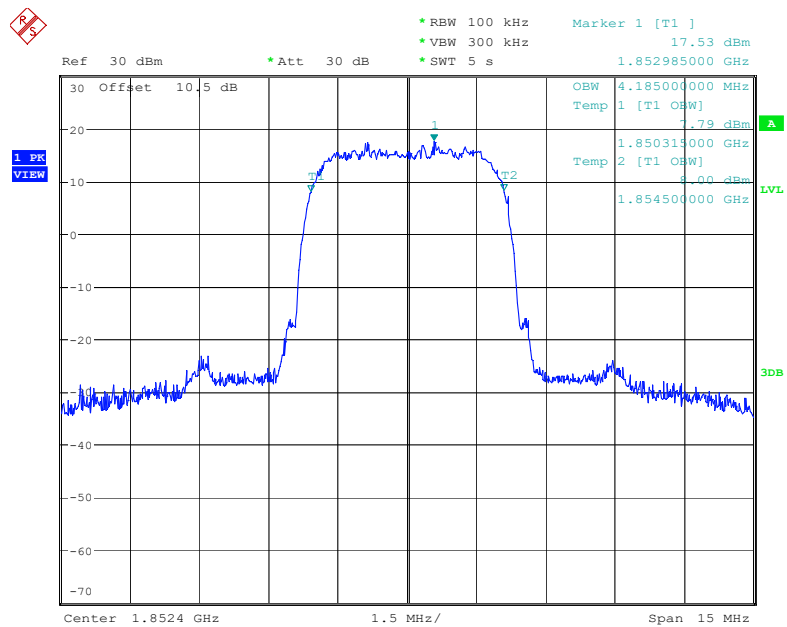


Date: 29.SEP.2022 16:06:58

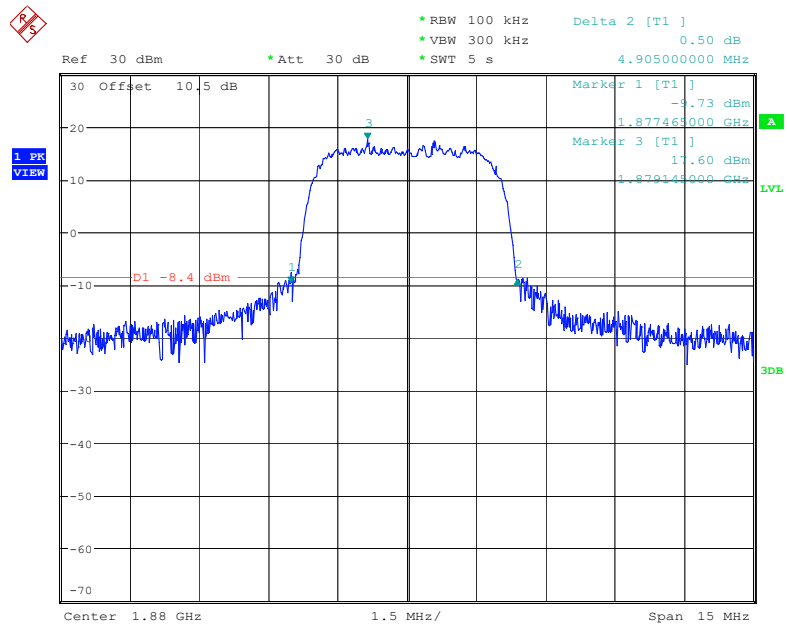
26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Low channel



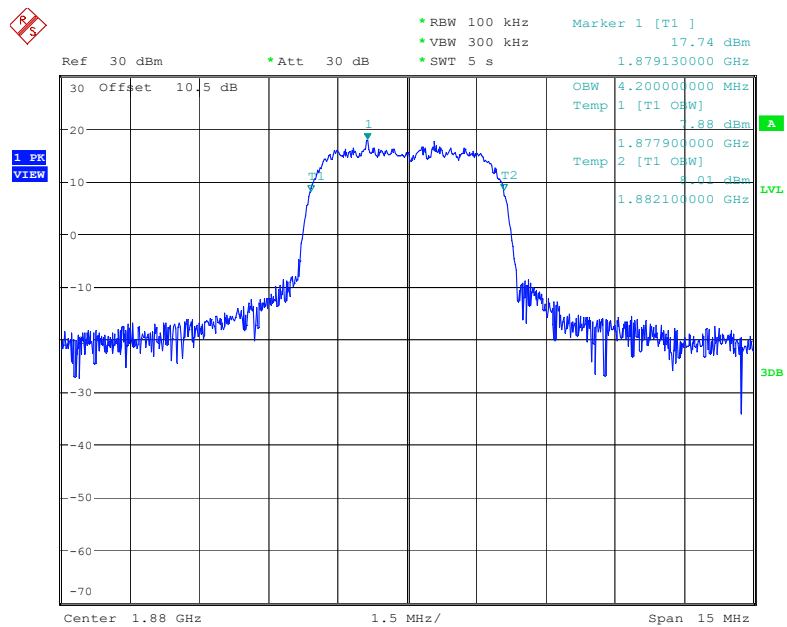
Date: 29.SEP.2022 17:26:10



Date: 29.SEP.2022 17:25:32

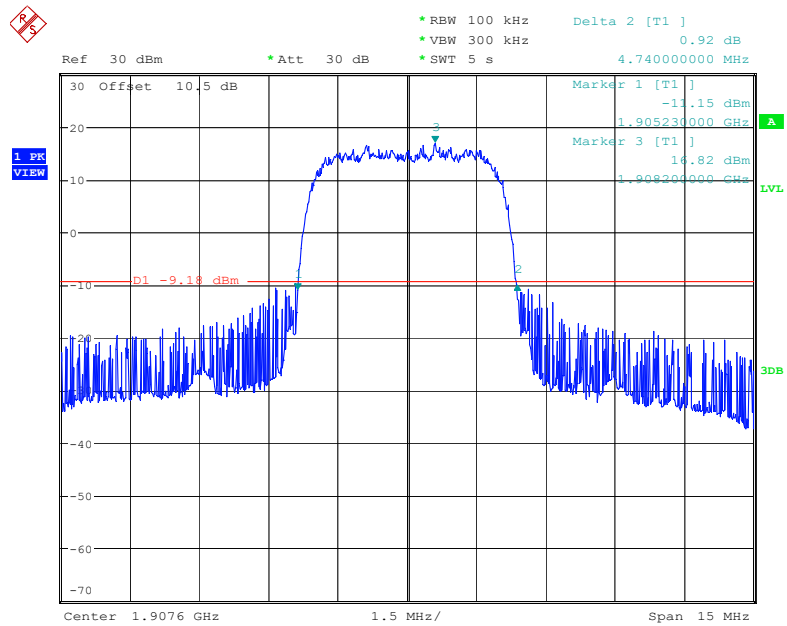
26 dB Emission Bandwidth for HSUPA (QPSK) Mode, Middle channel

Date: 29.SEP.2022 17:22:21

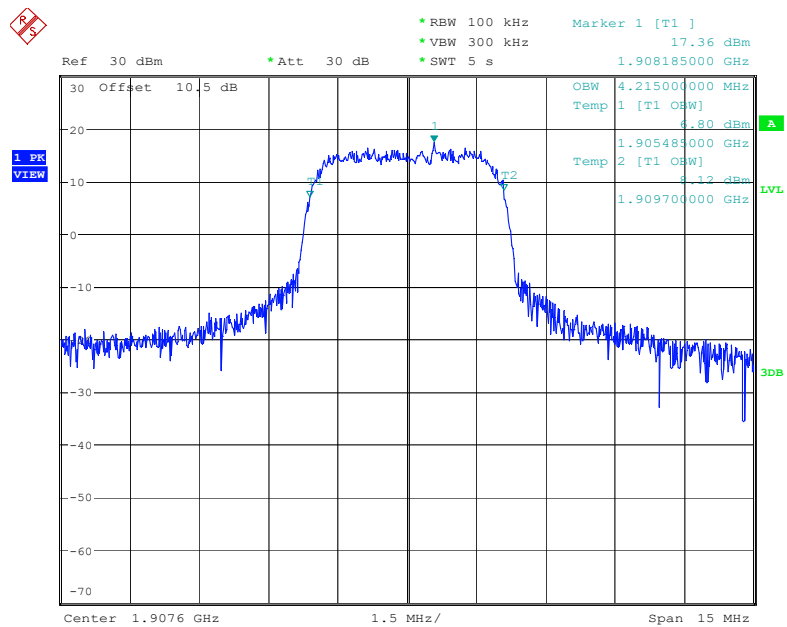


Date: 29.SEP.2022 17:21:43

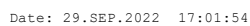
26 dB Emission Bandwidth for HSUPA (QPSK) Mode, High channel



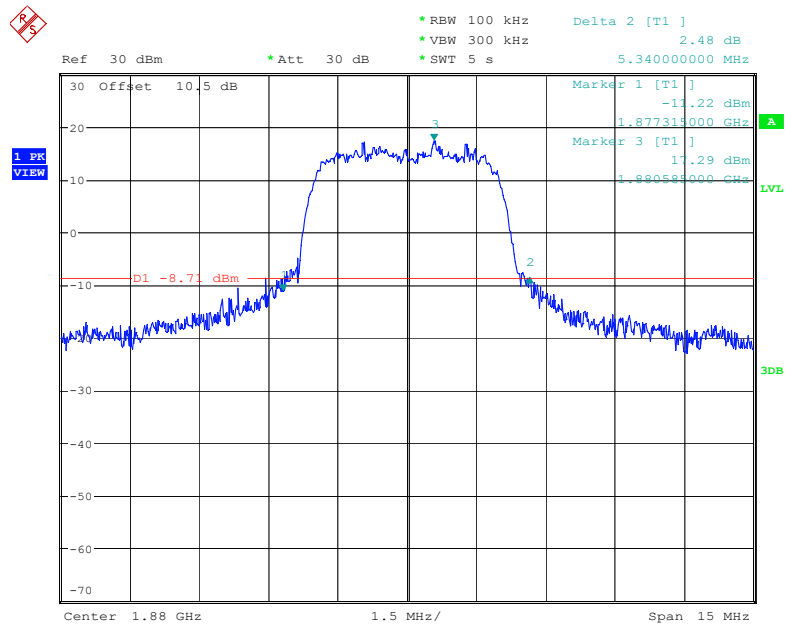
Date: 29.SEP.2022 17:18:12



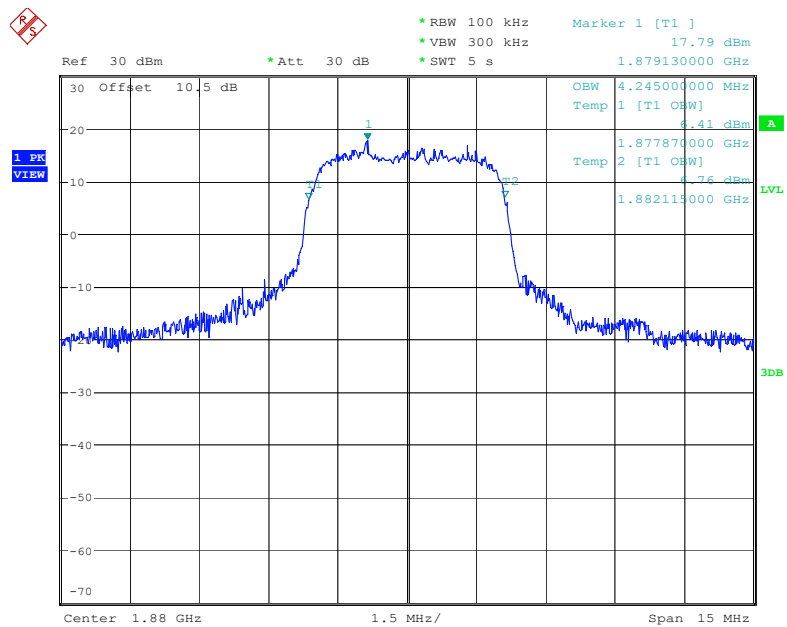
Date: 29.SEP.2022 17:17:33



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

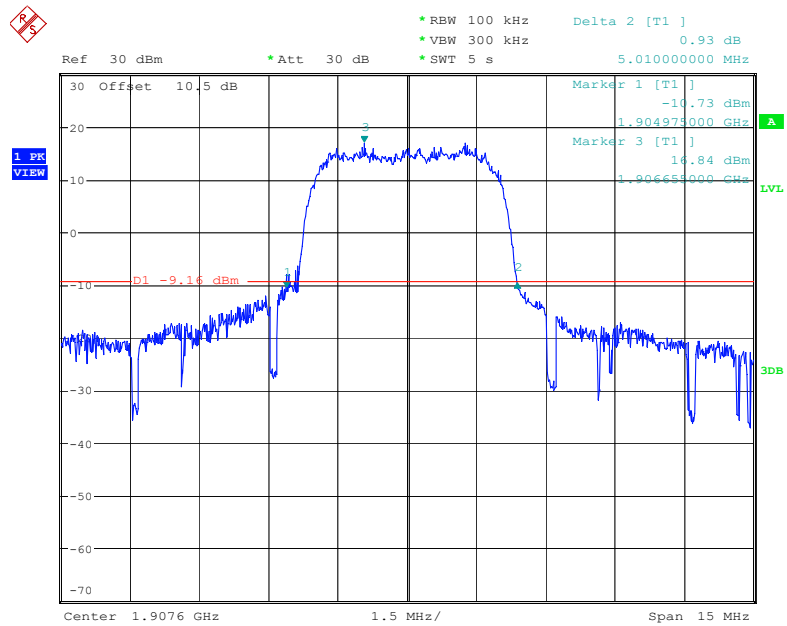


Date: 29.SEP.2022 17:06:34

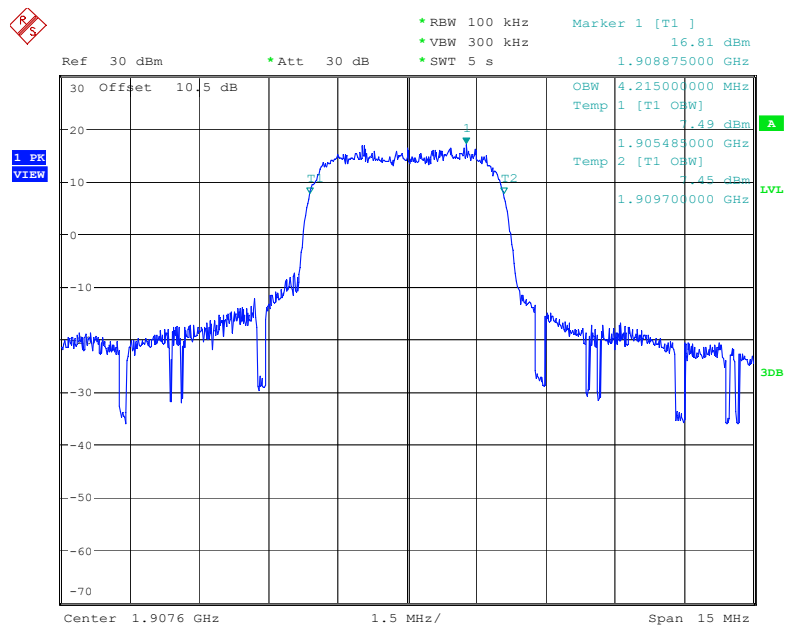


Date: 29.SEP.2022 17:05:55

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



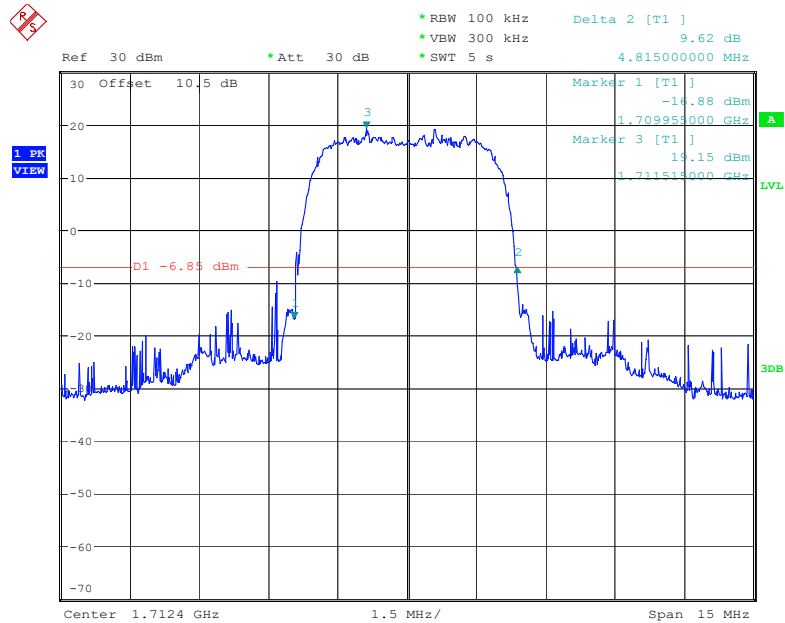
Date: 29.SEP.2022 17:11:23



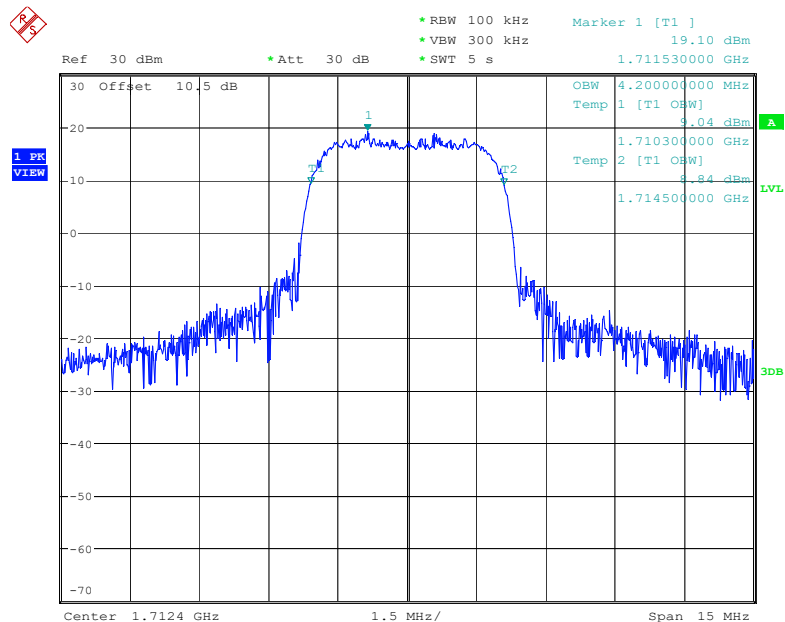
Date: 29.SEP.2022 17:10:44

AWS Band (Part 27)

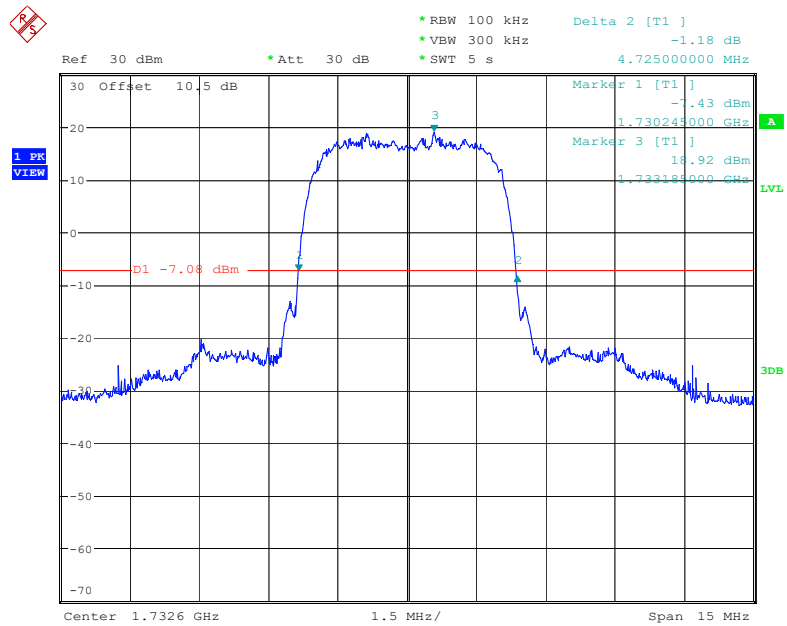
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



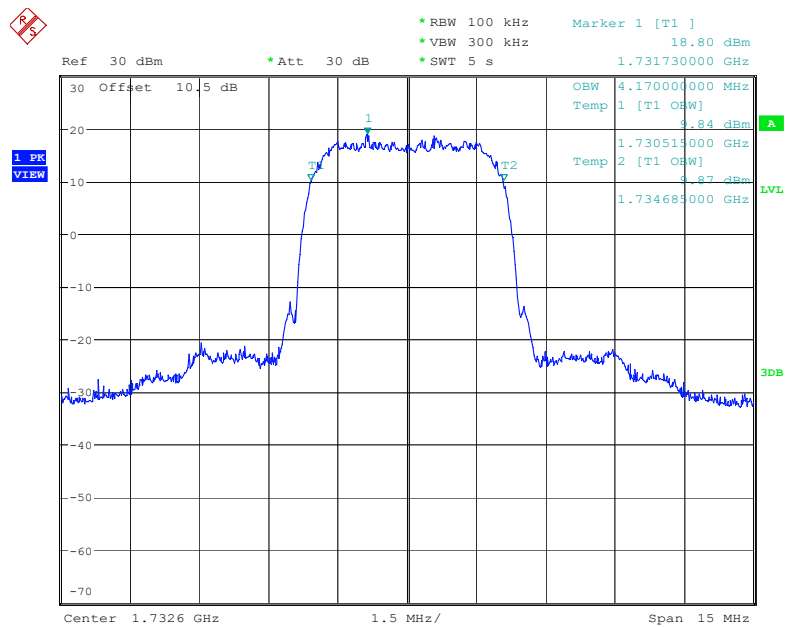
Date: 29.SEP.2022 16:12:08



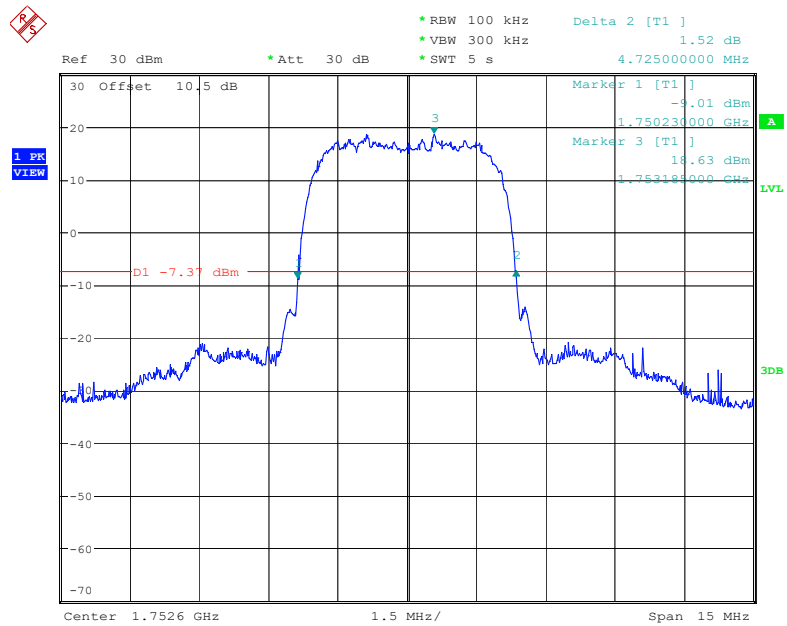
Date: 29.SEP.2022 16:11:30

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

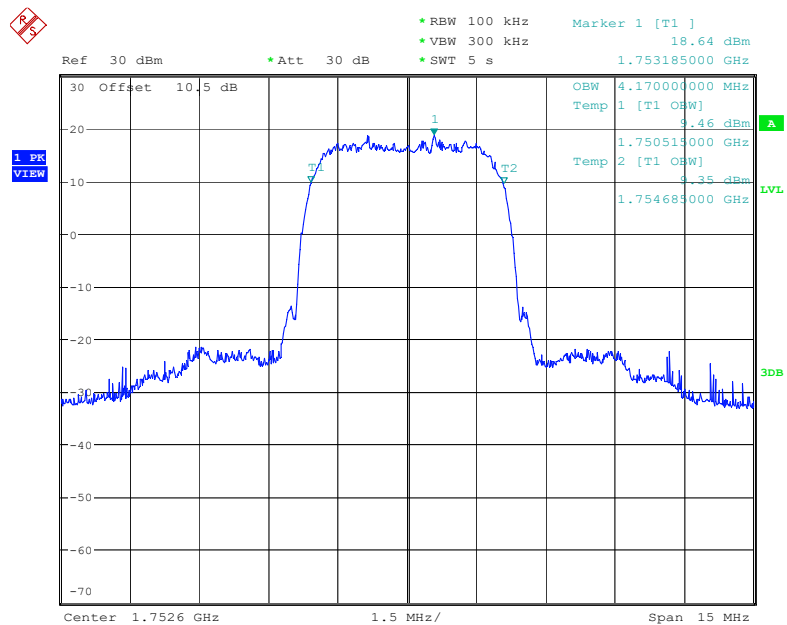
Date: 29.SEP.2022 16:16:12



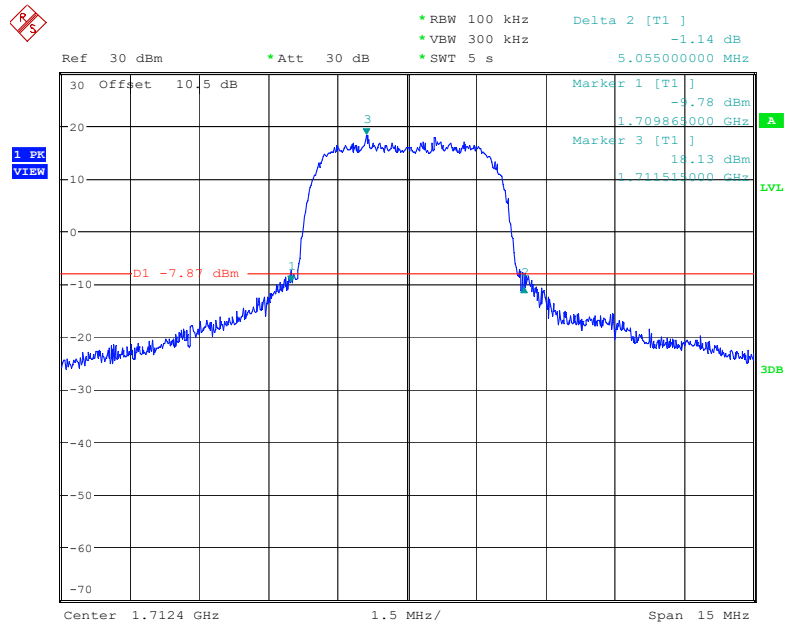
Date: 29.SEP.2022 16:15:33

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

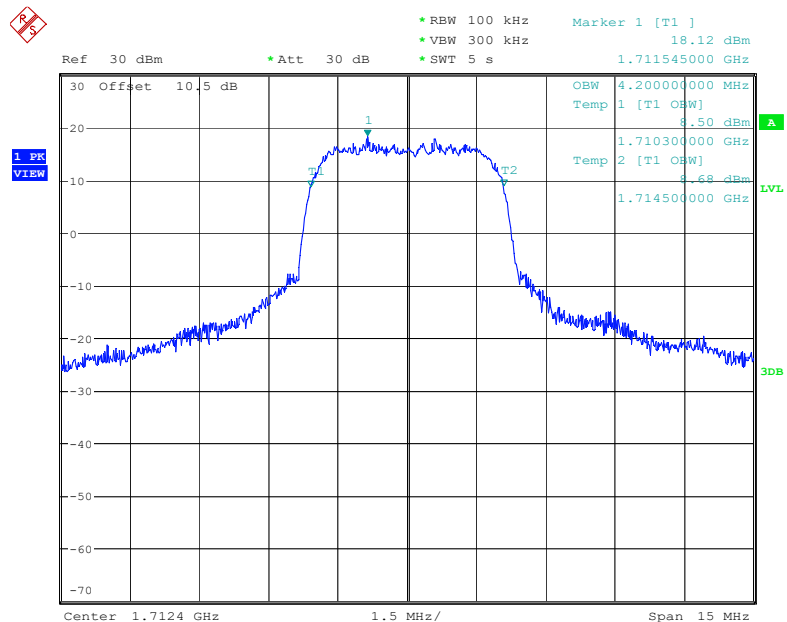
Date: 29.SEP.2022 16:20:04



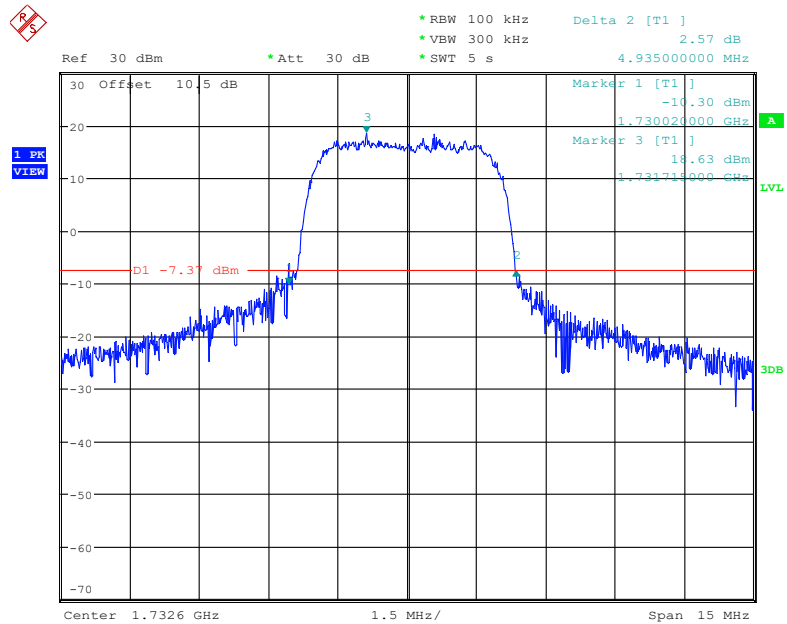
Date: 29.SEP.2022 16:19:24

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

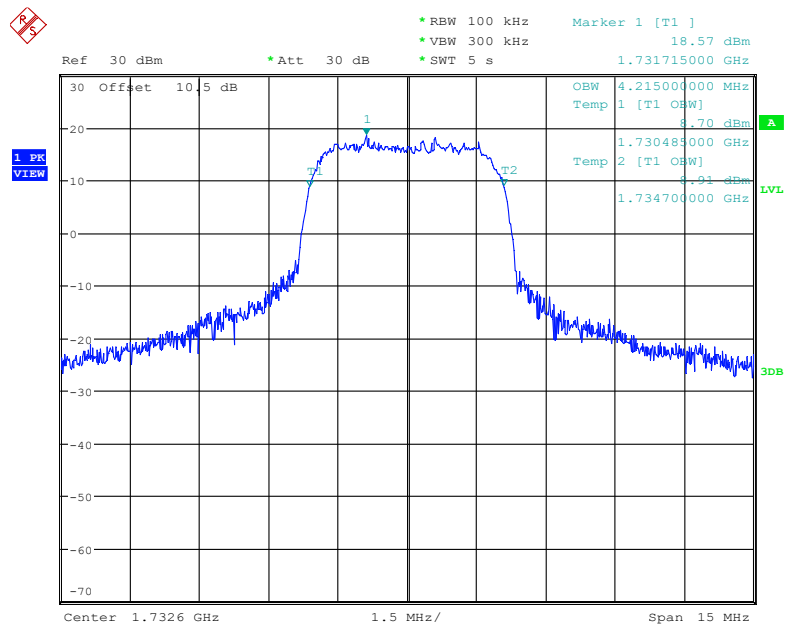
Date: 29.SEP.2022 17:30:15



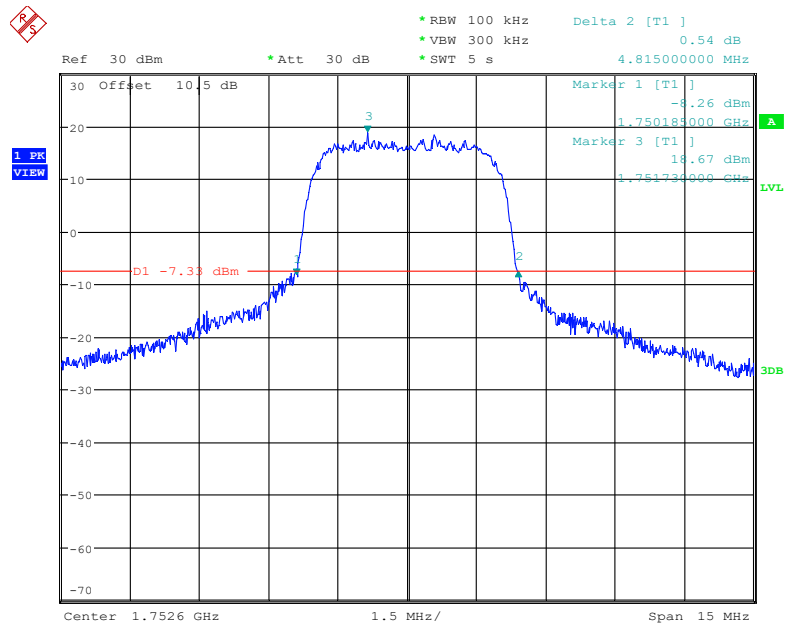
Date: 29.SEP.2022 17:29:37

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

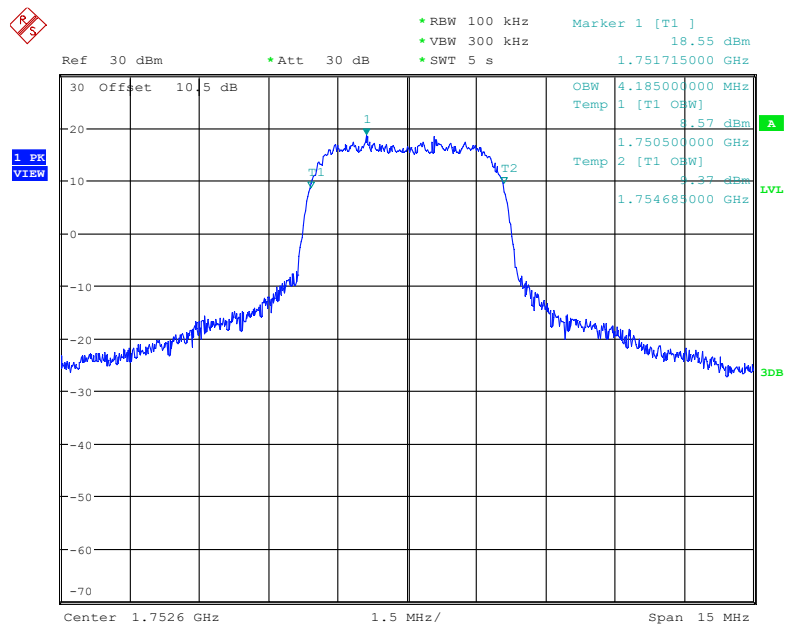
Date: 8.OCT.2022 15:56:28



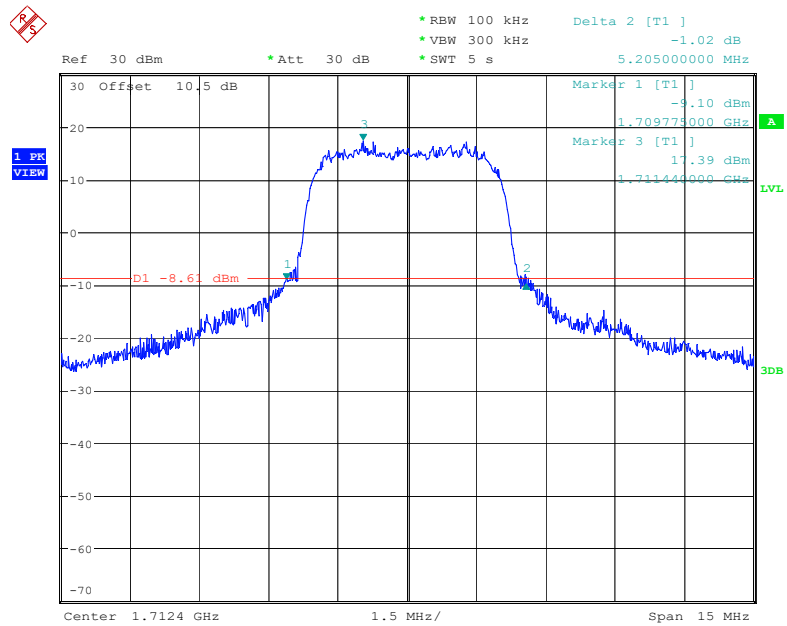
Date: 8.OCT.2022 15:55:49

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

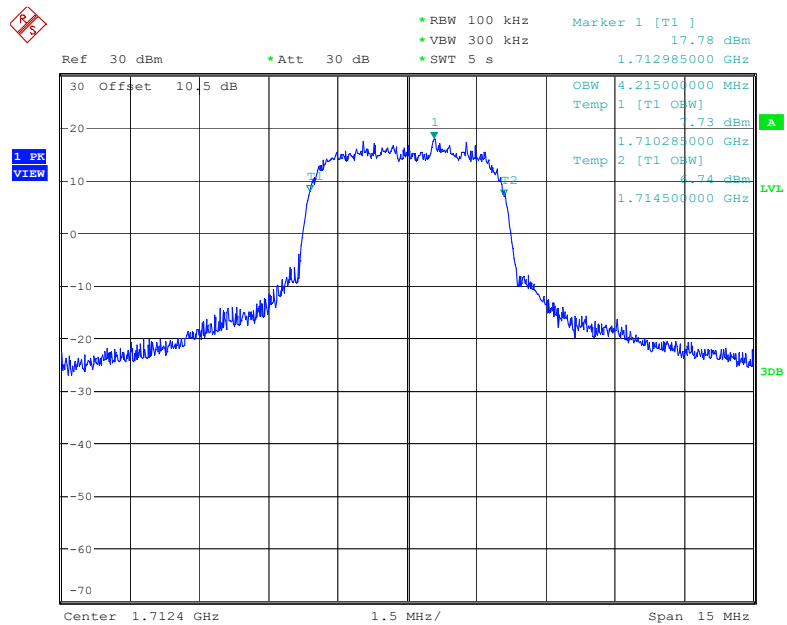
Date: 8.OCT.2022 15:52:22



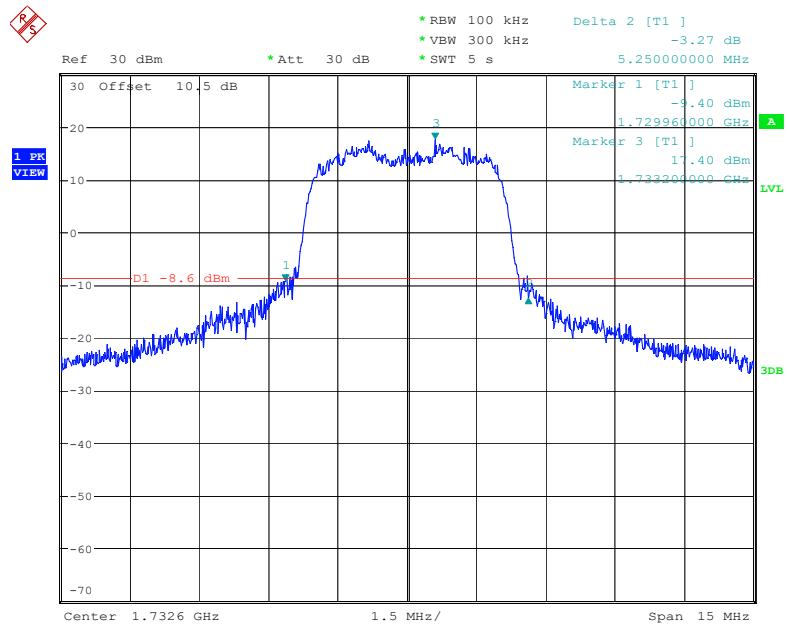
Date: 8.OCT.2022 15:51:42

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

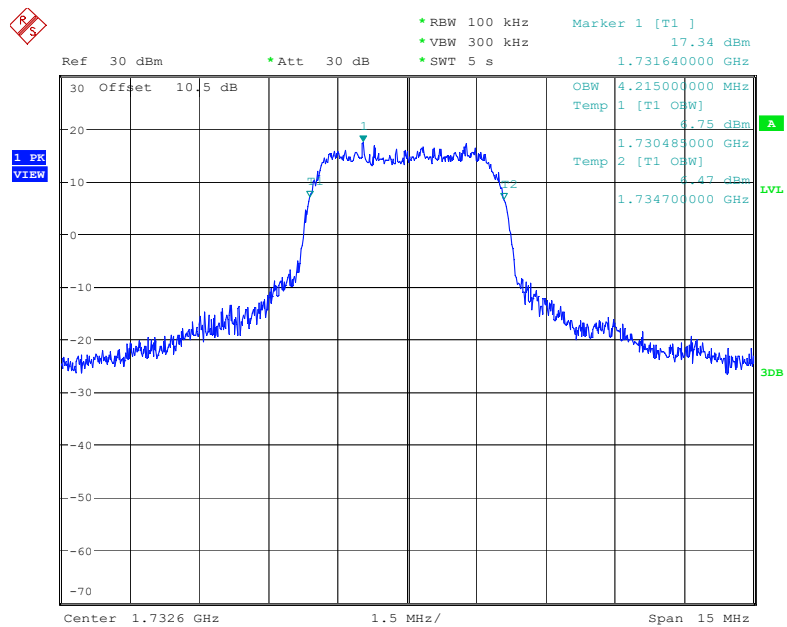
Date: 29.SEP.2022 16:57:16



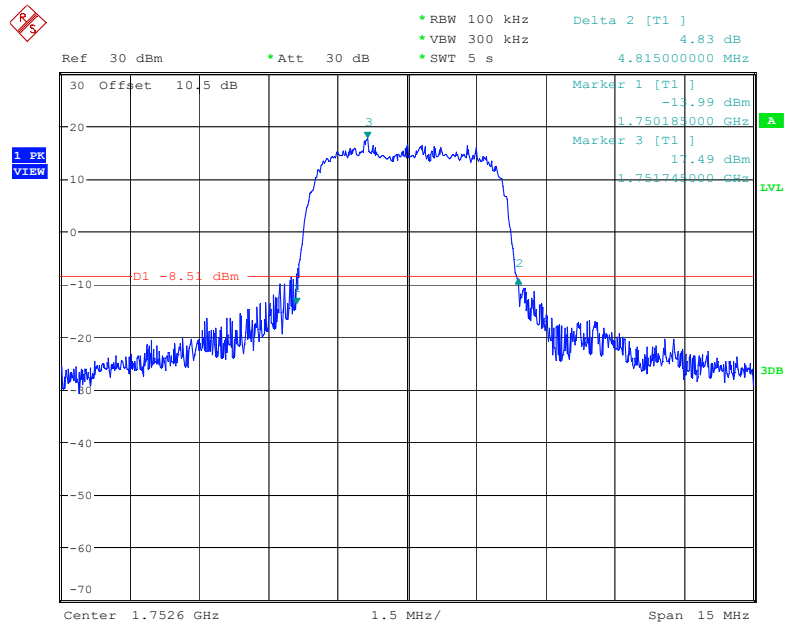
Date: 29.SEP.2022 16:56:37

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

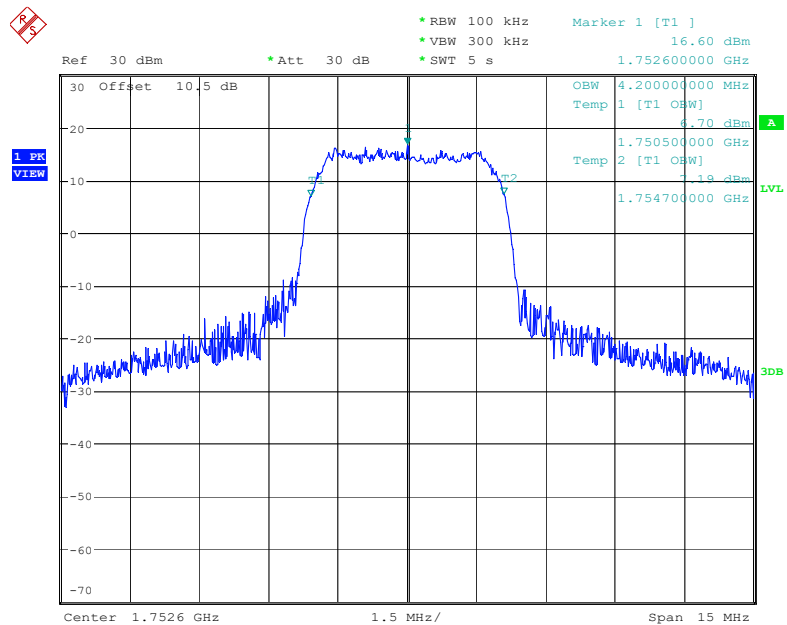
Date: 29.SEP.2022 16:53:46



Date: 29.SEP.2022 16:53:07

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

Date: 29.SEP.2022 16:49:49



Date: 29.SEP.2022 16:49:09

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	1.102	1.314	1.102	1.290	1.090	1.296
	16QAM	1.090	1.290	1.096	1.296	1.096	1.320
3 MHz	QPSK	2.695	2.880	2.683	2.892	2.671	2.868
	16QAM	2.683	2.880	2.683	2.880	2.671	2.880
5 MHz	QPSK	4.491	4.940	4.511	4.960	4.511	4.960
	16QAM	4.491	4.980	4.471	4.940	4.511	4.960
10 MHz	QPSK	8.942	9.720	8.982	9.640	8.942	9.600
	16QAM	8.942	9.680	8.942	9.600	8.942	9.560
15 MHz	QPSK	13.533	14.820	13.533	14.760	13.473	14.640
	16QAM	13.533	14.820	13.533	14.640	13.473	14.640
20 MHz	QPSK	18.124	20.320	17.964	19.280	17.884	19.360
	16QAM	17.964	19.360	18.044	19.360	17.964	19.360

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	1.102	1.314	1.102	1.290	1.090	1.290
	16QAM	1.096	1.290	1.096	1.296	1.102	1.326
3 MHz	QPSK	2.683	2.880	2.683	2.880	2.695	2.880
	16QAM	2.683	2.916	2.683	2.880	2.683	2.880
5 MHz	QPSK	4.511	4.960	4.491	4.940	4.511	4.960
	16QAM	4.511	4.960	4.511	5.000	4.491	4.960
10 MHz	QPSK	8.942	9.720	8.942	9.680	8.942	9.640
	16QAM	8.942	9.680	8.942	9.560	8.942	9.600
15 MHz	QPSK	13.533	14.760	13.533	15.420	13.533	14.700
	16QAM	13.533	14.760	13.533	14.640	13.533	14.700
20 MHz	QPSK	17.964	19.200	17.884	19.280	17.964	19.440
	16QAM	17.964	19.360	17.964	19.360	18.044	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	1.096	1.308	1.102	1.296	1.096	1.314
	16QAM	1.096	1.284	1.090	1.284	1.102	1.314
3 MHz	QPSK	2.695	2.880	2.683	2.892	2.683	2.880
	16QAM	2.683	2.868	2.683	2.868	2.683	2.880
5 MHz	QPSK	4.491	4.940	4.511	4.960	4.511	4.960
	16QAM	4.511	4.960	4.491	4.940	4.511	4.940
10 MHz	QPSK	8.942	9.600	8.982	9.640	8.982	9.680
	16QAM	8.942	9.640	8.982	9.600	8.942	9.600

LTE Band 7:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.491	4.940	4.511	4.960	4.511	4.960
	16QAM	4.491	4.960	4.471	4.920	4.511	4.960
10 MHz	QPSK	8.942	9.640	8.942	9.720	8.942	9.640
	16QAM	8.942	9.640	8.942	9.520	8.942	9.640
15 MHz	QPSK	13.413	14.640	13.533	14.760	13.533	14.880
	16QAM	13.533	14.700	13.533	14.640	13.533	14.640
20 MHz	QPSK	17.964	19.440	18.044	19.520	17.964	19.200
	16QAM	18.044	19.520	17.964	19.360	18.044	19.360

LTE Band 12:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.102	1.356	1.102	1.320	1.114	1.758
	16QAM	1.102	1.302	1.102	1.290	1.108	1.428
3 MHz	QPSK	2.683	2.904	2.683	2.880	2.695	2.940
	16QAM	2.683	2.880	2.683	2.892	2.683	2.880
5 MHz	QPSK	4.511	5.240	4.551	5.360	4.531	5.240
	16QAM	4.551	5.300	4.531	5.200	4.551	5.220
10 MHz	QPSK	8.982	10.080	8.982	10.200	8.942	9.960
	16QAM	8.982	9.880	8.942	9.840	8.942	9.920

LTE Band 17

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.511	5.200	4.551	5.280	4.511	5.200
	16QAM	4.551	5.260	4.511	5.200	4.551	5.200
10 MHz	QPSK	8.942	9.880	8.982	10.080	8.982	9.960
	16QAM	8.942	9.960	8.982	9.960	8.942	9.760

LTE Band 66

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.102	1.308	1.108	1.320	1.090	1.300
	16QAM	1.096	1.284	1.096	1.302	1.102	1.326
3 MHz	QPSK	2.695	2.880	2.683	2.892	2.683	2.880
	16QAM	2.683	2.880	2.683	2.880	2.683	2.880
5 MHz	QPSK	4.511	5.240	4.511	5.180	4.551	5.240
	16QAM	4.551	5.240	4.551	5.260	4.511	5.160
10 MHz	QPSK	8.942	9.880	8.982	9.960	8.982	9.920
	16QAM	8.982	9.920	8.982	9.920	8.942	9.840
15 MHz	QPSK	13.533	15.300	13.593	15.300	13.473	15.120
	16QAM	13.593	15.900	13.533	15.240	13.533	15.180
20 MHz	QPSK	17.964	19.840	18.044	19.760	18.044	19.680
	16QAM	18.044	19.680	18.044	19.840	17.964	19.840

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

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

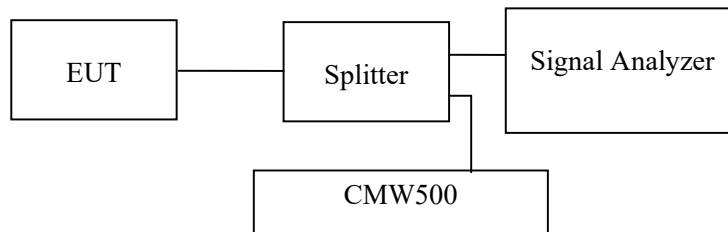
Applicable Standard

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

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

Test Procedure

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



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

Test Data

Environmental Conditions

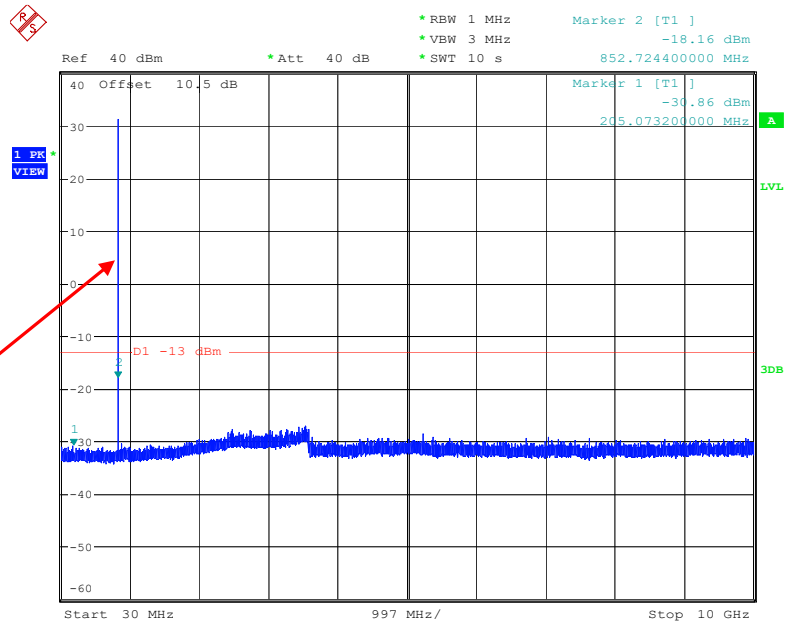
Temperature:	25 °C
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

The testing was performed by Andy Yu from 2022-09-16 to 2022-11-08.

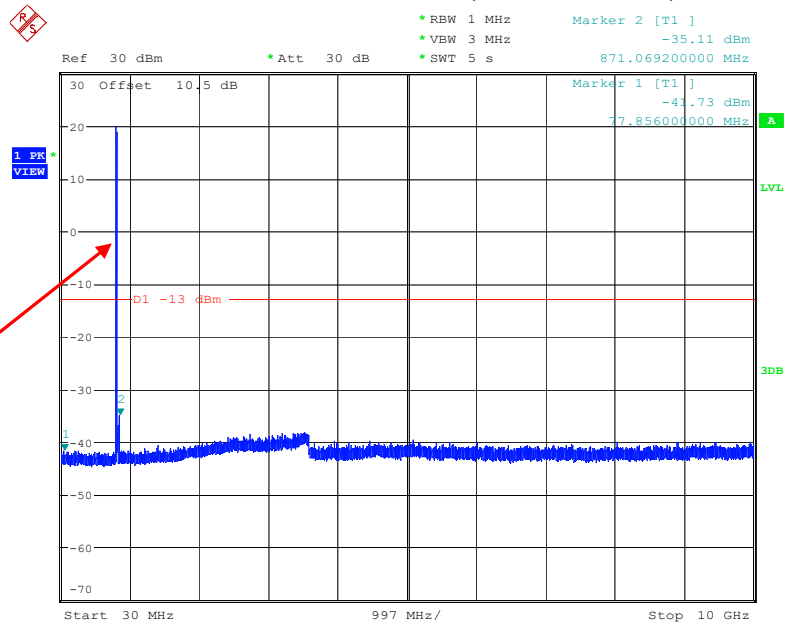
EUT operation mode: Transmitting

Test result: Pass

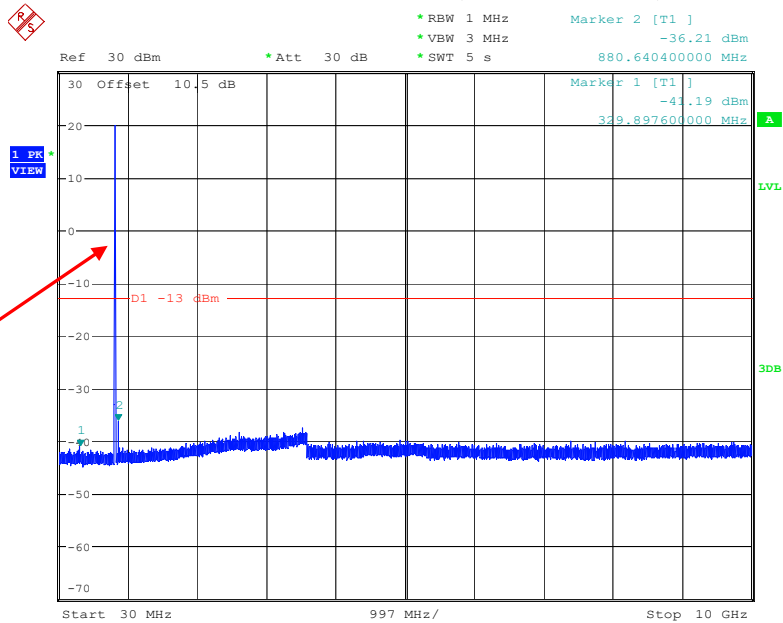
Please refer to the following plots.

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

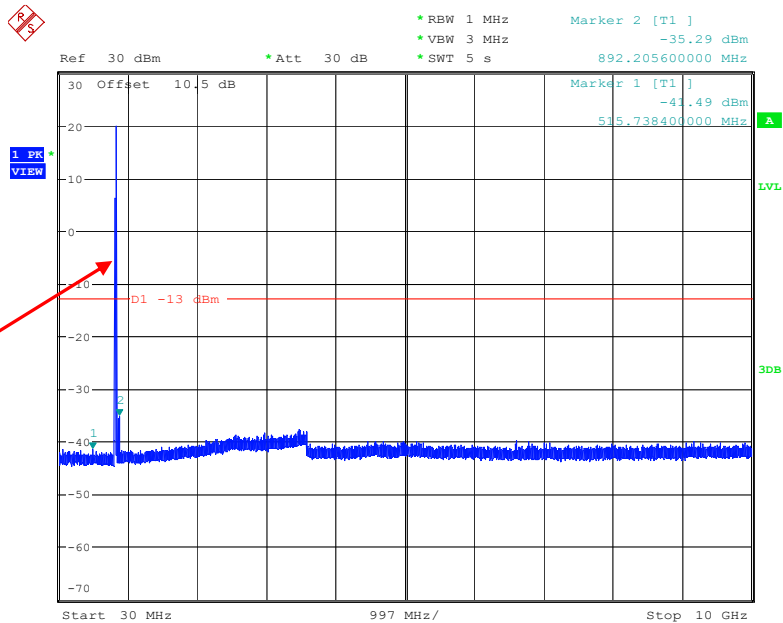
Date: 1.NOV.2022 11:21:12

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

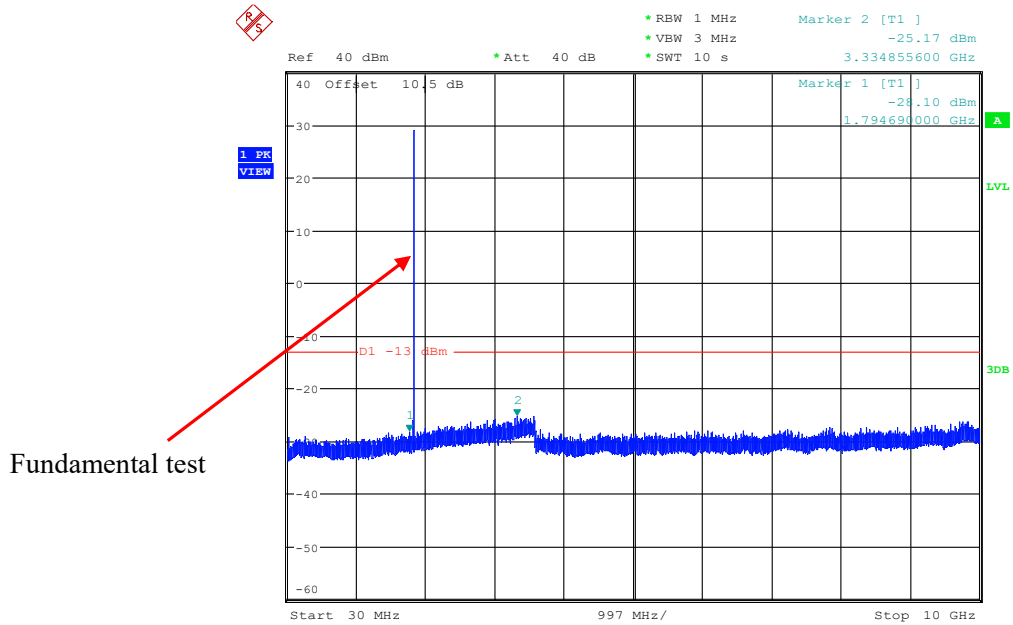
Date: 1.NOV.2022 10:04:49

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

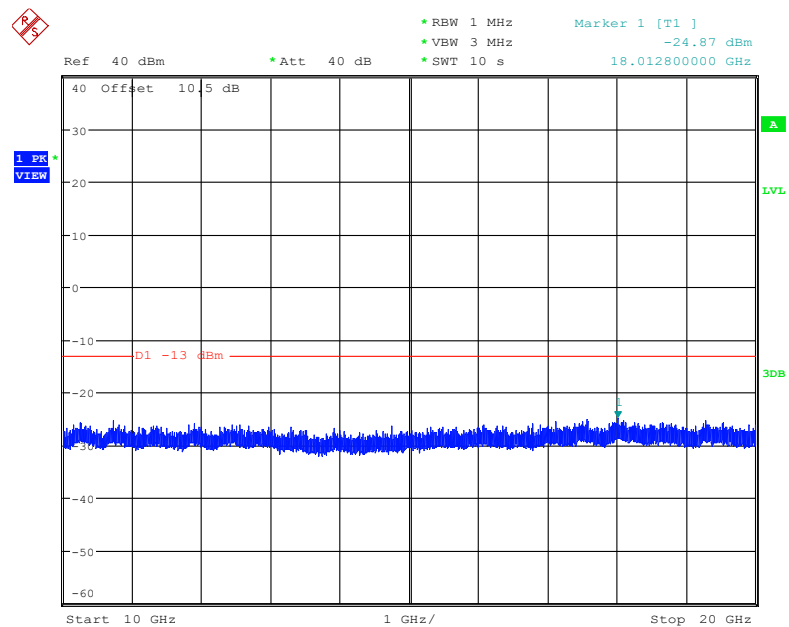
Date: 1.NOV.2022 10:07:47

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

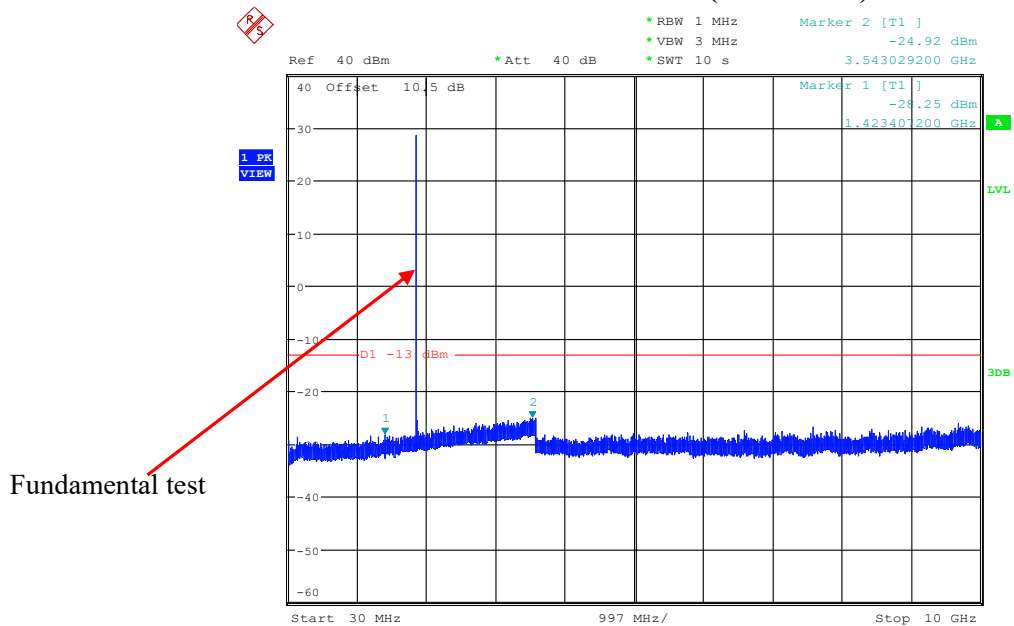
Date: 1.NOV.2022 10:09:29

PCS Band (Part 24E)**Low Channel:****30 MHz – 10GHz (GSM Mode)**

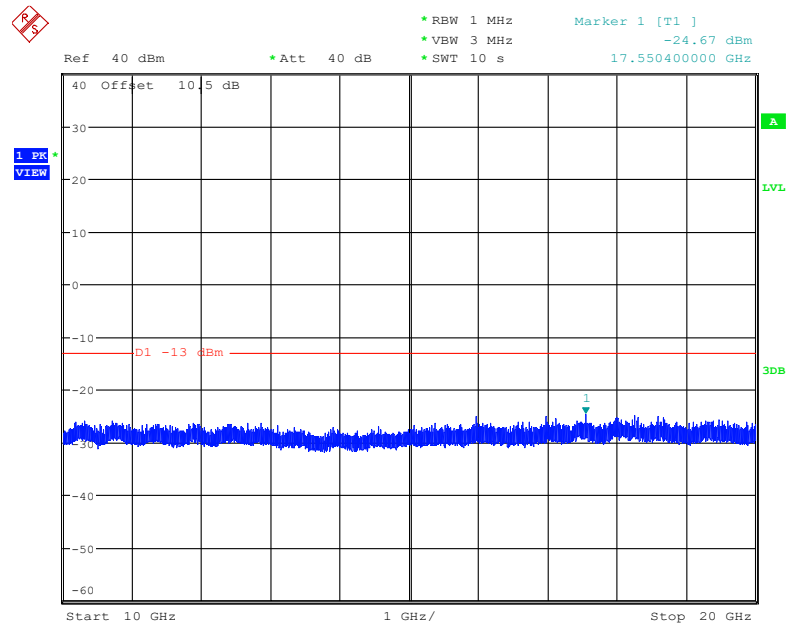
Date: 8.NOV.2022 17:32:50

10 GHz – 20GHz (GSM Mode)

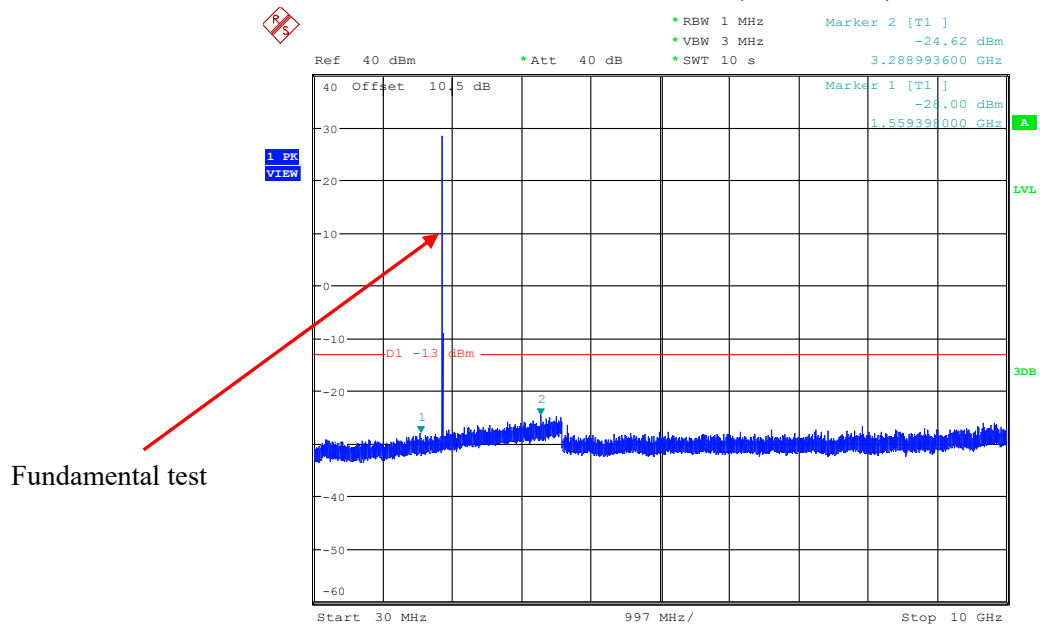
Date: 8.NOV.2022 17:27:30

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

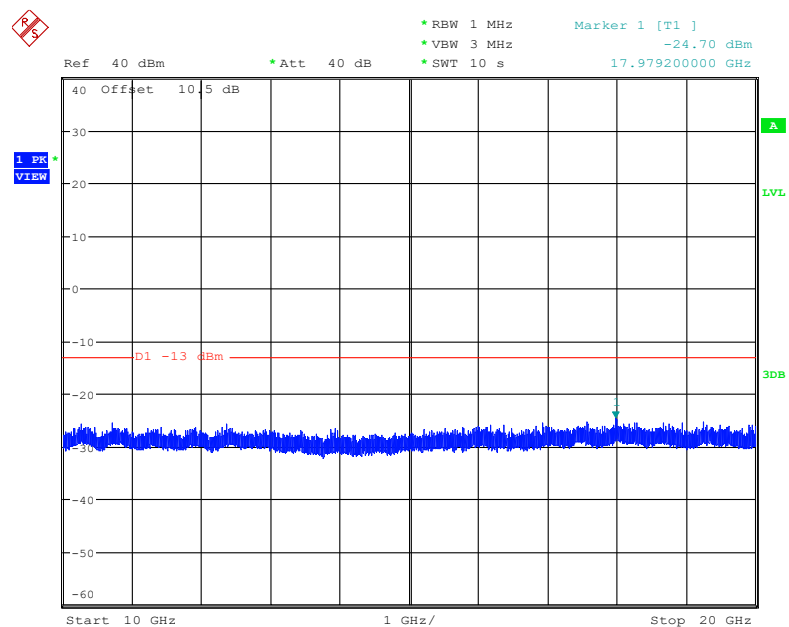
Date: 8.NOV.2022 17:30:32

10 GHz – 20GHz (GSM Mode)

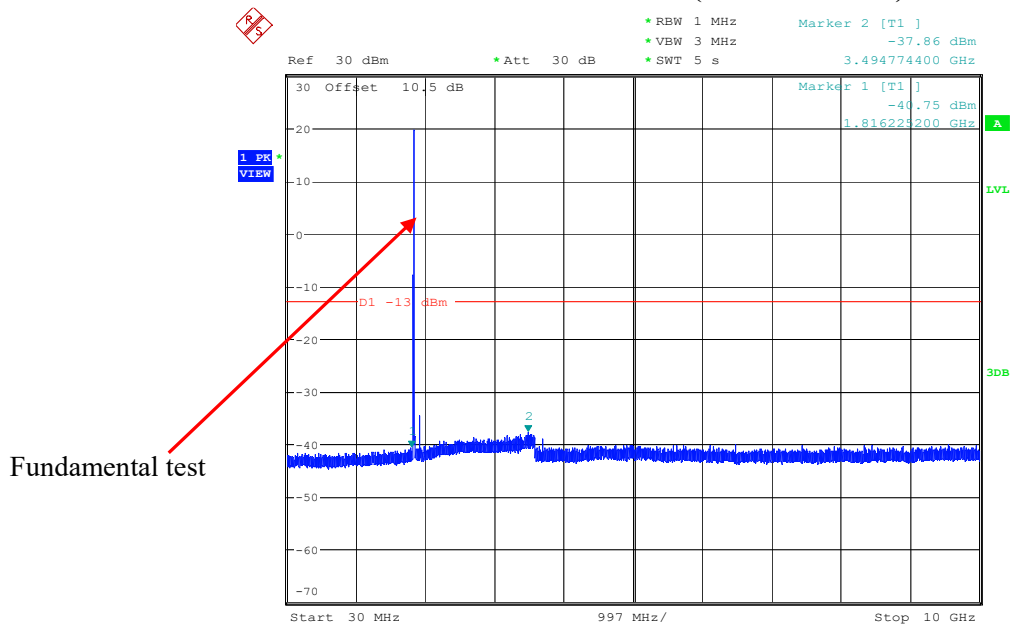
Date: 8.NOV.2022 17:30:59

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

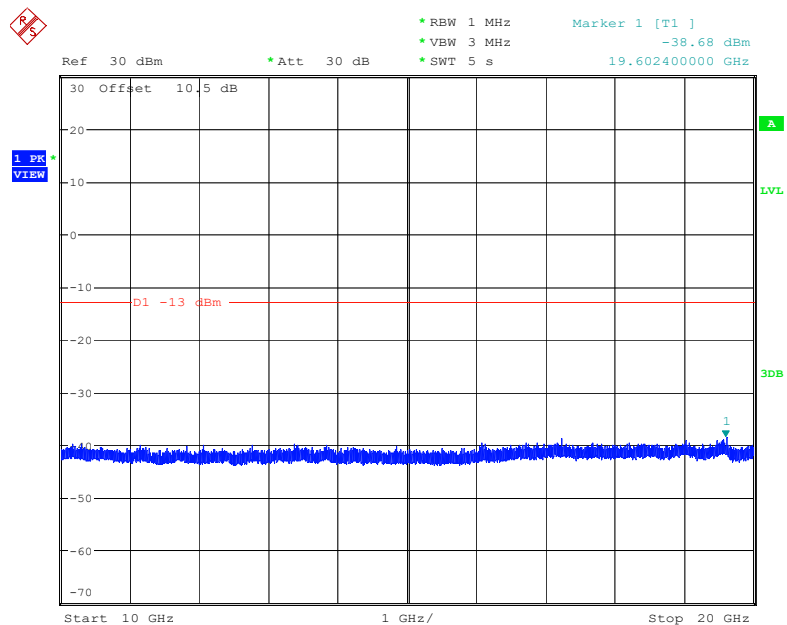
Date: 8.NOV.2022 17:22:40

10 GHz – 20GHz (GSM Mode)

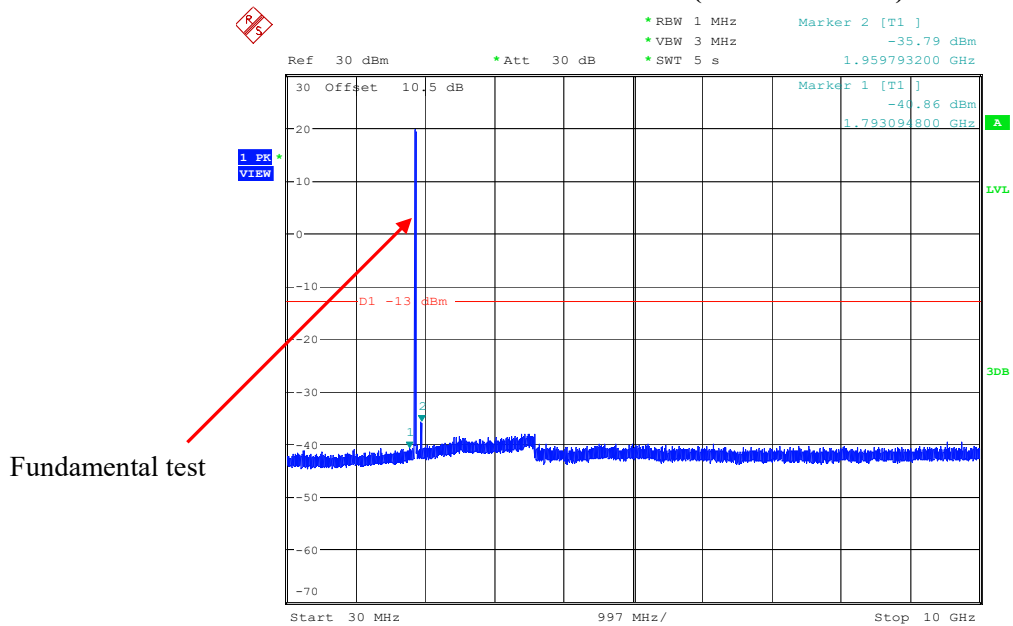
Date: 8.NOV.2022 17:23:03

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

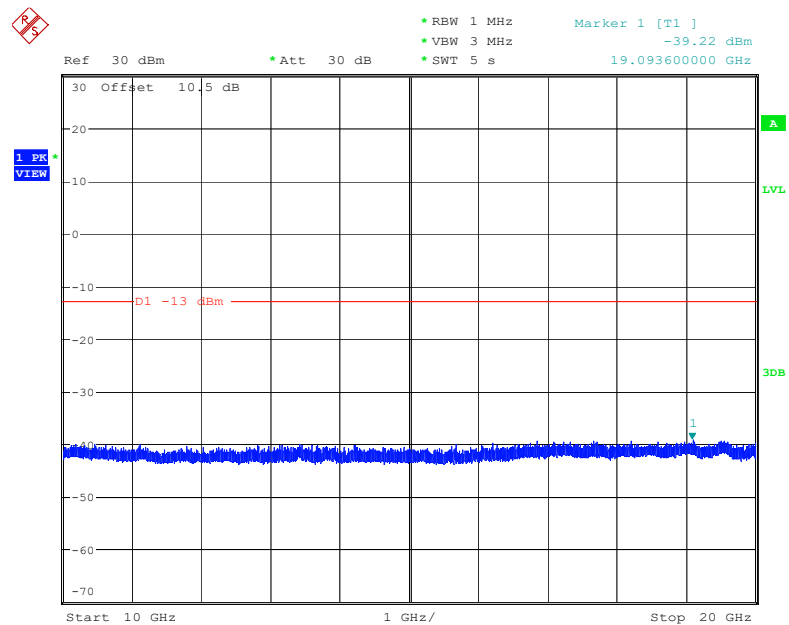
Date: 1.NOV.2022 10:16:50

10 GHz – 20GHz (WCDMA Mode)

Date: 1.NOV.2022 10:17:31

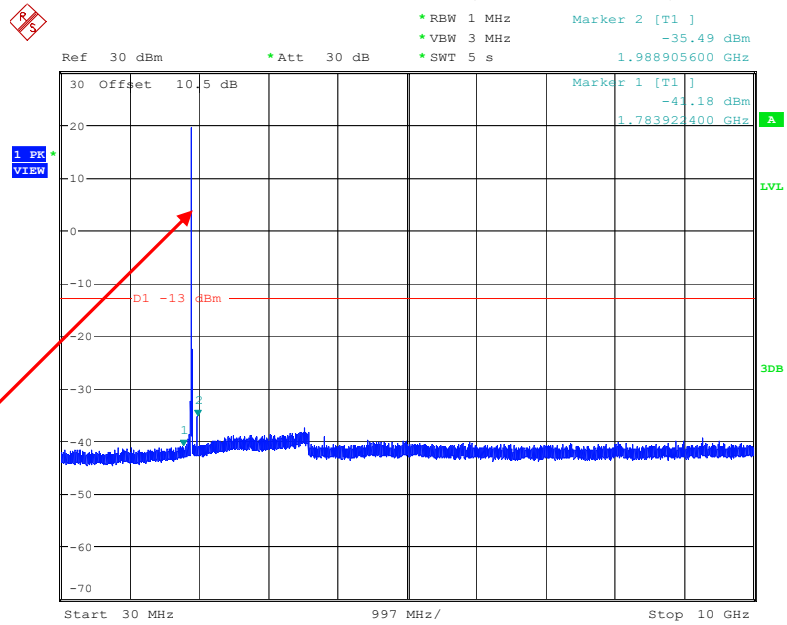
Middle Channel:**30 MHz – 10GHz (WCDMA Mode)**

Date: 1.NOV.2022 10:18:56

10 GHz – 20GHz (WCDMA Mode)

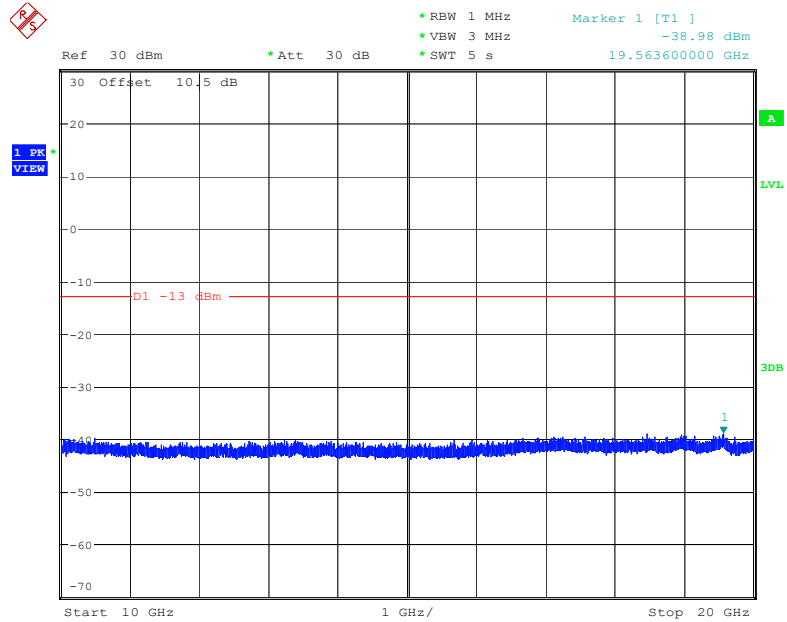
Date: 1.NOV.2022 10:19:37

30 MHz – 10GHz (WCDMA Mode)



Date: 1.NOV.2022 10:20:59

10 GHz – 20GHz (WCDMA Mode)

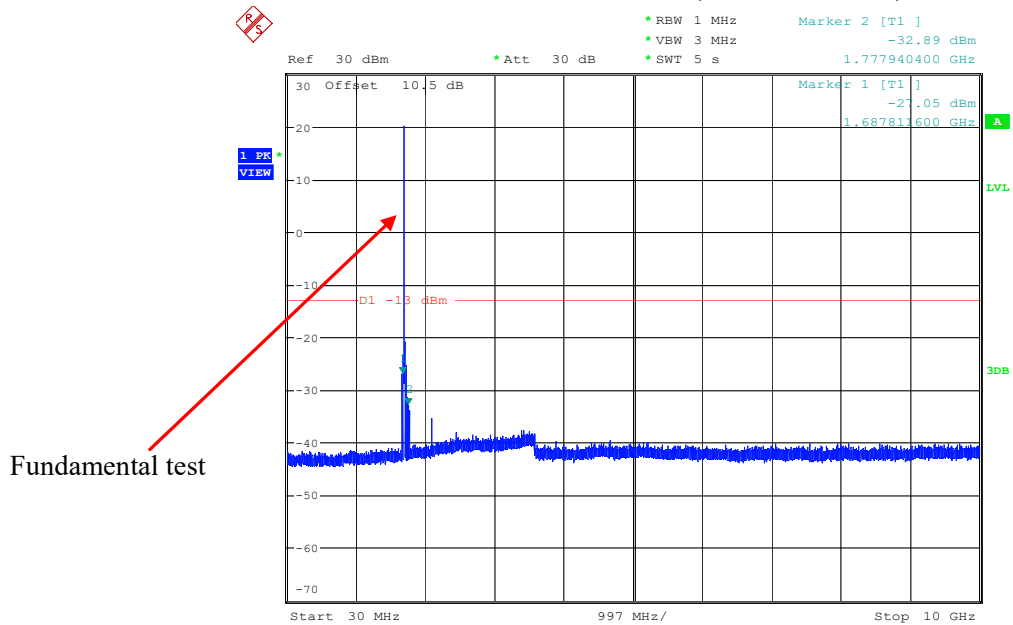


Date: 1.NOV.2022 10:21:40

AWS Band (Part 27)

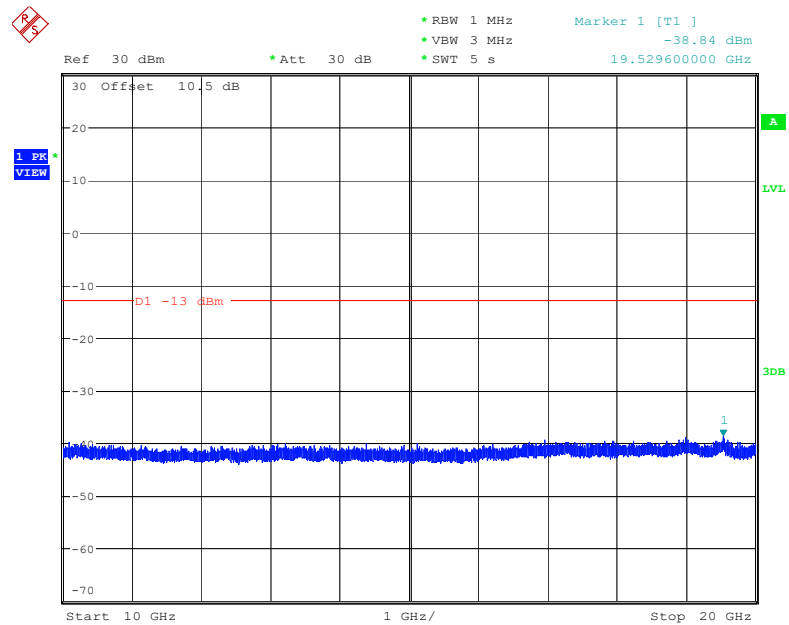
Low Channel:

30 MHz – 10GHz (WCDMA Mode)

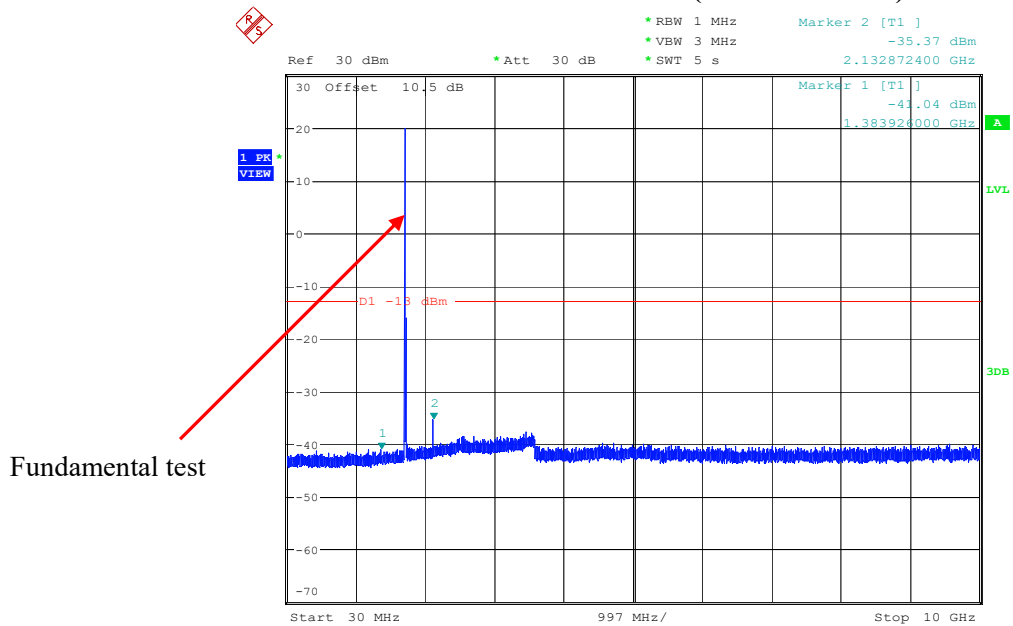


Date: 1.NOV.2022 10:27:48

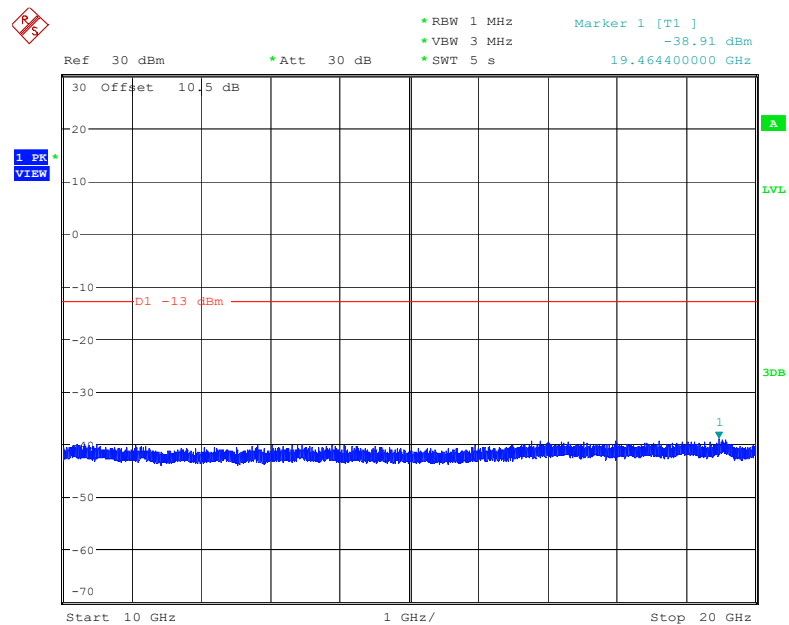
10 GHz – 20GHz (WCDMA Mode)



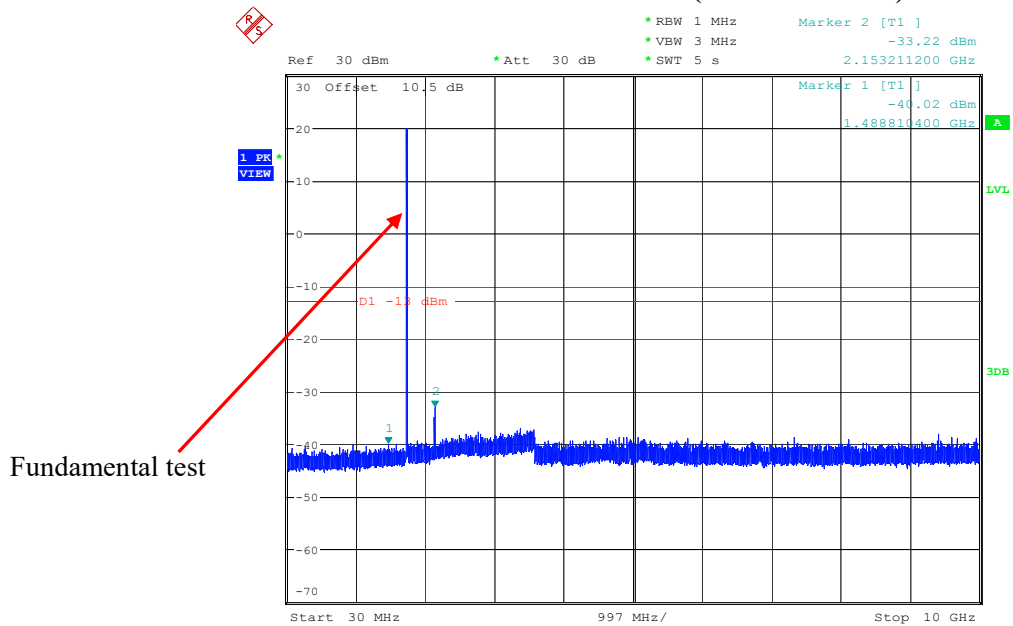
Date: 1.NOV.2022 10:28:30

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

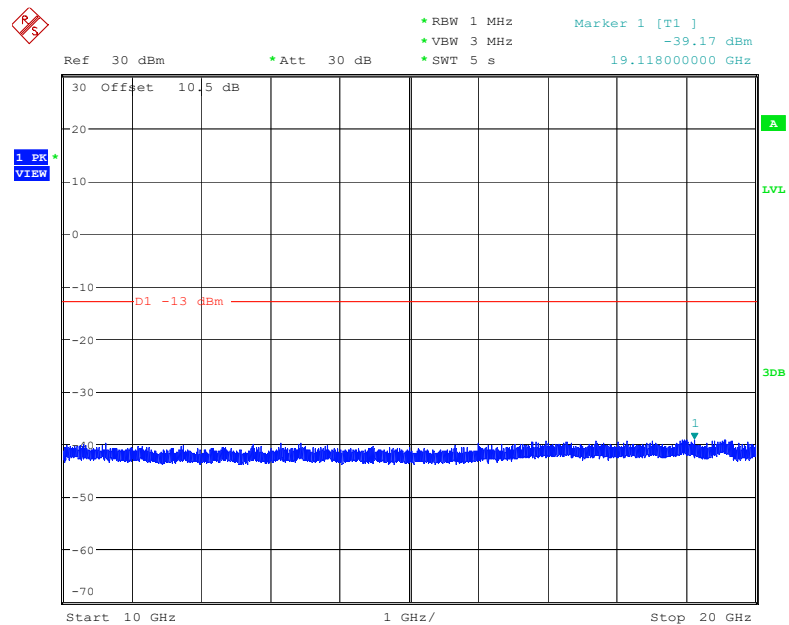
Date: 1.NOV.2022 10:31:32

10 GHz – 20GHz (WCDMA Mode)

Date: 1.NOV.2022 10:32:13

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

Date: 1.NOV.2022 10:33:37

10 GHz – 20GHz (WCDMA Mode)

Date: 1.NOV.2022 10:34:18

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:	24.5℃
Relative Humidity:	54 %
ATM Pressure:	101.0kPa

The testing was performed by Jeff Jiang from 2022-10-21 to 2022-10-23.

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								
955.89	-71.53	138	2.2	H	10.0	-61.53	-13	48.53
955.89	-76.90	47	1.8	V	11.7	-65.20	-13	52.20
1648.4	-43.8	124	1.4	H	3.5	-40.3	-13	27.3
1648.4	-45.6	113	1.6	V	3.1	-42.5	-13	29.5
2472.6	-49.4	278	1.3	H	6.6	-42.8	-13	29.8
2472.6	-50.7	96	1.8	V	5.8	-44.9	-13	31.9
3296.8	-45.4	321	2.1	H	6.4	-39	-13	26.0
3296.8	-46.9	46	1.0	V	5.7	-41.2	-13	28.2
Middle Channel								
954.68	-70.60	50	1.9	H	10.0	-60.60	-13	47.60
954.68	-77.53	122	1.9	V	11.7	-65.83	-13	52.83
1673.2	-41.3	279	2.0	H	3.8	-37.5	-13	24.5
1673.2	-44.6	235	1.7	V	3.1	-41.5	-13	28.5
2509.8	-50.2	268	1.8	H	6.2	-44	-13	31.0
2509.8	-50.0	29	2.4	V	5.5	-44.5	-13	31.5
3346.4	-43.1	274	2.5	H	6.6	-36.5	-13	23.5
3346.4	-45.3	165	2.2	V	5.4	-39.9	-13	26.9
High Channel								
953.73	-71.44	142	2.3	H	10.0	-61.44	-13	48.44
953.73	-76.54	21	1.9	V	11.7	-64.84	-13	51.84
1697.6	-40.8	76	1.3	H	4.1	-36.7	-13	23.7
1697.6	-45.0	120	2.1	V	3.1	-41.9	-13	28.9
2546.4	-51.3	133	1.6	H	6.1	-45.2	-13	32.2
2546.4	-51.0	131	1.1	V	5.8	-45.2	-13	32.2
3395.2	-43.8	334	1.9	H	6.2	-37.6	-13	24.6
3395.2	-44.7	92	2.2	V	5.4	-39.3	-13	26.3

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								
953.17	-70.40	84	2.0	H	10.0	-60.40	-13	47.40
953.17	-77.54	76	1.4	V	11.7	-65.84	-13	52.84
1652.8	-36.6	79	1.6	H	3.5	-33.1	-13	20.1
1652.8	-41.0	8	1.1	V	3.1	-37.9	-13	24.9
2479.2	-52.2	285	2.4	H	6.6	-45.6	-13	32.6
2479.2	-49.1	197	2.4	V	5.8	-43.3	-13	30.3
3305.6	-46.3	262	2.0	H	6.4	-39.9	-13	26.9
3305.6	-45.9	71	1.7	V	5.7	-40.2	-13	27.2
Middle Channel								
951.48	-70.67	19	2.4	H	10.0	-60.67	-13	47.67
951.48	-76.64	178	1.4	V	11.7	-64.94	-13	51.94
1672.8	-36.9	277	1.7	H	3.5	-33.4	-13	20.4
1672.8	-41.4	19	1.6	V	3.1	-38.3	-13	25.3
2509.2	-53.8	127	2.4	H	6.6	-47.2	-13	34.2
2509.2	-52.1	242	1.6	V	5.8	-46.3	-13	33.3
3345.6	-45.2	294	2.1	H	6.4	-38.8	-13	25.8
3345.6	-45.4	43	1.8	V	5.7	-39.7	-13	26.7
High Channel								
954.52	-71.17	21	1.3	H	10.0	-61.17	-13	48.17
954.52	-76.11	305	2.0	V	11.7	-64.41	-13	51.41
1693.2	-39.9	304	2.3	H	4.1	-35.8	-13	22.8
1693.2	-43.0	112	1.6	V	3.1	-39.9	-13	26.9
2539.8	-53.5	149	2.3	H	6.1	-47.4	-13	34.4
2539.8	-52.3	348	1.8	V	5.8	-46.5	-13	33.5
3386.4	-45.0	38	1.2	H	6.2	-38.8	-13	25.8
3386.4	-43.8	282	2.3	V	5.4	-38.4	-13	25.4

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								
954.90	-72.23	76	1.2	H	10.0	-62.23	-13	49.23
954.90	-77.55	260	1.4	V	11.7	-65.85	-13	52.85
3700.4	-47.0	196	2.0	H	8.1	-38.9	-13	25.9
3700.4	-47.2	352	2.2	V	7.6	-39.6	-13	26.6
5550.6	-49.0	221	1.4	H	9.6	-39.4	-13	26.4
5550.6	-47.3	112	1.6	V	9.1	-38.2	-13	25.2
Middle Channel								
951.94	-71.97	326	2.0	H	10.0	-61.97	-13	48.97
951.94	-76.18	211	2.3	V	11.7	-64.48	-13	51.48
3760	-47.0	340	1.9	H	8.8	-38.2	-13	25.2
3760	-47.6	243	2.1	V	8	-39.6	-13	26.6
5640	-51.2	296	1.6	H	10.2	-41	-13	28.0
5640	-48.0	220	1.6	V	9.5	-38.5	-13	25.5
High Channel								
956.20	-71.51	310	2.0	H	10.0	-61.51	-13	48.51
956.20	-76.36	198	2.3	V	11.7	-64.66	-13	51.66
3819.6	-45.0	218	1.9	H	8.7	-36.3	-13	23.3
3819.6	-47.9	237	2.0	V	8	-39.9	-13	26.9
5729.4	-51.4	180	1.9	H	10.8	-40.6	-13	27.6
5729.4	-49.3	133	1.8	V	10.4	-38.9	-13	25.9

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 2								
Low Channel								
953.25	-71.70	246	1.4	H	10.0	-61.70	-13	48.70
953.25	-77.24	324	1.4	V	11.7	-65.54	-13	52.54
3704.8	-35.1	175	1.6	H	8.1	-27	-13	14.0
3704.8	-38.6	142	1.4	V	7.6	-31	-13	18.0
5557.2	-38.3	79	2.2	H	9.6	-28.7	-13	15.7
5557.2	-41.9	139	1.9	V	9.1	-32.8	-13	19.8
Middle Channel								
952.06	-71.80	181	2.3	H	10.0	-61.80	-13	48.80
952.06	-77.62	118	1.1	V	11.7	-65.92	-13	52.92
3760	-37.9	321	1.2	H	8.8	-29.1	-13	16.1
3760	-42.1	49	1.1	V	8	-34.1	-13	21.1
5640	-39.6	74	1.9	H	10.2	-29.4	-13	16.4
5640	-41.2	183	2.1	V	9.5	-31.7	-13	18.7
High Channel								
950.91	-71.82	13	1.4	H	10.0	-61.82	-13	48.82
950.91	-77.10	104	1.8	V	11.7	-65.40	-13	52.40
3815.2	-36.4	297	2.0	H	8.7	-27.7	-13	14.7
3815.2	-40.0	271	2.2	V	8	-32.0	-13	19.0
5722.8	-37.1	47	2.5	H	10.4	-26.7	-13	13.7
5722.8	-39.2	237	1.6	V	9.9	-29.3	-13	16.3

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								
953.42	-70.50	245	2.1	H	10.0	-60.50	-13	47.50
953.42	-76.84	60	1.3	V	11.7	-65.14	-13	52.14
3424.8	-38.6	340	1.8	H	6.4	-32.2	-13	19.2
3424.8	-41.2	89	2.2	V	5.7	-35.5	-13	22.5
5137.2	-46.1	248	2.1	H	11.3	-34.8	-13	21.8
5137.2	-42.6	163	1.6	V	10.8	-31.8	-13	18.8
Middle Channel								
955.35	-72.28	287	2.4	H	10.0	-62.28	-13	49.28
955.35	-76.11	6	2.1	V	11.7	-64.41	-13	51.41
3465.2	-38.4	143	2.2	H	7	-31.4	-13	18.4
3465.2	-41.2	293	1.1	V	6.2	-35	-13	22.0
5197.8	-46.5	242	1.6	H	10.4	-36.1	-13	23.1
5197.8	-40.7	173	1.6	V	9.8	-30.9	-13	17.9
High Channel								
953.69	-72.87	43	2.4	H	10.0	-62.87	-13	49.87
953.69	-75.21	5	1.2	V	11.7	-63.51	-13	50.51
3505.2	-39.6	43	1.8	H	7.8	-31.8	-13	18.8
3505.2	-40.8	88	1.1	V	6.6	-34.2	-13	21.2
5257.8	-43.2	31	2.2	H	9.5	-33.7	-13	20.7
5257.8	-39.7	228	2.2	V	8.9	-30.8	-13	17.8

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 2								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, Low Channel								
954.70	-70.86	196	2.1	H	10.0	-60.86	-13	47.86
954.70	-76.57	210	1.6	V	11.7	-64.87	-13	51.87
3701.4	-36.3	52	2.1	H	8.1	-28.2	-13	15.2
3701.4	-34.9	164	1.8	V	7.6	-27.3	-13	14.3
5552.1	-31.8	297	1.6	H	9.6	-22.2	-13	9.2
5552.1	-32.3	144	2.3	V	9.1	-23.2	-13	10.2
1.4MHz bandwidth, Middle Channel								
955.09	-70.81	134	1.6	H	10.0	-60.81	-13	47.81
955.09	-77.26	24	1.3	V	11.7	-65.56	-13	52.56
3760	-36.5	202	2.4	H	8.8	-27.7	-13	14.7
3760	-38.9	146	1.7	V	8	-30.9	-13	17.9
5640	-32.4	127	2.3	H	10.2	-22.2	-13	9.2
5640	-32.0	33	1.8	V	9.5	-22.5	-13	9.5
1.4MHz bandwidth, High Channel								
950.05	-72.95	31	1.9	H	10.0	-62.95	-13	49.95
950.05	-75.01	77	2.4	V	11.7	-63.31	-13	50.31
3818.6	-37.2	121	1.2	H	8.7	-28.5	-13	15.5
3818.6	-36.0	261	1.4	V	8	-28	-13	15.0
5727.9	-31.6	272	1.8	H	10.6	-21	-13	8.0
5727.9	-33.1	340	1.6	V	10.2	-22.9	-13	9.9

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 4								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, Low Channel								
954.32	-72.95	258	2.0	H	10.0	-62.95	-13	49.95
954.32	-76.89	357	1.1	V	11.7	-65.19	-13	52.19
3421.4	-36.9	129	2.1	H	6.4	-30.5	-13	17.5
3421.4	-37.6	290	1.2	V	5.7	-31.9	-13	18.9
5132.1	-41.4	294	1.2	H	11.3	-30.1	-13	17.1
5132.1	-42.2	233	1.6	V	10.8	-31.4	-13	18.4
1.4MHz bandwidth, Middle Channel								
954.42	-70.53	98	2.1	H	10.0	-60.53	-13	47.53
954.42	-74.84	15	1.3	V	11.7	-63.14	-13	50.14
3465	-37.6	93	2.0	H	7	-30.6	-13	17.6
3465	-38.4	198	1.7	V	6.2	-32.2	-13	19.2
5197.5	-40.2	244	1.7	H	10.4	-29.8	-13	16.8
5197.5	-41.6	15	1.9	V	9.8	-31.8	-13	18.8
1.4MHz bandwidth, High Channel								
955.61	-72.96	350	2.0	H	10.0	-62.96	-13	49.96
955.61	-77.15	262	1.4	V	11.7	-65.45	-13	52.45
3508.6	-38.5	337	1.2	H	7.8	-30.7	-13	17.7
3508.6	-37.9	88	1.6	V	6.6	-31.3	-13	18.3
5262.9	-38.9	312	2.2	H	9.5	-29.4	-13	16.4
5262.9	-40.3	148	1.5	V	8.9	-31.4	-13	18.4

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 5								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, Low Channel								
953.16	-70.90	354	1.8	H	10.0	-60.90	-13	47.90
953.16	-75.90	80	2.4	V	11.7	-64.20	-13	51.20
1649.4	-35.3	324	1.5	H	3.5	-31.8	-13	18.8
1649.4	-38.3	303	2.2	V	3.1	-35.2	-13	22.2
2474.1	-50.6	164	1.3	H	6.6	-44	-13	31.0
2474.1	-52.4	61	1.6	V	5.8	-46.6	-13	33.6
3298.8	-46.7	66	1.7	H	6.4	-40.3	-13	27.3
3298.8	-46.0	245	1.8	V	5.7	-40.3	-13	27.3
1.4MHz bandwidth, Middle Channel								
954.55	-71.56	82	1.9	H	10.0	-61.56	-13	48.56
954.55	-74.91	348	1.7	V	11.7	-63.21	-13	50.21
1673	-32.1	301	1.7	H	3.8	-28.3	-13	15.3
1673	-36.9	297	1.3	V	3.1	-33.8	-13	20.8
2509.5	-49.3	333	1.7	H	6.2	-43.1	-13	30.1
2509.5	-51.6	156	1.7	V	5.5	-46.1	-13	33.1
3346	-47.0	245	1.5	H	6.6	-40.4	-13	27.4
3346	-45.6	242	1.7	V	5.4	-40.2	-13	27.2
1.4MHz bandwidth, High Channel								
953.10	-70.59	29	1.0	H	10.0	-60.59	-13	47.59
953.10	-77.39	191	1.6	V	11.7	-65.69	-13	52.69
1696.6	-33.4	24	1.9	H	4.1	-29.3	-13	16.3
1696.6	-35.8	226	2.3	V	3.1	-32.7	-13	19.7
2544.9	-49.0	321	2.4	H	6.1	-42.9	-13	29.9
2544.9	-51.9	294	2.2	V	5.8	-46.1	-13	33.1
3393.2	-47.2	317	1.5	H	6.2	-41	-13	28.0
3393.2	-44.5	16	1.7	V	5.4	-39.1	-13	26.1

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 7								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, Low Channel								
952.89	-71.86	305	1.4	H	10.0	-61.86	-25	36.86
952.89	-77.39	164	1.3	V	11.7	-65.69	-25	40.69
5005	-37.9	97	1.5	H	10.8	-27.1	-25	2.1
5005	-39.0	112	1.2	V	10.2	-28.8	-25	3.8
5MHz bandwidth, Middle Channel								
951.40	-70.29	229	1.6	H	9.8	-60.49	-25	35.49
951.40	-75.07	168	2.1	V	11.7	-63.37	-25	38.37
5070	-37.4	244	2.1	H	11.1	-26.3	-25	1.3
5070	-38.2	51	2.1	V	10.8	-27.4	-25	2.4
5MHz bandwidth, High Channel								
953.78	-71.44	223	1.3	H	10.0	-61.44	-25	36.44
953.78	-77.09	168	1.1	V	11.7	-65.39	-25	40.39
5135	-38.1	206	2.0	H	11.3	-26.8	-25	1.8
5135	-40.1	224	2.0	V	10.8	-29.3	-25	4.3

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 12								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, Low Channel								
951.32	-60.65	176	1.1	H	-0.2	-60.85	-13	47.85
951.32	-66.48	175	2.4	V	3.1	-63.38	-13	50.38
1399.4	-45.3	105	1.8	H	6.3	-39.0	-13	26.0
1399.4	-45.0	43	1.0	V	5.7	-39.3	-13	26.3
2099.1	-45.5	205	1.7	H	4.9	-40.6	-13	27.6
2099.1	-46.9	32	2.1	V	3.9	-43.0	-13	30.0
2798.8	-51.5	50	1.1	H	6.6	-44.9	-13	31.9
2798.8	-45.0	173	1.1	V	6	-39.0	-13	26.0
1.4MHz bandwidth, Middle Channel								
953.84	-72.53	276	2.0	H	10.0	-62.53	-13	49.53
953.84	-76.64	320	1.4	V	11.7	-64.94	-13	51.94
1415	-44.3	316	2.0	H	5.9	-38.4	-13	25.4
1415	-46.0	29	2.2	V	5.9	-40.1	-13	27.1
2122.5	-47.3	359	1.2	H	6.3	-41.0	-13	28.0
2122.5	-47.0	2	1.1	V	5.1	-41.9	-13	28.9
2830	-51.2	247	1.6	H	6.7	-44.5	-13	31.5
2830	-46.9	340	2.2	V	6.7	-40.2	-13	27.2
1.4MHz bandwidth, High Channel								
952.44	-71.71	231	1.6	H	10.0	-61.71	-13	48.71
952.44	-75.38	38	1.7	V	11.7	-63.68	-13	50.68
1430.6	-45.5	299	1.4	H	5.9	-39.6	-13	26.6
1430.6	-44.7	265	1.3	V	5.9	-38.8	-13	25.8
2145.9	-47.5	331	2.2	H	6.3	-41.2	-13	28.2
2145.9	-48.2	52	2.2	V	5.1	-43.1	-13	30.1
2861.2	-51.3	237	1.4	H	6.7	-44.6	-13	31.6
2861.2	-47.4	250	1.2	V	6.7	-40.7	-13	27.7

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 17								
Test frequency range: 30MHz-10GHz								
5MHz, Low Channel								
953.92	-72.62	109	1.7	H	10.0	-62.62	-13	49.62
953.92	-75.40	308	1.2	V	11.7	-63.70	-13	50.70
1413	-45.4	277	1.4	H	5.7	-39.7	-13	26.7
1413	-47.2	281	1.2	V	5.4	-41.8	-13	28.8
2119.5	-48.8	186	1.5	H	6.6	-42.2	-13	29.2
2119.5	-47.4	91	2.3	V	5.7	-41.7	-13	28.7
2826	-46.9	339	2.4	H	7.1	-39.8	-13	26.8
2826	-46.2	197	1.7	V	6.5	-39.7	-13	26.7
5MHz bandwidth, Middle Channel								
955.26	-72.09	65	1.6	H	10.0	-62.09	-13	49.09
955.26	-75.28	59	1.6	V	11.7	-63.58	-13	50.58
1420	-45.4	208	1.2	H	5.6	-39.8	-13	26.8
1420	-48.2	85	1.7	V	5.2	-43	-13	30.0
2130	-48.3	10	2.4	H	6.8	-41.5	-13	28.5
2130	-48.3	181	2.0	V	6.1	-42.2	-13	29.2
2840	-47.7	85	1.4	H	7	-40.7	-13	27.7
2840	-45.4	231	1.1	V	6.6	-38.8	-13	25.8
5MHz bandwidth, High Channel								
956.29	-70.52	120	1.7	H	10.0	-60.52	-13	47.52
956.29	-75.97	4	1.2	V	11.7	-64.27	-13	51.27
1427	-45.1	213	1.8	H	5.5	-39.6	-13	26.6
1427	-47.0	320	1.2	V	4.9	-42.1	-13	29.1
2140.5	-50.2	175	2.2	H	7	-43.2	-13	30.2
2140.5	-48.2	350	1.6	V	6.4	-41.8	-13	28.8
2854	-46.5	271	2.3	H	7.4	-39.1	-13	26.1
2854	-47.1	360	1.0	V	6.4	-40.7	-13	27.7

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 66								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, Low Channel								
951.50	-72.94	176	2.4	H	10.0	-62.94	-13	49.94
951.50	-76.00	116	2.4	V	11.7	-64.30	-13	51.30
3421.4	-34.3	57	1.3	H	6.4	-27.9	-13	14.9
3421.4	-31.8	164	2.2	V	5.7	-26.1	-13	13.1
5132.1	-41.5	25	2.1	H	11.7	-29.8	-13	16.8
5132.1	-34.9	206	1.5	V	10.8	-24.1	-13	11.1
1.4MHz bandwidth, Middle Channel								
953.24	-72.67	116	1.6	H	10.0	-62.67	-13	49.67
953.24	-75.86	350	2.0	V	11.7	-64.16	-13	51.16
3490	-38.9	281	1.7	H	7.6	-31.3	-13	18.3
3490	-37.6	320	2.2	V	6.4	-31.2	-13	18.2
5235	-37.7	23	2.2	H	9.7	-28	-13	15.0
5235	-30.0	10	1.9	V	9.2	-20.8	-13	7.8
1.4MHz bandwidth, High Channel								
956.98	-71.49	176	1.7	H	10.0	-61.49	-13	48.49
956.98	-75.59	18	2.4	V	11.7	-63.89	-13	50.89
3558.6	-34.8	298	1.8	H	7.8	-27	-13	14.0
3558.6	-35.3	99	2.1	V	7	-28.3	-13	15.3
5337.9	-38.1	169	1.6	H	9.4	-28.7	-13	15.7
5337.9	-32.9	350	2.0	V	8.7	-24.2	-13	11.2

Note:

Absolute Level = Reading Level + Substituted Factor

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

Margin = Absolute Level -Limit

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

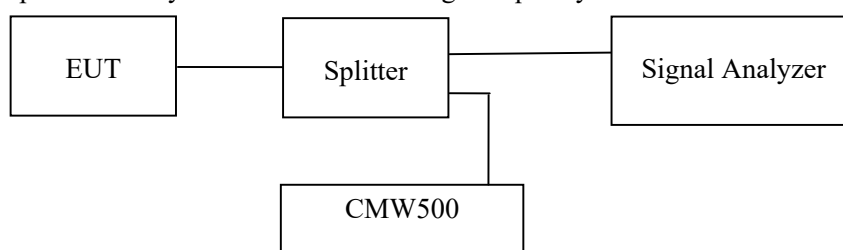
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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

Test Procedure

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

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



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

Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	60%
ATM Pressure:	101.0 kPa

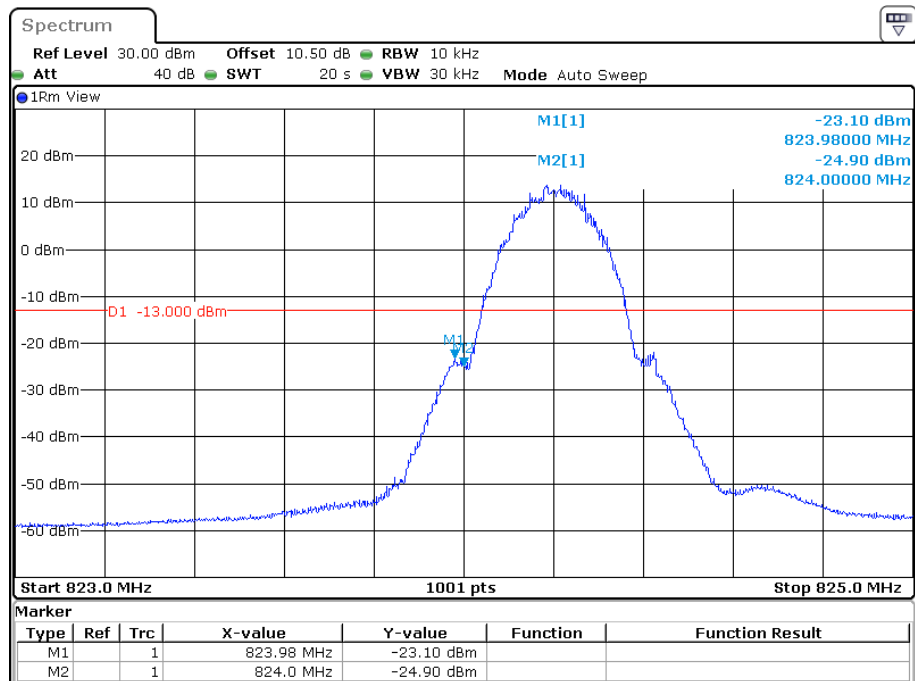
The testing was performed by Andy Yu from 2022-09-15 to 2022-11-01

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

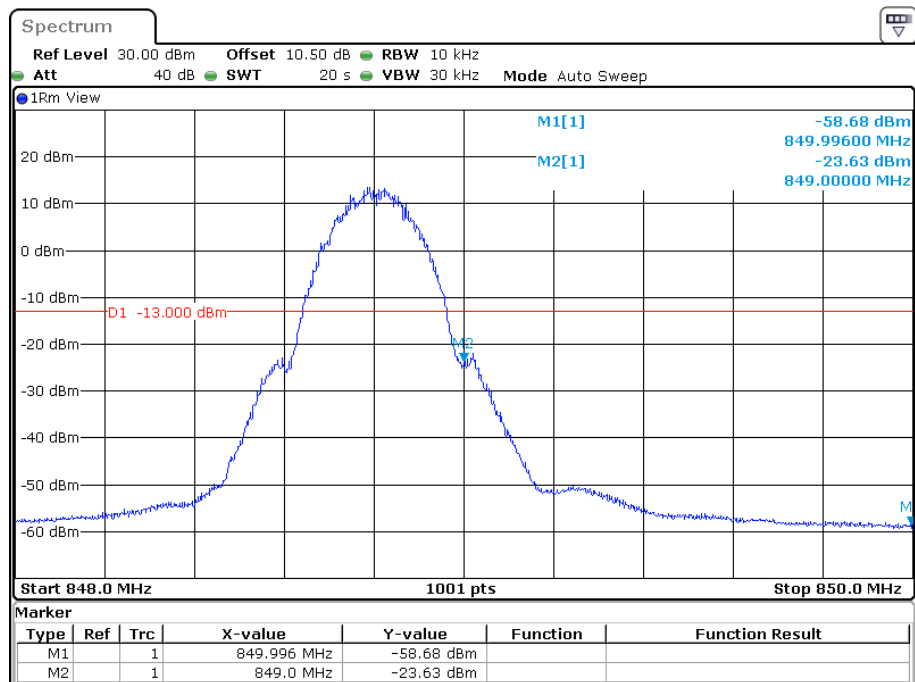
Please refer to the following plots.

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



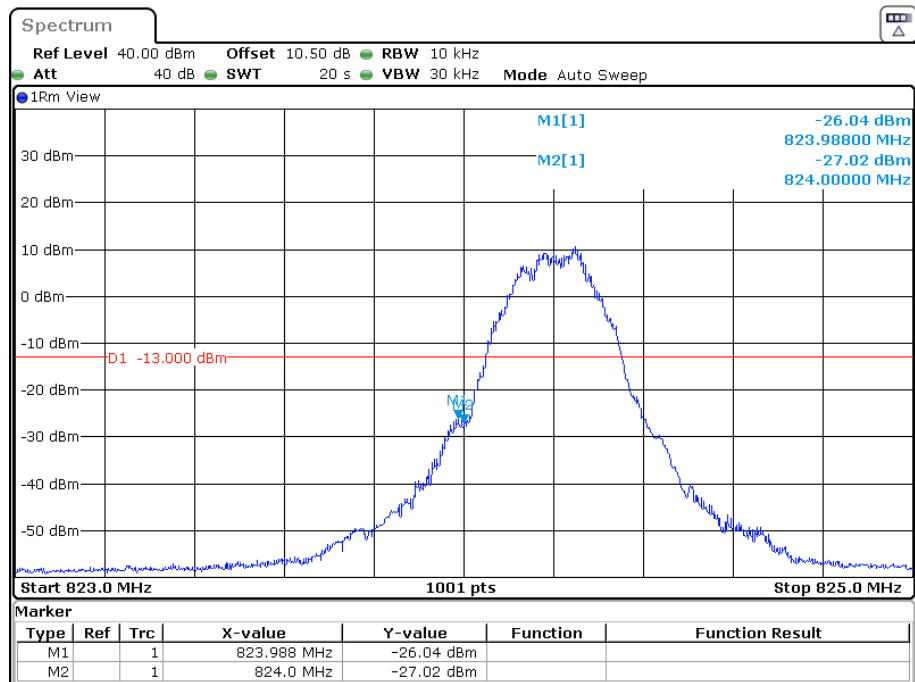
Date: 15.SEP.2022 16:10:12

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



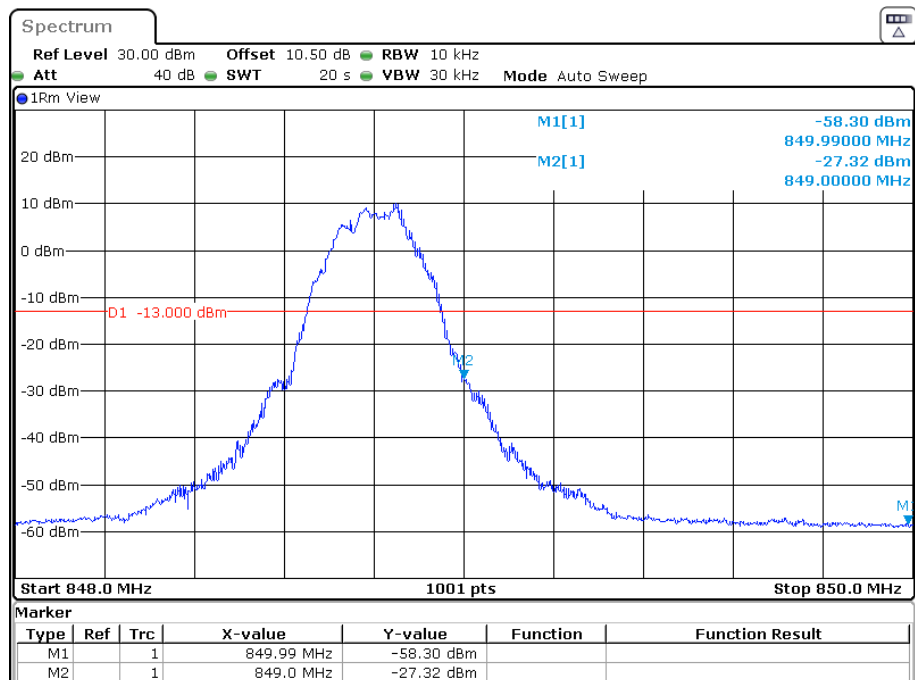
Date: 15.SEP.2022 16:25:27

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



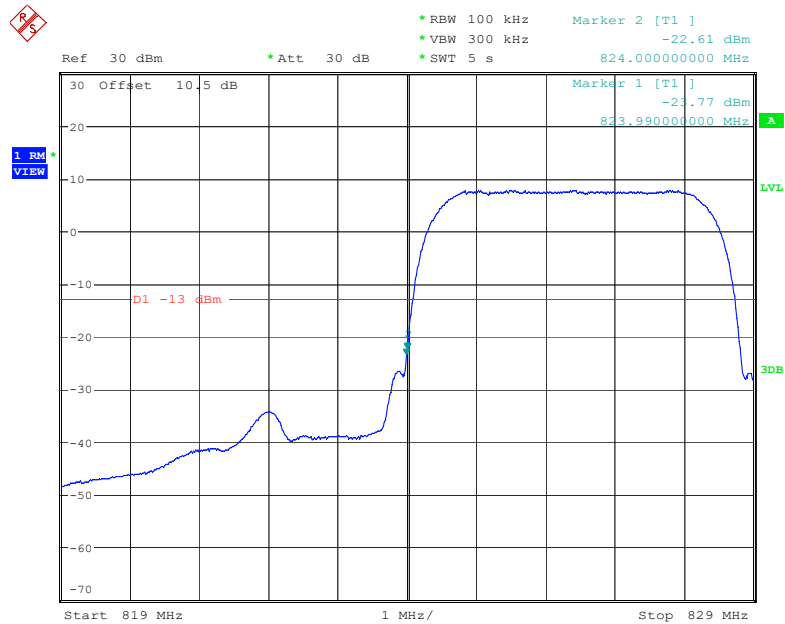
Date: 16.SEP.2022 10:46:31

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



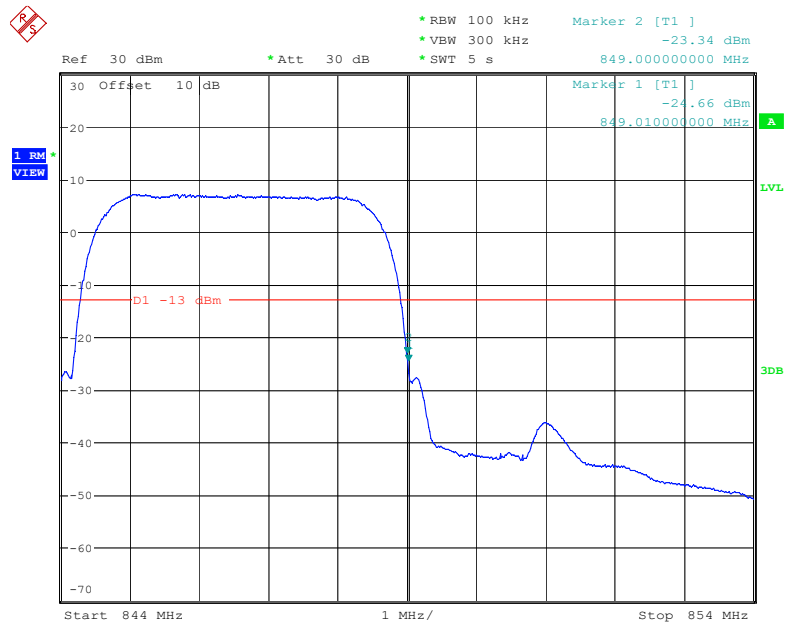
Date: 16.SEP.2022 10:59:07

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



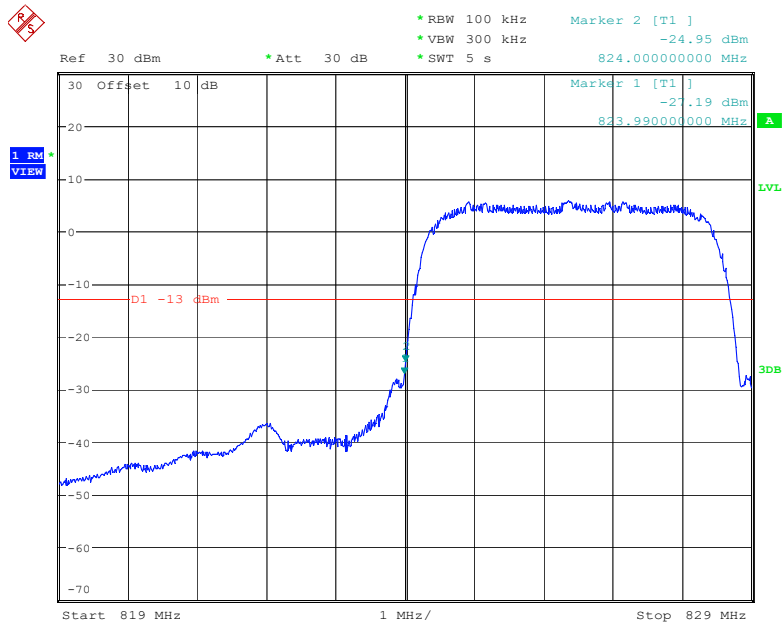
Date: 29.SEP.2022 16:25:31

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



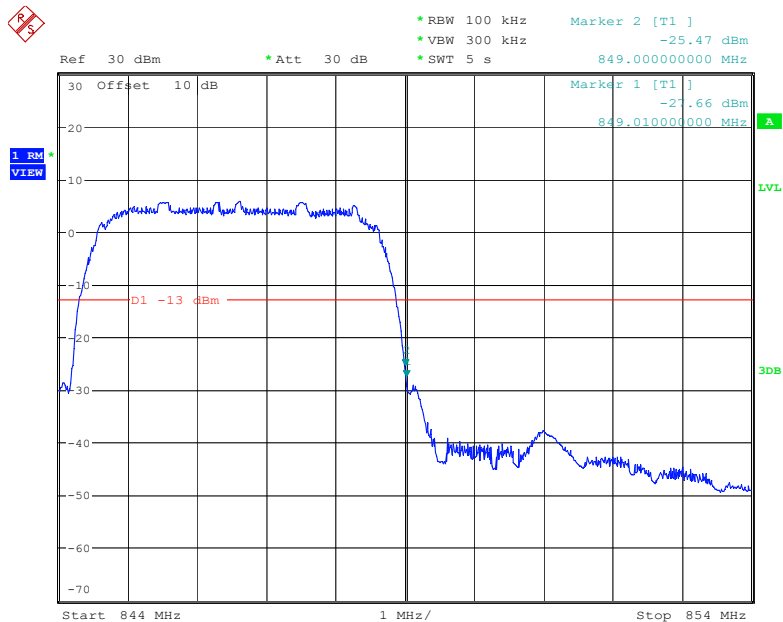
Date: 29.SEP.2022 16:33:16

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



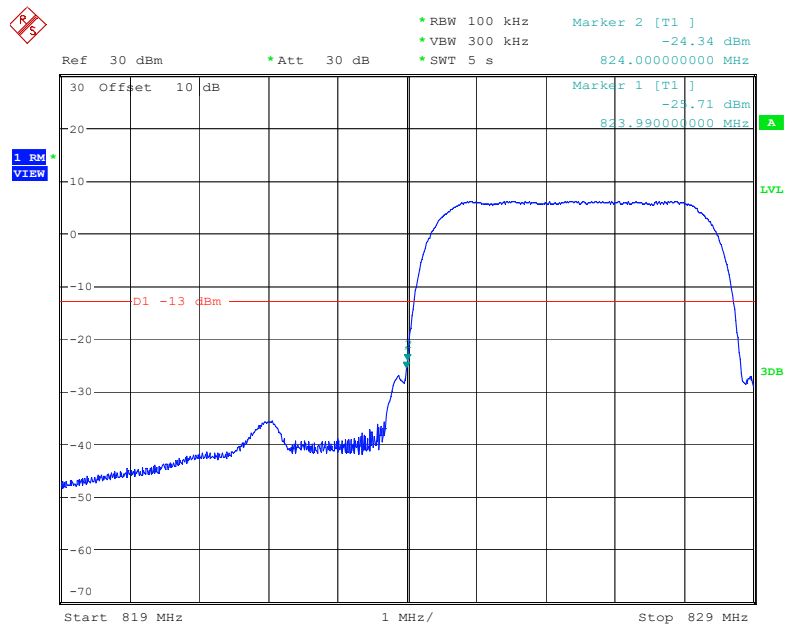
Date: 29.SEP.2022 16:46:50

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

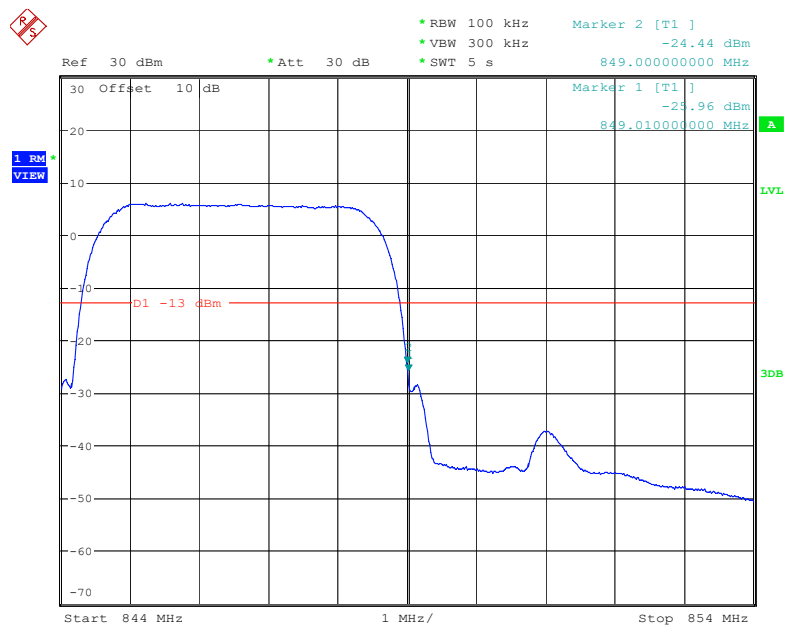


Date: 29.SEP.2022 16:38:48

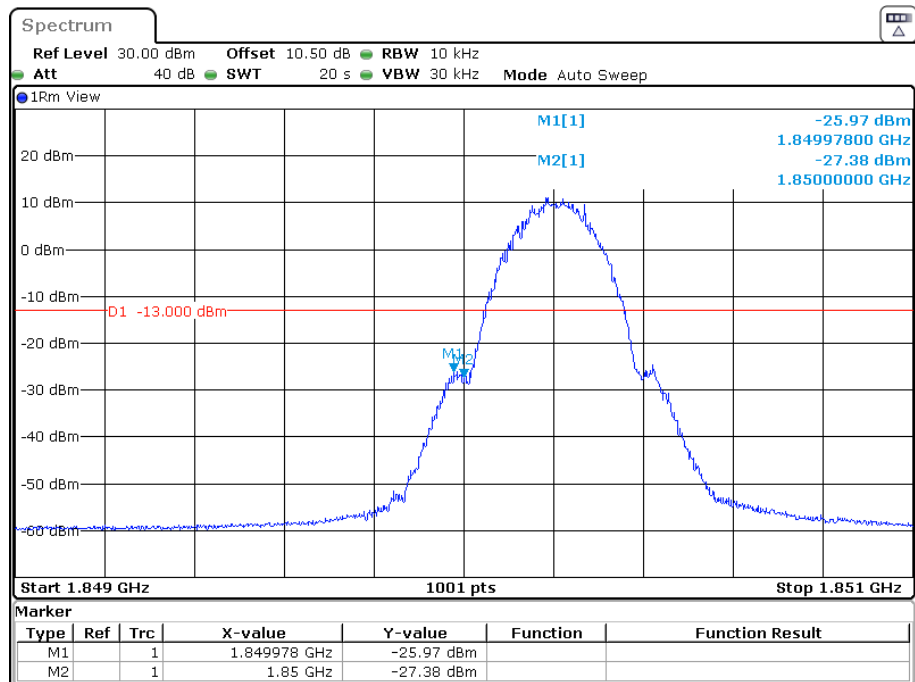
Cellular Band, Left Band Edge for HSUPA (BPSK) Mode



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

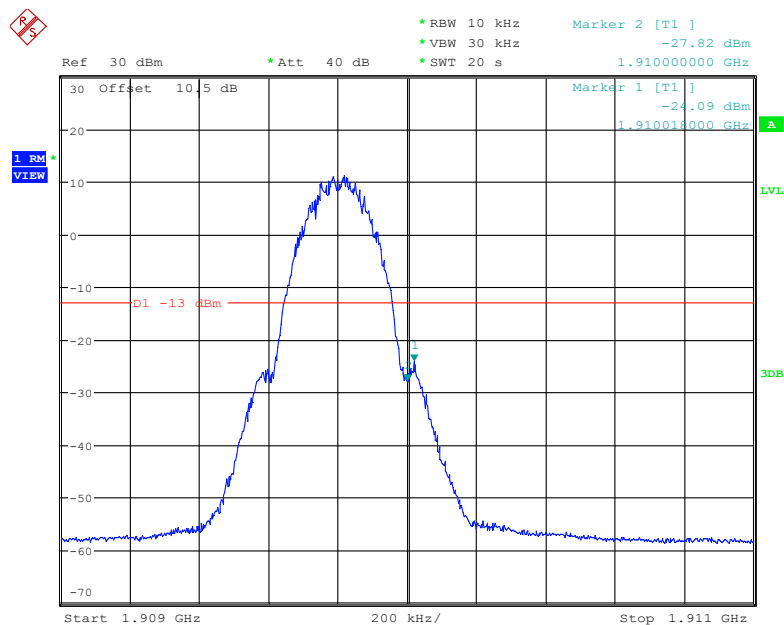


PCS Band, Left Band Edge for GSM (GMSK) Mode



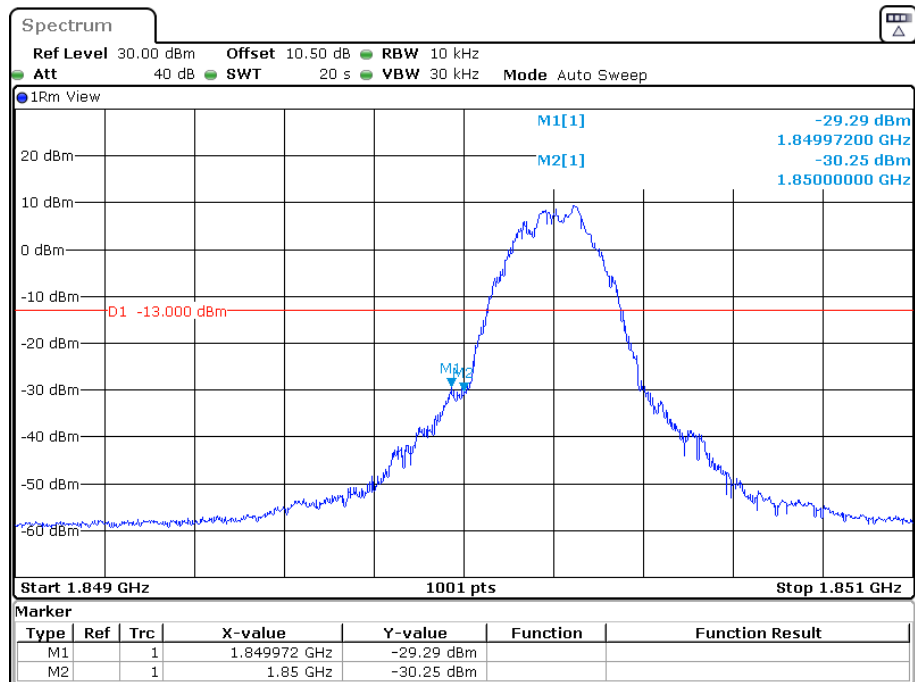
Date: 16.SEP.2022 11:25:17

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



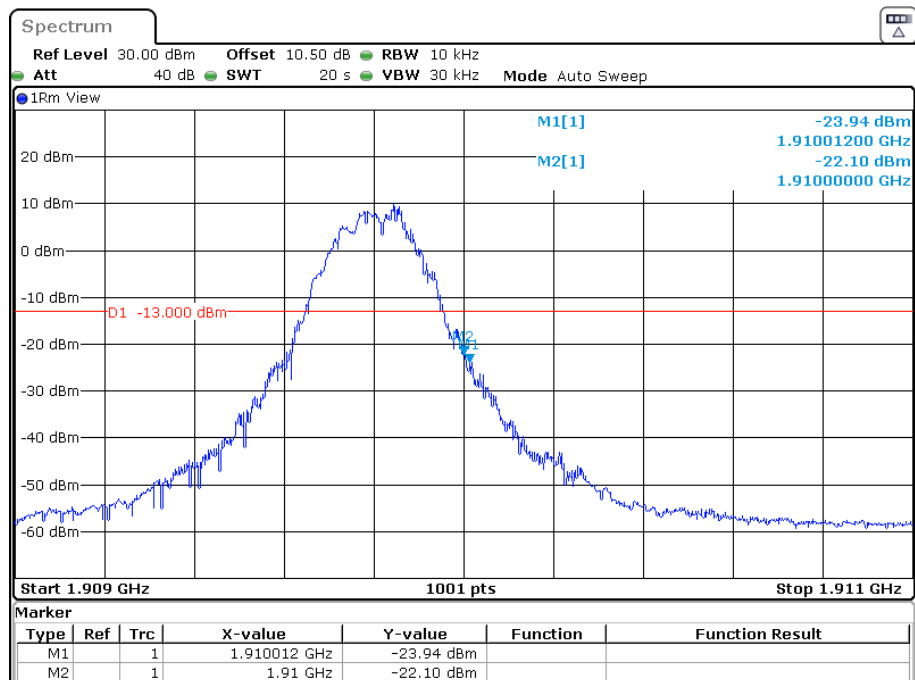
Date: 30.SEP.2022 10:18:39

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



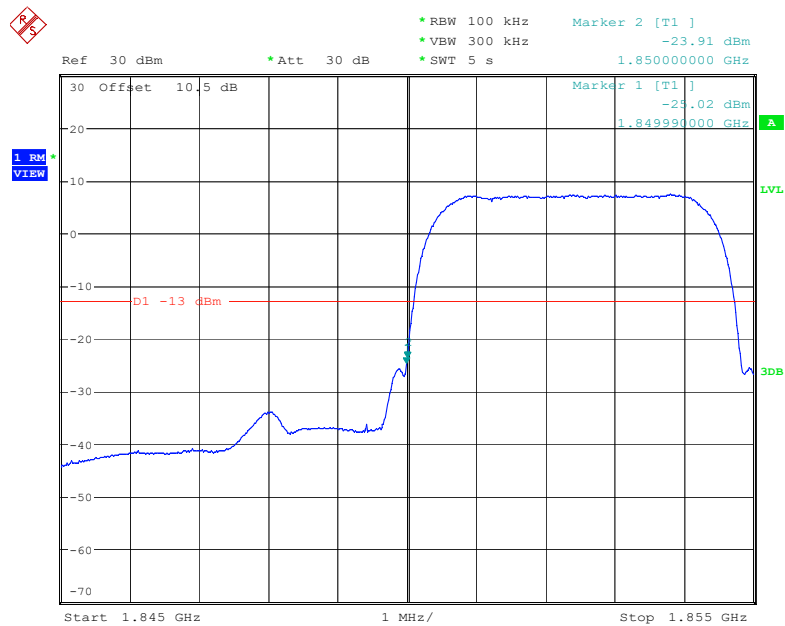
Date: 16.SEP.2022 12:58:36

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



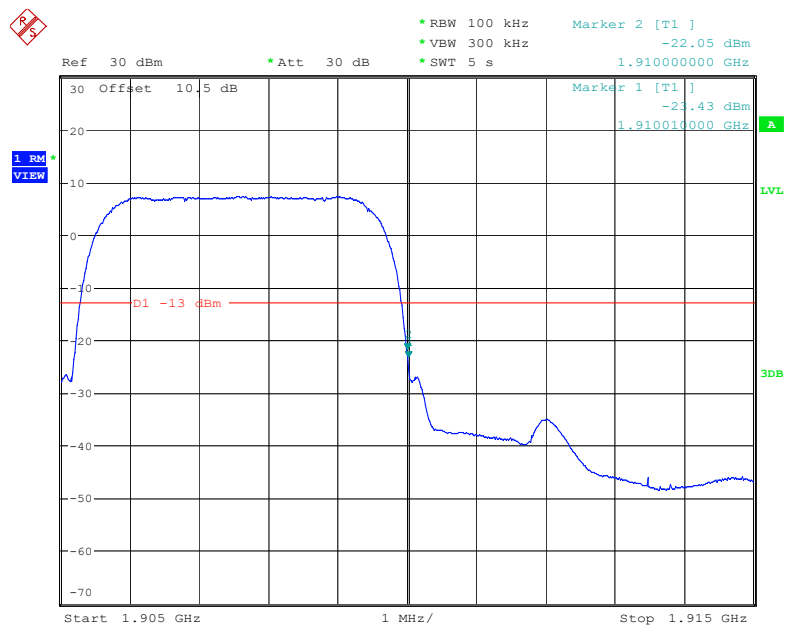
Date: 16.SEP.2022 13:14:29

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

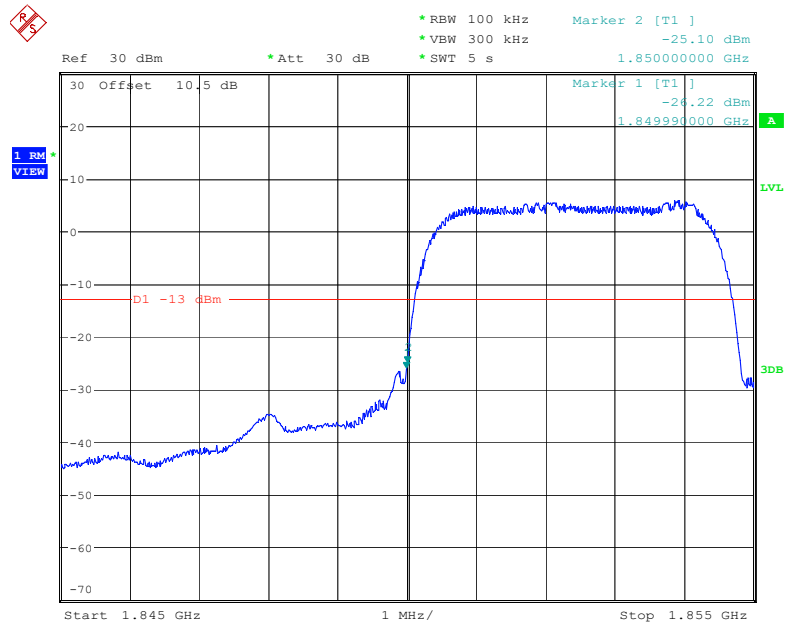


Date: 29.SEP.2022 16:00:04

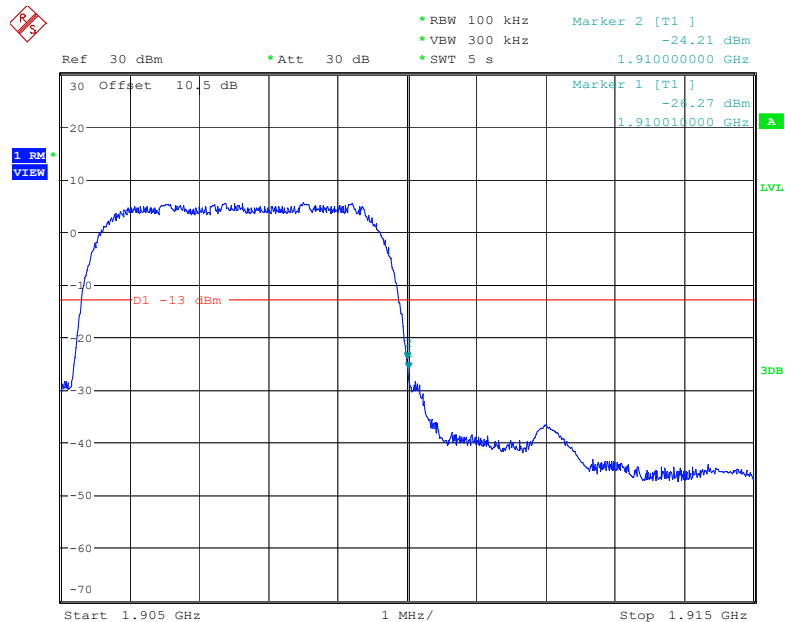
PCS Band, Right Band Edge for RMC (BPSK) Mode



Date: 29.SEP.2022 16:08:17

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

Date: 29.SEP.2022 17:03:12

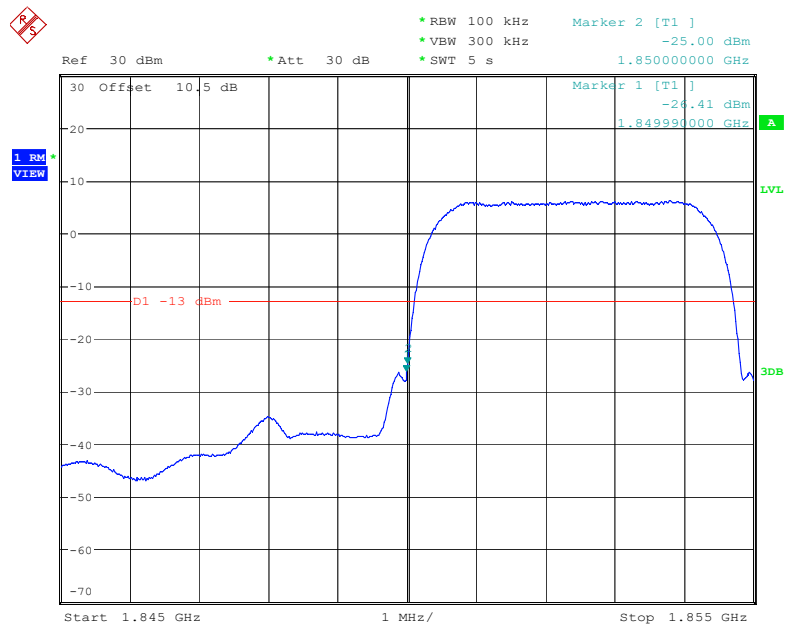
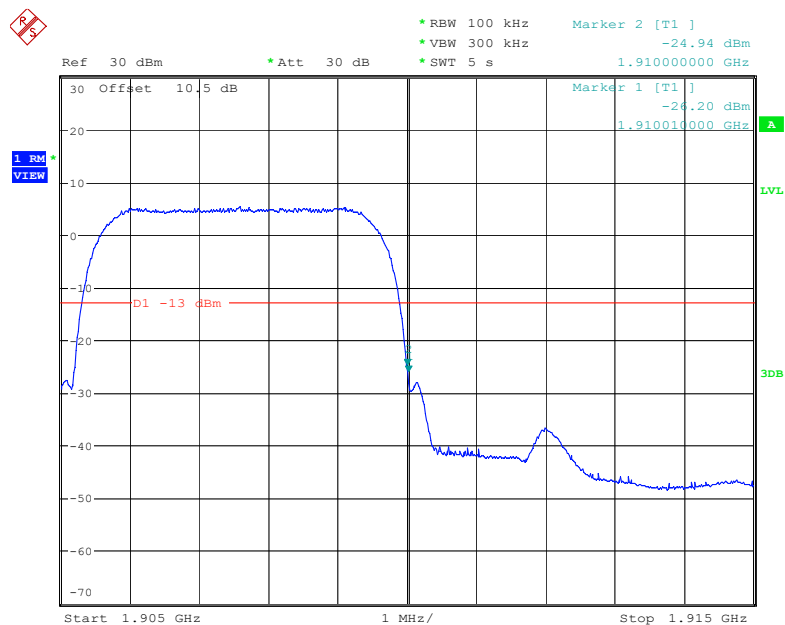
PCS Band, Right Band Edge for HSDPA (16QAM) Mode

Date: 29.SEP.2022 17:12:02







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

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

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

Applicable Standard

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

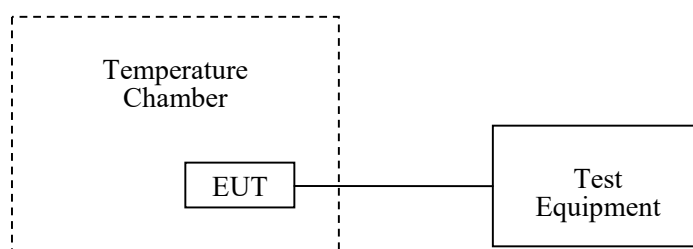
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

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

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

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



Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	60%
ATM Pressure:	101.0 kPa

The testing was performed by Andy Yu from 2022-09-17 to 2022-10-08.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

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

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	2	0.0024	2.5
-20		4	0.0048	2.5
-10		3	0.0036	2.5
0		5	0.0060	2.5
10		7	0.0084	2.5
20		8	0.0096	2.5
30		11	0.0131	2.5
40		12	0.0143	2.5
50		9	0.0108	2.5
20	L.V.	6	0.0072	2.5
	H.V.	5	0.0060	2.5

EDGE Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	3	0.0036	2.5
-20		4	0.0048	2.5
-10		7	0.0084	2.5
0		2	0.0024	2.5
10		5	0.0060	2.5
20		1	0.0012	2.5
30		4	0.0048	2.5
40		2	0.0024	2.5
50		3	0.0036	2.5
20	L.V.	5	0.0060	2.5
	H.V.	2	0.0024	2.5

WCDMA Mode

Middle Channel, $f_0=836.4\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	1.44	0.0017	2.5
-20		1.37	0.0016	2.5
-10		1.59	0.0019	2.5
0		1.82	0.0022	2.5
10		1.64	0.0020	2.5
20		1.35	0.0016	2.5
30		2.36	0.0028	2.5
40		2.14	0.0026	2.5
50		2.05	0.0025	2.5
20	L.V.	1.08	0.0013	2.5
	H.V.	1.39	0.0017	2.5

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

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	7	0.0037	pass
-20		8	0.0043	pass
-10		11	0.0059	pass
0		14	0.0074	pass
10		15	0.0080	pass
20		23	0.0122	pass
30		10	0.0053	pass
40		14	0.0074	pass
50		12	0.0064	pass
20	L.V.	11	0.0059	pass
	H.V.	13	0.0069	pass

EDGE Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	5	0.0027	pass
-20		4	0.0021	pass
-10		6	0.0032	pass
0		7	0.0037	pass
10		2	0.0011	pass
20		5	0.0027	pass
30		6	0.0032	pass
40		8	0.0043	pass
50		4	0.0021	pass
20	L.V.	5	0.0027	pass
	H.V.	8	0.0043	pass

WCDMA Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	1.57	0.0008	pass
-20		1.38	0.0007	pass
-10		2.11	0.0011	pass
0		1.93	0.0010	pass
10		1.82	0.0010	pass
20		1.27	0.0007	pass
30		1.38	0.0007	pass
40		1.28	0.0007	pass
50		2.21	0.0012	pass
20	L.V.	2.14	0.0011	pass
	H.V.	3.02	0.0016	pass

AWS Band (Part 27)

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.0343	1754.9685	1710	1755
-20		1710.0597	1754.9683	1710	1755
-10		1710.0607	1754.9714	1710	1755
0		1710.0375	1754.9722	1710	1755
10		1710.0454	1754.9716	1710	1755
20		1710.0190	1754.9703	1710	1755
30		1710.0426	1754.9678	1710	1755
40		1710.0433	1754.9728	1710	1755
50		1710.0358	1754.9690	1710	1755
20	L.V.	1710.0255	1754.9679	1710	1755
	H.V.	1710.0232	1754.9716	1710	1755

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, $f_0=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-9.28	-0.0049	pass
-20		8.86	0.0047	pass
-10		-5.14	-0.0027	pass
0		9.75	0.0052	pass
10		9.28	0.0049	pass
20		-7.35	-0.0039	pass
30		-5.15	-0.0027	pass
40		-7.11	-0.0038	pass
50		8.24	0.0044	pass
20	L.V.	5.19	0.0028	pass
	H.V.	-9.88	-0.0053	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.5689	1754.4269	1710	1755
-20		1710.5707	1754.4278	1710	1755
-10		1710.5744	1754.4275	1710	1755
0		1710.5741	1754.4312	1710	1755
10		1710.5711	1754.4288	1710	1755
20		1710.5737	1754.4296	1710	1755
30		1710.5700	1754.4259	1710	1755
40		1710.5720	1754.4298	1710	1755
50		1710.5702	1754.4308	1710	1755
20	L.V.	1710.5689	1754.4329	1710	1755
	H.V.	1710.5687	1754.4328	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_o=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-3.53	-0.0042	pass
-20		-6.69	-0.0080	pass
-10		-7.93	-0.0095	pass
0		-9.74	-0.0116	pass
10		-5.32	-0.0064	pass
20		6.28	0.0075	pass
30		-7.21	-0.0086	pass
40		-5.44	-0.0065	pass
50		9.85	0.0118	pass
20	L.V.	-5.33	-0.0064	pass
	H.V.	5.09	0.0061	pass

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2500.4017	2569.6943	2500	2570
-20		2500.4045	2569.7053	2500	2570
-10		2500.3924	2569.6911	2500	2570
0		2500.3907	2569.6815	2500	2570
10		2500.4009	2569.6960	2500	2570
20		2500.3906	2569.6534	2500	2570
30		2500.3834	2569.6619	2500	2570
40		2500.3635	2569.6909	2500	2570
50		2500.3618	2569.6919	2500	2570
20	L.V.	2500.4517	2569.6821	2500	2570
	H.V.	2500.3639	2569.6740	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.0923	715.9082	699	716
-20		699.0917	715.9072	699	716
-10		699.0913	715.9131	699	716
0		699.0866	715.9116	699	716
10		699.0895	715.9099	699	716
20		699.0932	715.9127	699	716
30		699.0926	715.9117	699	716
40		699.0927	715.9145	699	716
50		699.0916	715.9106	699	716
20	L.V.	699.0886	715.9128	699	716
	H.V.	699.0922	715.9092	699	716

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	704.3046	715.5566	704	716
-20		704.2986	715.5536	704	716
-10		704.3029	715.5540	704	716
0		704.2970	715.5566	704	716
10		704.3000	715.5557	704	716
20		704.3044	715.5585	704	716
30		704.3011	715.5586	704	716
40		704.3044	715.5595	704	716
50		704.3015	715.5553	704	716
20	L.V.	704.2963	715.5558	704	716
	H.V.	704.3019	715.5539	704	716

Band 66:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.1471	1779.8534	1710	1780
-20		1710.1465	1779.8524	1710	1780
-10		1710.1461	1779.8583	1710	1780
0		1710.1414	1779.8568	1710	1780
10		1710.1443	1779.8551	1710	1780
20		1710.1480	1779.8579	1710	1780
30		1710.1474	1779.8569	1710	1780
40		1710.1475	1779.8597	1710	1780
50		1710.1464	1779.8558	1710	1780
20	L.V.	1710.1434	1779.8580	1710	1780
	H.V.	1710.1470	1779.8544	1710	1780

16QAM:
Band 2:

10.0 MHz Middle Channel, $f_0=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-4.21	-0.0022	pass
-20		7.91	0.0042	pass
-10		7.23	0.0038	pass
0		-5.36	-0.0029	pass
10		-8.14	-0.0043	pass
20		-5.28	-0.0028	pass
30		-7.05	-0.0038	pass
40		-7.46	-0.0040	pass
50		-5.92	-0.0031	pass
20	L.V.	-7.06	-0.0038	pass
	H.V.	9.13	0.0049	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.5914	1754.5663	1710	1755
-20		1710.5943	1754.5679	1710	1755
-10		1710.5889	1754.5703	1710	1755
0		1710.5942	1754.5696	1710	1755
10		1710.5914	1754.5684	1710	1755
20		1710.5958	1754.5725	1710	1755
30		1710.5942	1754.5675	1710	1755
40		1710.5887	1754.5666	1710	1755
50		1710.5925	1754.5713	1710	1755
20	L.V.	1710.5959	1754.5689	1710	1755
	H.V.	1710.5917	1754.5660	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-1.53	-0.0018	pass
-20		9.71	0.0116	pass
-10		-5.81	-0.0069	pass
0		-9.10	-0.0109	pass
10		-7.58	-0.0091	pass
20		-7.16	-0.0086	pass
30		-6.22	-0.0074	pass
40		-8.27	-0.0099	pass
50		9.60	0.0115	pass
20	L.V.	-5.75	-0.0069	pass
	H.V.	-8.04	-0.0096	pass

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2500.5646	2569.3619	2500	2570
-20		2500.6529	2569.3645	2500	2570
-10		2500.6518	2569.3526	2500	2570
0		2500.6427	2569.3624	2500	2570
10		2500.6546	2569.4337	2500	2570
20		2500.6419	2569.3978	2500	2570
30		2500.6528	2569.3964	2500	2570
40		2500.6516	2569.3536	2500	2570
50		2500.6517	2569.3557	2500	2570
20	L.V.	2500.6424	2569.4444	2500	2570
	H.V.	2500.5618	2569.4367	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.2937	715.8927	699	716
-20		699.2943	715.8893	699	716
-10		699.2949	715.8896	699	716
0		699.2945	715.8888	699	716
10		699.2928	715.8908	699	716
20		699.2921	715.8889	699	716
30		699.2963	715.8913	699	716
40		699.2909	715.8889	699	716
50		699.2965	715.8881	699	716
20	L.V.	699.2951	715.8893	699	716
	H.V.	699.2964	715.8908	699	716

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	704.2979	715.5554	704	716
-20		704.2989	715.5550	704	716
-10		704.3005	715.5531	704	716
0		704.2986	715.5525	704	716
10		704.2995	715.5524	704	716
20		704.3005	715.5543	704	716
30		704.3004	715.5533	704	716
40		704.2989	715.5540	704	716
50		704.2973	715.5550	704	716
20	L.V.	704.2968	715.5560	704	716
	H.V.	704.2995	715.5543	704	716

Band 66:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1710.1471	1779.8534	1710	1780
-20		1710.1465	1779.8524	1710	1780
-10		1710.1461	1779.8583	1710	1780
0		1710.1414	1779.8568	1710	1780
10		1710.1443	1779.8551	1710	1780
20		1710.1480	1779.8579	1710	1780
30		1710.1474	1779.8569	1710	1780
40		1710.1475	1779.8597	1710	1780
50		1710.1464	1779.8558	1710	1780
20	L.V.	1710.1434	1779.8580	1710	1780
	H.V.	1710.1470	1779.8544	1710	1780

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