TESTREPORT

Applicant Name :	INFINIX MOBILITY LIMITED
Address :	FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25 SHAN MEI STREET FOTAN NT HONGKONG
Report Number :	RA221125-56859E-RF-00C
FCC ID:	2AIZN-X6516

Test Standard (s)

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

Sample Description

Product Type:	Mobile Phone
Model No.:	X6516
Multiple Model(s) No.:	N/A
Trade Mark:	Infinix
Date Received:	2022/11/25
Report Date:	2023/01/10

Test Result:	Pass*

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

Prepared and Checked By:

Nick Fang
EMC Engineer

Approved By:

Candy Li
EMC Engineer

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

Product Description for Equipment under Test (EUT)

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM, 64QAM (Downlink) 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band5/LTE Band 5: -3dBi PCS1900/WCDMA Band 2/ LTE Band 2/ LTE Band 7: 0dBi WCDMA Band 4/ LTE Band 4/LTE Band 38/LTE Band 41: -1dBi (provided by the applicant)
Voltage Range	DC 3.85V from battery or DC 5V from adapter
Sample serial number	1S3T-1 for Conducted and Radiated Emissions Test 1S43-5 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter information	Model: U100XSA Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5.0V, 2.0A
Extreme condition*	L.V.: Low Voltage 3.45V_{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		$\pm 0.082*10^{-7}$
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz - 18GHz	±4.98dB
	18GHz - 26.5GHz	±5.06dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

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

Test Facility

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

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE B38	5	2572.5	2595	2617.5
	10	2575	2595	2615
	15	2577.5	2595	2612.5
	20	2580	2595	2610
LTE B41	5	2537.5	2595	2652.5
	10	2540	2595	2650
	15	2542.5	2595	2647.5
	20	2545	2595	2645

Equipment Modifications

No modification was made to the EUT.

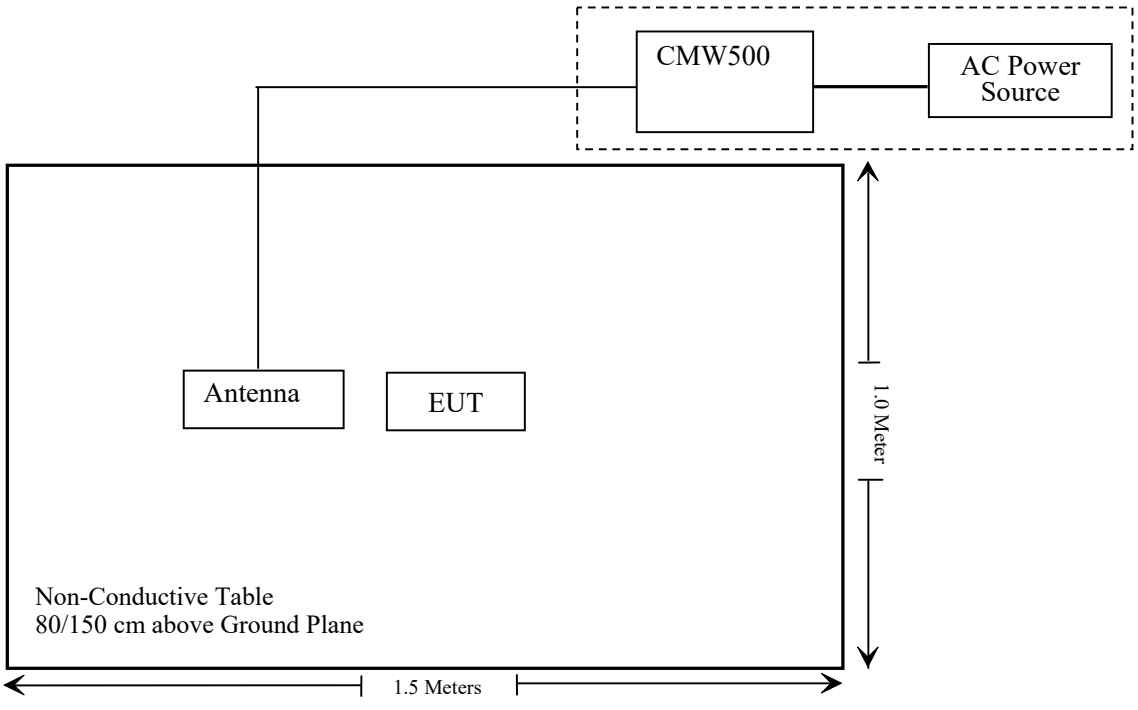
Support Equipment List and Details

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

Support Cable Description

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

Note: * Please refer to SAR report number: RA221125-56859E-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2022/11/25	2023/11/24
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2022/11/25	2023/11/24
SONOMA INSTRUMENT	Amplifier	310 N	186131	2022/11/08	2023/11/07
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2022/11/08	2023/11/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2022/11/08	2023/11/07
Radiated Emission Test Software: e3 19821b (V9)					
Unknown	RF Coaxial Cable	No.10	N050	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.11	N1000	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.12	N040	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.13	N300	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.14	N800	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.15	N600	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.16	N650	2022/11/25	2023/11/24
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
PASTERNACK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-024-1)	2020/01/05	2023/01/04
PASTERNACK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-025-1)	2020/01/05	2023/01/04
Wainwright	High Pass Filter	WHKX3.6/18G-10SS	5	2022/11/25	2023/11/24
CD	High Pass Filter	HPM-1.2/18G-60	110	2022/11/25	2023/11/24
Unknown	RFCoaxialCable	No.16	N200	2022/11/25	2023/11/24
Agilent	Signal Generator	N5183A	MY51040755	2022/11/25	2023/11/24

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
SPECTRUM ANALYZER	Rohde & Schwarz	FSU26	200982	2022/07/04	2023/07/03
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101590	2022/11/25	2023/11/24
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2022/11/25	2023/11/24
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2022/11/25	2023/11/24
REALE	Temp. & Humid. Chamber	RHP-800BT	R20170318310	2022/11/23	2023/11/22
Fluke	Multi Meter	45	7664009	2022/11/23	2023/11/22
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: RA221125-56859E-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

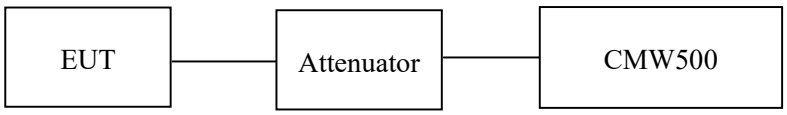
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

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

Test Procedure

Conducted method:

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



Test Data

Environmental Conditions

Temperature:	27.6 ℃
Relative Humidity:	56.7%
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2022-12-01 to 2022-12-17.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	32.50	**27.35**	38.45
	190	836.6	32.30	27.15	38.45
	251	848.8	32.30	27.15	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	32.49	30.75	28.79	26.79	27.34	25.60	23.64	21.64	38.45
	190	836.6	32.37	30.70	28.77	26.73	27.22	25.55	23.62	21.58	38.45
	251	848.8	32.30	30.62	28.69	26.65	27.15	25.47	23.54	21.50	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	25.96	25.41	22.74	20.65	**20.81**	20.26	17.59	15.50	38.45
	190	836.6	25.76	25.24	22.66	20.52	20.61	20.09	17.51	15.37	38.45
	251	848.8	25.61	24.89	22.55	20.41	20.46	19.74	17.40	15.26	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		22.80	22.73	22.82	17.65	17.58	**17.67**
	HSDPA	1	22.12	22.01	22.29	16.97	16.86	17.14
		2	22.10	22.11	22.21	16.95	16.96	17.06
		3	22.07	22.14	22.17	16.92	16.99	17.02
		4	22.06	22.13	22.18	16.91	16.98	17.03
	HSUPA	1	22.02	21.93	21.82	16.87	16.78	16.67
		2	22.01	21.88	21.49	16.86	16.73	16.34
		3	22.04	21.76	21.64	16.89	16.61	16.49
		4	22.03	21.84	21.55	16.88	16.69	16.40
		5	22.05	21.46	21.42	16.90	16.31	16.27
	HSPA+	1	22.06	21.48	21.38	16.91	16.33	16.23

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
For GSM850 / WCDMA Band5: Antenna Gain = -3.0dBi = -5.15dBd (0dBd=2.15(dBi)
Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	29.00	29.00	33
	661	1880.0	28.70	28.70	33
	810	1909.8	28.40	28.40	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	29.02	28.89	27.26	25.28	**29.02**	28.89	27.26	25.28	33
	661	1880.0	28.78	28.67	27.09	25.10	28.78	28.67	27.09	25.10	33
	810	1909.8	28.40	28.36	26.79	24.86	28.40	28.36	26.79	24.86	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	26.46	25.14	23.01	21.37	26.46	25.14	23.01	21.37	33
	661	1880.0	26.58	25.21	23.05	21.28	**26.58**	25.21	23.05	21.28	33
	810	1909.8	26.02	24.38	22.35	21.52	26.02	24.38	22.35	21.52	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.58	23.75	23.66	23.58	**23.75**	23.66
	HSDPA	1	22.55	22.79	22.52	22.55	22.79	22.52
		2	22.50	22.75	22.47	22.50	22.75	22.47
		3	22.33	22.18	22.15	22.33	22.18	22.15
		4	22.25	22.33	22.28	22.25	22.33	22.28
	HSUPA	1	22.50	22.75	22.47	22.50	22.75	22.47
		2	22.33	22.48	22.36	22.33	22.48	22.36
		3	22.41	22.39	22.24	22.41	22.39	22.24
		4	22.26	22.51	22.41	22.26	22.51	22.41
		5	22.25	22.24	22.39	22.25	22.24	22.39
	HSPA+	1	22.48	22.31	22.28	22.48	22.31	22.28

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For PCS1900 / WCDMA Band2: Antenna Gain =0dBi
Limit: EIRP≤33dBm

AWS Band

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		23.38	23.39	23.42	22.38	22.39	**22.42**
	HSDPA	1	22.26	22.25	22.71	21.26	21.25	21.71
		2	22.24	22.16	22.15	21.24	21.16	21.15
		3	22.14	22.13	22.14	21.14	21.13	21.14
		4	22.17	22.14	22.15	21.17	21.14	21.15
	HSUPA	1	22.16	22.34	22.74	21.16	21.34	21.74
		2	22.14	22.15	22.56	21.14	21.15	21.56
		3	22.13	22.24	22.31	21.13	21.24	21.31
		4	22.15	22.26	22.28	21.15	21.26	21.28
		5	22.18	22.31	22.46	21.18	21.31	21.46
	HSPA+	1	22.19	22.15	22.51	21.19	21.15	21.51

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band4: Antenna Gain = -1dBi
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	16.58	16.85	15.97	16.58	16.85	15.97
		RB1#3	16.73	17.02	16.11	16.73	17.02	16.11
		RB1#5	16.49	16.79	15.87	16.49	16.79	15.87
		RB3#0	16.67	16.99	16.06	16.67	16.99	16.06
		RB3#3	16.62	16.92	15.99	16.62	16.92	15.99
		RB6#0	15.75	15.99	15.09	15.75	15.99	15.09
	16QAM	RB1#0	15.65	15.93	15.16	15.65	15.93	15.16
		RB1#3	15.82	16.08	15.31	15.82	16.08	15.31
		RB1#5	15.61	15.84	15.10	15.61	15.84	15.10
		RB3#0	15.88	16.25	15.14	15.88	16.25	15.14
		RB3#3	15.95	16.19	15.10	15.95	16.19	15.10
		RB6#0	14.70	15.03	14.17	14.70	15.03	14.17
3.0	QPSK	RB1#0	16.59	16.96	16.27	16.59	16.96	16.27
		RB1#8	16.61	16.92	16.07	16.61	16.92	16.07
		RB1#14	16.43	16.66	15.84	16.43	16.66	15.84
		RB6#0	15.80	16.06	15.35	15.80	16.06	15.35
		RB6#9	15.72	15.88	15.09	15.72	15.88	15.09
		RB15#0	15.80	15.99	15.24	15.80	15.99	15.24
	16QAM	RB1#0	15.90	16.03	16.02	15.90	16.03	16.02
		RB1#8	15.95	15.99	15.82	15.95	15.99	15.82
		RB1#14	15.77	15.75	15.58	15.77	15.75	15.58
		RB6#0	14.73	15.02	14.46	14.73	15.02	14.46
		RB6#9	14.66	14.85	14.20	14.66	14.85	14.20
		RB15#0	14.64	15.06	14.36	14.64	15.06	14.36

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	16.26	16.70	16.51	16.26	16.70	16.51
		RB1#13	16.65	16.97	16.40	16.65	16.97	16.40
		RB1#24	16.13	16.18	15.58	16.13	16.18	15.58
		RB15#0	15.73	16.03	15.62	15.73	16.03	15.62
		RB15#10	15.68	15.83	15.21	15.68	15.83	15.21
		RB25#0	15.68	15.88	15.38	15.68	15.88	15.38
	16QAM	RB1#0	15.74	15.85	15.48	15.74	15.85	15.48
		RB1#13	16.17	16.13	15.36	16.17	16.13	15.36
		RB1#24	15.64	15.34	14.57	15.64	15.34	14.57
		RB15#0	14.59	15.06	14.69	14.59	15.06	14.69
		RB15#10	14.55	14.87	14.27	14.55	14.87	14.27
		RB25#0	14.56	14.93	14.47	14.56	14.93	14.47
10.0	QPSK	RB1#0	16.47	17.27	17.57	16.47	17.27	17.57
		RB1#25	16.59	16.92	16.93	16.59	16.92	16.93
		RB1#49	17.26	16.97	16.35	17.26	16.97	16.35
		RB25#0	15.75	16.24	16.58	15.75	16.24	16.58
		RB25#25	16.17	16.05	15.83	16.17	16.05	15.83
		RB50#0	15.97	16.15	16.22	15.97	16.15	16.22
	16QAM	RB1#0	15.77	16.32	17.35	15.77	16.32	17.35
		RB1#25	15.92	16.00	16.67	15.92	16.00	16.67
		RB1#49	16.59	16.03	16.16	16.59	16.03	16.16
		RB25#0	14.65	15.35	15.64	14.65	15.35	15.64
		RB25#25	15.08	15.16	14.89	15.08	15.16	14.89
		RB50#0	14.86	15.19	15.25	14.86	15.19	15.25

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	16.74	17.78	16.96	16.74	17.78	16.96
		RB1#38	16.72	16.86	16.52	16.72	16.86	16.52
		RB1#74	17.54	16.63	15.19	17.54	16.63	15.19
		RB36#0	15.88	16.52	16.20	15.88	16.52	16.20
		RB36#39	16.41	15.84	15.11	16.41	15.84	15.11
		RB75#0	16.15	16.19	15.69	16.15	16.19	15.69
	16QAM	RB1#0	16.01	17.27	16.74	16.01	17.27	16.74
		RB1#38	16.05	16.39	16.34	16.05	16.39	16.34
		RB1#74	16.83	16.14	14.96	16.83	16.14	14.96
		RB36#0	14.80	15.51	15.08	14.80	15.51	15.08
		RB36#39	15.33	14.83	14.00	15.33	14.83	14.00
		RB75#0	15.06	15.17	14.58	15.06	15.17	14.58
20.0	QPSK	RB1#0	16.66	18.48	16.84	16.66	**18.48**	16.84
		RB1#50	16.72	16.79	16.84	16.72	16.79	16.84
		RB1#99	18.35	17.85	16.07	18.35	17.85	16.07
		RB50#0	15.47	16.61	15.96	15.47	16.61	15.96
		RB50#50	16.66	16.18	15.65	16.66	16.18	15.65
		RB100#0	16.10	16.40	15.80	16.10	16.40	15.80
	16QAM	RB1#0	15.86	18.13	16.22	15.86	**18.13**	16.22
		RB1#50	16.03	16.46	16.33	16.03	16.46	16.33
		RB1#99	17.57	17.49	15.47	17.57	17.49	15.47
		RB50#0	14.44	15.64	14.84	14.44	15.64	14.84
		RB50#50	15.63	15.18	14.53	15.63	15.18	14.53
		RB100#0	15.07	15.42	14.71	15.07	15.42	14.71

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band2: Antenna Gain = 0dBi
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	19.93	19.40	20.06	18.93	18.40	19.06
		RB1#3	20.04	19.78	20.08	19.04	18.78	**19.08**
		RB1#5	20.01	19.72	20.06	19.01	18.72	19.06
		RB3#0	20.04	19.93	19.97	19.04	18.93	18.97
		RB3#3	20.01	19.88	19.93	19.01	18.88	18.93
		RB6#0	19.13	18.93	18.88	18.13	17.93	17.88
	16QAM	RB1#0	19.71	18.22	19.88	18.71	17.22	18.88
		RB1#3	19.73	18.6	19.88	18.73	17.60	**18.88**
		RB1#5	19.73	18.63	19.88	18.73	17.63	18.88
		RB3#0	18.86	19.02	19.11	17.86	18.02	18.11
		RB3#3	18.89	18.98	19.15	17.89	17.98	18.15
		RB6#0	17.11	17.39	17.67	16.11	16.39	16.67
3.0	QPSK	RB1#0	19.96	19.43	19.88	18.96	18.43	18.88
		RB1#8	19.93	19.81	19.88	18.93	18.81	18.88
		RB1#14	19.86	19.78	19.89	18.86	18.78	18.89
		RB6#0	19.06	18.65	18.98	18.06	17.65	17.98
		RB6#9	18.91	18.93	18.89	17.91	17.93	17.89
		RB15#0	18.96	18.94	18.96	17.96	17.94	17.96
	16QAM	RB1#0	19.67	18.25	19.06	18.67	17.25	18.06
		RB1#8	19.73	18.55	19.05	18.73	17.55	18.05
		RB1#14	19.59	18.60	19.00	18.59	17.60	18.00
		RB6#0	17.17	17.51	18.07	16.17	16.51	17.07
		RB6#9	17.71	17.35	17.73	16.71	16.35	16.73
		RB15#0	17.45	17.51	17.92	16.45	16.51	16.92

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	19.95	19.38	19.72	18.95	18.38	18.72
		RB1#13	19.93	19.82	19.98	18.93	18.82	18.98
		RB1#24	19.67	19.49	20.01	18.67	18.49	19.01
		RB15#0	18.97	18.53	18.58	17.97	17.53	17.58
		RB15#10	18.89	18.92	18.93	17.89	17.92	17.93
		RB25#0	18.93	18.99	18.96	17.93	17.99	17.96
	16QAM	RB1#0	18.99	18.56	17.69	17.99	17.56	16.69
		RB1#13	18.90	18.87	18.05	17.90	17.87	17.05
		RB1#24	18.66	18.57	18.17	17.66	17.57	17.17
		RB15#0	17.41	17.58	18.09	16.41	16.58	17.09
		RB15#10	17.94	17.39	17.89	16.94	16.39	16.89
		RB25#0	17.64	17.50	17.92	16.64	16.50	16.92
10.0	QPSK	RB1#0	20.23	19.81	19.85	19.23	18.81	18.85
		RB1#25	19.71	19.87	19.89	18.71	18.87	18.89
		RB1#49	19.73	19.49	19.91	18.73	18.49	18.91
		RB25#0	18.90	18.59	19.00	17.90	17.59	18.00
		RB25#25	18.54	18.58	18.99	17.54	17.58	17.99
		RB50#0	18.71	19.01	18.90	17.71	18.01	17.90
	16QAM	RB1#0	19.12	18.56	19.18	18.12	17.56	18.18
		RB1#25	18.82	18.59	19.15	17.82	17.59	18.15
		RB1#49	18.77	18.19	19.15	17.77	17.19	18.15
		RB25#0	17.16	17.89	17.92	16.16	16.89	16.92
		RB25#25	18.34	17.65	18.34	17.34	16.65	17.34
		RB50#0	17.69	17.76	18.13	16.69	16.76	17.13

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	20.23	19.43	19.86	**19.23**	18.43	18.86
		RB1#38	19.75	19.70	19.88	18.75	18.70	18.88
		RB1#74	19.75	19.39	19.88	18.75	18.39	18.88
		RB36#0	18.69	18.94	18.87	17.69	17.94	17.87
		RB36#39	18.54	18.54	18.56	17.54	17.54	17.56
		RB75#0	18.63	18.86	18.99	17.63	17.86	17.99
	16QAM	RB1#0	19.22	18.85	19.17	**18.22**	17.85	18.17
		RB1#38	18.79	19.22	19.19	17.79	18.22	18.19
		RB1#74	18.73	18.84	19.15	17.73	17.84	18.15
		RB36#0	17.58	18.11	17.50	16.58	17.11	16.50
		RB36#39	18.23	17.36	18.26	17.23	16.36	17.26
		RB75#0	17.90	17.80	17.94	16.90	16.80	16.94
20.0	QPSK	RB1#0	19.99	19.60	19.82	18.99	18.60	18.82
		RB1#50	19.65	19.95	20.20	18.65	18.95	**19.20**
		RB1#99	19.93	19.91	20.13	18.93	18.91	19.13
		RB50#0	18.77	18.84	19.01	17.77	17.84	18.01
		RB50#50	18.60	18.52	19.00	17.60	17.52	18.00
		RB100#0	18.63	19.00	18.96	17.63	18.00	17.96
	16QAM	RB1#0	19.09	19.36	17.94	18.09	18.36	16.94
		RB1#50	18.67	19.66	18.33	17.67	18.66	17.33
		RB1#99	18.99	19.79	18.32	17.99	**18.79**	17.32
		RB50#0	17.53	18.20	17.13	16.53	17.20	16.13
		RB50#50	17.97	17.62	18.51	16.97	16.62	17.51
		RB100#0	17.81	17.98	17.92	16.81	16.98	16.92

Note: EIRP (dBm) = Conducted Power (dBm) + Antenna Gain (dBi)
For Band4: Antenna Gain = -1.0dBi
Limit: EIRP≤30dBm

LTE Band5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.95	22.91	23.07	17.80	17.76	17.92
		RB1#3	22.94	23.07	23.15	17.79	17.92	18.00
		RB1#5	22.85	23.04	23.12	17.70	17.89	17.97
		RB3#0	23.09	23.22	23.07	17.94	**18.07**	17.92
		RB3#3	23.02	23.16	23.18	17.87	18.01	18.03
		RB6#0	21.99	22.11	22.21	16.84	16.96	17.06
	16QAM	RB1#0	21.59	22.50	22.95	16.44	17.35	17.80
		RB1#3	21.55	22.42	23.01	16.40	17.27	17.86
		RB1#5	21.58	22.53	23.03	16.43	17.38	**17.88**
		RB3#0	21.97	22.07	21.89	16.82	16.92	16.74
		RB3#3	21.95	22.16	22.01	16.80	17.01	16.86
		RB6#0	21.29	21.34	21.13	16.14	16.19	15.98
3.0	QPSK	RB1#0	22.98	22.90	22.99	17.83	17.75	17.84
		RB1#8	22.95	23.10	23.02	17.80	17.95	17.87
		RB1#14	22.90	23.18	23.08	17.75	18.03	17.93
		RB6#0	21.94	22.08	21.96	16.79	16.93	16.81
		RB6#9	22.01	22.17	22.02	16.86	17.02	16.87
		RB15#0	21.96	22.11	22.01	16.81	16.96	16.86
	16QAM	RB1#0	22.70	21.69	22.24	17.55	16.54	17.09
		RB1#8	22.71	21.72	22.16	17.56	16.57	17.01
		RB1#14	22.76	21.70	22.32	17.61	16.55	17.17
		RB6#0	21.21	21.56	21.18	16.06	16.41	16.03
		RB6#9	21.03	21.25	21.14	15.88	16.10	15.99
		RB15#0	21.04	21.17	21.16	15.89	16.02	16.01

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.02	22.87	22.78	17.87	17.72	17.63
		RB1#13	22.90	22.96	22.99	17.75	17.81	17.84
		RB1#24	23.06	22.78	22.99	17.91	17.63	17.84
		RB15#0	21.97	22.14	22.05	16.82	16.99	16.90
		RB15#10	22.03	22.04	22.13	16.88	16.89	16.98
		RB25#0	21.95	21.99	22.03	16.80	16.84	16.88
	16QAM	RB1#0	22.03	22.03	21.21	16.88	16.88	16.06
		RB1#13	21.98	21.95	21.26	16.83	16.80	16.11
		RB1#24	22.33	21.94	21.27	17.18	16.79	16.12
		RB15#0	20.93	21.31	21.18	15.78	16.16	16.03
		RB15#10	20.76	21.05	21.17	15.61	15.90	16.02
		RB25#0	20.87	21.20	21.14	15.72	16.05	15.99
10.0	QPSK	RB1#0	23.03	22.86	22.87	17.88	17.71	17.72
		RB1#25	22.98	22.87	23.11	17.83	17.72	17.96
		RB1#49	23.04	22.94	23.13	17.89	17.79	**17.98**
		RB25#0	22.02	22.07	22.08	16.87	16.92	16.93
		RB25#25	21.99	21.98	22.10	16.84	16.83	16.95
		RB50#0	22.19	22.15	22.17	17.04	17.00	17.02
	16QAM	RB1#0	22.63	21.58	22.40	17.48	16.43	17.25
		RB1#25	22.85	21.66	22.50	**17.70**	16.51	17.35
		RB1#49	22.75	21.88	22.29	17.60	16.73	17.14
		RB25#0	20.92	21.58	21.16	15.77	16.43	16.01
		RB25#25	21.10	21.59	21.13	15.95	16.44	15.98
		RB50#0	21.20	21.14	21.23	16.05	15.99	16.08

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
For Band5: Antenna Gain = -3.0dBi = -5.15dBd (0dBd=2.15dBi)
Limit: ERP≤38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	18.59	18.69	18.53	18.59	18.69	18.53
		RB1#13	18.56	18.63	18.50	18.56	18.63	18.50
		RB1#24	18.62	18.55	18.48	18.62	18.55	18.48
		RB15#0	17.53	17.82	17.54	17.53	17.82	17.54
		RB15#10	17.59	17.69	17.60	17.59	17.69	17.60
		RB25#0	17.59	17.86	17.59	17.59	17.86	17.59
	16QAM	RB1#0	17.59	17.78	16.64	17.59	17.78	16.64
		RB1#13	17.56	17.70	16.71	17.56	17.70	16.71
		RB1#24	17.42	17.74	16.68	17.42	17.74	16.68
		RB15#0	17.80	18.09	17.12	17.80	18.09	17.12
		RB15#10	18.06	18.13	17.03	18.06	18.13	17.03
		RB25#0	17.93	18.11	17.06	17.93	18.11	17.06
10.0	QPSK	RB1#0	18.68	18.65	18.39	18.68	18.65	18.39
		RB1#25	18.74	18.67	18.41	**18.74**	18.67	18.41
		RB1#49	18.72	18.65	18.41	18.72	18.65	18.41
		RB25#0	17.59	17.85	17.55	17.59	17.85	17.55
		RB25#25	17.60	17.76	17.54	17.60	17.76	17.54
		RB50#0	17.55	17.86	17.54	17.55	17.86	17.54
	16QAM	RB1#0	17.60	17.50	17.61	17.60	17.50	17.61
		RB1#25	17.78	17.42	17.61	17.78	17.42	17.61
		RB1#49	17.67	17.43	17.61	17.67	17.43	17.61
		RB25#0	17.48	18.10	17.30	17.48	18.10	17.30
		RB25#25	18.16	18.37	17.34	18.16	**18.37**	17.34
		RB50#0	17.84	18.19	17.31	17.84	18.19	17.31

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	18.67	18.64	18.45	18.67	18.64	18.45
		RB1#38	18.80	18.65	18.38	18.80	18.65	18.38
		RB1#74	18.70	18.66	18.34	18.70	18.66	18.34
		RB36#0	17.65	17.81	17.51	17.65	17.81	17.51
		RB36#39	17.68	17.75	17.60	17.68	17.75	17.60
		RB75#0	17.66	17.78	17.54	17.66	17.78	17.54
	16QAM	RB1#0	17.76	18.24	17.58	17.76	18.24	17.58
		RB1#38	17.76	18.19	17.61	17.76	18.19	17.61
		RB1#74	17.88	18.18	17.59	17.88	18.18	17.59
		RB36#0	17.72	18.09	17.02	17.72	18.09	17.02
		RB36#39	18.16	18.07	16.67	18.16	18.07	16.67
		RB75#0	17.95	18.10	16.87	17.95	18.10	16.87
20.0	QPSK	RB1#0	18.61	18.72	18.46	18.61	18.72	18.46
		RB1#50	18.63	18.81	18.52	18.63	18.81	18.52
		RB1#99	18.74	18.89	18.41	18.74	**18.89**	18.41
		RB50#0	17.60	17.75	17.60	17.60	17.75	17.60
		RB50#50	17.69	17.75	17.46	17.69	17.75	17.46
		RB100#0	17.57	17.66	17.51	17.57	17.66	17.51
	16QAM	RB1#0	18.17	18.09	17.18	18.17	18.09	17.18
		RB1#50	18.13	18.32	17.34	18.13	18.32	17.34
		RB1#99	18.21	18.33	17.33	18.21	**18.33**	17.33
		RB50#0	17.28	18.00	17.15	17.28	18.00	17.15
		RB50#50	18.04	18.31	17.04	18.04	18.31	17.04
		RB100#0	17.69	18.17	17.13	17.69	18.17	17.13

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band7: Antenna Gain = 0dBi
Limit: EIRP≤33dBm

LTE Band 38

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.91	20.76	21.00	19.91	19.76	20.00
		RB1#13	20.87	20.73	21.00	19.87	19.73	20.00
		RB1#24	20.98	20.76	20.89	19.98	19.76	19.89
		RB15#0	19.84	19.94	20.04	18.84	18.94	19.04
		RB15#10	19.87	19.96	19.94	18.87	18.96	18.94
		RB25#0	19.81	19.92	19.95	18.81	18.92	18.95
	16QAM	RB1#0	19.60	19.66	19.73	18.6	18.66	18.73
		RB1#13	19.88	19.36	19.70	18.88	18.36	18.70
		RB1#24	19.77	19.85	19.92	18.77	18.85	18.92
		RB15#0	18.95	19.06	19.27	17.95	18.06	18.27
		RB15#10	19.14	19.06	19.28	18.14	18.06	18.28
		RB25#0	19.32	19.16	18.91	18.32	18.16	17.91
10.0	QPSK	RB1#0	20.98	20.99	21.16	19.98	19.99	20.16
		RB1#25	21.07	21.00	21.21	20.07	20.00	20.21
		RB1#49	21.11	21.08	21.29	20.11	20.08	20.29
		RB25#0	19.76	20.28	20.21	18.76	19.28	19.21
		RB25#25	19.86	20.26	20.28	18.86	19.26	19.28
		RB50#0	19.75	20.12	20.24	18.75	19.12	19.24
	16QAM	RB1#0	20.59	19.42	20.04	19.59	18.42	19.04
		RB1#25	20.52	19.58	20.11	19.52	18.58	19.11
		RB1#49	20.10	19.51	20.18	19.10	18.51	19.18
		RB25#0	19.08	19.49	19.41	18.08	18.49	18.41
		RB25#25	19.03	19.47	19.35	18.03	18.47	18.35
		RB50#0	19.08	19.34	19.43	18.08	18.34	18.43

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.34	20.76	21.19	20.34	19.76	20.19
		RB1#38	21.35	20.84	21.19	20.35	19.84	20.19
		RB1#74	21.40	20.91	21.23	**20.40**	19.91	20.23
		RB36#0	20.11	19.94	20.25	19.11	18.94	19.25
		RB36#39	20.12	19.95	20.32	19.12	18.95	19.32
		RB75#0	20.08	19.93	20.3	19.08	18.93	19.30
	16QAM	RB1#0	21.05	19.98	20.08	**20.05**	18.98	19.08
		RB1#38	20.98	20.19	20.09	19.98	19.19	19.09
		RB1#74	21.05	20.00	20.15	20.05	19.00	19.15
		RB36#0	19.35	19.21	19.30	18.35	18.21	18.30
		RB36#39	19.31	19.32	19.41	18.31	18.32	18.41
		RB75#0	19.29	19.13	19.49	18.29	18.13	18.49
20.0	QPSK	RB1#0	20.74	20.94	21.03	19.74	19.94	20.03
		RB1#50	20.90	20.94	21.15	19.90	19.94	20.15
		RB1#99	21.04	21.03	21.26	20.04	20.03	**20.26**
		RB50#0	19.77	19.96	20.24	18.77	18.96	19.24
		RB50#50	19.87	20.01	20.32	18.87	19.01	19.32
		RB100#0	19.91	19.81	20.26	18.91	18.81	19.26
	16QAM	RB1#0	19.41	20.71	20.70	18.41	19.71	19.70
		RB1#50	19.64	20.72	20.79	18.64	19.72	19.79
		RB1#99	19.66	21.04	20.88	18.66	**20.04**	19.88
		RB50#0	19.40	18.95	19.48	18.40	17.95	18.48
		RB50#50	19.45	19.13	19.55	18.45	18.13	18.55
		RB100#0	19.18	18.96	19.50	18.18	17.96	18.50

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band38: Antenna Gain = -1.0dBi
Limit: EIRP≤33dBm

LTE Band 41

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.02	21.26	21.18	20.02	20.26	20.18
		RB1#13	21.00	21.23	21.27	20.00	20.23	20.27
		RB1#24	21.05	21.23	21.26	20.05	20.23	20.26
		RB15#0	19.97	20.17	20.37	18.97	19.17	19.37
		RB15#10	20.00	20.17	20.40	19.00	19.17	19.40
		RB25#0	19.94	20.14	20.27	18.94	19.14	19.27
	16QAM	RB1#0	20.09	20.53	20.22	19.09	19.53	19.22
		RB1#13	19.97	20.41	20.37	18.97	19.41	19.37
		RB1#24	20.17	20.53	20.46	19.17	19.53	19.46
		RB15#0	19.13	19.47	19.58	18.13	18.47	18.58
		RB15#10	19.07	19.45	19.63	18.07	18.45	18.63
		RB25#0	19.20	19.50	19.26	18.20	18.50	18.26
10.0	QPSK	RB1#0	21.01	21.26	21.60	20.01	20.26	20.60
		RB1#25	21.13	21.25	21.46	20.13	20.25	20.46
		RB1#49	21.03	21.34	21.61	20.03	20.34	**20.61**
		RB25#0	20.15	20.30	20.60	19.15	19.30	19.60
		RB25#25	20.23	20.38	20.54	19.23	19.38	19.54
		RB50#0	20.03	20.26	20.55	19.03	19.26	19.55
	16QAM	RB1#0	20.31	20.23	21.21	19.31	19.23	**20.21**
		RB1#25	20.32	20.19	21.11	19.32	19.19	20.11
		RB1#49	20.69	20.20	20.67	19.69	19.20	19.67
		RB25#0	19.34	19.39	19.73	18.34	18.39	18.73
		RB25#25	19.32	19.47	19.70	18.32	18.47	18.70
		RB50#0	19.23	19.50	19.69	18.23	18.50	18.69

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	20.98	21.31	21.74	19.98	20.31	20.74
		RB1#38	20.89	21.42	21.58	19.89	20.42	20.58
		RB1#74	20.86	21.32	21.58	19.86	20.32	20.58
		RB36#0	20.01	20.24	20.35	19.01	19.24	19.35
		RB36#39	20.11	20.23	20.35	19.11	19.23	19.35
		RB75#0	20.03	20.23	20.40	19.03	19.23	19.40
	16QAM	RB1#0	20.30	20.35	20.86	19.30	19.35	19.86
		RB1#38	20.30	20.32	20.68	19.30	19.32	19.68
		RB1#74	20.21	20.34	21.00	19.21	19.34	20.00
		RB36#0	19.23	19.33	19.44	18.23	18.33	18.44
		RB36#39	19.08	19.30	19.34	18.08	18.30	18.34
		RB75#0	19.12	19.28	19.57	18.12	18.28	18.57
20.0	QPSK	RB1#0	21.10	21.21	21.74	20.10	20.21	**20.74**
		RB1#50	21.10	21.18	21.64	20.10	20.18	20.64
		RB1#99	21.05	21.25	21.54	20.05	20.25	20.54
		RB50#0	19.89	20.35	20.67	18.89	19.35	19.67
		RB50#50	19.95	20.44	20.51	18.95	19.44	19.51
		RB100#0	19.89	20.26	20.57	18.89	19.26	19.57
	16QAM	RB1#0	20.77	20.90	20.70	19.77	19.90	19.70
		RB1#50	20.62	20.90	20.53	19.62	19.90	19.53
		RB1#99	20.60	21.00	20.48	19.60	**20.00**	19.48
		RB50#0	19.08	19.55	19.89	18.08	18.55	18.89
		RB50#50	19.13	19.63	19.75	18.13	18.63	18.75
		RB100#0	19.05	19.47	19.62	18.05	18.47	18.62

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band41: Antenna Gain = -1.0dBi
Limit: EIRP≤33dBm

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	4.42	13
	Middle	4.75	13
	High	4.62	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	4.89	13
	Middle	4.21	13
	High	4.83	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.95	13
	Middle	3.01	13
	High	2.95	13
HSDPA (16QAM)	Low	3.72	13
	Middle	3.85	13
	High	3.85	13
HSUPA (BPSK)	Low	3.72	13
	Middle	3.85	13
	High	3.97	13
HSPA+	Low	3.51	13
	Middle	3.62	13
	High	3.77	13

PCS Band

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	4.97	13
	Middle	4.46	13
	High	5.28	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	4.92	13
	Middle	4.28	13
	High	4.92	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.17	13
	Middle	3.14	13
	High	3.11	13
HSDPA (16QAM)	Low	3.94	13
	Middle	4.20	13
	High	4.07	13
HSUPA (BPSK)	Low	4.39	13
	Middle	4.20	13
	High	4.10	13
HSPA+	Low	3.89	13
	Middle	3.77	13
	High	3.96	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.24	13
	Middle	3.24	13
	High	3.21	13
HSDPA (16QAM)	Low	4.01	13
	Middle	3.81	13
	High	3.91	13
HSUPA (BPSK)	Low	3.97	13
	Middle	3.97	13
	High	3.97	13
HSPA+	Low	3.55	13
	Middle	3.64	13
	High	3.52	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.71	5.59	5.57	13	Pass
QPSK (100RB Size)	5.83	5.71	5.59	13	Pass
16QAM (1RB Size)	7.71	5.65	6.84	13	Pass
16QAM (100RB Size)	7.71	6.67	6.84	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.12	5.10	6.67	13	Pass
QPSK (100RB Size)	5.54	5.68	5.74	13	Pass
16QAM (1RB Size)	7.91	6.23	7.86	13	Pass
16QAM (100RB Size)	5.88	5.83	6.20	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.16	4.9	4.46	13	Pass
QPSK (50RB Size)	5.54	5.51	5.38	13	Pass
16QAM (1RB Size)	6.06	5.77	5.48	13	Pass
16QAM (50RB Size)	6.38	6.47	6.28	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.62	5.10	6.67	13	Pass
QPSK (100RB Size)	5.54	5.68	5.74	13	Pass
16QAM (1RB Size)	7.91	6.23	7.86	13	Pass
16QAM (100RB Size)	5.88	5.83	6.20	13	Pass

LTE Band 38 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.33	5.48	5.57	13	Pass
QPSK (100RB Size)	4.99	5.62	5.51	13	Pass
16QAM (1RB Size)	6.35	5.83	6.38	13	Pass
16QAM (100RB Size)	6.26	5.97	6.14	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.45	5.57	5.22	13	Pass
QPSK (100RB Size)	5.39	6.17	5.42	13	Pass
16QAM (1RB Size)	6.00	5.74	5.74	13	Pass
16QAM (100RB Size)	5.91	6.00	5.28	13	Pass

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

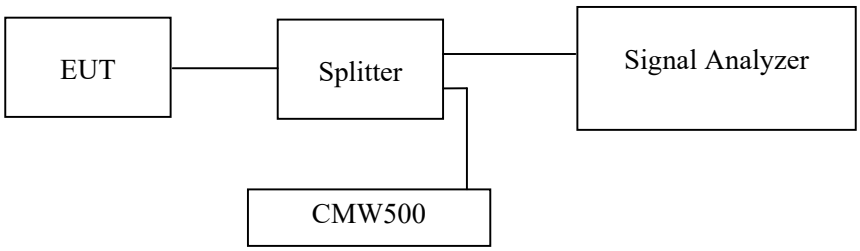
Applicable Standard

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

Test Procedure

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

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



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

Test Data

Environmental Conditions

Temperature:	27.6 ℃
Relative Humidity:	56.7%
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2022-12-01 to 2023-01-09.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	245.00	320.00
	190	836.6	243.00	321.00
	251	848.8	243.00	316.00
EGPRS(8PSK)	128	824.2	241.00	307.00
	190	836.6	239.00	307.00
	251	848.8	243.00	302.00

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.16	4.70
	836.6	4.14	4.70
	846.6	4.16	4.70
HSDPA	826.4	4.16	4.70
	836.6	4.16	4.71
	846.6	4.17	4.68
HSUPA	826.4	4.16	4.68
	836.6	4.14	4.71
	846.6	4.16	4.68

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	245.00	320.00
	661	1880.0	246.00	317.00
	810	1909.8	242.00	319.00
EGPRS(8PSK)	512	1850.2	244.00	315.00
	661	1880.0	245.00	311.00
	810	1909.8	243.00	308.00

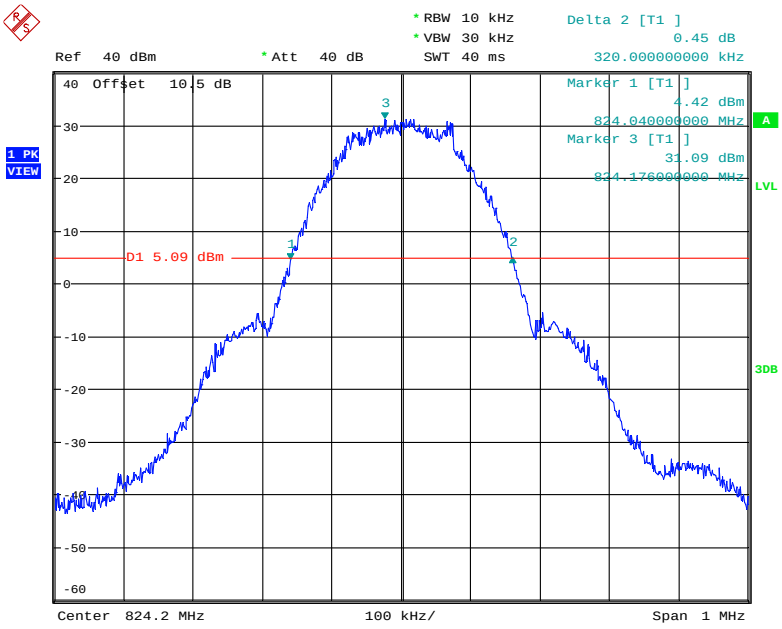
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.14	4.70
	1880.0	4.14	4.68
	1907.6	4.16	4.68
HSDPA	1852.4	4.17	4.71
	1880.0	4.14	4.70
	1907.6	4.16	4.70
HSUPA	1852.4	4.14	4.71
	1880.0	4.14	4.68
	1907.6	4.16	4.71

AWS Band (Part 27)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.14	4.71
	1732.6	4.16	4.68
	1752.6	4.14	4.70
HSDPA	1712.4	4.16	4.68
	1732.6	4.16	4.71
	1752.6	4.16	4.68
HSUPA	1712.4	4.14	4.70
	1732.6	4.16	4.70
	1752.6	4.16	4.70

Cellular Band (Part 22H)

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



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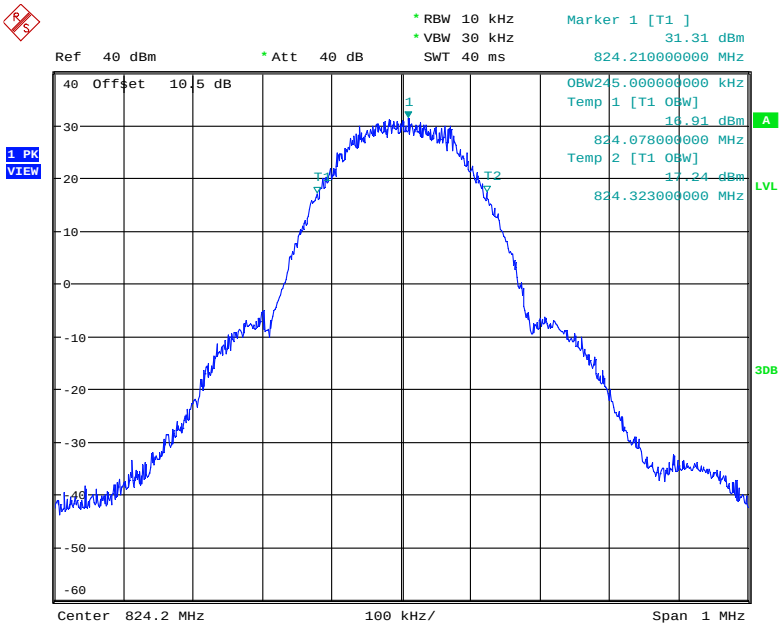

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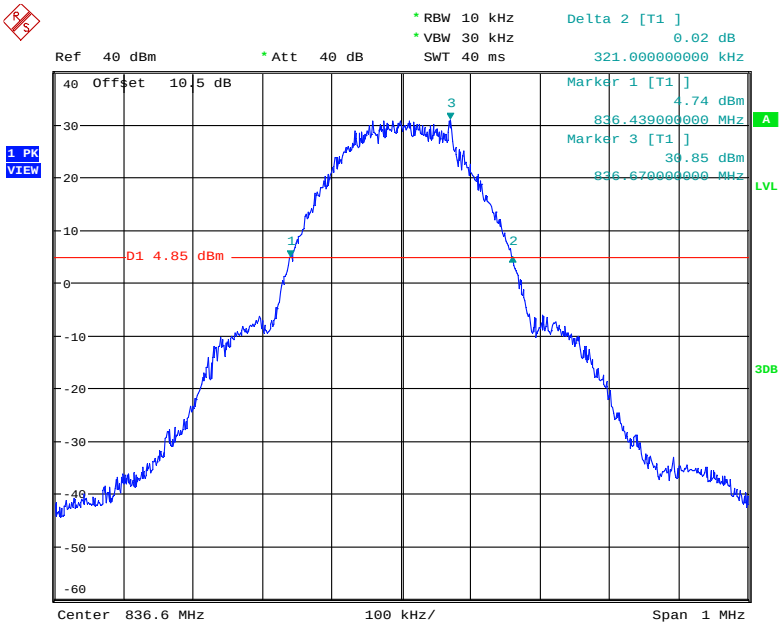
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



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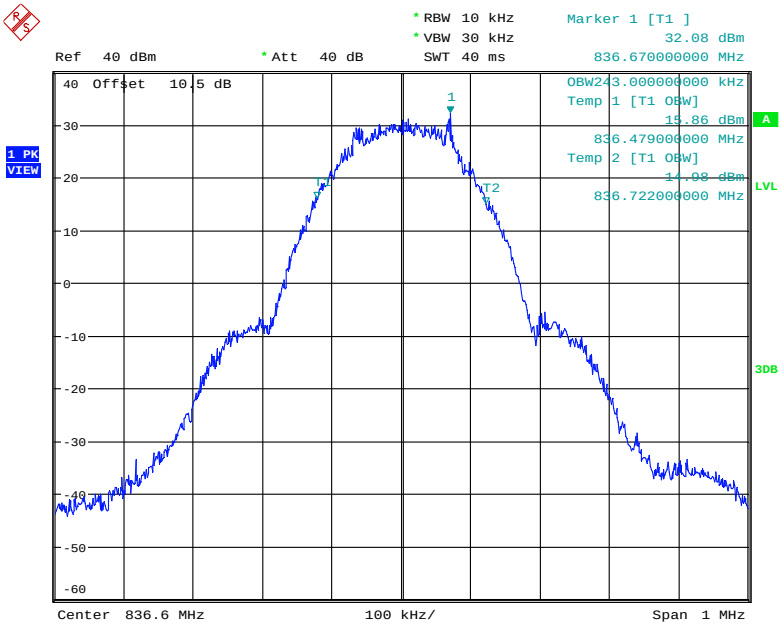

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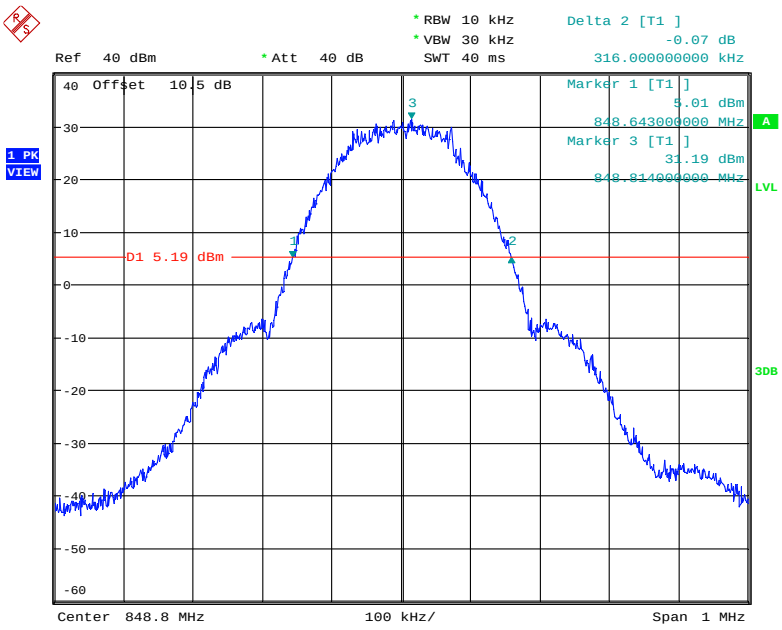
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



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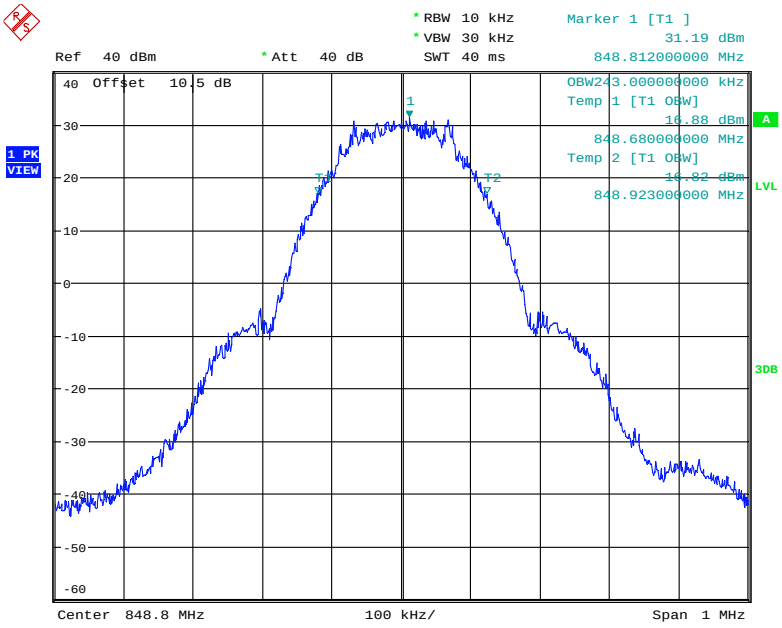
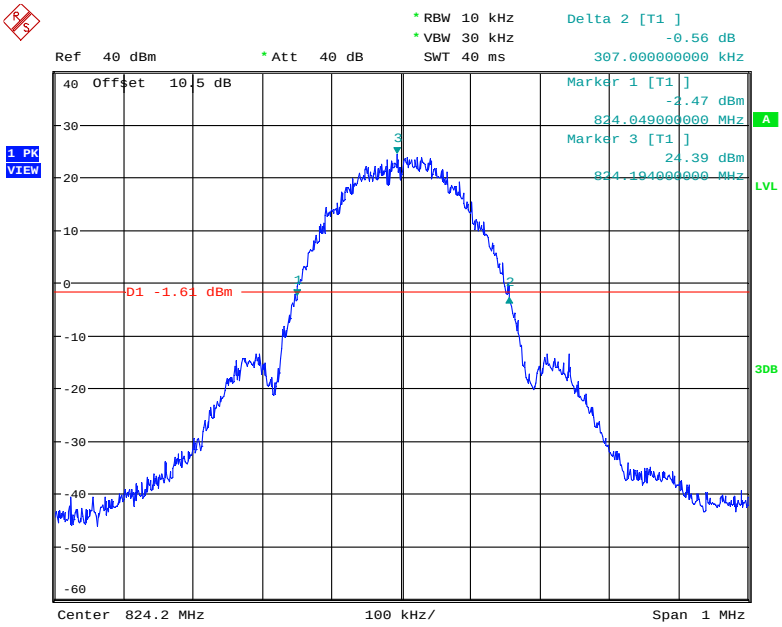


Date: 2.DEC.2022 08:49:56

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



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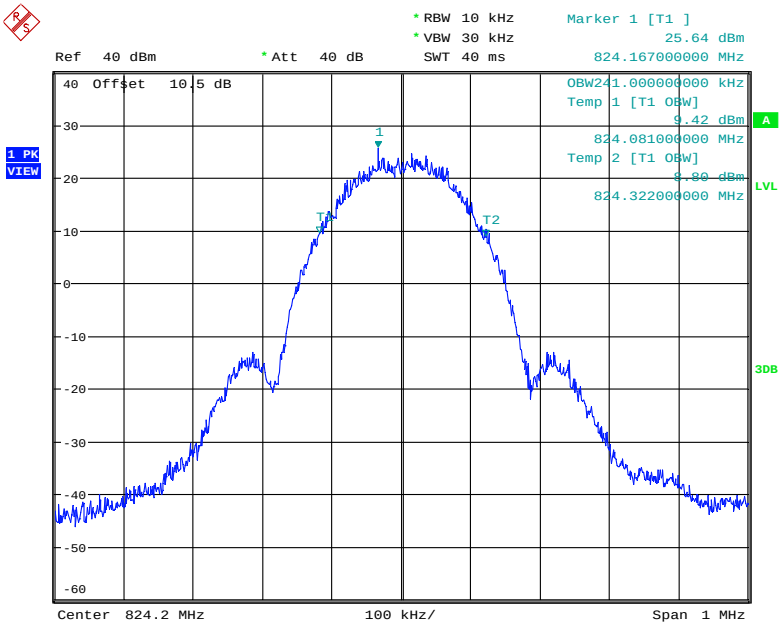

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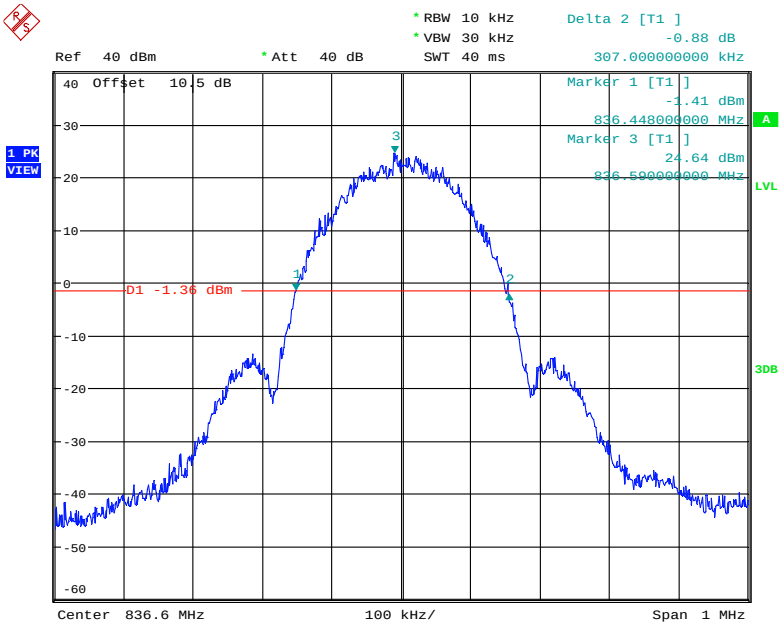
26 dB Emission Bandwidth for GSM(8PSK) Mode, Middle channel



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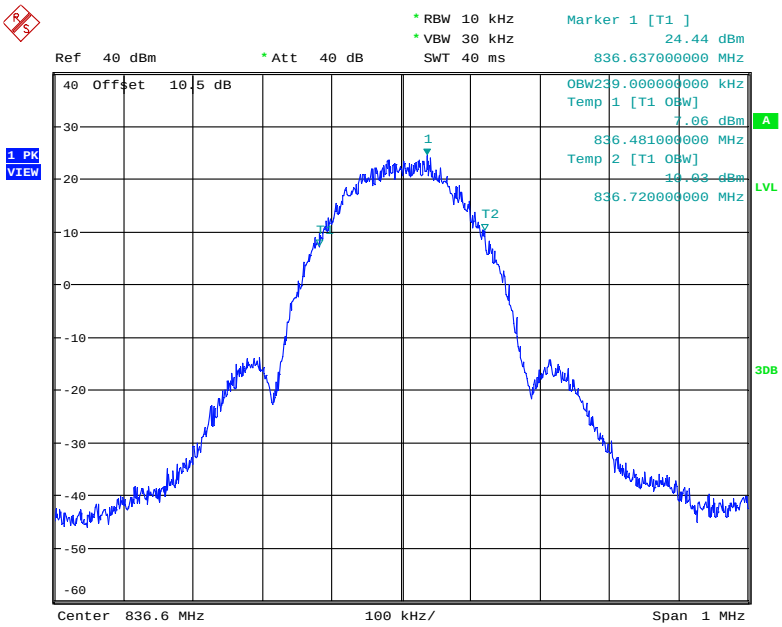
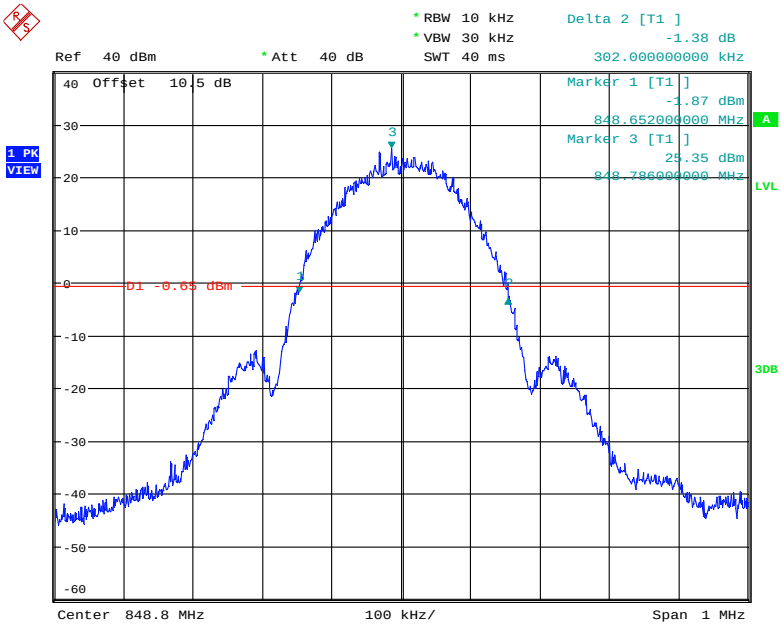


Date: 2.DEC.2022 09:02:28

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



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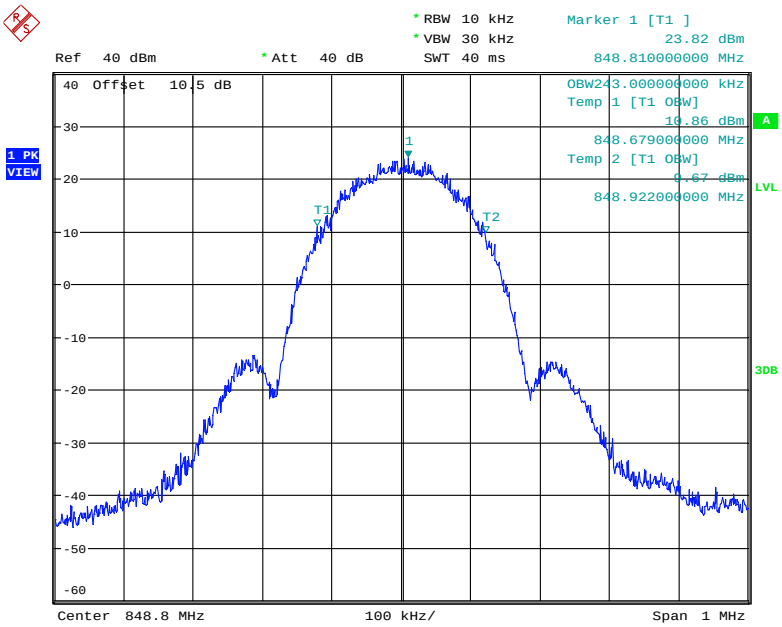
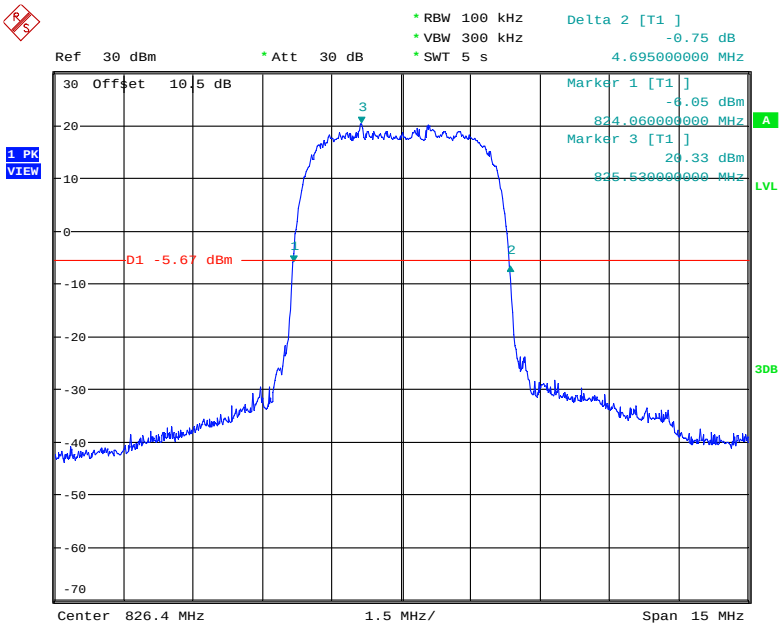


Date: 2.DEC.2022 09:06:00

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



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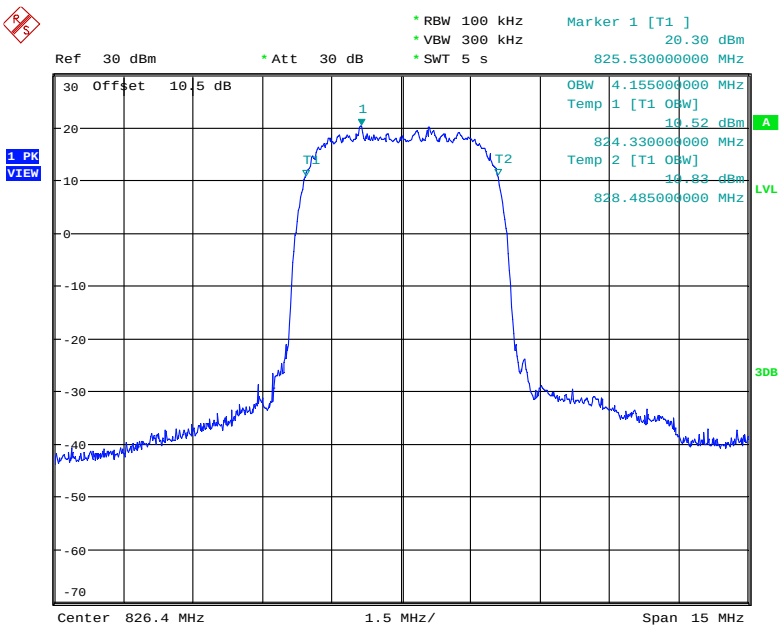
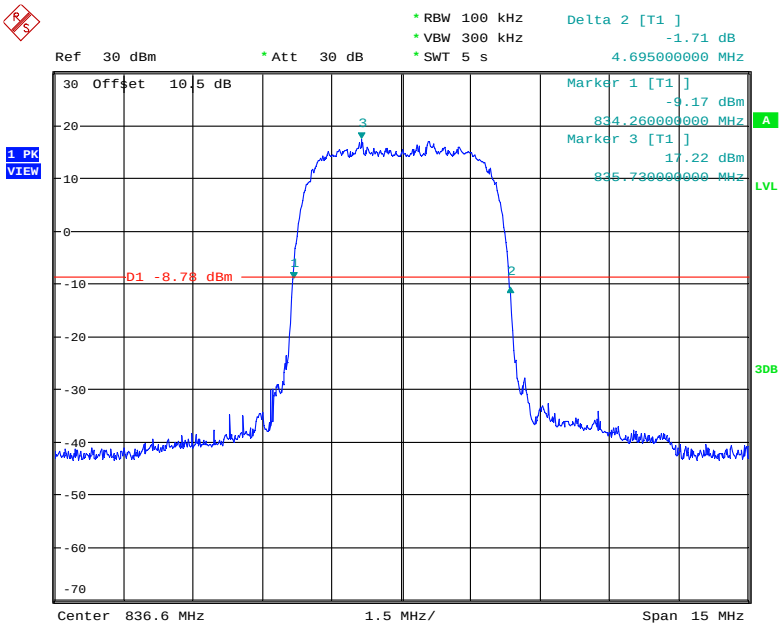


Date: 2.DEC.2022 10:49:24

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



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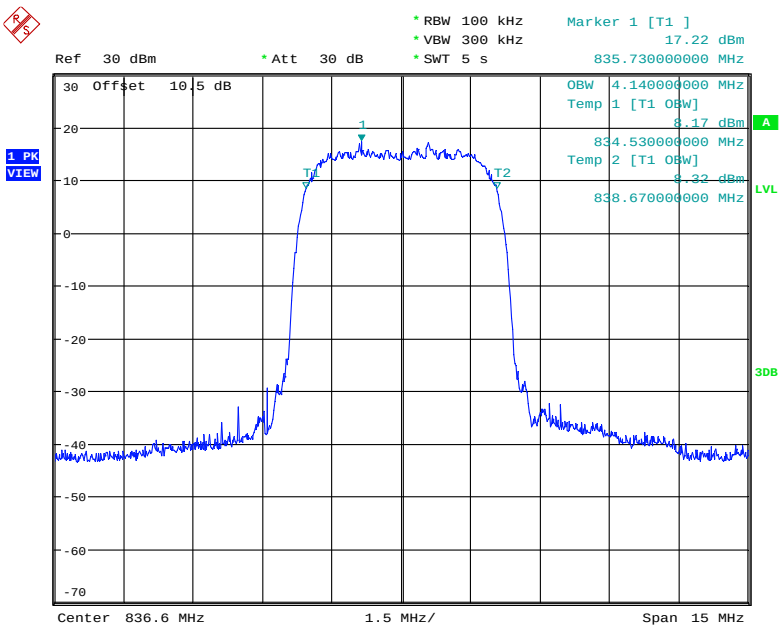
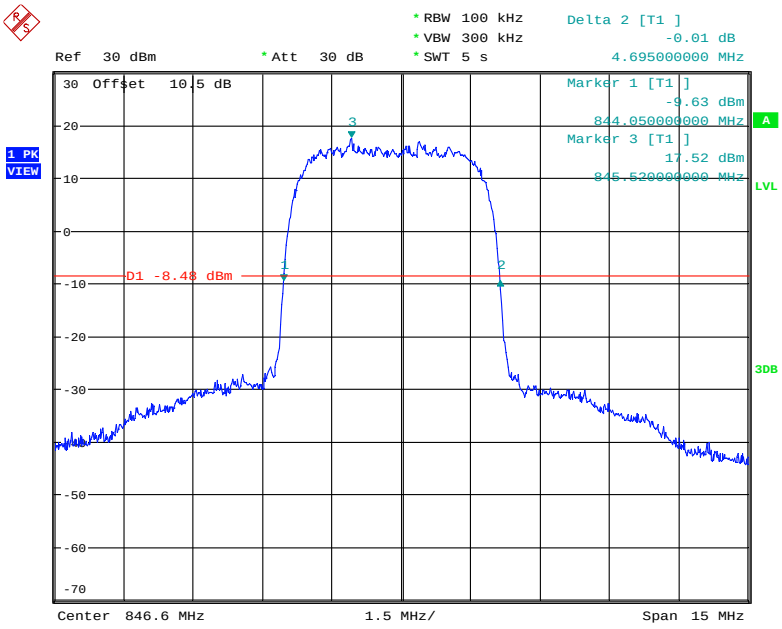
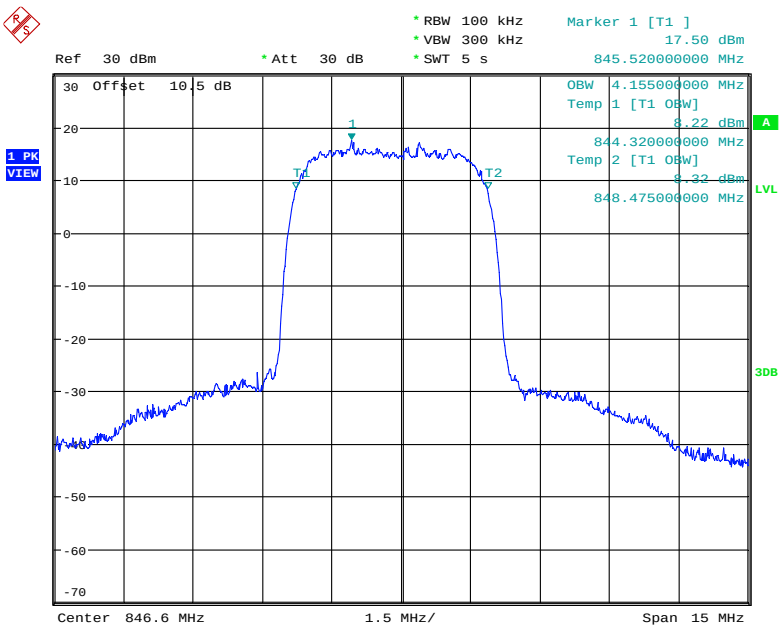


Date: 2.DEC.2022 10:54:22

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

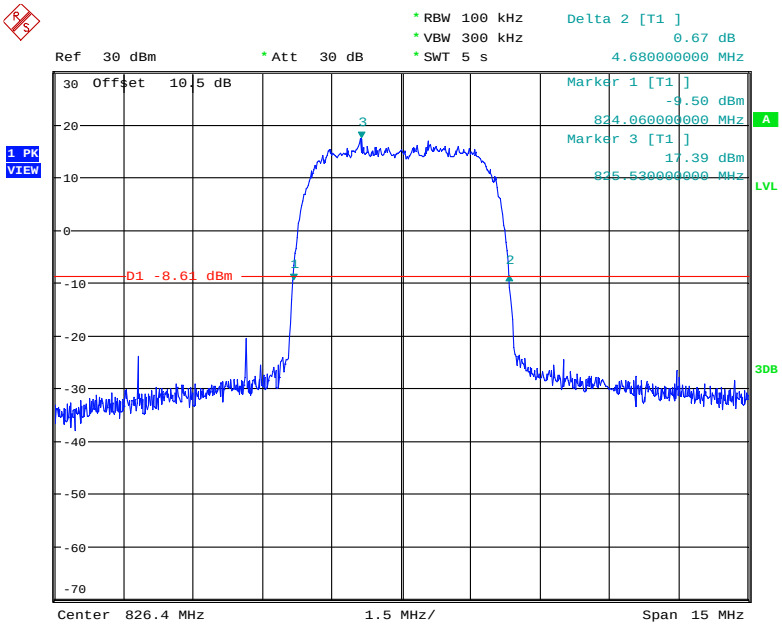


Date: 2.DEC.2022 11:01:20

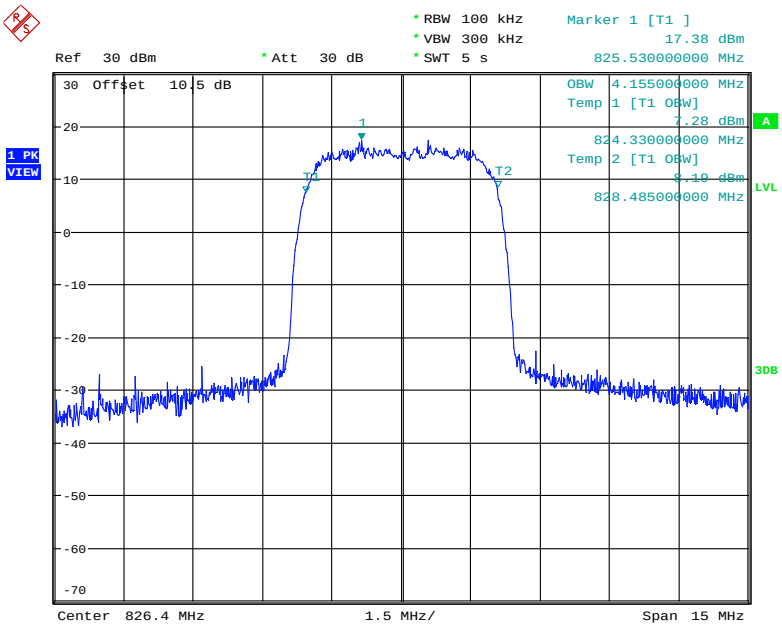


Date: 2.DEC.2022 11:00:41

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

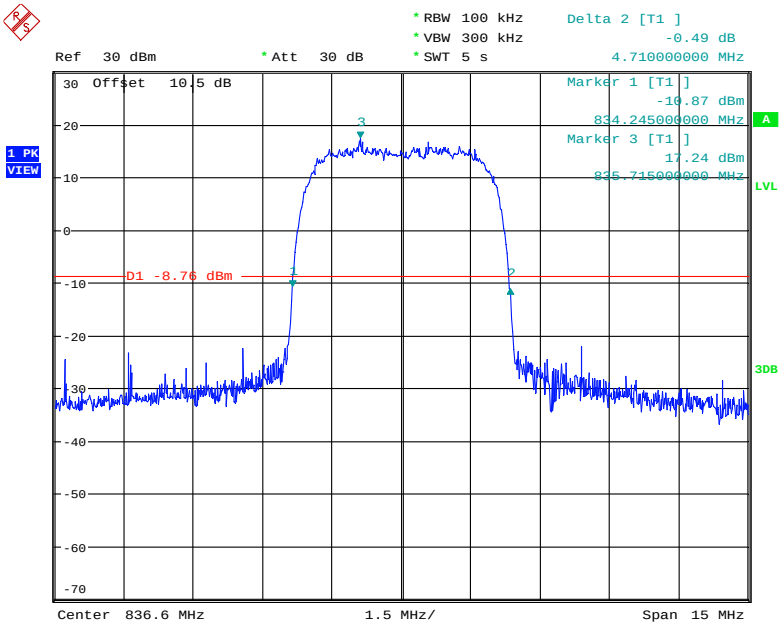


Date: 2.DEC.2022 13:41:40

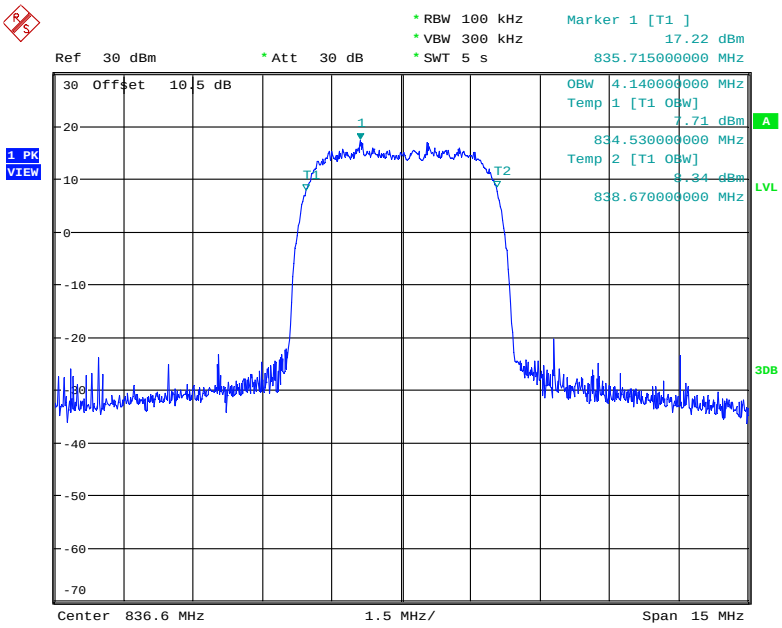


Date: 2.DEC.2022 13:41:01

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

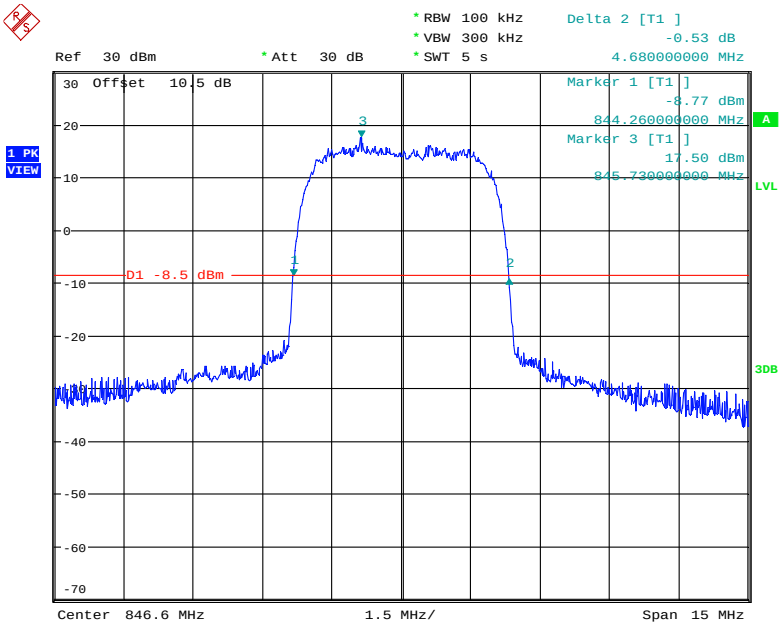


Date: 2.DEC.2022 13:45:17

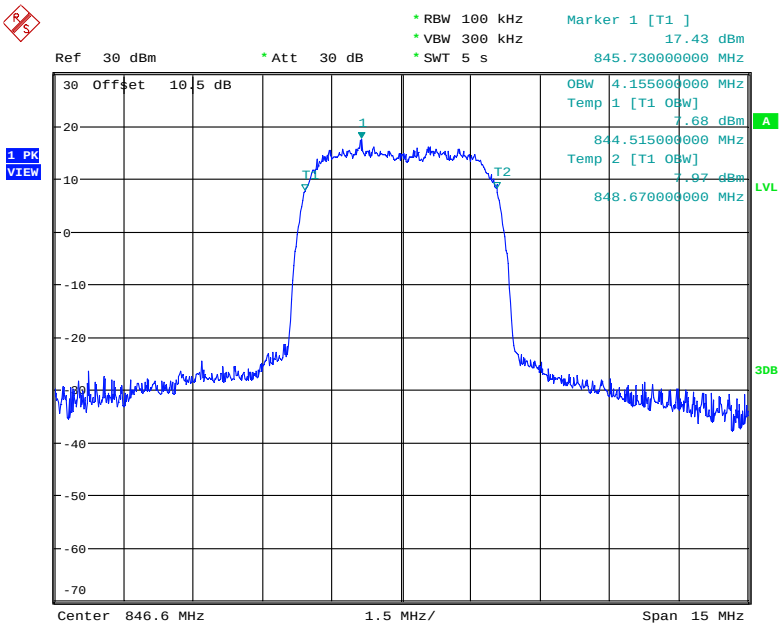


Date: 2.DEC.2022 13:44:37

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

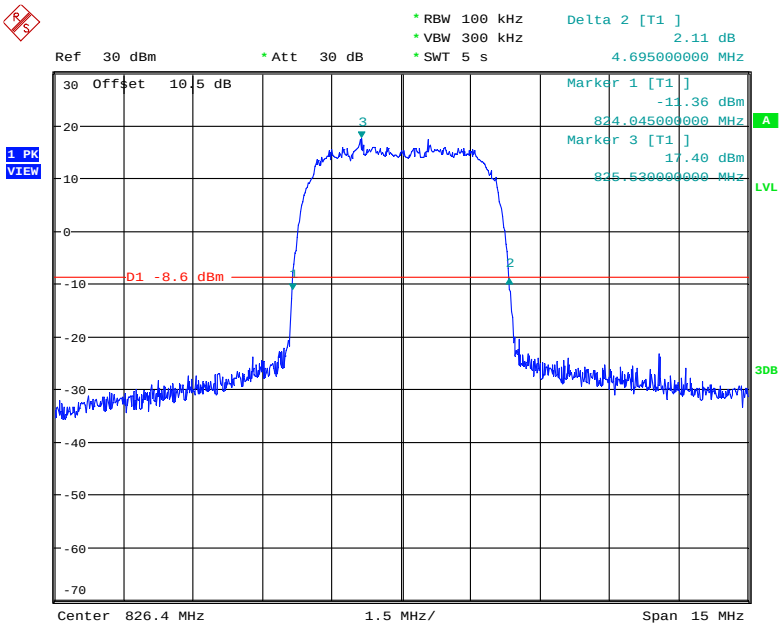


Date: 2.DEC.2022 13:49:14

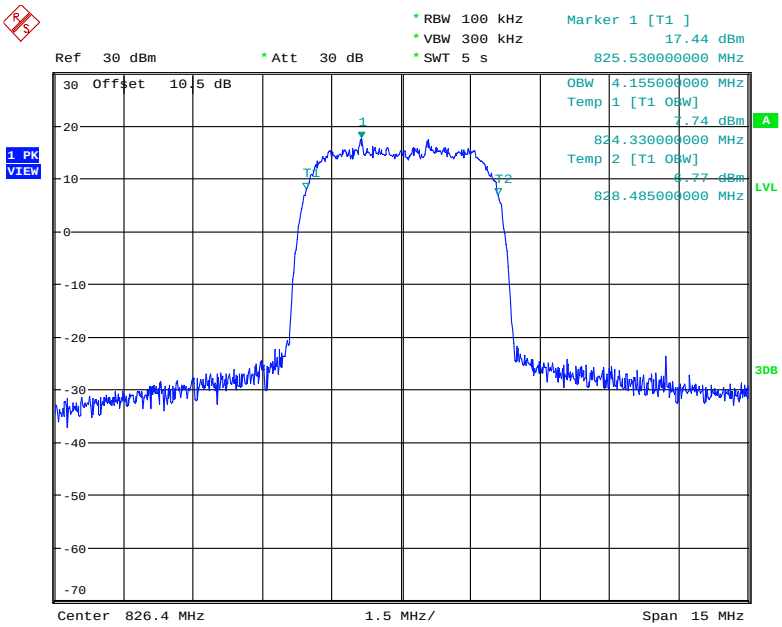


Date: 2.DEC.2022 13:48:36

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

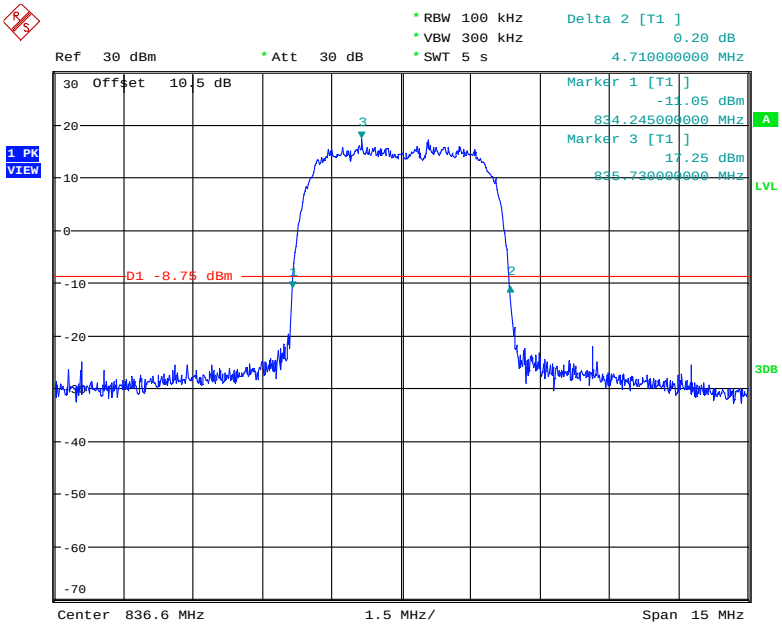


Date: 2.DEC.2022 11:17:26

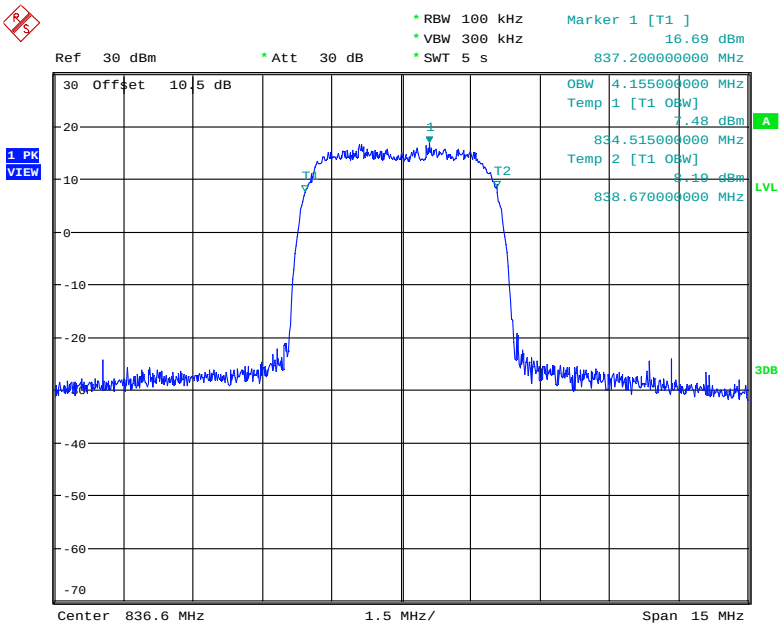


Date: 2.DEC.2022 11:16:45

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

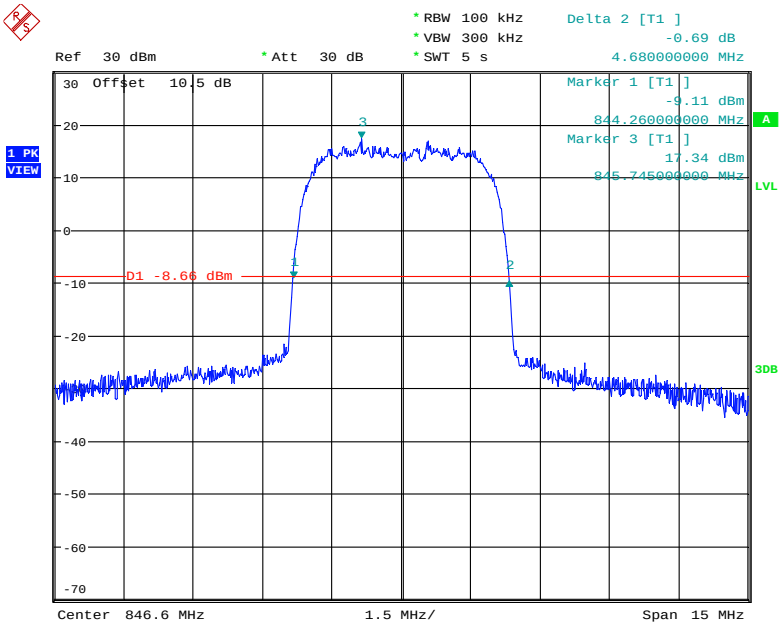


Date: 2.DEC.2022 11:20:43

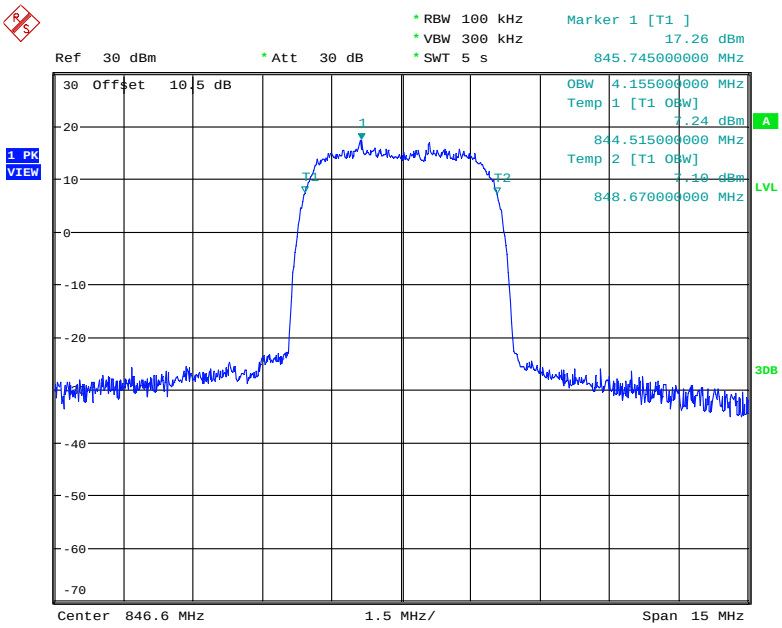


Date: 2.DEC.2022 11:20:04

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



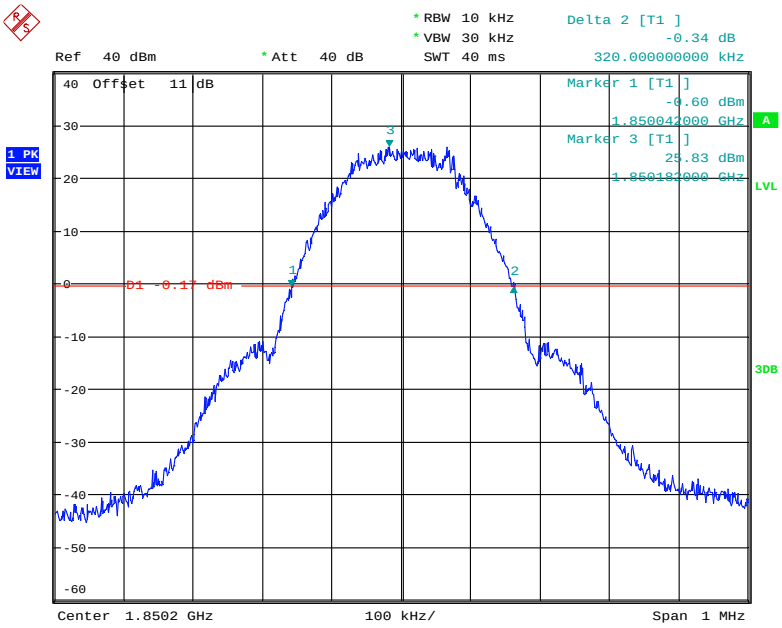
Date: 2.DEC.2022 11:23:07



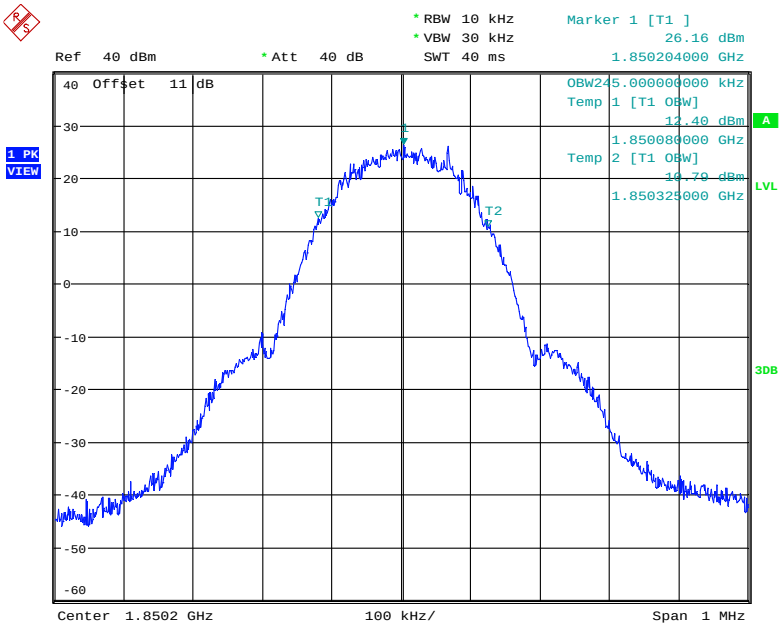
Date: 2.DEC.2022 11:22:27

PCS Band (Part 24E)

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

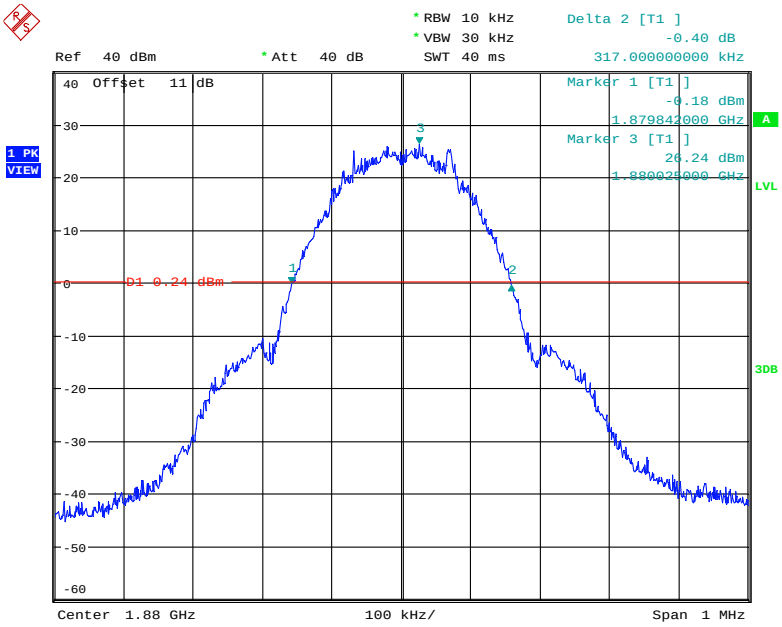


Date: 17.DEC.2022 14:05:35

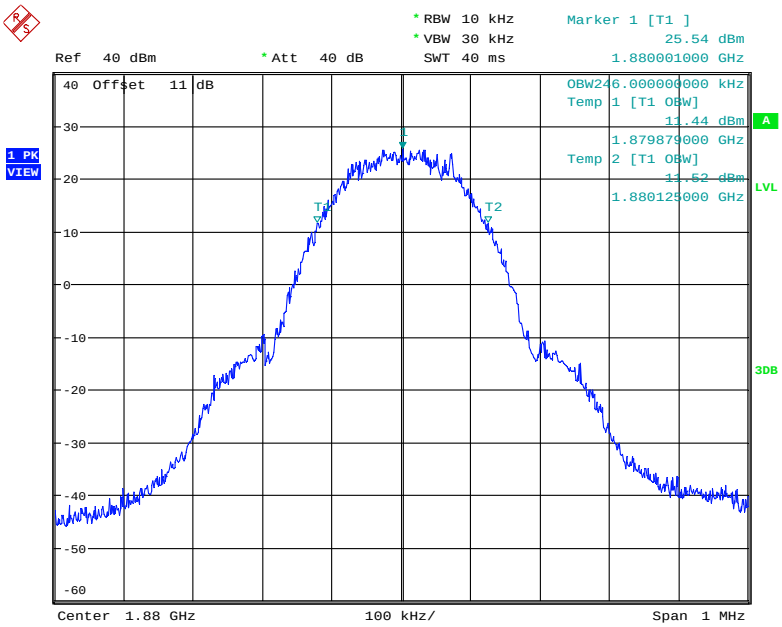


Date: 17.DEC.2022 14:04:55

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

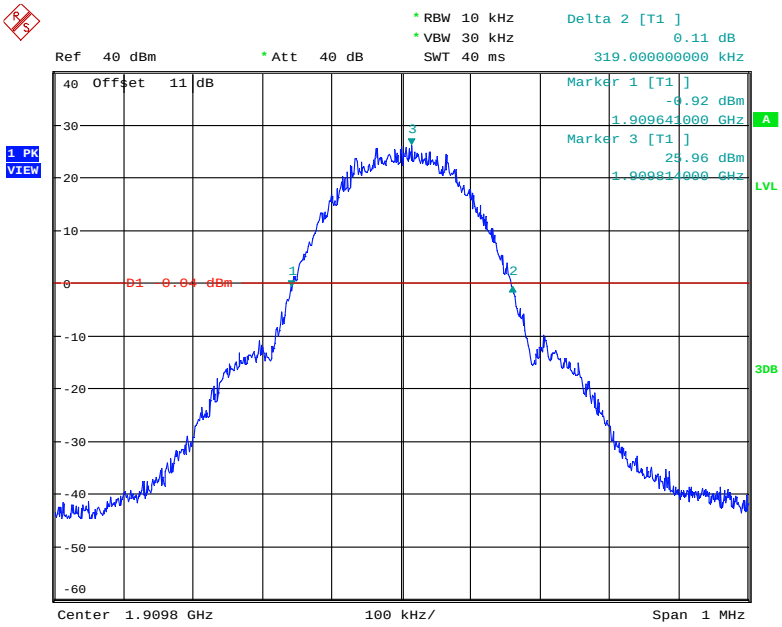


Date: 17.DEC.2022 14:11:43

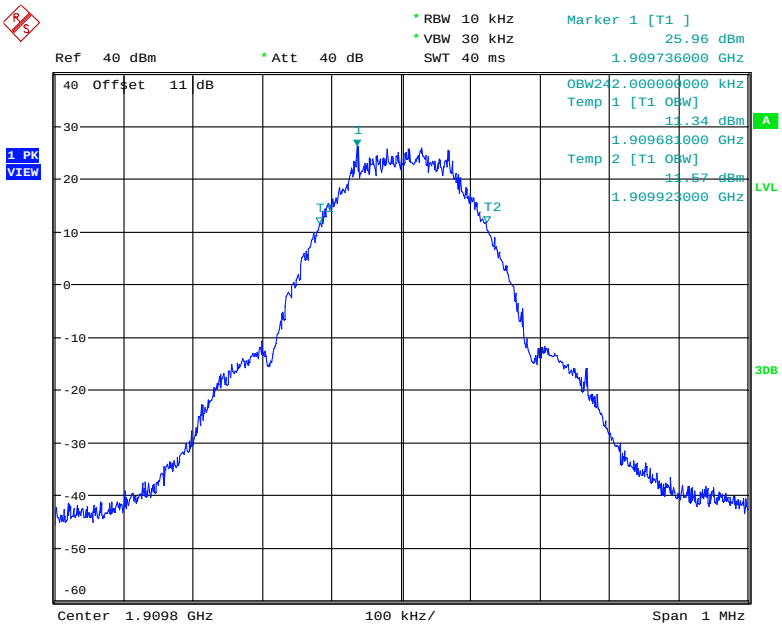


Date: 17.DEC.2022 14:11:03

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

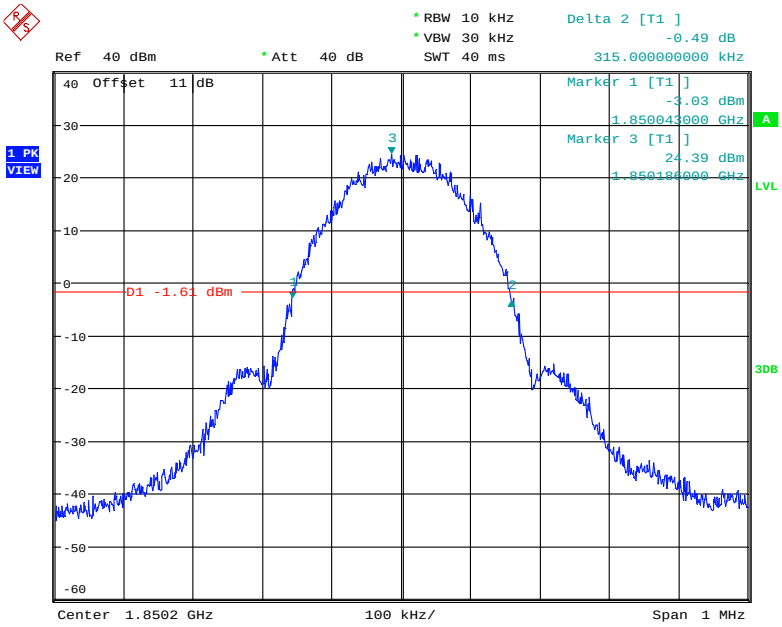


Date: 17.DEC.2022 14:17:19

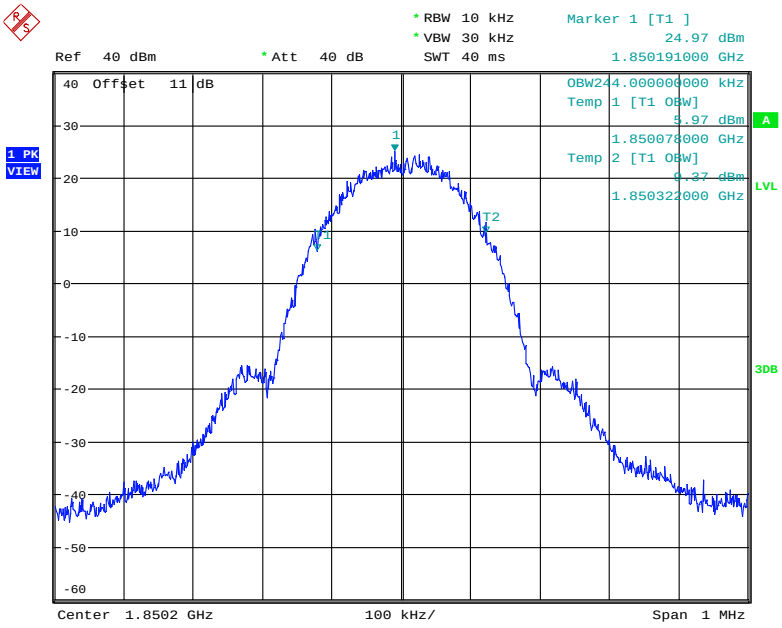


Date: 17.DEC.2022 14:16:39

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

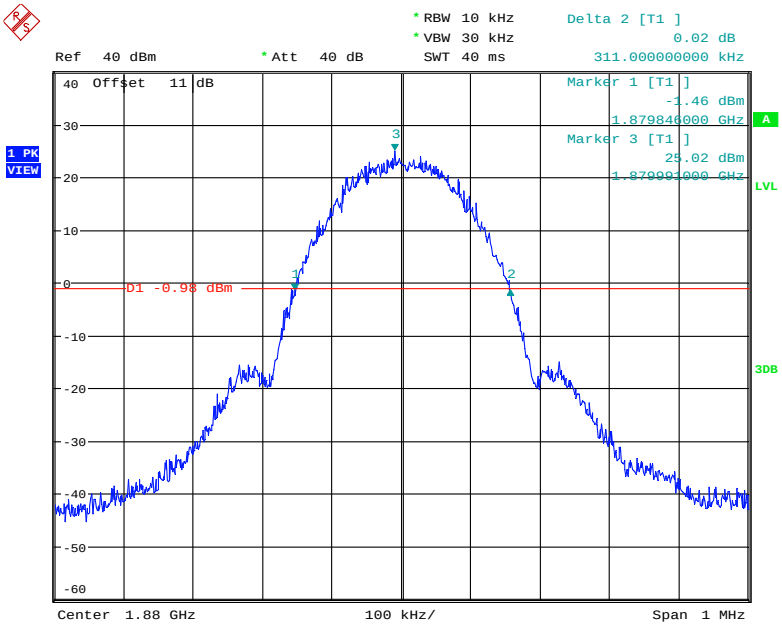


Date: 17.DEC.2022 14:24:51

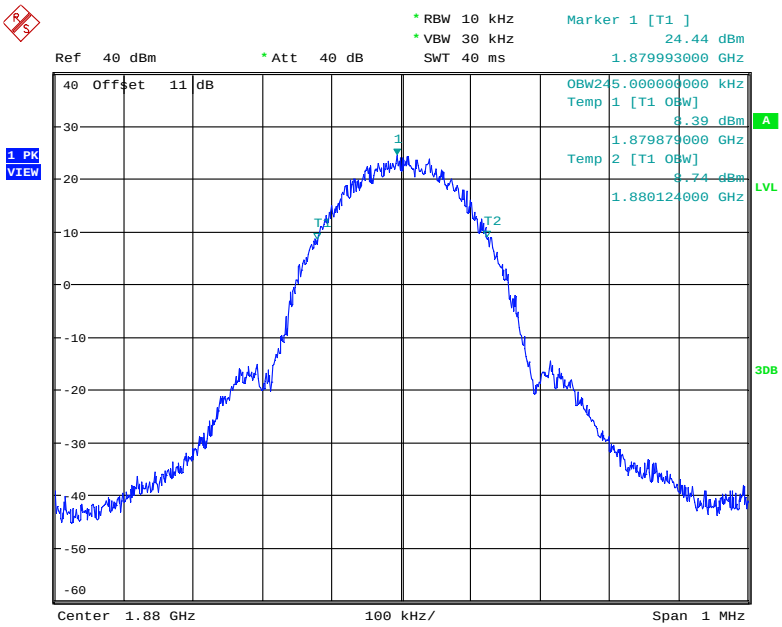


Date: 17.DEC.2022 14:24:11

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

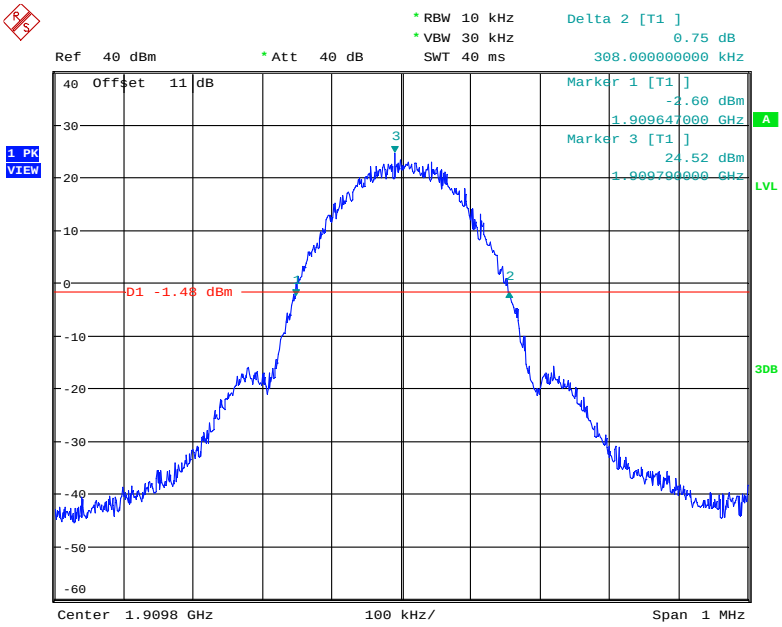


Date: 17.DEC.2022 14:30:56

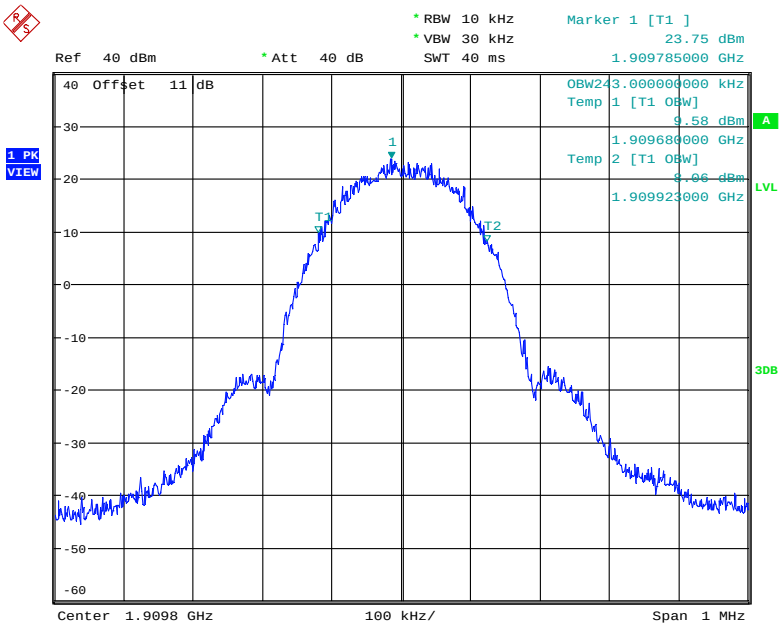


Date: 17.DEC.2022 14:30:16

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

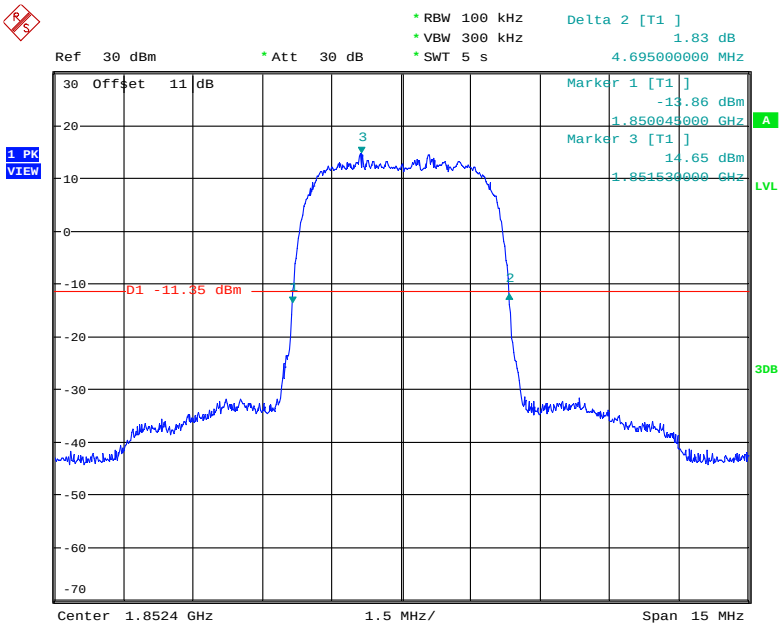


Date: 17.DEC.2022 14:36:04

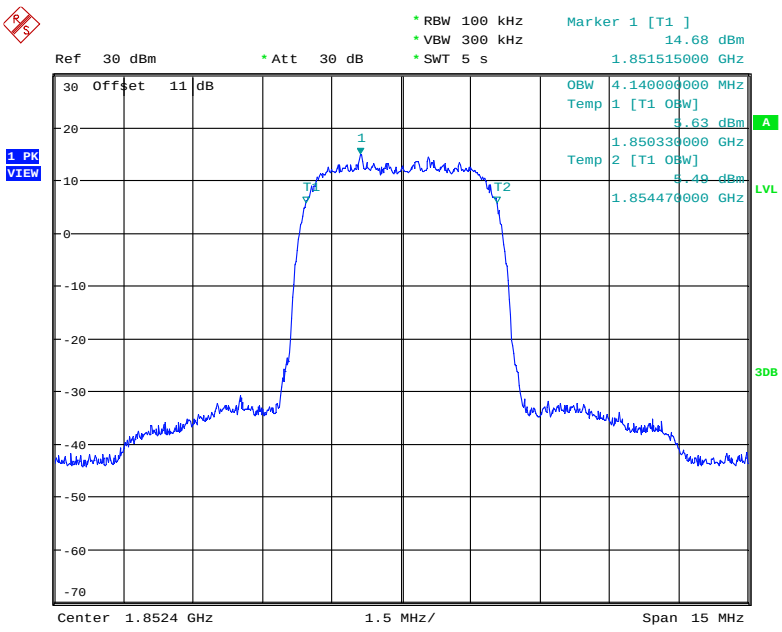


Date: 17.DEC.2022 14:35:25

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

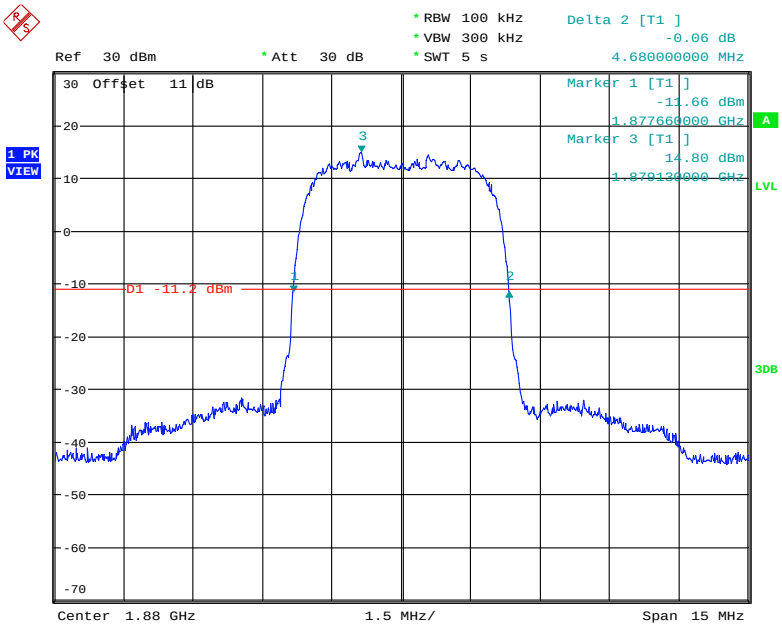


Date: 17.DEC.2022 10:59:53

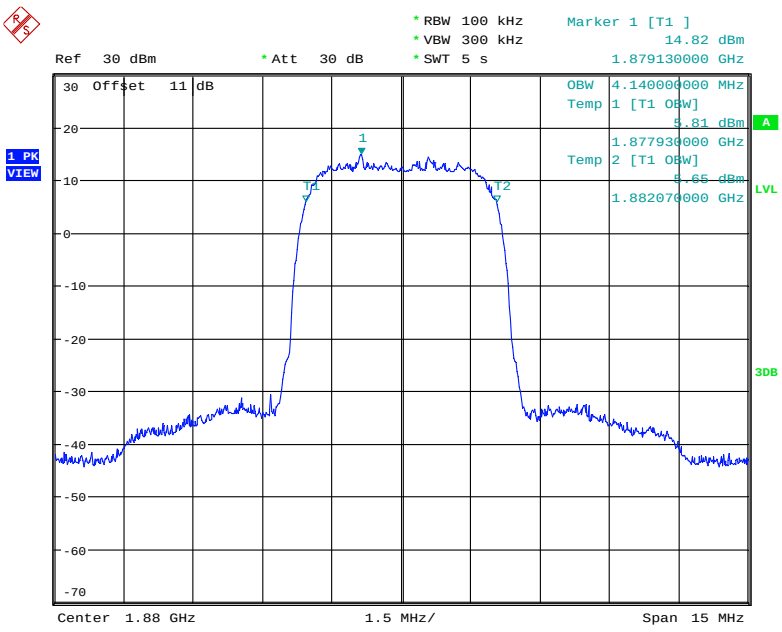


Date: 17.DEC.2022 10:59:13

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

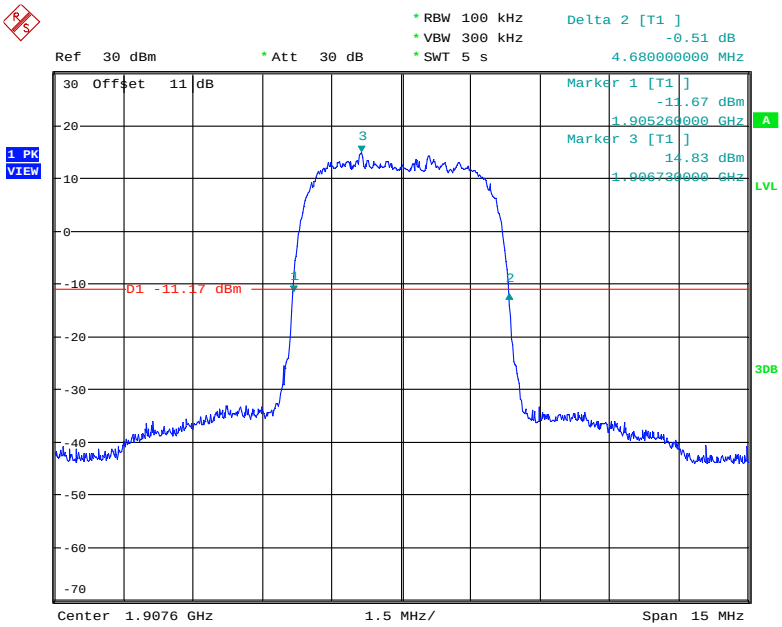


Date: 17.DEC.2022 11:04:14

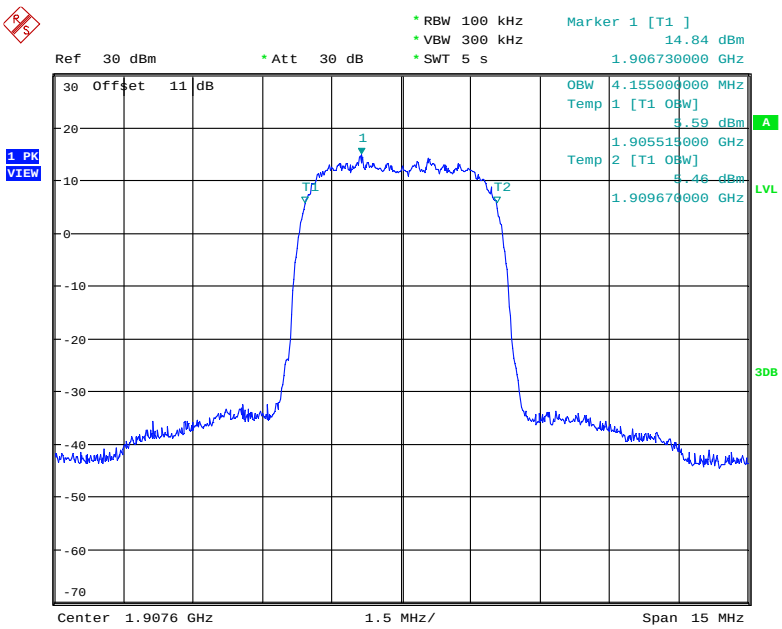


Date: 17.DEC.2022 11:03:34

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

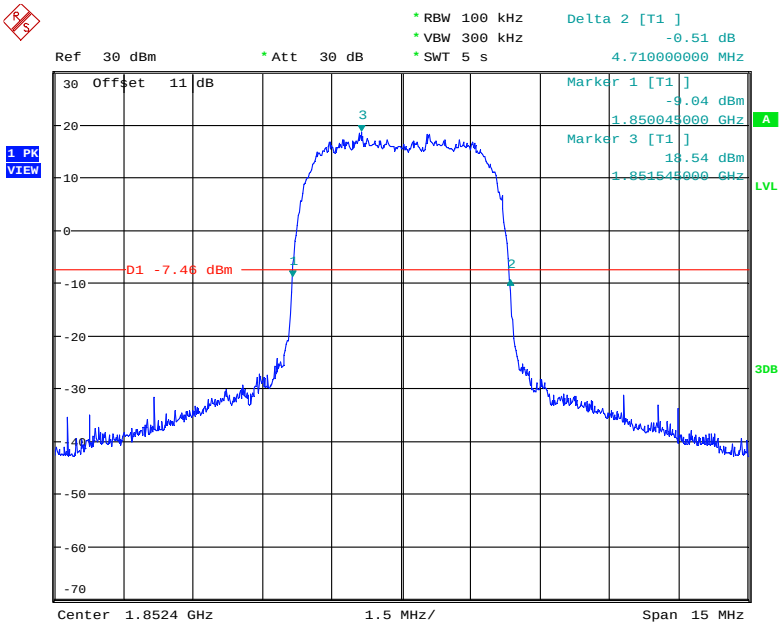


Date: 17.DEC.2022 11:07:32

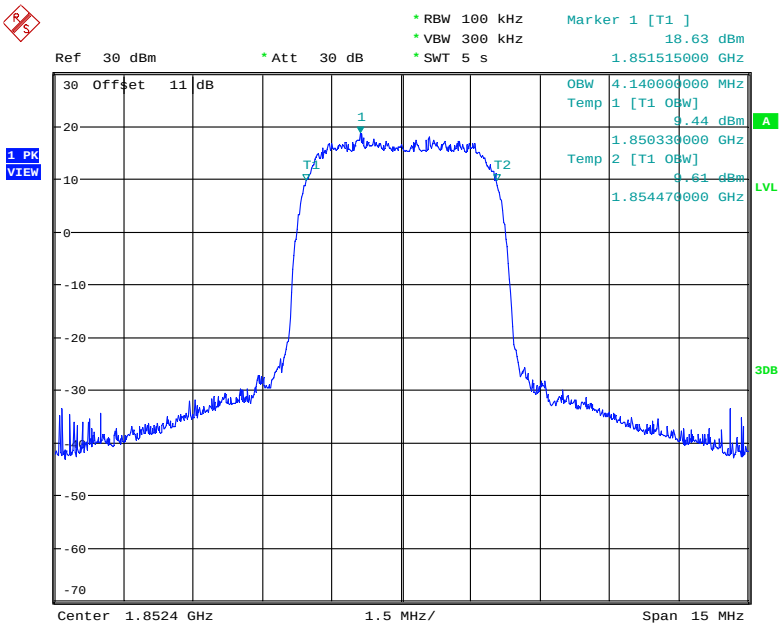


Date: 17.DEC.2022 11:06:51

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

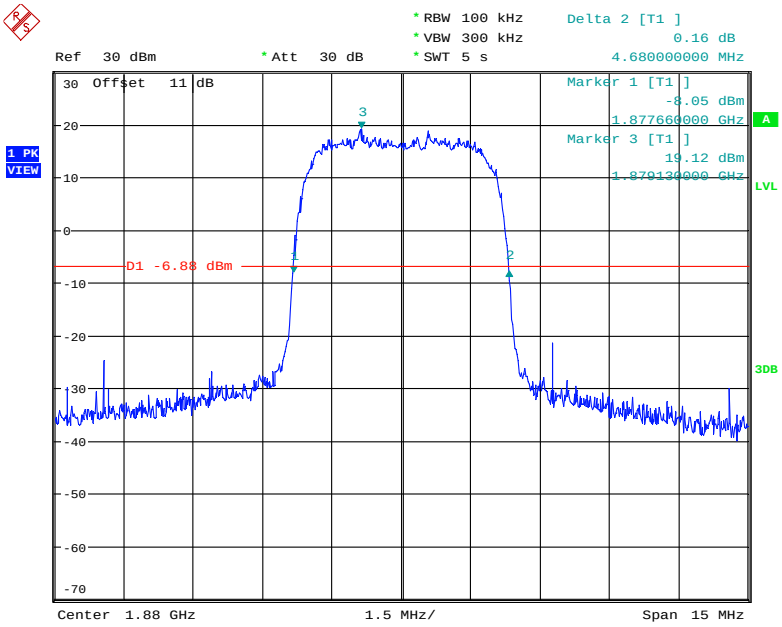


Date: 17.DEC.2022 12:02:16

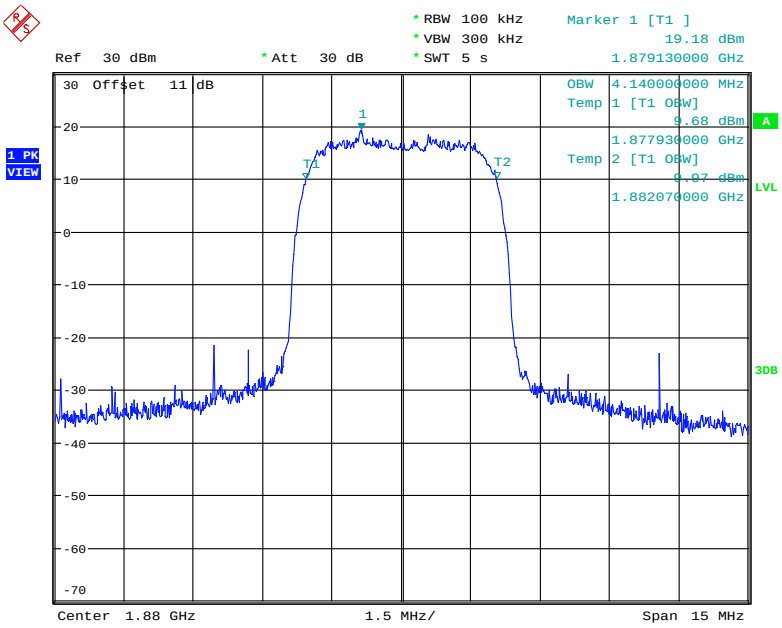


Date: 17.DEC.2022 12:01:37

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

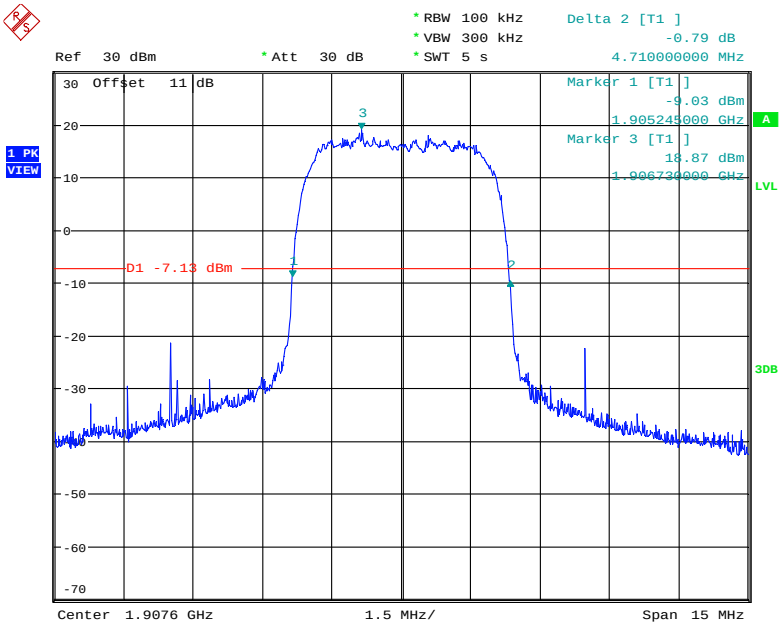


Date: 17.DEC.2022 13:10:30

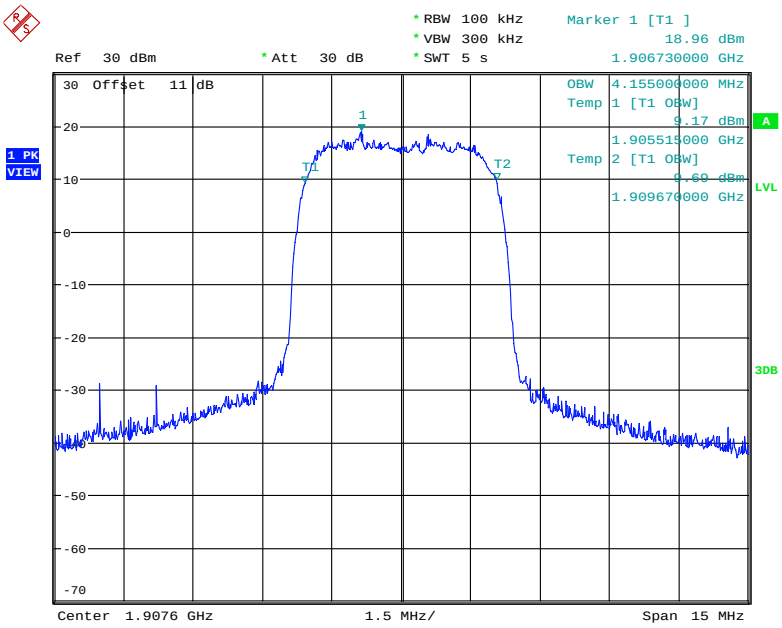


Date: 17.DEC.2022 13:09:51

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

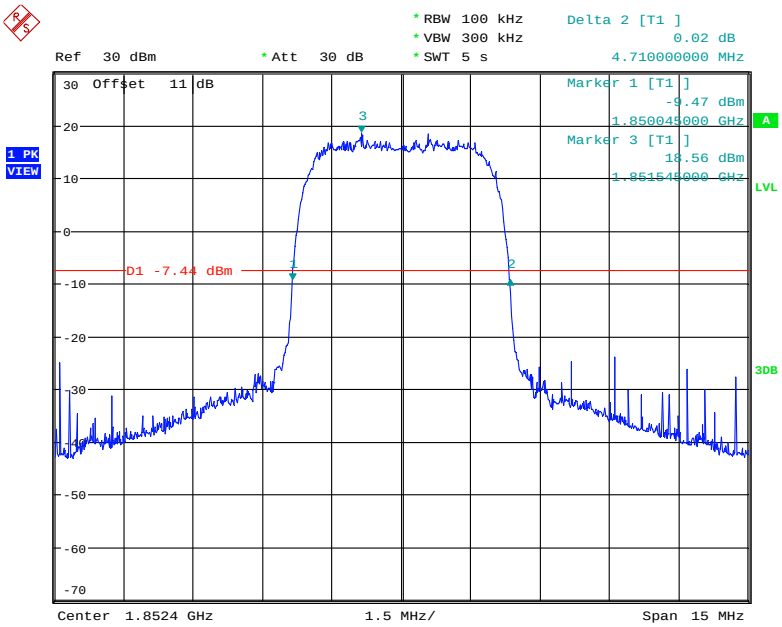


Date: 17.DEC.2022 13:15:25

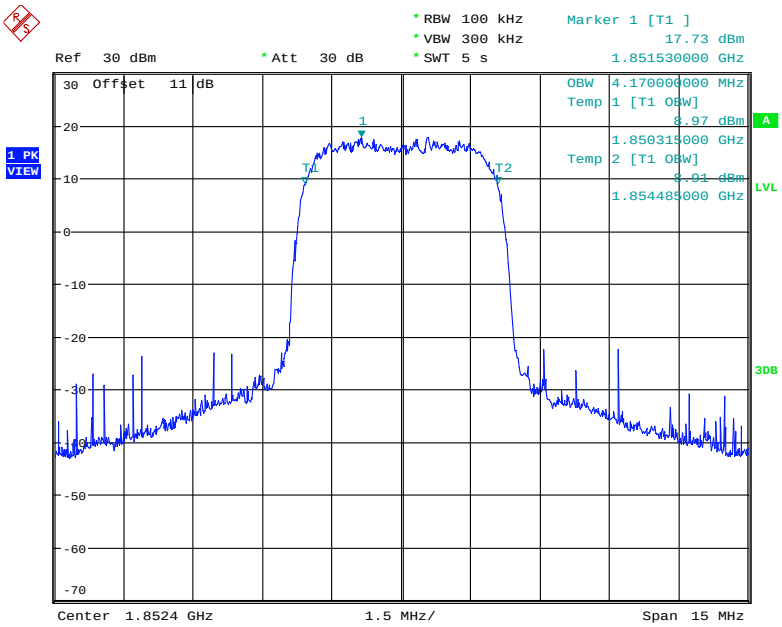


Date: 17.DEC.2022 13:14:43

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

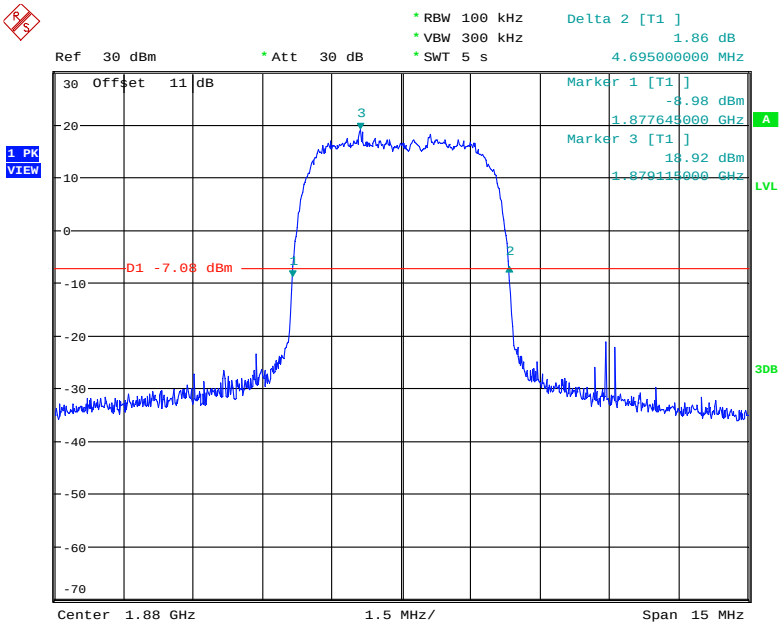


Date: 17.DEC.2022 11:47:25

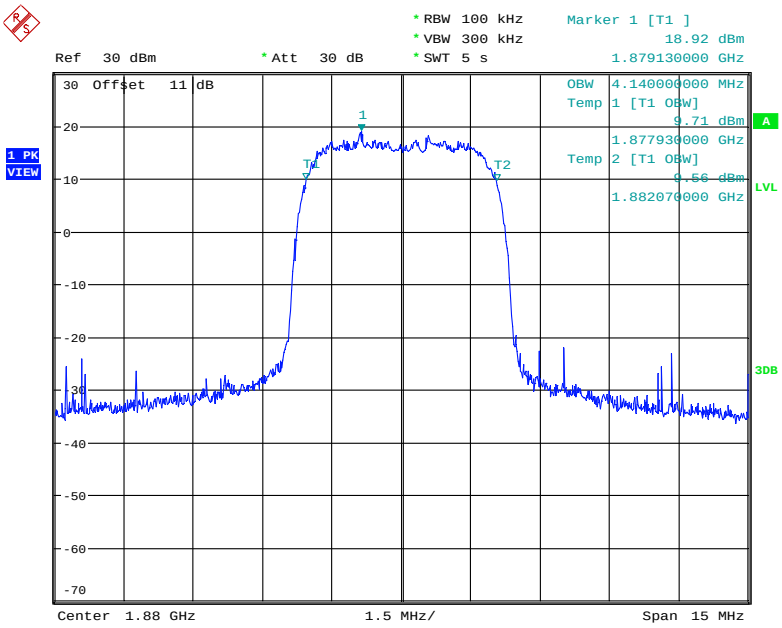


Date: 17.DEC.2022 11:46:44

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

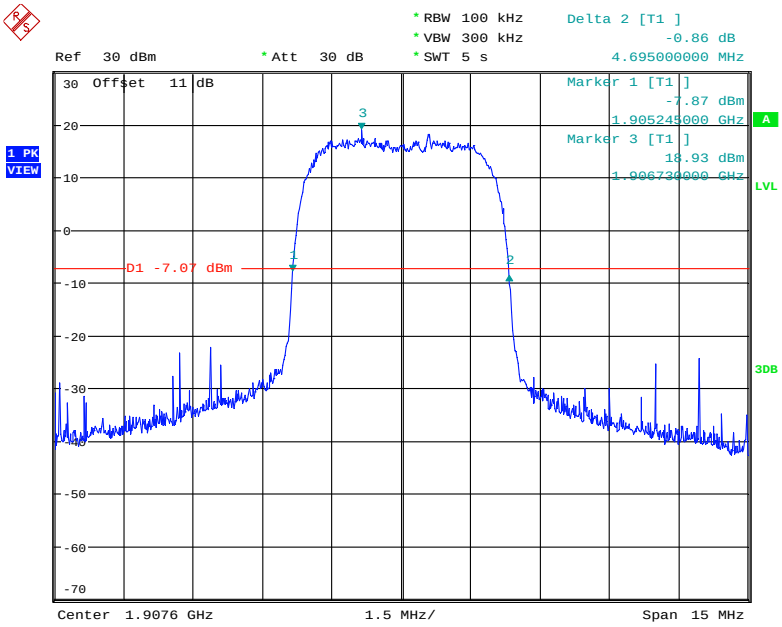


Date: 17.DEC.2022 11:51:20

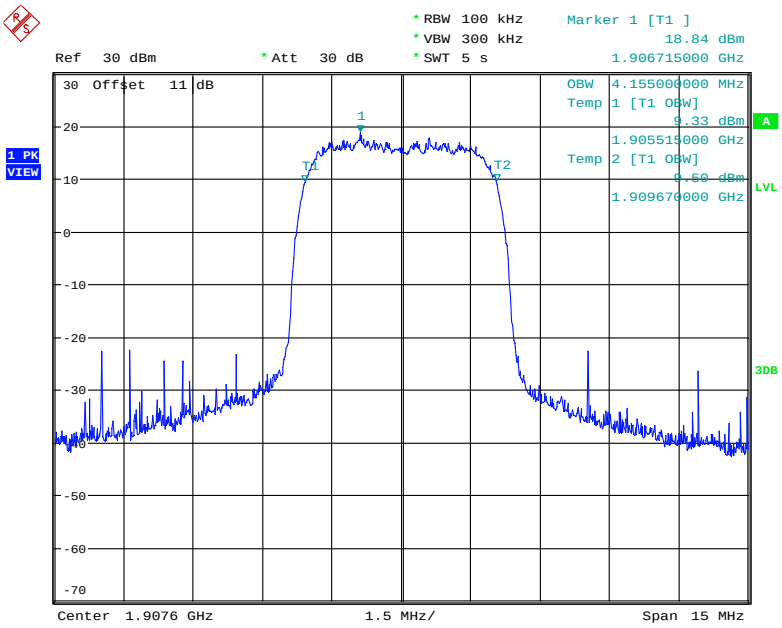


Date: 17.DEC.2022 11:50:41

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



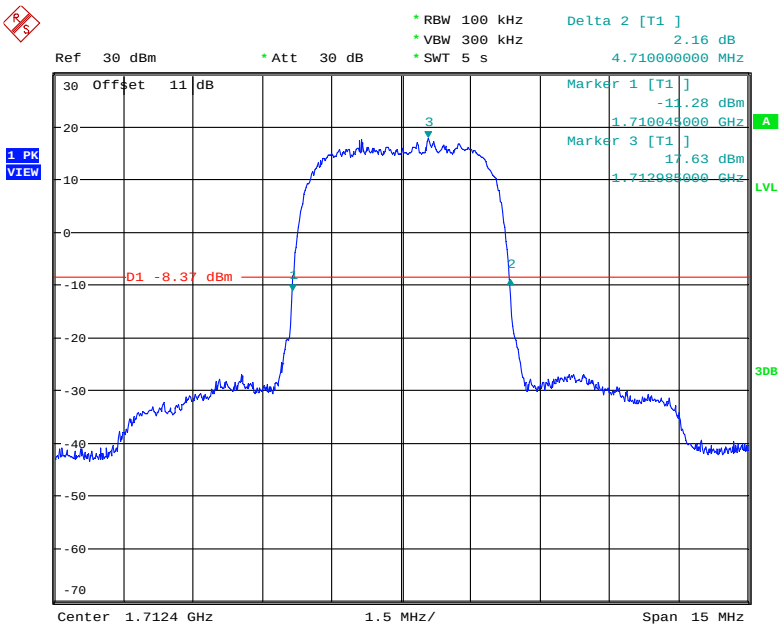
Date: 17.DEC.2022 11:54:36



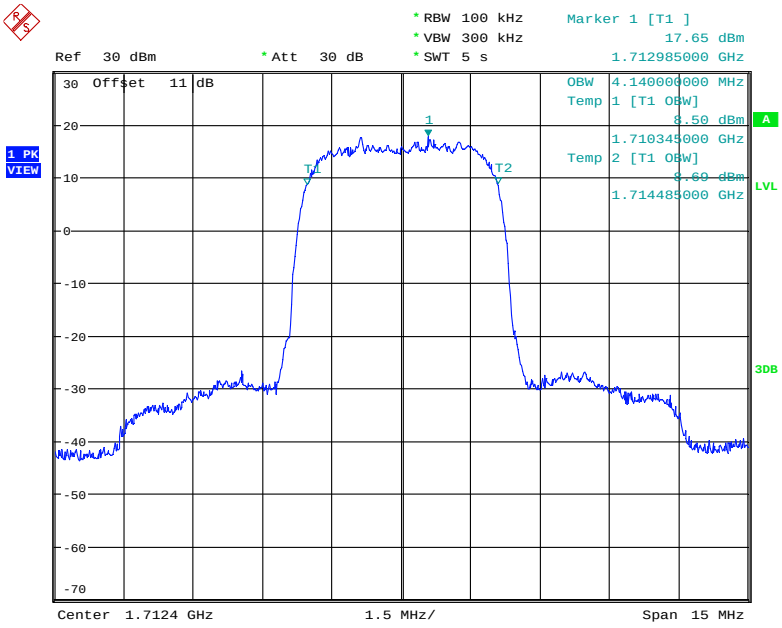
Date: 17.DEC.2022 11:53:56

AWS Band (Part 27)

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

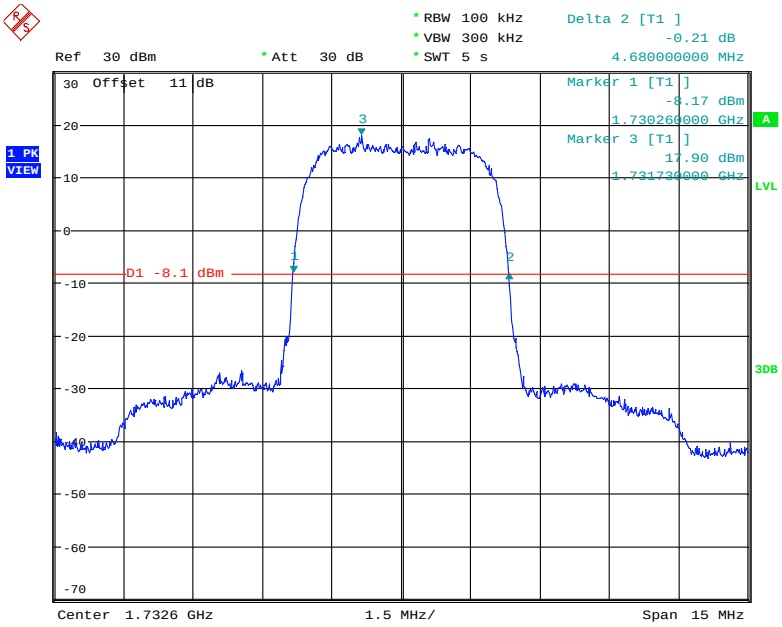


Date: 17.DEC.2022 11:14:16

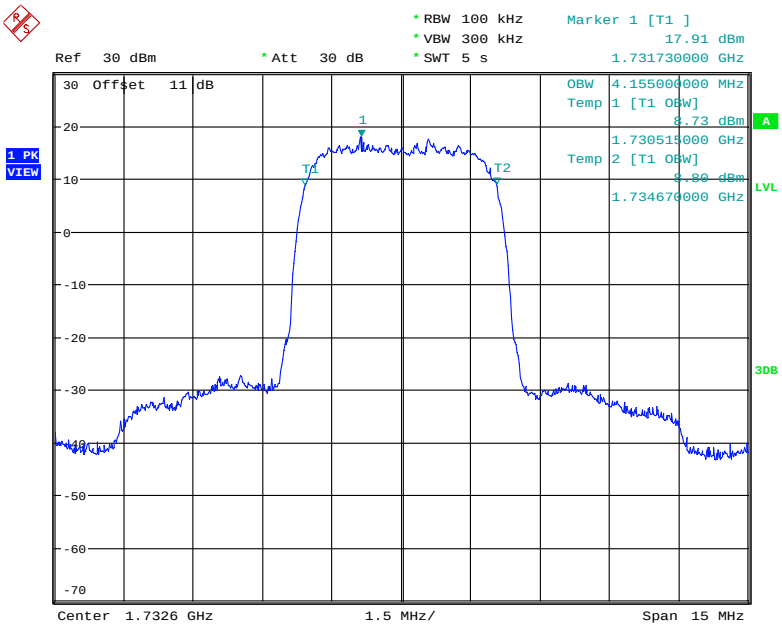


Date: 17.DEC.2022 11:13:36

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

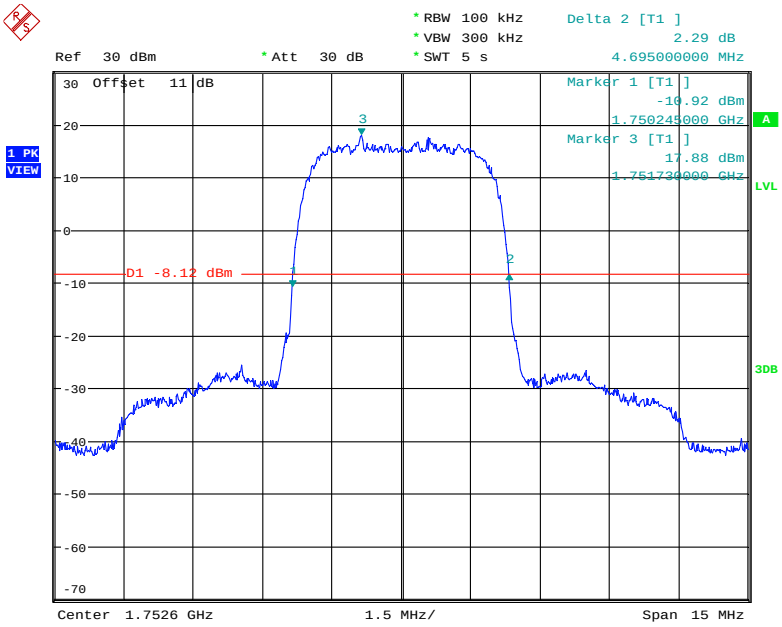


Date: 17.DEC.2022 11:19:04

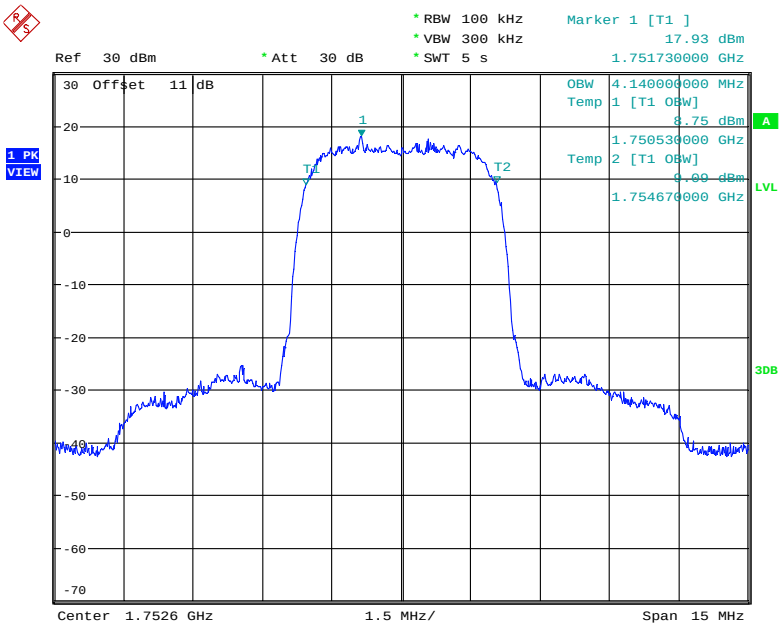


Date: 17.DEC.2022 11:18:26

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

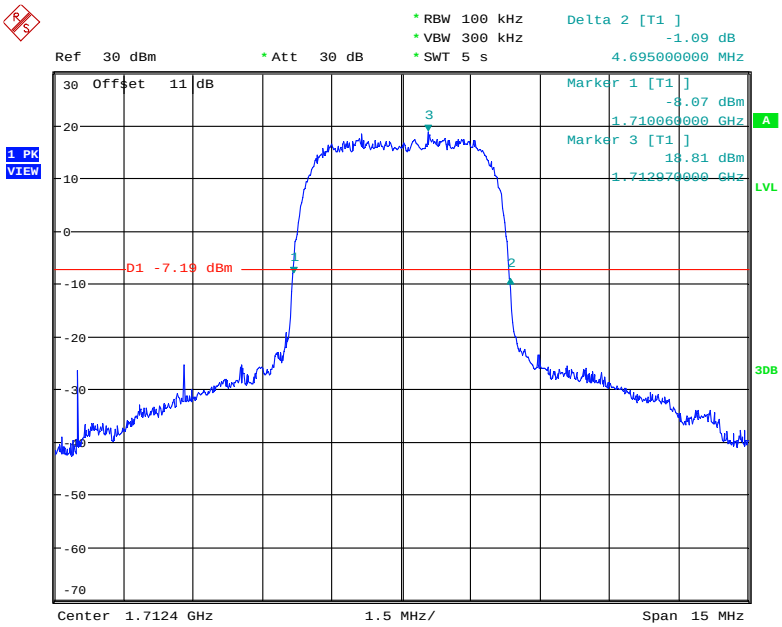


Date: 17.DEC.2022 11:26:41

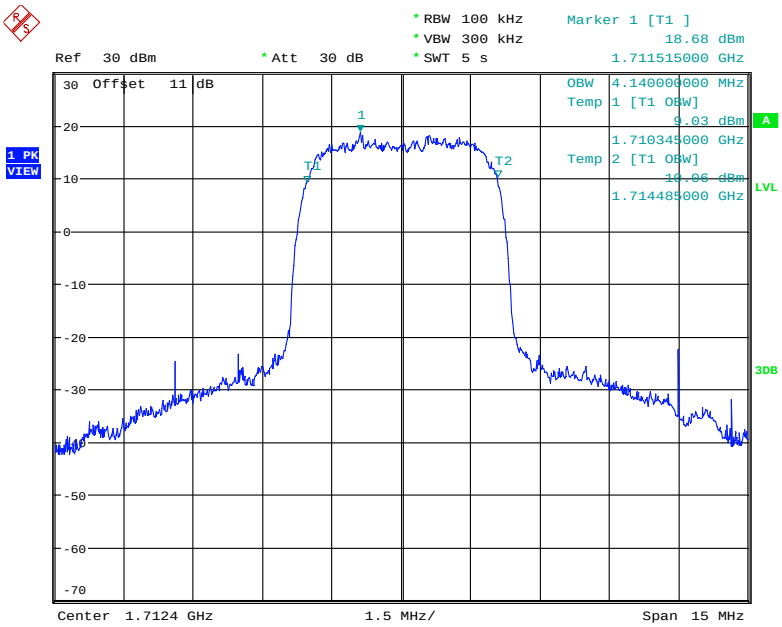


Date: 17.DEC.2022 11:26:01

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

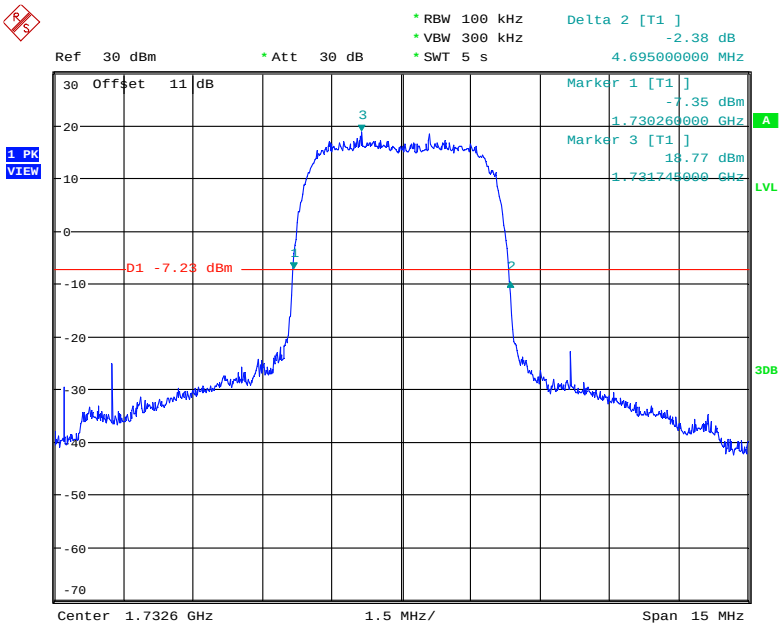


Date: 17.DEC.2022 13:23:25

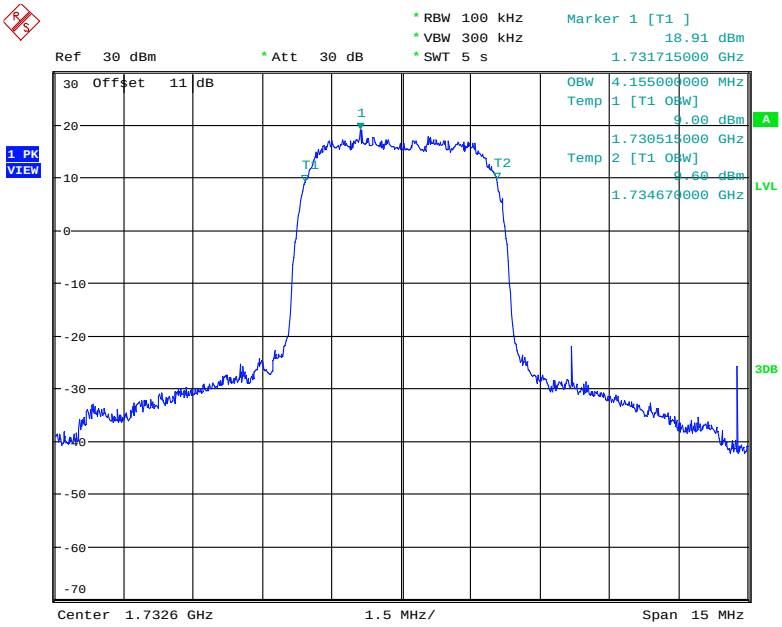


Date: 17.DEC.2022 13:22:46

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

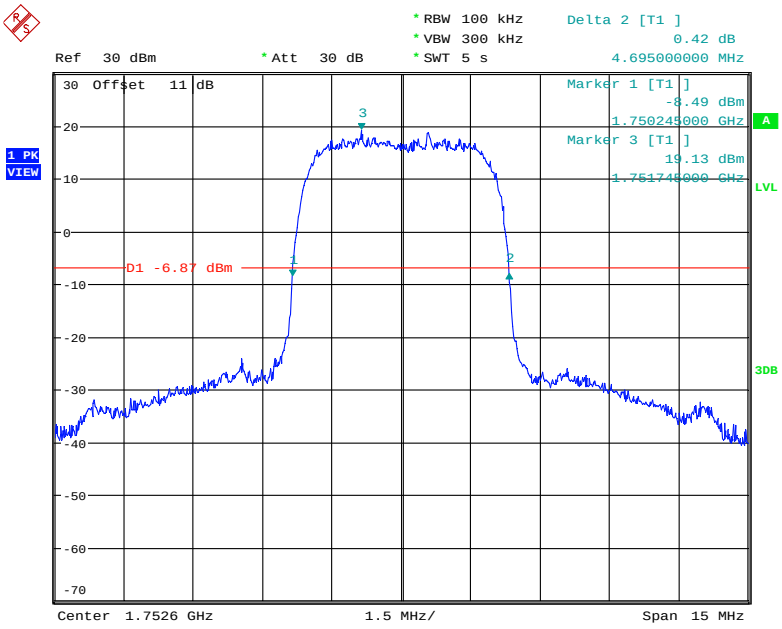


Date: 17.DEC.2022 13:27:22

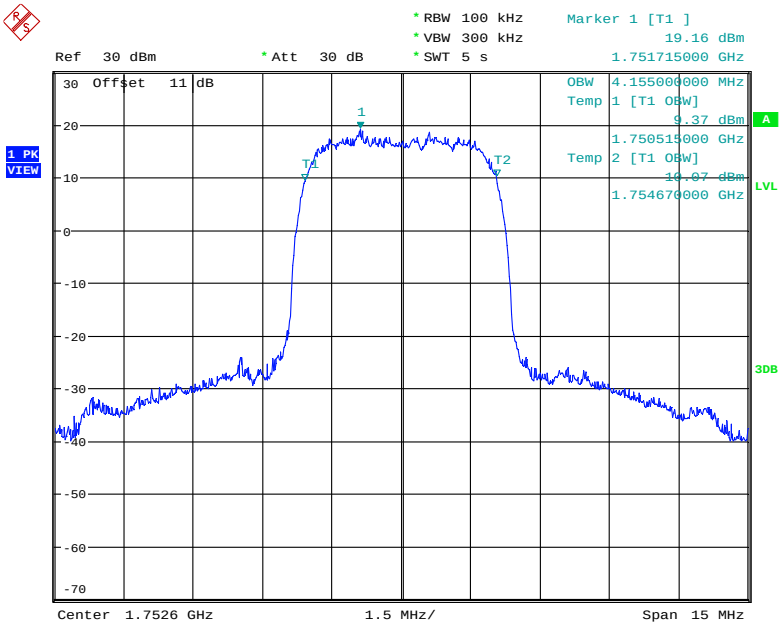


Date: 17.DEC.2022 13:26:43

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

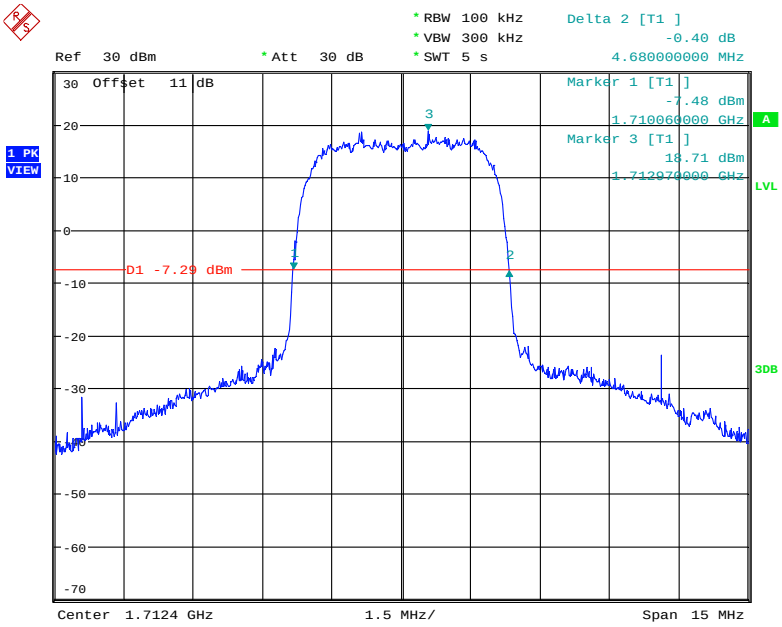


Date: 17.DEC.2022 13:30:55

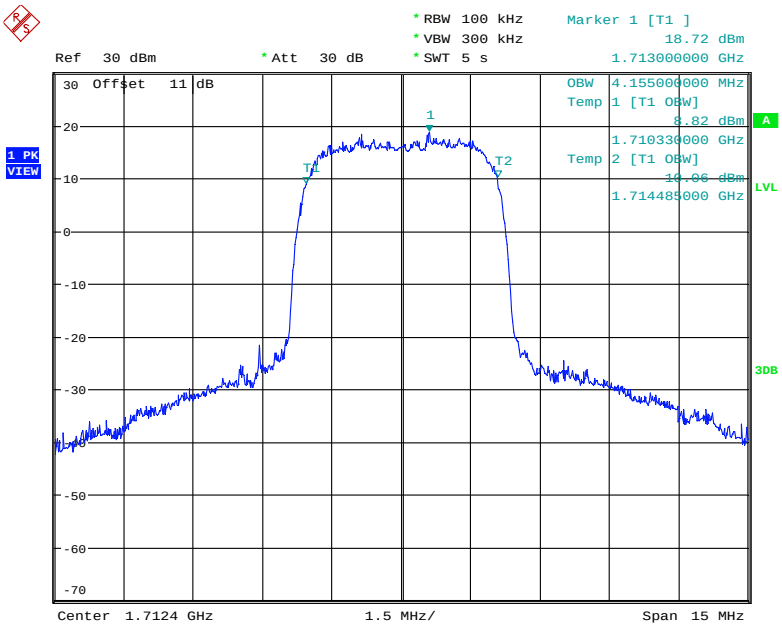


Date: 17.DEC.2022 13:30:14

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

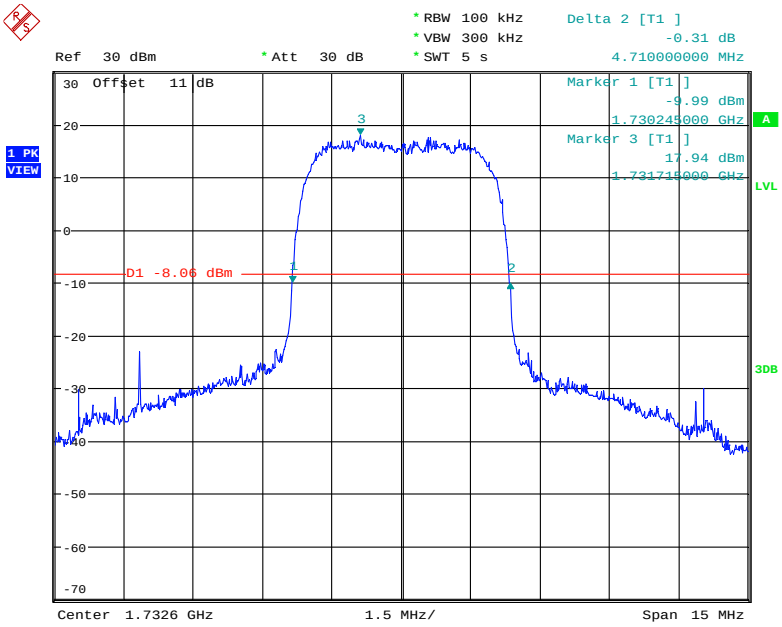


Date: 17.DEC.2022 11:32:58

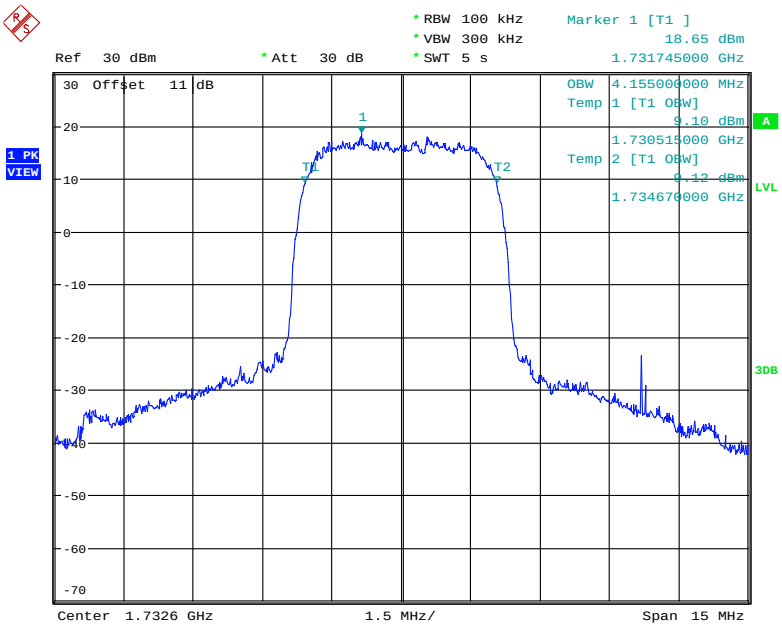


Date: 17.DEC.2022 11:32:18

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

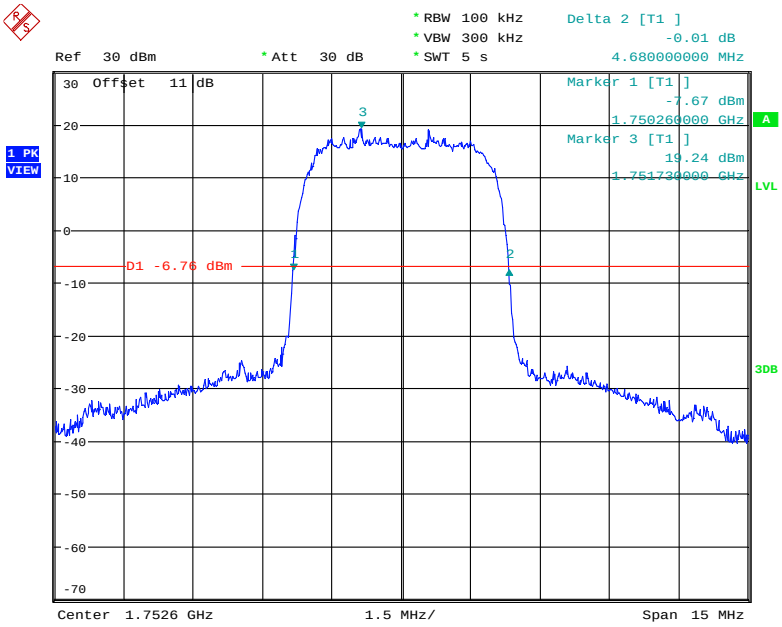


Date: 17.DEC.2022 11:37:13

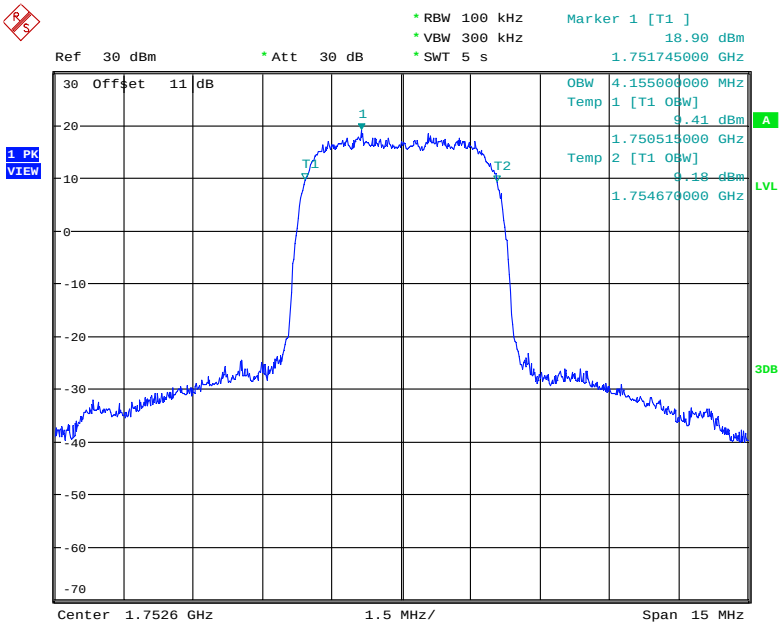


Date: 17.DEC.2022 11:36:33

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



Date: 17.DEC.2022 11:41:14



Date: 17.DEC.2022 11:40:34

LTE Band 2:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.254	1.104	1.254	1.104	1.254
	16QAM	1.104	1.260	1.116	1.260	1.098	1.248
3 MHz	QPSK	2.700	3.012	2.700	3.024	2.700	2.988
	16QAM	2.688	3.012	2.712	3.000	2.712	3.012
5 MHz	QPSK	4.520	5.000	4.520	4.980	4.540	4.980
	16QAM	4.520	5.020	4.500	5.000	4.520	4.980
10 MHz	QPSK	9.000	9.800	8.960	9.840	8.960	9760
	16QAM	9.000	9.800	8.960	9.800	8.960	9.800
15 MHz	QPSK	13.560	14.940	13.560	15.000	13.560	15.000
	16QAM	13.560	15.060	13.560	15.060	13.500	15.000
20 MHz	QPSK	18.000	19.600	18.080	19.760	17.920	19.600
	16QAM	18.000	19.760	18.080	19.600	17.920	19.760

LTE Band 4:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.266	1.104	1.254	1.098	1.254
	16QAM	1.104	1.248	1.104	1.254	1.116	1.260
3 MHz	QPSK	2.700	2.976	2.712	3.012	2.700	3.000
	16QAM	2.700	3.012	2.712	3.024	2.700	3.012
5 MHz	QPSK	4.540	5.020	4.520	5.000	4.540	4.980
	16QAM	4.540	4.980	4.540	5.020	4.520	5.000
10 MHz	QPSK	8.960	9.600	8.960	9.800	9.000	9.760
	16QAM	8.960	9.720	8.960	9.880	8.960	9.680
15 MHz	QPSK	13.440	14.880	13.560	15.120	13.560	15.060
	16QAM	13.500	15.060	13.560	15.060	13.560	15.000
20 MHz	QPSK	18.000	19.600	18.080	19.840	18.000	19.600
	16QAM	18.000	19.600	18.080	19.760	18.080	19.760

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	1.098	1.260	1.104	1.260	1.098	1.260
	16QAM	1.104	1.260	1.104	1.254	1.110	1.260
3 MHz	QPSK	2.700	3.000	2.688	3.012	2.712	3.000
	16QAM	2.688	3.012	2.700	3.000	2.688	3.024
5 MHz	QPSK	4.520	5.020	4.520	4.980	4.520	5.000
	16QAM	4.540	5.000	4.520	5.000	4.520	5.000
10 MHz	QPSK	8.960	9.680	8.960	9.760	8.960	9.760
	16QAM	8.960	9.720	8.960	9.760	8.960	9.760

LTE Band 7:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	4.980	4.520	5.000	4.540	5.000
	16QAM	4.540	4.980	4.540	4.980	4.500	4.960
10 MHz	QPSK	8.920	9.680	8.960	9.800	8.960	9.800
	16QAM	9.000	9.800	8.960	9.920	8.960	9.800
15 MHz	QPSK	13.560	15.000	13.500	15.120	13.560	15.000
	16QAM	13.500	15.060	13.620	14.940	13.560	15.120
20 MHz	QPSK	18.000	19.520	18.080	19.760	18.000	19.600
	16QAM	18.000	19.760	18.000	19.680	18.000	19.680

LTE Band 38

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	4.960	4.520	4.980	4.500	4.960
	16QAM	4.500	5.020	4.520	4.980	4.500	4.960
10 MHz	QPSK	8.960	9.800	9.000	9.720	8.960	9.680
	16QAM	8.960	9.720	8.960	9.840	8.960	9.760
15 MHz	QPSK	13.500	15.000	13.500	15.180	13.560	15.000
	16QAM	13.560	15.000	13.560	14.880	13.560	15.060
20 MHz	QPSK	17.920	19.600	18.000	19.680	18.000	19.680
	16QAM	18.000	19.520	18.000	19.600	18.000	19.680

LTE Band 41

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.500	4.940	4.520	4.980	4.520	4.980
	16QAM	4.520	4.980	4.520	5.040	4.520	5.000
10 MHz	QPSK	9.000	9.680	8.960	9.800	8.960	9.760
	16QAM	9.000	9.800	8.960	9.680	8.960	9.800
15 MHz	QPSK	13.560	15.060	13.500	15.000	13.560	15.360
	16QAM	13.500	14.880	13.620	15.060	13.560	14.940
20 MHz	QPSK	18.000	19.520	18.000	19.680	18.080	19.680
	16QAM	18.000	19.680	18.000	19.680	18.000	19.600

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

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

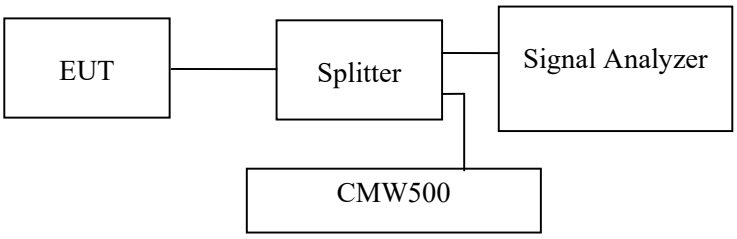
Applicable Standard

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

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

Test Procedure

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



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

Test Data

Environmental Conditions

Temperature:	27.6 ℃
Relative Humidity:	58 %
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2022-12-01 to 2023-01-09.

EUT operation mode: Transmitting

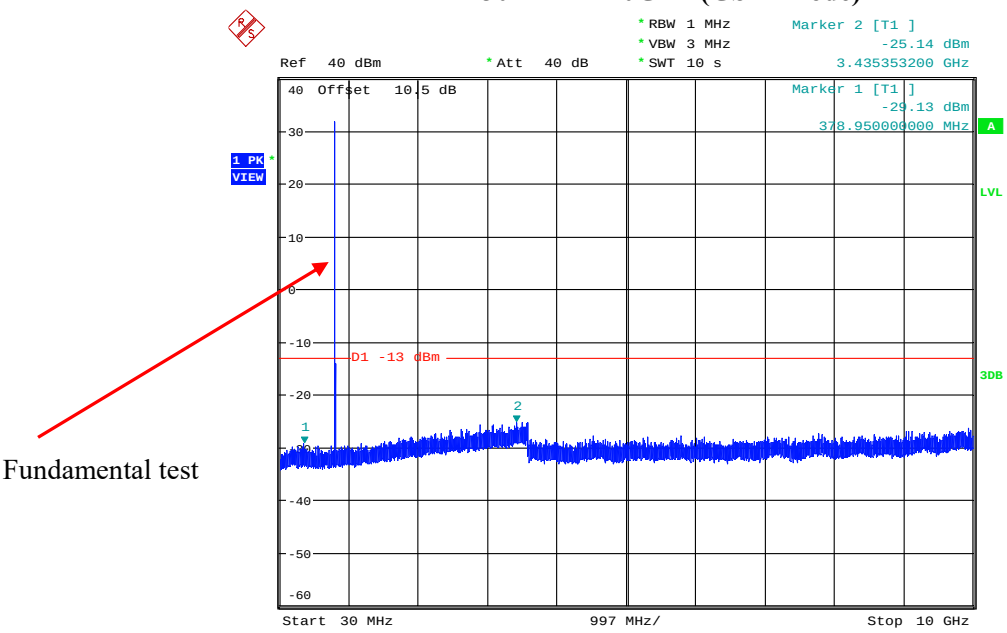
Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)

Low Channel:

30 MHz – 10GHz (GSM Mode)

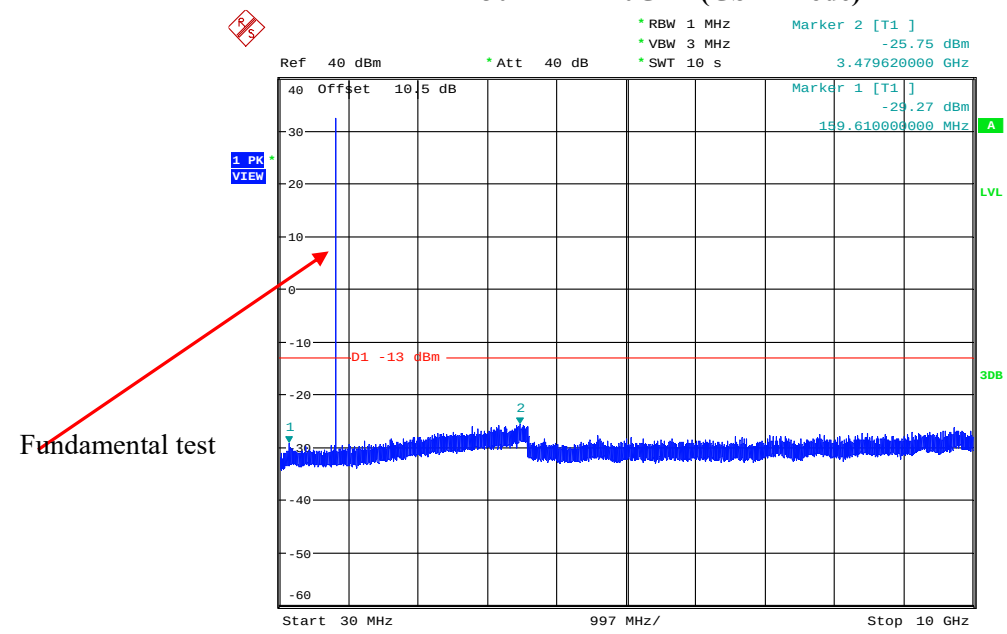


Fundamental test

Date: 2.DEC.2022 08:44:05

Middle Channel:

30 MHz – 10GHz (GSM Mode)

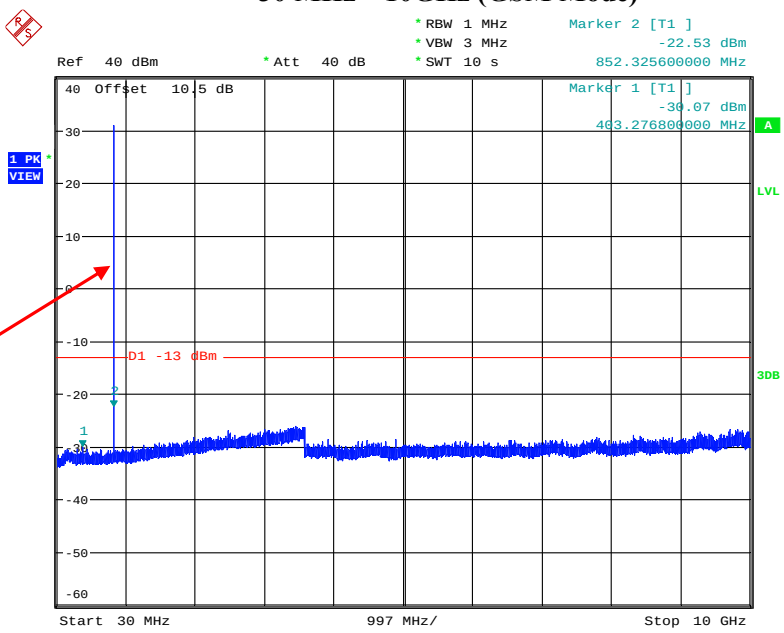


Fundamental test

Date: 2.DEC.2022 08:48:15

High Channel:

30 MHz – 10GHz (GSM Mode)

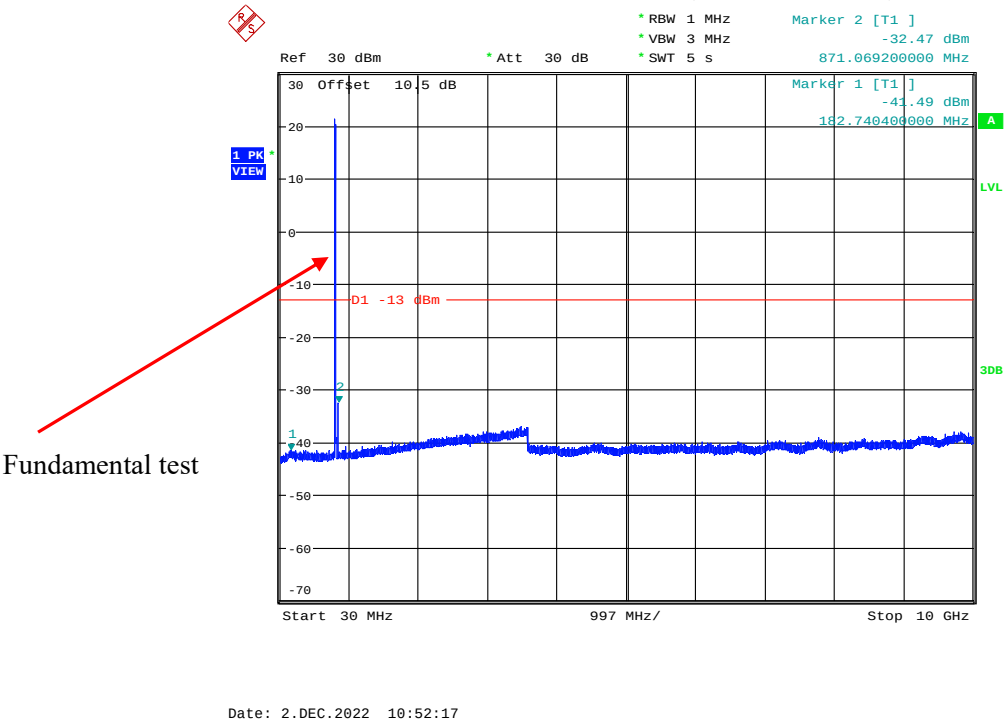


Fundamental test

Date: 2.DEC.2022 08:53:09

Low Channel:

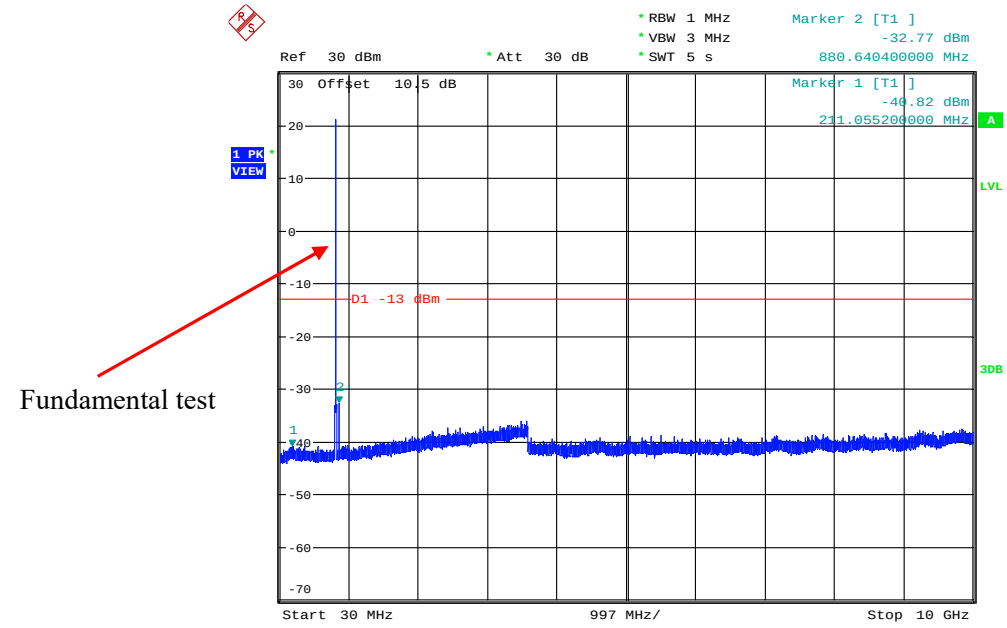
30 MHz – 10GHz (WCDMA Mode)



Date: 2.DEC.2022 10:52:17

Middle Channel:

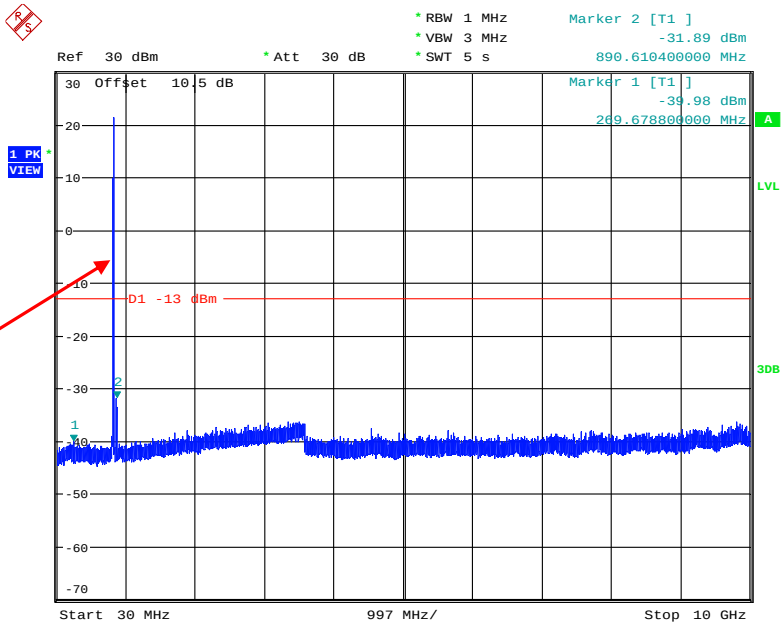
30 MHz – 10GHz (WCDMA Mode)



Date: 2.DEC.2022 10:55:43

High Channel:

30 MHz – 10GHz (WCDMA Mode)



Fundamental test

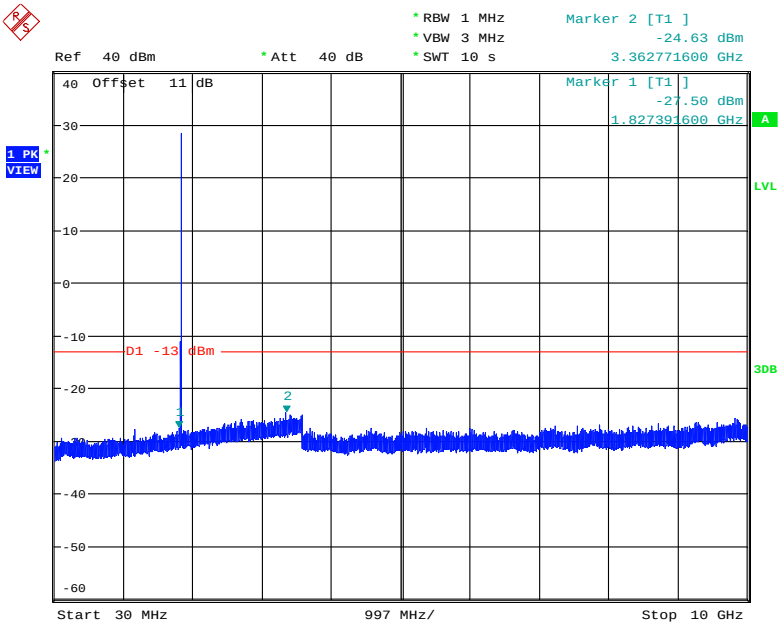
Date: 2.DEC.2022 11:02:22

PCS Band (Part 24E)

Low Channel:

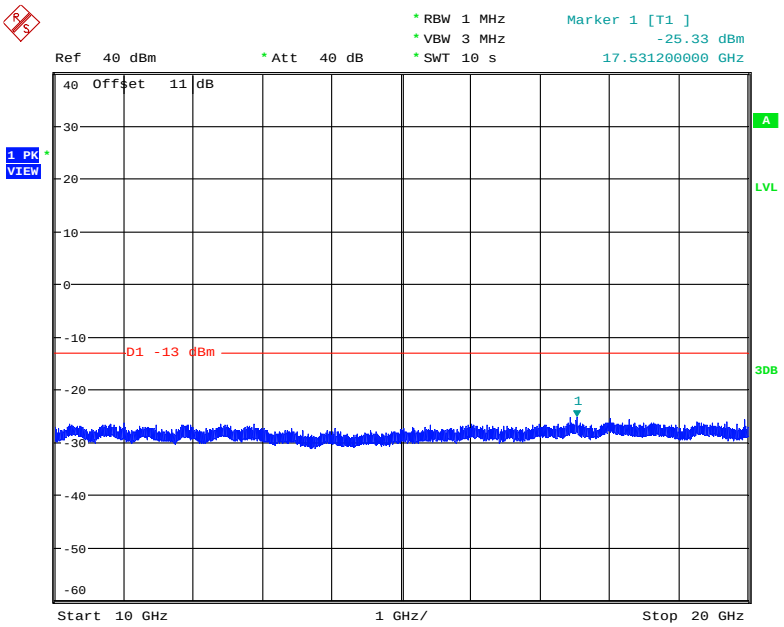
Fundamental test

30 MHz – 10GHz (GSM Mode)



Date: 4.JAN.2023 15:18:30

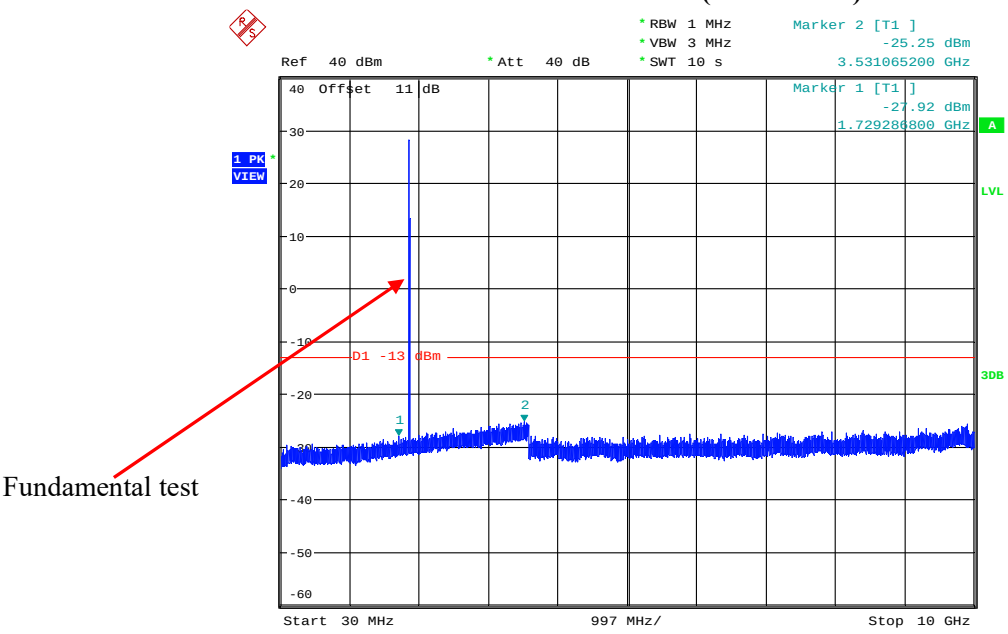
10 GHz – 20GHz (GSM Mode)



Date: 17.DEC.2022 14:09:30

Middle Channel:

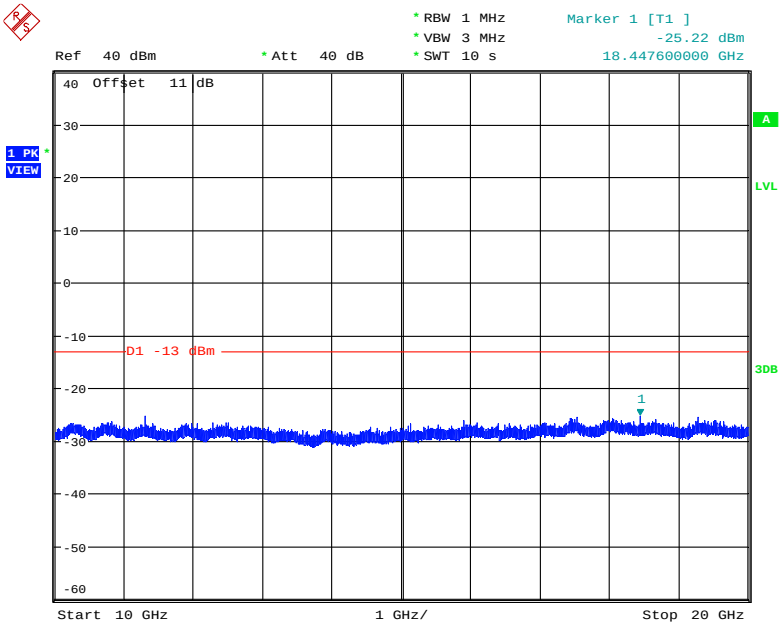
30 MHz – 10GHz (GSM Mode)



Fundamental test

Date: 17.DEC.2022 14:12:52

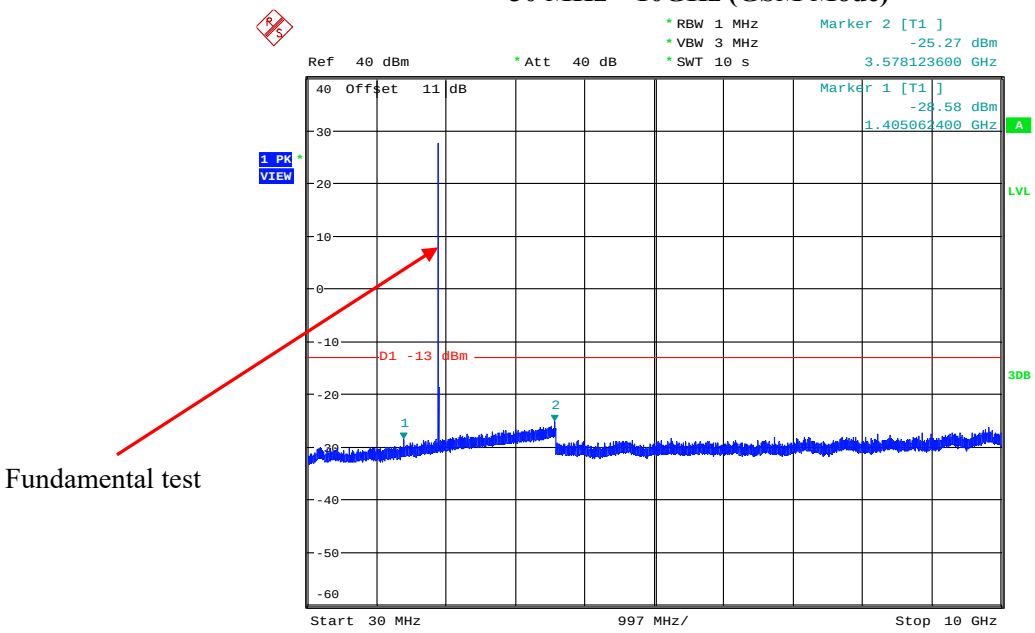
10 GHz – 20GHz (GSM Mode)



Date: 17.DEC.2022 14:14:04

High Channel:

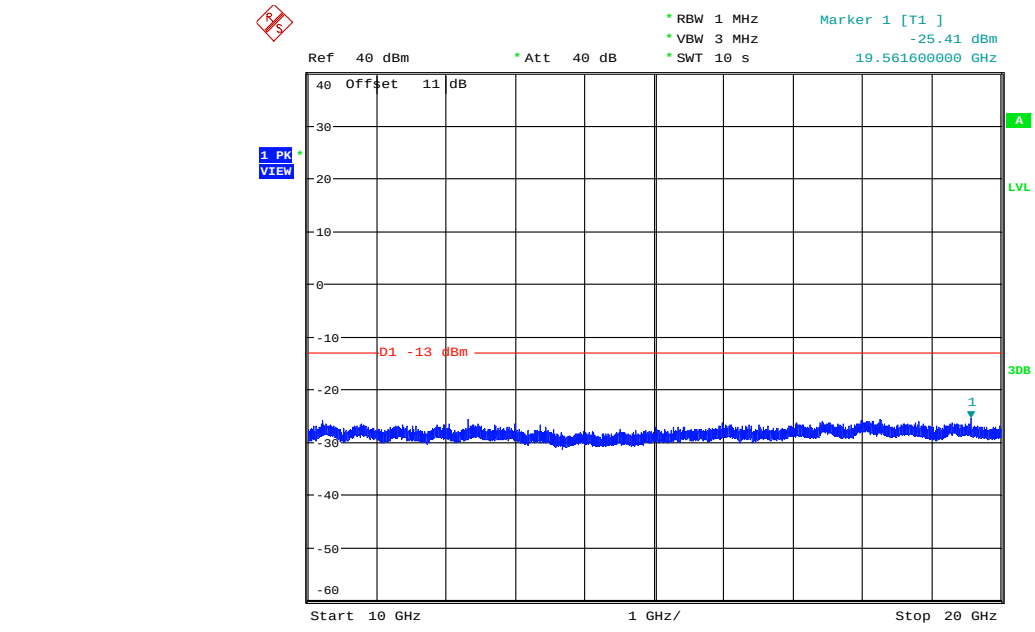
30 MHz – 10GHz (GSM Mode)



Fundamental test

Date: 17.DEC.2022 14:20:01

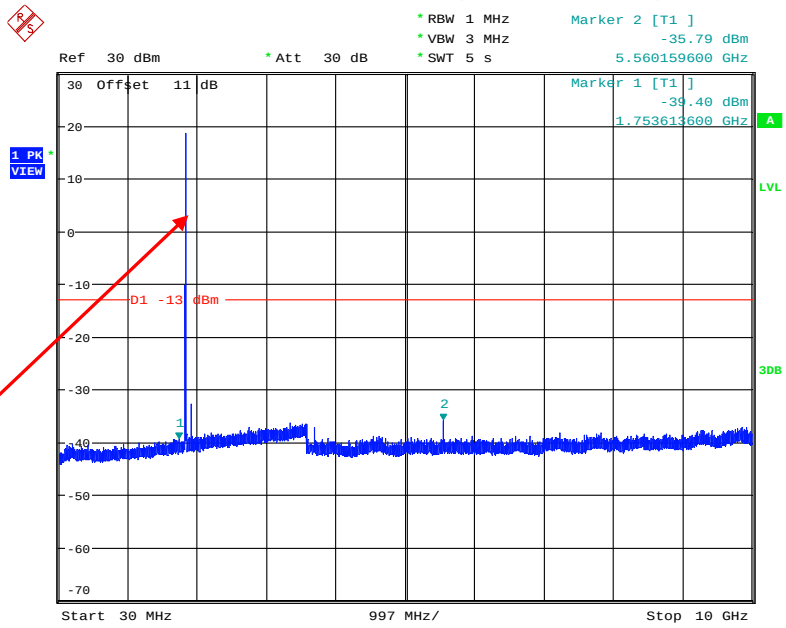
10 GHz – 20GHz (GSM Mode)



Date: 17.DEC.2022 14:21:13

Low Channel:

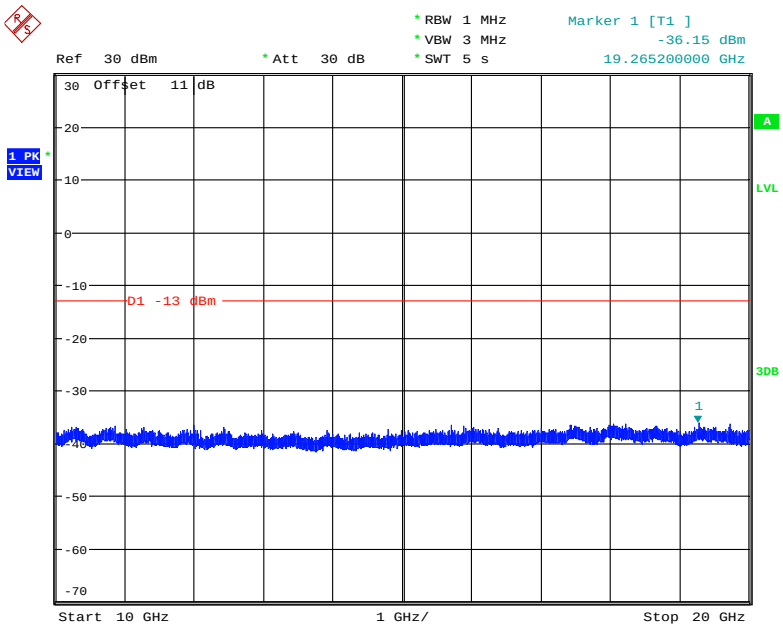
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 17.DEC.2022 11:01:13

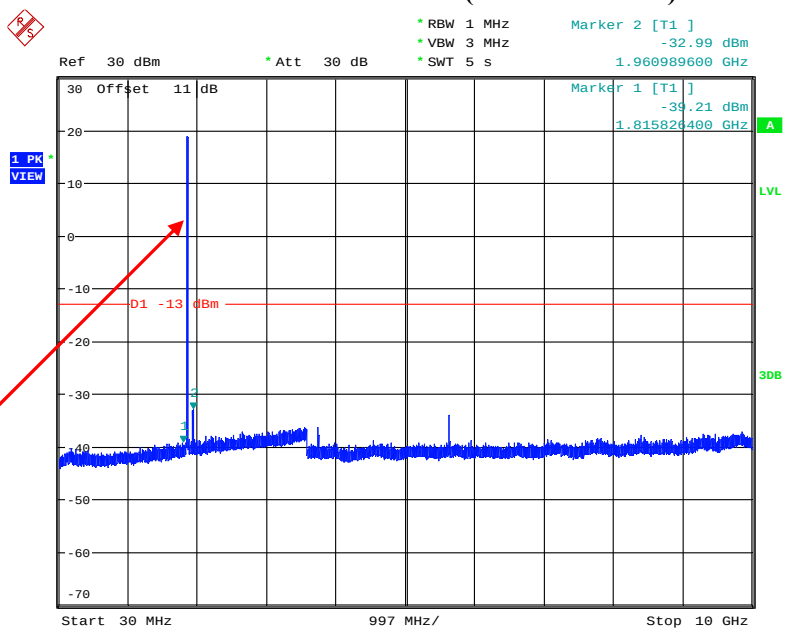
10 GHz – 20GHz (WCDMA Mode)



Date: 17.DEC.2022 11:01:55

Middle Channel:

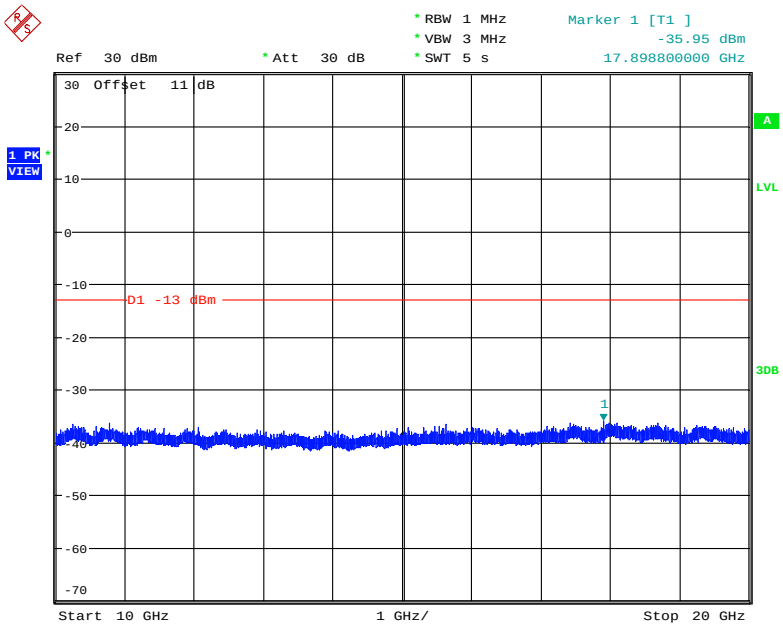
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 17.DEC.2022 11:04:54

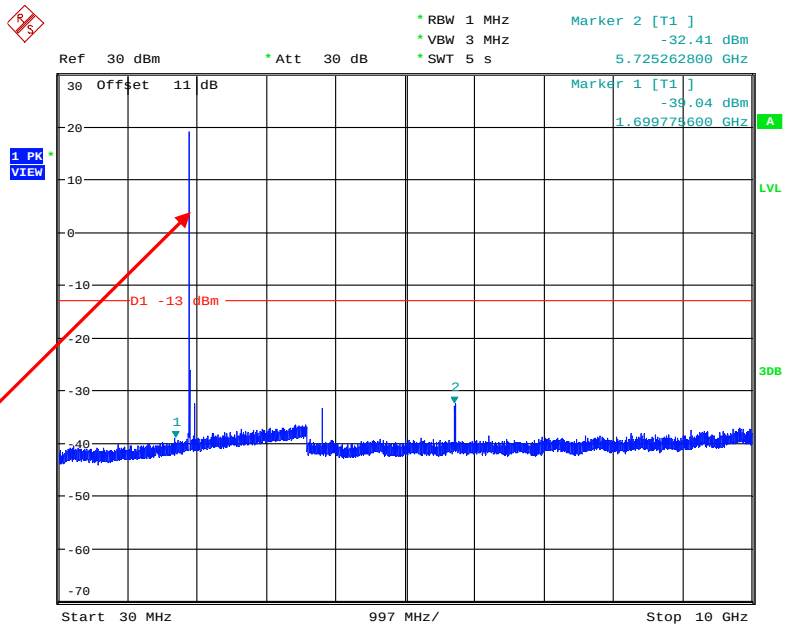
10 GHz – 20GHz (WCDMA Mode)



Date: 17.DEC.2022 11:05:35

High Channel:

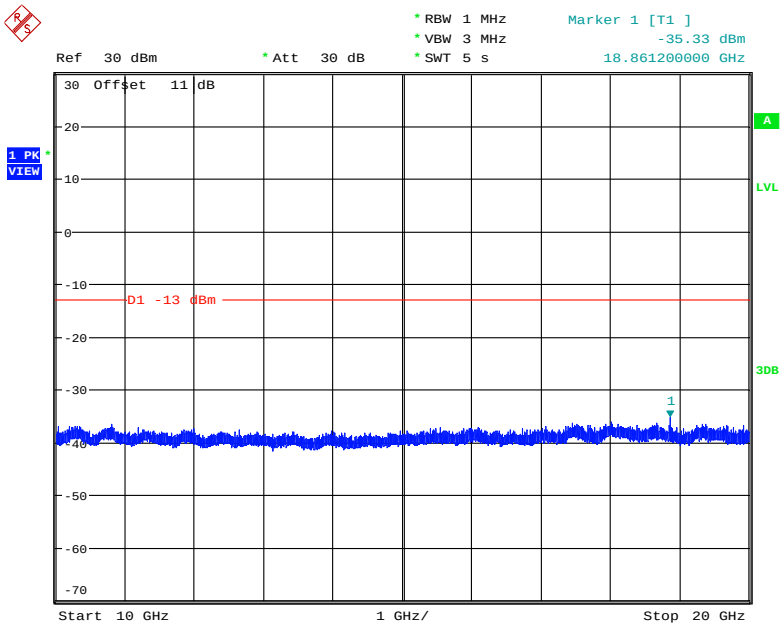
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 17.DEC.2022 11:08:56

10 GHz – 20GHz (WCDMA Mode)

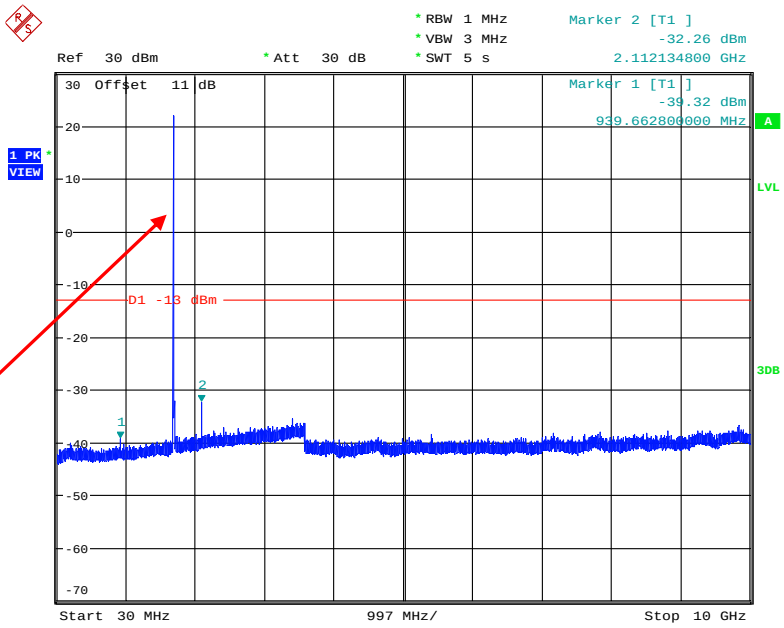


Date: 17.DEC.2022 11:09:39

AWS Band (Part 27)

Low Channel:

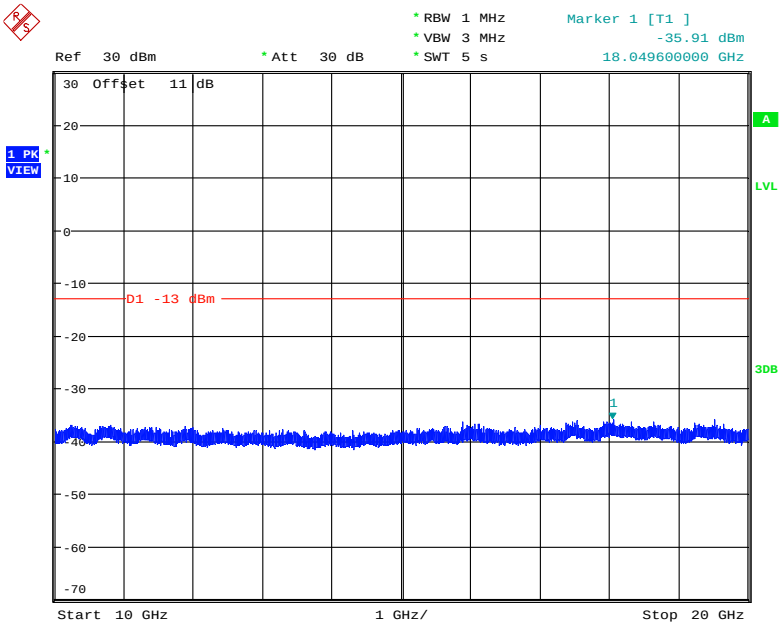
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 17.DEC.2022 11:15:36

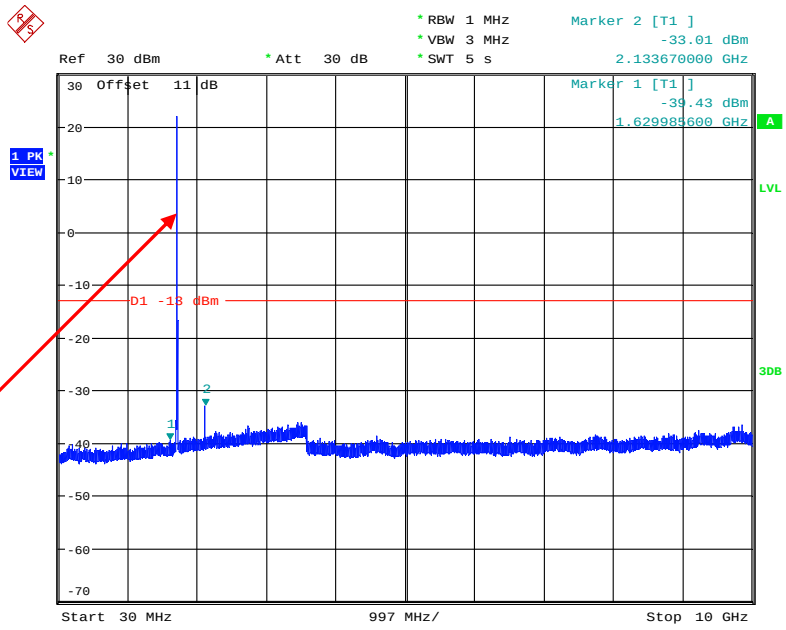
10 GHz – 20GHz (WCDMA Mode)



Date: 17.DEC.2022 11:16:18

Middle Channel:

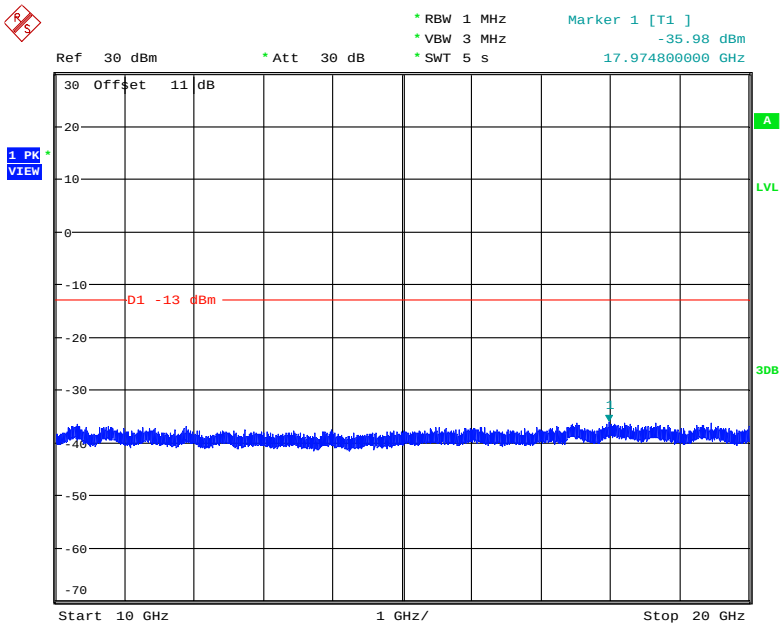
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 17.DEC.2022 11:19:46

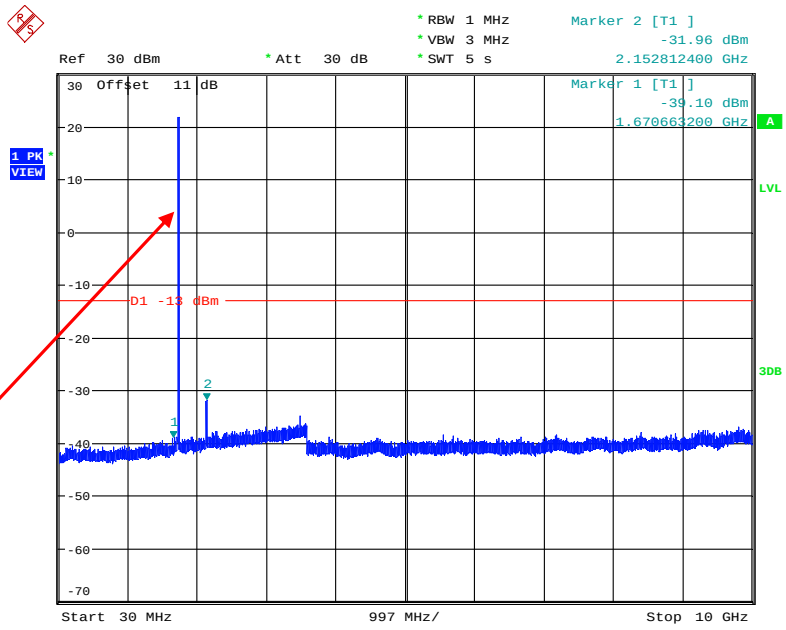
10 GHz – 20GHz (WCDMA Mode)



Date: 17.DEC.2022 11:20:28

High Channel:

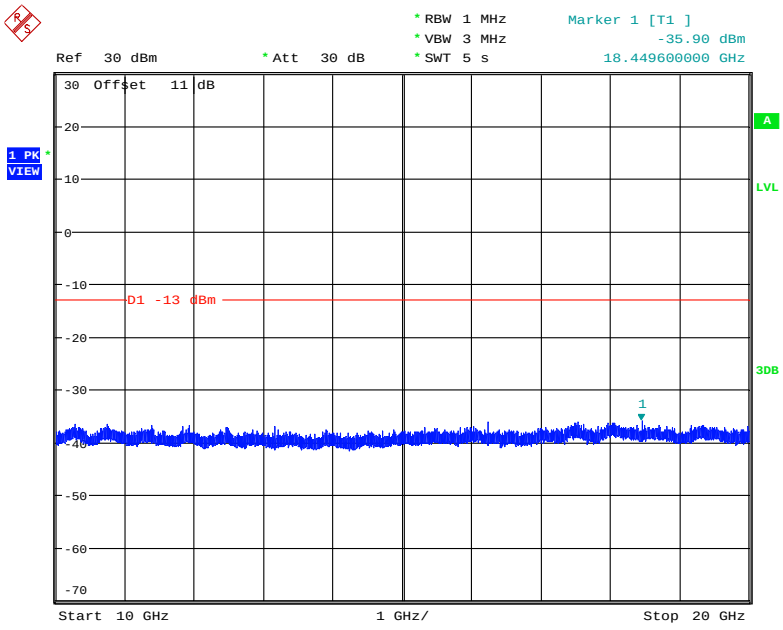
30 MHz – 10GHz (WCDMA Mode)



Fundamental test

Date: 17.DEC.2022 11:28:02

10 GHz – 20GHz (WCDMA Mode)



Date: 17.DEC.2022 11:28:44

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

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

Applicable Standard

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

Test Procedure

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

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

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

Test Data

Environmental Conditions

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

The testing was performed by Leo Li on 2022-11-30.

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

The worst case is as below:

30MHz-10GHz:

Cellular Band (Part 22H)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM850								
Low Channel								
1648.4	-49.00	246	2.4	H	3.5	-45.50	-13	-32.50
1648.4	-49.70	58	1.8	V	3.1	-46.60	-13	-33.60
2472.6	-34.20	91	1.2	H	6.6	-27.60	-13	-14.60
2472.6	-40.30	330	1.1	V	5.8	-34.50	-13	-21.50
3296.8	-47.10	59	1.8	H	6.4	-40.70	-13	-27.70
3296.8	-47.10	313	1.7	V	5.7	-41.40	-13	-28.40
Middle Channel								
1673.2	-48.70	323	2.1	H	3.8	-44.90	-13	-31.90
1673.2	-48.50	277	2	V	3.1	-45.40	-13	-32.40
2509.8	-45.30	255	2.2	H	6.2	-39.10	-13	-26.10
2509.8	-31.70	22	2	V	5.6	-26.10	-13	-13.10
3346.4	-48.30	311	1	H	6.6	-41.70	-13	-28.70
3346.4	-47.30	111	1.1	V	5.4	-41.90	-13	-28.90
High Channel								
1697.6	-45.30	81	2.1	H	4.1	-41.20	-13	-28.20
1697.6	-45.50	355	2.2	V	3.1	-42.40	-13	-29.40
2546.4	-47.70	223	1.7	H	6.1	-41.60	-13	-28.60
2546.4	-46.20	40	1.7	V	5.8	-40.40	-13	-27.40
3395.2	-47.00	250	2.2	H	6.2	-40.80	-13	-27.80
3395.2	-45.30	77	1.1	V	5.4	-39.90	-13	-26.90

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 5								
Low Channel								
1652.8	-55.10	355	2.2	H	3.5	-51.60	-13	-38.60
1652.8	-52.70	134	1.9	V	3.1	-49.60	-13	-36.60
2479.2	-48.80	176	2.1	H	6.5	-42.30	-13	-29.30
2479.2	-48.60	306	2.1	V	5.7	-42.90	-13	-29.90
3305.6	-49.30	220	1.5	H	6.4	-42.90	-13	-29.90
3305.6	-48.70	144	1.8	V	5.7	-43.00	-13	-30.00
Middle Channel								
1673.2	-48.70	178	1.2	H	3.8	-44.90	-13	-31.90
1673.2	-50.10	302	1.7	V	3.1	-47.00	-13	-34.00
2509.8	-53.20	201	2	H	6.2	-47.00	-13	-34.00
2509.8	-52.40	282	1.3	V	5.6	-46.80	-13	-33.80
3346.4	-49.40	245	2	H	6.6	-42.80	-13	-29.80
3346.4	-48.00	66	2.2	V	5.4	-42.60	-13	-29.60
High Channel								
1693.2	-54.40	117	2.2	H	4	-50.40	-13	-37.40
1693.2	-53.70	307	2.3	V	3.1	-50.60	-13	-37.60
2539.8	-54.30	58	1.1	H	6.1	-48.20	-13	-35.20
2539.8	-53.50	11	2.3	V	5.7	-47.80	-13	-34.80
3386.4	-49.50	220	1.5	H	6.3	-43.20	-13	-30.20
3386.4	-47.90	314	1.6	V	5.4	-42.50	-13	-29.50

30MHz-20GHz:

PCS Band (Part 24E)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM 1900								
Low Channel								
3700.4	-39.20	162	1.5	H	8.1	-31.10	-13	-18.10
3700.4	-45.80	235	1.5	V	7.6	-38.20	-13	-25.20
5550.6	-44.20	156	1.2	H	9.6	-34.60	-13	-21.60
5550.6	-48.90	237	1.5	V	9.1	-39.80	-13	-26.80
Middle Channel								
3760.0	-41.30	223	1.2	H	8.8	-32.50	-13	-19.50
3760.0	-47.40	24	2.5	V	8	-39.40	-13	-26.40
5640.0	-48.80	175	1.8	H	10.2	-38.60	-13	-25.60
5640.0	-49.70	105	2	V	9.4	-40.30	-13	-27.30
High Channel								
3819.6	-42.10	128	1.8	H	8.7	-33.40	-13	-20.40
3819.6	-48.30	191	2.2	V	8	-40.30	-13	-27.30
5729.4	-51.40	309	1.9	H	10.6	-40.80	-13	-27.80
5729.4	-51.30	261	2.3	V	10.2	-41.10	-13	-28.10

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								
3704.8	-49.70	347	1.5	H	8.2	-41.50	-13	-28.50
3704.8	-48.20	150	1.3	V	7.6	-40.60	-13	-27.60
5557.2	-50.00	29	1.5	H	9.7	-40.30	-13	-27.30
5557.2	-47.30	246	1.5	V	9.1	-38.20	-13	-25.20
Middle Channel								
3760.0	-49.50	69	2.2	H	8.8	-40.70	-13	-27.70
3760.0	-47.70	68	1.1	V	8	-39.70	-13	-26.70
5640.0	-51.00	226	1.9	H	10.2	-40.80	-13	-27.80
5640.0	-47.70	342	2.2	V	9.4	-38.30	-13	-25.30
High Channel								
3815.2	-45.40	92	2.2	H	8.7	-36.70	-13	-23.70
3815.2	-44.80	31	2.2	V	7.9	-36.90	-13	-23.90
5722.8	-51.70	197	1.8	H	10.6	-41.10	-13	-28.10
5722.8	-48.70	267	1.5	V	10.1	-38.60	-13	-25.60

30MHz-20GHz:

AWS Band (Part 27E)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 4								
Low Channel								
3424.8	-48.40	329	2.4	H	6.4	-42.00	-13	-29.00
3424.8	-47.80	86	1.5	V	5.7	-42.10	-13	-29.10
5137.2	-53.30	30	2.4	H	11.3	-42.00	-13	-29.00
5137.2	-53.60	339	2.3	V	10.8	-42.80	-13	-29.80
Middle Channel								
3465.2	-49.00	233	1.1	H	7	-42.00	-13	-29.00
3465.2	-49.00	70	1.4	V	6.2	-42.80	-13	-29.80
5197.8	-51.90	179	2.4	H	10.3	-41.60	-13	-28.60
5197.8	-51.90	308	1.1	V	9.8	-42.10	-13	-29.10
High Channel								
3505.2	-49.90	326	1.8	H	7.8	-42.10	-13	-29.10
3505.2	-49.10	347	2.3	V	6.5	-42.60	-13	-29.60
5257.8	-51.30	64	1.2	H	9.4	-41.90	-13	-28.90
5257.8	-50.80	44	1.3	V	9	-41.80	-13	-28.80

LTE Band: *(Pre-scan with all the bandwidth and modulation, 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								
QPSK, 1.4MHz bandwidth, Low Channel								
3701.4	-47.90	190	1.9	H	8.1	-39.80	-13	-26.80
3701.4	-46.10	4	1.2	V	7.6	-38.50	-13	-25.50
5552.1	-46.60	321	2.1	H	9.6	-37.00	-13	-24.00
5552.1	-43.40	344	1.9	V	9.1	-34.30	-13	-21.30
QPSK, 1.4MHz bandwidth, Middle Channel								
3760.0	-46.10	285	1.3	H	8.8	-37.30	-13	-24.30
3760.0	-46.40	133	2.3	V	8	-38.40	-13	-25.40
5640.0	-47.00	79	1.9	H	10.2	-36.80	-13	-23.80
5640.0	-43.40	357	1.9	V	9.4	-34.00	-13	-21.00
QPSK, 1.4MHz bandwidth, High Channel								
3818.6	-42.40	283	1.1	H	8.7	-33.70	-13	-20.70
3818.6	-41.50	39	2.5	V	7.9	-33.60	-13	-20.60
5727.9	-48.20	254	2	H	10.6	-37.60	-13	-24.60
5727.9	-45.00	187	2	V	10.2	-34.80	-13	-21.80

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 4								
Test frequency range: 30MHz-20GHz								
QPSK, 1.4MHz bandwidth, Low Channel								
3421.4	-47.80	309	1.6	H	6.4	-41.40	-13	-28.40
3421.4	-47.60	213	1.4	V	5.7	-41.90	-13	-28.90
5132.1	-52.30	39	2.5	H	11.3	-41.00	-13	-28.00
5132.1	-52.70	179	1.6	V	10.8	-41.90	-13	-28.90
QPSK, 1.4MHz bandwidth, Middle Channel								
3465.0	-48.60	320	1.3	H	7	-41.60	-13	-28.60
3465.0	-49.50	106	2.3	V	6.2	-43.30	-13	-30.30
5197.5	-50.90	86	1.1	H	10.4	-40.50	-13	-27.50
5197.5	-52.00	247	1.2	V	9.8	-42.20	-13	-29.20
QPSK, 1.4MHz bandwidth, High Channel								
3508.6	-48.90	20	1.3	H	7.8	-41.10	-13	-28.10
3508.6	-49.70	293	2.2	V	6.6	-43.10	-13	-30.10
5262.9	-50.00	42	2.5	H	9.5	-40.50	-13	-27.50
5262.9	-50.50	321	2.3	V	8.9	-41.60	-13	-28.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 5								
Test frequency range: 30MHz-10GHz								
QPSK, 1.4MHz bandwidth, Low Channel								
1649.4	-51.60	109	2.5	H	3.5	-48.10	-13	-35.10
1649.4	-53.70	69	1.4	V	3.1	-50.60	-13	-37.60
2474.1	-40.00	174	1.6	H	6.6	-33.40	-13	-20.40
2474.1	-44.30	297	1.1	V	5.8	-38.50	-13	-25.50
3298.8	-49.60	37	1.8	H	6.4	-43.20	-13	-30.20
3298.8	-49.30	73	1.8	V	5.7	-43.60	-13	-30.60
QPSK, 1.4MHz bandwidth, Middle Channel								
1673.0	-49.60	210	2.5	H	3.8	-45.80	-13	-32.80
1673.0	-50.20	195	2.4	V	3.1	-47.10	-13	-34.10
2509.5	-53.00	329	2.3	H	6.2	-46.80	-13	-33.80
2509.5	-52.90	246	2.2	V	5.6	-47.30	-13	-34.30
3346.0	-49.30	243	1.4	H	6.6	-42.70	-13	-29.70
3346.0	-48.30	187	2.1	V	5.4	-42.90	-13	-29.90
QPSK, 1.4MHz bandwidth, High Channel								
1696.6	-54.40	260	1.1	H	4.1	-50.30	-13	-37.30
1696.6	-53.70	65	2	V	3.1	-50.60	-13	-37.60
2544.9	-53.00	337	1.3	H	6.1	-46.90	-13	-33.90
2544.9	-52.60	273	2.5	V	5.8	-46.80	-13	-33.80
3393.2	-49.00	317	1.6	H	6.3	-42.70	-13	-29.70
3393.2	-47.50	23	1.3	V	5.4	-42.10	-13	-29.10

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								
QPSK, 5MHz bandwidth, Low Channel								
5005.0	-53.20	206	1.6	H	10.8	-42.40	-25	-17.40
5005.0	-52.30	51	2.2	V	10.2	-42.10	-25	-17.10
7507.5	-61.00	245	1.2	H	20.3	-40.70	-25	-15.70
7507.5	-60.90	137	1.6	V	20.1	-40.80	-25	-15.80
QPSK, 5MHz bandwidth, Middle Channel								
5070.0	-52.50	224	2.1	H	11.1	-41.40	-25	-16.40
5070.0	-52.50	319	1.8	V	10.8	-41.70	-25	-16.70
7605.0	-63.70	341	1.3	H	21.2	-42.50	-25	-17.50
7605.0	-62.70	300	2.3	V	20.1	-42.60	-25	-17.60
QPSK, 5MHz bandwidth, High Channel								
5135.0	-51.90	255	1.8	H	11.3	-40.60	-25	-15.60
5135.0	-52.00	43	1.6	V	10.8	-41.20	-25	-16.20
7702.5	-63.30	55	1.3	H	21.2	-42.10	-25	-17.10
7702.5	-63.30	117	2.1	V	21	-42.30	-25	-17.30
Band 38								
Test frequency range: 30MHz-26.5GHz								
QPSK, 5MHz, Low Channel								
5145	-44.1	67	2.4	H	11.4	-32.70	-25	-7.70
5145	-43.7	340	1.6	V	10.7	-33.00	-25	-8.00
QPSK, 5MHz, Middle Channel								
5190	-42.6	213	1.3	H	10.5	-32.10	-25	-7.10
5190	-42.5	257	2.1	V	10	-32.50	-25	-7.50
QPSK, 5MHz, High Channel								
5235	-41.5	322	1.3	H	9.7	-31.80	-25	-6.80
5235	-39.8	39	2.3	V	9.2	-30.60	-25	-5.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 41								
Test frequency range: 30MHz-26.55GHz								
QPSK, 5MHz, Low Channel								
5075.0	-50.10	158	2.4	H	11.2	-38.90	-25	-13.90
5075.0	-51.80	348	1.1	V	10.8	-41.00	-25	-16.00
7612.5	-62.40	314	2.4	H	21.2	-41.20	-25	-16.20
7612.5	-62.30	29	1	V	20.2	-42.10	-25	-17.10
QPSK, 5MHz, Middle Channel								
5190.0	-51.50	120	2	H	10.5	-41.00	-25	-16.00
5190.0	-51.20	181	2.1	V	10	-41.20	-25	-16.20
7785.0	-59.20	231	1.7	H	18.3	-40.90	-25	-15.90
7785.0	-59.80	175	1.7	V	18	-41.80	-25	-16.80
QPSK, 5MHz, High Channel								
5305.0	-48.70	144	1.8	H	9.6	-39.10	-25	-14.10
5305.0	-48.90	301	1.1	V	8.8	-40.10	-25	-15.10
7957.5	-60.30	219	2	H	18.9	-41.40	-25	-16.40
7957.5	-60.90	251	1.5	V	18.5	-42.40	-25	-17.40

Note:
Absolute Level = Reading Level + Substituted Factor
Substituted Factor contains: Substituted Level - Cable loss+ Antenna Gain
Margin = Absolute Level -Limit

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

Applicable Standard

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

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

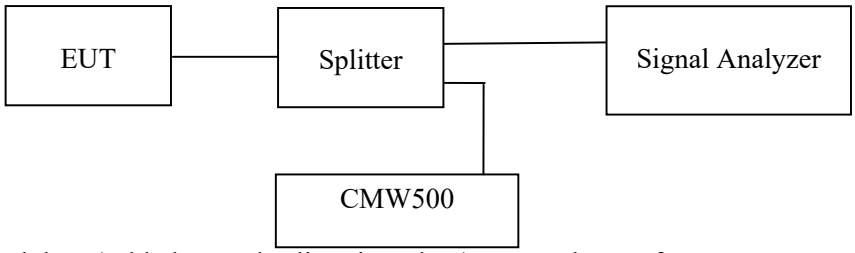
According to FCC §27.53 (h) the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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

Test Procedure

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

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



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

Test Data

Environmental Conditions

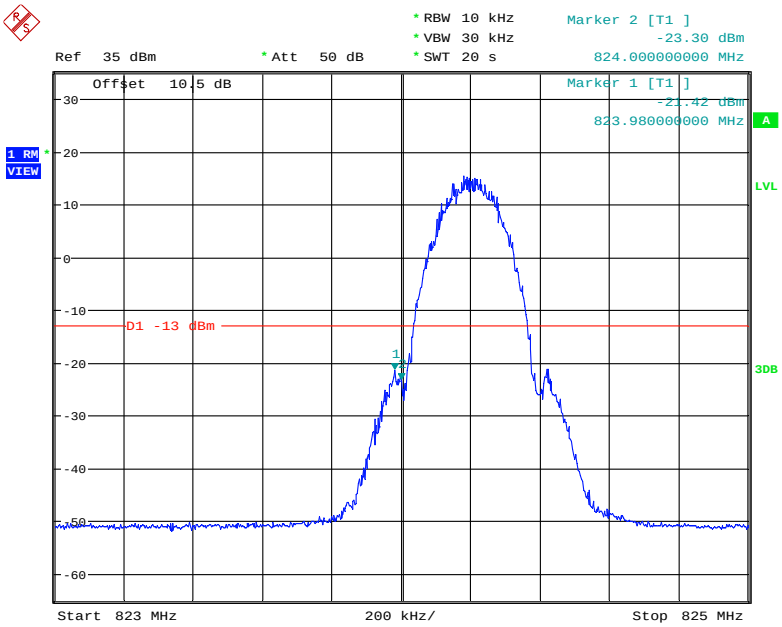
Temperature:	27.6 ℃
Relative Humidity:	56.7%
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2022-12-01 to 2023-01-09.
EUT operation mode: Transmitting (Worst case)

Test Result: Pass

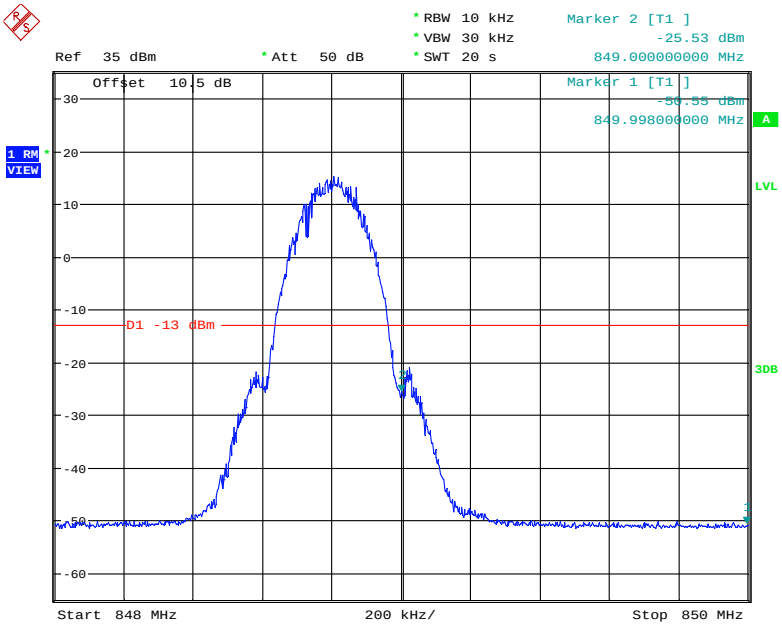
Please refer to the following plots.

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



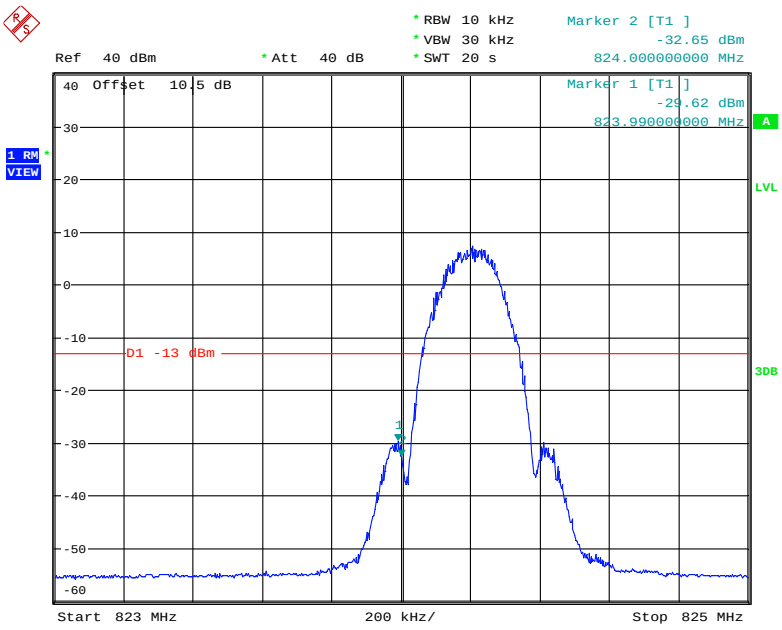
Date: 2.DEC.2022 08:38:35

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



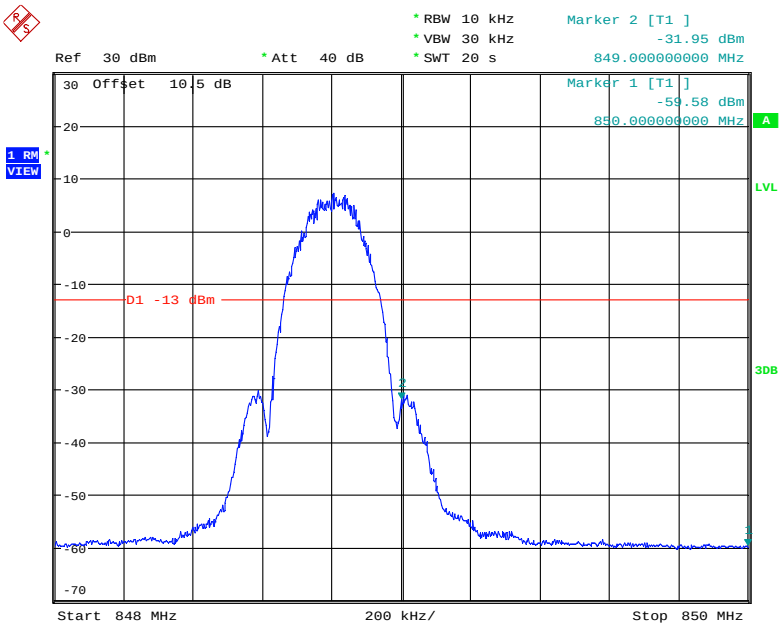
Date: 2.DEC.2022 08:52:12

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



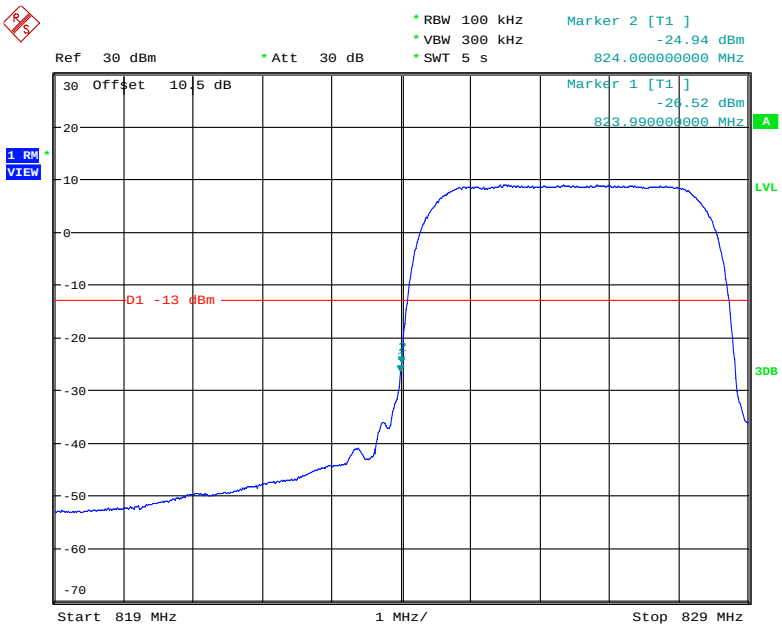
Date: 4.JAN.2023 15:22:24

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



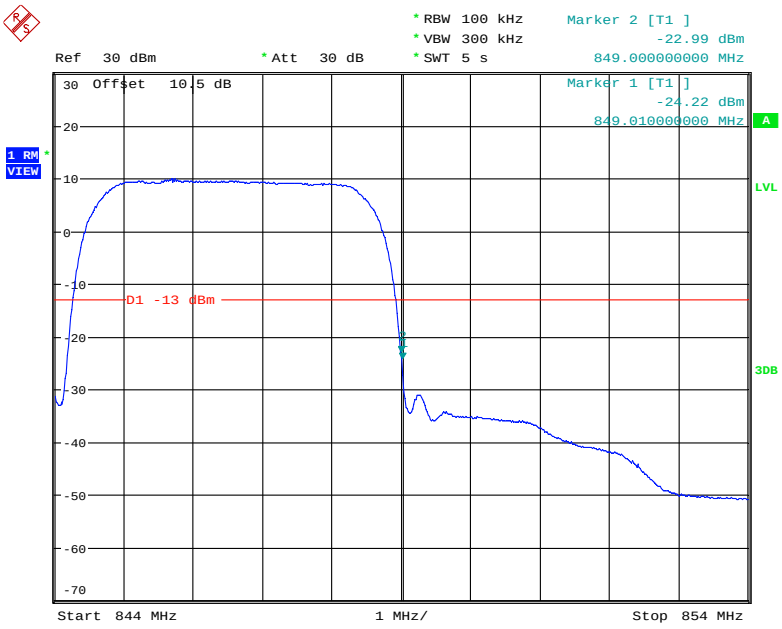
Date: 2.DEC.2022 09:08:14

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



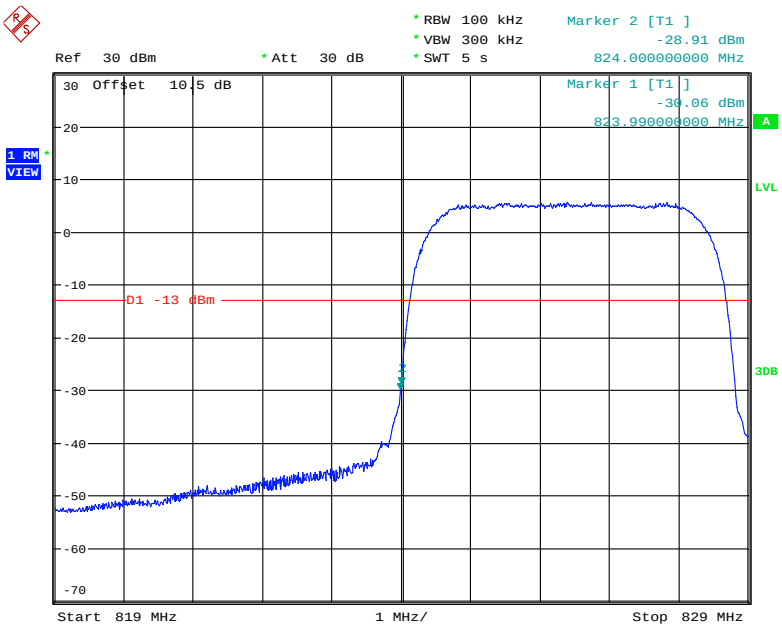
Date: 2.DEC.2022 10:50:44

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



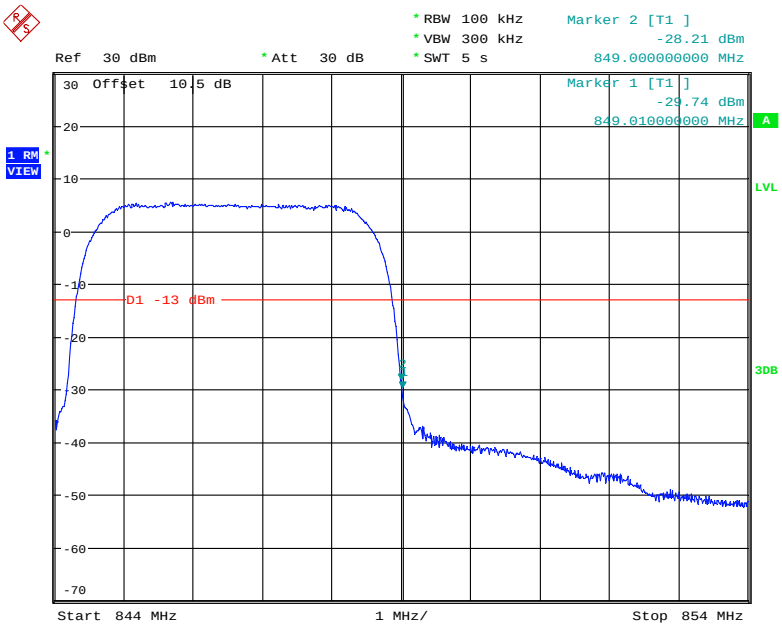
Date: 4.JAN.2023 16:15:44

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



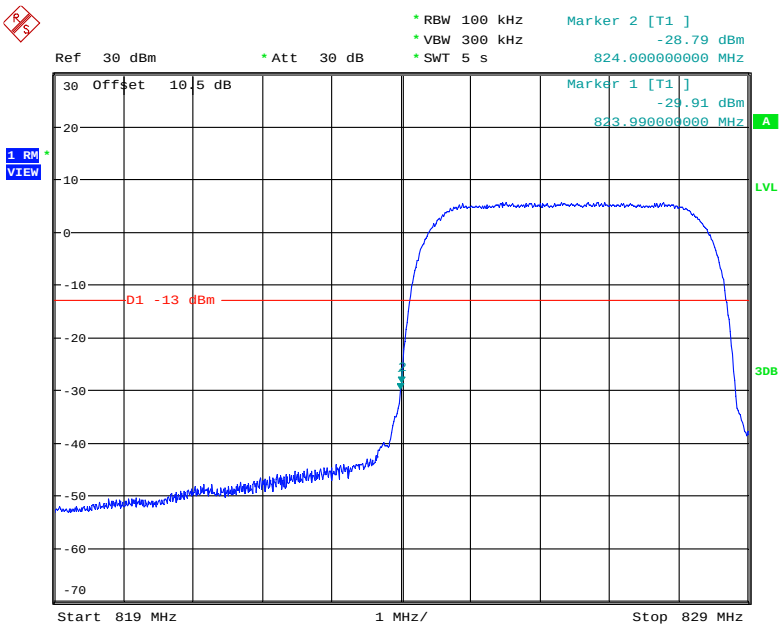
Date: 2.DEC.2022 11:18:04

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



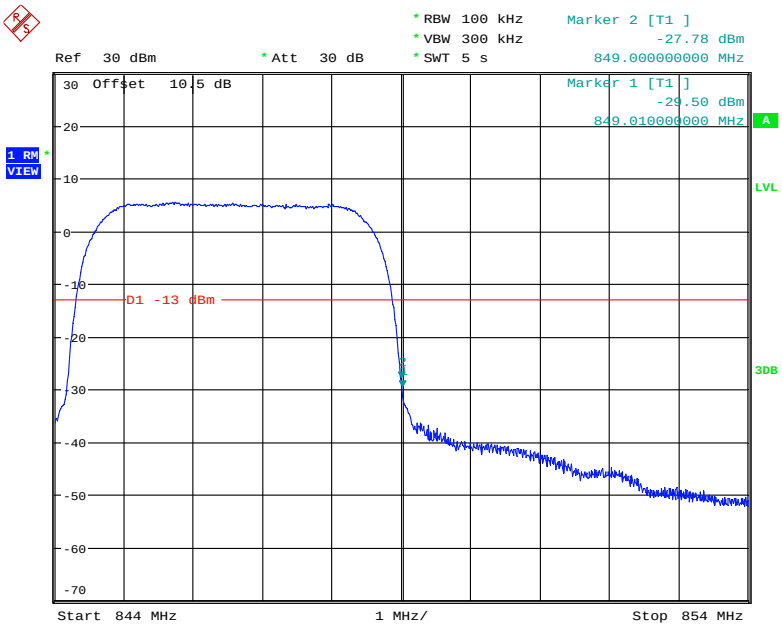
Date: 2.DEC.2022 11:23:48

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



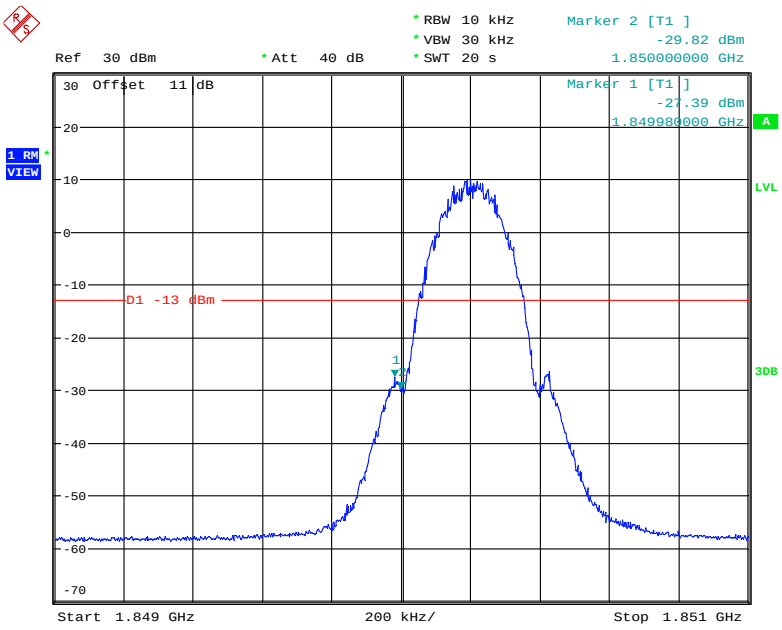
Date: 2.DEC.2022 13:42:20

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



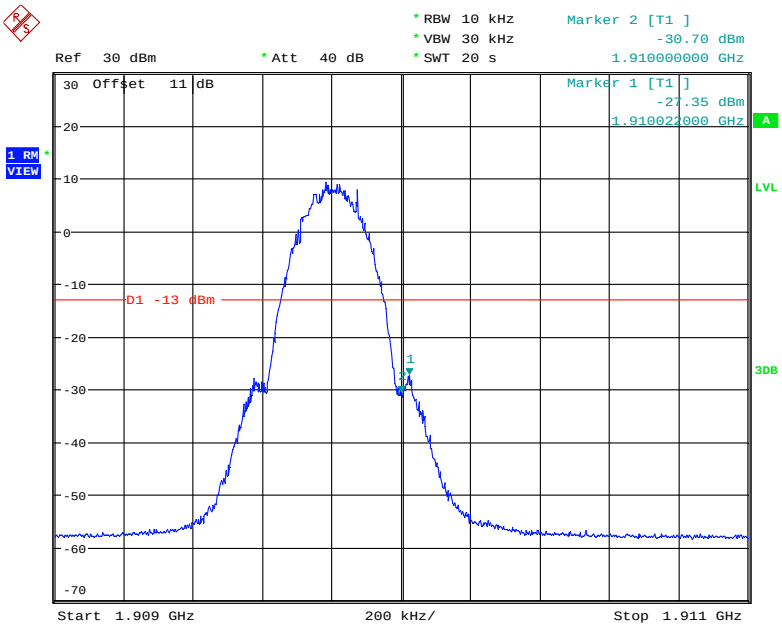
Date: 2.DEC.2022 13:49:55

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



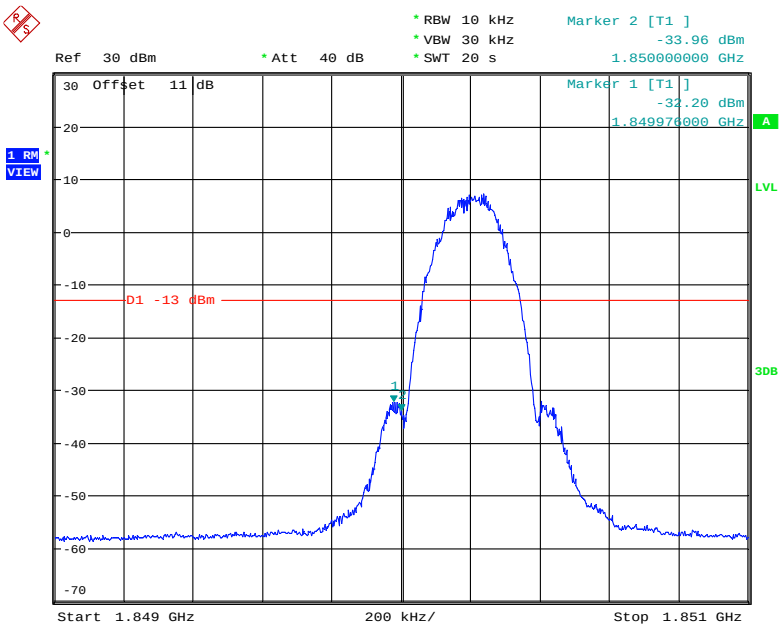
Date: 17.DEC.2022 14:07:05

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



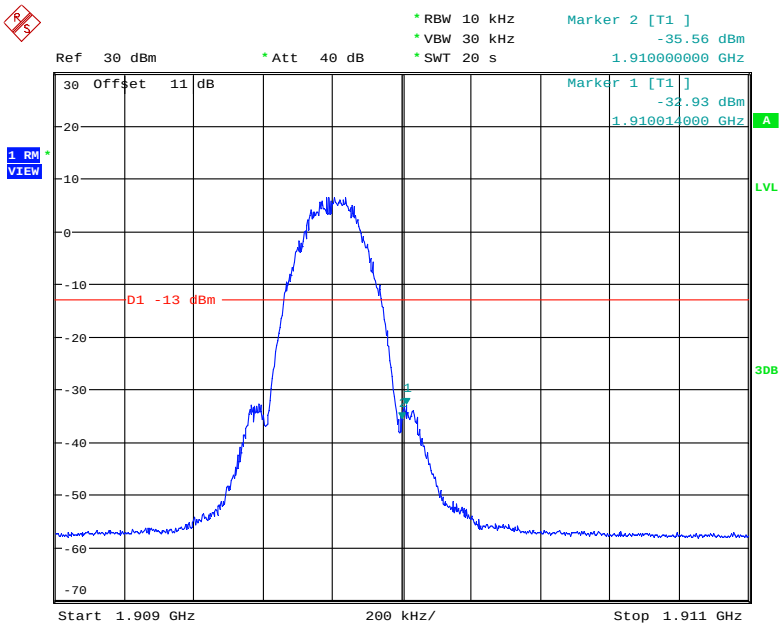
Date: 17.DEC.2022 14:18:49

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



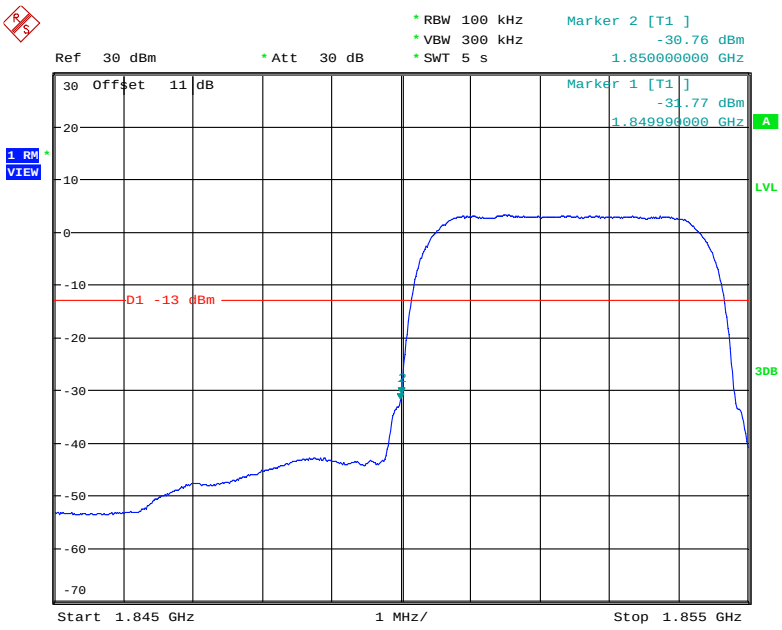
Date: 17.DEC.2022 14:26:21

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



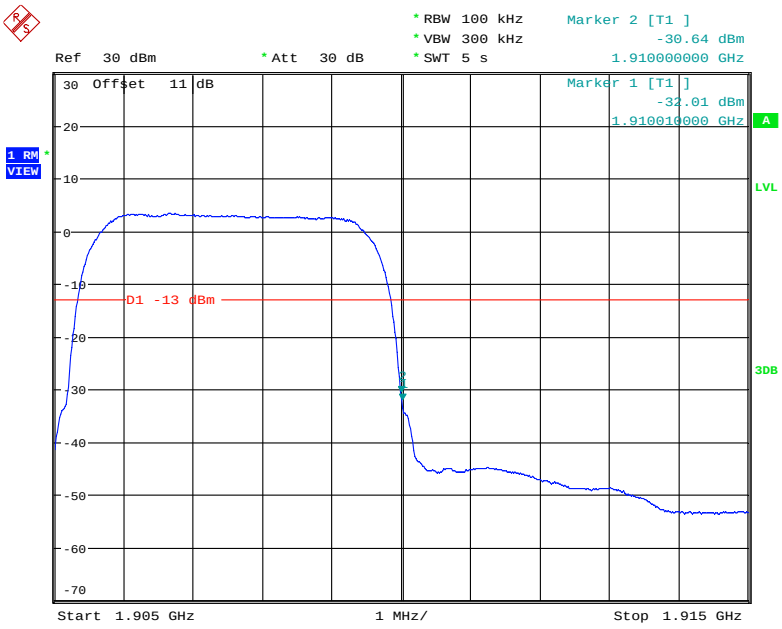
Date: 17.DEC.2022 14:37:35

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



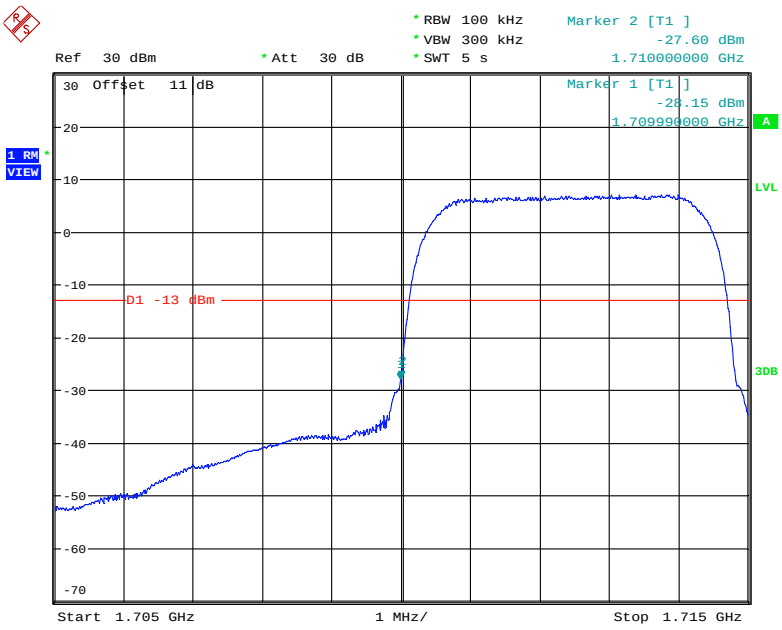
Date: 17.DEC.2022 11:00:33

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



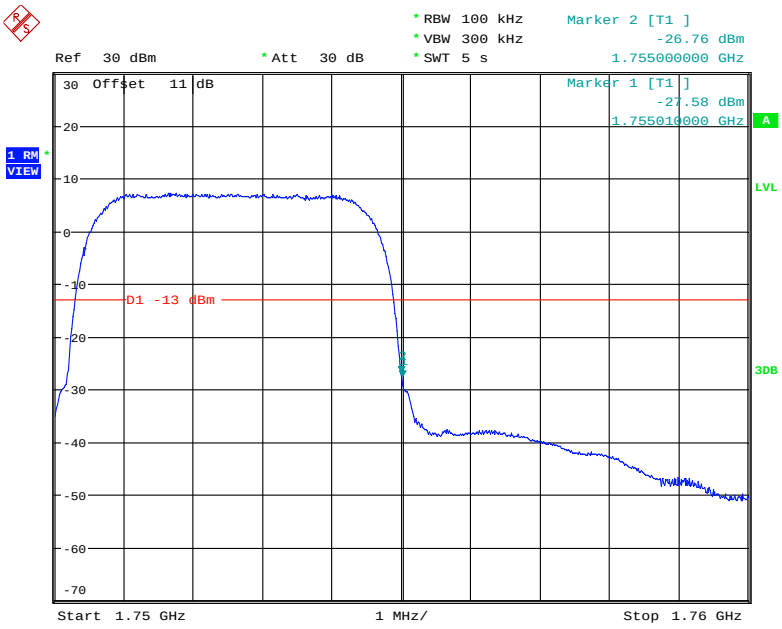
Date: 17.DEC.2022 11:08:12

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



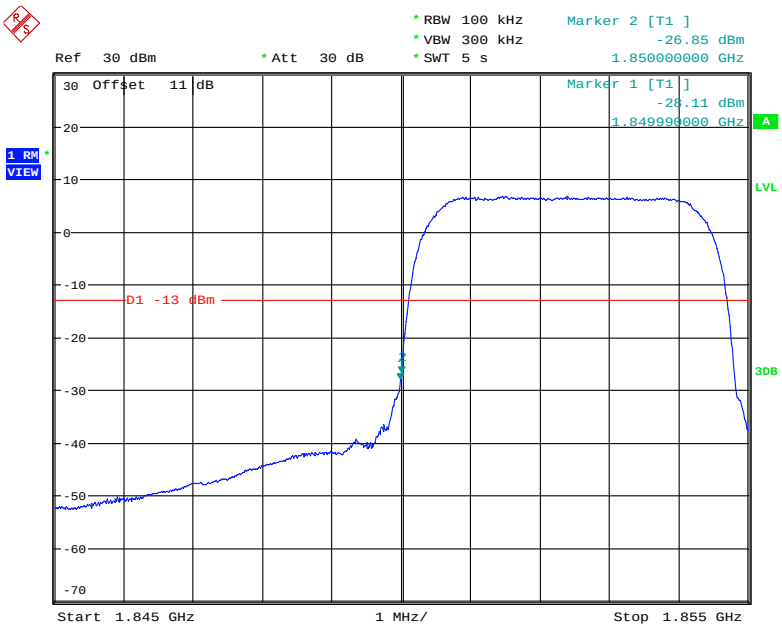
Date: 17.DEC.2022 11:33:37

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



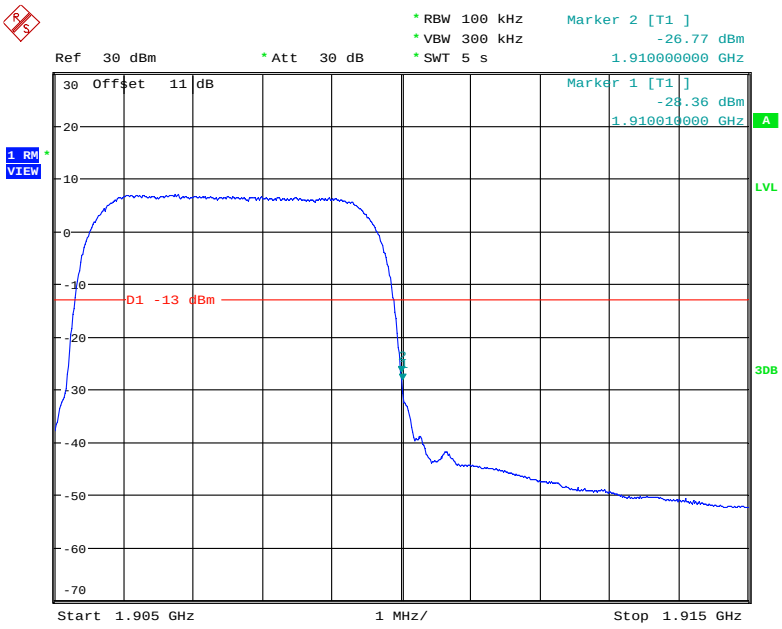
Date: 17.DEC.2022 11:41:53

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



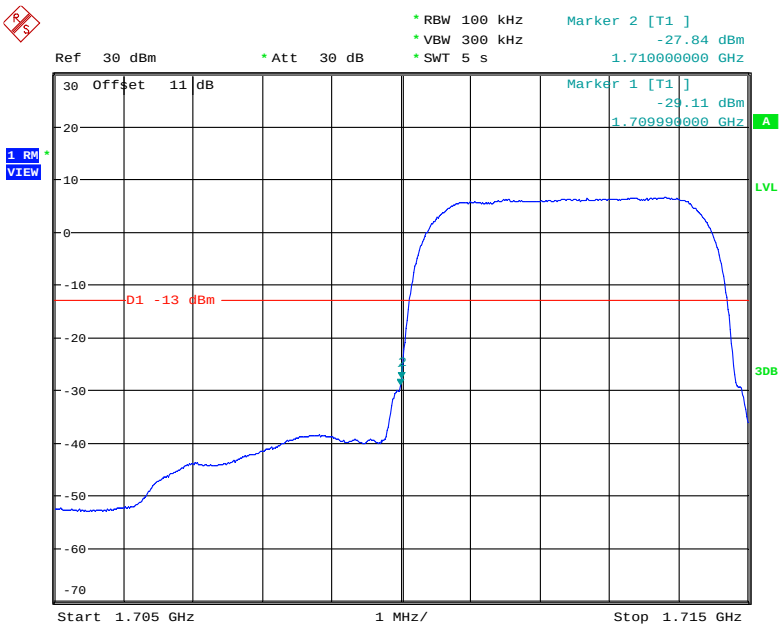
Date: 17.DEC.2022 12:02:57

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



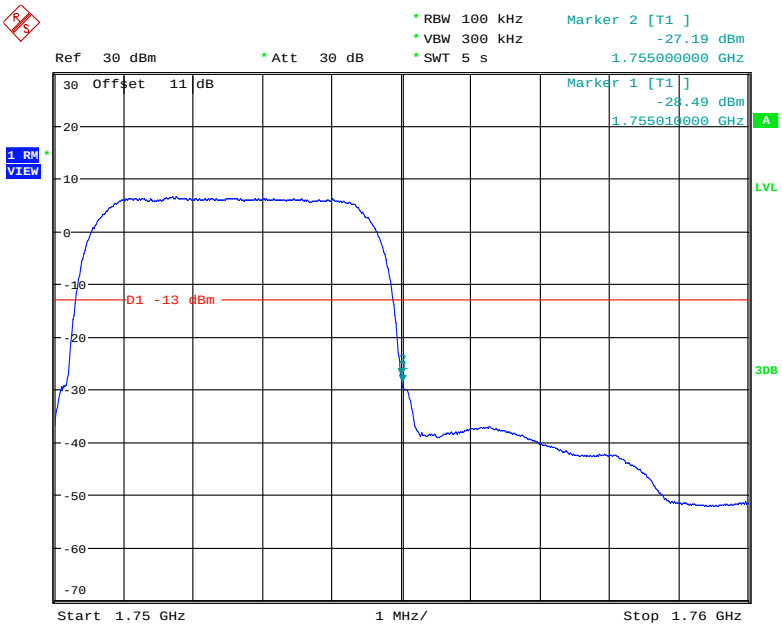
Date: 17.DEC.2022 13:16:06

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



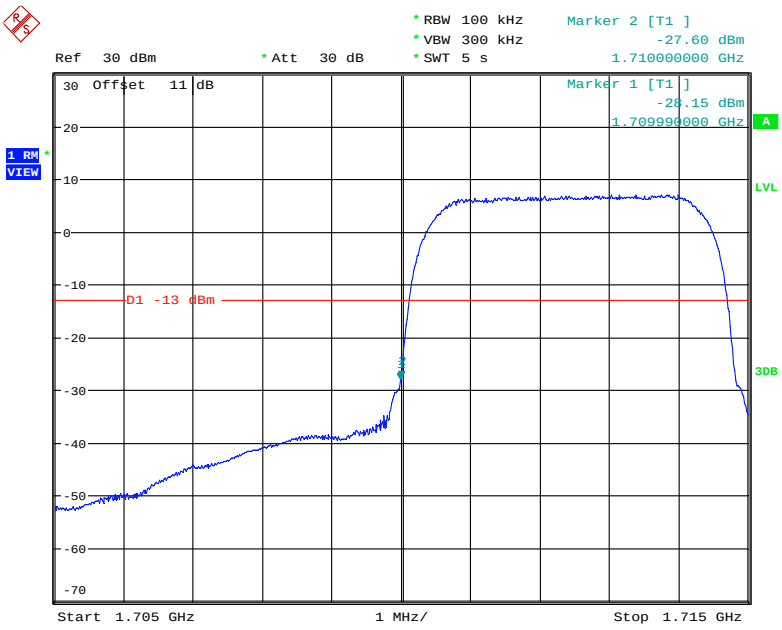
Date: 17.DEC.2022 11:14:56

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



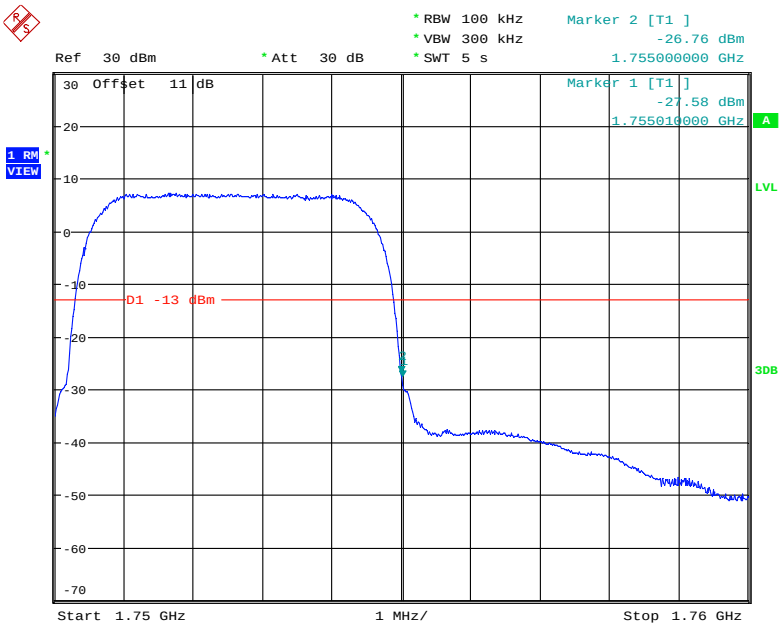
Date: 17.DEC.2022 11:27:20

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



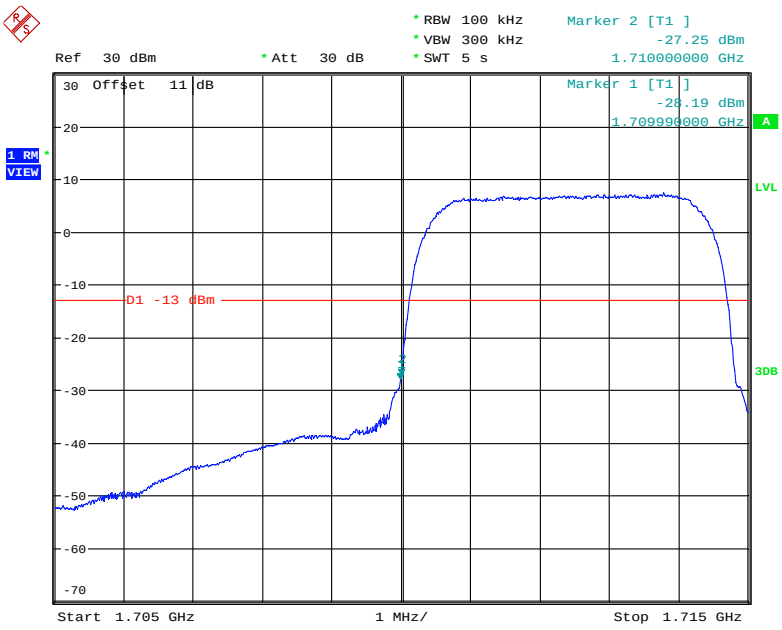
Date: 17.DEC.2022 11:33:37

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



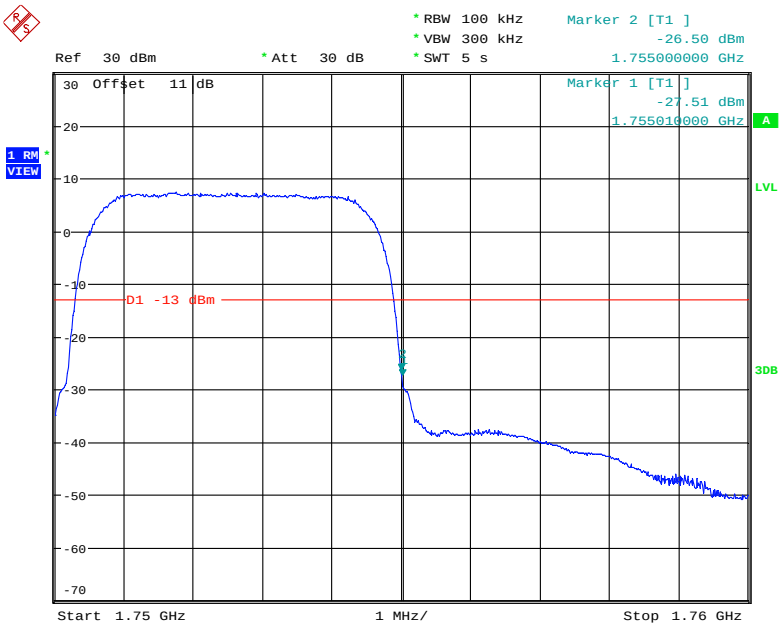
Date: 17.DEC.2022 11:41:53

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



Date: 17.DEC.2022 13:24:06

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



Date: 17.DEC.2022 13:31:35

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

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

Applicable Standard

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

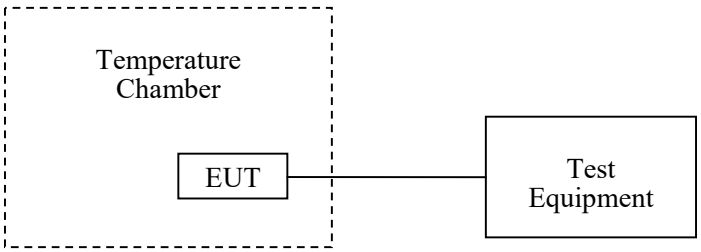
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

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

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

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



Test Data

Environmental Conditions

Temperature:	27.6 ℃
Relative Humidity:	56.7%
ATM Pressure:	101.0 kPa

The testing was performed by Jesse from 2022-12-01 to 2022-12-17.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Cellular Band (Part 22H)

GSM Mode

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

EDGE Mode

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

WCDMA Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	1.38	0.0016	2.5
-20		1.56	0.0019	2.5
-10		1.42	0.0017	2.5
0		1.33	0.0016	2.5
10		1.24	0.0015	2.5
20		0.70	0.0008	2.5
30		1.21	0.0014	2.5
40		1.42	0.0017	2.5
50		1.35	0.0016	2.5
20	L.V.	1.26	0.0015	2.5
	H.V.	1.54	0.0018	2.5

PCS Band (Part 24E)

GSM Mode

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.0787	1909.9235	1850	1910
-20		1850.0806	1909.9196	1850	1910
-10		1850.0745	1909.9202	1850	1910
0		1850.0812	1909.9257	1850	1910
10		1850.0773	1909.9226	1850	1910
20		1850.0754	1909.9209	1850	1910
30		1850.0780	1909.9239	1850	1910
40		1850.0775	1909.9248	1850	1910
50		1850.0747	1909.9267	1850	1910
20	L.V.	1850.0766	1909.9270	1850	1910
	H.V.	1850.0795	1909.9262	1850	1910

EDGE Mode

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.0765	1909.9270	1850	1910
-20		1850.0753	1909.9263	1850	1910
-10		1850.0743	1909.9252	1850	1910
0		1850.0815	1909.9231	1850	1910
10		1850.0768	1909.9234	1850	1910
20		1850.0780	1909.9225	1850	1910
30		1850.0755	1909.9208	1850	1910
40		1850.0805	1909.9279	1850	1910
50		1850.0796	1909.9261	1850	1910
20	L.V.	1850.0805	1909.9237	1850	1910
	H.V.	1850.0796	1909.9214	1850	1910

WCDMA Mode

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.3287	1909.6778	1850	1910
-20		1850.3263	1909.6767	1850	1910
-10		1850.3284	1909.6727	1850	1910
0		1850.3300	1909.6731	1850	1910
10		1850.3257	1909.6744	1850	1910
20		1850.3267	1909.6719	1850	1910
30		1850.3259	1909.6766	1850	1910
40		1850.3242	1909.6715	1850	1910
50		1850.3297	1909.6739	1850	1910
20	L.V.	1850.3232	1909.6742	1850	1910
	H.V.	1850.3246	1909.6783	1850	1910

AWS Band (Part 27)

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1710.0173	1754.9724	1710	1755
-20		1710.0167	1754.9726	1710	1755
-10		1710.0154	1754.9721	1710	1755
0		1710.0155	1754.9733	1710	1755
10		1710.0134	1754.9729	1710	1755
20		1710.0136	1754.9730	1710	1755
30		1710.0135	1754.9721	1710	1755
40		1710.0126	1754.9722	1710	1755
50		1710.0124	1754.9734	1710	1755
20	L.V.	1710.0137	1754.9727	1710	1755
	H.V.	1710.0146	1754.9725	1710	1755

LTE:
QPSK:
Band 2:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1850.5167	1909.4801	1850	1910
-20		1850.5156	1909.4854	1850	1910
-10		1850.5164	1909.4849	1850	1910
0		1850.5179	1909.4806	1850	1910
10		1850.5176	1909.4827	1850	1910
20		1850.5211	1909.4801	1850	1910
30		1850.5157	1909.4848	1850	1910
40		1850.5182	1909.4803	1850	1910
50		1850.5148	1909.4862	1850	1910
20	L.V.	1850.5215	1909.4860	1850	1910
	H.V.	1850.5174	1909.4864	1850	1910

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1710.1165	1754.8737	1710	1755
-20		1710.1154	1754.8734	1710	1755
-10		1710.1156	1754.8735	1710	1755
0		1710.1154	1754.8737	1710	1755
10		1710.1145	1754.8753	1710	1755
20		1710.1143	1754.8757	1710	1755
30		1710.1132	1754.8726	1710	1755
40		1710.1137	1754.8758	1710	1755
50		1710.1124	1754.8743	1710	1755
20	L.V.	1710.1124	1754.8747	1710	1755
	H.V.	1710.1025	1754.8725	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o =836.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	7.85	0.0094	2.5
-20		-7.08	-0.0085	2.5
-10		8.22	0.0098	2.5
0		6.47	0.0077	2.5
10		-5.54	-0.0066	2.5
20		-7.16	-0.0086	2.5
30		5.64	0.0067	2.5
40		-6.03	-0.0072	2.5
50		-9.75	-0.0117	2.5
20	L.V.	-5.35	-0.0064	2.5
	H.V.	-8.62	-0.0103	2.5

Band 7:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2500.1733	2569.8854	2500	2570
-20		2500.1725	2569.8945	2500	2570
-10		2500.1787	2569.8857	2500	2570
0		2500.1783	2569.8731	2500	2570
10		2500.1985	2569.8827	2500	2570
20		2500.1871	2569.8424	2500	2570
30		2500.1753	2569.8332	2500	2570
40		2500.1655	2569.8933	2500	2570
50		2500.1567	2569.8916	2500	2570
20	L.V.	2500.1526	2569.8835	2500	2570
	H.V.	2500.1432	2569.8722	2500	2570

Band 38:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2570.3961	2619.4300	2570	2620
-20		2570.3926	2619.4363	2570	2620
-10		2570.3980	2619.4373	2570	2620
0		2570.3977	2619.4343	2570	2620
10		2570.3934	2619.4324	2570	2620
20		2570.3951	2619.4320	2570	2620
30		2570.3940	2619.4302	2570	2620
40		2570.3905	2619.4358	2570	2620
50		2570.3921	2619.4297	2570	2620
20	L.V.	2570.3964	2619.4354	2570	2620
	H.V.	2570.3913	2619.4318	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2535.1754	2654.8872	2535	2655
-20		2535.1633	2654.8853	2535	2655
-10		2535.1562	2654.8767	2535	2655
0		2535.1427	2654.8656	2535	2655
10		2535.1325	2654.8557	2535	2655
20		2535.1226	2654.8425	2535	2655
30		2535.1158	2654.8357	2535	2655
40		2535.1142	2654.8222	2535	2655
50		2535.1932	2654.8035	2535	2655
20	L.V.	2535.1621	2654.8035	2535	2655
	H.V.	2535.1525	2654.8014	2535	2655

16QAM:

Band 2:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1850.5172	1909.4814	1850	1910
-20		1850.5149	1909.4843	1850	1910
-10		1850.5188	1909.4852	1850	1910
0		1850.5188	1909.4853	1850	1910
10		1850.5172	1909.4824	1850	1910
20		1850.5190	1909.4844	1850	1910
30		1850.5184	1909.4796	1850	1910
40		1850.5166	1909.4802	1850	1910
50		1850.5192	1909.4833	1850	1910
20	L.V.	1850.5189	1909.4802	1850	1910
	H.V.	1850.5192	1909.4855	1850	1910

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1710.2942	1754.7632	1710	1755
-20		1710.2953	1754.7544	1710	1755
-10		1710.2728	1754.7675	1710	1755
0		1710.2657	1754.7472	1710	1755
10		1710.2637	1754.7434	1710	1755
20		1710.2642	1754.7623	1710	1755
30		1710.2515	1754.7625	1710	1755
40		1710.2654	1754.7644	1710	1755
50		1710.2632	1754.7756	1710	1755
20	L.V.	1710.2627	1754.7528	1710	1755
	H.V.	1710.2713	1754.7517	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o =836.5MHz				
Temperature (°C)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	-8.12	-0.0097	2.5
-20		5.57	0.0067	2.5
-10		9.08	0.0109	2.5
0		8.43	0.0101	2.5
10		7.34	0.0088	2.5
20		-8.73	-0.0104	2.5
30		9.58	0.0115	2.5
40		6.33	0.0076	2.5
50		8.32	0.0099	2.5
20	L.V.	-7.83	-0.0094	2.5
	H.V.	9.66	0.0115	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2500.1444	2569.8375	2500	2570
-20		2500.1427	2569.8557	2500	2570
-10		2500.1642	2569.8422	2500	2570
0		2500.1256	2569.8533	2500	2570
10		2500.1325	2569.8257	2500	2570
20		2500.1234	2569.8826	2500	2570
30		2500.1353	2569.8835	2500	2570
40		2500.1325	2569.8424	2500	2570
50		2500.1227	2569.8453	2500	2570
20	L.V.	2500.1222	2569.8341	2500	2570
	H.V.	2500.1147	2569.8235	2500	2570

Band 38:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2570.3949	2619.4345	2570	2620
-20		2570.3968	2619.4275	2570	2620
-10		2570.3934	2619.4280	2570	2620
0		2570.3933	2619.4280	2570	2620
10		2570.3956	2619.4297	2570	2620
20		2570.3959	2619.4332	2570	2620
30		2570.3959	2619.4296	2570	2620
40		2570.3952	2619.4339	2570	2620
50		2570.3975	2619.4276	2570	2620
20	L.V.	2570.3980	2619.4282	2570	2620
	H.V.	2570.3987	2619.4309	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	2535.1469	2654.8625	2535	2655
-20		2535.1431	2654.8581	2535	2655
-10		2535.1322	2654.8487	2535	2655
0		2535.1265	2654.8372	2535	2655
10		2535.1132	2654.8283	2535	2655
20		2535.1144	2654.8144	2535	2655
30		2535.1987	2654.8585	2535	2655
40		2535.1885	2654.8987	2535	2655
50		2535.1827	2654.8884	2535	2655
20	L.V.	2535.1616	2654.8765	2535	2655
	H.V.	2535.1533	2654.8343	2535	2655

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