TESTREPORT

Applicant Name :	KRIPTO MOBILE CORPORATION
Address :	7640 NW 25TH ST STE 101 MIAMI Florida United States 33122
Report Number:	RA230413-19132E-RF-00C
FCC ID:	2APX7K69

Test Standard (s)

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

Sample Description

Product Type:	4G Smart Phone
Model No.:	K69
Multiple Model(s) No.:	N/A
Trade Mark:	KRIP
Date Received:	2023/03/31
Report Date:	2023/05/24

Test Result:	Pass*

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

Prepared and Checked By:

Andy Yu
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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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA230413-19132E-RF-00C	Original Report	2023-05-24

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band 5/LTE Band 5: -3.7dBi PCS 1900/WCDMA Band 2/ LTE Band 2: 0.83dBi LTE Band 4: 0.78dBi LTE Band 7: -3.3dBi LTE Band 12/LTE Band 17: -4.2dBi (provided by the applicant)
Voltage Range	DC 3.87V from battery or DC 5V from adapter
Sample serial number	24LB_1 for Radiated Emissions Test 24LB_4 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Extreme condition*	L.V.: Low Voltage 3.5VDC N.V.: Normal Voltage 3.87VDC H.V.: High Voltage 4.45VDC (provided by the applicant)
Adapter information	Model: C69 Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5.0V, 2.0A

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part24-Subpart E, 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.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF Frequency		$0.082*10^{-7}$
RF output power, conducted		0.71dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	9kHz - 30MHz	2.06dB
	30MHz - 1GHz	5.08dB
	1GHz - 18GHz	4.96dB
	18GHz - 26.5GHz	5.16dB
	26.5GHz - 40GHz	4.64dB
Temperature		1℃
Humidity		6%
Supply voltages		0.4%

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

Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

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
PCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE 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 B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE B17	5	706.5	710	713.5
	10	709	710	711

Equipment Modifications

No modification was made to the EUT.

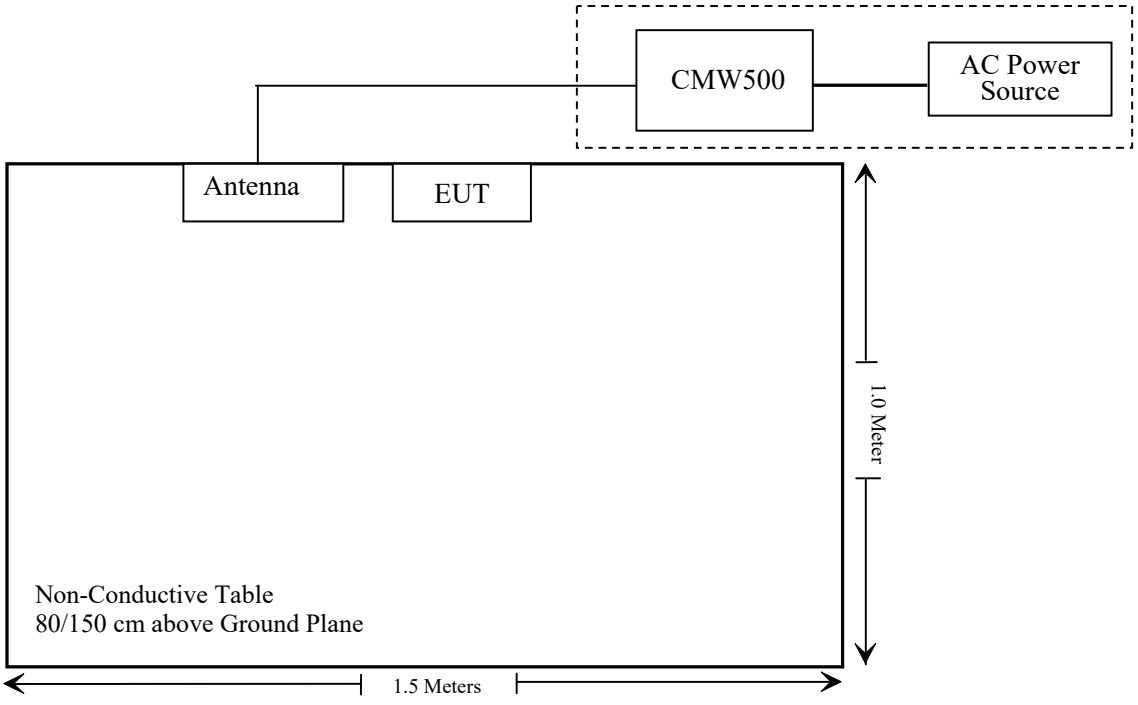
Support Equipment List and Details

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

Support Cable Description

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

Block Diagram of Test Setup



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

SUMMARY OF TEST RESULTS

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

Note: * Please refer to SAR report number: CR230419132-20.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2022/11/25	2023/11/24
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2022/11/25	2023/11/24
SONOMA INSTRUMENT	Amplifier	310 N	186131	2022/11/08	2023/11/07
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2022/11/08	2023/11/07
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2022/11/08	2023/11/07
Unknown	RF Coaxial Cable	No.10	N050	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.11	N1000	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.12	N040	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.13	N300	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.14	N800	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.15	N600	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.16	N650	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF824-862 MS-1147	ATCE-141	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF1850-191 0MS-1148	ATCE-142	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF1710-178 5MS-1150	ATCE-144	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF2495-257 0MS-1152	ATCE-146	2022/11/25	2023/11/24
Unknown	Band Reject Filter	MSF700-800 MS-1153	ATCE-147	2022/11/25	2023/11/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2023/02/14	2026/02/13
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2022/12/26	2025/12/25
Schwarzbeck	Horn Antenna	BBHA9120D	837	2023/02/22	2026/02/21
PASTERNACK	Horn Antenna	PE9852/2F-20	1120 (ATC-BA-024-1)	2023/01/04	2026/01/03
PASTERNACK	Horn Antenna	PE9852/2F-20	1120 (ATC-BA-025-1)	2023/01/04	2026/01/03
Unknown	RF Coaxial Cable	No.16	N200	2022/11/25	2023/11/24
Agilent	Signal Generator	N5183A	MY51040755	2022/11/25	2023/11/24

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
SPECTRUM ANALYZER	Rohde & Schwarz	FSU26	200982	2022/07/04	2023/07/03
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2022/11/25	2023/11/24
WEINSCHEL	10dB Attenuator	5324	AU 3842	2022/11/25	2023/11/24
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2022/11/25	2023/11/24
BACL	Temp. & Humid. Chamber	BTH-150-40	30192	2023/02/09	2024/02/08
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.31	RF-01	Each time	

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

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

Applicable Standard

FCC§1.1307 and §2.1093.

Test Result

Compliant, please refer to the SAR report: CR230419132-20.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

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

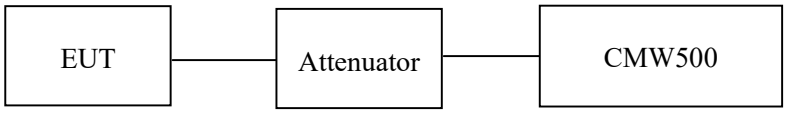
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

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

Test Procedure

Conducted method:

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



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

Test Data

Environmental Conditions

Temperature:	24~27 ℃
Relative Humidity:	52~60 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-05-04 to 2023-05-08.

Conducted Power

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	32.3	26.25	38.45
	190	836.6	32.5	26.45	38.45
	251	848.8	32.6	25.55	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	32.29	31.09	29.19	26.89	26.24	25.04	23.14	20.84	38.45
	190	836.6	32.45	31.05	29.17	26.93	26.40	25.00	23.12	20.88	38.45
	251	848.8	32.51	30.98	29.10	26.85	26.46	24.93	23.05	20.80	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	25.91	24.61	22.10	20.03	19.86	18.56	16.05	13.98	38.45
	190	836.6	25.96	24.78	22.43	20.22	19.91	18.73	16.38	14.17	38.45
	251	848.8	26.61	24.38	21.90	19.79	20.56	18.33	15.85	13.74	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		23.27	23.35	23.75	17.22	17.30	17.70
	HSDPA	1	22.50	22.35	22.79	16.45	16.30	16.74
		2	22.51	22.34	22.74	16.46	16.29	16.69
		3	22.56	22.39	22.71	16.51	16.34	16.66
		4	22.48	22.36	22.76	16.43	16.31	16.71
	HSUPA	1	22.47	22.31	22.77	16.42	16.26	16.72
		2	22.41	22.35	22.74	16.36	16.30	16.69
		3	22.42	22.38	22.76	16.37	16.33	16.71
		4	22.49	22.41	22.69	16.44	16.36	16.64
		5	22.51	22.35	22.65	16.46	16.30	16.60
	HSPA+	1	22.56	22.46	22.54	16.51	16.41	16.49

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For GSM850 / WCDMA Band5: Antenna Gain = -3.7dBi = -5.85dBd (0dBd=2.15dBi)
Cable Loss=0.2dB* (provided by the applicant)
Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	30.4	30.83	33
	661	1880.0	30.2	30.63	33
	810	1909.8	30.2	30.63	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	30.40	28.39	26.74	24.70	30.83	28.82	27.17	25.13	33
	661	1880.0	30.30	28.15	26.58	24.52	30.73	28.58	27.01	24.95	33
	810	1909.8	30.18	27.92	26.30	24.26	30.61	28.35	26.73	24.69	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	26.39	24.63	22.66	20.72	26.82	25.06	23.09	21.15	33
	661	1880.0	26.27	24.68	22.67	20.82	26.70	25.11	23.10	21.25	33
	810	1909.8	26.05	24.47	22.49	20.64	26.48	24.9	22.92	21.07	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		22.93	22.83	22.81	23.36	23.26	23.24
	HSDPA	1	22.08	22.17	21.76	22.51	22.60	22.19
		2	22.07	22.13	21.68	22.50	22.56	22.11
		3	22.12	22.16	21.75	22.55	22.59	22.18
		4	22.16	22.14	21.82	22.59	22.57	22.25
	HSUPA	1	22.21	22.12	21.78	22.64	22.55	22.21
		2	22.27	22.45	21.54	22.70	22.88	21.97
		3	22.34	22.16	21.62	22.77	22.59	22.05
		4	22.17	22.35	21.58	22.60	22.78	22.01
		5	22.34	22.49	21.69	22.77	22.92	22.12
	HSPA+	1	22.38	22.38	22.46	22.81	22.81	22.89

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For PCS1900 / WCDMA Band2: Antenna Gain = 0.83dBi
Cable Loss=0.4dB* (provided by the applicant)
Limit: EIRP≤33dBm

LTE Band 2

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	24.11	23.97	23.92	24.54	24.40	24.35
		RB1#3	24.09	23.99	24.04	24.52	24.42	24.47
		RB1#5	24.07	24.03	24.00	24.50	24.46	24.43
		RB3#0	24.13	24.13	24.10	24.56	24.56	24.53
		RB3#3	24.17	24.14	24.09	24.60	24.57	24.52
		RB6#0	23.05	23.06	23.01	23.48	23.49	23.44
	16QAM	RB1#0	23.77	22.99	22.94	24.20	23.42	23.37
		RB1#3	23.76	23.01	22.89	24.19	23.44	23.32
		RB1#5	23.77	23.04	22.93	24.20	23.47	23.36
		RB3#0	23.22	23.28	23.15	23.65	23.71	23.58
		RB3#3	23.24	23.27	23.14	23.67	23.70	23.57
		RB6#0	22.41	22.17	22.25	22.84	22.60	22.68
3.0	QPSK	RB1#0	24.04	24.03	23.98	24.47	24.46	24.41
		RB1#8	24.03	23.97	24.00	24.46	24.40	24.43
		RB1#14	23.98	24.01	23.95	24.41	24.44	24.38
		RB6#0	23.13	23.03	23.05	23.56	23.46	23.48
		RB6#9	23.08	23.10	22.94	23.51	23.53	23.37
		RB15#0	23.17	23.10	23.01	23.60	23.53	23.44
	16QAM	RB1#0	23.79	22.77	23.38	24.22	23.20	23.81
		RB1#8	23.74	22.77	23.34	24.17	23.20	23.77
		RB1#14	23.65	22.80	23.31	24.08	23.23	23.74
		RB6#0	22.24	22.02	22.30	22.67	22.45	22.73
		RB6#9	22.18	22.04	22.28	22.61	22.47	22.71
		RB15#0	22.23	22.13	22.11	22.66	22.56	22.54

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	24.21	23.99	24.09	24.64	24.42	24.52
		RB1#13	24.17	23.87	23.99	24.60	24.30	24.42
		RB1#24	24.20	23.86	23.96	24.63	24.29	24.39
		RB15#0	23.17	23.00	23.15	23.60	23.43	23.58
		RB15#10	23.03	23.08	23.00	23.46	23.51	23.43
		RB25#0	23.00	23.01	22.99	23.43	23.44	23.42
	16QAM	RB1#0	23.27	23.16	22.55	23.70	23.59	22.98
		RB1#13	23.18	23.14	22.42	23.61	23.57	22.85
		RB1#24	23.22	23.15	22.30	23.65	23.58	22.73
		RB15#0	22.09	22.04	22.19	22.52	22.47	22.62
		RB15#10	22.08	22.11	22.18	22.51	22.54	22.61
		RB25#0	22.11	22.22	22.23	22.54	22.65	22.66
10.0	QPSK	RB1#0	24.14	24.13	24.09	24.57	24.56	24.52
		RB1#25	24.04	23.97	24.04	24.47	24.40	24.47
		RB1#49	24.05	23.99	23.95	24.48	24.42	24.38
		RB25#0	22.95	23.09	23.13	23.38	23.52	23.56
		RB25#25	23.08	23.06	23.08	23.51	23.49	23.51
		RB50#0	23.06	23.09	23.14	23.49	23.52	23.57
	16QAM	RB1#0	23.35	23.13	23.45	23.78	23.56	23.88
		RB1#25	23.24	22.93	23.48	23.67	23.36	23.91
		RB1#49	23.33	22.96	23.47	23.76	23.39	23.90
		RB25#0	22.23	22.31	22.25	22.66	22.74	22.68
		RB25#25	22.20	22.28	22.14	22.63	22.71	22.57
		RB50#0	22.19	22.13	22.20	22.62	22.56	22.63

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	24.10	23.94	23.99	24.53	24.37	24.42
		RB1#38	24.04	23.84	24.04	24.47	24.27	24.47
		RB1#74	24.10	23.80	23.96	24.53	24.23	24.39
		RB36#0	23.02	23.15	23.09	23.45	23.58	23.52
		RB36#39	23.04	22.92	23.00	23.47	23.35	23.43
		RB75#0	22.97	23.06	23.10	23.40	23.49	23.53
	16QAM	RB1#0	23.29	23.20	23.36	23.72	23.63	23.79
		RB1#38	23.33	23.16	23.40	23.76	23.59	23.83
		RB1#74	23.37	23.23	23.42	23.80	23.66	23.85
		RB36#0	22.15	22.18	22.13	22.58	22.61	22.56
		RB36#39	22.21	22.17	22.13	22.64	22.60	22.56
		RB75#0	22.16	22.03	22.17	22.59	22.46	22.60
20.0	QPSK	RB1#0	24.00	24.16	24.07	24.43	24.59	24.50
		RB1#50	23.86	24.10	24.15	24.29	24.53	24.58
		RB1#99	23.98	24.08	24.08	24.41	24.51	24.51
		RB50#0	23.09	23.17	23.16	23.52	23.60	23.59
		RB50#50	23.20	23.06	23.19	23.63	23.49	23.62
		RB100#0	23.11	23.11	23.11	23.54	23.54	23.54
	16QAM	RB1#0	23.37	23.65	23.16	23.80	24.08	23.59
		RB1#50	23.26	23.74	23.21	23.69	24.17	23.64
		RB1#99	23.33	23.68	23.19	23.76	24.11	23.62
		RB50#0	22.21	22.25	22.22	22.64	22.68	22.65
		RB50#50	22.25	22.19	22.31	22.68	22.62	22.74
		RB100#0	22.15	22.22	22.27	22.58	22.65	22.70

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band2: Antenna Gain = 0.83dBi
Cable Loss=0.4dB* (provided by the applicant)
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	23.24	23.33	23.30	23.62	23.71	23.68
		RB1#3	23.18	23.40	23.31	23.56	23.78	23.69
		RB1#5	23.23	23.41	23.38	23.61	23.79	23.76
		RB3#0	23.4	23.51	23.33	23.78	23.89	23.71
		RB3#3	23.41	23.56	23.39	23.79	23.94	23.77
		RB6#0	22.32	22.39	22.42	22.70	22.77	22.80
	16QAM	RB1#0	22.17	22.29	23.33	22.55	22.67	23.71
		RB1#3	22.14	22.45	23.42	22.52	22.83	23.80
		RB1#5	22.21	22.42	23.36	22.59	22.80	23.74
		RB3#0	22.55	22.58	22.65	22.93	22.96	23.03
		RB3#3	22.49	22.54	22.71	22.87	22.92	23.09
		RB6#0	21.65	21.67	21.74	22.03	22.05	22.12
3.0	QPSK	RB1#0	23.33	23.50	23.38	23.71	23.88	23.76
		RB1#8	23.26	23.49	23.44	23.64	23.87	23.82
		RB1#14	23.36	23.50	23.37	23.74	23.88	23.75
		RB6#0	22.31	22.35	22.35	22.69	22.73	22.73
		RB6#9	22.30	22.49	22.49	22.68	22.87	22.87
		RB15#0	22.29	22.52	22.45	22.67	22.90	22.83
	16QAM	RB1#0	23.03	21.99	22.52	23.41	22.37	22.90
		RB1#8	23.09	22.05	22.51	23.47	22.43	22.89
		RB1#14	23.13	22.09	22.60	23.51	22.47	22.98
		RB6#0	21.47	21.48	21.58	21.85	21.86	21.96
		RB6#9	21.54	21.56	21.58	21.92	21.94	21.96
		RB15#0	21.43	21.59	21.61	21.81	21.97	21.99

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	23.38	23.29	23.31	23.76	23.67	23.69
		RB1#13	23.39	23.29	23.30	23.77	23.67	23.68
		RB1#24	23.36	23.30	23.30	23.74	23.68	23.68
		RB15#0	22.31	22.38	22.39	22.69	22.76	22.77
		RB15#10	22.27	22.56	22.50	22.65	22.94	22.88
		RB25#0	22.36	22.52	22.39	22.74	22.90	22.77
	16QAM	RB1#0	22.52	22.59	21.70	22.90	22.97	22.08
		RB1#13	22.54	22.61	21.70	22.92	22.99	22.08
		RB1#24	22.56	22.62	21.74	22.94	23.00	22.12
		RB15#0	21.40	21.46	21.61	21.78	21.84	21.99
		RB15#10	21.43	21.54	21.59	21.81	21.92	21.97
		RB25#0	21.53	21.66	21.64	21.91	22.04	22.02
10.0	QPSK	RB1#0	23.42	23.37	23.36	23.80	23.75	23.74
		RB1#25	23.37	23.48	23.34	23.75	23.86	23.72
		RB1#49	23.43	23.52	23.33	23.81	23.90	23.71
		RB25#0	22.31	22.47	22.45	22.69	22.85	22.83
		RB25#25	22.34	22.43	22.47	22.72	22.81	22.85
		RB50#0	22.31	22.57	22.52	22.69	22.95	22.90
	16QAM	RB1#0	22.55	22.39	22.72	22.93	22.77	23.10
		RB1#25	22.55	22.44	22.81	22.93	22.82	23.19
		RB1#49	22.51	22.48	22.81	22.89	22.86	23.19
		RB25#0	21.54	21.69	21.57	21.92	22.07	21.95
		RB25#25	21.60	21.70	21.53	21.98	22.08	21.91
		RB50#0	21.58	21.64	21.6	21.96	22.02	21.98

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	23.43	23.17	23.40	23.81	23.55	23.78
		RB1#38	23.43	23.29	23.37	23.81	23.67	23.75
		RB1#74	23.41	23.27	23.37	23.79	23.65	23.75
		RB36#0	22.32	22.36	22.47	22.70	22.74	22.85
		RB36#39	22.39	22.55	22.42	22.77	22.93	22.80
		RB75#0	22.34	22.46	22.43	22.72	22.84	22.81
	16QAM	RB1#0	22.54	22.53	22.70	22.92	22.91	23.08
		RB1#38	22.49	22.59	22.80	22.87	22.97	23.18
		RB1#74	22.55	22.58	22.75	22.93	22.96	23.13
		RB36#0	21.61	21.48	21.57	21.99	21.86	21.95
		RB36#39	21.63	21.56	21.63	22.01	21.94	22.01
		RB75#0	21.52	21.56	21.57	21.90	21.94	21.95
20.0	QPSK	RB1#0	23.29	23.34	23.68	23.67	23.72	24.06
		RB1#50	23.31	23.43	23.73	23.69	23.81	24.11
		RB1#99	23.28	23.46	23.67	23.66	23.84	24.05
		RB50#0	22.42	22.37	22.45	22.80	22.75	22.83
		RB50#50	22.39	22.54	22.49	22.77	22.92	22.87
		RB100#0	22.31	22.47	22.42	22.69	22.85	22.80
	16QAM	RB1#0	22.72	23.13	22.32	23.10	23.51	22.70
		RB1#50	22.69	23.06	22.28	23.07	23.44	22.66
		RB1#99	22.65	23.17	22.25	23.03	23.55	22.63
		RB50#0	21.56	21.50	21.61	21.94	21.88	21.99
		RB50#50	21.57	21.60	21.59	21.95	21.98	21.97
		RB100#0	21.51	21.65	21.55	21.89	22.03	21.93

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band4: Antenna Gain = 0.78dBi
Cable Loss=0.4dB* (provided by the applicant)
Limit: EIRP≤30dBm

LTE Band 5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	24.11	24.23	24.18	18.06	18.18	18.13
		RB1#3	24.18	24.16	24.22	18.13	18.11	18.17
		RB1#5	24.20	24.15	24.27	18.15	18.10	18.22
		RB3#0	24.26	24.23	24.22	18.21	18.18	18.17
		RB3#3	24.25	24.20	24.17	18.20	18.15	18.12
		RB6#0	23.18	23.27	23.16	17.13	17.22	17.11
	16QAM	RB1#0	22.94	22.93	23.48	16.89	16.88	17.43
		RB1#3	22.99	22.97	23.51	16.94	16.92	17.46
		RB1#5	23.00	22.98	23.51	16.95	16.93	17.46
		RB3#0	23.21	23.36	23.18	17.16	17.31	17.13
		RB3#3	23.17	23.29	23.24	17.12	17.24	17.19
		RB6#0	22.35	22.45	22.26	16.30	16.40	16.21
3.0	QPSK	RB1#0	24.06	24.25	24.15	18.01	18.20	18.10
		RB1#8	24.13	24.14	24.14	18.08	18.09	18.09
		RB1#14	24.19	24.18	24.21	18.14	18.13	18.16
		RB6#0	23.19	23.20	23.18	17.14	17.15	17.13
		RB6#9	23.35	23.22	23.12	17.30	17.17	17.07
		RB15#0	23.16	23.31	23.24	17.11	17.26	17.19
	16QAM	RB1#0	23.70	22.73	23.49	17.65	16.68	17.44
		RB1#8	23.79	22.70	23.51	17.74	16.65	17.46
		RB1#14	23.82	22.70	23.35	17.77	16.65	17.30
		RB6#0	22.22	22.17	22.16	16.17	16.12	16.11
		RB6#9	22.32	22.34	22.04	16.27	16.29	15.99
		RB15#0	22.20	22.41	22.24	16.15	16.36	16.19

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	24.22	24.16	24.22	18.17	18.11	18.17
		RB1#13	24.33	24.01	24.05	18.28	17.96	18.00
		RB1#24	24.24	24.23	24.11	18.19	18.18	18.06
		RB15#0	23.13	23.23	23.32	17.08	17.18	17.27
		RB15#10	23.21	23.23	23.24	17.16	17.18	17.19
		RB25#0	23.15	23.25	23.16	17.10	17.20	17.11
	16QAM	RB1#0	23.22	23.24	22.49	17.17	17.19	16.44
		RB1#13	23.29	23.29	22.4	17.24	17.24	16.35
		RB1#24	23.27	23.42	22.37	17.22	17.37	16.32
		RB15#0	22.17	22.12	22.3	16.12	16.07	16.25
		RB15#10	22.10	22.27	22.32	16.05	16.22	16.27
		RB25#0	22.19	22.42	22.28	16.14	16.37	16.23
10.0	QPSK	RB1#0	24.18	24.10	24.31	18.13	18.05	18.26
		RB1#25	24.24	24.18	24.20	18.19	18.13	18.15
		RB1#49	24.23	24.15	24.17	18.18	18.10	18.12
		RB25#0	23.33	23.29	23.32	17.28	17.24	17.27
		RB25#25	23.29	23.36	23.16	17.24	17.31	17.11
		RB50#0	23.19	23.28	23.28	17.14	17.23	17.23
	16QAM	RB1#0	23.33	22.98	23.74	17.28	16.93	17.69
		RB1#25	23.27	23.08	23.65	17.22	17.03	17.60
		RB1#49	23.37	23.04	23.55	17.32	16.99	17.50
		RB25#0	22.34	22.37	22.33	16.29	16.32	16.28
		RB25#25	22.33	22.59	22.22	16.28	16.54	16.17
		RB50#0	22.30	22.45	22.39	16.25	16.40	16.34

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
For LTE Band5: Antenna Gain = -3.7dBi = -5.85dBd (0dBd=2.15dBi)
Cable Loss=0.2dB* (provided by the applicant)
Limit: ERP≤38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	22.25	22.31	22.33	18.55	18.61	18.63
		RB1#13	22.19	22.33	22.36	18.49	18.63	18.66
		RB1#24	22.28	22.35	22.33	18.58	18.65	18.63
		RB15#0	21.46	21.34	21.36	17.76	17.64	17.66
		RB15#10	21.29	21.37	21.33	17.59	17.67	17.63
		RB25#0	21.23	21.36	21.31	17.53	17.66	17.61
	16QAM	RB1#0	20.60	21.40	20.97	16.90	17.70	17.27
		RB1#13	20.49	21.36	20.99	16.79	17.66	17.29
		RB1#24	20.54	21.41	21.02	16.84	17.71	17.32
		RB15#0	20.44	20.36	20.62	16.74	16.66	16.92
		RB15#10	20.38	20.31	20.48	16.68	16.61	16.78
		RB25#0	20.41	20.44	20.37	16.71	16.74	16.67
10	QPSK	RB1#0	22.20	22.29	22.24	18.50	18.59	18.54
		RB1#25	22.22	22.32	22.23	18.52	18.62	18.53
		RB1#49	22.32	22.29	22.26	18.62	18.59	18.56
		RB25#0	21.29	21.36	21.30	17.59	17.66	17.60
		RB25#25	21.30	21.25	21.31	17.60	17.55	17.61
		RB50#0	21.23	21.35	21.31	17.53	17.65	17.61
	16QAM	RB1#0	22.06	20.79	21.54	18.36	17.09	17.84
		RB1#25	22.04	20.84	21.56	18.34	17.14	17.86
		RB1#49	22.08	20.84	21.55	18.38	17.14	17.85
		RB25#0	20.40	20.57	20.48	16.70	16.87	16.78
		RB25#25	20.45	20.53	20.48	16.75	16.83	16.78
		RB50#0	20.41	20.44	20.46	16.71	16.74	16.76

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	22.26	22.33	22.20	18.56	18.63	18.50
		RB1#38	22.22	22.30	22.21	18.52	18.60	18.51
		RB1#74	22.21	22.32	22.27	18.51	18.62	18.57
		RB36#0	21.35	21.34	21.28	17.65	17.64	17.58
		RB36#39	21.34	21.39	21.43	17.64	17.69	17.73
		RB75#0	21.31	21.25	21.31	17.61	17.55	17.61
	16QAM	RB1#0	22.18	21.80	21.53	18.48	18.10	17.83
		RB1#38	22.16	21.72	21.58	18.46	18.02	17.88
		RB1#74	22.13	21.79	21.54	18.43	18.09	17.84
		RB36#0	20.38	20.43	20.62	16.68	16.73	16.92
		RB36#39	20.47	20.47	20.64	16.77	16.77	16.94
		RB75#0	20.42	20.49	20.56	16.72	16.79	16.86
20	QPSK	RB1#0	22.27	22.21	22.32	18.57	18.51	18.62
		RB1#50	22.21	22.27	22.38	18.51	18.57	18.68
		RB1#99	22.30	22.35	22.38	18.60	18.65	18.68
		RB50#0	21.28	21.36	21.32	17.58	17.66	17.62
		RB50#50	21.29	21.38	21.44	17.59	17.68	17.74
		RB100#0	21.25	21.35	21.29	17.55	17.65	17.59
	16QAM	RB1#0	21.81	22.16	21.34	18.11	18.46	17.64
		RB1#50	21.80	22.20	21.22	18.10	18.50	17.52
		RB1#99	21.83	22.21	21.34	18.13	18.51	17.64
		RB50#0	20.55	20.53	20.56	16.85	16.83	16.86
		RB50#50	20.57	20.54	20.55	16.87	16.84	16.85
		RB100#0	20.39	20.52	20.51	16.69	16.82	16.81

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)
For Band7: Antenna Gain = -3.3dBi
Cable Loss=0.4dB* (provided by the applicant)
Limit: EIRP≤33dBm

LTE Band 12

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	24.81	24.57	24.60	18.26	18.02	18.05
		RB1#3	24.75	24.66	24.64	18.20	18.11	18.09
		RB1#5	24.79	24.65	24.40	18.24	18.10	17.85
		RB3#0	24.75	24.72	24.62	18.20	18.17	18.07
		RB3#3	24.76	24.64	24.49	18.21	18.09	17.94
		RB6#0	23.78	23.53	23.54	17.23	16.98	16.99
	16QAM	RB1#0	23.48	23.34	23.86	16.93	16.79	17.31
		RB1#3	23.47	23.44	23.87	16.92	16.89	17.32
		RB1#5	23.52	23.39	23.81	16.97	16.84	17.26
		RB3#0	23.81	23.62	23.59	17.26	17.07	17.04
		RB3#3	23.78	23.58	23.61	17.23	17.03	17.06
		RB6#0	22.90	22.69	22.60	16.35	16.14	16.05
3.0	QPSK	RB1#0	24.60	24.59	24.53	18.05	18.04	17.98
		RB1#8	24.56	24.60	24.43	18.01	18.05	17.88
		RB1#14	24.58	24.62	23.10	18.03	18.07	16.55
		RB6#0	23.79	23.57	23.65	17.24	17.02	17.10
		RB6#9	23.66	23.44	23.53	17.11	16.89	16.98
		RB15#0	23.69	23.57	23.54	17.14	17.02	16.99
	16QAM	RB1#0	23.95	22.93	23.90	17.40	16.38	17.35
		RB1#8	23.84	23.03	23.86	17.29	16.48	17.31
		RB1#14	23.77	23.01	23.79	17.22	16.46	17.24
		RB6#0	22.72	22.93	22.60	16.17	16.38	16.05
		RB6#9	22.62	22.56	22.49	16.07	16.01	15.94
		RB15#0	22.64	22.57	22.41	16.09	16.02	15.86

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	24.85	24.42	24.57	18.30	17.87	18.02
		RB1#13	24.78	24.62	24.47	18.23	18.07	17.92
		RB1#24	24.85	24.57	24.57	18.30	18.02	18.02
		RB15#0	23.82	23.64	23.55	17.27	17.09	17.00
		RB15#10	23.56	23.48	23.60	17.01	16.93	17.05
		RB25#0	23.68	23.67	23.55	17.13	17.12	17.00
	16QAM	RB1#0	23.82	23.50	23.52	17.27	16.95	16.97
		RB1#13	23.68	23.47	23.51	17.13	16.92	16.96
		RB1#24	23.59	23.49	23.6	17.04	16.94	17.05
		RB15#0	22.68	22.81	22.47	16.13	16.26	15.92
		RB15#10	22.47	22.41	22.44	15.92	15.86	15.89
		RB25#0	22.54	22.45	22.49	15.99	15.90	15.94
10.0	QPSK	RB1#0	24.75	24.67	24.56	18.20	18.12	18.01
		RB1#25	24.66	24.66	24.58	18.11	18.11	18.03
		RB1#49	24.64	24.68	24.18	18.09	18.13	17.63
		RB25#0	23.58	23.62	23.61	17.03	17.07	17.06
		RB25#25	23.62	23.66	23.71	17.07	17.11	17.16
		RB50#0	23.65	23.72	23.67	17.10	17.17	17.12
	16QAM	RB1#0	23.85	23.14	23.82	17.30	16.59	17.27
		RB1#25	24.13	23.13	23.71	17.58	16.58	17.16
		RB1#49	24.21	23.10	23.76	17.66	16.55	17.21
		RB25#0	22.65	23.08	22.60	16.10	16.53	16.05
		RB25#25	22.96	22.74	22.54	16.41	16.19	15.99
		RB50#0	22.52	22.56	22.60	15.97	16.01	16.05

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)
For Band12: Antenna Gain = -4.2dBi = -6.35dBd (0dBd=2.15dBi)
Cable Loss=0.2dB* (provided by the applicant)
Limit: ERP≤34.77dBm

LTE Band 17

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	24.80	24.51	24.56	18.25	17.96	18.01
		RB1#13	24.71	24.52	24.49	18.16	17.97	17.94
		RB1#24	24.68	24.44	24.13	18.13	17.89	17.58
		RB15#0	23.70	23.68	23.58	17.15	17.13	17.03
		RB15#10	23.67	23.61	23.58	17.12	17.06	17.03
		RB25#0	23.60	23.70	23.52	17.05	17.15	16.97
	16QAM	RB1#0	23.52	23.65	22.85	16.97	17.10	16.30
		RB1#13	23.51	23.60	22.83	16.96	17.05	16.28
		RB1#24	23.52	23.60	23.04	16.97	17.05	16.49
		RB15#0	22.82	22.55	22.56	16.27	16.00	16.01
		RB15#10	22.50	22.54	22.65	15.95	15.99	16.10
		RB25#0	22.80	22.69	22.68	16.25	16.14	16.13
10.0	QPSK	RB1#0	24.68	24.68	24.64	18.13	18.13	18.09
		RB1#25	24.56	24.67	24.61	18.01	18.12	18.06
		RB1#49	24.54	24.60	24.16	17.99	18.05	17.61
		RB25#0	23.65	23.71	23.66	17.10	17.16	17.11
		RB25#25	23.54	23.56	23.71	16.99	17.01	17.16
		RB50#0	23.54	23.68	23.65	16.99	17.13	17.10
	16QAM	RB1#0	24.08	23.46	23.82	17.53	16.91	17.27
		RB1#25	24.18	23.49	23.74	17.63	16.94	17.19
		RB1#49	24.15	23.42	23.79	17.60	16.87	17.24
		RB25#0	23.00	22.80	22.60	16.45	16.25	16.05
		RB25#25	22.60	22.76	22.58	16.05	16.21	16.03
		RB50#0	22.55	22.64	22.63	16.00	16.09	16.08

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)
For Band17: Antenna Gain = -4.2dBi = -6.35dBd (0dBd=2.15dBi)
Cable Loss=0.2dB* (provided by the applicant)
Limit: ERP≤34.77dBm

Peak-to-average ratio (PAR)

Cellular Band 850

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	8.17	13
	Middle	9.04	13
	High	9.23	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	12.79	13
	Middle	12.50	13
	High	11.73	13

WCDMA Band 5

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.85	13
	Middle	2.95	13
	High	3.01	13
HSDPA (16QAM)	Low	3.72	13
	Middle	3.88	13
	High	3.91	13
HSUPA (BPSK)	Low	3.65	13
	Middle	3.81	13
	High	4.26	13
HSPA+	Low	3.45	13
	Middle	3.26	13
	High	3.58	13

PCS Band 1900

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	10.58	13
	Middle	8.88	13
	High	9.90	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	12.15	13
	Middle	12.24	13
	High	12.47	13

WCDMA Band 2

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.98	13
	Middle	3.04	13
	High	3.01	13
HSDPA (16QAM)	Low	3.97	13
	Middle	3.88	13
	High	3.91	13
HSUPA (BPSK)	Low	3.72	13
	Middle	3.97	13
	High	3.88	13
HSPA+	Low	3.47	13
	Middle	3.58	13
	High	3.29	13

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

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.45	3.69	4.58	13	Pass
QPSK (100RB Size)	3.15	4.15	4.16	13	Pass
16QAM (1RB Size)	3.26	4.58	4.21	13	Pass
16QAM (100RB Size)	3.68	3.69	5.10	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	7.84	8.16	8.12	13	Pass
QPSK (100RB Size)	7.59	7.68	8.35	13	Pass
16QAM (1RB Size)	7.69	7.25	8.69	13	Pass
16QAM (100RB Size)	7.15	7.64	7.15	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	2.69	3.46	3.24	13	Pass
QPSK (50RB Size)	5.03	5.10	5.13	13	Pass
16QAM (1RB Size)	3.85	4.52	3.72	13	Pass
16QAM (50RB Size)	5.74	5.93	6.03	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	7.36	7.95	8.69	13	Pass
QPSK (100RB Size)	7.15	7.69	8.61	13	Pass
16QAM (1RB Size)	7.36	7.36	7.21	13	Pass
16QAM (100RB Size)	7.45	8.16	7.45	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	2.88	2.92	2.88	13	Pass
QPSK (50RB Size)	4.90	5.10	5.00	13	Pass
16QAM (1RB Size)	3.85	4.13	3.53	13	Pass
16QAM (50RB Size)	5.87	5.96	5.90	13	Pass

LTE Band 17 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	2.79	3.01	2.95	13	Pass
QPSK (50RB Size)	5.06	5.13	5.00	13	Pass
16QAM (1RB Size)	3.91	3.97	3.65	13	Pass
16QAM (50RB Size)	5.99	5.96	5.93	13	Pass

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

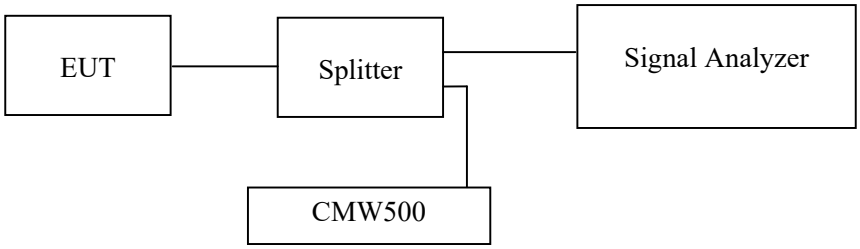
Applicable Standard

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

Test Procedure

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

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



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

Test Data

Environmental Conditions

Temperature:	24~27 ℃
Relative Humidity:	52~60 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-05-05 to 2023-05-23.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	242.00	313.00
	190	836.6	243.00	316.00
	251	848.8	243.00	319.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	128	824.2	249.00	324.00
	190	836.6	253.00	333.00
	251	848.8	252.00	322.00

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.140	4.695
	836.6	4.140	4.695
	846.6	4.155	4.710
HSDPA	826.4	4.155	4.710
	836.6	4.155	4.695
	846.6	4.155	4.710
HSUPA	826.4	4.155	4.695
	836.6	4.140	4.695
	846.6	4.155	4.710

PCS Band (Part 24E)

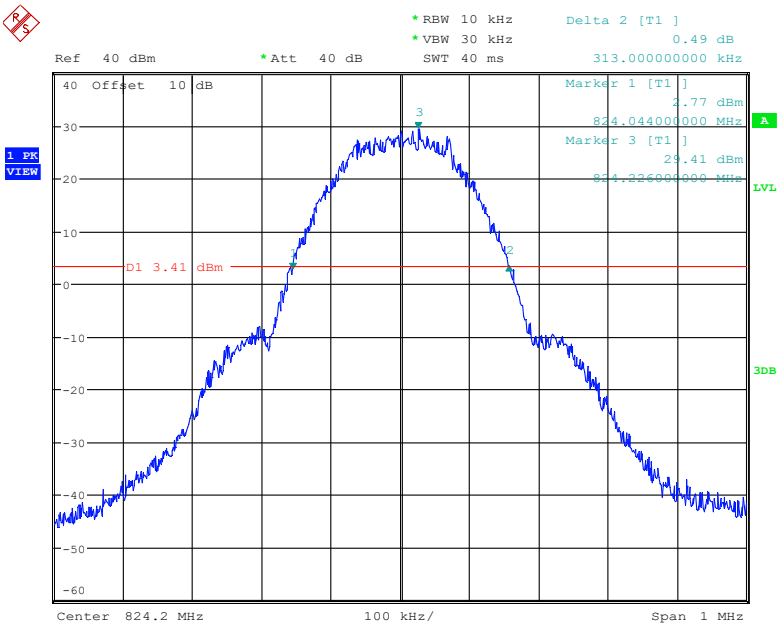
Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	245.00	316.00
	661	1880.0	243.00	312.00
	810	1909.8	243.00	316.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	512	1850.2	247.00	315.00
	661	1880.0	246.00	318.00
	810	1909.8	246.00	309.00

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.155	4.695
	1880.0	4.155	4.710
	1907.6	4.155	4.695
HSDPA	1852.4	4.155	4.695
	1880.0	4.155	4.710
	1907.6	4.170	4.695
HSUPA	1852.4	4.155	4.710
	1880.0	4.155	4.695
	1907.6	4.155	4.710

Cellular Band (Part 22H)

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



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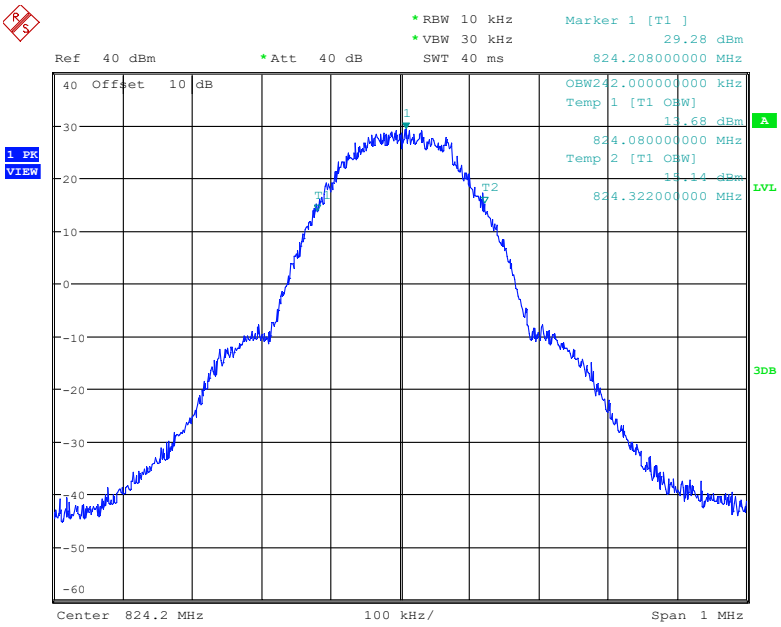

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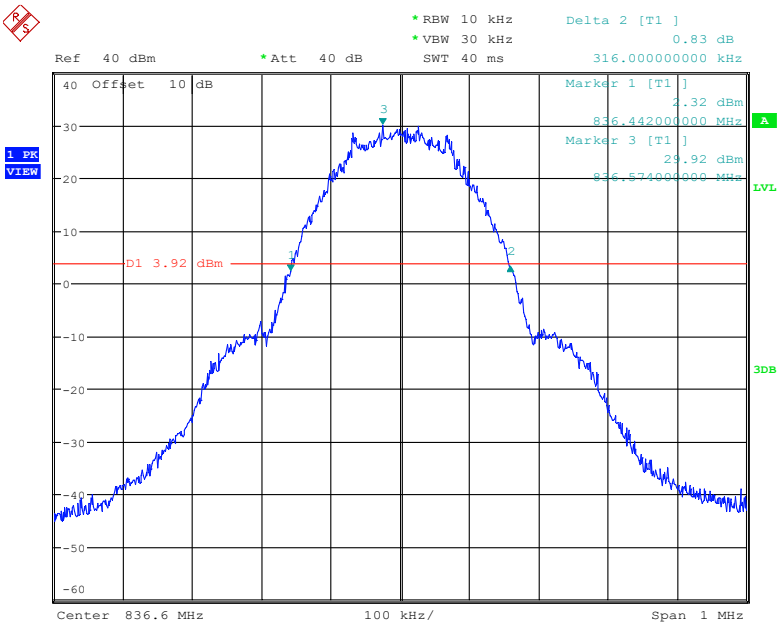
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



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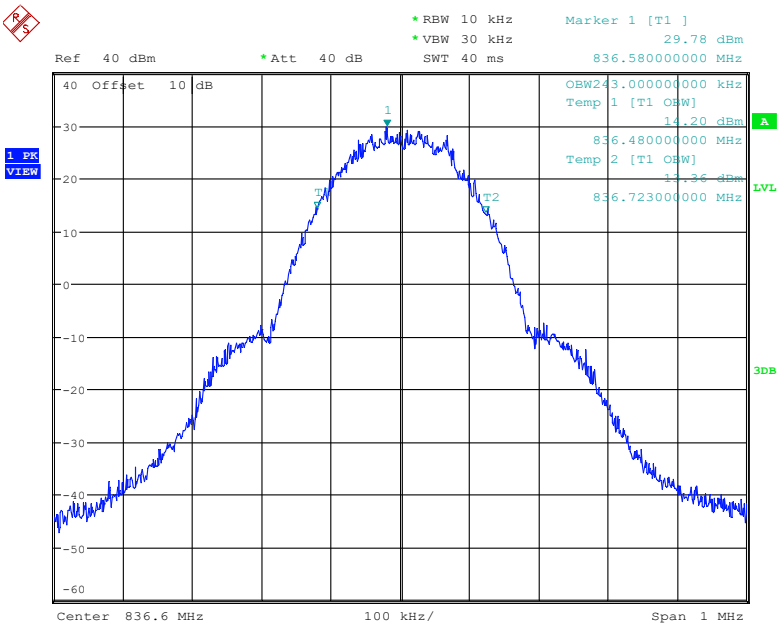

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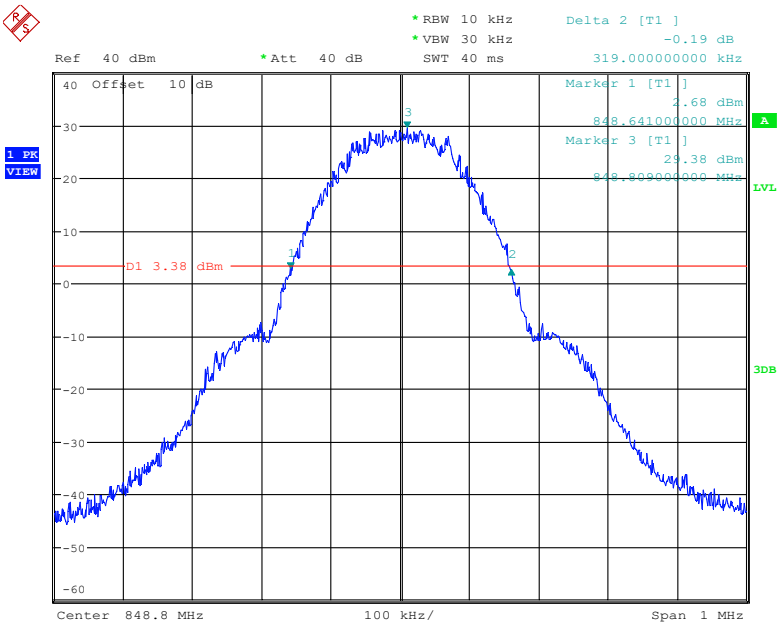
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



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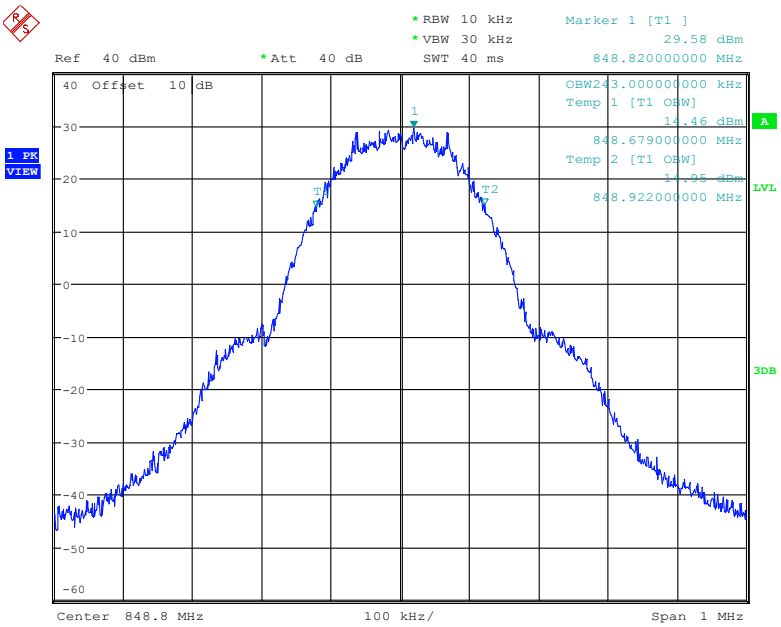

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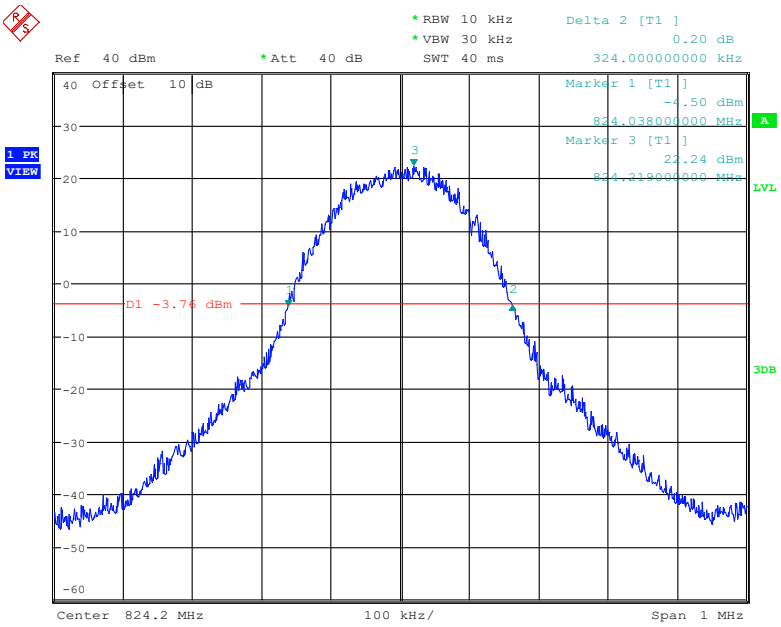
26 dB Emissions &99% Occupied Bandwidth for EGPRS (8PSK) Mode, Low channel



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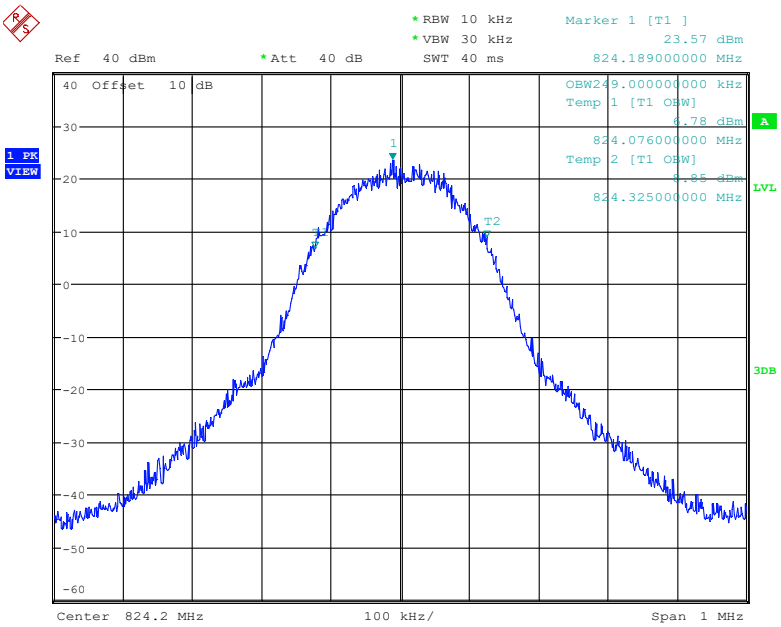

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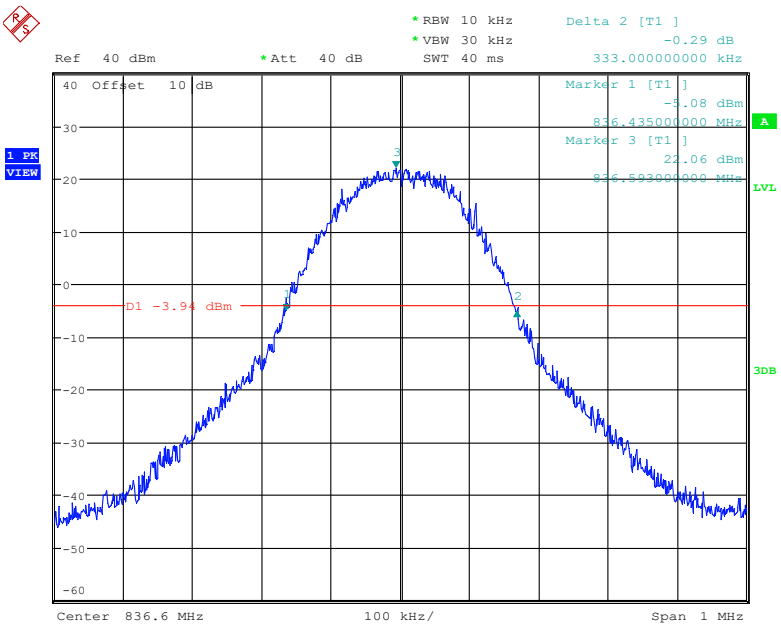
26 dB Emissions &99% Occupied Bandwidth for EGPRS (8PSK) Mode, Middle channel



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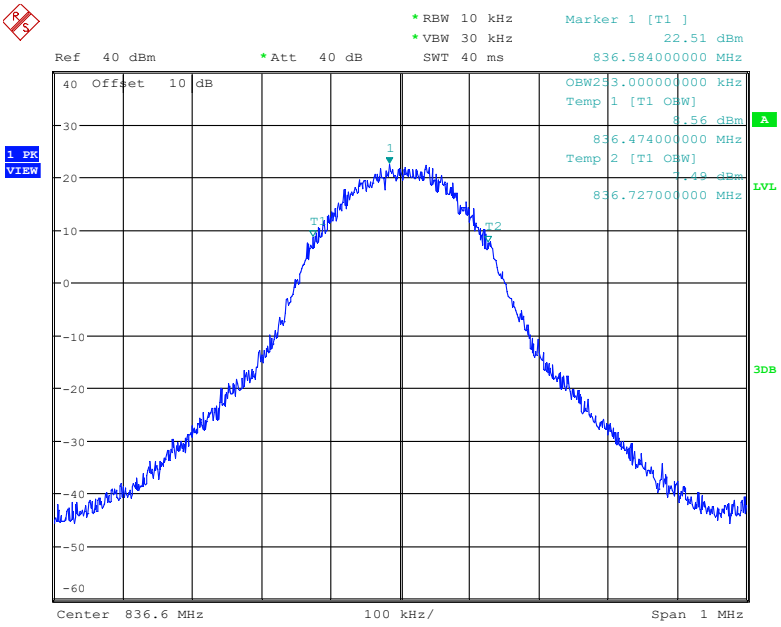

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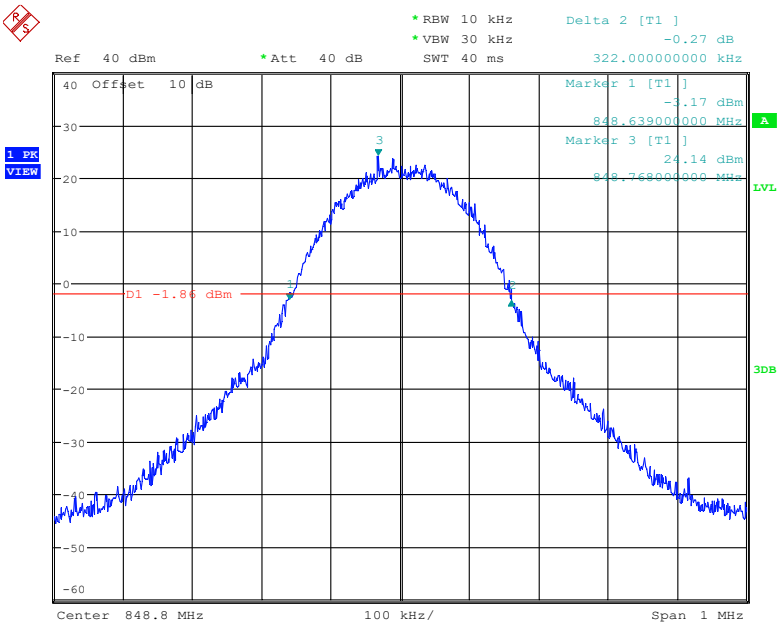
26 dB Emissions &99% Occupied Bandwidth for EGPRS (8PSK) Mode, High channel



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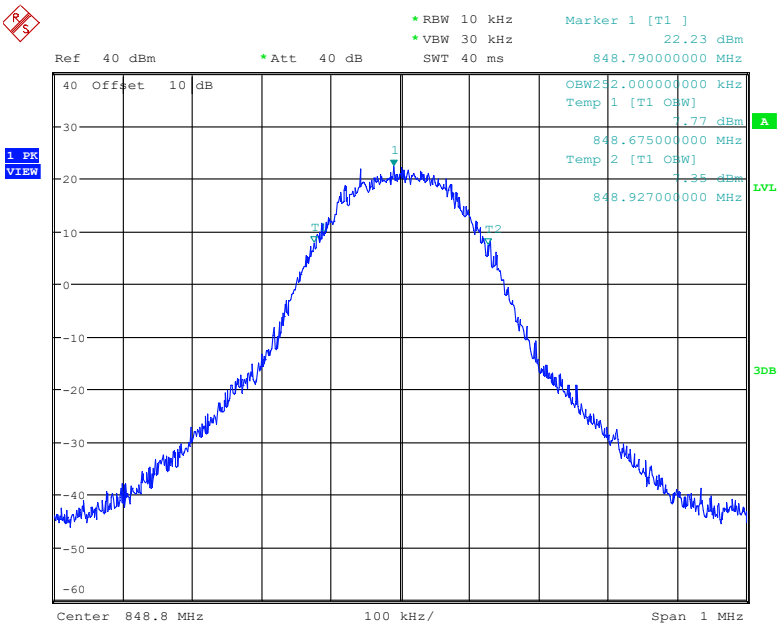

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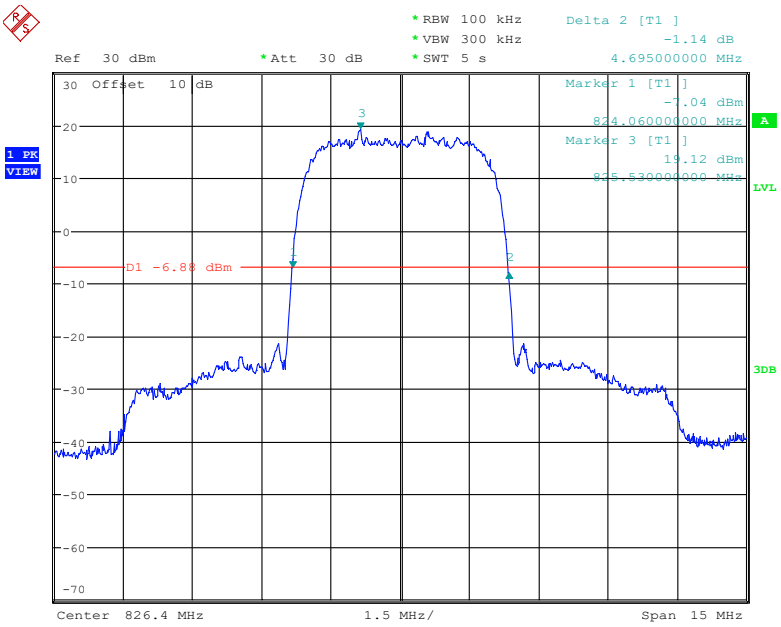
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



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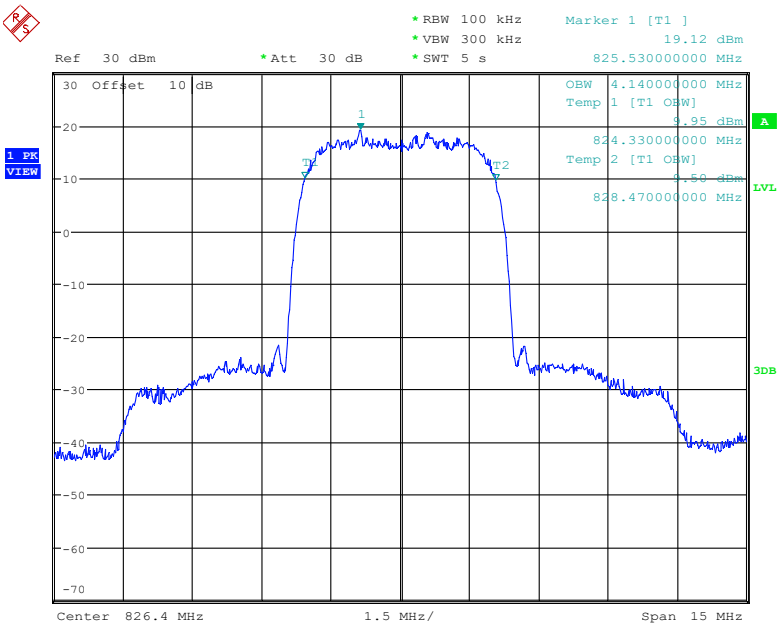

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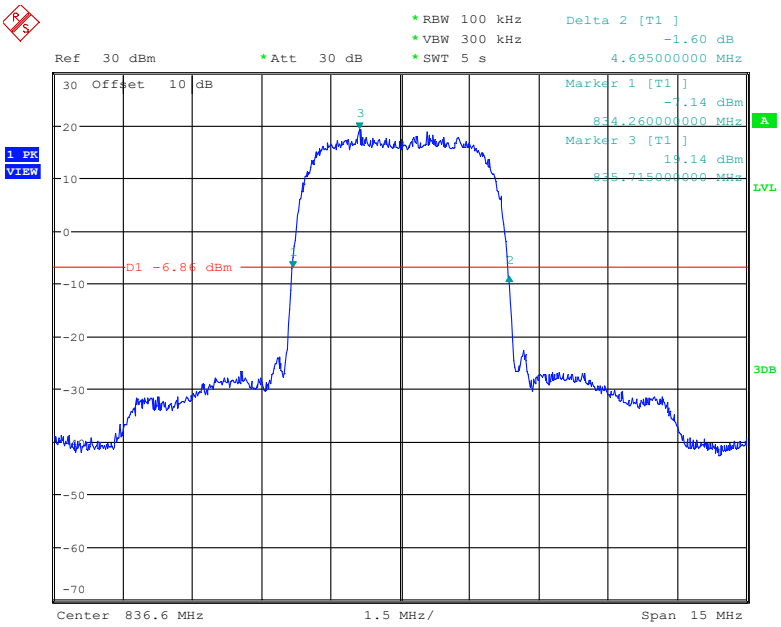
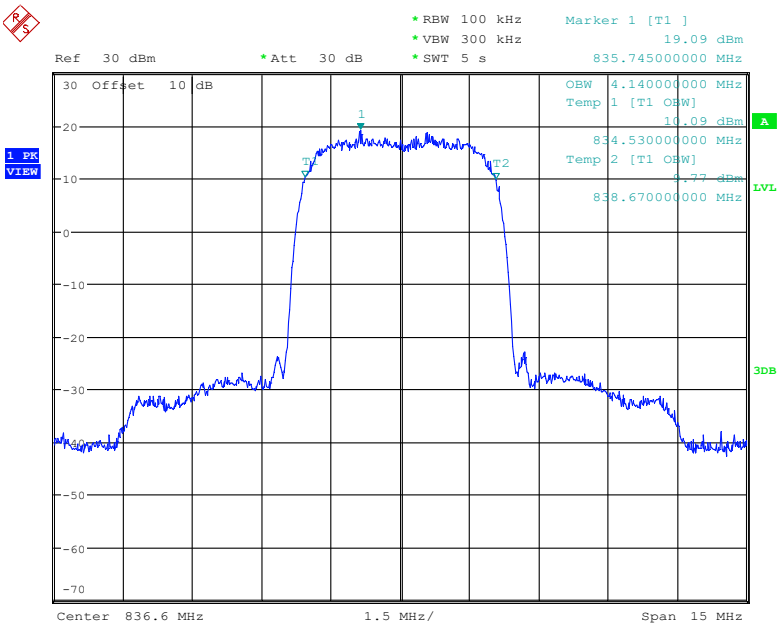
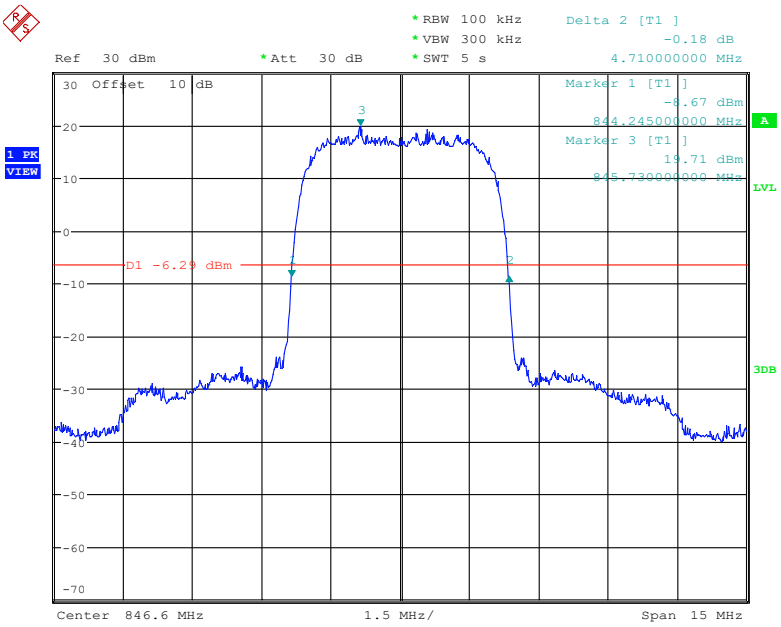
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel





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



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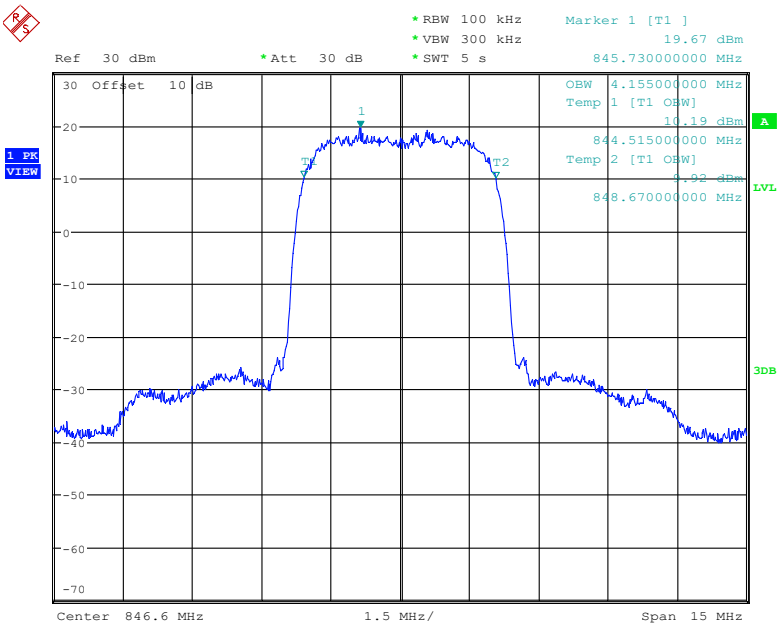

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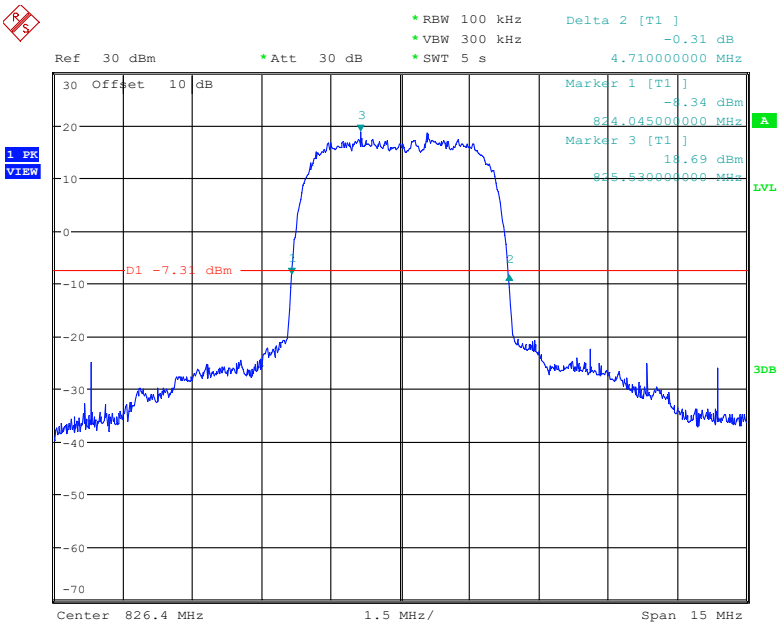
26 dB Emissions &99% Occupied Bandwidth for HSDPA (QPSK) Mode, Low channel



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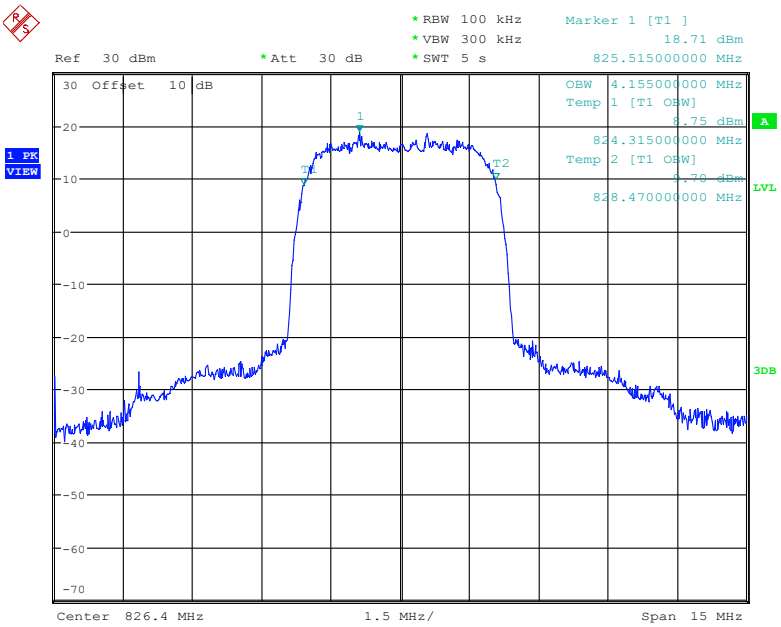

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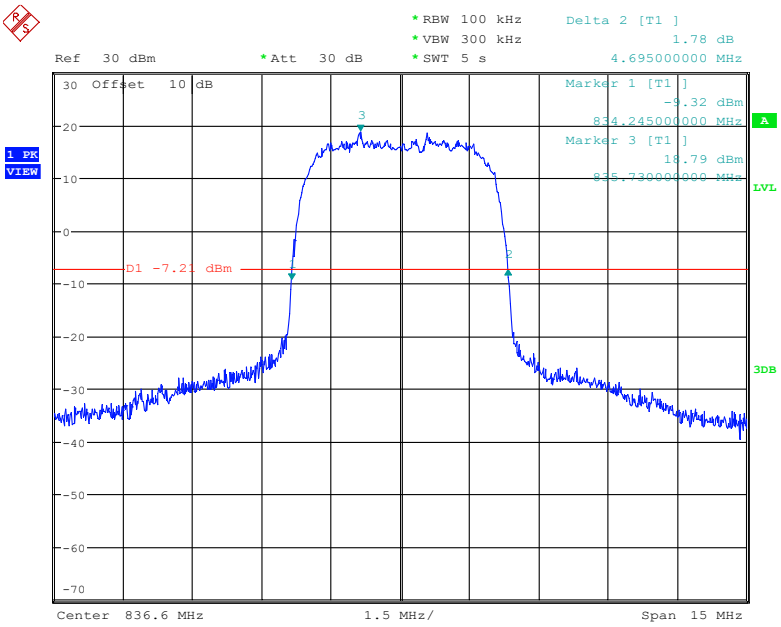
26 dB Emissions &99% Occupied Bandwidth for HSDPA (QPSK) Mode, Middle channel



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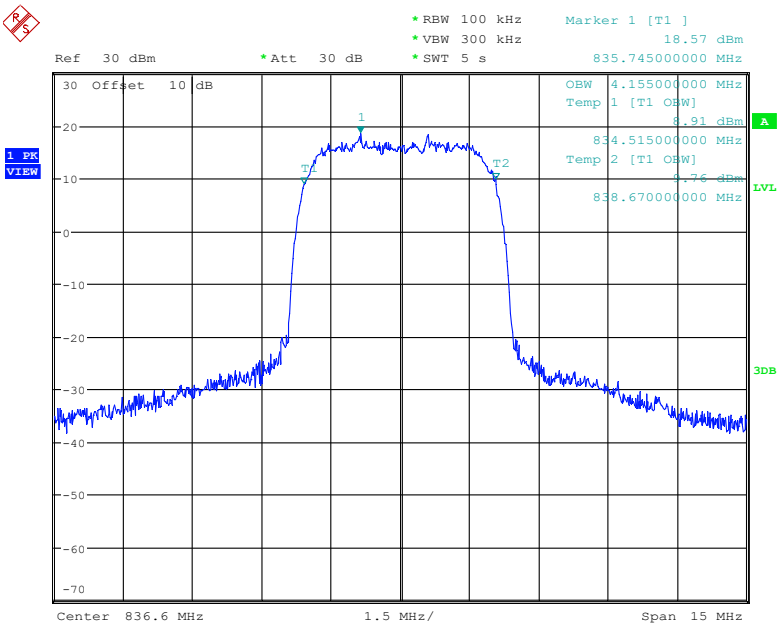

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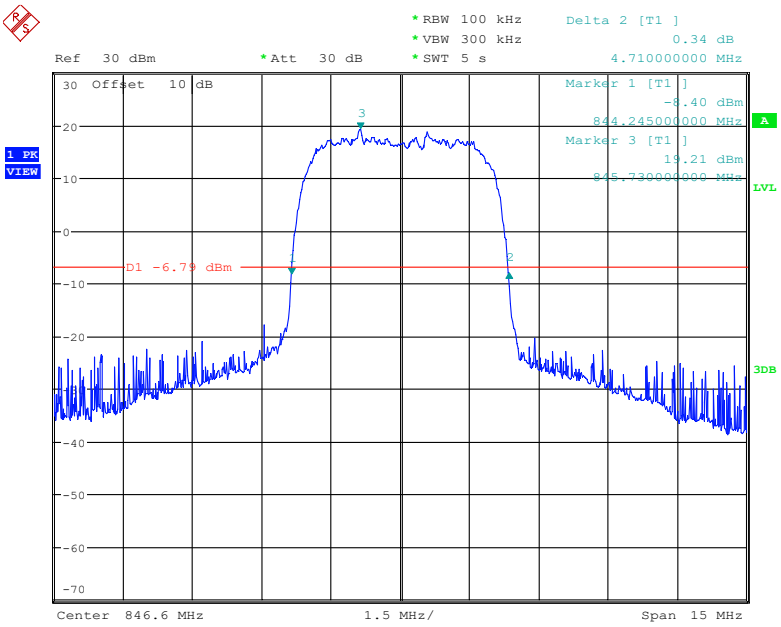
26 dB Emissions &99% Occupied Bandwidth for HSDPA (QPSK) Mode, High channel



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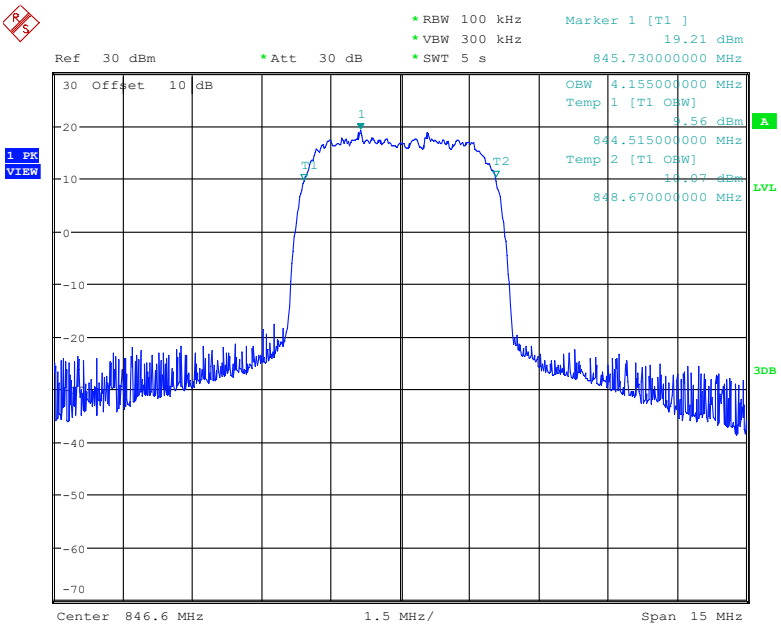
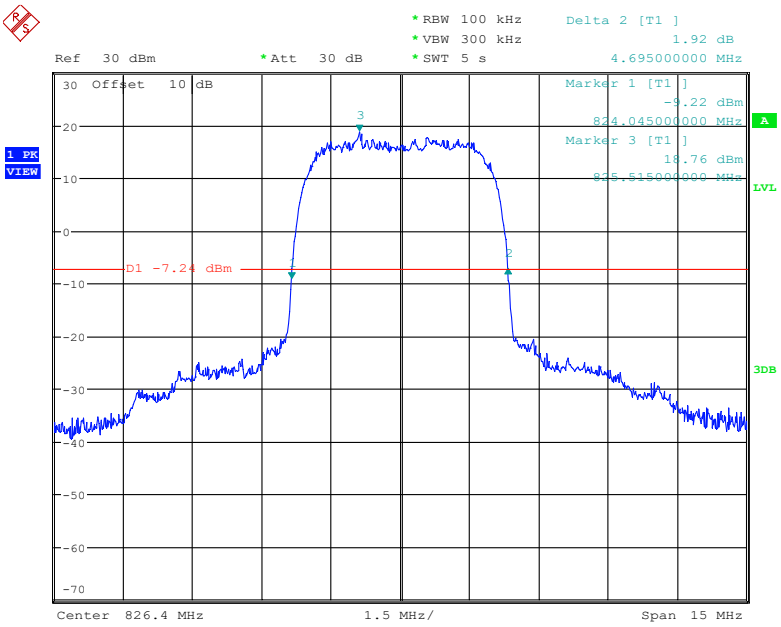
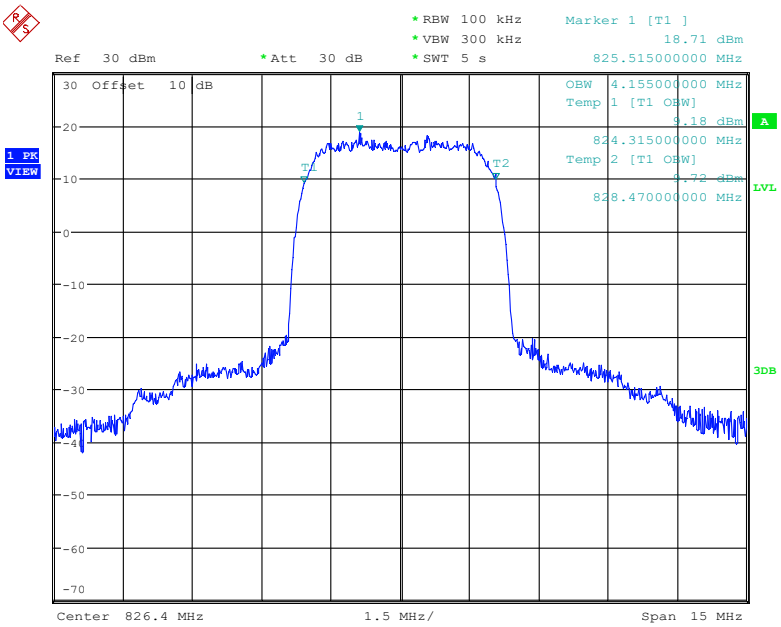


Date: 5.MAY.2023 12:38:34

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

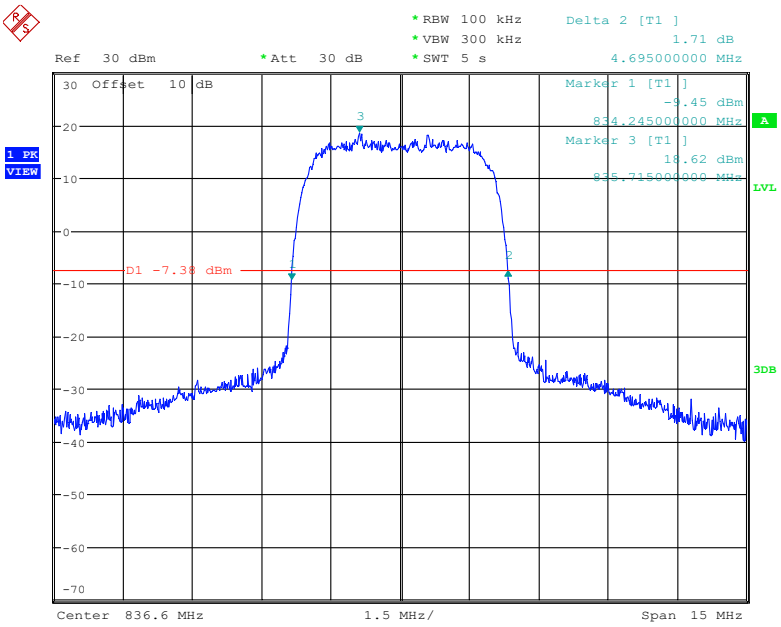


Date: 5.MAY.2023 12:48:16

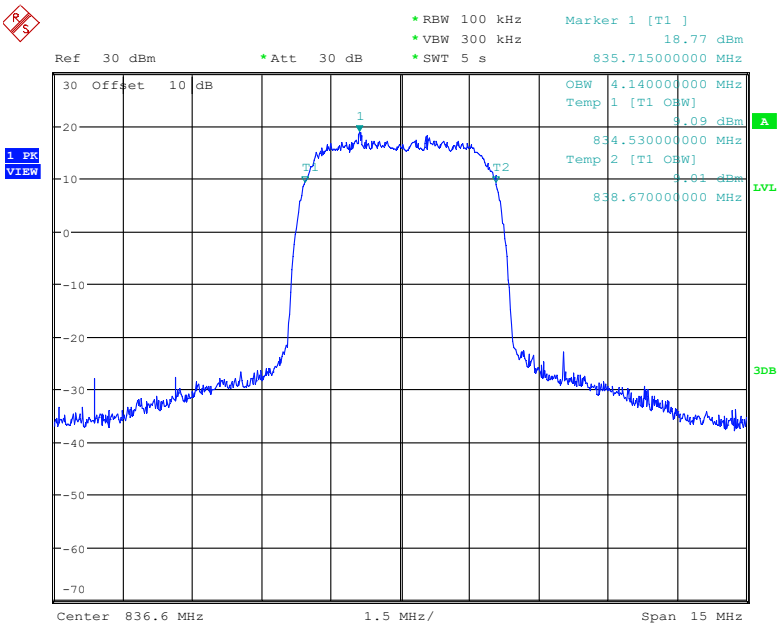


Date: 5.MAY.2023 12:47:35

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

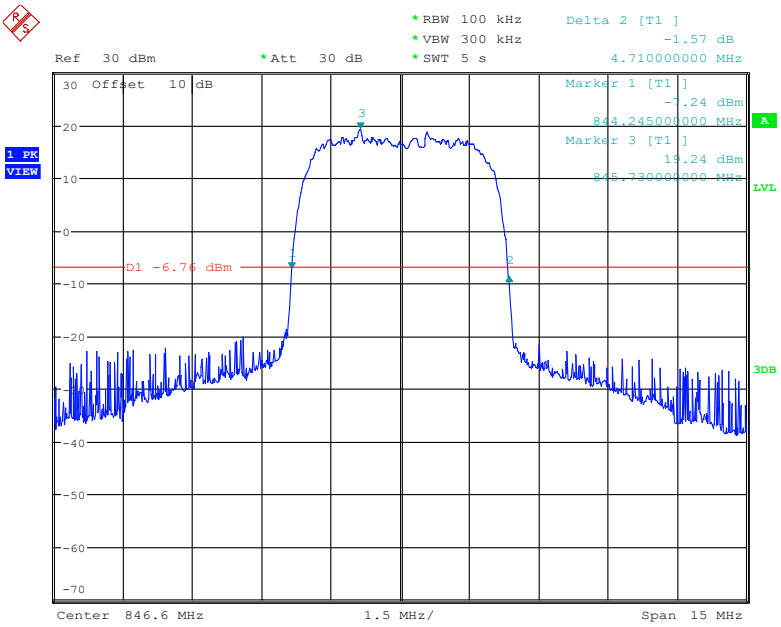


Date: 5.MAY.2023 12:53:52

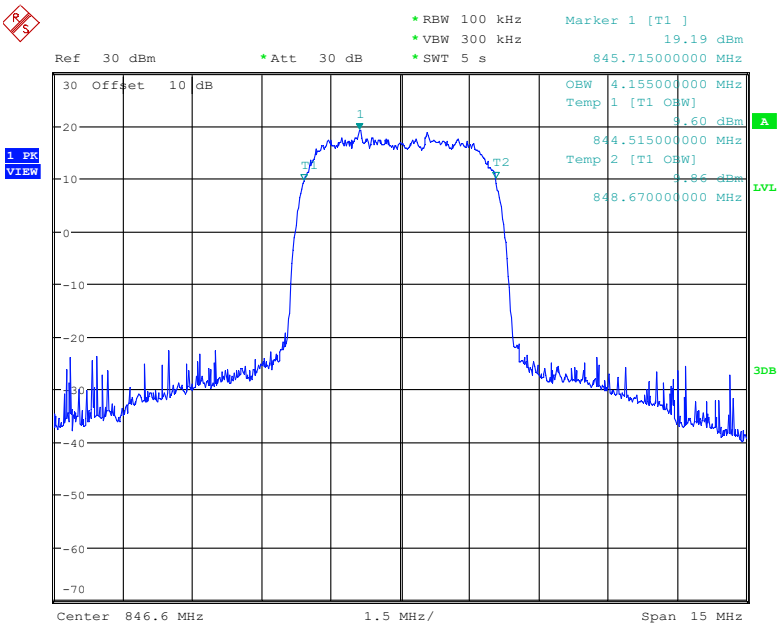


Date: 5.MAY.2023 12:53:10

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



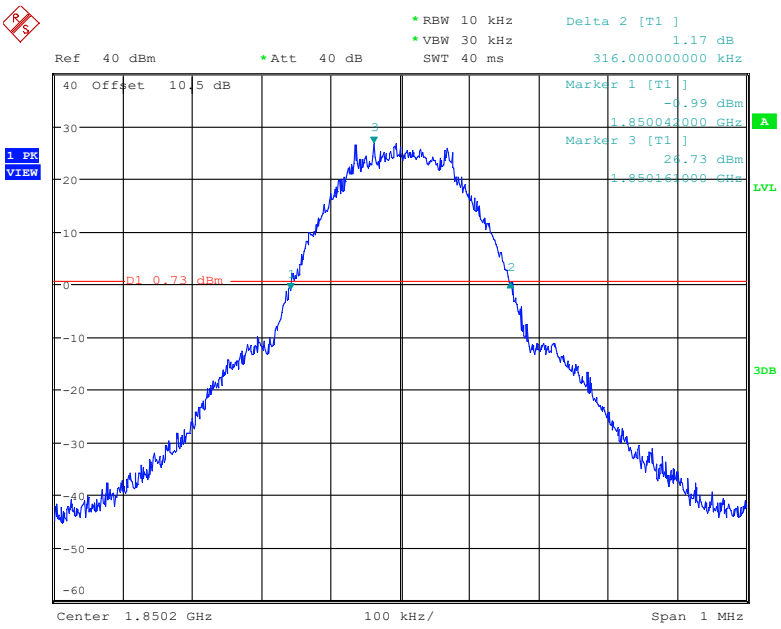
Date: 5.MAY.2023 13:06:23



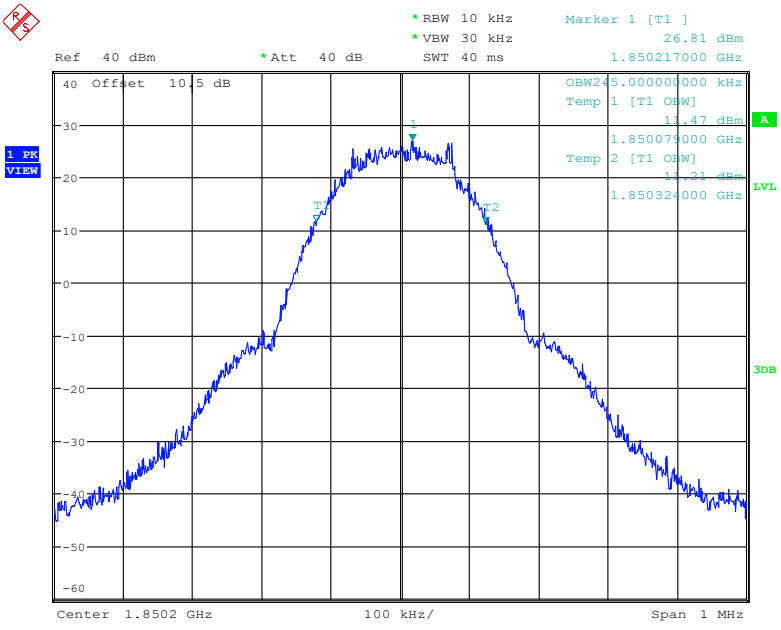
Date: 5.MAY.2023 13:03:25

PCS Band (Part 24E)

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

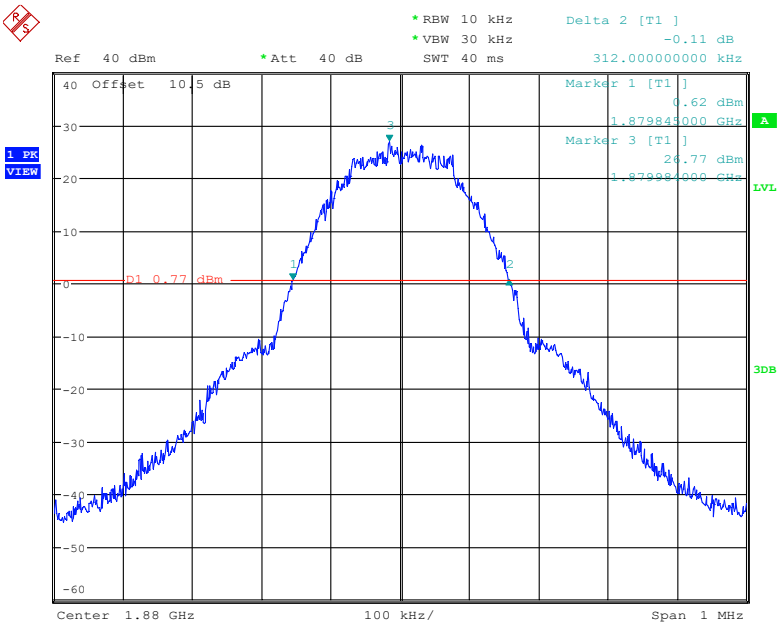


Date: 5.MAY.2023 15:30:43

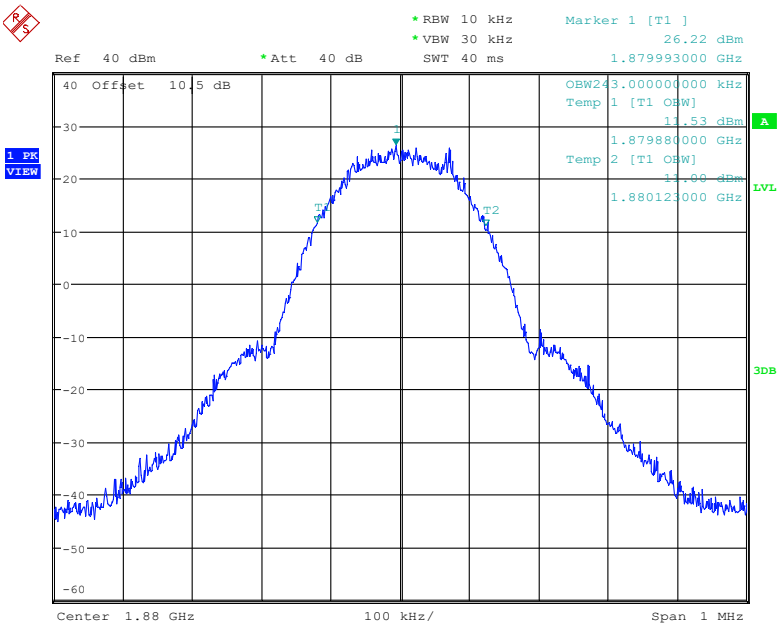


Date: 5.MAY.2023 15:30:01

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

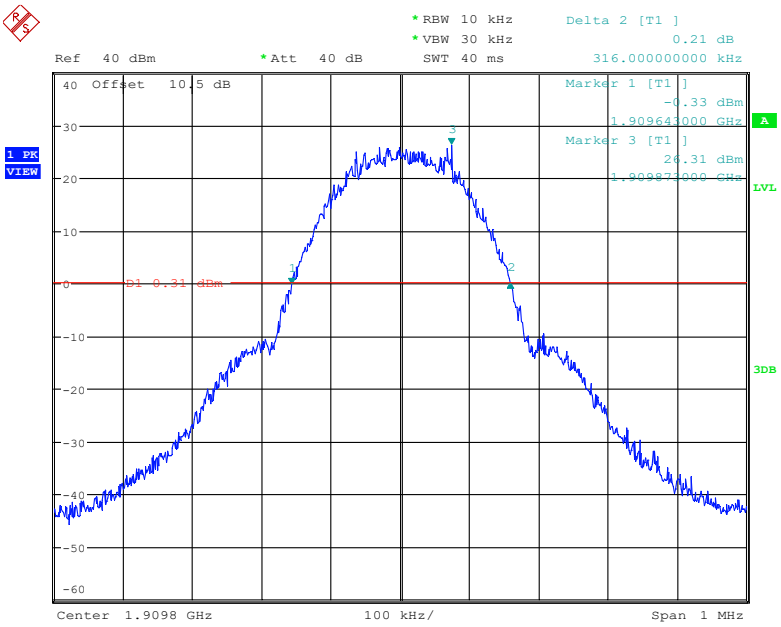


Date: 5.MAY.2023 15:41:58

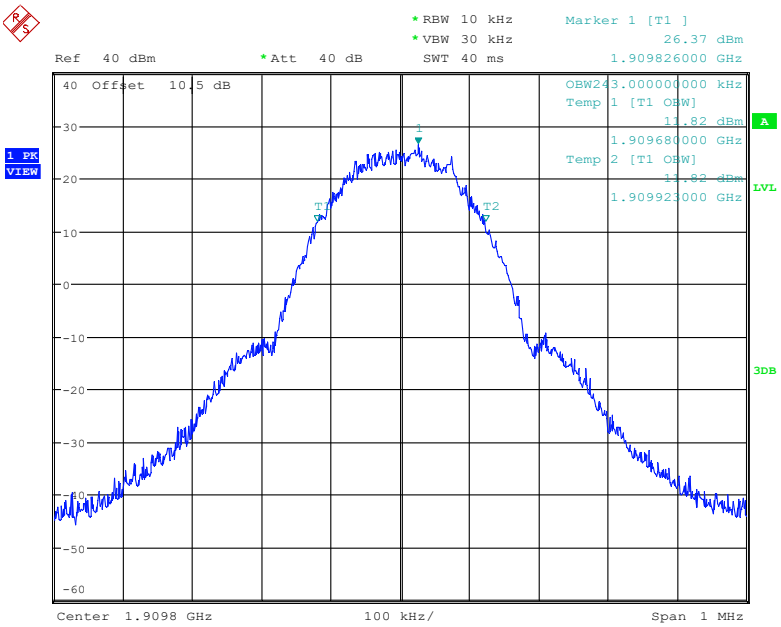


Date: 5.MAY.2023 15:41:16

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

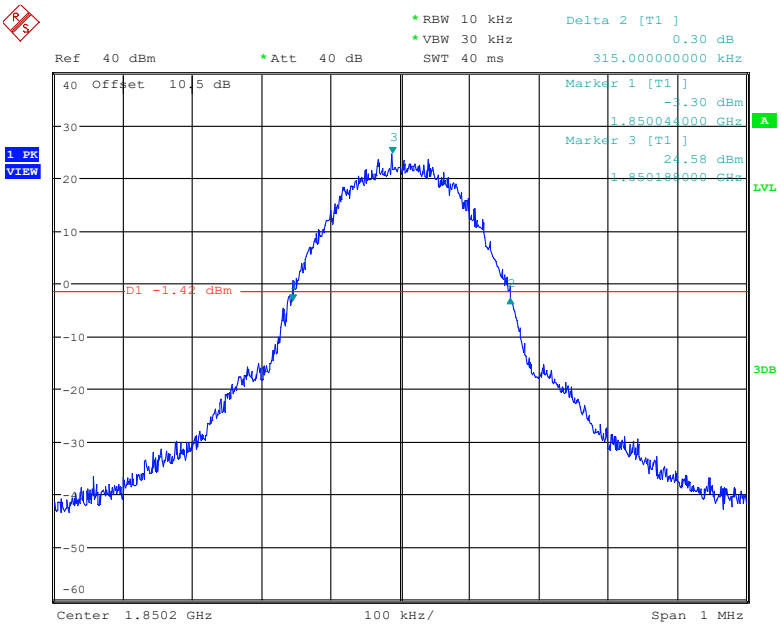


Date: 5.MAY.2023 15:53:20

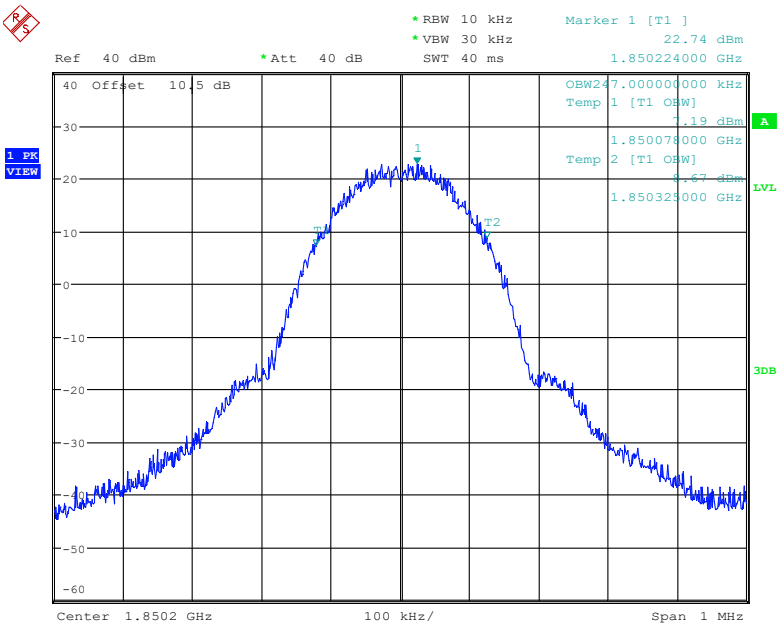


Date: 5.MAY.2023 15:52:38

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

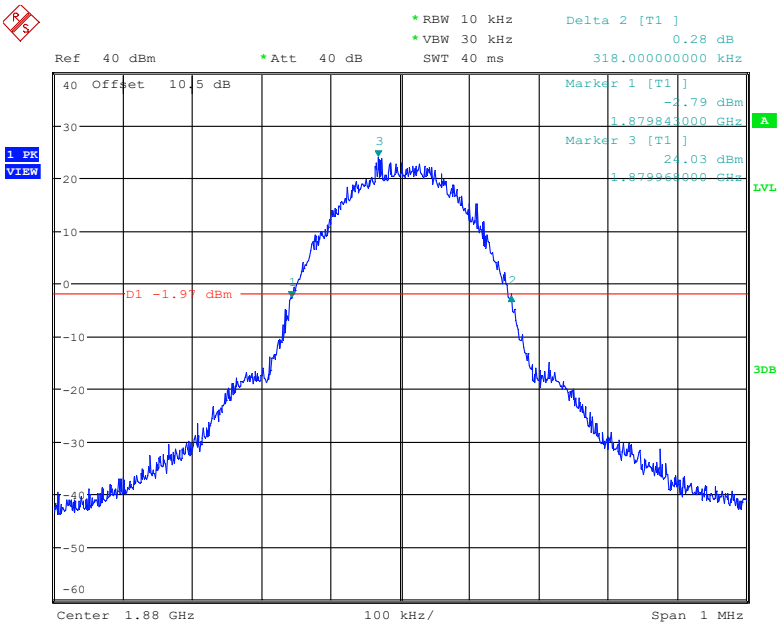


Date: 5.MAY.2023 16:32:23

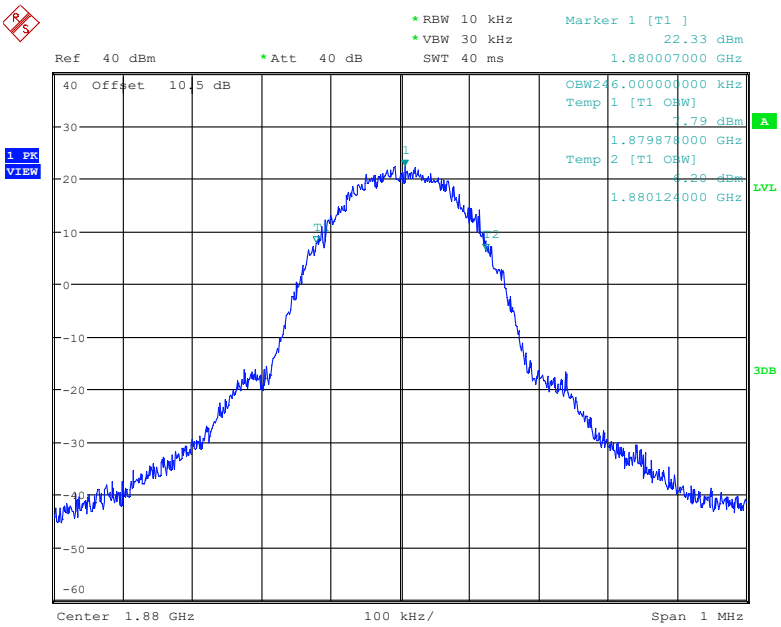


Date: 5.MAY.2023 16:31:19

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

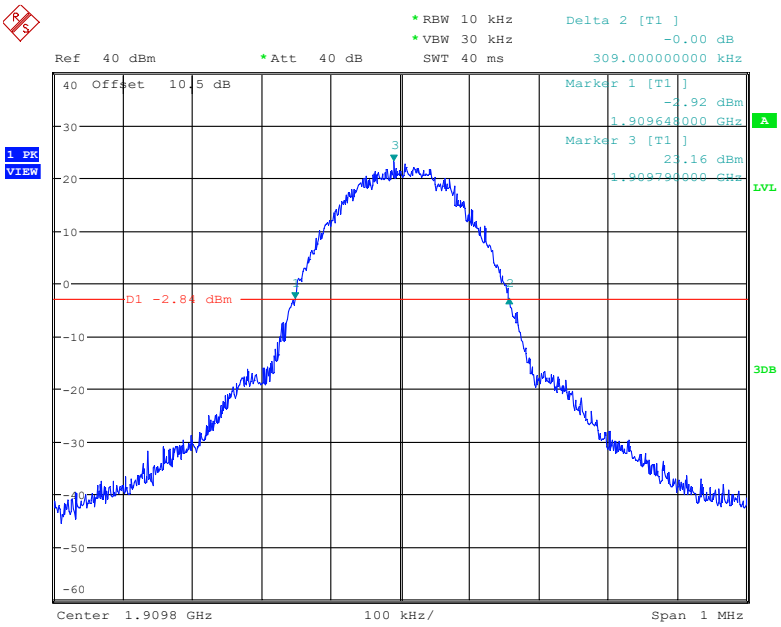


Date: 5.MAY.2023 16:39:50

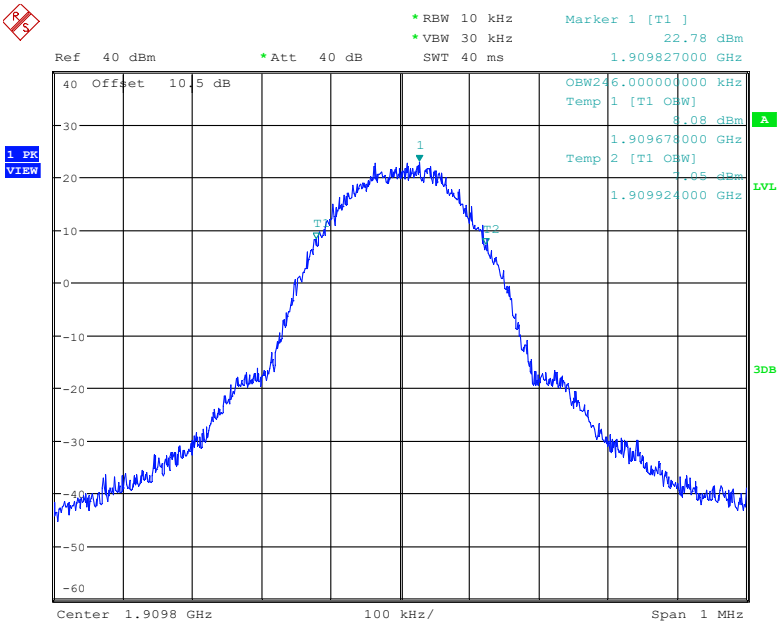


Date: 5.MAY.2023 16:38:58

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

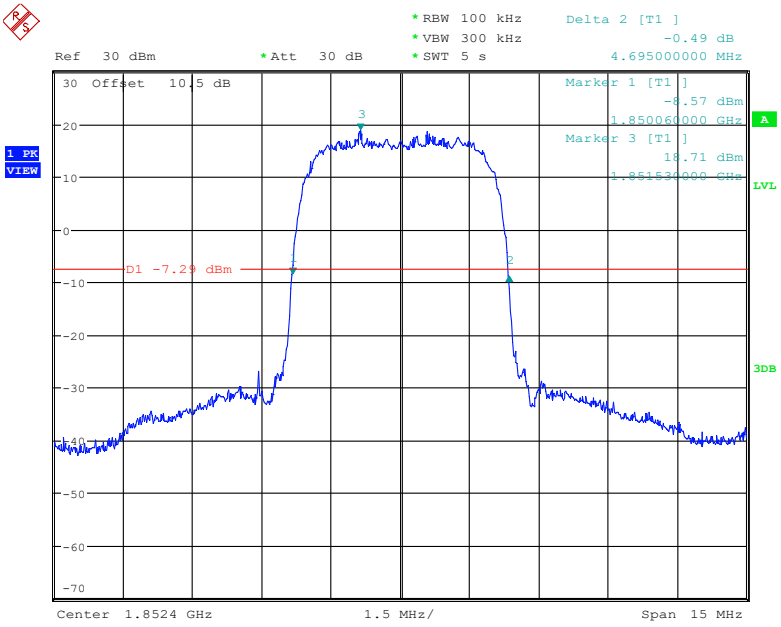


Date: 5.MAY.2023 16:47:26

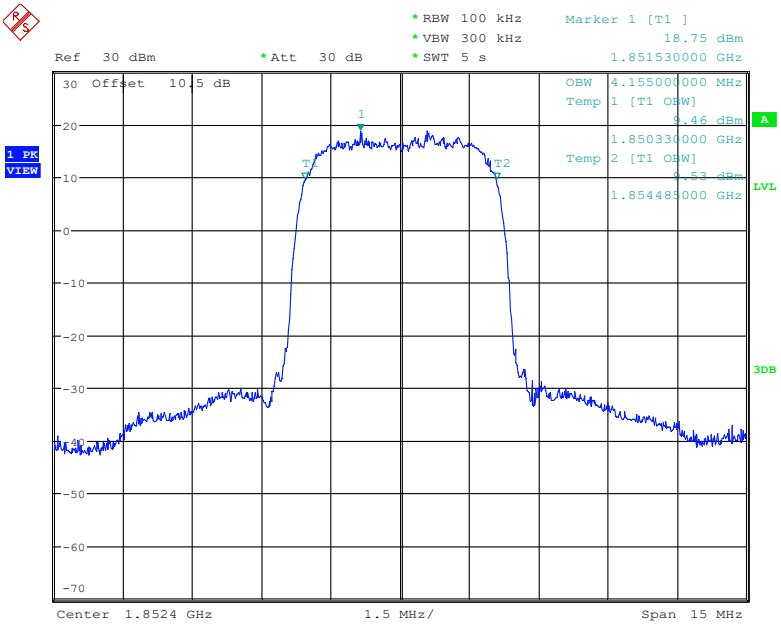


Date: 5.MAY.2023 16:46:34

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

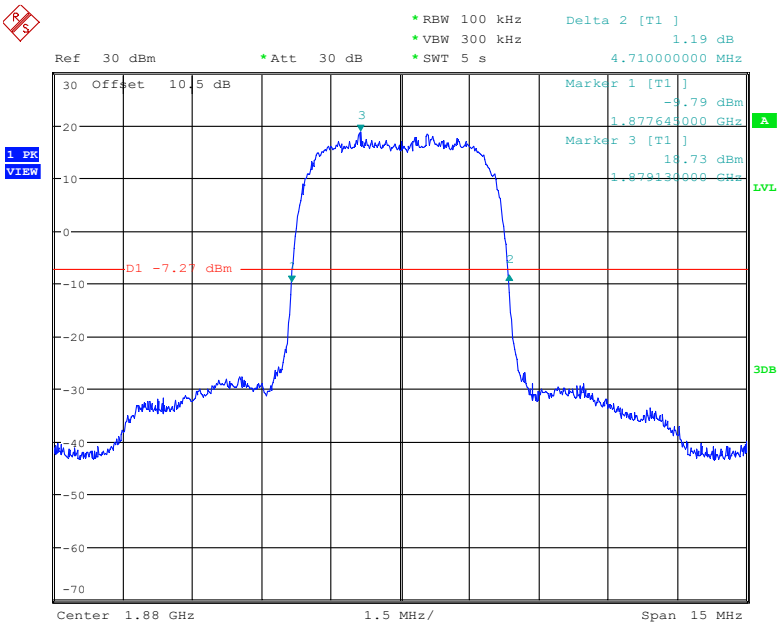


Date: 5.MAY.2023 08:48:32

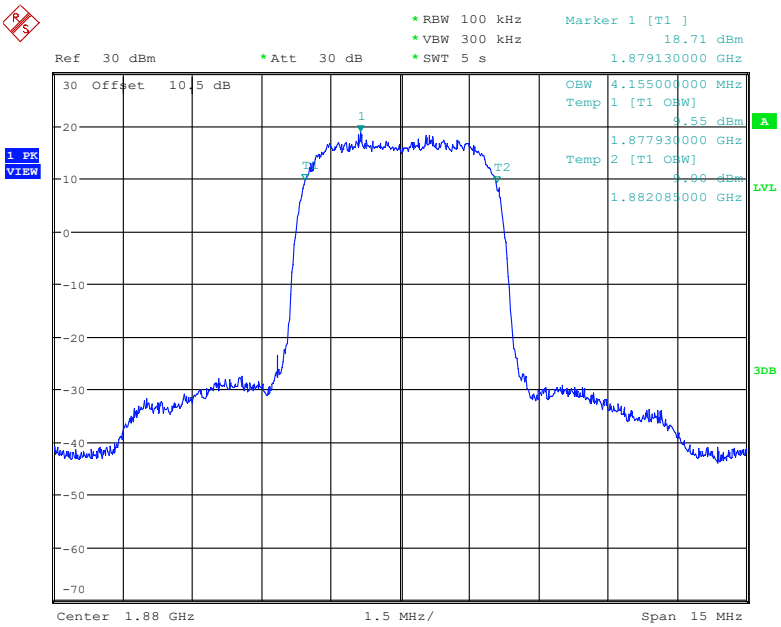


Date: 5.MAY.2023 08:48:04

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

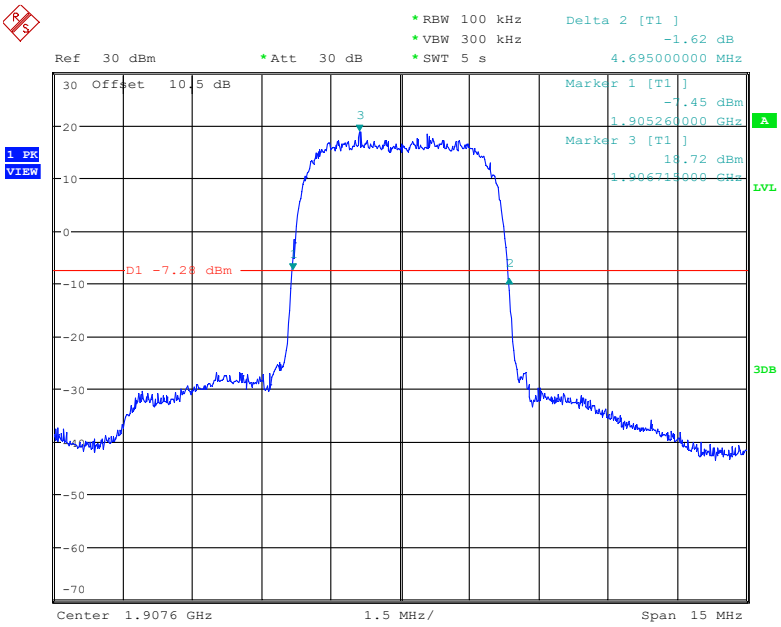


Date: 5.MAY.2023 08:53:53

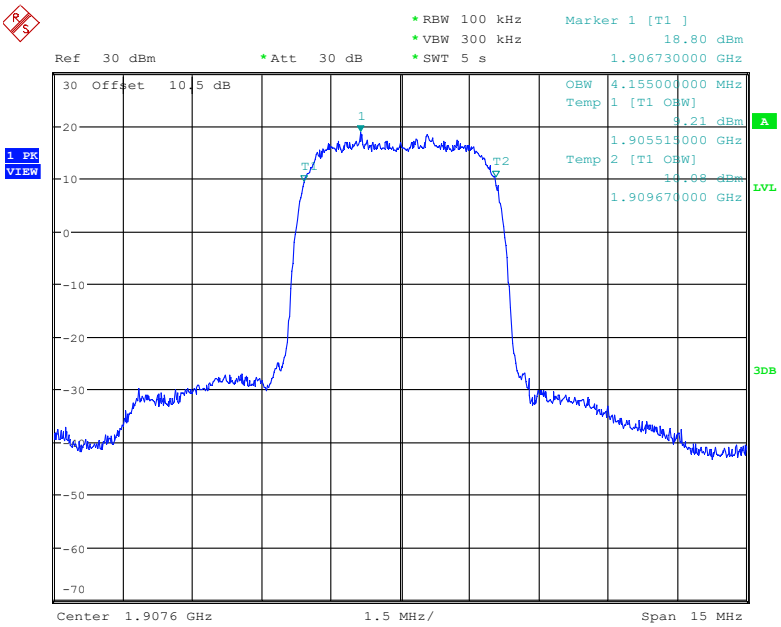


Date: 5.MAY.2023 08:53:27

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

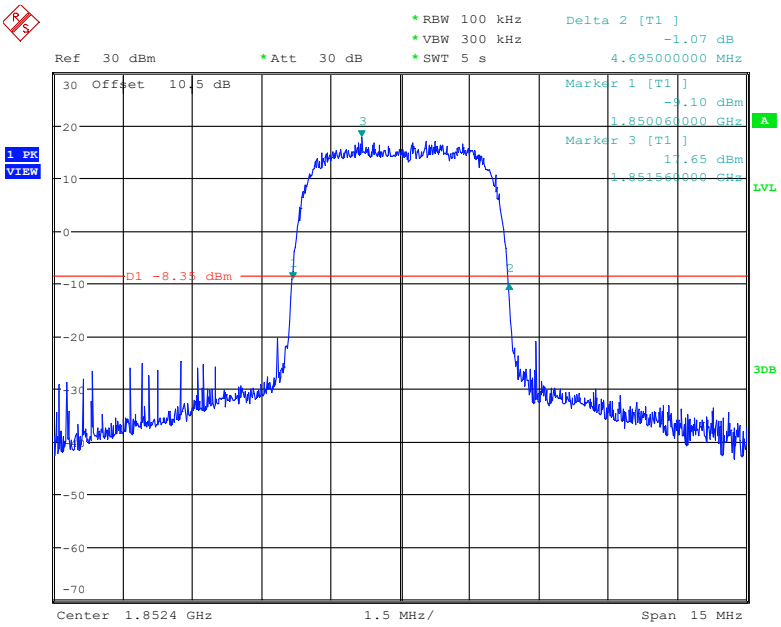


Date: 5.MAY.2023 08:56:51

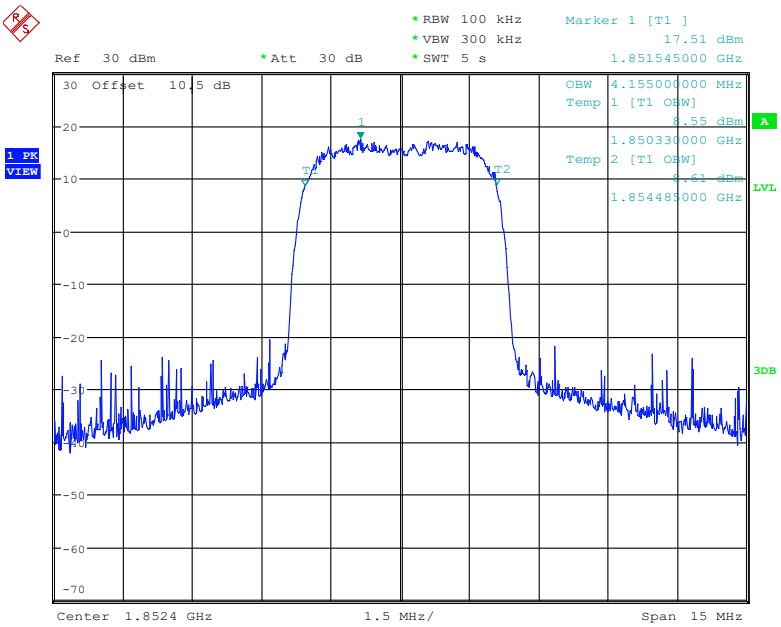


Date: 5.MAY.2023 08:56:23

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

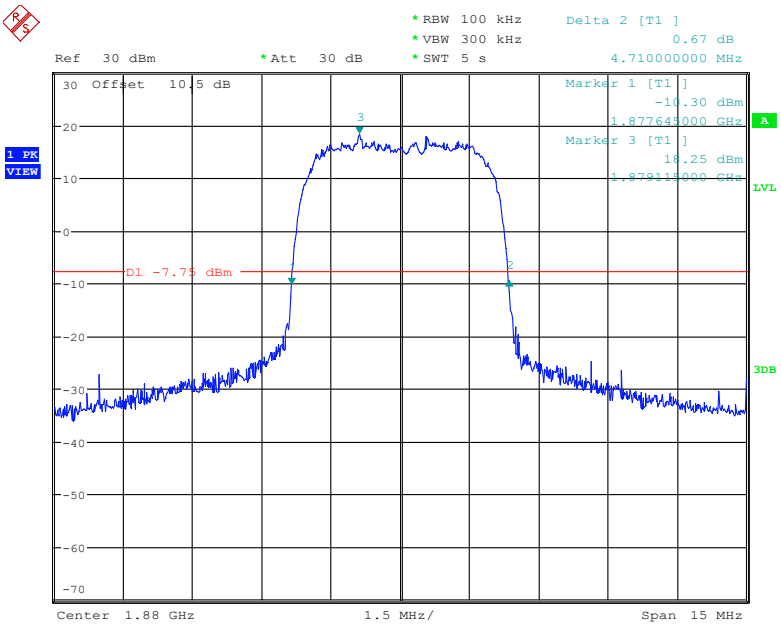


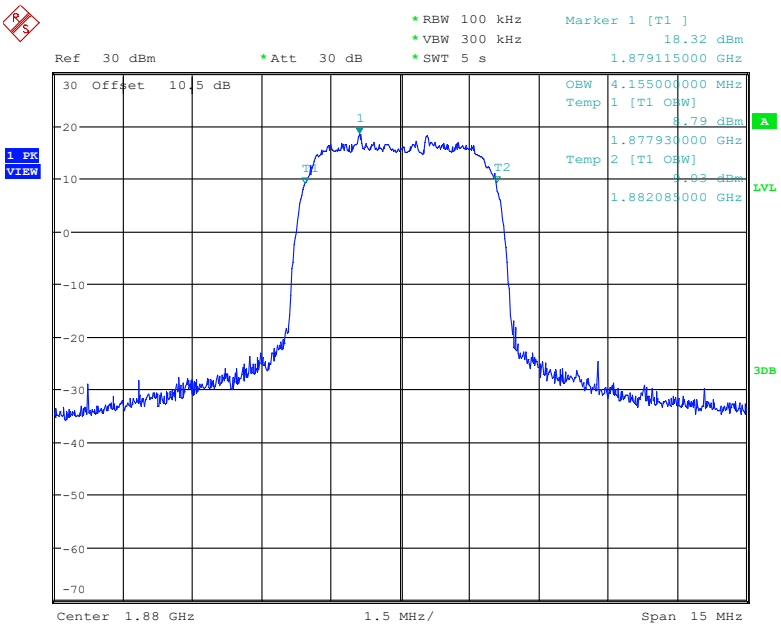
Date: 5.MAY.2023 09:11:55



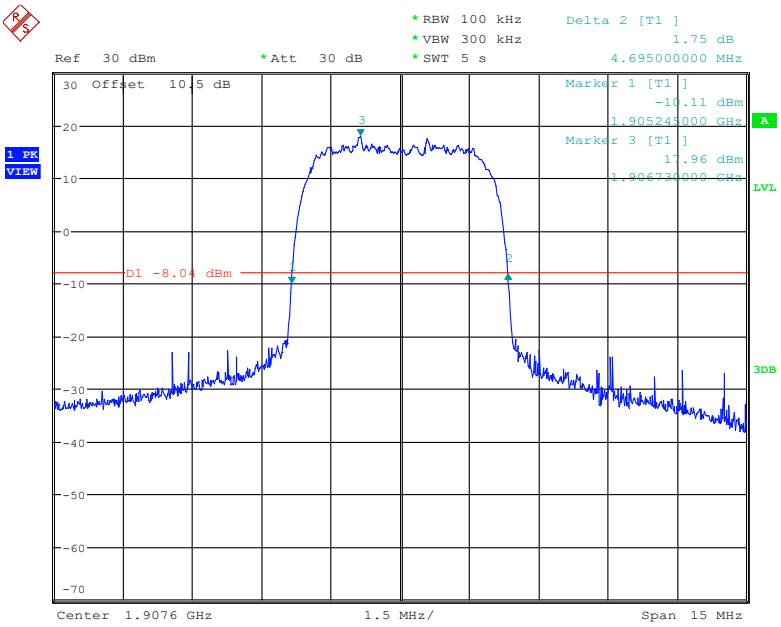
Date: 5.MAY.2023 09:05:36

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

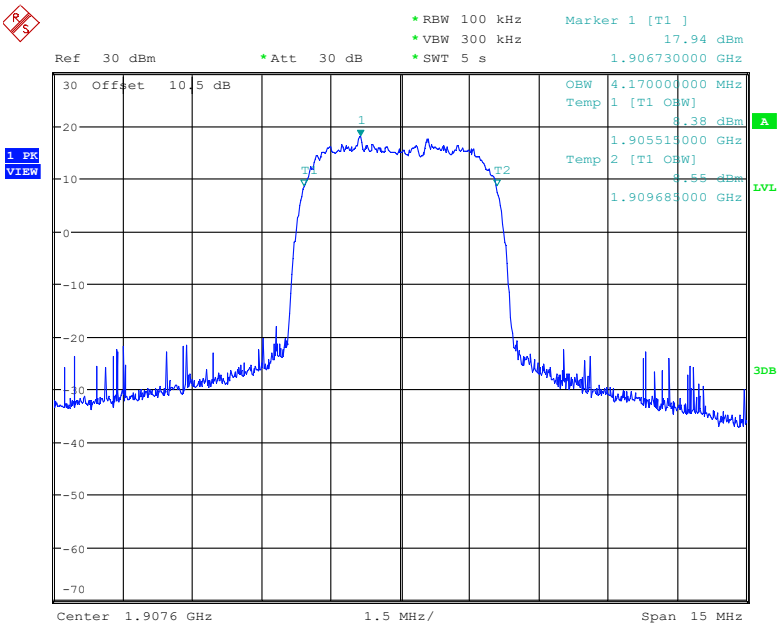




26 dB Emissions &99% Occupied Bandwidth for HSDPA (QPSK) Mode, High channel

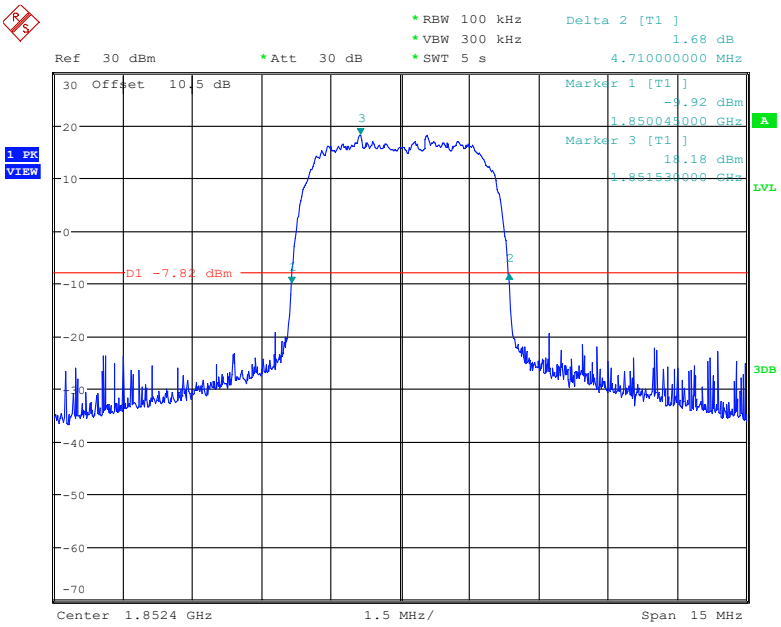


Date: 5.MAY.2023 09:23:25

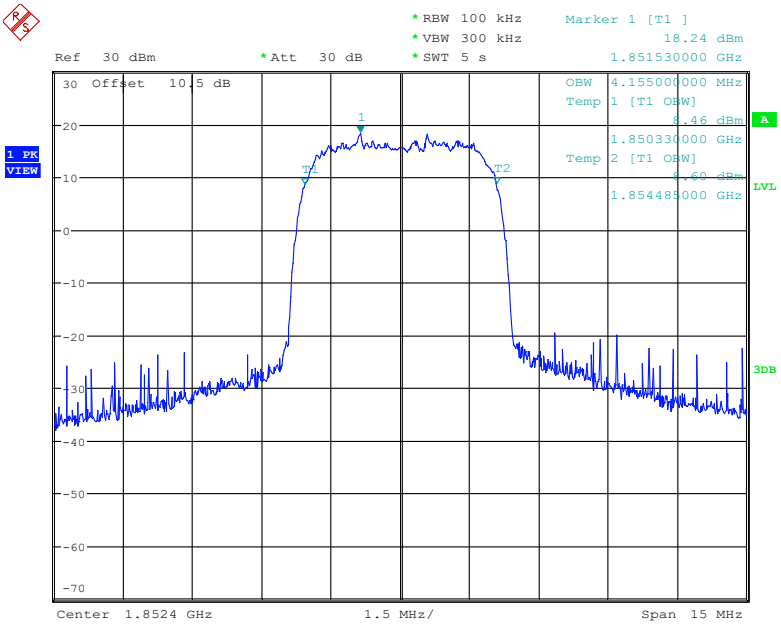


Date: 5.MAY.2023 09:21:57

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

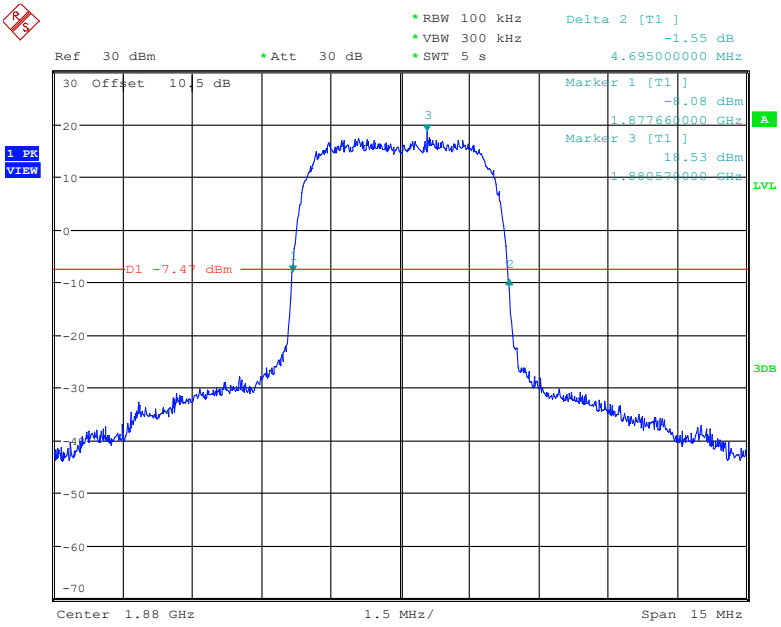


Date: 5.MAY.2023 09:50:22

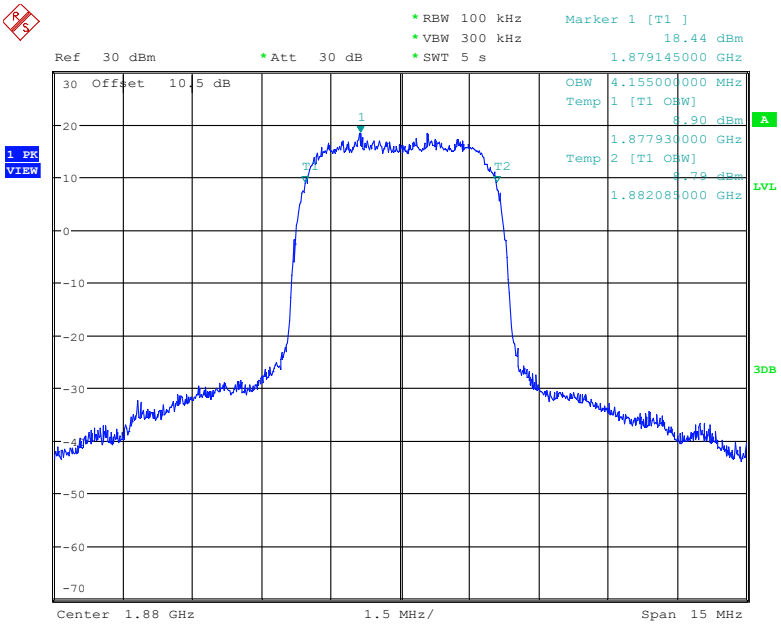


Date: 5.MAY.2023 09:47:07

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

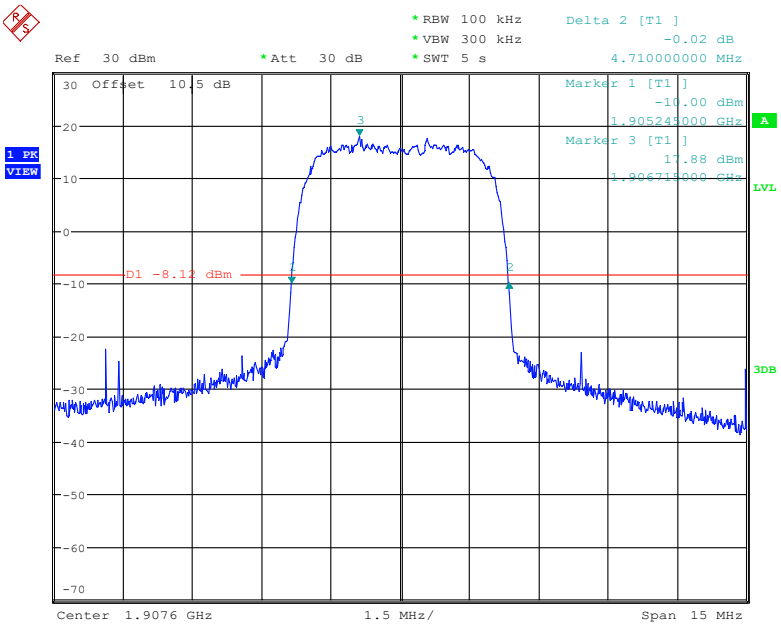


Date: 5.MAY.2023 09:53:51

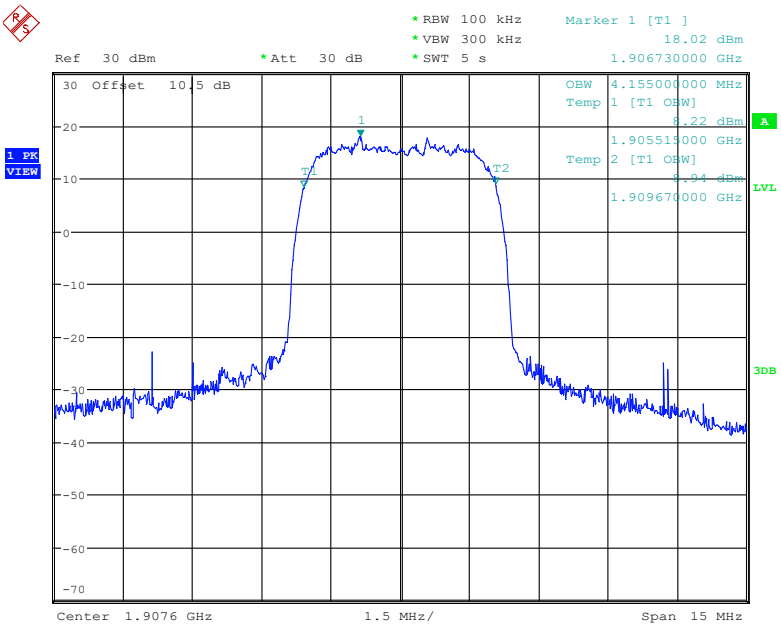


Date: 5.MAY.2023 09:53:25

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



Date: 5.MAY.2023 10:00:00



Date: 5.MAY.2023 09:58:17

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	1.11	1.27	1.11	1.27	1.10	1.28
	16QAM	1.11	1.27	1.11	1.26	1.12	1.27
3 MHz	QPSK	2.70	3.02	2.70	3.02	2.70	3.04
	16QAM	2.70	3.01	2.70	3.02	2.70	3.04
5 MHz	QPSK	4.54	5.00	4.52	5.00	4.52	5.00
	16QAM	4.54	5.04	4.54	5.04	4.56	5.02
10 MHz	QPSK	9.00	9.76	9.00	9.84	9.01	12.15
	16QAM	9.00	9.88	8.96	9.84	9.00	11.60
15 MHz	QPSK	13.56	18.70	13.56	15.18	13.65	22.31
	16QAM	13.56	19.26	13.62	15.18	13.75	21.97
20 MHz	QPSK	17.98	23.56	18.08	20.00	18.08	23.60
	16QAM	18.00	21.44	18.16	19.92	18.08	22.16

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	1.11	1.25	1.11	1.33	1.10	1.26
	16QAM	1.11	1.27	1.12	1.31	1.11	1.26
3 MHz	QPSK	2.70	3.01	2.71	3.11	2.71	3.00
	16QAM	2.70	3.01	2.71	3.18	2.70	3.02
5 MHz	QPSK	4.52	5.02	4.52	5.04	4.54	5.00
	16QAM	4.54	5.00	4.56	6.50	4.52	4.98
10 MHz	QPSK	8.96	9.72	9.00	10.20	9.00	9.76
	16QAM	8.96	9.84	9.00	9.96	9.00	9.68
15 MHz	QPSK	13.50	15.00	13.62	15.48	13.56	15.12
	16QAM	13.62	15.18	13.62	16.20	13.62	15.18
20 MHz	QPSK	18.00	19.60	18.08	20.88	18.00	19.68
	16QAM	18.00	19.76	18.00	19.84	18.08	19.76

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	1.11	1.28	1.10	1.26	1.10	1.26
	16QAM	1.12	1.26	1.12	1.27	1.10	1.26
3 MHz	QPSK	2.70	3.02	2.70	3.02	2.70	3.01
	16QAM	2.71	3.02	2.70	3.02	2.70	3.02
5 MHz	QPSK	4.52	5.04	4.50	5.00	4.52	5.00
	16QAM	4.56	5.04	4.56	5.02	4.52	4.98
10 MHz	QPSK	8.96	9.80	9.00	9.80	8.96	9.76
	16QAM	8.96	9.80	8.96	9.84	8.96	9.84

LTE Band7:

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	4.52	4.96	4.52	4.98	4.52	4.96
	16QAM	4.52	4.98	4.54	5.02	4.52	5.02
10 MHz	QPSK	9.00	9.76	8.96	9.84	8.96	9.84
	16QAM	9.00	9.72	8.96	9.88	8.96	9.76
15 MHz	QPSK	13.56	15.06	13.56	15.12	13.62	15.12
	16QAM	13.62	15.06	13.62	15.18	13.62	15.12
20 MHz	QPSK	18.00	19.68	18.00	19.92	18.00	19.68
	16QAM	18.00	19.76	18.08	19.76	18.08	19.76

LTE Band 12:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.10	1.26	1.11	1.26	1.15	2.08
	16QAM	1.10	1.26	1.11	1.26	1.13	1.73
3 MHz	QPSK	2.70	3.01	2.70	3.02	2.71	3.05
	16QAM	2.70	3.01	2.70	3.04	2.70	3.07
5 MHz	QPSK	4.52	5.02	4.54	5.02	4.56	5.02
	16QAM	4.54	5.02	4.56	5.02	4.52	5.00
10 MHz	QPSK	8.96	9.80	9.00	9.84	8.96	9.80
	16QAM	9.00	9.72	8.96	9.84	9.00	9.72

LTE Band 17

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.52	5.00	4.52	5.00	4.54	5.02
	16QAM	4.52	5.00	4.56	5.02	4.52	5.02
10 MHz	QPSK	8.96	9.84	8.96	9.76	8.96	9.92
	16QAM	9.00	9.80	8.96	9.80	9.00	9.76

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

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

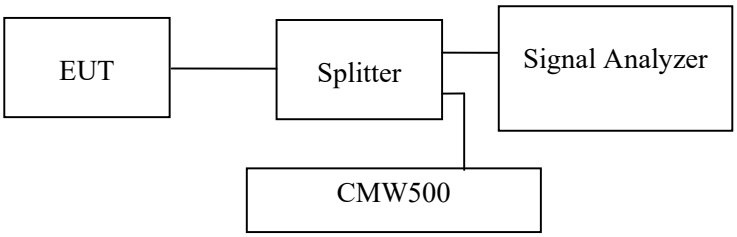
Applicable Standard

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

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

Test Procedure

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



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

Test Data

Environmental Conditions

Temperature:	24~27 ℃
Relative Humidity:	52~60 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-05-05to 2023-05-23.

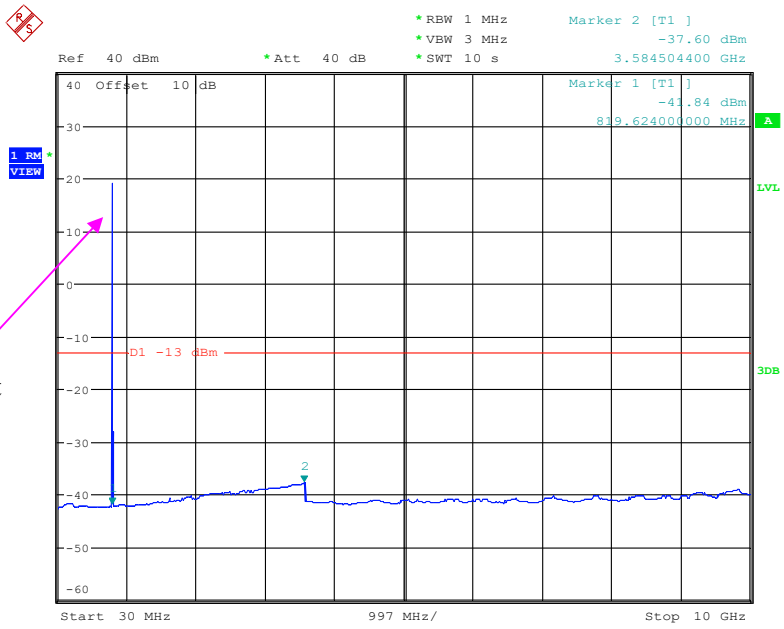
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)
Low Channel:

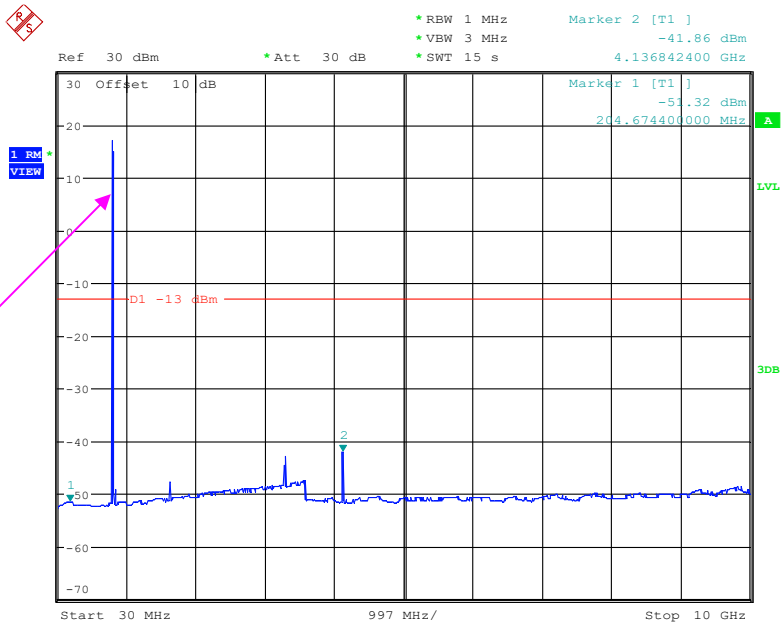
30 MHz – 10 GHz (GSM Mode)



Fundamental test

Date: 5.MAY.2023 14:17:03

30 MHz – 10 GHz (WCDMA Mode)

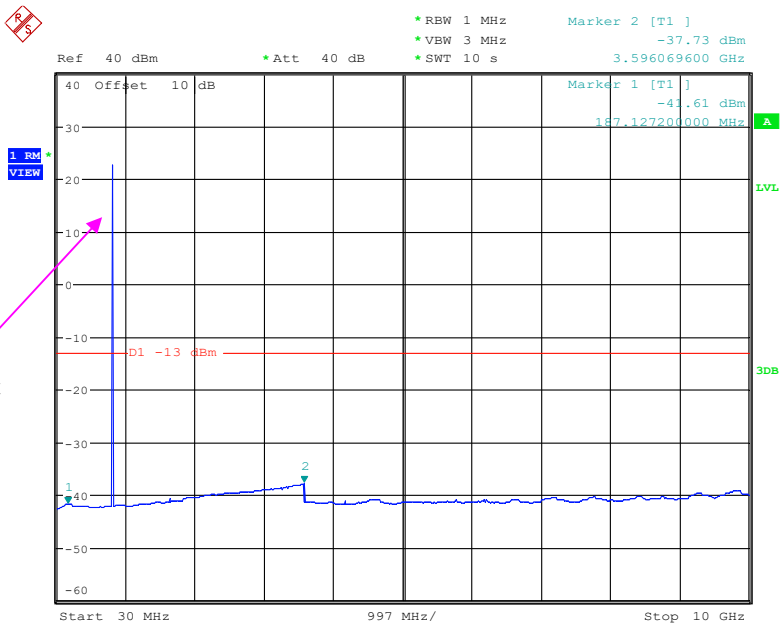


Fundamental test

Date: 5.MAY.2023 11:57:34

Middle Channel:

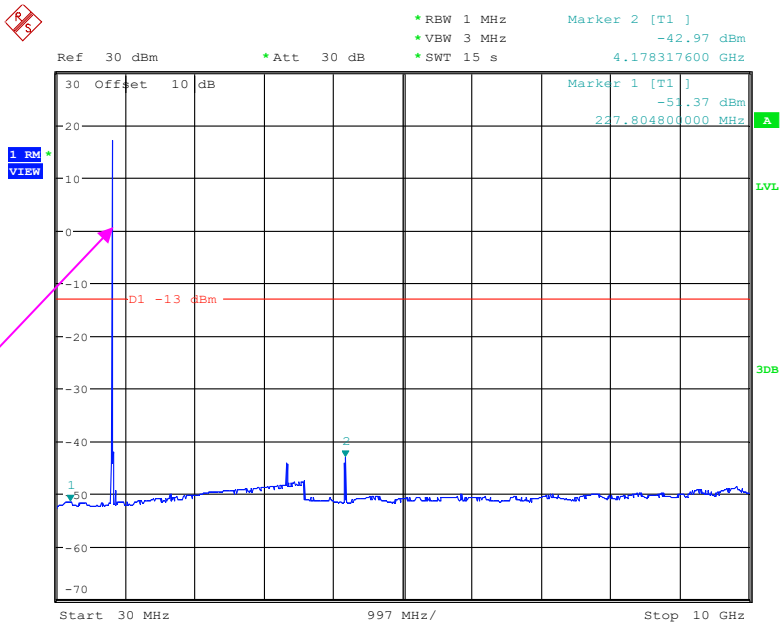
30 MHz – 10 GHz (GSM Mode)



Fundamental test

Date: 5.MAY.2023 14:27:21

30 MHz – 10 GHz (WCDMA Mode)

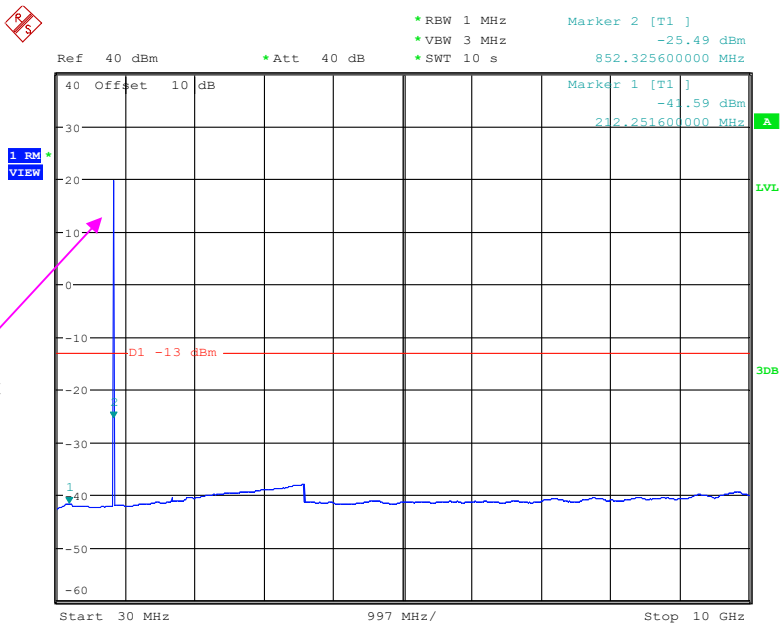


Fundamental test

Date: 5.MAY.2023 12:00:30

High Channel:

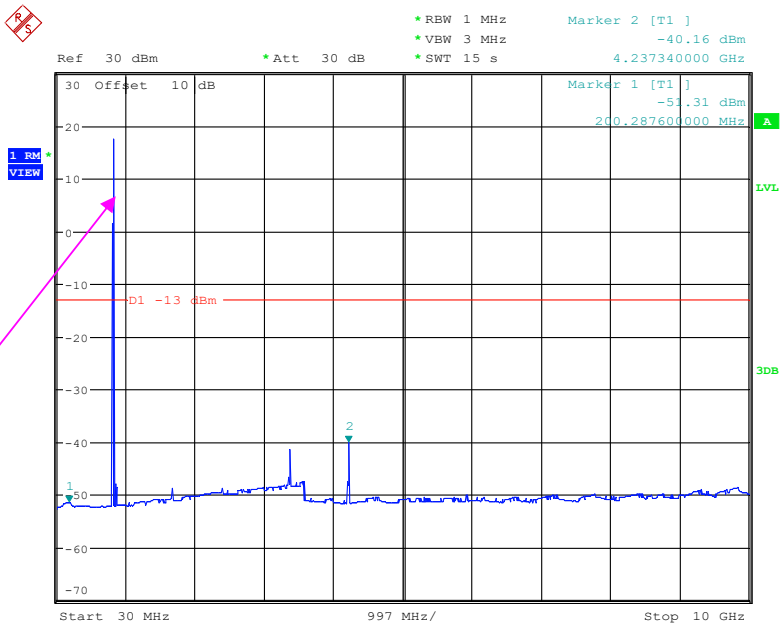
30 MHz – 10 GHz (GSM Mode)



Fundamental test

Date: 5.MAY.2023 14:36:35

30 MHz – 10 GHz (WCDMA Mode)

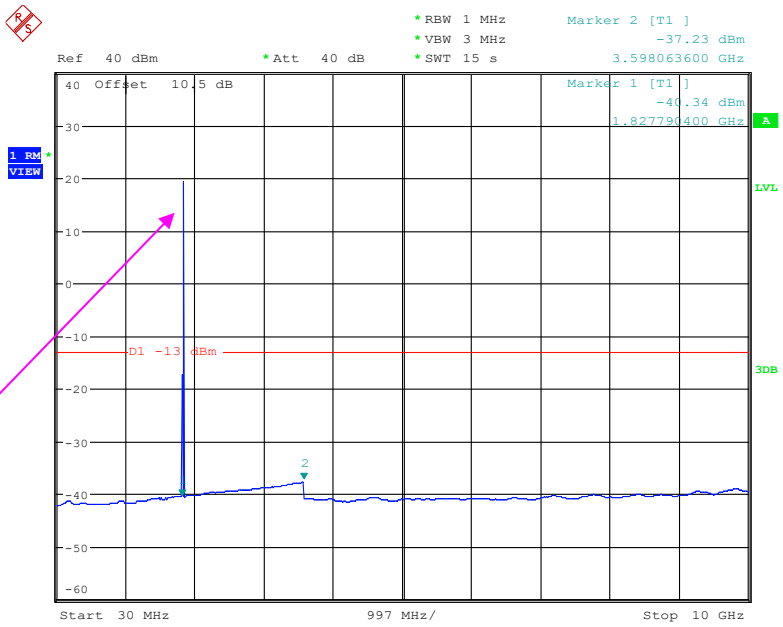


Fundamental test

Date: 5.MAY.2023 12:06:10

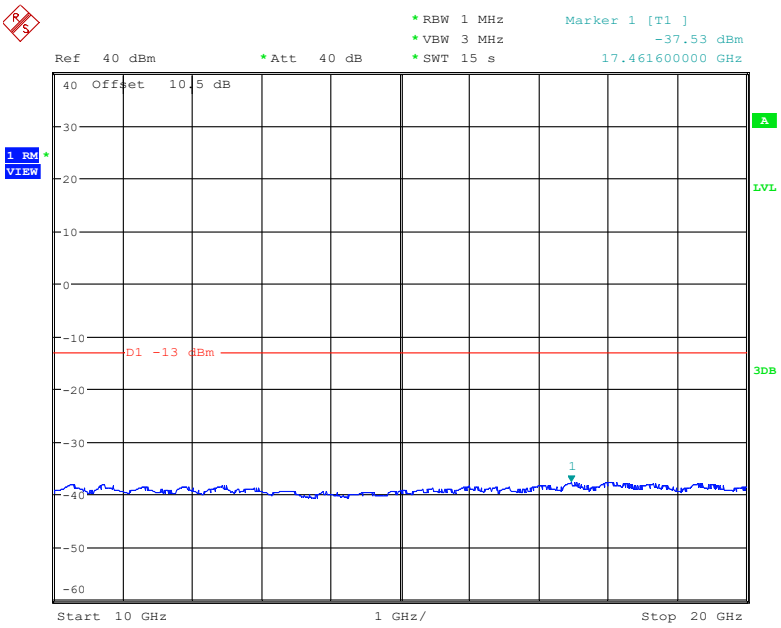
PCS Band (Part 24E)
Low Channel:

30 MHz – 10 GHz (GSM Mode)



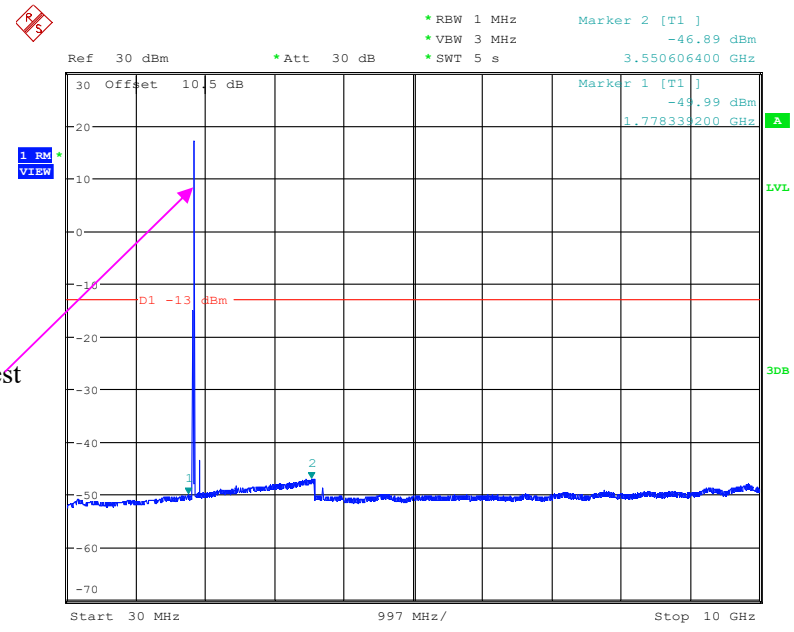
Fundamental test

10 GHz – 20 GHz (GSM Mode)



Date: 5.MAY.2023 15:36:21

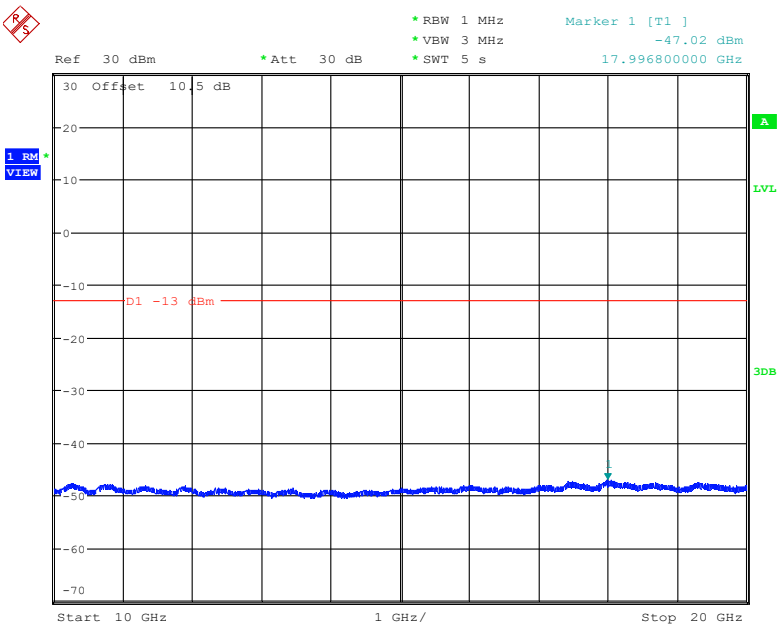
30 MHz – 10 GHz (WCDMA Mode)



Fundamental test

Date: 5.MAY.2023 08:49:27

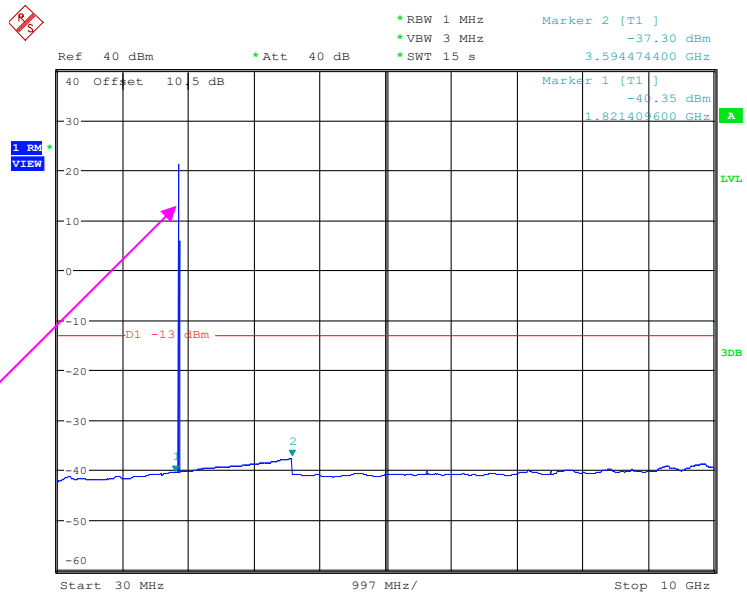
10 GHz – 20 GHz (WCDMA Mode)



Date: 5.MAY.2023 08:49:56

Middle Channel:

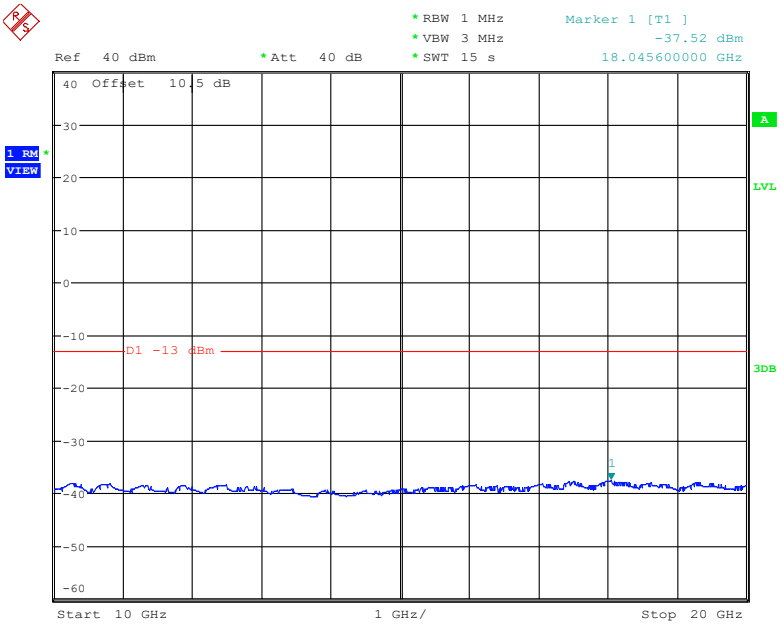
30 MHz – 10 GHz (GSM Mode)



Fundamental test

Date: 5.MAY.2023 15:46:26

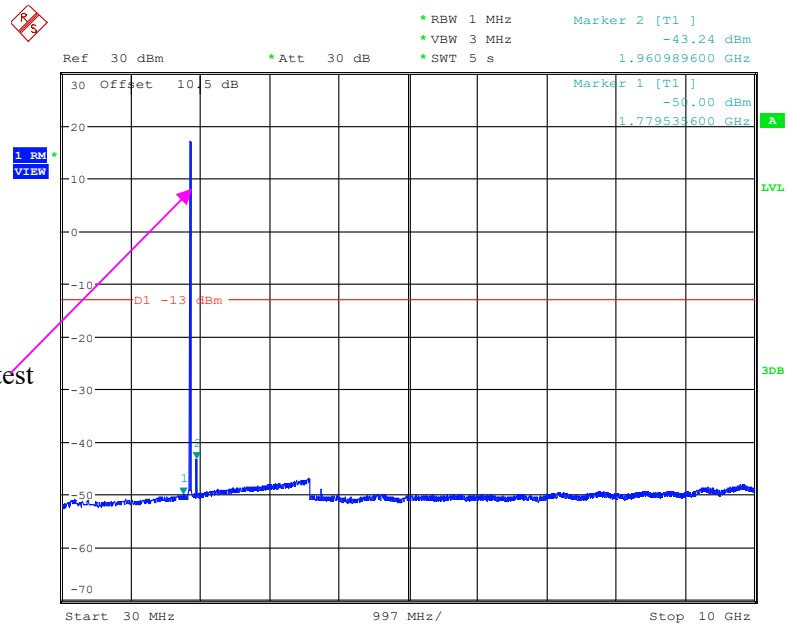
10 GHz – 20 GHz (GSM Mode)



Date: 5.MAY.2023 15:47:16

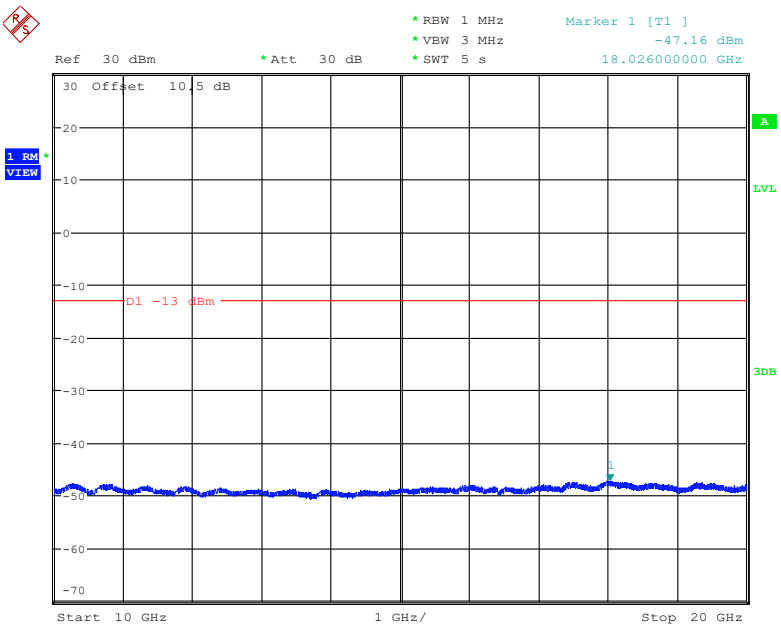
30 MHz – 10 GHz (WCDMA Mode)

Fundamental test



Date: 5.MAY.2023 08:54:22

10 GHz – 20 GHz (WCDMA Mode)

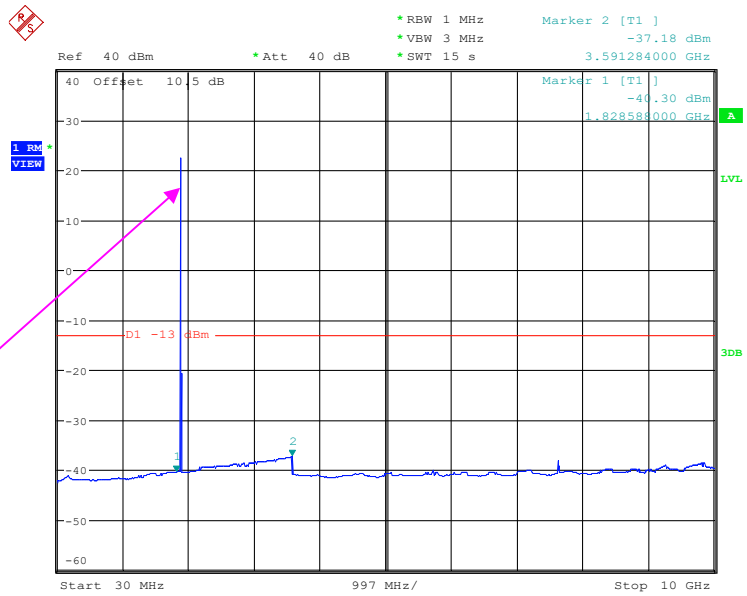


Date: 5.MAY.2023 08:54:52

High Channel:

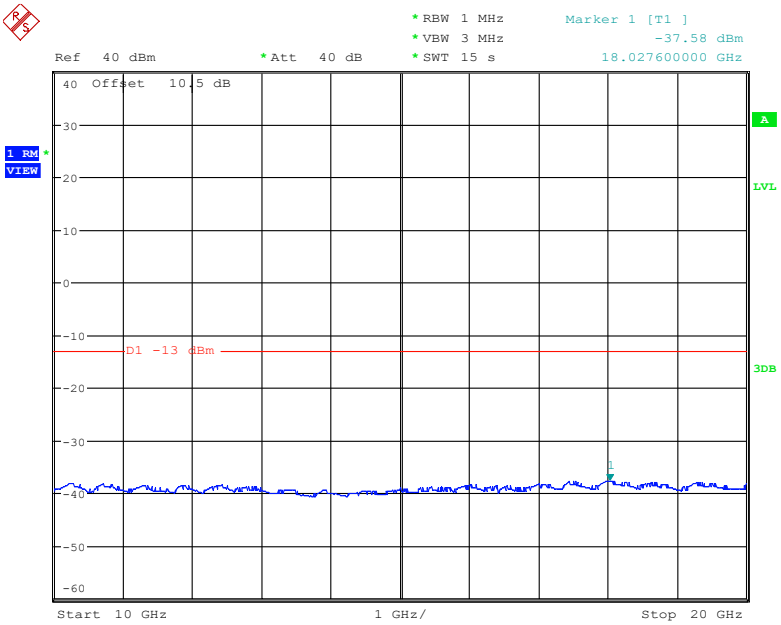
30 MHz – 10 GHz (GSM Mode)

Fundamental test



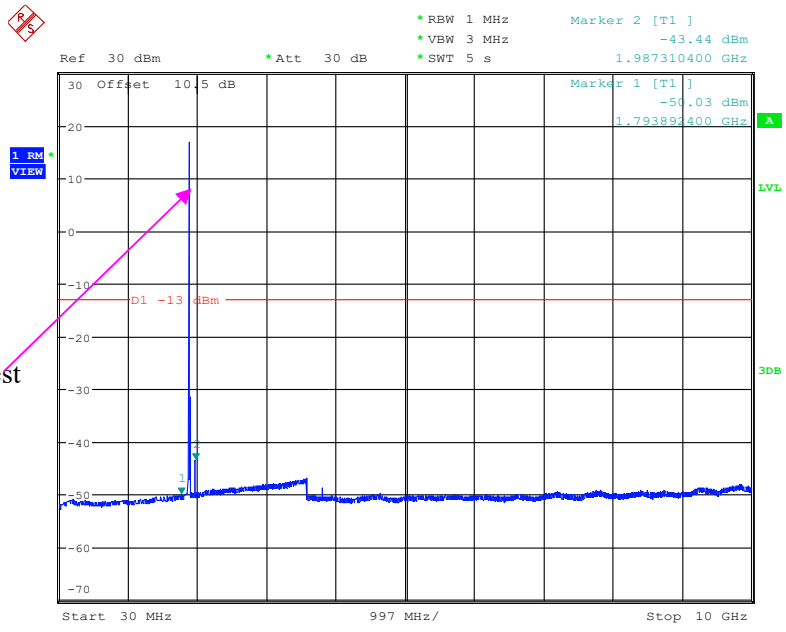
Date: 5.MAY.2023 15:56:19

10 GHz – 20 GHz (GSM Mode)



Date: 5.MAY.2023 15:57:08

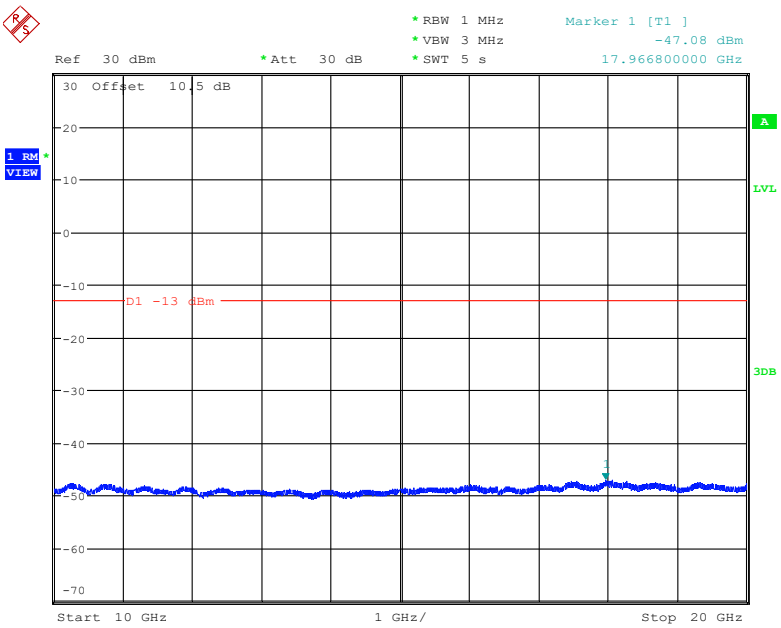
30 MHz – 10 GHz (WCDMA Mode)



Fundamental test

Date: 5.MAY.2023 08:57:46

10 GHz – 20 GHz (WCDMA Mode)



Date: 5.MAY.2023 08:58:16

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:	21~25.3 ℃
Relative Humidity:	48~57 %
ATM Pressure:	102.0 kPa

The testing was performed by Jason Liu on 2023-04-26~2023-04-30.

Test mode: Transmitting (Pre-scan in the X,Y and Z axes of orientation, the worst case Y-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, 824.2MHz								
1648.4	-52.10	214	2	H	3	-49.10	-13	-36.10
1648.4	-51.80	192	1.3	V	2.6	-49.20	-13	-36.20
2472.6	-45.70	134	1	H	7.1	-38.60	-13	-25.60
2472.6	-43.50	75	1.7	V	5.9	-37.60	-13	-24.60
3296.8	-48.60	227	2.3	H	6.7	-41.90	-13	-28.90
3296.8	-48.70	131	2.3	V	6.2	-42.50	-13	-29.50
GSM850, 836.6MHz								
1673.2	-51.90	280	2.1	H	3.1	-48.80	-13	-35.80
1673.2	-51.90	202	1.3	V	2.5	-49.40	-13	-36.40
2509.8	-54.00	62	1.5	H	7.1	-46.90	-13	-33.90
2509.8	-50.60	273	2.1	V	5.4	-45.20	-13	-32.20
3346.4	-42.00	347	1.6	H	7.3	-34.70	-13	-21.70
3346.4	-41.30	264	1.2	V	5.4	-35.90	-13	-22.90
GSM850, 848.8MHz								
1697.6	-54.30	324	1.4	H	3.2	-51.10	-13	-38.10
1697.6	-53.40	338	1.3	V	2.4	-51.00	-13	-38.00
2546.4	-51.70	54	1.7	H	6.9	-44.80	-13	-31.80
2546.4	-49.70	238	1.7	V	6.2	-43.50	-13	-30.50
3395.2	-37.00	119	2.4	H	5.9	-31.10	-13	-18.10
3395.2	-40.70	100	2.1	V	5.2	-35.50	-13	-22.50

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band5,826.4MHz								
1652.8	-52.50	224	2.1	H	3	-49.50	-13	-36.50
1652.8	-53.20	319	1.9	V	2.6	-50.60	-13	-37.60
2479.2	-42.90	137	1.6	H	7.1	-35.80	-13	-22.80
2479.2	-40.30	18	1.1	V	5.8	-34.50	-13	-21.50
3305.6	-45.10	319	1.5	H	6.7	-38.40	-13	-25.40
3305.6	-46.00	47	1.5	V	6.1	-39.90	-13	-26.90
WCDMA Band5,836.6MHz								
1673.2	-54.00	136	2	H	3.1	-50.90	-13	-37.90
1673.2	-53.10	142	1.3	V	2.5	-50.60	-13	-37.60
2509.8	-54.90	80	1.9	H	7.1	-47.80	-13	-34.80
2509.8	-52.80	318	2.2	V	5.4	-47.40	-13	-34.40
3346.4	-47.50	238	1.5	H	7.3	-40.20	-13	-27.20
3346.4	-46.50	33	2.3	V	5.4	-41.10	-13	-28.10
WCDMA Band5,846.6MHz								
1693.2	-53.20	56	1.5	H	3.2	-50.00	-13	-37.00
1693.2	-53.70	248	1.2	V	2.4	-51.30	-13	-38.30
2539.8	-55.60	310	2.3	H	7	-48.60	-13	-35.60
2539.8	-53.10	357	2.3	V	6	-47.10	-13	-34.10
3386.4	-37.60	263	1.5	H	6.2	-31.40	-13	-18.40
3386.4	-38.50	291	1.1	V	5.2	-33.30	-13	-20.30

30MHz-20GHz:

PCS Band (Part 24E)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM 1900, 1850.2MHz								
3700.4	-50.30	53	2.1	H	8.2	-42.10	-13	-29.10
3700.4	-49.90	53	1.2	V	6.8	-43.10	-13	-30.10
5550.6	-44.40	333	2.3	H	9	-35.40	-13	-22.40
5550.6	-45.50	333	1.6	V	10	-35.50	-13	-22.50
GSM1900, 1880MHz								
3760.0	-49.30	254	2.1	H	8.2	-41.10	-13	-28.10
3760.0	-49.90	44	1.8	V	7.7	-42.20	-13	-29.20
5640.0	-43.30	51	1.5	H	10.7	-32.60	-13	-19.60
5640.0	-44.60	158	2	V	9.8	-34.80	-13	-21.80
GSM 1900, 1909.8MHz								
3819.6	-50.80	314	2.5	H	8.1	-42.70	-13	-29.70
3819.6	-51.10	227	1.5	V	7.6	-43.50	-13	-30.50
5729.4	-44.90	77	2.2	H	11.4	-33.50	-13	-20.50
5729.4	-45.80	139	1.9	V	10	-35.80	-13	-22.80
WCDMA Band2,1852.4MHz								
3704.8	-50.70	284	2.5	H	8.2	-42.50	-13	-29.50
3704.8	-49.40	216	1.1	V	6.9	-42.50	-13	-29.50
5557.2	-45.80	214	2.5	H	9.1	-36.70	-13	-23.70
5557.2	-50.00	34	1.6	V	9.9	-40.10	-13	-27.10
WCDMA Band2,1880MHz								
3760.0	-51.40	192	2.2	H	8.2	-43.20	-13	-30.20
3760.0	-49.30	262	1.8	V	7.7	-41.60	-13	-28.60
5640.0	-48.50	94	2.4	H	10.7	-37.80	-13	-24.80
5640.0	-50.20	160	1.9	V	9.8	-40.40	-13	-27.40
WCDMA Band2,1907.6MHz								
3815.2	-50.20	28	1.8	H	8.2	-42.00	-13	-29.00
3815.2	-48.00	246	1.1	V	7.5	-40.50	-13	-27.50
5722.8	-50.80	163	2.1	H	11.3	-39.50	-13	-26.50
5722.8	-51.20	336	1.9	V	10	-41.20	-13	-28.20

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 2								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, QPSK, Low channel								
3701.4	-47.80	232	2.3	H	8.2	-39.60	-13	-26.60
3701.4	-46.30	75	2.4	V	6.9	-39.40	-13	-26.40
5552.1	-45.20	146	2.3	H	9	-36.20	-13	-23.20
5552.1	-45.60	319	1.5	V	10	-35.60	-13	-22.60
1.4MHz bandwidth, QPSK, Middle channel								
3760.0	-49.10	322	2.4	H	8.2	-40.90	-13	-27.90
3760.0	-46.30	170	1	V	7.7	-38.60	-13	-25.60
5640.0	-45.70	52	1.1	H	10.7	-35.00	-13	-22.00
5640.0	-44.30	241	2.4	V	9.8	-34.50	-13	-21.50
1.4MHz bandwidth, QPSK, High channel								
3818.6	-46.20	276	1	H	8.1	-38.10	-13	-25.10
3818.6	-43.50	196	1	V	7.6	-35.90	-13	-22.90
5727.9	-48.00	154	1.8	H	11.4	-36.60	-13	-23.60
5727.9	-44.30	11	1.2	V	10	-34.30	-13	-21.30
LTE Band 4								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, QPSK, Low channel								
3421.4	-40.90	52	1	H	5.8	-35.10	-13	-22.10
3421.4	-41.80	258	1.2	V	6	-35.80	-13	-22.80
5132.1	-49.00	194	1.6	H	11.3	-37.70	-13	-24.70
5132.1	-47.60	49	2.1	V	10.6	-37.00	-13	-24.00
1.4MHz bandwidth, QPSK, Middle channel								
3465.0	-47.30	50	1.7	H	6.5	-40.80	-13	-27.80
3465.0	-48.20	136	1.3	V	6.7	-41.50	-13	-28.50
5197.5	-47.20	127	1.7	H	11.1	-36.10	-13	-23.10
5197.5	-45.90	18	1.7	V	9.8	-36.10	-13	-23.10
1.4MHz bandwidth, QPSK, High channel								
3508.6	-46.90	9	2.4	H	8.2	-38.70	-13	-25.70
3508.6	-44.10	13	1.1	V	6	-38.10	-13	-25.10
5262.9	-41.40	301	1.6	H	9.7	-31.70	-13	-18.70
5262.9	-42.30	225	2.2	V	9.3	-33.00	-13	-20.00

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 5								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, QPSK, Low channel								
1649.4	-51.40	310	1.4	H	3	-48.40	-13	-35.40
1649.4	-52.50	298	1.5	V	2.6	-49.90	-13	-36.90
2474.1	-41.10	247	2.2	H	7.1	-34.00	-13	-21.00
2474.1	-40.50	218	1.9	V	5.9	-34.60	-13	-21.60
3298.8	-41.60	12	2.3	H	6.7	-34.90	-13	-21.90
3298.8	-45.10	124	1.8	V	6.2	-38.90	-13	-25.90
1.4MHz bandwidth, QPSK, Middle channel								
1673.0	-50.50	211	2.4	H	3.1	-47.40	-13	-34.40
1673.0	-49.90	8	1.3	V	2.5	-47.40	-13	-34.40
2509.5	-53.30	121	1.4	H	7.1	-46.20	-13	-33.20
2509.5	-49.70	60	2	V	5.4	-44.30	-13	-31.30
3346.0	-44.40	324	1.2	H	7.3	-37.10	-13	-24.10
3346.0	-44.30	193	1.7	V	5.4	-38.90	-13	-25.90
1.4MHz bandwidth, QPSK, High channel								
1696.6	-51.70	219	1.8	H	3.3	-48.40	-13	-35.40
1696.6	-51.00	235	1.7	V	2.4	-48.60	-13	-35.60
2544.9	-54.60	183	2.1	H	6.9	-47.70	-13	-34.70
2544.9	-53.60	149	2.2	V	6.1	-47.50	-13	-34.50
3393.2	-39.50	88	1.8	H	5.9	-33.60	-13	-20.60
3393.2	-40.80	175	1.4	V	5.2	-35.60	-13	-22.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 7								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, QPSK, Low channel								
5005.0	-52.90	171	1.6	H	10.8	-42.10	-25	-17.10
5005.0	-51.60	300	1.7	V	10.2	-41.40	-25	-16.40
7507.5	-56.80	260	1.2	H	19.8	-37.00	-25	-12.00
7507.5	-52.70	80	1.8	V	19.5	-33.20	-25	-8.20
5MHz bandwidth, QPSK, Middle channel								
5070.0	-52.80	321	1.8	H	11.6	-41.20	-25	-16.20
5070.0	-52.20	308	1.9	V	11.2	-41.00	-25	-16.00
7605.0	-61.70	315	2.4	H	21.9	-39.80	-25	-14.80
7605.0	-55.10	131	2.1	V	19.8	-35.30	-25	-10.30
5MHz bandwidth, QPSK, High channel								
5135.0	-52.10	202	2.2	H	11.3	-40.80	-25	-15.80
5135.0	-50.90	129	1.5	V	10.6	-40.30	-25	-15.30
7702.5	-58.50	90	1.1	H	20.8	-37.70	-25	-12.70
7702.5	-53.50	196	1.1	V	21.8	-31.70	-25	-6.70

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 12								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, QPSK, Low channel								
1399.4	-59.20	195	1.6	H	5.5	-53.70	-13	-40.70
1399.4	-60.10	317	2.2	V	6.3	-53.80	-13	-40.80
2099.1	-51.20	233	1.4	H	5.8	-45.40	-13	-32.40
2099.1	-51.20	68	1.8	V	4.6	-46.60	-13	-33.60
2798.8	-50.70	137	2.5	H	5.8	-44.90	-13	-31.90
2798.8	-50.00	268	2.3	V	6.9	-43.10	-13	-30.10
1.4MHz bandwidth, QPSK, Middle channel								
1415.0	-57.30	243	1.8	H	5.1	-52.20	-13	-39.20
1415.0	-58.40	340	2.3	V	5.6	-52.80	-13	-39.80
2122.5	-52.30	89	1.2	H	6.7	-45.60	-13	-32.60
2122.5	-52.40	62	1.9	V	5.6	-46.80	-13	-33.80
2830.0	-50.20	273	2.2	H	6.3	-43.90	-13	-30.90
2830.0	-49.70	69	1.3	V	6.5	-43.20	-13	-30.20
1.4MHz bandwidth, QPSK, High channel								
1430.6	-57.00	222	1.8	H	4.7	-52.30	-13	-39.30
1430.6	-58.00	199	1.1	V	4.9	-53.10	-13	-40.10
2145.9	-52.20	243	2	H	7.6	-44.60	-13	-31.60
2145.9	-52.50	248	1.6	V	6.7	-45.80	-13	-32.80
2861.2	-51.90	247	1.6	H	6.7	-45.20	-13	-32.20
2861.2	-50.80	87	2	V	6.2	-44.60	-13	-31.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 17								
Test frequency range: 30MHz-10GHz								
5MHz bandwidth, QPSK, Low channel								
1413.0	-56.70	0	2.5	H	5.2	-51.50	-13	-38.50
1413.0	-55.60	155	1.9	V	5.7	-49.90	-13	-36.90
2119.5	-52.80	235	1.1	H	6.6	-46.20	-13	-33.20
2119.5	-52.40	112	1.6	V	5.5	-46.90	-13	-33.90
2826.0	-51.40	195	1.3	H	6.2	-45.20	-13	-32.20
2826.0	-51.10	60	2.1	V	6.6	-44.50	-13	-31.50
5MHz bandwidth, QPSK, Middle channel								
1420.0	-57.70	170	2.5	H	5	-52.70	-13	-39.70
1420.0	-58.00	2	1.2	V	5.4	-52.60	-13	-39.60
2130.0	-53.00	173	1.1	H	7	-46.00	-13	-33.00
2130.0	-52.60	255	1.5	V	6	-46.60	-13	-33.60
2840.0	-51.00	256	2.5	H	6.4	-44.60	-13	-31.60
2840.0	-49.60	288	1.6	V	6.3	-43.30	-13	-30.30
5MHz bandwidth, QPSK, High channel								
1427.0	-57.80	270	1.8	H	4.8	-53.00	-13	-40.00
1427.0	-58.70	358	1.8	V	5	-53.70	-13	-40.70
2140.5	-53.30	63	1.1	H	7.4	-45.90	-13	-32.90
2140.5	-53.00	21	1.2	V	6.5	-46.50	-13	-33.50
2854.0	-53.80	111	1.9	H	6.6	-47.20	-13	-34.20
2854.0	-53.20	187	1.9	V	6.2	-47.00	-13	-34.00

Note:
Absolute Level = Reading Level + Substituted Factor
Substituted Factor contains: Substituted Level - Cable loss+ Antenna Gain
Margin = Absolute Level – Limit
Other emissions which was more than 20dB below limit was not recorded

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

Applicable Standard

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

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

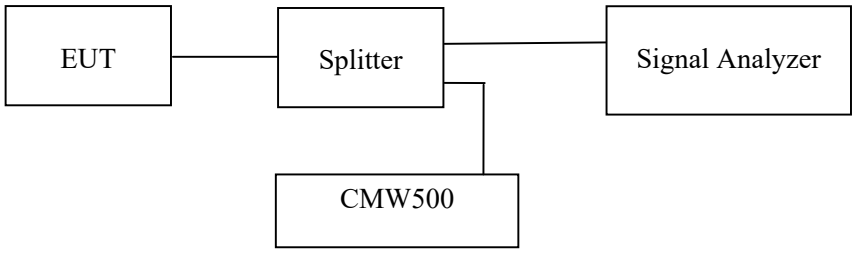
According to FCC §27.53 (g)(h), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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

Test Procedure

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

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



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

Test Data

Environmental Conditions

Temperature:	24~27 ℃
Relative Humidity:	52~60 %
ATM Pressure:	101.0 kPa

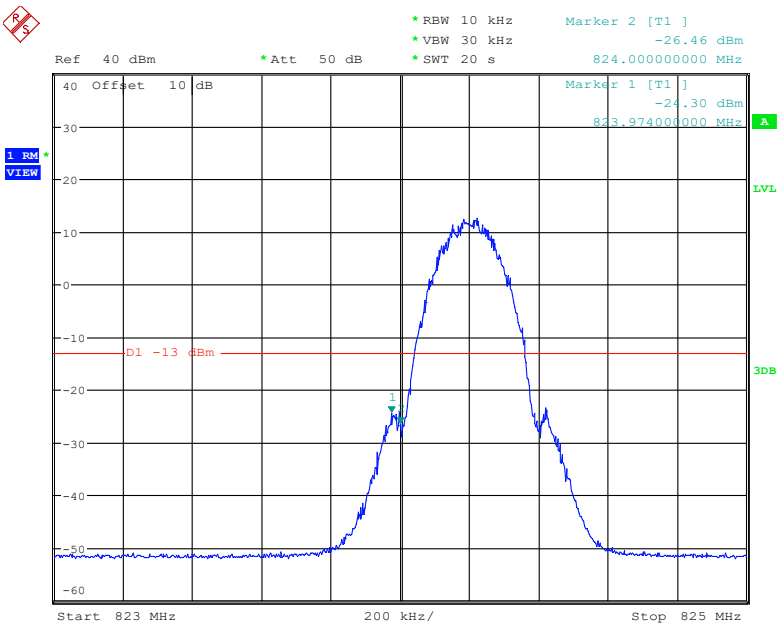
The testing was performed by Jacob Huang from 2023-05-05 to 2023-05-08.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

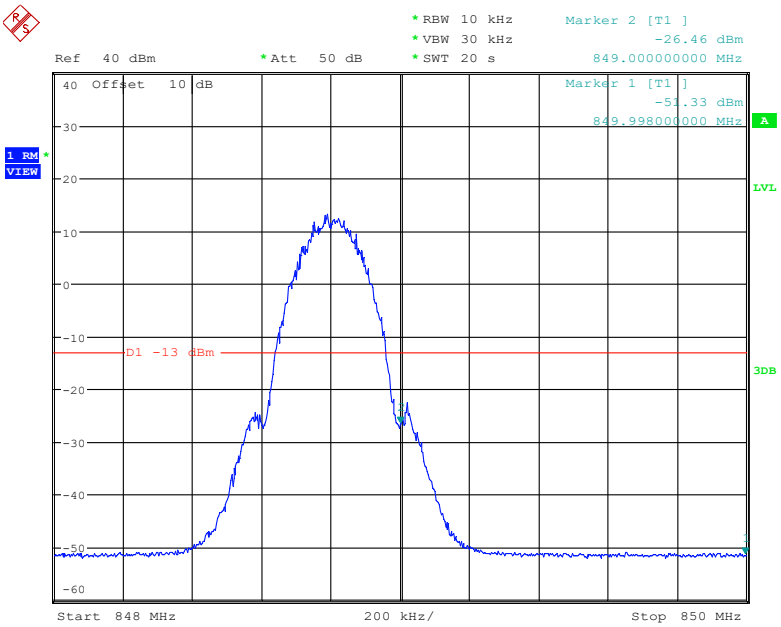
Please refer to the following plots.

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



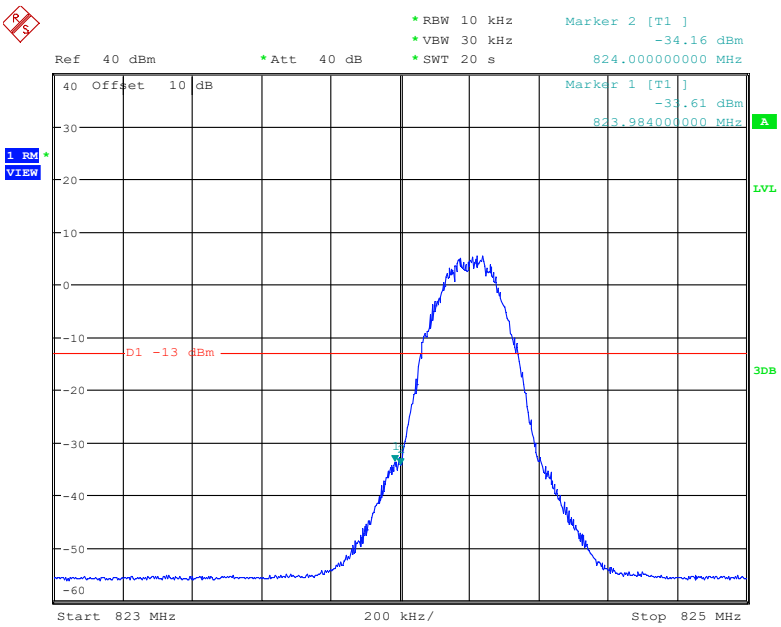
Date: 5.MAY.2023 14:15:32

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



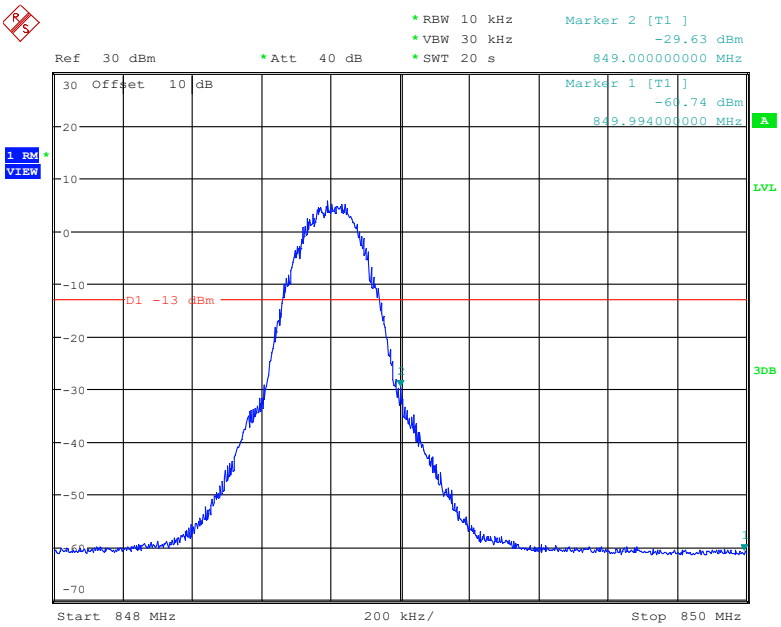
Date: 5.MAY.2023 14:33:18

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



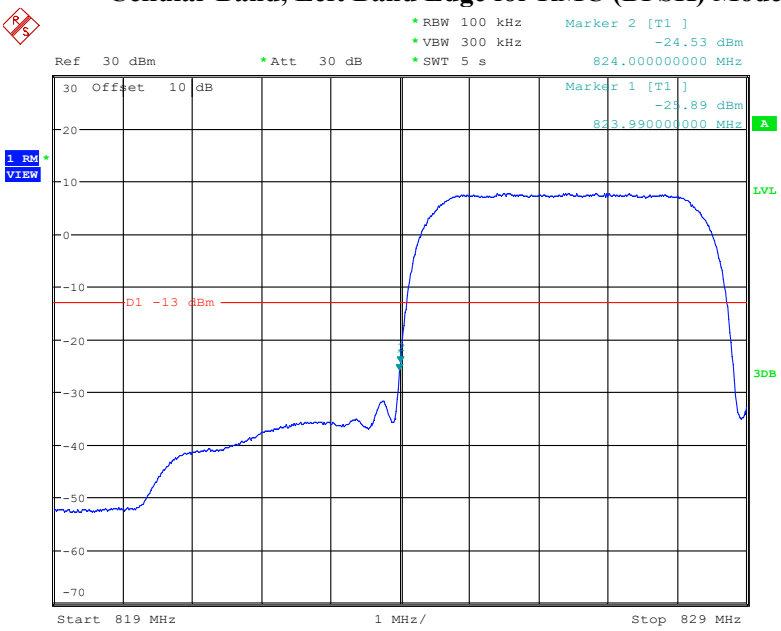
Date: 5.MAY.2023 15:07:48

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



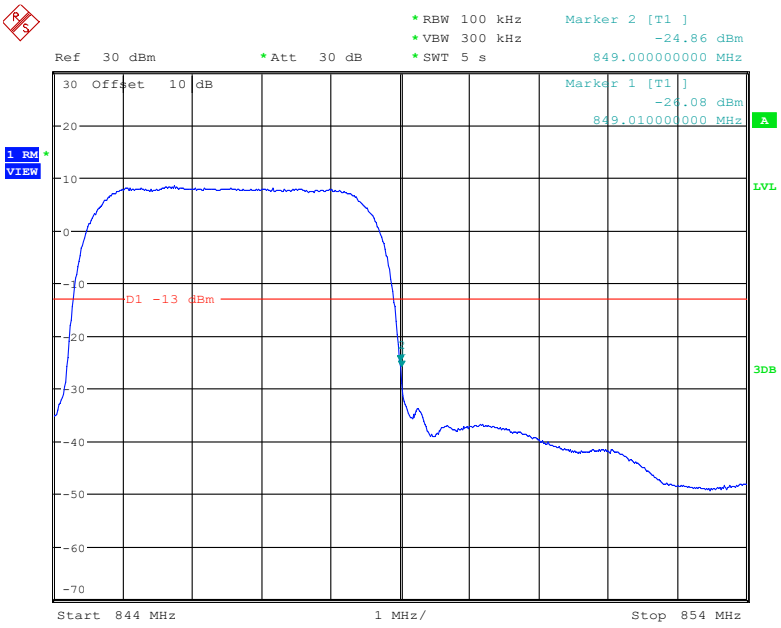
Date: 5.MAY.2023 15:22:10

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



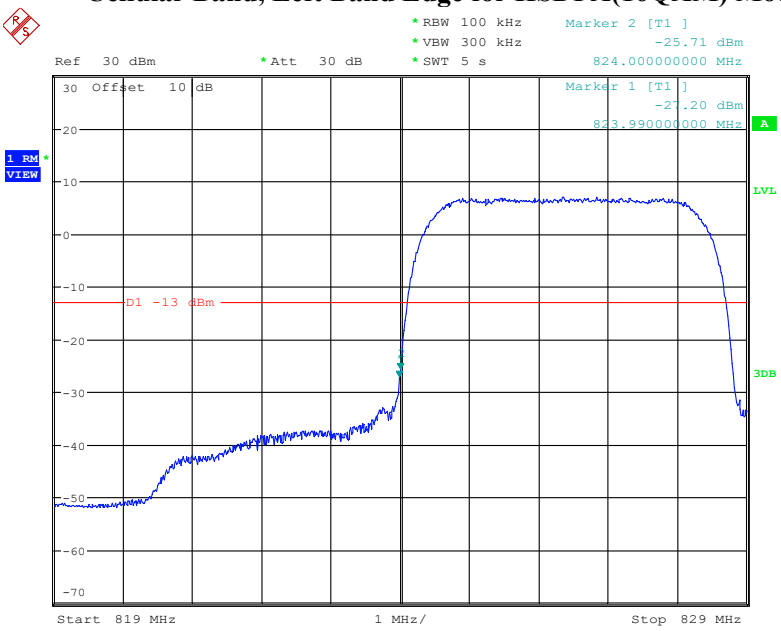
Date: 5.MAY.2023 11:56:46

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



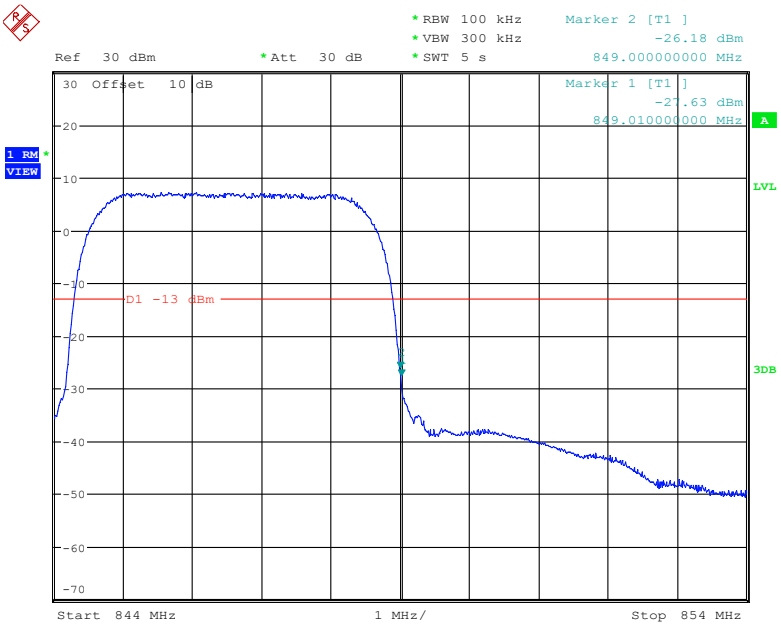
Date: 5.MAY.2023 12:05:22

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



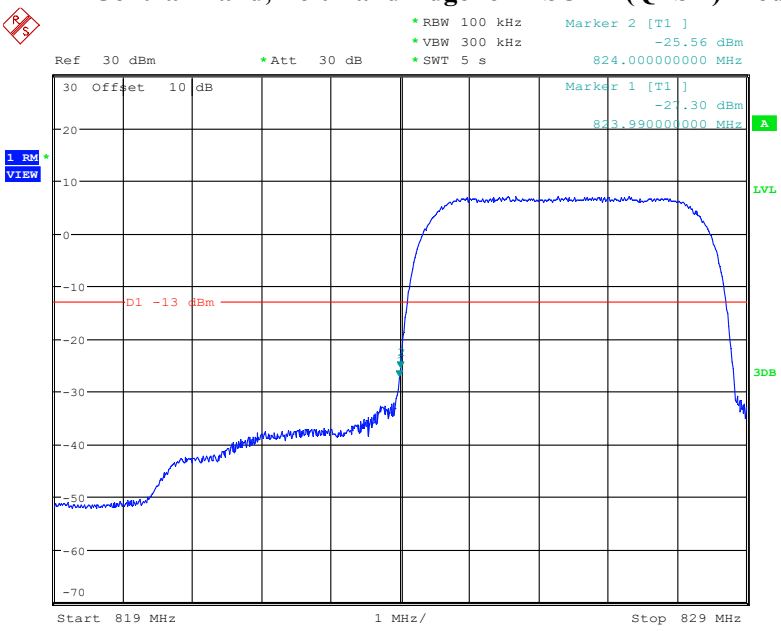
Date: 5.MAY.2023 12:14:00

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



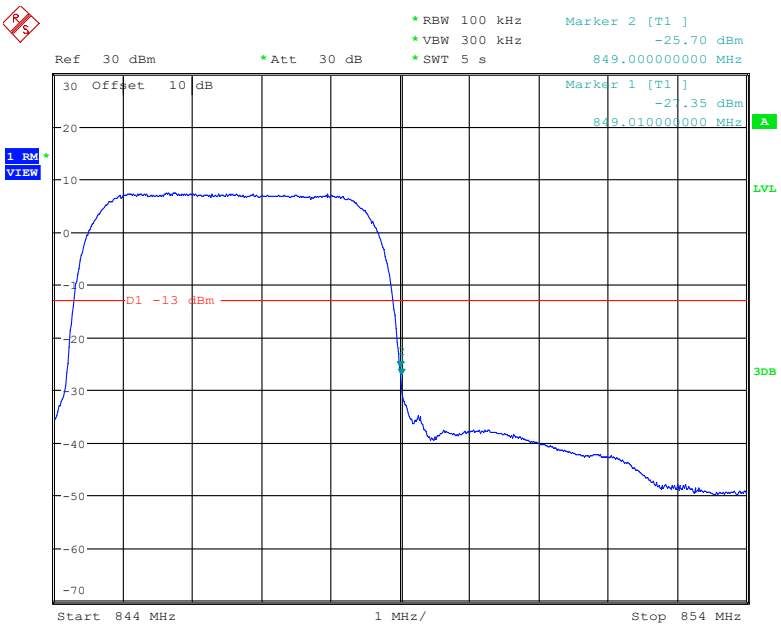
Date: 5.MAY.2023 12:42:31

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



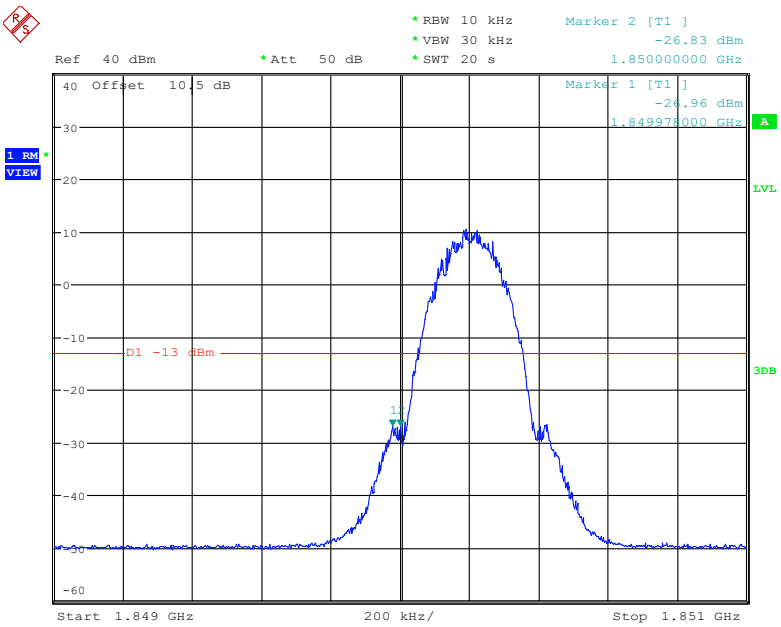
Date: 5.MAY.2023 12:48:43

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



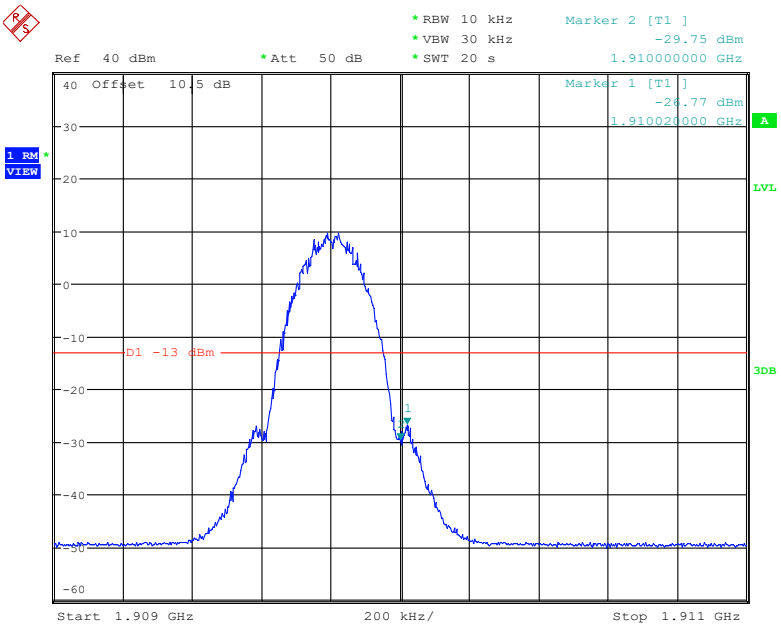
Date: 5.MAY.2023 13:06:50

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



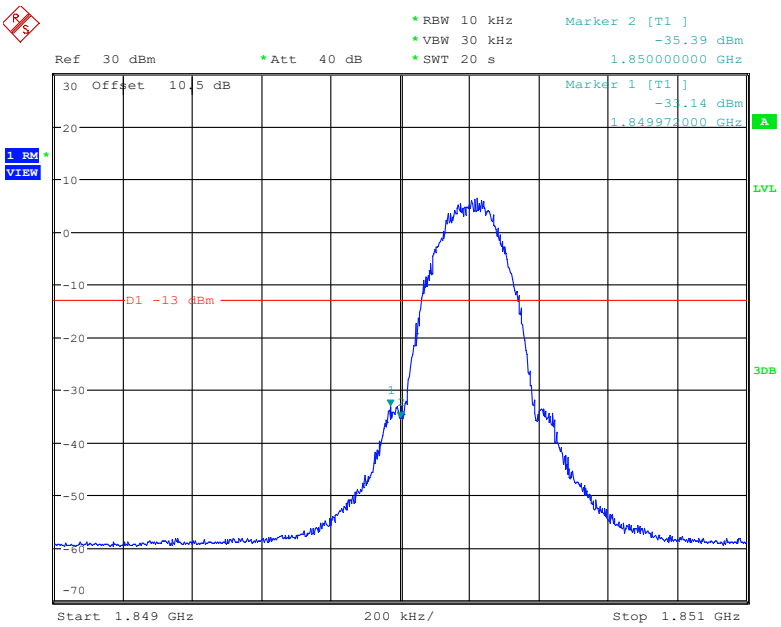
Date: 5.MAY.2023 15:32:16

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



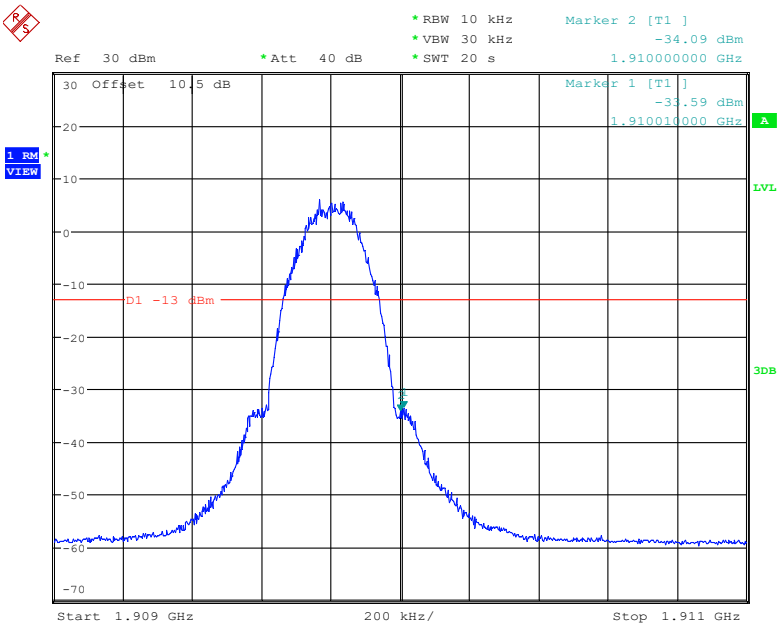
Date: 5.MAY.2023 15:54:53

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



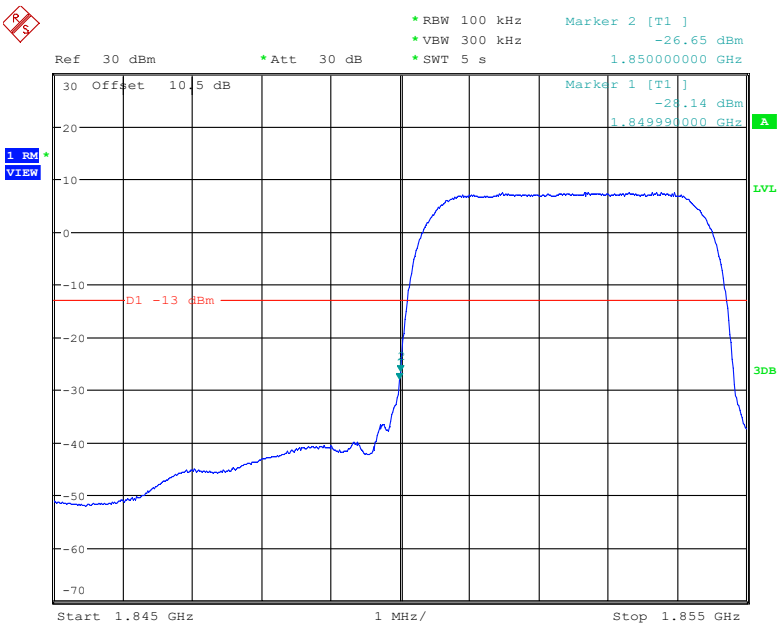
Date: 5.MAY.2023 16:33:56

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



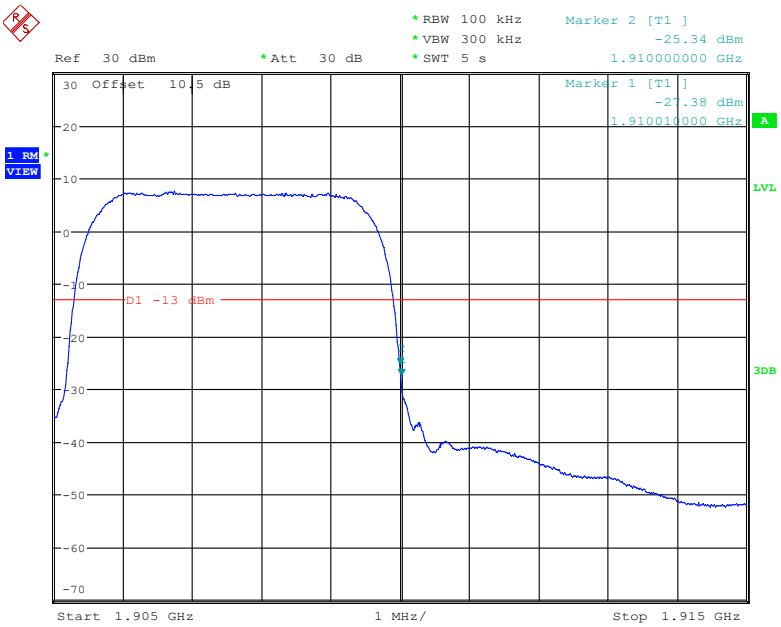
Date: 5.MAY.2023 16:49:00

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



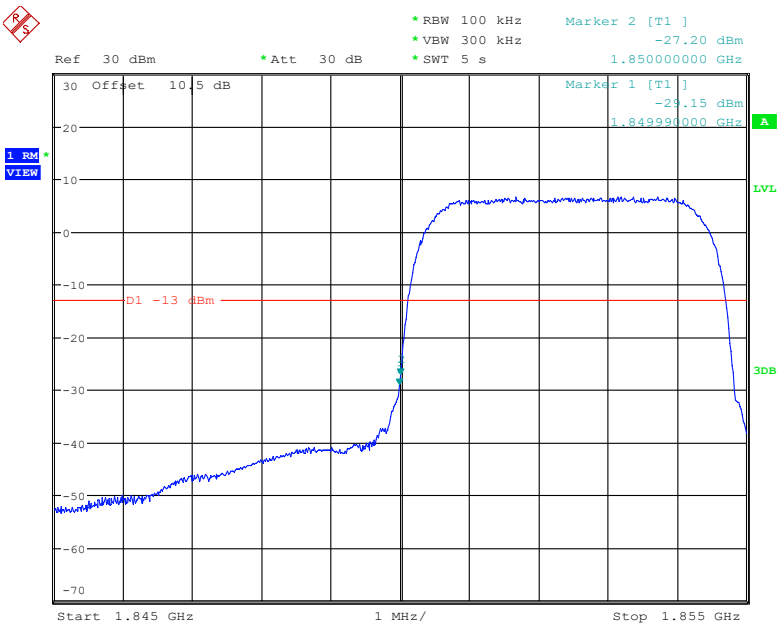
Date: 5.MAY.2023 08:48:59

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



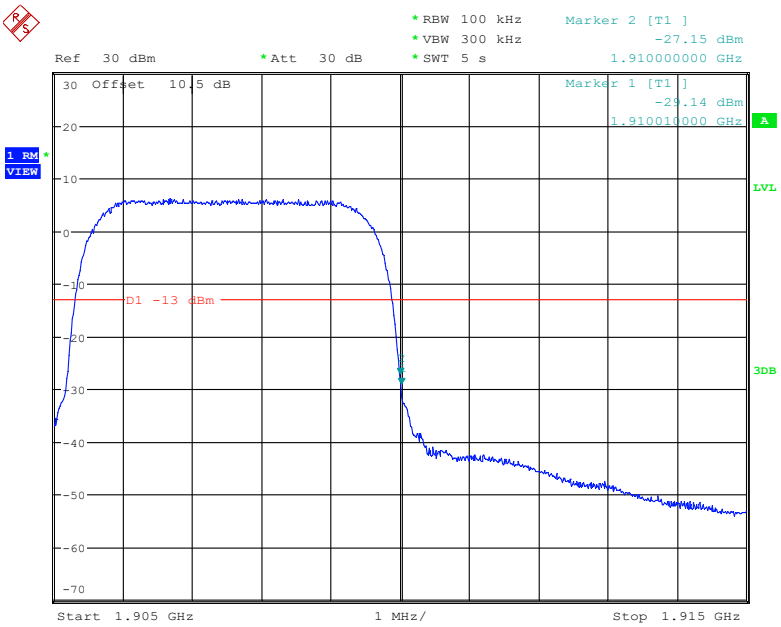
Date: 5.MAY.2023 08:57:18

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



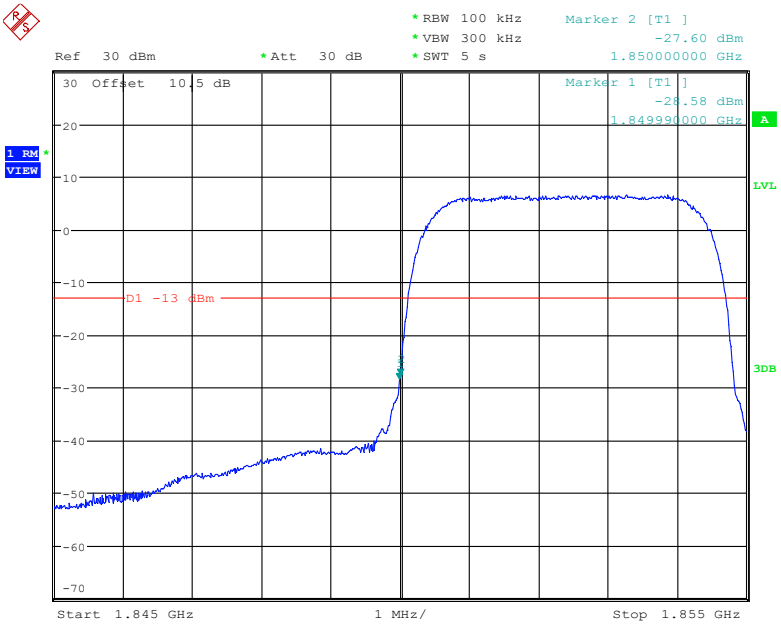
Date: 5.MAY.2023 09:12:22

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



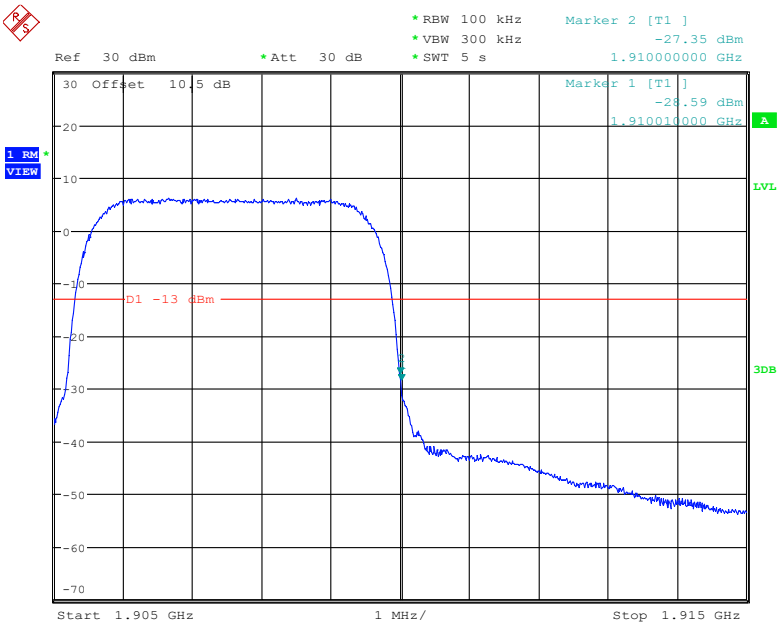
Date: 5.MAY.2023 09:23:52

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



Date: 5.MAY.2023 09:50:49

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



Date: 5.MAY.2023 10:00:27

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

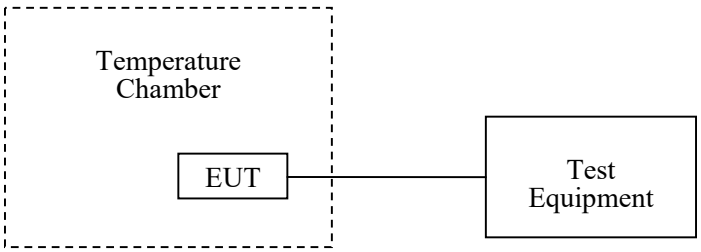
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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:	24~27 ℃
Relative Humidity:	52~60 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-05-04 to 2023-05-08.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.(worst case listed)

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.	8	0.009563	2.5
-20		9	0.010758	2.5
-10		5	0.005977	2.5
0		3	0.003586	2.5
10		4	0.004781	2.5
20		1	0.001195	2.5
30		7	0.008367	2.5
40		5	0.005977	2.5
50		9	0.010758	2.5
20	L.V.	6	0.007172	2.5
	H.V.	2	0.002391	2.5

EDGE Mode

Middle Channel, f_o =836.6MHz				
Temperature (°C)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	2	0.002391	2.5
-20		6	0.007172	2.5
-10		5	0.005977	2.5
0		-2	-0.002390	2.5
10		3	0.003586	2.5
20		-2	-0.002391	2.5
30		4	0.004781	2.5
40		-2	-0.002390	2.5
50		-3	-0.003590	2.5
20	L.V.	5	0.005977	2.5
	H.V.	6	0.007172	2.5

WCDMA Mode

Middle Channel, f_o =836.6MHz				
Temperature (°C)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	2	0.002391	2.5
-20		9	0.010758	2.5
-10		6	0.007172	2.5
0		8	0.009563	2.5
10		1	0.001195	2.5
20		-1	-0.001195	2.5
30		5	0.005977	2.5
40		9	0.010758	2.5
50		-3	-0.003590	2.5
20	L.V.	4	0.004781	2.5
	H.V.	-3	-0.003590	2.5

PCS Band (Part 24E)

GSM Mode

Middle Channel, f_o =1880MHz					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1850.0437	1909.9532	1850	1910
-20		1850.0433	1909.9643	1850	1910
-10		1850.0369	1909.9784	1850	1910
0		1850.0669	1909.9575	1850	1910
10		1850.0493	1909.9732	1850	1910
20		1850.0604	1909.9654	1850	1910
30		1850.0556	1909.9655	1850	1910
40		1850.0499	1909.9735	1850	1910
50		1850.0489	1909.9601	1850	1910
20	L.V.	1850.0505	1909.9568	1850	1910
	H.V.	1850.0324	1909.9518	1850	1910

EDGE Mode

Middle Channel, f_o =1880MHz					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1850.0457	1909.9264	1850	1910
-20		1850.0424	1909.9457	1850	1910
-10		1850.0378	1909.9461	1850	1910
0		1850.0149	1909.9872	1850	1910
10		1850.0245	1909.9212	1850	1910
20		1850.0604	1909.9423	1850	1910
30		1850.0684	1909.9655	1850	1910
40		1850.0499	1909.9684	1850	1910
50		1850.0216	1909.9651	1850	1910
20	L.V.	1850.0305	1909.9546	1850	1910
	H.V.	1850.0396	1909.9534	1850	1910

WCDMA Mode

Middle Channel, f_o =1880MHz					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	1850.0381	1909.9890	1850	1910
-20		1850.0275	1909.9839	1850	1910
-10		1850.0247	1909.9873	1850	1910
0		1850.0423	1909.9984	1850	1910
10		1850.0334	1909.9919	1850	1910
20		1850.0508	1909.9821	1850	1910
30		1850.0312	1909.9966	1850	1910
40		1850.0303	1909.9678	1850	1910
50		1850.0502	1909.9810	1850	1910
20	L.V.	1850.0285	1909.9716	1850	1910
	H.V.	1850.0501	1909.9802	1850	1910

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.	1850.1587	1909.7729	1850	1910
-20		1850.1675	1909.7829	1850	1910
-10		1850.1738	1909.7873	1850	1910
0		1850.1532	1909.7651	1850	1910
10		1850.1691	1909.7694	1850	1910
20		1850.1678	1909.7857	1850	1910
30		1850.1636	1909.7656	1850	1910
40		1850.1815	1909.7587	1850	1910
50		1850.1647	1909.7732	1850	1910
20	L.V.	1850.1771	1909.7761	1850	1910
	H.V.	1850.1742	1909.7819	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.	1710.1265	1754.9365	1710	1755
-20		1710.1231	1754.9265	1710	1755
-10		1710.1265	1754.9965	1710	1755
0		1710.1458	1754.9845	1710	1755
10		1710.1569	1754.9784	1710	1755
20		1710.1853	1754.9126	1710	1755
30		1710.1691	1754.9236	1710	1755
40		1710.1369	1754.9951	1710	1755
50		1710.1589	1754.9254	1710	1755
20	L.V.	1710.1451	1754.9368	1710	1755
	H.V.	1710.1126	1754.9452	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.	-14.92	-0.0178	2.5
-20		6.60	0.0079	2.5
-10		8.20	0.0098	2.5
0		7.97	0.0095	2.5
10		-5.46	-0.0065	2.5
20		8.38	0.0100	2.5
30		-6.67	-0.0080	2.5
40		8.44	0.0101	2.5
50		8.89	0.0106	2.5
20	L.V.	8.74	0.0104	2.5
	H.V.	5.51	0.0066	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.	2500.1974	2569.8813	2500	2570
-20		2500.1986	2569.9019	2500	2570
-10		2500.1809	2569.8997	2500	2570
0		2500.1706	2569.8742	2500	2570
10		2500.1977	2569.9004	2500	2570
20		2500.2047	2569.8374	2500	2570
30		2500.1676	2569.8448	2500	2570
40		2500.1776	2569.9002	2500	2570
50		2500.1500	2569.9030	2500	2570
20	L.V.	2500.1463	2569.8763	2500	2570
	H.V.	2500.1543	2569.8886	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	699.1715	715.8765	699	716
-20		699.1635	715.8864	699	716
-10		699.1564	715.8408	699	716
0		699.1484	715.8723	699	716
10		699.1306	715.8513	699	716
20		699.1562	715.8674	699	716
30		699.1202	715.8318	699	716
40		699.1288	715.8411	699	716
50		699.1178	715.8594	699	716
20	L.V.	699.1546	715.8818	699	716
	H.V.	699.1504	715.8629	699	716

Band 17:

10 MHz Bandwidth					
Temperature (°C)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	704.1569	715.9963	704	716
-20		704.1215	715.9568	704	716
-10		704.1145	715.9451	704	716
0		704.1147	715.9215	704	716
10		704.1258	715.9258	704	716
20		704.1652	715.9623	704	716
30		704.1458	715.9584	704	716
40		704.1596	715.9269	704	716
50		704.1528	715.9124	704	716
20	L.V.	704.1263	715.9589	704	716
	H.V.	704.1024	715.9264	704	716

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.	1850.1743	1909.7715	1850	1910
-20		1850.1582	1909.7845	1850	1910
-10		1850.1791	1909.7922	1850	1910
0		1850.1644	1909.7724	1850	1910
10		1850.1867	1909.7660	1850	1910
20		1850.1744	1909.8009	1850	1910
30		1850.1765	1909.7730	1850	1910
40		1850.1981	1909.7658	1850	1910
50		1850.1667	1909.7728	1850	1910
20	L.V.	1850.1737	1909.7914	1850	1910
	H.V.	1850.1693	1909.7941	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.	1710.1265	1754.9365	1710	1755
-20		1710.1231	1754.9265	1710	1755
-10		1710.1265	1754.9965	1710	1755
0		1710.1458	1754.9845	1710	1755
10		1710.1569	1754.9784	1710	1755
20		1710.1853	1754.9126	1710	1755
30		1710.1691	1754.9236	1710	1755
40		1710.1369	1754.9951	1710	1755
50		1710.1589	1754.9254	1710	1755
20	L.V.	1710.1451	1754.9368	1710	1755
	H.V.	1710.1126	1754.9452	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.	7.56	0.0090	2.5
-20		-7.54	-0.0090	2.5
-10		8.30	0.0099	2.5
0		-6.78	-0.0081	2.5
10		-6.47	-0.0077	2.5
20		-5.21	-0.0062	2.5
30		9.21	0.0110	2.5
40		-7.89	-0.0094	2.5
50		6.57	0.0079	2.5
20	L.V.	6.20	0.0074	2.5
	H.V.	7.41	0.0089	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.	2500.1949	2569.8927	2500	2570
-20		2500.2090	2569.8955	2500	2570
-10		2500.1938	2569.9090	2500	2570
0		2500.1829	2569.8891	2500	2570
10		2500.1973	2569.8977	2500	2570
20		2500.2036	2569.8293	2500	2570
30		2500.1756	2569.8498	2500	2570
40		2500.1836	2569.9163	2500	2570
50		2500.1611	2569.9107	2500	2570
20	L.V.	2500.1451	2569.8927	2500	2570
	H.V.	2500.1716	2569.8990	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	699.1698	715.8811	699	716
-20		699.1735	715.8833	699	716
-10		699.1483	715.8564	699	716
0		699.1463	715.8891	699	716
10		699.1298	715.8533	699	716
20		699.1536	715.8784	699	716
30		699.1235	715.8405	699	716
40		699.1258	715.8489	699	716
50		699.1108	715.8649	699	716
20	L.V.	699.1694	715.8952	699	716
	H.V.	699.1624	715.8709	699	716

Band 17:

10 MHz Bandwidth					
Temperature (°C)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	N.V.	704.1569	715.9963	704	716
-20		704.1215	715.9568	704	716
-10		704.1145	715.9451	704	716
0		704.1147	715.9215	704	716
10		704.1258	715.9258	704	716
20		704.1652	715.9623	704	716
30		704.1458	715.9584	704	716
40		704.1596	715.9269	704	716
50		704.1528	715.9124	704	716
20	L.V.	704.1263	715.9589	704	716
	H.V.	704.1024	715.9264	704	716

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