TESTREPORT

Applicant Name :	Bolt Modus Corp
Address :	Oficina N.33 Edificio Ofidepositos Central, Calidonia - Distrito Federal, Panama
Report Number:	SZNS220812-36653E-RF-00C
FCC ID:	2APW4MAX3U

Test Standard (s)

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

Sample Description

Product Type:	4G Smart Phone
Model No.:	MAX 3 ULTRA
Multiple Model(s) No.:	N/A
Trade Mark:	YEZZ
Date Received:	2022/08/12
Report Date:	2022/09/27

Test Result:	Pass*

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

Prepared and Checked By:

Audy 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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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 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: 0.1 dBi PCS1900/WCDMA Band 2/ LTE Band 2: 0.1dBi LTE Band 4: 0.2 dBi LTE Band 7: -0.5dBi LTE Band 12/LTE Band 17:-0.1dBi (provided by the applicant)
Voltage Range	DC 3.85V from battery or DC 5V from adapter
Sample serial number	SZNS220812-36653E-RF-S1 for Conducted and Radiated Emissions SZNS220812-36653E-RF-S2 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Extreme condition*	L.V.: Low Voltage 3.4V_{DC} N.V.: Normal Voltage 3.85V_{DC} H.V.: High Voltage 4.4V_{DC} (provided by the applicant)
Adapter information	Model: CMAX3U Input: AC 100-240V, 50/60Hz 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, and Subpart 27 of the Federal Communication Commission's rules.

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

Test Methodology

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

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

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

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 output power, conducted		±0.73dB
Unwanted Emission, conducted		±1.6dB
RF Frequency		$\pm 0.082*10^{-7}$
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz - 18GHz	±4.98dB
	18GHz - 26.5GHz	±5.06dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

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

Test Facility

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

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B5	4.2	826.4	836.4	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE 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.

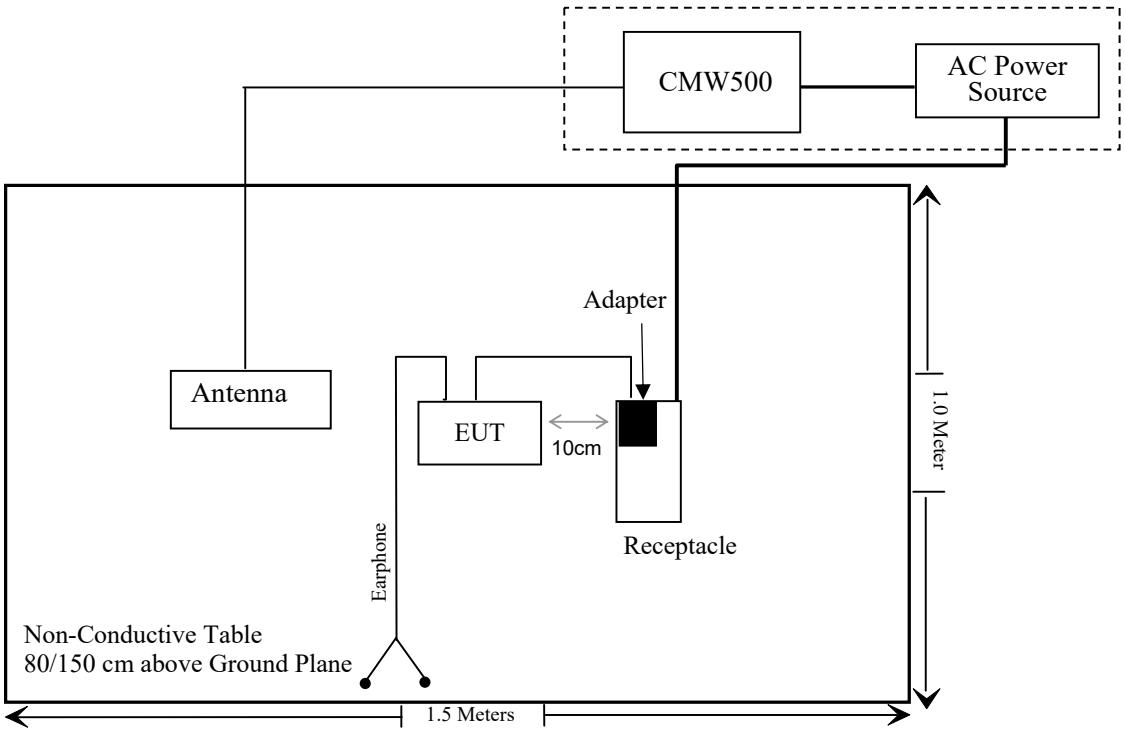
Support Equipment List and Details

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



SUMMARY OF TEST RESULTS

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

Note: * Please refer to SAR report number: SZNS220812-36653E-SA.

TEST EQUIPMENT LIST

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

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
SPECTRUM ANALYZER	Rohde & Schwarz	FSU26	200982	2022/07/06	2023/07/05
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2021/12/13	2022/12/12
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2021/12/13	2022/12/12
WEINSCHEL	10dB Attenuator	5324	AU 3842	2021/12/14	2022/12/13
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2021/12/14	2022/12/13
Gongwen	Temp. & Humid. Chamber	HSD-500	109	2021/10/14	2022/10/13
Fluke	Multi Meter	45	7664009	2021/12/14	2022/12/13
Manson	DC Power Source	KPS-6604	ATCS-205	NCR	NCR
Unknown	RF Coaxial Cable	No.33	RF-03	Each time	/
Unknown	RF Coaxial Cable	No.31	RF-01	Each time	/
Unknown	RF Cable	Unknown	2	Each time	/
HP	6dB Attenuator	8493B	2708A 04769	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF824-862 MS-1147	ATCE-141	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF1850-1910MS-1148	ATCE-142	2021/12/14	2022/12/13

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: SZNS220812-36653E-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

According to §27.50(c), 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.

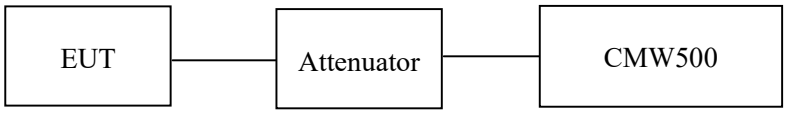
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

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:	27 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang on 2022-08-30.

Conducted Power

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	32.31	29.76	38.45
	190	836.6	32.65	30.10	38.45
	251	848.8	32.62	30.07	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	33.45	32.49	30.72	29.45	30.90	29.94	28.17	26.90	38.45
	190	836.6	33.42	32.51	30.58	29.32	30.87	29.96	28.03	26.77	38.45
	251	848.8	33.35	32.42	30.42	29.21	30.80	29.87	27.87	26.66	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	26.46	25.49	23.35	22.46	23.91	22.94	20.80	19.91	38.45
	190	836.6	26.45	25.45	23.37	22.47	23.90	22.90	20.82	19.92	38.45
	251	848.8	26.37	25.31	23.24	22.43	23.82	22.76	20.69	19.88	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		22.67	22.72	22.79	20.12	20.17	20.24
	HSDPA	1	22.56	22.63	22.16	20.01	20.08	19.61
		2	22.57	22.54	22.17	20.02	19.99	19.62
		3	22.45	22.49	22.05	19.90	19.94	19.50
		4	22.43	22.51	22.03	19.88	19.96	19.48
	HSUPA	1	22.21	22.22	21.81	19.66	19.67	19.26
		2	22.20	22.21	21.80	19.65	19.66	19.25
		3	22.20	22.04	21.80	19.65	19.49	19.25
		4	22.01	21.76	21.61	19.46	19.21	19.06
		5	21.96	21.51	21.56	19.41	18.96	19.01
	HSPA+	1	21.97	21.46	21.57	19.42	18.91	19.02

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Insertion loss(dB)
For GSM850 / WCDMA Band5: Antenna Gain = 0.1dBi = -2.05dBd (0dBd=2.15dBi)
Insertion Loss=0.5dB* (Signal attenuation in connecting cable between the mainboard and transmitter antenna, it's 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	31.65	30.95	33
	661	1880.0	31.79	31.09	33
	810	1909.8	32.01	31.31	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.71	29.06	28.04	26.95	29.01	28.36	27.34	26.25	33
	661	1880.0	29.61	29.07	27.96	26.94	28.91	28.37	27.26	26.24	33
	810	1909.8	29.54	29.08	27.87	26.78	28.84	28.38	27.17	26.08	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	26.82	25.58	24.64	23.54	26.12	24.88	23.94	22.84	33
	661	1880.0	26.68	25.44	24.50	23.45	25.98	24.74	23.80	22.75	33
	810	1909.8	26.69	25.30	24.37	23.30	25.99	24.60	23.67	22.60	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		21.9	21.7	21.6	21.20	21.00	20.90
	HSDPA	1	21.82	21.60	21.61	21.12	20.90	20.91
		2	21.77	21.56	21.58	21.07	20.86	20.88
		3	21.78	21.49	21.52	21.08	20.79	20.82
		4	21.80	21.44	21.50	21.10	20.74	20.80
	HSUPA	1	21.64	21.42	21.29	20.94	20.72	20.59
		2	21.48	21.22	21.27	20.78	20.52	20.57
		3	21.24	21.17	21.14	20.54	20.47	20.44
		4	21.10	21.09	20.88	20.40	20.39	20.18
		5	21.05	20.99	20.85	20.35	20.29	20.15
	HSPA+	1	20.89	20.91	20.75	20.19	20.21	20.05

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Insertion loss(dB)
For PCS1900 / WCDMA Band2: Antenna Gain = 0.1dBi
Insertion Loss=0.8dB*(Signal attenuation in connecting cable between the mainboard and transmitter antenna, it's 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	20.32	20.03	19.97	19.62	19.33	19.27
		RB1#3	20.36	20.05	19.96	19.66	19.35	19.26
		RB1#5	20.34	20.06	19.94	19.64	19.36	19.24
		RB3#0	20.43	20.17	20.12	19.73	19.47	19.42
		RB3#3	20.40	20.25	20.03	19.70	19.55	19.33
		RB6#0	19.43	19.16	19.01	18.73	18.46	18.31
	16QAM	RB1#0	19.95	18.96	19.58	19.25	18.26	18.88
		RB1#3	20.02	19.00	19.59	19.32	18.30	18.89
		RB1#5	20.00	19.09	19.58	19.30	18.39	18.88
		RB3#0	19.21	19.34	19.00	18.51	18.64	18.30
		RB3#3	19.23	19.42	19.04	18.53	18.72	18.34
		RB6#0	18.53	18.22	18.22	17.83	17.52	17.52
3.0	QPSK	RB1#0	20.38	20.06	20.00	19.68	19.36	19.30
		RB1#8	20.35	20.15	19.96	19.65	19.45	19.26
		RB1#14	20.31	20.06	19.92	19.61	19.36	19.22
		RB6#0	19.37	19.18	18.93	18.67	18.48	18.23
		RB6#9	19.29	19.27	18.86	18.59	18.57	18.16
		RB15#0	19.35	19.08	18.94	18.65	18.38	18.24
	16QAM	RB1#0	20.04	19.02	19.40	19.34	18.32	18.70
		RB1#8	20.04	19.10	19.37	19.34	18.40	18.67
		RB1#14	19.96	19.03	19.31	19.26	18.33	18.61
		RB6#0	18.51	18.22	18.00	17.81	17.52	17.30
		RB6#9	18.41	18.26	17.95	17.71	17.56	17.25
		RB15#0	18.43	18.25	18.18	17.73	17.55	17.48

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.50	20.16	20.00	19.80	19.46	19.30
		RB1#13	20.34	20.13	19.93	19.64	19.43	19.23
		RB1#24	20.37	20.12	19.94	19.67	19.42	19.24
		RB15#0	19.29	19.14	19.11	18.59	18.44	18.41
		RB15#10	19.40	19.27	19.01	18.70	18.57	18.31
		RB25#0	19.30	19.09	19.05	18.60	18.39	18.35
	16QAM	RB1#0	19.49	18.82	18.19	18.79	18.12	17.49
		RB1#13	19.43	18.93	18.13	18.73	18.23	17.43
		RB1#24	19.46	18.85	18.11	18.76	18.15	17.41
		RB15#0	18.36	18.24	18.12	17.66	17.54	17.42
		RB15#10	18.21	18.25	18.11	17.51	17.55	17.41
		RB25#0	18.40	18.19	18.17	17.70	17.49	17.47
10.0	QPSK	RB1#0	20.45	20.22	19.93	19.75	19.52	19.23
		RB1#25	20.37	20.14	19.93	19.67	19.44	19.23
		RB1#49	20.33	20.21	19.91	19.63	19.51	19.21
		RB25#0	19.37	19.15	19.10	18.67	18.45	18.40
		RB25#25	19.33	19.13	18.98	18.63	18.43	18.28
		RB50#0	19.38	19.16	19.10	18.68	18.46	18.40
	16QAM	RB1#0	19.57	18.68	19.28	18.87	17.98	18.58
		RB1#25	19.51	18.57	19.26	18.81	17.87	18.56
		RB1#49	19.30	18.61	19.18	18.60	17.91	18.48
		RB25#0	18.47	18.37	18.11	17.77	17.67	17.41
		RB25#25	18.68	18.30	18.11	17.98	17.60	17.41
		RB50#0	18.46	18.28	18.18	17.76	17.58	17.48

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	20.49	20.16	20.08	19.79	19.46	19.38
		RB1#38	20.36	20.09	19.96	19.66	19.39	19.26
		RB1#74	20.27	20.09	19.92	19.57	19.39	19.22
		RB36#0	19.37	19.19	19.07	18.67	18.49	18.37
		RB36#39	19.31	19.09	19.00	18.61	18.39	18.30
		RB75#0	19.33	19.14	19.05	18.63	18.44	18.35
	16QAM	RB1#0	19.55	19.57	19.33	18.85	18.87	18.63
		RB1#38	19.40	19.52	19.28	18.70	18.82	18.58
		RB1#74	19.31	19.38	19.11	18.61	18.68	18.41
		RB36#0	18.49	18.23	18.17	17.79	17.53	17.47
		RB36#39	18.40	18.15	18.14	17.70	17.45	17.44
		RB75#0	18.65	18.25	18.15	17.95	17.55	17.45
20.0	QPSK	RB1#0	20.57	20.30	20.26	19.87	19.60	19.56
		RB1#50	20.37	20.10	20.06	19.67	19.40	19.36
		RB1#99	20.25	20.12	20.05	19.55	19.42	19.35
		RB50#0	19.41	19.25	19.07	18.71	18.55	18.37
		RB50#50	19.14	19.11	18.97	18.44	18.41	18.27
		RB100#0	19.17	19.22	19.06	18.47	18.52	18.36
	16QAM	RB1#0	19.41	19.99	19.28	18.71	19.29	18.58
		RB1#50	19.20	19.79	19.16	18.50	19.09	18.46
		RB1#99	19.22	19.80	19.06	18.52	19.10	18.36
		RB50#0	18.38	18.16	18.27	17.68	17.46	17.57
		RB50#50	18.19	18.17	18.16	17.49	17.47	17.46
		RB100#0	18.47	18.28	18.08	17.77	17.58	17.38

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Insertion Loss(dB)
For Band2: Antenna Gain = 0.1dBi
Insertion Loss=0.8dB*(Signal attenuation in connecting cable between the mainboard and transmitter antenna, it's 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	21.25	21.12	21.13	20.65	20.52	20.53
		RB1#3	21.27	21.12	21.11	20.67	20.52	20.51
		RB1#5	21.30	21.07	21.08	20.70	20.47	20.48
		RB3#0	21.22	21.28	21.29	20.62	20.68	20.69
		RB3#3	21.33	21.32	21.28	20.73	20.72	20.68
		RB6#0	20.33	20.26	20.21	19.73	19.66	19.61
	16QAM	RB1#0	21.00	19.95	20.81	20.40	19.35	20.21
		RB1#3	20.97	20.00	20.81	20.37	19.40	20.21
		RB1#5	21.00	20.01	20.80	20.40	19.41	20.20
		RB3#0	20.21	20.40	20.23	19.61	19.80	19.63
		RB3#3	20.18	20.38	20.22	19.58	19.78	19.62
		RB6#0	19.47	19.51	19.16	18.87	18.91	18.56
3.0	QPSK	RB1#0	21.28	21.15	21.16	20.68	20.55	20.56
		RB1#8	21.31	21.07	21.10	20.71	20.47	20.50
		RB1#14	21.29	21.13	21.03	20.69	20.53	20.43
		RB6#0	20.41	20.29	20.22	19.81	19.69	19.62
		RB6#9	20.37	20.24	20.06	19.77	19.64	19.46
		RB15#0	20.25	20.22	20.21	19.65	19.62	19.61
	16QAM	RB1#0	21.05	20.00	20.29	20.45	19.40	19.69
		RB1#8	21.05	19.97	20.27	20.45	19.37	19.67
		RB1#14	21.04	19.94	20.18	20.44	19.34	19.58
		RB6#0	19.47	19.50	19.15	18.87	18.90	18.55
		RB6#9	19.45	19.50	19.14	18.85	18.90	18.54
		RB15#0	19.37	19.40	19.24	18.77	18.80	18.64

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.29	21.29	21.24	20.69	20.69	20.64
		RB1#13	21.38	21.12	21.21	20.78	20.52	20.61
		RB1#24	21.32	21.15	21.11	20.72	20.55	20.51
		RB15#0	20.33	20.25	20.19	19.73	19.65	19.59
		RB15#10	20.33	20.29	20.12	19.73	19.69	19.52
		RB25#0	20.24	20.24	20.22	19.64	19.64	19.62
	16QAM	RB1#0	20.43	19.96	19.38	19.83	19.36	18.78
		RB1#13	20.43	19.95	19.39	19.83	19.35	18.79
		RB1#24	20.47	19.93	19.33	19.87	19.33	18.73
		RB15#0	19.27	19.38	19.30	18.67	18.78	18.70
		RB15#10	19.21	19.35	19.20	18.61	18.75	18.60
		RB25#0	19.36	19.16	19.27	18.76	18.56	18.67
10.0	QPSK	RB1#0	21.45	21.36	21.25	20.85	20.76	20.65
		RB1#25	21.46	21.23	21.21	20.86	20.63	20.61
		RB1#49	21.38	21.21	21.15	20.78	20.61	20.55
		RB25#0	20.34	20.20	20.13	19.74	19.60	19.53
		RB25#25	20.24	20.15	20.10	19.64	19.55	19.50
		RB50#0	20.26	20.21	20.19	19.66	19.61	19.59
	16QAM	RB1#0	20.51	19.77	20.52	19.91	19.17	19.92
		RB1#25	20.48	19.77	20.50	19.88	19.17	19.90
		RB1#49	20.40	19.68	20.39	19.80	19.08	19.79
		RB25#0	19.44	19.49	19.56	18.84	18.89	18.96
		RB25#25	19.47	19.45	19.29	18.87	18.85	18.69
		RB50#0	19.46	19.35	19.40	18.86	18.75	18.80

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.40	21.09	21.14	20.80	20.49	20.54
		RB1#38	21.32	21.07	21.12	20.72	20.47	20.52
		RB1#74	20.31	20.33	20.15	19.71	19.73	19.55
		RB36#0	20.29	20.23	20.14	19.69	19.63	19.54
		RB36#39	20.26	20.25	20.14	19.66	19.65	19.54
		RB75#0	20.49	20.63	20.50	19.89	20.03	19.90
	16QAM	RB1#0	20.41	20.55	20.43	19.81	19.95	19.83
		RB1#38	20.41	20.71	20.40	19.81	20.11	19.80
		RB1#74	19.57	19.35	19.43	18.97	18.75	18.83
		RB36#0	19.66	19.25	19.35	19.06	18.65	18.75
		RB36#39	19.44	19.31	19.55	18.84	18.71	18.95
		RB75#0	21.40	21.09	21.14	20.80	20.49	20.54
20.0	QPSK	RB1#0	21.47	21.39	21.54	20.87	20.79	20.94
		RB1#50	21.38	21.26	21.44	20.78	20.66	20.84
		RB1#99	21.39	21.22	21.39	20.79	20.62	20.79
		RB50#0	20.36	20.29	20.31	19.76	19.69	19.71
		RB50#50	20.19	20.20	20.24	19.59	19.60	19.64
		RB100#0	20.28	20.20	20.16	19.68	19.60	19.56
	16QAM	RB1#0	20.44	21.09	19.96	19.84	20.49	19.36
		RB1#50	20.28	21.06	19.89	19.68	20.46	19.29
		RB1#99	20.27	21.02	19.83	19.67	20.42	19.23
		RB50#0	19.46	19.33	19.37	18.86	18.73	18.77
		RB50#50	19.56	19.28	19.33	18.96	18.68	18.73
		RB100#0	19.28	19.36	19.27	18.68	18.76	18.67

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Insertion Loss(dB)
For Band4: Antenna Gain = 0.2dBi
Insertion Loss=0.8dB*(Signal attenuation in connecting cable between the mainboard and transmitter antenna, it's provided by the applicant)
Limit: EIRP≤30dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	24.41	24.62	24.51	23.11	23.32	23.21
		RB1#13	24.41	24.59	24.41	23.11	23.29	23.11
		RB1#24	24.40	24.66	24.38	23.10	23.36	23.08
		RB15#0	23.43	23.59	23.48	22.13	22.29	22.18
		RB15#10	23.55	23.48	23.51	22.25	22.18	22.21
		RB25#0	23.46	23.55	23.66	22.16	22.25	22.36
	16QAM	RB1#0	22.82	23.59	23.32	21.52	22.29	22.02
		RB1#13	22.77	23.66	23.17	21.47	22.36	21.87
		RB1#24	22.85	23.59	23.14	21.55	22.29	21.84
		RB15#0	22.60	22.63	22.75	21.30	21.33	21.45
		RB15#10	22.58	22.50	22.71	21.28	21.20	21.41
		RB25#0	22.74	22.68	22.51	21.44	21.38	21.21
10.0	QPSK	RB1#0	24.05	24.13	24.14	22.75	22.83	22.84
		RB1#25	24.03	24.06	24.05	22.73	22.76	22.75
		RB1#49	24.07	24.11	23.99	22.77	22.81	22.69
		RB25#0	23.13	23.14	23.21	21.83	21.84	21.91
		RB25#25	23.06	23.07	23.11	21.76	21.77	21.81
		RB50#0	22.98	23.14	23.23	21.68	21.84	21.93
	16QAM	RB1#0	23.16	22.70	23.37	21.86	21.40	22.07
		RB1#25	23.20	22.76	23.29	21.90	21.46	21.99
		RB1#49	23.16	22.71	23.24	21.86	21.41	21.94
		RB25#0	22.20	22.39	22.22	20.90	21.09	20.92
		RB25#25	22.22	22.39	22.27	20.92	21.09	20.97
		RB50#0	22.25	22.31	22.26	20.95	21.01	20.96

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	24.03	24.11	24.07	22.73	22.81	22.77
		RB1#38	24.06	24.10	24.06	22.76	22.80	22.76
		RB1#74	24.20	24.03	23.98	22.90	22.73	22.68
		RB36#0	23.03	23.13	23.19	21.73	21.83	21.89
		RB36#39	23.08	23.16	23.14	21.78	21.86	21.84
		RB75#0	23.18	23.18	23.20	21.88	21.88	21.90
	16QAM	RB1#0	23.27	23.61	23.36	21.97	22.31	22.06
		RB1#38	23.34	23.68	23.32	22.04	22.38	22.02
		RB1#74	23.40	23.57	23.25	22.10	22.27	21.95
		RB36#0	22.32	22.28	22.36	21.02	20.98	21.06
		RB36#39	22.23	22.29	22.32	20.93	20.99	21.02
		RB75#0	22.30	22.32	22.29	21.00	21.02	20.99
20.0	QPSK	RB1#0	24.16	24.17	24.18	22.86	22.87	22.88
		RB1#50	24.17	24.12	24.12	22.87	22.82	22.82
		RB1#99	24.24	24.10	24.07	22.94	22.80	22.77
		RB50#0	23.08	23.12	23.15	21.78	21.82	21.85
		RB50#50	23.19	23.08	23.06	21.89	21.78	21.76
		RB100#0	23.04	23.18	23.13	21.74	21.88	21.83
	16QAM	RB1#0	23.28	24.13	23.16	21.98	22.83	21.86
		RB1#50	23.20	23.71	22.97	21.90	22.41	21.67
		RB1#99	23.36	23.78	23.00	22.06	22.48	21.70
		RB50#0	22.15	22.30	22.35	20.85	21.00	21.05
		RB50#50	22.25	22.35	22.28	20.95	21.05	20.98
		RB100#0	22.16	22.37	22.33	20.86	21.07	21.03

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Insertion Loss(dB)
For Band7: Antenna Gain = -0.5dBi
Insertion Loss=0.8dB*(Signal attenuation in connecting cable between the mainboard and transmitter antenna, it's 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	23.01	22.95	22.78	20.26	20.20	20.03
		RB1#3	23.09	23.05	22.89	20.34	20.30	20.14
		RB1#5	23.07	23.01	22.91	20.32	20.26	20.16
		RB3#0	23.22	23.04	22.96	20.47	20.29	20.21
		RB3#3	23.08	23.09	23.06	20.33	20.34	20.31
		RB6#0	22.09	21.88	21.79	19.34	19.13	19.04
	16QAM	RB1#0	22.68	22.15	22.11	19.93	19.40	19.36
		RB1#3	22.72	21.63	22.25	19.97	18.88	19.50
		RB1#5	22.67	21.66	22.21	19.92	18.91	19.46
		RB3#0	21.88	22.08	21.86	19.13	19.33	19.11
		RB3#3	21.89	22.09	22.01	19.14	19.34	19.26
		RB6#0	21.05	21.68	21.58	18.30	18.93	18.83
3.0	QPSK	RB1#0	23.01	23.03	22.96	20.26	20.28	20.21
		RB1#8	23.12	23.08	22.86	20.37	20.33	20.11
		RB1#14	23.02	23.05	22.85	20.27	20.30	20.10
		RB6#0	22.11	22.47	21.76	19.36	19.72	19.01
		RB6#9	22.56	21.99	21.83	19.81	19.24	19.08
		RB15#0	22.02	22.00	21.65	19.27	19.25	18.90
	16QAM	RB1#0	22.71	22.13	22.15	19.96	19.38	19.40
		RB1#8	22.77	21.65	22.07	20.02	18.90	19.32
		RB1#14	23.35	21.55	22.00	20.60	18.80	19.25
		RB6#0	21.07	21.60	21.42	18.32	18.85	18.67
		RB6#9	21.65	21.62	21.38	18.90	18.87	18.63
		RB15#0	20.99	21.51	21.38	18.24	18.76	18.63

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.12	22.91	22.98	20.37	20.16	20.23
		RB1#13	23.08	23.02	22.89	20.33	20.27	20.14
		RB1#24	23.01	23.03	22.90	20.26	20.28	20.15
		RB15#0	22.07	22.55	22.42	19.32	19.80	19.67
		RB15#10	22.58	21.97	21.83	19.83	19.22	19.08
		RB25#0	22.60	21.84	21.86	19.85	19.09	19.11
	16QAM	RB1#0	22.15	22.03	21.49	19.40	19.28	18.74
		RB1#13	22.67	21.59	20.89	19.92	18.84	18.14
		RB1#24	22.19	21.48	21.14	19.44	18.73	18.39
		RB15#0	20.85	21.48	21.48	18.10	18.73	18.73
		RB15#10	21.48	21.47	21.45	18.73	18.72	18.70
		RB25#0	21.62	21.37	21.48	18.87	18.62	18.73
10.0	QPSK	RB1#0	23.13	23.14	22.98	20.38	20.39	20.23
		RB1#25	23.10	23.13	22.98	20.35	20.38	20.23
		RB1#49	23.04	23.02	22.83	20.29	20.27	20.08
		RB25#0	22.60	22.52	21.87	19.85	19.77	19.12
		RB25#25	22.44	21.95	21.83	19.69	19.20	19.08
		RB50#0	22.08	21.94	22.04	19.33	19.19	19.29
	16QAM	RB1#0	22.20	22.10	22.63	19.45	19.35	19.88
		RB1#25	22.24	21.48	21.96	19.49	18.73	19.21
		RB1#49	22.00	21.92	22.04	19.25	19.17	19.29
		RB25#0	21.71	21.60	21.46	18.96	18.85	18.71
		RB25#25	21.47	21.02	21.44	18.72	18.27	18.69
		RB50#0	20.88	21.49	20.98	18.13	18.74	18.23

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Insertion Loss(dB)
For Band12: Antenna Gain = -0.1dBi = -2.25dBd (0dBd=2.15dBi)
Insertion Loss=0.5dB*(Signal attenuation in connecting cable between the mainboard and transmitter antenna, it's 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	23.08	23.04	23.06	20.33	20.29	20.31
		RB1#13	22.96	22.96	22.92	20.21	20.21	20.17
		RB1#24	23.03	22.92	22.94	20.28	20.17	20.19
		RB15#0	22.46	22.06	22.46	19.71	19.31	19.71
		RB15#10	22.09	22.00	21.86	19.34	19.25	19.11
		RB25#0	22.45	21.99	21.90	19.70	19.24	19.15
	16QAM	RB1#0	21.97	21.62	21.48	19.22	18.87	18.73
		RB1#13	22.39	21.48	20.92	19.64	18.73	18.17
		RB1#24	21.88	21.93	21.19	19.13	19.18	18.44
		RB15#0	21.39	20.97	21.45	18.64	18.22	18.70
		RB15#10	21.38	20.96	21.44	18.63	18.21	18.69
		RB25#0	21.38	20.77	21.51	18.63	18.02	18.76
10.0	QPSK	RB1#0	23.08	23.09	22.89	20.33	20.34	20.14
		RB1#25	22.97	23.21	22.87	20.22	20.46	20.12
		RB1#49	22.94	23.00	22.89	20.19	20.25	20.14
		RB25#0	22.51	22.07	21.94	19.76	19.32	19.19
		RB25#25	22.41	22.49	21.72	19.66	19.74	18.97
		RB50#0	21.89	21.99	21.95	19.14	19.24	19.20
	16QAM	RB1#0	22.14	21.99	22.53	19.39	19.24	19.78
		RB1#25	22.03	21.54	22.01	19.28	18.79	19.26
		RB1#49	21.97	21.29	22.08	19.22	18.54	19.33
		RB25#0	21.51	21.58	21.47	18.76	18.83	18.72
		RB25#25	21.50	21.46	21.37	18.75	18.71	18.62
		RB50#0	21.44	20.94	20.98	18.69	18.19	18.23

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Insertion Loss(dB)
For Band13: Antenna Gain = 0.1dBi = -2.25dBd (0dBd=2.15dBi)
Insertion Loss=0.5dB* (Signal attenuation in connecting cable between the mainboard and transmitter antenna, it's provided by the applicant)
Limit: ERP≤34.77dBm

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	5.49	13
	Middle	5.78	13
	High	5.49	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	5.61	13
	Middle	5.51	13
	High	5.48	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.11	13
	Middle	3.11	13
	High	3.11	13
HSDPA (16QAM)	Low	4.68	13
	Middle	5.03	13
	High	4.62	13
HSUPA (QPSK)	Low	5.71	13
	Middle	5.74	13
	High	5.61	13
HSPA+	Low	3.33	13
	Middle	3.33	13
	High	3.53	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	5.29	13
	Middle	5.42	13
	High	5.04	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	5.96	13
	Middle	5.44	13
	High	5.22	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.72	13
	Middle	2.79	13
	High	2.72	13
HSDPA (16QAM)	Low	4.13	13
	Middle	4.58	13
	High	4.39	13
HSUPA (QPSK)	Low	4.81	13
	Middle	5.10	13
	High	5.06	13
HSPA+	Low	3.14	13
	Middle	3.14	13
	High	3.17	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.22	6.35	6.19	13	Pass
QPSK (100RB Size)	6.41	6.35	6.41	13	Pass
16QAM (1RB Size)	6.92	7.08	6.76	13	Pass
16QAM (100RB Size)	6.99	6.96	6.99	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	7.08	7.05	7.02	13	Pass
QPSK (100RB Size)	6.86	6.86	6.86	13	Pass
16QAM (1RB Size)	7.63	7.56	7.40	13	Pass
16QAM (100RB Size)	7.44	7.40	7.37	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.97	5.32	4.84	13	Pass
QPSK (100RB Size)	5.16	5.58	5.51	13	Pass
16QAM (1RB Size)	5.35	6.70	5.83	13	Pass
16QAM (100RB Size)	5.87	6.51	6.28	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.38	5.71	5.22	13	Pass
QPSK (50RB Size)	5.83	5.64	5.77	13	Pass
16QAM (1RB Size)	6.41	6.73	5.80	13	Pass
16QAM (50RB Size)	6.70	6.44	6.70	13	Pass

LTE Band 17 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.48	5.45	5.10	13	Pass
QPSK (50RB Size)	5.74	5.80	5.77	13	Pass
16QAM (1RB Size)	6.25	6.38	5.93	13	Pass
16QAM (50RB Size)	6.47	6.54	6.63	13	Pass

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

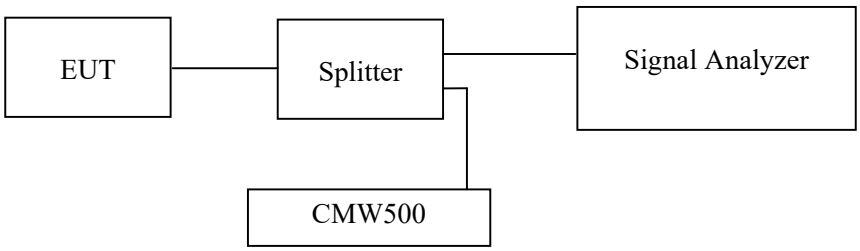
Applicable Standard

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

Test Procedure

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

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



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

Test Data

Environmental Conditions

Temperature:	27 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang from 2022-08-27 to 2022-08-31.

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	246.00	316.00
	190	836.6	247.00	313.00
	251	848.8	246.00	313.00
EGPRS(8PSK)	128	824.2	247.00	323.00
	190	836.6	250.00	326.00
	251	848.8	248.00	321.00

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

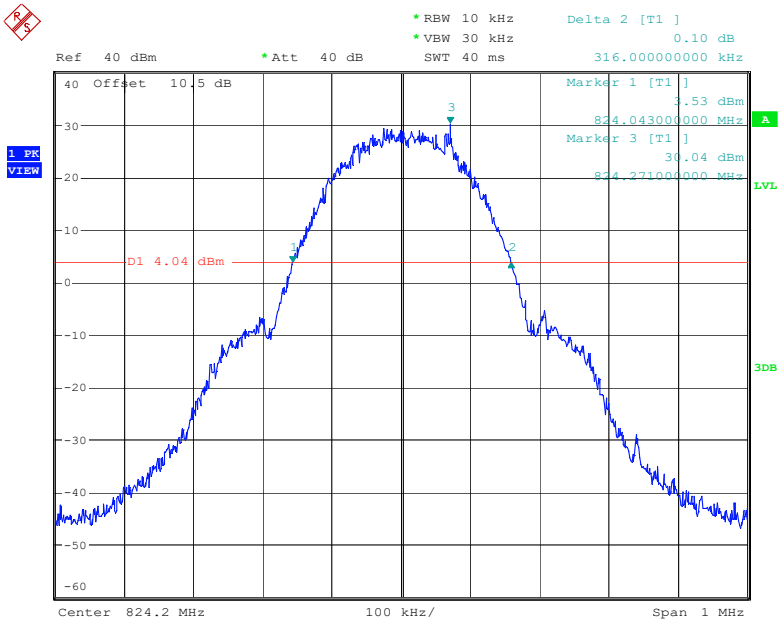
PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	246.00	317.00
	661	1880.0	247.00	320.00
	810	1909.8	245.00	323.00
EGPRS(8PSK)	512	1850.2	257.60	308.00
	661	1880.0	241.00	315.00
	810	1909.8	244.00	311.00

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

Cellular Band (Part 22H)

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



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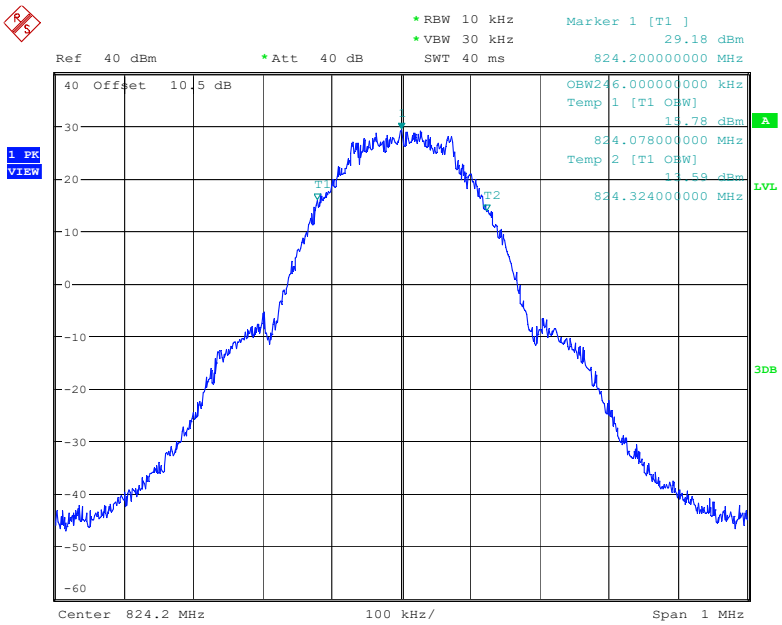

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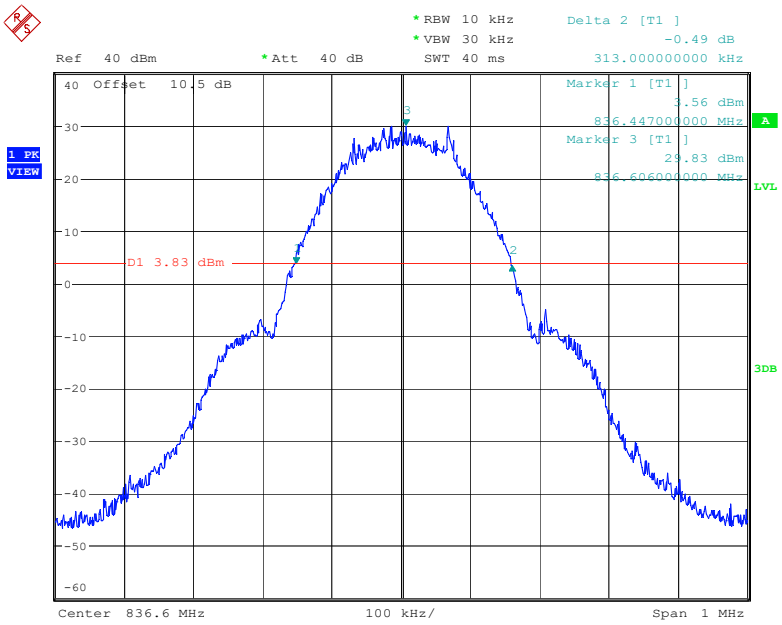
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



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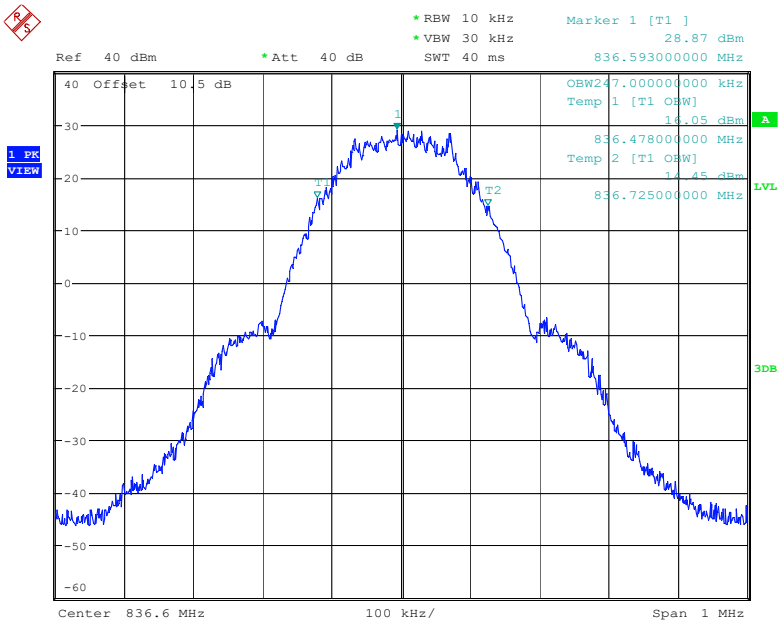

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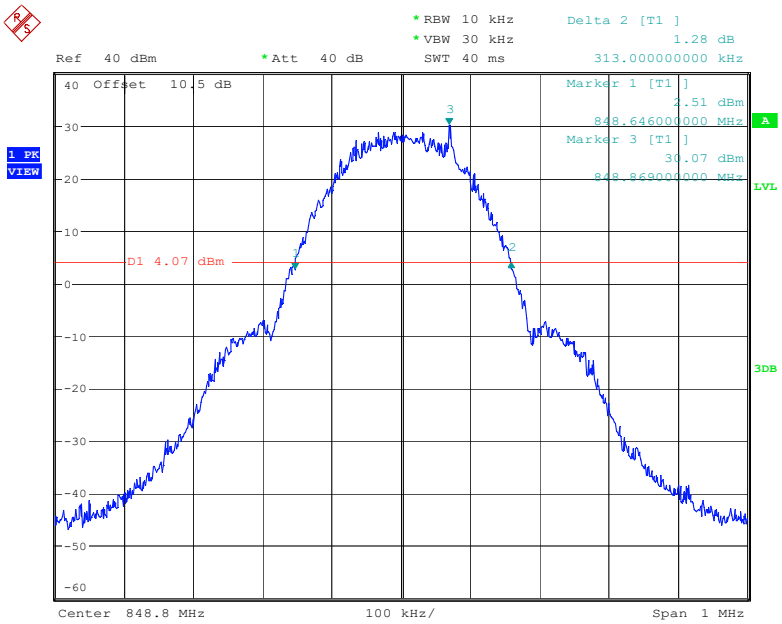
26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



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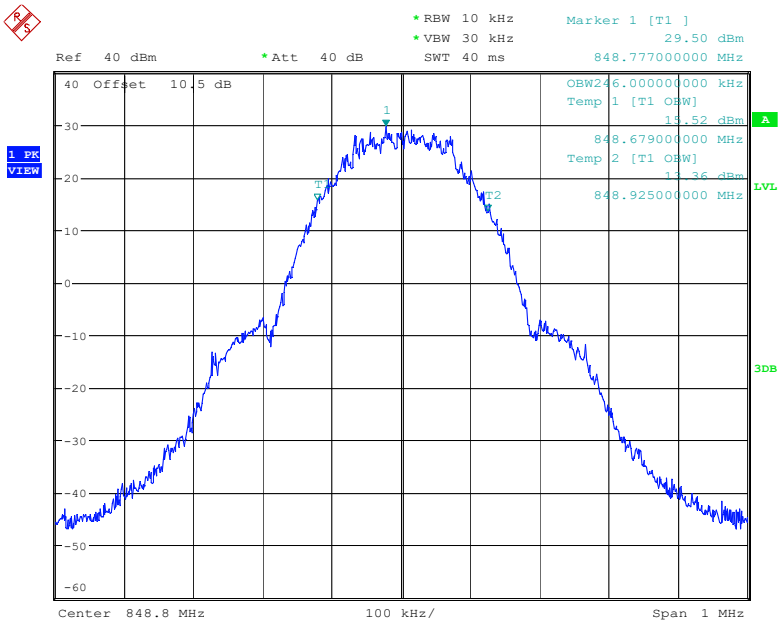

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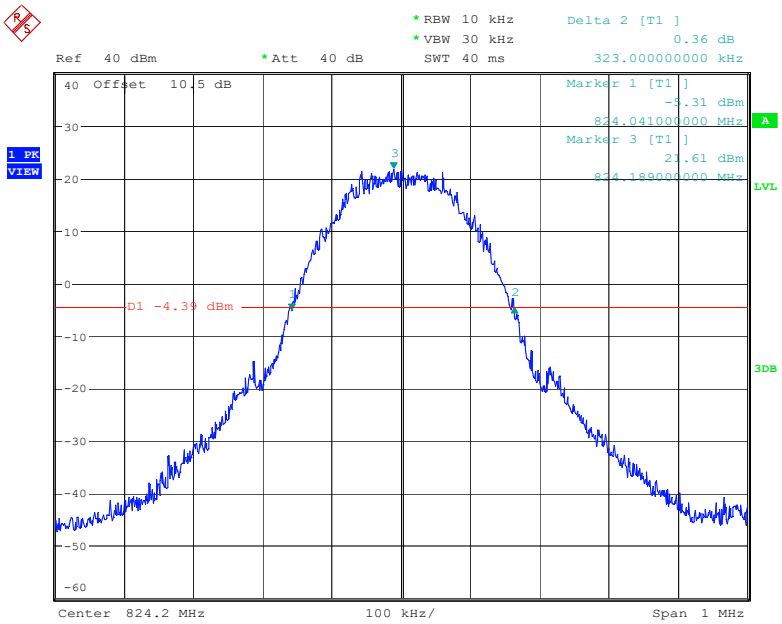
26 dB Emissions &99% Occupied Bandwidth for EGPRS (8PSK) Mode, Low channel



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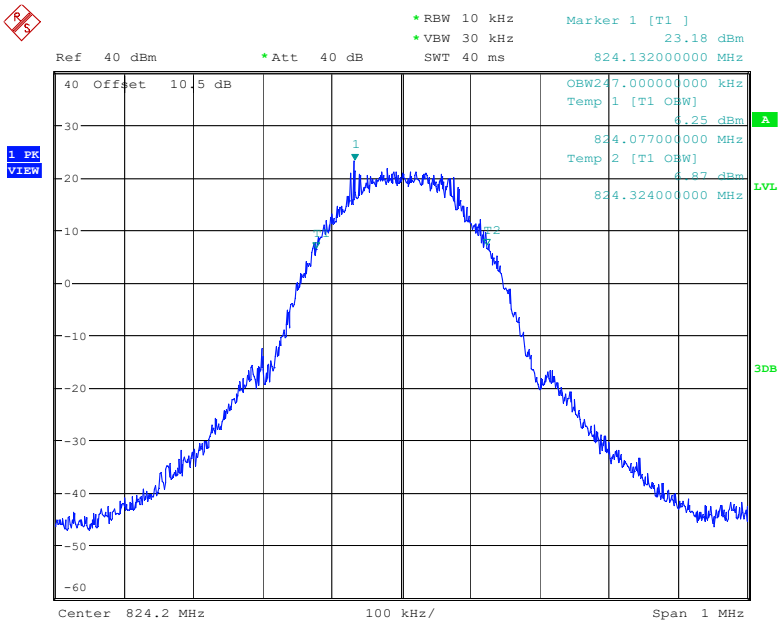
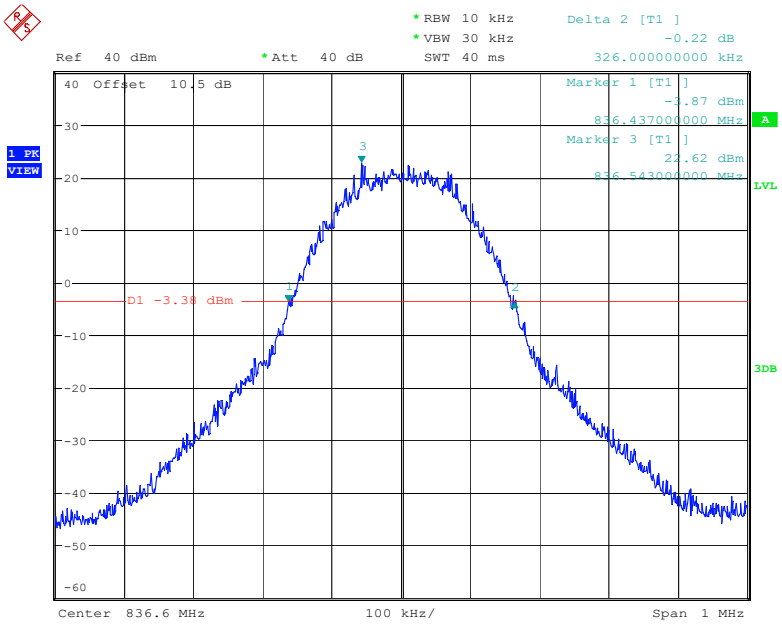


Date: 30.AUG.2022 10:24:46

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



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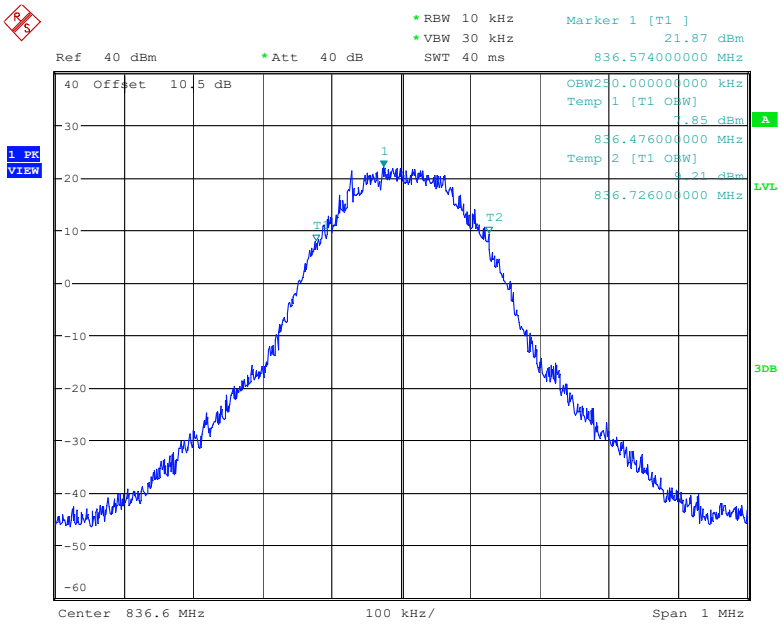
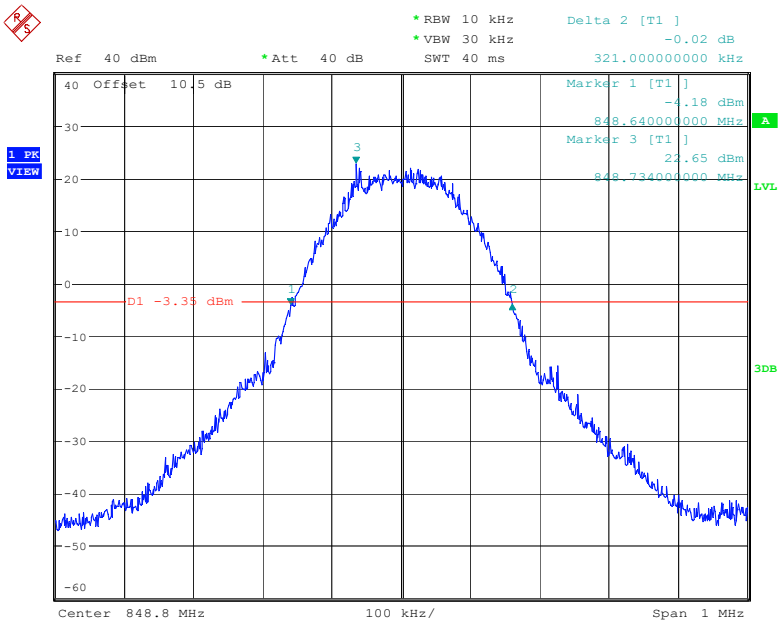


Date: 30.AUG.2022 10:29:33

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



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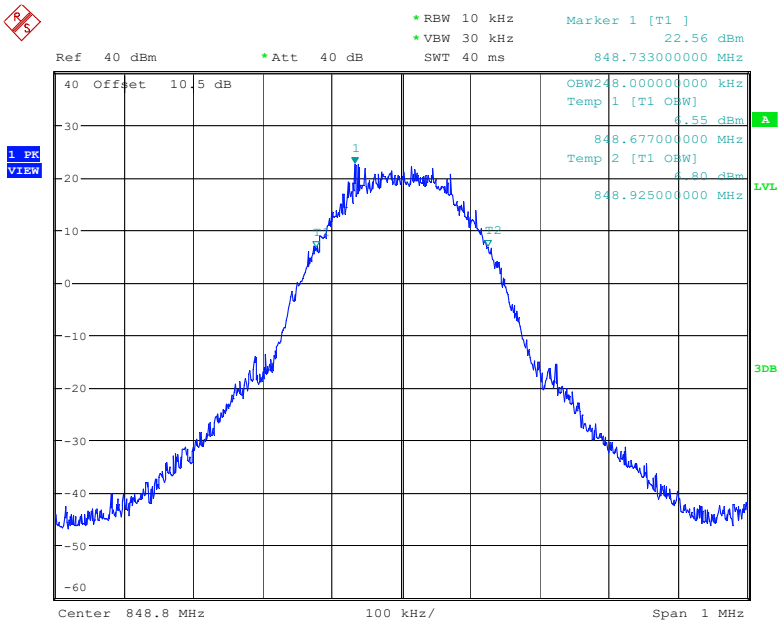

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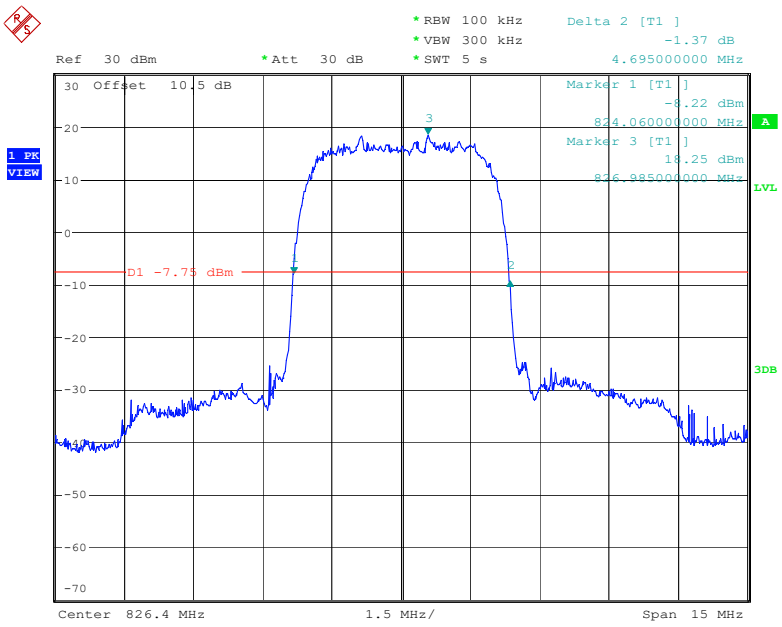
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



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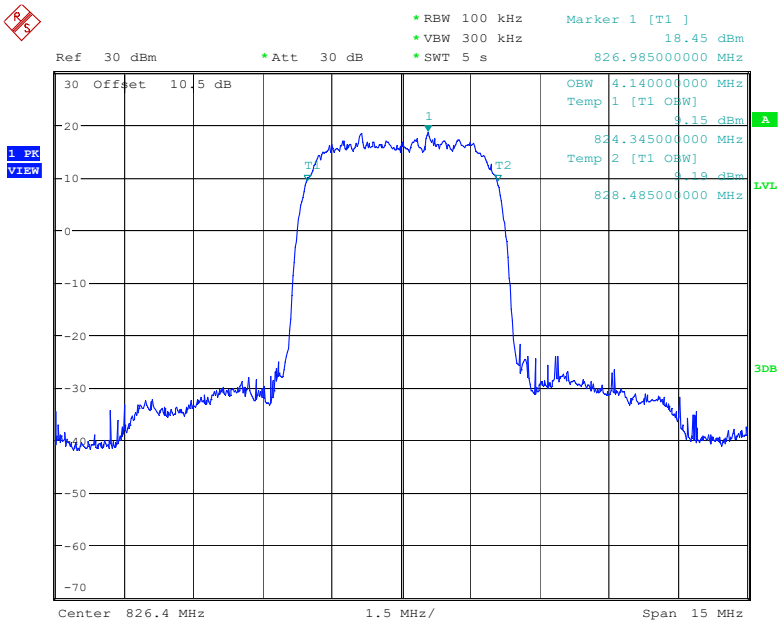

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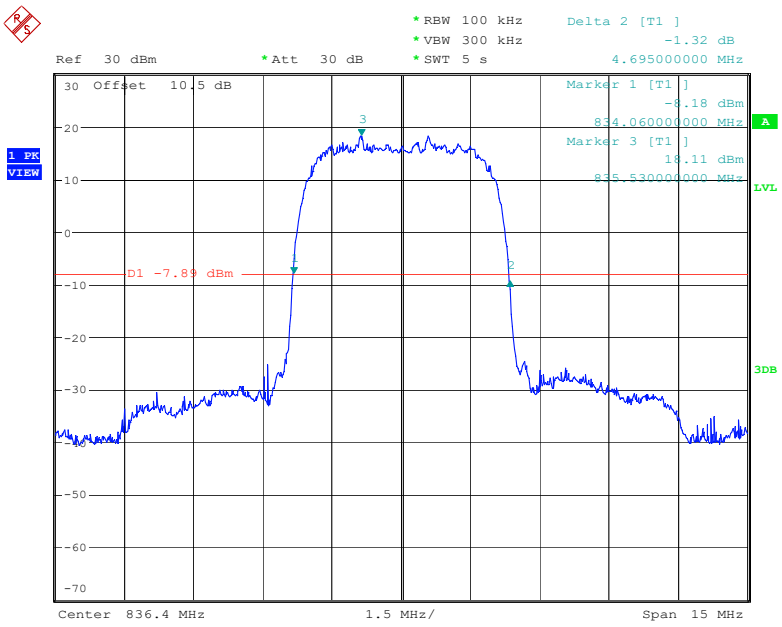
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



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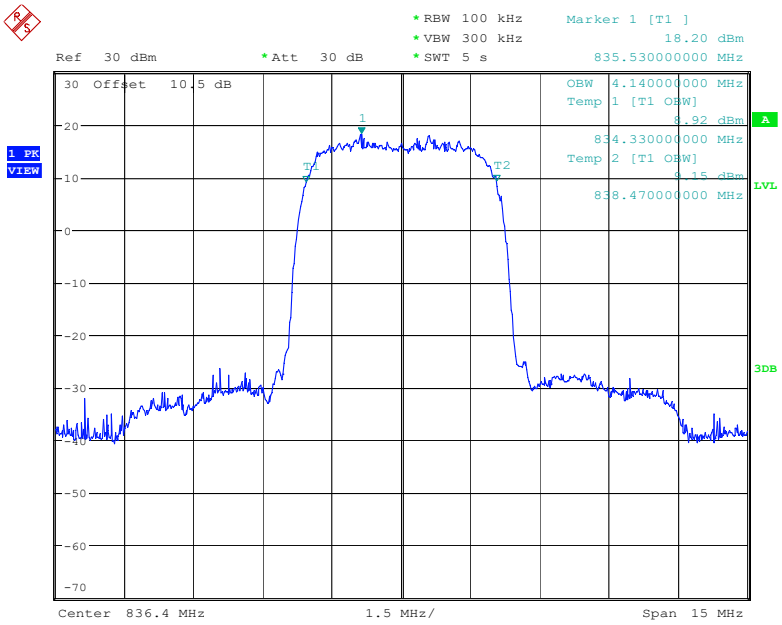

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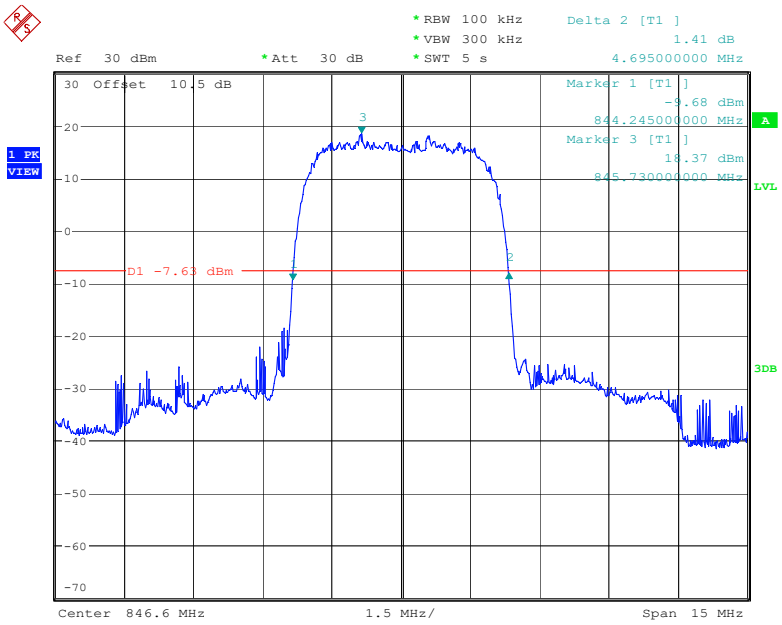
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



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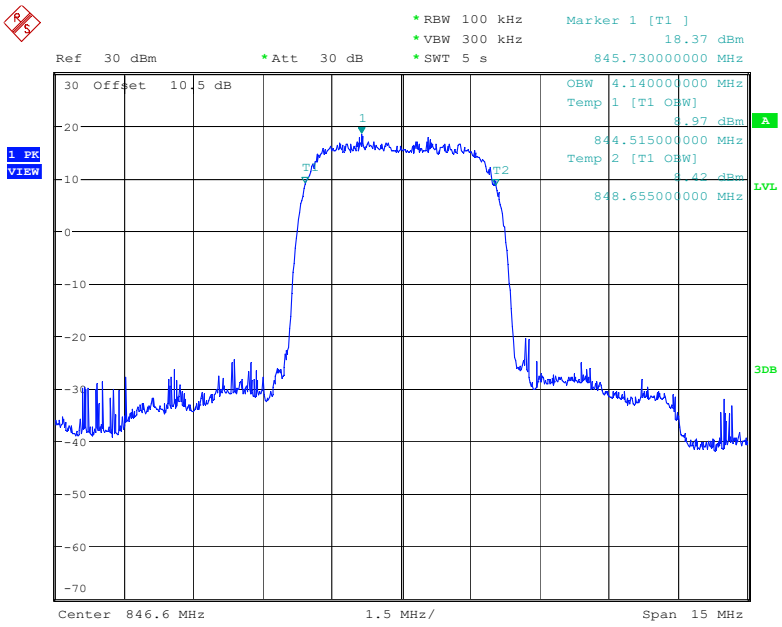
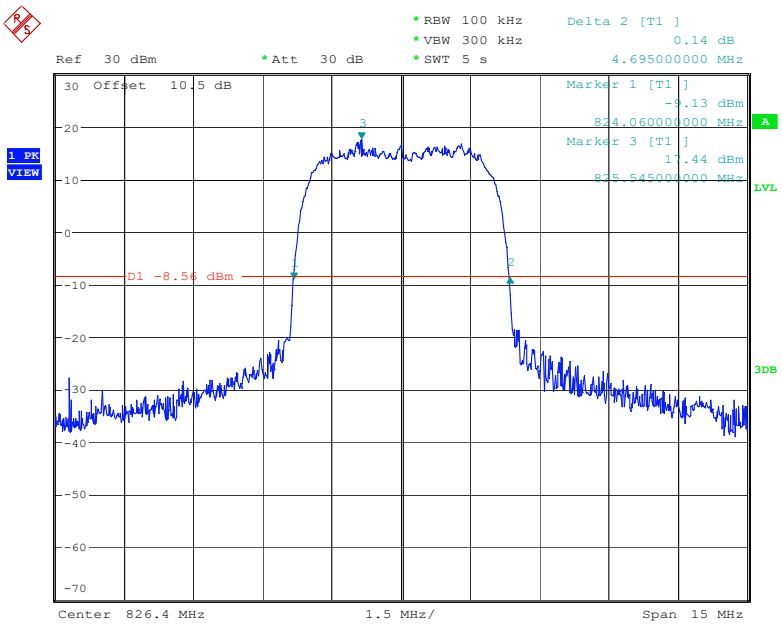


Date: 30.AUG.2022 14:59:50

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



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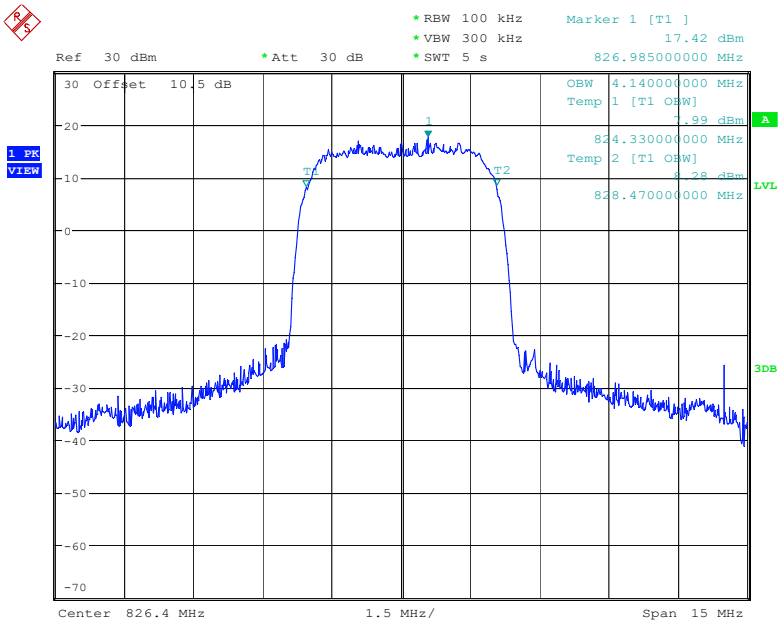

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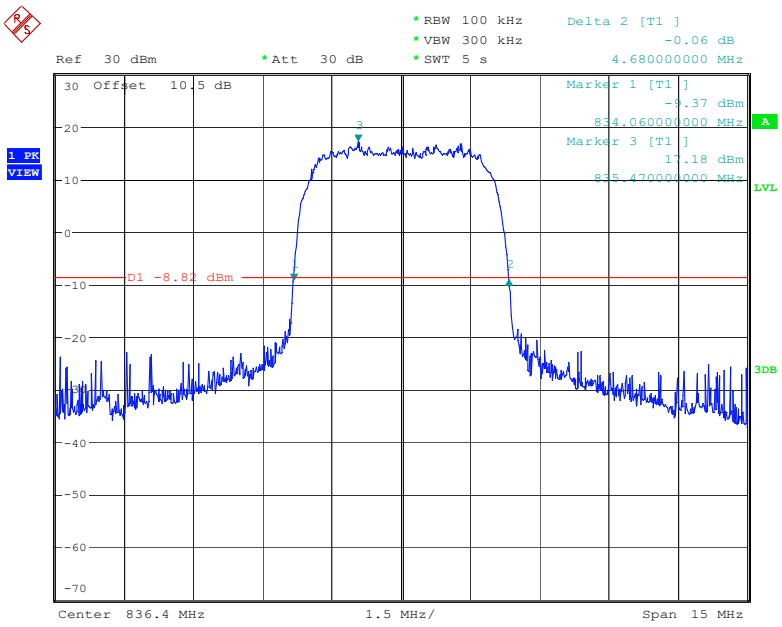
26 dB Emissions &99% Occupied Bandwidth for HSDPA (QPSK) Mode, Middle channel



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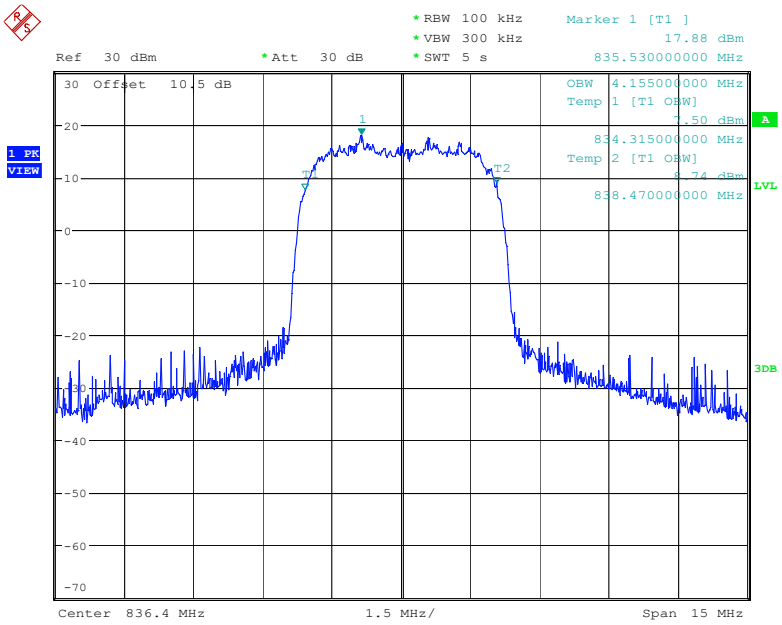

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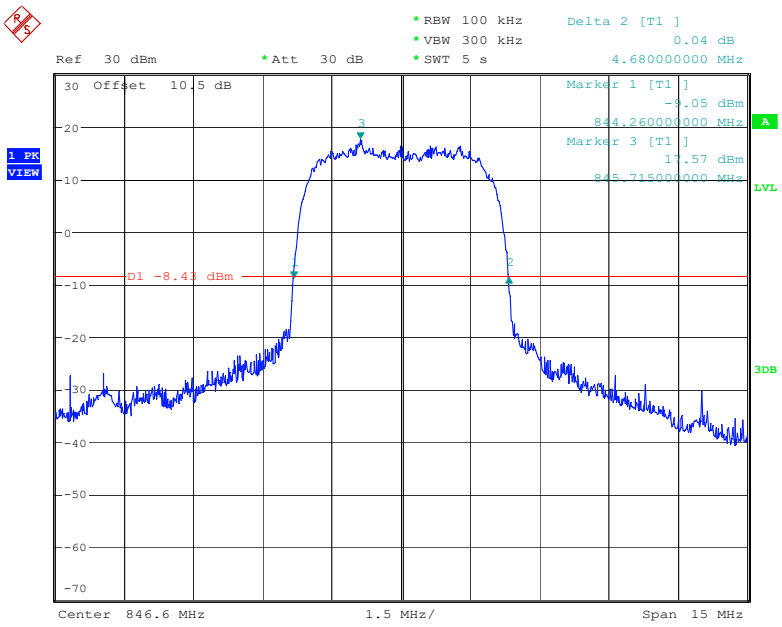
26 dB Emissions &99% Occupied Bandwidth for HSDPA (QPSK) Mode, High channel



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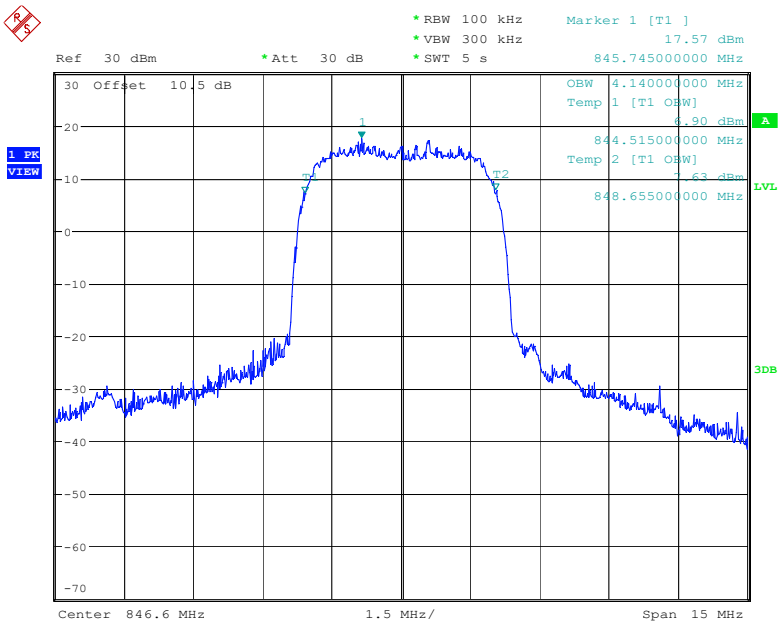
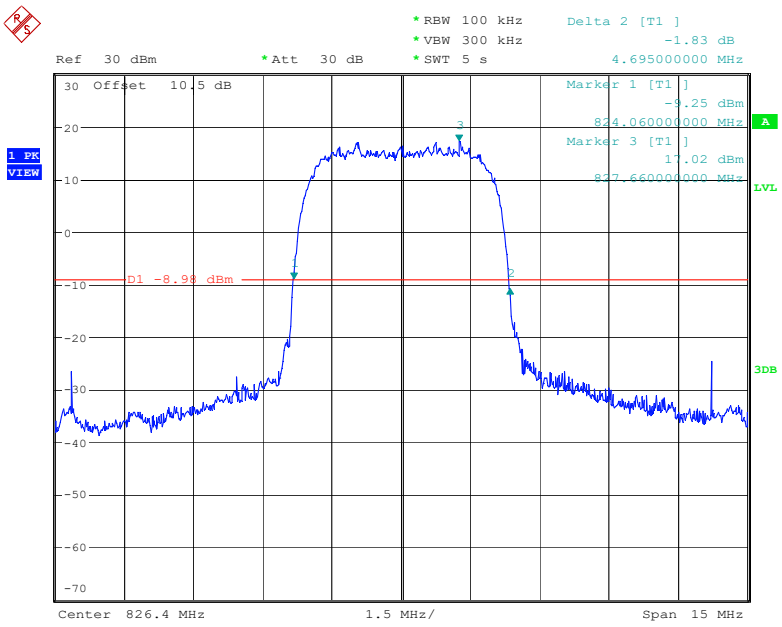


Date: 30.AUG.2022 14:49:46

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



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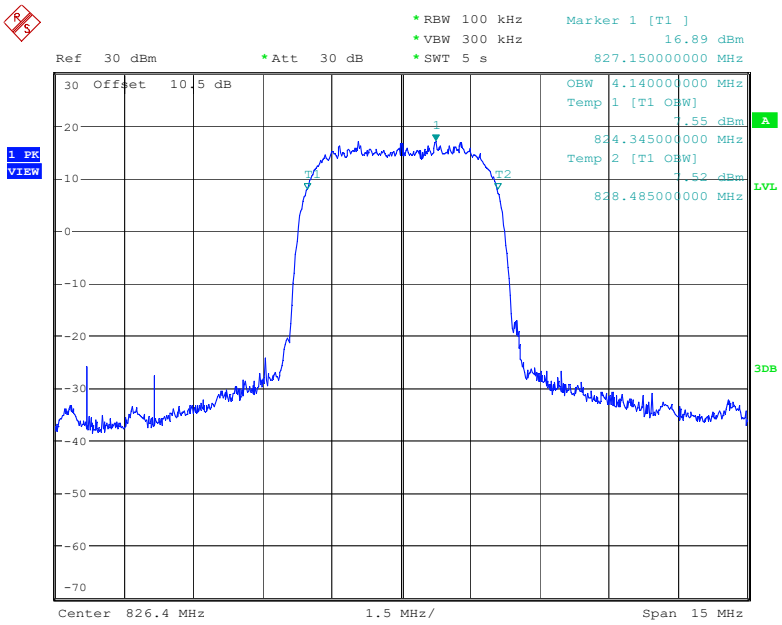

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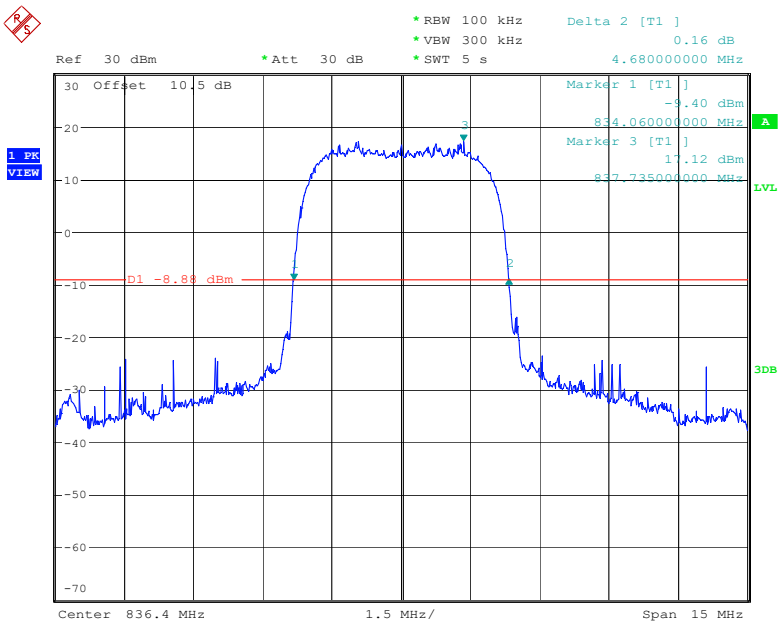
26 dB Emissions &99% Occupied Bandwidth for HSUPA (16QAM) Mode, Middle channel



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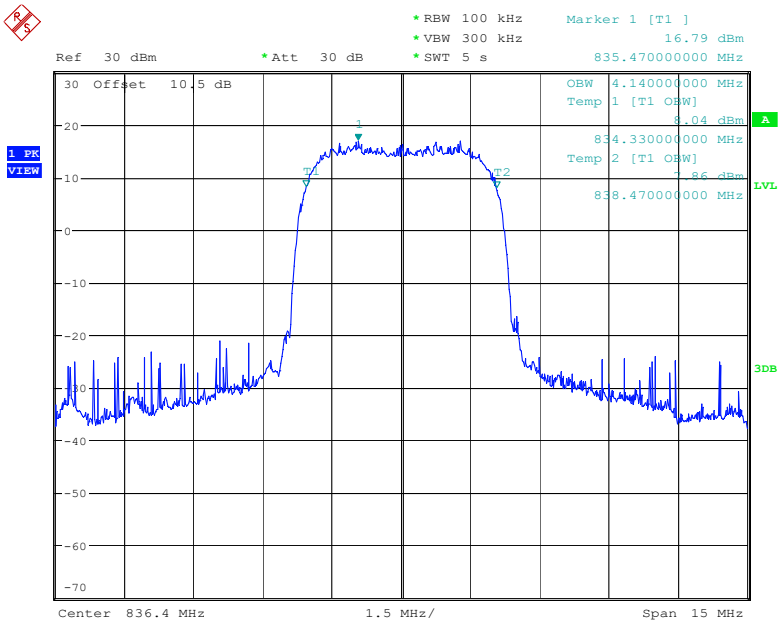

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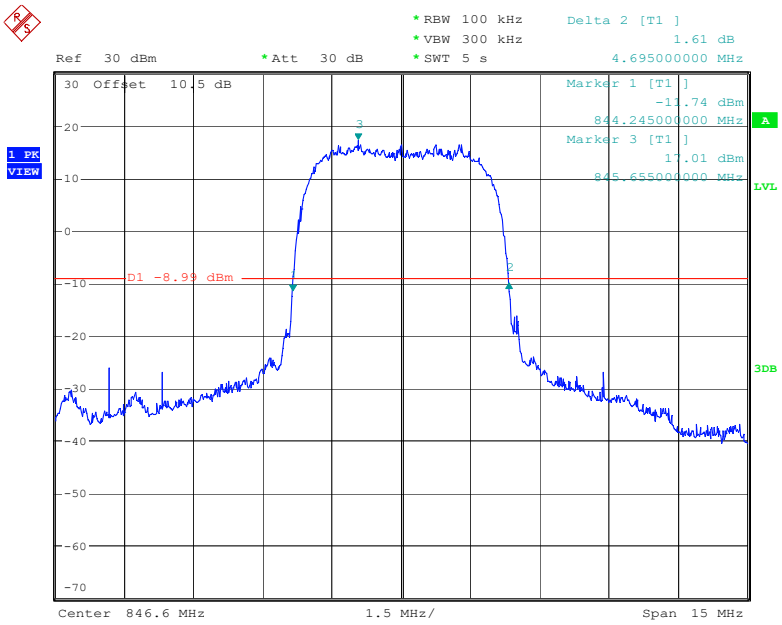
26 dB Emissions &99% Occupied Bandwidth for HSUPA (16QAM) Mode, High channel



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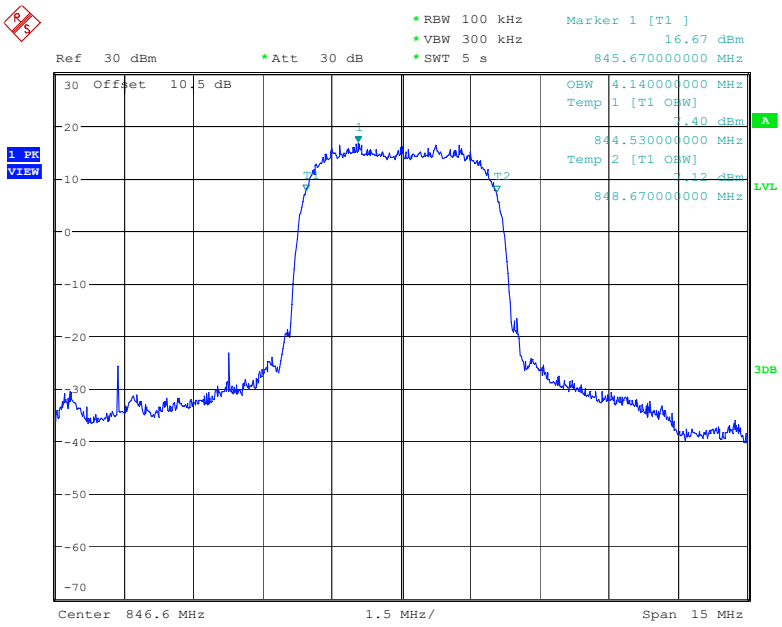
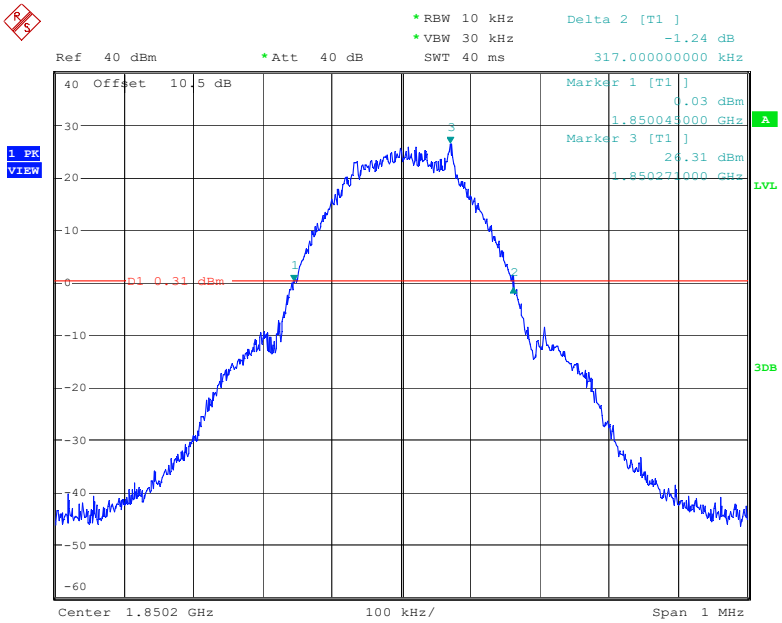


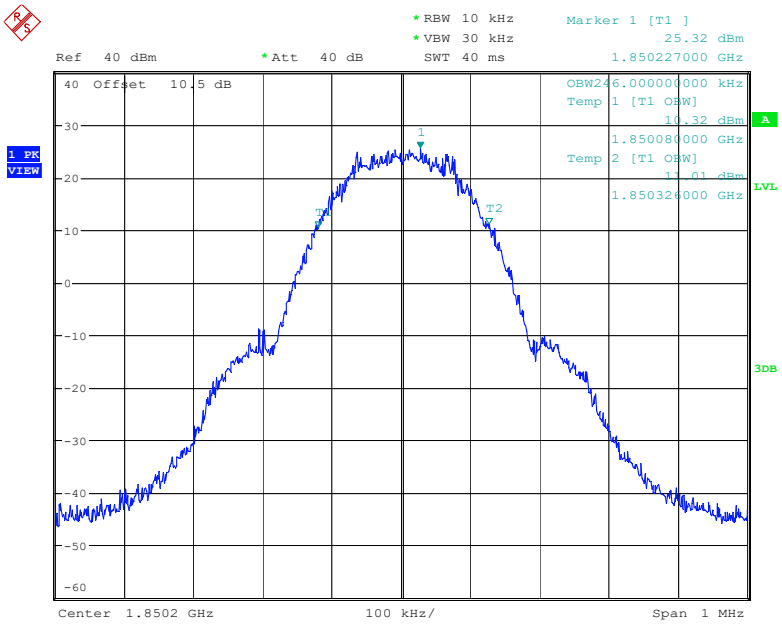
Date: 30.AUG.2022 14:39:14

PCS Band (Part 24E)

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

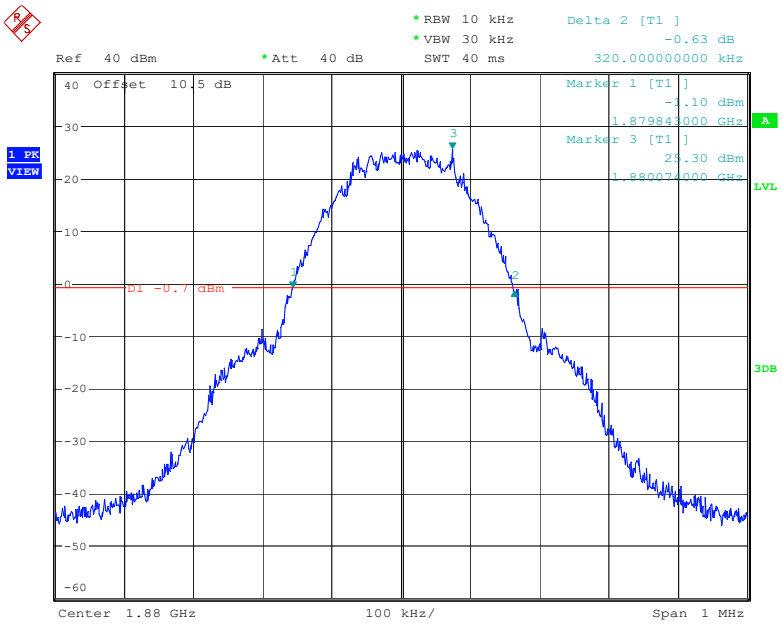


Date: 30.AUG.2022 10:48:27

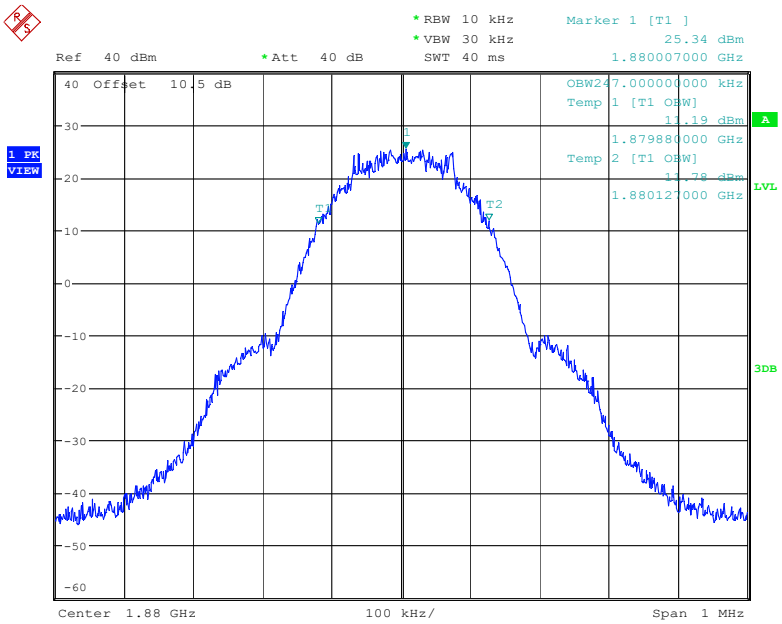


Date: 30.AUG.2022 10:47:49

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

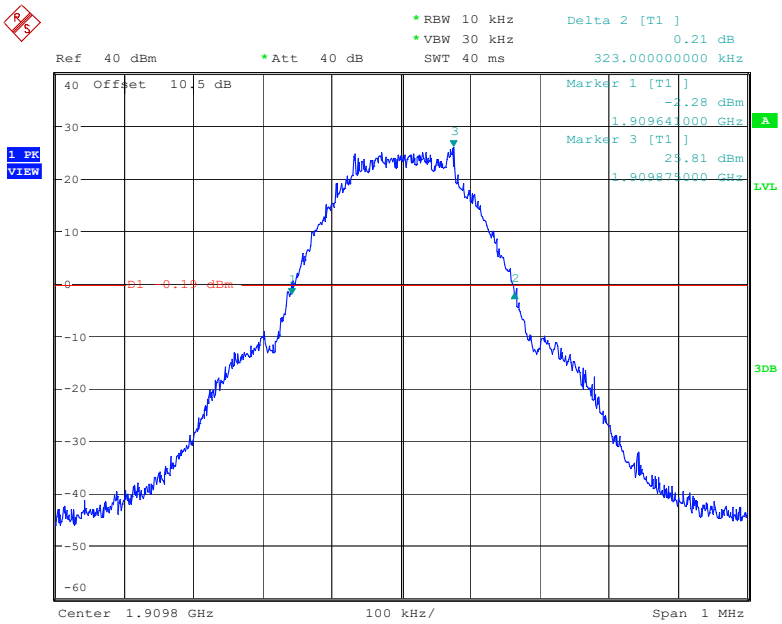


Date: 30.AUG.2022 10:57:55

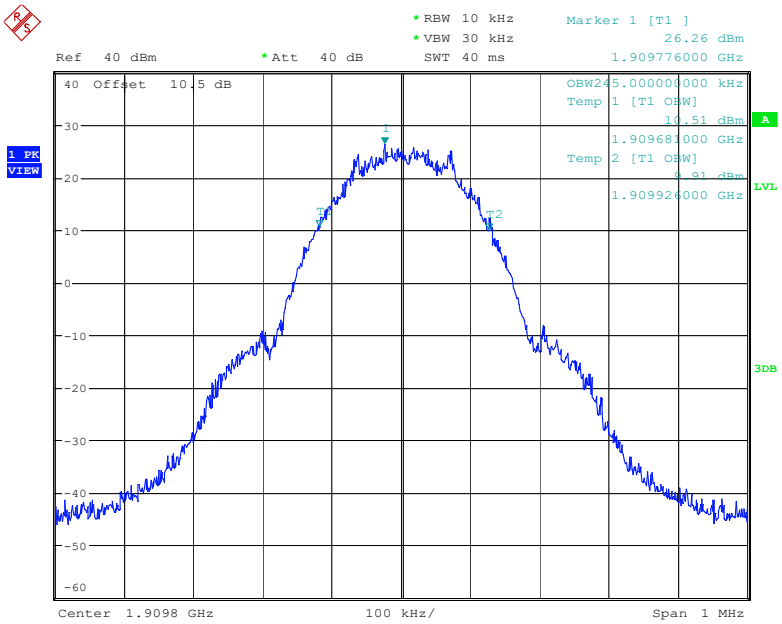


Date: 30.AUG.2022 10:57:17

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

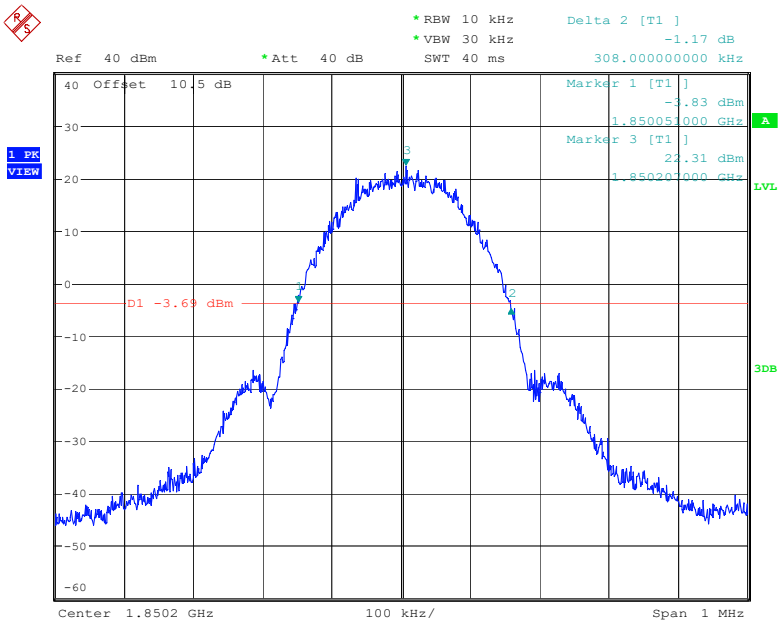


Date: 30.AUG.2022 11:03:42

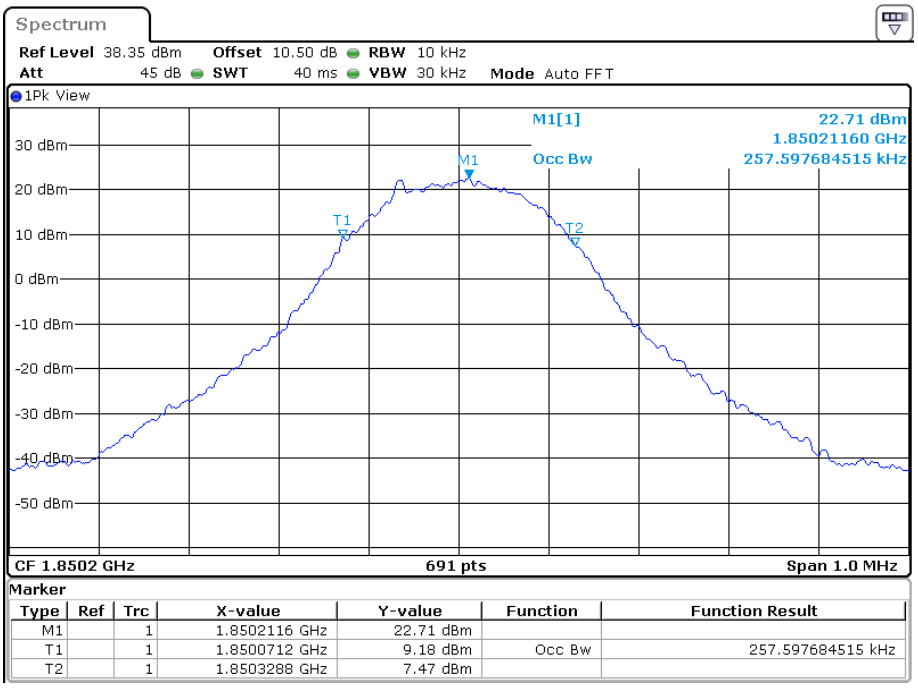


Date: 30.AUG.2022 11:03:02

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



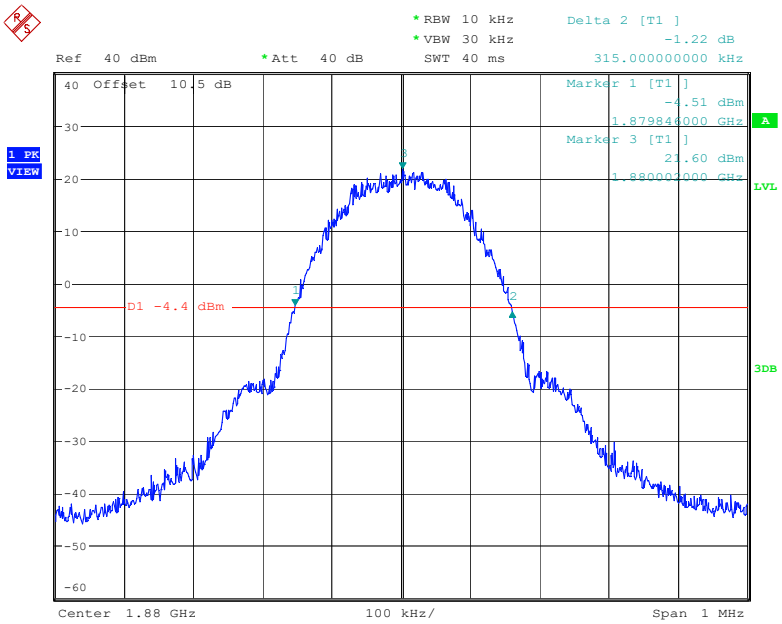
Date: 30.AUG.2022 11:35:29



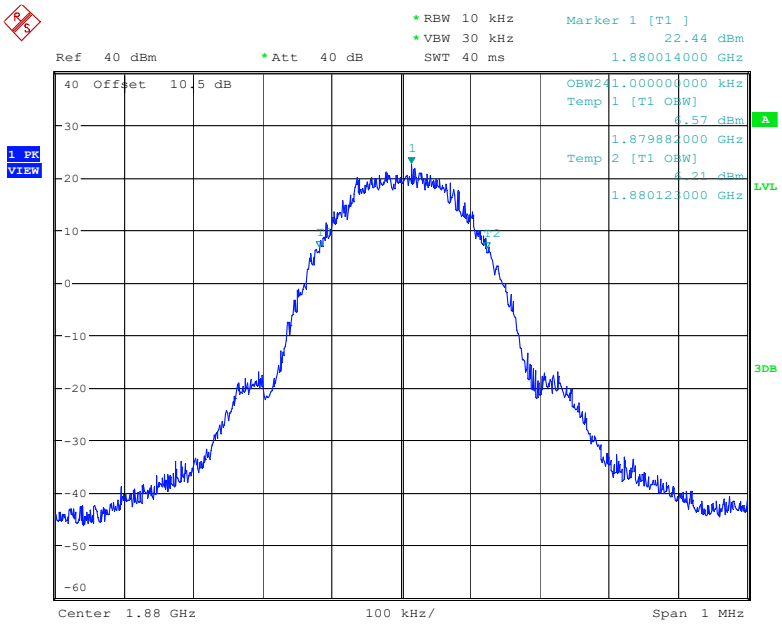
Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	1.8502116 GHz	22.71 dBm		
T1		1	1.8500712 GHz	9.18 dBm	Occ Bw	257.597684515 kHz
T2		1	1.8503288 GHz	7.47 dBm		

Date: 31.AUG.2022 17:40:06

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

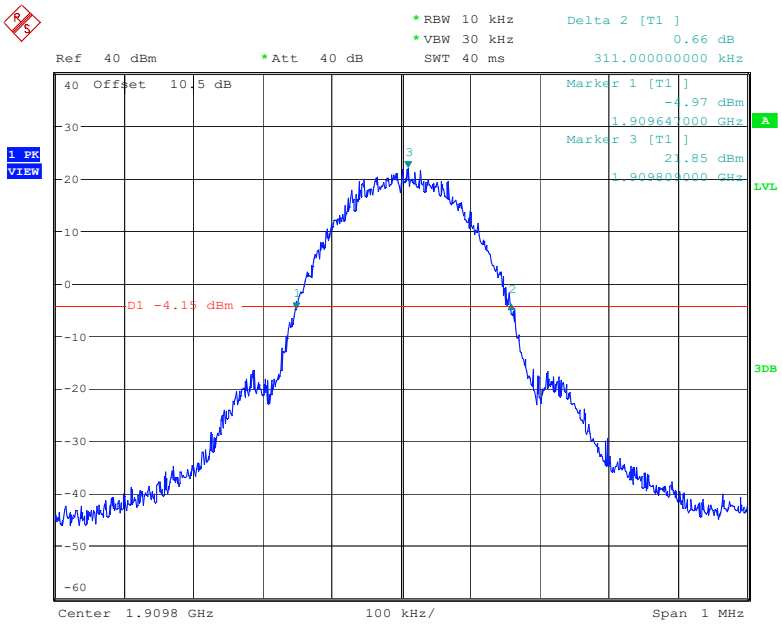


Date: 30.AUG.2022 11:41:37

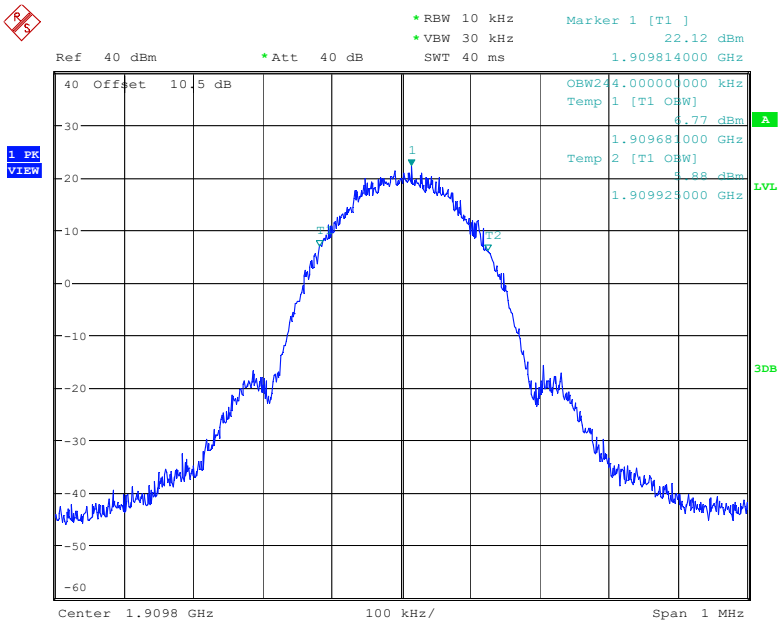


Date: 30.AUG.2022 11:40:58

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

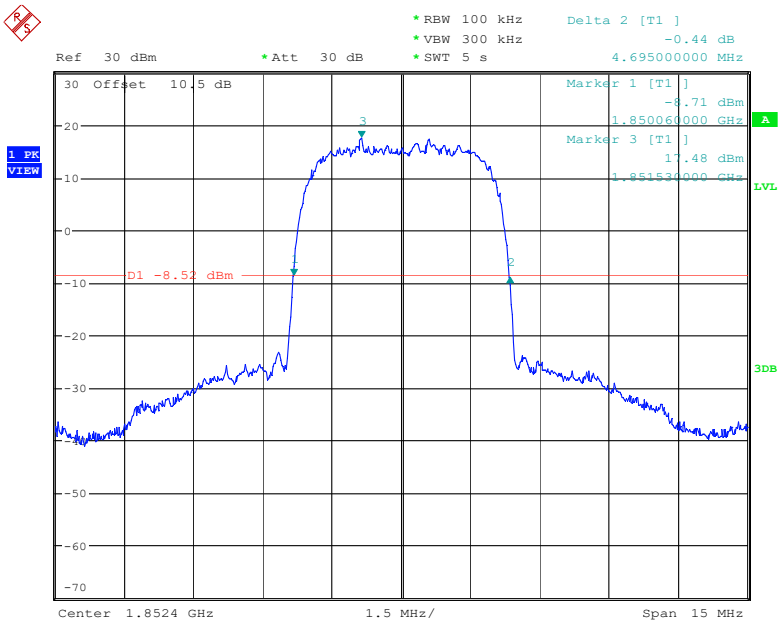


Date: 30.AUG.2022 11:46:22

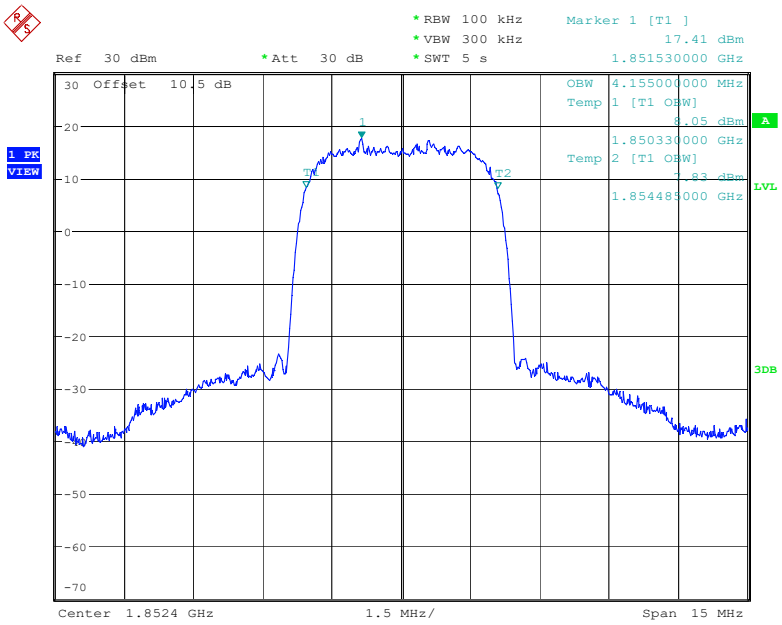


Date: 30.AUG.2022 11:45:45

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

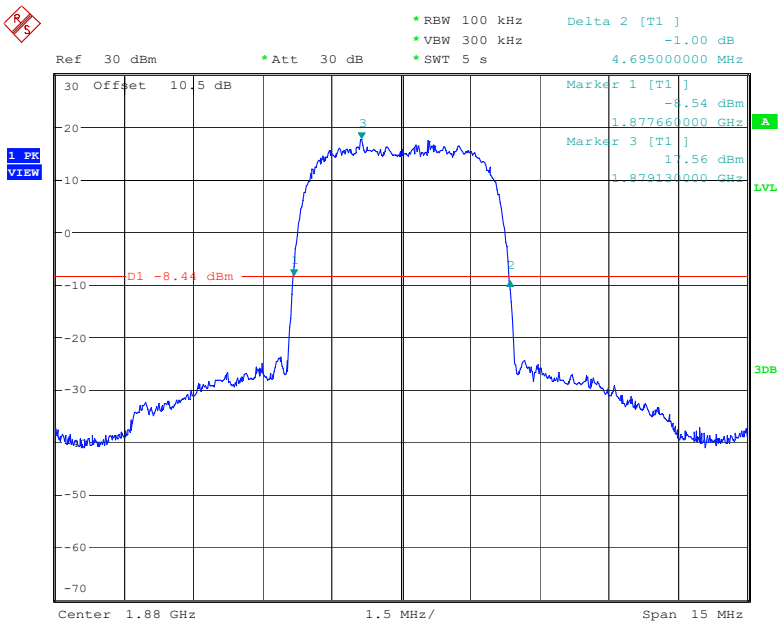


Date: 30.AUG.2022 13:14:54

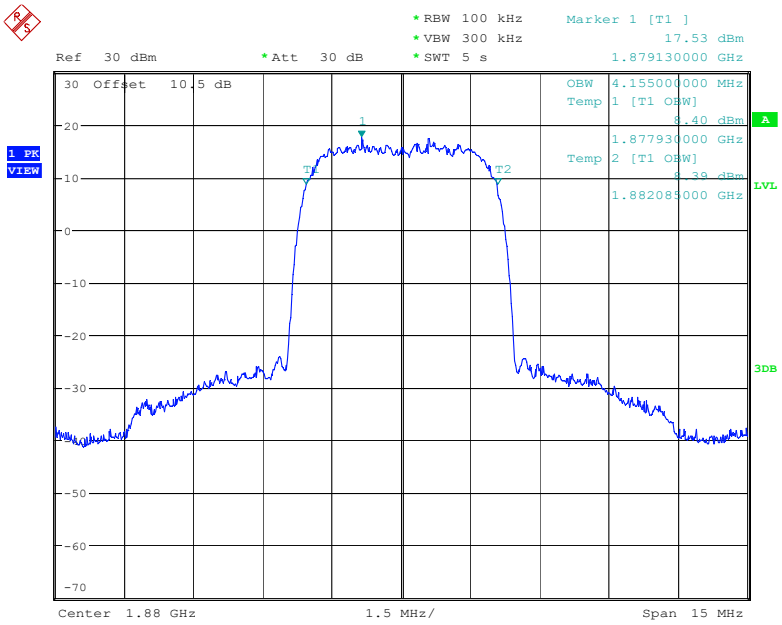


Date: 30.AUG.2022 13:14:15

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

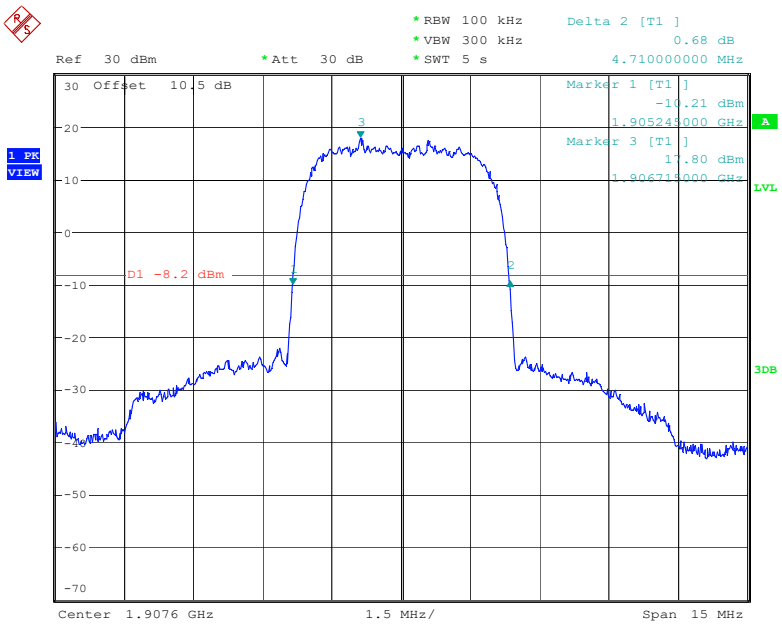


Date: 30.AUG.2022 13:19:03

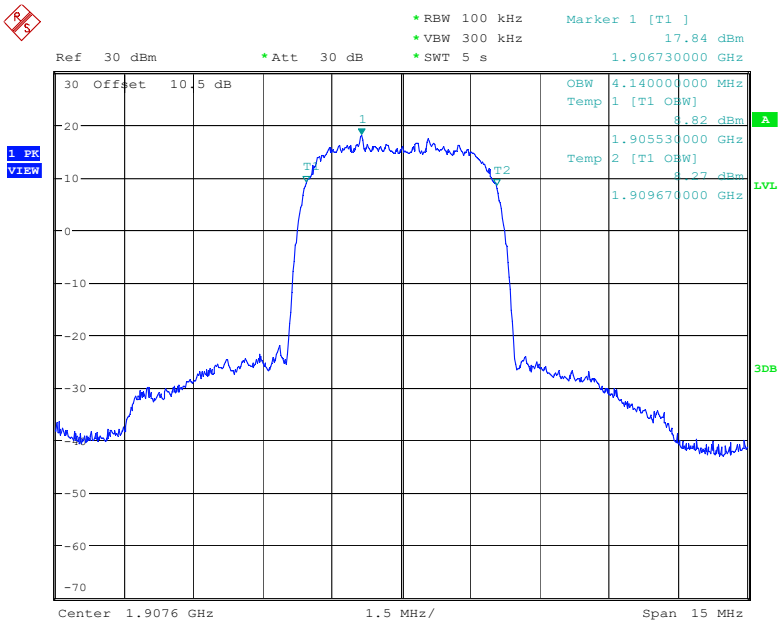


Date: 30.AUG.2022 13:18:25

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

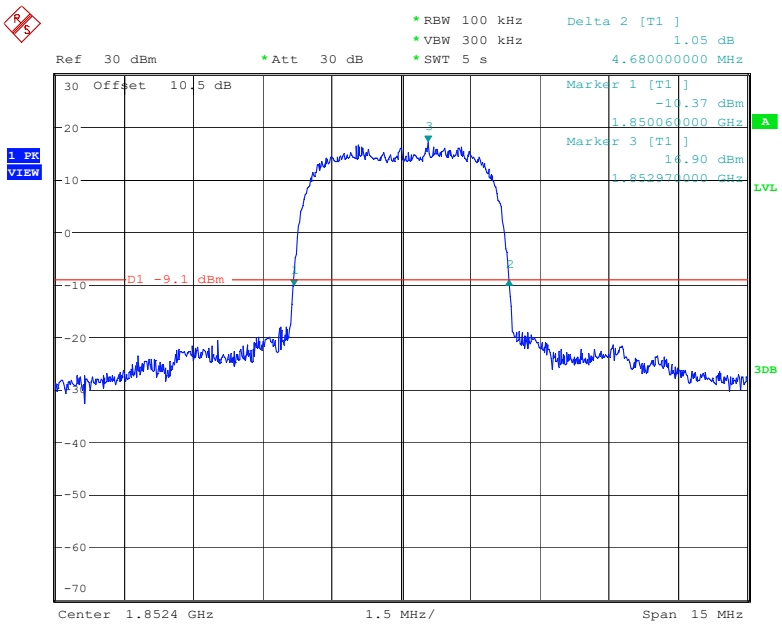


Date: 30.AUG.2022 13:22:34

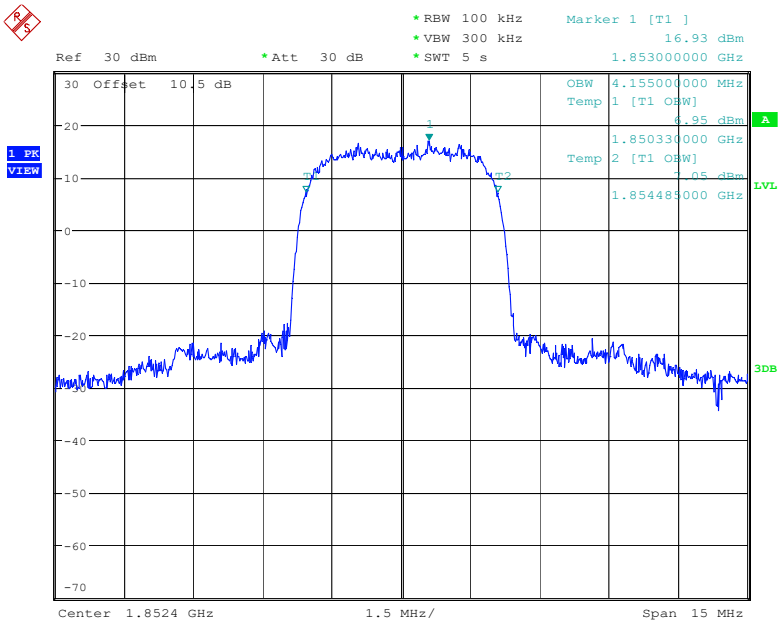


Date: 30.AUG.2022 13:21:56

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

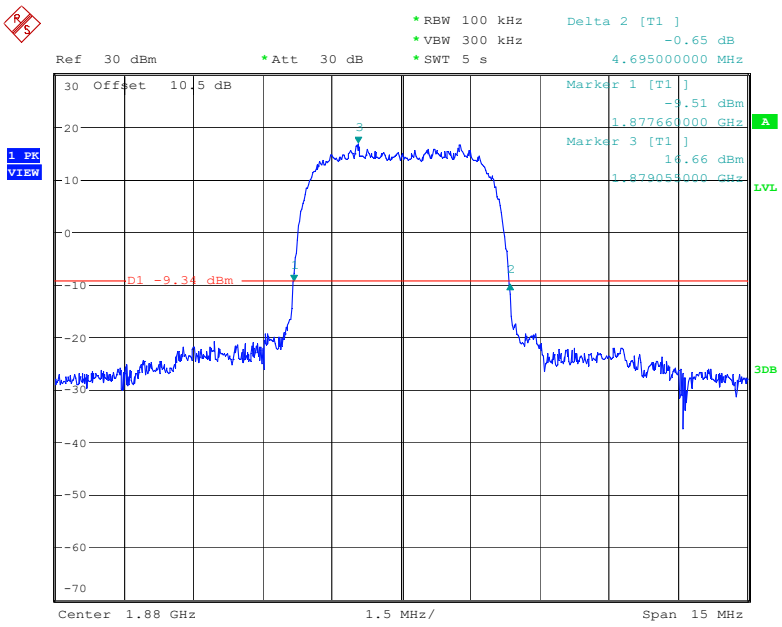


Date: 30.AUG.2022 13:28:18

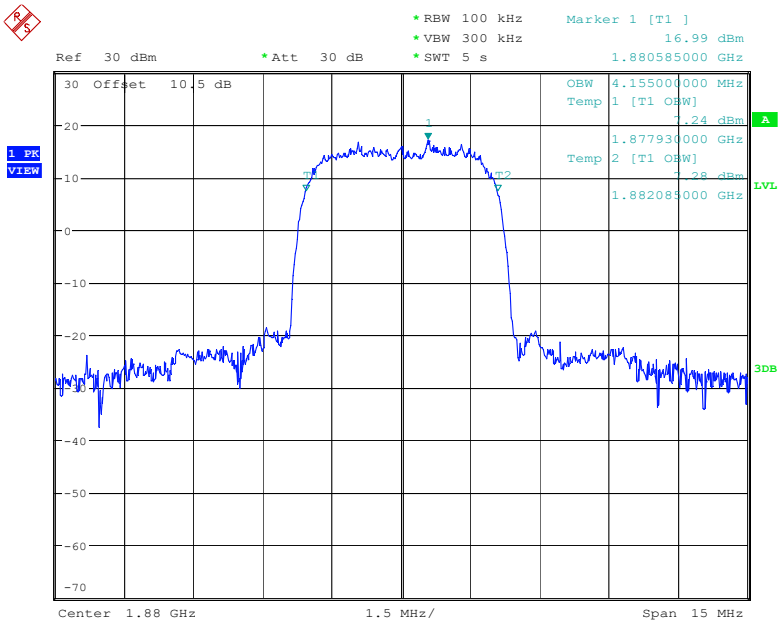


Date: 30.AUG.2022 13:27:40

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

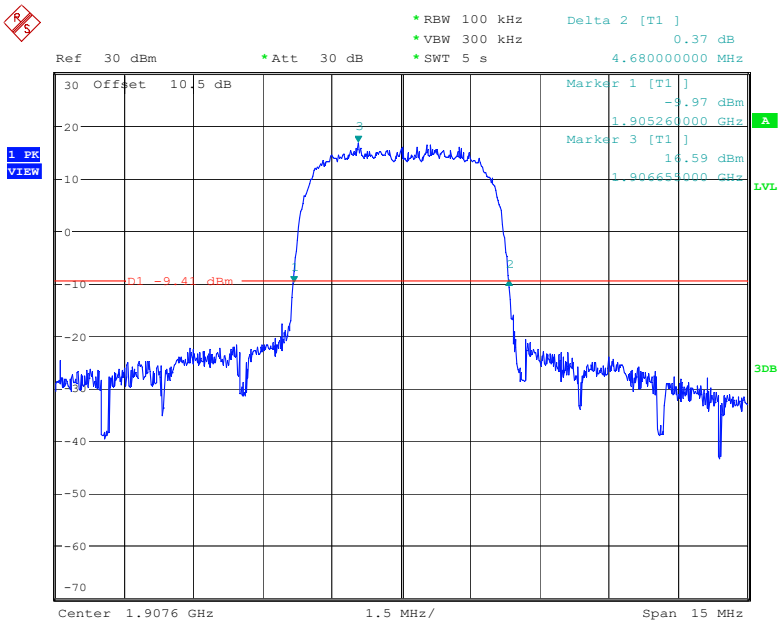


Date: 30.AUG.2022 13:32:46



Date: 30.AUG.2022 13:32:08

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



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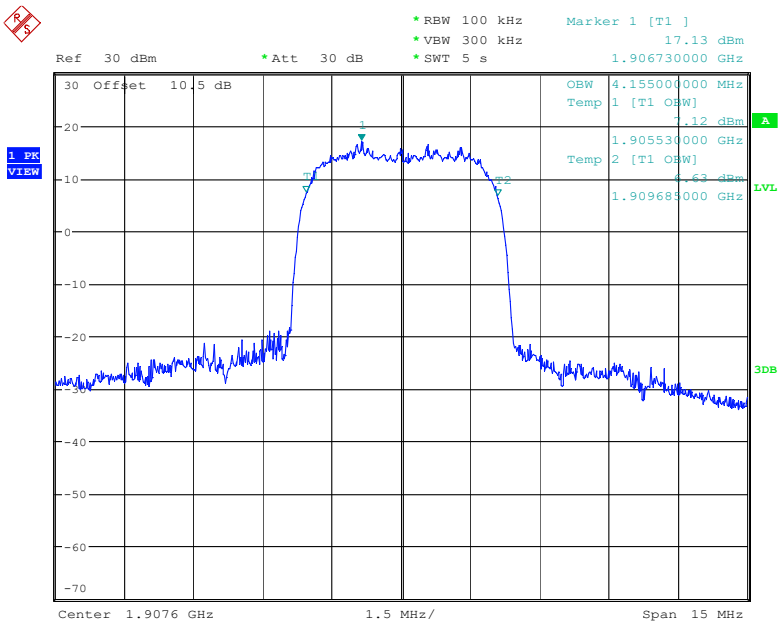
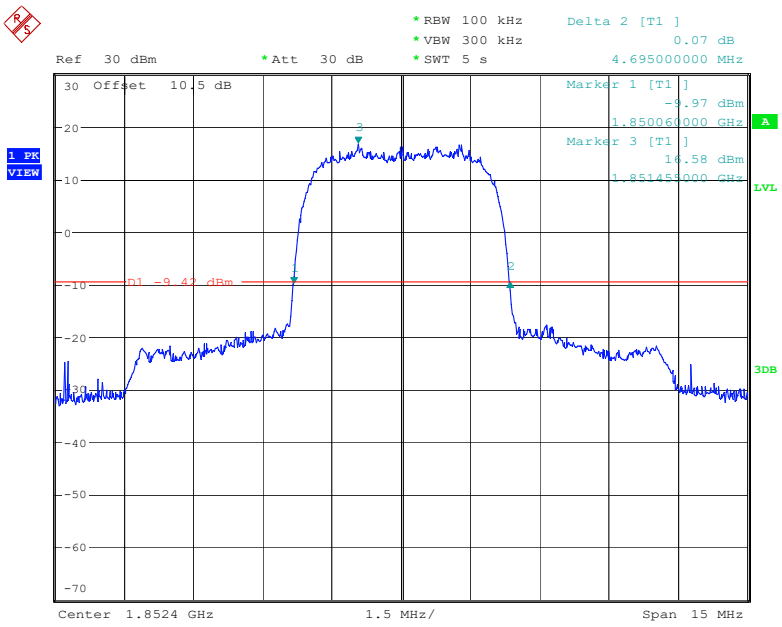


Date: 30.AUG.2022 13:44:48

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



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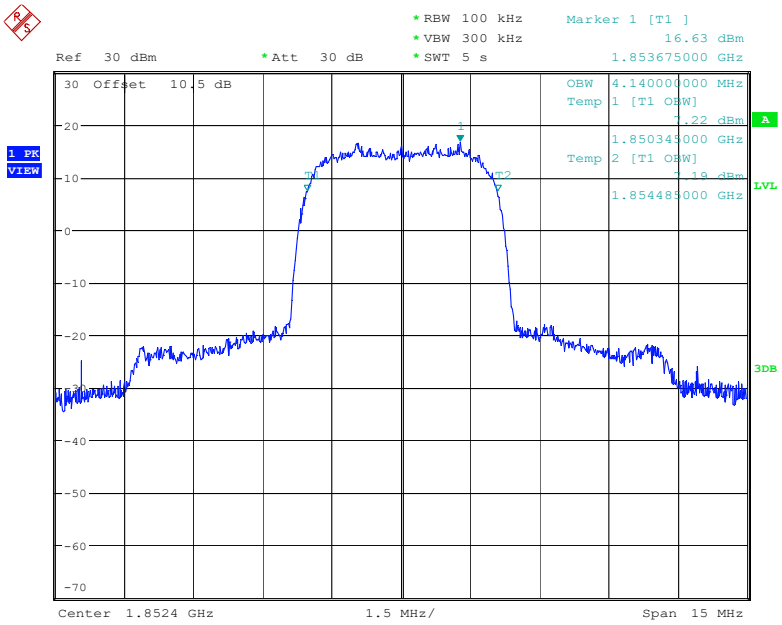
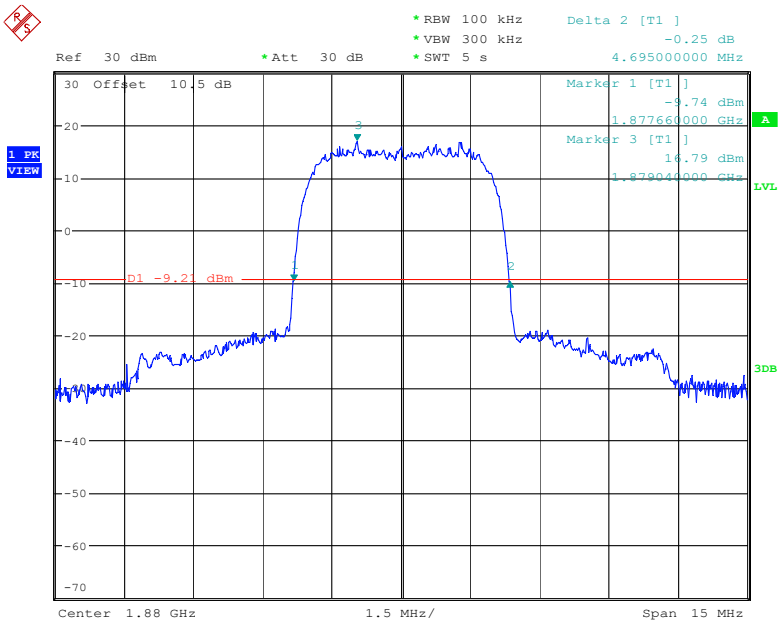
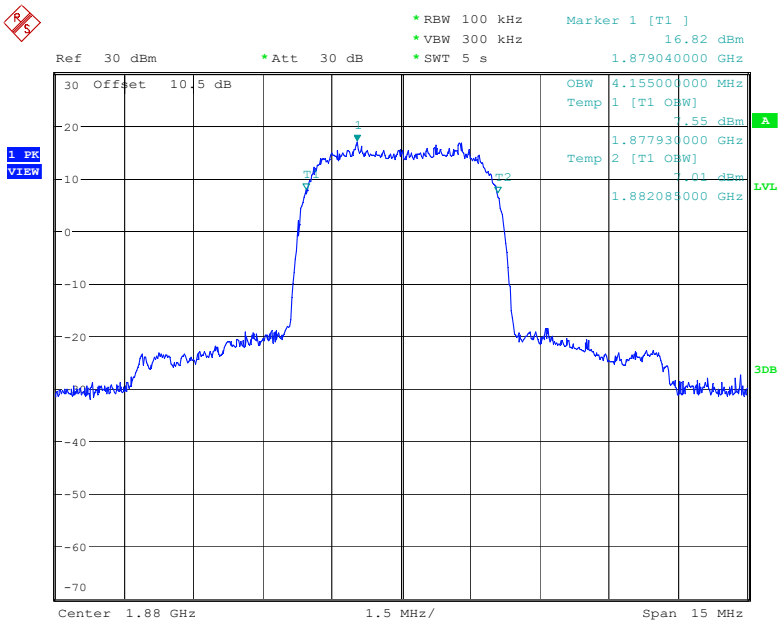


Date: 30.AUG.2022 13:50:13

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

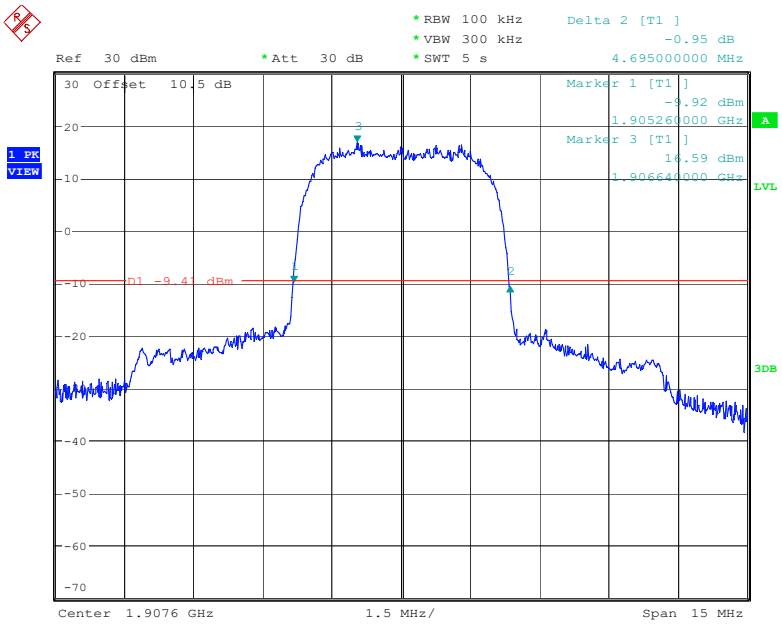


Date: 30.AUG.2022 13:55:30

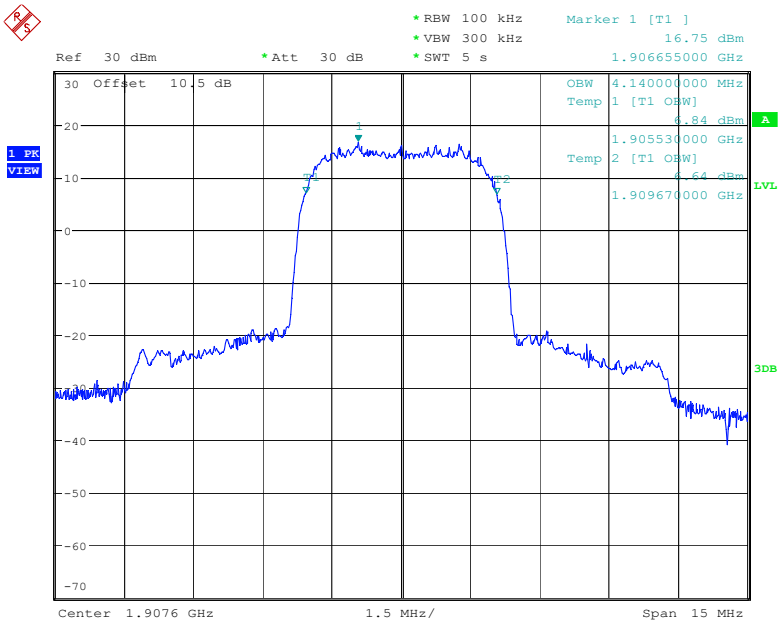


Date: 30.AUG.2022 13:54:52

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



Date: 30.AUG.2022 13:58:47



Date: 30.AUG.2022 13:58:11

LTE Band 2:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.260	1.104	1.266	1.104	1.266
	16QAM	1.116	1.266	1.098	1.254	1.116	1.266
3 MHz	QPSK	2.700	3.012	2.700	3.024	2.712	3.000
	16QAM	2.688	3.000	2.712	3.012	2.688	3.012
5 MHz	QPSK	4.520	4.980	4.520	4.980	4.540	5.000
	16QAM	4.540	4.980	4.520	5.020	4.520	5.000
10 MHz	QPSK	8.960	9.720	8.960	9.760	8.960	9.720
	16QAM	8.960	9.800	8.960	9.840	8.960	9.720
15 MHz	QPSK	13.500	14.940	13.560	15.060	13.560	15.000
	16QAM	13.560	15.180	13.560	14.940	13.560	15.000
20 MHz	QPSK	18.000	19.600	18.000	19.760	18.000	19.520
	16QAM	18.000	19.600	18.000	19.600	17.920	19.760

LTE Band 4:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.260	1.098	1.260	1.104	1.260
	16QAM	1.092	1.254	1.110	1.260	1.104	1.260
3 MHz	QPSK	2.700	3.000	2.712	3.024	2.700	2.988
	16QAM	2.688	3.000	2.700	3.024	2.700	3.024
5 MHz	QPSK	4.520	4.980	4.520	5.000	4.560	4.960
	16QAM	4.520	5.020	4.520	4.980	4.500	4.960
10 MHz	QPSK	8.920	9.720	8.960	9.800	8.960	9.640
	16QAM	9.000	9.720	8.960	9.840	9.000	9.720
15 MHz	QPSK	13.500	14.880	13.560	15.120	13.560	15.120
	16QAM	13.500	15.000	13.560	14.940	13.500	15.060
20 MHz	QPSK	18.000	19.520	18.000	19.680	17.920	19.520
	16QAM	17.920	19.600	18.080	19.760	18.000	19.600

LTE Band 7:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	5.020	4.520	5.000	4.520	5.000
	16QAM	4.540	5.000	4.540	5.000	4.540	5.020
10 MHz	QPSK	8.960	9.800	9.000	9.800	8.960	9.720
	16QAM	8.960	9.800	8.960	9.840	8.960	9.720
15 MHz	QPSK	13.500	15.060	13.560	15.120	13.560	15.000
	16QAM	13.560	15.000	13.500	15.000	13.560	15.000
20 MHz	QPSK	18.000	19.520	18.000	19.680	17.920	19.520
	16QAM	18.000	19.760	18.000	19.760	18.080	19.840

LTE Band 12:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.104	1.260	1.110	1.260	1.098	1.260
	16QAM	1.104	1.254	1.110	1.254	1.122	1.284
3 MHz	QPSK	2.700	2.988	2.700	3.012	2.712	3.012
	16QAM	2.688	3.012	2.712	3.024	2.700	3.024
5 MHz	QPSK	4.540	5.000	4.500	4.960	4.520	5.000
	16QAM	4.540	5.020	4.520	4.960	4.520	4.980
10 MHz	QPSK	9.000	9.720	8.960	9.760	9.000	9.760
	16QAM	9.000	9.760	8.920	9.720	8.960	9.680

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	4.520	4.960	4.520	4.980	4.520	5.000
	16QAM	4.520	4.960	4.540	5.000	4.520	5.000
10 MHz	QPSK	8.920	9.680	8.960	9.760	9.000	9.800
	16QAM	8.960	9.720	8.960	9.800	8.960	9.720

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

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

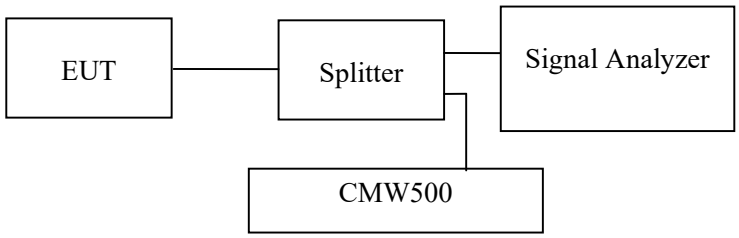
Applicable Standard

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

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

Test Procedure

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



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

Test Data

Environmental Conditions

Temperature:	27 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang on 2022-08-30 and 2022-09-19.

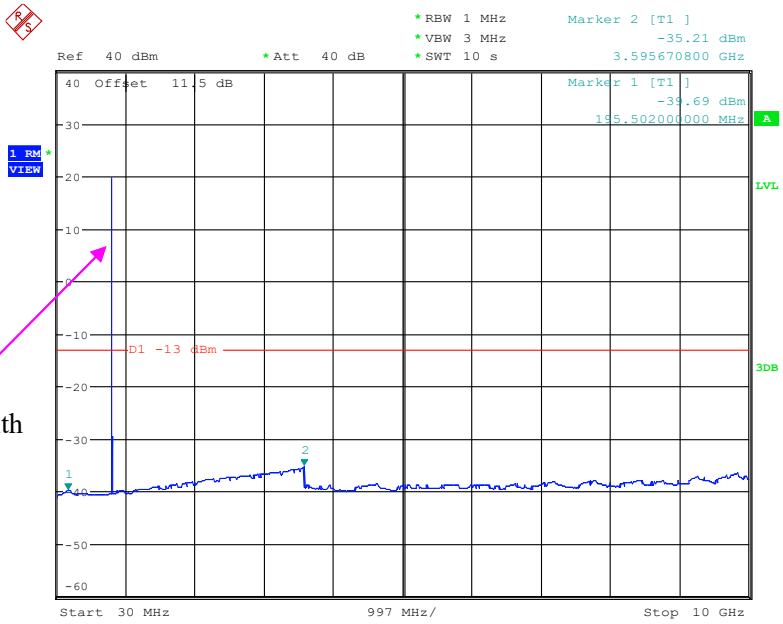
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)
Low Channel:

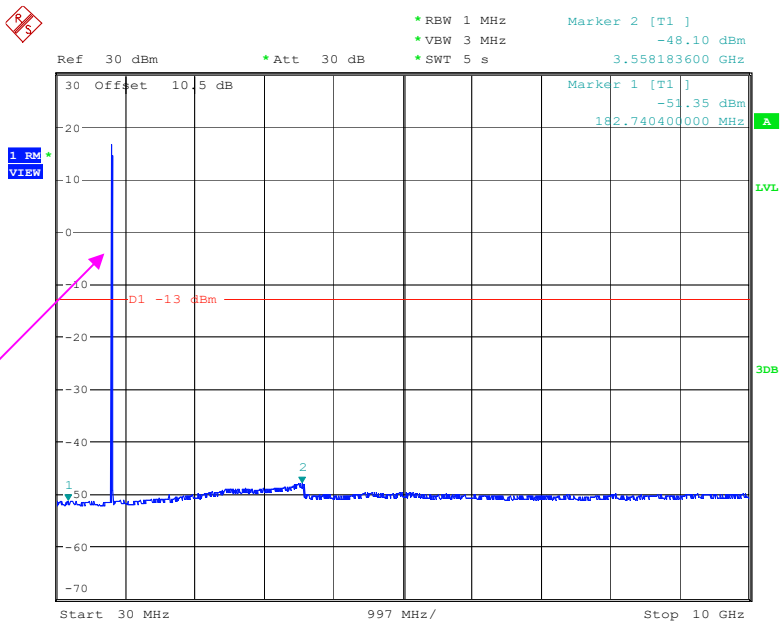
30 MHz – 10 GHz (GSM Mode)



Fundamental test with notch filter

Date: 19.SEP.2022 15:13:42

30 MHz – 10 GHz (WCDMA Mode)

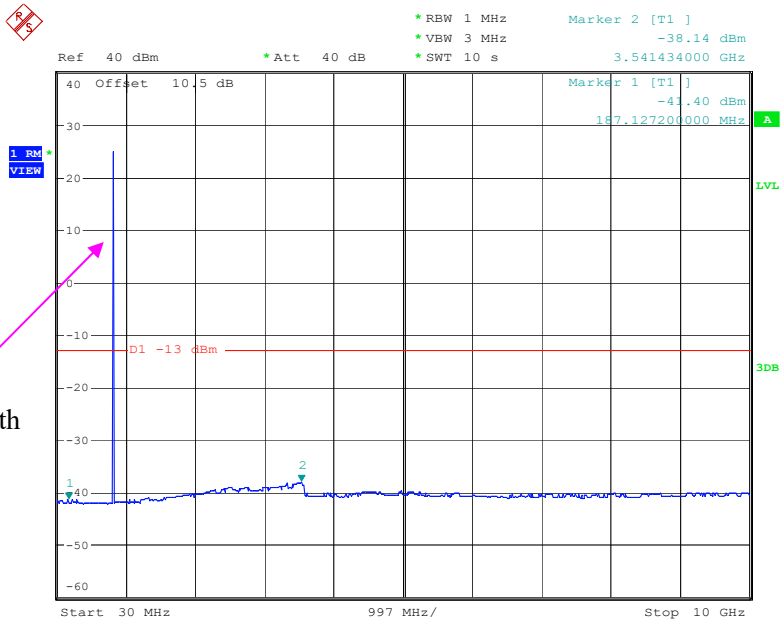


Fundamental test

Date: 30.AUG.2022 14:55:42

Middle Channel:

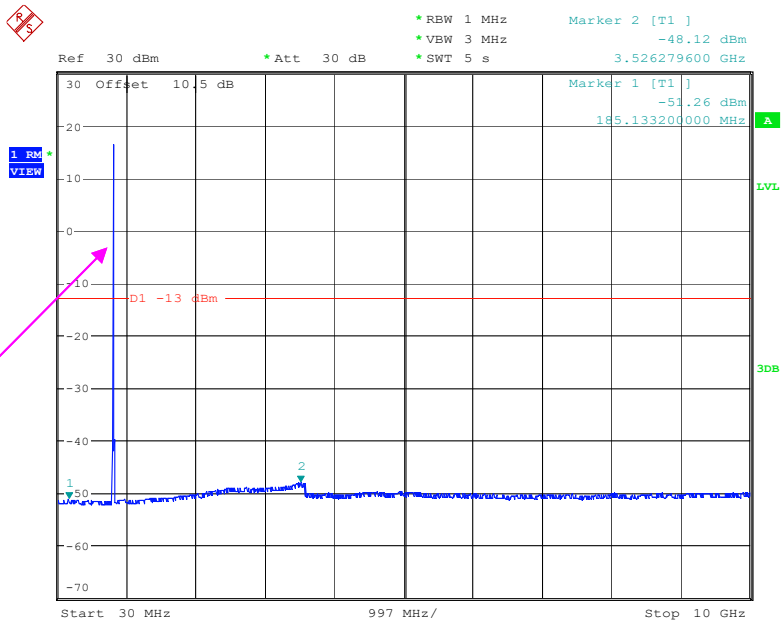
30 MHz – 10 GHz (GSM Mode)



Fundamental test with notch filter

Date: 30.AUG.2022 09:30:25

30 MHz – 10 GHz (WCDMA Mode)

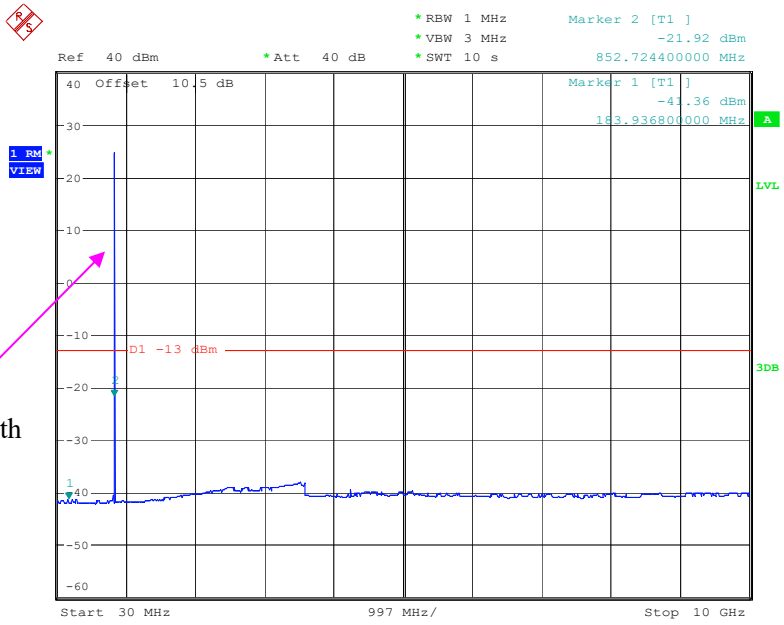


Fundamental test

Date: 30.AUG.2022 14:58:19

High Channel:

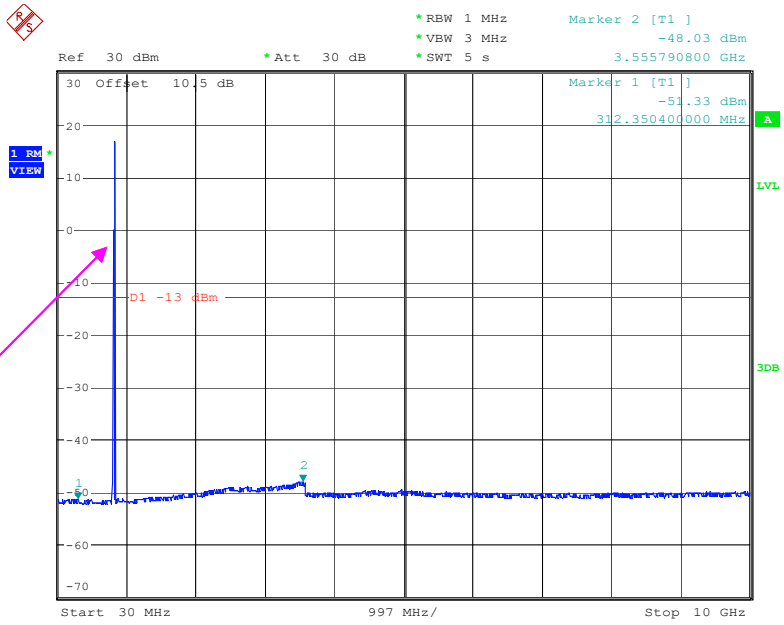
30 MHz – 10 GHz (GSM Mode)



Fundamental test with notch filter

Date: 30.AUG.2022 09:36:00

30 MHz – 10 GHz (WCDMA Mode)

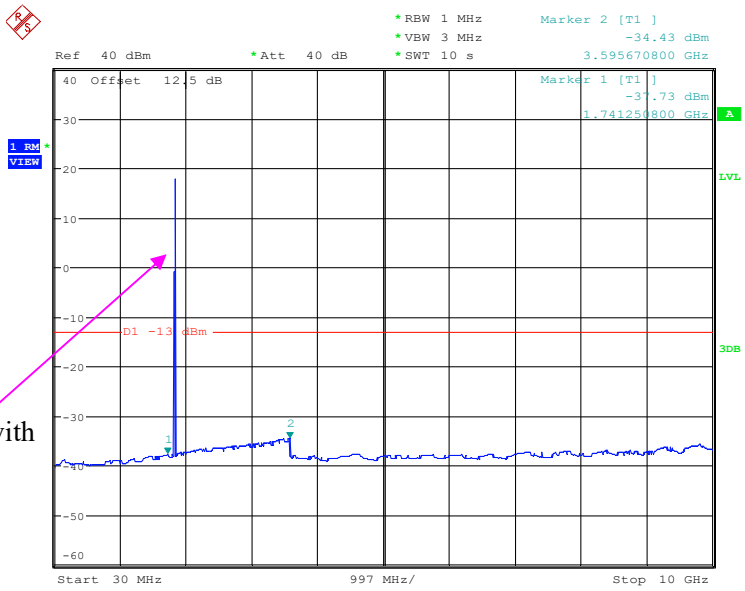


Fundamental test

Date: 30.AUG.2022 15:01:44

PCS Band (Part 24E)
Low Channel:

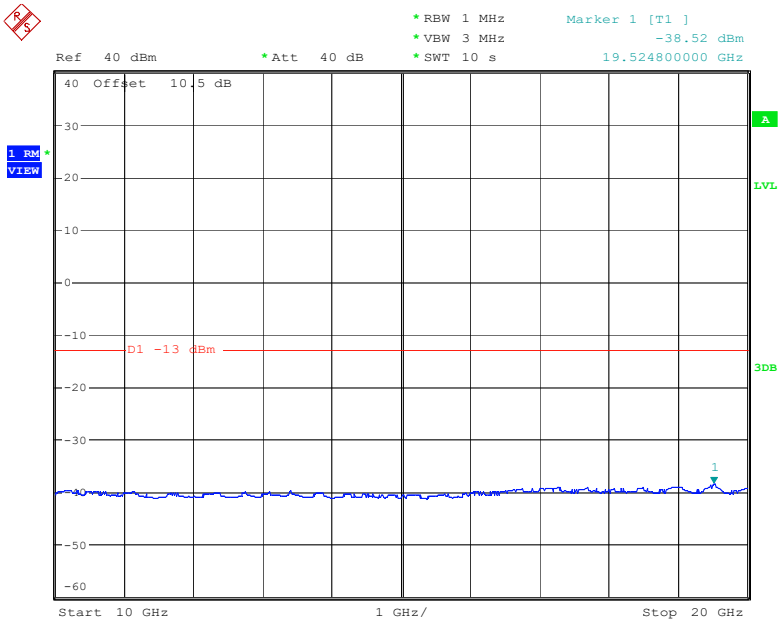
30 MHz – 10 GHz (GSM Mode)



Fundamental test with notch filter

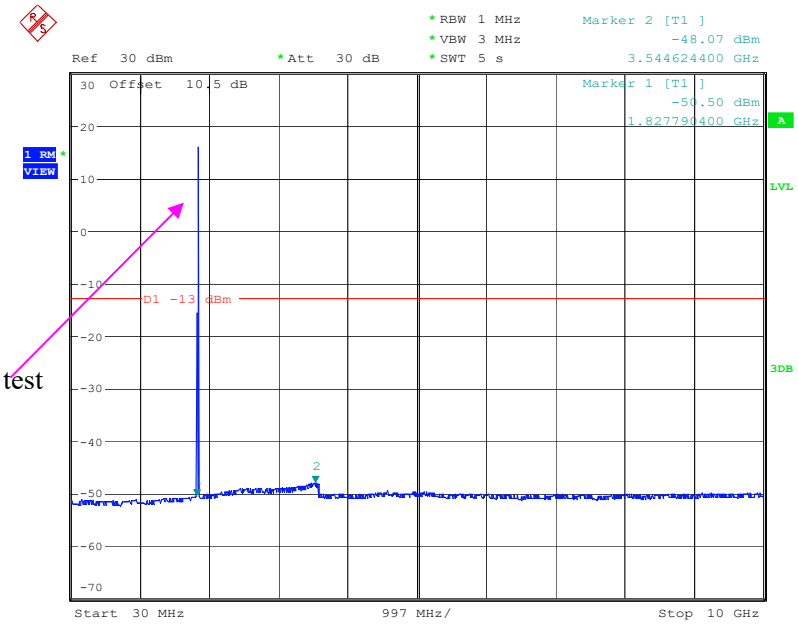
Date: 19.SEP.2022 15:48:26

10 GHz – 20 GHz (GSM Mode)



Date: 30.AUG.2022 10:52:14

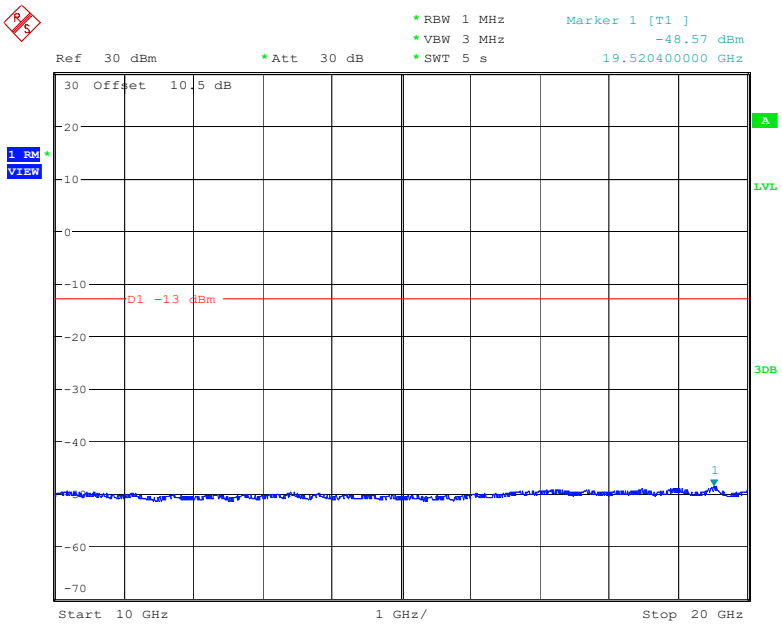
30 MHz – 10 GHz (WCDMA Mode)



Fundamental test

Date: 30.AUG.2022 13:16:10

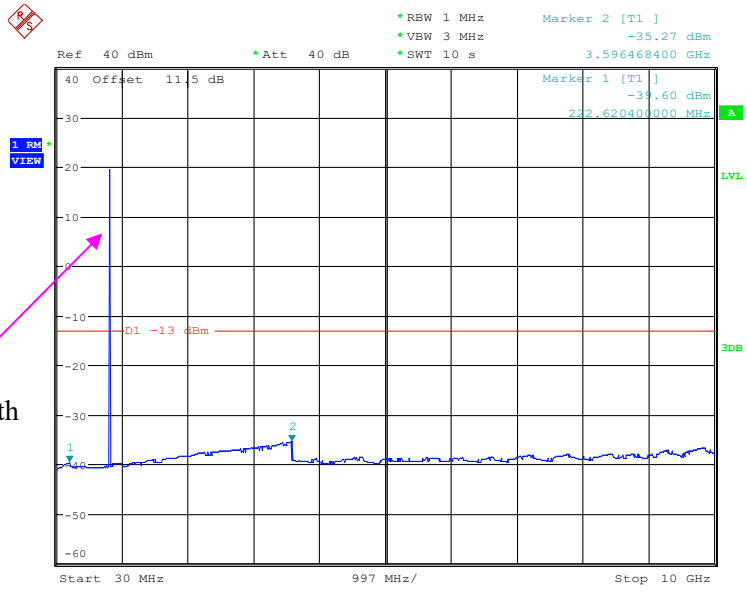
10 GHz – 20 GHz (WCDMA Mode)



Date: 30.AUG.2022 13:16:49

Middle Channel:

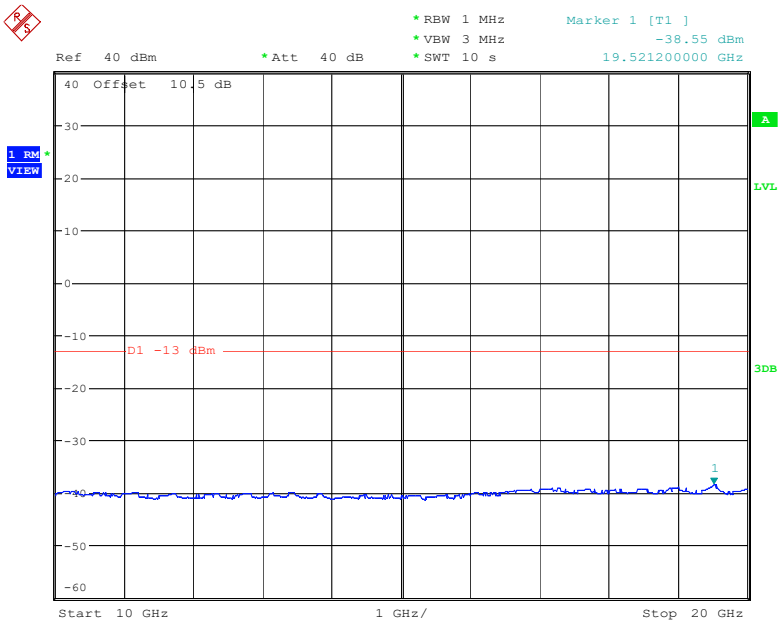
30 MHz – 10 GHz (GSM Mode)



Fundamental test with notch filter

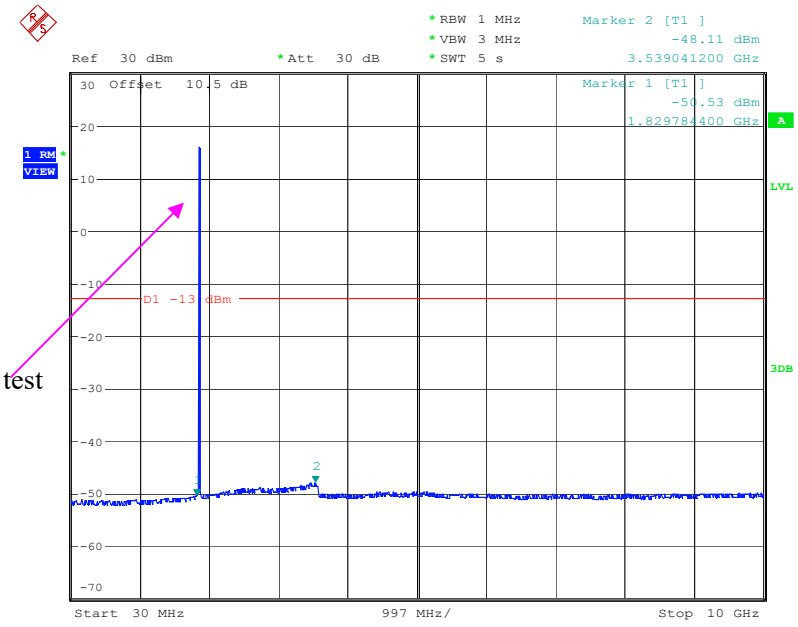
Date: 19.SEP.2022 15:22:10

10 GHz – 20 GHz (GSM Mode)



Date: 30.AUG.2022 11:00:13

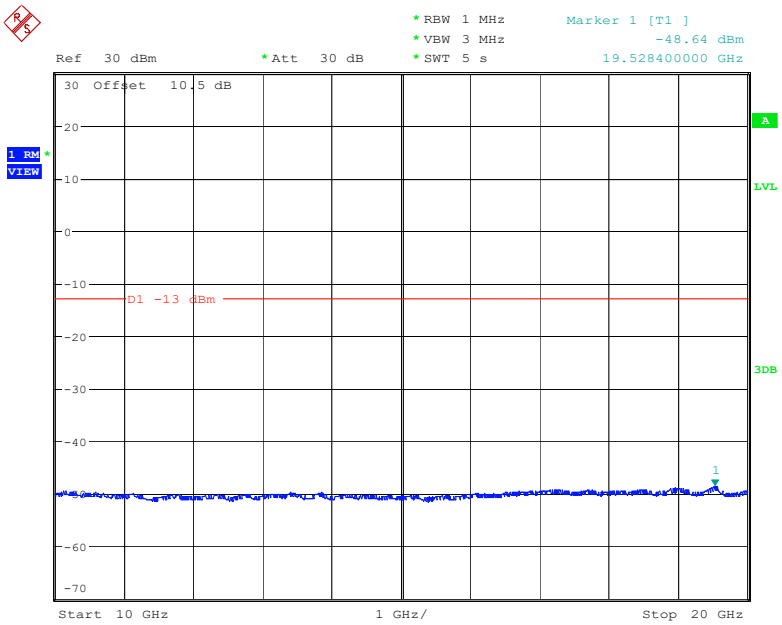
30 MHz – 10 GHz (WCDMA Mode)



Fundamental test

Date: 30.AUG.2022 13:19:42

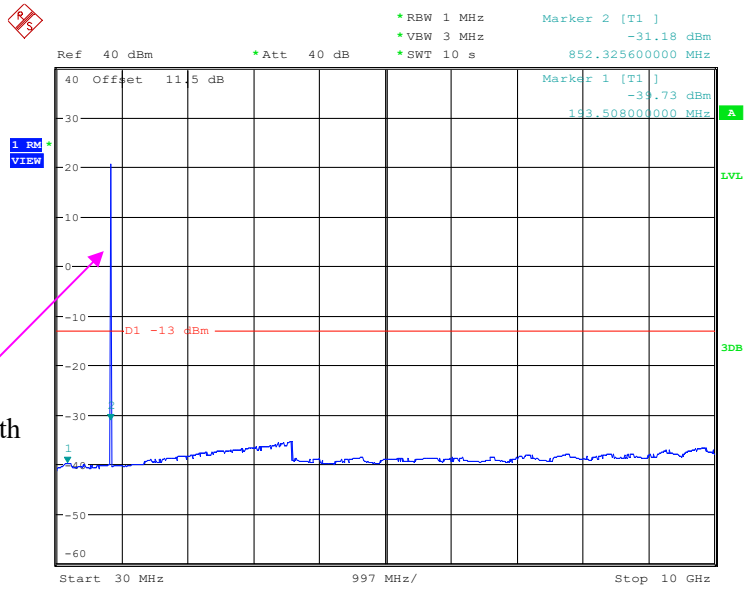
10 GHz – 20 GHz (WCDMA Mode)



Date: 30.AUG.2022 13:20:22

High Channel:

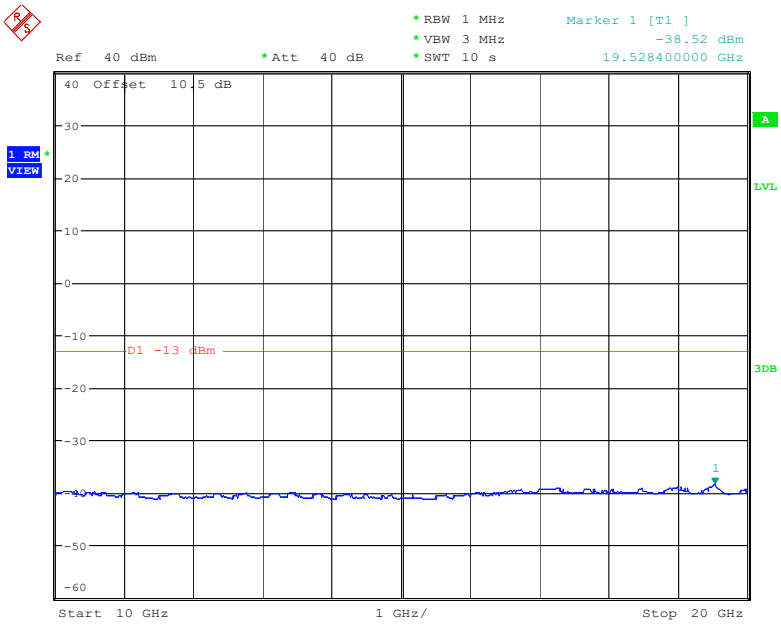
30 MHz – 10 GHz (GSM Mode)



Fundamental test with notch filter

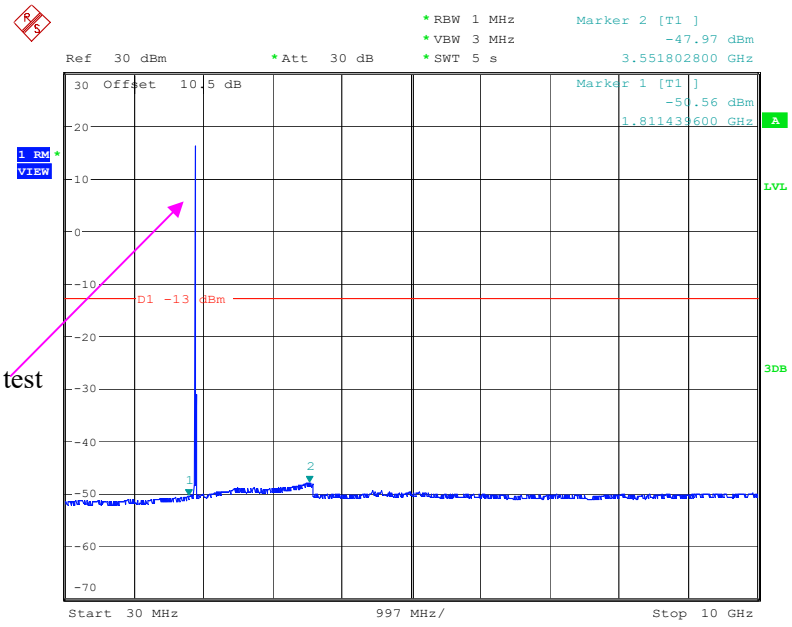
Date: 19.SEP.2022 15:24:33

10 GHz – 20 GHz (GSM Mode)



Date: 30.AUG.2022 11:07:29

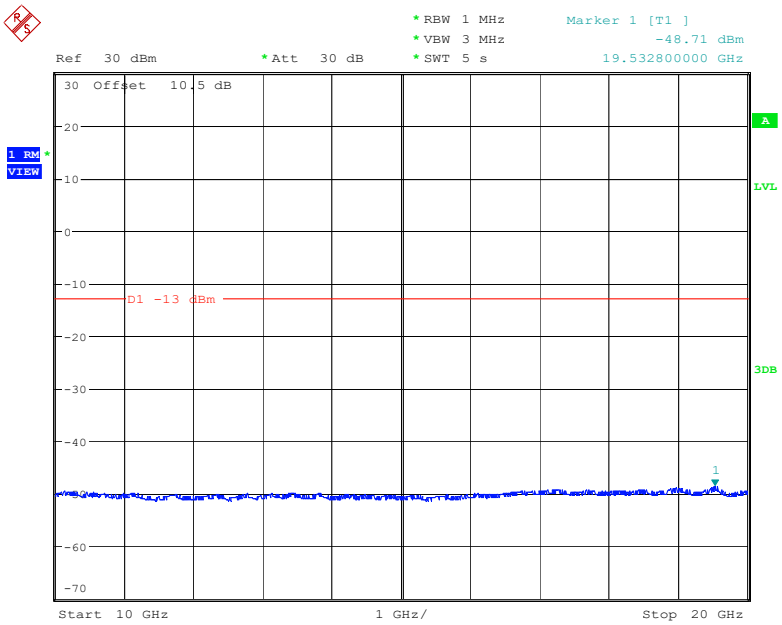
30 MHz – 10 GHz (WCDMA Mode)



Fundamental test

Date: 30.AUG.2022 13:23:50

10 GHz – 20 GHz (WCDMA Mode)



Date: 30.AUG.2022 13:24:30

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

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

Applicable Standard

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

Test Procedure

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

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

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

Test Data

Environmental Conditions

Temperature:	25.6℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Jeff Jiang from 2022-08-15 to 2022-08-22.

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

The worst case is as below:

30MHz-10GHz:

Cellular Band (Part 22H)

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM850, 824.2MHz								
952.86	-71.49	98	2.5	H	10.0	-61.49	-13	48.49
952.86	-75.40	123	1.7	V	11.7	-63.70	-13	50.70
1648.4	-57.0	321	1.3	H	3.5	-53.5	-13	40.5
1648.4	-54.5	124	1.3	V	3.1	-51.4	-13	38.4
2472.6	-42.0	339	2.0	H	6.6	-35.4	-13	22.4
2472.6	-41.2	234	1.5	V	5.8	-35.4	-13	22.4
3296.8	-51.8	44	1.2	H	6.4	-45.4	-13	32.4
3296.8	-51.4	157	2.1	V	5.7	-45.7	-13	32.7
GSM850, 836.6MHz								
955.39	-70.31	359	1.6	H	10.0	-60.31	-13	47.31
955.39	-74.72	87	1.8	V	11.7	-63.02	-13	50.02
1673.20	-51.7	10	1.2	H	3.8	-47.9	-13	34.9
1673.20	-48.6	191	1.5	V	3.1	-45.5	-13	32.5
2509.80	-42.7	156	1.1	H	6.2	-36.5	-13	23.5
2509.80	-42.7	202	2.1	V	5.5	-37.2	-13	24.2
3346.40	-52.1	200	1.1	H	6.6	-45.5	-13	32.5
3346.40	-51.3	217	2.5	V	5.4	-45.9	-13	32.9
GSM850, 848.8MHz								
952.58	-72.74	250	1.8	H	10.0	-62.74	-13	49.74
952.58	-76.16	112	2.1	V	11.7	-64.46	-13	51.46
1697.6	-54.6	1	1.0	H	4.1	-50.5	-13	37.5
1697.6	-51.2	29	2.1	V	3.1	-48.1	-13	35.1
2546.4	-39.5	138	1.4	H	6.1	-33.4	-13	20.4
2546.4	-40.1	67	2.0	V	5.8	-34.3	-13	21.3
3395.2	-50.4	329	2.1	H	6.2	-44.2	-13	31.2
3395.2	-50.5	282	2.0	V	5.4	-45.1	-13	32.1

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band5,826.4MHz								
956.76	-71.44	249	2.4	H	10.0	-61.44	-13	48.44
956.76	-75.57	95	2.1	V	11.7	-63.87	-13	50.87
1652.8	-56.6	148	2.1	H	3.5	-53.1	-13	40.1
1652.8	-55.7	195	2.2	V	3.1	-52.6	-13	39.6
2479.2	-52.1	19	1.5	H	6.6	-45.5	-13	32.5
2479.2	-51.3	271	1.1	V	5.8	-45.5	-13	32.5
3305.6	-52.3	159	1.0	H	6.4	-45.9	-13	32.9
3305.6	-52.1	275	1.7	V	5.7	-46.4	-13	33.4
WCDMA Band5,836.4MHz								
954.85	-72.81	145	2.2	H	10.0	-62.81	-13	49.81
954.85	-77.58	319	2.0	V	11.7	-65.88	-13	52.88
1672.8	-55.0	47	1.3	H	3.5	-51.5	-13	38.5
1672.8	-55.2	317	1.4	V	3.1	-52.1	-13	39.1
2509.2	-55.0	73	1.5	H	6.6	-48.4	-13	35.4
2509.2	-51.4	132	1.6	V	5.8	-45.6	-13	32.6
3345.6	-51.9	223	2.1	H	6.4	-45.5	-13	32.5
3345.6	-51.6	321	1.3	V	5.7	-45.9	-13	32.9
WCDMA Band5,846.6MHz								
953.38	-70.99	283	2.3	H	10.0	-60.99	-13	47.99
953.38	-77.36	109	1.1	V	11.7	-65.66	-13	52.66
1693.2	-57.5	343	1.5	H	4.1	-53.4	-13	40.4
1693.2	-56.3	31	1.5	V	3.1	-53.2	-13	40.2
2539.8	-51.7	140	1.6	H	6.1	-45.6	-13	32.6
2539.8	-51.9	265	2.1	V	5.8	-46.1	-13	33.1
3386.4	-52.1	253	1.5	H	6.2	-45.9	-13	32.9
3386.4	-51.6	181	2.1	V	5.4	-46.2	-13	33.2

30MHz-20GHz:

Cellular 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)				
GSM1900, 1850.2MHz								
953.98	-71.68	266	1.6	H	10.0	-61.68	-13	48.68
953.98	-75.77	215	2.4	V	11.7	-64.07	-13	51.07
3700.4	-53.5	268	1.1	H	8.1	-45.4	-13	32.4
3700.4	-52.1	251	2.2	V	7.6	-44.5	-13	31.5
5550.6	-49.2	323	1.4	H	9.6	-39.6	-13	26.6
5550.6	-50.0	107	2.2	V	9.1	-40.9	-13	27.9
GSM1900, 1880MHz								
952.01	-72.45	156	2.1	H	10.0	-62.45	-13	49.45
952.01	-75.89	54	1.9	V	11.7	-64.19	-13	51.19
3760	-55.3	275	1.3	H	8.8	-46.5	-13	33.5
3760	-53.8	359	1.3	V	8	-45.8	-13	32.8
5640	-50.9	191	2.2	H	10.2	-40.7	-13	27.7
5640	-51.7	132	1.9	V	9.5	-42.2	-13	29.2
GSM1900, 1909.8MHz								
954.25	-70.34	279	1.5	H	10.0	-60.34	-13	47.34
954.25	-75.55	333	2.2	V	11.7	-63.85	-13	50.85
3819.6	-56.5	112	1.6	H	8.7	-47.8	-13	34.8
3819.6	-55.1	54	2.0	V	8	-47.1	-13	34.1
5729.4	-53.2	338	2.4	H	10.4	-42.8	-13	29.8
5729.4	-54.0	357	1.2	V	9.9	-44.1	-13	31.1

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band2,1852.4MHz								
950.75	-70.55	280	1.9	H	10.0	-60.55	-13	47.55
950.75	-76.77	108	2.4	V	11.7	-65.07	-13	52.07
3704.8	-55.7	33	1.9	H	8.1	-47.6	-13	34.6
3704.8	-53.9	33	2.3	V	7.6	-46.3	-13	33.3
5557.2	-54.5	159	2.3	H	9.6	-44.9	-13	31.9
5557.2	-52.6	256	1.6	V	9.1	-43.5	-13	30.5
WCDMA Band2,1880MHz								
953.18	-72.09	255	1.3	H	10.0	-62.09	-13	49.09
953.18	-74.84	338	1.5	V	11.7	-63.14	-13	50.14
3760	-57.3	314	1.8	H	8.8	-48.5	-13	35.5
3760	-55.6	107	1.5	V	8	-47.6	-13	34.6
5640	-55.1	1	1.0	H	10.2	-44.9	-13	31.9
5640	-53.9	45	1.9	V	9.5	-44.4	-13	31.4
WCDMA Band2,1907.6MHz								
950.94	-70.31	44	1.9	H	10.0	-60.31	-13	47.31
950.94	-77.68	159	2.2	V	11.7	-65.98	-13	52.98
3815.2	-57.0	276	1.9	H	8.7	-48.3	-13	35.3
3815.2	-55.4	63	2.2	V	8	-47.4	-13	34.4
5722.8	-55.4	138	2.3	H	10.4	-45	-13	32.0
5722.8	-54.0	27	1.6	V	9.9	-44.1	-13	31.1

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								
954.28	-72.94	206	1.8	H	10.0	-62.94	-13	49.94
954.28	-76.76	113	1.2	V	11.7	-65.06	-13	52.06
3701.4	-55.5	147	1.8	H	8.1	-47.4	-13	34.4
3701.4	-53.9	114	1.2	V	7.6	-46.3	-13	33.3
5552.1	-50.9	236	1.9	H	9.6	-41.3	-13	28.3
5552.1	-52.5	227	1.1	V	9.1	-43.4	-13	30.4
1.4MHz bandwidth, QPSK, Middle channel								
950.68	-70.79	272	2.3	H	10.0	-60.79	-13	47.79
950.68	-77.53	275	2.5	V	11.7	-65.83	-13	52.83
3760	-57.1	126	1.6	H	8.8	-48.3	-13	35.3
3760	-55.3	262	2.1	V	8	-47.3	-13	34.3
5640	-51.6	350	2.2	H	10.2	-41.4	-13	28.4
5640	-53.4	346	2.4	V	9.5	-43.9	-13	30.9
1.4MHz bandwidth, QPSK, High channel								
950.94	-70.57	239	1.2	H	10.0	-60.57	-13	47.57
950.94	-75.43	276	2.4	V	11.7	-63.73	-13	50.73
3818.6	-56.2	128	1.1	H	8.7	-47.5	-13	34.5
3818.6	-54.1	40	2.2	V	8	-46.1	-13	33.1
5727.9	-54.0	165	1.2	H	10.6	-43.4	-13	30.4
5727.9	-52.4	69	1.8	V	10.2	-42.2	-13	29.2

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 4								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, QPSK, Low channel								
953.89	-72.52	241	2.3	H	10.0	-62.52	-13	49.52
953.89	-74.77	40	1.7	V	11.7	-63.07	-13	50.07
3421.4	-43.3	336	2.0	H	6.4	-36.9	-13	23.9
3421.4	-41.4	176	1.7	V	5.7	-35.7	-13	22.7
5132.1	-50.1	329	1.1	H	11.3	-38.8	-13	25.8
5132.1	-50.5	37	1.2	V	10.8	-39.7	-13	26.7
1.4MHz bandwidth, QPSK, Middle channel								
951.03	-71.36	266	1.7	H	10.0	-61.36	-13	48.36
951.03	-76.11	298	1.0	V	11.7	-64.41	-13	51.41
3465	-44.8	298	2.4	H	7	-37.8	-13	24.8
3465	-43.7	199	1.2	V	6.2	-37.5	-13	24.5
5197.5	-49.8	250	1.6	H	10.4	-39.4	-13	26.4
5197.5	-49.5	263	1.3	V	9.8	-39.7	-13	26.7
1.4MHz bandwidth, QPSK, High channel								
955.64	-72.27	68	1.6	H	10.0	-62.27	-13	49.27
955.64	-75.97	142	1.4	V	11.7	-64.27	-13	51.27
3508.6	-48.2	116	1.5	H	7.8	-40.4	-13	27.4
3508.6	-46.9	253	1.9	V	6.6	-40.3	-13	27.3
5262.9	-48.5	359	2.0	H	9.5	-39	-13	26.0
5262.9	-48.3	18	1.5	V	8.9	-39.4	-13	26.4

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 7								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, QPSK, Low channel								
954.34	-72.08	284	2.2	H	10.0	-62.08	-25	37.08
954.34	-74.95	105	2.0	V	11.7	-63.25	-25	38.25
5005	-55.8	199	2.1	H	10.8	-45	-25	20.0
5005	-55.0	313	2.2	V	10.2	-44.8	-25	19.8
7507.5	-58.7	285	2.0	H	20.3	-38.4	-25	13.4
7507.5	-54.2	348	1.7	V	20.1	-34.1	-25	9.1
5MHz bandwidth, QPSK, Middle channel								
951.80	-72.38	107	1.4	H	9.8	-62.58	-25	37.58
951.80	-75.40	219	2.2	V	11.7	-63.70	-25	38.70
5070	-53.5	268	1.5	H	11.1	-42.4	-25	17.4
5070	-54.4	325	1.5	V	10.8	-43.6	-25	18.6
7605	-58.0	252	1.1	H	21.2	-36.8	-25	11.8
7605	-54.4	259	2.1	V	20.1	-34.3	-25	9.3
5MHz bandwidth, QPSK, High channel								
953.09	-71.60	234	2.3	H	10.0	-61.60	-25	36.60
953.09	-75.55	100	2.4	V	11.7	-63.85	-25	38.85
5135	-53.2	119	1.0	H	11.3	-41.9	-25	16.9
5135	-54.0	180	1.1	V	10.8	-43.2	-25	18.2
7702.5	-62.6	327	1.5	H	21.2	-41.4	-25	16.4
7702.5	-61.4	51	1.5	V	21	-40.4	-25	15.4

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 12								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, QPSK, Low channel								
955.28	-60.76	173	2.4	H	-0.2	-60.96	-13	47.96
955.28	-67.22	182	1.2	V	3.1	-64.12	-13	51.12
1399.4	-55.9	111	1.6	H	5.9	-50	-13	37
1399.4	-58.1	25	1.9	V	5.9	-52.2	-13	39.2
2099.1	-48.7	75	2.2	H	6.3	-42.4	-13	29.4
2099.1	-45.8	24	1.5	V	5.1	-40.7	-13	27.7
2798.8	-56.4	240	1.7	H	6.7	-49.7	-13	36.7
2798.8	-54.9	136	1.8	V	6.7	-48.2	-13	35.2
1.4MHz bandwidth, QPSK, Middle channel								
952.14	-71.60	67	1.1	H	10.0	-61.60	-13	48.60
952.14	-76.87	271	1.1	V	11.7	-65.17	-13	52.17
1415	-58.8	256	1.9	H	5.9	-52.9	-13	39.9
1415	-58.1	118	1.5	V	5.9	-52.2	-13	39.2
2122.5	-50.6	36	2.3	H	6.3	-44.3	-13	31.3
2122.5	-48.8	313	2.4	V	5.1	-43.7	-13	30.7
2830	-56.3	116	1.9	H	7.4	-48.9	-13	35.9
2830	-55.0	352	2.0	V	6.7	-48.3	-13	35.3
1.4MHz bandwidth, QPSK, High channel								
953.31	-70.69	222	1.4	H	10.0	-60.69	-13	47.69
953.31	-76.94	279	2.1	V	11.7	-65.24	-13	52.24
1430.6	-58.5	153	1.9	H	5.4	-53.1	-40	13.1
1430.6	-57.8	137	2.0	V	4.1	-53.7	-40	13.7
2145.9	-51.6	220	1.4	H	7.1	-44.5	-13	31.5
2145.9	-54.9	28	1.1	V	6.7	-48.2	-13	35.2
2861.2	-41.8	351	1.9	H	7.4	-34.4	-13	21.4
2861.2	-48.2	143	1.3	V	6.7	-41.5	-13	28.5

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								
1.4MHz bandwidth, QPSK, Low channel								
956.03	-70.05	157	1.4	H	10.0	-60.05	-13	47.05
956.03	-75.92	139	2.3	V	11.7	-64.22	-13	51.22
1413	-61.3	131	1.0	H	5.7	-55.6	-13	42.6
1413	-58.4	133	2.5	V	5.4	-53	-13	40.0
2119.5	-44.2	104	1.7	H	6.6	-37.6	-13	24.6
2119.5	-44.3	322	1.3	V	5.7	-38.6	-13	25.6
2826	-56.1	251	2.1	H	7.1	-49	-13	36.0
2826	-54.4	124	1.6	V	6.5	-47.9	-13	34.9
1.4MHz bandwidth, QPSK, Middle channel								
955.95	-70.28	79	2.1	H	10.0	-60.28	-13	47.28
955.95	-75.55	120	2.0	V	11.7	-63.85	-13	50.85
1420	-58.0	97	1.1	H	5.6	-52.4	-13	39.4
1420	-56.7	122	1.5	V	5.2	-51.5	-13	38.5
2130	-53.1	345	1.4	H	6.8	-46.3	-13	33.3
2130	-51.9	65	1.3	V	6.1	-45.8	-13	32.8
2840	-56.6	257	1.2	H	7	-49.6	-13	36.6
2840	-56.0	100	1.1	V	6.6	-49.4	-13	36.4
1.4MHz bandwidth, QPSK, High channel								
954.41	-72.67	128	2.4	H	10.0	-62.67	-13	49.67
954.41	-77.35	329	1.8	V	11.7	-65.65	-13	52.65
1427	-58.2	4	2.3	H	5.5	-52.7	-13	39.7
1427	-56.6	51	1.0	V	4.9	-51.7	-13	38.7
2140.5	-51.0	10	1.5	H	7	-44	-13	31.0
2140.5	-45.9	223	2.0	V	6.4	-39.5	-13	26.5
2854	-57.8	12	1.4	H	7.4	-50.4	-13	37.4
2854	-55.7	30	2.0	V	6.4	-49.3	-13	36.3

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

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

Applicable Standard

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

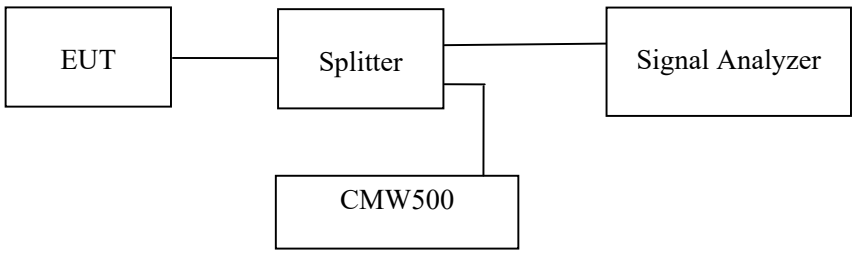
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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

Test Procedure

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

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



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

Test Data

Environmental Conditions

Temperature:	27 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

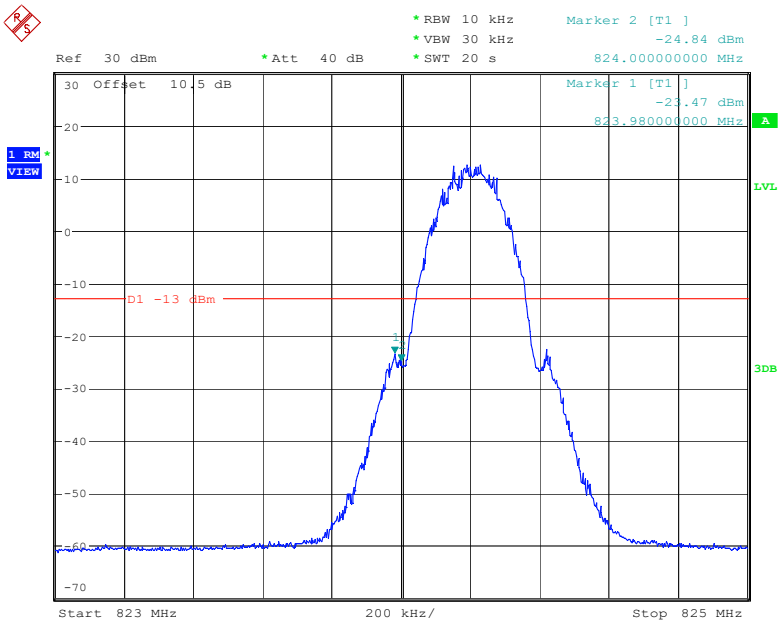
The testing was performed by Cat Kang from 2022-08-30 to2022-09-26.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

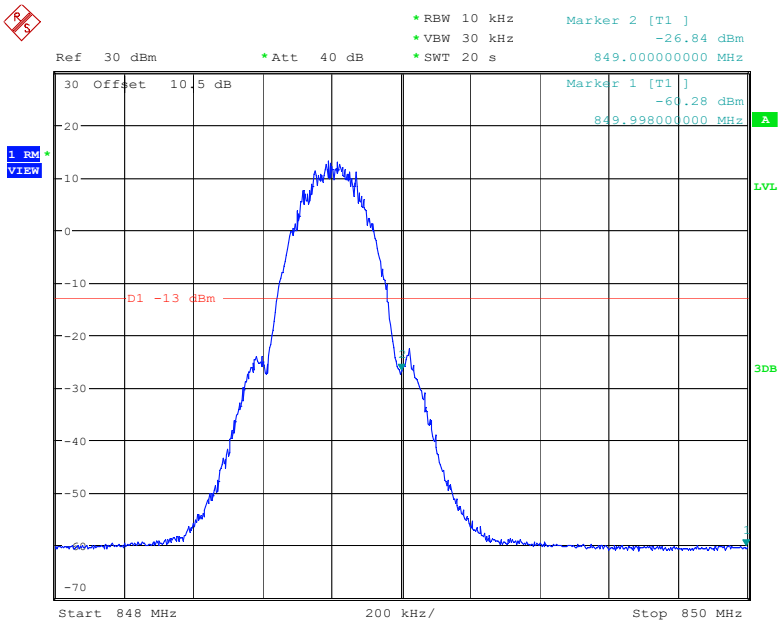
Please refer to the following plots.

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



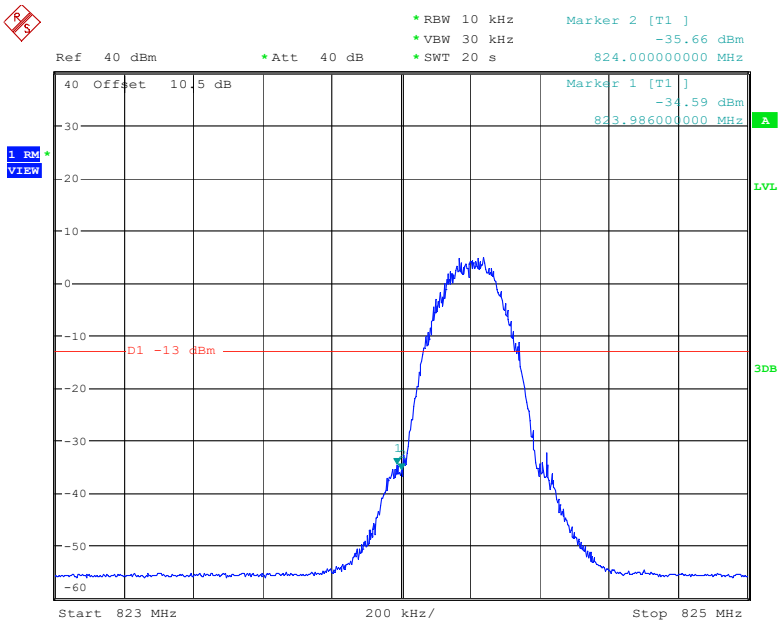
Date: 30.AUG.2022 09:53:24

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



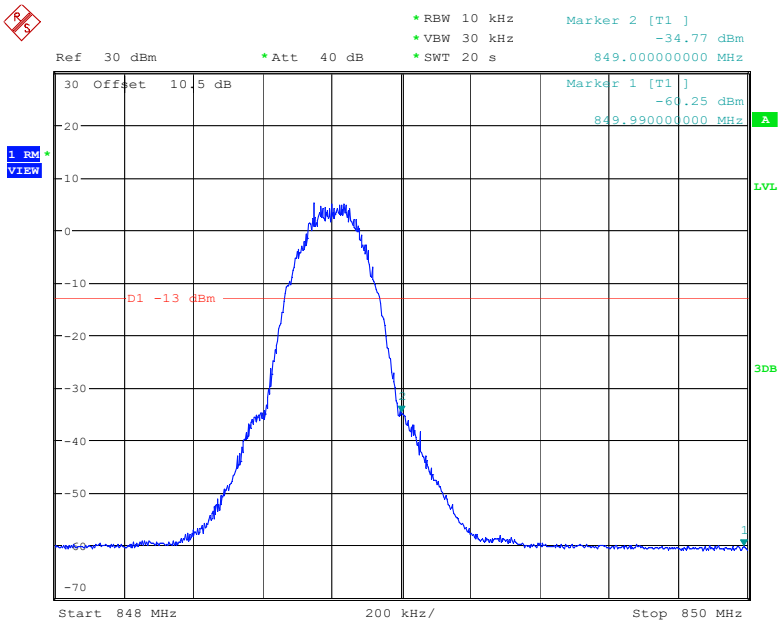
Date: 30.AUG.2022 09:34:51

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



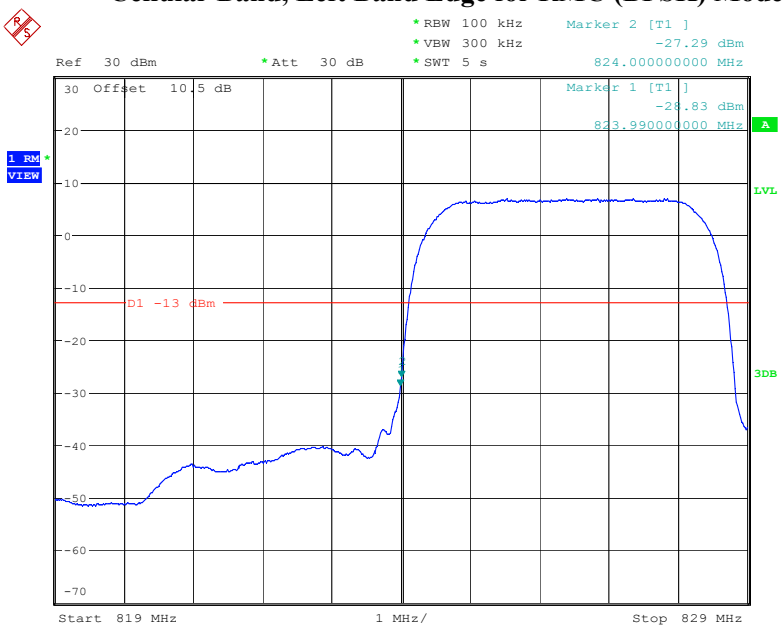
Date: 30.AUG.2022 10:26:52

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



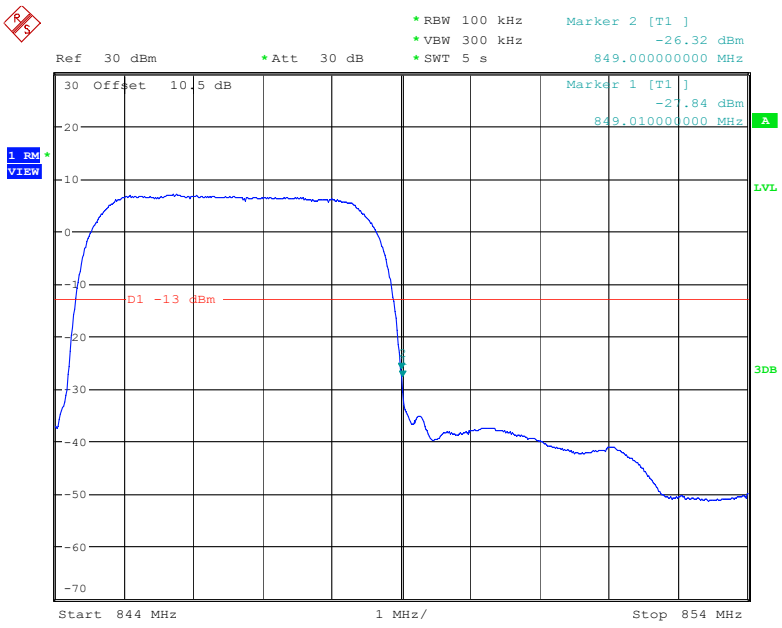
Date: 30.AUG.2022 10:35:35

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



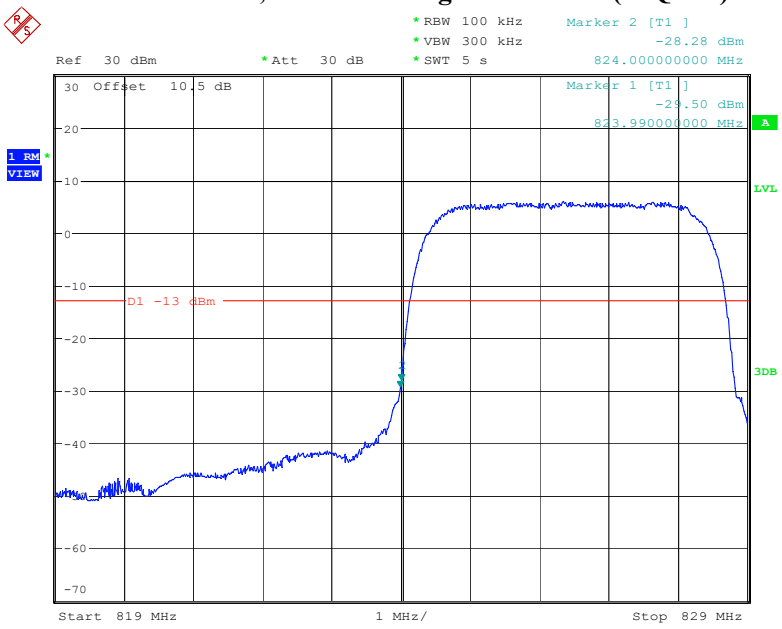
Date: 30.AUG.2022 14:55:03

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



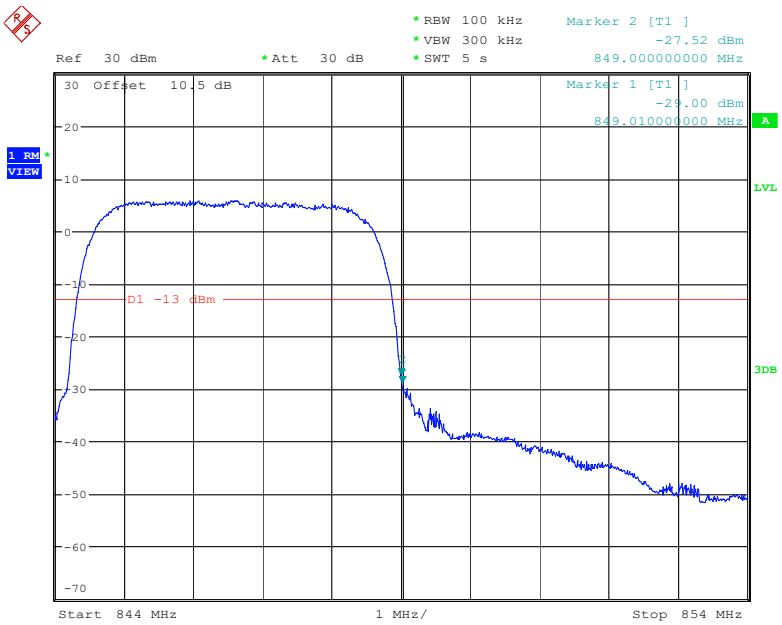
Date: 30.AUG.2022 15:01:05

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



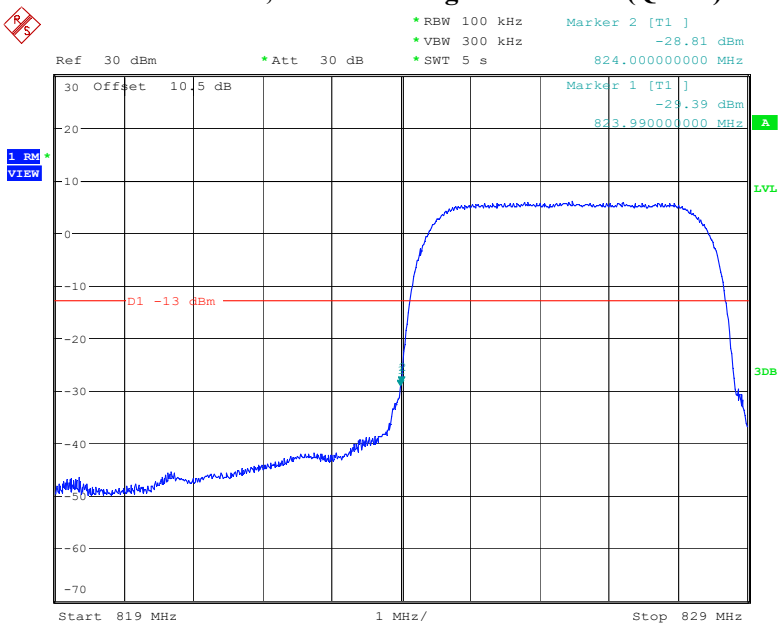
Date: 30.AUG.2022 14:44:54

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



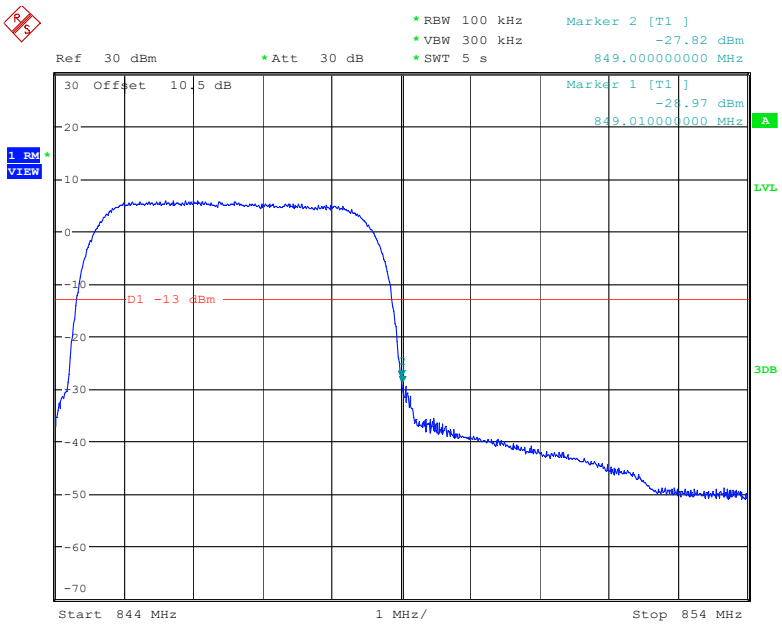
Date: 30.AUG.2022 14:51:02

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



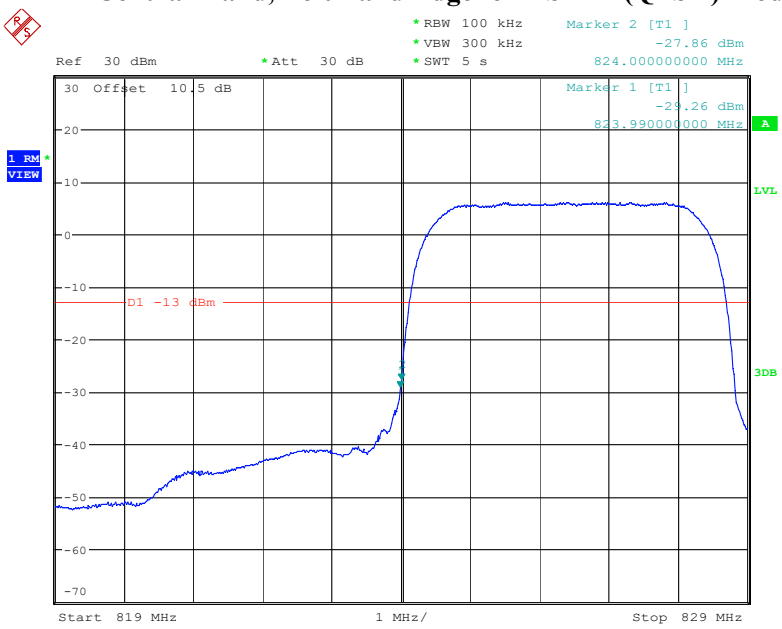
Date: 30.AUG.2022 14:32:27

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



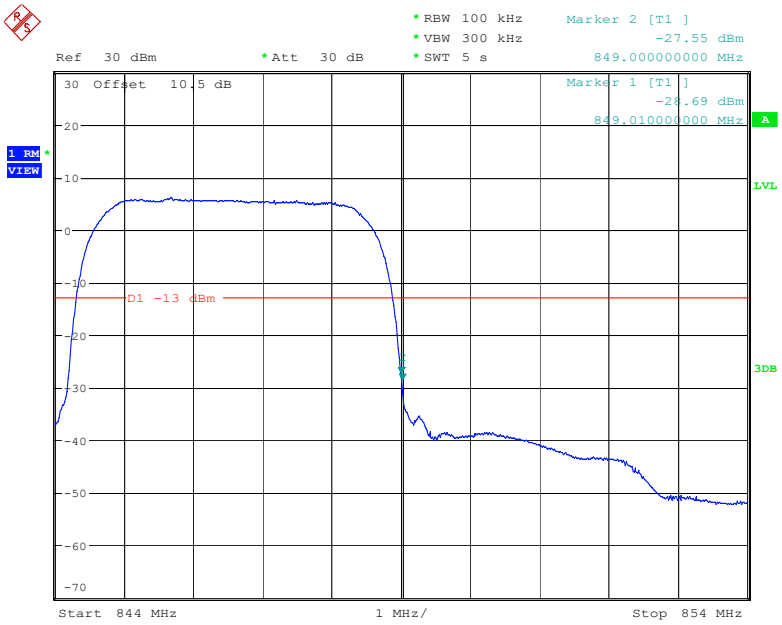
Date: 30.AUG.2022 14:40:31

Cellular Band, Left Band Edge for HSPA+ (QPSK) Mode



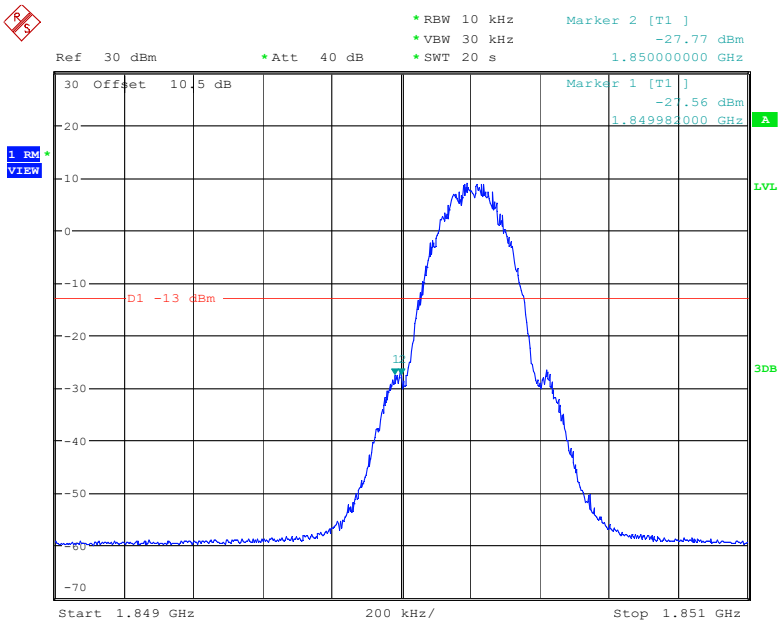
Date: 30.AUG.2022 14:21:47

Cellular Band, Right Band Edge for HSPA+ (QPSK) Mode



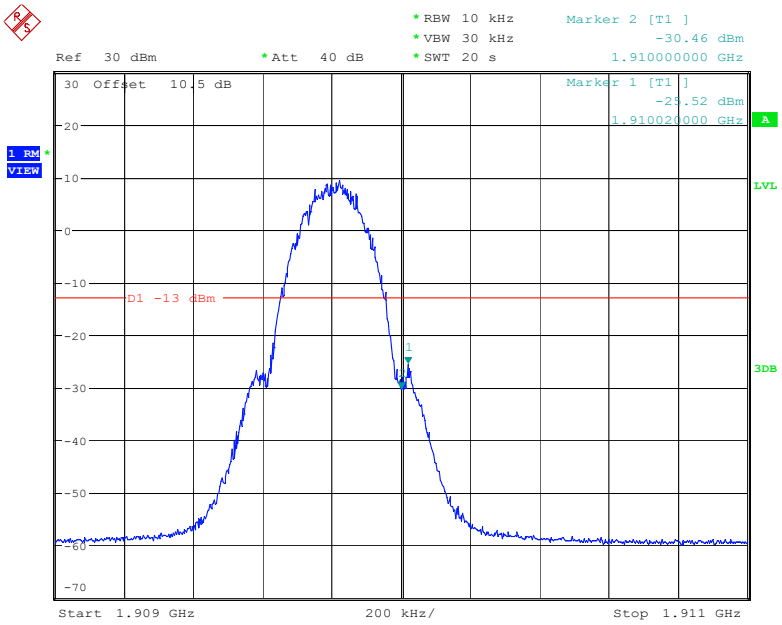
Date: 30.AUG.2022 14:28:10

PCS Band, Left Band Edge for HSPA+ (GMSK) Mode



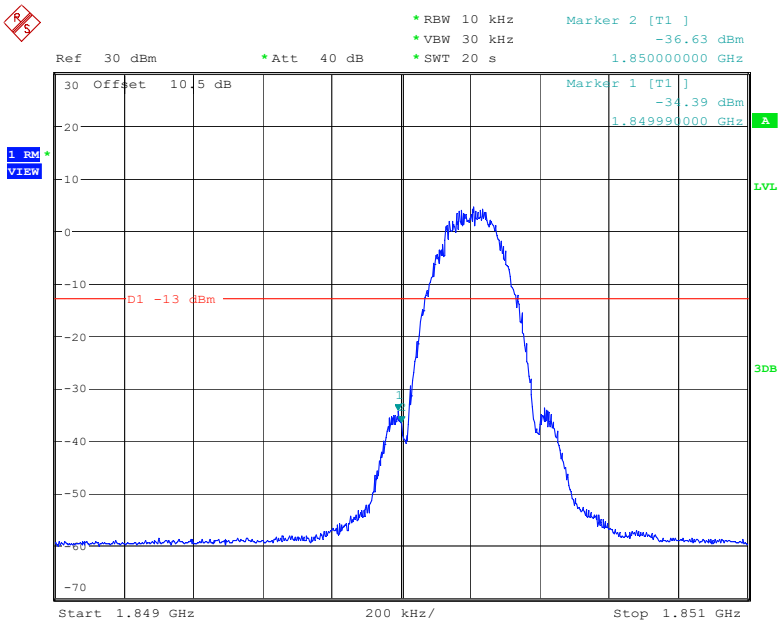
Date: 30.AUG.2022 10:49:56

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



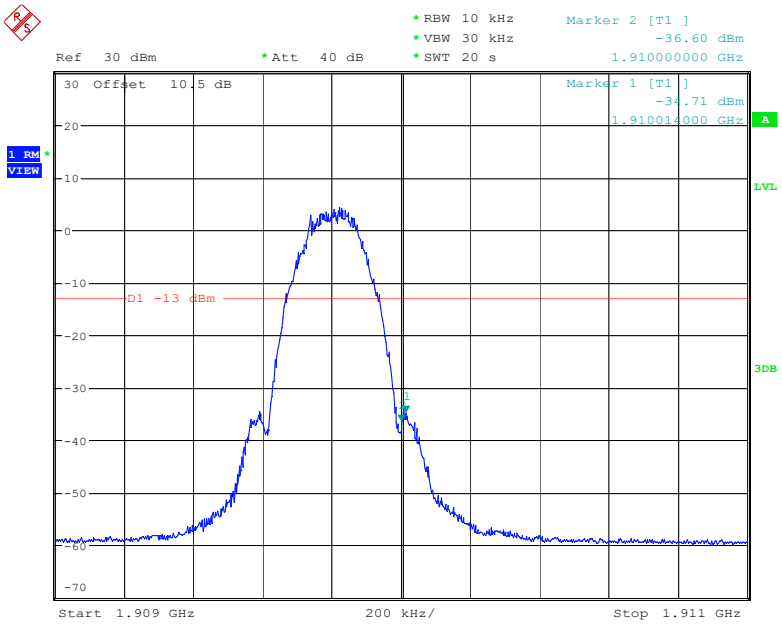
Date: 30.AUG.2022 11:05:10

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



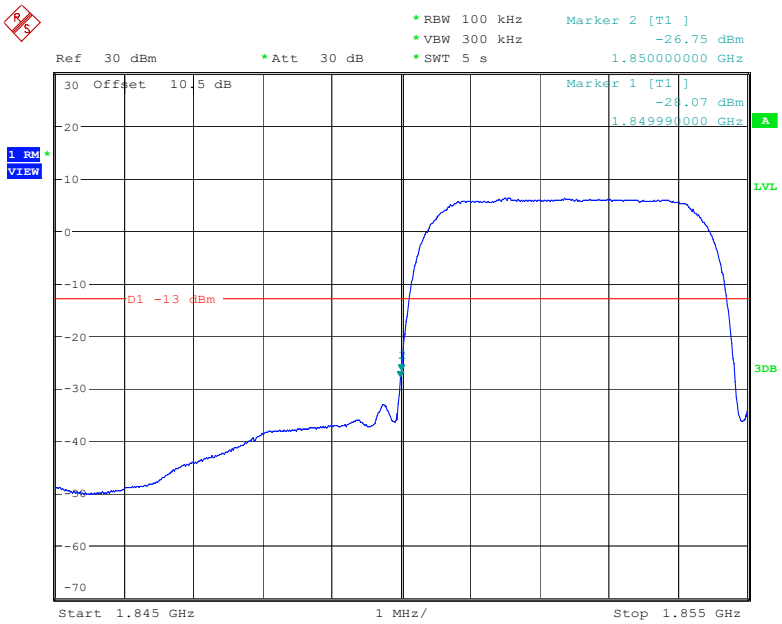
Date: 30.AUG.2022 11:36:58

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



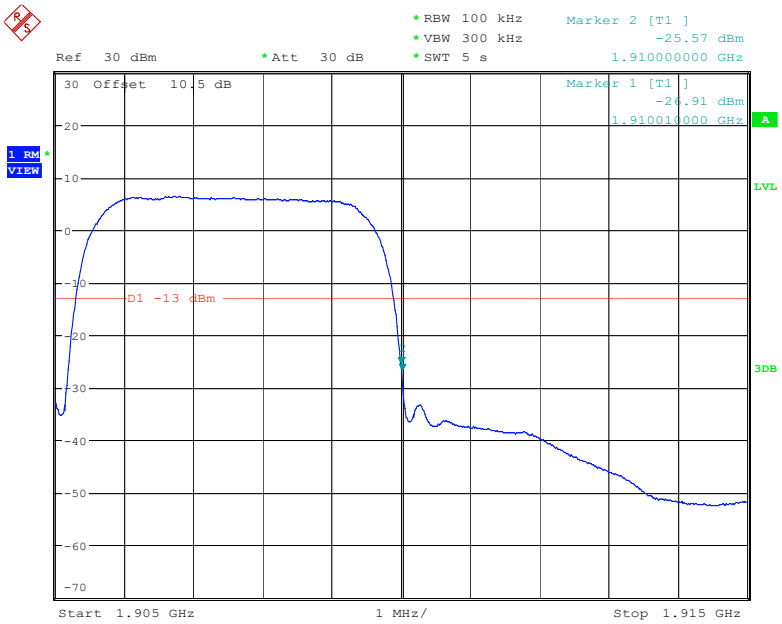
Date: 30.AUG.2022 11:47:52

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



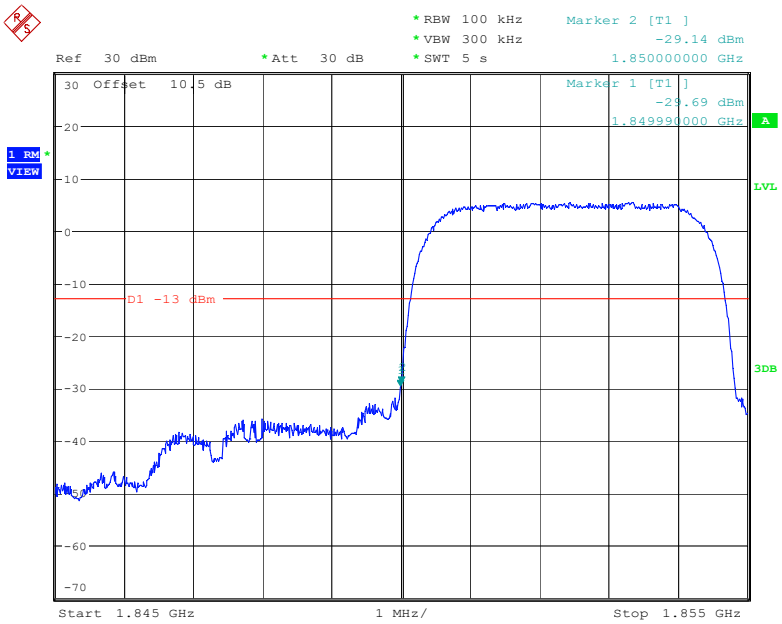
Date: 30.AUG.2022 13:15:32

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



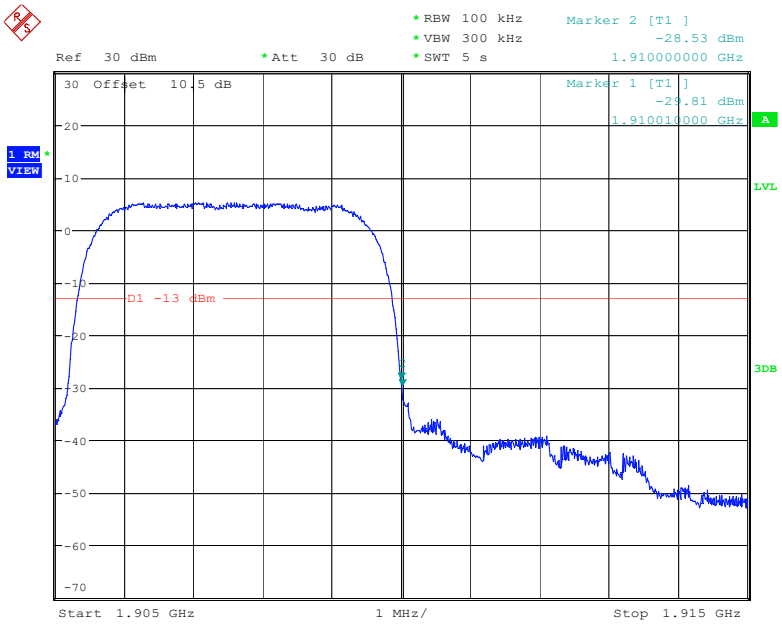
Date: 30.AUG.2022 13:23:12

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



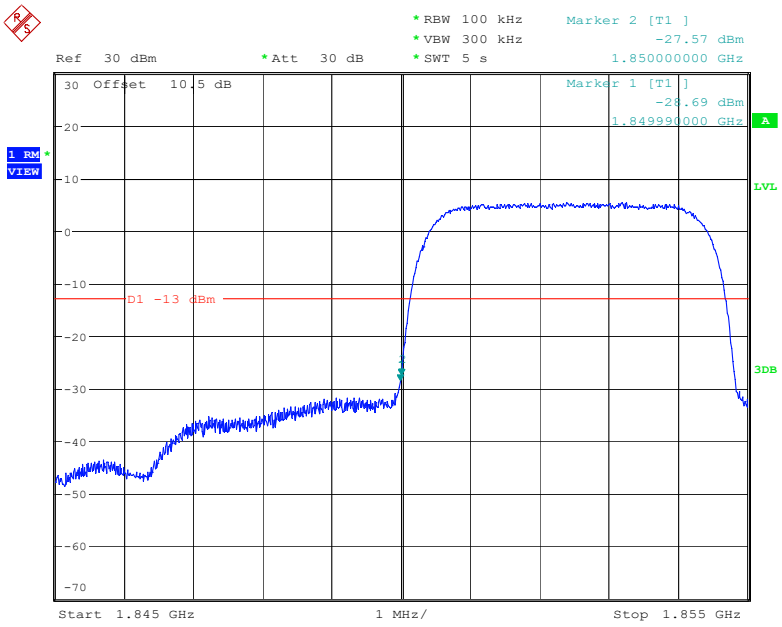
Date: 30.AUG.2022 13:28:55

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



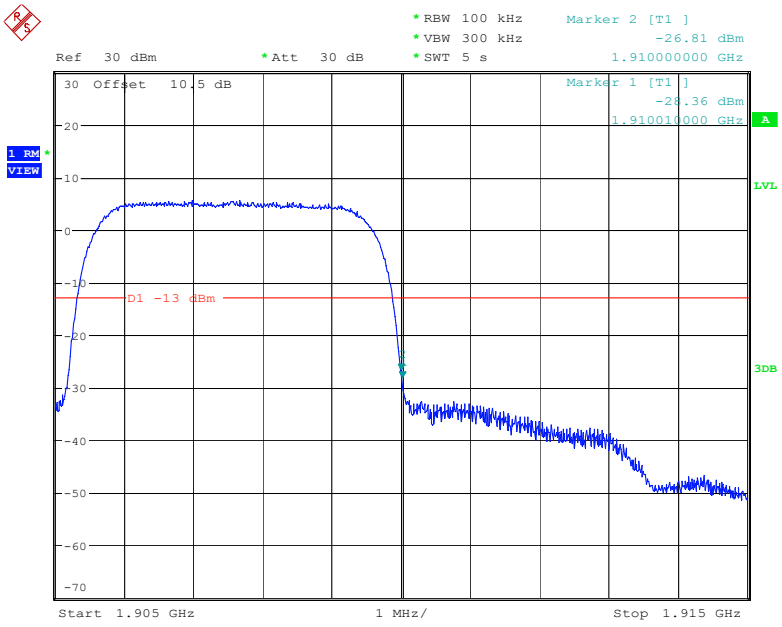
Date: 30.AUG.2022 13:46:04

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



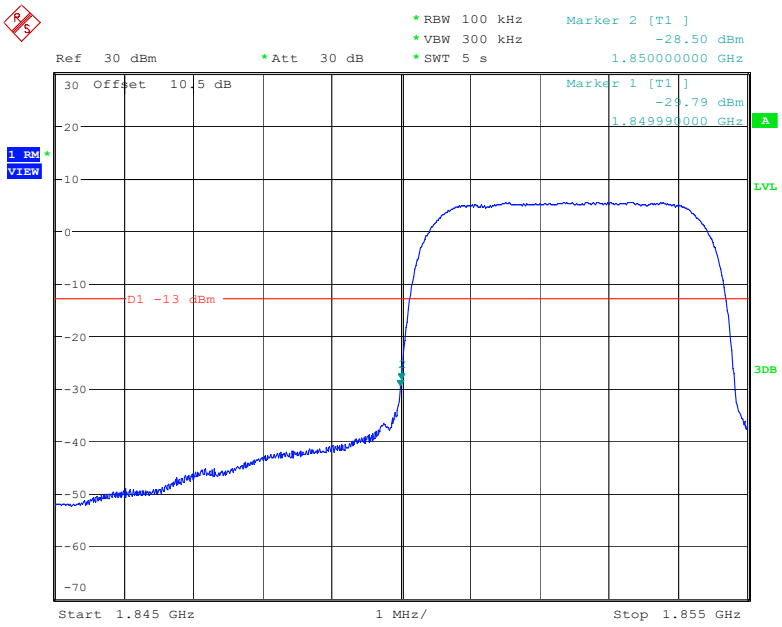
Date: 30.AUG.2022 13:51:28

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



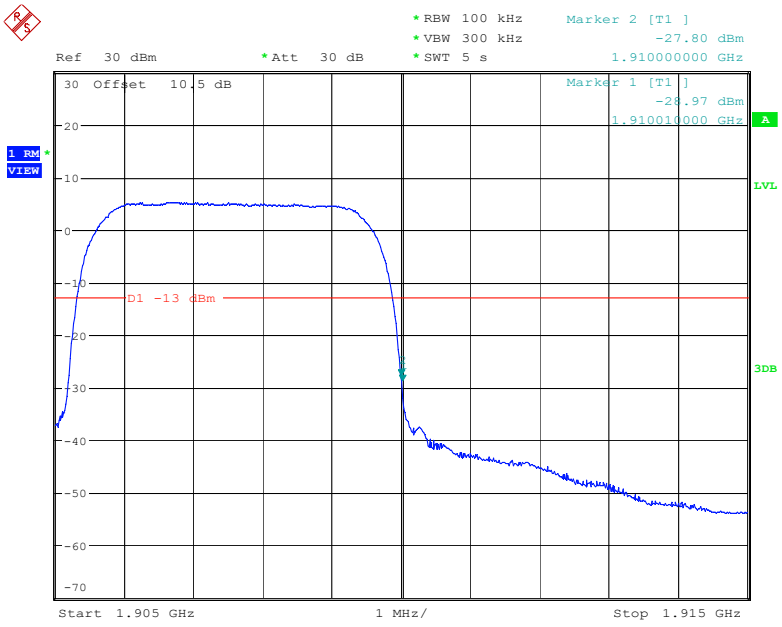
Date: 30.AUG.2022 13:59:26

PCS Band, Left Band Edge for HSPA+ (QPSK) Mode



Date: 30.AUG.2022 14:06:45

PCS Band, Right Band Edge for HSPA+ (QPSK) Mode



Date: 30.AUG.2022 14:14:24

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

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

Applicable Standard

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

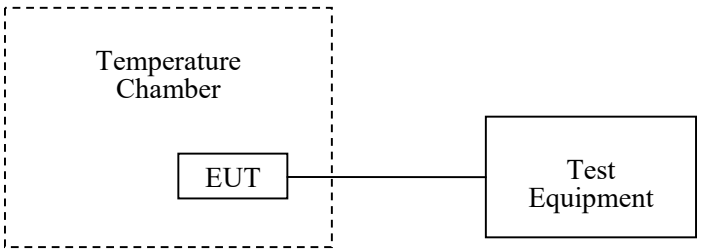
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

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

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

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



Test Data

Environmental Conditions

Temperature:	27 ℃
Relative Humidity:	54 %
ATM Pressure:	101.0 kPa

The testing was performed by Cat Kang on 2022-08-30.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Cellular Band (Part 22H)

GSM Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	2	0.0024	2.5
-20		3	0.0036	2.5
-10		0	0.0000	2.5
0		4	0.0048	2.5
10		2	0.0024	2.5
20		3	0.0036	2.5
30		6	0.0072	2.5
40		5	0.0060	2.5
50		3	0.0036	2.5
20	L.V.	2	0.0024	2.5
	H.V.	3	0.0036	2.5

EDGE Mode

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

WCDMA Mode

Middle Channel, f_o =836.4MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	N.V.	-7	-0.0084	2.5
-20		6	0.0072	2.5
-10		6	0.0072	2.5
0		-5	-0.0060	2.5
10		-4	-0.0048	2.5
20		-5	-0.0060	2.5
30		5	0.0060	2.5
40		-5	-0.0060	2.5
50		-7	-0.0084	2.5
20	L.V.	5	0.0060	2.5
	H.V.	-5	-0.0060	2.5

PCS Band (Part 24E)

GSM Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	N.V.	-3	-0.0016	pass
-20		6	0.0032	pass
-10		5	0.0027	pass
0		2	0.0011	pass
10		-3	-0.0016	pass
20		-4	-0.0021	pass
30		-4	-0.0021	pass
40		-6	-0.0032	pass
50		-6	-0.0032	pass
20	L.V.	-3	-0.0016	pass
	H.V.	-5	-0.0027	pass

EDGE Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	N.V.	-5	-0.0027	pass
-20		-6	-0.0032	pass
-10		-6	-0.0032	pass
0		-7	-0.0037	pass
10		-3	-0.0016	pass
20		-1	-0.0005	pass
30		-5	-0.0027	pass
40		-5	-0.0027	pass
50		-3	-0.0016	pass
20	L.V.	-3	-0.0016	pass
	H.V.	-4	-0.0021	pass

WCDMA Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	N.V.	-9	-0.0048	pass
-20		19	0.0101	pass
-10		16	0.0085	pass
0		-15	-0.0080	pass
10		-10	-0.0053	pass
20		-17	-0.0090	pass
30		12	0.0064	pass
40		-17	-0.0090	pass
50		-8	-0.0043	pass
20	L.V.	15	0.0080	pass
	H.V.	-11	-0.0059	pass

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	N.V.	-14	-0.0074	pass
-20		-10	-0.0053	pass
-10		-6	-0.0032	pass
0		6	0.0032	pass
10		8	0.0043	pass
20		6	0.0032	pass
30		-7	-0.0037	pass
40		7	0.0037	pass
50		-10	-0.0053	pass
20	L.V.	-8	-0.0043	pass
	H.V.	-7	-0.0037	pass

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.	1710.111	1754.565	1710	1755
-20		1710.115	1754.568	1710	1755
-10		1710.116	1754.561	1710	1755
0		1710.113	1754.566	1710	1755
10		1710.113	1754.564	1710	1755
20		1710.113	1754.562	1710	1755
30		1710.116	1754.565	1710	1755
40		1710.112	1754.567	1710	1755
50		1710.116	1754.563	1710	1755
20	L.V.	1710.111	1754.565	1710	1755
	H.V.	1710.115	1754.568	1710	1755

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.	2500.3001	2569.2285	2500	2570
-20		2500.3996	2569.3289	2500	2570
-10		2500.3949	2569.9188	2500	2570
0		2500.3288	2569.8309	2500	2570
10		2500.2201	2569.8300	2500	2570
20		2500.3175	2569.8303	2500	2570
30		2500.3377	2569.8294	2500	2570
40		2500.3297	2569.8203	2500	2570
50		2500.3775	2569.8591	2500	2570
20	L.V.	2500.2342	2569.8825	2500	2570
	H.V.	2500.1904	2569.6054	2500	2570

Band 12:

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.	699.0375	715.9630	699	716
-20		699.0369	715.9620	699	716
-10		699.0365	715.9679	699	716
0		699.0318	715.9664	699	716
10		699.0347	715.9647	699	716
20		699.0384	715.9675	699	716
30		699.0378	715.9665	699	716
40		699.0379	715.9693	699	716
50		699.0368	715.9654	699	716
20	L.V.	699.0338	715.9676	699	716
	H.V.	699.0374	715.9640	699	716

Band 17:

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.	704.3396	715.8825	704	716
-20		704.3158	715.8769	704	716
-10		704.2589	715.8423	704	716
0		704.2612	715.8513	704	716
10		704.5146	715.4682	704	716
20		704.5028	715.4523	704	716
30		704.4562	715.3346	704	716
40		704.3564	715.3628	704	716
50		704.3328	715.2835	704	716
20	L.V.	704.2954	715.2649	704	716
	H.V.	704.3112	715.3314	704	716

16QAM:

Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	N.V.	-9	-0.0048	pass
-20		-7	-0.0037	pass
-10		10	0.0053	pass
0		-8	-0.0043	pass
10		-10	-0.0053	pass
20		-10	-0.0053	pass
30		-7	-0.0037	pass
40		-9	-0.0048	pass
50		6	0.0032	pass
20	L.V.	6	0.0032	pass
	H.V.	8	0.0043	pass

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.	1710.2694	1754.7557	1710	1755
-20		1710.2703	1754.7632	1710	1755
-10		1710.2679	1754.7598	1710	1755
0		1710.2653	1754.7569	1710	1755
10		1710.2657	1754.7584	1710	1755
20		1710.2638	1754.7629	1710	1755
30		1710.2650	1754.7606	1710	1755
40		1710.2670	1754.7597	1710	1755
50		1710.2678	1754.7613	1710	1755
20	L.V.	1710.2657	1754.7573	1710	1755
	H.V.	1710.2702	1754.7579	1710	1755

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.	2500.5221	2569.7933	2500	2570
-20		2500.6104	2569.4951	2500	2570
-10		2500.6163	2569.8840	2500	2570
0		2500.6202	2569.6838	2500	2570
10		2500.7321	2569.7651	2500	2570
20		2500.9692	2569.8492	2500	2570
30		2500.6202	2569.7778	2500	2570
40		2500.6291	2569.9850	2500	2570
50		2500.6192	2569.8874	2500	2570
20	L.V.	2500.5599	2569.8758	2500	2570
	H.V.	2500.5113	2569.7681	2500	2570

Band 12:

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.	699.0386	715.9696	699	716
-20		699.0356	715.9621	699	716
-10		699.0399	715.9676	699	716
0		699.0347	715.9672	699	716
10		699.0356	715.9650	699	716
20		699.0406	715.9636	699	716
30		699.0354	715.9625	699	716
40		699.0341	715.9643	699	716
50		699.0386	715.9632	699	716
20	L.V.	699.0366	715.9664	699	716
	H.V.	699.0347	715.9671	699	716

Band 17:

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.	704.0128	715.9415	704	716
-20		704.0439	715.9633	704	716
-10		704.0135	715.9447	704	716
0		704.0741	715.9129	704	716
10		704.0790	715.9667	704	716
20		704.0452	715.9734	704	716
30		704.0716	715.9228	704	716
40		704.0538	715.9136	704	716
50		704.0943	715.9243	704	716
20	L.V.	704.0427	715.9893	704	716
	H.V.	704.0664	715.9098	704	716

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