

TESTREPORT

Applicant Name : TECNO MOBILE LIMITED
Address : FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35
SHAN MEI STREET FOTAN NT Hong Kong
Report Number: SZ1210927-50387E-RF-00D
FCC ID: 2ADYY-KG5K

Test Standard (s)

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

Sample Description

Product Type: Mobile Phone
Model No.: KG5k
Trade Mark: TECNO
Date Received: 2021/09/27
Date of Test: 2021/11/05~2021/11/13
Report Date: 2021/11/13

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

Prepared and Checked By:



Ting Lü
EMC Engineer

Approved By:



Candy Li
EMC Engineer

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

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GENERAL INFORMATION**Product Description for Equipment under Test (EUT)**

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX) LTE Band 66: 1710-1780MHz(TX); 2110-2180MHz(RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band5/LTE Band 5: -2.9dBi PCS1900/WCDMA Band 2/ LTE Band 2: -0.9dBi WCDMA Band 4/ LTE Band 4/ LTE Band 66: -2.4dBi LTE Band 7/LTE Band 38/LTE Band 41: -0.1dBi LTE Band 17:-3.0dBi(provided by the applicant)
Voltage Range	DC 3.85V from battery or DC 5.0 from adapter
Sample serial number	SZ1210927-50387E-RF-S1 (Assigned by ATC)
Sample/EUT Status	Good condition
Normal/Extreme Condition	L.V.: Low Voltage 3.45V _{DC} N.V.: Normal Voltage 3.85V _{DC} H.V.: High Voltage 4.4V _{DC} Note: The extreme condition was declared by the applicant
Adapter information	Model: U100TSA Input: AC 100-240V ~ 50/60Hz, 0.3A Output: DC 5.0V, 2.0A

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part 24-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.

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Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±0.73dB
Unwanted Emission, conducted		±1.6dB
RF Frequency		±0.082*10 ⁻⁷
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz- 18GHz	±4.98dB
	18GHz-26.5GHz	±5.06dB
Temperature		±1°C
Humidity		±6%
Supply voltages		±0.4%

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

Test Facility

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

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

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

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE B17	5	706.5	710	713.5
	10	709	710	711

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
LTE B38	5	2572.5	2595	2617.5
	10	2575	2595	2615
	15	2577.5	2595	2612.5
	20	2580	2595	2610
LTE B41	5	2537.5	2595	2652.5
	10	2540	2595	2650
	15	2542.5	2595	2647.5
	20	2545	2595	2645
LTE B66	1.4	1710.7	1745	1779.3
	3	1711.5	1745	1778.5
	5	1712.5	1745	1777.5
	10	1715	1745	1775
	15	1717.5	1745	1772.5
	20	1720	1745	1770

Equipment Modifications

No modification was made to the EUT.

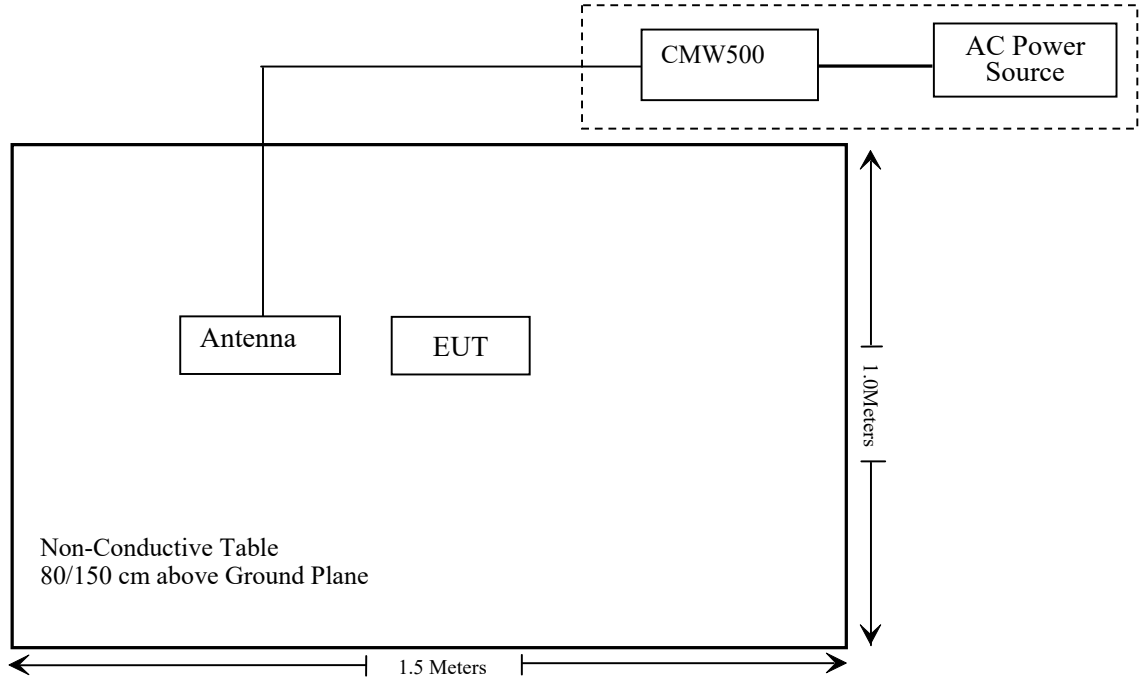
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde&Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-11621 8-U

Support Cable Description

Cable Description	Length (m)	From / Port	To
/	/	/	/

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 (b) (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 (c) (h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Note: * Please refer to SAR report number: SZ1210927-50387E-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	101817	2020/12/24	2021/12/23
Rohde&Schwarz	Spectrum Analyzer	FSV40	101495	2020/12/24	2021/12/23
SONOMA INSTRUMENT	Amplifier	310 N	186131	2020/12/25	2021/12/24
A.H. Systems, inc.	Preamplifier	PAM-0118P	531	2021/07/08	2022/07/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/28	2021/11/27
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2020/12/25	2021/12/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
OREGON SCIENTIFIC	Temperature & Humidity Meter	JB913R	GZ-WS004	2020/01/02	2023/01/01
Unknown	RF Coaxial Cable	N-5m	No.3	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-5m	No.4	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.5	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.6	2020/12/25	2021/12/24
Wainwright	High Pass Filter	WHKX3.6/18G-10SS	5	2020/12/25	2021/12/24
CD	High Pass Filter	HPM-1.2/18G-60	110	2020/12/25	2021/12/24
Anritsu	Signal Generator	68369B	004114	2021/7/31	2022/7/30

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101495	2020/12/24	2021/12/23
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2020/12/25	2021/12/24
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2020/12/25	2021/12/24
Gongwen	Temp. & Humid. Chamber	JB913R	GZ-WS004	2020/12/25	2021/12/24

* 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: SZ1210927-50387E-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E 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(b) (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(b), Control stations and mobile stations transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands and fixed stations transmitting in the 787-788 MHz and 805-806 MHz bands are limited to 30 watts ERP.

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

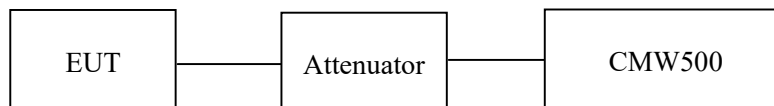
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2500-2570MHz.

Test Procedure

Conducted method:

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



Radiated method:

ANSI C63.26-2015 Section 5.5.

Test Data

Environmental Conditions

Temperature:	29.1~29.2℃
Relative Humidity:	44~65 %
ATM Pressure:	101.0kPa

The testing was performed by Paul Liu from 2021-11-05 to 2021-11-08.

Conducted Power**Cellular Band (Part 22H)**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	31.32	26.27	38.45
	190	836.6	31.16	26.11	38.45
	251	848.8	31.18	26.13	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	31.20	30.25	26.97	25.78	26.15	25.20	21.92	20.73	38.45
	190	836.6	31.13	30.00	27.17	25.81	26.08	24.95	22.12	20.76	38.45
	251	848.8	31.02	29.98	27.43	26.04	25.97	24.93	22.38	20.99	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	25.44	24.04	20.60	19.65	20.39	18.99	15.55	14.60	38.45
	190	836.6	25.29	23.58	20.74	19.67	20.24	18.53	15.69	14.62	38.45
	251	848.8	25.44	24.09	20.67	19.86	20.39	19.04	15.62	14.81	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		23.34	23.36	23.29	18.29	18.31	18.24
	HSDPA	1	22.54	22.49	22.57	17.49	17.44	17.52
		2	22.59	22.52	22.61	17.54	17.47	17.56
		3	22.67	22.56	22.67	17.62	17.51	17.62
		4	22.70	22.62	22.70	17.65	17.57	17.65
	HSUPA	1	22.54	22.49	22.57	17.49	17.44	17.52
		2	22.58	22.52	22.62	17.53	17.47	17.57
		3	22.65	22.59	22.65	17.60	17.54	17.60
		4	22.67	22.66	22.67	17.62	17.61	17.62
		5	22.74	22.71	22.69	17.69	17.66	17.64
	HSPA+	1	22.82	22.74	22.77	17.77	17.69	17.72

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For GSM850 / WCDMA Band5: Antenna Gain = -2.9dBi = -5.05dBd (0dBd=2.15dBi)
 Limit: ERP ≤ 38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	27.52	26.62	33
	661	1880.0	27.43	26.53	33
	810	1909.8	27.47	26.57	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	27.40	26.08	22.62	21.64	26.50	25.18	21.72	20.74	33
	661	1880.0	27.29	25.60	22.79	21.67	26.39	24.70	21.89	20.77	33
	810	1909.8	27.35	26.20	22.63	21.80	26.45	25.30	21.73	20.90	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	24.38	22.89	19.54	18.54	23.48	21.99	18.64	17.64	33
	661	1880.0	24.18	22.47	19.66	18.63	23.28	21.57	18.76	17.73	33
	810	1909.8	24.21	22.95	19.59	18.69	23.31	22.05	18.69	17.79	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		19.84	19.85	19.67	18.94	18.95	18.77
	HSDPA	1	18.59	18.52	18.47	17.69	17.62	17.57
		2	18.61	18.55	18.50	17.71	17.65	17.60
		3	18.69	18.61	18.55	17.79	17.71	17.65
		4	18.74	18.64	18.61	17.84	17.74	17.71
	HSUPA	1	18.54	18.38	18.56	17.64	17.48	17.66
		2	18.57	18.41	18.62	17.67	17.51	17.72
		3	18.61	18.44	18.69	17.71	17.54	17.79
		4	18.66	18.52	18.73	17.76	17.62	17.83
		5	18.72	18.55	18.77	17.82	17.65	17.87
HSPA+	1	18.76	18.57	18.84	17.86	17.67	17.94	

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For PCS1900 / WCDMA Band2: Antenna Gain = -0.9dBi
 Limit: EIRP ≤ 33dBm

AWS Band (Part 27)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		20.65	20.35	20.42	18.25	17.95	18.02
	HSDPA	1	19.79	19.65	19.68	17.39	17.25	17.28
		2	19.82	19.72	19.75	17.42	17.32	17.35
		3	19.84	19.79	19.81	17.44	17.39	17.41
		4	19.91	19.83	19.86	17.51	17.43	17.46
	HSUPA	1	19.83	19.82	19.72	17.43	17.42	17.32
		2	19.83	19.82	19.72	17.43	17.42	17.32
		3	19.88	19.88	19.79	17.48	17.48	17.39
		4	19.92	19.92	19.82	17.52	17.52	17.42
		5	19.97	20.00	19.89	17.57	17.60	17.49
	HSPA+	1	20.04	20.07	19.94	17.64	17.67	17.54

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

For WCDMA Band4: Antenna Gain = -2.4dBi

The limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	3.49	13
	Middle	3.52	13
	High	3.69	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	3.69	13
	Middle	3.54	13
	High	3.72	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.52	13
	Middle	3.38	13
	High	3.54	13
HSDPA (16QAM)	Low	3.57	13
	Middle	3.48	13
	High	3.62	13
HSUPA (BPSK)	Low	3.69	13
	Middle	3.57	13
	High	3.63	13
HSPA+	Low	3.52	13
	Middle	3.54	13
	High	3.57	13

PCS Band

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	3.34	13
	Middle	3.26	13
	High	3.45	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	3.58	13
	Middle	3.43	13
	High	3.84	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.92	13
	Middle	3.63	13
	High	3.75	13
HSDPA (16QAM)	Low	3.45	13
	Middle	3.81	13
	High	3.52	13
HSUPA (BPSK)	Low	3.62	13
	Middle	3.35	13
	High	3.42	13
HSPA+	Low	3.65	13
	Middle	3.54	13
	High	3.82	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.82	13
	Middle	3.63	13
	High	3.72	13
HSDPA (16QAM)	Low	3.52	13
	Middle	3.35	13
	High	3.34	13
HSUPA (BPSK)	Low	3.63	13
	Middle	3.42	13
	High	3.57	13
HSPA+	Low	3.48	13
	Middle	3.68	13
	High	3.59	13

LTE Band 2:**Maximum Output Power**

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	17.80	18.82	18.15	16.90	17.92	17.25
		RB1#3	18.15	18.93	18.16	17.25	18.03	17.26
		RB1#5	17.99	18.79	18.03	17.09	17.89	17.13
		RB3#0	18.02	18.99	18.29	17.12	18.09	17.39
		RB3#3	18.10	18.95	18.18	17.20	18.05	17.28
		RB6#0	16.98	17.98	17.23	16.08	17.08	16.33
	16QAM	RB1#0	16.80	17.88	17.18	15.90	16.98	16.28
		RB1#3	17.07	18.02	17.28	16.17	17.12	16.38
		RB1#5	16.92	17.82	17.02	16.02	16.92	16.12
		RB3#0	17.16	18.08	17.36	16.26	17.18	16.46
		RB3#3	17.22	18.02	17.24	16.32	17.12	16.34
		RB6#0	15.99	16.90	16.20	15.09	16.00	15.30
3.0	QPSK	RB1#0	17.87	18.94	18.45	16.97	18.04	17.55
		RB1#8	18.15	18.95	18.36	17.25	18.05	17.46
		RB1#14	18.16	18.78	18.02	17.26	17.88	17.12
		RB6#0	16.98	18.01	17.49	16.08	17.11	16.59
		RB6#9	17.18	17.91	17.24	16.28	17.01	16.34
		RB15#0	17.13	18.01	17.41	16.23	17.11	16.51
	16QAM	RB1#0	17.43	18.09	17.44	16.53	17.19	16.54
		RB1#8	17.72	18.09	17.37	16.82	17.19	16.47
		RB1#14	17.71	17.93	17.04	16.81	17.03	16.14
		RB6#0	16.04	17.04	16.45	15.14	16.14	15.55
		RB6#9	16.23	16.93	16.20	15.33	16.03	15.30
		RB15#0	16.16	16.94	16.47	15.26	16.04	15.57

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	17.65	18.72	18.28	16.75	17.82	17.38
		RB1#13	18.40	19.03	18.53	17.50	18.13	17.63
		RB1#24	18.18	18.46	17.74	17.28	17.56	16.84
		RB15#0	17.09	18.01	17.58	16.19	17.11	16.68
		RB15#10	17.32	17.91	17.39	16.42	17.01	16.49
		RB25#0	17.17	17.93	17.44	16.27	17.03	16.54
	16QAM	RB1#0	16.45	18.00	17.35	15.55	17.10	16.45
		RB1#13	17.23	18.33	17.62	16.33	17.43	16.72
		RB1#24	17.01	17.77	16.83	16.11	16.87	15.93
		RB15#0	16.12	16.97	16.60	15.22	16.07	15.70
		RB15#10	16.33	16.88	16.42	15.43	15.98	15.52
		RB25#0	16.19	16.91	16.48	15.29	16.01	15.58
10.0	QPSK	RB1#0	16.84	19.04	18.64	15.94	18.14	17.74
		RB1#25	17.66	18.96	18.70	16.76	18.06	17.80
		RB1#49	18.51	19.07	18.49	17.61	18.17	17.59
		RB25#0	16.40	18.15	17.81	15.50	17.25	16.91
		RB25#25	17.33	18.13	17.78	16.43	17.23	16.88
		RB50#0	16.90	18.14	17.80	16.00	17.24	16.90
	16QAM	RB1#0	16.50	18.18	17.57	15.60	17.28	16.67
		RB1#25	17.30	18.10	17.70	16.40	17.20	16.80
		RB1#49	18.16	18.22	17.48	17.26	17.32	16.58
		RB25#0	15.45	17.16	16.90	14.55	16.26	16.00
		RB25#25	16.37	17.14	16.88	15.47	16.24	15.98
		RB50#0	15.90	17.14	16.84	15.00	16.24	15.94

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	17.50	19.82	18.55	16.60	18.92	17.65
		RB1#38	18.01	18.92	18.39	17.11	18.02	17.49
		RB1#74	18.86	19.20	18.20	17.96	18.30	17.30
		RB36#0	16.81	18.43	17.42	15.91	17.53	16.52
		RB36#39	17.63	18.05	17.32	16.73	17.15	16.42
		RB75#0	17.24	18.23	17.37	16.34	17.33	16.47
	16QAM	RB1#0	17.30	18.99	17.79	16.40	18.09	16.89
		RB1#38	17.64	18.06	17.75	16.74	17.16	16.85
		RB1#74	18.65	18.35	17.49	17.75	17.45	16.59
		RB36#0	15.82	17.48	16.48	14.92	16.58	15.58
		RB36#39	16.65	17.09	16.38	15.75	16.19	15.48
		RB75#0	16.25	17.27	16.42	15.35	16.37	15.52
20.0	QPSK	RB1#0	16.87	20.16	18.16	15.97	19.26	17.26
		RB1#50	17.90	18.97	18.33	17.00	18.07	17.43
		RB1#99	18.19	19.38	18.07	17.29	18.48	17.17
		RB50#0	16.65	18.70	17.29	15.75	17.80	16.39
		RB50#50	17.40	18.24	17.45	16.50	17.34	16.55
		RB100#0	17.03	18.46	17.37	16.13	17.56	16.47
	16QAM	RB1#0	16.45	19.39	17.54	15.55	18.49	16.64
		RB1#50	17.18	18.18	17.88	16.28	17.28	16.98
		RB1#99	17.76	18.61	17.48	16.86	17.71	16.58
		RB50#0	15.55	17.75	16.42	14.65	16.85	15.52
		RB50#50	16.30	17.29	16.57	15.40	16.39	15.67
		RB100#0	15.95	17.51	16.49	15.05	16.61	15.59

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band2: Antenna Gain = -0.9dBi
Limit: EIRP ≤ 33dBm

Peak-to-average ratio (PAR)**20MHz Bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.03	5.42	5.03	13	Pass
QPSK (100RB Size)	5.61	5.61	5.51	13	Pass
16QAM (1RB Size)	7.12	6.57	5.77	13	Pass
16QAM (100RB Size)	6.41	6.41	6.28	13	Pass

LTE Band 4**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	16.87	17.18	17.08	14.47	14.78	14.68
		RB1#3	17.27	17.43	17.25	14.87	15.03	14.85
		RB1#5	17.21	17.25	17.01	14.81	14.85	14.61
		RB3#0	17.08	17.34	17.24	14.68	14.94	14.84
		RB3#3	17.28	17.40	17.17	14.88	15.00	14.77
		RB6#0	16.15	16.39	16.25	13.75	13.99	13.85
	16QAM	RB1#0	15.87	16.25	16.21	13.47	13.85	13.81
		RB1#3	16.30	16.50	16.34	13.90	14.10	13.94
		RB1#5	16.23	16.34	16.11	13.83	13.94	13.71
		RB3#0	16.30	16.51	16.42	13.90	14.11	14.02
		RB3#3	16.51	16.54	16.34	14.11	14.14	13.94
		RB6#0	15.20	15.35	15.25	12.80	12.95	12.85
3.0	QPSK	RB1#0	16.85	17.16	17.35	14.45	14.76	14.95
		RB1#8	17.51	17.42	17.31	15.11	15.02	14.91
		RB1#14	17.68	17.36	16.99	15.28	14.96	14.59
		RB6#0	16.16	16.32	16.55	13.76	13.92	14.15
		RB6#9	16.70	16.45	16.32	14.30	14.05	13.92
		RB15#0	16.47	16.43	16.45	14.07	14.03	14.05
	16QAM	RB1#0	16.55	16.36	17.12	14.15	13.96	14.72
		RB1#8	17.21	16.61	17.05	14.81	14.21	14.65
		RB1#14	17.37	16.56	16.76	14.97	14.16	14.36
		RB6#0	15.26	15.36	15.62	12.86	12.96	13.22
		RB6#9	15.80	15.50	15.39	13.40	13.10	12.99
		RB15#0	15.55	15.38	15.54	13.15	12.98	13.14

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	16.65	16.80	17.30	14.25	14.40	14.90
		RB1#13	17.95	17.50	17.51	15.55	15.10	15.11
		RB1#24	17.78	17.13	16.72	15.38	14.73	14.32
		RB15#0	16.46	16.30	16.61	14.06	13.90	14.21
		RB15#10	16.94	16.44	16.38	14.54	14.04	13.98
		RB25#0	16.67	16.34	16.45	14.27	13.94	14.05
	16QAM	RB1#0	15.53	16.16	16.47	13.13	13.76	14.07
		RB1#13	16.87	16.87	16.67	14.47	14.47	14.27
		RB1#24	16.71	16.50	15.88	14.31	14.10	13.48
		RB15#0	15.54	15.27	15.67	13.14	12.87	13.27
		RB15#10	16.02	15.43	15.43	13.62	13.03	13.03
		RB25#0	15.74	15.34	15.52	13.34	12.94	13.12
10.0	QPSK	RB1#0	16.31	16.96	17.91	13.91	14.56	15.51
		RB1#25	17.69	17.42	17.75	15.29	15.02	15.35
		RB1#49	18.00	18.11	17.52	15.60	15.71	15.12
		RB25#0	16.23	16.28	17.02	13.83	13.88	14.62
		RB25#25	17.02	16.89	16.83	14.62	14.49	14.43
		RB50#0	16.64	16.60	16.93	14.24	14.20	14.53
	16QAM	RB1#0	15.96	16.14	16.99	13.56	13.74	14.59
		RB1#25	17.36	16.61	16.85	14.96	14.21	14.45
		RB1#49	17.66	17.29	16.62	15.26	14.89	14.22
		RB25#0	15.28	15.32	16.15	12.88	12.92	13.75
		RB25#25	16.11	15.94	15.96	13.71	13.54	13.56
		RB50#0	15.68	15.62	15.99	13.28	13.22	13.59

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	17.13	17.60	18.24	14.73	15.20	15.84
		RB1#38	17.71	17.38	17.71	15.31	14.98	15.31
		RB1#74	17.92	18.35	17.40	15.52	15.95	15.00
		RB36#0	16.57	16.51	17.20	14.17	14.11	14.80
		RB36#39	16.79	16.99	16.74	14.39	14.59	14.34
		RB75#0	16.68	16.75	16.97	14.28	14.35	14.57
	16QAM	RB1#0	16.66	17.01	17.97	14.26	14.61	15.57
		RB1#38	17.38	16.58	17.21	14.98	14.18	14.81
		RB1#74	17.47	17.75	17.15	15.07	15.35	14.75
		RB36#0	15.69	15.53	16.28	13.29	13.13	13.88
		RB36#39	15.94	16.01	15.83	13.54	13.61	13.43
		RB75#0	15.81	15.76	16.04	13.41	13.36	13.64
20.0	QPSK	RB1#0	16.72	17.52	17.87	14.32	15.12	15.47
		RB1#50	17.40	17.44	17.87	15.00	15.04	15.47
		RB1#99	17.44	18.33	17.43	15.04	15.93	15.03
		RB50#0	16.64	16.63	17.26	14.24	14.23	14.86
		RB50#50	16.65	17.18	17.06	14.25	14.78	14.66
		RB100#0	16.62	16.90	17.15	14.22	14.50	14.75
	16QAM	RB1#0	16.39	17.12	17.89	13.99	14.72	15.49
		RB1#50	16.77	16.72	17.53	14.37	14.32	15.13
		RB1#99	17.13	17.91	17.46	14.73	15.51	15.06
		RB50#0	15.61	15.61	16.33	13.21	13.21	13.93
		RB50#50	15.62	16.16	16.15	13.22	13.76	13.75
		RB100#0	15.63	15.88	16.22	13.23	13.48	13.82

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band4: Antenna Gain = -2.4dBi
Limit: EIRP ≤ 30dBm

Peak-to-average ratio (PAR)**20MHz Bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.74	5.54	5.96	13	Pass
QPSK (100RB Size)	5.74	5.80	5.77	13	Pass
16QAM (1RB Size)	6.54	6.51	6.76	13	Pass
16QAM (100RB Size)	6.57	6.70	6.63	13	Pass

LTE Band 5:**Maximum Output Power**

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	23.19	22.91	23.15	18.14	17.86	18.10
		RB1#3	23.16	22.99	23.10	18.11	17.94	18.05
		RB1#5	23.14	22.93	23.13	18.09	17.88	18.08
		RB3#0	23.26	23.11	23.31	18.21	18.06	18.26
		RB3#3	23.16	23.14	23.25	18.11	18.09	18.20
		RB6#0	22.13	22.02	22.09	17.08	16.97	17.04
	16QAM	RB1#0	22.52	21.78	21.90	17.47	16.73	16.85
		RB1#3	22.47	21.80	21.83	17.42	16.75	16.78
		RB1#5	22.48	21.80	21.87	17.43	16.75	16.82
		RB3#0	22.04	22.23	22.31	16.99	17.18	17.26
		RB3#3	22.11	22.24	22.26	17.06	17.19	17.21
		RB6#0	21.24	21.29	21.36	16.19	16.24	16.31
3.0	QPSK	RB1#0	23.09	23.17	23.22	18.04	18.12	18.17
		RB1#8	23.05	23.09	23.26	18.00	18.04	18.21
		RB1#14	23.16	23.12	23.14	18.11	18.07	18.09
		RB6#0	22.10	21.95	22.25	17.05	16.90	17.20
		RB6#9	22.18	21.98	22.13	17.13	16.93	17.08
		RB15#0	22.23	22.06	22.11	17.18	17.01	17.06
	16QAM	RB1#0	22.27	22.06	23.00	17.22	17.01	17.95
		RB1#8	22.30	22.03	22.97	17.25	16.98	17.92
		RB1#14	22.24	22.12	23.02	17.19	17.07	17.97
		RB6#0	21.36	21.31	21.40	16.31	16.26	16.35
		RB6#9	21.38	21.26	21.30	16.33	16.21	16.25
		RB15#0	21.22	21.18	21.26	16.17	16.13	16.21

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	23.14	22.97	18.03	18.09	17.92
		RB1#13	23.04	23.13	23.03	17.99	18.08	17.98
		RB1#24	23.00	23.19	23.01	17.95	18.14	17.96
		RB15#0	22.16	21.94	22.12	17.11	16.89	17.07
		RB15#10	22.12	22.04	22.17	17.07	16.99	17.12
		RB25#0	22.14	22.09	22.26	17.09	17.04	17.21
	16QAM	RB1#0	21.44	22.03	22.22	16.39	16.98	17.17
		RB1#13	21.41	22.04	22.24	16.36	16.99	17.19
		RB1#24	21.41	22.06	22.18	16.36	17.01	17.13
		RB15#0	21.26	20.92	21.13	16.21	15.87	16.08
		RB15#10	21.31	20.95	21.15	16.26	15.90	16.10
		RB25#0	21.36	21.05	21.35	16.31	16.00	16.30
10.0	QPSK	RB1#0	23.16	23.15	22.95	18.11	18.10	17.90
		RB1#25	23.07	23.08	22.91	18.02	18.03	17.86
		RB1#49	23.08	23.09	22.94	18.03	18.04	17.89
		RB25#0	22.20	22.08	22.06	17.15	17.03	17.01
		RB25#25	22.21	22.00	22.30	17.16	16.95	17.25
		RB50#0	22.24	22.05	22.14	17.19	17.00	17.09
	16QAM	RB1#0	22.63	22.87	21.85	17.58	17.82	16.80
		RB1#25	22.62	22.74	21.84	17.57	17.69	16.79
		RB1#49	22.55	22.83	21.90	17.50	17.78	16.85
		RB25#0	21.28	21.10	21.37	16.23	16.05	16.32
		RB25#25	21.32	21.17	21.42	16.27	16.12	16.37
		RB50#0	21.27	21.23	21.24	16.22	16.18	16.19

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
For Band5: Antenna Gain = -2.9dBi = -5.05dBd (0dBd=2.15dBi)
Limit: ERP ≤ 38.45dBm

Peak-to-average ratio (PAR)**10MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.29	4.94	5.10	13	Pass
QPSK (50RB Size)	5.58	5.58	5.54	13	Pass
16QAM (1RB Size)	6.44	5.96	5.90	13	Pass
16QAM (50RB Size)	6.28	6.31	6.41	13	Pass

LTE Band 7:**Maximum Output Power**

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	14.38	14.67	14.72	14.28	14.57	14.62
		RB1#13	15.28	15.19	15.33	15.18	15.09	15.23
		RB1#24	15.07	14.79	14.96	14.97	14.69	14.86
		RB15#0	13.97	14.07	14.21	13.87	13.97	14.11
		RB15#10	14.27	14.12	14.32	14.17	14.02	14.22
		RB25#0	14.09	14.08	14.23	13.99	13.98	14.13
	16QAM	RB1#0	13.30	13.99	13.83	13.20	13.89	13.73
		RB1#13	14.21	14.54	14.46	14.11	14.44	14.36
		RB1#24	13.99	14.14	14.10	13.89	14.04	14.00
		RB15#0	12.95	13.10	13.21	12.85	13.00	13.11
		RB15#10	13.22	13.15	13.32	13.12	13.05	13.22
		RB25#0	13.05	13.12	13.23	12.95	13.02	13.13
10.0	QPSK	RB1#0	13.67	14.79	15.13	13.57	14.69	15.03
		RB1#25	14.78	15.15	15.20	14.68	15.05	15.10
		RB1#49	15.49	15.62	15.62	15.39	15.52	15.52
		RB25#0	13.43	14.11	14.26	13.33	14.01	14.16
		RB25#25	14.39	14.53	14.54	14.29	14.43	14.44
		RB50#0	13.94	14.34	14.41	13.84	14.24	14.31
	16QAM	RB1#0	13.46	13.94	14.13	13.36	13.84	14.03
		RB1#25	14.42	14.32	14.26	14.32	14.22	14.16
		RB1#49	15.27	14.80	14.64	15.17	14.70	14.54
		RB25#0	12.36	13.20	13.35	12.26	13.10	13.25
		RB25#25	13.32	13.62	13.61	13.22	13.52	13.51
		RB50#0	12.82	13.40	13.42	12.72	13.30	13.32

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	14.56	15.62	16.27	14.46	15.52	16.17
		RB1#38	15.12	15.12	15.07	15.02	15.02	14.97
		RB1#74	15.86	16.08	15.65	15.76	15.98	15.55
		RB36#0	13.84	14.38	14.59	13.74	14.28	14.49
		RB36#39	14.64	14.62	14.23	14.54	14.52	14.13
		RB75#0	14.27	14.50	14.41	14.17	14.40	14.31
	16QAM	RB1#0	14.24	15.09	15.74	14.14	14.99	15.64
		RB1#38	14.76	14.56	14.59	14.66	14.46	14.49
		RB1#74	15.48	15.50	15.20	15.38	15.40	15.10
		RB36#0	12.72	13.35	13.57	12.62	13.25	13.47
		RB36#39	13.53	13.58	13.19	13.43	13.48	13.09
		RB75#0	13.14	13.45	13.37	13.04	13.35	13.27
20.0	QPSK	RB1#0	14.25	15.75	16.69	14.15	15.65	16.59
		RB1#50	15.16	15.12	15.43	15.06	15.02	15.33
		RB1#99	15.09	16.23	15.61	14.99	16.13	15.51
		RB50#0	13.65	14.48	15.16	13.55	14.38	15.06
		RB50#50	14.15	14.76	14.42	14.05	14.66	14.32
		RB100#0	13.89	14.60	14.81	13.79	14.50	14.71
	16QAM	RB1#0	13.27	14.95	16.10	13.17	14.85	16.00
		RB1#50	14.28	14.37	14.79	14.18	14.27	14.69
		RB1#99	14.09	15.39	15.03	13.99	15.29	14.93
		RB50#0	12.48	13.46	14.05	12.38	13.36	13.95
		RB50#50	12.99	13.75	13.27	12.89	13.65	13.17
		RB100#0	12.75	13.59	13.66	12.65	13.49	13.56

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band7: Antenna Gain = -0.1dBi
Limit: EIRP ≤ 33dBm

Peak-to-average ratio (PAR)**20MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.38	5.74	5.48	13	Pass
QPSK (50RB Size)	5.67	5.71	5.64	13	Pass
16QAM (1RB Size)	6.12	7.08	6.57	13	Pass
16QAM (50RB Size)	6.54	6.54	6.54	13	Pass

LTE Band 17:**Maximum Output Power**

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	23.84	24.08	24.08	18.69	18.93	18.93
		RB1#13	24.10	24.32	23.99	18.95	19.17	18.84
		RB1#24	24.18	24.24	23.96	19.03	19.09	18.81
		RB15#0	22.78	23.03	23.18	17.63	17.88	18.03
		RB15#10	22.95	23.16	23.14	17.80	18.01	17.99
		RB25#0	23.08	23.02	23.08	17.93	17.87	17.93
	16QAM	RB1#0	22.07	22.70	23.22	16.92	17.55	18.07
		RB1#13	22.23	23.04	23.13	17.08	17.89	17.98
		RB1#24	22.38	23.00	23.18	17.23	17.85	18.03
		RB15#0	21.92	22.10	22.09	16.77	16.95	16.94
		RB15#10	22.07	22.09	22.11	16.92	16.94	16.96
		RB25#0	22.14	22.09	22.29	16.99	16.94	17.14
10.0	QPSK	RB1#0	23.83	23.81	23.99	18.68	18.66	18.84
		RB1#25	24.15	24.21	24.12	19.00	19.06	18.97
		RB1#49	24.08	24.12	24.08	18.93	18.97	18.93
		RB25#0	23.05	23.01	23.20	17.90	17.86	18.05
		RB25#25	23.24	23.10	23.19	18.09	17.95	18.04
		RB50#0	23.06	23.12	23.33	17.91	17.97	18.18
	16QAM	RB1#0	22.97	23.51	22.70	17.82	18.36	17.55
		RB1#25	23.23	23.86	22.98	18.08	18.71	17.83
		RB1#49	23.21	23.81	22.89	18.06	18.66	17.74
		RB25#0	21.99	22.06	22.33	16.84	16.91	17.18
		RB25#25	22.20	22.31	22.34	17.05	17.16	17.19
		RB50#0	22.26	22.18	22.28	17.11	17.03	17.13

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

For LTE Band17: Antenna Gain = -3.0dBi = -5.15dBd (0dBd=2.15dBi)

Limit: ERP ≤ 34.77dBm

Peak-to-average ratio (PAR)**10MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PARLimit (dB)	Result
QPSK (1RB Size)	5.06	4.97	4.81	13	Pass
QPSK (50RB Size)	5.54	5.58	5.71	13	Pass
16QAM (1RB Size)	5.80	5.71	6.22	13	Pass
16QAM (50RB Size)	6.35	6.41	6.38	13	Pass

LTE Band 38:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	18.21	18.51	18.15	18.11	18.41	18.05
		RB1#13	18.77	18.95	18.55	18.67	18.85	18.45
		RB1#24	18.24	18.39	17.99	18.14	18.29	17.89
		RB15#0	17.85	17.84	17.53	17.75	17.74	17.43
		RB15#10	17.89	17.81	17.46	17.79	17.71	17.36
		RB25#0	17.83	17.79	17.46	17.73	17.69	17.36
	16QAM	RB1#0	17.69	17.52	17.29	17.59	17.42	17.19
		RB1#13	18.28	17.98	17.70	18.18	17.88	17.60
		RB1#24	17.77	17.42	17.11	17.67	17.32	17.01
		RB15#0	16.94	16.80	16.53	16.84	16.70	16.43
		RB15#10	16.96	16.77	16.45	16.86	16.67	16.35
		RB25#0	16.85	16.83	16.47	16.75	16.73	16.37
10.0	QPSK	RB1#0	18.56	18.86	18.49	18.46	18.76	18.39
		RB1#25	18.86	18.92	18.67	18.76	18.82	18.57
		RB1#49	19.08	19.19	18.77	18.98	19.09	18.67
		RB25#0	17.90	17.93	17.70	17.80	17.83	17.60
		RB25#25	18.16	18.09	17.80	18.06	17.99	17.70
		RB50#0	18.03	18.02	17.75	17.93	17.92	17.65
	16QAM	RB1#0	17.84	17.75	17.60	17.74	17.65	17.50
		RB1#25	18.19	17.88	17.83	18.09	17.78	17.73
		RB1#49	18.37	18.10	17.89	18.27	18.00	17.79
		RB25#0	16.93	16.99	16.71	16.83	16.89	16.61
		RB25#25	17.18	17.15	16.82	17.08	17.05	16.72
		RB50#0	17.06	17.04	16.76	16.96	16.94	16.66

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	18.84	19.19	18.74	18.74	19.09	18.64
		RB1#38	18.29	18.38	18.06	18.19	18.28	17.96
		RB1#74	18.82	18.95	18.36	18.72	18.85	18.26
		RB36#0	17.64	17.72	17.39	17.54	17.62	17.29
		RB36#39	17.60	17.58	17.21	17.50	17.48	17.11
		RB75#0	17.62	17.65	17.30	17.52	17.55	17.20
	16QAM	RB1#0	18.10	18.14	18.04	18.00	18.04	17.94
		RB1#38	17.62	17.35	17.38	17.52	17.25	17.28
		RB1#74	18.09	17.91	17.65	17.99	17.81	17.55
		RB36#0	16.66	16.71	16.46	16.56	16.61	16.36
		RB36#39	16.63	16.55	16.29	16.53	16.45	16.19
		RB75#0	16.61	16.65	16.32	16.51	16.55	16.22
20.0	QPSK	RB1#0	18.53	19.13	19.05	18.43	19.03	18.95
		RB1#50	18.13	18.34	18.14	18.03	18.24	18.04
		RB1#99	18.43	18.84	18.56	18.33	18.74	18.46
		RB50#0	17.71	17.87	17.67	17.61	17.77	17.57
		RB50#50	17.66	17.69	17.44	17.56	17.59	17.34
		RB100#0	17.68	17.77	17.55	17.58	17.67	17.45
	16QAM	RB1#0	17.81	18.15	18.31	17.71	18.05	18.21
		RB1#50	17.49	17.39	17.42	17.39	17.29	17.32
		RB1#99	17.72	17.87	17.84	17.62	17.77	17.74
		RB50#0	16.74	16.92	16.71	16.64	16.82	16.61
		RB50#50	16.68	16.75	16.48	16.58	16.65	16.38
		RB100#0	16.70	16.78	16.56	16.60	16.68	16.46

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

For LTE Band38: Antenna Gain = -0.1dBi

Limit: EIRP ≤ 33dBm

Peak-to-average ratio (PAR)**20MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.53	9.65	9.21	13	Pass
QPSK (100RB Size)	6.35	7.32	8.63	13	Pass
16QAM (1RB Size)	7.92	8.52	8.42	13	Pass
16QAM (100RB Size)	8.76	8.21	8.35	13	Pass

LTE Band 41:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	18.53	18.29	18.41	18.43	18.19	18.31
		RB1#13	18.36	18.60	18.47	18.26	18.50	18.37
		RB1#24	18.36	18.42	18.35	18.26	18.32	18.25
		RB15#0	18.46	18.56	18.43	18.36	18.46	18.33
		RB15#10	18.49	18.42	18.46	18.39	18.32	18.36
		RB25#0	17.33	17.43	17.41	17.23	17.33	17.31
	16QAM	RB1#0	17.16	17.51	17.35	17.06	17.41	17.25
		RB1#13	17.64	17.57	17.66	17.54	17.47	17.56
		RB1#24	17.62	17.50	17.40	17.52	17.40	17.30
		RB15#0	17.27	17.80	17.65	17.17	17.70	17.55
		RB15#10	17.53	17.61	17.69	17.43	17.51	17.59
		RB25#0	16.40	16.47	16.61	16.30	16.37	16.51
10.0	QPSK	RB1#0	18.07	18.50	18.51	17.97	18.40	18.41
		RB1#25	18.68	18.49	18.51	18.58	18.39	18.41
		RB1#49	18.83	18.47	18.55	18.73	18.37	18.45
		RB25#0	17.22	17.61	17.38	17.12	17.51	17.28
		RB25#25	17.74	17.70	17.42	17.64	17.60	17.32
		RB50#0	17.61	17.59	17.50	17.51	17.49	17.40
	16QAM	RB1#0	17.67	17.58	17.34	17.57	17.48	17.24
		RB1#25	18.42	17.67	17.61	18.32	17.57	17.51
		RB1#49	18.49	17.47	17.51	18.39	17.37	17.41
		RB25#0	16.55	16.77	16.61	16.45	16.67	16.51
		RB25#25	16.96	16.84	16.46	16.86	16.74	16.36
		RB50#0	16.58	16.64	16.63	16.48	16.54	16.53

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	17.73	18.00	18.06	17.63	17.90	17.96
		RB1#38	19.14	18.56	18.53	19.04	18.46	18.43
		RB1#74	18.91	18.02	18.05	18.81	17.92	17.95
		RB36#0	17.53	17.38	17.52	17.43	17.28	17.42
		RB36#39	17.89	17.54	17.47	17.79	17.44	17.37
		RB75#0	17.62	17.51	17.57	17.52	17.41	17.47
	16QAM	RB1#0	16.85	17.60	17.10	16.75	17.50	17.00
		RB1#38	18.06	18.15	17.61	17.96	18.05	17.51
		RB1#74	17.69	17.43	17.25	17.59	17.33	17.15
		RB36#0	16.73	16.45	16.53	16.63	16.35	16.43
		RB36#39	17.20	16.63	16.47	17.10	16.53	16.37
		RB75#0	16.78	16.43	16.47	16.68	16.33	16.37
20.0	QPSK	RB1#0	17.43	18.41	18.20	17.33	18.31	18.10
		RB1#50	18.60	18.51	18.41	18.50	18.41	18.31
		RB1#99	19.00	18.65	18.98	18.90	18.55	18.88
		RB50#0	17.36	17.61	17.47	17.26	17.51	17.37
		RB50#50	18.12	17.82	17.74	18.02	17.72	17.64
		RB100#0	17.83	17.77	17.64	17.73	17.67	17.54
	16QAM	RB1#0	17.28	17.47	17.15	17.18	17.37	17.05
		RB1#50	18.21	17.69	17.57	18.11	17.59	17.47
		RB1#99	18.86	17.77	18.04	18.76	17.67	17.94
		RB50#0	16.41	16.52	16.47	16.31	16.42	16.37
		RB50#50	17.14	16.95	17.00	17.04	16.85	16.90
		RB100#0	16.67	16.82	16.78	16.57	16.72	16.68

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

For LTE Band41: Antenna Gain = -0.1dBi

Limit: EIRP ≤ 33dBm

Peak-to-average ratio (PAR)**20MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	9.65	7.59	8.27	13	Pass
QPSK (100RB Size)	8.25	8.72	9.13	13	Pass
16QAM (1RB Size)	9.67	9.84	8.25	13	Pass
16QAM (100RB Size)	8.54	9.75	8.33	13	Pass

LTE Band 66:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	16.61	16.59	16.57	14.21	14.19	14.17
		RB1#3	16.65	16.79	16.75	14.25	14.39	14.35
		RB1#5	16.68	16.58	16.59	14.28	14.18	14.19
		RB3#0	16.59	16.73	16.68	14.19	14.33	14.28
		RB3#3	16.74	16.74	16.70	14.34	14.34	14.30
		RB6#0	15.58	15.78	15.73	13.18	13.38	13.33
	16QAM	RB1#0	15.48	15.67	15.60	13.08	13.27	13.20
		RB1#3	15.86	15.88	15.82	13.46	13.48	13.42
		RB1#5	15.75	15.68	15.65	13.35	13.28	13.25
		RB3#0	15.53	15.91	15.94	13.13	13.51	13.54
		RB3#3	15.71	15.89	15.97	13.31	13.49	13.57
		RB6#0	14.65	14.79	14.78	12.25	12.39	12.38
3.0	QPSK	RB1#0	16.34	16.62	16.54	13.94	14.22	14.14
		RB1#8	16.90	16.74	16.71	14.50	14.34	14.31
		RB1#14	17.00	16.58	16.68	14.60	14.18	14.28
		RB6#0	15.56	15.77	15.75	13.16	13.37	13.35
		RB6#9	15.99	15.75	15.75	13.59	13.35	13.35
		RB15#0	15.81	15.80	15.78	13.41	13.40	13.38
	16QAM	RB1#0	15.98	15.83	15.63	13.58	13.43	13.23
		RB1#8	16.54	15.96	15.85	14.14	13.56	13.45
		RB1#14	16.62	15.80	15.77	14.22	13.40	13.37
		RB6#0	14.67	14.86	14.69	12.27	12.46	12.29
		RB6#9	15.11	14.85	14.72	12.71	12.45	12.32
		RB15#0	14.91	14.81	14.83	12.51	12.41	12.43

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	16.10	16.30	16.17	13.70	13.90	13.77
		RB1#13	17.25	16.83	16.79	14.85	14.43	14.39
		RB1#24	17.02	16.21	16.39	14.62	13.81	13.99
		RB15#0	15.76	15.75	15.68	13.36	13.35	13.28
		RB15#10	16.16	15.72	15.77	13.76	13.32	13.37
		RB25#0	15.92	15.69	15.67	13.52	13.29	13.27
	16QAM	RB1#0	14.92	15.66	15.31	12.52	13.26	12.91
		RB1#13	16.11	16.22	15.94	13.71	13.82	13.54
		RB1#24	15.88	15.59	15.50	13.48	13.19	13.10
		RB15#0	14.85	14.78	14.71	12.45	12.38	12.31
		RB15#10	15.24	14.76	14.78	12.84	12.36	12.38
		RB25#0	15.00	14.74	14.71	12.60	12.34	12.31
10.0	QPSK	RB1#0	15.68	16.49	16.42	13.28	14.09	14.02
		RB1#25	16.86	16.75	16.64	14.46	14.35	14.24
		RB1#49	17.33	16.92	17.14	14.93	14.52	14.74
		RB25#0	15.46	15.78	15.63	13.06	13.38	13.23
		RB25#25	16.26	15.98	16.02	13.86	13.58	13.62
		RB50#0	15.88	15.89	15.84	13.48	13.49	13.44
	16QAM	RB1#0	15.35	15.65	15.47	12.95	13.25	13.07
		RB1#25	16.52	15.98	15.68	14.12	13.58	13.28
		RB1#49	16.98	16.09	16.14	14.58	13.69	13.74
		RB25#0	14.60	14.86	14.73	12.20	12.46	12.33
		RB25#25	15.41	15.08	15.12	13.01	12.68	12.72
		RB50#0	14.98	14.96	14.86	12.58	12.56	12.46

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	16.61	17.33	17.55	14.21	14.93	15.15
		RB1#38	16.99	16.73	16.66	14.59	14.33	14.26
		RB1#74	17.63	17.09	17.48	15.23	14.69	15.08
		RB36#0	15.91	16.03	16.18	13.51	13.63	13.78
		RB36#39	16.33	15.92	15.99	13.93	13.52	13.59
		RB75#0	16.12	15.97	16.06	13.72	13.57	13.66
	16QAM	RB1#0	16.26	16.45	16.94	13.86	14.05	14.54
		RB1#38	16.65	15.96	16.22	14.25	13.56	13.82
		RB1#74	17.29	16.23	16.82	14.89	13.83	14.42
		RB36#0	15.00	15.10	15.20	12.60	12.70	12.80
		RB36#39	15.43	15.00	15.13	13.03	12.60	12.73
		RB75#0	15.21	15.04	15.14	12.81	12.64	12.74
20.0	QPSK	RB1#0	16.26	17.46	17.81	13.86	15.06	15.41
		RB1#50	16.71	16.82	16.68	14.31	14.42	14.28
		RB1#99	17.25	17.07	17.13	14.85	14.67	14.73
		RB50#0	15.82	16.20	16.36	13.42	13.80	13.96
		RB50#50	16.11	16.05	15.96	13.71	13.65	13.56
		RB100#0	15.95	16.11	16.16	13.55	13.71	13.76
	16QAM	RB1#0	15.55	16.60	17.31	13.15	14.20	14.91
		RB1#50	16.12	16.12	16.37	13.72	13.72	13.97
		RB1#99	16.56	16.23	16.59	14.16	13.83	14.19
		RB50#0	14.76	15.25	15.59	12.36	12.85	13.19
		RB50#50	15.07	15.10	15.16	12.67	12.70	12.76
		RB100#0	14.92	15.16	15.36	12.52	12.76	12.96

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

For LTE Band 66: Antenna Gain = -2.4dBi

Limit: EIRP ≤ 30dBm

Peak-to-average ratio (PAR)**20MHz bandwidth**

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.18	5.06	4.77	13	Pass
QPSK (100RB Size)	5.35	5.35	6.56	13	Pass
16QAM (1RB Size)	5.29	5.87	5.89	13	Pass
16QAM (100RB Size)	7.85	5.39	6.67	13	Pass

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

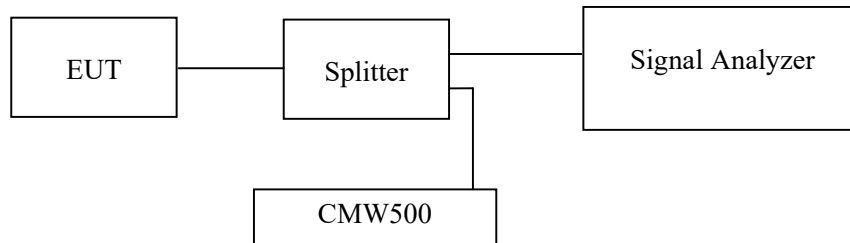
Applicable Standard

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.



Test Data

Environmental Conditions

Temperature:	29.1~29.2℃
Relative Humidity:	44~65 %
ATM Pressure:	101.0kPa

The testing was performed by Paul Liu from 2021-11-07 to 2021-11-08.

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	244.00	309.62
	190	836.6	246.00	320.91
	251	848.8	246.00	321.79
EGPRS(8PSK)	128	824.2	238.00	311.22
	190	836.6	248.00	323.72
	251	848.8	240.00	308.65

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.14	4.69
	836.6	4.16	4.68
	846.6	4.16	4.69
HSDPA	826.4	4.16	4.69
	836.6	4.16	4.67
	846.6	4.14	4.68
HSUPA	826.4	4.16	4.69
	836.6	4.16	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	244.00	315.83
	661	1880.0	246.00	316.99
	810	1909.8	244.00	312.18
EGPRS(8PSK)	512	1850.2	238.00	319.23
	661	1880.0	238.00	316.35
	810	1909.8	238.00	313.81

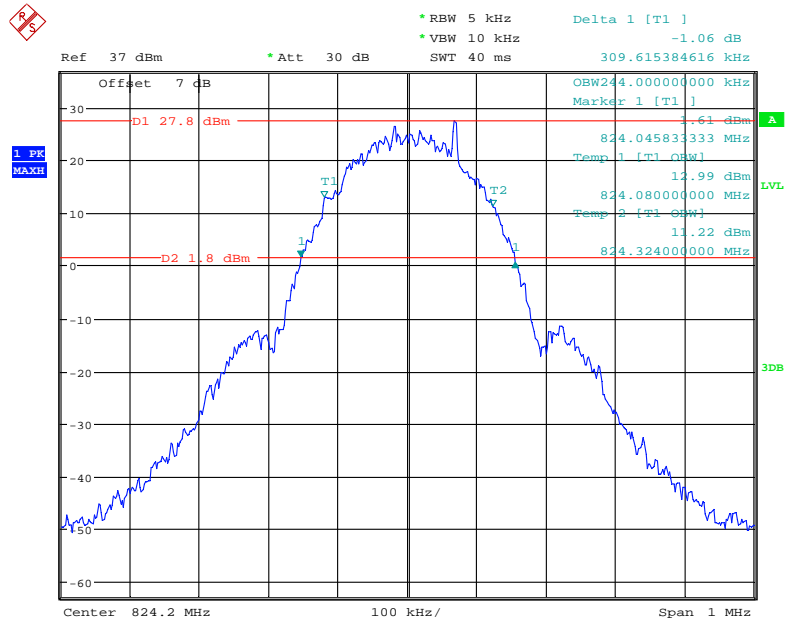
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.18	4.70
	1880.0	4.16	4.70
	1907.6	4.16	4.69
HSDPA	1852.4	4.18	4.70
	1880.0	4.16	4.70
	1907.6	4.18	4.71
HSUPA	1852.4	4.18	4.70
	1880.0	4.16	4.70
	1907.6	4.16	4.69

AWS Band (Part 27)

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.16	4.67
	1732.6	4.16	4.70
	1752.6	4.16	4.69
HSDPA	1712.4	4.16	4.69
	1732.6	4.16	4.70
	1752.6	4.18	4.68
HSUPA	1712.4	4.16	4.70
	1732.6	4.18	4.70
	1752.6	4.16	4.70

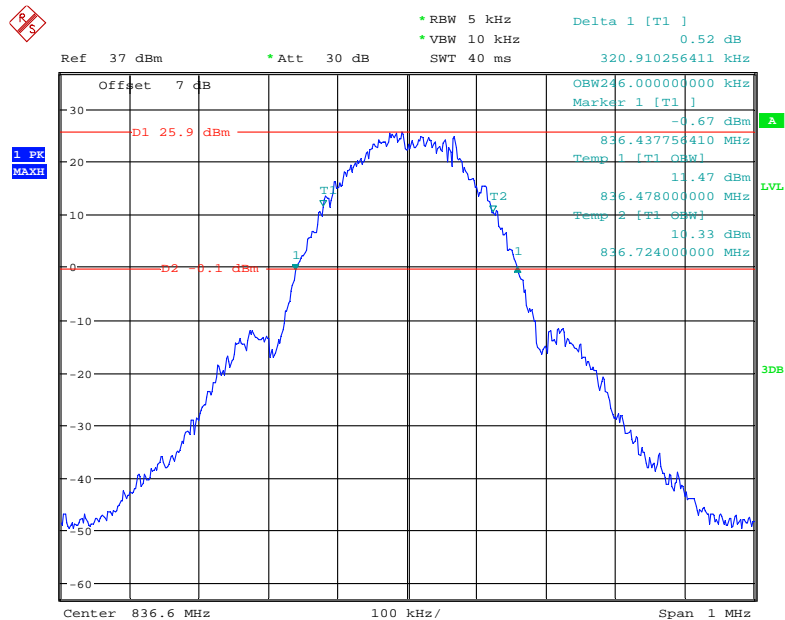
Cellular Band (Part 22H)

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



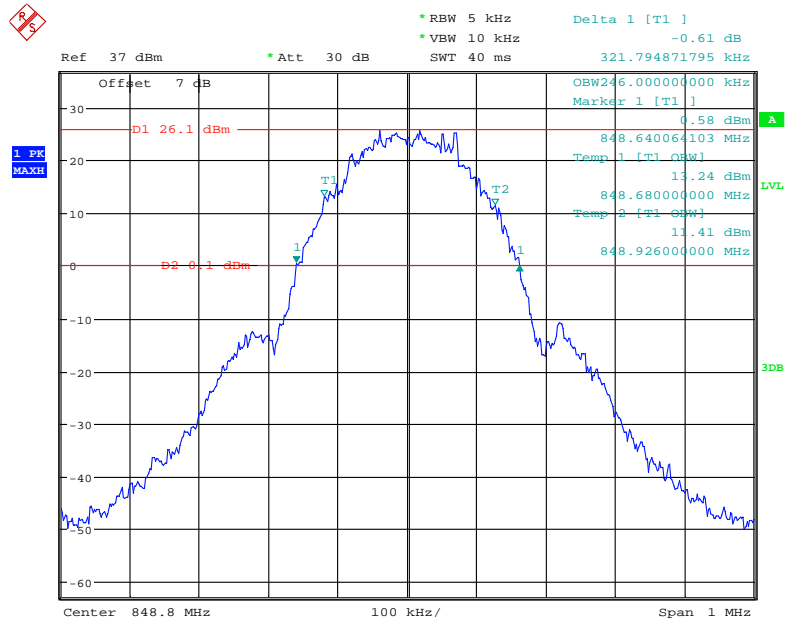
Date: 7.NOV.2021 14:06:02

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



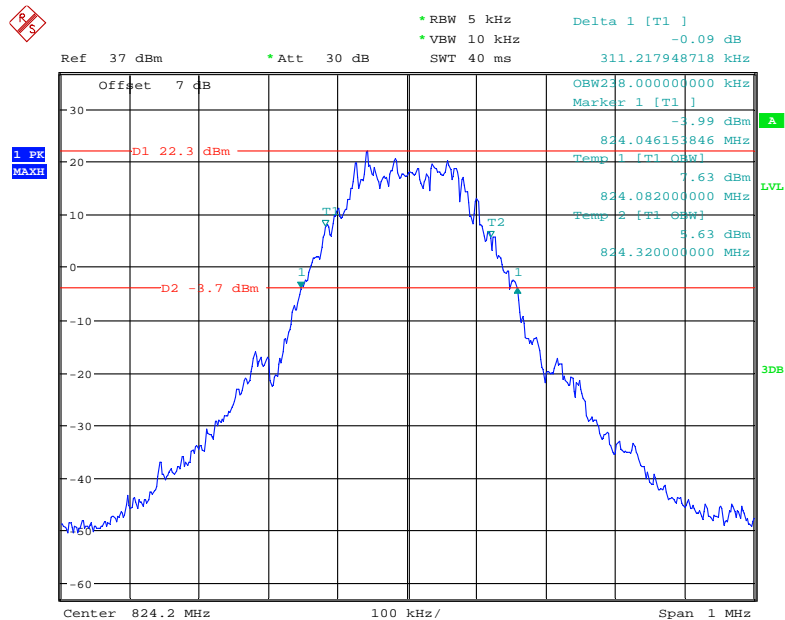
Date: 7.NOV.2021 14:04:04

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



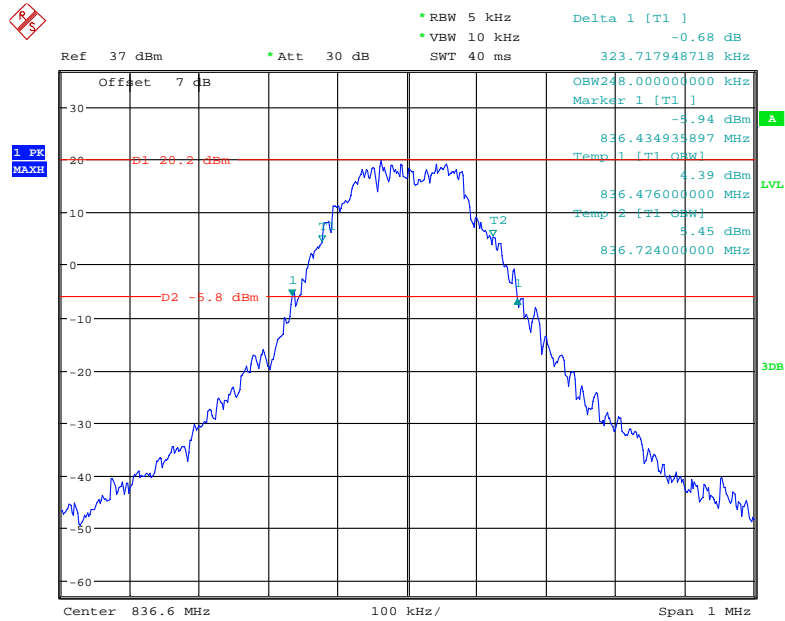
Date: 7.NOV.2021 14:07:01

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



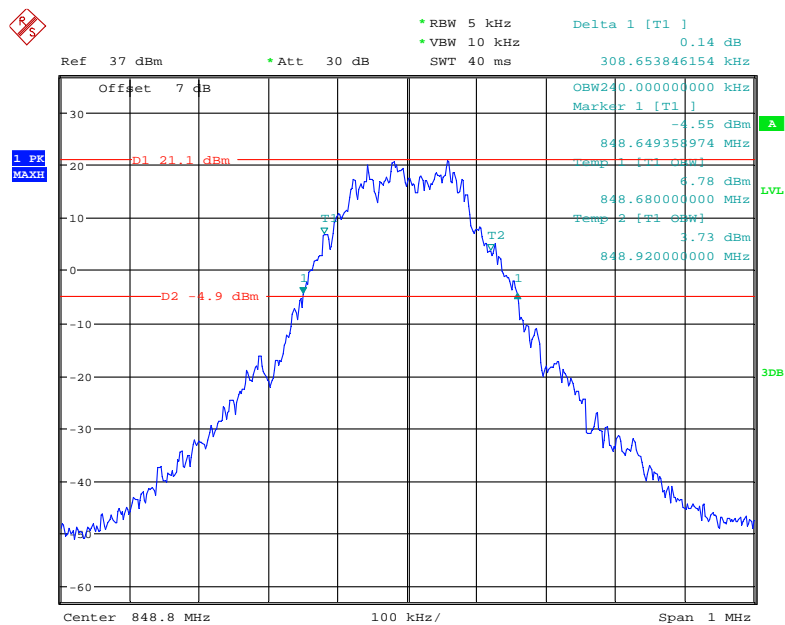
Date: 7.NOV.2021 14:41:08

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



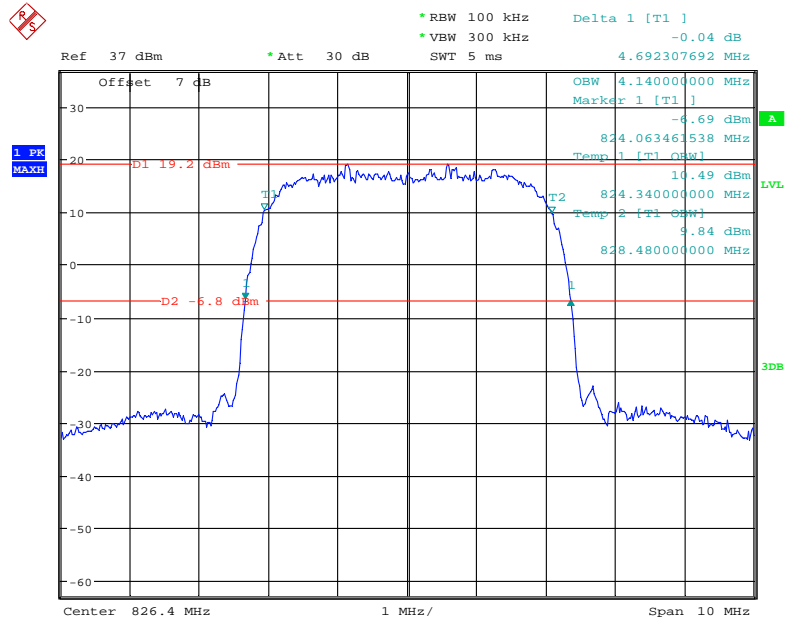
Date: 7.NOV.2021 14:42:22

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



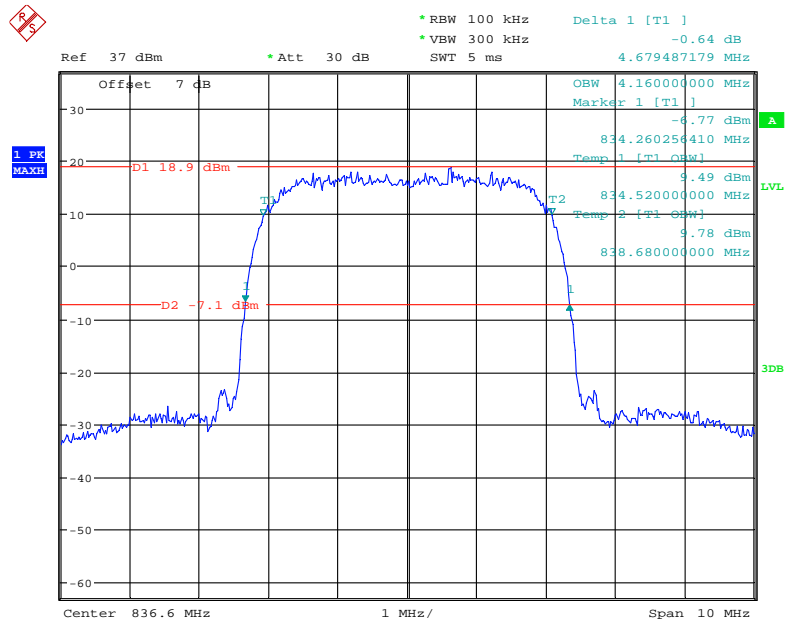
Date: 7.NOV.2021 14:43:22

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



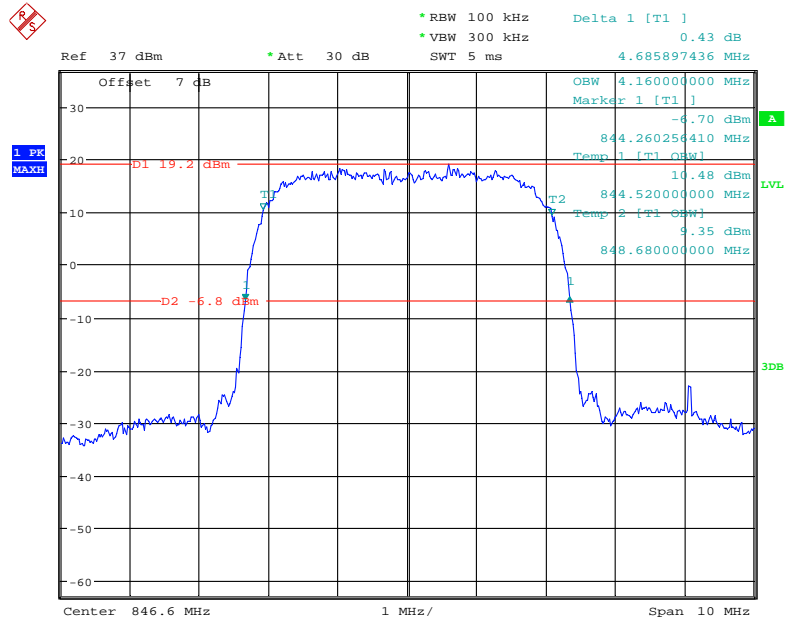
Date: 7.NOV.2021 15:02:38

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



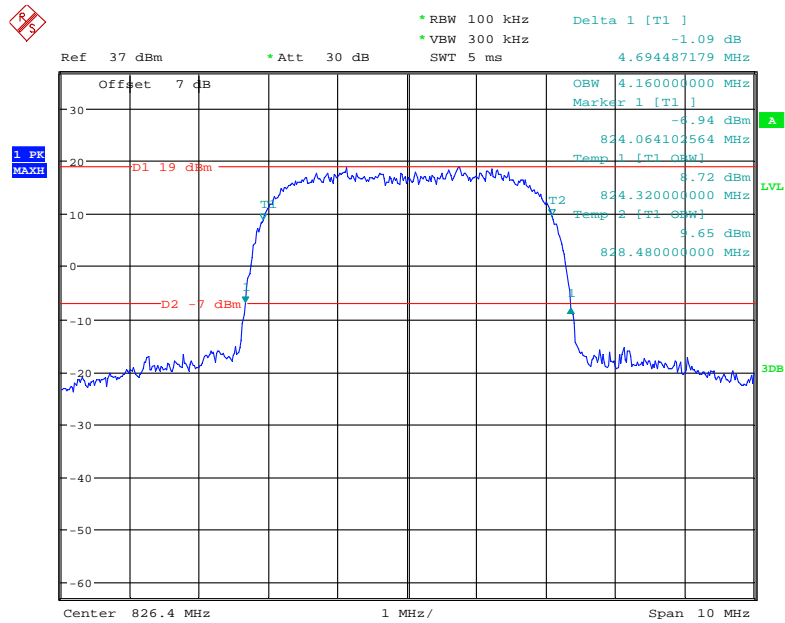
Date: 7.NOV.2021 15:03:35

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



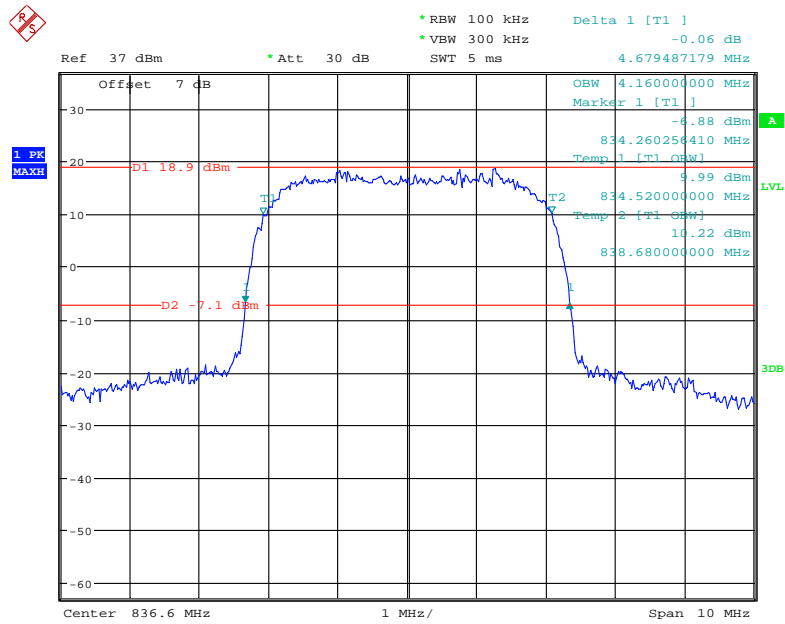
Date: 7.NOV.2021 15:04:24

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



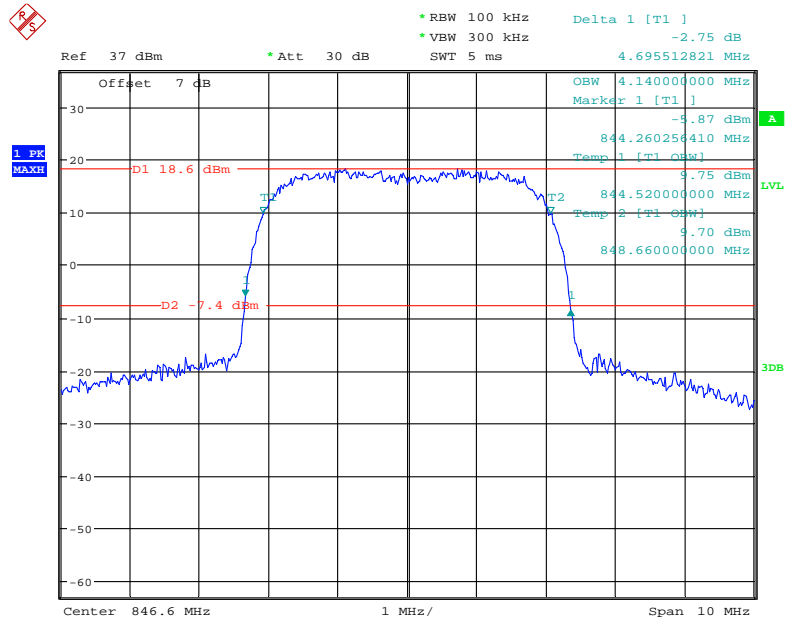
Date: 7.NOV.2021 15:37:44

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



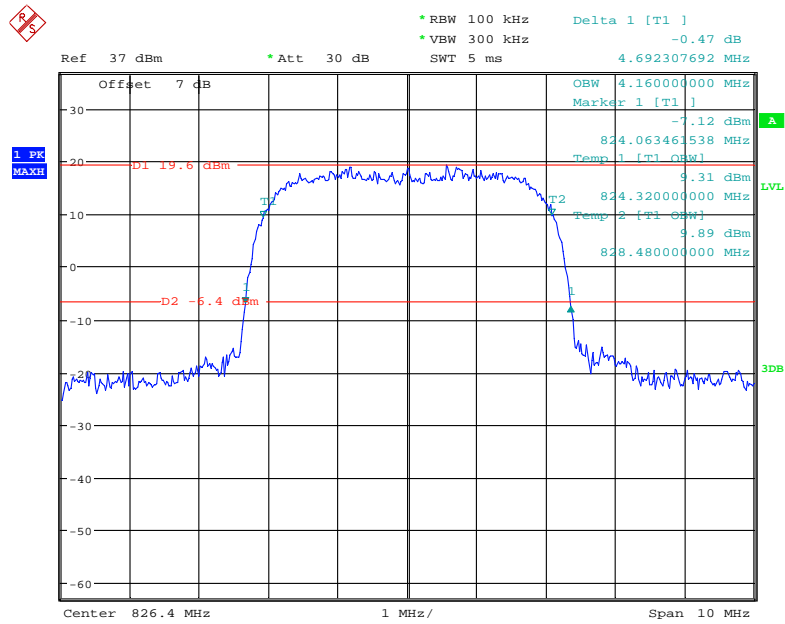
Date: 7.NOV.2021 15:39:03

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



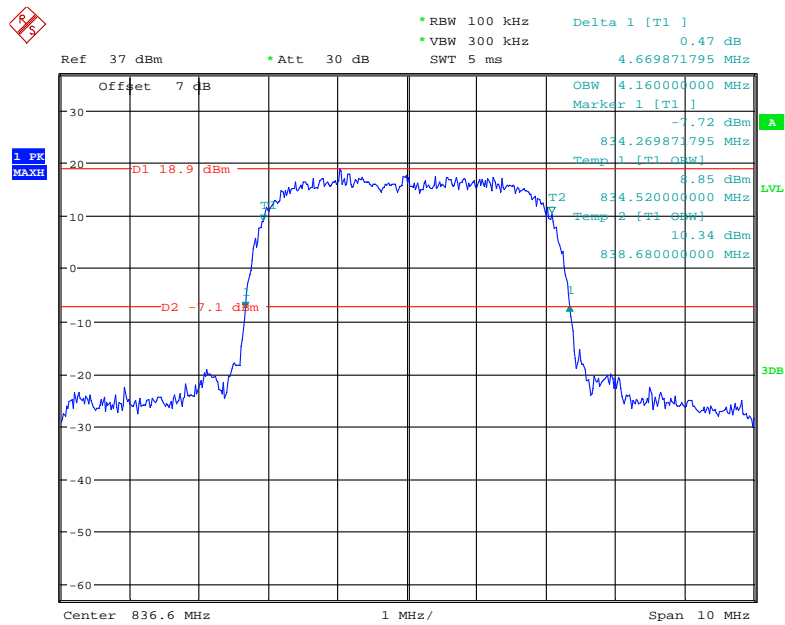
Date: 7.NOV.2021 15:39:45

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



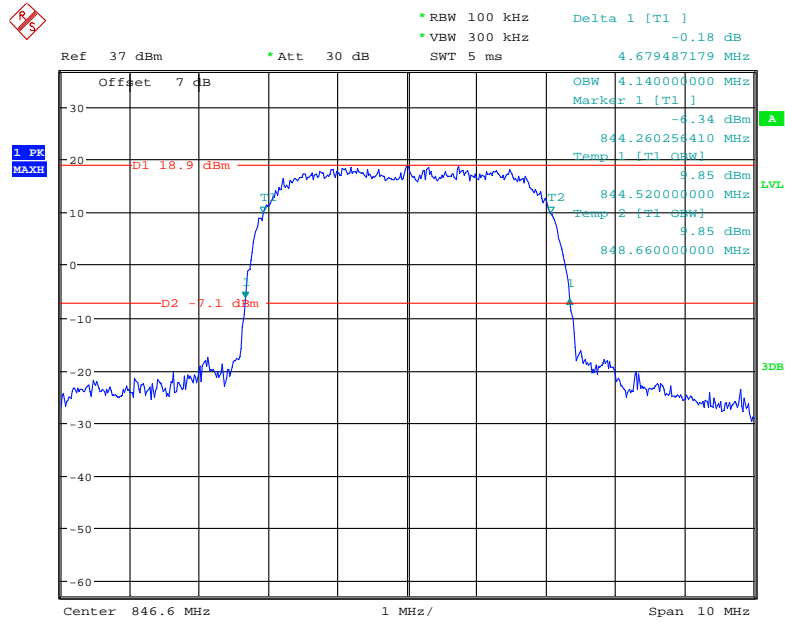
Date: 7.NOV.2021 15:26:28

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



Date: 7.NOV.2021 15:25:15

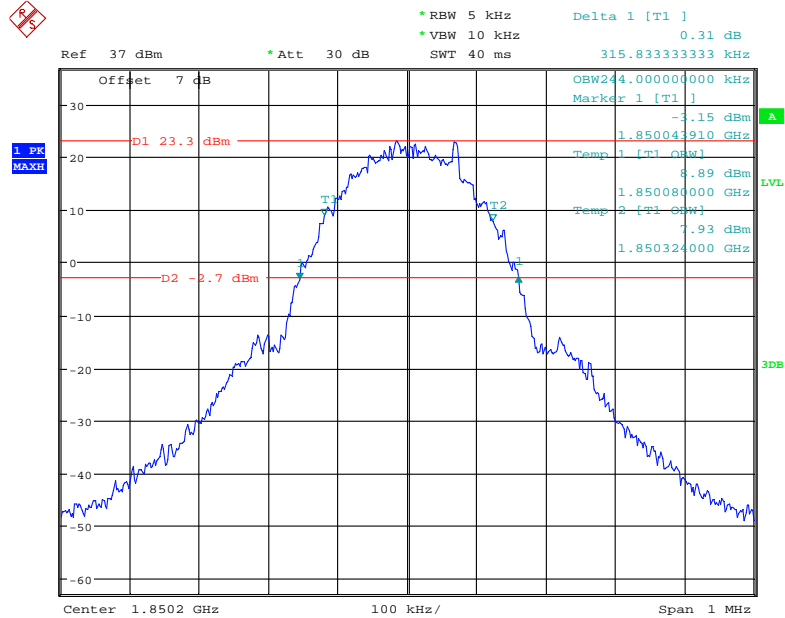
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 7.NOV.2021 15:24:31

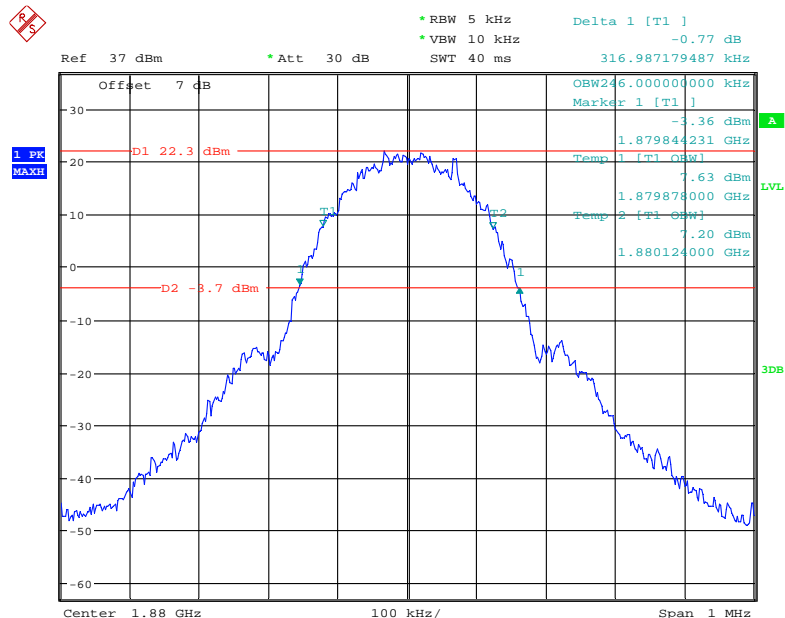
PCS Band (Part 24E)

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



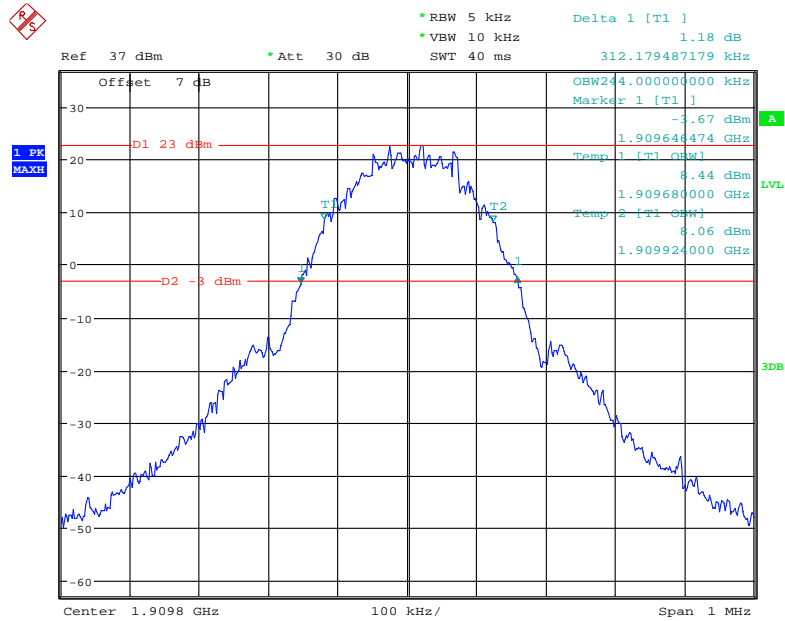
Date: 7.NOV.2021 14:22:04

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



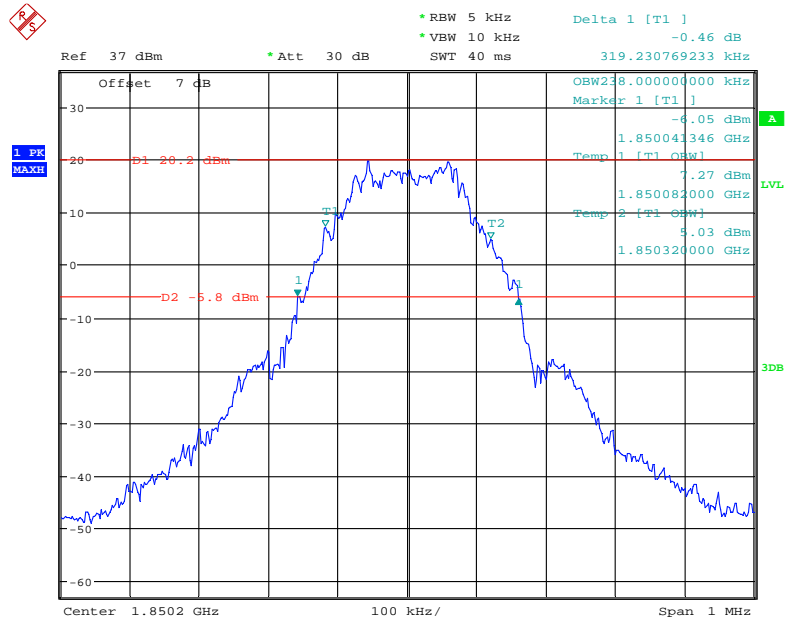
Date: 7.NOV.2021 14:23:23

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



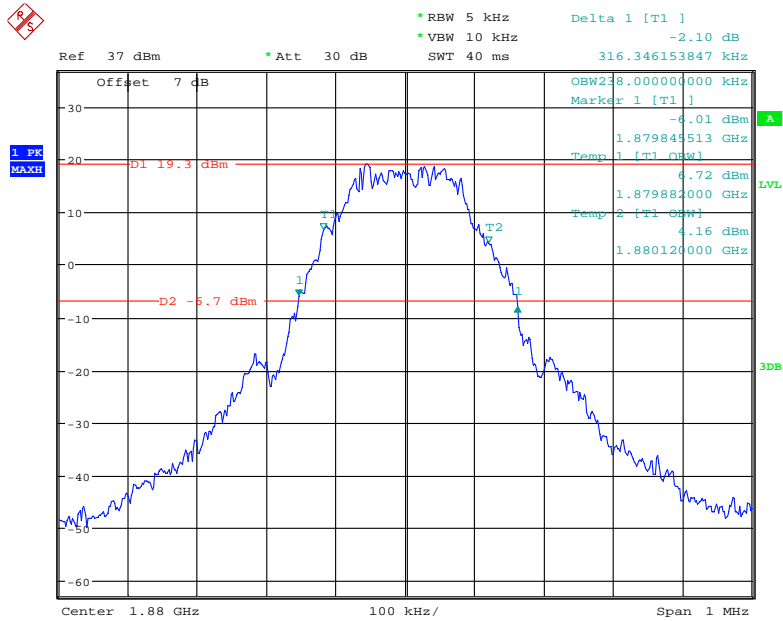
Date: 7.NOV.2021 14:24:35

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



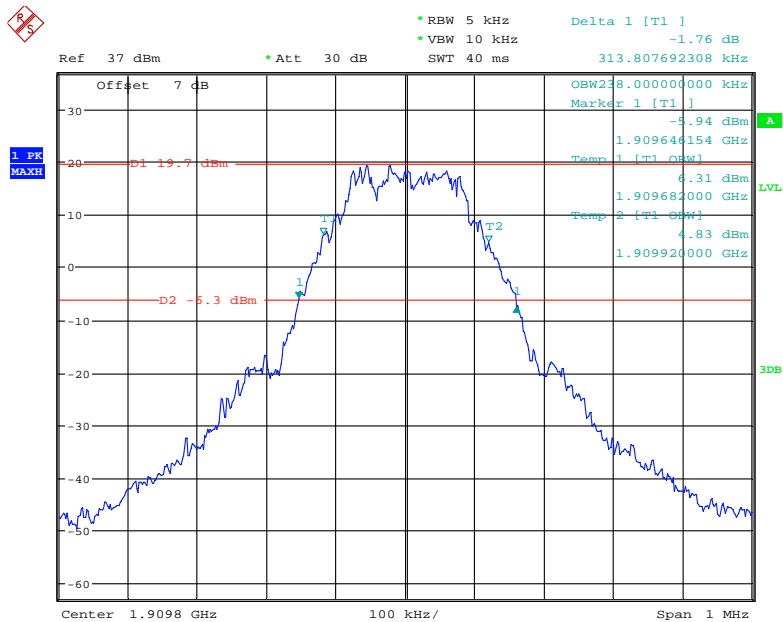
Date: 7.NOV.2021 14:35:32

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



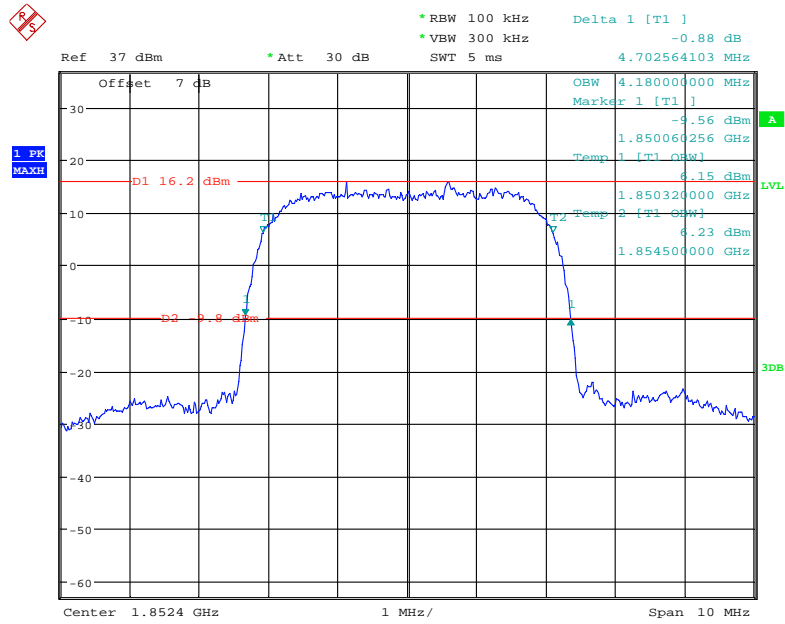
Date: 7.NOV.2021 14:33:46

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



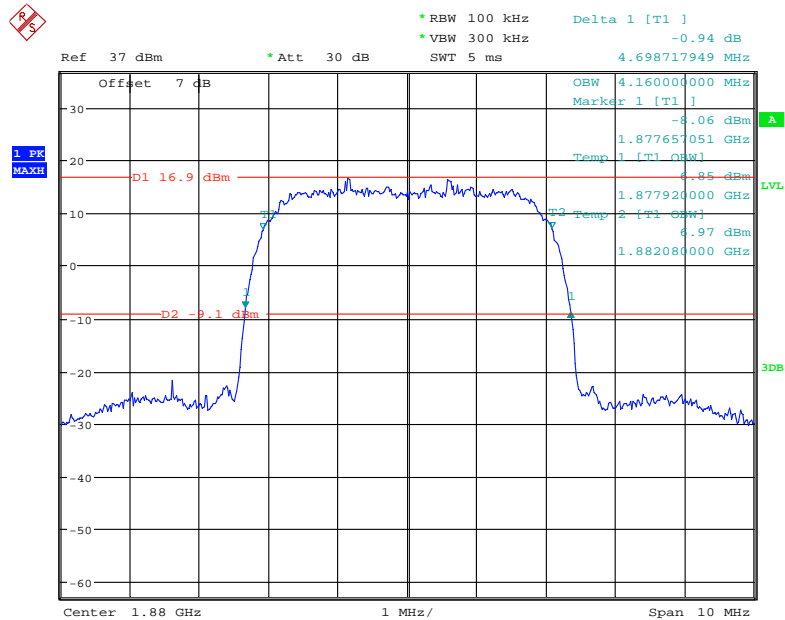
Date: 7.NOV.2021 14:32:05

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



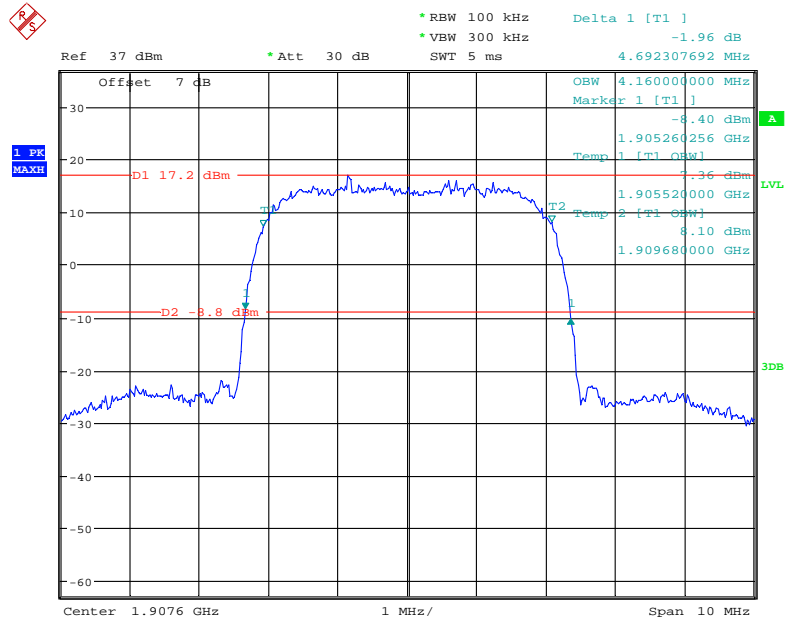
Date: 7.NOV.2021 14:56:12

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



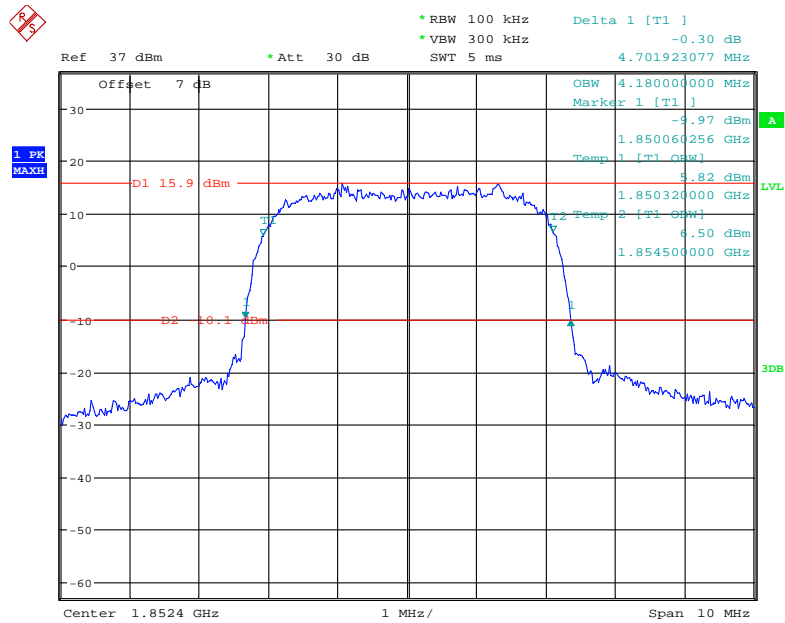
Date: 7.NOV.2021 14:57:10

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



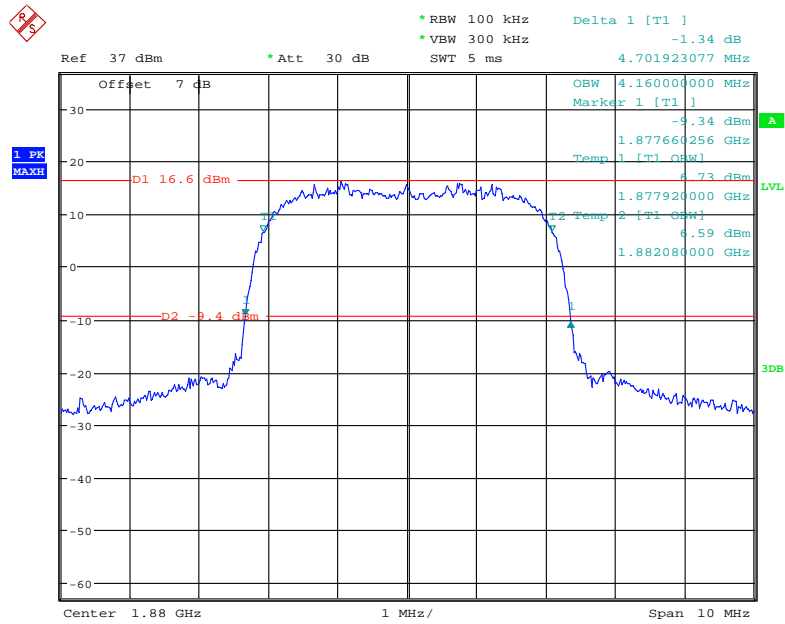
Date: 7.NOV.2021 14:58:19

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



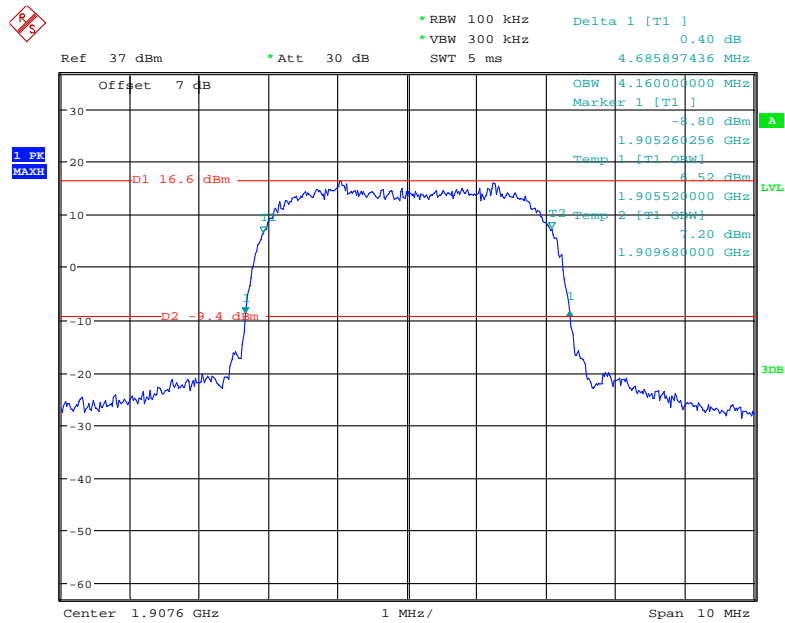
Date: 7.NOV.2021 15:43:16

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



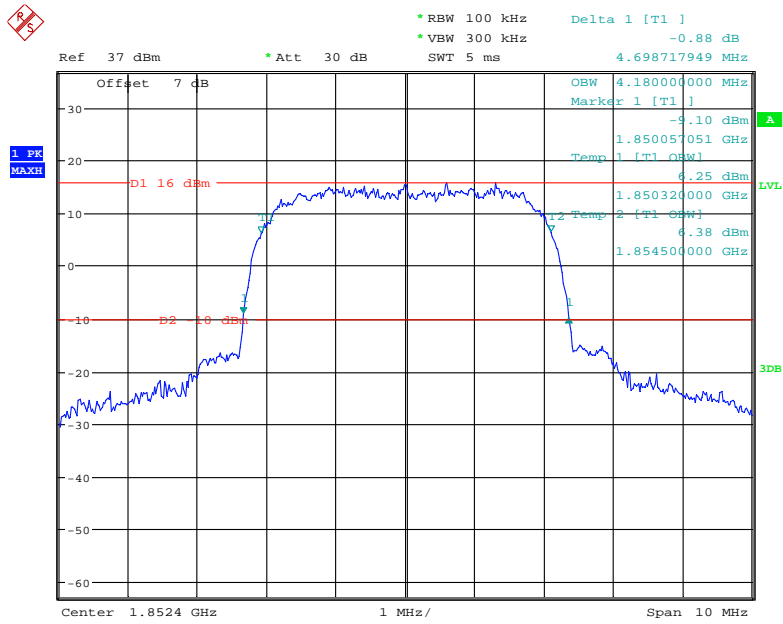
Date: 7.NOV.2021 15:44:11

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



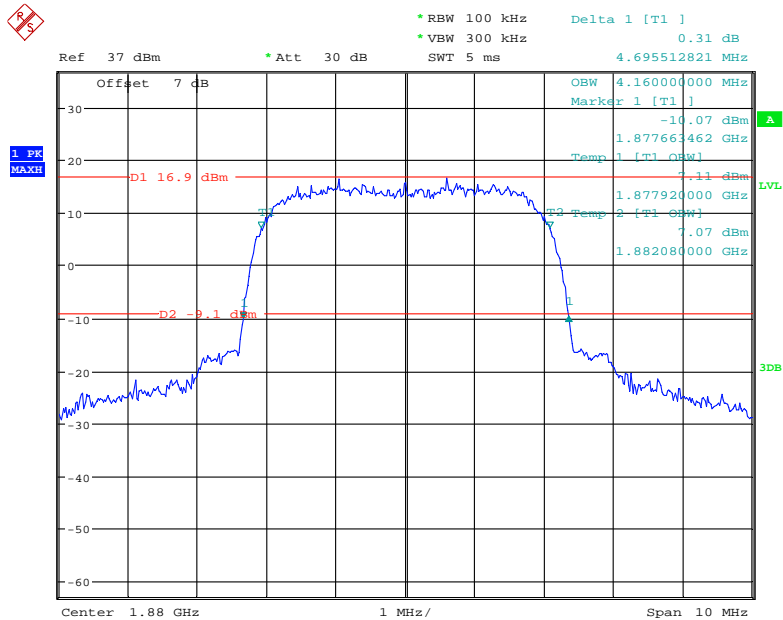
Date: 7.NOV.2021 15:45:10

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



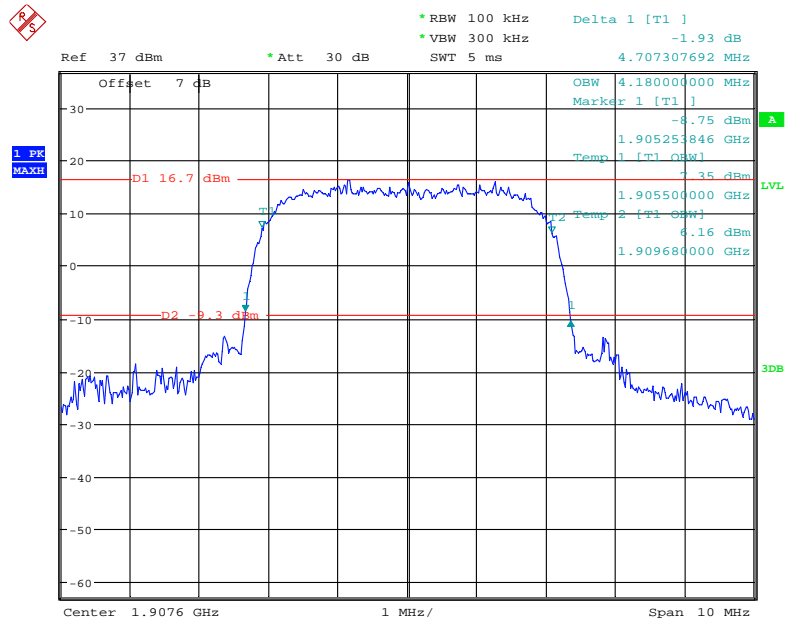
Date: 7.NOV.2021 15:20:46

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



Date: 7.NOV.2021 15:19:49

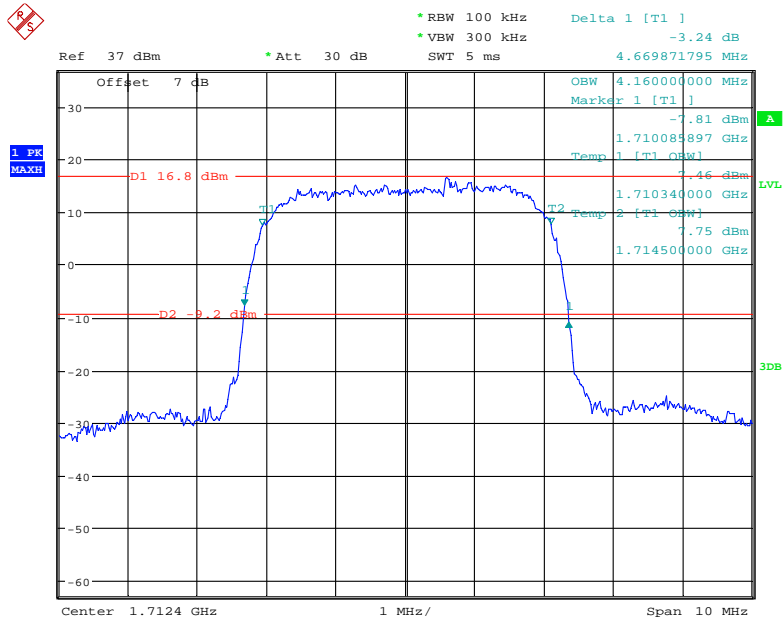
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 7.NOV.2021 15:18:36

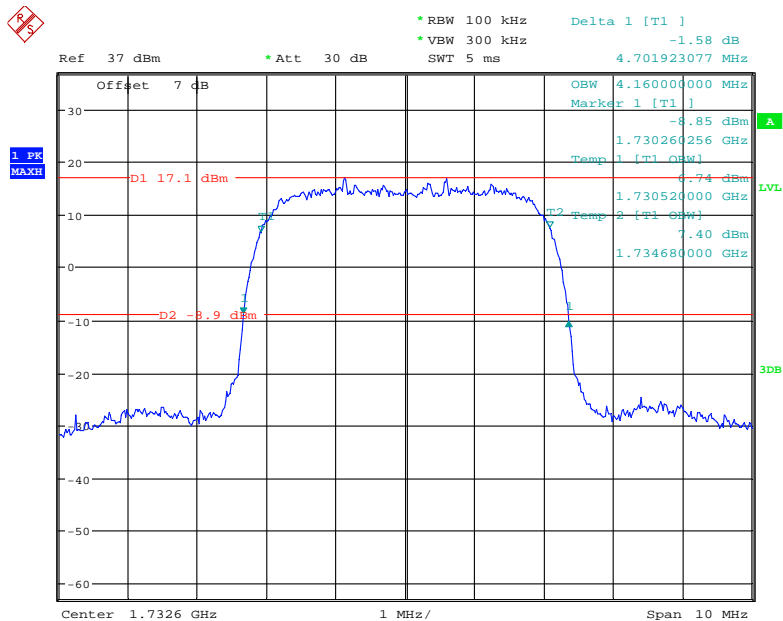
AWS Band (Part 27)

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



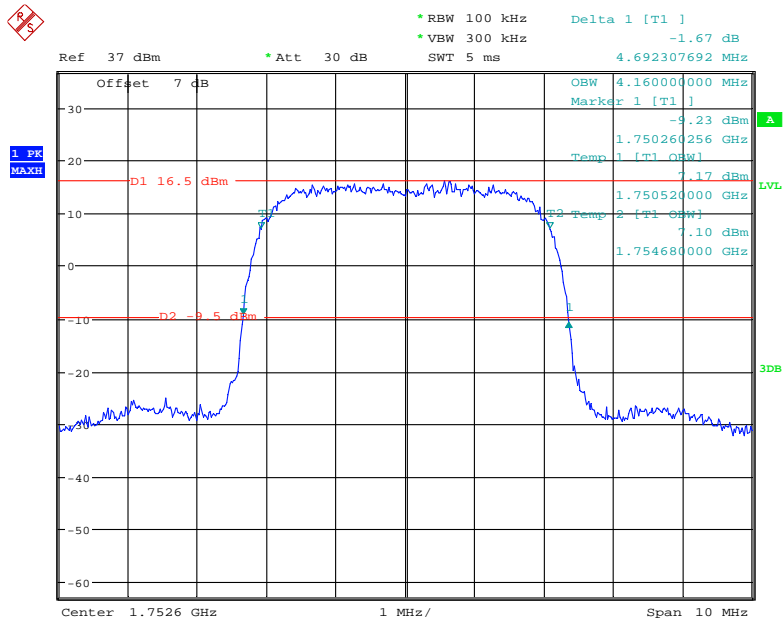
Date: 7.NOV.2021 14:59:42

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



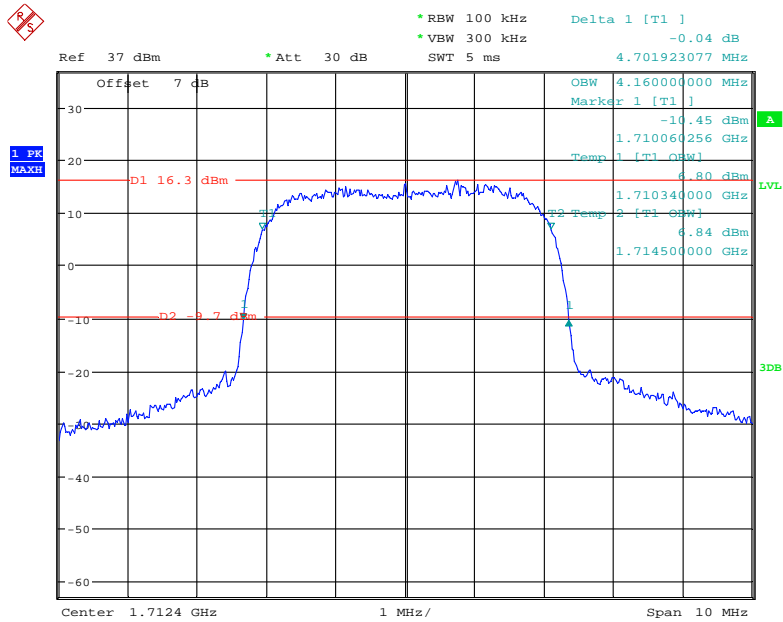
Date: 7.NOV.2021 15:00:33

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



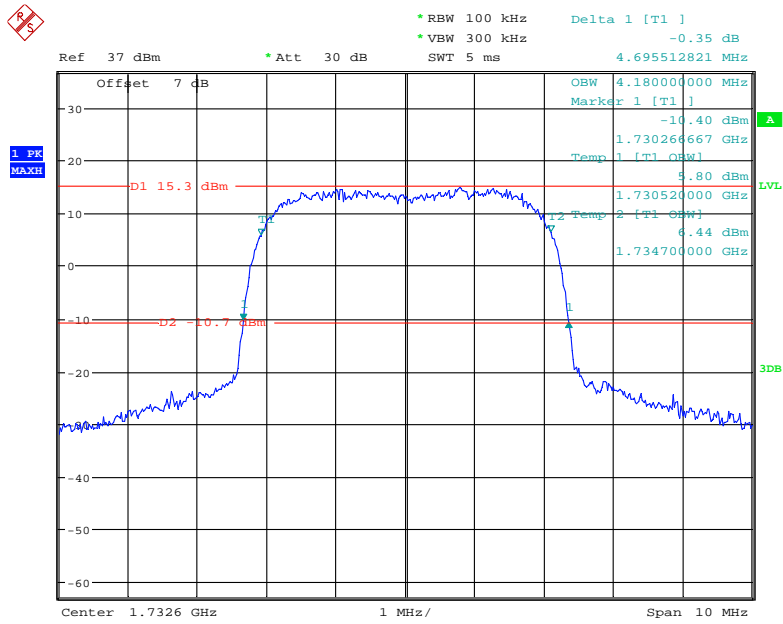
Date: 7.NOV.2021 15:01:26

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



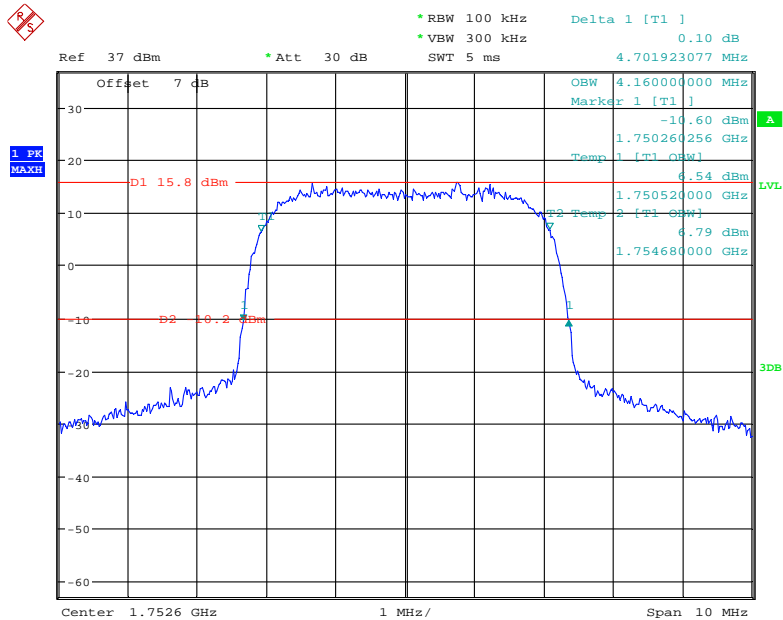
Date: 7.NOV.2021 15:40:50

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



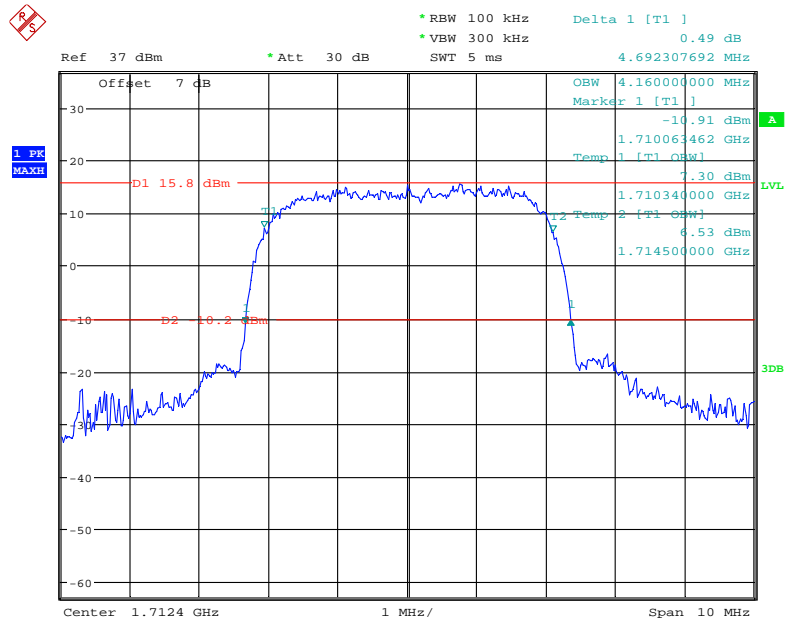
Date: 7.NOV.2021 15:41:44

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



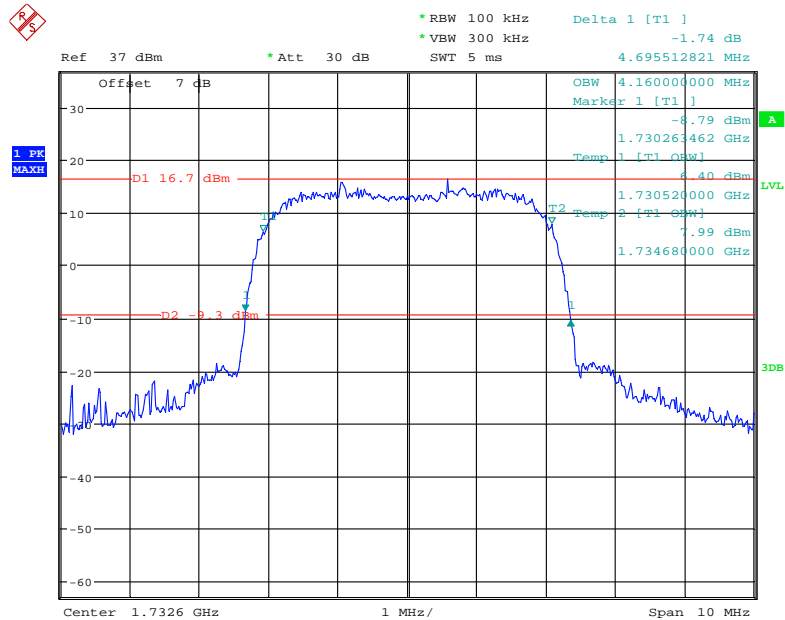
Date: 7.NOV.2021 15:42:24

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



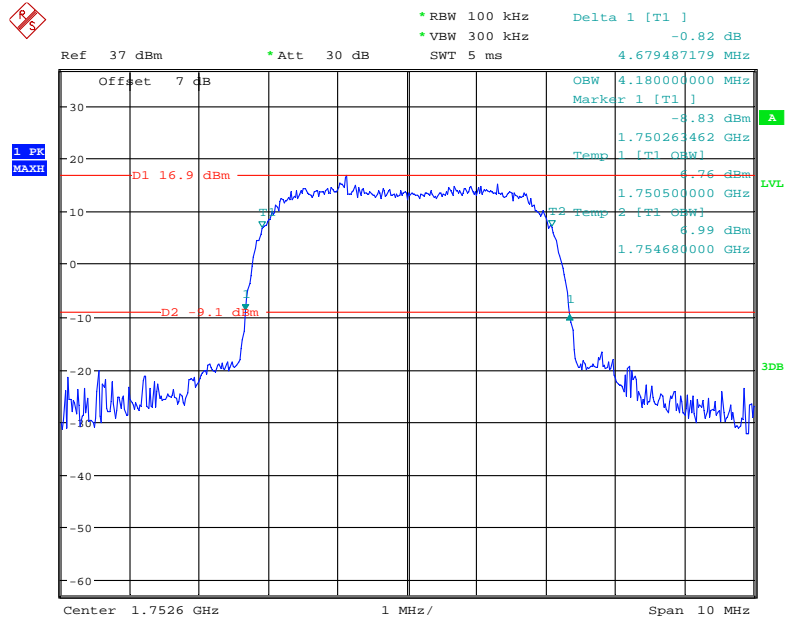
Date: 7.NOV.2021 15:23:27

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



Date: 7.NOV.2021 15:22:34

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



Date: 7.NOV.2021 15:21:42

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	1.110	1.260	1.104	1.260	1.104	1.266
	16QAM	1.116	1.260	1.098	1.260	1.104	1.260
3 MHz	QPSK	2.700	2.988	2.700	3.012	2.700	3.024
	16QAM	2.700	3.036	2.700	3.000	2.700	3.012
5 MHz	QPSK	4.540	4.980	4.520	5.020	4.520	4.980
	16QAM	4.520	5.000	4.560	5.000	4.520	5.000
10 MHz	QPSK	8.960	9.720	8.960	9.800	8.960	9.760
	16QAM	8.960	9.800	8.960	9.760	8.960	9.880
15 MHz	QPSK	13.560	15.060	13.560	14.880	13.500	15.060
	16QAM	13.560	15.120	13.620	15.000	13.620	15.120
20 MHz	QPSK	18.000	19.520	18.000	19.680	17.920	19.600
	16QAM	18.000	19.680	18.000	19.840	18.000	19.680

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	1.098	1.266	1.104	1.254	1.104	1.260
	16QAM	1.110	1.266	1.098	1.254	1.104	1.260
3 MHz	QPSK	2.700	3.000	2.700	3.012	2.700	3.012
	16QAM	2.700	3.015	2.688	3.012	2.700	3.030
5 MHz	QPSK	4.540	4.960	4.520	5.000	4.520	4.980
	16QAM	4.540	4.960	4.540	5.020	4.520	5.020
10 MHz	QPSK	8.960	9.760	8.960	9.760	8.960	9.840
	16QAM	8.960	9.640	8.960	9.840	8.960	9.840
15 MHz	QPSK	13.560	15.060	13.560	15.060	13.620	15.120
	16QAM	13.560	15.000	13.620	15.000	13.560	14.940
20 MHz	QPSK	18.000	19.520	18.000	19.680	18.000	19.840
	16QAM	17.920	19.600	18.000	19.760	18.000	19.680

LTE Band 5:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.098	1.248	1.104	1.254	1.098	1.260
	16QAM	1.110	1.260	1.098	1.254	1.104	1.260
3 MHz	QPSK	2.700	2.976	2.700	3.012	2.700	3.012
	16QAM	2.700	3.024	2.688	3.000	2.700	3.024
5 MHz	QPSK	4.520	4.980	4.500	4.980	4.520	4.940
	16QAM	4.520	4.980	4.520	5.000	4.520	5.020
10 MHz	QPSK	8.960	9.720	8.960	9.640	8.960	9.760
	16QAM	8.960	9.840	8.960	9.800	8.960	9.800

LTE Band 7

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.540	5.000	4.520	4.980	4.520	4.960
	16QAM	4.520	5.000	4.520	5.000	4.520	5.000
10 MHz	QPSK	8.960	9.680	8.960	9.800	8.960	9.720
	16QAM	8.960	9.720	9.000	9.760	8.960	9.800
15 MHz	QPSK	13.560	14.940	13.560	14.940	13.620	15.120
	16QAM	13.560	15.060	13.560	15.060	13.650	15.225
20 MHz	QPSK	18.000	19.520	18.000	19.600	18.000	19.840
	16QAM	18.000	19.680	18.000	19.760	18.000	19.760

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	4.940	4.520	5.000	4.520	5.000
	16QAM	4.500	4.940	4.520	5.000	4.540	5.020
10 MHz	QPSK	8.960	9.760	8.960	9.840	9.000	9.750
	16QAM	8.960	9.760	8.960	9.800	8.960	9.800

LTE Band 38

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	5.100	4.520	4.960	4.520	5.020
	16QAM	4.500	5.080	4.520	5.040	4.520	5.120
10 MHz	QPSK	9.000	9.760	9.000	9.800	8.960	9.760
	16QAM	8.960	9.760	8.960	9.760	8.960	9.960
15 MHz	QPSK	13.620	15.060	13.575	15.750	13.560	15.660
	16QAM	13.575	16.350	13.620	15.540	13.575	15.475
20 MHz	QPSK	18.000	19.680	18.000	19.680	18.000	19.840
	16QAM	18.000	19.520	18.000	20.000	18.000	19.520

LTE Band 41

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	4.960	4.520	5.120	4.525	5.125
	16QAM	4.525	5.175	4.520	5.160	4.520	5.080
10 MHz	QPSK	9.000	9.760	9.000	9.850	8.960	9.800
	16QAM	9.000	9.680	8.960	9.800	8.960	9.840
15 MHz	QPSK	13.560	15.180	13.575	15.375	13.500	15.360
	16QAM	13.650	15.525	13.560	15.360	13.575	15.600
20 MHz	QPSK	18.000	19.680	18.000	20.080	18.000	19.680
	16QAM	18.000	19.800	18.000	19.680	18.000	19.840

LTE Band 66:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.103	1.260	1.104	1.254	1.110	1.254
	16QAM	1.098	1.260	1.104	1.254	1.116	1.266
3 MHz	QPSK	2.700	3.000	2.700	3.000	2.700	3.024
	16QAM	2.700	3.024	2.688	3.000	2.712	3.024
5 MHz	QPSK	4.520	4.960	4.520	4.980	4.500	4.960
	16QAM	4.500	4.960	4.520	4.980	4.500	5.020
10 MHz	QPSK	8.960	9.720	8.960	9.760	9.000	9.800
	16QAM	8.960	9.800	8.960	9.800	8.960	9.800
15 MHz	QPSK	13.560	14.820	13.500	15.000	13.620	15.120
	16QAM	13.560	15.000	13.560	15.120	13.560	15.000
20 MHz	QPSK	17.920	19.520	18.000	19.600	18.080	19.920
	16QAM	18.000	19.600	18.000	19.760	18.000	19.680

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

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

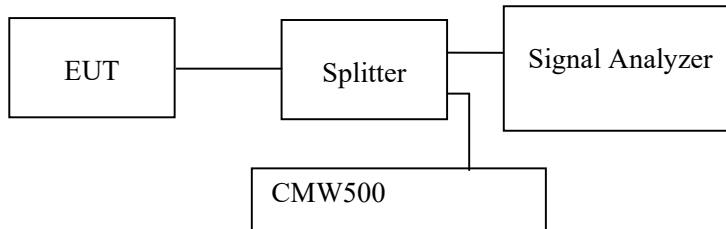
Applicable Standard

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

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

Test Procedure

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



Test Data

Environmental Conditions

Temperature:	29.1~29.2℃
Relative Humidity:	44~65 %
ATM Pressure:	101.0kPa

The testing was performed by Paul Liu on 2021-11-07.

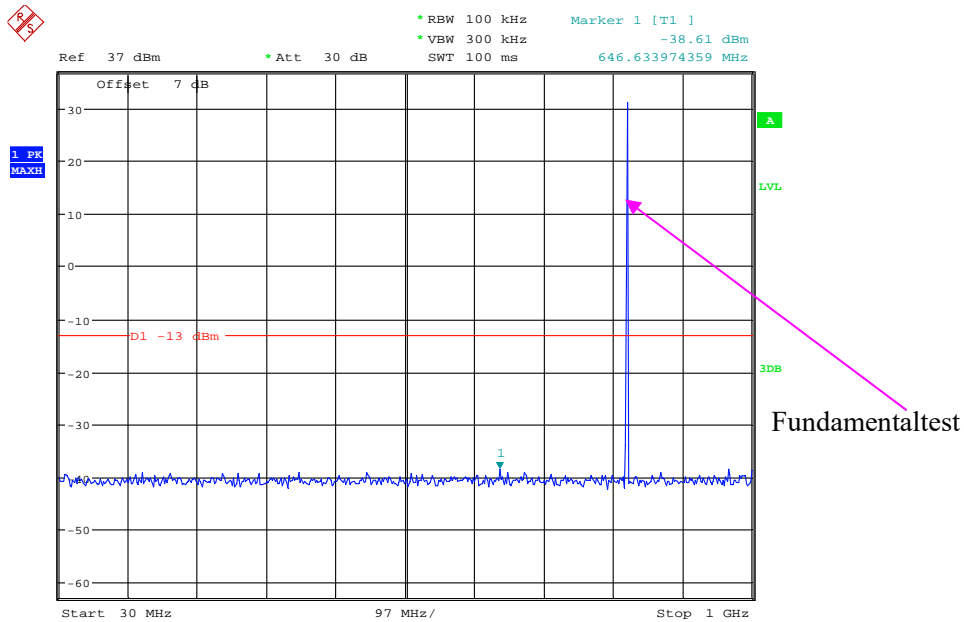
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

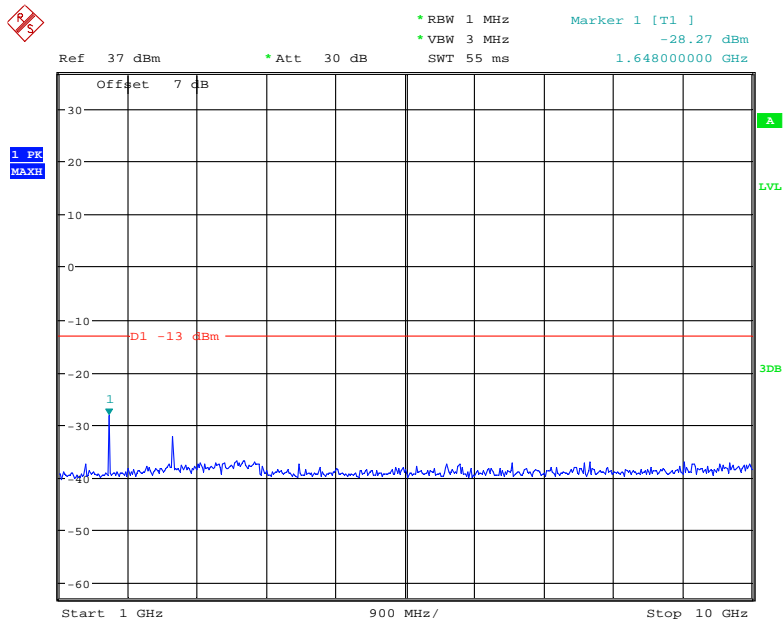
Cellular Band (Part 22H)
Low Channel:

30 MHz – 1 GHz (GSM Mode)



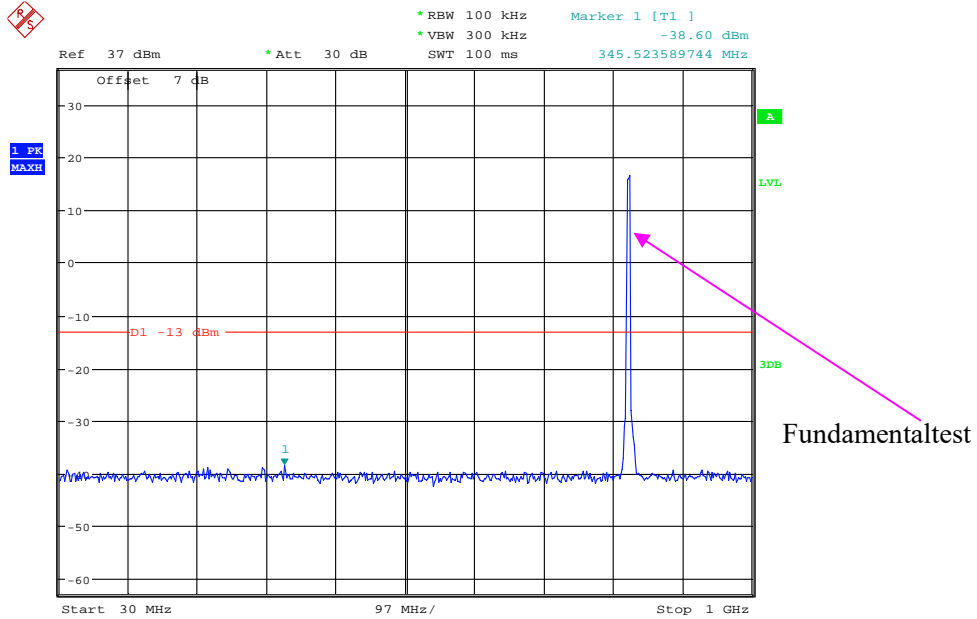
Date: 7.NOV.2021 14:10:27

1 GHz – 10 GHz (GSM Mode)



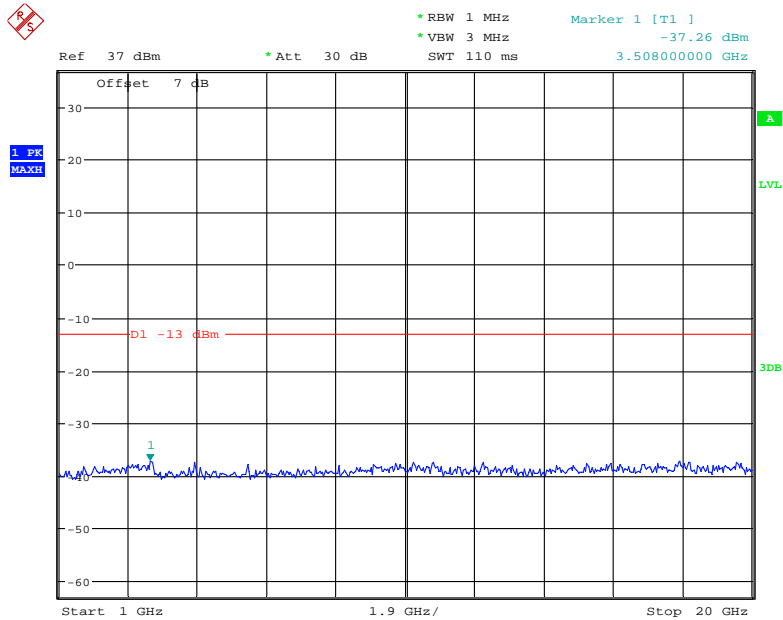
Date: 7.NOV.2021 14:13:44

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:11:54

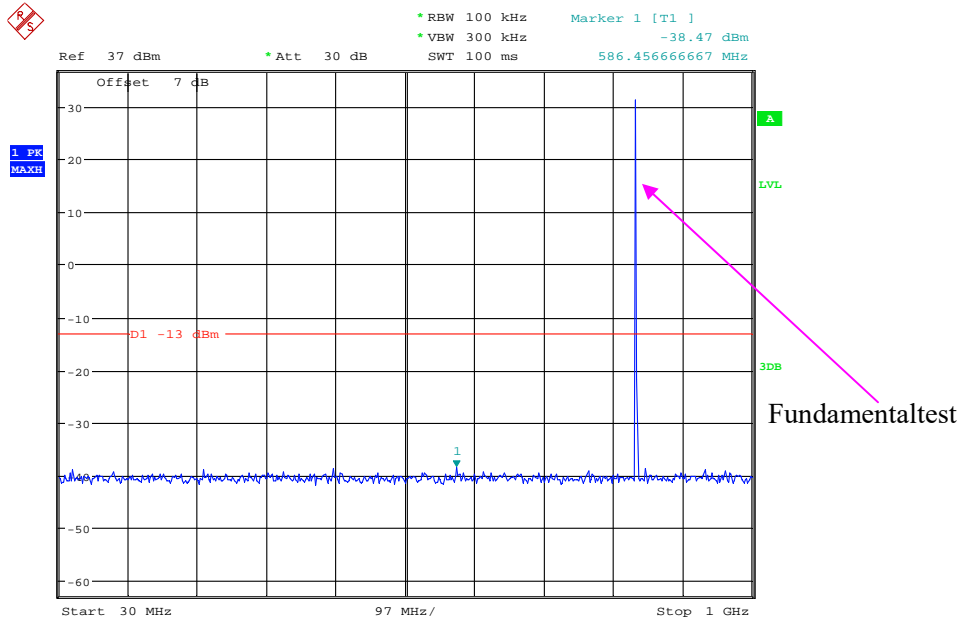
1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:13:33

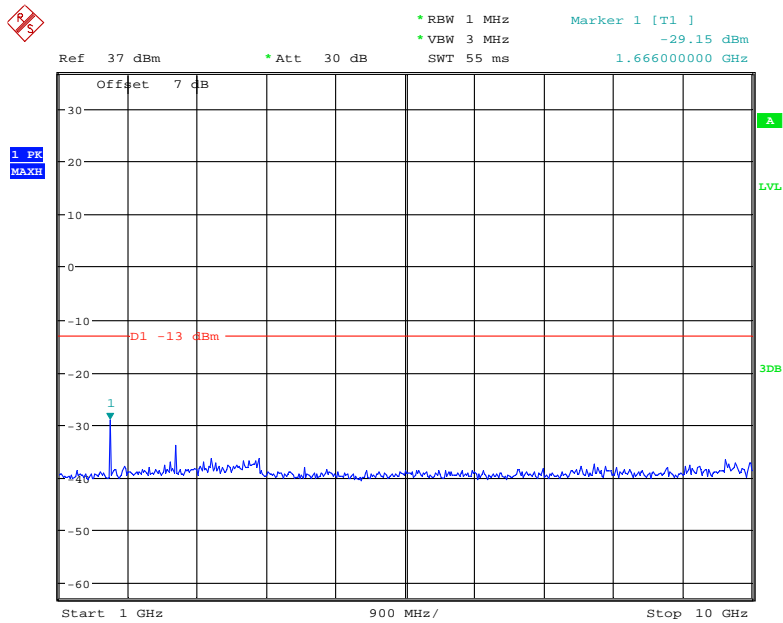
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



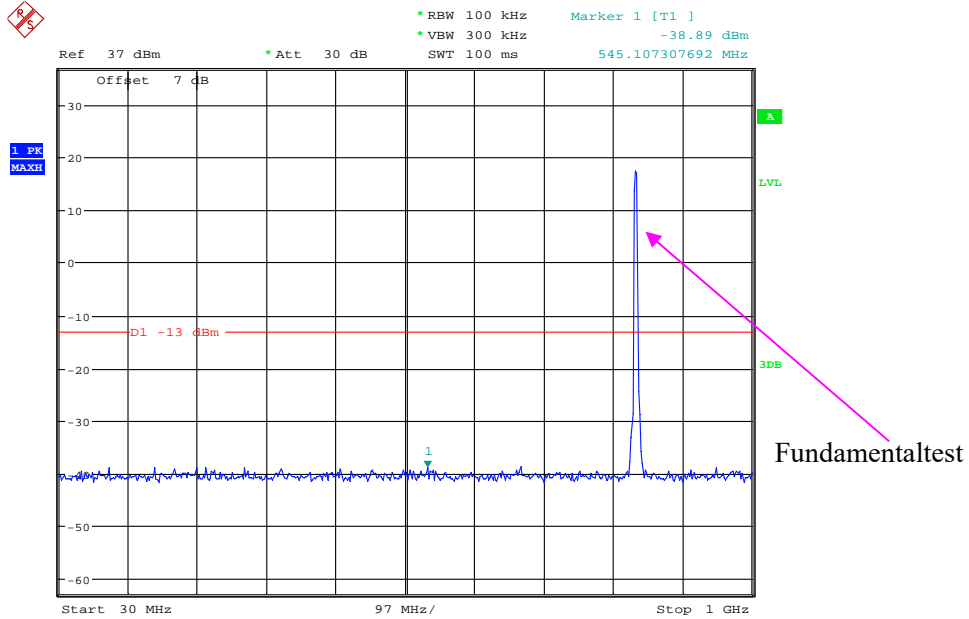
Date: 7.NOV.2021 14:11:09

1 GHz – 10 GHz (GSM Mode)



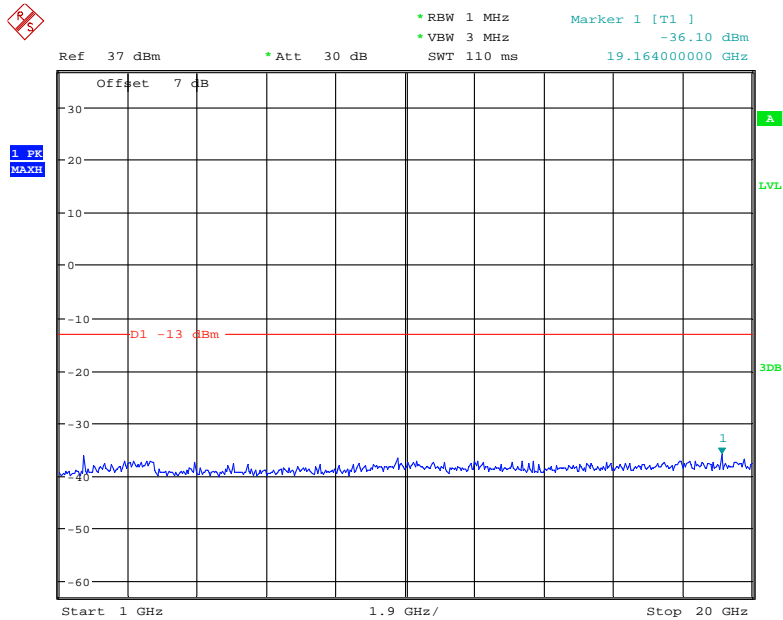
Date: 7.NOV.2021 14:13:09

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:12:28

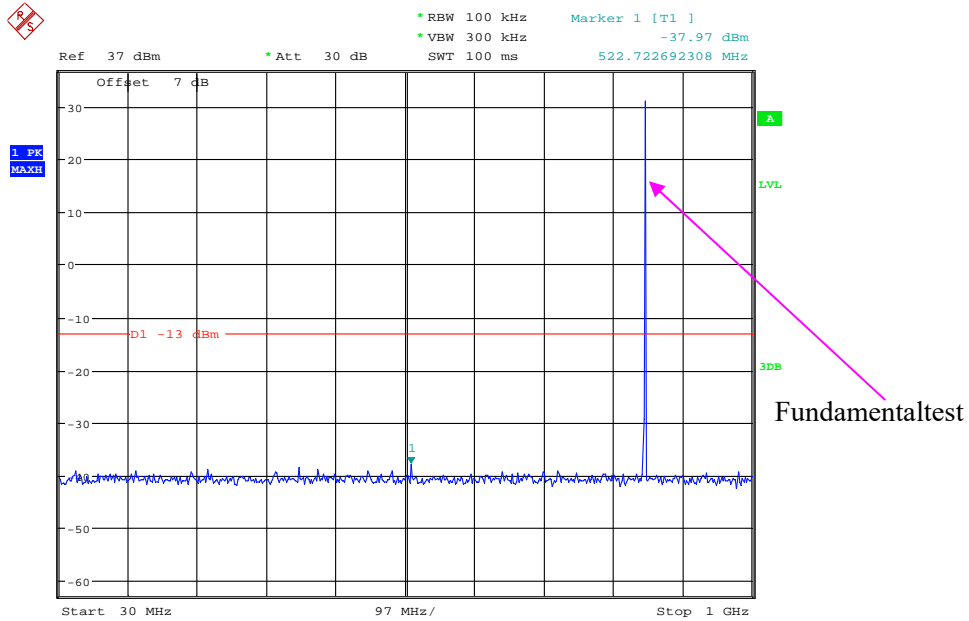
1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:13:42

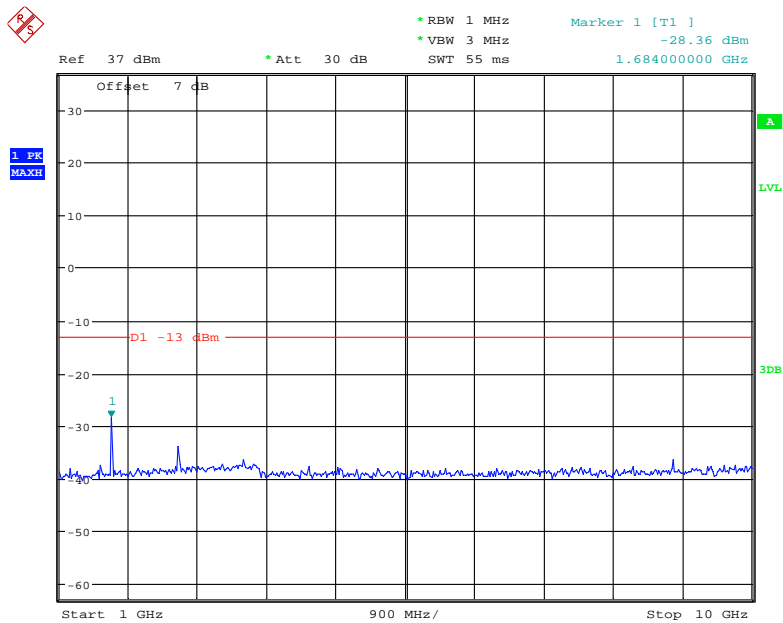
High Channel:

30 MHz – 1 GHz (GSM Mode)



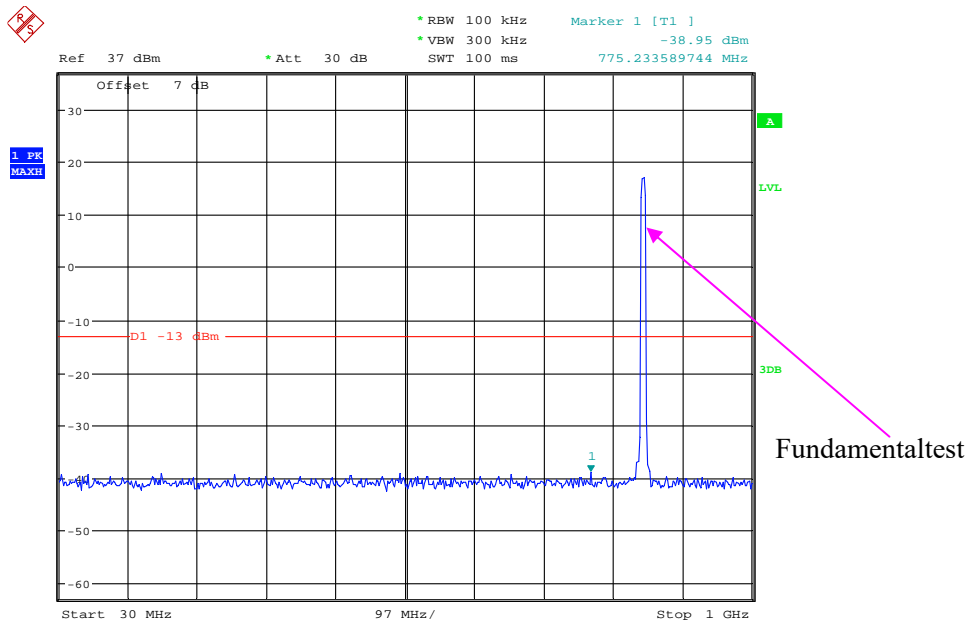
Date: 7.NOV.2021 14:11:34

1 GHz – 10 GHz (GSM Mode)



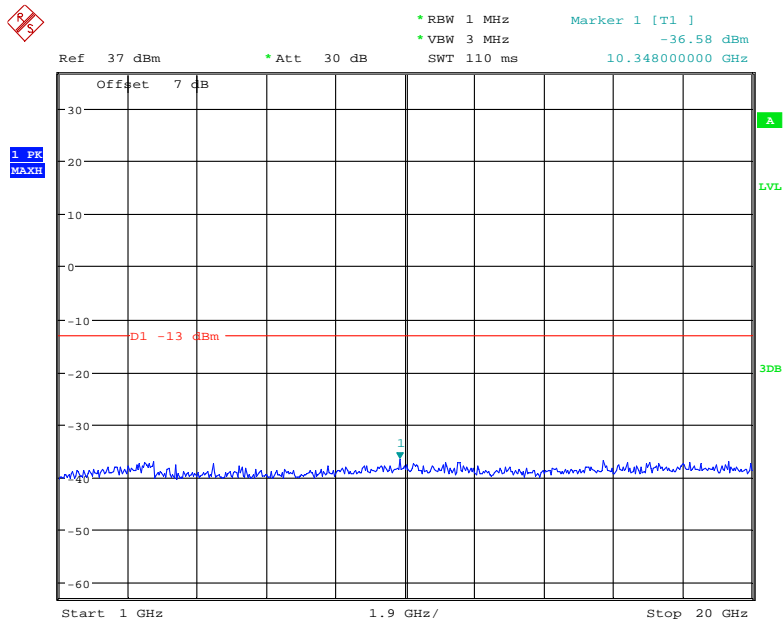
Date: 7.NOV.2021 14:12:36

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:12:50

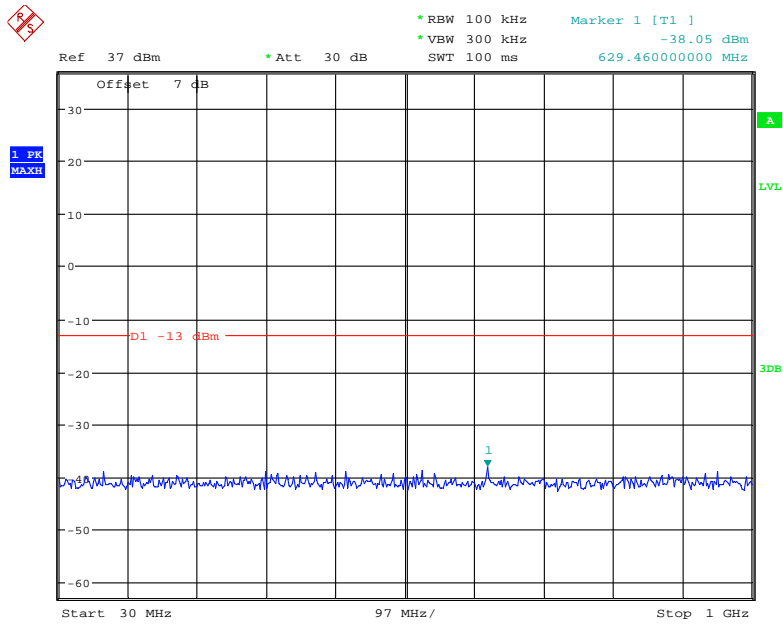
1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:13:16

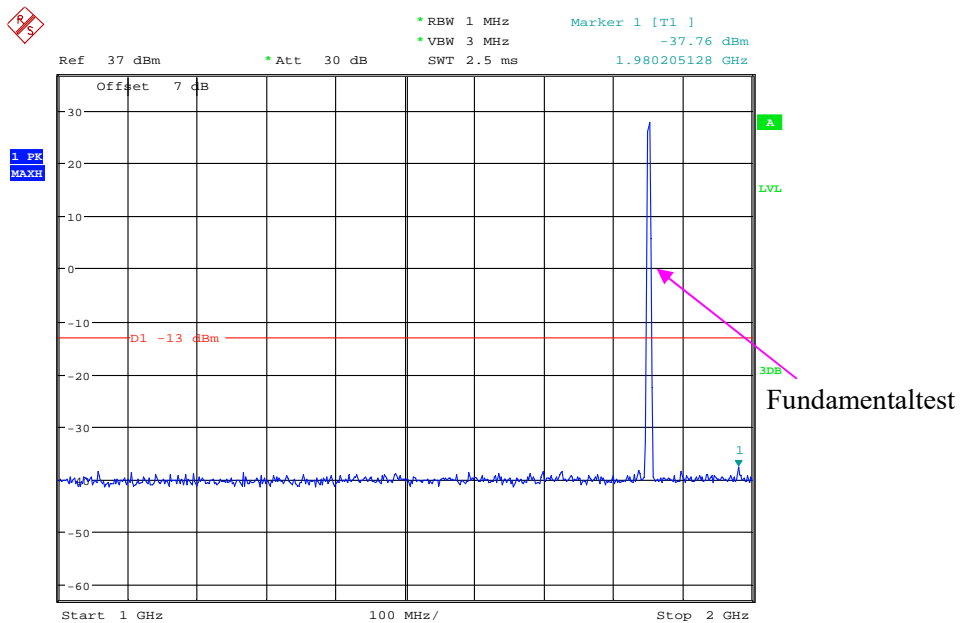
PCS Band (Part24E) Low Channel:

30 MHz – 1 GHz (GSM Mode)



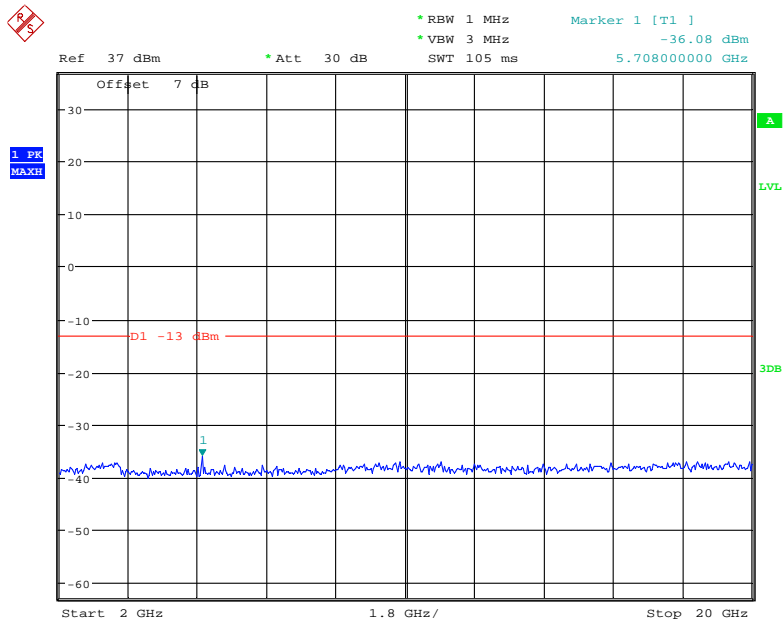
Date: 7.NOV.2021 14:18:15

1 GHz– 2 GHz (GSM Mode)



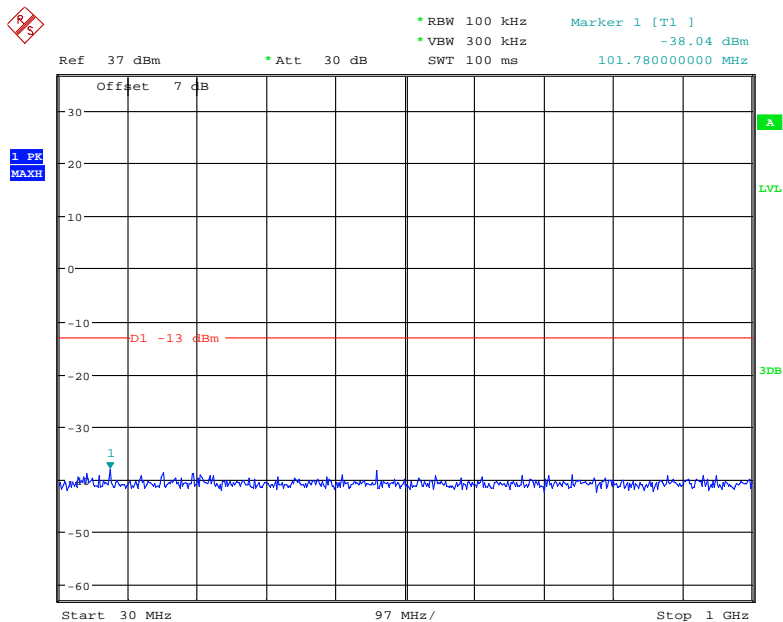
Date: 7.NOV.2021 14:16:21

2 GHz – 20 GHz (GSM Mode)



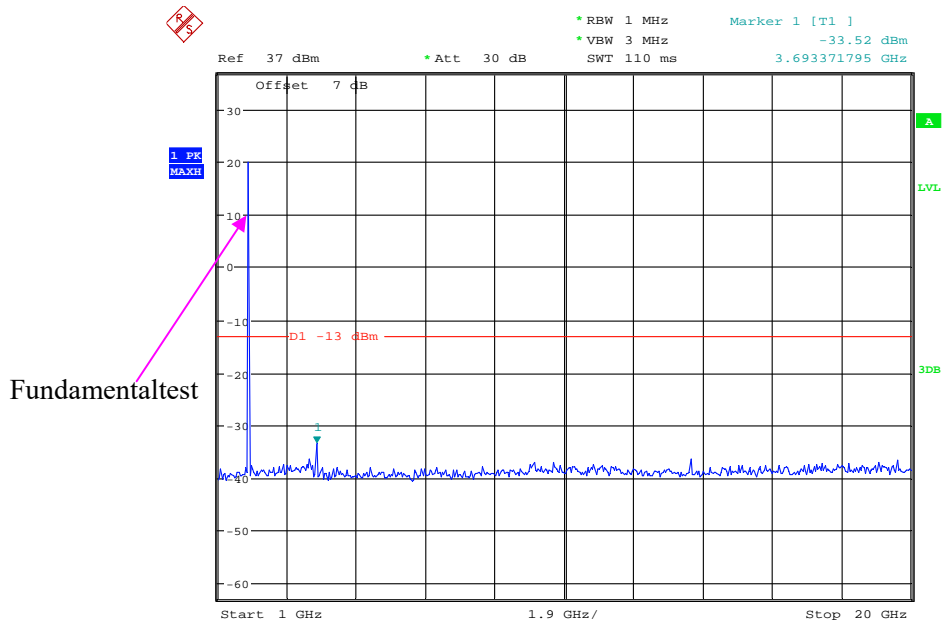
Date: 7.NOV.2021 14:17:44

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:09:50

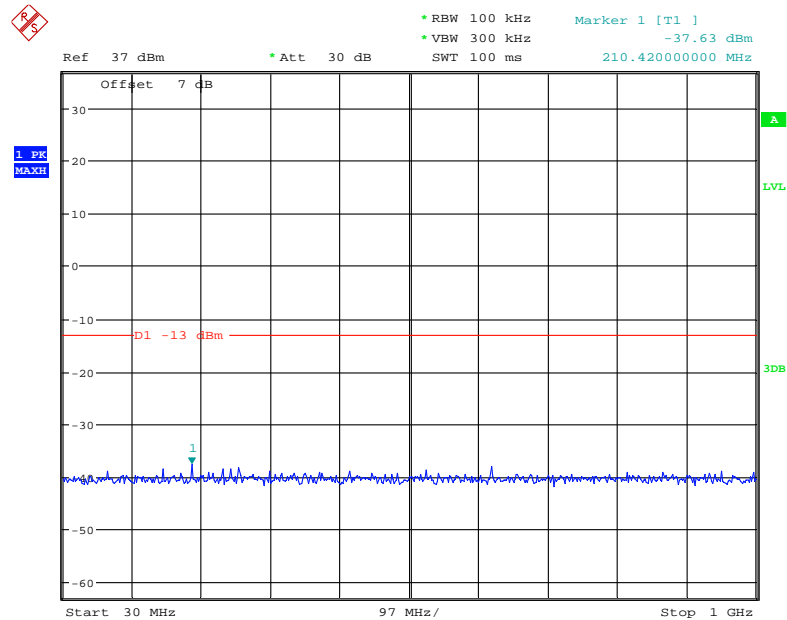
1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:15:36

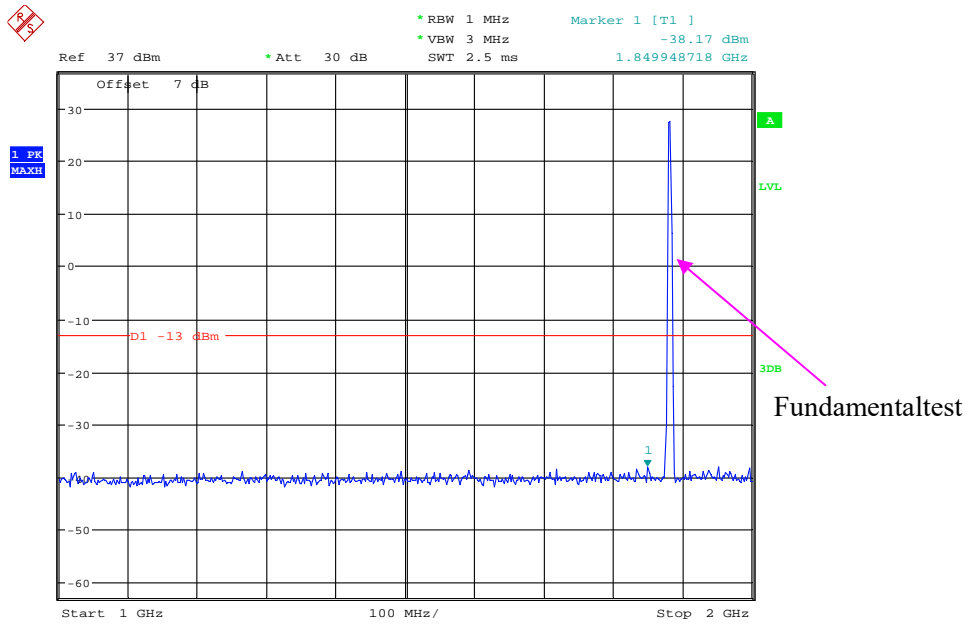
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



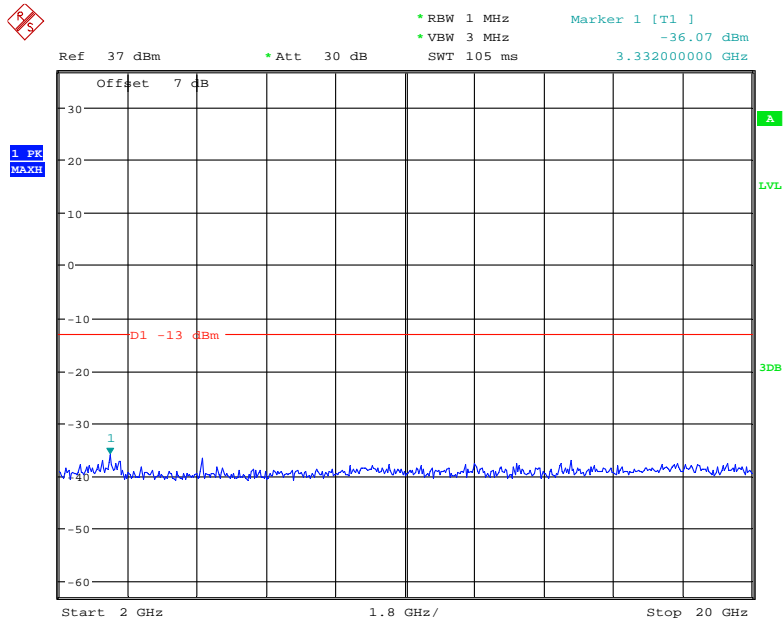
Date: 7.NOV.2021 14:18:29

1 GHz – 2 GHz (GSM Mode)



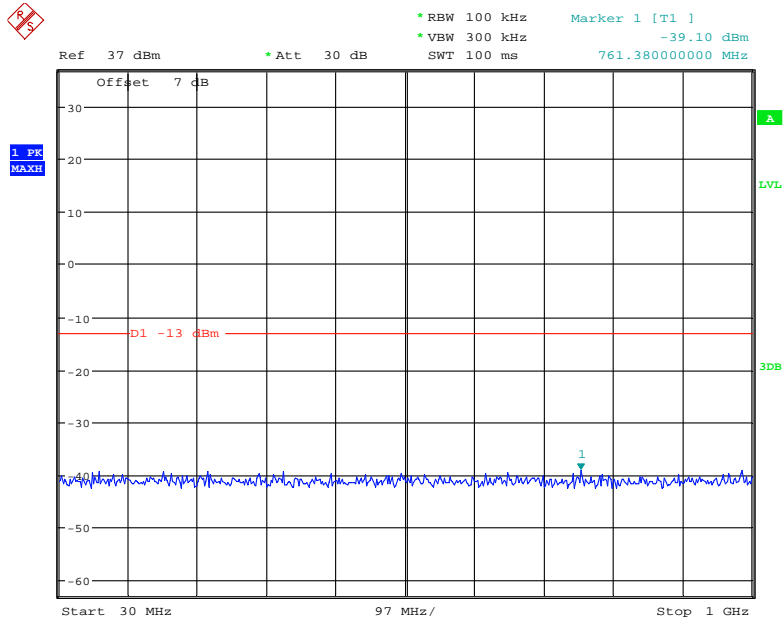
Date: 7.NOV.2021 14:16:50

2 GHz – 20 GHz (GSM Mode)



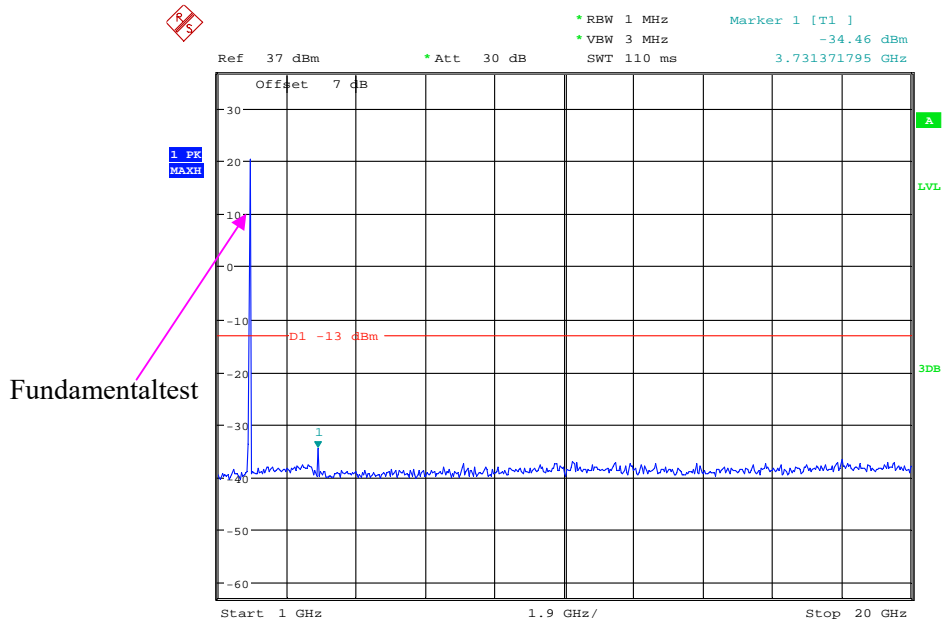
Date: 7.NOV.2021 14:17:55

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:10:13

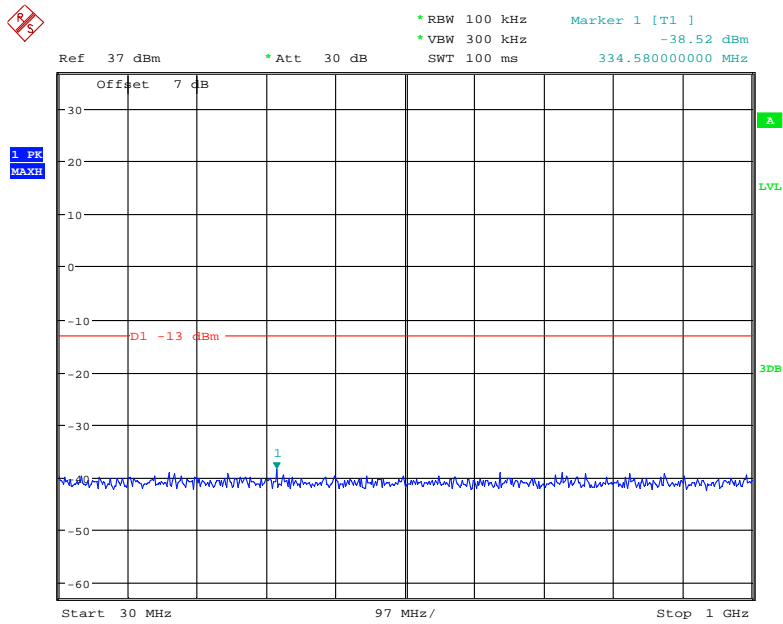
1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:16:05

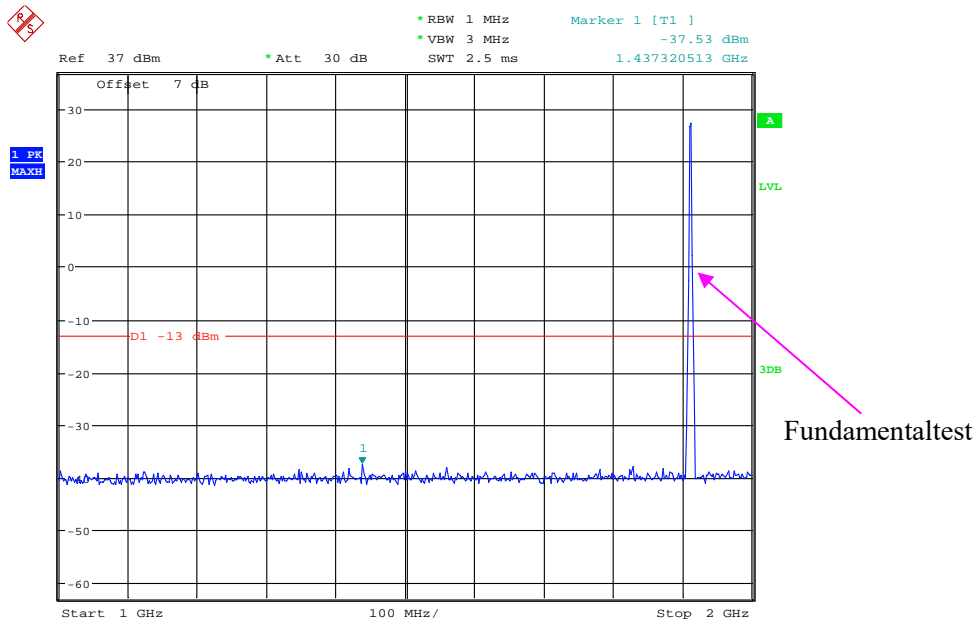
High Channel:

30 MHz – 1 GHz (GSM Mode)



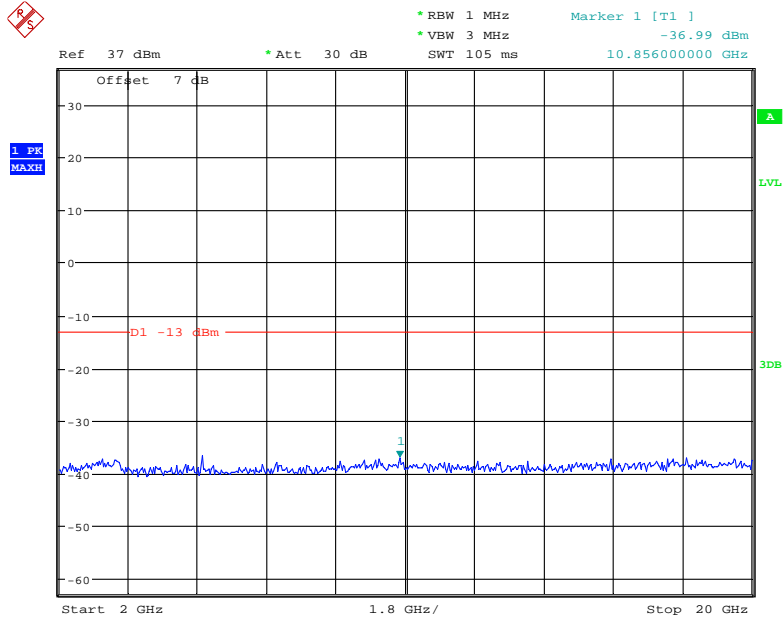
Date: 7.NOV.2021 14:18:43

1 GHz – 2 GHz (GSM Mode)



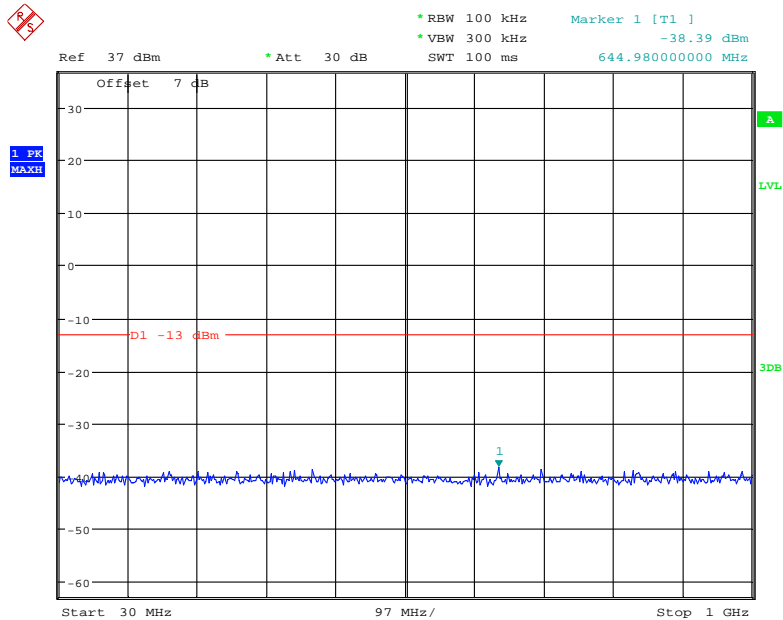
Date: 7.NOV.2021 14:17:14

2 GHz – 20 GHz (GSM Mode)



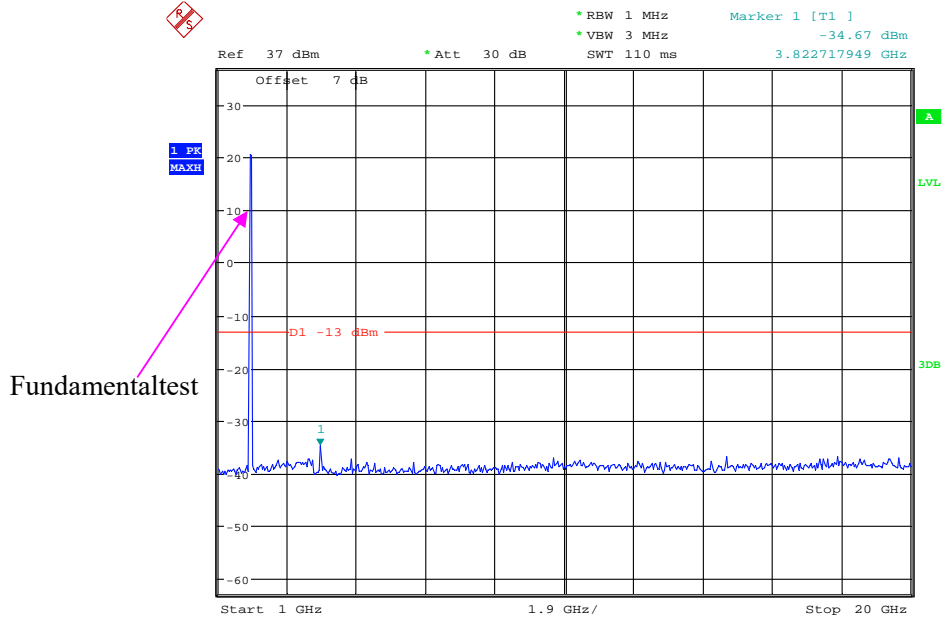
Date: 7.NOV.2021 14:17:32

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:10:22

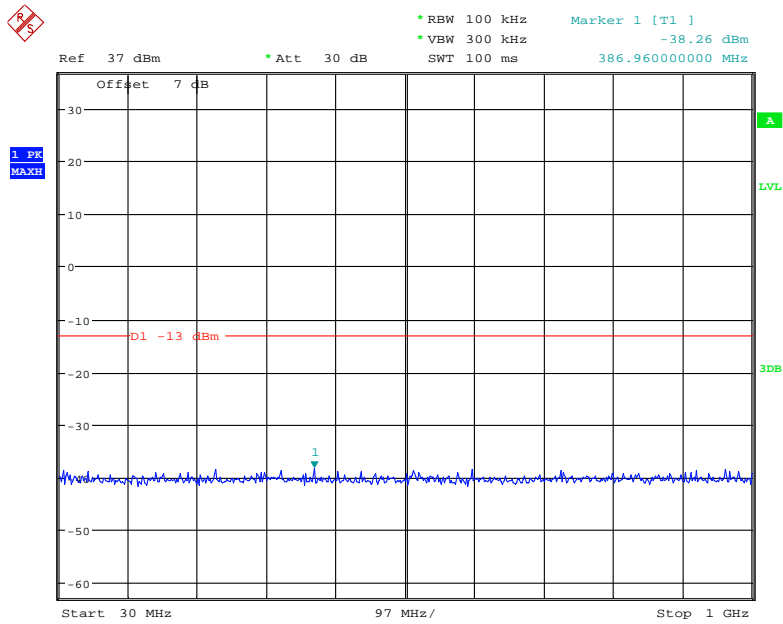
1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:16:38

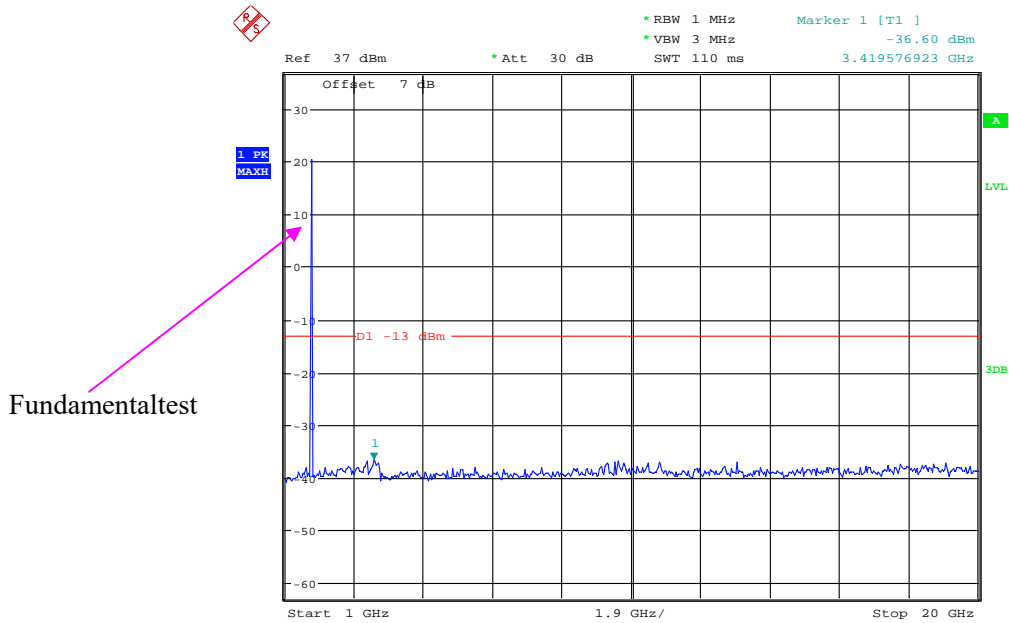
Middle Channel

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:11:09

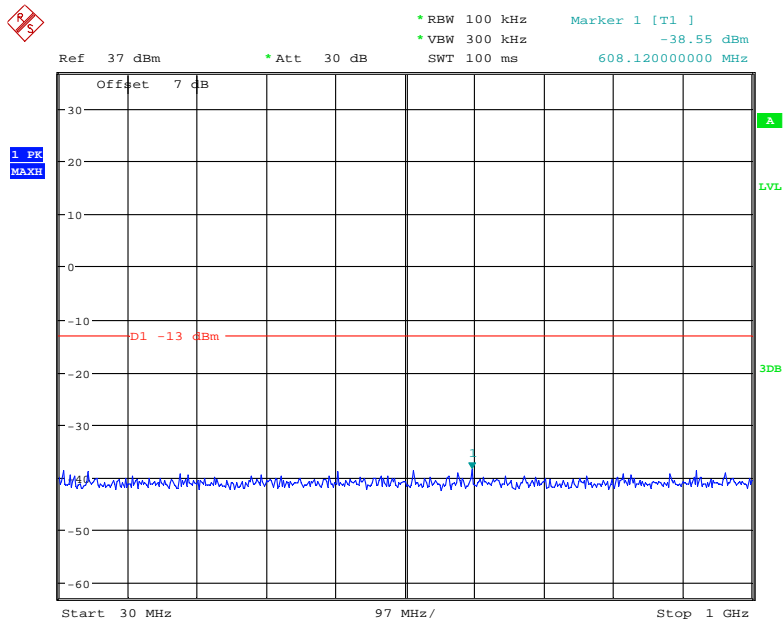
1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:14:42

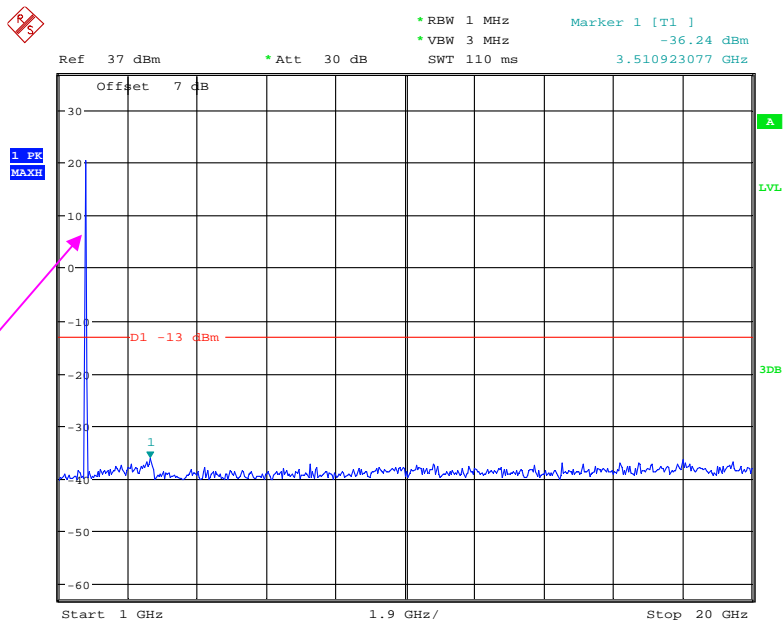
High Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:10:51

1 GHz – 20 GHz (WCDMA Mode)



Date: 7.NOV.2021 15:15:09

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 °C
Relative Humidity:	50 %
ATM Pressure:	103.0kPa

The testing was performed by Chao Moon 2021-11-06.

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

The worst case is as below:

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
GSM850									
Test frequency range: 1-10GHz									
Low Channel									
32.4059	-67.66	PK	327	2.0	H	3.12	-64.54	-13	51.54
36.3814	-53.94	PK	328	1.3	V	-3.89	-57.83	-13	44.83
2472.6	-39.32	PK	60	2.1	H	-5.11	-44.43	-13	31.43
2472.6	-44.71	PK	324	1.7	V	-5.09	-49.80	-13	36.80
Middle Channel									
46.17	-75.29	PK	268	1.7	H	3.12	-72.17	-13	59.17
46.5	-61.35	PK	61	1.7	V	-3.89	-65.24	-13	52.24
2509.5	-40.16	PK	353	1.4	H	-5.16	-45.32	-13	32.32
2509.5	-44.75	PK	116	1.8	V	-5.04	-49.79	-13	36.79
3346.4	-43.67	PK	333	2.2	H	-1.28	-44.95	-13	31.95
3346.4	-45.20	PK	254	1.5	V	-1.25	-46.45	-13	33.45
High Channel									
56.99	-64.35	PK	153	1.1	H	3.12	-61.23	-13	48.23
53.31	-62.97	PK	47	1.3	V	-3.89	-66.86	-13	53.86
2546.4	-40.50	PK	187	1.9	H	-4.76	-45.26	-13	32.26
2546.4	-42.91	PK	173	2.1	V	-4.74	-47.65	-13	34.65
DCS1900									
Test frequency range: 1-20GHz									
Low Channel									
32.4059	-63.91	PK	35	1.8	H	3.12	-60.79	-13	47.79
36.3814	-58.59	PK	93	1.6	V	-3.89	-62.48	-13	49.48
3700.4	-60.98	PK	244	1.7	H	4.72	-56.26	-13	43.26
3700.4	-60.26	PK	51	1.8	V	4.61	-55.65	-13	42.65
Middle Channel									
46.17	-73.68	PK	110	1.1	H	3.12	-70.56	-13	57.56
46.5	-61.08	PK	142	1.6	V	-3.89	-64.97	-13	51.97
3760	-61.85	PK	55	1.6	H	4.94	-56.91	-13	43.91
3760	-61.11	PK	72	1.2	V	4.85	-56.26	-13	43.26
High Channel									
56.99	-63.61	PK	107	1.3	H	3.12	-60.49	-13	47.49
53.31	-61.52	PK	252	1.8	V	-3.89	-65.41	-13	52.41
3819.6	-60.61	PK	140	2.1	H	5.25	-55.36	-13	42.36
3819.6	-61.60	PK	77	2.1	V	5.08	-56.52	-13	43.52

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
WCDMA BAND2									
Test frequency range: 1-20GHz									
Low Channel									
31.17	-60.32	PK	20	1.6	H	3.12	-57.20	-13	44.20
33.09	-55.22	PK	152	2.0	V	-3.89	-59.11	-13	46.11
3704.8	-54.96	PK	186	1.6	H	4.75	-50.21	-13	37.21
3704.8	-54.08	PK	263	1.6	V	4.62	-49.46	-13	36.46
Middle Channel									
31.17	-60.25	PK	69	1.7	H	3.12	-57.13	-13	44.13
33.09	-54.94	PK	109	1.2	V	-3.89	-58.83	-13	45.83
3760	-55.15	PK	155	1.8	H	4.94	-50.21	-13	37.21
3760	-54.69	PK	196	1.5	V	4.85	-49.84	-13	36.84
High Channel									
31.17	-60.52	PK	198	2.1	H	3.12	-57.40	-13	44.40
33.09	-55.09	PK	111	1.3	V	-3.89	-58.98	-13	45.98
3815.2	-55.54	PK	270	1.6	H	5.22	-50.32	-13	37.32
3815.2	-54.33	PK	266	1.7	V	5.05	-49.28	-13	36.28
WCDMA BAND4									
Test frequency range: 1-20GHz									
Low Channel									
31.17	-60.32	PK	233	1.1	H	3.12	-57.20	-13	44.20
33.09	-55.22	PK	357	1.4	V	-3.89	-59.11	-13	46.11
3424.8	-59.64	PK	223	1.4	H	3.39	-56.25	-13	43.25
3424.8	-59.65	PK	220	2.2	V	3.39	-56.26	-13	43.26
Middle Channel									
31.17	-60.25	PK	214	1.3	H	3.12	-57.13	-13	44.13
33.09	-54.94	PK	66	2.0	V	-3.89	-58.83	-13	45.83
3465	-59.58	PK	356	1.3	H	3.43	-56.15	-13	43.15
3465	-61.56	PK	141	1.2	V	3.43	-58.13	-13	45.13
High Channel									
31.17	-60.52	PK	242	1.5	H	3.12	-57.40	-13	44.40
33.09	-55.09	PK	310	1.5	V	-3.89	-58.98	-13	45.98
3505.2	-60.10	PK	323	1.8	H	3.5	-56.60	-13	43.60
3505.2	-61.66	PK	198	1.0	V	3.43	-58.23	-13	45.23

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
WCDMA BAND5									
Test frequency range: 1-10GHz									
Low Channel									
178.8	-54.75	PK	233	1.1	H	3.12	-51.63	-13	38.63
178.8	-51.85	PK	357	1.4	V	-3.89	-55.74	-13	42.74
1652.8	-53.80	PK	223	1.4	H	-2.32	-56.12	-13	43.12
1652.8	-54.97	PK	220	2.2	V	-2.29	-57.26	-13	44.26
Middle Channel									
178.8	-54.62	PK	214	1.3	H	3.12	-51.50	-13	38.50
178.8	-48.72	PK	66	2.0	V	-3.89	-52.61	-13	39.61
1673.2	-53.92	PK	356	1.3	H	-2.34	-56.26	-13	43.26
1673.2	-56.34	PK	141	1.2	V	-2.31	-58.65	-13	45.65
High Channel									
178.8	-53.75	PK	242	1.5	H	3.12	-50.63	-13	37.63
178.8	-51.08	PK	310	1.5	V	-3.89	-54.97	-13	41.97
1693.2	-54.90	PK	323	1.8	H	-2.38	-57.28	-13	44.28
1693.2	-55.42	PK	198	1.0	V	-2.34	-57.76	-13	44.76

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

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
BAND2									
Test frequency range: 1-20GHz									
1.4MHz, Low Channel									
178.8	-54.64	PK	296	1.3	H	3.12	-51.52	-13	38.52
178.8	-52.73	PK	155	1.3	V	-3.89	-56.62	-13	43.62
3701.4	-57.06	PK	346	1.2	H	4.72	-52.34	-13	39.34
3701.4	-57.87	PK	92	1.5	V	4.61	-53.26	-13	40.26
1.4MHz, Middle Channel									
178.7	-55.06	PK	143	2.1	H	3.12	-51.94	-13	38.94
178.7	-52.32	PK	149	1.6	V	-3.89	-56.21	-13	43.21
3760	-57.31	PK	195	1.9	H	4.94	-52.37	-13	39.37
3760	-58.23	PK	209	1.0	V	4.85	-53.38	-13	40.38
1.4MHz, High Channel									
178.8	-55.83	PK	174	2.2	H	3.12	-52.71	-13	39.71
178.8	-53.39	PK	157	1.9	V	-3.89	-57.28	-13	44.28
3818.6	-57.63	PK	270	1.3	H	5.25	-52.38	-13	39.38
3818.6	-58.66	PK	317	1.8	V	5.08	-53.58	-13	40.58

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
BAND4									
Test frequency range: 1-20GHz									
1.4MHz, Low Channel									
178.7	-53.75	PK	286	1.0	H	3.12	-50.63	-13	37.63
178.7	-51.82	PK	173	1.7	V	-3.89	-55.71	-13	42.71
3421.4	-59.98	PK	216	1.9	H	2.72	-57.26	-13	44.26
3421.4	-60.12	PK	292	1.6	V	2.59	-57.53	-13	44.53
1.4MHz,Middle Channel									
178.8	-54.66	PK	221	2.0	H	3.12	-51.54	-13	38.54
178.8	-52.08	PK	334	1.5	V	-3.89	-55.97	-13	42.97
3465	-60.28	PK	328	1.3	H	3.09	-57.19	-13	44.19
3465	-60.60	PK	49	1.0	V	2.97	-57.63	-13	44.63
1.4MHz,High Channel									
178.8	-55.62	PK	356	1.6	H	3.12	-52.50	-13	39.50
178.8	-51.85	PK	199	1.3	V	-3.89	-55.74	-13	42.74
3508.6	-60.80	PK	30	1.0	H	3.44	-57.36	-13	44.36
3508.6	-60.63	PK	114	1.6	V	3.31	-57.32	-13	44.32
BAND5									
Test frequency range: 1-10GHz									
1.4MHz, Low Channel									
178.7	-54.25	PK	13	1.7	H	3.12	-51.13	-13	38.13
178.7	-52.92	PK	45	1.1	V	-3.89	-56.81	-13	43.81
1649.4	-58.83	PK	286	1.2	H	-2.79	-61.62	-13	48.62
1649.4	-62.63	PK	181	1.6	V	-2.73	-65.36	-13	52.36
1.4MHz, Middle Channel									
178.8	-60.52	PK	183	1.5	H	3.12	-57.40	-13	44.40
178.8	-54.95	PK	118	1.2	V	-3.89	-58.84	-13	45.84
1673	-58.78	PK	296	1.4	H	-2.74	-61.52	-13	48.52
1673	-62.61	PK	291	1.2	V	-2.69	-65.30	-13	52.30
1.4MHz, High Channel									
178.7	-60.39	PK	9	1.9	H	3.12	-57.27	-13	44.27
178.7	-55.14	PK	194	1.8	V	-3.89	-59.03	-13	46.03
1696.6	-58.92	PK	263	1.1	H	-2.7	-61.62	-13	48.62
1696.6	-62.83	PK	248	2.0	V	-2.65	-65.48	-13	52.48

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
BAND7									
Test frequency range: 1-26.5GHz									
5MHz, Low Channel									
178.8	-53.75	PK	340	1.7	H	3.12	-50.63	-25	25.63
178.8	-51.52	PK	30	2.1	V	-3.89	-55.41	-25	30.41
5005	-60.80	PK	7	1.2	H	8.82	-51.98	-25	26.98
5005	-68.18	PK	121	1.9	V	8.53	-59.65	-25	34.65
5MHz, Middle Channel									
178.8	-52.24	PK	336	1.6	H	3.12	-49.12	-25	24.12
178.8	-47.43	PK	80	2.0	V	-3.89	-51.32	-25	26.32
5070	-60.96	PK	187	1.8	H	9.18	-51.78	-25	26.78
5070	-68.25	PK	321	1.3	V	8.56	-59.69	-25	34.69
5MHz, High Channel									
178.7	-51.58	PK	290	2.1	H	3.12	-48.46	-25	23.46
178.7	-47.95	PK	44	1.9	V	-3.89	-51.84	-25	26.84
5135	-61.23	PK	95	2.2	H	9.47	-51.76	-25	26.76
5135	-68.21	PK	25	2.1	V	8.65	-59.56	-25	34.56
BAND17									
Test frequency range: 1-10GHz									
5MHz, Low Channel									
178.8	-53.54	PK	76	2.2	H	3.12	-50.42	-13	37.42
178.8	-51.61	PK	181	1.3	V	-3.89	-55.50	-13	42.50
1413	-58.56	PK	263	1.7	H	-0.65	-59.21	-13	46.21
1413	-60.25	PK	303	2.0	V	-0.87	-61.12	-13	48.12
5MHz, Middle Channel									
178.9	-52.25	PK	89	1.6	H	3.12	-49.13	-13	36.13
178.9	-49.64	PK	304	1.6	V	-3.89	-53.53	-13	40.53
1420	-59.19	PK	339	1.6	H	-0.67	-59.86	-13	46.86
1420	-60.22	PK	251	1.1	V	-0.91	-61.13	-13	48.13
5MHz, High Channel									
178.8	-51.29	PK	256	1.3	H	3.12	-48.17	-13	35.17
178.8	-50.80	PK	278	1.4	V	-3.89	-54.69	-13	41.69
1427	-58.77	PK	195	1.7	H	-0.71	-59.48	-13	46.48
1427	-60.29	PK	120	1.2	V	-0.94	-61.23	-13	48.23

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
BAND 38									
Test frequency range: 1-26.5GHz									
5MHz, Low Channel									
31.17	-59.50	PK	95	1.2	H	3.12	-56.38	-25	31.38
33.09	-53.36	PK	57	2.0	V	-3.89	-57.25	-25	32.25
5145	-62.80	PK	4	1.1	H	9.64	-53.16	-25	28.16
5145	-65.89	PK	252	1.3	V	8.71	-57.18	-25	32.18
5MHz, Middle Channel									
31.17	-59.43	PK	330	1.4	H	3.12	-56.31	-25	31.31
33.09	-53.26	PK	258	1.1	V	-3.89	-57.15	-25	32.15
5190	-63.50	PK	170	2.2	H	9.75	-53.75	-25	28.75
5190	-66.32	PK	220	1.9	V	8.73	-57.59	-25	32.59
5MHz, High Channel									
31.17	-58.57	PK	79	1.1	H	3.12	-55.45	-25	30.45
33.09	-52.99	PK	223	2.0	V	-3.89	-56.88	-25	31.88
5235	-62.97	PK	339	2.1	H	9.83	-53.14	-25	28.14
5235	-66.07	PK	162	2.0	V	8.91	-57.16	-25	32.16
BAND 41									
Test frequency range: 1-26.5GHz									
5MHz, Low Channel									
31.17	-54.52	PK	33	1.5	H	3.12	-51.40	-25	26.40
33.09	-48.13	PK	157	2.2	V	-3.89	-52.02	-25	27.02
5075	-63.97	PK	303	2.0	H	9.5	-54.47	-25	29.47
5075	-65.05	PK	223	2.0	V	9.5	-55.55	-25	30.55
5MHz, Middle Channel									
31.17	-52.11	PK	83	1.1	H	3.12	-48.99	-25	23.99
33.09	-46.91	PK	247	1.8	V	-3.89	-50.80	-25	25.80
5190	-63.77	PK	253	1.8	H	9.81	-53.96	-25	28.96
5190	-66.04	PK	126	1.4	V	9.81	-56.23	-25	31.23
5MHz, High Channel									
31.17	-52.32	PK	358	1.1	H	3.12	-49.20	-25	24.20
33.09	-47.25	PK	192	1.5	V	-3.89	-51.14	-25	26.14
5305	-65.78	PK	69	1.7	H	10.11	-55.67	-25	30.67
5305	-66.78	PK	142	1.1	V	10.11	-56.67	-25	31.67

Frequency (MHz)	Receiver		Turntable Angle Degree	Rx Antenna		Substituted Factor (dB/m)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
	Reading (dBm)	PK/Ave		Height (m)	Polar (H/V)				
BAND66									
Test frequency range: 1-20GHz									
1.4MHz, Low Channel									
31.17	-41.75	PK	299	1.8	H	3.12	-38.63	-13	25.63
33.09	-35.98	PK	102	1.8	V	-3.89	-39.87	-13	26.87
3241.4	-45.38	PK	6	1.1	H	2.72	-42.66	-13	29.66
3241.4	-47.05	PK	112	1.2	V	2.61	-44.44	-13	31.44
1.4MHz,Middle Channel									
31.17	-41.29	PK	224	1.9	H	3.12	-38.17	-13	25.17
33.09	-35.62	PK	107	1.4	V	-3.89	-39.51	-13	26.51
3490	-46.40	PK	195	2.1	H	3.52	-42.88	-13	29.88
3490	-47.71	PK	313	2.0	V	3.46	-44.25	-13	31.25
1.4MHz,High Channel									
31.17	-41.54	PK	52	2.0	H	3.12	-38.42	-13	25.42
33.09	-35.44	PK	323	1.6	V	-3.89	-39.33	-13	26.33
3558.6	-46.18	PK	109	1.3	H	3.87	-42.31	-13	29.31
3558.6	-48.23	PK	297	2.0	V	3.8	-44.43	-13	31.43

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 (c)(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 (c), For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside the licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, in accordance with the following:

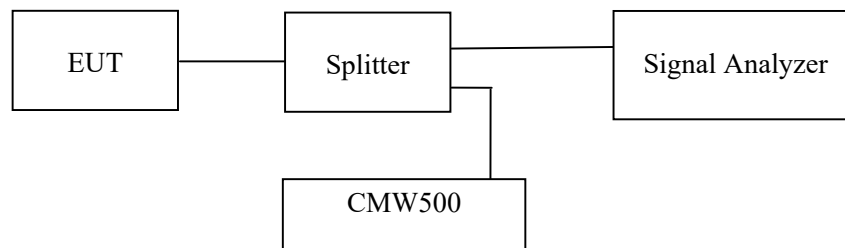
- (1) On any frequency outside the 746-758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least $43 + 10 \log (P)$ dB;
- (3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $76 + 10 \log (P)$ dB in a 6.25 kHz band segment, for base and fixed stations;
- (4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than $65 + 10 \log (P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;

According to FCC §27.53 (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



Test Data**Environmental Conditions**

Temperature:	29.1~29.2℃
Relative Humidity:	44~65 %
ATM Pressure:	101.0kPa

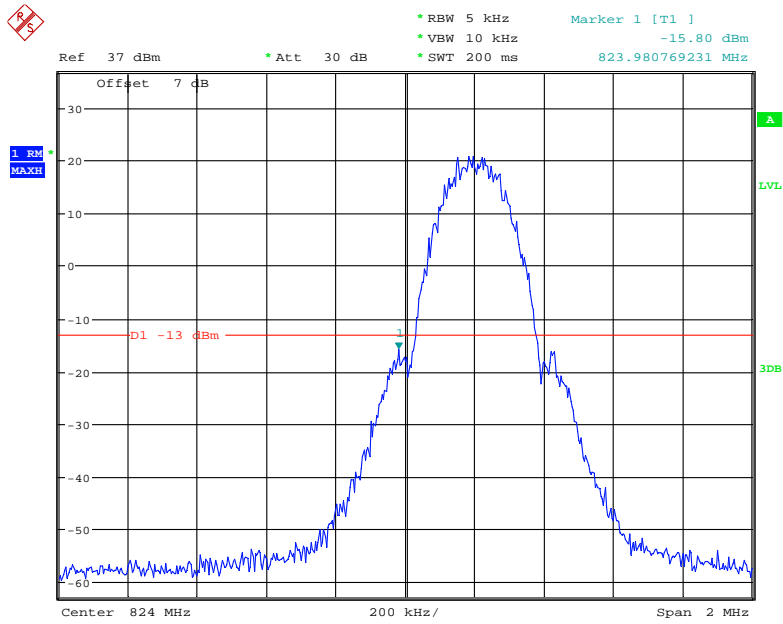
The testing was performed by Paul Liu from 2021-11-07 to 2021-11-13.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

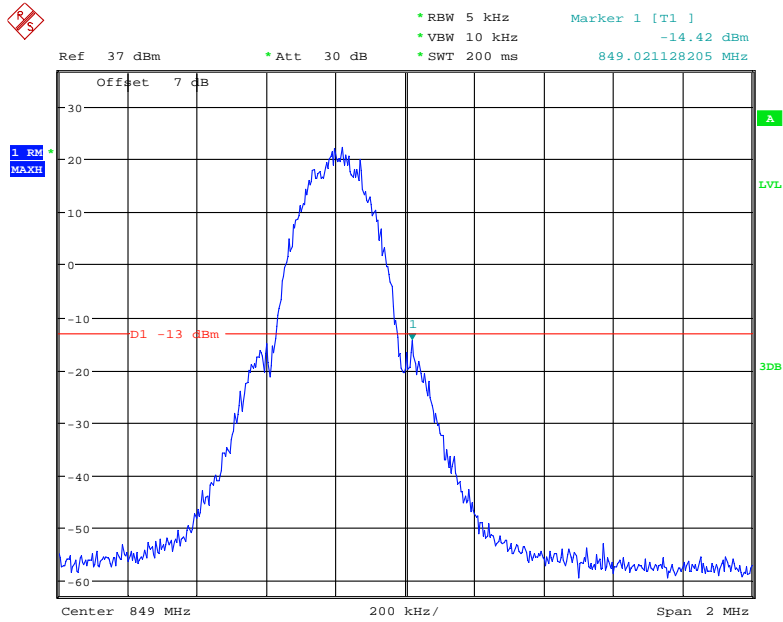
Please refer to the following plots.

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



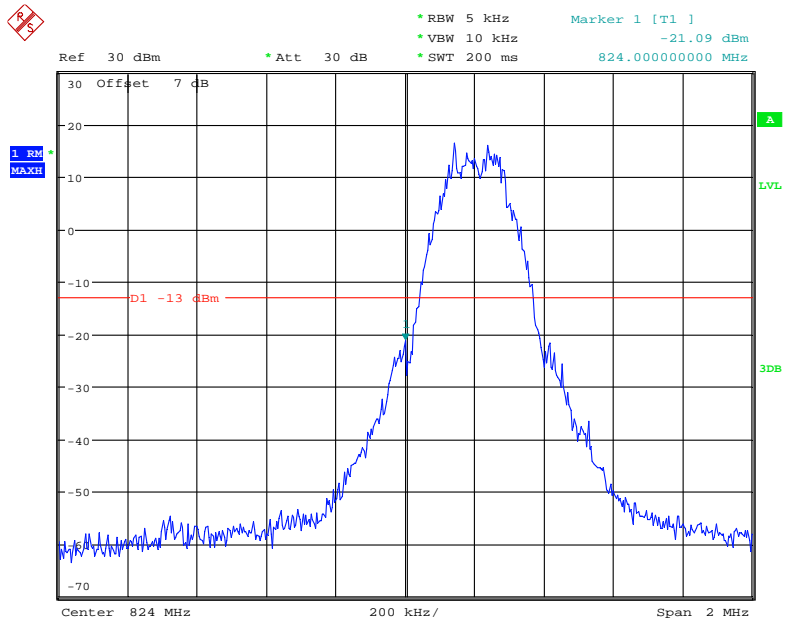
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Cellular Band, Right Band Edge for GSM (GMSK) Mode



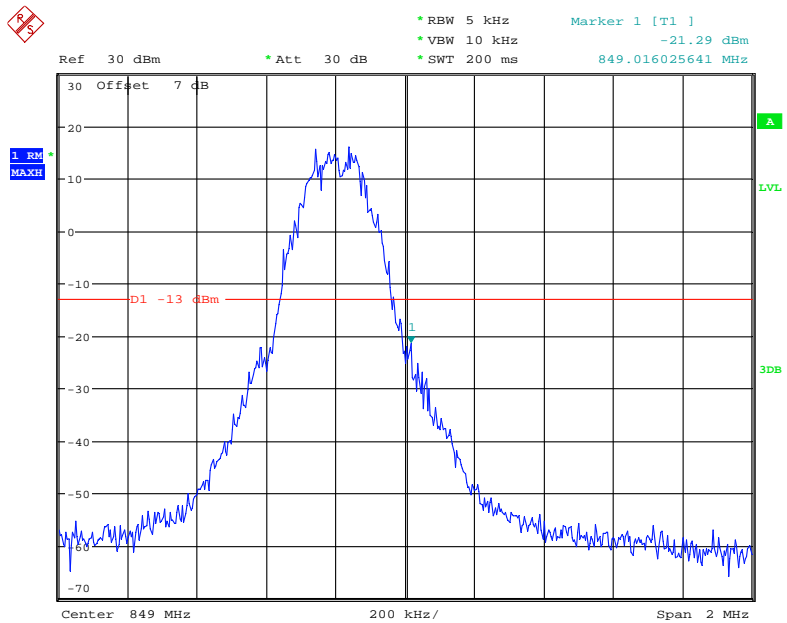
Date: 7.NOV.2021 14:08:35

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



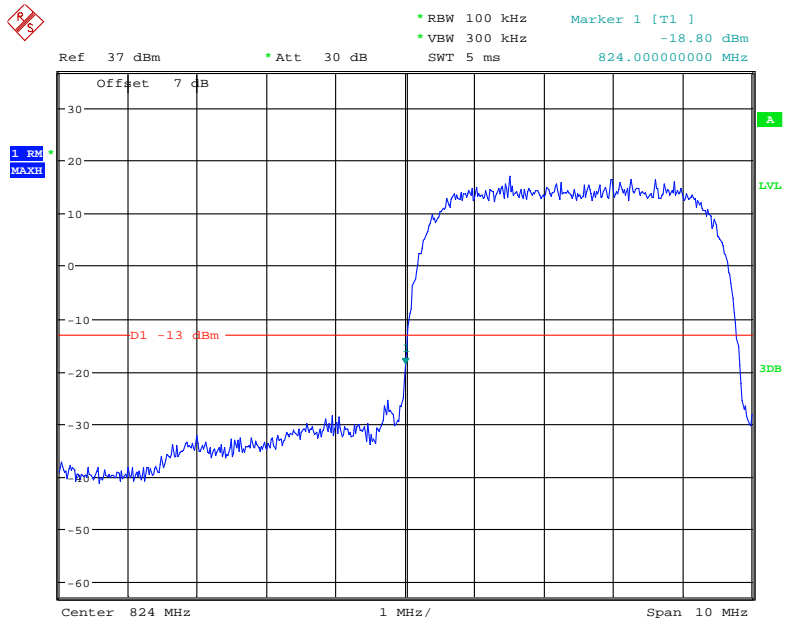
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Cellular Band, Right Band Edge for EGPRS (8PSK) Mode



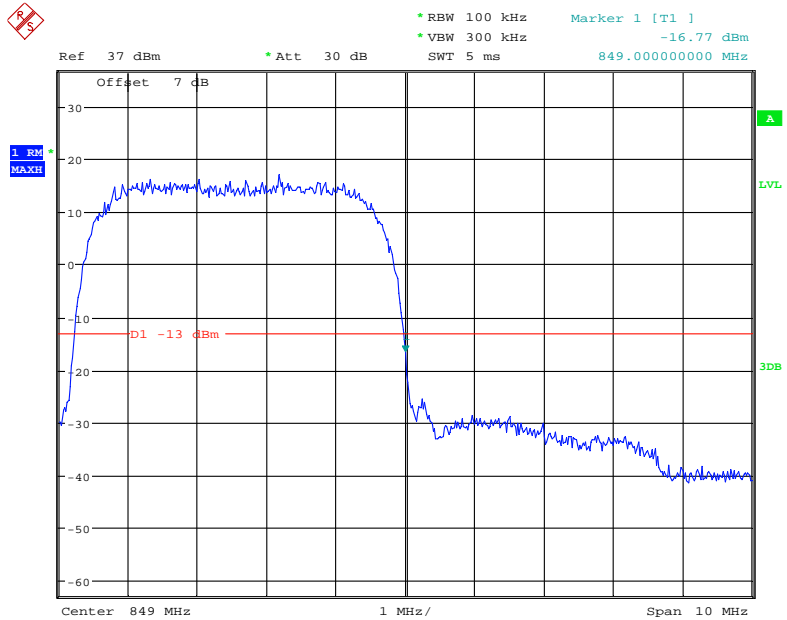
Date: 7.NOV.2021 14:53:06

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



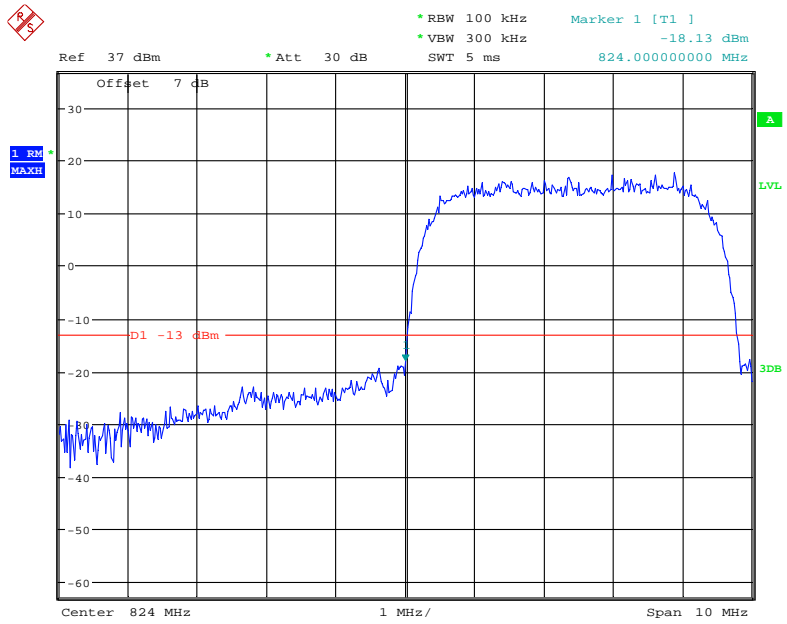
Date: 7.NOV.2021 15:06:16

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



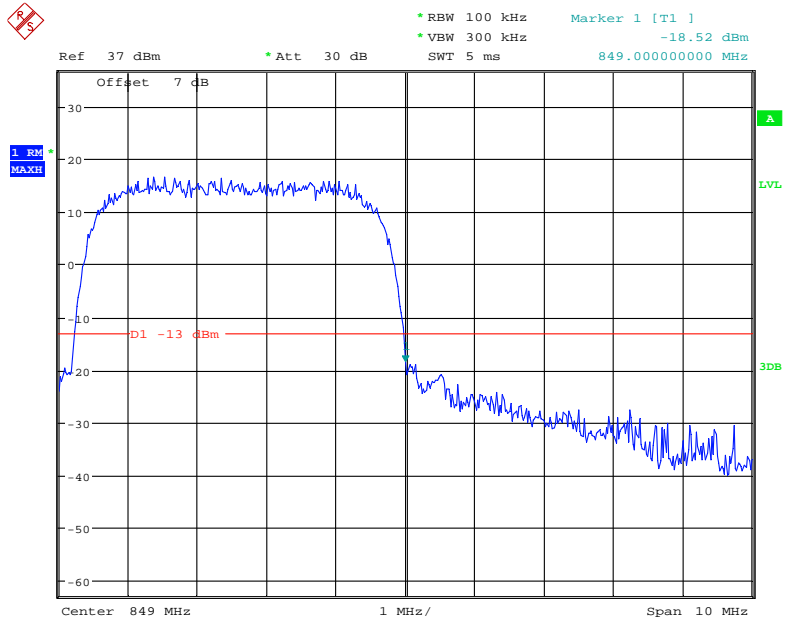
Date: 7.NOV.2021 15:05:41

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



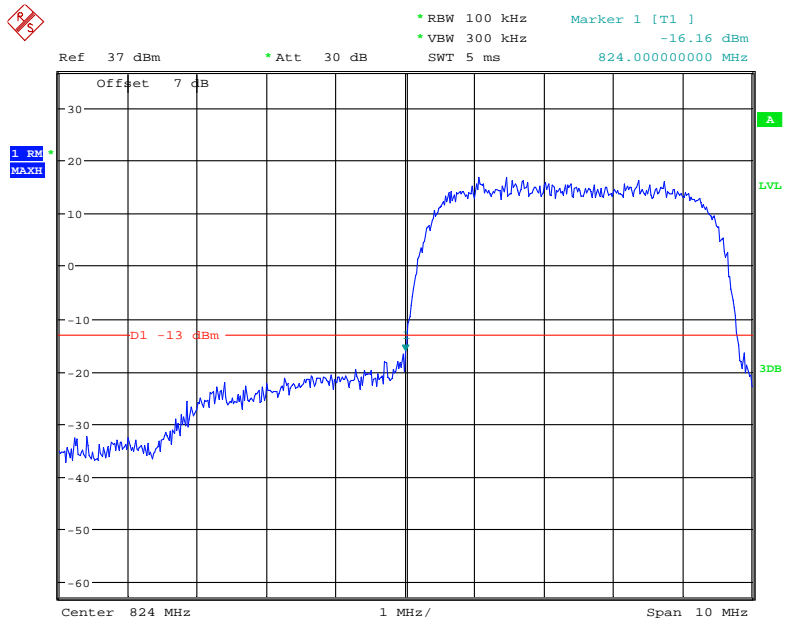
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Cellular Band, Right Band Edge for HSDPA (16QAM) Mode



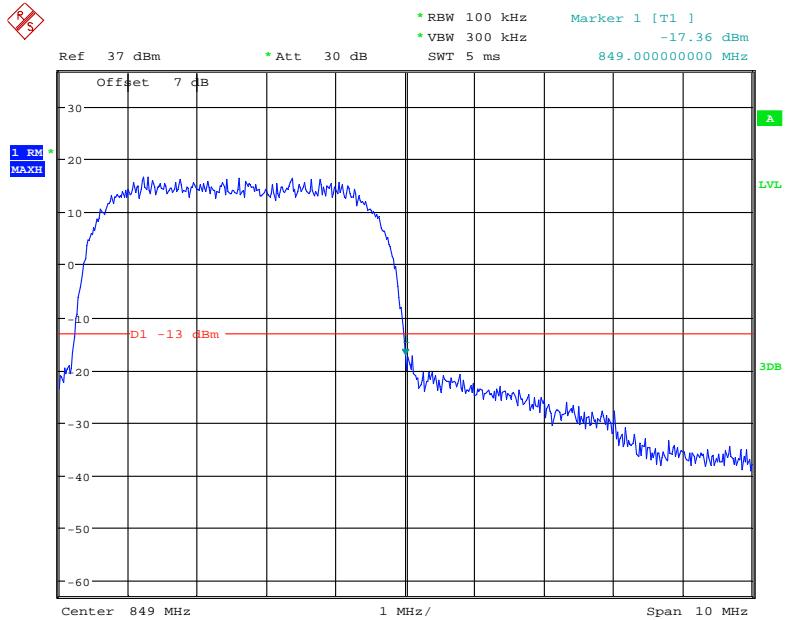
Date: 7.NOV.2021 15:27:43

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



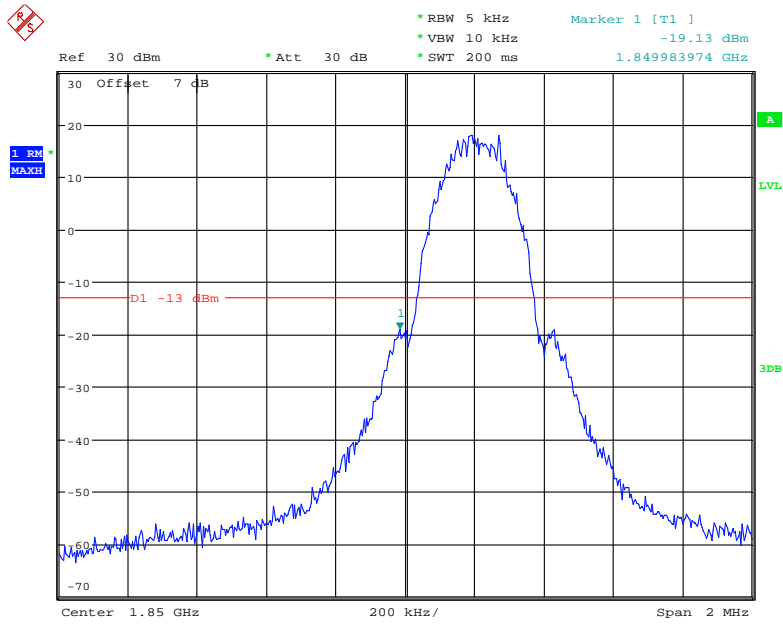
Date: 7.NOV.2021 15:35:32

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



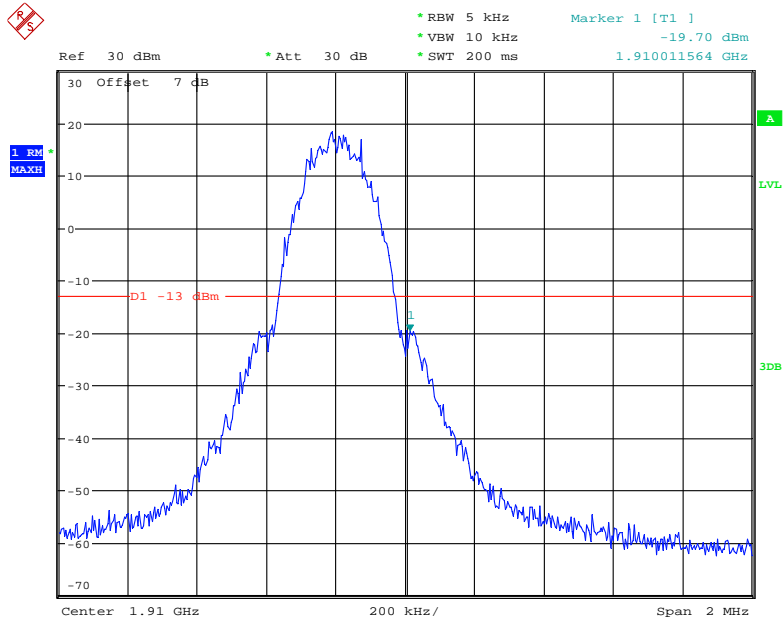
Date: 7.NOV.2021 15:34:41

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



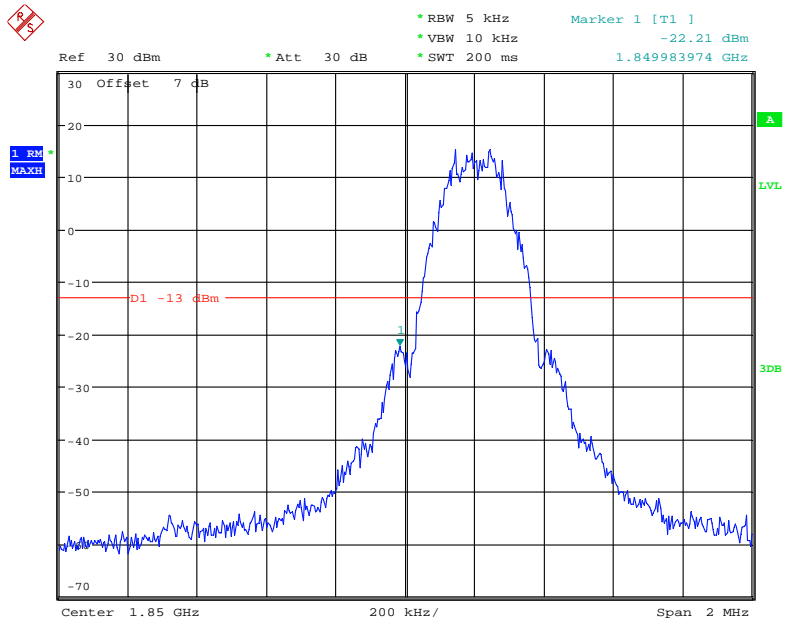
Date: 7.NOV.2021 14:27:06

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



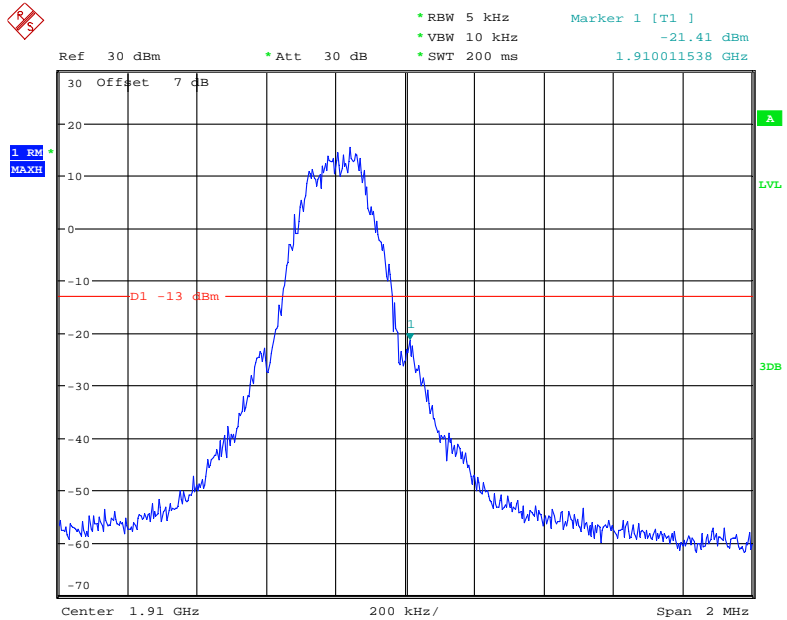
Date: 7.NOV.2021 14:25:54

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



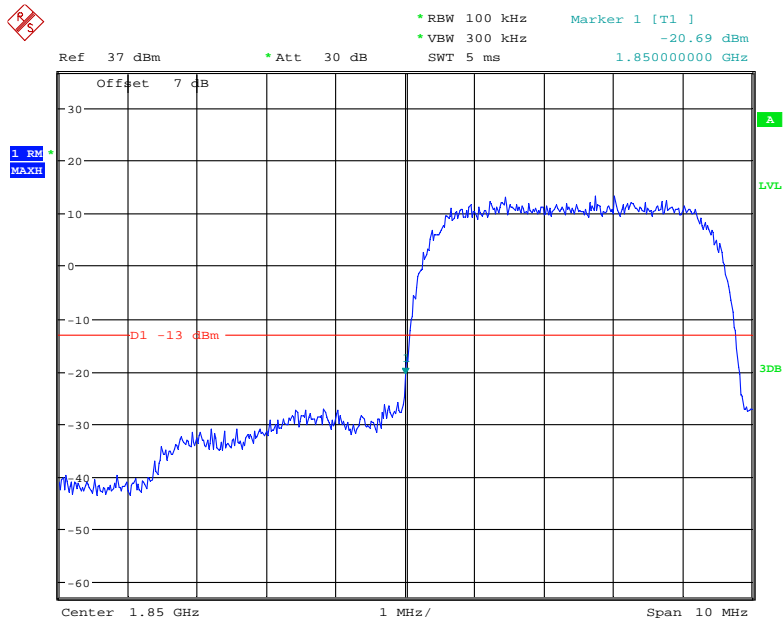
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PCS Band, Right Band Edge for EGPRS (8PSK) Mode



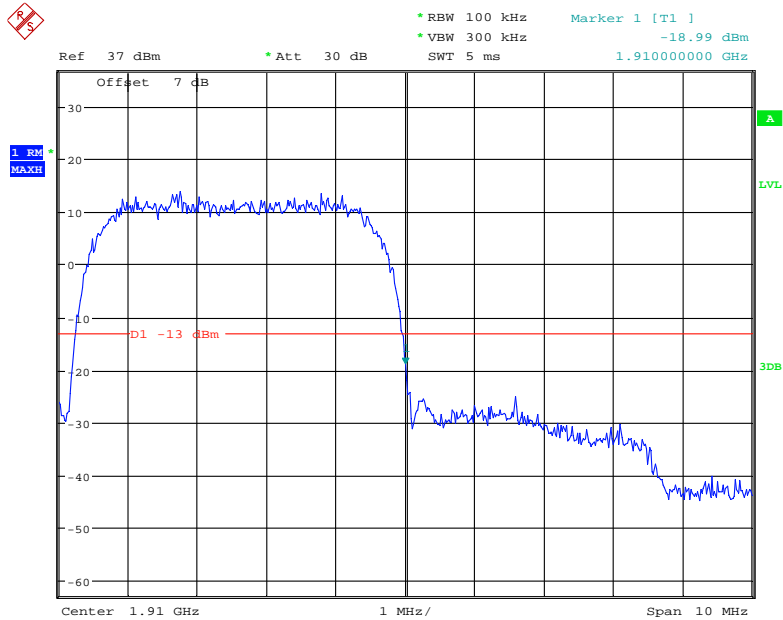
Date: 7.NOV.2021 14:29:47

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



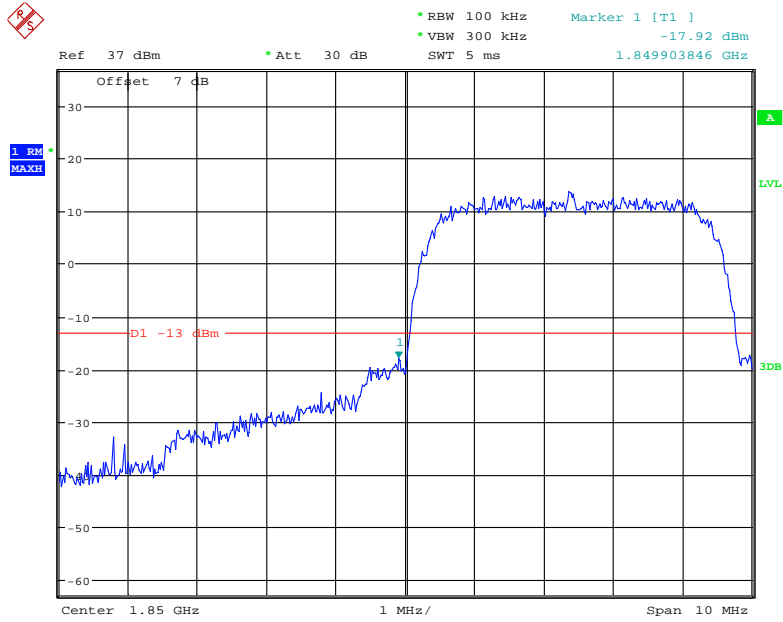
Date: 7.NOV.2021 15:08:53

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



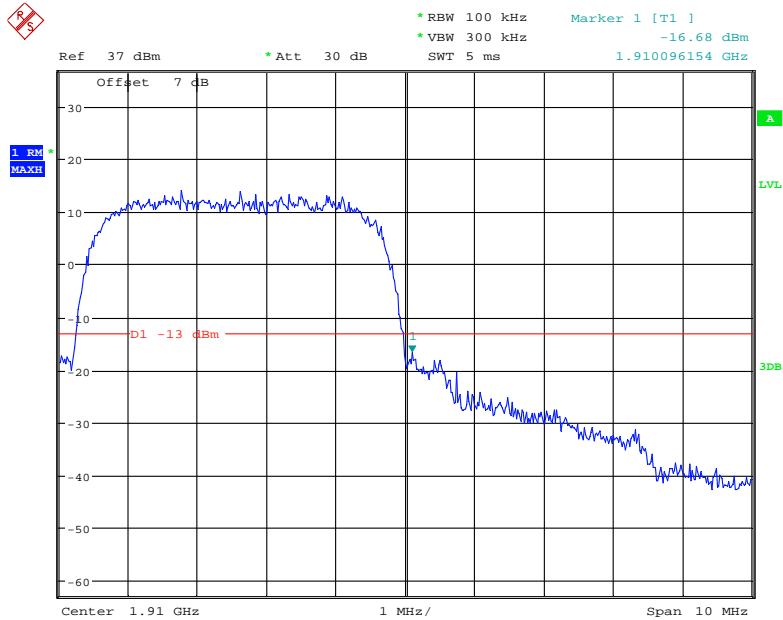
Date: 7.NOV.2021 15:08:18

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



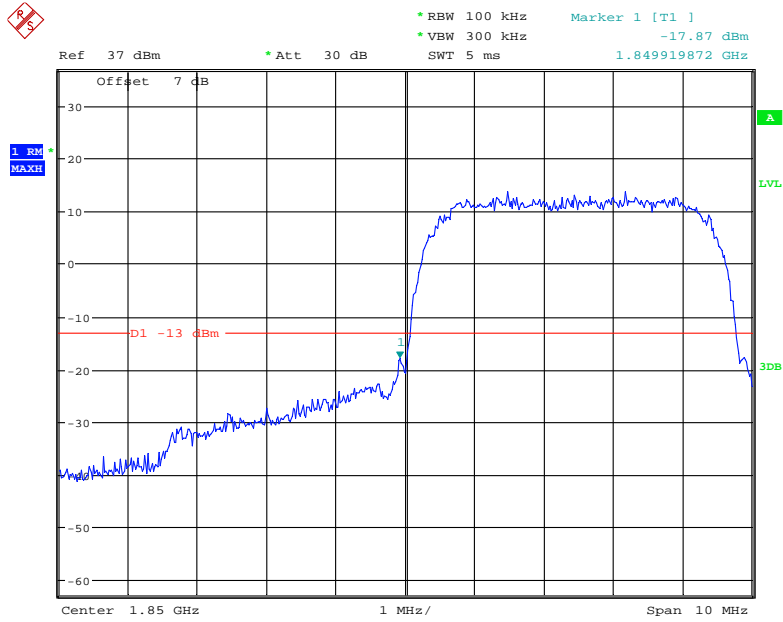
Date: 7.NOV.2021 15:29:56

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



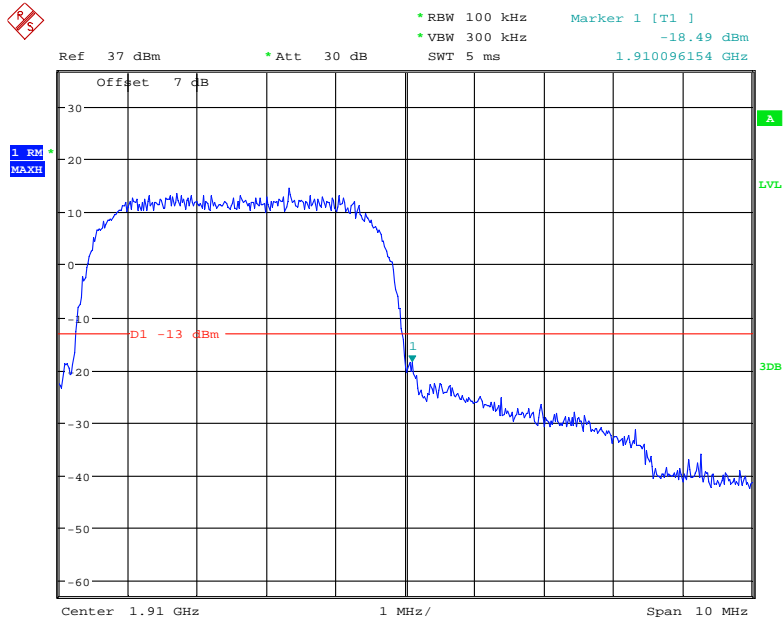
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PCS Band, Left Band Edge for HSUPA (BPSK) Mode



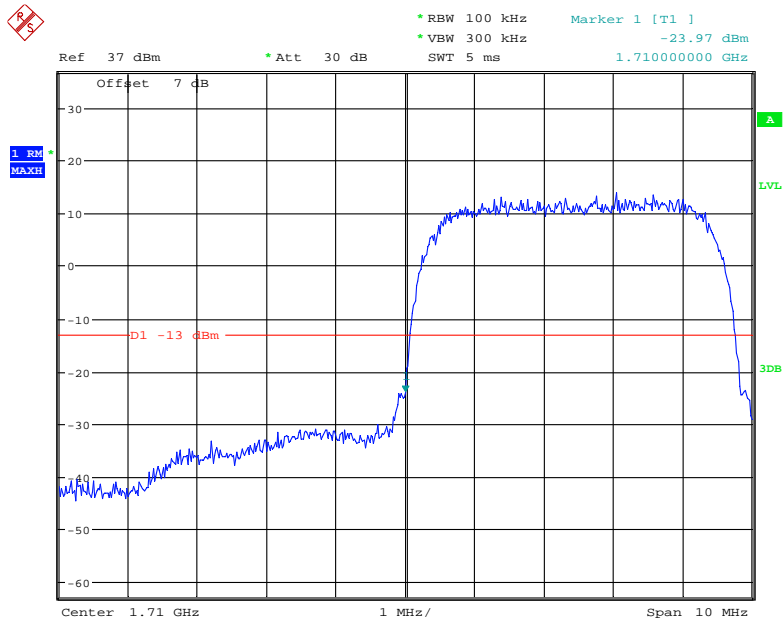
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PCS Band, Right Band Edge for HSUPA (BPSK) Mode



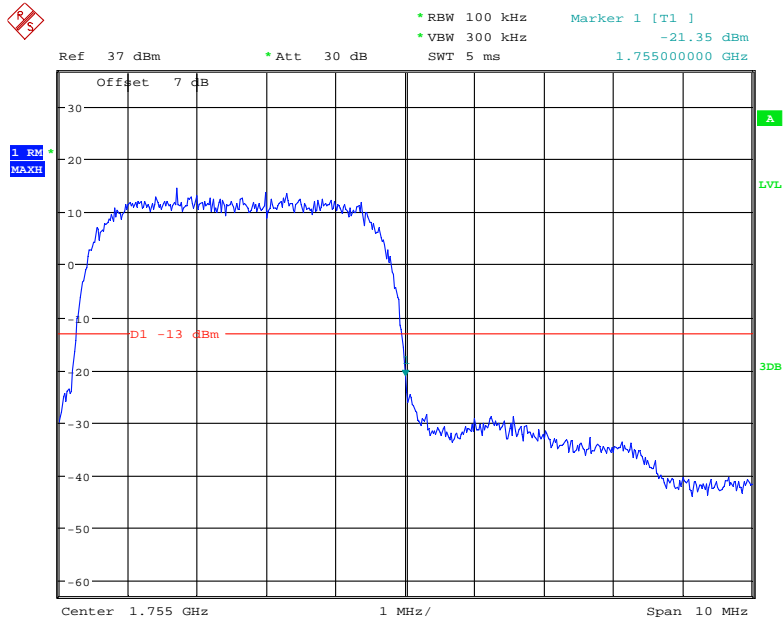
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AWS Band, Left Band Edge for RMC (BPSK) Mode



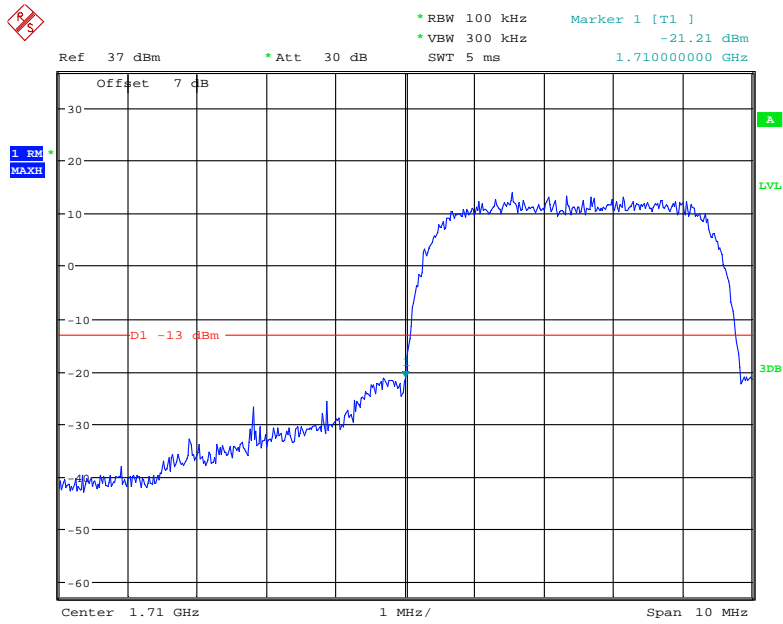
Date: 7.NOV.2021 15:07:46

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



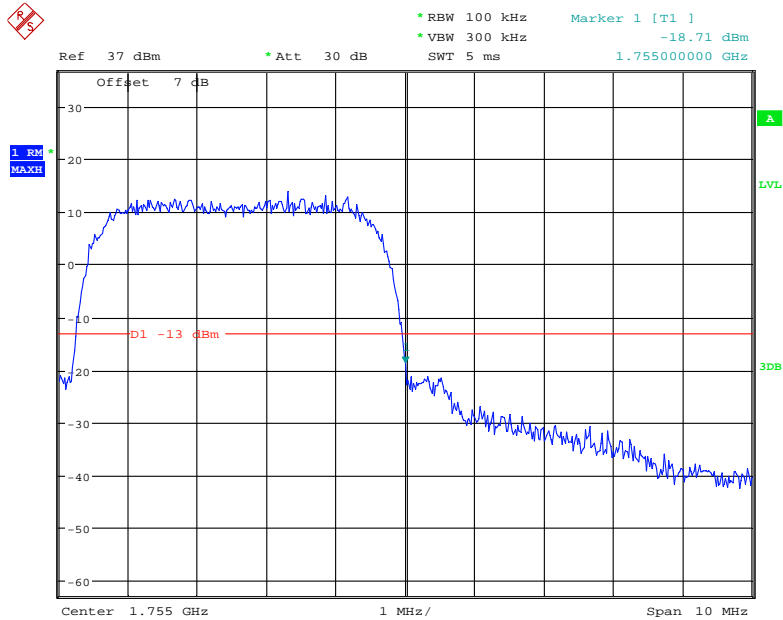
Date: 7.NOV.2021 15:06:55

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



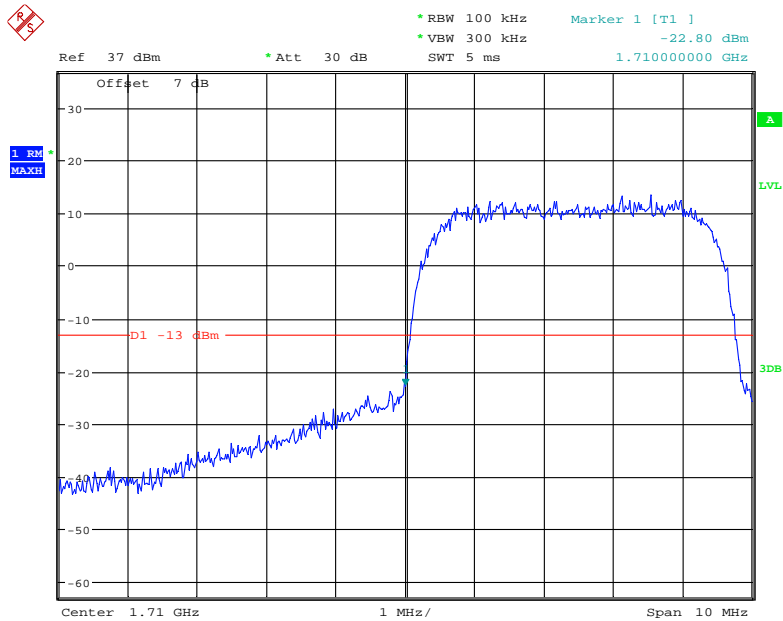
Date: 7.NOV.2021 15:28:17

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



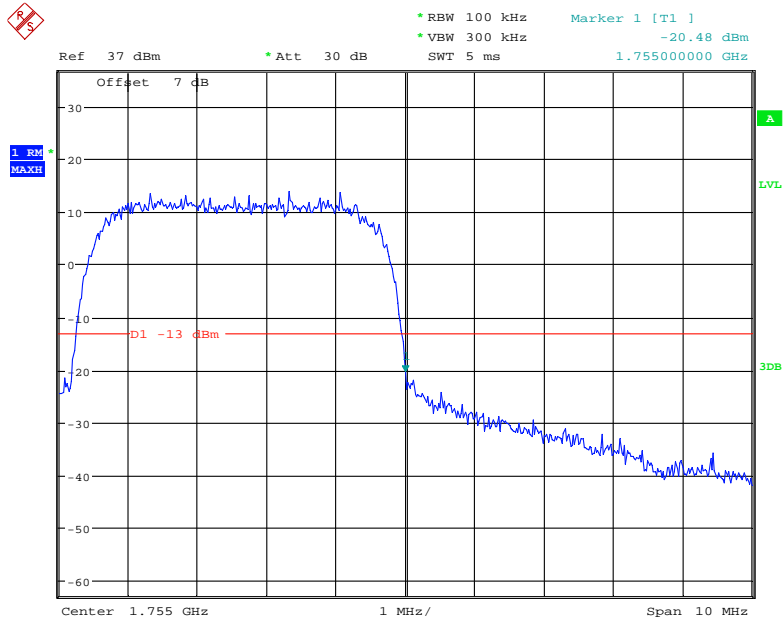
Date: 7.NOV.2021 15:28:52

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



Date: 7.NOV.2021 15:34:17

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



Date: 7.NOV.2021 15:33:51

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

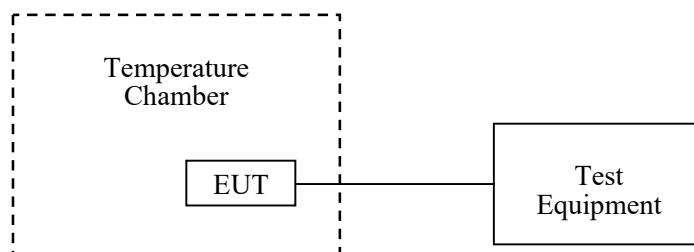
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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:	29.1~29.2℃
Relative Humidity:	44~65 %
ATM Pressure:	101.0kPa

The testing was performed by Paul Liu from 2021-11-05 to 2021-11-08.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

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

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	10.98	0.0131	2.5
-20		9.63	0.0115	2.5
-10		10.25	0.0123	2.5
0		13.65	0.0163	2.5
10		11.25	0.0134	2.5
20		14.24	0.0170	2.5
30		15.36	0.0184	2.5
40		13.26	0.0158	2.5
50		10.84	0.0130	2.5
20	L.V.	9.35	0.0112	2.5
	H.V.	10.25	0.0123	2.5

EDGE Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	7.36	0.0088	2.5
-20		8.25	0.0099	2.5
-10		7.52	0.0090	2.5
0		10.53	0.0126	2.5
10		8.98	0.0107	2.5
20		8.56	0.0102	2.5
30		7.25	0.0087	2.5
40		6.68	0.0080	2.5
50		9.32	0.0111	2.5
20	L.V.	4.23	0.0051	2.5
	H.V.	5.66	0.0068	2.5

WCDMA Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-3.16	-0.0038	2.5
-20		3.24	0.0039	2.5
-10		4.05	0.0048	2.5
0		-5.31	-0.0063	2.5
10		-2.59	-0.0031	2.5
20		-1.37	-0.0016	2.5
30		-7.65	-0.0091	2.5
40		-3.95	-0.0047	2.5
50		1.27	0.0015	2.5
20	L.V.	2.59	0.0031	2.5
	H.V.	-3.64	-0.0044	2.5

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

Middle Channel, $f_0=1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	12.68	0.0067	pass
-20		7.53	0.0040	pass
-10		10.38	0.0055	pass
0		13.25	0.0070	pass
10		14.52	0.0077	pass
20		17.21	0.0092	pass
30		10.63	0.0057	pass
40		9.84	0.0052	pass
50		7.65	0.0041	pass
20		L.V.	10.96	0.0058
	H.V.	11.74	0.0062	pass

EDGE Mode

Middle Channel, $f_0=1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-10.24	-0.0054	pass
-20		-13.25	-0.0070	pass
-10		-16.79	-0.0089	pass
0		-14.56	-0.0077	pass
10		-8.91	-0.0047	pass
20		-7.49	-0.0040	pass
30		-8.36	-0.0044	pass
40		-7.89	-0.0042	pass
50		-10.58	-0.0056	pass
20		L.V.	-14.89	-0.0079
	H.V.	-11.24	-0.0060	pass

WCDMA Mode

Middle Channel, $f_0=1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	6.68	0.0036	pass
-20		4.53	0.0024	pass
-10		5.58	0.0030	pass
0		7.21	0.0038	pass
10		4.25	0.0023	pass
20		2.42	0.0013	pass
30		4.69	0.0025	pass
40		3.68	0.0020	pass
50		5.87	0.0031	pass
20		L.V.	6.35	0.0034
	H.V.	3.81	0.0020	pass

AWS Band (Part 27)

Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1710.0298	1754.9578	1710	1755
-20		1710.0788	1754.9556	1710	1755
-10		1710.0381	1754.9557	1710	1755
0		1710.0228	1754.9305	1710	1755
10		1710.0464	1754.9722	1710	1755
20		1710.0801	1754.9481	1710	1755
30		1710.0216	1754.9337	1710	1755
40		1710.0584	1754.9586	1710	1755
50		1710.0732	1754.9374	1710	1755
20		L.V.	1710.0908	1754.9072	1710
	H.V.	1710.0132	1754.9022	1710	1755

LTE:
QPSK:
Band 2:

10.0 MHz Middle Channel, $f_0=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	NV	-11.80	-0.0063	pass
-20		-9.97	-0.0053	pass
-10		-6.13	-0.0033	pass
0		6.17	0.0033	pass
10		7.92	0.0042	pass
20		6.46	0.0034	pass
30		-6.52	-0.0035	pass
40		7.18	0.0038	pass
50		-9.69	-0.0052	pass
20		LV	-8.17	-0.0043
	HV	-7.05	-0.0038	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	1710.0580	1754.9310	1710	1755
-20		1710.0677	1754.8349	1710	1755
-10		1710.0325	1754.8908	1710	1755
0		1710.0334	1754.9003	1710	1755
10		1710.0296	1754.8518	1710	1755
20		1710.0281	1754.8917	1710	1755
30		1710.0260	1754.8440	1710	1755
40		1710.0991	1754.9481	1710	1755
50		1710.0779	1754.9380	1710	1755
20		LV	1710.0681	1754.9130	1710
	HV	1710.0030	1754.8723	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	NV	17.45	0.0209	2.5
-20		-6.97	-0.0083	2.5
-10		-5.50	-0.0066	2.5
0		6.06	0.0072	2.5
10		9.80	0.0117	2.5
20		5.03	0.006	2.5
30		-6.62	-0.0079	2.5
40		-8.73	-0.0104	2.5
50		-7.05	-0.0084	2.5
20	LV	8.99	0.0107	2.5
	HV	-7.17	-0.0086	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	2500.0161	2569.8788	2500	2570
-20		2500.0226	2569.9135	2500	2570
-10		2500.0448	2569.8823	2500	2570
0		2500.0860	2569.8722	2500	2570
10		2500.0840	2569.8524	2500	2570
20		2500.0763	2569.9026	2500	2570
30		2500.0867	2569.9475	2500	2570
40		2500.0381	2569.8850	2500	2570
50		2500.0153	2569.8595	2500	2570
20	LV	2500.0044	2569.8710	2500	2570
	HV	2500.0625	2569.8428	2500	2570

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	704.0641	715.8914	704	716
-20		704.0600	715.9422	704	716
-10		704.0324	715.8935	704	716
0		704.0440	715.8673	704	716
10		704.0531	715.9079	704	716
20		704.0560	715.9646	704	716
30		704.0674	715.8281	704	716
40		704.0122	715.9276	704	716
50		704.0697	715.9365	704	716
20		LV	704.0248	715.8518	704
	HV	704.0264	715.8326	704	716

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	2570.0195	2619.9169	2570	2620
-20		2570.0197	2619.8232	2570	2620
-10		2570.0421	2619.8964	2570	2620
0		2570.0266	2619.8864	2570	2620
10		2570.0255	2619.9093	2570	2620
20		2570.0360	2619.9135	2570	2620
30		2570.0751	2619.9815	2570	2620
40		2570.0371	2619.9650	2570	2620
50		2570.0275	2619.9158	2570	2620
20		LV	2570.0895	2619.9223	2570
	HV	2570.0126	2619.8875	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	2535.0501	2654.8797	2535	2655
-20		2535.0232	2654.8625	2535	2655
-10		2535.0555	2654.9010	2535	2655
0		2535.0944	2654.9792	2535	2655
10		2535.0904	2654.9612	2535	2655
20		2535.0633	2654.8897	2535	2655
30		2535.0693	2654.8604	2535	2655
40		2535.0589	2654.8875	2535	2655
50		2535.0125	2654.9195	2535	2655
20		LV	2535.0573	2654.9766	2535
	HV	2535.0876	2654.9699	2535	2655

Note: the frequency range 2535-2655MHz was declared by applicant.

Band 66:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	1710.0557	1779.9292	1710	1780
-20		1710.0717	1779.9689	1710	1780
-10		1710.0592	1779.8242	1710	1780
0		1710.0764	1779.9496	1710	1780
10		1710.0736	1779.9015	1710	1780
20		1710.0592	1779.8597	1710	1780
30		1710.0258	1779.9651	1710	1780
40		1710.0640	1779.8777	1710	1780
50		1710.0653	1779.9758	1710	1780
20		LV	1710.0623	1779.8718	1710
	HV	1710.0932	1779.9098	1710	1780

16QAM:**Band 2:**

10.0 MHz Middle Channel, $f_0=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	NV	-29.03	-0.0154	pass
-20		-6.68	-0.0036	pass
-10		9.77	0.0052	pass
0		-7.62	-0.0041	pass
10		-9.91	-0.0053	pass
20		-9.82	-0.0052	pass
30		-6.68	-0.0036	pass
40		-8.85	-0.0047	pass
50		5.67	0.003	pass
20		LV	6.05	0.0032
	HV	7.52	0.004	pass

Band 4:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	1710.0378	1754.8975	1710	1755
-20		1710.0877	1754.8579	1710	1755
-10		1710.0183	1754.9659	1710	1755
0		1710.0438	1754.8577	1710	1755
10		1710.0196	1754.8707	1710	1755
20		1710.0743	1754.8556	1710	1755
30		1710.0540	1754.9004	1710	1755
40		1710.0696	1754.8879	1710	1755
50		1710.0269	1754.9558	1710	1755
20		LV	1710.0568	1754.8289	1710
	HV	1710.0153	1754.9060	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	NV	14.61	0.0175	2.5
-20		8.10	0.0097	2.5
-10		-8.59	-0.0103	2.5
0		9.33	0.0112	2.5
10		-6.94	-0.0083	2.5
20		7.54	0.009	2.5
30		6.43	0.0077	2.5
40		-6.17	-0.0074	2.5
50		-6.44	-0.0077	2.5
20	LV	6.34	0.0076	2.5
	HV	-6.89	-0.0082	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	NV	2500.0694	2569.9504	2500	2570
-20		2500.0252	2569.9140	2500	2570
-10		2500.0393	2569.9264	2500	2570
0		2500.0919	2569.9174	2500	2570
10		2500.0458	2569.8736	2500	2570
20		2500.0621	2569.9699	2500	2570
30		2500.0280	2569.8945	2500	2570
40		2500.0144	2569.9539	2500	2570
50		2500.0337	2569.9365	2500	2570
20	LV	2500.0548	2569.9839	2500	2570
	HV	2500.0485	2569.9375	2500	2570

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	704.0635	715.9277	704	716
-20		704.0717	715.8418	704	716
-10		704.0579	715.9492	704	716
0		704.0276	715.9687	704	716
10		704.0706	715.9640	704	716
20		704.0392	715.8764	704	716
30		704.0404	715.8844	704	716
40		704.0329	715.9957	704	716
50		704.0315	715.9008	704	716
20		LV	704.0210	715.8705	704
	HV	704.0656	715.9867	704	716

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	2570.0304	2619.8601	2570	2620
-20		2570.0222	2619.9315	2570	2620
-10		2570.0476	2619.9353	2570	2620
0		2570.0115	2619.9170	2570	2620
10		2570.0238	2619.9480	2570	2620
20		2570.0351	2619.9409	2570	2620
30		2570.0709	2619.8654	2570	2620
40		2570.0287	2619.9007	2570	2620
50		2570.0792	2619.9314	2570	2620
20		LV	2570.0337	2619.9094	2570
	HV	2570.0367	2619.9406	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	2535.0325	2654.8703	2535	2655
-20		2535.0334	2654.9263	2535	2655
-10		2535.0513	2654.9102	2535	2655
0		2535.0294	2654.9253	2535	2655
10		2535.0697	2654.9494	2535	2655
20		2535.0712	2654.9083	2535	2655
30		2535.0311	2654.9213	2535	2655
40		2535.0672	2654.9598	2535	2655
50		2535.0015	2654.9204	2535	2655
20		LV	2535.0583	2654.8307	2535
	HV	2535.0751	2654.9516	2535	2655

Note: the frequency range 2535-2655MHz was declared by applicant.

Band 66:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	NV	1710.0958	1779.9074	1710	1780
-20		1710.0662	1779.9296	1710	1780
-10		1710.0798	1779.9136	1710	1780
0		1710.0966	1779.9590	1710	1780
10		1710.0513	1779.9302	1710	1780
20		1710.0409	1779.9574	1710	1780
30		1710.0279	1779.9653	1710	1780
40		1710.0992	1779.8783	1710	1780
50		1710.0708	1779.9513	1710	1780
20		LV	1710.0268	1779.8763	1710
	HV	1710.0539	1779.9676	1710	1780

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