FCC PART 27

FCC PART 22H, PART 24E

TEST REPORT

For

BLU Products, Inc.

10814 NW 33rd St # 100 Doral, FL 33172, Doral, Florida, United States

FCC ID: YHLBLUC6L21

Report Type:	**Product Type:**
Original Report	Mobile Phone

Report Number:	SZ1210625-25401E-00A
Report Date:	2021-07-28
Reviewed By:	Jimmy Xiao RF Engineer
Prepared By:	Bay Area Compliance Laboratories Corp. (Shenzhen) 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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)

Product	Mobile Phone
Tested Model	C6L 2021
Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band 5/LTE Band 5: -2.0dBi PCS1900/WCDMA Band 2/ LTE Band 2: 1.2dBi LTE Band 4: 1.1dBi LTE Band 7/Band 38: 1.8dBi (provided by the applicant)
Voltage Range	DC3.8V from battery or DC 5.0V from adapter
Date of Test	2021-07-01 to 2021-07-27
Sample number	SZ1210625-25401E-RF-S1\4 SZ1210625-25401E-RF-S3\4(For RF Conduction Test) (Assigned by BACL, Shenzhen)
Received date	2021-06-25
Sample/EUT Status	Good condition
Adapter information	Model: US-FC-0750 Input: AC 100-240V, 50/60Hz, 0.2A Output: DC 5.0V, 750mA

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E and Subpart 27 of the Federal Communication Commissions 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 Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.
Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		±0.73dB
Unwanted Emission, conducted		±1.6dB
Emissions, Radiated	Below 1GHz	±4.75dB
	Above 1GHz	±4.88dB
Temperature		±1℃
Humidity		±6%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West) ,6F,7F,the 3rd Phase of Wan Li Industrial Building D,Shihua Rd, FuTian Free Trade Zone, Shenzhen, 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.: 342867, the FCC Designation No.: CN1221.

The test site has been registered with ISED Canada under ISED Canada Registration Number 3062B.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

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

Equipment Modifications

No modification was made to the EUT.

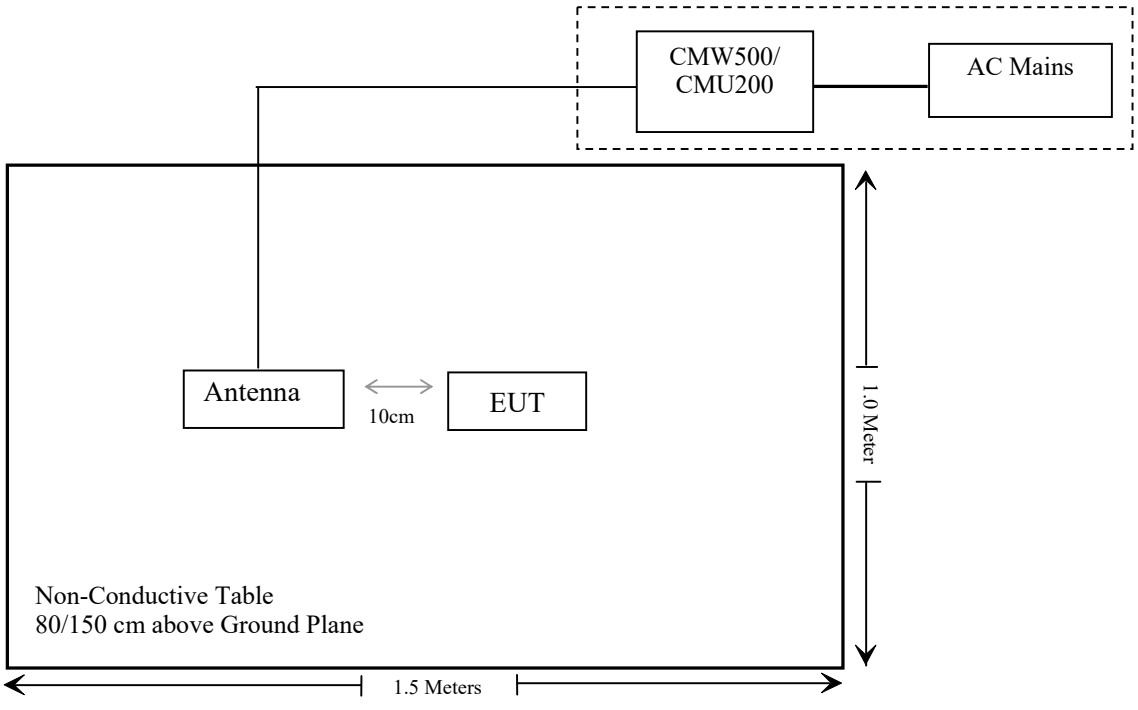
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-116218-U
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500

Support Cable Description

Cable Description	Length (m)	From / Port	To
Unshielded Detachable AC Cable	1.2	AC Mains	CMW500/ CMU200

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

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

Note: * Please refer to SAR report released by BACL, report number: SZ1210625-25401E-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
R&S	EMI Test Receiver	ESR3	102455	2020/08/04	2021/08/03
Sonoma instrument	Pre-amplifier	310 N	186238	2020/08/04	2021/08/03
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2020/12/22	2023/12/21
COM-POWER	Dipole Antenna	AD-100	721027	NCR	NCR
Unknown	Cable 2	RF Cable 2	F-03-EM197	2020/11/29	2021/11/28
Unknown	Cable	Chamber Cable 4	EC-007	2020/11/29	2021/11/28
Rohde & Schwarz	Spectrum Analyzer	FSV40-N	102259	2020/08/04	2021/08/03
COM-POWER	Pre-amplifier	PA-122	181919	2020/11/29	2021/11/28
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/28	2021/11/27
Sunol Sciences	Horn Antenna	3115	9107-3694	2021/01/15	2024/01/14
A.H.System	Horn Antenna	SAS-200/571	135	2018/09/01	2021/08/31
Insulted Wire Inc.	RF Cable	SPS-2503-3150	02222010	2020/11/29	2021/11/28
Unknown	RF Cable	W1101-EQ1 OUT	F-19-EM005	2020/11/29	2021/11/28
Unknown	Signal Cable	RG-214	2	2020/11/29	2021/11/28
MICRO-TRONICS	Passband filter	HPM50111	F-19-EM006	2021/04/20	2022/04/20
Unknown	High Pass filter	1.3GHz	101120	2021/04/20	2022/04/20
Ducommun Technolagies	Horn antenna	ARH-4223-02	1007726-02 1304	2020/12/06	2023/12/05
Ducommun Technolagies	Horn antenna	ARH-4223-02	1007726-01 1304	2020/12/06	2023/12/05
Agilent	Signal Generator	N5183A	MY51040755	2020/12/29	2021/12/28

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2021/04/02	2022/04/01
Unknown	RF Cable	Unknown	0501 067	2020/11/29	2021/11/28
Weinschel	Power divider	1515	RH386	2021/04/20	2022/04/20
ESPEC	Temperature & Humidity Chamber	EL-10KA	9107726	2021/02/23	2022/02/22
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500	2020/07/31	2021/07/30
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2020/08/04	2021/08/03
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
Fluke	Digital Multimeter	287	19000011	2020/07/23	2021/07/22

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) 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

Compliance, please refer to the SAR report: SZ1210625-25401E-SA.

FCC §2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

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

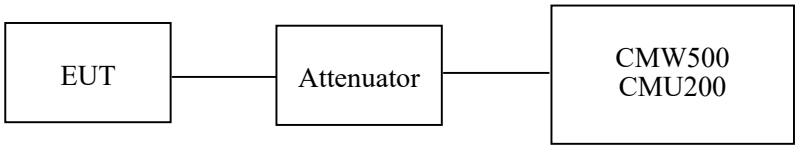
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1780MHz.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2500-2570MHz & 2496-2690MHz.

Test Procedure

Conducted method:

The RF output of the transmitter was connected to the CMW500/CMU200 through sufficient attenuation.



Test Data

Environmental Conditions

Temperature:	25~28 ℃
Relative Humidity:	51~57 %
ATM Pressure:	101.0 kPa

The testing was performed by Key on 2021-07-05 and Pedro Yun from 2021-07-01 to 2021-07-04

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Conducted Power

Cellular Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP (dBm)	Limit (dBm)
GSM	128	824.2	32.68	27.93	38.45
	190	836.6	32.68	27.93	38.45
	251	848.8	32.75	28.00	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	32.14	30.32	28.58	26.41	27.39	25.57	23.83	21.66	38.45
	190	836.6	32.20	30.36	28.60	26.62	27.45	25.61	23.85	21.87	38.45
	251	848.8	32.51	30.67	28.74	26.71	27.76	25.92	23.99	21.96	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	27.27	25.73	23.54	21.72	22.52	20.98	18.79	16.97	38.45
	190	836.6	27.32	25.70	23.53	21.94	22.57	20.95	18.78	17.19	38.45
	251	848.8	27.09	25.51	23.25	21.74	22.34	20.76	18.5	16.99	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		23.03	23.07	23.12	18.28	18.32	18.37
	HSDPA	1	22.21	22.64	22.52	17.46	17.89	17.77
		2	22.12	22.40	22.42	17.37	17.65	17.67
		3	22.51	22.45	22.21	17.76	17.70	17.46
		4	22.27	22.54	22.37	17.52	17.79	17.62
	HSUPA	1	22.35	22.23	22.55	17.60	17.48	17.80
		2	22.46	22.54	22.36	17.71	17.79	17.61
		3	22.67	22.36	22.27	17.92	17.61	17.52
		4	22.18	22.24	22.48	17.43	17.49	17.73
		5	22.29	22.47	22.19	17.54	17.72	17.44
	HSPA+	1	22.37	22.56	22.47	17.62	17.81	17.72

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)-Cable Loss(dB)
For GSM850/WCDMA Band5: Antenna Gain =-2.0dBi = -4.15dBd (0dBd=2.15dBi)
Cable Loss=0.6 dB

PCS Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	29.07	29.67	33
	661	1880.0	29.04	29.64	33
	810	1909.8	29.13	29.73	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.20	27.44	25.32	23.26	29.80	28.04	25.92	23.86	33
	661	1880.0	29.06	27.52	25.53	23.49	29.66	28.12	26.13	24.09	33
	810	1909.8	29.19	27.39	25.42	23.37	29.79	27.99	26.02	23.97	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	27.21	25.36	23.35	21.65	27.81	25.96	23.95	22.25	33
	661	1880.0	27.51	25.41	23.48	21.67	28.11	26.01	24.08	22.27	33
	810	1909.8	27.10	25.22	23.46	21.52	27.70	25.82	24.06	22.12	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.52	23.47	23.58	24.12	24.07	24.18
	HSDPA	1	22.56	22.71	22.58	23.16	23.31	23.18
		2	22.67	22.64	22.44	23.27	23.24	23.04
		3	22.41	22.45	22.46	23.01	23.05	23.06
		4	22.54	22.54	22.65	23.14	23.14	23.25
	HSUPA	1	22.62	22.23	22.55	23.22	22.83	23.15
		2	22.36	22.34	22.60	22.96	22.94	23.2
		3	22.67	22.56	22.41	23.27	23.16	23.01
		4	22.58	22.44	22.44	23.18	23.04	23.04
		5	22.27	22.37	22.65	22.87	22.97	23.25
	HSPA+	1	22.69	22.46	22.47	23.29	23.06	23.07

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)-Cable Loss(dB)
For PCS1900 /WCDMA Band2: Antenna Gain = 1.2dBi
Cable Loss= 0.6dB

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.25	13
	Middle	3.31	13
	High	3.47	13
EGPRS	Low	3.21	13
	Middle	3.18	13
	High	3.34	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.21	13
	Middle	3.29	13
	High	3.45	13
HSDPA (16QAM)	Low	3.26	13
	Middle	3.45	13
	High	3.61	13
HSUPA (BPSK)	Low	3.25	13
	Middle	3.21	13
	High	3.47	13
HSPA+	Low	3.25	13
	Middle	3.21	13
	High	3.47	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.38	13
	Middle	3.18	13
	High	3.35	13
EGPRS	Low	3.16	13
	Middle	3.21	13
	High	3.51	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.21	13
	Middle	3.29	13
	High	3.45	13
HSDPA (16QAM)	Low	3.26	13
	Middle	3.45	13
	High	3.61	13
HSUPA (BPSK)	Low	3.25	13
	Middle	3.21	13
	High	3.47	13
HSPA+	Low	3.25	13
	Middle	3.21	13
	High	3.47	13

LTE Band 2

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.34	22.23	22.11	22.94	22.83	22.71
		RB1#3	22.31	22.26	22.19	22.91	22.86	22.79
		RB1#5	22.38	22.29	22.20	22.98	22.89	22.80
		RB3#0	22.51	22.20	22.31	23.11	22.80	22.91
		RB3#3	22.47	22.18	22.25	23.07	22.78	22.85
		RB6#0	21.41	21.12	21.22	22.01	21.72	21.82
	16QAM	RB1#0	21.16	21.52	21.91	21.76	22.12	22.51
		RB1#3	21.18	21.45	21.87	21.78	22.05	22.47
		RB1#5	21.24	21.52	21.91	21.84	22.12	22.51
		RB3#0	21.51	21.15	21.21	22.11	21.75	21.81
		RB3#3	21.49	21.17	21.20	22.09	21.77	21.80
		RB6#0	20.75	20.34	20.39	21.35	20.94	20.99
3.0	QPSK	RB1#0	22.27	22.00	22.16	22.87	22.60	22.76
		RB1#8	22.32	22.01	22.24	22.92	22.61	22.84
		RB1#14	22.17	22.09	22.22	22.77	22.69	22.82
		RB6#0	21.31	21.14	21.24	21.91	21.74	21.84
		RB6#9	21.12	21.14	21.29	21.72	21.74	21.89
		RB15#0	21.37	21.09	21.30	21.97	21.69	21.90
	16QAM	RB1#0	21.56	21.54	21.09	22.16	22.14	21.69
		RB1#8	21.50	21.60	21.06	22.10	22.20	21.66
		RB1#14	21.38	21.62	21.05	21.98	22.22	21.65
		RB6#0	20.58	20.67	20.47	21.18	21.27	21.07
		RB6#9	20.38	20.81	20.42	20.98	21.41	21.02
		RB15#0	20.49	20.18	20.28	21.09	20.78	20.88

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.96	21.75	21.73	22.56	22.35	22.33
		RB1#13	21.90	21.77	21.78	22.50	22.37	22.38
		RB1#24	21.77	21.91	21.79	22.37	22.51	22.39
		RB15#0	20.99	20.76	20.81	21.59	21.36	21.41
		RB15#10	20.92	20.78	20.81	21.52	21.38	21.41
		RB25#0	20.85	20.78	20.82	21.45	21.38	21.42
	16QAM	RB1#0	20.28	21.03	20.55	20.88	21.63	21.15
		RB1#13	20.21	21.00	20.52	20.81	21.60	21.12
		RB1#24	20.14	21.07	20.51	20.74	21.67	21.11
		RB15#0	20.16	19.80	19.94	20.76	20.40	20.54
		RB15#10	19.97	20.31	19.93	20.57	20.91	20.53
		RB25#0	20.07	19.86	19.85	20.67	20.46	20.45
10.0	QPSK	RB1#0	22.20	22.03	21.90	22.80	22.63	22.50
		RB1#25	21.98	21.96	21.90	22.58	22.56	22.50
		RB1#49	21.97	22.05	21.88	22.57	22.65	22.48
		RB25#0	21.13	21.02	21.00	21.73	21.62	21.60
		RB25#25	21.03	20.94	20.97	21.63	21.54	21.57
		RB50#0	21.16	21.00	20.96	21.76	21.60	21.56
	16QAM	RB1#0	21.65	21.09	20.45	22.25	21.69	21.05
		RB1#25	21.41	21.10	20.45	22.01	21.70	21.05
		RB1#49	21.44	21.15	20.44	22.04	21.75	21.04
		RB25#0	20.17	20.22	20.14	20.77	20.82	20.74
		RB25#25	20.13	20.47	20.10	20.73	21.07	20.70
		RB50#0	20.17	20.07	20.06	20.77	20.67	20.66

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	22.23	21.95	21.91	22.83	22.55	22.51
		RB1#38	22.05	21.96	21.90	22.65	22.56	22.50
		RB1#74	22.03	21.89	21.93	22.63	22.49	22.53
		RB36#0	21.25	20.99	21.00	21.85	21.59	21.60
		RB36#39	21.19	20.90	21.04	21.79	21.50	21.64
		RB75#0	21.11	20.97	21.03	21.71	21.57	21.63
	16QAM	RB1#0	21.69	21.22	21.39	22.29	21.82	21.99
		RB1#38	21.78	21.21	21.39	22.38	21.81	21.99
		RB1#74	21.38	21.18	21.35	21.98	21.78	21.95
		RB36#0	20.22	20.27	20.11	20.82	20.87	20.71
		RB36#39	20.25	20.61	20.08	20.85	21.21	20.68
		RB75#0	20.15	20.09	20.11	20.75	20.69	20.71
20.0	QPSK	RB1#0	22.46	22.08	21.89	23.06	22.68	22.49
		RB1#50	22.24	21.76	21.89	22.84	22.36	22.49
		RB1#99	22.28	21.81	21.97	22.88	22.41	22.57
		RB50#0	21.25	20.85	21.26	21.85	21.45	21.86
		RB50#50	21.24	20.86	20.89	21.84	21.46	21.49
		RB100#0	21.14	21.06	21.03	21.74	21.66	21.63
	16QAM	RB1#0	21.71	21.23	21.51	22.31	21.83	22.11
		RB1#50	21.82	21.30	21.12	22.42	21.90	21.72
		RB1#99	21.44	21.05	21.43	22.04	21.65	22.03
		RB50#0	20.31	20.41	20.08	20.91	21.01	20.68
		RB50#50	20.34	20.80	20.24	20.94	21.40	20.84
		RB100#0	20.15	20.12	20.01	20.75	20.72	20.61

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)
For Band 2: Antenna Gain =1.2dBi
Cable Loss=0.6dB
Limit: EIRP≤33dBm

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.09	22.45	22.43	22.59	22.95	22.93
		RB1#3	22.21	22.51	22.47	22.71	23.01	22.97
		RB1#5	22.34	22.49	22.36	22.84	22.99	22.86
		RB3#0	22.53	22.50	22.62	23.03	23.00	23.12
		RB3#3	22.57	22.57	22.60	23.07	23.07	23.10
		RB6#0	21.52	21.47	21.59	22.02	21.97	22.09
	16QAM	RB1#0	21.31	22.16	22.09	21.81	22.66	22.59
		RB1#3	21.33	22.21	22.17	21.83	22.71	22.67
		RB1#5	21.36	22.20	22.17	21.86	22.70	22.67
		RB3#0	21.69	21.58	21.56	22.19	22.08	22.06
		RB3#3	21.66	21.65	21.62	22.16	22.15	22.12
		RB6#0	20.86	20.92	20.59	21.36	21.42	21.09
3.0	QPSK	RB1#0	22.44	22.48	22.63	22.94	22.98	23.13
		RB1#8	22.51	22.55	22.58	23.01	23.05	23.08
		RB1#14	22.54	22.57	22.57	23.04	23.07	23.07
		RB6#0	21.59	21.56	21.46	22.09	22.06	21.96
		RB6#9	21.54	21.68	21.41	22.04	22.18	21.91
		RB15#0	21.59	21.55	21.44	22.09	22.05	21.94
	16QAM	RB1#0	21.79	22.19	21.46	22.29	22.69	21.96
		RB1#8	21.80	22.28	21.41	22.30	22.78	21.91
		RB1#14	21.81	22.29	21.38	22.31	22.79	21.88
		RB6#0	20.90	20.63	20.81	21.40	21.13	21.31
		RB6#9	20.88	20.73	20.82	21.38	21.23	21.32
		RB15#0	20.82	20.68	20.58	21.32	21.18	21.08

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	22.44	22.53	22.38	22.94	23.03	22.88
		RB1#13	22.42	22.65	22.38	22.92	23.15	22.88
		RB1#24	22.48	22.58	22.39	22.98	23.08	22.89
		RB15#0	21.64	21.60	21.54	22.14	22.10	22.04
		RB15#10	21.48	21.50	21.55	21.98	22.00	22.05
		RB25#0	21.64	21.53	21.48	22.14	22.03	21.98
	16QAM	RB1#0	20.85	21.71	21.14	21.35	22.21	21.64
		RB1#13	20.79	21.78	21.09	21.29	22.28	21.59
		RB1#24	20.80	21.81	21.12	21.30	22.31	21.62
		RB15#0	20.84	20.56	20.64	21.34	21.06	21.14
		RB15#10	20.68	20.59	20.64	21.18	21.09	21.14
		RB25#0	20.83	20.66	20.42	21.33	21.16	20.92
10.0	QPSK	RB1#0	22.54	22.57	22.74	23.04	23.07	23.24
		RB1#25	22.55	22.57	22.86	23.05	23.07	23.36
		RB1#49	22.58	22.67	22.71	23.08	23.17	23.21
		RB25#0	21.38	21.38	21.60	21.88	21.88	22.10
		RB25#25	21.55	21.59	21.61	22.05	22.09	22.11
		RB50#0	21.54	21.45	21.67	22.04	21.95	22.17
	16QAM	RB1#0	22.00	21.76	21.29	22.50	22.26	21.79
		RB1#25	21.94	21.70	21.32	22.44	22.20	21.82
		RB1#49	21.95	21.81	21.17	22.45	22.31	21.67
		RB25#0	20.74	20.70	20.86	21.24	21.20	21.36
		RB25#25	20.66	20.83	20.75	21.16	21.33	21.25
		RB50#0	20.64	20.88	20.83	21.14	21.38	21.33

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	22.60	22.69	22.72	23.10	23.19	23.22
		RB1#38	22.57	22.75	22.77	23.07	23.25	23.27
		RB1#74	22.57	22.76	22.71	23.07	23.26	23.21
		RB36#0	21.69	21.61	21.72	22.19	22.11	22.22
		RB36#39	21.68	21.66	21.67	22.18	22.16	22.17
		RB75#0	21.72	21.66	21.59	22.22	22.16	22.09
	16QAM	RB1#0	21.94	21.77	22.07	22.44	22.27	22.57
		RB1#38	21.90	21.90	22.08	22.40	22.40	22.58
		RB1#74	21.97	21.87	22.08	22.47	22.37	22.58
		RB36#0	20.89	20.83	20.86	21.39	21.33	21.36
		RB36#39	20.94	20.83	20.71	21.44	21.33	21.21
		RB75#0	20.92	20.81	20.86	21.42	21.31	21.36
20.0	QPSK	RB1#0	22.76	22.67	22.67	23.26	23.17	23.17
		RB1#50	22.71	22.72	22.68	23.21	23.22	23.18
		RB1#99	22.68	22.79	22.63	23.18	23.29	23.13
		RB50#0	21.60	21.68	21.73	22.10	22.18	22.23
		RB50#50	21.68	21.80	21.75	22.18	22.30	22.25
		RB100#0	21.65	21.71	21.69	22.15	22.21	22.19
	16QAM	RB1#0	21.69	21.70	22.48	22.19	22.20	22.98
		RB1#50	21.74	21.68	22.44	22.24	22.18	22.94
		RB1#99	21.63	21.73	22.36	22.13	22.23	22.86
		RB50#0	20.80	20.73	20.74	21.30	21.23	21.24
		RB50#50	20.86	20.76	20.84	21.36	21.26	21.34
		RB100#0	20.75	20.73	20.83	21.25	21.23	21.33

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)
For Band 4: Antenna Gain =1.1dBi
Cable Loss=0.6dB
Limit: EIRP≤30dBm

LTE Band5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.62	21.61	22.00	16.87	16.86	17.25
		RB1#3	21.51	21.70	22.02	16.76	16.95	17.27
		RB1#5	21.53	21.66	22.01	16.78	16.91	17.26
		RB3#0	21.66	21.71	22.01	16.91	16.96	17.26
		RB3#3	21.61	21.81	22.03	16.86	17.06	17.28
		RB6#0	20.48	20.79	20.89	15.73	16.04	16.14
	16QAM	RB1#0	21.04	21.40	20.68	16.29	16.65	15.93
		RB1#3	20.97	21.43	20.88	16.22	16.68	16.13
		RB1#5	20.96	21.48	20.94	16.21	16.73	16.19
		RB3#0	20.68	20.73	20.96	15.93	15.98	16.21
		RB3#3	20.68	20.66	21.04	15.93	15.91	16.29
		RB6#0	19.73	20.22	20.31	14.98	15.47	15.56
3.0	QPSK	RB1#0	21.48	21.64	21.92	16.73	16.89	17.17
		RB1#8	21.39	21.66	22.05	16.64	16.91	17.30
		RB1#14	21.25	21.62	22.05	16.50	16.87	17.30
		RB6#0	20.62	20.73	20.75	15.87	15.98	16.00
		RB6#9	20.31	20.78	20.98	15.56	16.03	16.23
		RB15#0	20.52	20.85	20.86	15.77	16.10	16.11
	16QAM	RB1#0	20.98	21.33	20.47	16.23	16.58	15.72
		RB1#8	20.85	21.43	20.61	16.10	16.68	15.86
		RB1#14	20.55	21.38	20.73	15.80	16.63	15.98
		RB6#0	19.59	19.75	19.81	14.84	15.00	15.06
		RB6#9	19.65	20.17	20.28	14.90	15.42	15.53
		RB15#0	19.57	20.16	19.74	14.82	15.41	14.99

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	21.62	21.67	21.83	16.87	16.92	17.08
		RB1#13	21.34	21.57	21.97	16.59	16.82	17.22
		RB1#24	21.36	21.71	22.02	16.61	16.96	17.27
		RB15#0	20.62	20.70	20.99	15.87	15.95	16.24
		RB15#10	20.38	20.71	20.92	15.63	15.96	16.17
		RB25#0	20.38	20.74	20.82	15.63	15.99	16.07
	16QAM	RB1#0	19.95	20.70	20.61	15.20	15.95	15.86
		RB1#13	19.59	20.86	20.54	14.84	16.11	15.79
		RB1#24	19.62	20.81	20.87	14.87	16.06	16.12
		RB15#0	19.62	19.60	19.94	14.87	14.85	15.19
		RB15#10	19.78	19.96	19.87	15.03	15.21	15.12
		RB25#0	19.98	20.17	19.73	15.23	15.42	14.98
10.0	QPSK	RB1#0	21.45	21.53	21.43	16.70	16.78	16.68
		RB1#25	21.33	21.85	21.77	16.58	17.10	17.02
		RB1#49	21.37	21.76	21.96	16.62	17.01	17.21
		RB25#0	20.28	20.65	20.67	15.53	15.90	15.92
		RB25#25	20.54	20.54	20.91	15.79	15.79	16.16
		RB50#0	20.40	20.68	20.86	15.65	15.93	16.11
	16QAM	RB1#0	20.79	20.76	20.04	16.04	16.01	15.29
		RB1#25	20.51	20.88	20.46	15.76	16.13	15.71
		RB1#49	20.77	20.75	20.51	16.02	16.00	15.76
		RB25#0	19.96	19.88	19.63	15.21	15.13	14.88
		RB25#25	19.30	20.27	19.97	14.55	15.52	15.22
		RB50#0	19.95	20.22	19.76	15.20	15.47	15.01

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)
For Band 5: Antenna Gain =-2.0dBi =-4.15dBd (0dBd=2.15dBi)
Cable Loss=0.6dB
Limit: ERP≤38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.45	22.35	22.09	23.65	23.55	23.29
		RB1#13	22.54	22.36	21.95	23.74	23.56	23.15
		RB1#24	22.47	22.38	21.99	23.67	23.58	23.19
		RB15#0	21.50	21.32	21.08	22.70	22.52	22.28
		RB15#10	21.47	21.27	21.16	22.67	22.47	22.36
		RB25#0	21.53	21.34	21.06	22.73	22.54	22.26
	16QAM	RB1#0	20.83	21.42	20.92	22.03	22.62	22.12
		RB1#13	20.86	21.41	20.77	22.06	22.61	21.97
		RB1#24	20.87	21.50	20.80	22.07	22.70	22.00
		RB15#0	20.67	20.37	20.24	21.87	21.57	21.44
		RB15#10	20.63	20.41	20.29	21.83	21.61	21.49
		RB25#0	20.66	20.46	20.23	21.86	21.66	21.43
10.0	QPSK	RB1#0	22.30	22.34	22.36	23.50	23.54	23.56
		RB1#25	22.31	22.27	22.32	23.51	23.47	23.52
		RB1#49	22.32	22.23	22.17	23.52	23.43	23.37
		RB25#0	21.36	21.36	21.18	22.56	22.56	22.38
		RB25#25	21.41	21.35	21.12	22.61	22.55	22.32
		RB50#0	21.52	21.25	21.28	22.72	22.45	22.48
	16QAM	RB1#0	21.69	21.71	20.80	22.89	22.91	22.00
		RB1#25	21.68	21.64	20.87	22.88	22.84	22.07
		RB1#49	21.66	21.61	20.65	22.86	22.81	21.85
		RB25#0	20.60	20.53	20.42	21.80	21.73	21.62
		RB25#25	20.55	20.53	20.38	21.75	21.73	21.58
		RB50#0	20.56	20.59	20.41	21.76	21.79	21.61

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	22.36	22.34	22.37	23.56	23.54	23.57
		RB1#38	22.25	22.30	22.28	23.45	23.50	23.48
		RB1#74	22.28	22.23	22.18	23.48	23.43	23.38
		RB36#0	21.39	21.39	21.27	22.59	22.59	22.47
		RB36#39	21.37	21.27	21.08	22.57	22.47	22.28
		RB75#0	21.33	21.38	21.17	22.53	22.58	22.37
	16QAM	RB1#0	21.76	21.81	21.71	22.96	23.01	22.91
		RB1#38	21.66	21.79	21.61	22.86	22.99	22.81
		RB1#74	21.67	21.69	21.55	22.87	22.89	22.75
		RB36#0	20.69	20.58	20.36	21.89	21.78	21.56
		RB36#39	20.61	20.57	20.29	21.81	21.77	21.49
		RB75#0	20.60	20.51	20.29	21.80	21.71	21.49
20.0	QPSK	RB1#0	22.52	22.43	22.43	23.72	23.63	23.63
		RB1#50	22.44	22.40	22.45	23.64	23.60	23.65
		RB1#99	22.57	22.32	22.27	23.77	23.52	23.47
		RB50#0	21.49	21.43	21.38	22.69	22.63	22.58
		RB50#50	21.32	21.32	21.16	22.52	22.52	22.36
		RB100#0	21.51	21.28	21.28	22.71	22.48	22.48
	16QAM	RB1#0	21.33	22.02	21.93	22.53	23.22	23.13
		RB1#50	21.28	21.98	21.87	22.48	23.18	23.07
		RB1#99	21.31	21.79	21.75	22.51	22.99	22.95
		RB50#0	20.58	20.71	20.44	21.78	21.91	21.64
		RB50#50	20.59	20.56	20.35	21.79	21.76	21.55
		RB100#0	20.53	20.41	20.47	21.73	21.61	21.67

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)
For Band 7: Antenna Gain =1.8dBi
Cable Loss=0.6dB
Limit: EIRP≤33dBm

LTE Band 38:

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.50	21.75	22.01	22.70	22.95	23.21
		RB1#13	21.52	21.74	21.92	22.72	22.94	23.12
		RB1#24	21.59	21.81	21.97	22.79	23.01	23.17
		RB15#0	20.68	20.65	20.95	21.88	21.85	22.15
		RB15#10	20.75	20.71	20.95	21.95	21.91	22.15
		RB25#0	20.64	20.82	20.92	21.84	22.02	22.12
	16QAM	RB1#0	20.73	21.09	21.22	21.93	22.29	22.42
		RB1#13	20.47	20.74	21.18	21.67	21.94	22.38
		RB1#24	20.70	20.92	21.32	21.90	22.12	22.52
		RB15#0	19.96	19.93	20.22	21.16	21.13	21.42
		RB15#10	20.00	19.96	20.21	21.20	21.16	21.41
		RB25#0	19.72	20.00	20.26	20.92	21.20	21.46
10.0	QPSK	RB1#0	21.88	21.89	21.95	23.08	23.09	23.15
		RB1#25	21.87	21.89	21.98	23.07	23.09	23.18
		RB1#49	21.86	21.95	22.05	23.06	23.15	23.25
		RB25#0	20.75	20.78	20.95	21.95	21.98	22.15
		RB25#25	20.82	20.78	21.01	22.02	21.98	22.21
		RB50#0	20.79	20.77	20.90	21.99	21.97	22.10
	16QAM	RB1#0	21.01	21.46	21.22	22.21	22.66	22.42
		RB1#25	21.02	20.83	21.39	22.22	22.03	22.59
		RB1#49	21.07	21.43	21.48	22.27	22.63	22.68
		RB25#0	19.85	19.96	20.23	21.05	21.16	21.43
		RB25#25	19.77	20.01	20.31	20.97	21.21	21.51
		RB50#0	19.92	19.84	20.07	21.12	21.04	21.27

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.85	21.89	21.69	23.05	23.09	22.89
		RB1#38	21.91	21.92	21.66	23.11	23.12	22.86
		RB1#74	21.89	21.95	21.81	23.09	23.15	23.01
		RB36#0	20.77	20.76	20.81	21.97	21.96	22.01
		RB36#39	20.82	20.89	20.94	22.02	22.09	22.14
		RB75#0	20.73	20.78	20.95	21.93	21.98	22.15
	16QAM	RB1#0	21.07	21.02	21.06	22.27	22.22	22.26
		RB1#38	21.04	20.92	21.22	22.24	22.12	22.42
		RB1#74	21.11	21.47	21.08	22.31	22.67	22.28
		RB36#0	19.89	20.01	20.01	21.09	21.21	21.21
		RB36#39	19.94	20.02	20.12	21.14	21.22	21.32
		RB75#0	19.97	19.99	20.09	21.17	21.19	21.29
20.0	QPSK	RB1#0	21.70	21.78	21.95	22.90	22.98	23.15
		RB1#50	21.90	21.79	22.12	23.10	22.99	23.32
		RB1#99	21.95	21.83	22.18	23.15	23.03	23.38
		RB50#0	20.82	20.90	20.96	22.02	22.10	22.16
		RB50#50	20.91	20.90	21.11	22.11	22.10	22.31
		RB100#0	20.79	20.85	20.95	21.99	22.05	22.15
	16QAM	RB1#0	21.07	20.67	21.44	22.27	21.87	22.64
		RB1#50	21.17	20.67	21.51	22.37	21.87	22.71
		RB1#99	21.35	20.72	21.63	22.55	21.92	22.83
		RB50#0	20.15	20.09	20.09	21.35	21.29	21.29
		RB50#50	20.10	20.07	20.25	21.30	21.27	21.45
		RB100#0	20.03	20.02	20.08	21.23	21.22	21.28

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable Loss(dB)
For Band 38: Antenna Gain =1.8dBi
Cable Loss=0.6dB
Limit: EIRP≤33dBm

Peak-to-average ratio (PAR)

LTE Band 2

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.49	4.81	3.49	13	Pass
QPSK (100RB Size)	5.38	5.51	5.35	13	Pass
16QAM (1RB Size)	5.51	5.93	4.49	13	Pass
16QAM (100RB Size)	6.25	6.38	6.25	13	Pass

LTE Band 4

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.13	4.49	4.33	13	Pass
QPSK (100RB Size)	5.58	5.38	5.54	13	Pass
16QAM (1RB Size)	6.35	5.71	5.71	13	Pass
16QAM (100RB Size)	6.41	6.25	6.31	13	Pass

LTE Band 5

10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.62	4.55	4.97	13	Pass
QPSK (50RB Size)	5.38	5.54	5.45	13	Pass
16QAM (1RB Size)	5.87	5.90	5.77	13	Pass
16QAM (50RB Size)	6.15	6.35	6.31	13	Pass

LTE Band 7

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.37	4.33	5.24	13	Pass
QPSK (100RB Size)	4.97	5.35	5.12	13	Pass
16QAM (1RB Size)	4.65	5.80	5.76	13	Pass
16QAM (100RB Size)	5.83	6.12	5.98	13	Pass

LTE Band 38

20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	7.69	7.88	8.31	13	Pass
QPSK (100RB Size)	7.26	8.32	8.25	13	Pass
16QAM (1RB Size)	7.49	7.86	7.69	13	Pass
16QAM (100RB Size)	8.93	7.95	6.87	13	Pass

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

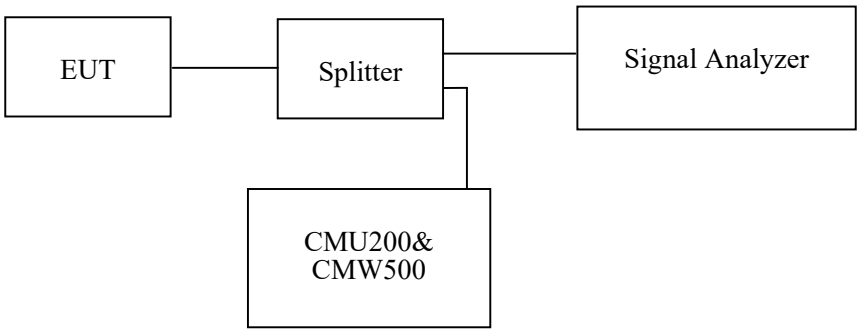
Applicable Standard

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:	25~28 ℃
Relative Humidity:	51~57 %
ATM Pressure:	101.0 kPa

The testing was performed by Key on 2021-07-05 and Pedro Yun from 2021-07-01 to 2021-07-04

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	824.2	246.00	318.86
	836.6	244.00	315.21
	848.8	244.00	317.31
EGPRS(8PSK)	824.2	248.00	314.46
	836.6	244.00	322.88
	848.8	244.00	317.71

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.16	4.70
	836.6	4.16	4.70
	846.6	4.16	4.69
HSDPA	826.4	4.16	4.70
	836.6	4.18	4.70
	846.6	4.16	4.70
HSUPA	826.4	4.16	4.70
	836.6	4.18	4.70
	846.6	4.16	4.70

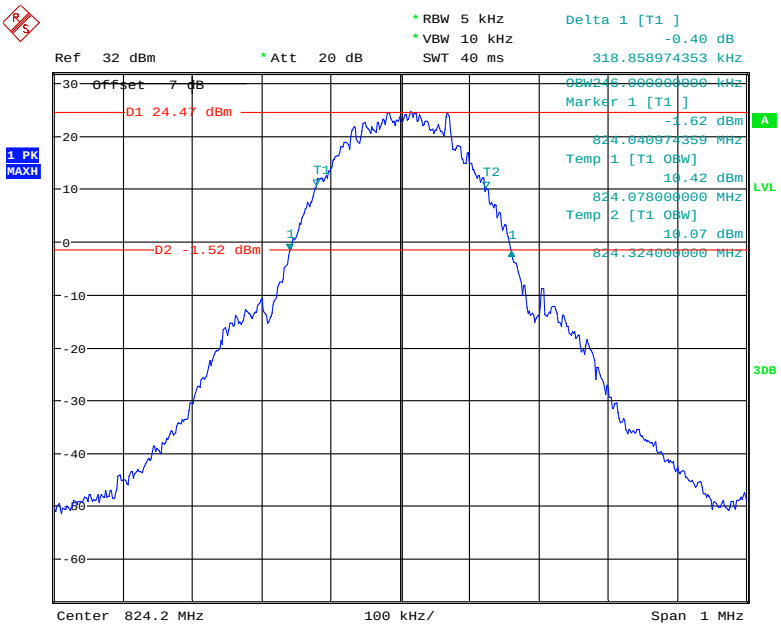
PCS Band (Part 24E)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1850.2	246.00	312.50
	1880.0	248.00	317.47
	1909.8	246.00	318.22
EGPRS(8PSK)	1850.2	248.00	316.91
	1880.0	252.00	321.27
	1909.8	248.00	310.90

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.16	4.69
	1880.0	4.16	4.70
	1907.6	4.16	4.70
HSDPA	1852.4	4.16	4.72
	1880.0	4.16	4.69
	1907.6	4.16	4.69
HSUPA	1852.4	4.16	4.70
	1880.0	4.18	4.70
	1907.6	4.16	4.66

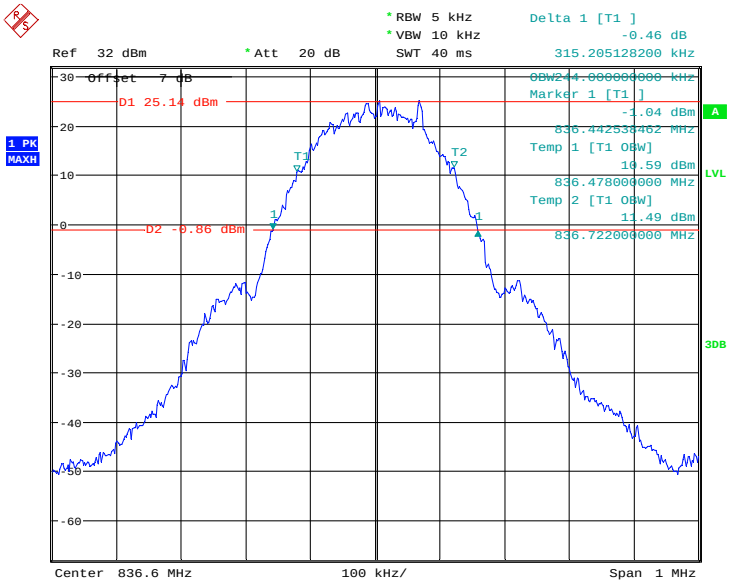
Cellular Band (Part 22H)

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



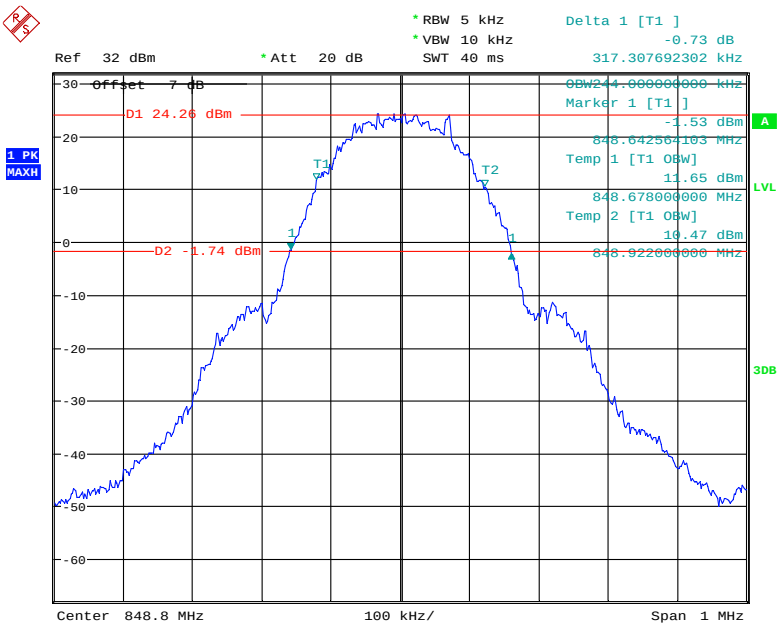
Date: 5.JUL.2021 11:44:46

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



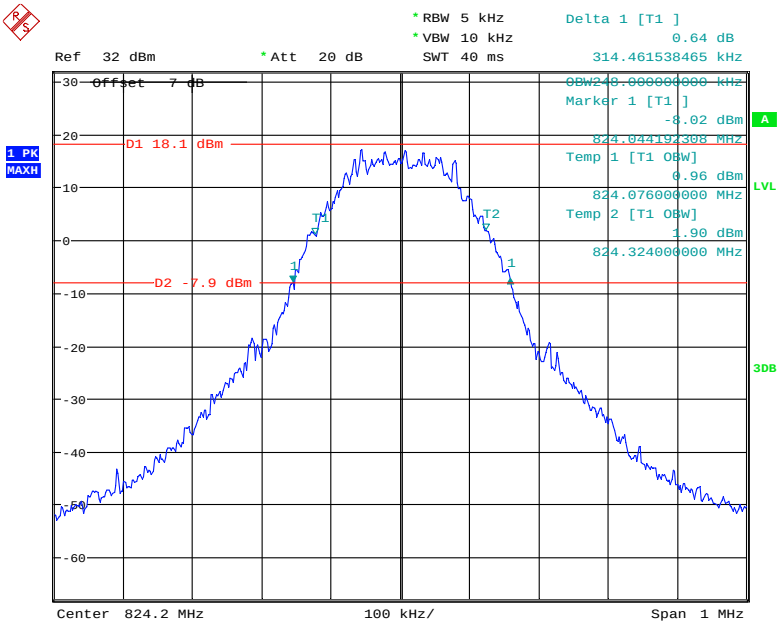
Date: 5.JUL.2021 11:47:00

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



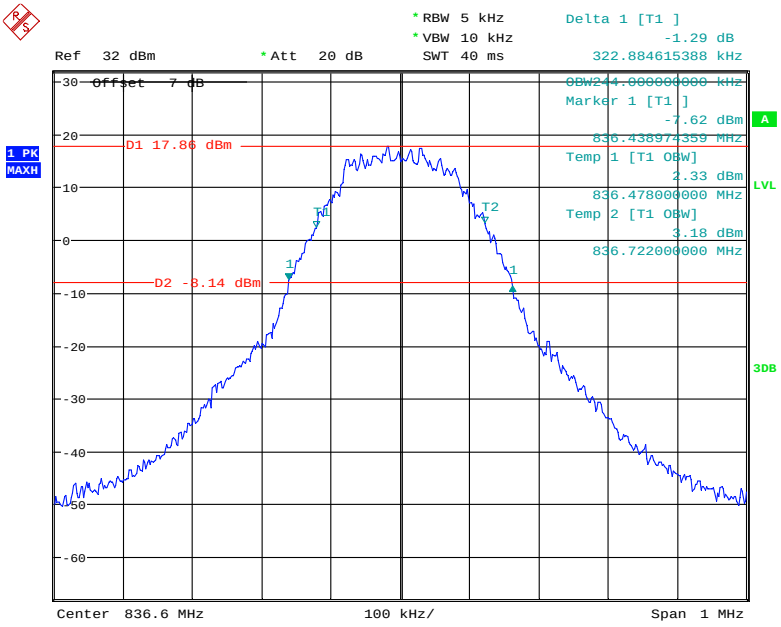
Date: 5.JUL.2021 11:49:40

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



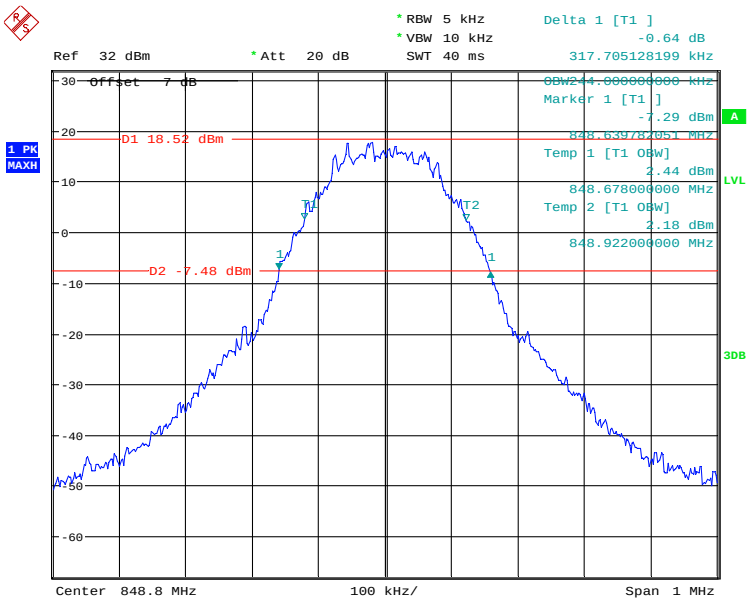
Date: 5.JUL.2021 11:11:21

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



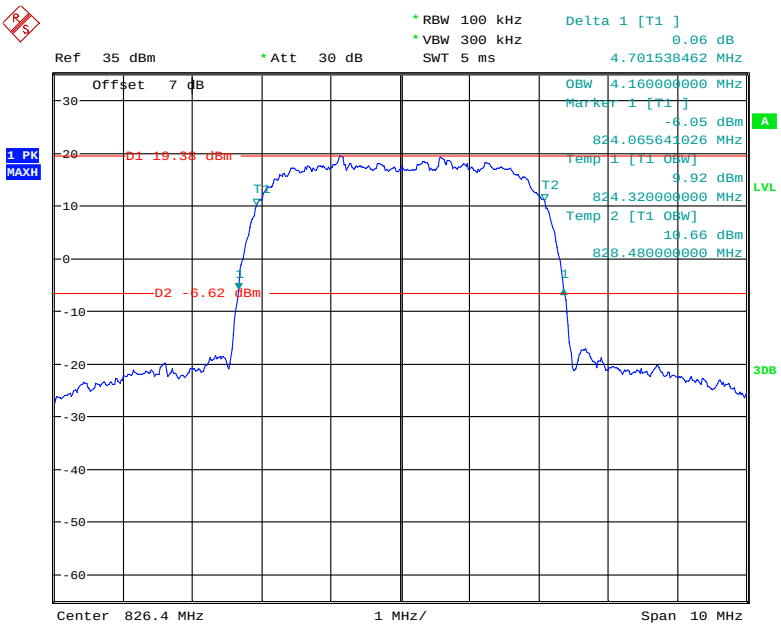
Date: 5.JUL.2021 11:06:15

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



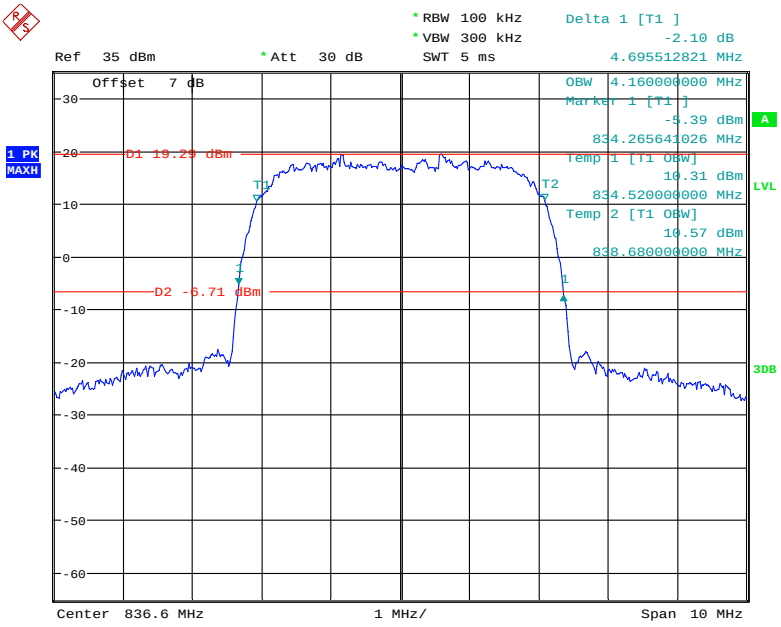
Date: 5.JUL.2021 11:02:13

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



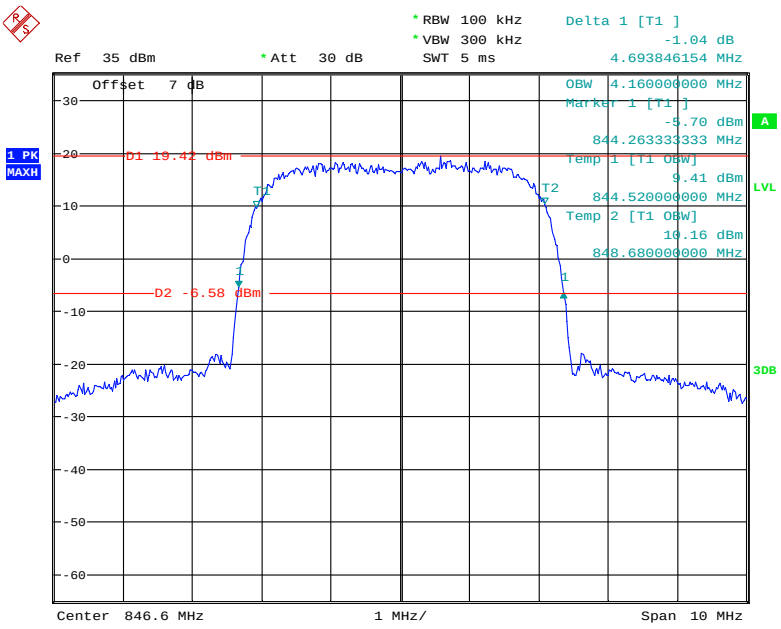
Date: 5.JUL.2021 15:54:21

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



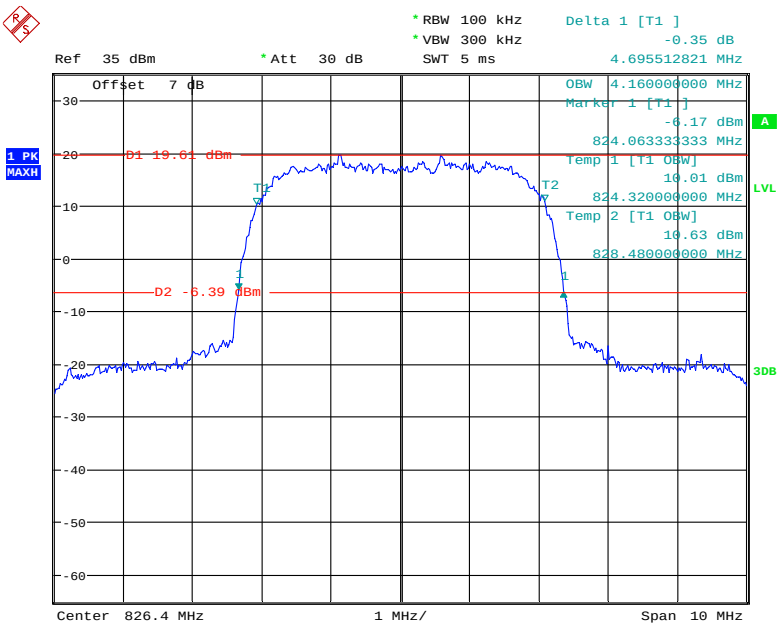
Date: 5.JUL.2021 15:51:31

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



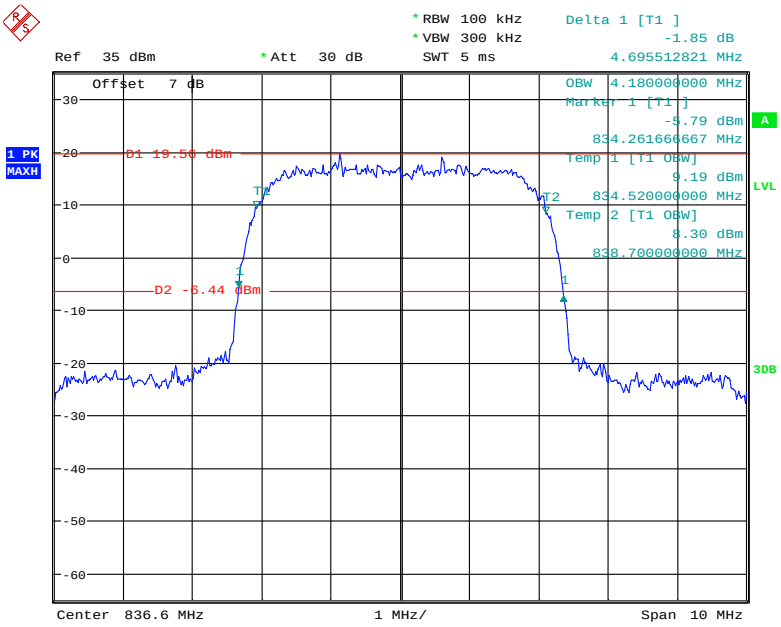
Date: 5.JUL.2021 15:48:23

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



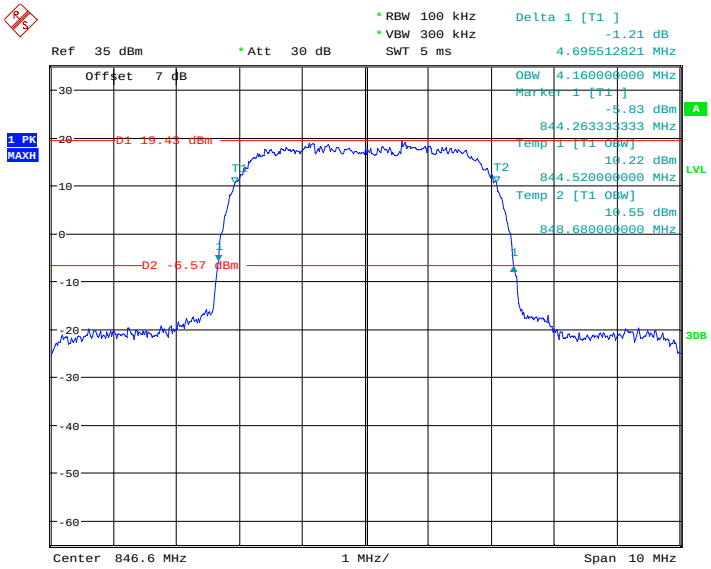
Date: 5.JUL.2021 15:56:50

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



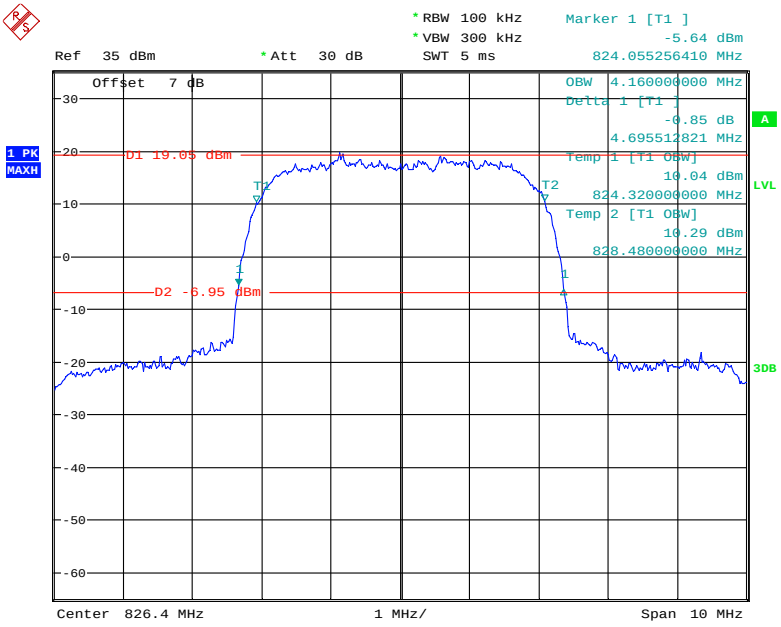
Date: 5.JUL.2021 16:00:07

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



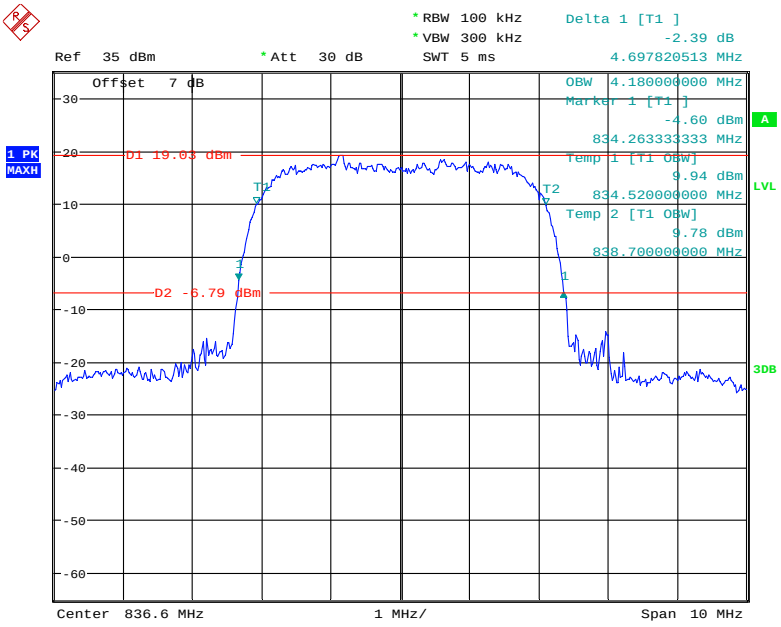
Date: 5.JUL.2021 16:03:21

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



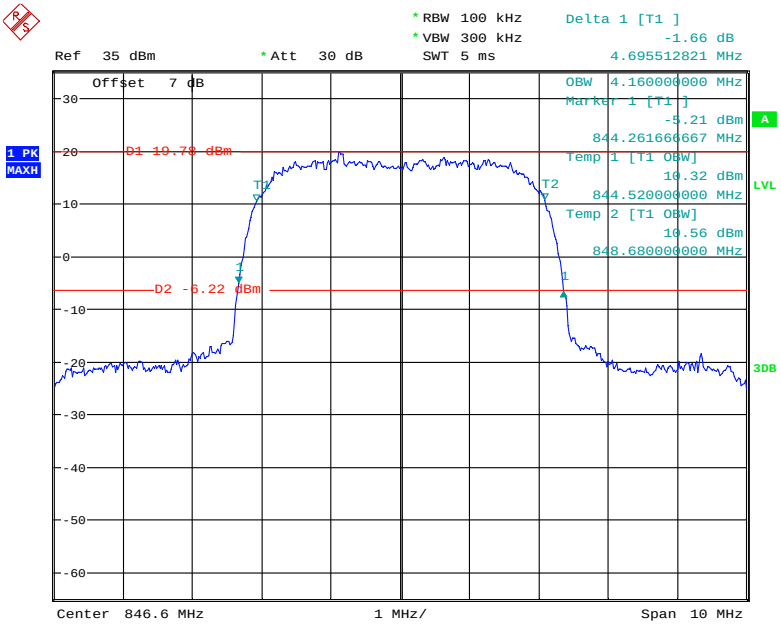
Date: 5.JUL.2021 15:39:00

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



Date: 5.JUL.2021 15:43:18

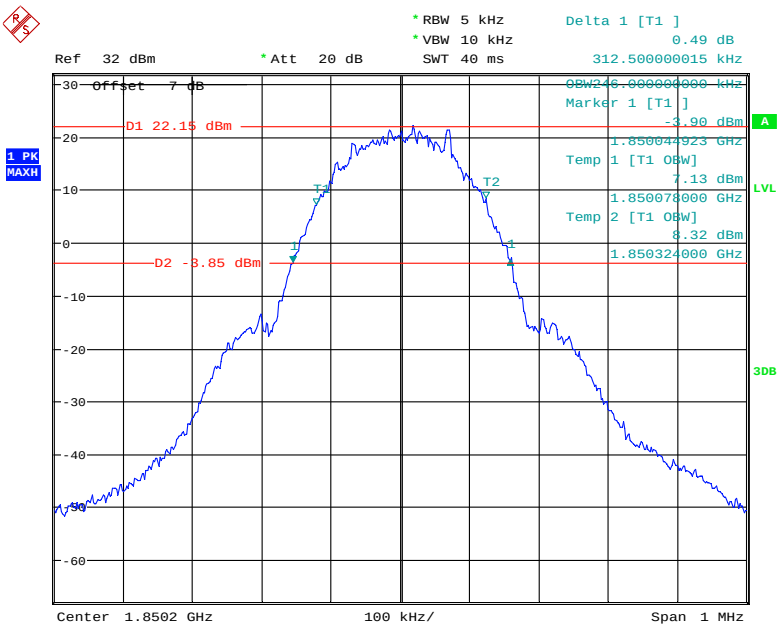
26 dB Emissions &99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 5.JUL.2021 15:45:30

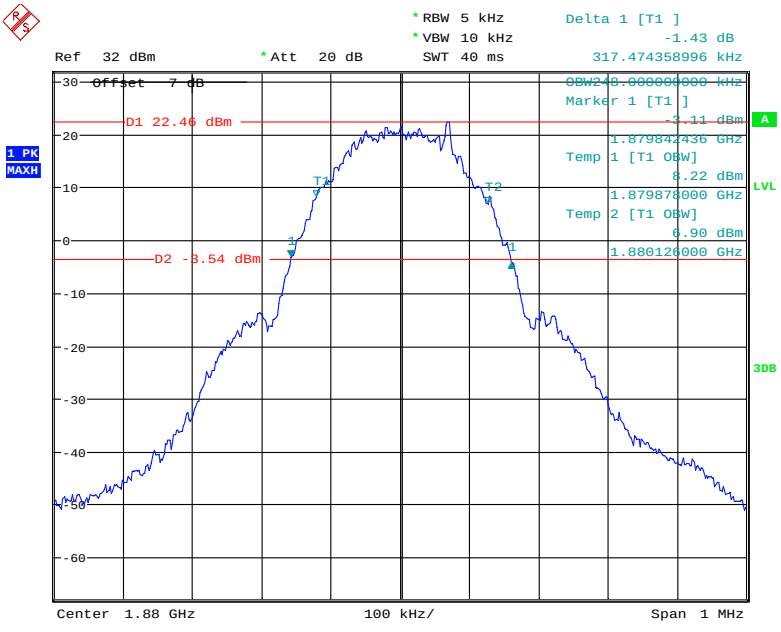
PCS Band (Part 24E)

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

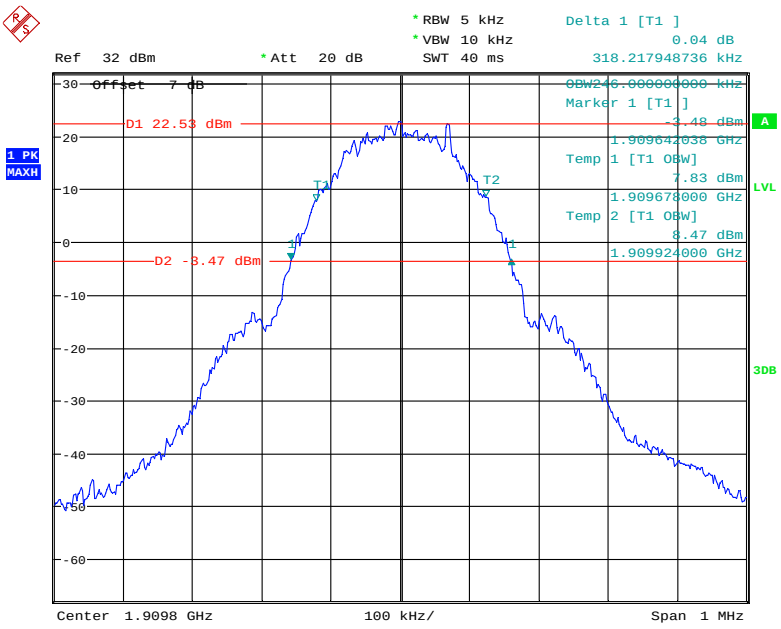


Date: 5.JUL.2021 11:32:12

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

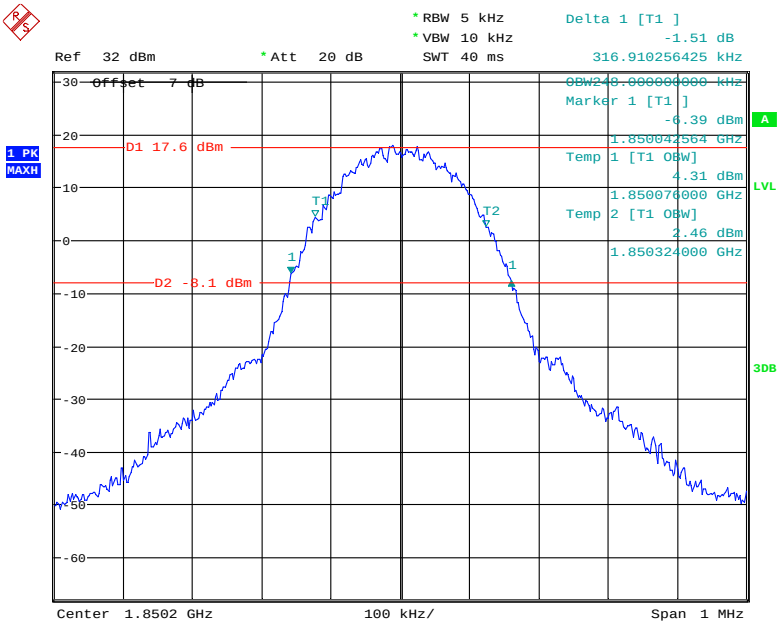


26 dB Emissions &99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



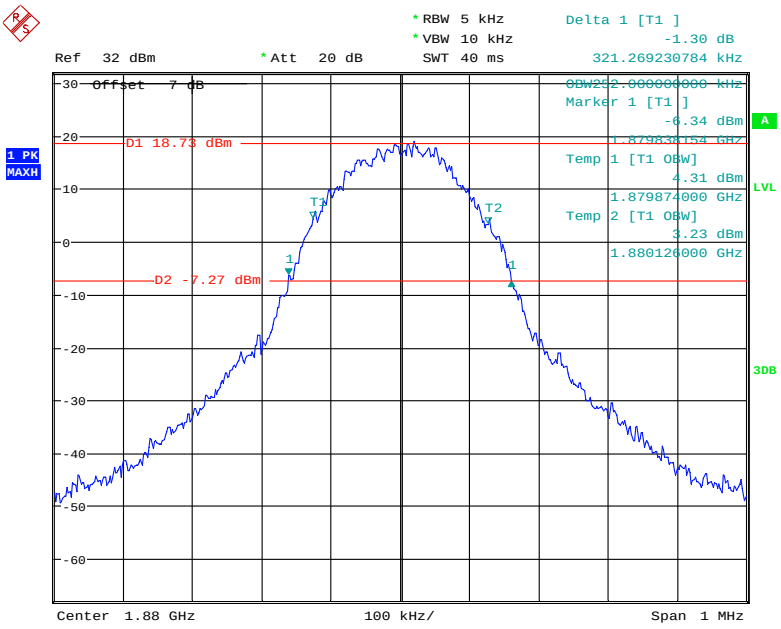
Date: 5.JUL.2021 11:39:48

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

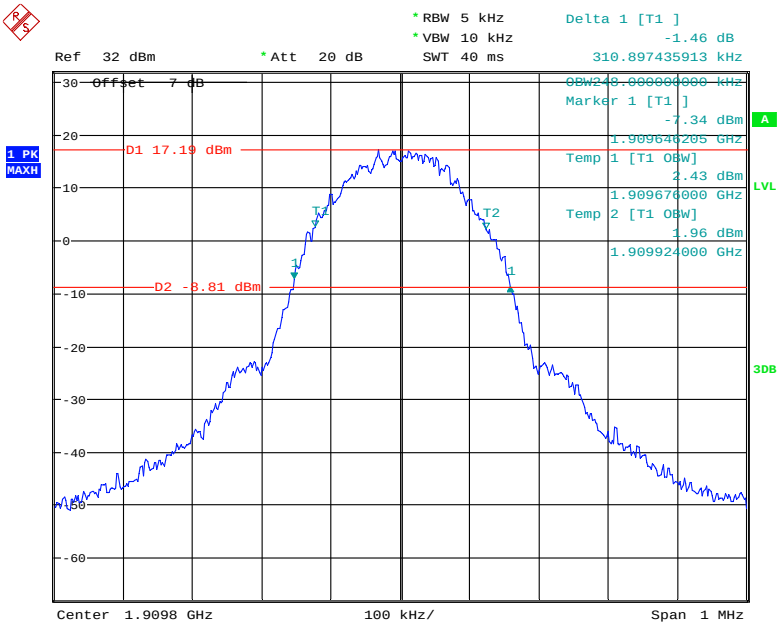


Date: 5.JUL.2021 11:16:42

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

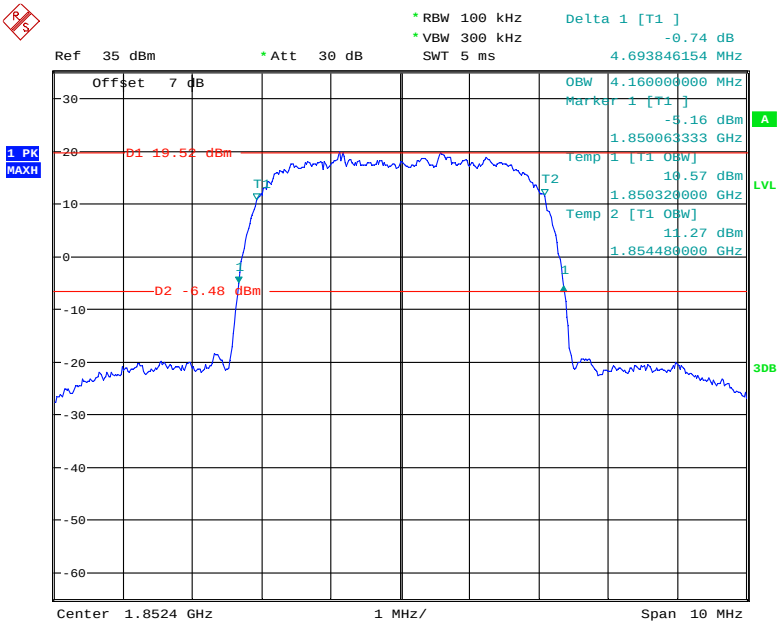


26 dB Emissions &99% Occupied Bandwidth for EGPRS (8PSK) Mode, High channel



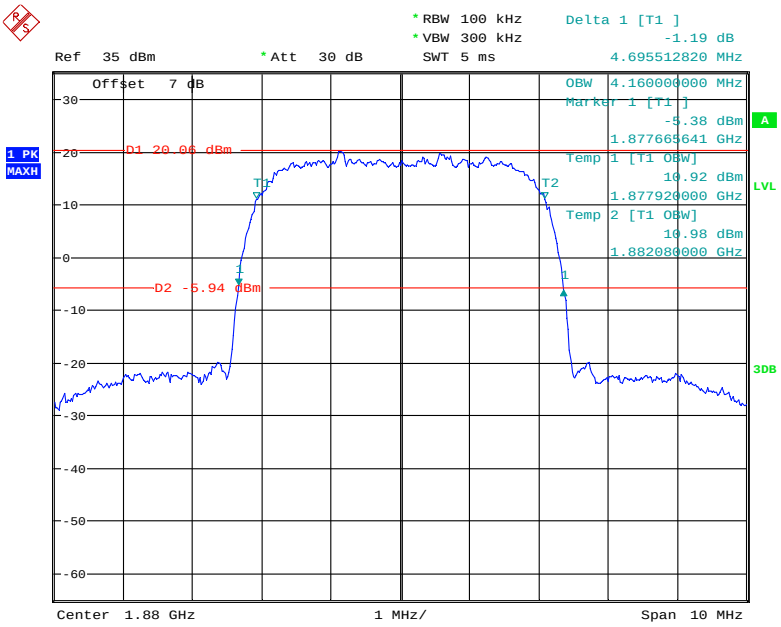
Date: 5.JUL.2021 11:23:04

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

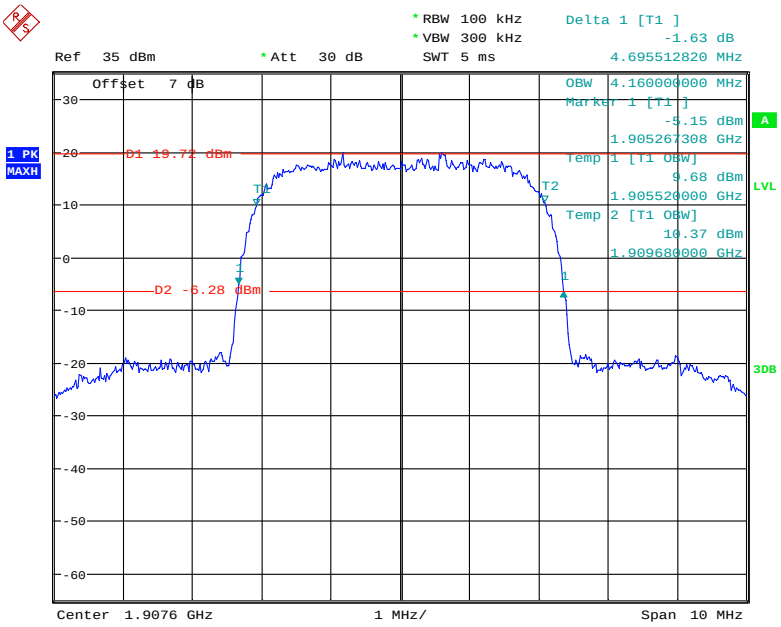


Date: 5.JUL.2021 16:07:24

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

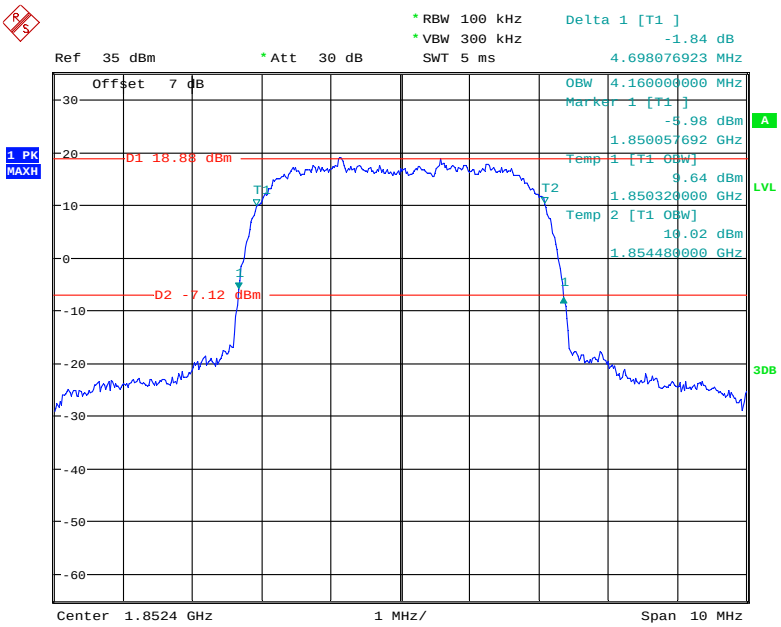


26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

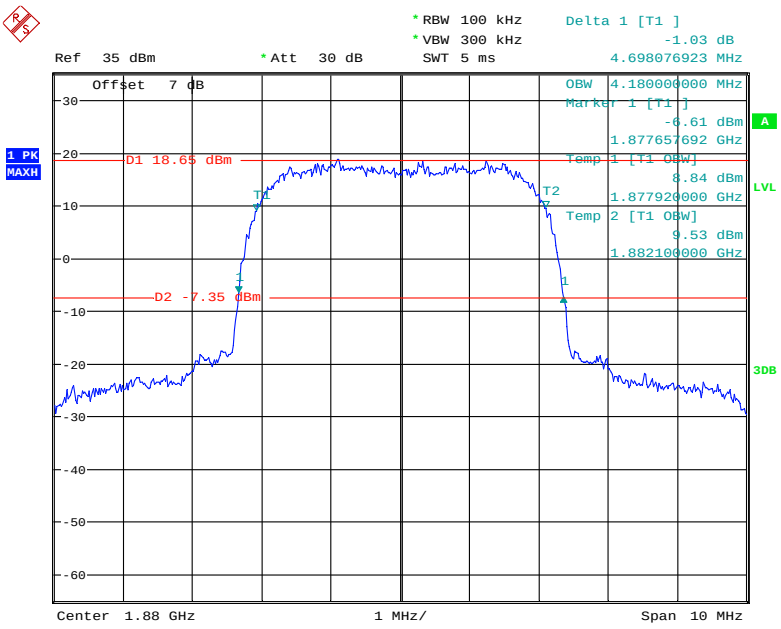


Date: 5.JUL.2021 16:11:22

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

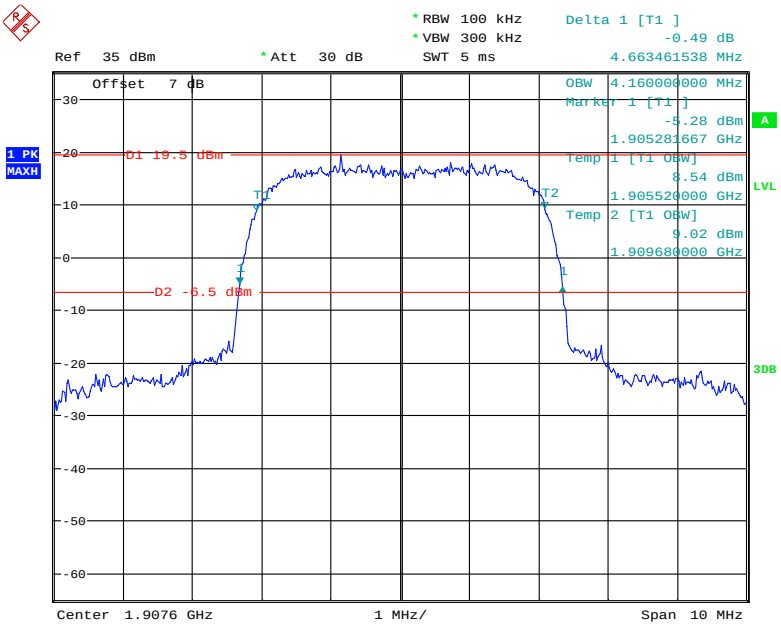


26 dB Emissions &99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel

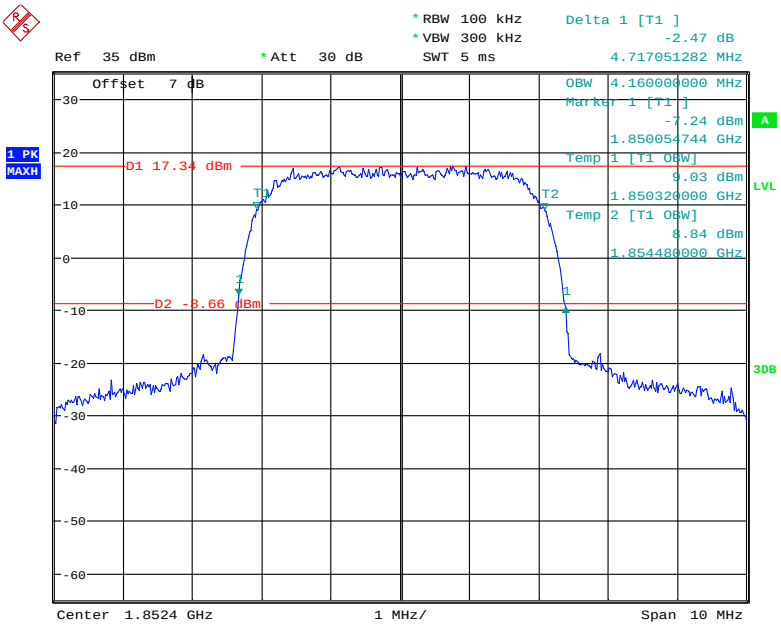


Date: 5.JUL.2021 16:23:03

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

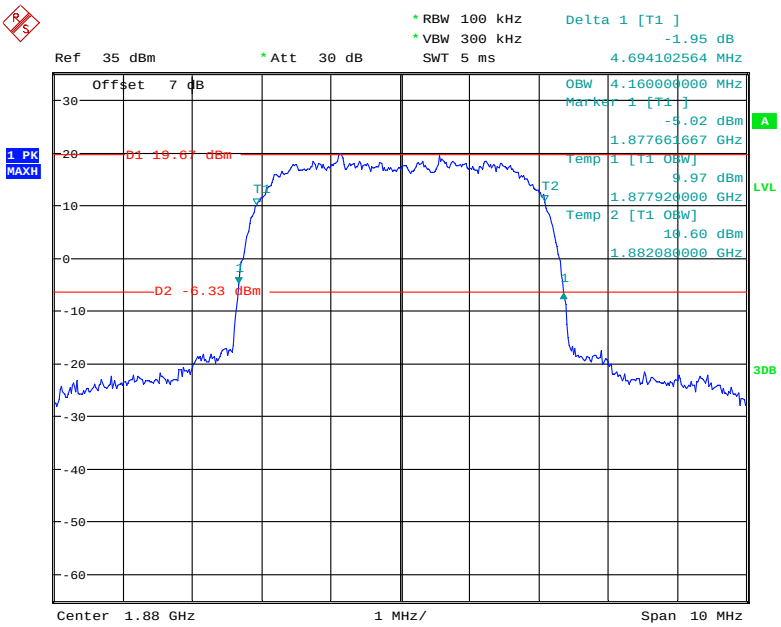


26 dB Emissions &99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel



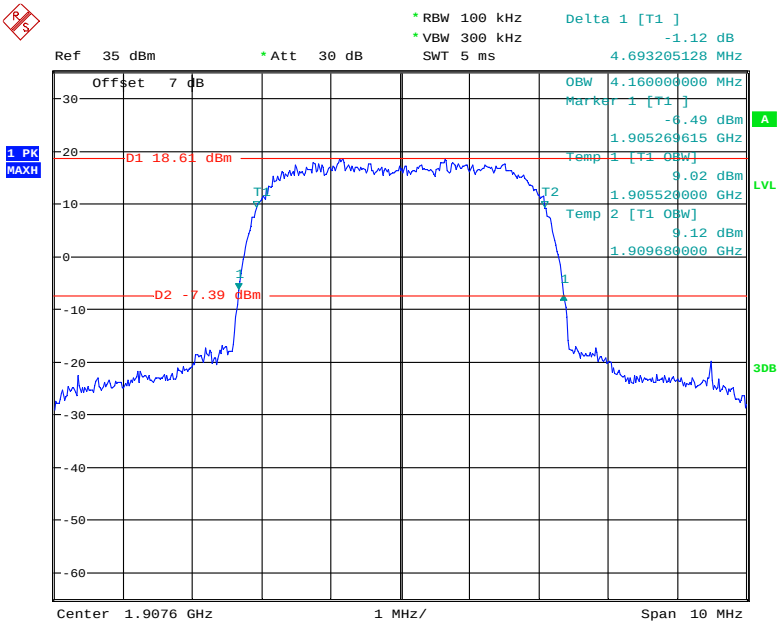
Date: 5.JUL.2021 16:18:33

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



Date: 5.JUL.2021 16:16:05

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



Date: 5.JUL.2021 16:13:59

LTE Band 2:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.254
		Middle	1.110	1.260
		High	1.104	1.266
	16QAM	Low	1.104	1.254
		Middle	1.116	1.260
		High	1.098	1.254
3	QPSK	Low	2.700	2.988
		Middle	2.700	3.012
		High	2.712	3.024
	16QAM	Low	2.688	3.012
		Middle	2.688	3.000
		High	2.700	3.024
5	QPSK	Low	4.520	4.980
		Middle	4.520	5.000
		High	4.520	5.000
	16QAM	Low	4.520	5.000
		Middle	4.540	5.020
		High	4.560	5.000
10	QPSK	Low	8.960	9.720
		Middle	8.960	9.720
		High	8.960	9.760
	16QAM	Low	8.960	9.800
		Middle	9.000	9.840
		High	8.960	9.880
15	QPSK	Low	13.560	15.060
		Middle	13.560	15.120
		High	13.560	15.180
	16QAM	Low	13.560	15.060
		Middle	13.560	15.060
		High	13.620	15.180
20	QPSK	Low	18.000	19.680
		Middle	18.000	19.680
		High	18.080	19.840
	16QAM	Low	18.000	19.680
		Middle	18.080	19.840
		High	18.080	19.680

LTE Band 4:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.098	1.260
		Middle	1.104	1.266
		High	1.104	1.260
	16QAM	Low	1.110	1.266
		Middle	1.098	1.260
		High	1.104	1.254
3	QPSK	Low	2.700	2.988
		Middle	2.700	3.000
		High	2.688	3.024
	16QAM	Low	2.700	3.012
		Middle	2.712	3.000
		High	2.700	3.012
5	QPSK	Low	4.520	5.000
		Middle	4.520	5.020
		High	4.520	5.000
	16QAM	Low	4.520	4.980
		Middle	4.540	5.020
		High	4.520	5.020
10	QPSK	Low	9.000	9.760
		Middle	8.920	9.720
		High	8.960	9.800
	16QAM	Low	8.960	9.760
		Middle	9.000	9.800
		High	8.960	9.760
15	QPSK	Low	13.620	15.060
		Middle	13.560	14.940
		High	13.560	15.120
	16QAM	Low	13.620	15.120
		Middle	13.560	15.060
		High	13.560	15.060
20	QPSK	Low	18.000	19.680
		Middle	18.000	19.600
		High	18.080	19.680
	16QAM	Low	18.080	19.760
		Middle	17.920	19.760
		High	18.000	19.760

LTE Band 5:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.260
		Middle	1.104	1.254
		High	1.110	1.260
	16QAM	Low	1.116	1.266
		Middle	1.098	1.254
		High	1.104	1.254
3	QPSK	Low	2.700	3.000
		Middle	2.700	3.000
		High	2.688	3.024
	16QAM	Low	2.700	3.012
		Middle	2.688	3.000
		High	2.700	3.024
5	QPSK	Low	4.520	5.020
		Middle	4.520	5.020
		High	4.520	5.020
	16QAM	Low	4.500	4.980
		Middle	4.540	5.000
		High	4.540	5.020
10	QPSK	Low	8.960	9.840
		Middle	9.000	9.760
		High	8.960	9.760
	16QAM	Low	8.960	9.760
		Middle	9.000	9.800
		High	8.960	9.760

LTE Band 7:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.520	4.980
		Middle	4.520	5.000
		High	4.520	4.960
	16QAM	Low	4.520	5.000
		Middle	4.540	4.980
		High	4.520	5.000
10	QPSK	Low	9.000	9.800
		Middle	8.960	9.720
		High	8.960	9.800
	16QAM	Low	8.960	9.640
		Middle	8.960	9.800
		High	8.960	9.840
15	QPSK	Low	13.620	15.060
		Middle	13.500	15.120
		High	13.500	15.180
	16QAM	Low	13.620	15.120
		Middle	13.560	15.060
		High	13.560	15.180
20	QPSK	Low	18.000	19.680
		Middle	18.000	19.600
		High	18.000	19.840
	16QAM	Low	18.000	20.000
		Middle	18.000	19.680
		High	18.080	19.760

LTE Band 38

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.520	5.207
		Middle	4.520	5.020
		High	4.520	5.192
	16QAM	Low	4.500	4.960
		Middle	4.520	5.020
		High	4.500	5.040
10	QPSK	Low	9.000	9.720
		Middle	9.000	10.032
		High	8.960	9.720
	16QAM	Low	8.960	9.720
		Middle	8.960	9.800
		High	8.960	9.744
15	QPSK	Low	13.560	15.180
		Middle	13.500	16.140
		High	13.500	16.042
	16QAM	Low	13.560	15.240
		Middle	13.620	15.660
		High	13.560	16.474
20	QPSK	Low	18.000	19.920
		Middle	18.000	20.080
		High	18.000	19.840
	16QAM	Low	18.000	19.920
		Middle	18.000	20.080
		High	18.000	19.840

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

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

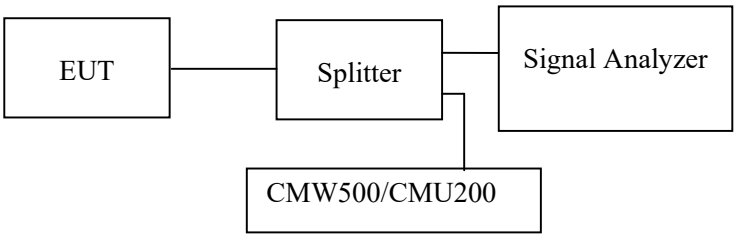
Applicable Standard

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

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

Test Procedure

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



Test Data

Environmental Conditions

Temperature:	25~28 ℃
Relative Humidity:	51~57 %
ATM Pressure:	101.0 kPa

The testing was performed by Key from 2021-07-05 to 2021-07-27 and Pedro Yun from 2021-07-01 to 2021-07-27.

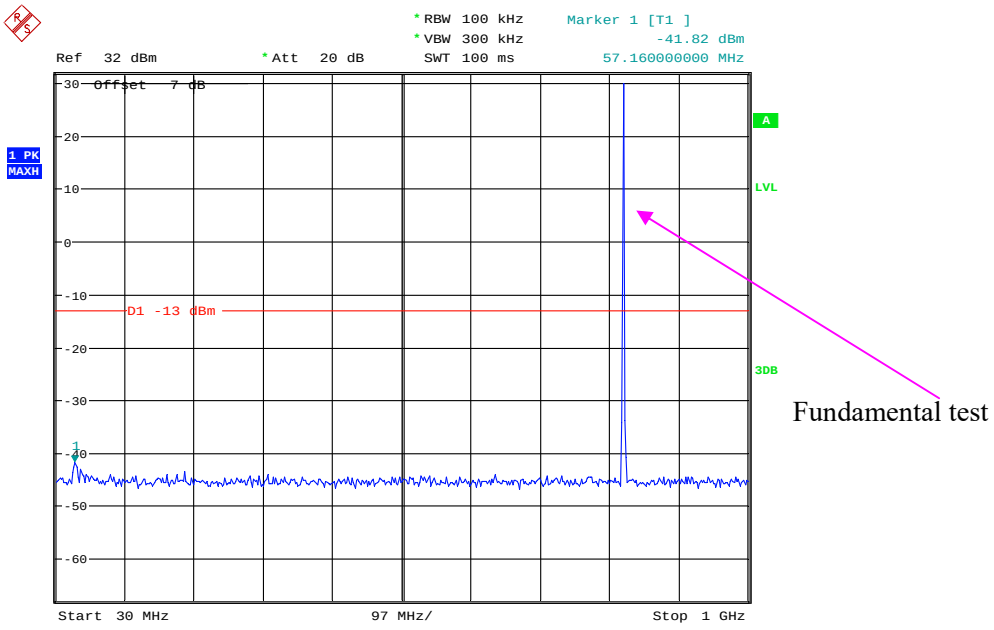
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

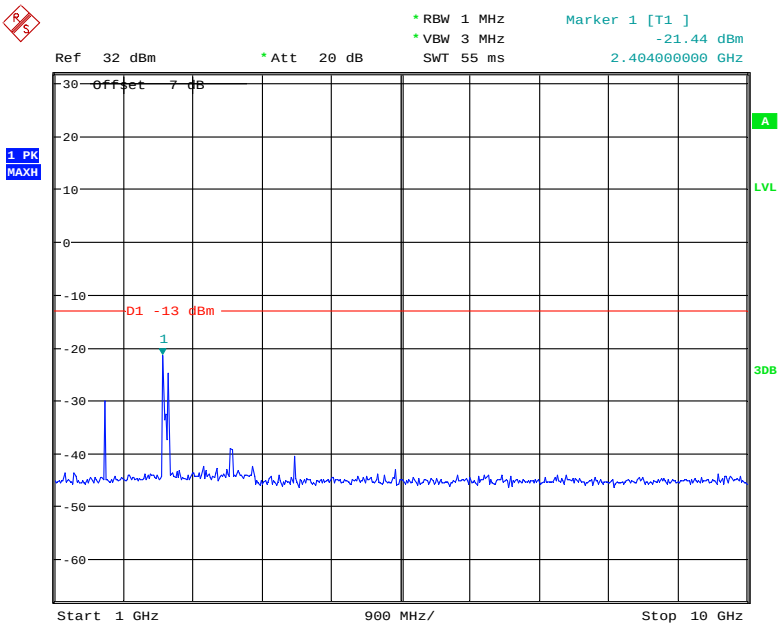
Cellular Band (Part 22H)
Low Channel:

30 MHz – 1 GHz (GSM Mode)



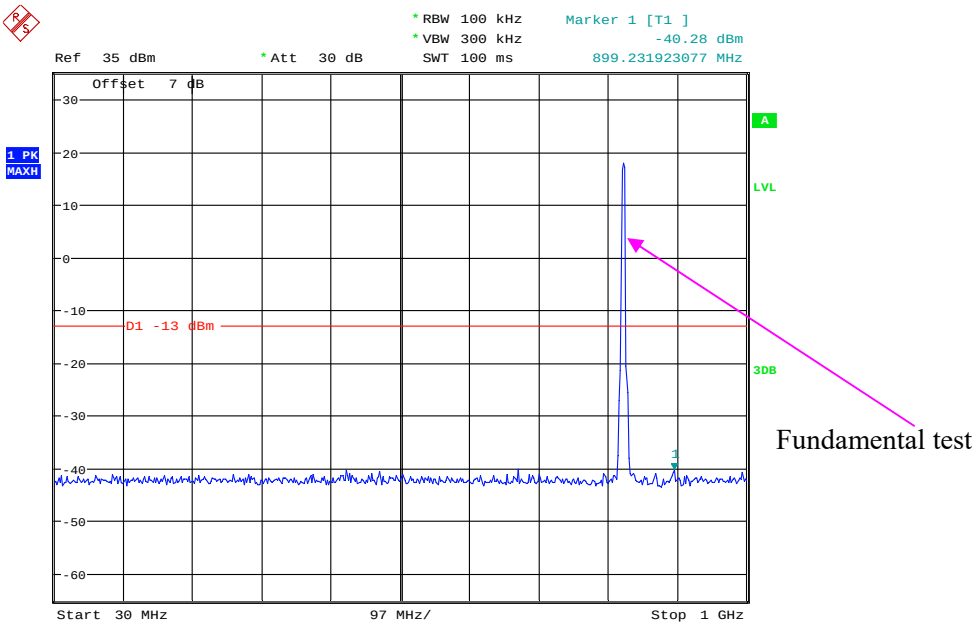
Date: 5.JUL.2021 09:56:06

1 GHz – 10 GHz (GSM Mode)



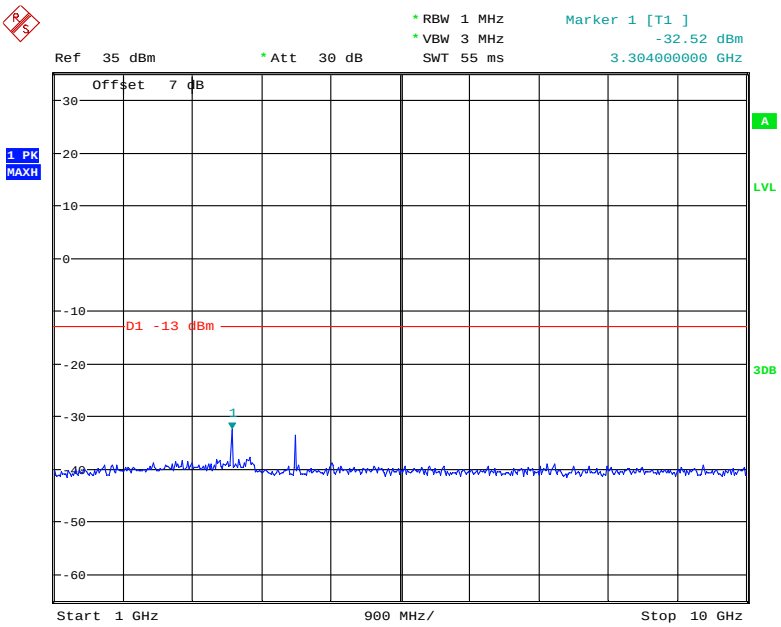
Date: 5.JUL.2021 09:57:14

30 MHz – 1 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:42:50

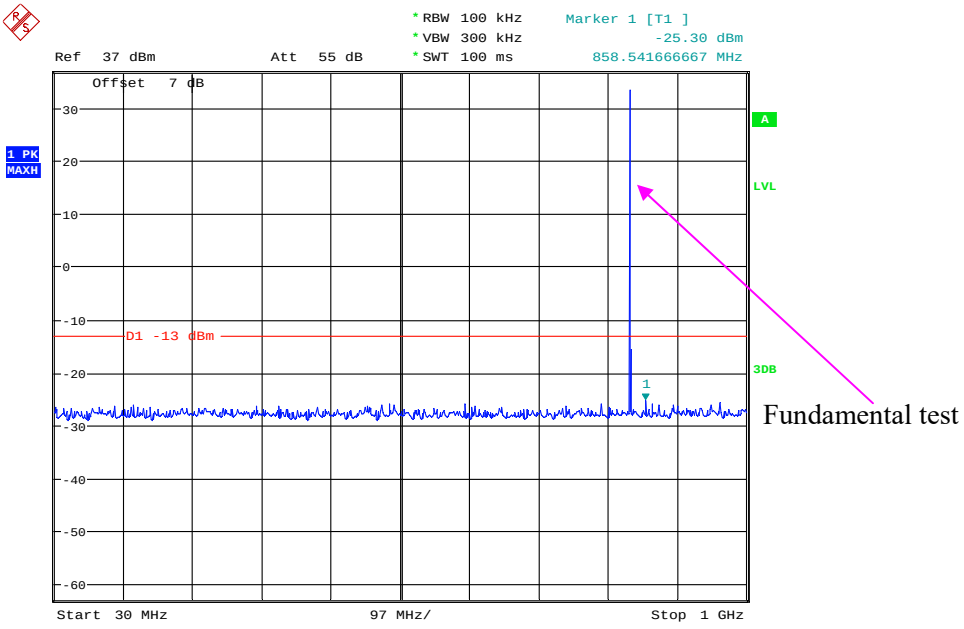
1 GHz – 10 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:44:37

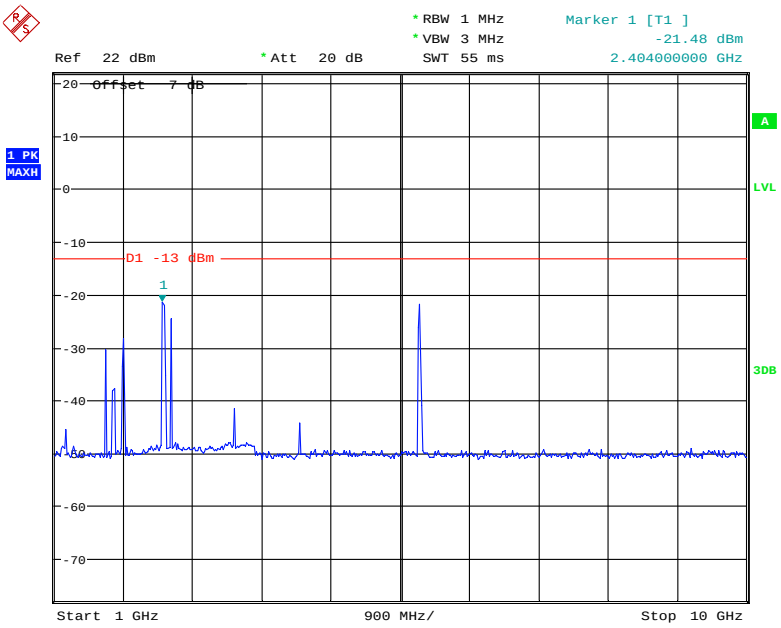
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



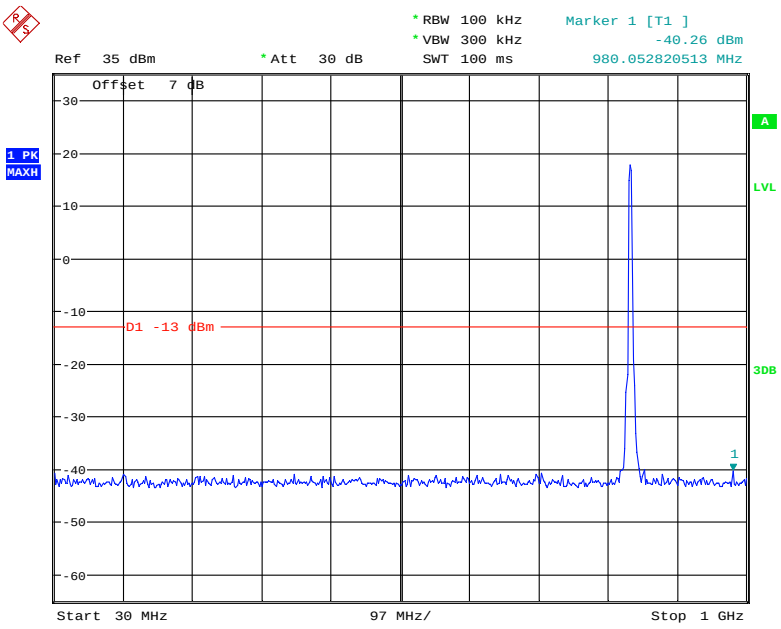
Date: 2.JUL.2021 17:39:45

1 GHz – 10 GHz (GSM Mode)



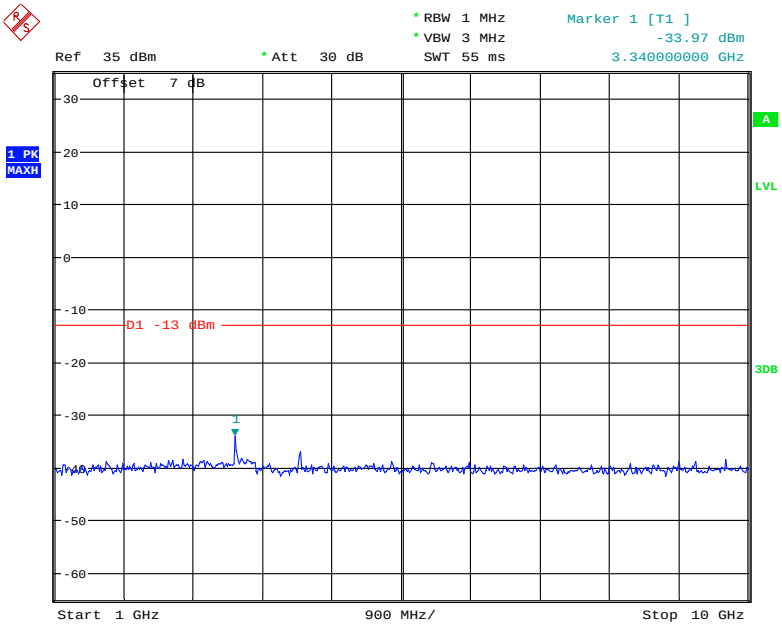
Date: 5.JUL.2021 09:49:50

30 MHz – 1 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:48:11

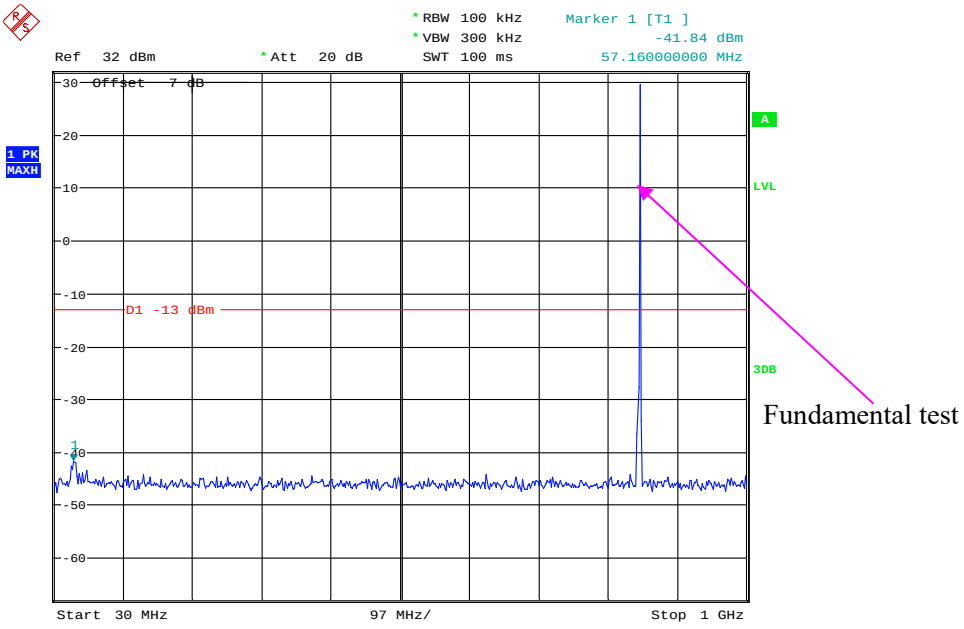
1 GHz – 10 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:45:24

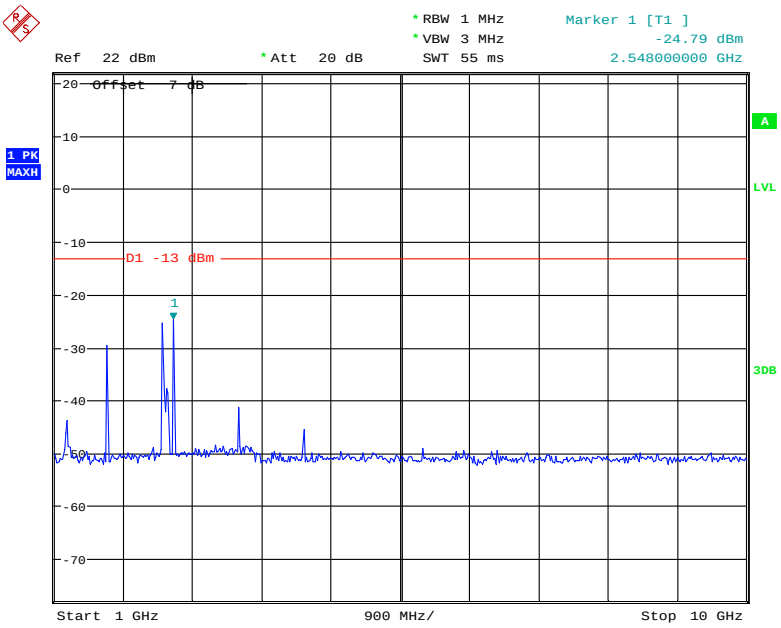
High Channel:

30 MHz – 1 GHz (GSM Mode)



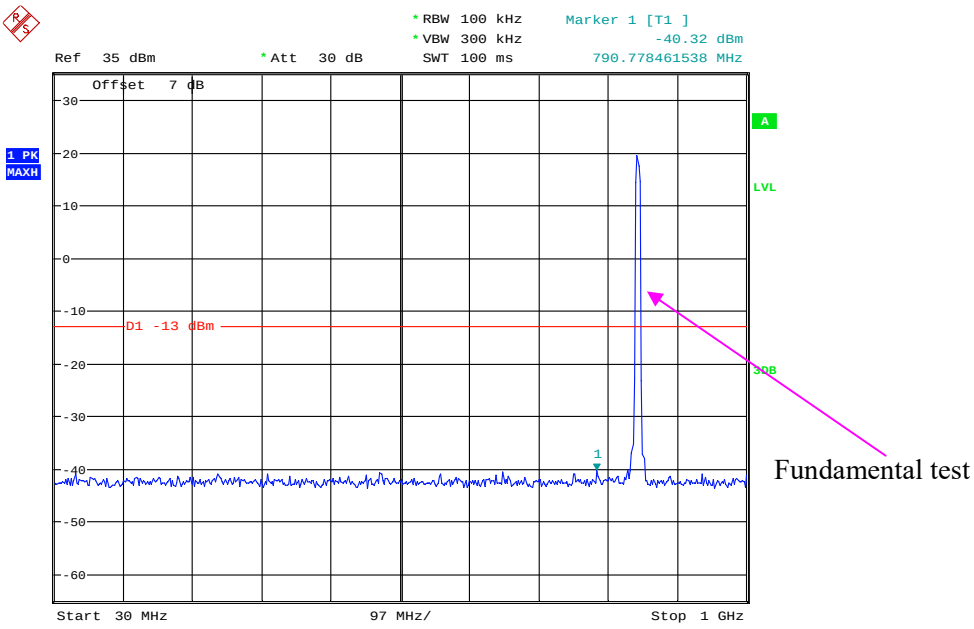
Date: 5.JUL.2021 10:00:10

1 GHz – 10 GHz (GSM Mode)



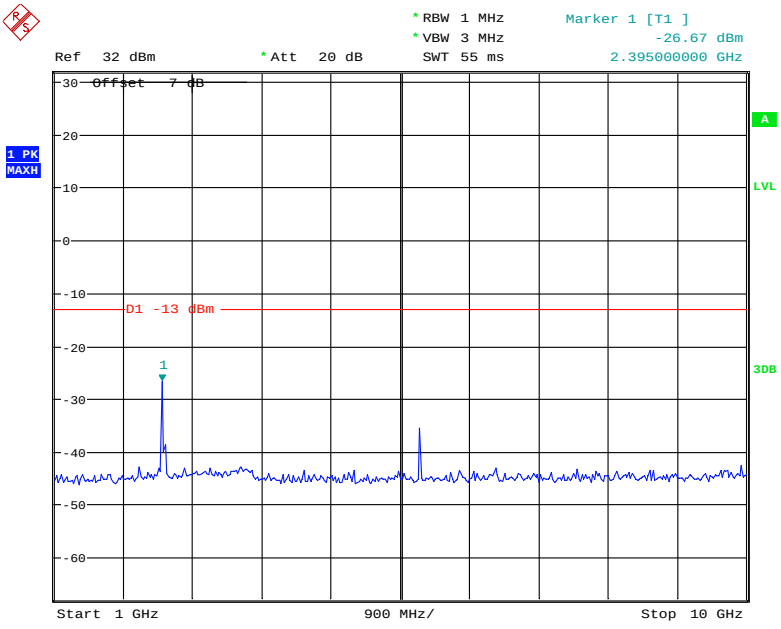
Date: 5.JUL.2021 09:52:09

30 MHz – 1 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:49:47

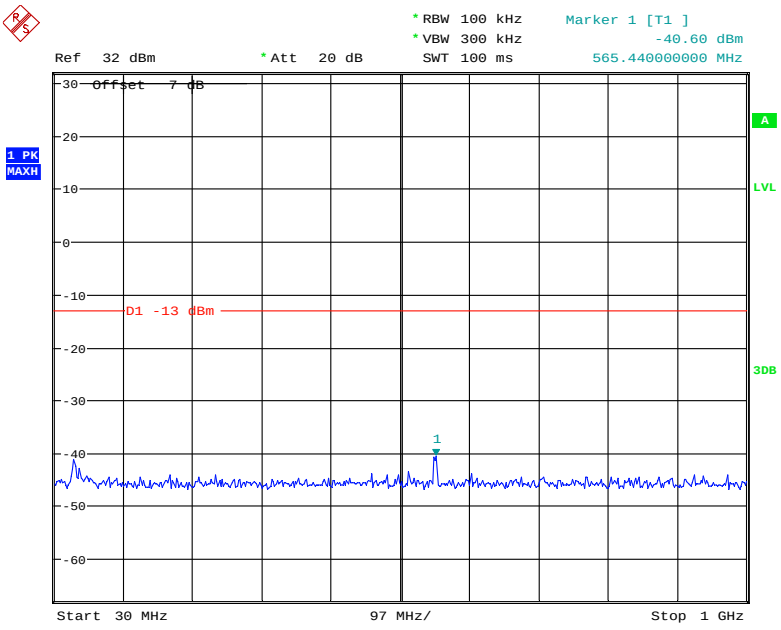
1 GHz – 10 GHz (WCDMA Mode)



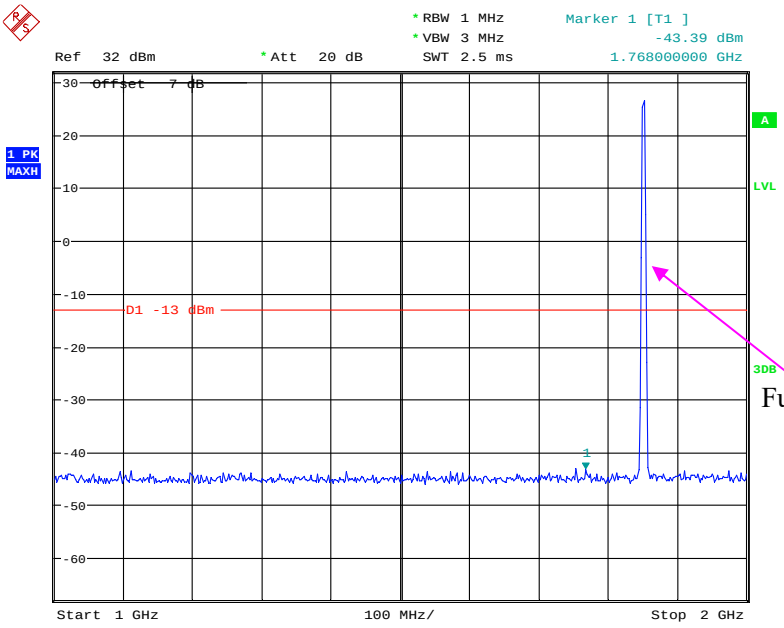
Date: 27.JUL.2021 14:37:20

PCS Band (Part 24E)
Low Channel:

30 MHz – 1 GHz (GSM Mode)



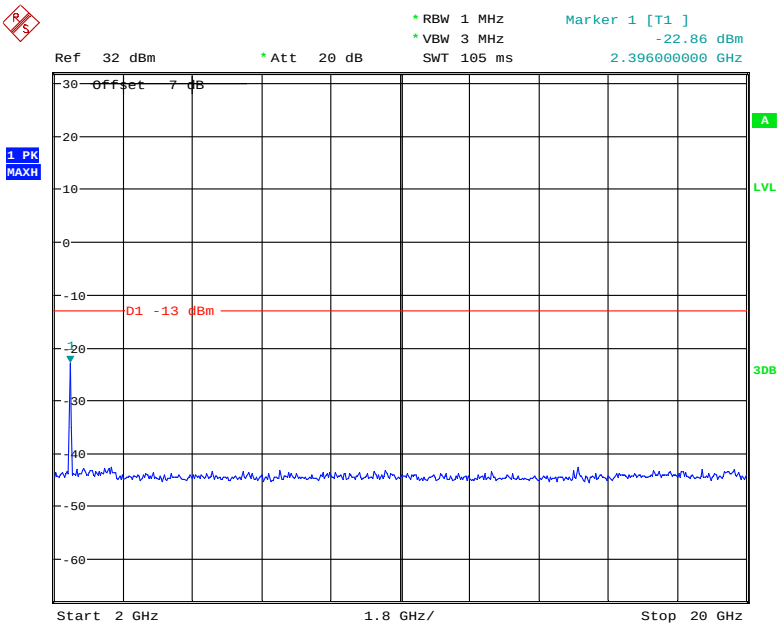
1 GHz – 2 GHz (GSM Mode)



Fundamental test

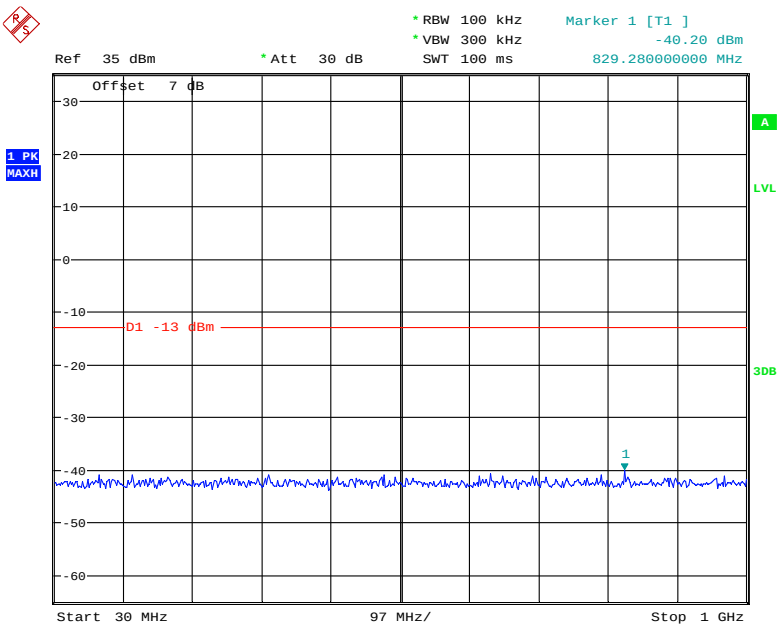
Date: 5.JUL.2021 10:08:25

2 GHz – 20 GHz (GSM Mode)



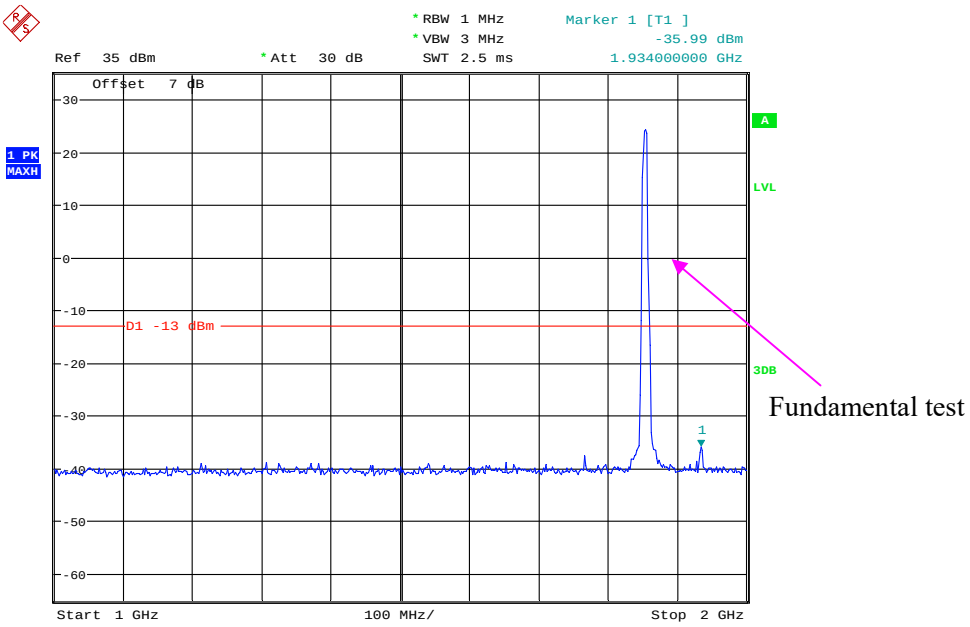
Date: 5.JUL.2021 10:10:01

30 MHz – 1 GHz (WCDMA Mode)



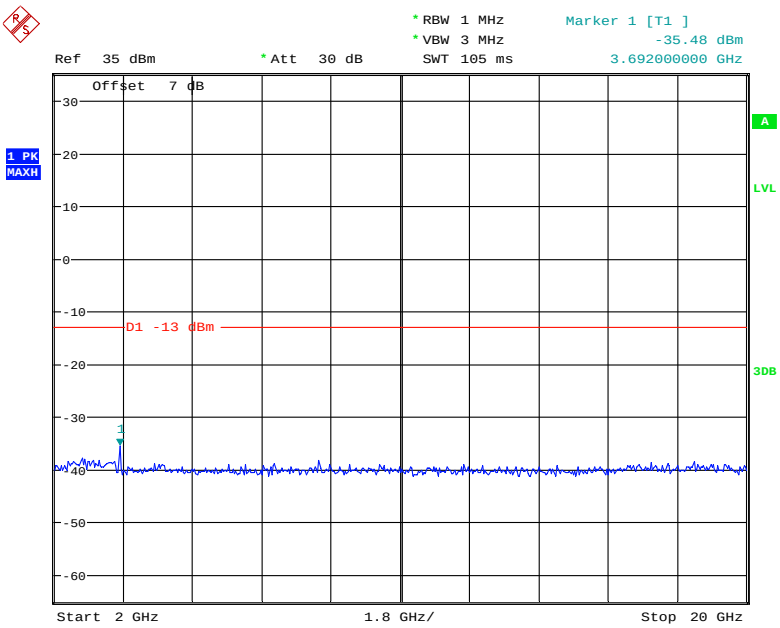
Date: 5.JUL.2021 14:24:27

1 GHz – 2 GHz (GSM Mode)



Date: 5.JUL.2021 14:29:08

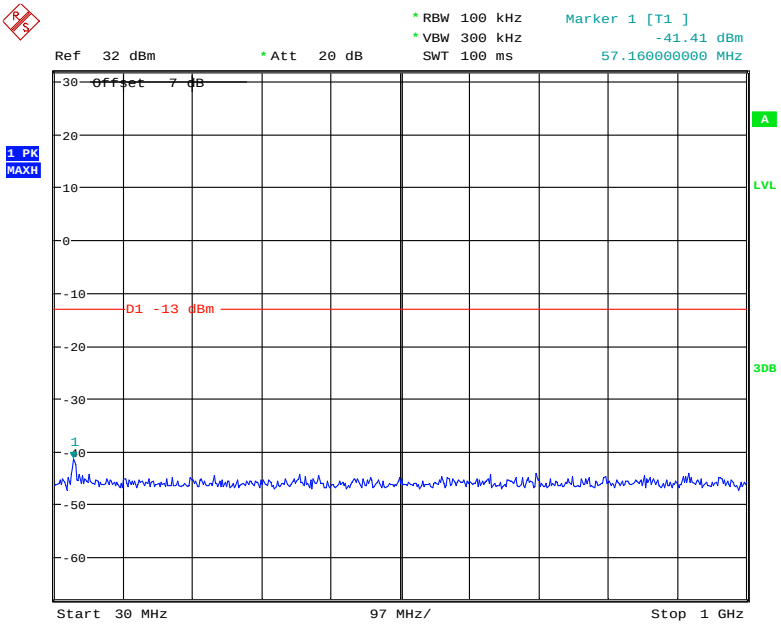
2 GHz – 20 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:30:16

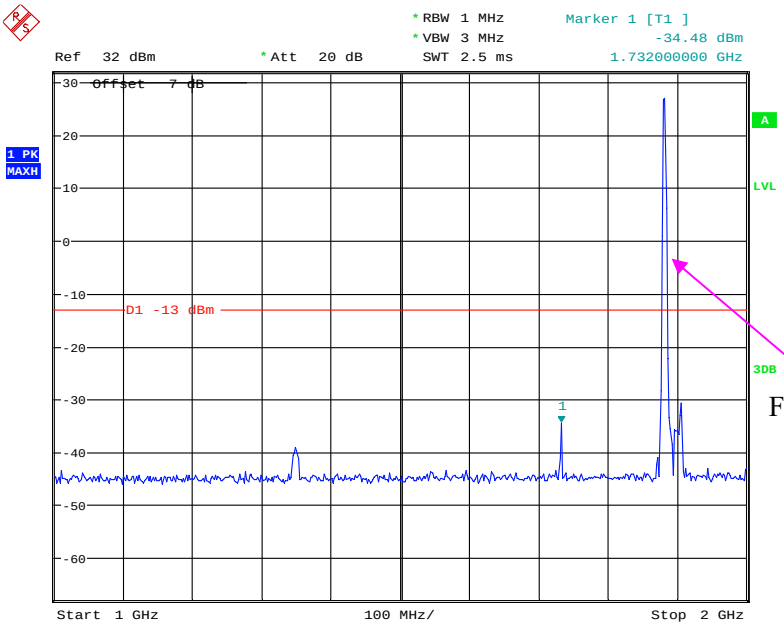
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



Date: 5.JUL.2021 10:13:06

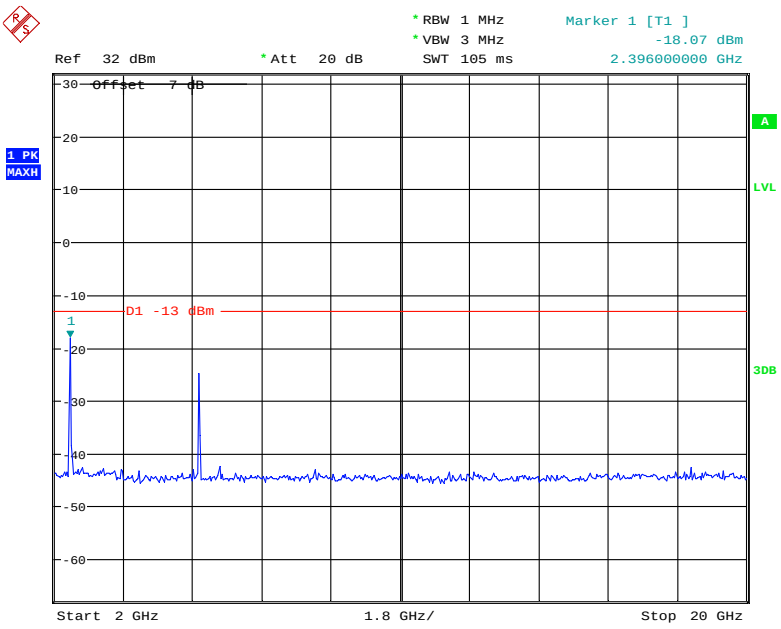
1 GHz – 2 GHz (GSM Mode)



Fundamental test

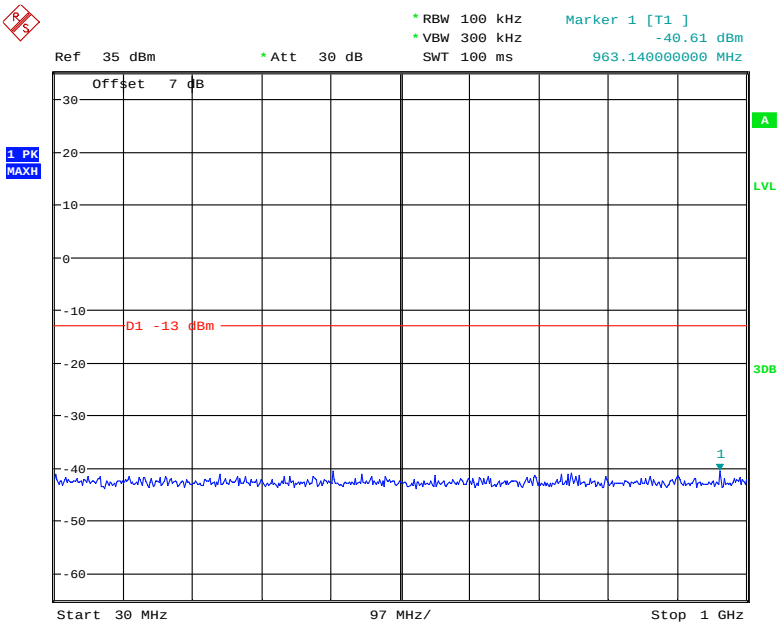
Date: 5.JUL.2021 10:12:28

2 GHz – 20 GHz (GSM Mode)



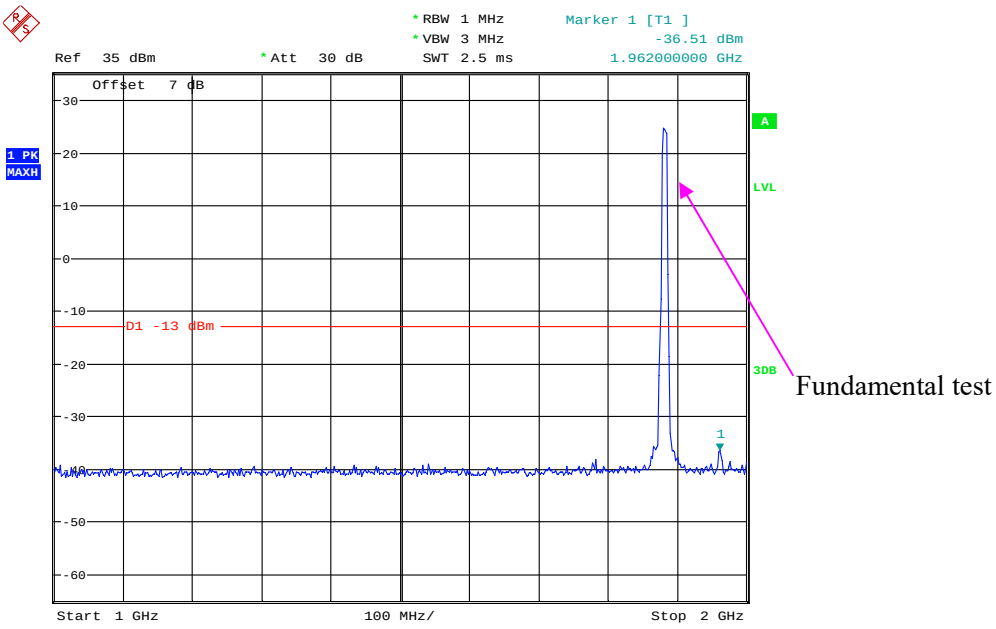
Date: 5.JUL.2021 10:11:00

30 MHz – 1 GHz (WCDMA Mode)



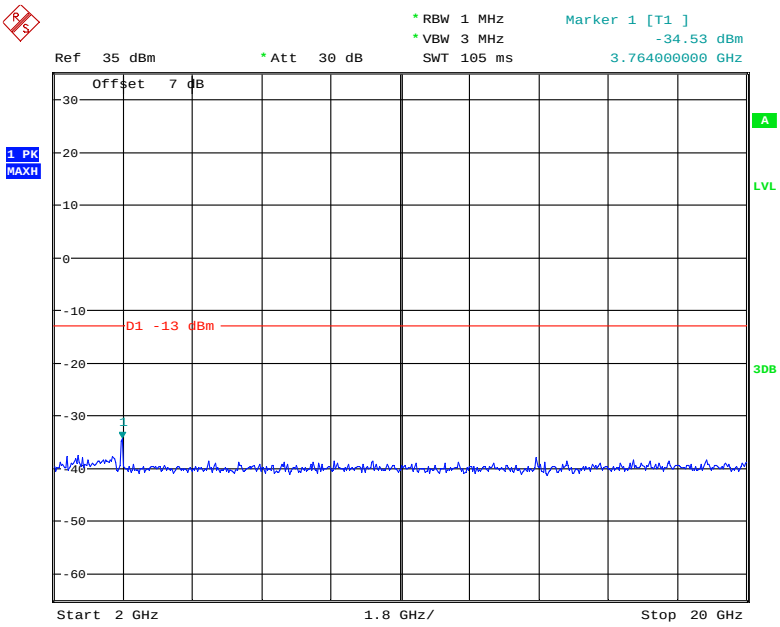
Date: 5.JUL.2021 14:33:25

1 GHz – 2 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:32:06

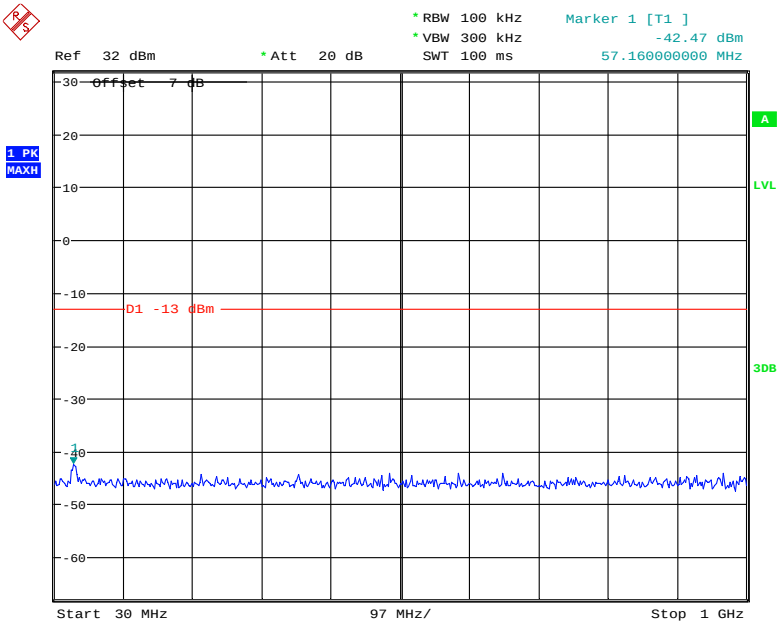
2 GHz – 20 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:31:09

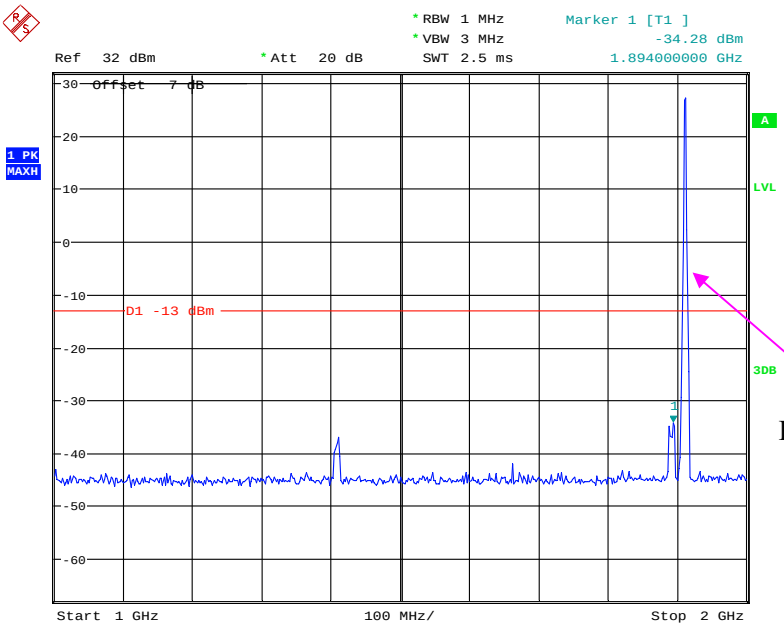
High Channel:

30 MHz – 1 GHz (GSM Mode)



Date: 5.JUL.2021 10:14:00

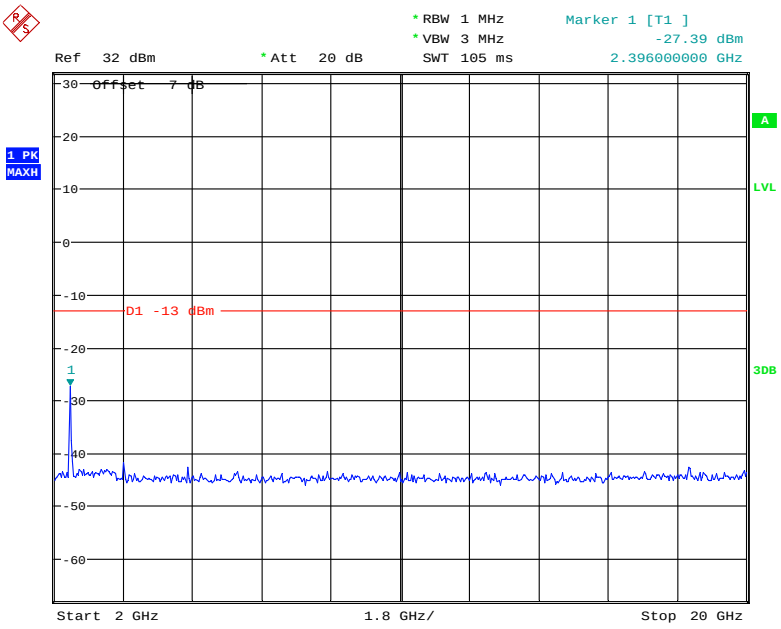
1 GHz – 2 GHz (GSM Mode)



Fundamental test

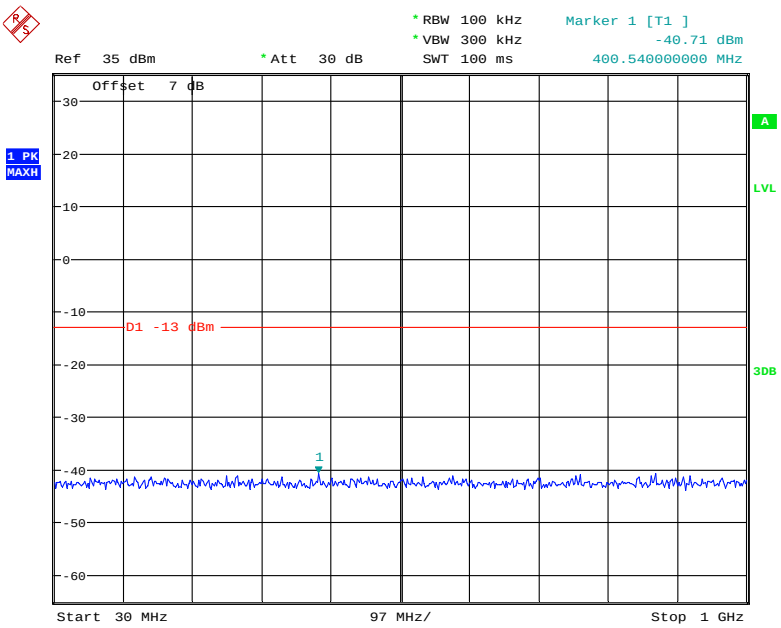
Date: 5.JUL.2021 10:15:13

2 GHz – 20 GHz (GSM Mode)



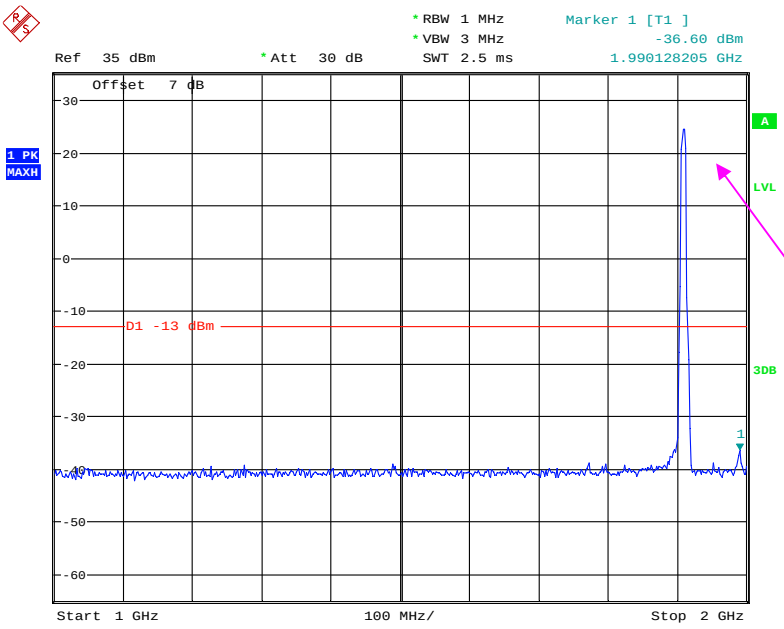
Date: 5.JUL.2021 10:16:01

30 MHz – 1 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:34:58

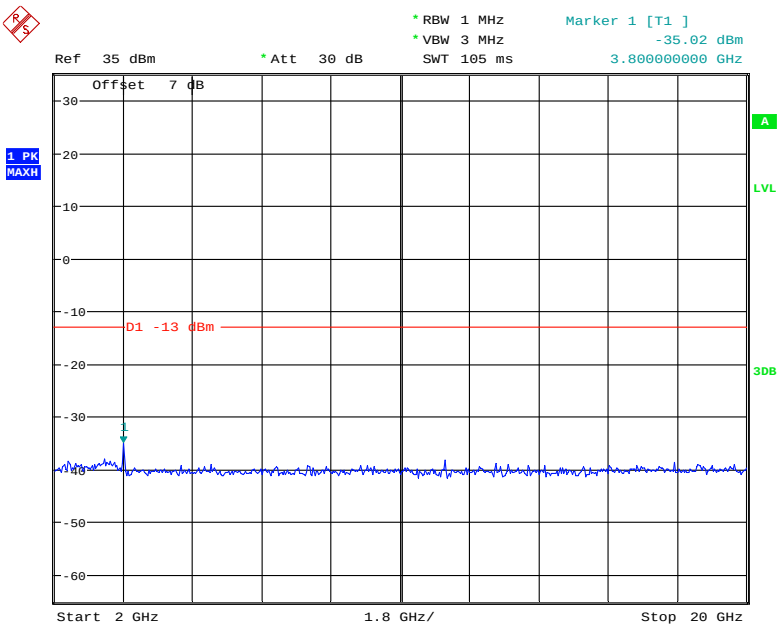
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 5.JUL.2021 14:37:19

2 GHz – 20 GHz (WCDMA Mode)



Date: 5.JUL.2021 14:39:08

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) and § 24.238(a) and § 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:	30~32.2 ℃
Relative Humidity:	50~53 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Willia Wang 2021-07-04 for below 1GHz and Hanic Pan on 2021-07-06 for above 1GHz.

EUT operation mode: Transmitting

30 MHz ~ 10 GHz:

Cellular Band (Part 22H)

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
965.3	32.69	43	2.0	H	-63.8	1.36	0.0	-65.16	-13	52.16
965.3	33.81	53	1.4	V	-60.2	1.36	0.0	-61.56	-13	48.56
1648.40	83.58	294	2.5	H	-24.5	1.40	8.70	-17.20	-13	4.20
1648.40	83.23	222	2.0	V	-24.6	1.40	8.70	-17.30	-13	4.30
2472.60	65.79	222	1.6	H	-37.6	2.60	10.20	-30.00	-13	17.00
2472.60	62.83	211	1.7	V	-39.9	2.60	10.20	-32.30	-13	19.30
3296.80	61.97	269	1.7	H	-38.9	1.50	11.70	-28.70	-13	15.70
3296.80	66.42	111	2.4	V	-34.5	1.50	11.70	-24.30	-13	11.30
Middle channel										
960.6	32.57	61	1.6	H	-63.9	1.36	0.0	-65.26	-13	52.26
960.6	33.69	198	1.7	V	-60.4	1.36	0.0	-61.76	-13	48.76
1673.20	82.59	41	1.7	H	-23.7	1.30	8.90	-16.10	-13	3.10
1673.20	81.87	312	1.8	V	-23.9	1.30	8.90	-16.30	-13	3.30
2509.80	66.72	108	2.5	H	-36.6	2.60	10.20	-29.00	-13	16.00
2509.80	67.74	352	1.6	V	-35.0	2.60	10.20	-27.40	-13	14.40
3346.40	55.15	344	1.0	H	-45.7	1.50	11.70	-35.50	-13	22.50
3346.40	63.90	142	2.1	V	-37.0	1.50	11.70	-26.80	-13	13.80
High channel										
965.8	32.38	37	2.0	H	-64.1	1.36	0.0	-65.46	-13	52.46
965.8	33.61	329	1.8	V	-60.4	1.36	0.0	-61.76	-13	48.76
1697.60	82.52	139	1.7	H	-23.8	1.30	8.90	-16.20	-13	3.20
1697.60	81.81	177	1.6	V	-23.9	1.30	8.90	-16.30	-13	3.30
2546.40	66.10	139	1.3	H	-37.3	2.60	10.20	-29.70	-13	16.70
2546.40	67.79	171	1.6	V	-35.0	2.60	10.20	-27.40	-13	14.40
3395.20	57.45	44	1.8	H	-43.8	1.40	11.80	-33.40	-13	20.40
3395.20	59.64	158	2.4	V	-41.4	1.40	11.80	-31.00	-13	18.00

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
952.3	32.69	226	1.6	H	-63.8	1.36	0.0	-65.16	-13	52.16
952.3	33.54	254	1.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
1652.80	62.42	256	2.2	H	-43.9	1.30	8.90	-36.30	-13	23.30
1652.80	59.31	17	1.2	V	-46.4	1.30	8.90	-38.80	-13	25.80
2479.20	48.02	304	1.9	H	-55.3	2.60	10.20	-47.70	-13	34.70
2479.20	45.16	196	1.3	V	-57.6	2.60	10.20	-50.00	-13	37.00
3305.60	55.06	322	2.3	H	-45.8	1.50	11.70	-35.60	-13	22.60
3305.60	56.03	7	1.4	V	-44.9	1.50	11.70	-34.70	-13	21.70
Middle channel										
951.6	32.67	62	1.9	H	-63.8	1.36	0.0	-65.16	-13	52.16
951.6	33.72	244	1.7	V	-60.3	1.36	0.0	-61.66	-13	48.66
1673.20	61.49	3	1.6	H	-44.8	1.30	8.90	-37.20	-13	24.20
1673.20	59.11	9	2.4	V	-46.6	1.30	8.90	-39.00	-13	26.00
2509.80	49.76	150	1.3	H	-53.6	2.60	10.20	-46.00	-13	33.00
2509.80	47.68	8	1.6	V	-55.1	2.60	10.20	-47.50	-13	34.50
3346.40	57.29	266	1.9	H	-43.6	1.50	11.70	-33.40	-13	20.40
3346.40	59.22	271	1.0	V	-41.7	1.50	11.70	-31.50	-13	18.50
High channel										
966.8	32.72	329	2.2	H	-63.8	1.36	0.0	-65.16	-13	52.16
966.8	33.58	205	1.6	V	-60.5	1.36	0.0	-61.86	-13	48.86
1693.20	61.42	66	1.3	H	-44.9	1.30	8.90	-37.30	-13	24.30
1693.20	58.30	273	2.4	V	-47.4	1.30	8.90	-39.80	-13	26.80
2539.80	48.34	121	1.7	H	-55.0	2.60	10.20	-47.40	-13	34.40
2539.80	47.54	280	1.9	V	-55.2	2.60	10.20	-47.60	-13	34.60
3386.40	60.32	250	1.5	H	-40.9	1.40	11.80	-30.50	-13	17.50
3386.40	57.17	1	2.1	V	-43.9	1.40	11.80	-33.50	-13	20.50

30 MHz ~ 20 GHz:

PCS Band (Part 24E)

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
962.1	32.57	216	1.1	H	-63.9	1.36	0.0	-65.26	-13	52.26
962.1	33.64	226	2.4	V	-60.4	1.36	0.0	-61.76	-13	48.76
3700.40	64.52	46	2.0	H	-37.6	1.60	11.90	-27.30	-13	14.30
3700.40	70.65	163	1.9	V	-30.9	1.60	11.90	-20.60	-13	7.60
Middle channel										
963.2	32.44	329	2.4	H	-64.1	1.36	0.0	-65.46	-13	52.46
963.2	33.66	97	2.3	V	-60.4	1.36	0.0	-61.76	-13	48.76
3760.00	62.20	7	1.4	H	-39.9	1.50	11.80	-29.60	-13	16.60
3760.00	67.81	91	1.8	V	-33.8	1.50	11.80	-23.50	-13	10.50
High channel										
962.5	32.49	354	1.2	H	-64.0	1.36	0.0	-65.36	-13	52.36
962.5	33.56	210	1.6	V	-60.5	1.36	0.0	-61.86	-13	48.86
3819.60	63.84	338	1.2	H	-38.6	1.50	11.80	-28.30	-13	15.30
3819.60	68.57	30	1.9	V	-33.4	1.50	11.80	-23.10	-13	10.10
WCDMA Mode										
Low channel										
961.6	32.56	171	1.9	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.6	33.47	144	1.1	V	-60.6	1.36	0.0	-61.96	-13	48.96
3704.80	44.22	329	2.3	H	-57.6	1.60	11.90	-47.30	-13	34.30
3704.80	46.7	339	2.3	V	-54.5	1.60	11.90	-44.20	-13	31.20
Middle channel										
961.3	32.64	20	1.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.3	33.51	255	1.4	V	-60.5	1.36	0.0	-61.86	-13	48.86
3760.00	45.71	232	1.9	H	-56.3	1.50	11.80	-46.00	-13	33.00
3760.00	47.04	118	2.0	V	-54.5	1.50	11.80	-44.20	-13	31.20
High channel										
959.4	32.71	298	1.4	H	-63.8	1.36	0.0	-65.16	-13	52.16
959.4	33.57	213	1.3	V	-60.5	1.36	0.0	-61.86	-13	48.86
3815.20	47.09	208	2.2	H	-55.0	1.50	11.80	-44.70	-13	31.70
3815.20	50.52	40	2.3	V	-51.1	1.50	11.80	-40.80	-13	27.80

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

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 2										
Test frequency range: 30 MHz ~ 20 GHz										
1.4MHz, Low channel										
961.6	32.56	171	1.9	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.6	33.47	144	1.1	V	-60.6	1.36	0.0	-61.96	-13	48.96
3701.40	46.85	203	1.7	H	-55.0	1.60	11.90	-44.70	-13	31.70
3701.40	50.16	292	1.5	V	-51.1	1.60	11.90	-40.80	-13	27.80
1.4MHz, Middle channel										
961.3	32.64	20	1.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.3	33.51	255	1.4	V	-60.5	1.36	0.0	-61.86	-13	48.86
3760.00	47.35	140	2.1	H	-54.7	1.50	11.80	-44.40	-13	31.40
3760.00	50.84	33	2.3	V	-50.7	1.50	11.80	-40.40	-13	27.40
1.4MHz, High channel										
959.4	32.71	298	1.4	H	-63.8	1.36	0.0	-65.16	-13	52.16
959.4	33.57	213	1.3	V	-60.5	1.36	0.0	-61.86	-13	48.86
3818.60	47.15	264	1.0	H	-54.9	1.50	11.80	-44.60	-13	31.60
3818.60	50.66	42	1.4	V	-50.9	1.50	11.80	-40.60	-13	27.60
Band 4										
Test frequency range:30 MHz ~ 20 GHz										
1.4MHz, Low channel										
963.9	32.74	192	1.7	H	-63.8	1.36	0.0	-65.16	-13	52.16
963.9	33.49	308	2.0	V	-60.6	1.36	0.0	-61.96	-13	48.96
3421.40	44.68	131	1.7	H	-56.1	1.40	11.80	-45.70	-13	32.70
3421.40	45.23	203	2.2	V	-55.4	1.40	11.80	-45.00	-13	32.00
1.4MHz, Middle channel										
958.6	32.55	92	2.5	H	-64.0	1.36	0.0	-65.36	-13	52.36
958.6	33.43	1	1.6	V	-60.6	1.36	0.0	-61.96	-13	48.96
3465.00	48.91	23	1.7	H	-51.8	1.50	12.00	-41.30	-13	28.30
3465.00	50.47	358	1.8	V	-51.0	1.50	12.00	-40.50	-13	27.50
1.4MHz, High channel										
959.7	32.59	186	2.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
959.7	33.53	21	1.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
3508.60	45.02	282	2.4	H	-55.7	1.50	12.00	-45.20	-13	32.20
3508.60	45.79	117	2.2	V	-55.7	1.50	12.00	-45.20	-13	32.20

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 5										
Test frequency range:30 MHz ~ 10 GHz										
1.4MHz, Low channel										
956.8	32.73	74	1.7	H	-63.8	1.36	0.0	-65.16	-13	52.16
956.8	33.59	161	2.4	V	-60.5	1.36	0.0	-61.86	-13	48.86
1649.40	66.27	357	2.0	H	-41.8	1.40	8.70	-34.50	-13	21.50
1649.40	62.03	107	2.4	V	-45.8	1.40	8.70	-38.50	-13	25.50
2474.10	55.14	164	1.5	H	-48.2	2.60	10.20	-40.60	-13	27.60
2474.10	55.23	70	2.0	V	-47.5	2.60	10.20	-39.90	-13	26.90
3298.80	48.65	106	2.1	H	-52.2	1.50	11.70	-42.00	-13	29.00
3298.80	48.34	104	1.3	V	-52.6	1.50	11.70	-42.40	-13	29.40
1.4MHz, Middle channel										
964.7	32.77	300	1.2	H	-63.7	1.36	0.0	-65.06	-13	52.06
964.7	33.62	55	1.9	V	-60.4	1.36	0.0	-61.76	-13	48.76
1673.00	68.09	117	1.5	H	-38.2	1.30	8.90	-30.60	-13	17.60
1673.00	63.67	61	2.0	V	-42.1	1.30	8.90	-34.50	-13	21.50
2509.50	55.95	212	2.2	H	-47.4	2.60	10.20	-39.80	-13	26.80
2509.50	55.68	11	1.9	V	-47.1	2.60	10.20	-39.50	-13	26.50
3346.00	49.65	289	1.1	H	-51.2	1.50	11.70	-41.00	-13	28.00
3346.00	49.26	175	1.2	V	-51.7	1.50	11.70	-41.50	-13	28.50
1.4MHz, High channel										
961.2	32.75	326	1.2	H	-63.8	1.36	0.0	-65.16	-13	52.16
961.2	33.61	155	1.1	V	-60.4	1.36	0.0	-61.76	-13	48.76
1696.60	67.26	201	1.3	H	-39.1	1.30	8.90	-31.50	-13	18.50
1696.60	62.48	0	2.5	V	-43.3	1.30	8.90	-35.70	-13	22.70
2544.90	54.39	256	2.4	H	-49.0	2.60	10.20	-41.40	-13	28.40
2544.90	54.31	148	2.4	V	-48.4	2.60	10.20	-40.80	-13	27.80
3393.20	48.52	279	1.4	H	-52.7	1.40	11.80	-42.30	-13	29.30
3393.20	48.33	226	2.3	V	-52.7	1.40	11.80	-42.30	-13	29.30
Band 7										
Test frequency range: 30 MHz ~ 26.5 GHz										
10MHz, Low channel										
957.3	32.86	229	2.0	H	-63.6	1.36	0.0	-64.96	-25	39.96
957.3	33.66	79	1.6	V	-60.4	1.36	0.0	-61.76	-25	36.76
5010.00	45.69	206	1.0	H	-54.9	1.70	12.00	-44.60	-25	19.60
5010.00	45.95	57	1.7	V	-54.1	1.70	12.00	-43.80	-25	18.80
7515.00	47.32	299	1.9	H	-48.6	1.90	10.70	-39.80	-25	14.80
7515.00	47.69	274	1.5	V	-47.8	1.90	10.70	-39.00	-25	14.00
10020.0	55.56	56	1.8	H	-40.9	2.40	10.80	-32.50	-25	7.50
10020.0	50.33	295	2.3	V	-46.4	2.40	10.80	-38.00	-25	13.00
10MHz, Middle channel										
957.6	32.62	133	2.4	H	-63.9	1.36	0.0	-65.26	-25	40.26
951.6	33.73	41	2.1	V	-60.3	1.36	0.0	-61.66	-25	36.66
5070.00	46.82	30	2.0	H	-53.2	1.60	12.10	-42.70	-25	17.70
5070.00	46.11	92	2.5	V	-53.9	1.60	12.10	-43.40	-25	18.40
7605.00	47.85	317	1.4	H	-49.7	2.10	10.50	-41.30	-25	16.30
7605.00	49.14	339	1.1	V	-48.1	2.10	10.50	-39.70	-25	14.70
10140.0	56.85	162	2.1	H	-39.6	2.40	10.80	-31.20	-25	6.20
10140.0	52.31	23	1.8	V	-44.4	2.40	10.80	-36.00	-25	11.00

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
10MHz, High channel										
966.8	32.85	109	1.3	H	-63.7	1.36	0.0	-65.06	-25	40.06
966.8	33.71	304	2.5	V	-60.3	1.36	0.0	-61.66	-25	36.66
5130.00	47.55	27	1.9	H	-52.5	1.60	12.10	-42.00	-25	17.00
5130.00	46.89	60	2.0	V	-53.1	1.60	12.10	-42.60	-25	17.60
7695.00	49.39	202	1.8	H	-48.1	2.10	10.50	-39.70	-25	14.70
7695.00	48.70	270	1.7	V	-48.6	2.10	10.50	-40.20	-25	15.20
10260.0	57.05	213	1.5	H	-39.4	2.60	10.60	-31.40	-25	6.40
10260.0	51.14	231	1.7	V	-44.5	2.60	10.60	-36.50	-25	11.50

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 38										
Test frequency range: 30 MHz ~26.5 GHz										
10MHz, Low channel										
962.3	32.58	313	1.2	H	-63.9	1.36	0.0	-65.26	-25	40.26
962.3	33.67	42	2.0	V	-60.4	1.36	0.0	-61.76	-25	36.76
5150.00	48.68	249	1.0	H	-51.4	1.60	12.10	-40.90	-25	15.90
5150.00	49.35	307	1.4	V	-50.3	1.60	12.10	-39.80	-25	14.80
7725.00	61.05	236	1.4	H	-36.5	2.10	10.50	-28.10	-25	3.10
7725.00	60.57	149	1.3	V	-36.7	2.10	10.50	-28.30	-25	3.30
10MHz, Middle channel										
959.3	32.53	129	1.3	H	-64.0	1.36	0.0	-65.36	-25	40.36
959.3	33.61	146	1.8	V	-60.4	1.36	0.0	-61.76	-25	36.76
5190.00	48.80	277	2.2	H	-51.3	1.60	12.10	-40.80	-25	15.80
5190.00	49.54	144	2.5	V	-50.1	1.60	12.10	-39.60	-25	14.60
7785.00	59.13	156	1.9	H	-37.1	2.00	10.50	-28.60	-25	3.60
7785.00	58.21	126	2.1	V	-38.0	2.00	10.50	-29.50	-25	4.50
10MHz, High channel										
960.1	32.64	251	2.4	H	-63.9	1.36	0.0	-65.26	-25	40.26
960.1	33.77	172	2.2	V	-60.3	1.36	0.0	-61.66	-25	36.66
5230.00	48.71	58	1.5	H	-51.4	1.60	12.10	-40.90	-25	15.90
5230.00	49.63	74	1.8	V	-50.0	1.60	12.10	-39.50	-25	14.50
7845.00	59.36	70	2.4	H	-36.9	2.00	10.50	-28.40	-25	3.40
7845.00	58.74	44	1.0	V	-37.4	2.00	10.50	-28.90	-25	3.90

Note:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level
dBd is for the ERP, dBi is for EIRP.

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.

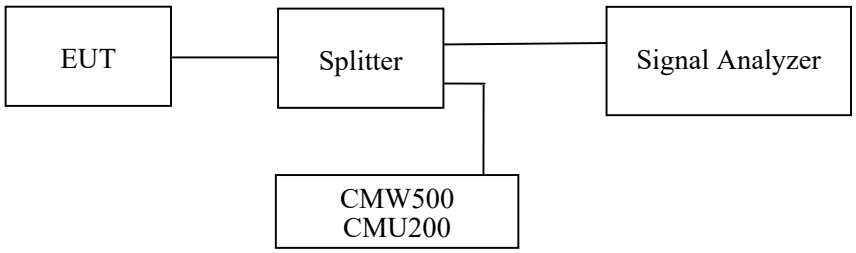
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

According to FCC §27.53 (c)(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:	25~28 ℃
Relative Humidity:	51~57 %
ATM Pressure:	101.0 kPa

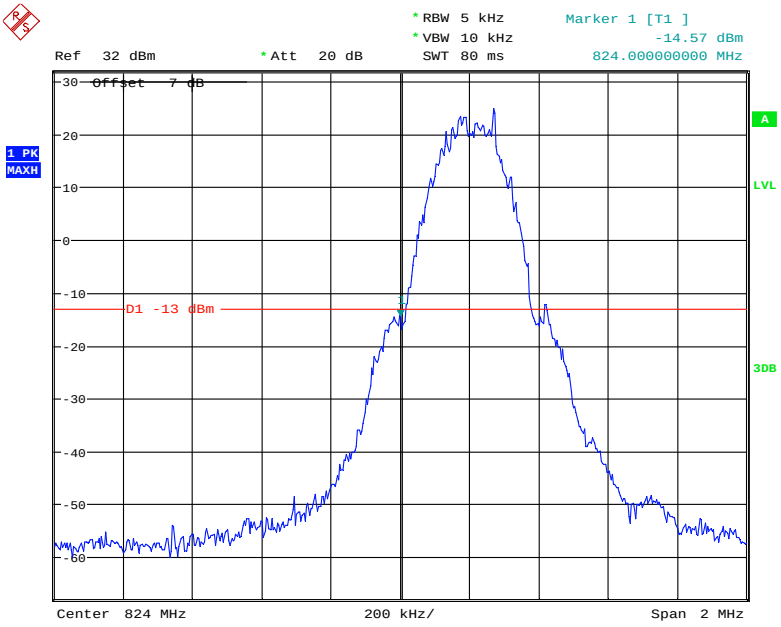
The testing was performed by Key from 2021-07-05 to 2021-07-27 and Pedro Yun from 2021-07-01 to 2021-07-27.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

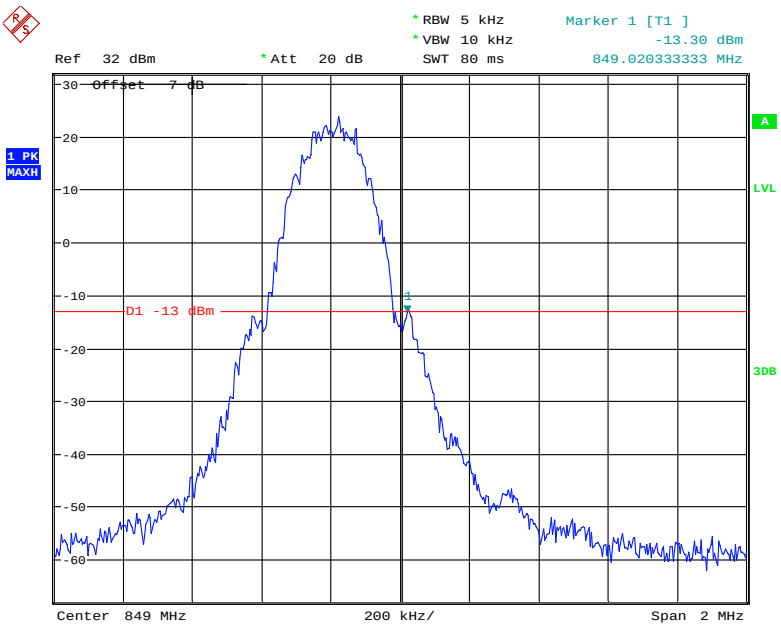
Please refer to the following plots.

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



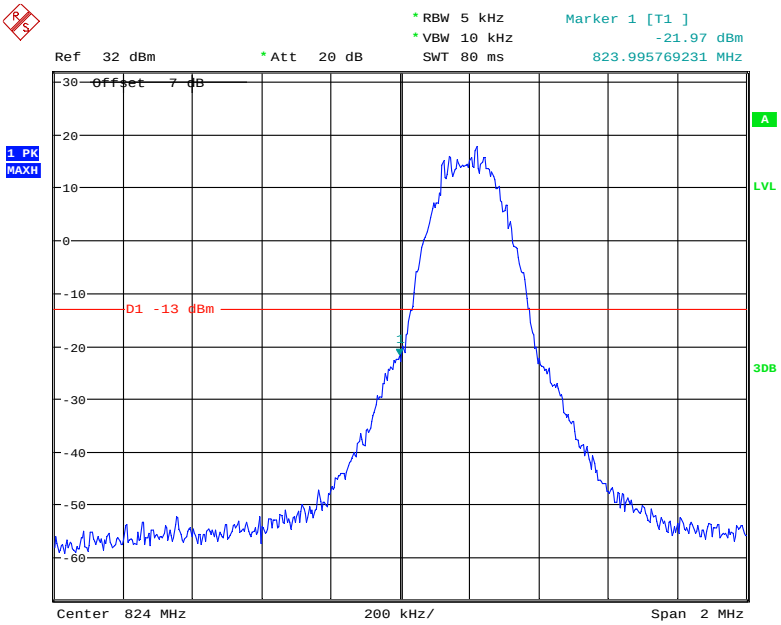
Date: 5.JUL.2021 10:28:02

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



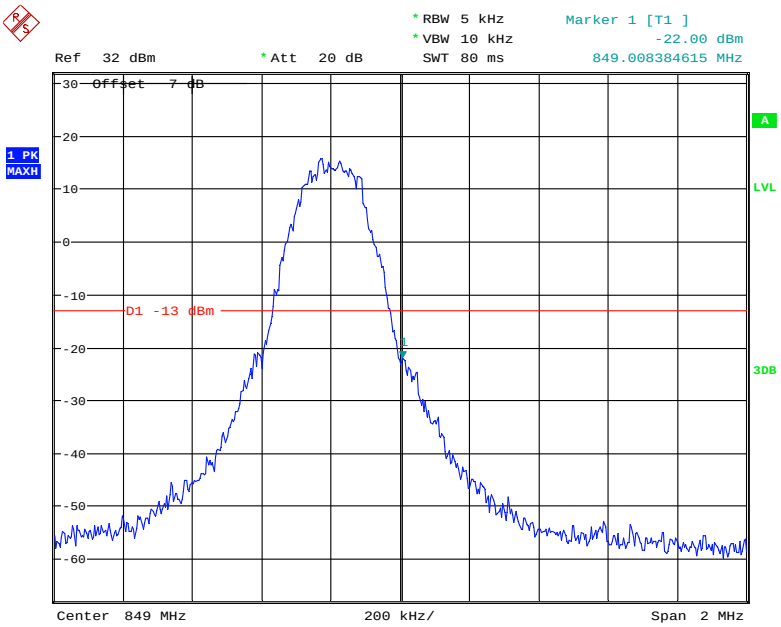
Date: 5.JUL.2021 10:30:02

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



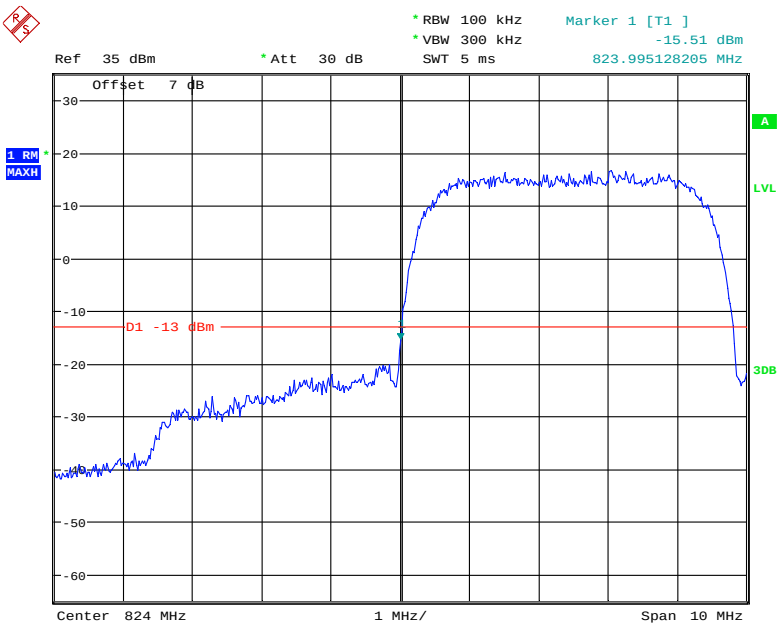
Date: 5.JUL.2021 10:46:57

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



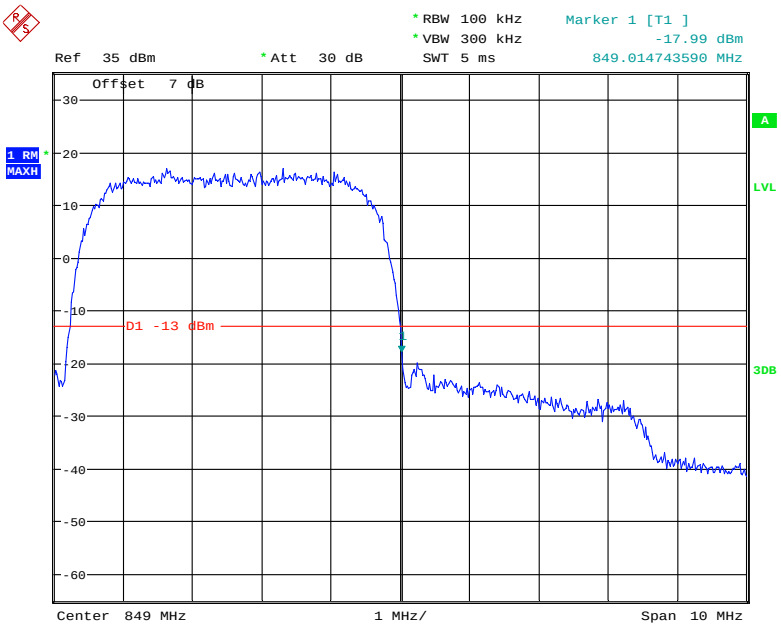
Date: 5.JUL.2021 10:48:32

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



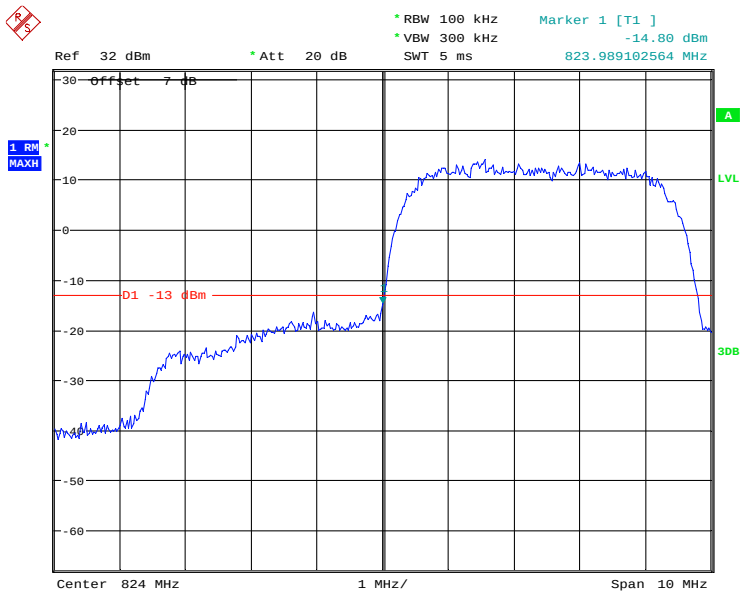
Date: 5.JUL.2021 15:18:47

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



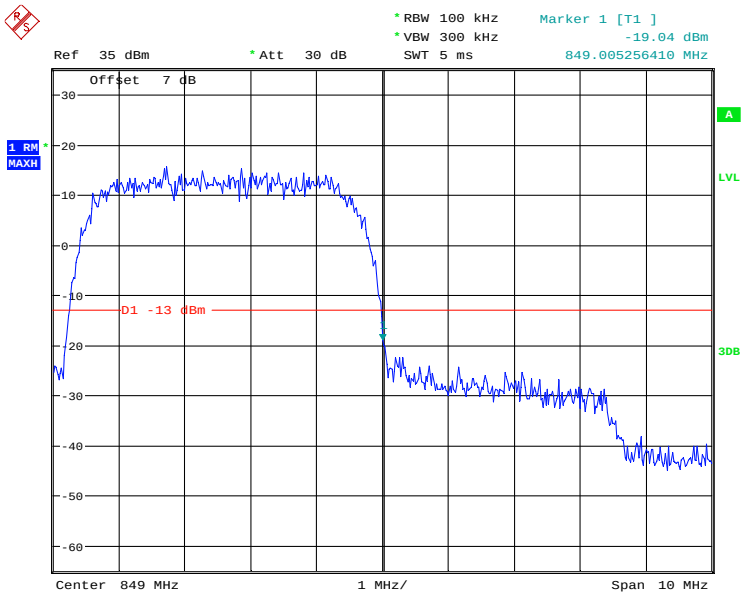
Date: 5.JUL.2021 15:25:17

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



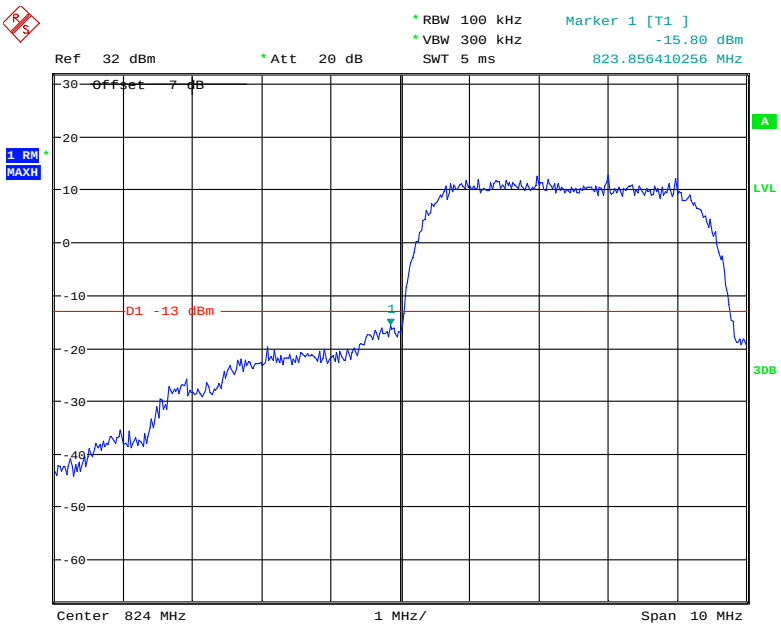
Date: 27.JUL.2021 14:35:02

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



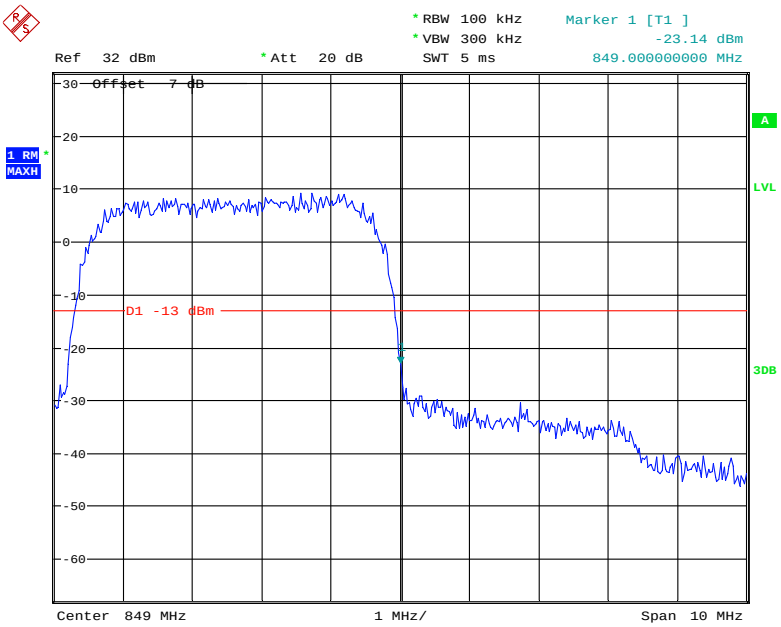
Date: 5.JUL.2021 15:24:04

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



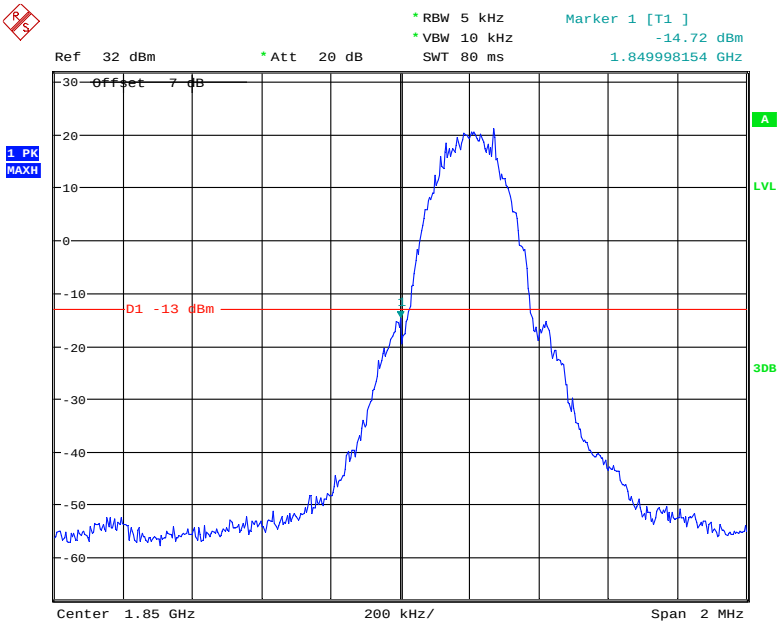
Date: 27.JUL.2021 14:33:33

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



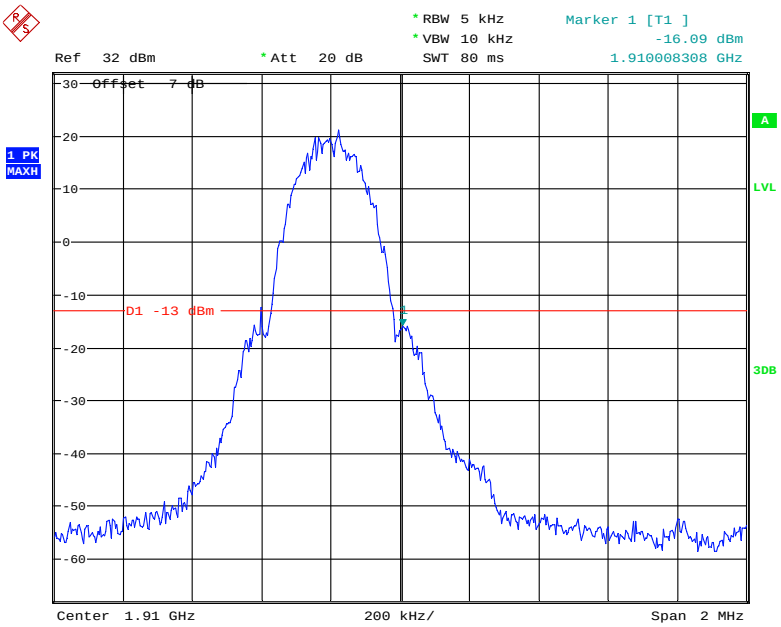
Date: 27.JUL.2021 14:25:23

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



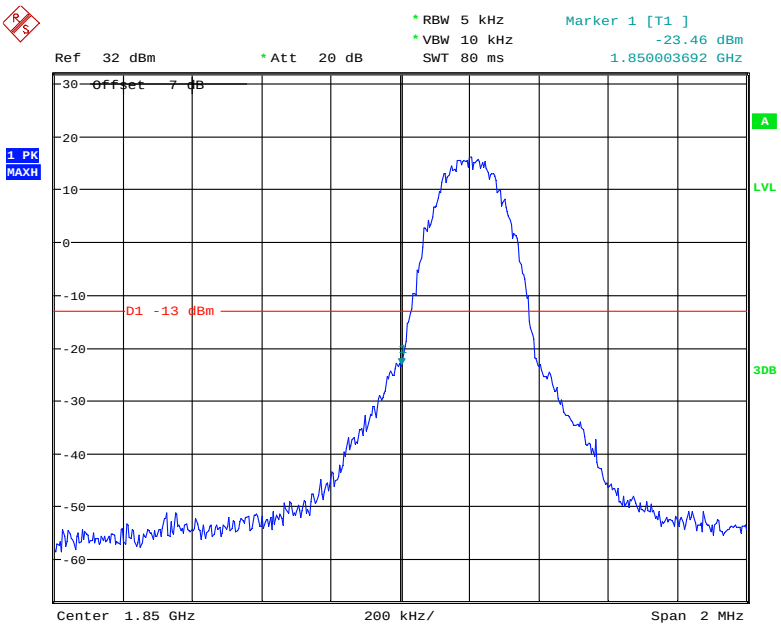
Date: 5.JUL.2021 10:20:05

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



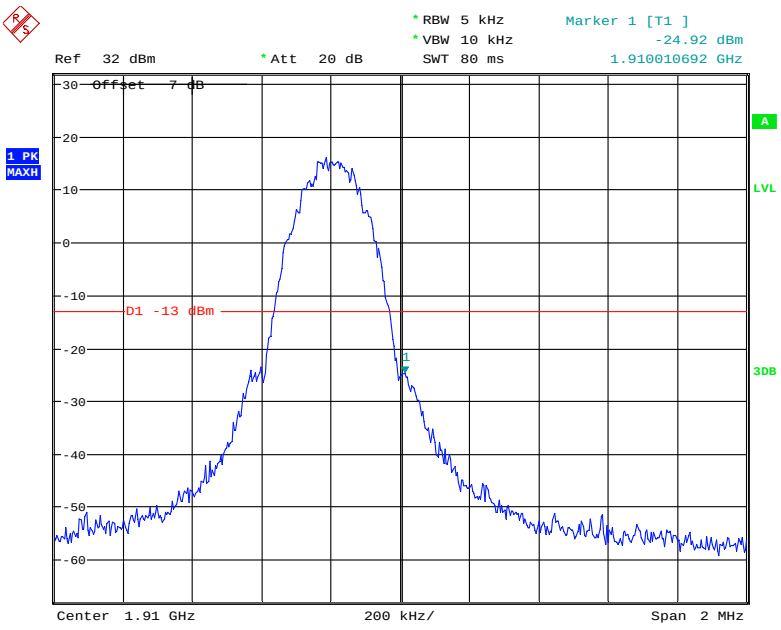
Date: 5.JUL.2021 10:36:10

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



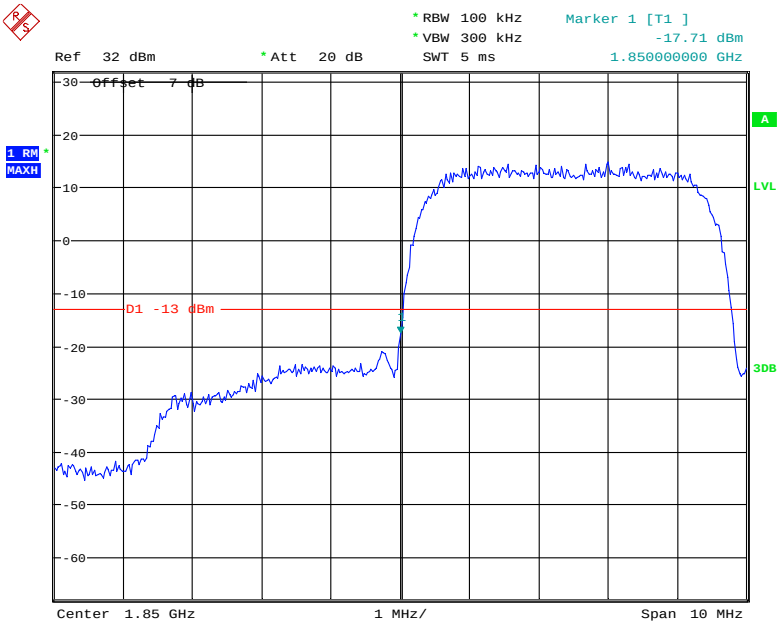
Date: 5.JUL.2021 10:41:06

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



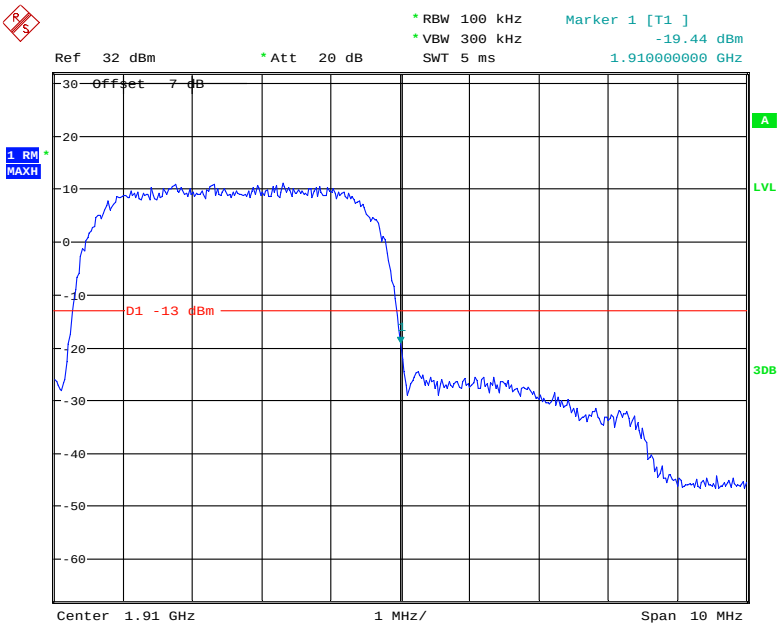
Date: 5.JUL.2021 10:42:58

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



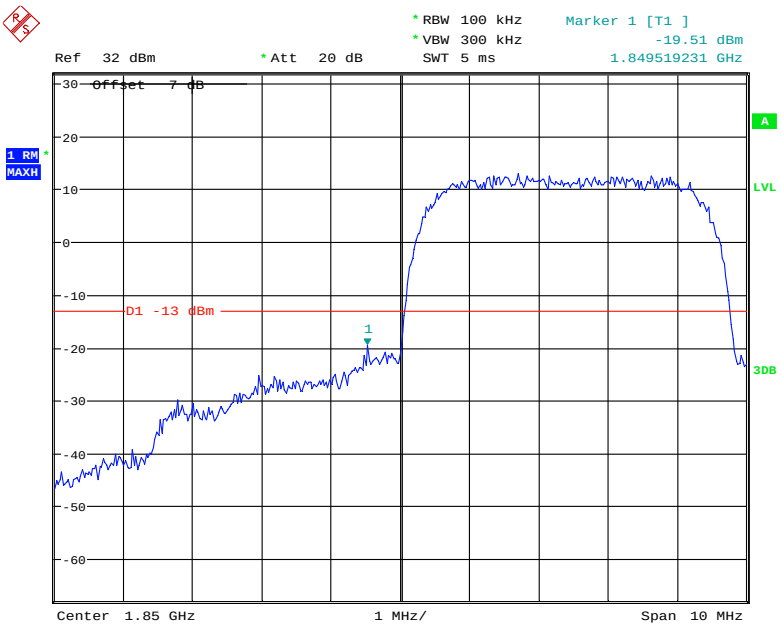
Date: 27.JUL.2021 14:15:39

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



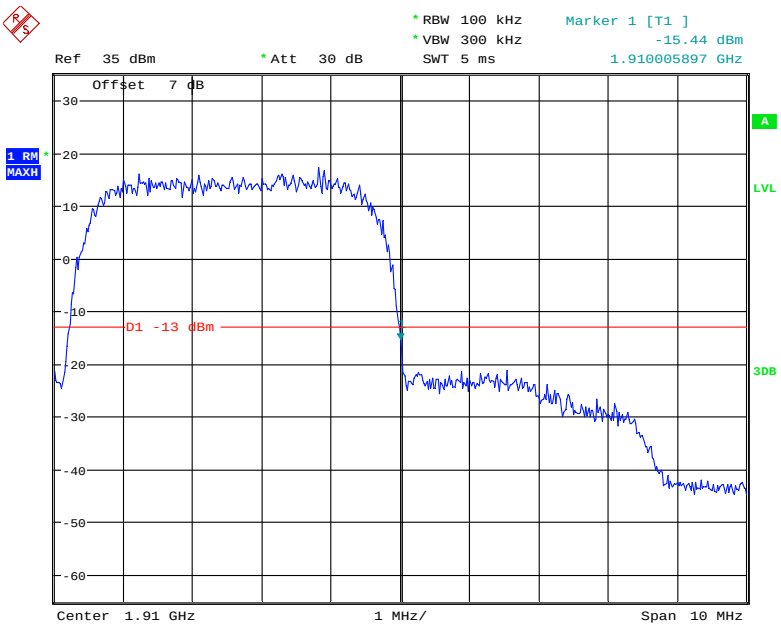
Date: 27.JUL.2021 14:18:08

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



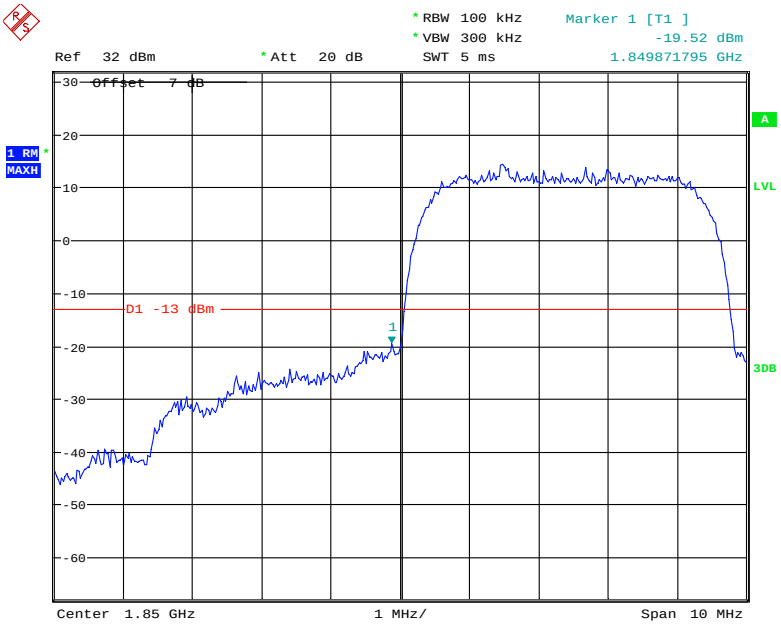
Date: 27.JUL.2021 14:22:23

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

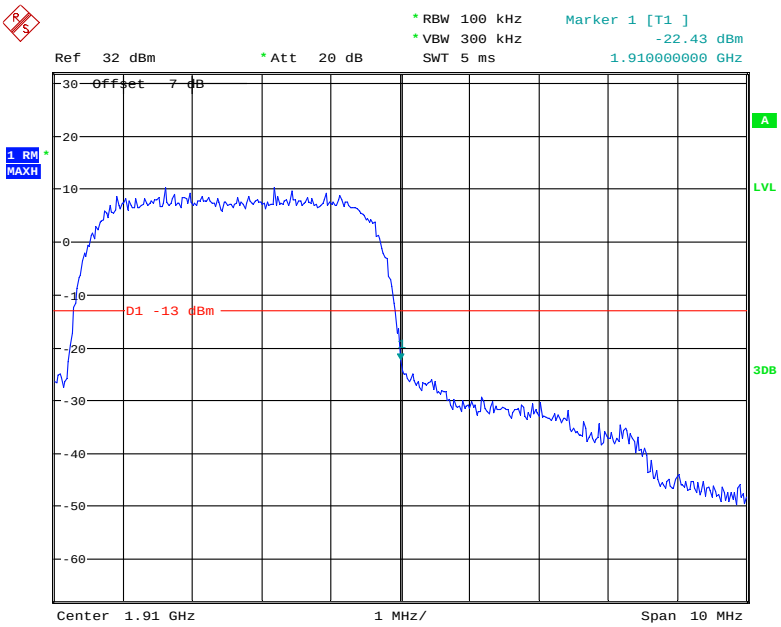


Date: 5.JUL.2021 15:05:48

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



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



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

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

Applicable Standard

FCC § 2.1055, §22.355, §24.235 and & §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

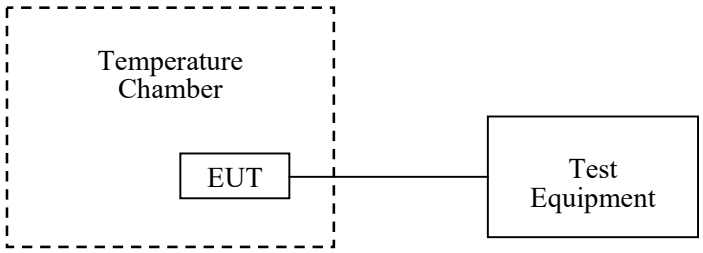
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

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

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

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



Test Data

Environmental Conditions

Temperature:	25~28 ℃
Relative Humidity:	51~57 %
ATM Pressure:	101.0 kPa

The testing was performed by Key on 2021-07-05 and Pedro Yun from 2021-07-01 to 2021-07-04

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Cellular Band (Part 22H)

GSM Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	4	0.0048	2.5
-20		3	0.0036	2.5
-10		4	0.0048	2.5
0		7	0.0084	2.5
10		4	0.0048	2.5
20		11	0.0131	2.5
30		6	0.0072	2.5
40		8	0.0096	2.5
50		4	0.0048	2.5
20	3.6	8	0.0096	2.5
	4.35	9	0.0108	2.5

EDGE Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	5	0.0060	2.5
-20		4	0.0048	2.5
-10		3	0.0036	2.5
0		8	0.0096	2.5
10		9	0.0108	2.5
20		11	0.0131	2.5
30		13	0.0155	2.5
40		15	0.0179	2.5
50		18	0.0215	2.5
20	3.6	9	0.0108	2.5
	4.35	12	0.0143	2.5

WCDMA Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	1	0.0012	2.5
-20		2	0.0024	2.5
-10		5	0.0060	2.5
0		7	0.0084	2.5
10		11	0.0131	2.5
20		12	0.0143	2.5
30		14	0.0167	2.5
40		17	0.0203	2.5
50		19	0.0227	2.5
20	3.6	6	0.0072	2.5
	4.35	10	0.0120	2.5

PCS Band (Part 24E)

GSM Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	6	0.0032	pass
-20		4	0.0021	pass
-10		2	0.0011	pass
0		1	0.0005	pass
10		5	0.0027	pass
20		7	0.0037	pass
30		4	0.0021	pass
40		6	0.0032	pass
50		6	0.0032	pass
20	3.6	4	0.0021	pass
	4.35	5	0.0027	pass

EDGE Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	-1	-0.0005	pass
-20		2	0.0011	pass
-10		3	0.0016	pass
0		6	0.0032	pass
10		8	0.0043	pass
20		10	0.0053	pass
30		13	0.0069	pass
40		15	0.0080	pass
50		17	0.0090	pass
20	3.6	7	0.0037	pass
	4.35	11	0.0059	pass

WCDMA Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	-3	-0.0016	pass
-20		2	0.0011	pass
-10		3	0.0016	pass
0		4	0.0021	pass
10		8	0.0043	pass
20		9	0.0048	pass
30		13	0.0069	pass
40		15	0.0080	pass
50		17	0.0090	pass
20	3.6	7	0.0037	pass
	4.35	13	0.0069	pass

LTE:
QPSK:

Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	-5	-0.0027	pass
-20		-9	-0.0048	pass
-10		-6	-0.0032	pass
0		6	0.0032	pass
10		7	0.0037	pass
20		6	0.0032	pass
30		-6	-0.0032	pass
40		7	0.0037	pass
50		-9	-0.0048	pass
20	3.6	-8	-0.0043	pass
	4.35	-7	-0.0037	pass

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8	1710.5553	1754.3097	1710	1755
-20		1710.3407	1754.0980	1710	1755
-10		1710.3975	1754.5281	1710	1755
0		1710.5717	1754.1088	1710	1755
10		1710.0945	1754.7273	1710	1755
20		1710.1261	1754.5988	1710	1755
30		1710.0192	1754.4259	1710	1755
40		1710.3888	1754.5572	1710	1755
50		1710.2410	1754.6284	1710	1755
20	3.6	1710.3553	1754.4441	1710	1755
	4.35	1710.5513	1754.0892	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o=836.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	-8	-0.0096	2.5
-20		9	0.0108	2.5
-10		8	0.0096	2.5
0		-7	-0.0084	2.5
10		-5	-0.0060	2.5
20		7	0.0084	2.5
30		-5	-0.0060	2.5
40		5	0.0060	2.5
50		6	0.0072	2.5
20	3.6	9	0.0108	2.5
	4.35	9	0.0108	2.5

Band 7:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8	2500.2926	2569.3784	2500	2570
-20		2500.0752	2569.6581	2500	2570
-10		2500.4729	2569.5763	2500	2570
0		2500.5485	2569.1626	2500	2570
10		2500.0138	2569.2471	2500	2570
20		2500.3427	2569.5477	2500	2570
30		2500.2306	2569.1603	2500	2570
40		2500.5839	2569.1098	2500	2570
50		2500.1972	2569.4857	2500	2570
20	3.6	2500.5177	2569.4385	2500	2570
	4.35	2500.1657	2569.3796	2500	2570

Band 38

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8	2570.5476	2619.0795	2570	2620
-20		2570.5964	2619.0686	2570	2620
-10		2570.3385	2619.4096	2570	2620
0		2570.4974	2619.4756	2570	2620
10		2570.2745	2619.2080	2570	2620
20		2570.2275	2619.2266	2570	2620
30		2570.2865	2619.3511	2570	2620
40		2570.1883	2619.5334	2570	2620
50		2570.1060	2619.1819	2570	2620
20	3.6	2570.0322	2619.3796	2570	2620
	4.35	2570.2706	2619.2043	2570	2620

16QAM:

Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	3.8	-6	-0.0032	pass
-20		-5	-0.0027	pass
-10		9	0.0048	pass
0		-6	-0.0032	pass
10		5	0.0027	pass
20		-8	-0.0043	pass
30		-7	-0.0037	pass
40		-5	-0.0027	pass
50		7	0.0037	pass
20	3.6	9	0.0048	pass
	4.35	10	0.0053	pass

Band 4:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8	1710.1307	1754.2594	1710	1755
-20		1710.5356	1754.2186	1710	1755
-10		1710.5072	1754.5642	1710	1755
0		1710.5364	1754.2053	1710	1755
10		1710.6876	1754.2352	1710	1755
20		1710.4973	1754.3898	1710	1755
30		1710.4031	1754.2078	1710	1755
40		1710.3466	1754.4576	1710	1755
50		1710.5926	1754.3090	1710	1755
20	3.6	1710.3813	1754.5367	1710	1755
	4.35	1710.1307	1754.2116	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o =836.5MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	3.8	-3	-0.0036	2.5
-20		6	0.0072	2.5
-10		-9	-0.0108	2.5
0		-8	-0.0096	2.5
10		-8	-0.0096	2.5
20		-9	-0.0108	2.5
30		8	0.0096	2.5
40		6	0.0072	2.5
50		-5	-0.0060	2.5
20	3.6	8	0.0096	2.5
	4.35	-7	-0.0084	2.5

Band 7:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8	2500.6211	2569.0766	2500	2570
-20		2500.0791	2569.0206	2500	2570
-10		2500.5102	2569.5386	2500	2570
0		2500.0714	2569.4865	2500	2570
10		2500.5276	2569.0343	2500	2570
20		2500.2083	2569.0828	2500	2570
30		2500.9049	2569.1737	2500	2570
40		2500.2541	2569.3783	2500	2570
50		2500.2992	2569.0061	2500	2570
20	3.6	2500.2108	2569.0489	2500	2570
	4.35	2500.4060	2569.0214	2500	2570

Band 38

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	3.8	2570.4714	2619.2116	2570	2620
-20		2570.1168	2619.6621	2570	2620
-10		2570.3385	2619.6096	2570	2620
0		2570.3203	2619.1326	2570	2620
10		2570.0266	2619.0775	2570	2620
20		2570.5777	2619.4571	2570	2620
30		2570.3881	2619.2597	2570	2620
40		2570.2647	2619.2814	2570	2620
50		2570.2981	2619.0782	2570	2620
20	3.6	2570.2446	2619.2846	2570	2620
	4.35	2570.5239	2619.2351	2570	2620

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