FCC PART 27

FCC PART 22H, PART 24E

TEST REPORT

For

INFINIX MOBILITY LIMITED

FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET
FOTAN NT Hong Kong

FCC ID: 2AIZN-X6811

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

Report Number:	SZ1210622-24739E-00A
Report Date:	2021-07-29
Reviewed By:	Jacob Kong 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 "★".

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with an asterisk '*'. Customer model name, addresses, names, trademarks etc. are not considered data.

TABLE OF CONTENTS

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mobile Phone
Tested Model	X6811
Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	EGSM850/WCDMA Band 5/LTE Band 5: -5.6dBi PCS1900/WCDMA Band 2/ LTE Band 2: 1.47dBi WCDMA Band 4/ LTE Band 4: -1.17dBi LTE Band 7/ Band 38/ Band 41: 1.56dBi (provided by the applicant)
Voltage Range	DC 3.87V from battery or DC 5V/11V from adapter
Date of Test	2021-06-27 to 2021-07-14
Sample number	SZ1210622-24739E-RF-S6 for RF conducted SZ1210622-24739E-RF-S1 for CE&RE (Assigned by BACL, Shenzhen)
Received date	2021-06-22
Sample/EUT Status	Good condition
Normal/Extreme Condition	L.V.: Low Voltage 3.45V_{DC} N.V.: Normal Voltage 3.87V_{DC} H.V.: High Voltage 4.45V_{DC} The extreme condition was declared by the applicant
Adapter information	Model: U450XSA Input: AC 100-240V ~ 50/60Hz, 1.8A Output: DC 5.0V~2.0V or 11.0V, 4.1A Max

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°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 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
EGSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE B38	5	2572.5	2595	2617.5
	10	2575	2595	2615
	15	2577.5	2595	2612.5
	20	2580	2595	2610
LTE B41	5	2537.5	2595	2652.5
	10	2540	2595	2650
	15	2542.5	2595	2647.5
	20	2545	2595	2645

Equipment Modifications

No modification was made to the EUT.

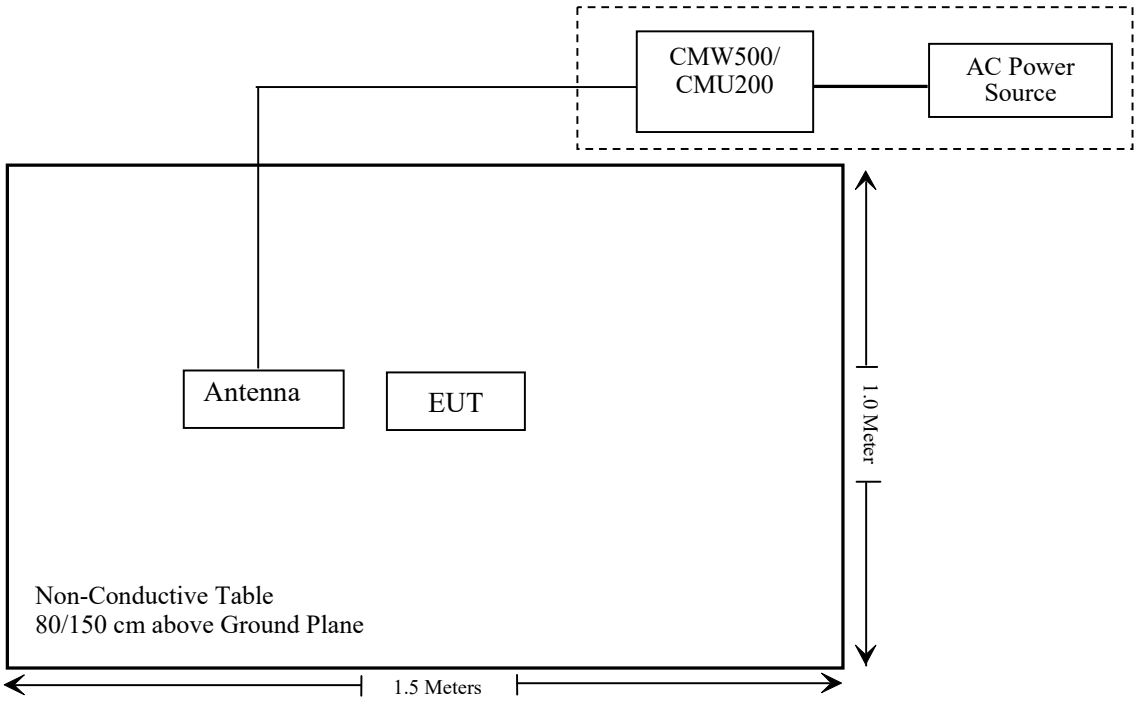
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-116218-UY
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	110605

Support Cable Description

Cable Description	Length (m)	From / Port	To
Un-shielded Un-detachable AC cable	1.2	AC Power	CMW500/ CMU200

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 , §2.1093	RF Exposure (SAR)	Compliant*
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (c) (d) (h)	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
§ 2.1051; § 22.917 (a); § 24.238 (a); §27.53	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53(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: SZ1210622-24739E-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
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	2021/02/22	2022/02/21

* 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: SZ1210622-24739E-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.

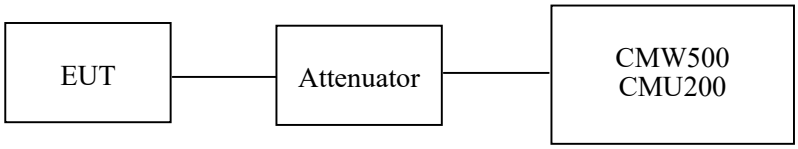
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1780MHz.

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:	27.3 °C
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

The testing was performed by Pedro Yun on 2021-06-27, 2021-07-14 and 2021-07-29.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Conducted Power

Cellular Band 850

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.8	26.05	38.45
	190	836.6	33.8	26.05	38.45
	251	848.8	33.7	25.95	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	33.84	32.52	30.51	28.76	26.09	24.77	22.76	21.01	38.45
	190	836.6	33.82	32.54	30.44	28.77	26.07	24.79	22.69	21.02	38.45
	251	848.8	33.72	32.44	30.39	28.68	25.97	24.69	22.64	20.93	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	27.16	25.83	24.01	22.34	19.41	18.08	16.26	14.59	38.45
	190	836.6	27.23	25.86	24.11	22.32	19.48	18.11	16.36	14.57	38.45
	251	848.8	27.14	25.79	23.99	22.25	19.39	18.04	16.24	14.50	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		23.67	23.06	23.26	15.92	15.31	15.51
	HSDPA	1	22.54	22.07	22.17	14.79	14.32	14.42
		2	22.24	22.08	22.16	14.49	14.33	14.41
		3	22.61	22.12	22.24	14.86	14.37	14.49
		4	22.66	22.17	22.31	14.91	14.42	14.56
	HSUPA	1	22.11	21.68	21.79	14.36	13.93	14.04
		2	22.16	21.73	21.85	14.41	13.98	14.10
		3	22.21	21.78	21.90	14.46	14.03	14.15
		4	22.29	21.84	21.94	14.54	14.09	14.19
		5	22.35	21.89	22.01	14.60	14.14	14.26
	HSPA+	1	22.41	21.92	22.08	14.66	14.17	14.33

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
Antenna Gain = -5.6dBi = -7.75dBd (0dBd=2.15dBi)
Limit: ERP≤38.45dBm

PCS Band 1900

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	26.07	27.54	33
	661	1880.0	26.05	27.52	33
	810	1909.8	25.94	27.41	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	25.45	24.08	22.77	21.43	26.92	25.55	24.24	22.90	33
	661	1880.0	25.47	24.08	22.69	21.35	26.94	25.55	24.16	22.82	33
	810	1909.8	25.32	23.95	22.58	21.21	26.79	25.42	24.05	22.68	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	25.42	24.08	22.69	21.34	26.89	25.55	24.16	22.81	33
	661	1880.0	25.39	24.04	22.74	21.38	26.86	25.51	24.21	22.85	33
	810	1909.8	25.28	23.95	22.56	21.19	26.75	25.42	24.03	22.66	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		15.68	15.59	15.66	17.15	17.06	17.13
	HSDPA	1	15.24	15.19	15.26	16.71	16.66	16.73
		2	15.37	15.30	15.29	16.84	16.77	16.76
		3	15.26	15.25	15.30	16.73	16.72	16.77
		4	15.31	15.33	15.26	16.78	16.80	16.73
	HSUPA	1	15.26	15.25	15.36	16.73	16.72	16.83
		2	15.14	15.12	15.06	16.61	16.59	16.53
		3	15.14	15.18	15.12	16.61	16.65	16.59
		4	15.2	15.13	15.24	16.67	16.60	16.71
		5	15.17	15.07	15.26	16.64	16.54	16.73
	HSPA+	1	15.09	15.08	15.05	16.56	16.55	16.52

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
Antenna Gain =1.47dBi
Limit: EIRP≤33dBm

AWS Band 4

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		14.30	14.28	14.32	15.47	15.45	15.49
	HSDPA	1	14.10	14.11	14.05	15.27	15.28	15.22
		2	14.14	14.02	14.07	15.31	15.19	15.24
		3	14.25	14.08	14.08	15.42	15.25	15.25
		4	14.30	14.01	14.02	15.47	15.18	15.19
	HSUPA	1	14.08	14.09	14.05	15.25	15.26	15.22
		2	14.09	14.17	14.12	15.26	15.34	15.29
		3	14.10	14.18	14.26	15.27	15.35	15.43
		4	14.21	14.17	14.22	15.38	15.34	15.39
		5	14.24	14.15	14.23	15.41	15.32	15.40
	HSPA+	1	14.08	14.07	14.05	15.25	15.24	15.22

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
Antenna Gain = 1.17dBi
Limit: EIRP≤30dBm

Peak-to-average ratio (PAR)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.16	13
	Middle	3.44	13
	High	3.45	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.21	13
	Middle	3.51	13
	High	3.50	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.47	13
	Middle	3.30	13
	High	3.48	13
HSDPA (16QAM)	Low	3.43	13
	Middle	3.14	13
	High	3.35	13
HSUPA (BPSK)	Low	3.08	13
	Middle	3.14	13
	High	3.32	13
HSUPA+	Low	3.45	13
	Middle	3.31	13
	High	3.24	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.15	13
	Middle	3.14	13
	High	3.43	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.19	13
	Middle	3.41	13
	High	3.39	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.54	13
	Middle	3.43	13
	High	3.36	13
HSDPA (16QAM)	Low	3.51	13
	Middle	3.33	13
	High	3.45	13
HSUPA (BPSK)	Low	3.30	13
	Middle	3.61	13
	High	3.45	13
HSUPA+	Low	3.13	13
	Middle	3.29	13
	High	3.23	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
WCDMA (BPSK)	Low	3.11	13
	Middle	3.20	13
	High	3.52	13
HSDPA (16QAM)	Low	3.37	13
	Middle	3.34	13
	High	3.50	13
HSUPA (BPSK)	Low	3.12	13
	Middle	3.41	13
	High	3.35	13
HSUPA+	Low	3.28	13
	Middle	3.43	13
	High	3.37	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	14.96	14.83	14.74	16.43	16.30	16.21
		RB1#3	14.98	14.84	14.74	16.45	16.31	16.21
		RB1#5	14.96	14.83	14.72	16.43	16.30	16.19
		RB3#0	15.09	14.95	14.87	16.56	16.42	16.34
		RB3#3	15.05	14.92	14.89	16.52	16.39	16.36
		RB6#0	14.08	13.96	13.92	15.55	15.43	15.39
	16QAM	RB1#0	13.99	13.95	13.79	15.46	15.42	15.26
		RB1#3	13.99	13.98	13.87	15.46	15.45	15.34
		RB1#5	13.97	13.97	13.81	15.44	15.44	15.28
		RB3#0	14.32	14.03	14.05	15.79	15.50	15.52
		RB3#3	14.36	14.05	14.06	15.83	15.52	15.53
		RB6#0	13.23	13.11	12.95	14.70	14.58	14.42
3.0	QPSK	RB1#0	14.78	14.73	14.66	16.25	16.20	16.13
		RB1#8	14.87	14.79	14.71	16.34	16.26	16.18
		RB1#14	14.73	14.71	14.54	16.20	16.18	16.01
		RB6#0	14.00	13.88	13.81	15.47	15.35	15.28
		RB6#9	14.03	13.93	13.86	15.50	15.40	15.33
		RB15#0	14.06	13.91	13.87	15.53	15.38	15.34
	16QAM	RB1#0	14.47	13.84	13.65	15.94	15.31	15.12
		RB1#8	14.53	13.96	13.80	16.00	15.43	15.27
		RB1#14	14.35	13.87	13.69	15.82	15.34	15.16
		RB6#0	13.17	12.91	12.86	14.64	14.38	14.33
		RB6#9	13.14	12.98	12.90	14.61	14.45	14.37
		RB15#0	13.15	12.90	12.97	14.62	14.37	14.44

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	15.16	14.98	14.93	16.63	16.45	16.40
		RB1#13	15.21	15.11	15.03	16.68	16.58	16.50
		RB1#24	15.10	14.97	14.84	16.57	16.44	16.31
		RB15#0	14.16	13.94	14.01	15.63	15.41	15.48
		RB15#10	14.08	14.06	14.06	15.55	15.53	15.53
		RB25#0	14.16	14.01	14.04	15.63	15.48	15.51
	16QAM	RB1#0	14.02	14.31	14.06	15.49	15.78	15.53
		RB1#13	14.13	14.40	14.16	15.60	15.87	15.63
		RB1#24	14.01	14.30	13.98	15.48	15.77	15.45
		RB15#0	13.26	12.99	13.07	14.73	14.46	14.54
		RB15#10	13.19	13.08	13.13	14.66	14.55	14.60
		RB25#0	13.24	13.13	13.13	14.71	14.60	14.60
10.0	QPSK	RB1#0	15.08	15.01	14.90	16.55	16.48	16.37
		RB1#25	15.10	15.05	15.01	16.57	16.52	16.48
		RB1#49	14.97	14.99	14.88	16.44	16.46	16.35
		RB25#0	14.15	13.92	14.05	15.62	15.39	15.52
		RB25#25	13.98	14.08	14.06	15.45	15.55	15.53
		RB50#0	14.09	14.07	14.10	15.56	15.54	15.57
	16QAM	RB1#0	14.73	14.14	13.95	16.20	15.61	15.42
		RB1#25	14.78	14.18	14.01	16.25	15.65	15.48
		RB1#49	14.66	14.12	13.94	16.13	15.59	15.41
		RB25#0	13.26	12.99	13.20	14.73	14.46	14.67
		RB25#25	13.11	13.23	13.19	14.58	14.70	14.66
		RB50#0	13.11	13.07	13.11	14.58	14.54	14.58

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	15.05	14.94	14.92	16.52	16.41	16.39
		RB1#38	15.03	15.08	15.05	16.50	16.55	16.52
		RB1#74	14.97	14.97	14.85	16.44	16.44	16.32
		RB36#0	14.14	13.90	14.04	15.61	15.37	15.51
		RB36#39	13.94	14.01	13.95	15.41	15.48	15.42
		RB75#0	14.03	14.01	14.00	15.50	15.48	15.47
	16QAM	RB1#0	14.73	14.17	14.37	16.20	15.64	15.84
		RB1#38	14.72	14.20	14.50	16.19	15.67	15.97
		RB1#74	14.64	14.10	14.40	16.11	15.57	15.87
		RB36#0	13.17	12.98	13.06	14.64	14.45	14.53
		RB36#39	13.00	13.11	13.03	14.47	14.58	14.50
		RB75#0	13.06	13.09	13.02	14.53	14.56	14.49
20.0	QPSK	RB1#0	15.08	14.97	14.85	16.55	16.44	16.32
		RB1#50	15.10	15.08	14.98	16.57	16.55	16.45
		RB1#99	15.00	14.98	14.89	16.47	16.45	16.36
		RB50#0	14.21	13.98	14.26	15.68	15.45	15.73
		RB50#50	13.97	14.24	13.96	15.44	15.71	15.43
		RB100#0	14.10	14.12	14.15	15.57	15.59	15.62
	16QAM	RB1#0	14.38	14.20	14.44	15.85	15.67	15.91
		RB1#50	14.42	14.29	14.60	15.89	15.76	16.07
		RB1#99	14.32	14.19	14.50	15.79	15.66	15.97
		RB50#0	13.26	12.94	13.25	14.73	14.41	14.72
		RB50#50	12.98	13.28	12.99	14.45	14.75	14.46
		RB100#0	13.14	13.12	13.14	14.61	14.59	14.61

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
Antenna Gain = 1.47dBi
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	14.29	14.34	14.19	15.46	15.51	15.36
		RB1#3	14.29	14.35	14.26	15.46	15.52	15.43
		RB1#5	14.30	14.32	14.21	15.47	15.49	15.38
		RB3#0	14.34	14.46	14.50	15.51	15.63	15.67
		RB3#3	14.50	14.33	14.43	15.67	15.50	15.60
		RB6#0	13.30	13.34	13.16	14.47	14.51	14.33
	16QAM	RB1#0	13.31	13.45	13.22	14.48	14.62	14.39
		RB1#3	13.31	13.47	13.27	14.48	14.64	14.44
		RB1#5	13.34	13.46	13.24	14.51	14.63	14.41
		RB3#0	13.56	13.70	13.73	14.73	14.87	14.90
		RB3#3	14.09	13.69	13.70	15.26	14.86	14.87
		RB6#0	12.72	12.67	12.49	13.89	13.84	13.66
3.0	QPSK	RB1#0	14.16	14.21	14.10	15.33	15.38	15.27
		RB1#8	14.25	14.34	14.18	15.42	15.51	15.35
		RB1#14	14.14	14.23	14.08	15.31	15.40	15.25
		RB6#0	13.22	13.22	13.16	14.39	14.39	14.33
		RB6#9	13.20	13.20	13.13	14.37	14.37	14.30
		RB15#0	13.43	13.41	13.34	14.60	14.58	14.51
	16QAM	RB1#0	13.83	13.33	13.13	15.00	14.50	14.30
		RB1#8	13.94	13.41	13.22	15.11	14.58	14.39
		RB1#14	13.78	13.35	13.14	14.95	14.52	14.31
		RB6#0	12.68	12.57	12.39	13.85	13.74	13.56
		RB6#9	12.66	12.60	12.38	13.83	13.77	13.55
		RB15#0	12.83	12.66	12.66	14.00	13.83	13.83

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	14.51	14.52	14.40	15.68	15.69	15.57
		RB1#13	14.63	14.62	14.49	15.80	15.79	15.66
		RB1#24	14.55	14.52	14.40	15.72	15.69	15.57
		RB15#0	13.38	13.48	13.43	14.55	14.65	14.60
		RB15#10	13.54	13.57	13.46	14.71	14.74	14.63
		RB25#0	13.61	13.61	13.52	14.78	14.78	14.69
	16QAM	RB1#0	13.43	13.84	13.55	14.60	15.01	14.72
		RB1#13	13.50	13.91	13.59	14.67	15.08	14.76
		RB1#24	13.49	13.84	13.53	14.66	15.01	14.70
		RB15#0	12.85	12.69	12.49	14.02	13.86	13.66
		RB15#10	13.39	12.63	12.80	14.56	13.80	13.97
		RB25#0	13.17	12.91	12.88	14.34	14.08	14.05
10.0	QPSK	RB1#0	13.55	14.47	14.40	14.72	15.64	15.57
		RB1#25	14.63	14.58	14.51	15.80	15.75	15.68
		RB1#49	14.57	14.53	14.44	15.74	15.70	15.61
		RB25#0	13.39	13.46	13.48	14.56	14.63	14.65
		RB25#25	13.43	13.55	13.35	14.60	14.72	14.52
		RB50#0	13.56	13.55	13.47	14.73	14.72	14.64
	16QAM	RB1#0	13.43	13.66	13.60	14.60	14.83	14.77
		RB1#25	13.53	13.77	13.69	14.70	14.94	14.86
		RB1#49	13.44	13.71	13.62	14.61	14.88	14.79
		RB25#0	12.63	12.87	12.75	13.80	14.04	13.92
		RB25#25	12.83	12.84	12.74	14.00	14.01	13.91
		RB50#0	12.94	12.93	12.83	14.11	14.10	14.00

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	14.48	14.56	14.49	15.65	15.73	15.66
		RB1#38	14.66	14.65	14.53	15.83	15.82	15.70
		RB1#74	14.54	14.63	14.44	15.71	15.80	15.61
		RB36#0	13.16	13.34	13.55	14.33	14.51	14.72
		RB36#39	13.49	13.22	13.32	14.66	14.39	14.49
		RB75#0	13.61	13.49	13.24	14.78	14.66	14.41
	16QAM	RB1#0	13.67	13.43	13.76	14.84	14.60	14.93
		RB1#38	13.81	13.54	13.82	14.98	14.71	14.99
		RB1#74	13.70	13.49	13.74	14.87	14.66	14.91
		RB36#0	12.47	12.52	12.61	13.64	13.69	13.78
		RB36#39	12.77	12.67	12.61	13.94	13.84	13.78
		RB75#0	12.62	12.65	12.70	13.79	13.82	13.87
20.0	QPSK	RB1#0	14.49	14.39	14.45	15.66	15.56	15.62
		RB1#50	14.69	14.56	14.61	15.86	15.73	15.78
		RB1#99	14.63	14.49	14.49	15.80	15.66	15.66
		RB50#0	13.48	13.52	13.73	14.65	14.69	14.90
		RB50#50	13.63	13.66	13.49	14.80	14.83	14.66
		RB100#0	13.50	13.60	13.52	14.67	14.77	14.69
	16QAM	RB1#0	13.50	13.44	13.65	14.67	14.61	14.82
		RB1#50	13.72	13.63	13.82	14.89	14.80	14.99
		RB1#99	13.61	13.54	13.70	14.78	14.71	14.87
		RB50#0	12.62	12.78	12.80	13.79	13.95	13.97
		RB50#50	12.75	12.78	12.64	13.92	13.95	13.81
		RB100#0	12.66	12.57	12.82	13.83	13.74	13.99

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
Antenna Gain = 1.17dBi
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	24.26	23.25	23.64	16.51	15.50	15.89
		RB1#3	24.42	23.30	23.83	16.67	15.55	16.08
		RB1#5	24.39	23.24	23.87	16.64	15.49	16.12
		RB3#0	24.36	23.33	23.77	16.61	15.58	16.02
		RB3#3	24.40	23.33	23.87	16.65	15.58	16.12
		RB6#0	23.37	22.40	22.77	15.62	14.65	15.02
	16QAM	RB1#0	23.06	22.37	22.55	15.31	14.62	14.80
		RB1#3	23.27	22.44	22.66	15.52	14.69	14.91
		RB1#5	23.25	22.39	22.73	15.50	14.64	14.98
		RB3#0	23.41	22.36	22.81	15.66	14.61	15.06
		RB3#3	23.58	22.36	22.89	15.83	14.61	15.14
		RB6#0	22.36	21.49	21.76	14.61	13.74	14.01
3.0	QPSK	RB1#0	24.09	23.13	23.42	16.34	15.38	15.67
		RB1#8	24.37	23.28	23.61	16.62	15.53	15.86
		RB1#14	24.01	23.14	23.73	16.26	15.39	15.98
		RB6#0	23.26	22.26	22.51	15.51	14.51	14.76
		RB6#9	23.18	22.39	22.64	15.43	14.64	14.89
		RB15#0	23.28	22.38	22.61	15.53	14.63	14.86
	16QAM	RB1#0	23.43	22.24	22.33	15.68	14.49	14.58
		RB1#8	23.70	22.37	22.51	15.95	14.62	14.76
		RB1#14	23.35	22.29	22.61	15.60	14.54	14.86
		RB6#0	22.37	21.37	21.51	14.62	13.62	13.76
		RB6#9	22.29	21.50	21.63	14.54	13.75	13.88
		RB15#0	22.33	21.34	21.71	14.58	13.59	13.96

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	24.33	23.38	23.55	16.58	15.63	15.80
		RB1#13	24.31	23.50	23.73	16.56	15.75	15.98
		RB1#24	23.72	23.46	23.92	15.97	15.71	16.17
		RB15#0	23.40	22.32	22.66	15.65	14.57	14.91
		RB15#10	23.05	22.54	22.66	15.30	14.79	14.91
		RB25#0	23.19	22.42	22.67	15.44	14.67	14.92
	16QAM	RB1#0	23.03	22.66	22.62	15.28	14.91	14.87
		RB1#13	23.15	22.80	22.73	15.40	15.05	14.98
		RB1#24	22.64	22.74	22.87	14.89	14.99	15.12
		RB15#0	22.46	21.31	21.74	14.71	13.56	13.99
		RB15#10	22.07	21.56	21.70	14.32	13.81	13.95
		RB25#0	22.26	21.49	21.74	14.51	13.74	13.99
10.0	QPSK	RB1#0	24.51	23.46	23.44	16.76	15.71	15.69
		RB1#25	23.74	23.48	23.65	15.99	15.73	15.90
		RB1#49	23.30	23.58	23.94	15.55	15.83	16.19
		RB25#0	23.16	22.24	22.45	15.41	14.49	14.70
		RB25#25	22.77	22.61	22.60	15.02	14.86	14.85
		RB50#0	22.95	22.39	22.57	15.20	14.64	14.82
	16QAM	RB1#0	23.77	22.61	22.44	16.02	14.86	14.69
		RB1#25	23.18	22.60	22.65	15.43	14.85	14.90
		RB1#49	22.81	22.70	22.78	15.06	14.95	15.03
		RB25#0	22.28	21.32	21.58	14.53	13.57	13.83
		RB25#25	21.90	21.69	21.74	14.15	13.94	13.99
		RB50#0	22.00	21.42	21.61	14.25	13.67	13.86

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
Antenna Gain = -5.6dBi = -7.75dBd (0dBd=2.15dBi)
Limit: ERP≤38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.97	20.82	20.71	22.53	22.38	22.27
		RB1#13	21.02	20.89	20.78	22.58	22.45	22.34
		RB1#24	20.89	20.83	20.69	22.45	22.39	22.25
		RB15#0	19.88	19.76	19.72	21.44	21.32	21.28
		RB15#10	19.96	19.73	19.64	21.52	21.29	21.20
		RB25#0	19.94	19.75	19.65	21.50	21.31	21.21
	16QAM	RB1#0	20.07	19.84	20.02	21.63	21.40	21.58
		RB1#13	20.15	19.93	20.07	21.71	21.49	21.63
		RB1#24	20.02	19.83	20.01	21.58	21.39	21.57
		RB15#0	18.86	18.84	18.87	20.42	20.40	20.43
		RB15#10	18.90	18.82	18.76	20.46	20.38	20.32
		RB25#0	19.00	18.86	18.71	20.56	20.42	20.27
10.0	QPSK	RB1#0	20.91	20.75	20.63	22.47	22.31	22.19
		RB1#25	20.98	20.85	20.75	22.54	22.41	22.31
		RB1#49	20.88	20.79	20.64	22.44	22.35	22.20
		RB25#0	19.86	19.71	19.72	21.42	21.27	21.28
		RB25#25	19.93	19.69	19.57	21.49	21.25	21.13
		RB50#0	19.93	19.75	19.66	21.49	21.31	21.22
	16QAM	RB1#0	20.18	19.63	19.93	21.74	21.19	21.49
		RB1#25	20.24	19.71	20.02	21.80	21.27	21.58
		RB1#49	20.14	19.65	19.93	21.70	21.21	21.49
		RB25#0	18.94	18.84	18.82	20.50	20.40	20.38
		RB25#25	19.02	18.78	18.71	20.58	20.34	20.27
		RB50#0	19.00	18.77	18.76	20.56	20.33	20.32

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	20.92	20.78	20.64	22.48	22.34	22.20
		RB1#38	20.96	20.82	20.68	22.52	22.38	22.24
		RB1#74	20.83	20.80	20.63	22.39	22.36	22.19
		RB36#0	19.86	19.69	19.64	21.42	21.25	21.20
		RB36#39	19.93	19.71	19.61	21.49	21.27	21.17
		RB75#0	19.88	19.74	19.67	21.44	21.30	21.23
	16QAM	RB1#0	20.16	19.68	20.04	21.72	21.24	21.60
		RB1#38	20.22	19.70	20.08	21.78	21.26	21.64
		RB1#74	20.07	19.65	20.01	21.63	21.21	21.57
		RB36#0	18.86	18.74	18.80	20.42	20.30	20.36
		RB36#39	18.97	18.72	18.74	20.53	20.28	20.30
		RB75#0	18.90	18.77	18.73	20.46	20.33	20.29
20.0	QPSK	RB1#0	19.93	19.62	19.70	21.49	21.18	21.26
		RB1#50	21.07	20.75	20.80	22.63	22.31	22.36
		RB1#99	20.93	20.65	20.65	22.49	22.21	22.21
		RB50#0	19.76	19.77	19.66	21.32	21.33	21.22
		RB50#50	19.94	19.68	19.60	21.50	21.24	21.16
		RB100#0	19.84	19.74	19.65	21.40	21.30	21.21
	16QAM	RB1#0	19.06	18.78	19.03	20.62	20.34	20.59
		RB1#50	20.14	19.88	20.09	21.70	21.44	21.65
		RB1#99	19.92	19.77	19.97	21.48	21.33	21.53
		RB50#0	18.79	18.87	18.72	20.35	20.43	20.28
		RB50#50	18.97	18.80	18.69	20.53	20.36	20.25
		RB100#0	18.87	18.81	18.71	20.43	20.37	20.27

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
Antenna Gain = 1.56dBi
Limit: EIRP≤33dBm

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	QPSK	RB1#0	22.51	22.46	22.38	24.07	24.02	23.94
		RB1#13	22.60	22.55	22.48	24.16	24.11	24.04
		RB1#24	22.53	22.46	22.37	24.09	24.02	23.93
		RB15#0	21.50	21.54	21.42	23.06	23.10	22.98
		RB15#10	21.55	21.52	21.41	23.11	23.08	22.97
		RB25#0	21.52	21.54	21.40	23.08	23.10	22.96
	16QAM	RB1#0	21.69	21.49	21.47	23.25	23.05	23.03
		RB1#13	21.78	21.56	21.59	23.34	23.12	23.15
		RB1#24	21.75	21.49	21.44	23.31	23.05	23.00
		RB15#0	20.50	20.44	20.42	22.06	22.00	21.98
		RB15#10	20.53	20.45	20.40	22.09	22.01	21.96
		RB25#0	20.50	20.55	20.46	22.06	22.11	22.02
10	QPSK	RB1#0	22.43	22.51	22.47	23.99	24.07	24.03
		RB1#25	22.55	22.59	22.53	24.11	24.15	24.09
		RB1#49	22.49	22.53	22.43	24.05	24.09	23.99
		RB25#0	21.56	21.53	21.45	23.12	23.09	23.01
		RB25#25	21.57	21.55	21.42	23.13	23.11	22.98
		RB50#0	21.56	21.57	21.43	23.12	23.13	22.99
	16QAM	RB1#0	21.62	21.39	21.58	23.18	22.95	23.14
		RB1#25	21.73	21.48	21.63	23.29	23.04	23.19
		RB1#49	21.67	21.43	21.52	23.23	22.99	23.08
		RB25#0	20.54	20.57	20.50	22.10	22.13	22.06
		RB25#25	20.56	20.59	20.44	22.12	22.15	22.00
		RB50#0	20.53	20.54	20.47	22.09	22.10	22.03

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	22.43	22.49	22.47	23.99	24.05	24.03
		RB1#38	22.58	22.58	22.58	24.14	24.14	24.14
		RB1#74	22.54	22.54	22.45	24.10	24.10	24.01
		RB36#0	21.47	21.52	21.45	23.03	23.08	23.01
		RB36#39	21.53	21.52	21.43	23.09	23.08	22.99
		RB75#0	21.51	21.58	21.46	23.07	23.14	23.02
	16QAM	RB1#0	21.58	21.41	21.68	23.14	22.97	23.24
		RB1#38	21.74	21.51	21.76	23.30	23.07	23.32
		RB1#74	21.69	21.47	21.65	23.25	23.03	23.21
		RB36#0	20.47	20.47	20.53	22.03	22.03	22.09
		RB36#39	20.54	20.48	20.49	22.10	22.04	22.05
		RB75#0	20.46	20.53	20.48	22.02	22.09	22.04
20	QPSK	RB1#0	22.37	22.38	22.49	23.93	23.94	24.05
		RB1#50	22.62	22.57	22.64	24.18	24.13	24.20
		RB1#99	22.47	22.42	22.42	24.03	23.98	23.98
		RB50#0	21.52	21.54	21.52	23.08	23.10	23.08
		RB50#50	21.53	21.54	21.46	23.09	23.10	23.02
		RB100#0	21.55	21.53	21.48	23.11	23.09	23.04
	16QAM	RB1#0	21.40	21.39	21.70	22.96	22.95	23.26
		RB1#50	21.66	21.54	21.84	23.22	23.10	23.40
		RB1#99	21.54	21.43	21.65	23.10	22.99	23.21
		RB50#0	20.50	20.59	20.53	22.06	22.15	22.09
		RB50#50	20.50	20.60	20.47	22.06	22.16	22.03
		RB100#0	20.51	20.57	20.43	22.07	22.13	21.99

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
Antenna Gain = 1.56dBi
Limit: EIRP≤33dBm

LTE Band 41:

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5	QPSK	RB1#0	22.36	22.57	22.30	23.92	24.13	23.86
		RB1#13	22.44	22.62	22.43	24.00	24.18	23.99
		RB1#24	22.36	22.55	22.33	23.92	24.11	23.89
		RB15#0	21.33	21.57	21.32	22.89	23.13	22.88
		RB15#10	21.41	21.58	21.32	22.97	23.14	22.88
		RB25#0	21.34	21.59	21.37	22.90	23.15	22.93
	16QAM	RB1#0	21.32	21.65	21.51	22.88	23.21	23.07
		RB1#13	21.48	21.74	21.60	23.04	23.30	23.16
		RB1#24	21.37	21.62	21.51	22.93	23.18	23.07
		RB15#0	20.27	20.59	20.35	21.83	22.15	21.91
		RB15#10	20.30	20.58	20.35	21.86	22.14	21.91
		RB25#0	20.38	20.65	20.32	21.94	22.21	21.88
10	QPSK	RB1#0	22.30	22.59	22.31	23.86	24.15	23.87
		RB1#25	22.43	22.65	22.43	23.99	24.21	23.99
		RB1#49	22.36	22.59	22.36	23.92	24.15	23.92
		RB25#0	21.31	21.61	21.36	22.87	23.17	22.92
		RB25#25	21.47	21.60	21.36	23.03	23.16	22.92
		RB50#0	21.37	21.59	21.34	22.93	23.15	22.90
	16QAM	RB1#0	21.53	21.51	21.36	23.09	23.07	22.92
		RB1#25	21.63	21.60	21.45	23.19	23.16	23.01
		RB1#49	21.56	21.49	21.37	23.12	23.05	22.93
		RB25#0	20.32	20.65	20.38	21.88	22.21	21.94
		RB25#25	20.45	20.63	20.39	22.01	22.19	21.95
		RB50#0	20.34	20.59	20.37	21.90	22.15	21.93

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	22.31	22.55	22.33	23.87	24.11	23.89
		RB1#38	22.44	22.66	22.45	24.00	24.22	24.01
		RB1#74	22.43	22.59	22.40	23.99	24.15	23.96
		RB36#0	21.27	21.57	21.32	22.83	23.13	22.88
		RB36#39	21.41	21.55	21.28	22.97	23.11	22.84
		RB75#0	21.42	21.63	21.35	22.98	23.19	22.91
	16QAM	RB1#0	21.50	21.49	21.48	23.06	23.05	23.04
		RB1#38	21.64	21.60	21.61	23.20	23.16	23.17
		RB1#74	21.61	21.51	21.51	23.17	23.07	23.07
		RB36#0	20.29	20.55	20.38	21.85	22.11	21.94
		RB36#39	20.44	20.56	20.38	22.00	22.12	21.94
		RB75#0	20.35	20.57	20.34	21.91	22.13	21.90
20	QPSK	RB1#0	22.23	22.47	22.35	23.79	24.03	23.91
		RB1#50	22.49	22.63	22.50	24.05	24.19	24.06
		RB1#99	22.36	22.50	22.36	23.92	24.06	23.92
		RB50#0	21.26	21.62	21.34	22.82	23.18	22.90
		RB50#50	21.53	21.59	21.37	23.09	23.15	22.93
		RB100#0	21.42	21.60	21.34	22.98	23.16	22.90
	16QAM	RB1#0	21.29	21.45	21.59	22.85	23.01	23.15
		RB1#50	21.53	21.65	21.67	23.09	23.21	23.23
		RB1#99	21.42	21.49	21.57	22.98	23.05	23.13
		RB50#0	20.21	20.62	20.33	21.77	22.18	21.89
		RB50#50	20.50	20.62	20.36	22.06	22.18	21.92
		RB100#0	20.38	20.59	20.34	21.94	22.15	21.90

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
For Band 41: Antenna Gain = -0.4dBi
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)	3.62	4.68	3.91	13	Pass
QPSK (100RB Size)	5.51	5.67	5.61	13	Pass
16QAM (1RB Size)	4.58	5.80	4.84	13	Pass
16QAM (100RB Size)	6.35	6.51	6.51	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.46	4.21	4.27	13	Pass
QPSK (100RB Size)	5.59	5.50	5.67	13	Pass
16QAM (1RB Size)	5.44	5.21	5.08	13	Pass
16QAM (100RB Size)	6.49	6.39	6.42	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.11	3.69	4.04	13	Pass
QPSK (50RB Size)	5.48	5.61	5.51	13	Pass
16QAM (1RB Size)	4.13	4.62	4.81	13	Pass
16QAM (50RB Size)	6.25	6.41	6.35	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.71	4.87	4.26	13	Pass
QPSK (100RB Size)	5.61	5.71	5.61	13	Pass
16QAM (1RB Size)	5.67	5.96	5.16	13	Pass
16QAM (100RB Size)	6.51	6.57	6.47	13	Pass

LTE Band 38 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.47	6.52	7.02	13	Pass
QPSK (100RB Size)	6.29	6.35	6.86	13	Pass
16QAM (1RB Size)	5.89	7.05	7.32	13	Pass
16QAM (100RB Size)	8.10	8.49	7.69	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.36	7.98	6.44	13	Pass
QPSK (100RB Size)	7.68	9.86	8.43	13	Pass
16QAM (1RB Size)	8.03	8.65	8.35	13	Pass
16QAM (100RB Size)	8.01	8.17	7.84	13	Pass

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

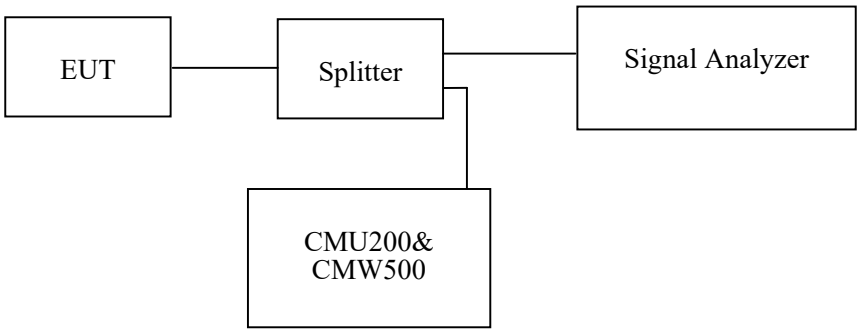
Applicable Standard

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:	27.3 ℃
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

The testing was performed by Pedro Yun on 2021-06-27 to 2021-07-14.

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	241.99	312.50
	190	836.6	245.19	315.06
	251	848.8	246.79	317.63
EGPRS(8PSK)	128	824.2	245.19	310.26
	190	836.6	245.19	314.10
	251	848.8	246.79	317.31

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.17	4.74
	836.6	4.17	4.69
	846.6	4.17	4.73
HSDPA	826.4	4.17	4.72
	836.6	4.17	4.69
	846.6	4.17	4.74
HSUPA	826.4	4.18	4.71
	836.6	4.18	4.72
	846.6	4.17	4.70

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	243.59	317.31
	661	1880.0	245.19	314.10
	810	1909.8	246.79	317.31
EGPRS(8PSK)	512	1850.2	248.40	322.12
	661	1880.0	245.19	322.12
	810	1909.8	246.79	309.29

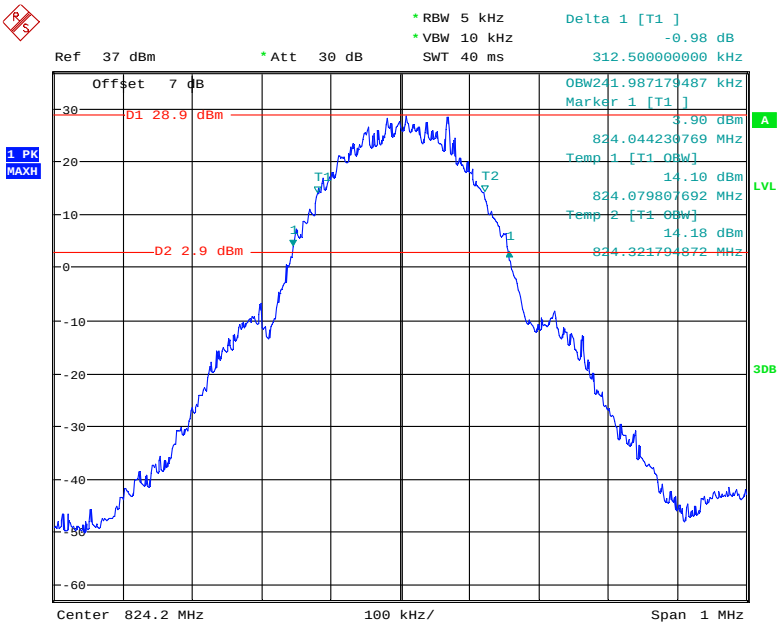
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.15	4.70
	1880.0	4.15	4.71
	1907.6	4.17	4.73
HSDPA	1852.4	4.17	4.70
	1880.0	4.20	4.75
	1907.6	4.18	4.71
HSUPA	1852.4	4.17	4.70
	1880.0	4.18	4.73
	1907.6	4.17	4.73

AWS Band (Part 27)

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.15	4.70
	1732.6	4.16	4.72
	1752.6	4.17	4.71
HSDPA	1712.4	4.17	4.70
	1732.6	4.17	4.72
	1752.6	4.17	4.73
HSUPA	1712.4	4.18	4.72
	1732.6	4.17	4.72
	1752.6	4.17	4.71

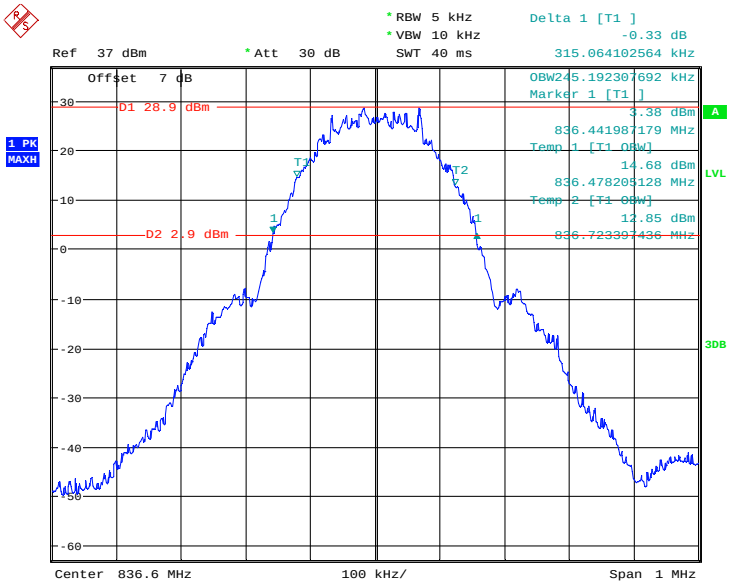
Cellular Band (Part 22H)

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



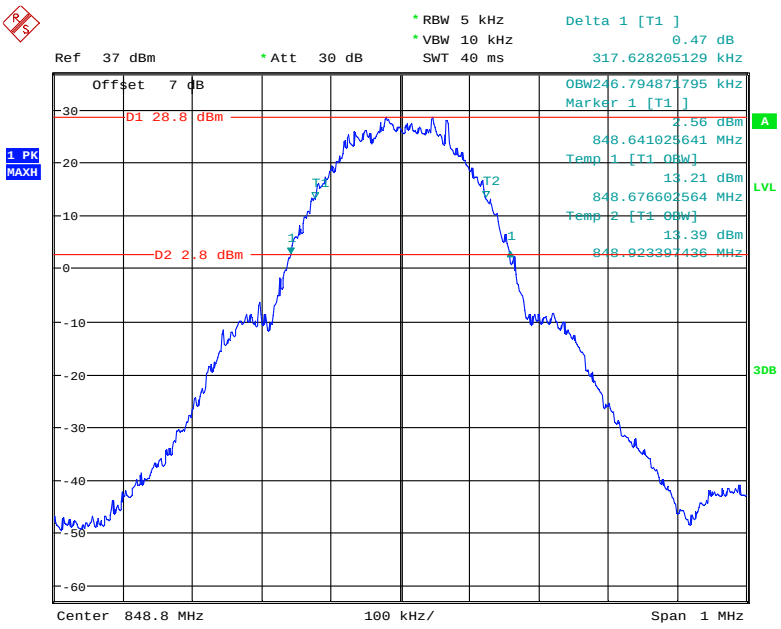
Date: 27.JUN.2021 23:27:23

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



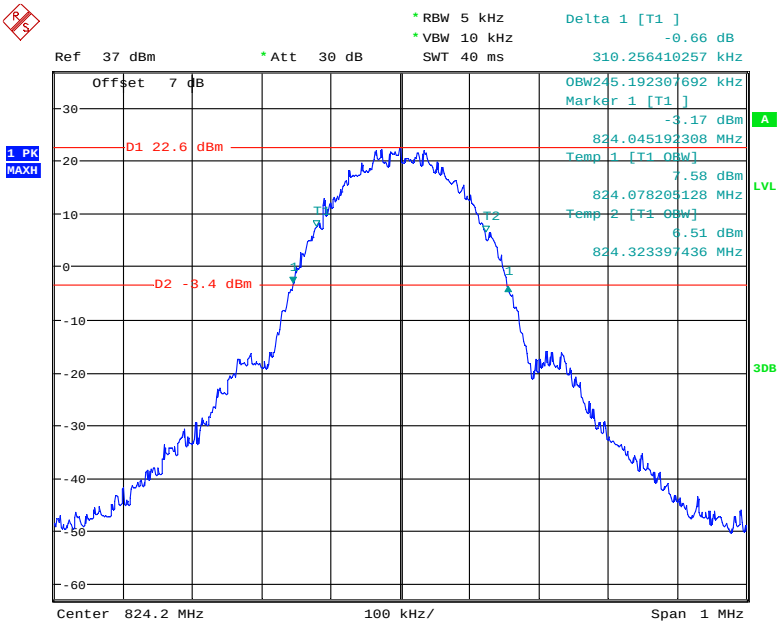
Date: 27.JUN.2021 23:26:26

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



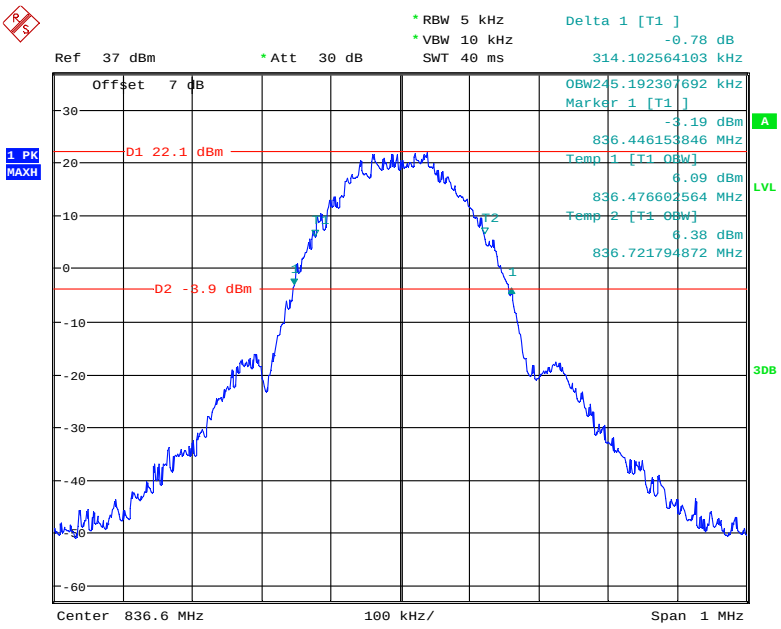
Date: 27.JUN.2021 23:24:54

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



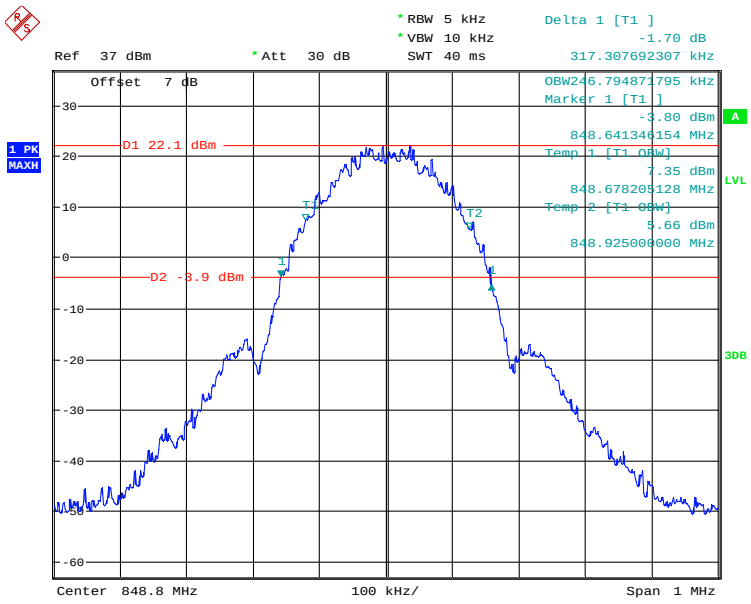
Date: 27.JUN.2021 23:35:09

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



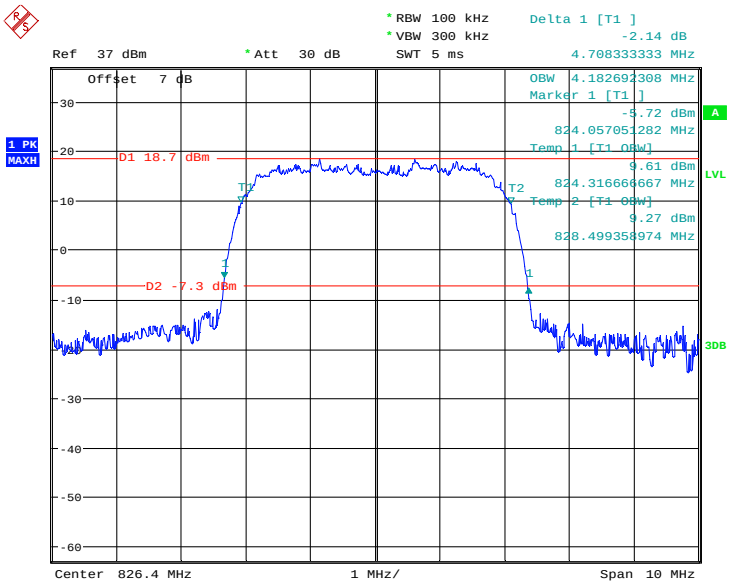
Date: 27.JUN.2021 23:37:21

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



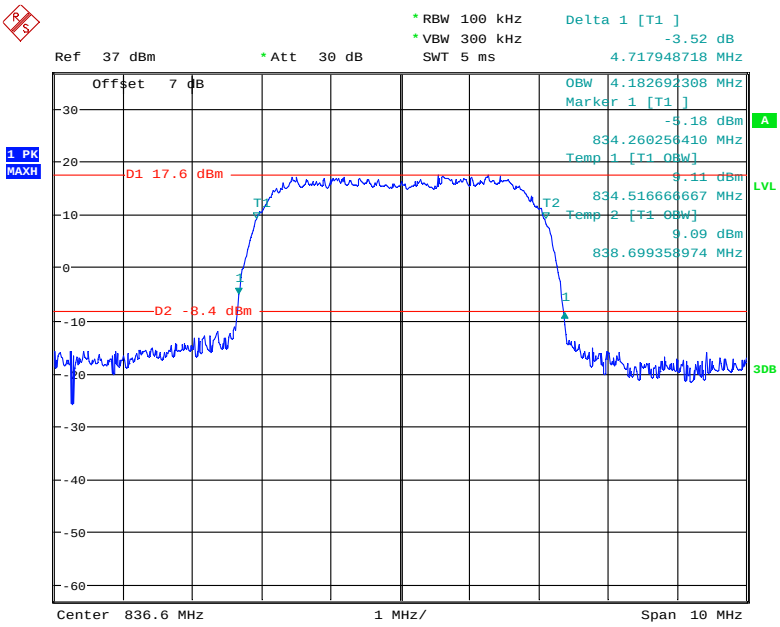
Date: 27.JUN.2021 23:38:38

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



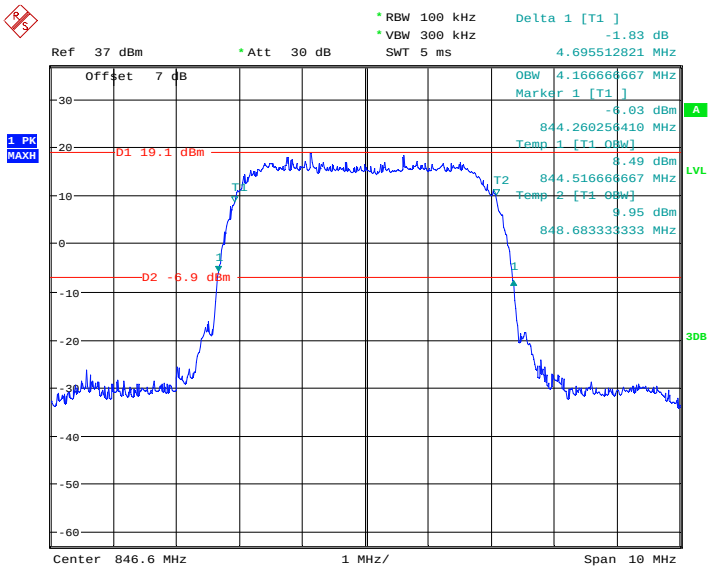
Date: 27.JUN.2021 23:02:41

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



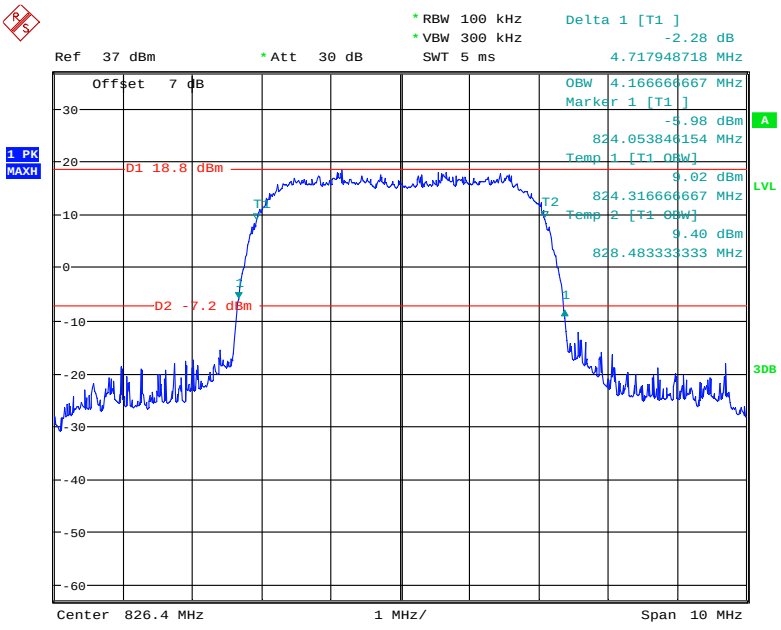
Date: 27.JUN.2021 23:08:22

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



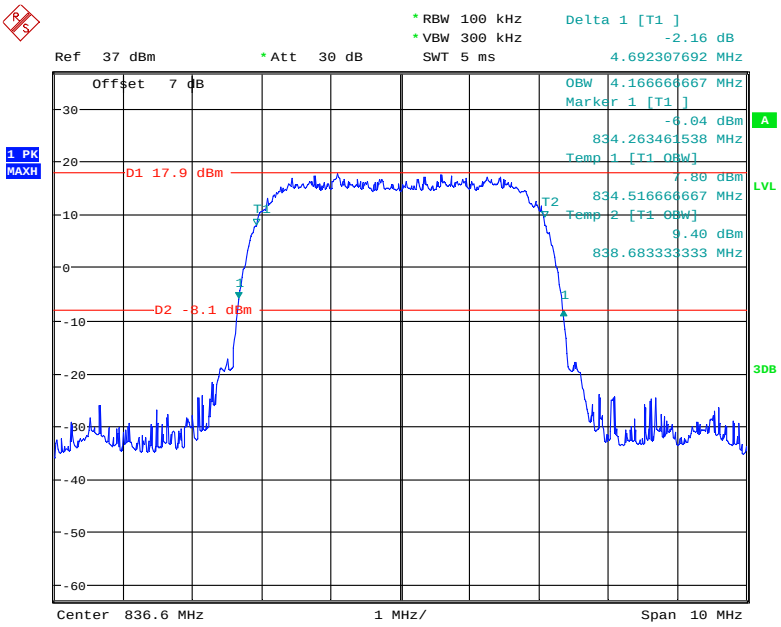
Date: 27.JUN.2021 23:09:34

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



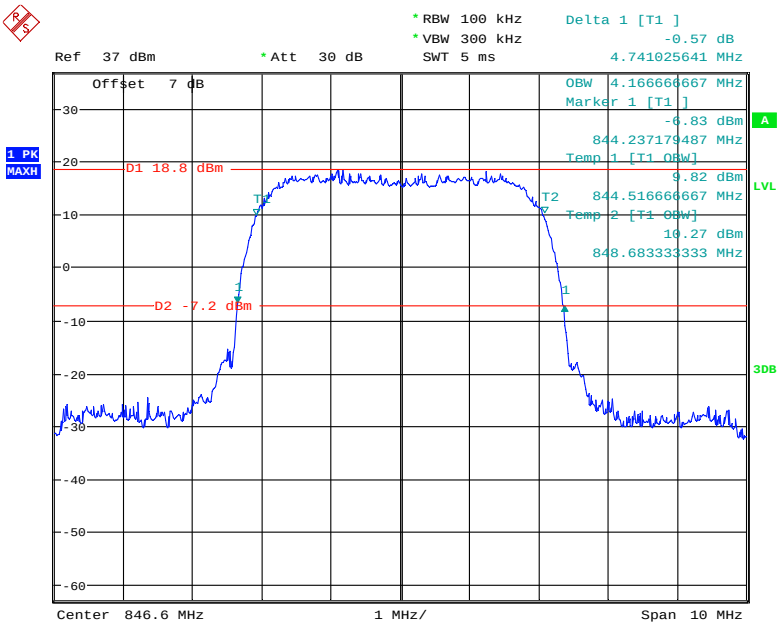
Date: 27.JUN.2021 22:41:05

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



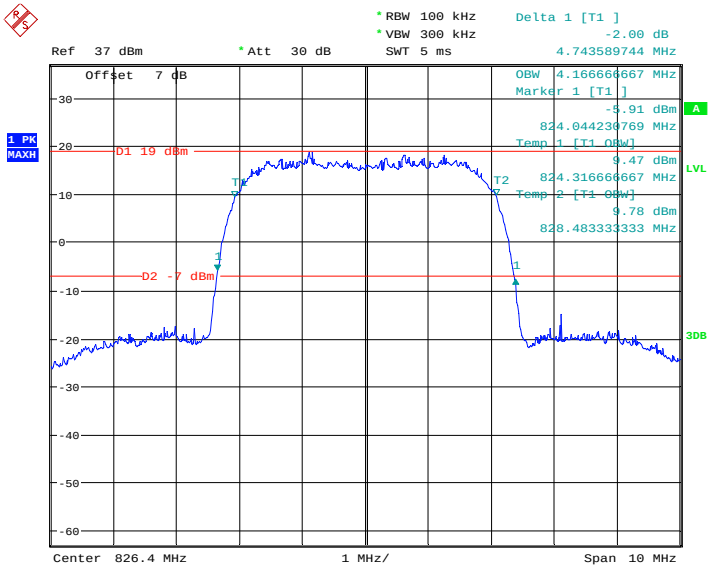
Date: 27.JUN.2021 22:39:44

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



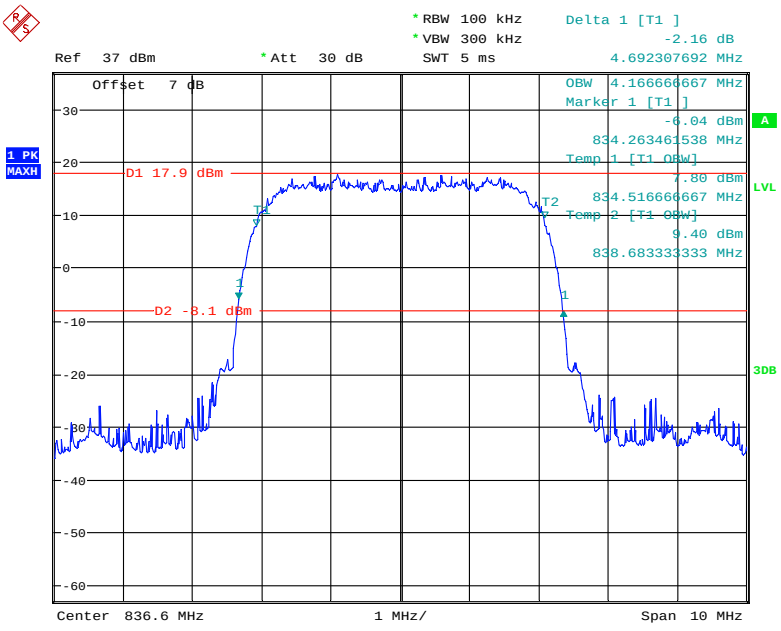
Date: 27.JUN.2021 22:36:58

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



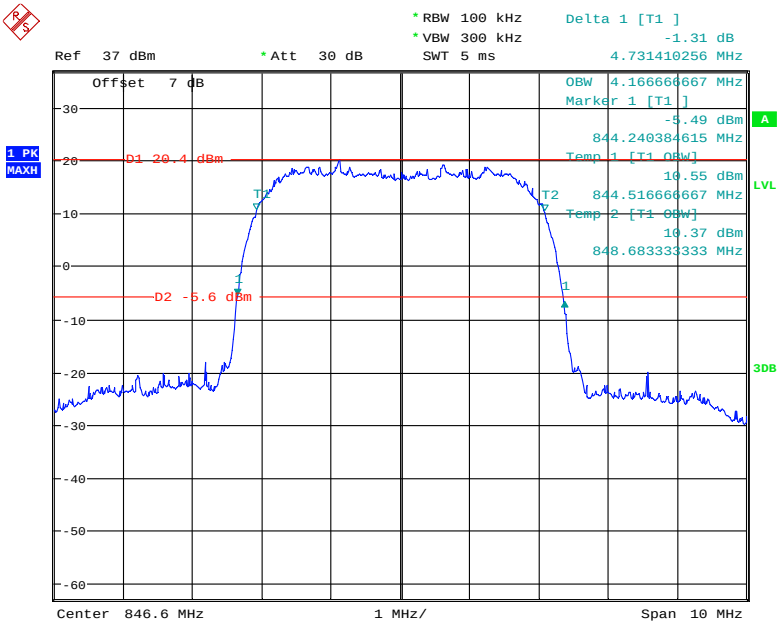
Date: 27.JUN.2021 22:07:22

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



Date: 27.JUN.2021 22:39:44

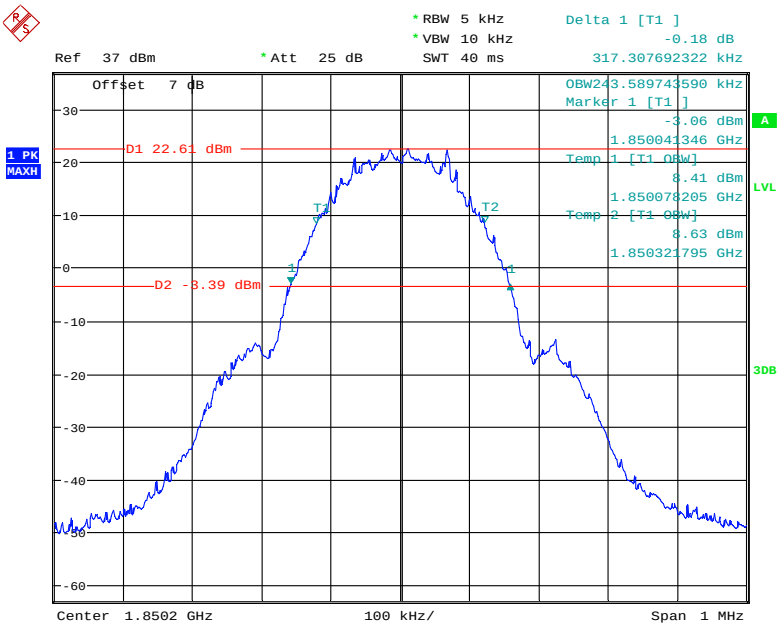
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



Date: 27.JUN.2021 22:04:39

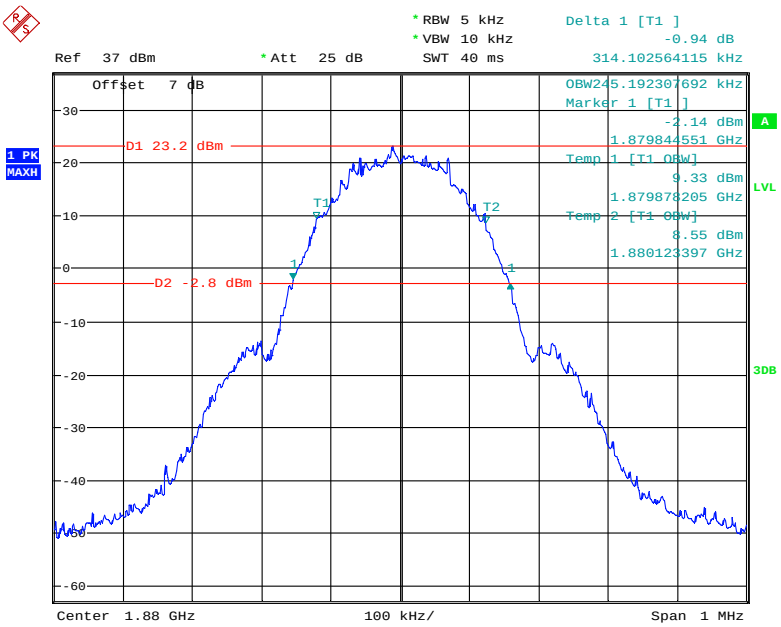
PCS Band (Part 24E)

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



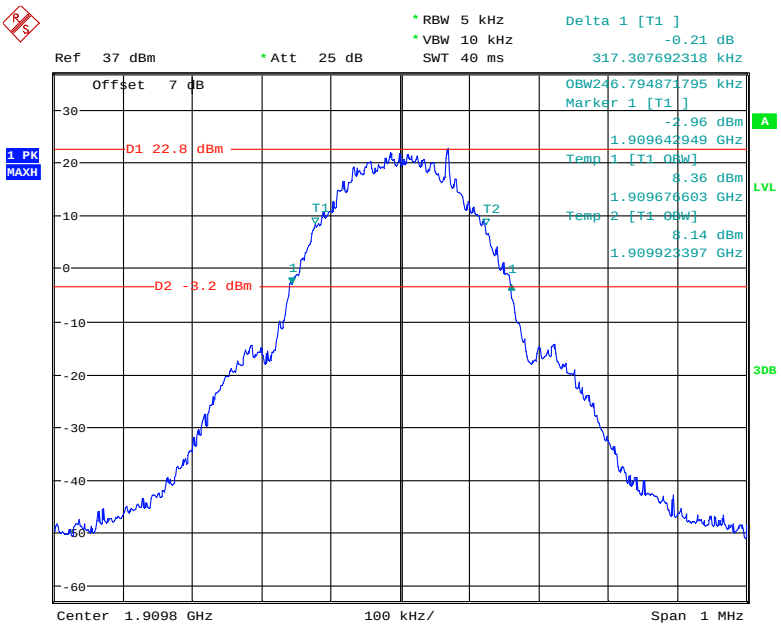
Date: 14.JUL.2021 16:49:54

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



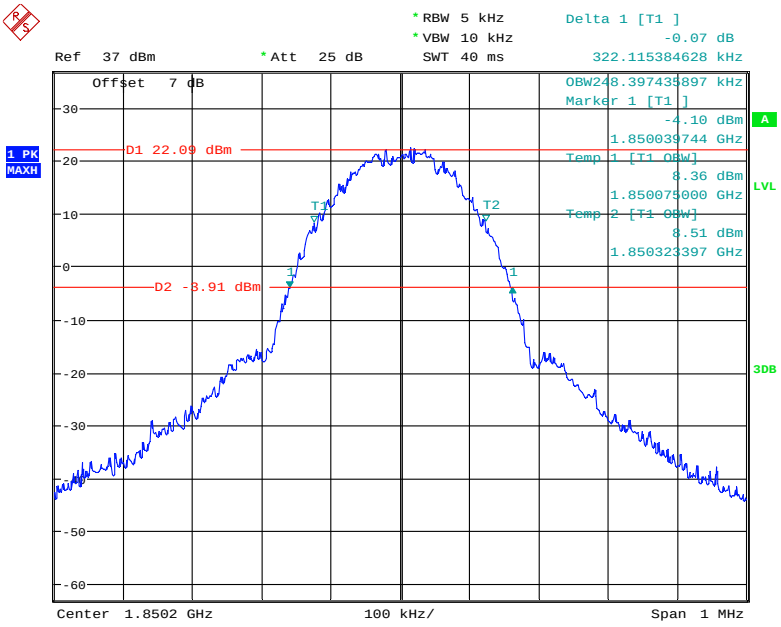
Date: 14.JUL.2021 16:54:13

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



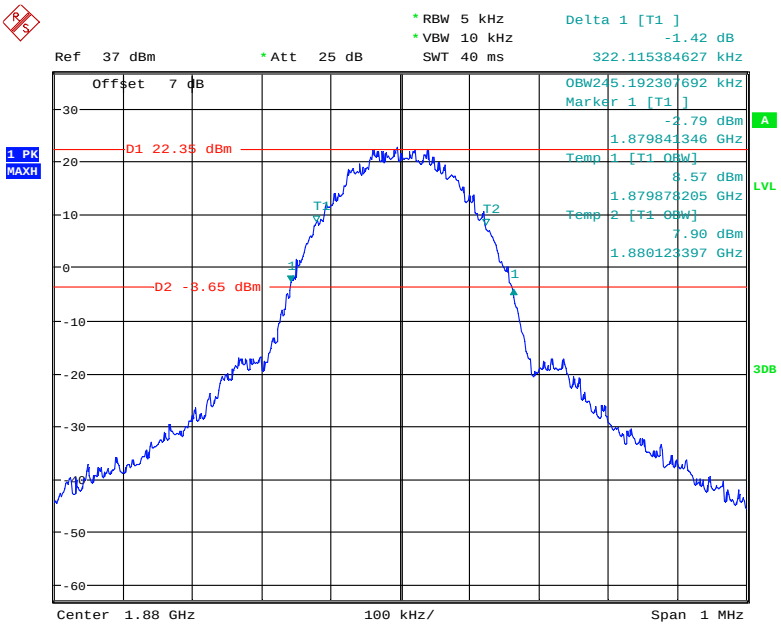
Date: 14.JUL.2021 16:55:55

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



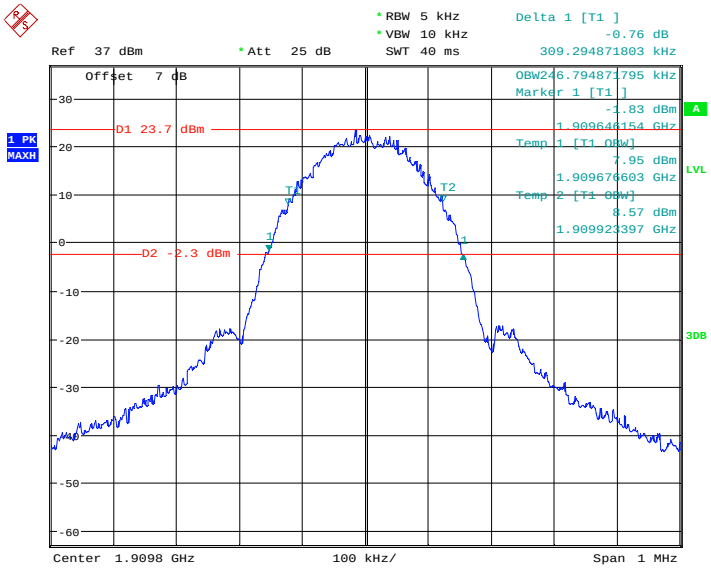
Date: 14.JUL.2021 17:05:35

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



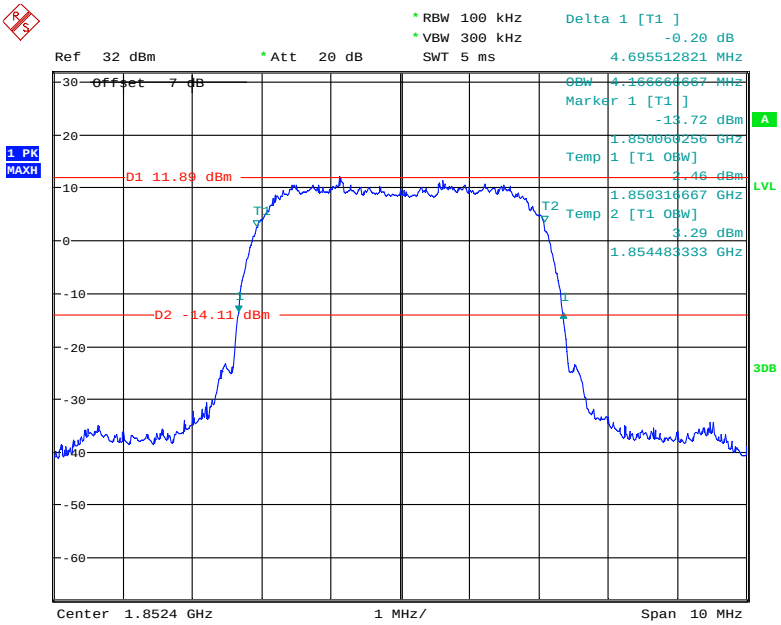
Date: 14.JUL.2021 17:03:35

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



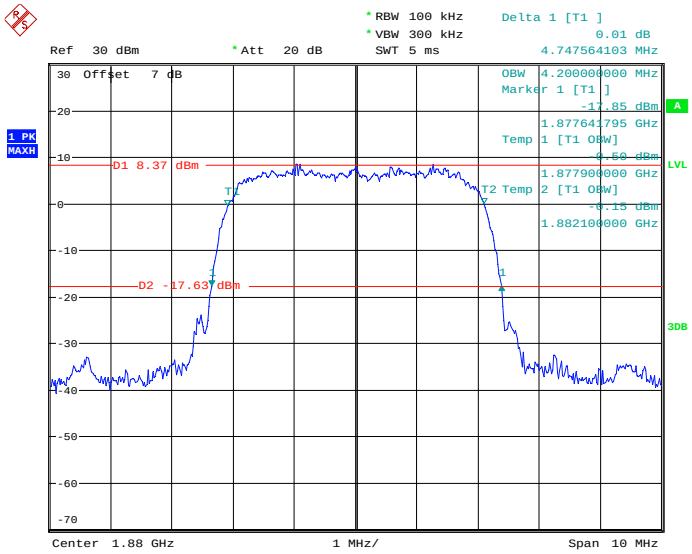
Date: 14.JUL.2021 17:00:02

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



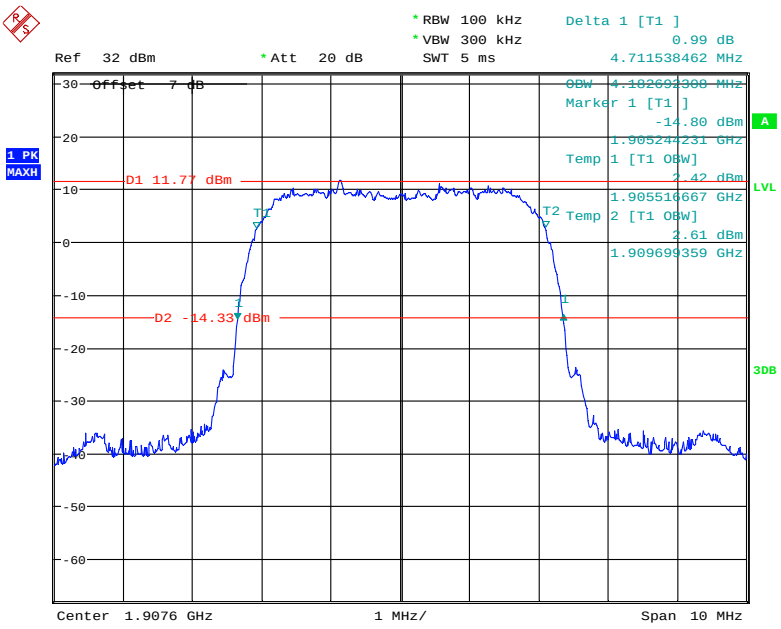
Date: 14.JUL.2021 15:45:34

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



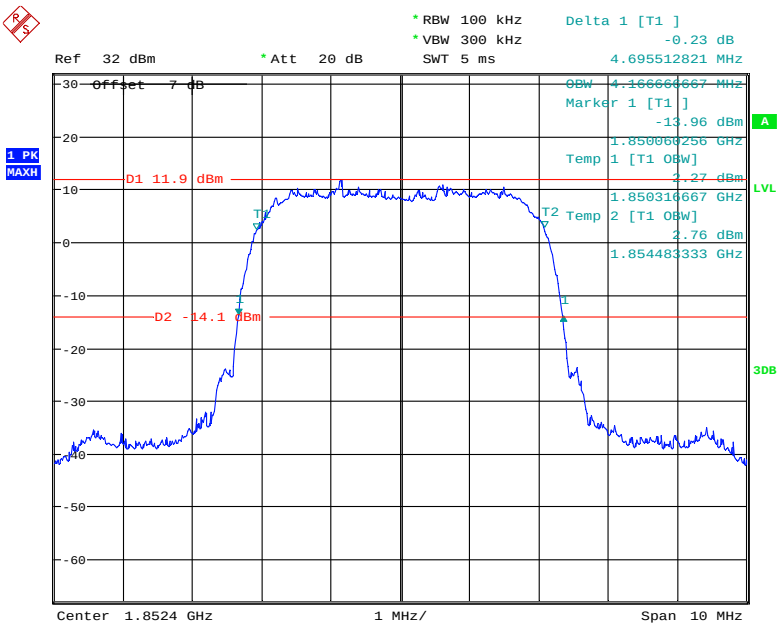
Date: 12.JUL.2021 17:24:58

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



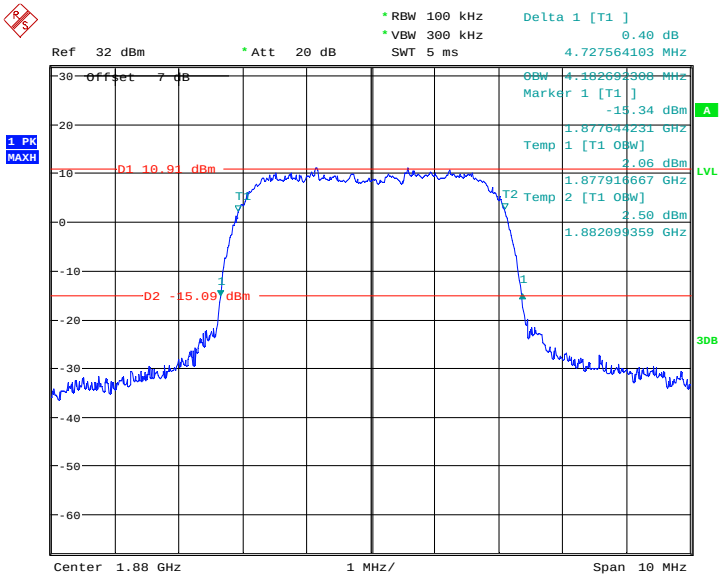
Date: 14.JUL.2021 15:42:08

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



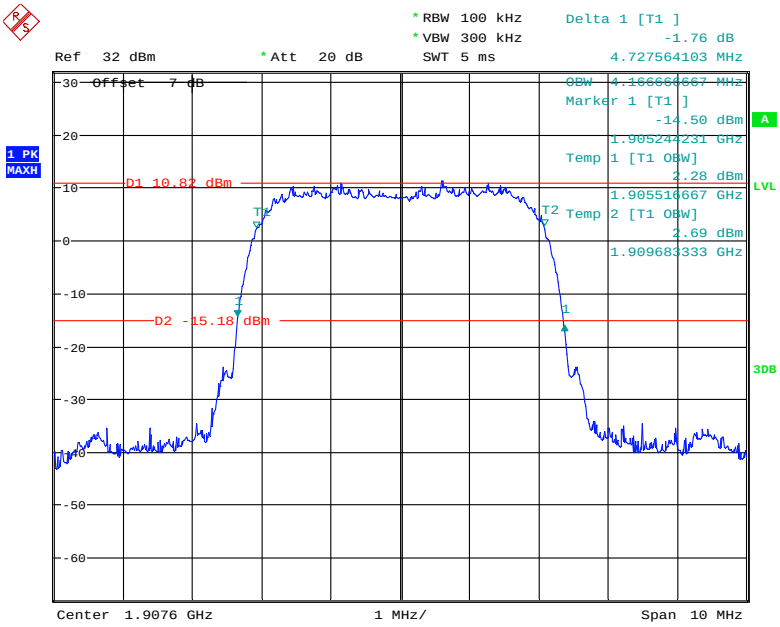
Date: 14.JUL.2021 15:50:50

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



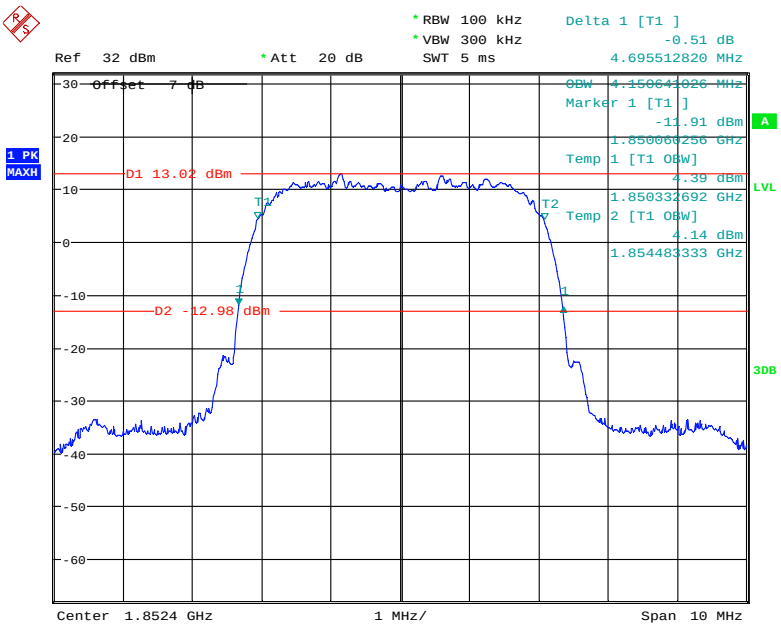
Date: 14.JUL.2021 15:52:39

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



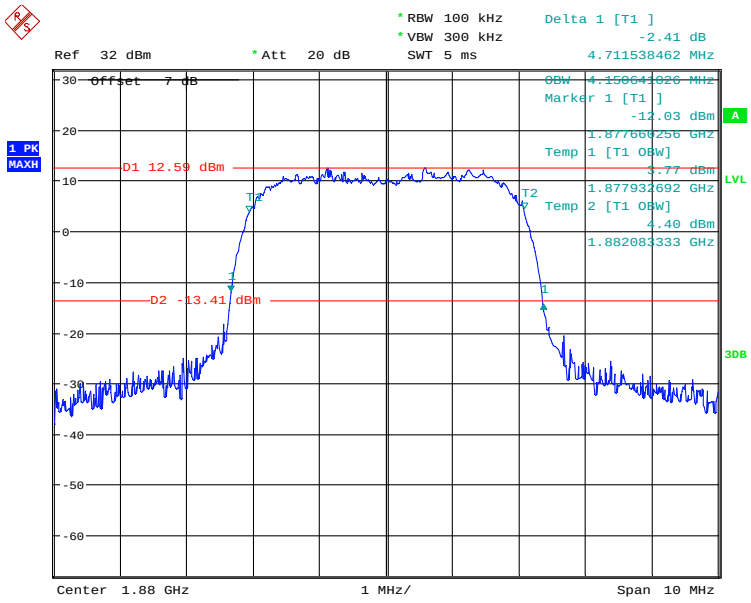
Date: 14.JUL.2021 15:55:22

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



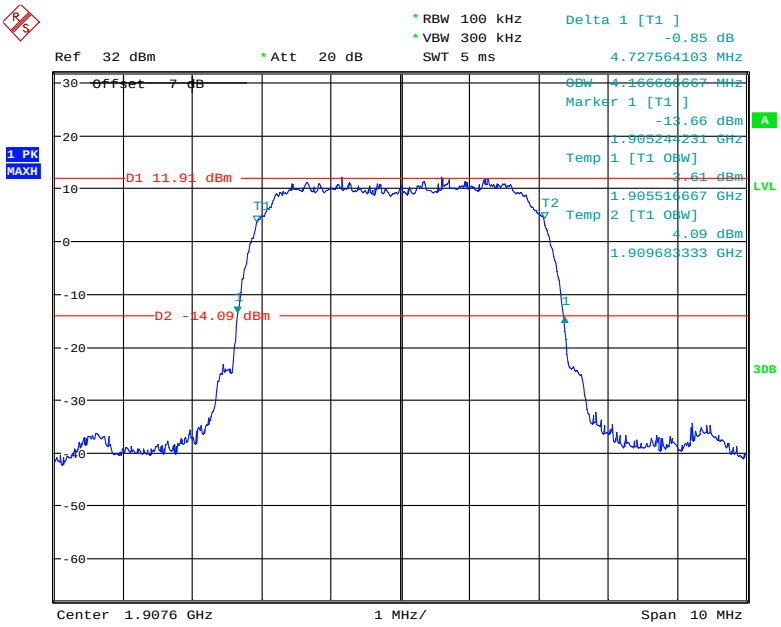
Date: 14.JUL.2021 15:19:37

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



Date: 14.JUL.2021 15:23:15

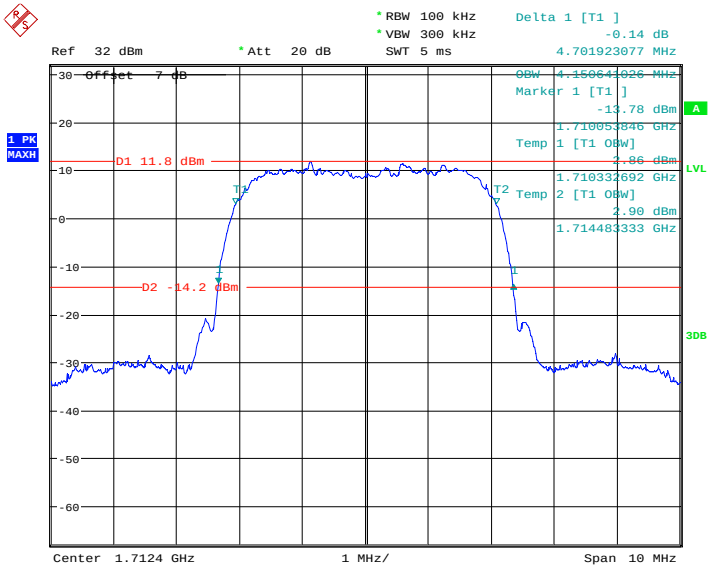
26 dB Emissions &99% Occupied Bandwidth for RMC (BPSK) Mode, High channel



Date: 14.JUL.2021 15:24:40

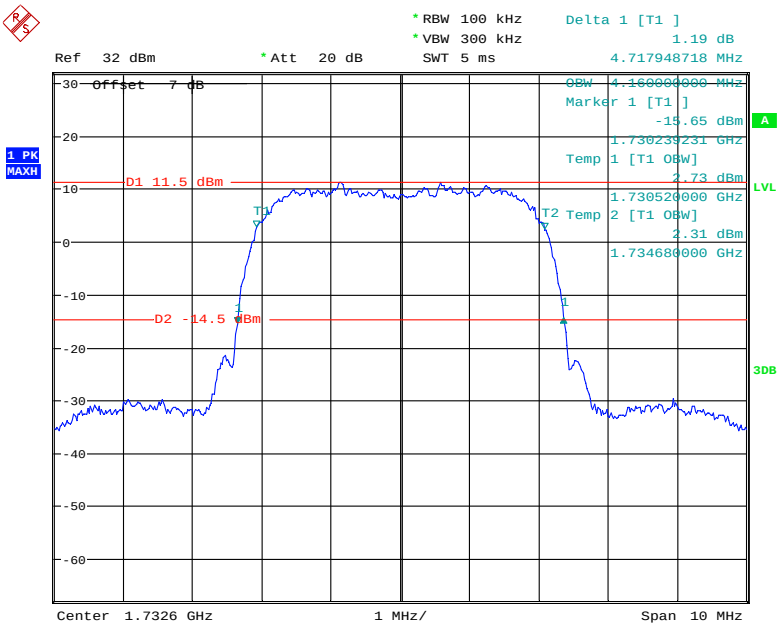
AWS Band (Part 27)

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



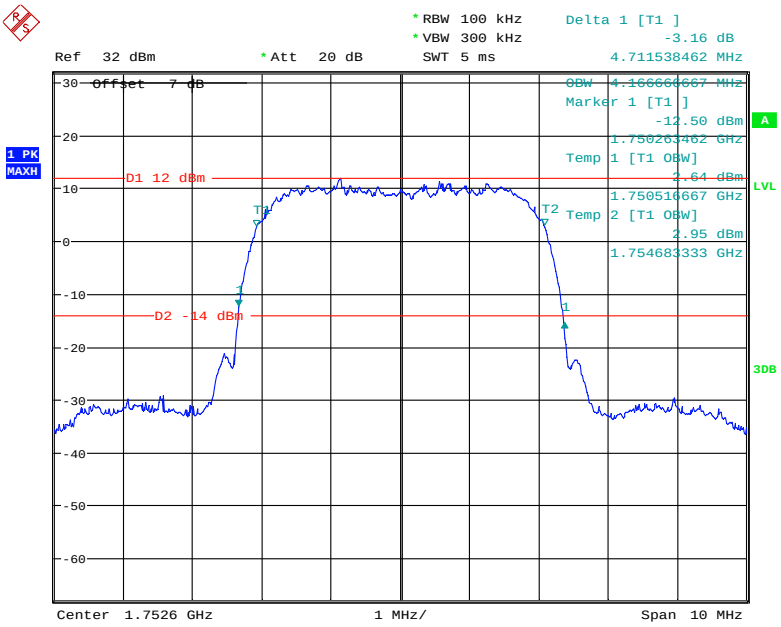
Date: 29.JUN.2021 22:27:22

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



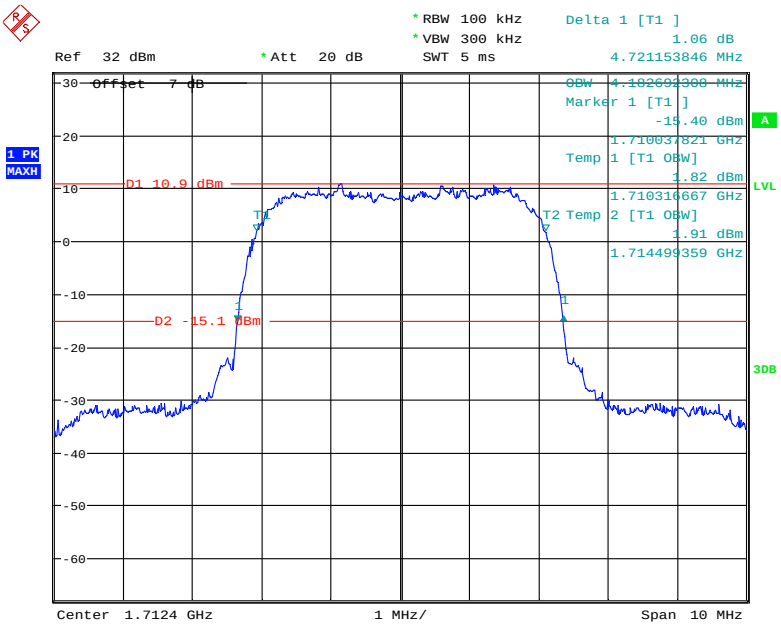
Date: 30.JUN.2021 03:30:23

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



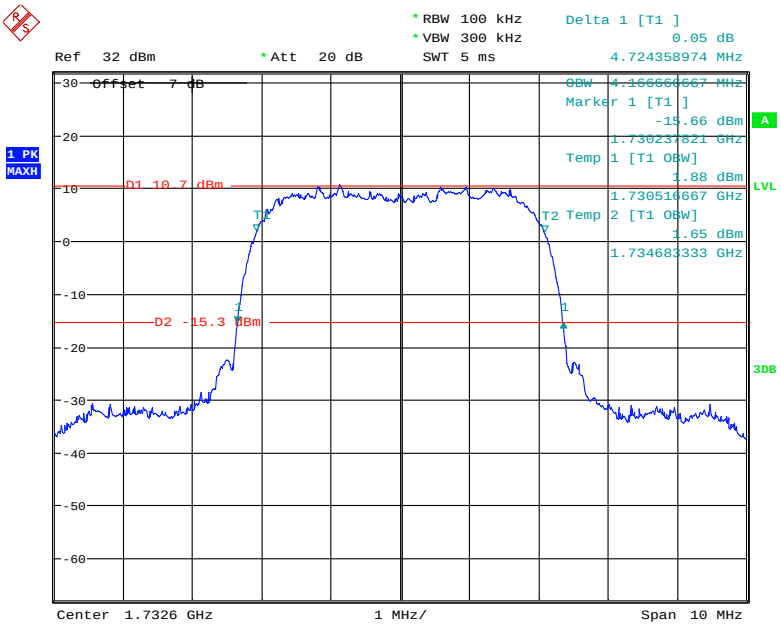
Date: 29.JUN.2021 22:35:03

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



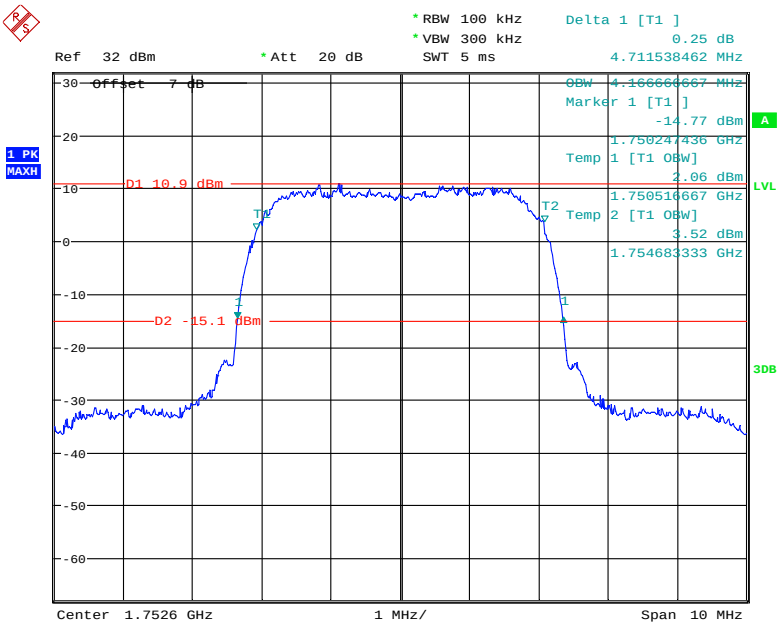
Date: 29.JUN.2021 21:50:58

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



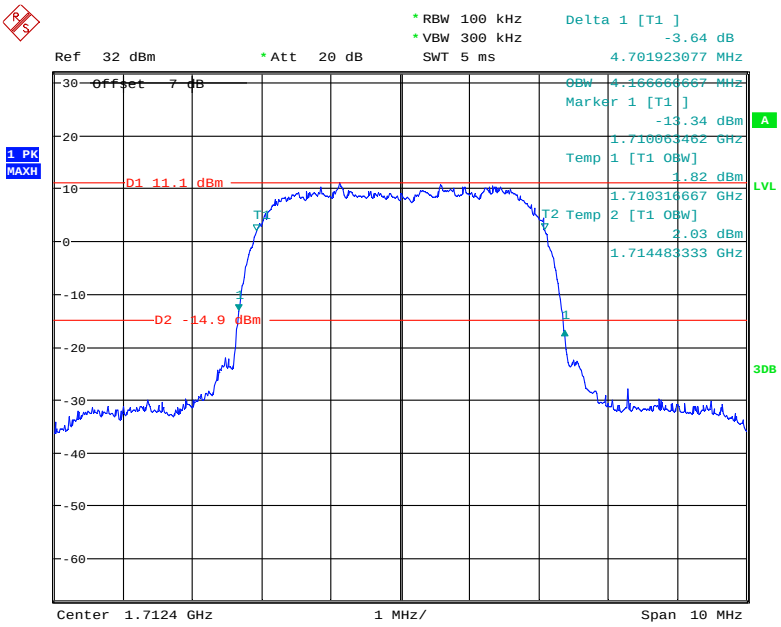
Date: 29.JUN.2021 21:48:59

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



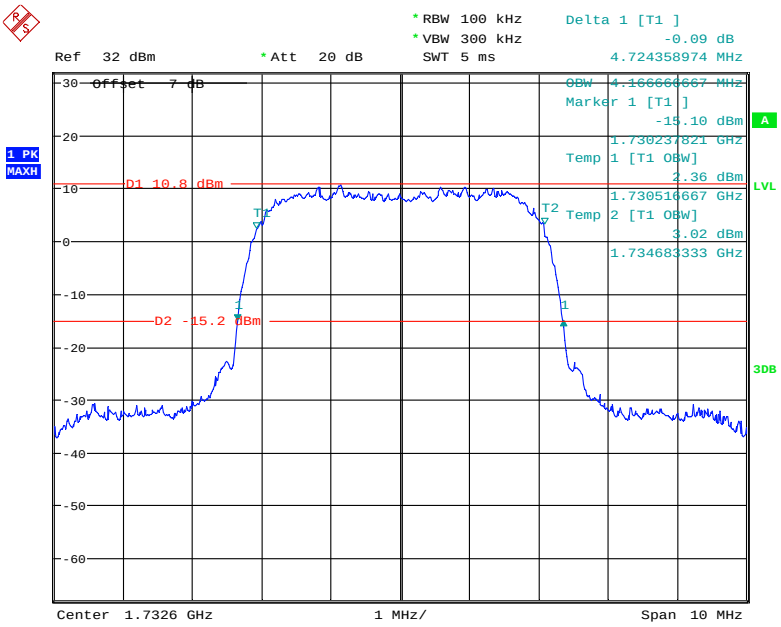
Date: 29.JUN.2021 21:46:59

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



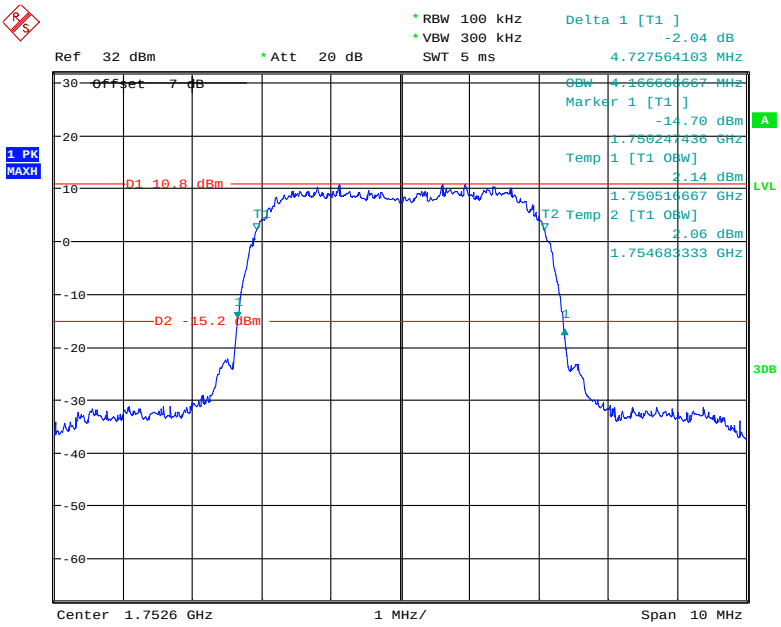
Date: 29.JUN.2021 21:54:05

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



Date: 29.JUN.2021 21:57:18

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



Date: 29.JUN.2021 21:58:23

LTE Band 2:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.302
		Middle	1.098	1.302
		High	1.122	1.326
	16QAM	Low	1.104	1.314
		Middle	1.116	1.314
		High	1.098	1.290
3	QPSK	Low	2.688	2.916
		Middle	2.700	2.952
		High	2.688	2.940
	16QAM	Low	2.688	2.964
		Middle	2.688	2.940
		High	2.688	2.928
5	QPSK	Low	4.520	4.940
		Middle	4.520	4.920
		High	4.520	4.930
	16QAM	Low	4.520	4.920
		Middle	4.540	4.940
		High	4.540	4.960
10	QPSK	Low	8.960	9.640
		Middle	8.960	9.600
		High	8.960	9.600
	16QAM	Low	8.960	9.600
		Middle	9.000	9.600
		High	8.960	9.680
15	QPSK	Low	13.500	14.700
		Middle	13.560	14.760
		High	13.560	14.760
	16QAM	Low	13.440	14.760
		Middle	13.560	14.640
		High	13.560	14.760
20	QPSK	Low	18.000	19.280
		Middle	17.920	19.360
		High	17.920	19.280
	16QAM	Low	18.000	19.200
		Middle	18.000	19.360
		High	18.000	19.280

LTE Band 4:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.290
		Middle	1.098	1.284
		High	1.110	1.314
	16QAM	Low	1.104	1.302
		Middle	1.110	1.308
		High	1.104	1.284
3	QPSK	Low	2.688	2.916
		Middle	2.700	2.952
		High	2.688	2.940
	16QAM	Low	2.688	2.952
		Middle	2.688	2.964
		High	2.688	2.928
5	QPSK	Low	4.520	4.900
		Middle	4.520	5.080
		High	4.520	5.240
	16QAM	Low	4.500	4.940
		Middle	4.520	4.940
		High	4.540	4.940
10	QPSK	Low	8.960	9.640
		Middle	8.960	9.640
		High	8.960	9.720
	16QAM	Low	8.960	9.520
		Middle	8.960	9.640
		High	8.960	9.640
15	QPSK	Low	13.560	14.880
		Middle	13.500	14.820
		High	13.560	14.760
	16QAM	Low	13.560	14.820
		Middle	13.560	14.820
		High	13.500	14.820
20	QPSK	Low	18.000	19.280
		Middle	18.000	19.360
		High	18.000	19.600
	16QAM	Low	17.920	19.440
		Middle	18.000	19.680
		High	18.000	19.360

LTE Band 5:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.104	1.290
		Middle	1.110	1.296
		High	1.110	1.278
	16QAM	Low	1.110	1.296
		Middle	1.098	1.284
		High	1.104	1.290
3	QPSK	Low	2.688	2.904
		Middle	2.688	2.928
		High	2.688	2.940
	16QAM	Low	2.688	2.952
		Middle	2.688	2.940
		High	2.676	2.940
5	QPSK	Low	4.520	4.940
		Middle	4.520	4.940
		High	4.520	4.940
	16QAM	Low	4.500	4.920
		Middle	4.520	4.940
		High	4.520	4.940
10	QPSK	Low	8.960	9.640
		Middle	8.960	9.600
		High	8.960	9.600
	16QAM	Low	8.960	9.600
		Middle	9.000	9.560
		High	8.960	9.600

LTE Band 7:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.520	4.920
		Middle	4.520	4.920
		High	4.520	4.920
	16QAM	Low	4.500	4.900
		Middle	4.520	4.920
		High	4.520	4.940
10	QPSK	Low	9.000	9.640
		Middle	8.960	9.600
		High	8.960	9.640
	16QAM	Low	8.960	9.720
		Middle	8.960	9.640
		High	8.960	9.600
15	QPSK	Low	13.560	14.640
		Middle	13.500	14.760
		High	13.500	14.760
	16QAM	Low	13.440	14.700
		Middle	13.560	14.700
		High	13.500	14.640
20	QPSK	Low	17.920	19.200
		Middle	17.920	19.360
		High	18.000	19.280
	16QAM	Low	17.920	19.280
		Middle	17.920	19.440
		High	18.000	19.280

LTE Band 38:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.500	4.960
		Middle	4.520	4.940
		High	4.520	4.940
	16QAM	Low	4.500	4.920
		Middle	4.520	4.940
		High	4.520	4.960
10	QPSK	Low	8.960	9.600
		Middle	8.960	9.680
		High	8.960	9.640
	16QAM	Low	8.960	9.480
		Middle	8.960	9.560
		High	8.960	9.880
15	QPSK	Low	13.500	14.880
		Middle	13.500	15.240
		High	13.500	15.300
	16QAM	Low	13.560	15.180
		Middle	13.560	15.120
		High	13.620	15.300
20	QPSK	Low	18.000	19.280
		Middle	18.000	19.280
		High	18.000	19.520
	16QAM	Low	17.920	19.360
		Middle	18.000	20.240
		High	18.000	19.360

LTE Band 41:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.500	4.900
		Middle	4.520	5.020
		High	4.520	5.000
	16QAM	Low	4.520	4.980
		Middle	4.520	4.960
		High	4.520	4.940
10	QPSK	Low	9.000	9.920
		Middle	8.960	9.680
		High	8.960	9.560
	16QAM	Low	8.960	9.480
		Middle	8.960	9.520
		High	8.960	9.920
15	QPSK	Low	13.560	15.120
		Middle	13.500	15.300
		High	13.500	14.880
	16QAM	Low	13.560	15.420
		Middle	13.620	14.880
		High	13.560	15.420
20	QPSK	Low	18.000	19.280
		Middle	17.920	19.280
		High	17.920	19.360
	16QAM	Low	18.000	19.440
		Middle	18.000	20.080
		High	17.920	19.360

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

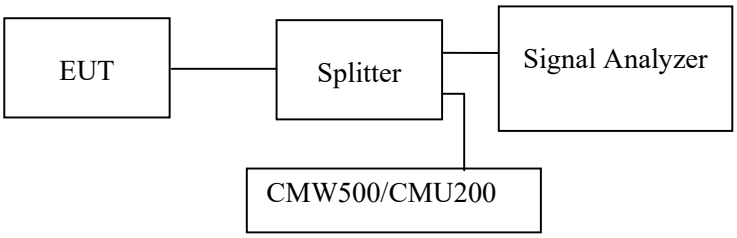
Applicable Standard

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:	27.3 ℃
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

The testing was performed by Pedro Yun on 2021-06-27 to 2021-07-14.

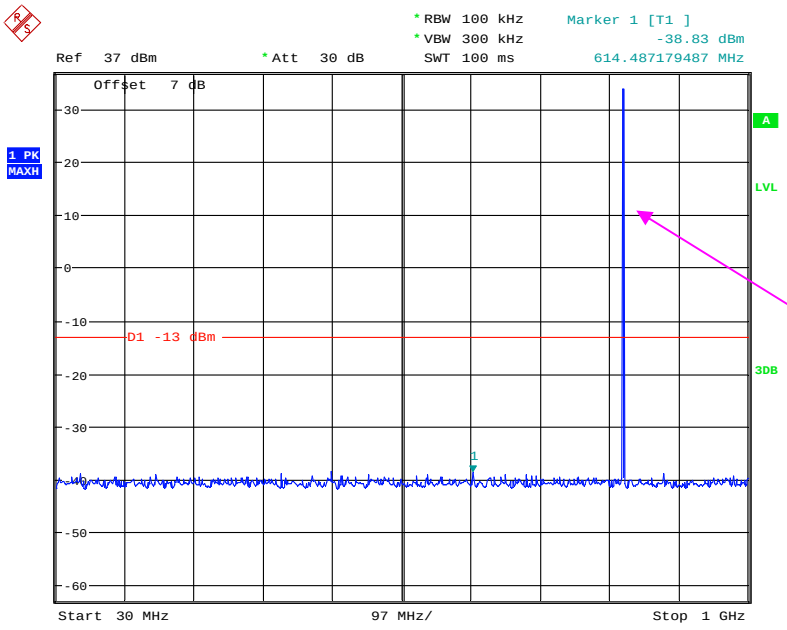
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)
Low Channel:

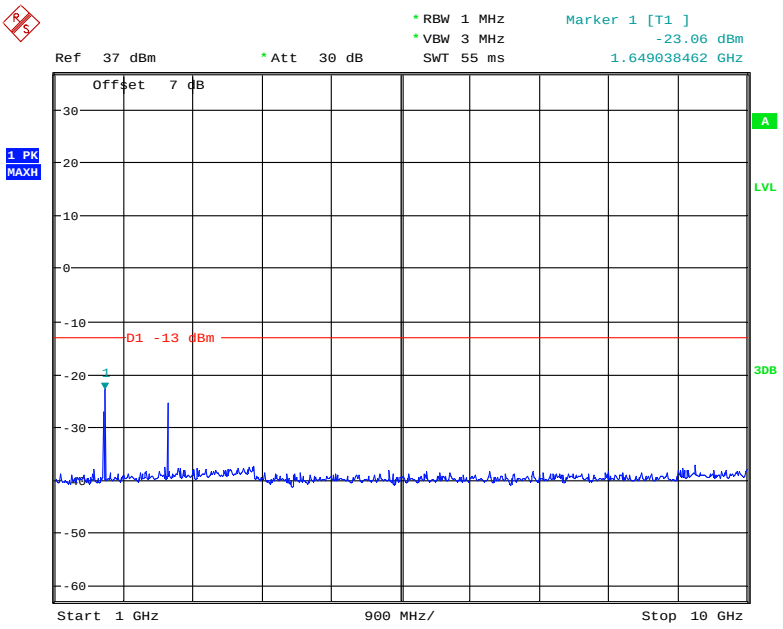
30 MHz – 1 GHz (GSM Mode)



Fundamental test

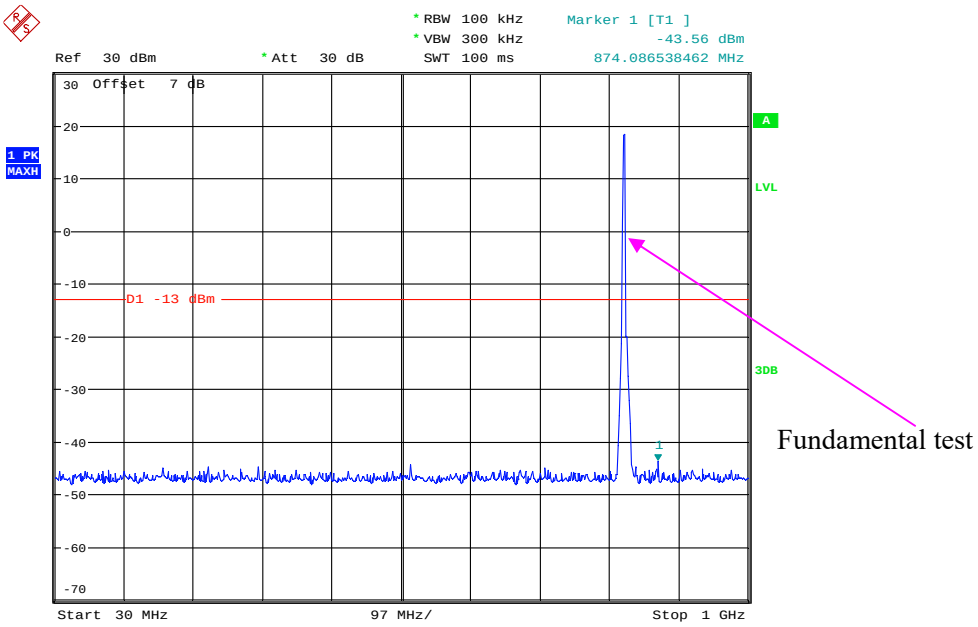
Date: 27.JUN.2021 23:28:45

1 GHz – 10 GHz (GSM Mode)



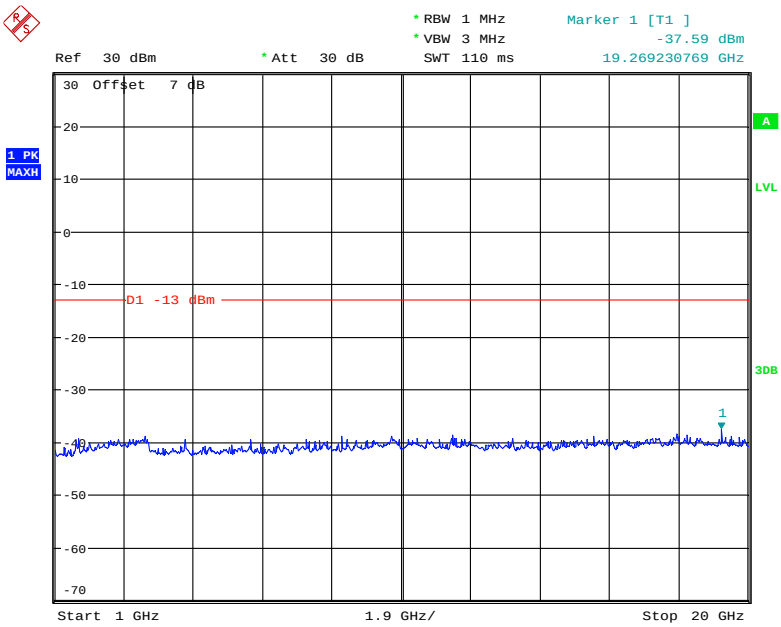
Date: 27.JUN.2021 23:31:23

30 MHz – 1 GHz (WCDMA Mode)



Date: 27.JUN.2021 22:23:20

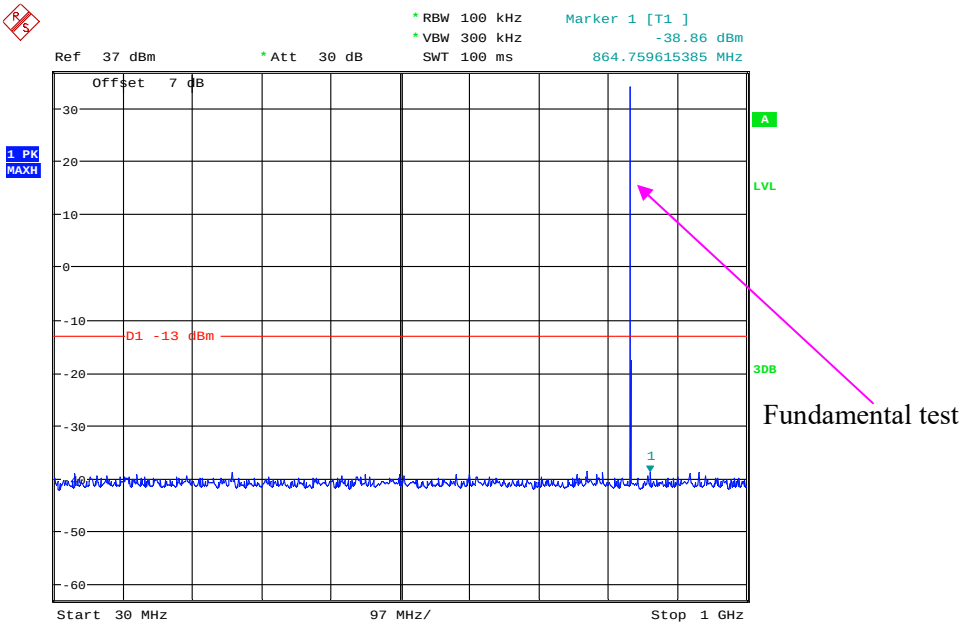
1 GHz – 20 GHz (WCDMA Mode)



Date: 27.JUN.2021 22:26:22

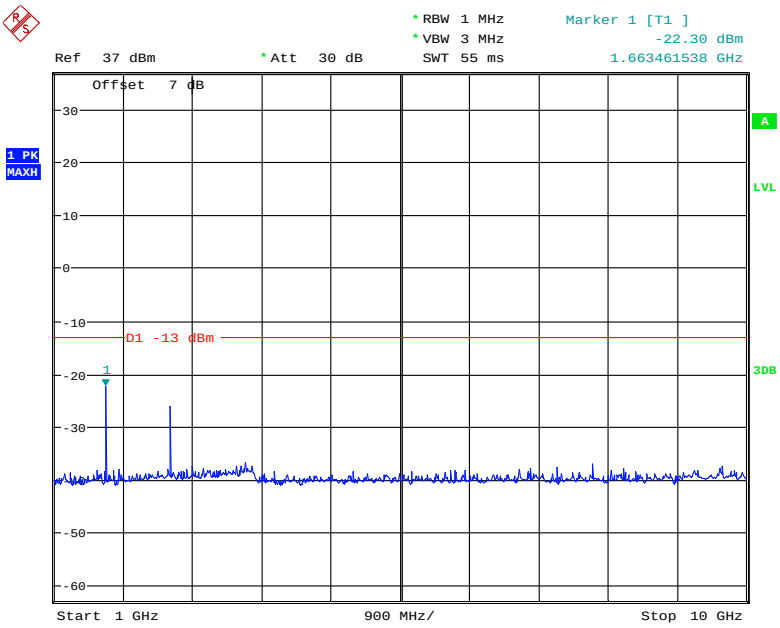
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



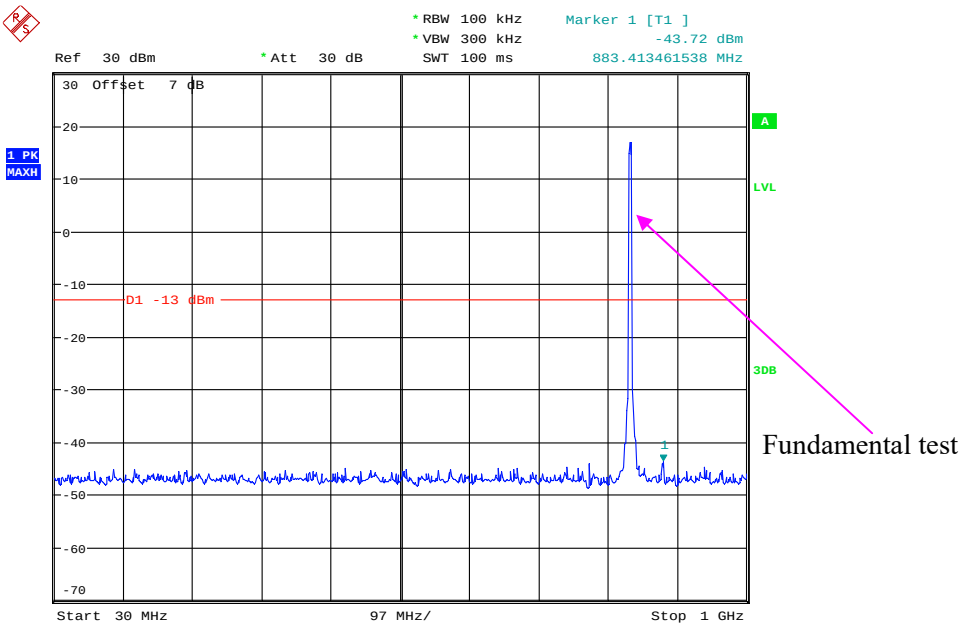
Date: 27.JUN.2021 23:29:37

1 GHz – 10 GHz (GSM Mode)



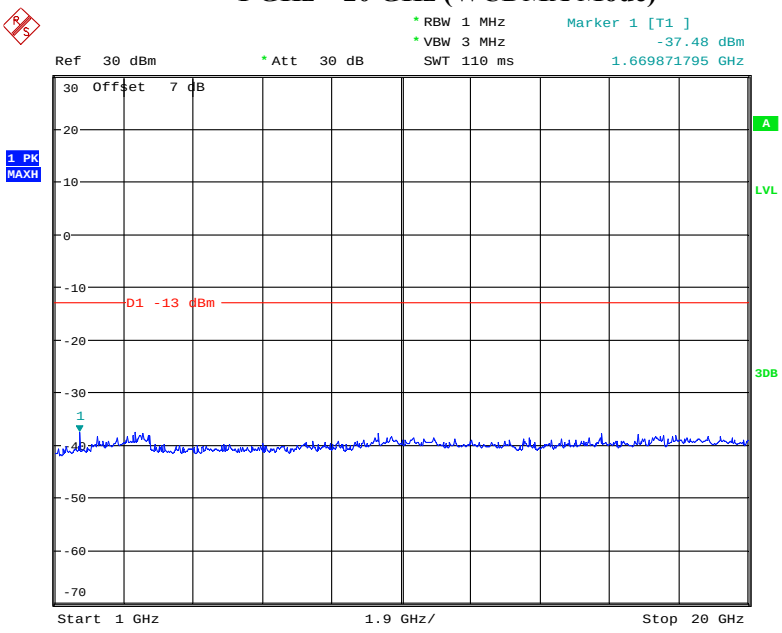
Date: 27.JUN.2021 23:31:05

30 MHz – 1 GHz (WCDMA Mode)



Date: 27.JUN.2021 22:23:53

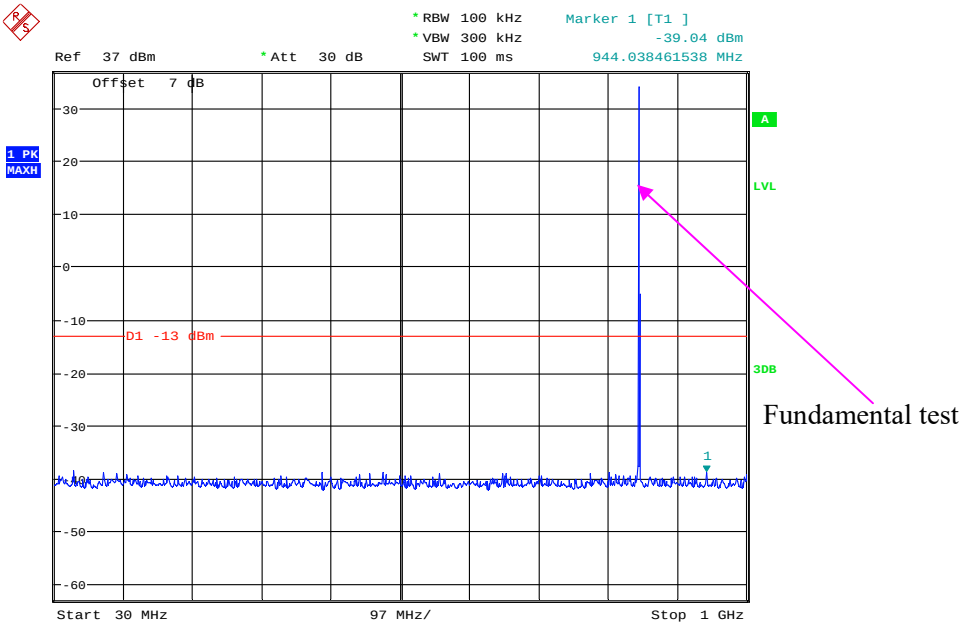
1 GHz – 20 GHz (WCDMA Mode)



Date: 27.JUN.2021 22:25:58

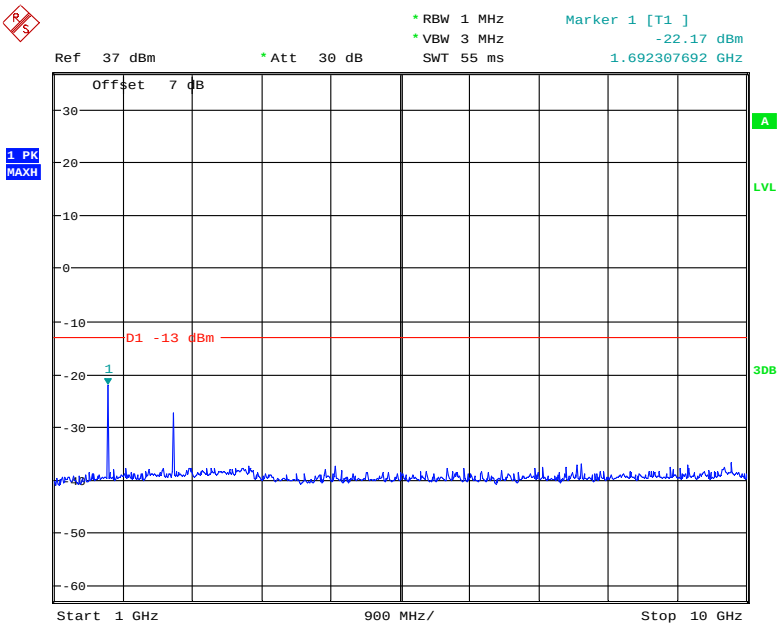
High Channel:

30 MHz – 1 GHz (GSM Mode)



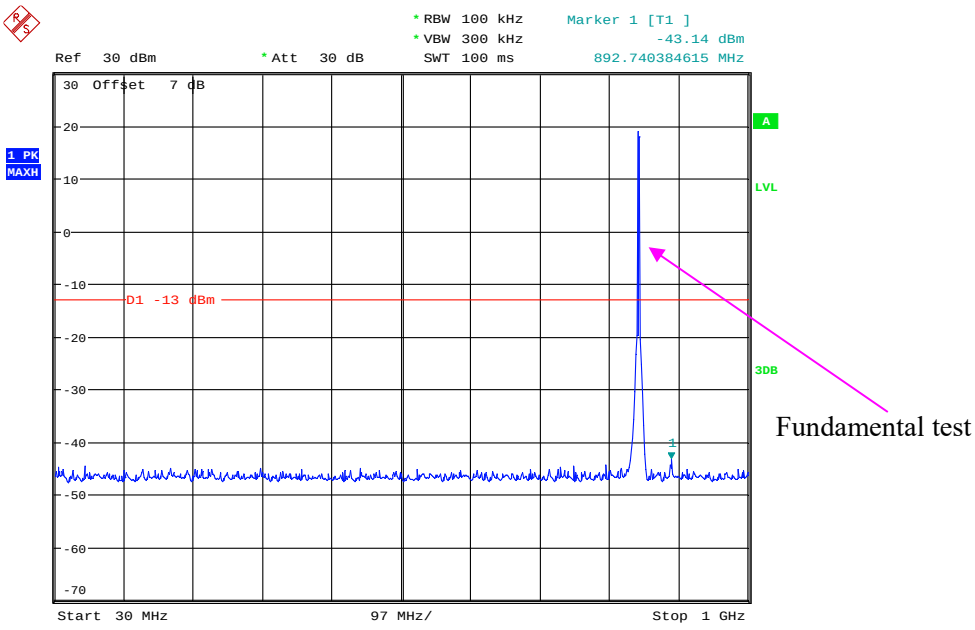
Date: 27.JUN.2021 23:30:06

1 GHz – 10 GHz (GSM Mode)



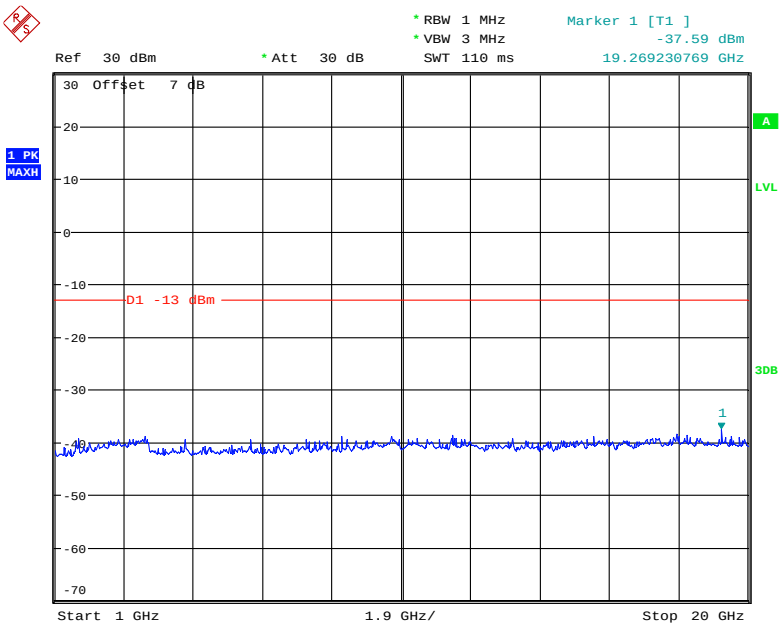
Date: 27.JUN.2021 23:30:40

30 MHz – 1 GHz (WCDMA Mode)



Date: 27.JUN.2021 22:24:35

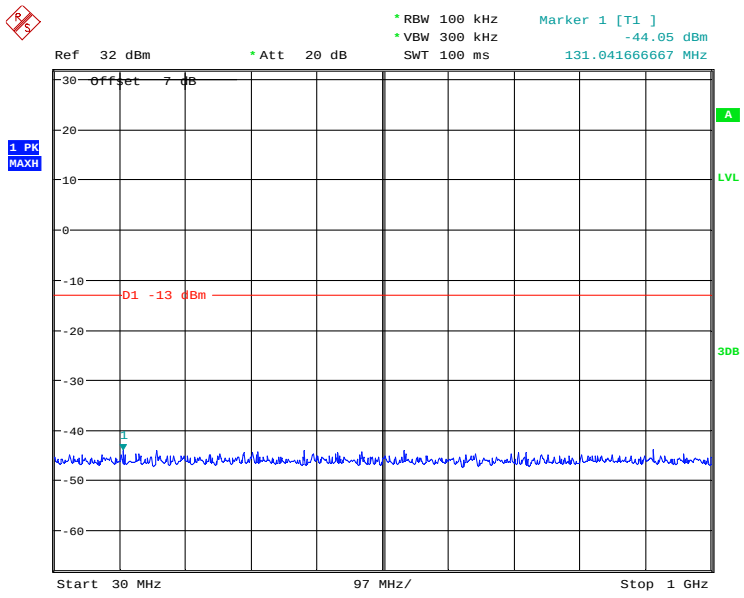
1 GHz – 2 GHz (WCDMA Mode)



Date: 27.JUN.2021 22:26:22

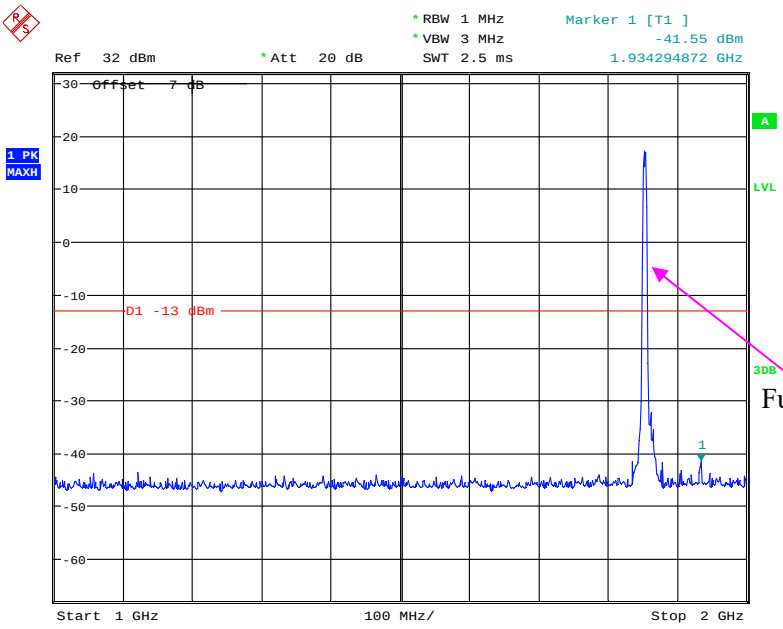
PCS Band (Part 24E)
Low Channel:

30 MHz – 1 GHz (GSM Mode)



Date: 14.JUL.2021 16:18:21

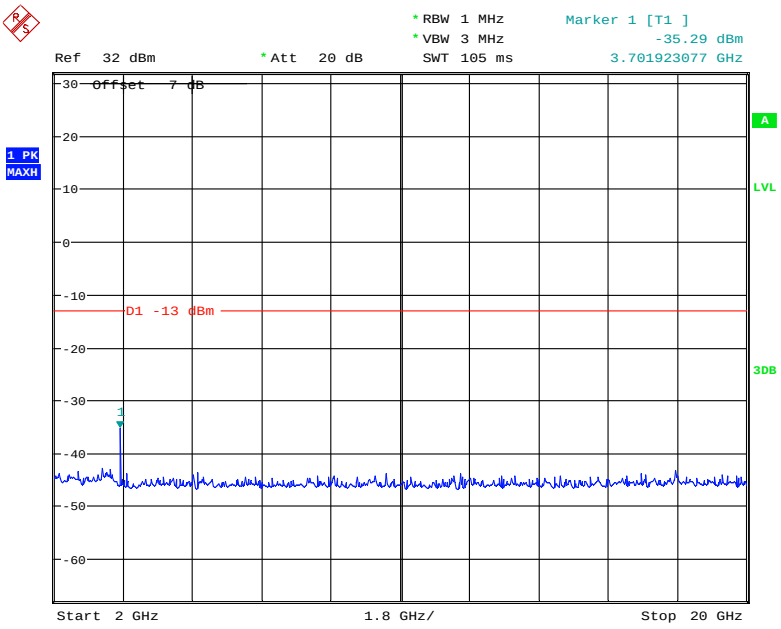
1 GHz – 2 GHz (GSM Mode)



Fundamental test

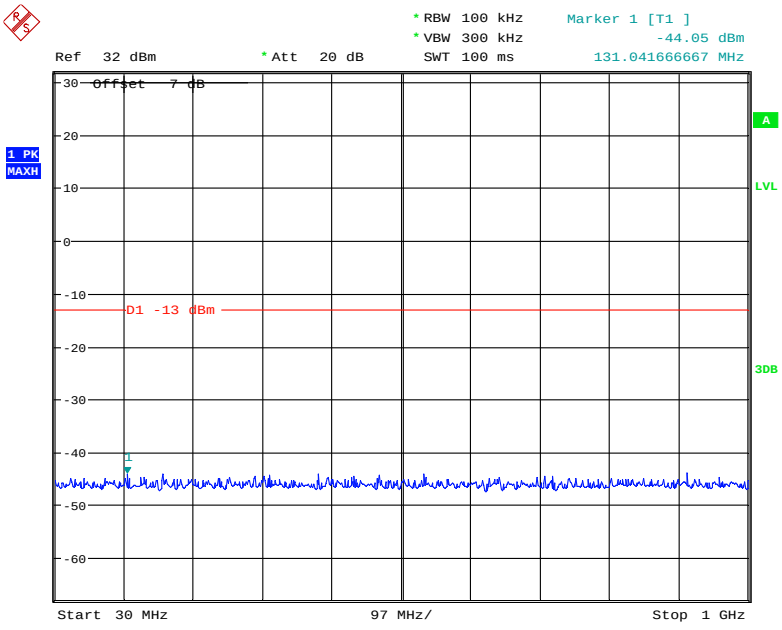
Date: 14.JUL.2021 16:32:09

2 GHz – 20 GHz (GSM Mode)



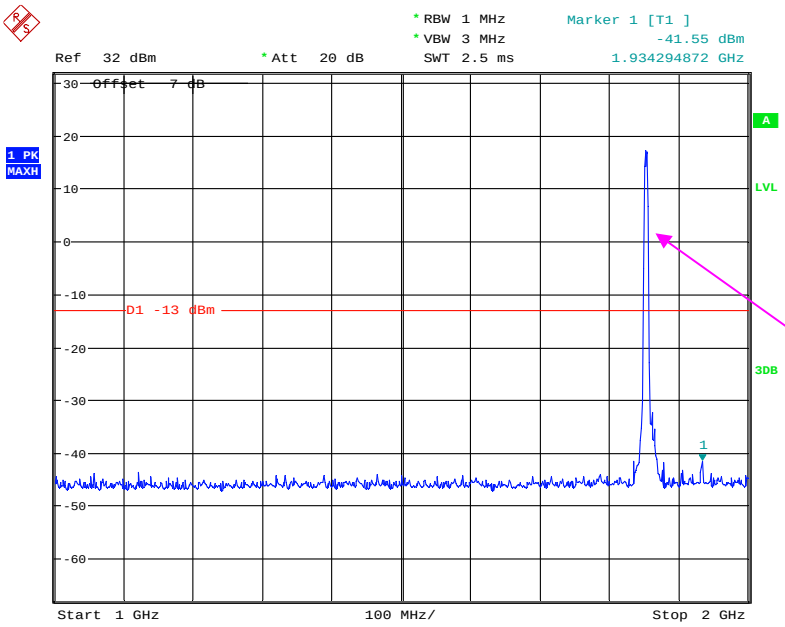
Date: 14.JUL.2021 16:31:45

30 MHz – 1 GHz (WCDMA Mode)



Date: 14.JUL.2021 16:18:21

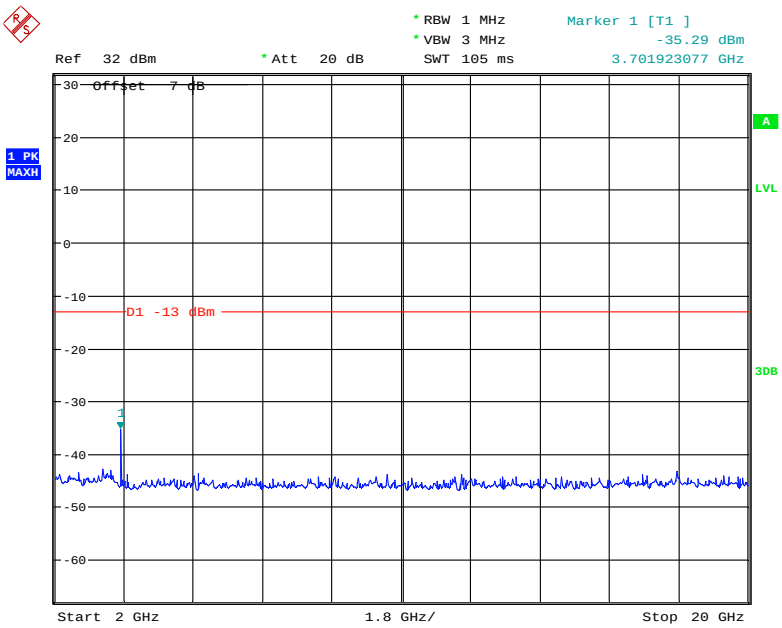
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 14.JUL.2021 16:32:09

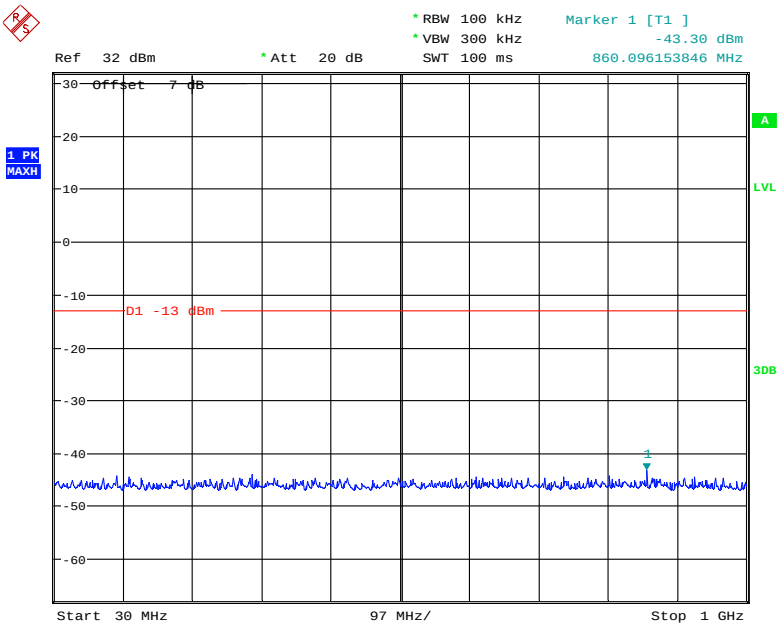
2 GHz – 20 GH z (WCDMA Mode)



Date: 14.JUL.2021 16:31:45

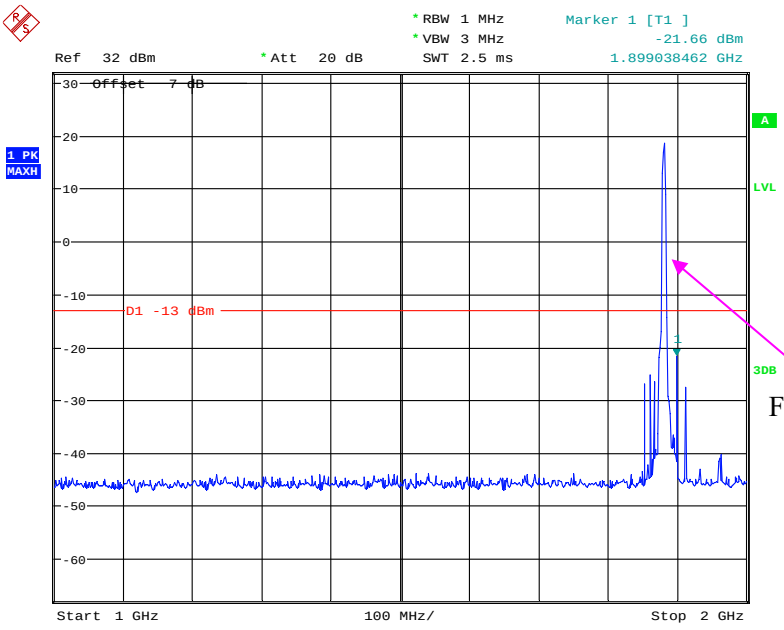
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



Date: 14.JUL.2021 16:19:41

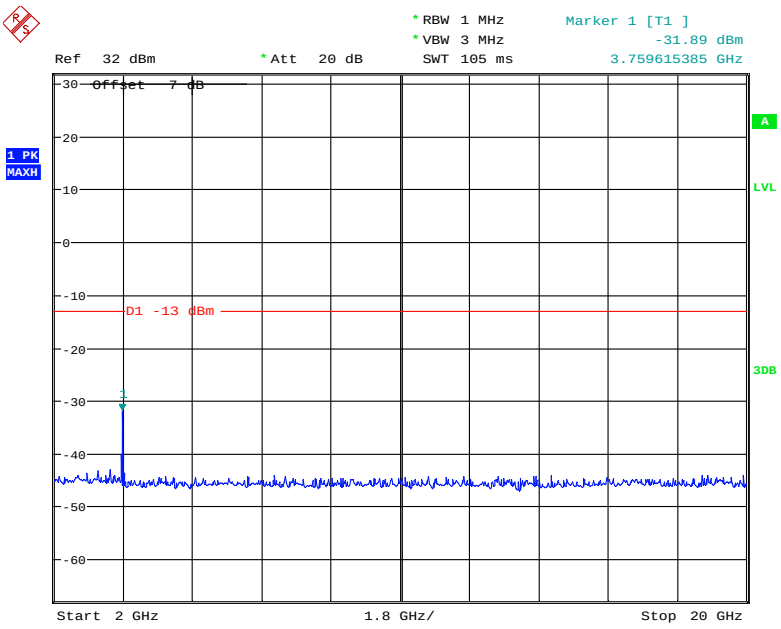
1 GHz – 2 GHz (GSM Mode)



Fundamental test

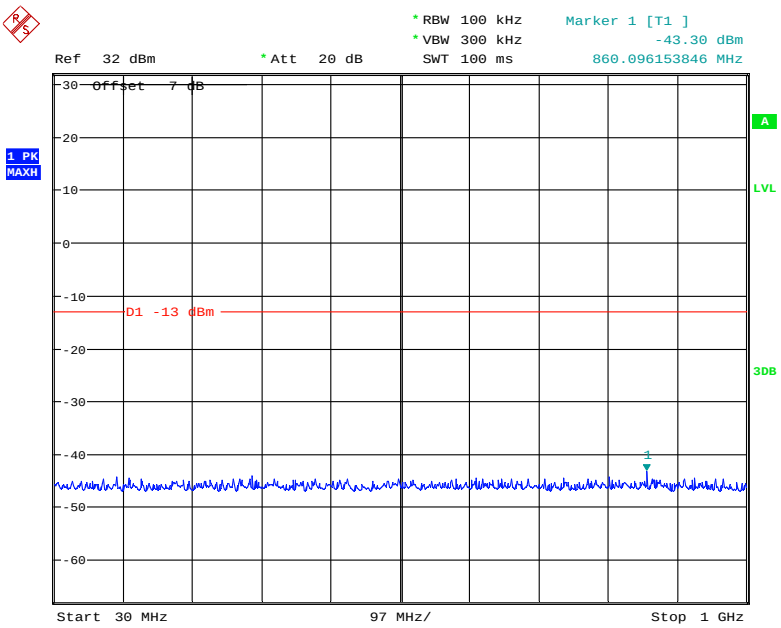
Date: 14.JUL.2021 16:30:48

2 GHz – 20 GHz (GSM Mode)



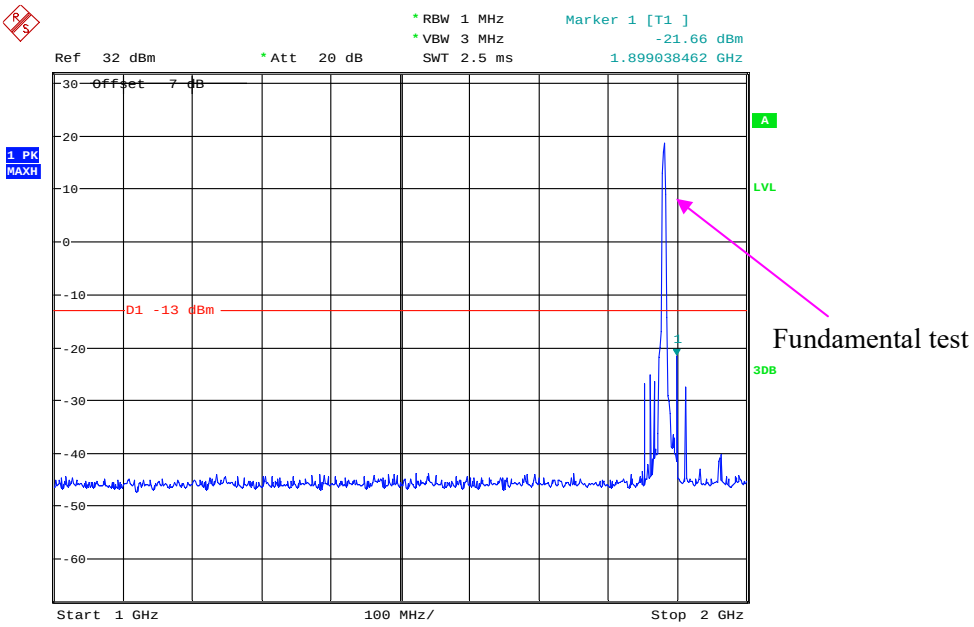
Date: 14.JUL.2021 16:31:19

30 MHz – 1 GHz (WCDMA Mode)



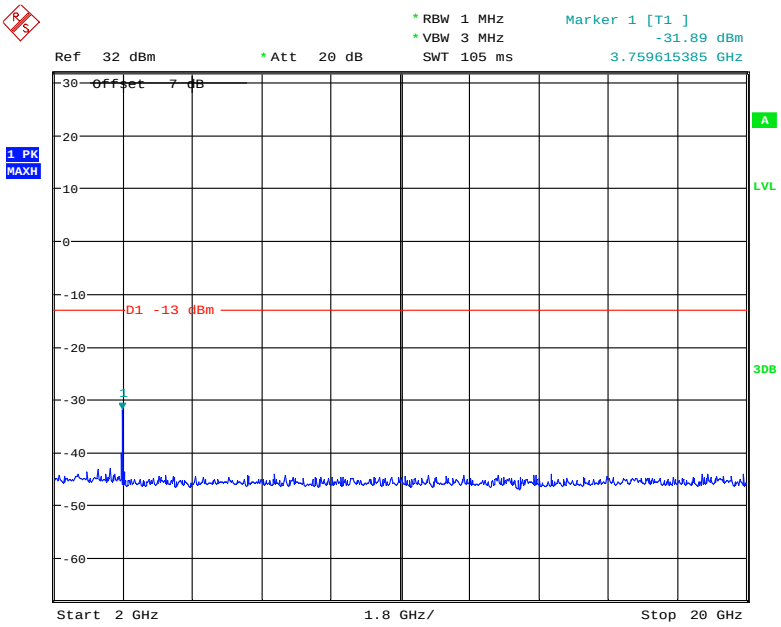
Date: 14.JUL.2021 16:19:41

1 GHz – 2 GHz (WCDMA Mode)



Date: 14.JUL.2021 16:30:48

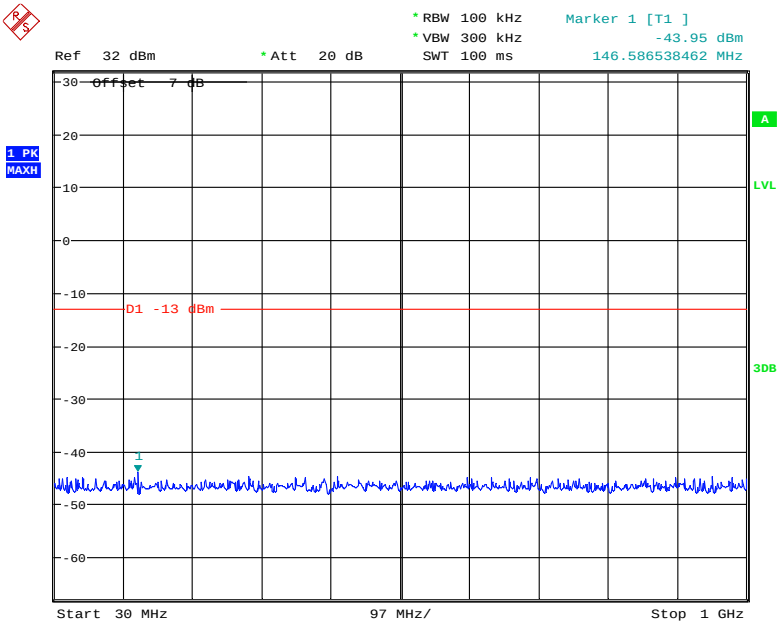
2 GHz – 20 GHz (WCDMA Mode)



Date: 14.JUL.2021 16:31:19

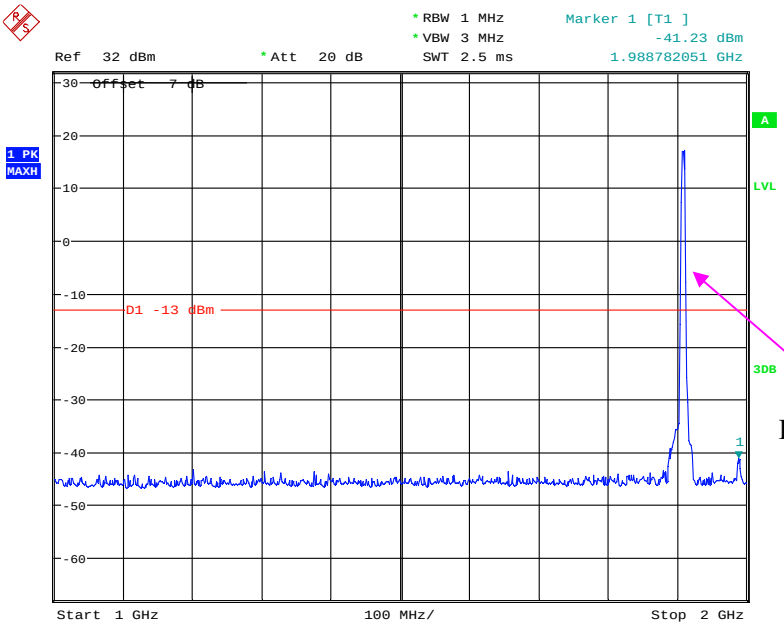
High Channel:

30 MHz – 1 GHz (GSM Mode)



Date: 14.JUL.2021 16:20:19

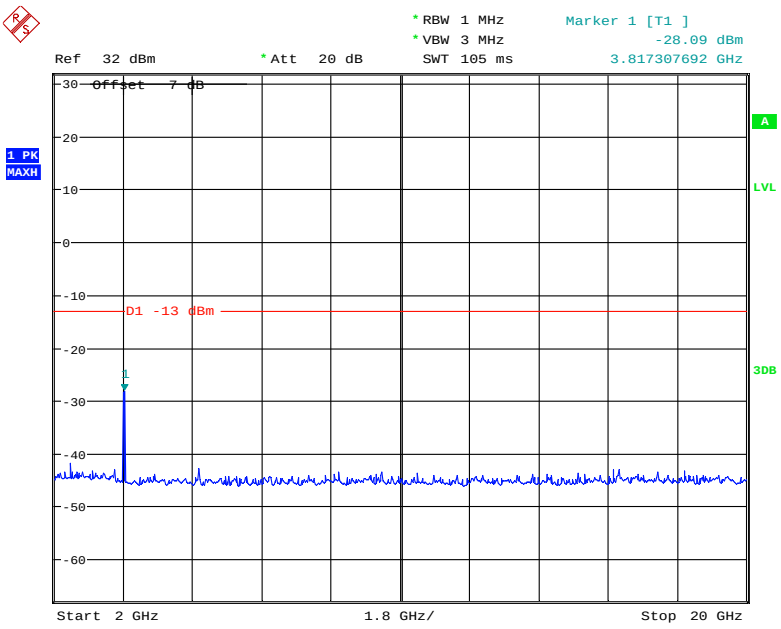
1 GHz – 2 GHz (GSM Mode)



Fundamental test

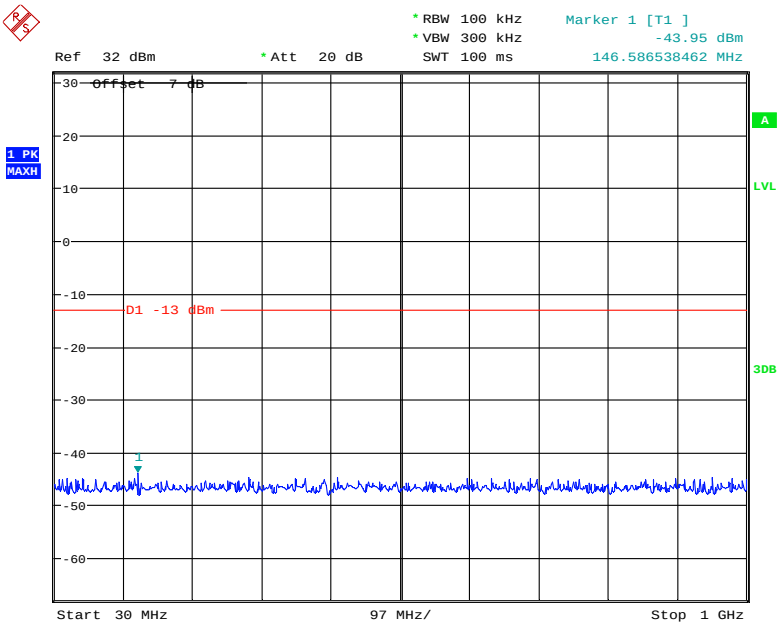
Date: 14.JUL.2021 16:29:46

2 GHz – 20 GHz (GSM Mode)



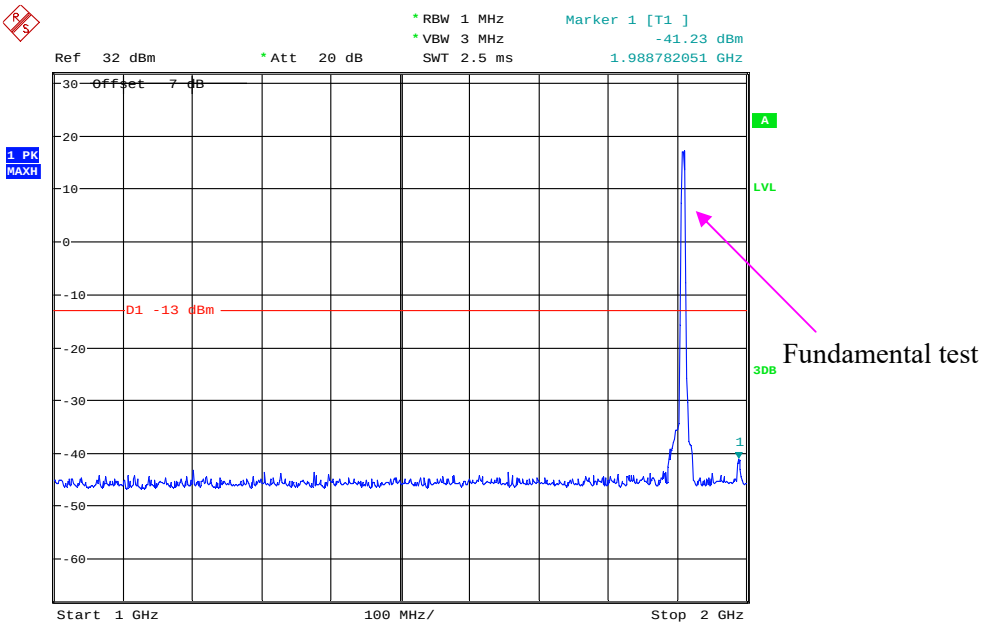
Date: 14.JUL.2021 16:29:13

30 MHz – 1 GHz (WCDMA Mode)



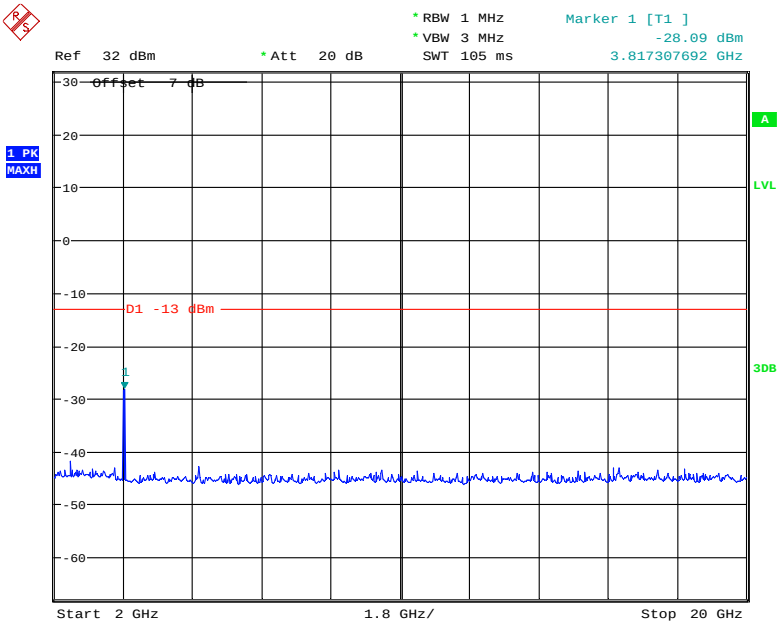
Date: 14.JUL.2021 16:20:19

1 GHz – 2 GHz (WCDMA Mode)



Date: 14.JUL.2021 16:29:46

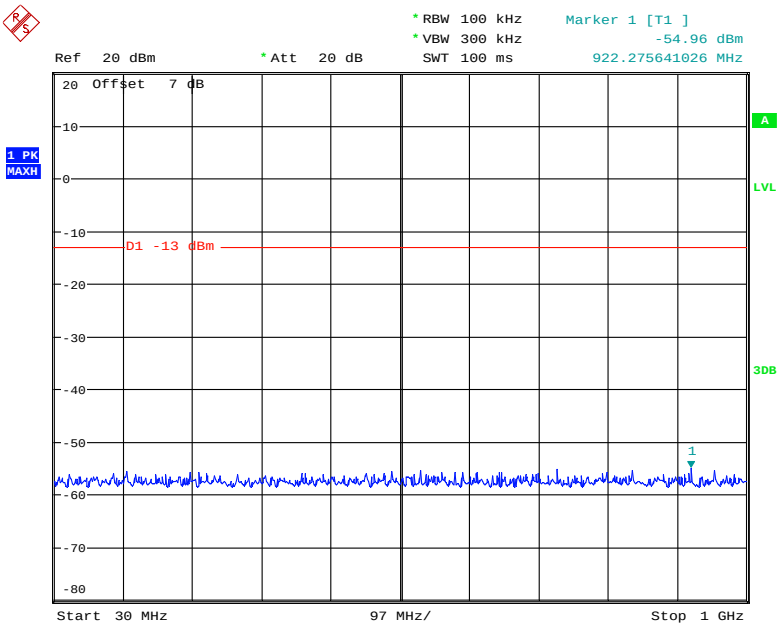
2 GHz – 20 GHz (WCDMA Mode)



Date: 14.JUL.2021 16:29:13

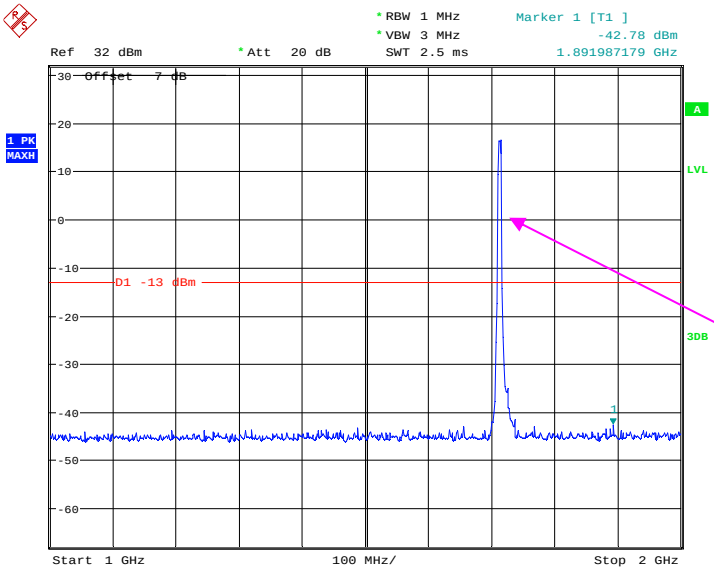
AWS Band (Part 27)
Low Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 29.JUN.2021 23:08:38

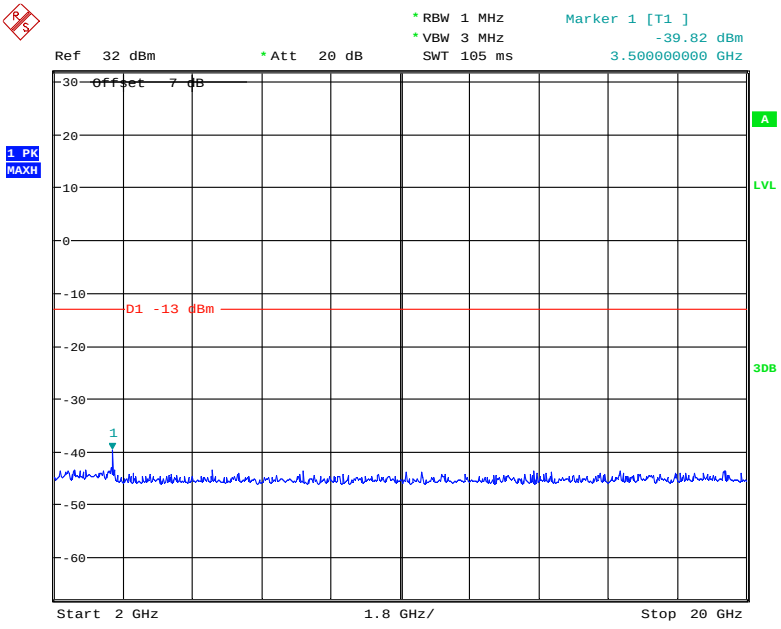
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 29.JUN.2021 23:11:13

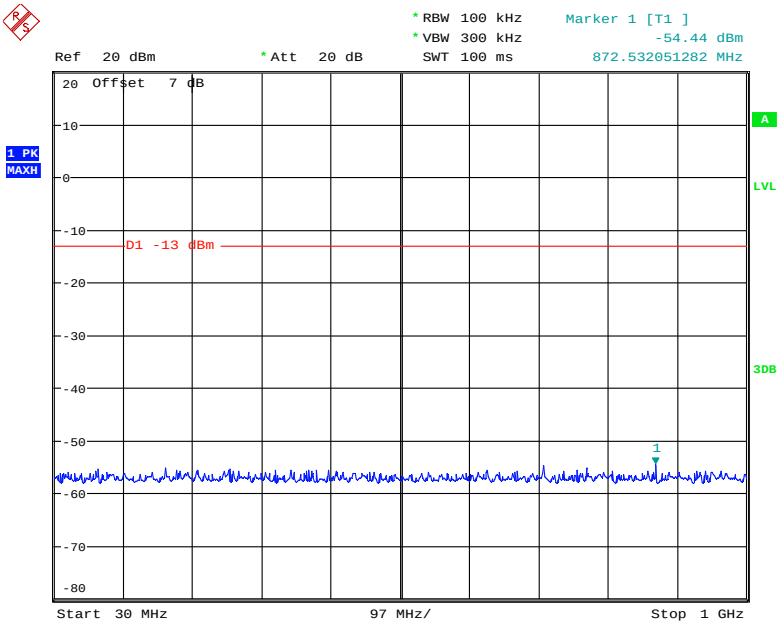
2 GHz – 20 GHz (WCDMA Mode)



Date: 29.JUN.2021 22:52:03

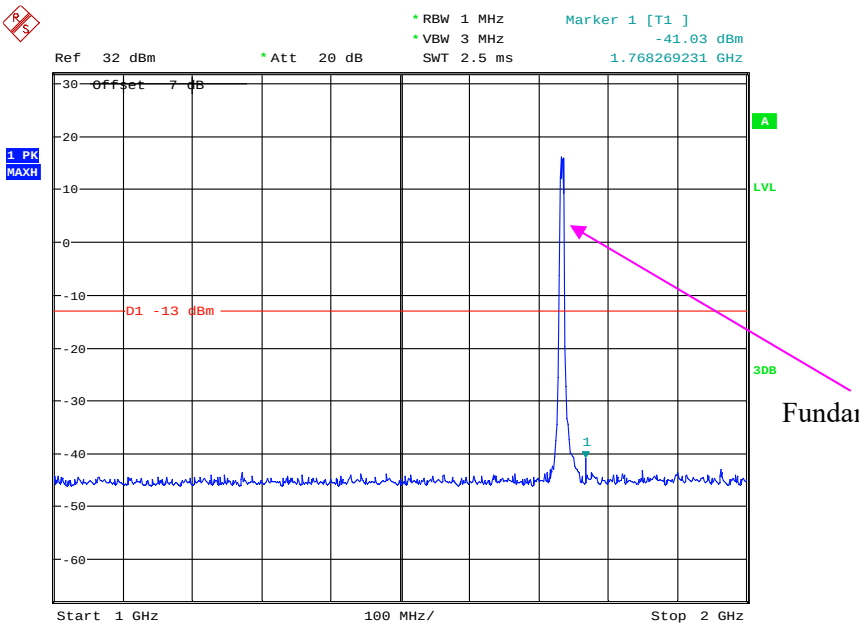
Middle Channel

30 MHz – 1 GHz (WCDMA Mode)



Date: 29.JUN.2021 23:02:03

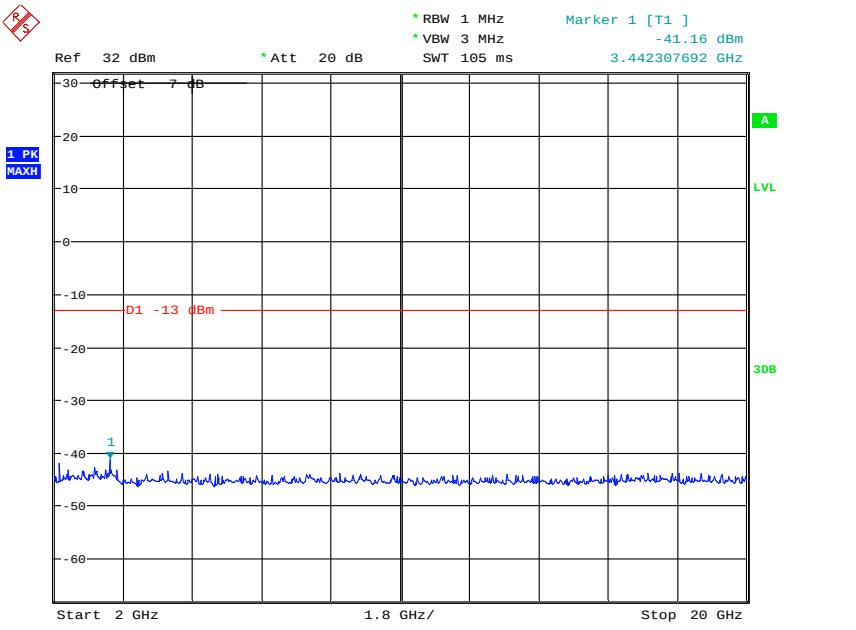
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 29.JUN.2021 22:46:45

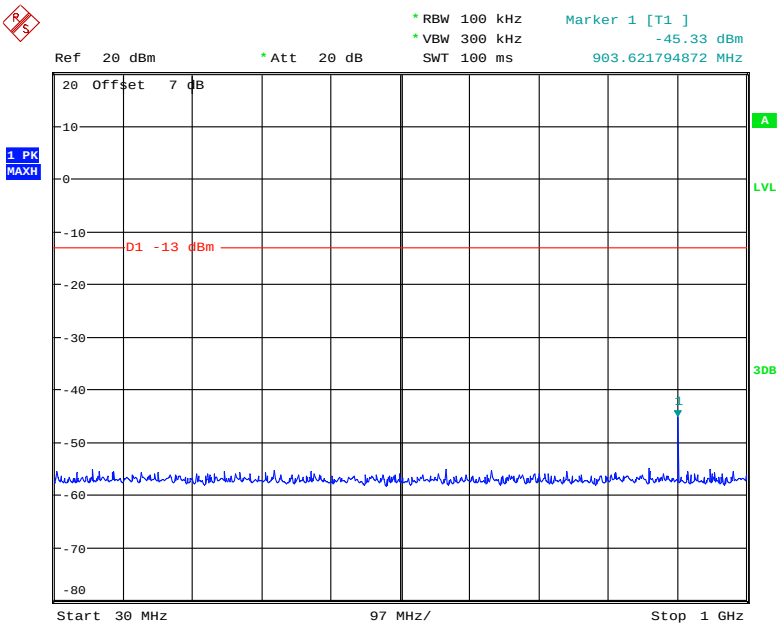
2 GHz – 20 GHz (WCDMA Mode)



Date: 29.JUN.2021 22:46:00

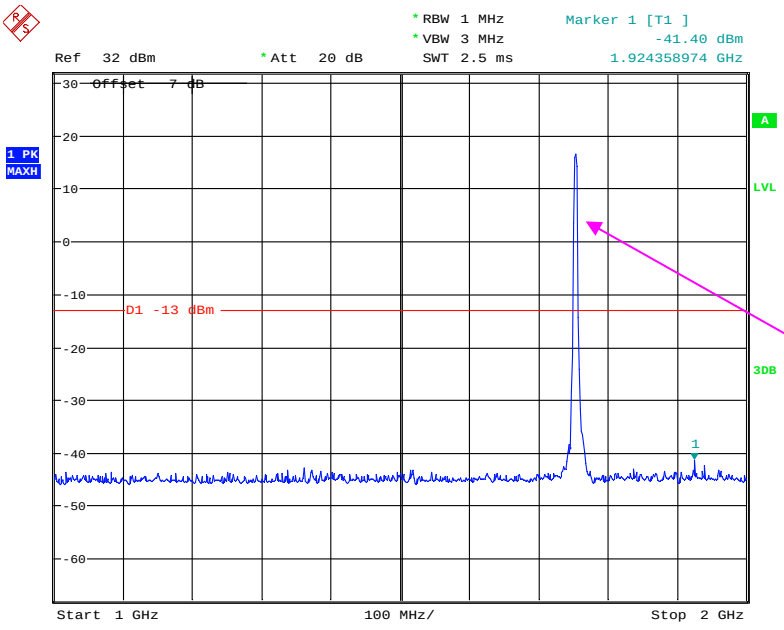
High Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 29.JUN.2021 22:59:53

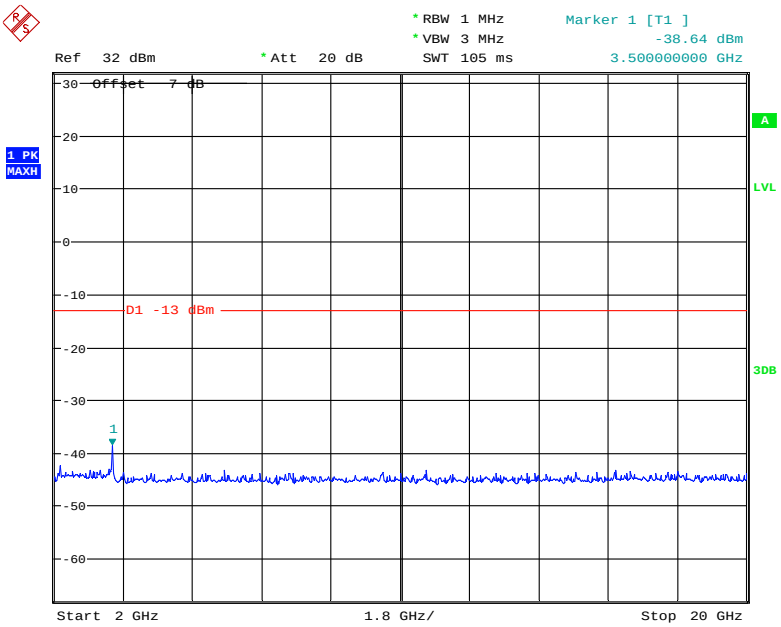
1 GHz – 2 GHz (WCDMA Mode)



Fundamental test

Date: 29.JUN.2021 22:44:10

2 GHz – 20 GHz (WCDMA Mode)



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:	25.6~ 27 ℃
Relative Humidity:	52~ 56 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Cloud Qiu 2021-06-28 for below 1GHz and Bruce Lin on 2021-07-05 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 850 Mode										
Low channel										
955.3	30.12	135	2.1	H	-66.4	1.36	0.0	-67.76	-13	54.76
955.3	31.45	290	1.0	V	-62.6	1.36	0.0	-63.96	-13	50.96
1648.40	51.25	312	1.5	H	-56.8	1.40	8.70	-49.50	-13	36.50
1648.40	49.45	324	1.5	V	-58.4	1.40	8.70	-51.10	-13	38.10
2472.60	47.65	148	1.5	H	-55.7	2.60	10.20	-48.10	-13	35.10
2472.60	47.02	218	2.4	V	-55.7	2.60	10.20	-48.10	-13	35.10
3296.80	55.27	344	1.6	H	-45.6	1.50	11.70	-35.40	-13	22.40
3296.80	50.26	62	1.7	V	-50.7	1.50	11.70	-40.50	-13	27.50
Middle channel										
960.2	30.32	114	1.8	H	-66.2	1.36	0.0	-67.56	-13	54.56
960.2	31.41	160	2.2	V	-62.6	1.36	0.0	-63.96	-13	50.96
1673.20	50.22	213	1.7	H	-56.1	1.30	8.90	-48.50	-13	35.50
1673.20	48.71	322	2.0	V	-57.0	1.30	8.90	-49.40	-13	36.40
2509.80	51.24	359	2.2	H	-52.1	2.60	10.20	-44.50	-13	31.50
2509.80	50.67	348	1.2	V	-52.1	2.60	10.20	-44.50	-13	31.50
3346.40	54.25	224	1.7	H	-46.6	1.50	11.70	-36.40	-13	23.40
3346.40	50.25	18	1.8	V	-50.7	1.50	11.70	-40.50	-13	27.50
High Channel										
955.8	30.53	124	2.3	H	-66.0	1.36	0.0	-67.36	-13	54.36
955.8	31.78	181	1.3	V	-62.3	1.36	0.0	-63.66	-13	50.66
1697.60	51.62	36	1.4	H	-54.7	1.30	8.90	-47.10	-13	34.10
1697.60	48.67	125	1.4	V	-57.1	1.30	8.90	-49.50	-13	36.50
2546.40	50.26	66	1.1	H	-53.1	2.60	10.20	-45.50	-13	32.50
2546.40	50.29	39	1.8	V	-52.5	2.60	10.20	-44.90	-13	31.90
3395.20	49.37	331	1.9	H	-51.9	1.40	11.80	-41.50	-13	28.50
3395.20	46.52	141	1.3	V	-54.5	1.40	11.80	-44.10	-13	31.10

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
952.3	30.56	24	2.0	H	-65.9	1.36	0.0	-67.26	-13	54.26
952.3	31.56	213	1.2	V	-62.5	1.36	0.0	-63.86	-13	50.86
1652.80	43.12	192	1.9	H	-63.2	1.30	8.90	-55.60	-13	42.60
1652.80	42.85	4	1.3	V	-62.9	1.30	8.90	-55.30	-13	42.30
Middle channel										
951.6	30.35	59	1.0	H	-66.2	1.36	0.0	-67.56	-13	54.56
951.6	31.68	311	2.3	V	-62.4	1.36	0.0	-63.76	-13	50.76
1673.20	43.75	337	1.5	H	-62.6	1.30	8.90	-55.00	-13	42.00
1673.20	43.21	300	1.5	V	-62.5	1.30	8.90	-54.90	-13	41.90
High channel										
966.8	30.42	278	1.2	H	-66.1	1.36	0.0	-67.46	-13	54.46
966.8	31.54	3	1.7	V	-62.5	1.36	0.0	-63.86	-13	50.86
1693.20	43.55	97	1.0	H	-62.8	1.30	8.90	-55.20	-13	42.20
1693.20	43.15	315	1.5	V	-62.6	1.30	8.90	-55.00	-13	42.00

30 MHz ~ 20 GHz:

PCS Band (Part 24E)

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)
PCS 1900 Mode										
Low channel										
952.2	30.57	352	2.0	H	-65.9	1.36	0.0	-67.26	-13	54.26
952.2	31.66	135	1.9	V	-62.4	1.36	0.0	-63.76	-13	50.76
3700.40	45.15	188	2.3	H	-56.7	1.60	11.90	-46.40	-13	33.40
3700.40	44.76	260	1.9	V	-56.5	1.60	11.90	-46.20	-13	33.20
Middle channel										
953.2	30.44	357	2.1	H	-66.1	1.36	0.0	-67.46	-13	54.46
953.2	31.61	254	1.2	V	-62.4	1.36	0.0	-63.76	-13	50.76
3760.00	45.68	25	2.1	H	-56.4	1.50	11.80	-46.10	-13	33.10
3760.00	45.27	351	1.4	V	-56.3	1.50	11.80	-46.00	-13	33.00
High channel										
952.1	30.36	269	1.4	H	-66.1	1.36	0.0	-67.46	-13	54.46
952.1	31.73	313	2.2	V	-62.3	1.36	0.0	-63.66	-13	50.66
3819.60	46.21	162	2.5	H	-55.8	1.50	11.80	-45.50	-13	32.50
3819.60	45.27	221	1.2	V	-56.3	1.50	11.80	-46.00	-13	33.00
WCDMA Mode										
Low channel										
956.8	30.11	209	1.5	H	-66.4	1.36	0.0	-67.76	-13	54.76
956.8	31.72	124	1.2	V	-62.3	1.36	0.0	-63.66	-13	50.66
3704.80	49.68	232	2.0	H	-52.1	1.60	11.90	-41.80	-13	28.80
3704.80	46.76	295	1.8	V	-54.5	1.60	11.90	-44.20	-13	31.20
Middle channel										
954.7	30.32	131	1.9	H	-66.2	1.36	0.0	-67.56	-13	54.56
954.7	31.45	286	1.7	V	-62.6	1.36	0.0	-63.96	-13	50.96
3760.00	57.28	228	1.5	H	-44.8	1.50	11.80	-34.50	-13	21.50
3760.00	54.51	51	2.1	V	-47.1	1.50	11.80	-36.80	-13	23.80
High channel										
961.2	30.43	38	2.3	H	-66.1	1.36	0.0	-67.46	-13	54.46
961.2	31.59	88	2.1	V	-62.5	1.36	0.0	-63.86	-13	50.86
3815.20	60.69	189	1.9	H	-41.4	1.50	11.80	-31.10	-13	18.10
3815.20	57.53	220	1.2	V	-44.1	1.50	11.80	-33.80	-13	20.80

30 MHz ~ 20 GHz:

AWS Band

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 27	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
952.3	30.34	131	1.9	H	-66.2	1.36	0.0	-67.56	-13	54.56
952.3	31.47	286	1.7	V	-62.6	1.36	0.0	-63.96	-13	50.96
3424.80	44.62	194	2.2	H	-56.2	1.40	11.80	-45.80	-13	32.80
3424.80	43.96	262	2.4	V	-56.6	1.40	11.80	-46.20	-13	33.20
Middle channel										
951.6	30.52	173	1.5	H	-66.0	1.36	0.0	-67.36	-13	54.36
951.6	31.63	227	2.0	V	-62.4	1.36	0.0	-63.76	-13	50.76
3465.20	44.57	165	2.3	H	-56.2	1.50	12.00	-45.70	-13	32.70
3465.20	44.25	179	1.7	V	-57.3	1.50	12.00	-46.80	-13	33.80
High channel										
964.8	30.25	345	1.9	H	-66.3	1.36	0.0	-67.66	-13	54.66
964.8	31.49	234	1.0	V	-62.6	1.36	0.0	-63.96	-13	50.96
3505.20	44.32	236	1.9	H	-56.4	1.50	12.00	-45.90	-13	32.90
3505.20	43.76	106	1.1	V	-57.7	1.50	12.00	-47.20	-13	34.20

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										
951.6	30.41	1	1.4	H	-66.1	1.36	0.0	-67.46	-13	54.46
951.6	31.58	302	1.1	V	-62.5	1.36	0.0	-63.86	-13	50.86
3701.40	53.60	201	1.6	H	-48.2	1.60	11.90	-37.90	-13	24.90
3701.40	50.44	122	1.3	V	-50.8	1.60	11.90	-40.50	-13	27.50
5552.10	45.38	344	1.8	H	-54.3	1.70	12.40	-43.60	-13	30.60
5552.10	45.68	120	1.3	V	-53.7	1.70	12.40	-43.00	-13	30.00
1.4 MHz, Middle channel										
951.3	30.66	217	1.1	H	-65.8	1.36	0.0	-67.16	-13	54.16
951.3	31.51	209	1.6	V	-62.5	1.36	0.0	-63.86	-13	50.86
3760.00	62.56	103	2.0	H	-39.5	1.50	11.80	-29.20	-13	16.20
3760.00	59.59	4	1.5	V	-42.0	1.50	11.80	-31.70	-13	18.70
5640.00	45.79	304	2.3	H	-53.9	1.70	12.40	-43.20	-13	30.20
5640.00	45.08	252	2.3	V	-54.3	1.70	12.40	-43.60	-13	30.60
1.4MHz, High channel										
959.4	30.76	193	1.3	H	-65.7	1.36	0.0	-67.06	-13	54.06
959.4	31.65	15	1.3	V	-62.4	1.36	0.0	-63.76	-13	50.76
3818.60	65.28	217	1.1	H	-36.8	1.50	11.80	-26.50	-13	13.50
3818.60	63.65	267	2.1	V	-37.9	1.50	11.80	-27.60	-13	14.60
5727.90	48.68	307	1.2	H	-51.2	1.60	12.10	-40.70	-13	27.70
5727.90	47.27	235	1.4	V	-52.0	1.60	12.10	-41.50	-13	28.50
Band 4										
Test frequency range:30 MHz ~ 20 GHz										
1.4 MHz, Low channel										
953.9	30.57	91	1.4	H	-65.9	1.36	0.0	-67.26	-13	54.26
963.9	31.61	303	1.4	V	-62.4	1.36	0.0	-63.76	-13	50.76
3421.40	45.68	249	2.0	H	-55.1	1.40	11.80	-44.70	-13	31.70
3421.40	45.78	342	2.4	V	-54.8	1.40	11.80	-44.40	-13	31.40
1.4MHz, Middle channel										
958.6	30.53	149	1.7	H	-66.0	1.36	0.0	-67.36	-13	54.36
958.6	31.65	56	1.9	V	-62.4	1.36	0.0	-63.76	-13	50.76
3465.00	45.77	59	1.8	H	-55.0	1.50	12.00	-44.50	-13	31.50
3465.00	45.69	339	1.5	V	-55.8	1.50	12.00	-45.30	-13	32.30
1.4MHz, High channel										
955.7	30.66	282	2.3	H	-65.8	1.36	0.0	-67.16	-13	54.16
955.7	31.83	91	1.3	V	-62.2	1.36	0.0	-63.56	-13	50.56
3508.60	45.25	193	2.2	H	-55.5	1.50	12.00	-45.00	-13	32.00
3508.60	45.47	233	2.3	V	-56.0	1.50	12.00	-45.50	-13	32.50

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 5										
Test frequency range:30 MHz ~ 10 GHz										
1.4MHz, Low channel										
956.8	30.45	267	1.8	H	-66.1	1.36	0.0	-67.46	-13	54.46
956.8	31.83	119	1.8	V	-62.2	1.36	0.0	-63.56	-13	50.56
1649.40	44.68	205	1.9	H	-63.4	1.40	8.70	-56.10	-13	43.10
1649.40	44.72	353	1.2	V	-63.1	1.40	8.70	-55.80	-13	42.80
2474.10	44.66	275	1.6	H	-58.7	2.60	10.20	-51.10	-13	38.10
2474.10	45.12	263	1.9	V	-57.6	2.60	10.20	-50.00	-13	37.00
1.4MHz, Middle channel										
954.7	30.49	274	1.4	H	-66.0	1.36	0.0	-67.36	-13	54.36
954.7	31.73	67	2.1	V	-62.3	1.36	0.0	-63.66	-13	50.66
1673.00	45.56	160	1.1	H	-60.8	1.30	8.90	-53.20	-13	40.20
1673.00	45.87	201	1.2	V	-59.9	1.30	8.90	-52.30	-13	39.30
2509.50	44.86	278	1.1	H	-58.5	2.60	10.20	-50.90	-13	37.90
2509.50	44.95	239	1.6	V	-57.8	2.60	10.20	-50.20	-13	37.20
1.4MHz, High channel										
960.2	30.36	239	1.9	H	-66.1	1.36	0.0	-67.46	-13	54.46
960.2	31.69	356	1.8	V	-62.4	1.36	0.0	-63.76	-13	50.76
1696.60	45.25	256	2.3	H	-61.1	1.30	8.90	-53.50	-13	40.50
1696.60	45.28	179	1.3	V	-60.5	1.30	8.90	-52.90	-13	39.90
2544.90	44.79	191	1.4	H	-58.6	2.60	10.20	-51.00	-13	38.00
2544.90	45.61	333	1.2	V	-57.1	2.60	10.20	-49.50	-13	36.50

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 7										
Test frequency range: 30 MHz ~ 26.5 GHz										
5MHz, Low channel										
957.3	30.48	209	2.4	H	-66.0	1.36	0.0	-67.36	-25	42.36
957.3	31.66	13	2.4	V	-62.4	1.36	0.0	-63.76	-25	38.76
5005.00	49.73	353	1.7	H	-50.9	1.70	12.00	-40.60	-25	15.60
5005.00	48.56	148	2.4	V	-51.5	1.70	12.00	-41.20	-25	16.20
7507.50	49.72	224	1.2	H	-46.2	1.90	10.70	-37.40	-25	12.40
7507.50	48.24	48	2.2	V	-47.3	1.90	10.70	-38.50	-25	13.50
10010.0	49.68	150	2.2	H	-46.8	2.40	10.80	-38.40	-25	13.40
10010.0	48.75	99	2.1	V	-47.9	2.40	10.80	-39.50	-25	14.50
5MHz, Middle channel										
957.2	30.41	170	1.2	H	-66.1	1.36	0.0	-67.46	-25	42.46
957.2	31.68	345	1.7	V	-62.4	1.36	0.0	-63.76	-25	38.76
5070.00	49.58	206	2.0	H	-50.4	1.60	12.10	-39.90	-25	14.90
5070.00	48.62	28	1.3	V	-51.4	1.60	12.10	-40.90	-25	15.90
7605.00	49.72	113	1.9	H	-47.8	2.10	10.50	-39.40	-25	14.40
7605.00	48.24	265	2.1	V	-49.0	2.10	10.50	-40.60	-25	15.60
10140.0	50.25	109	2.2	H	-46.2	2.40	10.80	-37.80	-25	12.80
10140.0	48.37	236	2.2	V	-48.3	2.40	10.80	-39.90	-25	14.90
5 MHz, High channel										
956.8	30.43	207	1.3	H	-66.1	1.36	0.0	-67.46	-25	42.46
956.8	31.75	336	1.4	V	-62.3	1.36	0.0	-63.66	-25	38.66
5135.00	50.14	90	2.1	H	-49.9	1.60	12.10	-39.40	-25	14.40
5135.00	49.37	82	1.9	V	-50.6	1.60	12.10	-40.10	-25	15.10
7702.50	49.77	14	1.7	H	-47.7	2.10	10.50	-39.30	-25	14.30
7702.50	49.04	165	2.0	V	-48.2	2.10	10.50	-39.80	-25	14.80
10270.0	46.91	297	2.0	H	-49.5	2.60	10.60	-41.50	-25	16.50
10270.0	45.36	170	2.4	V	-50.3	2.60	10.60	-42.30	-25	17.30

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										
5MHz, Low channel										
954.5	30.27	110	2.1	H	-66.2	1.36	0.0	-67.56	-25	42.56
954.5	31.67	149	2.2	V	-62.4	1.36	0.0	-63.76	-25	38.76
5145.00	45.91	152	1.5	H	-54.1	1.60	12.10	-43.60	-25	18.60
5145.00	47.74	277	2.2	V	-52.3	1.60	12.10	-41.80	-25	16.80
7717.50	53.99	30	2.3	H	-43.5	2.10	10.50	-35.10	-25	10.10
7717.50	53.88	300	1.3	V	-43.4	2.10	10.50	-35.00	-25	10.00
10290.0	44.67	120	2.3	H	-51.7	2.60	10.60	-43.70	-25	18.70
10290.0	44.46	224	1.3	V	-51.2	2.60	10.60	-43.20	-25	18.20
5 MHz, Middle channel										
957.7	30.29	283	1.6	H	-66.2	1.36	0.0	-67.56	-25	42.56
957.7	31.65	297	2.0	V	-62.4	1.36	0.0	-63.76	-25	38.76
5190.00	46.97	101	2.0	H	-53.1	1.60	12.10	-42.60	-25	17.60
5190.00	48.11	251	1.5	V	-51.5	1.60	12.10	-41.00	-25	16.00
7785.00	54.97	144	1.8	H	-41.3	2.00	10.50	-32.80	-25	7.80
7785.00	53.72	257	2.1	V	-42.5	2.00	10.50	-34.00	-25	9.00
10380.0	48.05	75	1.1	H	-47.4	2.60	10.50	-39.50	-25	14.50
10380.0	47.68	69	1.5	V	-48.3	2.60	10.50	-40.40	-25	15.40
5MHz, High channel										
953.6	30.34	129	1.9	H	-66.2	1.36	0.0	-67.56	-25	42.56
953.6	31.59	319	1.5	V	-62.5	1.36	0.0	-63.86	-25	38.86
5235.00	46.15	106	2.4	H	-53.9	1.60	12.10	-43.40	-25	18.40
5235.00	47.94	320	2.3	V	-51.7	1.60	12.10	-41.20	-25	16.20
7852.50	54.26	78	1.4	H	-42.0	2.00	10.50	-33.50	-25	8.50
7852.50	53.52	82	2.2	V	-42.7	2.00	10.50	-34.20	-25	9.20
10470.0	45.02	256	1.9	H	-50.4	2.60	10.50	-42.50	-25	17.50
10470.0	44.37	153	1.5	V	-51.6	2.60	10.50	-43.70	-25	18.70

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 41										
Test frequency range: 30 MHz ~ 26.5GHz										
5 MHz, Low channel										
953.2	30.34	319	1.8	H	-66.2	1.36	0.0	-67.56	-25	42.56
953.2	31.77	162	2.0	V	-62.3	1.36	0.0	-63.66	-25	38.66
5075.00	46.92	239	1.1	H	-53.1	1.60	12.10	-42.60	-25	17.60
5075.00	48.67	69	2.4	V	-51.3	1.60	12.10	-40.80	-25	15.80
7612.50	51.06	90	1.5	H	-46.5	2.10	10.50	-38.10	-25	13.10
7612.50	50.57	152	2.1	V	-46.7	2.10	10.50	-38.30	-25	13.30
10150.0	47.53	244	2.0	H	-48.9	2.60	10.60	-40.90	-25	15.90
10150.0	47.69	106	1.3	V	-48.0	2.60	10.60	-40.00	-25	15.00
5 MHz, Middle channel										
952.9	30.43	227	1.1	H	-66.1	1.36	0.0	-67.46	-25	42.46
952.9	31.84	275	1.2	V	-62.2	1.36	0.0	-63.56	-25	38.56
5190.00	46.58	352	2.1	H	-53.5	1.60	12.10	-43.00	-25	18.00
5190.00	48.09	65	1.2	V	-51.5	1.60	12.10	-41.00	-25	16.00
7785.00	54.65	127	1.9	H	-41.6	2.00	10.50	-33.10	-25	8.10
7785.00	54.1	116	1.9	V	-42.1	2.00	10.50	-33.60	-25	8.60
10380.0	48.25	337	2.0	H	-47.2	2.60	10.50	-39.30	-25	14.30
10380.0	47.68	117	2.1	V	-48.3	2.60	10.50	-40.40	-25	15.40
5 MHz, High channel										
956.6	30.35	71	2.0	H	-66.2	1.36	0.0	-67.56	-25	42.56
956.6	31.63	272	2.4	V	-62.4	1.36	0.0	-63.76	-25	38.76
5305.00	56.22	221	2.5	H	-43.5	1.60	12.20	-32.90	-25	7.90
5305.00	55.40	10	1.7	V	-43.8	1.60	12.20	-33.20	-25	8.20
7957.50	59.53	342	1.1	H	-38.5	2.10	10.70	-29.90	-25	4.90
7957.50	57.77	11	1.9	V	-40.2	2.10	10.70	-31.60	-25	6.60
10610.0	46.58	332	1.9	H	-48.8	2.60	10.70	-40.70	-25	15.70
10610.0	46.87	272	2.2	V	-48.1	2.60	10.70	-40.00	-25	15.00

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.

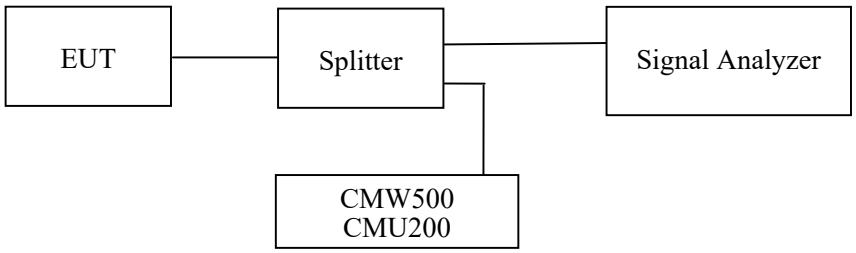
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.

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:	27.3 ℃
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

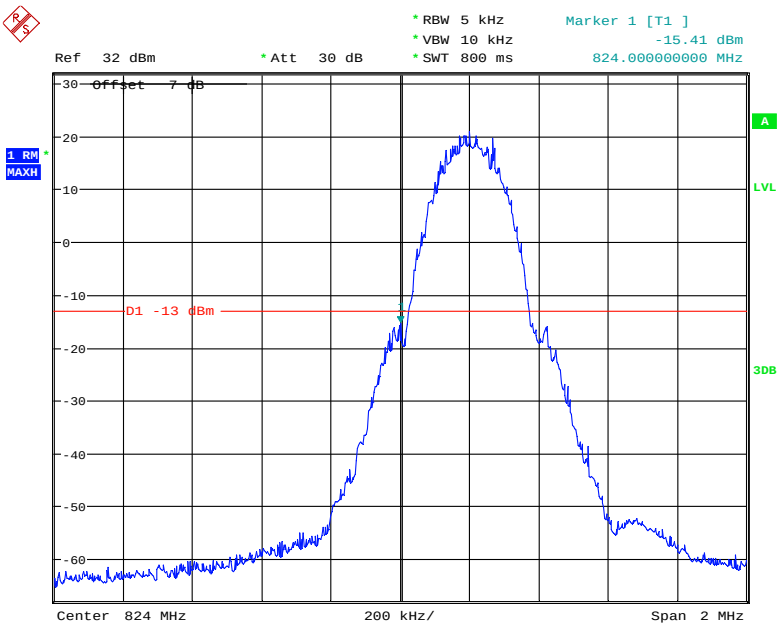
The testing was performed by Pedro Yun from 2021-06-27 to 2021-07-14.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

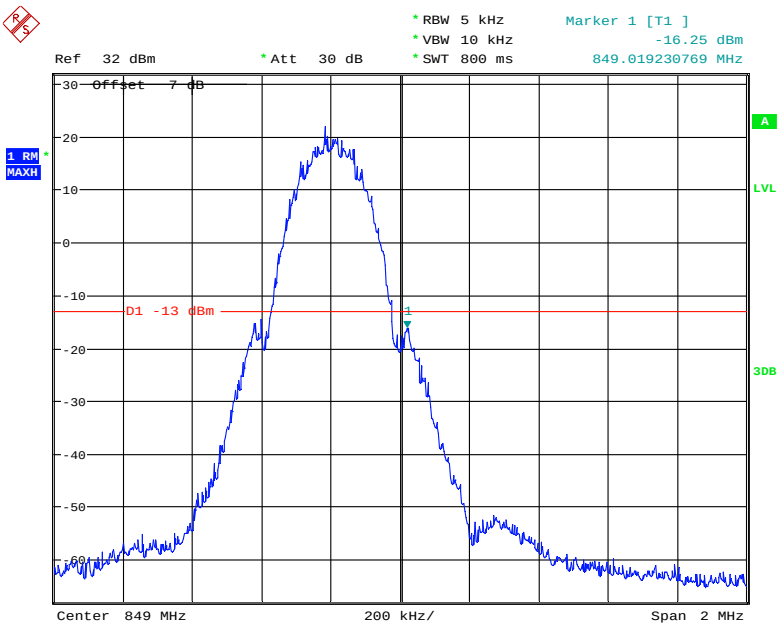
Please refer to the following plots.

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



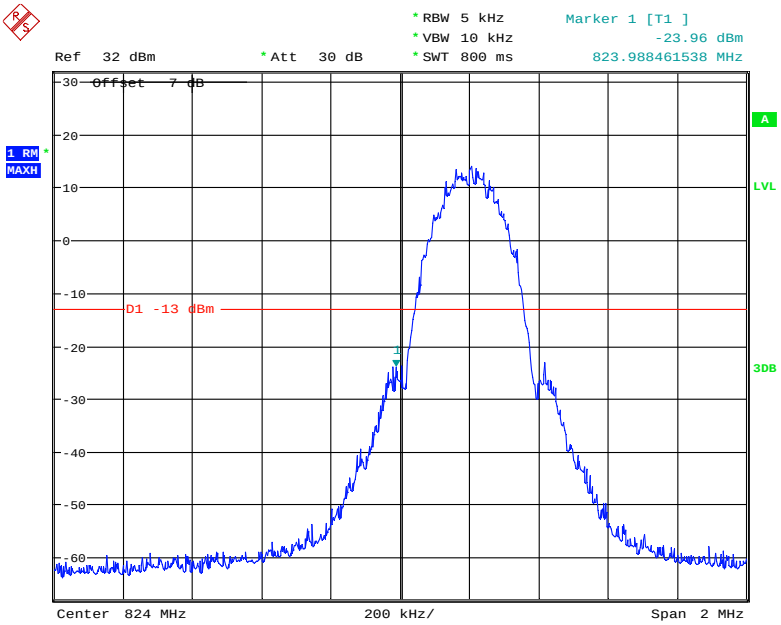
Date: 27.JUN.2021 23:21:02

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



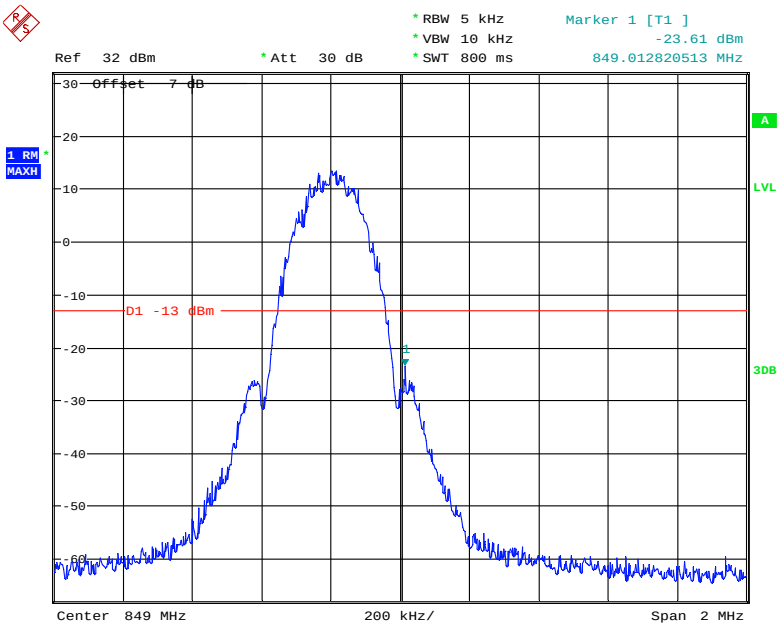
Date: 27.JUN.2021 23:21:57

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



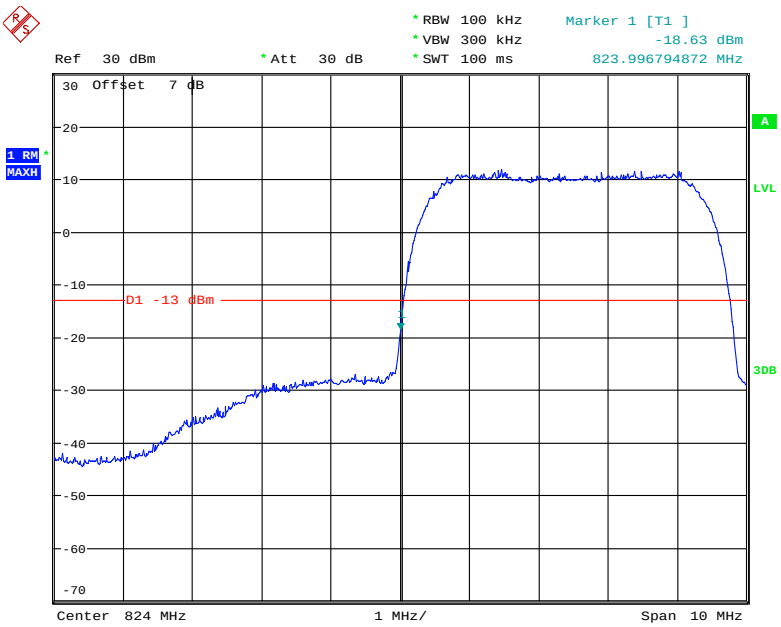
Date: 27.JUN.2021 23:41:50

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



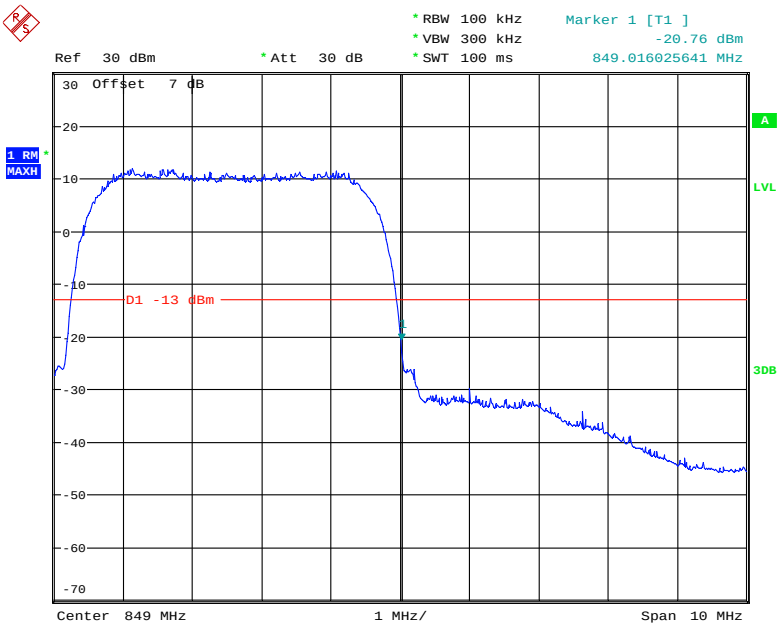
Date: 27.JUN.2021 23:40:34

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



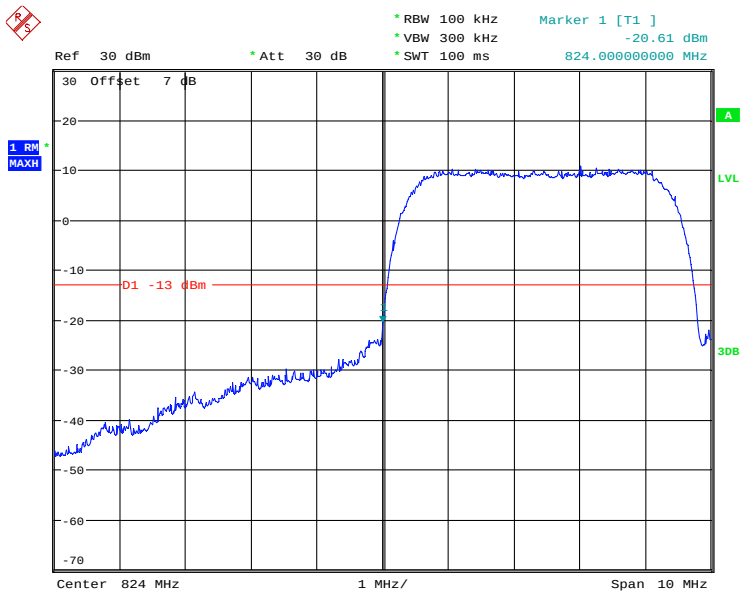
Date: 27.JUN.2021 22:01:35

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



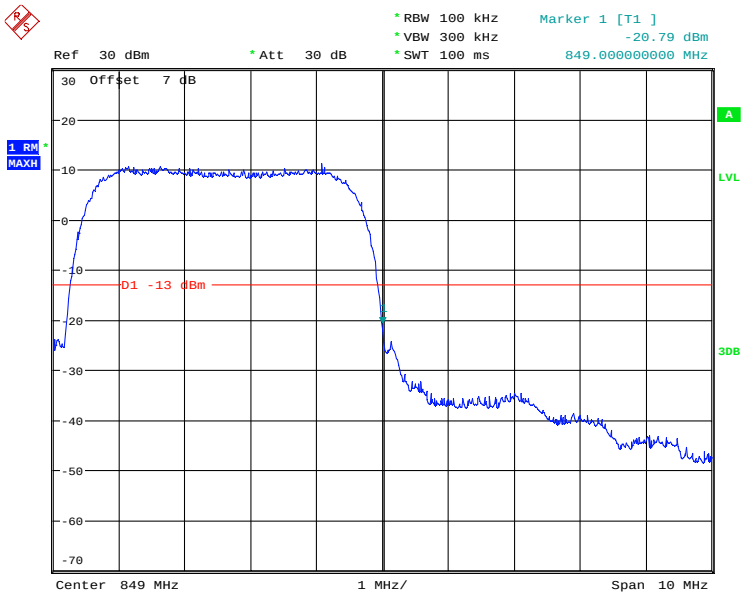
Date: 27.JUN.2021 22:02:14

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



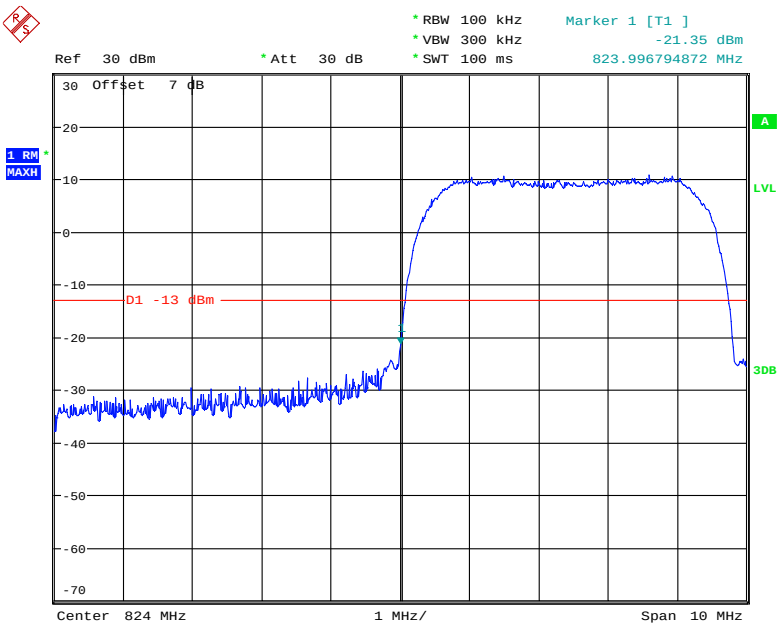
Date: 27.JUN.2021 22:34:21

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



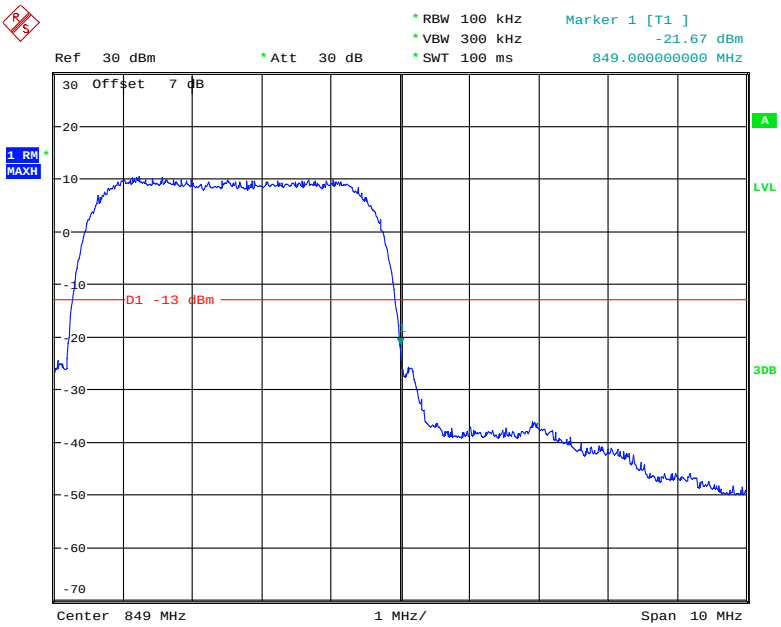
Date: 27.JUN.2021 22:35:00

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



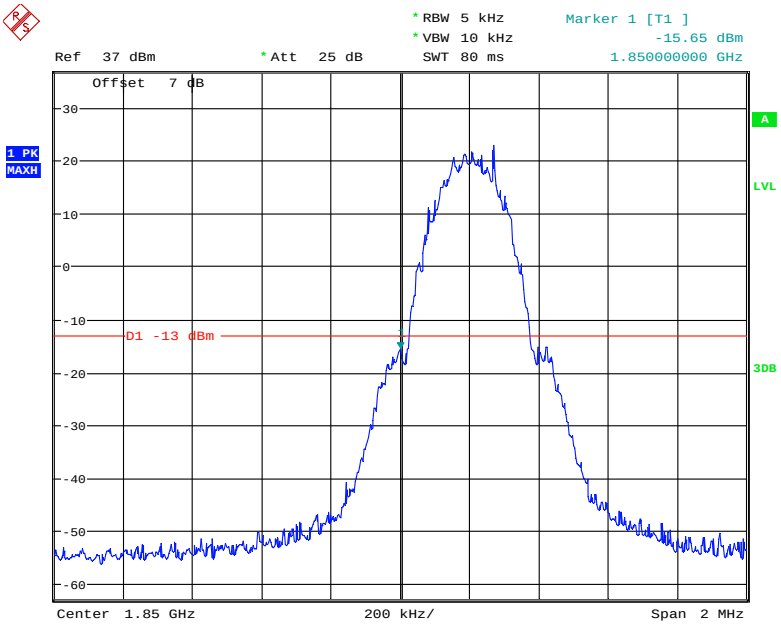
Date: 27.JUN.2021 23:11:30

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



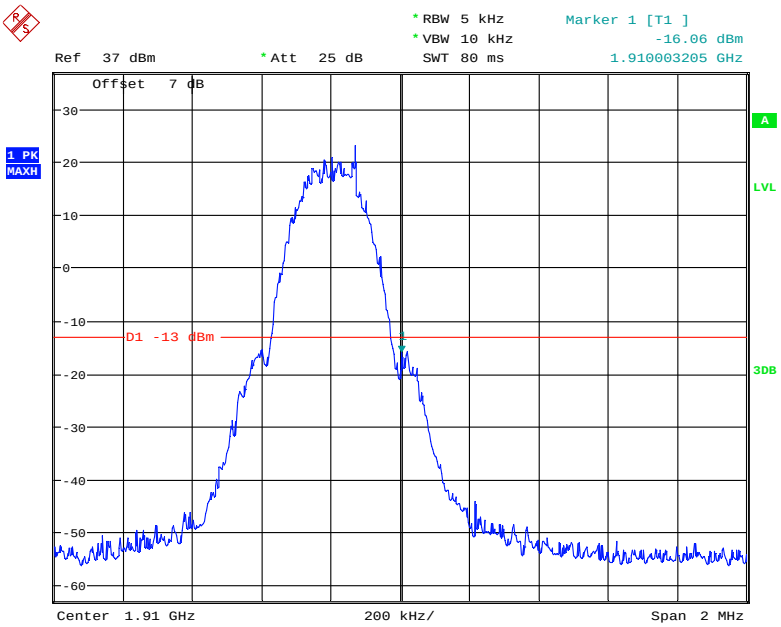
Date: 27.JUN.2021 23:10:33

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



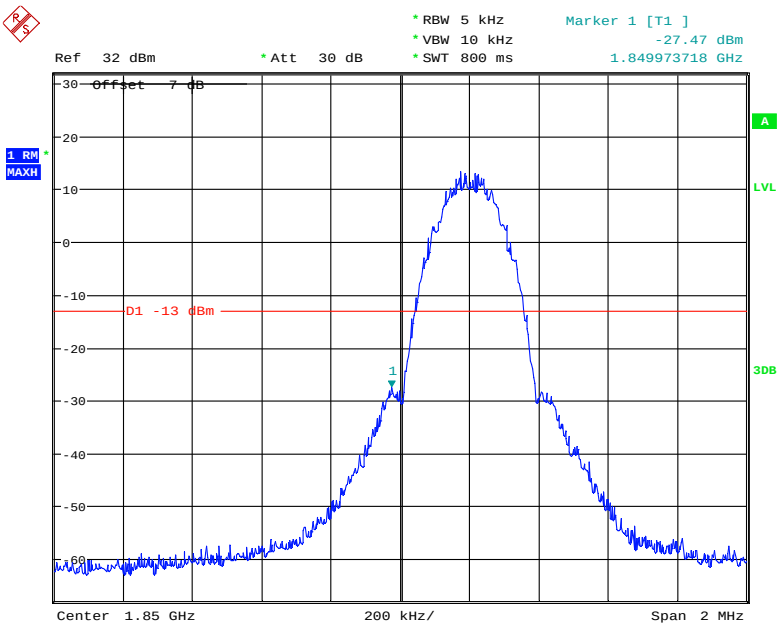
Date: 14.JUL.2021 17:12:02

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



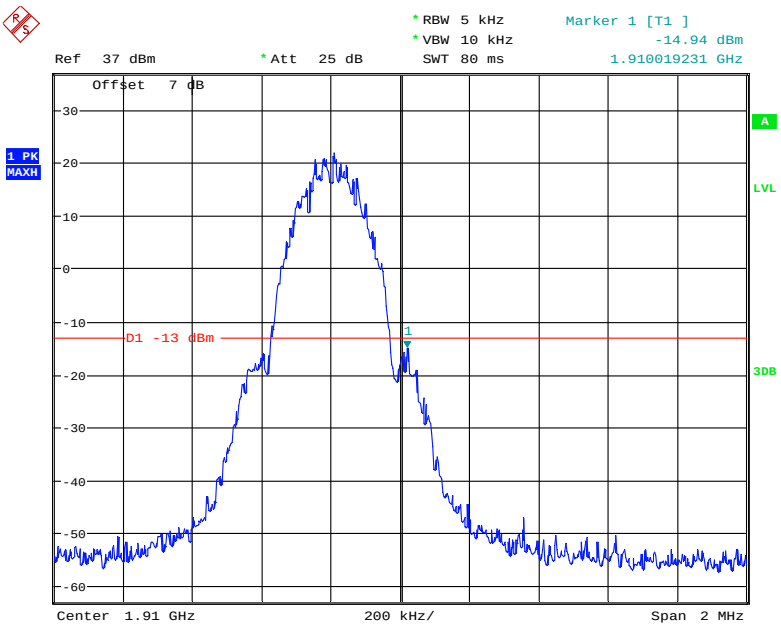
Date: 14.JUL.2021 17:13:22

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



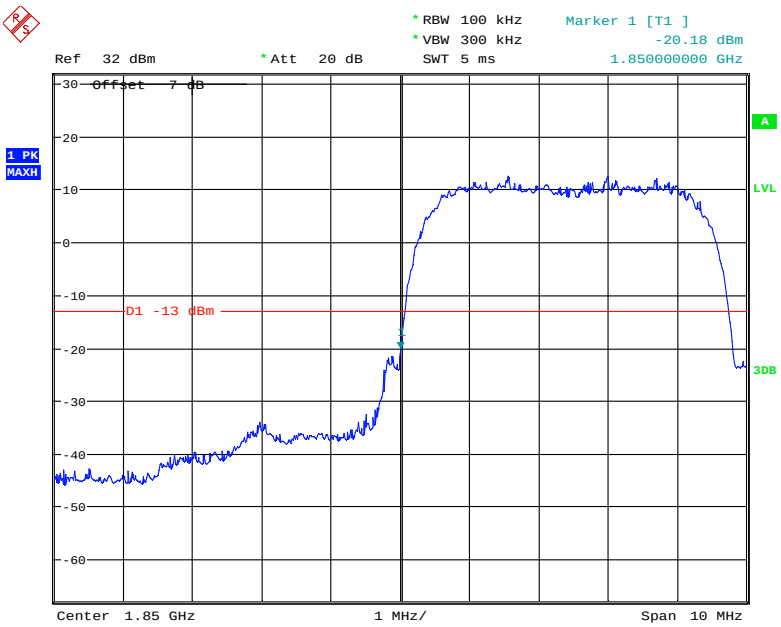
Date: 28.JUN.2021 00:07:04

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



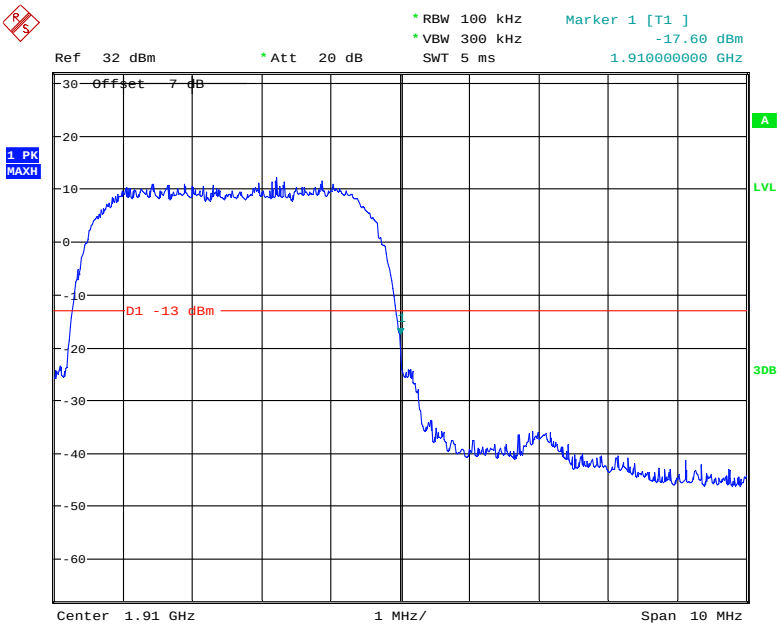
Date: 14.JUL.2021 17:13:43

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



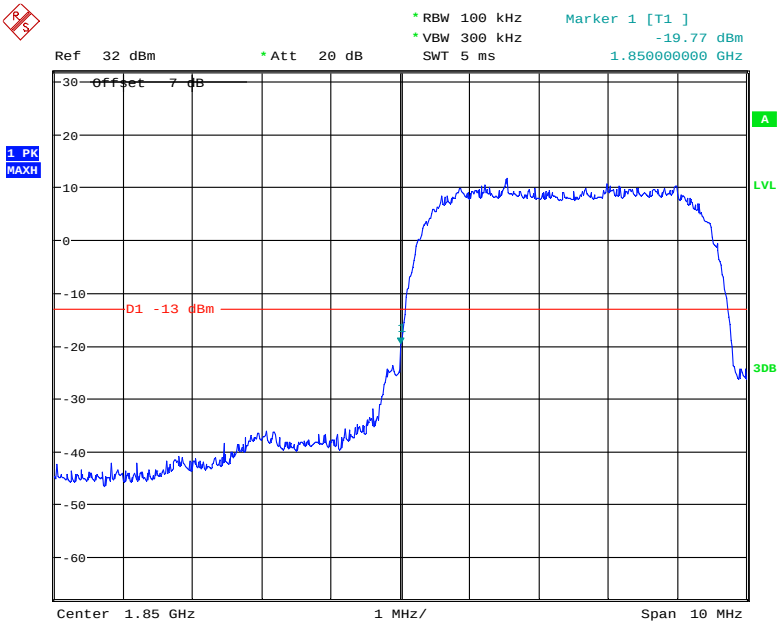
Date: 14.JUL.2021 16:15:57

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



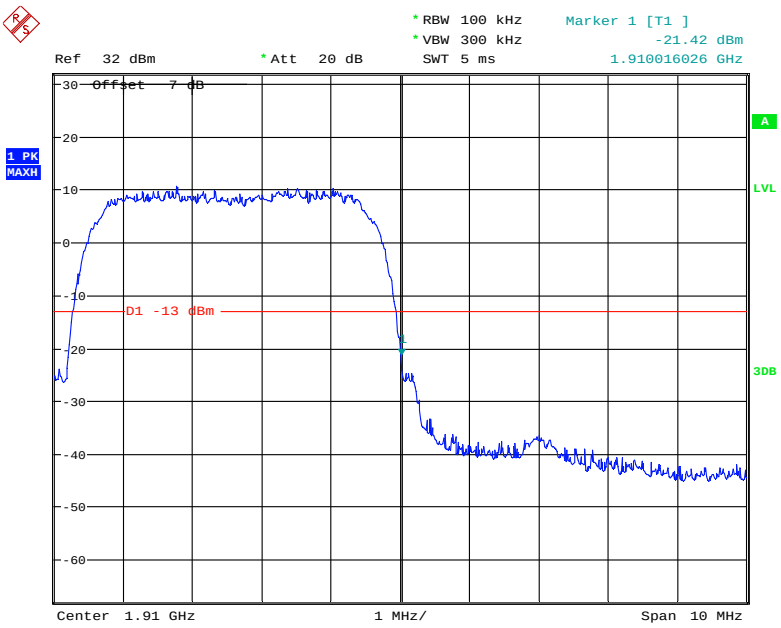
Date: 14.JUL.2021 16:14:46

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



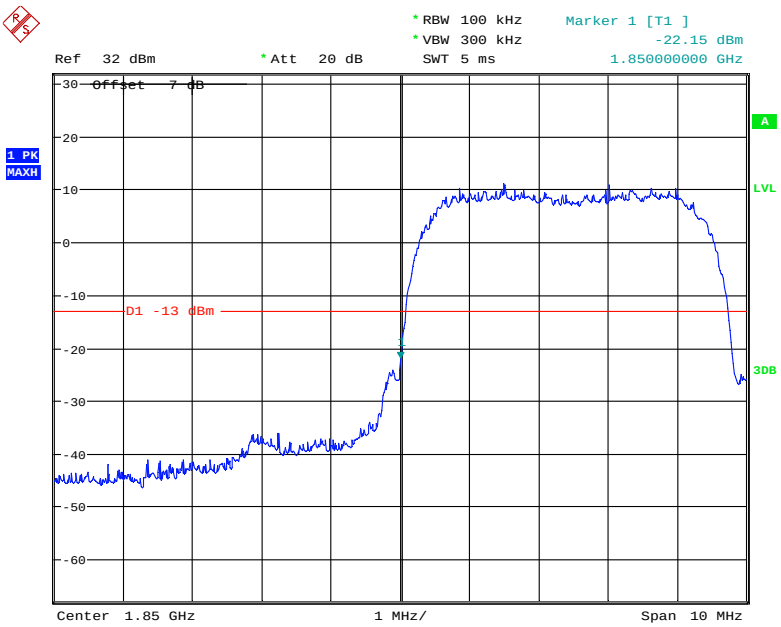
Date: 14.JUL.2021 16:07:34

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



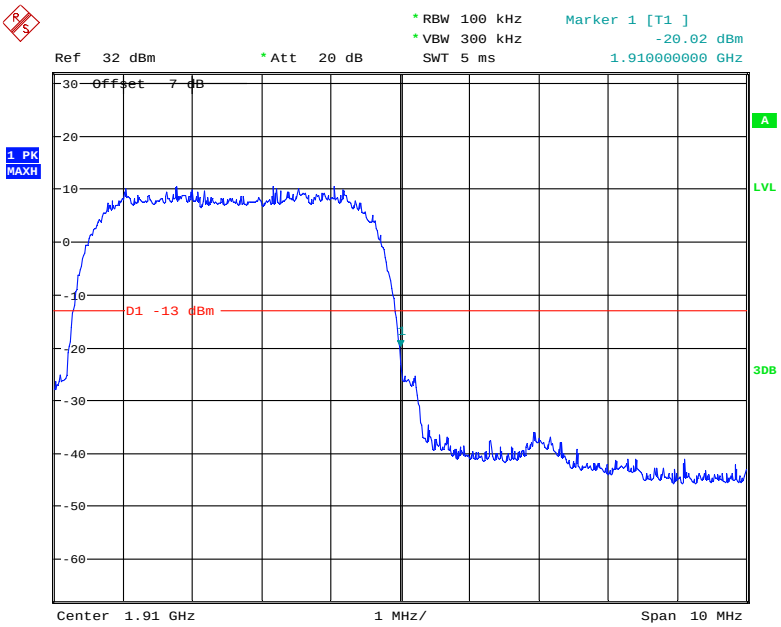
Date: 14.JUL.2021 16:08:38

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



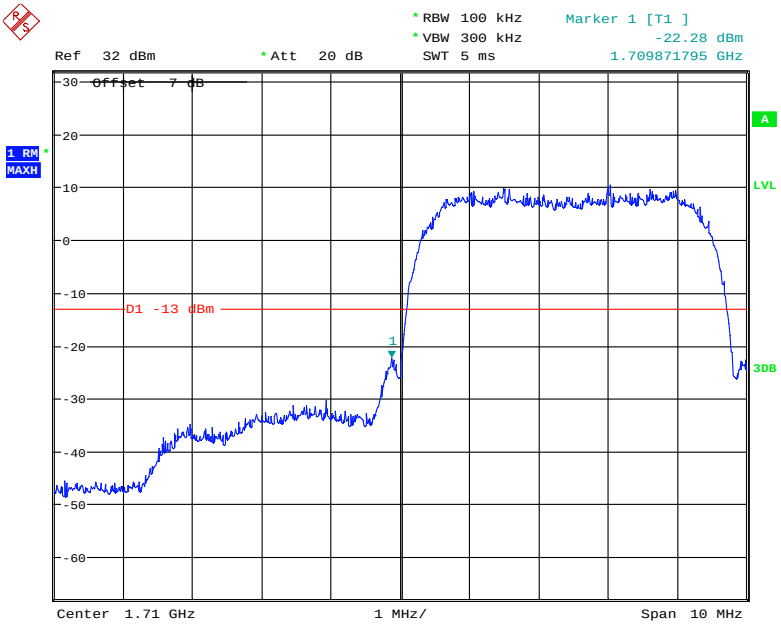
Date: 14.JUL.2021 16:06:41

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



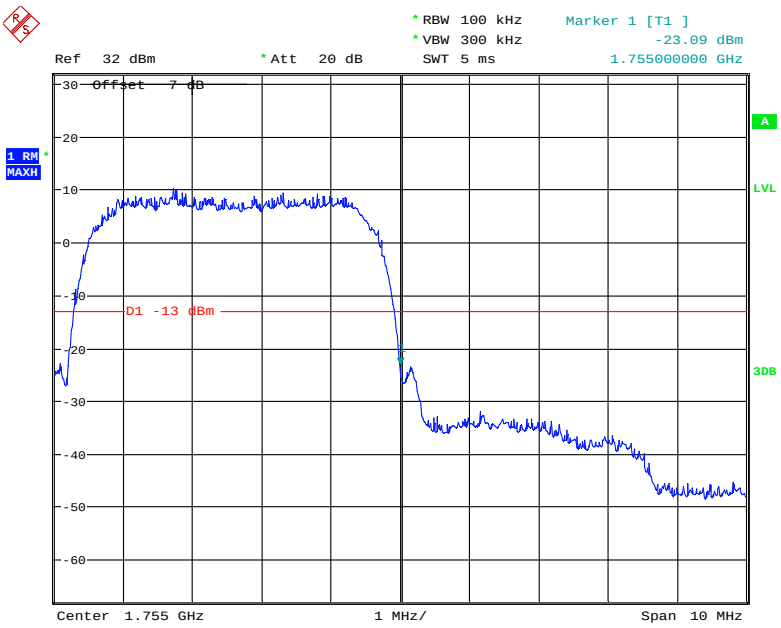
Date: 14.JUL.2021 16:05:17

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



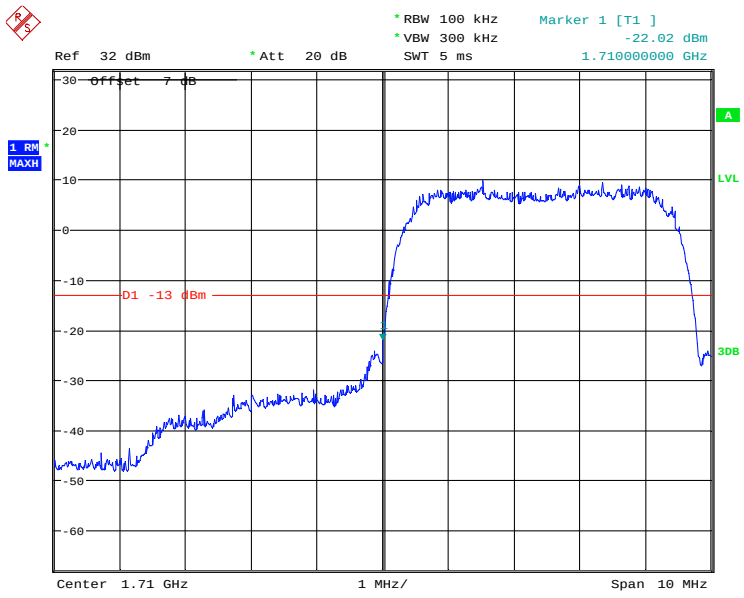
Date: 29.JUN.2021 21:35:12

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



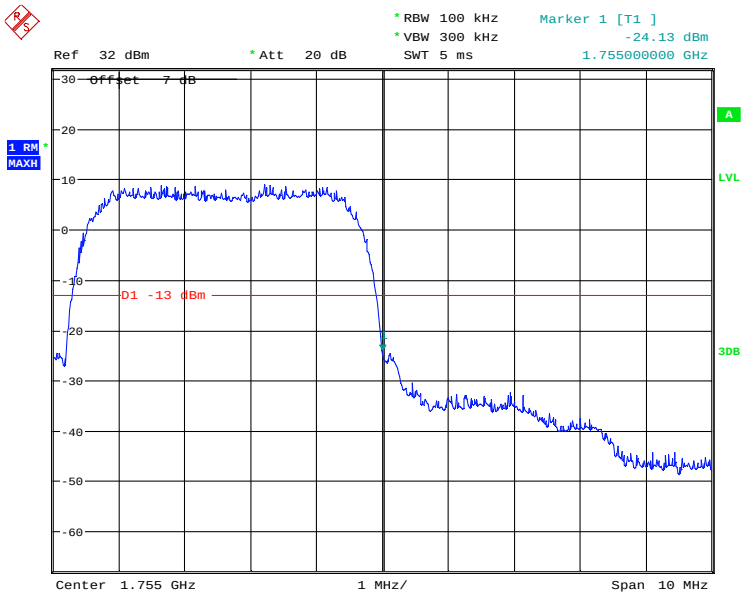
Date: 29.JUN.2021 21:36:09

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



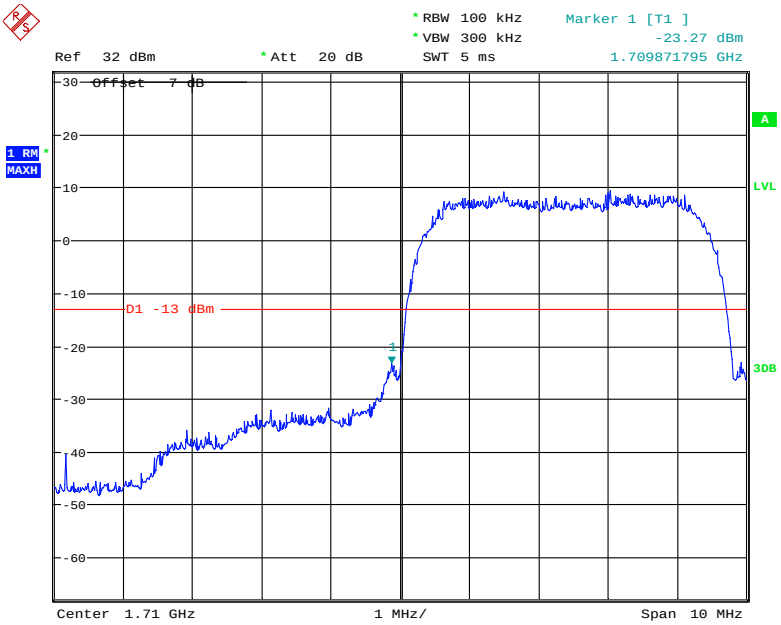
Date: 29.JUN.2021 21:38:42

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

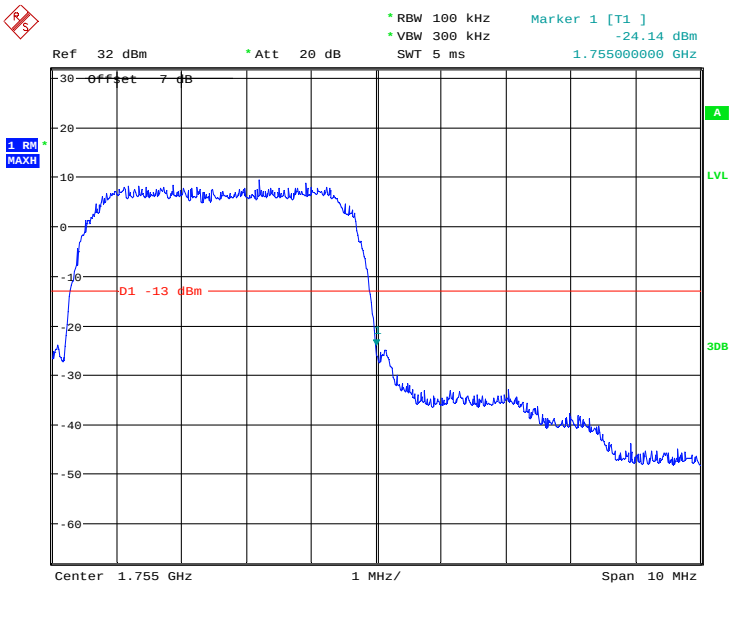


Date: 29.JUN.2021 21:37:19

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



AWS 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

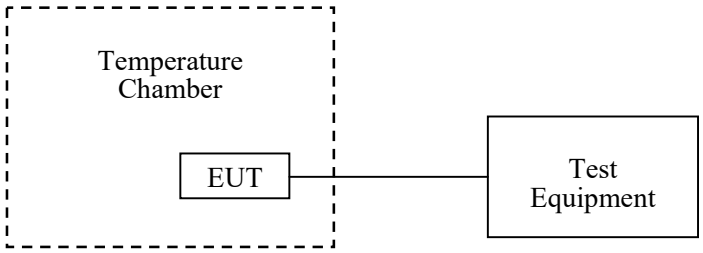
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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:	27.3 ℃
Relative Humidity:	60 %
ATM Pressure:	101.0 kPa

The testing was performed by Pedro Yun on 2021-06-27 and 2021-07-14

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	NV	-5	-0.0060	2.5
-20		-4	-0.0048	2.5
-10		-5	-0.0060	2.5
0		-3	-0.0036	2.5
10		-2	-0.0024	2.5
20		-2	-0.0024	2.5
30		2	0.0024	2.5
40		3	0.0036	2.5
50		-4	-0.0048	2.5
20	LV	3	0.0036	2.5
	HV	-2	-0.0024	2.5

EDGE Mode

Middle Channel, f_o =836.6MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	NV	5	0.0060	2.5
-20		4	0.0048	2.5
-10		5	0.0060	2.5
0		7	0.0084	2.5
10		6	0.0072	2.5
20		4	0.0048	2.5
30		6	0.0072	2.5
40		5	0.0060	2.5
50		3	0.0036	2.5
20	LV	7	0.0084	2.5
	HV	4	0.0048	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	NV	4	0.0021	pass
-20		3	0.0016	pass
-10		5	0.0027	pass
0		1	0.0005	pass
10		2	0.0011	pass
20		2	0.0011	pass
30		3	0.0016	pass
40		5	0.0027	pass
50		3	0.0016	pass
20	LV	2	0.0011	pass
	HV	3	0.0016	pass

EDGE Mode

Middle Channel, f_o =1880.0 MHz				
Temperature (℃)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	NV	-4	-0.0021	pass
-20		-3	-0.0016	pass
-10		2	0.0011	pass
0		4	0.0021	pass
10		5	0.0027	pass
20		-2	-0.0011	pass
30		-4	-0.0021	pass
40		-4	-0.0021	pass
50		-5	-0.0027	pass
20	LV	-4	-0.0021	pass
	HV	-3	-0.0016	pass

AWS Band (Part 27)

Temperature (℃)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	NV	1710.0511	1754.6792	1710	1755
-20		1710.0498	1754.6020	1710	1755
-10		1710.0414	1754.5394	1710	1755
0		1710.0631	1754.4978	1710	1755
10		1710.0546	1754.4929	1710	1755
20		1710.0475	1754.5693	1710	1755
30		1710.0452	1754.3426	1710	1755
40		1710.0425	1754.4688	1710	1755
50		1710.0508	1754.4589	1710	1755
20	LV	1710.0659	1754.4813	1710	1755
	HV	1710.0481	1754.4912	1710	1755

LTE:
QPSK:

Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (°C)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	NV	-5.59	-0.0030	pass
-20		-9.79	-0.0052	pass
-10		-6.22	-0.0033	pass
0		6.28	0.0033	pass
10		7.69	0.0041	pass
20		6.59	0.0035	pass
30		-6.57	-0.0035	pass
40		7.18	0.0038	pass
50		-9.52	-0.0051	pass
20	LV	-8.35	-0.0044	pass
	HV	-7.21	-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	1710.3459	1754.6410	1710	1755
-20		1710.3031	1754.6287	1710	1755
-10		1710.3269	1754.6277	1710	1755
0		1710.2933	1754.6336	1710	1755
10		1710.2773	1754.6382	1710	1755
20		1710.2871	1754.6509	1710	1755
30		1710.3105	1754.6596	1710	1755
40		1710.3198	1754.6403	1710	1755
50		1710.3014	1754.6362	1710	1755
20	LV	1710.3238	1754.6385	1710	1755
	HV	1710.2590	1754.6513	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o=836.5MHz				
Temperature (°C)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	NV	-8.85	-0.0106	2.5
-20		9.13	0.0109	2.5
-10		8.51	0.0102	2.5
0		-7.20	-0.0086	2.5
10		-5.37	-0.0064	2.5
20		7.15	0.0085	2.5
30		-5.78	-0.0069	2.5
40		5.48	0.0066	2.5
50		6.69	0.0080	2.5
20	LV	9.72	0.0116	2.5
	HV	9.89	0.0118	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	2500.3761	2569.6523	2500	2570
-20		2500.3683	2569.6862	2500	2570
-10		2500.2729	2569.6763	2500	2570
0		2500.3201	2569.7023	2500	2570
10		2500.3726	2569.6405	2500	2570
20		2500.2622	2569.6549	2500	2570
30		2500.2735	2569.6882	2500	2570
40		2500.3491	2569.6335	2500	2570
50		2500.2999	2569.6411	2500	2570
20	LV	2500.3507	2569.6908	2500	2570
	HV	2500.2739	2569.6435	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	NV	2570.3267	2619.6875	2570	2620
-20		2570.3171	2619.6445	2570	2620
-10		2570.3085	2619.7096	2570	2620
0		2570.2886	2619.6937	2570	2620
10		2570.2476	2619.6529	2570	2620
20		2570.2338	2619.6801	2570	2620
30		2570.2271	2619.6945	2570	2620
40		2570.3171	2619.6934	2570	2620
50		2570.2677	2619.6825	2570	2620
20	LV	2570.2285	2619.7084	2570	2620
	HV	2570.3036	2619.7269	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (℃)	**Power Supplied (V_{DC})**	**F_L (MHz)**	**F_H (MHz)**	**F_L Limit (MHz)**	**F_H Limit (MHz)**
-30	NV	2535.3141	2654.6456	2535	2655
-20		2535.3088	2654.6584	2535	2655
-10		2535.3385	2654.6696	2535	2655
0		2535.2846	2654.7068	2535	2655
10		2535.2734	2654.6882	2535	2655
20		2535.2450	2654.6508	2535	2655
30		2535.2721	2654.6860	2535	2655
40		2535.2866	2654.6895	2535	2655
50		2535.3149	2654.6944	2535	2655
20	LV	2535.2677	2654.7062	2535	2655
	HV	2535.2319	2654.7002	2535	2655

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

16QAM:

Band 2:

10.0 MHz Middle Channel, f_o =1880MHz				
Temperature (°C)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Result**
-30	NV	-8	-0.0043	pass
-20		-4	-0.0021	pass
-10		10	0.0053	pass
0		-5	-0.0027	pass
10		6	0.0032	pass
20		-7	-0.0037	pass
30		-6	-0.0032	pass
40		-5	-0.0027	pass
50		8	0.0043	pass
20	LV	9	0.0048	pass
	HV	10	0.0053	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	1710.3407	1754.6357	1710	1755
-20		1710.3105	1754.6370	1710	1755
-10		1710.3206	1754.6240	1710	1755
0		1710.2971	1754.6301	1710	1755
10		1710.2746	1754.6417	1710	1755
20		1710.2877	1754.6586	1710	1755
30		1710.3046	1754.6633	1710	1755
40		1710.3263	1754.6412	1710	1755
50		1710.3049	1754.6366	1710	1755
20	LV	1710.3174	1754.6419	1710	1755
	HV	1710.2528	1754.6603	1710	1755

Band 5:

10.0 MHz Middle Channel, f_o=836.5MHz				
Temperature (°C)	**Voltage Supplied (V_{DC})**	**Frequency Error (Hz)**	**Frequency Error (ppm)**	**Limit (ppm)**
-30	NV	-3.67	-0.0044	2.5
-20		6.93	0.0083	2.5
-10		-9.67	-0.0116	2.5
0		-8.15	-0.0097	2.5
10		-8.45	-0.0101	2.5
20		-9.21	-0.0110	2.5
30		8.39	0.0100	2.5
40		6.58	0.0079	2.5
50		-5.48	-0.0066	2.5
20	LV	8.68	0.0104	2.5
	HV	-7.69	-0.0092	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	2500.3796	2569.6475	2500	2570
-20		2500.3643	2569.6774	2500	2570
-10		2500.2757	2569.6771	2500	2570
0		2500.3192	2569.7078	2500	2570
10		2500.3691	2569.6437	2500	2570
20		2500.2692	2569.6587	2500	2570
30		2500.2775	2569.6831	2500	2570
40		2500.3508	2569.6331	2500	2570
50		2500.2899	2569.6464	2500	2570
20	LV	2500.3576	2569.6826	2500	2570
	HV	2500.2706	2569.6337	2500	2570

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	2570.3299	2619.6889	2570	2620
-20		2570.3174	2619.6453	2570	2620
-10		2570.3002	2619.7193	2570	2620
0		2570.2959	2619.6985	2570	2620
10		2570.2523	2619.6518	2570	2620
20		2570.2265	2619.6877	2570	2620
30		2570.2295	2619.6979	2570	2620
40		2570.3141	2619.6935	2570	2620
50		2570.2656	2619.6725	2570	2620
20	LV	2570.2273	2619.6990	2570	2620
	HV	2570.3031	2619.7340	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	2535.3072	2654.6483	2535	2655
-20		2535.3099	2654.6583	2535	2655
-10		2535.3342	2654.6645	2535	2655
0		2535.2799	2654.7037	2535	2655
10		2535.2793	2654.6846	2535	2655
20		2535.2461	2654.6473	2535	2655
30		2535.2774	2654.6843	2535	2655
40		2535.2869	2654.6848	2535	2655
50		2535.3071	2654.6926	2535	2655
20	LV	2535.2634	2654.7132	2535	2655
	HV	2535.2395	2654.7020	2535	2655

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

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