



FCC PART 27
FCC PART 22H, PART 24E
TEST REPORT

For

Epik One America Corporation

801 Brickell avenue #900 Miami Florida 33131 United States

FCC ID: 2AO6ZX515

Report Type: Original Report	Product Type: 4G Smart Phone
Report Number: SZ1210512-16774E-00C	
Report Date: 2021-06-15	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	4G Smart Phone
Tested Model	X515
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)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	EGSM850/ WCDMA Band 5/ LTE Band 5: 0.3dBi PCS1900/WCDMA Band 2/ LTE Band 2: 1.1 dBi WCDMA Band 4/ LTE Band 4: 1.1 dBi LTE Band 7: 1.4dBi (provided by the applicant)
Voltage Range	DC3.7V from battery or DC 5.0V from adapter
Date of Test	2021-05-19 to 2021-06-15
Sample serial number	SZ1210512-16774E-RF-S_5LU(Assigned by BACL, Shenzhen)
Received date	2021-05-12
Sample/EUT Status	Good condition
Adapter information	Model: YMK-6W050100 Input: 100-240V~50/60Hz, 0.2A Output: 5V, 1000mA

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

Equipment Modifications

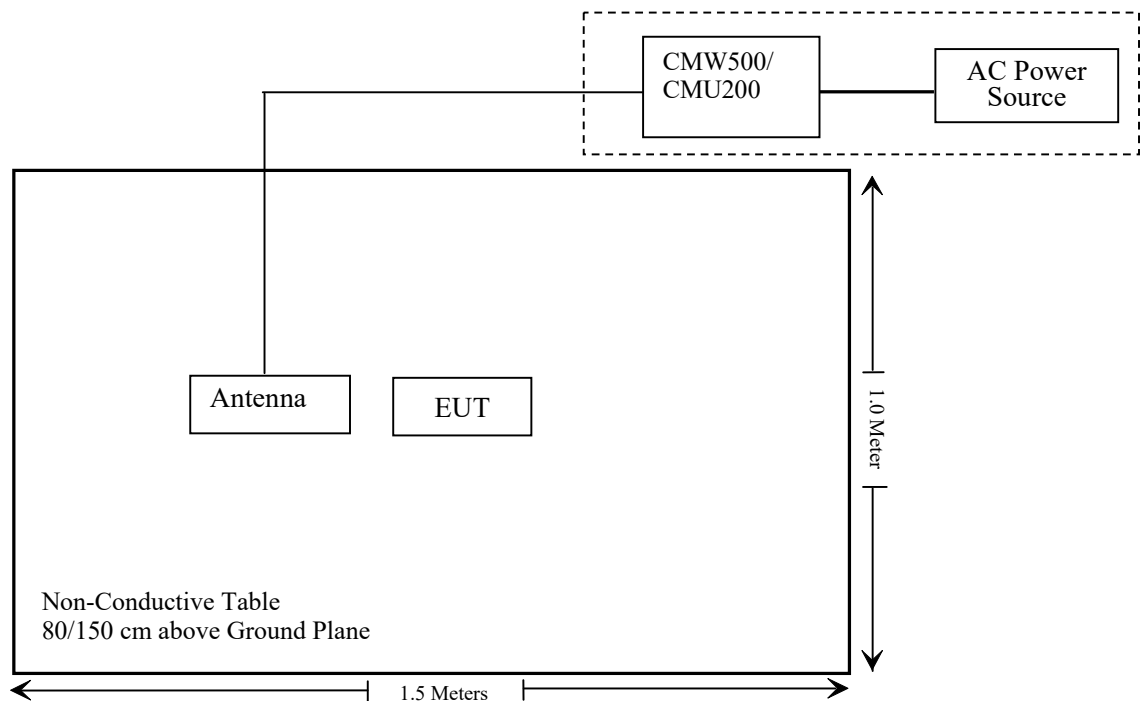
No modification was made to the EUT.

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	115500

Support Cable Description

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

Block Diagram of Test Setup

SUMMARY OF TEST RESULTS

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

Note: * Please refer to SAR report released by BACL, report number: SZ1210512-16774E-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	Chamber Cable 1	F-03-EM236	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
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/28	2021/11/27
COM-POWER	Pre-amplifier	PA-122	181919	2020/11/29	2021/11/28
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
SNSD	Band Reject filter	BSF2402-2480MN-0898-001	2.4G filter	2021/04/20	2022/04/20
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-01 1304	2020/12/06	2023/12/05
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-02 1304	2020/12/06	2023/12/05

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2021/04/03	2022/04/02
Yijia	Temperature & Humidity Meter	10316377	T-03-EM397	2020/09/30	2021/09/29
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	1201.002K50-146520-wh	2020/08/04	2021/08/03
Unknown	RF Cable	Unknown	2301 276	2020/11/29	2021/11/28
Unknown	RF Cable	Unknown	DLO J5/W6102	2020/11/29	2021/11/28
Weinschel	Power divider	1515	MY628	2020/11/29	2021/11/28
Rohde & Schwarz	Universal Radio Communication Tester	CMU200	115500	2020/07/31	2021/07/30
instek	DC Power Supply	GPS-3030DD	EM832096	NCR	NCR
Fluke	Digital Multimeter	287	19000011	2020/07/23	2021/07/22
ESPEC	Temperature & Humidity Chamber	EL-10KA	9107726	2021/02/23	2022/02/22

* Statement of Traceability: Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: SZ1210512-16774E-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 (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.

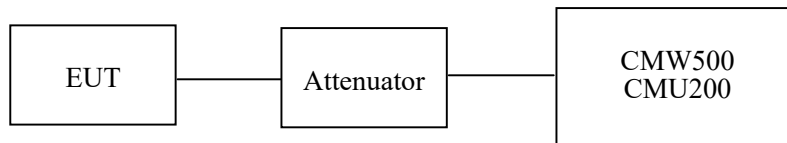
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1755MHz.

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 °C
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by Orlo Yang on 2021-05-19.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	31.6	28.95	38.45
	190	836.6	31.4	28.75	38.45
	251	848.8	31.3	28.65	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	31.55	29.34	27.51	25.34	28.9	26.69	24.86	22.69	38.45
	190	836.6	31.38	29.16	27.31	25.16	28.73	26.51	24.66	22.51	38.45
	251	848.8	31.32	29.10	27.26	25.07	28.67	26.45	24.61	22.42	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	24.35	24.07	22.78	19.29	21.7	21.42	20.13	16.64	38.45
	190	836.6	24.77	24.50	23.02	19.87	22.12	21.85	20.37	17.22	38.45
	251	848.8	23.91	23.64	22.14	18.96	21.26	20.99	19.49	16.31	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		22.23	22.26	22.33	19.58	19.61	19.68
	HSDPA	1	21.59	22.01	21.43	18.94	19.36	18.78
		2	21.67	22.12	21.44	19.02	19.47	18.79
		3	21.69	22.16	21.54	19.04	19.51	18.89
		4	21.59	22.18	21.47	18.94	19.53	18.82
	HSUPA	1	21.58	22.09	21.61	18.93	19.44	18.96
		2	21.49	22.17	21.58	18.84	19.52	18.93
		3	21.52	22.20	21.61	18.87	19.55	18.96
		4	21.69	22.12	21.63	19.04	19.47	18.98
		5	21.71	22.12	21.62	19.06	19.47	18.97
	HSPA+	1	21.32	21.84	21.37	18.67	19.19	18.72

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
 For GSM850 / WCDMA Band5: Antenna Gain =0.3dBi = -1.85dBd (0dBd=2.15dBi)
 Cable Loss=0.8dB* (provided by the applicant)
 Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	28.7	29.0	33
	661	1880.0	28.5	28.8	33
	810	1909.8	28.1	28.4	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	28.71	26.51	24.91	22.68	29.01	26.81	25.21	22.98	33
	661	1880.0	28.57	26.10	24.48	22.23	28.87	26.4	24.78	22.53	33
	810	1909.8	28.02	25.43	23.65	21.49	28.32	25.73	23.95	21.79	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	24.39	24.01	22.12	18.81	24.69	24.31	22.42	19.11	33
	661	1880.0	24.59	24.22	22.42	19.47	24.89	24.52	22.72	19.77	33
	810	1909.8	23.78	23.48	21.41	18.64	24.08	23.78	21.71	18.94	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		20.73	20.41	20.42	21.03	20.71	20.72
	HSDPA	1	19.94	19.25	19.29	20.24	19.55	19.59
		2	19.86	19.42	19.37	20.16	19.72	19.67
		3	19.88	19.56	19.47	20.18	19.86	19.77
		4	19.96	19.68	19.46	20.26	19.98	19.76
	HSUPA	1	20.09	19.24	19.25	20.39	19.54	19.55
		2	20.14	19.22	19.24	20.44	19.52	19.54
		3	20.10	19.35	19.15	20.40	19.65	19.45
		4	20.04	19.38	19.26	20.34	19.68	19.56
		5	20.01	19.40	19.30	20.31	19.70	19.60
	HSPA+	1	20.07	19.19	19.15	20.37	19.49	19.45

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)

For PCS1900 / WCDMA Band2: Antenna Gain = 1.1dBi

Cable Loss=0.8dB*(provided by the applicant)

Limit: EIRP≤33dBm

AWS Band (Part 27)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		20.36	20.32	20.45	20.66	20.62	20.75
	HSDPA	1	19.03	18.00	19.79	19.33	18.3	20.09
		2	18.95	18.01	19.71	19.25	18.31	20.01
		3	19.02	18.03	19.67	19.32	18.33	19.97
		4	19.04	18.07	19.73	19.34	18.37	20.03
	HSUPA	1	19.19	18.18	19.01	19.49	18.48	19.31
		2	19.25	18.29	19.01	19.55	18.59	19.31
		3	19.32	18.32	19.00	19.62	18.62	19.3
		4	19.38	18.32	19.01	19.68	18.62	19.31
		5	19.29	18.23	18.99	19.59	18.53	19.29
	HSPA+	1	19.23	19.22	19.05	19.53	19.52	19.35

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)

For Band4: Antenna Gain = 1.1dBi

Cable Loss=0.8dB*(provided by the applicant)

Limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.35	13
	Middle	3.47	13
	High	3.43	13
EGPRS	Low	3.38	13
	Middle	3.46	13
	High	3.51	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.62	13
	Middle	3.37	13
	High	3.58	13
HSDPA (16QAM)	Low	3.46	13
	Middle	3.22	13
	High	3.43	13
HSUPA (BPSK)	Low	3.15	13
	Middle	3.26	13
	High	3.38	13
HSPA+ (16QAM)	Low	3.43	13
	Middle	3.32	13
	High	3.28	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.27	13
	Middle	3.24	13
	High	3.48	13
EGPRS	Low	3.32	13
	Middle	3.41	13
	High	3.28	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.54	13
	Middle	3.47	13
	High	3.43	13
HSDPA (16QAM)	Low	3.52	13
	Middle	3.36	13
	High	3.47	13
HSUPA (BPSK)	Low	3.26	13
	Middle	3.45	13
	High	3.37	13
HSPA+ (16QAM)	Low	3.28	13
	Middle	3.34	13
	High	3.27	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.08	13
	Middle	3.36	13
	High	3.52	13
HSDPA (16QAM)	Low	3.41	13
	Middle	3.39	13
	High	3.44	13
HSUPA (BPSK)	Low	3.29	13
	Middle	3.47	13
	High	3.43	13
HSPA+ (16QAM)	Low	3.19	13
	Middle	3.39	13
	High	3.31	13

LTE Band 2:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	20.46	19.92	19.93	20.76	20.22	20.23
		RB1#3	20.48	19.94	19.93	20.78	20.24	20.23
		RB1#5	20.42	19.98	19.93	20.72	20.28	20.23
		RB3#0	20.58	20.05	20.10	20.88	20.35	20.4
		RB3#3	20.57	20.17	20.08	20.87	20.47	20.38
		RB6#0	19.56	19.18	19.01	19.86	19.48	19.31
	16QAM	RB1#0	20.18	19.64	18.76	20.48	19.94	19.06
		RB1#3	20.20	19.63	18.83	20.50	19.93	19.13
		RB1#5	20.18	19.57	18.84	20.48	19.87	19.14
		RB3#0	19.67	19.13	19.10	19.97	19.43	19.40
		RB3#3	19.71	19.06	19.16	20.01	19.36	19.46
		RB6#0	18.81	18.57	18.29	19.11	18.87	18.59
3.0	QPSK	RB1#0	20.66	20.11	20.01	20.96	20.41	20.31
		RB1#8	20.66	20.10	20.00	20.96	20.40	20.30
		RB1#14	20.48	20.13	20.04	20.78	20.43	20.34
		RB6#0	19.66	19.21	19.06	19.96	19.51	19.36
		RB6#9	19.47	19.17	19.16	19.77	19.47	19.46
		RB15#0	19.70	19.21	19.12	20.00	19.51	19.42
	16QAM	RB1#0	19.93	19.73	18.90	20.23	20.03	19.20
		RB1#8	19.91	19.68	18.90	20.21	19.98	19.20
		RB1#14	19.79	19.67	18.97	20.09	19.97	19.27
		RB6#0	18.97	18.68	18.40	19.27	18.98	18.70
		RB6#9	18.87	18.72	18.41	19.17	19.02	18.71
		RB15#0	18.86	18.54	18.25	19.16	18.84	18.55

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	20.65	20.34	20.09	20.95	20.64	20.39
		RB1#13	20.58	20.25	20.15	20.88	20.55	20.45
		RB1#24	20.46	20.28	20.09	20.76	20.58	20.39
		RB15#0	19.75	19.30	19.14	20.05	19.60	19.44
		RB15#10	19.65	19.25	19.17	19.95	19.55	19.47
		RB25#0	19.65	19.21	19.20	19.95	19.51	19.5
	16QAM	RB1#0	19.12	19.45	18.81	19.42	19.75	19.11
		RB1#13	18.92	19.29	18.83	19.22	19.59	19.13
		RB1#24	18.90	19.42	18.90	19.2	19.72	19.20
		RB15#0	18.93	18.57	18.28	19.23	18.87	18.58
		RB15#10	18.83	18.55	18.28	19.13	18.85	18.58
		RB25#0	18.86	18.65	18.12	19.16	18.95	18.42
10.0	QPSK	RB1#0	20.82	20.45	20.15	21.12	20.75	20.45
		RB1#25	20.61	20.35	20.18	20.91	20.65	20.48
		RB1#49	20.49	20.24	20.25	20.79	20.54	20.55
		RB25#0	19.72	19.21	19.22	20.02	19.51	19.52
		RB25#25	19.57	19.26	19.20	19.87	19.56	19.50
		RB50#0	19.71	19.35	19.24	20.01	19.65	19.54
	16QAM	RB1#0	20.32	19.49	18.72	20.62	19.79	19.02
		RB1#25	20.08	19.40	18.69	20.38	19.70	18.99
		RB1#49	20.02	19.43	18.68	20.32	19.73	18.98
		RB25#0	18.90	18.80	18.34	19.20	19.10	18.64
		RB25#25	19.07	18.38	18.39	19.37	18.68	18.69
		RB50#0	18.78	18.77	18.23	19.08	19.07	18.53

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	20.83	20.29	20.13	21.13	20.59	20.43
		RB1#38	20.60	20.31	20.14	20.90	20.61	20.44
		RB1#74	20.43	20.18	20.22	20.73	20.48	20.52
		RB36#0	19.69	19.39	19.25	19.99	19.69	19.55
		RB36#39	19.61	19.23	19.16	19.91	19.53	19.46
		RB75#0	19.61	19.31	19.20	19.91	19.61	19.50
	16QAM	RB1#0	20.04	19.54	19.47	20.34	19.84	19.77
		RB1#38	19.81	19.45	19.58	20.11	19.75	19.88
		RB1#74	19.69	19.47	19.62	19.99	19.77	19.92
		RB36#0	18.82	18.84	18.33	19.12	19.14	18.63
		RB36#39	18.67	18.40	18.29	18.97	18.70	18.59
		RB75#0	19.17	18.79	18.36	19.47	19.09	18.66
20.0	QPSK	RB1#0	21.03	20.44	20.40	21.33	20.74	20.70
		RB1#50	20.70	20.36	20.28	21.00	20.66	20.58
		RB1#99	20.52	20.30	20.37	20.82	20.60	20.67
		RB50#0	19.75	19.38	19.29	20.05	19.68	19.59
		RB50#50	19.50	19.37	19.31	19.80	19.67	19.61
		RB100#0	19.67	19.47	19.27	19.97	19.77	19.57
	16QAM	RB1#0	19.96	19.49	20.00	20.26	19.79	20.30
		RB1#50	19.66	19.41	20.00	19.96	19.71	20.30
		RB1#99	19.49	19.21	19.92	19.79	19.51	20.22
		RB50#0	18.93	18.48	18.39	19.23	18.78	18.69
		RB50#50	18.68	18.45	18.30	18.98	18.75	18.60
		RB100#0	18.78	18.73	18.40	19.08	19.03	18.70

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)

For Band2: Antenna Gain = 1.1dBi

Cable Loss=0.8dB*(provided by the applicant)

Limit: EIRP≤33dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.01	4.81	5.38	13	Pass
QPSK (100RB Size)	5.45	5.38	5.51	13	Pass
16QAM (1RB Size)	4.97	5.58	6.57	13	Pass
16QAM (100RB Size)	6.35	6.15	6.22	13	Pass

LTE Band 4**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.54	21.68	22.04	21.84	21.98	22.34
		RB1#3	21.48	21.74	22.00	21.78	22.04	22.30
		RB1#5	21.55	21.72	22.01	21.85	22.02	22.31
		RB3#0	21.68	21.76	21.98	21.98	22.06	22.28
		RB3#3	21.64	21.80	21.94	21.94	22.10	22.24
		RB6#0	20.56	20.80	20.80	20.86	21.10	21.10
	16QAM	RB1#0	21.17	21.39	20.93	21.47	21.69	21.23
		RB1#3	21.19	21.42	21.03	21.49	21.72	21.33
		RB1#5	21.22	21.42	20.97	21.52	21.72	21.27
		RB3#0	20.67	20.62	20.89	20.97	20.92	21.19
		RB3#3	20.70	20.70	20.85	21.00	21.00	21.15
		RB6#0	19.88	19.90	20.54	20.18	20.20	20.84
3.0	QPSK	RB1#0	21.46	21.66	22.04	21.76	21.96	22.34
		RB1#8	21.47	21.71	22.06	21.77	22.01	22.36
		RB1#14	21.51	21.70	22.00	21.81	22.00	22.30
		RB6#0	20.55	20.70	20.89	20.85	21.00	21.19
		RB6#9	20.50	20.77	20.86	20.80	21.07	21.16
		RB15#0	20.61	20.75	20.96	20.91	21.05	21.26
	16QAM	RB1#0	21.03	21.40	20.93	21.33	21.70	21.23
		RB1#8	21.01	21.46	20.94	21.31	21.76	21.24
		RB1#14	20.96	21.48	21.00	21.26	21.78	21.30
		RB6#0	19.63	19.83	20.53	19.93	20.13	20.83
		RB6#9	19.87	19.93	20.63	20.17	20.23	20.93
		RB15#0	19.83	19.82	20.31	20.13	20.12	20.61

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.56	21.75	21.74	21.86	22.05	22.04
		RB1#13	21.59	21.78	21.79	21.89	22.08	22.09
		RB1#24	21.55	21.82	21.74	21.85	22.12	22.04
		RB15#0	20.64	20.69	20.90	20.94	20.99	21.20
		RB15#10	20.54	20.69	20.98	20.84	20.99	21.28
		RB25#0	20.55	20.67	20.92	20.85	20.97	21.22
	16QAM	RB1#0	19.87	20.89	20.44	20.17	21.19	20.74
		RB1#13	19.81	20.85	20.52	20.11	21.15	20.82
		RB1#24	19.81	20.96	20.52	20.11	21.26	20.82
		RB15#0	19.79	19.73	20.31	20.09	20.03	20.61
		RB15#10	20.08	19.76	20.24	20.38	20.06	20.54
		RB25#0	20.08	19.77	20.16	20.38	20.07	20.46
10.0	QPSK	RB1#0	21.49	21.76	21.94	21.79	22.06	22.24
		RB1#25	21.55	21.75	21.99	21.85	22.05	22.29
		RB1#49	21.54	21.80	22.08	21.84	22.10	22.38
		RB25#0	20.55	20.66	20.82	20.85	20.96	21.12
		RB25#25	20.57	20.79	20.89	20.87	21.09	21.19
		RB50#0	20.56	20.77	20.96	20.86	21.07	21.26
	16QAM	RB1#0	20.80	20.83	20.45	21.10	21.13	20.75
		RB1#25	20.79	20.90	20.51	21.09	21.20	20.81
		RB1#49	20.78	20.91	20.49	21.08	21.21	20.79
		RB25#0	20.00	19.89	20.36	20.30	20.19	20.66
		RB25#25	19.67	20.27	20.36	19.97	20.57	20.66
		RB50#0	19.74	19.90	20.00	20.04	20.20	20.30

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.43	21.73	21.89	21.73	22.03	22.19
		RB1#38	21.45	21.80	22.07	21.75	22.10	22.37
		RB1#74	21.64	21.85	22.09	21.94	22.15	22.39
		RB36#0	20.56	20.77	20.81	20.86	21.07	21.11
		RB36#39	20.63	20.81	20.88	20.93	21.11	21.18
		RB75#0	20.64	20.75	20.77	20.94	21.05	21.07
	16QAM	RB1#0	20.96	20.85	21.12	21.26	21.15	21.42
		RB1#38	21.05	20.89	21.20	21.35	21.19	21.50
		RB1#74	21.07	20.96	21.36	21.37	21.26	21.66
		RB36#0	19.65	20.19	19.89	19.95	20.49	20.19
		RB36#39	20.07	19.91	20.35	20.37	20.21	20.65
		RB75#0	19.74	19.86	20.26	20.04	20.16	20.56
20.0	QPSK	RB1#0	21.70	21.64	21.85	22.00	21.94	22.15
		RB1#50	21.67	21.78	21.85	21.97	22.08	22.15
		RB1#99	21.83	21.82	22.05	22.13	22.12	22.35
		RB50#0	20.60	20.77	20.82	20.90	21.07	21.12
		RB50#50	20.68	20.75	20.96	20.98	21.05	21.26
		RB100#0	20.57	20.85	20.79	20.87	21.15	21.09
	16QAM	RB1#0	20.56	21.13	21.38	20.86	21.43	21.68
		RB1#50	20.59	21.19	21.45	20.89	21.49	21.75
		RB1#99	20.70	21.31	21.57	21.00	21.61	21.87
		RB50#0	19.78	20.20	19.87	20.08	20.50	20.17
		RB50#50	19.87	20.02	20.00	20.17	20.32	20.30
		RB100#0	20.13	19.85	20.03	20.43	20.15	20.33

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)

For Band4: Antenna Gain = 1.1dBi

Cable Loss=0.8dB*(provided by the applicant)

Limit: EIRP ≤ 30dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.04	4.78	3.69	13	Pass
QPSK (100RB Size)	5.51	5.48	5.26	13	Pass
16QAM (1RB Size)	4.87	6.15	4.87	13	Pass
16QAM (100RB Size)	6.31	6.38	6.09	13	Pass

LTE Band 5:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.52	23.43	23.35	20.87	20.78	20.70
		RB1#3	23.51	23.45	23.32	20.86	20.80	20.67
		RB1#5	23.50	23.47	23.40	20.85	20.82	20.75
		RB3#0	23.59	23.54	23.40	20.94	20.89	20.75
		RB3#3	23.53	23.55	23.41	20.88	20.90	20.76
		RB6#0	22.50	22.50	22.34	19.85	19.85	19.69
	16QAM	RB1#0	23.07	22.57	22.16	20.42	19.92	19.51
		RB1#3	23.03	22.63	22.12	20.38	19.98	19.47
		RB1#5	23.05	22.68	22.10	20.40	20.03	19.45
		RB3#0	22.68	22.51	22.55	20.03	19.86	19.90
		RB3#3	22.72	22.56	22.35	20.07	19.91	19.70
		RB6#0	22.07	21.67	22.00	19.42	19.02	19.35
3.0	QPSK	RB1#0	23.38	23.48	23.39	20.73	20.83	20.74
		RB1#8	23.37	23.49	23.43	20.72	20.84	20.78
		RB1#14	23.52	23.51	23.46	20.87	20.86	20.81
		RB6#0	22.51	22.49	22.46	19.86	19.84	19.81
		RB6#9	22.60	22.58	22.38	19.95	19.93	19.73
		RB15#0	22.55	22.59	22.40	19.90	19.94	19.75
	16QAM	RB1#0	22.85	23.14	22.06	20.20	20.49	19.41
		RB1#8	22.86	23.13	22.03	20.21	20.48	19.38
		RB1#14	22.88	23.18	21.96	20.23	20.53	19.31
		RB6#0	21.82	21.54	21.57	19.17	18.89	18.92
		RB6#9	21.87	21.48	21.89	19.22	18.83	19.24
		RB15#0	21.95	21.46	21.34	19.30	18.81	18.69

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.55	23.61	23.31	20.90	20.96	20.66
		RB1#13	23.61	23.51	23.40	20.96	20.86	20.75
		RB1#24	23.58	23.66	23.28	20.93	21.01	20.63
		RB15#0	22.53	22.42	22.43	19.88	19.77	19.78
		RB15#10	22.59	22.47	22.43	19.94	19.82	19.78
		RB25#0	22.59	22.43	22.45	19.94	19.78	19.80
	16QAM	RB1#0	21.75	22.55	22.03	19.10	19.90	19.38
		RB1#13	21.73	22.59	22.08	19.08	19.94	19.43
		RB1#24	21.67	22.74	21.97	19.02	20.09	19.32
		RB15#0	21.95	21.36	21.44	19.30	18.71	18.79
		RB15#10	21.94	21.42	21.41	19.29	18.77	18.76
		RB25#0	21.98	21.52	21.35	19.33	18.87	18.70
10.0	QPSK	RB1#0	23.51	23.45	23.70	20.86	20.80	21.05
		RB1#25	23.48	23.45	23.49	20.83	20.80	20.84
		RB1#49	23.52	23.47	23.54	20.87	20.82	20.89
		RB25#0	22.65	22.51	22.40	20.00	19.86	19.75
		RB25#25	22.52	22.55	22.55	19.87	19.90	19.90
		RB50#0	22.51	22.39	22.56	19.86	19.74	19.91
	16QAM	RB1#0	22.14	22.62	22.79	19.49	19.97	20.14
		RB1#25	22.08	22.62	22.61	19.43	19.97	19.96
		RB1#49	21.91	22.52	22.56	19.26	19.87	19.91
		RB25#0	22.06	21.46	21.64	19.41	18.81	18.99
		RB25#25	21.66	21.61	21.56	19.01	18.96	18.91
		RB50#0	21.87	21.46	21.39	19.22	18.81	18.74

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)

For Band5: Antenna Gain = 0.3dBi = -1.85dBd (0dBd=2.15dBi)

Cable Loss= 0.8dB*(provided by the applicant)

Limit: ERP ≤ 38.45dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.55	5.16	5.00	13	Pass
QPSK (50RB Size)	5.61	5.67	5.64	13	Pass
16QAM (1RB Size)	5.35	6.63	6.22	13	Pass
16QAM (50RB Size)	6.31	6.41	6.47	13	Pass

LTE Band 7:**Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.36	20.38	20.55	20.96	20.98	21.15
		RB1#13	20.39	20.27	20.51	20.99	20.87	21.11
		RB1#24	20.41	20.33	20.62	21.01	20.93	21.22
		RB15#0	19.45	19.32	19.61	20.05	19.92	20.21
		RB15#10	19.46	19.35	19.51	20.06	19.95	20.11
		RB25#0	19.41	19.37	19.56	20.01	19.97	20.16
	16QAM	RB1#0	19.24	18.47	19.54	19.84	19.07	20.14
		RB1#13	19.15	18.61	19.64	19.75	19.21	20.24
		RB1#24	19.00	18.65	19.54	19.60	19.25	20.14
		RB15#0	18.49	18.40	18.81	19.09	19.00	19.41
		RB15#10	18.60	18.45	18.80	19.20	19.05	19.40
		RB25#0	18.37	18.50	18.97	18.97	19.10	19.57
10.0	QPSK	RB1#0	20.19	19.71	20.11	20.79	20.31	20.71
		RB1#25	20.13	19.78	20.06	20.73	20.38	20.66
		RB1#49	20.11	19.78	20.13	20.71	20.38	20.73
		RB25#0	19.16	18.87	19.05	19.76	19.47	19.65
		RB25#25	19.07	18.91	19.19	19.67	19.51	19.79
		RB50#0	19.14	18.89	19.07	19.74	19.49	19.67
	16QAM	RB1#0	18.70	19.09	19.30	19.30	19.69	19.90
		RB1#25	18.64	19.09	19.32	19.24	19.69	19.92
		RB1#49	18.68	19.13	19.43	19.28	19.73	20.03
		RB25#0	18.27	18.05	18.23	18.87	18.65	18.83
		RB25#25	18.24	18.07	18.67	18.84	18.67	19.27
		RB50#0	18.52	18.03	18.30	19.12	18.63	18.90

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	20.09	19.84	20.05	20.69	20.44	20.65
		RB1#38	19.95	19.86	20.14	20.55	20.46	20.74
		RB1#74	19.91	19.97	20.19	20.51	20.57	20.79
		RB36#0	19.12	18.80	19.08	19.72	19.40	19.68
		RB36#39	18.95	18.94	19.09	19.55	19.54	19.69
		RB75#0	19.12	18.83	19.06	19.72	19.43	19.66
	16QAM	RB1#0	19.43	19.22	19.41	20.03	19.82	20.01
		RB1#38	19.39	19.25	19.50	19.99	19.85	20.10
		RB1#74	19.42	19.34	19.63	20.02	19.94	20.23
		RB36#0	18.65	18.08	18.21	19.25	18.68	18.81
		RB36#39	18.16	18.53	18.67	18.76	19.13	19.27
		RB75#0	18.07	18.06	18.17	18.67	18.66	18.77
20.0	QPSK	RB1#0	20.06	19.99	20.15	20.66	20.59	20.75
		RB1#50	20.09	20.06	20.19	20.69	20.66	20.79
		RB1#99	19.93	20.12	20.32	20.53	20.72	20.92
		RB50#0	18.97	18.95	19.13	19.57	19.55	19.73
		RB50#50	18.97	19.00	19.18	19.57	19.60	19.78
		RB100#0	19.02	18.99	19.08	19.62	19.59	19.68
	16QAM	RB1#0	19.05	19.50	19.62	19.65	20.10	20.22
		RB1#50	18.86	19.47	19.77	19.46	20.07	20.37
		RB1#99	18.89	19.58	19.76	19.49	20.18	20.36
		RB50#0	18.58	18.13	18.16	19.18	18.73	18.76
		RB50#50	18.08	18.56	18.23	18.68	19.16	18.83
		RB100#0	18.14	18.07	18.22	18.74	18.67	18.82

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi) - Cable loss(dB)

For Band 7: Antenna Gain = 1.4dBi

Cable Loss=0.8dB*(provided by the applicant)

Limit: EIRP≤33dBm

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

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.42	5.22	4.78	13	Pass
QPSK (100RB Size)	5.61	5.67	5.61	13	Pass
16QAM (1RB Size)	6.03	5.90	6.09	13	Pass
16QAM (100RB Size)	6.38	6.47	6.41	13	Pass

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

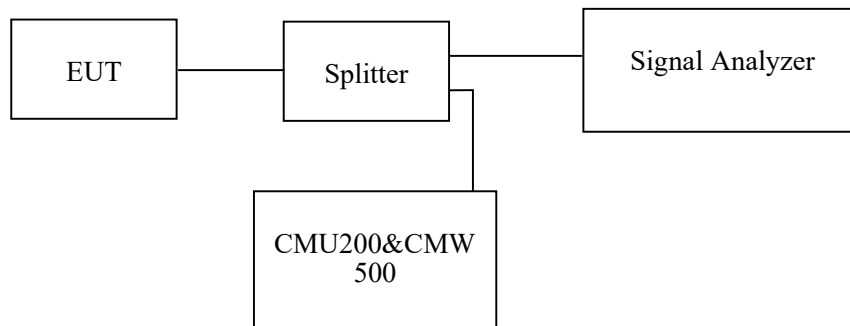
Applicable Standard

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 °C
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by Orlo Yang from 2021-05-19 to 2021-06-15.

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	245.192	316.026
	190	836.6	246.795	316.385
	251	848.8	246.795	320.833
EGPRS(8PSK)	128	824.2	246.795	310.577
	190	836.6	250.000	319.231
	251	848.8	246.795	316.667

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.167	4.715
	836.6	4.151	4.696
	846.6	4.151	4.696
HSDPA	826.4	4.167	4.679
	836.6	4.151	4.692
	846.6	4.167	4.679
HSUPA	826.4	4.167	4.696
	836.6	4.151	4.673
	846.6	4.151	4.683

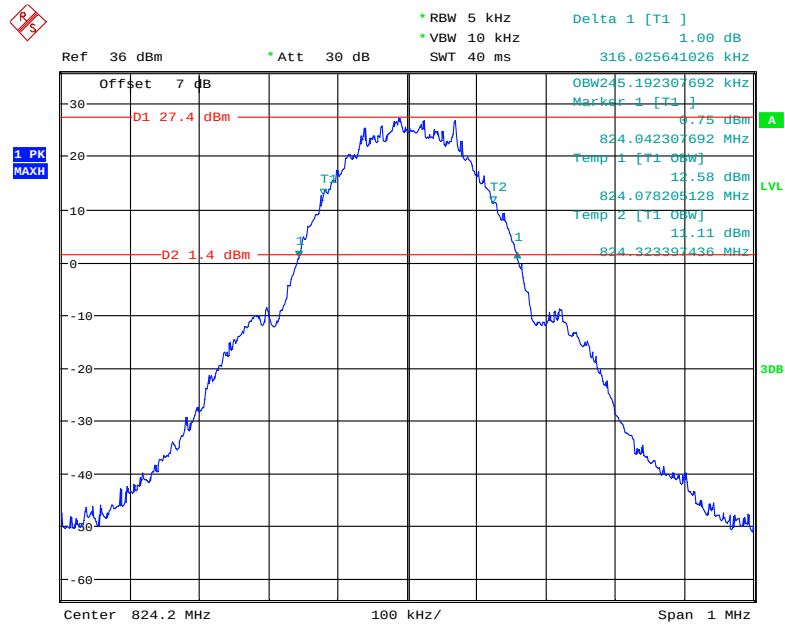
PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	248.397	314.744
	661	1880.0	246.795	318.590
	810	1909.8	246.795	319.231
EGPRS(8PSK)	512	1850.2	246.795	311.218
	661	1880.0	248.397	309.615
	810	1909.8	243.560	309.615

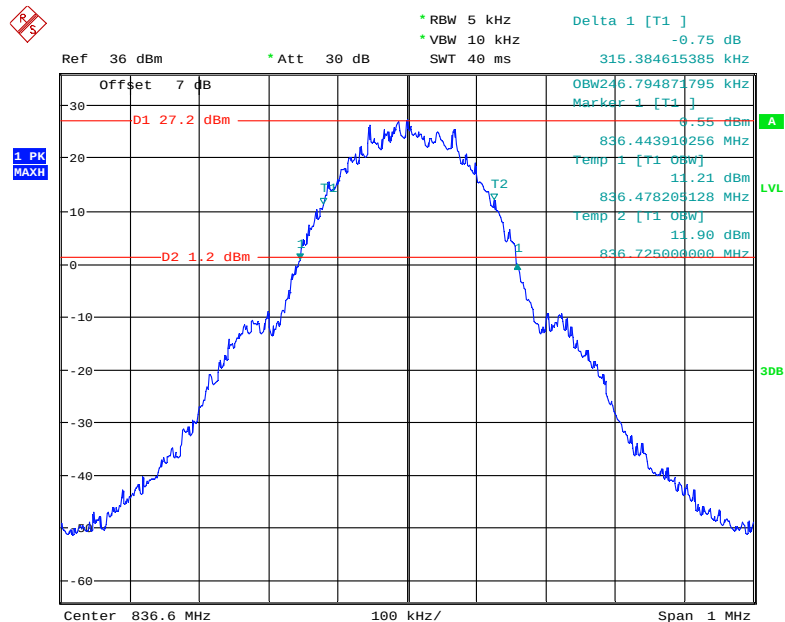
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.135	4.708
	1880.0	4.151	4.699
	1907.6	4.151	4.689
HSDPA	1852.4	4.151	4.689
	1880.0	4.151	4.696
	1907.6	4.167	4.673
HSUPA	1852.4	4.167	4.696
	1880.0	4.151	4.679
	1907.6	4.151	4.692

AWS Band (Part 27)

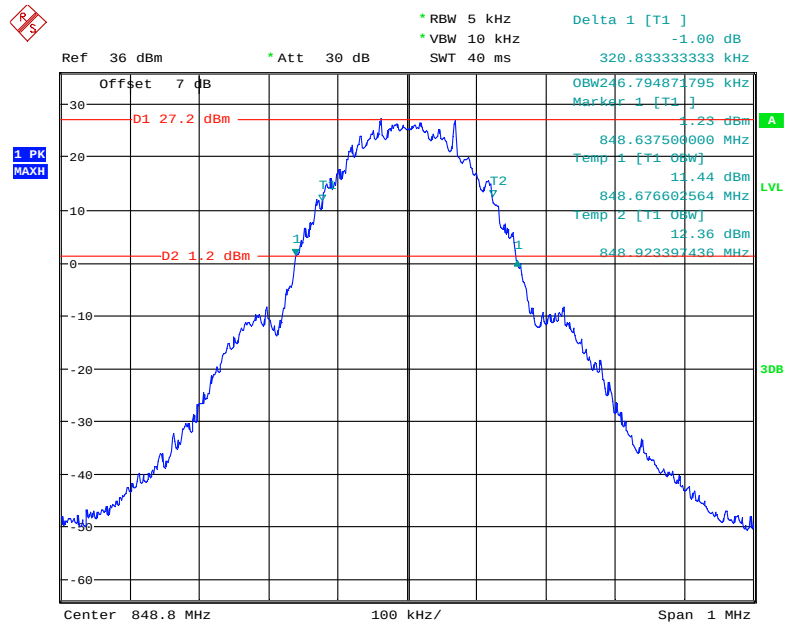
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.151	4.683
	1732.6	4.151	4.679
	1752.6	4.167	4.679
HSDPA	1712.4	4.167	4.679
	1732.6	4.151	4.679
	1752.6	4.151	4.686
HSUPA	1712.4	4.151	4.696
	1732.6	4.151	4.696
	1752.6	4.151	4.689

Cellular Band (Part 22H)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel**

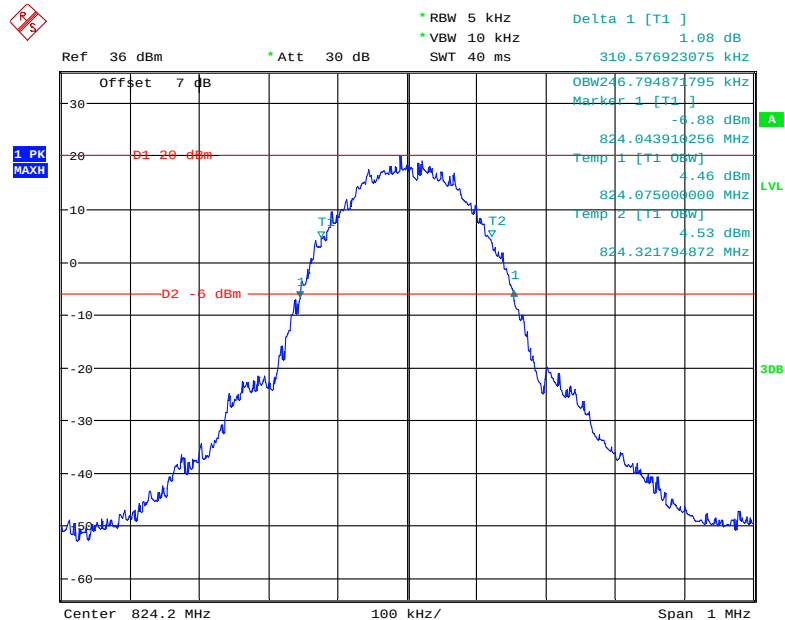
Date: 19.MAY.2021 23:57:26

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

Date: 19.MAY.2021 23:55:06

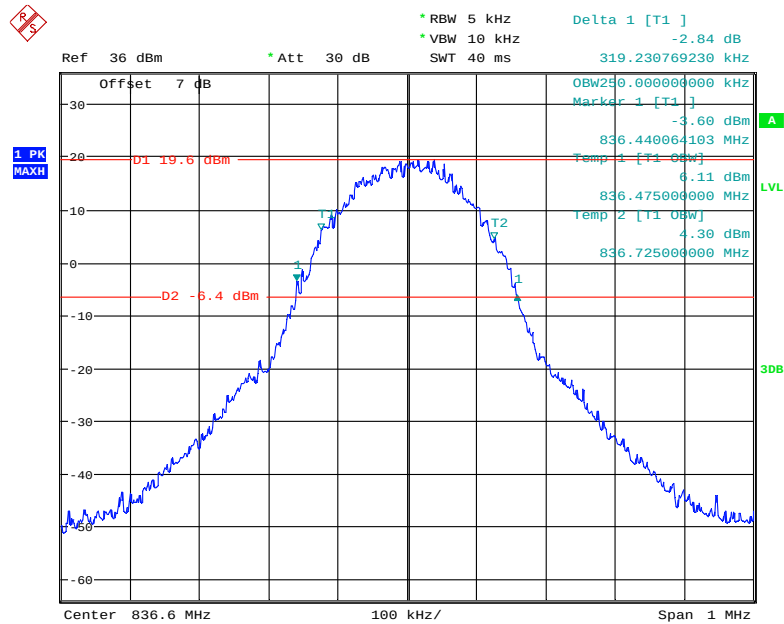
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel

Date: 19.MAY.2021 23:53:27

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

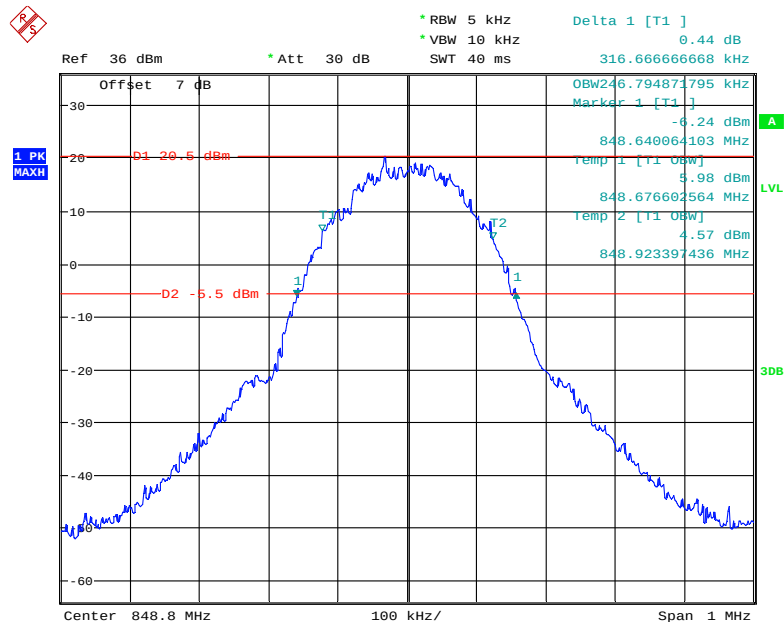
Date: 2.JUN.2021 15:57:20

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



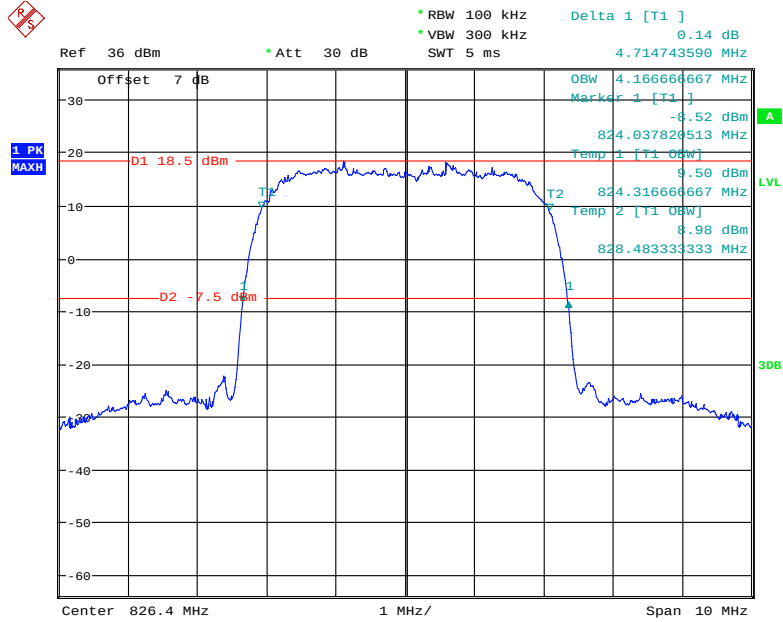
Date: 2.JUN.2021 15:56:02

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



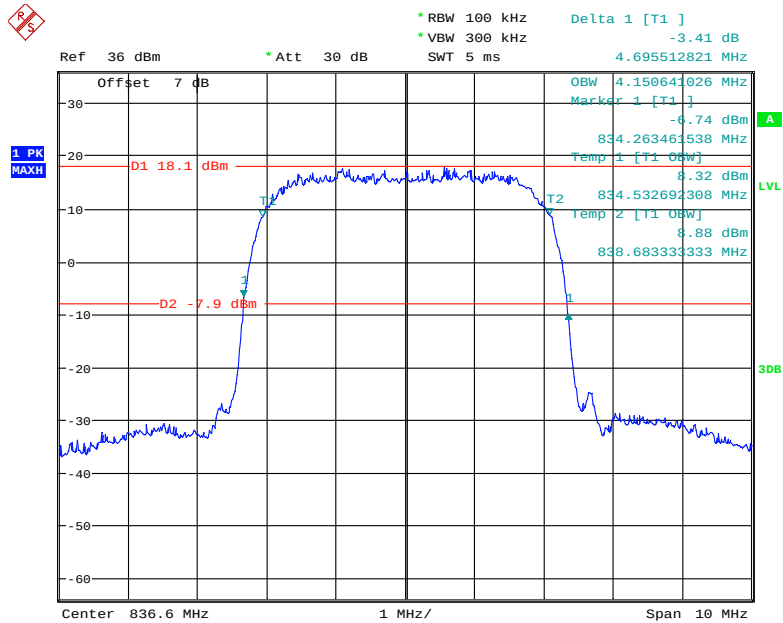
Date: 2.JUN.2021 15:53:54

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



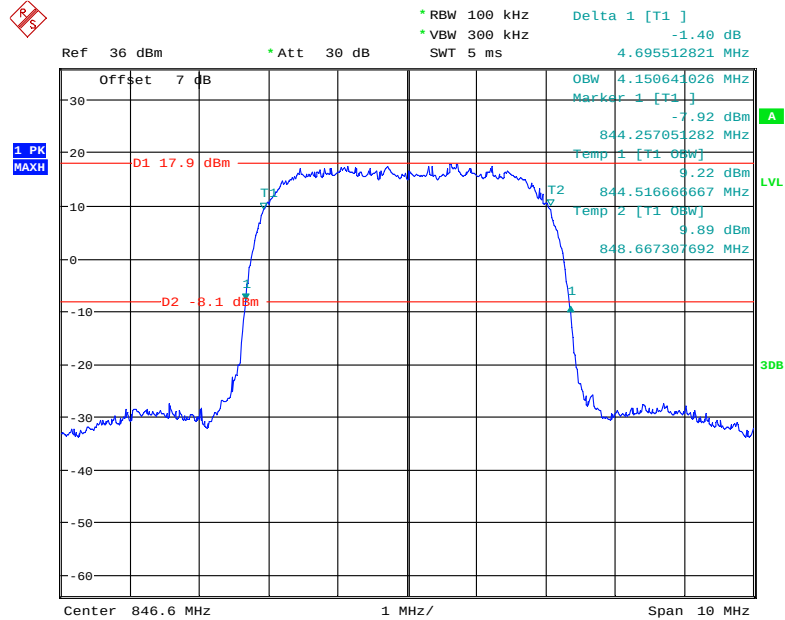
Date: 20.MAY.2021 21:27:56

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



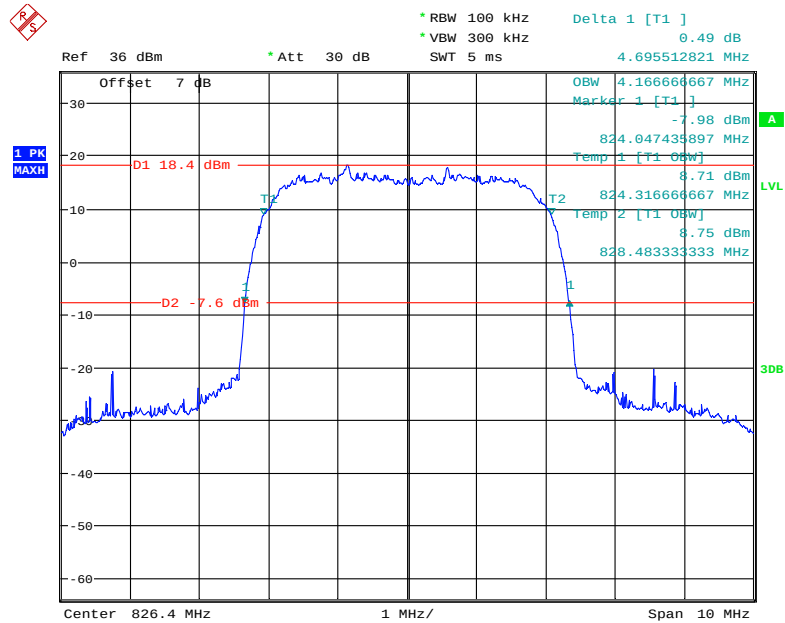
Date: 20.MAY.2021 21:29:50

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

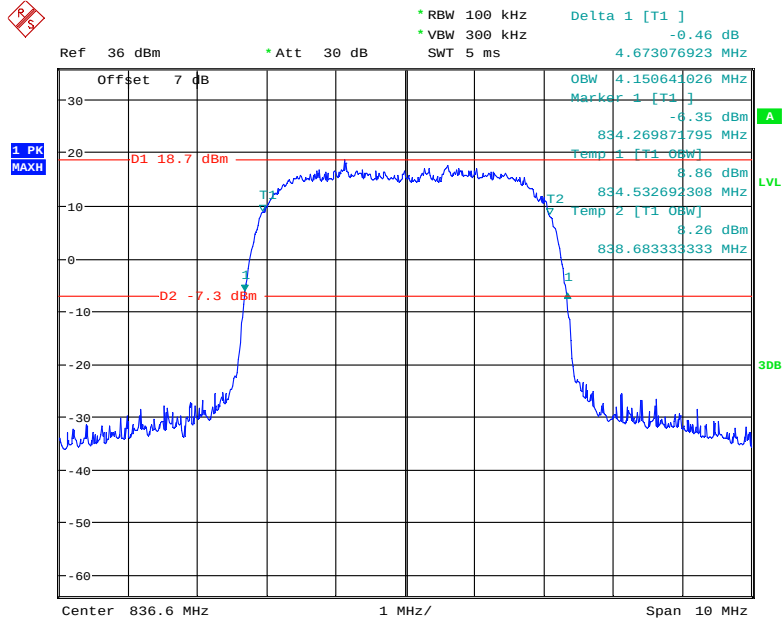


Date: 20.MAY.2021 21:31:18

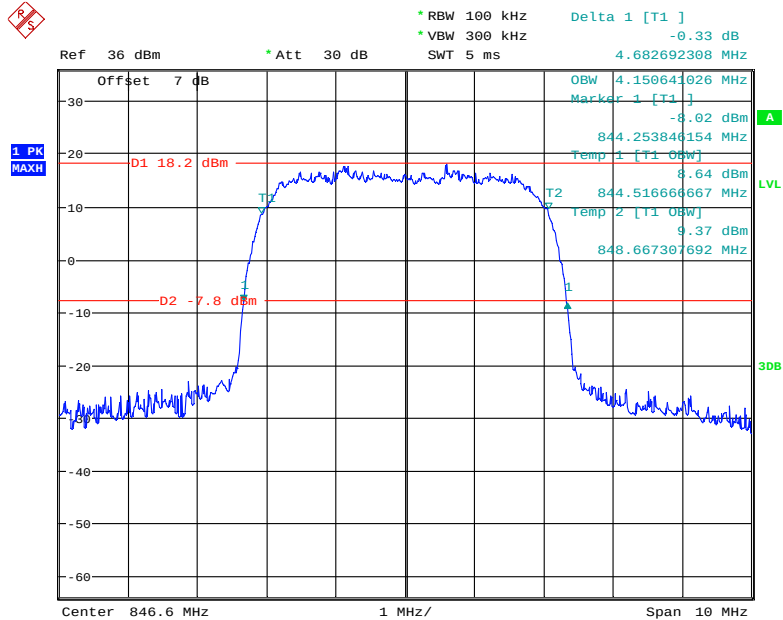
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel



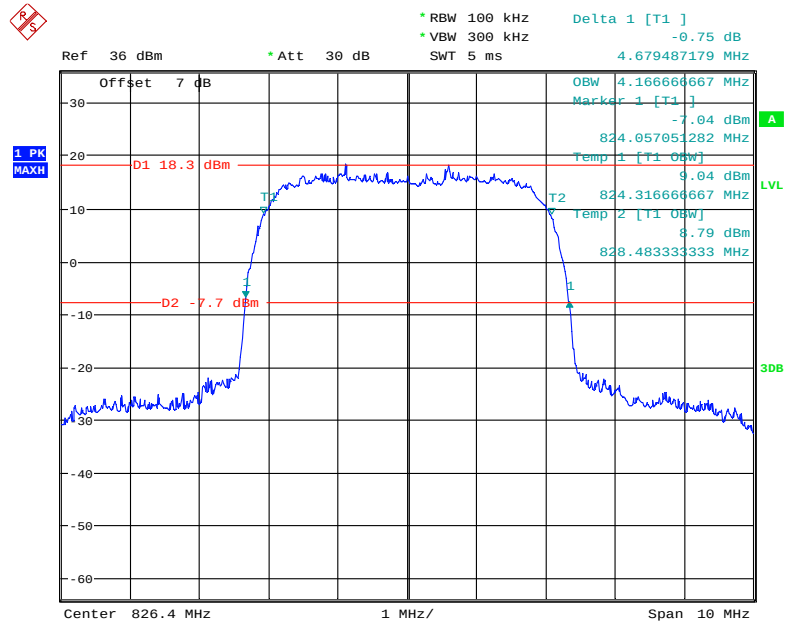
Date: 20.MAY.2021 20:18:52

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

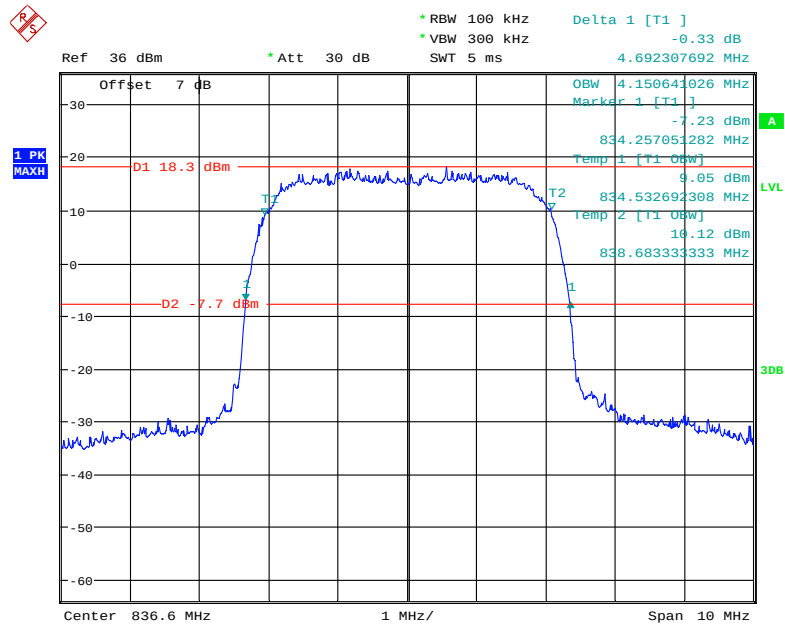
Date: 20.MAY.2021 20:20:56

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

Date: 20.MAY.2021 20:22:53

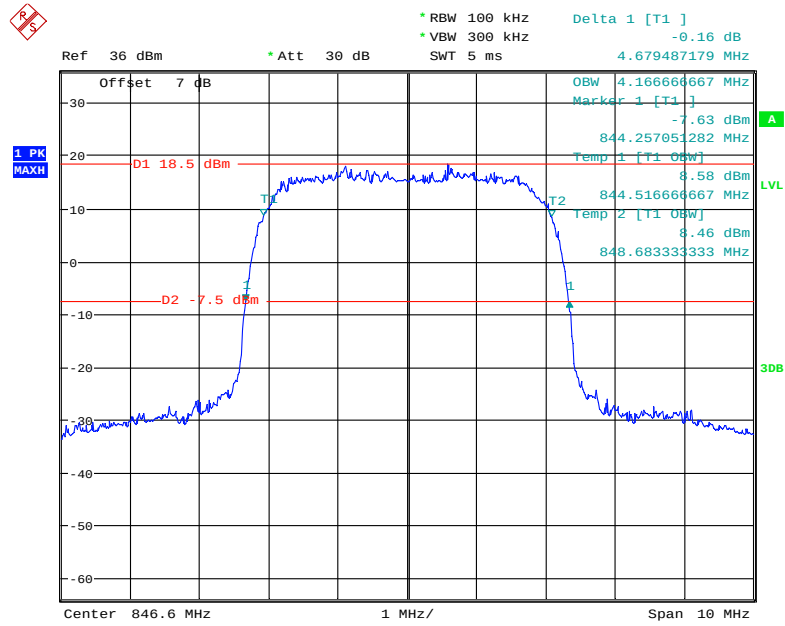
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 20.MAY.2021 21:12:04

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

Date: 20.MAY.2021 21:08:39

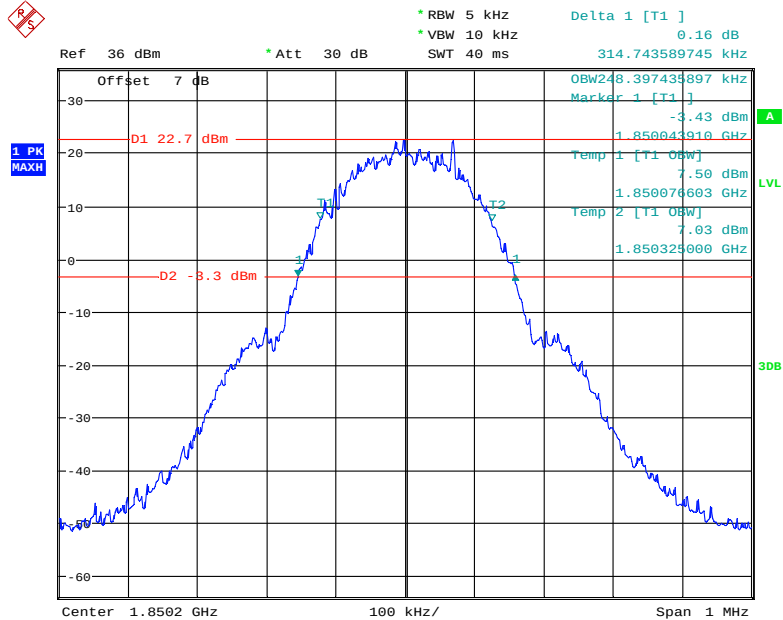
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 20.MAY.2021 21:06:12

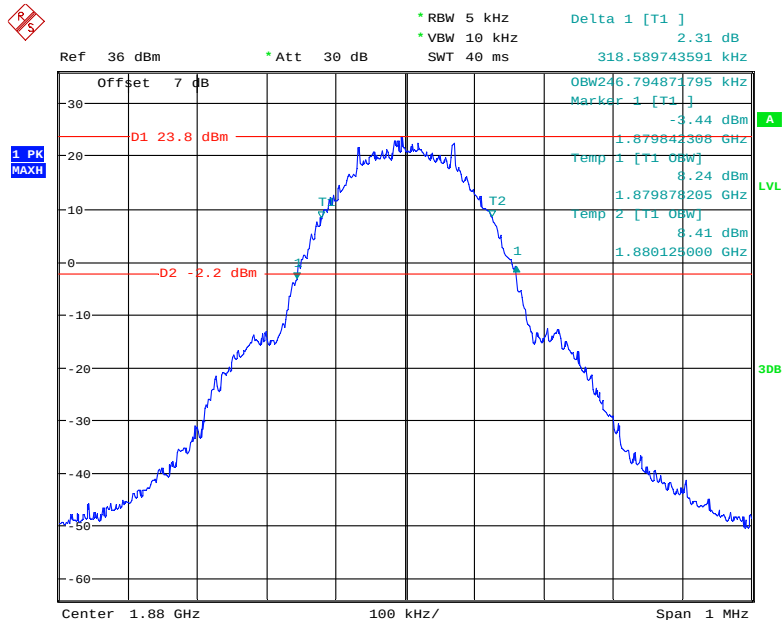
PCS Band (Part 24E)

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

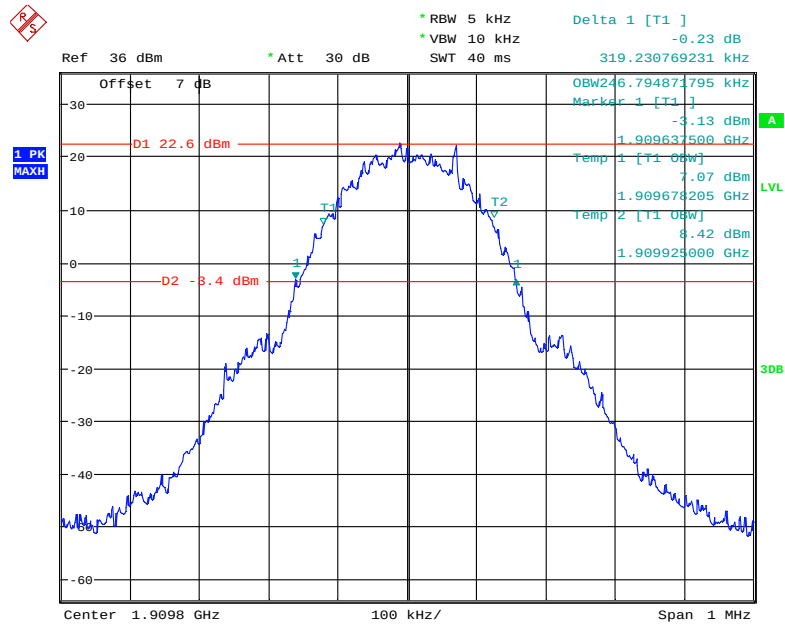


Date: 20.MAY.2021 00:06:48

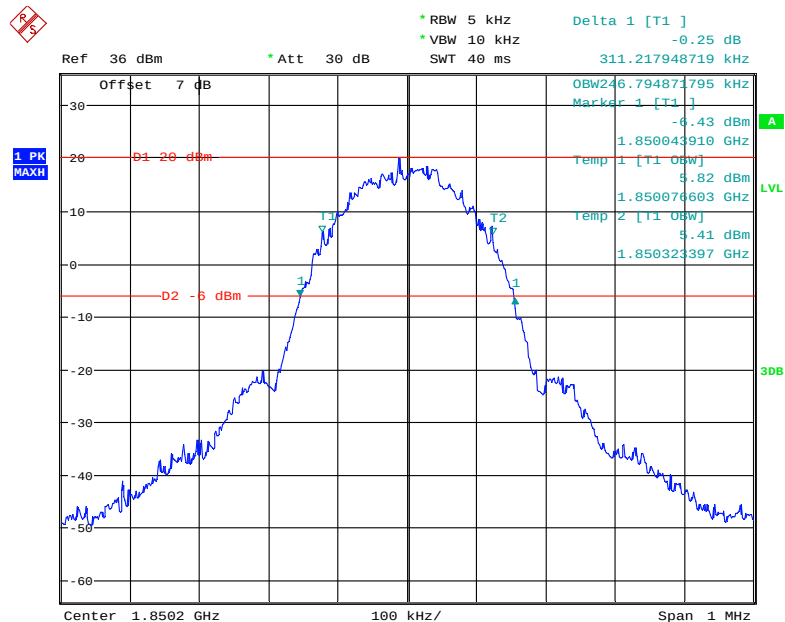
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



Date: 20.MAY.2021 00:04:55

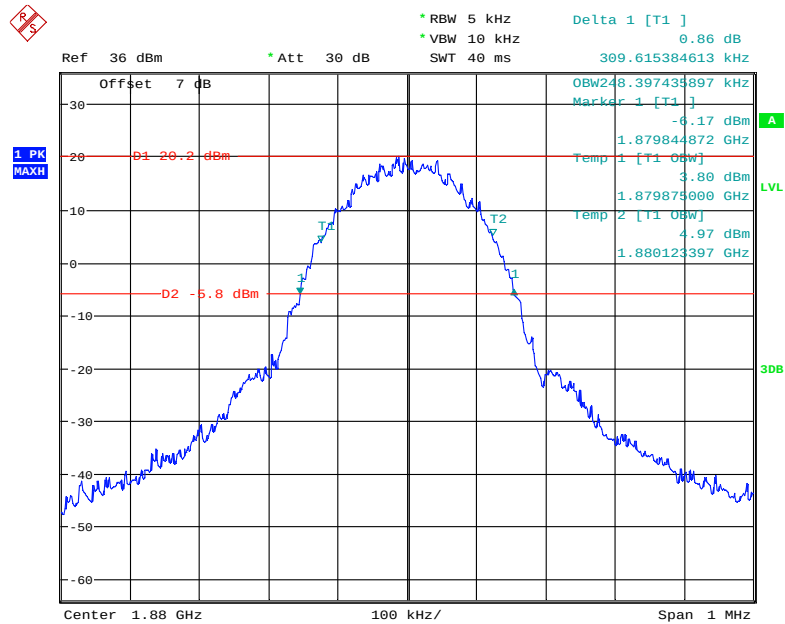
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel

Date: 20.MAY.2021 00:01:38

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

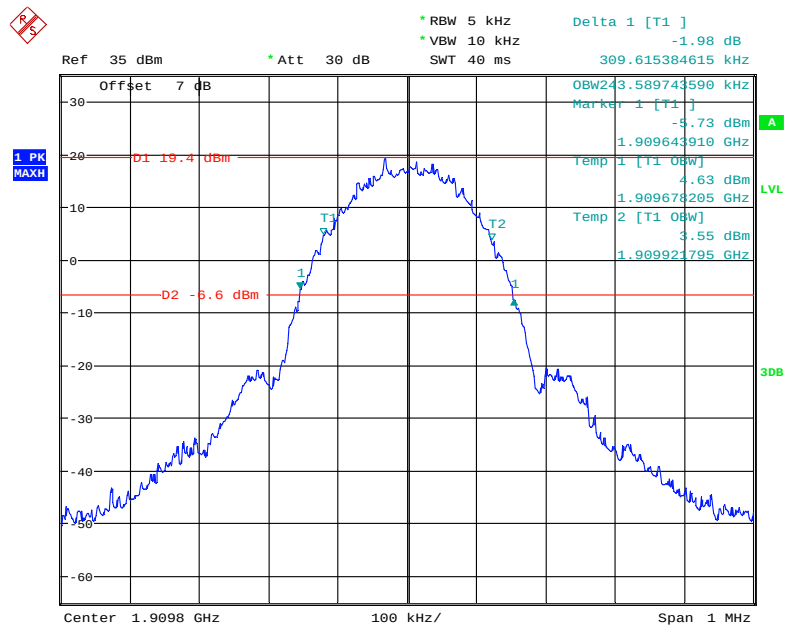
Date: 2.JUN.2021 16:04:38

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



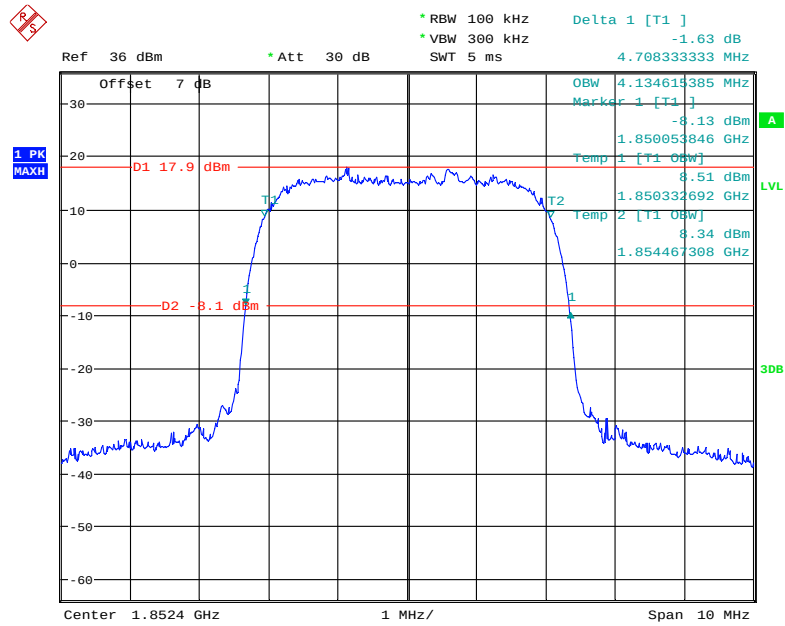
Date: 2.JUN.2021 16:07:04

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



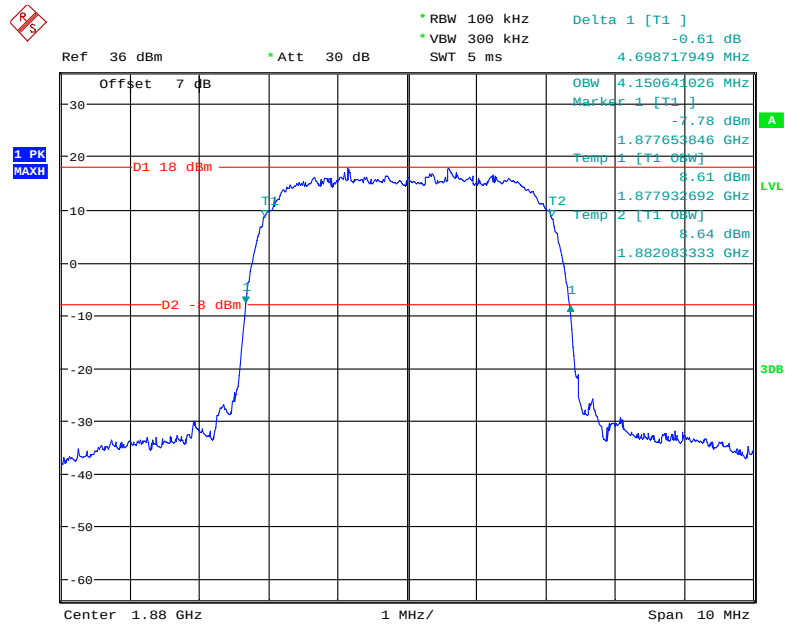
Date: 2.JUN.2021 17:29:09

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

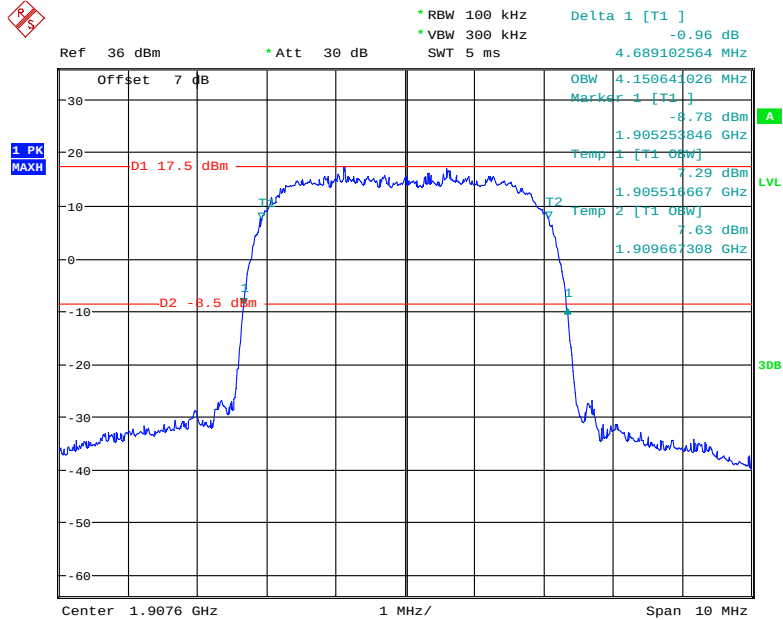


Date: 20.MAY.2021 21:16:19

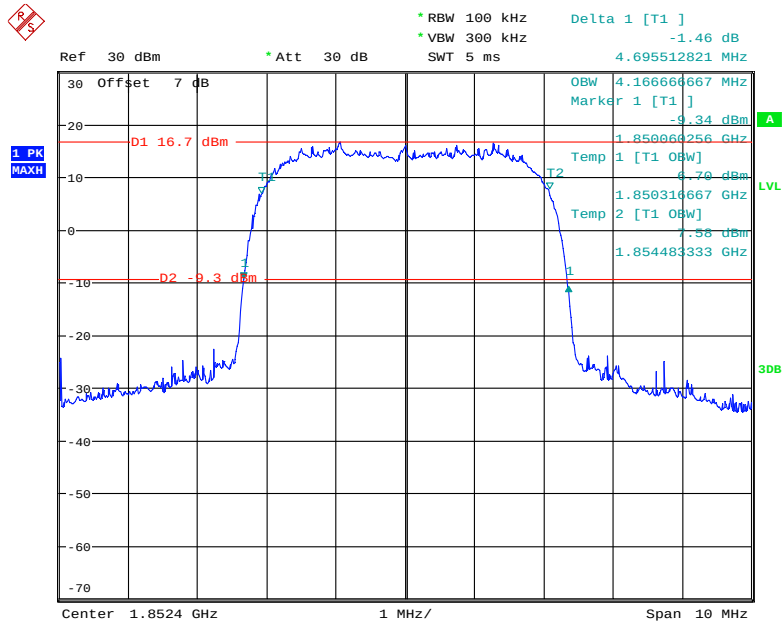
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



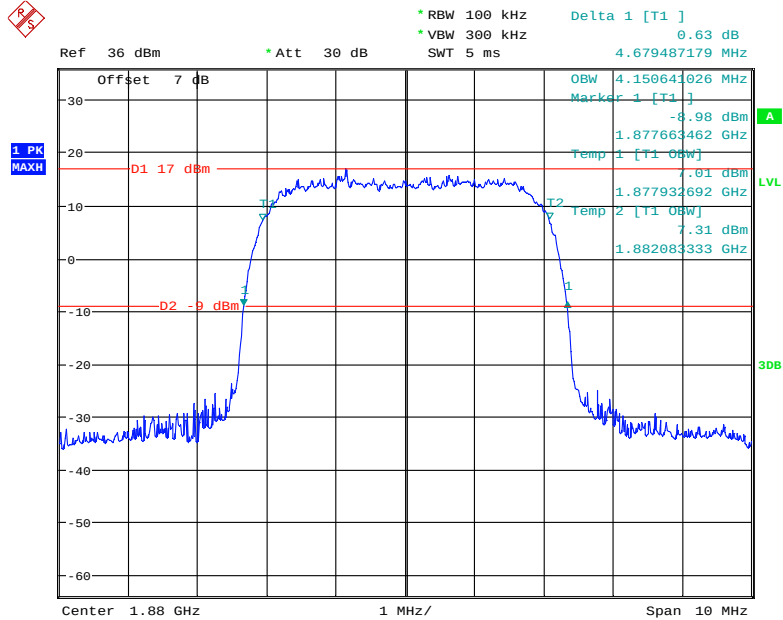
Date: 20.MAY.2021 21:18:19

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

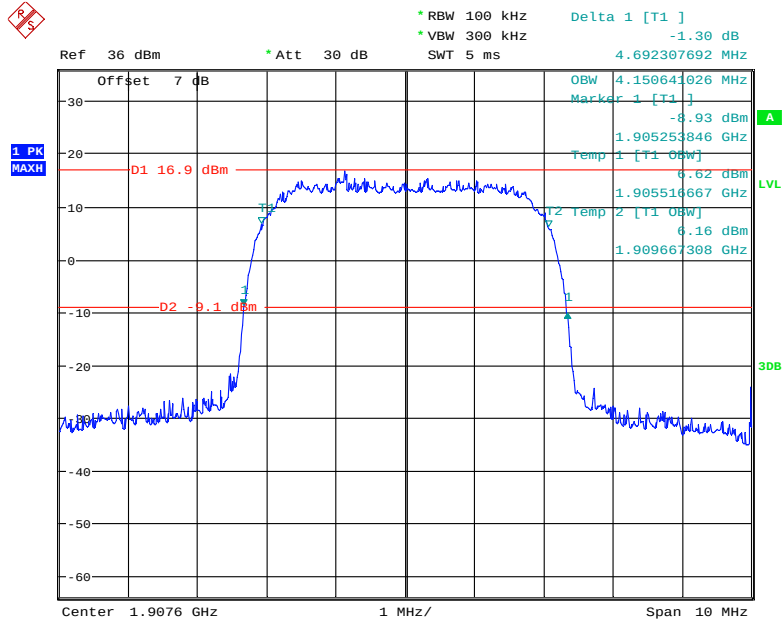
Date: 20.MAY.2021 21:19:43

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

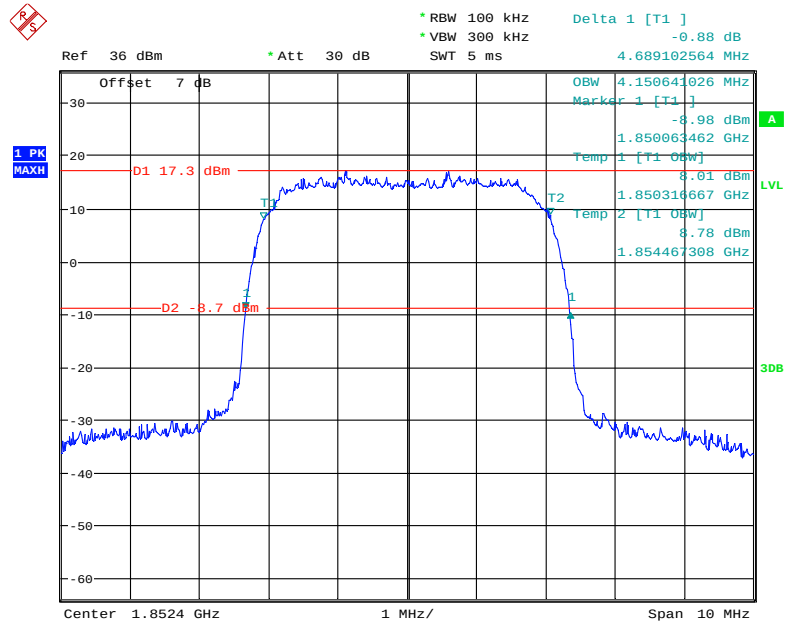
Date: 15.JUN.2021 13:25:50

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

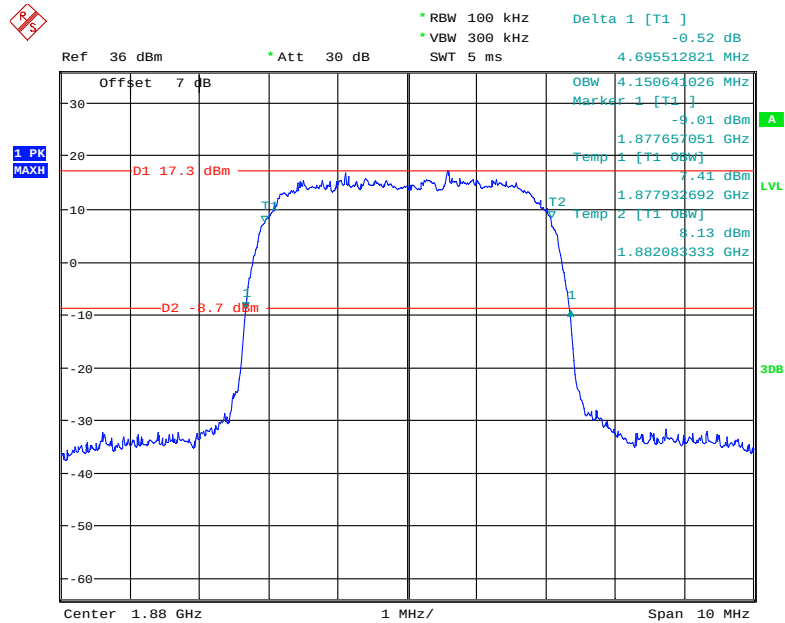
Date: 20.MAY.2021 20:34:37

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

Date: 20.MAY.2021 20:36:18

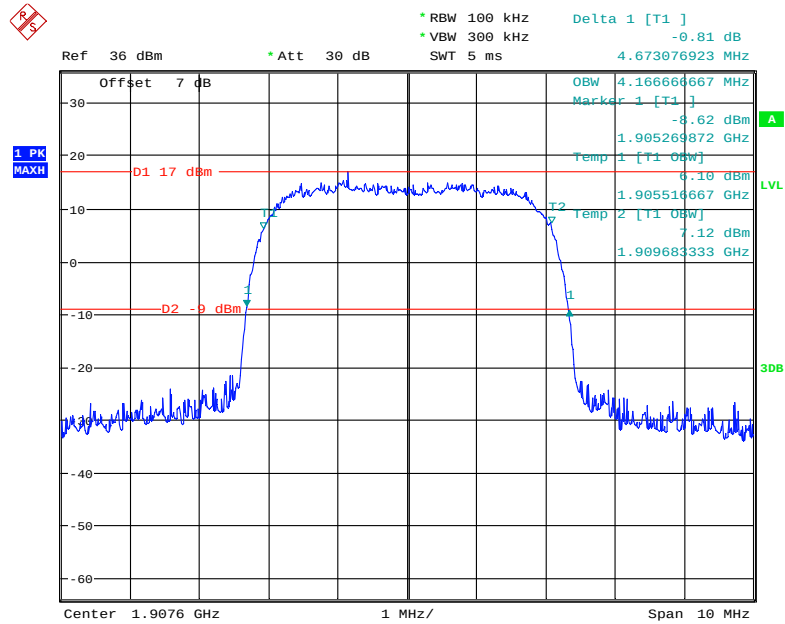
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 20.MAY.2021 20:48:25

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

Date: 20.MAY.2021 20:46:48

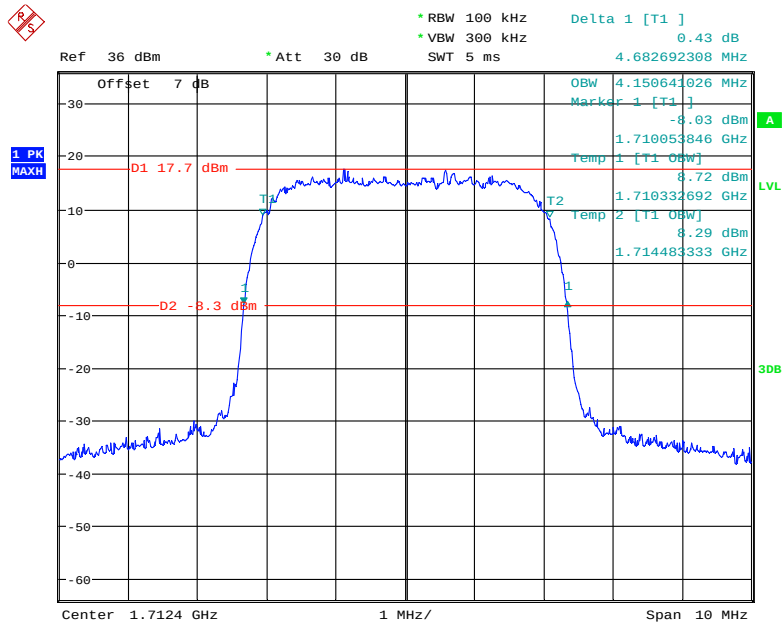
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 20.MAY.2021 20:40:43

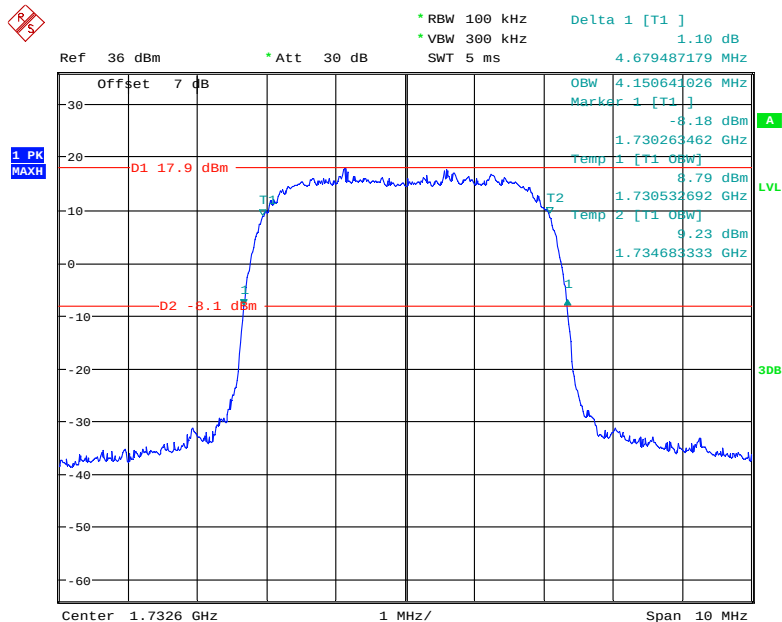
AWS Band (Part 27)

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



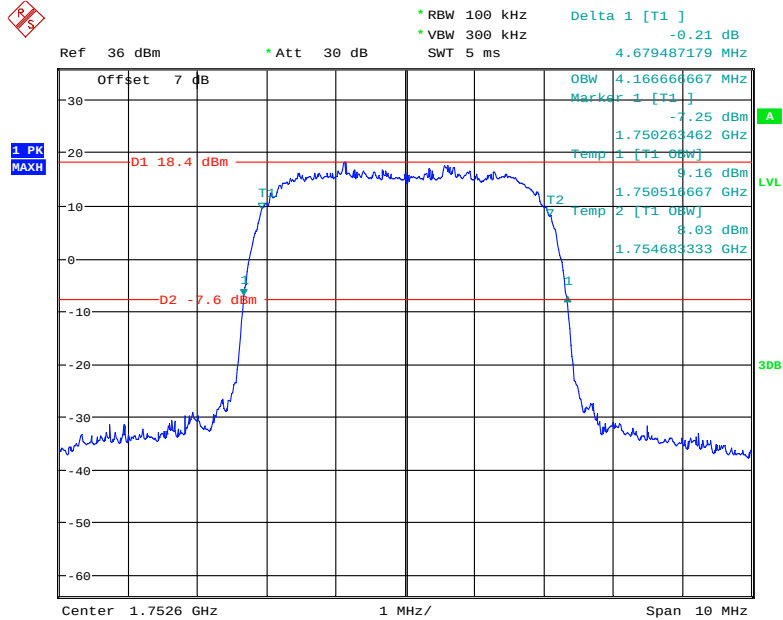
Date: 20.MAY.2021 21:22:19

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



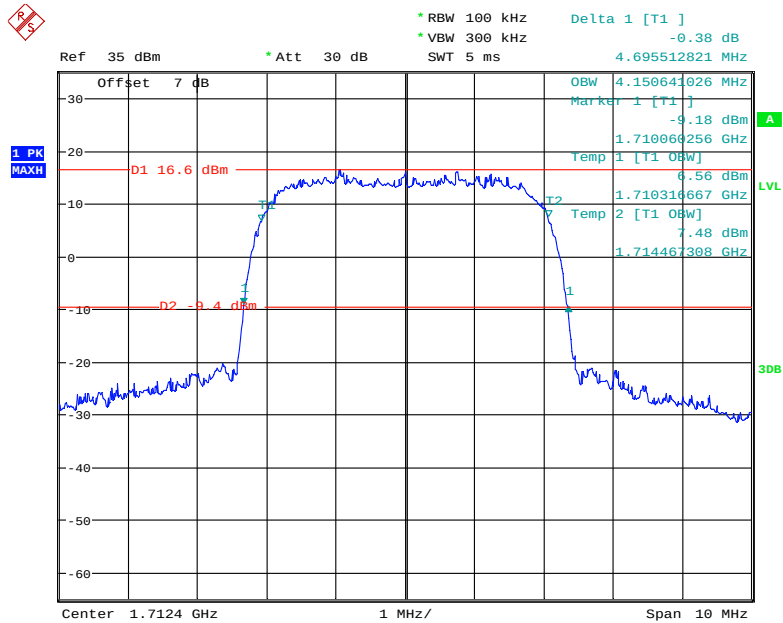
Date: 20.MAY.2021 21:23:52

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

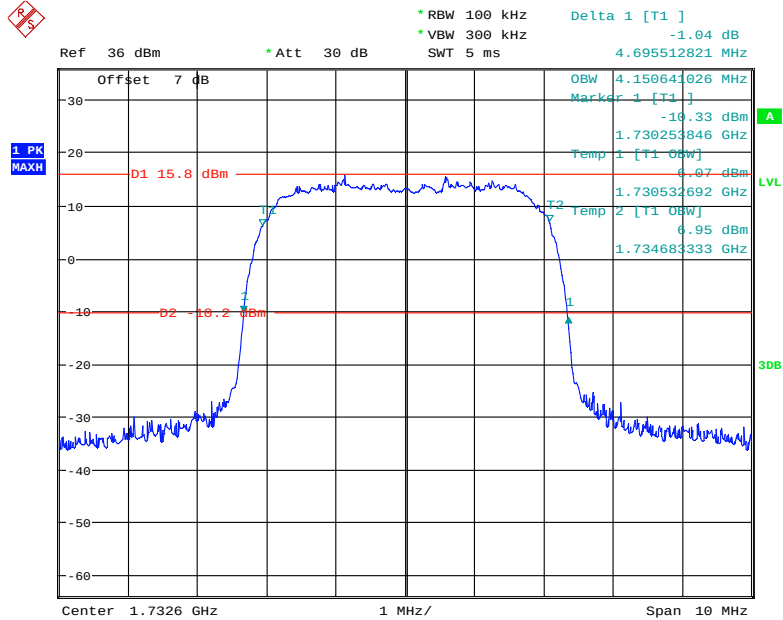


Date: 20.MAY.2021 21:25:13

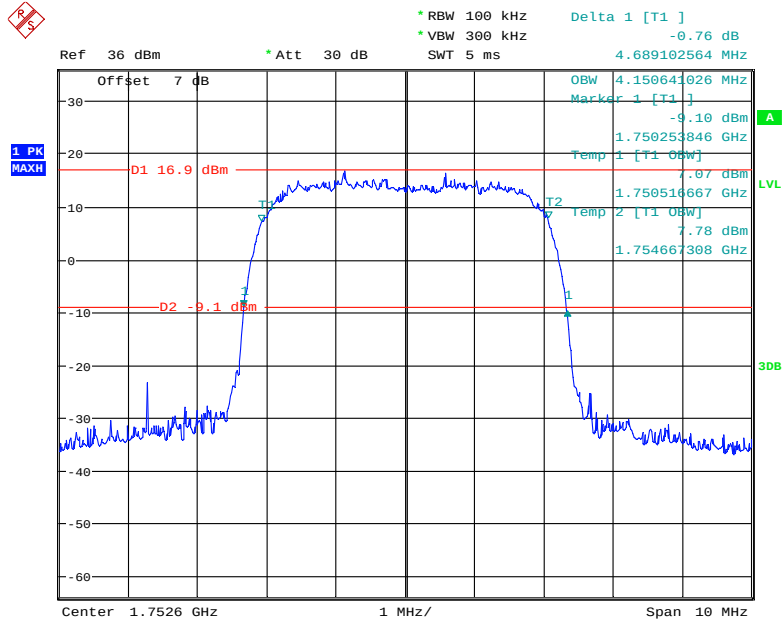
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel



Date: 15.JUN.2021 11:04:53

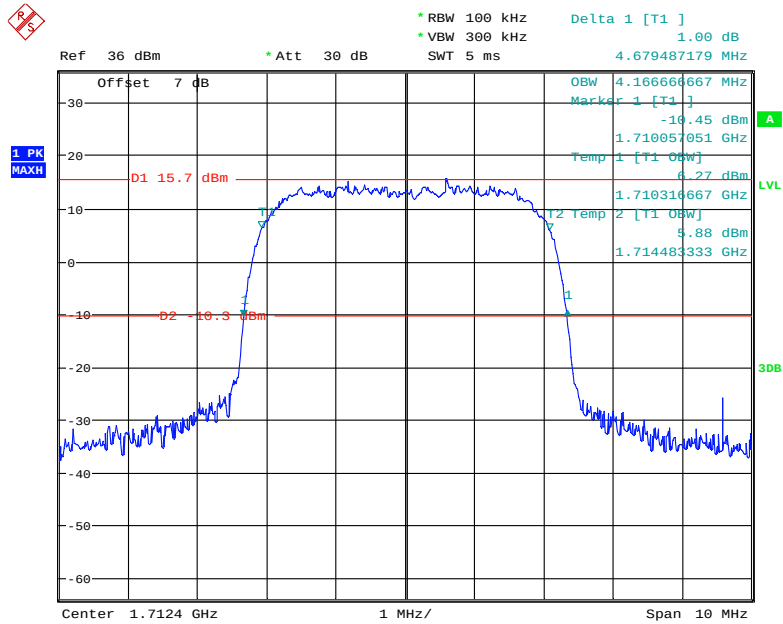
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel

Date: 20.MAY.2021 20:29:29

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

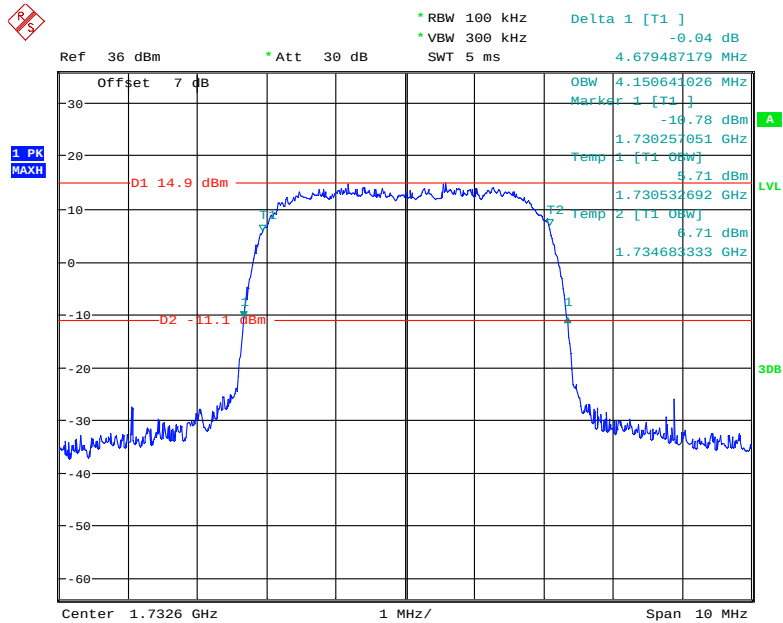
Date: 20.MAY.2021 20:31:06

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



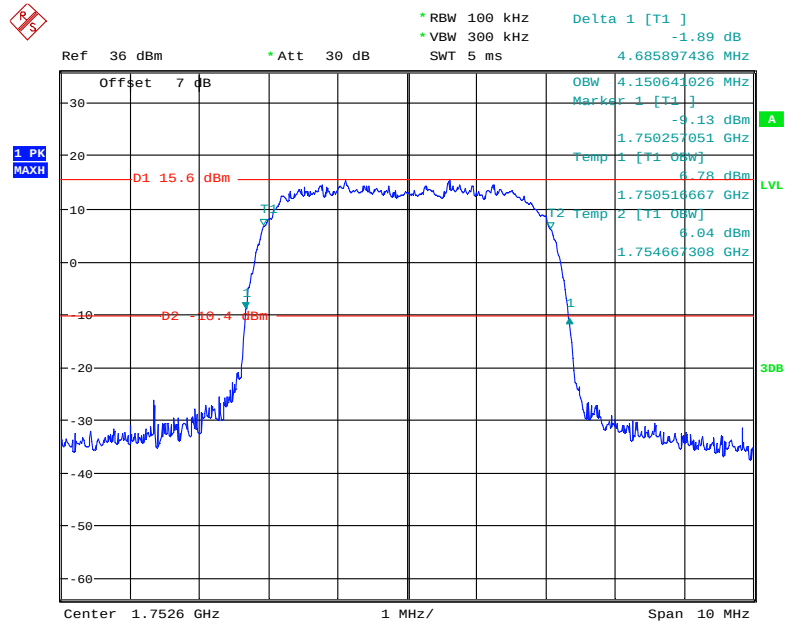
Date: 20.MAY.2021 21:02:53

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



Date: 20.MAY.2021 20:59:56

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



Date: 20.MAY.2021 20:52:15

LTE Band 2:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.098	1.260
		Middle	1.104	1.254
		High	1.104	1.260
	16QAM	Low	1.104	1.254
		Middle	1.098	1.248
		High	1.104	1.254
3	QPSK	Low	2.712	2.988
		Middle	2.700	3.012
		High	2.688	3.012
	16QAM	Low	2.700	3.012
		Middle	2.700	3.000
		High	2.700	3.012
5	QPSK	Low	4.500	4.980
		Middle	4.540	5.000
		High	4.520	4.980
	16QAM	Low	4.540	5.000
		Middle	4.520	4.960
		High	4.520	4.980
10	QPSK	Low	8.960	9.680
		Middle	8.960	9.720
		High	8.960	9.800
	16QAM	Low	8.960	9.760
		Middle	9.000	9.800
		High	8.960	9.760
15	QPSK	Low	13.500	15.000
		Middle	13.560	15.000
		High	13.500	15.060
	16QAM	Low	13.560	15.000
		Middle	13.560	15.000
		High	13.560	15.000
20	QPSK	Low	18.000	19.680
		Middle	17.920	19.440
		High	18.000	19.920
	16QAM	Low	18.000	19.680
		Middle	18.000	19.680
		High	18.000	19.680

Band 4:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.098	1.260
		Middle	1.104	1.254
		High	1.104	1.254
	16QAM	Low	1.110	1.260
		Middle	1.098	1.254
		High	1.110	1.254
3	QPSK	Low	2.712	3.012
		Middle	2.700	3.000
		High	2.700	3.012
	16QAM	Low	2.700	3.036
		Middle	2.688	3.000
		High	2.700	3.024
5	QPSK	Low	4.520	4.960
		Middle	4.520	5.000
		High	4.520	4.980
	16QAM	Low	4.520	4.980
		Middle	4.560	5.020
		High	4.540	5.000
10	QPSK	Low	8.960	9.800
		Middle	9.000	9.720
		High	8.960	9.760
	16QAM	Low	8.960	9.640
		Middle	9.000	9.800
		High	8.960	9.800
15	QPSK	Low	13.560	15.060
		Middle	13.560	15.000
		High	13.560	15.120
	16QAM	Low	13.560	15.060
		Middle	13.560	15.120
		High	13.500	15.180
20	QPSK	Low	18.080	19.600
		Middle	18.000	19.680
		High	18.000	19.920
	16QAM	Low	18.000	19.600
		Middle	18.000	19.760
		High	18.000	19.760

Band 5:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.104	1.260
		Middle	1.098	1.260
		High	1.104	1.254
	16QAM	Low	1.110	1.266
		Middle	1.098	1.248
		High	1.098	1.254
3	QPSK	Low	2.700	2.988
		Middle	2.688	2.976
		High	2.712	3.024
	16QAM	Low	2.688	3.012
		Middle	2.688	3.012
		High	2.700	3.024
5	QPSK	Low	4.540	5.000
		Middle	4.520	4.960
		High	4.520	5.000
	16QAM	Low	4.520	4.980
		Middle	4.520	4.980
		High	4.520	5.020
10	QPSK	Low	8.960	9.760
		Middle	8.960	9.720
		High	8.960	9.680
	16QAM	Low	8.960	9.760
		Middle	8.960	9.760
		High	9.000	9.760

Band 7

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.520	5.000
		Middle	4.520	5.000
		High	4.520	4.960
	16QAM	Low	4.520	4.960
		Middle	4.520	4.980
		High	4.520	5.020
10	QPSK	Low	9.000	9.760
		Middle	8.960	9.760
		High	8.960	9.800
	16QAM	Low	8.960	9.760
		Middle	9.000	9.800
		High	8.960	9.840
15	QPSK	Low	13.560	15.120
		Middle	13.620	15.060
		High	13.560	14.880
	16QAM	Low	13.560	14.940
		Middle	13.620	15.180
		High	13.560	15.060
20	QPSK	Low	17.920	19.600
		Middle	18.000	19.680
		High	18.000	19.600
	16QAM	Low	18.080	19.600
		Middle	18.000	19.760
		High	17.920	19.680

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

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

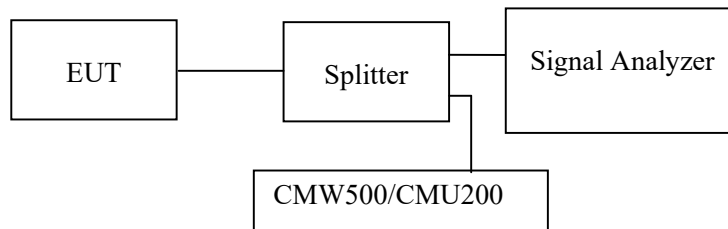
Applicable Standard

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 10th harmonic.



Test Data

Environmental Conditions

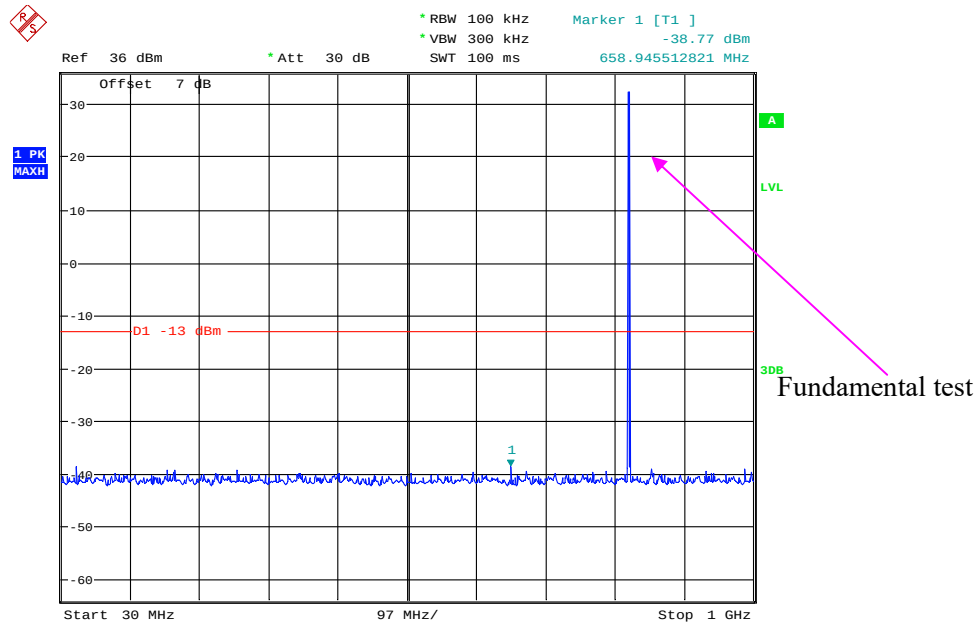
Temperature:	27 °C
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by Orlo Yang from 2021-05-19 to 2021-05-21.

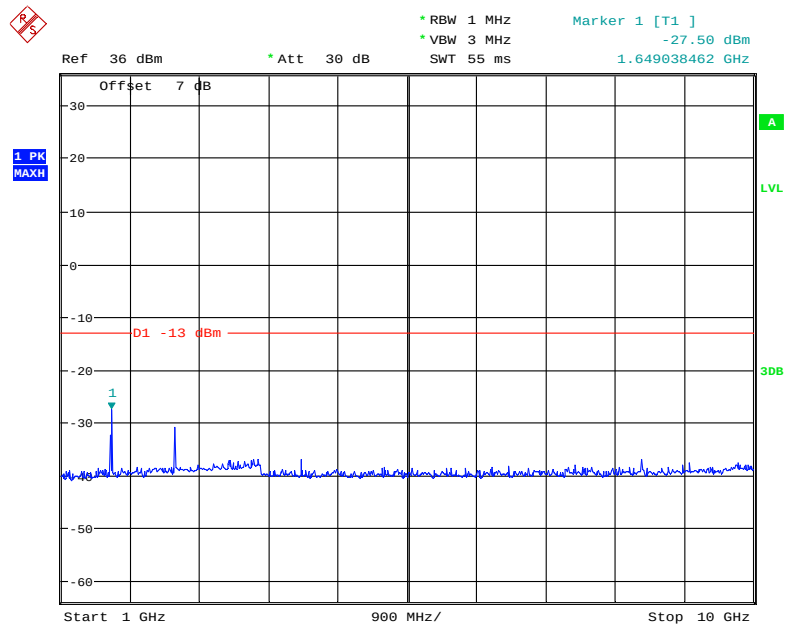
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

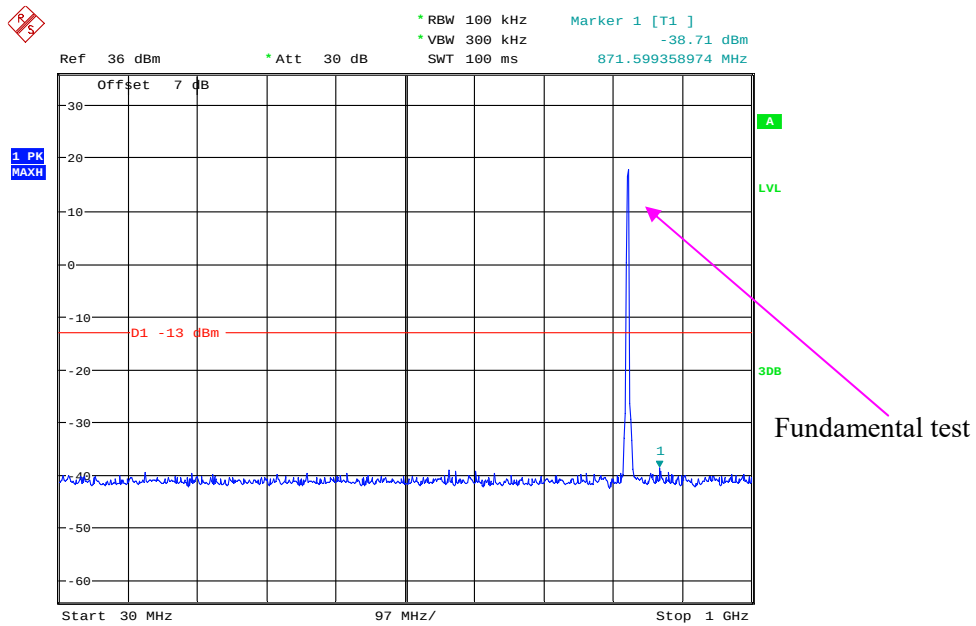
Cellular Band (Part 22H)**Low Channel:****30 MHz – 1 GHz (GSM Mode)**

Date: 20.MAY.2021 00:29:45

1 GHz – 10 GHz (GSM Mode)

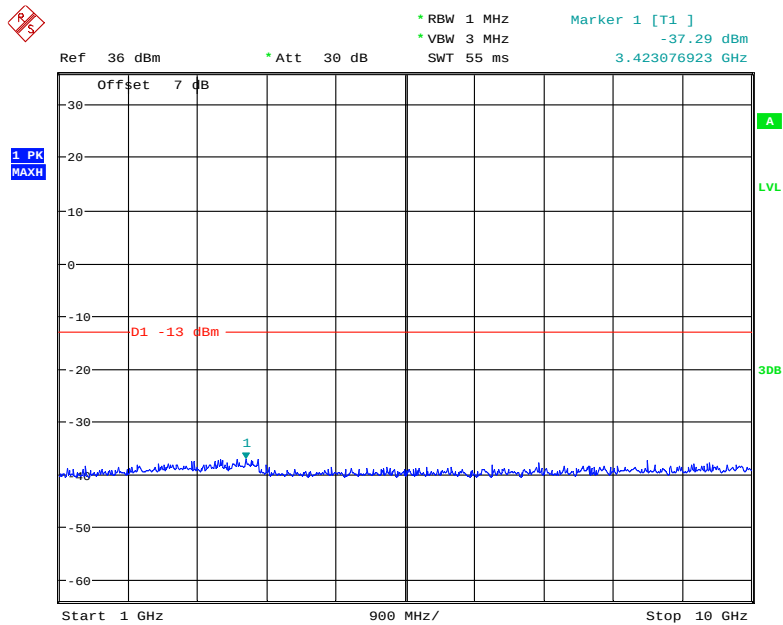
Date: 20.MAY.2021 00:23:10

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:50:53

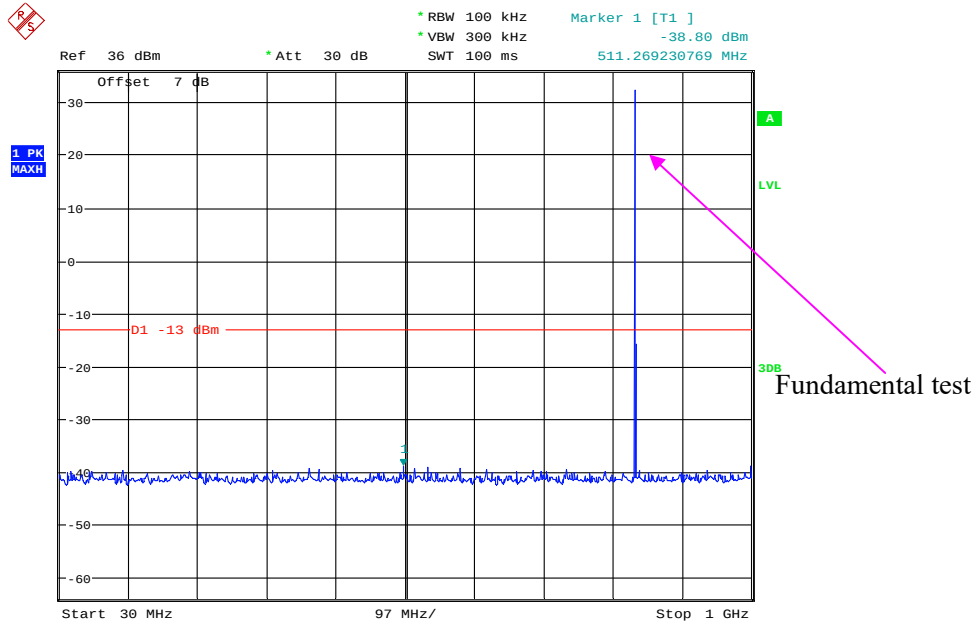
1 GHz – 10 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:52:20

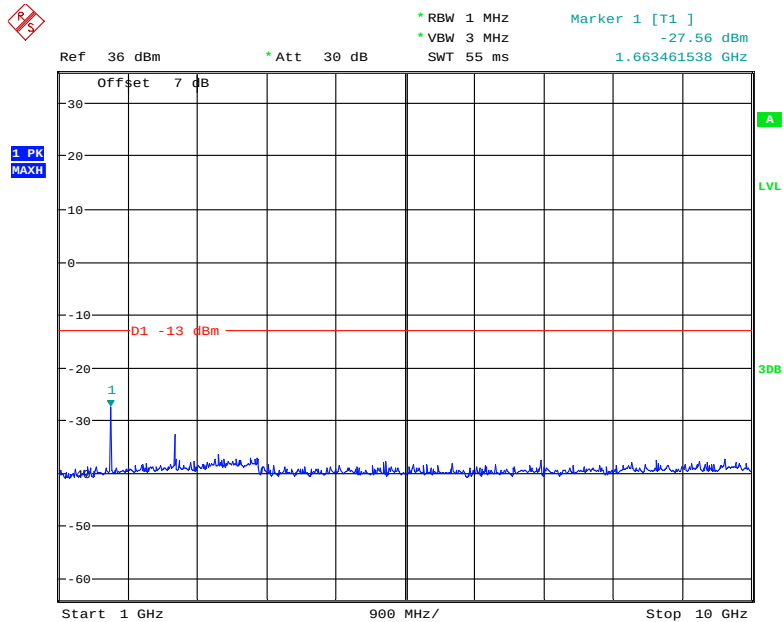
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



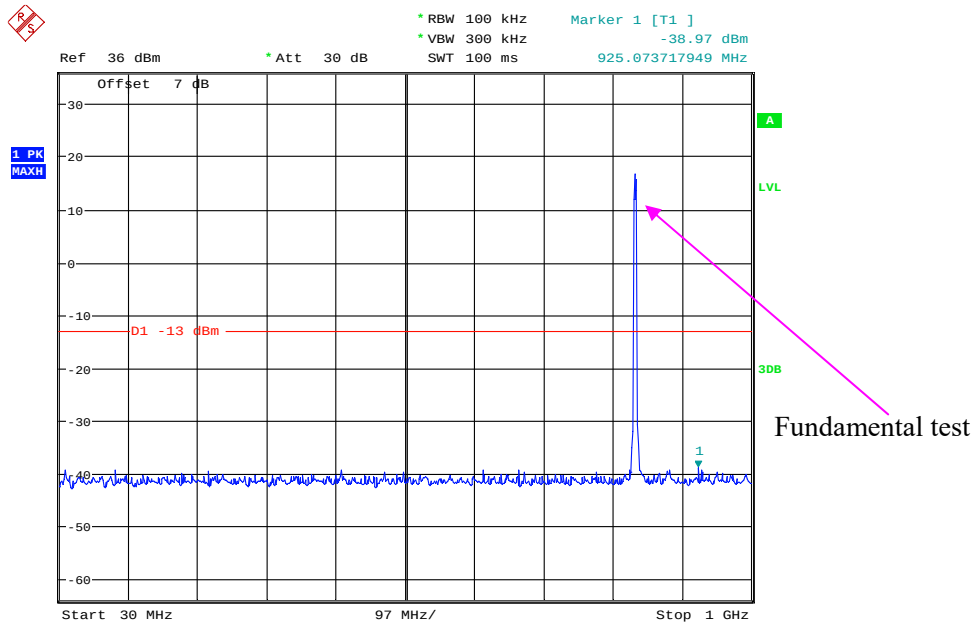
Date: 20.MAY.2021 00:28:41

1 GHz – 10 GHz (GSM Mode)



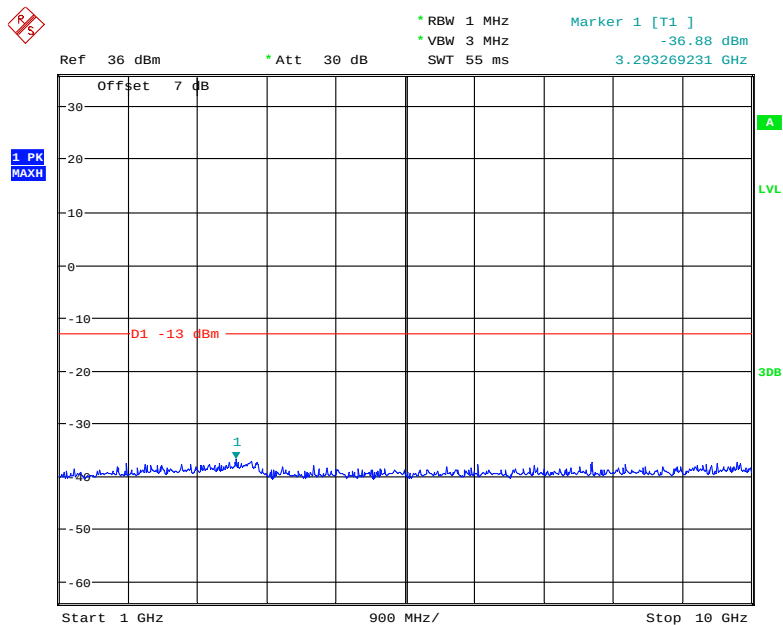
Date: 20.MAY.2021 00:24:21

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:49:51

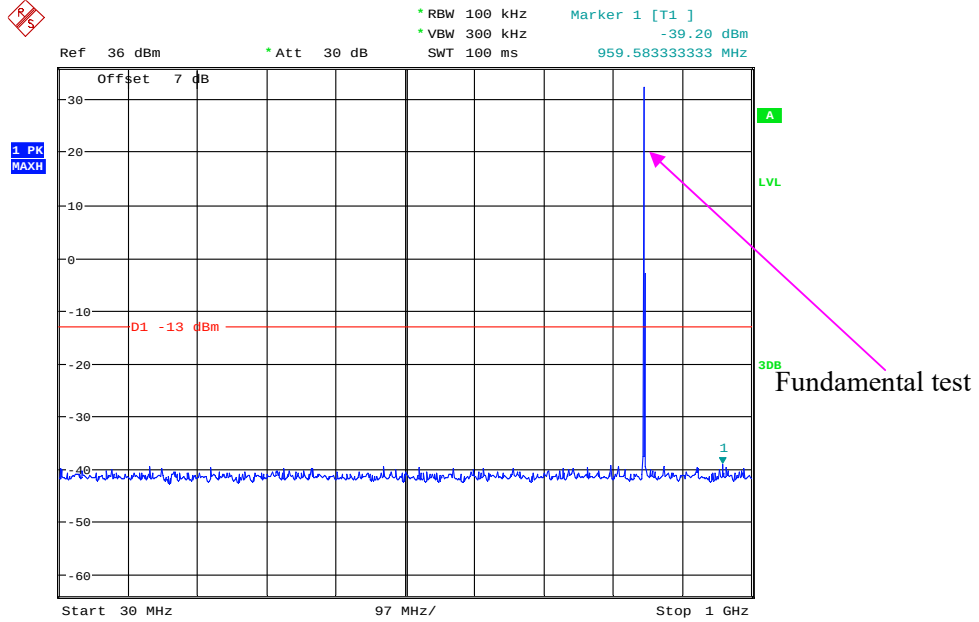
1 GHz – 10 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:53:24

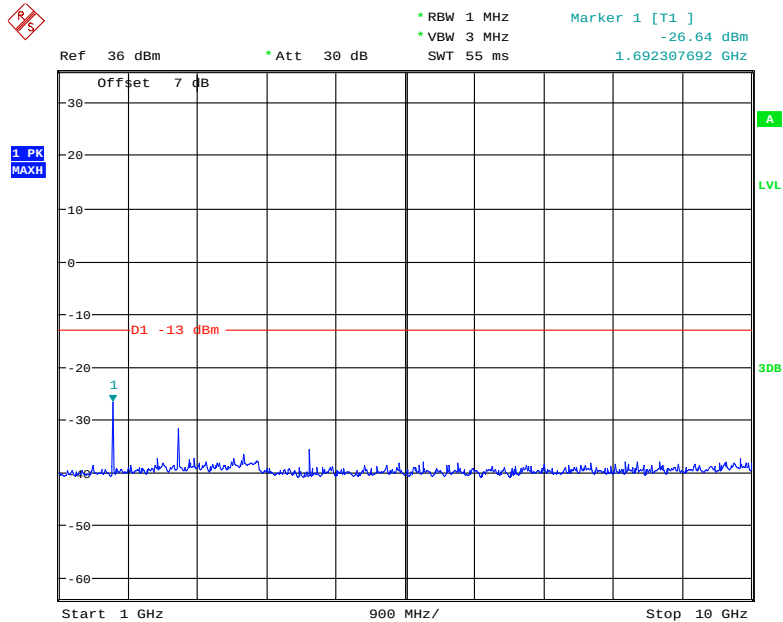
High Channel:

30 MHz – 1 GHz (GSM Mode)



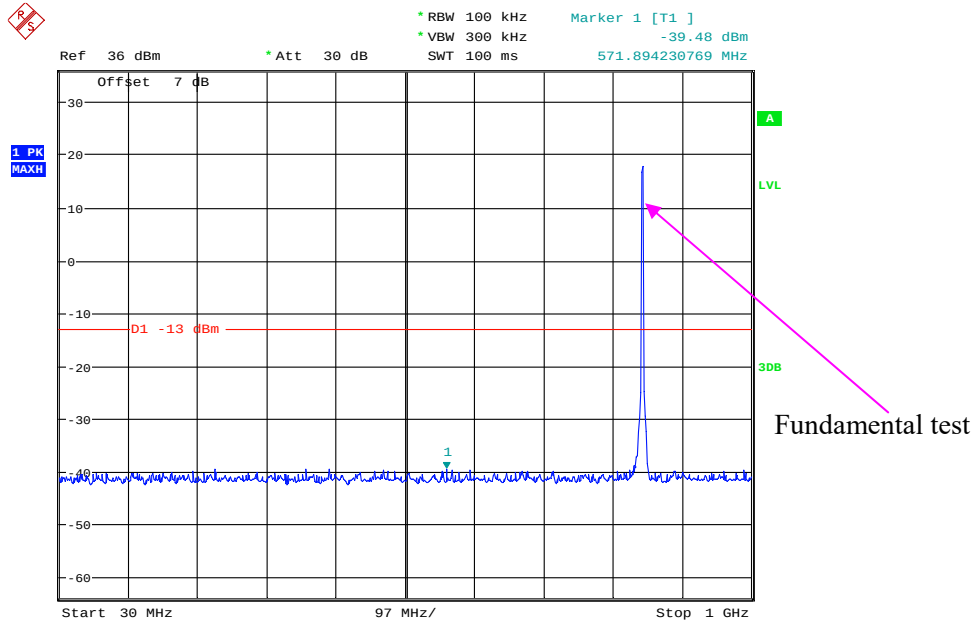
Date: 20.MAY.2021 00:27:43

1 GHz – 10 GHz (GSM Mode)



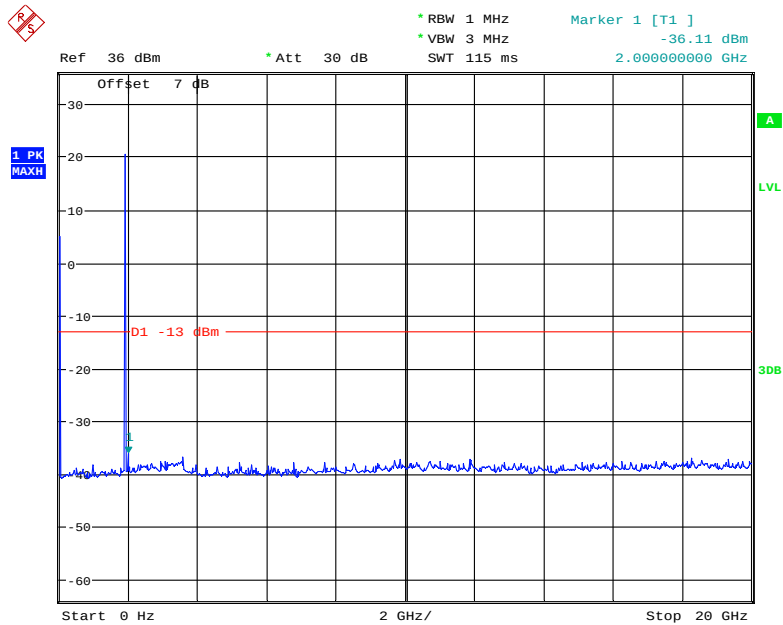
Date: 20.MAY.2021 00:24:48

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:48:50

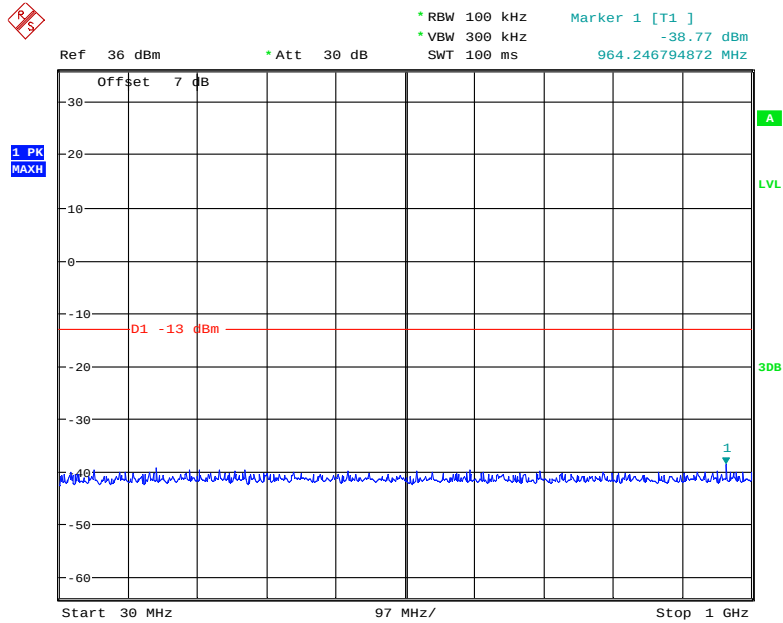
1 GHz – 10 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:55:40

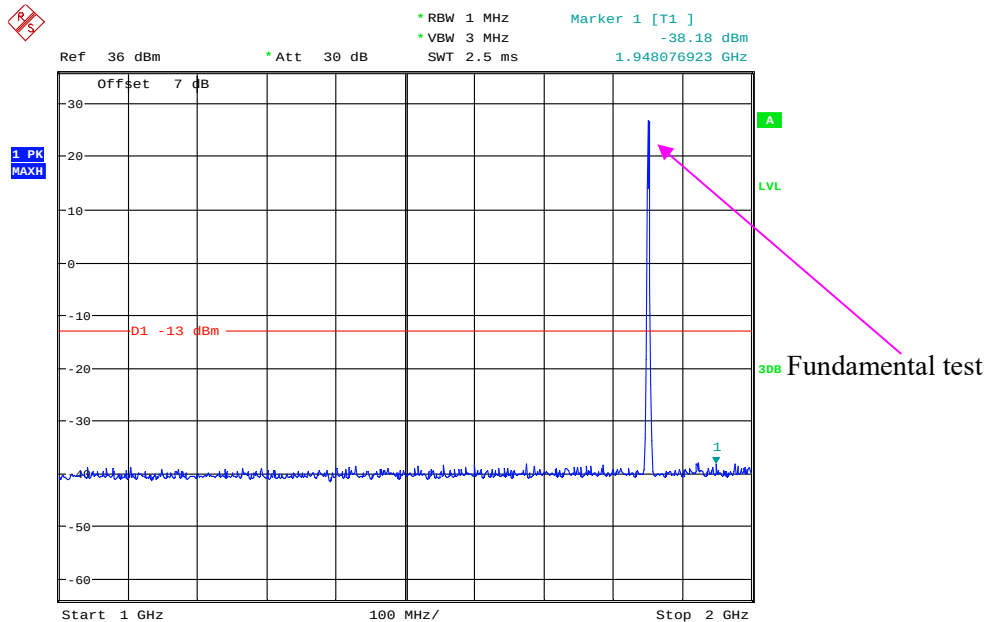
PCS Band (Part 24E) Low Channel:

30 MHz – 1 GHz (GSM Mode)



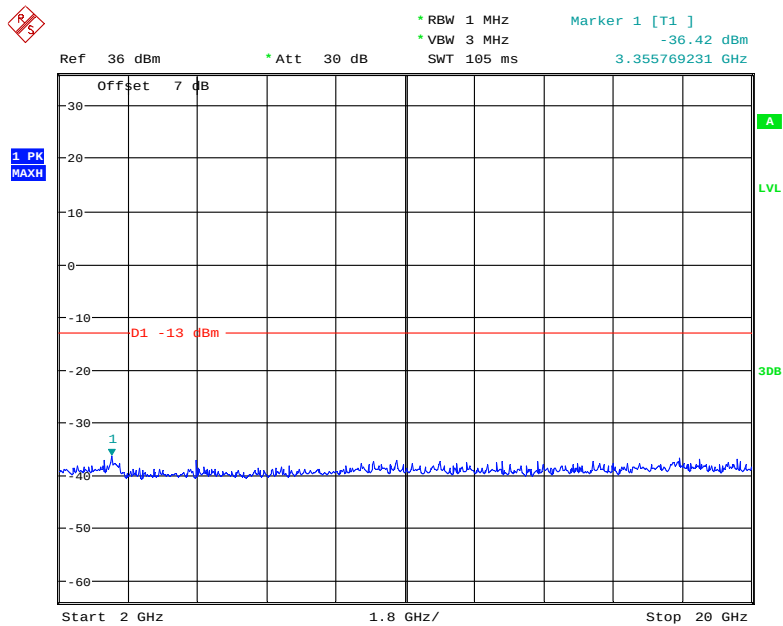
Date: 20.MAY.2021 00:08:45

1 GHz – 2GHz (GSM Mode)



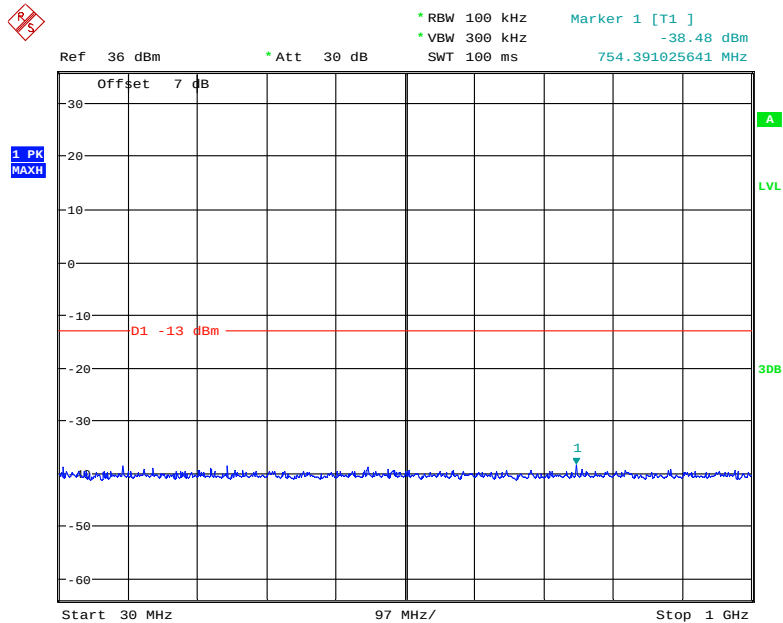
Date: 20.MAY.2021 00:15:58

2 MHz – 20 GHz (GSM Mode)



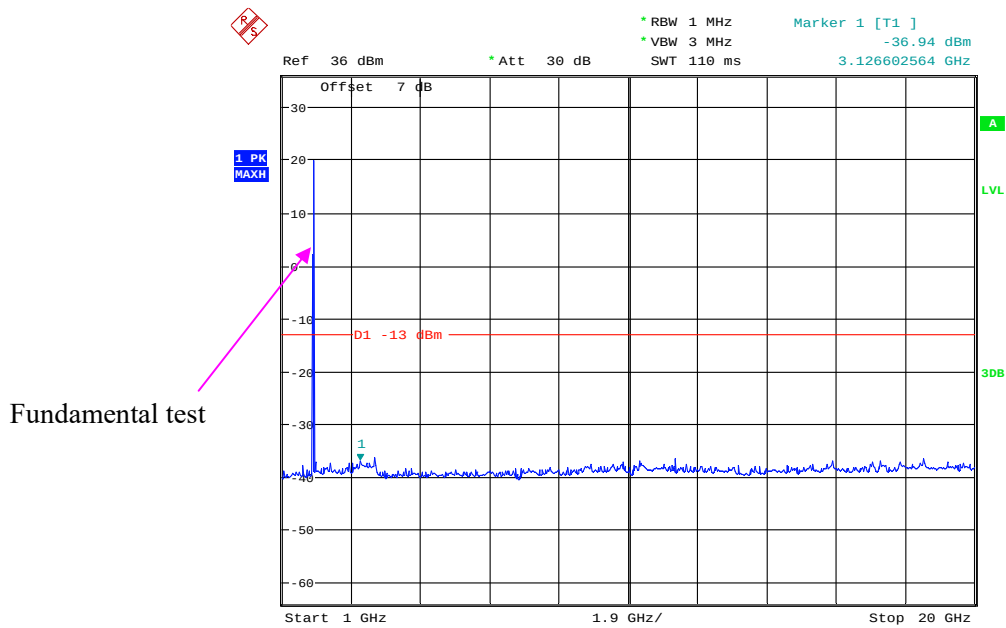
Date: 20.MAY.2021 00:17:30

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:41:00

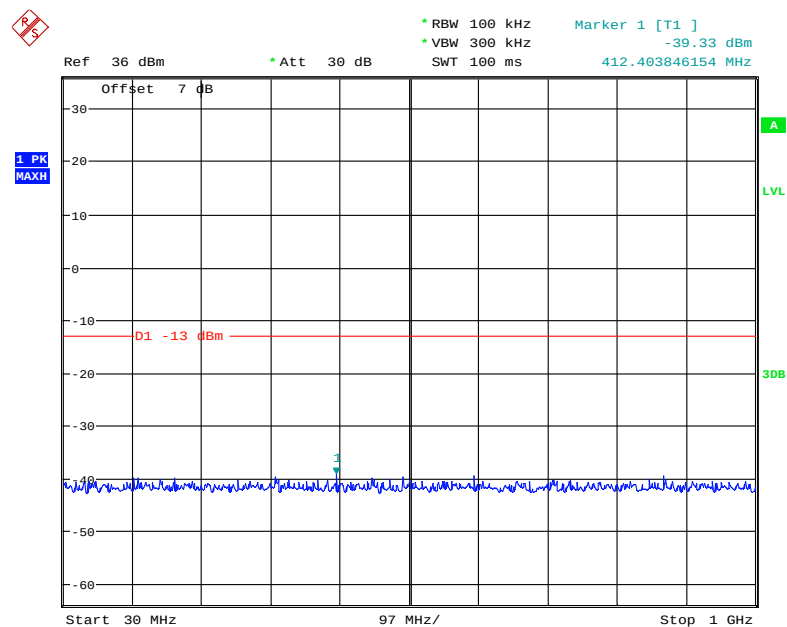
1 GHz – 20 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:58:36

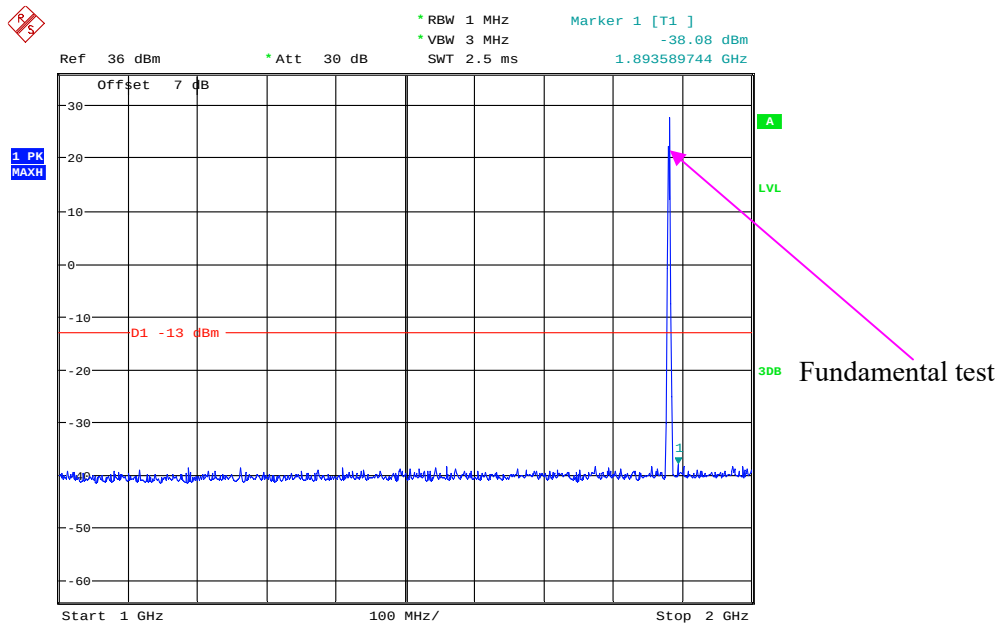
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



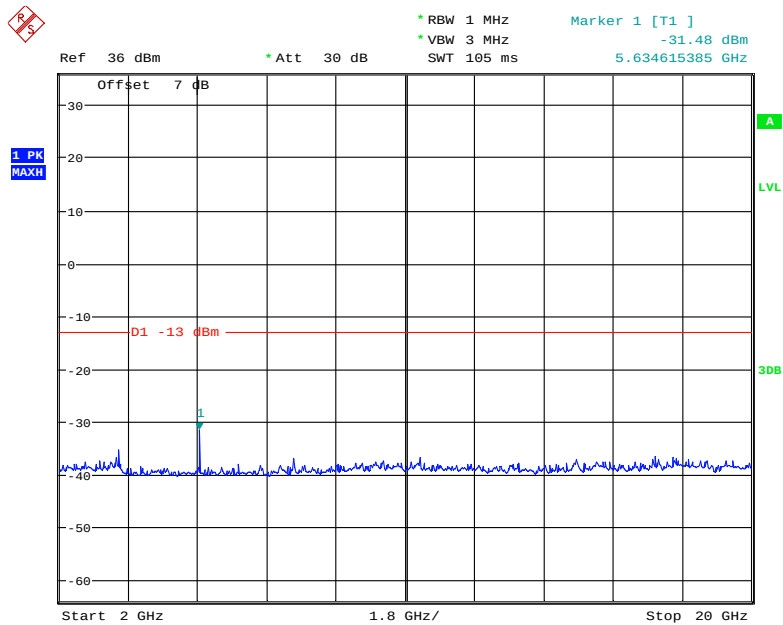
Date: 20.MAY.2021 00:10:08

1 GHz – 2 GHz (GSM Mode)



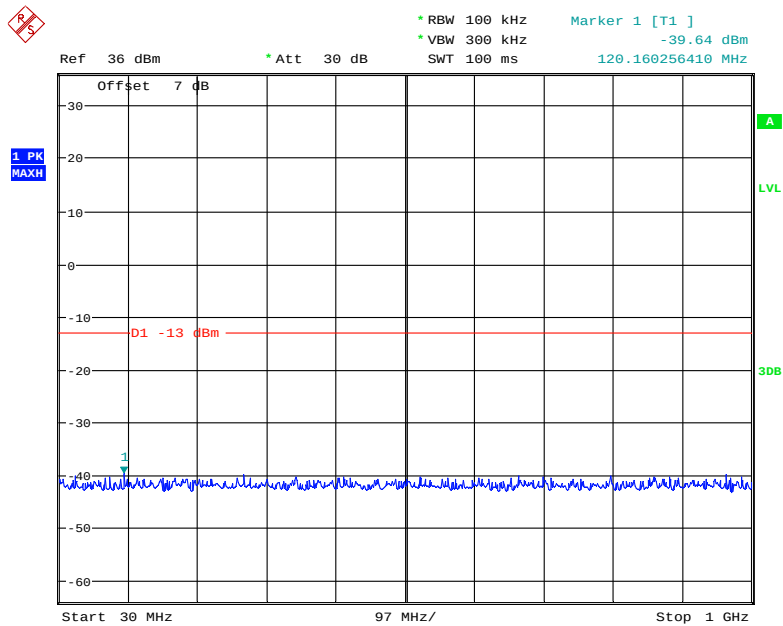
Date: 20.MAY.2021 00:14:34

2 GHz – 20 GHz (GSM Mode)



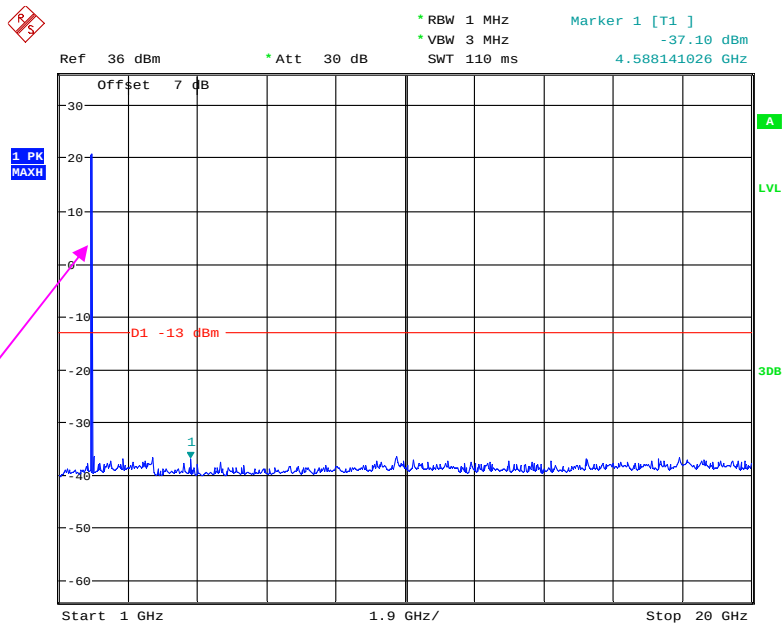
Date: 20.MAY.2021 00:18:37

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:42:13

1 GHz – 20 GHz (WCDMA Mode)

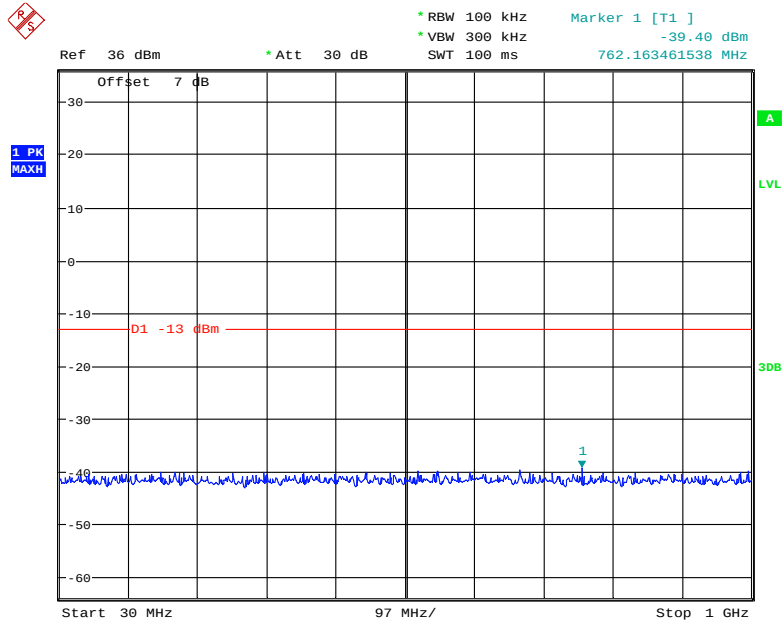


Fundamental test

Date: 20.MAY.2021 00:57:43

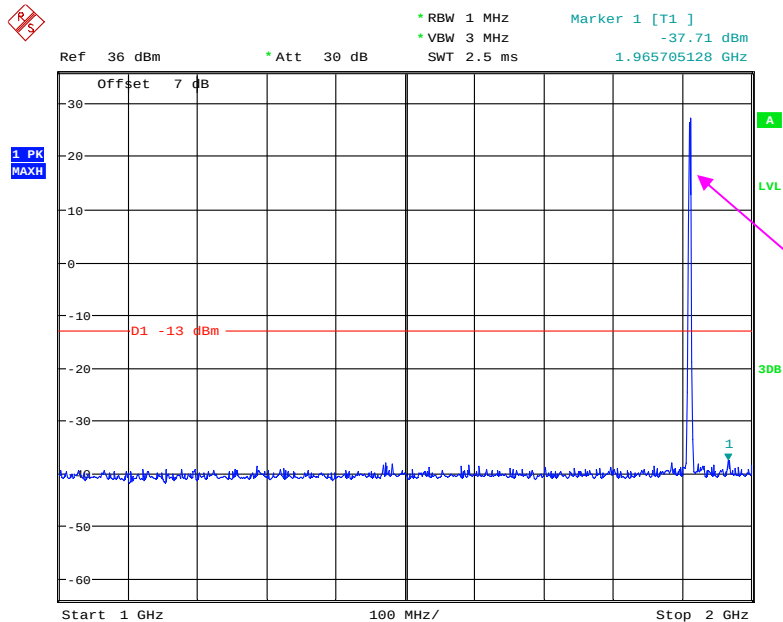
High Channel:

30 MHz – 1 GHz (GSM Mode)



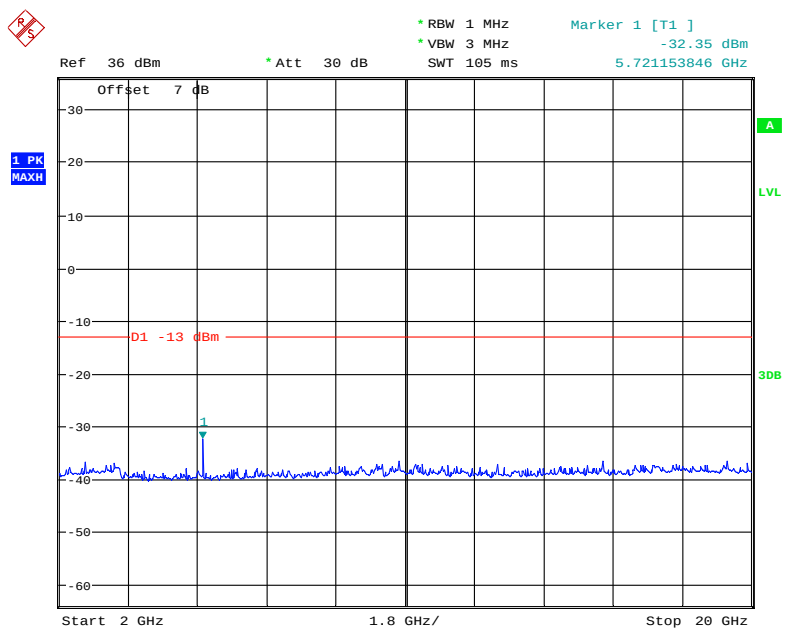
Date: 20.MAY.2021 00:10:56

1 GHz – 2 GHz (GSM Mode)



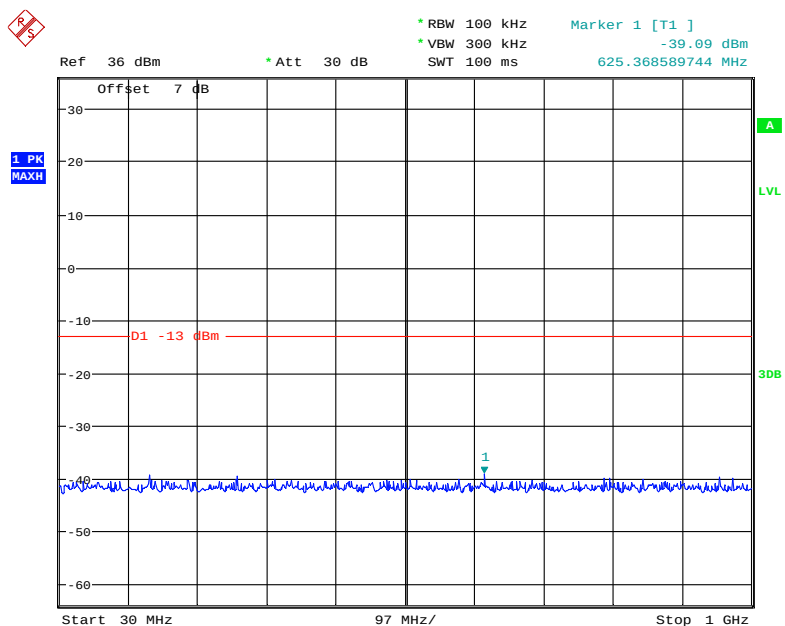
Date: 20.MAY.2021 00:13:26

2 GHz – 20 GHz (GSM Mode)



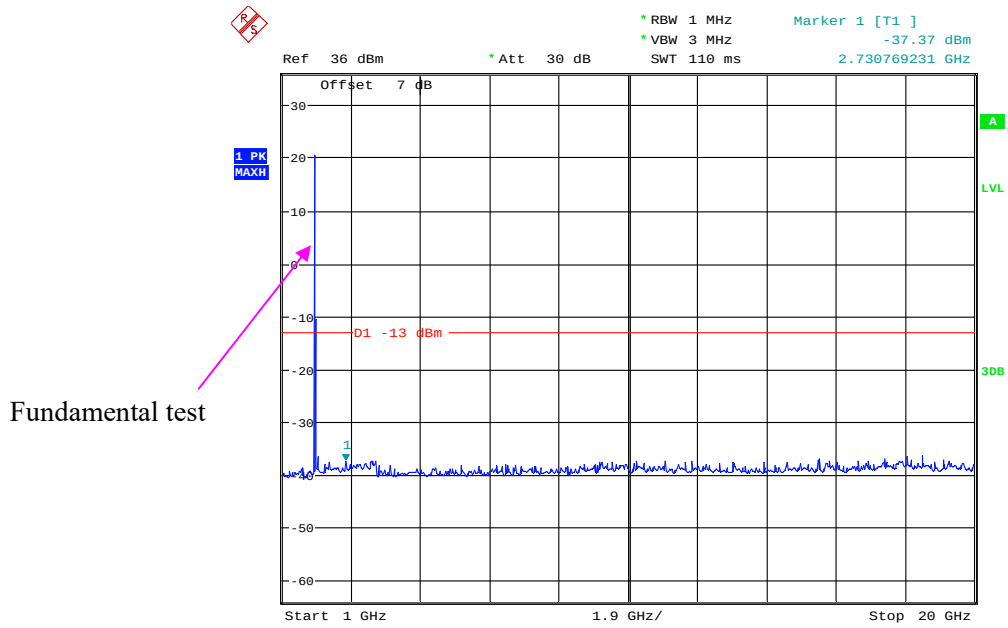
Date: 20.MAY.2021 00:19:23

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:42:52

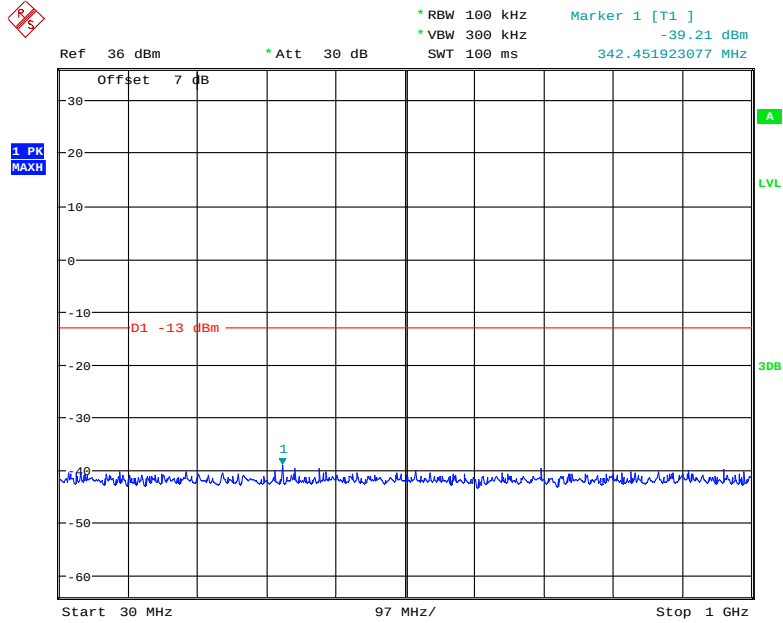
1 GHz – 20 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:56:29

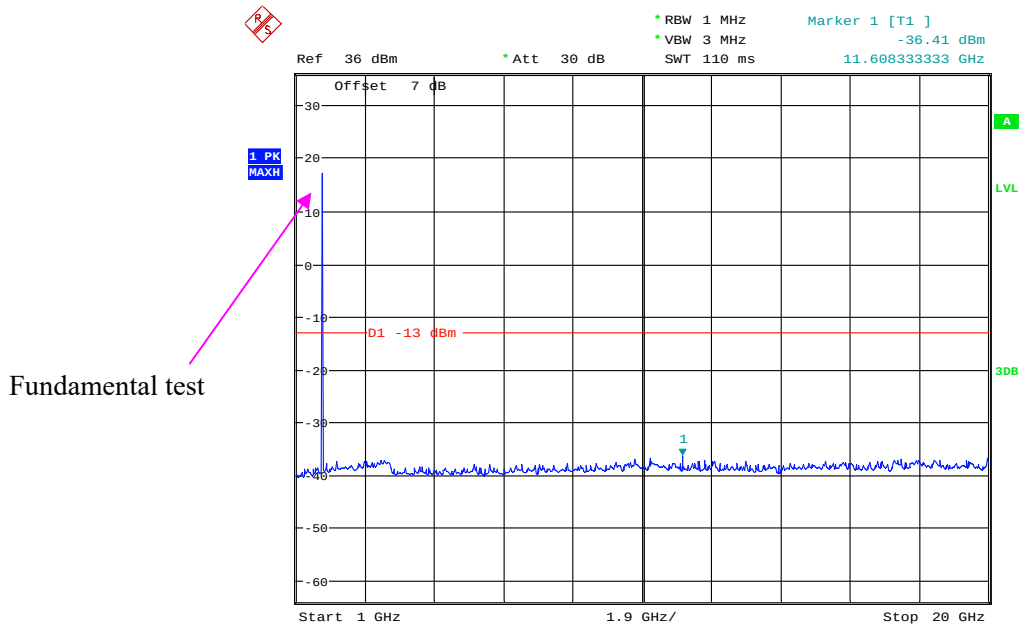
AWS Band (Part 27)
Low Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:47:26

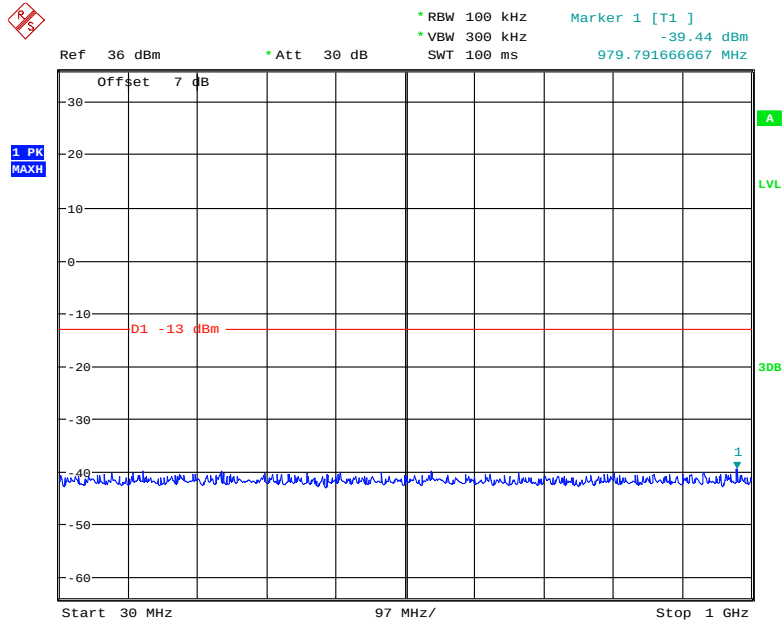
1 GHz – 20 GHz (WCDMA Mode)



Date: 20.MAY.2021 01:00:00

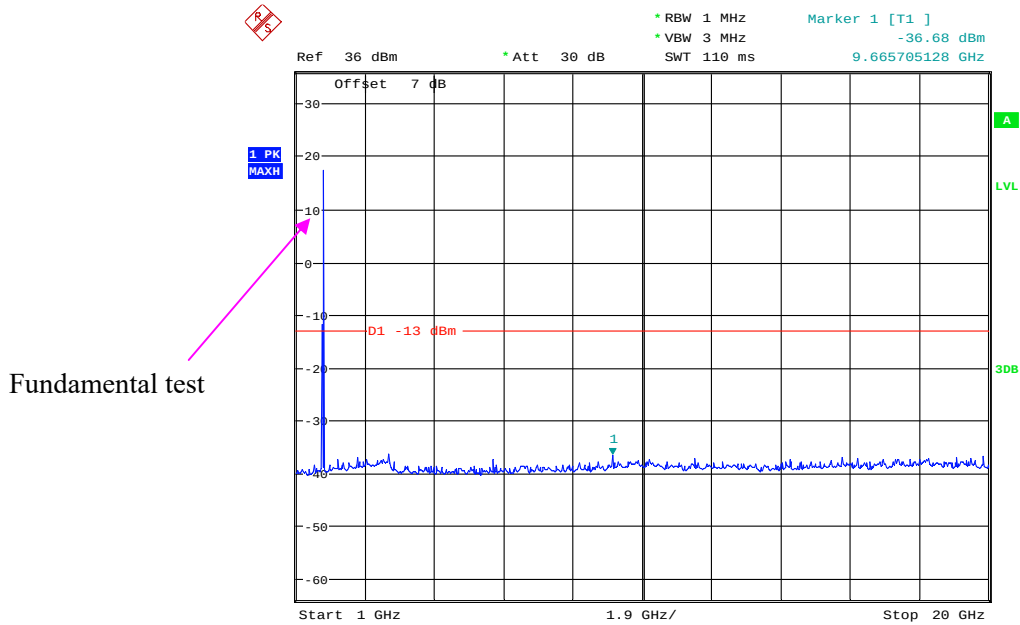
Middle Channel

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:47:56

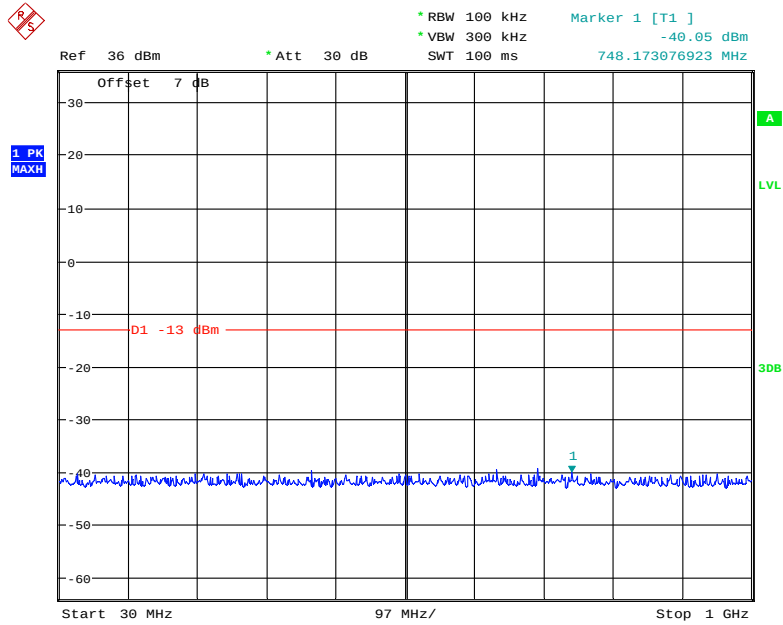
1 GHz – 20 GHz (WCDMA Mode)



Date: 20.MAY.2021 01:01:07

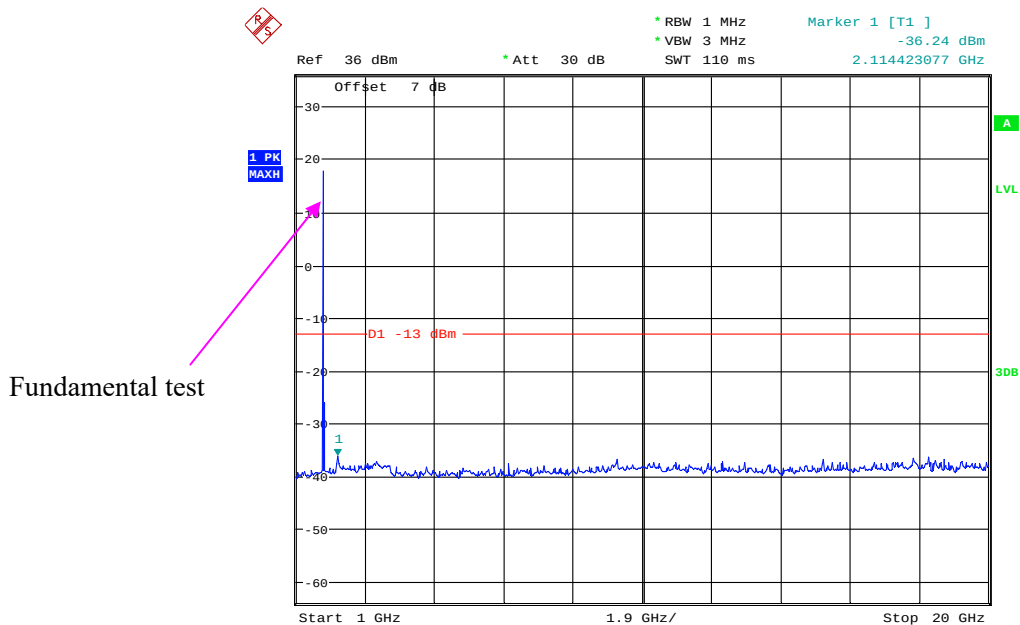
High Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 20.MAY.2021 00:43:31

1 GHz – 20 GHz (WCDMA Mode)



Date: 20.MAY.2021 01:02:26

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:	26.3~27.3 °C
Relative Humidity:	46~57 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Zero Yan on 2021-05-20 for below 1GHz and Hanic Pan from 2021-05-20 to 2021-05-24 for above 1GHz.

EUT operation mode: Transmitting

30 MHz ~ 10 GHz:**Cellular Band (Part 22H)**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
961.3	32.69	43	2.0	H	-63.8	1.36	0.0	-65.16	-13	52.16
961.3	33.81	53	1.4	V	-60.2	1.36	0.0	-61.56	-13	48.56
1648.40	48.96	50	1.7	H	-59.1	1.40	8.70	-51.80	-13	38.80
1648.40	48.27	96	2.2	V	-59.6	1.40	8.70	-52.30	-13	39.30
2472.60	43.37	178	2.0	H	-60.0	2.60	10.20	-52.40	-13	39.40
2472.60	42.21	9	2.3	V	-60.5	2.60	10.20	-52.90	-13	39.90
3296.80	43.50	37	1.1	H	-57.4	1.50	11.70	-47.20	-13	34.20
3296.80	43.39	254	2.1	V	-57.5	1.50	11.70	-47.30	-13	34.30
Middle channel										
959.7	32.13	106	2.5	H	-64.4	1.36	0.0	-65.76	-13	52.76
959.7	33.07	336	1.6	V	-61.0	1.36	0.0	-62.36	-13	49.36
1673.20	55.94	178	1.8	H	-50.4	1.30	8.90	-42.80	-13	29.80
1673.20	54.25	128	2.2	V	-51.5	1.30	8.90	-43.90	-13	30.90
2509.80	48.65	45	1.3	H	-54.7	2.60	10.20	-47.10	-13	34.10
2509.80	48.64	117	1.4	V	-54.1	2.60	10.20	-46.50	-13	33.50
3346.40	44.55	332	1.4	H	-56.3	1.50	11.70	-46.10	-13	33.10
3346.40	43.74	72	1.3	V	-57.2	1.50	11.70	-47.00	-13	34.00
High channel										
962.8	32.27	72	2.2	H	-64.2	1.36	0.0	-65.56	-13	52.56
962.8	33.14	175	1.5	V	-60.9	1.36	0.0	-62.26	-13	49.26
1697.60	48.15	60	1.7	H	-58.2	1.30	8.90	-50.60	-13	37.60
1697.60	46.99	333	2.0	V	-58.7	1.30	8.90	-51.10	-13	38.10
2546.40	45.42	121	2.4	H	-57.9	2.60	10.20	-50.30	-13	37.30
2546.40	43.18	300	1.7	V	-59.6	2.60	10.20	-52.00	-13	39.00
3395.20	45.95	247	2.5	H	-55.3	1.40	11.80	-44.90	-13	31.90
3395.20	44.29	142	2.0	V	-56.8	1.40	11.80	-46.40	-13	33.40

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
957.8	32.38	354	2.1	H	-64.1	1.36	0.0	-65.46	-13	52.46
957.8	33.36	232	1.9	V	-60.7	1.36	0.0	-62.06	-13	49.06
1652.80	51.38	263	2.0	H	-55.0	1.30	8.90	-47.40	-13	34.40
1652.80	49.31	22	1.0	V	-56.4	1.30	8.90	-48.80	-13	35.80
2479.20	43.57	41	2.3	H	-59.8	2.60	10.20	-52.20	-13	39.20
2479.20	43.21	292	1.8	V	-59.5	2.60	10.20	-51.90	-13	38.90
3305.60	43.96	125	2.4	H	-56.9	1.50	11.70	-46.70	-13	33.70
3305.60	43.47	286	1.9	V	-57.5	1.50	11.70	-47.30	-13	34.30
Middle channel										
951.6	32.23	288	1.8	H	-64.3	1.36	0.0	-65.66	-13	52.66
951.6	33.54	10	2.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
1673.20	52.34	89	1.4	H	-54.0	1.30	8.90	-46.40	-13	33.40
1673.20	49.86	88	1.3	V	-55.9	1.30	8.90	-48.30	-13	35.30
2509.80	44.03	241	2.1	H	-59.3	2.60	10.20	-51.70	-13	38.70
2509.80	43.67	338	1.4	V	-59.1	2.60	10.20	-51.50	-13	38.50
3346.40	43.86	202	1.3	H	-57.0	1.50	11.70	-46.80	-13	33.80
3346.40	43.38	306	1.5	V	-57.5	1.50	11.70	-47.30	-13	34.30
High channel										
954.8	32.52	25	1.1	H	-64.0	1.36	0.0	-65.36	-13	52.36
954.8	33.73	167	2.3	V	-60.3	1.36	0.0	-61.66	-13	48.66
1693.20	51.23	256	1.8	H	-55.1	1.30	8.90	-47.50	-13	34.50
1693.20	49.57	185	1.1	V	-56.2	1.30	8.90	-48.60	-13	35.60
2539.80	43.56	178	2.0	H	-59.8	2.60	10.20	-52.20	-13	39.20
2539.80	43.28	188	2.1	V	-59.5	2.60	10.20	-51.90	-13	38.90
3386.40	43.66	13	1.8	H	-57.6	1.40	11.80	-47.20	-13	34.20
3386.40	43.22	246	1.8	V	-57.8	1.40	11.80	-47.40	-13	34.40

30 MHz ~ 20 GHz:**PCS Band (Part 24E)**

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
963.6	32.28	31	2.4	H	-64.2	1.36	0.0	-65.56	-13	52.56
963.6	33.31	72	2.4	V	-60.7	1.36	0.0	-62.06	-13	49.06
3700.40	43.45	330	1.6	H	-58.4	1.60	11.90	-48.10	-13	35.10
3700.40	43.28	321	1.4	V	-57.9	1.60	11.90	-47.60	-13	34.60
Middle channel										
958.4	32.31	326	1.6	H	-64.2	1.36	0.0	-65.56	-13	52.56
958.4	33.26	114	1.8	V	-60.8	1.36	0.0	-62.16	-13	49.16
3760.00	43.79	61	2.3	H	-58.3	1.50	11.80	-48.00	-13	35.00
3760.00	43.19	70	1.1	V	-58.4	1.50	11.80	-48.10	-13	35.10
High channel										
962.5	32.49	354	1.2	H	-64.0	1.36	0.0	-65.36	-13	52.36
962.5	33.56	210	1.6	V	-60.5	1.36	0.0	-61.86	-13	48.86
3819.60	43.42	101	1.4	H	-58.6	1.50	11.80	-48.30	-13	35.30
3819.60	43.25	277	2.1	V	-58.3	1.50	11.80	-48.00	-13	35.00

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 24E	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
WCDMA Mode										
Low channel										
960.1	32.58	108	2.2	H	-63.9	1.36	0.0	-65.26	-13	52.26
960.1	33.71	161	1.8	V	-60.3	1.36	0.0	-61.66	-13	48.66
3704.80	43.18	278	1.9	H	-58.6	1.60	11.90	-48.30	-13	35.30
3704.80	43.02	10	1.4	V	-58.2	1.60	11.90	-47.90	-13	34.90
Middle channel										
955.9	32.34	206	2.1	H	-64.2	1.36	0.0	-65.56	-13	52.56
955.9	33.24	3	2.4	V	-60.8	1.36	0.0	-62.16	-13	49.16
3760.00	43.59	30	1.1	H	-58.5	1.50	11.80	-48.20	-13	35.20
3760.00	43.35	143	2.4	V	-58.2	1.50	11.80	-47.90	-13	34.90
High channel										
958.6	32.18	97	1.7	H	-64.3	1.36	0.0	-65.66	-13	52.66
958.6	33.21	295	1.5	V	-60.8	1.36	0.0	-62.16	-13	49.16
3815.20	43.58	257	2.3	H	-58.5	1.50	11.80	-48.20	-13	35.20
3815.20	43.42	200	1.0	V	-58.2	1.50	11.80	-47.90	-13	34.90

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										
956.8	32.58	331	2.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
956.8	33.71	211	2.1	V	-60.3	1.36	0.0	-61.66	-13	48.66
3424.80	44.42	283	1.3	H	-56.4	1.40	11.80	-46.00	-13	33.00
3424.80	44.93	280	2.0	V	-55.7	1.40	11.80	-45.30	-13	32.30
Middle channel										
957.3	32.28	196	2.2	H	-64.2	1.36	0.0	-65.56	-13	52.56
957.3	33.35	60	2.4	V	-60.7	1.36	0.0	-62.06	-13	49.06
3465.20	44.58	39	2.2	H	-56.2	1.50	12.00	-45.70	-13	32.70
3465.20	44.97	1	2.2	V	-56.5	1.50	12.00	-46.00	-13	33.00
High channel										
961.6	32.64	17	2.2	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.6	33.58	109	1.5	V	-60.5	1.36	0.0	-61.86	-13	48.86
3505.20	44.68	246	1.3	H	-56.1	1.50	12.00	-45.60	-13	32.60
3505.20	44.99	353	1.5	V	-56.5	1.50	12.00	-46.00	-13	33.00

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										
1.4 MHz, Low channel										
961.3	32.28	6	2.3	H	-64.2	1.36	0.0	-65.56	-13	52.56
961.3	33.22	23	1.3	V	-60.8	1.36	0.0	-62.16	-13	49.16
3701.40	44.23	140	2.0	H	-57.6	1.60	11.90	-47.30	-13	34.30
3701.40	44.02	35	1.0	V	-57.2	1.60	11.90	-46.90	-13	33.90
1.4 MHz, Middle channel										
958.2	32.34	123	1.8	H	-64.2	1.36	0.0	-65.56	-13	52.56
958.2	33.55	250	1.3	V	-60.5	1.36	0.0	-61.86	-13	48.86
3760.00	44.13	247	1.6	H	-57.9	1.50	11.80	-47.60	-13	34.60
3760.00	43.89	41	1.3	V	-57.7	1.50	11.80	-47.40	-13	34.40
1.4 MHz, High channel										
959.7	32.14	6	2.1	H	-64.4	1.36	0.0	-65.76	-13	52.76
959.7	33.52	197	1.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
3818.60	43.96	29	1.2	H	-58.1	1.50	11.80	-47.80	-13	34.80
3818.60	43.67	329	2.2	V	-57.9	1.50	11.80	-47.60	-13	34.60
Band 4										
Test frequency range: 30 MHz ~ 20 GHz										
1.4MHz, Low channel										
963.1	32.37	270	1.7	H	-64.1	1.36	0.0	-65.46	-13	52.46
963.1	33.59	325	1.7	V	-60.5	1.36	0.0	-61.86	-13	48.86
3421.40	43.56	356	2.5	H	-57.2	1.40	11.80	-46.80	-13	33.80
3421.40	43.42	277	1.6	V	-57.2	1.40	11.80	-46.80	-13	33.80
1.4MHz, Middle channel										
958.7	32.42	4	2.3	H	-64.1	1.36	0.0	-65.46	-13	52.46
958.7	33.03	82	2.0	V	-61.0	1.36	0.0	-62.36	-13	49.36
3465.00	43.55	76	1.4	H	-57.2	1.50	12.00	-46.70	-13	33.70
3465.00	43.27	10	2.4	V	-58.2	1.50	12.00	-47.70	-13	34.70
1.4MHz, High channel										
959.3	32.36	20	1.2	H	-64.1	1.36	0.0	-65.46	-13	52.46
959.3	33.12	87	1.1	V	-60.9	1.36	0.0	-62.26	-13	49.26
3508.60	43.52	49	1.8	H	-57.2	1.50	12.00	-46.70	-13	33.70
3508.60	43.37	6	2.5	V	-58.1	1.50	12.00	-47.60	-13	34.60

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										
956.4	32.56	177	1.5	H	-63.9	1.36	0.0	-65.26	-13	52.26
956.4	33.24	66	1.8	V	-60.8	1.36	0.0	-62.16	-13	49.16
1649.40	54.26	1	2.4	H	-53.8	1.40	8.70	-46.50	-13	33.50
1649.40	54.12	172	1.1	V	-53.7	1.40	8.70	-46.40	-13	33.40
2474.10	48.65	265	2.2	H	-54.7	2.60	10.20	-47.10	-13	34.10
2474.10	48.33	3	1.3	V	-54.4	2.60	10.20	-46.80	-13	33.80
3298.80	43.21	138	1.5	H	-57.7	1.50	11.70	-47.50	-13	34.50
3298.80	43.36	297	1.9	V	-57.6	1.50	11.70	-47.40	-13	34.40
1.4MHz, Middle channel										
954.9	32.29	178	1.5	H	-64.2	1.36	0.0	-65.56	-13	52.56
954.9	33.32	358	1.7	V	-60.7	1.36	0.0	-62.06	-13	49.06
1673.00	55.31	320	1.1	H	-51.0	1.30	8.90	-43.40	-13	30.40
1673.00	54.56	301	2.0	V	-51.2	1.30	8.90	-43.60	-13	30.60
2509.50	48.87	98	2.1	H	-54.5	2.60	10.20	-46.90	-13	33.90
2509.50	48.41	42	2.0	V	-54.3	2.60	10.20	-46.70	-13	33.70
3346.00	43.16	72	1.3	H	-57.7	1.50	11.70	-47.50	-13	34.50
3346.00	43.82	256	2.3	V	-57.1	1.50	11.70	-46.90	-13	33.90
1.4MHz, High channel										
960.2	32.47	106	2.5	H	-64.0	1.36	0.0	-65.36	-13	52.36
960.2	33.38	225	1.5	V	-60.7	1.36	0.0	-62.06	-13	49.06
1696.60	55.03	195	2.2	H	-51.3	1.30	8.90	-43.70	-13	30.70
1696.60	54.34	49	2.2	V	-51.4	1.30	8.90	-43.80	-13	30.80
2544.90	48.59	336	1.7	H	-54.8	2.60	10.20	-47.20	-13	34.20
2544.90	48.17	233	1.4	V	-54.6	2.60	10.20	-47.00	-13	34.00
3393.20	43.35	240	2.1	H	-57.9	1.40	11.80	-47.50	-13	34.50
3393.20	43.22	186	1.2	V	-57.8	1.40	11.80	-47.40	-13	34.40

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										
957.8	32.58	203	1.6	H	-63.9	1.36	0.0	-65.26	-25	40.26
957.8	33.53	78	2.5	V	-60.5	1.36	0.0	-61.86	-25	36.86
5010.00	43.78	286	2.0	H	-56.8	1.70	12.00	-46.50	-25	21.50
5010.00	43.69	70	2.4	V	-56.3	1.70	12.00	-46.00	-25	21.00
5MHz, Middle channel										
957.2	32.28	172	1.2	H	-64.2	1.36	0.0	-65.56	-25	40.56
951.2	33.11	338	1.4	V	-60.9	1.36	0.0	-62.26	-25	37.26
5070.00	44.15	133	1.9	H	-55.9	1.60	12.10	-45.40	-25	20.40
5070.00	44.02	168	2.2	V	-56.0	1.60	12.10	-45.50	-25	20.50
5MHz, High channel										
956.1	32.41	253	2.0	H	-64.1	1.36	0.0	-65.46	-25	40.46
956.1	33.35	50	2.2	V	-60.7	1.36	0.0	-62.06	-25	37.06
5130.00	43.69	153	1.9	H	-56.3	1.60	12.10	-45.80	-25	20.80
5130.00	43.37	78	2.1	V	-56.6	1.60	12.10	-46.10	-25	21.10

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(g) (h)(m) - BAND EDGES**Applicable Standard**

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

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

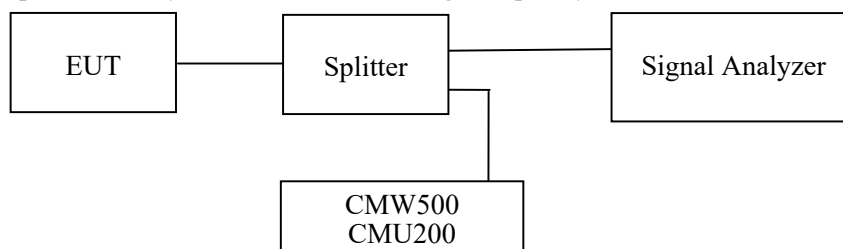
According to FCC §27.53 (g), For operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log(P)$ dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

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

Test Procedure

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

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



Test Data**Environmental Conditions**

Temperature:	27 °C
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

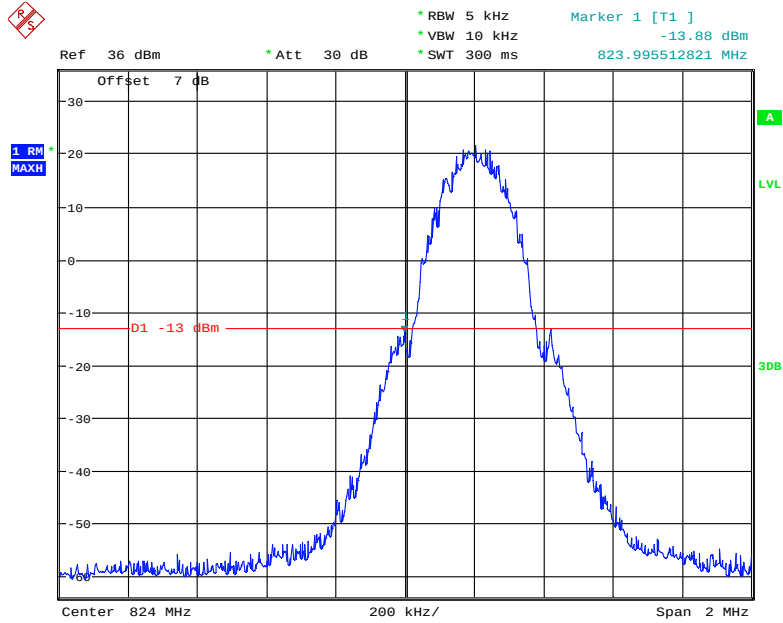
The testing was performed by Orlo Yang from 2021-05-19 to 2021-06-02.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

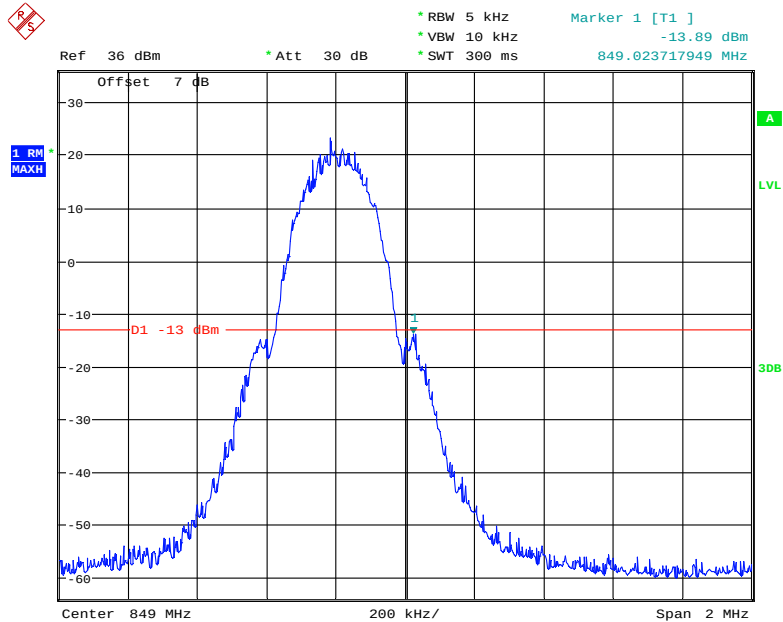
Please refer to the following plots.

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



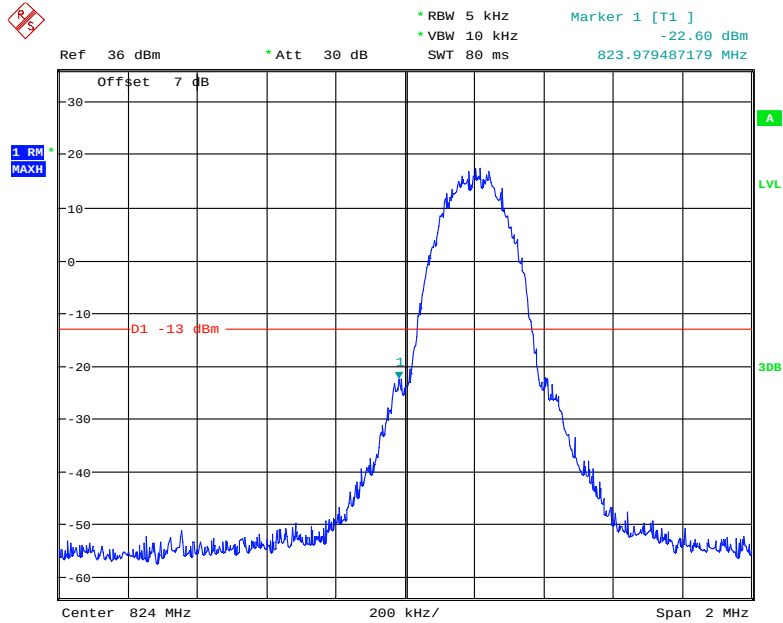
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Cellular Band, Right Band Edge for GSM (GMSK) Mode



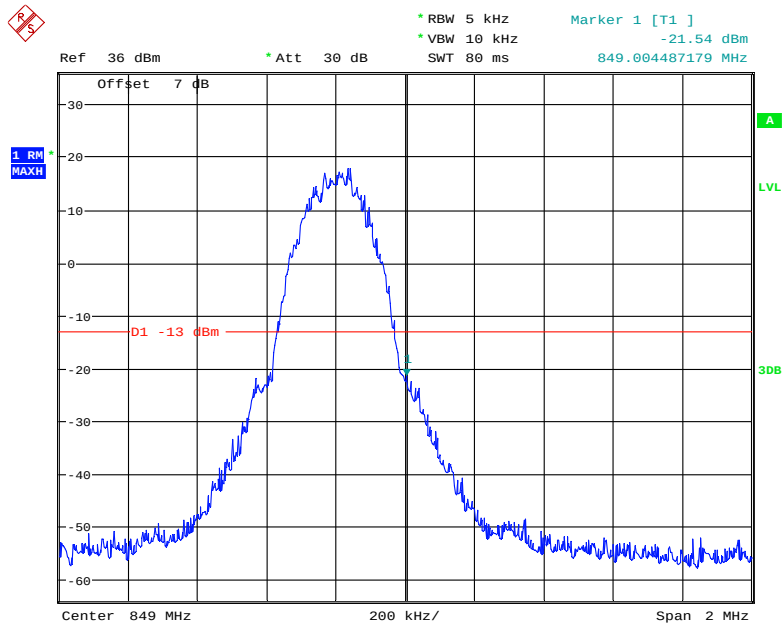
Date: 19.MAY.2021 23:50:08

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



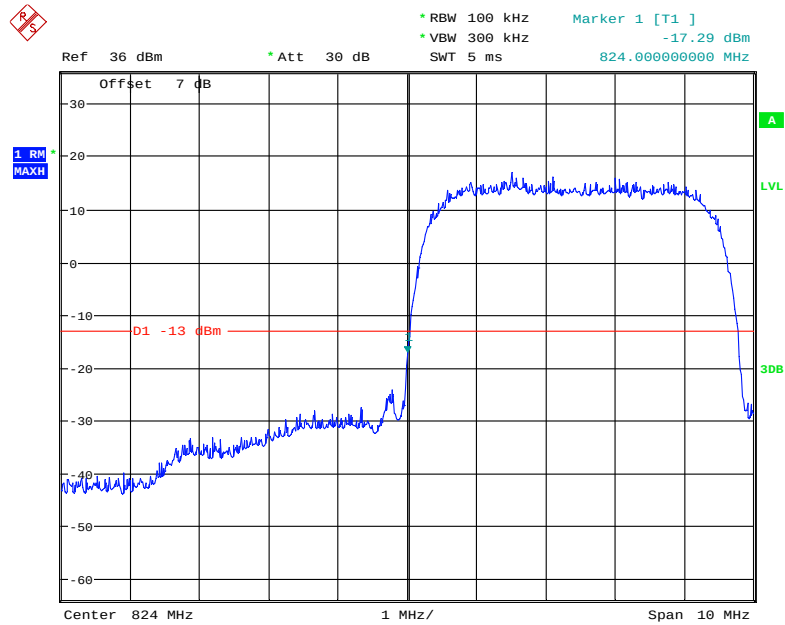
Date: 2.JUN.2021 15:50:15

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



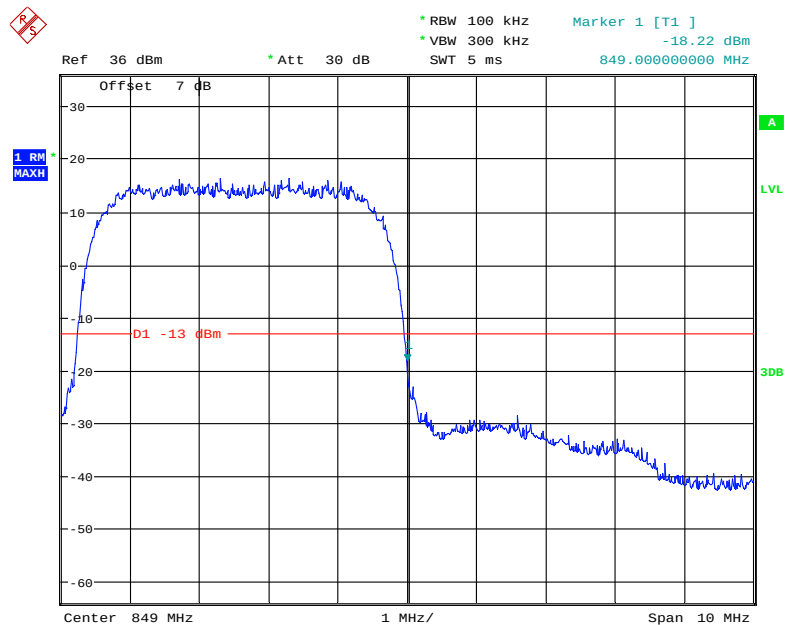
Date: 2.JUN.2021 15:51:46

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



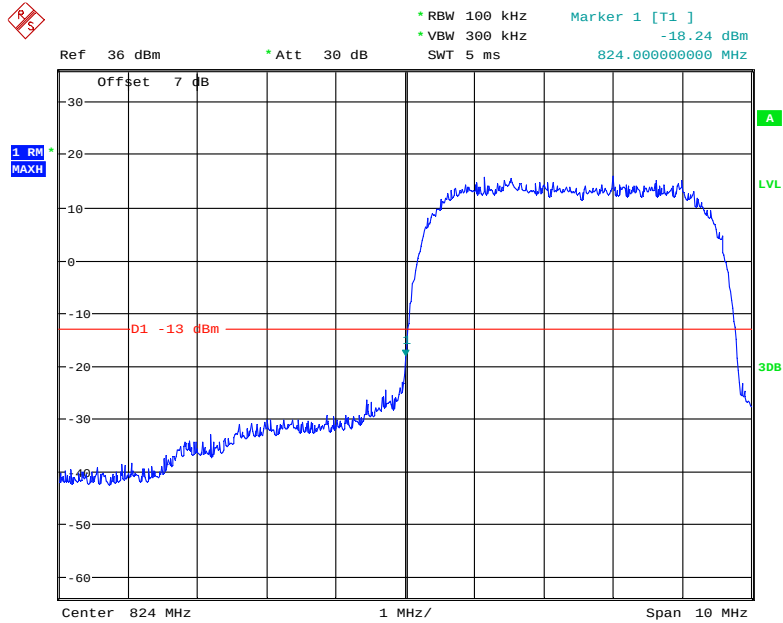
Date: 20.MAY.2021 19:51:50

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



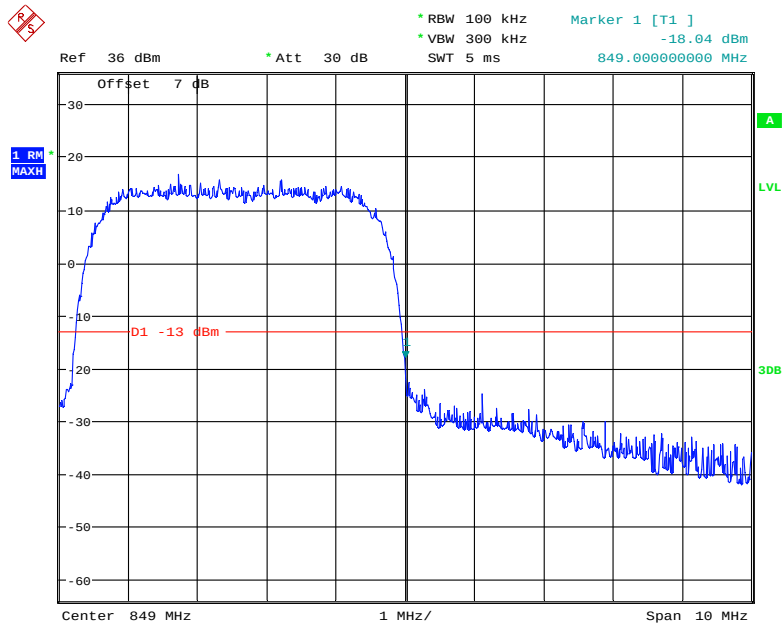
Date: 20.MAY.2021 19:46:26

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



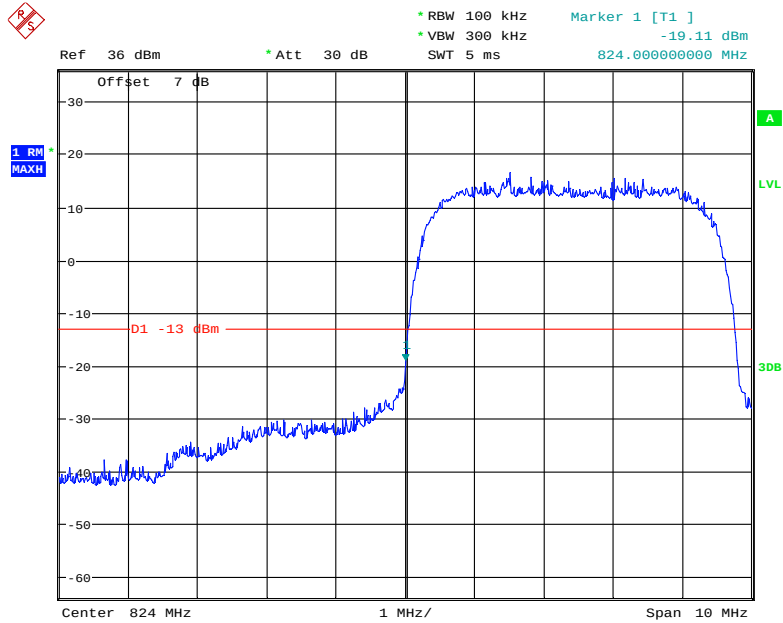
Date: 20.MAY.2021 19:54:50

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



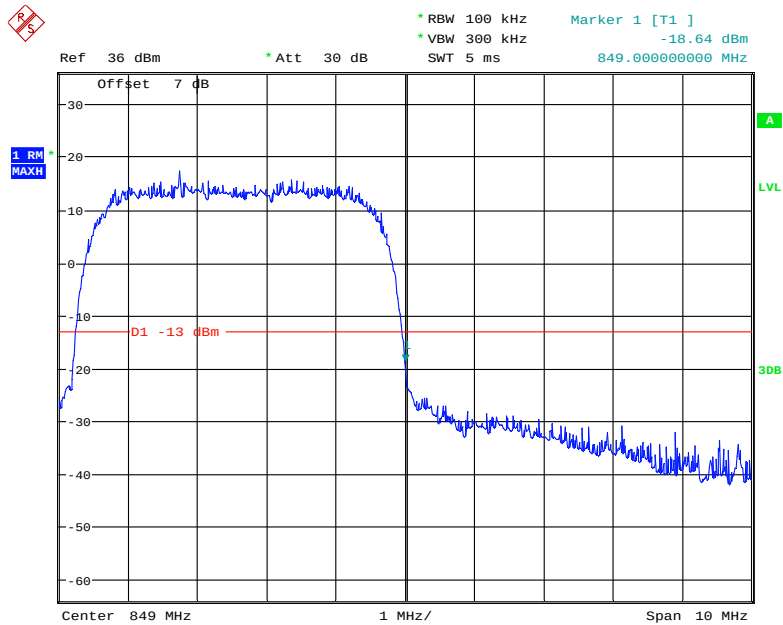
Date: 20.MAY.2021 19:56:06

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



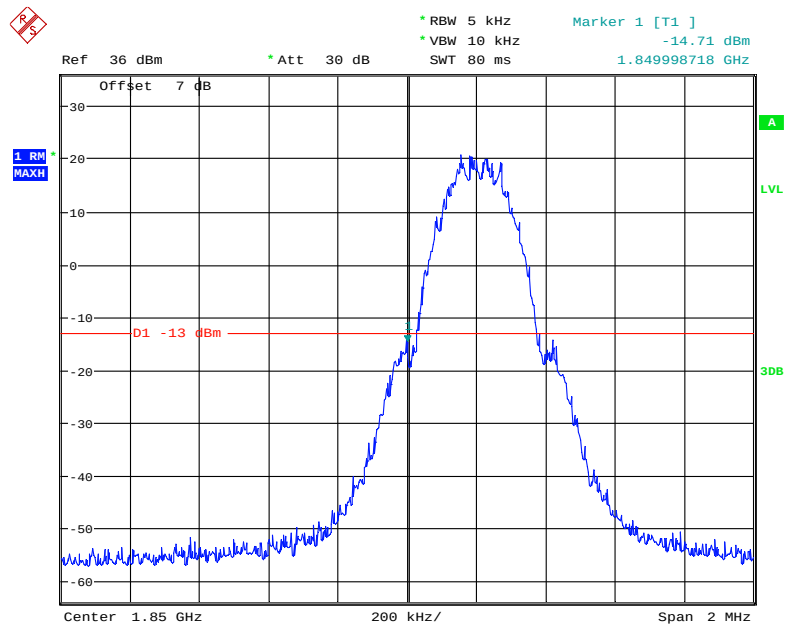
Date: 20.MAY.2021 20:13:23

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



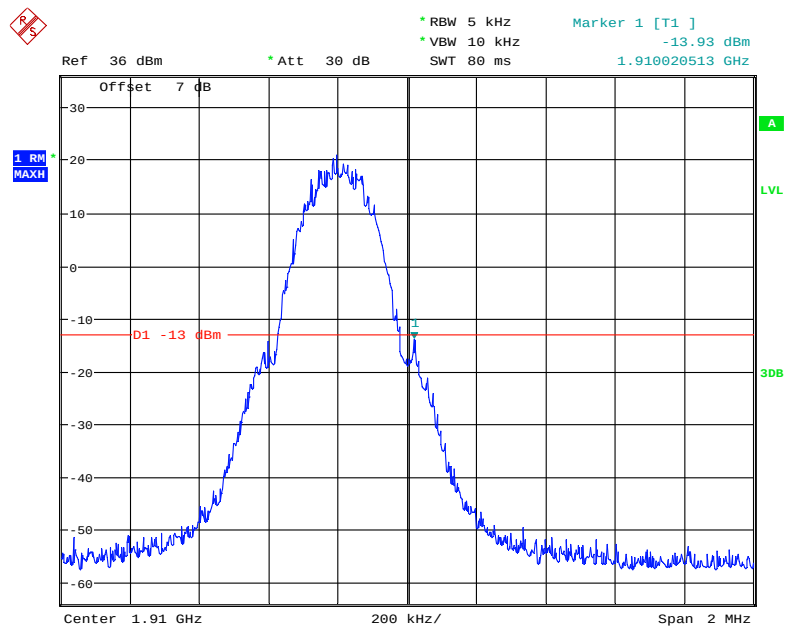
Date: 20.MAY.2021 20:12:23

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



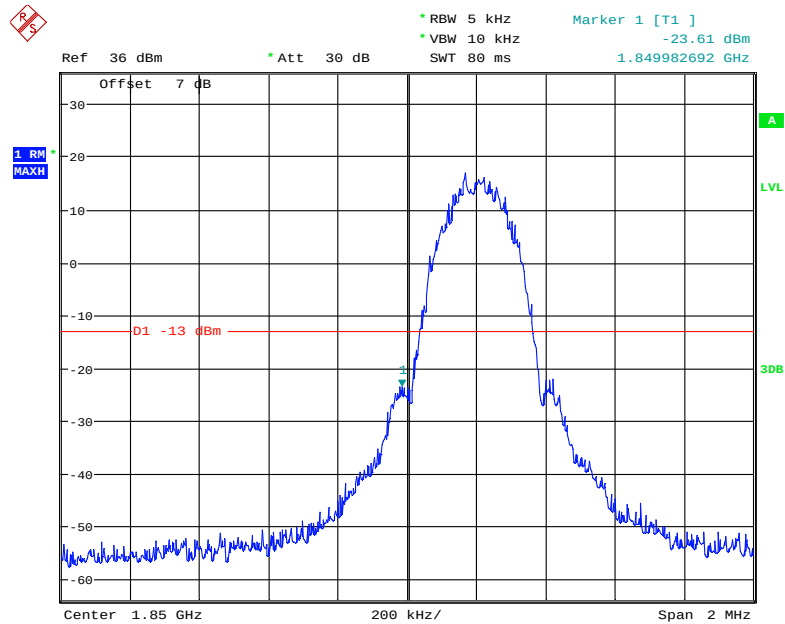
Date: 19.MAY.2021 23:42:23

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



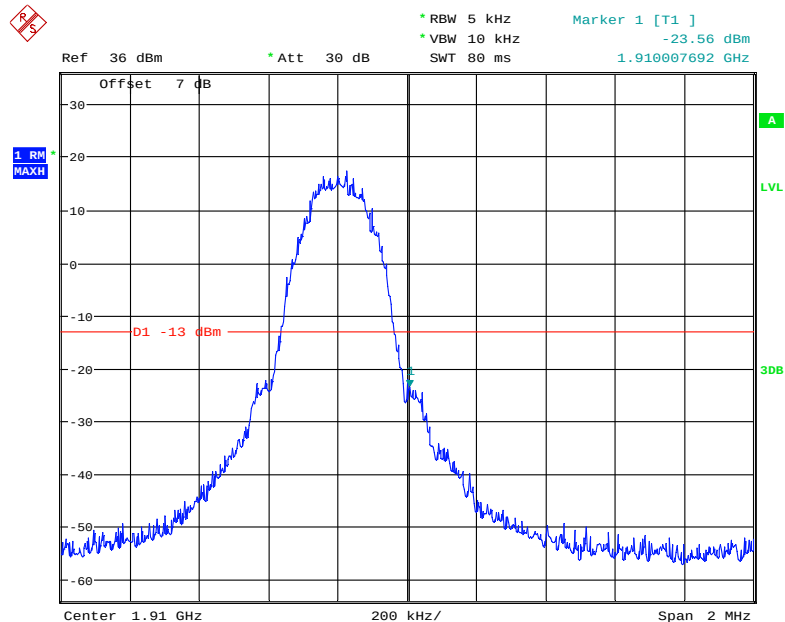
Date: 19.MAY.2021 23:43:33

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



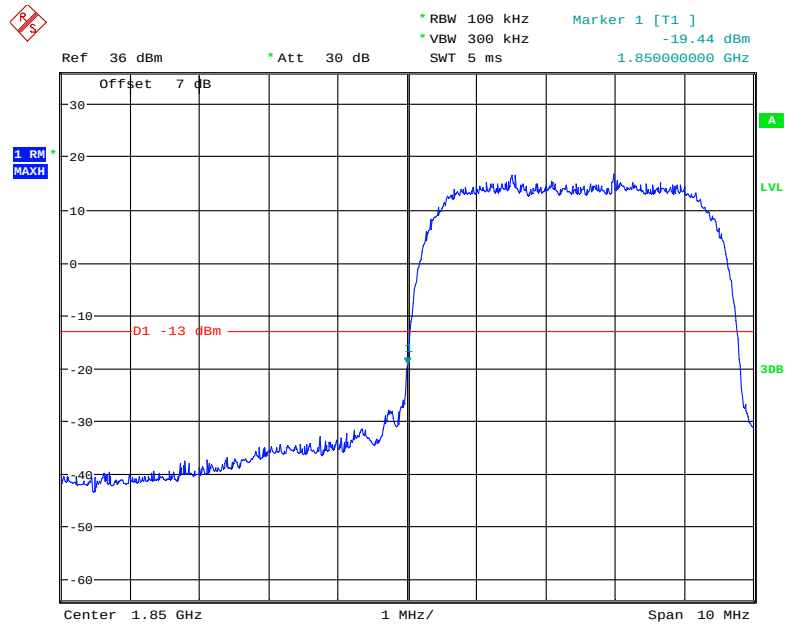
Date: 2.JUN.2021 15:46:31

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



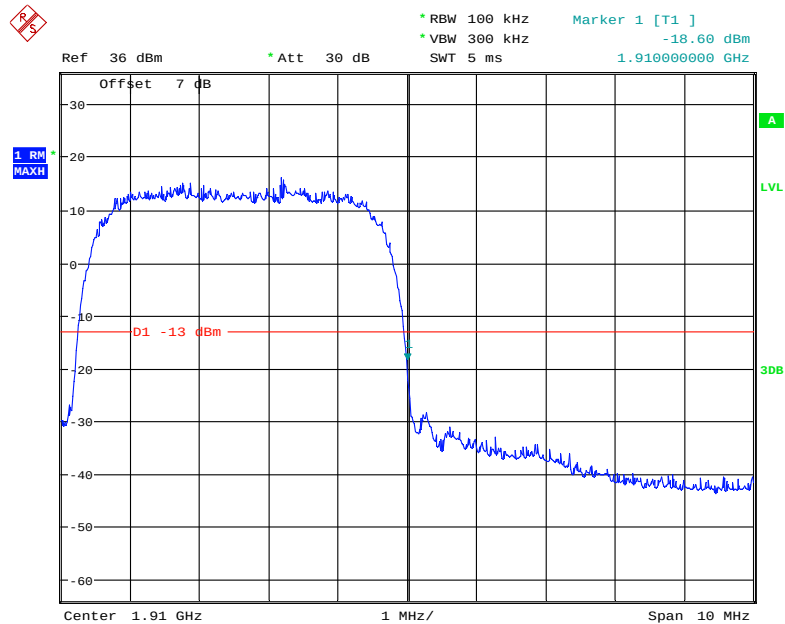
Date: 2.JUN.2021 15:45:24

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

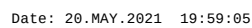
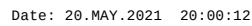


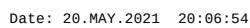
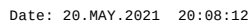
Date: 20.MAY.2021 19:38:44

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

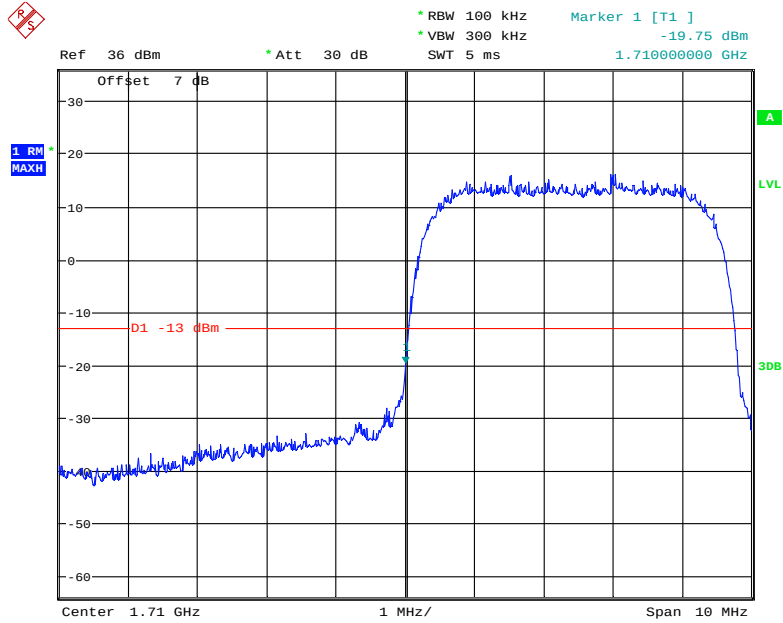


Date: 20.MAY.2021 19:41:24



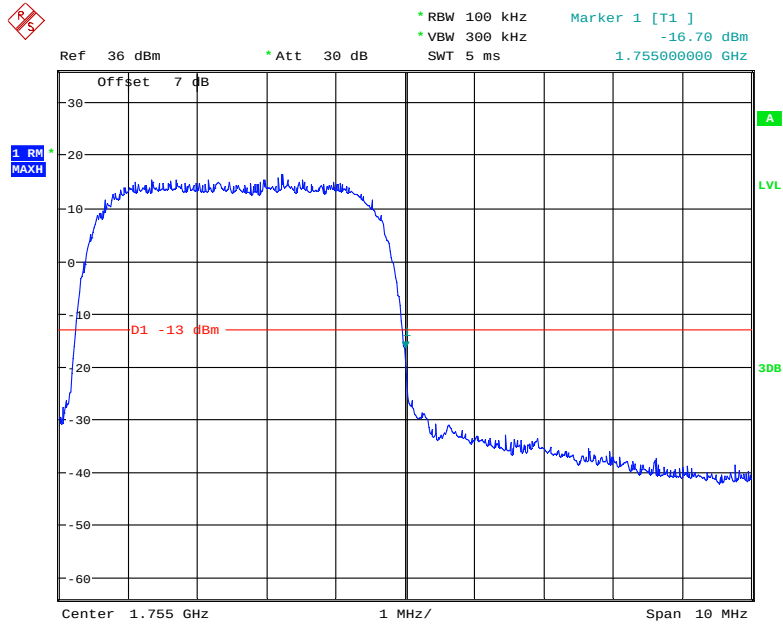


AWS Band, Left Band Edge for WCDMA (BPSK) Mode



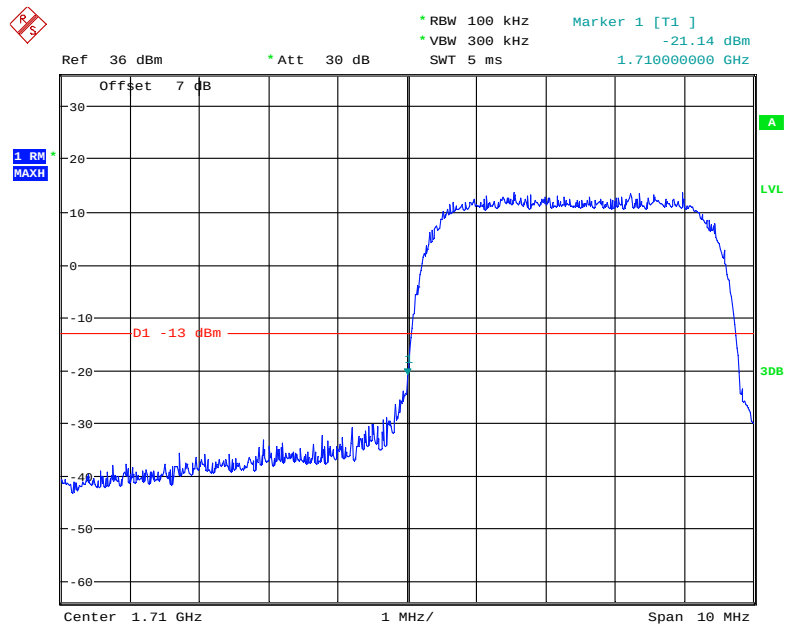
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AWS Band, Right Band Edge for WCDMA (BPSK) Mode



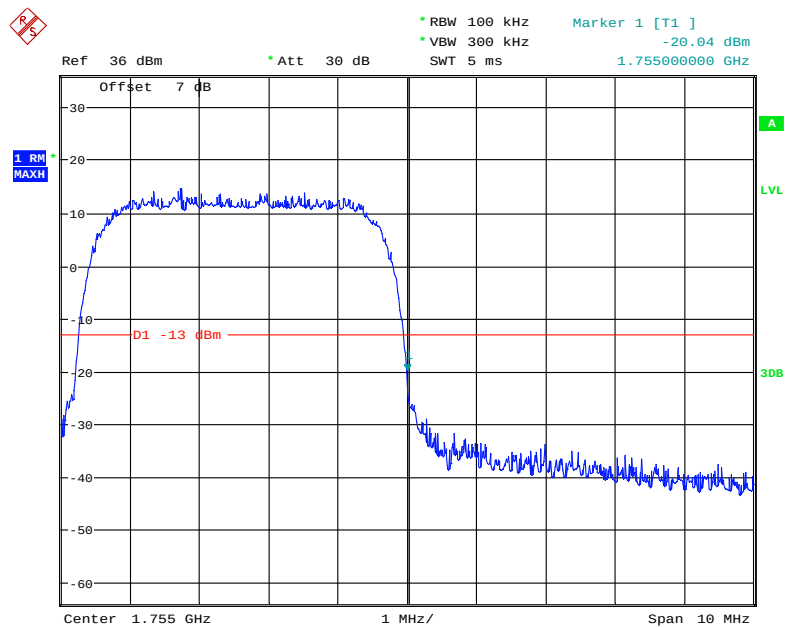
Date: 20.MAY.2021 19:43:23

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

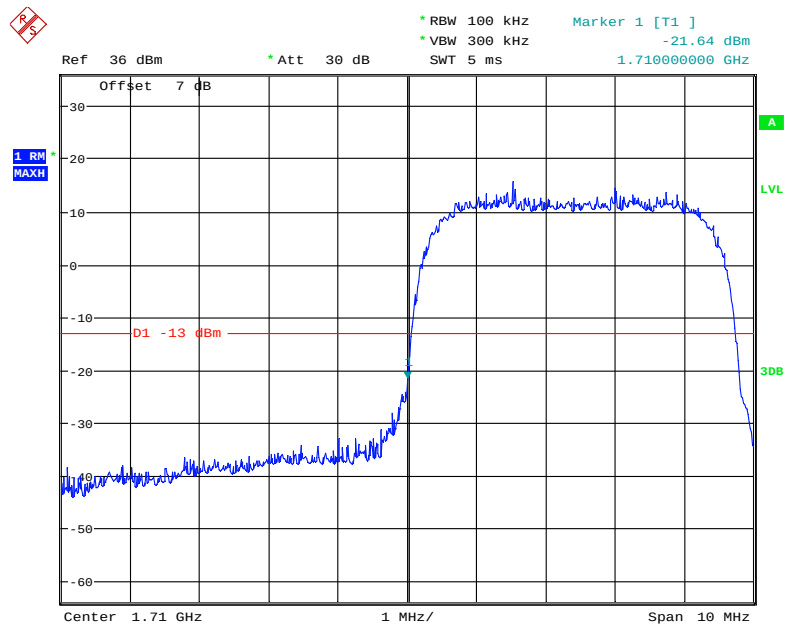


Date: 20.MAY.2021 20:02:07

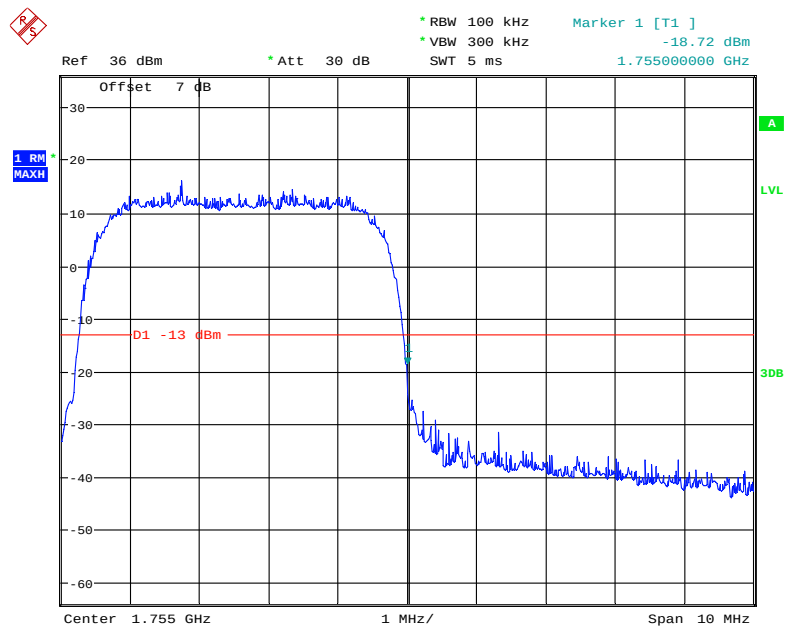
AWS Band, Right Band Edge for HSDPA (16QAM) Mode



Date: 20.MAY.2021 20:03:57

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

Date: 20.MAY.2021 20:11:18

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

Date: 20.MAY.2021 20:09:39

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

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

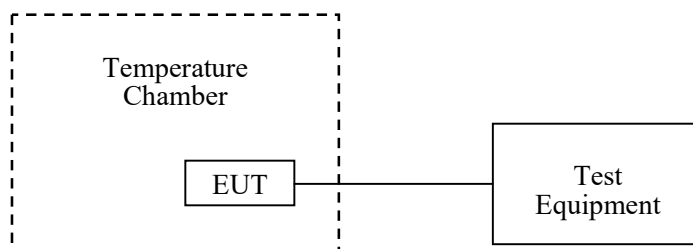
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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 °C
Relative Humidity:	51 %
ATM Pressure:	101.0 kPa

The testing was performed by Orlo Yang from 2021-05-19 to 2021-05-20.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

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

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	6	0.0072	2.5
-20		-5	-0.0060	2.5
-10		9	0.0108	2.5
0		-7	-0.0084	2.5
10		5	0.0060	2.5
20		4	0.0048	2.5
30		-6	-0.0072	2.5
40		7	0.0084	2.5
50		3	0.0036	2.5
20	3.5	7	0.0084	2.5
	4.2	-6	-0.0072	2.5

EDGE Mode

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	3	0.0036	2.5
-20		5	0.0060	2.5
-10		-6	-0.0072	2.5
0		2	0.0024	2.5
10		4	0.0048	2.5
20		-5	-0.0060	2.5
30		-3	-0.0036	2.5
40		-7	-0.0084	2.5
50		6	0.0072	2.5
20	3.5	2	0.0024	2.5
	4.2	4	0.0048	2.5

WCDMA Mode

Middle Channel, $f_0 = 836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	5	0.0060	2.5
-20		3	0.0036	2.5
-10		-6	-0.0072	2.5
0		3	0.0036	2.5
10		3	0.0036	2.5
20		3	0.0036	2.5
30		-5	-0.0060	2.5
40		3	0.0036	2.5
50		-3	-0.0036	2.5
20	3.5	7	0.0084	2.5
	4.2	4	0.0048	2.5

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

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	7	0.0037	pass
-20		3	0.0016	pass
-10		-6	-0.0032	pass
0		3	0.0016	pass
10		3	0.0016	pass
20		3	0.0016	pass
30		-5	-0.0027	pass
40		3	0.0016	pass
50		-3	-0.0016	pass
20	3.5	5	0.0027	pass
	4.2	4	0.0021	pass

EDGE Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	3	0.0016	pass
-20		5	0.0027	pass
-10		1	0.0005	pass
0		0	0.0000	pass
10		-3	-0.0016	pass
20		-4	-0.0021	pass
30		6	0.0032	pass
40		4	0.0021	pass
50		5	0.0027	pass
20	3.5	2	0.0011	pass
	4.2	1	0.0005	pass

WCDMA Mode

Middle Channel, $f_0=1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	5	0.0027	pass
-20		3	0.0016	pass
-10		-6	-0.0032	pass
0		3	0.0016	pass
10		3	0.0016	pass
20		3	0.0016	pass
30		-5	-0.0027	pass
40		3	0.0016	pass
50		-3	-0.0016	pass
20	3.5	6	0.0032	pass
	4.2	7	0.0037	pass

AWS Band (Part 27)

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.7	1710.0645	1754.9396	1710	1755
-20		1710.0568	1754.9361	1710	1755
-10		1710.0576	1754.9451	1710	1755
0		1710.0528	1754.9423	1710	1755
10		1710.0636	1754.9373	1710	1755
20		1710.0573	1754.9388	1710	1755
30		1710.0593	1754.9402	1710	1755
40		1710.0539	1754.9361	1710	1755
50		1710.0526	1754.9389	1710	1755
20	3.5	1710.0634	1754.9420	1710	1755
	4.2	1710.0649	1754.9389	1710	1755

LTE:
QPSK:

Band 2:

10.0 MHz Middle Channel, $f_o=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	7	0.0037	pass
-20		8	0.0043	pass
-10		-6	-0.0032	pass
0		5	0.0027	pass
10		-5	-0.0027	pass
20		8	0.0043	pass
30		1	0.0005	pass
40		5	0.0027	pass
50		5	0.0027	pass
20	3.5	-8	-0.0043	pass
	4.2	7	0.0037	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	3.7	1710.5673	1755.4836	1710	1755
-20		1710.5480	1754.7556	1710	1755
-10		1710.7908	1754.5688	1710	1755
0		1710.5111	1754.5809	1710	1755
10		1710.6022	1754.7197	1710	1755
20		1710.8929	1754.6473	1710	1755
30		1710.6720	1754.4857	1710	1755
40		1710.5808	1754.6227	1710	1755
50		1711.3640	1754.7181	1710	1755
20	3.5	1710.5932	1754.7870	1710	1755
	4.2	1710.7335	1754.5761	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	8	0.0096	2.5
-20		11	0.0131	2.5
-10		7	0.0084	2.5
0		-3	-0.0036	2.5
10		6	0.0072	2.5
20		9	0.0108	2.5
30		2	0.0024	2.5
40		6	0.0072	2.5
50		5	0.0060	2.5
20	3.5	7	0.0084	2.5
	4.2	5	0.0060	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	3.7	2500.7246	2569.4506	2500	2570
-20		2500.4654	2569.5379	2500	2570
-10		2500.3660	2569.7399	2500	2570
0		2500.4045	2569.8978	2500	2570
10		2500.7350	2569.2646	2500	2570
20		2500.6922	2569.8622	2500	2570
30		2500.5402	2569.9136	2500	2570
40		2500.5188	2569.7567	2500	2570
50		2500.5981	2569.7747	2500	2570
20	3.5	2500.5648	2569.3207	2500	2570
	4.2	2500.6510	2569.4895	2500	2570

16QAM:**Band 2:**

10.0 MHz Middle Channel, $f_o=1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.7	-6	-0.0032	pass
-20		5	0.0027	pass
-10		8	0.0043	pass
0		-4	-0.0021	pass
10		7	0.0037	pass
20		-9	-0.0048	pass
30		-5	-0.0027	pass
40		7	0.0037	pass
50		11	0.0059	pass
20	3.5	8	0.0043	pass
	4.2	9	0.0048	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	3.7	1710.5459	1754.8905	1710	1755
-20		1710.5758	1754.8208	1710	1755
-10		1710.5740	1754.8719	1710	1755
0		1710.5874	1754.7637	1710	1755
10		1710.5288	1754.7827	1710	1755
20		1710.7052	1754.8619	1710	1755
30		1710.5634	1754.7152	1710	1755
40		1710.6728	1754.8050	1710	1755
50		1710.5147	1754.7733	1710	1755
20	3.5	1710.5315	1754.7488	1710	1755
	4.2	1710.5256	1754.7754	1710	1755

Band 5:

10.0 MHz Middle Channel, $f_o=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.7	6	0.0072	2.5
-20		5	0.0060	2.5
-10		-8	-0.0096	2.5
0		-5	-0.0060	2.5
10		8	0.0096	2.5
20		7	0.0084	2.5
30		-3	-0.0036	2.5
40		6	0.0072	2.5
50		4	0.0048	2.5
20	3.5	9	0.0108	2.5
	4.2	-4	-0.0048	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	3.7	2500.6719	2569.4869	2500	2570
-20		2500.5816	2569.4428	2500	2570
-10		2500.6305	2569.5023	2500	2570
0		2500.6425	2569.5167	2500	2570
10		2500.5395	2569.4200	2500	2570
20		2500.5317	2569.4970	2500	2570
30		2500.5624	2569.4835	2500	2570
40		2500.5306	2569.4446	2500	2570
50		2500.5724	2569.4827	2500	2570
20	3.5	2500.4022	2569.4621	2500	2570
	4.2	2500.5684	2569.5256	2500	2570

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