



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

For

SENWA MEXICO,S.A.DE C.V

CARRETERA MEXICO-TOLUCA No. 5324, INT. PLANTA BAJA COL. EL YAQUI,
CUAJIMALPA DE MORELOS, CIUDAD DE MEXICO, Mexico

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TABLE OF CONTENTS

GENERAL INFORMATION.....	4
PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)	4
OBJECTIVE	4
TEST METHODOLOGY	5
MEASUREMENT UNCERTAINTY	5
TEST FACILITY	5
SYSTEM TEST CONFIGURATION.....	6
DESCRIPTION OF TEST CONFIGURATION	6
EQUIPMENT MODIFICATIONS	6
SUPPORT EQUIPMENT LIST AND DETAILS	6
SUPPORT CABLE DESCRIPTION	6
BLOCK DIAGRAM OF TEST SETUP	6
SUMMARY OF TEST RESULTS.....	7
TEST EQUIPMENT LIST	8
FCC §1.1307(B) & §2.1093 - RF EXPOSURE INFORMATION.....	10
APPLICABLE STANDARD	10
TEST RESULT	10
FCC §2.1047 - MODULATION CHARACTERISTIC	11
FCC § 2.1046, § 22.913 (A) & § 24.232 (C); §27.50 (D) (H) - RF OUTPUT POWER	12
APPLICABLE STANDARD	12
TEST PROCEDURE	12
TEST DATA	12
FCC §2.1049, §22.917, §22.905 & §24.238 & §27.53 - OCCUPIED BANDWIDTH.....	36
APPLICABLE STANDARD	36
TEST PROCEDURE	36
TEST DATA	36
FCC §2.1051, §22.917(A) & §24.238(A); §27.53 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS	61
APPLICABLE STANDARD	61
TEST PROCEDURE	61
TEST DATA	61
FCC § 2.1053; § 22.917 (A);§ 24.238 (A); §27.53 SPURIOUS RADIATED EMISSIONS	79
APPLICABLE STANDARD	79
TEST PROCEDURE	79
TEST DATA	79
FCC § 22.917 (A);§ 24.238 (A); §27.53 (H)(M) - BAND EDGES	88
APPLICABLE STANDARD	88
TEST PROCEDURE	88
TEST DATA	88
FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY	100
APPLICABLE STANDARD	100

TEST PROCEDURE100

TEST DATA101

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mobile Phone
Tested Model	D60LX
Frequency Range	EGSM 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 66: 1710-1780MHz(TX); 2110-2180MHz(RX)
Modulation Technique	2G: GMSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	EGSM850/WCDMA Band 5/LTE Band 5: 0.4dBi PCS1900/WCDMA Band 2/LTE Band 2: 1.2dBi WCDMA Band 4/LTE Band 4/LTE Band 66: 0.8dBi LTE Band 7: 1.1dBi (provided by the applicant)
Voltage Range	DC 3.8 V from battery or DC5.0V from adapter
Date of Test	2021-03-01 to 2021-03-26
Sample serial number	SZ1210224-04783E-RF-S1(Assigned by BACL, Shenzhen)
Received date	2021-02-24
Sample/EUT Status	Good condition
Adapter information	Input: 100-240V _{AC} , 50/60Hz, 0.2A Output: 5.0V _{DC} , 1A

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.

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.

Equipment Modifications

No modification was made to the EUT.

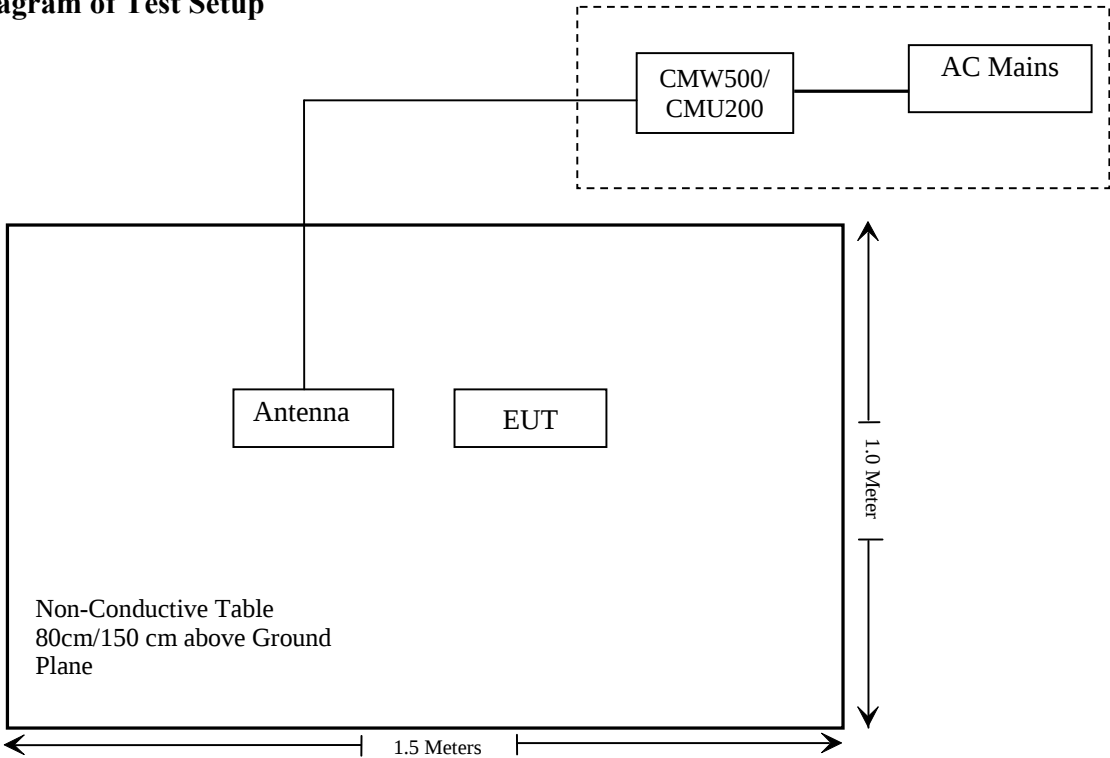
Support Equipment List and Details

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

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	A040904-1	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 1	F-03-EM236	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	2020/11/29	2021/11/28
Sunol Sciences	Horn Antenna	DRH-118	A052604	2020/12/22	2023/12/21
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
MICRO-TRONICS	Passband filter	HPM50111	F-19-EM006	2020/04/20	2021/04/20
Unknown	High Pass filter	1.3GHz	101120	2020/04/20	2021/04/20
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-02 1304	2018/12/06	2021/12/05
Ducommun Technologies	Horn antenna	ARH-4223-02	1007726-01 1304	2018/12/06	2021/12/05
Agilent	Signal Generator	N5183A	MY51040755	2020/12/04	2021/12/04

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	SPECTRUM ANALYZER	FSU26	200120	2020/04/03	2021/04/02
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
ESPEC	Temperature & Humidity Chamber	EL-10KA	9107726	2021/01/05	2022/01/05
Fluke	Digital Multimeter	287	19000011	2020/07/23	2021/07/22

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

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliance, please refer to the SAR report: SZ1210224-04783E-20.

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.

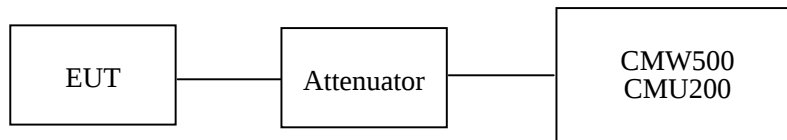
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1780MHz.

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.



Radiated method:

ANSI C63.26-2015 section 5.5.3.

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu from 2021-03-01 to 2021-03-04.

Conducted Power**Cellular 850**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP (dBm)	Limit (dBm)
GSM	128	824.2	32.1	29.85	38.45
	190	836.6	32.2	29.95	38.45
	251	848.8	32.1	29.85	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	32.12	31.43	29.76	28.28	29.87	29.18	27.51	26.03	38.45
	190	836.6	32.14	31.22	29.34	28.31	29.89	28.97	27.09	26.06	38.45
	251	848.8	32.13	31.31	29.28	28.18	29.88	29.06	27.03	25.93	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP (dBm)			Limit (dBm)
			Low	Mid	High	Low	Mid	High	
WCDMA (Band 5)	RMC12.2k		22.24	22.31	22.48	19.99	20.06	20.23	38.45
	HSDPA	1	21.57	21.66	21.72	19.32	19.41	19.47	38.45
		2	21.43	21.51	21.34	19.18	19.26	19.09	38.45
		3	21.12	21.04	21.16	18.87	18.79	18.91	38.45
		4	20.41	20.54	20.62	18.16	18.29	18.37	38.45
	HSUPA	1	21.72	21.59	21.61	19.47	19.34	19.36	38.45
		2	21.53	21.43	21.52	19.28	19.18	19.27	38.45
		3	21.24	21.10	21.21	18.99	18.85	18.96	38.45
		4	20.82	20.74	20.86	18.57	18.49	18.61	38.45
		5	20.64	21.62	20.46	18.39	19.37	18.21	38.45
	HSPA+	1	21.54	21.61	21.72	19.29	19.36	19.47	38.45

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)-Cable Loss(dB)
 For GSM850/WCDMA Band 5: Antenna Gain = 0.4dBi = -1.75dBd (0dBd=2.15dBi)
 Cable Loss=0.5dB*(provided by the applicant)
 Limit: ERP≤38.45dBm

PCS 1900

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP (dBm)	Limit (dBm)
GSM	512	1850.2	29.3	30.0	33
	661	1880.0	29.1	29.8	33
	810	1909.8	29.4	30.1	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP (dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	29.22	28.64	26.70	25.43	29.92	29.34	27.4	26.13	33
	661	1880.0	29.26	28.53	26.67	25.57	29.96	29.23	27.37	26.27	33
	810	1909.8	29.34	28.57	26.44	25.49	30.04	29.27	27.14	26.19	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP (dBm)			Limit (dBm)
			Low	Mid	High	Low	Mid	High	
WCDMA (Band 2)	RMC12.2k		22.12	22.46	22.34	22.82	23.16	23.04	33
	HSDPA	1	21.82	21.76	21.89	22.52	22.46	22.59	33
		2	21.34	21.52	21.73	22.04	22.22	22.43	33
		3	21.05	21.16	21.32	21.75	21.86	22.02	33
		4	20.76	20.86	20.67	21.46	21.56	21.37	33
	HSUPA	1	21.62	21.87	21.74	22.32	22.57	22.44	33
		2	21.34	21.24	21.63	22.04	21.94	22.33	33
		3	21.00	21.13	21.03	21.7	21.83	21.73	33
		4	20.89	20.92	20.83	21.59	21.62	21.53	33
		5	20.72	20.53	20.64	21.42	21.23	21.34	33
	HSPA+	1	21.55	21.74	21.63	22.25	22.44	22.33	33

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

For PCS1900 /WCDMA Band 2: Antenna Gain = 1.2dBi

Cable Loss=0.5dB*(provided by the applicant)

Limit: EIRP ≤ 33dBm

AWS Band 4

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)			Limit (dBm)
			Low	Mid	High	Low	Mid	High	
WCDMA (Band 4)	RMC12.2k		21.98	21.82	21.79	22.28	22.12	22.09	30
	HSDPA	1	21.43	21.30	21.57	21.73	21.6	21.87	30
		2	21.21	21.17	21.31	21.51	21.47	21.61	30
		3	20.96	20.69	20.73	21.26	20.99	21.03	30
		4	20.84	20.46	20.31	21.14	20.76	20.61	30
	HSUPA	1	21.33	21.28	21.47	21.63	21.58	21.77	30
		2	21.01	21.16	21.26	21.31	21.46	21.56	30
		3	20.98	20.97	21.04	21.28	21.27	21.34	30
		4	20.84	20.76	20.79	21.14	21.06	21.09	30
		5	20.46	20.31	20.48	20.76	20.61	20.78	30
	HSPA+	1	21.41	21.38	21.52	21.71	21.68	21.82	30

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

For Band 4: Antenna Gain = 0.8dBi

Cable Loss=0.5dB*(provided by the applicant)

Limit: EIRP≤30dBm

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.25	13
	Middle	3.56	13
	High	3.49	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.56	13
	Middle	3.35	13
	High	3.54	13
HSDPA (16QAM)	Low	3.45	13
	Middle	3.24	13
	High	3.46	13
HSUPA (BPSK)	Low	3.14	13
	Middle	3.24	13
	High	3.37	13
HSPA+	Low	3.47	13
	Middle	3.34	13
	High	3.29	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.28	13
	Middle	3.22	13
	High	3.49	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.56	13
	Middle	3.45	13
	High	3.41	13
HSDPA (16QAM)	Low	3.53	13
	Middle	3.37	13
	High	3.48	13
HSUPA (BPSK)	Low	3.34	13
	Middle	3.67	13
	High	3.54	13
HSPA+	Low	3.18	13
	Middle	3.35	13
	High	3.29	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.14	13
	Middle	3.35	13
	High	3.54	13
HSDPA (16QAM)	Low	3.41	13
	Middle	3.37	13
	High	3.54	13
HSUPA (BPSK)	Low	3.26	13
	Middle	3.47	13
	High	3.42	13
HSPA+	Low	3.31	13
	Middle	3.46	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	22.14	22.2	22.23	22.84	22.90	22.93
		RB1#2	22.1	22.15	22.26	22.8	22.85	22.96
		RB1#5	22.14	22.25	22.31	22.84	22.95	23.01
		RB3#0	22.07	22.32	22.42	22.77	23.02	23.12
		RB3#1	22.12	22.33	22.43	22.82	23.03	23.13
		RB3#2	21.03	21.24	21.29	21.73	21.94	21.99
		RB6#0	20.71	20.91	21.04	21.41	21.61	21.74
	16QAM	RB1#0	21.59	21.75	21.11	22.29	22.45	21.81
		RB1#2	21.68	21.76	21.12	22.38	22.46	21.82
		RB1#5	21.65	21.78	21.09	22.35	22.48	21.79
		RB3#0	20.94	21.24	21.45	21.64	21.94	22.15
		RB3#1	20.98	21.28	21.42	21.68	21.98	22.12
		RB3#2	20.12	20.47	20.6	20.82	21.17	21.3
		RB6#0	19.85	20.26	20.27	20.55	20.96	20.97
3.0	QPSK	RB1#0	22.01	22.22	22.18	22.71	22.92	22.88
		RB1#7	22.03	22.23	22.21	22.73	22.93	22.91
		RB1#14	22.02	22.28	22.29	22.72	22.98	22.99
		RB8#0	21.06	21.3	21.23	21.76	22.00	21.93
		RB8#4	21.01	21.28	21.29	21.71	21.98	21.99
		RB8#7	21.04	21.28	21.3	21.74	21.98	22.00
		RB15#0	20.76	20.93	21.11	21.46	21.63	21.81
	16QAM	RB1#0	21.29	21.78	21.02	21.99	22.48	21.72
		RB1#7	21.22	21.8	21.03	21.92	22.5	21.73
		RB1#14	21.22	21.81	21.06	21.92	22.51	21.76
		RB8#0	20.22	20.44	20.61	20.92	21.14	21.31
		RB8#4	20.23	20.49	20.56	20.93	21.19	21.26
		RB8#7	20.15	20.27	20.33	20.85	20.97	21.03
		RB15#0	19.91	20.02	19.84	20.61	20.72	20.54

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.01	22.36	22.28	22.71	23.06	22.98
		RB1#12	22.01	22.32	22.25	22.71	23.02	22.95
		RB1#24	21.99	22.4	22.26	22.69	23.10	22.96
		RB12#0	21.02	21.28	21.23	21.72	21.98	21.93
		RB12#6	21.1	21.37	21.3	21.80	22.07	22.00
		RB12#11	20.95	21.29	21.27	21.65	21.99	21.97
		RB25#0	20.57	20.93	20.86	21.27	21.63	21.56
	16QAM	RB1#0	20.29	21.47	20.91	20.99	22.17	21.61
		RB1#12	20.29	21.48	20.87	20.99	22.18	21.57
		RB1#24	20.28	21.5	20.95	20.98	22.2	21.65
		RB12#0	20.25	20.25	20.44	20.95	20.95	21.14
		RB12#6	20.2	20.23	20.42	20.90	20.93	21.12
		RB12#11	20.19	20.39	20.32	20.89	21.09	21.02
		RB25#0	19.86	19.95	19.97	20.56	20.65	20.67
10.0	QPSK	RB1#0	21.96	22.29	22.29	22.66	22.99	22.99
		RB1#24	22	22.34	22.25	22.70	23.04	22.95
		RB1#49	22.06	22.35	22.35	22.76	23.05	23.05
		RB25#0	21.1	21.27	21.36	21.8	21.97	22.06
		RB25#12	21.13	21.37	21.39	21.83	22.07	22.09
		RB25#24	21.12	21.27	21.28	21.82	21.97	21.98
		RB50#0	20.86	21.02	20.94	21.56	21.72	21.64
	16QAM	RB1#0	21.26	21.42	20.87	21.96	22.12	21.57
		RB1#24	21.32	21.42	20.74	22.02	22.12	21.44
		RB1#49	21.39	21.42	20.86	22.09	22.12	21.56
		RB25#0	20.13	20.46	20.52	20.83	21.16	21.22
		RB25#12	20.32	20.46	20.54	21.02	21.16	21.24
		RB25#24	20.17	20.44	20.35	20.87	21.14	21.05
		RB50#0	19.84	20.06	19.94	20.54	20.76	20.64

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	21.94	22.2	22.2	22.64	22.9	22.9
		RB1#37	22.08	22.23	22.27	22.78	22.93	22.97
		RB1#74	22.13	22.22	22.27	22.83	22.92	22.97
		RB36#0	20.99	21.27	21.23	21.69	21.97	21.93
		RB36#18	21.26	21.23	21.37	21.96	21.93	22.07
		RB36#37	21.19	21.26	21.24	21.89	21.96	21.94
		RB75#0	20.93	20.86	20.94	21.63	21.56	21.64
	16QAM	RB1#0	21.44	21.54	21.64	22.14	22.24	22.34
		RB1#37	21.6	21.58	21.69	22.3	22.28	22.39
		RB1#74	21.51	21.52	21.69	22.21	22.22	22.39
		RB36#0	20.26	20.38	20.66	20.96	21.08	21.36
		RB36#18	20.24	20.43	20.42	20.94	21.13	21.12
		RB36#37	20.27	20.48	20.4	20.97	21.18	21.1
		RB75#0	19.96	20.24	20.22	20.66	20.94	20.92
20.0	QPSK	RB1#0	22.22	22.28	22.24	22.92	22.98	22.94
		RB1#49	22.27	22.31	22.3	22.97	23.01	23
		RB1#99	22.43	22.35	22.41	23.13	23.05	23.11
		RB50#0	21.07	21.38	21.2	21.77	22.08	21.9
		RB50#24	21.27	21.42	21.27	21.97	22.12	21.97
		RB50#49	21.24	21.28	21.23	21.94	21.98	21.93
		RB100#0	20.91	20.93	21.04	21.61	21.63	21.74
	16QAM	RB1#0	21.16	21.31	22.07	21.86	22.01	22.77
		RB1#49	21.15	21.37	21.91	21.85	22.07	22.61
		RB1#99	21.3	21.35	22.05	22	22.05	22.75
		RB50#0	20.28	20.44	20.3	20.98	21.14	21
		RB50#24	20.41	20.46	20.24	21.11	21.16	20.94
		RB50#49	20.27	20.39	20.73	20.97	21.09	21.43
		RB100#0	20.02	20.24	20.37	20.72	20.94	21.07

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

For Band 2: Antenna Gain = 1.2dBi

Cable Loss=0.5dB*(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)	5.38	5.38	5.12	13	Pass
QPSK (100RB Size)	5.67	5.64	5.50	13	Pass
16QAM (1RB Size)	6.79	6.71	6.67	13	Pass
16QAM (100RB Size)	6.57	6.63	6.38	13	Pass

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.3	21.24	21.57	21.6	21.54	21.87
		RB1#2	21.28	21.19	21.6	21.58	21.49	21.9
		RB1#5	21.34	21.25	21.61	21.64	21.55	21.91
		RB3#0	21.43	21.26	21.53	21.73	21.56	21.83
		RB3#1	21.44	21.32	21.55	21.74	21.62	21.85
		RB3#2	20.25	20.35	20.38	20.55	20.65	20.68
		RB6#0	20.02	20.14	20.15	20.32	20.44	20.45
	16QAM	RB1#0	20.93	20.98	20.5	21.23	21.28	20.8
		RB1#2	20.96	21.05	20.48	21.26	21.35	20.78
		RB1#5	21	21.09	20.53	21.3	21.39	20.83
		RB3#0	20.45	20.25	20.46	20.75	20.55	20.76
		RB3#1	20.48	20.25	20.49	20.78	20.55	20.79
		RB3#2	19.64	19.44	19.75	19.94	19.74	20.05
		RB6#0	19.44	19.25	19.55	19.74	19.55	19.85
3.0	QPSK	RB1#0	21.2	21.14	21.52	21.5	21.44	21.82
		RB1#7	21.3	21.21	21.59	21.6	21.51	21.89
		RB1#14	21.31	21.37	21.61	21.61	21.67	21.91
		RB8#0	20.34	20.21	20.45	20.64	20.51	20.75
		RB8#4	20.34	20.46	20.44	20.64	20.76	20.74
		RB8#7	20.37	20.45	20.47	20.67	20.75	20.77
		RB15#0	20.24	20.15	20.21	20.54	20.45	20.51
	16QAM	RB1#0	20.68	20.95	20.41	20.98	21.25	20.71
		RB1#7	20.77	21.08	20.47	21.07	21.38	20.77
		RB1#14	20.74	21.16	20.61	21.04	21.46	20.91
		RB8#0	19.28	19.41	19.7	19.58	19.71	20
		RB8#4	19.26	19.58	19.8	19.56	19.88	20.1
		RB8#7	19.51	19.33	19.51	19.81	19.63	19.81
		RB15#0	19.44	19.22	19.37	19.74	19.52	19.67

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.29	21.24	21.13	21.59	21.54	21.43
		RB1#12	21.39	21.33	21.31	21.69	21.63	21.61
		RB1#24	21.33	21.51	21.34	21.63	21.81	21.64
		RB12#0	20.32	20.2	20.38	20.62	20.5	20.68
		RB12#6	20.34	20.31	20.48	20.64	20.61	20.78
		RB12#11	20.31	20.33	20.47	20.61	20.63	20.77
		RB25#0	20.11	20.13	20.27	20.41	20.43	20.57
	16QAM	RB1#0	20.56	20.31	20.88	20.86	20.61	21.18
		RB1#12	20.63	20.49	21	20.93	20.79	21.3
		RB1#24	20.68	20.52	21.14	20.98	20.82	21.44
		RB12#0	20.63	20.22	20.56	20.93	20.52	20.86
		RB12#6	20.54	20.35	20.52	20.84	20.65	20.82
		RB12#11	20.5	20.39	20.32	20.8	20.69	20.62
		RB25#0	20.25	20.14	20.19	20.55	20.44	20.49
10.0	QPSK	RB1#0	21.26	20.99	21.23	21.56	21.29	21.53
		RB1#24	21.31	21.26	21.45	21.61	21.56	21.75
		RB1#49	21.57	21.54	21.69	21.87	21.84	21.99
		RB25#0	20.44	20.06	20.14	20.74	20.36	20.44
		RB25#12	20.54	20.41	20.34	20.84	20.71	20.64
		RB25#24	20.43	20.31	20.27	20.73	20.61	20.57
		RB50#0	20.17	20.14	20.06	20.47	20.44	20.36
	16QAM	RB1#0	20.51	20.13	19.63	20.81	20.43	19.93
		RB1#24	20.62	20.51	19.83	20.92	20.81	20.13
		RB1#49	20.84	20.59	20.04	21.14	20.89	20.34
		RB25#0	19.41	19.28	19.33	19.71	19.58	19.63
		RB25#12	19.65	19.58	19.52	19.95	19.88	19.82
		RB25#24	19.59	19.47	19.38	19.89	19.77	19.68
		RB50#0	19.52	19.38	19.32	19.82	19.68	19.62

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	21.16	20.91	20.84	21.46	21.21	21.14
		RB1#37	21.39	21.25	21.22	21.69	21.55	21.52
		RB1#74	21.82	21.69	21.66	22.12	21.99	21.96
		RB36#0	20.37	20.04	19.91	20.67	20.34	20.21
		RB36#18	20.77	20.45	20.31	21.07	20.75	20.61
		RB36#37	20.46	20.38	20.17	20.76	20.68	20.47
		RB75#0	20.25	20.09	19.98	20.55	20.39	20.28
	16QAM	RB1#0	20.53	20.03	19.97	20.83	20.33	20.27
		RB1#37	20.65	20.4	20.51	20.95	20.7	20.81
		RB1#74	21.08	20.82	20.83	21.38	21.12	21.13
		RB36#0	19.61	19.27	18.9	19.91	19.57	19.2
		RB36#18	19.84	19.6	19.44	20.14	19.9	19.74
		RB36#37	19.64	19.46	19.23	19.94	19.76	19.53
		RB75#0	19.44	19.25	19.08	19.74	19.55	19.38
20.0	QPSK	RB1#0	21.45	20.75	20.53	21.75	21.05	20.83
		RB1#49	21.69	21.2	21.03	21.99	21.5	21.33
		RB1#99	22.23	21.82	21.61	22.53	22.12	21.91
		RB50#0	20.48	19.94	19.57	20.78	20.24	19.87
		RB50#24	20.94	20.57	20.24	21.24	20.87	20.54
		RB50#49	20.75	20.38	20.02	21.05	20.68	20.32
		RB100#0	20.38	20.24	19.97	20.68	20.54	20.27
	16QAM	RB1#0	20.22	20.33	20.02	20.52	20.63	20.32
		RB1#49	20.5	20.69	20.61	20.8	20.99	20.91
		RB1#99	21.12	21.13	21.1	21.42	21.43	21.4
		RB50#0	19.63	19.63	18.63	19.93	19.93	18.93
		RB50#24	20.05	19.7	19.19	20.35	20	19.49
		RB50#49	19.86	19.45	19.05	20.16	19.75	19.35
		RB100#0	19.55	19.37	19.17	19.85	19.67	19.47

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

For Band 4: Antenna Gain = 0.8dBi

Cable Loss=0.5dB*(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)	6.37	6.82	6.79	13	Pass
QPSK (100RB Size)	6.39	6.46	6.37	13	Pass
16QAM (1RB Size)	6.40	6.59	6.83	13	Pass
16QAM (100RB Size)	6.82	6.37	6.19	13	Pass

LTE Band 5

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	22.17	22.00	22.03	19.92	19.75	19.78
		RB1#2	22.10	22.11	22.04	19.85	19.86	19.79
		RB1#5	22.12	22.04	22.02	19.87	19.79	19.77
		RB3#0	22.13	22.22	22.03	19.88	19.97	19.78
		RB3#1	22.17	22.25	22.06	19.92	20.00	19.81
		RB3#2	21.05	21.19	21.03	18.80	18.94	18.78
		RB6#0	20.77	20.58	20.76	18.52	18.33	18.51
	16QAM	RB1#0	21.45	21.69	20.75	19.20	19.44	18.50
		RB1#2	21.48	21.70	20.85	19.23	19.45	18.60
		RB1#5	21.49	21.75	20.83	19.24	19.50	18.58
		RB3#0	21.19	21.06	21.11	18.94	18.81	18.86
		RB3#1	21.20	21.05	21.18	18.95	18.80	18.93
		RB3#2	20.42	20.36	20.24	18.17	18.11	17.99
		RB6#0	20.44	20.26	20.08	18.19	18.01	17.83
3.0	QPSK	RB1#0	22.05	22.01	22.09	19.80	19.76	19.84
		RB1#7	22.06	22.09	22.07	19.81	19.84	19.82
		RB1#14	22.03	22.18	22.12	19.78	19.93	19.87
		RB8#0	21.04	21.14	21.14	18.79	18.89	18.89
		RB8#4	21.18	21.14	20.95	18.93	18.89	18.70
		RB8#7	21.12	21.18	21.08	18.87	18.93	18.83
		RB15#0	21.02	21.11	20.99	18.77	18.86	18.74
	16QAM	RB1#0	21.36	21.72	20.70	19.11	19.47	18.45
		RB1#7	21.38	21.79	20.68	19.13	19.54	18.43
		RB1#14	21.39	21.79	20.72	19.14	19.54	18.47
		RB8#0	20.20	20.35	20.20	17.95	18.10	17.95
		RB8#4	20.01	20.37	20.16	17.76	18.12	17.91
		RB8#7	20.23	20.33	20.02	17.98	18.08	17.77
		RB15#0	20.06	20.24	19.97	17.81	17.99	17.72

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	22.10	22.12	21.98	19.85	19.87	19.73
		RB1#12	22.06	22.17	21.91	19.81	19.92	19.66
		RB1#24	22.11	22.16	21.98	19.86	19.91	19.73
		RB12#0	21.08	21.09	21.04	18.83	18.84	18.79
		RB12#6	21.11	21.11	21.01	18.86	18.86	18.76
		RB12#11	21.17	21.07	21.00	18.92	18.82	18.75
		RB25#0	21.04	20.94	20.96	18.79	18.69	18.71
	16QAM	RB1#0	20.31	21.13	20.71	18.06	18.88	18.46
		RB1#12	20.35	21.28	20.65	18.10	19.03	18.40
		RB1#24	20.37	21.23	20.75	18.12	18.98	18.50
		RB12#0	20.28	20.23	20.29	18.03	17.98	18.04
		RB12#6	20.13	20.27	20.04	17.88	18.02	17.79
		RB12#11	20.18	20.30	19.90	17.93	18.05	17.65
		RB25#0	20.05	20.24	20.06	17.80	17.99	17.81
10.0	QPSK	RB1#0	22.04	22.23	22.06	19.79	19.98	19.81
		RB1#24	22.03	22.25	22.04	19.78	20.00	19.79
		RB1#49	22.04	22.20	22.02	19.79	19.95	19.77
		RB25#0	21.21	21.12	21.27	18.96	18.87	19.02
		RB25#12	21.11	21.15	21.07	18.86	18.90	18.82
		RB25#24	21.19	21.09	21.08	18.94	18.84	18.83
		RB50#0	21.06	20.95	20.97	18.81	18.70	18.72
	16QAM	RB1#0	21.19	21.24	20.68	18.94	18.99	18.43
		RB1#24	21.31	21.34	20.64	19.06	19.09	18.39
		RB1#49	21.19	21.37	20.54	18.94	19.12	18.29
		RB25#0	20.10	20.45	20.31	17.85	18.20	18.06
		RB25#12	20.39	20.39	20.19	18.14	18.14	17.94
		RB25#24	20.19	20.42	20.18	17.94	18.17	17.93
		RB50#0	20.06	20.29	20.07	17.81	18.04	17.82

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band 5: Antenna Gain = 0.4dBi = -1.75dBd (0dBd=2.15dBi)
 Cable Loss= 0.5dB*(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)	5.89	5.82	5.79	13	Pass
QPSK (50RB Size)	6.42	5.40	5.38	13	Pass
16QAM (1RB Size)	6.13	6.86	6.82	13	Pass
16QAM (50RB Size)	6.52	6.16	6.27	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	22.75	22.74	22.64	23.35	23.34	23.24
		RB1#12	22.62	22.75	22.71	23.22	23.35	23.31
		RB1#24	22.67	22.76	22.67	23.27	23.36	23.27
		RB12#0	21.69	21.74	21.85	22.29	22.34	22.45
		RB12#6	21.62	21.74	21.78	22.22	22.34	22.38
		RB12#11	21.59	21.75	21.76	22.19	22.35	22.36
		RB25#0	21.35	21.25	21.47	21.95	21.85	22.07
	16QAM	RB1#0	20.98	21.63	21.39	21.58	22.23	21.99
		RB1#12	20.91	21.8	21.43	21.51	22.4	22.03
		RB1#24	20.89	21.69	21.49	21.49	22.29	22.09
		RB12#0	20.87	20.64	20.93	21.47	21.24	21.53
		RB12#6	20.81	20.73	20.94	21.41	21.33	21.54
		RB12#11	20.85	20.77	20.76	21.45	21.37	21.36
		RB25#0	20.47	20.54	20.38	21.07	21.14	20.98
10.0	QPSK	RB1#0	22.56	22.73	22.82	23.16	23.33	23.42
		RB1#24	22.54	22.74	22.86	23.14	23.34	23.46
		RB1#49	22.56	22.75	22.93	23.16	23.35	23.53
		RB25#0	21.73	21.64	21.81	22.33	22.24	22.41
		RB25#12	21.66	21.66	21.74	22.26	22.26	22.34
		RB25#24	21.59	21.66	21.71	22.19	22.26	22.31
		RB50#0	21.46	21.38	21.57	22.06	21.98	22.17
	16QAM	RB1#0	21.83	21.93	21.36	22.43	22.53	21.96
		RB1#24	21.78	21.94	21.41	22.38	22.54	22.01
		RB1#49	21.85	21.97	21.4	22.45	22.57	22
		RB25#0	20.77	20.93	21.01	21.37	21.53	21.61
		RB25#12	20.78	20.94	21	21.38	21.54	21.6
		RB25#24	20.83	20.9	20.91	21.43	21.5	21.51
		RB50#0	20.58	20.65	20.71	21.18	21.25	21.31

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.52	22.71	22.84	23.12	23.31	23.44
		RB1#37	22.61	22.75	22.88	23.21	23.35	23.48
		RB1#74	22.58	22.71	22.9	23.18	23.31	23.5
		RB36#0	21.68	21.77	21.87	22.28	22.37	22.47
		RB36#18	21.75	21.71	21.79	22.35	22.31	22.39
		RB36#37	21.61	21.79	21.83	22.21	22.39	22.43
		RB75#0	21.54	21.48	21.62	22.14	22.08	22.22
	16QAM	RB1#0	21.88	22.12	22.3	22.48	22.72	22.9
		RB1#37	21.88	22.09	22.32	22.48	22.69	22.92
		RB1#74	21.94	22.2	22.27	22.54	22.8	22.87
		RB36#0	20.87	20.89	20.96	21.47	21.49	21.56
		RB36#18	20.94	20.89	20.94	21.54	21.49	21.54
		RB36#37	20.76	20.9	20.94	21.36	21.5	21.54
		RB75#0	20.38	20.73	20.74	20.98	21.33	21.34
20.0	QPSK	RB1#0	22.69	22.8	22.88	23.29	23.4	23.48
		RB1#49	22.66	22.79	22.95	23.26	23.39	23.55
		RB1#99	22.69	22.9	23.03	23.29	23.5	23.63
		RB50#0	21.7	21.74	21.85	22.3	22.34	22.45
		RB50#24	21.73	21.79	21.88	22.33	22.39	22.48
		RB50#49	21.55	21.82	21.84	22.15	22.42	22.44
		RB100#0	21.44	21.64	21.52	22.04	22.24	22.12
	16QAM	RB1#0	21.53	22.34	22.43	22.13	22.94	23.03
		RB1#49	21.38	22.34	22.42	21.98	22.94	23.02
		RB1#99	21.49	22.39	22.5	22.09	22.99	23.1
		RB50#0	20.83	20.97	20.84	21.43	21.57	21.44
		RB50#24	20.92	21.02	20.92	21.52	21.62	21.52
		RB50#49	20.75	20.79	20.92	21.35	21.39	21.52
		RB100#0	20.43	20.57	20.78	21.03	21.17	21.38

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)
 For Band 7: Antenna Gain = 1.1dBi, Cable Loss=0.5dB*(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)	5.39	5.80	5.28	13	Pass
QPSK (100RB Size)	5.42	5.36	5.64	13	Pass
16QAM (1RB Size)	6.39	6.85	6.49	13	Pass
16QAM (100RB Size)	6.86	6.16	6.37	13	Pass

LTE Band 66:

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	22.03	21.66	21.42	22.33	21.96	21.72
		RB1#2	22.01	21.7	21.45	22.31	22	21.75
		RB1#5	22.03	21.71	21.39	22.33	22.01	21.69
		RB3#0	22.12	21.88	21.48	22.42	22.18	21.78
		RB3#1	22.09	21.83	21.42	22.39	22.13	21.72
		RB3#2	21.09	20.73	20.37	21.39	21.03	20.67
		RB6#0	20.77	20.53	20.15	21.07	20.83	20.45
	16QAM	RB1#0	21.79	21.78	21.08	22.09	22.08	21.38
		RB1#2	21.76	20.81	21.1	22.06	21.11	21.4
		RB1#5	21.74	21.37	20.2	22.04	21.67	20.5
		RB3#0	21.16	20.92	20.33	21.46	21.22	20.63
		RB3#1	21.27	20.81	20.4	21.57	21.11	20.7
		RB3#2	20.17	19.99	19.79	20.47	20.29	20.09
		RB6#0	19.78	19.65	19.57	20.08	19.95	19.87
3.0	QPSK	RB1#0	22.07	21.75	21.53	22.37	22.05	21.83
		RB1#7	22.1	21.77	21.37	22.4	22.07	21.67
		RB1#14	22.22	21.71	21.22	22.52	22.01	21.52
		RB8#0	21.11	20.77	20.82	21.41	21.07	21.12
		RB8#4	21.22	20.75	20.65	21.52	21.05	20.95
		RB8#7	21.06	20.79	20.46	21.36	21.09	20.76
		RB15#0	20.11	19.96	20.02	20.41	20.26	20.32
	16QAM	RB1#0	21.95	21.46	21.52	22.25	21.76	21.82
		RB1#7	21.88	21.51	21.25	22.18	21.81	21.55
		RB1#14	21.45	21.48	21.16	21.75	21.78	21.46
		RB8#0	20.45	20.04	20.58	20.75	20.34	20.88
		RB8#4	20.43	20.05	20.06	20.73	20.35	20.36
		RB8#7	20.29	19.99	19.68	20.59	20.29	19.98
		RB15#0	20.11	19.79	19.53	20.41	20.09	19.83

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QP SK	RB1#0	22.12	21.78	21.62	22.42	22.08	21.92
		RB1#12	22.17	21.82	21.47	22.47	22.12	21.77
		RB1#24	22.26	21.81	21.23	22.56	22.11	21.53
		RB12#0	21.17	20.8	20.9	21.47	21.1	21.2
		RB12#6	21.31	20.78	20.67	21.61	21.08	20.97
		RB12#11	20.14	20.05	20.02	20.44	20.35	20.32
		RB25#0	20.16	19.97	20.03	20.46	20.27	20.33
	16QAM	RB1#0	21.99	21.51	21.61	22.29	21.81	21.91
		RB1#12	21.9	21.53	21.32	22.2	21.83	21.62
		RB1#24	21.49	21.51	21.24	21.79	21.81	21.54
		RB12#0	20.5	20.12	20.63	20.8	20.42	20.93
		RB12#6	20.43	20.06	20.16	20.73	20.36	20.46
		RB12#11	20.16	19.83	19.57	20.46	20.13	19.87
		RB25#0	20.18	19.88	19.62	20.48	20.18	19.92
10.0	QPSK	RB1#0	22.08	21.84	21.57	22.38	22.14	21.87
		RB1#24	22.16	21.78	21.43	22.46	22.08	21.73
		RB1#49	22.31	21.8	21.25	22.61	22.1	21.55
		RB25#0	21.13	20.81	20.86	21.43	21.11	21.16
		RB25#12	21.28	20.84	20.65	21.58	21.14	20.95
		RB25#24	20.21	20.04	20.04	20.51	20.34	20.34
		RB50#0	20.06	19.59	19.98	20.36	19.89	20.28
	16QAM	RB1#0	22.02	21.47	21.6	22.32	21.77	21.9
		RB1#24	21.95	21.59	21.3	22.25	21.89	21.6
		RB1#49	21.46	21.56	21.21	21.76	21.86	21.51
		RB25#0	20.53	20.04	20.62	20.83	20.34	20.92
		RB25#12	20.44	20.07	20.08	20.74	20.37	20.38
		RB25#24	20.2	19.84	19.58	20.5	20.14	19.88
		RB50#0	20.16	19.83	19.5	20.46	20.13	19.8

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.13	21.84	21.59	22.43	22.14	21.89
		RB1#37	22.18	21.85	21.38	22.48	22.15	21.68
		RB1#74	22.25	21.73	21.27	22.55	22.03	21.57
		RB36#0	21.15	20.85	20.84	21.45	21.15	21.14
		RB36#18	21.31	20.8	20.75	21.61	21.1	21.05
		RB36#37	20.12	20.01	20.09	20.42	20.31	20.39
		RB75#0	20.07	19.6	19.93	20.37	19.9	20.23
	16QAM	RB1#0	22	21.47	21.52	22.3	21.77	21.82
		RB1#37	21.88	21.54	21.27	22.18	21.84	21.57
		RB1#74	21.46	21.49	21.2	21.76	21.79	21.5
		RB36#0	20.5	20.07	20.59	20.8	20.37	20.89
		RB36#18	20.46	20.14	20.15	20.76	20.44	20.45
		RB36#37	20.14	19.86	19.54	20.44	20.16	19.84
		RB75#0	20.18	19.76	19.48	20.48	20.06	19.78
20.0	QPSK	RB1#0	22.1	21.83	21.55	22.4	22.13	21.85
		RB1#49	22.17	21.87	21.41	22.47	22.17	21.71
		RB1#99	22.22	21.79	21.23	22.52	22.09	21.53
		RB50#0	21.14	20.82	20.9	21.44	21.12	21.2
		RB50#24	21.32	20.75	20.7	21.62	21.05	21
		RB50#49	20.15	20.03	20.08	20.45	20.33	20.38
		RB100#0	20.11	19.68	19.98	20.41	19.98	20.28
	16QAM	RB1#0	22.01	21.53	21.54	22.31	21.83	21.84
		RB1#49	21.93	21.59	21.33	22.23	21.89	21.63
		RB1#99	21.51	21.55	21.18	21.81	21.85	21.48
		RB50#0	20.55	20.08	20.64	20.85	20.38	20.94
		RB50#24	20.44	20.1	20.12	20.74	20.4	20.42
		RB50#49	20.14	19.79	19.53	20.44	20.09	19.83
		RB100#0	20.18	19.76	19.51	20.48	20.06	19.81

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

For Band 66: Antenna Gain = 0.8dBi, Cable Loss=0.5dB*(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)	5.15	5.15	5.91	13	Pass
QPSK (100RB Size)	5.75	5.69	5.78	13	Pass
16QAM (1RB Size)	6.64	6.34	7.14	13	Pass
16QAM (100RB Size)	6.61	6.53	6.55	13	Pass

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

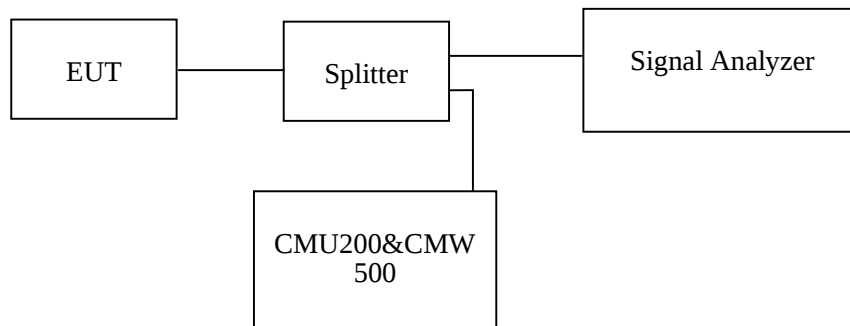
Applicable Standard

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

Test Procedure

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

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



Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu from 2021-03-01 to 2021-03-26.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	824.2	240.38	309.29
	836.6	240.38	309.29
	848.8	240.38	309.29

Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.15	4.70
	836.6	4.17	4.70
	846.6	4.18	4.73
HSDPA	826.4	4.17	4.68
	836.6	4.15	4.68
	846.6	4.17	4.71
HSUPA	826.4	4.17	4.68
	836.6	4.17	4.70
	846.6	4.15	4.68

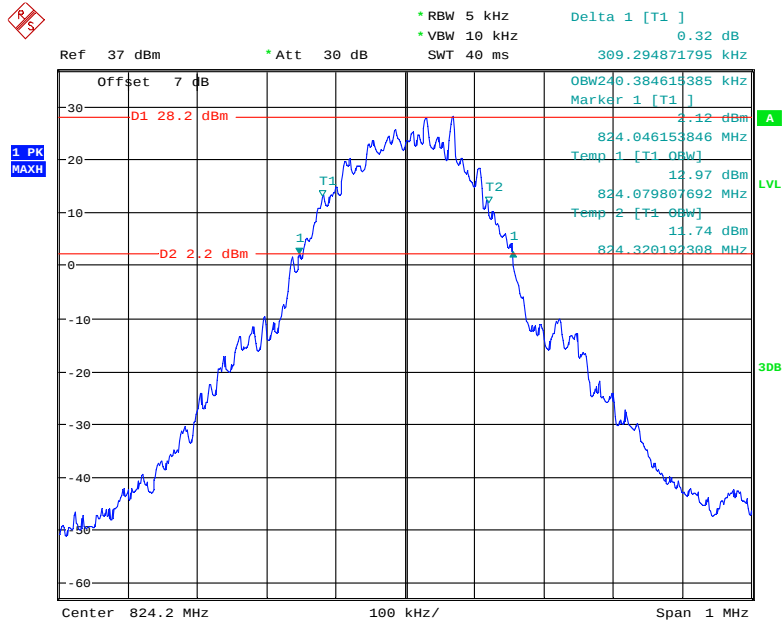
PCS Band (Part 24E)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1850.2	241.99	310.90
	1880.0	243.59	312.50
	1909.8	243.59	307.69

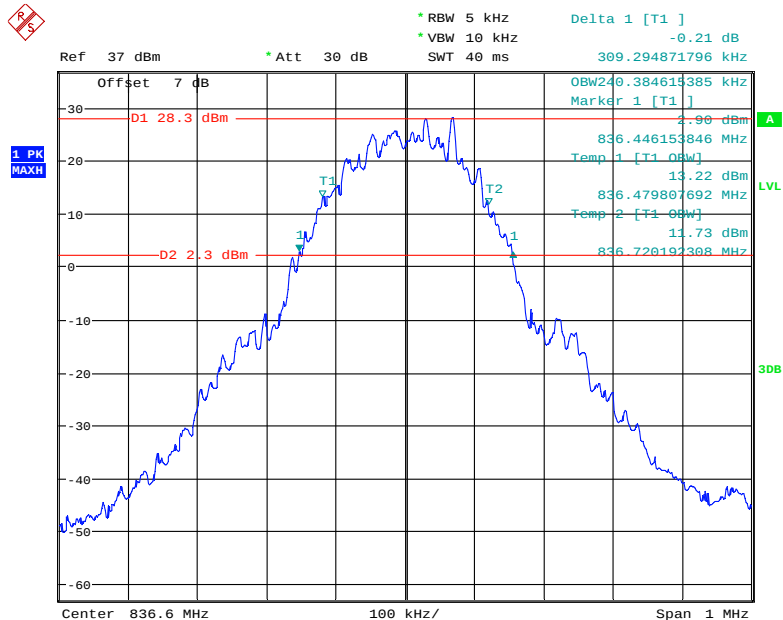
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.15	4.68
	1880.0	4.17	4.68
	1907.6	4.15	4.68
HSDPA	1852.4	4.15	4.68
	1880.0	4.15	4.68
	1907.6	4.15	4.68
HSUPA	1852.4	4.15	4.68
	1880.0	4.17	4.70
	1907.6	4.15	4.68

AWS Band (Part 27)

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.17	4.66
	1732.6	4.15	4.68
	1752.6	4.15	4.68
HSDPA	1712.4	4.15	4.70
	1732.6	4.15	4.68
	1752.6	4.17	4.68
HSUPA	1712.4	4.17	4.66
	1732.6	4.17	4.68
	1752.6	4.17	4.66

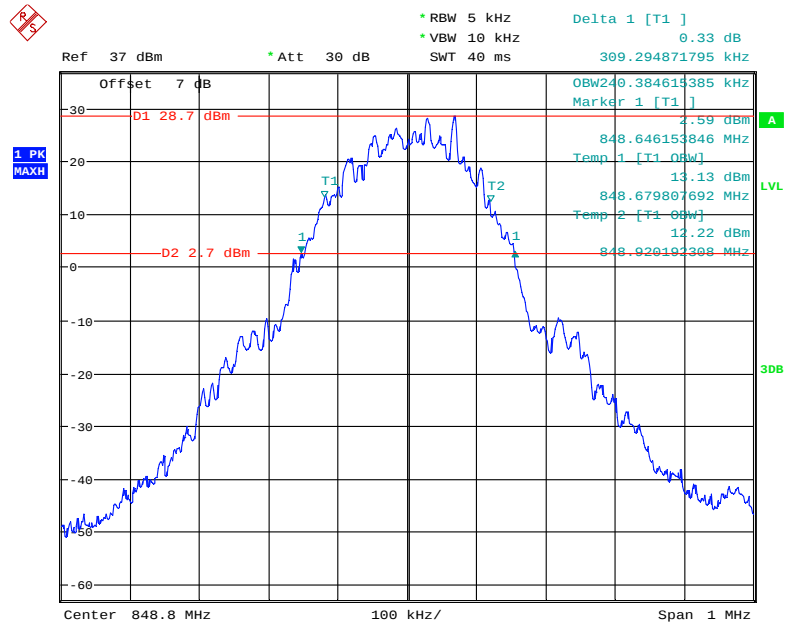
Cellular Band (Part 22H)**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel**

Date: 3.MAR.2021 10:06:14

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

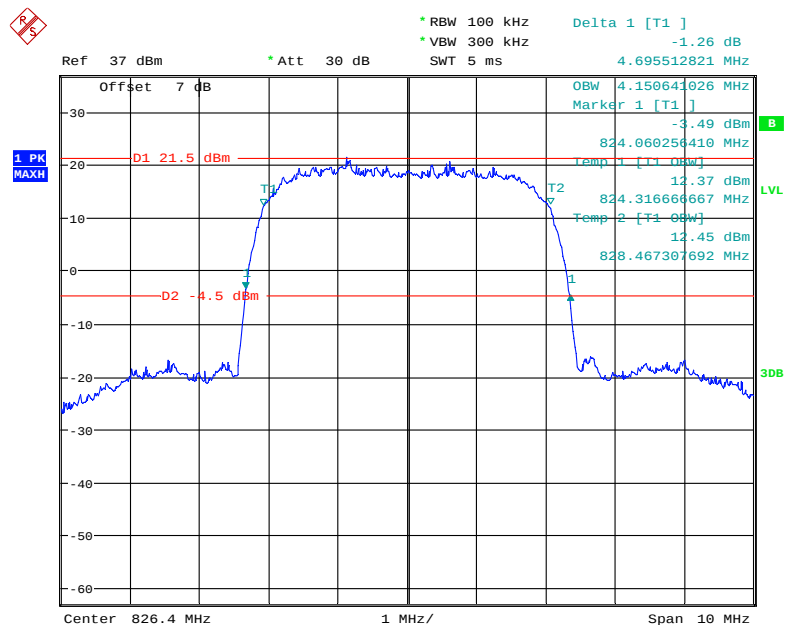
Date: 3.MAR.2021 10:05:10

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

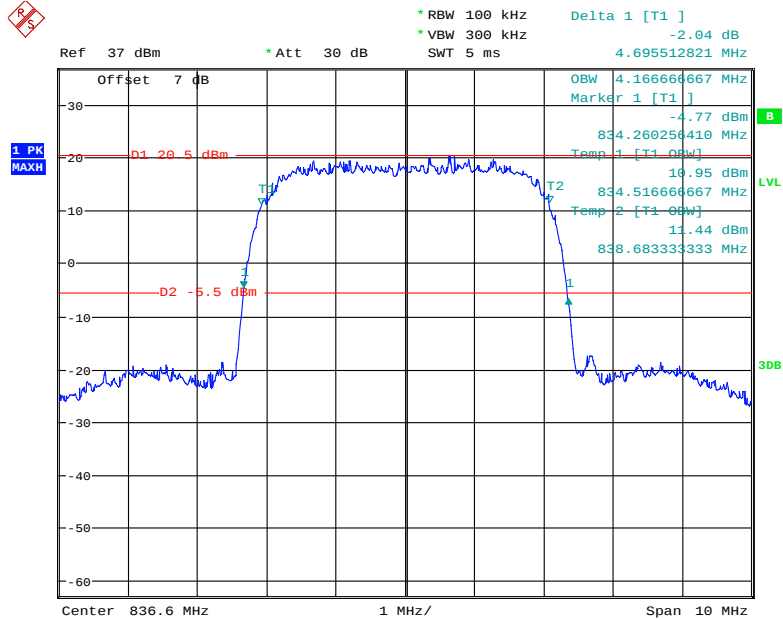


Date: 3.MAR.2021 10:07:04

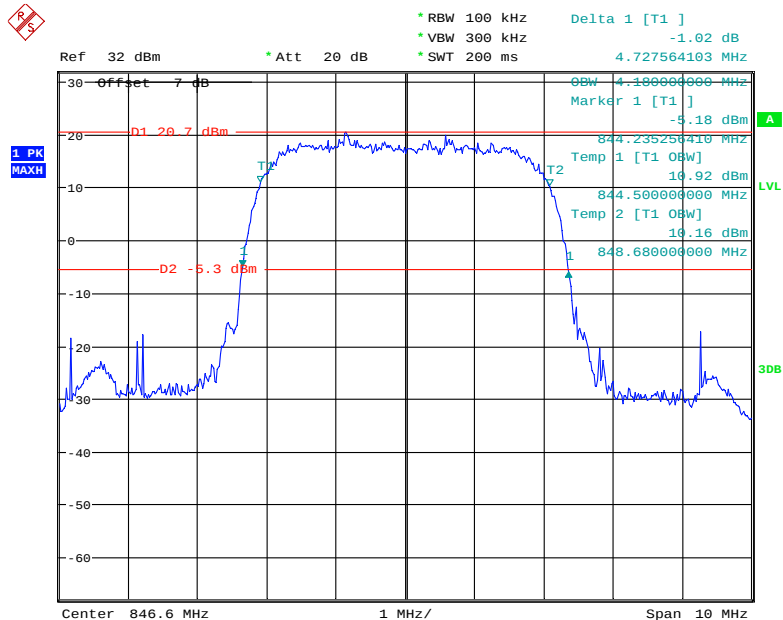
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



Date: 3.MAR.2021 11:29:54

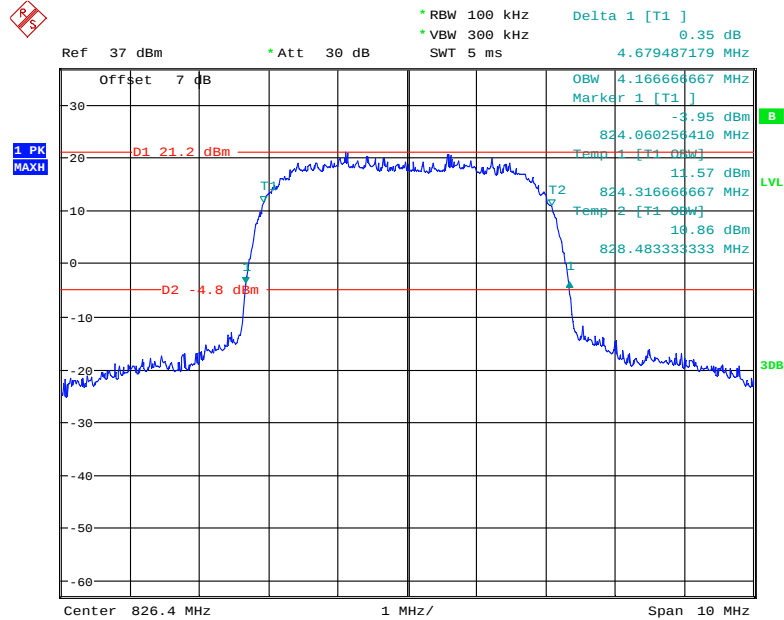
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel

Date: 3.MAR.2021 11:31:16

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

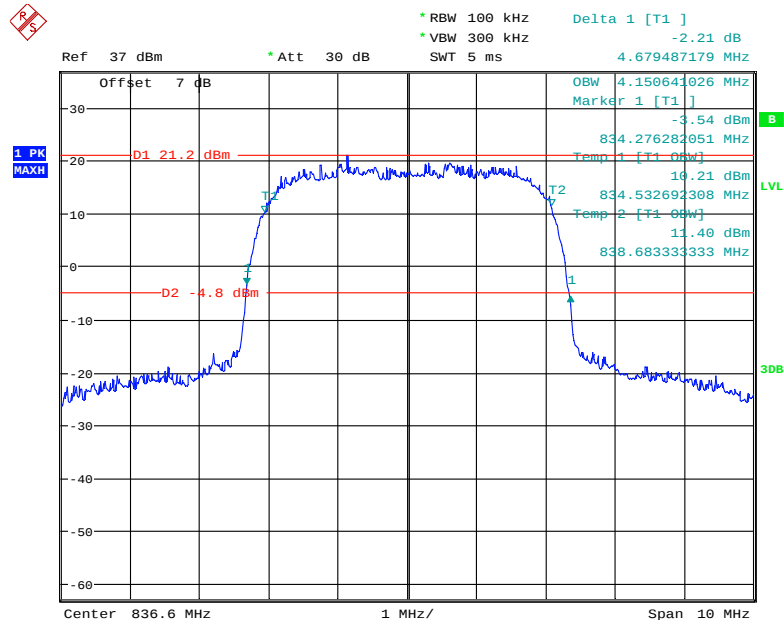
Date: 26.MAR.2021 16:24:42

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



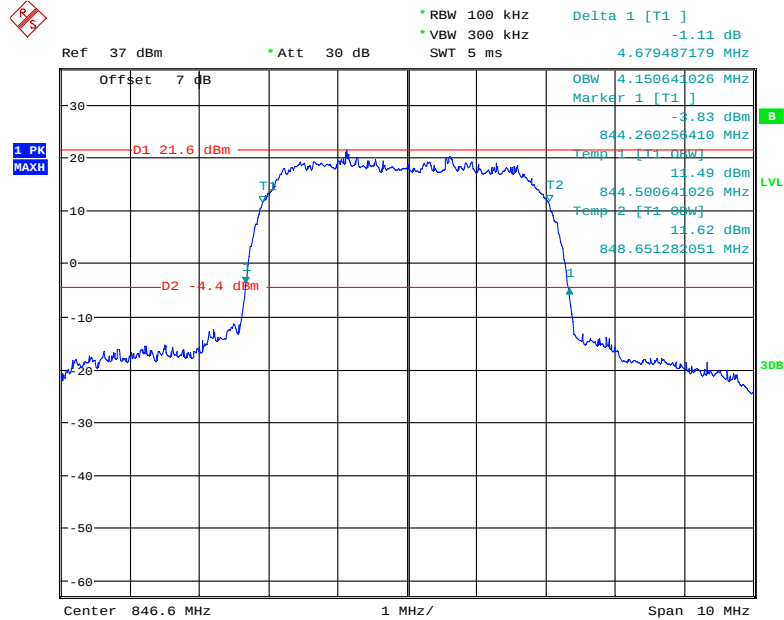
Date: 3.MAR.2021 11:40:42

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



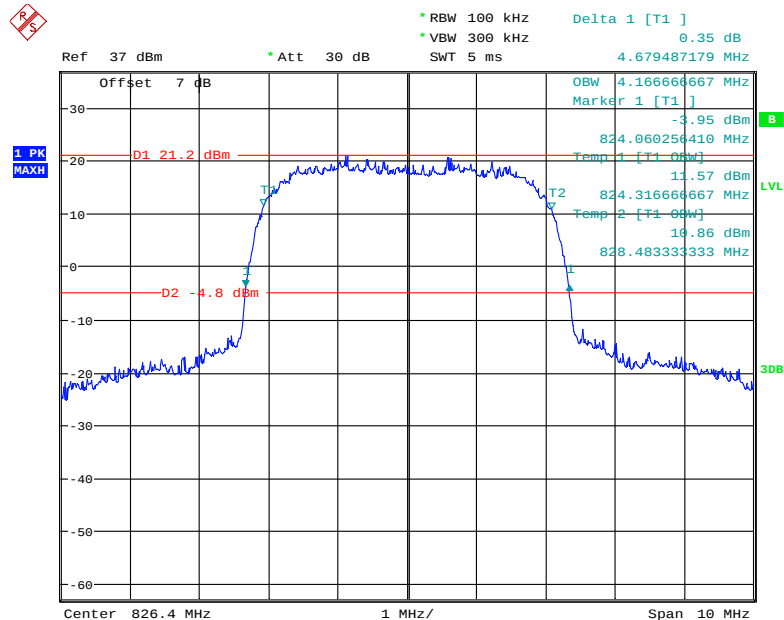
Date: 3.MAR.2021 11:47:16

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

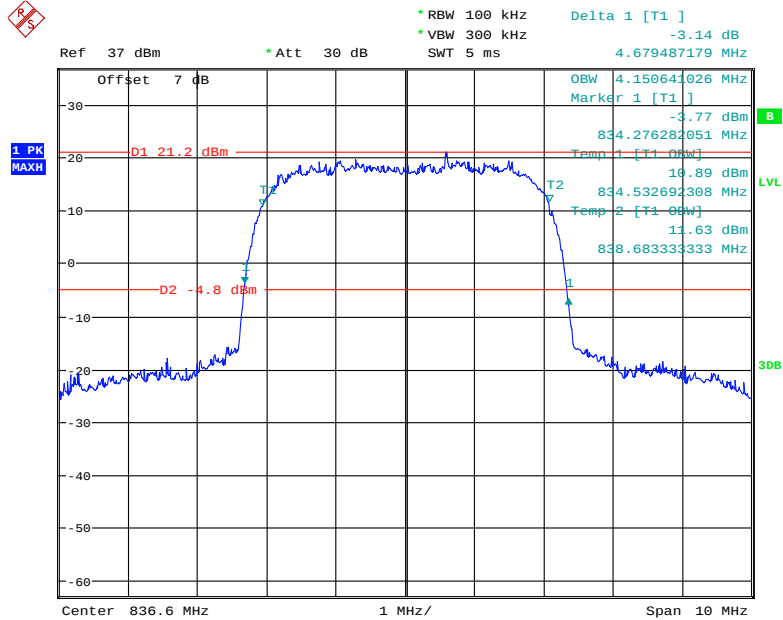


Date: 3.MAR.2021 11:45:57

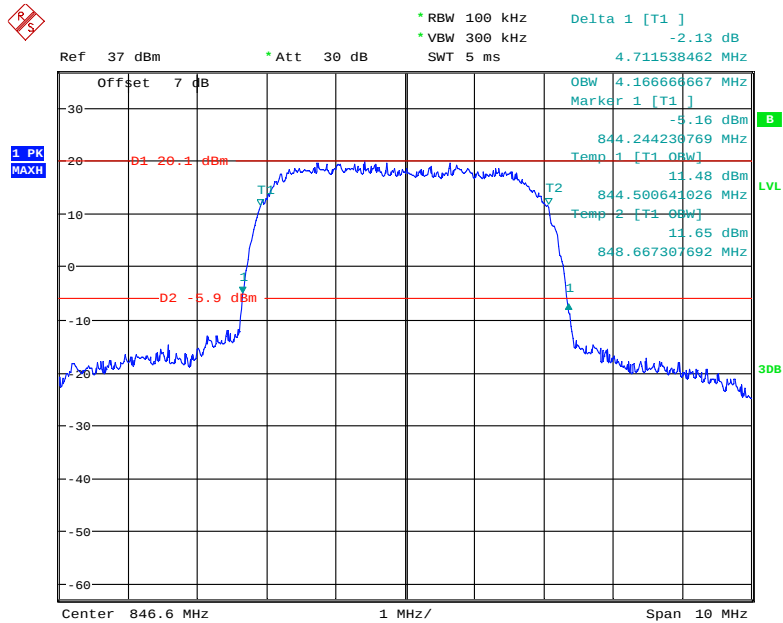
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel



Date: 3.MAR.2021 11:40:42

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

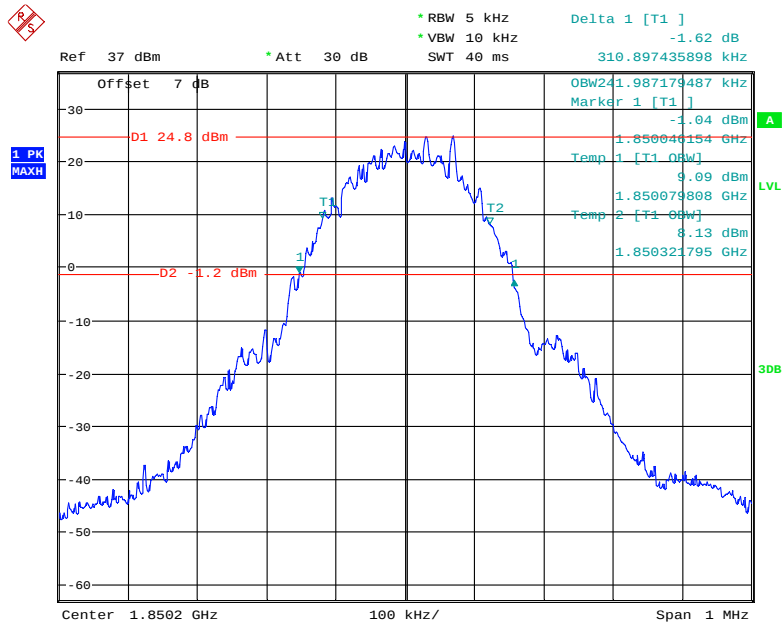
Date: 3.MAR.2021 11:39:51

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

Date: 3.MAR.2021 11:38:16

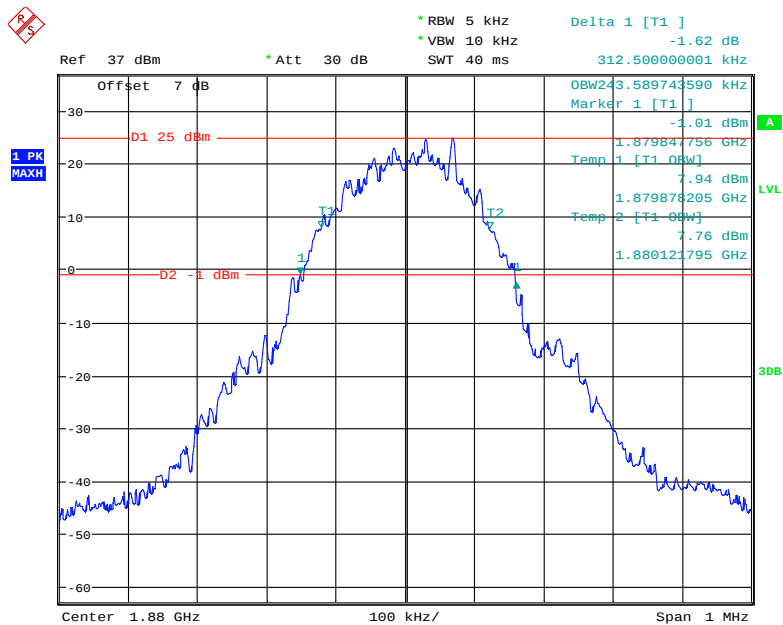
PCS Band (Part 24E)

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



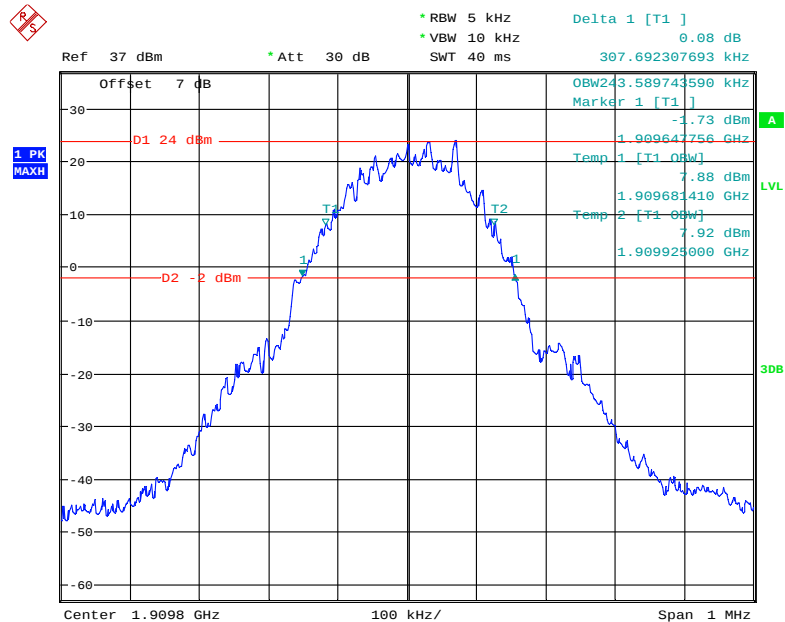
Date: 3.MAR.2021 10:16:48

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



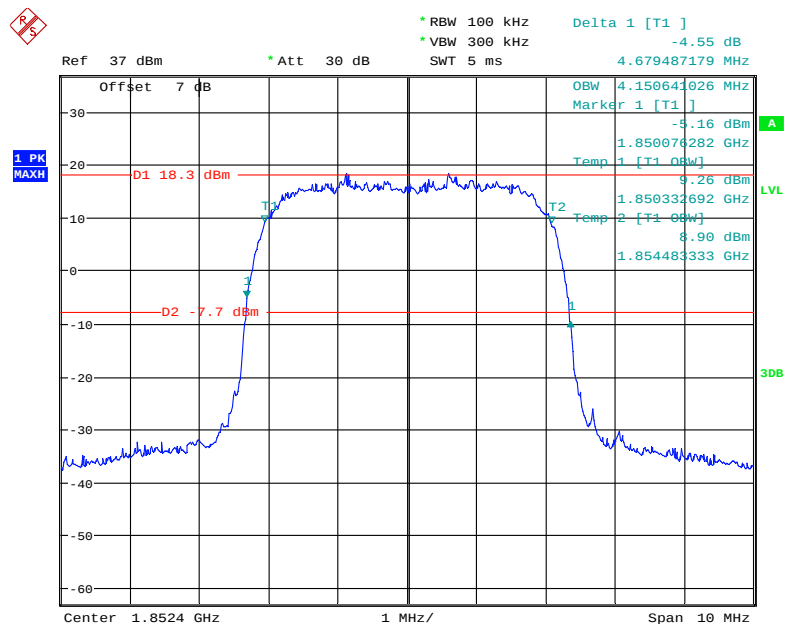
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26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel

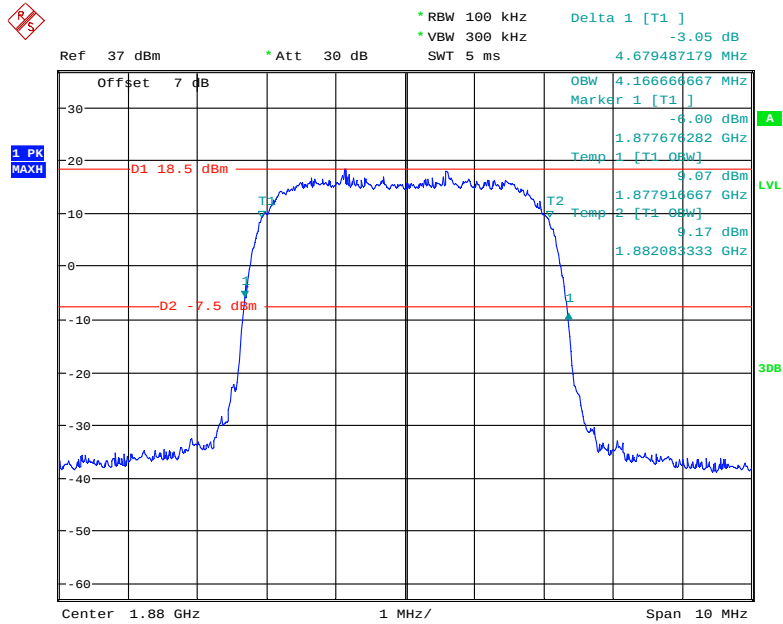


Date: 3.MAR.2021 10:19:14

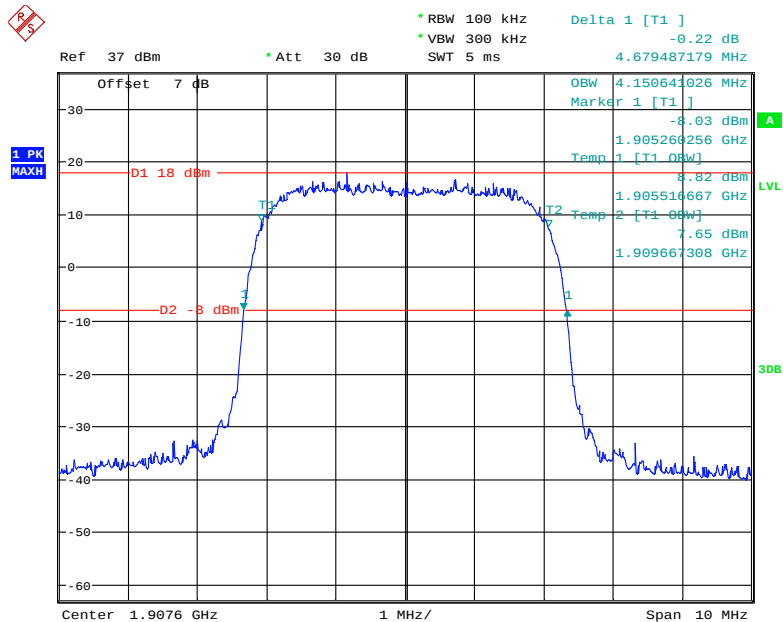
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



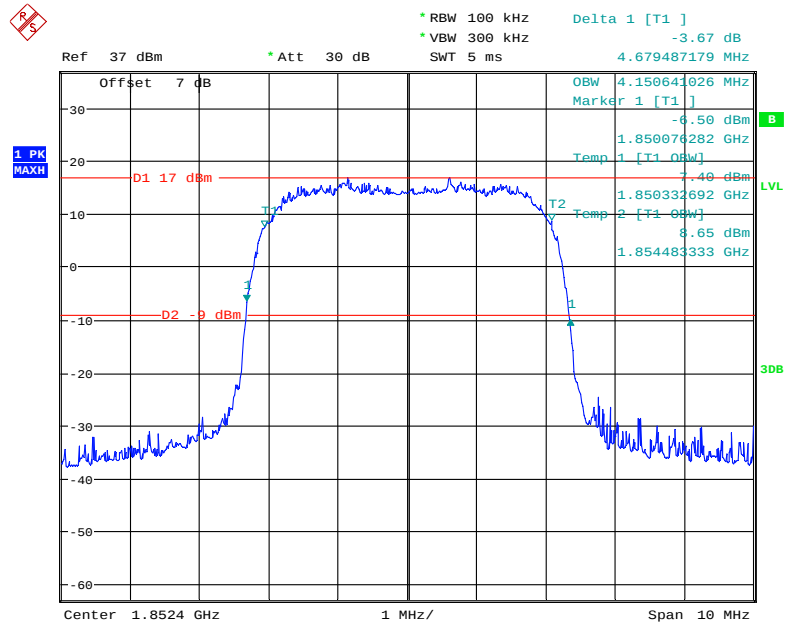
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26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel

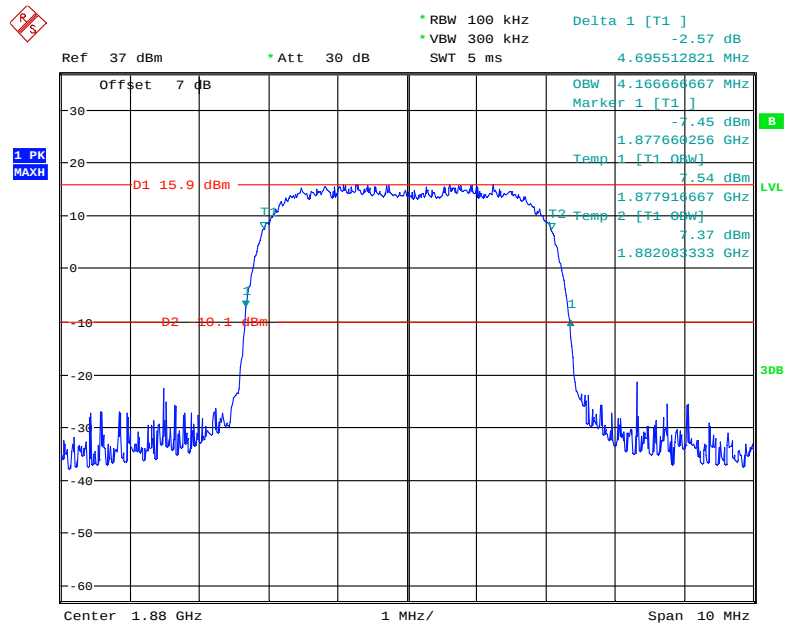
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26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 3.MAR.2021 10:46:03

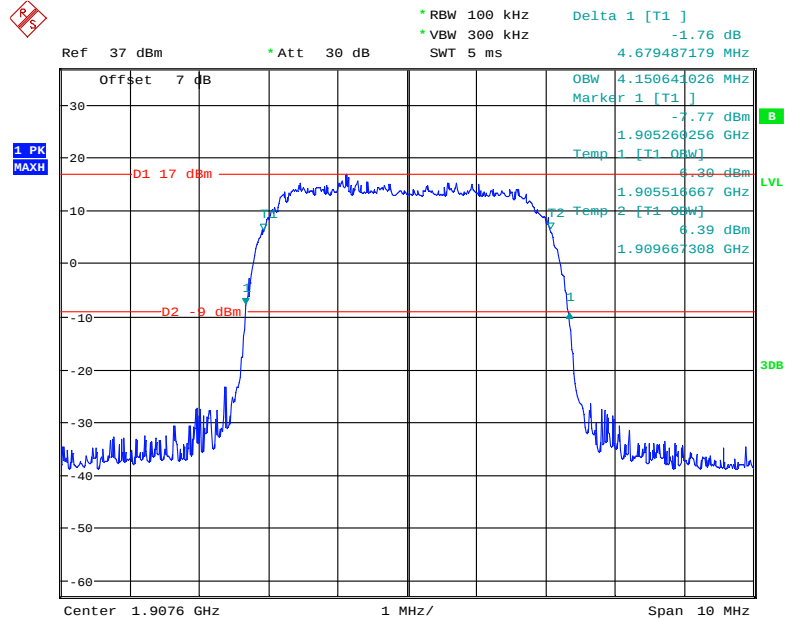
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Low channel

Date: 3.MAR.2021 11:07:08

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

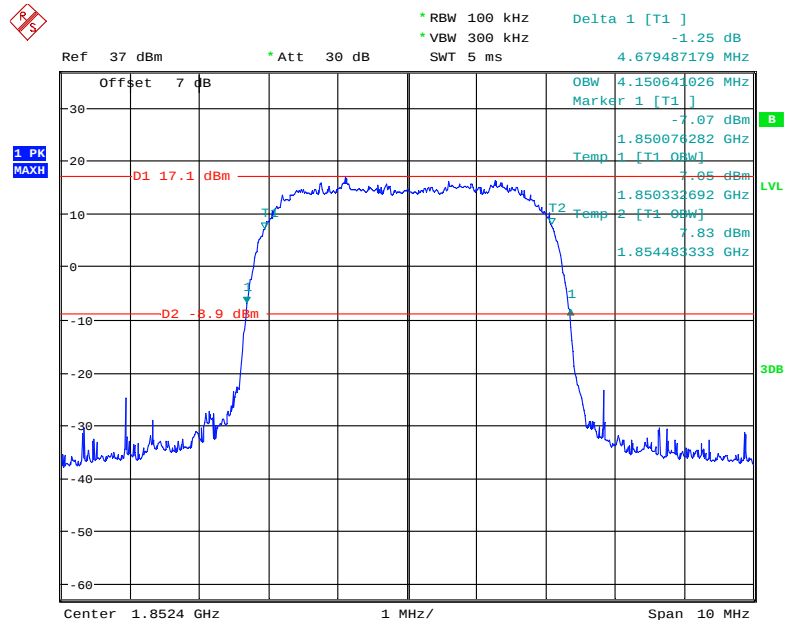
Date: 3.MAR.2021 11:05:56

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

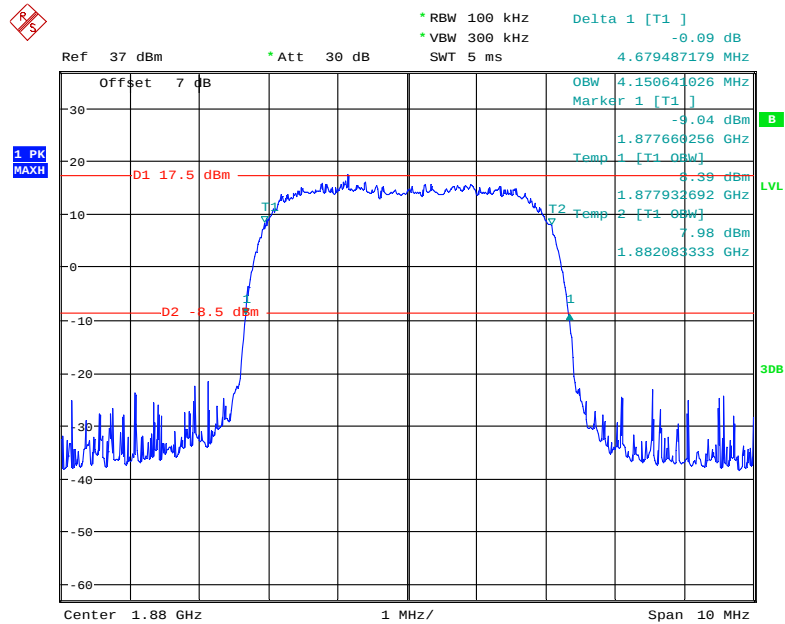


Date: 3.MAR.2021 11:04:38

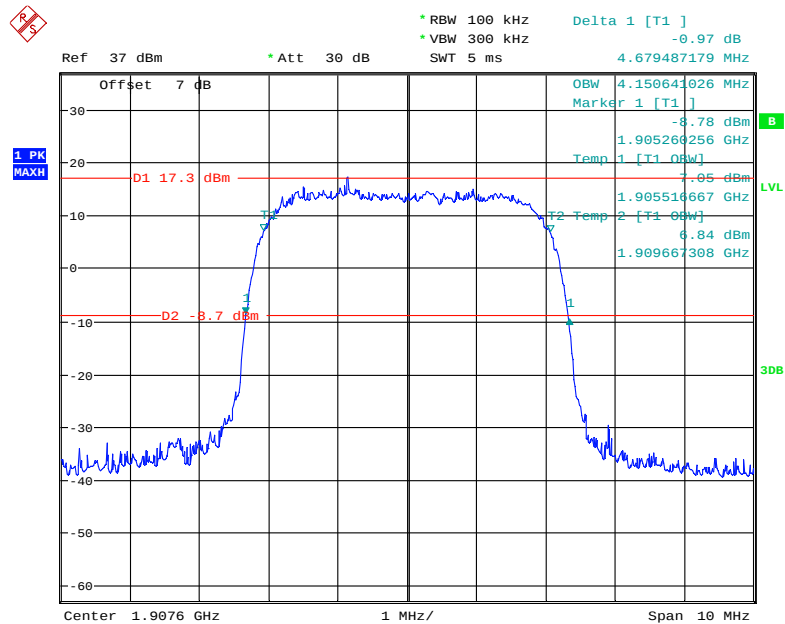
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel



Date: 3.MAR.2021 10:58:48

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

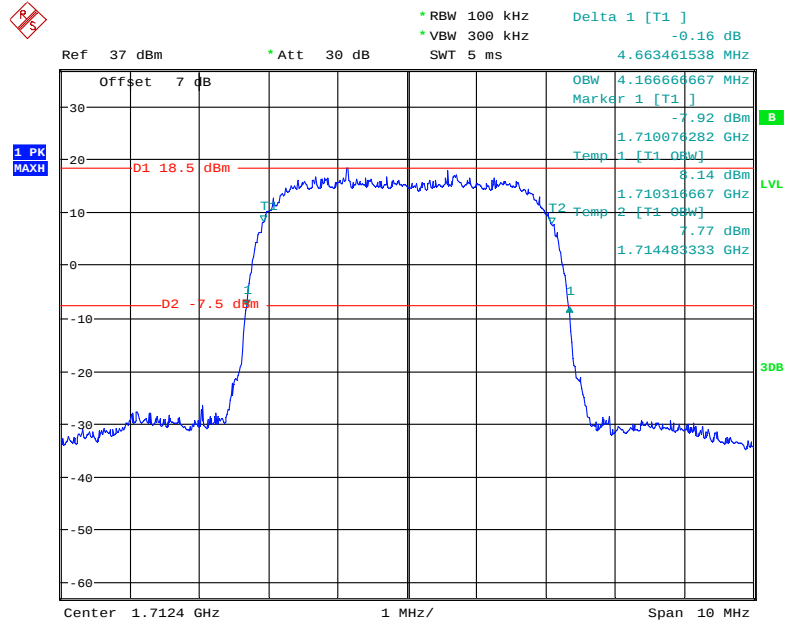
Date: 3.MAR.2021 11:00:29

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

Date: 3.MAR.2021 11:01:36

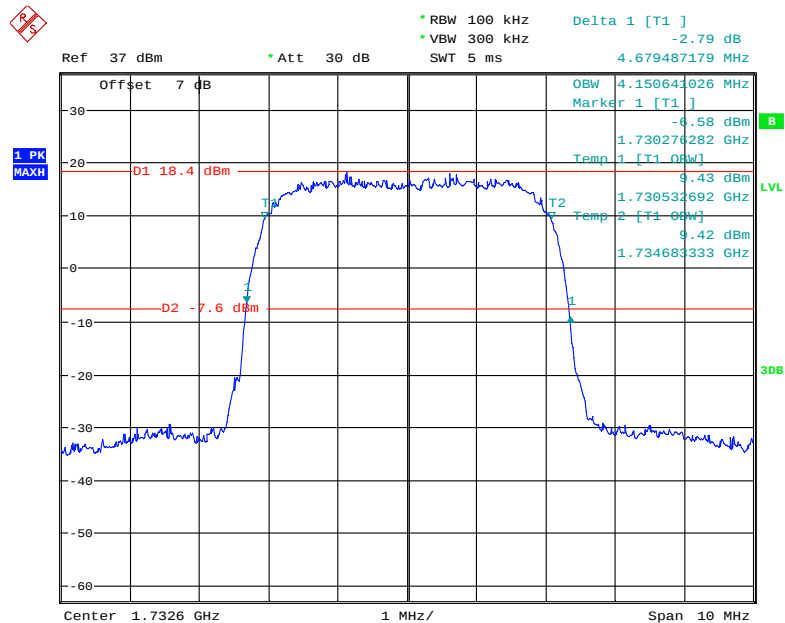
AWS Band (Part 27)

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

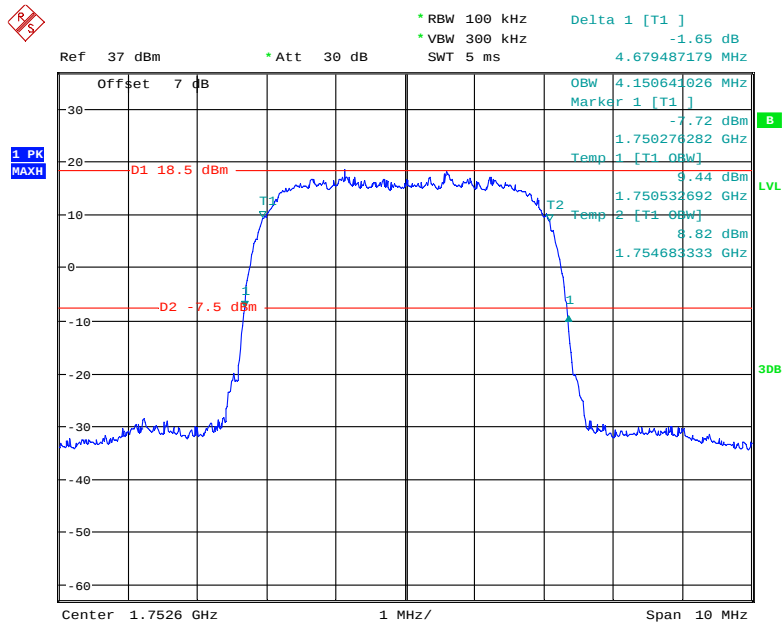


Date: 3.MAR.2021 11:11:16

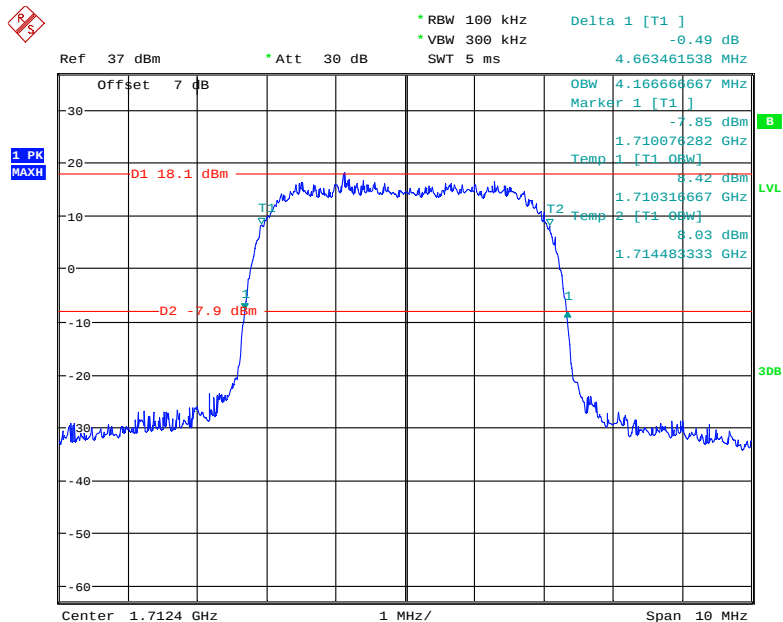
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



Date: 3.MAR.2021 11:12:45

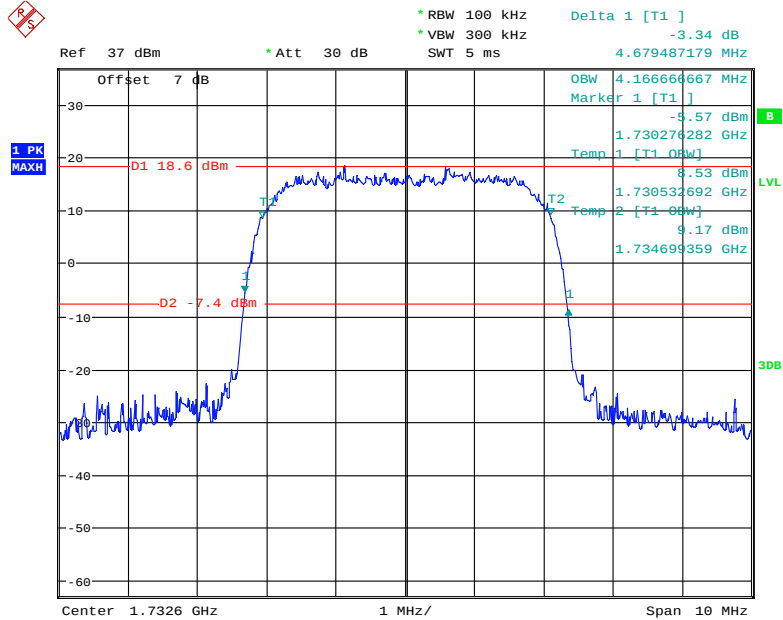
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 3.MAR.2021 11:13:53

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

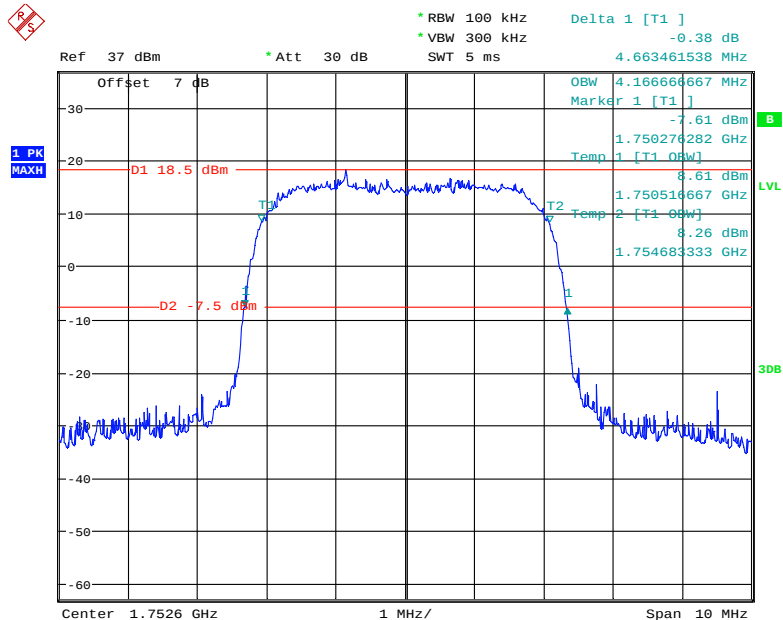
Date: 3.MAR.2021 11:20:58

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



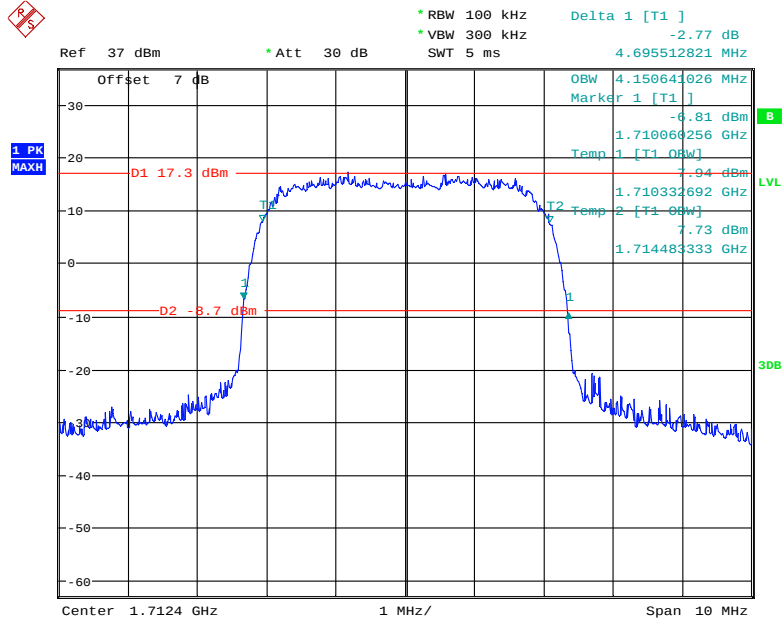
Date: 3.MAR.2021 11:22:08

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



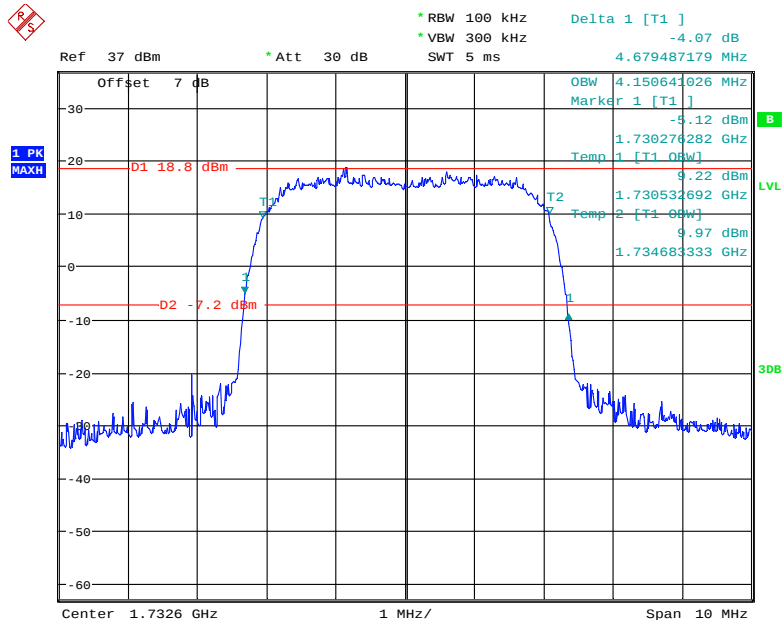
Date: 3.MAR.2021 11:22:54

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



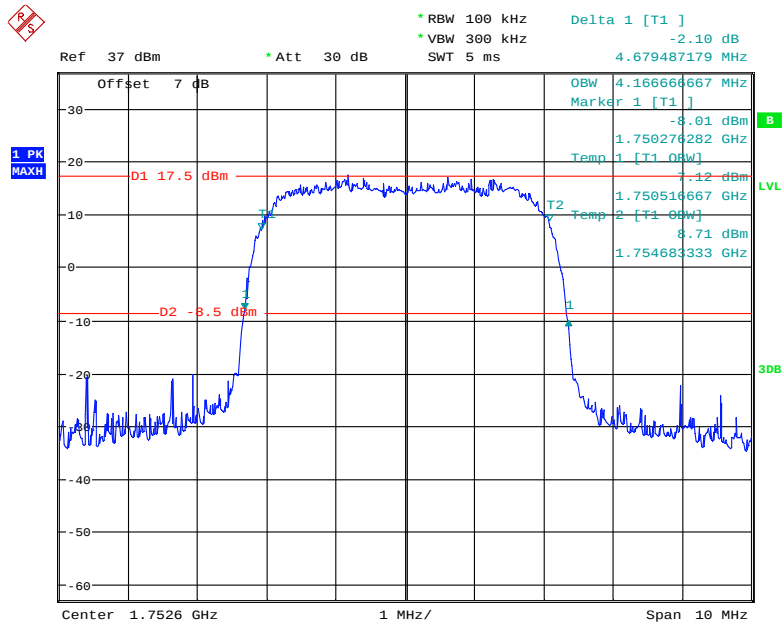
Date: 3.MAR.2021 11:26:45

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



Date: 3.MAR.2021 11:25:31

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



Date: 3.MAR.2021 11:24:16

LTE Band 2:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.104	1.290
		Middle	1.110	1.326
		High	1.110	1.320
	16QAM	Low	1.116	1.284
		Middle	1.098	1.290
		High	1.110	1.326
3	QPSK	Low	2.688	3.000
		Middle	2.700	3.000
		High	2.688	3.024
	16QAM	Low	2.700	3.012
		Middle	2.700	3.072
		High	2.700	3.048
5	QPSK	Low	4.560	5.300
		Middle	4.520	5.280
		High	4.540	5.360
	16QAM	Low	4.540	5.320
		Middle	4.560	5.400
		High	4.540	5.420
10	QPSK	Low	9.000	9.840
		Middle	8.960	9.840
		High	8.960	9.800
	16QAM	Low	8.960	9.880
		Middle	9.000	9.920
		High	8.960	9.880
15	QPSK	Low	13.620	15.600
		Middle	13.500	15.660
		High	13.560	15.720
	16QAM	Low	13.620	15.180
		Middle	13.620	15.420
		High	13.560	15.120
20	QPSK	Low	18.000	20.000
		Middle	18.000	20.160
		High	18.000	20.000
	16QAM	Low	18.080	19.920
		Middle	18.080	19.920
		High	18.000	20.000

LTE Band 4:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.104	1.296
		Middle	1.104	1.314
		High	1.110	1.320
	16QAM	Low	1.116	1.266
		Middle	1.098	1.308
		High	1.104	1.326
3	QPSK	Low	2.712	2.988
		Middle	2.700	3.012
		High	2.688	3.012
	16QAM	Low	2.700	3.024
		Middle	2.700	3.096
		High	2.700	3.084
5	QPSK	Low	4.540	5.200
		Middle	4.540	5.300
		High	4.540	5.420
	16QAM	Low	4.540	5.340
		Middle	4.560	5.440
		High	4.560	5.460
10	QPSK	Low	8.960	9.800
		Middle	8.960	9.880
		High	8.960	9.800
	16QAM	Low	8.960	9.760
		Middle	9.000	9.880
		High	8.960	10.040
15	QPSK	Low	13.620	15.540
		Middle	13.560	15.480
		High	13.620	16.020
	16QAM	Low	13.560	15.180
		Middle	13.620	15.540
		High	13.560	15.120
20	QPSK	Low	18.000	19.920
		Middle	18.000	20.000
		High	18.080	20.240
	16QAM	Low	18.080	20.240
		Middle	18.000	20.000
		High	18.080	20.320

LTE Band 5:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.104	1.278
		Middle	1.104	1.344
		High	1.110	1.362
	16QAM	Low	1.116	1.284
		Middle	1.098	1.308
		High	1.110	1.302
3	QPSK	Low	2.712	3.000
		Middle	2.700	3.036
		High	2.700	3.024
	16QAM	Low	2.700	3.036
		Middle	2.688	3.048
		High	2.700	3.084
5	QPSK	Low	4.560	5.460
		Middle	4.520	5.280
		High	4.540	5.420
	16QAM	Low	4.540	5.400
		Middle	4.540	5.440
		High	4.580	5.400
10	QPSK	Low	8.960	9.920
		Middle	8.960	9.840
		High	8.960	9.760
	16QAM	Low	8.960	9.840
		Middle	9.000	9.760
		High	8.960	9.920

LTE Band 7:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.560	5.320
		Middle	4.520	5.160
		High	4.540	5.440
	16QAM	Low	4.540	5.380
		Middle	4.560	5.440
		High	4.540	5.420
10	QPSK	Low	8.960	9.840
		Middle	8.960	9.880
		High	8.960	10.000
	16QAM	Low	8.960	9.880
		Middle	8.960	9.840
		High	8.960	10.040
15	QPSK	Low	13.620	15.540
		Middle	13.500	15.300
		High	13.620	16.080
	16QAM	Low	13.560	15.120
		Middle	13.620	15.300
		High	13.620	15.120
20	QPSK	Low	18.000	19.840
		Middle	18.000	20.240
		High	18.080	20.160
	16QAM	Low	18.080	20.160
		Middle	18.000	19.840
		High	18.080	20.160

LTE Band 66:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.284
		Middle	1.110	1.308
		High	1.110	1.302
	16QAM	Low	1.116	1.266
		Middle	1.098	1.302
		High	1.110	1.326
3	QPSK	Low	2.700	3.036
		Middle	2.700	3.048
		High	2.688	3.000
	16QAM	Low	2.700	3.024
		Middle	2.700	3.084
		High	2.712	3.084
5	QPSK	Low	4.560	5.300
		Middle	4.520	5.240
		High	4.520	5.420
	16QAM	Low	4.540	5.320
		Middle	4.560	5.460
		High	4.560	5.280
10	QPSK	Low	8.960	9.800
		Middle	8.960	9.880
		High	8.960	9.840
	16QAM	Low	8.960	9.760
		Middle	9.000	9.840
		High	8.960	10.160
15	QPSK	Low	13.620	15.600
		Middle	13.560	15.420
		High	13.620	16.320
	16QAM	Low	13.620	15.120
		Middle	13.620	15.480
		High	13.560	15.180
20	QPSK	Low	18.000	20.000
		Middle	18.000	20.160
		High	18.080	20.240
	16QAM	Low	18.080	20.160
		Middle	18.080	19.840
		High	18.080	20.480

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

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

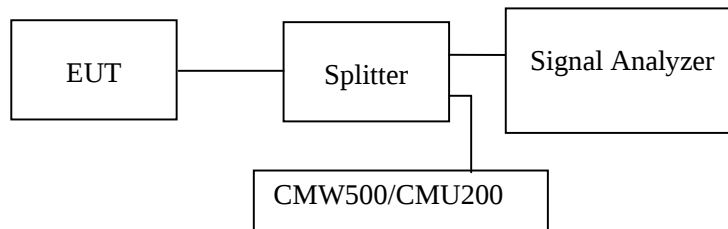
Applicable Standard

FCC §2.1051, §22.917(a) 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:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu from 2021-03-01 to 2021-03-04.

EUT operation mode: Transmitting

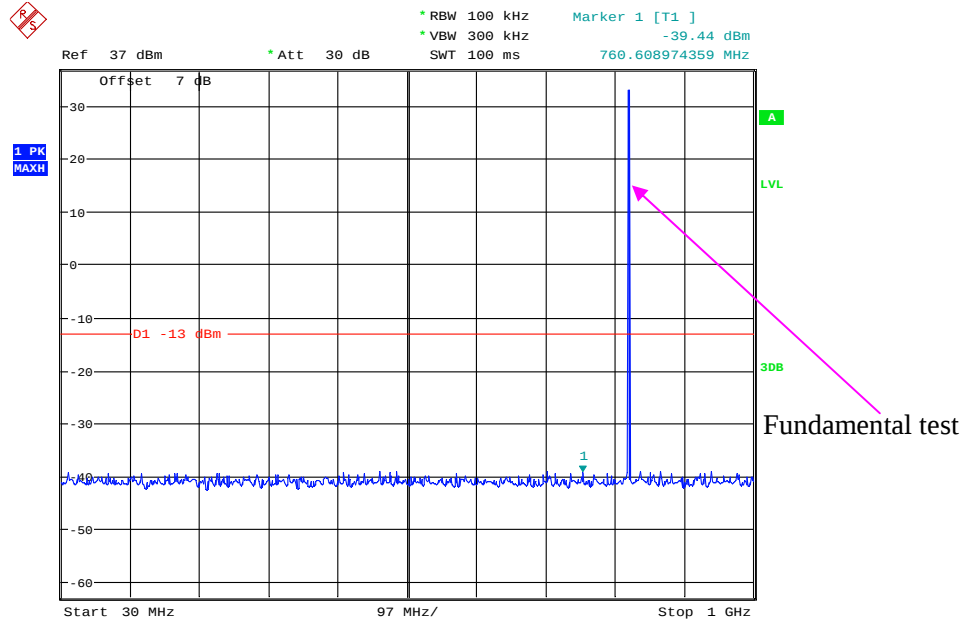
Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)

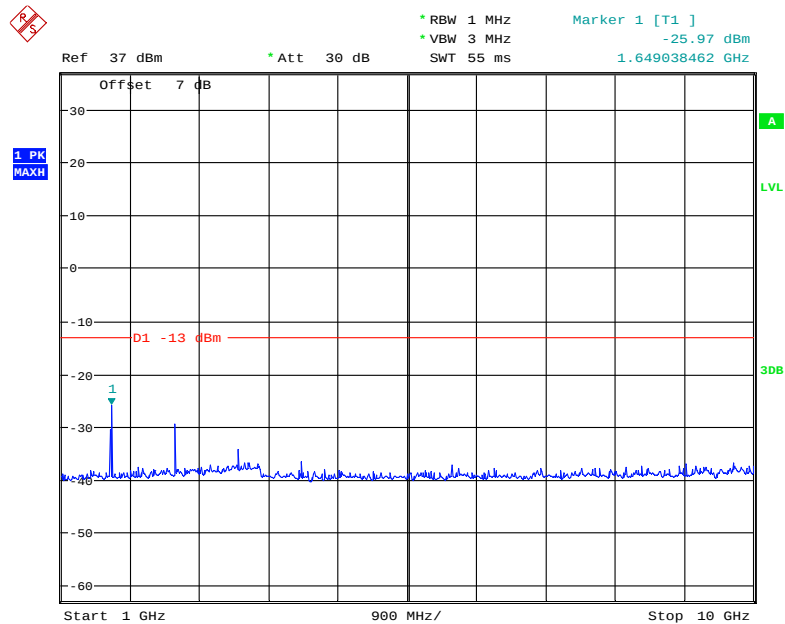
Low Channel:

30 MHz – 1 GHz (GSM Mode)



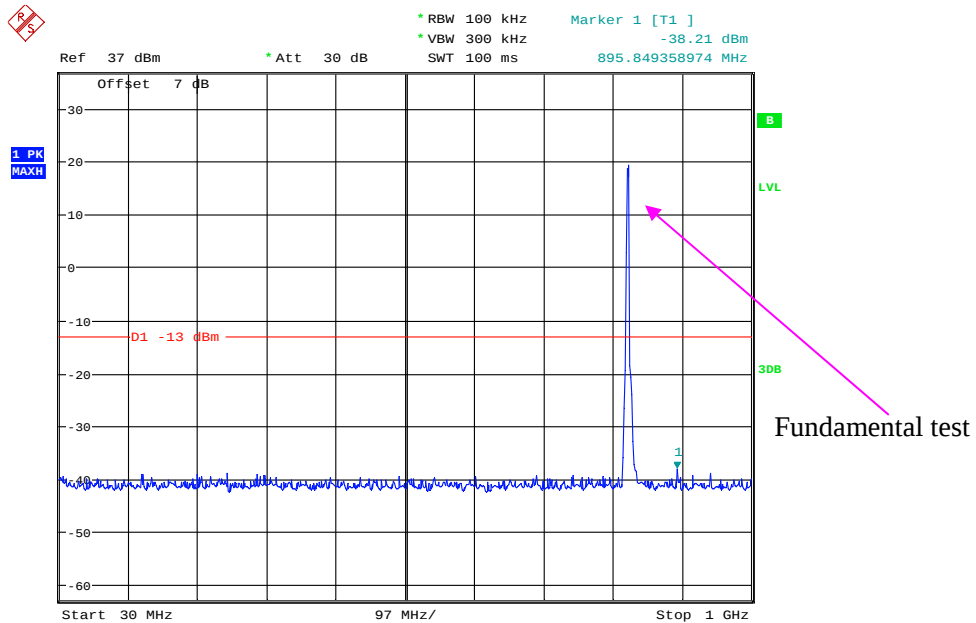
Date: 3.MAR.2021 09:52:17

1 GHz – 10 GHz (GSM Mode)



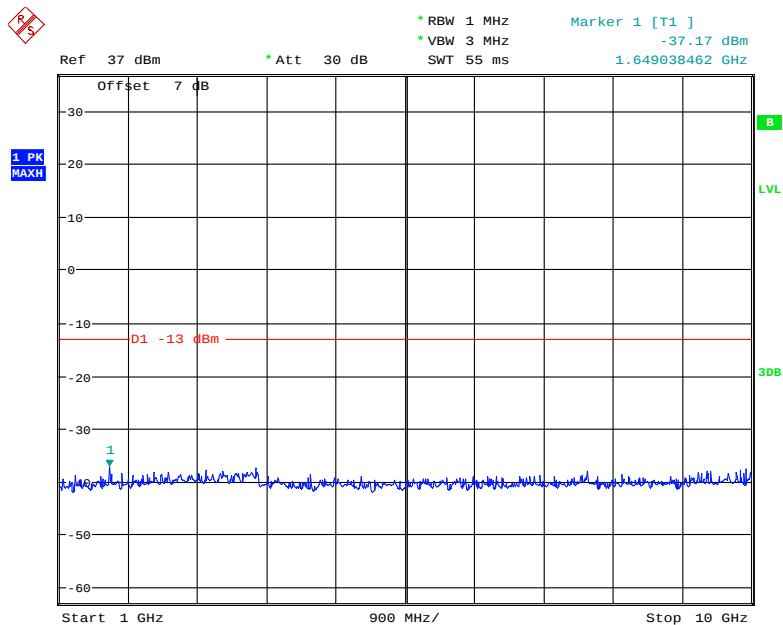
Date: 3.MAR.2021 09:55:28

30 MHz – 1 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:33:54

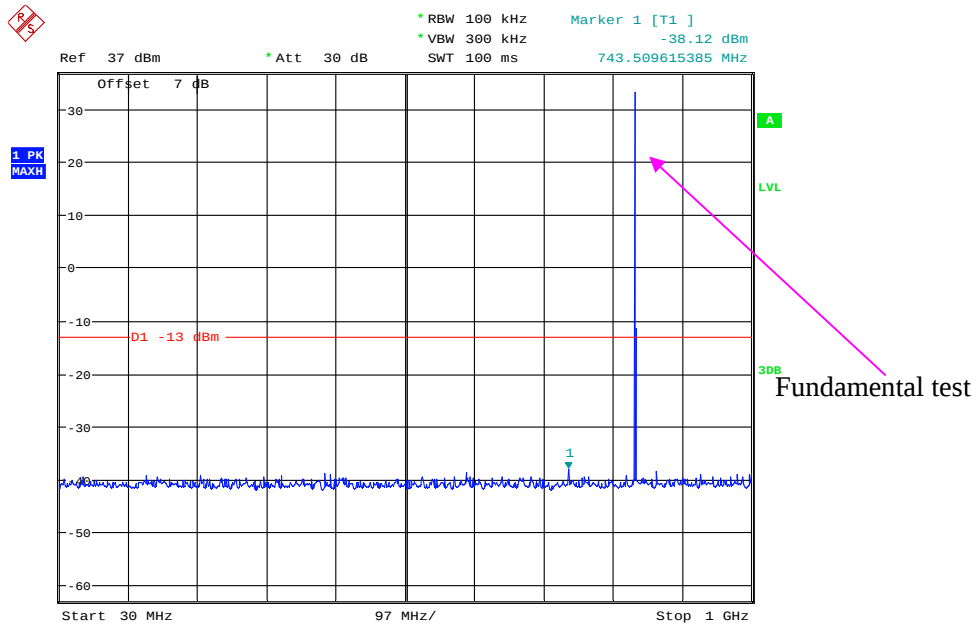
1 GHz – 10 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:35:37

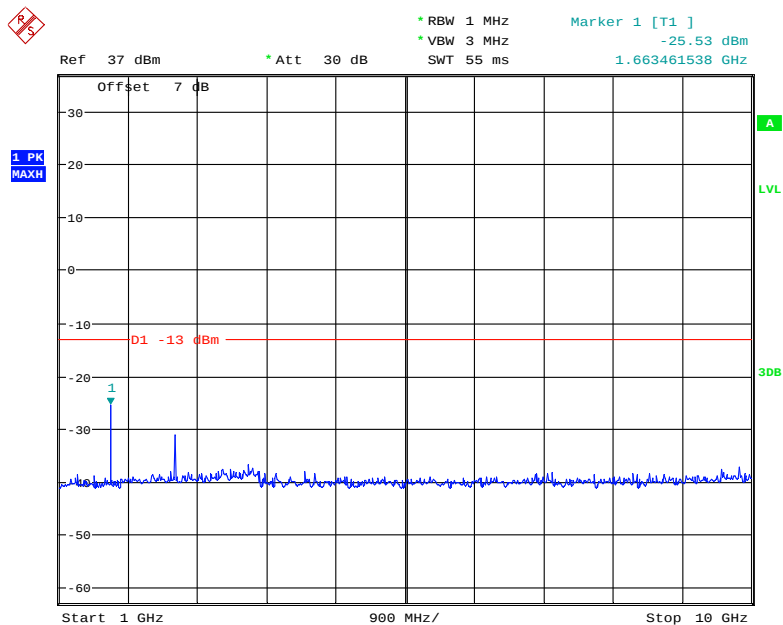
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



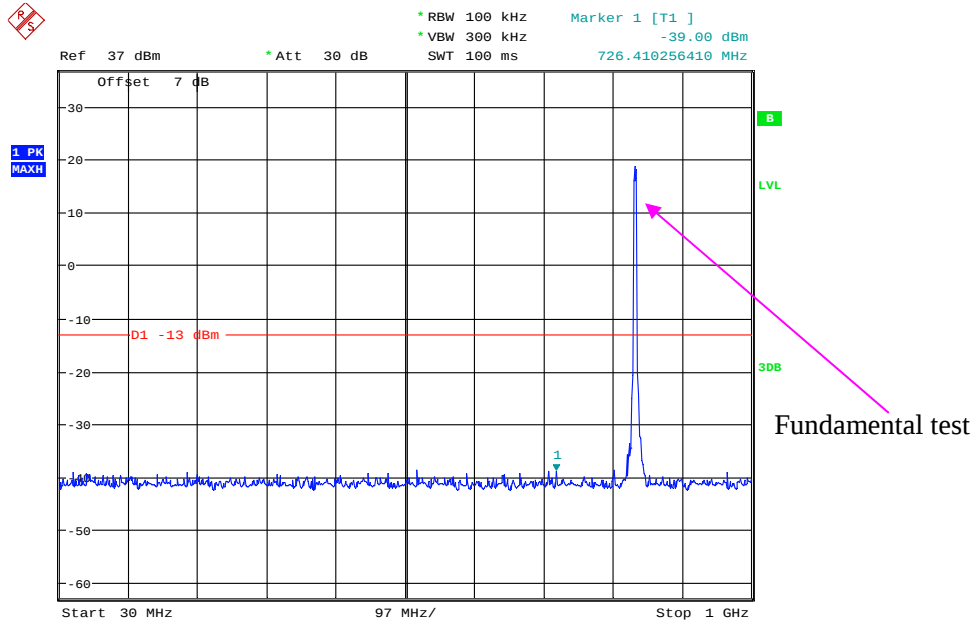
Date: 3.MAR.2021 09:53:25

1 GHz – 10 GHz (GSM Mode)



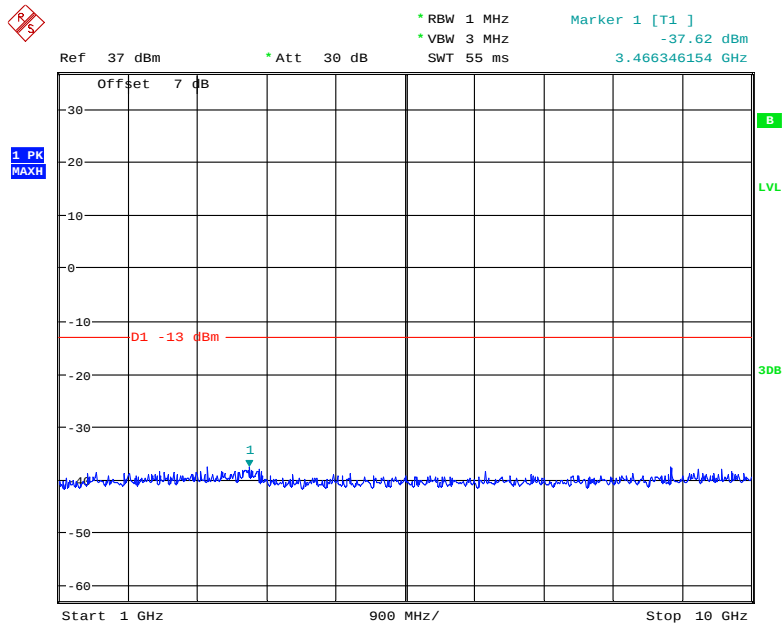
Date: 3.MAR.2021 09:54:51

30 MHz – 1 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:34:28

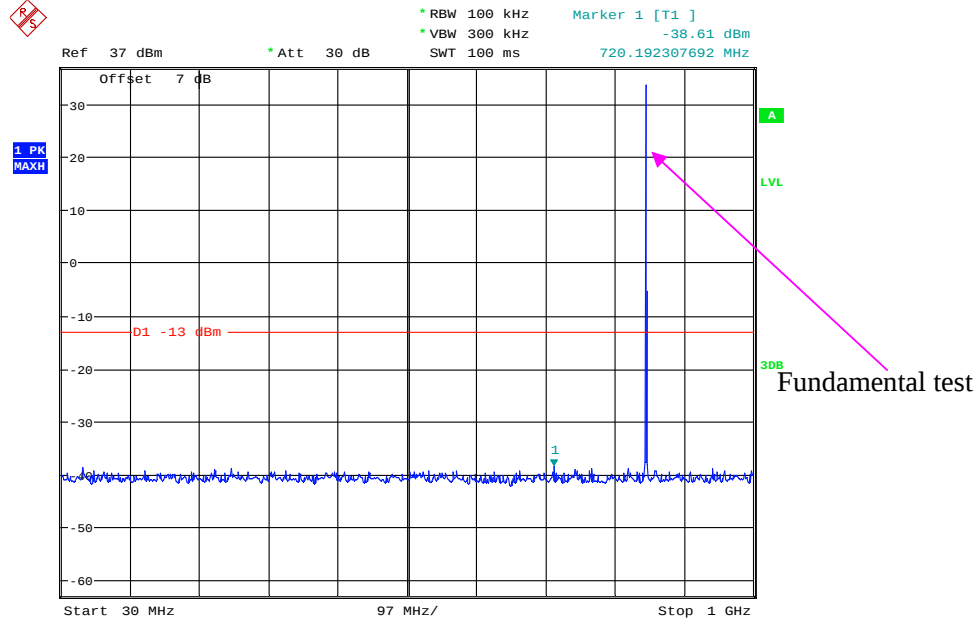
1 GHz – 10 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:35:24

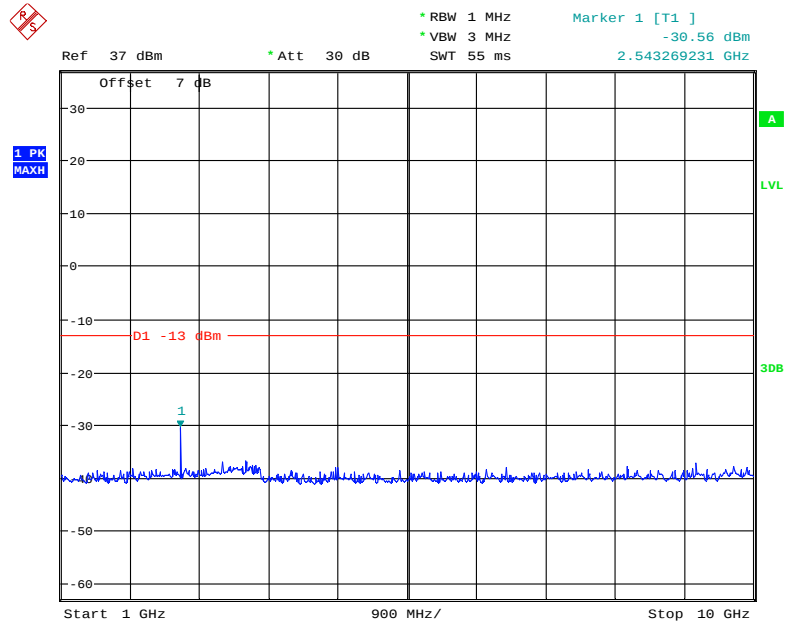
High Channel:

30 MHz – 1 GHz (GSM Mode)



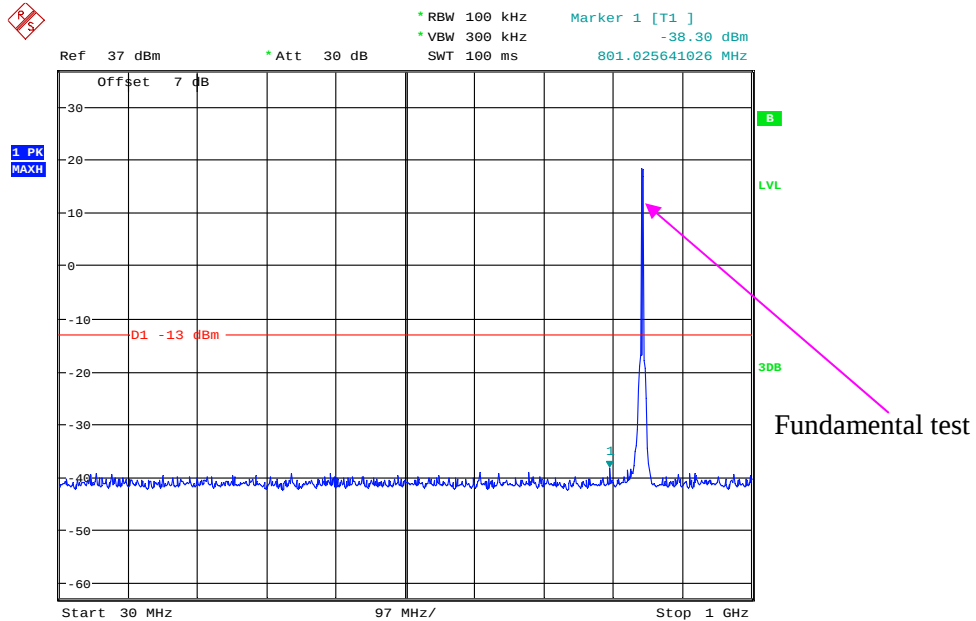
Date: 3.MAR.2021 09:53:54

1 GHz – 10 GHz (GSM Mode)



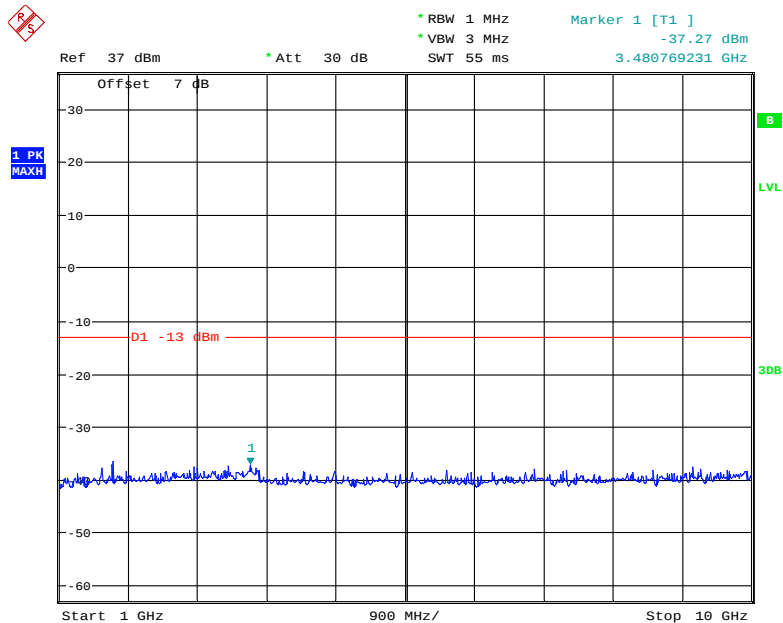
Date: 3.MAR.2021 09:54:24

30 MHz – 1 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:34:48

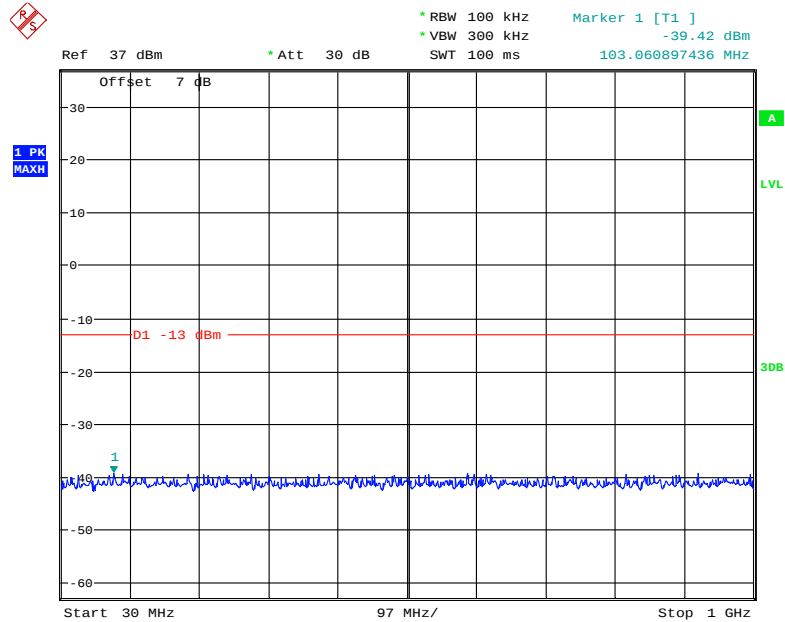
1 GHz – 10 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:35:07

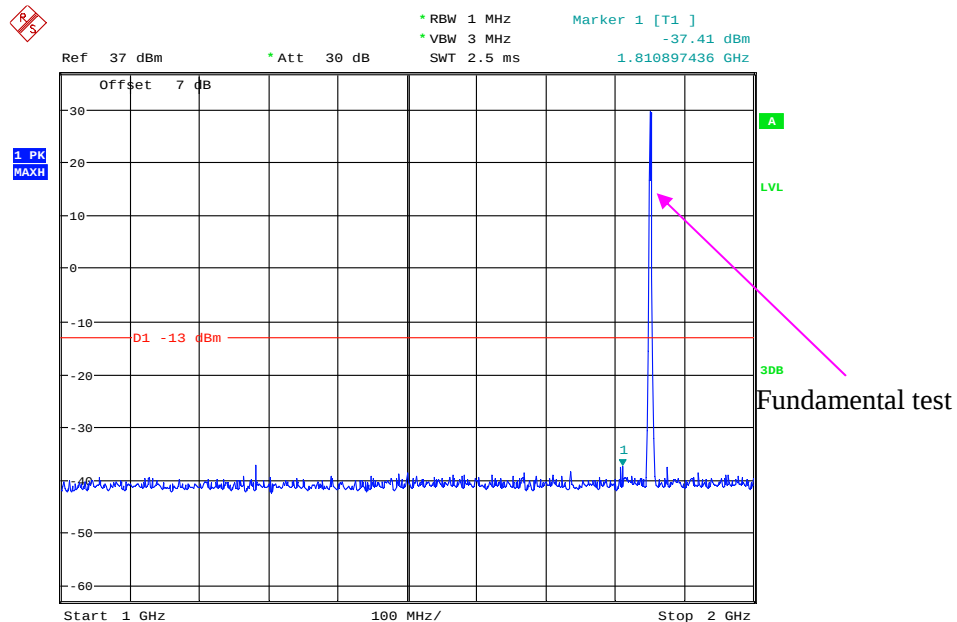
PCS Band (Part 24E)
Low Channel:

30 MHz – 1 GHz (GSM Mode)



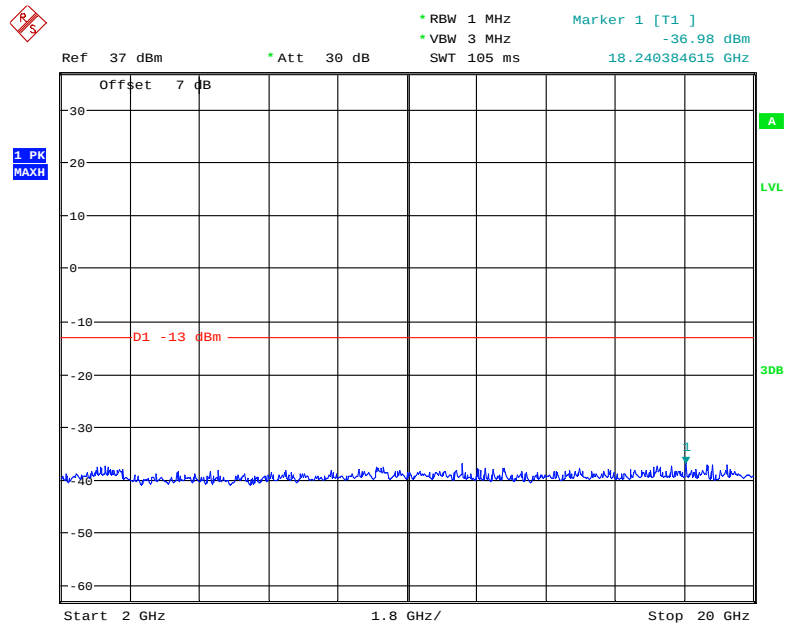
Date: 3.MAR.2021 10:22:06

1 GHz – 2 GHz (GSM Mode)



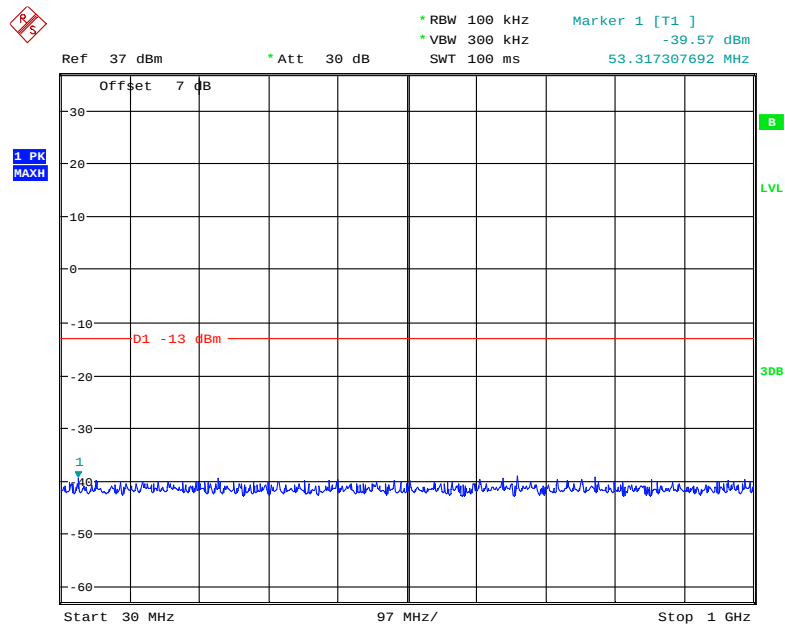
Date: 3.MAR.2021 10:24:16

2 GHz – 20 GHz (GSM Mode)



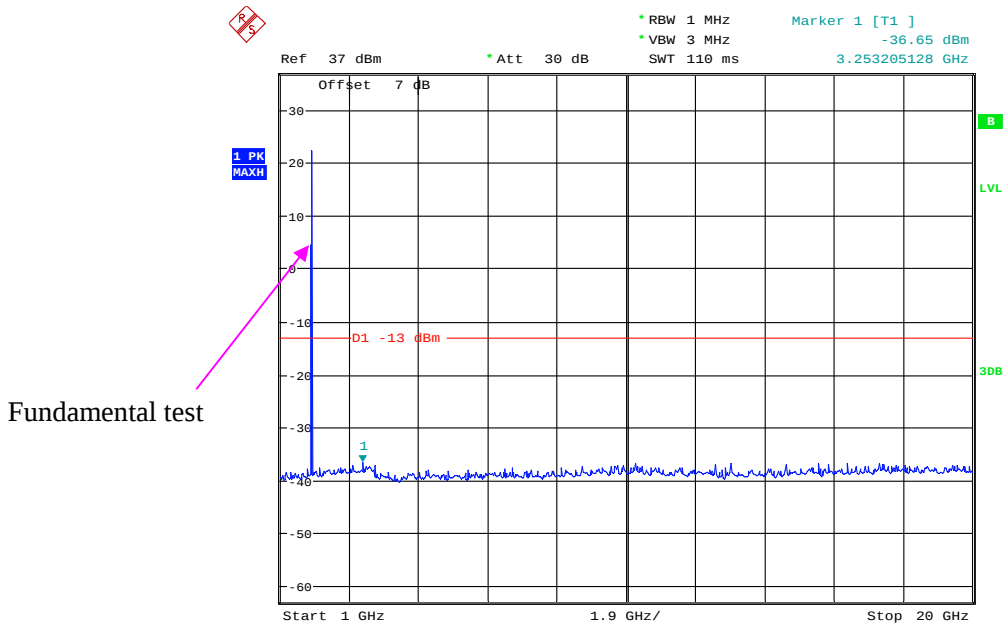
Date: 3.MAR.2021 10:24:37

30 MHz – 1 GHz (WCDMA Mode)



Date: 3.MAR.2021 10:50:18

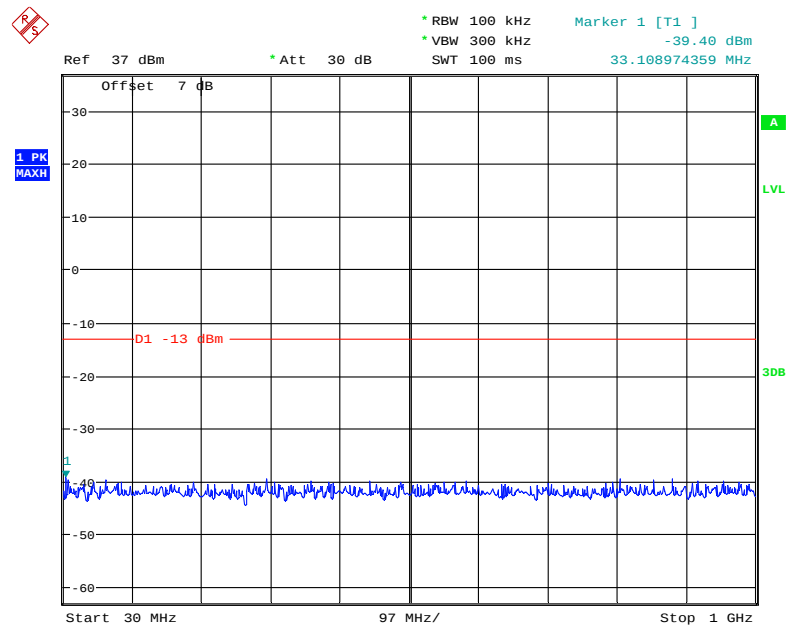
1 GHz – 20 GHz (WCDMA Mode)



Date: 3.MAR.2021 10:51:37

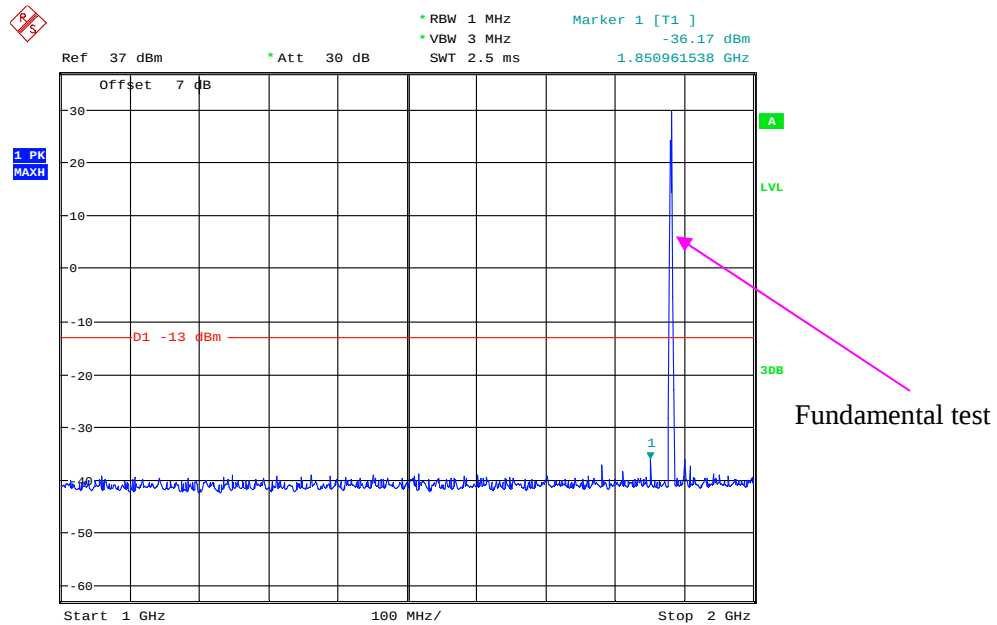
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



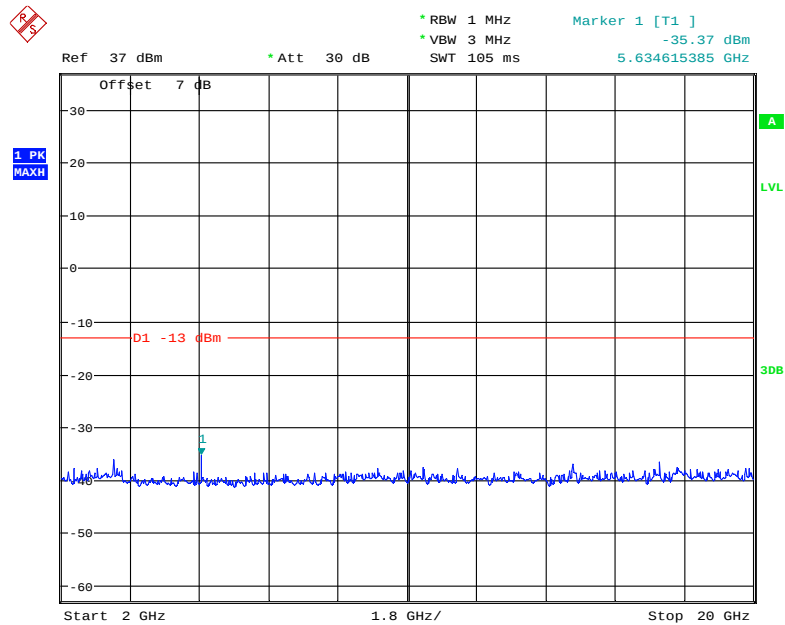
Date: 3.MAR.2021 10:22:31

1 GHz – 2 GHz (GSM Mode)



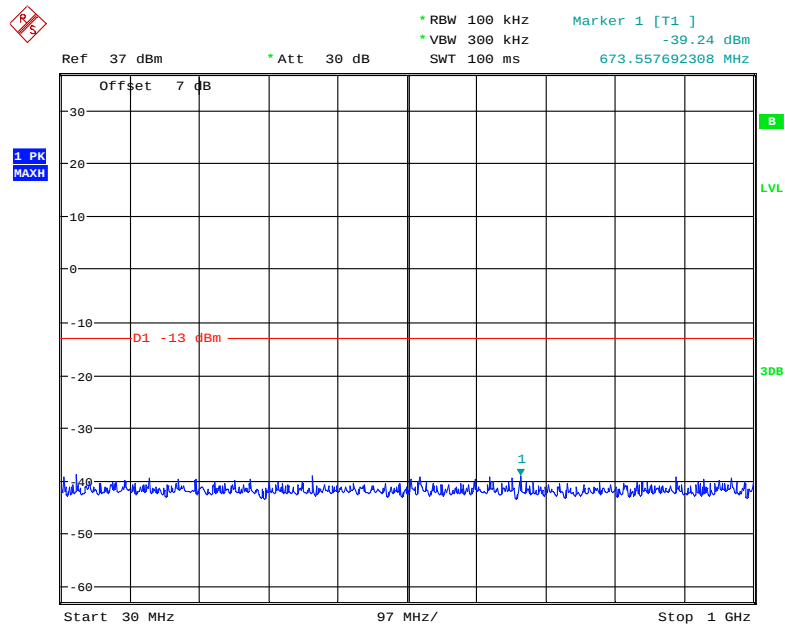
Date: 3.MAR.2021 10:23:53

2 GHz – 20 GHz (GSM Mode)



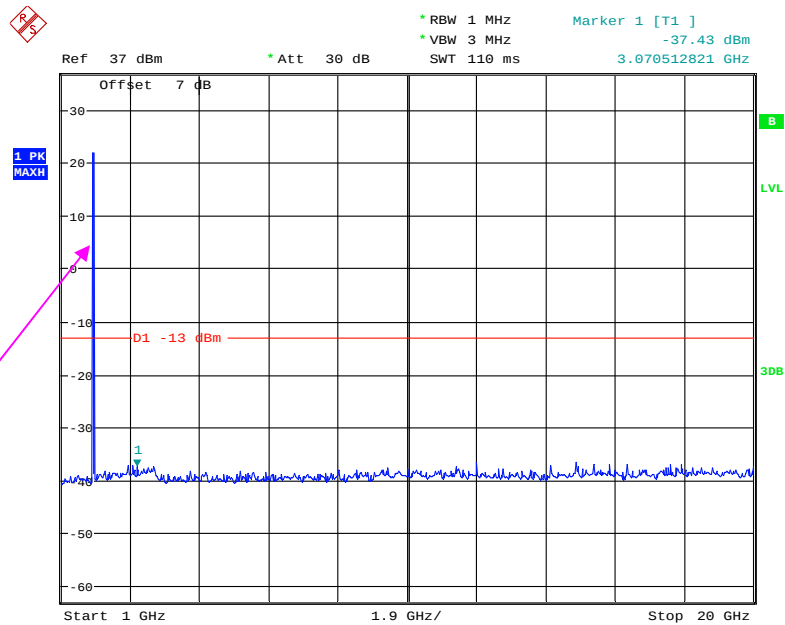
Date: 3.MAR.2021 10:25:00

30 MHz – 1 GHz (WCDMA Mode)



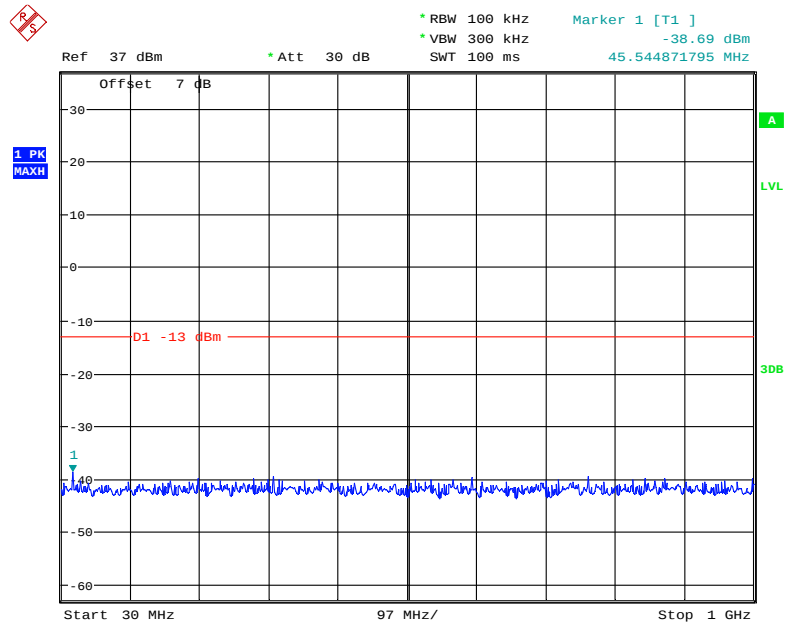
Date: 3.MAR.2021 10:53:10

1 GHz – 20 GHz (WCDMA Mode)

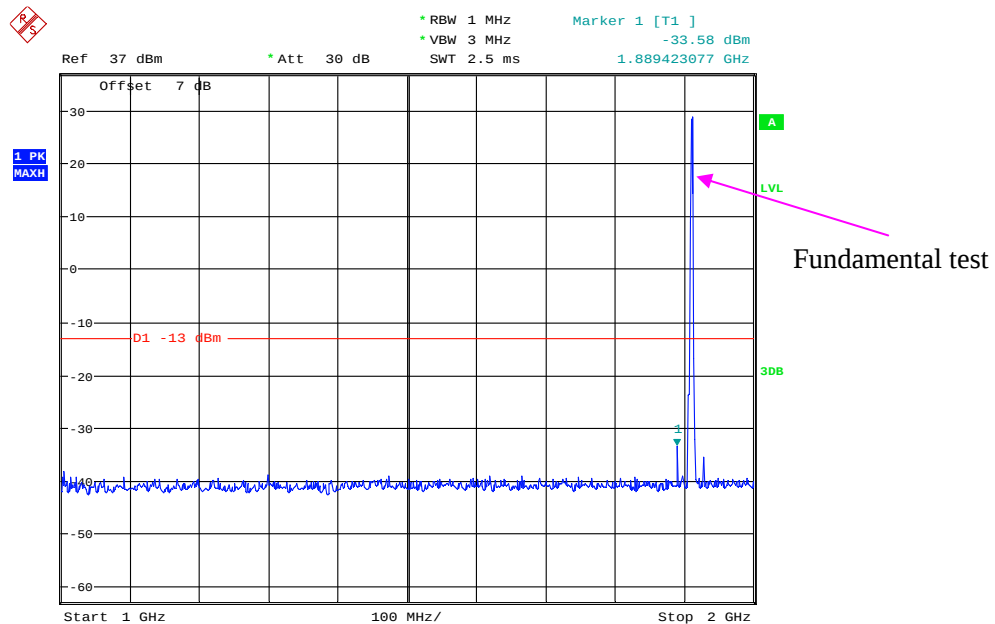


Fundamental test

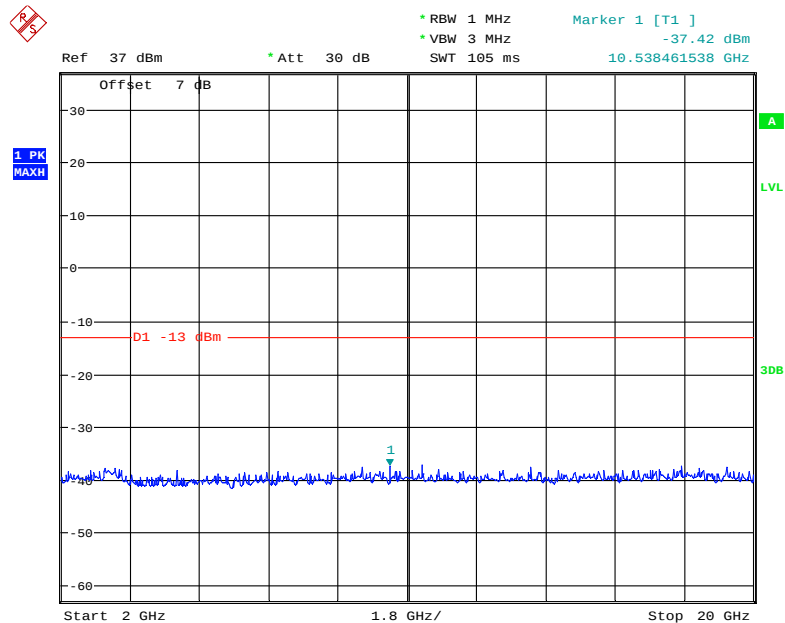
Date: 3.MAR.2021 10:52:23

High Channel:**30 MHz – 1 GHz (GSM Mode)**

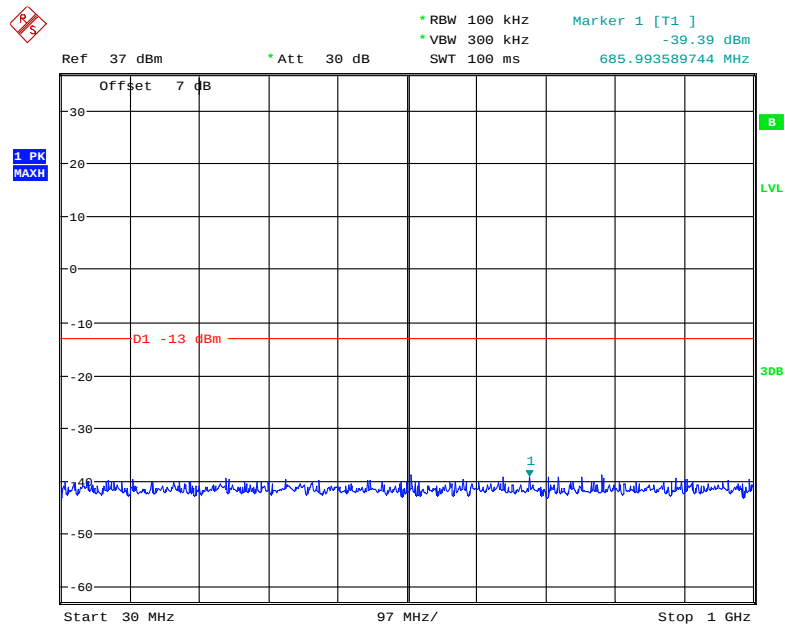
Date: 3.MAR.2021 10:22:44

1 GHz – 2 GHz (GSM Mode)

Date: 3.MAR.2021 10:23:31

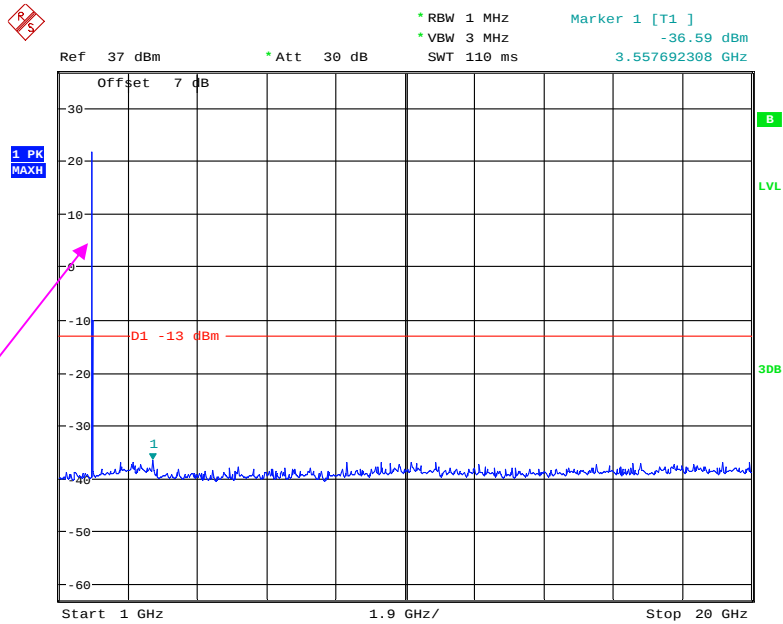
2 GHz – 20 GHz (GSM Mode)

Date: 3.MAR.2021 10:25:18

30 MHz – 1 GHz (WCDMA Mode)

Date: 3.MAR.2021 10:53:38

1 GHz – 20 GHz (WCDMA Mode)

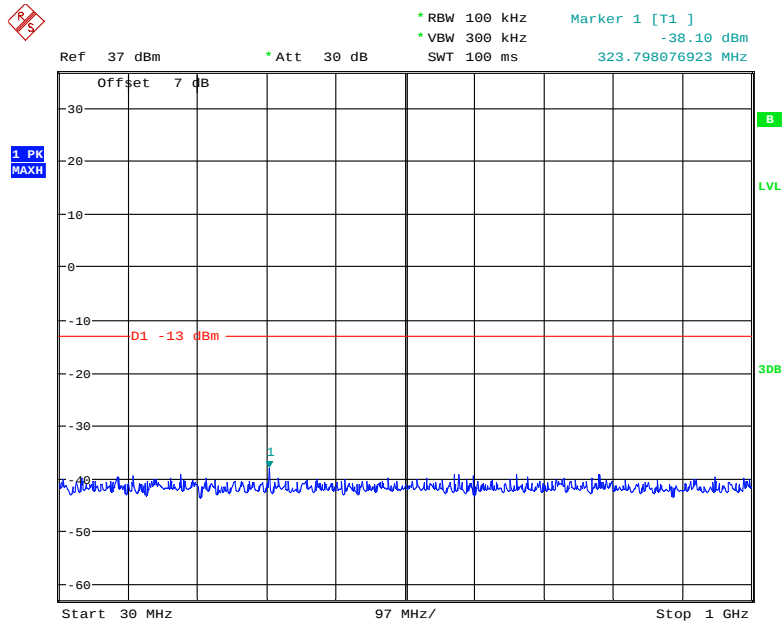


Fundamental test

Date: 3.MAR.2021 10:54:01

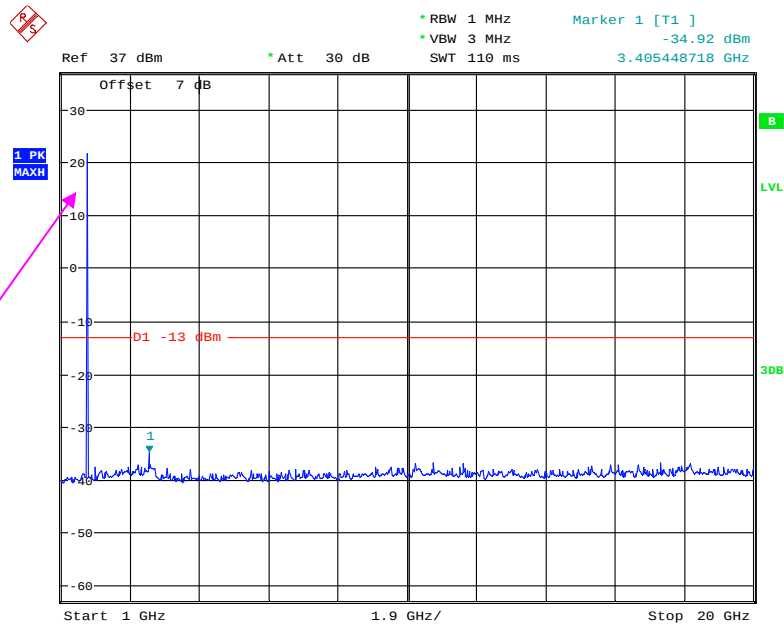
AWS Band (Part 27) Low Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:15:51

1 GHz – 20 GHz (WCDMA Mode)

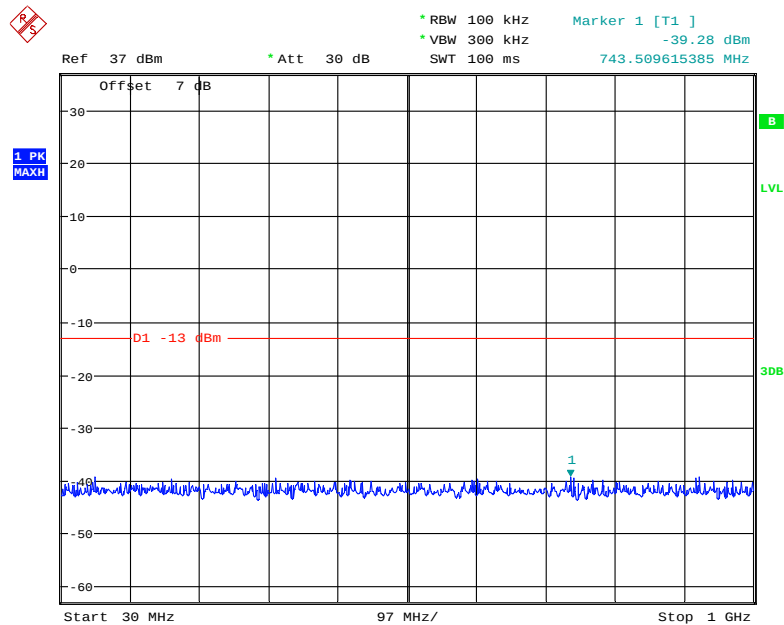


Fundamental test

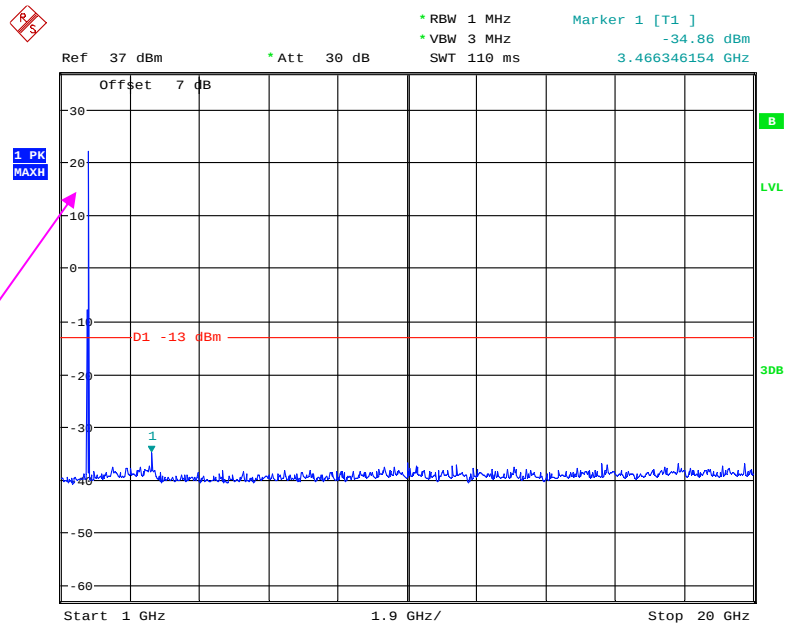
Date: 3.MAR.2021 11:17:20

Middle Channel

30 MHz – 1 GHz (WCDMA Mode)

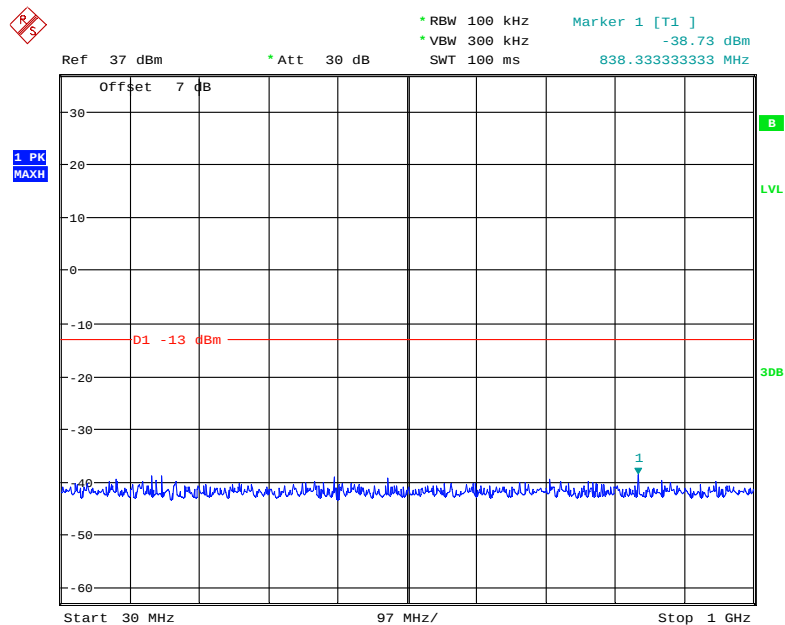


Date: 3.MAR.2021 11:16:34

1 GHz – 20 GHz (WCDMA Mode)

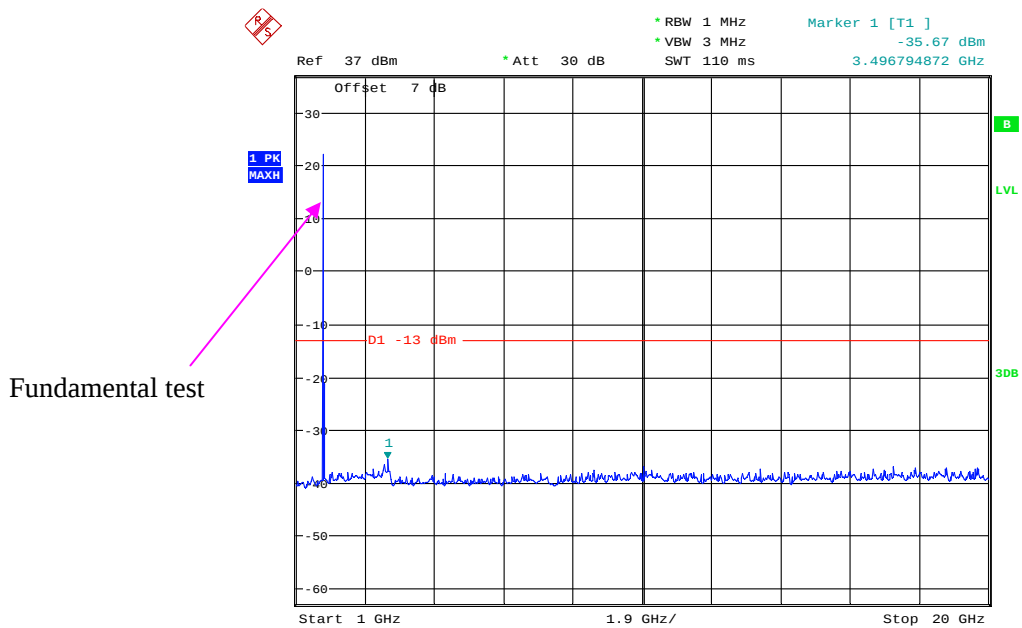
Fundamental test

Date: 3.MAR.2021 11:17:50

High Channel:**30 MHz – 1 GHz (WCDMA Mode)**

Date: 3.MAR.2021 11:16:19

1 GHz – 20 GHz (WCDMA Mode)



Date: 3.MAR.2021 11:18:08

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

FCC § 2.1053; § 22.917 (a); § 24.238 (a); § 27.53 SPURIOUS RADIATED EMISSIONS**Applicable Standard**

FCC § 2.1053, § 22.917(a) and § 24.238(a) and § 27.53

Test Procedure

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

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

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

Test Data**Environmental Conditions**

Temperature:	20~26.3 °C
Relative Humidity:	46~51 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Harris He on 2021-03-06 for below 1GHz, Troy Wang and Alan He form 2021-03-19 to 2021-03-22 for above 1GHz.

EUT operation mode: Transmitting

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

Frequency (MHz)	Receiver Reading (dBμV)	Turntable Angle Degree	Rx Antenna		Substituted			Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)		Limit (dBm)	Margin (dB)
GSM Mode										
Low channel										
965.2	32.69	43	2.0	H	-63.8	1.36	0.0	-65.16	-13	52.16
965.2	33.81	53	1.4	V	-60.2	1.36	0.0	-61.56	-13	48.56
1648.40	44.29	341	1.9	H	-63.8	1.40	8.70	-56.50	-13	43.50
1648.40	44.31	128	2.0	V	-63.5	1.40	8.70	-56.20	-13	43.20
2472.60	46.75	153	2.4	H	-56.6	2.60	10.20	-49.00	-13	36.00
2472.60	45.68	239	2.0	V	-57.1	2.60	10.20	-49.50	-13	36.50
3296.80	44.23	121	1.3	H	-56.7	1.50	11.70	-46.50	-13	33.50
3296.80	43.26	149	1.2	V	-57.7	1.50	11.70	-47.50	-13	34.50
Middle channel										
960.6	32.57	61	1.6	H	-63.9	1.36	0.0	-65.26	-13	52.26
960.6	33.69	198	1.7	V	-60.4	1.36	0.0	-61.76	-13	48.76
1673.20	65.50	199	1.4	H	-40.8	1.30	8.90	-33.20	-13	20.20
1673.20	60.57	118	2.0	V	-45.2	1.30	8.90	-37.60	-13	24.60
2509.80	57.98	264	1.9	H	-45.4	2.60	10.20	-37.80	-13	24.80
2509.80	54.87	351	1.8	V	-47.9	2.60	10.20	-40.30	-13	27.30
3346.40	54.62	82	1.0	H	-46.3	1.50	11.70	-36.10	-13	23.10
3346.40	51.03	342	2.2	V	-49.9	1.50	11.70	-39.70	-13	26.70
High channel										
961.8	32.38	37	2.0	H	-64.1	1.36	0.0	-65.46	-13	52.46
961.8	33.61	329	1.8	V	-60.4	1.36	0.0	-61.76	-13	48.76
1697.60	45.36	157	1.7	H	-61.0	1.30	8.90	-53.40	-13	40.40
1697.60	44.87	134	2.3	V	-60.9	1.30	8.90	-53.30	-13	40.30
2546.40	46.71	168	1.5	H	-56.6	2.60	10.20	-49.00	-13	36.00
2546.40	45.32	328	2.2	V	-57.4	2.60	10.20	-49.80	-13	36.80
3395.20	43.39	338	2.2	H	-57.8	1.40	11.80	-47.40	-13	34.40
3395.20	43.02	21	1.1	V	-58.0	1.40	11.80	-47.60	-13	34.60

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										
953.7	32.38	80	2.5	H	-64.1	1.36	0.0	-65.46	-13	52.46
953.7	33.51	246	1.3	V	-60.5	1.36	0.0	-61.86	-13	48.86
1652.80	46.21	277	1.7	H	-60.1	1.30	8.90	-52.50	-13	39.50
1652.80	45.76	319	1.5	V	-60.0	1.30	8.90	-52.40	-13	39.40
Middle channel										
962.2	32.58	26	1.5	H	-63.9	1.36	0.0	-65.26	-13	52.26
962.2	33.69	319	1.2	V	-60.4	1.36	0.0	-61.76	-13	48.76
1673.20	54.73	287	1.9	H	-51.6	1.30	8.90	-44.00	-13	31.00
1673.20	50.38	314	1.6	V	-55.4	1.30	8.90	-47.80	-13	34.80
High channel										
951.6	32.19	90	1.9	H	-64.3	1.36	0.0	-65.66	-13	52.66
951.6	33.33	281	2.4	V	-60.7	1.36	0.0	-62.06	-13	49.06
1693.20	46.03	134	2.3	H	-60.3	1.30	8.90	-52.70	-13	39.70
1693.20	45.75	20	1.2	V	-60.0	1.30	8.90	-52.40	-13	39.40

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										
962.1	32.57	216	1.1	H	-63.9	1.36	0.0	-65.26	-13	52.26
962.1	33.64	226	2.4	V	-60.4	1.36	0.0	-61.76	-13	48.76
3700.40	44.01	221	2.3	H	-58.1	1.60	11.90	-47.80	-13	34.80
3700.40	43.25	82	1.6	V	-58.3	1.60	11.90	-48.00	-13	35.00
Middle channel										
963.2	32.44	329	2.4	H	-64.1	1.36	0.0	-65.46	-13	52.46
3760.00	43.80	226	1.3	H	-58.3	1.50	11.80	-48.00	-13	35.00
3760.00	44.41	7	2.2	V	-57.2	1.50	11.80	-46.90	-13	33.90
5640.00	49.98	246	2.2	H	-49.7	1.70	12.40	-39.00	-13	26.00
5640.00	46.14	319	1.4	V	-53.2	1.70	12.40	-42.50	-13	29.50
7520.00	52.86	112	1.9	H	-43.1	1.90	10.70	-34.30	-13	21.30
7520.00	42.76	222	2.4	V	-52.8	1.90	10.70	-44.00	-13	31.00
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	44.12	305	1.9	H	-58.3	1.50	11.80	-48.00	-13	35.00
3819.60	43.68	278	1.8	V	-58.2	1.50	11.80	-47.90	-13	34.90

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										
951.8	32.52	216	1.8	H	-64.0	1.36	0.0	-65.36	-13	52.36
951.8	33.69	67	1.4	V	-60.4	1.36	0.0	-61.76	-13	48.76
3704.80	50.01	214	2.3	H	-52.1	1.60	11.90	-41.80	-13	28.80
3704.80	49.78	216	2.5	V	-51.7	1.60	11.90	-41.40	-13	28.40
Middle channel										
964.7	32.55	239	1.2	H	-64.0	1.36	0.0	-65.36	-13	52.36
964.7	33.73	84	2.1	V	-60.3	1.36	0.0	-61.66	-13	48.66
3760.00	44.87	253	1.8	H	-57.2	1.50	11.80	-46.90	-13	33.90
3760.00	44.21	24	1.1	V	-57.4	1.50	11.80	-47.10	-13	34.10
High channel										
967.2	32.63	17	2.2	H	-63.9	1.36	0.0	-65.26	-13	52.26
967.2	33.57	109	1.5	V	-60.5	1.36	0.0	-61.86	-13	48.86
3815.20	49.96	230	2.1	H	-52.4	1.50	11.80	-42.10	-13	29.10
3815.20	49.45	206	1.5	V	-52.5	1.50	11.80	-42.20	-13	29.20

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										
955.3	32.34	209	1.5	H	-64.2	1.36	0.0	-65.56	-13	52.56
955.3	33.47	303	1.5	V	-60.6	1.36	0.0	-61.96	-13	48.96
3424.80	48.99	4	1.0	H	-52.2	1.40	11.80	-41.80	-13	28.80
3424.80	49.12	252	2.0	V	-51.9	1.40	11.80	-41.50	-13	28.50
Middle channel										
958.5	32.62	60	1.9	H	-63.9	1.36	0.0	-65.26	-13	52.26
958.5	33.77	26	1.3	V	-60.3	1.36	0.0	-61.66	-13	48.66
3465.20	45.12	105	1.1	H	-55.6	1.50	12.00	-45.10	-13	32.10
3465.20	44.23	50	2.1	V	-57.3	1.50	12.00	-46.80	-13	33.80
High channel										
949.6	32.55	239	1.2	H	-64.0	1.36	0.0	-65.36	-13	52.36
949.6	33.73	84	2.1	V	-60.3	1.36	0.0	-61.66	-13	48.66
3505.20	47.56	294	2.2	H	-53.3	1.50	12.00	-42.80	-13	29.80
3505.20	46.87	43	2.4	V	-54.8	1.50	12.00	-44.30	-13	31.30

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										
954.3	32.68	326	1.4	H	-63.8	1.36	0.0	-65.16	-13	52.16
954.3	33.44	302	1.4	V	-60.6	1.36	0.0	-61.96	-13	48.96
3701.40	44.12	339	1.8	H	-57.7	1.60	11.90	-47.40	-13	34.40
3701.40	43.05	269	2.4	V	-58.2	1.60	11.90	-47.90	-13	34.90
1.4 MHz, Middle channel										
962.1	32.75	200	2.4	H	-63.8	1.36	0.0	-65.16	-13	52.16
962.1	33.46	88	1.7	V	-60.6	1.36	0.0	-61.96	-13	48.96
3760.00	43.89	68	2.5	H	-58.2	1.50	11.80	-47.90	-13	34.90
3760.00	42.67	184	2.1	V	-58.9	1.50	11.80	-48.60	-13	35.60
1.4 MHz, High channel										
963.3	32.51	125	2.4	H	-64.0	1.36	0.0	-65.36	-13	52.36
963.3	33.17	271	1.4	V	-60.9	1.36	0.0	-62.26	-13	49.26
3818.60	44.05	7	2.4	H	-58.0	1.50	11.80	-47.70	-13	34.70
3818.60	43.11	120	1.2	V	-58.5	1.50	11.80	-48.20	-13	35.20
Band 4										
Test frequency range:30 MHz ~ 20 GHz										
1.4 MHz, Low channel										
962.9	32.85	185	1.4	H	-63.7	1.36	0.0	-65.06	-13	52.06
962.9	33.76	258	1.0	V	-60.3	1.36	0.0	-61.66	-13	48.66
3421.40	48.62	262	1.7	H	-52.2	1.40	11.80	-41.80	-13	28.80
3421.40	49.91	239	1.0	V	-50.7	1.40	11.80	-40.30	-13	27.30
1.4 MHz, Middle channel										
956.3	32.35	118	1.3	H	-64.2	1.36	0.0	-65.56	-13	52.56
956.3	33.16	109	1.1	V	-60.9	1.36	0.0	-62.26	-13	49.26
3465.00	48.87	63	1.9	H	-51.9	1.50	12.00	-41.40	-13	28.40
3465.00	49.82	88	2.4	V	-51.7	1.50	12.00	-41.20	-13	28.20
1.4 MHz, High channel										
964.1	32.44	237	1.9	H	-64.1	1.36	0.0	-65.46	-13	52.46
964.1	33.66	348	1.3	V	-60.4	1.36	0.0	-61.76	-13	48.76
3508.60	48.39	61	1.9	H	-52.4	1.50	12.00	-41.90	-13	28.90
3508.60	49.73	238	1.8	V	-51.8	1.50	12.00	-41.30	-13	28.30

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 5										
Test frequency range:30 MHz ~ 10 GHz										
1.4 MHz, Low channel										
951.8	32.73	222	1.3	H	-63.8	1.36	0.0	-65.16	-13	52.16
951.8	33.51	31	1.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
1649.40	49.63	279	2.2	H	-58.4	1.40	8.70	-51.10	-13	38.10
1649.40	47.27	354	2.2	V	-60.6	1.40	8.70	-53.30	-13	40.30
2474.10	57.99	132	2.1	H	-45.4	2.60	10.20	-37.80	-13	24.80
2474.10	50.91	124	1.3	V	-51.8	2.60	10.20	-44.20	-13	31.20
3298.80	44.64	304	1.8	H	-56.3	1.50	11.70	-46.10	-13	33.10
3298.80	43.69	78	2.0	V	-57.2	1.50	11.70	-47.00	-13	34.00
1.4 MHz, Middle channel										
962.1	32.45	46	1.8	H	-64.1	1.36	0.0	-65.46	-13	52.46
962.1	33.82	114	2.5	V	-60.2	1.36	0.0	-61.56	-13	48.56
1673.00	49.85	85	2.2	H	-56.5	1.30	8.90	-48.90	-13	35.90
1673.00	47.23	65	1.6	V	-58.5	1.30	8.90	-50.90	-13	37.90
2509.50	57.82	327	2.5	H	-45.5	2.60	10.20	-37.90	-13	24.90
2509.50	50.62	195	1.5	V	-52.1	2.60	10.20	-44.50	-13	31.50
3346.00	44.71	337	2.5	H	-56.2	1.50	11.70	-46.00	-13	33.00
3346.00	43.42	68	2.0	V	-57.5	1.50	11.70	-47.30	-13	34.30
1.4 MHz, High channel										
963.4	32.09	212	2.3	H	-64.4	1.36	0.0	-65.76	-13	52.76
963.4	33.30	319	1.9	V	-60.8	1.36	0.0	-62.16	-13	49.16
1696.60	50.16	225	1.0	H	-56.2	1.30	8.90	-48.60	-13	35.60
1696.60	47.47	226	1.4	V	-58.3	1.30	8.90	-50.70	-13	37.70
2544.90	57.66	132	2.4	H	-45.7	2.60	10.20	-38.10	-13	25.10
2544.90	50.52	201	1.1	V	-52.2	2.60	10.20	-44.60	-13	31.60
3393.20	44.80	359	2.2	H	-56.4	1.40	11.80	-46.00	-13	33.00
3393.20	43.47	59	2.1	V	-57.6	1.40	11.80	-47.20	-13	34.20

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 7										
Test frequency range: 30 MHz ~26.5GHz										
5 MHz, Low channel										
950.3	32.67	348	2.3	H	-63.8	1.36	0.0	-65.16	-25	40.16
950.3	33.18	85	1.2	V	-60.9	1.36	0.0	-62.26	-25	37.26
5005.00	48.25	92	1.2	H	-52.3	1.70	12.00	-42.00	-25	17.00
5005.00	47.73	333	1.9	V	-52.3	1.70	12.00	-42.00	-25	17.00
5 MHz, Middle channel										
953.6	32.31	189	1.4	H	-64.2	1.36	0.0	-65.56	-25	40.56
953.6	33.28	127	1.5	V	-60.8	1.36	0.0	-62.16	-25	37.16
5070.00	48.60	13	2.0	H	-51.4	1.60	12.10	-40.90	-25	15.90
5070.00	47.78	313	2.1	V	-52.2	1.60	12.10	-41.70	-25	16.70
5 MHz, High channel										
945.5	32.54	188	2.0	H	-64.0	1.36	0.0	-65.36	-25	40.36
945.5	33.07	252	2.3	V	-61.0	1.36	0.0	-62.36	-25	37.36
5135.00	48.37	264	1.5	H	-51.6	1.60	12.10	-41.10	-25	16.10
5135.00	47.65	38	1.7	V	-52.4	1.60	12.10	-41.90	-25	16.90
Band 66										
Test frequency range: 30 MHz ~ 20GHz										
1.4 MHz, Low channel										
954.7	32.63	18	1.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
954.7	33.82	152	1.8	V	-60.2	1.36	0.0	-61.56	-13	48.56
3421.40	46.32	104	1.5	H	-54.5	1.40	11.80	-44.10	-13	31.10
3421.40	45.24	31	2.1	V	-55.4	1.40	11.80	-45.00	-13	32.00
1.4 MHz, Middle channel										
963.8	32.51	313	1.5	H	-64.0	1.36	0.0	-65.36	-13	52.36
963.8	33.94	260	1.9	V	-60.1	1.36	0.0	-61.46	-13	48.46
3490.00	45.35	1	1.8	H	-55.4	1.50	12.00	-44.90	-13	31.90
3490.00	44.18	140	2.2	V	-57.3	1.50	12.00	-46.80	-13	33.80
1.4 MHz, High channel										
951.3	32.74	95	2.4	H	-63.8	1.36	0.0	-65.16	-13	52.16
951.3	33.61	194	1.8	V	-60.4	1.36	0.0	-61.76	-13	48.76
3558.60	45.92	300	1.3	H	-55.6	1.50	12.10	-45.00	-13	32.00
3558.60	45.23	254	2.3	V	-55.8	1.50	12.10	-45.20	-13	32.20

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 (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.

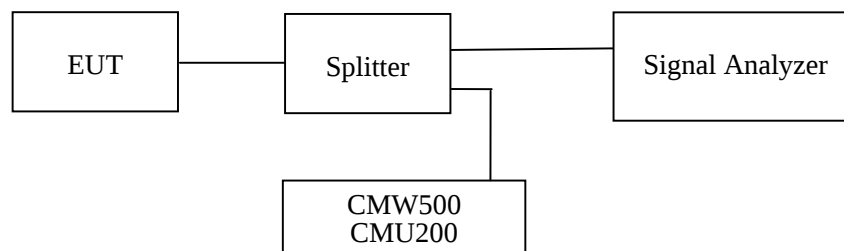
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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

Test Procedure

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

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

**Test Data****Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

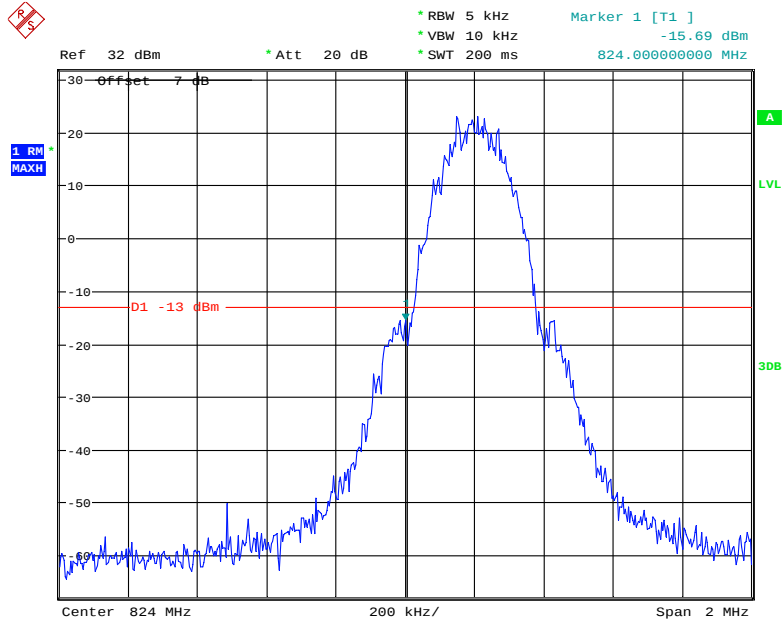
The testing was performed by Coco Liu from 2021-03-01 to 2021-03-26.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

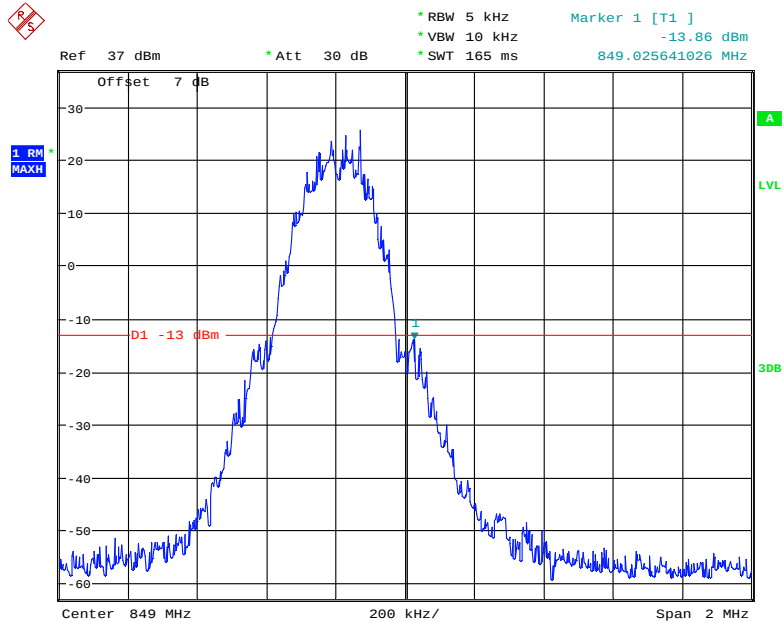
Please refer to the following plots.

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



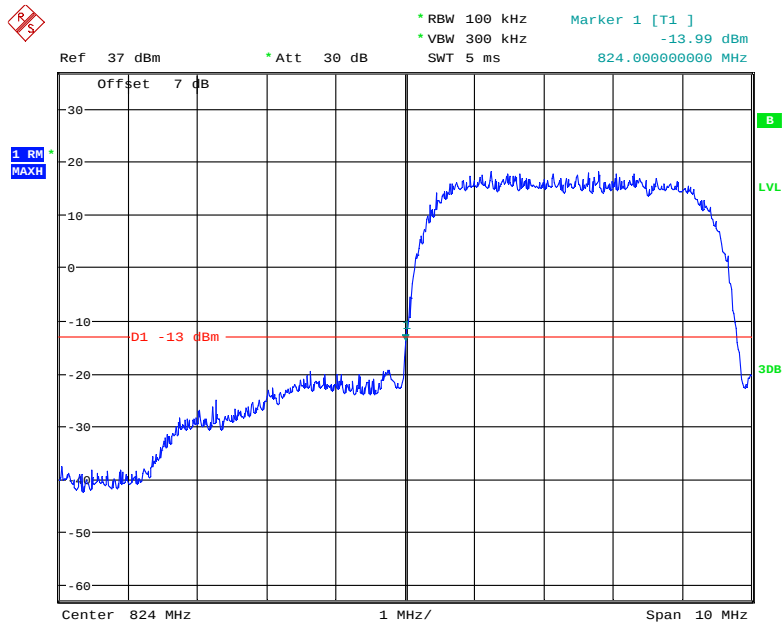
Date: 26.MAR.2021 16:16:33

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



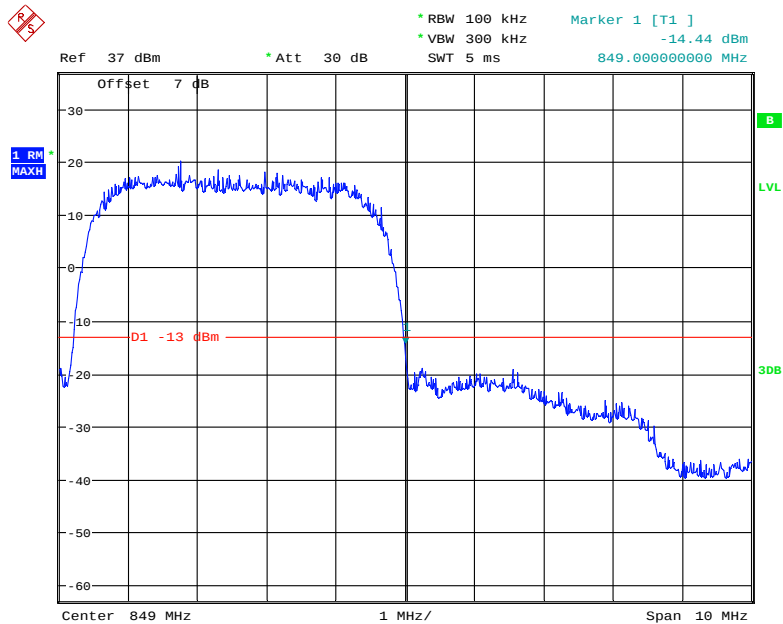
Date: 3.MAR.2021 09:59:07

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



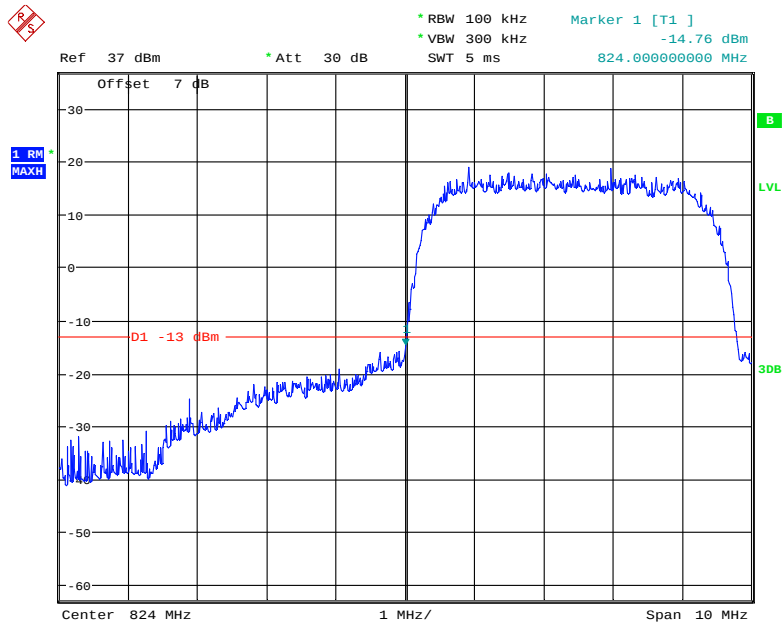
Date: 3.MAR.2021 11:33:19

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



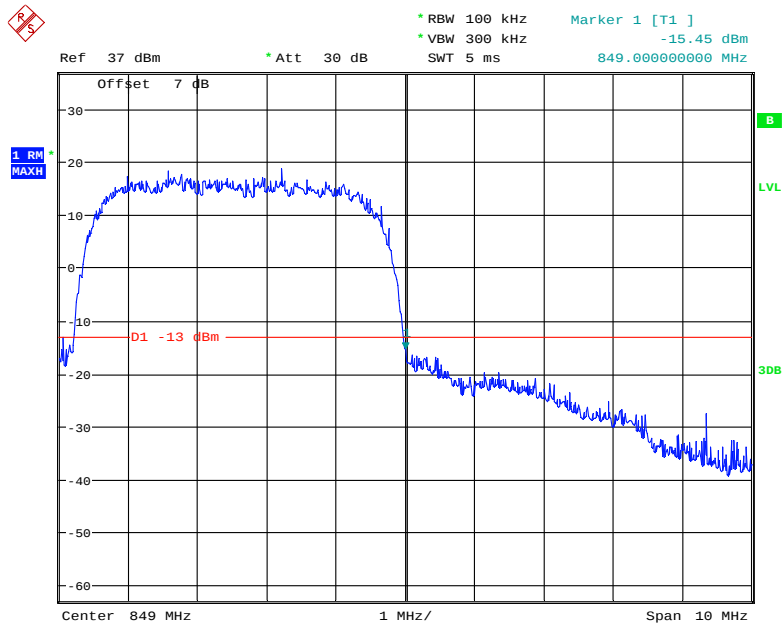
Date: 3.MAR.2021 11:32:47

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



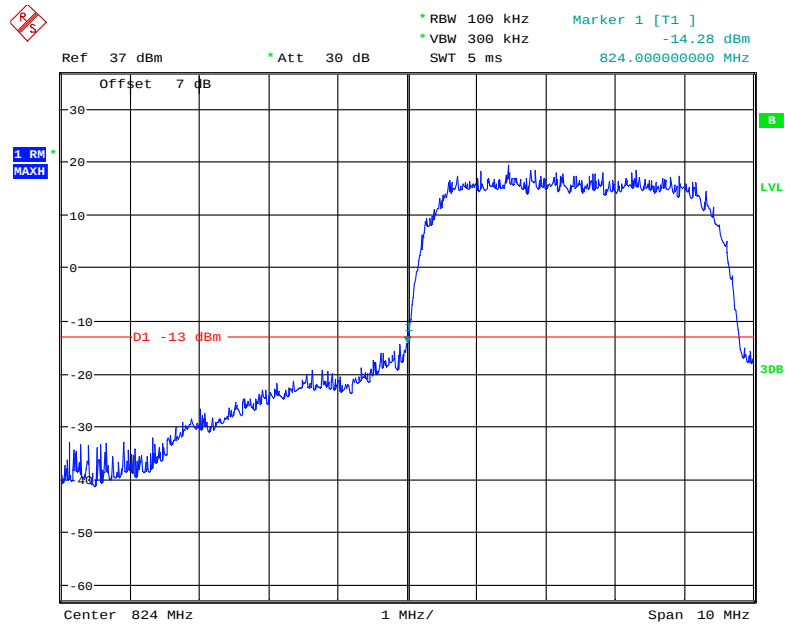
Date: 3.MAR.2021 11:36:19

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



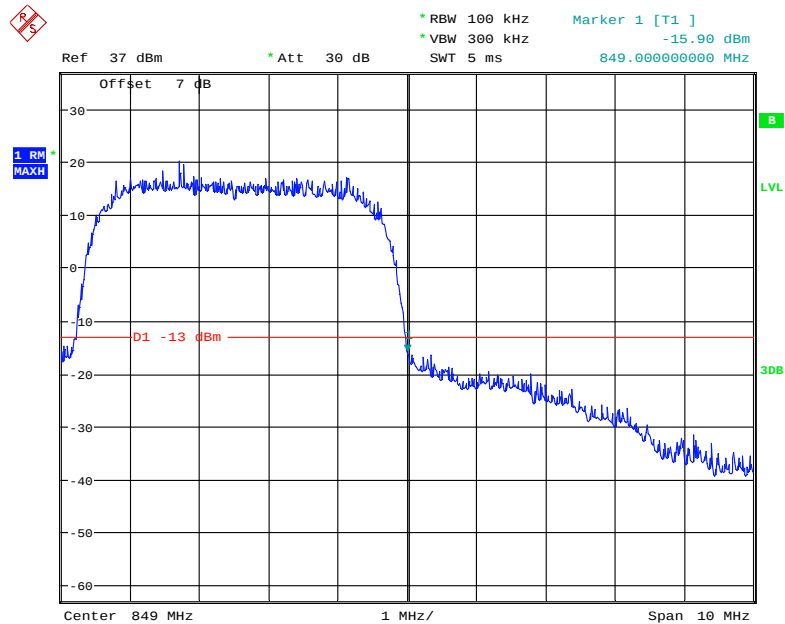
Date: 3.MAR.2021 11:36:59

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



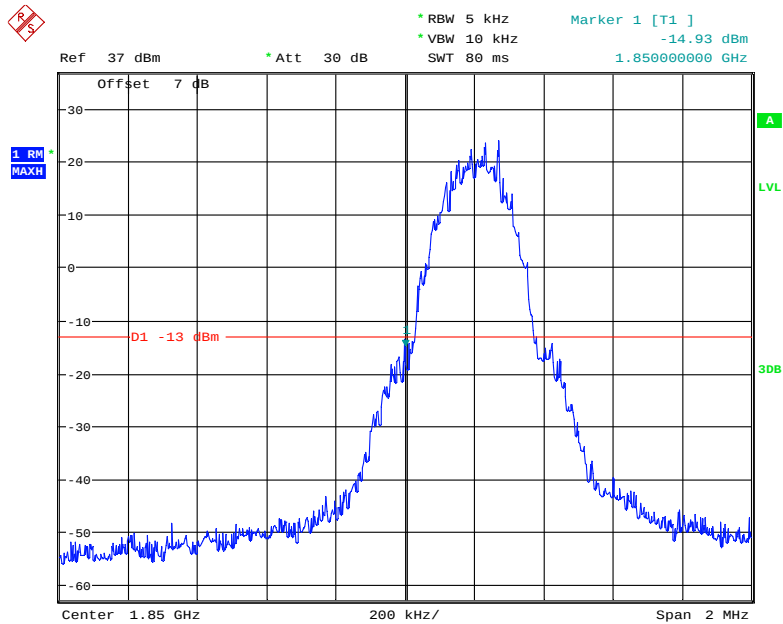
Date: 3.MAR.2021 11:47:47

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



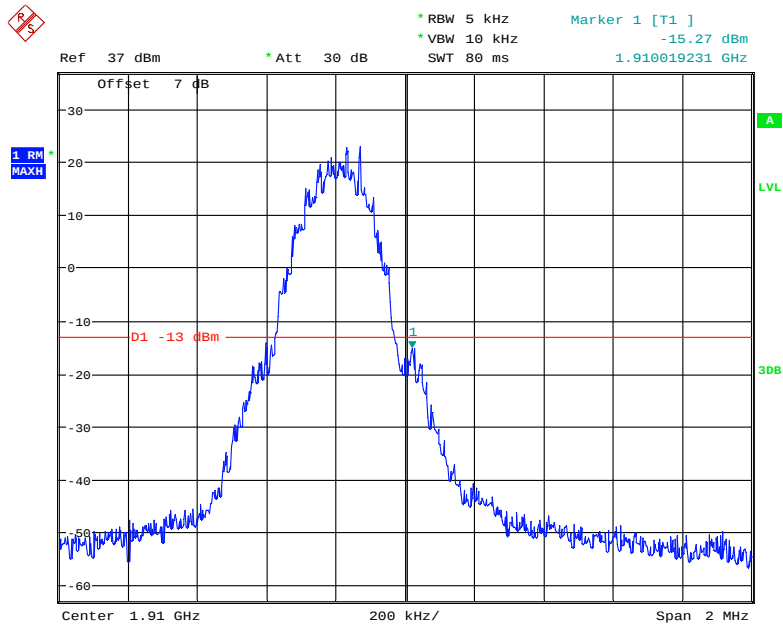
Date: 3.MAR.2021 11:48:08

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



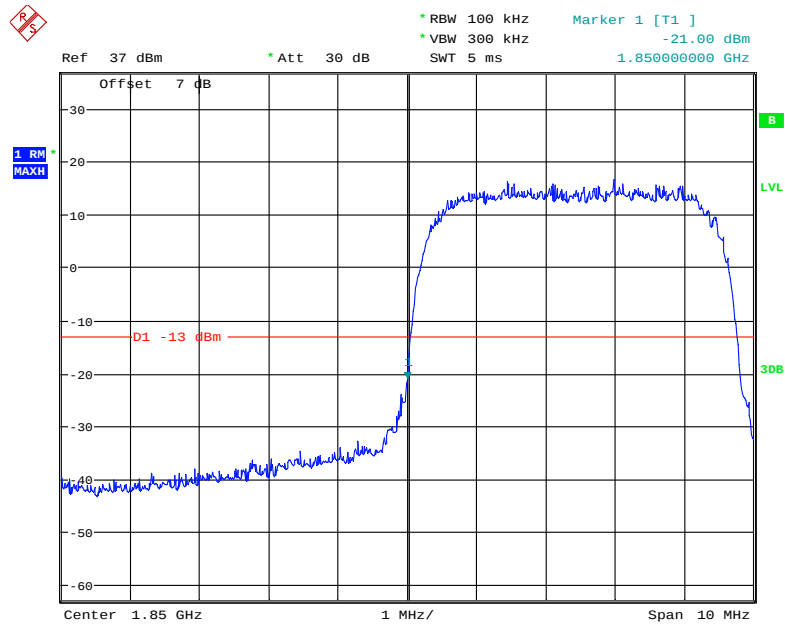
Date: 3.MAR.2021 10:21:16

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



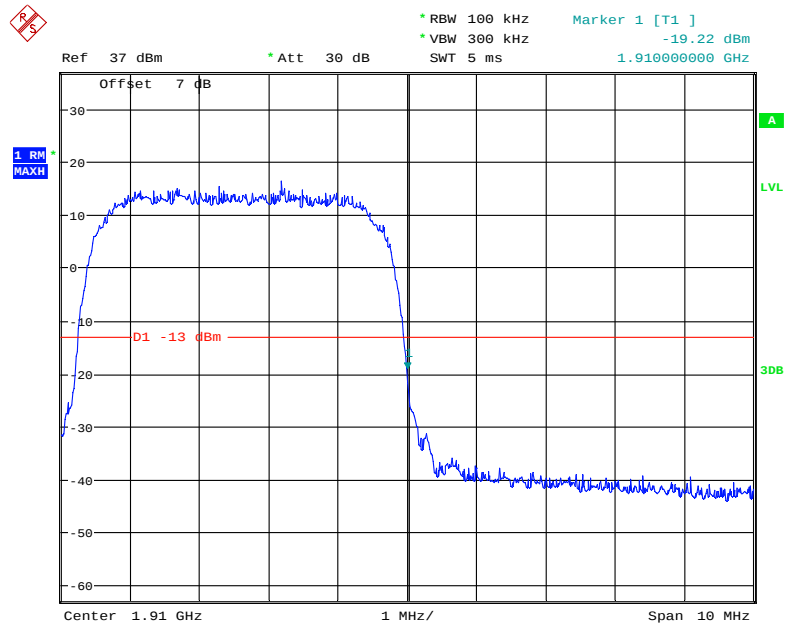
Date: 3.MAR.2021 10:20:33

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



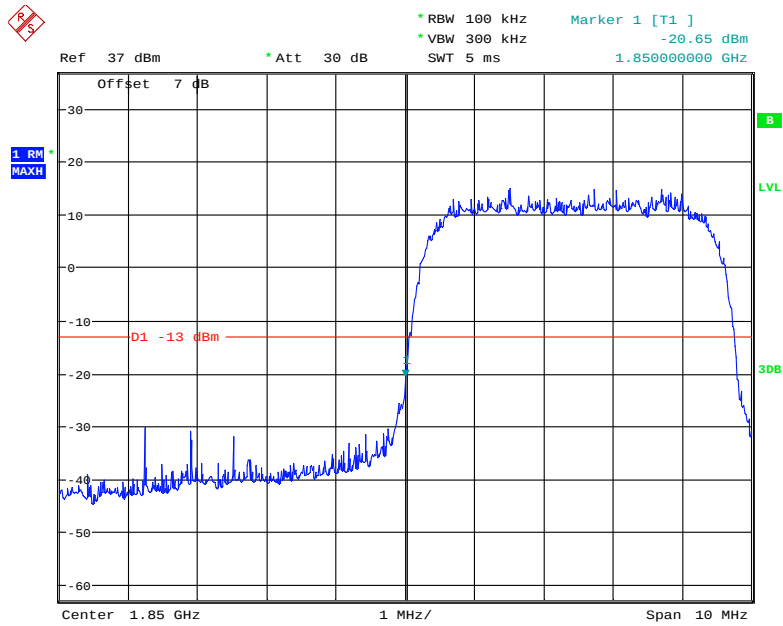
Date: 3.MAR.2021 10:49:15

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



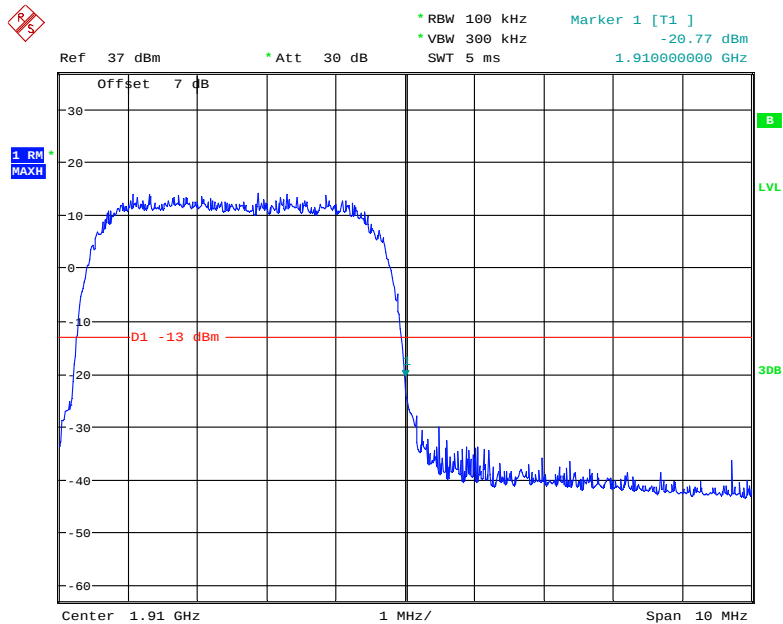
Date: 3.MAR.2021 10:47:02

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



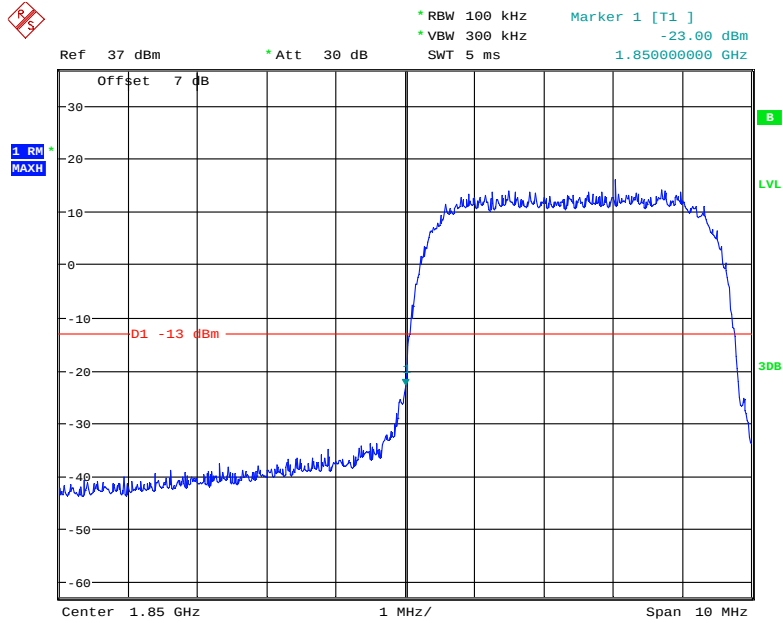
Date: 3.MAR.2021 10:56:43

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



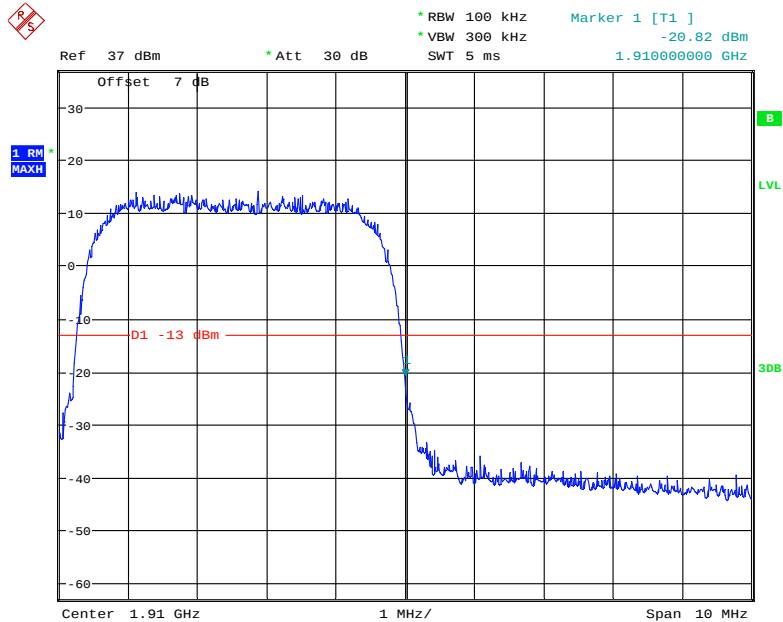
Date: 3.MAR.2021 10:56:11

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



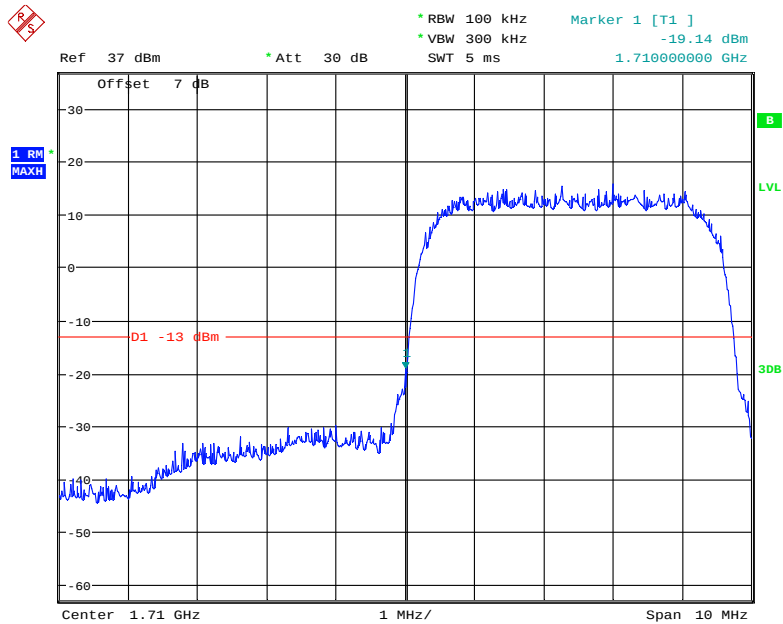
Date: 3.MAR.2021 11:07:40

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



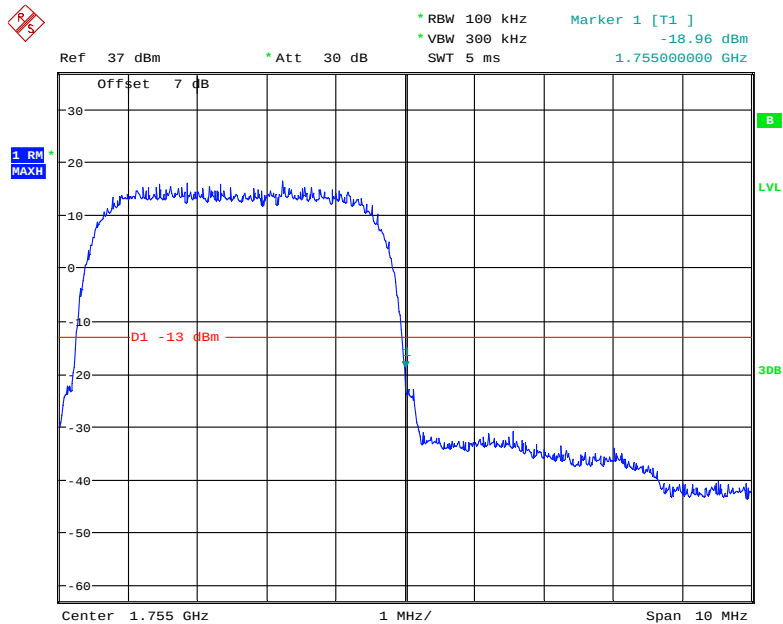
Date: 3.MAR.2021 11:08:31

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



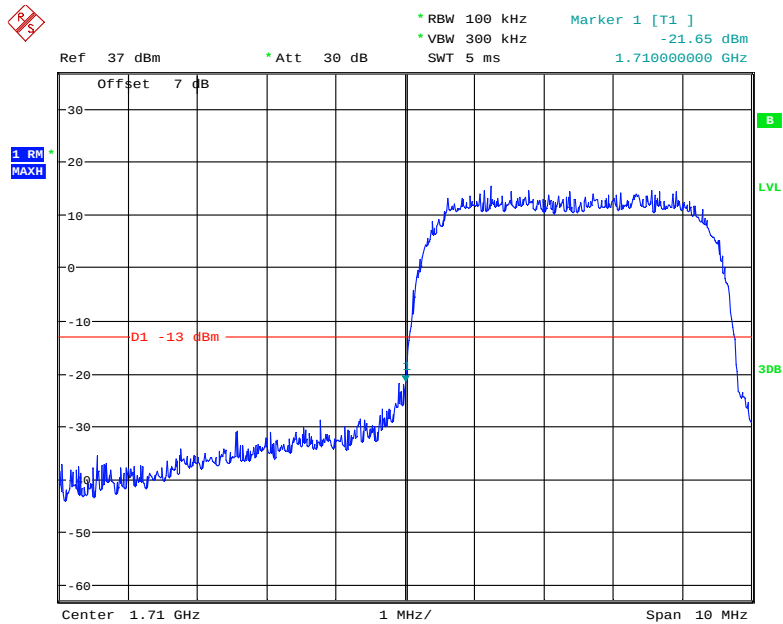
Date: 3.MAR.2021 11:15:23

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



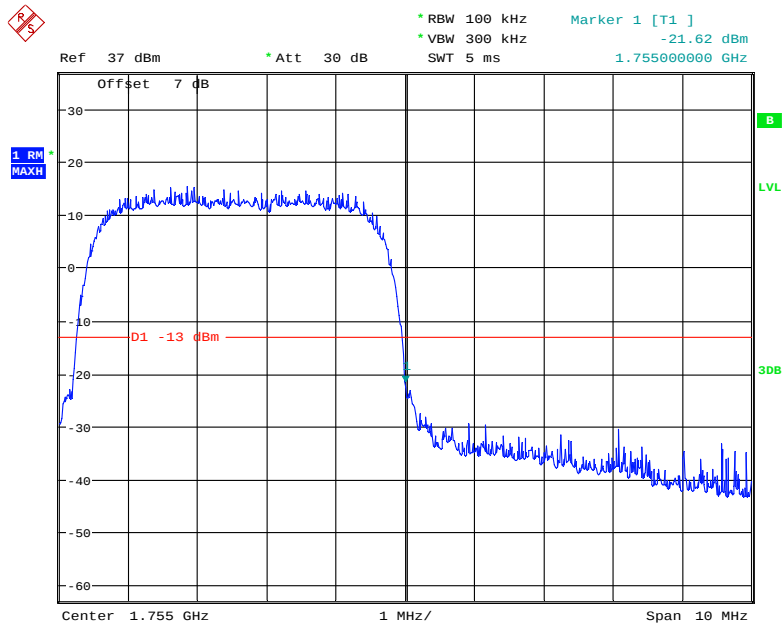
Date: 3.MAR.2021 11:14:59

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



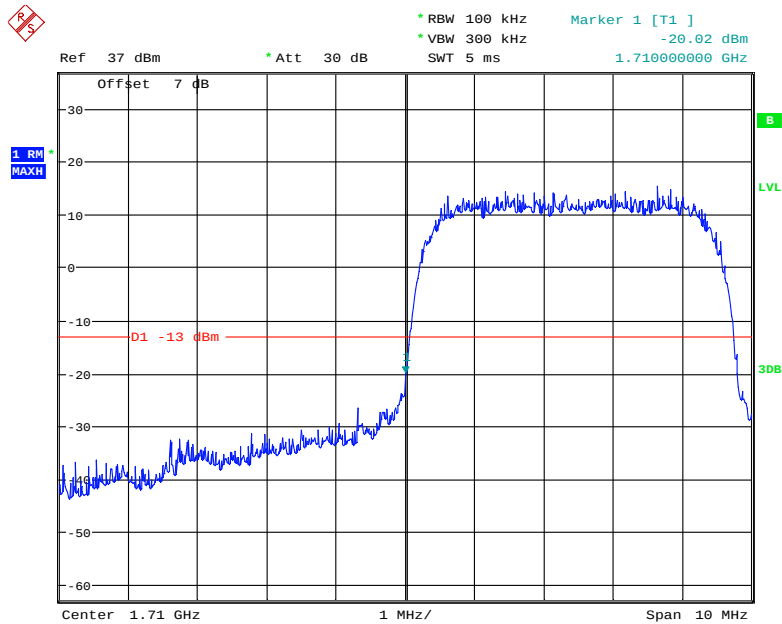
Date: 3.MAR.2021 11:27:12

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



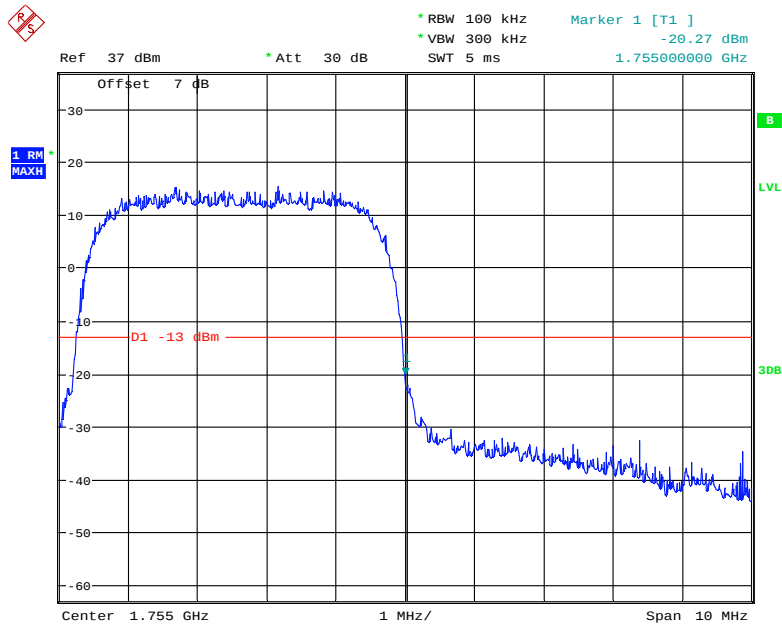
Date: 3.MAR.2021 11:27:41

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



Date: 3.MAR.2021 11:19:50

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



Date: 3.MAR.2021 11:19:24

The test plot of LTE band please refer to the Appendix C

FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY**Applicable Standard**

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

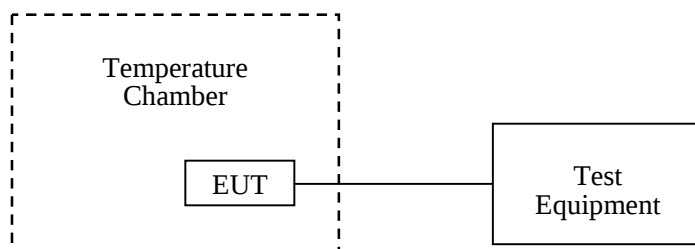
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

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

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

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



Test Data**Environmental Conditions**

Temperature:	25 °C
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Coco Liu from 2021-03-01 to 2021-03-04.

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	3.8	3	0.0036	2.5
-20		4	0.0048	2.5
-10		2	0.0024	2.5
0		3	0.0036	2.5
10		4	0.0048	2.5
20		4	0.0048	2.5
30		5	0.0060	2.5
40		6	0.0072	2.5
50		4	0.0048	2.5
20	V min.= 3.5	2	0.0024	2.5
	V max.= 4.35	3	0.0036	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	3.8	2	0.0024	2.5
-20		1	0.0012	2.5
-10		-1	-0.0012	2.5
0		2	0.0024	2.5
10		3	0.0036	2.5
20		6	0.0072	2.5
30		7	0.0084	2.5
40		2	0.0024	2.5
50		1	0.0012	2.5
20	V min.= 3.5	3	0.0036	2.5
	V max.= 4.35	2	0.0024	2.5

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

Middle Channel, $f_0 = 1880.0\text{ MHz}$				
Temperature (°C)	Voltage Supplied (V_{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.8	-2	-0.0011	pass
-20		4	0.0021	pass
-10		2	0.0011	pass
0		3	0.0016	pass
10		-1	-0.0005	pass
20		-3	-0.0016	pass
30		-3	-0.0016	pass
40		-4	-0.0021	pass
50		-2	-0.0011	pass
20	V min.= 3.5	1	0.0005	pass
	V max.= 4.35	-3	-0.0016	pass

WCDMA Mode

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	3.8	2	0.0011	pass
-20		4	0.0021	pass
-10		7	0.0037	pass
0		6	0.0032	pass
10		4	0.0021	pass
20		3	0.0016	pass
30		5	0.0027	pass
40		4	0.0021	pass
50		3	0.0016	pass
20	V min.= 3.5	2	0.0011	pass
	V max.= 4.35	4	0.0021	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	3.8	1710.0645	1754.9364	1710	1755
-20		1710.0658	1754.9338	1710	1755
-10		1710.0646	1754.9356	1710	1755
0		1710.0608	1754.9346	1710	1755
10		1710.0626	1754.9334	1710	1755
20		1710.0613	1754.9359	1710	1755
30		1710.0623	1754.9351	1710	1755
40		1710.0659	1754.9349	1710	1755
50		1710.0586	1754.9312	1710	1755
20	V min.= 3.5	1710.0664	1754.9345	1710	1755
	V max.= 4.35	1710.0649	1754.9316	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	3.8	15	0.0080	pass
-20		9	0.0048	pass
-10		9	0.0048	pass
0		-7	-0.0037	pass
10		-5	-0.0027	pass
20		7	0.0037	pass
30		-6	-0.0032	pass
40		6	0.0032	pass
50		7	0.0037	pass
20	V min.= 3.5	9	0.0048	pass
	V max.= 4.35	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	3.8	1710.0103	1754.6207	1710	1755
-20		1710.1349	1754.7142	1710	1755
-10		1710.2422	1754.5944	1710	1755
0		1710.2931	1754.7472	1710	1755
10		1710.0163	1754.6036	1710	1755
20		1710.2861	1754.6918	1710	1755
30		1710.0239	1754.5169	1710	1755
40		1710.0585	1754.6786	1710	1755
50		1710.2361	1754.7606	1710	1755
20	V min.= 3.5	1710.1522	1754.7711	1710	1755
	V max.= 4.35	1710.0003	1754.5337	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	3.8	12	0.0143	2.5
-20		-8	-0.0096	2.5
-10		-7	-0.0084	2.5
0		9	0.0108	2.5
10		-5	-0.0060	2.5
20		7	0.0084	2.5
30		8	0.0096	2.5
40		-10	-0.0120	2.5
50		-9	-0.0108	2.5
20	V min.= 3.5	6	0.0073	2.5
	V max.= 4.35	7	0.0084	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	3.8	2500.2425	2569.7791	2500	2570
-20		2500.1771	2569.6293	2500	2570
-10		2500.1547	2569.5414	2500	2570
0		2500.0766	2569.6494	2500	2570
10		2500.2738	2569.5027	2500	2570
20		2500.2937	2569.6767	2500	2570
30		2500.1508	2569.7775	2500	2570
40		2500.2826	2569.6318	2500	2570
50		2500.2662	2569.7083	2500	2570
20	V min.= 3.5	2500.1986	2569.6710	2500	2570
	V max.= 4.35	2500.1318	2569.6645	2500	2570

Band 66:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.8	1710.2887	1779.6425	1710	1780
-20		1710.2634	1779.778	1710	1780
-10		1710.2066	1779.7023	1710	1780
0		1710.1272	1779.6363	1710	1780
10		1710.2379	1779.5707	1710	1780
20		1710.0801	1779.7314	1710	1780
30		1710.1415	1779.7768	1710	1780
40		1710.0252	1779.6677	1710	1780
50		1710.235	1779.769	1710	1780
20	V min.= 3.5	1710.2549	1779.6128	1710	1780
	V max.= 4.35	1710.094	1779.5403	1710	1780

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	3.8	10	0.0053	pass
-20		7	0.0037	pass
-10		-10	-0.0053	pass
0		-8	-0.0043	pass
10		-9	-0.0048	pass
20		-10	-0.0053	pass
30		6	0.0032	pass
40		7	0.0037	pass
50		-6	-0.0032	pass
20	V min.= 3.5	9	0.0048	pass
	V max.= 4.35	-8	-0.0043	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	3.8	1710.1397	1754.7222	1710	1755
-20		1710.2444	1754.69	1710	1755
-10		1710.0701	1754.6048	1710	1755
0		1710.1392	1754.5895	1710	1755
10		1710.0001	1754.5142	1710	1755
20		1710.0041	1754.7264	1710	1755
30		1710.2373	1754.6944	1710	1755
40		1710.2114	1754.5787	1710	1755
50		1710.1929	1754.5894	1710	1755
20	V min.= 3.5	1710.0428	1754.5239	1710	1755
	V max.= 4.35	1710.1068	1754.631	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	3.8	7	0.0084	2.5
-20		-12	-0.0143	2.5
-10		-6	-0.0072	2.5
0		-8	-0.0096	2.5
10		-10	-0.0120	2.5
20		-5	-0.0060	2.5
30		5	0.0060	2.5
40		-9	-0.0108	2.5
50		6	0.0072	2.5
20	V min.= 3.5	-5	-0.0060	2.5
	V max.= 4.35	-7	-0.0084	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	3.8	2500.1259	2569.7499	2500	2570
-20		2500.0411	2569.7492	2500	2570
-10		2500.231	2569.7462	2500	2570
0		2500.2053	2569.7484	2500	2570
10		2500.2725	2569.7452	2500	2570
20		2500.1427	2569.7499	2500	2570
30		2500.148	2569.7498	2500	2570
40		2500.0398	2569.7464	2500	2570
50		2500.218	2569.7451	2500	2570
20	V min.= 3.5	2500.2319	2569.7470	2500	2570
	V max.= 4.35	2500.2956	2569.7463	2500	2570

Band 66:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	3.8	1710.2169	1779.6976	1710	1780
-20		1710.0359	1779.5471	1710	1780
-10		1710.2243	1779.6930	1710	1780
0		1710.0478	1779.7648	1710	1780
10		1710.0145	1779.6612	1710	1780
20		1710.0198	1779.5554	1710	1780
30		1710.225	1779.6077	1710	1780
40		1710.2182	1779.7717	1710	1780
50		1710.169	1779.6804	1710	1780
20	V min.= 3.5	1710.0292	1779.5952	1710	1780
	V max.= 4.35	1710.1024	1779.7174	1710	1780

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