



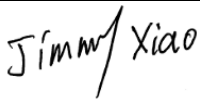
FCC PART 27
FCC PART 22H, PART 24E
TEST REPORT

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

FCC ID: 2AAA6-D65LX

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Report Number: RSZ210107004-00C	
Report Date: 2021-02-04	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	Mobile Phone
Tested Model	D65LX
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 (-1.75dBd) 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 3.8V from battery or DC5.0V from adapter
Date of Test	2021-01-12 to 2021-02-04
Sample serial number	RSZ210107004-RF-S1(Assigned by BACL, Shenzhen)
Received date	2021-01-07
Sample/EUT Status	Good condition
Adapter information	Entrada: 100-240Vca, 50/60Hz, 0.2A Salida: 5.0Vcc, 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 6/F., West Wing, Third Phase of Wanli Industrial Building, Shihua Road, Futian Free Trade Zone, Shenzhen, Guangdong, 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.

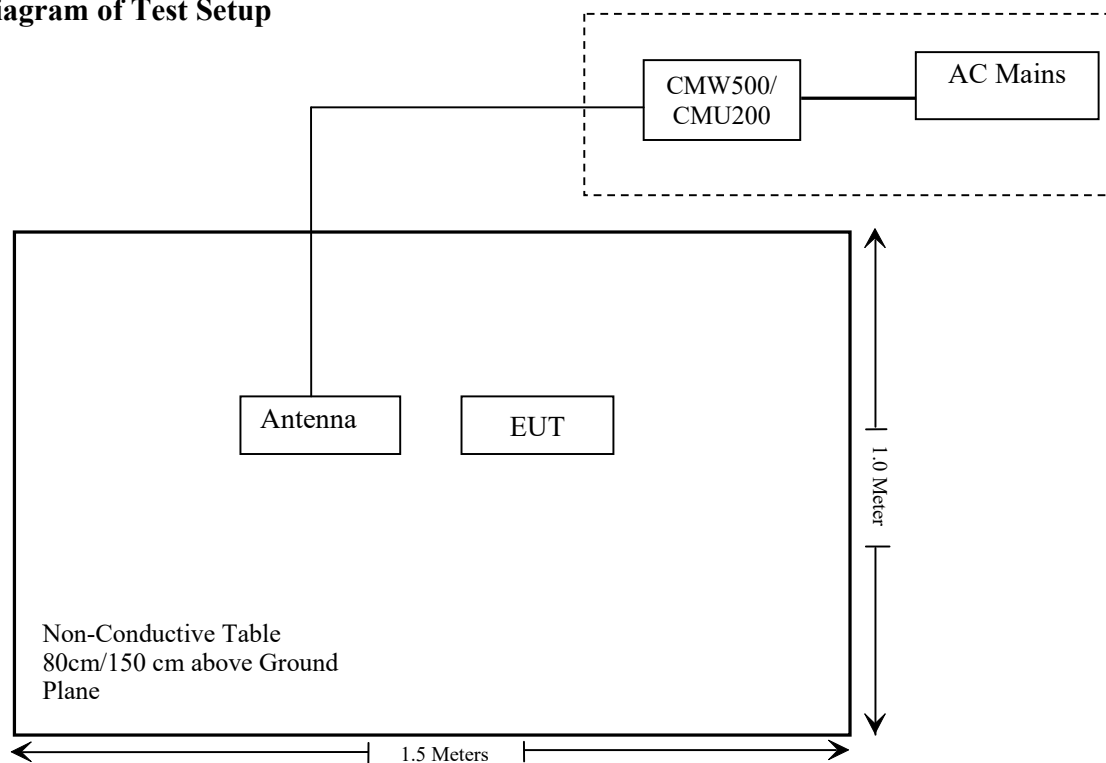
Support Equipment List and Details

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: RSZ210107004-SA.

FCC §2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

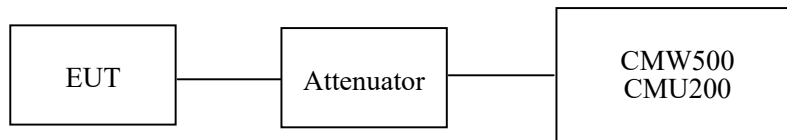
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1780MHz.

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 Alan He and Blaker Zhang from 2021-01-12 to 2021-01-27.

Conducted Power**Cellular 850**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP (dBm)	Limit (dBm)
GSM	128	824.2	32.47	30.22	38.45
	190	836.6	32.66	30.41	38.45
	251	848.8	32.80	30.55	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	32.76	30.81	28.77	26.67	30.51	28.56	26.52	24.42	38.45
	190	836.6	32.64	30.65	28.52	26.51	30.39	28.4	26.27	24.26	38.45
	251	848.8	32.43	30.36	28.43	26.29	30.18	28.11	26.18	24.04	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		22.37	22.32	22.16	20.12	20.07	19.91	38.45
	HSDPA	1	22.02	21.99	21.87	19.77	19.74	19.62	38.45
		2	21.97	21.93	21.81	19.72	19.68	19.56	38.45
		3	21.93	21.89	21.79	19.68	19.64	19.54	38.45
		4	21.90	21.86	21.76	19.65	19.61	19.51	38.45
	HSUPA	1	21.85	21.82	21.73	19.60	19.57	19.48	38.45
		2	22.09	22.12	21.93	19.84	19.87	19.68	38.45
		3	21.98	22.10	21.91	19.73	19.85	19.66	38.45
		4	21.94	22.06	21.86	19.69	19.81	19.61	38.45
		5	21.88	22.03	21.84	19.63	19.78	19.59	38.45
	HSPA+	1	21.86	21.99	21.82	19.61	19.74	19.57	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)

PCS 1900

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP (dBm)	Limit (dBm)
GSM	512	1850.2	28.84	29.54	33
	661	1880.0	28.73	29.43	33
	810	1909.8	28.81	29.51	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	28.33	26.04	24.48	22.36	29.03	26.74	25.18	23.06	33
	661	1880.0	28.62	26.36	24.75	22.53	29.32	27.06	25.45	23.23	33
	810	1909.8	28.86	26.49	24.81	22.68	29.56	27.19	25.51	23.38	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		22.19	22.12	22.20	22.89	22.82	22.90	33
	HSDPA	1	22.12	22.06	22.13	22.82	22.76	22.83	33
		2	22.10	21.97	22.07	22.80	22.67	22.77	33
		3	22.06	21.93	22.05	22.76	22.63	22.75	33
		4	21.98	21.90	22.02	22.68	22.60	22.72	33
	HSUPA	1	21.95	21.84	21.98	22.65	22.54	22.68	33
		2	21.98	21.93	22.04	22.68	22.63	22.74	33
		3	21.96	21.91	22.01	22.66	22.61	22.71	33
		4	21.94	21.88	21.98	22.64	22.58	22.68	33
		5	21.93	21.85	21.97	22.63	22.55	22.67	33
	HSPA+	1	21.92	21.81	21.93	22.62	22.51	22.63	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)

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		22.39	22.27	22.22	22.69	22.57	22.52	30
	HSDPA	1	22.32	22.19	22.17	22.62	22.49	22.47	30
		2	22.27	22.16	22.15	22.57	22.46	22.45	30
		3	22.25	22.14	22.12	22.55	22.44	22.42	30
		4	22.21	22.11	22.09	22.51	22.41	22.39	30
	HSUPA	1	22.18	22.09	22.06	22.48	22.39	22.36	30
		2	22.29	22.15	22.13	22.59	22.45	22.43	30
		3	22.28	22.13	22.08	22.58	22.43	22.38	30
		4	22.25	22.10	22.06	22.55	22.40	22.36	30
		5	22.21	22.08	22.04	22.51	22.38	22.34	30
	HSPA+	1	22.18	22.05	22.01	22.48	22.35	22.31	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)

Cellular Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.26	13
	Middle	3.41	13
	High	3.37	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.33	13
	Middle	3.42	13
	High	3.15	13
HSDPA (16QAM)	Low	3.46	13
	Middle	3.52	13
	High	3.49	13
HSUPA (BPSK)	Low	3.35	13
	Middle	3.42	13
	High	3.21	13
HSPA+	Low	3.24	13
	Middle	3.36	13
	High	3.51	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.56	13
	Middle	3.45	13
	High	3.12	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.15	13
	Middle	3.46	13
	High	3.12	13
HSDPA (16QAM)	Low	3.27	13
	Middle	3.12	13
	High	3.46	13
HSUPA (BPSK)	Low	3.19	13
	Middle	3.23	13
	High	3.13	13
HSPA+	Low	3.16	13
	Middle	3.21	13
	High	3.18	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.54	13
	Middle	3.12	13
	High	3.53	13
HSDPA (16QAM)	Low	3.21	13
	Middle	3.14	13
	High	3.54	13
HSUPA (BPSK)	Low	3.20	13
	Middle	3.13	13
	High	3.16	13
HSPA+	Low	3.24	13
	Middle	3.16	13
	High	3.13	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	22.44	22.50	22.53	23.14	23.20	23.23
		RB1#2	22.40	22.45	22.56	23.10	23.15	23.26
		RB1#5	22.44	22.55	22.61	23.14	23.25	23.31
		RB3#0	22.37	22.62	22.72	23.07	23.32	23.42
		RB3#1	22.42	22.63	22.73	23.12	23.33	23.43
		RB3#2	21.33	21.54	21.59	22.03	22.24	22.29
		RB6#0	21.01	21.21	21.34	21.71	21.91	22.04
	16QAM	RB1#0	21.89	22.05	21.41	22.59	22.75	22.11
		RB1#2	21.98	22.06	21.42	22.68	22.76	22.12
		RB1#5	21.95	22.08	21.39	22.65	22.78	22.09
		RB3#0	21.24	21.54	21.75	21.94	22.24	22.45
		RB3#1	21.28	21.58	21.72	21.98	22.28	22.42
		RB3#2	20.42	20.77	20.90	21.12	21.47	21.60
		RB6#0	20.15	20.56	20.57	20.85	21.26	21.27
3.0	QPSK	RB1#0	22.31	22.52	22.48	23.01	23.22	23.18
		RB1#7	22.33	22.53	22.51	23.03	23.23	23.21
		RB1#14	22.32	22.58	22.59	23.02	23.28	23.29
		RB8#0	21.36	21.60	21.53	22.06	22.30	22.23
		RB8#4	21.31	21.58	21.59	22.01	22.28	22.29
		RB8#7	21.34	21.58	21.60	22.04	22.28	22.30
		RB15#0	21.06	21.23	21.41	21.76	21.93	22.11
	16QAM	RB1#0	21.59	22.08	21.32	22.29	22.78	22.02
		RB1#7	21.52	22.10	21.33	22.22	22.80	22.03
		RB1#14	21.52	22.11	21.36	22.22	22.81	22.06
		RB8#0	20.52	20.74	20.91	21.22	21.44	21.61
		RB8#4	20.53	20.79	20.86	21.23	21.49	21.56
		RB8#7	20.45	20.57	20.63	21.15	21.27	21.33
		RB15#0	20.21	20.32	20.14	20.91	21.02	20.84

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	22.31	22.66	22.58	23.01	23.36	23.28
		RB1#12	22.31	22.62	22.55	23.01	23.32	23.25
		RB1#24	22.29	22.70	22.56	22.99	23.40	23.26
		RB12#0	21.32	21.58	21.53	22.02	22.28	22.23
		RB12#6	21.40	21.67	21.60	22.10	22.37	22.30
		RB12#11	21.25	21.59	21.57	21.95	22.29	22.27
		RB25#0	20.87	21.23	21.16	21.57	21.93	21.86
	16QAM	RB1#0	20.59	21.77	21.21	21.29	22.47	21.91
		RB1#12	20.59	21.78	21.17	21.29	22.48	21.87
		RB1#24	20.58	21.80	21.25	21.28	22.50	21.95
		RB12#0	20.55	20.55	20.74	21.25	21.25	21.44
		RB12#6	20.50	20.53	20.72	21.20	21.23	21.42
		RB12#11	20.49	20.69	20.62	21.19	21.39	21.32
		RB25#0	20.16	20.25	20.27	20.86	20.95	20.97
10.0	QPSK	RB1#0	22.26	22.59	22.59	22.96	23.29	23.29
		RB1#24	22.30	22.64	22.55	23.00	23.34	23.25
		RB1#49	22.36	22.65	22.65	23.06	23.35	23.35
		RB25#0	21.40	21.57	21.66	22.10	22.27	22.36
		RB25#12	21.43	21.67	21.69	22.13	22.37	22.39
		RB25#24	21.42	21.57	21.58	22.12	22.27	22.28
		RB50#0	21.16	21.32	21.24	21.86	22.02	21.94
	16QAM	RB1#0	21.56	21.72	21.17	22.26	22.42	21.87
		RB1#24	21.62	21.72	21.04	22.32	22.42	21.74
		RB1#49	21.69	21.72	21.16	22.39	22.42	21.86
		RB25#0	20.43	20.76	20.82	21.13	21.46	21.52
		RB25#12	20.62	20.76	20.84	21.32	21.46	21.54
		RB25#24	20.47	20.74	20.65	21.17	21.44	21.35
		RB50#0	20.14	20.36	20.24	20.84	21.06	20.94

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.24	22.50	22.50	22.94	23.20	23.20
		RB1#37	22.38	22.53	22.57	23.08	23.23	23.27
		RB1#74	22.43	22.52	22.57	23.13	23.22	23.27
		RB36#0	21.29	21.57	21.53	21.99	22.27	22.23
		RB36#18	21.56	21.53	21.67	22.26	22.23	22.37
		RB36#37	21.49	21.56	21.54	22.19	22.26	22.24
		RB75#0	21.23	21.16	21.24	21.93	21.86	21.94
	16QAM	RB1#0	21.74	21.84	21.94	22.44	22.54	22.64
		RB1#37	21.90	21.88	21.99	22.60	22.58	22.69
		RB1#74	21.81	21.82	21.99	22.51	22.52	22.69
		RB36#0	20.56	20.68	20.96	21.26	21.38	21.66
		RB36#18	20.54	20.73	20.72	21.24	21.43	21.42
		RB36#37	20.57	20.78	20.70	21.27	21.48	21.40
		RB75#0	20.26	20.54	20.52	20.96	21.24	21.22
20.0	QPSK	RB1#0	22.52	22.58	22.54	23.22	23.28	23.24
		RB1#49	22.57	22.61	22.60	23.27	23.31	23.30
		RB1#99	22.73	22.65	22.71	23.43	23.35	23.41
		RB50#0	21.37	21.68	21.50	22.07	22.38	22.20
		RB50#24	21.57	21.72	21.57	22.27	22.42	22.27
		RB50#49	21.54	21.58	21.53	22.24	22.28	22.23
		RB100#0	21.21	21.23	21.34	21.91	21.93	22.04
	16QAM	RB1#0	21.46	21.61	22.37	22.16	22.31	23.07
		RB1#49	21.45	21.67	22.21	22.15	22.37	22.91
		RB1#99	21.60	21.65	22.35	22.30	22.35	23.05
		RB50#0	20.58	20.74	20.60	21.28	21.44	21.30
		RB50#24	20.71	20.76	20.54	21.41	21.46	21.24
		RB50#49	20.57	20.69	21.03	21.27	21.39	21.73
		RB100#0	20.32	20.54	20.67	21.02	21.24	21.37

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

For Band 2: Antenna Gain = 1.2dBi

For 1700-2000MHz, 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)	5.35	5.38	5.16	13	Pass
QPSK (100RB Size)	5.61	5.67	5.58	13	Pass
16QAM (1RB Size)	6.12	6.79	6.60	13	Pass
16QAM (100RB Size)	6.57	6.57	6.47	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	21.40	21.34	21.67	21.70	21.64	21.97
		RB1#2	21.38	21.29	21.70	21.68	21.59	22.00
		RB1#5	21.44	21.35	21.71	21.74	21.65	22.01
		RB3#0	21.53	21.36	21.63	21.83	21.66	21.93
		RB3#1	21.54	21.42	21.65	21.84	21.72	21.95
		RB3#2	20.35	20.45	20.48	20.65	20.75	20.78
		RB6#0	20.12	20.24	20.25	20.42	20.54	20.55
	16QAM	RB1#0	21.03	21.08	20.60	21.33	21.38	20.90
		RB1#2	21.06	21.15	20.58	21.36	21.45	20.88
		RB1#5	21.10	21.19	20.63	21.40	21.49	20.93
		RB3#0	20.55	20.35	20.56	20.85	20.65	20.86
		RB3#1	20.58	20.35	20.59	20.88	20.65	20.89
		RB3#2	19.74	19.54	19.85	20.04	19.84	20.15
		RB6#0	19.54	19.35	19.65	19.84	19.65	19.95
3.0	QPSK	RB1#0	21.30	21.24	21.62	21.60	21.54	21.92
		RB1#7	21.40	21.31	21.69	21.70	21.61	21.99
		RB1#14	21.41	21.47	21.71	21.71	21.77	22.01
		RB8#0	20.44	20.31	20.55	20.74	20.61	20.85
		RB8#4	20.44	20.56	20.54	20.74	20.86	20.84
		RB8#7	20.47	20.55	20.57	20.77	20.85	20.87
		RB15#0	20.34	20.25	20.31	20.64	20.55	20.61
	16QAM	RB1#0	20.78	21.05	20.51	21.08	21.35	20.81
		RB1#7	20.87	21.18	20.57	21.17	21.48	20.87
		RB1#14	20.84	21.26	20.71	21.14	21.56	21.01
		RB8#0	19.38	19.51	19.80	19.68	19.81	20.10
		RB8#4	19.36	19.68	19.90	19.66	19.98	20.20
		RB8#7	19.61	19.43	19.61	19.91	19.73	19.91
		RB15#0	19.54	19.32	19.47	19.84	19.62	19.77

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	21.39	21.34	21.23	21.69	21.64	21.53
		RB1#12	21.49	21.43	21.41	21.79	21.73	21.71
		RB1#24	21.43	21.61	21.44	21.73	21.91	21.74
		RB12#0	20.42	20.30	20.48	20.72	20.60	20.78
		RB12#6	20.44	20.41	20.58	20.74	20.71	20.88
		RB12#11	20.41	20.43	20.57	20.71	20.73	20.87
		RB25#0	20.21	20.23	20.37	20.51	20.53	20.67
	16QAM	RB1#0	20.66	20.41	20.98	20.96	20.71	21.28
		RB1#12	20.73	20.59	21.10	21.03	20.89	21.40
		RB1#24	20.78	20.62	21.24	21.08	20.92	21.54
		RB12#0	20.73	20.32	20.66	21.03	20.62	20.96
		RB12#6	20.64	20.45	20.62	20.94	20.75	20.92
		RB12#11	20.60	20.49	20.42	20.90	20.79	20.72
		RB25#0	20.35	20.24	20.29	20.65	20.54	20.59
10.0	QPSK	RB1#0	21.36	21.09	21.33	21.66	21.39	21.63
		RB1#24	21.41	21.36	21.55	21.71	21.66	21.85
		RB1#49	21.67	21.64	21.79	21.97	21.94	22.09
		RB25#0	20.54	20.16	20.24	20.84	20.46	20.54
		RB25#12	20.64	20.51	20.44	20.94	20.81	20.74
		RB25#24	20.53	20.41	20.37	20.83	20.71	20.67
		RB50#0	20.27	20.24	20.16	20.57	20.54	20.46
	16QAM	RB1#0	20.61	20.23	19.73	20.91	20.53	20.03
		RB1#24	20.72	20.61	19.93	21.02	20.91	20.23
		RB1#49	20.94	20.69	20.14	21.24	20.99	20.44
		RB25#0	19.51	19.38	19.43	19.81	19.68	19.73
		RB25#12	19.75	19.68	19.62	20.05	19.98	19.92
		RB25#24	19.69	19.57	19.48	19.99	19.87	19.78
		RB50#0	19.62	19.48	19.42	19.92	19.78	19.72

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	21.26	21.01	20.94	21.56	21.31	21.24
		RB1#37	21.49	21.35	21.32	21.79	21.65	21.62
		RB1#74	21.92	21.79	21.76	22.22	22.09	22.06
		RB36#0	20.47	20.14	20.01	20.77	20.44	20.31
		RB36#18	20.87	20.55	20.41	21.17	20.85	20.71
		RB36#37	20.56	20.48	20.27	20.86	20.78	20.57
		RB75#0	20.35	20.19	20.08	20.65	20.49	20.38
	16QAM	RB1#0	20.63	20.13	20.07	20.93	20.43	20.37
		RB1#37	20.75	20.50	20.61	21.05	20.80	20.91
		RB1#74	21.18	20.92	20.93	21.48	21.22	21.23
		RB36#0	19.71	19.37	19.00	20.01	19.67	19.30
		RB36#18	19.94	19.70	19.54	20.24	20.00	19.84
		RB36#37	19.74	19.56	19.33	20.04	19.86	19.63
		RB75#0	19.54	19.35	19.18	19.84	19.65	19.48
20.0	QPSK	RB1#0	21.55	20.85	20.63	21.85	21.15	20.93
		RB1#49	21.79	21.30	21.13	22.09	21.60	21.43
		RB1#99	22.33	21.92	21.71	22.63	22.22	22.01
		RB50#0	20.58	20.04	19.67	20.88	20.34	19.97
		RB50#24	21.04	20.67	20.34	21.34	20.97	20.64
		RB50#49	20.85	20.48	20.12	21.15	20.78	20.42
		RB100#0	20.48	20.34	20.07	20.78	20.64	20.37
	16QAM	RB1#0	20.32	20.43	20.12	20.62	20.73	20.42
		RB1#49	20.60	20.79	20.71	20.90	21.09	21.01
		RB1#99	21.22	21.23	21.20	21.52	21.53	21.50
		RB50#0	19.73	19.73	18.73	20.03	20.03	19.03
		RB50#24	20.15	19.80	19.29	20.45	20.10	19.59
		RB50#49	19.96	19.55	19.15	20.26	19.85	19.45
		RB100#0	19.65	19.47	19.27	19.95	19.77	19.57

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

For Band 4: Antenna Gain = 0.8dBi

For 1700-2000MHz, 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)	6.89	6.37	6.79	13	Pass
QPSK (100RB Size)	6.47	6.39	6.37	13	Pass
16QAM (1RB Size)	6.13	6.40	6.83	13	Pass
16QAM (100RB Size)	6.48	6.82	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	22.27	22.10	22.13	20.02	19.85	19.88
		RB1#2	22.20	22.21	22.14	19.95	19.96	19.89
		RB1#5	22.22	22.14	22.12	19.97	19.89	19.87
		RB3#0	22.23	22.32	22.13	19.98	20.07	19.88
		RB3#1	22.27	22.35	22.16	20.02	20.10	19.91
		RB3#2	21.15	21.29	21.13	18.90	19.04	18.88
		RB6#0	20.87	20.68	20.86	18.62	18.43	18.61
	16QAM	RB1#0	21.55	21.79	20.85	19.30	19.54	18.60
		RB1#2	21.58	21.80	20.95	19.33	19.55	18.70
		RB1#5	21.59	21.85	20.93	19.34	19.60	18.68
		RB3#0	21.29	21.16	21.21	19.04	18.91	18.96
		RB3#1	21.30	21.15	21.28	19.05	18.90	19.03
		RB3#2	20.52	20.46	20.34	18.27	18.21	18.09
		RB6#0	20.54	20.36	20.18	18.29	18.11	17.93
3.0	QPSK	RB1#0	22.15	22.11	22.19	19.90	19.86	19.94
		RB1#7	22.16	22.19	22.17	19.91	19.94	19.92
		RB1#14	22.13	22.28	22.22	19.88	20.03	19.97
		RB8#0	21.14	21.24	21.24	18.89	18.99	18.99
		RB8#4	21.28	21.24	21.05	19.03	18.99	18.80
		RB8#7	21.22	21.28	21.18	18.97	19.03	18.93
		RB15#0	21.12	21.21	21.09	18.87	18.96	18.84
	16QAM	RB1#0	21.46	21.82	20.80	19.21	19.57	18.55
		RB1#7	21.48	21.89	20.78	19.23	19.64	18.53
		RB1#14	21.49	21.89	20.82	19.24	19.64	18.57
		RB8#0	20.30	20.45	20.30	18.05	18.20	18.05
		RB8#4	20.11	20.47	20.26	17.86	18.22	18.01
		RB8#7	20.33	20.43	20.12	18.08	18.18	17.87
		RB15#0	20.16	20.34	20.07	17.91	18.09	17.82

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	22.20	22.22	22.08	19.95	19.97	19.83
		RB1#12	22.16	22.27	22.01	19.91	20.02	19.76
		RB1#24	22.21	22.26	22.08	19.96	20.01	19.83
		RB12#0	21.18	21.19	21.14	18.93	18.94	18.89
		RB12#6	21.21	21.21	21.11	18.96	18.96	18.86
		RB12#11	21.27	21.17	21.10	19.02	18.92	18.85
		RB25#0	21.14	21.04	21.06	18.89	18.79	18.81
	16QAM	RB1#0	20.41	21.23	20.81	18.16	18.98	18.56
		RB1#12	20.45	21.38	20.75	18.20	19.13	18.50
		RB1#24	20.47	21.33	20.85	18.22	19.08	18.60
		RB12#0	20.38	20.33	20.39	18.13	18.08	18.14
		RB12#6	20.23	20.37	20.14	17.98	18.12	17.89
		RB12#11	20.28	20.40	20.00	18.03	18.15	17.75
		RB25#0	20.15	20.34	20.16	17.90	18.09	17.91
10.0	QPSK	RB1#0	22.14	22.33	22.16	19.89	20.08	19.91
		RB1#24	22.13	22.35	22.14	19.88	20.10	19.89
		RB1#49	22.14	22.30	22.12	19.89	20.05	19.87
		RB25#0	21.31	21.22	21.37	19.06	18.97	19.12
		RB25#12	21.21	21.25	21.17	18.96	19.00	18.92
		RB25#24	21.29	21.19	21.18	19.04	18.94	18.93
		RB50#0	21.16	21.05	21.07	18.91	18.80	18.82
	16QAM	RB1#0	21.29	21.34	20.78	19.04	19.09	18.53
		RB1#24	21.41	21.44	20.74	19.16	19.19	18.49
		RB1#49	21.29	21.47	20.64	19.04	19.22	18.39
		RB25#0	20.20	20.55	20.41	17.95	18.30	18.16
		RB25#12	20.49	20.49	20.29	18.24	18.24	18.04
		RB25#24	20.29	20.52	20.28	18.04	18.27	18.03
		RB50#0	20.16	20.39	20.17	17.91	18.14	17.92

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band 5: Antenna Gain = 0.4dBi = -1.75dBd (0dBd=2.15dBi)
 For 700-960MHz, 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	5.42	5.82	13	Pass
QPSK (50RB Size)	6.42	5.41	5.40	13	Pass
16QAM (1RB Size)	6.13	6.38	6.86	13	Pass
16QAM (50RB Size)	6.52	6.81	6.16	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	22.85	22.84	22.74	23.45	23.44	23.34
		RB1#12	22.72	22.85	22.81	23.32	23.45	23.41
		RB1#24	22.77	22.86	22.77	23.37	23.46	23.37
		RB12#0	21.79	21.84	21.95	22.39	22.44	22.55
		RB12#6	21.72	21.84	21.88	22.32	22.44	22.48
		RB12#11	21.69	21.85	21.86	22.29	22.45	22.46
		RB25#0	21.45	21.35	21.57	22.05	21.95	22.17
	16QAM	RB1#0	21.08	21.73	21.49	21.68	22.33	22.09
		RB1#12	21.01	21.90	21.53	21.61	22.50	22.13
		RB1#24	20.99	21.79	21.59	21.59	22.39	22.19
		RB12#0	20.97	20.74	21.03	21.57	21.34	21.63
		RB12#6	20.91	20.83	21.04	21.51	21.43	21.64
		RB12#11	20.95	20.87	20.86	21.55	21.47	21.46
		RB25#0	20.57	20.64	20.48	21.17	21.24	21.08
10.0	QPSK	RB1#0	22.66	22.83	22.92	23.26	23.43	23.52
		RB1#24	22.64	22.84	22.96	23.24	23.44	23.56
		RB1#49	22.66	22.85	23.03	23.26	23.45	23.63
		RB25#0	21.83	21.74	21.91	22.43	22.34	22.51
		RB25#12	21.76	21.76	21.84	22.36	22.36	22.44
		RB25#24	21.69	21.76	21.81	22.29	22.36	22.41
		RB50#0	21.56	21.48	21.67	22.16	22.08	22.27
	16QAM	RB1#0	21.93	22.03	21.46	22.53	22.63	22.06
		RB1#24	21.88	22.04	21.51	22.48	22.64	22.11
		RB1#49	21.95	22.07	21.50	22.55	22.67	22.10
		RB25#0	20.87	21.03	21.11	21.47	21.63	21.71
		RB25#12	20.88	21.04	21.10	21.48	21.64	21.70
		RB25#24	20.93	21.00	21.01	21.53	21.60	21.61
		RB50#0	20.68	20.75	20.81	21.28	21.35	21.41

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	22.62	22.81	22.94	23.22	23.41	23.54
		RB1#37	22.71	22.85	22.98	23.31	23.45	23.58
		RB1#74	22.68	22.81	23.00	23.28	23.41	23.60
		RB36#0	21.78	21.87	21.97	22.38	22.47	22.57
		RB36#18	21.85	21.81	21.89	22.45	22.41	22.49
		RB36#37	21.71	21.89	21.93	22.31	22.49	22.53
		RB75#0	21.64	21.58	21.72	22.24	22.18	22.32
	16QAM	RB1#0	21.98	22.22	22.40	22.58	22.82	23.00
		RB1#37	21.98	22.19	22.42	22.58	22.79	23.02
		RB1#74	22.04	22.30	22.37	22.64	22.90	22.97
		RB36#0	20.97	20.99	21.06	21.57	21.59	21.66
		RB36#18	21.04	20.99	21.04	21.64	21.59	21.64
		RB36#37	20.86	21.00	21.04	21.46	21.60	21.64
		RB75#0	20.48	20.83	20.84	21.08	21.43	21.44
20.0	QPSK	RB1#0	22.79	22.90	22.98	23.39	23.50	23.58
		RB1#49	22.76	22.89	23.05	23.36	23.49	23.65
		RB1#99	22.79	23.00	23.13	23.39	23.60	23.73
		RB50#0	21.80	21.84	21.95	22.40	22.44	22.55
		RB50#24	21.83	21.89	21.98	22.43	22.49	22.58
		RB50#49	21.65	21.92	21.94	22.25	22.52	22.54
		RB100#0	21.54	21.74	21.62	22.14	22.34	22.22
	16QAM	RB1#0	21.63	22.44	22.53	22.23	23.04	23.13
		RB1#49	21.48	22.44	22.52	22.08	23.04	23.12
		RB1#99	21.59	22.49	22.60	22.19	23.09	23.20
		RB50#0	20.93	21.07	20.94	21.53	21.67	21.54
		RB50#24	21.02	21.12	21.02	21.62	21.72	21.62
		RB50#49	20.85	20.89	21.02	21.45	21.49	21.62
		RB100#0	20.53	20.67	20.88	21.13	21.27	21.48

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

For Band 7: Antenna Gain = 1.1dBi

For 2000-3000MHz, 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)	5.91	5.39	5.80	13	Pass
QPSK (100RB Size)	5.45	5.42	5.36	13	Pass
16QAM (1RB Size)	6.14	6.39	6.85	13	Pass
16QAM (100RB Size)	6.50	6.86	6.16	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	22.13	21.76	21.52	22.43	22.06	21.82
		RB1#2	22.11	21.80	21.55	22.41	22.10	21.85
		RB1#5	22.13	21.81	21.49	22.43	22.11	21.79
		RB3#0	22.22	21.98	21.58	22.52	22.28	21.88
		RB3#1	22.19	21.93	21.52	22.49	22.23	21.82
		RB3#2	21.19	20.83	20.47	21.49	21.13	20.77
		RB6#0	20.87	20.63	20.25	21.17	20.93	20.55
	16QAM	RB1#0	21.89	21.88	21.18	22.19	22.18	21.48
		RB1#2	21.86	20.91	21.20	22.16	21.21	21.50
		RB1#5	21.84	21.47	20.30	22.14	21.77	20.60
		RB3#0	21.26	21.02	20.43	21.56	21.32	20.73
		RB3#1	21.37	20.91	20.50	21.67	21.21	20.80
		RB3#2	20.27	20.09	19.89	20.57	20.39	20.19
		RB6#0	19.88	19.75	19.67	20.18	20.05	19.97
3.0	QPSK	RB1#0	22.17	21.85	21.63	22.47	22.15	21.93
		RB1#7	22.20	21.87	21.47	22.50	22.17	21.77
		RB1#14	22.32	21.81	21.32	22.62	22.11	21.62
		RB8#0	21.21	20.87	20.92	21.51	21.17	21.22
		RB8#4	21.32	20.85	20.75	21.62	21.15	21.05
		RB8#7	21.16	20.89	20.56	21.46	21.19	20.86
		RB15#0	20.21	20.06	20.12	20.51	20.36	20.42
	16QAM	RB1#0	22.05	21.56	21.62	22.35	21.86	21.92
		RB1#7	21.98	21.61	21.35	22.28	21.91	21.65
		RB1#14	21.55	21.58	21.26	21.85	21.88	21.56
		RB8#0	20.55	20.14	20.68	20.85	20.44	20.98
		RB8#4	20.53	20.15	20.16	20.83	20.45	20.46
		RB8#7	20.39	20.09	19.78	20.69	20.39	20.08
		RB15#0	20.21	19.89	19.63	20.51	20.19	19.93

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	22.22	21.88	21.72	22.52	22.18	22.02
		RB1#12	22.27	21.92	21.57	22.57	22.22	21.87
		RB1#24	22.36	21.91	21.33	22.66	22.21	21.63
		RB12#0	21.27	20.90	21.00	21.57	21.20	21.30
		RB12#6	21.41	20.88	20.77	21.71	21.18	21.07
		RB12#11	20.24	20.15	20.12	20.54	20.45	20.42
		RB25#0	20.26	20.07	20.13	20.56	20.37	20.43
	16QAM	RB1#0	22.09	21.61	21.71	22.39	21.91	22.01
		RB1#12	22.00	21.63	21.42	22.30	21.93	21.72
		RB1#24	21.59	21.61	21.34	21.89	21.91	21.64
		RB12#0	20.60	20.22	20.73	20.90	20.52	21.03
		RB12#6	20.53	20.16	20.26	20.83	20.46	20.56
		RB12#11	20.26	19.93	19.67	20.56	20.23	19.97
		RB25#0	20.28	19.98	19.72	20.58	20.28	20.02
10.0	QPSK	RB1#0	22.18	21.94	21.67	22.48	22.24	21.97
		RB1#24	22.26	21.88	21.53	22.56	22.18	21.83
		RB1#49	22.41	21.90	21.35	22.71	22.20	21.65
		RB25#0	21.23	20.91	20.96	21.53	21.21	21.26
		RB25#12	21.38	20.94	20.75	21.68	21.24	21.05
		RB25#24	20.31	20.14	20.14	20.61	20.44	20.44
		RB50#0	20.16	19.69	20.08	20.46	19.99	20.38
	16QAM	RB1#0	22.12	21.57	21.70	22.42	21.87	22.00
		RB1#24	22.05	21.69	21.40	22.35	21.99	21.70
		RB1#49	21.56	21.66	21.31	21.86	21.96	21.61
		RB25#0	20.63	20.14	20.72	20.93	20.44	21.02
		RB25#12	20.54	20.17	20.18	20.84	20.47	20.48
		RB25#24	20.30	19.94	19.68	20.60	20.24	19.98
		RB50#0	20.26	19.93	19.60	20.56	20.23	19.90

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	22.23	21.94	21.69	22.53	22.24	21.99
		RB1#37	22.28	21.95	21.48	22.58	22.25	21.78
		RB1#74	22.35	21.83	21.37	22.65	22.13	21.67
		RB36#0	21.25	20.95	20.94	21.55	21.25	21.24
		RB36#18	21.41	20.90	20.85	21.71	21.20	21.15
		RB36#37	20.22	20.11	20.19	20.52	20.41	20.49
		RB75#0	20.17	19.70	20.03	20.47	20.00	20.33
	16QAM	RB1#0	22.10	21.57	21.62	22.40	21.87	21.92
		RB1#37	21.98	21.64	21.37	22.28	21.94	21.67
		RB1#74	21.56	21.59	21.30	21.86	21.89	21.60
		RB36#0	20.60	20.17	20.69	20.90	20.47	20.99
		RB36#18	20.56	20.24	20.25	20.86	20.54	20.55
		RB36#37	20.24	19.96	19.64	20.54	20.26	19.94
		RB75#0	20.28	19.86	19.58	20.58	20.16	19.88
20.0	QPSK	RB1#0	22.20	21.93	21.65	22.50	22.23	21.95
		RB1#49	22.27	21.97	21.51	22.57	22.27	21.81
		RB1#99	22.32	21.89	21.33	22.62	22.19	21.63
		RB50#0	21.24	20.92	21.00	21.54	21.22	21.30
		RB50#24	21.42	20.85	20.80	21.72	21.15	21.10
		RB50#49	20.25	20.13	20.18	20.55	20.43	20.48
		RB100#0	20.21	19.78	20.08	20.51	20.08	20.38
	16QAM	RB1#0	22.11	21.63	21.64	22.41	21.93	21.94
		RB1#49	22.03	21.69	21.43	22.33	21.99	21.73
		RB1#99	21.61	21.65	21.28	21.91	21.95	21.58
		RB50#0	20.65	20.18	20.74	20.95	20.48	21.04
		RB50#24	20.54	20.20	20.22	20.84	20.50	20.52
		RB50#49	20.24	19.89	19.63	20.54	20.19	19.93
		RB100#0	20.28	19.86	19.61	20.58	20.16	19.91

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

For Band 66: Antenna Gain = 0.8dBi

1GHz-2GHz : 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)	5.13	5.16	5.90	13	Pass
QPSK (100RB Size)	5.77	5.67	5.71	13	Pass
16QAM (1RB Size)	6.60	6.38	7.12	13	Pass
16QAM (100RB Size)	6.60	6.57	6.57	13	Pass

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

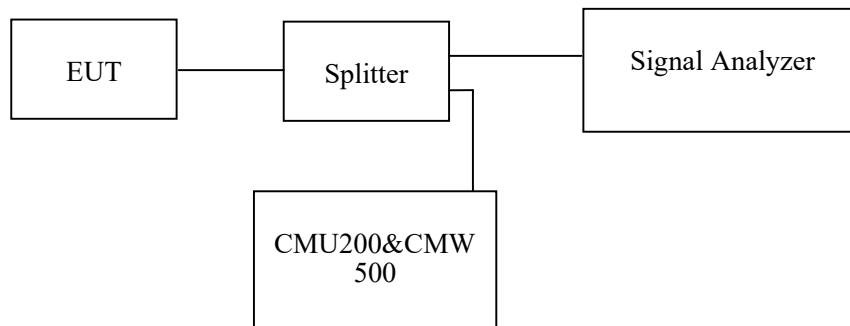
Applicable Standard

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 Alan He and Blaker Zhang from 2021-01-12 to 2021-02-03.

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	238.78	305.45
	836.6	244.00	315.33
	848.8	241.99	319.23

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.16	4.71
	836.6	4.16	4.69
	846.6	4.16	4.68
HSDPA	826.4	4.16	4.72
	836.6	4.16	4.71
	846.6	4.16	4.71
HSUPA	826.4	4.16	4.72
	836.6	4.18	4.69
	846.6	4.16	4.69

PCS Band (Part 24E)

Mode	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	1850.2	240.38	304.81
	1880.0	246.00	312.82
	1909.8	238.78	303.85

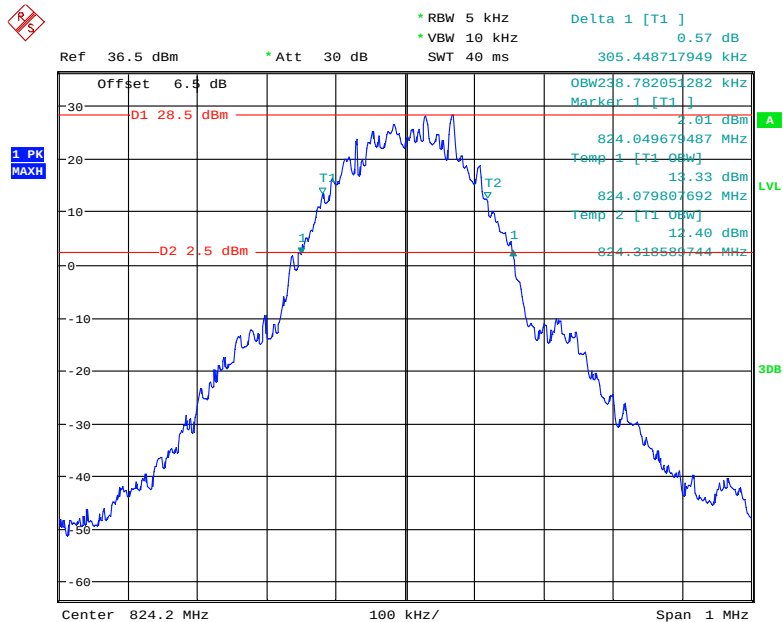
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.14	4.69
	1880.0	4.16	4.71
	1907.6	4.14	4.69
HSDPA	1852.4	4.16	4.71
	1880.0	4.16	4.71
	1907.6	4.14	4.68
HSUPA	1852.4	4.16	4.68
	1880.0	4.16	4.69
	1907.6	4.16	4.70

AWS Band (Part 27)

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

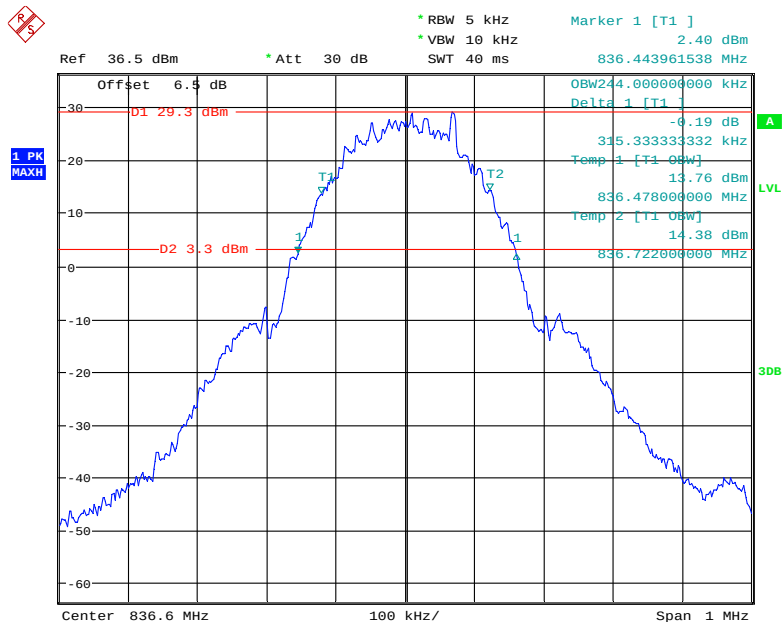
Cellular Band (Part 22H)

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



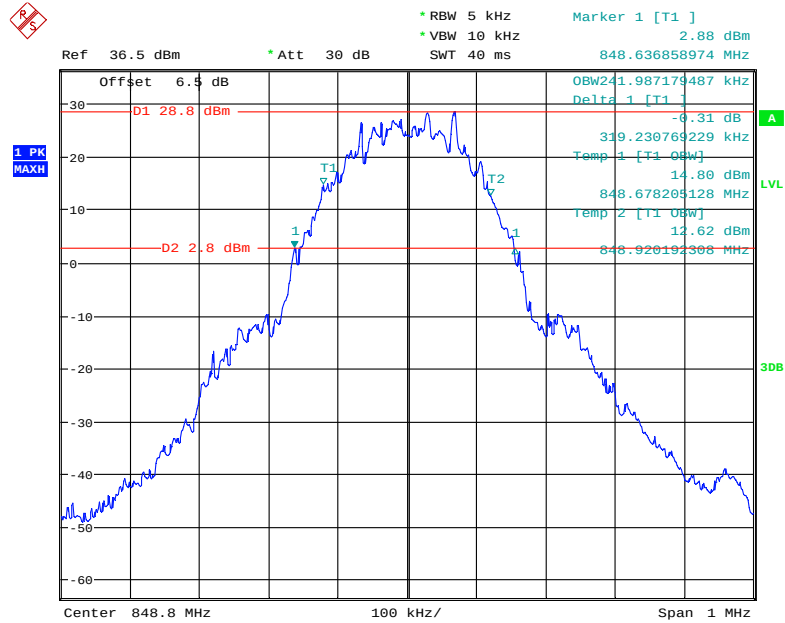
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26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



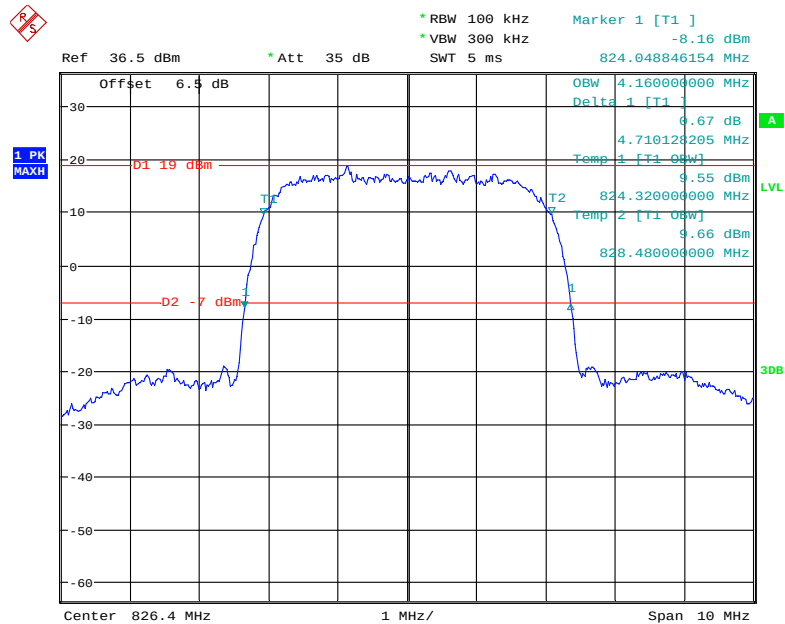
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26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel

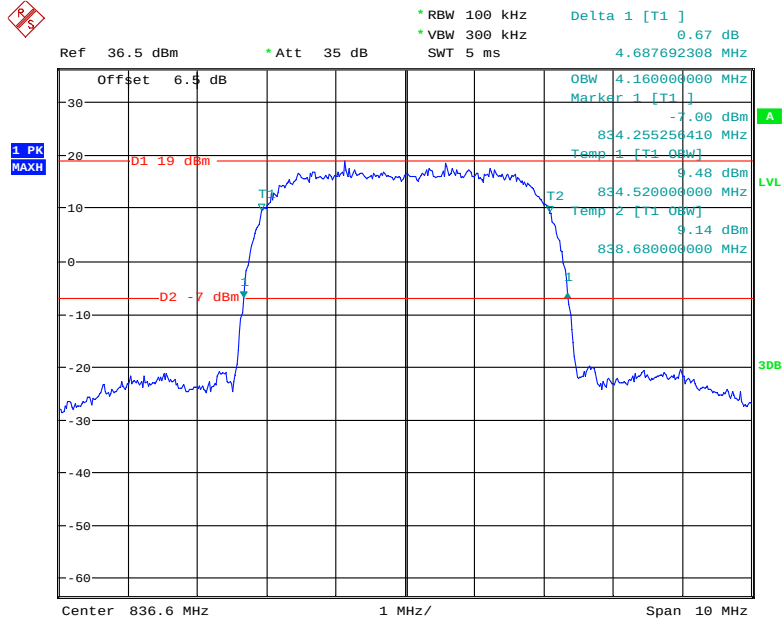


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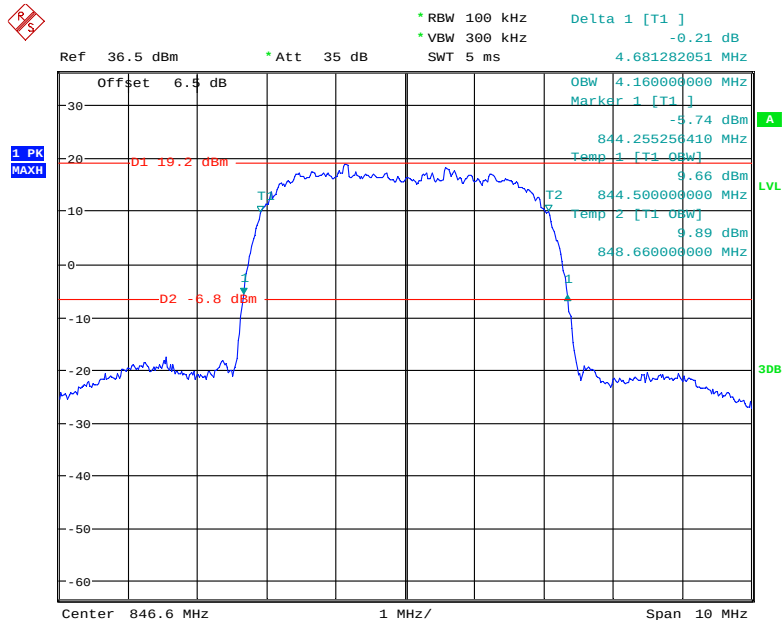
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



Date: 13.JAN.2021 14:36:42

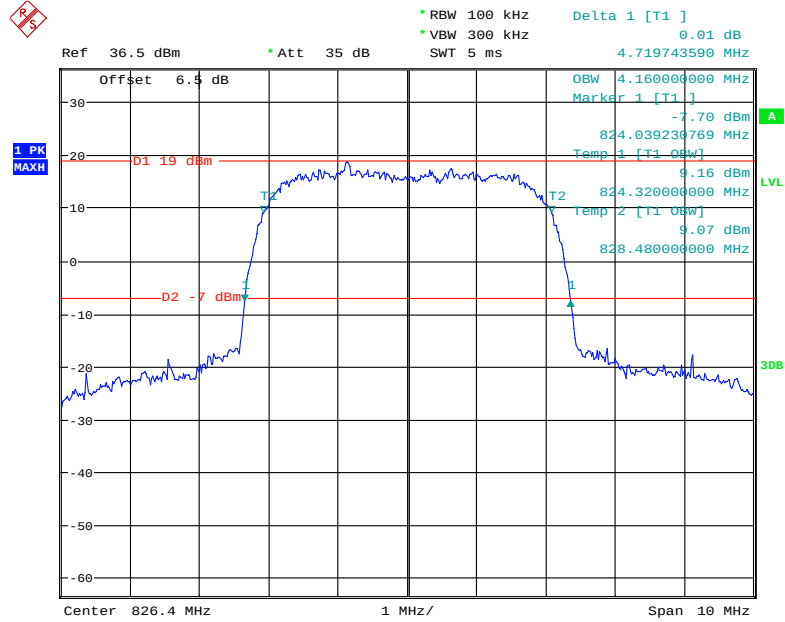
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel

Date: 13.JAN.2021 11:17:09

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

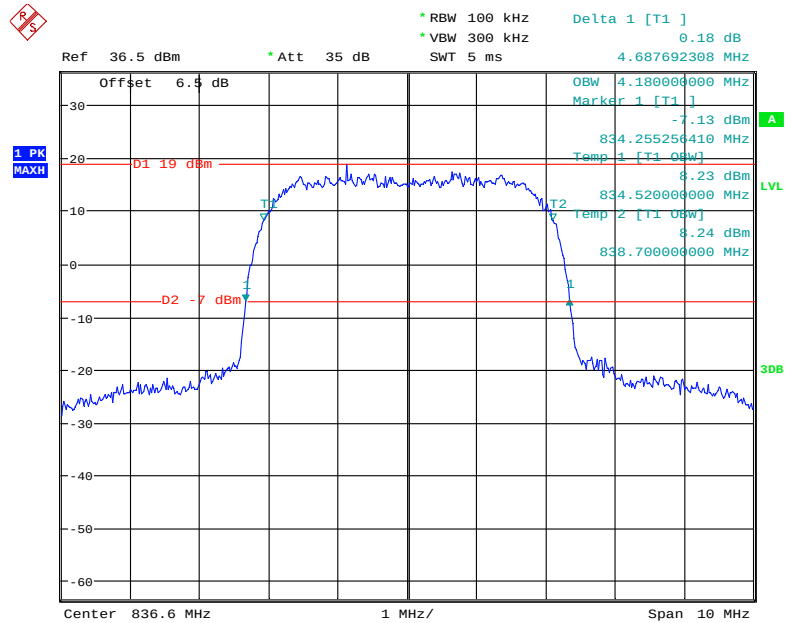
Date: 13.JAN.2021 14:38:10

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

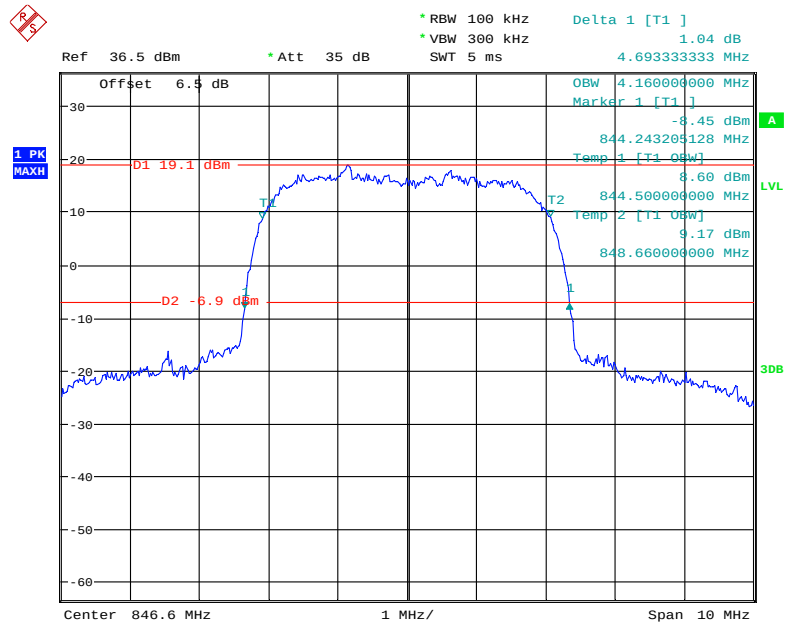


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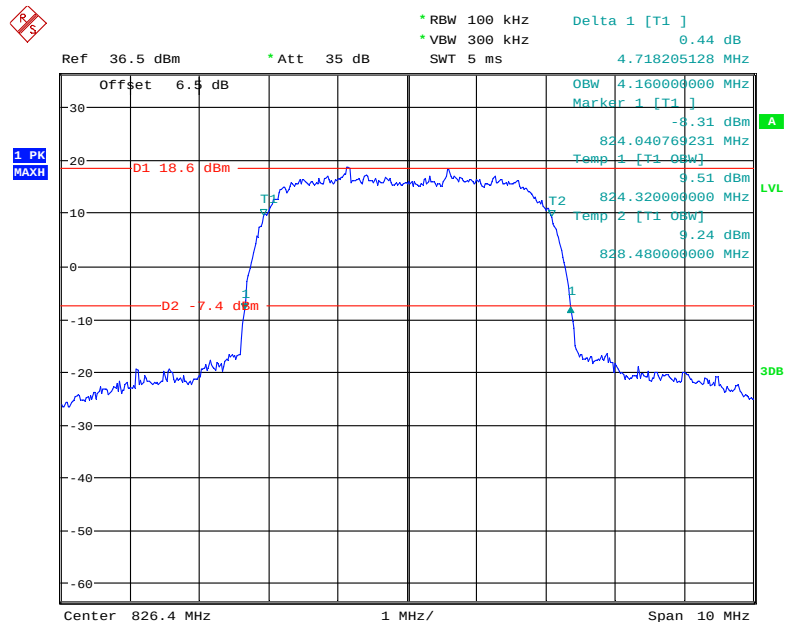
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel



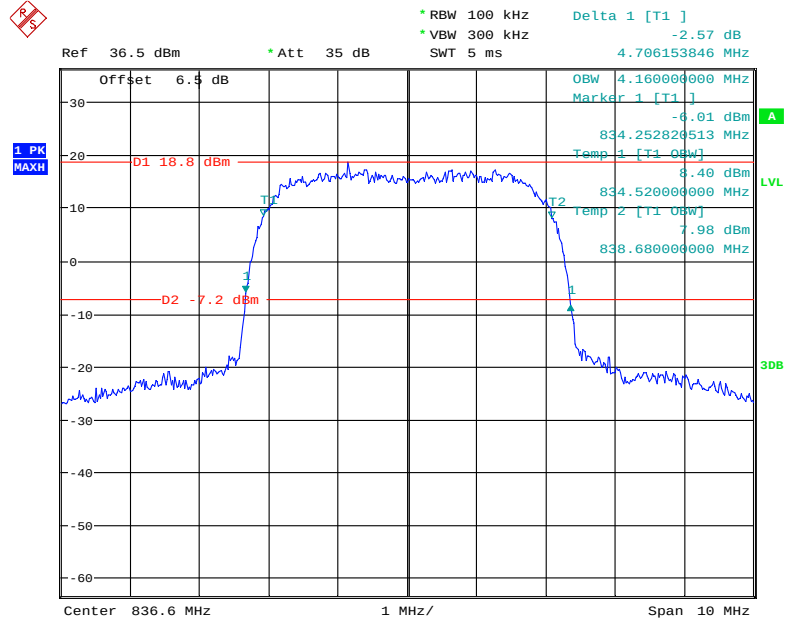
Date: 13.JAN.2021 11:21:12

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

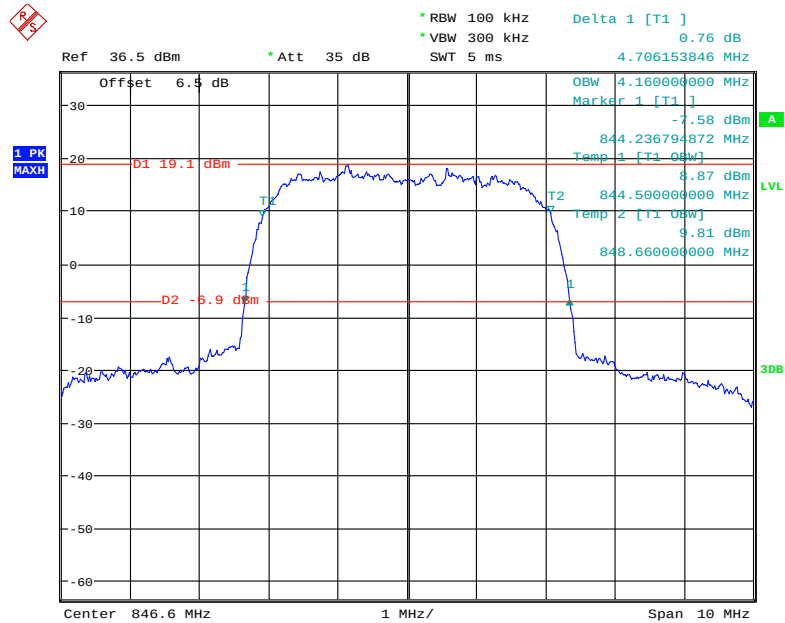
Date: 13.JAN.2021 14:04:27

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

Date: 13.JAN.2021 14:33:54

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

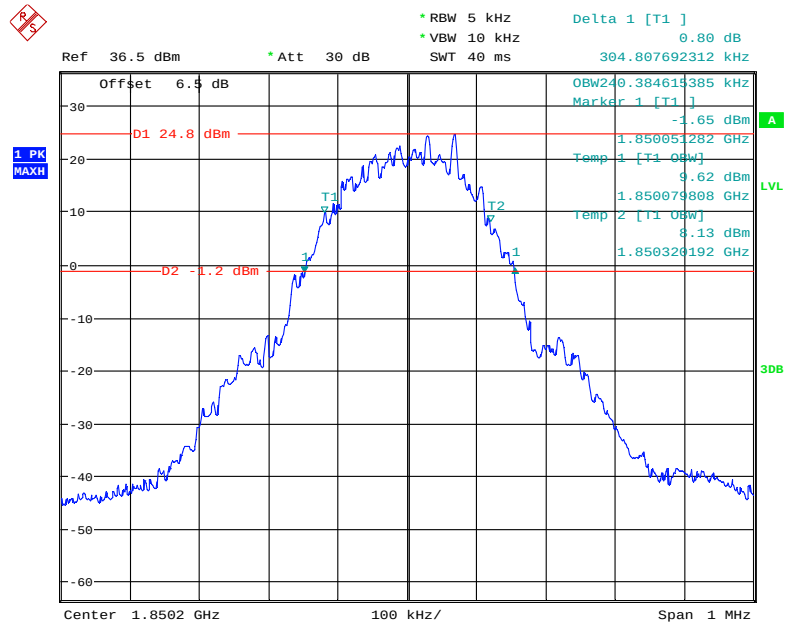
Date: 13.JAN.2021 11:18:59

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

Date: 13.JAN.2021 14:31:42

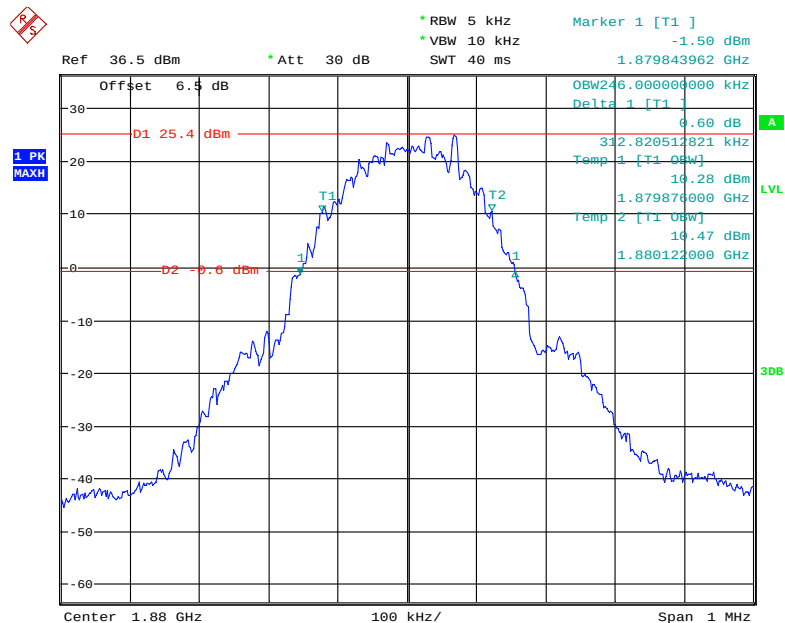
PCS Band (Part 24E)

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



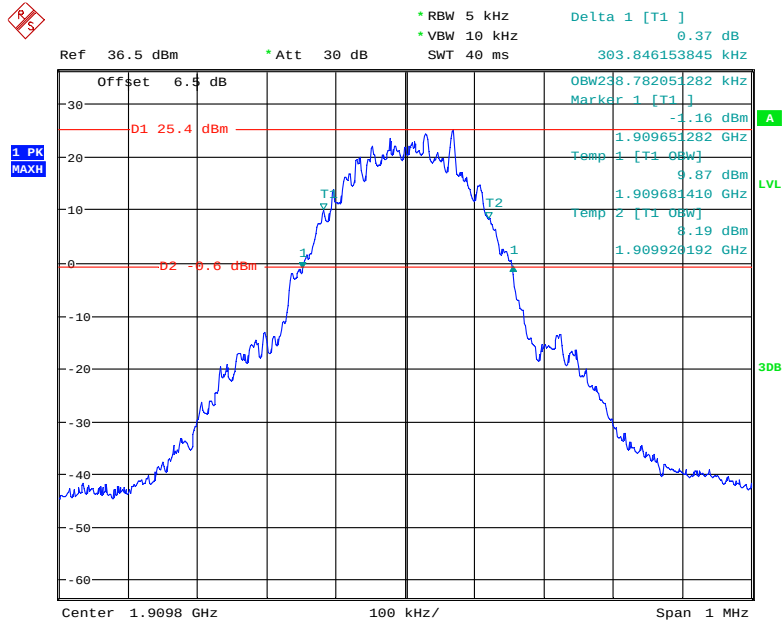
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26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



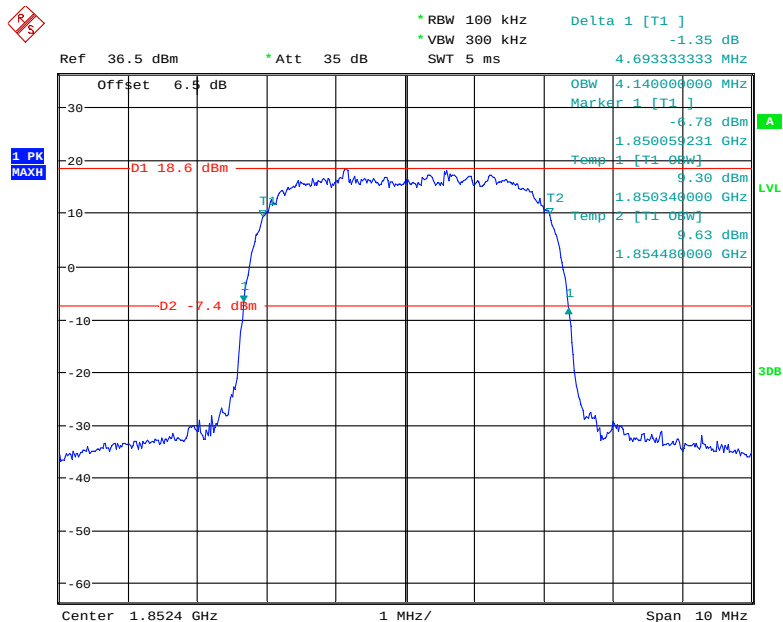
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26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



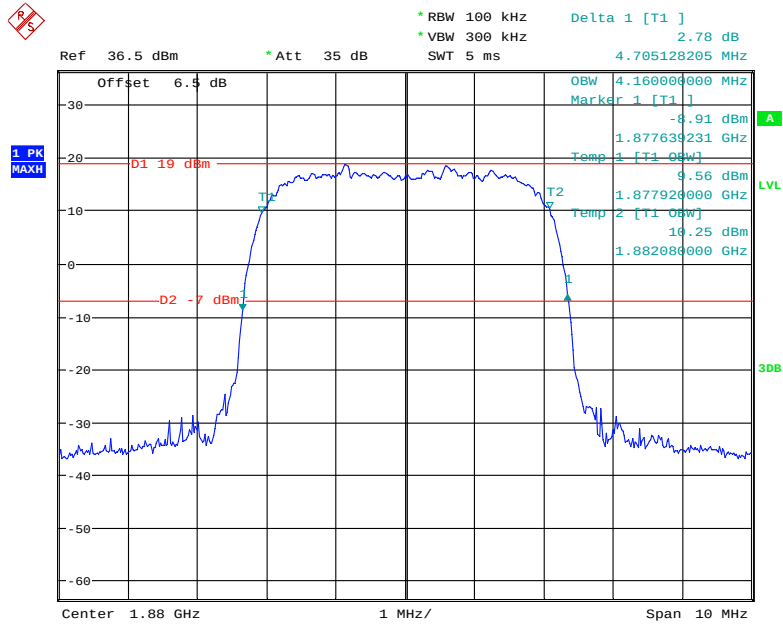
Date: 13.JAN.2021 17:51:06

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



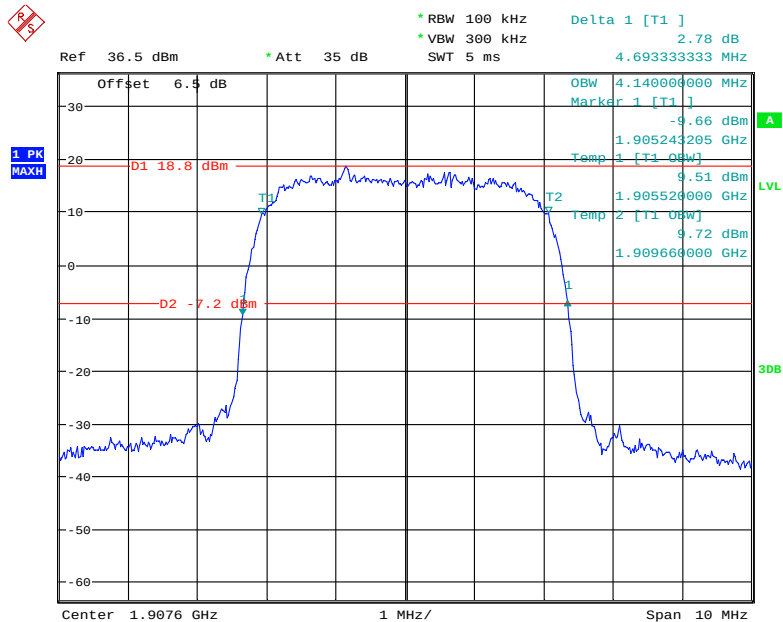
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26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



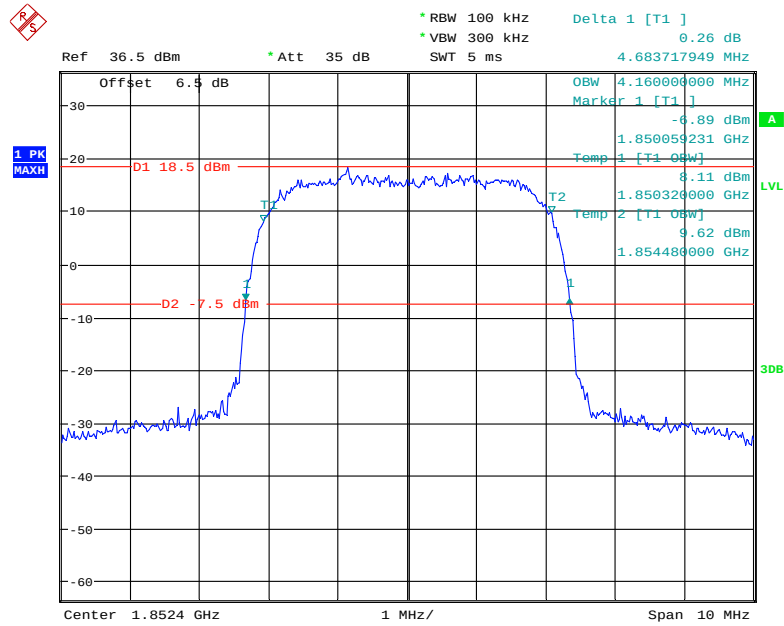
Date: 13.JAN.2021 11:02:02

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



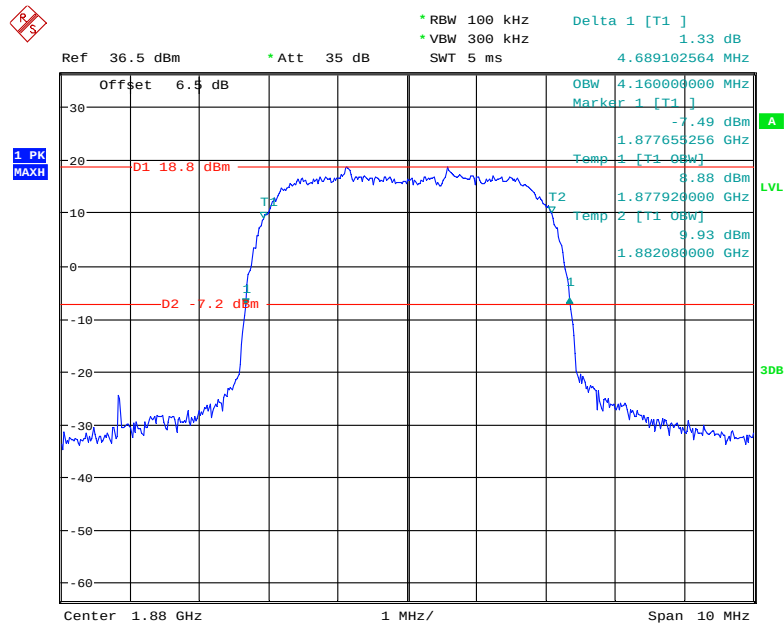
Date: 13.JAN.2021 14:42:04

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



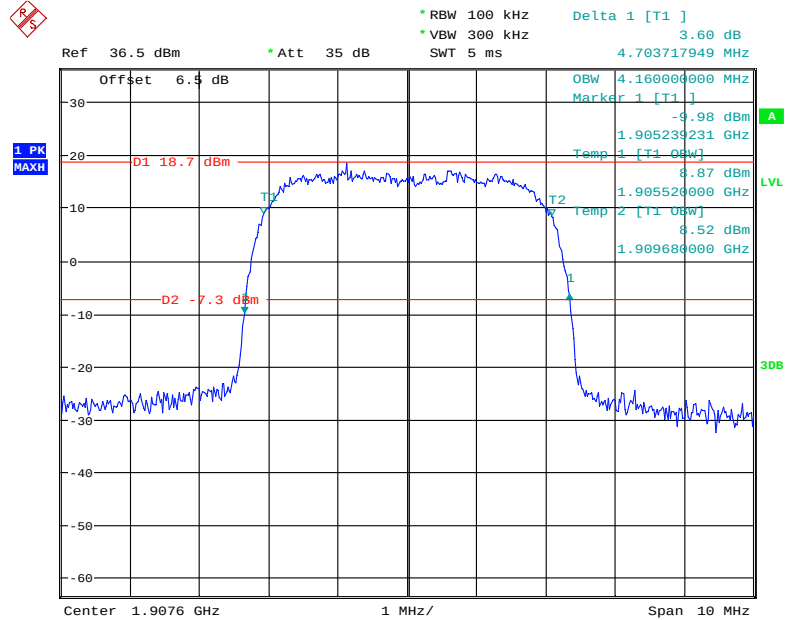
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26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, Middle channel



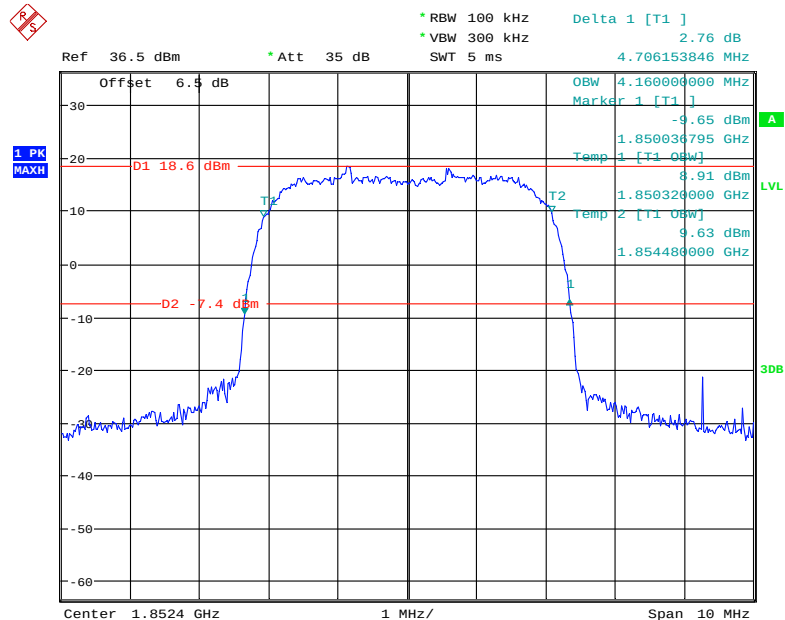
Date: 13.JAN.2021 11:08:18

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



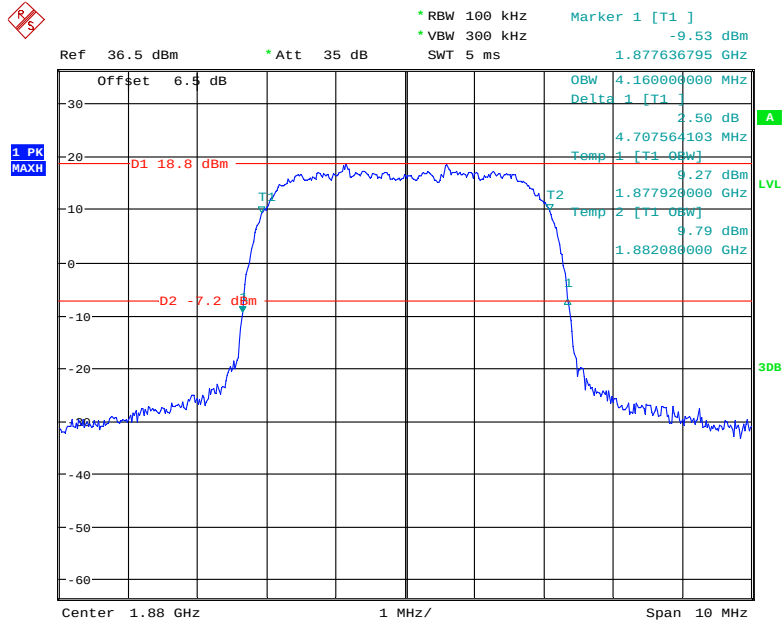
Date: 13.JAN.2021 14:10:40

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



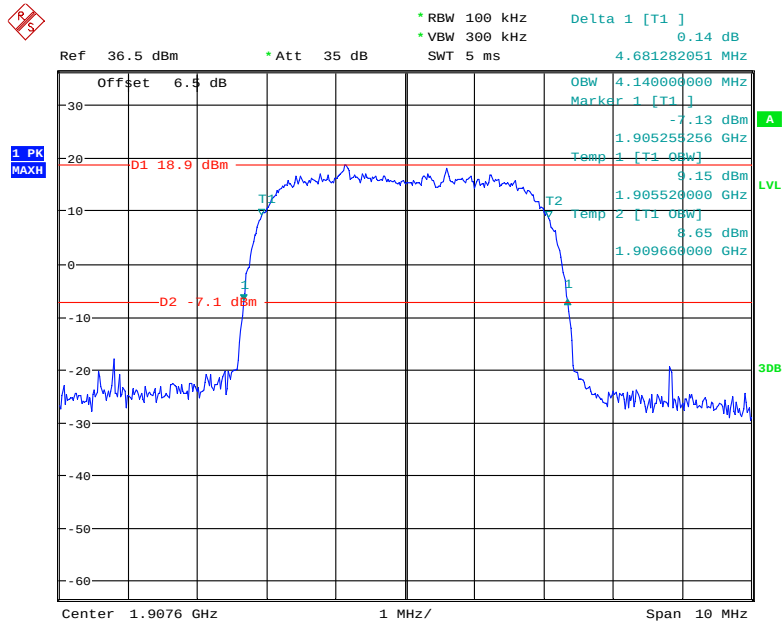
Date: 13.JAN.2021 14:19:31

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



Date: 13.JAN.2021 11:13:50

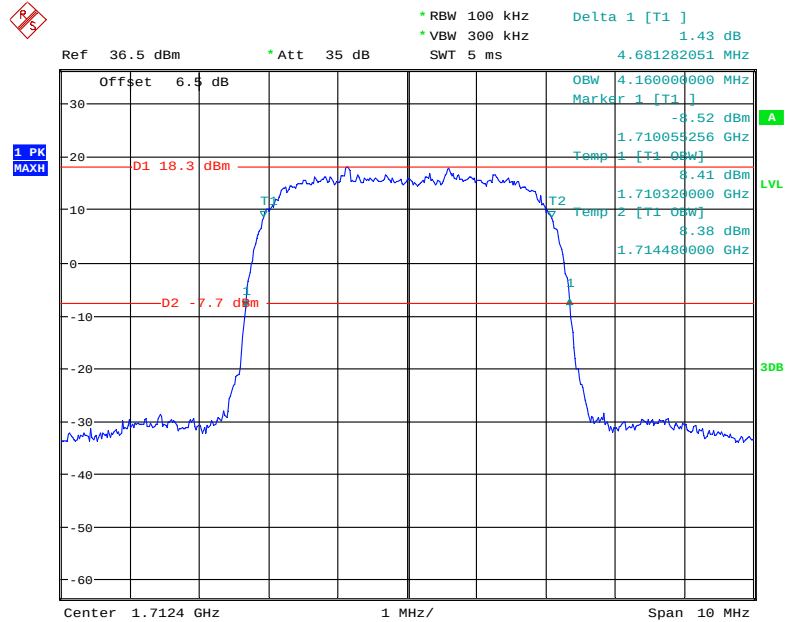
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 13.JAN.2021 14:21:41

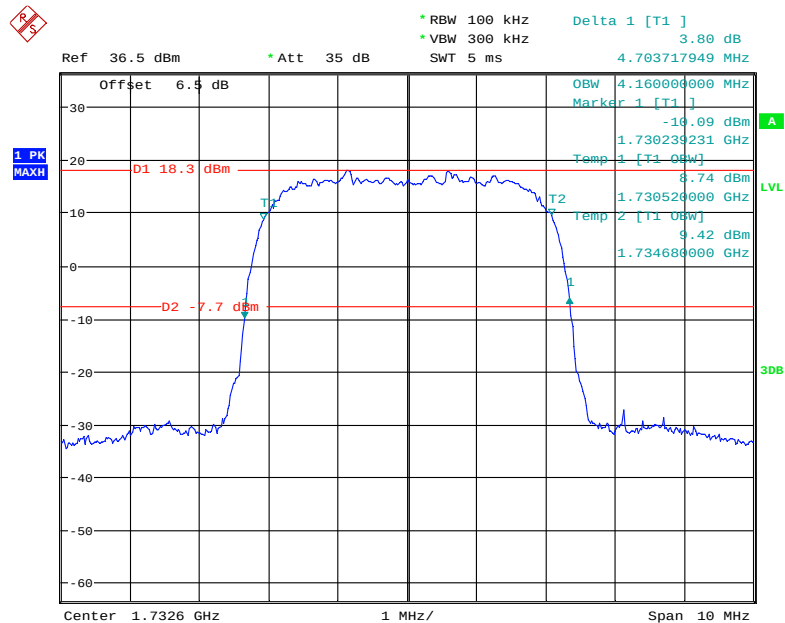
AWS Band (Part 27)

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

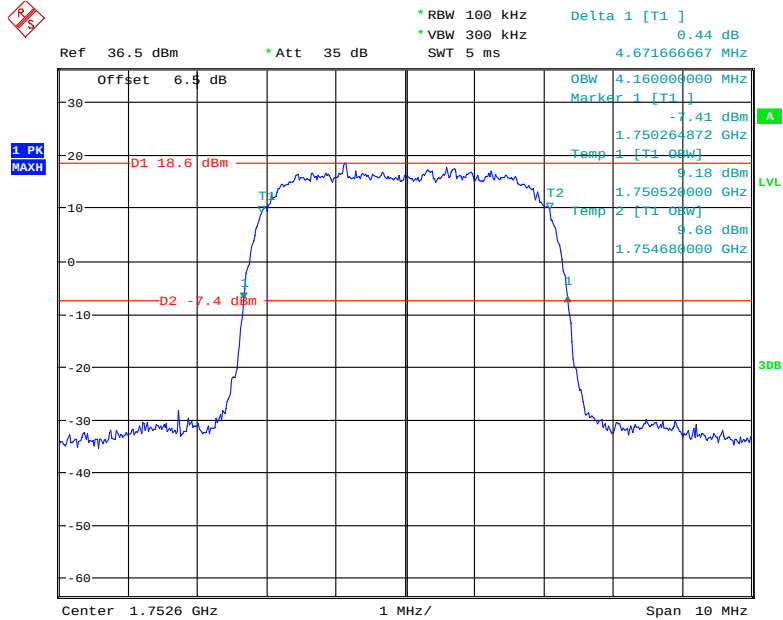


Date: 13.JAN.2021 14:39:44

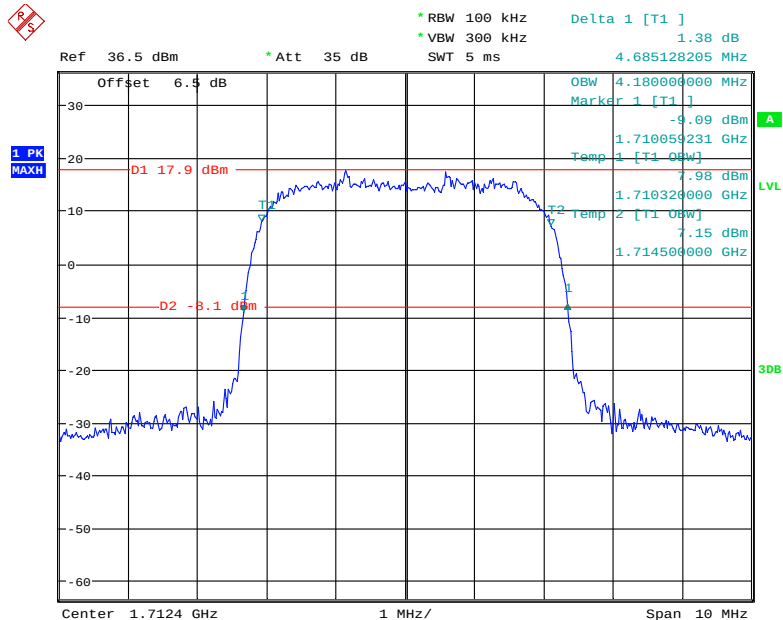
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel



Date: 13.JAN.2021 11:31:09

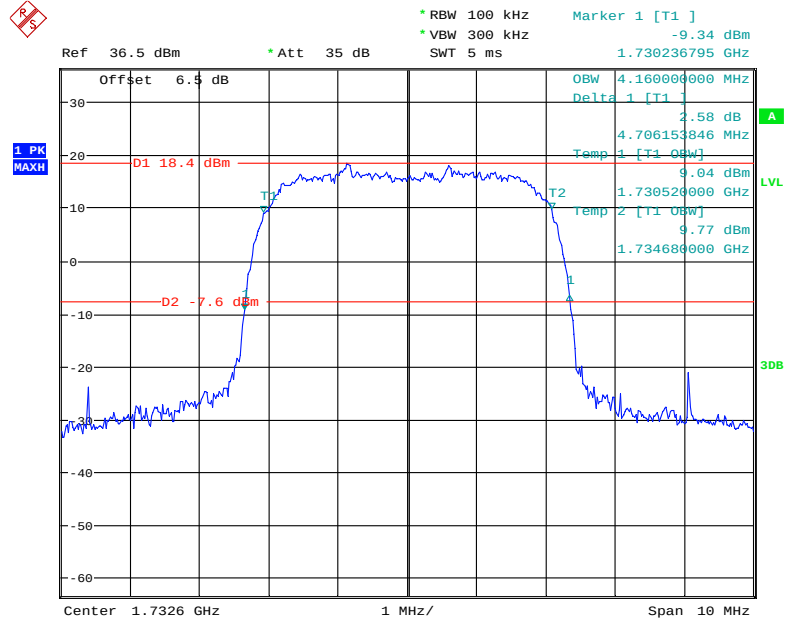
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 13.JAN.2021 14:40:54

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

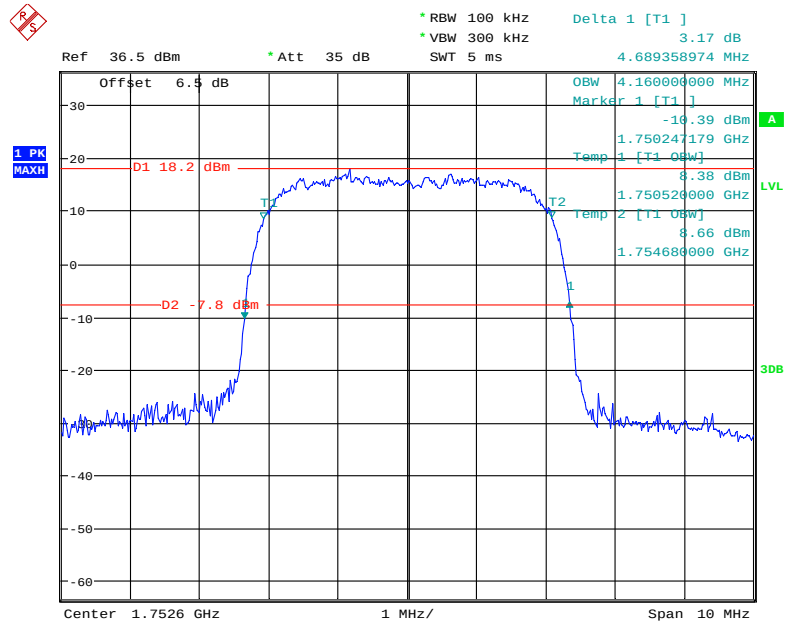
Date: 13.JAN.2021 14:00:12

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

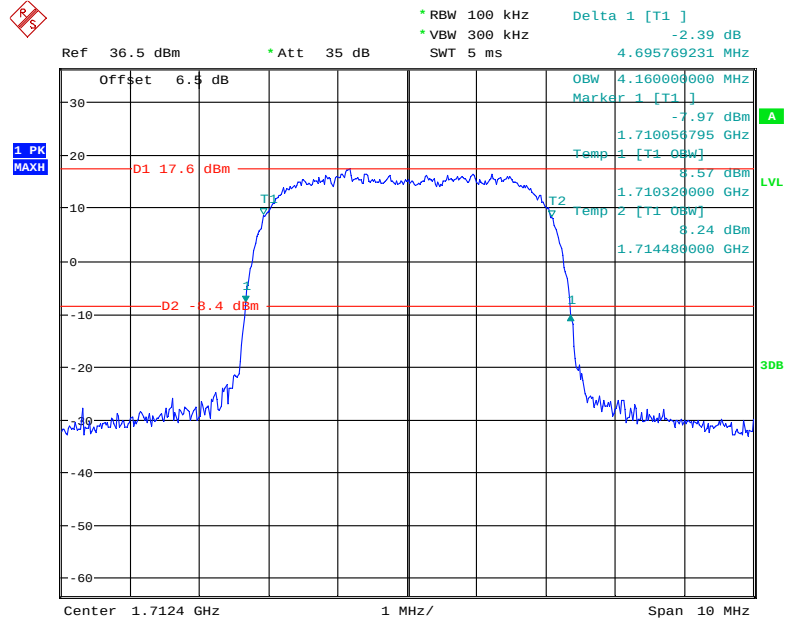


Date: 13.JAN.2021 11:36:42

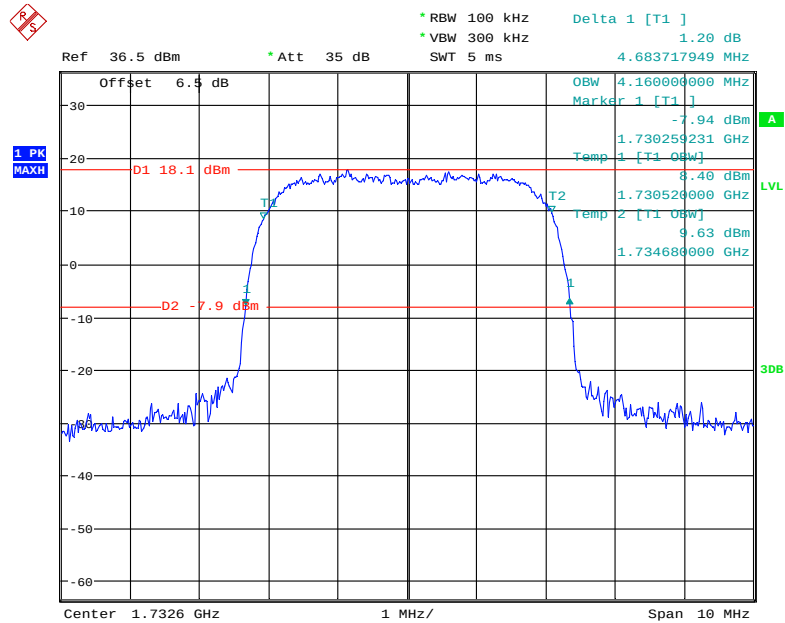
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (BPSK) Mode, High channel



Date: 13.JAN.2021 14:01:19

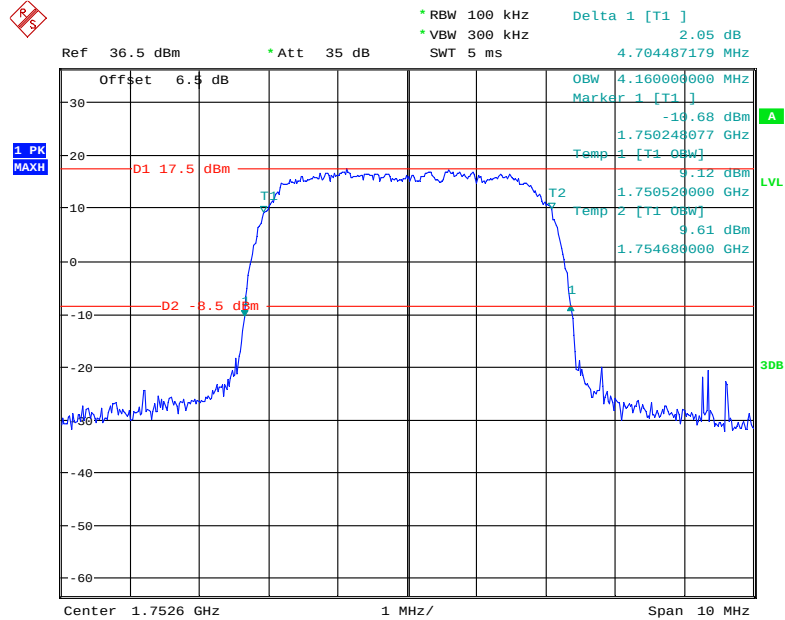
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, Low channel

Date: 13.JAN.2021 14:29:09

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

Date: 13.JAN.2021 11:34:54

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



Date: 13.JAN.2021 14:27:22

LTE Band 2:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.308
		Middle	1.104	1.308
		High	1.110	1.302
	16QAM	Low	1.098	1.308
		Middle	1.098	1.290
		High	1.098	1.284
3	QPSK	Low	2.712	3.024
		Middle	2.688	3.012
		High	2.712	3.012
	16QAM	Low	2.700	3.084
		Middle	2.700	3.084
		High	2.700	3.072
5	QPSK	Low	4.540	5.320
		Middle	4.540	5.260
		High	4.540	5.240
	16QAM	Low	4.580	5.480
		Middle	4.560	5.400
		High	4.560	5.320
10	QPSK	Low	9.000	9.840
		Middle	8.960	9.840
		High	8.960	9.720
	16QAM	Low	9.000	9.880
		Middle	8.960	10.040
		High	8.960	9.760
15	QPSK	Low	13.560	15.600
		Middle	13.500	15.480
		High	13.500	15.060
	16QAM	Low	13.560	15.360
		Middle	13.560	15.240
		High	13.560	15.300
20	QPSK	Low	17.920	19.600
		Middle	18.000	19.840
		High	17.920	19.920
	16QAM	Low	18.000	20.000
		Middle	18.000	20.000
		High	17.920	19.840

LTE Band 4:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.308
		Middle	1.110	1.296
		High	1.110	1.290
	16QAM	Low	1.110	1.260
		Middle	1.104	1.290
		High	1.098	1.278
3	QPSK	Low	2.700	3.000
		Middle	2.700	3.048
		High	2.700	3.024
	16QAM	Low	2.700	3.120
		Middle	2.700	3.060
		High	2.700	3.084
5	QPSK	Low	4.540	5.280
		Middle	4.520	5.320
		High	4.520	5.300
	16QAM	Low	4.540	5.460
		Middle	4.560	5.480
		High	4.560	5.460
10	QPSK	Low	8.960	9.960
		Middle	8.960	9.760
		High	8.960	9.880
	16QAM	Low	8.960	9.760
		Middle	9.000	10.000
		High	8.960	9.840
15	QPSK	Low	13.560	15.360
		Middle	13.560	15.240
		High	13.500	15.420
	16QAM	Low	13.620	15.540
		Middle	13.560	15.300
		High	13.620	15.480
20	QPSK	Low	18.080	20.320
		Middle	18.000	19.840
		High	18.000	19.920
	16QAM	Low	18.000	19.600
		Middle	18.000	19.840
		High	18.000	19.760

LTE Band 5:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.110	1.326
		Middle	1.110	1.338
		High	1.110	1.350
	16QAM	Low	1.098	1.290
		Middle	1.098	1.290
		High	1.098	1.314
3	QPSK	Low	2.700	3.000
		Middle	2.700	2.988
		High	2.700	3.048
	16QAM	Low	2.700	3.072
		Middle	2.700	3.036
		High	2.700	3.060
5	QPSK	Low	4.520	5.200
		Middle	4.520	5.360
		High	4.540	5.200
	16QAM	Low	4.560	5.400
		Middle	4.560	5.420
		High	4.540	5.180
10	QPSK	Low	8.960	9.800
		Middle	8.960	9.840
		High	8.960	9.800
	16QAM	Low	8.960	9.720
		Middle	8.960	9.840
		High	8.960	9.760

LTE Band 7:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5	QPSK	Low	4.520	5.240
		Middle	4.520	5.200
		High	4.520	5.260
	16QAM	Low	4.560	5.440
		Middle	4.560	5.420
		High	4.540	5.320
10	QPSK	Low	8.960	9.800
		Middle	8.960	9.840
		High	8.960	9.800
	16QAM	Low	8.960	9.960
		Middle	9.000	9.840
		High	9.000	9.960
15	QPSK	Low	13.500	15.360
		Middle	13.500	15.240
		High	13.500	15.000
	16QAM	Low	13.560	15.360
		Middle	13.560	15.060
		High	13.620	15.180
20	QPSK	Low	18.000	19.920
		Middle	18.000	19.840
		High	18.080	19.760
	16QAM	Low	18.080	20.000
		Middle	18.000	19.600
		High	18.000	19.840

LTE Band 66:

Bandwidth (MHz)	Modulation	Channel	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4	QPSK	Low	1.104	1.296
		Middle	1.110	1.308
		High	1.110	1.308
	16QAM	Low	1.098	1.278
		Middle	1.110	1.278
		High	1.098	1.290
3	QPSK	Low	2.700	3.036
		Middle	2.712	3.012
		High	2.712	3.036
	16QAM	Low	2.700	3.096
		Middle	2.700	3.084
		High	2.700	3.072
5	QPSK	Low	4.520	5.280
		Middle	4.520	5.340
		High	4.540	5.280
	16QAM	Low	4.520	4.840
		Middle	4.560	5.420
		High	4.540	5.360
10	QPSK	Low	8.960	9.800
		Middle	9.000	9.840
		High	8.960	9.760
	16QAM	Low	8.960	9.960
		Middle	9.000	9.920
		High	9.000	9.920
15	QPSK	Low	13.560	15.600
		Middle	13.500	15.480
		High	13.500	15.420
	16QAM	Low	13.620	15.240
		Middle	13.620	15.180
		High	13.620	15.300
20	QPSK	Low	18.000	20.080
		Middle	18.000	19.840
		High	18.080	19.840
	16QAM	Low	18.080	20.080
		Middle	18.000	19.760
		High	18.080	19.920

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

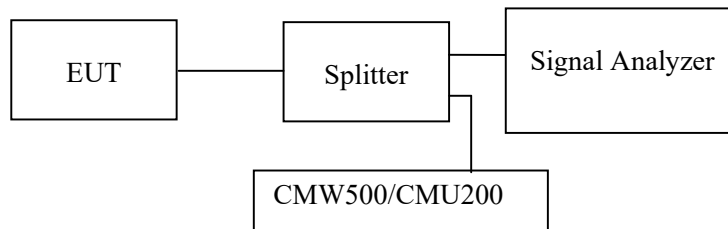
Applicable Standard

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 Alan He and Blaker Zhang from 2021-01-12 to 2021-02-04.

EUT operation mode: Transmitting

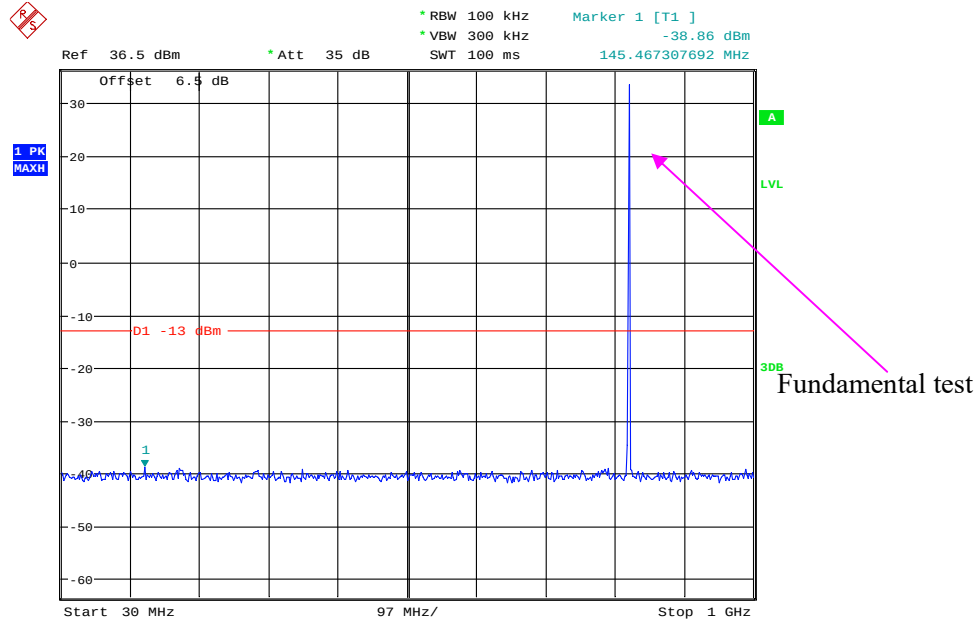
Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)

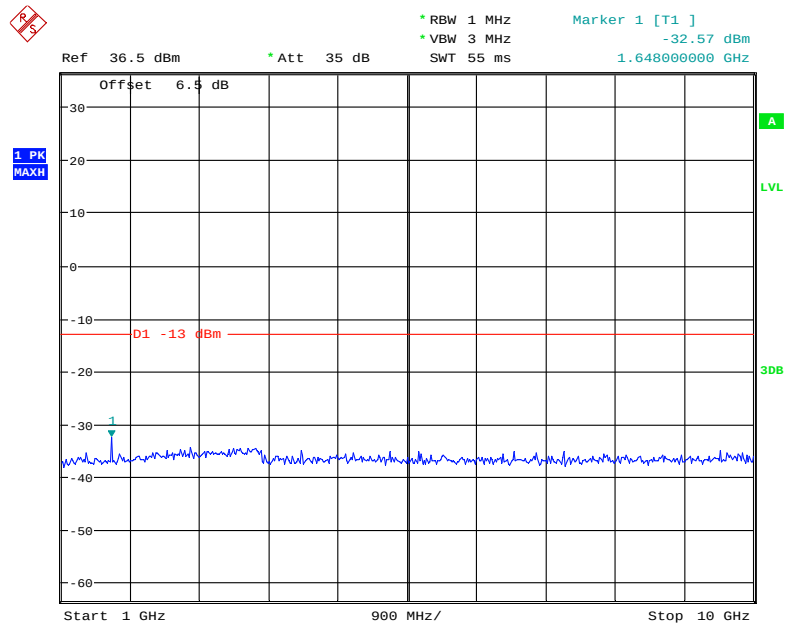
Low Channel:

30 MHz – 1 GHz (GSM Mode)



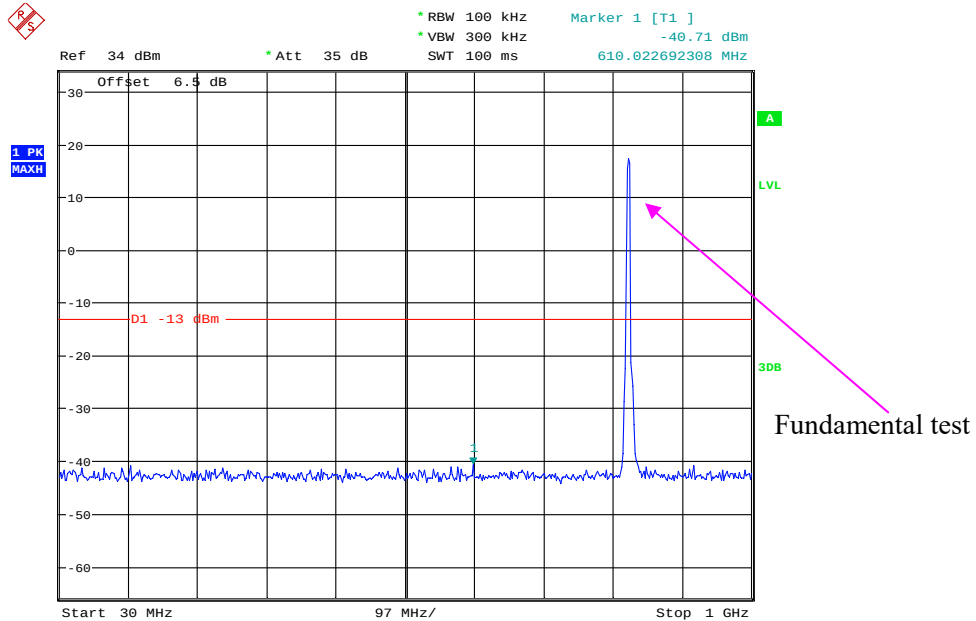
Date: 13.JAN.2021 10:33:06

1 GHz – 10 GHz (GSM Mode)



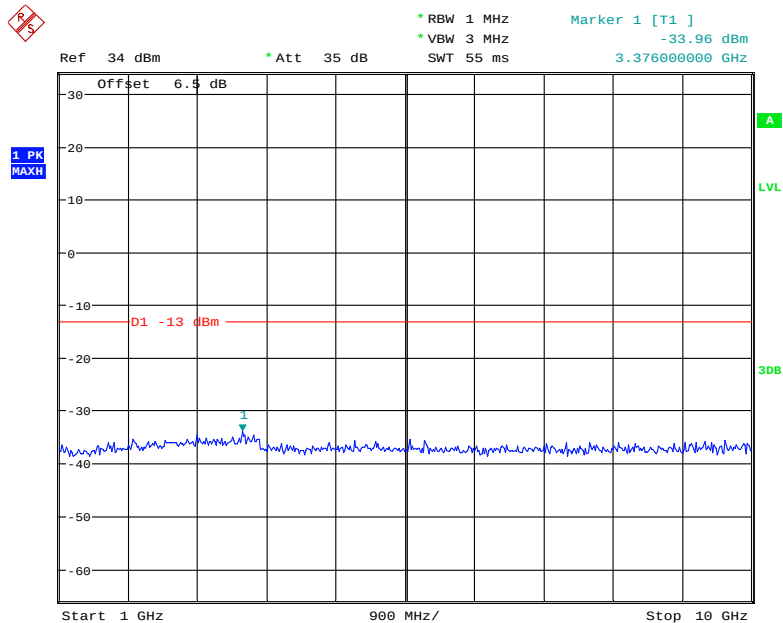
Date: 13.JAN.2021 10:33:40

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:47:02

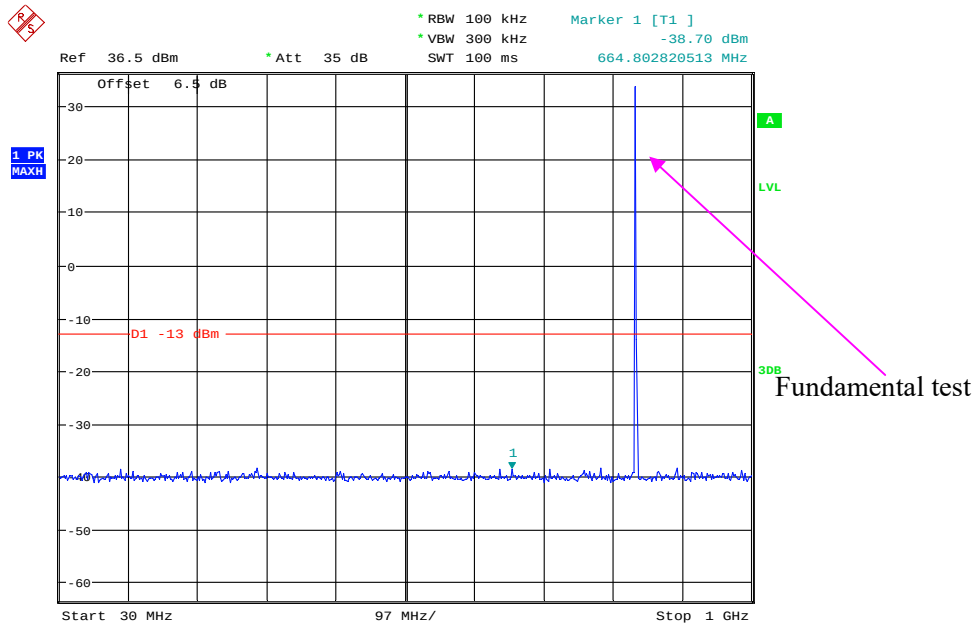
1 GHz – 10 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:47:27

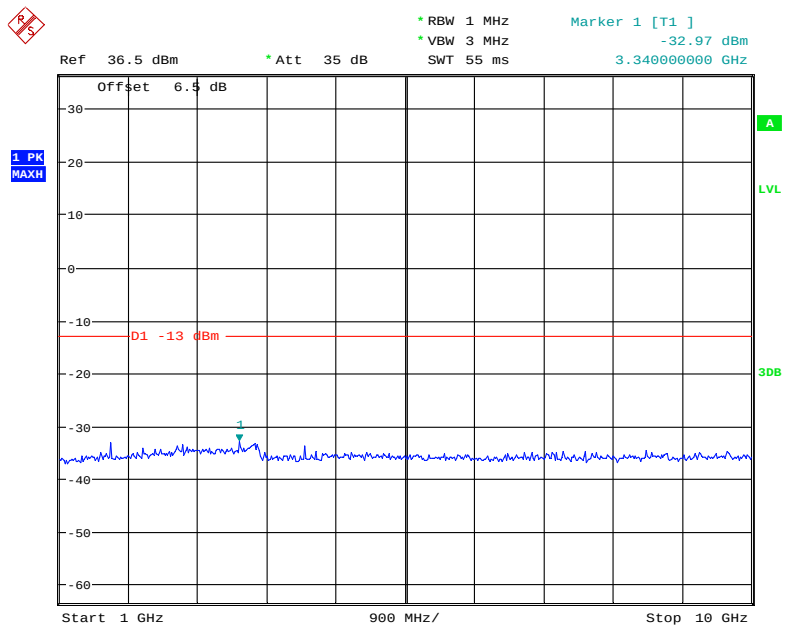
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



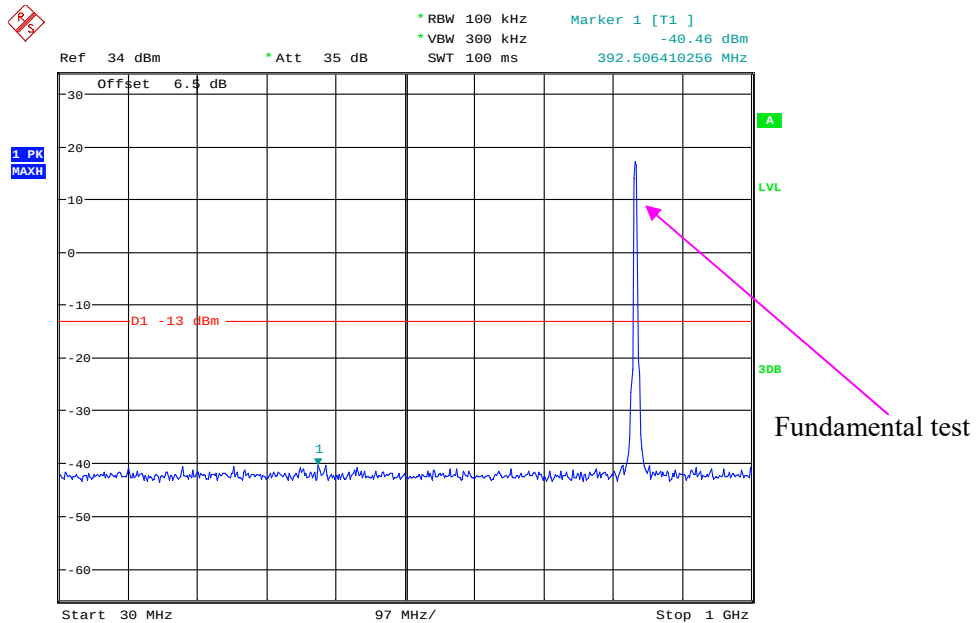
Date: 13.JAN.2021 10:14:02

1 GHz – 10 GHz (GSM Mode)



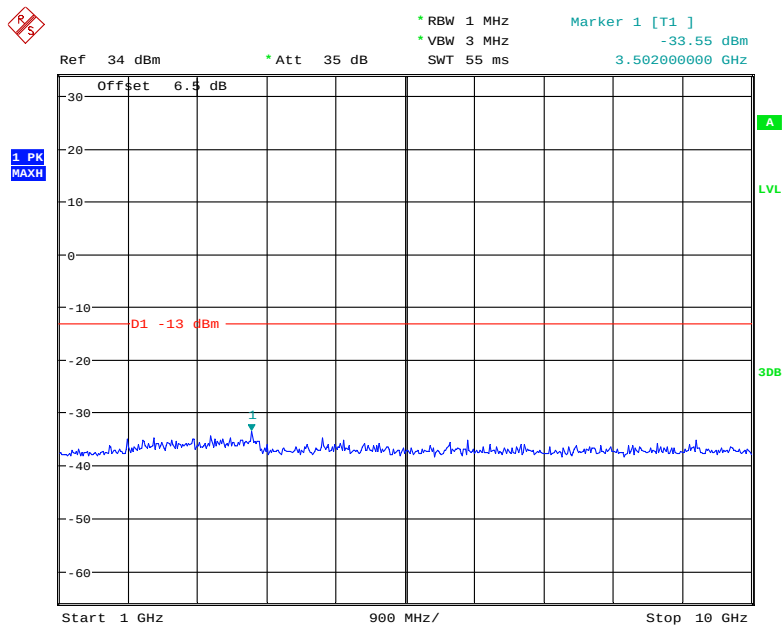
Date: 13.JAN.2021 10:16:50

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:51:47

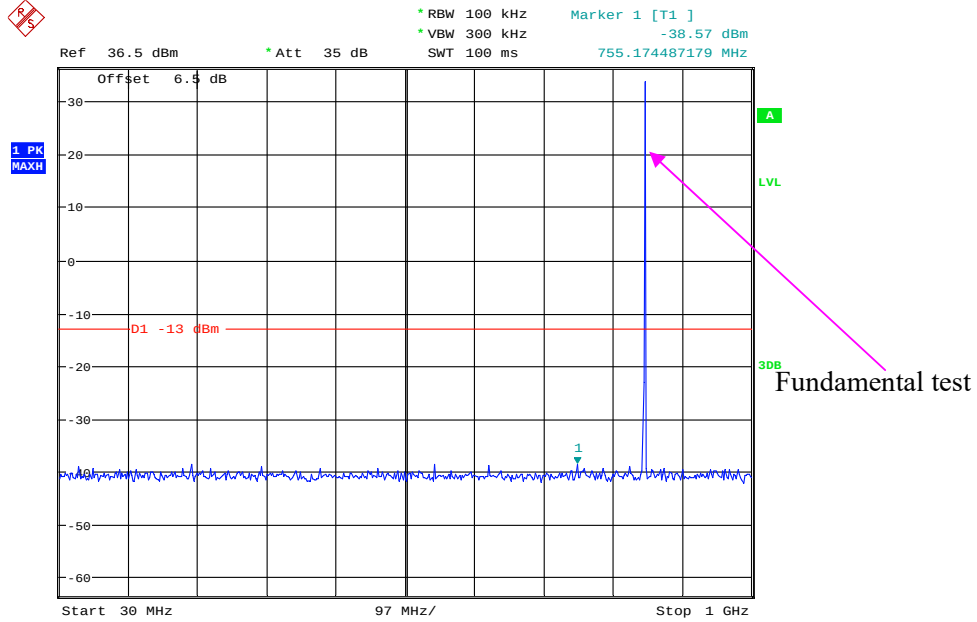
1 GHz – 10 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:50:54

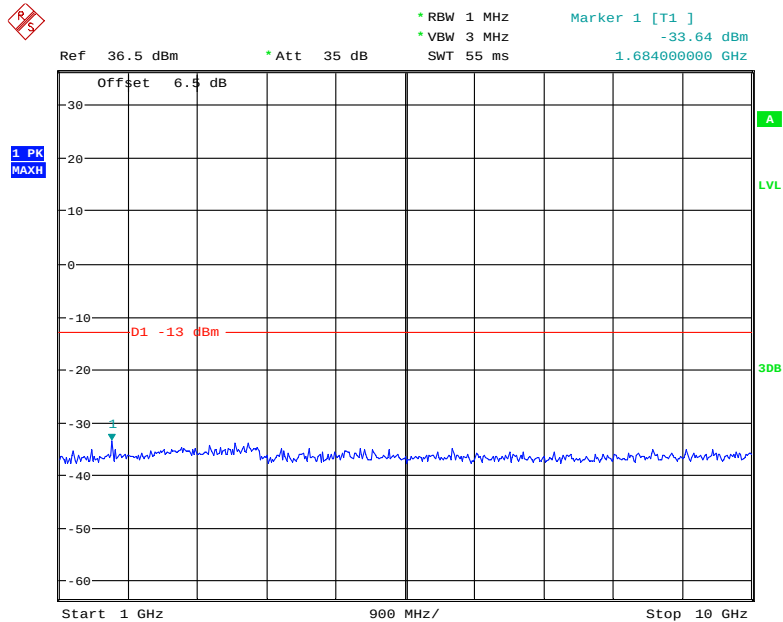
High Channel:

30 MHz – 1 GHz (GSM Mode)



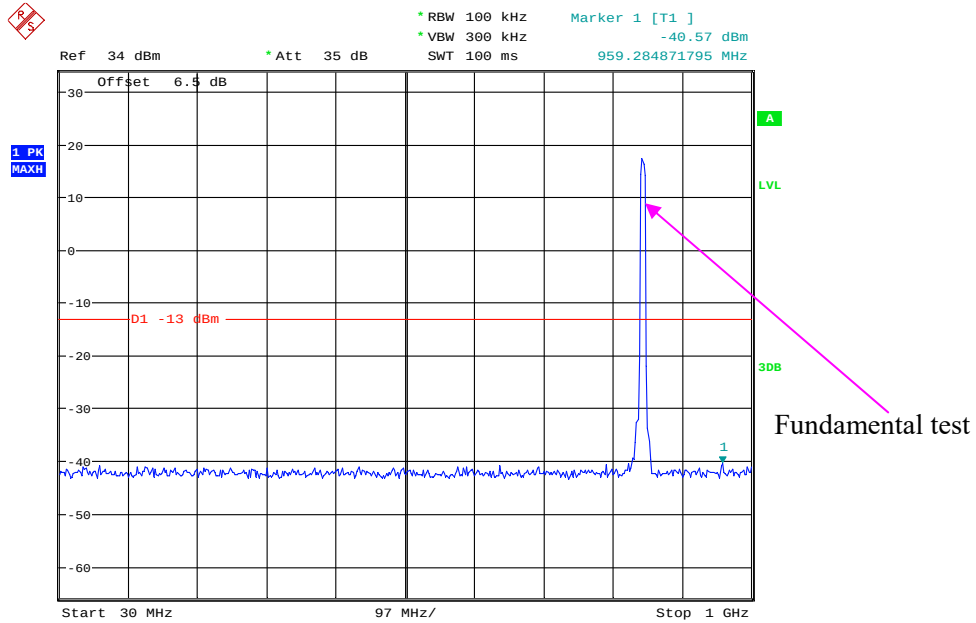
Date: 13.JAN.2021 10:34:58

1 GHz – 10 GHz (GSM Mode)



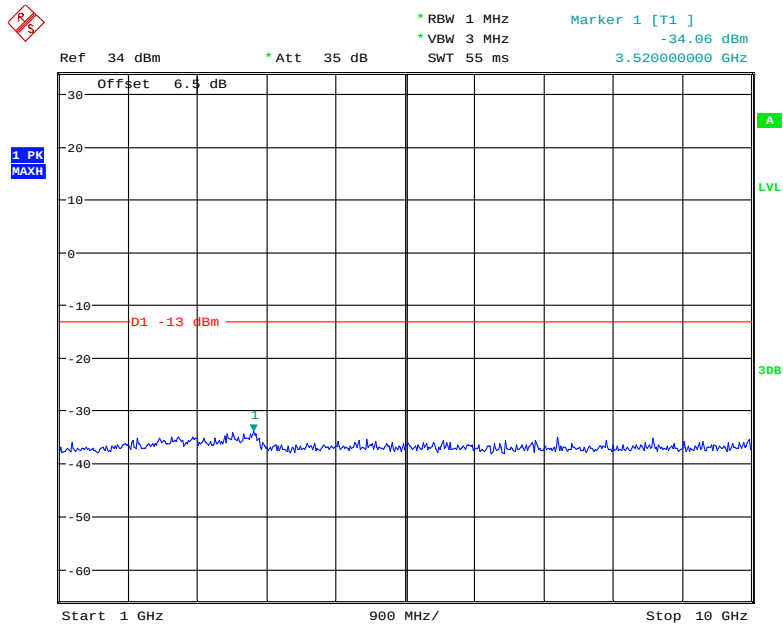
Date: 13.JAN.2021 10:34:20

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:49:07

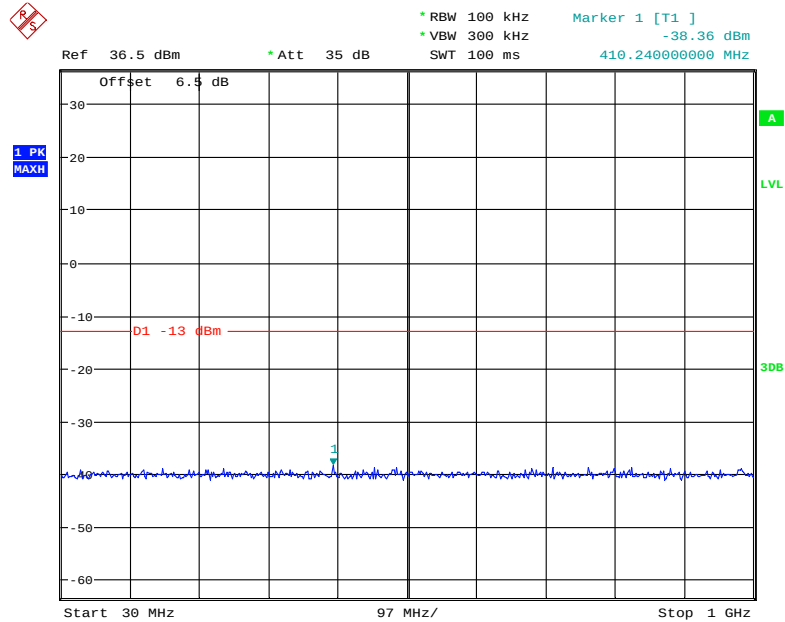
1 GHz – 10 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:49:48

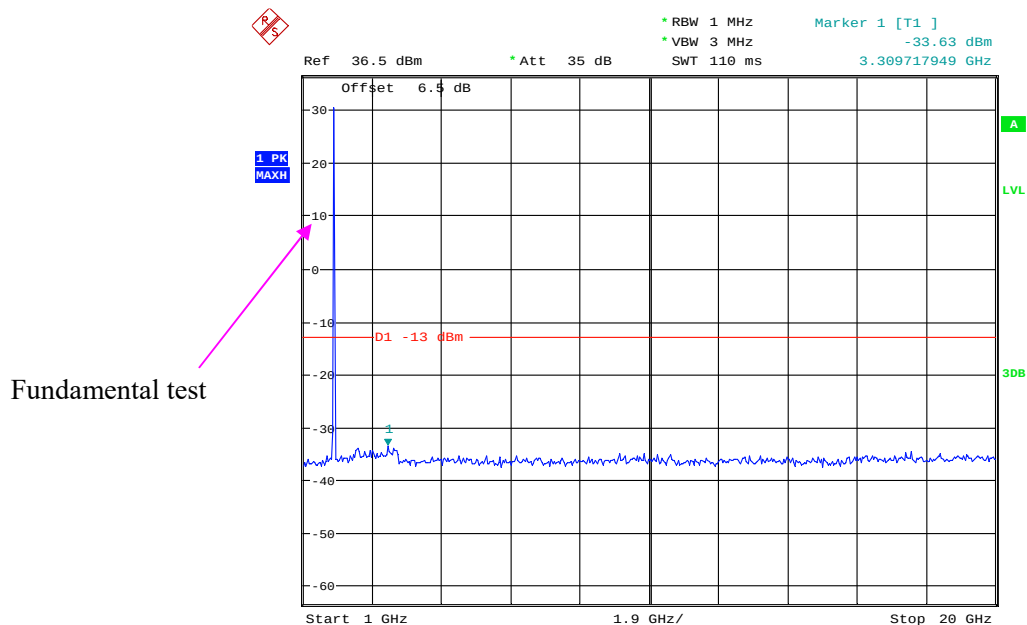
PCS Band (Part 24E)
Low Channel:

30 MHz – 1 GHz (GSM Mode)



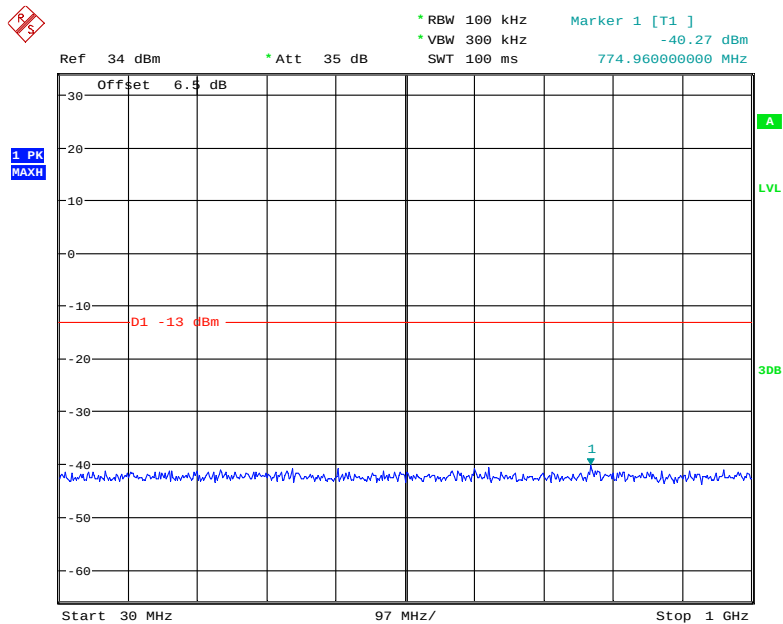
Date: 13.JAN.2021 10:40:02

1 GHz – 20 GHz (GSM Mode)



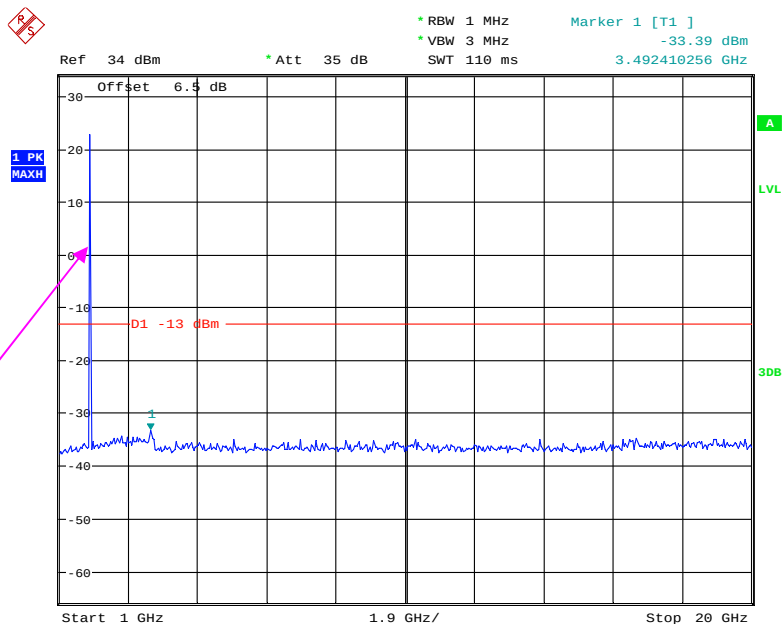
Date: 13.JAN.2021 10:40:40

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:17:04

1 GHz – 20 GHz (WCDMA Mode)

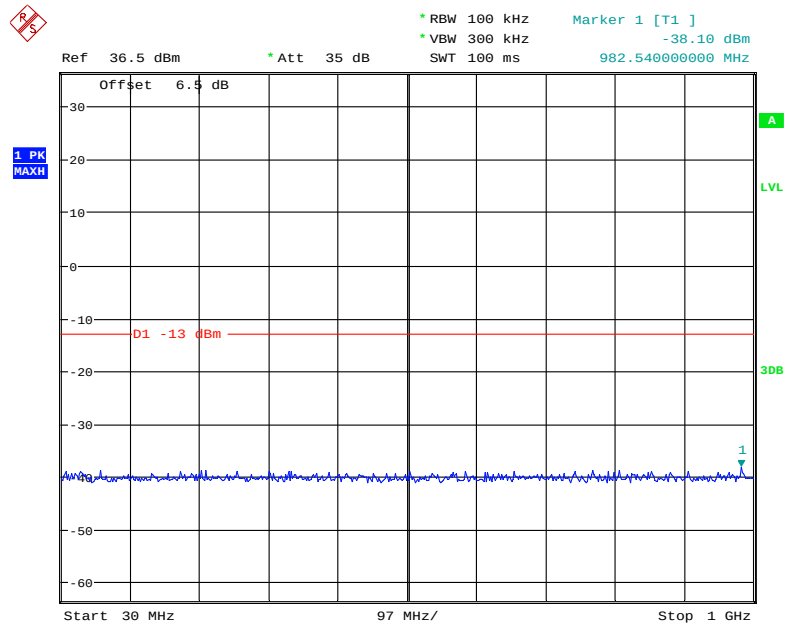


Fundamental test

Date: 13.JAN.2021 15:18:03

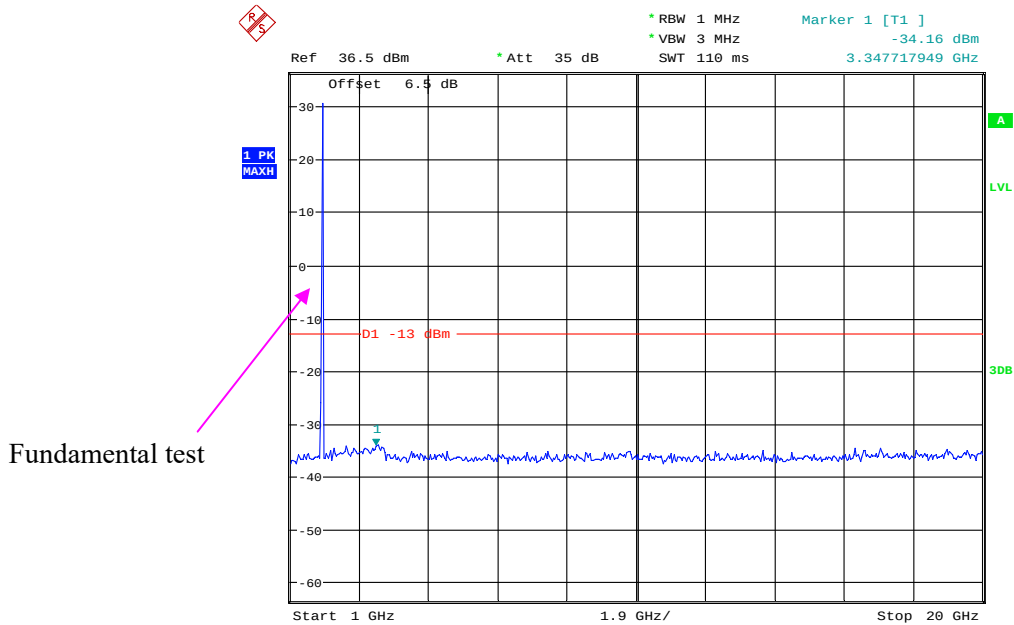
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



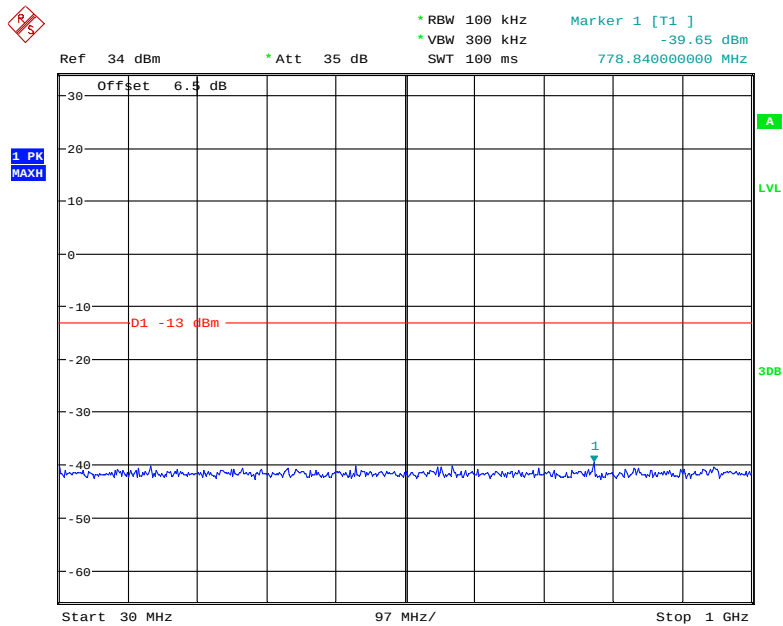
Date: 13.JAN.2021 10:20:11

1 GHz – 20 GHz (GSM Mode)



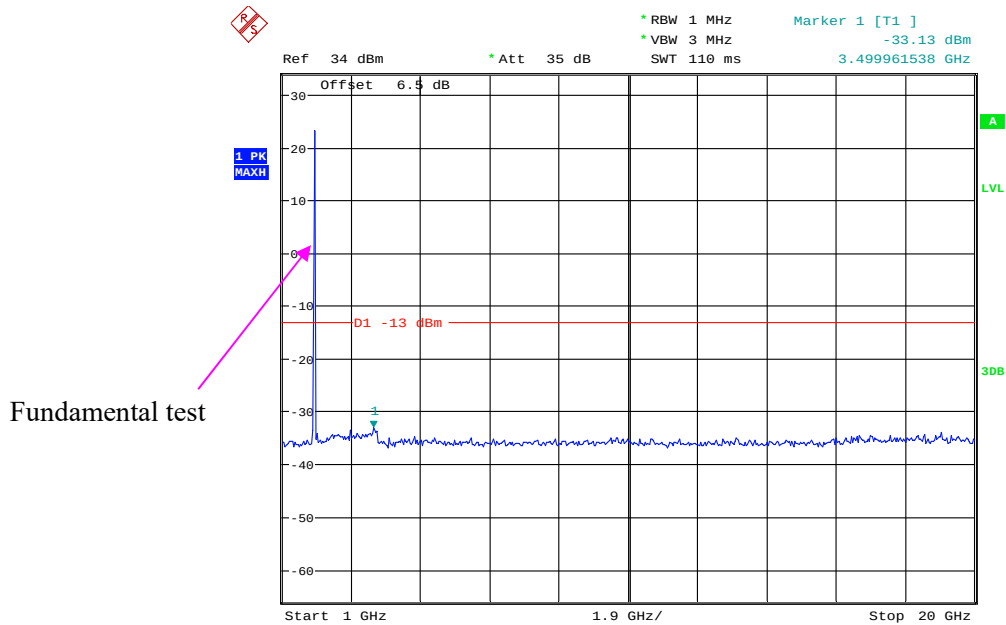
Date: 13.JAN.2021 10:18:38

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:24:18

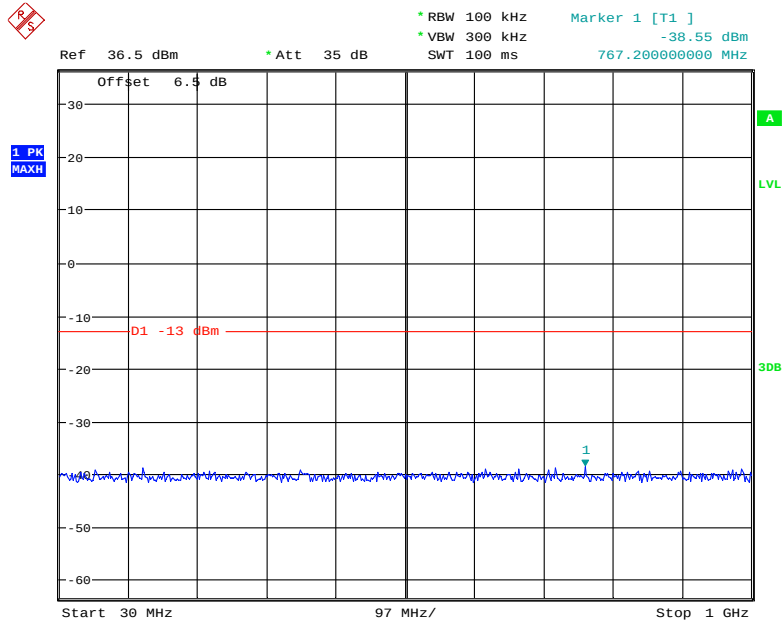
1 GHz – 20 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:27:24

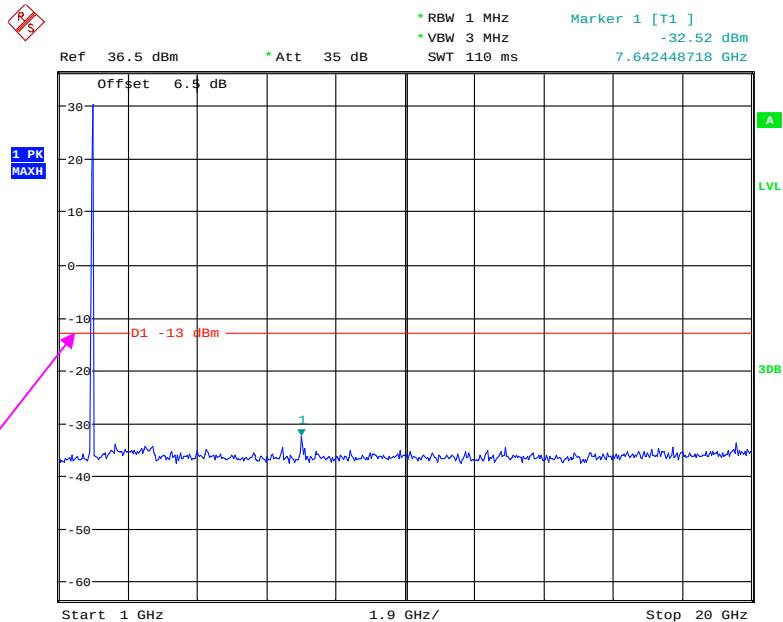
High Channel:

30 MHz – 1 GHz (GSM Mode)



Date: 13.JAN.2021 10:42:16

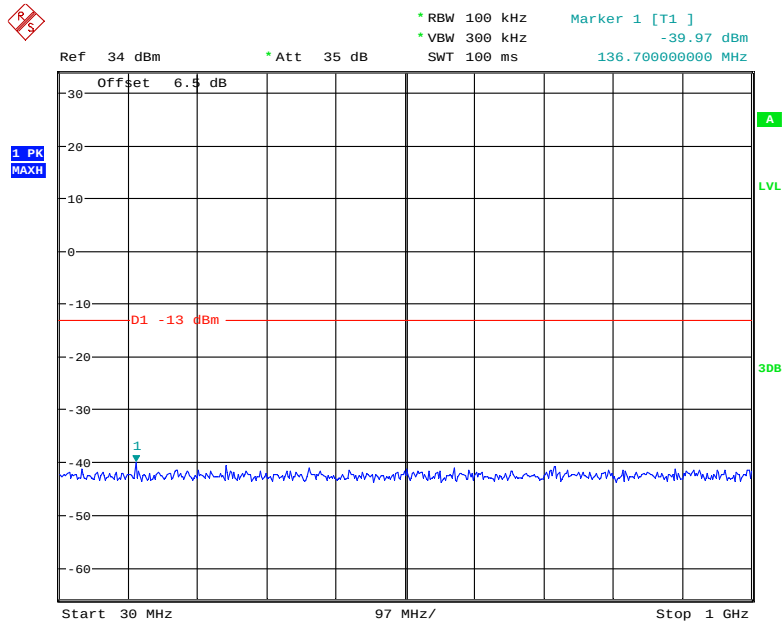
1 GHz – 20 GHz (GSM Mode)



Fundamental test

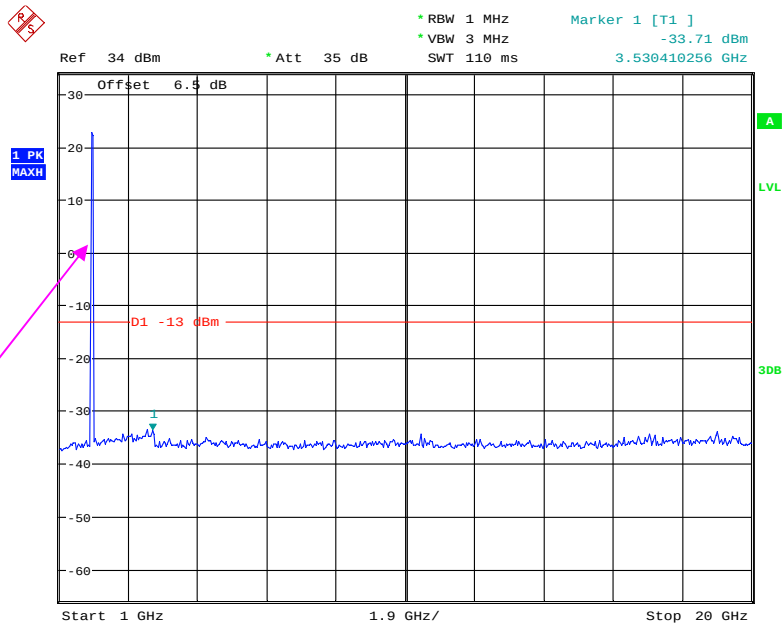
Date: 13.JAN.2021 10:41:27

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:20:51

1 GHz – 20 GHz (WCDMA Mode)

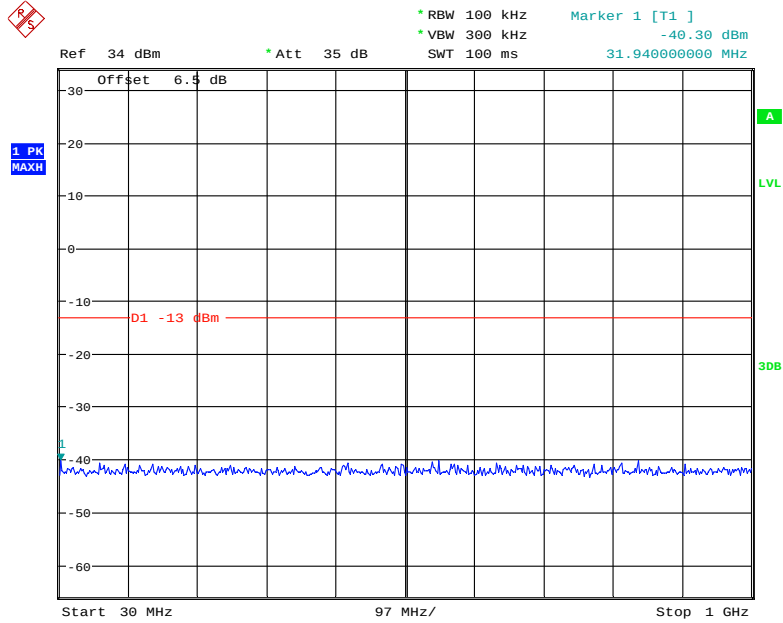


Fundamental test

Date: 13.JAN.2021 15:20:04

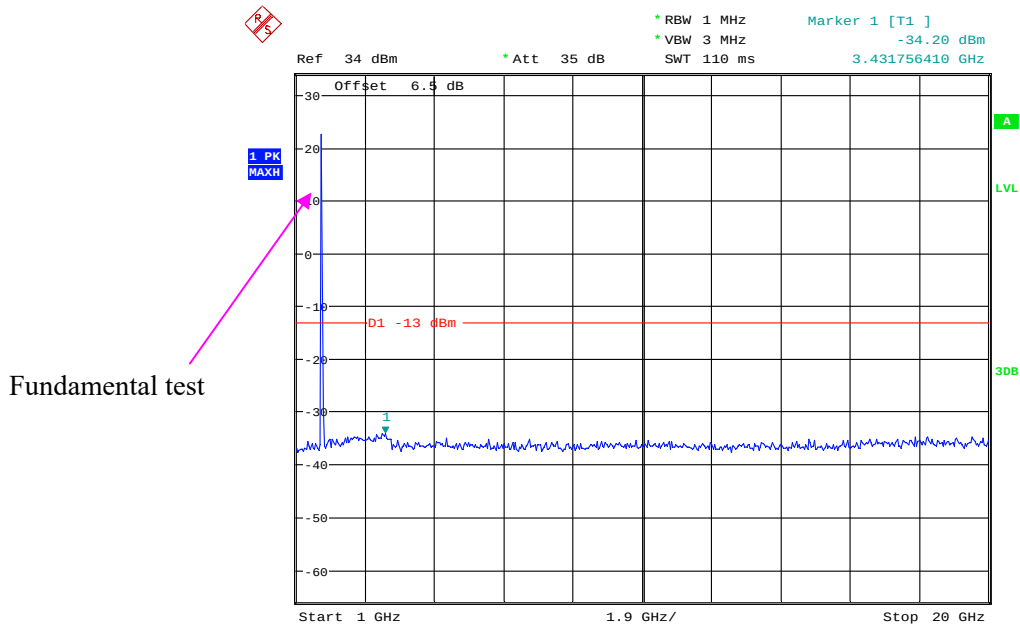
AWS Band (Part 27)
Low Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:36:58

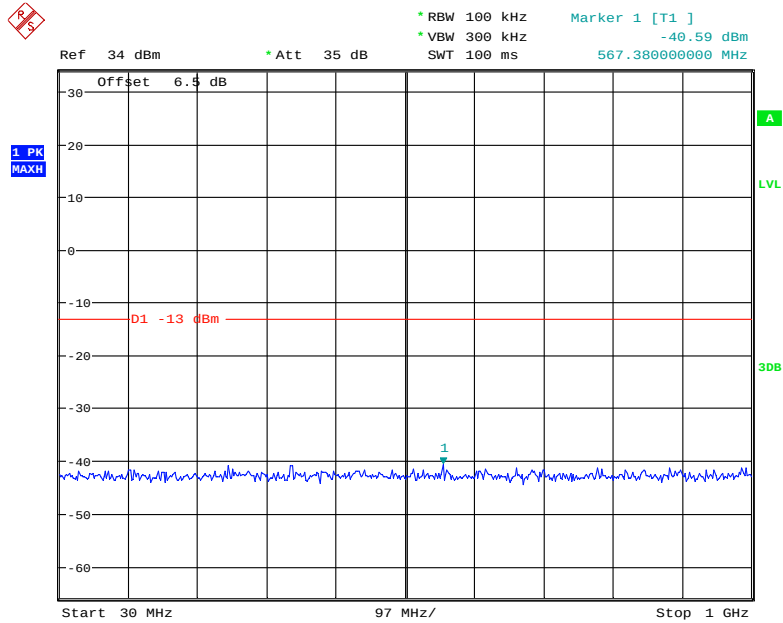
1 GHz – 20 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:37:57

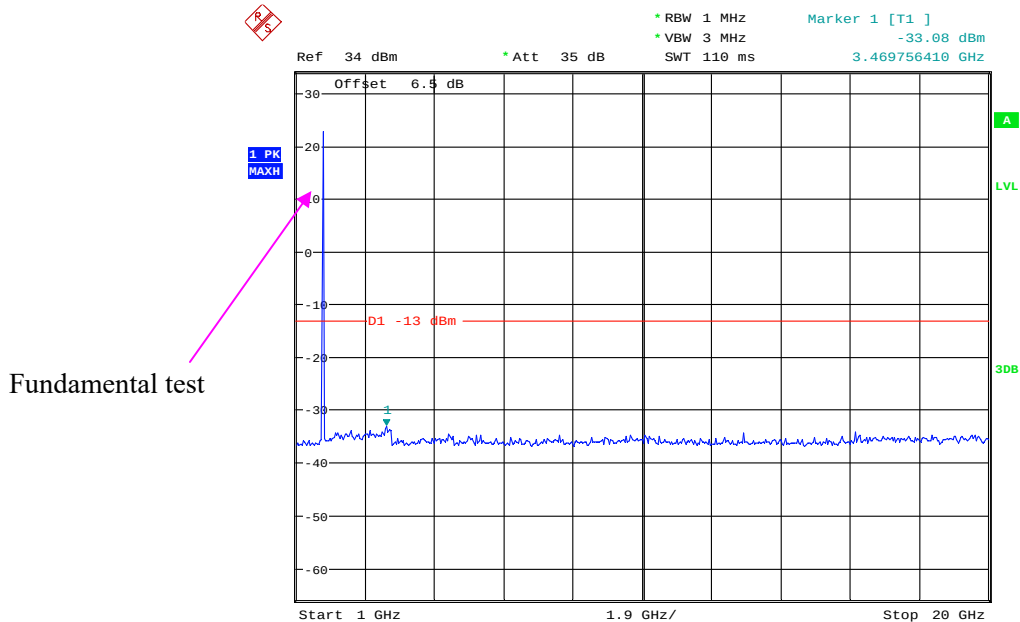
Middle Channel

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:46:02

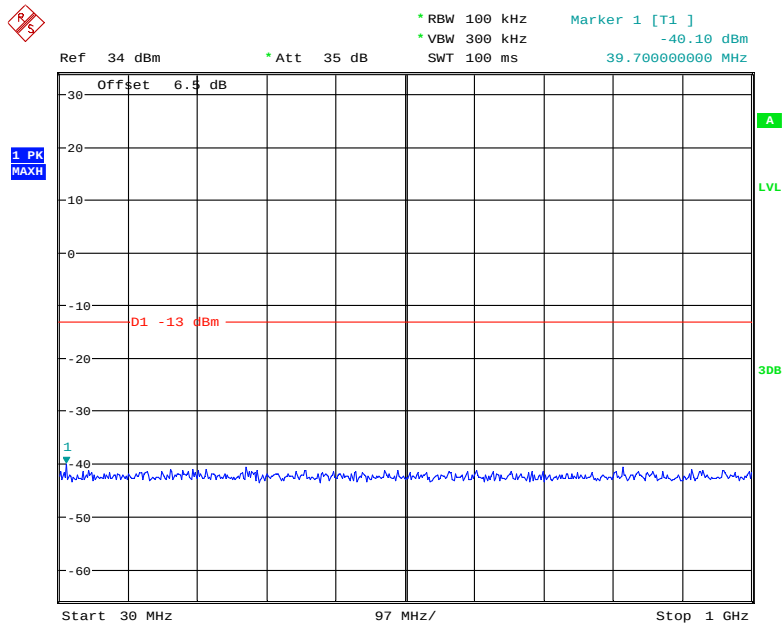
1 GHz – 20 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:45:14

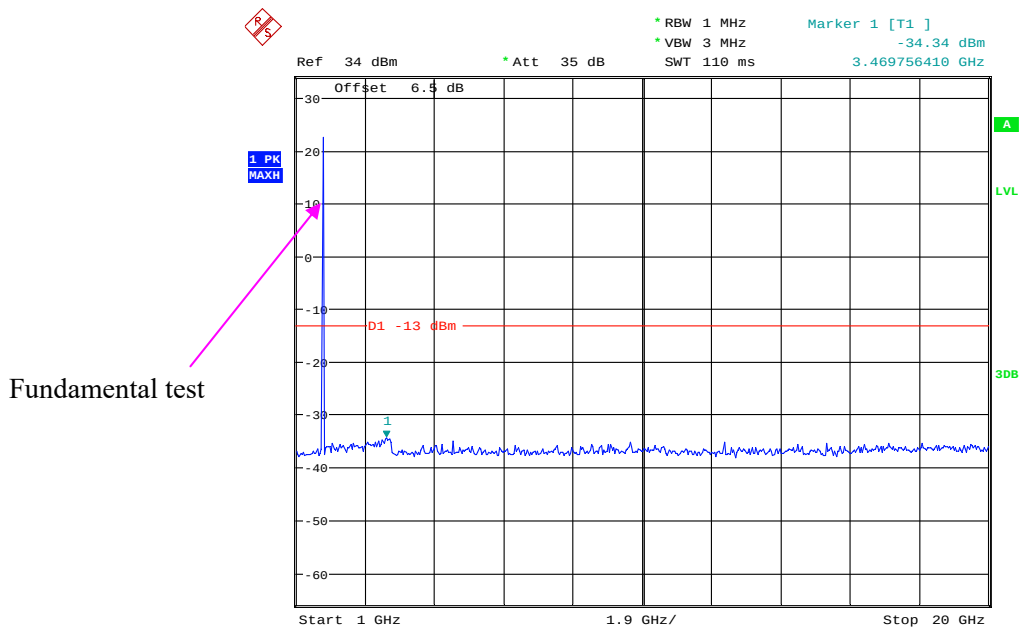
High Channel:

30 MHz – 1 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:41:35

1 GHz – 20 GHz (WCDMA Mode)



Date: 13.JAN.2021 15:43:31

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:	21.2~24 °C
Relative Humidity:	42~51 %
ATM Pressure:	101.0~101.1 kPa

The testing was performed by Holland Yang on 2021-01-15 for below 1GHz and Leven Gan on 2021-01-17 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	53.41	201	1.1	H	-54.7	1.40	8.70	-47.40	-13	34.40
1648.40	53.42	327	1.6	V	-54.4	1.40	8.70	-47.10	-13	34.10
2472.60	59.75	205	1.6	H	-43.6	2.60	10.20	-36.00	-13	23.00
2472.60	65.49	222	2.4	V	-37.3	2.60	10.20	-29.70	-13	16.70
3296.80	46.35	164	1.1	H	-54.5	1.50	11.70	-44.30	-13	31.30
3296.80	48.79	68	1.9	V	-52.1	1.50	11.70	-41.90	-13	28.90
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	53.24	141	2.1	H	-53.1	1.30	8.90	-45.50	-13	32.50
1673.20	52.93	275	1.8	V	-52.8	1.30	8.90	-45.20	-13	32.20
2509.80	60.41	322	1.1	H	-42.9	2.60	10.20	-35.30	-13	22.30
2509.80	65.76	47	2.2	V	-37.0	2.60	10.20	-29.40	-13	16.40
3346.40	47.13	121	2.3	H	-53.8	1.50	11.70	-43.60	-13	30.60
3346.40	48.49	286	1.1	V	-52.4	1.50	11.70	-42.20	-13	29.20
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	51.48	168	1.0	H	-54.9	1.30	8.90	-47.30	-13	34.30
1697.60	53.29	167	2.3	V	-52.4	1.30	8.90	-44.80	-13	31.80
2546.40	60.12	306	1.1	H	-43.2	2.60	10.20	-35.60	-13	22.60
2546.40	66.37	219	1.2	V	-36.4	2.60	10.20	-28.80	-13	15.80
3395.20	46.87	126	2.5	H	-54.4	1.40	11.80	-44.00	-13	31.00
3395.20	49.15	221	2.1	V	-51.9	1.40	11.80	-41.50	-13	28.50

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										
962.3	32.69	226	1.6	H	-63.8	1.36	0.0	-65.16	-13	52.16
962.3	33.54	254	1.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
1652.80	49.41	93	2.4	H	-56.9	1.30	8.90	-49.30	-13	36.30
1652.80	47.71	350	1.0	V	-58.0	1.30	8.90	-50.40	-13	37.40
2479.20	45.12	240	1.5	H	-58.2	2.60	10.20	-50.60	-13	37.60
2479.20	44.87	151	1.5	V	-57.9	2.60	10.20	-50.30	-13	37.30
3305.60	44.26	311	1.1	H	-56.6	1.50	11.70	-46.40	-13	33.40
3305.60	43.97	271	2.3	V	-57.0	1.50	11.70	-46.80	-13	33.80
Middle channel										
963.6	32.67	62	1.9	H	-63.8	1.36	0.0	-65.16	-13	52.16
963.6	33.72	244	1.7	V	-60.3	1.36	0.0	-61.66	-13	48.66
1673.20	50.12	29	2.3	H	-56.2	1.30	8.90	-48.60	-13	35.60
1673.20	48.24	109	1.7	V	-57.5	1.30	8.90	-49.90	-13	36.90
2509.80	45.24	184	1.1	H	-58.1	2.60	10.20	-50.50	-13	37.50
2509.80	43.96	17	2.1	V	-58.8	2.60	10.20	-51.20	-13	38.20
3346.40	44.19	266	1.4	H	-56.7	1.50	11.70	-46.50	-13	33.50
3346.40	44.02	123	1.9	V	-56.9	1.50	11.70	-46.70	-13	33.70
High channel										
966.8	32.72	329	2.2	H	-63.8	1.36	0.0	-65.16	-13	52.16
966.8	33.58	205	1.6	V	-60.5	1.36	0.0	-61.86	-13	48.86
1693.20	49.12	116	1.5	H	-57.2	1.30	8.90	-49.60	-13	36.60
1693.20	48.31	326	2.0	V	-57.4	1.30	8.90	-49.80	-13	36.80
2539.80	45.19	288	1.2	H	-58.2	2.60	10.20	-50.60	-13	37.60
2539.80	44.24	222	2.3	V	-58.5	2.60	10.20	-50.90	-13	37.90
3386.40	43.87	203	1.9	H	-57.4	1.40	11.80	-47.00	-13	34.00
3386.40	43.92	56	1.9	V	-57.1	1.40	11.80	-46.70	-13	33.70

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	49.42	328	1.5	H	-52.4	1.60	11.90	-42.10	-13	29.10
3700.40	48.62	344	2.5	V	-52.6	1.60	11.90	-42.30	-13	29.30
Middle channel										
963.2	32.44	329	2.4	H	-64.1	1.36	0.0	-65.46	-13	52.46
963.2	33.66	97	2.3	V	-60.4	1.36	0.0	-61.76	-13	48.76
3760.00	50.04	322	1.0	H	-52.0	1.50	11.80	-41.70	-13	28.70
3760.00	49.17	149	2.0	V	-52.4	1.50	11.80	-42.10	-13	29.10
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	50.75	276	1.9	H	-51.3	1.50	11.80	-41.00	-13	28.00
3819.60	48.18	137	1.7	V	-53.4	1.50	11.80	-43.10	-13	30.10

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										
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
3704.80	46.41	355	1.9	H	-55.4	1.60	11.90	-45.10	-13	32.10
3704.80	48.18	167	1.9	V	-53.0	1.60	11.90	-42.70	-13	29.70
Middle channel										
954.7	32.52	32	1.4	H	-64.0	1.36	0.0	-65.36	-13	52.36
954.7	33.65	155	1.2	V	-60.4	1.36	0.0	-61.76	-13	48.76
3760.00	46.81	99	2.2	H	-55.2	1.50	11.80	-44.90	-13	31.90
3760.00	47.49	167	1.7	V	-54.1	1.50	11.80	-43.80	-13	30.80
High channel										
961.2	32.64	17	2.2	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.2	33.58	109	1.5	V	-60.5	1.36	0.0	-61.86	-13	48.86
3815.20	46.17	119	1.2	H	-55.9	1.50	11.80	-45.60	-13	32.60
3815.20	48.23	23	2.2	V	-53.4	1.50	11.80	-43.10	-13	30.10

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										
958.3	32.59	24	1.3	H	-63.9	1.36	0.0	-65.26	-13	52.26
958.3	33.63	216	2.2	V	-60.4	1.36	0.0	-61.76	-13	48.76
3424.80	46.18	189	2.3	H	-54.6	1.40	11.80	-44.20	-13	31.20
3424.80	47.67	188	2.5	V	-52.9	1.40	11.80	-42.50	-13	29.50
Middle channel										
959.6	32.66	170	1.1	H	-63.8	1.36	0.0	-65.16	-13	52.16
959.6	33.49	322	2.0	V	-60.6	1.36	0.0	-61.96	-13	48.96
3465.20	46.35	0	1.4	H	-54.4	1.50	12.00	-43.90	-13	30.90
3465.20	48.14	262	1.7	V	-53.4	1.50	12.00	-42.90	-13	29.90
High channel										
964.8	32.52	25	1.1	H	-64.0	1.36	0.0	-65.36	-13	52.36
964.8	33.73	167	2.3	V	-60.3	1.36	0.0	-61.66	-13	48.66
3505.20	46.29	38	2.0	H	-54.5	1.50	12.00	-44.00	-13	31.00
3505.20	47.71	360	2.2	V	-53.8	1.50	12.00	-43.30	-13	30.30

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										
963.9	32.74	192	1.7	H	-63.8	1.36	0.0	-65.16	-13	52.16
963.9	33.49	308	2.0	V	-60.6	1.36	0.0	-61.96	-13	48.96
3701.40	48.24	50	2.5	H	-53.6	1.60	11.90	-43.30	-13	30.30
3701.40	45.74	1	2.4	V	-55.5	1.60	11.90	-45.20	-13	32.20
1.4 MHz, Middle channel										
958.6	32.55	92	2.5	H	-64.0	1.36	0.0	-65.36	-13	52.36
958.6	33.43	1	1.6	V	-60.6	1.36	0.0	-61.96	-13	48.96
3760.00	48.42	31	1.2	H	-53.6	1.50	11.80	-43.30	-13	30.30
3760.00	46.23	252	1.8	V	-55.4	1.50	11.80	-45.10	-13	32.10
1.4 MHz, High channel										
959.7	32.59	186	2.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
959.7	33.53	21	1.1	V	-60.5	1.36	0.0	-61.86	-13	48.86
3818.60	47.42	135	2.1	H	-54.6	1.50	11.80	-44.30	-13	31.30
3818.60	46.28	151	1.3	V	-55.3	1.50	11.80	-45.00	-13	32.00
Band 4										
Test frequency range:30 MHz ~ 20 GHz										
1.4 MHz, Low channel										
957.3	32.86	229	2.0	H	-63.6	1.36	0.0	-64.96	-13	51.96
957.3	33.66	79	1.6	V	-60.4	1.36	0.0	-61.76	-13	48.76
3421.40	50.42	132	2.4	H	-50.4	1.40	11.80	-40.00	-13	27.00
3421.40	48.16	90	1.2	V	-52.4	1.40	11.80	-42.00	-13	29.00
1.4 MHz, Middle 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
3465.00	49.42	42	1.2	H	-51.3	1.50	12.00	-40.80	-13	27.80
3465.00	47.79	52	1.3	V	-53.7	1.50	12.00	-43.20	-13	30.20
1.4 MHz, High channel										
966.8	32.85	109	1.3	H	-63.7	1.36	0.0	-65.06	-13	52.06
966.8	33.71	304	2.5	V	-60.3	1.36	0.0	-61.66	-13	48.66
3508.60	50.42	85	2.3	H	-50.3	1.50	12.00	-39.80	-13	26.80
3508.60	47.39	96	1.1	V	-54.1	1.50	12.00	-43.60	-13	30.60

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										
1.4 MHz, Low 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
1649.40	52.67	242	1.7	H	-55.4	1.40	8.70	-48.10	-13	35.10
1649.40	52.87	136	1.2	V	-55.0	1.40	8.70	-47.70	-13	34.70
2474.10	52.41	153	1.9	H	-50.9	2.60	10.20	-43.30	-13	30.30
2474.10	53.17	115	2.1	V	-49.6	2.60	10.20	-42.00	-13	29.00
3298.80	47.81	111	1.5	H	-53.1	1.50	11.70	-42.90	-13	29.90
3298.80	48.04	283	1.5	V	-52.9	1.50	11.70	-42.70	-13	29.70
1.4 MHz, Middle channel										
961.7	32.59	157	2.4	H	-63.9	1.36	0.0	-65.26	-13	52.26
961.7	33.71	301	1.6	V	-60.3	1.36	0.0	-61.66	-13	48.66
1673.00	52.84	121	1.1	H	-53.5	1.30	8.90	-45.90	-13	32.90
1673.00	53.73	253	1.7	V	-52.0	1.30	8.90	-44.40	-13	31.40
2509.50	49.63	304	2.2	H	-53.7	2.60	10.20	-46.10	-13	33.10
2509.50	50.17	154	1.0	V	-52.6	2.60	10.20	-45.00	-13	32.00
3346.00	47.43	280	2.3	H	-53.5	1.50	11.70	-43.30	-13	30.30
3346.00	47.81	244	2.4	V	-53.1	1.50	11.70	-42.90	-13	29.90
1.4 MHz, High channel										
963.6	32.46	200	2.1	H	-64.0	1.36	0.0	-65.36	-13	52.36
963.6	33.63	77	2.1	V	-60.4	1.36	0.0	-61.76	-13	48.76
1696.60	52.41	161	2.1	H	-53.9	1.30	8.90	-46.30	-13	33.30
1696.60	54.17	224	2.3	V	-51.6	1.30	8.90	-44.00	-13	31.00
2544.90	50.12	179	1.3	H	-53.2	2.60	10.20	-45.60	-13	32.60
2544.90	51.64	281	1.8	V	-51.1	2.60	10.20	-43.50	-13	30.50
3393.20	46.87	107	1.4	H	-54.4	1.40	11.80	-44.00	-13	31.00
3393.20	47.93	197	2.2	V	-53.1	1.40	11.80	-42.70	-13	29.70

Frequency	Receiver	Turntable	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
(MHz)	Reading (dBμV)	Angle Degree	Height (m)	Polar (H/V)	Level (dBm)	Cable Loss (dB)	Antenna Gain (dBd/dBi)			
Band 7										
Test frequency range: 30 MHz ~26.5GHz										
5 MHz, Low channel										
962.3	32.58	313	1.2	H	-63.9	1.36	0.0	-65.26	-25	40.26
962.3	33.67	42	2.0	V	-60.4	1.36	0.0	-61.76	-25	36.76
5005.00	55.75	335	2.3	H	-44.8	1.70	12.00	-34.50	-25	9.50
5005.00	53.18	208	2.4	V	-46.9	1.70	12.00	-36.60	-25	11.60
5 MHz, Middle channel										
959.3	32.53	129	1.3	H	-64.0	1.36	0.0	-65.36	-25	40.36
959.3	33.61	146	1.8	V	-60.4	1.36	0.0	-61.76	-25	36.76
5070.00	56.19	304	2.4	H	-43.8	1.60	12.10	-33.30	-25	8.30
5070.00	55.90	177	1.9	V	-44.1	1.60	12.10	-33.60	-25	8.60
5 MHz, High channel										
960.1	32.64	251	2.4	H	-63.9	1.36	0.0	-65.26	-25	40.26
960.1	33.77	172	2.2	V	-60.3	1.36	0.0	-61.66	-25	36.66
5135.00	56.14	277	2.4	H	-43.9	1.60	12.10	-33.40	-25	8.40
5135.00	55.75	342	2.0	V	-44.3	1.60	12.10	-33.80	-25	8.80
Band 66										
Test frequency range: 30 MHz ~ 20GHz										
1.4 MHz, Low channel										
957.8	32.58	315	1.7	H	-63.9	1.36	0.0	-65.26	-13	52.26
957.8	33.65	218	1.7	V	-60.4	1.36	0.0	-61.76	-13	48.76
3421.40	50.75	179	2.4	H	-50.0	1.40	11.80	-39.60	-13	26.60
3421.40	50.17	256	2.0	V	-50.4	1.40	11.80	-40.00	-13	27.00
1.4 MHz, Middle channel										
963.1	32.54	222	1.9	H	-64.0	1.36	0.0	-65.36	-13	52.36
963.1	33.59	304	2.0	V	-60.5	1.36	0.0	-61.86	-13	48.86
3510.00	50.47	50	2.1	H	-50.3	1.50	12.00	-39.80	-13	26.80
3510.00	48.92	350	1.4	V	-52.6	1.50	12.00	-42.10	-13	29.10
1.4 MHz, High channel										
963.4	32.63	266	2.0	H	-63.9	1.36	0.0	-65.26	-13	52.26
963.4	33.54	168	1.9	V	-60.5	1.36	0.0	-61.86	-13	48.86
3558.60	51.47	50	1.3	H	-50.1	1.50	12.10	-39.50	-13	26.50
3558.60	49.53	300	1.4	V	-51.5	1.50	12.10	-40.90	-13	27.90

Note:

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Limit- Absolute Level

dBd is for the ERP, dBi is for EIRP.

FCC § 22.917 (a); § 24.238 (a); §27.53 (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.

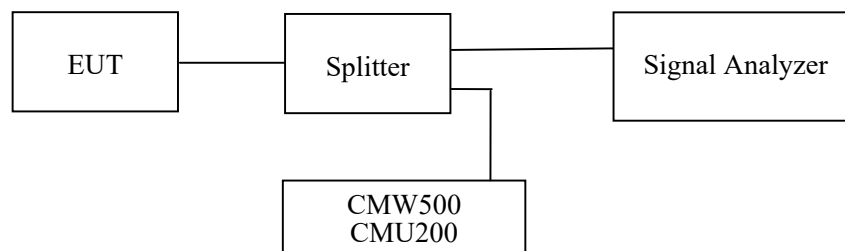
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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

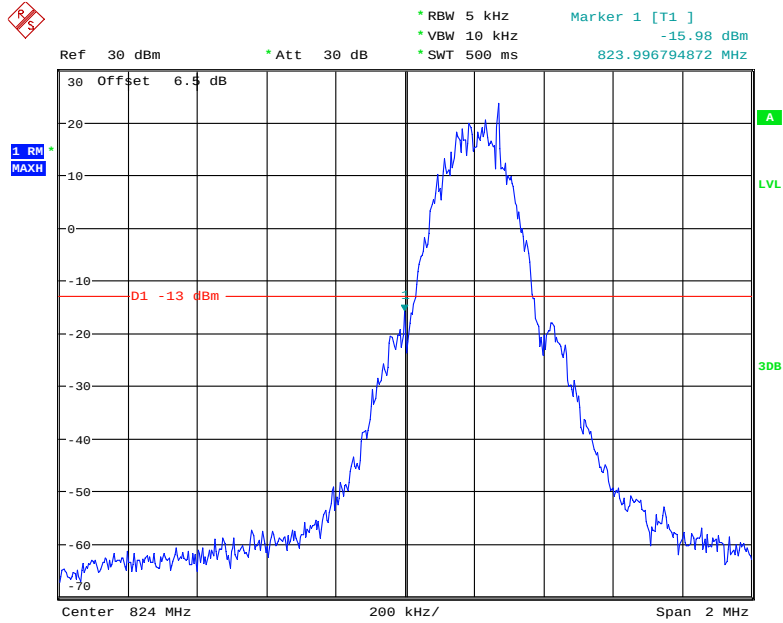
The testing was performed by Alan He and Blaker Zhang from 2021-01-12 to 2021-02-04.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

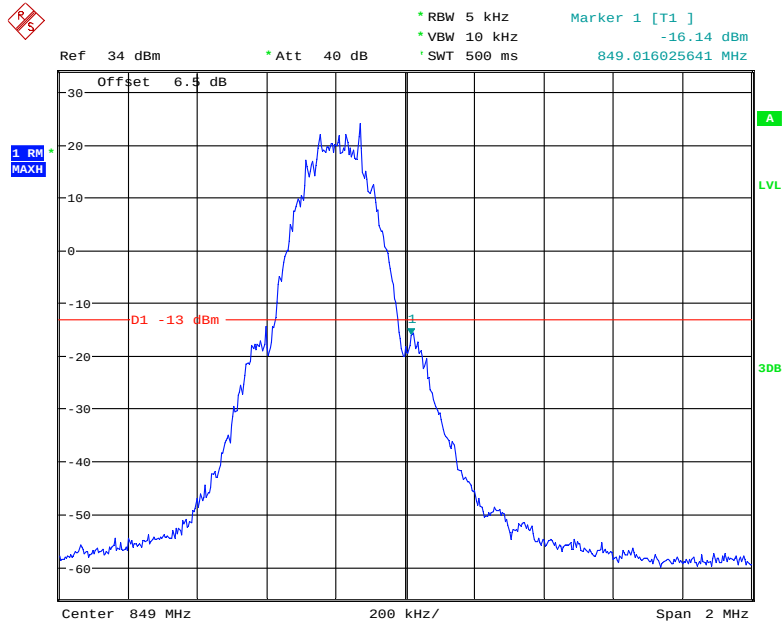
Please refer to the following plots.

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



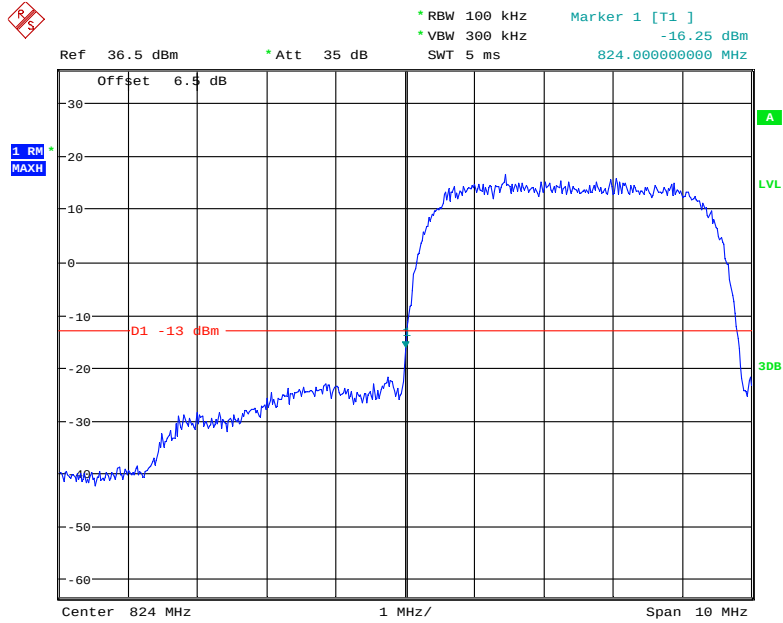
Date: 12.JAN.2021 17:15:36

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



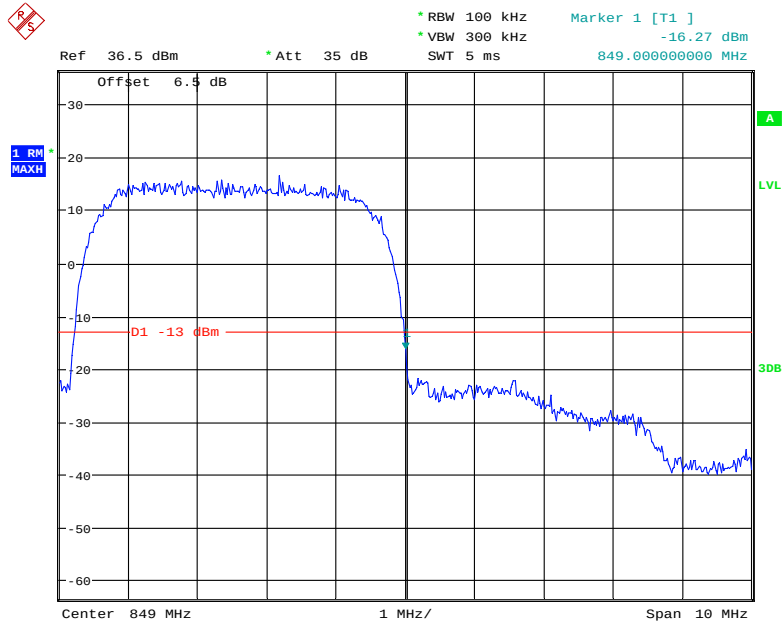
Date: 12.JAN.2021 17:24:58

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



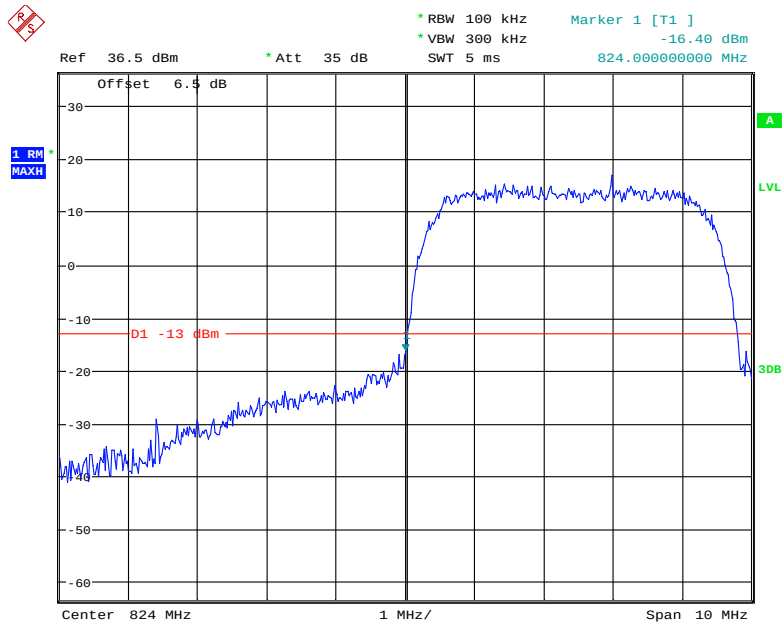
Date: 13.JAN.2021 11:58:28

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



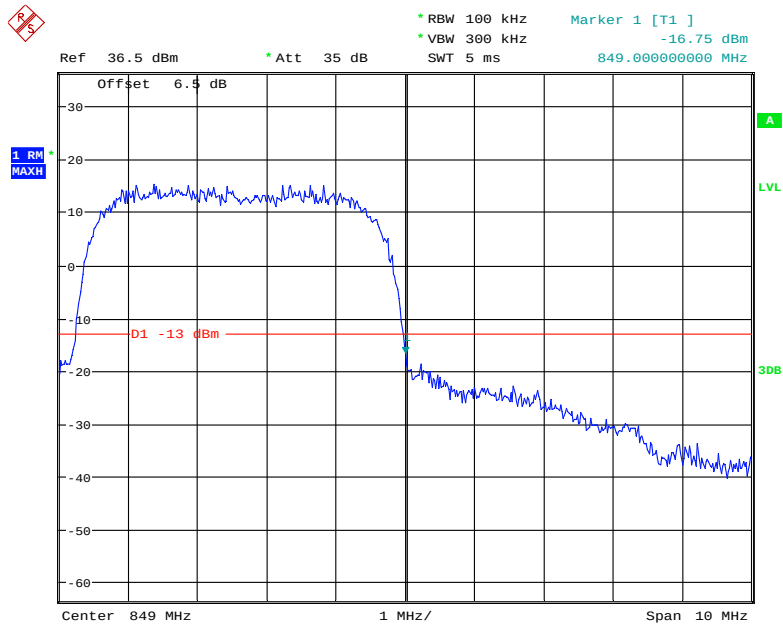
Date: 13.JAN.2021 11:57:54

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



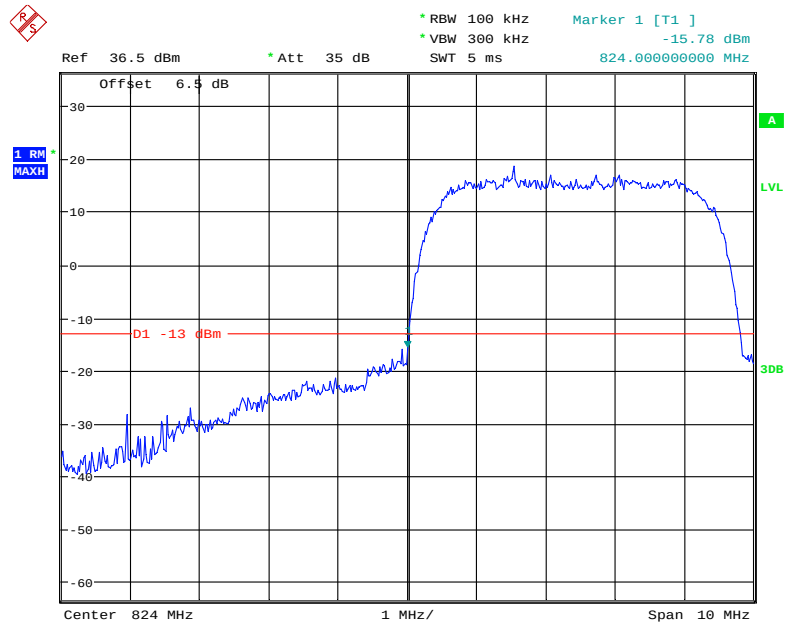
Date: 13.JAN.2021 11:56:34

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



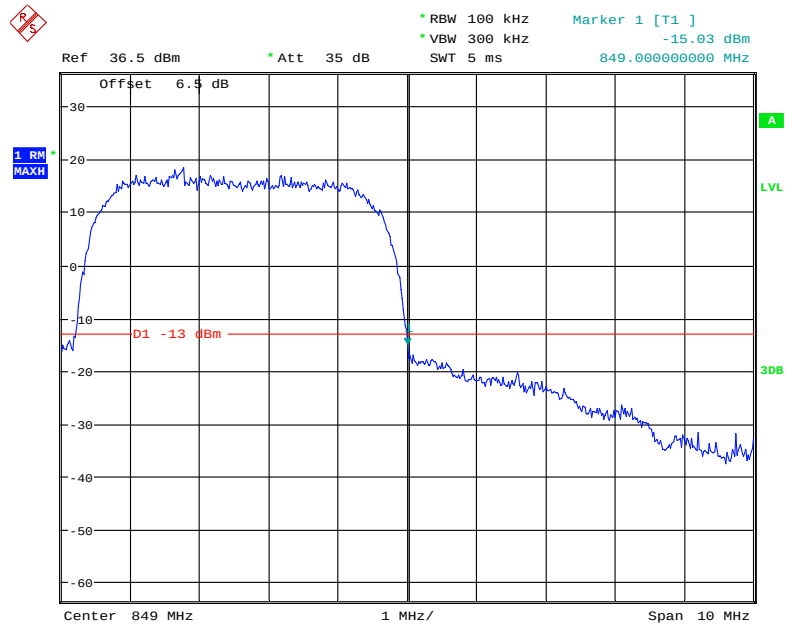
Date: 13.JAN.2021 11:57:06

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



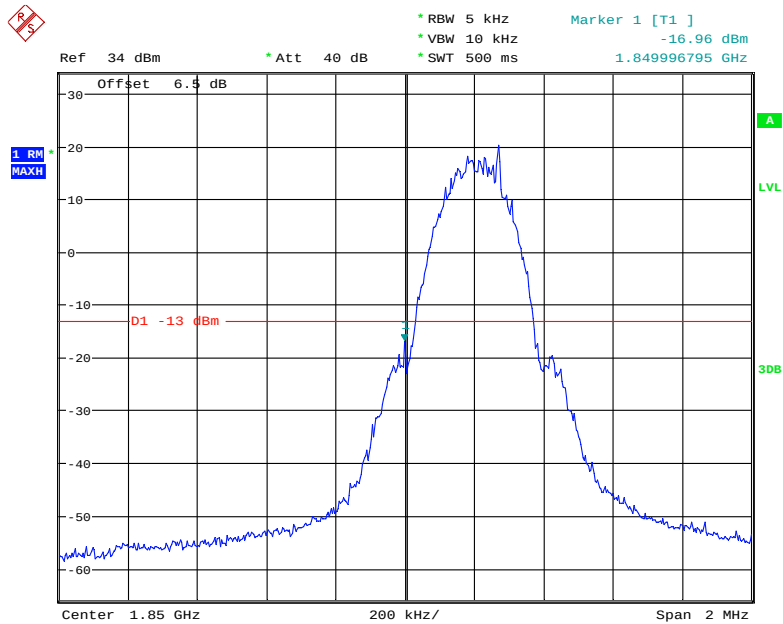
Date: 13.JAN.2021 11:54:13

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



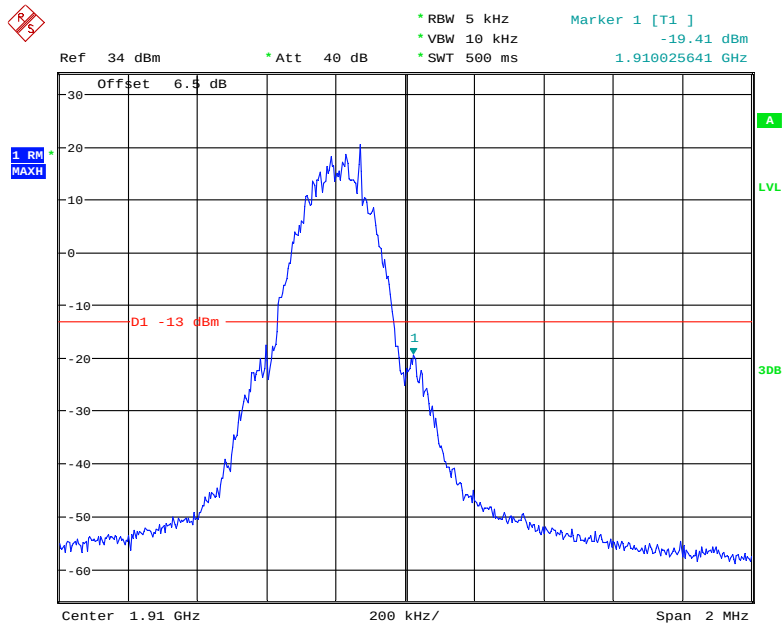
Date: 13.JAN.2021 11:51:36

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



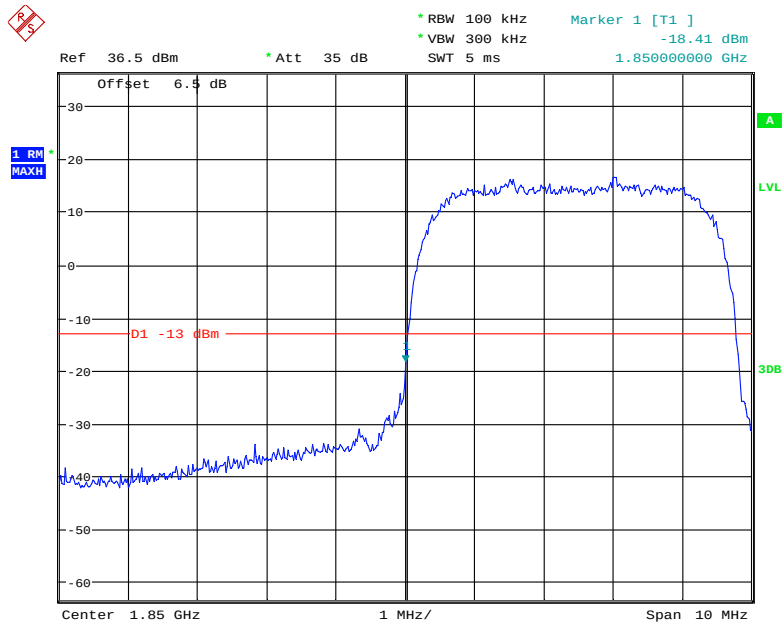
Date: 12.JAN.2021 17:42:23

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



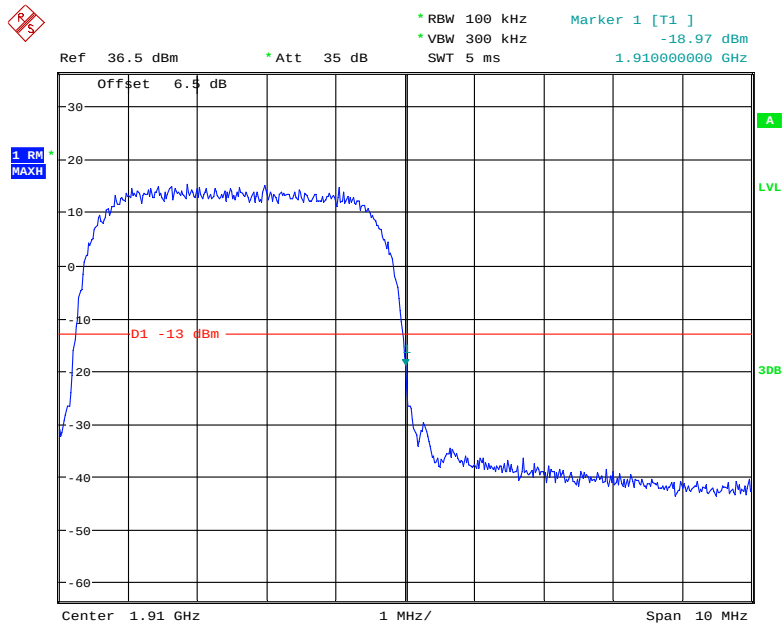
Date: 12.JAN.2021 17:51:13

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



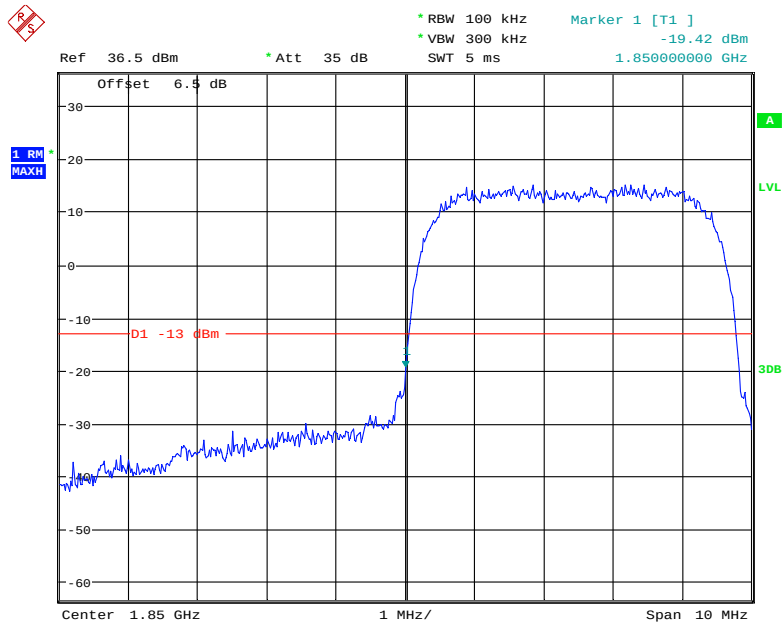
Date: 13.JAN.2021 12:00:59

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



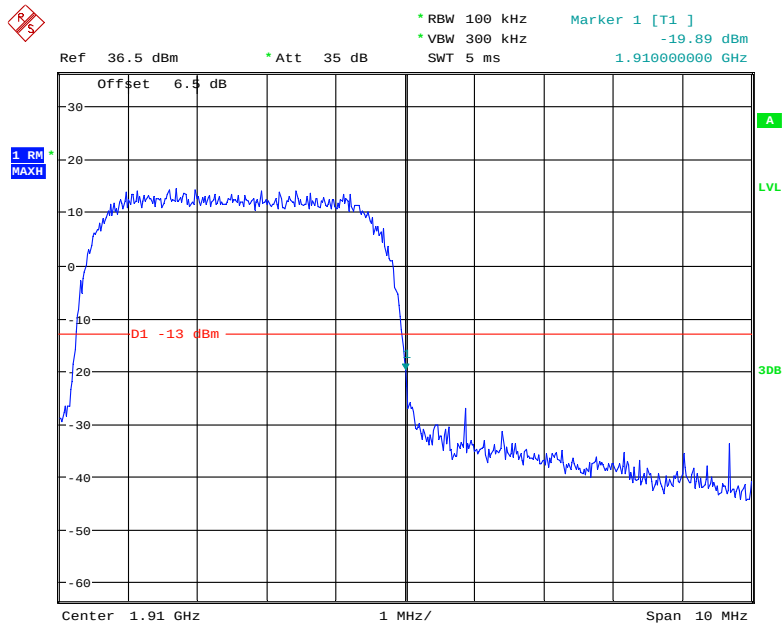
Date: 13.JAN.2021 12:02:16

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



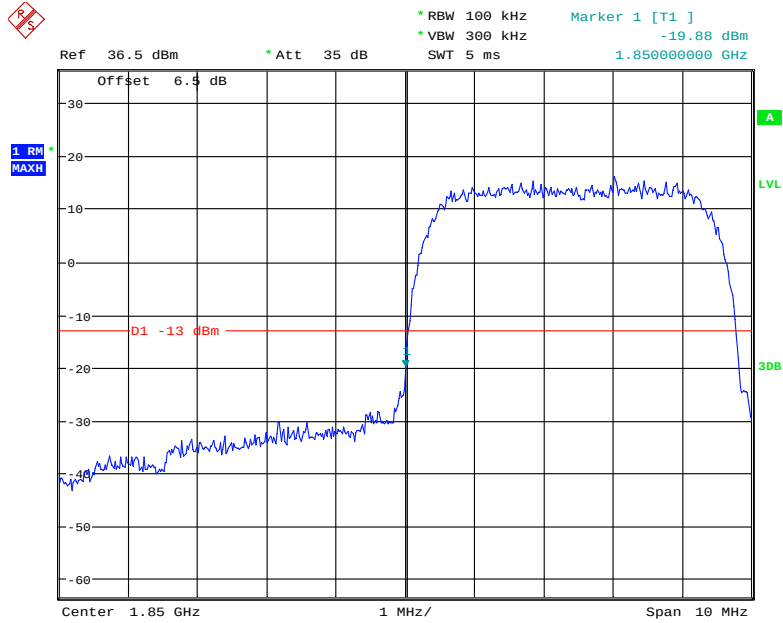
Date: 13.JAN.2021 13:13:36

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



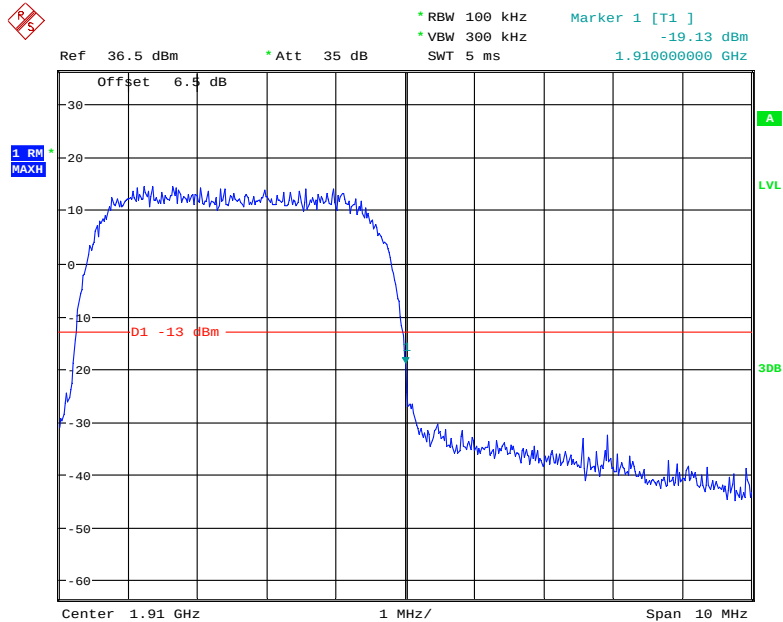
Date: 13.JAN.2021 13:12:32

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



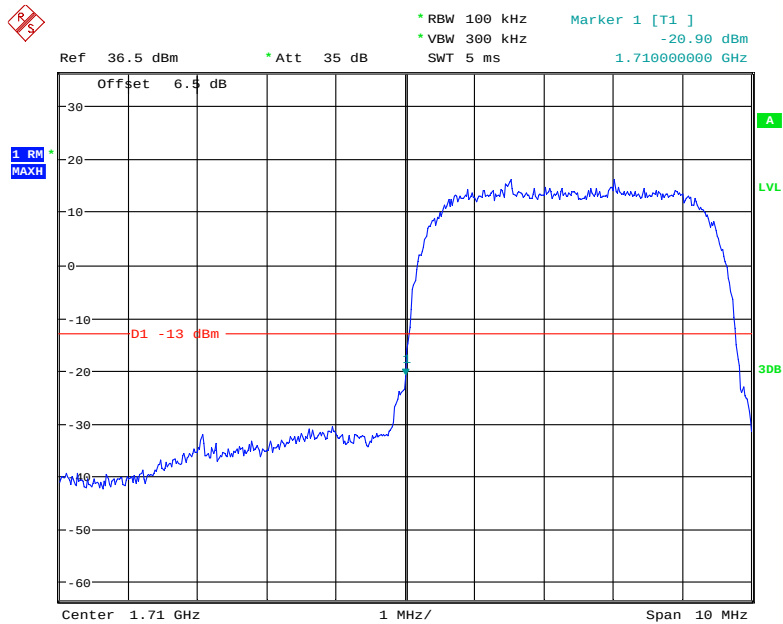
Date: 13.JAN.2021 13:14:27

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



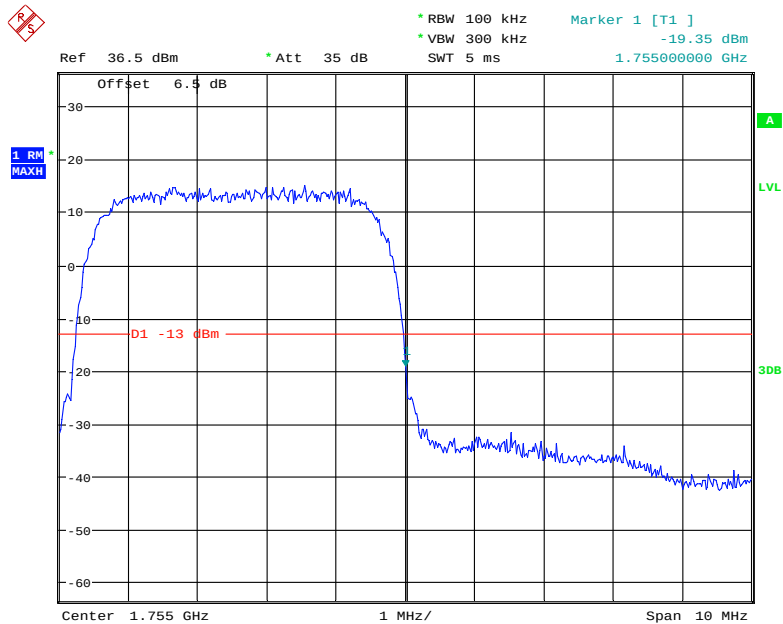
Date: 13.JAN.2021 13:15:23

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



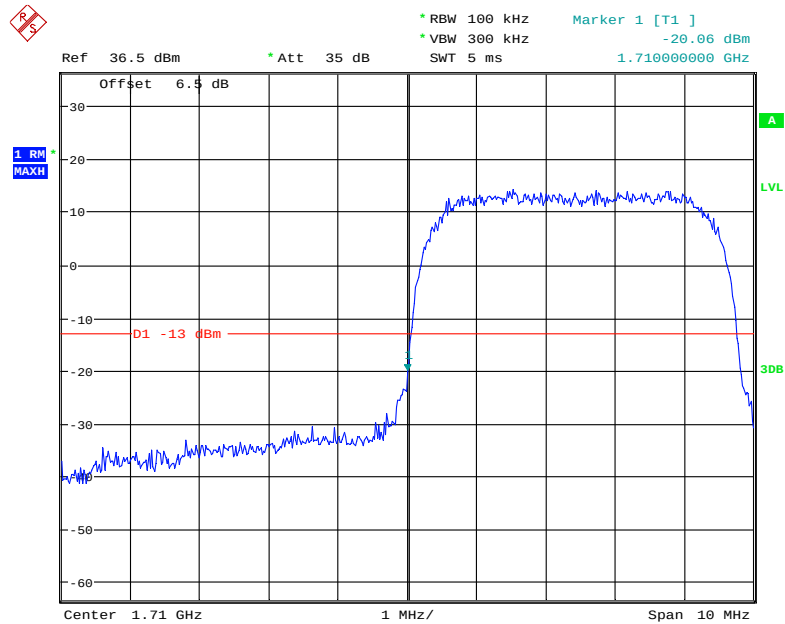
Date: 13.JAN.2021 13:34:04

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



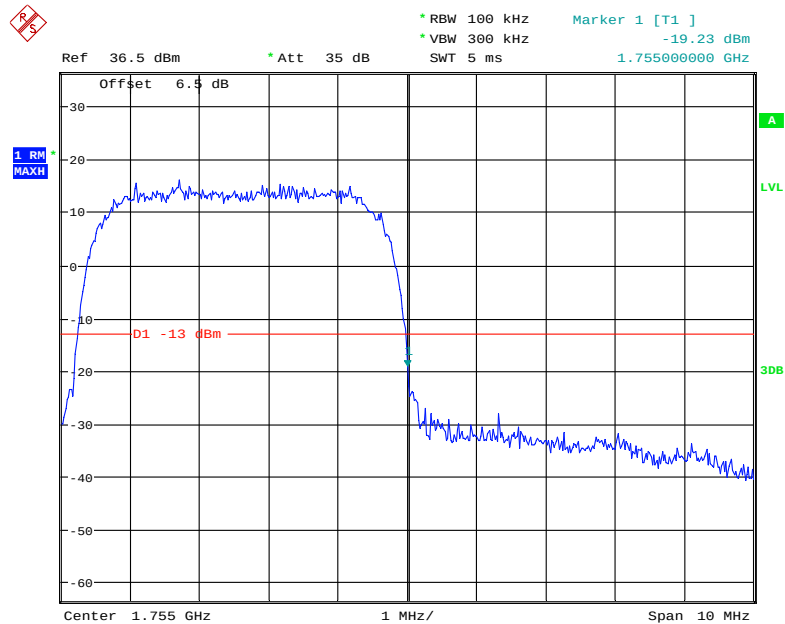
Date: 13.JAN.2021 13:31:49

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



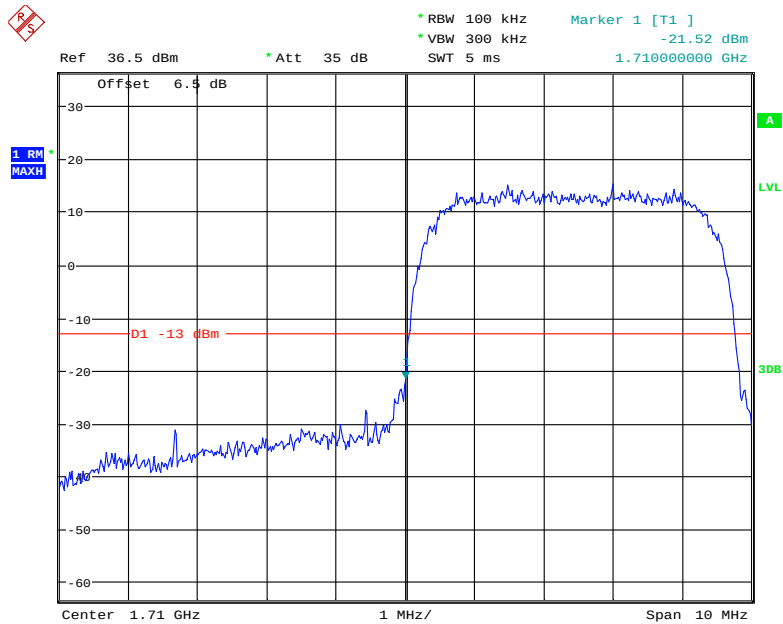
Date: 13.JAN.2021 13:37:38

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



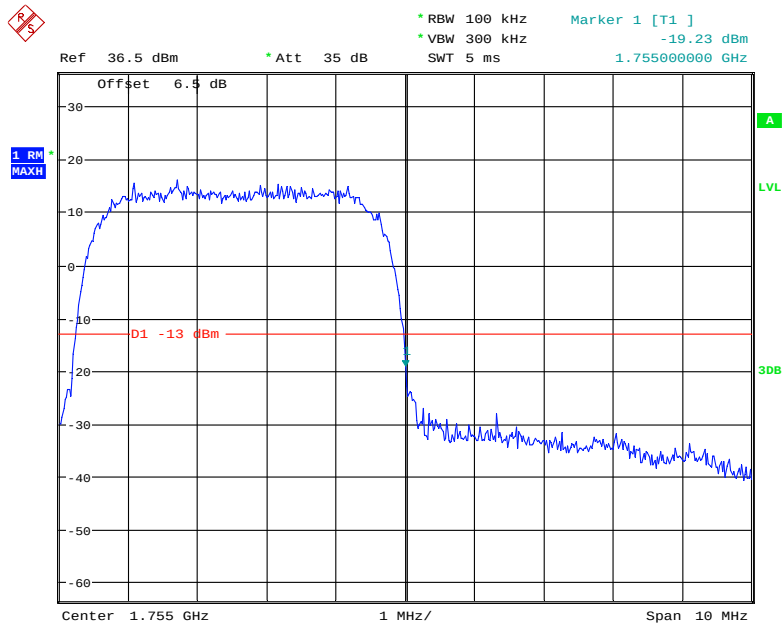
Date: 13.JAN.2021 13:40:19

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



Date: 13.JAN.2021 13:41:00

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



Date: 13.JAN.2021 13:40:19

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

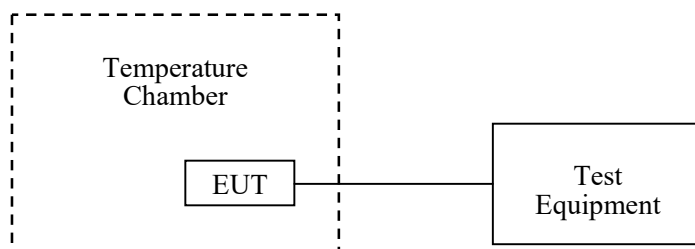
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

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 Alan He and Blaker Zhang from 2021-01-12 to 2021-02-04.

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		-2	-0.0024	2.5
-10		-2	-0.0024	2.5
0		-1	-0.0012	2.5
10		-2	-0.0024	2.5
20		-1	-0.0012	2.5
30		0	0.0000	2.5
40		0	0.0000	2.5
50		-2	-0.0024	2.5
20	V min.= 3.5	1	0.0012	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	3	0.0036	2.5
-20		2	0.0024	2.5
-10		5	0.0060	2.5
0		7	0.0084	2.5
10		6	0.0072	2.5
20		2	0.0024	2.5
30		4	0.0048	2.5
40		3	0.0036	2.5
50		1	0.0012	2.5
20	V min.= 3.5	7	0.0084	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		3	0.0016	pass
-10		5	0.0027	pass
0		1	0.0005	pass
10		0	0.0000	pass
20		2	0.0011	pass
30		3	0.0016	pass
40		5	0.0027	pass
50		1	0.0005	pass
20	V min.= 3.5	2	0.0011	pass
	V max.= 4.35	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	3.8	-2	-0.0011	pass
-20		-1	-0.0005	pass
-10		0	0.0000	pass
0		2	0.0011	pass
10		5	0.0027	pass
20		-3	-0.0016	pass
30		-2	-0.0011	pass
40		-4	-0.0021	pass
50		-5	-0.0027	pass
20	V min.= 3.5	-2	-0.0011	pass
	V max.= 4.35	-3	-0.0016	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	1710.0392	1754.5410	1710	1755
-20		1710.0353	1754.5406	1710	1755
-10		1710.0392	1754.5398	1710	1755
0		1710.0399	1754.5398	1710	1755
10		1710.0355	1754.5360	1710	1755
20		1710.0402	1754.5401	1710	1755
30		1710.0328	1754.5351	1710	1755
40		1710.0367	1754.5391	1710	1755
50		1710.0385	1754.5340	1710	1755
20	V min.= 3.5	1710.0383	1754.5358	1710	1755
	V max.= 4.35	1710.0334	1754.5386	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	30.31	0.0161	pass
-20		9.11	0.0048	pass
-10		8.51	0.0045	pass
0		-7.15	-0.0038	pass
10		-5.29	-0.0028	pass
20		7.24	0.0039	pass
30		-5.81	-0.0031	pass
40		5.59	0.003	pass
50		6.87	0.0037	pass
20	V min.= 3.5	9.94	0.0053	pass
	V max.= 4.35	9.99	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	1710.2629	1754.8422	1710	1755
-20		1710.2704	1754.8469	1710	1755
-10		1710.2699	1754.8463	1710	1755
0		1710.2658	1754.8404	1710	1755
10		1710.2658	1754.8421	1710	1755
20		1710.2653	1754.8405	1710	1755
30		1710.2682	1754.8395	1710	1755
40		1710.2643	1754.8416	1710	1755
50		1710.2638	1754.8441	1710	1755
20	V min.= 3.5	1710.2704	1754.8393	1710	1755
	V max.= 4.35	1710.2684	1754.8413	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	13.09	0.0156	2.5
-20		-7.53	-0.009	2.5
-10		-7.80	-0.0093	2.5
0		8.82	0.0105	2.5
10		-7.19	-0.0086	2.5
20		6.69	0.008	2.5
30		-7.11	-0.0085	2.5
40		-9.97	-0.0119	2.5
50		-8.77	-0.0105	2.5
20	V min.= 3.5	6.12	0.0073	2.5
	V max.= 4.35	7.05	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	2500.3671	2569.7465	2500	2570
-20		2500.3684	2569.7486	2500	2570
-10		2500.3686	2569.7442	2500	2570
0		2500.3637	2569.7473	2500	2570
10		2500.3651	2569.7452	2500	2570
20		2500.3657	2569.7465	2500	2570
30		2500.3690	2569.7475	2500	2570
40		2500.3639	2569.7465	2500	2570
50		2500.3670	2569.7472	2500	2570
20	V min.= 3.5	2500.3682	2569.7455	2500	2570
	V max.= 4.35	2500.3653	2569.7426	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	1710.1231	1779.8542	1710	1780
-20		1710.1219	1779.8545	1710	1780
-10		1710.1281	1779.8564	1710	1780
0		1710.1224	1779.8475	1710	1780
10		1710.1245	1779.8537	1710	1780
20		1710.1242	1779.8547	1710	1780
30		1710.1275	1779.8517	1710	1780
40		1710.1261	1779.8539	1710	1780
50		1710.1257	1779.8542	1710	1780
20	V min.= 3.5	1710.1231	1779.8547	1710	1780
	V max.= 4.35	1710.1251	1779.8523	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	11.39	0.0061	pass
-20		6.80	0.0036	pass
-10		-9.52	-0.0051	pass
0		-8.15	-0.0043	pass
10		-8.88	-0.0047	pass
20		-9.82	-0.0052	pass
30		8.38	0.0045	pass
40		6.75	0.0036	pass
50		-5.89	-0.0031	pass
20	V min.= 3.5	8.98	0.0048	pass
	V max.= 4.35	-7.83	-0.0042	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	1710.4252	1754.6841	1710	1755
-20		1710.4285	1754.6832	1710	1755
-10		1710.4262	1754.6839	1710	1755
0		1710.4285	1754.6860	1710	1755
10		1710.4254	1754.6845	1710	1755
20		1710.4237	1754.6818	1710	1755
30		1710.4256	1754.6850	1710	1755
40		1710.4274	1754.6823	1710	1755
50		1710.4266	1754.6887	1710	1755
20	V min.= 3.5	1710.4229	1754.6841	1710	1755
	V max.= 4.35	1710.4255	1754.6880	1710	1755

Band 5:

10.0 MHz Middle Channel, f ₀ = 836.5 MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	3.8	7.05	0.0084	2.5
-20		-15.41	-0.0184	2.5
-10		-5.79	-0.0069	2.5
0		-7.69	-0.0092	2.5
10		-9.71	-0.0116	2.5
20		-7.72	-0.0092	2.5
30		5.04	0.006	2.5
40		-8.52	-0.0102	2.5
50		-5.96	-0.0071	2.5
20	V min.= 3.5	-5.35	-0.0064	2.5
	V max.= 4.35	-6.80	-0.0081	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	2500.2694	2569.7499	2500	2570
-20		2500.2669	2569.7492	2500	2570
-10		2500.2707	2569.7462	2500	2570
0		2500.2632	2569.7484	2500	2570
10		2500.2657	2569.7452	2500	2570
20		2500.2691	2569.7499	2500	2570
30		2500.2656	2569.7498	2500	2570
40		2500.2701	2569.7464	2500	2570
50		2500.2705	2569.7451	2500	2570
20	V min.= 3.5	2500.2628	2569.7470	2500	2570
	V max.= 4.35	2500.2638	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	1710.1224	1779.8539	1710	1780
-20		1710.1217	1779.8547	1710	1780
-10		1710.1233	1779.8501	1710	1780
0		1710.1218	1779.8498	1710	1780
10		1710.1236	1779.8526	1710	1780
20		1710.1226	1779.8513	1710	1780
30		1710.1270	1779.8504	1710	1780
40		1710.1274	1779.8509	1710	1780
50		1710.1273	1779.8529	1710	1780
20	V min.= 3.5	1710.1237	1779.8529	1710	1780
	V max.= 4.35	1710.1248	1779.8509	1710	1780

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