



TESTREPORT

Applicant Name : Shenzhen Harvilon Technology Co., Ltd
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Report Number : RA221209-60485E-RF-00B
FCC ID: ZZJ-MF833

Test Standard (s)

FCC PART 27; FCC PART 22H; FCC PART 24E; FCC PART 90

Sample Description

Product Type: Portable WiFi
Model No.: Ryoko Portable WiFi
Multiple Model(s) No.: N/A
Trade Mark: Harvilon
Date Received: 2022/12/09
Report Date: 2023/01/11

Test Result:	Pass*
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* In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

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Approved By:

Candy Li
EMC Engineer

Note: This report may contain data that are not covered by the A2LA accreditation and are marked with an asterisk "★".

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA221209-60485E-RF-00B	Original Report	2023/01/11

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 25: 1850-1915MHz(TX); 1930-1995MHz(RX) LTE Band 26(Part 22): 824-849MHz(TX); 869-894MHz(RX) LTE Band 26(Part 90): 814-824MHz(TX); 859-869MHz(RX) LTE Band 41: 2555-2655MHz(TX/RX) LTE Band 66: 1710-1780MHz(TX); 2110-2180MHz(RX)
Modulation Technique	3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	WCDMA B5/LTE B26: 0.1 dBi, WCDMA B2/ LTE B2/B25: 1.7dBi LTE B7/B41: 2.1dBi, LTE B12/B17: -0.7dBi, LTE B4/B66: 1.8dBi (provided by the applicant)
Voltage Range	DC 3.8V from battery or DC 5V from Micro USB Port
Sample serial number	1UTE-6 for Radiated Emissions Test, 1UTC-4 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Extreme condition*	L.V.: Low Voltage 3.5V _{DC} N.V.: Normal Voltage 3.8V _{DC} H.V.: High Voltage 4.35V _{DC} (provided by the applicant)

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, Part 27, and Part 90 of the Federal Communication Commission's 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
Part 90 – Private Land Mobile Radio Services

ANSI C63.26-2015: American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. 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
RF Frequency		±0.082*10 ⁻⁷
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz - 18GHz	±4.98dB
	18GHz - 26.5GHz	±5.06dB
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 Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. 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.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

Listed by Innovation, Science and Economic Development Canada (ISED), the Registration Number is 5077A.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704	707.5	711
LTE B17	5	706.5	710	713.5
	10	709	710	711
LTE B25	1.4	1850.7	1882.5	1914.3
	3	1851.5	1882.5	1913.5
	5	1852.5	1882.5	1912.5
	10	1855	1882.5	1910
	15	1857.5	1882.5	1907.5
	20	1860	1882.5	1905

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
LTE B26(Part 22H)	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
	15	831.5	836.5	841.5
LTE B26(Part 90S)	1.4	814.7	819	823.3
	3	815.5	819	822.5
	5	816.5	819	821.5
	10	/	819	/
LTE B41	5	2557.5	2605	2652.5
	10	2560	2605	2650
	15	2562.5	2605	2647.5
	20	2565	2605	2645
LTE B66	1.4	1710.7	1745	1779.3
	3	1711.5	1745	1778.5
	5	1712.5	1745	1777.5
	10	1715	1745	1775
	15	1717.5	1745	1772.5
	20	1720	1745	1770

Equipment Modifications

No modification was made to the EUT.

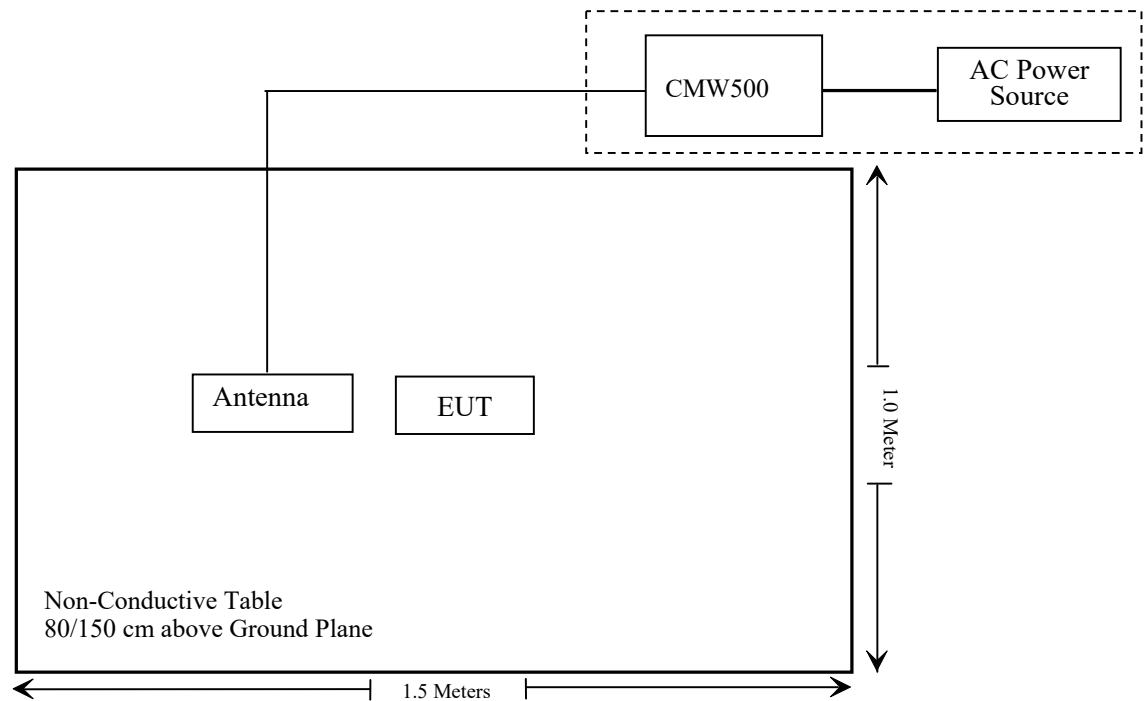
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606

Support Cable Description

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

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 ,§2.1093	RF Exposure (SAR)	Compliant*
§2.1046; § 22.913 (a) (d); § 24.232 (c) (d); §27.50 (c) (d) (h); §90.635	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53 §90.209	Occupied Bandwidth	Compliant
§ 2.1051; §22.917 (a); § 24.238 (a); §27.53; §90.691	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53 §90.691	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53 (g) (h) (m) §90.691	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54; §90.213	Frequency stability	Compliant

Note: * Please refer to SAR report number: RA221209-60484E-SA.

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2022/11/25	2023/11/24
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2022/11/25	2023/11/24
SONOMA INSTRUMENT	Amplifier	310 N	186131	2022/11/08	2023/11/07
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2022/11/08	2023/11/07
Quinstar	Amplifier	QLW-184055 36-J0	15964001002	2022/11/08	2023/11/07
Radiated Emission Test Software: e3 19821b (V9)					
Unknown	RF Coaxial Cable	No.10	N050	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.11	N1000	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.12	N040	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.13	N300	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.14	N800	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.15	N600	2022/11/25	2022/12/13
Unknown	RF Coaxial Cable	No.16	N650	2022/11/25	2022/12/13
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-024-1)	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-025-1)	2020/01/05	2023/01/04
Wainwright	High Pass Filter	WHKX3.6/18 G-10SS	5	2022/11/25	2023/11/24
CD	High Pass Filter	HPM-1.2/18G -60	110	2022/11/25	2023/11/24
Unknown	RF Coaxial Cable	No.16	N200	2022/11/25	2023/11/24
Agilent	Signal Generator	N5183A	MY51040755	2022/11/25	2023/11/24

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101948	2022/11/25	2023/11/24
SPECTRUM ANALYZER	Rohde & Schwarz	FSU26	200982	2022/07/04	2023/07/03
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2022/11/25	2023/11/24
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2022/11/25	2023/11/24
REALE	Temp. & Humid. Chamber	RHP-800BT	R20170318310	2022/11/23	2023/11/22
Manson	DC Power Source	KPS-6604	ATCS-205	NCR	NCR
Fluke	Multi Meter	45	7664009	2022/12/14	2023/12/13
Unknown	RF Coaxial Cable	No.33	RF-03	Each time	

* Statement of Traceability: Shenzhen Accurate Technology Co., Ltd. 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

Compliant, please refer to the SAR report: RA221209-60484E-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

According to FCC § 2.1047(d), Part 22H & 24E& 27& 90, there is no specific requirement for digital modulation, therefore modulation characteristic is not presented.

FCC § 2.1046, § 22.913 (a) (d) & § 24.232(c) (d); § 27.50(c)(d)(h) ; § 90.635- RF OUTPUT POWER

Applicable Standard

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

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

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

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

According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

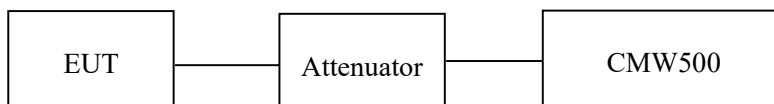
According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2496-2690MHz.

According to §90.635, the maximum ERP must not exceed 100Watts (50dBm) for 814-824MHz.

Test Procedure

Conducted method:

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



Note: the path loss (cable loss and attenuator) has including in the test result.

Test Data

Environmental Conditions

Temperature:	27~27.6℃
Relative Humidity:	54~56.4%
ATM Pressure:	101.0 kPa

The testing was performed by Clenn Jiang from 2022-12-15 to 2022-12-26.

Cellular Band (Part 22H)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		21.66	21.71	21.79	19.61	19.66	19.74
	HSDPA	1	20.77	20.83	20.88	18.72	18.78	18.83
		2	20.58	20.71	20.68	18.53	18.66	18.63
		3	20.68	20.75	20.84	18.63	18.70	18.79
		4	20.69	20.79	20.71	18.64	18.74	18.66
	HSUPA	1	20.80	21.05	20.99	18.75	19.00	18.94
		2	20.77	21.03	20.88	18.72	18.98	18.83
		3	20.68	21.01	20.74	18.63	18.96	18.69
		4	20.69	21.06	20.75	18.64	19.01	18.70
		5	20.72	21.04	20.88	18.67	18.99	18.83
	HSPA+	1	20.58	21.02	20.64	18.53	18.97	18.59

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain(dBd)

WCDMA Band5: Antenna Gain = 0.1dBi = -2.05dBd (0dBd=2.15(dBi))

Limit: ERP ≤ 38.45dBm

PCS Band (Part 24E)

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.55	23.85	23.23	25.25	25.55	24.93
	HSDPA	1	23.65	23.71	23.05	25.35	25.41	24.75
		2	23.58	23.58	23.04	25.28	25.28	24.74
		3	23.14	23.52	23.02	24.84	25.22	24.72
		4	23.22	23.16	23.11	24.92	24.86	24.81
	HSUPA	1	22.61	22.68	22.33	24.31	24.38	24.03
		2	22.58	22.58	22.15	24.28	24.28	23.85
		3	22.54	22.54	22.16	24.24	24.24	23.86
		4	22.43	22.36	22.34	24.13	24.06	24.04
		5	22.33	22.31	22.18	24.03	24.01	23.88
	HSPA+	1	22.24	22.28	22.26	23.94	23.98	23.96

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

WCDMA Band2: Antenna Gain = 1.7dBi

Limit: EIRP ≤ 33dBm

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	21.07	22.03	21.37	22.77	23.73	23.07
		RB1#3	21.21	21.94	21.27	22.91	23.64	22.97
		RB1#5	21.29	21.94	21.29	22.99	23.64	22.99
		RB3#0	21.14	21.89	21.22	22.84	23.59	22.92
		RB3#3	21.16	21.90	21.21	22.86	23.60	22.91
		RB6#0	20.42	21.07	20.46	22.12	22.77	22.16
	16QAM	RB1#0	20.54	21.10	20.38	22.24	22.80	22.08
		RB1#3	20.30	20.83	20.58	22.00	22.53	22.28
		RB1#5	20.60	21.11	20.63	22.30	22.81	22.33
		RB3#0	20.19	20.84	20.36	21.89	22.54	22.06
		RB3#3	20.25	20.88	20.44	21.95	22.58	22.14
		RB6#0	19.36	20.23	19.65	21.06	21.93	21.35
3.0	QPSK	RB1#0	21.16	22.26	21.53	22.86	23.96	23.23
		RB1#8	20.87	21.84	21.14	22.57	23.54	22.84
		RB1#14	21.36	22.22	21.46	23.06	23.92	23.16
		RB6#0	20.22	21.16	20.59	21.92	22.86	22.29
		RB6#9	20.40	21.20	20.61	22.10	22.90	22.31
		RB15#0	20.25	21.12	20.55	21.95	22.82	22.25
	16QAM	RB1#0	20.28	21.46	20.61	21.98	23.16	22.31
		RB1#8	20.20	21.06	20.28	21.90	22.76	21.98
		RB1#14	20.80	21.32	20.62	22.50	23.02	22.32
		RB6#0	19.46	20.27	19.83	21.16	21.97	21.53
		RB6#9	19.64	20.33	19.85	21.34	22.03	21.55
		RB15#0	19.49	20.33	19.75	21.19	22.03	21.45

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	21.02	21.73	21.31	22.72	23.43	23.01
		RB1#13	21.10	21.78	21.21	22.80	23.48	22.91
		RB1#24	21.52	22.02	21.33	23.22	23.72	23.03
		RB15#0	20.40	21.03	20.42	22.10	22.73	22.12
		RB15#10	20.64	21.07	20.49	22.34	22.77	22.19
		RB25#0	20.57	21.09	20.50	22.27	22.79	22.20
	16QAM	RB1#0	20.18	20.92	20.39	21.88	22.62	22.09
		RB1#13	20.34	20.98	20.32	22.04	22.68	22.02
		RB1#24	20.76	21.26	20.47	22.46	22.96	22.17
		RB15#0	19.37	20.20	19.63	21.07	21.90	21.33
		RB15#10	19.62	20.25	19.71	21.32	21.95	21.41
		RB25#0	19.54	20.26	19.71	21.24	21.96	21.41
10.0	QPSK	RB1#0	21.43	21.78	21.41	23.13	23.48	23.11
		RB1#25	21.26	21.60	20.88	22.96	23.30	22.58
		RB1#49	21.45	22.62	21.57	23.15	24.32	23.27
		RB25#0	20.65	21.06	20.24	22.35	22.76	21.94
		RB25#25	20.75	21.45	20.72	22.45	23.15	22.42
		RB50#0	20.95	21.40	20.77	22.65	23.10	22.47
	16QAM	RB1#0	20.34	21.09	20.69	22.04	22.79	22.39
		RB1#25	20.33	20.89	20.16	22.03	22.59	21.86
		RB1#49	20.62	21.98	20.95	22.32	23.68	22.65
		RB25#0	19.42	19.91	19.24	21.12	21.61	20.94
		RB25#25	19.47	20.32	19.65	21.17	22.02	21.35
		RB50#0	19.74	20.26	19.70	21.44	21.96	21.40

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	21.03	21.44	21.36	22.73	23.14	23.06
		RB1#38	20.85	21.34	20.39	22.55	23.04	22.09
		RB1#74	21.03	21.93	21.19	22.73	23.63	22.89
		RB36#0	20.58	20.86	20.24	22.28	22.56	21.94
		RB36#39	20.30	21.33	20.47	22.00	23.03	22.17
		RB75#0	20.42	21.22	20.23	22.12	22.92	21.93
	16QAM	RB1#0	20.10	20.45	20.70	21.80	22.15	22.40
		RB1#38	19.85	20.46	19.77	21.55	22.16	21.47
		RB1#74	20.25	21.08	20.58	21.95	22.78	22.28
		RB36#0	19.39	19.68	19.19	21.09	21.38	20.89
		RB36#39	19.05	20.18	19.37	20.75	21.88	21.07
		RB75#0	19.16	20.09	19.21	20.86	21.79	20.91
20.0	QPSK	RB1#0	20.35	20.42	21.31	22.05	22.12	23.01
		RB1#50	20.61	21.24	20.63	22.31	22.94	22.33
		RB1#99	20.90	21.52	20.88	22.60	23.22	22.58
		RB50#0	20.57	20.53	20.46	22.27	22.23	22.16
		RB50#50	20.21	21.26	20.40	21.91	22.96	22.10
		RB100#0	20.01	21.15	20.45	21.71	22.85	22.15
	16QAM	RB1#0	19.95	20.24	20.96	21.65	21.94	22.66
		RB1#50	20.27	21.16	20.34	21.97	22.86	22.04
		RB1#99	20.58	21.47	20.62	22.28	23.17	22.32
		RB50#0	19.70	19.57	19.63	21.40	21.27	21.33
		RB50#50	19.17	20.28	19.46	20.87	21.98	21.16
		RB100#0	18.98	20.18	19.53	20.68	21.88	21.23

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

For Band2: Antenna Gain = 1.7dBi

Limit: EIRP ≤ 33dBm

LTE Band 4

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.43	22.42	21.72	23.23	24.22	23.52
		RB1#3	21.47	22.38	21.62	23.27	24.18	23.42
		RB1#5	21.61	22.43	21.65	23.41	24.23	23.45
		RB3#0	21.33	22.30	21.68	23.13	24.10	23.48
		RB3#3	21.48	22.31	21.62	23.28	24.11	23.42
		RB6#0	20.47	21.63	20.67	22.27	23.43	22.47
	16QAM	RB1#0	19.93	21.18	20.54	21.73	22.98	22.34
		RB1#3	20.08	21.15	20.47	21.88	22.95	22.27
		RB1#5	20.23	21.23	20.52	22.03	23.03	22.32
		RB3#0	20.10	21.27	20.56	21.90	23.07	22.36
		RB3#3	20.31	21.30	20.53	22.11	23.10	22.33
		RB6#0	19.44	20.43	19.80	21.24	22.23	21.60
3.0	QPSK	RB1#0	21.70	22.83	22.06	23.50	24.63	23.86
		RB1#8	21.44	22.20	21.25	23.24	24.00	23.05
		RB1#14	22.28	22.41	21.85	24.08	24.21	23.65
		RB6#0	20.54	21.66	20.78	22.34	23.46	22.58
		RB6#9	21.00	21.71	20.74	22.80	23.51	22.54
		RB15#0	20.71	21.64	20.71	22.51	23.44	22.51
	16QAM	RB1#0	20.43	22.04	21.07	22.23	23.84	22.87
		RB1#8	20.28	21.18	20.52	22.08	22.98	22.32
		RB1#14	21.10	21.58	20.82	22.90	23.38	22.62
		RB6#0	19.38	20.53	19.91	21.18	22.33	21.71
		RB6#9	20.03	20.56	19.86	21.83	22.36	21.66
		RB15#0	19.65	20.44	19.83	21.45	22.24	21.63

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	21.40	22.60	21.87	23.20	24.40	23.67
		RB1#13	21.85	22.23	21.64	23.65	24.03	23.44
		RB1#24	22.27	22.20	21.69	24.07	24.00	23.49
		RB15#0	20.71	21.58	20.74	22.51	23.38	22.54
		RB15#10	21.12	21.64	20.69	22.92	23.44	22.49
		RB25#0	20.96	21.65	20.76	22.76	23.45	22.56
	16QAM	RB1#0	20.17	21.67	20.74	21.97	23.47	22.54
		RB1#13	20.69	21.12	20.60	22.49	22.92	22.40
		RB1#24	21.14	21.16	20.64	22.94	22.96	22.44
		RB15#0	19.64	20.43	19.80	21.44	22.23	21.60
		RB15#10	20.08	20.51	19.76	21.88	22.31	21.56
		RB25#0	19.94	20.49	19.84	21.74	22.29	21.64
10.0	QPSK	RB1#0	22.01	23.03	22.06	23.81	24.83	23.86
		RB1#25	22.12	22.08	21.45	23.92	23.88	23.25
		RB1#49	22.75	22.46	21.89	24.55	24.26	23.69
		RB25#0	21.26	21.92	20.91	23.06	23.72	22.71
		RB25#25	21.67	21.64	20.84	23.47	23.44	22.64
		RB50#0	21.68	21.84	20.92	23.48	23.64	22.72
	16QAM	RB1#0	20.72	21.97	21.08	22.52	23.77	22.88
		RB1#25	20.91	21.10	20.48	22.71	22.90	22.28
		RB1#49	21.67	21.63	20.92	23.47	23.43	22.72
		RB25#0	19.93	20.57	19.79	21.73	22.37	21.59
		RB25#25	20.47	20.29	19.74	22.27	22.09	21.54
		RB50#0	20.36	20.47	19.81	22.16	22.27	21.61

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	21.57	22.76	21.75	23.37	24.56	23.55
		RB1#38	21.96	21.92	21.34	23.76	23.72	23.14
		RB1#74	22.64	21.66	21.53	24.44	23.46	23.33
		RB36#0	21.31	21.66	20.72	23.11	23.46	22.52
		RB36#39	21.60	21.21	20.67	23.40	23.01	22.47
		RB75#0	21.44	21.61	20.74	23.24	23.41	22.54
	16QAM	RB1#0	20.34	21.72	20.82	22.14	23.52	22.62
		RB1#38	20.90	20.75	20.44	22.70	22.55	22.24
		RB1#74	21.51	20.66	20.67	23.31	22.46	22.47
		RB36#0	20.00	20.28	19.56	21.80	22.08	21.36
		RB36#39	20.03	19.74	19.54	21.83	21.54	21.34
		RB75#0	20.25	20.23	19.63	22.05	22.03	21.43
20.0	QPSK	RB1#0	20.94	21.96	21.57	22.74	23.76	23.37
		RB1#50	21.87	21.95	21.34	23.67	23.75	23.14
		RB1#99	22.21	21.44	21.25	24.01	23.24	23.05
		RB50#0	21.51	21.62	20.91	23.31	23.42	22.71
		RB50#50	21.66	21.11	20.90	23.46	22.91	22.70
		RB100#0	21.31	21.47	20.96	23.11	23.27	22.76
	16QAM	RB1#0	20.27	21.69	21.21	22.07	23.49	23.01
		RB1#50	21.28	21.70	20.61	23.08	23.50	22.41
		RB1#99	21.72	21.29	20.90	23.52	23.09	22.70
		RB50#0	20.28	20.61	19.71	22.08	22.41	21.51
		RB50#50	20.68	19.93	19.73	22.48	21.73	21.53
		RB100#0	20.35	20.27	19.80	22.15	22.07	21.60

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

For Band4: Antenna Gain = 1.8dBi

Limit: EIRP ≤ 30dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.05	21.93	21.96	24.15	24.03	24.06
		RB1#13	21.90	21.81	21.23	24.00	23.91	23.33
		RB1#24	21.95	21.79	20.87	24.05	23.89	22.97
		RB15#0	21.12	20.90	20.90	23.22	23.00	23.00
		RB15#10	21.12	20.97	20.45	23.22	23.07	22.55
		RB25#0	21.14	21.09	20.74	23.24	23.19	22.84
	16QAM	RB1#0	20.43	20.69	21.15	22.53	22.79	23.25
		RB1#13	20.42	20.95	20.43	22.52	23.05	22.53
		RB1#24	20.51	20.93	20.10	22.61	23.03	22.20
		RB15#0	19.74	19.57	19.64	21.84	21.67	21.74
		RB15#10	19.78	19.65	19.20	21.88	21.75	21.30
		RB25#0	19.84	19.82	19.49	21.94	21.92	21.59
10.0	QPSK	RB1#0	22.46	22.36	23.02	24.56	24.46	25.12
		RB1#25	21.58	21.62	21.56	23.68	23.72	23.66
		RB1#49	22.59	22.60	21.30	24.69	24.70	23.40
		RB25#0	21.33	21.25	21.83	23.43	23.35	23.93
		RB25#25	21.30	21.03	20.94	23.40	23.13	23.04
		RB50#0	21.50	21.31	21.46	23.60	23.41	23.56
	16QAM	RB1#0	21.33	21.45	21.99	23.43	23.55	24.09
		RB1#25	20.15	20.69	20.83	22.25	22.79	22.93
		RB1#49	21.58	21.54	20.56	23.68	23.64	22.66
		RB25#0	19.70	19.68	20.27	21.80	21.78	22.37
		RB25#25	19.71	19.48	19.42	21.81	21.58	21.52
		RB50#0	19.84	19.79	19.91	21.94	21.89	22.01

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	22.00	22.12	22.98	24.10	24.22	25.08
		RB1#38	21.48	21.37	21.77	23.58	23.47	23.87
		RB1#74	22.57	21.89	20.90	24.67	23.99	23.00
		RB36#0	21.15	21.18	22.23	23.25	23.28	24.33
		RB36#39	21.47	21.20	21.02	23.57	23.30	23.12
		RB75#0	21.21	21.11	21.49	23.31	23.21	23.59
	16QAM	RB1#0	20.71	21.23	21.85	22.81	23.33	23.95
		RB1#38	20.11	20.54	20.98	22.21	22.64	23.08
		RB1#74	21.49	21.08	20.07	23.59	23.18	22.17
		RB36#0	19.52	19.60	21.00	21.62	21.70	23.10
		RB36#39	19.92	20.06	19.46	22.02	22.16	21.56
		RB75#0	19.66	19.58	19.90	21.76	21.68	22.00
20.0	QPSK	RB1#0	21.38	21.53	22.14	23.48	23.63	24.24
		RB1#50	21.67	21.27	22.04	23.77	23.37	24.14
		RB1#99	22.20	21.79	20.68	24.30	23.89	22.78
		RB50#0	21.11	20.97	22.23	23.21	23.07	24.33
		RB50#50	21.68	21.12	21.07	23.78	23.22	23.17
		RB100#0	21.36	21.14	21.28	23.46	23.24	23.38
	16QAM	RB1#0	20.94	21.29	21.60	23.04	23.39	23.70
		RB1#50	21.37	21.16	21.68	23.47	23.26	23.78
		RB1#99	21.89	21.50	20.24	23.99	23.60	22.34
		RB50#0	19.69	19.60	21.14	21.79	21.70	23.24
		RB50#50	20.28	20.14	20.15	22.38	22.24	22.25
		RB100#0	19.99	20.17	20.36	22.09	22.27	22.46

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

For Band7: Antenna Gain = 2.1dBi

Limit: EIRP ≤ 33dBm

LTE Band 12

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	22.34	21.52	20.89	19.49	18.67	18.04
		RB1#3	22.60	21.57	20.57	19.75	18.72	17.72
		RB1#5	22.54	21.30	20.63	19.69	18.45	17.78
		RB3#0	22.17	21.47	20.77	19.32	18.62	17.92
		RB3#3	22.49	21.20	20.60	19.64	18.35	17.75
		RB6#0	21.45	20.47	19.81	18.60	17.62	16.96
	16QAM	RB1#0	21.15	20.23	19.96	18.30	17.38	17.11
		RB1#3	21.47	20.36	19.47	18.62	17.51	16.62
		RB1#5	21.78	20.34	19.72	18.93	17.49	16.87
		RB3#0	20.96	20.30	19.56	18.11	17.45	16.71
		RB3#3	21.52	20.42	19.39	18.67	17.57	16.54
		RB6#0	20.39	19.77	18.91	17.54	16.92	16.06
3.0	QPSK	RB1#0	22.24	21.70	22.08	19.39	18.85	19.23
		RB1#8	22.39	21.57	20.60	19.54	18.72	17.75
		RB1#14	22.68	21.98	20.98	19.83	19.13	18.13
		RB6#0	21.41	20.45	20.65	18.56	17.60	17.80
		RB6#9	21.65	20.63	19.77	18.80	17.78	16.92
		RB15#0	21.51	20.66	20.14	18.66	17.81	17.29
	16QAM	RB1#0	21.07	20.64	21.11	18.22	17.79	18.26
		RB1#8	21.46	20.29	19.80	18.61	17.44	16.95
		RB1#14	21.47	20.83	19.78	18.62	17.98	16.93
		RB6#0	20.39	19.42	19.77	17.54	16.57	16.92
		RB6#9	20.64	19.71	18.95	17.79	16.86	16.10
		RB15#0	20.51	19.62	19.27	17.66	16.77	16.42

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	22.07	21.55	22.11	19.22	18.70	19.26
		RB1#13	22.31	21.52	21.29	19.46	18.67	18.44
		RB1#24	21.70	21.65	20.53	18.85	18.80	17.68
		RB15#0	21.43	20.35	21.02	18.58	17.50	18.17
		RB15#10	21.06	20.57	20.12	18.21	17.72	17.27
		RB25#0	21.27	20.70	20.62	18.42	17.85	17.77
	16QAM	RB1#0	20.97	20.28	21.28	18.12	17.43	18.43
		RB1#13	21.16	20.28	20.45	18.31	17.43	17.60
		RB1#24	20.46	20.69	19.75	17.61	17.84	16.90
		RB15#0	20.40	19.34	20.12	17.55	16.49	17.27
		RB15#10	20.04	19.68	19.23	17.19	16.83	16.38
		RB25#0	20.23	19.67	19.76	17.38	16.82	16.91
10.0	QPSK	RB1#0	22.62	22.24	21.69	19.77	19.39	18.84
		RB1#25	21.26	21.28	21.72	18.41	18.43	18.87
		RB1#49	22.00	22.63	21.04	19.15	19.78	18.19
		RB25#0	21.58	20.90	21.00	18.73	18.05	18.15
		RB25#25	20.79	21.09	20.94	17.94	18.24	18.09
		RB50#0	21.34	21.31	20.93	18.49	18.46	18.08
	16QAM	RB1#0	21.66	21.17	20.86	18.81	18.32	18.01
		RB1#25	20.03	20.14	20.82	17.18	17.29	17.97
		RB1#49	20.83	21.51	19.98	17.98	18.66	17.13
		RB25#0	20.06	19.44	19.74	17.21	16.59	16.89
		RB25#25	19.29	19.85	19.72	16.44	17.00	16.87
		RB50#0	19.84	19.86	19.65	16.99	17.01	16.80

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)

For Band12: Antenna Gain = -0.7dBi = -2.85dBd (0dBd=2.15dBi)

Limit: ERP ≤ 34.77dBm

LTE Band 17

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	22.59	22.54	23.14	19.74	19.69	20.29
		RB1#13	22.12	22.77	22.63	19.27	19.92	19.78
		RB1#24	22.65	23.12	22.44	19.80	20.27	19.59
		RB15#0	21.53	21.57	21.86	18.68	18.72	19.01
		RB15#10	21.40	22.02	21.31	18.55	19.17	18.46
		RB25#0	21.75	21.83	21.81	18.90	18.98	18.96
	16QAM	RB1#0	21.46	21.20	21.99	18.61	18.35	19.14
		RB1#13	21.01	21.48	21.41	18.16	18.63	18.56
		RB1#24	21.69	21.84	21.40	18.84	18.99	18.55
		RB15#0	20.18	20.54	20.84	17.33	17.69	17.99
		RB15#10	20.27	21.01	20.19	17.42	18.16	17.34
		RB25#0	20.40	20.85	20.71	17.55	18.00	17.86
10.0	QPSK	RB1#0	23.12	23.00	23.06	20.27	20.15	20.21
		RB1#25	22.32	22.57	22.75	19.47	19.72	19.90
		RB1#49	23.43	23.14	23.00	20.58	20.29	20.15
		RB25#0	21.99	21.97	22.23	19.14	19.12	19.38
		RB25#25	22.39	22.28	22.37	19.54	19.43	19.52
		RB50#0	22.04	22.08	22.13	19.19	19.23	19.28
	16QAM	RB1#0	21.85	21.80	21.91	19.00	18.95	19.06
		RB1#25	21.11	21.39	21.53	18.26	18.54	18.68
		RB1#49	22.32	22.04	21.73	19.47	19.19	18.88
		RB25#0	20.46	20.37	20.67	17.61	17.52	17.82
		RB25#25	20.87	20.82	20.77	18.02	17.97	17.92
		RB50#0	20.47	20.54	20.56	17.62	17.69	17.71

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)
 For Band17: Antenna Gain = -0.7dBi = -2.85dBd (0dBd=2.15dBi)
 Limit: ERP≤34.77dBm

LTE Band 25

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	21.21	21.59	20.90	22.91	23.29	22.60
		RB1#3	21.24	21.60	20.24	22.94	23.30	21.94
		RB1#5	21.36	21.63	19.70	23.06	23.33	21.40
		RB3#0	21.19	21.49	20.54	22.89	23.19	22.24
		RB3#3	21.26	21.55	19.89	22.96	23.25	21.59
		RB6#0	20.52	20.30	19.64	22.22	22.00	21.34
	16QAM	RB1#0	20.01	19.83	19.85	21.71	21.53	21.55
		RB1#3	20.00	19.99	19.47	21.70	21.69	21.17
		RB1#5	20.08	20.17	19.29	21.78	21.87	20.99
		RB3#0	19.70	20.05	19.88	21.40	21.75	21.58
		RB3#3	19.92	20.04	19.41	21.62	21.74	21.11
		RB6#0	19.15	19.45	19.23	20.85	21.15	20.93
3.0	QPSK	RB1#0	21.66	21.88	21.88	23.36	23.58	23.58
		RB1#8	21.35	21.52	20.85	23.05	23.22	22.55
		RB1#14	21.81	22.20	19.62	23.51	23.90	21.32
		RB6#0	20.68	20.90	20.97	22.38	22.60	22.67
		RB6#9	20.91	21.17	19.99	22.61	22.87	21.69
		RB15#0	20.74	20.97	20.52	22.44	22.67	22.22
	16QAM	RB1#0	20.87	20.97	21.11	22.57	22.67	22.81
		RB1#8	20.16	20.01	19.70	21.86	21.71	21.40
		RB1#14	21.33	21.32	19.29	23.03	23.02	20.99
		RB6#0	19.23	19.50	19.81	20.93	21.20	21.51
		RB6#9	19.50	19.77	19.22	21.20	21.47	20.92
		RB15#0	19.25	19.54	19.53	20.95	21.24	21.23

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	21.31	21.55	21.73	23.01	23.25	23.43
		RB1#13	21.41	21.49	21.43	23.11	23.19	23.13
		RB1#24	21.91	22.09	19.74	23.61	23.79	21.44
		RB15#0	20.67	20.79	20.98	22.37	22.49	22.68
		RB15#10	20.96	21.08	20.54	22.66	22.78	22.24
		RB25#0	20.87	20.98	20.80	22.57	22.68	22.50
	16QAM	RB1#0	20.43	20.08	20.41	22.13	21.78	22.11
		RB1#13	20.61	20.26	20.38	22.31	21.96	22.08
		RB1#24	21.15	20.85	19.32	22.85	22.55	21.02
		RB15#0	19.19	19.35	19.67	20.89	21.05	21.37
		RB15#10	19.49	19.65	19.48	21.19	21.35	21.18
		RB25#0	19.40	19.56	19.61	21.10	21.26	21.31
10.0	QPSK	RB1#0	21.66	21.84	20.87	23.36	23.54	22.57
		RB1#25	21.63	21.32	21.29	23.33	23.02	22.99
		RB1#49	21.95	22.26	20.14	23.65	23.96	21.84
		RB25#0	21.03	20.88	20.76	22.73	22.58	22.46
		RB25#25	21.22	21.49	20.95	22.92	23.19	22.65
		RB50#0	21.40	21.22	20.95	23.10	22.92	22.65
	16QAM	RB1#0	20.81	20.76	19.36	22.51	22.46	21.06
		RB1#25	20.85	19.84	20.18	22.55	21.54	21.88
		RB1#49	21.17	21.44	19.95	22.87	23.14	21.65
		RB25#0	19.31	19.23	19.10	21.01	20.93	20.80
		RB25#25	19.53	19.84	19.51	21.23	21.54	21.21
		RB50#0	19.72	19.58	19.41	21.42	21.28	21.11

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	21.36	21.33	21.17	23.06	23.03	22.87
		RB1#38	21.35	21.15	20.87	23.05	22.85	22.57
		RB1#74	21.44	21.72	20.29	23.14	23.42	21.99
		RB36#0	21.02	20.64	19.30	22.72	22.34	21.00
		RB36#39	20.87	21.04	20.86	22.57	22.74	22.56
		RB75#0	20.89	21.10	20.81	22.59	22.80	22.51
	16QAM	RB1#0	20.58	20.52	19.62	22.28	22.22	21.32
		RB1#38	19.92	19.98	19.67	21.62	21.68	21.37
		RB1#74	20.26	20.46	19.85	21.96	22.16	21.55
		RB36#0	19.35	18.94	18.45	21.05	20.64	20.15
		RB36#39	19.24	19.38	19.31	20.94	21.08	21.01
		RB75#0	19.26	19.43	19.26	20.96	21.13	20.96
20.0	QPSK	RB1#0	20.77	20.80	20.80	22.47	22.50	22.50
		RB1#50	21.17	21.11	20.08	22.87	22.81	21.78
		RB1#99	21.03	21.60	20.52	22.73	23.30	22.22
		RB50#0	21.06	20.51	19.96	22.76	22.21	21.66
		RB50#50	20.60	21.06	20.73	22.30	22.76	22.43
		RB100#0	20.57	21.07	19.72	22.27	22.77	21.42
	16QAM	RB1#0	20.35	20.72	20.46	22.05	22.42	22.16
		RB1#50	20.84	20.98	19.32	22.54	22.68	21.02
		RB1#99	20.73	21.10	20.44	22.43	22.80	22.14
		RB50#0	20.23	19.17	19.00	21.93	20.87	20.70
		RB50#50	19.12	19.59	19.47	20.82	21.29	21.17
		RB100#0	19.10	19.79	18.80	20.80	21.49	20.50

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

For Band25: Antenna Gain = 1.7dBi

Limit: EIRP ≤ 33dBm

LTE Band 26(Part 22H):

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	22.15	23.03	21.44	20.10	20.98	19.39
		RB1#3	22.13	22.78	21.10	20.08	20.73	19.05
		RB1#5	22.30	22.75	21.06	20.25	20.70	19.01
		RB3#0	22.09	22.84	21.29	20.04	20.79	19.24
		RB3#3	22.22	22.68	21.09	20.17	20.63	19.04
		RB6#0	21.36	21.75	20.41	19.31	19.70	18.36
	16QAM	RB1#0	21.07	21.77	20.59	19.02	19.72	18.54
		RB1#3	21.17	21.64	20.06	19.12	19.59	18.01
		RB1#5	21.31	21.72	20.02	19.26	19.67	17.97
		RB3#0	21.13	21.70	20.38	19.08	19.65	18.33
		RB3#3	21.48	21.60	20.11	19.43	19.55	18.06
		RB6#0	20.38	20.81	19.30	18.33	18.76	17.25
3.0	QPSK	RB1#0	22.53	23.21	22.80	20.48	21.16	20.75
		RB1#8	22.18	22.29	21.14	20.13	20.24	19.09
		RB1#14	22.81	22.52	21.22	20.76	20.47	19.17
		RB6#0	21.50	21.88	21.50	19.45	19.83	19.45
		RB6#9	21.73	21.47	20.40	19.68	19.42	18.35
		RB15#0	21.55	21.63	20.87	19.50	19.58	18.82
	16QAM	RB1#0	21.43	22.14	22.07	19.38	20.09	20.02
		RB1#8	21.42	21.35	20.41	19.37	19.30	18.36
		RB1#14	21.79	21.57	20.52	19.74	19.52	18.47
		RB6#0	20.30	21.01	20.37	18.25	18.96	18.32
		RB6#9	20.55	20.59	19.37	18.50	18.54	17.32
		RB15#0	20.40	20.67	19.78	18.35	18.62	17.73

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	22.85	23.12	20.15	20.80	21.07
		RB1#13	22.33	22.41	22.03	20.28	20.36	19.98
		RB1#24	22.78	22.28	20.98	20.73	20.23	18.93
		RB15#0	21.52	21.71	21.99	19.47	19.66	19.94
		RB15#10	21.74	21.31	20.88	19.69	19.26	18.83
		RB25#0	21.66	21.56	21.49	19.61	19.51	19.44
	16QAM	RB1#0	21.18	21.68	22.09	19.13	19.63	20.04
		RB1#13	21.36	21.30	21.13	19.31	19.25	19.08
		RB1#24	21.83	21.15	20.00	19.78	19.10	17.95
		RB15#0	20.28	20.73	20.84	18.23	18.68	18.79
		RB15#10	20.51	20.34	19.77	18.46	18.29	17.72
		RB25#0	20.50	20.61	20.33	18.45	18.56	18.28
10.0	QPSK	RB1#0	22.79	23.45	22.44	20.74	21.40	20.39
		RB1#25	22.64	22.22	22.71	20.59	20.17	20.66
		RB1#49	22.94	22.60	21.39	20.89	20.55	19.34
		RB25#0	21.91	22.10	21.79	19.86	20.05	19.74
		RB25#25	22.21	21.72	21.72	20.16	19.67	19.67
		RB50#0	22.50	21.82	21.95	20.45	19.77	19.90
	16QAM	RB1#0	21.56	22.55	21.76	19.51	20.50	19.71
		RB1#25	21.66	21.11	22.01	19.61	19.06	19.96
		RB1#49	21.85	21.66	20.58	19.80	19.61	18.53
		RB25#0	20.68	20.69	20.36	18.63	18.64	18.31
		RB25#25	20.68	20.27	20.34	18.63	18.22	18.29
		RB50#0	21.25	20.42	20.56	19.20	18.37	18.51

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
15	QPSK	RB1#0	20.65	21.45	21.57	18.60	19.40	19.52
		RB1#38	21.02	20.96	20.18	18.97	18.91	18.13
		RB1#74	21.06	21.06	19.88	19.01	19.01	17.83
		RB36#0	20.48	20.58	20.36	18.43	18.53	18.31
		RB36#39	20.49	20.10	20.34	18.44	18.05	18.29
		RB75#0	20.52	20.34	20.54	18.47	18.29	18.49
	16QAM	RB1#0	19.75	20.30	20.85	17.70	18.25	18.80
		RB1#38	19.86	19.58	19.55	17.81	17.53	17.50
		RB1#74	20.31	20.00	19.25	18.26	17.95	17.20
		RB36#0	19.10	19.09	18.89	17.05	17.04	16.84
		RB36#39	19.00	18.68	18.92	16.95	16.63	16.87
		RB75#0	19.10	18.86	19.00	17.05	16.81	16.95

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)
 For Band26: Antenna Gain = 0.1dBi = -2.05 dBd (0dBd=2.15dBi)
 Limit: ERP ≤ 38.45dBm

LTE Band 26(Part 90S)

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	20.56	20.96	20.51	18.51	18.91	18.46
		RB1#3	20.49	20.72	20.54	18.44	18.67	18.49
		RB1#5	20.70	20.65	20.50	18.65	18.60	18.45
		RB3#0	20.40	20.79	20.74	18.35	18.74	18.69
		RB3#3	20.56	20.60	20.45	18.51	18.55	18.40
		RB6#0	19.69	19.94	19.60	17.64	17.89	17.55
	16QAM	RB1#0	19.56	19.94	19.37	17.51	17.89	17.32
		RB1#3	19.59	19.88	19.19	17.54	17.83	17.14
		RB1#5	19.89	19.79	19.10	17.84	17.74	17.05
		RB3#0	19.44	19.89	19.56	17.39	17.84	17.51
		RB3#3	19.52	19.84	19.32	17.47	17.79	17.27
		RB6#0	18.86	19.19	18.70	16.81	17.14	16.65
3.0	QPSK	RB1#0	20.60	21.19	20.28	18.55	19.14	18.23
		RB1#8	20.48	20.49	19.97	18.43	18.44	17.92
		RB1#14	21.15	20.70	20.74	19.10	18.65	18.69
		RB6#0	19.77	20.16	19.66	17.72	18.11	17.61
		RB6#9	20.16	19.92	19.66	18.11	17.87	17.61
		RB15#0	19.90	19.88	19.32	17.85	17.83	17.27
	16QAM	RB1#0	19.70	20.31	19.23	17.65	18.26	17.18
		RB1#8	19.63	19.71	18.95	17.58	17.66	16.90
		RB1#14	20.34	19.86	19.45	18.29	17.81	17.40
		RB6#0	18.96	19.33	18.83	16.91	17.28	16.78
		RB6#9	19.32	19.13	18.80	17.27	17.08	16.75
		RB15#0	19.07	19.11	18.55	17.02	17.06	16.50

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	20.40	21.01	20.73	18.35	18.96	18.68
		RB1#13	20.75	20.61	20.71	18.70	18.56	18.66
		RB1#24	20.85	20.91	20.51	18.80	18.86	18.46
		RB15#0	19.92	20.07	19.49	17.87	18.02	17.44
		RB15#10	20.13	19.78	19.40	18.08	17.73	17.35
		RB25#0	20.04	19.84	19.75	17.99	17.79	17.70
	16QAM	RB1#0	19.58	20.08	19.92	17.53	18.03	17.87
		RB1#13	20.00	19.68	19.55	17.95	17.63	17.50
		RB1#24	20.12	19.67	19.39	18.07	17.62	17.34
		RB15#0	19.14	19.26	18.74	17.09	17.21	16.69
		RB15#10	19.37	19.00	18.58	17.32	16.95	16.53
		RB25#0	19.23	19.04	18.91	17.18	16.99	16.86
10.0	QPSK	RB1#0	/	21.32	/		19.27	
		RB1#25	/	20.44	/		18.39	
		RB1#49	/	21.02	/		18.97	
		RB25#0	/	20.23	/		18.18	
		RB25#25	/	20.12	/		18.07	
		RB50#0	/	19.85	/		17.80	
	16QAM	RB1#0	/	20.09	/		18.04	
		RB1#25	/	19.66	/		17.61	
		RB1#49	/	20.22	/		18.17	
		RB25#0	/	19.14	/		17.09	
		RB25#25	/	18.94	/		16.89	
		RB50#0	/	18.79	/		16.74	

Note: ERP (dBm) = Conducted Power (dBm) + Antenna Gain (dBd)
For Band26: Antenna Gain = 0.1dBi = -2.05dBd (0dBd=2.15dBi)
Limit: ERP ≤ 50dBm

LTE Band 41

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	22.25	23.00	22.31	24.35	25.10	24.41
		RB1#13	22.32	23.00	21.91	24.42	25.10	24.01
		RB1#24	22.52	23.06	21.77	24.62	25.16	23.87
		RB15#0	21.42	22.14	21.26	23.52	24.24	23.36
		RB15#10	21.55	22.25	20.99	23.65	24.35	23.09
		RB25#0	21.52	22.16	21.18	23.62	24.26	23.28
	16QAM	RB1#0	21.17	22.29	21.37	23.27	24.39	23.47
		RB1#13	21.15	22.39	20.88	23.25	24.49	22.98
		RB1#24	21.44	22.50	20.70	23.54	24.60	22.80
		RB15#0	20.51	21.08	20.35	22.61	23.18	22.45
		RB15#10	20.65	21.25	20.09	22.75	23.35	22.19
		RB25#0	20.61	21.19	20.22	22.71	23.29	22.32
10.0	QPSK	RB1#0	22.66	23.49	23.30	24.76	25.59	25.40
		RB1#25	22.17	22.84	22.08	24.27	24.94	24.18
		RB1#49	22.88	23.47	22.56	24.98	25.57	24.66
		RB25#0	21.81	22.41	21.86	23.91	24.51	23.96
		RB25#25	22.05	22.48	21.56	24.15	24.58	23.66
		RB50#0	21.97	22.39	21.92	24.07	24.49	24.02
	16QAM	RB1#0	21.89	22.39	22.23	23.99	24.49	24.33
		RB1#25	21.34	21.94	21.08	23.44	24.04	23.18
		RB1#49	22.02	22.51	21.36	24.12	24.61	23.46
		RB25#0	20.54	21.11	20.61	22.64	23.21	22.71
		RB25#25	20.80	21.18	20.19	22.90	23.28	22.29
		RB50#0	20.74	21.15	20.57	22.84	23.25	22.67

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	22.29	23.11	23.03	24.39	25.21	25.13
		RB1#38	21.93	22.67	22.29	24.03	24.77	24.39
		RB1#74	22.53	22.91	22.07	24.63	25.01	24.17
		RB36#0	21.67	22.26	22.12	23.77	24.36	24.22
		RB36#39	21.65	22.24	21.55	23.75	24.34	23.65
		RB75#0	21.87	22.19	21.75	23.97	24.29	23.85
	16QAM	RB1#0	21.44	21.94	21.95	23.54	24.04	24.05
		RB1#38	21.15	21.57	21.24	23.25	23.67	23.34
		RB1#74	21.85	21.81	20.91	23.95	23.91	23.01
		RB36#0	20.43	20.93	20.87	22.53	23.03	22.97
		RB36#39	20.55	20.91	20.20	22.65	23.01	22.30
		RB75#0	20.65	20.94	20.49	22.75	23.04	22.59
20.0	QPSK	RB1#0	21.60	22.45	22.46	23.70	24.55	24.56
		RB1#50	21.92	22.73	22.40	24.02	24.83	24.50
		RB1#99	22.23	22.61	21.86	24.33	24.71	23.96
		RB50#0	21.62	22.18	22.15	23.72	24.28	24.25
		RB50#50	21.75	22.12	21.77	23.85	24.22	23.87
		RB100#0	21.63	22.09	22.05	23.73	24.19	24.15
	16QAM	RB1#0	21.25	21.98	21.92	23.35	24.08	24.02
		RB1#50	21.43	22.35	21.69	23.53	24.45	23.79
		RB1#99	21.92	22.21	21.03	24.02	24.31	23.13
		RB50#0	20.56	21.22	21.00	22.66	23.32	23.10
		RB50#50	20.70	21.14	20.54	22.80	23.24	22.64
		RB100#0	20.61	21.17	20.83	22.71	23.27	22.93

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

For Band41: Antenna Gain = 2.1dBi

Limit: EIRP ≤ 33dBm

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	21.15	21.55	21.40	22.95	23.35	23.20
		RB1#3	21.27	21.49	21.24	23.07	23.29	23.04
		RB1#5	21.57	21.51	21.31	23.37	23.31	23.11
		RB3#0	21.26	21.53	21.23	23.06	23.33	23.03
		RB3#3	21.39	21.53	21.25	23.19	23.33	23.05
		RB6#0	20.44	20.81	20.53	22.24	22.61	22.33
	16QAM	RB1#0	20.28	20.66	20.16	22.08	22.46	21.96
		RB1#3	20.28	20.79	20.30	22.08	22.59	22.10
		RB1#5	20.42	20.78	20.38	22.22	22.58	22.18
		RB3#0	20.21	20.72	20.13	22.01	22.52	21.93
		RB3#3	20.48	20.72	20.15	22.28	22.52	21.95
		RB6#0	19.40	19.96	19.46	21.20	21.76	21.26
3.0	QPSK	RB1#0	21.45	21.81	21.36	23.25	23.61	23.16
		RB1#8	21.24	21.20	20.92	23.04	23.00	22.72
		RB1#14	22.05	21.79	21.36	23.85	23.59	23.16
		RB6#0	20.31	20.69	20.39	22.11	22.49	22.19
		RB6#9	20.80	20.69	20.50	22.60	22.49	22.30
		RB15#0	20.50	20.64	20.38	22.30	22.44	22.18
	16QAM	RB1#0	20.49	21.03	20.45	22.29	22.83	22.25
		RB1#8	20.41	20.60	19.93	22.21	22.40	21.73
		RB1#14	21.19	21.03	20.63	22.99	22.83	22.43
		RB6#0	19.33	19.81	19.41	21.13	21.61	21.21
		RB6#9	19.82	19.82	19.55	21.62	21.62	21.35
		RB15#0	19.54	19.77	19.34	21.34	21.57	21.14

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	21.07	21.95	21.00	22.87	23.75	22.80
		RB1#13	21.52	21.14	21.01	23.32	22.94	22.81
		RB1#24	21.94	21.29	21.16	23.74	23.09	22.96
		RB15#0	20.45	20.56	20.20	22.25	22.36	22.00
		RB15#10	20.86	20.56	20.35	22.66	22.36	22.15
		RB25#0	20.70	20.60	20.30	22.50	22.40	22.10
	16QAM	RB1#0	19.97	21.07	19.84	21.77	22.87	21.64
		RB1#13	20.53	20.46	19.93	22.33	22.26	21.73
		RB1#24	20.92	20.55	20.20	22.72	22.35	22.00
		RB15#0	19.44	19.68	19.13	21.24	21.48	20.93
		RB15#10	19.88	19.70	19.30	21.68	21.50	21.10
		RB25#0	19.72	19.74	19.25	21.52	21.54	21.05
10.0	QPSK	RB1#0	21.70	22.26	21.25	23.50	24.06	23.05
		RB1#25	21.76	20.95	20.50	23.56	22.75	22.30
		RB1#49	22.15	21.81	21.54	23.95	23.61	23.34
		RB25#0	21.03	21.35	20.13	22.83	23.15	21.93
		RB25#25	20.90	20.73	20.39	22.70	22.53	22.19
		RB50#0	21.48	20.77	20.29	23.28	22.57	22.09
	16QAM	RB1#0	20.48	21.36	20.17	22.28	23.16	21.97
		RB1#25	20.70	20.15	19.43	22.50	21.95	21.23
		RB1#49	21.06	20.61	20.61	22.86	22.41	22.41
		RB25#0	19.70	20.08	18.88	21.50	21.88	20.68
		RB25#25	19.58	19.64	19.15	21.38	21.44	20.95
		RB50#0	20.17	19.70	19.02	21.97	21.50	20.82

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	21.22	21.79	21.24	23.02	23.59	23.04
		RB1#38	21.13	20.80	20.27	22.93	22.60	22.07
		RB1#74	22.12	21.35	21.07	23.92	23.15	22.87
		RB36#0	21.07	21.12	20.08	22.87	22.92	21.88
		RB36#39	21.03	20.50	20.11	22.83	22.30	21.91
		RB75#0	20.67	20.53	20.10	22.47	22.33	21.90
	16QAM	RB1#0	19.98	20.86	20.23	21.78	22.66	22.03
		RB1#38	20.15	20.02	19.25	21.95	21.82	21.05
		RB1#74	21.08	20.36	20.32	22.88	22.16	22.12
		RB36#0	19.76	19.83	18.80	21.56	21.63	20.60
		RB36#39	19.74	19.41	18.82	21.54	21.21	20.62
		RB75#0	19.38	19.42	18.85	21.18	21.22	20.65
20.0	QPSK	RB1#0	20.72	21.16	20.61	22.52	22.96	22.41
		RB1#50	21.32	20.96	20.31	23.12	22.76	22.11
		RB1#99	21.46	21.11	20.70	23.26	22.91	22.50
		RB50#0	21.16	20.98	20.05	22.96	22.78	21.85
		RB50#50	21.19	20.33	19.90	22.99	22.13	21.70
		RB100#0	20.85	20.37	20.12	22.65	22.17	21.92
	16QAM	RB1#0	20.24	20.94	20.25	22.04	22.74	22.05
		RB1#50	20.86	20.50	19.86	22.66	22.30	21.66
		RB1#99	21.09	20.85	20.17	22.89	22.65	21.97
		RB50#0	20.07	19.88	18.98	21.87	21.68	20.78
		RB50#50	20.23	19.47	18.82	22.03	21.27	20.62
		RB100#0	19.87	19.54	19.06	21.67	21.34	20.86

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

For Band 66: Antenna Gain = 1.8dBi

Limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.21	13
	Middle	3.27	13
	High	3.24	13
HSDPA (16QAM)	Low	5.26	13
	Middle	5.16	13
	High	4.90	13
HSUPA (BPSK)	Low	3.65	13
	Middle	3.65	13
	High	3.69	13
HSPA+	Low	3.55	13
	Middle	3.71	13
	High	3.62	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.98	13
	Middle	3.01	13
	High	2.85	13
HSDPA (16QAM)	Low	4.65	13
	Middle	4.74	13
	High	4.42	13
HSUPA (BPSK)	Low	3.46	13
	Middle	3.30	13
	High	3.27	13
HSPA+	Low	3.22	13
	Middle	3.46	13
	High	3.18	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.58	5.71	5.65	13	Pass
QPSK (100RB Size)	5.19	5.22	5.19	13	Pass
16QAM (1RB Size)	5.33	5.59	6.32	13	Pass
16QAM (100RB Size)	6.14	6.12	6.06	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.74	4.84	4.81	13	Pass
QPSK (100RB Size)	5.65	4.87	4.99	13	Pass
16QAM (1RB Size)	5.97	5.19	5.13	13	Pass
16QAM (100RB Size)	5.80	5.83	6.00	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.81	4.72	4.61	13	Pass
QPSK (100RB Size)	4.87	4.99	4.61	13	Pass
16QAM (1RB Size)	5.25	5.54	4.87	13	Pass
16QAM (100RB Size)	6.20	6.03	5.57	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	3.33	5.29	5.13	13	Pass
QPSK (50RB Size)	5.45	5.45	5.29	13	Pass
16QAM (1RB Size)	4.46	5.99	5.83	13	Pass
16QAM (50RB Size)	5.29	6.28	6.25	13	Pass

LTE Band 17 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.87	4.46	4.01	13	Pass
QPSK (50RB Size)	5.22	5.13	5.10	13	Pass
16QAM (1RB Size)	5.58	5.80	5.87	13	Pass
16QAM (50RB Size)	6.15	6.06	5.99	13	Pass

LTE Band 25 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.96	5.88	5.30	13	Pass
QPSK (100RB Size)	5.28	5.59	5.86	13	Pass
16QAM (1RB Size)	6.58	5.74	5.91	13	Pass
16QAM (100RB Size)	6.09	5.57	5.71	13	Pass

LTE Band 26(Part 22H) 15MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.07	4.70	5.57	13	Pass
QPSK (75RB Size)	6.00	5.33	5.57	13	Pass
16QAM (1RB Size)	6.09	4.87	5.36	13	Pass
16QAM (75RB Size)	6.03	6.09	6.20	13	Pass

LTE Band 26(Part 90S) 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	/	4.78	/	13	Pass
QPSK (50RB Size)	/	5.48	/	13	Pass
16QAM (1RB Size)	/	5.77	/	13	Pass
16QAM (50RB Size)	/	6.41	/	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.45	4.93	5.25	13	Pass
QPSK (100RB Size)	8.03	7.30	7.71	13	Pass
16QAM (1RB Size)	6.09	5.07	4.38	13	Pass
16QAM (100RB Size)	7.77	7.30	5.39	13	Pass

LTE Band 66 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.54	4.90	5.01	13	Pass
QPSK (100RB Size)	5.04	5.22	5.25	13	Pass
16QAM (1RB Size)	6.41	5.48	5.33	13	Pass
16QAM (100RB Size)	6.12	6.00	6.20	13	Pass

FCC §2.1049, §22.917, §22.905 & §24.238&§27.53 &§90.209- OCCUPIED BANDWIDTH

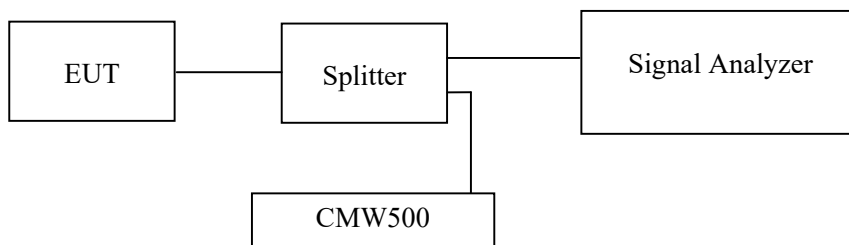
Applicable Standard

FCC 47 §2.1049, §22.917, §22.905, §24.238, §27.53 and §90.209.

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.



Note: the worst path loss (cable loss and splitter inset loss) among the test frequency range has added into plot.

Test Data

Environmental Conditions

Temperature:	27~27.6℃
Relative Humidity:	54~56.4%
ATM Pressure:	101.0 kPa

The testing was performed by Clenn Jiang from 2022-12-15 to 2023-01-10.

EUT operation mode: Transmitting

Test Result: Pass

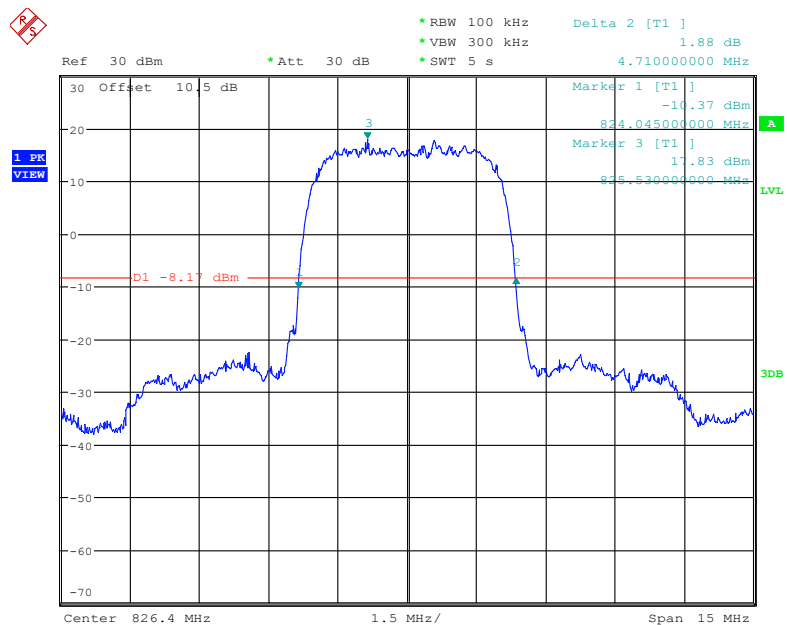
Please refer to the following tables and plots.

Cellular Band (Part 22H)

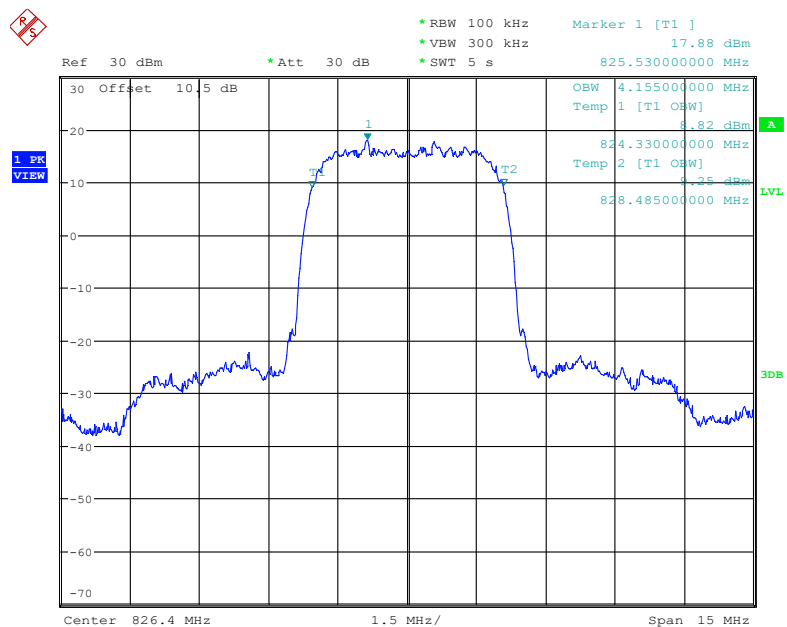
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.16	4.71
	836.6	4.16	4.70
	846.6	4.16	4.70
HSDPA	826.4	4.17	4.74
	836.6	4.16	4.73
	846.6	4.17	4.70
HSUPA	826.4	4.16	4.73
	836.6	4.16	4.71
	846.6	4.16	4.70

PCS Band (Part 24E)

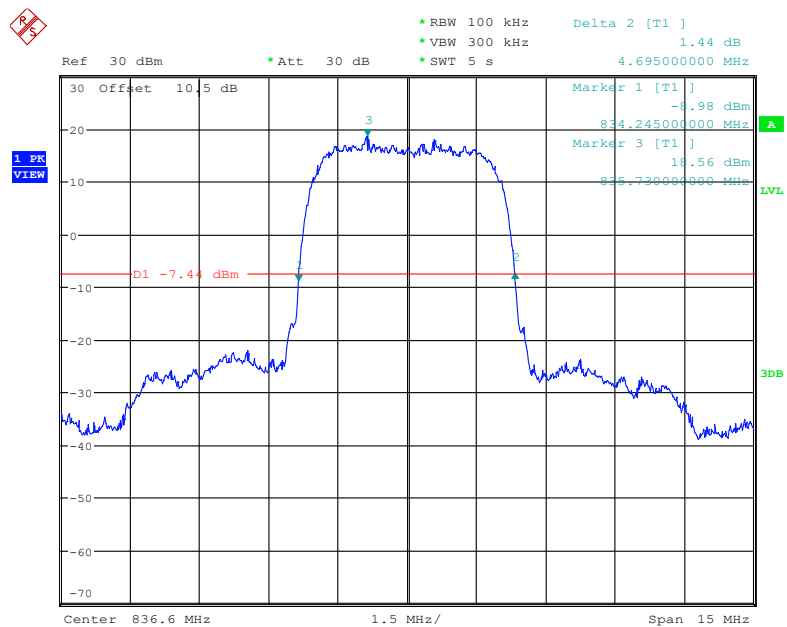
Frequency (MHz)		Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.16	4.73
	1880.0	4.16	4.73
	1907.6	4.16	4.73
HSDPA	1852.4	4.16	4.73
	1880.0	4.16	4.71
	1907.6	4.17	4.71
HSUPA	1852.4	4.16	4.73
	1880.0	4.16	4.73
	1907.6	4.17	4.73

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

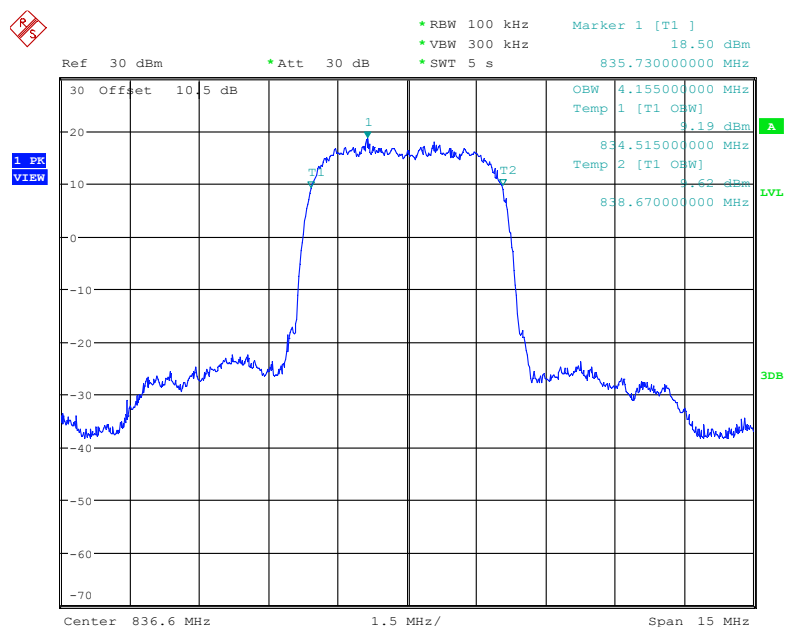
Date: 16.DEC.2022 11:38:22



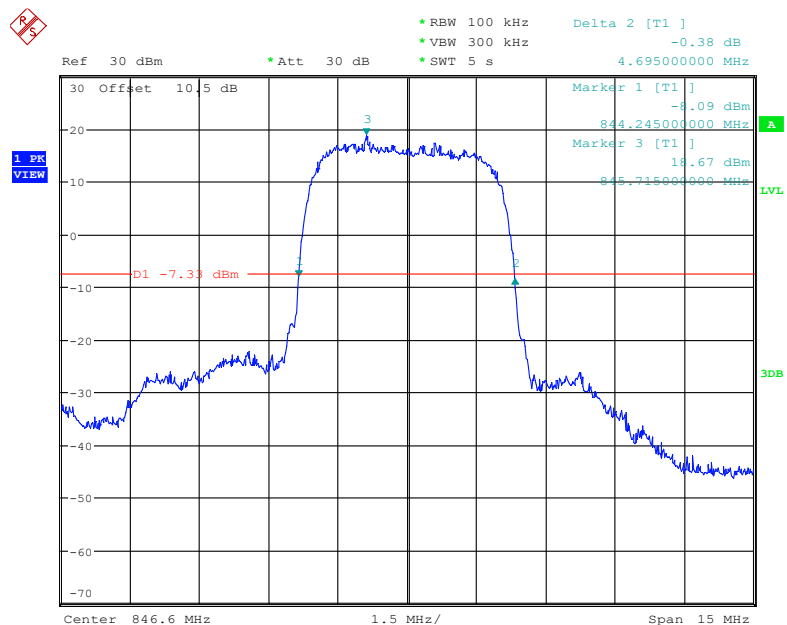
Date: 16.DEC.2022 11:37:43

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

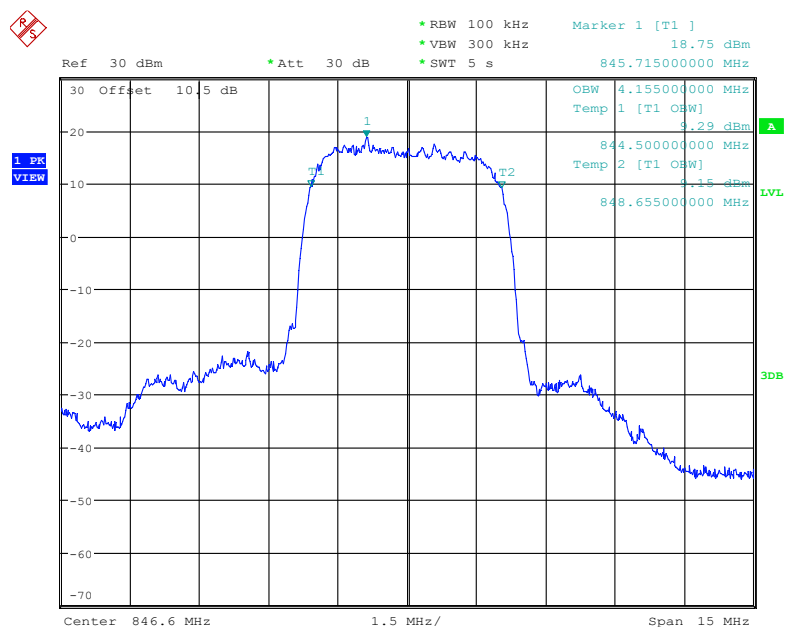
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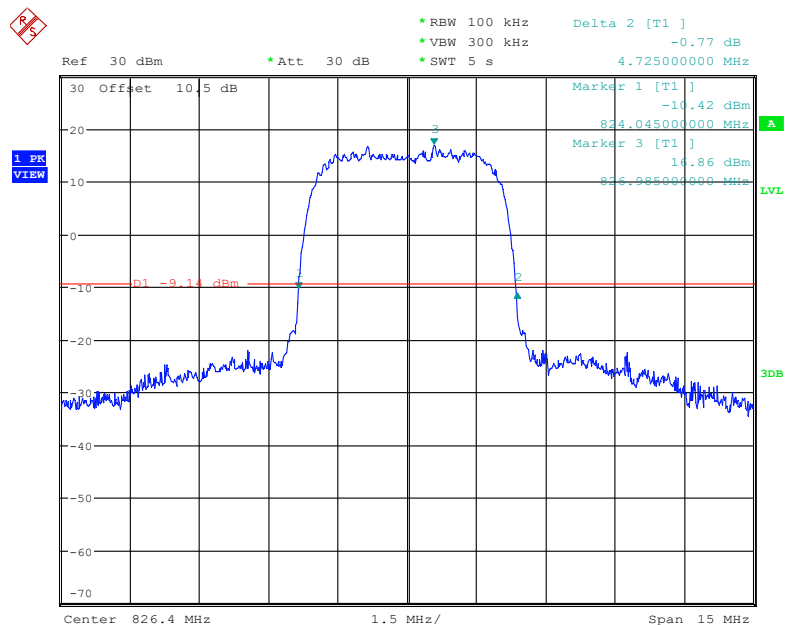
Date: 16.DEC.2022 11:41:22

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

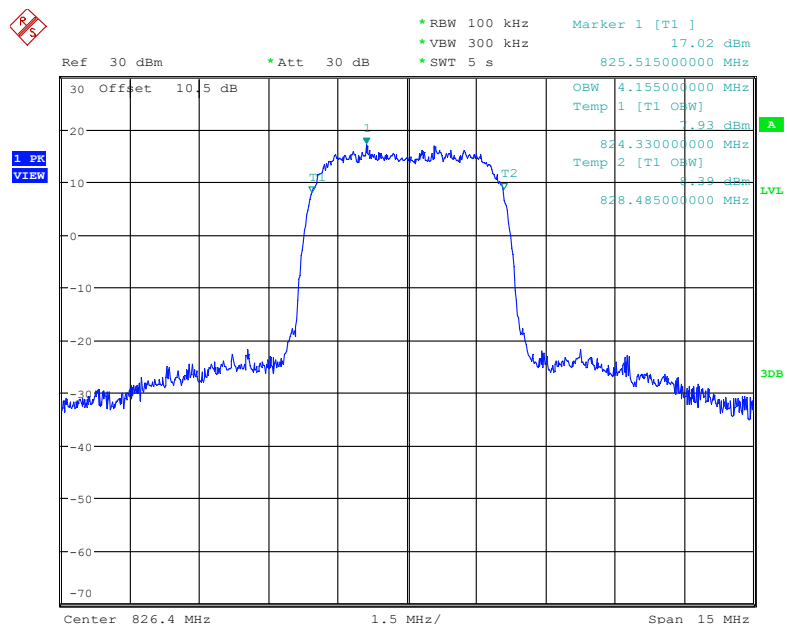
Date: 16.DEC.2022 11:44:51



Date: 16.DEC.2022 11:44:13

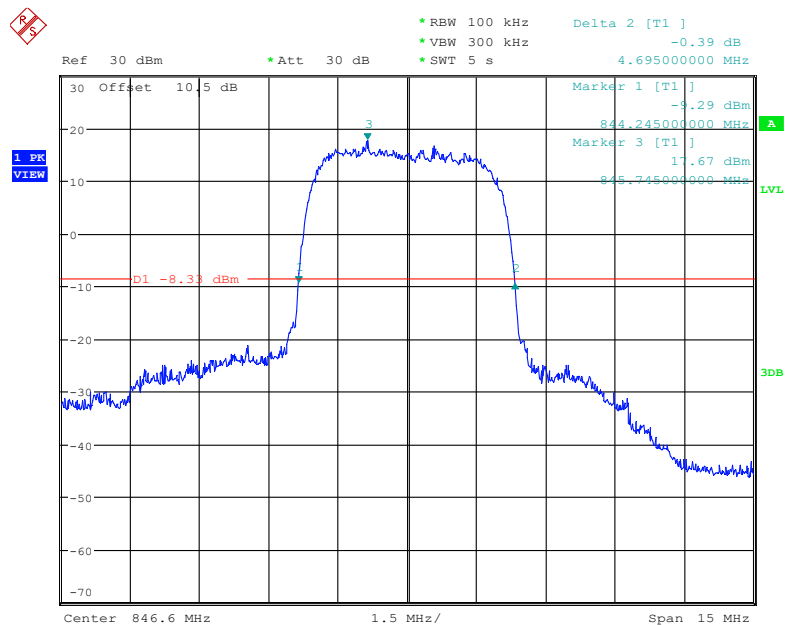
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (QPSK) Mode, Low channel

Date: 16.DEC.2022 13:29:47

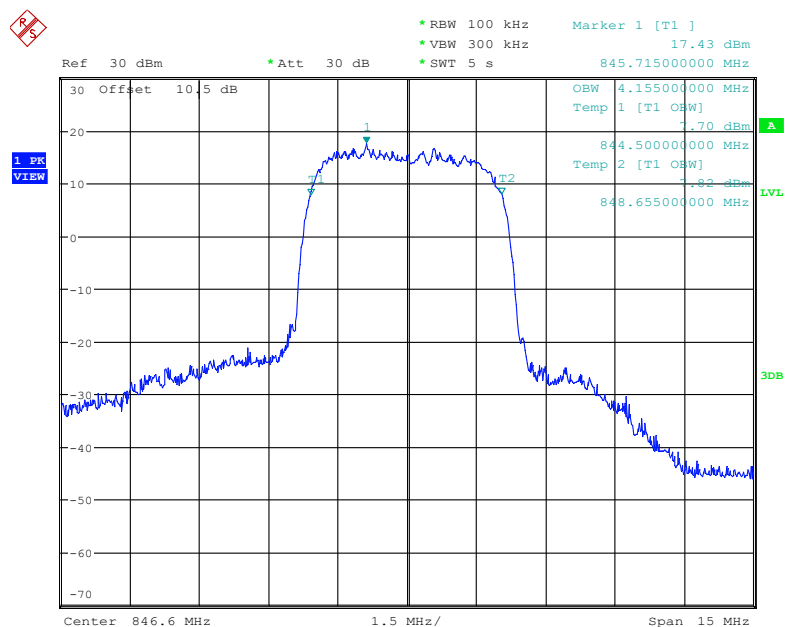


Date: 16.DEC.2022 13:29:07



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

Date: 16.DEC.2022 13:37:06



Date: 16.DEC.2022 13:36:27

1 PK
VIEW

Ref 30 dBm * Att 30 dB * RBW 100 kHz * VBW 300 kHz * SWT 5 s Delta 2 [T1] 1.23 dB 4.740000000 MHz

30 Offset 10.5 dB

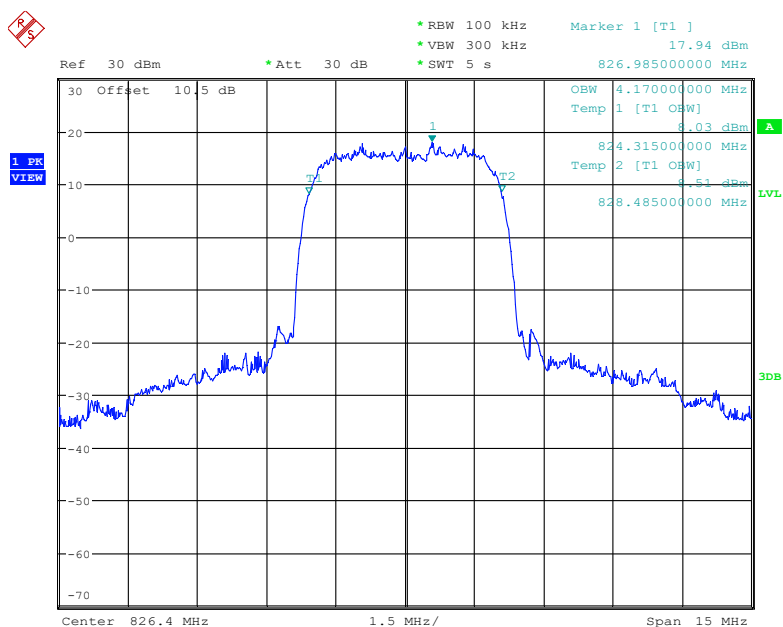
Marker 1 [T1] -10.16 dBm 824.030000000 MHz

Marker 3 [T1] 17.44 dBm 826.400000000 MHz

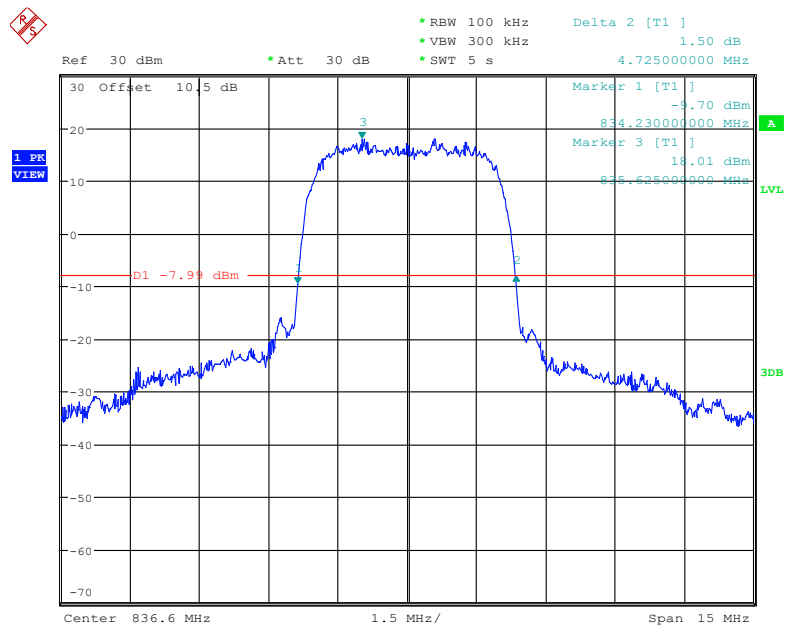
D1 -8.56 dBm

Center 826.4 MHz 1.5 MHz/ Span 15 MHz

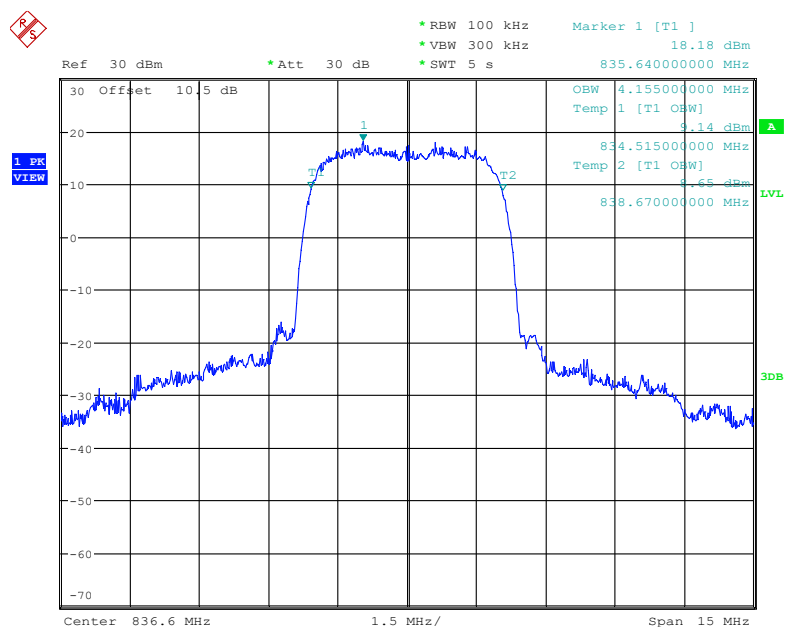
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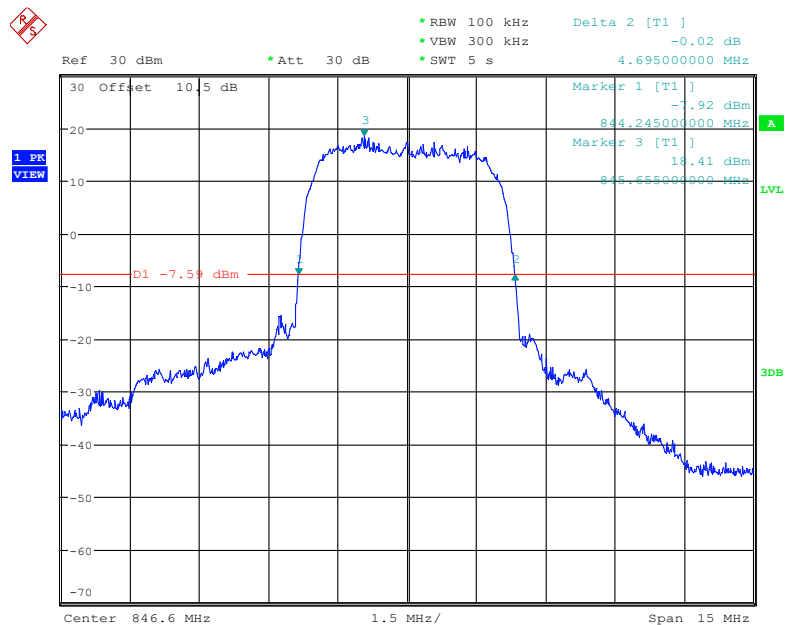
Date: 16.DEC.2022 13:03:32

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

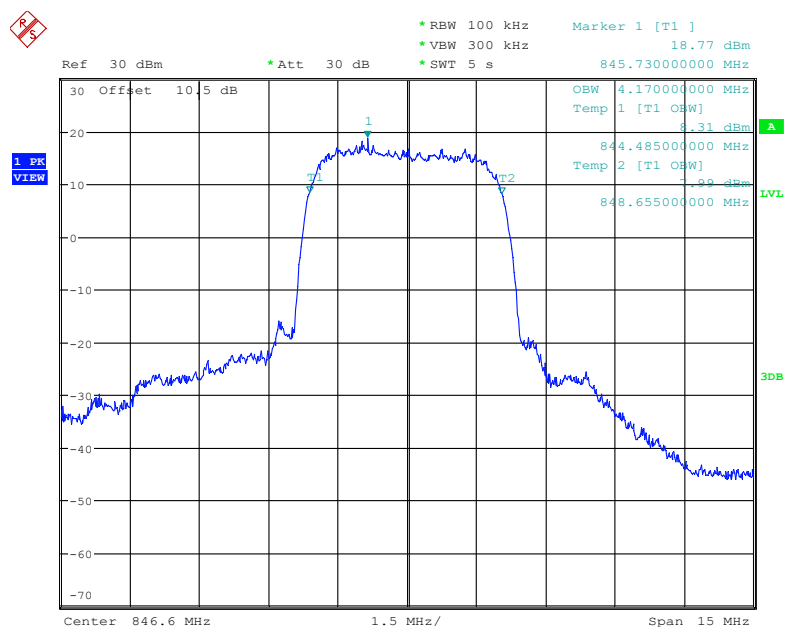
Date: 16.DEC.2022 13:07:39



Date: 16.DEC.2022 13:07:00

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

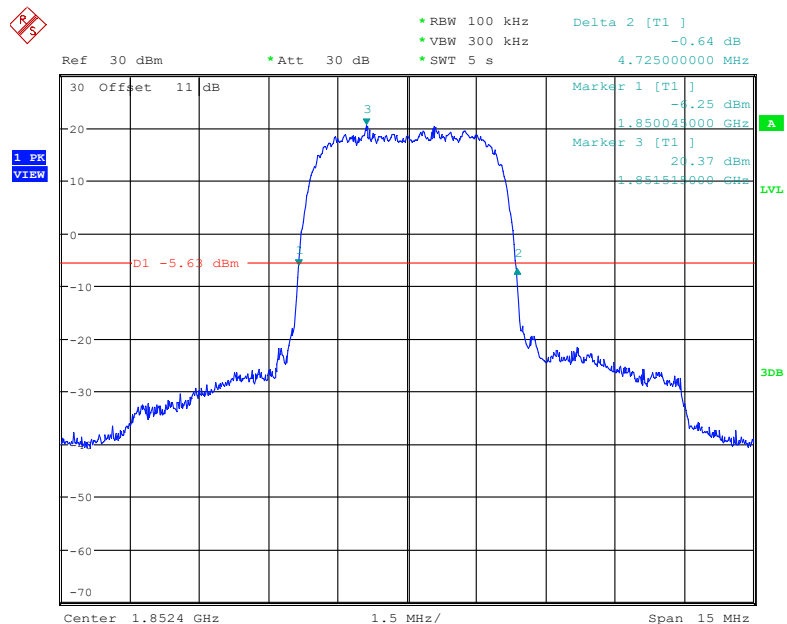
Date: 16.DEC.2022 13:10:26



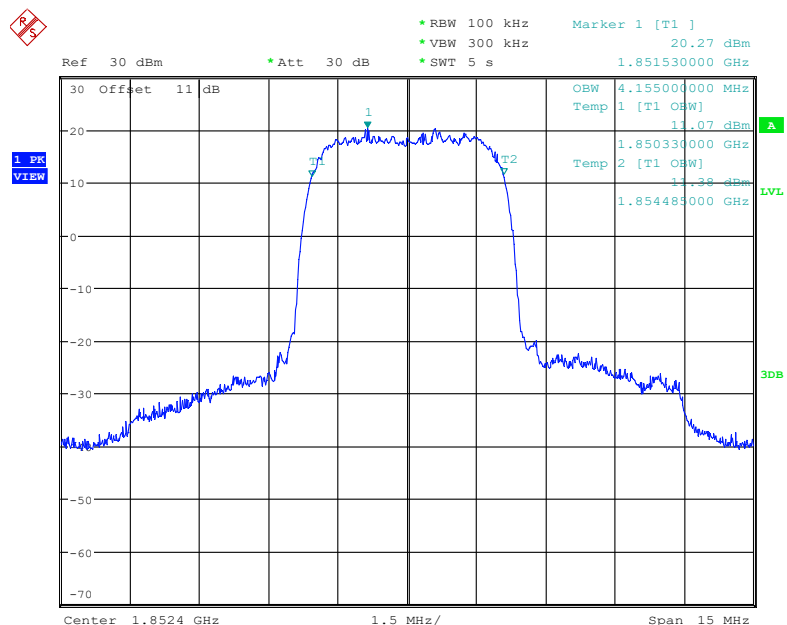
Date: 16.DEC.2022 13:09:46

PCS Band (Part 24E)

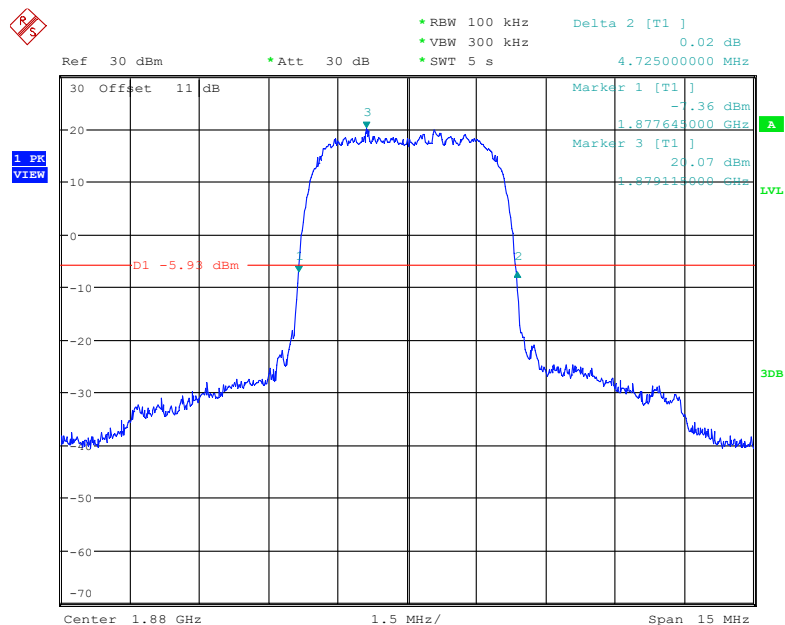
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Low channel



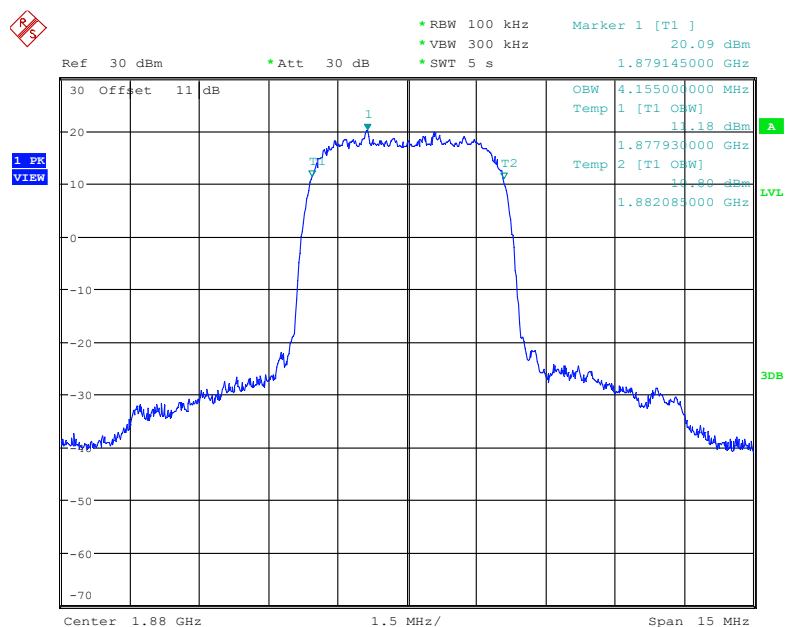
Date: 16.DEC.2022 11:19:57



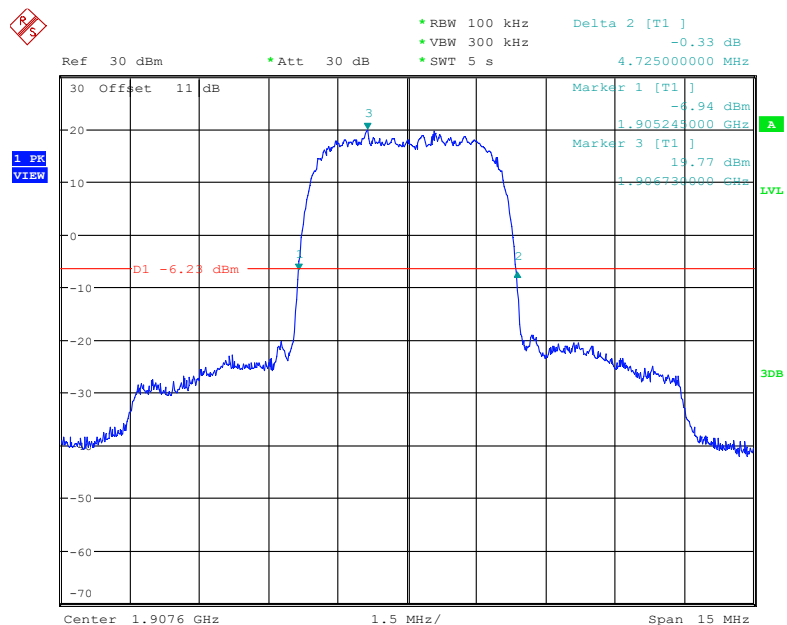
Date: 16.DEC.2022 11:19:17

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

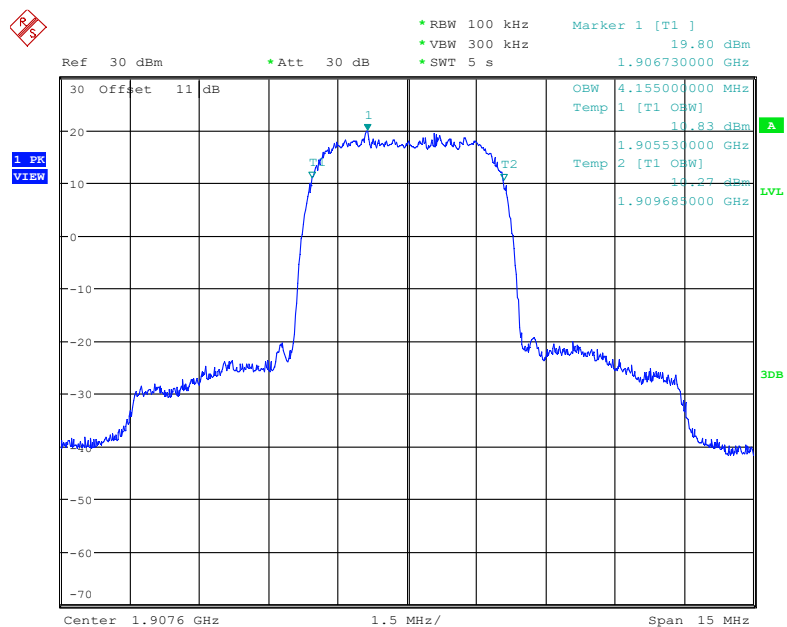
Date: 16.DEC.2022 11:24:00



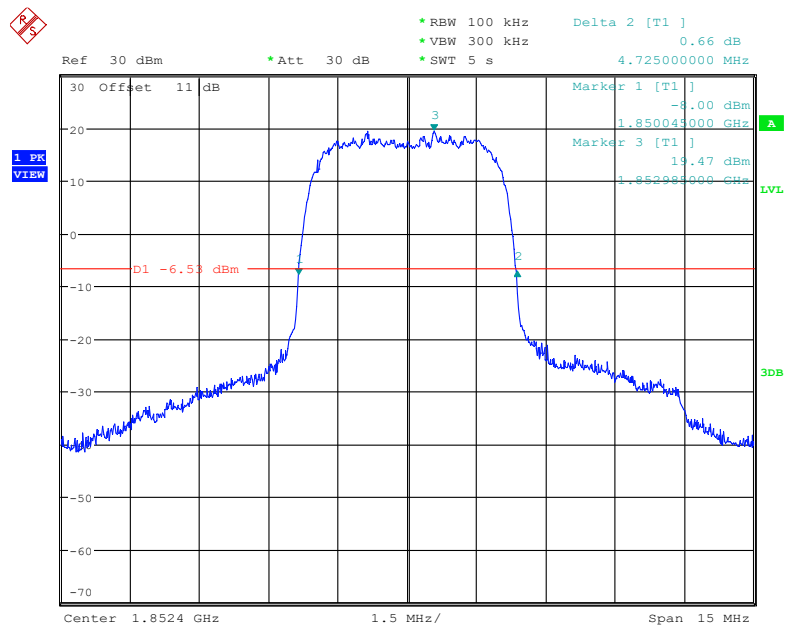
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26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

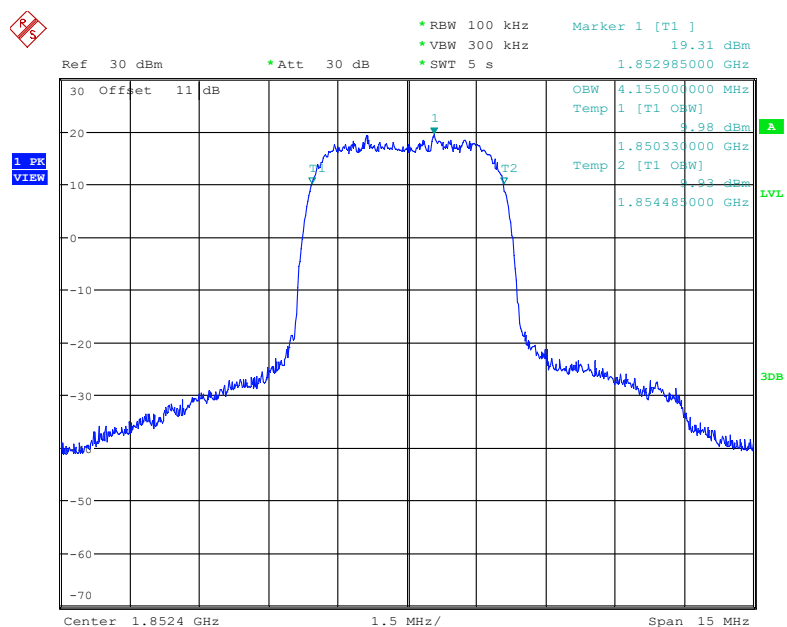
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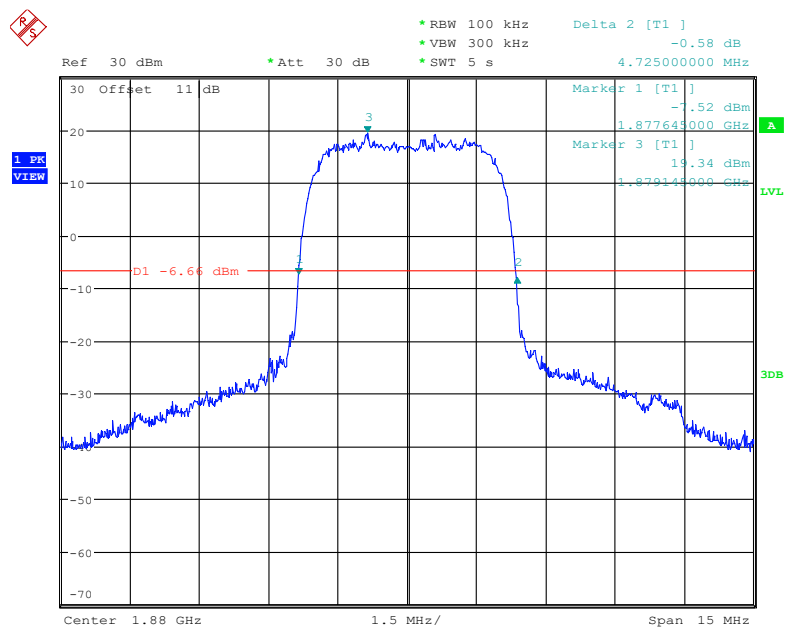
Date: 16.DEC.2022 11:27:27

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

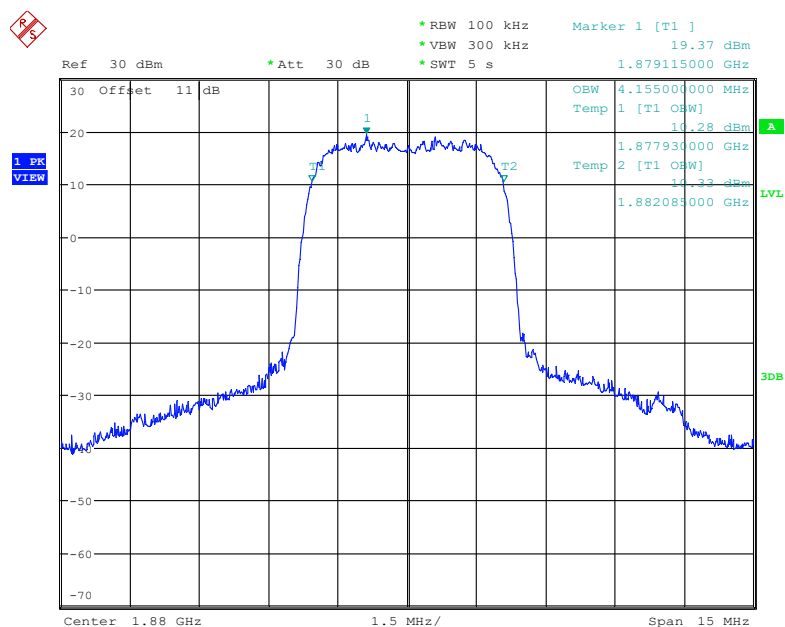
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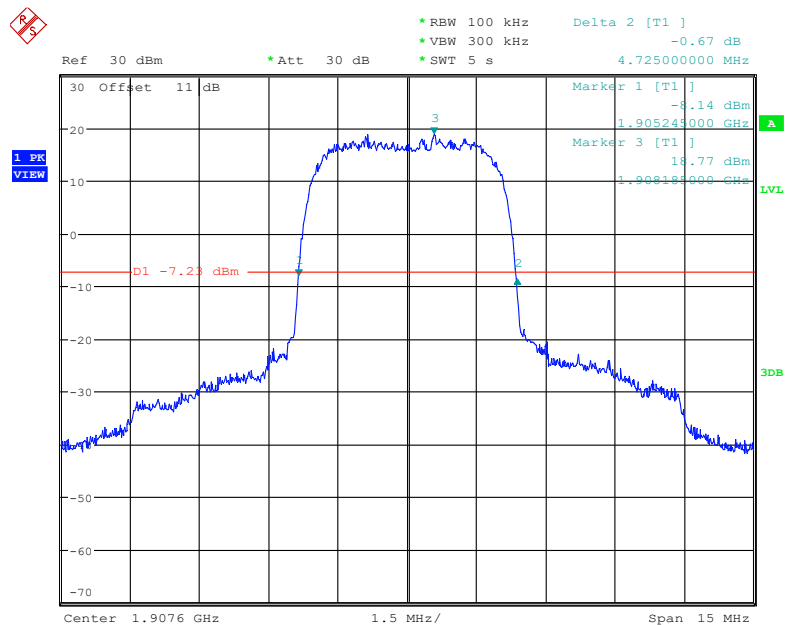
Date: 16.DEC.2022 13:14:55

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

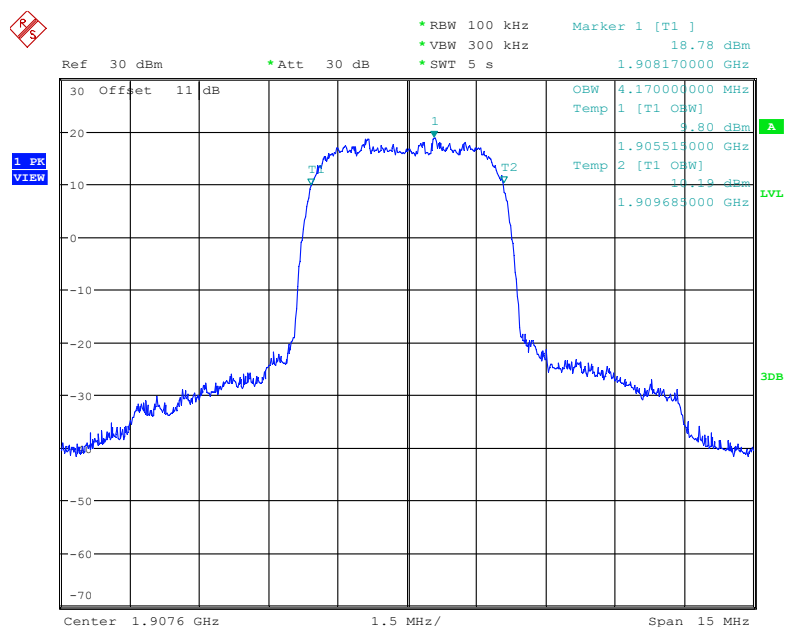
Date: 16.DEC.2022 13:20:54



Date: 16.DEC.2022 13:20:14

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

Date: 16.DEC.2022 13:24:54



Date: 16.DEC.2022 13:24:14

Delta 2 [T1] 0.07 dB

*RBW 100 kHz

*VBW 300 kHz

*Att 30 dB

*SWT 5 s

4.725000000 MHz

30 Offset 11 dB

Ref 30 dBm

1 PK VIEW

Marker 1 [T1] -1.64 dBm

Marker 2 [T1] -7.19 dBm

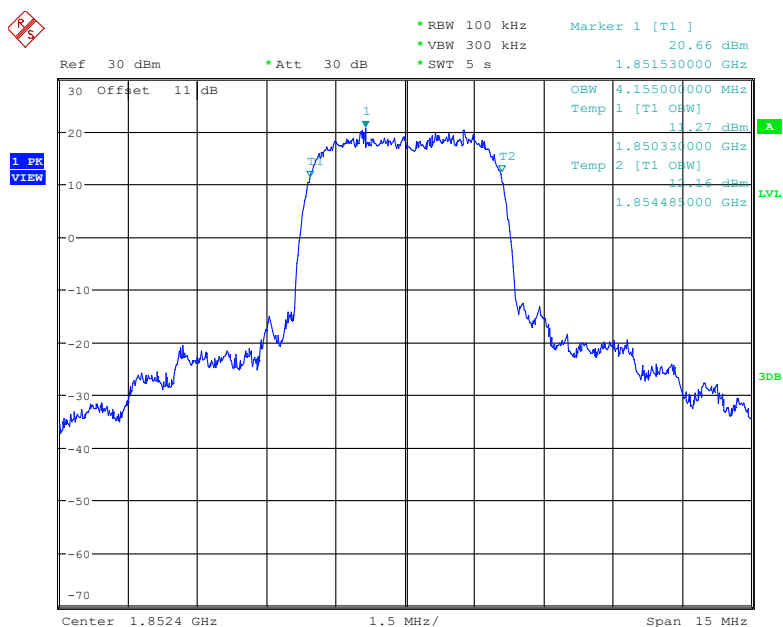
Marker 3 [T1] -20.19 dBm

D1 -5.81 dBm

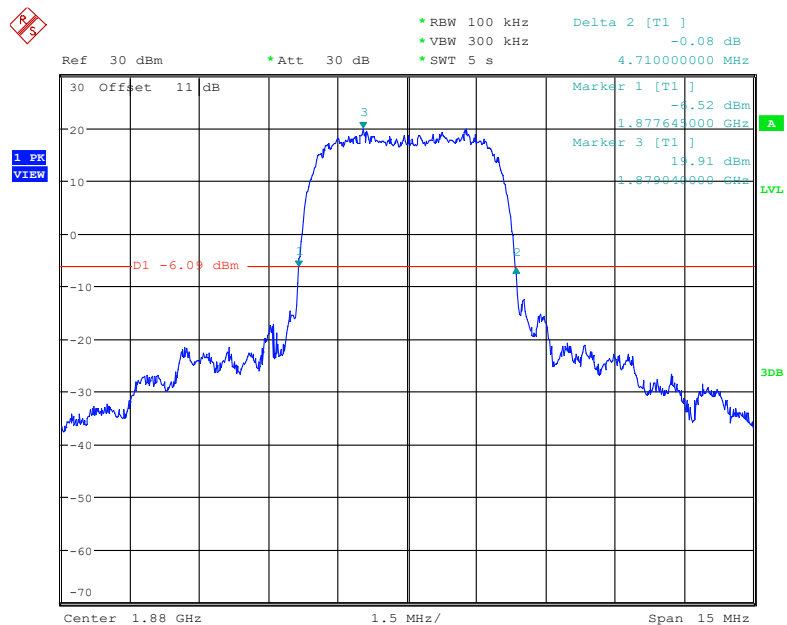
Center 1.8524 GHz

Span 15 MHz

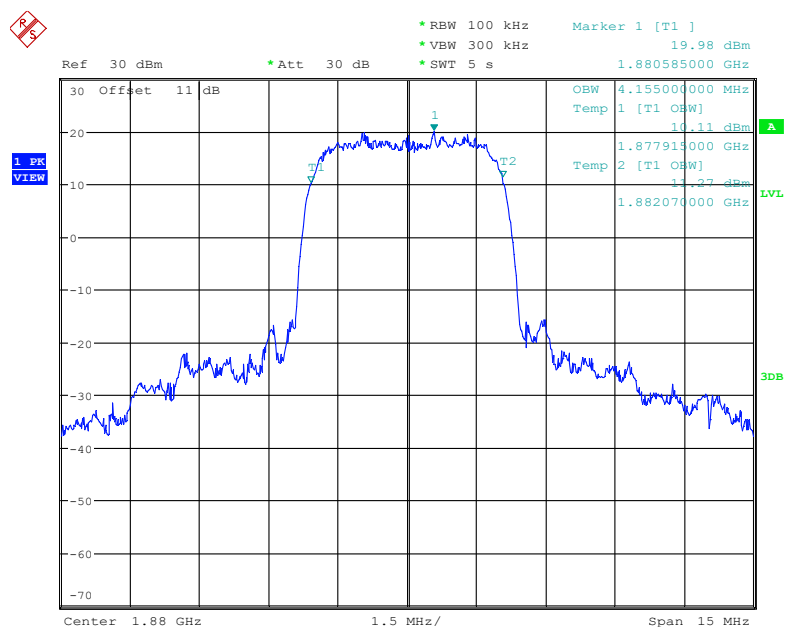
Date: 16.DEC.2022 11:54:14



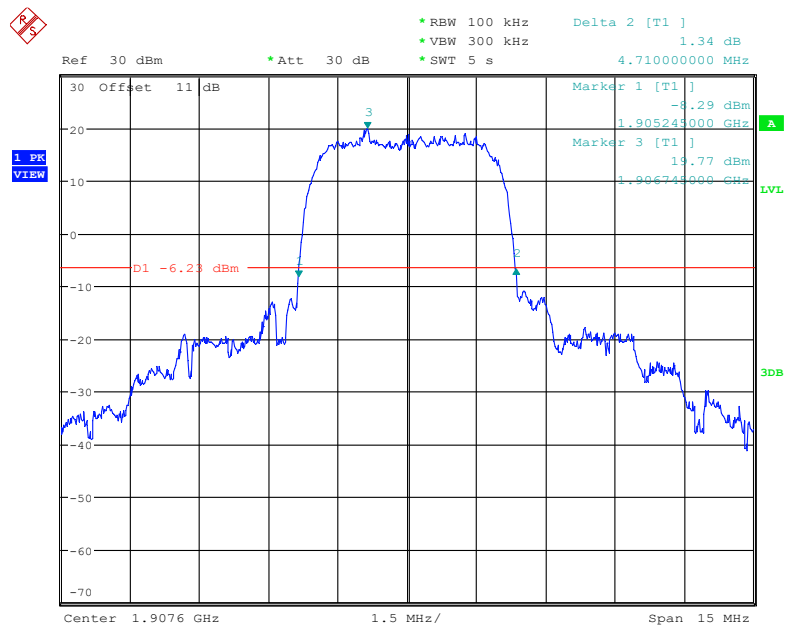
Date: 16.DEC.2022 11:53:35

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

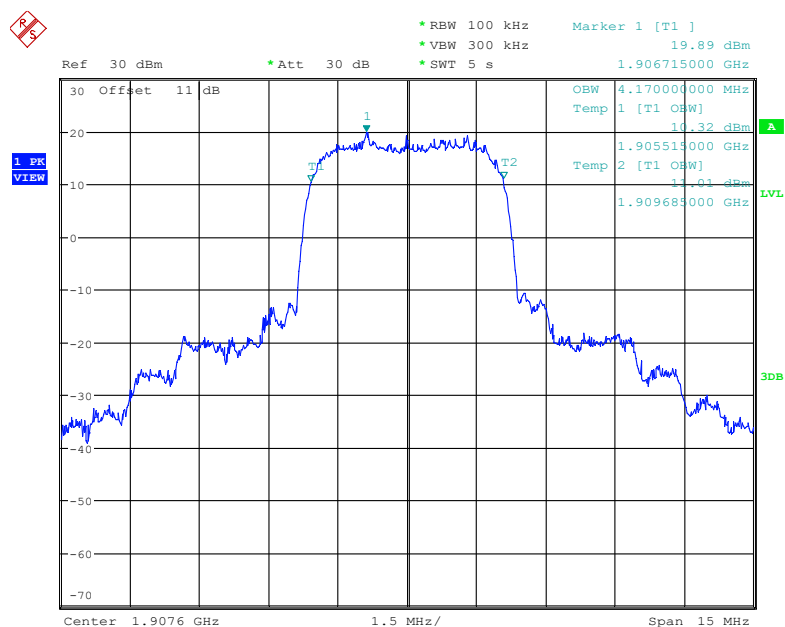
Date: 16.DEC.2022 11:58:18



Date: 16.DEC.2022 11:57:40

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

Date: 16.DEC.2022 12:01:32



Date: 16.DEC.2022 12:00:51

LTE Band 2:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.134	1.500	1.128	1.494	1.128	1.500
	16QAM	1.122	1.440	1.116	1.470	1.128	1.494
3 MHz	QPSK	2.688	3.000	2.700	3.012	2.700	3.024
	16QAM	2.700	3.012	2.688	3.000	2.712	3.000
5 MHz	QPSK	4.540	5.160	4.560	5.140	4.560	5.180
	16QAM	4.540	5.140	4.560	5.180	4.560	5.120
10 MHz	QPSK	8.960	10.200	8.960	10.080	8.960	10.280
	16QAM	9.000	10.160	9.000	10.320	8.960	10.200
15 MHz	QPSK	13.620	15.720	13.620	15.720	13.620	15.780
	16QAM	13.560	15.780	13.620	15.780	13.413	14.615
20 MHz	QPSK	18.000	19.600	18.000	19.680	18.000	19.600
	16QAM	18.000	19.680	18.000	19.760	17.920	19.680

LTE Band 4:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.122	1.500	1.122	1.488	1.134	1.488
	16QAM	1.122	1.476	1.134	1.482	1.134	1.506
3 MHz	QPSK	2.688	2.988	2.700	3.000	2.700	3.000
	16QAM	2.700	3.000	2.700	3.024	2.700	3.000
5 MHz	QPSK	4.540	5.120	4.560	5.180	4.560	5.120
	16QAM	4.540	5.200	4.560	5.160	4.540	5.160
10 MHz	QPSK	9.000	10.080	8.960	10.160	8.960	10.160
	16QAM	9.000	10.120	9.040	10.200	8.960	10.200
15 MHz	QPSK	13.560	15.660	13.620	15.960	13.620	15.900
	16QAM	13.620	15.660	13.560	15.900	13.620	15.720
20 MHz	QPSK	17.920	19.680	18.000	19.680	18.000	19.760
	16QAM	17.920	19.440	18.000	19.600	18.000	19.840

LTE Band 7:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.540	5.180	4.560	5.160	4.560	5.160
	16QAM	4.540	5.180	4.520	5.120	4.540	5.160
10 MHz	QPSK	9.000	10.240	8.960	10.120	8.960	10.200
	16QAM	9.000	10.016	8.960	10.240	8.960	10.160
15 MHz	QPSK	13.560	16.020	13.560	15.720	13.560	15.900
	16QAM	13.620	15.900	13.560	15.900	13.560	15.600
20 MHz	QPSK	18.000	19.680	17.920	19.600	18.080	19.680
	16QAM	18.000	19.680	18.000	19.840	17.920	19.520

LTE Band 12:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.106	1.288	1.134	1.500	1.134	1.506
	16QAM	1.101	1.293	1.128	1.494	1.128	1.500
3 MHz	QPSK	2.688	2.988	2.700	3.000	2.700	3.000
	16QAM	2.688	2.988	2.700	3.000	2.712	3.000
5 MHz	QPSK	4.540	5.120	4.540	5.120	4.580	5.200
	16QAM	4.540	5.120	4.540	5.120	4.540	5.140
10 MHz	QPSK	9.040	10.160	9.000	10.040	8.960	10.000
	16QAM	8.960	10.280	9.000	10.280	8.960	10.080

LTE Band 17:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.540	5.140	4.520	5.140	4.540	5.140
	16QAM	4.540	5.120	4.560	5.120	4.560	5.140
10 MHz	QPSK	8.960	10.120	8.960	10.000	8.960	10.040
	16QAM	8.960	10.120	8.960	10.120	8.960	10.120

LTE Band 25:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.134	1.500	1.122	1.506	1.128	1.536
	16QAM	1.128	1.506	1.128	1.452	1.134	1.494
3 MHz	QPSK	2.700	3.000	2.700	3.000	2.700	3.000
	16QAM	2.712	3.000	2.700	3.024	2.712	3.012
5 MHz	QPSK	4.540	5.200	4.560	5.120	4.540	5.160
	16QAM	4.540	5.180	4.540	5.180	4.540	5.120
10 MHz	QPSK	9.000	10.120	9.000	10.280	8.960	10.160
	16QAM	9.000	10.120	9.000	10.280	9.000	10.080
15 MHz	QPSK	13.620	15.780	13.620	15.720	13.620	15.780
	16QAM	13.620	15.720	13.620	15.780	13.620	15.780
20 MHz	QPSK	18.000	19.680	18.000	19.840	17.920	19.760
	16QAM	18.000	19.680	18.000	19.760	18.080	19.760

LTE Band 26(Part 22H):

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.098	1.260	1.128	1.482	1.122	1.482
	16QAM	1.116	1.482	1.122	1.494	1.134	1.476
3 MHz	QPSK	2.700	2.976	2.688	3.000	2.700	3.000
	16QAM	2.700	3.000	2.688	2.988	2.700	3.000
5 MHz	QPSK	4.540	5.160	4.520	5.100	4.540	5.120
	16QAM	4.560	5.100	4.560	5.160	4.540	5.140
10 MHz	QPSK	8.960	10.360	8.960	9.760	8.960	10.040
	16QAM	8.960	10.160	8.960	10.120	8.960	10.000
15 MHz	QPSK	13.560	15.660	13.560	15.660	13.560	15.720
	16QAM	13.560	15.048	13.560	15.840	13.560	15.780

LTE Band 26(Part 90S):

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.122	1.470	1.128	1.494	1.128	1.494
	16QAM	1.128	1.494	1.134	1.494	1.128	1.464
3 MHz	QPSK	2.700	3.000	2.700	2.976	2.688	2.988
	16QAM	2.688	2.988	2.688	3.000	2.688	3.000
5 MHz	QPSK	4.540	5.180	4.540	5.160	4.540	5.140
	16QAM	4.560	5.160	4.560	5.180	4.560	5.080
10 MHz	QPSK	/	/	8.960	10.120	/	/
	16QAM	/	/	8.960	10.040	/	/

LTE Band 41:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.519	5.128	4.560	6.180	4.520	4.888
	16QAM	4.500	5.064	4.520	5.276	4.520	5.196
10 MHz	QPSK	9.000	9.898	9.000	11.920	9.000	12.080
	16QAM	9.000	12.160	9.000	12.409	8.960	9.874
15 MHz	QPSK	13.620	15.660	13.680	15.900	13.620	15.840
	16QAM	13.620	16.020	13.560	15.660	13.620	15.960
20 MHz	QPSK	18.000	19.760	18.000	19.760	18.000	19.760
	16QAM	18.000	19.600	18.000	19.520	18.000	20.080

LTE Band 66:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
1.4 MHz	QPSK	1.122	1.500	1.128	1.500	1.128	1.482
	16QAM	1.128	1.500	1.128	1.488	1.122	1.500
3 MHz	QPSK	2.688	2.976	2.688	3.000	2.688	2.988
	16QAM	2.700	3.000	2.688	3.000	2.700	2.988
5 MHz	QPSK	4.540	5.160	4.540	5.120	4.520	5.120
	16QAM	4.540	5.160	4.560	5.120	4.520	5.120
10 MHz	QPSK	9.000	10.040	8.960	10.160	9.000	10.160
	16QAM	8.960	10.160	9.000	10.240	8.960	10.200
15 MHz	QPSK	13.560	15.720	13.620	15.840	13.560	15.900
	16QAM	13.620	15.780	13.560	15.840	13.620	15.660
20 MHz	QPSK	18.000	19.520	18.000	19.840	18.000	19.680
	16QAM	18.000	19.760	18.000	19.680	18.000	19.760

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

FCC §2.1051, §22.917(a) & §24.238(a) & §27.53 & §90.691 - SPURIOUS EMISSIONS AT ANTENNA TERMINALS

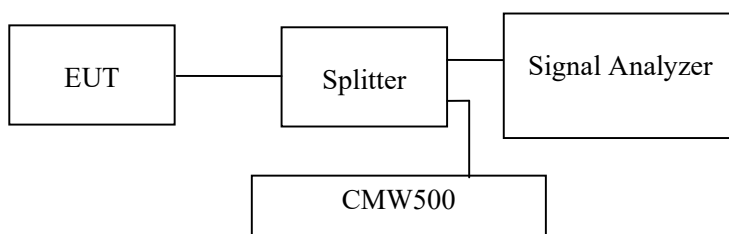
Applicable Standard

FCC §2.1051, §22.917(a) & §24.238(a) & §27.53 & §90.691.

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.



Note: the worst path loss (cable loss and splitter inset loss) among the test frequency range has added into plot.

Test Data

Environmental Conditions

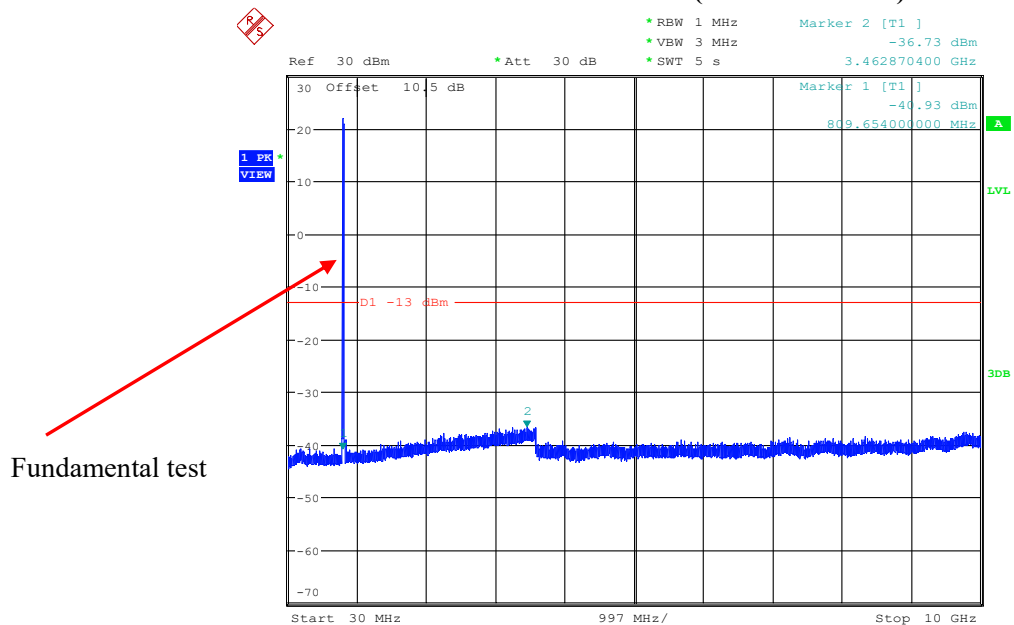
Temperature:	27~27.6°C
Relative Humidity:	54~56.4%
ATM Pressure:	101.0 kPa

The testing was performed by Clenn Jiang from 2022-12-15 to 2023-01-06.

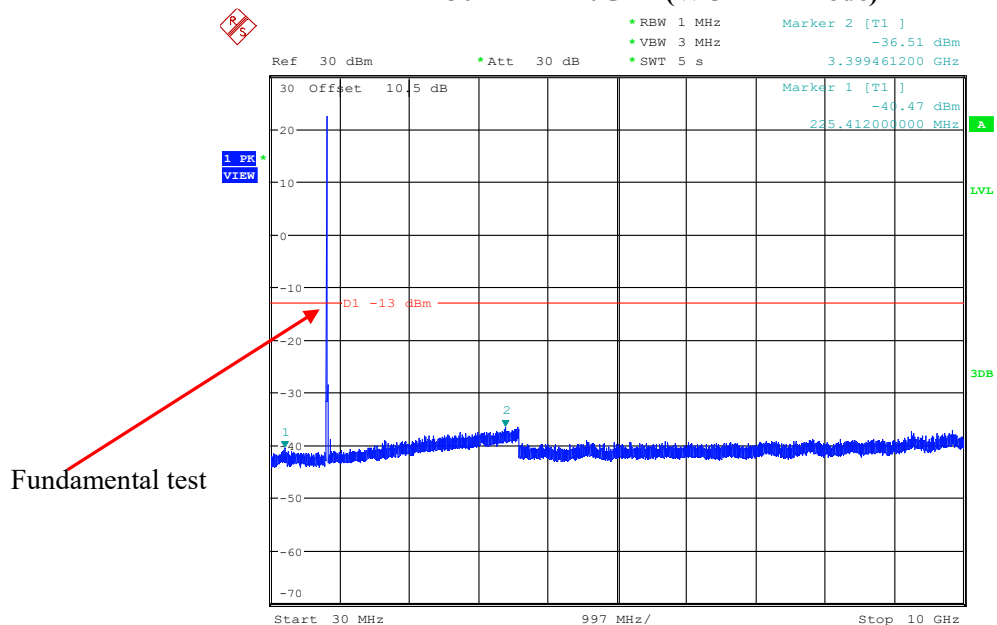
EUT operation mode: Transmitting

Test result: Pass

Please refer to the following plots.

Cellular Band (Part 22H)**Low Channel:****30 MHz – 10GHz (WCDMA Mode)**

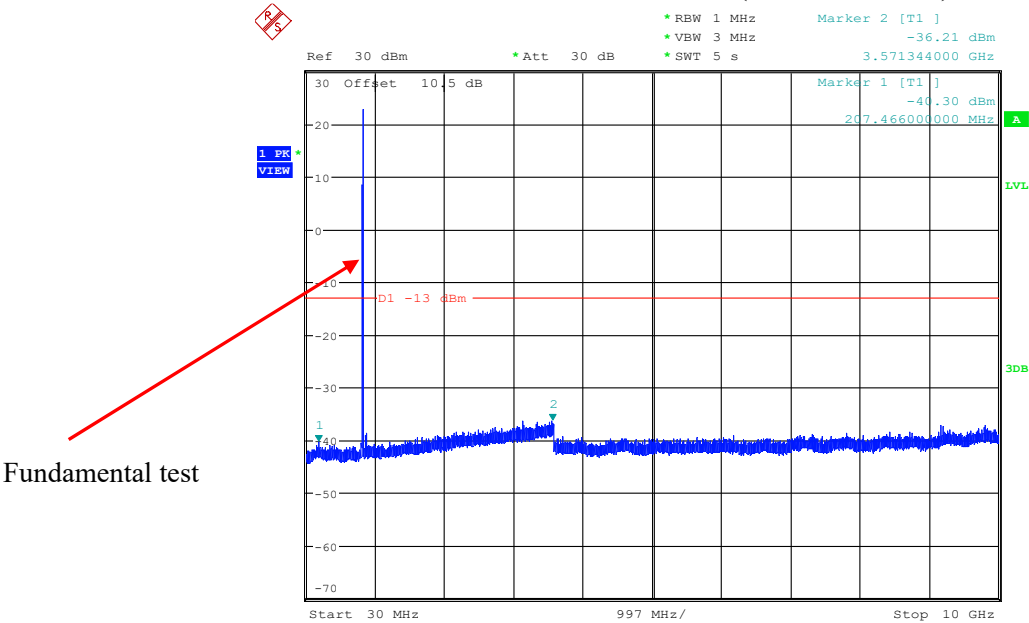
Date: 16.DEC.2022 11:39:43

Middle Channel:**30 MHz – 10GHz (WCDMA Mode)**

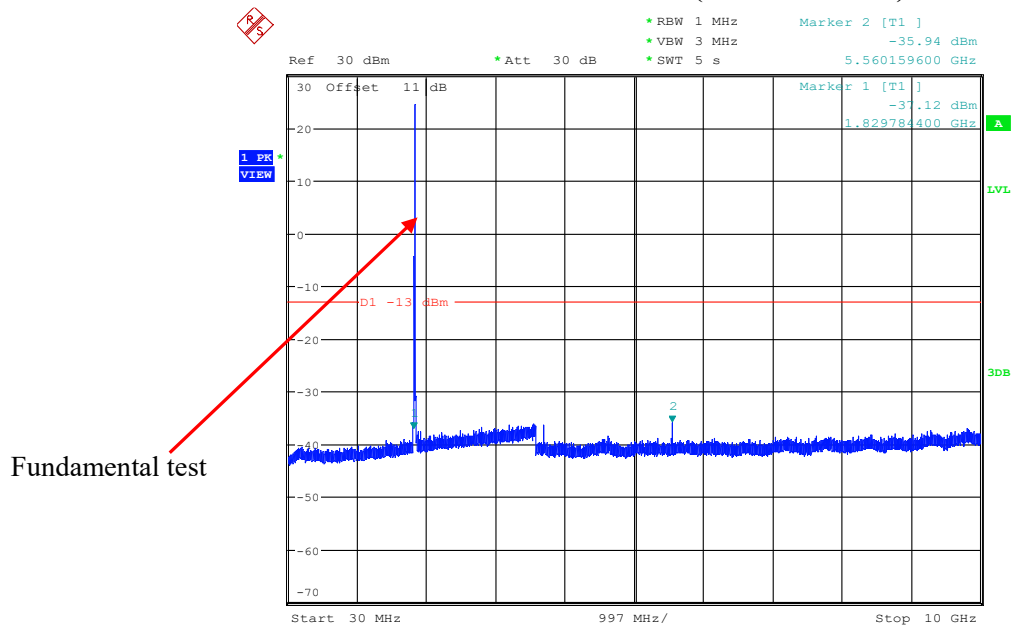
Date: 16.DEC.2022 11:42:42

High Channel:

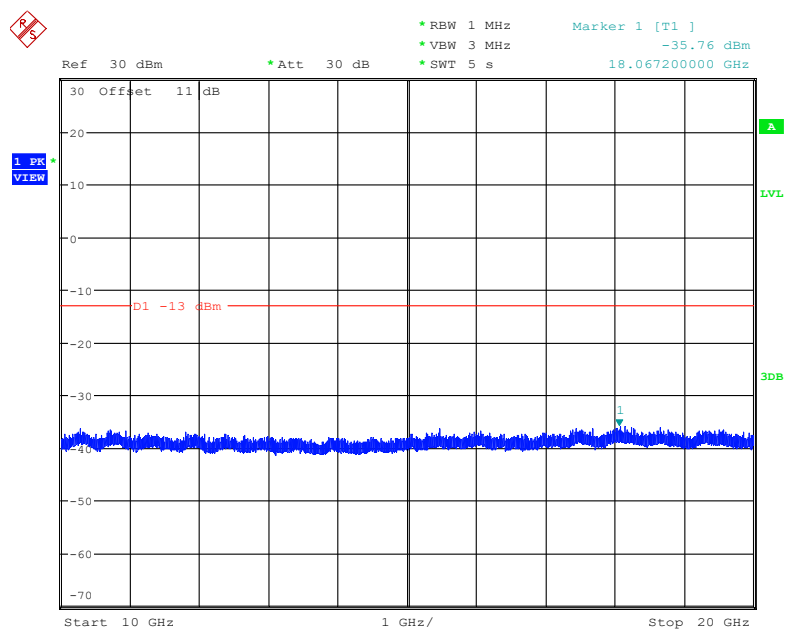
30 MHz – 10GHz RMC (WCDMA Mode)



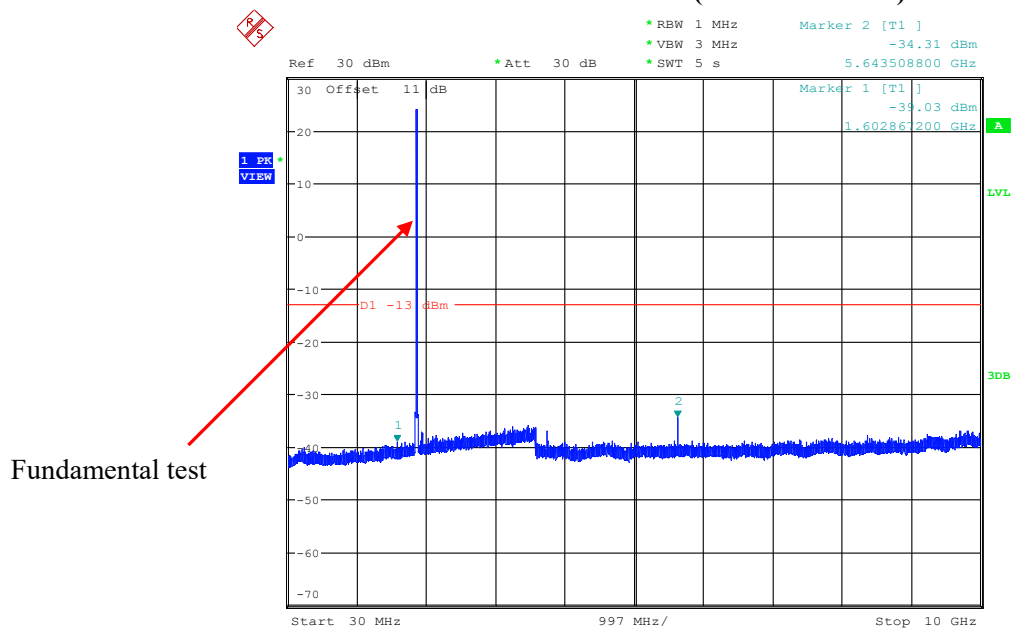
Date: 16,DEC,2022 11:46:12

PCS Band (Part 24E)**Low Channel:****30 MHz – 10GHz (WCDMA Mode)**

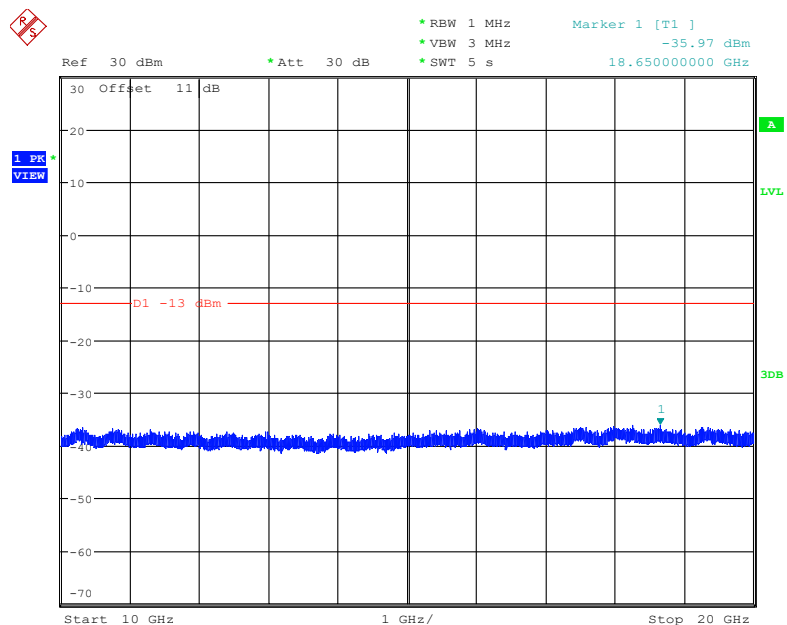
Date: 16.DEC.2022 11:21:18

10 GHz – 20GHz (WCDMA Mode)

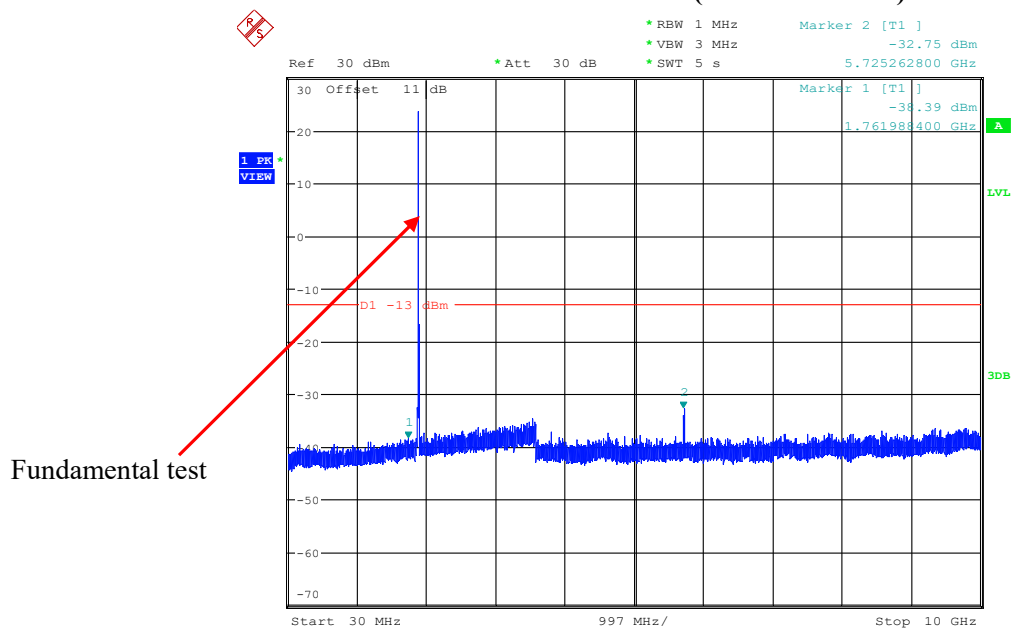
Date: 16.DEC.2022 11:22:00

Middle Channel:**30 MHz – 10GHz (WCDMA Mode)**

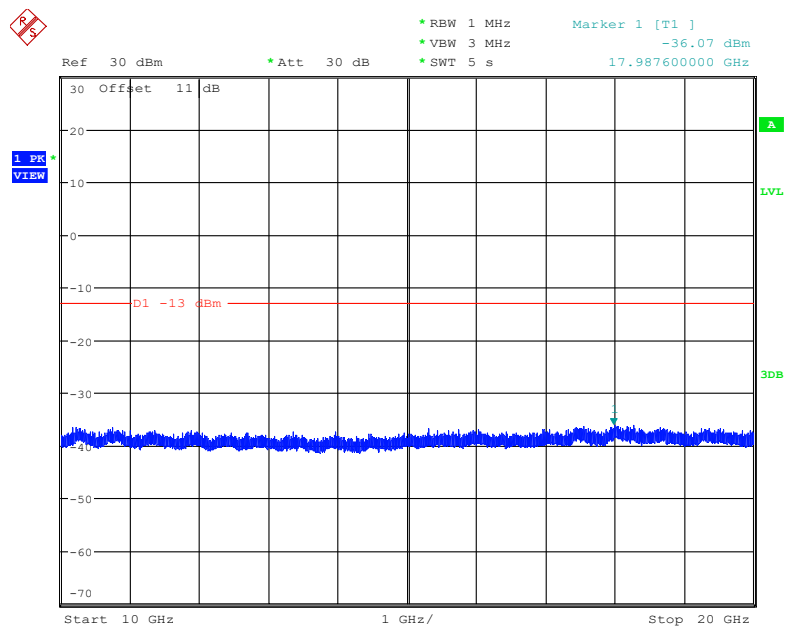
Date: 16,DEC.2022 11:24:40

10 GHz – 20GHz (WCDMA Mode)

Date: 16,DEC.2022 11:25:21

High Channel:**30 MHz – 10GHz (WCDMA Mode)**

Date: 16.DEC.2022 11:30:53

10 GHz – 20GHz (WCDMA Mode)

Date: 16.DEC.2022 11:31:35

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

FCC § 2.1053; § 22.917 (a); § 24.238 (a); § 27.53; § 90.691- SPURIOUS RADIATED EMISSIONS

Applicable Standard

FCC § 2.1053, § 22.917(a) & § 24.238(a) & § 27.53 & § 90.691.

Test Procedure

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

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

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

Test Data

Environmental Conditions

Temperature:	25.5℃
Relative Humidity:	52 %
ATM Pressure:	101.0kPa

The testing was performed by Jason Liu on 2022-12-20.

Test mode: Transmitting (Pre-scan in the X, Y and Z axes of orientation, the worst case Z-axis of orientation was recorded)

The worst case is as below:

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 5, Low Channel								
950.46	-70.32	349	2.0	H	10.0	-60.32	-13	-47.32
950.46	-75.97	4	1.1	V	11.7	-64.27	-13	-51.27
1652.8	-50.80	48	1.6	H	3.5	-47.30	-13	-34.30
1652.8	-40.20	323	2.4	V	3.1	-37.10	-13	-24.10
2479.2	-54.60	130	1.4	H	6.6	-48.00	-13	-35.00
2479.2	-57.10	304	1	V	5.8	-51.30	-13	-38.30
3305.6	-51.90	164	1.1	H	6.4	-45.50	-13	-32.50
3305.6	-51.20	165	2.2	V	5.7	-45.50	-13	-32.50
WCDMA Band 5, Middle Channel								
955.66	-70.99	278	2.1	H	10.0	-60.99	-13	-47.99
955.66	-77.28	148	1.8	V	11.7	-65.58	-13	-52.58
1673.2	-52.10	226	1.7	H	3.8	-48.30	-13	-35.30
1673.2	-41.00	154	1.1	V	3.1	-37.90	-13	-24.90
2509.8	-52.70	240	1.8	H	6.2	-46.50	-13	-33.50
2509.8	-52.20	354	1.6	V	5.6	-46.60	-13	-33.60
3346.4	-51.20	156	1.5	H	6.6	-44.60	-13	-31.60
3346.4	-51.30	315	1.4	V	5.4	-45.90	-13	-32.90
WCDMA Band 5, High Channel								
956.92	-71.62	134	2.1	H	10.0	-61.62	-13	-48.62
956.92	-77.25	235	2.5	V	11.7	-65.55	-13	-52.55
1693.2	-53.20	177	2.2	H	4.1	-49.10	-13	-36.10
1693.2	-41.50	229	1.6	V	3.1	-38.40	-13	-25.40
2539.8	-53.60	92	1.1	H	6.1	-47.50	-13	-34.50
2539.8	-52.30	45	1.6	V	5.8	-46.50	-13	-33.50
3386.4	-51.50	62	1.3	H	6.2	-45.30	-13	-32.30
3386.4	-50.60	358	1.8	V	5.4	-45.20	-13	-32.20

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
WCDMA Band 2, Low Channel								
951.18	-70.33	94	1.9	H	10.0	-60.33	-13	-47.33
951.18	-77.57	82	2.0	V	11.7	-65.87	-13	-52.87
3704.8	-45.80	195	1.4	H	8.1	-37.70	-13	-24.70
3704.8	-45.00	210	1.1	V	7.6	-37.40	-13	-24.40
5557.2	-47.30	277	2.4	H	9.6	-37.70	-13	-24.70
5557.2	-46.70	216	1.9	V	9.1	-37.60	-13	-24.60
WCDMA Band 2, Middle Channel								
952.95	-72.38	241	2.1	H	10.0	-62.38	-13	-49.38
952.95	-76.67	347	1.3	V	11.7	-64.97	-13	-51.97
3760	-47.90	104	2.5	H	8.8	-39.10	-13	-26.10
3760	-47.30	287	1.7	V	8	-39.30	-13	-26.30
5640	-47.10	134	1.5	H	10.2	-36.90	-13	-23.90
5640	-46.10	305	1.9	V	9.4	-36.70	-13	-23.70
WCDMA Band 2, High Channel								
954.49	-72.81	104	2.5	H	10.0	-62.81	-13	-49.81
954.49	-74.99	239	1.2	V	11.7	-63.29	-13	-50.29
3815.2	-47.50	57	1.5	H	8.7	-38.80	-13	-25.80
3815.2	-48.50	284	1.2	V	7.9	-40.60	-13	-27.60
5722.8	-47.20	306	1.4	H	10.6	-36.60	-13	-23.60
5722.8	-46.50	190	1.6	V	10.2	-36.30	-13	-23.30

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Test frequency range: 30MHz-20GHz								
LTE Band2, QPSK, 1.4MHz, Low Channel								
954.37	-71.07	127	1.4	H	10.0	-61.07	-13	-48.07
954.37	-76.96	106	1.2	V	11.7	-65.26	-13	-52.26
3701.4	-41.90	260	2.0	H	8.1	-33.80	-13	-20.80
3701.4	-45.20	255	1.6	V	7.6	-37.60	-13	-24.60
5552.1	-36.90	182	1.2	H	9.6	-27.30	-13	-14.30
5552.1	-33.10	188	2.1	V	9.1	-24.00	-13	-11.00
LTE Band2, QPSK, 1.4MHz, Middle Channel								
952.77	-70.86	164	1.8	H	10.0	-60.86	-13	-47.86
952.77	-74.86	277	2.2	V	11.7	-63.16	-13	-50.16
3760	-43.50	224	1.7	H	8.8	-34.70	-13	-21.70
3760	-45.80	95	2.3	V	8	-37.80	-13	-24.80
5640	-39.30	325	1.5	H	10.2	-29.10	-13	-16.10
5640	-35.30	225	2.2	V	9.4	-25.90	-13	-12.90
LTE Band2, QPSK, 1.4MHz, Middle Channel								
955.17	-72.56	49	1.3	H	10.0	-62.56	-13	-49.56
955.17	-77.19	54	1.6	V	11.7	-65.49	-13	-52.49
3818.6	-43.70	89	1.8	H	8.7	-35.00	-13	-22.00
3818.6	-46.60	345	1.6	V	7.9	-38.70	-13	-25.70
5727.9	-39.30	202	2.3	H	10.6	-28.70	-13	-15.70
5727.9	-35.50	112	1.7	V	10.2	-25.30	-13	-12.30
LTE Band4, QPSK, 1.4MHz, Low Channel								
953.03	-70.16	202	1.6	H	10.0	-60.16	-13	-47.16
953.03	-76.32	13	1.8	V	11.7	-64.62	-13	-51.62
3421.4	-39.40	317	2.4	H	6.4	-33.00	-13	-20.00
3421.4	-37.50	38	1.5	V	5.8	-31.70	-13	-18.70
LTE Band4, QPSK, 1.4MHz, Middle Channel								
950.39	-72.02	313	2.4	H	10.0	-62.02	-13	-49.02
950.39	-77.54	109	1.6	V	11.7	-65.84	-13	-52.84
3465	-36.2	228	2.3	H	7	-29.20	-13	-16.20
3465	-36.7	246	2.2	V	6.2	-30.50	-13	-17.50
LTE Band4, QPSK, 1.4MHz, Middle Channel								
954.28	-72.60	312	2.2	H	10.0	-62.60	-13	-49.60
954.28	-77.68	94	1.3	V	11.7	-65.98	-13	-52.98
3508.6	-38.20	293	1.6	H	7.8	-30.40	-13	-17.40
3508.6	-38.10	225	1.2	V	6.5	-31.60	-13	-18.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Test frequency range: 30MHz-26.5GHz								
LTE Band7, QPSK, 5MHz, Low Channel								
952.88	-70.40	110	2.3	H	10.0	-60.40	-25	-35.40
952.88	-75.71	303	1.8	V	11.7	-64.01	-25	-39.01
5005.0	-48.20	344	1.9	H	10.8	-37.40	-25	-12.40
5005.0	-45.80	200	2.4	V	10.2	-35.60	-25	-10.60
LTE Band7, QPSK, 5MHz, Middle Channel								
951.95	-71.22	41	1.1	H	9.8	-61.42	-25	-36.42
951.95	-77.62	226	2.4	V	11.7	-65.92	-25	-40.92
5070.0	-47.70	61	2.1	H	11.1	-36.60	-25	-11.60
5070.0	-46.20	339	1.2	V	10.8	-35.40	-25	-10.40
LTE Band7, QPSK, 5MHz, High Channel								
953.18	-72.52	207	1.2	H	10.0	-62.52	-25	-37.52
953.18	-77.60	220	2.3	V	11.7	-65.90	-25	-40.90
5135.0	-47.90	151	1.6	H	11.3	-36.60	-25	-11.60
5135.0	-46.20	269	2.1	V	10.8	-35.40	-25	-10.40
Test frequency range: 30MHz-10GHz								
LTE Band12, QPSK, 5MHz, Low Channel								
953.62	-61.14	292	1.3	H	-0.2	-61.34	-13	-48.34
953.62	-68.15	203	2.4	V	3.1	-65.05	-13	-52.05
1399.4	-47.4	19	1.5	H	5.9	-41.5	-13	-28.5
1399.4	-49.5	220	1.6	V	5.9	-43.6	-13	-30.6
2099.1	-43.4	327	1.9	H	6.3	-37.1	-13	-24.1
2099.1	-47.6	54	2.3	V	5.1	-42.5	-13	-29.5
2798.8	-54.6	348	1.3	H	6.7	-47.9	-13	-34.9
2798.8	-54.0	90	1.2	V	6.7	-47.3	-13	-34.3
LTE Band12, QPSK, 5MHz, Middle Channel								
955.26	-72.19	353	1.9	H	10.0	-62.19	-13	-49.19
955.26	-75.34	262	2.5	V	11.7	-63.64	-13	-50.64
1415.0	-46.6	348	1.6	H	5.7	-40.9	-13	-27.9
1415.0	-48.1	84	2.0	V	5.4	-42.7	-13	-29.7
2122.5	-44.1	172	2.0	H	6.7	-37.4	-13	-24.4
2122.5	-48.0	136	2.1	V	5.8	-42.2	-13	-29.2
2830.0	-54.3	282	1.9	H	7.1	-47.2	-13	-34.2
2830.0	-53.2	242	1.5	V	6.5	-46.7	-13	-33.7
LTE Band12, QPSK, 5MHz, High Channel								
955.77	-70.06	116	1.7	H	10.0	-60.06	-13	-47.06
955.77	-75.41	100	1.9	V	11.7	-63.71	-13	-50.71
1430.6	-50.2	359	1.4	H	5.4	-44.8	-13	-31.8
1430.6	-52.8	224	1.8	V	4.8	-48.0	-13	-35.0
2145.9	-42.5	257	1.0	H	7	-35.5	-13	-22.5
2145.9	-45.6	115	1.5	V	6.6	-39.0	-13	-26.0
2861.2	-55.1	25	1.8	H	7.3	-47.8	-13	-34.8
2861.2	-54.2	33	1.7	V	6.3	-47.9	-13	-34.9

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Test frequency range: 30MHz-10GHz								
LTE Band17, QPSK, 5MHz, Low Channel								
952.90	-71.86	154	2.5	H	10.0	-61.86	-13	-48.86
952.90	-74.85	105	1.8	V	11.7	-63.15	-13	-50.15
1413	-39.77	238	2.4	H	-0.53	-40.30	-13	-27.30
1413	-38.66	277	1.4	V	-0.74	-39.40	-13	-26.40
2119.5	-37.21	214	2.4	H	-0.89	-38.10	-13	-25.10
2119.5	-40.38	149	1.3	V	-1.12	-41.50	-13	-28.50
2826	-45.64	20	1.7	H	2.24	-43.40	-13	-30.40
2826	-45.83	292	2.1	V	2.33	-43.50	-13	-30.50
LTE Band17, QPSK, 5MHz, Middle Channel								
953.62	-72.61	346	2.0	H	10.0	-62.61	-13	-49.61
953.62	-75.89	292	2.2	V	11.7	-64.19	-13	-51.19
1420	-40.07	7	2.5	H	-0.53	-40.60	-13	-27.60
1420	-39.96	142	1.4	V	-0.74	-40.70	-13	-27.70
2130	-38.21	47	2.4	H	-0.89	-39.10	-13	-26.10
2130	-42.08	106	1.7	V	-1.12	-43.20	-13	-30.20
2840	-45.84	258	1.1	H	2.24	-43.60	-13	-30.60
2840	-46.23	306	1.5	V	2.33	-43.90	-13	-30.90
LTE Band17, QPSK, 5MHz, High Channel								
954.01	-72.33	91	2.2	H	10.0	-62.33	-13	-49.33
954.01	-75.70	350	1.1	V	11.7	-64.00	-13	-51.00
1427	-41.37	229	1.2	H	-0.53	-41.90	-13	-28.90
1427	-41.86	303	1.3	V	-0.74	-42.60	-13	-29.60
2140.5	-37.91	13	2.4	H	-0.89	-38.80	-13	-25.80
2140.5	-41.38	342	2.3	V	-1.12	-42.50	-13	-29.50
2854	-47.04	171	1.2	H	2.24	-44.80	-13	-31.80
2854	-47.03	255	1.5	V	2.33	-44.70	-13	-31.70
Test frequency range: 30MHz-20GHz								
LTE Band25, QPSK, 1.4MHz, Low Channel								
956.71	-71.12	244	1.8	H	10.0	-61.12	-13	-48.12
956.71	-75.57	284	1.6	V	11.7	-63.87	-13	-50.87
3701.4	-33.6	176	1.1	H	8.1	-25.5	-13	-12.5
3701.4	-35.7	236	1.2	V	7.6	-28.1	-13	-15.1
LTE Band25, QPSK, 1.4MHz, Middle Channel								
954.98	-70.50	213	1.7	H	10.0	-60.50	-13	-47.50
954.98	-75.38	146	2.0	V	11.7	-63.68	-13	-50.68
3765	-34.9	45	2.4	H	8.8	-26.1	-13	-13.1
3765	-39.9	10	2.4	V	7.9	-32.0	-13	-19.0
LTE Band25, QPSK, 1.4MHz, High Channel								
956.66	-71.59	12	2.4	H	10.0	-61.59	-13	-48.59
956.66	-74.86	220	1.6	V	11.7	-63.16	-13	-50.16
3828.6	-34.3	217	1.4	H	8.7	-25.6	-13	-12.6
3828.6	-35.0	134	1.8	V	8	-27.0	-13	-14.0

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 26(Part 22H)								
Test frequency range: 30MHz-10GHz								
QPSK, 1.4MHz, Low Channel								
955.21	-70.59	15	1.2	H	10.0	-60.59	-13	-47.59
955.21	-76.90	137	2.3	V	11.7	-65.20	-13	-52.20
1649.4	-61.3	228	1.4	H	3.5	-57.8	-13	-44.8
1649.4	-60.8	245	1.5	V	3.1	-57.7	-13	-44.7
2474.1	-57.7	38	1.8	H	6.6	-51.1	-13	-38.1
2474.1	-59.2	208	1.5	V	5.8	-53.4	-13	-40.4
3298.8	-49.4	105	1.1	H	6.4	-43.0	-13	-30.0
3298.8	-55.4	138	2.1	V	5.7	-49.7	-13	-36.7
QPSK, 1.4MHz, Middle Channel								
953.79	-72.04	150	2.4	H	10.0	-62.04	-13	-49.04
953.79	-75.91	67	2.3	V	11.7	-64.21	-13	-51.21
1673	-57.2	259	2.2	H	3.8	-53.4	-13	-40.4
1673	-57.8	306	2.0	V	3.1	-54.7	-13	-41.7
2509.5	-46.6	326	1.0	H	6.2	-40.4	-13	-27.4
2509.5	-50.3	91	2.4	V	5.5	-44.8	-13	-31.8
3346	-44.2	311	1.6	H	6.6	-37.6	-13	-24.6
3346	-46.9	162	2.2	V	5.4	-41.5	-13	-28.5
QPSK, 1.4MHz, High Channel								
954.69	-71.19	109	1.9	H	10.0	-61.19	-13	-48.19
954.69	-74.83	166	2.5	V	11.7	-63.13	-13	-50.13
1696.6	-52.5	235	2.0	H	4.1	-48.4	-13	-35.4
1696.6	-55.0	271	1.7	V	3.1	-51.9	-13	-38.9
2544.9	-61.9	111	2.1	H	6.1	-55.8	-13	-42.8
2544.9	-60.7	166	1.5	V	5.8	-54.9	-13	-41.9
3393.2	-51.2	89	2.4	H	6.2	-45.0	-13	-32.0
3393.2	-51.8	353	1.8	V	5.4	-46.4	-13	-33.4

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 26 (Part 90S)								
Test frequency range: 30MHz-10GHz								
QPSK, 1.4MHz, Low Channel								
954.24	-70.10	210	1.1	H	10.0	-60.10	-13	-47.10
954.24	-76.31	238	2.0	V	11.7	-64.61	-13	-51.61
1629.4	-62.5	38	1.4	H	3.7	-58.8	-13	-45.8
1629.4	-61.8	321	1.2	V	3.1	-58.7	-13	-45.7
2444.1	-53.2	152	2.1	H	7	-46.2	-13	-33.2
2444.1	-52.0	175	1.8	V	6	-46.0	-13	-33.0
3258.8	-44.6	339	2.4	H	6.9	-37.7	-13	-24.7
3258.8	-54.0	360	1.2	V	6	-48.0	-13	-35.0
QPSK, 1.4MHz, Middle Channel								
951.98	-71.19	165	2.0	H	10.0	-61.19	-13	-48.19
951.98	-75.72	167	1.9	V	11.7	-64.02	-13	-51.02
1638	-58.6	132	2.3	H	3.6	-55.0	-13	-42.0
1638	-60.1	325	1.1	V	3.1	-57.0	-13	-44.0
2457	-53.5	352	1.7	H	6.9	-46.6	-13	-33.6
2457	-52.0	110	2.5	V	5.9	-46.1	-13	-33.1
3276	-53.9	101	1.2	H	6.7	-47.2	-13	-34.2
3276	-54.4	298	2.5	V	5.9	-48.5	-13	-35.5
QPSK, 1.4MHz, High Channel								
954.23	-72.61	275	1.3	H	10.0	-62.61	-13	-49.61
954.23	-74.90	119	2.1	V	11.7	-63.20	-13	-50.20
1646.6	-60.7	325	2.2	H	3.5	-57.2	-13	-44.2
1646.6	-61.8	180	2.1	V	3.1	-58.7	-13	-45.7
2469.9	-55.7	122	2.1	H	6.7	-49.0	-13	-36.0
2469.9	-58.4	110	2.0	V	5.8	-52.6	-13	-39.6
3293.2	-47.9	198	2.4	H	6.5	-41.4	-13	-28.4
3293.2	-54.6	329	2.5	V	5.8	-48.8	-13	-35.8

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 41								
Test frequency range: 30MHz-26.55GHz								
QPSK, 5MHz, Low Channel								
953.44	-72.33	223	1.3	H	10.0	-62.33	-25	-37.33
953.44	-75.10	100	2.5	V	11.7	-63.40	-25	-38.40
5115	-45.6	180	2.2	H	11.3	-34.30	-25	-9.30
5115	-46.0	121	1.3	V	10.8	-35.20	-25	-10.20
7672.5	-57.1	193	1.7	H	21.2	-35.90	-25	-10.90
7672.5	-56.0	229	2.3	V	20.9	-35.10	-25	-10.10
QPSK, 5MHz, Middle Channel								
951.24	-72.92	91	1.1	H	10.0	-62.92	-25	-37.92
951.24	-76.95	2	2.2	V	11.7	-65.25	-25	-40.25
5210	-45.6	64	1.0	H	10.1	-35.50	-25	-10.50
5210	-44.5	262	1.7	V	9.6	-34.90	-25	-9.90
7815	-52.7	52	1.4	H	18	-34.70	-25	-9.70
7815	-51.8	97	2.3	V	17.6	-34.20	-25	-9.20
QPSK, 5MHz, High Channel								
954.27	-72.01	112	1.5	H	10.0	-62.01	-25	-37.01
954.27	-76.17	117	1.3	V	11.7	-64.47	-25	-39.47
5305	-46.4	169	1.5	H	9.5	-36.90	-25	-11.90
5305	-43.1	195	2	V	8.9	-34.20	-25	-9.20
7957.5	-51.9	218	1.8	H	18.9	-33.00	-25	-8.00
7957.5	-50.4	302	1.9	V	18.5	-31.90	-25	-6.90

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 66								
Test frequency range: 30MHz-20GHz								
QPSK, 1.4MHz, Low Channel								
951.60	-72.50	194	2.5	H	10.0	-62.50	-13	-49.50
951.60	-77.04	73	2.3	V	11.7	-65.34	-13	-52.34
3421.4	-37.1	141	2.2	H	6.4	-30.70	-13	-17.70
3421.4	-36.3	148	1.1	V	5.7	-30.60	-13	-17.60
5132.1	-44.9	106	1.6	H	11.3	-33.60	-13	-20.60
5132.1	-45.6	105	2.3	V	10.8	-34.80	-13	-21.80
QPSK, 1.4MHz, Middle Channel								
950.74	-71.33	242	1.7	H	10.0	-61.33	-13	-48.33
950.74	-74.72	18	1.9	V	11.7	-63.02	-13	-50.02
3490	-39.8	77	1.6	H	7.6	-32.20	-13	-19.20
3490	-38.6	5	2.4	V	6.4	-32.20	-13	-19.20
5235	-36.9	183	1.6	H	9.7	-27.20	-13	-14.20
5235	-39.1	114	1.4	V	9.2	-29.90	-13	-16.90
QPSK, 1.4MHz, High Channel								
950.99	-70.65	84	1.0	H	10.0	-60.65	-13	-47.65
950.99	-74.83	252	2.0	V	11.7	-63.13	-13	-50.13
3558.6	-38.4	164	2	H	7.8	-30.60	-13	-17.60
3558.6	-38	140	2.5	V	7	-31.00	-13	-18.00
5337.9	-42.2	41	1.9	H	9.4	-32.80	-13	-19.80
5337.9	-42	134	1.5	V	8.7	-33.30	-13	-20.30

Note:

Absolute Level = Reading Level + Substituted Factor

Substituted Factor contains: SG Level - Cable loss+ Antenna Gain

Margin = Absolute Level -Limit

FCC§ 22.917 (a);§ 24.238 (a); §27.53(g) (h)(m); §90.691 - BAND EDGES

Applicable Standard

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

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

According to FCC §27.53 (g) (h), 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.

According to FCC §27.53 (m), the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in [paragraph \(m\)\(6\)](#) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log(P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log(P)$ dB at or below 2490.5 MHz.

According to § 90.691, (a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $16 \log_{10}(f/6.1)$ decibels or $50 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

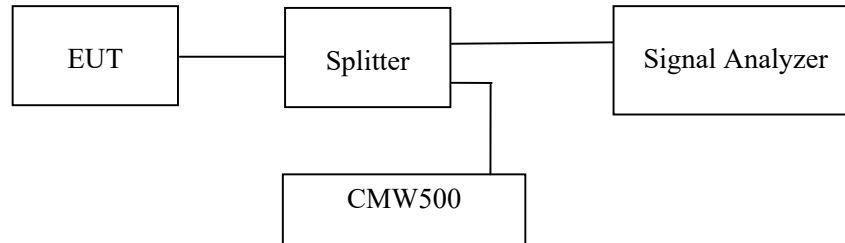
(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section

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



Note: the worst path loss (cable loss and splitter inset loss) among the test frequency range has added into plot.

Test Data

Environmental Conditions

Temperature:	27~27.6℃
Relative Humidity:	54~56.4%
ATM Pressure:	101.0 kPa

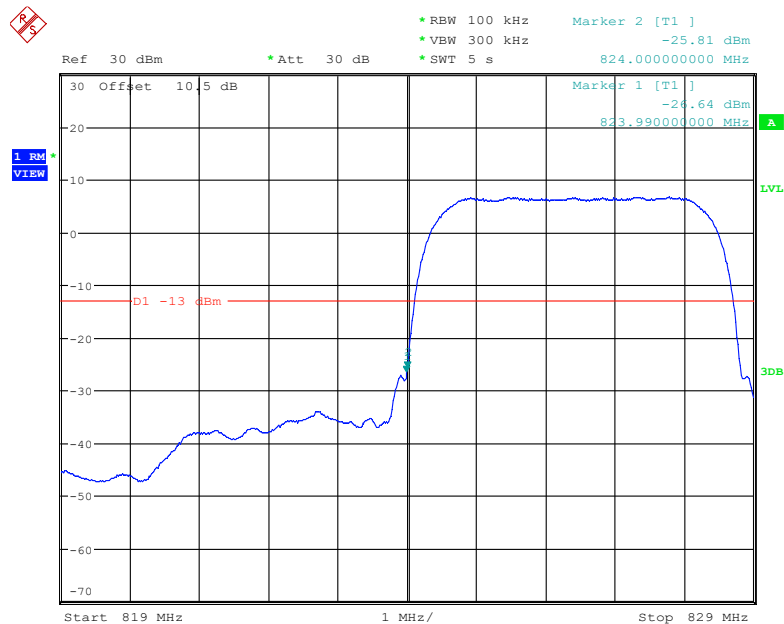
The testing was performed by Clenn Jiang from 2022-12-15 to 2023-01-06.

EUT operation mode: Transmitting (Worst case)

Test Result: Pass

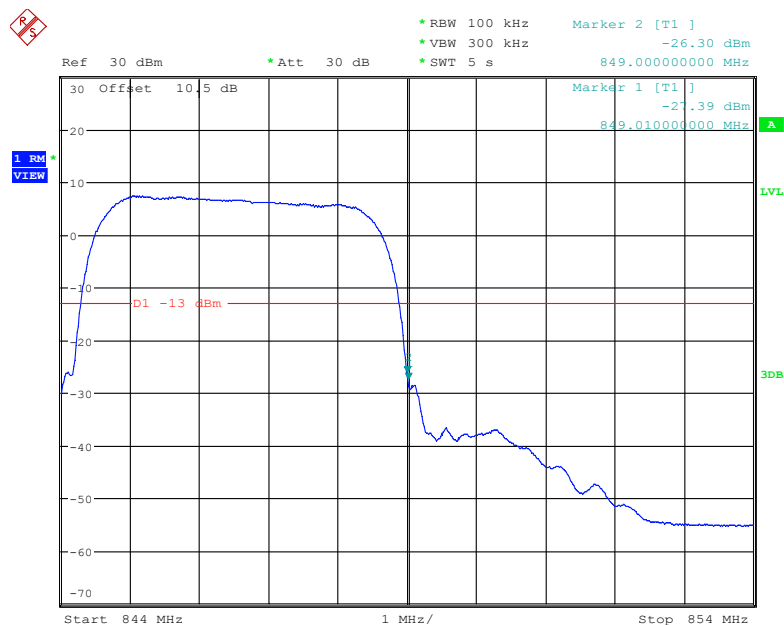
Please refer to the following plots.

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



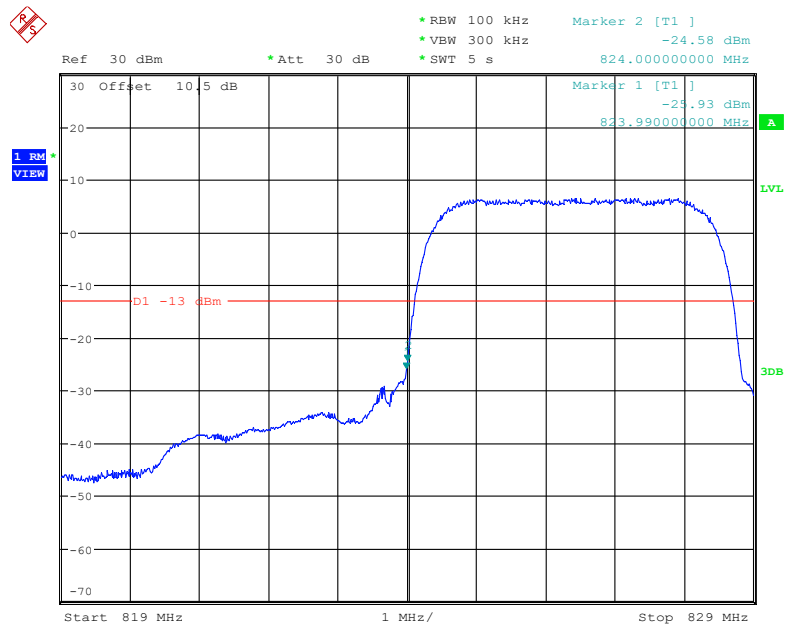
Date: 16.DEC.2022 11:39:02

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



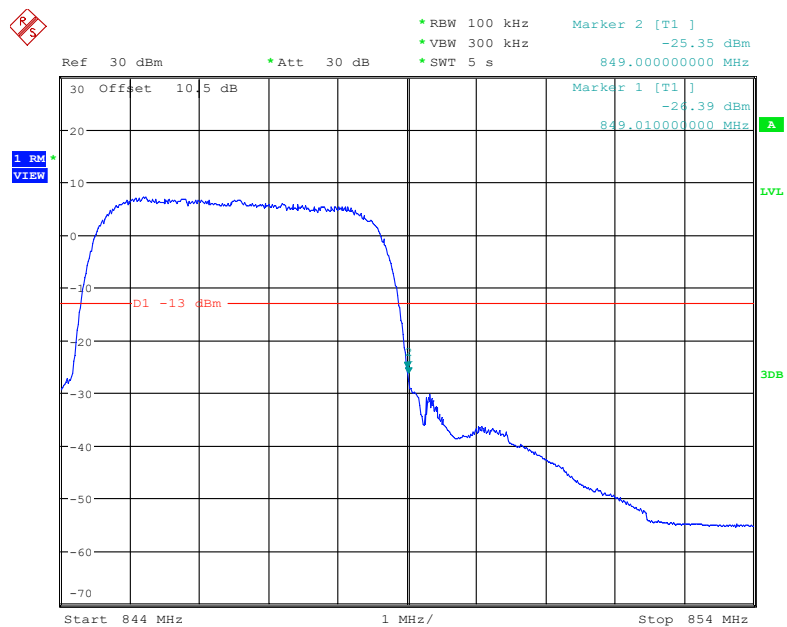
Date: 16.DEC.2022 11:45:32

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

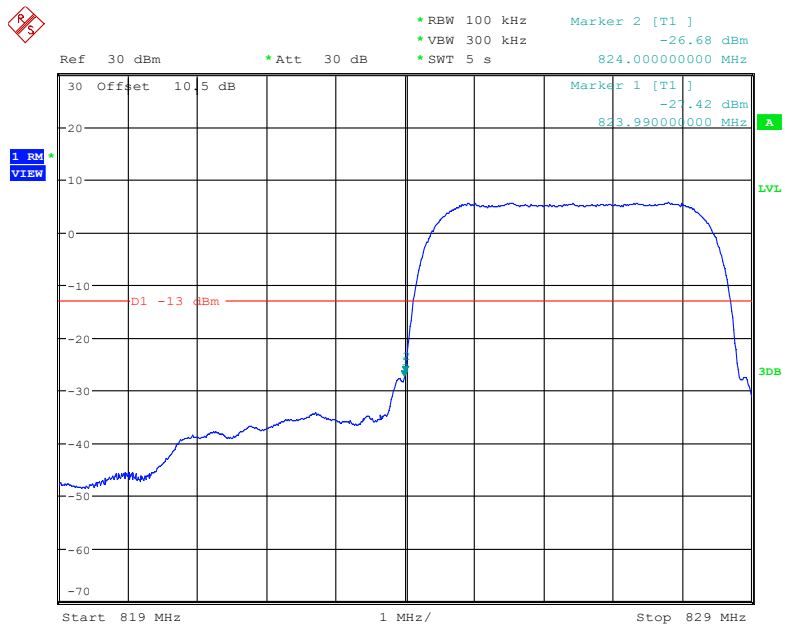


Date: 16.DEC.2022 13:04:50

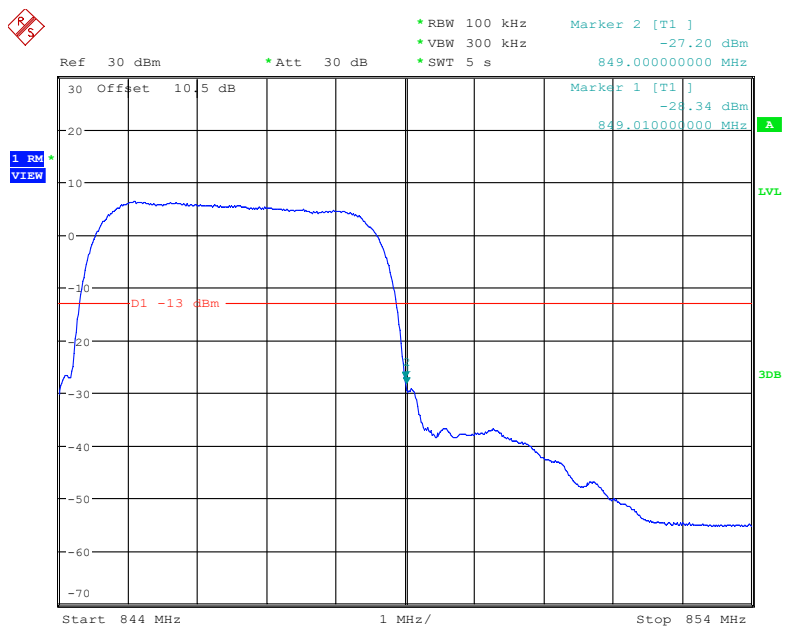
Cellular Band, Right Band Edge for HSDPA (16QAM) Mode



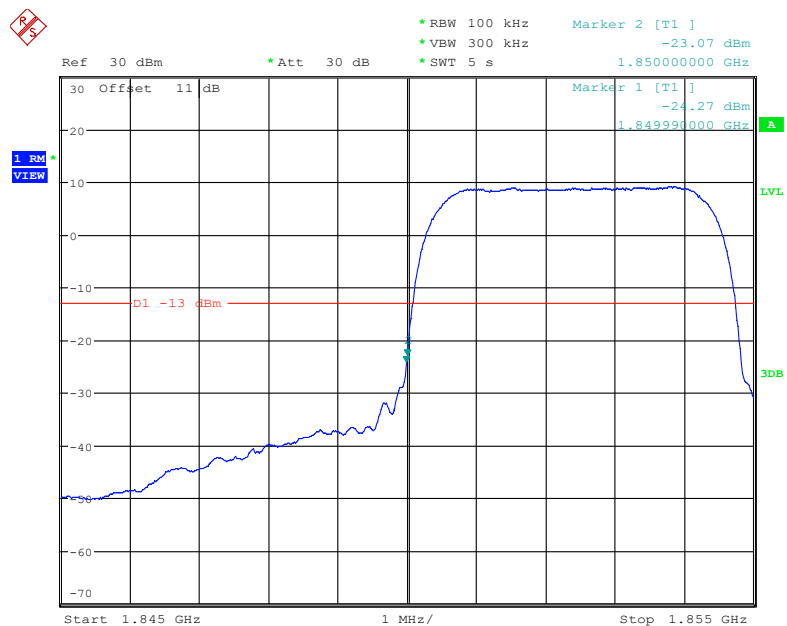
Date: 16.DEC.2022 13:11:06

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

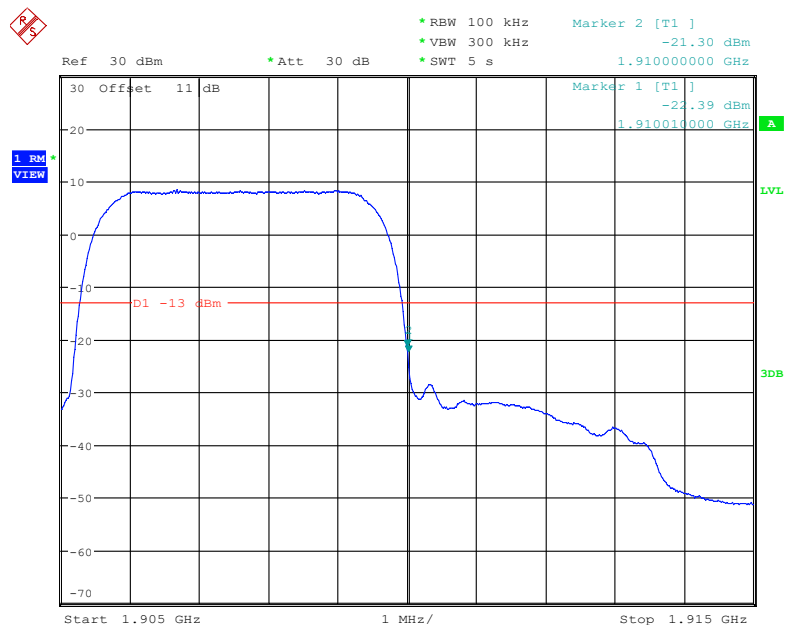
Date: 16.DEC.2022 13:30:27

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

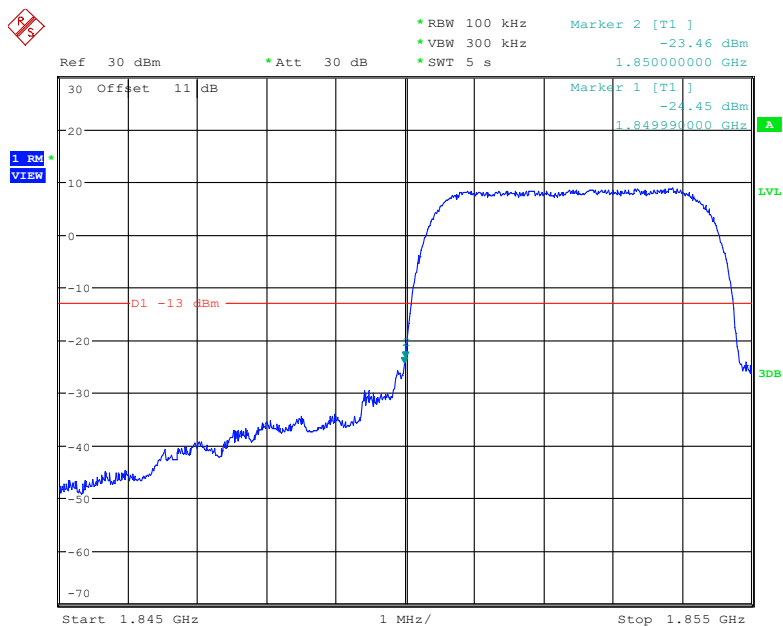
Date: 16.DEC.2022 13:37:46

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

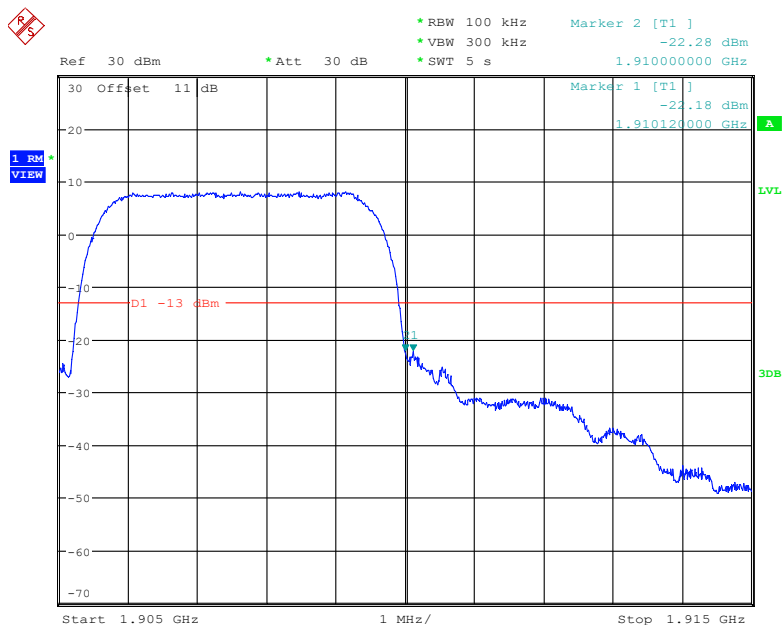
Date: 16.DEC.2022 11:20:37

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

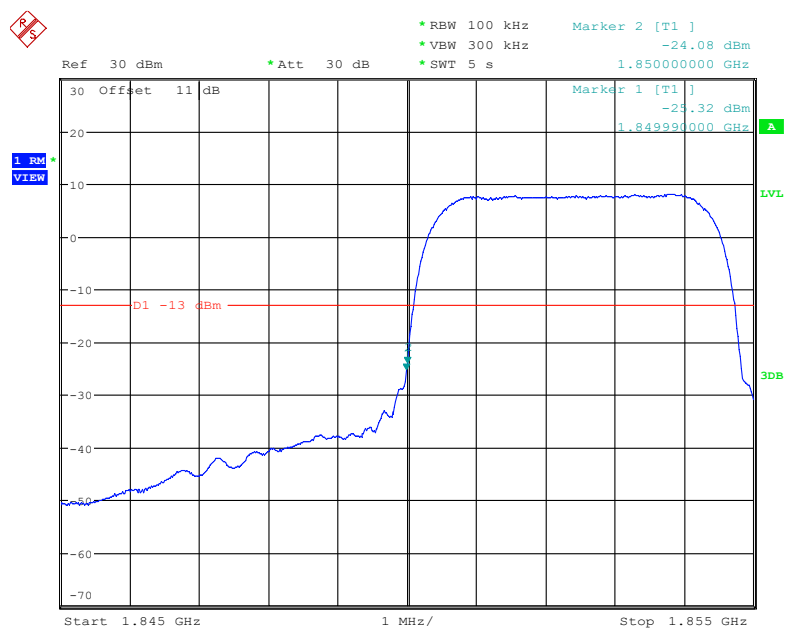
Date: 16.DEC.2022 11:28:47

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

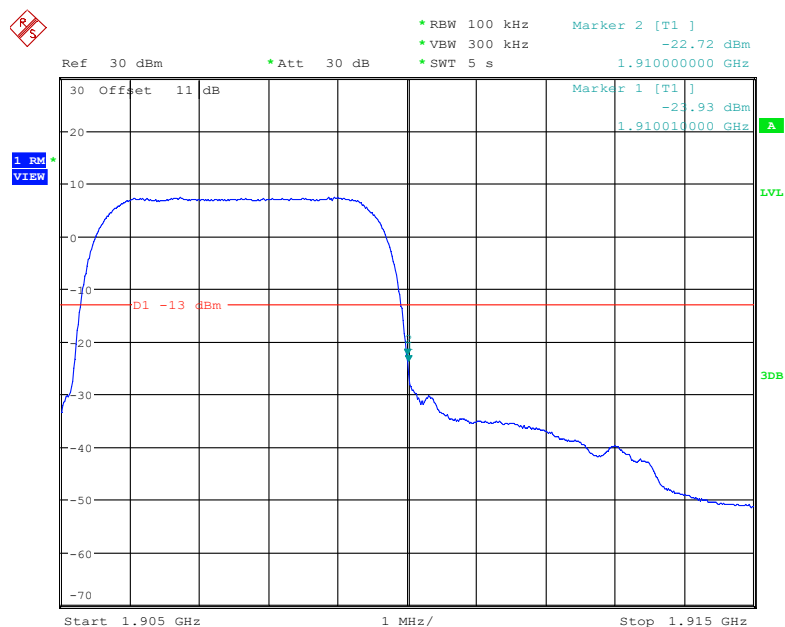
Date: 16.DEC.2022 11:54:55

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

Date: 16.DEC.2022 12:02:11

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

Date: 16.DEC.2022 13:16:21

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

Date: 16.DEC.2022 13:25:34

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

FCC § 2.1055; § 22.355; § 24.235; §27.54; §90.213- FREQUENCY STABILITY

Applicable Standard

FCC § 2.1055, §22.355, §24.235&§27.54&§90.213.

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&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

According to §90.213, unless noted elsewhere, transmitters used in the services governed by this part must have a minimum frequency stability as specified in the following table:

TABLE 1 TO §90.213(a)—MINIMUM FREQUENCY STABILITY

[Parts per million (ppm)]

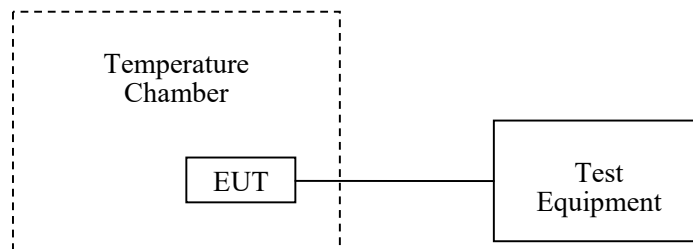
Frequency range (MHz)	Fixed and base stations	Mobile stations	
		Over 2 watts output power	2 watts or less output power
Below 25	1 2 3 100	100	200
25-50	20	20	50
72-76	5		50
150-174	5 11 5	6 5	4 6 50
216-220	1.0		1.0
220-222 ¹²	0.1	1.5	1.5
421-512	7 11 14 2.5	8 5	8 5
806-809	14 1.0	1.5	1.5
809-824	14 1.5	2.5	2.5
851-854	1.0	1.5	1.5
854-869	1.5	2.5	2.5
896-901	14 0.1	1.5	1.5
902-928	2.5	2.5	2.5
902-928 ¹³	2.5	2.5	2.5
929-930	1.5		
935-940	0.1	1.5	1.5
1427-1435	9 300	300	300
Above 2450 ¹⁰			

Test Procedure

Frequency Stability vs. Temperature: The equipment under test was connected to an external AC 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 AC leads and RF output cable exited the chamber through an opening made for the purpose.

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

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



Test Data

Environmental Conditions

Temperature:	27~27.6℃
Relative Humidity:	54~56.4%
ATM Pressure:	101.0 kPa

The testing was performed by Glenn Jiang from 2022-12-15 to 2022-12-26.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

Cellular Band (Part 22H)**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	N.V.	1.83	0.0022	2.5
-20		1.69	0.0020	2.5
-10		1.72	0.0021	2.5
0		1.68	0.0020	2.5
10		1.32	0.0016	2.5
20		1.57	0.0019	2.5
30		1.64	0.0020	2.5
40		1.96	0.0023	2.5
50		1.58	0.0019	2.5
20	L.V.	1.67	0.0020	2.5
	H.V.	1.55	0.0019	2.5

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

Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.3206	1909.3808	1850	1910
-20		1850.3170	1909.3833	1850	1910
-10		1850.3223	1909.3811	1850	1910
0		1850.3202	1909.3847	1850	1910
10		1850.3189	1909.3816	1850	1910
20		1850.3228	1909.3798	1850	1910
30		1850.3233	1909.3804	1850	1910
40		1850.3202	1909.3807	1850	1910
50		1850.3167	1909.3794	1850	1910
20	L.V.	1850.3211	1909.3852	1850	1910
	H.V.	1850.3215	1909.3854	1850	1910

LTE:
QPSK:
Band 2:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.5700	1909.4285	1850	1910
-20		1850.5702	1909.4305	1850	1910
-10		1850.5735	1909.4312	1850	1910
0		1850.5698	1909.4337	1850	1910
10		1850.5692	1909.4307	1850	1910
20		1850.5699	1909.4324	1850	1910
30		1850.5665	1909.4321	1850	1910
40		1850.5680	1909.4302	1850	1910
50		1850.5721	1909.4325	1850	1910
20	L.V.	1850.5714	1909.4285	1850	1910
	H.V.	1850.5681	1909.4301	1850	1910

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	N.V.	1710.1166	1754.8738	1710	1755
-20		1710.1158	1754.8736	1710	1755
-10		1710.1152	1754.8737	1710	1755
0		1710.1154	1754.8738	1710	1755
10		1710.1147	1754.8757	1710	1755
20		1710.1142	1754.8755	1710	1755
30		1710.1139	1754.8754	1710	1755
40		1710.1130	1754.8756	1710	1755
50		1710.1129	1754.8749	1710	1755
20	L.V.	1710.1128	1754.8748	1710	1755
	H.V.	1710.1024	1754.8742	1710	1755

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	N.V.	2500.1796	2569.8855	2500	2570
-20		2500.1792	2569.8947	2500	2570
-10		2500.1788	2569.8856	2500	2570
0		2500.1786	2569.8762	2500	2570
10		2500.1987	2569.8828	2500	2570
20		2500.1879	2569.8425	2500	2570
30		2500.1757	2569.8337	2500	2570
40		2500.1656	2569.8926	2500	2570
50		2500.1562	2569.8925	2500	2570
20	L.V.	2500.1528	2569.8835	2500	2570
	H.V.	2500.1431	2569.8741	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.1433	715.8872	699	716
-20		699.1441	715.8728	699	716
-10		699.1423	715.8458	699	716
0		699.1427	715.8632	699	716
10		699.1332	715.8417	699	716
20		699.1421	715.8284	699	716
30		699.1389	715.8323	699	716
40		699.1347	715.8314	699	716
50		699.1442	715.8454	699	716
20	L.V.	699.1372	715.8672	699	716
	H.V.	699.1374	715.8678	699	716

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	704.1895	715.9836	704	716
-20		704.1729	715.9825	704	716
-10		704.1368	715.9725	704	716
0		704.1218	715.8898	704	716
10		704.1326	715.8875	704	716
20		704.1265	715.8794	704	716
30		704.1435	715.8972	704	716
40		704.1532	715.8881	704	716
50		704.1232	715.8847	704	716
20	L.V.	704.1447	715.8826	704	716
	H.V.	704.1335	715.8799	704	716

Band 25:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.5985	1914.4047	1850	1915
-20		1850.5958	1914.4044	1850	1915
-10		1850.5958	1914.4091	1850	1915
0		1850.5961	1914.4075	1850	1915
10		1850.5954	1914.4042	1850	1915
20		1850.5987	1914.4072	1850	1915
30		1850.5976	1914.4069	1850	1915
40		1850.5969	1914.4084	1850	1915
50		1850.5941	1914.4090	1850	1915
20	L.V.	1850.5931	1914.4025	1850	1915
	H.V.	1850.5963	1914.4078	1850	1915

Band 26(Part 22H):

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	N.V.	-10.58	-0.0126	2.5
-20		7.62	0.0091	2.5
-10		7.86	0.0094	2.5
0		9.50	0.0114	2.5
10		6.20	0.0074	2.5
20		-6.53	-0.0078	2.5
30		6.71	0.0080	2.5
40		-8.43	-0.0101	2.5
50		8.38	0.0100	2.5
20	L.V.	-7.35	-0.0088	2.5
	H.V.	7.82	0.0093	2.5

Band 26 (Part 90S):

10.0 MHz, Middle Channel, $f_o=819\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-2.67	-0.0033	2.5
-20		-5.88	-0.0072	2.5
-10		6.33	0.0077	2.5
0		4.67	0.0057	2.5
10		-5.33	-0.0065	2.5
20		6.34	0.0077	2.5
30		-7.58	-0.0093	2.5
40		-6.33	-0.0077	2.5
50		-5.27	-0.0064	2.5
20	L.V.	7.39	0.0090	2.5
	H.V.	-7.25	-0.0089	2.5

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2555.1758	2654.8871	2555	2655
-20		2555.1678	2654.8852	2555	2655
-10		2555.1565	2654.8766	2555	2655
0		2555.1425	2654.8652	2555	2655
10		2555.1327	2654.8556	2555	2655
20		2555.1228	2654.8438	2555	2655
30		2555.1159	2654.8351	2555	2655
40		2555.1157	2654.8237	2555	2655
50		2555.1939	2654.8065	2555	2655
20	L.V.	2555.1622	2654.8032	2555	2655
	H.V.	2555.1524	2654.8012	2555	2655

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	N.V.	1710.0241	1779.9728	1710	1780
-20		1710.0238	1779.9727	1710	1780
-10		1710.0236	1779.9839	1710	1780
0		1710.0235	1779.9756	1710	1780
10		1710.0237	1779.9755	1710	1780
20		1710.0228	1779.9747	1710	1780
30		1710.0257	1779.9749	1710	1780
40		1710.0256	1779.9756	1710	1780
50		1710.0229	1779.9828	1710	1780
20	L.V.	1710.0225	1779.9727	1710	1780
	H.V.	1710.0226	1779.9775	1710	1780

16QAM:**Band 2:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.5719	1909.4362	1850	1910
-20		1850.5671	1909.4391	1850	1910
-10		1850.5645	1909.4367	1850	1910
0		1850.5669	1909.4376	1850	1910
10		1850.5671	1909.4355	1850	1910
20		1850.5696	1909.4398	1850	1910
30		1850.5661	1909.4382	1850	1910
40		1850.5657	1909.4395	1850	1910
50		1850.5658	1909.4328	1850	1910
20	L.V.	1850.5671	1909.4347	1850	1910
	H.V.	1850.5698	1909.4396	1850	1910

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	N.V.	1710.2966	1754.7672	1710	1755
-20		1710.2958	1754.7562	1710	1755
-10		1710.2751	1754.7672	1710	1755
0		1710.2652	1754.7452	1710	1755
10		1710.2633	1754.743a5	1710	1755
20		1710.2643	1754.7626	1710	1755
30		1710.2572	1754.7625	1710	1755
40		1710.2658	1754.7652	1710	1755
50		1710.2636	1754.7752	1710	1755
20	L.V.	1710.2621	1754.7536	1710	1755
	H.V.	1710.2715	1754.7524	1710	1755

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	N.V.	2500.1456	2569.8376	2500	2570
-20		2500.1428	2569.8551	2500	2570
-10		2500.1641	2569.8425	2500	2570
0		2500.1255	2569.8537	2500	2570
10		2500.1326	2569.8285	2500	2570
20		2500.1239	2569.8829	2500	2570
30		2500.1351	2569.8836	2500	2570
40		2500.1327	2569.8426	2500	2570
50		2500.1226	2569.8457	2500	2570
20	L.V.	2500.1235	2569.8352	2500	2570
	H.V.	2500.1144	2569.8238	2500	2570

Band 12:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	699.1325	715.8364	699	716
-20		699.1333	715.8325	699	716
-10		699.1315	715.8354	699	716
0		699.1319	715.8324	699	716
10		699.1324	715.8309	699	716
20		699.1313	715.8376	699	716
30		699.1381	715.8315	699	716
40		699.1339	715.8306	699	716
50		699.1334	715.8346	699	716
20	L.V.	699.1364	715.8364	699	716
	H.V.	699.1366	715.8376	699	716

Band 17:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	704.1687	715.8328	704	716
-20		704.1521	715.8317	704	716
-10		704.1862	715.8217	704	716
0		704.1713	715.8394	704	716
10		704.1818	715.8367	704	716
20		704.1757	715.8286	704	716
30		704.1827	715.8464	704	716
40		704.1524	715.8373	704	716
50		704.1724	715.8339	704	716
20	L.V.	704.1739	715.8318	704	716
	H.V.	704.1827	715.8291	704	716

Band 25:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.5744	1915.4236	1850	1915
-20		1850.5731	1915.4293	1850	1915
-10		1850.5736	1915.4284	1850	1915
0		1850.5771	1915.4283	1850	1915
10		1850.5746	1915.4251	1850	1915
20		1850.5738	1915.4239	1850	1915
30		1850.5745	1915.4233	1850	1915
40		1850.5748	1915.4282	1850	1915
50		1850.5729	1915.4293	1850	1915
20	L.V.	1850.5730	1915.4232	1850	1915
	H.V.	1850.5736	1915.4274	1850	1915

Band 26(Part 22H):

10.0 MHz ,Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-2.49	-0.0030	2.5
-20		-1.59	-0.0019	2.5
-10		-0.59	-0.0007	2.5
0		0.41	0.0005	2.5
10		1.41	0.0017	2.5
20		2.61	0.0031	2.5
30		3.31	0.0040	2.5
40		4.41	0.0053	2.5
50		5.32	0.0064	2.5
20	L.V.	6.42	0.0077	2.5
	H.V.	7.31	0.0087	2.5

Band 26 (Part 90S):

10.0 MHz, Middle Channel, $f_0=819\text{MHz}$				
Temperature (°C)	Voltage Supplied (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-3.55	-0.0043	pass
-20		4.26	0.0052	pass
-10		-5.16	-0.0063	pass
0		5.33	0.0065	pass
10		-7.82	-0.0095	pass
20		5.32	0.0065	pass
30		7.42	0.0091	pass
40		-8.52	-0.0104	pass
50		4.68	0.0057	pass
20	L.V.	5.48	0.0067	pass
	H.V.	-8.37	-0.0102	pass

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2555.1456	2654.8655	2555	2655
-20		2555.1442	2654.8582	2555	2655
-10		2555.1372	2654.8486	2555	2655
0		2555.1266	2654.8375	2555	2655
10		2555.1138	2654.8284	2555	2655
20		2555.1175	2654.8182	2555	2655
30		2555.1988	2654.8587	2555	2655
40		2555.1882	2654.8986	2555	2655
50		2555.1829	2654.8882	2555	2655
20	L.V.	2555.1618	2654.8765	2555	2655
	H.V.	2555.1572	2654.8344	2555	2655

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	N.V.	1710.1277	1779.8392	1710	1780
-20		1710.1249	1779.8444	1710	1780
-10		1710.1246	1779.8363	1710	1780
0		1710.1275	1779.8358	1710	1780
10		1710.1265	1779.8362	1710	1780
20		1710.1239	1779.8333	1710	1780
30		1710.1225	1779.8341	1710	1780
40		1710.1246	1779.8368	1710	1780
50		1710.1233	1779.8376	1710	1780
20	L.V.	1710.1258	1779.8356	1710	1780
	H.V.	1710.1252	1779.8354	1710	1780

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