



TESTREPORT

Applicant Name : TECNO MOBILE LIMITED
Address : FLAT N 16/F BLOCK B UNIVERSAL INDUSTRIAL CENTRE 19-25
SHAN MEI STREET FOTAN NT HONGKONG
Report Number: RA230331-16045E-RF-00E
FCC ID: 2ADYY-LH6N

Test Standard (s)

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

Sample Description

Product Type: Mobile Phone
Model No.: LH6n
Multiple Model(s) No.: N/A
Trade Mark: TECNO
Date Received: 2023/03/31
Report Date: 2023/04/25

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

Prepared and Checked By:

Approved By:

Nick Fang
EMC Engineer

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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FCC -2G,3G,4G

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	RA230331-16045E-RF-00E	Original Report	2023-04-25

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 7: 2500-2570MHz(TX); 2620-2690MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX) LTE Band 38: 2570-2620MHz(TX/RX) LTE Band 41: 2535-2655MHz(TX/RX) LTE Band 66: 1710-1780MHz(TX); 2110-2180MHz(RX)
Modulation Technique	2G: GMSK, 8PSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band 5/LTE Band 5: -4.1dBi PCS 1900/WCDMA Band 2/ LTE Band 2: -0.1dBi WCDMA Band 4/ LTE Band 4: -0.8dBi LTE Band 7/ LTE Band 38/LTE Band 41: -0.8dBi LTE Band 12/ LTE Band 17: -4.7dBi LTE Band 66: -0.1dBi (provided by the applicant)
Voltage Range	DC 3.89V from battery or DC 5V/7.5V from adapter
Sample serial number	23W4_1 for Radiated Emissions Test 23W4_5 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Extreme condition*	L.V.: Low Voltage 3.45V _{DC} N.V.: Normal Voltage 3.89V _{DC} H.V.: High Voltage 4.48V _{DC} (provided by the applicant)
Adapter information	Model: U180TSA Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 5.0V, 2.4A or DC 7.5V, 2.4A 18.0W Max

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part 24-Subpart E, Part 27 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

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.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Harmonic Current		0.512%, k=2
Occupied Channel Bandwidth		5%
RF Frequency		0.082×10^{-7}
RF output power, conducted		0.71dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions	9k-30MHz	2.74dB, k=2
	150kHz-30MHz	2.92dB, k=2
Audio Frequency Response		0.1dB
Low Pass Filter Response		1.2dB
Modulation Limiting		1%
Emissions, Radiated	9kHz - 30MHz	2.06dB
	30MHz - 1GHz	5.08dB
	1GHz - 18GHz	4.96dB
	18GHz - 26.5GHz	5.16dB
	26.5GHz - 40GHz	4.64dB
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 Floor 1, KuMaKe Building, Dongzhou Community, Guangming Street, Guangming District, Shenzhen, Guangdong, China.

The test site has been approved by the FCC under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No.: 708358, the FCC Designation No.: CN1189. Accredited by American Association for Laboratory Accreditation (A2LA) The Certificate Number is 429 7.01.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier: CN0016. The Registration Number is 30241.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
PCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE 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 B38	5	2572.5	2595	2617.5
	10	2575	2595	2615
	15	2577.5	2595	2612.5
	20	2580	2595	2610

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
LTE B41	5	2537.5	2595	2652.5
	10	2540	2595	2650
	15	2542.5	2595	2647.5
	20	2545	2595	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.

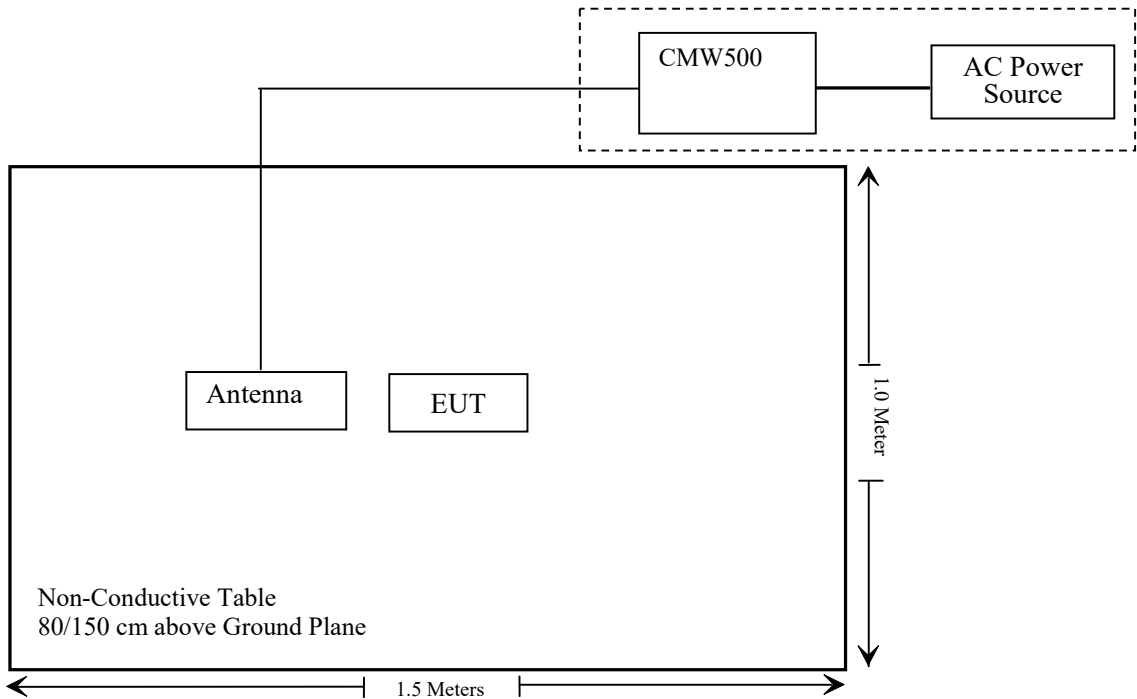
Support Equipment List and Details

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

Support Cable Description

Cable Description	Length (m)	From / Port	To
Unshielded 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)	RF Output Power	Compliant
§ 2.1047	Modulation Characteristics	Not Applicable
§ 2.1049; § 22.905; § 22.917; § 24.238; §27.53	Occupied Bandwidth	Compliant
§ 2.1051; §22.917 (a); § 24.238 (a); §27.53;	Spurious Emissions at Antenna Terminal	Compliant
§ 2.1053; § 22.917 (a); § 24.238 (a); §27.53	Field Strength of Spurious Radiation	Compliant
§ 22.917 (a); § 24.238 (a); §27.53 (g) (h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Note: * Please refer to SAR report number: RA230331-16045E-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
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	2023/11/24
Unknown	RF Coaxial Cable	No.16	N650	2022/11/25	2023/11/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2022/11/30	2025/11/29
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2022/12/26	2025/12/25
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2022/11/30	2025/11/29
PASTERNAK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-024-1)	2023/01/04	2026/01/03
PASTERNAK	Horn Antenn	PE9852/2F-20	1120 (ATC-BA-025-1)	2023/01/04	2026/01/03
PASTERNAK	Horn Antenn	PE9850/2F-20	720 (ATC-BA-024)	2023/01/04	2026/01/03
PASTERNAK	Horn Antenn	PE9850/2F-20	720 (ATC-BA-025)	2023/01/04	2026/01/03
Unknown	RFCoaxialCable	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	101495	2022/11/25	2023/11/24
SPECTRUM ANALYZER	Rohde & Schwarz	FSU26	200982	2022/07/04	2023/07/03
WEINSCHEL	10dB Attenuator	5324	AU 3842	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
Fluke	Multi Meter	45	7664009	2022/12/14	2023/12/13
Manson	DC Power Source	KPS-6604	ATCS-205	NCR	NCR
Unknown	RF Coaxial Cable	No.31	RF-01	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§1.1307 and §2.1093.

Test Result

Compliant, please refer to the SAR report: RA230331-16045E-SA.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

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

Applicable Standard

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

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

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

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

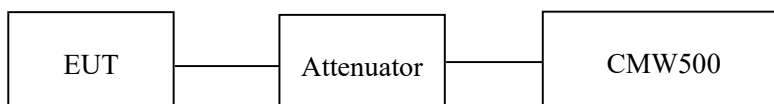
According to §27.50(d), Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

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

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 included in the result.

Test Data

Environmental Conditions

Temperature:	28.8 °C
Relative Humidity:	46.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-04-16 to 2023-04-19.

Conducted Power**Cellular Band (Part 22H)**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.4	27.15	38.45
	190	836.6	33.4	27.15	38.45
	251	848.8	33.5	27.25	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	33.80	32.77	30.82	29.68	27.55	26.52	24.57	23.43	38.45
	190	836.6	33.83	32.81	30.81	29.70	27.58	26.56	24.56	23.45	38.45
	251	848.8	33.91	32.87	30.87	29.75	27.66	26.62	24.62	23.50	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	128	824.2	28.14	26.57	24.11	22.83	21.89	20.32	17.86	16.58	38.45
	190	836.6	27.97	26.42	23.93	22.64	21.72	20.17	17.68	16.39	38.45
	251	848.8	27.85	26.28	23.83	22.52	21.60	20.03	17.58	16.27	38.45

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 5)	RMC12.2k		23.27	23.34	23.42	17.02	17.09	17.17
	HSDPA	1	22.22	22.25	22.28	15.97	16.00	16.03
		2	22.31	22.24	22.34	16.06	15.99	16.09
		3	22.26	22.39	22.19	16.01	16.14	15.94
		4	22.34	22.16	22.54	16.09	15.91	16.29
	HSUPA	1	23.21	23.24	23.35	16.96	16.99	17.10
		2	23.34	23.36	23.65	17.09	17.11	17.40
		3	23.04	23.94	23.38	16.79	17.69	17.13
		4	23.57	23.68	23.69	17.32	17.43	17.44
		5	23.64	23.81	23.05	17.39	17.56	16.80
	HSPA+	1	23.23	23.63	23.17	16.98	17.38	16.92

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

WCDMA Band5: Antenna Gain = -4.1dBi = -6.25dBd (0dBd=2.15(dBi))

Limit: ERP≤38.45dBm

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	28.2	28.1	33
	661	1880.0	28.1	28.0	33
	810	1909.8	28.1	28.0	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	512	1850.2	28.19	28.08	28.00	27.92	28.09	27.98	27.90	27.82	33
	661	1880.0	28.03	27.98	27.85	27.75	27.93	27.88	27.75	27.65	33
	810	1909.8	28.05	28.00	27.87	27.80	27.95	27.90	27.77	27.70	33

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
EGPRS	512	1850.2	27.67	26.65	24.59	23.45	27.57	26.55	24.49	23.35	33
	661	1880.0	27.46	26.37	24.26	23.16	27.36	26.27	24.16	23.06	33
	810	1909.8	27.00	25.91	23.76	22.71	26.90	25.81	23.66	22.61	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		19.35	19.23	19.15	19.25	19.13	19.05
	HSDPA	1	18.16	18.07	18.00	18.06	17.97	17.90
		2	18.36	18.04	18.30	18.26	17.94	18.20
		3	18.65	18.26	18.25	18.55	18.16	18.15
		4	18.79	18.07	18.06	18.69	17.97	17.96
	HSUPA	1	18.84	18.74	18.59	18.74	18.16	18.49
		2	18.25	18.59	18.37	18.15	18.49	18.27
		3	18.36	18.63	18.64	18.26	18.53	18.54
		4	18.07	18.26	18.69	17.97	18.16	18.59
		5	18.32	18.37	18.32	18.22	18.27	18.22
	HSPA+	1	18.37	18.61	18.19	18.27	18.51	18.09

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

WCDMA Band2: Antenna Gain = -0.1dBi

Limit: EIRP ≤ 33dBm

AWS Band 4

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		19.33	19.40	19.38	18.53	18.60	18.58
	HSDPA	1	18.26	18.29	18.30	17.46	17.49	17.50
		2	18.36	18.24	18.48	17.56	17.44	17.68
		3	18.27	18.39	18.31	17.47	17.59	17.51
		4	18.59	18.27	18.26	17.79	17.47	17.46
	HSUPA	1	18.80	18.88	18.91	18.00	18.08	18.11
		2	18.84	18.85	18.64	18.04	18.05	17.84
		3	18.76	18.86	18.87	17.96	18.06	18.07
		4	18.73	18.75	18.79	17.93	17.95	17.99
		5	18.89	18.82	18.85	18.09	18.02	18.05
	HSPA+	1	18.67	18.83	18.89	17.87	18.03	18.09

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

For Band4: Antenna Gain = -0.8dBi

Cable Loss=0dB*(provided by the applicant)

Limit: EIRP≤30dBm

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	17.66	17.43	17.34	17.56	17.33	17.24
		RB1#3	17.82	17.59	17.53	17.72	17.49	17.43
		RB1#5	17.64	17.42	17.3	17.54	17.32	17.2
		RB3#0	17.81	17.54	17.43	17.71	17.44	17.33
		RB3#3	17.82	17.52	17.38	17.72	17.42	17.28
		RB6#0	16.67	16.45	16.37	16.57	16.35	16.27
	16QAM	RB1#0	16.68	16.47	16.43	16.58	16.37	16.33
		RB1#3	16.86	16.65	16.64	16.76	16.55	16.54
		RB1#5	16.69	16.44	16.45	16.59	16.34	16.35
		RB3#0	16.89	16.69	16.40	16.79	16.59	16.30
		RB3#3	16.86	16.72	16.43	16.76	16.62	16.33
		RB6#0	15.71	15.58	15.46	15.61	15.48	15.36
3.0	QPSK	RB1#0	17.68	17.44	17.33	17.58	17.34	17.23
		RB1#8	17.64	17.44	17.37	17.54	17.34	17.27
		RB1#14	17.56	17.39	17.35	17.46	17.29	17.25
		RB6#0	16.55	16.37	16.27	16.45	16.27	16.17
		RB6#9	16.57	16.32	16.28	16.47	16.22	16.18
		RB15#0	16.67	16.40	16.38	16.57	16.30	16.28
	16QAM	RB1#0	17.33	16.60	16.39	17.23	16.50	16.29
		RB1#8	17.31	16.59	16.38	17.21	16.49	16.28
		RB1#14	17.24	16.55	16.34	17.14	16.45	16.24
		RB6#0	15.76	15.49	15.29	15.66	15.39	15.19
		RB6#9	15.77	15.51	15.29	15.67	15.41	15.19
		RB15#0	15.82	15.47	15.51	15.72	15.37	15.41

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	17.59	17.35	17.16	17.49	17.25	17.06
		RB1#13	17.65	17.5	17.32	17.55	17.40	17.22
		RB1#24	17.50	17.32	17.16	17.40	17.22	17.06
		RB15#0	16.66	16.47	16.41	16.56	16.37	16.31
		RB15#10	16.64	16.42	16.24	16.54	16.32	16.14
		RB25#0	16.66	16.42	16.26	16.56	16.32	16.16
	16QAM	RB1#0	16.69	16.66	16.27	16.59	16.56	16.17
		RB1#13	16.73	16.83	16.36	16.63	16.73	16.26
		RB1#24	16.61	16.65	16.27	16.51	16.55	16.17
		RB15#0	15.80	15.53	15.51	15.70	15.43	15.41
		RB15#10	15.76	15.50	15.34	15.66	15.40	15.24
		RB25#0	15.75	15.49	15.38	15.65	15.39	15.28
10.0	QPSK	RB1#0	17.67	17.39	17.32	17.57	17.29	17.22
		RB1#25	17.74	17.52	17.40	17.64	17.42	17.30
		RB1#49	17.58	17.32	17.36	17.48	17.22	17.26
		RB25#0	16.65	16.48	16.43	16.55	16.38	16.33
		RB25#25	16.64	16.37	16.21	16.54	16.27	16.11
		RB50#0	16.67	16.46	16.31	16.57	16.36	16.21
	16QAM	RB1#0	16.70	17.10	16.50	16.60	17.00	16.40
		RB1#25	16.80	17.18	16.64	16.70	17.08	16.54
		RB1#49	16.59	17.00	16.47	16.49	16.90	16.37
		RB25#0	15.84	15.63	15.52	15.74	15.53	15.42
		RB25#25	15.81	15.53	15.30	15.71	15.43	15.20
		RB50#0	15.74	15.52	15.42	15.64	15.42	15.32

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	17.58	17.34	17.30	17.48	17.24	17.20
		RB1#38	17.60	17.38	17.36	17.50	17.28	17.26
		RB1#74	17.42	17.21	17.24	17.32	17.11	17.14
		RB36#0	16.63	16.49	16.35	16.53	16.39	16.25
		RB36#39	16.57	16.31	16.20	16.47	16.21	16.10
		RB75#0	16.57	16.4	16.27	16.47	16.30	16.17
	16QAM	RB1#0	17.04	17.00	16.42	16.94	16.90	16.32
		RB1#38	17.04	17.03	16.51	16.94	16.93	16.41
		RB1#74	16.89	16.90	16.35	16.79	16.80	16.25
		RB36#0	15.66	15.52	15.42	15.56	15.42	15.32
		RB36#39	15.63	15.38	15.29	15.53	15.28	15.19
		RB75#0	15.62	15.48	15.34	15.52	15.38	15.24
20.0	QPSK	RB1#0	17.43	17.27	17.16	17.33	17.17	17.06
		RB1#50	17.67	17.57	17.40	17.57	17.47	17.30
		RB1#99	17.18	17.08	17.01	17.08	16.98	16.91
		RB50#0	16.58	16.57	16.29	16.48	16.47	16.19
		RB50#50	16.57	16.33	15.94	16.47	16.23	15.84
		RB100#0	16.60	16.46	16.14	16.50	16.36	16.04
	16QAM	RB1#0	17.08	16.61	16.39	16.98	16.51	16.29
		RB1#50	17.32	16.88	16.72	17.22	16.78	16.62
		RB1#99	16.84	16.38	16.22	16.74	16.28	16.12
		RB50#0	15.68	15.65	15.30	15.58	15.55	15.20
		RB50#50	15.65	15.42	15.05	15.55	15.32	14.95
		RB100#0	15.66	15.59	15.30	15.56	15.49	15.20

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

For Band2: Antenna Gain = -0.1dBi

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	18.33	18.34	18.28	17.53	17.54	17.48
		RB1#3	18.43	18.40	18.41	17.63	17.60	17.61
		RB1#5	18.26	18.28	18.27	17.46	17.48	17.47
		RB3#0	18.38	18.43	18.28	17.58	17.63	17.48
		RB3#3	18.40	18.42	18.26	17.60	17.62	17.46
		RB6#0	17.40	17.41	17.41	16.60	16.61	16.61
	16QAM	RB1#0	17.32	17.40	17.36	16.52	16.60	16.56
		RB1#3	17.49	17.57	17.60	16.69	16.77	16.80
		RB1#5	17.39	17.42	17.35	16.59	16.62	16.55
		RB3#0	17.47	17.68	17.18	16.67	16.88	16.38
		RB3#3	17.47	17.66	17.24	16.67	16.86	16.44
		RB6#0	16.32	16.46	16.34	15.52	15.66	15.54
3.0	QPSK	RB1#0	18.86	18.38	18.33	18.06	17.58	17.53
		RB1#8	18.46	18.38	18.32	17.66	17.58	17.52
		RB1#14	18.35	18.36	18.26	17.55	17.56	17.46
		RB6#0	17.38	17.41	17.36	16.58	16.61	16.56
		RB6#9	17.36	17.41	17.34	16.56	16.61	16.54
		RB15#0	17.38	17.45	17.33	16.58	16.65	16.53
	16QAM	RB1#0	17.54	17.48	17.73	16.74	16.68	16.93
		RB1#8	17.52	17.46	17.70	16.72	16.66	16.90
		RB1#14	17.53	17.41	17.69	16.73	16.61	16.89
		RB6#0	16.36	16.33	16.35	15.56	15.53	15.55
		RB6#9	16.41	16.33	16.32	15.61	15.53	15.52
		RB15#0	16.33	16.48	16.31	15.53	15.68	15.51

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	18.22	18.32	18.21	17.42	17.52	17.41
		RB1#13	18.33	18.43	18.36	17.53	17.63	17.56
		RB1#24	18.19	18.29	18.18	17.39	17.49	17.38
		RB15#0	17.34	17.46	17.36	16.54	16.66	16.56
		RB15#10	17.43	17.41	17.41	16.63	16.61	16.61
		RB25#0	17.35	17.41	17.29	16.55	16.61	16.49
	16QAM	RB1#0	17.35	17.66	17.26	16.55	16.86	16.46
		RB1#13	17.46	17.75	17.35	16.66	16.95	16.55
		RB1#24	17.30	17.66	17.23	16.50	16.86	16.43
		RB15#0	16.37	16.45	16.33	15.57	15.65	15.53
		RB15#10	16.45	16.41	16.33	15.65	15.61	15.53
		RB25#0	16.37	16.44	16.27	15.57	15.64	15.47
10.0	QPSK	RB1#0	18.78	18.37	18.30	17.98	17.57	17.50
		RB1#25	18.56	18.57	18.53	17.76	17.77	17.73
		RB1#49	18.26	18.29	18.25	17.46	17.49	17.45
		RB25#0	17.31	17.54	17.32	16.51	16.74	16.52
		RB25#25	17.51	17.46	17.44	16.71	16.66	16.64
		RB50#0	17.43	17.49	17.35	16.63	16.69	16.55
	16QAM	RB1#0	17.35	18.03	17.46	16.55	17.23	16.66
		RB1#25	17.55	18.19	17.58	16.75	17.39	16.78
		RB1#49	17.35	17.95	17.36	16.55	17.15	16.56
		RB25#0	16.43	16.62	16.31	15.63	15.82	15.51
		RB25#25	16.58	16.51	16.38	15.78	15.71	15.58
		RB50#0	16.47	16.54	16.34	15.67	15.74	15.54

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	18.58	18.30	18.29	17.78	17.50	17.49
		RB1#38	18.34	18.34	18.35	17.54	17.54	17.55
		RB1#74	18.25	18.18	18.19	17.45	17.38	17.39
		RB36#0	17.40	17.51	17.48	16.60	16.71	16.68
		RB36#39	17.48	17.44	17.55	16.68	16.64	16.75
		RB75#0	17.45	17.50	17.46	16.65	16.70	16.66
	16QAM	RB1#0	17.71	17.97	17.46	16.91	17.17	16.66
		RB1#38	17.72	18.03	17.45	16.92	17.23	16.65
		RB1#74	17.69	17.85	17.31	16.89	17.05	16.51
		RB36#0	16.33	16.51	16.40	15.53	15.71	15.60
		RB36#39	16.39	16.42	16.41	15.59	15.62	15.61
		RB75#0	16.40	16.49	16.43	15.60	15.69	15.63
20.0	QPSK	RB1#0	18.17	18.15	18.18	17.37	17.35	17.38
		RB1#50	18.50	18.48	18.46	17.70	17.68	17.66
		RB1#99	18.11	18.01	18.01	17.31	17.21	17.21
		RB50#0	17.22	17.57	17.33	16.42	16.77	16.53
		RB50#50	17.35	17.39	17.41	16.55	16.59	16.61
		RB100#0	17.31	17.45	17.34	16.51	16.65	16.54
	16QAM	RB1#0	17.39	17.78	17.56	16.59	16.98	16.76
		RB1#50	17.69	18.16	17.78	16.89	17.36	16.98
		RB1#99	17.36	17.63	17.28	16.56	16.83	16.48
		RB50#0	16.24	16.55	16.34	15.44	15.75	15.54
		RB50#50	16.36	16.34	16.36	15.56	15.54	15.56
		RB100#0	16.32	16.51	16.40	15.52	15.71	15.60

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

For Band4: Antenna Gain = -0.8dBi

Limit: EIRP ≤ 30dBm

LTE Band5

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	23.82	23.2	23.35	17.57	16.95	17.10
		RB1#3	23.50	23.51	23.51	17.25	17.26	17.26
		RB1#5	23.29	23.28	23.35	17.04	17.03	17.10
		RB3#0	23.40	23.38	23.43	17.15	17.13	17.18
		RB3#3	23.45	23.36	23.44	17.20	17.11	17.19
		RB6#0	22.46	22.40	22.49	16.21	16.15	16.24
	16QAM	RB1#0	22.35	22.33	22.54	16.10	16.08	16.29
		RB1#3	22.56	22.51	22.73	16.31	16.26	16.48
		RB1#5	22.42	22.36	22.49	16.17	16.11	16.24
		RB3#0	22.48	22.58	22.44	16.23	16.33	16.19
		RB3#3	22.46	22.58	22.46	16.21	16.33	16.21
		RB6#0	21.37	21.42	21.51	15.12	15.17	15.26
3.0	QPSK	RB1#0	23.92	23.44	23.44	17.67	17.19	17.19
		RB1#8	23.86	23.32	23.45	17.61	17.07	17.20
		RB1#14	23.87	23.32	23.43	17.62	17.07	17.18
		RB6#0	22.83	22.40	22.47	16.58	16.15	16.22
		RB6#9	22.83	22.40	22.42	16.58	16.15	16.17
		RB15#0	22.85	22.47	22.50	16.60	16.22	16.25
	16QAM	RB1#0	22.90	22.95	22.63	16.65	16.70	16.38
		RB1#8	22.68	22.88	22.65	16.43	16.63	16.40
		RB1#14	22.57	22.89	22.62	16.32	16.64	16.37
		RB6#0	21.37	21.46	21.54	15.12	15.21	15.29
		RB6#9	21.31	21.42	21.49	15.06	15.17	15.24
		RB15#0	21.53	21.49	21.44	15.28	15.24	15.19

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.79	23.31	23.33	17.54	17.06	17.08
		RB1#13	23.93	23.41	23.48	17.68	17.16	17.23
		RB1#24	23.82	23.26	23.33	17.57	17.01	17.08
		RB15#0	22.81	22.47	22.56	16.56	16.22	16.31
		RB15#10	22.36	22.44	22.49	16.11	16.19	16.24
		RB25#0	22.38	22.42	22.48	16.13	16.17	16.23
	16QAM	RB1#0	22.40	22.28	22.68	16.15	16.03	16.43
		RB1#13	22.53	22.34	22.87	16.28	16.09	16.62
		RB1#24	22.43	22.25	22.70	16.18	16.00	16.45
		RB15#0	21.45	21.48	21.52	15.20	15.23	15.27
		RB15#10	21.43	21.47	21.47	15.18	15.22	15.22
		RB25#0	21.42	21.48	21.48	15.17	15.23	15.23
10.0	QPSK	RB1#0	23.88	23.37	23.34	17.63	17.12	17.09
		RB1#25	24.07	23.50	23.53	17.82	17.25	17.28
		RB1#49	23.87	23.34	23.36	17.62	17.09	17.11
		RB25#0	22.68	22.42	22.57	16.43	16.17	16.32
		RB25#25	22.44	22.47	22.46	16.19	16.22	16.21
		RB50#0	22.45	22.44	22.51	16.20	16.19	16.26
	16QAM	RB1#0	22.45	22.94	22.52	16.20	16.69	16.27
		RB1#25	22.55	23.05	22.73	16.30	16.80	16.48
		RB1#49	22.39	22.92	22.60	16.14	16.67	16.35
		RB25#0	21.54	21.46	21.61	15.29	15.21	15.36
		RB25#25	21.52	21.50	21.45	15.27	15.25	15.20
		RB50#0	21.46	21.46	21.50	15.21	15.21	15.25

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

For Band5: Antenna Gain = -4.1dBi = -6.25dBd (0dBd=2.15dBi)

Limit: ERP ≤ 38.45dBm

LTE Band 7

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	20.09	20.65	20.70	19.29	19.85	19.90
		RB1#13	20.70	20.79	20.81	19.90	19.99	20.01
		RB1#24	20.53	20.64	20.68	19.73	19.84	19.88
		RB15#0	19.66	19.75	19.77	18.86	18.95	18.97
		RB15#10	19.66	19.70	19.72	18.86	18.90	18.92
		RB25#0	19.61	19.72	19.74	18.81	18.92	18.94
	16QAM	RB1#0	19.71	19.58	19.96	18.91	18.78	19.16
		RB1#13	19.78	19.66	20.13	18.98	18.86	19.33
		RB1#24	19.64	19.55	19.97	18.84	18.75	19.17
		RB15#0	18.75	18.87	18.84	17.95	18.07	18.04
		RB15#10	18.77	18.82	18.76	17.97	18.02	17.96
		RB25#0	18.75	18.83	18.83	17.95	18.03	18.03
10.0	QPSK	RB1#0	21.18	20.66	20.77	20.38	19.86	19.97
		RB1#25	21.34	20.82	20.97	20.54	20.02	20.17
		RB1#49	21.14	20.62	20.74	20.34	19.82	19.94
		RB25#0	19.99	19.73	19.82	19.19	18.93	19.02
		RB25#25	19.72	19.76	19.81	18.92	18.96	19.01
		RB50#0	19.75	19.74	19.84	18.95	18.94	19.04
	16QAM	RB1#0	19.71	20.34	19.93	18.91	19.54	19.13
		RB1#25	19.86	20.46	20.08	19.06	19.66	19.28
		RB1#49	19.70	20.35	19.90	18.90	19.55	19.10
		RB25#0	18.82	18.94	18.95	18.02	18.14	18.15
		RB25#25	18.84	18.92	18.89	18.04	18.12	18.09
		RB50#0	18.76	18.91	18.93	17.96	18.11	18.13

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	21.15	20.65	20.74	20.35	19.85	19.94
		RB1#38	21.24	20.75	20.82	20.44	19.95	20.02
		RB1#74	21.06	20.63	20.72	20.26	19.83	19.92
		RB36#0	20.23	19.77	19.84	19.43	18.97	19.04
		RB36#39	20.01	19.80	19.84	19.21	19.00	19.04
		RB75#0	19.75	19.77	19.80	18.95	18.97	19.00
	16QAM	RB1#0	20.11	20.36	19.88	19.31	19.56	19.08
		RB1#38	20.25	20.41	19.99	19.45	19.61	19.19
		RB1#74	20.06	20.29	19.83	19.26	19.49	19.03
		RB36#0	18.74	18.82	18.86	17.94	18.02	18.06
		RB36#39	18.77	18.84	18.85	17.97	18.04	18.05
		RB75#0	18.76	18.84	18.86	17.96	18.04	18.06
20.0	QPSK	RB1#0	20.98	20.59	20.62	20.18	19.79	19.82
		RB1#50	21.31	20.90	20.96	20.51	20.10	20.16
		RB1#99	20.38	20.53	20.60	19.58	19.73	19.80
		RB50#0	19.67	19.75	19.82	18.87	18.95	19.02
		RB50#50	19.70	19.76	19.79	18.90	18.96	18.99
		RB100#0	19.69	19.76	19.82	18.89	18.96	19.02
	16QAM	RB1#0	20.14	19.87	19.86	19.34	19.07	19.06
		RB1#50	20.52	20.22	20.20	19.72	19.42	19.40
		RB1#99	20.02	19.80	19.78	19.22	19.00	18.98
		RB50#0	18.74	18.80	18.89	17.94	18.00	18.09
		RB50#50	18.79	18.83	18.84	17.99	18.03	18.04
		RB100#0	18.78	18.86	18.90	17.98	18.06	18.10

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

For Band7: Antenna Gain = -0.8dBi

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	23.61	23.07	23.14	16.76	16.22	16.29
		RB1#3	23.8	23.32	23.24	16.95	16.47	16.39
		RB1#5	23.63	23.05	23.12	16.78	16.20	16.27
		RB3#0	23.75	23.20	23.22	16.90	16.35	16.37
		RB3#3	23.76	23.20	23.20	16.91	16.35	16.35
		RB6#0	22.67	22.54	22.12	15.82	15.69	15.27
	16QAM	RB1#0	22.64	22.14	22.09	15.79	15.29	15.24
		RB1#3	22.64	22.28	22.31	15.79	15.43	15.46
		RB1#5	22.31	22.12	22.05	15.46	15.27	15.20
		RB3#0	22.22	22.39	22.42	15.37	15.54	15.57
		RB3#3	22.27	22.24	22.40	15.42	15.39	15.55
		RB6#0	21.37	21.59	21.24	14.52	14.74	14.39
3.0	QPSK	RB1#0	23.74	23.23	23.30	16.89	16.38	16.45
		RB1#8	23.74	23.11	23.20	16.89	16.26	16.35
		RB1#14	23.69	23.10	23.14	16.84	16.25	16.29
		RB6#0	22.58	22.53	22.15	15.73	15.68	15.30
		RB6#9	22.66	22.66	22.12	15.81	15.81	15.27
		RB15#0	22.77	22.67	22.22	15.92	15.82	15.37
	16QAM	RB1#0	22.78	22.80	22.34	15.93	15.95	15.49
		RB1#8	22.74	22.72	22.37	15.89	15.87	15.52
		RB1#14	22.45	22.66	22.31	15.60	15.81	15.46
		RB6#0	21.24	21.69	21.22	14.39	14.84	14.37
		RB6#9	21.28	21.65	21.30	14.43	14.80	14.45
		RB15#0	21.49	21.75	21.24	14.64	14.90	14.39

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.65	23.04	23.08	16.80	16.19	16.23
		RB1#13	23.73	23.17	23.18	16.88	16.32	16.33
		RB1#24	23.60	23.14	23.09	16.75	16.29	16.24
		RB15#0	22.77	22.19	22.29	15.92	15.34	15.44
		RB15#10	22.77	22.13	22.26	15.92	15.28	15.41
		RB25#0	22.78	22.20	22.25	15.93	15.35	15.40
	16QAM	RB1#0	22.28	22.38	22.12	15.43	15.53	15.27
		RB1#13	22.20	22.47	22.23	15.35	15.62	15.38
		RB1#24	22.11	22.45	22.11	15.26	15.60	15.26
		RB15#0	21.41	21.21	21.38	14.56	14.36	14.53
		RB15#10	21.44	21.30	21.37	14.59	14.45	14.52
		RB25#0	21.39	21.39	21.34	14.54	14.54	14.49
10.0	QPSK	RB1#0	23.66	23.08	23.18	16.81	16.23	16.33
		RB1#25	23.87	23.25	23.30	17.02	16.40	16.45
		RB1#49	23.65	23.19	23.16	16.80	16.34	16.31
		RB25#0	22.74	22.08	22.37	15.89	15.23	15.52
		RB25#25	22.78	22.01	22.21	15.93	15.16	15.36
		RB50#0	22.78	21.98	22.31	15.93	15.13	15.46
	16QAM	RB1#0	22.69	22.76	22.29	15.84	15.91	15.44
		RB1#25	22.56	22.83	22.51	15.71	15.98	15.66
		RB1#49	22.28	22.76	22.31	15.43	15.91	15.46
		RB25#0	21.48	21.22	21.46	14.63	14.37	14.61
		RB25#25	21.57	21.17	21.33	14.72	14.32	14.48
		RB50#0	21.39	21.16	21.41	14.54	14.31	14.56

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

For Band12: Antenna Gain = -4.7dBi = -6.85dBd (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	23.40	23.04	22.86	16.55	16.19	16.01
		RB1#13	23.47	22.93	22.96	16.62	16.08	16.11
		RB1#24	23.32	22.87	22.82	16.47	16.02	15.97
		RB15#0	22.37	22.15	22.05	15.52	15.30	15.20
		RB15#10	22.46	21.87	21.98	15.61	15.02	15.13
		RB25#0	22.40	21.92	21.98	15.55	15.07	15.13
	16QAM	RB1#0	22.62	21.87	21.78	15.77	15.02	14.93
		RB1#13	22.64	22.00	21.92	15.79	15.15	15.07
		RB1#24	22.13	21.96	21.78	15.28	15.11	14.93
		RB15#0	21.16	21.22	21.17	14.31	14.37	14.32
		RB15#10	21.24	20.99	21.11	14.39	14.14	14.26
		RB25#0	21.36	21.04	21.13	14.51	14.19	14.28
10.0	QPSK	RB1#0	23.41	22.98	22.89	16.56	16.13	16.04
		RB1#25	23.59	23.01	23.09	16.74	16.16	16.24
		RB1#49	23.46	22.91	22.96	16.61	16.06	16.11
		RB25#0	22.41	22.07	22.16	15.56	15.22	15.31
		RB25#25	22.34	21.94	22.01	15.49	15.09	15.16
		RB50#0	22.42	22.01	22.13	15.57	15.16	15.28
	16QAM	RB1#0	22.46	22.48	22.10	15.61	15.63	15.25
		RB1#25	22.54	22.65	22.32	15.69	15.80	15.47
		RB1#49	22.29	22.52	22.15	15.44	15.67	15.30
		RB25#0	21.44	21.17	21.28	14.59	14.32	14.43
		RB25#25	21.26	21.07	21.19	14.41	14.22	14.34
		RB50#0	21.15	21.11	21.24	14.30	14.26	14.39

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

For Band17: Antenna Gain = -4.7dBi = -6.85dBd (0dBd=2.15dBi)

Limit: ERP≤34.77dBm

LTE Band 38

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	23.49	23.36	23.30	22.69	22.56	22.50
		RB1#13	23.60	23.52	23.40	22.80	22.72	22.60
		RB1#24	23.43	23.34	23.20	22.63	22.54	22.40
		RB15#0	22.57	22.41	22.36	21.77	21.61	21.56
		RB15#10	22.55	22.40	22.35	21.75	21.60	21.55
		RB25#0	22.56	22.41	22.35	21.76	21.61	21.55
	16QAM	RB1#0	22.55	22.57	22.29	21.75	21.77	21.49
		RB1#13	22.65	22.72	22.40	21.85	21.92	21.60
		RB1#24	22.47	22.53	22.21	21.67	21.73	21.41
		RB15#0	21.57	21.45	21.34	20.77	20.65	20.54
		RB15#10	21.54	21.46	21.28	20.74	20.66	20.48
		RB25#0	21.60	21.39	21.37	20.80	20.59	20.57
10.0	QPSK	RB1#0	23.60	23.51	23.47	22.80	22.71	22.67
		RB1#25	23.84	23.74	23.73	23.04	22.94	22.93
		RB1#49	23.48	23.42	23.37	22.68	22.62	22.57
		RB25#0	22.58	22.45	22.44	21.78	21.65	21.64
		RB25#25	22.56	22.41	22.38	21.76	21.61	21.58
		RB50#0	22.57	22.46	22.41	21.77	21.66	21.61
	16QAM	RB1#0	22.81	22.42	22.51	22.01	21.62	21.71
		RB1#25	23.03	22.64	22.79	22.23	21.84	21.99
		RB1#49	22.67	22.30	22.48	21.87	21.50	21.68
		RB25#0	21.58	21.49	21.46	20.78	20.69	20.66
		RB25#25	21.54	21.43	21.41	20.74	20.63	20.61
		RB50#0	21.54	21.45	21.43	20.74	20.65	20.63

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	23.56	23.40	23.34	22.76	22.60	22.54
		RB1#38	23.57	23.42	23.39	22.77	22.62	22.59
		RB1#74	23.37	23.29	23.26	22.57	22.49	22.46
		RB36#0	22.56	22.47	22.4	21.76	21.67	21.60
		RB36#39	22.54	22.45	22.37	21.74	21.65	21.57
		RB75#0	22.57	22.48	22.40	21.77	21.68	21.60
	16QAM	RB1#0	22.78	22.58	22.30	21.98	21.78	21.50
		RB1#38	22.73	22.61	22.32	21.93	21.81	21.52
		RB1#74	22.57	22.45	22.22	21.77	21.65	21.42
		RB36#0	21.57	21.40	21.37	20.77	20.60	20.57
		RB36#39	21.53	21.36	21.23	20.73	20.56	20.43
		RB75#0	21.55	21.38	21.36	20.75	20.58	20.56
20.0	QPSK	RB1#0	23.35	23.35	23.20	22.55	22.55	22.40
		RB1#50	23.69	23.73	23.58	22.89	22.93	22.78
		RB1#99	23.16	23.20	23.03	22.36	22.40	22.23
		RB50#0	22.47	22.37	22.38	21.67	21.57	21.58
		RB50#50	22.45	22.38	22.25	21.65	21.58	21.45
		RB100#0	22.46	22.41	22.35	21.66	21.61	21.55
	16QAM	RB1#0	22.38	22.53	22.23	21.58	21.73	21.43
		RB1#50	22.70	22.93	22.65	21.90	22.13	21.85
		RB1#99	22.13	22.39	22.13	21.33	21.59	21.33
		RB50#0	21.50	21.39	21.36	20.70	20.59	20.56
		RB50#50	21.49	21.38	21.26	20.69	20.58	20.46
		RB100#0	21.44	21.36	21.32	20.64	20.56	20.52

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

For Band38: Antenna Gain = -0.8dBi

Limit: EIRP ≤ 33dBm

LTE Band 41

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.4	23.33	23.19	22.60	22.53	22.39
		RB1#13	23.48	23.39	23.29	22.68	22.59	22.49
		RB1#24	23.38	23.3	23.17	22.58	22.50	22.37
		RB15#0	22.44	22.31	22.26	21.64	21.51	21.46
		RB15#10	22.43	22.33	22.22	21.63	21.53	21.42
		RB25#0	22.45	22.35	22.27	21.65	21.55	21.47
	16QAM	RB1#0	22.46	22.59	22.18	21.66	21.79	21.38
		RB1#13	22.52	22.60	22.27	21.72	21.80	21.47
		RB1#24	22.44	22.53	22.16	21.64	21.73	21.36
		RB15#0	21.47	21.34	21.24	20.67	20.54	20.44
		RB15#10	21.47	21.35	21.16	20.67	20.55	20.36
		RB25#0	21.48	21.28	21.29	20.68	20.48	20.49
10.0	QPSK	RB1#0	23.48	23.40	23.33	22.68	22.60	22.53
		RB1#25	23.78	23.69	23.58	22.98	22.89	22.78
		RB1#49	23.45	23.35	23.27	22.65	22.55	22.47
		RB25#0	22.51	22.43	22.37	21.71	21.63	21.57
		RB25#25	22.47	22.39	22.29	21.67	21.59	21.49
		RB50#0	22.48	22.39	22.29	21.68	21.59	21.49
	16QAM	RB1#0	22.63	22.62	22.25	21.83	21.82	21.45
		RB1#25	22.88	22.89	22.50	22.08	22.09	21.70
		RB1#49	22.58	22.54	22.18	21.78	21.74	21.38
		RB25#0	21.53	21.38	21.38	20.73	20.58	20.58
		RB25#25	21.52	21.38	21.30	20.72	20.58	20.50
		RB50#0	21.51	21.40	21.29	20.71	20.60	20.49

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	23.45	23.41	23.27	22.65	22.61	22.47
		RB1#38	23.50	23.42	23.34	22.70	22.62	22.54
		RB1#74	23.35	23.26	23.18	22.55	22.46	22.38
		RB36#0	22.48	22.45	22.36	21.68	21.65	21.56
		RB36#39	22.42	22.41	22.28	21.62	21.61	21.48
		RB75#0	22.42	22.42	22.28	21.62	21.62	21.48
	16QAM	RB1#0	22.64	22.58	22.48	21.84	21.78	21.68
		RB1#38	22.72	22.63	22.51	21.92	21.83	21.71
		RB1#74	22.59	22.44	22.35	21.79	21.64	21.55
		RB36#0	21.49	21.40	21.32	20.69	20.60	20.52
		RB36#39	21.48	21.37	21.29	20.68	20.57	20.49
		RB75#0	21.45	21.36	21.28	20.65	20.56	20.48
20.0	QPSK	RB1#0	23.39	23.24	23.04	22.59	22.44	22.24
		RB1#50	23.82	23.61	23.47	23.02	22.81	22.67
		RB1#99	23.29	23.05	22.95	22.49	22.25	22.15
		RB50#0	22.42	22.33	22.22	21.62	21.53	21.42
		RB50#50	22.43	22.32	22.19	21.63	21.52	21.39
		RB100#0	22.41	22.36	22.23	21.61	21.56	21.43
	16QAM	RB1#0	22.57	22.28	22.03	21.77	21.48	21.23
		RB1#50	23.03	22.70	22.48	22.23	21.90	21.68
		RB1#99	22.47	22.12	21.95	21.67	21.32	21.15
		RB50#0	21.43	21.34	21.29	20.63	20.54	20.49
		RB50#50	21.45	21.30	21.20	20.65	20.50	20.40
		RB100#0	21.40	21.36	21.23	20.60	20.56	20.43

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

For Band41: Antenna Gain = -0.8dBi

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	17.41	17.01	16.83	17.31	16.91	16.73
		RB1#3	17.62	17.10	16.97	17.52	17.00	16.87
		RB1#5	17.43	17.00	16.83	17.33	16.90	16.73
		RB3#0	17.27	17.14	16.92	17.17	17.04	16.82
		RB3#3	17.18	17.12	16.88	17.08	17.02	16.78
		RB6#0	16.04	16.07	15.89	15.94	15.97	15.79
	16QAM	RB1#0	16.03	16.07	16.03	15.93	15.97	15.93
		RB1#3	16.23	16.27	16.20	16.13	16.17	16.10
		RB1#5	16.06	16.10	16.06	15.96	16.00	15.96
		RB3#0	16.24	16.40	16.01	16.14	16.30	15.91
		RB3#3	16.25	16.41	16.03	16.15	16.31	15.93
		RB6#0	15.03	15.12	14.98	14.93	15.02	14.88
3.0	QPSK	RB1#0	17.53	17.05	16.93	17.43	16.95	16.83
		RB1#8	17.58	17.01	16.92	17.48	16.91	16.82
		RB1#14	17.17	17.0	16.86	17.07	16.90	16.76
		RB6#0	16.07	16.08	15.93	15.97	15.98	15.83
		RB6#9	16.07	16.02	15.87	15.97	15.92	15.77
		RB15#0	16.12	16.13	15.97	16.02	16.03	15.87
	16QAM	RB1#0	16.17	16.84	16.17	16.07	16.74	16.07
		RB1#8	16.17	16.8	16.14	16.07	16.70	16.04
		RB1#14	16.14	16.74	16.13	16.04	16.64	16.03
		RB6#0	15.04	15.21	14.95	14.94	15.11	14.85
		RB6#9	15.04	15.15	14.97	14.94	15.05	14.87
		RB15#0	15.17	15.25	14.98	15.07	15.15	14.88

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	17.47	16.99	16.84	17.37	16.89	16.74
		RB1#13	17.59	17.12	16.97	17.49	17.02	16.87
		RB1#24	17.38	16.94	16.81	17.28	16.84	16.71
		RB15#0	16.15	16.12	15.96	16.05	16.02	15.86
		RB15#10	16.16	16.15	15.93	16.06	16.05	15.83
		RB25#0	16.11	16.07	15.91	16.01	15.97	15.81
	16QAM	RB1#0	16.36	16.17	15.77	16.26	16.07	15.67
		RB1#13	16.47	16.28	15.93	16.37	16.18	15.83
		RB1#24	16.40	16.11	15.74	16.30	16.01	15.64
		RB15#0	15.02	15.23	15.09	14.92	15.13	14.99
		RB15#10	15.17	15.20	15.03	15.07	15.10	14.93
		RB25#0	15.16	15.16	15.05	15.06	15.06	14.95
10.0	QPSK	RB1#0	17.49	17.02	16.97	17.39	16.92	16.87
		RB1#25	17.43	17.18	17.07	17.33	17.08	16.97
		RB1#49	17.00	16.90	16.84	16.90	16.80	16.74
		RB25#0	16.07	16.11	16.03	15.97	16.01	15.93
		RB25#25	16.2	16.13	15.96	16.10	16.03	15.86
		RB50#0	16.12	16.15	16.02	16.02	16.05	15.92
	16QAM	RB1#0	16.08	16.78	16.16	15.98	16.68	16.06
		RB1#25	16.31	16.90	16.33	16.21	16.80	16.23
		RB1#49	16.12	16.71	16.08	16.02	16.61	15.98
		RB25#0	15.19	15.22	15.11	15.09	15.12	15.01
		RB25#25	15.38	15.25	15.05	15.28	15.15	14.95
		RB50#0	15.23	15.20	15.05	15.13	15.10	14.95

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	17.48	16.99	16.88	17.38	16.89	16.78
		RB1#38	17.48	17.07	16.91	17.38	16.97	16.81
		RB1#74	17.01	16.91	16.74	16.91	16.81	16.64
		RB36#0	16.04	16.08	16.07	15.94	15.98	15.97
		RB36#39	16.14	16.12	15.96	16.04	16.02	15.86
		RB75#0	16.09	16.10	16.00	15.99	16.00	15.90
	16QAM	RB1#0	16.18	16.56	16.64	16.08	16.46	16.54
		RB1#38	16.39	16.60	16.67	16.29	16.50	16.57
		RB1#74	16.22	16.41	16.51	16.12	16.31	16.41
		RB36#0	15.06	15.08	15.10	14.96	14.98	15.00
		RB36#39	15.18	15.13	14.96	15.08	15.03	14.86
		RB75#0	15.13	15.11	15.02	15.03	15.01	14.92
20.0	QPSK	RB1#0	17.36	16.86	16.86	17.26	16.76	16.76
		RB1#50	17.82	17.19	17.17	17.72	17.09	17.07
		RB1#99	17.34	16.68	16.64	17.24	16.58	16.54
		RB50#0	16.41	16.19	16.22	16.31	16.09	16.12
		RB50#50	16.10	16.22	16.00	16.00	16.12	15.90
		RB100#0	16.11	16.20	16.11	16.01	16.10	16.01
	16QAM	RB1#0	16.17	16.58	16.19	16.07	16.48	16.09
		RB1#50	16.62	16.87	16.51	16.52	16.77	16.41
		RB1#99	16.17	16.40	16.01	16.07	16.30	15.91
		RB50#0	15.07	15.20	15.26	14.97	15.10	15.16
		RB50#50	15.14	15.28	15.20	15.04	15.18	15.10
		RB100#0	15.08	15.26	15.18	14.98	15.16	15.08

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

For Band 66: Antenna Gain = -0.1dBi

Limit: EIRP ≤ 30dBm

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

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	9.26	13
	Middle	9.17	13
	High	10.35	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	11.06	13
	Middle	11.73	13
	High	11.92	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	2.95	13
	Middle	2.92	13
	High	3.04	13
HSDPA (16QAM)	Low	3.78	13
	Middle	3.75	13
	High	3.85	13
HSUPA (BPSK)	Low	3.75	13
	Middle	3.69	13
	High	3.65	13
HSPA+	Low	3.56	13
	Middle	3.64	13
	High	3.58	13

PCS Band

Mode	Channel	PAR (dB)	Limit(dB)
GSM	Low	8.72	13
	Middle	10.10	13
	High	8.65	13

Mode	Channel	PAR (dB)	Limit(dB)
EGPRS	Low	12.18	13
	Middle	11.57	13
	High	11.03	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.21	13
	Middle	3.14	13
	High	3.14	13
HSDPA (16QAM)	Low	3.97	13
	Middle	3.78	13
	High	3.88	13
HSUPA (BPSK)	Low	4.07	13
	Middle	4.07	13
	High	4.04	13
HSPA+	Low	4.31	13
	Middle	4.56	13
	High	4.32	13

AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.30	13
	Middle	3.24	13
	High	3.27	13
HSDPA (16QAM)	Low	4.13	13
	Middle	3.97	13
	High	4.10	13
HSUPA (BPSK)	Low	4.07	13
	Middle	3.46	13
	High	4.20	13
HSPA+	Low	4.31	13
	Middle	4.26	13
	High	4.28	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.67	5.42	6.43	13	Pass
QPSK (100RB Size)	5.74	5.68	5.62	13	Pass
16QAM (1RB Size)	7.48	6.52	7.51	13	Pass
16QAM (100RB Size)	6.58	6.58	6.43	13	Pass

LTE Band 4 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.10	4.87	5.13	13	Pass
QPSK (100RB Size)	5.07	5.33	4.90	13	Pass
16QAM (1RB Size)	5.65	5.71	5.74	13	Pass
16QAM (100RB Size)	6.06	6.23	5.68	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.58	4.68	4.2	13	Pass
QPSK (50RB Size)	5.48	5.51	5.42	13	Pass
16QAM (1RB Size)	5.19	5.58	5.19	13	Pass
16QAM (50RB Size)	6.28	6.31	6.31	13	Pass

LTE Band 7 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.14	5.71	5.42	13	Pass
QPSK (100RB Size)	5.57	5.54	5.65	13	Pass
16QAM (1RB Size)	6.41	5.86	6.32	13	Pass
16QAM (100RB Size)	6.49	6.43	6.46	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.58	5.19	4.9	13	Pass
QPSK (50RB Size)	5.74	5.61	5.64	13	Pass
16QAM (1RB Size)	5.58	6.31	5.96	13	Pass
16QAM (50RB Size)	6.6	6.51	6.57	13	Pass

LTE Band 17 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.03	5.13	5	13	Pass
QPSK (50RB Size)	5.54	5.71	5.67	13	Pass
16QAM (1RB Size)	6.03	5.99	6.06	13	Pass
16QAM (50RB Size)	6.51	6.54	6.6	13	Pass

LTE Band 38 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.72	8.61	6.96	13	Pass
QPSK (50RB Size)	5.25	8.64	5.19	13	Pass
16QAM (1RB Size)	5.30	9.48	5.33	13	Pass
16QAM (50RB Size)	6.46	6.06	6.03	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	5.13	5.01	6.75	13	Pass
QPSK (100RB Size)	6.64	5.54	5.25	13	Pass
16QAM (1RB Size)	5.48	7.25	7.13	13	Pass
16QAM (100RB Size)	6.26	6.14	6.09	13	Pass

LTE Band 66 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	6.06	6.35	6.00	13	Pass
QPSK (100RB Size)	5.62	5.91	5.88	13	Pass
16QAM (1RB Size)	6.00	7.59	6.55	13	Pass
16QAM (100RB Size)	6.61	6.78	6.67	13	Pass

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

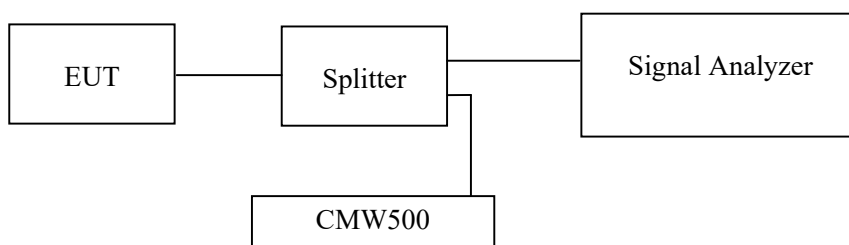
Applicable Standard

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

Test Procedure

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

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



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

Test Data

Environmental Conditions

Temperature:	28.8 °C
Relative Humidity:	46.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-04-16 to 2023-04-19.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band (Part 22H)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	246.00	322.00
	190	836.6	248.00	319.00
	251	848.8	245.00	321.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	128	824.2	248.00	315.00
	190	836.6	248.00	320.00
	251	848.8	247.00	317.00

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.230	4.725
	836.6	4.155	4.710
	846.6	4.155	4.740
HSDPA	826.4	4.215	5.175
	836.6	4.200	4.955
	846.6	4.170	4.740
HSUPA	826.4	4.215	4.710
	836.6	4.170	5.385
	846.6	4.170	4.710

PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	246.00	319.00
	661	1880.0	243.00	317.00
	810	1909.8	244.00	320.00

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
EDGE(8PSK)	512	1850.2	250.00	319.00
	661	1880.0	251.00	326.00
	810	1909.8	253.00	317.00

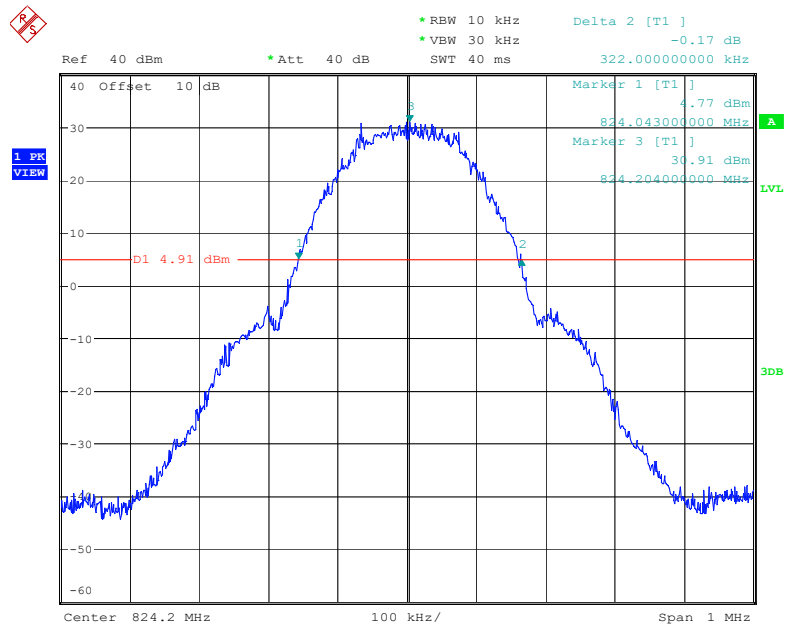
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.170	4.740
	1880.0	4.170	4.725
	1907.6	4.170	4.725
HSDPA	1852.4	4.980	10.59
	1880.0	4.170	4.740
	1907.6	5.010	8.895
HSUPA	1852.4	4.410	8.940
	1880.0	4.680	9.585
	1907.6	4.365	7.710

AWS Band (Part 27)

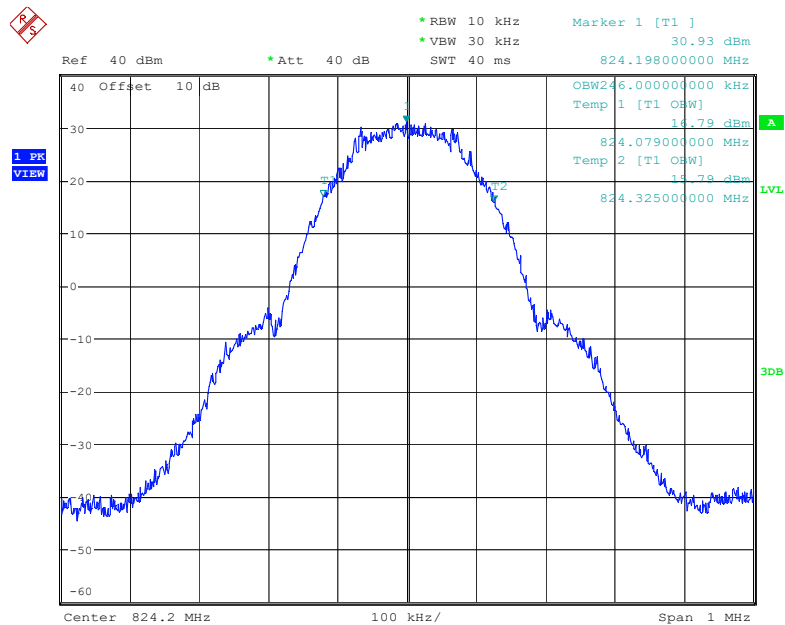
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.560	10.635
	1732.6	4.170	4.725
	1752.6	4.185	4.725
HSDPA	1712.4	4.290	4.710
	1732.6	5.070	11.475
	1752.6	4.185	4.740
HSUPA	1712.4	4.185	4.725
	1732.6	4.185	4.740
	1752.6	4.995	10.800

Cellular Band (Part 22H)

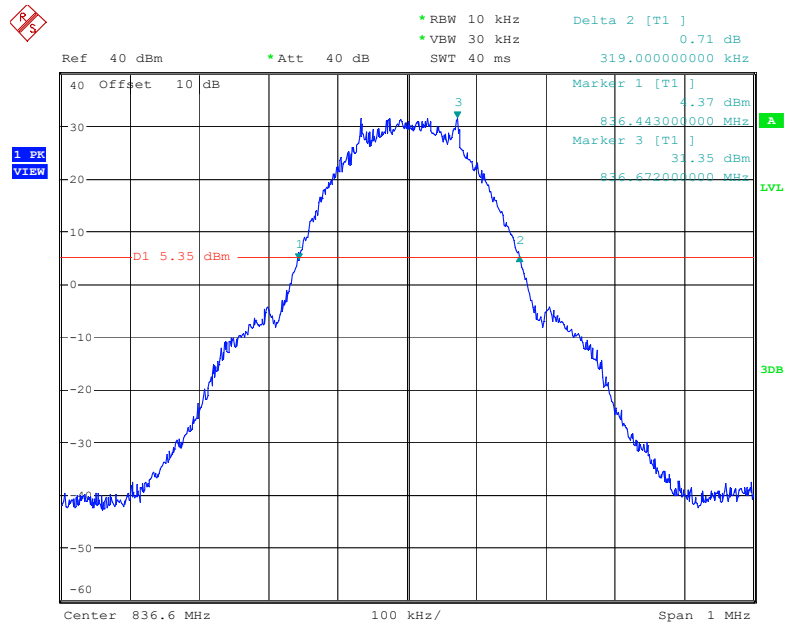
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Low channel



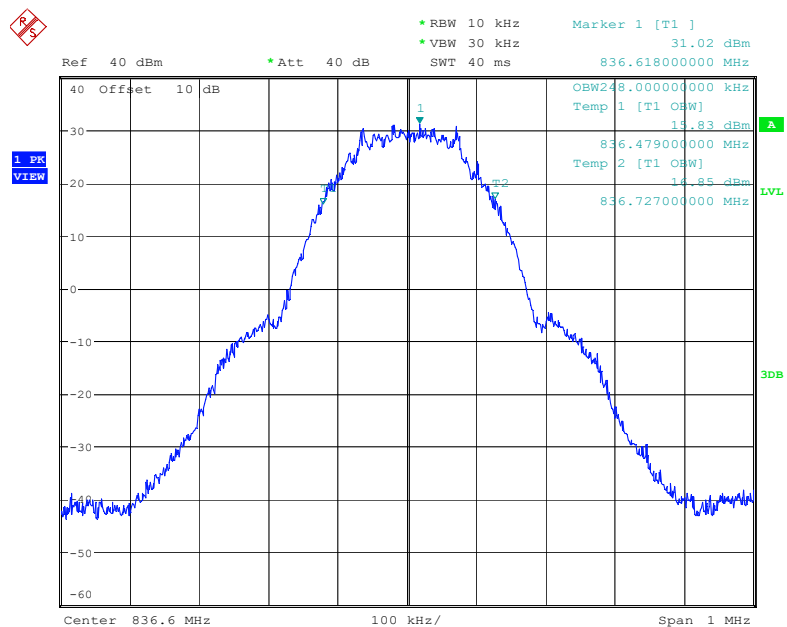
Date: 19.APR.2023 15:56:58



Date: 19.APR.2023 15:56:17

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

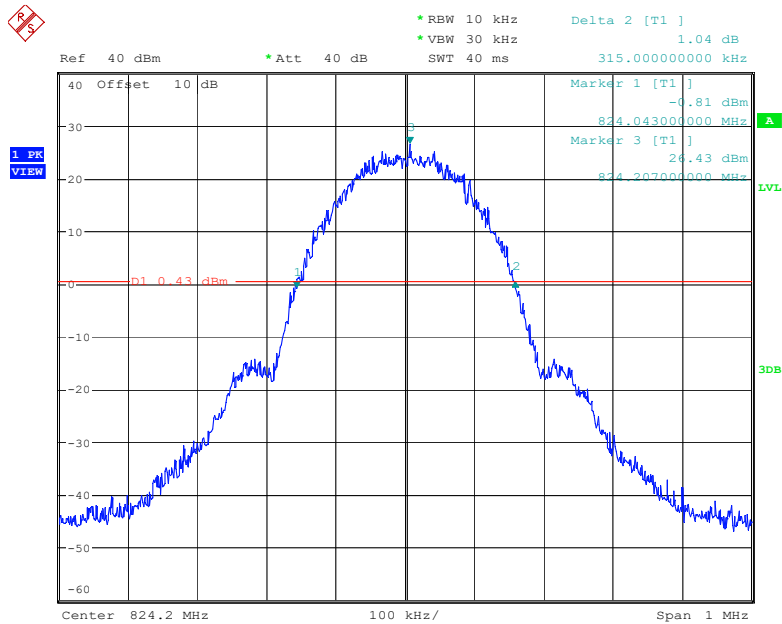
Date: 19.APR.2023 16:05:13



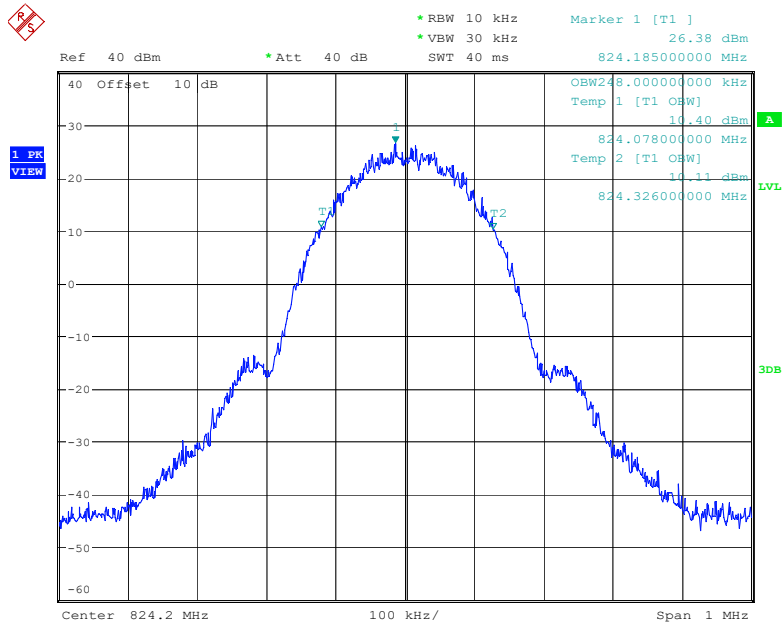
Date: 19.APR.2023 16:04:02



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

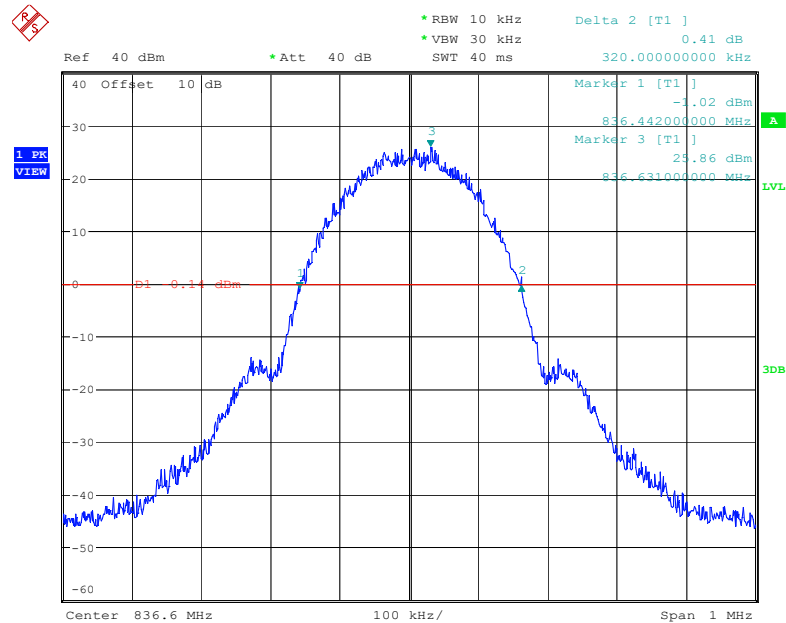


Date: 19.APR.2023 13:58:52

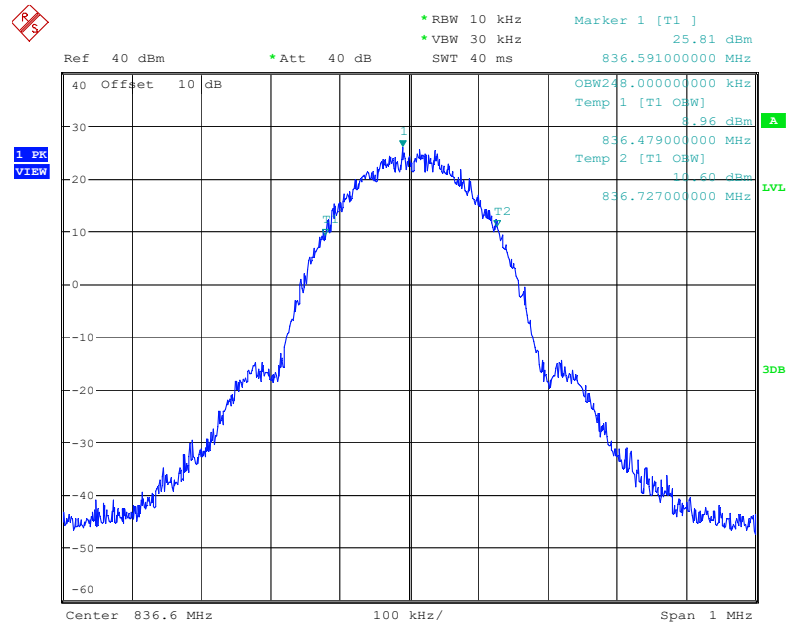


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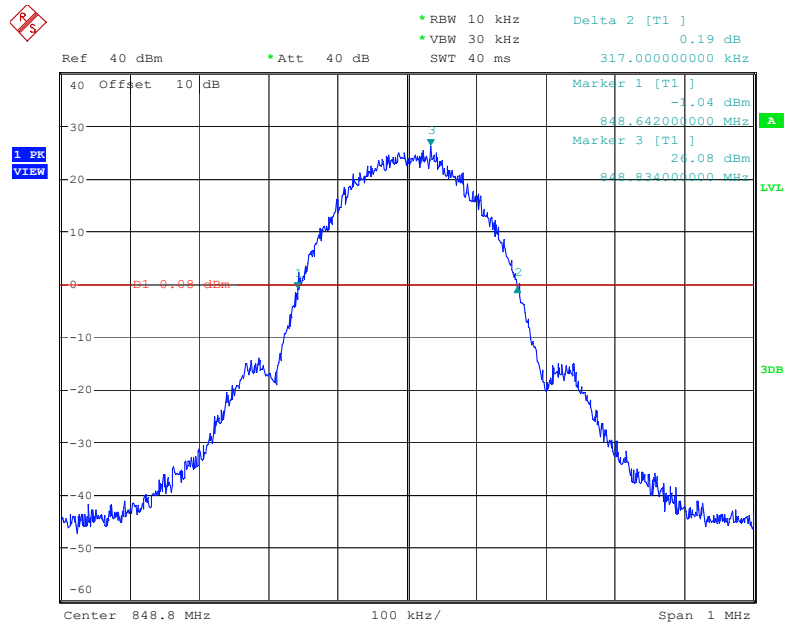
26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode, Middle channel



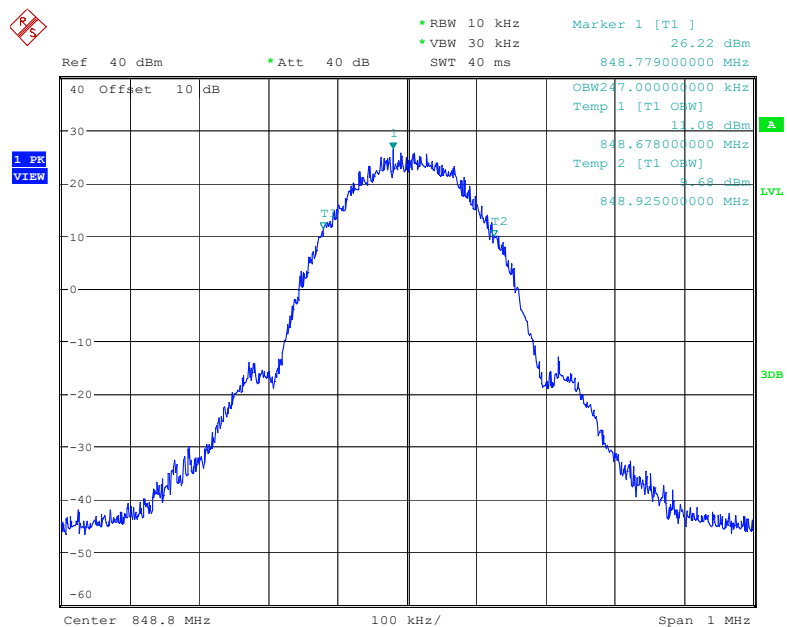
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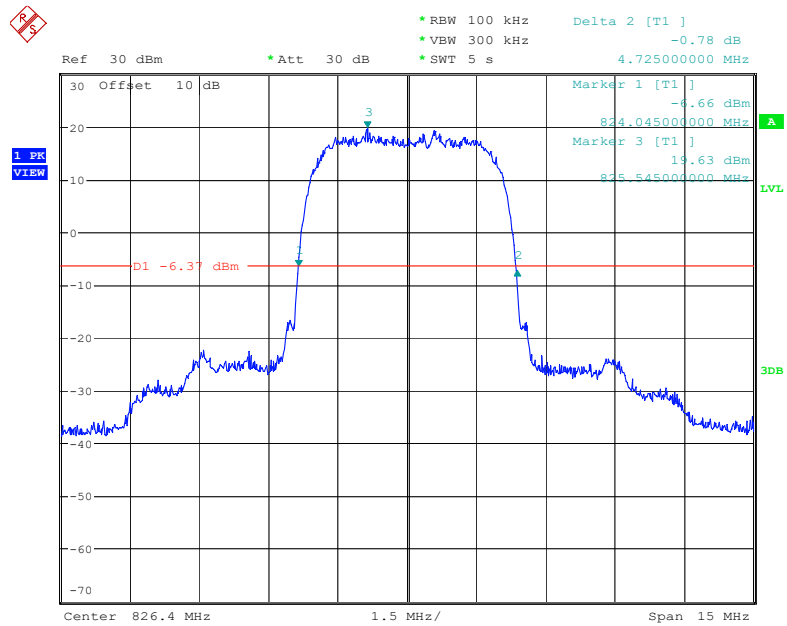
Date: 19.APR.2023 14:04:15

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

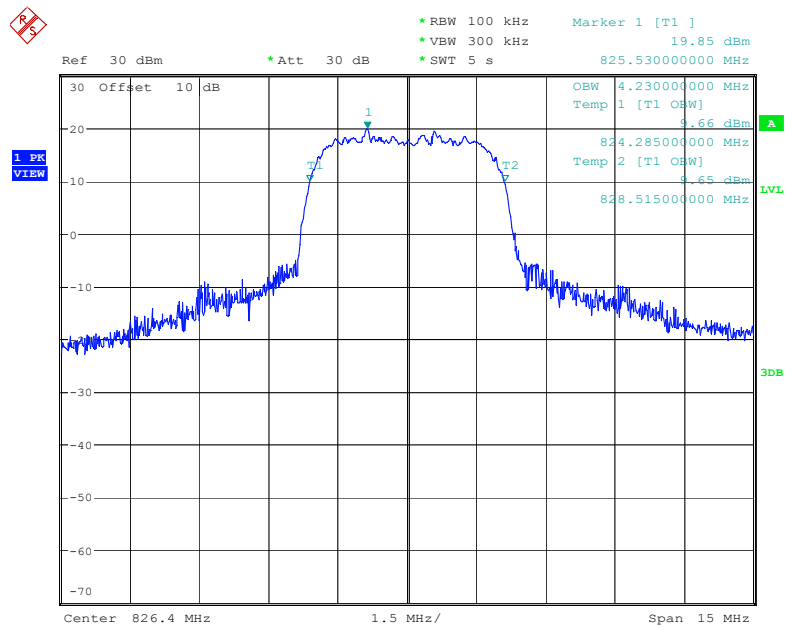
Date: 19.APR.2023 14:11:16



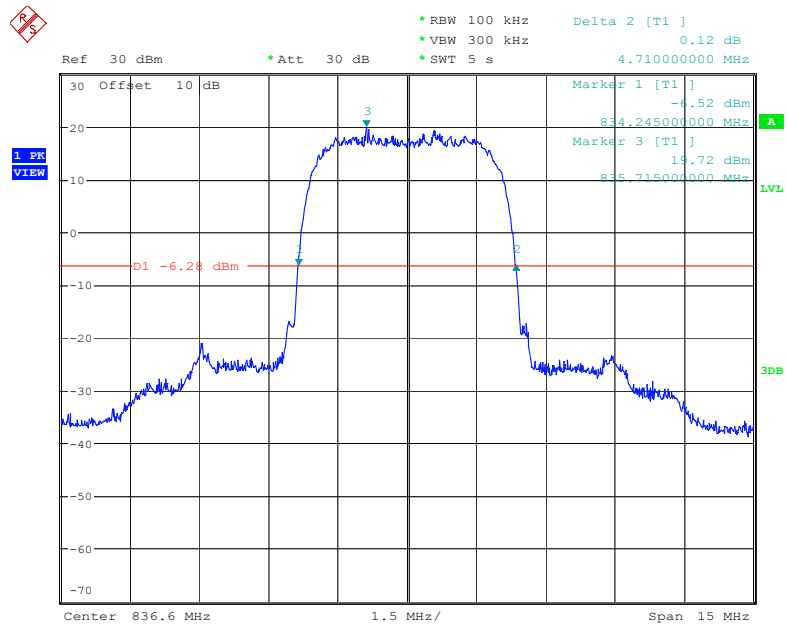
Date: 19.APR.2023 14:10:36

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

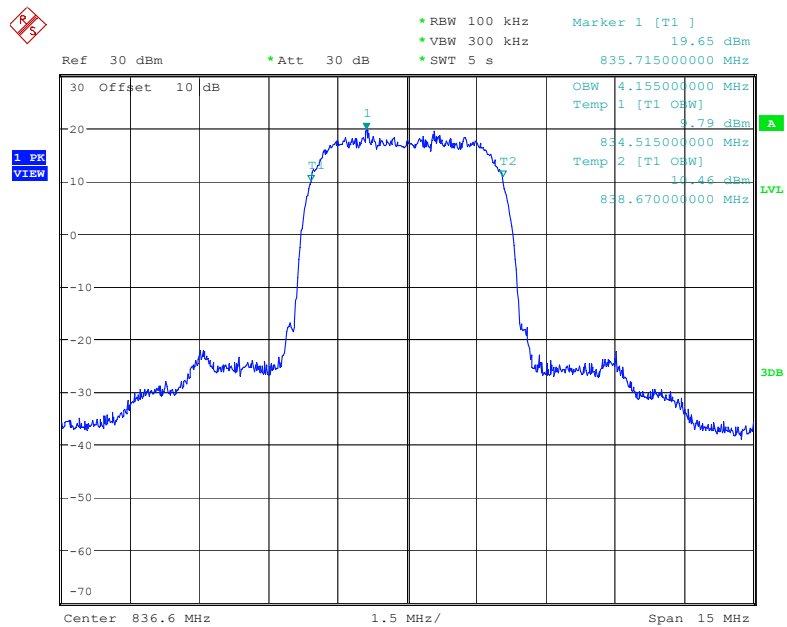
Date: 18.APR.2023 16:43:24



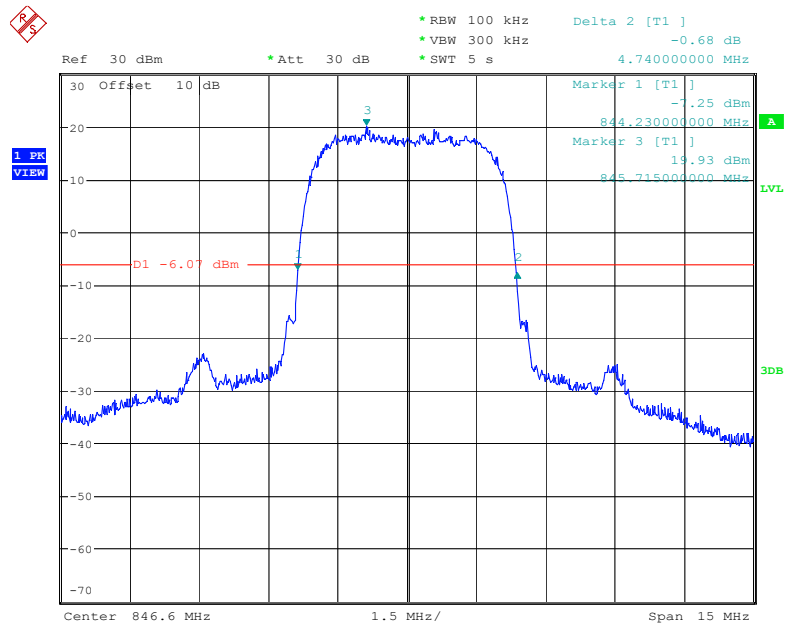
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26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel

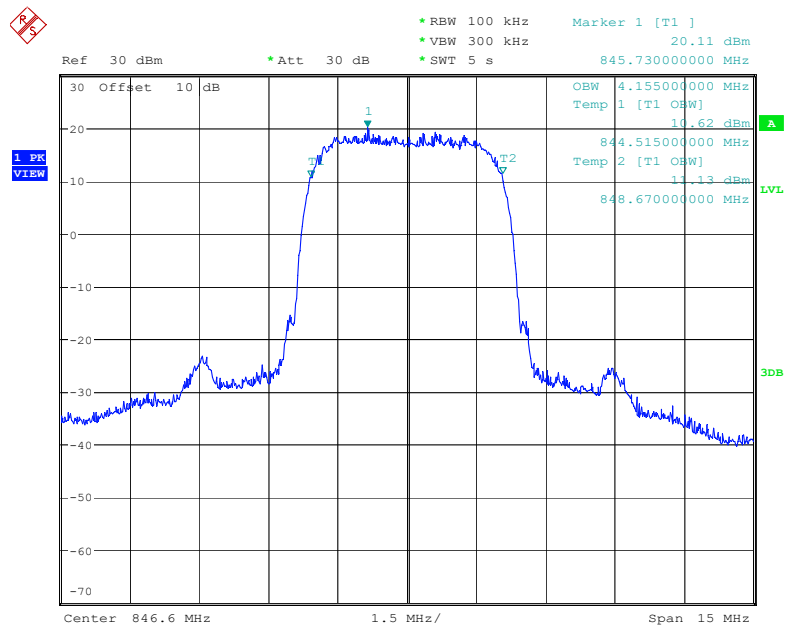
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Date: 18.APR.2023 16:47:57

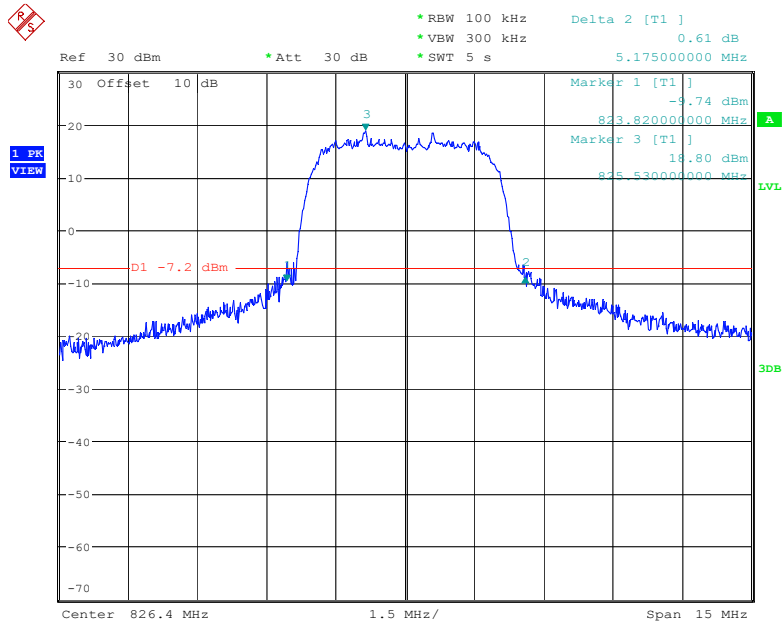
26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel

Date: 18.APR.2023 16:51:09

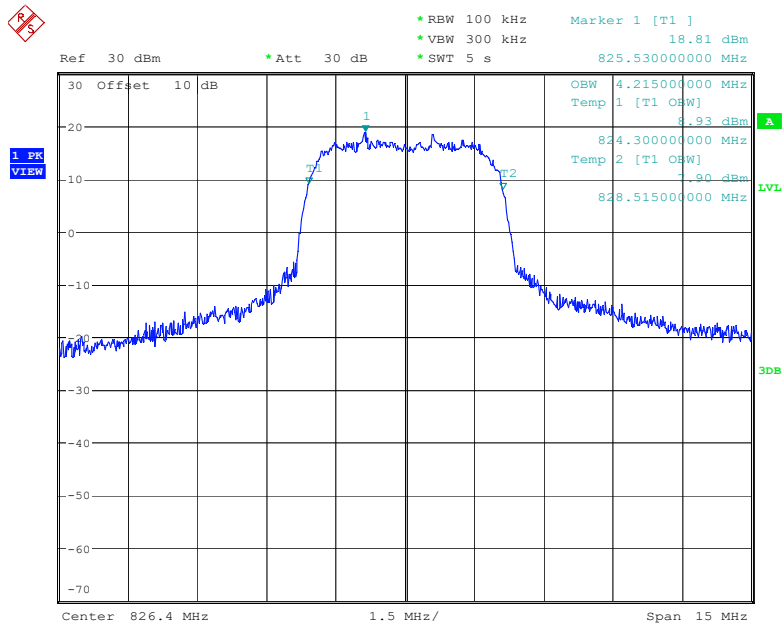


Date: 18.APR.2023 16:50:43

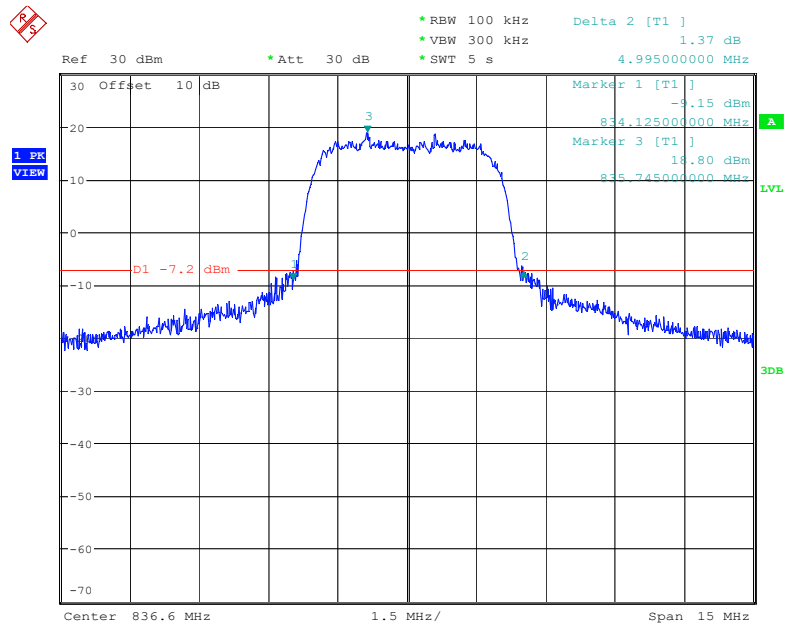
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (QPSK) Mode, Low channel



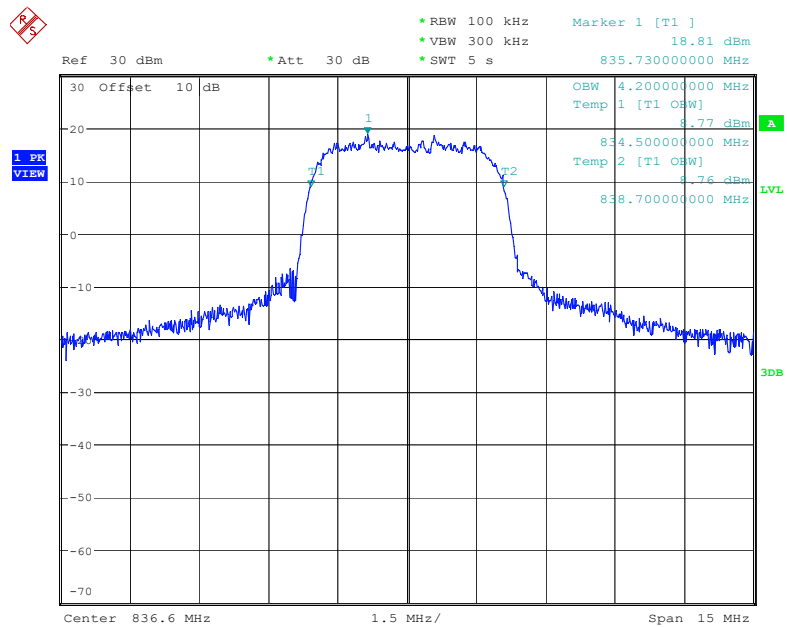
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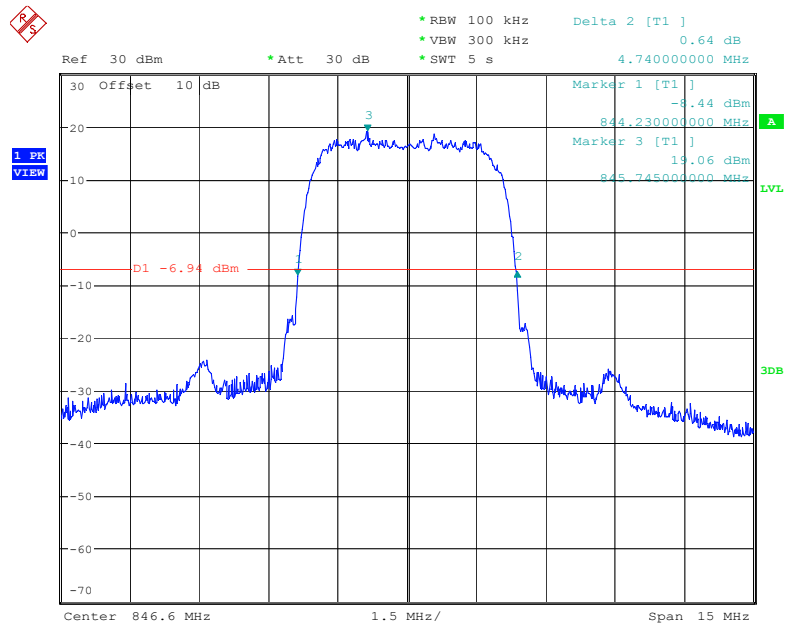
Date: 18.APR.2023 17:00:40

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

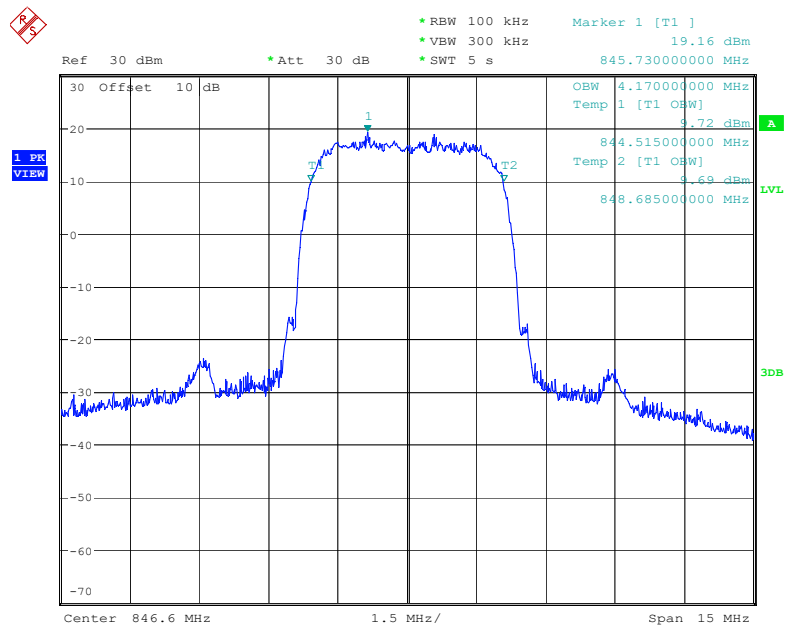
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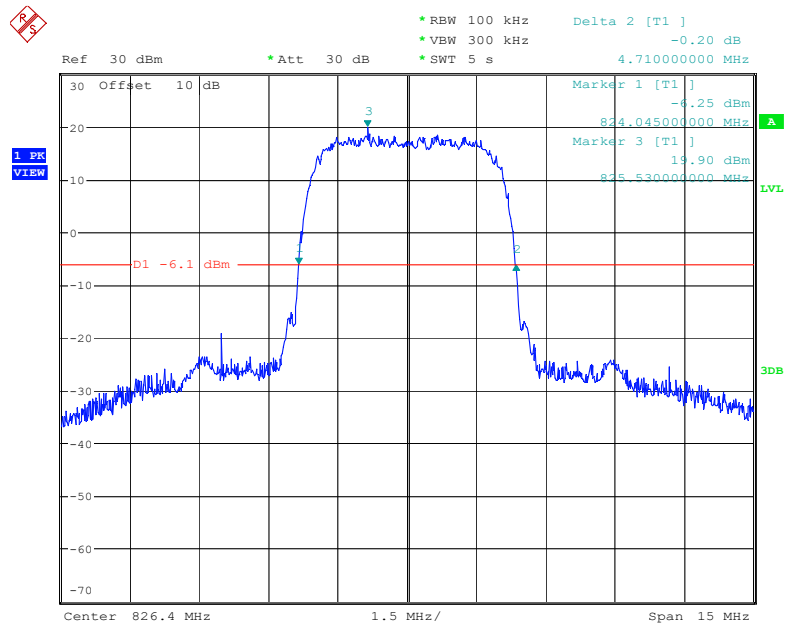
Date: 18.APR.2023 17:04:36

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

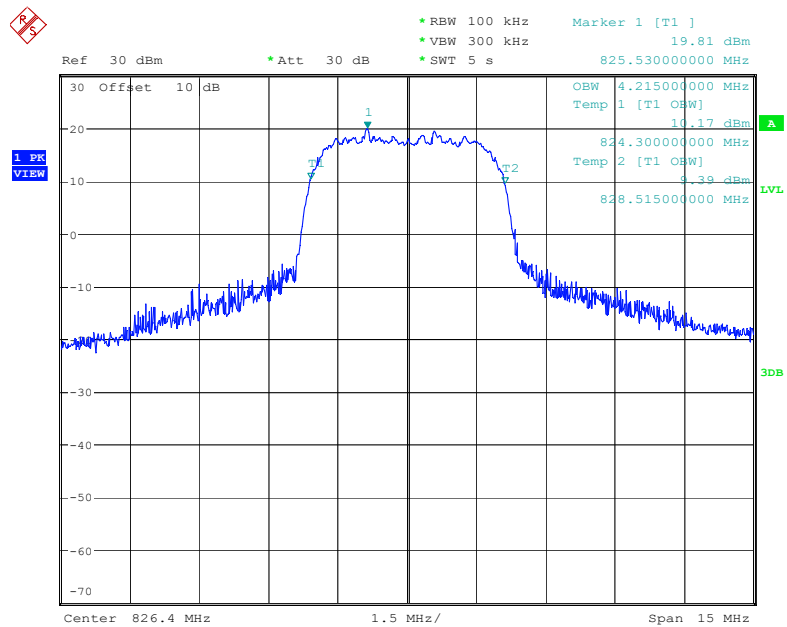
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Date: 18.APR.2023 17:07:36

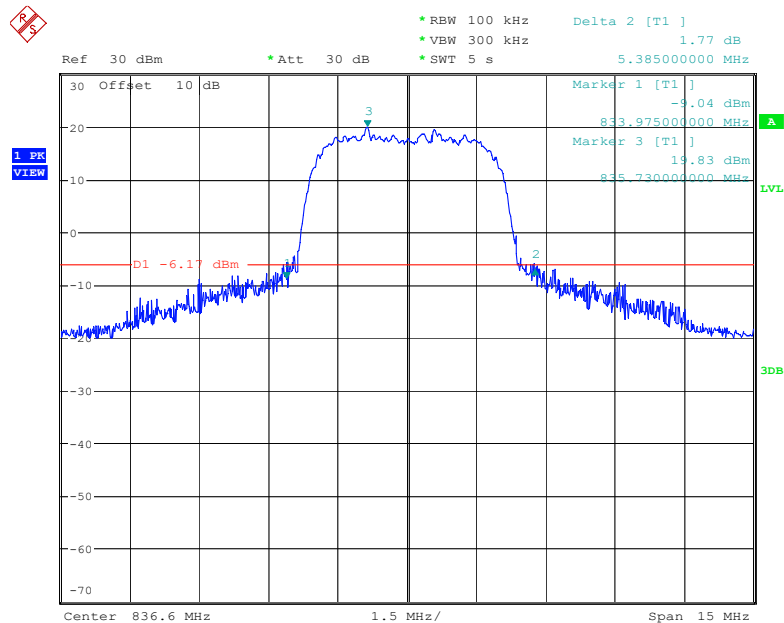
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (16QAM) Mode, Low channel

Date: 18.APR.2023 17:13:20

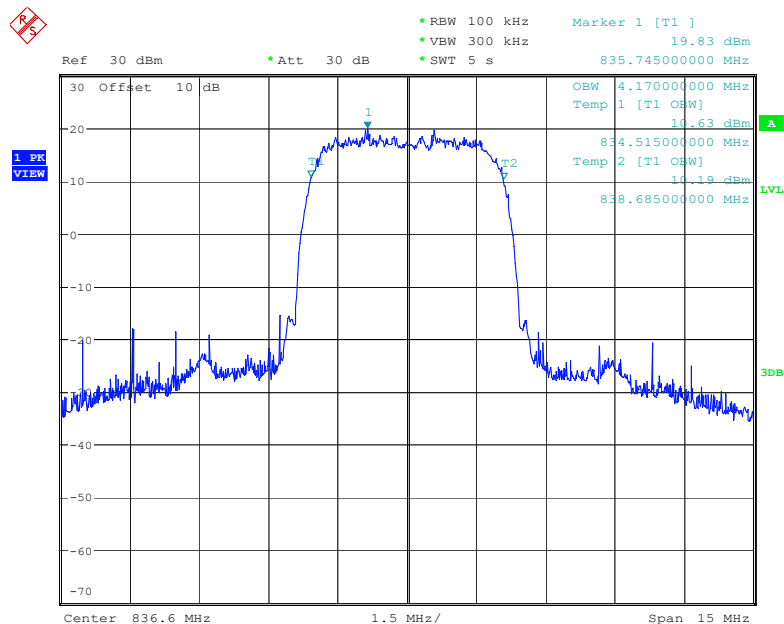


Date: 21.APR.2023 15:49:52

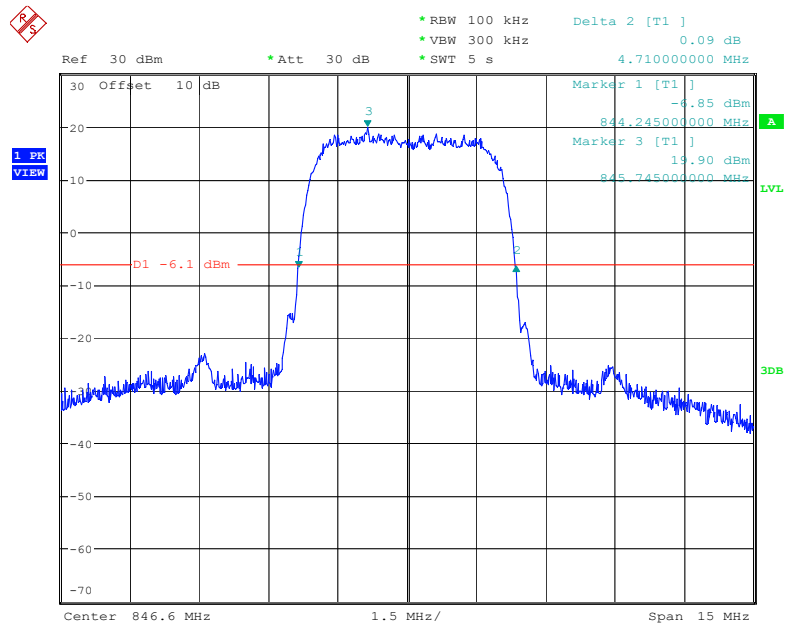
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (16QAM) Mode, Middle channel



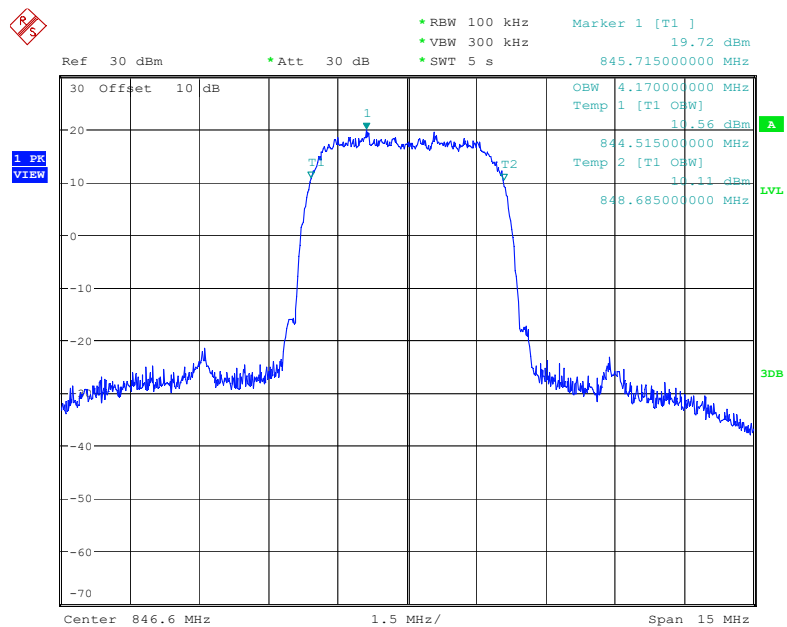
Date: 21.APR.2023 15:54:26



Date: 18.APR.2023 17:16:55

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

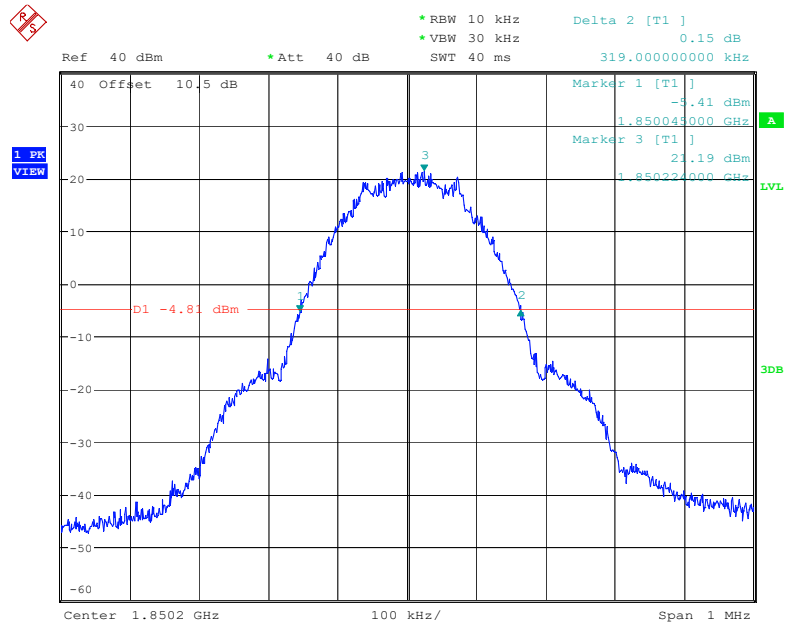
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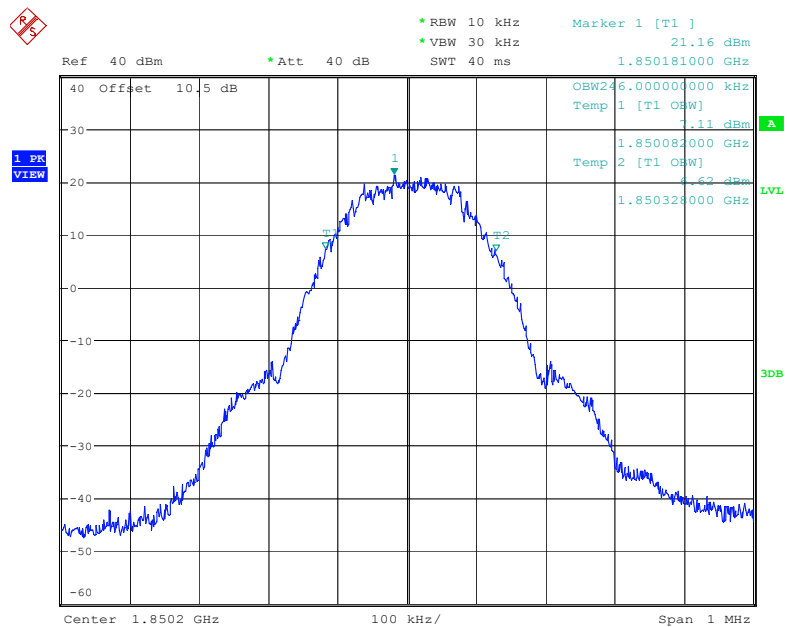
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PCS Band (Part 24E)

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

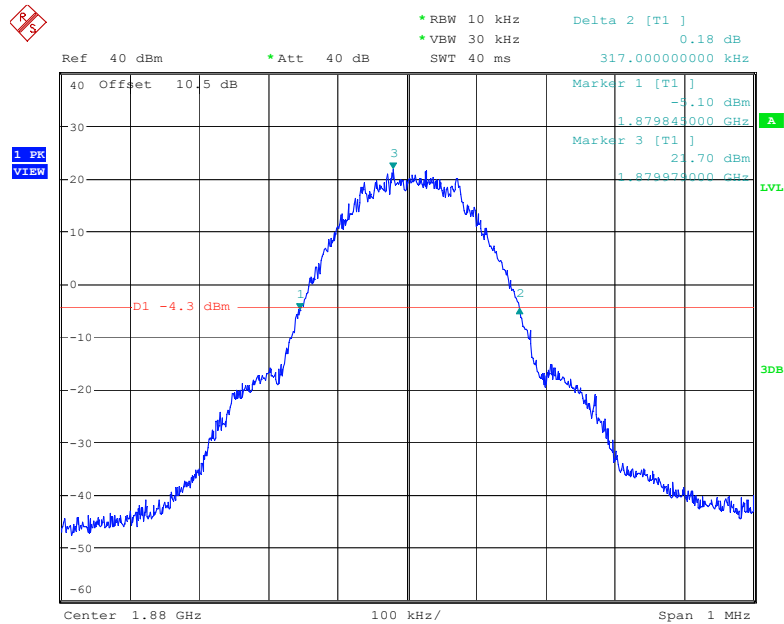


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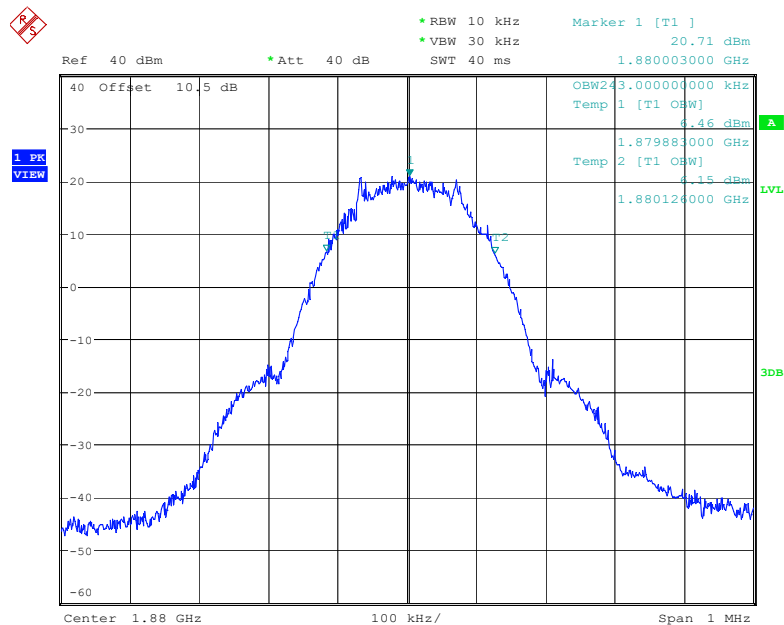


Date: 19.APR.2023 14:35:20

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

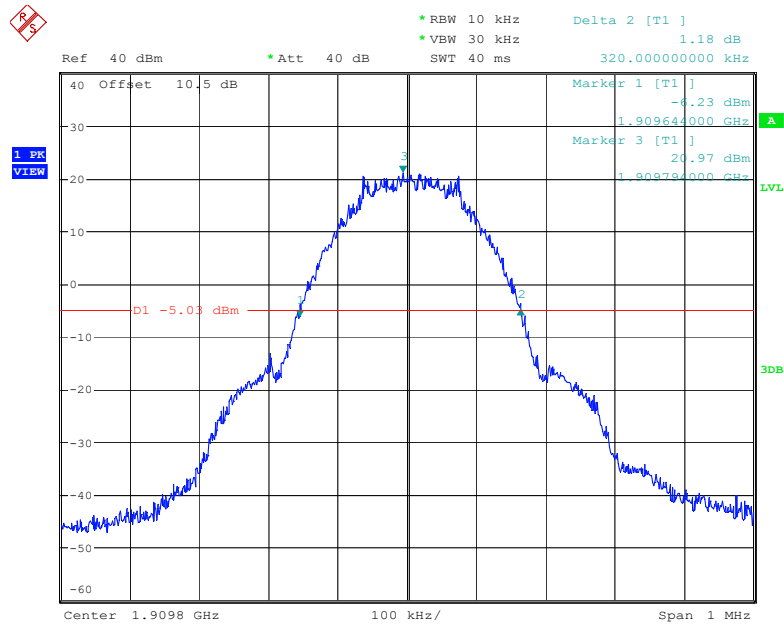


Date: 19.APR.2023 14:44:46

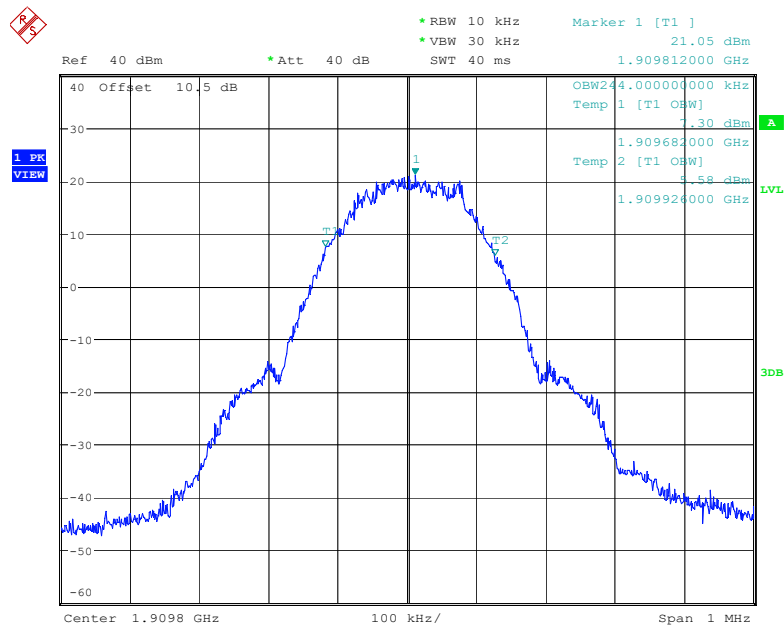


Date: 19.APR.2023 14:44:07

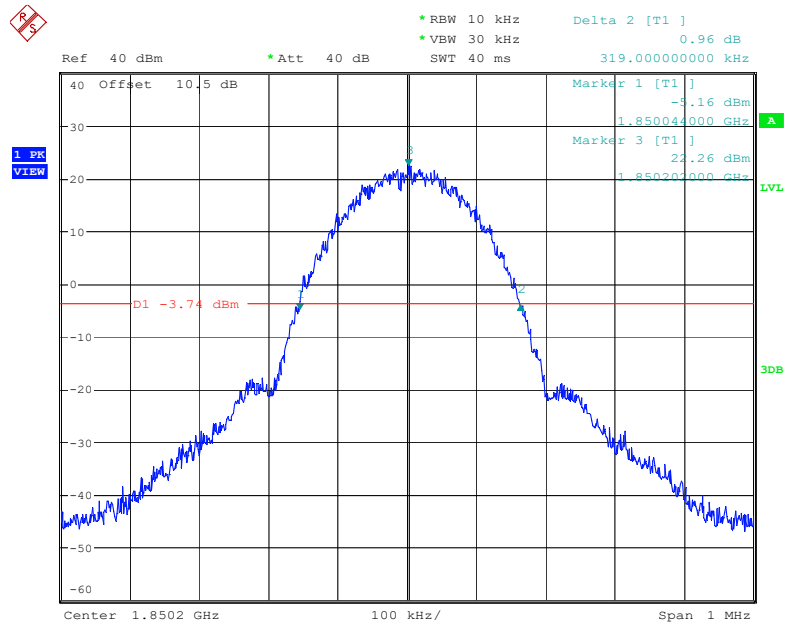
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel



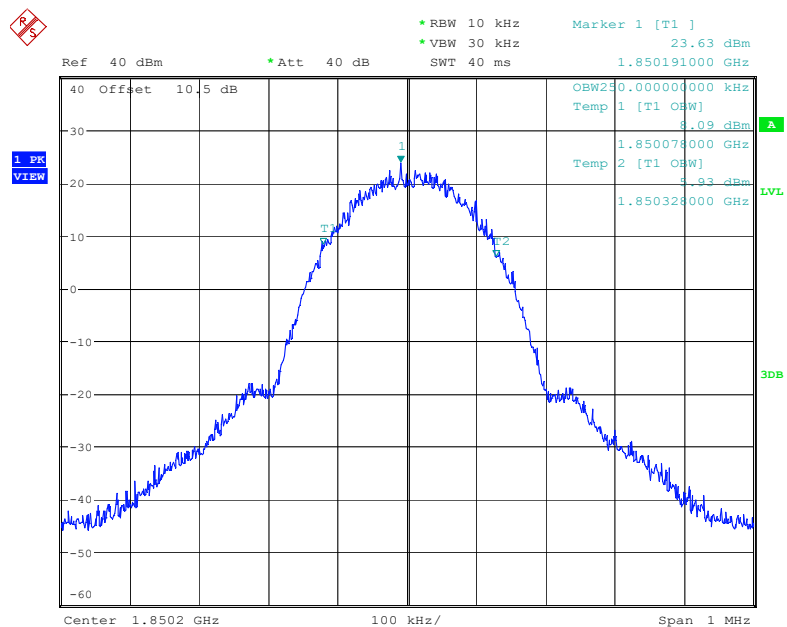
Date: 19.APR.2023 14:52:11



Date: 19.APR.2023 14:51:31

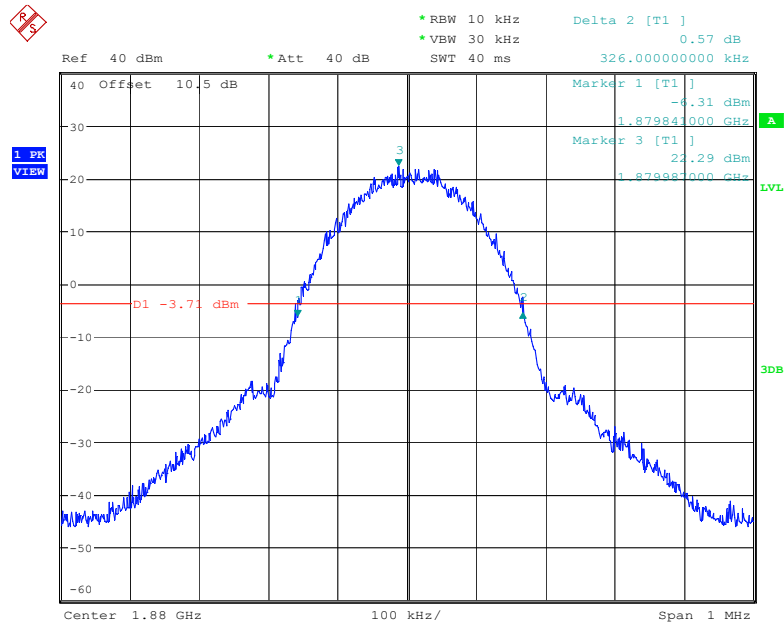
26 dB Emissions & 99% Occupied Bandwidth for EGPRS (8PSK) Mode, Low channel

Date: 19.APR.2023 15:30:03

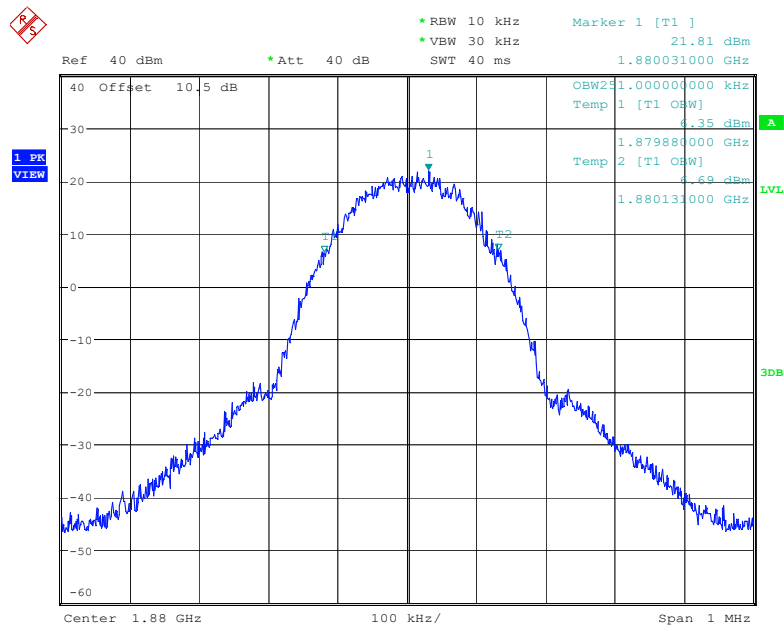


Date: 19.APR.2023 15:29:22

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

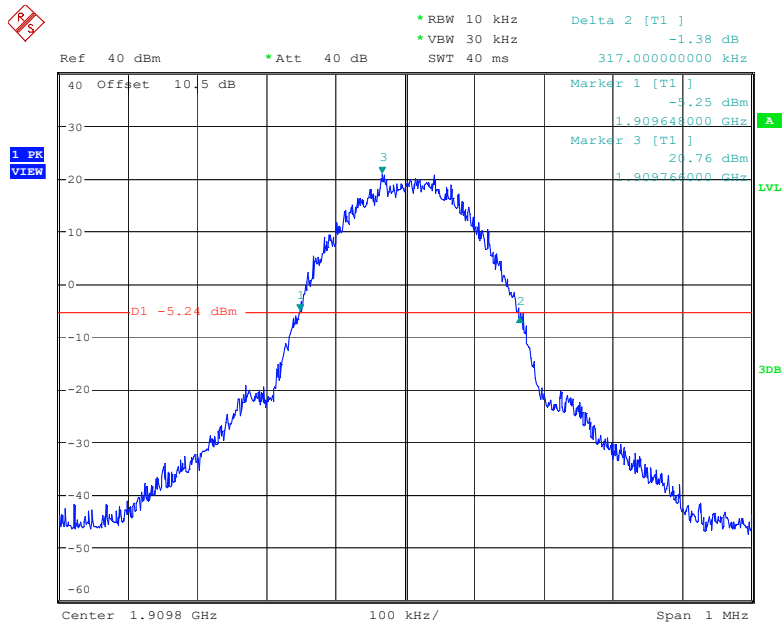


Date: 19.APR.2023 15:37:32

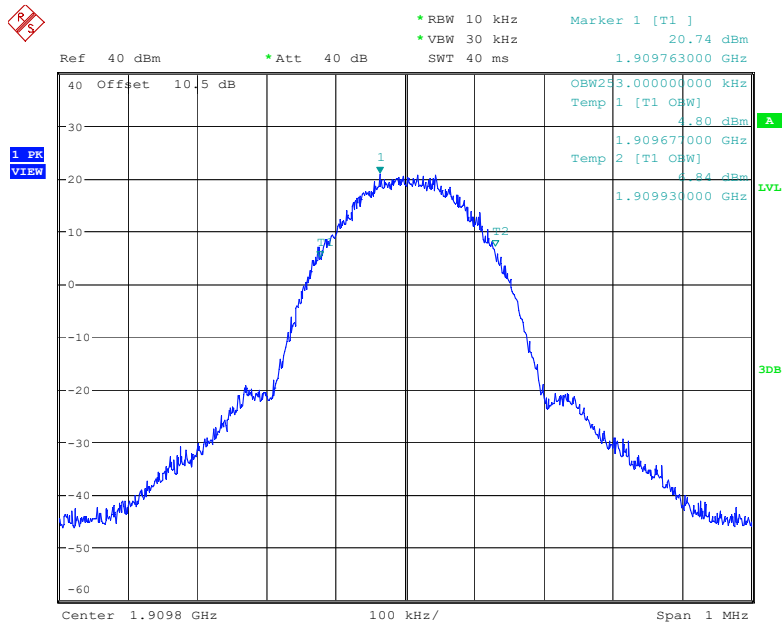


Date: 19.APR.2023 15:36:41

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

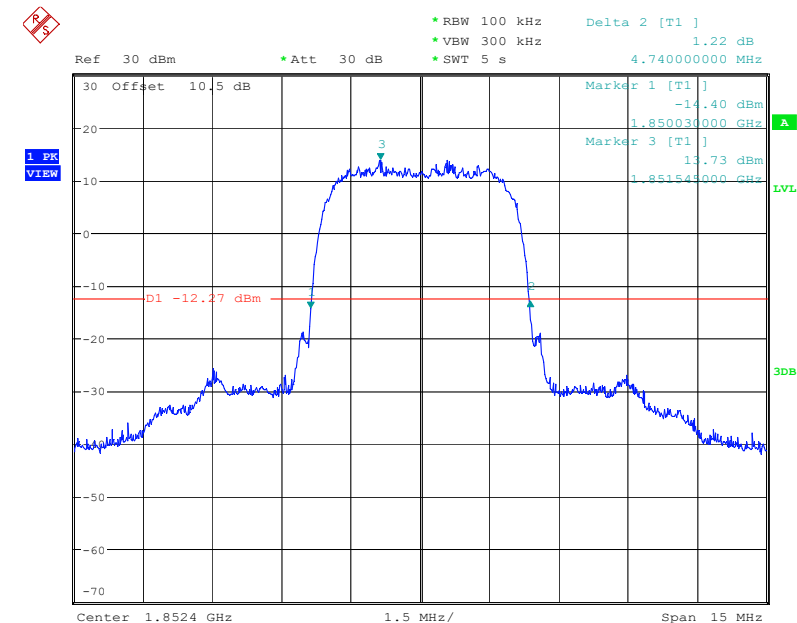


Date: 19.APR.2023 15:44:53

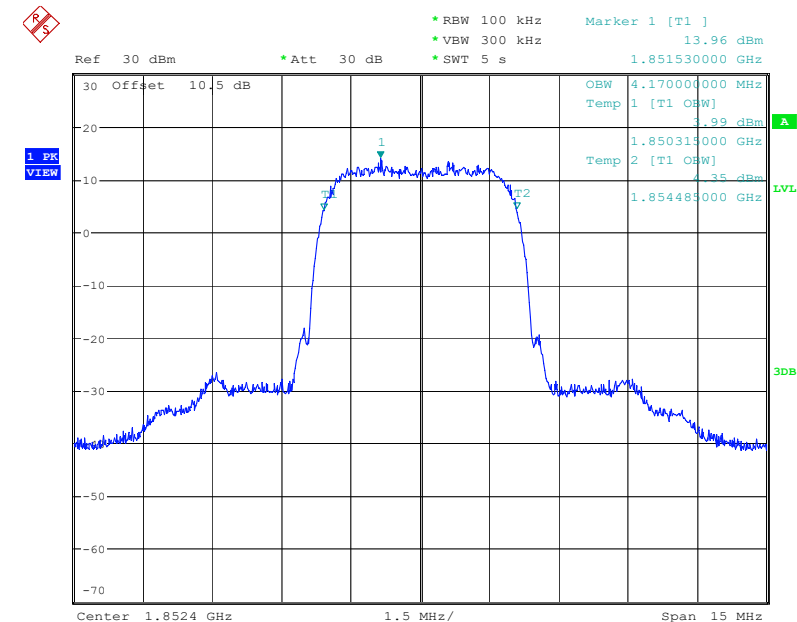


Date: 19.APR.2023 15:44:23

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

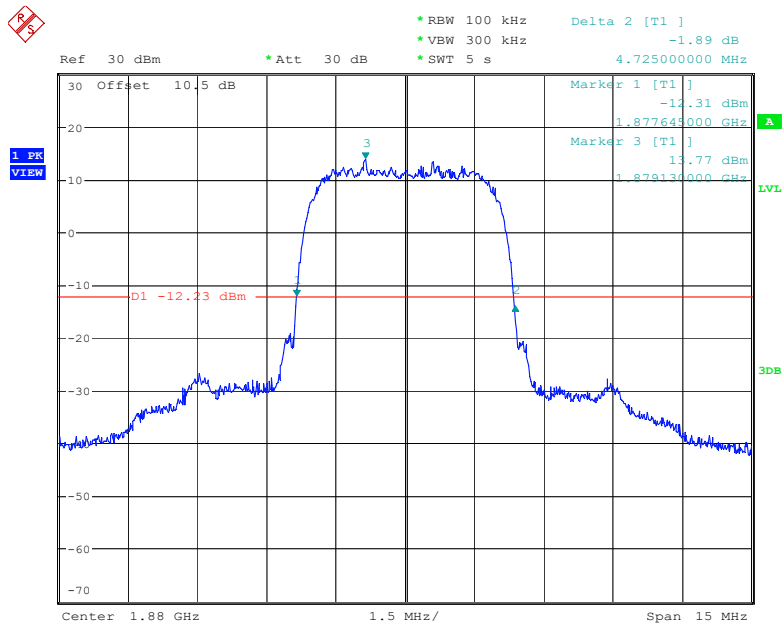


Date: 18.APR.2023 09:26:01

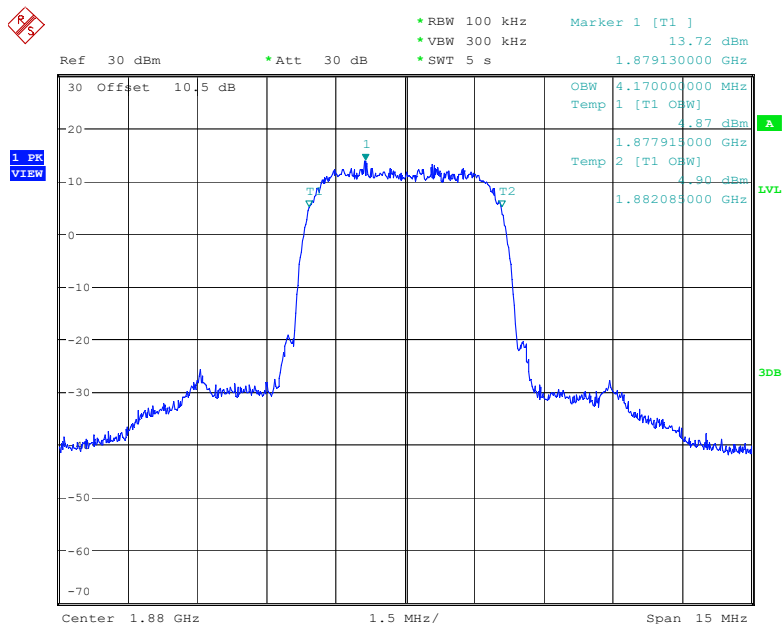


Date: 18.APR.2023 09:25:31

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

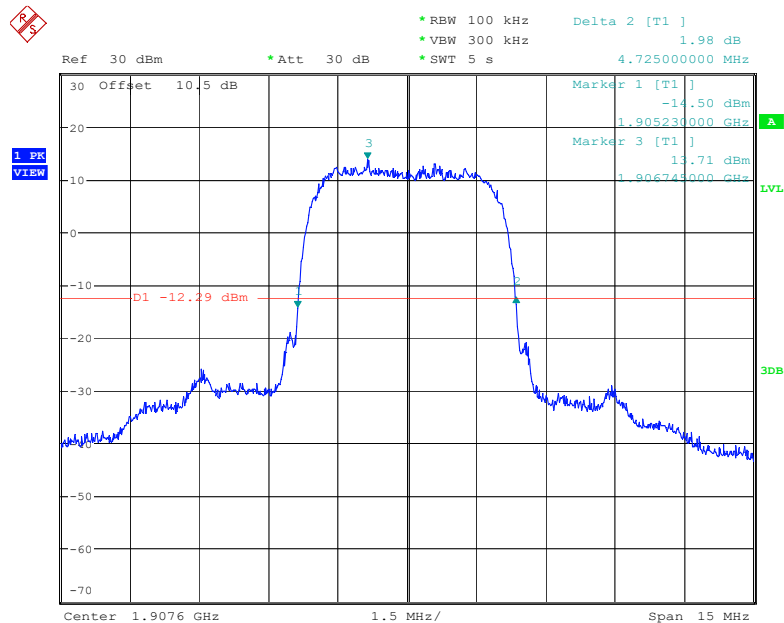


Date: 18.APR.2023 09:29:59

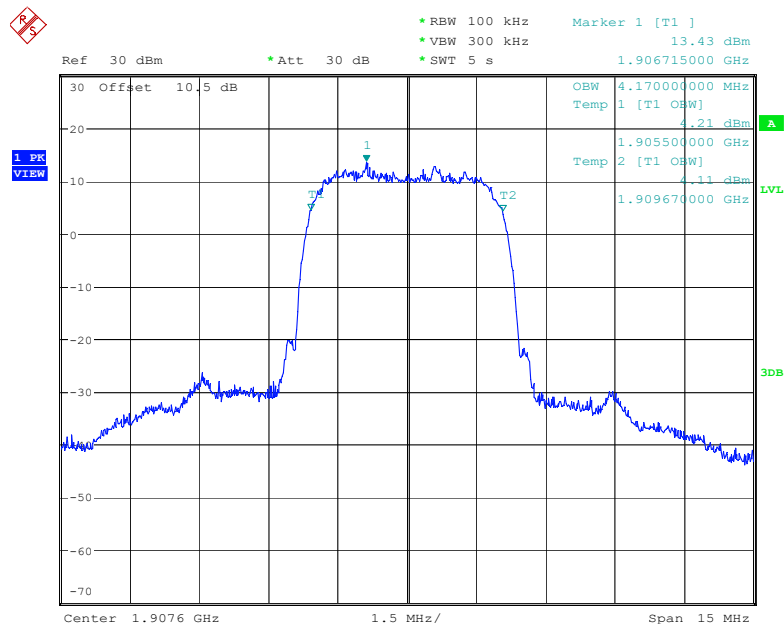


Date: 18.APR.2023 09:29:29

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

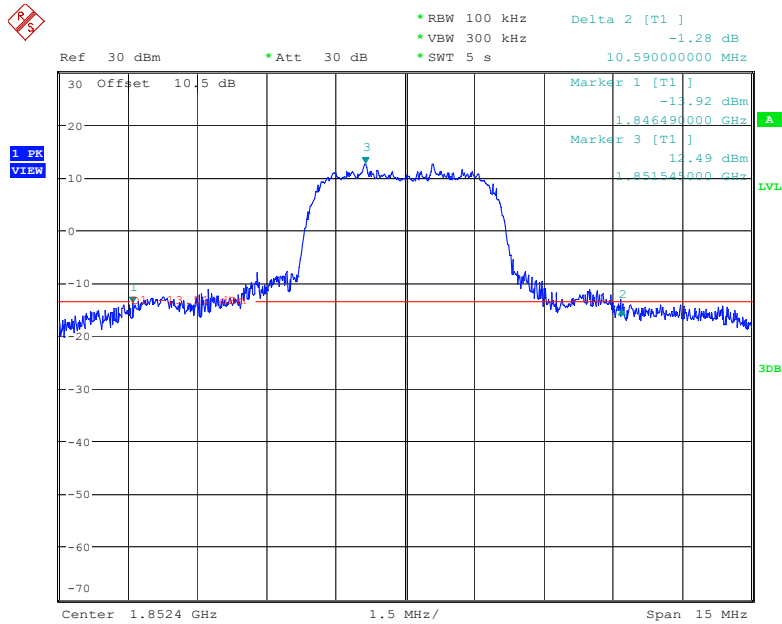


Date: 18.APR.2023 09:46:21

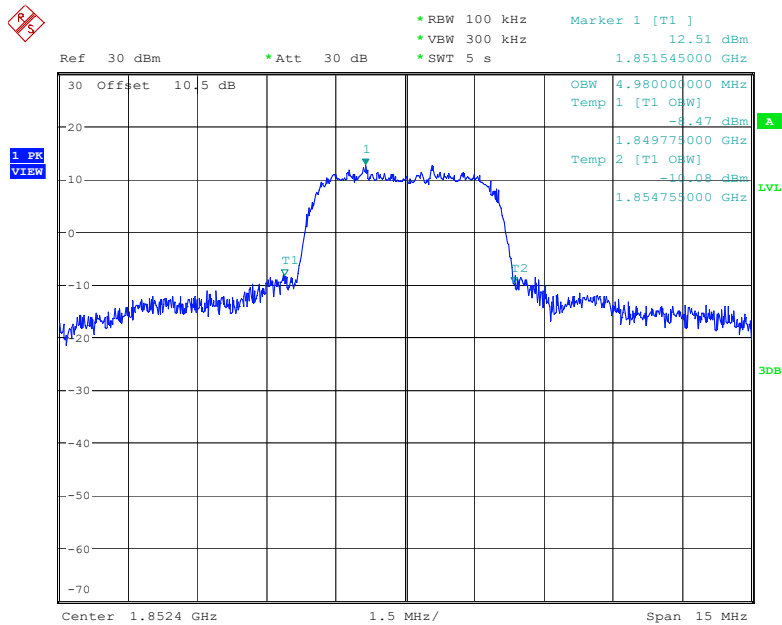


Date: 21.APR.2023 09:38:16

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

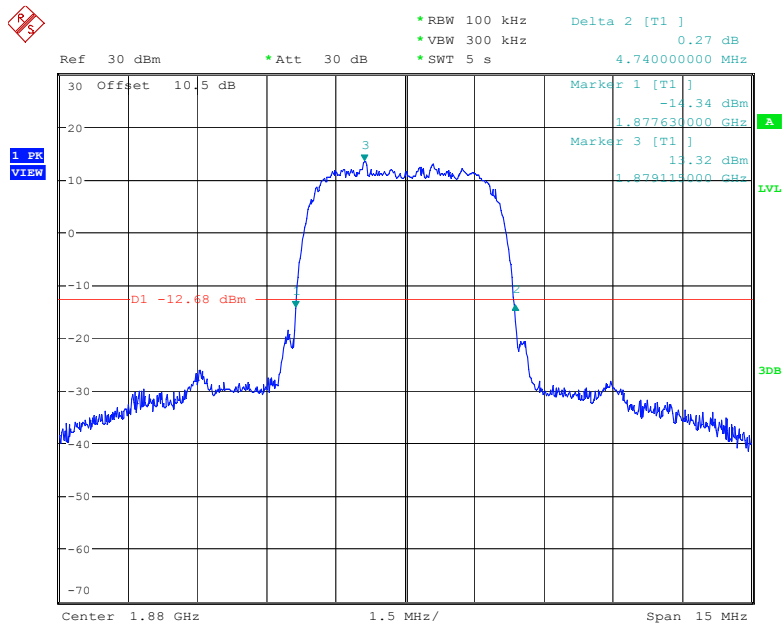


Date: 18.APR.2023 13:51:26

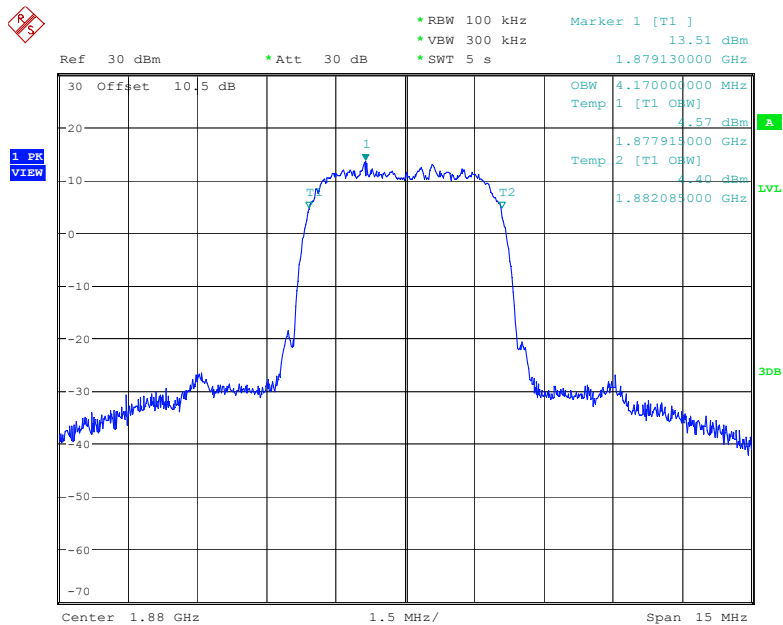


Date: 18.APR.2023 13:50:15

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

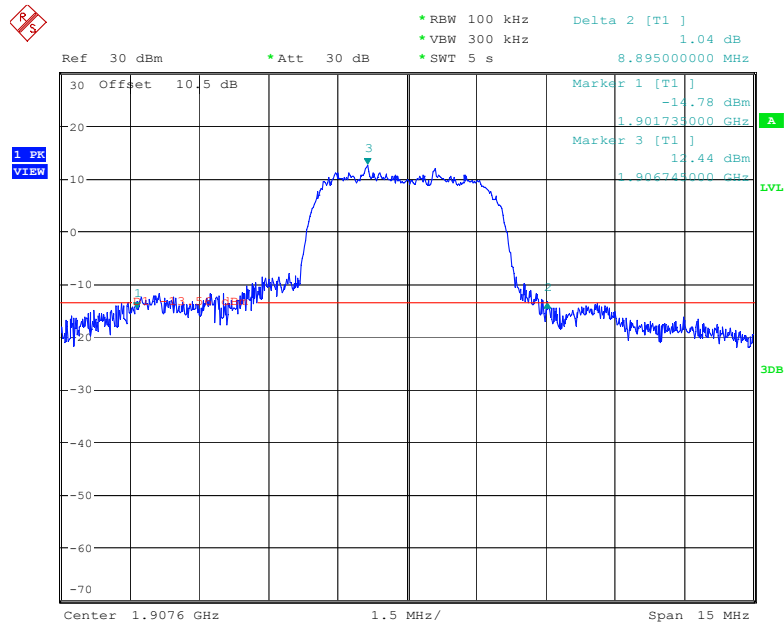


Date: 21.APR.2023 15:36:54

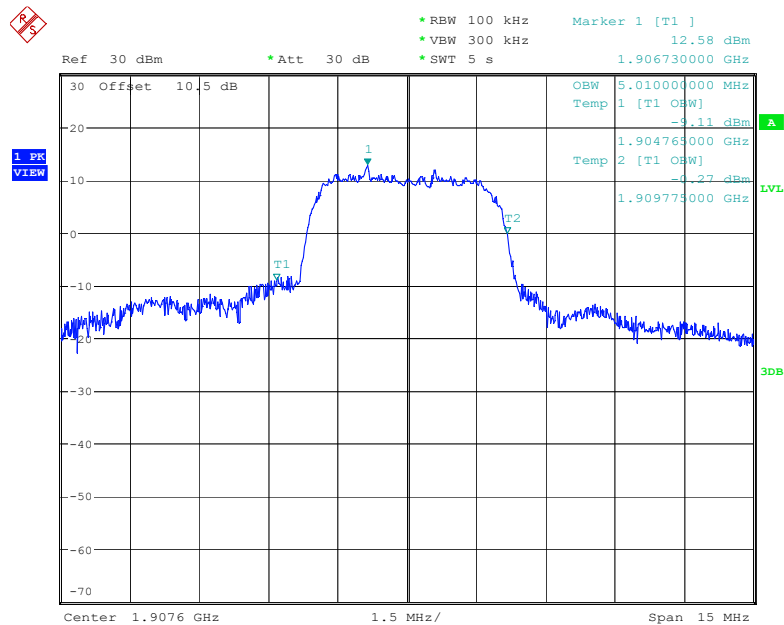


Date: 21.APR.2023 15:36:01

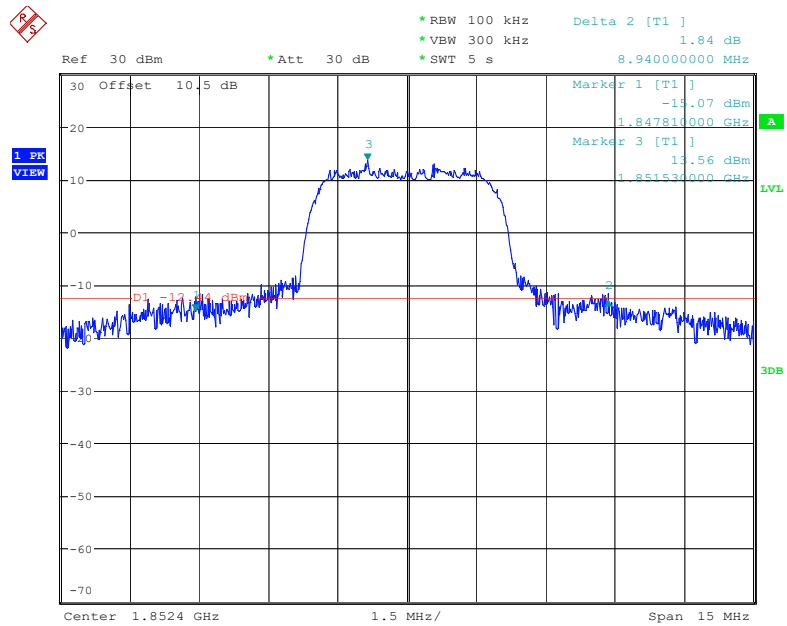
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (QPSK) Mode, High channel



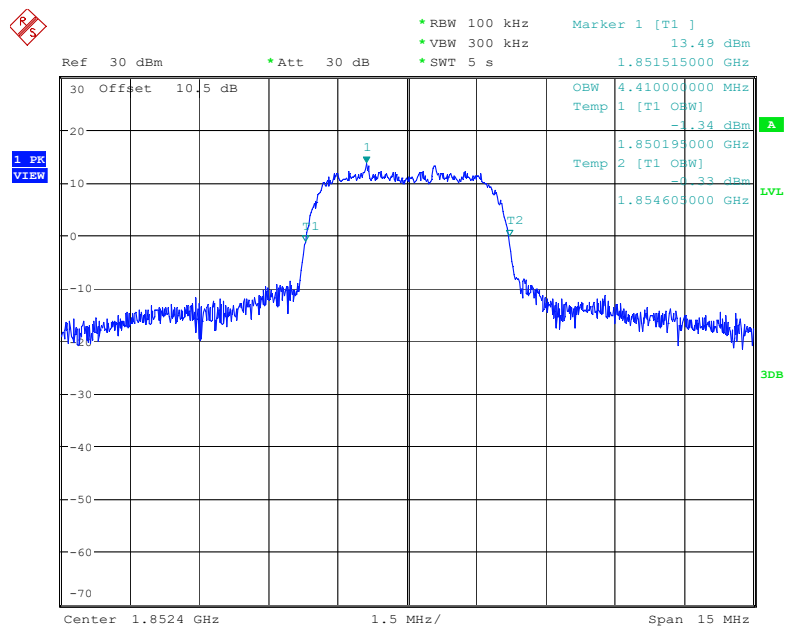
Date: 18.APR.2023 14:41:11



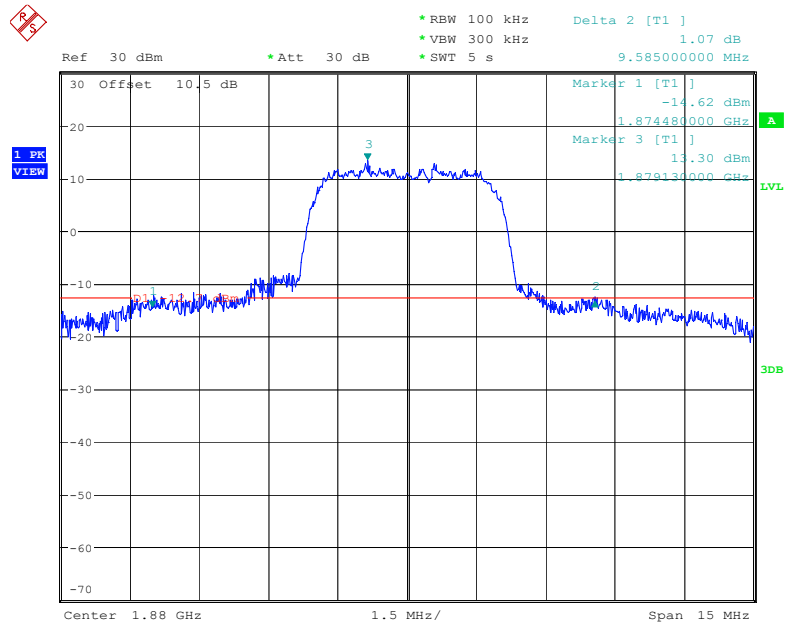
Date: 18.APR.2023 14:40:15

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

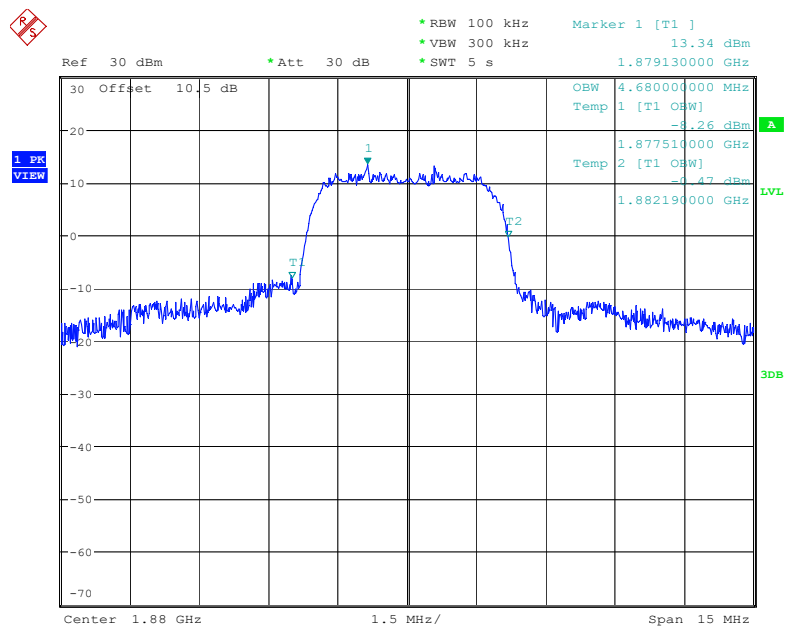
Date: 18.APR.2023 14:48:27



Date: 18.APR.2023 14:47:16

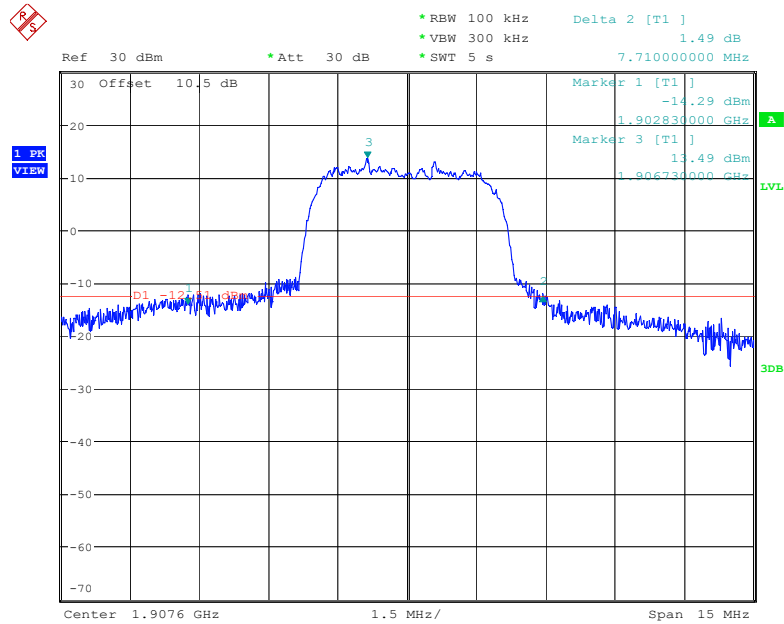
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (16QAM) Mode, Middle channel

Date: 18.APR.2023 14:54:42

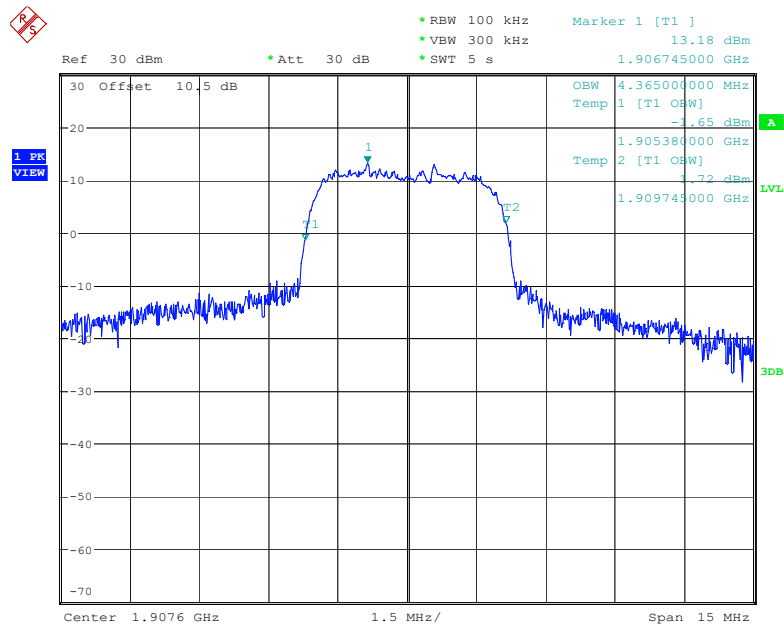


Date: 18.APR.2023 14:53:31

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



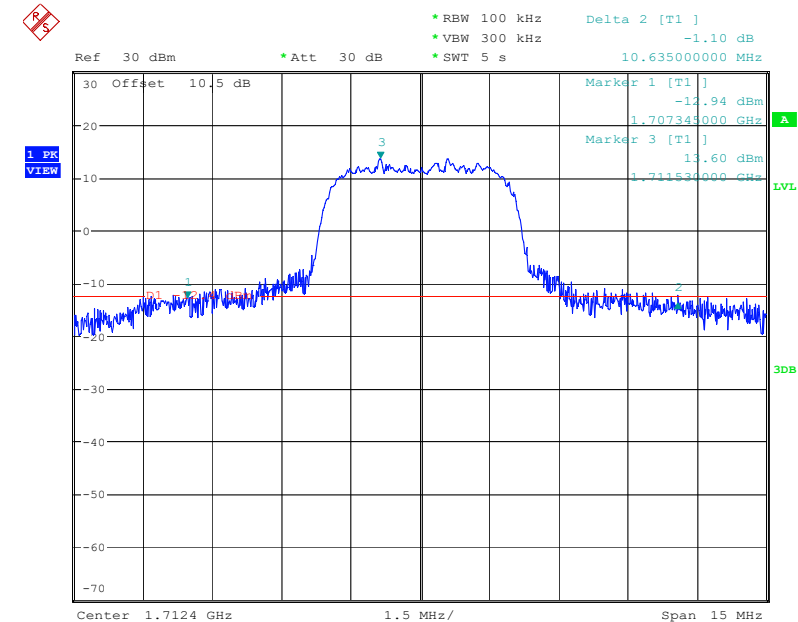
Date: 18.APR.2023 15:02:12



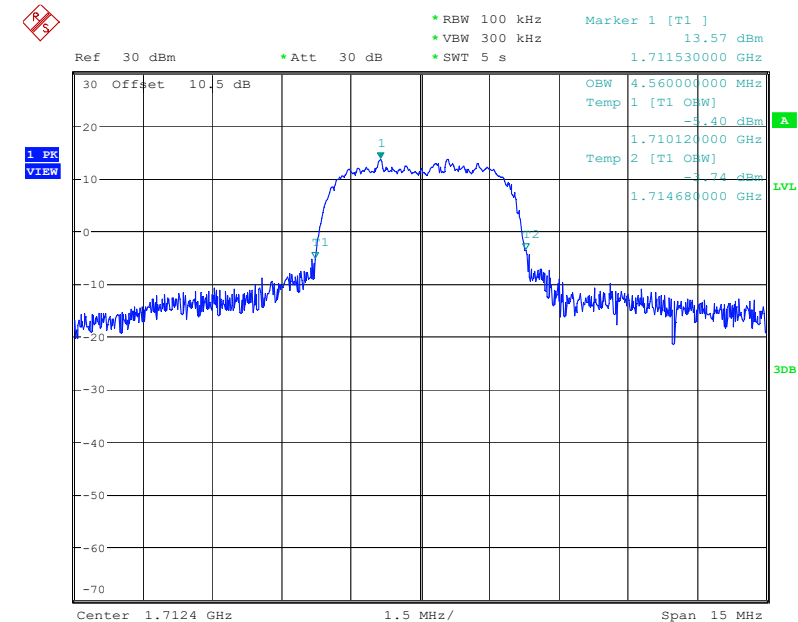
Date: 18.APR.2023 14:59:29

AWS Band

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

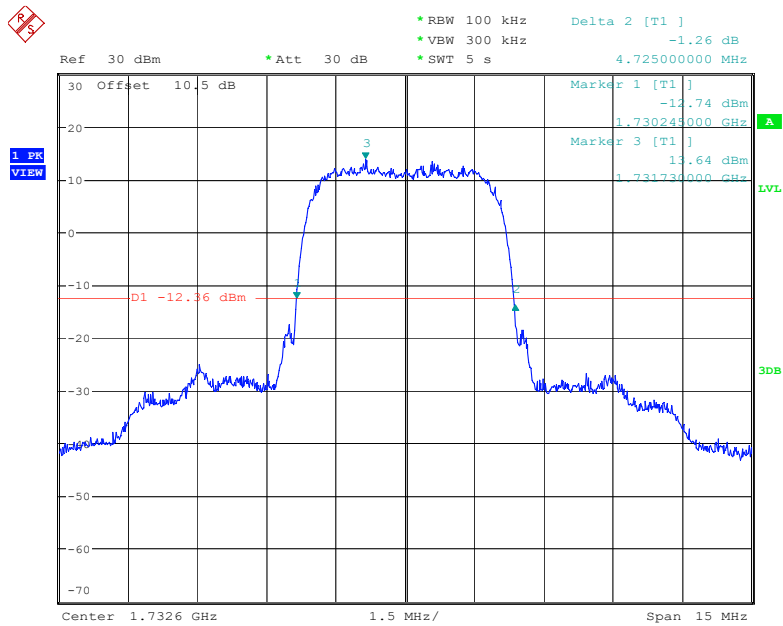


Date: 18.APR.2023 15:14:50

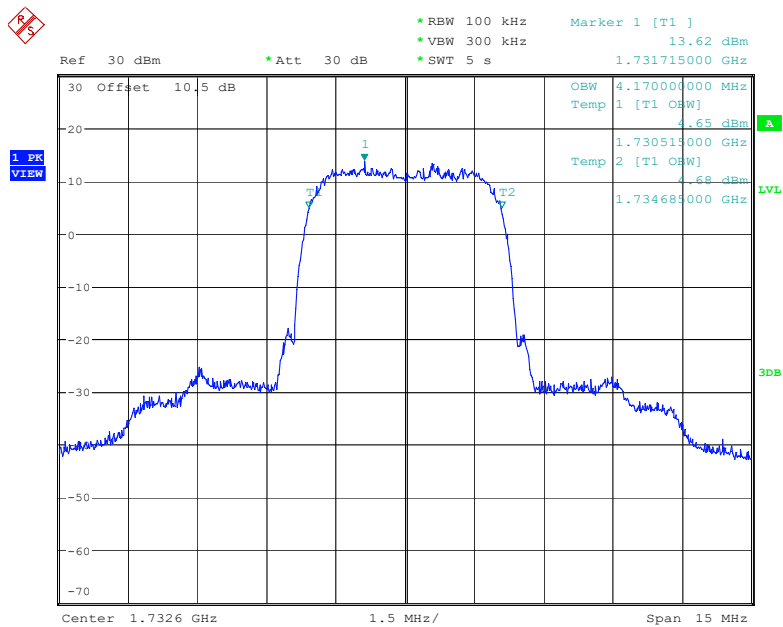


Date: 18.APR.2023 15:12:52

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

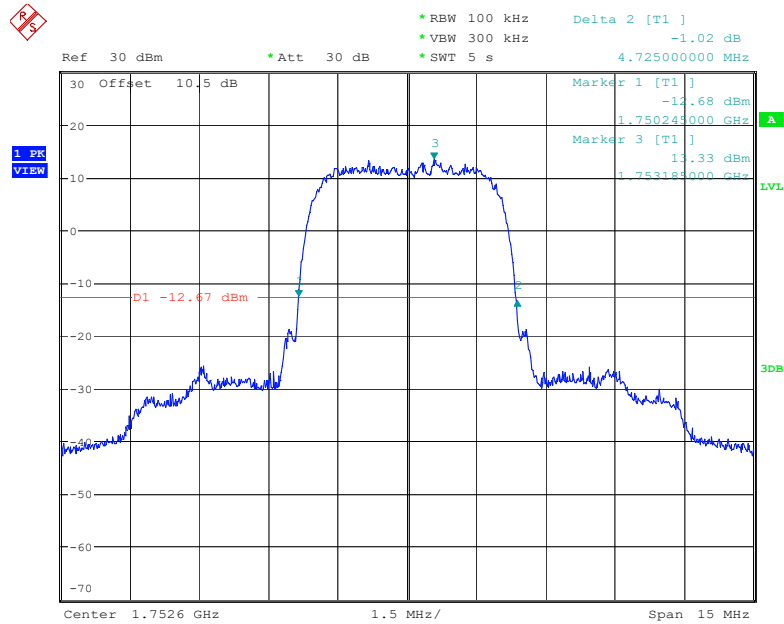


Date: 18.APR.2023 15:27:36

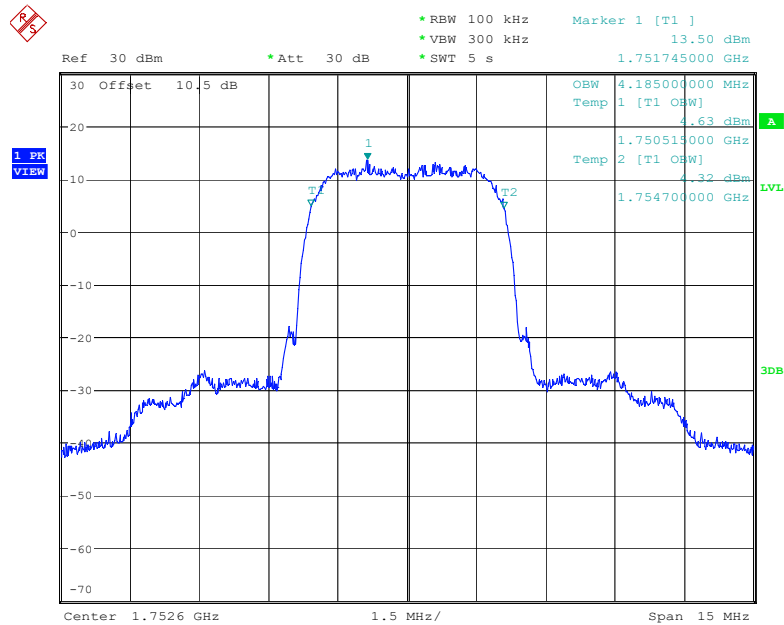


Date: 18.APR.2023 15:27:11

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

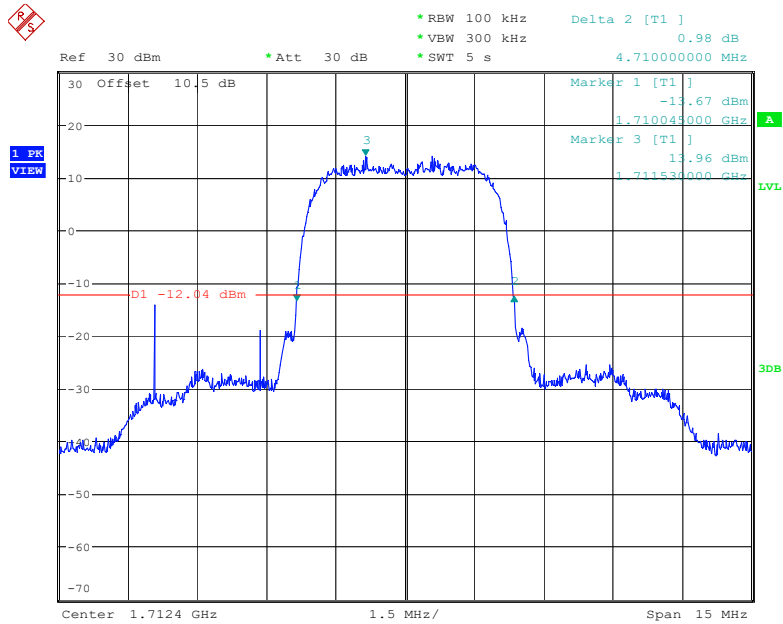


Date: 18.APR.2023 15:31:09

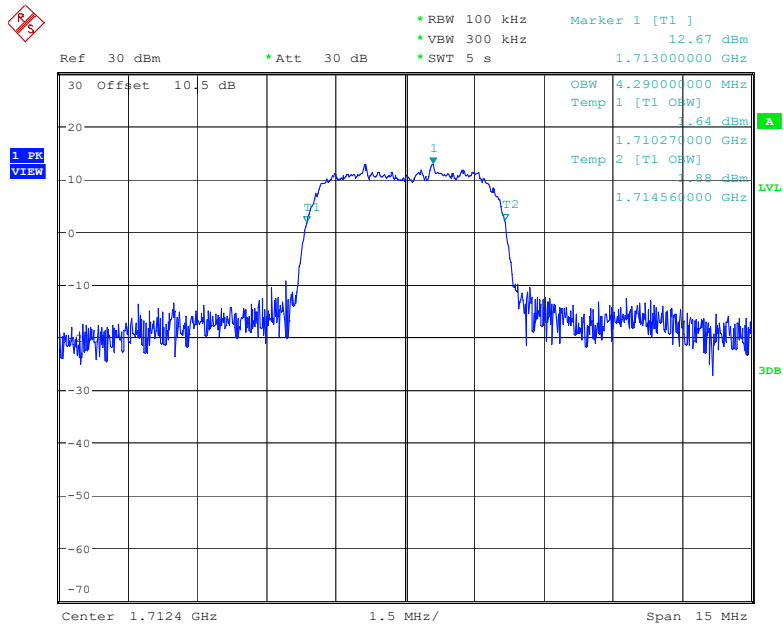


Date: 18.APR.2023 15:30:43

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

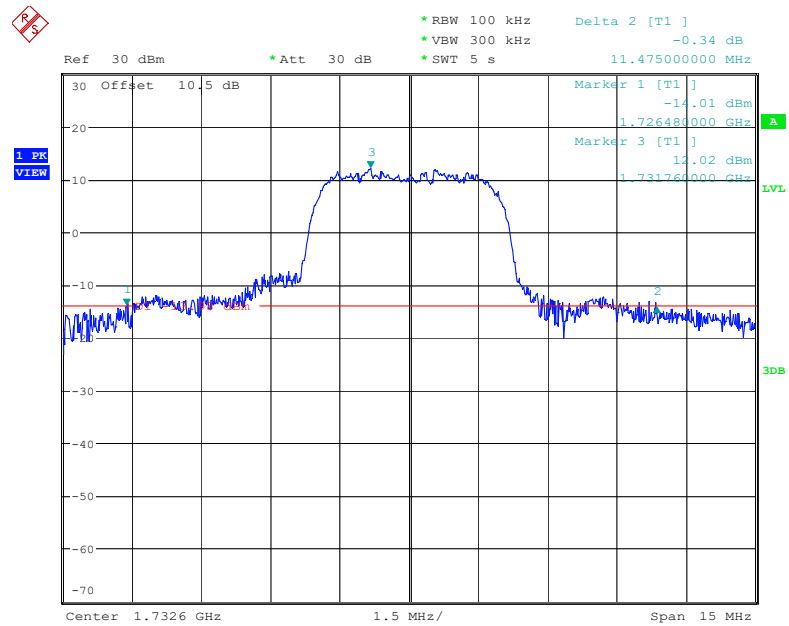


Date: 21.APR.2023 15:44:42

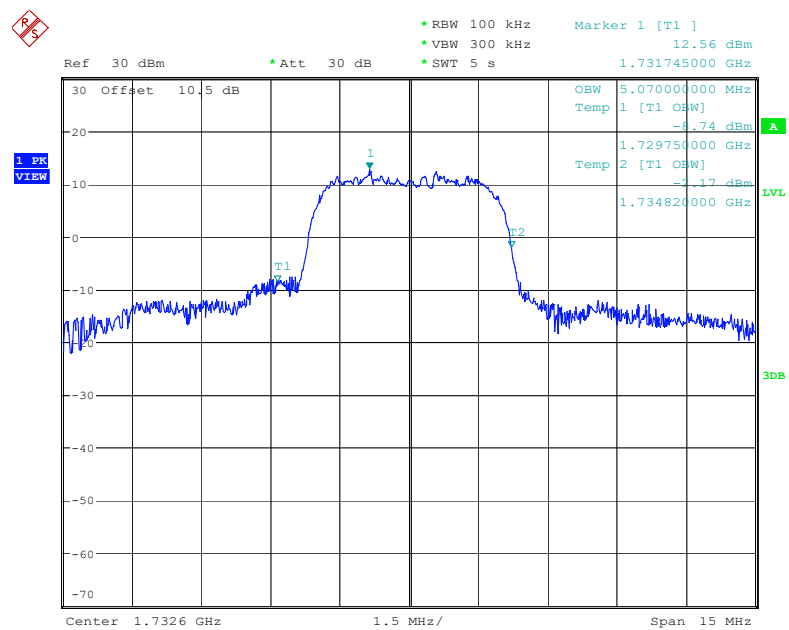


Date: 18.APR.2023 15:38:14

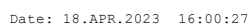
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (QPSK) Mode, Middle channel

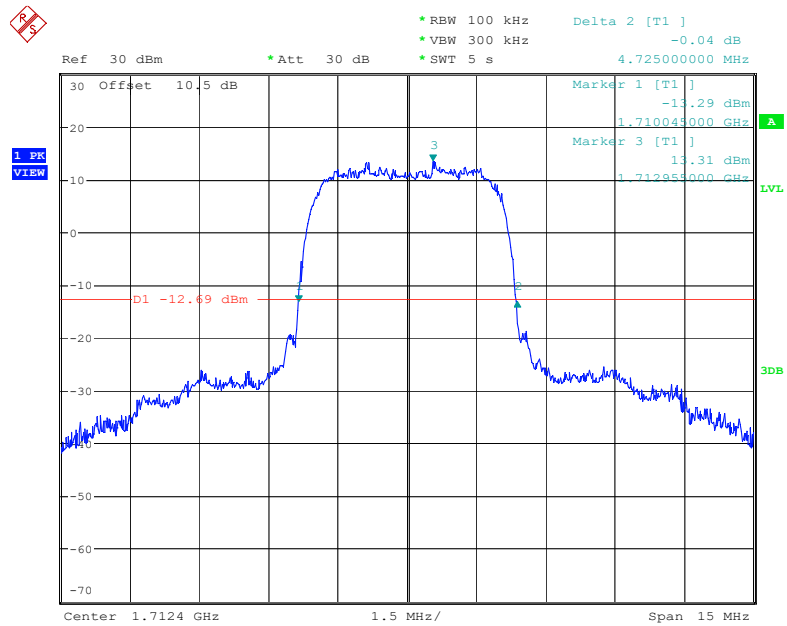


Date: 18.APR.2023 15:50:50

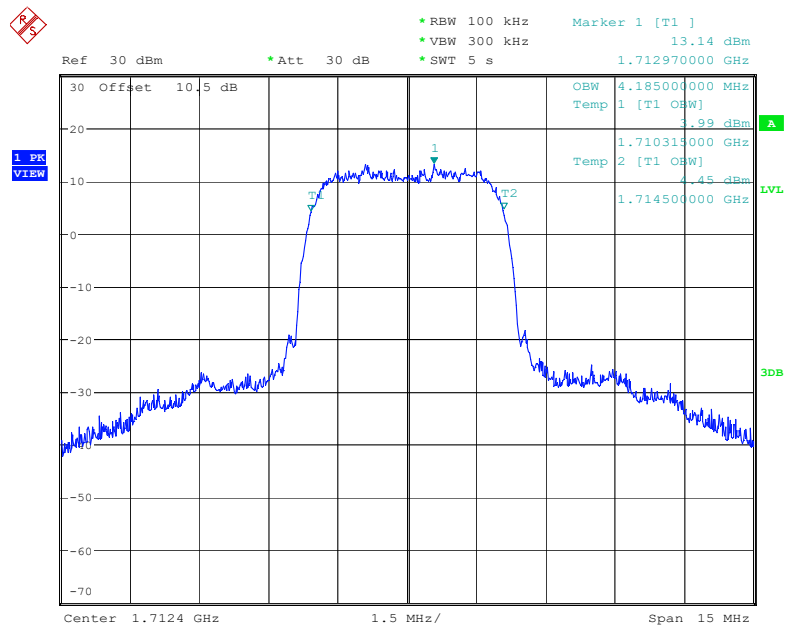


Date: 18.APR.2023 15:49:38

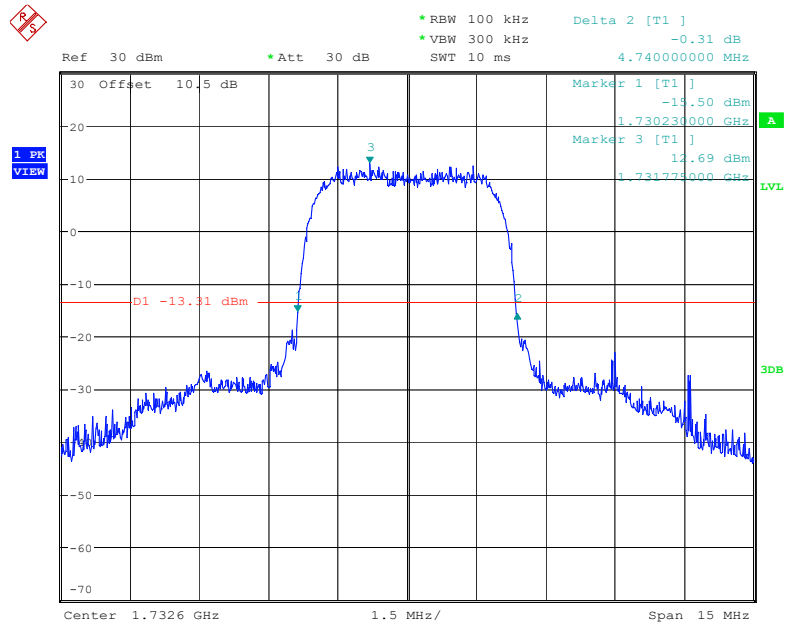


26 dB Emissions & 99% Occupied Bandwidth for HSUPA (16QAM) Mode, Low channel

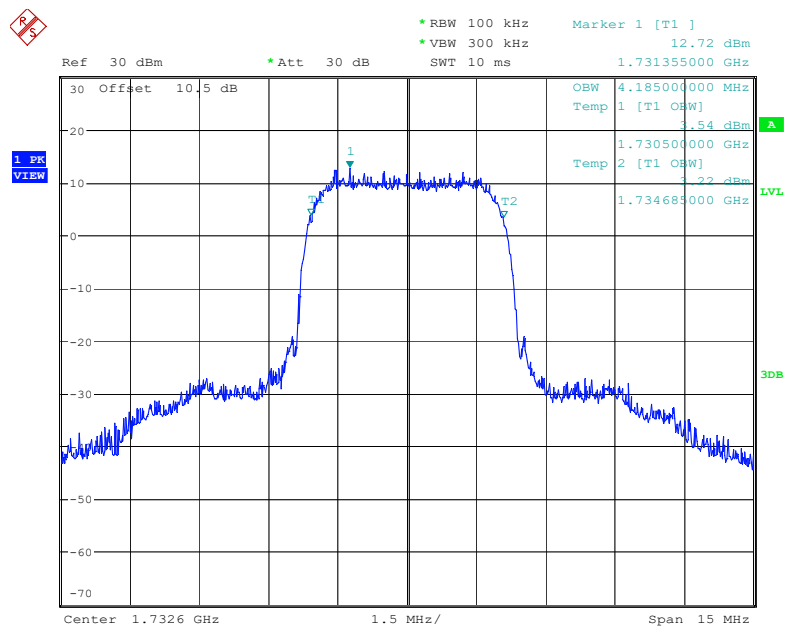
Date: 18.APR.2023 16:11:30



Date: 18.APR.2023 16:10:33

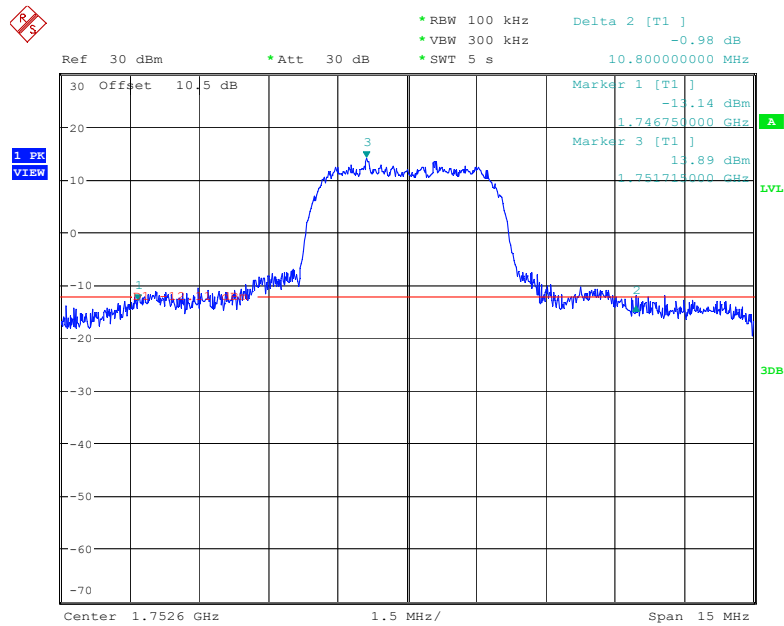
26 dB Emissions & 99% Occupied Bandwidth for HSUPA (16QAM) Mode, Middle channel

Date: 21.APR.2023 15:23:05

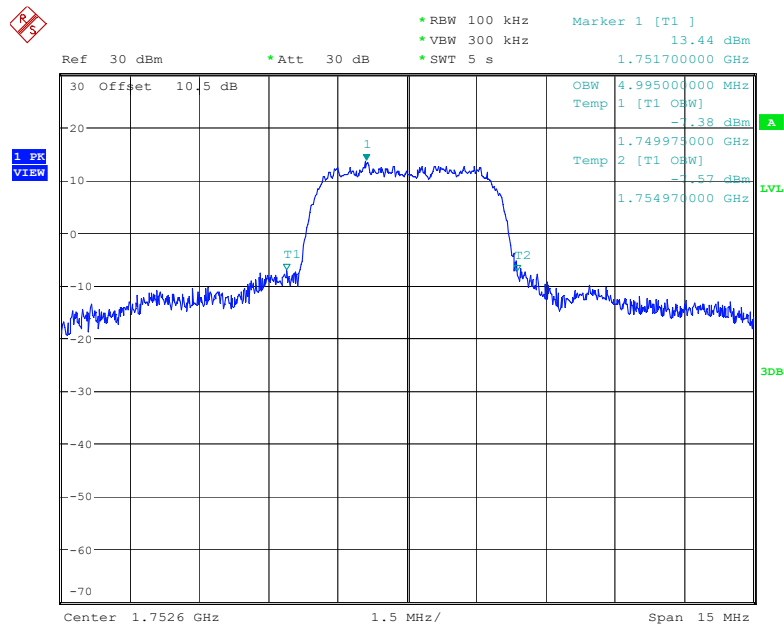


Date: 21.APR.2023 15:22:31

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



Date: 19.APR.2023 11:48:50



Date: 19.APR.2023 11:47:39

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	1.104	1.302	1.110	1.300	1.098	1.308
	16QAM	1.098	1.296	1.104	1.290	1.104	1.314
3 MHz	QPSK	2.676	2.880	2.687	2.868	2.687	2.880
	16QAM	2.687	2.880	2.676	2.868	2.687	2.880
5 MHz	QPSK	4.520	4.920	4.520	4.960	4.520	4.940
	16QAM	4.500	5.000	4.500	4.900	4.520	4.940
10 MHz	QPSK	8.960	9.640	8.960	9.680	8.960	9.560
	16QAM	8.960	9.680	8.960	9.560	8.920	9.640
15 MHz	QPSK	13.500	14.700	13.500	14.800	13.500	14.700
	16QAM	13.560	14.760	13.500	14.700	13.440	14.700
20 MHz	QPSK	18.000	19.000	18.000	20.000	17.920	19.280
	16QAM	18.000	19.000	18.000	19.000	18.000	19.000

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	1.092	1.296	1.098	1.308	1.110	1.310
	16QAM	1.104	1.320	1.098	1.290	1.110	1.300
3 MHz	QPSK	2.676	2.892	2.687	2.880	2.687	2.892
	16QAM	2.676	2.880	2.676	2.880	2.676	2.880
5 MHz	QPSK	4.500	5.000	4.520	4.940	4.520	4.980
	16QAM	4.520	4.940	4.500	5.000	4.520	4.980
10 MHz	QPSK	8.960	9.560	9.000	10.000	8.960	9.600
	16QAM	8.960	9.600	8.960	9.600	8.960	9.560
15 MHz	QPSK	13.560	14.880	13.560	14.820	13.560	14.820
	16QAM	13.560	14.760	13.500	14.800	13.560	14.760
20 MHz	QPSK	17.920	19.280	18.000	19.000	18.000	19.000
	16QAM	17.920	19.280	18.000	19.000	18.080	19.360

LTE Band 5:

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	1.110	1.300	1.098	1.308	1.104	1.308
	16QAM	1.098	1.302	1.104	1.308	1.092	1.290
3 MHz	QPSK	2.687	2.880	2.676	2.856	2.700	2.900
	16QAM	2.676	2.880	2.676	2.892	2.687	2.880
5 MHz	QPSK	4.500	4.900	4.520	4.900	4.520	5.040
	16QAM	4.500	5.000	4.500	4.900	4.520	4.940
10 MHz	QPSK	8.960	9.520	8.960	9.640	8.960	9.560
	16QAM	8.960	9.520	8.960	9.560	8.960	9.520

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)
1.4 MHz	QPSK	4.500	4.900	4.500	5.000	4.500	4.900
	16QAM	4.500	50.000	4.500	4.900	4.500	4.900
3 MHz	QPSK	8.960	9.520	8.960	9.600	8.960	9.640
	16QAM	8.960	9.600	8.960	9.640	8.960	9.520
5 MHz	QPSK	13.560	14.760	13.560	14.880	13.500	14.700
	16QAM	13.560	14.760	13.500	14.700	13.500	14.700
10 MHz	QPSK	18.000	19.000	18.000	19.000	18.000	19.000
	16QAM	17.920	19.200	18.000	19.000	18.000	19.000

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	1.104	1.344	1.104	1.296	1.098	1.302
	16QAM	1.098	1.284	1.098	1.302	1.104	1.320
3 MHz	QPSK	2.687	2.892	2.676	2.868	2.700	2.900
	16QAM	2.687	2.880	2.676	2.880	2.687	2.892
5 MHz	QPSK	4.520	5.160	4.540	5.600	4.560	5.200
	16QAM	4.560	5.160	4.560	5.400	4.540	5.180
10 MHz	QPSK	9.000	10.000	8.960	10.120	8.960	9.840
	16QAM	9.000	10.000	8.960	10.160	8.960	9.800

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	5.20	4.520	5.160	4.560	5.240
	16QAM	4.540	5.720	4.560	5.440	4.540	5.180
10 MHz	QPSK	8.960	9.800	9.000	11.000	9.000	10.000
	16QAM	8.960	9.760	9.000	11.000	8.960	9.800

LTE Band 38:

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	4.500	5.200	4.500	5.000	4.520	4.960
	16QAM	4.500	5.000	4.500	5.100	4.500	5.100
10 MHz	QPSK	8.960	9.880	9.000	10.000	8.960	9.680
	16QAM	9.000	10.000	8.960	9.600	8.960	9.520
15 MHz	QPSK	13.500	15.900	13.560	15.600	13.500	15.200
	16QAM	13.560	16.800	13.560	16.320	13.560	16.080
20 MHz	QPSK	17.920	19.440	18.000	20.000	17.920	19.680
	16QAM	18.000	21.000	17.920	19.280	18.000	20.000

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	4.500	5.100	4.500	5.000	4.500	4.900
	16QAM	4.500	5.000	4.500	5.200	4.500	5.200
10 MHz	QPSK	8.960	9.960	9.000	10.000	8.960	9.640
	16QAM	9.000	10.000	9.000	10.000	8.960	9.560
15 MHz	QPSK	13.500	15.700	13.560	15.000	13.500	15.600
	16QAM	13.560	16.440	13.560	15.840	13.560	16.380
20 MHz	QPSK	18.000	19.000	18.000	20.000	17.920	19.440
	16QAM	17.920	19.360	18.000	19.000	18.000	21.000

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	1.110	1.300	1.110	1.610	1.098	1.320
	16QAM	1.098	1.284	1.116	1.320	1.098	1.284
3 MHz	QPSK	2.700	2.900	2.700	2.900	2.687	2.892
	16QAM	2.687	2.880	2.700	3.800	2.687	2.880
5 MHz	QPSK	4.500	5.200	4.540	5.180	4.520	5.120
	16QAM	4.540	5.220	4.500	5.100	4.540	5.220
10 MHz	QPSK	8.960	9.880	9.000	10.000	8.960	9.760
	16QAM	8.960	9.960	9.000	10.000	8.960	9.880
15 MHz	QPSK	13.560	15.240	13.560	15.300	13.560	15.060
	16QAM	13.560	15.000	13.560	15.180	13.500	15.100
20 MHz	QPSK	18.000	20.000	18.000	20.000	18.000	20.000
	16QAM	18.080	19.680	18.080	19.760	18.080	19.600

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

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

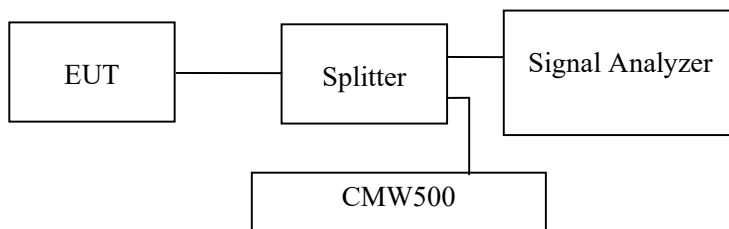
Applicable Standard

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

The spectrum was to be investigated to the tenth harmonics of the highest fundamental frequency as specified in § 2.1051.

Test Procedure

The RF output of the transceiver was connected to a spectrum analyzer and simulator through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz. Sufficient scans were taken to show any out of band emissions up to 10th harmonic.



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

Test Data

Environmental Conditions

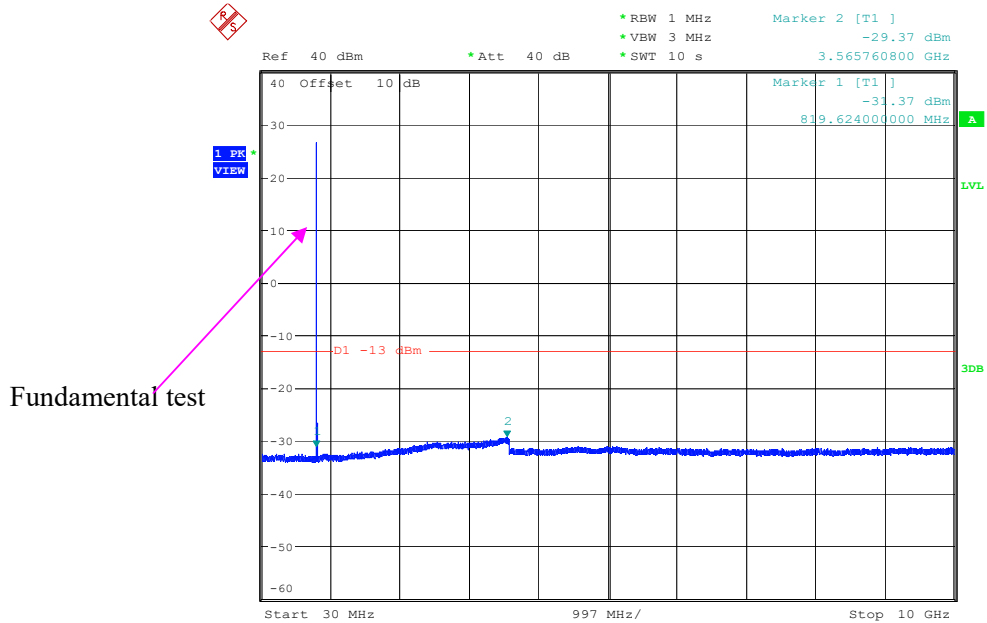
Temperature:	28.8 °C
Relative Humidity:	46.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-04-16 to 2023-04-25.

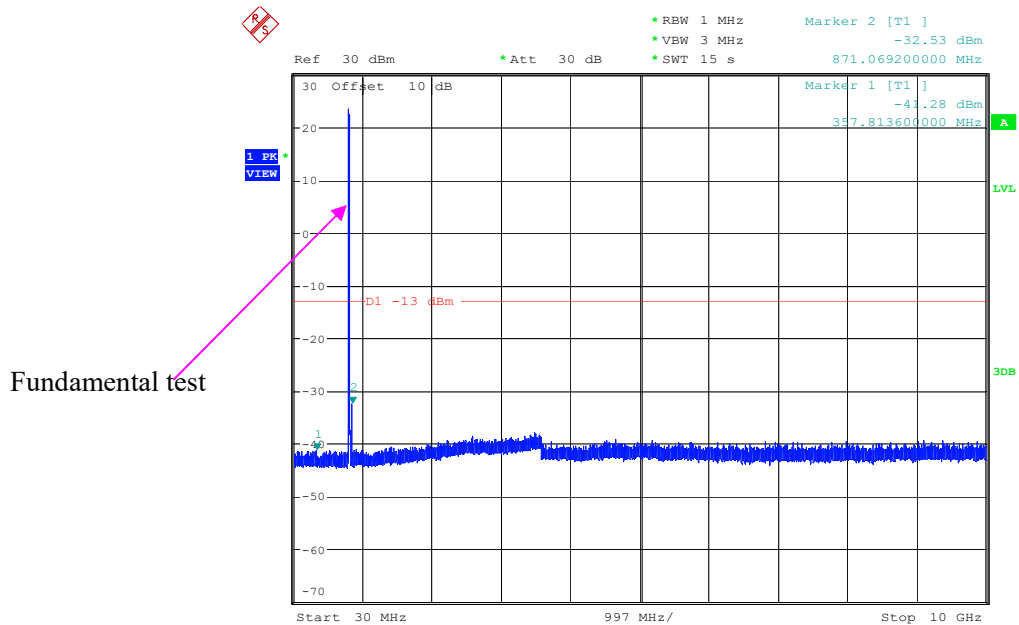
EUT operation mode: Transmitting

Test result: Pass

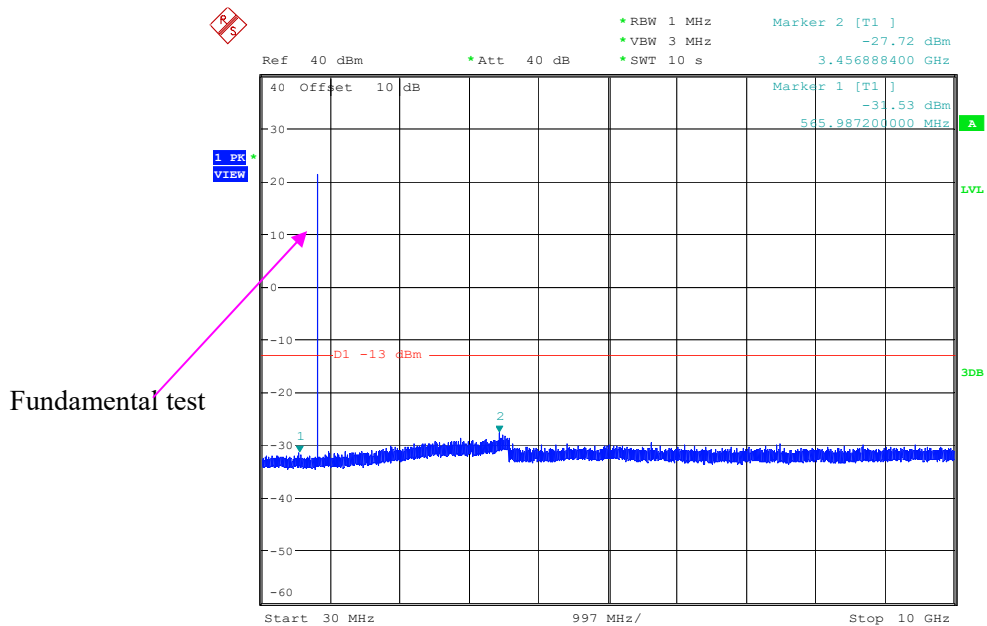
Please refer to the following plots.

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

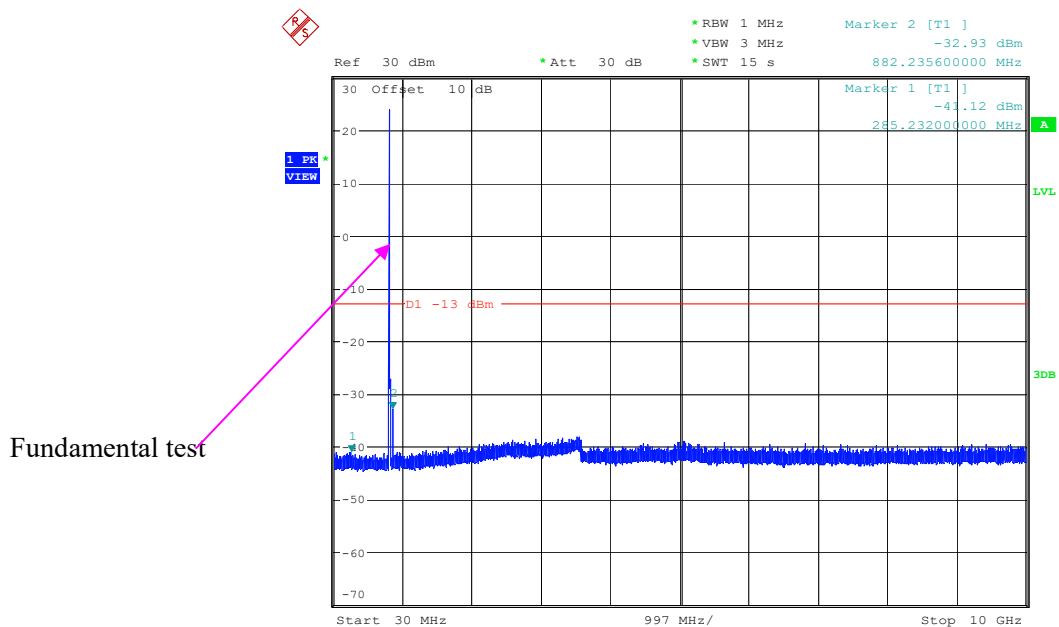
Date: 19.APR.2023 16:01:37

30 MHz – 10 GHz (WCDMA Mode)

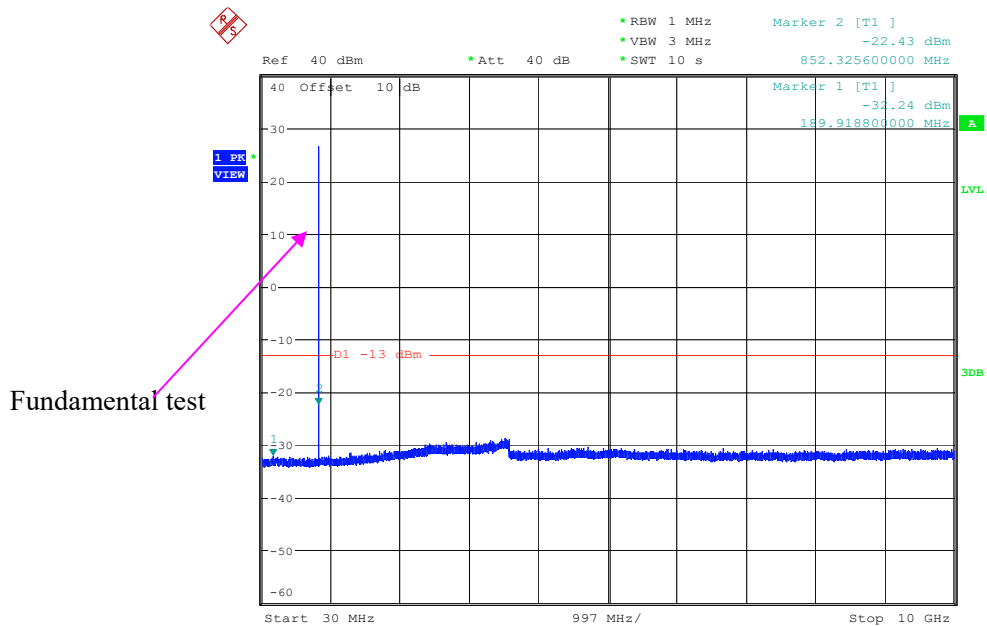
Date: 18.APR.2023 16:44:36

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

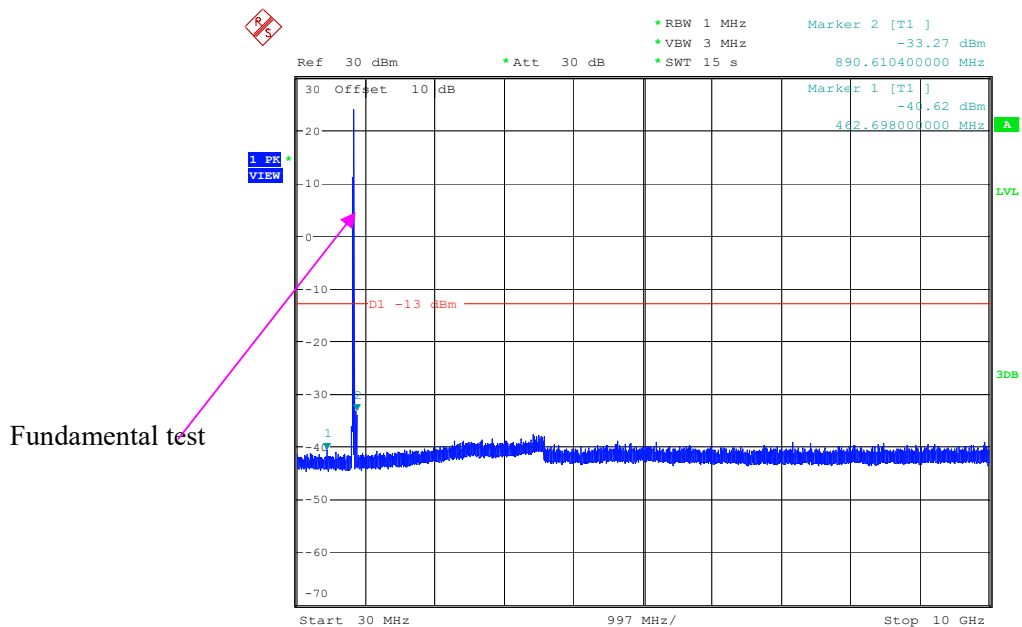
Date: 19.APR.2023 16:06:15

30 MHz – 10 GHz (WCDMA Mode)

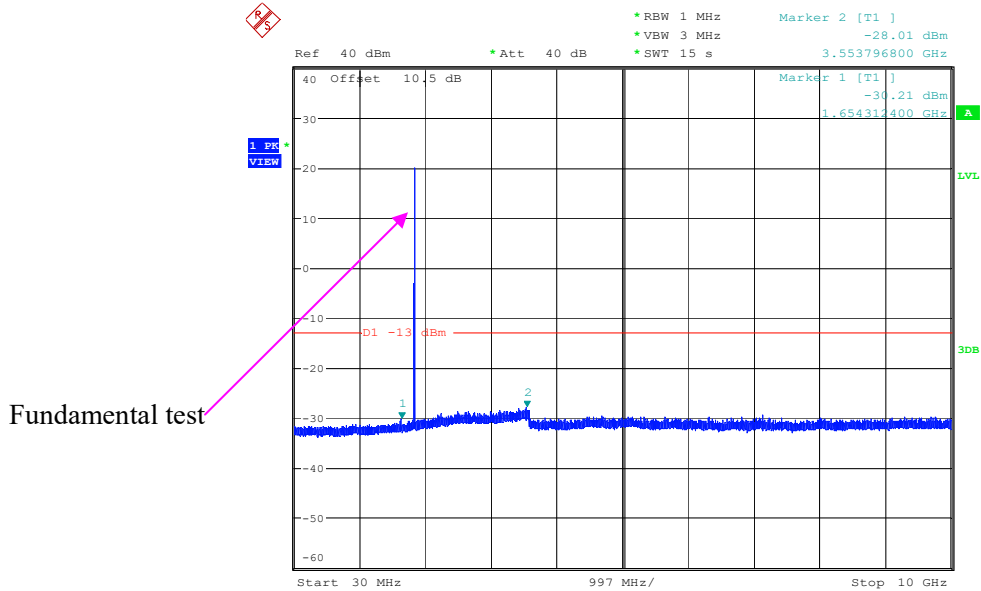
Date: 18.APR.2023 16:49:09

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

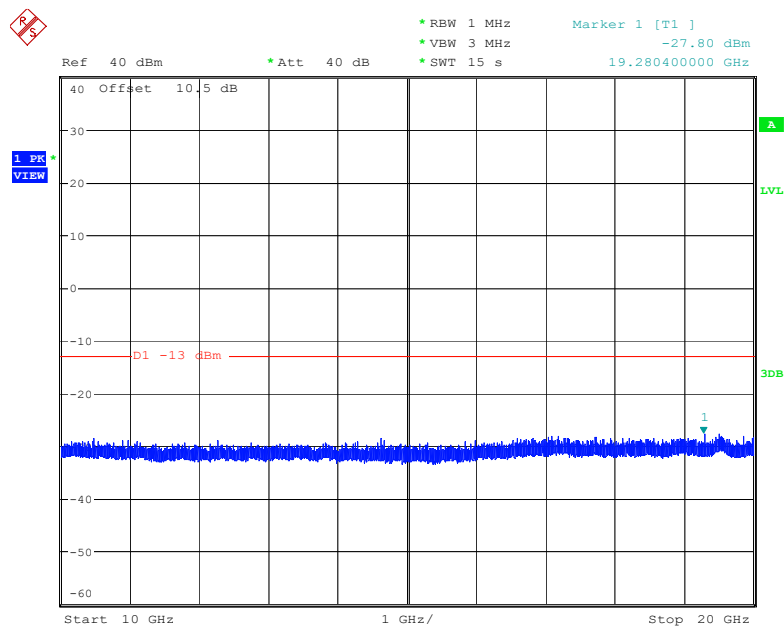
Date: 19.APR.2023 16:12:57

30 MHz – 10 GHz (WCDMA Mode)

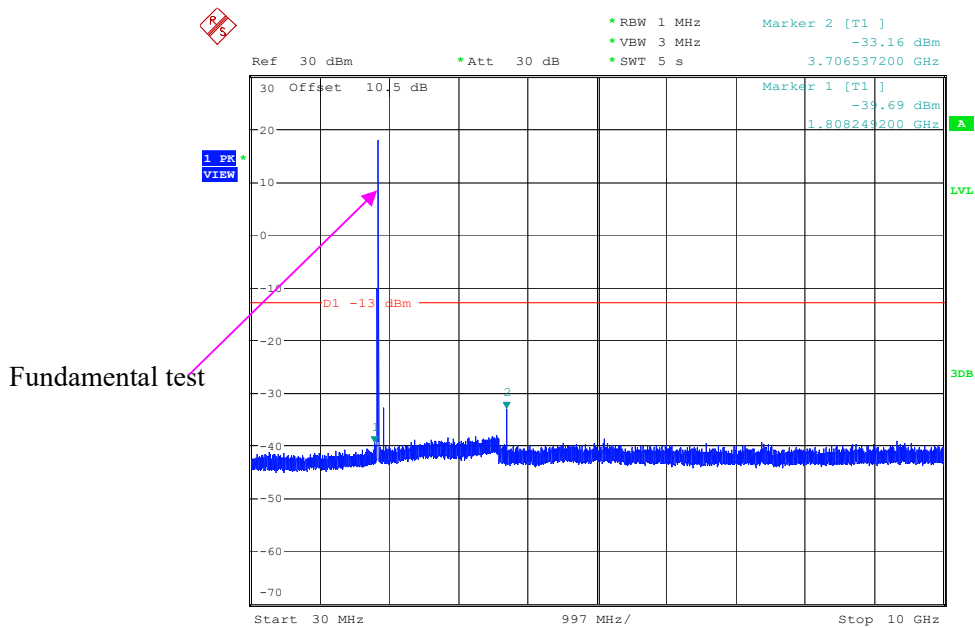
Date: 18.APR.2023 16:52:21

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

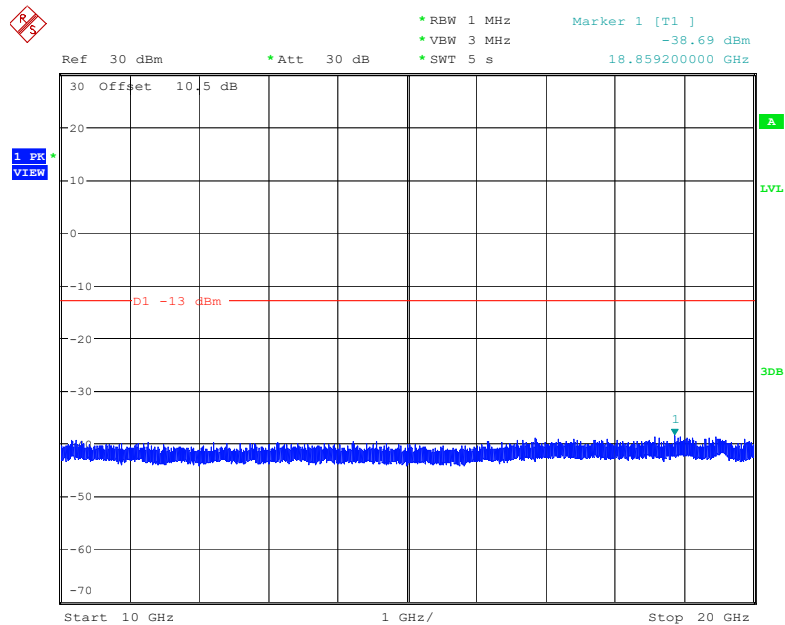
Date: 19.APR.2023 14:39:29

10 GHz – 20 GHz (GSM Mode)

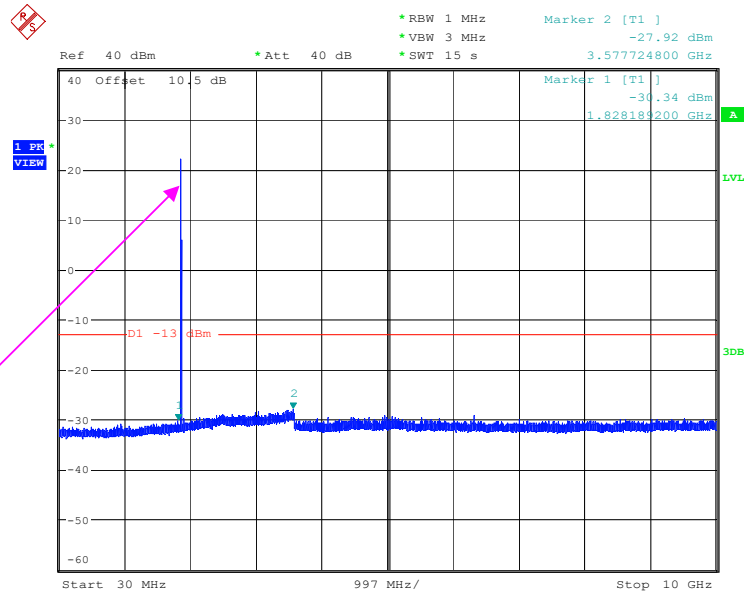
Date: 19.APR.2023 14:40:18

30 MHz – 10 GHz (WCDMA Mode)

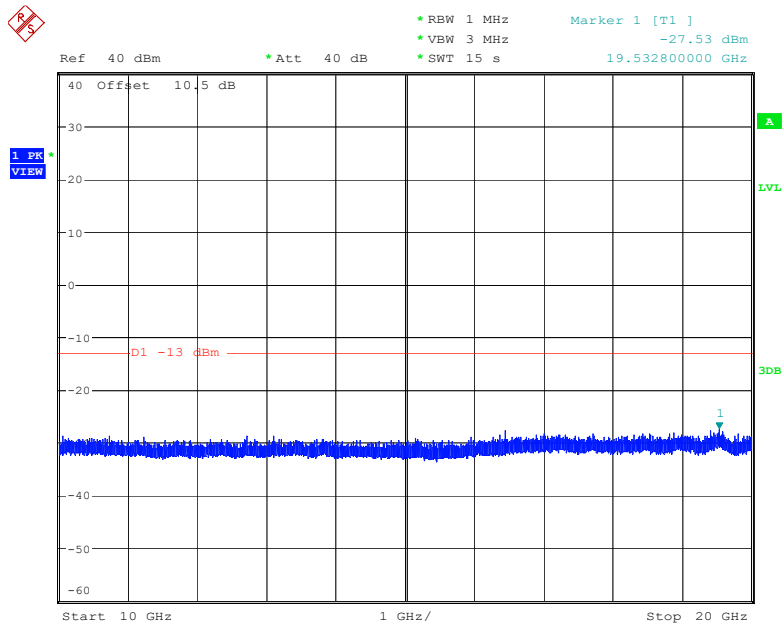
Date: 18.APR.2023 09:27:01

10 GHz – 20 GHz (WCDMA Mode)

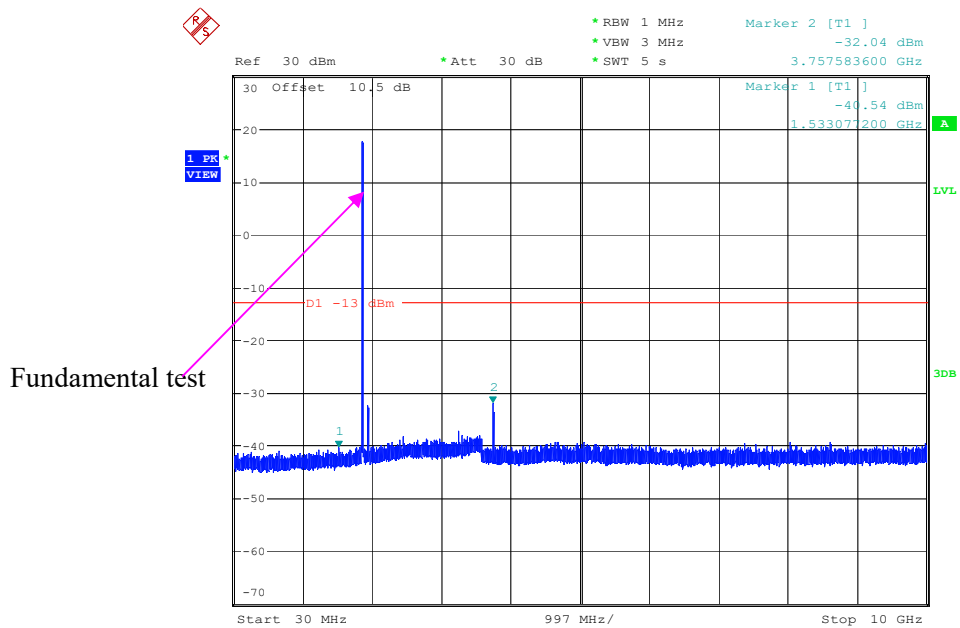
Date: 18.APR.2023 09:27:33

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

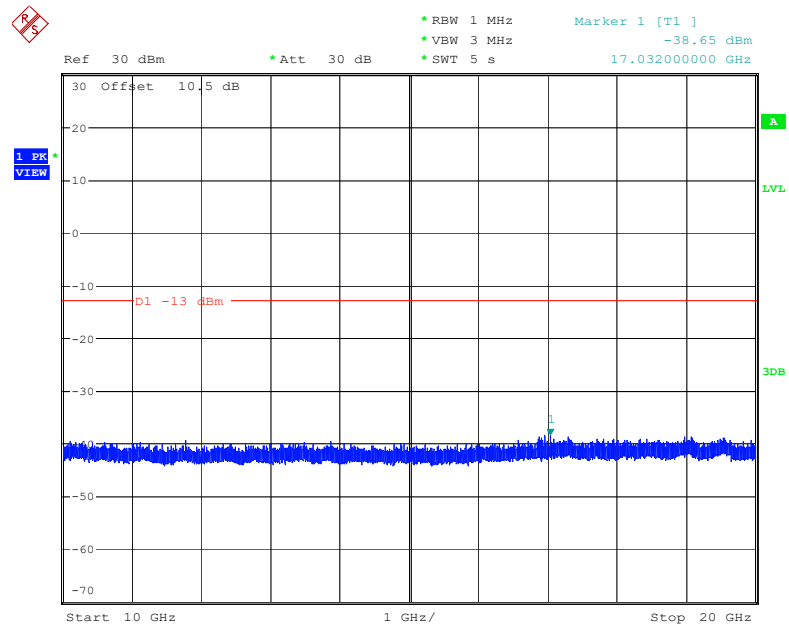
Date: 19.APR.2023 14:46:45

10 GHz – 20 GHz (GSM Mode)

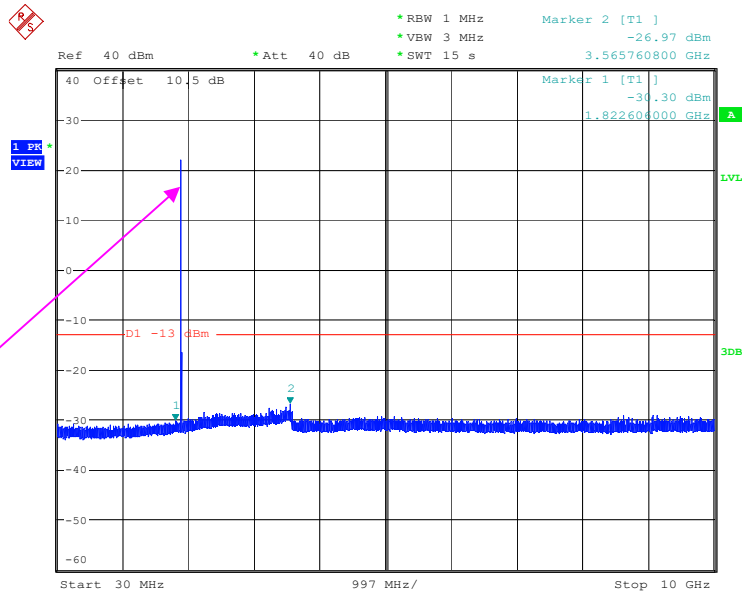
Date: 19.APR.2023 14:47:33

30 MHz – 10 GHz (WCDMA Mode)

Date: 18.APR.2023 09:30:29

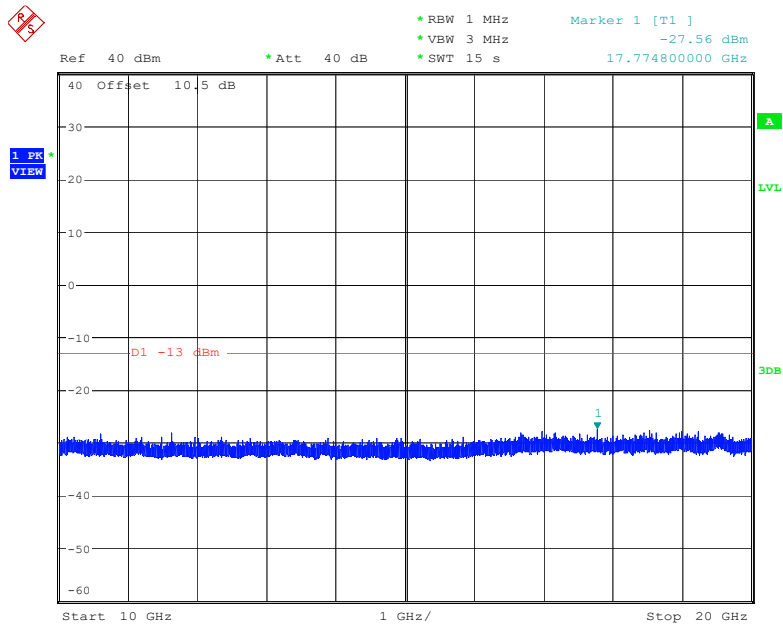
10 GHz – 20 GHz (WCDMA Mode)

Date: 18.APR.2023 09:31:02

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

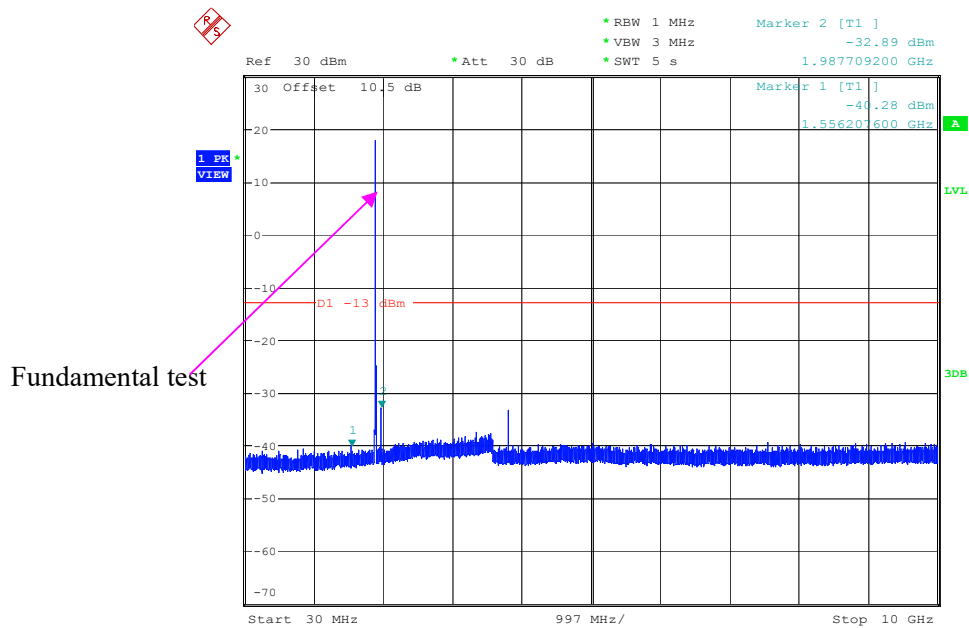
Fundamental test

Date: 19.APR.2023 14:55:04

10 GHz – 20 GHz (GSM Mode)

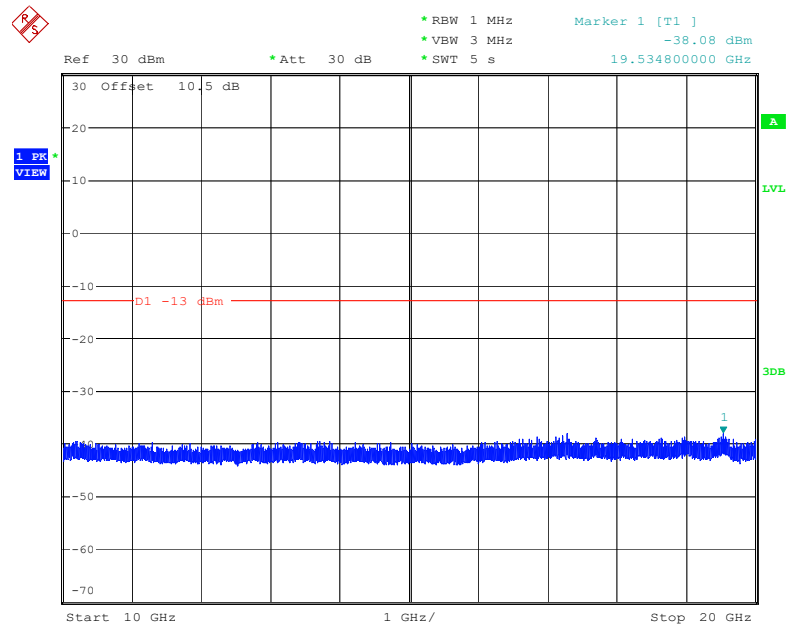
Date: 19.APR.2023 14:55:52

30 MHz – 10 GHz (WCDMA Mode)

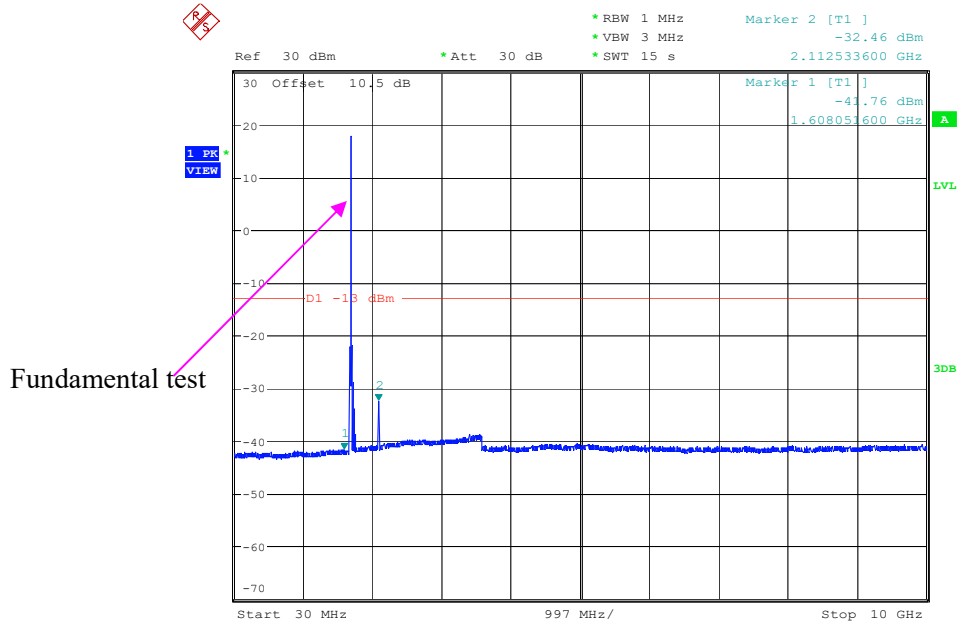


Date: 18.APR.2023 09:47:22

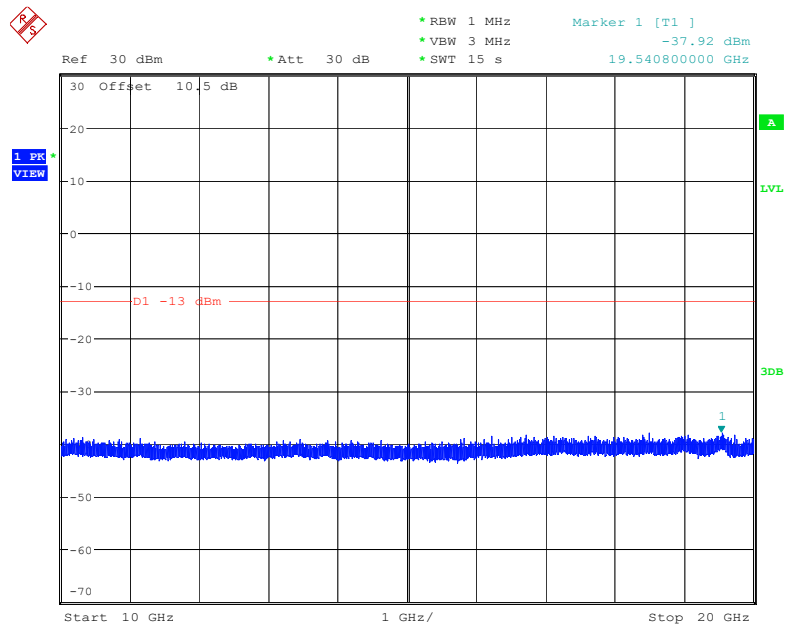
10 GHz – 20 GHz (WCDMA Mode)



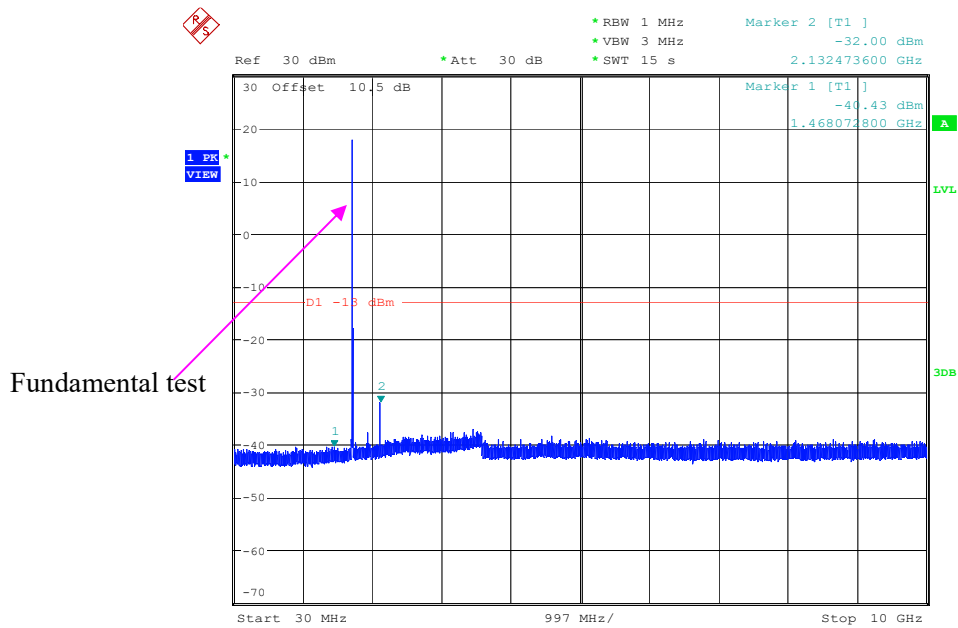
Date: 18.APR.2023 09:47:53

**AWS BAND
Low Channel:****30 MHz – 10 GHz (WCDMA Mode)**

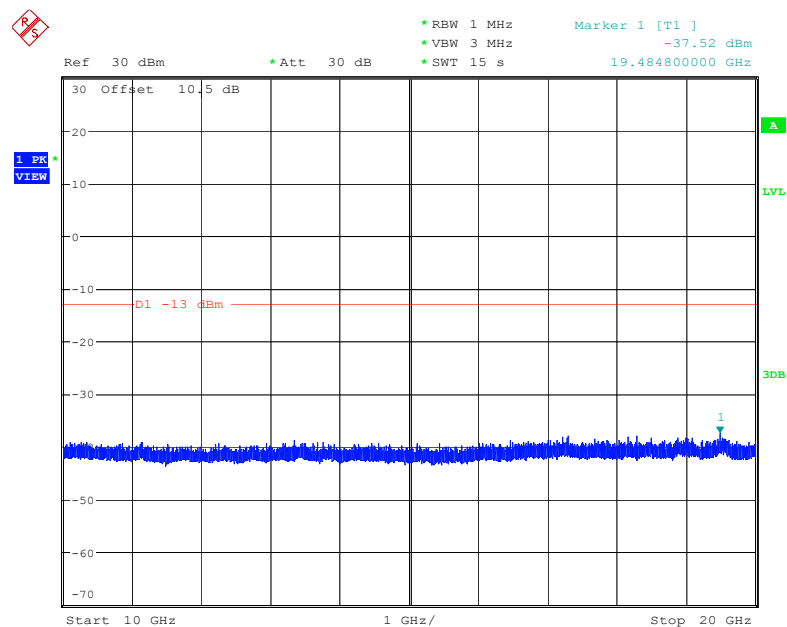
Date: 18.APR.2023 15:25:02

10 GHz – 20 GHz (WCDMA Mode)

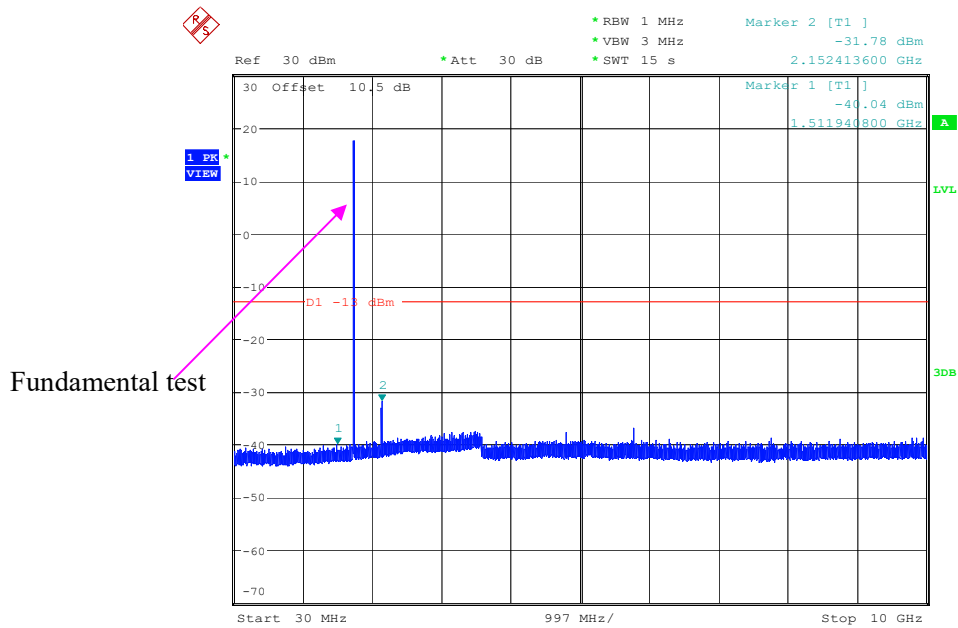
Date: 18.APR.2023 15:25:50

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

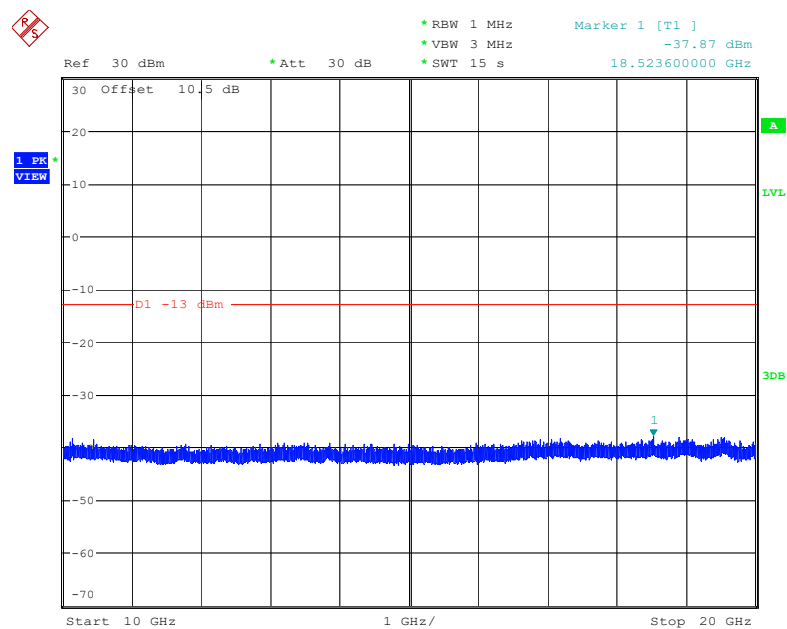
Date: 18.APR.2023 15:28:23

10 GHz – 20 GHz (WCDMA Mode)

Date: 18.APR.2023 15:29:10

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

Date: 18.APR.2023 15:32:21

10 GHz – 20 GHz (WCDMA Mode)

Date: 18.APR.2023 15:33:10

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

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

Applicable Standard

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

Test Procedure

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

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

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

Test Data

Environmental Conditions

Temperature:	24.5~26.8 °C
Relative Humidity:	53~57 %
ATM Pressure:	101.0 kPa

The testing was performed by Jimi Zheng on 2023-04-13 and 2023-04-18.

Test mode: Transmitting (Pre-scan in the X,Y and Z axes of orientation, the worst case Y-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)				
GSM850, 824.2MHz								
1648.4	-53.60	181	1.9	H	3	-50.60	-13	-37.60
1648.4	-52.70	247	1.7	V	2.6	-50.10	-13	-37.10
2472.6	-43.30	146	1.6	H	7.1	-36.20	-13	-23.20
2472.6	-42.00	99	1.5	V	5.9	-36.10	-13	-23.10
3296.8	-49.50	126	1.9	H	6.7	-42.80	-13	-29.80
3296.8	-49.40	320	2.3	V	6.2	-43.20	-13	-30.20
GSM850, 836.6MHz								
1673.2	-48.10	215	2.2	H	3.1	-45.00	-13	-32.00
1673.2	-46.70	180	2.1	V	2.5	-44.20	-13	-31.20
2509.8	-42.60	53	2.3	H	7.1	-35.50	-13	-22.50
2509.8	-38.40	355	1.3	V	5.4	-33.00	-13	-20.00
3346.4	-50.10	329	1.4	H	7.3	-42.80	-13	-29.80
3346.4	-48.50	264	2.4	V	5.4	-43.10	-13	-30.10
GSM850, 848.8MHz								
1697.6	-43.10	72	2.3	H	3.2	-39.90	-13	-26.90
1697.6	-42.80	24	2.3	V	2.4	-40.40	-13	-27.40
2546.4	-43.60	61	1.6	H	6.9	-36.70	-13	-23.70
2546.4	-40.10	270	1.3	V	6.2	-33.90	-13	-20.90
3395.2	-49.40	16	2.4	H	5.9	-43.50	-13	-30.50
3395.2	-48.60	52	2.4	V	5.2	-43.40	-13	-30.40

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 Band5,826.4MHz								
1652.8	-52.50	349	1.7	H	3	-49.50	-13	-36.50
1652.8	-52.40	167	1.7	V	2.6	-49.80	-13	-36.80
2479.2	-52.20	201	2	H	7.1	-45.10	-13	-32.10
2479.2	-49.10	134	2.4	V	5.8	-43.30	-13	-30.30
3305.6	-49.70	223	1.6	H	6.7	-43.00	-13	-30.00
3305.6	-49.60	169	1.8	V	6.1	-43.50	-13	-30.50
WCDMA Band5,836.6MHz								
1673.2	-52.70	179	1.7	H	3.1	-49.60	-13	-36.60
1673.2	-52.20	50	1	V	2.5	-49.70	-13	-36.70
2509.8	-55.30	344	1.5	H	7.1	-48.20	-13	-35.20
2509.8	-52.60	13	2.4	V	5.4	-47.20	-13	-34.20
3346.4	-50.10	341	1.7	H	7.3	-42.80	-13	-29.80
3346.4	-48.60	323	2.1	V	5.4	-43.20	-13	-30.20
WCDMA Band5,846.6MHz								
1693.2	-53.20	179	2.2	H	3.2	-50.00	-13	-37.00
1693.2	-52.20	294	1.7	V	2.4	-49.80	-13	-36.80
2539.8	-55.50	12	1.5	H	7	-48.50	-13	-35.50
2539.8	-53.60	205	2.4	V	6	-47.60	-13	-34.60
3386.4	-49.70	340	1.2	H	6.2	-43.50	-13	-30.50
3386.4	-48.80	249	2	V	5.2	-43.60	-13	-30.60

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substitute d Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
GSM 1900, 1850.2MHz								
3700.4	-51.70	358	2.5	H	8.2	-43.50	-13	-30.50
3700.4	-49.30	266	1.4	V	6.8	-42.50	-13	-29.50
5550.6	-44.00	62	1.3	H	9	-35.00	-13	-22.00
5550.6	-47.00	101	1.3	V	10	-37.00	-13	-24.00
GSM1900, 1880MHz								
3760.0	-50.80	30	2.2	H	8.2	-42.60	-13	-29.60
3760.0	-49.40	49	1	V	7.7	-41.70	-13	-28.70
5640.0	-48.10	122	1.2	H	10.7	-37.40	-13	-24.40
5640.0	-46.40	223	1.1	V	9.8	-36.60	-13	-23.60
GSM 1900, 1909.8MHz								
3819.6	-50.50	178	1.6	H	8.1	-42.40	-13	-29.40
3819.6	-49.40	295	2.2	V	7.6	-41.80	-13	-28.80
5729.4	-50.30	357	1.5	H	11.4	-38.90	-13	-25.90
5729.4	-46.50	185	1.2	V	10	-36.50	-13	-23.50
WCDMA Band2,1852.4MHz								
3704.8	-48.20	105	2.4	H	8.2	-40.00	-13	-27.00
3704.8	-45.00	139	2.1	V	6.9	-38.10	-13	-25.10
5557.2	-47.50	5	1.5	H	9.1	-38.40	-13	-25.40
5557.2	-48.90	345	2.2	V	9.9	-39.00	-13	-26.00
WCDMA Band2,1880MHz								
3760.0	-47.20	336	1.4	H	8.2	-39.00	-13	-26.00
3760.0	-50.00	101	2.1	V	7.7	-42.30	-13	-29.30
5640.0	-50.30	160	2.4	H	10.7	-39.60	-13	-26.60
5640.0	-49.80	247	1.6	V	9.8	-40.00	-13	-27.00
WCDMA Band2,1907.6MHz								
3815.2	-45.80	140	1.4	H	8.2	-37.60	-13	-24.60
3815.2	-45.80	195	2.3	V	7.5	-38.30	-13	-25.30
5722.8	-50.50	353	2	H	11.3	-39.20	-13	-26.20
5722.8	-50.50	62	2.4	V	10	-40.50	-13	-27.50

AWS Band (Part 27)

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 Band4, 1712.4MHz								
3424.8	-45.40	182	1.4	H	5.8	-39.60	-13	-26.60
3424.8	-46.50	331	2	V	6.1	-40.40	-13	-27.40
5137.2	-52.60	143	1.8	H	11.2	-41.40	-13	-28.40
5137.2	-52.60	225	1.4	V	10.5	-42.10	-13	-29.10
WCDMA Band4, 1732.6MHz								
3465.2	-46.80	230	1.7	H	6.5	-40.30	-13	-27.30
3465.2	-48.50	242	2	V	6.7	-41.80	-13	-28.80
5197.8	-52.00	16	1.3	H	11.1	-40.90	-13	-27.90
5197.8	-50.30	236	1.7	V	9.8	-40.50	-13	-27.50
WCDMA Band4, 1752.6MHz								
3505.2	-49.30	8	2.3	H	8.1	-41.20	-13	-28.20
3505.2	-48.30	131	1.6	V	6	-42.30	-13	-29.30
5257.8	-51.70	255	1.4	H	9.7	-42.00	-13	-29.00
5257.8	-51.10	66	1.6	V	9.4	-41.70	-13	-28.70

LTE Band: (Pre-scan all bandwidth/modulation, the 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)				
LTE Band 2								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, QPSK, Low channel								
3701.4	-44.50	195	2	H	8.2	-36.30	-13	-23.30
3701.4	-41.70	179	1.2	V	6.9	-34.80	-13	-21.80
5552.1	-43.70	138	1.3	H	9	-34.70	-13	-21.70
5552.1	-45.90	287	2	V	10	-35.90	-13	-22.90
1.4MHz bandwidth, QPSK, Middle channel								
3760.0	-45.00	7	1.9	H	8.2	-36.80	-13	-23.80
3760.0	-43.80	9	1.8	V	7.7	-36.10	-13	-23.10
5640.0	-45.60	161	1.5	H	10.7	-34.90	-13	-21.90
5640.0	-45.70	327	1.4	V	9.8	-35.90	-13	-22.90
1.4MHz bandwidth, QPSK, High channel								
3818.6	-42.80	33	1.3	H	8.1	-34.70	-13	-21.70
3818.6	-42.60	5	1.6	V	7.6	-35.00	-13	-22.00
5727.9	-46.50	66	2.1	H	11.4	-35.10	-13	-22.10
5727.9	-46.60	90	1.4	V	10	-36.60	-13	-23.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
LTE Band 4								
Test frequency range: 30MHz-20GHz								
1.4MHz bandwidth, QPSK, Low channel								
3421.4	-45.20	80	1.6	H	5.8	-39.40	-13	-26.40
3421.4	-46.00	220	2.5	V	6	-40.00	-13	-27.00
5132.1	-50.50	252	1.3	H	11.3	-39.20	-13	-26.20
5132.1	-51.40	92	2	V	10.6	-40.80	-13	-27.80
1.4MHz bandwidth, QPSK, Middle channel								
3465.0	-45.80	290	2.4	H	6.5	-39.30	-13	-26.30
3465.0	-47.30	43	1.9	V	6.7	-40.60	-13	-27.60
5197.5	-50.10	14	2.2	H	11.1	-39.00	-13	-26.00
5197.5	-49.40	254	2	V	9.8	-39.60	-13	-26.60
1.4MHz bandwidth, QPSK, High channel								
3508.6	-48.10	323	2.5	H	8.2	-39.90	-13	-26.90
3508.6	-47.00	143	2	V	6	-41.00	-13	-28.00
5262.9	-49.20	125	2.3	H	9.7	-39.50	-13	-26.50
5262.9	-49.50	96	2.5	V	9.3	-40.20	-13	-27.20

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 5								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, QPSK, Low channel								
1649.4	-51.20	244	2	H	3	-48.20	-13	-35.20
1649.4	-51.80	184	2.2	V	2.6	-49.20	-13	-36.20
2474.1	-43.20	65	2.3	H	7.1	-36.10	-13	-23.10
2474.1	-42.80	199	1.9	V	5.9	-36.90	-13	-23.90
3298.8	-49.30	39	2.4	H	6.7	-42.60	-13	-29.60
3298.8	-48.30	82	1.8	V	6.2	-42.10	-13	-29.10
1.4MHz bandwidth, QPSK, Middle channel								
1673.0	-49.20	246	1.6	H	3.1	-46.10	-13	-33.10
1673.0	-49.20	111	1.2	V	2.5	-46.70	-13	-33.70
2509.5	-45.10	329	2	H	7.1	-38.00	-13	-25.00
2509.5	-45.20	16	1.4	V	5.4	-39.80	-13	-26.80
3346.0	-50.10	292	2	H	7.3	-42.80	-13	-29.80
3346.0	-47.90	316	1.6	V	5.4	-42.50	-13	-29.50
1.4MHz bandwidth, QPSK, High channel								
1696.6	-48.80	93	1.8	H	3.3	-45.50	-13	-32.50
1696.6	-48.20	345	2.3	V	2.4	-45.80	-13	-32.80
2544.9	-44.90	251	1	H	6.9	-38.00	-13	-25.00
2544.9	-45.40	204	1.2	V	6.1	-39.30	-13	-26.30
3393.2	-48.90	132	2.2	H	5.9	-43.00	-13	-30.00
3393.2	-47.60	94	2	V	5.2	-42.40	-13	-29.40

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 7								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, QPSK, Low channel								
5005.0	-52.90	82	1.3	H	10.8	-42.10	-25	-17.10
5005.0	-52.20	17	1.4	V	10.2	-42.00	-25	-17.00
7507.5	-54.40	285	1	H	19.8	-34.60	-25	-9.60
7507.5	-56.20	359	2.3	V	19.5	-36.70	-25	-11.70
5MHz bandwidth, QPSK, Middle channel								
5070.0	-52.60	131	2.3	H	11.6	-41.00	-25	-16.00
5070.0	-52.70	19	2.4	V	11.2	-41.50	-25	-16.50
7605.0	-57.10	275	1.5	H	21.9	-35.20	-25	-10.20
7605.0	-57.70	157	1	V	19.8	-37.90	-25	-12.90
5MHz bandwidth, QPSK, High channel								
5135.0	-51.60	140	2.1	H	11.3	-40.30	-25	-15.30
5135.0	-51.50	22	2.2	V	10.6	-40.90	-25	-15.90
7702.5	-55.40	192	1.3	H	20.8	-34.60	-25	-9.60
7702.5	-58.50	352	2.4	V	21.8	-36.70	-25	-11.70

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 12								
Test frequency range: 30MHz-10GHz								
1.4MHz bandwidth, QPSK, Low channel								
1399.4	-59.50	270	1.8	H	5.5	-54.00	-13	-41.00
1399.4	-59.90	243	1.2	V	6.3	-53.60	-13	-40.60
2099.1	-41.00	219	2.3	H	5.8	-35.20	-13	-22.20
2099.1	-42.40	98	1.5	V	4.6	-37.80	-13	-24.80
2798.8	-54.10	323	2.4	H	5.8	-48.30	-13	-35.30
2798.8	-54.60	256	1.1	V	6.9	-47.70	-13	-34.70
1.4MHz bandwidth, QPSK, Middle channel								
1415.0	-58.90	48	1.1	H	5.1	-53.80	-13	-40.80
1415.0	-59.10	348	1.3	V	5.6	-53.50	-13	-40.50
2122.5	-41.50	251	2.4	H	6.7	-34.80	-13	-21.80
2122.5	-43.60	162	2.3	V	5.6	-38.00	-13	-25.00
2830.0	-54.90	89	1.2	H	6.3	-48.60	-13	-35.60
2830.0	-54.40	285	2.5	V	6.5	-47.90	-13	-34.90
1.4MHz bandwidth, QPSK, High channel								
1430.6	-58.20	224	1.7	H	4.7	-53.50	-13	-40.50
1430.6	-58.20	273	1.2	V	4.9	-53.30	-13	-40.30
2145.9	-42.00	263	1.5	H	7.6	-34.40	-13	-21.40
2145.9	-44.30	81	1.2	V	6.7	-37.60	-13	-24.60
2861.2	-55.00	241	1.4	H	6.7	-48.30	-13	-35.30
2861.2	-54.10	173	1.4	V	6.2	-47.90	-13	-34.90

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 17								
Test frequency range: 30MHz-10GHz								
5MHz bandwidth, QPSK, Low channel								
1413.0	-58.90	79	1.4	H	5.2	-53.70	-13	-40.70
1413.0	-59.10	354	1.2	V	5.7	-53.40	-13	-40.40
2119.5	-43.50	319	1.2	H	6.6	-36.90	-13	-23.90
2119.5	-45.40	348	1.1	V	5.5	-39.90	-13	-26.90
2826.0	-54.30	77	1.7	H	6.2	-48.10	-13	-35.10
2826.0	-54.10	328	2.3	V	6.6	-47.50	-13	-34.50
5MHz bandwidth, QPSK, Middle channel								
1420.0	-58.90	356	2.1	H	5	-53.90	-13	-40.90
1420.0	-59.00	45	1.3	V	5.4	-53.60	-13	-40.60
2130.0	-45.10	280	2	H	7	-38.10	-13	-25.10
2130.0	-46.40	341	2.1	V	6	-40.40	-13	-27.40
2840.0	-55.00	315	1.7	H	6.4	-48.60	-13	-35.60
2840.0	-54.20	220	1.6	V	6.3	-47.90	-13	-34.90
5MHz bandwidth, QPSK, High channel								
1427.0	-57.90	344	1.6	H	4.8	-53.10	-13	-40.10
1427.0	-58.10	316	1.7	V	5	-53.10	-13	-40.10
2140.5	-45.20	256	1.1	H	7.4	-37.80	-13	-24.80
2140.5	-46.70	176	2.4	V	6.5	-40.20	-13	-27.20
2854.0	-54.40	320	1.6	H	6.6	-47.80	-13	-34.80
2854.0	-53.70	40	1.6	V	6.2	-47.50	-13	-34.50

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 38								
Test frequency range: 30MHz-26.5GHz								
5MHz bandwidth, QPSK, Low channel								
5145.0	-52.00	0	1	H	11.1	-40.90	-25	-15.90
5145.0	-52.00	228	2.5	V	10.5	-41.50	-25	-16.50
7717.5	-59.00	215	1.3	H	20.1	-38.90	-25	-13.90
7717.5	-61.50	272	2	V	20.6	-40.90	-25	-15.90
5MHz bandwidth, QPSK, Middle channel								
5190.0	-52.60	210	1.4	H	11.1	-41.50	-25	-16.50
5190.0	-51.40	212	1	V	9.9	-41.50	-25	-16.50
7785.0	-56.80	261	2.4	H	17.8	-39.00	-25	-14.00
7785.0	-58.30	99	2.2	V	17.1	-41.20	-25	-16.20
5MHz bandwidth, QPSK, High channel								
5235.0	-51.90	320	1.6	H	10.2	-41.70	-25	-16.70
5235.0	-51.30	356	1.5	V	9.6	-41.70	-25	-16.70
7852.5	-57.40	20	2.5	H	18.3	-39.10	-25	-14.10
7852.5	-59.30	330	1.3	V	18.4	-40.90	-25	-15.90

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 41								
Test frequency range: 30MHz-26.55GHz								
5MHz bandwidth, QPSK, Low channel								
5075.0	-52.90	190	1.6	H	11.6	-41.30	-25	-16.30
5075.0	-52.90	77	1.1	V	11.2	-41.70	-25	-16.70
7612.5	-59.80	327	2.1	H	21.7	-38.10	-25	-13.10
7612.5	-59.50	235	1.4	V	19.9	-39.60	-25	-14.60
5MHz bandwidth, QPSK, Middle channel								
5190.0	-52.80	321	2.3	H	11.1	-41.70	-25	-16.70
5190.0	-51.60	248	1.8	V	9.9	-41.70	-25	-16.70
7785.0	-55.60	115	1.3	H	17.8	-37.80	-25	-12.80
7785.0	-56.70	149	1.6	V	17.1	-39.60	-25	-14.60
5MHz bandwidth, QPSK, High channel								
5305.0	-51.00	156	1.7	H	9.4	-41.60	-25	-16.60
5305.0	-49.90	316	1.1	V	8.6	-41.30	-25	-16.30
7957.5	-58.30	211	1.2	H	19.4	-38.90	-25	-13.90
7957.5	-58.40	112	1.8	V	18.1	-40.30	-25	-15.30

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								
1.4MHz bandwidth, QPSK, Low channel								
3421.4	-44.80	124	2.4	H	5.8	-39.00	-13	-26.00
3421.4	-45.50	32	1.4	V	6	-39.50	-13	-26.50
5132.1	-47.00	49	1.3	H	11.3	-35.70	-13	-22.70
5132.1	-48.10	92	2.4	V	10.6	-37.50	-13	-24.50
1.4MHz bandwidth, QPSK, Middle channel								
3490.0	-46.90	208	1.9	H	7.6	-39.30	-13	-26.30
3490.0	-47.30	334	1.8	V	6.1	-41.20	-13	-28.20
5235.0	-46.70	356	2	H	10.2	-36.50	-13	-23.50
5235.0	-47.50	283	1.5	V	9.6	-37.90	-13	-24.90
1.4MHz bandwidth, QPSK, High channel								
3558.6	-48.80	190	1.7	H	8.4	-40.40	-13	-27.40
3558.6	-47.70	308	2	V	7.2	-40.50	-13	-27.50
5337.9	-44.40	228	1.8	H	8.9	-35.50	-13	-22.50
5337.9	-45.50	50	2.3	V	8.2	-37.30	-13	-24.30

Note:

Absolute Level = Reading Level + Substituted Factor

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

Margin = Absolute Level – Limit

Other emissions which was more than 20dB below limit was not recorded

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

Applicable Standard

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

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

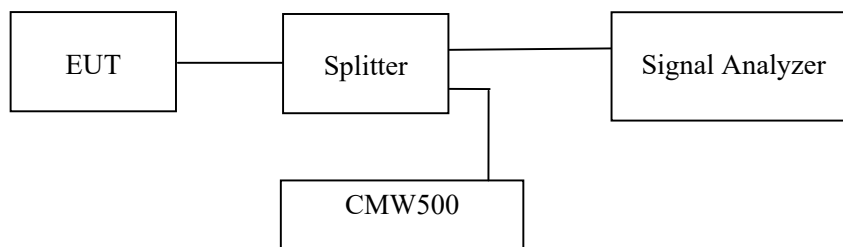
According to FCC §27.53 (g)(h), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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.

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 included in plot.

Test Data**Environmental Conditions**

Temperature:	28.8 °C
Relative Humidity:	46.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-04-16 to 2023-04-19.

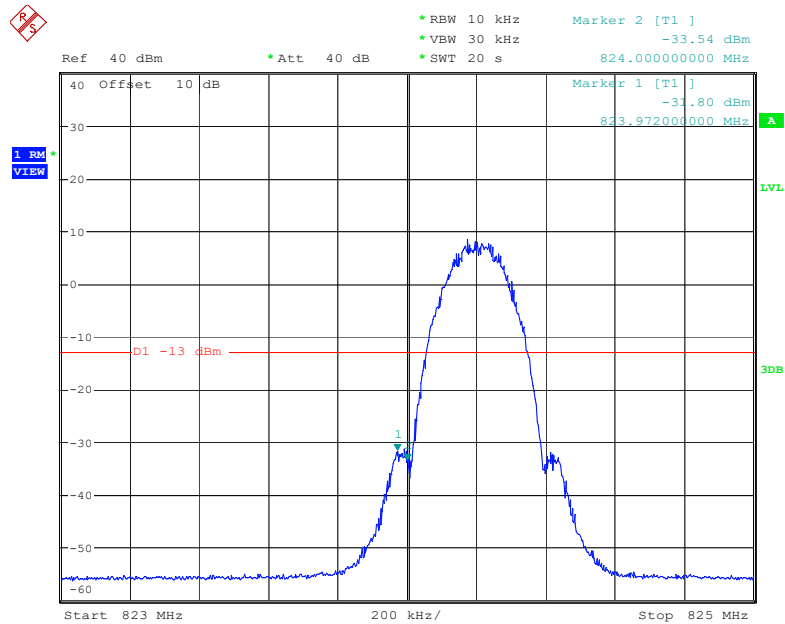
EUT operation mode: Transmitting (Worst case)

Test Result: Pass

Please refer to the following plots.

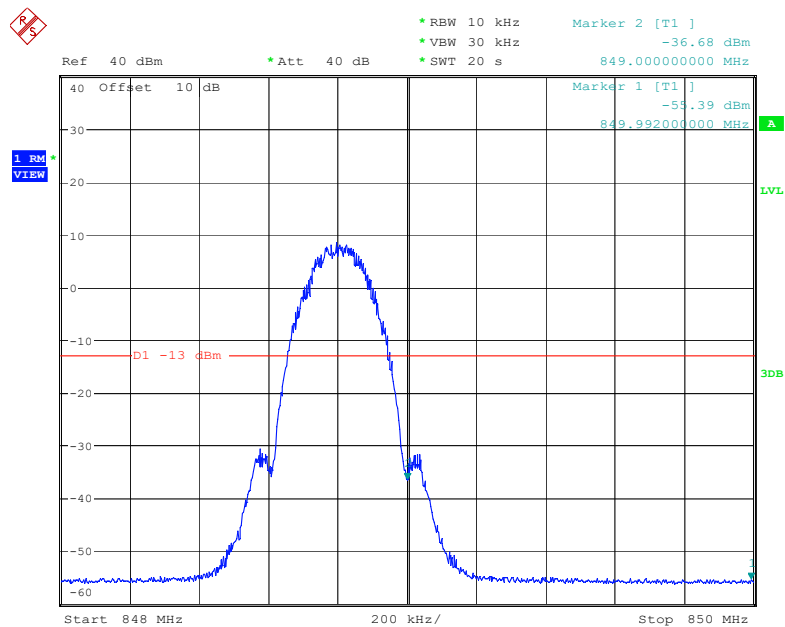


Cellular Band, Left Band Edge for EGPRS (8PSK) Mode

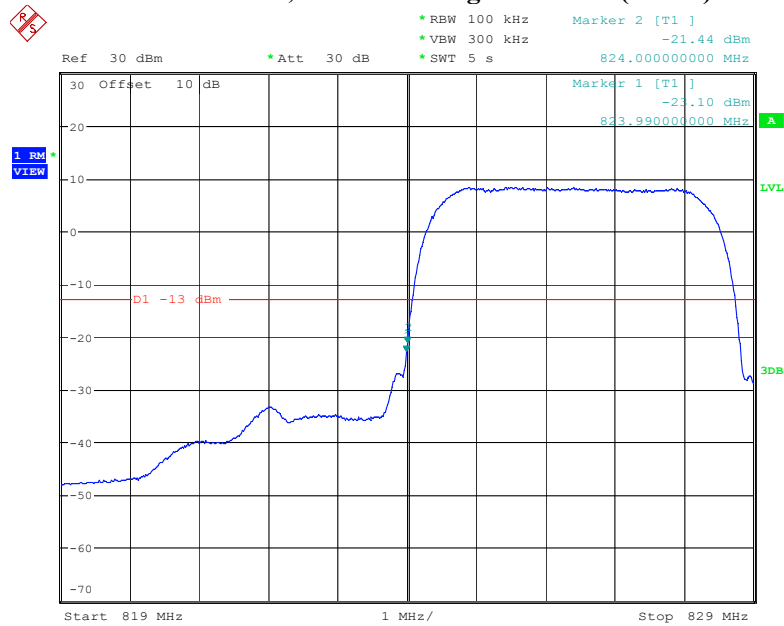
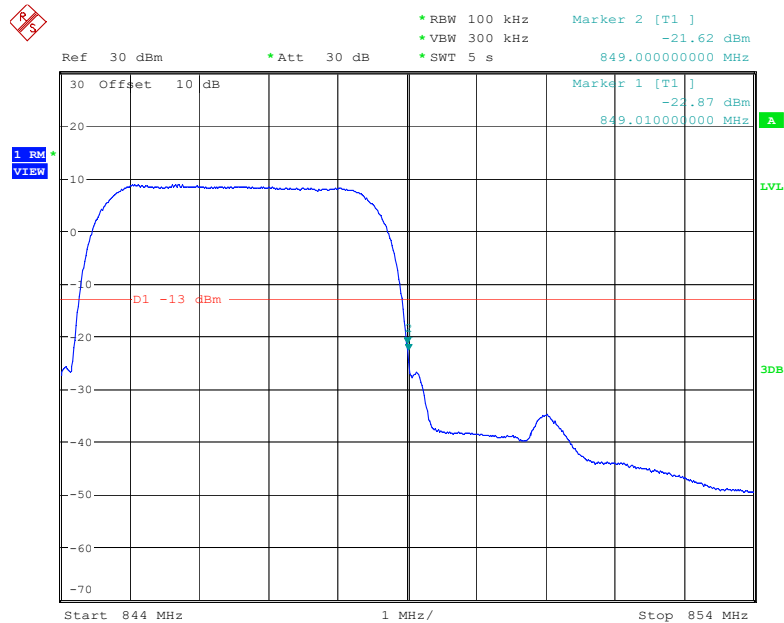


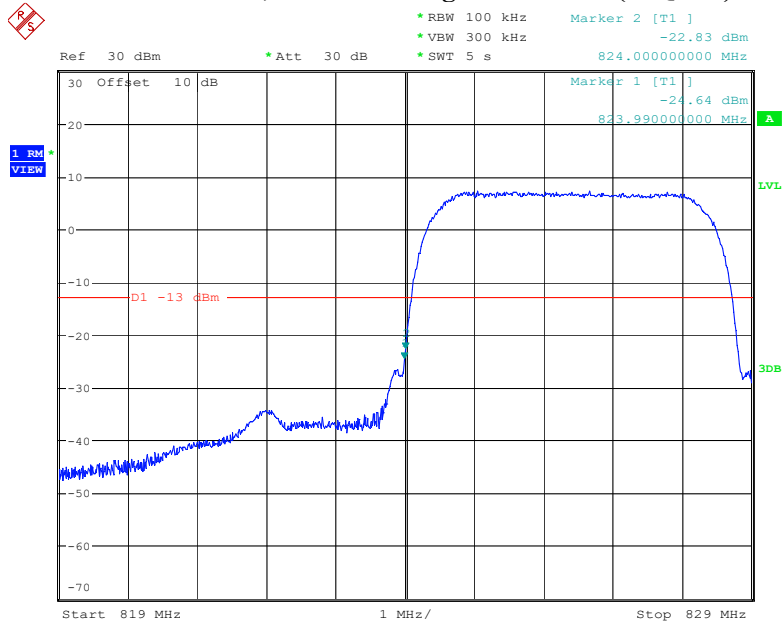
Date: 19.APR.2023 14:00:25

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

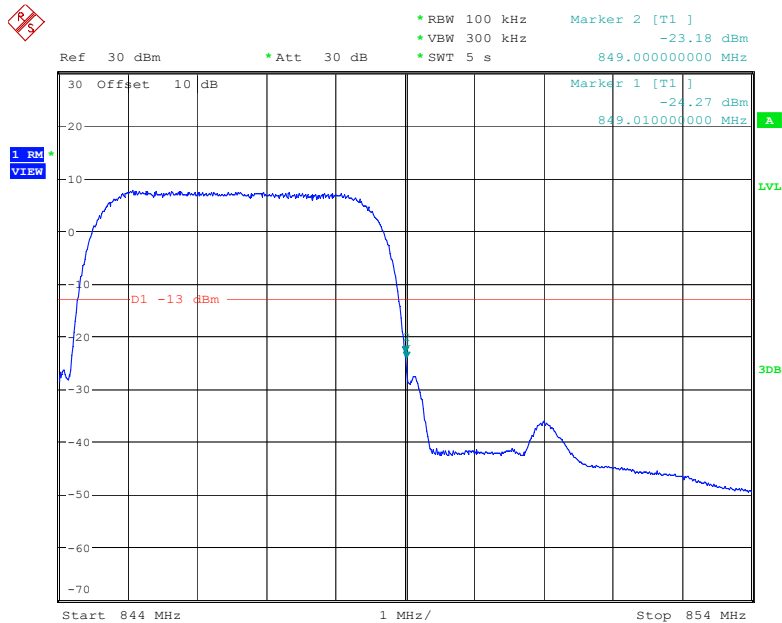


Date: 19.APR.2023 14:12:13

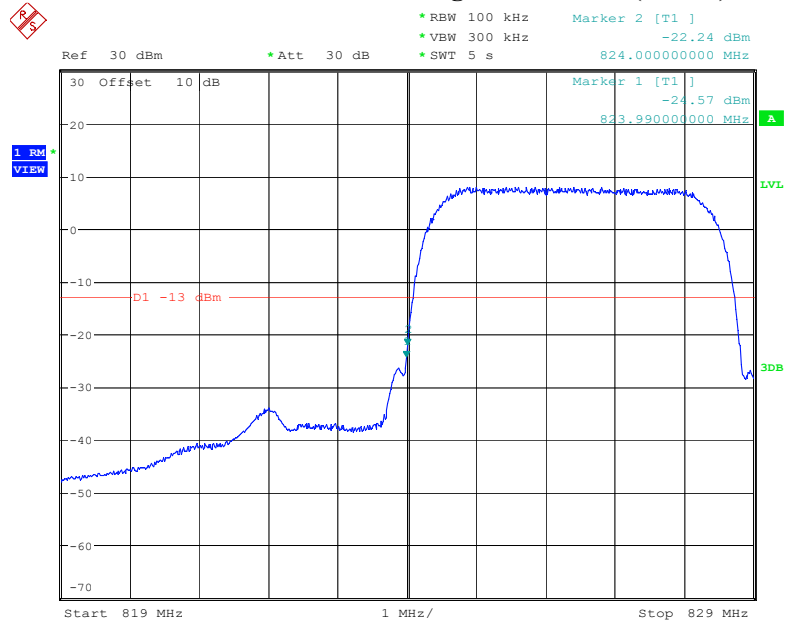
Cellular Band, Left Band Edge for RMC (BPSK) Mode**Cellular Band, Right Band Edge for RMC (BPSK) Mode**

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

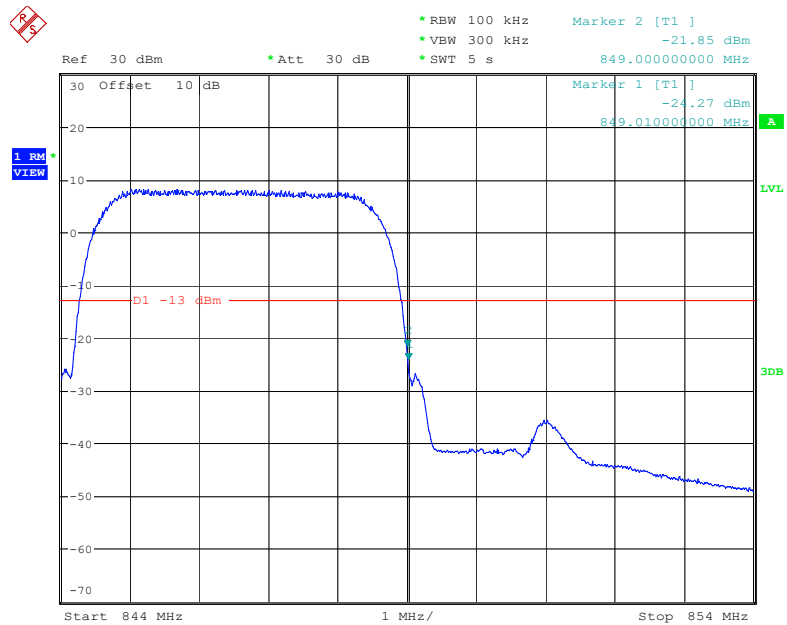
Date: 18.APR.2023 17:01:48

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

Date: 18.APR.2023 17:08:43

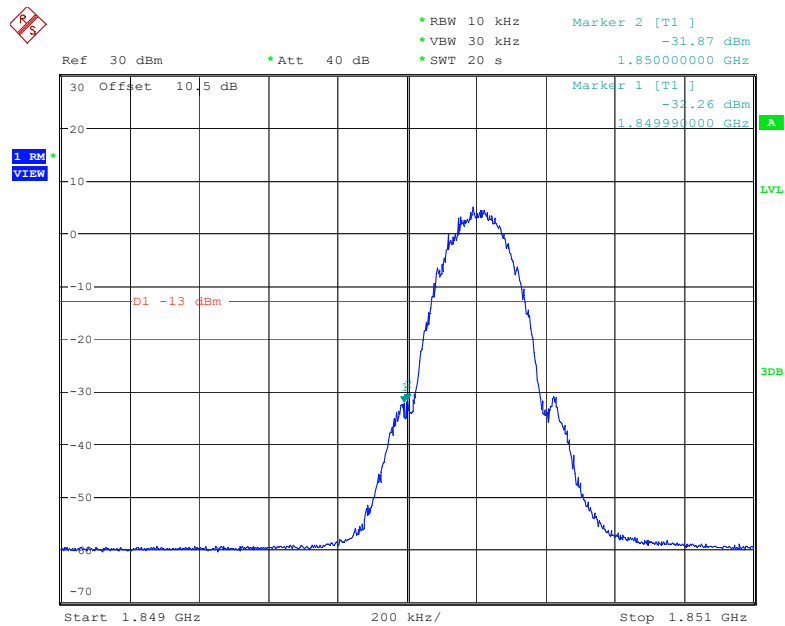
Cellular Band, Left Band Edge for HSUPA (QPSK) Mode

Date: 18.APR.2023 17:13:47

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

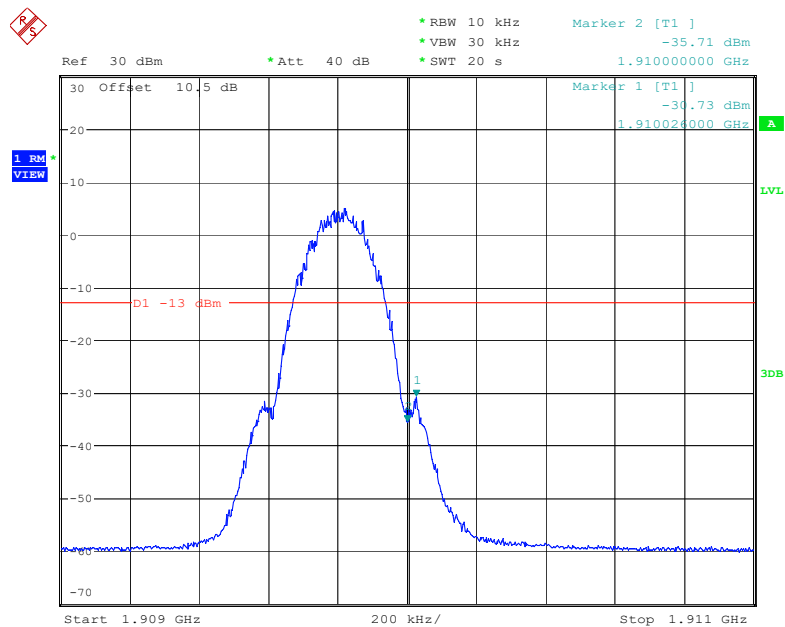
Date: 19.APR.2023 16:20:22

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



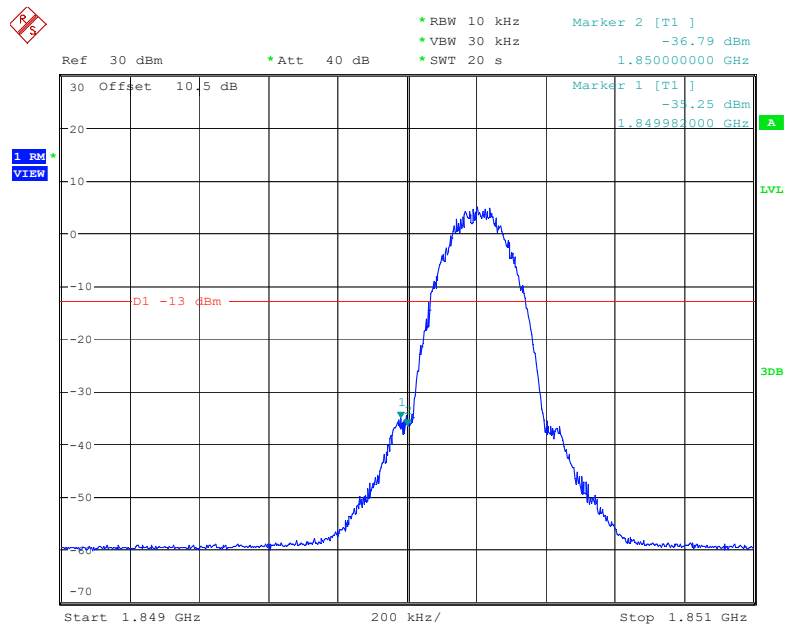
Date: 19.APR.2023 14:37:32

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



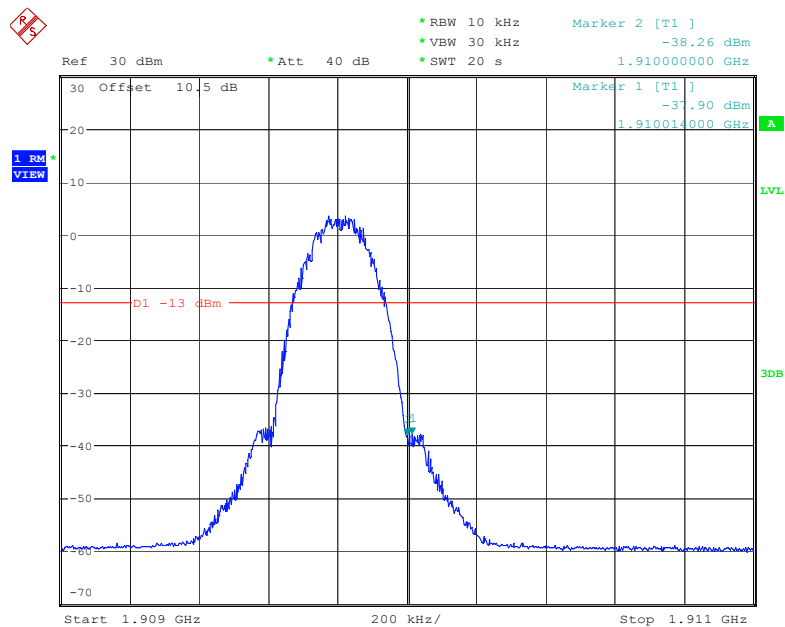
Date: 19.APR.2023 14:53:43

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



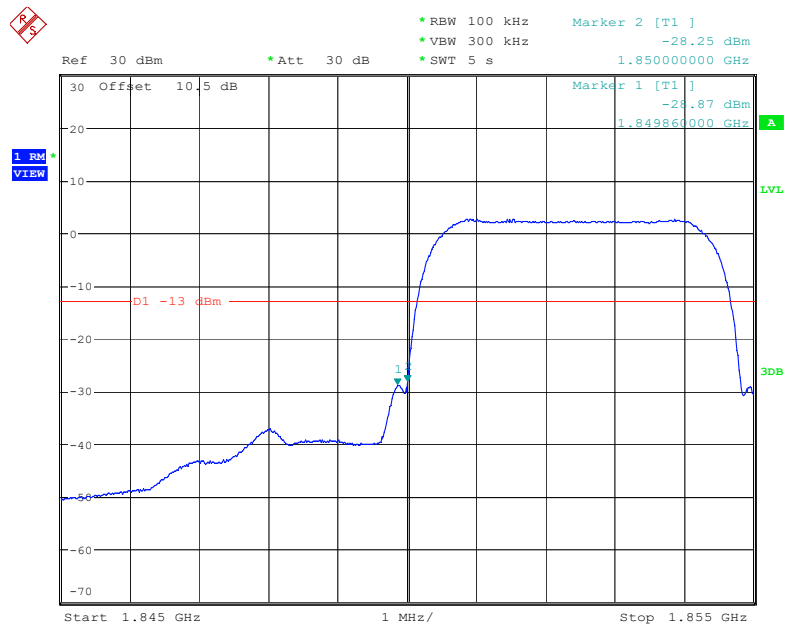
Date: 19.APR.2023 15:31:35

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



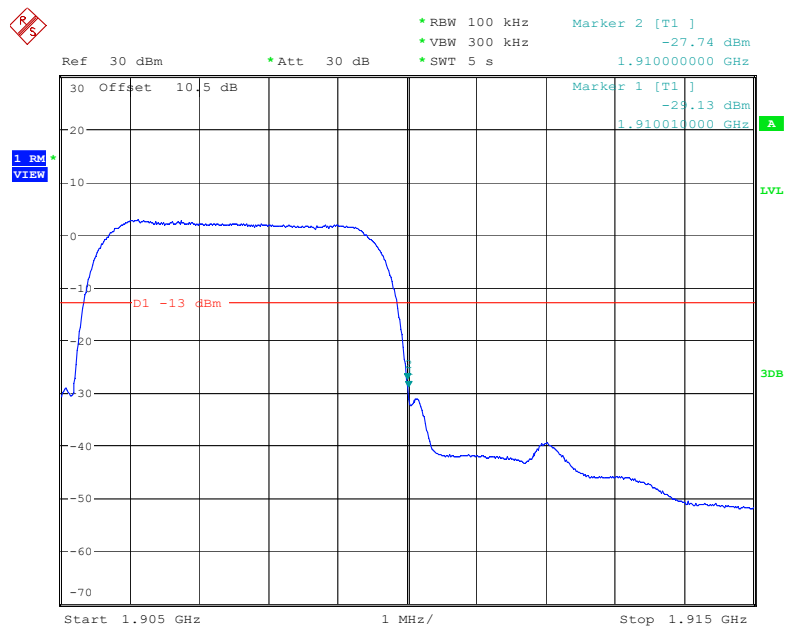
Date: 19.APR.2023 15:46:24

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



Date: 18.APR.2023 09:26:31

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

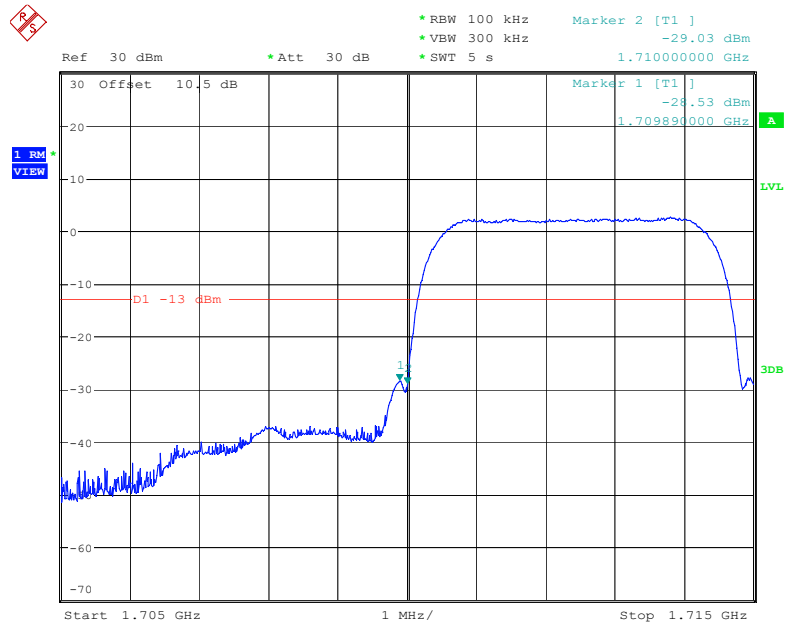


Date: 18.APR.2023 09:46:51



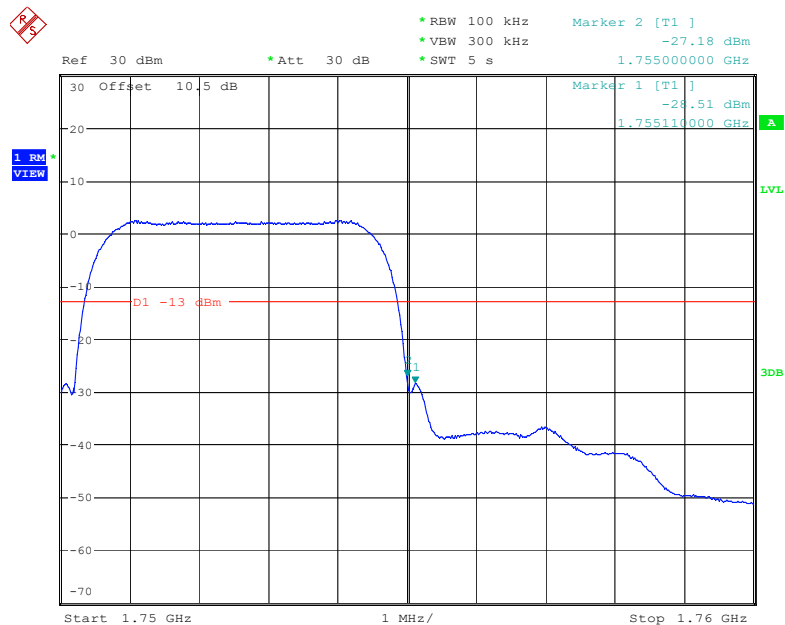


AWS Band, Left Band Edge for RMC (BPSK) Mode



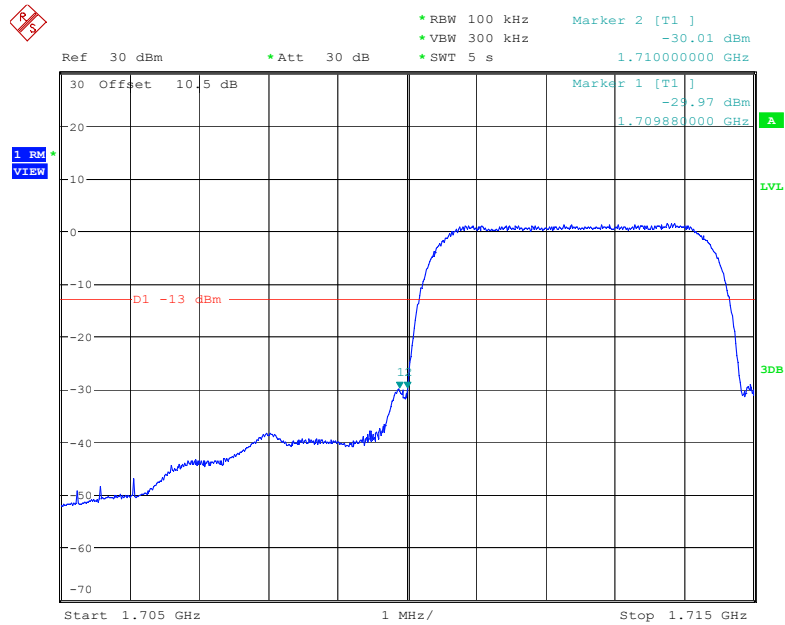
Date: 18.APR.2023 15:15:16

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



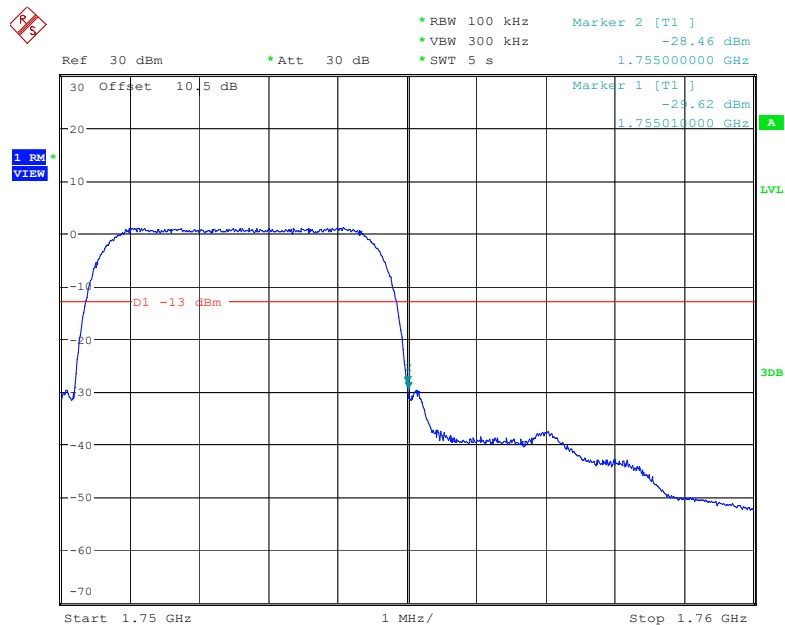
Date: 18.APR.2023 15:31:35

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

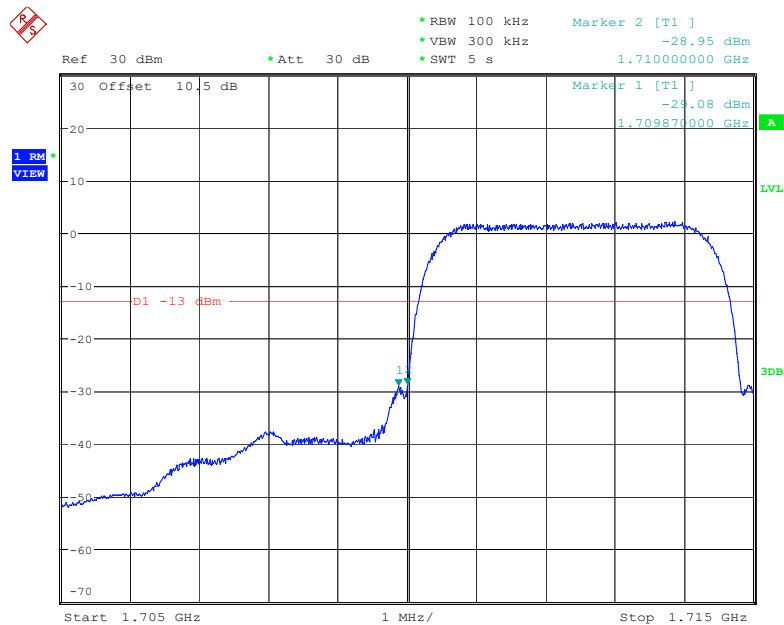


Date: 18.APR.2023 15:45:28

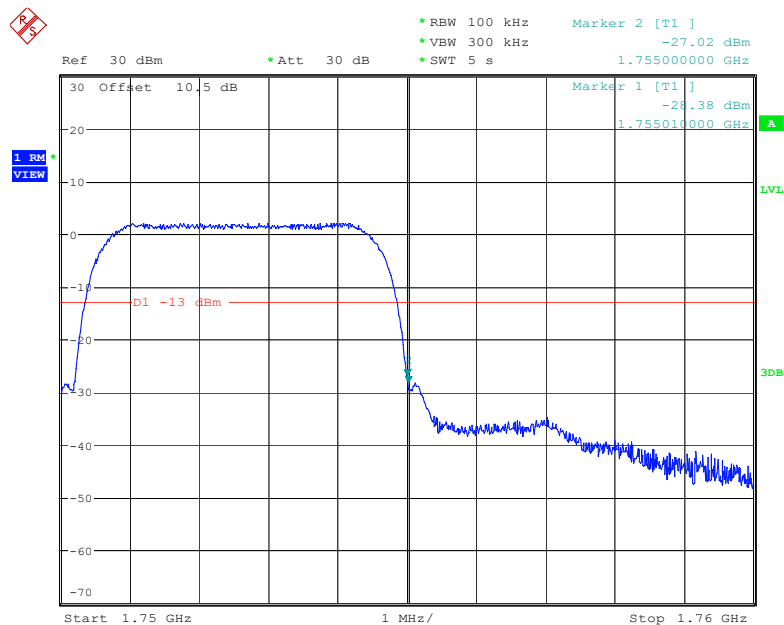
AWS Band, Right Band Edge for HSDPA (16QAM) Mode



Date: 18.APR.2023 16:01:33

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

Date: 18.APR.2023 16:11:55

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

Date: 19.APR.2023 11:52:50

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

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

Applicable Standard

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

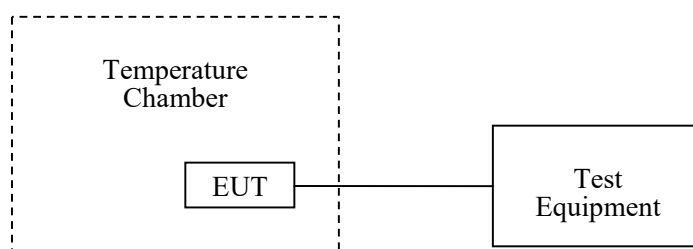
According to §24.235&§27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

Test Procedure

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

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

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



Test Data**Environmental Conditions**

Temperature:	28.8 °C
Relative Humidity:	46.8 %
ATM Pressure:	101.0 kPa

The testing was performed by Jacob Huang from 2023-04-16 to 2023-04-19.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables.

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

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	4	0.004781	2.5
-20		2	0.002391	2.5
-10		3	0.003586	2.5
0		7	0.008367	2.5
10		3	0.003586	2.5
20		2	0.002391	2.5
30		4	0.004781	2.5
40		5	0.005977	2.5
50		2	0.002391	2.5
20	L.V.	3	0.003586	2.5
	H.V.	2	0.002391	2.5

EDGE Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	1	0.001195	2.5
-20		2	0.002391	2.5
-10		5	0.005977	2.5
0		3	0.003586	2.5
10		2	0.002391	2.5
20		-1	-0.00120	2.5
30		4	0.004781	2.5
40		2	0.002391	2.5
50		5	0.005977	2.5
20	L.V.	6	0.007172	2.5
	H.V.	4	0.004781	2.5

WCDMA Mode

Middle Channel, $f_0=836.6\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-5	-0.00598	2.5
-20		-6	-0.00717	2.5
-10		-5	-0.00598	2.5
0		-4	-0.00478	2.5
10		-7	-0.00837	2.5
20		-9	-0.01076	2.5
30		-6	-0.00717	2.5
40		-5	-0.00598	2.5
50		-8	-0.00956	2.5
20	L.V.	-5	-0.00598	2.5
	H.V.	-6	-0.00717	2.5

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

Middle Channel, $f_0=1880\text{MHz}$					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	1850.0437	1909.9532	1850	1910
-20		1850.0433	1909.9643	1850	1910
-10		1850.0369	1909.9784	1850	1910
0		1850.0669	1909.9575	1850	1910
10		1850.0493	1909.9732	1850	1910
20		1850.0604	1909.9654	1850	1910
30		1850.0556	1909.9655	1850	1910
40		1850.0499	1909.9735	1850	1910
50		1850.0489	1909.9601	1850	1910
20	L.V.	1850.0505	1909.9568	1850	1910
	H.V.	1850.0324	1909.9518	1850	1910

EDGE Mode

Middle Channel, $f_0=1880\text{MHz}$					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.0254	1909.9564	1850	1910
-20		1850.0123	1909.9643	1850	1910
-10		1850.0563	1909.9756	1850	1910
0		1850.0251	1909.9645	1850	1910
10		1850.0493	1909.9742	1850	1910
20		1850.0582	1909.9654	1850	1910
30		1850.0556	1909.9664	1850	1910
40		1850.0245	1909.9785	1850	1910
50		1850.0489	1909.9625	1850	1910
20	L.V.	1850.0367	1909.9554	1850	1910
	H.V.	1850.0450	1909.9552	1850	1910

WCDMA Mode

Middle Channel, $f_0=1880\text{MHz}$					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1850.0381	1909.9890	1850	1910
-20		1850.0275	1909.9839	1850	1910
-10		1850.0247	1909.9873	1850	1910
0		1850.0423	1909.9984	1850	1910
10		1850.0334	1909.9919	1850	1910
20		1850.0508	1909.9821	1850	1910
30		1850.0312	1909.9966	1850	1910
40		1850.0303	1909.9678	1850	1910
50		1850.0502	1909.9810	1850	1910
20	L.V.	1850.0285	1909.9716	1850	1910
	H.V.	1850.0501	1909.9802	1850	1910

AWS Band (Part 27)

Middle Channel, $f_0 = 1732.6\text{MHz}$					
Temperature (°C)	Power Supplied (V_{DC})	F_L (MHz)	F_H (MHz)	F_L Limit (MHz)	F_H Limit (MHz)
-30	N.V.	1710.1234	1754.8592	1710	1755
-20		1710.1236	1754.8265	1710	1755
-10		1710.1568	1754.8254	1710	1755
0		1710.1236	1754.8256	1710	1755
10		1710.1215	1754.8158	1710	1755
20		1710.1214	1754.8412	1710	1755
30		1710.1102	1754.8128	1710	1755
40		1710.1157	1754.8321	1710	1755
50		1710.1452	1754.8267	1710	1755
20	L.V.	1710.1154	1754.8264	1710	1755
	H.V.	1710.1128	1754.8261	1710	1755

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.	1850.1145	1909.8722	1850	1910
-20		1850.1154	1909.8726	1850	1910
-10		1850.1121	1909.8741	1850	1910
0		1850.1155	1909.8734	1850	1910
10		1850.1138	1909.8736	1850	1910
20		1850.1151	1909.8364	1850	1910
30		1850.1133	1909.8752	1850	1910
40		1850.1138	1909.8754	1850	1910
50		1850.1122	1909.8741	1850	1910
20	L.V.	1850.1139	1909.8358	1850	1910
	H.V.	1850.1044	1909.8745	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 5:

10.0 MHz Middle Channel, f _o =836.5MHz				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	7.94	0.0095	2.5
-20		-7.96	-0.0095	2.5
-10		8.30	0.0099	2.5
0		-6.24	-0.0075	2.5
10		-6.93	-0.0083	2.5
20		-5.21	-0.0062	2.5
30		9.29	0.0111	2.5
40		-7.43	-0.0089	2.5
50		6.09	0.0073	2.5
20	L.V.	6.20	0.0074	2.5
	H.V.	7.96	0.0095	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2500.779	2569.171	2500	2570
-20		2500.841	2569.408	2500	2570
-10		2500.891	2569.607	2500	2570
0		2500.405	2569.814	2500	2570
10		2500.702	2569.423	2500	2570
20		2500.344	2569.163	2500	2570
30		2500.261	2569.181	2500	2570
40		2500.501	2569.441	2500	2570
50		2500.699	2569.403	2500	2570
20	L.V.	2500.269	2569.559	2500	2570
	H.V.	2500.691	2569.299	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.	704.1245	715.8872	704	716
-20		704.2365	715.8728	704	716
-10		704.5963	715.8458	704	716
0		704.6587	715.8632	704	716
10		704.2367	715.8417	704	716
20		704.3614	715.8284	704	716
30		704.2519	715.8323	704	716
40		704.2316	715.8314	704	716
50		704.3618	715.8454	704	716
20	L.V.	704.6241	715.8672	704	716
	H.V.	704.3614	715.8678	704	716

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2570.812	2619.276	2570	2620
-20		2570.499	2619.389	2570	2620
-10		2570.530	2619.861	2570	2620
0		2570.577	2619.218	2570	2620
10		2570.675	2619.388	2570	2620
20		2570.747	2619.296	2570	2620
30		2570.485	2619.810	2570	2620
40		2570.537	2619.896	2570	2620
50		2570.272	2619.855	2570	2620
20	L.V.	2570.389	2619.855	2570	2620
	H.V.	2570.571	2619.817	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.229	2654.987	2535	2655
-20		2535.268	2654.977	2535	2655
-10		2535.246	2654.976	2535	2655
0		2535.193	2654.854	2535	2655
10		2535.415	2654.929	2535	2655
20		2535.644	2654.958	2535	2655
30		2535.618	2654.954	2535	2655
40		2535.775	2654.942	2535	2655
50		2535.124	2654.974	2535	2655
20	L.V.	2535.831	2654.938	2535	2655
	H.V.	2535.184	2654.936	2535	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.	1850.1162	1909.8735	1850	1910
-20		1850.1154	1909.8732	1850	1910
-10		1850.1195	1909.8723	1850	1910
0		1850.1156	1909.8724	1850	1910
10		1850.1147	1909.8754	1850	1910
20		1850.1156	1909.8743	1850	1910
30		1850.1134	1909.8754	1850	1910
40		1850.1122	1909.8735	1850	1910
50		1850.1124	1909.8742	1850	1910
20	L.V.	1850.1135	1909.8734	1850	1910
	H.V.	1850.1043	1909.8747	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	1754.7435	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 5:

10.0 MHz Middle Channel, $f_0=836.5\text{MHz}$				
Temperature (°C)	Voltage Supplied (V _{DC})	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
-30	N.V.	-14.92	-0.0178	2.5
-20		6.60	0.0079	2.5
-10		8.20	0.0098	2.5
0		7.97	0.0095	2.5
10		-5.46	-0.0065	2.5
20		8.38	0.01	2.5
30		-6.67	-0.008	2.5
40		8.44	0.0101	2.5
50		8.89	0.0106	2.5
20	L.V.	8.74	0.0104	2.5
	H.V.	5.51	0.0066	2.5

Band 7:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2500.476	2569.743	2500	2570
-20		2500.442	2569.922	2500	2570
-10		2500.318	2569.734	2500	2570
0		2500.209	2569.828	2500	2570
10		2500.598	2569.927	2500	2570
20		2500.597	2569.888	2500	2570
30		2500.693	2569.852	2500	2570
40		2500.631	2569.991	2500	2570
50		2500.386	2569.875	2500	2570
20	L.V.	2500.665	2569.907	2500	2570
	H.V.	2500.282	2569.834	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.	704.6192	715.5646	704	716
-20		704.1957	715.8015	704	716
-10		704.3992	715.8962	704	716
0		704.1142	715.8542	704	716
10		704.3237	715.7978	704	716
20		704.3557	715.9112	704	716
30		704.5745	715.6003	704	716
40		704.1562	715.8458	704	716
50		704.1663	715.8858	704	716
20	L.V.	704.6967	715.8081	704	716
	H.V.	704.8846	715.7516	704	716

Band 38:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2570.604	2619.704	2570	2620
-20		2570.524	2619.862	2570	2620
-10		2570.854	2619.826	2570	2620
0		2570.391	2619.825	2570	2620
10		2570.325	2619.814	2570	2620
20		2570.239	2619.826	2570	2620
30		2570.744	2619.815	2570	2620
40		2570.713	2619.826	2570	2620
50		2570.668	2619.825	2570	2620
20	L.V.	2570.674	2619.815	2570	2620
	H.V.	2570.481	2619.836	2570	2620

Band 41:

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V _{DC})	F _L (MHz)	F _H (MHz)	F _L Limit (MHz)	F _H Limit (MHz)
-30	N.V.	2535.229	2654.8654	2535	2655
-20		2535.268	2654.8258	2535	2655
-10		2535.246	2654.8369	2535	2655
0		2535.193	2654.8261	2535	2655
10		2535.415	2654.8218	2535	2655
20		2535.644	2654.8458	2535	2655
30		2535.618	2654.8956	2535	2655
40		2535.775	2654.8984	2535	2655
50		2535.124	2654.8783	2535	2655
20	L.V.	2535.831	2654.8216	2535	2655
	H.V.	2535.184	2654.8954	2535	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

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