




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

For

**TECNO MOBILE LIMITED**

FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET  
FOTAN NT Hong Kong

**FCC ID: 2ADYY-LE6**

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## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

Product	Mobile Phone
Tested Model	LE6
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 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: -2.9dBi PCS1900/WCDMA Band 2/ LTE Band 2: -0.9dBi WCDMA Band 4/ LTE Band 4/ LTE Band 66: -2.4dBi LTE Band 7/LTE Band 38//LTE Band 41: -0.1dBi LTE Band 17: -3.0dBi (provided by the applicant)
Voltage Range	DC 3.85V from battery or DC 5.0~12.0V from adapter
Date of Test	2021-09-10 to 2021-11-02
Sample serial number	SZ1210825-36467E-RF-S1
Received date	2021-08-25
Sample/EUT Status	Good condition
Normal/Extreme Condition	L.V.: Low Voltage 3.45V <sub>DC</sub> N.V.: Normal Voltage 3.85V <sub>DC</sub> H.V.: High Voltage 4.4V <sub>DC</sub> Note: The extreme condition was declared by the applicant
Adapter information	Model: U180TSA Input: AC 100-240V~50/60Hz, 0.6A Output: DC 5.0V~9.0V, 2.0A 9.0V~12.0V, 1.5A

### Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H and Part 24-Subpart E and Subpart 27 of the Federal Communication Commissions rules.

The objective is to determine the compliance of the EUT with FCC rules for output power, modulation characteristic, occupied bandwidth, and spurious emission at antenna terminal, spurious radiated emission, frequency stability and band edge.

## Test Methodology

All tests and measurements indicated in this document were performed in accordance with the Code of Federal Regulations Title 47 Part 2-Subpart J as well as the following parts:

Part 22 Subpart H - Public Mobile Services  
 Part 24 Subpart E - Personal Communication Services  
 Part 27 – Miscellaneous wireless communications services

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

All emissions measurement was performed at 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
Occupied Channel Bandwidth		±5%
RF output power, conducted		±0.73dB
Unwanted Emission, conducted		±1.6dB
RF Frequency		±0.082*10 <sup>-7</sup>
Emissions, Radiated	30MHz - 1GHz	±4.28dB
	1GHz - 18GHz	±4.98dB
	18GHz - 26.5GHz	±5.06dB
Temperature		±1°C
Humidity		±6%
Supply voltages		±0.4%

*Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.*

## Test Facility

The test site used by Shenzhen Accurate Technology Co., Ltd. to collect test data is located on the 1/F., Building A, Changyuan New Material Port, Science & Industry Park, Nanshan District, Shenzhen, Guangdong, P.R. China.

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

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

## SYSTEM TEST CONFIGURATION

### Description of Test Configuration

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

Test was performed as below table:

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
DCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B4	4.2	1712.4	1732.6	1752.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE B5	1.4	824.7	836.5	848.3
	3	825.5	836.5	847.5
	5	826.5	836.5	846.5
	10	829	836.5	844
LTE B7	5	2502.5	2535	2567.5
	10	2505	2535	2565
	15	2507.5	2535	2562.5
	20	2510	2535	2560
LTE B17	5	706.5	710	713.5
	10	709	710	711

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
LTE B38	5	2572.5	2595	2617.5
	10	2575	2595	2615
	15	2577.5	2595	2612.5
	20	2580	2595	2610
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.

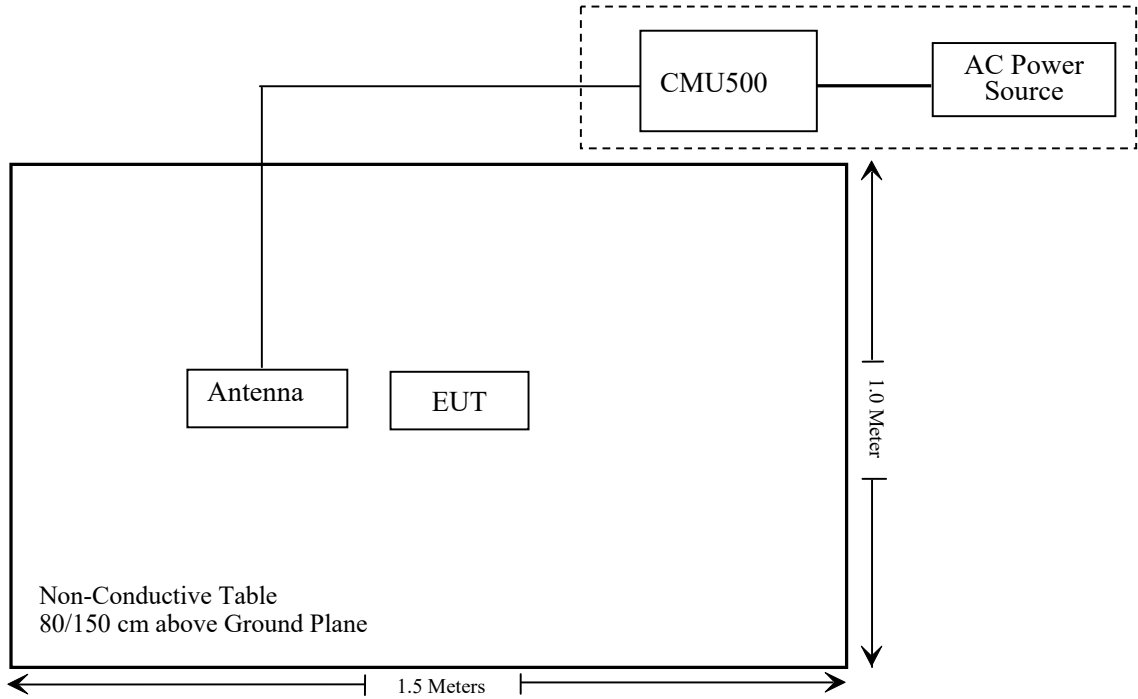
### Support Equipment List and Details

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

### Support Cable Description

Cable Description	Length (m)	From / Port	To
Un-Shielded Un-Detachable AC Cable	1.2	AC Power	CMU200/500

### Block Diagram of Test Setup



**SUMMARY OF TEST RESULTS**

<b>FCC Rules</b>	<b>Description of Test</b>	<b>Result</b>
§ 1.1307 , §2.1093	RF Exposure (SAR)	Compliant*
§2.1046; § 22.913 (a); § 24.232 (c); §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(c)(h) (m)	Band Edge	Compliant
§ 2.1055; § 22.355; § 24.235; §27.54;	Frequency stability	Compliant

Note: \* Please refer to SAR report released by ATC, report number: SZ1210825-36467E-20.



**TEST EQUIPMENT LIST**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>Radiated Emission Test</b>					
Rohde& Schwarz	Test Receiver	ESR	101817	2020/12/24	2021/12/23
Rohde&Schwarz	Spectrum Analyzer	FSV40	101495	2020/12/24	2021/12/23
SONOMA INSTRUMENT	Amplifier	310 N	186131	2020/12/25	2021/12/24
A.H. Systems, inc.	Preamplifier	PAM-0118P	531	2021/07/08	2022/07/07
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2020/11/28	2021/11/27
Anritsu Corp	50 Coaxial Switch	MP59B	6100237248	2020/12/25	2021/12/24
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
PASTERNAK	Horn Antenn	PE9852/2F-20	1120	2020/01/05	2023/01/04
OREGON SCIENTIFIC	Temperature & Humidity Meter	JB913R	GZ-WS004	2020/01/02	2023/01/01
Unknown	RF Coaxial Cable	N-5m	No.3	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-5m	No.4	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.5	2020/12/25	2021/12/24
Unknown	RF Coaxial Cable	N-1m	No.6	2020/12/25	2021/12/24
Wainwright	High Pass Filter	WHKX3.6/18G-10SS	5	2020/12/25	2021/12/24
CD	High Pass Filter	HPM-1.2/18G-60	110	2020/12/25	2021/12/24
Anritsu	Signal Generator	68369B	004114	2021/7/31	2022/7/30

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
<b>RF Conducted Test</b>					
Rohde & Schwarz	Spectrum Analyzer	FSV-40	101495	2020/12/24	2021/12/23
Rohde & Schwarz	Open Switch and Control Unit	OSP120 + OSP-B157	101244 + 100866	2020/12/24	2021/12/23
Rohde & Schwarz	Spectrum Analyzer	FSU26	200982	2021/07/06	2022/07/05
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2020/12/25	2021/12/24
Gongwen	Temperature & Humidity Chamber	HSD-500	109	2020/12/25	2021/12/24

\* **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)

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

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### **Applicable Standard**

FCC§1.1310 and §2.1093.

### **Test Result**

Compliance, please refer to the SAR report: SZ1210825-36467E-20.

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## **FCC §2.1047 - MODULATION CHARACTERISTIC**

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

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

### Applicable Standard

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

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

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

According to §27.50(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.

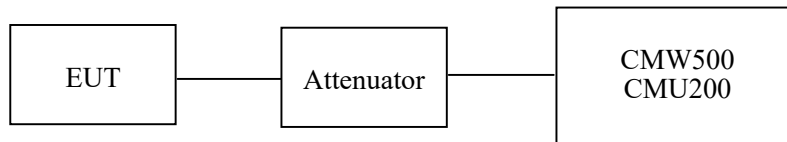
According to §27.50(d), the maximum EIRP must not exceed 1Watts (30dBm) for 1710-1780MHz.

According to §27.50(h), the maximum EIRP must not exceed 2Watts (33dBm) for 2500-2570MHz & 2496-2690MHz.

### Test Procedure

*Conducted method:*

The RF output of the transmitter was connected to the CMW500/CMU200 through sufficient attenuation.



### Test Data

#### Environmental Conditions

<b>Temperature:</b>	26~28 °C
<b>Relative Humidity:</b>	52~58 %
<b>ATM Pressure:</b>	100.9~101.2 kPa

*The testing was performed by Paul liu from 2021-09-10 to 2021-09-15.*

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

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP (dBm)	Limit (dBm)
GSM	128	824.2	33.37	28.32	38.45
	190	836.6	33.22	28.17	38.45
	251	848.8	33.01	27.96	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	30.18	29.19	28.45	27.29	25.13	24.14	23.40	22.24	38.45
	190	836.6	30.17	29.16	28.47	27.28	25.12	24.11	23.42	22.23	38.45
	251	848.8	30.13	29.11	28.42	27.21	25.08	24.06	23.37	22.16	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	28.37	27.41	26.63	25.24	23.32	22.36	21.58	20.19	38.45
	190	836.6	28.57	27.51	26.43	25.42	23.52	22.46	21.38	20.37	38.45
	251	848.8	28.77	27.78	25.88	24.75	23.72	22.73	20.83	19.70	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		23.91	23.87	23.71	18.86	18.82	18.66
	HSDPA	1	21.91	21.87	21.95	16.86	16.82	16.90
		2	21.95	21.84	21.92	16.90	16.79	16.87
		3	21.94	21.81	21.97	16.89	16.76	16.92
		4	21.93	21.85	21.91	16.88	16.80	16.86
	HSUPA	1	21.92	21.82	21.93	16.87	16.77	16.88
		2	21.91	21.85	21.96	16.86	16.80	16.91
		3	21.96	21.87	21.94	16.91	16.82	16.89
		4	21.97	21.86	21.93	16.92	16.81	16.88
		5	21.92	21.82	21.97	16.87	16.77	16.92
HSPA+	1	21.72	21.92	21.87	16.67	16.87	16.82	

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

For GSM850/WCDMA Band 5: Antenna Gain = -2.9dBi = -5.05dBd (0dBd=2.15dBi)

The limit: ERP ≤ 38.45dBm

## PCS Band (Part 24E)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	29.66	28.76	33
	661	1880.0	29.86	28.96	33
	810	1909.8	30.05	29.15	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	26.67	25.71	24.93	23.54	25.77	24.81	24.03	22.64	33
	661	1880.0	26.87	25.81	24.73	23.72	25.97	24.91	23.83	22.82	33
	810	1909.8	27.07	26.08	24.18	23.05	26.17	25.18	23.28	22.15	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	25.00	24.01	23.21	22.15	24.1	23.11	22.31	21.25	33
	661	1880.0	25.19	24.17	23.51	22.14	24.29	23.27	22.61	21.24	33
	810	1909.8	25.23	24.23	23.41	22.19	24.33	23.33	22.51	21.29	33

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.39	23.46	23.47	22.49	22.56	22.57
	HSDPA	1	22.86	22.81	22.84	21.96	21.91	21.94
		2	22.87	22.84	22.87	21.97	21.94	21.97
		3	22.85	22.85	22.82	21.95	21.95	21.92
		4	22.83	22.86	22.85	21.93	21.96	21.95
	HSUPA	1	22.85	22.84	22.86	21.95	21.94	21.96
		2	22.87	22.81	22.83	21.97	21.91	21.93
		3	22.85	22.81	22.82	21.95	21.91	21.92
		4	22.85	22.84	22.86	21.95	21.94	21.96
		5	22.89	22.82	22.83	21.99	21.92	21.93
	HSPA+	1	22.84	22.83	22.87	21.94	21.93	21.97

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)  
 For PCS1900/WCDMA Band 2: Antenna Gain = -0.9dBi  
 The limit: EIRP ≤ 33dBm

**AWS Band (Part 27)**

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 4)	RMC12.2k		23.65	23.47	23.51	21.25	21.07	21.11
	HSDPA	1	21.76	21.67	21.76	19.36	19.27	19.36
		2	21.74	21.55	21.72	19.34	19.15	19.32
		3	21.78	21.55	21.74	19.38	19.15	19.34
		4	21.79	21.65	21.75	19.39	19.25	19.35
	HSUPA	1	21.74	21.64	21.72	19.34	19.24	19.32
		2	21.73	21.67	21.77	19.33	19.27	19.37
		3	21.78	21.65	21.74	19.38	19.25	19.34
		4	21.72	21.65	21.76	19.32	19.25	19.36
		5	21.77	21.67	21.75	19.37	19.27	19.35
	HSPA+	1	21.75	21.67	21.71	19.35	19.27	19.31

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

For WCDMA Band 4: Antenna Gain = -2.4dBi

The limit: EIRP ≤ 30dBm



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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.15	13
	Middle	3.31	13
	High	3.41	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.15	13
	Middle	3.51	13
	High	3.23	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.14	13
	Middle	3.31	13
	High	3.24	13
HSDPA (16QAM)	Low	4.21	13
	Middle	3.99	13
	High	3.78	13
HSUPA (BPSK)	Low	3.48	13
	Middle	3.67	13
	High	3.65	13
HSPA+	Low	3.31	13
	Middle	3.14	13
	High	3.51	13

**PCS Band**

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.34	13
	Middle	3.24	13
	High	3.71	13

Mode	Channel	PAR (dB)	Limit (dB)
EGPRS	Low	3.21	13
	Middle	3.15	13
	High	3.41	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.21	13
	Middle	3.27	13
	High	2.91	13
HSDPA (16QAM)	Low	3.65	13
	Middle	4.02	13
	High	4.41	13
HSUPA (BPSK)	Low	3.64	13
	Middle	3.75	13
	High	3.86	13
HSPA+	Low	3.30	13
	Middle	3.21	13
	High	3.65	13

#### AWS Band

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.42	13
	Middle	3.35	13
	High	3.91	13
HSDPA (16QAM)	Low	3.72	13
	Middle	4.32	13
	High	4.05	13
HSUPA (BPSK)	Low	3.46	13
	Middle	3.57	13
	High	3.68	13
HSPA+	Low	3.56	13
	Middle	3.65	13
	High	3.63	13

**LTE Band 2:****Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	21.91	21.31	21.36	21.01	20.41	20.46
		RB1#3	21.55	21.45	21.56	20.65	20.55	20.66
		RB1#5	21.40	21.27	21.37	20.50	20.37	20.47
		RB3#0	21.48	21.40	21.46	20.58	20.50	20.56
		RB3#3	21.46	21.38	21.36	20.56	20.48	20.46
		RB6#0	20.37	20.37	20.44	19.47	19.47	19.54
	16QAM	RB1#0	20.31	20.30	20.46	19.41	19.40	19.56
		RB1#3	20.52	20.49	20.66	19.62	19.59	19.76
		RB1#5	20.39	20.31	20.48	19.49	19.41	19.58
		RB3#0	20.49	20.55	20.35	19.59	19.65	19.45
		RB3#3	20.48	20.54	20.36	19.58	19.64	19.46
		RB6#0	19.32	19.38	19.41	18.42	18.48	18.51
3.0	QPSK	RB1#0	21.61	21.61	21.74	20.71	20.71	20.84
		RB1#8	21.65	21.64	21.75	20.75	20.74	20.85
		RB1#14	21.64	21.66	21.75	20.74	20.76	20.85
		RB6#0	20.62	20.64	20.65	19.72	19.74	19.75
		RB6#9	20.61	20.65	20.75	19.71	19.75	19.85
		RB15#0	20.61	20.65	20.75	19.71	19.75	19.85
	16QAM	RB1#0	21.54	21.53	21.51	20.64	20.63	20.61
		RB1#8	21.63	21.63	21.68	20.73	20.73	20.78
		RB1#14	21.51	21.54	21.56	20.61	20.64	20.66
		RB6#0	20.69	20.67	20.74	19.79	19.77	19.84
		RB6#9	20.66	20.66	20.67	19.76	19.76	19.77
		RB15#0	20.60	20.61	20.61	19.7	19.71	19.71

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	21.05	20.93	21.22	20.15	20.03	20.32
		RB1#13	21.44	21.28	21.52	20.54	20.38	20.62
		RB1#24	21.01	20.88	21.23	20.11	19.98	20.33
		RB15#0	19.88	19.97	19.96	18.98	19.07	19.06
		RB15#10	20.00	19.99	19.81	19.10	19.09	18.91
		RB25#0	20.00	19.98	19.89	19.10	19.08	18.99
	16QAM	RB1#0	20.83	20.82	20.81	19.93	19.92	19.91
		RB1#13	20.79	20.84	20.81	19.89	19.94	19.91
		RB1#24	21.22	20.83	21.03	20.32	19.93	20.13
		RB15#0	21.19	20.75	21.02	20.29	19.85	20.12
		RB15#10	19.74	19.76	19.76	18.84	18.86	18.86
		RB25#0	19.78	19.79	19.73	18.88	18.89	18.83
10.0	QPSK	RB1#0	21.64	21.66	21.68	20.74	20.76	20.78
		RB1#25	21.72	21.74	21.71	20.82	20.84	20.81
		RB1#49	21.60	21.64	21.70	20.70	20.74	20.80
		RB25#0	20.79	20.82	20.86	19.89	19.92	19.96
		RB25#25	20.83	20.82	20.81	19.93	19.92	19.91
		RB50#0	20.79	20.84	20.81	19.89	19.94	19.91
	16QAM	RB1#0	21.22	20.83	21.03	20.32	19.93	20.13
		RB1#25	21.31	20.89	21.06	20.41	19.99	20.16
		RB1#49	21.19	20.75	21.02	20.29	19.85	20.12
		RB25#0	19.74	19.76	19.76	18.84	18.86	18.86
		RB25#25	19.78	19.79	19.73	18.88	18.89	18.83
		RB50#0	19.76	19.83	19.78	18.86	18.93	18.88

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	21.74	21.73	21.60	20.84	20.83	20.7
		RB1#38	22.13	22.14	22.05	21.23	21.24	21.15
		RB1#74	21.70	21.67	21.66	20.80	20.77	20.76
		RB36#0	20.89	20.98	20.96	19.99	20.08	20.06
		RB36#39	21.01	20.96	20.80	20.11	20.06	19.90
		RB75#0	20.97	20.98	20.94	20.07	20.08	20.04
	16QAM	RB1#0	21.05	20.93	21.22	20.15	20.03	20.32
		RB1#38	21.44	21.28	21.52	20.54	20.38	20.62
		RB1#74	21.01	20.88	21.23	20.11	19.98	20.33
		RB36#0	19.88	19.97	19.96	18.98	19.07	19.06
		RB36#39	20.00	19.99	19.81	19.10	19.09	18.91
		RB75#0	20.00	19.98	19.89	19.10	19.08	18.99
20.0	QPSK	RB1#0	21.73	21.59	21.63	20.83	20.69	20.73
		RB1#50	21.87	21.81	21.80	20.97	20.91	20.90
		RB1#99	21.72	21.60	21.60	20.82	20.70	20.70
		RB50#0	21.83	21.71	21.71	20.93	20.81	20.81
		RB50#50	21.87	21.65	21.80	20.97	20.75	20.90
		RB100#0	20.79	20.66	20.70	19.89	19.76	19.80
	16QAM	RB1#0	20.72	20.69	20.65	19.82	19.79	19.75
		RB1#50	20.91	20.89	20.83	20.01	19.99	19.93
		RB1#99	20.74	20.74	20.64	19.84	19.84	19.74
		RB50#0	20.96	20.61	20.76	20.06	19.71	19.86
		RB50#50	21.00	20.68	20.76	20.10	19.78	19.86
		RB100#0	19.82	19.67	19.61	18.92	18.77	18.71

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

For LTE Band2: Antenna Gain = -0.9dBi

The Limit: EIRP ≤ 33dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	5.32	4.81	4.62	13	Pass
QPSK (100RB Size)	5.58	5.45	5.54	13	Pass
16QAM (1RB Size)	6.44	5.48	5.77	13	Pass
16QAM (100RB Size)	6.47	6.35	6.25	13	Pass

## LTE Band 4

## Maximum Output Power

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	20.94	20.85	20.90	18.54	18.45	18.50
		RB1#3	20.91	20.87	20.86	18.51	18.47	18.46
		RB1#5	20.93	20.88	20.84	18.53	18.48	18.44
		RB3#0	20.58	20.51	20.49	18.18	18.11	18.09
		RB3#3	20.60	20.53	20.51	18.20	18.13	18.11
		RB6#0	20.64	20.58	20.53	18.24	18.18	18.13
	16QAM	RB1#0	20.52	20.00	19.91	18.12	17.60	17.51
		RB1#3	20.48	19.97	19.88	18.08	17.57	17.48
		RB1#5	20.47	19.99	19.83	18.07	17.59	17.43
		RB3#0	19.67	19.52	19.48	17.27	17.12	17.08
		RB3#3	19.67	19.54	19.46	17.27	17.14	17.06
		RB6#0	19.69	19.48	19.58	17.29	17.08	17.18
3.0	QPSK	RB1#0	20.98	20.91	20.92	18.58	18.51	18.52
		RB1#8	20.97	20.99	20.99	18.57	18.59	18.59
		RB1#14	20.93	20.86	20.89	18.53	18.46	18.49
		RB6#0	20.78	20.68	20.71	18.38	18.28	18.31
		RB6#9	20.79	20.65	20.66	18.39	18.25	18.26
		RB15#0	20.74	20.67	20.66	18.34	18.27	18.26
	16QAM	RB1#0	20.60	20.92	20.68	18.20	18.52	18.28
		RB1#8	20.68	20.97	20.75	18.28	18.57	18.35
		RB1#14	20.58	20.90	20.63	18.18	18.50	18.23
		RB6#0	19.81	19.69	19.75	17.41	17.29	17.35
		RB6#9	19.83	19.65	19.68	17.43	17.25	17.28
		RB15#0	19.79	19.68	19.68	17.39	17.28	17.28

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	20.76	20.66	20.65	18.36	18.26	18.25
		RB1#13	20.90	20.83	20.88	18.50	18.43	18.48
		RB1#24	20.70	20.67	20.66	18.30	18.27	18.26
		RB15#0	20.98	20.87	20.84	18.58	18.47	18.44
		RB15#10	20.84	20.88	20.81	18.44	18.48	18.41
		RB25#0	20.82	20.88	20.86	18.42	18.48	18.46
	16QAM	RB1#0	20.91	20.42	20.22	18.51	18.02	17.82
		RB1#13	20.94	20.44	20.36	18.54	18.04	17.96
		RB1#24	20.89	20.37	20.22	18.49	17.97	17.82
		RB15#0	20.03	19.92	19.95	17.63	17.52	17.55
		RB15#10	20.00	19.90	19.90	17.60	17.50	17.50
		RB25#0	20.04	19.90	19.93	17.64	17.50	17.53
10.0	QPSK	RB1#0	20.83	20.73	20.72	18.43	18.33	18.32
		RB1#25	20.95	20.85	20.88	18.55	18.45	18.48
		RB1#49	20.80	20.73	20.79	18.40	18.33	18.39
		RB25#0	20.75	20.64	20.67	18.35	18.24	18.27
		RB25#25	20.75	20.64	20.63	18.35	18.24	18.23
		RB50#0	20.74	20.63	20.61	18.34	18.23	18.21
	16QAM	RB1#0	20.68	20.12	20.34	18.28	17.72	17.94
		RB1#25	20.78	20.24	20.50	18.38	17.84	18.10
		RB1#49	20.63	20.13	20.40	18.23	17.73	18.00
		RB25#0	19.72	19.62	19.62	17.32	17.22	17.22
		RB25#25	19.74	19.59	19.59	17.34	17.19	17.19
		RB50#0	19.72	19.64	19.59	17.32	17.24	17.19



Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	20.81	20.34	20.14	18.41	17.94	17.74
		RB1#38	20.96	20.46	20.38	18.56	18.06	17.98
		RB1#74	20.81	20.29	20.14	18.41	17.89	17.74
		RB36#0	20.03	19.92	19.95	17.63	17.52	17.55
		RB36#39	20.00	19.90	19.90	17.60	17.50	17.50
		RB75#0	20.04	19.90	19.93	17.64	17.50	17.53
	16QAM	RB1#0	20.86	20.76	20.75	18.46	18.36	18.35
		RB1#38	20.98	20.88	20.91	18.58	18.48	18.51
		RB1#74	20.83	20.76	20.82	18.43	18.36	18.42
		RB36#0	20.75	20.64	20.67	18.35	18.24	18.27
		RB36#39	20.75	20.64	20.63	18.35	18.24	18.23
		RB75#0	20.74	20.63	20.61	18.34	18.23	18.21
20.0	QPSK	RB1#0	20.90	20.38	20.29	18.50	17.98	17.89
		RB1#50	20.86	20.35	20.26	18.46	17.95	17.86
		RB1#99	20.85	20.37	20.21	18.45	17.97	17.81
		RB50#0	19.67	19.52	19.48	17.27	17.12	17.08
		RB50#50	19.67	19.54	19.46	17.27	17.14	17.06
		RB100#0	19.69	19.48	19.58	17.29	17.08	17.18
	16QAM	RB1#0	20.84	20.78	20.79	18.44	18.38	18.39
		RB1#50	20.97	20.86	20.86	18.57	18.46	18.46
		RB1#99	20.85	20.73	20.76	18.45	18.33	18.36
		RB50#0	20.78	20.68	20.71	18.38	18.28	18.31
		RB50#50	20.79	20.65	20.66	18.39	18.25	18.26
		RB100#0	20.74	20.67	20.66	18.34	18.27	18.26

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

For LTE Band 4: Antenna Gain = -2.4dBi

The Limit: EIRP≤30dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	4.62	4.84	4.81	13	Pass
QPSK (100RB Size)	5.61	5.54	5.51	13	Pass
16QAM (1RB Size)	5.61	5.99	6.25	13	Pass
16QAM (100RB Size)	6.47	6.38	6.41	13	Pass

**LTE Band 5:****Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	20.35	20.69	20.35	15.30	15.64	15.30
		RB1#3	20.53	20.77	20.53	15.48	15.72	15.48
		RB1#5	20.44	21.00	20.44	15.39	15.95	15.39
		RB3#0	20.04	20.77	20.04	14.99	15.72	14.99
		RB3#3	20.11	20.89	20.11	15.06	15.84	15.06
		RB6#0	19.94	20.79	19.94	14.89	15.74	14.89
	16QAM	RB1#0	21.14	20.87	21.14	16.09	15.82	16.09
		RB1#3	21.02	21.00	21.02	15.97	15.95	15.97
		RB1#5	21.36	21.10	21.36	16.31	16.05	16.31
		RB3#0	21.37	21.17	21.37	16.32	16.12	16.32
		RB3#3	21.12	21.03	21.12	16.07	15.98	16.07
		RB6#0	19.98	20.06	19.98	14.93	15.01	14.93
3.0	QPSK	RB1#0	21.71	21.31	21.71	16.66	16.26	16.66
		RB1#8	21.73	21.30	21.73	16.68	16.25	16.68
		RB1#14	20.57	20.23	20.57	15.52	15.18	15.52
		RB6#0	22.40	22.12	22.40	17.35	17.07	17.35
		RB6#9	22.16	21.96	22.16	17.11	16.91	17.11
		RB15#0	22.15	21.74	22.15	17.10	16.69	17.10
	16QAM	RB1#0	21.39	21.28	21.39	16.34	16.23	16.34
		RB1#8	21.41	21.25	21.41	16.36	16.20	16.36
		RB1#14	21.46	21.22	21.46	16.41	16.17	16.41
		RB6#0	21.56	21.28	21.56	16.51	16.23	16.51
		RB6#9	21.74	21.29	21.74	16.69	16.24	16.69
		RB15#0	21.76	21.10	21.76	16.71	16.05	16.71

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			ERP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.28	22.23	22.24	17.23	17.18	17.19
		RB1#13	22.40	22.37	22.36	17.35	17.32	17.31
		RB1#24	22.14	22.13	22.10	17.09	17.08	17.05
		RB15#0	21.02	21.02	21.05	15.97	15.97	16.00
		RB15#10	21.22	21.03	21.01	16.17	15.98	15.96
		RB25#0	21.46	21.48	21.36	16.41	16.43	16.31
	16QAM	RB1#0	23.07	23.01	23.03	18.02	17.96	17.98
		RB1#13	23.09	23.11	23.11	18.04	18.06	18.06
		RB1#24	22.93	22.95	22.94	17.88	17.90	17.89
		RB15#0	22.08	22.05	22.08	17.03	17.00	17.03
		RB15#10	21.97	21.95	21.94	16.92	16.90	16.89
		RB25#0	21.99	22.02	22.00	16.94	16.97	16.95
10.0	QPSK	RB1#0	21.77	21.89	21.88	16.72	16.84	16.83
		RB1#25	21.83	21.99	21.91	16.78	16.94	16.86
		RB1#49	21.60	21.82	21.76	16.55	16.77	16.71
		RB25#0	20.83	21.06	20.89	15.78	16.01	15.84
		RB25#25	21.14	20.87	20.88	16.09	15.82	15.83
		RB50#0	21.02	21.00	20.86	15.97	15.95	15.81
	16QAM	RB1#0	21.36	21.10	20.89	16.31	16.05	15.84
		RB1#25	21.37	21.17	20.84	16.32	16.12	15.79
		RB1#49	21.12	21.03	20.74	16.07	15.98	15.69
		RB25#0	19.98	20.06	19.98	14.93	15.01	14.93
		RB25#25	20.17	20.08	19.91	15.12	15.03	14.86
		RB50#0	20.20	20.41	19.90	15.15	15.36	14.85

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)  
For LTE Band 5: Antenna Gain = -2.9dBi = -5.05dBd (0dBd=2.15dBi)  
Limit: ERP ≤ 38.45dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	4.94	3.97	4.33	13	Pass
QPSK (50RB Size)	5.48	5.42	5.54	13	Pass
16QAM (1RB Size)	5.90	5.06	5.19	13	Pass
16QAM (50RB Size)	6.28	6.25	6.47	13	Pass

**LTE Band 7:****Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	22.40	22.12	21.49	22.30	22.02	21.39
		RB1#13	22.16	21.96	21.00	22.06	21.86	20.90
		RB1#24	22.15	21.74	20.97	22.05	21.64	20.87
		RB15#0	21.39	21.28	20.31	21.29	21.18	20.21
		RB15#10	21.41	21.25	20.33	21.31	21.15	20.23
		RB25#0	21.46	21.22	20.41	21.36	21.12	20.31
	16QAM	RB1#0	21.56	21.28	20.11	21.46	21.18	20.01
		RB1#13	21.74	21.29	20.04	21.64	21.19	19.94
		RB1#24	21.76	21.10	20.01	21.66	21.00	19.91
		RB15#0	20.55	20.28	19.42	20.45	20.18	19.32
		RB15#10	20.49	20.32	19.44	20.39	20.22	19.34
		RB25#0	20.49	20.24	19.60	20.39	20.14	19.50
10	QPSK	RB1#0	22.51	22.14	21.78	22.41	22.04	21.68
		RB1#25	22.72	22.29	21.64	22.62	22.19	21.54
		RB1#49	22.55	22.06	21.29	22.45	21.96	21.19
		RB25#0	22.64	22.18	21.40	22.54	22.08	21.30
		RB25#25	22.58	22.15	21.40	22.48	22.05	21.30
		RB50#0	21.64	21.21	20.87	21.54	21.11	20.77
	16QAM	RB1#0	21.59	21.09	20.41	21.49	20.99	20.31
		RB1#25	21.77	21.28	20.79	21.67	21.18	20.69
		RB1#49	21.61	21.09	20.46	21.51	20.99	20.36
		RB25#0	21.71	21.31	20.41	21.61	21.21	20.31
		RB25#25	21.73	21.30	20.37	21.63	21.20	20.27
		RB50#0	20.57	20.23	19.95	20.47	20.13	19.85

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	22.21	22.21	22.22	22.11	22.11	22.12
		RB1#38	22.34	22.32	22.32	22.24	22.22	22.22
		RB1#74	22.12	22.15	22.14	22.02	22.05	22.04
		RB36#0	21.01	21.05	20.99	20.91	20.95	20.89
		RB36#39	21.04	20.97	20.94	20.94	20.87	20.84
		RB75#0	21.10	21.24	21.10	21.00	21.14	21.00
	16QAM	RB1#0	23.05	23.03	23.01	22.95	22.93	22.91
		RB1#38	23.23	23.10	23.08	23.13	23.00	22.98
		RB1#74	22.94	22.91	22.95	22.84	22.81	22.85
		RB36#0	22.03	22.01	22.04	21.93	21.91	21.94
		RB36#39	22.00	22.00	22.00	21.90	21.90	21.90
		RB75#0	22.01	22.01	22.02	21.91	21.91	21.92
20.0	QPSK	RB1#0	22.45	22.80	22.49	22.35	22.70	22.39
		RB1#25	22.50	22.84	22.34	22.40	22.74	22.24
		RB1#49	22.35	22.70	21.96	22.25	22.60	21.86
		RB25#0	21.63	21.50	21.63	21.53	21.40	21.53
		RB25#25	21.70	21.52	21.47	21.60	21.42	21.37
		RB50#0	21.66	21.48	21.56	21.56	21.38	21.46
	16QAM	RB1#0	23.52	23.05	23.30	23.42	22.95	23.20
		RB1#50	23.69	23.20	23.34	23.59	23.10	23.24
		RB1#99	22.94	22.93	22.96	22.84	22.83	22.86
		RB50#0	22.24	22.08	22.12	22.14	21.98	22.02
		RB50#50	22.25	22.19	21.92	22.15	22.09	21.82
		RB100#0	22.56	22.23	22.32	22.46	22.13	22.22

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

For LTE Band7: Antenna Gain = -0.1dBi

Limit: EIRP ≤ 33dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	4.17	4.36	4.39	13	Pass
QPSK (100RB Size)	5.48	5.51	5.42	13	Pass
16QAM (1RB Size)	4.90	5.35	5.54	13	Pass
16QAM (100RB Size)	6.38	6.31	6.35	13	Pass



**LTE Band 17:****Maximum Output Power**

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	23.52	23.50	23.43	18.37	18.35	18.28
		RB1#13	23.64	23.53	23.49	18.49	18.38	18.34
		RB1#24	23.45	23.40	22.90	18.30	18.25	17.75
		RB15#0	22.59	22.52	22.41	17.44	17.37	17.26
		RB15#10	22.66	22.52	22.48	17.51	17.37	17.33
		RB25#0	22.59	22.48	22.56	17.44	17.33	17.41
	16QAM	RB1#0	22.45	22.80	22.49	17.30	17.65	17.34
		RB1#13	22.50	22.84	22.34	17.35	17.69	17.19
		RB1#24	22.35	22.70	21.96	17.20	17.55	16.81
		RB15#0	21.63	21.50	21.63	16.48	16.35	16.48
		RB15#10	21.70	21.52	21.47	16.55	16.37	16.32
		RB25#0	21.66	21.48	21.56	16.51	16.33	16.41
10.0	QPSK	RB1#0	23.52	23.05	23.30	18.37	17.90	18.15
		RB1#25	23.69	23.20	23.34	18.54	18.05	18.19
		RB1#49	22.94	22.93	22.96	17.79	17.78	17.81
		RB25#0	22.24	22.08	22.12	17.09	16.93	16.97
		RB25#25	22.25	22.19	21.92	17.10	17.04	16.77
		RB50#0	22.56	22.23	22.32	17.41	17.08	17.17
	16QAM	RB1#0	22.63	22.19	22.03	17.48	17.04	16.88
		RB1#25	23.12	22.57	22.32	17.97	17.42	17.17
		RB1#49	22.49	22.12	22.01	17.34	16.97	16.86
		RB25#0	21.57	21.41	21.37	16.42	16.26	16.22
		RB25#25	21.51	21.34	21.42	16.36	16.19	16.27
		RB50#0	21.55	21.52	21.48	16.40	16.37	16.33

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd)  
For LTE Band17: Antenna Gain = -3.0dBi = -5.15dBd (0dBd=2.15dBi)  
Limit: ERP ≤ 34.77dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	4.26	4.74	4.23	13	Pass
QPSK (50RB Size)	5.25	5.13	5.14	13	Pass
16QAM (1RB Size)	4.94	5.83	5.13	13	Pass
16QAM (50RB Size)	6.21	6.19	6.05	13	Pass

**LTE Band 38:****Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.40	23.07	23.03	23.30	22.97	22.93
		RB1#13	23.12	23.15	23.10	23.02	23.05	23.00
		RB1#24	22.93	22.90	22.91	22.83	22.80	22.81
		RB15#0	22.02	21.99	22.00	21.92	21.89	21.90
		RB15#10	21.95	21.95	21.95	21.85	21.85	21.85
		RB25#0	22.10	22.11	22.04	22.00	22.01	21.94
	16QAM	RB1#0	22.28	22.23	22.24	22.18	22.13	22.14
		RB1#13	22.40	22.37	22.36	22.30	22.27	22.26
		RB1#24	22.14	22.13	22.10	22.04	22.03	22.00
		RB15#0	21.02	21.02	21.05	20.92	20.92	20.95
		RB15#10	21.22	21.03	21.01	21.12	20.93	20.91
		RB25#0	21.46	21.48	21.36	21.36	21.38	21.26
10	QPSK	RB1#0	23.07	23.01	23.03	22.97	22.91	22.93
		RB1#25	23.09	23.11	23.11	22.99	23.01	23.01
		RB1#49	22.93	22.95	22.94	22.83	22.85	22.84
		RB25#0	22.08	22.05	22.08	21.98	21.95	21.98
		RB25#25	21.97	21.95	21.94	21.87	21.85	21.84
		RB50#0	21.99	22.02	22.00	21.89	21.92	21.90
	16QAM	RB1#0	22.25	22.22	22.24	22.15	22.12	22.14
		RB1#25	22.29	22.27	22.35	22.19	22.17	22.25
		RB1#49	22.12	22.15	22.14	22.02	22.05	22.04
		RB25#0	21.04	21.02	21.02	20.94	20.92	20.92
		RB25#25	21.00	20.91	20.93	20.90	20.81	20.83
		RB50#0	21.20	21.19	21.04	21.10	21.09	20.94

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
15.0	QPSK	RB1#0	23.02	23.03	23.04	22.92	22.93	22.94
		RB1#38	23.18	23.12	23.10	23.08	23.02	23.00
		RB1#74	22.95	22.95	22.93	22.85	22.85	22.83
		RB36#0	22.10	22.09	22.13	22.00	21.99	22.03
		RB36#39	21.94	21.97	21.95	21.84	21.87	21.85
		RB75#0	22.10	22.08	22.08	22.00	21.98	21.98
	16QAM	RB1#0	22.21	22.21	22.22	22.11	22.11	22.12
		RB1#38	22.34	22.32	22.32	22.24	22.22	22.22
		RB1#74	22.12	22.15	22.14	22.02	22.05	22.04
		RB36#0	21.01	21.05	20.99	20.91	20.95	20.89
		RB36#39	21.04	20.97	20.94	20.94	20.87	20.84
		RB75#0	21.10	21.24	21.10	21.00	21.14	21.00
20.0	QPSK	RB1#0	23.05	23.03	23.01	22.95	22.93	22.91
		RB1#25	23.23	23.10	23.08	23.13	23.00	22.98
		RB1#49	22.94	22.91	22.95	22.84	22.81	22.85
		RB25#0	22.03	22.01	22.04	21.93	21.91	21.94
		RB25#25	22.00	22.00	22.00	21.90	21.90	21.90
		RB50#0	22.01	22.01	22.02	21.91	21.91	21.92
	16QAM	RB1#0	22.23	22.26	22.24	22.13	22.16	22.14
		RB1#50	22.37	22.22	22.30	22.27	22.12	22.20
		RB1#99	22.14	22.17	22.19	22.04	22.07	22.09
		RB50#0	21.00	21.01	20.97	20.90	20.91	20.87
		RB50#50	20.99	20.98	20.99	20.89	20.88	20.89
		RB100#0	21.03	21.01	21.00	20.93	20.91	20.90

Note: EIRP(dBm) = Conducted Power(dBm) + Antenna Gain(dBi)  
 For LTE Band38: Antenna Gain = -0.1dBi  
 Limit: EIRP ≤ 33dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	4.26	4.52	4.23	13	Pass
QPSK (100RB Size)	5.22	5.26	5.10	13	Pass
16QAM (1RB Size)	4.94	5.54	5.13	13	Pass
16QAM (100RB Size)	6.22	6.22	6.03	13	Pass

**LTE Band 41:****Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
5.0	QPSK	RB1#0	23.01	23.02	23.03	22.91	22.92	22.93
		RB1#13	23.13	23.08	23.08	23.03	22.98	22.98
		RB1#24	22.93	22.93	22.94	22.83	22.83	22.84
		RB15#0	22.02	22.02	22.00	21.92	21.92	21.90
		RB15#10	21.95	21.98	21.99	21.85	21.88	21.89
		RB25#0	22.06	22.10	22.08	21.96	22.00	21.98
	16QAM	RB1#0	22.26	22.22	22.24	22.16	22.12	22.14
		RB1#13	22.27	22.30	22.32	22.17	22.20	22.22
		RB1#24	22.16	22.18	22.17	22.06	22.08	22.07
		RB15#0	21.04	21.00	21.05	20.94	20.90	20.95
		RB15#10	20.97	20.99	21.00	20.87	20.89	20.90
		RB25#0	21.10	21.04	21.06	21.00	20.94	20.96
10	QPSK	RB1#0	23.03	23.05	23.02	22.93	22.95	22.92
		RB1#25	23.13	23.09	23.11	23.03	22.99	23.01
		RB1#49	22.94	22.91	22.94	22.84	22.81	22.84
		RB25#0	22.08	22.08	22.06	21.98	21.98	21.96
		RB25#25	21.93	21.96	21.95	21.83	21.86	21.85
		RB50#0	22.04	22.00	22.01	21.94	21.90	21.91
	16QAM	RB1#0	22.24	22.25	22.25	22.14	22.15	22.15
		RB1#25	22.34	22.33	22.36	22.24	22.23	22.26
		RB1#49	22.15	22.18	22.15	22.05	22.08	22.05
		RB25#0	21.06	21.07	21.10	20.96	20.97	21.00
		RB25#25	20.94	20.95	20.93	20.84	20.85	20.83
		RB50#0	20.99	21.01	21.02	20.89	20.91	20.92

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	23.03	23.02	23.01	22.93	22.92	22.91
		RB1#38	23.18	23.12	23.05	23.08	23.02	22.95
		RB1#74	22.93	22.92	22.93	22.83	22.82	22.83
		RB36#0	22.07	22.08	22.09	21.97	21.98	21.99
		RB36#39	21.98	21.97	21.97	21.88	21.87	21.87
		RB75#0	22.09	22.10	22.09	21.99	22.00	21.99
	16QAM	RB1#0	22.25	22.25	22.25	22.15	22.15	22.15
		RB1#38	22.33	22.33	22.45	22.23	22.23	22.35
		RB1#74	22.16	22.12	22.15	22.06	22.02	22.05
		RB36#0	21.05	21.06	21.05	20.95	20.96	20.95
		RB36#39	20.92	20.96	20.94	20.82	20.86	20.84
		RB75#0	21.07	21.02	21.05	20.97	20.92	20.95
20.0	QPSK	RB1#0	23.04	23.06	23.05	22.94	22.96	22.95
		RB1#25	23.14	23.15	23.10	23.04	23.05	23.00
		RB1#49	22.94	22.94	22.97	22.84	22.84	22.87
		RB25#0	22.00	21.99	22.03	21.90	21.89	21.93
		RB25#25	22.02	22.02	22.00	21.92	21.92	21.90
		RB50#0	22.02	22.02	22.03	21.92	21.92	21.93
	16QAM	RB1#0	22.23	22.24	22.24	22.13	22.14	22.14
		RB1#50	22.37	22.38	22.32	22.27	22.28	22.22
		RB1#99	22.16	22.18	22.16	22.06	22.08	22.06
		RB50#0	21.01	21.01	20.98	20.91	20.91	20.88
		RB50#50	21.01	20.98	21.01	20.91	20.88	20.91
		RB100#0	21.00	20.97	21.02	20.90	20.87	20.92

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

For LTE Band41: Antenna Gain = -0.1dBi

Limit: EIRP ≤ 33dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	4.26	4.52	4.23	13	Pass
QPSK (100RB Size)	5.22	5.26	5.10	13	Pass
16QAM (1RB Size)	4.94	5.54	5.13	13	Pass
16QAM (100RB Size)	6.22	6.22	6.03	13	Pass



**LTE Band 66:****Maximum Output Power**

Bandwidth (MHz)	Modulation	RB size/ RB Offset	Conducted Average Output Power (dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
1.4	QPSK	RB1#0	19.99	19.61	19.31	17.59	17.21	16.91
		RB1#3	20.10	19.80	19.48	17.70	17.40	17.08
		RB1#5	19.94	19.60	19.30	17.54	17.20	16.90
		RB3#0	20.03	19.71	19.39	17.63	17.31	16.99
		RB3#3	20.00	19.75	19.40	17.60	17.35	17.00
		RB6#0	19.00	18.72	18.40	16.60	16.32	16.00
	16QAM	RB1#0	19.14	18.64	18.32	16.74	16.24	15.92
		RB1#3	19.32	18.85	18.36	16.92	16.45	15.96
		RB1#5	19.09	18.65	18.31	16.69	16.25	15.91
		RB3#0	19.04	18.78	18.52	16.64	16.38	16.12
		RB3#3	19.03	18.75	18.52	16.63	16.35	16.12
		RB6#0	18.04	17.63	17.38	15.64	15.23	14.98
3.0	QPSK	RB1#0	20.04	19.72	19.42	17.64	17.32	17.02
		RB1#8	19.99	19.72	19.42	17.59	17.32	17.02
		RB1#14	19.99	19.70	19.37	17.59	17.30	16.97
		RB6#0	19.02	18.74	18.38	16.62	16.34	15.98
		RB6#9	18.96	18.67	18.37	16.56	16.27	15.97
		RB15#0	19.03	18.75	18.41	16.63	16.35	16.01
	16QAM	RB1#0	19.66	18.87	18.46	17.26	16.47	16.06
		RB1#8	19.59	18.88	18.41	17.19	16.48	16.01
		RB1#14	19.59	18.85	18.36	17.19	16.45	15.96
		RB6#0	18.09	17.75	17.37	15.69	15.35	14.97
		RB6#9	18.06	17.72	17.31	15.66	15.32	14.91
		RB15#0	18.13	17.73	17.47	15.73	15.33	15.07

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	20.49	19.63	19.31	18.09	17.23	16.91
		RB1#13	20.57	19.78	19.44	18.17	17.38	17.04
		RB1#24	20.38	19.61	19.26	17.98	17.21	16.86
		RB15#0	19.59	18.82	18.54	17.19	16.42	16.14
		RB15#10	19.51	18.69	18.44	17.11	16.29	16.04
		RB25#0	19.51	18.71	18.44	17.11	16.31	16.04
	16QAM	RB1#0	18.95	18.98	18.42	16.55	16.58	16.02
		RB1#13	19.00	19.11	18.50	16.60	16.71	16.10
		RB1#24	18.81	18.94	18.37	16.41	16.54	15.97
		RB15#0	18.17	17.80	17.53	15.77	15.40	15.13
		RB15#10	18.06	17.85	17.46	15.66	15.45	15.06
		RB25#0	18.45	17.99	17.46	16.05	15.59	15.06
10.0	QPSK	RB1#0	20.06	19.74	19.53	17.66	17.34	17.13
		RB1#25	20.13	19.89	19.60	17.73	17.49	17.20
		RB1#49	19.92	19.69	19.37	17.52	17.29	16.97
		RB25#0	19.19	18.91	18.72	16.79	16.51	16.32
		RB25#25	19.03	18.70	18.40	16.63	16.30	16.00
		RB50#0	19.12	18.81	18.57	16.72	16.41	16.17
	16QAM	RB1#0	19.66	18.94	18.54	17.26	16.54	16.14
		RB1#25	19.68	19.07	18.59	17.28	16.67	16.19
		RB1#49	19.53	18.86	18.40	17.13	16.46	16.00
		RB25#0	18.17	17.93	17.79	15.77	15.53	15.39
		RB25#25	18.10	17.68	17.48	15.70	15.28	15.08
		RB50#0	18.10	17.82	17.59	15.70	15.42	15.19

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	19.97	19.76	19.49	17.57	17.36	17.09
		RB1#38	19.94	19.75	19.46	17.54	17.35	17.06
		RB1#74	19.79	19.58	19.31	17.39	17.18	16.91
		RB36#0	19.13	18.96	18.83	16.73	16.56	16.43
		RB36#39	19.00	18.66	18.45	16.60	16.26	16.05
		RB75#0	19.04	18.85	18.61	16.64	16.45	16.21
	16QAM	RB1#0	19.55	18.87	18.81	17.15	16.47	16.41
		RB1#38	19.60	18.91	18.84	17.20	16.51	16.44
		RB1#74	19.40	18.73	18.71	17.00	16.33	16.31
		RB36#0	18.07	17.90	17.70	15.67	15.50	15.30
		RB36#39	17.96	17.66	17.35	15.56	15.26	14.95
		RB75#0	18.01	17.89	17.57	15.61	15.49	15.17
20.0	QPSK	RB1#0	19.83	19.63	19.35	17.43	17.23	16.95
		RB1#50	20.13	19.93	19.68	17.73	17.53	17.28
		RB1#99	19.61	19.43	19.13	17.21	17.03	16.73
		RB50#0	19.06	18.95	18.76	16.66	16.55	16.36
		RB50#50	19.02	18.65	18.19	16.62	16.25	15.79
		RB100#0	19.09	18.85	18.56	16.69	16.45	16.16
	16QAM	RB1#0	19.17	18.80	18.95	16.77	16.40	16.55
		RB1#50	19.37	19.12	19.16	16.97	16.72	16.76
		RB1#99	18.91	18.68	18.69	16.51	16.28	16.29
		RB50#0	18.06	17.97	17.72	15.66	15.57	15.32
		RB50#50	17.99	17.63	17.17	15.59	15.23	14.77
		RB100#0	18.08	17.85	17.52	15.68	15.45	15.12

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

For LTE Band 66: Antenna Gain = -2.4dBi

Limit: EIRP ≤ 30dBm

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

<b>Modulation</b>	<b>Low channel (dB)</b>	<b>Middle channel (dB)</b>	<b>High channel (dB)</b>	<b>PAR Limit (dB)</b>	<b>Result</b>
QPSK (1RB Size)	4.26	4.52	4.23	13	Pass
QPSK (100RB Size)	5.22	5.26	5.10	13	Pass
16QAM (1RB Size)	4.94	5.54	5.13	13	Pass
16QAM (100RB Size)	6.22	6.22	6.03	13	Pass

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

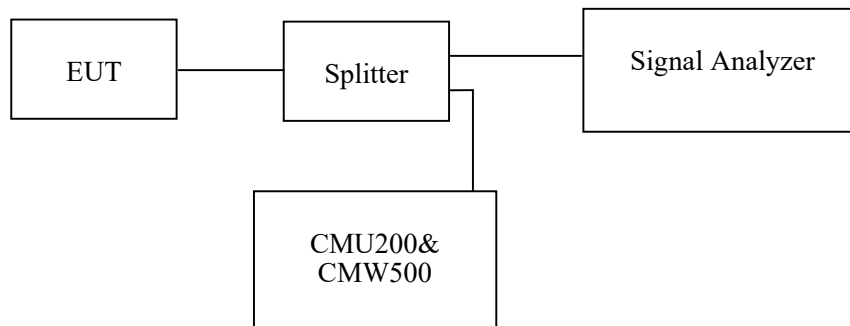
### Applicable Standard

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

### Test Procedure

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

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



### Test Data

#### Environmental Conditions

<b>Temperature:</b>	28 °C
<b>Relative Humidity:</b>	56 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Paul liu from 2021-09-10 to 2021-11-02.*

*EUT operation mode: Transmitting*

**Test Result: Pass**

*Please refer to the following tables and plots.*

**Cellular Band (Part 22H)**

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	245.19	317.31
	190	836.6	245.19	323.72
	251	848.8	246.80	314.10
EGPRS(8PSK)	128	824.2	248.40	309.29
	190	836.6	248.40	317.31
	251	848.8	248.40	323.72

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.19	4.82
	836.6	4.17	4.71
	846.6	4.19	4.76
HSDPA	826.4	4.20	4.78
	836.6	4.18	4.70
	846.6	4.18	4.73
HSUPA	826.4	4.21	5.14
	836.6	4.18	4.70
	846.6	4.18	4.73

**PCS Band (Part 24E)**

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	245.19	318.91
	661	1880.0	243.59	317.31
	810	1909.8	245.19	320.51
EGPRS(8PSK)	512	1850.2	250.00	323.72
	661	1880.0	251.60	320.51
	810	1909.8	250.00	318.91

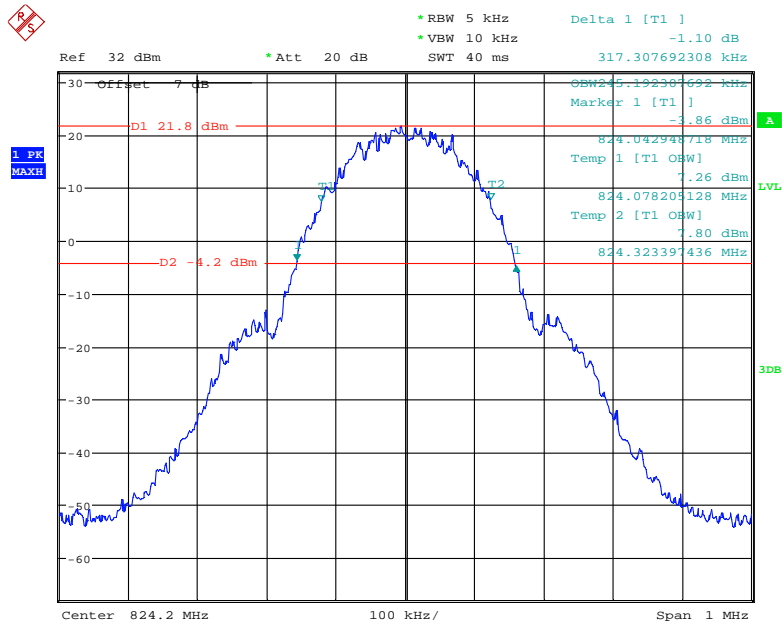
	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.20	4.73
	1880.0	4.18	4.74
	1907.6	4.18	4.76
HSDPA	1852.4	4.20	5.10
	1880.0	4.20	4.92
	1907.6	4.20	4.92
HSUPA	1852.4	4.20	5.11
	1880.0	4.20	4.73
	1907.6	4.20	4.87

#### AWS Band (Part 27)

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1712.4	4.17	4.73
	1732.6	4.18	4.74
	1752.6	4.18	4.73
HSDPA	1712.4	4.18	4.72
	1732.6	4.18	4.73
	1752.6	4.21	5.08
HSUPA	1712.4	4.17	4.73
	1732.6	4.18	4.73
	1752.6	4.21	5.35

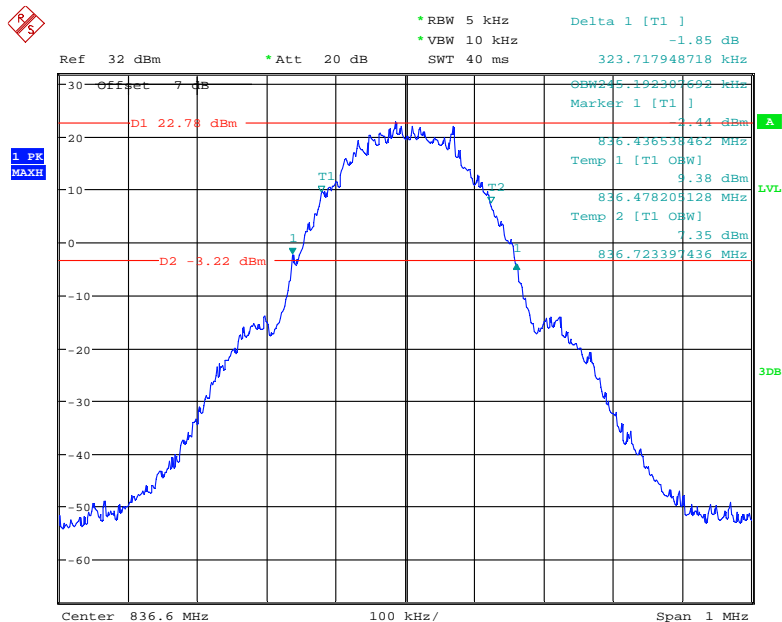
**Cellular Band (Part 22H)**

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



Date: 10.SEP.2021 10:58:17

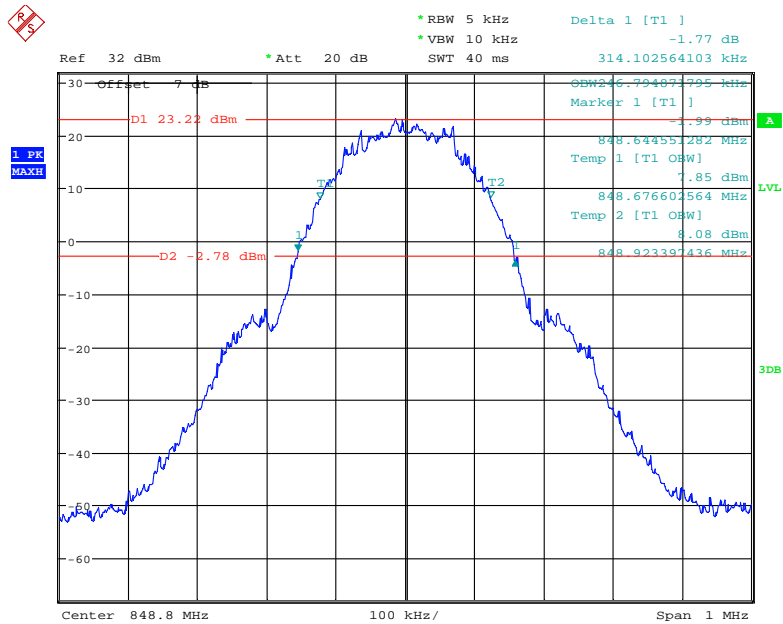
**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel**



Date: 10.SEP.2021 10:55:20

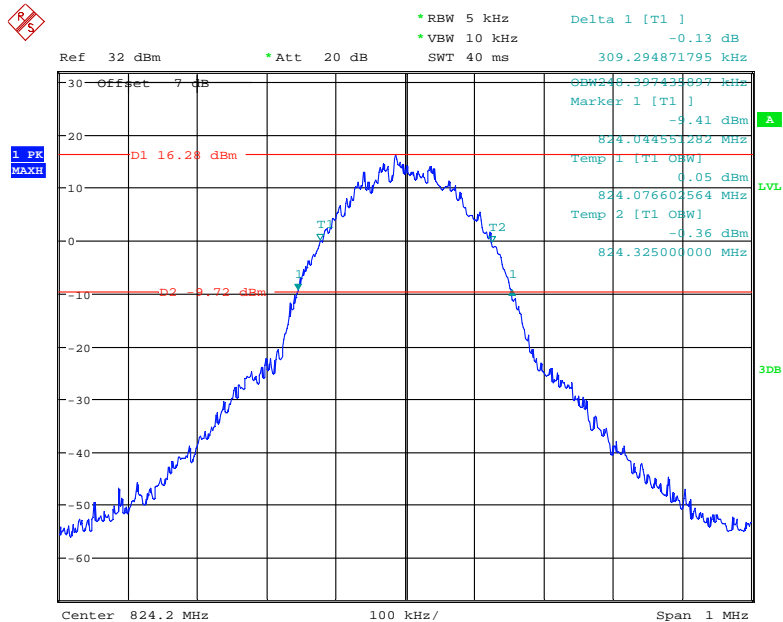


**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel**



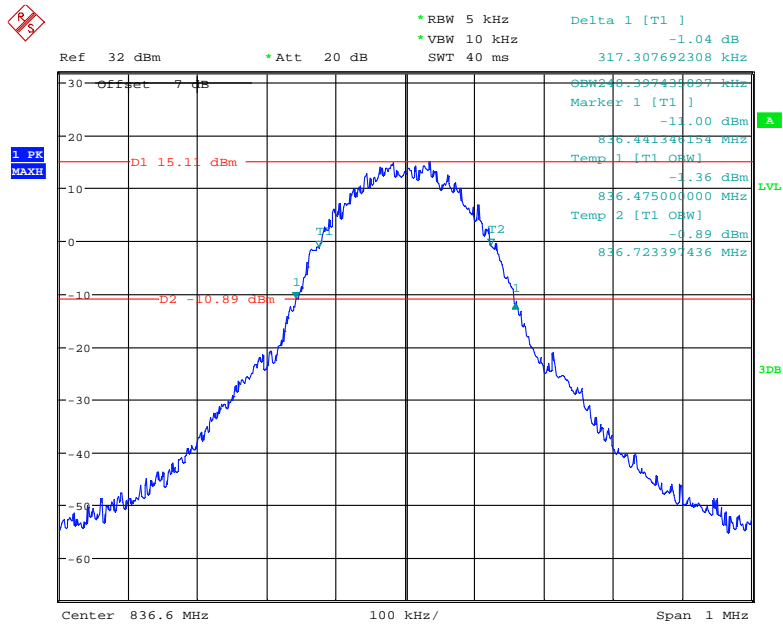
Date: 10.SEP.2021 10:14:14

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



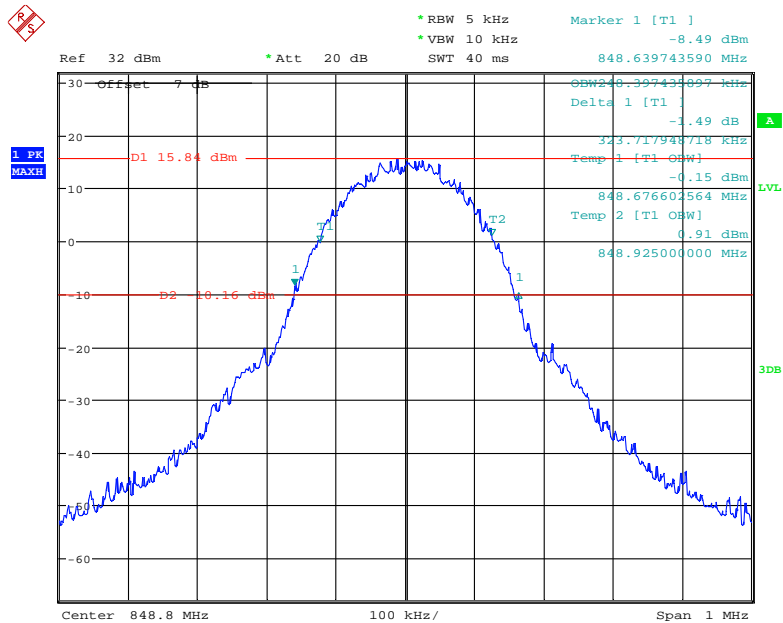
Date: 10.SEP.2021 11:03:08

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



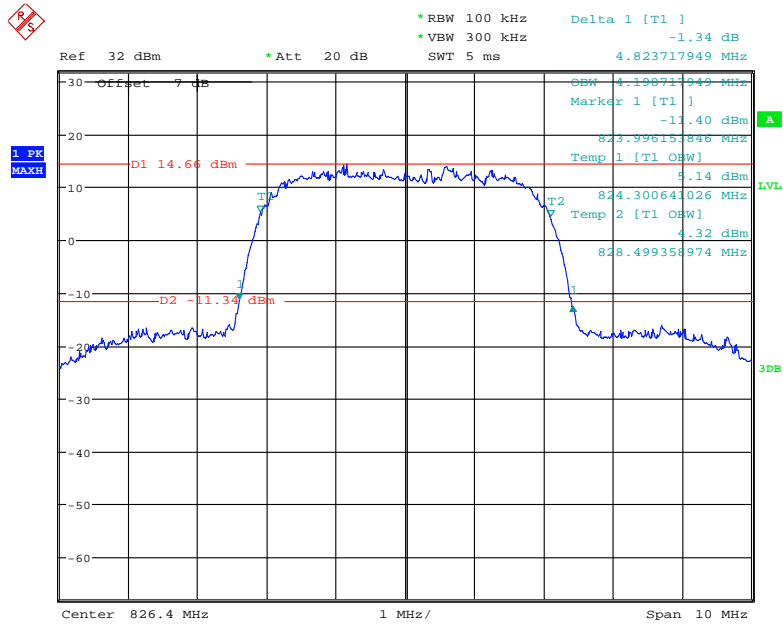
Date: 10.SEP.2021 11:05:44

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



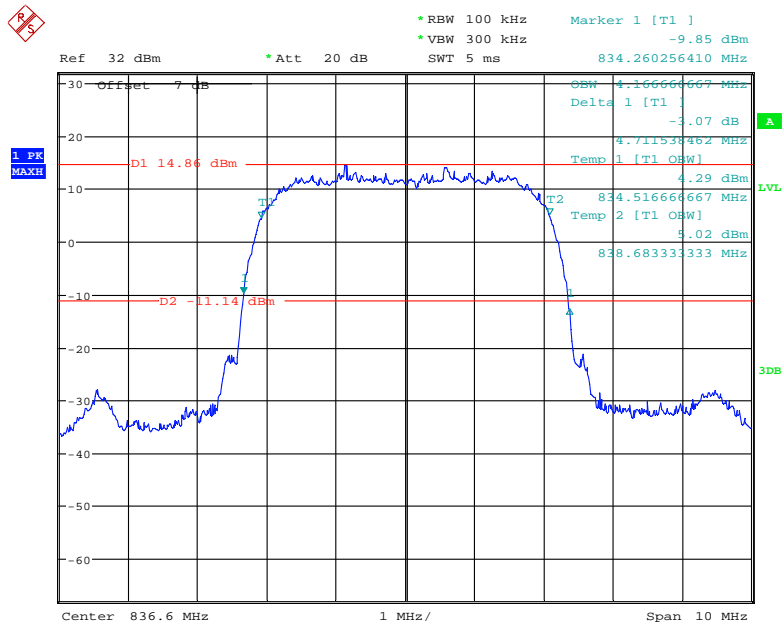
Date: 10.SEP.2021 11:08:35

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



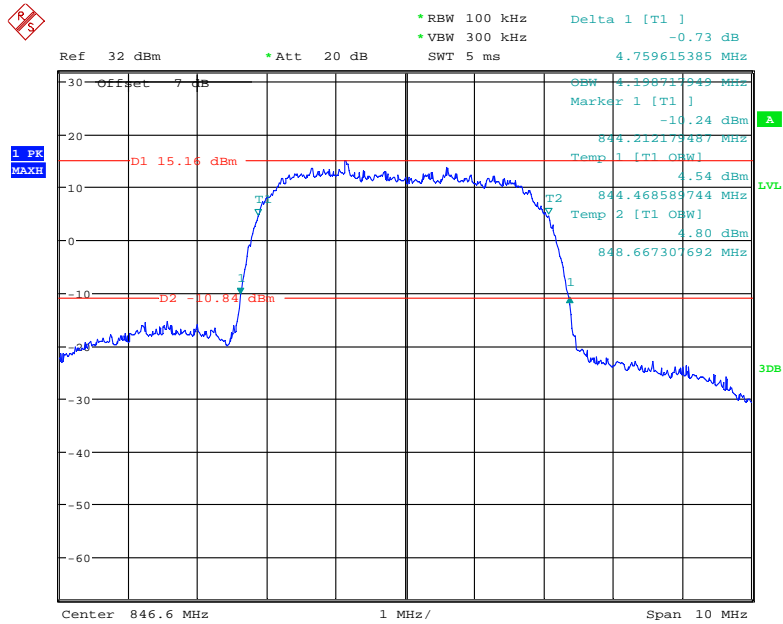
Date: 10.SEP.2021 14:22:18

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



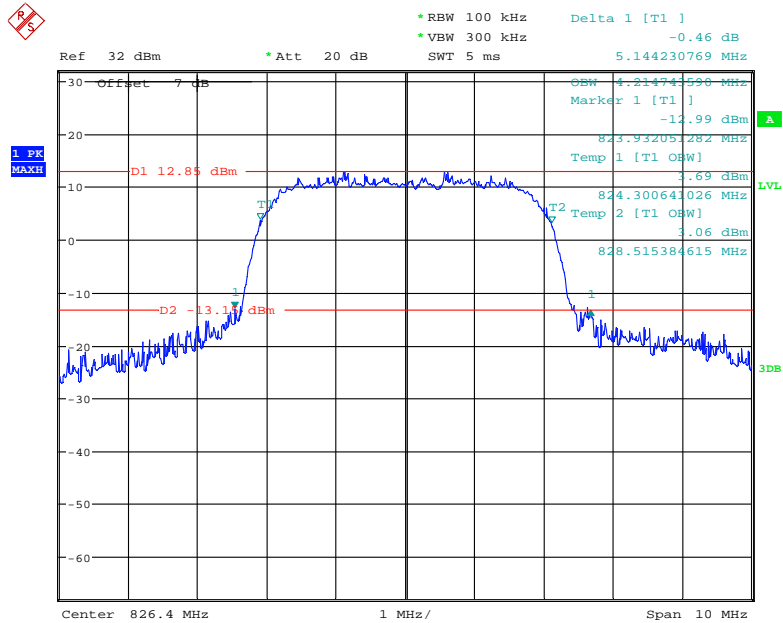
Date: 10.SEP.2021 14:20:07

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



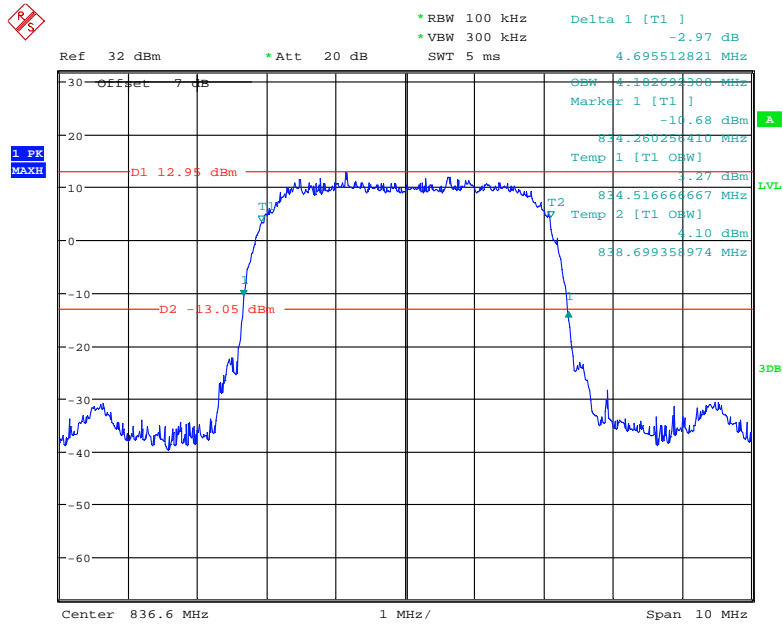
Date: 10.SEP.2021 14:16:47

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



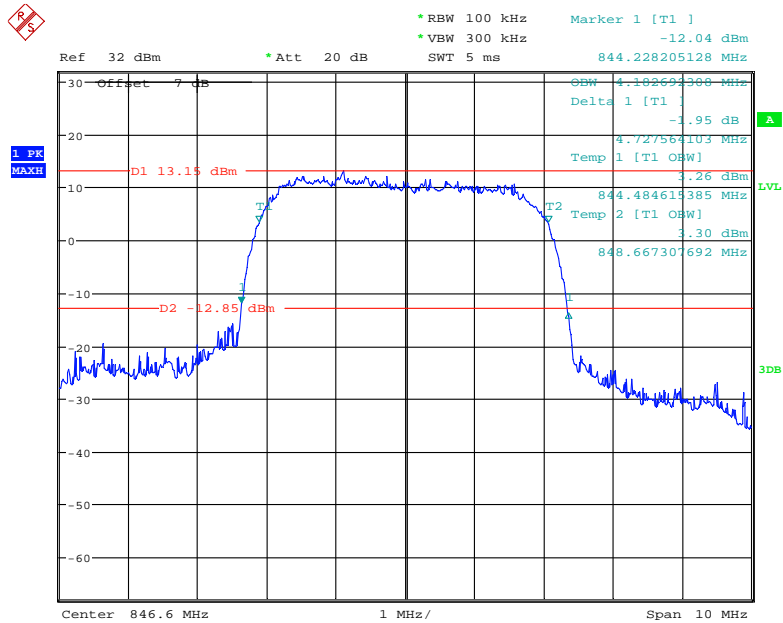
Date: 10.SEP.2021 14:25:41

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



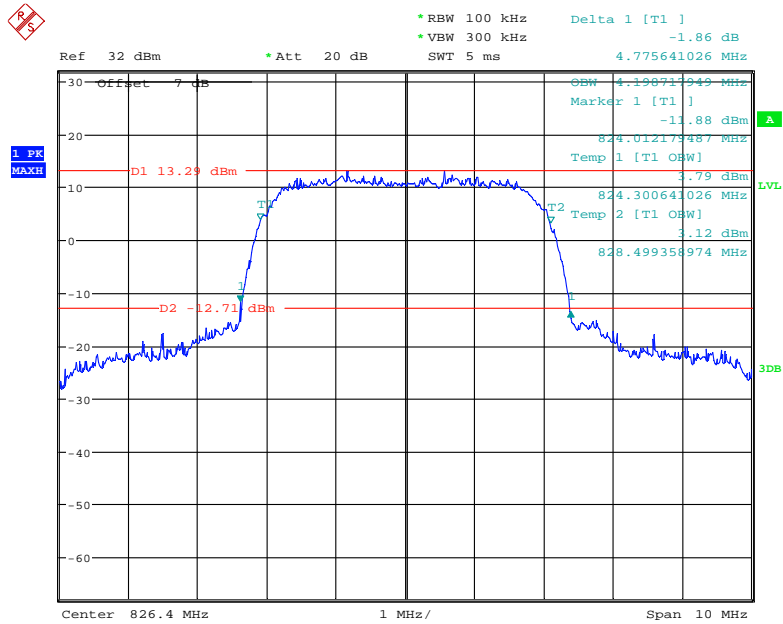
Date: 10.SEP.2021 14:27:08

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



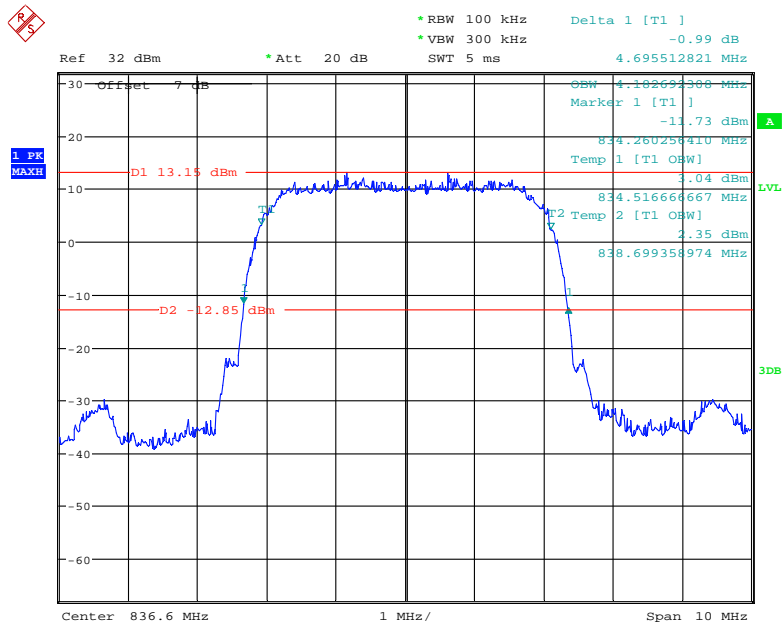
Date: 10.SEP.2021 14:28:57

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



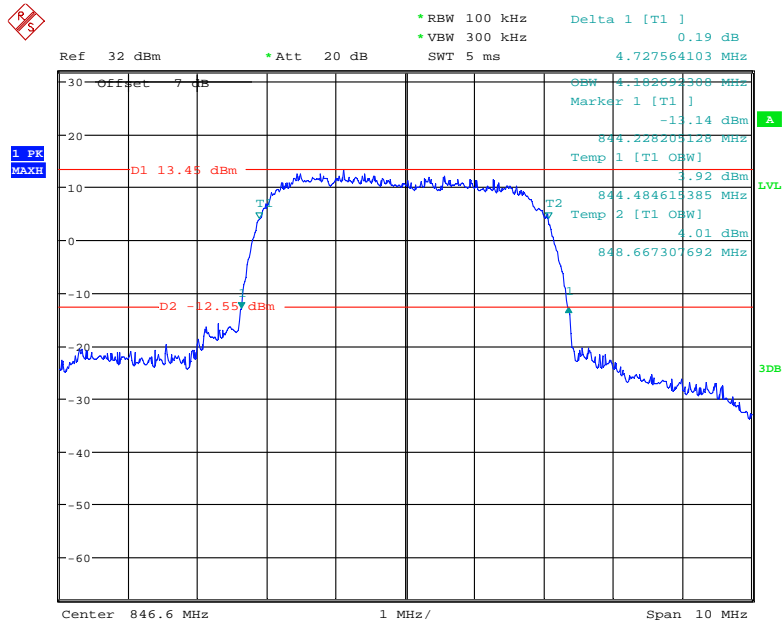
Date: 10.SEP.2021 15:33:42

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



Date: 10.SEP.2021 15:31:51

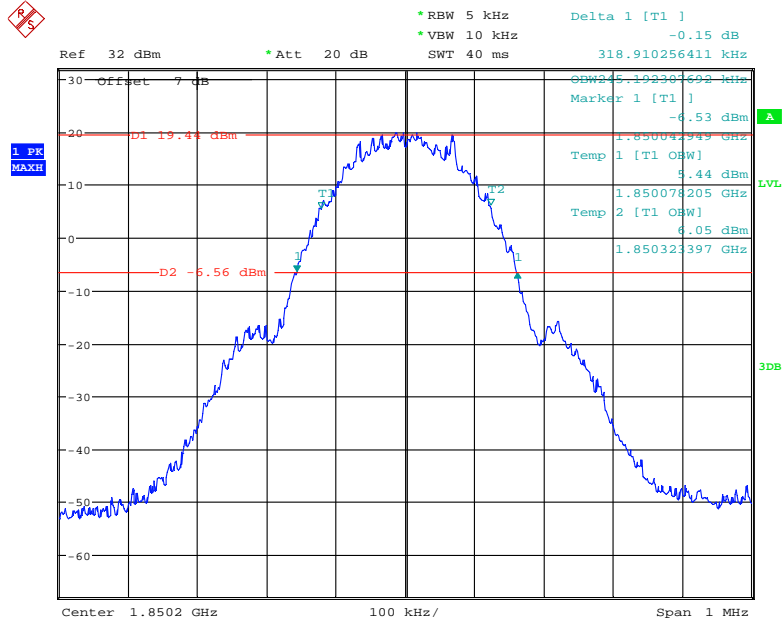
**26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel**



Date: 10.SEP.2021 15:30:22

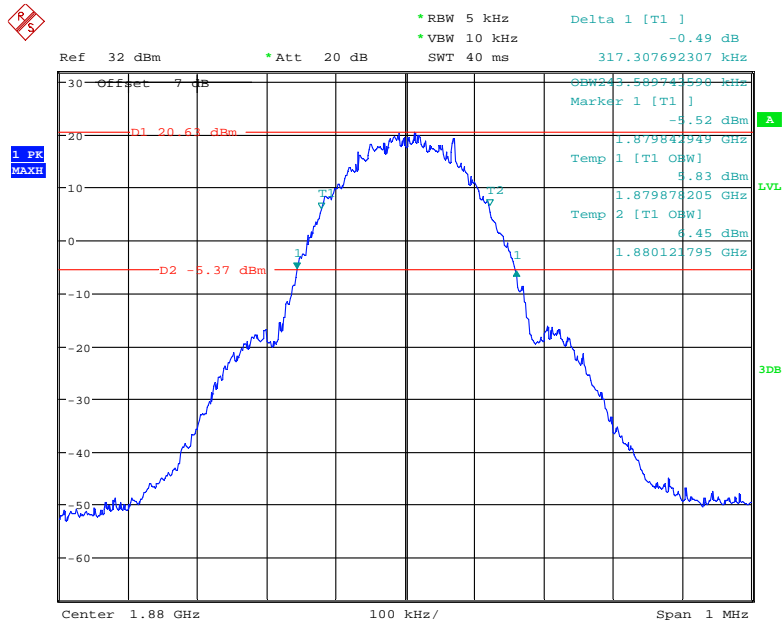
PCS Band (Part 24E)

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



Date: 10.SEP.2021 10:52:15

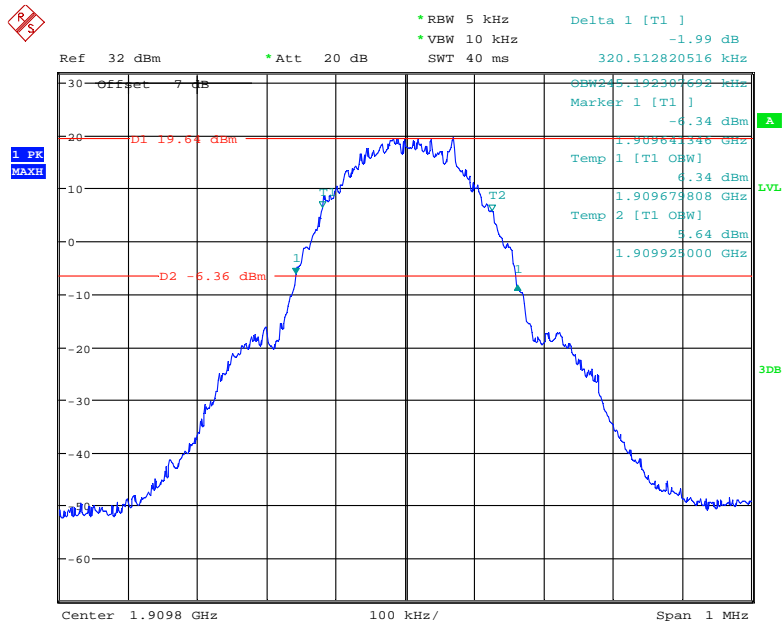
26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, Middle channel



Date: 10.SEP.2021 10:47:41

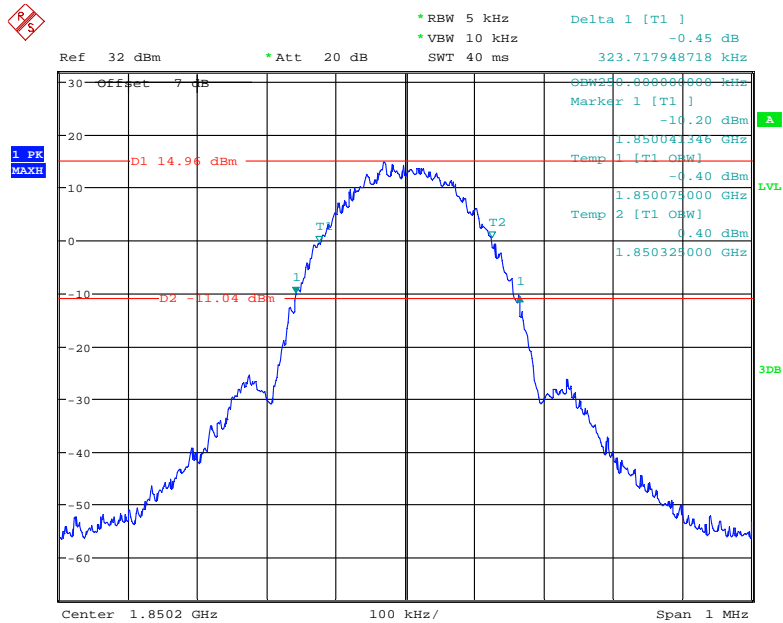


**26 dB Emissions & 99% Occupied Bandwidth for GSM (GMSK) Mode, High channel**



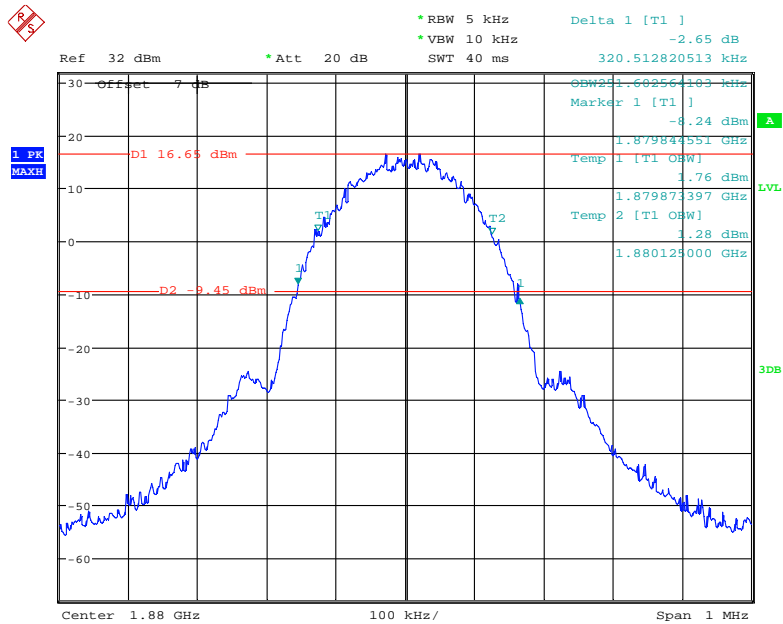
Date: 10.SEP.2021 10:50:17

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



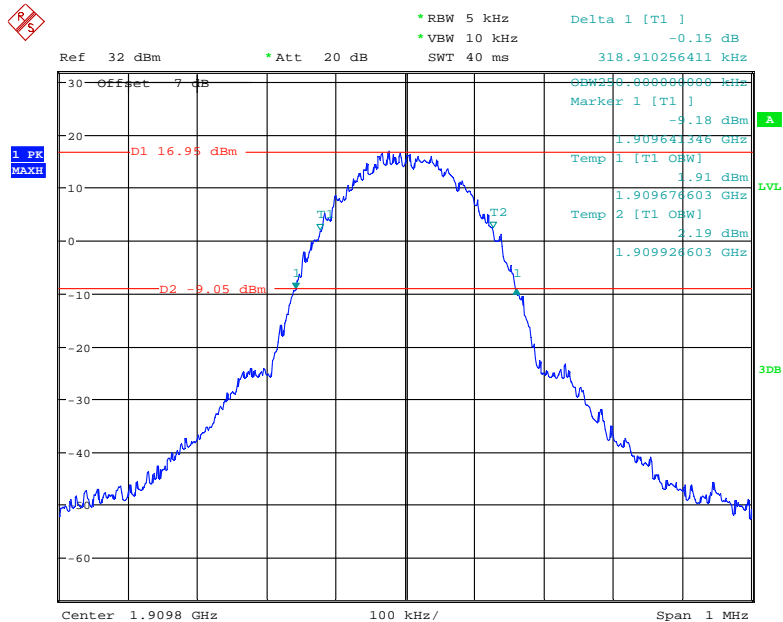
Date: 10.SEP.2021 11:13:54

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



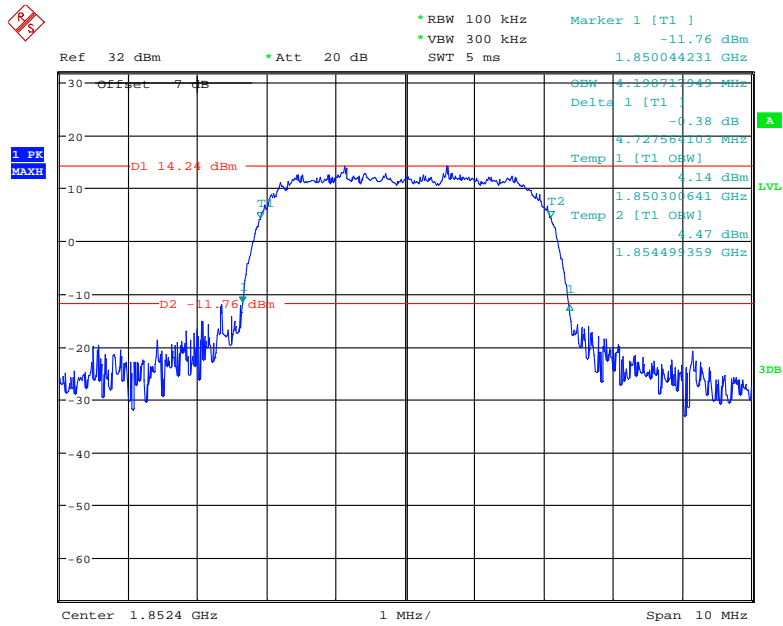
Date: 10.SEP.2021 11:16:32

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



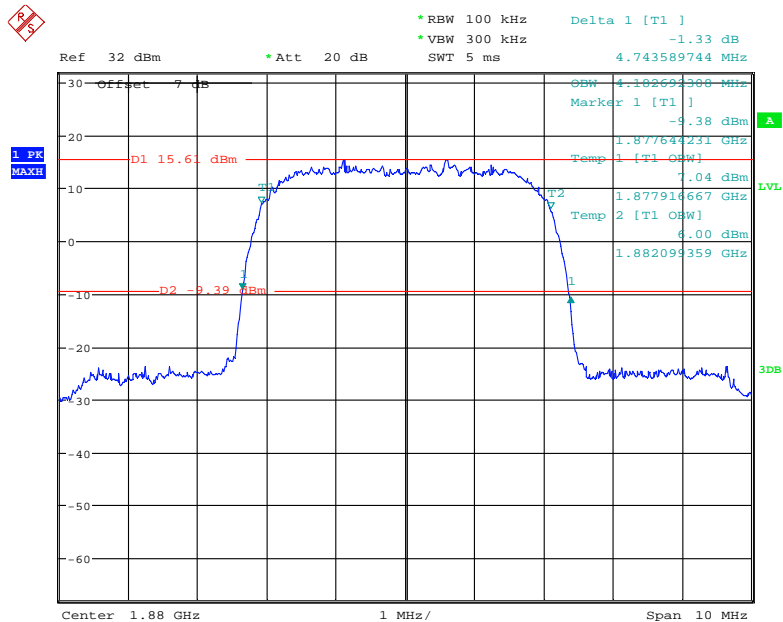
Date: 10.SEP.2021 11:19:21

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



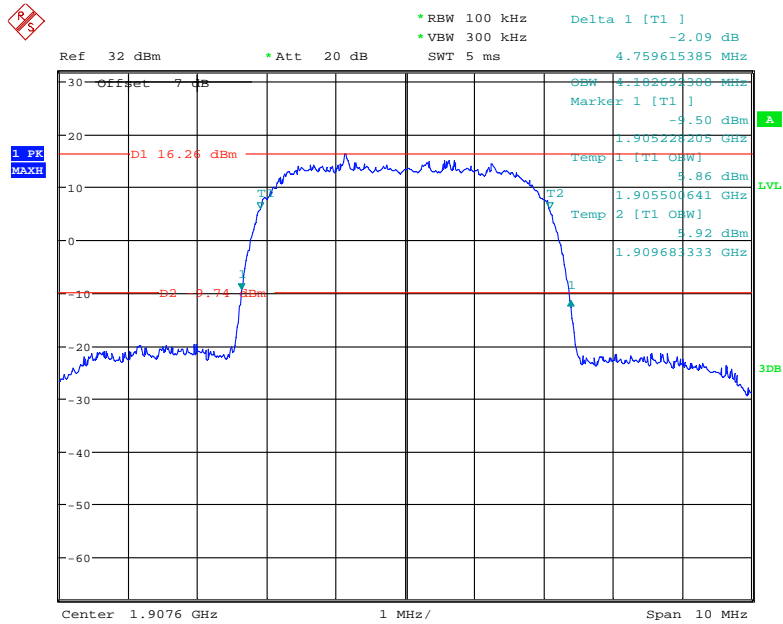
Date: 10.SEP.2021 14:58:04

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



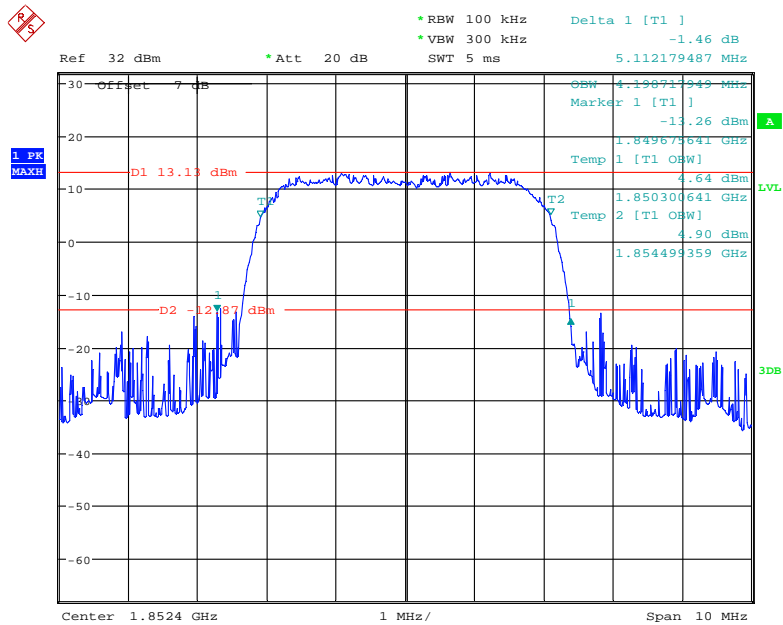
Date: 10.SEP.2021 15:01:04

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



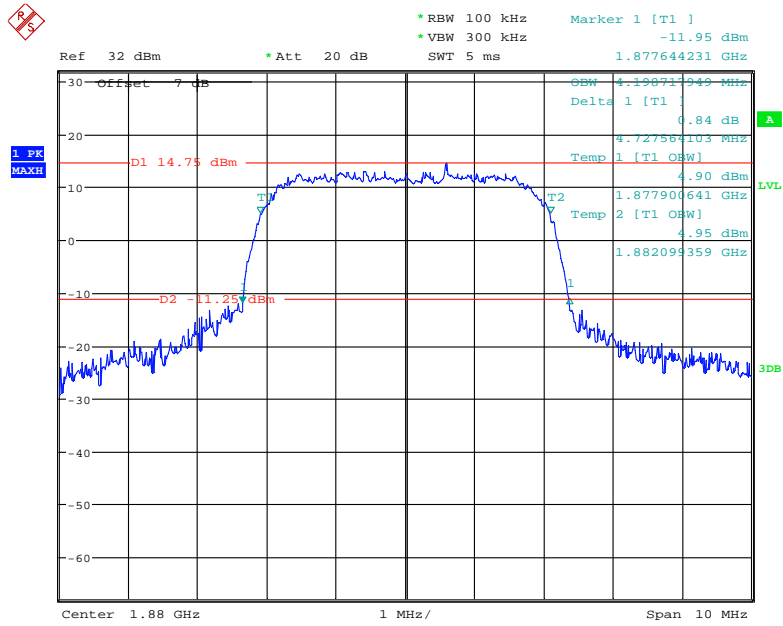
Date: 10.SEP.2021 15:03:17

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



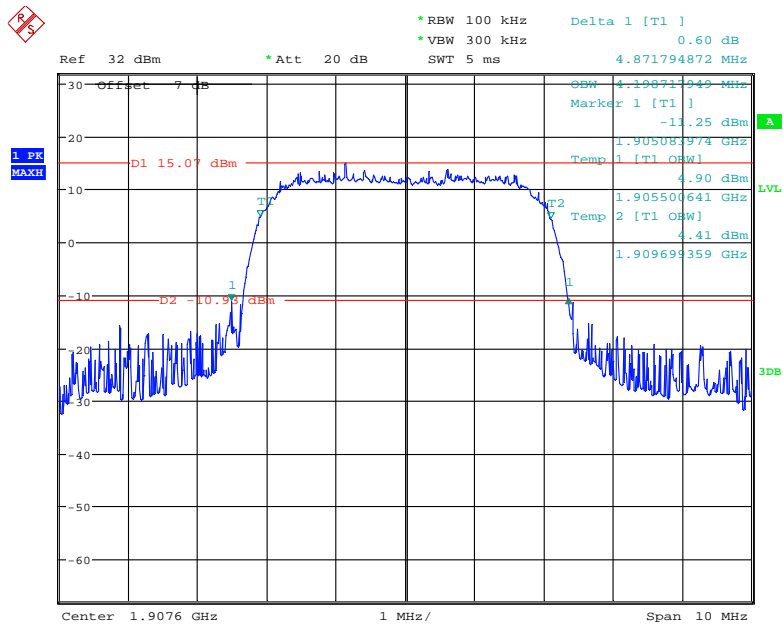
Date: 10.SEP.2021 14:36:22

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



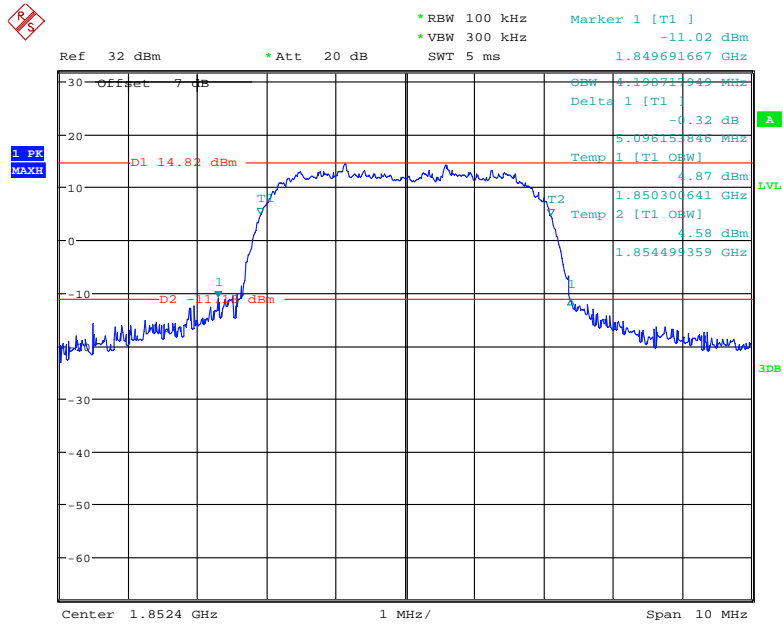
Date: 10.SEP.2021 14:31:43

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



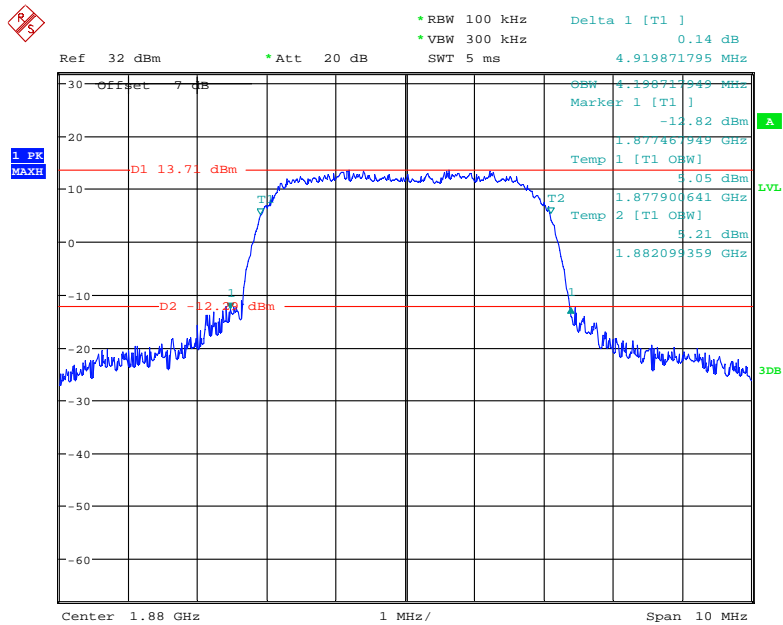
Date: 10.SEP.2021 14:33:53

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



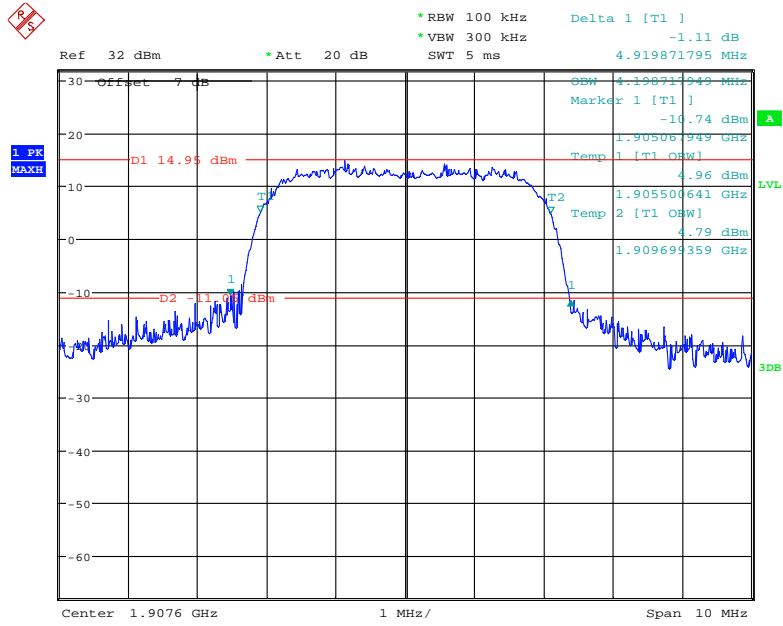
Date: 10.SEP.2021 15:15:02

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



Date: 10.SEP.2021 15:10:29

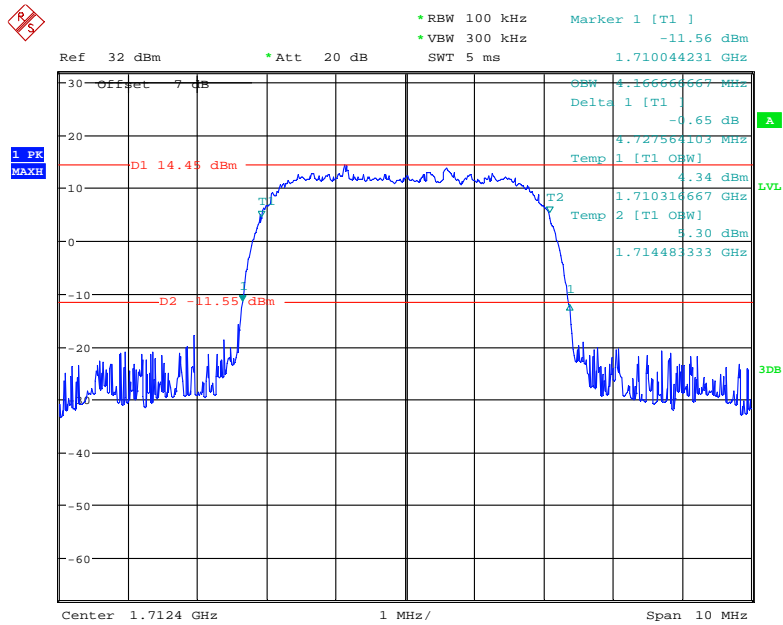
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 10.SEP.2021 15:08:13

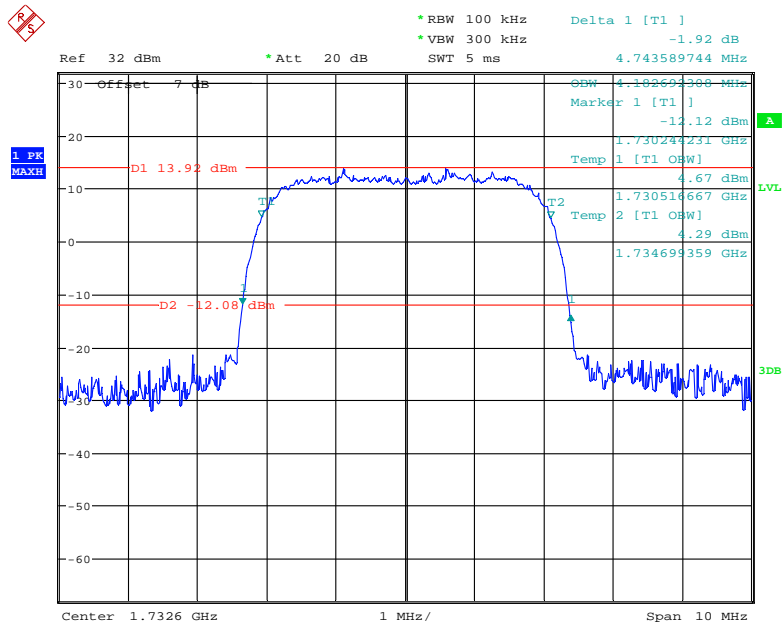
**AWS Band (Part 27)**

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



Date: 10.SEP.2021 14:49:01

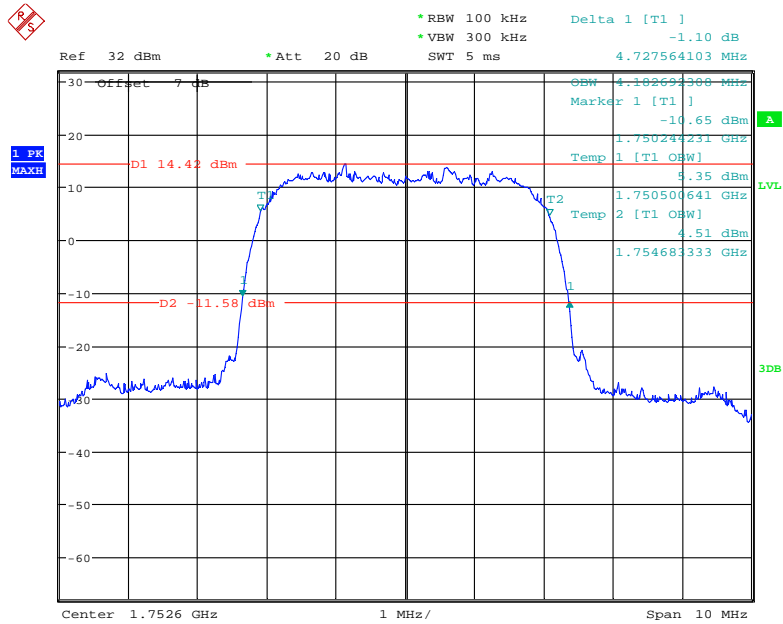
**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, Middle channel**



Date: 10.SEP.2021 14:51:53

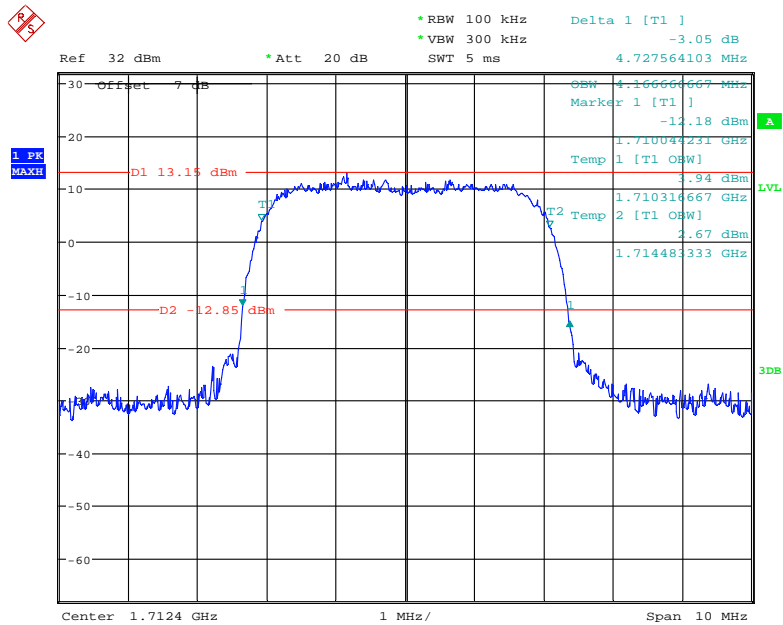


**26 dB Emissions & 99% Occupied Bandwidth for RMC (BPSK) Mode, High channel**



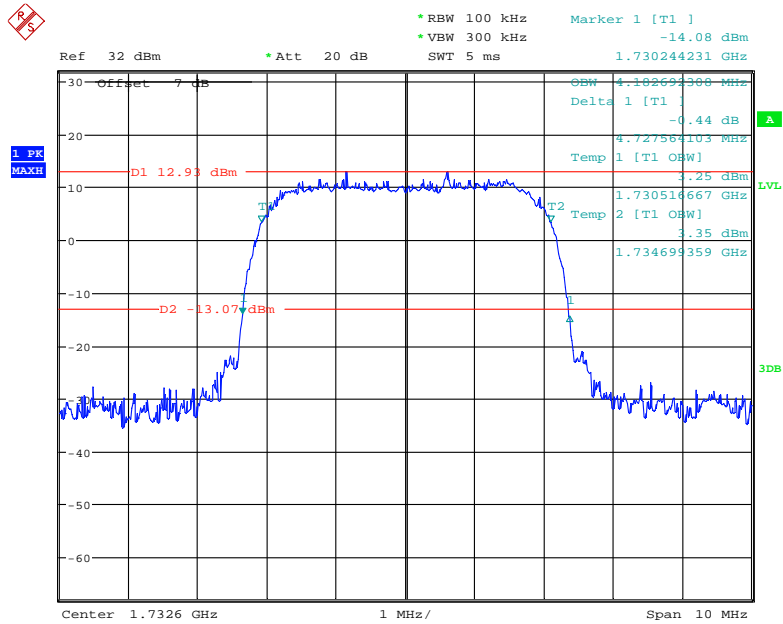
Date: 10.SEP.2021 14:53:47

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



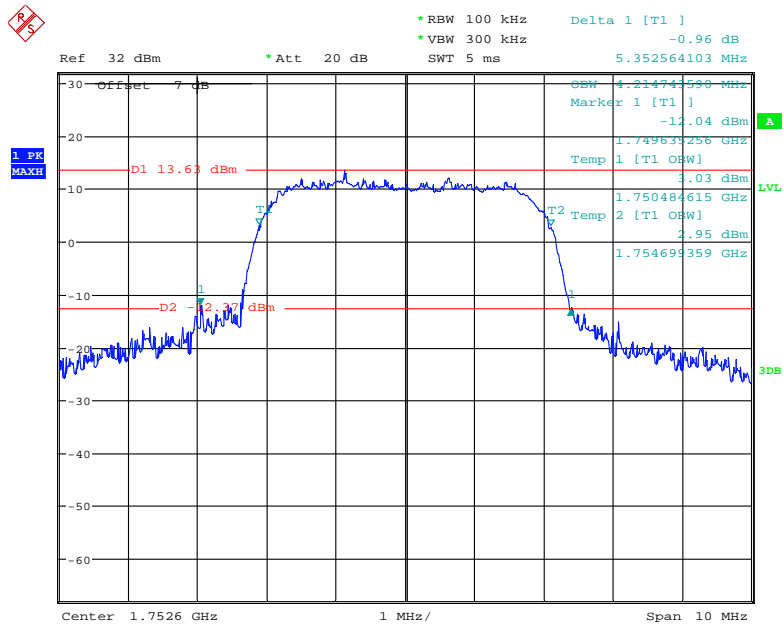
Date: 10.SEP.2021 14:43:50

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



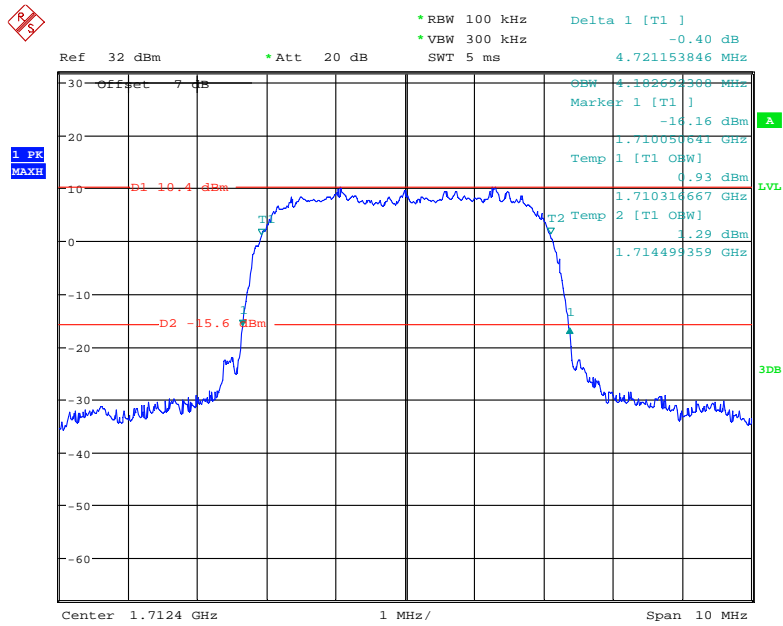
Date: 10.SEP.2021 14:38:07

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



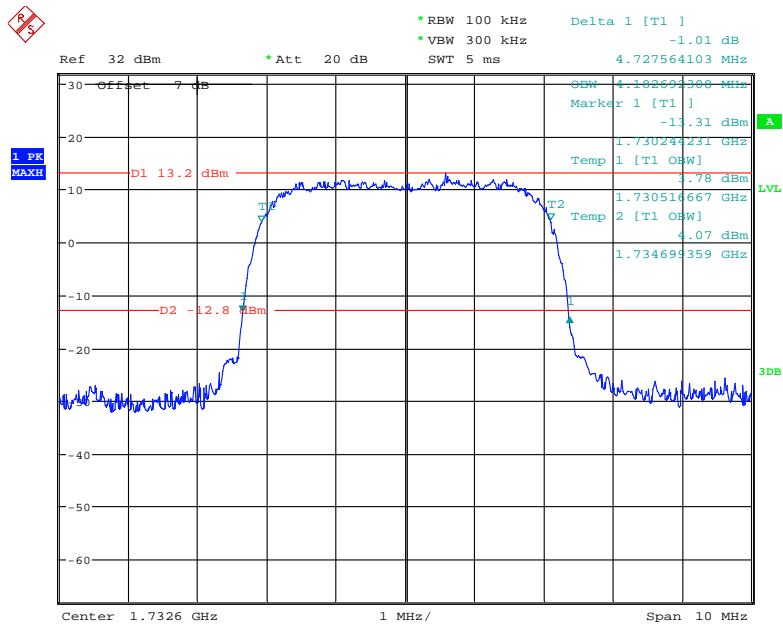
Date: 10.SEP.2021 14:41:25

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



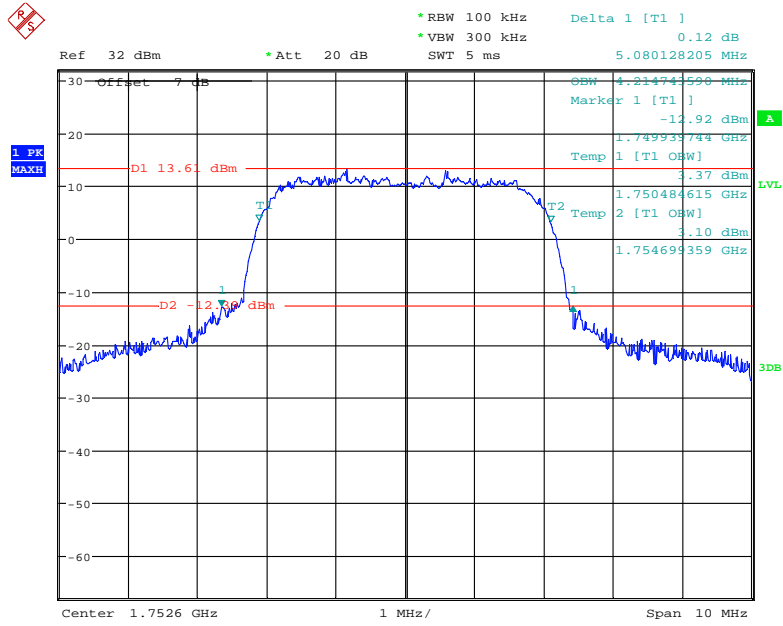
Date: 2.NOV.2021 17:48:24

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



Date: 10.SEP.2021 15:24:35

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



Date: 10.SEP.2021 15:27:41

**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	1.320	1.110	1.302	1.098	1.314
	16QAM	1.092	1.296	1.074	1.230	1.110	1.314
3 MHz	QPSK	2.688	2.868	2.688	2.880	2.688	2.880
	16QAM	2.688	2.892	2.688	2.880	2.688	2.868
5 MHz	QPSK	4.520	4.960	4.520	4.960	4.520	4.920
	16QAM	4.500	4.900	4.520	4.960	4.520	4.960
10 MHz	QPSK	9.000	9.640	8.960	9.600	8.960	9.560
	16QAM	8.960	9.520	8.960	9.600	8.960	9.560
15 MHz	QPSK	13.560	14.880	13.500	14.760	13.560	14.820
	16QAM	13.500	14.820	13.500	14.880	13.560	14.820
20 MHz	QPSK	18.000	19.360	18.000	19.440	17.920	19.440
	16QAM	18.000	19.440	18.000	19.360	18.000	19.360

**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	1.104	1.302	1.104	1.308	1.110	1.302
	16QAM	1.110	1.314	1.092	1.296	1.104	1.296
3 MHz	QPSK	2.688	2.880	2.688	2.880	2.676	2.892
	16QAM	2.688	2.940	2.688	2.880	2.688	2.880
5 MHz	QPSK	4.520	5.360	4.520	4.980	4.500	4.920
	16QAM	4.520	5.360	4.520	4.940	4.520	4.940
10 MHz	QPSK	8.960	9.800	8.960	9.600	8.960	9.520
	16QAM	8.920	9.520	8.960	9.640	8.960	9.560
15 MHz	QPSK	13.560	14.760	13.500	14.760	13.560	14.880
	16QAM	13.500	14.760	13.500	14.820	13.560	14.760
20 MHz	QPSK	18.000	19.440	18.000	19.280	18.000	19.440
	16QAM	18.000	19.360	18.000	19.360	18.000	19.280

**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	1.098	1.308	1.104	1.362	1.104	1.296
	16QAM	1.104	1.326	1.098	1.290	1.098	1.290
3 MHz	QPSK	2.688	2.880	2.676	2.880	2.688	2.880
	16QAM	2.688	2.892	2.688	2.892	2.688	2.868
5 MHz	QPSK	4.520	4.920	4.520	4.960	4.500	4.900
	16QAM	4.500	4.920	4.500	4.920	4.520	4.980
10 MHz	QPSK	8.960	9.640	8.960	9.560	8.960	9.600
	16QAM	8.960	9.480	9.000	9.600	8.960	9.640

**LTE Band 7:**

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)	OBW (MHz)	26dB EBW (MHz)
5 MHz	QPSK	4.520	4.920	4.520	4.940	4.520	4.940
	16QAM	4.500	4.940	4.520	4.940	4.500	4.940
10MHz	QPSK	9.000	9.720	8.960	9.600	8.960	9.560
	16QAM	8.920	9.560	8.960	9.560	8.960	9.560
15 MHz	QPSK	13.560	14.820	13.500	14.760	13.500	14.760
	16QAM	13.560	14.880	13.500	14.760	13.500	14.820
20 MHz	QPSK	17.920	19.440	18.000	19.440	18.000	19.520
	16QAM	17.920	19.360	18.000	19.440	18.000	19.360

**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	4.520	4.980	4.540	5.720	4.540	5.180
	16QAM	4.540	5.200	4.540	5.360	4.540	5.160
10 MHz	QPSK	8.960	9.920	8.960	9.760	8.960	9.800
	16QAM	8.960	9.760	8.960	9.800	8.960	9.760

**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	4.520	5.120	4.500	4.960	4.520	5.040
	16QAM	4.500	5.060	4.520	5.240	4.520	5.100
10 MHz	QPSK	8.960	9.720	8.960	9.520	8.960	9.760
	16QAM	8.960	9.640	8.960	9.640	8.960	9.840
15 MHz	QPSK	13.560	15.960	13.560	15.300	13.500	15.900
	16QAM	13.500	15.720	13.560	16.920	13.560	16.560
20 MHz	QPSK	18.000	19.840	18.000	19.760	18.000	19.680
	16QAM	18.000	19.760	18.000	20.560	18.000	19.520

**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	4.520	4.960	4.520	5.320	4.500	4.960
	16QAM	4.500	4.920	4.500	4.960	4.520	5.200
10 MHz	QPSK	9.000	9.640	8.960	9.680	8.960	9.560
	16QAM	8.960	9.520	8.960	9.520	8.960	10.160
15 MHz	QPSK	13.560	15.480	13.560	15.120	13.560	15.780
	16QAM	13.560	16.620	13.560	15.960	13.560	16.260
20 MHz	QPSK	18.000	19.280	18.000	19.840	18.000	19.680
	16QAM	18.000	19.600	18.000	20.000	17.920	19.360

**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	1.104	1.290	1.098	1.302	1.110	1.320
	16QAM	1.104	1.236	1.110	1.314	1.098	1.410
3 MHz	QPSK	2.688	2.880	2.688	2.880	2.688	2.892
	16QAM	2.688	2.892	2.688	2.880	2.688	2.880
5 MHz	QPSK	4.520	5.200	4.520	5.200	4.520	5.120
	16QAM	4.520	5.160	4.540	5.200	4.560	5.220
10 MHz	QPSK	9.000	9.960	8.960	9.840	9.000	9.840
	16QAM	8.960	9.680	8.960	9.840	8.960	9.920
15 MHz	QPSK	13.620	15.120	13.500	15.120	13.560	15.240
	16QAM	13.560	15.180	13.560	15.120	13.560	15.180
20 MHz	QPSK	18.000	19.600	18.000	19.680	18.080	20.080
	16QAM	18.080	19.840	18.000	19.840	18.000	19.680

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

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

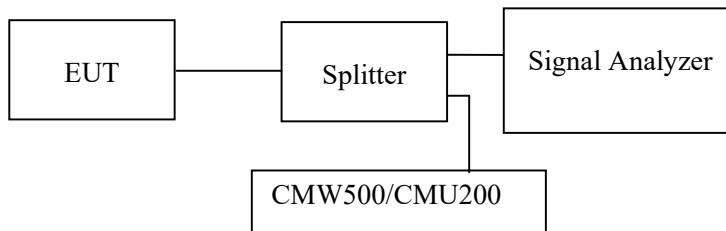
### Applicable Standard

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

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

### Test Procedure

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



### Test Data

#### Environmental Conditions

<b>Temperature:</b>	28 °C
<b>Relative Humidity:</b>	56 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Paul liu from 2021-09-10 to 2021-09-15.*

*EUT operation mode: Transmitting*

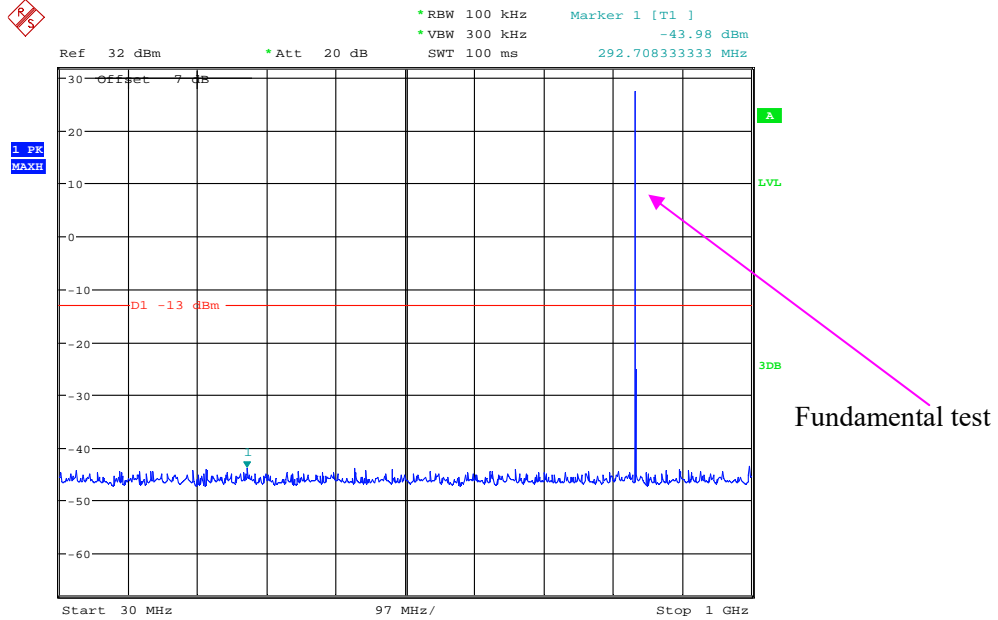
**Test result: Pass**

*Please refer to the following plots.*



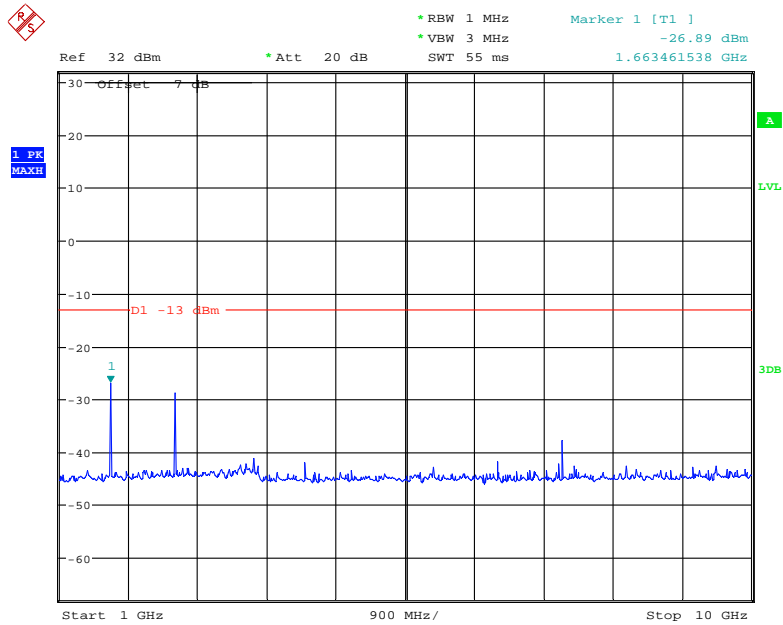
**Cellular Band (Part 22H)  
Low Channel:**

**30 MHz – 1 GHz (GSM Mode)**



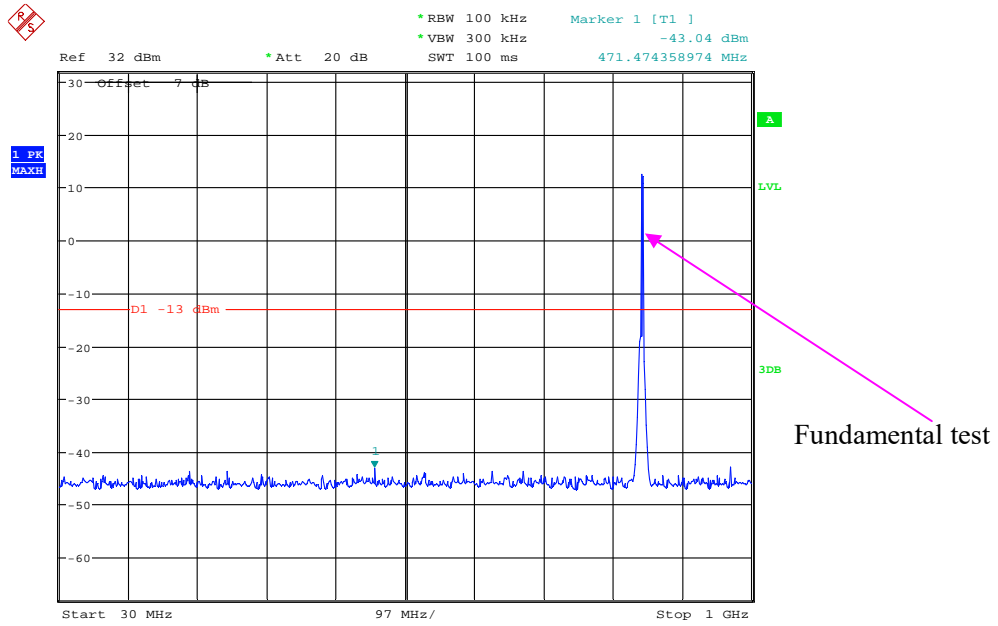
Date: 10.SEP.2021 13:07:36

**1 GHz – 10 GHz (GSM Mode)**



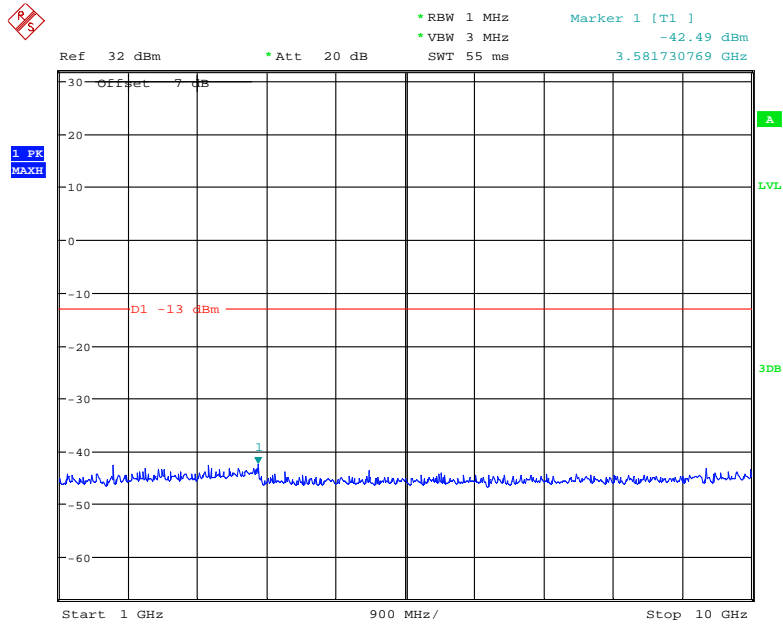
Date: 10.SEP.2021 13:08:33

### 30 MHz – 1 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:36:31

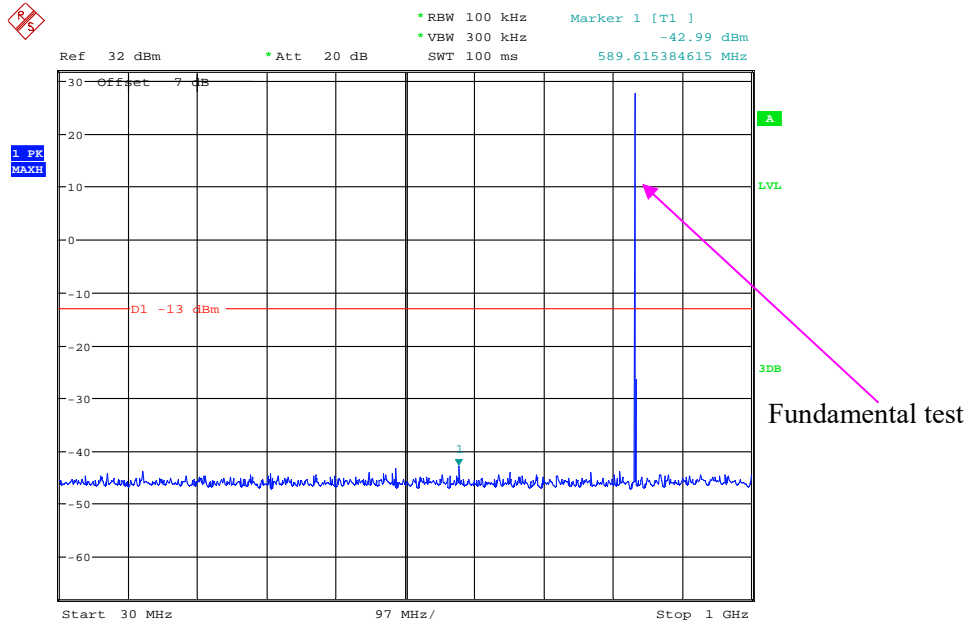
### 1 GHz – 10 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:38:09

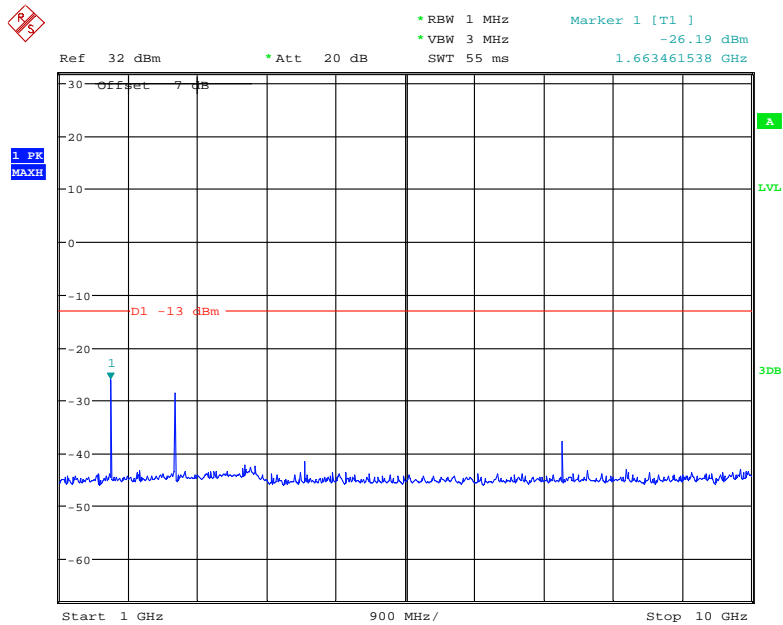
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



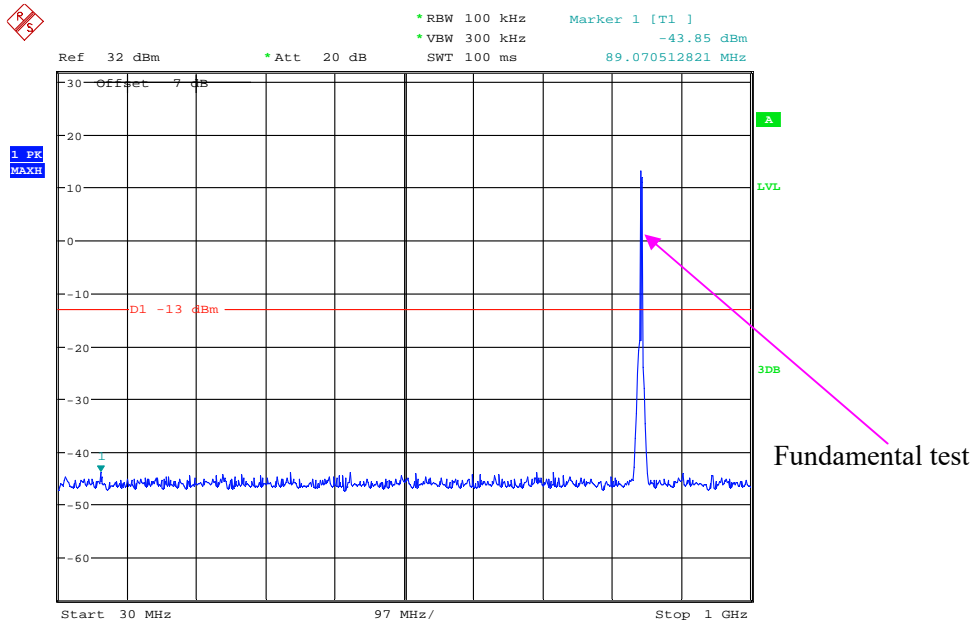
Date: 10.SEP.2021 13:07:13

1 GHz – 10 GHz (GSM Mode)



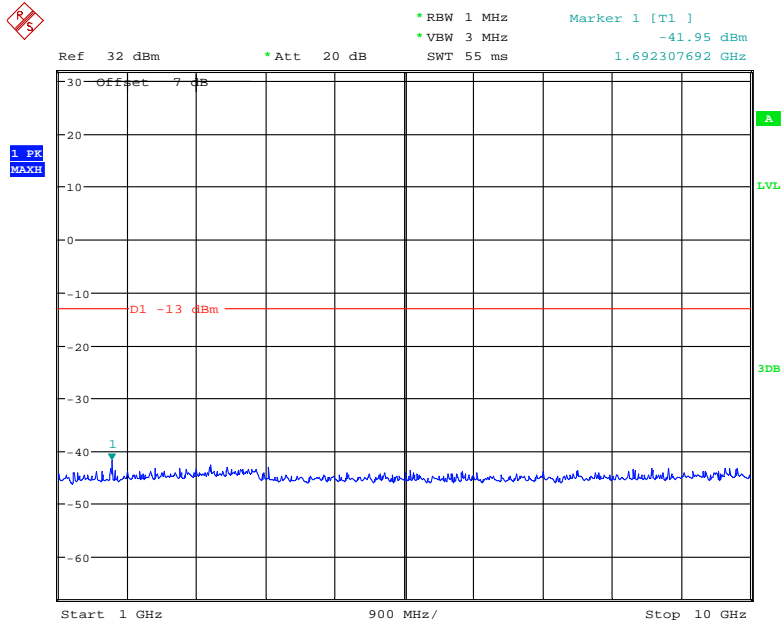
Date: 10.SEP.2021 13:09:06

### 30 MHz – 1 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:36:11

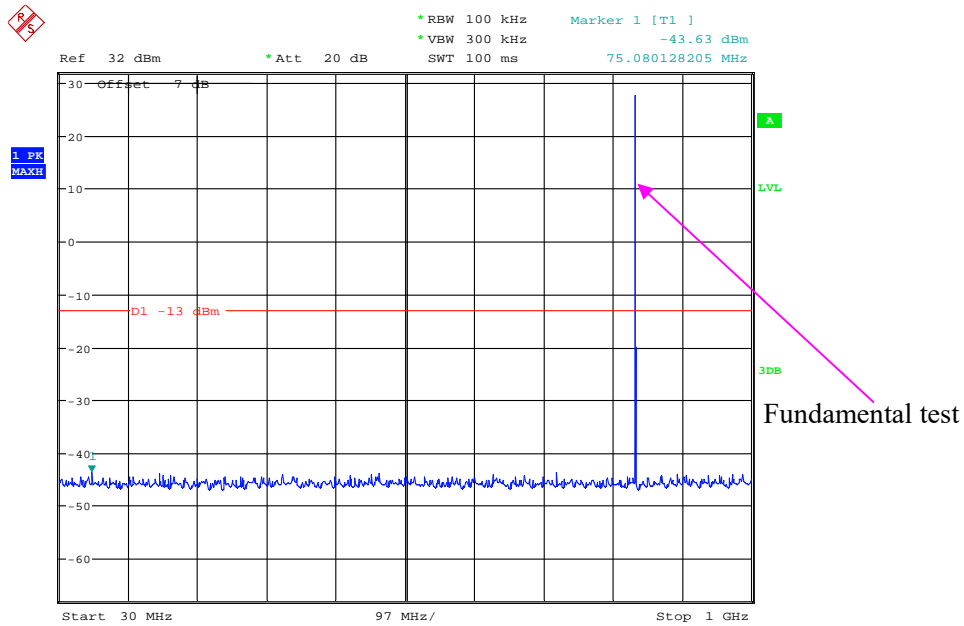
### 1 GHz – 10 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:38:53

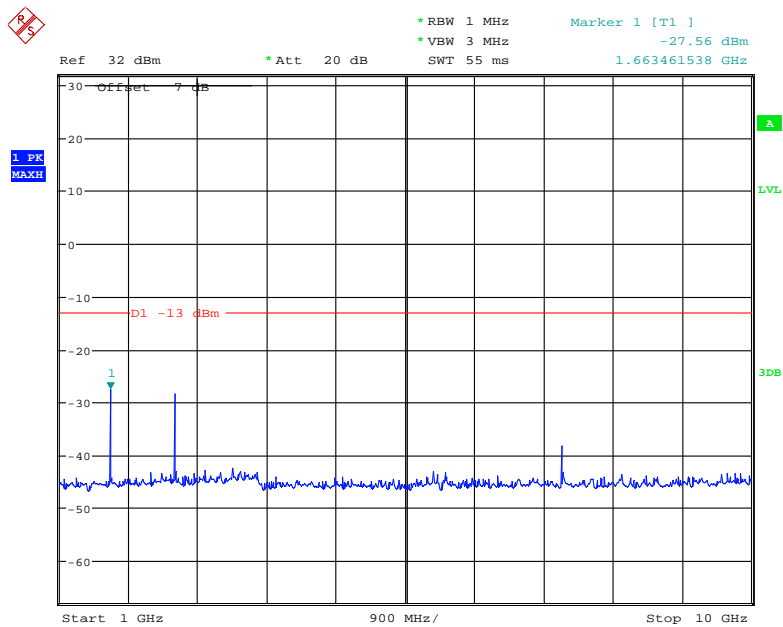
High Channel:

30 MHz – 1 GHz (GSM Mode)



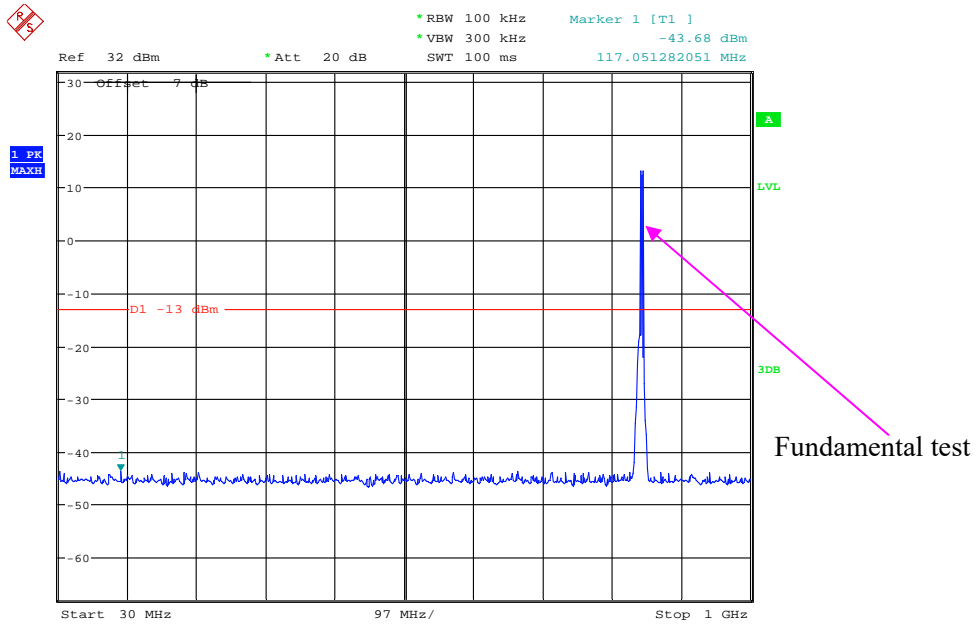
Date: 10.SEP.2021 13:06:53

1 GHz – 10 GHz (GSM Mode)



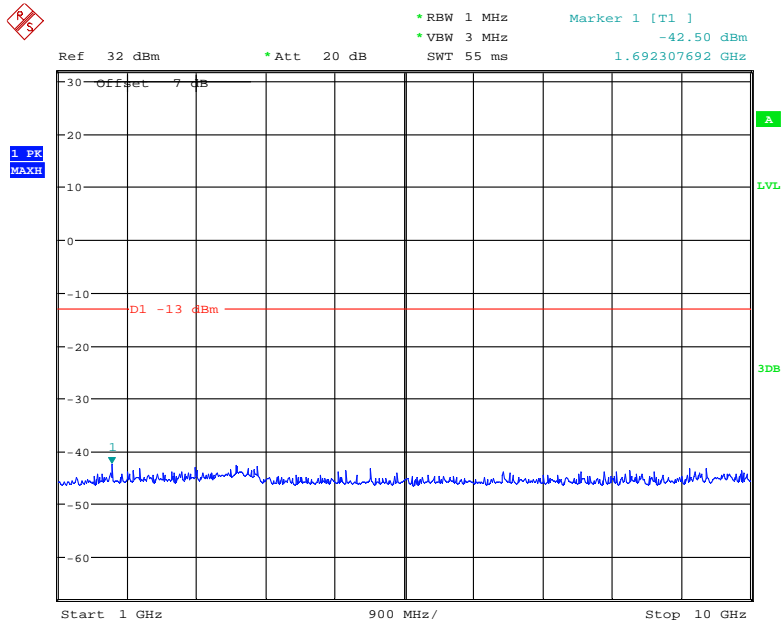
Date: 10.SEP.2021 13:09:23

### 30 MHz – 1 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:35:32

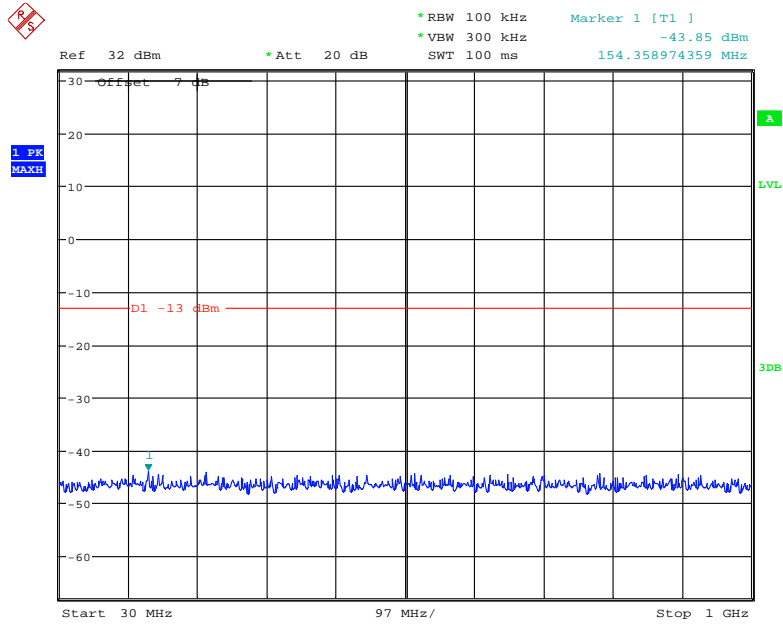
### 1 GHz – 10 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:39:09

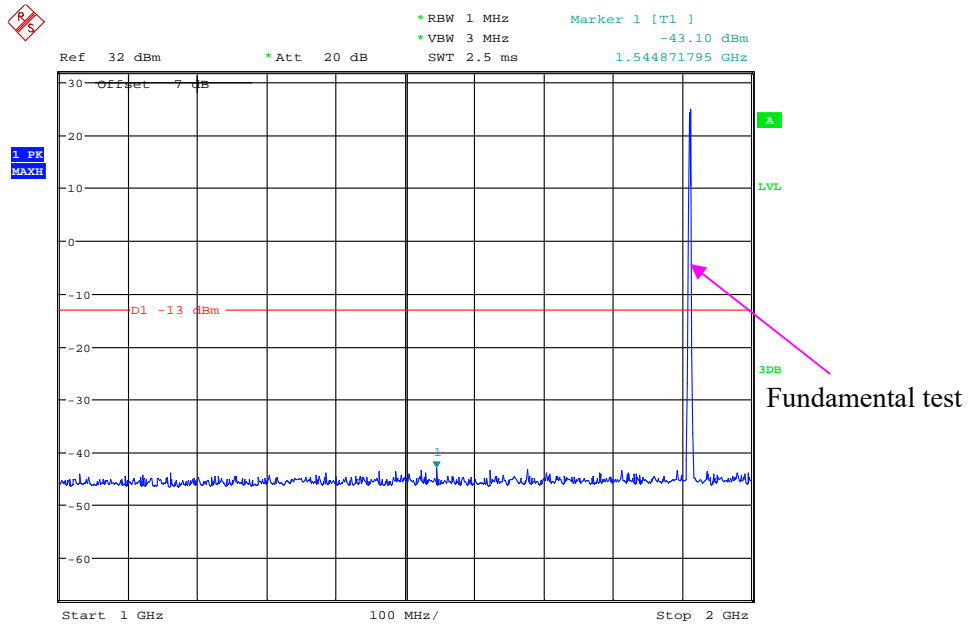
PCS Band (Part 24E) Low Channel:

30 MHz – 1 GHz (GSM Mode)



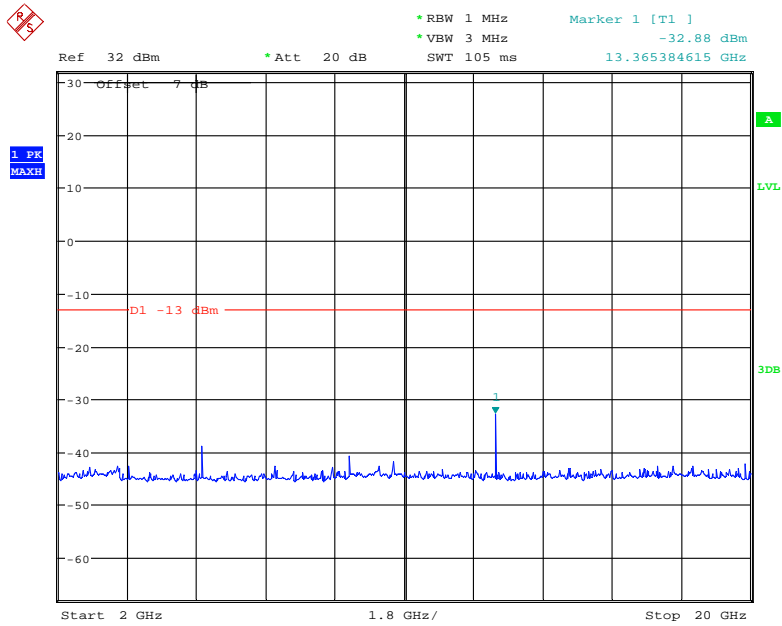
Date: 10.SEP.2021 11:48:51

1 GHz – 2 GHz (GSM Mode)



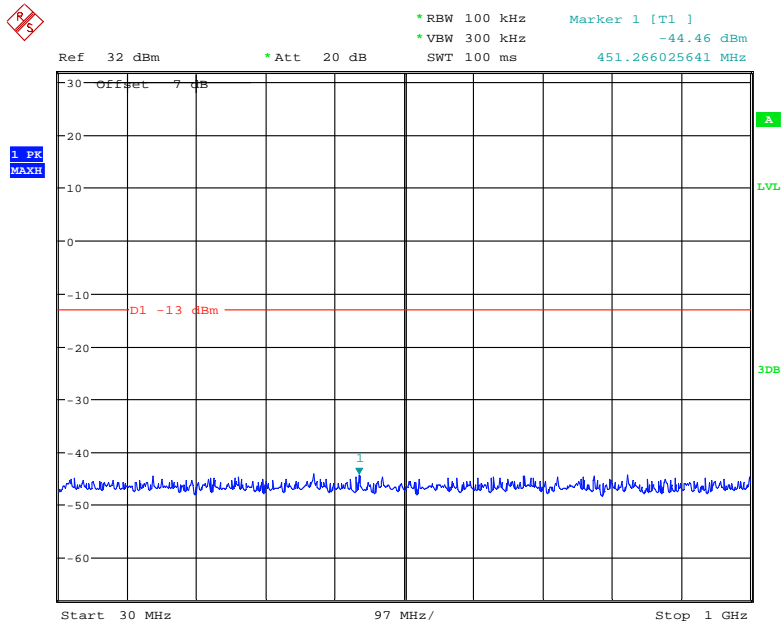
Date: 10.SEP.2021 11:53:47

### 2 GHz – 20 GHz (GSM Mode)



Date: 10.SEP.2021 11:54:53

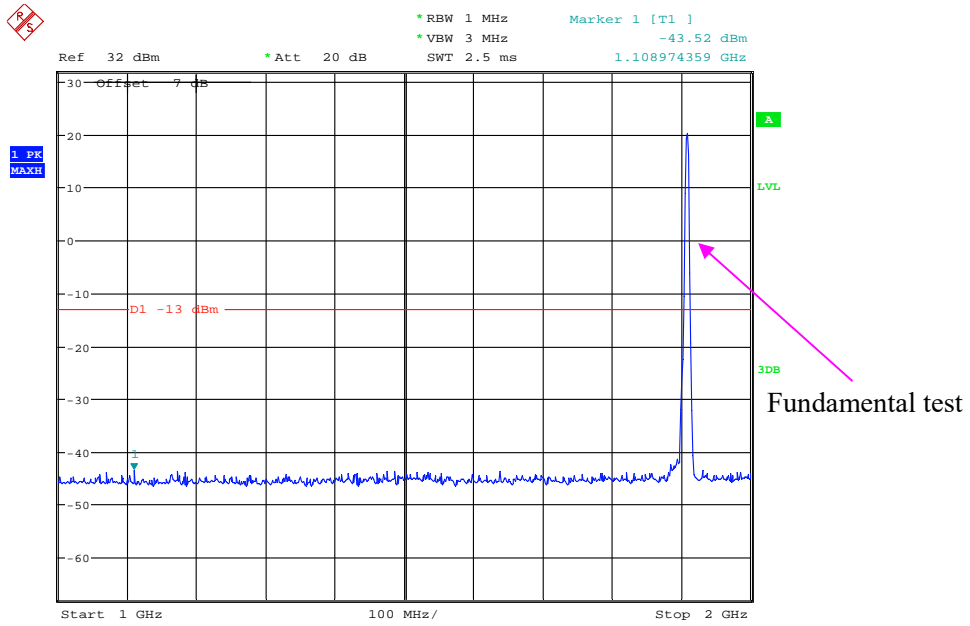
### 30 MHz – 1 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:24:34

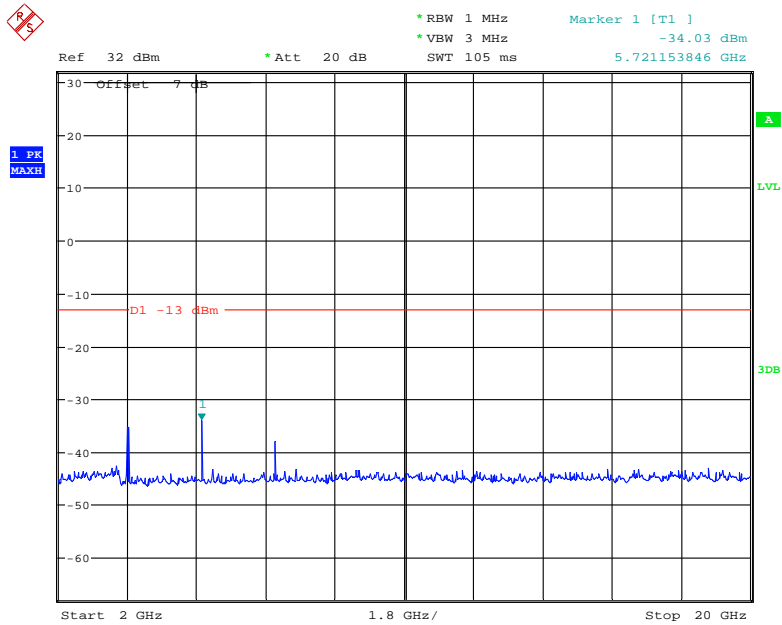


### 1 GHz – 2 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:26:15

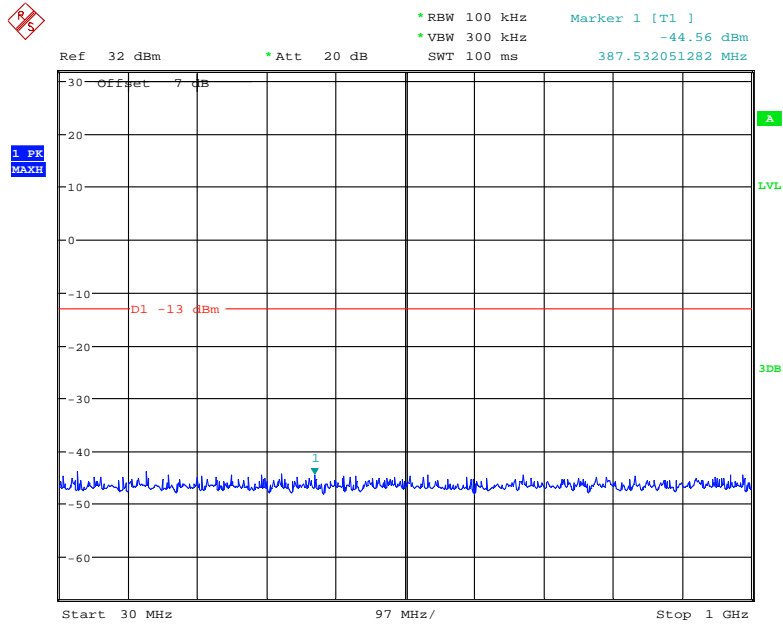
### 2 GHz – 20 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:28:19

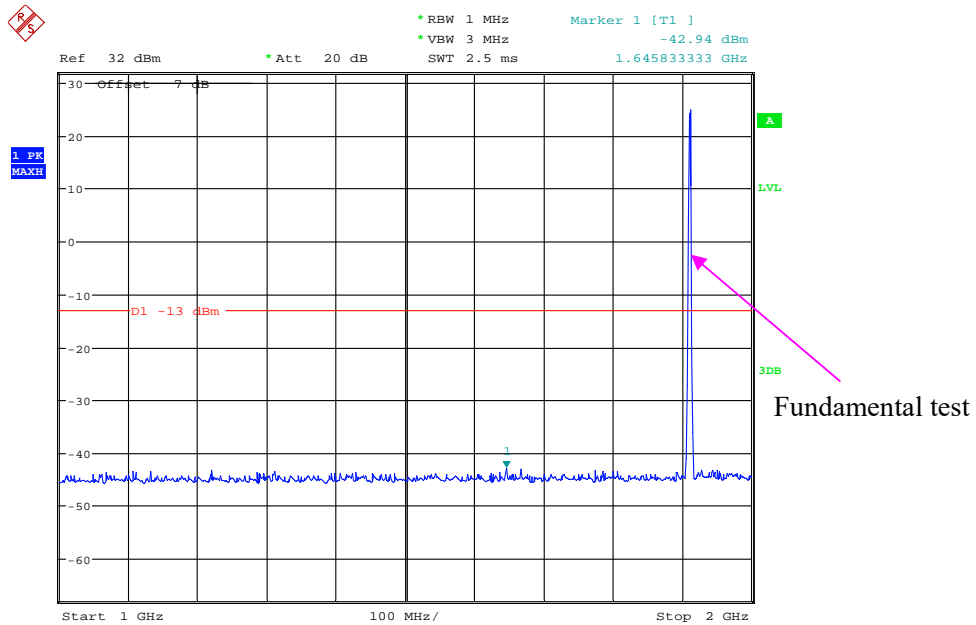
Middle Channel:

30 MHz – 1 GHz (GSM Mode)



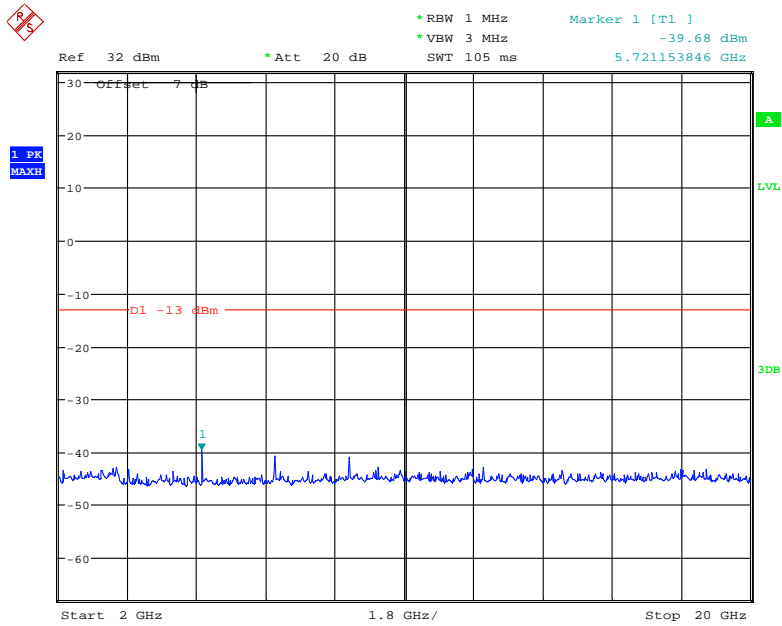
Date: 10.SEP.2021 11:48:35

1 GHz – 2 GHz (GSM Mode)



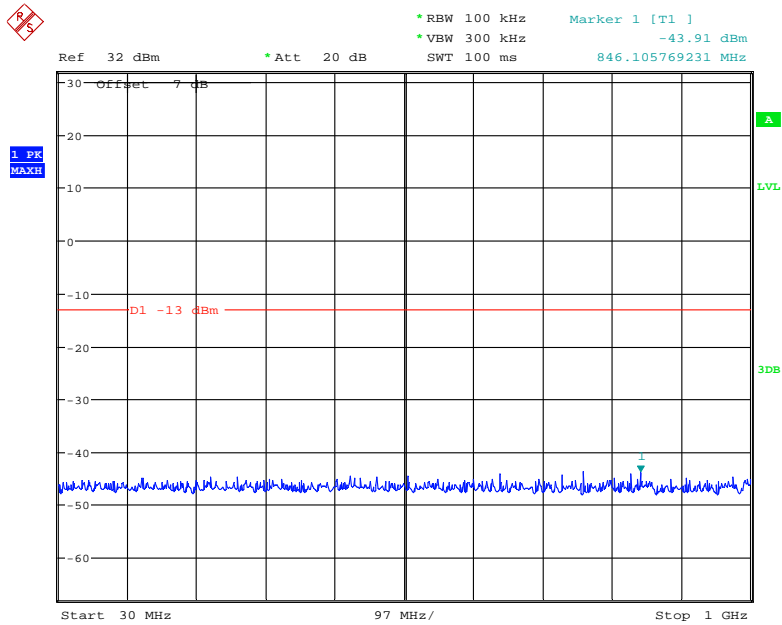
Date: 10.SEP.2021 11:52:34

### 2 GHz – 20 GHz (GSM Mode)



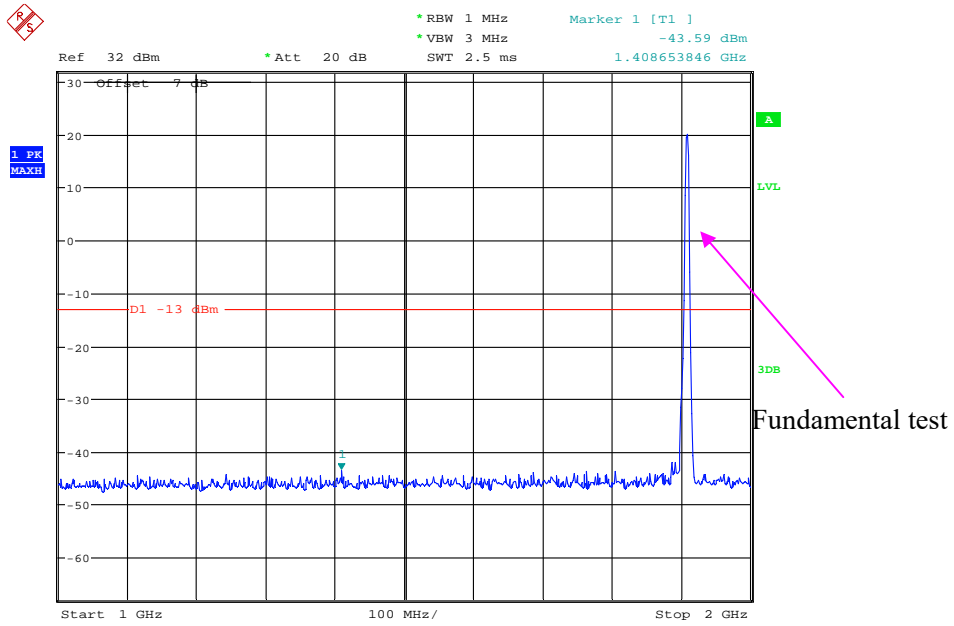
Date: 10.SEP.2021 11:55:16

### 30 MHz – 1 GHz (WCDMA Mode)



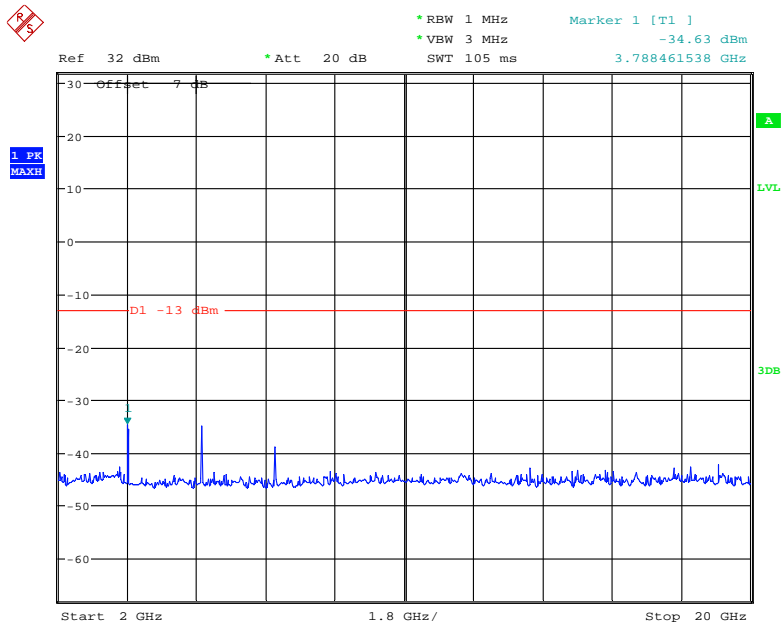
Date: 10.SEP.2021 16:24:11

### 1 GHz – 2 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:26:34

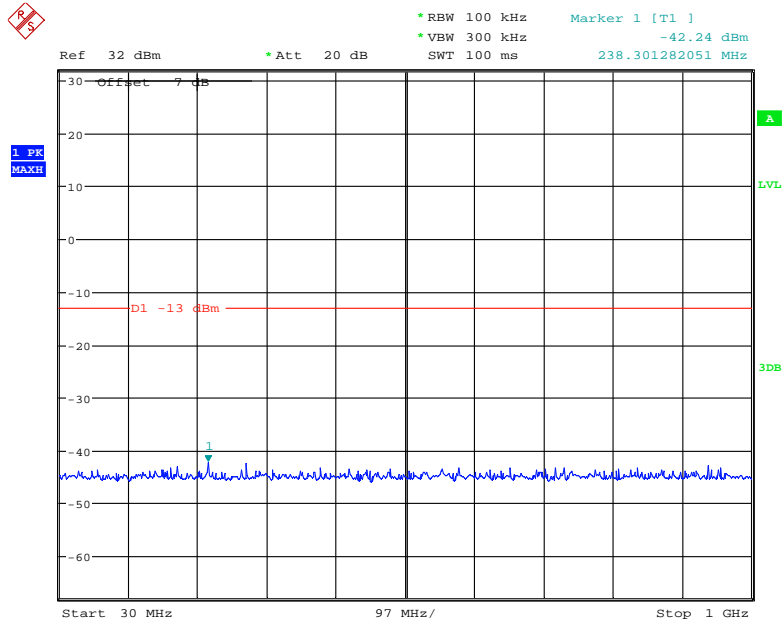
### 2 GHz – 20 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:28:30

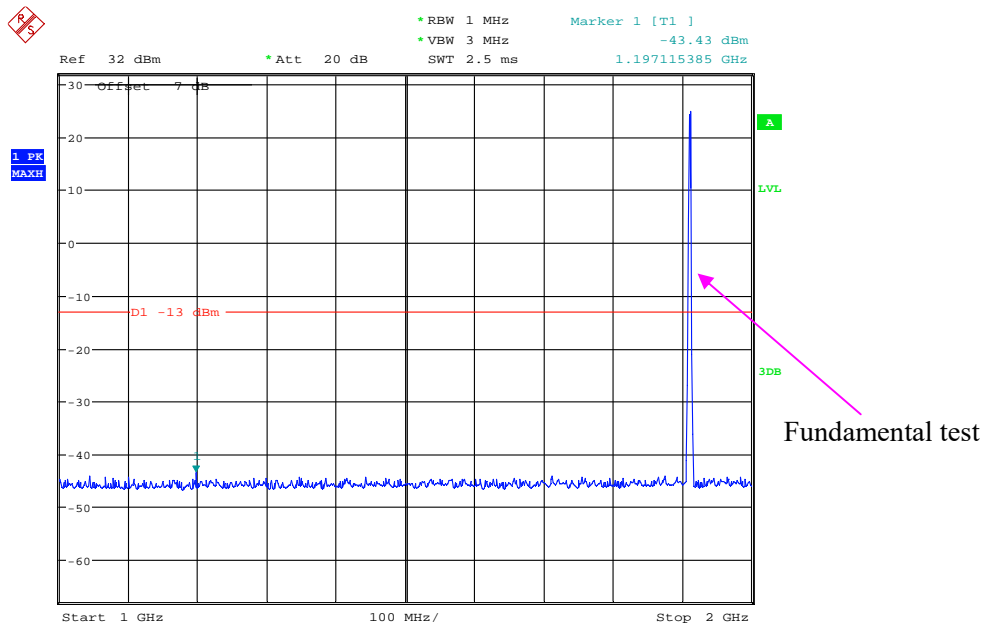
**High Channel:**

**30 MHz – 1 GHz (GSM Mode)**



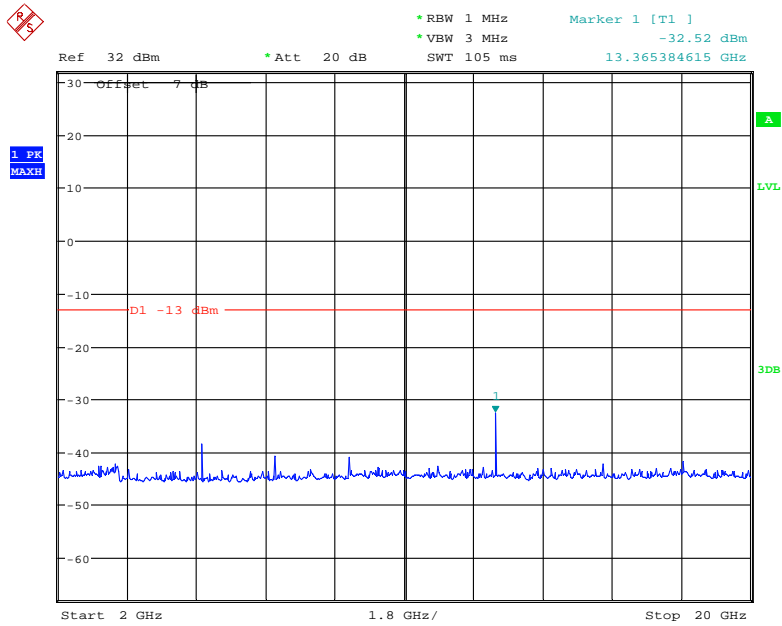
Date: 10.SEP.2021 11:47:18

**1 GHz – 2 GHz (GSM Mode)**



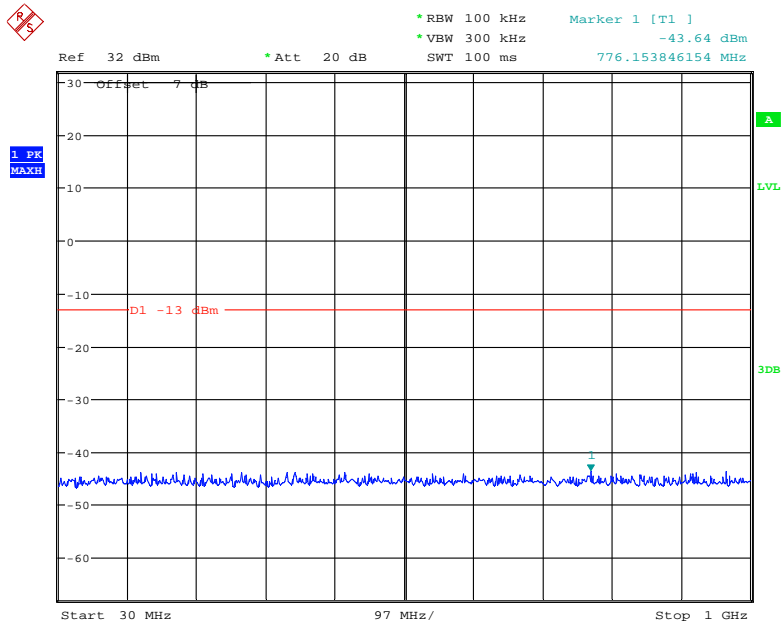
Date: 10.SEP.2021 11:53:14

### 2 GHz – 20 GHz (GSM Mode)



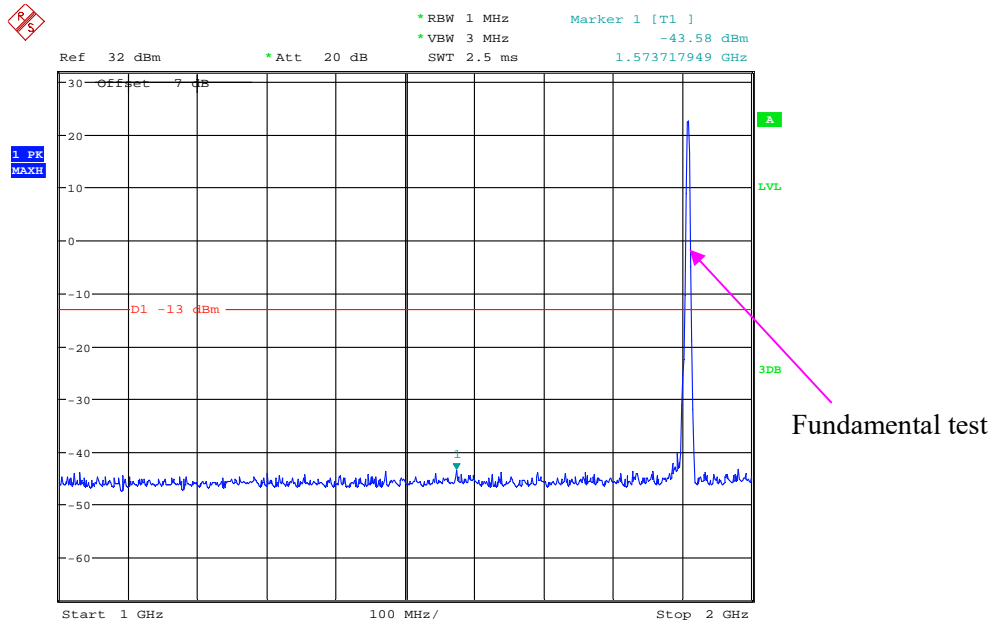
Date: 10.SEP.2021 11:55:29

### 30 MHz – 1 GHz (WCDMA Mode)



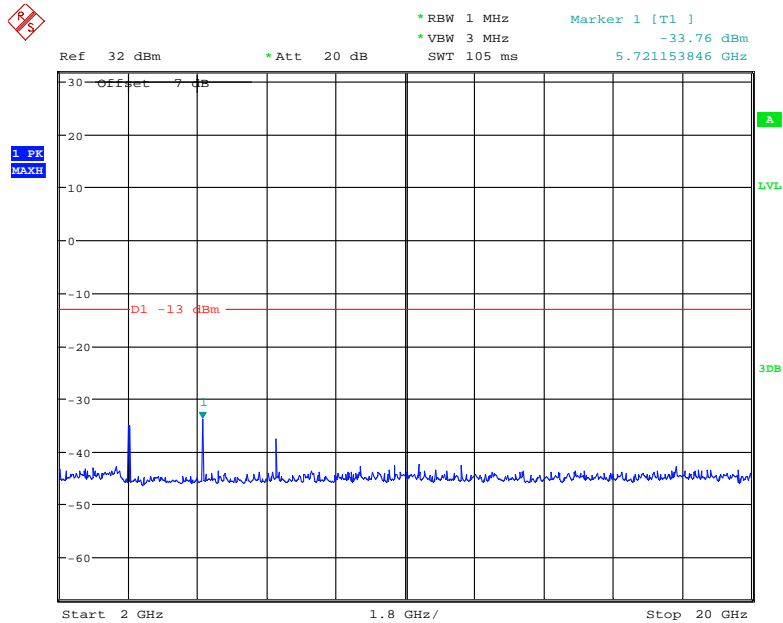
Date: 10.SEP.2021 16:23:30

### 1 GHz – 2 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:27:07

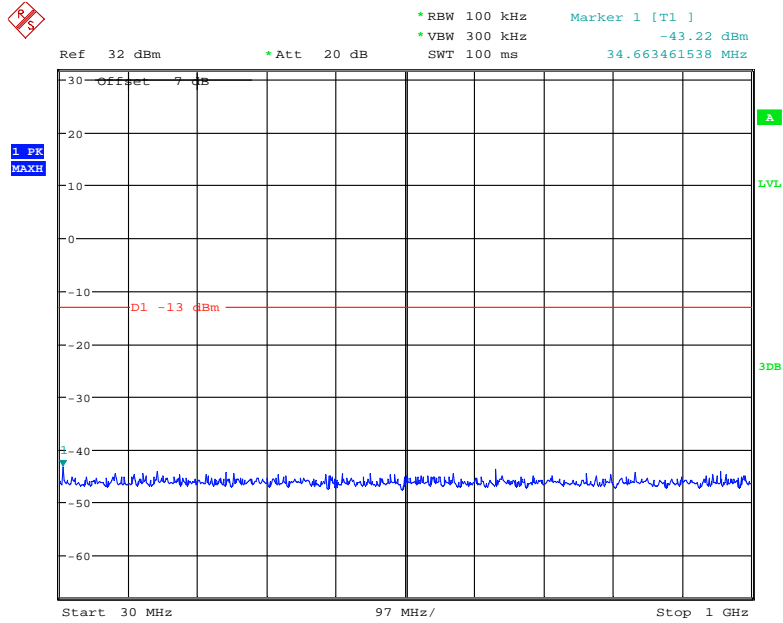
### 2 GHz – 20 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:27:52

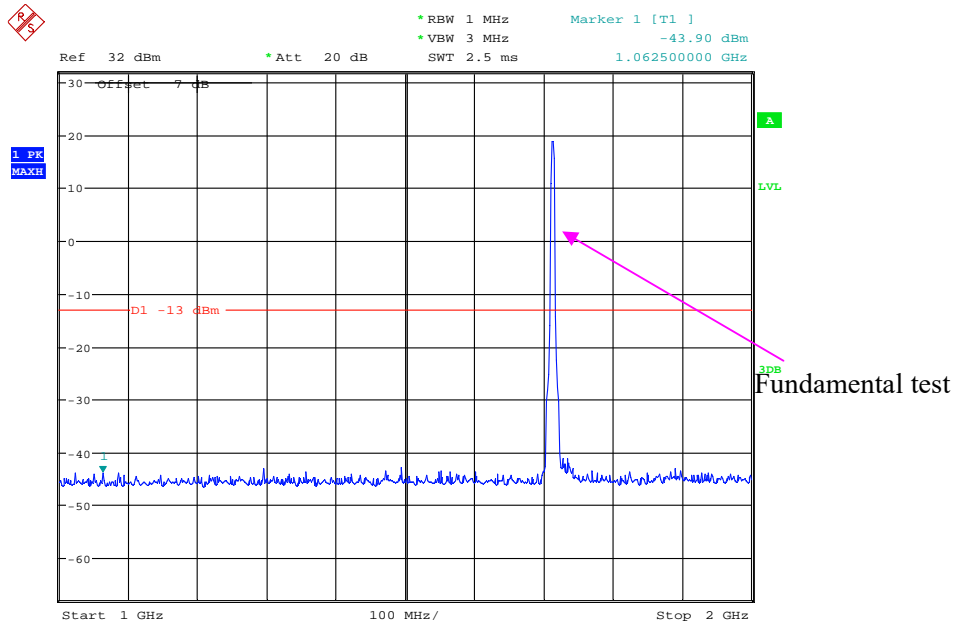
### AWS Band (Part 27) Low Channel:

#### 30 MHz – 1 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:30:14

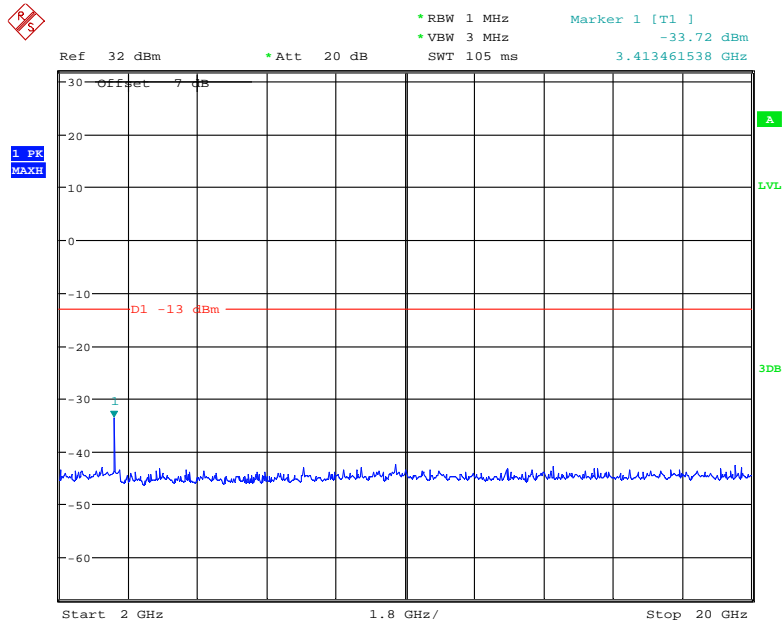
#### 1 GHz – 2 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:32:42



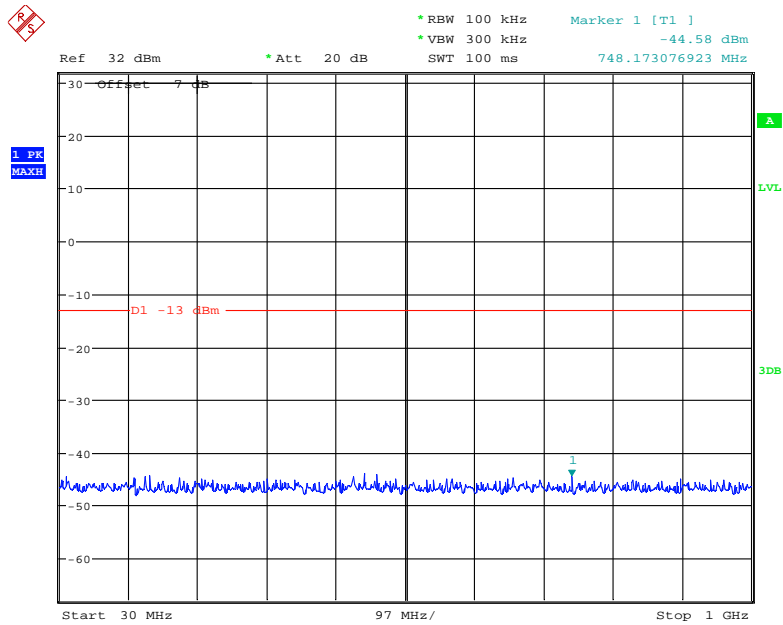
### 2 GHz – 20 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:33:30

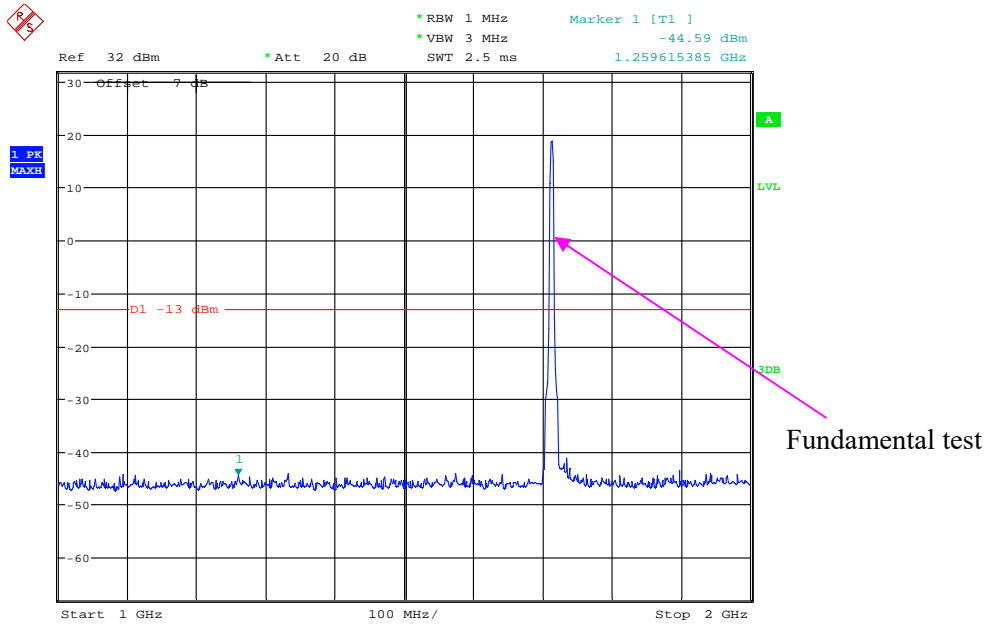
### Middle Channel

### 30 MHz – 1 GHz (WCDMA Mode)



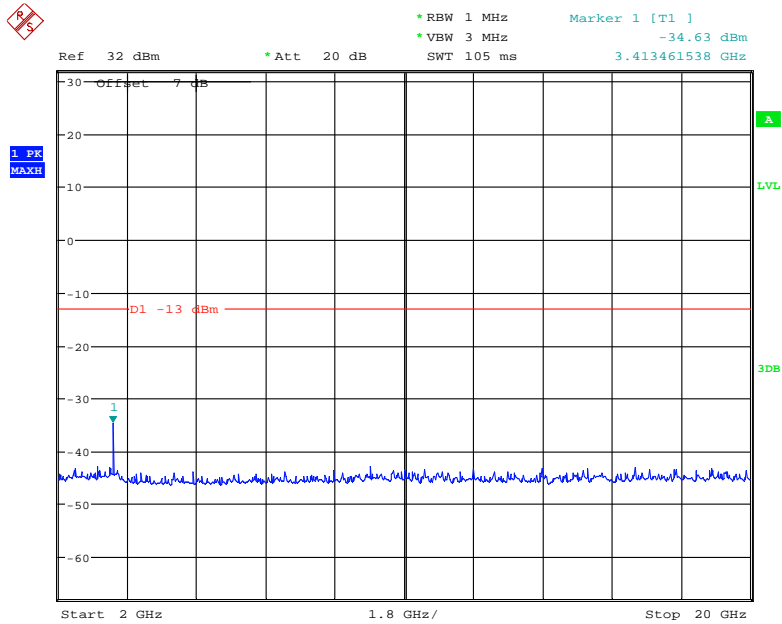
Date: 10.SEP.2021 16:30:51

### 1 GHz – 2 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:32:24

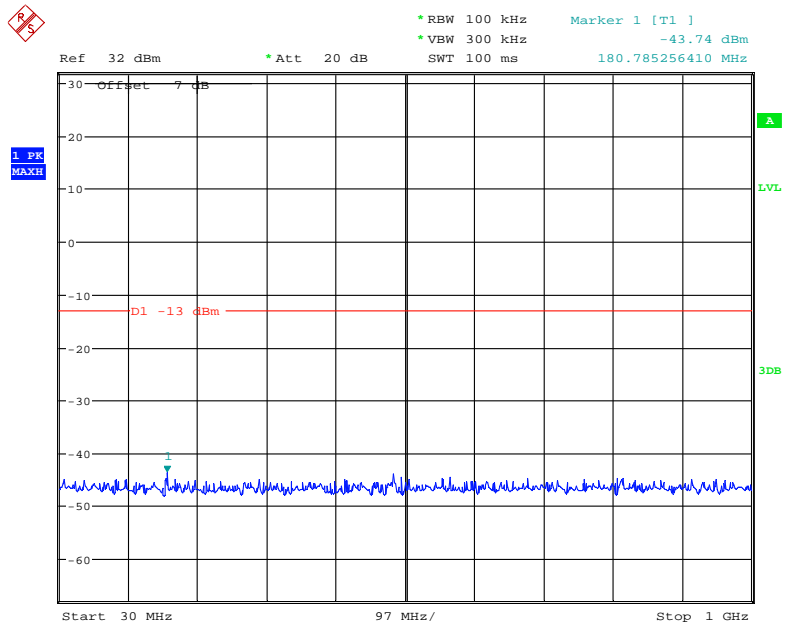
### 2 GHz – 20 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:33:45

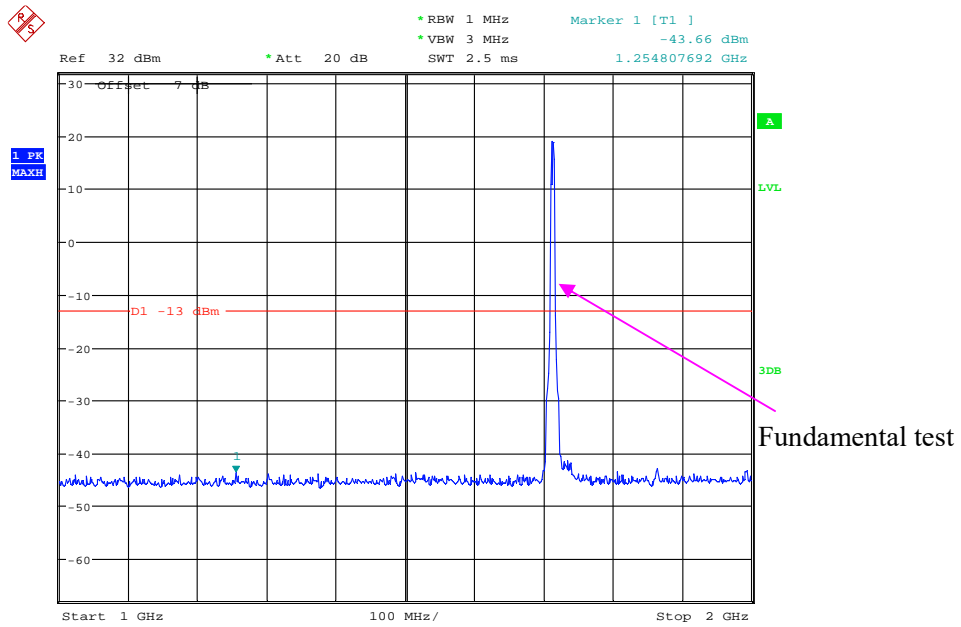
High Channel:

30 MHz – 1 GHz (WCDMA Mode)



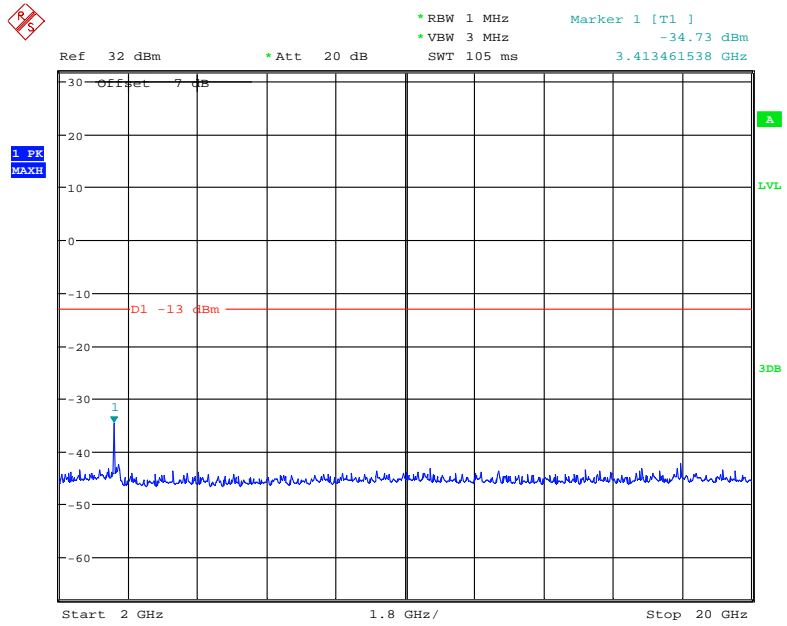
Date: 10.SEP.2021 16:31:03

1 GHz – 2 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:32:07

### 2 GHz – 20 GHz (WCDMA Mode)



Date: 10.SEP.2021 16:34:01

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

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

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**Applicable Standard**

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

**Test Procedure**

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

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

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

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

<b>Temperature:</b>	26~27 °C
<b>Relative Humidity:</b>	54~56 %
<b>ATM Pressure:</b>	101.0 kPa

*The testing was performed by Black Ding on 2021-10-07 for below 1GHz on 2021-09-24 for above 1GHz.*

*EUT operation mode: Transmitting*

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)			Limit (dBm)	Margin (dB)
GSM Mode								
Low Channel								
951.32	-40.91	139	2.3	H	11.79	-29.12	-13	-16.12
951.32	-42.91	261	1.4	V	12.48	-30.43	-13	-17.43
1648.4	-50.27	135	2	H	-2.73	-53.00	-13	-40.00
1648.4	-52.81	175	1.7	V	-2.79	-55.60	-13	-42.60
2472.6	-50.08	311	1.7	H	1.18	-48.90	-13	-35.90
2472.6	-50.91	119	2	V	1.21	-49.70	-13	-36.70
3296.8	-50.64	151	2.3	H	3.24	-47.40	-13	-34.40
3296.8	-50.57	204	1.2	V	3.27	-47.30	-13	-34.30
Middle Channel								
951.32	-41.48	300	2.5	H	11.79	-29.69	-13	-16.69
951.32	-43.06	86	2.4	V	12.48	-30.58	-13	-17.58
1673.2	-46.03	258	2.3	H	-2.67	-48.70	-13	-35.70
1673.2	-48.26	329	1.2	V	-2.74	-51.00	-13	-38.00
2509.8	-49.02	287	2.5	H	1.32	-47.70	-13	-34.70
2509.8	-48.16	102	1.2	V	1.36	-46.80	-13	-33.80
3346.4	-50.71	206	2.2	H	3.31	-47.40	-13	-34.40
3346.4	-50.92	214	1.1	V	3.32	-47.60	-13	-34.60
High Channel								
951.32	-41.64	178	1.4	H	11.79	-29.85	-13	-16.85
951.32	-43.74	330	1.6	V	12.48	-31.26	-13	-18.26
1697.6	-48.26	270	1.7	H	-2.64	-50.90	-13	-37.90
1697.6	-49.11	201	2.0	V	-2.69	-51.80	-13	-38.80
2546.4	-50.47	228	1.1	H	1.47	-49.00	-13	-36.00
2546.4	-50.82	51	1.5	V	1.52	-49.30	-13	-36.30
3395.2	-50.78	304	2.4	H	3.38	-47.40	-13	-34.40
3395.2	-50.87	348	1.6	V	3.37	-47.50	-13	-34.50

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	FCC Part 22H	
			Height (m)	Polar (H/V)			Limit (dBm)	Margin (dB)
WCDMA Mode								
Low Channel								
951.32	-43.01	105	1.4	H	11.79	-31.22	-13	-18.22
951.32	-44.21	197	1.6	V	12.48	-31.73	-13	-18.73
1652.80	-52.77	13	1.7	H	-2.73	-55.50	-13	-42.50
1652.80	-52.01	350	1	V	-2.79	-54.80	-13	-41.80
Middle Channel								
951.32	-42.28	211	1.4	H	11.79	-30.49	-13	-17.49
951.32	-43.40	182	1.8	V	12.48	-30.92	-13	-17.92
1673.20	-51.93	353	1.2	H	-2.67	-54.60	-13	-41.60
1673.20	-51.56	122	2.1	V	-2.74	-54.30	-13	-41.30
High Channel								
951.32	-42.24	132	1.4	H	11.79	-30.45	-13	-17.45
951.32	-43.35	127	2.2	V	12.48	-30.87	-13	-17.87
1693.20	-51.76	205	1.2	H	-2.64	-54.40	-13	-41.40
1693.20	-51.21	19	2.1	V	-2.69	-53.90	-13	-40.90

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	FCC Part 24E	
			Height (m)	Polar (H/V)			Limit (dBm)	Margin (dB)
GSM Mode								
Low Channel								
951.32	-41.15	29	1.8	H	11.79	-29.36	-13	-16.36
951.32	-42.66	36	2.4	V	12.48	-30.18	-13	-17.18
3700.4	-53.16	65	1.7	H	4.96	-48.20	-13	-35.20
3700.4	-51.79	48	1.2	V	4.59	-47.20	-13	-34.20
Middle Channel								
951.32	-41.48	317	2.1	H	11.79	-29.69	-13	-16.69
951.32	-43.02	284	2	V	12.48	-30.54	-13	-17.54
3760	-53.21	18	1.5	H	5.31	-47.90	-13	-34.90
3760	-52.63	152	2	V	4.93	-47.70	-13	-34.70
High Channel								
951.32	-40.41	214	2	H	11.79	-28.62	-13	-15.62
951.32	-42.60	147	2.3	V	12.48	-30.12	-13	-17.12
3819.6	-53.94	210	1.3	H	5.64	-48.30	-13	-35.30
3819.6	-53.07	5	1.9	V	5.27	-47.80	-13	-34.80



Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	FCC Part 2E	
			Height (m)	Polar (H/V)			Limit (dBm)	Margin (dB)
WCDMA Mode								
Low Channel								
951.32	-41.94	214	2.4	H	11.79	-30.15	-13	-17.15
951.32	-43.24	300	1.8	V	12.48	-30.76	-13	-17.76
3704.80	-38.26	74	2.3	H	4.96	-33.30	-13	-20.30
3704.80	-32.59	80	2.0	V	4.59	-28.00	-13	-15.00
5557.20	-49.53	284	1.8	H	10.63	-38.90	-13	-25.90
5557.20	-44.28	152	1.4	V	8.98	-35.30	-13	-22.30
7409.60	-44.44	303	1.9	H	14.06	-41.20	-13	-28.20
7409.60	-46.17	149	2.3	V	14.69	-42.90	-13	-29.90
Middle Channel								
951.32	-42.28	109	1.3	H	11.79	-30.49	-13	-17.49
951.32	-43.43	147	1.1	V	12.48	-30.95	-13	-17.95
3760.00	-42.31	168	2	H	5.31	-37.00	-13	-24.00
3760.00	-38.63	143	1.4	V	4.93	-33.70	-13	-20.70
5640.00	-48.18	275	2.1	H	10.68	-37.50	-13	-24.50
5640.00	-43.74	342	1.5	V	9.24	-34.50	-13	-21.50
7520.00	-45.51	116	1.9	H	14.38	-42.20	-13	-29.20
7520.00	-45.12	212	1.5	V	15.16	-41.80	-13	-28.80
High Channel								
951.32	-42.33	80	1.8	H	11.79	-30.54	-13	-17.54
951.32	-43.37	5	1.6	V	12.48	-30.89	-13	-17.89
3815.20	-41.44	37	2	H	5.64	-35.80	-13	-22.80
3815.20	-38.37	95	1.7	V	5.27	-33.10	-13	-20.10
5722.80	-48.83	91	1.4	H	10.73	-38.10	-13	-25.10
5722.80	-45.01	14	1.2	V	9.51	-35.50	-13	-22.50
7630.40	-56.71	313	2.2	H	14.71	-42.00	-13	-29.00
7630.40	-56.84	261	1.7	V	15.34	-41.50	-13	-28.50

**30 MHz ~ 20 GHz:****AWS Band**

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	FCC Part 27	
			Height (m)	Polar (H/V)			Limit (dBm)	Margin (dB)
WCDMA Mode								
Low Channel								
951.32	-42.95	262	1.9	H	11.79	-31.16	-13	-18.16
951.32	-44.16	311	1.2	V	12.48	-31.68	-13	-18.68
3424.80	-49.63	87	1.9	H	3.43	-46.20	-13	-33.20
3424.80	-49.00	75	2.3	V	3.4	-45.60	-13	-32.60
Middle Channel								
951.32	-42.28	50	1	H	11.79	-30.49	-13	-17.49
951.32	-43.52	285	1.2	V	12.48	-31.04	-13	-18.04
3465.20	-49.09	100	1.4	H	3.49	-45.60	-13	-32.60
3465.20	-49.75	233	2.2	V	3.45	-46.30	-13	-33.30
High Channel								
951.32	-42.95	193	2.4	H	11.79	-31.16	-13	-18.16
951.32	-44.10	169	2.1	V	12.48	-31.62	-13	-18.62
3505.20	-49.05	155	1.4	H	3.55	-45.50	-13	-32.50
3505.20	-50.00	326	1.1	V	3.5	-46.50	-13	-33.50

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

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 2								
Test frequency range: 30 MHz ~ 20 GHz								
1.4MHz, Low channel								
951.32	-42.35	287	2.3	H	11.79	-30.56	-13	-17.56
951.32	-42.63	39	2.3	V	12.48	-30.15	-13	-17.15
3701.40	-39.66	64	2.0	H	4.96	-34.70	-13	-21.70
3701.40	-38.39	301	2.4	V	4.59	-33.80	-13	-20.80
5552.10	-38.13	45	1.4	H	10.63	-27.50	-13	-14.50
5552.10	-38.38	180	2.1	V	8.98	-29.40	-13	-16.40
7402.80	-44.44	303	1.9	H	14.06	-41.20	-13	-28.20
7402.80	-46.17	149	2.3	V	14.69	-42.90	-13	-29.90
1.4MHz, Middle channel								
951.32	-41.81	52	1.9	H	11.79	-30.02	-13	-17.02
951.32	-42.29	144	1.2	V	12.48	-29.81	-13	-16.81
3760.00	-41.81	284	1.5	H	5.31	-36.50	-13	-23.50
3760.00	-38.73	279	1.6	V	4.93	-33.80	-13	-20.80
5640.00	-39.48	346	1.9	H	10.68	-28.80	-13	-15.80
5640.00	-37.24	239	2	V	9.24	-28.00	-13	-15.00
7520.00	-45.51	116	1.9	H	14.38	-42.20	-13	-29.20
7520.00	-45.12	212	1.5	V	15.16	-41.80	-13	-28.80
1.4MHz, High Channel								
951.32	-35.85	194	2.2	H	5.25	-30.60	-13	17.60
951.32	-40.38	64	1.3	V	5.08	-35.30	-13	17.33
3818.60	-41.24	161	1.1	H	5.64	-35.60	-13	-22.60
3818.60	-39.67	286	2.2	V	5.27	-34.40	-13	-21.40
5727.90	-39.53	128	1.2	H	10.73	-28.80	-13	-15.80
5727.90	-36.81	299	1.6	V	9.51	-27.30	-13	-14.30
7637.20	-49.91	71	1.1	H	14.71	-35.20	-13	-22.20
7637.20	-49.94	291	1.5	V	15.34	-34.60	-13	-21.60

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 4								
Test frequency range:30 MHz ~ 20 GHz								
1.4MHz, Low channel								
951.32	-42.39	270	1.4	H	11.79	-30.60	-13	-17.60
951.32	-42.81	253	1.7	V	12.48	-30.33	-13	-17.33
3421.40	-49.43	36	2.1	H	3.43	-46.00	-13	-33.00
3421.40	-48.40	115	1.7	V	3.4	-45.00	-13	-32.00
1.4MHz, Middle channel								
951.32	-41.84	307	1.1	H	11.79	-30.05	-13	-17.05
951.32	-42.37	72	2.1	V	12.48	-29.89	-13	-16.89
3465.00	-51.19	113	1.7	H	3.49	-47.70	-13	-34.70
3465.00	-48.65	272	2.2	V	3.45	-45.20	-13	-32.20
1.4MHz, High Channel								
951.32	-42.01	233	2.1	H	11.79	-30.22	-13	-17.22
951.32	-43.36	341	1.5	V	12.48	-30.88	-13	-17.88
3508.60	-50.65	216	2.3	H	3.55	-47.10	-13	-34.10
3508.60	-49.50	0	2.3	V	3.5	-46.00	-13	-33.00

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 5								
Test frequency range:30 MHz ~ 10 GHz								
1.4MHz, Low channel								
951.32	-42.69	302	2	H	11.79	-30.90	-13	-17.90
951.32	-42.90	66	1.2	V	12.48	-30.42	-13	-17.42
1649.40	-46.07	267	2.5	H	-2.73	-48.80	-13	-35.80
1649.40	-44.11	42	1.4	V	-2.79	-46.90	-13	-33.90
2474.10	-45.68	207	1.1	H	1.18	-44.50	-13	-31.50
2474.10	-46.71	157	2.4	V	1.21	-45.50	-13	-32.50
3298.80	-49.54	136	2.1	H	3.24	-46.30	-13	-33.30
3298.80	-49.17	281	1.3	V	3.27	-45.90	-13	-32.90
1.4MHz, Middle channel								
951.32	-42.58	235	1.5	H	11.79	-30.79	-13	-17.79
951.32	-42.99	249	1.7	V	12.48	-30.51	-13	-17.51
1673.00	-45.23	173	2.2	H	-2.67	-47.90	-13	-34.90
1673.00	-43.56	156	2	V	-2.74	-46.30	-13	-33.30
2509.50	-48.12	225	2.3	H	1.32	-46.80	-13	-33.80
2509.50	-47.06	137	2.3	V	1.36	-45.70	-13	-32.70
3346.00	-49.41	150	2	H	3.31	-46.10	-13	-33.10
3346.00	-48.92	35	1.3	V	3.32	-45.60	-13	-32.60
1.4MHz, High Channel								
951.32	-42.42	340	1.6	H	11.79	-30.63	-13	-17.63
951.32	-42.58	250	2	V	12.48	-30.10	-13	-17.10
1696.60	-51.80	67	1.6	H	9.5	-42.30	-25	-17.30
1696.60	-50.42	7	2.3	V	8.32	-42.10	-25	-17.10
2544.90	-49.08	39	1.9	H	14.38	-34.70	-25	-9.70
2544.90	-48.76	51	1	V	15.16	-33.60	-25	-8.60
3393.20	-53.53	126	1.6	H	17.03	-36.50	-25	-11.50
3393.20	-52.47	309	2.3	V	15.27	-37.20	-25	-12.20

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 7								
Test frequency range: 30 MHz ~ 26.5 GHz								
5MHz, Low channel								
951.32	-44.19	129	2.5	H	11.79	-32.40	-25	-7.40
951.32	-43.76	1	2.2	V	12.48	-31.28	-25	-6.28
5005.00	-51.80	239	1.5	H	9.5	-42.30	-25	-17.30
5005.00	-50.42	137	1.3	V	8.32	-42.10	-25	-17.10
7507.50	-51.80	239	1.5	H	14.38	-42.30	-25	-17.30
7507.50	-50.42	137	1.3	V	15.16	-42.10	-25	-17.10
10010.0	-51.80	239	1.5	H	17.03	-42.30	-25	-17.30
10010.0	-50.42	137	1.3	V	15.27	-42.10	-25	-17.10
5MHz, Middle channel								
951.32	-44.41	220	2.5	H	11.79	-32.62	-25	-7.62
951.32	-43.89	147	1.9	V	12.48	-31.41	-25	-6.41
5070.00	-50.36	9	1.7	H	9.56	-40.80	-25	-15.80
5070.00	-51.84	14	1.6	V	8.34	-43.50	-25	-18.50
7605.00	-50.21	104	1.7	H	14.71	-35.50	-25	-10.50
7605.00	-51.84	251	1.3	V	15.34	-36.50	-25	-11.50
10140.0	-51.59	238	1.4	H	17.19	-34.40	-25	-9.40
10140.0	-53.51	161	1.2	V	15.51	-38.00	-25	-13.00
5MHz, High Channel								
951.32	-43.89	152	2	H	11.79	-32.10	-25	-7.10
951.32	-43.53	310	1.9	V	12.48	-31.05	-25	-6.05
5135.00	-50.12	193	2.3	H	9.72	-40.40	-25	-15.40
5135.00	-49.58	250	1.1	V	8.38	-41.20	-25	-16.20
7702.50	-52.23	293	1.1	H	15.03	-37.20	-25	-12.20
7702.50	-52.21	84	1.3	V	15.51	-36.70	-25	-11.70
10270.0	-54.85	122	1.5	H	17.35	-37.50	-25	-12.50
10270.0	-51.26	324	2.2	V	15.76	-35.50	-25	-10.50

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 17								
Test frequency range: 30 MHz ~ 10 GHz								
5MHz, Low channel								
951.32	-43.19	207	2.3	H	11.79	-31.40	-13	-18.40
951.32	-43.52	277	2.4	V	12.48	-31.04	-13	-18.04
1413.00	-55.67	117	1.2	H	-0.53	-56.20	-13	-43.20
1413.00	-56.36	20	1.4	V	-0.74	-57.10	-13	-44.10
2119.50	-40.01	105	1.2	H	-0.89	-40.90	-13	-27.90
2119.50	-43.78	126	1.8	V	-1.12	-44.90	-13	-31.90
2826.00	-53.24	65	2.2	H	2.24	-51.00	-13	-38.00
2826.00	-52.83	58	1.2	V	2.33	-50.50	-13	-37.50
5MHz, Middle channel								
951.32	-42.29	174	1	H	11.79	-30.50	-13	-17.50
951.32	-42.29	295	1.3	V	12.48	-29.81	-13	-16.81
1420.00	-54.67	121	2.2	H	-0.53	-55.20	-13	-42.20
1420.00	-56.66	167	1.2	V	-0.74	-57.40	-13	-44.40
2130.00	-39.61	78	1.9	H	-0.89	-40.50	-13	-27.50
2130.00	-43.08	355	1.5	V	-1.12	-44.20	-13	-31.20
2840.00	-53.24	225	1.7	H	2.24	-51.00	-13	-38.00
2840.00	-52.93	69	2.4	V	2.33	-50.60	-13	-37.60
5MHz, High Channel								
951.32	-42.49	254	1.5	H	11.79	-30.70	-13	-17.70
951.32	-42.40	67	1.1	V	12.48	-29.92	-13	-16.92
1427.00	-54.47	132	2	H	-0.53	-55.00	-13	-42.00
1427.00	-56.06	2	2	V	-0.74	-56.80	-13	-43.80
2140.50	-40.21	76	1.5	H	-0.89	-41.10	-13	-28.10
2140.50	-42.18	3	1.7	V	-1.12	-43.30	-13	-30.30
2854.00	-53.44	83	1.5	H	2.24	-51.20	-13	-38.20
2854.00	-53.53	256	1	V	2.33	-51.20	-13	-38.20

Frequency (MHz)	Receiver Reading (dBm)	Turntable Degree	Rx Antenna		Substituted Factor (dB)	Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Height (m)	Polar (H/V)				
Band 38								
Test frequency range: 30 MHz ~ 26.5GHz								
5MHz, Low channel								
951.32	-44.17	45	1.4	H	11.79	-32.38	-25	-7.38
951.32	-44.20	162	2.1	V	12.48	-31.72	-25	-6.72
5145.00	-45.51	359	2.1	H	9.81	-35.70	-25	-10.70
5145.00	-46.33	155	1.2	V	8.43	-37.90	-25	-12.90
7717.50	-52.93	270	1.9	H	15.03	-37.90	-25	-12.90
7717.50	-55.61	117	2.3	V	15.51	-40.10	-25	-15.10
10290.0	-57.15	22	1.5	H	17.35	-39.80	-25	-14.80
10290.0	-57.46	184	2.3	V	15.76	-41.70	-25	-16.70
5MHz, Middle channel								
951.32	-43.91	285	1.1	H	11.79	-32.12	-25	-7.12
951.32	-43.95	25	2.3	V	12.48	-31.47	-25	-6.47
5190.00	-45.41	152	2.3	H	9.81	-35.60	-25	-10.60
5190.00	-47.33	59	1.3	V	8.43	-38.90	-25	-13.90
7785.00	-51.43	81	1.4	H	15.03	-36.40	-25	-11.40
7785.00	-53.71	81	1.8	V	15.51	-38.20	-25	-13.20
10380.0	-55.71	301	1.2	H	17.41	-38.30	-25	-13.30
10380.0	-57.97	71	2.3	V	15.87	-42.10	-25	-17.10
5MHz, High Channel								
951.32	-44.11	80	2.3	H	11.79	-32.32	-25	-7.32
951.32	-44.12	60	1.2	V	12.48	-31.64	-25	-6.64
5235.00	-46.71	113	1.5	H	9.81	-36.90	-25	-11.90
5235.00	-45.73	304	2.3	V	8.43	-37.30	-25	-12.30
7852.50	-51.63	164	1.1	H	15.03	-36.60	-25	-11.60
7852.50	-55.91	14	1.8	V	15.51	-40.40	-25	-15.40
10470.0	-55.67	69	1	H	17.47	-38.20	-25	-13.20
10470.0	-56.88	32	1.6	V	15.98	-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)				
Band 41								
Test frequency range: 30 MHz ~ 26.5GHz								
5MHz, Low channel								
951.32	-44.05	300	1.1	H	11.79	-32.26	-25	-7.26
951.32	-44.23	140	2.4	V	12.48	-31.75	-25	-6.75
5075.00	-45.7	38	2.4	H	9.5	-36.20	-25	-11.20
5075.00	-48.52	320	2.3	V	8.32	-40.20	-25	-15.20
7612.50	-54.21	333	2.5	H	14.71	-39.50	-25	-14.50
7612.50	-55.54	154	1.4	V	15.34	-40.20	-25	-15.20
5MHz, Middle channel								
951.32	-44.21	345	2.2	H	11.79	-32.42	-25	-7.42
951.32	-44.15	228	2.3	V	12.48	-31.67	-25	-6.67
5190.00	-45.41	80	2.5	H	9.81	-35.60	-25	-10.60
5190.00	-47.33	329	1.9	V	8.43	-38.90	-25	-13.90
7785.00	-51.43	246	1.2	H	15.03	-36.40	-25	-11.40
7785.00	-53.71	96	2.1	V	15.51	-38.20	-25	-13.20
5MHz, High Channel								
951.32	-43.69	151	1.9	H	11.79	-31.90	-25	-6.90
951.32	-43.48	62	1.7	V	12.48	-31.00	-25	-6.00
5305.00	-45.91	160	1.3	H	10.11	-35.80	-25	-10.80
5305.00	-46.84	208	1.7	V	8.54	-38.30	-25	-13.30
7957.50	-55.15	73	1.7	H	15.35	-39.80	-25	-14.80
7957.50	-57.08	217	2.3	V	15.68	-41.40	-25	-16.40
Band 66								
Test frequency range: 30 MHz ~ 20GHz								
1.4MHz, Low channel								
951.32	-42.41	339	1.8	H	11.79	-30.62	-13	-17.62
951.32	-42.50	325	2	V	12.48	-30.02	-13	-17.02
3421.40	-48.03	22	1.2	H	3.43	-44.60	-13	-31.60
3421.40	-49.20	282	2.4	V	3.4	-45.80	-13	-32.80
1.4MHz, Middle channel								
951.32	-42.72	21	1.5	H	11.79	-30.93	-13	-17.93
951.32	-42.66	167	1.2	V	12.48	-30.18	-13	-17.18
3510.00	-48.59	357	1.8	H	3.49	-45.10	-13	-32.10
3510.00	-50.05	339	1.5	V	3.45	-46.60	-13	-33.60
1.4MHz, High Channel								
951.32	-42.17	171	1.9	H	11.79	-30.38	-13	-17.38
951.32	-42.00	253	1.9	V	12.48	-29.52	-13	-16.52
3558.60	-49.65	264	1.2	H	3.55	-46.10	-13	-33.10
3558.60	-49.40	110	1.5	V	3.5	-45.90	-13	-32.90

**Note:**

Absolute Level = Substituted Level - Cable loss + Antenna Gain

Margin = Absolute Level - Limit

dBd is for the ERP, dBi is for EIRP.

## **FCC § 22.917 (a); § 24.238 (a); §27.53(c) (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.

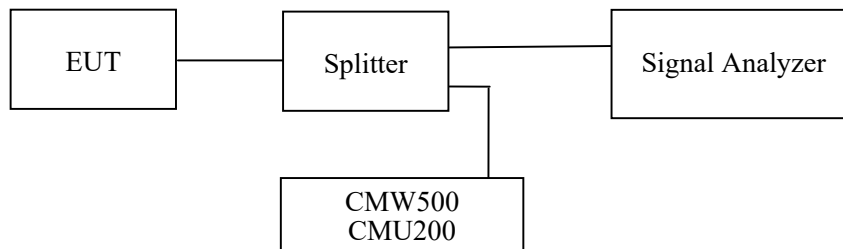
According to §24.238(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

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

### **Test Procedure**

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

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



### **Test Data**

#### **Environmental Conditions**

<b>Temperature:</b>	26~28 °C
<b>Relative Humidity:</b>	52~58 %
<b>ATM Pressure:</b>	100.9'101.2 kPa

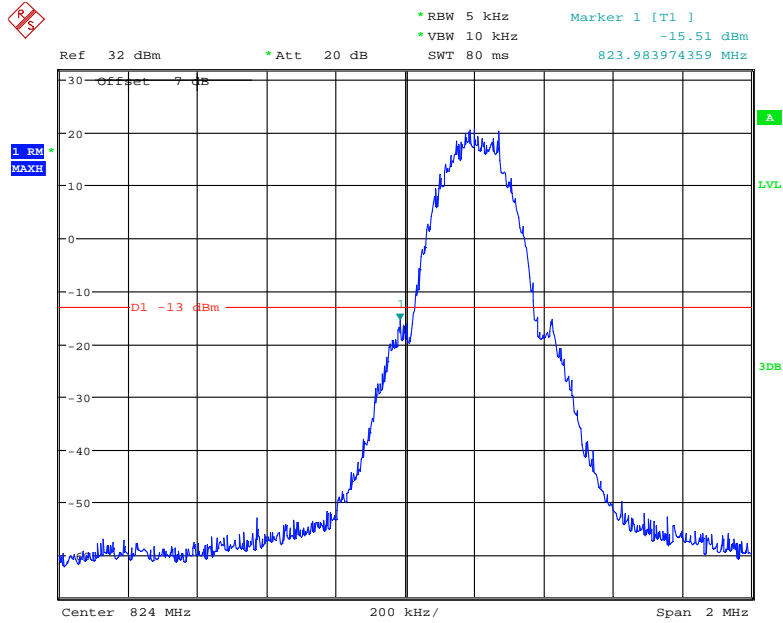
*The testing was performed by Paul liu from 2021-09-10 to 2021-09-15.*

*EUT operation mode: Transmitting (Worst case)*

**Test Result: Pass**

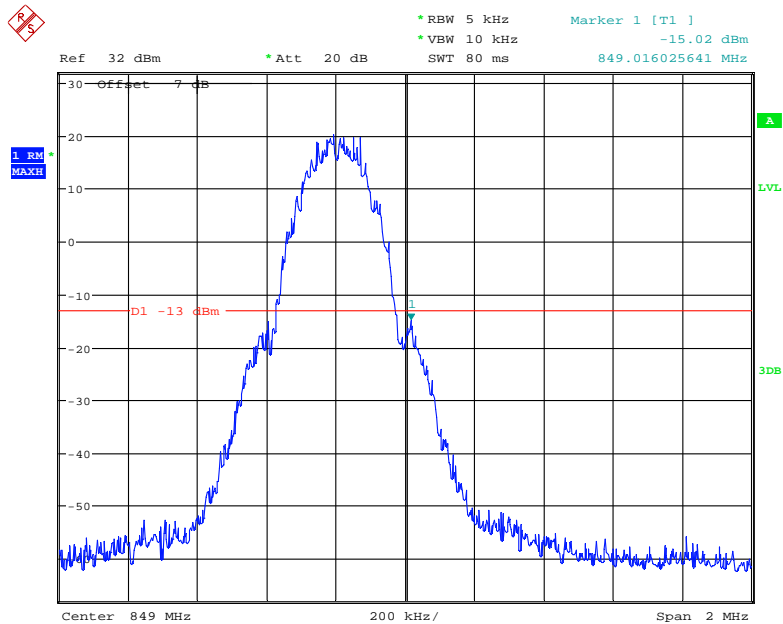
*Please refer to the following plots.*

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



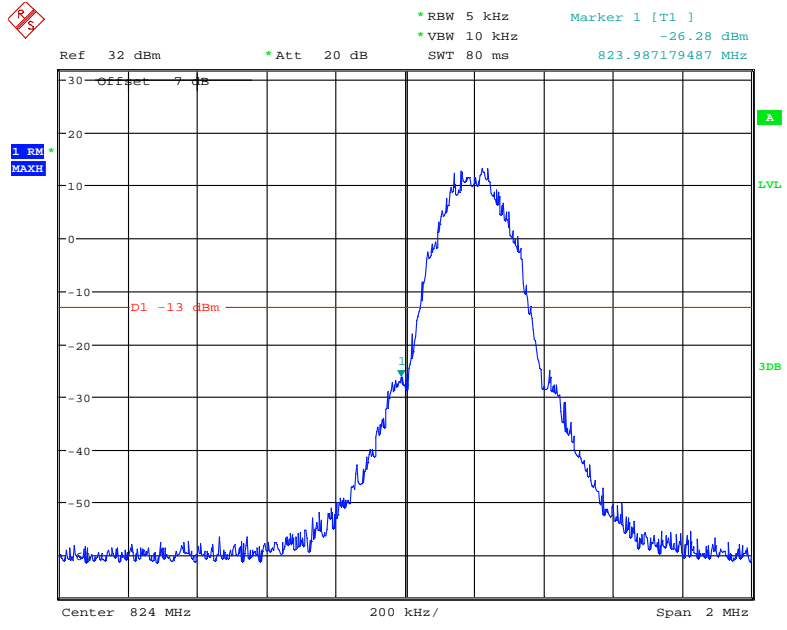
Date: 10.SEP.2021 11:38:43

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



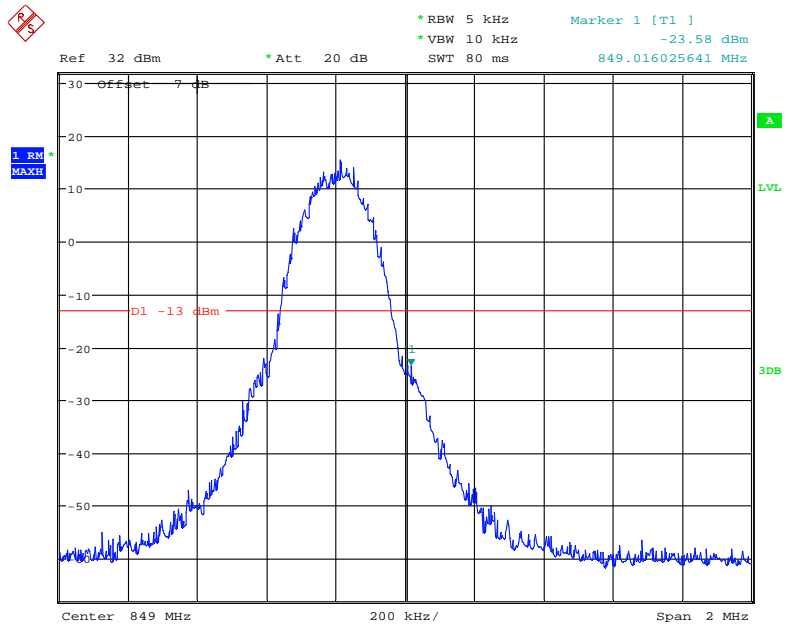
Date: 10.SEP.2021 11:39:42

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



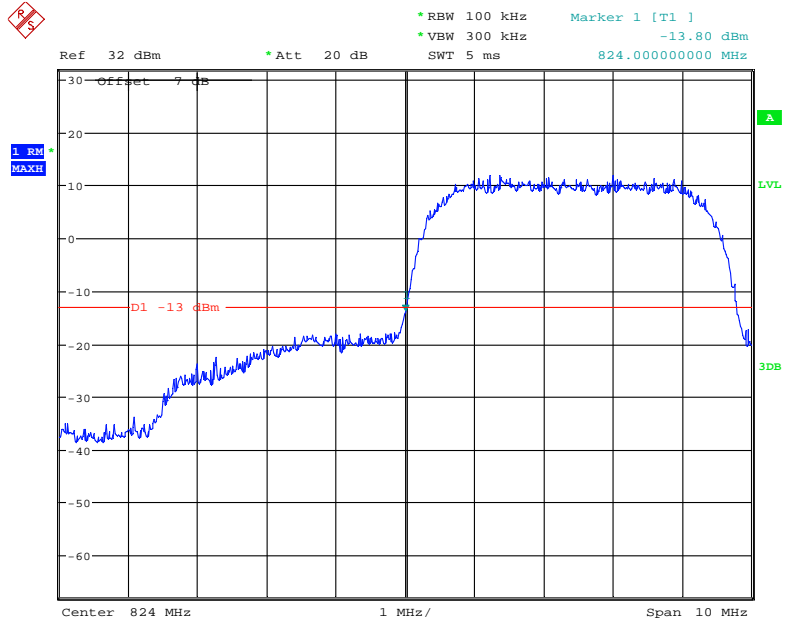
Date: 10.SEP.2021 11:34:23

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



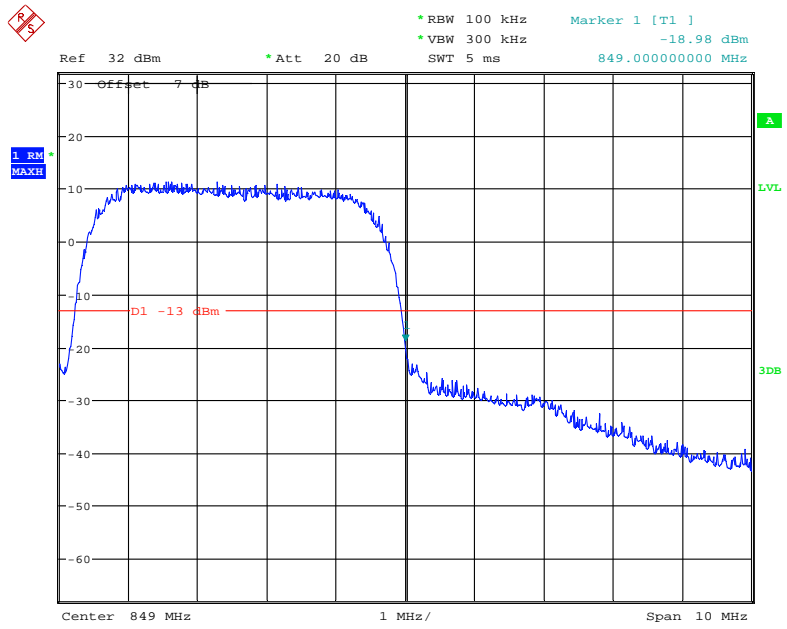
Date: 10.SEP.2021 11:36:00

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



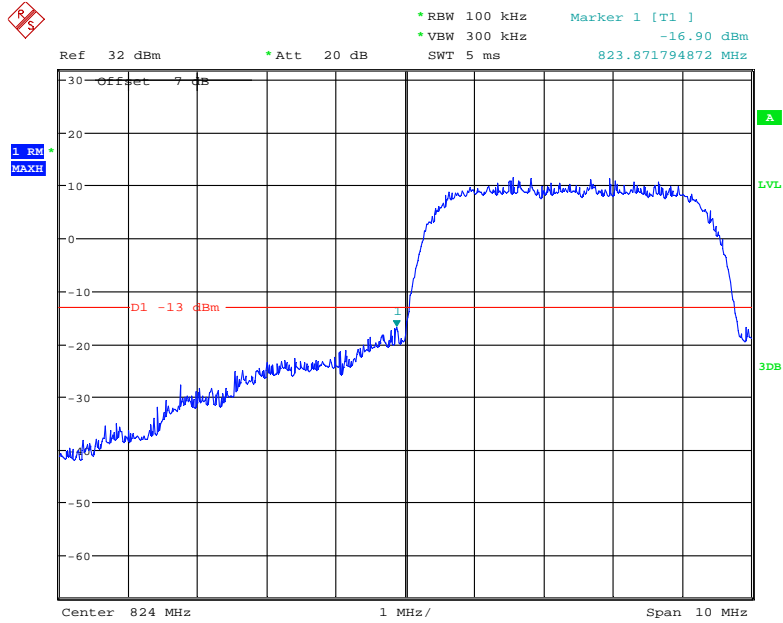
Date: 10.SEP.2021 15:56:11

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



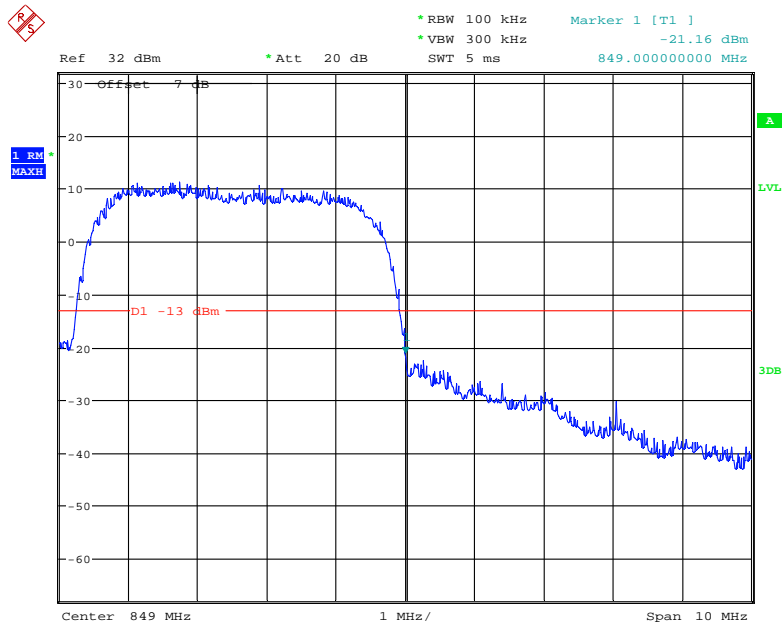
Date: 10.SEP.2021 15:55:18

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



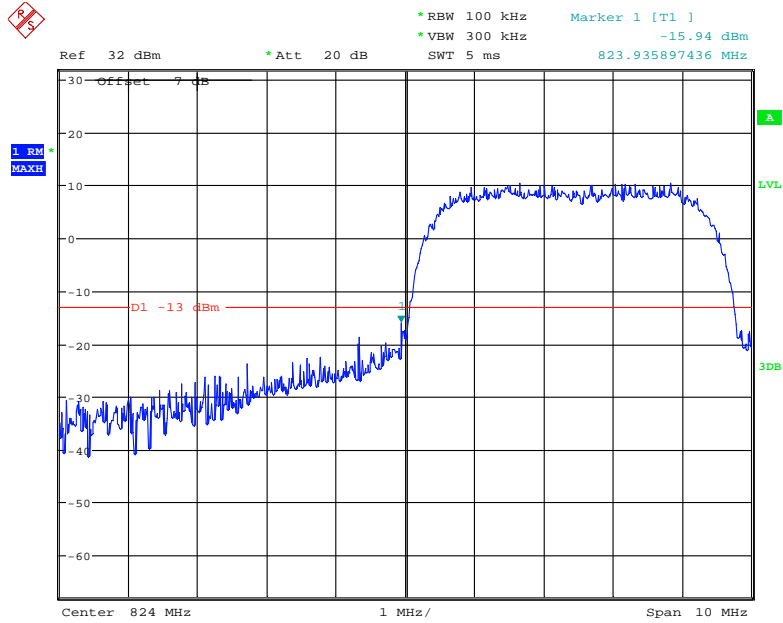
Date: 10.SEP.2021 15:37:31

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



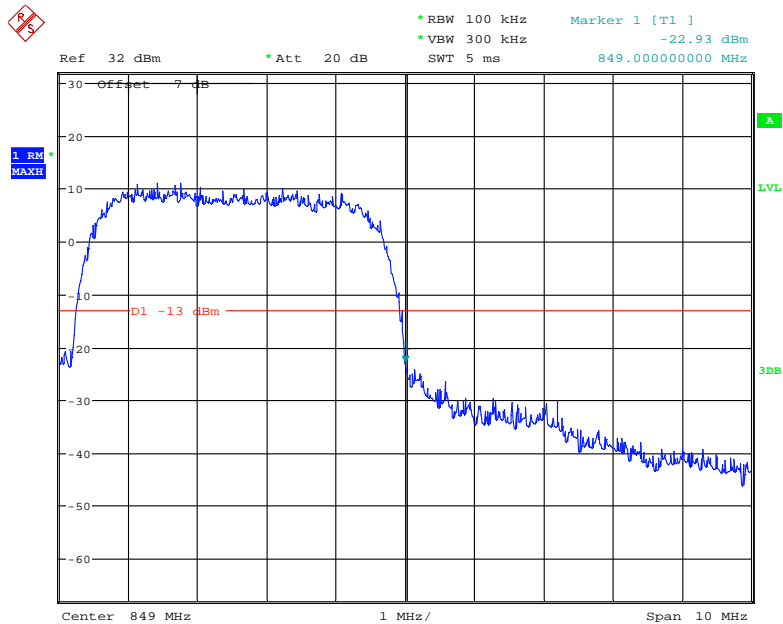
Date: 10.SEP.2021 15:42:11

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



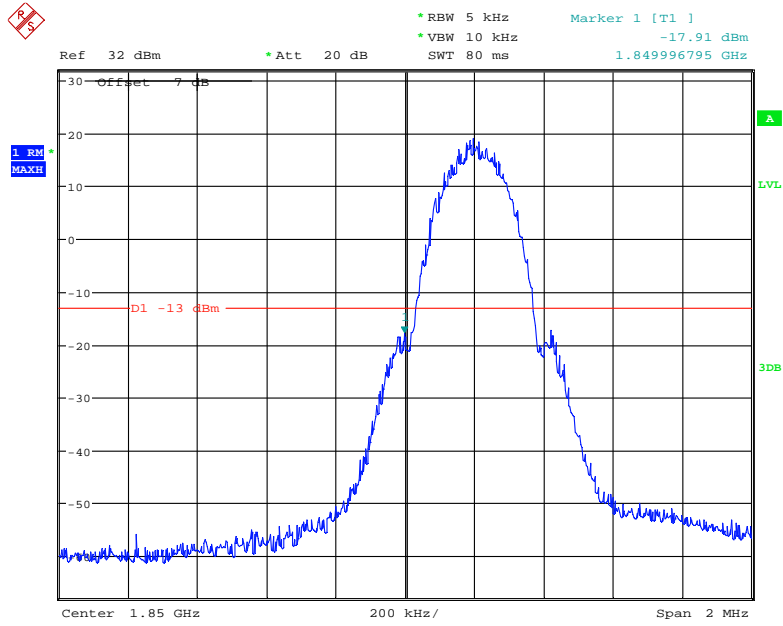
Date: 10.SEP.2021 15:58:22

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



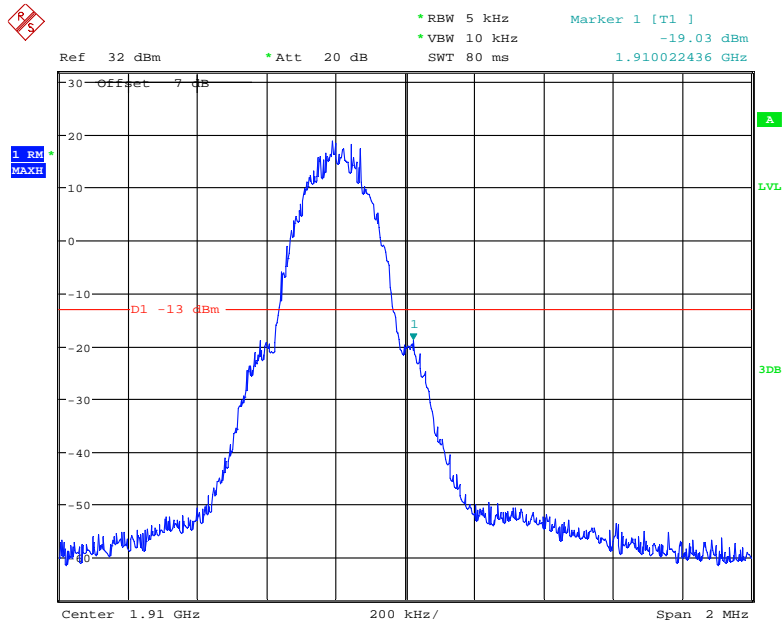
Date: 10.SEP.2021 16:00:13

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



Date: 10.SEP.2021 11:42:41

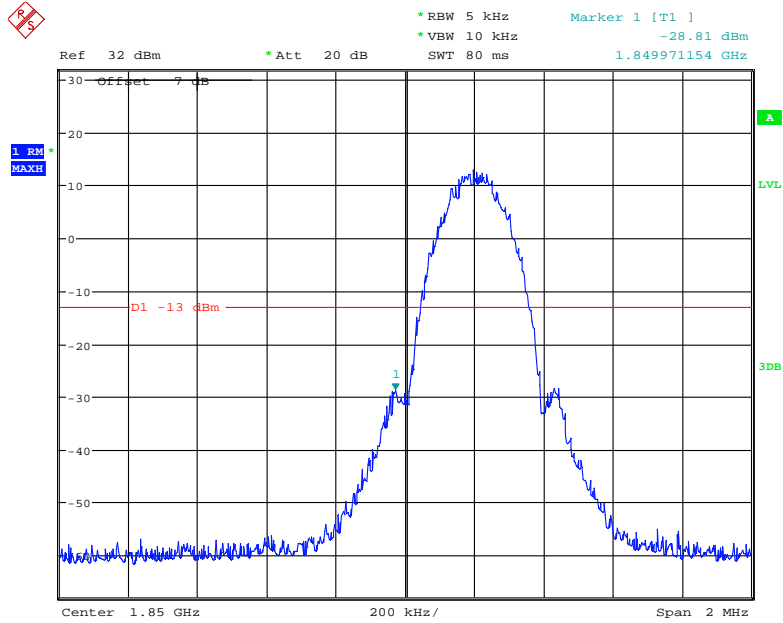
### PCS Band, Right Band Edge for GSM (GMSK) Mode



Date: 10.SEP.2021 11:43:47

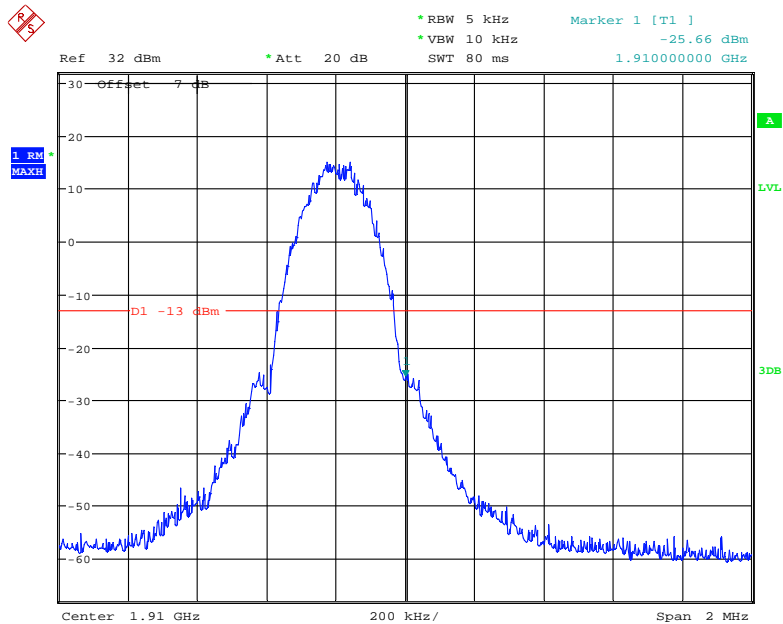


### PCS Band, Left Band Edge for EGPRS (8PSK) Mode



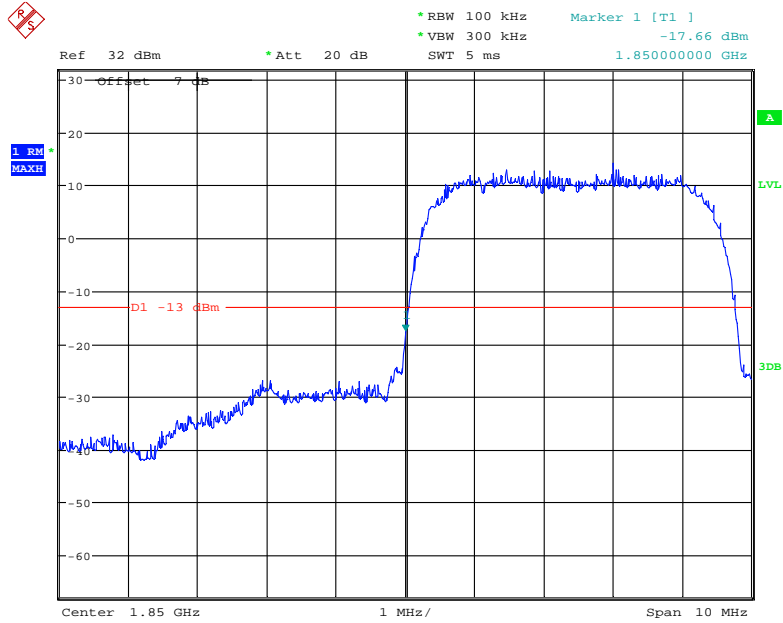
Date: 10.SEP.2021 11:23:06

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



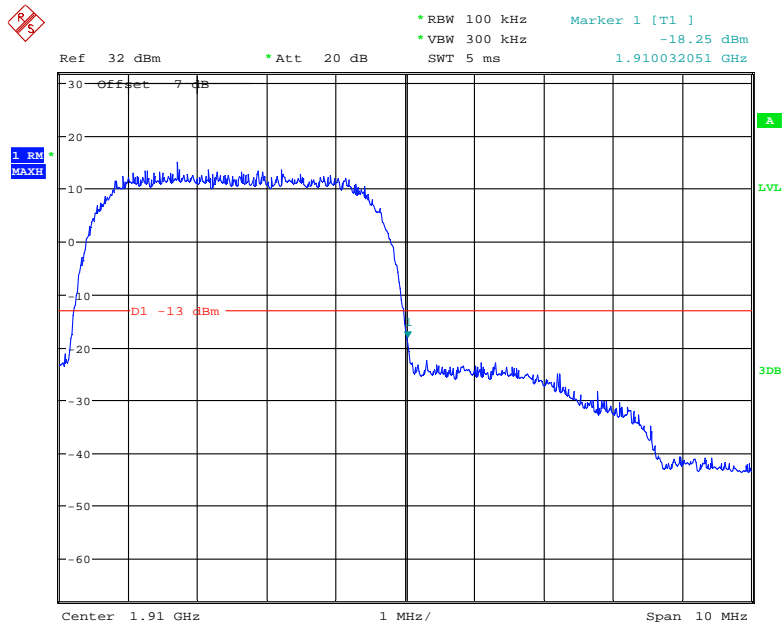
Date: 10.SEP.2021 11:24:55

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



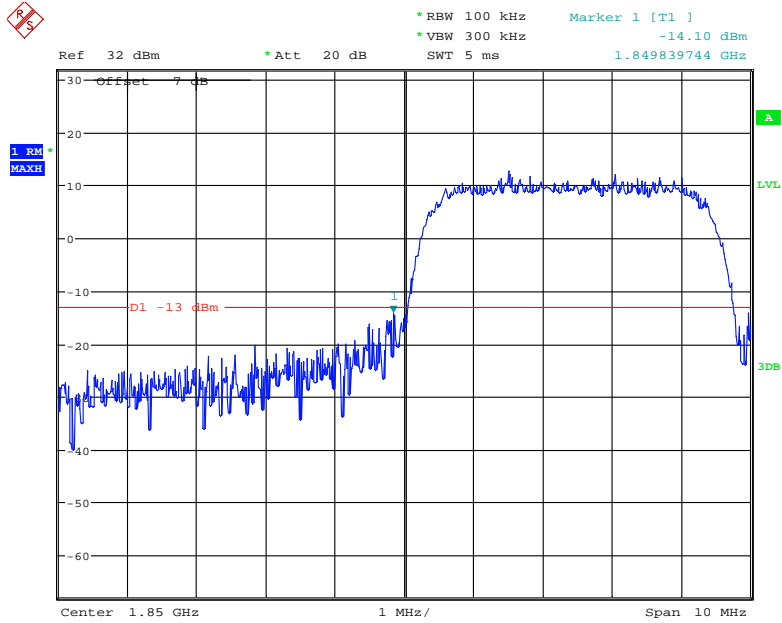
Date: 10.SEP.2021 15:51:31

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



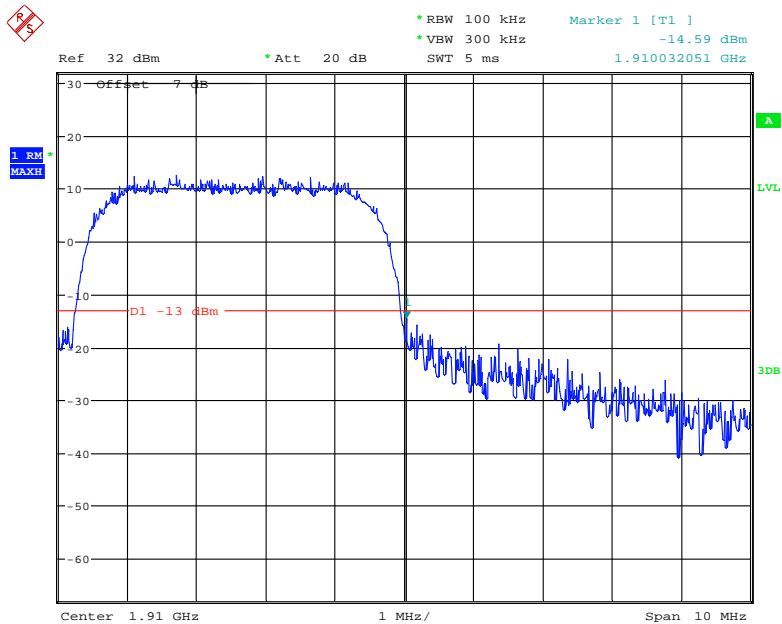
Date: 10.SEP.2021 15:50:32

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



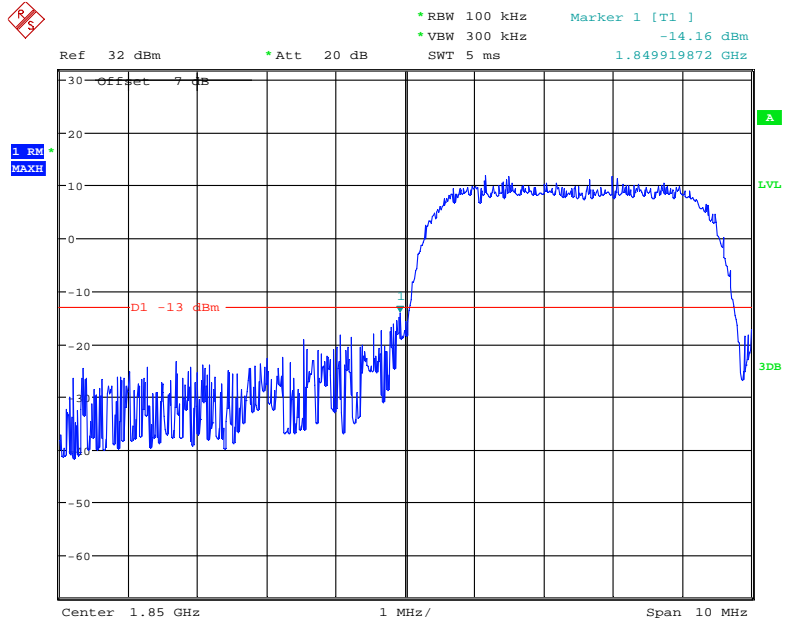
Date: 10.SEP.2021 15:47:00

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



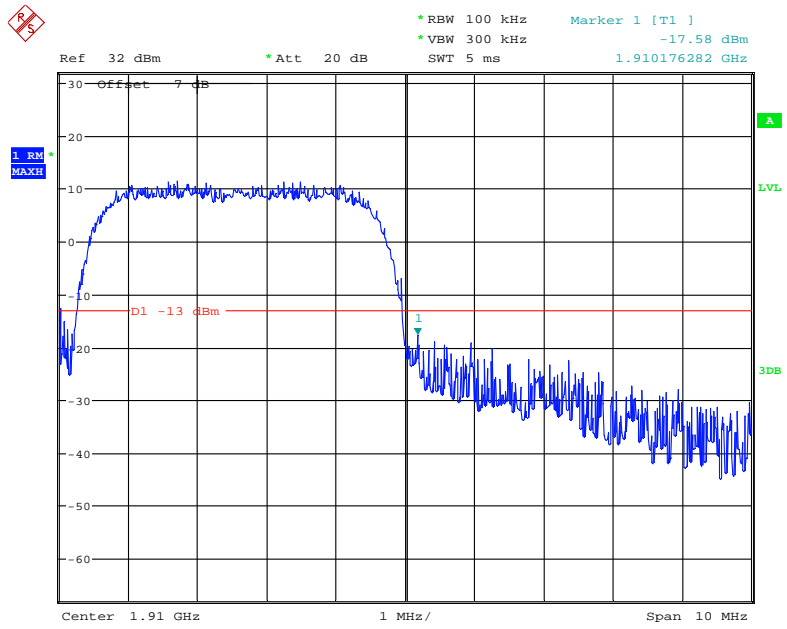
Date: 10.SEP.2021 15:48:24

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



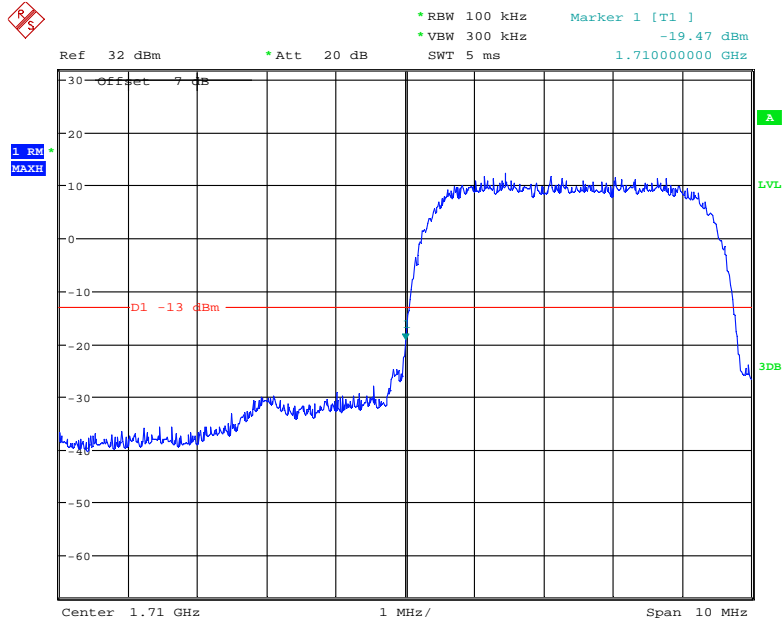
Date: 10.SEP.2021 16:03:53

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



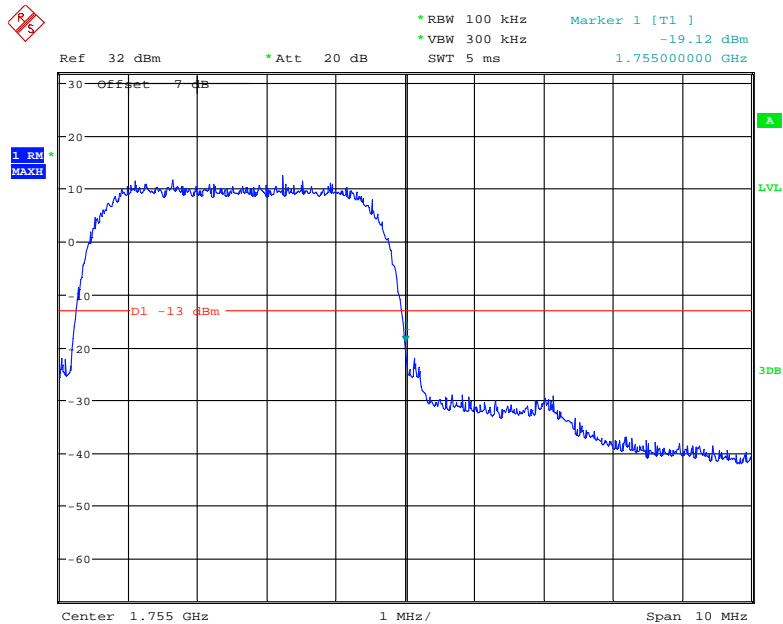
Date: 10.SEP.2021 16:04:45

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



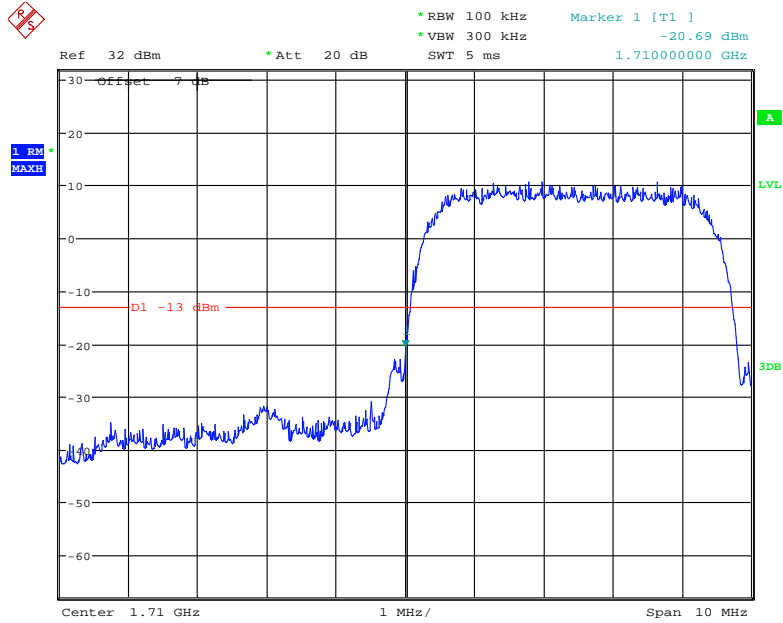
Date: 10.SEP.2021 15:52:37

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



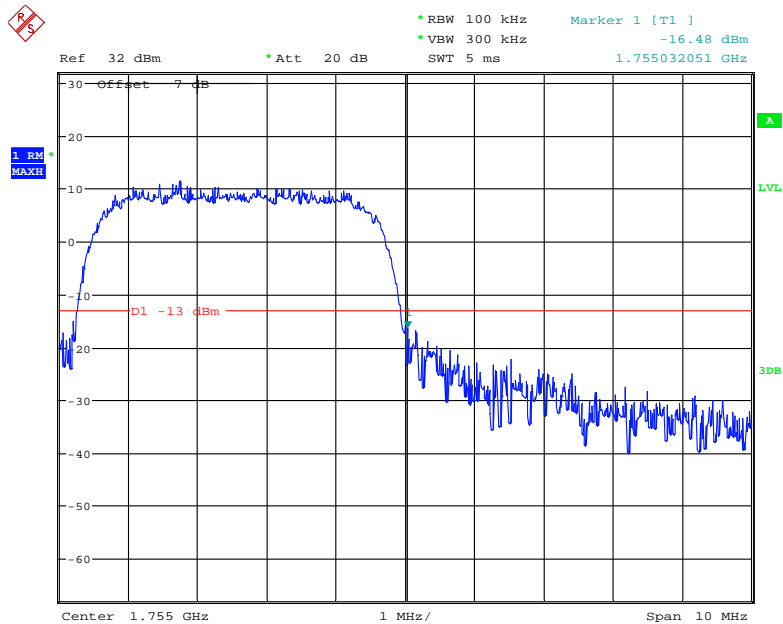
Date: 10.SEP.2021 15:53:37

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



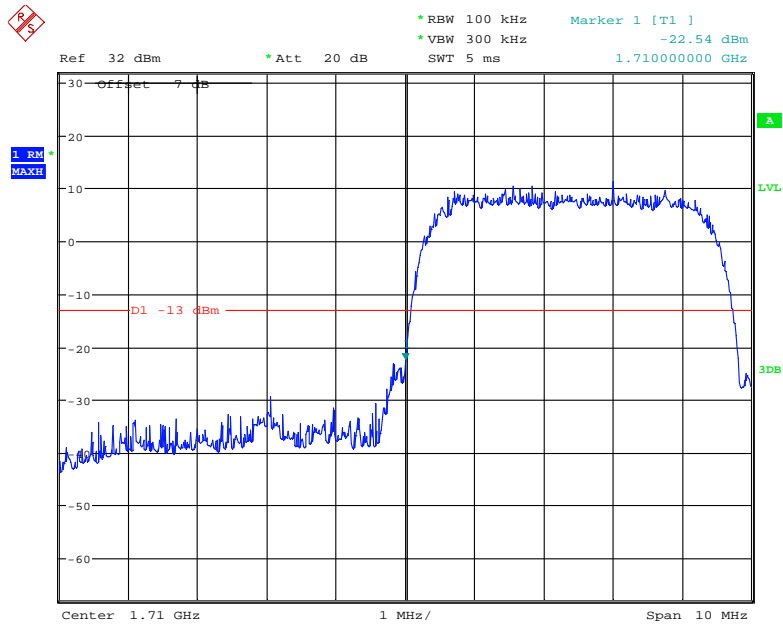
Date: 10.SEP.2021 15:45:44

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



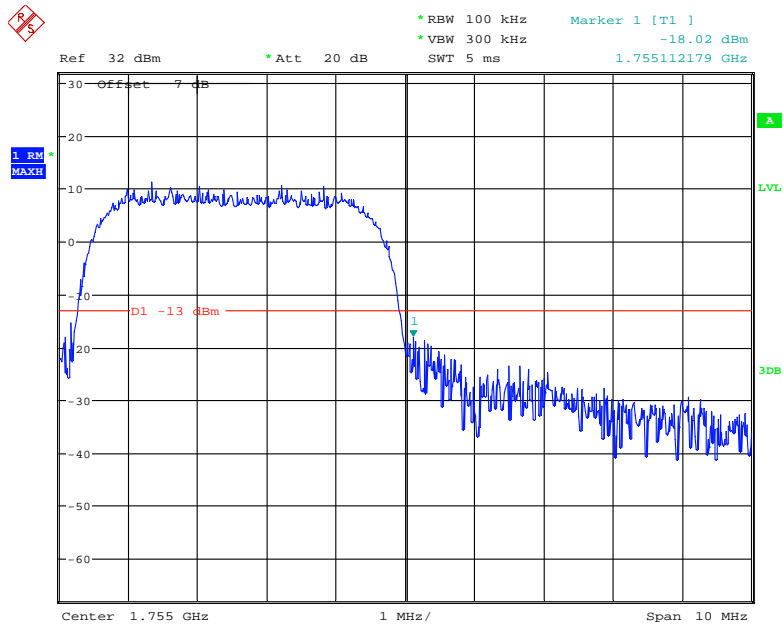
Date: 10.SEP.2021 15:44:22

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



Date: 10.SEP.2021 16:02:24

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



Date: 10.SEP.2021 16:01:37

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 and & §27.54.

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

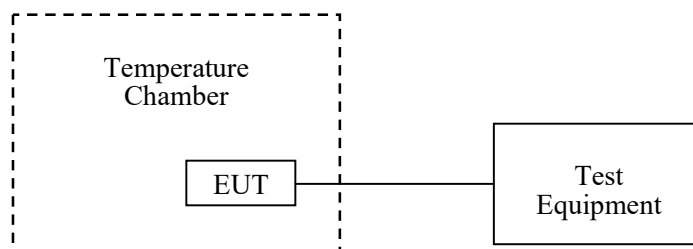
According to §24.235, the frequency stability shall be sufficient to ensure that the fundamental emissions stays within the authorized frequency block.

### **Test Procedure**

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

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

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





**Test Data**

## Environmental Conditions

Temperature:	26~28 °C
Relative Humidity:	52~58 %
ATM Pressure:	100.9' 101.2 kPa

The testing was performed by Paul liu from 2021-09-10 to 2021-09-15.

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.	-15	-0.0179	2.5
-20		-8	-0.0096	2.5
-10		-6	-0.0072	2.5
0		-11	-0.0131	2.5
10		3	0.0036	2.5
20		-17	-0.0203	2.5
30		-10	-0.0120	2.5
40		1	0.0012	2.5
50		-2	-0.0024	2.5
20		L.V.	6	0.0072
	H.V.	11	0.0131	2.5

**EDGE Mode**

<b>Middle Channel, <math>f_0=836.6\text{MHz}</math></b>				
<b>Temperature (°C)</b>	<b>Voltage Supplied (<math>V_{DC}</math>)</b>	<b>Frequency Error (Hz)</b>	<b>Frequency Error (ppm)</b>	<b>Limit (ppm)</b>
-30	N.V.	-14	-0.0167	2.5
-20		-8	-0.0096	2.5
-10		-4	-0.0048	2.5
0		-15	-0.0179	2.5
10		-8	-0.0096	2.5
20		-17	-0.0203	2.5
30		-10	-0.0120	2.5
40		1	0.0012	2.5
50		-2	-0.0024	2.5
20	L.V.	6	0.0072	2.5
	H.V.	13	0.0155	2.5

**WCDMA Mode**

<b>Middle Channel, <math>f_0=836.6\text{MHz}</math></b>				
<b>Temperature (°C)</b>	<b>Voltage Supplied (<math>V_{DC}</math>)</b>	<b>Frequency Error (Hz)</b>	<b>Frequency Error (ppm)</b>	<b>Limit (ppm)</b>
-30	N.V.	-10	-0.0120	2.5
-20		9	0.0108	2.5
-10		8	0.0096	2.5
0		-5	-0.0060	2.5
10		-14	-0.0167	2.5
20		-7	-0.0084	2.5
30		4	0.0048	2.5
40		-5	-0.0060	2.5
50		-8	-0.0096	2.5
20	L.V.	5	0.0060	2.5
	H.V.	-6	-0.0072	2.5

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

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-14	-0.0074	Pass
-20		12	0.0064	Pass
-10		3	0.0016	Pass
0		10	0.0053	Pass
10		24	0.0128	Pass
20		-4	-0.0021	Pass
30		-7	-0.0037	Pass
40		-6	-0.0032	Pass
50		-4	-0.0021	Pass
20	L.V.	-5	-0.0027	Pass
	H.V.	-4	-0.0021	Pass

**EDGE Mode**

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-15	-0.0080	Pass
-20		12	0.0064	Pass
-10		3	0.0016	Pass
0		8	0.0043	Pass
10		20	0.0106	Pass
20		-4	-0.0021	Pass
30		-3	-0.0016	Pass
40		-6	-0.0032	Pass
50		-4	-0.0021	Pass
20	L.V.	-5	-0.0027	Pass
	H.V.	-4	-0.0021	Pass

**WCDMA Mode**

Middle Channel, $f_0 = 1880.0$ MHz				
Temperature (°C)	Voltage Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-11	-0.0059	Pass
-20		19	0.0101	Pass
-10		18	0.0096	Pass
0		-15	-0.0080	Pass
10		-9	-0.0048	Pass
20		-17	-0.0090	Pass
30		14	0.0074	Pass
40		-17	-0.0090	Pass
50		-10	-0.0053	Pass
20		L.V.	15	0.0080
	H.V.	-12	-0.0064	Pass

**AWS Band (Part 27)**

Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	1710.0144	1754.9718	1710	1755
-20		1710.0164	1754.9773	1710	1755
-10		1710.0103	1754.9756	1710	1755
0		1710.0142	1754.9754	1710	1755
10		1710.0124	1754.9728	1710	1755
20		1710.0122	1754.9725	1710	1755
30		1710.0146	1754.9711	1710	1755
40		1710.0160	1754.9757	1710	1755
50		1710.0103	1754.9732	1710	1755
20		L.V.	1710.0139	1754.9710	1710
	H.V.	1710.0171	1754.9719	1710	1755

**LTE:**  
**QPSK:**  
**Band 2:**

10.0 MHz Middle Channel, $f_0 = 1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-14	-0.0074	Pass
-20		-10	-0.0053	Pass
-10		-6	-0.0032	Pass
0		6	0.0032	Pass
10		8	0.0043	Pass
20		6	0.0032	Pass
30		-7	-0.0037	Pass
40		7	0.0037	Pass
50		-10	-0.0053	Pass
20		L.V.	-8	-0.0043
	H.V.	-7	-0.0037	Pass

**Band 4:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	1710.1105	1754.7650	1710	1755
-20		1710.1153	1754.7681	1710	1755
-10		1710.1158	1754.7614	1710	1755
0		1710.1127	1754.7663	1710	1755
10		1710.1125	1754.7642	1710	1755
20		1710.1127	1754.7622	1710	1755
30		1710.1163	1754.7649	1710	1755
40		1710.1120	1754.7665	1710	1755
50		1710.1156	1754.7625	1710	1755
20		L.V.	1710.1105	1754.7650	1710
	H.V.	1710.1153	1754.7681	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.	-4.29	-0.0051	2.5
-20		-6.97	-0.0083	2.5
-10		-5.50	-0.0066	2.5
0		6.06	0.0072	2.5
10		9.80	0.0117	2.5
20		5.03	0.006	2.5
30		-6.62	-0.0079	2.5
40		-8.73	-0.0104	2.5
50		-7.05	-0.0084	2.5
20		L.V.	8.99	0.0107
	H.V.	-7.17	-0.0086	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.	2500.0375	2569.9630	2500	2570
-20		2500.0369	2569.9620	2500	2570
-10		2500.0365	2569.9679	2500	2570
0		2500.0318	2569.9664	2500	2570
10		2500.0347	2569.9647	2500	2570
20		2500.0384	2569.9675	2500	2570
30		2500.0378	2569.9665	2500	2570
40		2500.0379	2569.9693	2500	2570
50		2500.0368	2569.9654	2500	2570
20		L.V.	2500.0338	2569.9676	2500
	H.V.	2500.0374	2569.9640	2500	2570

**Band 17:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	704.1293	715.8468	704	716
-20		704.1233	715.8438	704	716
-10		704.1276	715.8442	704	716
0		704.1217	715.8468	704	716
10		704.1247	715.8459	704	716
20		704.1291	715.8487	704	716
30		704.1258	715.8488	704	716
40		704.1291	715.8497	704	716
50		704.1262	715.8455	704	716
20		L.V.	704.1210	715.8460	704
	H.V.	704.1266	715.8441	704	716

**Band38:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	2570.1293	2619.8468	2570	2620
-20		2570.1233	2619.8438	2570	2620
-10		2570.1276	2619.8443	2570	2620
0		2570.1217	2619.8468	2570	2620
10		2570.1247	2619.8459	2570	2620
20		2570.1291	2619.8487	2570	2620
30		2570.1258	2619.8485	2570	2620
40		2570.1291	2619.8497	2570	2620
50		2570.1262	2619.8457	2570	2620
20		L.V.	2570.1210	2619.8460	2570
	H.V.	2570.1266	2619.8445	2570	2620

**Band41:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	2535.1293	2654.8468	2535	2655
-20		2535.1233	2654.8438	2535	2655
-10		2535.1276	2654.8443	2535	2655
0		2535.1217	2654.8468	2535	2655
10		2535.1245	2654.8459	2535	2655
20		2535.1291	2654.8487	2535	2655
30		2535.1258	2654.8485	2535	2655
40		2535.1291	2654.8497	2535	2655
50		2535.1262	2654.8457	2535	2655
20	L.V.	2535.1210	2654.8460	2535	2655
	H.V.	2535.1266	2654.8445	2535	2655

Note: the frequency range 2535-2655MHz was declared by applicant.

**Band 66:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	1710.0219	1779.9773	1710	1780
-20		1710.0211	1779.9756	1710	1780
-10		1710.0229	1779.9806	1710	1780
0		1710.0258	1779.9755	1710	1780
10		1710.0239	1779.9762	1710	1780
20		1710.0225	1779.9746	1710	1780
30		1710.0260	1779.9765	1710	1780
40		1710.0257	1779.9757	1710	1780
50		1710.0237	1779.9809	1710	1780
20	L.V.	1710.0271	1779.9706	1710	1780
	H.V.	1710.0222	1779.9771	1710	1780



**16QAM:****Band 2:**

10.0 MHz Middle Channel, $f_0 = 1880\text{MHz}$				
Temperature (°C)	Voltage Supplied (V <sub>DC</sub> )	Frequency Error (Hz)	Frequency Error (ppm)	Result
-30	N.V.	-9	-0.0048	Pass
-20		-7	-0.0037	Pass
-10		10	0.0053	Pass
0		-8	-0.0043	Pass
10		-10	-0.0053	Pass
20		-10	-0.0053	Pass
30		-7	-0.0037	Pass
40		-9	-0.0048	Pass
50		6	0.0032	Pass
20		L.V.	6	0.0032
	H.V.	8	0.0043	Pass

**Band 4:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	1710.2694	1754.7557	1710	1755
-20		1710.2703	1754.7632	1710	1755
-10		1710.2679	1754.7598	1710	1755
0		1710.2653	1754.7569	1710	1755
10		1710.2657	1754.7584	1710	1755
20		1710.2638	1754.7629	1710	1755
30		1710.2650	1754.7606	1710	1755
40		1710.2670	1754.7597	1710	1755
50		1710.2678	1754.7613	1710	1755
20		L.V.	1710.2657	1754.7573	1710
	H.V.	1710.2702	1754.7579	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.	-8	-0.0096	2.5
-20		8	0.0096	2.5
-10		-9	-0.0108	2.5
0		9	0.0108	2.5
10		-7	-0.0084	2.5
20		8	0.0096	2.5
30		6	0.0072	2.5
40		-6	-0.0072	2.5
50		-6	-0.0072	2.5
20		L.V.	6	0.0072
	H.V.	-7	-0.0084	2.5

**Band 7:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied ( $V_{DC}$ )	$F_L$ (MHz)	$F_H$ (MHz)	$F_L$ Limit (MHz)	$F_H$ Limit (MHz)
-30	N.V.	2500.0375	2569.9630	2500	2570
-20		2500.0365	2569.9620	2500	2570
-10		2500.0365	2569.9679	2500	2570
0		2500.0317	2569.9664	2500	2570
10		2500.0347	2569.9647	2500	2570
20		2500.0384	2569.9675	2500	2570
30		2500.0378	2569.9665	2500	2570
40		2500.0379	2569.9698	2500	2570
50		2500.0364	2569.9651	2500	2570
20		L.V.	2500.0338	2569.9676	2500
	H.V.	2500.0375	2569.9640	2500	2570

**Band 17:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	704.1293	715.8468	704	716
-20		704.1253	715.8438	704	716
-10		704.1276	715.8442	704	716
0		704.1215	715.8467	704	716
10		704.1247	715.8458	704	716
20		704.1291	715.8485	704	716
30		704.1258	715.8488	704	716
40		704.1291	715.8497	704	716
50		704.1262	715.8455	704	716
20		L.V.	704.1211	715.8460	704
	H.V.	704.1266	715.8441	704	716

**Band38:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	2570.1293	2619.8465	2570	2620
-20		2570.1253	2619.8437	2570	2620
-10		2570.1276	2619.8443	2570	2620
0		2570.1287	2619.8468	2570	2620
10		2570.1247	2619.8454	2570	2620
20		2570.1281	2619.8486	2570	2620
30		2570.1258	2619.8484	2570	2620
40		2570.1291	2619.8597	2570	2620
50		2570.1242	2619.8452	2570	2620
20		L.V.	2570.1210	2619.8461	2570
	H.V.	2570.1267	2619.8446	2570	2620

**Band41:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	2535.1223	2654.8467	2535	2655
-20		2535.1273	2654.8432	2535	2655
-10		2535.1256	2654.8445	2535	2655
0		2535.1214	2654.8468	2535	2655
10		2535.1245	2654.8454	2535	2655
20		2535.1291	2654.8487	2535	2655
30		2535.1258	2654.8485	2535	2655
40		2535.1295	2654.8494	2535	2655
50		2535.1261	2654.8455	2535	2655
20	L.V.	2535.1211	2654.8465	2535	2655
	H.V.	2535.1265	2654.8447	2535	2655

Note: the frequency range 2535-2655MHz was declared by applicant.

**Band 66:**

10 MHz Bandwidth					
Temperature (°C)	Power Supplied (V <sub>DC</sub> )	F <sub>L</sub> (MHz)	F <sub>H</sub> (MHz)	F <sub>L</sub> Limit (MHz)	F <sub>H</sub> Limit (MHz)
-30	N.V.	1710.0283	1779.8371	1710	1780
-20		1710.0249	1779.8401	1710	1780
-10		1710.0256	1779.8375	1710	1780
0		1710.0273	1779.8351	1710	1780
10		1710.0246	1779.8365	1710	1780
20		1710.0255	1779.8342	1710	1780
30		1710.0219	1779.8349	1710	1780
40		1710.0255	1779.8363	1710	1780
50		1710.0219	1779.8383	1710	1780
20	L.V.	1710.0274	1779.8364	1710	1780
	H.V.	1710.0250	1779.8335	1710	1780

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