



TESTREPORT

Applicant Name : Shenzhen Youmi Intelligent Technology Co., Ltd.
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Report Number: SZNS220402-12151E-RF-00C
FCC ID: 2ATZ4-BGT2P

Test Standard (s)

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

Sample Description

Product Type: Smart phone
Model No.: BISON GT2
Multiple Model(s) No.: BISON GT2 PRO (Please refer to DOS for Model difference)
Trade Mark: UMIDIGI
Date Received: 2022/04/02
Report Date: 2022/05/25

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

Prepared and Checked By:

Ting Lü
EMC Engineer

Approved By:

Robert Li
EMC Engineer

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

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Frequency Range	GSM 850: 824-849MHz(TX); 869-894MHz(RX) PCS 1900: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 13: 777-787MHz(TX); 746-756MHz(RX) LTE Band 41: 2555-2655MHz(TX/RX)
Modulation Technique	2G: GMSK 3G: BPSK, QPSK, 16QAM 4G: QPSK, 16QAM
Antenna Specification*	GSM850/WCDMA Band5/ LTE Band 5: -1.23dBi PCS1900/WCDMA Band 2/ LTE Band 2: 0.87dBi LTE Band 12: -1.88dBi LTE Band 13: -1.56dBi LTE Band 41: 1.89dBi (provided by the applicant)
Voltage Range	DC 3.87V from battery or DC 5V/7.0V/9.0V/12.0V from adapter
Sample serial number	SZNS220402-12151E-RF-S1 for Conducted and Radiated Emissions SZNS220402-12151E-RF-S2 for RF Conducted Test (Assigned by ATC)
Sample/EUT Status	Good condition
Adapter information	Model: HJ-FC017K7-US Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 5.0V, 2.0A OR DC 7.0V, 2.0A OR DC 9.0V, 2.0A OR DC 12.0V, 1.5A, 18.0W
Normal/Extreme Condition	N.V.: Nominal Voltage: 3.87V _{DC} L.V.: Low Voltage 3.45V _{DC} H.V.: High Voltage 4.45V _{DC}

Objective

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

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

Test Methodology

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

Part 22 Subpart H - Public Mobile Services
 Part 24 Subpart E - Personal Communication Services
 Part 27 - Miscellaneous Wireless Communications Services

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

All emissions measurement was performed at Shenzhen Accurate Technology Co., Ltd. The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		5%
RF Frequency		0.082×10^{-7}
RF output power, conducted		0.73dB
Unwanted Emission, conducted		1.6dB
AC Power Lines Conducted Emissions		2.72dB
Emissions, Radiated	9kHz - 30MHz	2.66dB
	30MHz - 1GHz	4.28dB
	1GHz - 18GHz	4.98dB
	18GHz -26.5GHz	5.06dB
	26.5GHz -40GHz	4.72dB
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.

Frequency band	Bandwidth (MHz)	Test Frequency(MHz)		
		Low	Middle	High
GSM850	0.25	824.2	836.6	848.8
PCS1900	0.25	1850.2	1880	1909.8
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA 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 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 B12	1.4	699.7	707.5	715.3
	3	700.5	707.5	714.5
	5	701.5	707.5	713.5
	10	704.0	707.5	711
LTE B13	5	779.5	782	784.5
	10	/	782	/
LTE B41	5	2557.5	2605	2652.5
	10	2560	2605	2650
	15	2562.5	2605	2647.5
	20	2565	2605	2645

Equipment Modifications

No modification was made to the EUT.

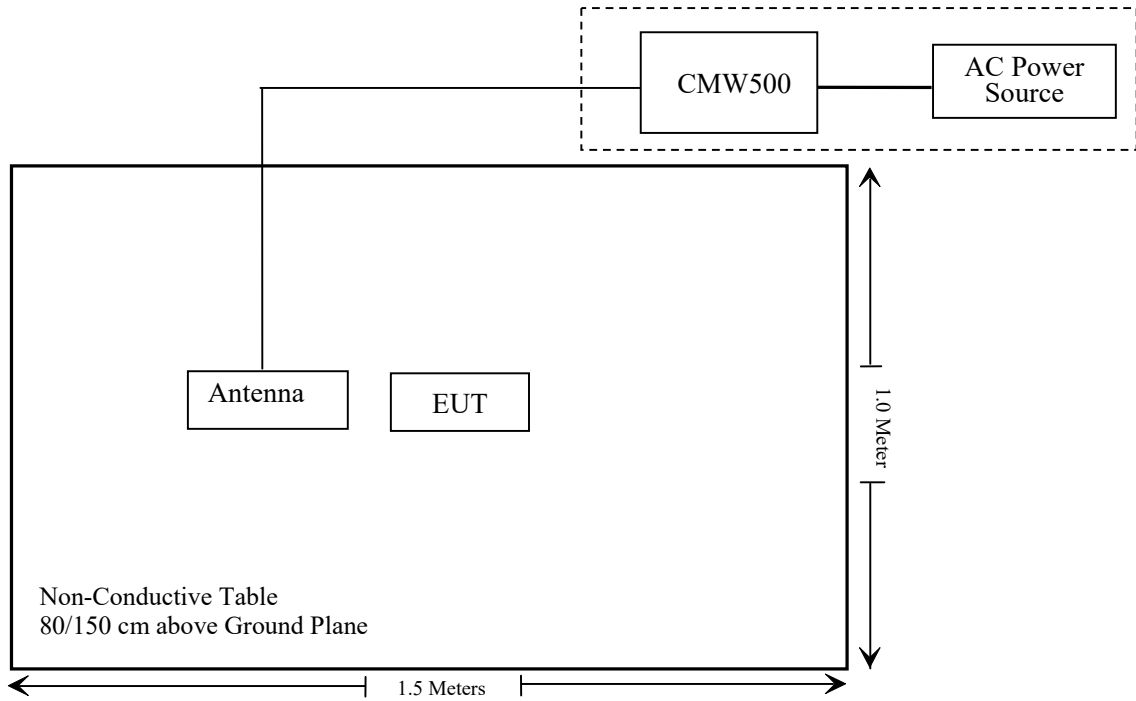
Support Equipment List and Details

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

Support Cable Description

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

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 1.1307 ,§2.1093	RF Exposure (SAR)	Compliant
§2.1046; § 22.913 (a); § 24.232 (c); §27.50 (b) (c) (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

TEST EQUIPMENT LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated Emission Test					
Rohde& Schwarz	Test Receiver	ESR	102725	2021/12/13	2022/12/12
Rohde&Schwarz	Spectrum Analyzer	FSV40	101949	2021/12/13	2022/12/12
SONOMA INSTRUMENT	Amplifier	310 N	186131	2021/11/09	2022/11/08
A.H. Systems, inc.	Preamplifier	PAM-0118P	135	2021/11/09	2022/11/08
Quinstar	Amplifier	QLW-18405536-J0	15964001002	2021/11/11	2022/11/10
Unknown	RF Coaxial Cable	No.10	N050	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.11	N1000	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.12	N040	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.13	N300	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.14	N800	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.15	N600	2021/12/14	2022/12/13
Unknown	RF Coaxial Cable	No.16	N650	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF824-862MS-1147	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF1850-1910MS-1148	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF2495-2570MS-1152	201706003	2021/12/14	2022/12/13
Unknown	Band Reject Filter	MSF700-800MS-1153	201706003	2021/12/14	2022/12/13
Schwarzbeck	Bilog Antenna	VULB9163	9163-194	2020/01/05	2023/01/04
Schwarzbeck	Bilog Antenna	VULB9163	9163-323	2021/07/06	2024/07/05
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-655	2020/01/05	2023/01/04
Schwarzbeck	Horn Antenna	BBHA9120D	9120D-1067	2020/01/05	2023/01/04
PASTERNAK	Horn Antenna	PE9852/2F-20	1120	2020/01/05	2023/01/04
PASTERNAK	Horn Antenna	PE9852/2F-20	1120	2020/01/05	2023/01/04
Agilent	Signal Generator	N5183A	MY51040755	2021/12/13	2022/12/12

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde&Schwarz	Spectrum Analyzer	FSV-40	101948	2021/12/13	2022/12/12
Rohde & Schwarz	Wideband Radio Communication Tester	CMW500	154606	2021/12/13	2022/12/12
Mini-Circuits	Power Splitter	DC-18000MHz	SF10944151S	2021/12/14	2022/12/13
Gongwen	Temp. & Humid. Chamber	HSD-500	109	2021/10/14	2022/10/13
Fluke	Multi Meter	45	7664009	2021/12/14	2022/12/13
Manson	DC Power Source	KPS-6604	ATCS-205	NCR	NCR
Unknown	RF Cable	Unknown	Unknown	Each time	
HP	6dB Attenuator	8493B	06151	2021/12/14	2022/12/13

* Statement of Traceability: Shenzhen Accurate Technology Co., Ltd. attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

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

Applicable Standard

FCC§1.1310 and §2.1093.

Test Result

Compliant, please refer to the SAR report: SZNS220402-12151E-SAA.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

FCC § 2.1046,§ 22.913 (a)&§ 24.232 (c); §27.50(b)(c)(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(b), Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

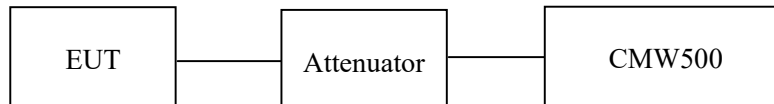
According to §27.50(c), Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP. And Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

Test Procedure

Conducted method:

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



ANSI C63.26-2015 Section 5.5.

Test Data

Environmental Conditions

Temperature:	22~26 °C
Relative Humidity:	48~56 %
ATM Pressure:	100.2~101.0 kPa

The testing was performed by Black Ding from 2022-04-09 to 2022-04-22.

Conducted Power**Cellular Band**

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP(dBm)	Limit (dBm)
GSM	128	824.2	33.40	29.52	38.45
	190	836.6	33.30	29.42	38.45
	251	848.8	33.20	29.32	38.45

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP(dBm)				Limit (dBm)
			1 slot	2 slots	3 slots	4 slots	1 slot	2 slots	3 slots	4 slots	
GPRS	128	824.2	33.35	32.46	30.04	28.53	29.47	28.58	26.16	24.65	38.45
	190	836.6	33.21	32.67	30.46	29.03	29.33	28.79	26.58	25.15	38.45
	251	848.8	33.17	32.75	30.69	29.33	29.29	28.87	26.81	25.45	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		23.08	22.87	22.89	19.20	18.99	19.01
	HSDPA	1	21.94	21.91	21.79	18.06	18.03	17.91
		2	21.75	21.48	21.58	17.87	17.60	17.70
		3	21.48	21.72	21.64	17.60	17.84	17.76
		4	21.65	21.69	21.72	17.77	17.81	17.84
	HSUPA	1	21.51	21.48	21.42	17.63	17.60	17.54
		2	21.44	21.52	21.48	17.56	17.64	17.60
		3	21.43	21.58	21.43	17.55	17.70	17.55
		4	21.38	21.64	21.52	17.50	17.76	17.64
		5	21.54	21.39	21.69	17.66	17.51	17.81
	HSPA+	1	21.26	21.71	21.58	17.38	17.83	17.70

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For GSM850 / WCDMA Band5: Antenna Gain = -1.23dBi = -3.38dBd (0dBd=2.15dBi)

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

Limit: ERP≤38.45dBm

PCS Band

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP(dBm)	Limit (dBm)
GSM	512	1850.2	30.30	30.37	33
	661	1880.0	30.30	30.37	33
	810	1909.8	30.60	30.67	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	30.28	29.27	26.85	25.50	30.35	29.34	26.92	25.57	33
	661	1880.0	30.68	29.98	28.11	26.83	30.75	30.05	28.18	26.90	33
	810	1909.8	30.65	30.08	28.49	27.44	30.72	30.15	28.56	27.51	33

Mode	Test Mode	3GPP Sub Test	Average Output Power(dBm)			EIRP(dBm)		
			Low	Mid	High	Low	Mid	High
WCDMA (Band 2)	RMC12.2k		23.46	23.79	23.82	23.53	23.86	23.89
	HSDPA	1	22.37	22.74	22.73	22.44	22.81	22.80
		2	22.22	22.52	22.65	22.29	22.59	22.72
		3	22.18	22.17	22.42	22.25	22.24	22.49
		4	22.23	22.31	22.38	22.30	22.38	22.45
	HSUPA	1	21.95	22.27	22.30	22.02	22.34	22.37
		2	21.85	22.12	22.25	21.92	22.19	22.32
		3	21.87	22.14	22.34	21.94	22.21	22.41
		4	21.94	22.17	22.16	22.01	22.24	22.23
		5	21.86	22.24	22.31	21.93	22.31	22.38
	HSPA+	1	21.92	22.16	22.41	21.99	22.23	22.48

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

For PCS1900 / WCDMA Band2: Antenna Gain = 0.87dBi

Cable Loss(dB) = 0.8 dB *(provided by the applicant)

Limit: EIRP≤33dBm

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	22.48	22.72	22.74	22.55	22.79	22.81
		RB1#3	22.55	22.74	22.77	22.62	22.81	22.84
		RB1#5	22.46	22.66	22.68	22.53	22.73	22.75
		RB3#0	22.55	22.75	22.84	22.62	22.82	22.91
		RB3#3	22.60	22.77	22.82	22.67	22.84	22.89
		RB6#0	21.68	21.84	21.87	21.75	21.91	21.94
	16QAM	RB1#0	21.56	21.61	21.71	21.63	21.68	21.78
		RB1#3	21.62	21.71	21.77	21.69	21.78	21.84
		RB1#5	21.59	21.65	21.70	21.66	21.72	21.77
		RB3#0	21.54	21.79	22.03	21.61	21.86	22.10
		RB3#3	21.54	21.79	22.05	21.61	21.86	22.12
		RB6#0	20.67	20.77	20.96	20.74	20.84	21.03
3.0	QPSK	RB1#0	22.33	22.56	22.60	22.40	22.63	22.67
		RB1#8	22.40	22.63	22.70	22.47	22.70	22.77
		RB1#14	22.38	22.54	22.56	22.45	22.61	22.63
		RB6#0	21.51	21.74	21.75	21.58	21.81	21.82
		RB6#9	21.56	21.75	21.75	21.63	21.82	21.82
		RB15#0	21.55	21.71	21.72	21.62	21.78	21.79
	16QAM	RB1#0	21.84	21.62	21.57	21.91	21.69	21.64
		RB1#8	21.91	21.72	21.65	21.98	21.79	21.72
		RB1#14	21.82	21.69	21.60	21.89	21.76	21.67
		RB6#0	20.61	20.74	20.73	20.68	20.81	20.80
		RB6#9	20.59	20.77	20.70	20.66	20.84	20.77
		RB15#0	20.56	20.66	20.84	20.63	20.73	20.91

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	22.52	22.80	22.85	22.59	22.87	22.92
		RB1#13	22.70	22.89	22.96	22.77	22.96	23.03
		RB1#24	22.57	22.79	22.84	22.64	22.86	22.91
		RB15#0	21.59	21.81	21.88	21.66	21.88	21.95
		RB15#10	21.63	21.82	21.87	21.70	21.89	21.94
		RB25#0	21.58	21.82	21.88	21.65	21.89	21.95
	16QAM	RB1#0	21.41	22.02	21.89	21.48	22.09	21.96
		RB1#13	21.58	22.15	21.98	21.65	22.22	22.05
		RB1#24	21.51	22.09	21.88	21.58	22.16	21.95
		RB15#0	20.64	20.80	20.94	20.71	20.87	21.01
		RB15#10	20.63	20.83	20.87	20.70	20.90	20.94
		RB25#0	20.64	20.84	20.94	20.71	20.91	21.01
10.0	QPSK	RB1#0	22.61	22.85	22.92	22.68	22.92	22.99
		RB1#25	22.65	22.85	22.97	22.72	22.92	23.04
		RB1#49	22.69	22.84	22.91	22.76	22.91	22.98
		RB25#0	21.55	21.80	21.86	21.62	21.87	21.93
		RB25#25	21.64	21.82	21.88	21.71	21.89	21.95
		RB50#0	21.64	21.84	21.86	21.71	21.91	21.93
	16QAM	RB1#0	22.09	21.90	21.88	22.16	21.97	21.95
		RB1#25	22.21	21.95	21.93	22.28	22.02	22.00
		RB1#49	22.21	21.95	21.89	22.28	22.02	21.96
		RB25#0	20.61	20.80	20.99	20.68	20.87	21.06
		RB25#25	20.75	20.87	21.01	20.82	20.94	21.08
		RB50#0	20.62	20.84	20.93	20.69	20.91	21.00

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	22.53	22.78	22.86	22.6	22.85	22.93
		RB1#38	22.72	22.91	22.97	22.79	22.98	23.04
		RB1#74	22.71	22.76	22.86	22.78	22.83	22.93
		RB36#0	21.61	21.87	21.92	21.68	21.94	21.99
		RB36#39	21.82	21.91	21.94	21.89	21.98	22.01
		RB75#0	21.78	21.90	21.94	21.85	21.97	22.01
	16QAM	RB1#0	22.06	21.85	22.15	22.13	21.92	22.22
		RB1#38	22.25	21.99	22.36	22.32	22.06	22.43
		RB1#74	22.20	21.92	22.21	22.27	21.99	22.28
		RB36#0	20.61	20.84	20.87	20.68	20.91	20.94
		RB36#39	20.76	20.87	20.92	20.83	20.94	20.99
		RB75#0	20.71	20.87	20.93	20.78	20.94	21.00
20.0	QPSK	RB1#0	22.47	22.70	22.69	22.54	22.77	22.76
		RB1#50	22.77	22.93	22.97	22.84	23.00	23.04
		RB1#99	22.74	22.83	22.77	22.81	22.90	22.84
		RB50#0	21.61	21.79	21.88	21.68	21.86	21.95
		RB50#50	21.79	21.82	21.92	21.86	21.89	21.99
		RB100#0	21.72	21.79	21.87	21.79	21.86	21.94
	16QAM	RB1#0	21.72	21.79	22.17	21.79	21.86	22.24
		RB1#50	22.04	22.05	22.44	22.11	22.12	22.51
		RB1#99	21.95	21.94	22.35	22.02	22.01	22.42
		RB50#0	20.56	20.77	20.88	20.63	20.84	20.95
		RB50#50	20.77	20.84	20.92	20.84	20.91	20.99
		RB100#0	20.69	20.81	20.93	20.76	20.88	21.00

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

For Band2: Antenna Gain = 0.87dBi

Cable Loss(dB) = 0.8dB * (provided by the applicant)

Limit: EIRP ≤ 33dBm

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	22.66	22.73	22.66	18.78	18.85	18.78
		RB1#3	22.71	22.77	22.80	18.83	18.89	18.92
		RB1#5	22.72	22.76	22.76	18.84	18.88	18.88
		RB3#0	22.79	22.79	22.77	18.91	18.91	18.89
		RB3#3	22.78	22.81	22.75	18.90	18.93	18.87
		RB6#0	21.87	21.86	21.86	17.99	17.98	17.98
	16QAM	RB1#0	21.68	21.80	21.66	17.80	17.92	17.78
		RB1#3	21.70	21.87	21.72	17.82	17.99	17.84
		RB1#5	21.67	21.80	21.64	17.79	17.92	17.76
		RB3#0	21.92	21.78	21.77	18.04	17.9	17.89
		RB3#3	21.94	21.80	21.74	18.06	17.92	17.86
		RB6#0	20.90	20.96	20.79	17.02	17.08	16.91
3.0	QPSK	RB1#0	22.57	22.61	22.57	18.69	18.73	18.69
		RB1#8	22.69	22.73	22.64	18.81	18.85	18.76
		RB1#14	22.63	22.62	22.64	18.75	18.74	18.76
		RB6#0	21.76	21.75	21.74	17.88	17.87	17.86
		RB6#9	21.81	21.79	21.73	17.93	17.91	17.85
		RB15#0	21.78	21.80	21.73	17.90	17.92	17.85
	16QAM	RB1#0	22.08	21.69	21.54	18.20	17.81	17.66
		RB1#8	22.15	21.80	21.65	18.27	17.92	17.77
		RB1#14	22.00	21.75	21.53	18.12	17.87	17.65
		RB6#0	20.86	20.80	20.72	16.98	16.92	16.84
		RB6#9	20.83	20.89	20.70	16.95	17.01	16.82
		RB15#0	20.79	20.74	20.80	16.91	16.86	16.92

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	22.82	22.89	22.84	18.94	19.01	18.96
		RB1#13	22.95	22.99	22.89	19.07	19.11	19.01
		RB1#24	22.86	22.87	22.84	18.98	18.99	18.96
		RB15#0	21.81	21.97	21.90	17.93	18.09	18.02
		RB15#10	21.89	21.82	21.75	18.01	17.94	17.87
		RB25#0	21.85	21.89	21.80	17.97	18.01	17.92
	16QAM	RB1#0	21.66	22.13	21.78	17.78	18.25	17.90
		RB1#13	21.79	22.29	21.98	17.91	18.41	18.10
		RB1#24	21.73	22.09	21.78	17.85	18.21	17.90
		RB15#0	20.85	20.95	20.88	16.97	17.07	17.00
		RB15#10	20.93	20.80	20.78	17.05	16.92	16.90
		RB25#0	20.94	20.90	20.86	17.06	17.02	16.98
10.0	QPSK	RB1#0	22.96	22.92	22.97	19.08	19.04	19.09
		RB1#25	22.96	22.99	22.98	19.08	19.11	19.10
		RB1#49	22.95	23.00	22.96	19.07	19.12	19.08
		RB25#0	21.76	21.98	21.68	17.88	18.10	17.80
		RB25#25	21.93	21.82	21.79	18.05	17.94	17.91
		RB50#0	21.89	21.88	21.74	18.01	18.00	17.86
	16QAM	RB1#0	22.42	22.06	21.87	18.54	18.18	17.99
		RB1#25	22.43	22.07	21.86	18.55	18.19	17.98
		RB1#49	22.52	21.98	21.88	18.64	18.10	18.00
		RB25#0	20.85	21.02	20.73	16.97	17.14	16.85
		RB25#25	20.97	20.88	20.86	17.09	17.00	16.98
		RB50#0	20.85	20.90	20.75	16.97	17.02	16.87

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For Band5: Antenna Gain = -1.23dBi = -3.38dBd (0dBd=2.15dBi)

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

Limit: ERP ≤ 38.45dBm

LTE Band 12:**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	22.60	22.57	22.47	18.07	18.04	17.94
		RB1#3	22.63	22.62	22.59	18.10	18.09	18.06
		RB1#5	22.60	22.57	22.53	18.07	18.04	18.00
		RB3#0	22.73	22.68	22.58	18.20	18.15	18.05
		RB3#3	22.70	22.65	22.58	18.17	18.12	18.05
		RB6#0	21.85	21.81	21.79	17.32	17.28	17.26
	16QAM	RB1#0	21.66	21.71	21.52	17.13	17.18	16.99
		RB1#3	21.73	21.81	21.64	17.20	17.28	17.11
		RB1#5	21.65	21.70	21.55	17.12	17.17	17.02
		RB3#0	21.99	21.69	21.68	17.46	17.16	17.15
		RB3#3	21.96	21.68	21.67	17.43	17.15	17.14
		RB6#0	20.90	20.81	20.69	16.37	16.28	16.16
3.0	QPSK	RB1#0	22.45	22.43	22.34	17.92	17.90	17.81
		RB1#8	22.54	22.52	22.45	18.01	17.99	17.92
		RB1#14	22.45	22.41	22.39	17.92	17.88	17.86
		RB6#0	21.71	21.69	21.63	17.18	17.16	17.10
		RB6#9	21.79	21.70	21.67	17.26	17.17	17.14
		RB15#0	21.76	21.71	21.62	17.23	17.18	17.09
	16QAM	RB1#0	22.07	21.64	21.38	17.54	17.11	16.85
		RB1#8	22.15	21.72	21.52	17.62	17.19	16.99
		RB1#14	21.98	21.64	21.46	17.45	17.11	16.93
		RB6#0	20.83	20.75	20.59	16.30	16.22	16.06
		RB6#9	20.80	20.76	20.58	16.27	16.23	16.05
		RB15#0	20.78	20.61	20.64	16.25	16.08	16.11

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	22.69	22.64	22.57	18.16	18.11	18.04
		RB1#13	22.83	22.78	22.70	18.30	18.25	18.17
		RB1#24	22.70	22.63	22.61	18.17	18.10	18.08
		RB15#0	21.80	21.82	21.74	17.27	17.29	17.21
		RB15#10	21.80	21.81	21.65	17.27	17.28	17.12
		RB25#0	21.76	21.79	21.68	17.23	17.26	17.15
	16QAM	RB1#0	21.71	22.03	21.71	17.18	17.50	17.18
		RB1#13	21.80	22.13	21.83	17.27	17.60	17.30
		RB1#24	21.67	21.98	21.70	17.14	17.45	17.17
		RB15#0	20.83	20.82	20.75	16.30	16.29	16.22
		RB15#10	20.85	20.76	20.71	16.32	16.23	16.18
		RB25#0	20.85	20.81	20.72	16.32	16.28	16.19
10.0	QPSK	RB1#0	22.79	22.73	22.77	18.26	18.20	18.24
		RB1#25	22.80	22.75	22.68	18.27	18.22	18.15
		RB1#49	22.72	22.67	22.74	18.19	18.14	18.21
		RB25#0	21.76	21.77	21.72	17.23	17.24	17.19
		RB25#25	21.77	21.77	21.69	17.24	17.24	17.16
		RB50#0	21.78	21.78	21.69	17.25	17.25	17.16
	16QAM	RB1#0	22.37	21.96	21.85	17.84	17.43	17.32
		RB1#25	22.44	21.97	21.79	17.91	17.44	17.26
		RB1#49	22.36	21.90	21.74	17.83	17.37	17.21
		RB25#0	20.85	20.86	20.81	16.32	16.33	16.28
		RB25#25	20.85	20.85	20.80	16.32	16.32	16.27
		RB50#0	20.80	20.79	20.74	16.27	16.26	16.21

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For Band12: Antenna Gain = -1.88dBi = -4.03dBd (0dBd=2.15dBi)

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

Limit: ERP ≤ 34.77dBm

LTE Band 13:**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	22.69	22.72	22.69	18.48	18.51	18.48
		RB1#13	22.85	22.85	22.82	18.64	18.64	18.61
		RB1#24	22.78	22.73	22.72	18.57	18.52	18.51
		RB15#0	21.73	21.72	21.71	17.52	17.51	17.50
		RB15#10	21.73	21.77	21.75	17.52	17.56	17.54
		RB25#0	21.70	21.76	21.73	17.49	17.55	17.52
	16QAM	RB1#0	21.52	22.01	21.79	17.31	17.80	17.58
		RB1#13	21.73	22.10	21.87	17.52	17.89	17.66
		RB1#24	21.63	22.04	21.80	17.42	17.83	17.59
		RB15#0	20.90	20.83	20.83	16.69	16.62	16.62
		RB15#10	20.86	20.81	20.85	16.65	16.60	16.64
		RB25#0	20.88	20.91	20.88	16.67	16.70	16.67
10.0	QPSK	RB1#0	/	22.76	/	/	18.55	/
		RB1#25	/	22.79	/	/	18.58	/
		RB1#49	/	22.83	/	/	18.62	/
		RB25#0	/	21.72	/	/	17.51	/
		RB25#25	/	21.74	/	/	17.53	/
		RB50#0	/	21.77	/	/	17.56	/
	16QAM	RB1#0	/	22.26	/	/	18.05	/
		RB1#25	/	22.38	/	/	18.17	/
		RB1#49	/	22.39	/	/	18.18	/
		RB25#0	/	20.85	/	/	16.64	/
		RB25#25	/	20.98	/	/	16.77	/
		RB50#0	/	20.89	/	/	16.68	/

Note: ERP(dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable Loss(dB)

For Band13: Antenna Gain = -1.56dBi = -3.71dBd (0dBd=2.15dBi)

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

Limit: ERP ≤ 34.77dBm

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	22.75	22.88	23.29	23.84	23.97	24.38
		RB1#13	22.94	23.01	23.45	24.03	24.10	24.54
		RB1#24	22.79	22.93	23.39	23.88	24.02	24.48
		RB15#0	21.75	21.94	22.42	22.84	23.03	23.51
		RB15#10	21.81	21.96	22.41	22.90	23.05	23.50
		RB25#0	21.77	21.92	22.34	22.86	23.01	23.43
	16QAM	RB1#0	21.96	21.83	22.32	23.05	22.92	23.41
		RB1#13	22.10	22.00	22.45	23.19	23.09	23.54
		RB1#24	22.04	21.90	22.34	23.13	22.99	23.43
		RB15#0	20.77	20.87	21.42	21.86	21.96	22.51
		RB15#10	20.82	20.85	21.37	21.91	21.94	22.46
		RB25#0	20.74	20.96	21.37	21.83	22.05	22.46
10.0	QPSK	RB1#0	22.80	22.95	23.40	23.89	24.04	24.49
		RB1#25	22.85	23.04	23.43	23.94	24.13	24.52
		RB1#49	22.83	23.13	23.52	23.92	24.22	24.61
		RB25#0	21.77	21.93	22.35	22.86	23.02	23.44
		RB25#25	21.84	22.00	22.35	22.93	23.09	23.44
		RB50#0	21.81	21.95	22.37	22.90	23.04	23.46
	16QAM	RB1#0	21.97	21.82	22.39	23.06	22.91	23.48
		RB1#25	22.06	21.91	22.48	23.15	23.00	23.57
		RB1#49	22.02	21.93	22.46	23.11	23.02	23.55
		RB25#0	20.74	20.95	21.42	21.83	22.04	22.51
		RB25#25	20.87	21.03	21.36	21.96	22.12	22.45
		RB50#0	20.77	20.95	21.37	21.86	22.04	22.46

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	22.71	22.82	23.28	23.80	23.91	24.37
		RB1#38	22.88	23.02	23.52	23.97	24.11	24.61
		RB1#74	22.80	23.04	23.48	23.89	24.13	24.57
		RB36#0	21.73	21.93	22.36	22.82	23.02	23.45
		RB36#39	21.85	22.00	22.42	22.94	23.09	23.51
		RB75#0	21.80	22.00	22.43	22.89	23.09	23.52
	16QAM	RB1#0	21.87	21.71	22.37	22.96	22.80	23.46
		RB1#38	22.01	21.91	22.58	23.10	23.00	23.67
		RB1#74	21.96	21.92	22.52	23.05	23.01	23.61
		RB36#0	20.71	20.87	21.36	21.80	21.96	22.45
		RB36#39	20.81	20.96	21.42	21.90	22.05	22.51
		RB75#0	20.71	20.92	21.36	21.80	22.01	22.45
20.0	QPSK	RB1#0	22.62	22.67	23.16	23.71	23.76	24.25
		RB1#50	22.89	23.00	23.49	23.98	24.09	24.58
		RB1#99	22.80	22.96	23.37	23.89	24.05	24.46
		RB50#0	21.69	21.87	22.31	22.78	22.96	23.40
		RB50#50	21.86	21.93	22.27	22.95	23.02	23.36
		RB100#0	21.72	21.93	22.28	22.81	23.02	23.37
	16QAM	RB1#0	21.68	21.63	22.34	22.77	22.72	23.43
		RB1#50	21.90	21.96	22.65	22.99	23.05	23.74
		RB1#99	21.81	21.95	22.54	22.90	23.04	23.63
		RB50#0	20.64	20.91	21.28	21.73	22.00	22.37
		RB50#50	20.83	20.99	21.25	21.92	22.08	22.34
		RB100#0	20.72	20.92	21.25	21.81	22.01	22.34

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

For Band41: Antenna Gain = 1.89dBi

Cable Loss(dB)=0.8dB*(provided by the applicant)

Limit: EIRP ≤ 33dBm

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

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.33	13
	Middle	3.35	13
	High	3.28	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.27	13
	Middle	3.42	13
	High	3.22	13
HSDPA (16QAM)	Low	4.31	13
	Middle	3.42	13
	High	3.32	13
HSUPA (QPSK)	Low	3.42	13
	Middle	3.52	13
	High	3.54	13
HSPA+	Low	3.41	13
	Middle	3.25	13
	High	3.42	13

PCS Band

Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	3.37	13
	Middle	3.26	13
	High	3.47	13

Mode	Channel	PAR (dB)	Limit (dB)
RMC (BPSK)	Low	3.23	13
	Middle	3.22	13
	High	3.34	13
HSDPA (16QAM)	Low	4.28	13
	Middle	4.25	13
	High	4.33	13
HSUPA (QPSK)	Low	3.25	13
	Middle	3.34	13
	High	3.41	13
HSPA+	Low	3.34	13
	Middle	3.22	13
	High	3.44	13

LTE Band 2 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.52	8.52	4.61	13	Pass
QPSK (100RB Size)	4.78	4.81	5.19	13	Pass
16QAM (1RB Size)	8.43	5.48	8.55	13	Pass
16QAM (100RB Size)	8.46	5.80	6.09	13	Pass

LTE Band 5 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	8.46	5.10	3.83	13	Pass
QPSK (50RB Size)	5.07	7.59	8.38	13	Pass
16QAM (1RB Size)	8.58	6.06	4.75	13	Pass
16QAM (50RB Size)	5.94	6.12	8.32	13	Pass

LTE Band 12 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.17	8.35	8.52	13	Pass
QPSK (50RB Size)	4.99	5.13	4.96	13	Pass
16QAM (1RB Size)	4.84	8.06	5.51	13	Pass
16QAM (50RB Size)	8.55	6.00	6.06	13	Pass

LTE Band 13 10MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	/	4.46	/	13	Pass
QPSK (50RB Size)	/	8.43	/	13	Pass
16QAM (1RB Size)	/	5.51	/	13	Pass
16QAM (50RB Size)	/	6.23	/	13	Pass

LTE Band 41 20MHz Bandwidth

Modulation	Low channel (dB)	Middle channel (dB)	High channel (dB)	PAR Limit (dB)	Result
QPSK (1RB Size)	4.75	3.88	10.00	13	Pass
QPSK (100RB Size)	7.59	5.83	9.90	13	Pass
16QAM (1RB Size)	7.77	8.41	11.33	13	Pass
16QAM (100RB Size)	7.80	11.94	12.03	13	Pass

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

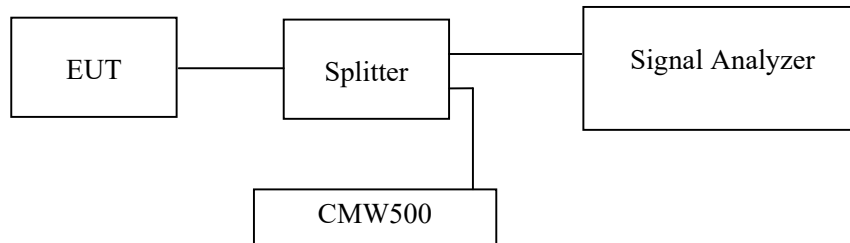
Applicable Standard

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

Temperature:	22~26 °C
Relative Humidity:	48~56 %
ATM Pressure:	100.2~101.0 kPa

The testing was performed by Black Ding from 2022-04-11 to 2022-04-21.

EUT operation mode: Transmitting

Test Result: Pass

Please refer to the following tables and plots.

Cellular Band

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	128	824.2	244.57	319.80
	190	836.6	244.57	318.40
	251	848.8	244.57	321.30

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	826.4	4.17	4.73
	836.6	4.15	4.70
	846.6	4.14	4.70
HSDPA	826.4	4.17	4.72
	836.6	4.15	4.70
	846.6	4.15	4.70
HSUPA	826.4	4.15	4.70
	836.6	4.15	4.70
	846.6	4.14	4.70

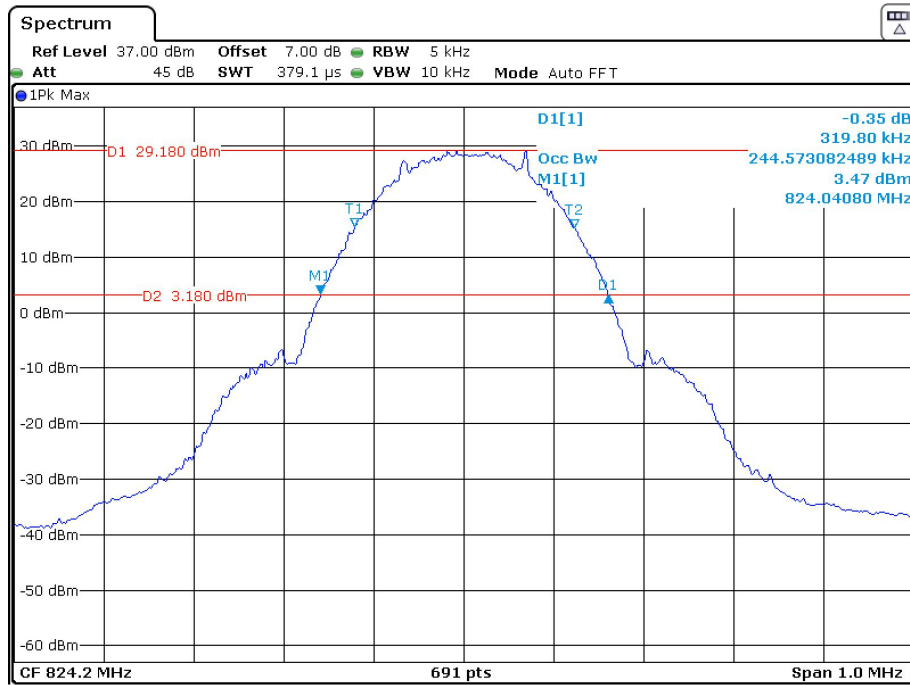
PCS Band

Mode	Channel	Frequency (MHz)	99% Occupied Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM(GMSK)	512	1850.2	244.57	314.00
	661	1880.0	243.13	315.50
	810	1909.8	244.57	318.40

	Frequency (MHz)	Occupied Bandwidth (MHz)	26dB Bandwidth (MHz)
RMC	1852.4	4.17	4.72
	1880.0	4.17	4.72
	1907.6	4.14	4.70
HSDPA	1852.4	4.17	4.72
	1880.0	4.18	4.72
	1907.6	4.18	4.70
HSUPA	1852.4	4.18	4.72
	1880.0	4.18	4.72
	1907.6	4.17	4.72

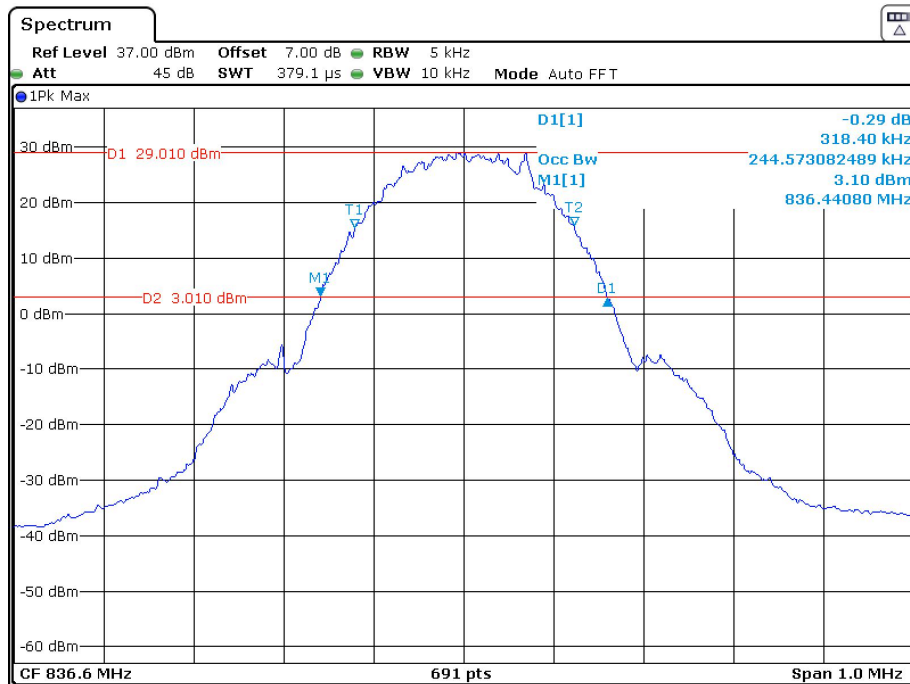
Cellular Band (Part 22H)

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



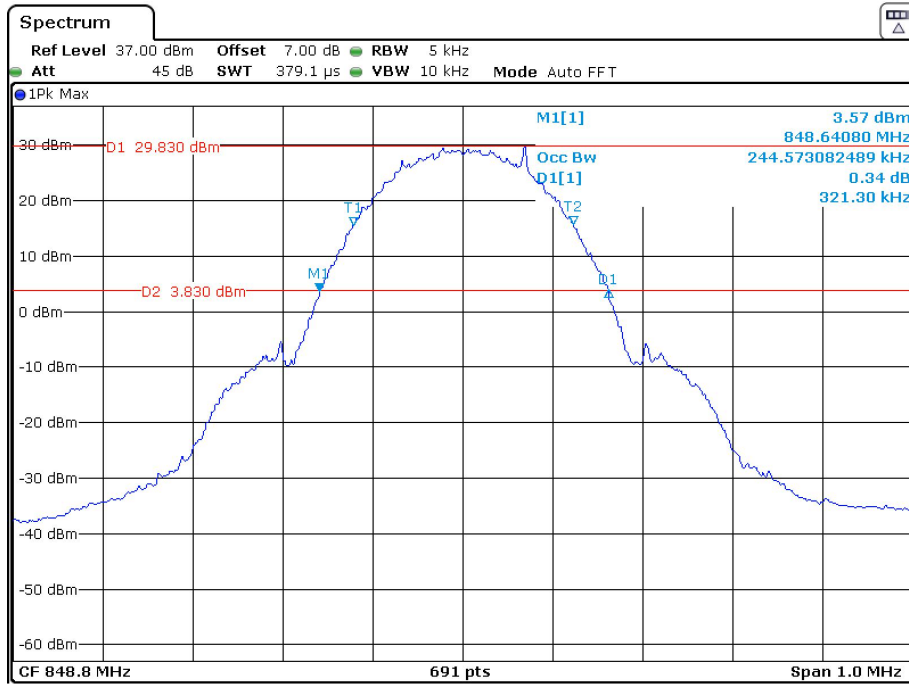
Date: 11.APR.2022 09:30:00

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



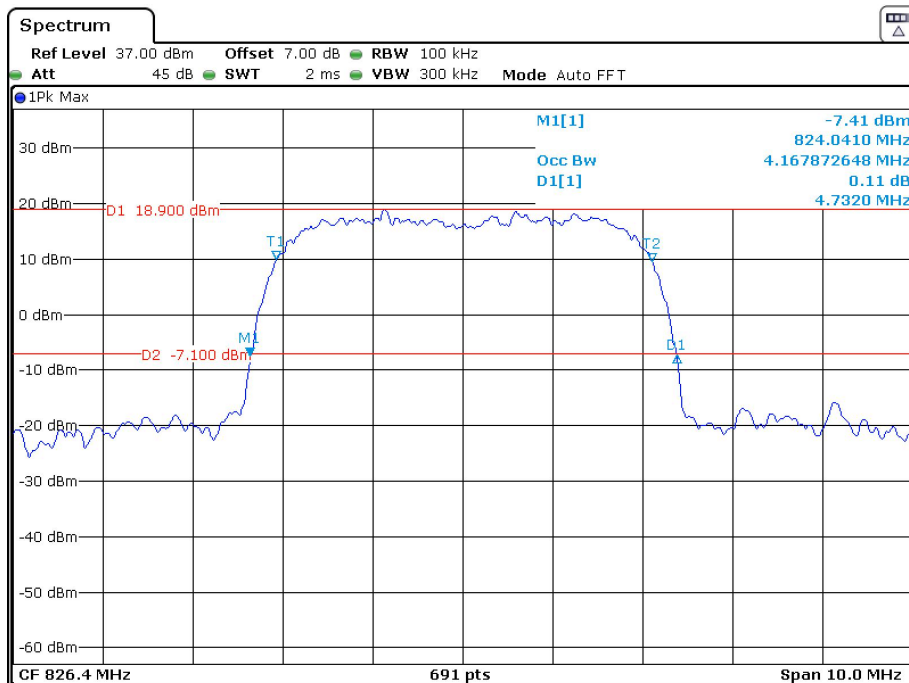
Date: 11.APR.2022 09:31:03

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



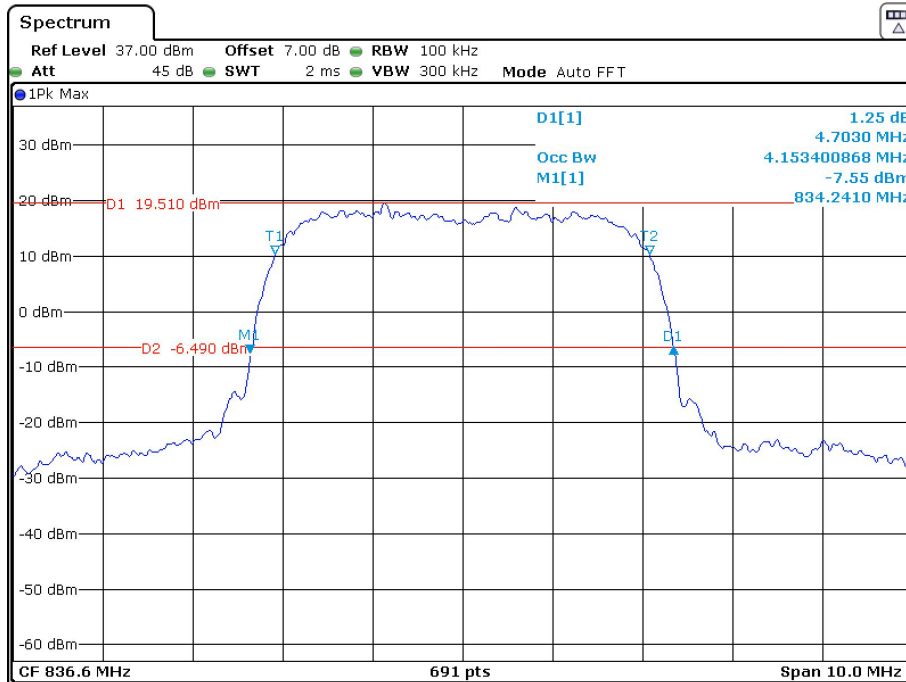
Date: 11.APR.2022 09:32:24

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



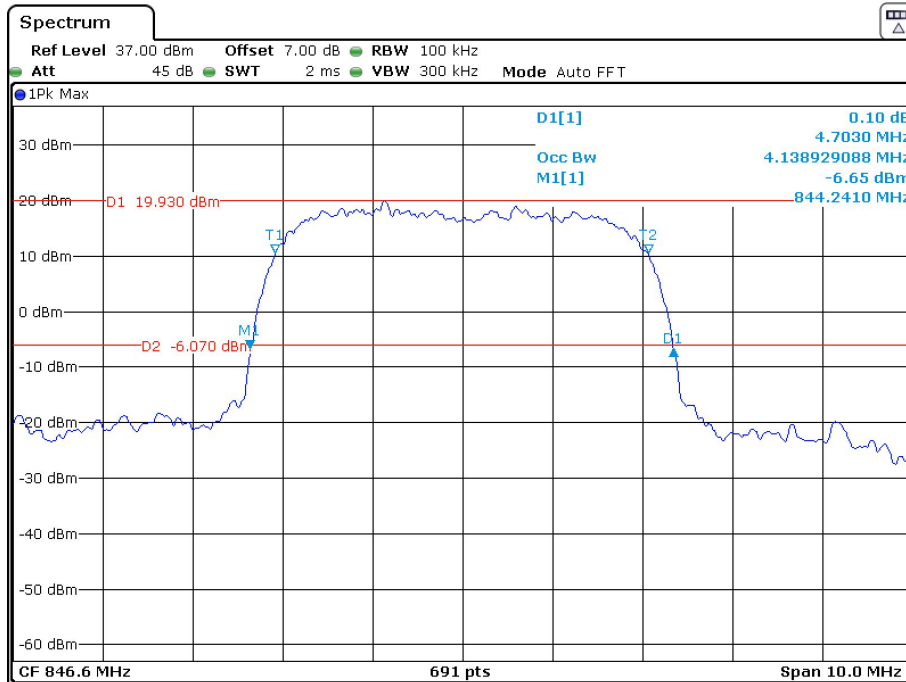
Date: 11.APR.2022 10:15:24

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



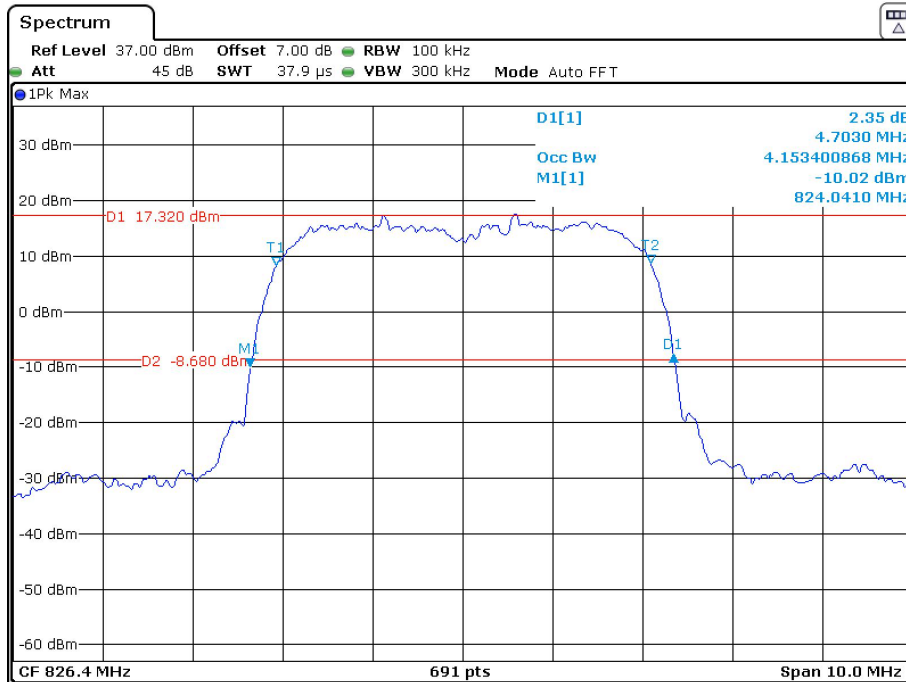
Date: 11.APR.2022 10:16:11

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



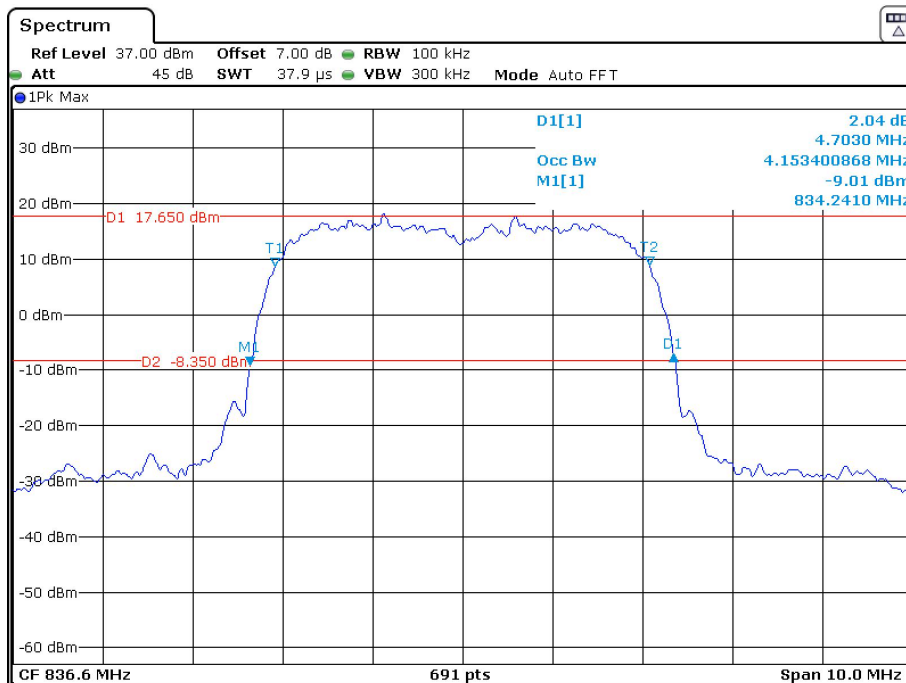
Date: 11.APR.2022 10:16:54

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



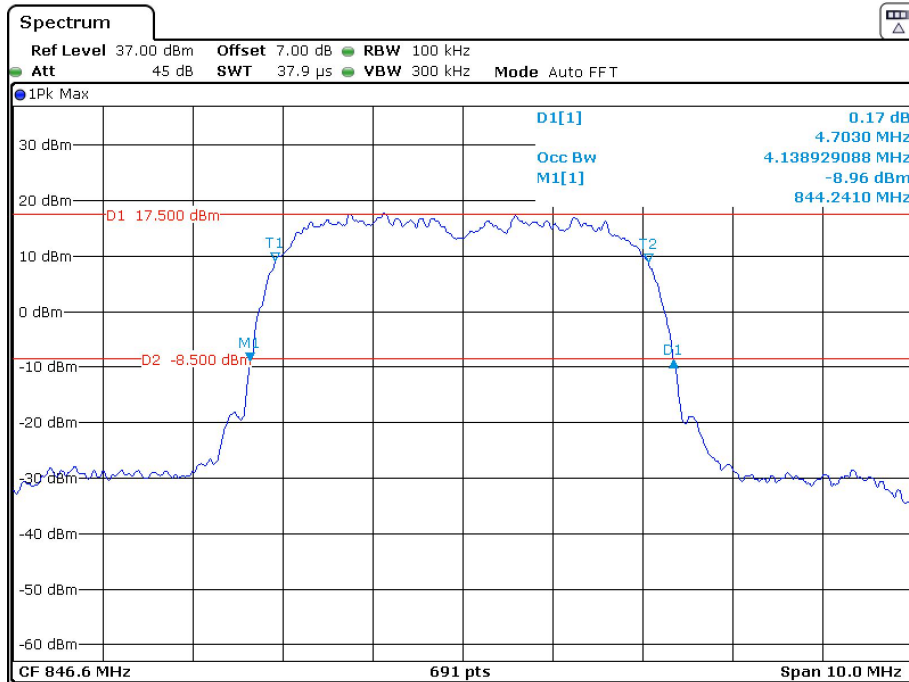
Date: 11.APR.2022 10:37:09

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



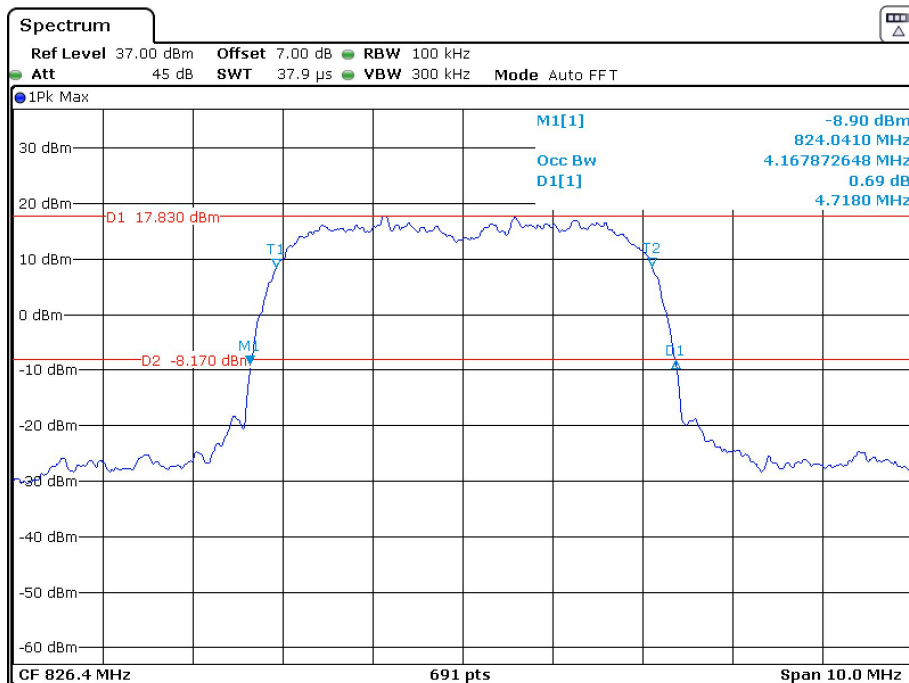
Date: 11.APR.2022 10:36:29

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



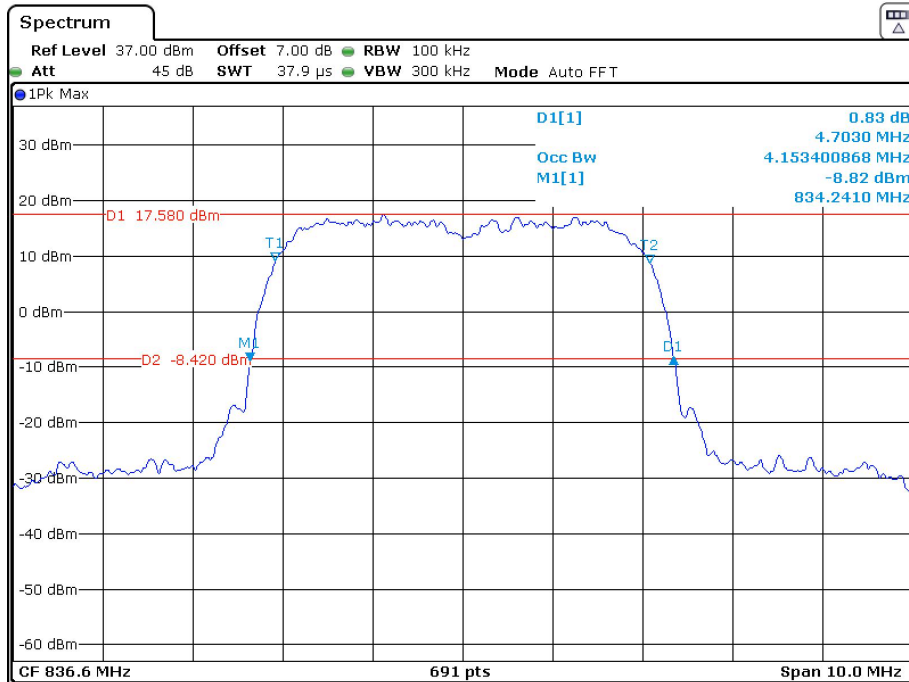
Date: 11.APR.2022 10:35:37

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



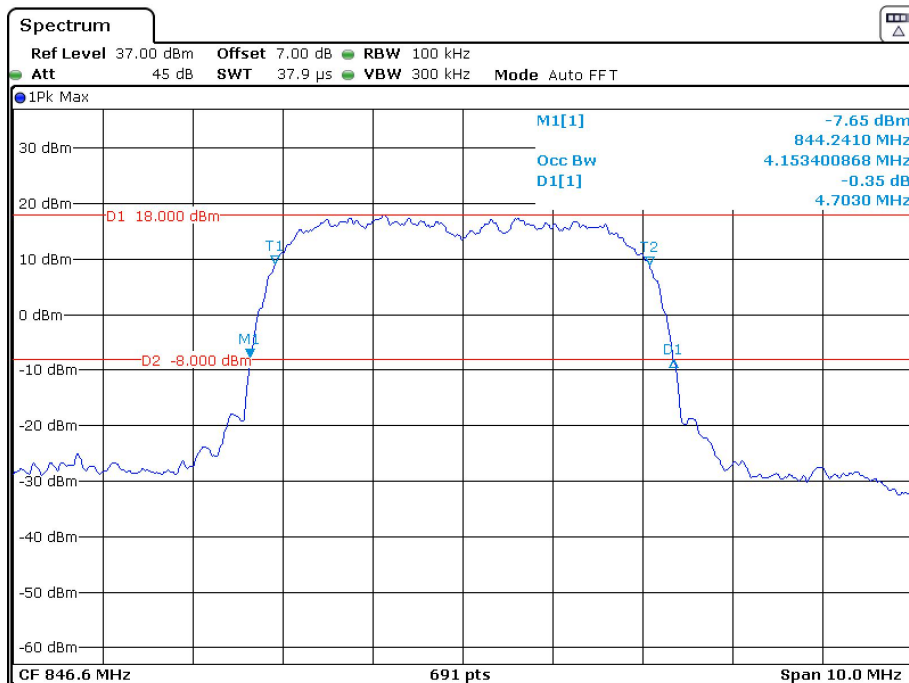
Date: 11.APR.2022 10:27:16

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



Date: 11.APR.2022 10:28:00

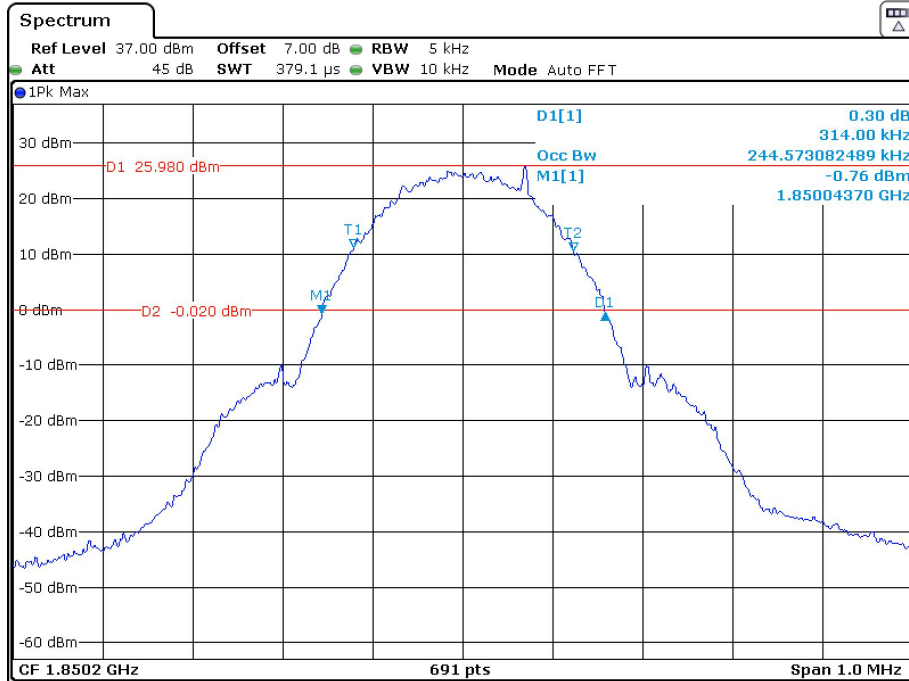
26 dB Emissions & 99% Occupied Bandwidth for HSDPA (16QAM) Mode, High channel



Date: 11.APR.2022 10:29:00

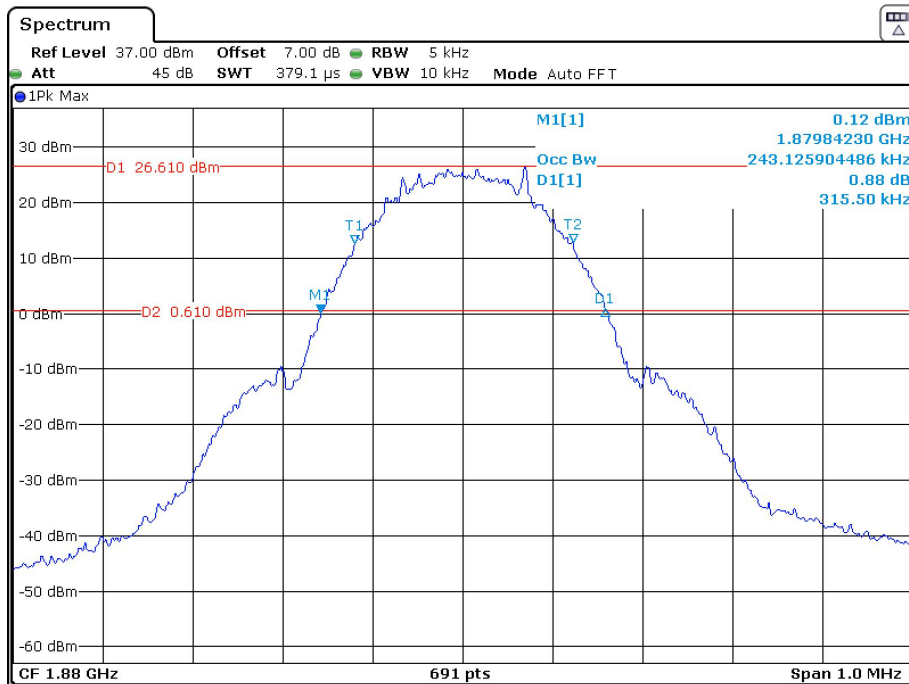
PCS Band (Part 24E)

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



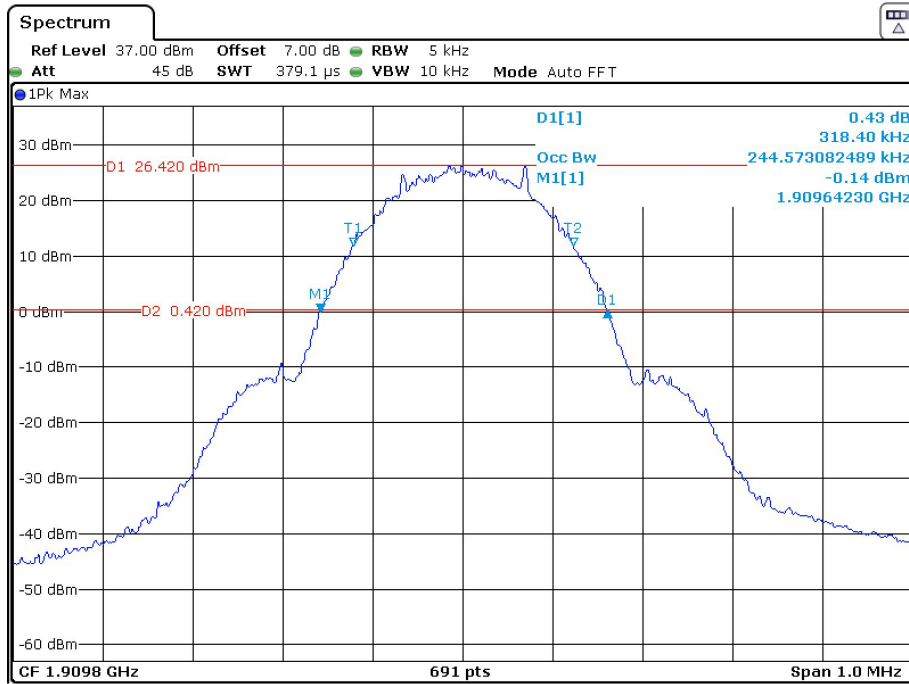
Date: 11.APR.2022 10:06:28

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



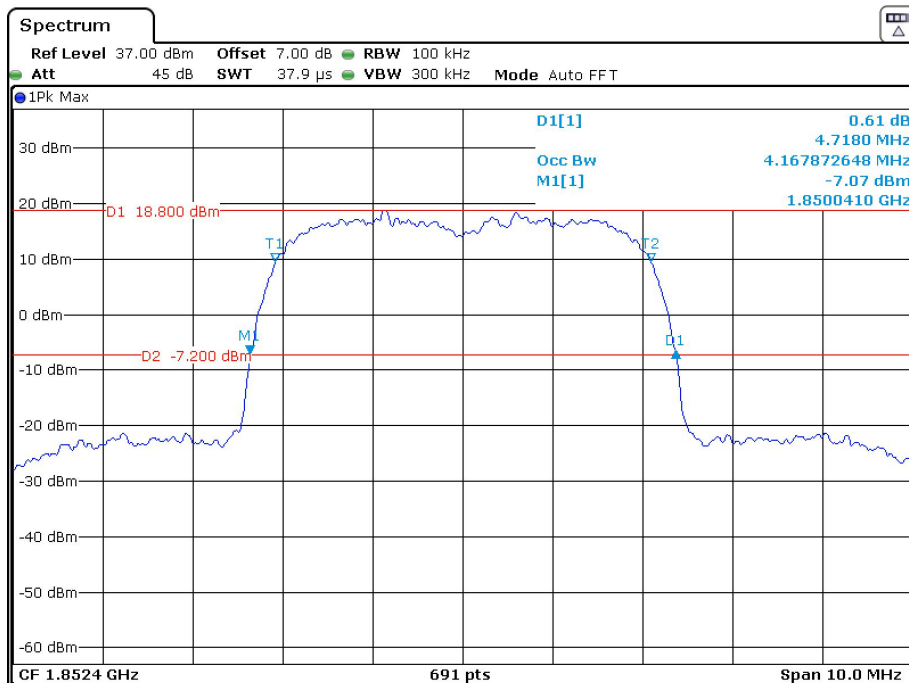
Date: 11.APR.2022 10:05:32

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



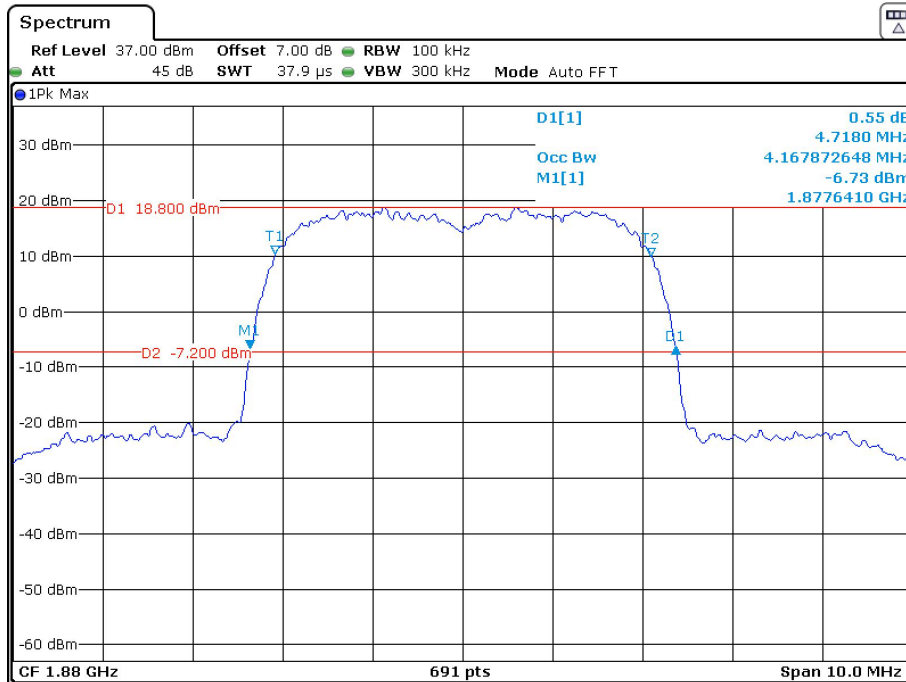
Date: 11.APR.2022 10:04:43

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



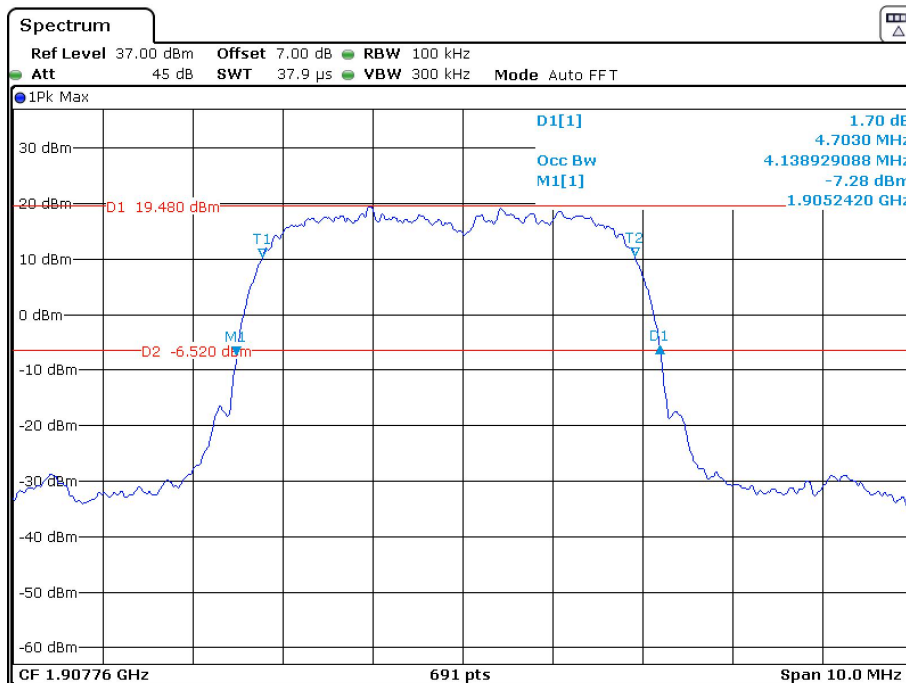
Date: 11.APR.2022 10:40:22

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



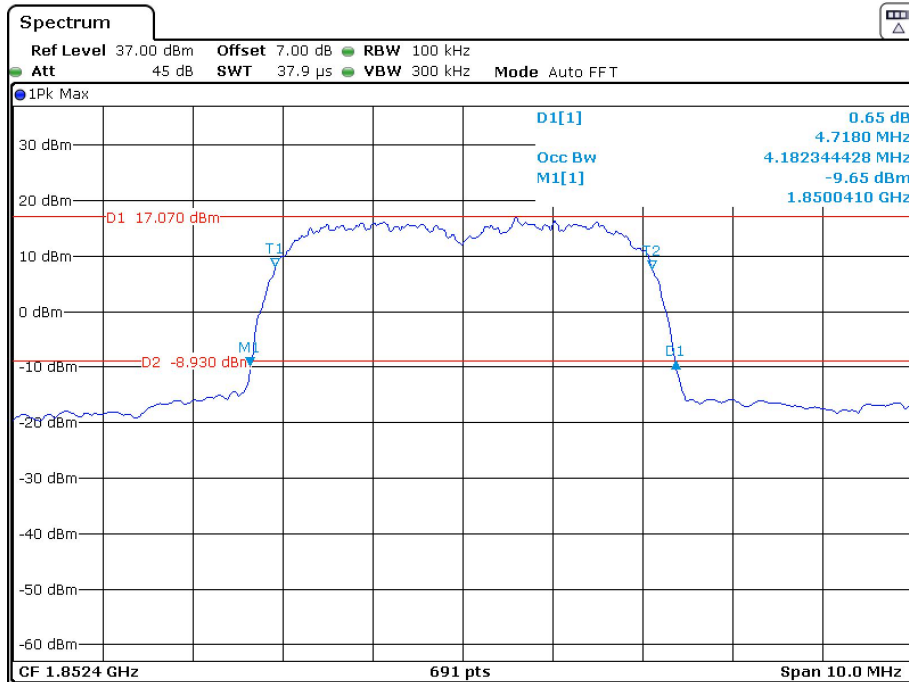
Date: 11.APR.2022 10:41:02

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



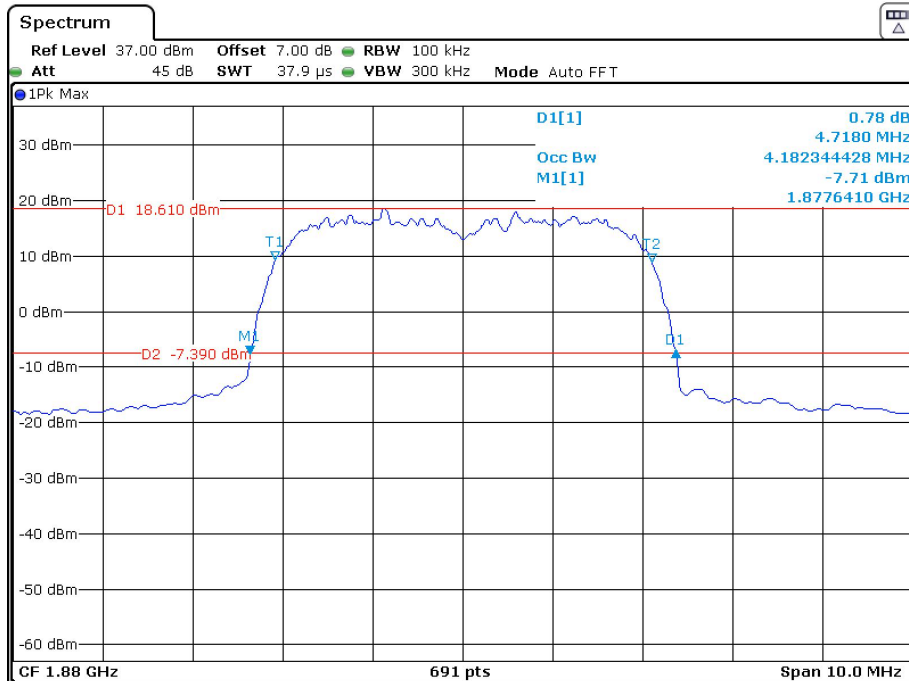
Date: 11.APR.2022 10:41:52

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



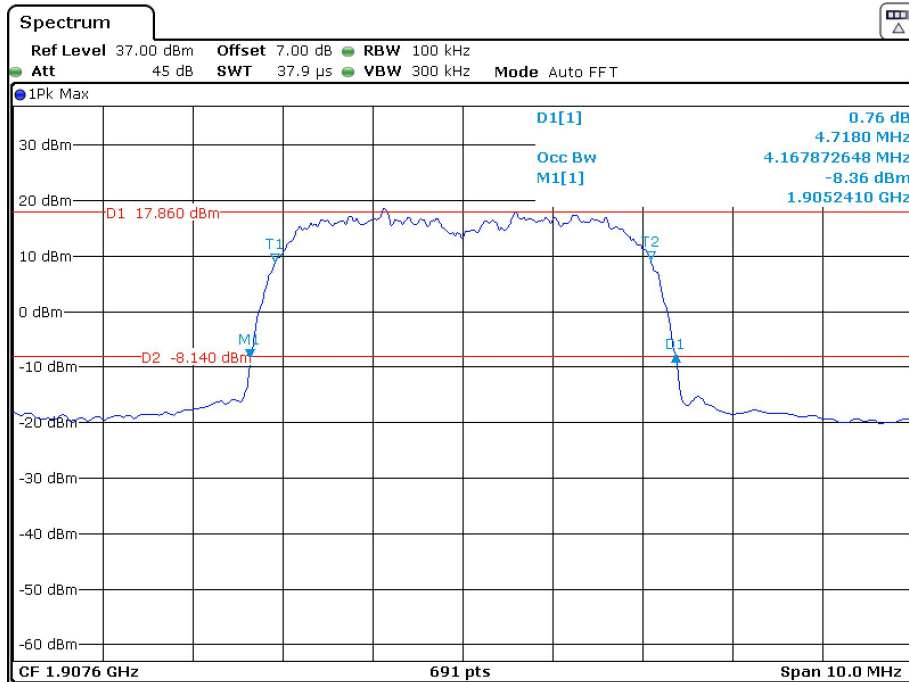
Date: 11.APR.2022 10:56:58

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



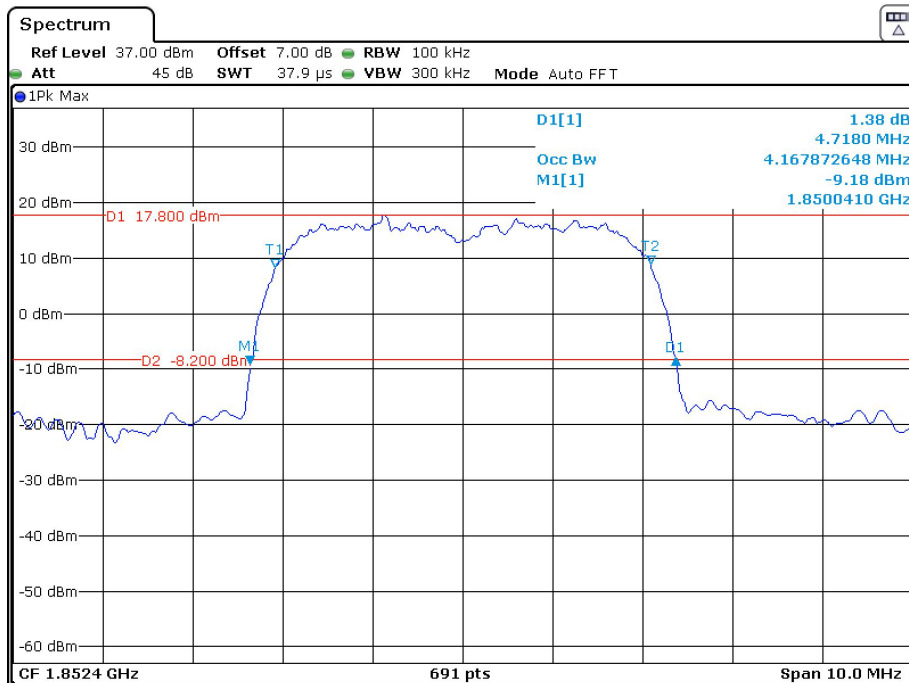
Date: 11.APR.2022 10:56:03

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



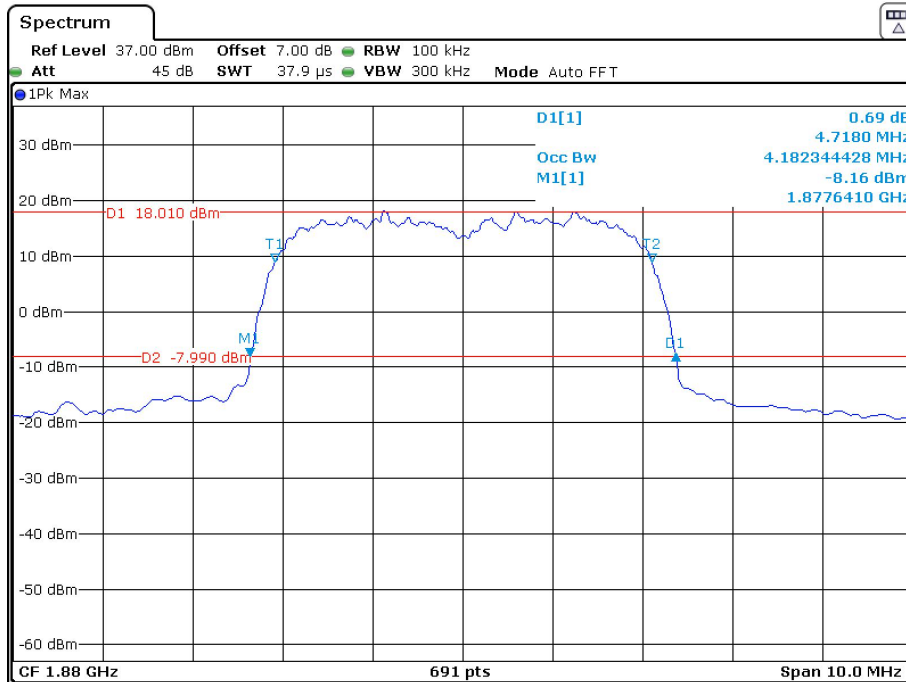
Date: 11.APR.2022 10:55:16

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



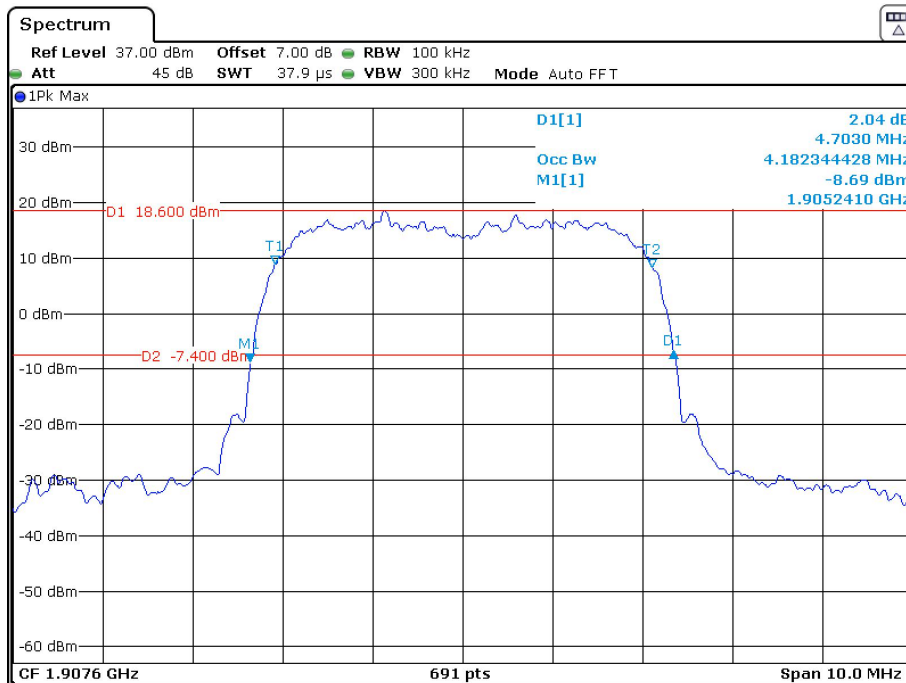
Date: 11.APR.2022 11:01:15

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



Date: 11.APR.2022 11:01:56

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



Date: 11.APR.2022 11:02:29

LTE Band 2:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4 MHz	QPSK	1.102	1.278	1.102	1.284	1.102	1.302
	16QAM	1.096	1.284	1.108	1.386	1.096	1.278
3 MHz	QPSK	2.683	2.988	2.695	2.928	2.683	2.916
	16QAM	2.671	2.976	2.683	2.940	2.683	2.928
5 MHz	QPSK	4.511	4.920	4.511	4.940	4.511	4.920
	16QAM	4.491	4.940	4.511	4.900	4.511	4.940
10 MHz	QPSK	8.942	9.680	8.942	9.600	8.942	9.680
	16QAM	8.942	9.560	8.942	9.640	8.942	9.640
15 MHz	QPSK	13.473	14.640	13.413	14.520	13.473	14.580
	16QAM	13.533	14.580	13.533	14.580	13.473	14.580
20 MHz	QPSK	17.884	19.280	17.884	19.280	17.964	19.280
	16QAM	17.884	19.200	17.884	19.360	18.044	19.360

LTE Band 5:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4 MHz	QPSK	1.102	1.284	1.108	1.422	1.102	1.314
	16QAM	1.102	1.302	1.090	1.272	1.102	1.296
3 MHz	QPSK	2.683	2.916	2.683	2.928	2.683	2.928
	16QAM	2.683	3.000	2.683	2.940	2.683	2.976
5 MHz	QPSK	4.511	4.940	4.511	4.960	4.491	4.920
	16QAM	4.491	4.920	4.531	4.920	4.511	4.940
10 MHz	QPSK	8.942	9.680	8.942	9.600	8.942	9.600
	16QAM	8.942	9.560	8.942	9.600	8.942	9.600

LTE Band 12:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
1.4 MHz	QPSK	1.102	1.284	1.108	1.356	1.102	1.278
	16QAM	1.102	1.302	1.096	1.278	1.102	1.278
3 MHz	QPSK	2.683	2.916	2.683	2.928	2.683	3.084
	16QAM	2.671	2.940	2.683	2.940	2.683	2.940
5 MHz	QPSK	4.511	4.920	4.511	4.940	4.511	4.920
	16QAM	4.511	4.900	4.511	4.940	4.511	4.940
10 MHz	QPSK	8.942	9.720	8.942	9.600	8.942	9.600
	16QAM	8.942	9.600	8.942	9.640	8.942	9.600

LTE Band 13:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5 MHz	QPSK	4.511	4.940	4.511	4.940	4.491	4.920
	16QAM	4.511	4.940	4.511	4.940	4.511	4.960
10 MHz	QPSK	/	/	8.942	9.640	/	/
	16QAM	/	/	8.942	9.800	/	/

LTE Band 41:

Bandwidth	Modulation	Low channel		Middle channel		High channel	
		99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	26 dB Emission Bandwidth (MHz)
5 MHz	QPSK	4.511	4.960	4.511	5.040	4.511	4.960
	16QAM	4.511	5.000	4.491	4.960	4.511	5.080
10 MHz	QPSK	8.942	10.000	8.942	9.680	8.942	9.600
	16QAM	8.942	9.520	8.942	9.520	8.942	9.960
15 MHz	QPSK	13.473	14.640	13.413	14.520	13.413	14.580
	16QAM	13.533	14.700	13.473	14.640	13.473	14.760
20 MHz	QPSK	17.964	19.120	17.884	18.880	17.884	19.600
	16QAM	17.884	19.280	17.884	19.200	17.884	19.360

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