

TEST REPORT

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ROAD CENTRAL, HongKong, China
Report Number: SZ1240111-02642E-RF-00B
FCC ID: 2BE7FB30CPE

Test Standard (s)

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

Sample Description

Product Type: 4G LTE WiFi Router
Model No.: B30
Multiple Model(s) No.: N/A
Trade Mark: N/A
Date Received: 2024/01/11
Issue Date: 2024/02/29

Test Result:

Pass▲

▲ In the configuration tested, the EUT complied with the standards above.

Prepared and Checked By:

Black Chen

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RF Engineer

Approved By:

Nancy Wang

Nancy Wang
RF Supervisor

Note: The information marked # is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report. Customer model name, addresses, names, trademarks etc. are included.

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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
0	SZ1240111-02642E-RF-00B	Original Report	2024/02/29

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product	4G LTE WiFi Router
Tested Model	B30
Multiple Model(s)	N/A
Frequency Range	WCDMA Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) WCDMA Band 5: 824-849MHz(TX); 869-894MHz(RX) LTE Band 2: 1850-1910MHz(TX); 1930-1990MHz(RX) LTE Band 4: 1710-1755MHz(TX); 2110-2155MHz(RX) LTE Band 12: 699-716MHz(TX); 729-746MHz(RX) LTE Band 17: 704-716MHz(TX); 734-746MHz(RX)
Modulation Technique	3G: BPSK, QPSK, 16QAM; 4G: QPSK, 16QAM, 64QAM
Antenna Specification#	WCDMA Band 2: 2.56dBi WCDMA Band 5: -2.31dBi LTE Band 2: 2.56dBi LTE Band 4: 1.62dBi LTE Band 12: -1.56dBi LTE Band 17: -1.56dBi (provided by the applicant)
Voltage Range	DC12V form adapter
Sample serial number	2GHX-2 for Radiated Emissions Test 2GHX-1 for RF Conducted Test (Assigned by BACL, Shenzhen)
Sample/EUT Status	Good condition
Normal/Extreme Condition#	L.V.: Low Voltage 110V _{AC} N.V.: Normal Voltage 12V _{DC} H.V.: High Voltage 240V _{AC}
Adapter Information	Model: ZL-A012W1201000 Input: 100-240~50/60Hz 0.5A Max Output: 12V,1.0A

Objective

This test report is in accordance with Part 2-Subpart J, Part 22-Subpart H, Part24-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
KDB 971168 D01: Power Meas License Digital Systems v03r01

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Each test item follows test standards and with no deviation.

Measurement Uncertainty

Parameter		Uncertainty
Occupied Channel Bandwidth		±5%
RF output power, conducted		0.72 dB(k=2, 95% level of confidence)
Unwanted Emission, conducted		1.75 dB(k=2, 95% level of confidence)
RF Frequency		213.55 Hz(k=2, 95% level of confidence)
Radiated Emissions	30MHz~200MHz (Horizontal)	4.48dB(k=2, 95% level of confidence)
	30MHz~200MHz (Vertical)	4.55dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Horizontal)	4.85dB(k=2, 95% level of confidence)
	200MHz~1000MHz (Vertical)	5.05dB(k=2, 95% level of confidence)
	1GHz - 6GHz	5.35dB(k=2, 95% level of confidence)
	6GHz - 18GHz	5.44dB(k=2, 95% level of confidence)
	18GHz - 40GHz	5.16dB(k=2, 95% level of confidence)
Temperature		±1°C
Humidity		±1%
Supply voltages		±0.4%

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

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 5F(B-West), 6F, 7F, the 3rd Phase of Wan Li Industrial Building D, Shihua Rd, FuTian Free Trade Zone, Shenzhen, China.

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 715558, the FCC Designation No. : CN5045.

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
WCDMA B2	4.2	1852.4	1880	1907.6
WCDMA B5	4.2	826.4	836.6	846.6
LTE B2	1.4	1850.7	1880	1909.3
	3	1851.5	1880	1908.5
	5	1852.5	1880	1907.5
	10	1855	1880	1905
	15	1857.5	1880	1902.5
	20	1860	1880	1900
LTE B4	1.4	1710.7	1732.5	1754.3
	3	1711.5	1732.5	1753.5
	5	1712.5	1732.5	1752.5
	10	1715	1732.5	1750
	15	1717.5	1732.5	1747.5
	20	1720	1732.5	1745
LTE 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	711.0
LTE B17	5	706.5	710	713.5
	10	709	710	711

Equipment Modifications

No modification was made to the EUT.

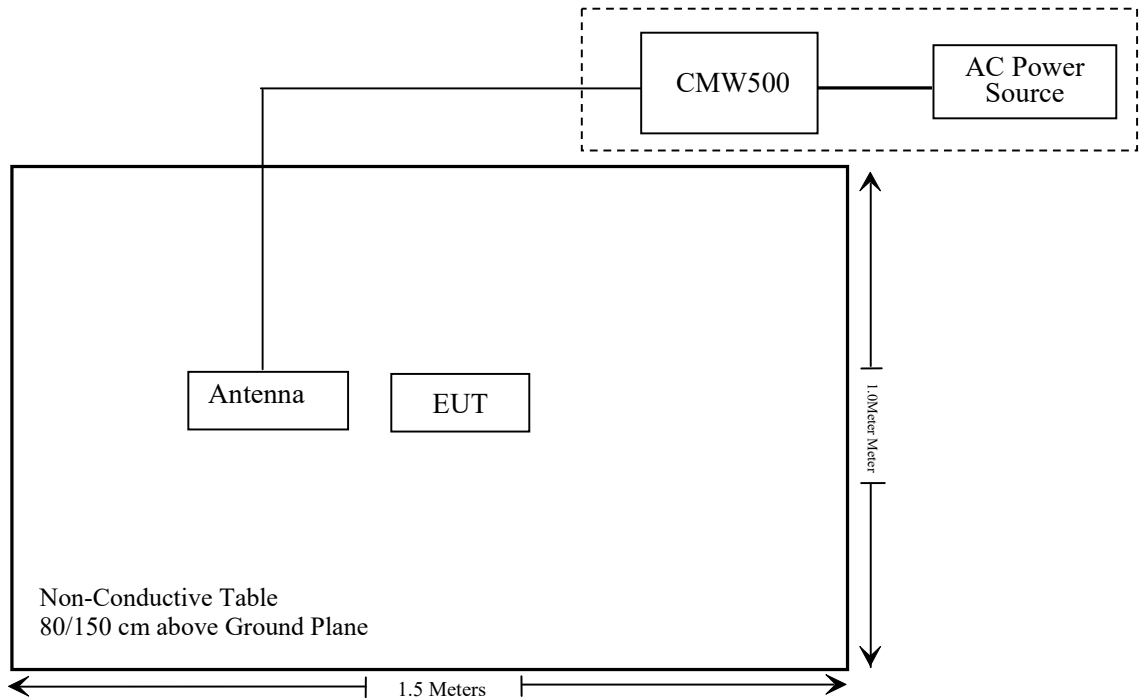
Support Equipment List and Details

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

Support Cable Description

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

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§1.1307 ,§2.1091	MAXIMUM PERMISSIBLE EXPOSURE (MPE)	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					
R&S	EMI Test Receiver	ESR3	102455	2023/02/08	2024/02/07
Sonoma instrument	Pre-amplifier	310 N	186238	2023/06/08	2024/06/07
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2023/07/20	2024/07/19
Unknown	Cable	Chamber Cable 1	F-03-EM236	2023/08/03	2024/08/02
Unknown	Cable	Chamber Cable 4	EC-007	2023/08/03	2024/08/02
COM-POWER	Dipole Antenna	AD-100	721027	NCR	NCR
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2023/04/18	2024/04/17
COM-POWER	Pre-amplifier	PA-122	181919	2023/06/29	2024/06/28
Schwarzbeck	Horn Antenna	BBHA9120D(1201)	1143	2023/07/26	2024/07/25
Electro-Mechanics Co	Horn Antenna	3115	9107-3694	2024/01/14	2027/01/13
Unknown	RF Cable	KMSE	0735	2023/10/08	2024/10/07
Unknown	RF Cable	UFA147	219661	2023/10/08	2024/10/07
Agilent	Signal Generator	N5183A	MY51040755	2023/02/08	2024/02/07
Rohde & Schwarz	Spectrum Analyzer	FSV40	101605	2023/04/18	2024/04/17
A.H.System	Pre-amplifier	PAM-1840VH	190	2023/08/03	2024/08/02
Electro-Mechanics Co	Horn Antenna	3116	9510-2270	2023/09/18	2026/09/17
Electro-Mechanics Co	Horn Antenna	3116	2026	2023/09/18	2026/09/17
UTIFLEX	RF Cable	NO. 13	232308-001	2023/08/03	2024/08/02
RF Conducted Test					
Rohde & Schwarz	Signal and Spectrum Analyzer	FSV40	101473	2023/04/18	2024/04/17
R&S	Wideband Radio Communication Tester	CMW500	141718	2023/09/06	2024/09/05
BACL	Temperature & Humidity Chamber	BTH-150-40	30145	2023/02/08	2024/02/07
HP	Power Splitter	11667A	1610A	2023/07/04	2024/07/03
Micro-Tronics	RF Cable	8082135	W1113	2023/07/04	2024/07/03
Unknown	10dB Attenuator	Unknown	F-03-EM190	2023/07/04	2024/07/03

* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §1.1307(b) & 2.1091 - MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (Minutes)
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f ²)	30
30-300	27.5	0.073	0.2	30
300-1500	/	/	f/1500	30
1500-100,000	/	/	1.0	30

f = frequency in MHz

* = Plane-wave equivalent power density

Result

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm²)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Result**For worst case:**

Mode	Frequency (MHz)	Antenna Gain [#]		Tune up conducted power [#]		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
		(dBi)	(numeric)	(dBm)	(mW)			
Wi-Fi	2412-2462	2.84	1.92	26	398.11	20	0.1521	1
WCDMA B2	1850-1910	2.56	1.8	23	199.53	20	0.0715	1
WCDMA B5	824-849	-2.31	0.59	25	316.23	20	0.0371	0.549
LTE B2	1850-1910	2.56	1.8	23	199.53	20	0.0715	1
LTE B4	1710-1755	1.62	1.45	22	158.49	20	0.0457	1
LTE B12	699-716	-1.56	0.7	23	199.53	20	0.0278	0.466
LTE B17	704-716	-1.56	0.7	24	251.19	20	0.0350	0.469

Note: The tune-up power and antenna gain was declared by the applicant.

Simultaneous transmitting consideration (worst case):

The ratio= $\text{MPE}_{\text{Wi-Fi}}/\text{limit}_{\text{Wi-Fi}} + \text{MPE}_{\text{LTE Band 17}}/\text{limit}_{\text{LTE Band 17}} = 0.1521/1 + 0.0350/0.469 = 0.227 < 1.0$

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.

FCC§2.1047 - MODULATION CHARACTERISTIC

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

FCC § 2.1046, § 22.913 (a) & § 24.232 (c); §27.50 (c) (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.

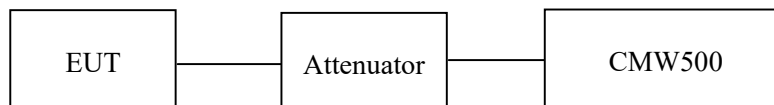
According to §27.50(c), Control and mobile stations in the 698-746 MHz band are limited to 30 watts ERP. And Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

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

Test Procedure

Conducted method: ANSI C63.26-2015 Section 5.2

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



Test Data

Environmental Conditions

Temperature:	23~24.8°C
Relative Humidity:	38~70 %
ATM Pressure:	101.0 kPa

The testing was performed by Bamboo Zhan from 2024-02-07 to 2024-02-18.

Test Result: Compliant

Cellular Band (Part 22H)**WCAMA B5**

Test Mode	Conducted Average Output Power (dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	24.25	22.35	23.61	19.79	38.45
HSDPA Subtest 1	23.41	21.91	22.82	18.95	38.45
HSDPA Subtest 2	23.46	21.96	22.88	19	38.45
HSDPA Subtest 3	23.51	21.99	22.91	19.05	38.45
HSDPA Subtest 4	23.56	22.05	22.94	19.1	38.45
HSUPA Subtest 1	22.58	21.65	22.09	18.12	38.45
HSUPA Subtest 2	22.62	21.68	22.17	18.16	38.45
HSUPA Subtest 3	22.65	21.71	22.2	18.19	38.45
HSUPA Subtest 4	22.68	21.76	22.22	18.22	38.45
HSUPA Subtest 5	22.71	21.78	22.26	18.25	38.45
HSPA+ Subtest 1	22.74	21.81	22.32	18.28	38.45
Note: ERP= Conducted Power(dBm) - LC(dB) + GT(dBd) GT(dBd)=GT(dBi)-2.15					

PCS Band (Part 24E)**WCDMA B2**

Test Mode	Conducted Average Output Power (dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
	Lowest Channel	Middle Channel	Highest Channel		
WCDMA R99	21.36	21.34	21.94	24.5	33
HSDPA Subtest 1	21.41	21.32	21.36	23.97	33
HSDPA Subtest 2	21.48	21.39	21.43	24.04	33
HSDPA Subtest 3	21.53	21.43	21.48	24.09	33
HSDPA Subtest 4	21.56	21.49	21.56	24.12	33
HSUPA Subtest 1	20.12	19.66	19.82	22.68	33
HSUPA Subtest 2	20.18	19.72	19.86	22.74	33
HSUPA Subtest 3	20.22	19.8	19.89	22.78	33
HSUPA Subtest 4	20.24	19.84	19.94	22.8	33
HSUPA Subtest 5	20.28	19.9	20	22.84	33
HSPA+ Subtest 1	20.33	19.95	20.07	22.89	33
Note: EIRP=Conducted Power(dBm) - LC(dB) + GT(dBi)					

LTE Band**Band 2**

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	21.77	21.74	22.42	24.98	33
	RB1#3	21.47	21.69	22.16		
	RB1#5	21.6	21.9	22.21		
	RB3#0	21.47	21.67	22.22		
	RB3#3	21.4	21.8	22.13		
	RB6#0	20.89	20.99	21.54		
1.4MHz 16QAM	RB1#0	21.11	21.15	21.52	24.08	33
	RB1#3	21.08	21.2	21.38		
	RB1#5	21.22	21.33	21.37		
	RB3#0	20.9	21.02	21.35		
	RB3#3	20.84	21.19	21.23		
	RB6#0	20.23	20.32	20.84		
3MHz QPSK	RB1#0	21.51	21.43	22.18	24.84	33
	RB1#8	20.77	21.05	21.74		
	RB1#14	21.37	21.87	22.28		
	RB6#0	20.37	20.36	20.95		
	RB6#9	20.31	20.76	21.47		
	RB15#0	20.28	20.48	21.25		
3MHz 16QAM	RB1#0	21.06	20.69	21.42	24.19	33
	RB1#8	20.17	20.38	21.14		
	RB1#14	20.74	21.47	21.63		
	RB6#0	19.78	19.76	20.38		
	RB6#9	19.68	19.92	20.63		
	RB15#0	19.65	19.78	20.48		
5MHz QPSK	RB1#0	21.37	21.36	21.23	24.57	33
	RB1#13	20.77	21.16	21.53		
	RB1#24	21.12	21.66	22.01		
	RB15#0	20.31	20.31	20.5		
	RB15#10	20.24	20.73	21.07		
	RB25#0	20.34	20.59	20.84		
5MHz 16QAM	RB1#0	20.97	20.52	20.5	23.95	33
	RB1#13	20.14	20.61	20.82		
	RB1#24	20.66	21.22	21.39		
	RB15#0	19.66	19.65	19.76		
	RB15#10	19.61	20.1	20.35		
	RB25#0	19.68	19.99	20.14		

10MHz QPSK	RB1#0	21.92	21.68	21.11	24.96	33
	RB1#25	20.47	20.86	20.23		
	RB1#49	21.16	22.4	22.36		
	RB25#0	20.21	20.24	19.79		
	RB25#25	19.73	20.69	20.89		
	RB50#0	20.15	20.54	20.3		
10MHz 16QAM	RB1#0	21.34	20.94	20.5	24.3	33
	RB1#25	19.9	20.18	19.8		
	RB1#49	20.48	21.73	21.74		
	RB25#0	19.55	19.61	19.04		
	RB25#25	19.06	20.08	20.22		
	RB50#0	19.49	19.93	19.61		
15MHz QPSK	RB1#0	21.98	21.13	20.61	24.93	33
	RB1#38	20.19	20.9	19.93		
	RB1#74	20.67	21.91	22.37		
	RB36#0	20.31	20.25	19.31		
	RB36#39	19.61	21	20.49		
	RB75#0	19.87	20.65	20.12		
15MHz 16QAM	RB1#0	21.3	-20.68	19.99	24.42	33
	RB1#38	19.43	20.45	19.51		
	RB1#74	19.96	21.67	21.86		
	RB36#0	19.6	19.53	18.65		
	RB36#39	18.93	20.36	19.81		
	RB75#0	19.17	19.99	19.42		
20MHz QPSK	RB1#0	21.91	20.65	21.27	25.01	33
	RB1#50	20.37	21.18	20.31		
	RB1#99	20.61	21.94	22.45		
	RB50#0	20.44	20.18	19.38		
	RB50#50	19.46	20.89	20.22		
	RB100#0	19.98	20.53	20.41		
20MHz 16QAM	RB1#0	21.51	20.11	20.53	24.39	33
	RB1#50	20.01	20.56	19.57		
	RB1#99	20.4	21.39	21.83		
	RB50#0	19.6	19.5	18.73		
	RB50#50	18.71	20.25	19.55		
	RB100#0	19.21	19.88	19.74		
Note: EIRP=Conducted Power(dBm) - LC(dB) + GT(dBi)						

Band 4

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum EIRP (dBm)	EIRP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	20.12	20.69	21.41	23.03	30
	RB1#3	20.09	20.55	21.16		
	RB1#5	20.45	20.68	21.27		
	RB3#0	20.06	20.56	21.29		
	RB3#3	20.26	20.58	21.26		
	RB6#0	19.27	20.02	20.66		
1.4MHz 16QAM	RB1#0	19.42	20.4	20.77	22.39	30
	RB1#3	19.36	20.06	20.75		
	RB1#5	19.63	20.19	20.71		
	RB3#0	19.32	20.24	20.75		
	RB3#3	19.52	20.16	20.73		
	RB6#0	18.85	19.5	19.89		
3MHz QPSK	RB1#0	20.25	21.03	21.57	23.19	30
	RB1#8	19.85	20.31	20.88		
	RB1#14	21.08	20.43	21.3		
	RB6#0	19.08	19.73	20.73		
	RB6#9	19.64	19.79	20.69		
	RB15#0	19.22	19.69	20.62		
3MHz 16QAM	RB1#0	19.27	20.51	20.94	22.66	30
	RB1#8	19.6	19.76	20.55		
	RB1#14	20.26	20.13	21.04		
	RB6#0	18.61	19.08	20		
	RB6#9	19.2	19.22	19.78		
	RB15#0	18.75	19.31	19.81		
5MHz QPSK	RB1#0	19.83	20.85	21.46	23.08	30
	RB1#13	20.44	20.15	21.01		
	RB1#24	21.3	20.65	21.23		
	RB15#0	19.33	19.73	20.59		
	RB15#10	19.92	19.79	20.49		
	RB25#0	19.68	19.83	20.6		
5MHz 16QAM	RB1#0	19.32	20.45	20.9	22.52	30
	RB1#13	19.71	19.84	20.59		
	RB1#24	20.6	20.06	20.79		
	RB15#0	18.87	19.08	19.82		
	RB15#10	19.45	19.17	19.73		
	RB25#0	19.22	19.28	19.87		

10MHz QPSK	RB1#0	20.92	21.79	21.49	23.67	30
	RB1#25	20.7	20.13	20.76		
	RB1#49	22.05	20.88	21.62		
	RB25#0	19.63	19.93	20.27		
	RB25#25	20.48	19.62	20.51		
	RB50#0	20.13	19.83	20.56		
10MHz 16QAM	RB1#0	19.96	20.93	20.74	22.88	30
	RB1#25	20.14	19.27	20.34		
	RB1#49	21.26	20.39	21		
	RB25#0	19.18	19.24	19.67		
	RB25#25	19.81	19.06	20.03		
	RB50#0	19.67	19.25	20		
15MHz QPSK	RB1#0	20.91	21.6	21.32	23.39	30
	RB1#38	20.85	20.1	20.7		
	RB1#74	21.77	20.98	21.74		
	RB36#0	20.05	20.26	20.14		
	RB36#39	20.68	19.51	20.75		
	RB75#0	20.4	20.13	20.37		
15MHz 16QAM	RB1#0	20.01	20.98	20.7	22.82	30
	RB1#38	20.25	19.72	20.22		
	RB1#74	20.91	20.41	21.2		
	RB36#0	19.59	19.69	19.48		
	RB36#39	20	19.2	20		
	RB75#0	19.73	19.57	19.66		
20MHz QPSK	RB1#0	20.59	21.52	21	23.3	30
	RB1#50	21.12	20.19	20.65		
	RB1#99	21.37	21.15	21.68		
	RB50#0	20.29	20.35	19.87		
	RB50#50	20.56	19.65	20.63		
	RB100#0	20.48	20.09	20.1		
20MHz 16QAM	RB1#0	19.87	21.23	20.47	22.87	30
	RB1#50	20.72	19.95	20.21		
	RB1#99	20.96	20.6	21.25		
	RB50#0	19.82	19.66	19.19		
	RB50#50	19.87	19.09	19.88		
	RB100#0	19.78	19.51	19.41		
Note: EIRP=Conducted Power(dBm) - Lc(dB) + Gr(dBi)						

Band 12

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
1.4MHz QPSK	RB1#0	22.6	21.21	20.83	19.32	34.77
	RB1#3	22.83	21.09	20.44		
	RB1#5	23.03	21.42	20.4		
	RB3#0	22.71	21.22	20.63		
	RB3#3	22.98	21.21	20.43		
	RB6#0	22.25	20.22	19.85		
1.4MHz 16QAM	RB1#0	21.89	20.56	20.29	18.76	34.77
	RB1#3	22.29	20.36	19.8		
	RB1#5	22.47	20.56	19.96		
	RB3#0	22.01	20.51	20.1		
	RB3#3	22.16	20.59	19.9		
	RB6#0	21.64	19.6	19.08		
3MHz QPSK	RB1#0	22.57	21.01	22.25	19.02	34.77
	RB1#8	22.71	20.59	20.45		
	RB1#14	22.73	21.4	20.46		
	RB6#0	22.02	19.94	21.21		
	RB6#9	22.16	20.24	19.61		
	RB15#0	22.13	19.97	20.42		
3MHz 16QAM	RB1#0	22.01	20.08	21.86	18.34	34.77
	RB1#8	21.96	19.9	19.99		
	RB1#14	22.05	20.28	20.01		
	RB6#0	21.3	19.2	20.55		
	RB6#9	21.54	19.56	18.82		
	RB15#0	21.43	19.33	19.63		
5MHz QPSK	RB1#0	22.42	20.58	22.91	19.2	34.77
	RB1#13	22.37	20.56	21.72		
	RB1#24	21.18	21.74	20.37		
	RB15#0	22.04	19.8	22.03		
	RB15#10	21.4	20.23	20.67		
	RB25#0	21.73	20.15	21.39		
5MHz 16QAM	RB1#0	21.8	19.83	22.2	18.49	34.77
	RB1#13	21.78	19.9	21.09		
	RB1#24	20.58	21.19	19.81		
	RB15#0	21.26	19.12	21.09		
	RB15#10	20.6	19.8	19.68		
	RB25#0	20.91	19.71	20.56		
10MHz QPSK	RB1#0	23.02	22.2	21.34	19.54	34.77
	RB1#25	20.52	20.29	22.34		
	RB1#49	21.67	23.25	20.95		
	RB25#0	21.82	20.02	20.7		
	RB25#25	20.07	21.19	21.46		
	RB50#0	20.86	21.05	21.03		

10MHz 16QAM	RB1#0	22.41	21.54	20.65	19.01	34.77
	RB1#25	19.96	19.76	21.67		
	RB1#49	20.91	22.72	20.26		
	RB25#0	21.04	19.29	19.89		
	RB25#25	19.5	20.31	20.62		
	RB50#0	20.2	20.34	20.17		
Note: ERP= Conducted Power(dBm) - Lc(dB) + G _T (dBd) G _T (dBd)=G _T (dBi)-2.15						

Band 17

Test Bandwidth & Modulation	Resource Block & RB offset	Conducted Average Output Power(dBm)			Maximum ERP (dBm)	ERP Limit (dBm)
		Lowest Channel	Middle Channel	Highest Channel		
5MHz QPSK	RB1#0	21.16	21.62	23.1	19.39	34.77
	RB1#13	20.8	22.25	21.72		
	RB1#24	21.65	22.83	21.24		
	RB15#0	19.81	20.74	21.9		
	RB15#10	20.06	22.18	20.83		
	RB25#0	20.33	21.65	21.38		
5MHz 16QAM	RB1#0	20.22	20.7	22.64	18.93	34.77
	RB1#13	19.97	21.49	21.1		
	RB1#24	20.85	22.14	20.43		
	RB15#0	19.29	19.77	21.19		
	RB15#10	19.57	21.27	20.01		
	RB25#0	19.81	20.73	20.63		
10MHz QPSK	RB1#0	21.53	21.13	21.82	18.99	34.77
	RB1#25	21	21.94	22.57		
	RB1#49	22.7	22.29	21.74		
	RB25#0	20.62	20.66	21.04		
	RB25#25	21.79	21.75	21.34		
	RB50#0	21.14	21.26	21.33		
10MHz 16QAM	RB1#0	21.04	20.54	21.08	18.35	34.77
	RB1#25	20.22	21.07	21.83		
	RB1#49	22.06	21.4	21.08		
	RB25#0	19.73	19.9	20.05		
	RB25#25	20.99	20.95	20.55		
	RB50#0	20.21	20.39	20.34		
Note: ERP= Conducted Power(dBm) - Lc(dB) + G _T (dBd) G _T (dBd)=G _T (dBi)-2.15						

Peak-to-average ratio (PAR)**Cellular Band****WCDMA B5**

Test Mode	Peak-to-average Ratio (dB)			Limit (dB)
	Lowest Channel	Middle Channel	Highest Channel	
WCDMA R99	2.52	3.16	2.93	13
HSDPA	3.57	3.3	4.2	13
HSUPA	4.46	5.77	5.36	13

PCS Band**WCDMA B2**

Test Mode	Peak-to-average Ratio (dB)			Limit (dB)
	Lowest Channel	Middle Channel	Highest Channel	
WCDMA R99	2.96	3.01	2.64	13
HSDPA	4.41	4.52	2.87	13
HSUPA	5.74	5.71	5.48	13

LTE Band: (pre-scan all bandwidth, the worst case as below)

LTE Band 2 20MHz Bandwidth

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio (dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	5.65	6.23	5.22	13
	RB100#0	4.55	4.32	4.64	13
20MHz 16QAM	RB1#0	6.26	6.99	6.06	13
	RB100#0	6.09	5.88	6	13

LTE Band 4 20MHz Bandwidth

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
20MHz QPSK	RB1#0	5.39	4.78	5.74	13
	RB100#0	4.29	4.58	4.29	13
20MHz 16QAM	RB1#0	6.03	5.25	6.41	13
	RB100#0	5.88	6.06	5.65	13

LTE Band 12 10MHz Bandwidth

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	2.52	3.01	5.1	13
	RB50#0	4.7	4.75	4.23	13
10MHz 16QAM	RB1#0	3.19	3.68	5.97	13
	RB50#0	5.39	5.54	5.16	13

LTE Band 17 10MHz Bandwidth

Test Bandwidth & Modulation	Resource Block & RB offset	Peak-to-average Ratio(dB)			Limit (dB)
		Lowest Channel	Middle Channel	Highest Channel	
10MHz QPSK	RB1#0	5.1	5.59	5.62	13
	RB50#0	4.52	4.32	4.17	13
10MHz 16QAM	RB1#0	4.96	5.62	5.71	13
	RB50#0	5.48	5.28	5.13	13

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

Applicable Standard

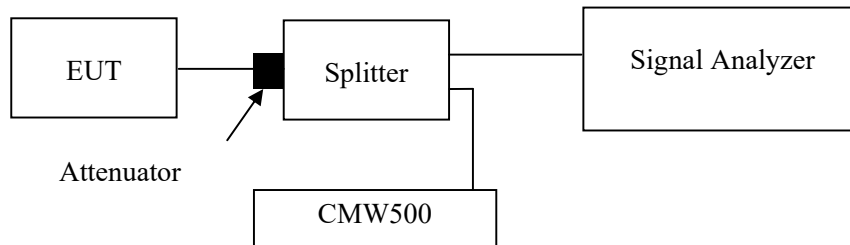
FCC 47 §2.1049, §22.917, §22.905, §24.238 and §27.53.

Test Procedure

ANSI C63.26-2015 Section 5.4.4

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:	23~24.8°C
Relative Humidity:	38~70 %
ATM Pressure:	101.0 kPa

The testing was performed by Bamboo Zhan from 2024-02-07 to 2024-02-18.

EUT operation mode: Transmitting

Test Result: Compliant

Please refer to the following tables and plots.

Cellular Band (Part 22H)**WCDMA B5**

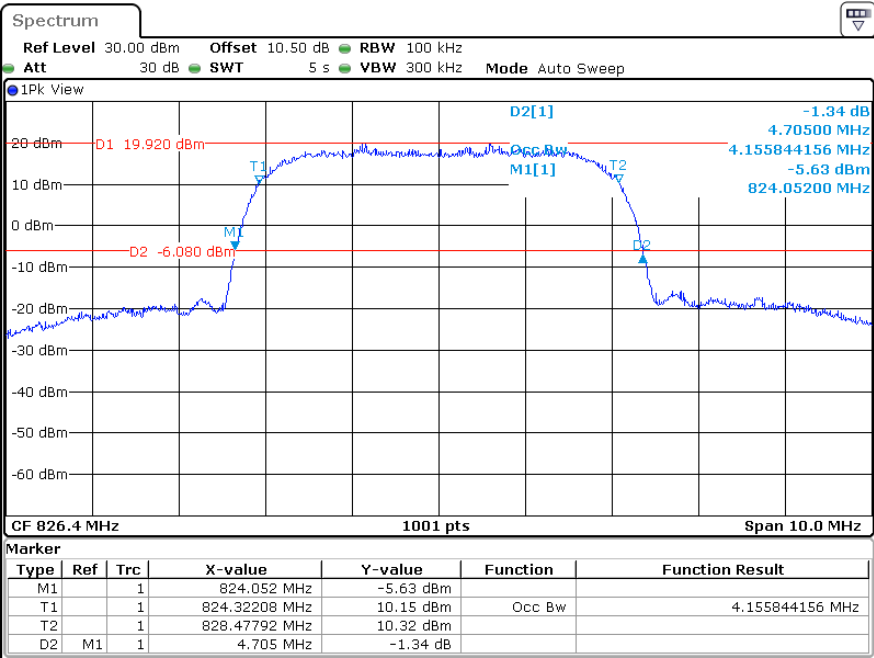
Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
WCDMA R99	4.156	4.176	4.166	4.705	4.695	4.695
HSDPA	4.186	4.176	4.176	4.685	4.685	4.695
HSUPA	4.176	4.166	4.186	4.715	4.695	4.725
Note: The test plots please refer to the Plots of Occupied Bandwidth						

PCS Band (Part 24E)**WCDMA B2**

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
WCDMA R99	4.156	4.156	4.166	4.695	4.705	4.725
HSDPA	4.176	4.166	4.186	4.685	4.685	5.025
HSUPA	4.176	4.176	4.166	4.695	4.695	4.695
Note: The test plots please refer to the Plots of Occupied Bandwidth						

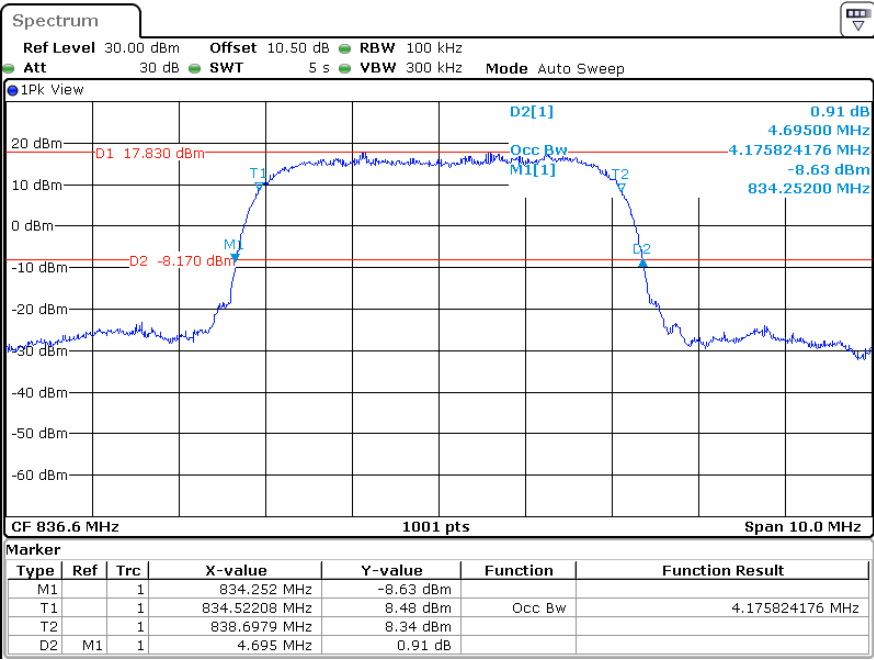
Cellular Band

RMC (BPSK) Mode, Low channel



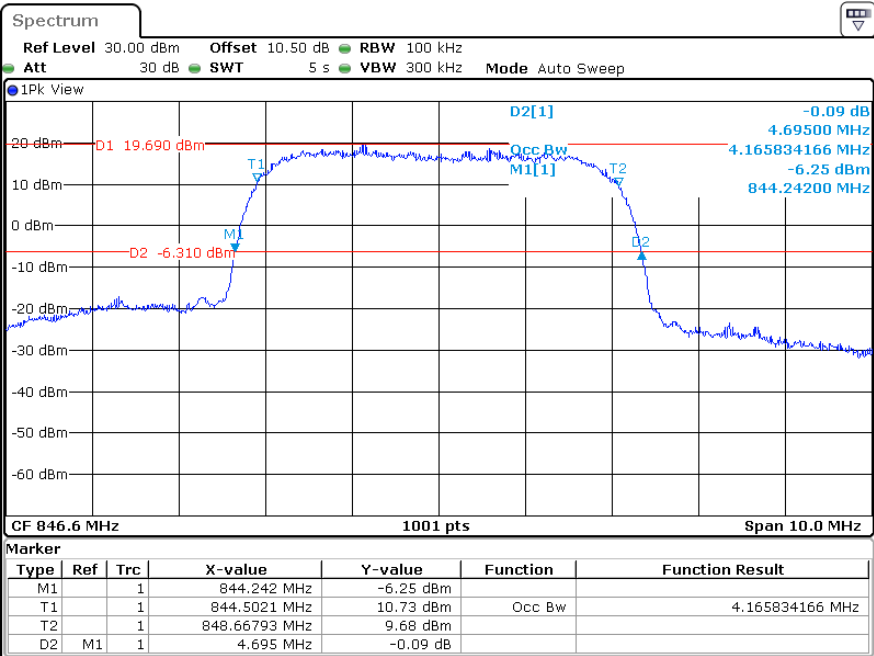
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:35:36

RMC (BPSK) Mode, Middle channel



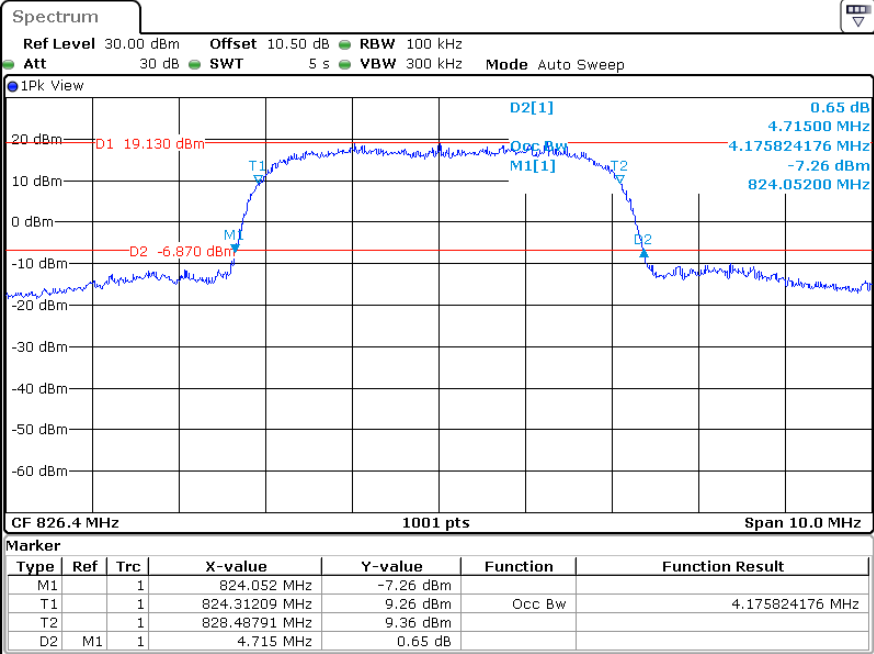
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:38:40

RMC (BPSK) Mode, High channel



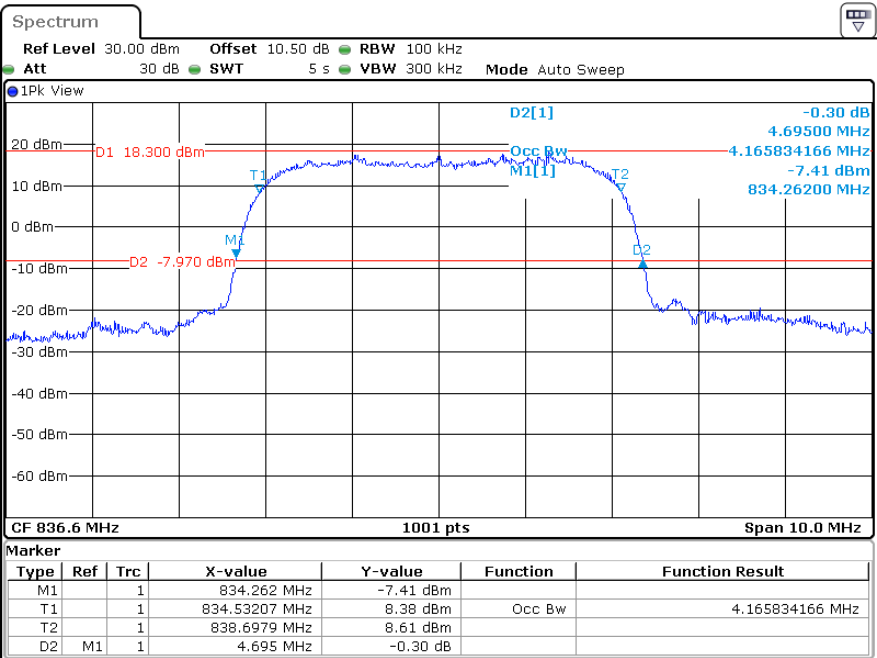
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:41:39

HSUPA (QPSK) Mode, Low channel



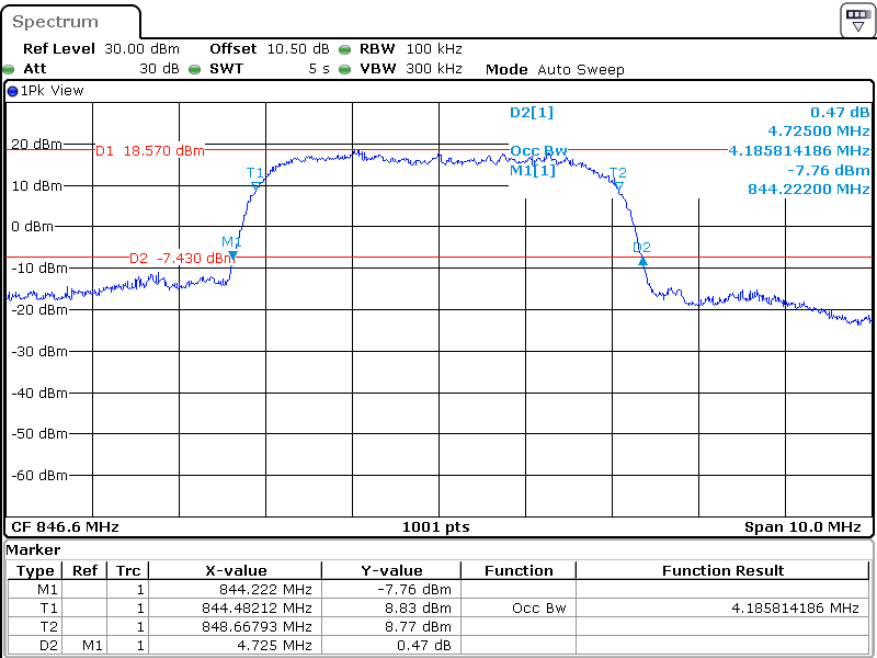
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:56:09

HSUPA (QPSK) Mode, Middle channel



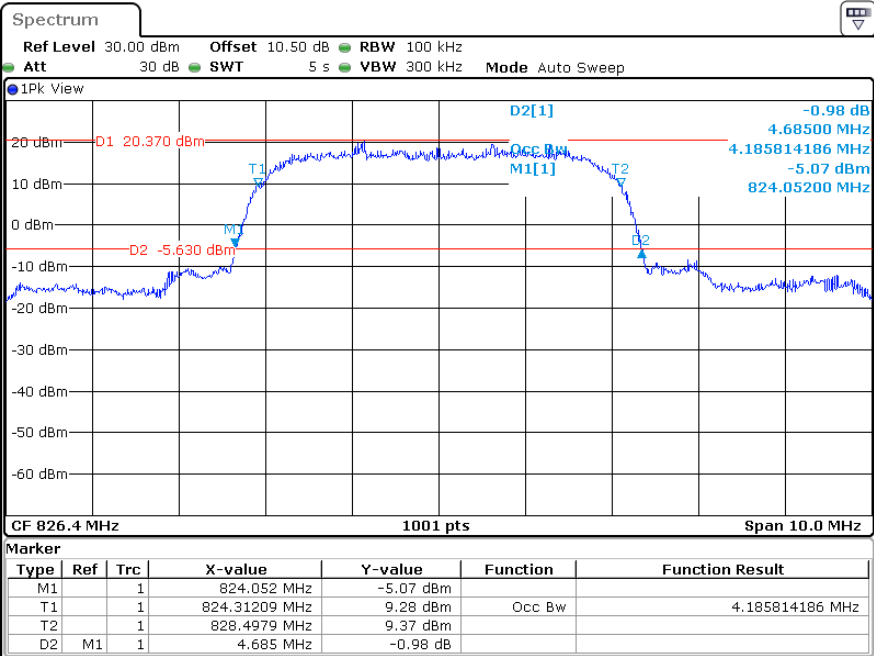
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:59:24

HSUPA (QPSK) Mode, High channel



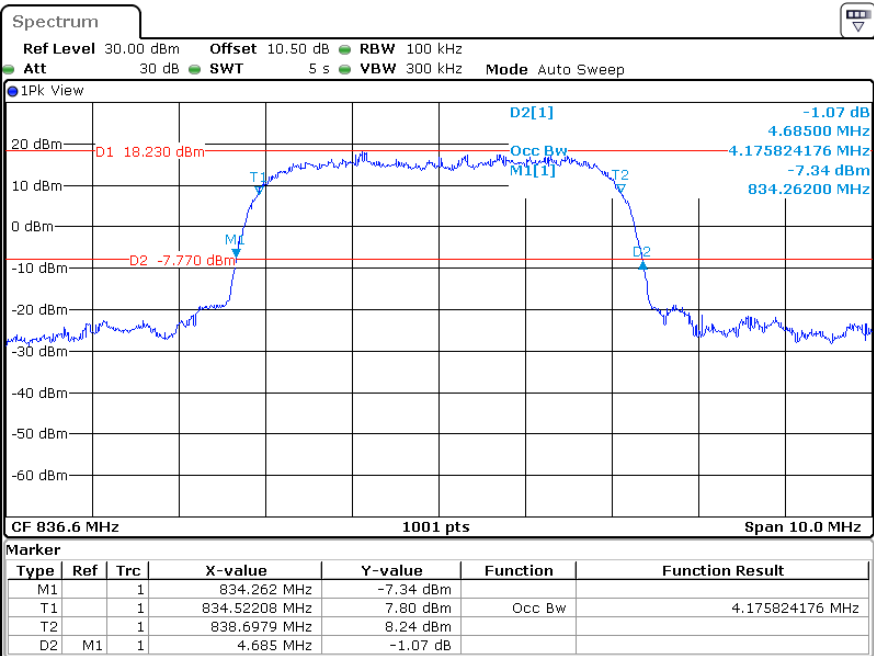
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 10:03:02

HSDPA (16QAM) Mode, Low channel



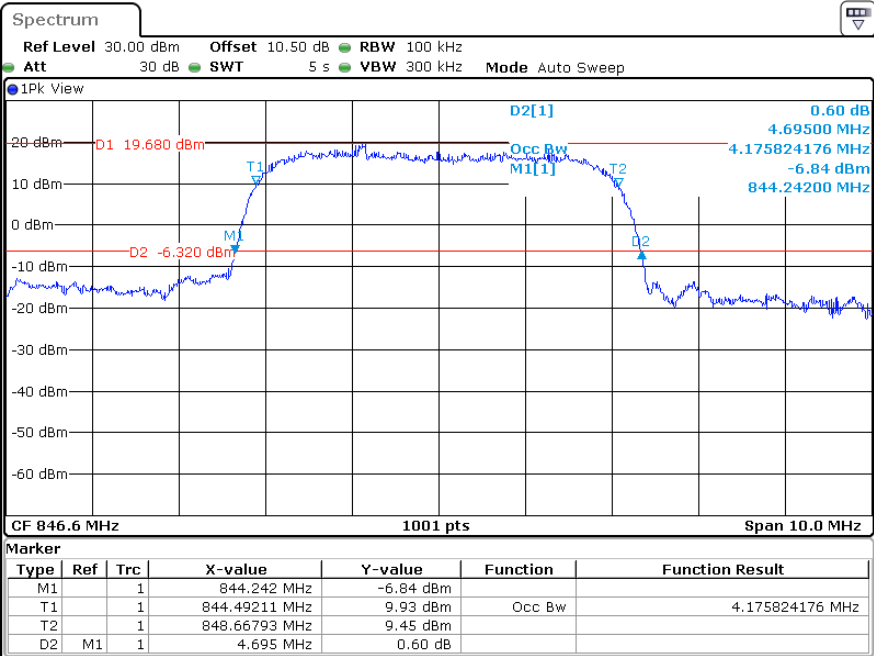
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Date: 18.FEB.2024 09:52:01

HSDPA (16QAM) Mode, Middle channel



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:48:55

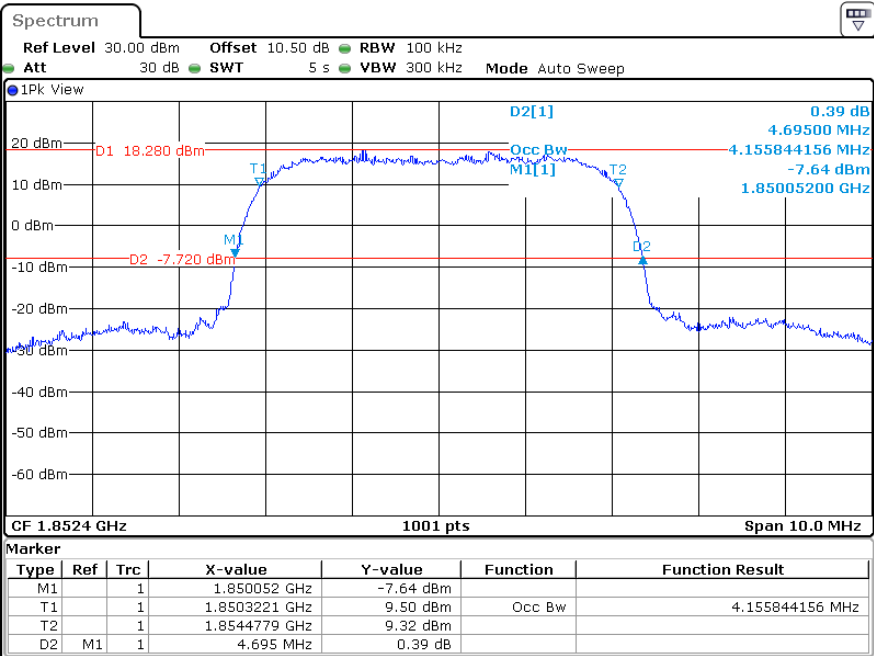
HSDPA (16QAM) Mode, High channel



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:45:25

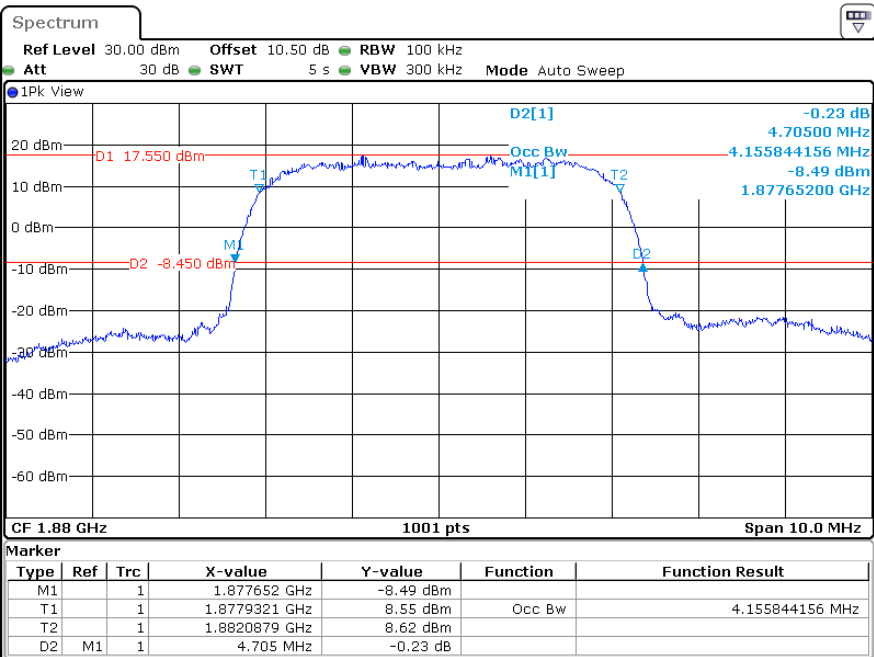
PCS Band

RMC (BPSK) Mode, Low channel



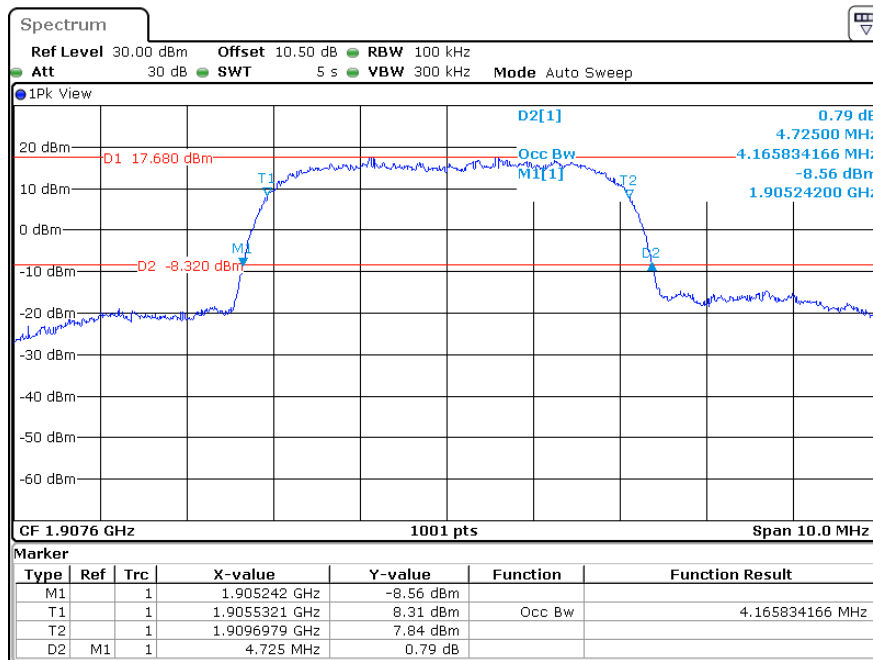
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Date: 18.FEB.2024 11:09:52

RMC (BPSK) Mode, Middle channel



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 11:13:41

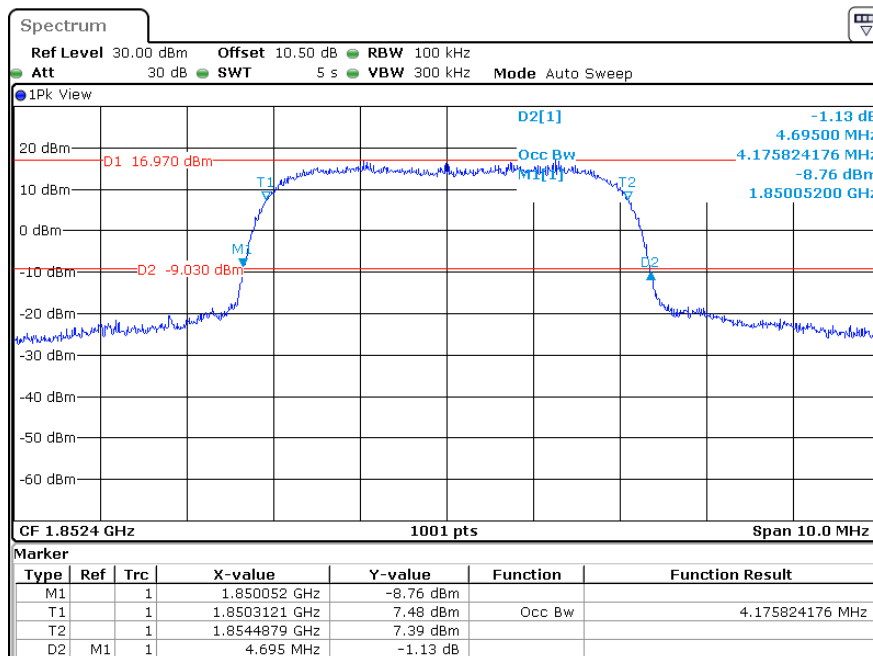
RMC (BPSK) Mode, High channel



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan

Date: 18.FEB.2024 11:16:47

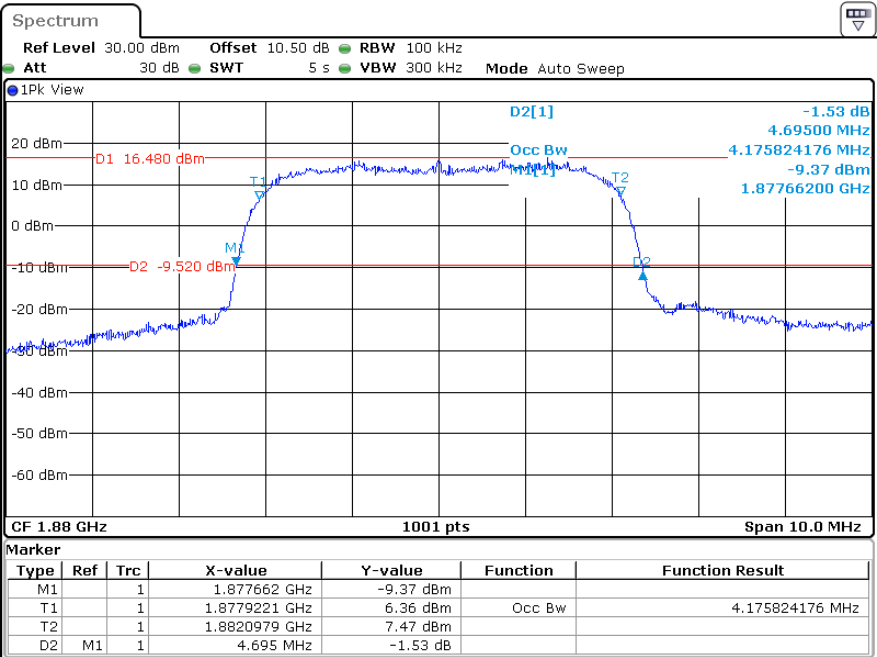
HSUPA (QPSK) Mode, Low channel



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan

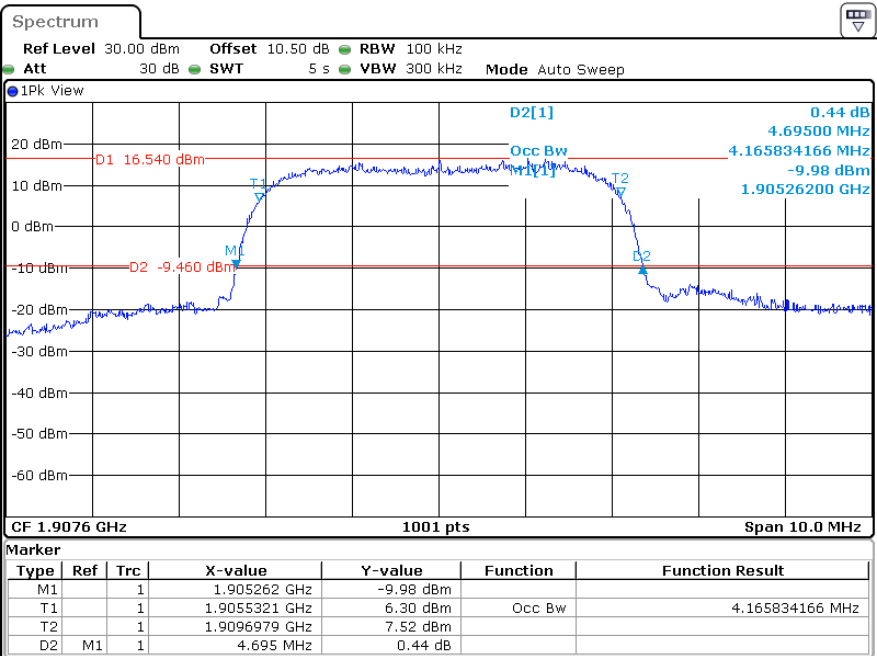
Date: 18.FEB.2024 10:35:03

HSUPA (QPSK) Mode, Middle channel



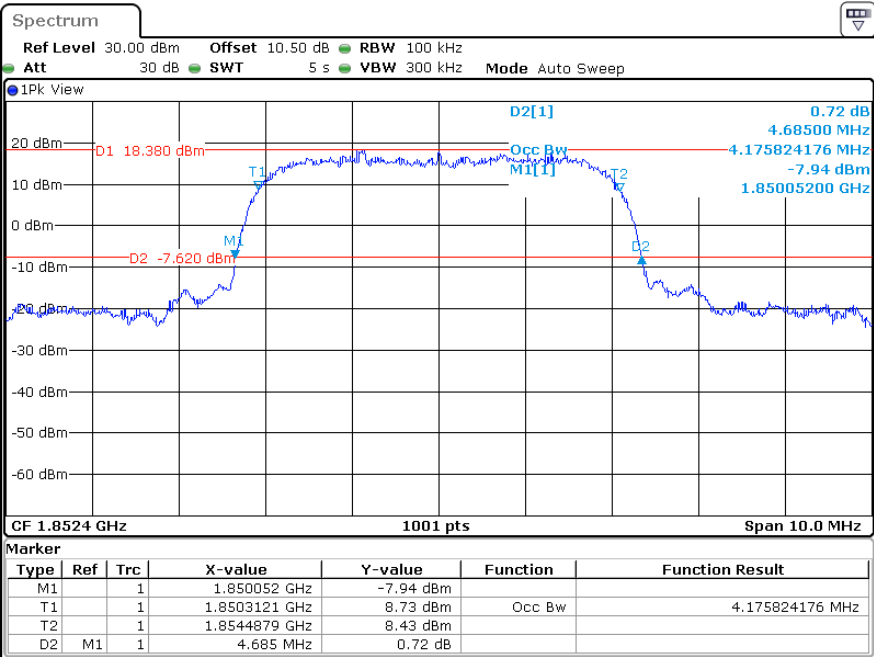
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Date: 18.FEB.2024 10:21:10

HSUPA (QPSK) Mode, High channel



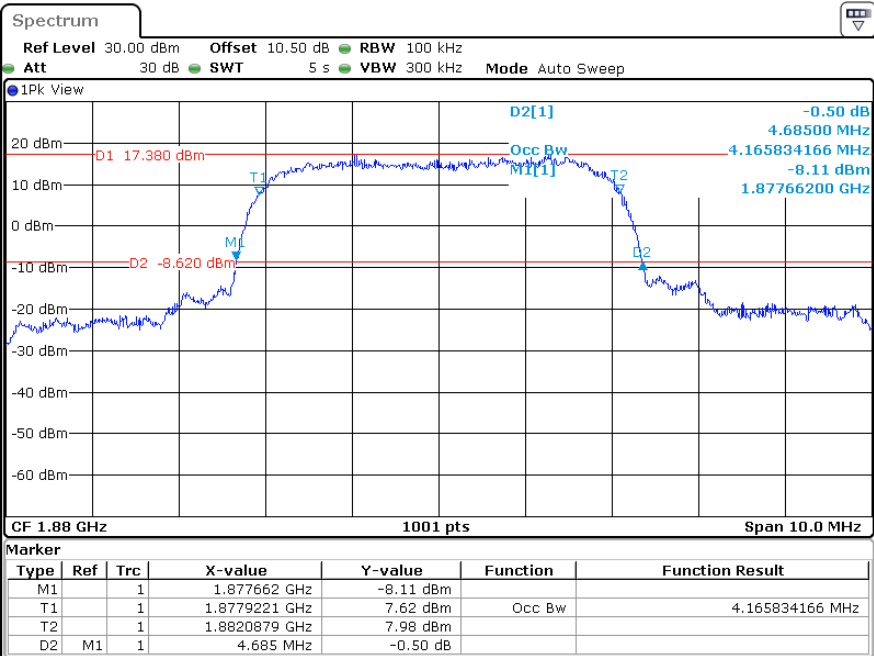
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Date: 18.FEB.2024 10:40:05

HSDPA (16QAM) Mode, Low channel



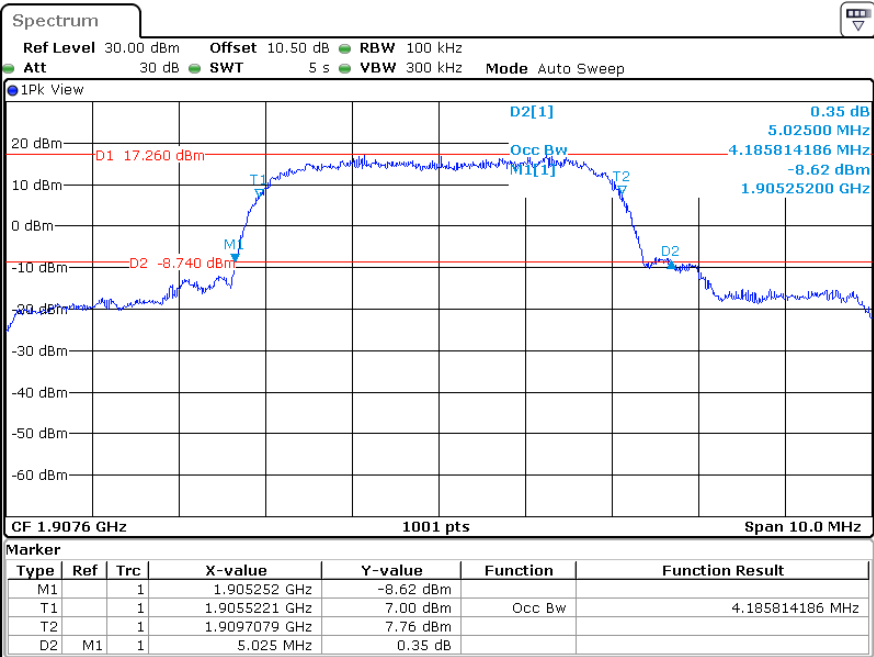
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 11:05:37

HSDPA (16QAM) Mode, Middle channel



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 10:51:31

HSDPA (16QAM) Mode, High channel



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 10:44:11

LTE Band**Band 2**

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.114	1.138	1.114	1.476	1.506	1.506
1.4MHz 16QAM	1.114	1.12	1.12	1.47	1.482	1.506
3MHz QPSK	2.695	2.683	2.695	3	2.976	2.988
3MHz 16QAM	2.695	2.695	2.707	3	3.012	3.012
5MHz QPSK	4.551	4.551	4.551	5.16	5.2	5.14
5MHz 16QAM	4.551	4.531	4.551	5.18	5.18	5.2
10MHz QPSK	9.022	8.982	8.982	10.36	10.2	10.24
10MHz 16QAM	8.982	8.982	8.982	10.24	10.16	10.2
15MHz QPSK	13.533	13.593	13.653	15.72	15.96	15.9
15MHz 16QAM	13.533	13.473	13.713	15.78	15.6	16.02
20MHz QPSK	18.044	17.964	18.044	19.84	19.52	19.76
20MHz 16QAM	17.964	17.964	18.044	19.6	19.68	19.68
Note: The test plots please refer to the Plots of Occupied Bandwidth						

Band 4

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.108	1.114	1.12	1.488	1.488	1.5
1.4MHz 16QAM	1.114	1.12	1.126	1.458	1.47	1.536
3MHz QPSK	2.707	2.707	2.695	3.012	3	3
3MHz 16QAM	2.695	2.695	2.707	3.012	3	3
5MHz QPSK	4.531	4.571	4.531	5.16	5.22	5.16
5MHz 16QAM	4.551	4.551	4.531	5.16	5.2	5.14
10MHz QPSK	8.982	9.022	9.022	10.2	10.32	10.28
10MHz 16QAM	8.982	8.982	8.982	10.32	10.32	10.2
15MHz QPSK	13.533	13.593	13.593	15.6	15.9	15.96
15MHz 16QAM	13.593	13.533	13.593	15.6	15.78	15.9
20MHz QPSK	17.964	18.044	17.964	19.52	19.84	19.84
20MHz 16QAM	17.964	18.283	18.044	19.6	25.36	19.76
Note: The test plots please refer to the Plots of Occupied Bandwidth						

Band 12

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
1.4MHz QPSK	1.144	1.12	1.12	1.8	1.482	1.494
1.4MHz 16QAM	1.15	1.138	1.114	1.818	1.506	1.488
3MHz QPSK	2.707	2.695	2.695	3.3	2.988	3.012
3MHz 16QAM	2.707	2.695	2.695	3.552	3	3
5MHz QPSK	4.551	4.551	4.551	5.76	5.2	5.2
5MHz 16QAM	4.551	4.551	4.551	5.42	5.2	5.44
10MHz QPSK	8.982	9.022	8.902	10.24	10.24	10.08
10MHz 16QAM	8.982	9.062	8.942	10.04	10.32	9.96
Note: The test plots please refer to the Plots of Occupied Bandwidth						

Band 17

Operation Mode	99% Occupied Bandwidth (MHz)			26 dB Occupied Bandwidth (MHz)		
	Low Channel	Middle channel	High Channel	Low Channel	Middle Channel	High Channel
5MHz QPSK	4.551	4.531	4.571	5.2	5.16	5.38
5MHz 16QAM	4.591	4.551	4.531	5.2	5.14	5.68
10MHz QPSK	8.982	8.942	8.942	10	10	10.12
10MHz 16QAM	8.982	8.942	8.942	10.16	10	10
Note: The test plots please refer to the Plots of Occupied Bandwidth						

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

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

Applicable Standard

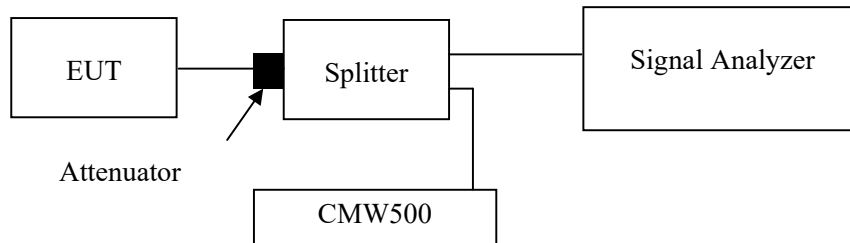
FCC §2.1051, §22.917(a) & §24.238(a) & §27.53.

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

Test Procedure

ANSI C63.26-2015 Section 5.7

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



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

Test Data

Environmental Conditions

Temperature:	23~24.8°C
Relative Humidity:	38~70 %
ATM Pressure:	101.0 kPa

The testing was performed by Bamboo Zhan from 2024-02-07 to 2024-02-18.

EUT operation mode: Transmitting

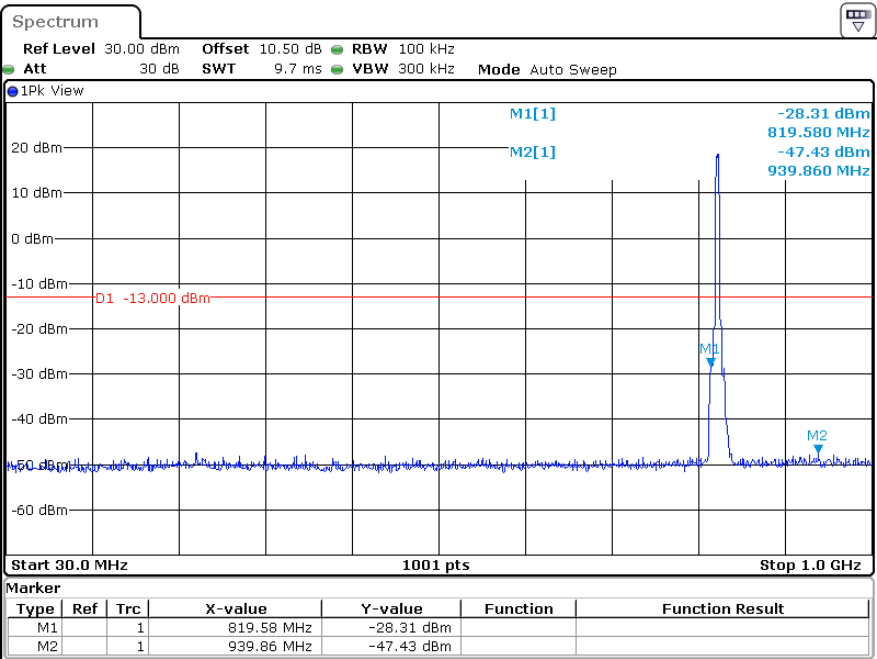
Test result: Compliant

Please refer to the following plots.

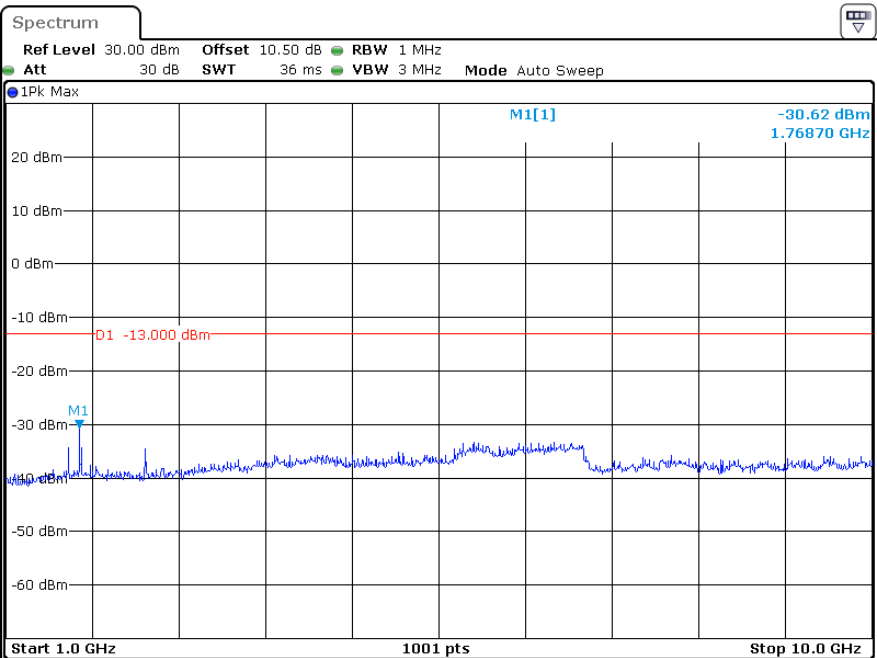
Cellular Band

Low Channel:

30 MHz – 10GHz (WCDMA Mode)



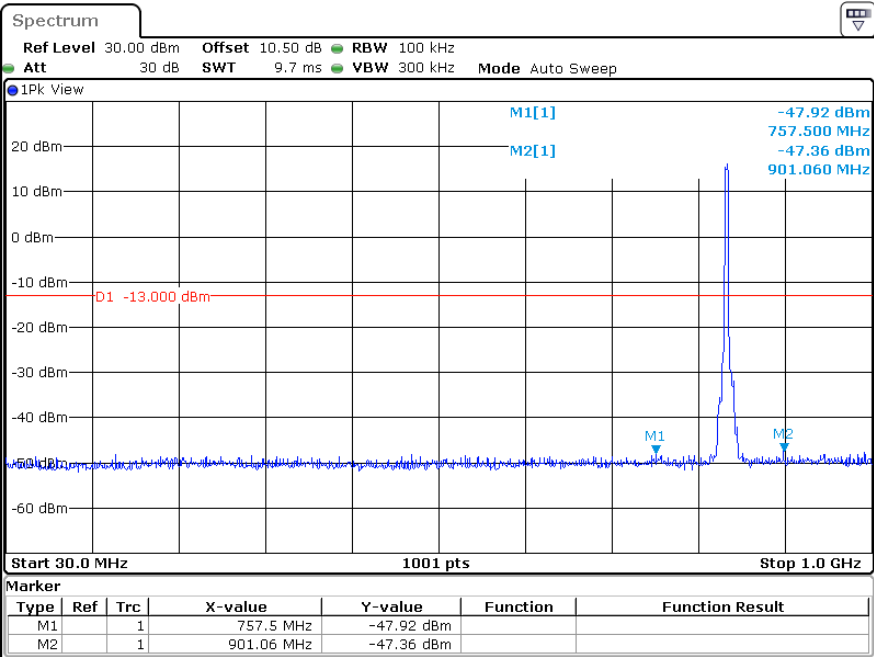
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:36:06



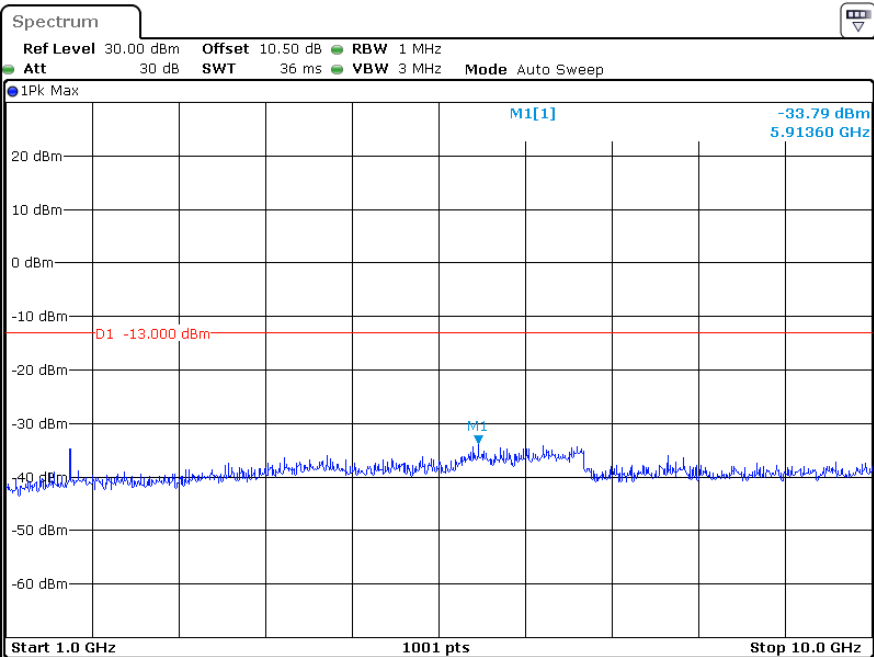
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:36:38

Middle Channel:

30 MHz – 10GHz (WCDMA Mode)



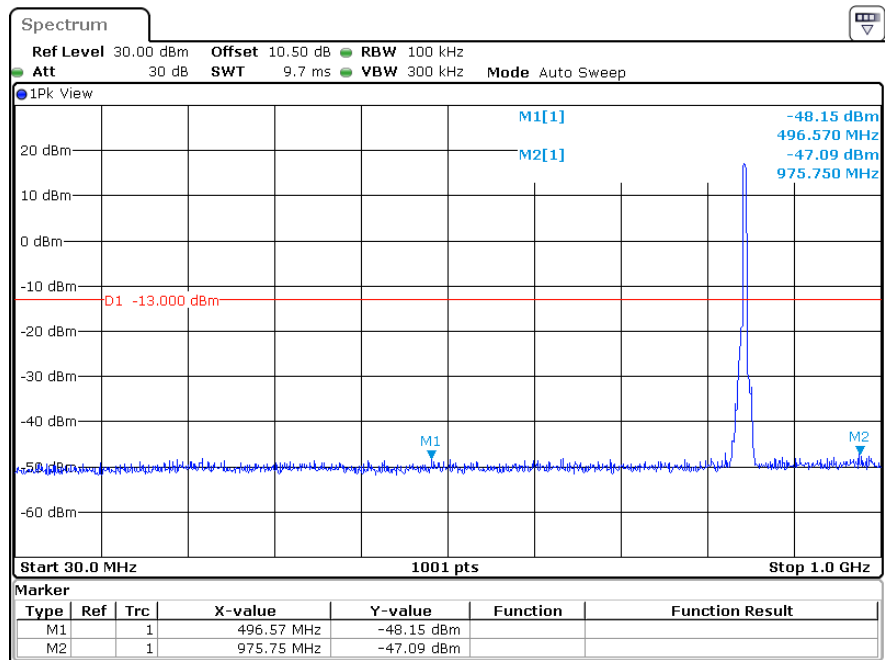
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:38:57



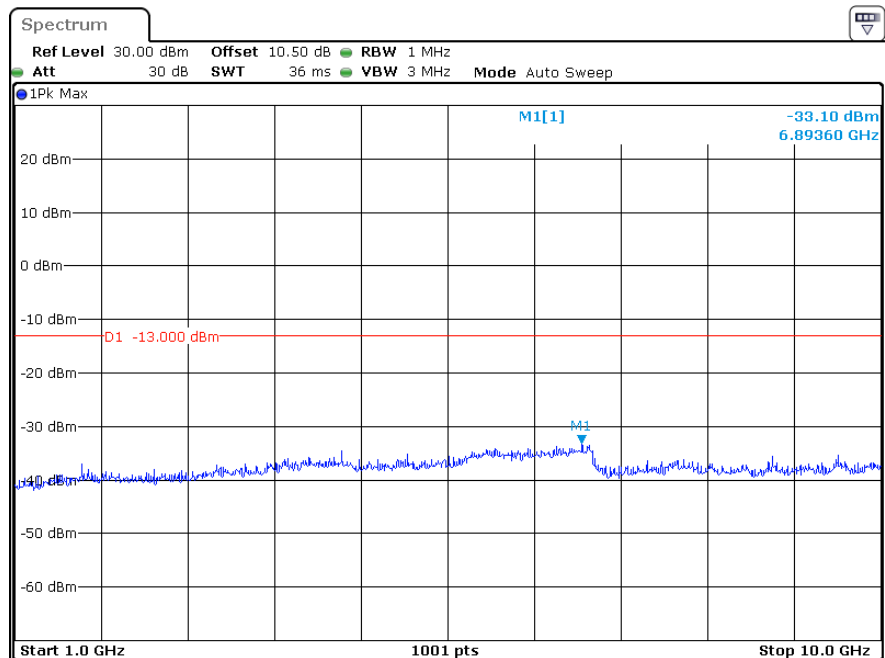
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:39:07

High Channel:

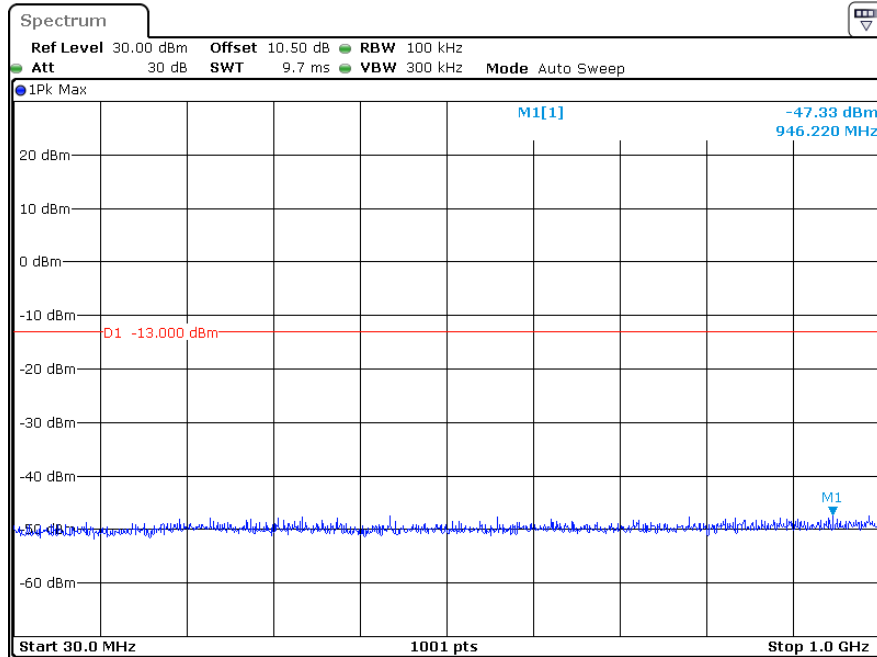
30 MHz – 10GHz RMC (WCDMA Mode)



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:42:24

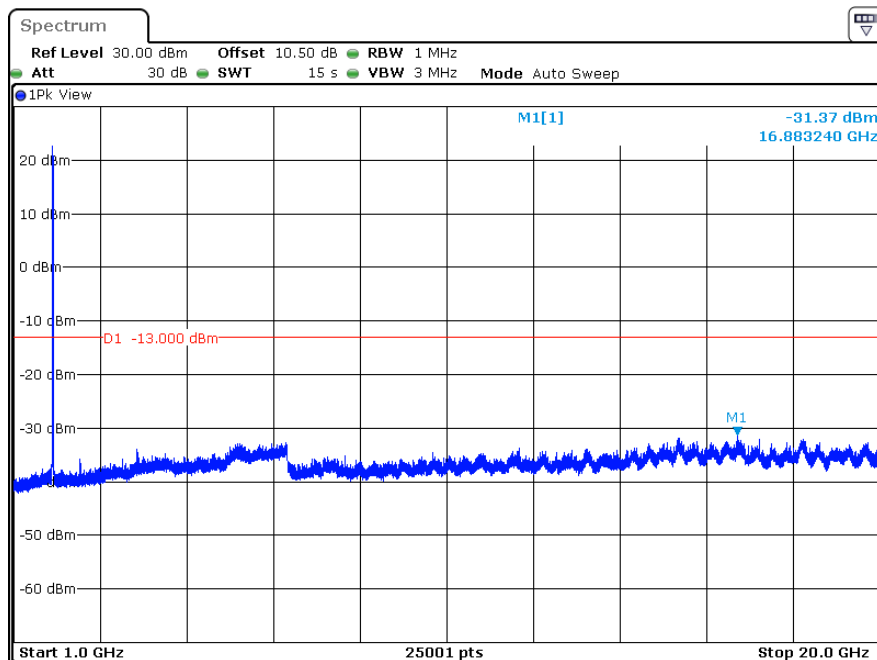


ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:42:46

PCS Band**Low Channel:****30 MHz – 1GHz (WCDMA Mode)**

ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan

Date: 18.FEB.2024 11:10:30

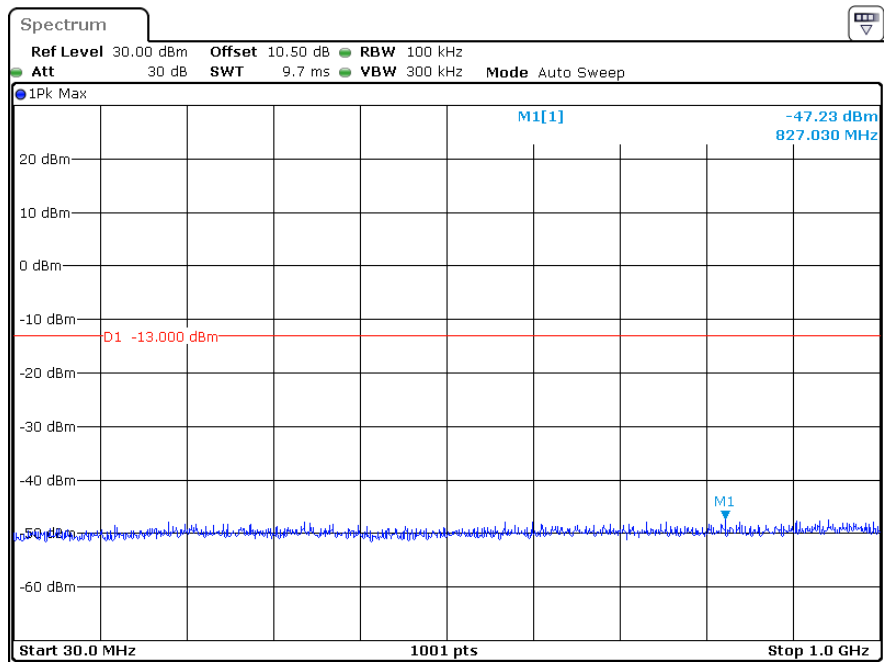
1 GHz – 20GHz (WCDMA Mode)

ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan

Date: 18.FEB.2024 11:11:53

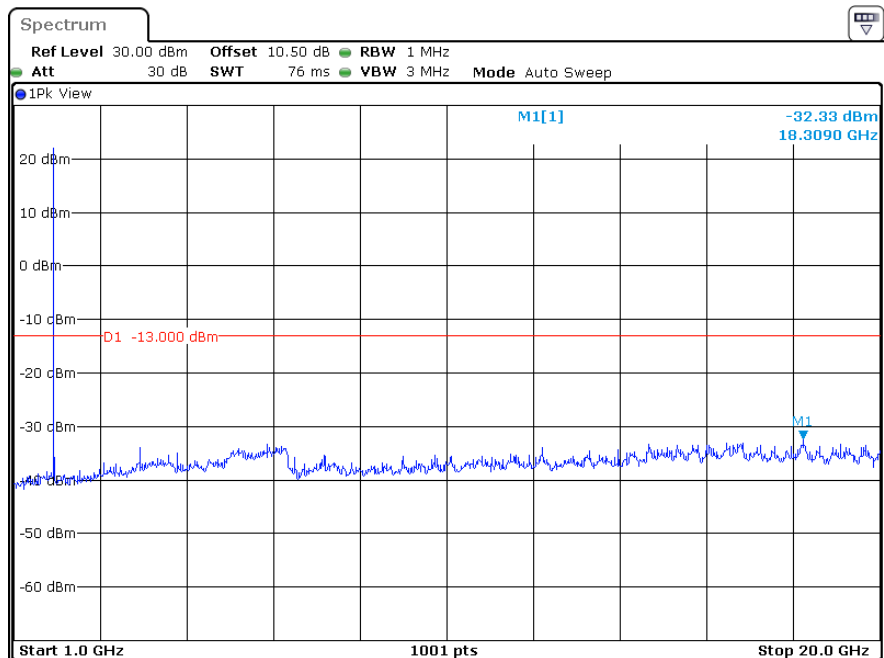
Middle Channel:

30 MHz – 1GHz (WCDMA Mode)



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
 Date: 18.FEB.2024 11:14:03

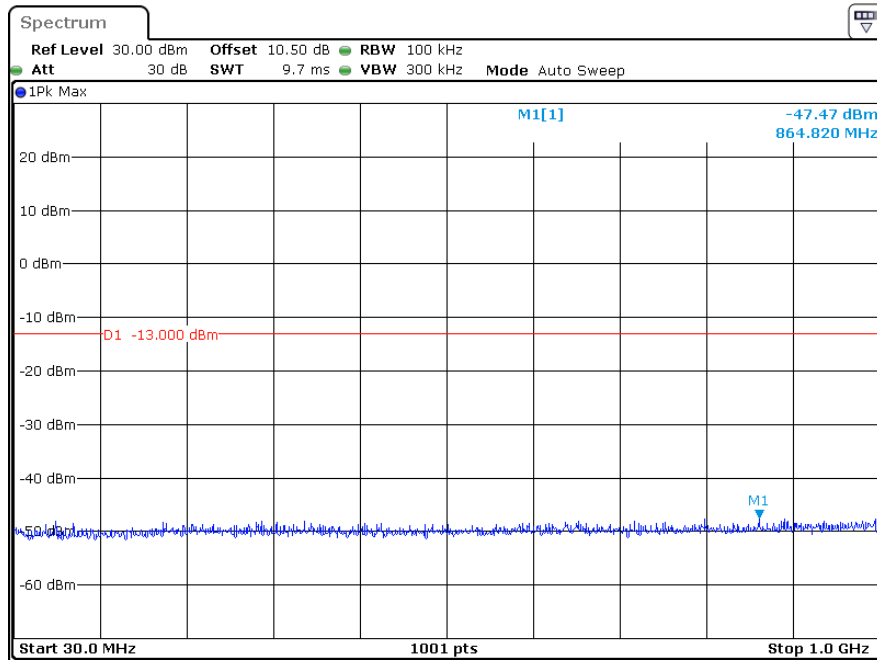
1 GHz – 20GHz (WCDMA Mode)



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
 Date: 18.FEB.2024 11:14:24

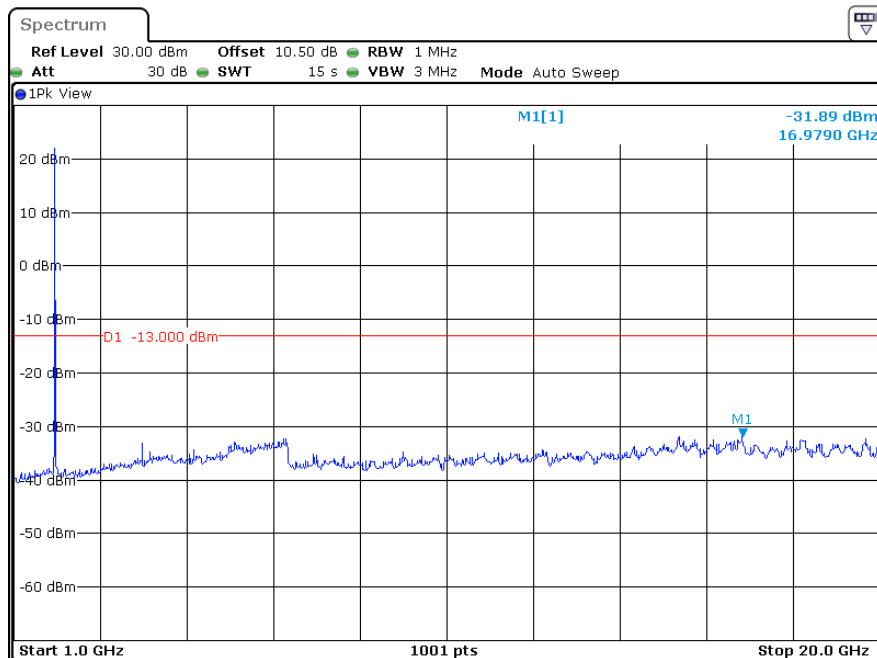
High Channel:

30 MHz – 1GHz (WCDMA Mode)



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 11:17:23

1 GHz – 20GHz (WCDMA Mode)



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 11:18:10

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

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

Applicable Standard

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

Test Procedure

ANSI/TIA-603-E-2016 Section 2.2.12
KDB 671168 D01 v03r01 Section 6.2

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

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

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

Test Data

Environmental Conditions

Temperature:	25~25.5 °C
Relative Humidity:	50~52 %
ATM Pressure:	101 kPa

The testing was performed by Anson Su on 2024-01-19 for below 1GHz and Dylan Yang on 2024-02-22 for above 1GHz.

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

WCDMA Bands:

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
		Angle Degree	Height (m)	Polar (H / V)	Substituted Level (dBm)	Cable loss (dB)	Antenna Gain (dB)			
Band 2										
Low Channel										
127.6	41.21	206	1	H	-73.2	0.75	0.0	-73.95	-13	60.95
49.0	42.89	85	2	V	-65.5	0.75	0.0	-66.25	-13	53.25
3704.80	56.33	43	1.6	H	-49.1	1.30	11.00	-39.40	-13	26.40
3704.80	60.63	16	2.1	V	-44.6	1.30	11.00	-34.90	-13	21.90
Middle Channel										
127.6	41.31	160	1.8	H	-73.1	0.75	0.0	-73.85	-13	60.85
49.0	43.36	228	1.3	V	-65.0	0.75	0.0	-65.75	-13	52.75
3760.00	57.73	170	1.4	H	-47.4	1.30	10.70	-38.00	-13	25.00
3760.00	61.56	244	1.7	V	-43.5	1.30	10.70	-34.10	-13	21.10
High Channel										
127.6	41.68	163	2.0	H	-72.7	0.75	0.0	-73.45	-13	60.45
49.0	43.93	80	2.1	V	-64.5	0.75	0.0	-65.25	-13	52.25
3815.20	59.56	314	1.8	H	-45.6	1.30	10.70	-36.20	-13	23.20
3815.20	62.54	41	2.3	V	-42.5	1.30	10.70	-33.10	-13	20.10
Band 5										
Low Channel										
127.6	41.63	119	1	H	-72.8	0.75	0.0	-73.55	-13	60.55
49.0	43.15	228	2	V	-65.3	0.75	0.0	-66.05	-13	53.05
1652.80	56.97	357	2.0	H	-50.6	0.90	8.60	-42.90	-13	29.90
1652.80	61.47	77	2.1	V	-46.7	0.90	8.60	-39.00	-13	26.00
2479.20	48.99	263	1.8	H	-58.4	1.10	8.80	-50.70	-13	37.70
2479.20	49.67	65	1.6	V	-57.4	1.10	8.80	-49.70	-13	36.70
3305.60	45.83	253	1.6	H	-60.2	1.30	8.80	-52.70	-13	39.70
3305.60	45.27	161	1.7	V	-60.4	1.30	8.80	-52.90	-13	39.90
Middle Channel										
127.6	42.13	273	2.5	H	-72.3	0.75	0.0	-73.05	-13	60.05
49.0	43.60	2	2.1	V	-64.8	0.75	0.0	-65.55	-13	52.55
1673.20	56.94	211	1.1	H	-50.6	0.90	8.60	-42.90	-13	29.90
1673.20	62.35	97	1.3	V	-45.8	0.90	8.60	-38.10	-13	25.10
2509.80	46.52	33	1.3	H	-60.8	1.10	8.80	-53.10	-13	40.10
2509.80	45.60	41	2.0	V	-61.5	1.10	8.80	-53.80	-13	40.80
3346.40	45.44	326	2.0	H	-60.5	1.30	8.80	-53.00	-13	40.00
3346.40	46.65	322	1.5	V	-59.0	1.30	8.80	-51.50	-13	38.50
High Channel										
127.6	42.56	108	2.1	H	-71.8	0.75	0.0	-72.55	-13	59.55
49.0	43.71	99	1.3	V	-64.7	0.75	0.0	-65.45	-13	52.45
1693.20	57.42	337	1.1	H	-50.1	0.90	8.60	-42.40	-13	29.40
1693.20	62.37	19	1.1	V	-45.8	0.90	8.60	-38.10	-13	25.10
2539.80	46.88	202	1.4	H	-60.5	1.10	8.80	-52.80	-13	39.80
2539.80	45.87	5	2.1	V	-61.2	1.10	8.80	-53.50	-13	40.50
3386.40	45.75	52	2.4	H	-60.2	1.30	9.90	-51.60	-13	38.60
3386.40	46.88	11	1.2	V	-58.8	1.30	9.90	-50.20	-13	37.20

LTE Bands: (pre-scan QPSK & 16QAM with all bandwidths, the worst case as below)

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
		Angle Degree	Height (m)	Polar (H / V)	Substituted Level (dBm)	Cable loss (dB)	Antenna Gain (dB)			
Band 2										
Low Channel										
127.6	40.94	204	2.1	H	-73.5	0.75	0.0	-74.25	-13	61.25
49.0	42.12	204	2.4	V	-66.3	0.75	0.0	-67.05	-13	54.05
3701.40	46.43	56	1.1	H	-59.0	1.30	11.00	-49.30	-13	36.30
3701.40	46.09	67	2.0	V	-59.2	1.30	11.00	-49.50	-13	36.50
Middle Channel										
127.6	41.24	97	2	H	-73.2	0.75	0.0	-73.95	-13	60.95
49.0	42.46	253	2	V	-65.9	0.75	0.0	-66.65	-13	53.65
3760.00	46.73	16	1.7	H	-58.4	1.30	10.70	-49.00	-13	36.00
3760.00	46.58	230	1.5	V	-58.5	1.30	10.70	-49.10	-13	36.10
High Channel										
127.6	41.65	218	2.5	H	-72.7	0.75	0.0	-73.45	-13	60.45
49.0	42.73	299	1.6	V	-65.7	0.75	0.0	-66.45	-13	53.45
3818.60	46.28	94	1.8	H	-58.9	1.30	10.70	-49.50	-13	36.50
3818.60	46.12	328	1.4	V	-58.9	1.30	10.70	-49.50	-13	36.50
Band 4										
Low Channel										
127.6	41.59	251	1	H	-72.8	0.75	0.0	-73.55	-13	60.55
49.0	42.85	193	2.4	V	-65.6	0.75	0.0	-66.35	-13	53.35
3421.40	55.06	224	2.4	H	-50.9	1.30	9.90	-42.30	-13	29.30
3421.40	46.88	69	2.4	V	-58.8	1.30	9.90	-50.20	-13	37.20
Middle Channel										
127.6	41.80	246	2.4	H	-72.6	0.75	0.0	-73.35	-13	60.35
49.0	43.05	75	1.0	V	-65.4	0.75	0.0	-66.15	-13	53.15
3465.00	47.66	311	1.3	H	-58.3	1.30	10.50	-49.10	-13	36.10
3465.00	48.23	48	1.6	V	-57.4	1.30	10.50	-48.20	-13	35.20
High Channel										
127.6	41.97	35	1.7	H	-72.4	0.75	0.0	-73.15	-13	60.15
49.0	43.22	216	1.4	V	-65.2	0.75	0.0	-65.95	-13	52.95
3508.60	46.42	272	1.1	H	-59.5	1.30	10.50	-50.30	-13	37.30
3508.60	47.98	289	2.0	V	-57.6	1.30	10.50	-48.40	-13	35.40

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
		Angle Degree	Height (m)	Polar (H / V)	Substituted Level (dBm)	Cable loss (dB)	Antenna Gain (dB)			
Band 12										
Low Channel										
127.6	42.08	23	2	H	-72.3	0.75	0	-73.05	-13	60.05
49.0	43.50	135	2.1	V	-64.9	0.75	0	-65.65	-13	52.65
1399.40	47.16	161	1.0	H	-60.5	0.80	7.90	-53.40	-13	40.40
1399.40	48.52	200	1.3	V	-59.9	0.80	7.90	-52.80	-13	39.80
2099.10	46.51	291	2.0	H	-60.8	1.00	8.30	-53.50	-13	40.50
2099.10	49.39	161	1.1	V	-58.4	1.00	8.30	-51.10	-13	38.10
2798.80	47.24	167	1.4	H	-59.3	1.20	9.20	-51.30	-13	38.30
2798.80	46.95	332	1.3	V	-59.4	1.20	9.20	-51.40	-13	38.40
3498.50	57.37	223	1.5	H	-48.6	1.30	10.50	-39.40	-13	26.40
3498.50	58.41	90	1.0	V	-47.2	1.30	10.50	-38.00	-13	25.00
Middle Channel										
127.6	42.72	118	1	H	-71.7	0.75	0	-72.45	-13	59.45
49.0	43.86	199	1.5	V	-64.5	0.75	0	-65.25	-13	52.25
1415.00	66.85	281	1.8	H	-40.9	0.80	7.90	-33.80	-13	20.80
1415.00	77.04	265	1.5	V	-31.4	0.80	7.90	-24.30	-13	11.30
2122.50	44.39	3	1.1	H	-62.9	1.00	8.30	-55.60	-13	42.60
2122.50	45.66	73	1.2	V	-62.2	1.00	8.30	-54.90	-13	41.90
2830.00	45.94	144	1.8	H	-60.6	1.20	9.20	-52.60	-13	39.60
2830.00	47.07	286	1.6	V	-59.2	1.20	9.20	-51.20	-13	38.20
3537.50	52.82	85	1.8	H	-53.1	1.30	10.50	-43.90	-13	30.90
3537.50	54.14	120	1.3	V	-51.5	1.30	10.50	-42.30	-13	29.30
High Channel										
127.6	42.89	74	1.2	H	-71.5	0.75	0	-72.25	-13	59.25
49.0	44.02	125	1.2	V	-64.4	0.75	0	-65.15	-13	52.15
1430.60	67.44	90	2.0	H	-40.3	0.80	7.90	-33.20	-13	20.20
1430.60	77.21	349	2.3	V	-31.2	0.80	7.90	-24.10	-13	11.10
2145.90	45.37	52	1.8	H	-61.9	1.00	8.30	-54.60	-13	41.60
2145.90	45.94	304	2.2	V	-61.9	1.00	8.30	-54.60	-13	41.60
2861.20	46.88	41	1.7	H	-59.4	1.20	9.00	-51.60	-13	38.60
2861.20	47.23	265	1.2	V	-58.8	1.20	9.00	-51.00	-13	38.00
3576.50	53.12	244	1.8	H	-52.6	1.30	10.90	-43.00	-13	30.00
3576.50	54.96	69	1.3	V	-50.5	1.30	10.90	-40.90	-13	27.90

Frequency (MHz)	Receiver Reading (dBμV)	Turn Table	Rx Antenna		Substituted			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
		Angle Degree	Height (m)	Polar (H / V)	Substituted Level (dBm)	Cable loss (dB)	Antenna Gain (dB)			
Band 17										
Low Channel										
127.6	41.87	275	2	H	-72.5	0.75	0.0	-73.25	-13	60.25
49.0	43.12	203	1.1	V	-65.3	0.75	0.0	-66.05	-13	53.05
1413.00	47.28	256	2.0	H	-60.4	0.80	7.90	-53.30	-13	40.30
1413.00	46.56	97	1.3	V	-61.8	0.80	7.90	-54.70	-13	41.70
2119.50	46.97	90	2.3	H	-60.3	1.00	8.30	-53.00	-13	40.00
2119.50	47.82	222	2.0	V	-60.0	1.00	8.30	-52.70	-13	39.70
2826.00	47.53	119	1.3	H	-59.0	1.20	9.20	-51.00	-13	38.00
2826.00	46.88	33	1.5	V	-59.4	1.20	9.20	-51.40	-13	38.40
3532.50	54.95	278	1.3	H	-51.0	1.30	10.50	-41.80	-13	28.80
3532.50	58.22	268	1.3	V	-47.4	1.30	10.50	-38.20	-13	25.20
Middle Channel										
127.6	42.31	224	1.5	H	-72.1	0.75	0.0	-72.85	-13	59.85
49.0	43.44	111	1.4	V	-65.0	0.75	0.0	-65.75	-13	52.75
1420.00	66.54	314	1.2	H	-41.2	0.80	7.90	-34.10	-13	21.10
1420.00	75.64	2	2.1	V	-32.8	0.80	7.90	-25.70	-13	12.70
2130.00	45.33	297	2.1	H	-62.0	1.00	8.30	-54.70	-13	41.70
2130.00	46.44	43	2.1	V	-61.4	1.00	8.30	-54.10	-13	41.10
2840.00	46.80	5	1.6	H	-59.8	1.20	9.20	-51.80	-13	38.80
2840.00	45.39	319	2.3	V	-60.9	1.20	9.20	-52.90	-13	39.90
3550.00	52.99	260	2.3	H	-52.7	1.30	10.90	-43.10	-13	30.10
3550.00	54.61	166	1.6	V	-50.8	1.30	10.90	-41.20	-13	28.20
High Channel										
127.6	42.52	26	1.5	H	-71.9	0.75	0.0	-72.65	-13	59.65
49.0	43.68	7	1.4	V	-64.7	0.75	0.0	-65.45	-13	52.45
1427.00	67.01	171	1.9	H	-40.7	0.80	7.90	-33.60	-13	20.60
1427.00	75.72	198	2.1	V	-32.7	0.80	7.90	-25.60	-13	12.60
2140.50	45.33	187	1.9	H	-62.0	1.00	8.30	-54.70	-13	41.70
2140.50	46.88	144	2.5	V	-60.9	1.00	8.30	-53.60	-13	40.60
2854.00	47.62	232	1.5	H	-58.7	1.20	9.00	-50.90	-13	37.90
2854.00	45.59	315	1.8	V	-60.5	1.20	9.00	-52.70	-13	39.70
3567.50	53.81	110	1.5	H	-51.9	1.30	10.90	-42.30	-13	29.30
3567.50	54.99	228	2.2	V	-50.4	1.30	10.90	-40.80	-13	27.80

Note:

Absolute Level = Reading Level + Substituted Factor

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

Margin = Absolute Level - Limit

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

Applicable Standard

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

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

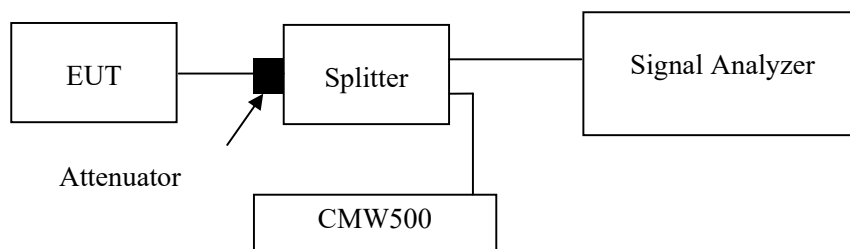
According to FCC §27.53 (h), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

Test Procedure

ANSI C63.26-2015 Section 5.7

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

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



Test Data**Environmental Conditions**

Temperature:	23~24.8°C
Relative Humidity:	38~70 %
ATM Pressure:	101.0 kPa

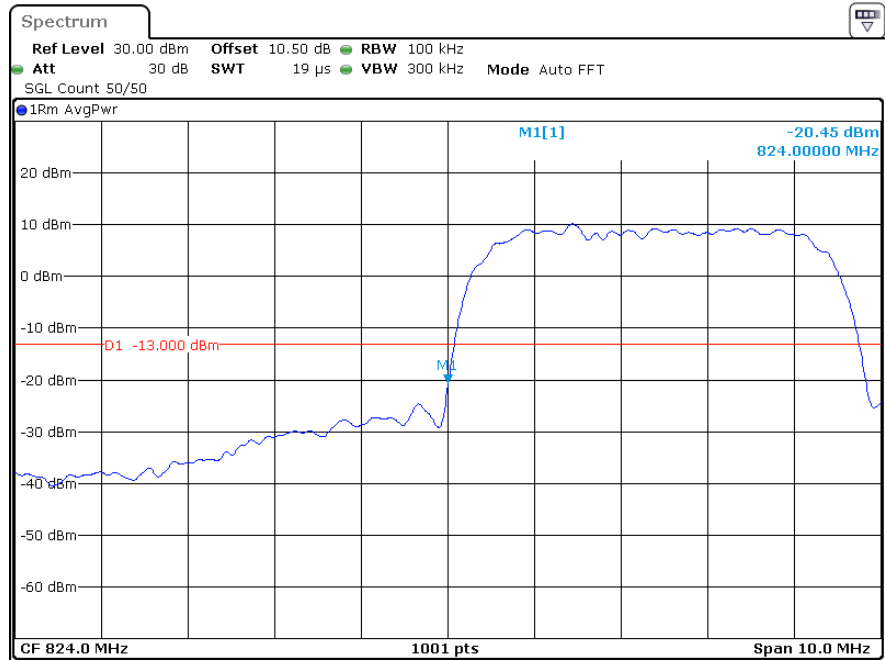
The testing was performed by Bamboo Zhan from 2024-02-07 to 2024-02-18.

EUT operation mode: Transmitting (Worst case)

Test Result: Compliant

Please refer to the following plots.

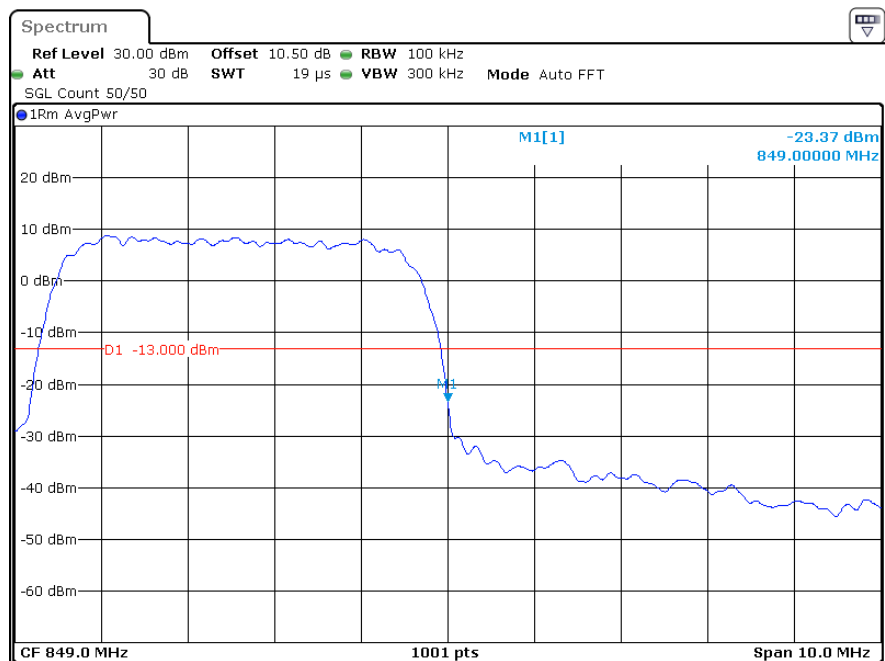
Cellular Band, Left Band Edge for RMC (BPSK) Mode



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan

Date: 18.FEB.2024 09:35:50

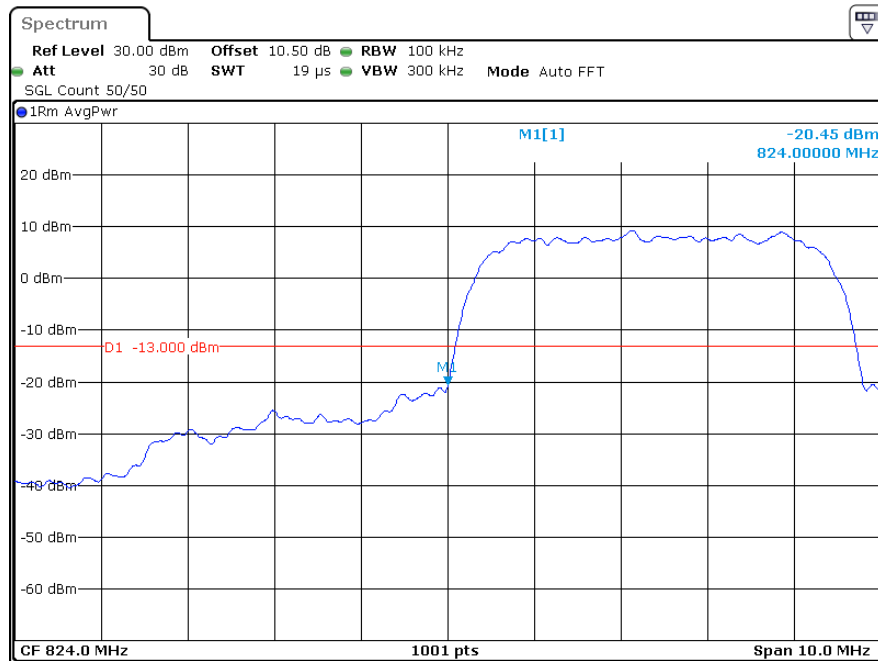
Cellular Band, Right Band Edge for RMC (BPSK) Mode



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan

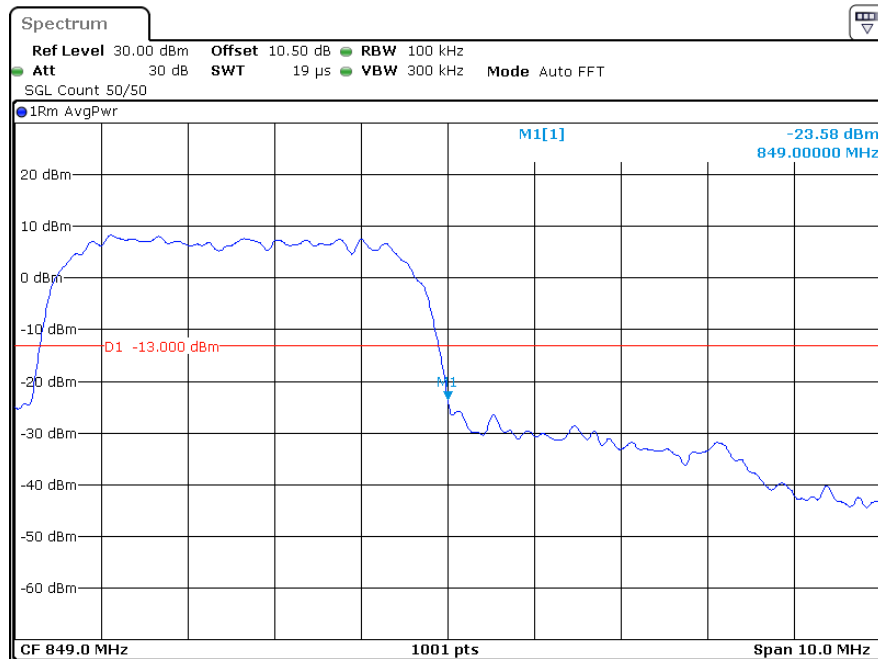
Date: 18.FEB.2024 09:42:09

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



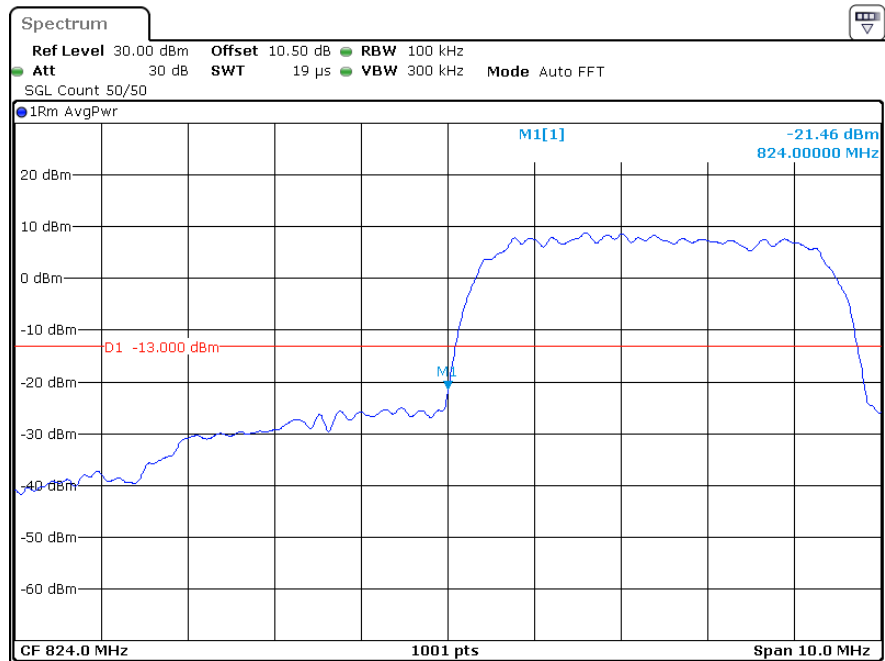
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:52:18

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



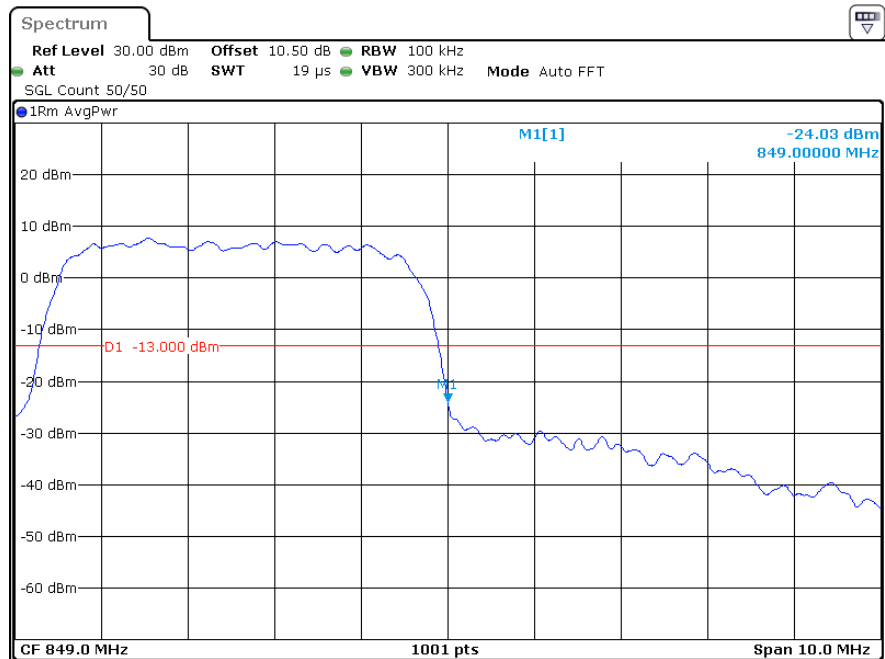
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 09:45:37

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



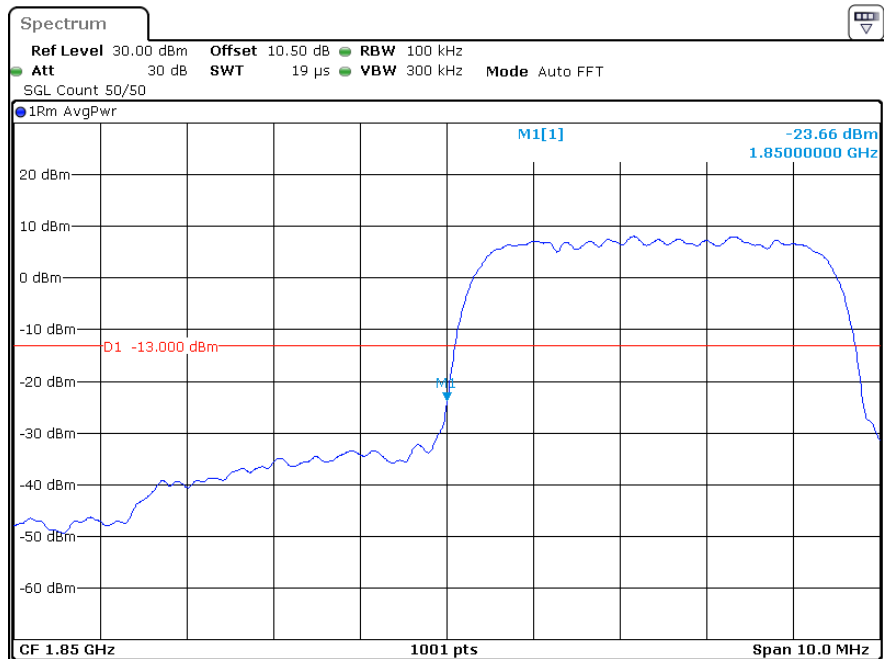
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
 Date: 18.FEB.2024 09:56:21

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

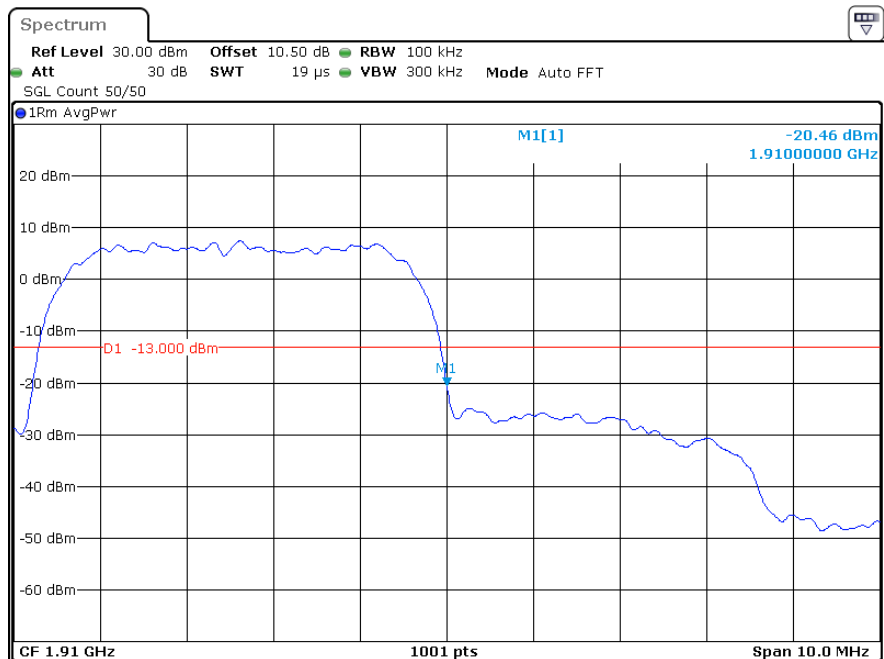


ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
 Date: 18.FEB.2024 10:03:15

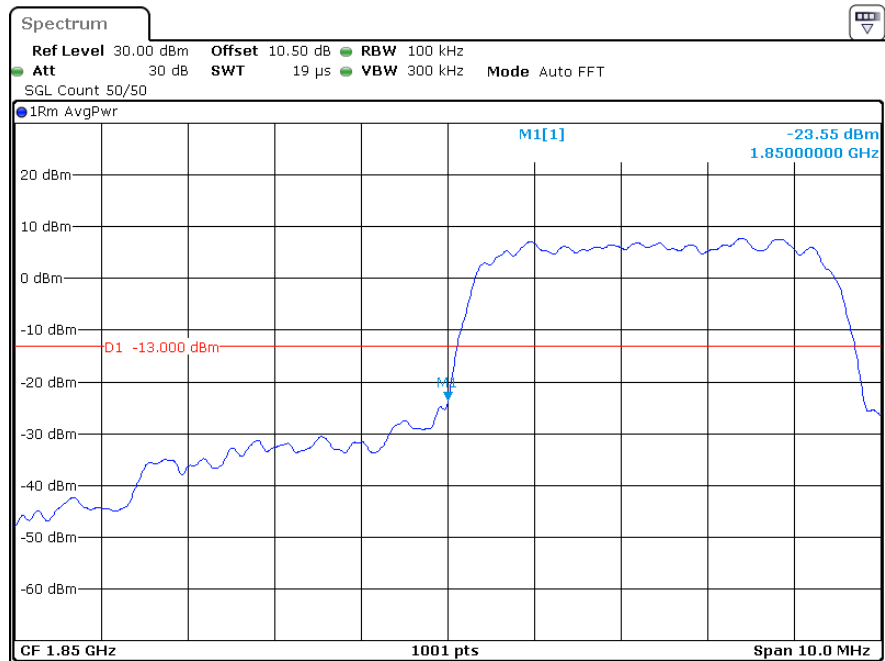
PCS Band, Left Band Edge for RMC (BPSK) Mode



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

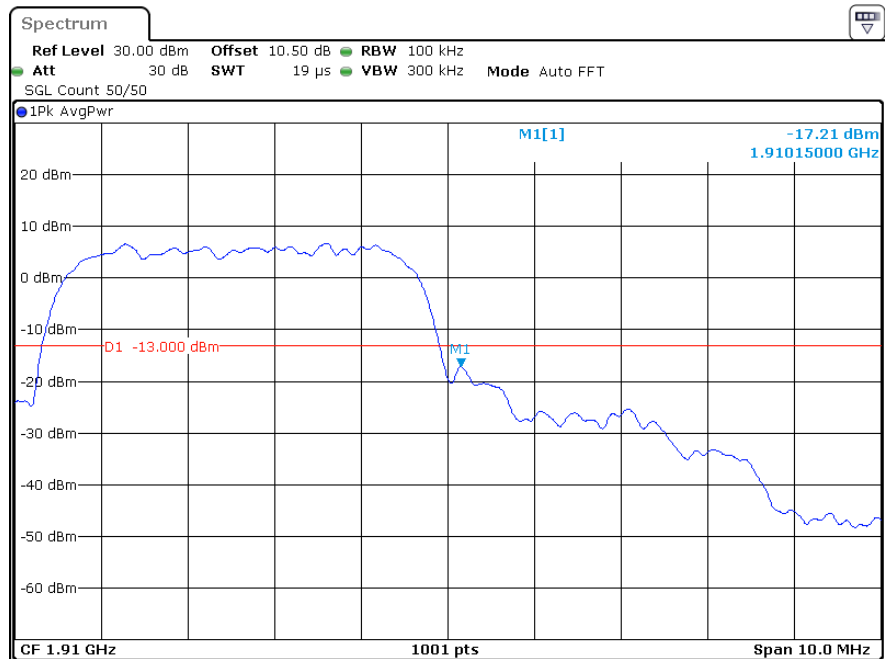


PCS Band, Left Band Edge for HSDPA(16QAM) Mode



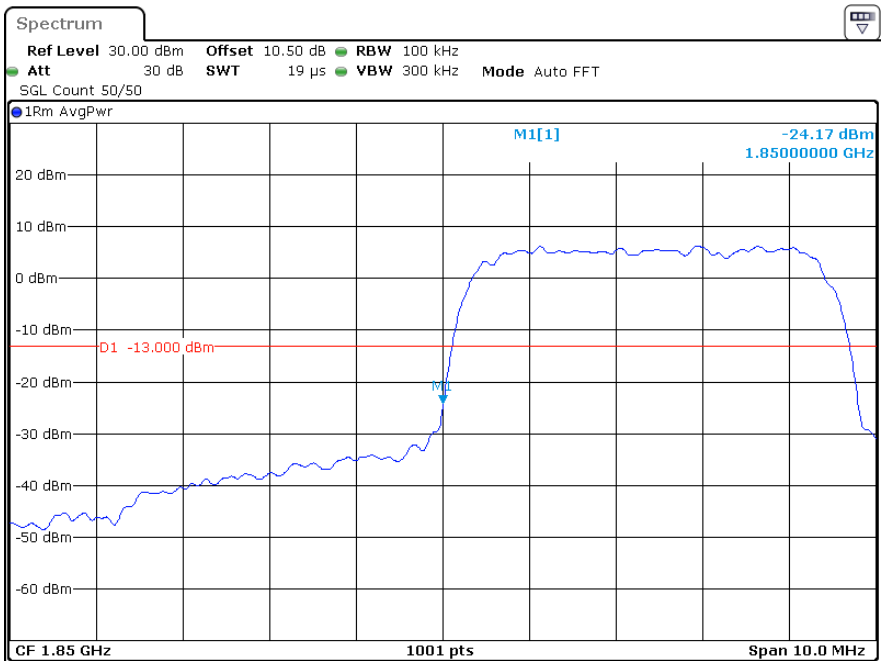
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
 Date: 18.FEB.2024 11:06:18

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



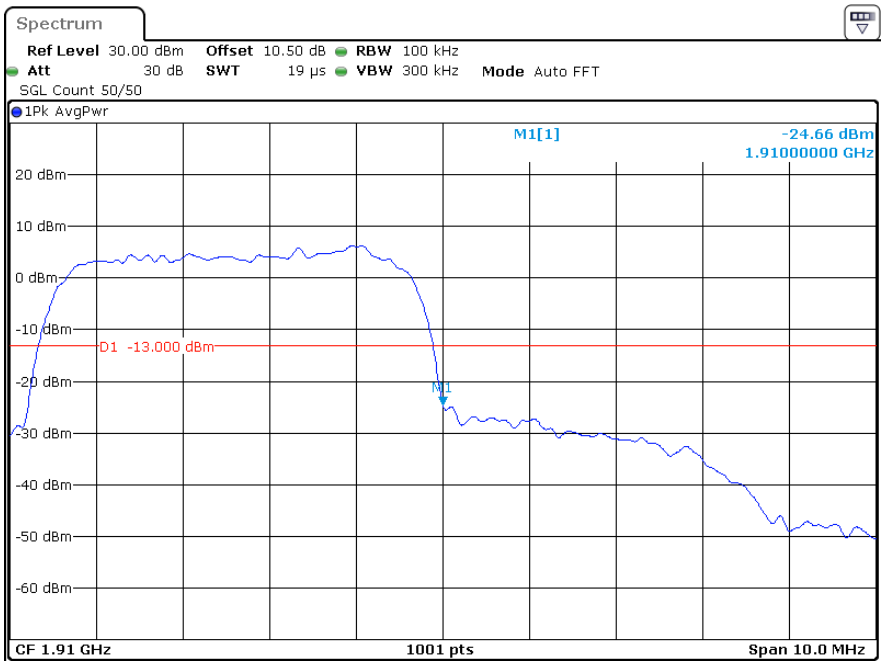
ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
 Date: 18.FEB.2024 10:47:42

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



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 10:35:46

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



ProjectNo.:SZ1240111-02642E Tester:Bamboo Zhan
Date: 18.FEB.2024 10:40:32

The test plots of LTE bands please refer to the Appendix C1 & Appendix C2.

FCC § 2.1055; § 22.355; § 24.235; §27.54 - FREQUENCY STABILITY**Applicable Standard**

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

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

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

Frequency Tolerance for Transmitters in the Public Mobile Services

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

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

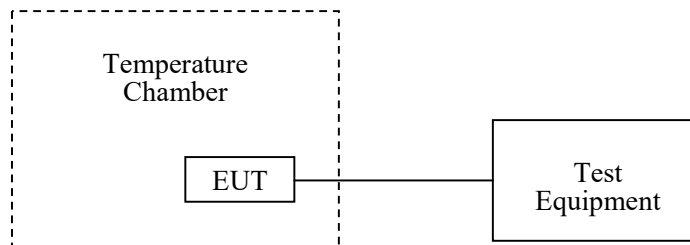
Test Procedure

ANSI C63.26-2015 Section 5.6

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:	23~24.8°C
Relative Humidity:	38~70 %
ATM Pressure:	101.0 kPa

The testing was performed by Bamboo Zhan from 2024-02-07 to 2024-02-18.

EUT operation mode: Transmitting

Test Result: Compliant

Please refer to the following tables.

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

Test Modulation:	WCDMA R99		Test Channel:	836.6	MHz
Test Item	Temperature (°C)	Voltage (V _{DC})	Frequency Error		Limit
			(Hz)	(ppm)	(ppm)
Frequency Stability vs. Temperature	-30	12V _{DC}	-14	-0.017	2.5
	-20	12V _{DC}	-14	-0.017	2.5
	-10	12V _{DC}	-13	-0.016	2.5
	0	12V _{DC}	-3	-0.004	2.5
	10	12V _{DC}	-7	-0.008	2.5
	20	12V _{DC}	-2	-0.002	2.5
	30	12V _{DC}	-8	-0.010	2.5
	40	12V _{DC}	-2	-0.002	2.5
	50	12V _{DC}	-2	-0.002	2.5
Frequency Stability vs. Voltage	20	110V _{AC}	-4	-0.005	2.5
	20	240V _{AC}	-11	-0.013	2.5

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

Test Mode:	WCDMA R99	Test Channel: Lowest for Lower Edge, Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	1850.04424	1850.00000	1909.97484	1910.00000
	-20	12V _{DC}	1850.02497	1850.00000	1909.99268	1910.00000
	-10	12V _{DC}	1850.01689	1850.00000	1909.98564	1910.00000
	0	12V _{DC}	1850.03037	1850.00000	1909.97238	1910.00000
	10	12V _{DC}	1850.03508	1850.00000	1909.96377	1910.00000
	20	12V _{DC}	1850.05099	1850.00000	1909.98062	1910.00000
	30	12V _{DC}	1850.00777	1850.00000	1909.97440	1910.00000
	40	12V _{DC}	1850.03942	1850.00000	1909.92478	1910.00000
	50	12V _{DC}	1850.03953	1850.00000	1909.98256	1910.00000
Frequency Stability vs. Voltage	20	110V _{AC}	1850.09735	1850.00000	1909.96713	1910.00000
	20	240V _{AC}	1850.00178	1850.00000	1909.91853	1910.00000

LTE**Band 2**

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	1850.10955	1850.00000	1909.86656	1910.00000
	-20	12V _{DC}	1850.12461	1850.00000	1909.87511	1910.00000
	-10	12V _{DC}	1850.10276	1850.00000	1909.86186	1910.00000
	0	12V _{DC}	1850.12669	1850.00000	1909.88956	1910.00000
	10	12V _{DC}	1850.10832	1850.00000	1909.89295	1910.00000
	20	12V _{DC}	1850.10564	1850.00000	1909.87302	1910.00000
	30	12V _{DC}	1850.12143	1850.00000	1909.87441	1910.00000
	40	12V _{DC}	1850.10252	1850.00000	1909.87214	1910.00000
	50	12V _{DC}	1850.11358	1850.00000	1909.88323	1910.00000
Frequency Stability vs. Voltage	20	110V _{AC}	1850.12666	1850.00000	1909.86762	1910.00000
	20	240V _{AC}	1850.08283	1850.00000	1909.86199	1910.00000
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	1850.12840	1850.00000	1909.86871	1910.00000
	-20	12V _{DC}	1850.12656	1850.00000	1909.85469	1910.00000
	-10	12V _{DC}	1850.11886	1850.00000	1909.90396	1910.00000
	0	12V _{DC}	1850.11329	1850.00000	1909.86094	1910.00000
	10	12V _{DC}	1850.13707	1850.00000	1909.85837	1910.00000
	20	12V _{DC}	1850.11549	1850.00000	1909.85068	1910.00000
	30	12V _{DC}	1850.10605	1850.00000	1909.87105	1910.00000
	40	12V _{DC}	1850.11486	1850.00000	1909.87190	1910.00000
	50	12V _{DC}	1850.11887	1850.00000	1909.87697	1910.00000
Frequency Stability vs. Voltage	20	110V _{AC}	1850.13363	1850.00000	1909.83566	1910.00000
	20	240V _{AC}	1850.09188	1850.00000	1909.86507	1910.00000

Band 4

Test Mode:	20M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	1710.29206	1710.00000	1754.77235	1755.00000
	-20	12V _{DC}	1710.29620	1710.00000	1754.75894	1755.00000
	-10	12V _{DC}	1710.28049	1710.00000	1754.76153	1755.00000
	0	12V _{DC}	1710.25011	1710.00000	1754.74941	1755.00000
	10	12V _{DC}	1710.27706	1710.00000	1754.73699	1755.00000
	20	12V _{DC}	1710.27214	1710.00000	1754.76855	1755.00000
	30	12V _{DC}	1710.25140	1710.00000	1754.78346	1755.00000
	40	12V _{DC}	1710.25751	1710.00000	1754.76670	1755.00000
	50	12V _{DC}	1710.24315	1710.00000	1754.75721	1755.00000
Frequency Stability vs. Voltage	20	110V _{AC}	1710.24666	1710.00000	1754.72764	1755.00000
	20	240V _{AC}	1710.25090	1710.00000	1754.74792	1755.00000
Test Mode:	20M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	1710.12501	1710.00000	1754.85044	1755.00000
	-20	12V _{DC}	1710.13220	1710.00000	1754.85093	1755.00000
	-10	12V _{DC}	1710.11033	1710.00000	1754.88863	1755.00000
	0	12V _{DC}	1710.10803	1710.00000	1754.87301	1755.00000
	10	12V _{DC}	1710.12660	1710.00000	1754.87650	1755.00000
	20	12V _{DC}	1710.13430	1710.00000	1754.88112	1755.00000
	30	12V _{DC}	1710.12157	1710.00000	1754.87396	1755.00000
	40	12V _{DC}	1710.10248	1710.00000	1754.88836	1755.00000
	50	12V _{DC}	1710.12311	1710.00000	1754.86448	1755.00000
Frequency Stability vs. Voltage	20	110V _{AC}	1710.10187	1710.00000	1754.88111	1755.00000
	20	240V _{AC}	1710.10030	1710.00000	1754.85358	1755.00000

Band 12

Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (VDC)	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	699.039	699.00	715.867	716.00
	-20	12V _{DC}	699.006	699.00	715.993	716.00
	-10	12V _{DC}	699.030	699.00	715.902	716.00
	0	12V _{DC}	699.041	699.00	715.921	716.00
	10	12V _{DC}	699.113	699.00	715.806	716.00
	20	12V _{DC}	699.070	699.00	715.949	716.00
	30	12V _{DC}	699.194	699.00	715.899	716.00
	40	12V _{DC}	699.110	699.00	715.818	716.00
	50	12V _{DC}	699.179	699.00	715.880	716.00
Frequency Stability vs. Voltage	20	110V _{AC}	699.178	699.00	715.823	716.00
	20	240V _{AC}	699.049	699.00	715.910	716.00
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (VDC)	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	699.171	699.00	715.863	716.00
	-20	12V _{DC}	699.185	699.00	715.937	716.00
	-10	12V _{DC}	699.030	699.00	715.882	716.00
	0	12V _{DC}	699.009	699.00	715.808	716.00
	10	12V _{DC}	699.104	699.00	715.856	716.00
	20	12V _{DC}	699.113	699.00	715.854	716.00
	30	12V _{DC}	699.036	699.00	715.918	716.00
	40	12V _{DC}	699.093	699.00	715.961	716.00
	50	12V _{DC}	699.179	699.00	715.995	716.00
Frequency Stability vs. Voltage	20	110V _{AC}	699.019	699.00	715.938	716.00
	20	240V _{AC}	699.091	699.00	715.988	716.00

Band 17

Test Mode:	10M QPSK	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	704.387	704.00	715.659	716.00
	-20	12V _{DC}	704.053	704.00	715.774	716.00
	-10	12V _{DC}	704.287	704.00	715.970	716.00
	0	12V _{DC}	704.057	704.00	715.626	716.00
	10	12V _{DC}	704.085	704.00	715.741	716.00
	20	12V _{DC}	704.250	704.00	715.698	716.00
	30	12V _{DC}	704.069	704.00	715.636	716.00
	40	12V _{DC}	704.381	704.00	715.919	716.00
	50	12V _{DC}	704.392	704.00	715.736	716.00
Frequency Stability vs. Voltage	20	110V _{AC}	704.295	704.00	715.820	716.00
	20	240V _{AC}	704.028	704.00	715.830	716.00
Test Mode:	10M 16QAM	Test Channel: Lowest for Lower Edge,Highest for Upper Edge				
Test Item	Temperature (°C)	Voltage (V _{DC})	Lower Edge (MHz)		Upper Edge (MHz)	
			Result	Limit	Result	Limit
Frequency Stability vs. Temperature	-30	12V _{DC}	704.108	704.00	715.798	716.00
	-20	12V _{DC}	704.307	704.00	715.804	716.00
	-10	12V _{DC}	704.179	704.00	715.766	716.00
	0	12V _{DC}	704.169	704.00	715.953	716.00
	10	12V _{DC}	704.165	704.00	715.796	716.00
	20	12V _{DC}	704.054	704.00	715.798	716.00
	30	12V _{DC}	704.219	704.00	715.703	716.00
	40	12V _{DC}	704.270	704.00	715.649	716.00
	50	12V _{DC}	704.077	704.00	715.991	716.00
Frequency Stability vs. Voltage	20	110V _{AC}	704.007	704.00	715.766	716.00
	20	240V _{AC}	704.335	704.00	715.660	716.00

EUT PHOTOGRAPHS

Please refer to the attachment SZ1240111-02642E-RF External photo and SZ1240111-02642E-RF Internal photo.

TEST SETUP PHOTOGRAPHS

Please refer to the attachment SZ1240111-02642E-RF Test Setup photo.

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