

TEST REPORT

Applicant: Acer India Pvt Ltd.

Address of Applicant: Embassy Heights 6th Floor, No.13, Magrath Road, (Next to Hosmat Hospital), Bangalore, India

Manufacturer: Acer India Pvt Ltd.

Address of Manufacturer: Embassy Heights 6th Floor, No.13, Magrath Road, (Next to Hosmat Hospital), Bangalore, India

Equipment Under Test (EUT)

Product Name: Tablet

Model No.: Acer One 10 T9-1212L

Trade Mark: ACER

FCC ID: 2AMY3ONE10T9-1212L

Applicable standards: FCC CFR Title 47 Part 2
FCC CFR Title 47 Part 22
FCC CFR Title 47 Part 24

Date of sample receipt: November 8, 2022

Date of Test: November 8, 2022~January 5, 2023

Date of report issued: January 10, 2023

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



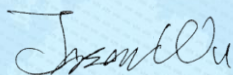
Robinson Luo
Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	2023.1.10	Original

Prepared By:



Date:

2023.1.10

Project Engineer

Check By:



Date:

2023.1.10

Reviewer

3 Contents

	Page
1 COVER PAGE.....	1
2 VERSION.....	2
3 CONTENTS	3
4 TEST SUMMARY	4
5 GENERAL INFORMATION.....	5
5.1 GENERAL DESCRIPTION OF EUT.....	5
5.2 RELATED SUBMITTAL(S) / GRANT (S)	7
5.3 TEST METHODOLOGY	7
5.4 DEVIATION FROM STANDARDS	7
5.5 ABNORMALITIES FROM STANDARD CONDITIONS	7
5.6 TEST FACILITY	7
5.7 TEST LOCATION	7
6 TEST INSTRUMENTS LIST	8
7 SYSTEM TEST CONFIGURATION	10
7.1 TEST MODE	10
7.2 CONFIGURATION OF TESTED SYSTEM.....	10
7.3 CONDUCTED OUTPUT POWER AND ERP/EIRP	11
7.4 PEAK-TO-AVERAGE RATIO	14
7.5 OCCUPY BANDWIDTH	16
7.6 MODULATION CHARACTERISTIC	23
7.7 OUT OF BAND EMISSION AT ANTENNA TERMINALS.....	23
7.8 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT	33
7.9 FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT.....	37
7.10 FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT.....	40
8 TEST SETUP PHOTO	42
9 EUT CONSTRUCTIONAL DETAILS	42

4 Test Summary

Test Item	Section in CFR 47	Result
RF Output Power	Part 2.1046 Part 22.913 (a) Part 24.232(c)	Pass
Peak-to-Average Ratio	Part 2.1046	Pass
Modulation Characteristics	Part 2.1047	Pass
99% Occupied Bandwidth & 26dB Bandwidth	Part 2.1049 Part 22.917(b) Part 24.238	Pass
Spurious Emissions at Antenna Terminal	Part 2.1051 Part 22.917 Part 24.238	Pass
Field Strength of Spurious Radiation	Part 2.1053 Part 22.917 Part 24.238	Pass
Out of band emission, Band Edge	Part 2.1051 Part 22.917 Part 24.238	Pass
ERP and EIRP	Part 22.913(a) Part 24.232(c)	Pass
Frequency stability vs. temperature	Part 2.1055(a)(1)(b) Part 22.355 Part 24.235	Pass
Frequency stability vs. voltage	Part 2.1055(d)(1)(2) Part 22.355 Part 24.235	Pass

Pass: The EUT complies with the essential requirements in the standard.

Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Radio Frequency	$\pm 7.25 \times 10^{-8}$
2	Duty cycle	$\pm 0.37\%$
3	Occupied Bandwidth	$\pm 3\%$
4	RF conducted power	$\pm 0.75\text{dB}$
5	Conducted Spurious emissions	$\pm 2.58\text{dB}$
6	Radiated Spurious emission test	$\pm 3.1\text{dB}$ (9kHz-30MHz)
		$\pm 3.8039\text{dB}$ (30MHz-200MHz)
		$\pm 3.9679\text{dB}$ (200MHz-1GHz)
		$\pm 4.29\text{dB}$ (1GHz-18GHz)
		$\pm 3.30\text{dB}$ (18GHz-40GHz)
7	Temperature test	$\pm 1^\circ\text{C}$
8	Humidity test	$\pm 3\%$
9	Time	$\pm 3\%$

5 General Information

5.1 General Description of EUT

Product Name:	Tablet
Model No.:	Acer One 10 T9-1212L
Test sample(s) ID:	GTS2023010007-1
Sample(s) Status:	Engineer sample
Serial No.:	N/A
Support Networks:	GSM, GPRS, HSPA, HSDPA, RMC
Support Bands:	GSM850, PCS 1900, WCDMA Band 2, WCDMA Band 5
TX Frequency:	GSM 850: 824-849MHz PCS 1900: 1850-1910MHz WCDMA Band 2: 1850-1910MHz WCDMA Band 5: 824-849MHz
Antenna type:	Internal Antenna
Antenna gain:	GSM 850: 0.8dBi PCS 1900: 1.1dBi WCDMA Band 2: 1.1dBi WCDMA Band 5: 0.8dBi
Power supply:	DC 9V, 2A
Adapter Information	Model: BPS-PN18A Input: AC 100-240V~, 50/60Hz, 800mA (Max) Output: USB-A: 5V 3A, 9V 2A, 12V 1.5A

Regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Final test channel:

Band	Channel Bandwidth (MHz)	Frequency (MHz)		
		Low	Middle	High
GSM 850	0.3	824.2	836.6	848.8
PCS 1900	0.3	1850.2	1880	1909.8
WCDMA Band 2	4.2	1852.4	1880	1907.6
WCDMA Band 5	4.2	826.4	836.6	846.6

5.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is filing to comply with Section Part 22 / 24 of the FCC CFR 47 Rules.

5.3 Test Methodology

Both conducted and radiated testing were performed according to the procedures document on ANSI C63.26:2015 and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **FCC —Registration No.: 381383**

Designation Number: CN5029

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files.

- **IC —Registration No.: 9079A**

CAB identifier: CN0091

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with.

- **NVLAP (LAB CODE:600179-0)**

Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

5.7 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102

Tel: 0755-27798480

Fax: 0755-27798960

6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July 02, 2020	July 01, 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	April 22, 2022	April 21, 2023
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9168	GTS640	March 21, 2022	March 20, 2023
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June 12, 2022	June 11, 2023
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June 23, 2022	June 22, 2023
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	April 22, 2022	April 21, 2023
9	Coaxial Cable	GTS	N/A	GTS211	April 22, 2022	April 21, 2023
10	Coaxial cable	GTS	N/A	GTS210	April 22, 2022	April 21, 2023
11	Coaxial Cable	GTS	N/A	GTS212	April 22, 2022	April 21, 2023
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	April 22, 2022	April 21, 2023
13	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 23, 2022	June 22, 2023
14	Band filter	Amindeon	82346	GTS219	June 23, 2022	June 22, 2023
15	Power Meter	Anritsu	ML2495A	GTS540	June 23, 2022	June 22, 2023
16	Power Sensor	Anritsu	MA2411B	GTS541	June 23, 2022	June 22, 2023
17	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	April 22, 2022	April 21, 2023
18	Splitter	Agilent	11636B	GTS237	June 23, 2022	June 22, 2023
19	Loop Antenna	ZHINAN	ZN30900A	GTS534	Nov. 29, 2022	Nov. 28, 2023
20	Broadband Preamplifier	SCHWARZBECK	BBV9718	GTS535	April 22, 2022	April 21, 2023
21	Breitband hornantenna	SCHWARZBECK	BBHA 9170	GTS579	Oct. 16, 2022	Oct. 15, 2023
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 16, 2022	Oct. 15, 2023
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 16, 2022	Oct. 15, 2023
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June 23, 2022	June 22, 2023
25	Amplifier(1GHz-26.5GHz)	HP	8449B	GTS601	April 22, 2022	April 21, 2023

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	April 22, 2022	April 21, 2023
2	EMI Test Receiver	R&S	ESCI 7	GTS552	April 22, 2022	April 21, 2023
3	Spectrum Analyzer	Agilent	E4440A	GTS536	April 22, 2022	April 21, 2023
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	April 22, 2022	April 21, 2023
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	April 22, 2022	April 21, 2023
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	April 22, 2022	April 21, 2023
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	April 22, 2022	April 21, 2023
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	April 22, 2022	April 21, 2023

General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	April 25, 2022	April 24, 2023
2	Barometer	KUMAO	SF132	GTS647	July 26, 2022	July 25, 2023

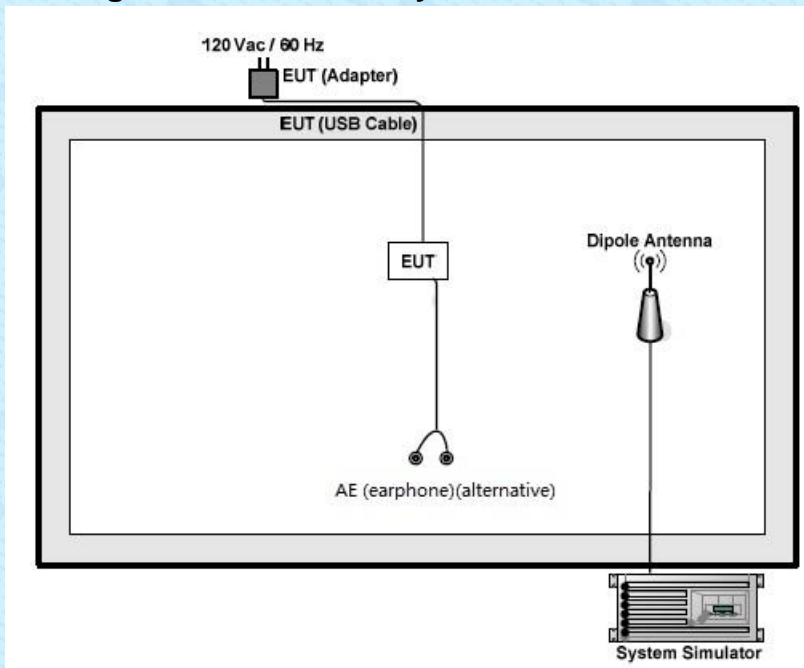
7 System test configuration

7.1 Test mode

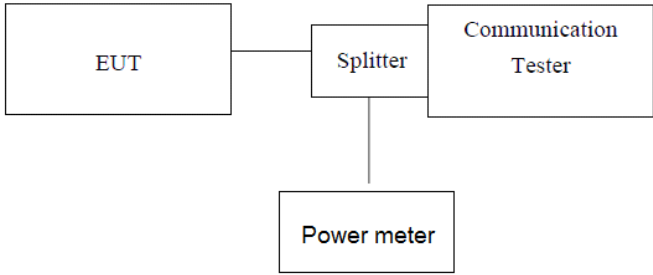
During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on the worst emission.

Test modes		
Band	Radiated	Conducted
GSM 850	■ GSM/GPRS link	■ GSM/GPRS link
PCS 1900	■ GSM/GPRS link	■ GSM/GPRS link
WCDMA Band 2	■ HSPA/RMC link	■ HSPA/RMC link
WCDMA Band 5	■ HSPA/RMC link	■ HSPA/RMC link

7.2 Configuration of Tested System



7.3 Conducted Output Power and ERP/EIRP

Test Requirement:	FCC part 22.913(a), part 24.232(c)
Test Method:	FCC part 2.1046
Limit:	GSM850: 7W(38.45dBm) PCS1900: 2W(33dBm) WCDMA Band 2: 2W(33dBm) WCDMA Band 5: 7W(38.45dBm)
Test setup:	 <p><i>Note: Measurement setup for testing on Antenna connector</i></p>
Test Procedure:	<ol style="list-style-type: none"> 1. The transmitter output port was connected to base station. 2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement. 3. Set EUT at maximum power through base station. 4. Select lowest, middle, and highest channels for each band and different modulation. 5. Measure the maximum burst power. 6. $EIRP = \text{measured power} + \text{antenna gain}$ $ERP = EIRP - 2.15$
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data:

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	ERP (dBm)
GSM	128	824.2	29.88	28.03
	190	836.6	30.02	28.17
	251	848.8	29.88	28.03

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				ERP (dBm)			
			1 slot	2 slot	3 slot	4 slot	1 slot	2 slot	3 slot	4 slot
GPRS	128	824.2	30.66	29.7	27.65	26.44	28.81	27.85	25.8	24.59
	190	836.6	30.76	29.75	27.77	26.46	28.91	27.9	25.92	24.61
	251	848.8	30.13	29.69	27.68	26.42	28.28	27.84	25.83	24.57

Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			ERP (dBm)		
			Low 826.4MHz	Middle 836.6MHz	High 846.6MHz	Low 826.4MHz	Middle 836.6MHz	High 846.6MHz
WCDMA Band 5	RMC 12.2k		21.45	21.44	21.28	19.6	19.59	19.6
	HSDPA	1	20.32	20.2	20.14	18.47	18.35	18.47
		2	20.44	20.40	20.17	18.59	18.55	18.59
		3	20.26	20.32	20.29	18.41	18.47	18.41
		4	20.21	20.09	20.07	18.36	18.24	18.36
	HSUPA	1	20.08	20.36	20.07	18.23	18.51	18.23
		2	20.23	20.52	20.13	18.38	18.67	18.38
		3	20.04	20.54	19.98	18.19	18.69	18.19
		4	20.03	20.25	20.11	18.18	18.4	18.18
		5	20.01	20.39	20.01	18.16	18.54	18.16
HSPA+	1	20.01	20.28	20.26	18.16	18.43	18.16	

Note: ERP (dBm) = Conducted Power(dBm) + Antenna Gain(dBd) - Cable loss(dB)
 For GSM850 / WCDMA Band5: Antenna Gain= 0.8dBi = -1.35dBd (0dBd=2.15dBi)
 For 600-1000MHz, Cable Loss=0.5dB (provided by the applicant)

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)	EIRP (dBm)
GSM	512	1850.2	27	27.6
	661	1880.0	26.73	27.33
	810	1909.8	26.33	26.93

Mode	Channel	Frequency (MHz)	Average Output Power (dBm)				EIRP (dBm)			
			1 slot	2 slot	3 slot	4 slot	1 slot	2 slot	3 slot	4 slot
GPRS	512	1850.2	26.99	26.49	24.85	23.78	27.59	27.09	25.45	24.38
	661	1880.0	26.76	26.35	25.08	24.08	27.36	26.95	25.68	24.68
	810	1909.8	26.35	26.09	24.94	24.05	26.95	26.69	25.54	24.65

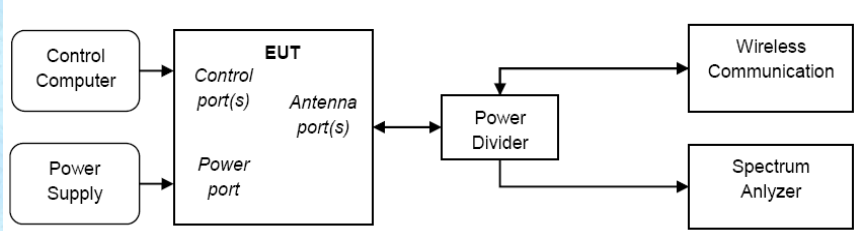
Mode	Test Mode	3GPP Sub Test	Average Output Power (dBm)			EIRP (dBm)		
			Low 1852.4MHz	Middle 1880MHz	High 1907.6MHz	Low 1852.4MHz	Middle 1880MHz	High 1907.6MHz
WCDMA Band 2	RMC 12.2k		20.35	20.42	20.05	20.95	21.02	20.65
	HSDPA	1	19.34	19.73	19.46	19.94	20.33	20.06
		2	19.46	19.74	19.51	20.06	20.34	20.11
		3	19.16	19.76	19.53	19.76	20.36	20.13
		4	19.30	19.54	19.28	19.9	20.14	19.88
	HSUPA	1	20.08	19.04	19.1	20.68	19.64	19.7
		2	20.23	19.08	19.24	20.83	19.68	19.84
		3	19.96	19.08	19.16	20.56	19.68	19.76
		4	19.90	18.98	19.08	20.5	19.58	19.68
		5	20.06	19.17	19.11	20.66	19.77	19.71
HSPA+	1	20.21	19.46	19.09	20.81	20.06	19.69	

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

For PCS1900/ WCDMA Band2: Antenna Gain =1.1dBi

For 1000-3000MHz, Cable Loss=0.5dB (provided by the applicant)

7.4 Peak-to-Average Ratio

Test Requirement:	FCC Part 22.913(d)
Test Method:	FCC part2.1046
Limit:	13db
Test setup:	 <pre> graph LR CC[Control Computer] --> EUT[EUT] PS[Power Supply] --> EUT EUT --> PD[Power Divider] PD --> WC[Wireless Communication] PD --> SA[Spectrum Analyzer] </pre>
Test Procedure:	<p>A peak to average ratio measurement is performed at the conducted port of the EUT. For WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used on a spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth. The traces are generated with the spectrum analyzer set to zero span mode.</p> <p>Test Settings</p> <ol style="list-style-type: none"> 1. The signal analyzer's CCDF measurement profile enabled 2. Frequency= carrier center frequency 3. Measurement BW > EBW of signal 4. for continuous transmissions, set to 1ms 5. Record the maximum PAPR level associated with a probability of 0.1%.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data:

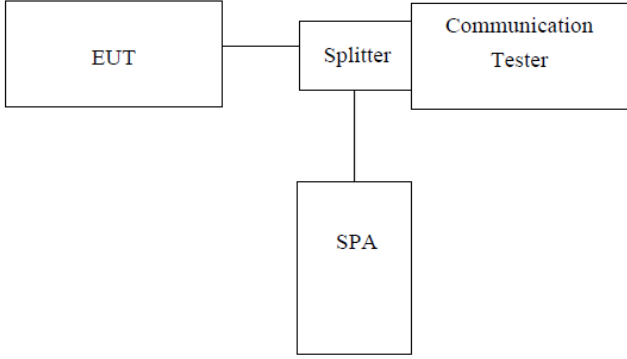
Part 22H

Mode	Channel	PAR (dB)	Limit (dB)	Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	2.51	13	HSDPA (16QAM)	Low	3.94	13
	Middle	3.24	13		Middle	3.33	13
	High	2.39	13		High	3.08	13
GPRS	Low	2.51	13	HSUPA (BPSK)	Low	3.68	13
	Middle	3.09	13		Middle	3.77	13
	High	2.16	13		High	3.45	13
RMC (BPSK)	Low	3.11	13	HSPA+ (16QAM)	Low	3.88	13
	Middle	3.57	13		Middle	3.25	13
	High	3.73	13		High	3.05	13

Part 24H

Mode	Channel	PAR (dB)	Limit (dB)	Mode	Channel	PAR (dB)	Limit (dB)
GSM	Low	2.13	13	HSDPA (16QAM)	Low	3.61	13
	Middle	3.64	13		Middle	3.49	13
	High	2.67	13		High	3.75	13
GPRS	Low	3.26	13	HSUPA (BPSK)	Low	3.23	13
	Middle	3.88	13		Middle	3.15	13
	High	3.54	13		High	3.96	13
RMC (BPSK)	Low	3.13	13	HSPA+ (16QAM)	Low	3.94	13
	Middle	3.64	13		Middle	3.50	13
	High	3.67	13		High	3.65	13

7.5 Occupy Bandwidth

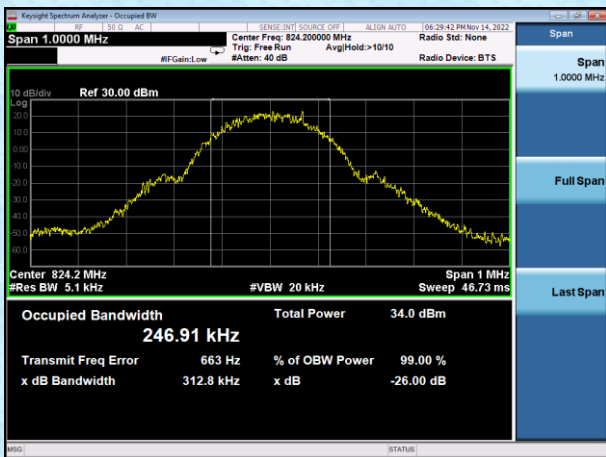
Test Requirement:	FCC part 22.917(b), part 24.238
Test Method:	FCC part 2.1049
Test setup:	 <p><i>Note: Measurement setup for testing on Antenna connector</i></p>
Test Procedure:	<ol style="list-style-type: none"> 1. The EUT's output RF connector was connected with a short cable to the spectrum analyzer 2. RBW was set to about 1% of emission BW, VBW= 3 times RBW. 3. -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.
Test Instruments:	Refer to section 5.0 for details
Test mode:	Refer to section 6.1 for details
Test results:	Pass

Measurement Data:

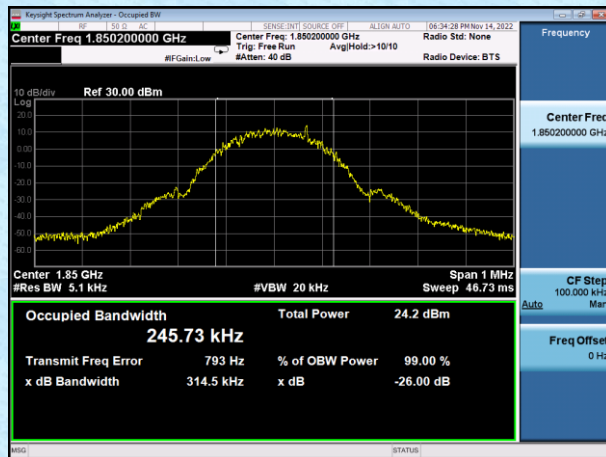
Mode	Frequency (MHz)	99% Bandwidth (kHz)	-26dB Bandwidth (kHz)
GSM	824.2	246.91	312.80
	836.6	246.81	315.20
	848.8	246.48	312.20
	1850.2	245.73	314.50
	1880	245.33	320.20
	1909.8	246.80	308.50
GPRS	824.2	246.69	312.26
	836.6	245.62	308.50
	848.8	245.94	306.60
	1850.2	244.49	317.40
	1880	245.25	316.70
	1909.8	244.79	314.20

Mode	Frequency (MHz)	99% Bandwidth (MHz)	-26dB Bandwidth (MHz)
HSDPA	826.4	4.22	5.18
	836.6	4.21	5.55
	846.6	4.21	5.07
	1852.4	4.26	5.18
	1880	4.22	4.93
	1907.6	4.21	5.03
HSUPA	826.4	4.22	5.40
	836.6	4.20	5.18
	846.6	4.24	5.80
	1852.4	4.26	5.12
	1880	4.21	4.94
	1907.6	4.21	4.70
WCDMA	826.4	4.17	4.72
	836.6	4.19	4.70
	846.6	4.18	5.21
	1852.4	4.27	5.15
	1880	4.22	4.80
	1907.6	4.20	4.78

GSM	GSM
------------	------------



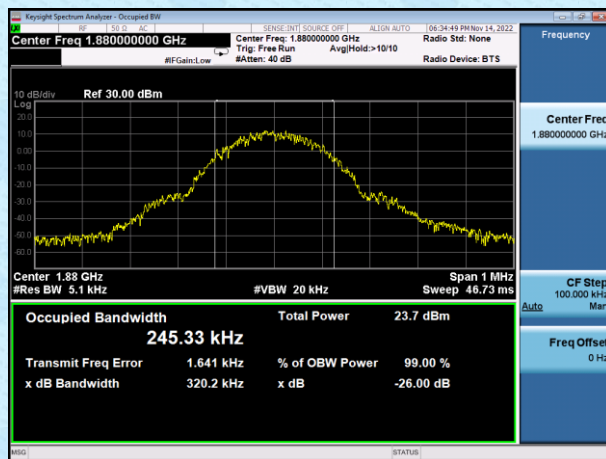
824.2 MHz



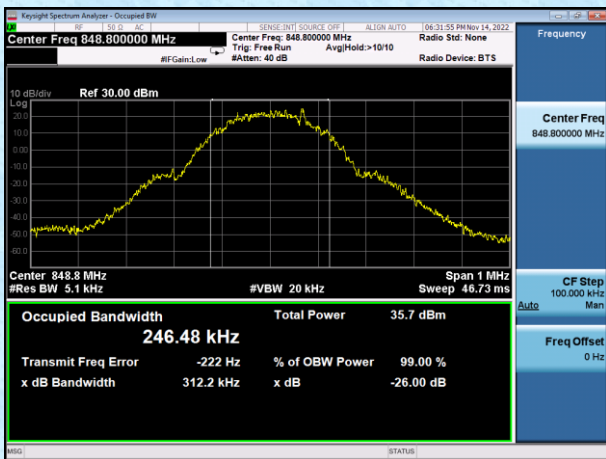
1850.2 MHz



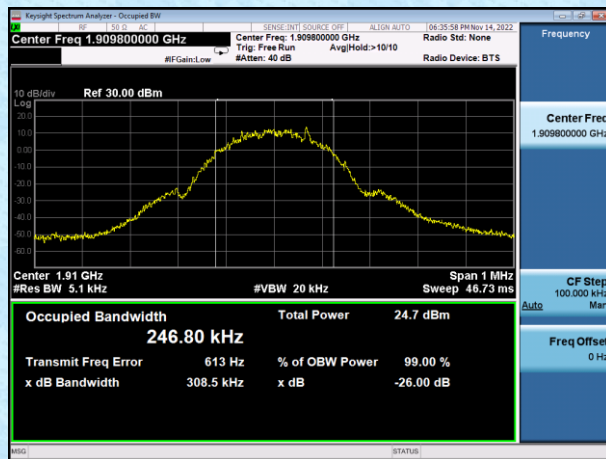
836.6 MHz



1880 MHz

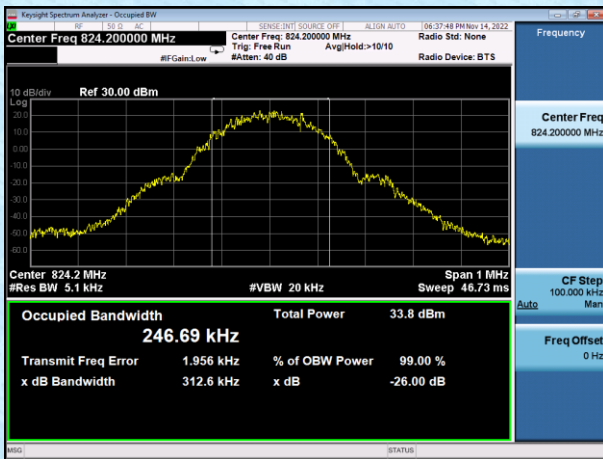


848.8 MHz



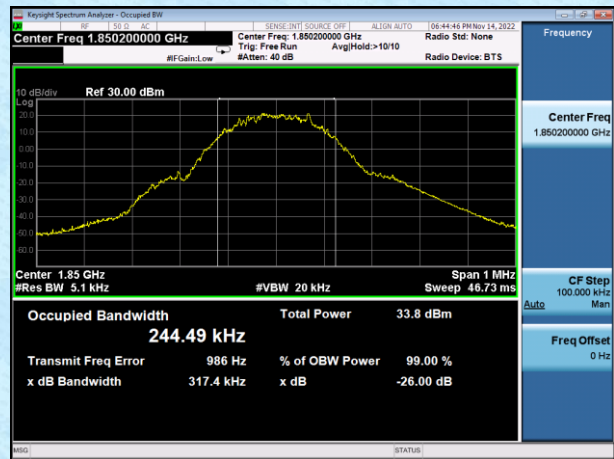
1909.8 MHz

GPRS

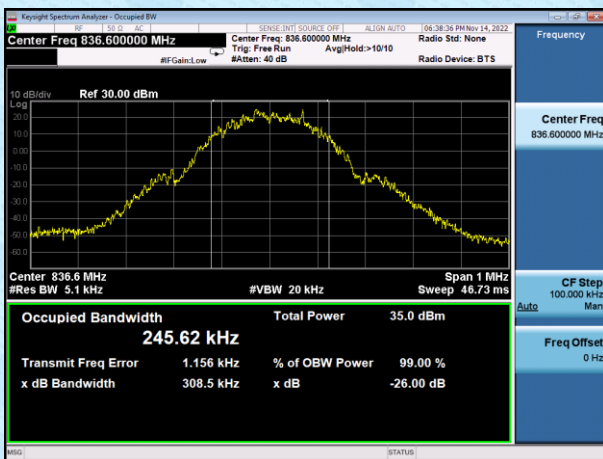


824.2 MHz

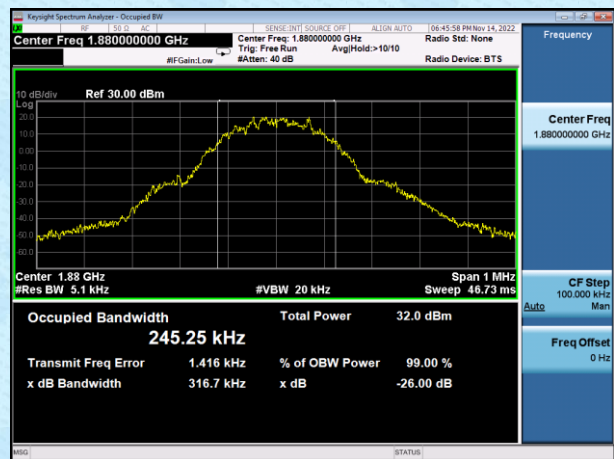
GPRS



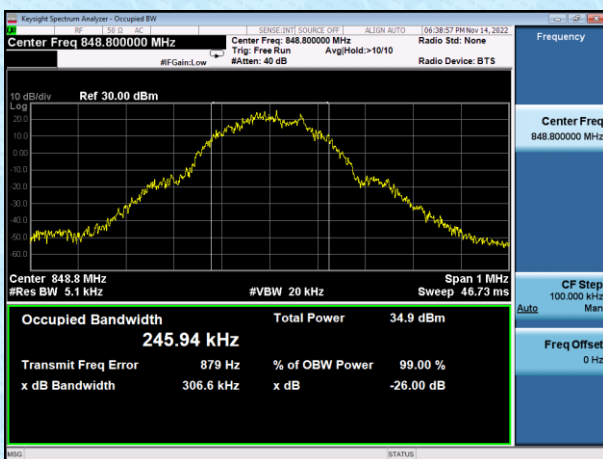
1850.2 MHz



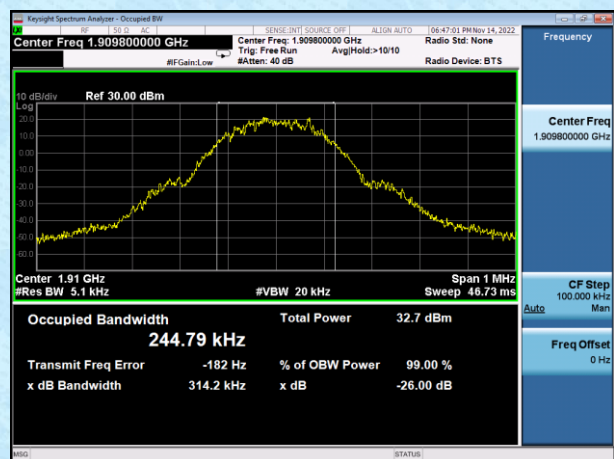
836.6 MHz



1880 MHz



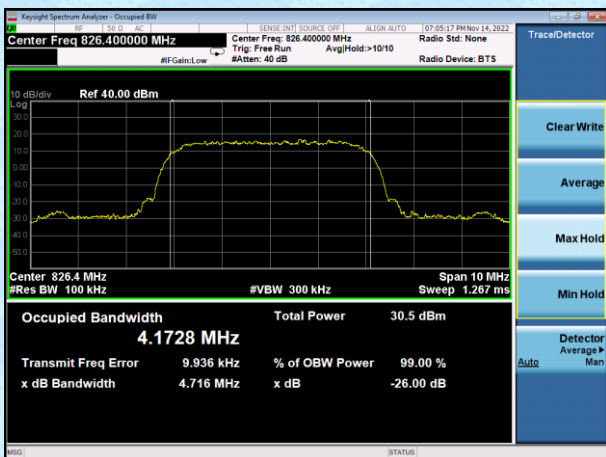
848.8 MHz



1909.8 MHz

WCDMA

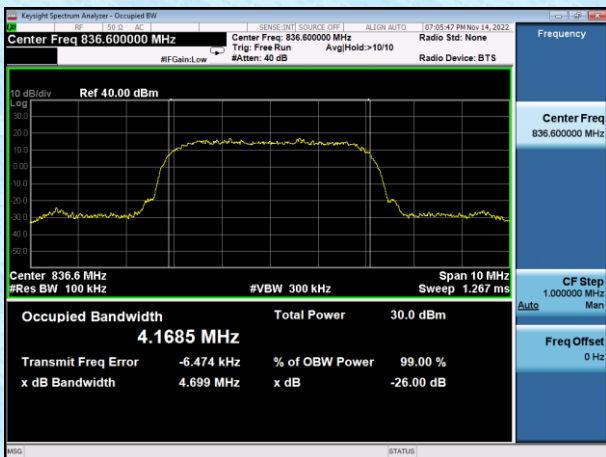
WCDMA



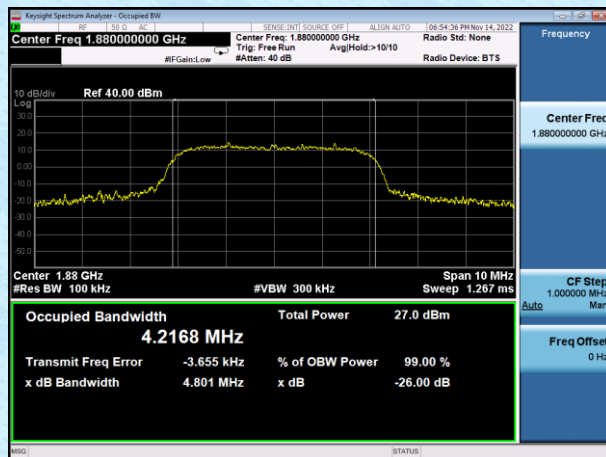
826.4 MHz



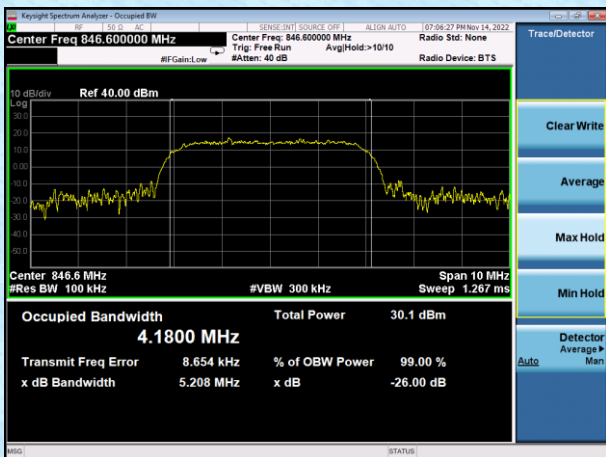
1852.4 MHz



836.6 MHz



1880 MHz



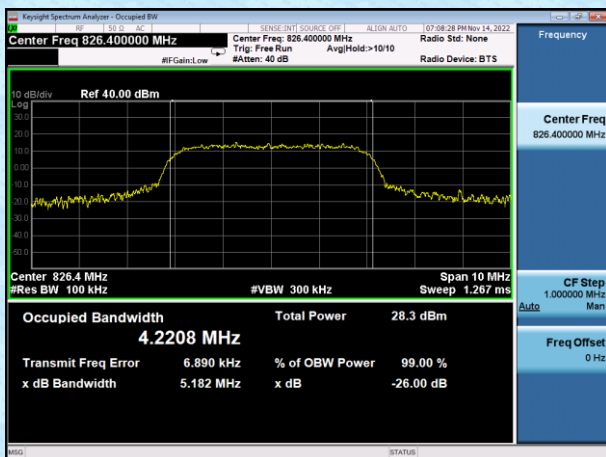
846.6 MHz



1907.6 MHz

HSDPA

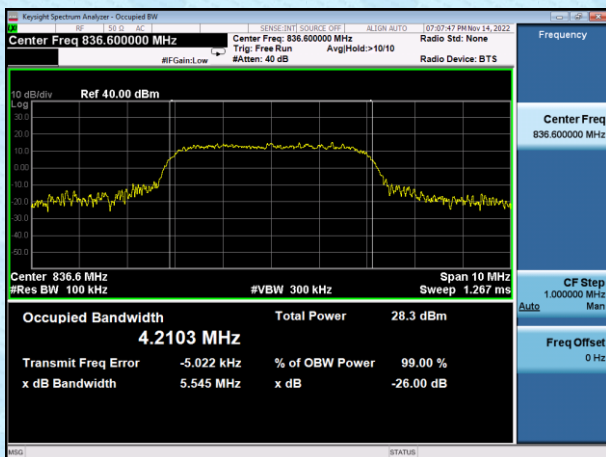
HSDPA



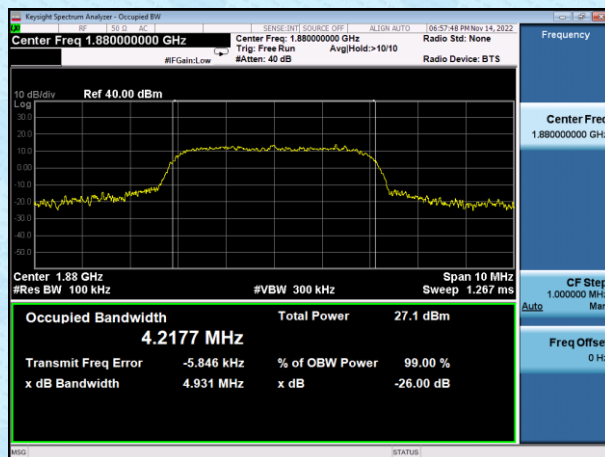
826.4 MHz



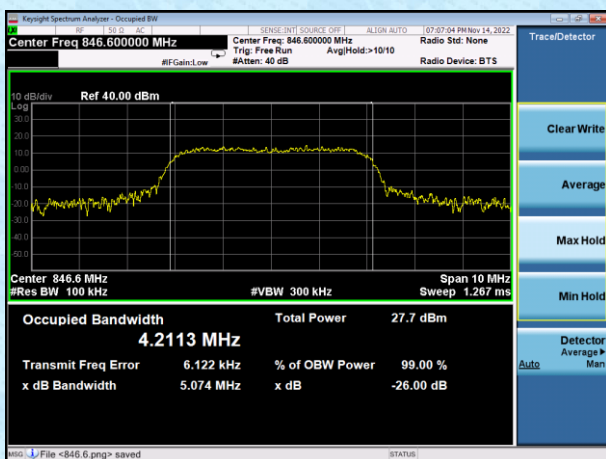
1852.4 MHz



836.6 MHz



1880 MHz



846.6 MHz



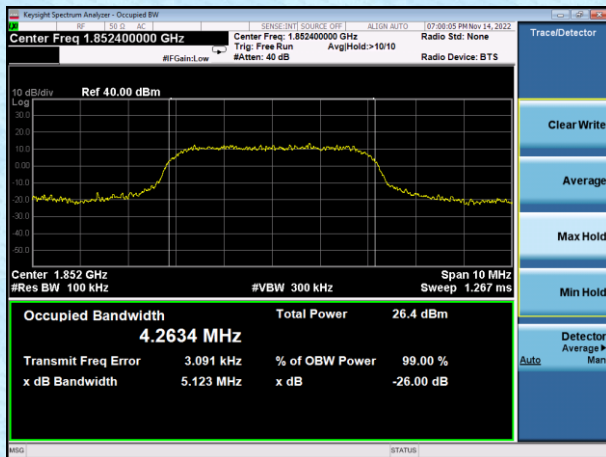
1907.6 MHz

HSUPA

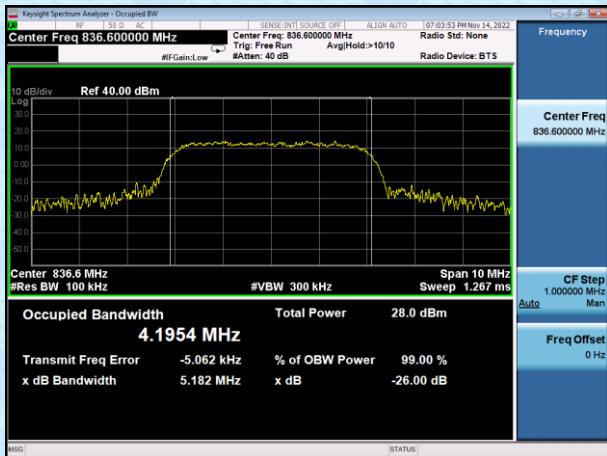
HSUPA



826.4 MHz



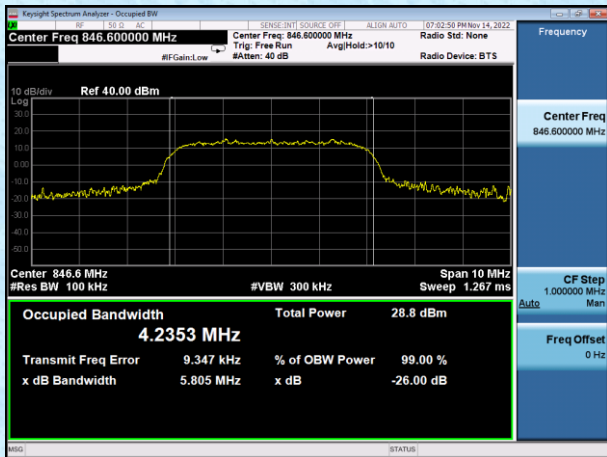
1852.4 MHz



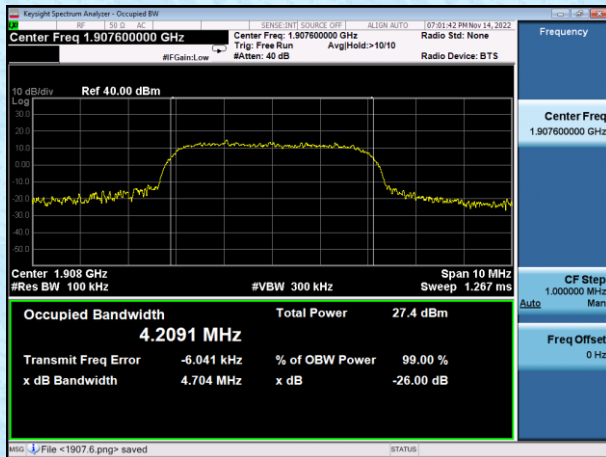
836.6 MHz



1880 MHz



846.6 MHz



1907.6 MHz