TEST REPORT

Reference No.	:	WTD25D09247158W003
FCC ID	:	2BSNE-L13
Applicant	:	Shenzhen Telemiles Co., Ltd
Address	:	24F, Block B of Block A.B, Haiwang Building, Nanhai Blvd No.2221, Nanshan Street, Nanshan District, Shenzhen, China
Manufacturer	:	Shenzhen Telemiles Co., Ltd
Address	:	24F, Block B of Block A.B, Haiwang Building, Nanhai Blvd No.2221, Nanshan Street, Nanshan District, Shenzhen, China
Product	:	Mini ONE
Model(s)	:	L13
Standards	:	FCC CFR47 Part 24 Subpart E
Date of Receipt Sample	:	2025-09-15
Date of Test	:	2025-10-31 to 2025-11-17
Date of Issue	:	2025-12-01
Test Result	:	**Pass**

Remarks:
The 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.

Prepared By:
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3 Revision History

Test Report No.	Date of Receipt Sample	Date of Test	Date of Issue	Purpose	Comment	Approved
WTD25D09247158W003	2025-09-15	2025-10-31 to 2025-11-17	2025-12-01	Original	-	Valid

4 General Information

4.1 General Description of E.U.T.

Product:	Mini ONE
Model(s):	L13
Model Description:	N/A
Test Sample No.:	1-1/1
WCDMA Band(s):	FDD Band II
Hardware Version:	Mobile.Router.H01
Software Version:	Mobile.Router.B01

4.2 Details of E.U.T.

Operation Frequency:	WCDMA Band II: 1850~1910MHz
Max. RF output power:	WCDMA Band II: 22.84dBm
ERP/EIRP:	WCDMA Band II: 24.98dBm
Type of Modulation:	WCDMA: BPSK, QPSK, 16QAM, 64QAM
Antenna installation:	WCDMA: FPC Antenna
Antenna Gain:	WCDMA Band II: 2.3dBi

Note:
#: The antenna gain is provided by the applicant, and the applicant should be responsible for its authenticity, WALTEK lab has not verified the authenticity of its information.

Ratings:	DC 5V 1A
Type of Emission:	WCDMA Band II: 4M17F9W

4.3 Test Mode

All test mode(s) and condition(s) mentioned were considered and evaluated respectively by performing full tests, the worst data were recorded and reported.

Support Band	Test Mode	Channel Frequency	Channel Number
WCDMA Band II	WCDMA/HSUPA/HSDPA	1852.4MHz	9262
		1880.0MHz	9400
		1907.6MHz	9538
Remark: All mode(s) were tested and the worst data was recorded.			

4.4 Test Facility

The test facility has a test site registered with the following organizations:

ISED CAB identifier: CN0013. Test Firm Registration No.: 7760A.

Waltek Testing Group Co., Ltd. Has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration number 7760A, October 15, 2016.

FCC Designation No.: CN1201. Test Firm Registration No.: 523476.

Waltek Testing Group Co., Ltd. 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 our files. Registration number 523476, September 10, 2019.

5 Test Summary

Test Items	Test Requirement	Result
RF Output Power	2.1046 24.232 (c)	PASS
Peak-to-Average Ratio	24.232 (d)	PASS
Bandwidth	2.1049 24.238	PASS
Spurious Emissions at Antenna Terminal	2.1051 24.238 (a)	PASS
Field Strength of Spurious Radiation	2.1053 24.238 (a)	PASS
Out of band emission, Band Edge	24.238 (a)	PASS
Frequency Stability	2.1055 24.235	PASS
Maximum Permissible Exposure (SAR)	1.1307 2.1093	PASS

6 Equipment Used during Test

6.1 Equipments List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal. Date	Calibration Due Date
3m Semi-anechoic Chamber for Radiation Emissions 1#						
1	Spectrum Analyzer	R&S	FSP30	100091	2025-04-19	2026-04-18
2	Amplifier	Agilent	8447D	2944A10178	2025-07-04	2026-07-03
3	Tri-log Broadband Antenna	SCHWARZBECK	VULB9163	336	2025-07-20	2026-07-19
4	Coaxial Cable	Top	TYPE16(13M)	-	2025-04-19	2026-04-18
5	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9120 D	9120D-1314	2025-08-09	2026-08-08
6	Broad-band Horn Antenna	SCHWARZBECK	BBHA 9170	335	2025-07-04	2026-07-03
7	Broadband Preamplifier	COMPLIANCE	PAP-1G18	2004	2025-07-04	2026-07-03
8	Coaxial Cable	Top	ZT26-NJ-NJ-8M/FA	-	2025-04-19	2026-04-18
9	Microwave Amplifier	SCHWARZBECK	BBV 9721	100472	2025-04-19	2026-04-18
10	Coaxial Cable	Top	ZT40-2.92J-2.92J-2.0M	17100919	2025-04-19	2026-04-18
3m Semi-anechoic Chamber for Radiation Emissions 2#						
1	Test Receiver	R&S	ESCI	101296	2025-04-19	2026-04-18
2	Trilog Broadband Antenna	SCHWARZBECK	VULB9160	9160-3325	2025-07-05	2026-07-04
3	Active Loop Antenna	Com-Power	AL-130R	10160007	2025-04-21	2026-04-20
4	Amplifier	ANRITSU	MH648A	M43381	2025-04-19	2026-04-18
5	Cable	HUBER+SUHNER	CBL2	525178	2025-04-19	2026-04-18
RF Conducted Testing						
1	Spectrum Analyzer	R&S	FSP40	100501	2025-07-04	2026-07-03
2	Spectrum Analyzer	Agilent	N9020A	MY49100060	2025-07-04	2026-07-03
3.	Universal Radio Communication Tester	R&S	CMU 200	121315	2025-04-19	2026-04-18
4	Signal Analyzer (9k~26.5GHz)	Agilent	N9010A	MY50520207	2025-04-19	2026-04-18
5	Universal Radio Communication Tester	R&S	CMW 500	127818	2025-04-19	2026-04-18

Test Software:

Test Item	Software name	Software version
Conduction disturbance Radiated Emission(3m)	EZ-EMC	EZ-EMC(RA-03A1-1)

6.2 Measurement Uncertainty

Parameter	Uncertainty
Conducted Emission	± 3.64 dB(AC mains 150KHz~30MHz)
Radiated Spurious Emissions	± 5.08 dB (Bilog antenna 30M~1000MHz)
	± 5.47 dB (Horn antenna 1000M~25000MHz)
Radio Frequency	± 1 x 10^{-7}Hz
RF Power	± 0.42 dB
RF Power Density	± 0.7dB
Conducted Spurious Emissions	± 2.76 dB (9kHz~26500MHz)
Confidence interval：95%. Confidence factor:k=2	

7 RF Output Power

Test Requirement:	FCC Part 2.1046, 24.232 (c)
Test Method:	ANSI/TIA-603-E:2016
	ANSI C63.26:2015
Test Mode:	TX transmitting

7.1 EUT Operation

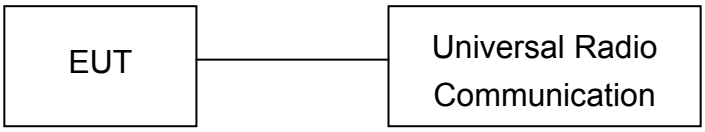
Operating Environment **:**

Temperature:	22.5 °C
Humidity:	52.1 % RH
Atmospheric Pressure:	101.2kPa

7.2 Test Procedure

Conducted method:

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



Radiated method:

1. The setup of EUT is according with Standard ANSI/TIA-603-E.
2. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the 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.
3. The frequency range up to tenth harmonic of the fundamental frequency was investigated.
4. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.

7.3 Test Result

Conducted Power

WCDMA - Average Power (dBm)			
Band	**WCDMA Band II**		
Channel	**9262**	**9400**	**9538**
Frequency (MHz)	**1852.4**	**1880**	**1907.6**
RMC 12.2k	22.83	**22.84**	22.55
HSDPA Subtest-1	21.89	21.70	21.79
HSDPA Subtest-2	21.41	21.18	21.33
HSDPA Subtest-3	21.10	20.92	21.01
HSDPA Subtest-4	20.73	20.51	20.66
HSUPA Subtest-1	21.79	21.78	21.92
HSUPA Subtest-2	21.38	21.32	21.47
HSUPA Subtest-3	21.05	20.97	21.25
HSUPA Subtest-4	20.82	20.74	21.04
HSUPA Subtest-5	20.44	20.43	20.75

Radiated Power

ERP and EIRP

WCDMA Band II (Part 24E)

Mode	Channel	Antenna Polar	EIRP (dBm)	Limit (dBm)	Verdict
WCDMA Band II Voice	9262	H	22.44	33	Pass
		V	**24.98**	33	Pass
	9400	H	21.65	33	Pass
		V	24.85	33	Pass
	9538	H	20.54	33	Pass
		V	24.47	33	Pass
WCDMA Band II HSDPA	9262	H	21.96	33	Pass
		V	24.58	33	Pass
	9400	H	21.55	33	Pass
		V	24.32	33	Pass
	9538	H	21.51	33	Pass
		V	23.12	33	Pass
WCDMA Band II HSUPA	9262	H	21.79	33	Pass
		V	24.06	33	Pass
	9400	H	21.53	33	Pass
		V	23.53	33	Pass
	9538	H	21.09	33	Pass
		V	22.65	33	Pass

8 Peak-to-Average Ratio

Test Requirement: 24.232 (d)

Test Method: N/A

Test Mode: TX transmitting

8.1 EUT Operation

Operating Environment **:**

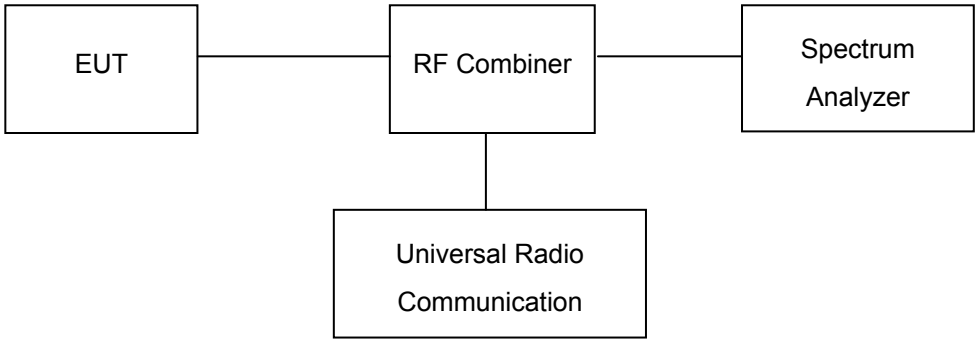
Temperature: 22.5 °C

Humidity: 52.3% RH

Atmospheric Pressure: 101.2kPa

8.2 Test Procedure

1. The EUT was connected to spectrum analyzer and system simulator via a power divider.
2. Set EUT to transmit at maximum output power.
3. When the duty cycle is less than 98%, then signal gating will be implemented on the spectrum analyzer by triggering from the system simulator.
4. Set the CCDF (Complementary Cumulative Distribution Function) option of the spectrum analyzer. Record the maximum PAPR level associated with a probability of 0.1%.



8.3 Test Result

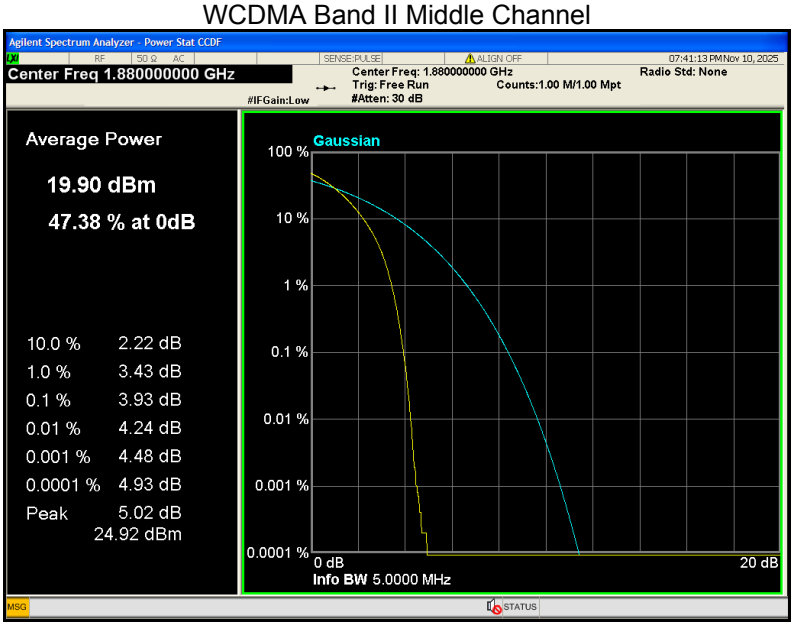
Cellular Band (Part 24E)

Remark: All test data were reported and only the worst case (middle channel mode) test graphs were showed in test report.

Mode	WCDMA Band II			Limit (dB)
Channel	9262	9400	9538	
Frequency (MHz)	1852.4	1880.0	1907.6	
Peak-to-Average Ratio (dB)	3.07	3.93	3.91	13

Test Plots (Part 24E)

WCDMA Band II Middle Channel



9 Bandwidth

Test Requirement:	FCC Part 2.1049, 24.238
Test Method:	ANSI/TIA-603-E:2016
	ANSI C63.26:2015
Test Mode:	TX transmitting

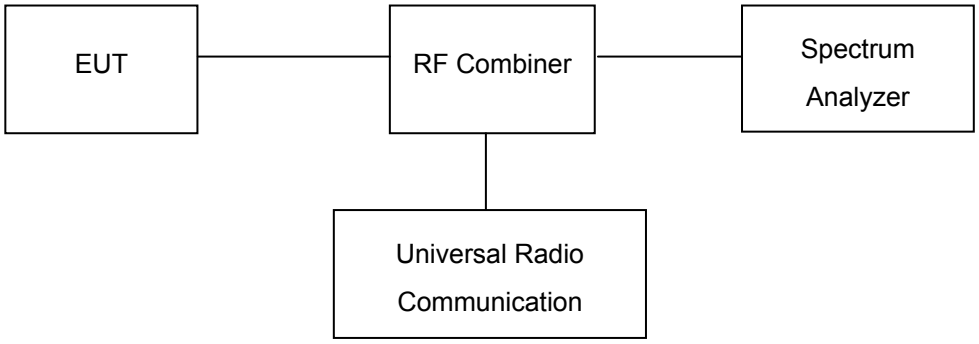
9.1 EUT Operation

Operating Environment **:**

Temperature:	22.5 °C
Humidity:	52.3% RH
Atmospheric Pressure:	101.2kPa

9.2 Test Procedure

The RF output of the transmitter was connected to the wireless test set and the spectrum analyzer through sufficient attenuation.
The resolution bandwidth of the spectrum analyzer was set in the range of 1 to 5 % of the anticipated OBW (Cellular /PCS) and the 26 dB & 99%bandwidth was recorded.



9.3 Test Result

Remark: All test data were reported and only the worst case (middle channel mode) test graphs were showed in test report.

Cellular Band (Part 24E)

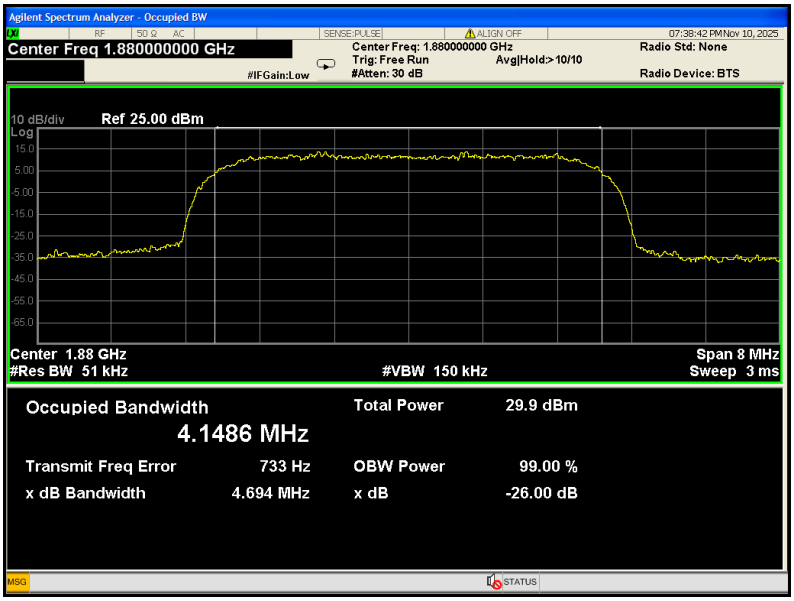
Test Mode		Channel	Frequency (MHz)	99% Occupied Bandwidth(MHz)	26 dB Emission Bandwidth(MHz)
WCDMA Band II	RMC12.2k	9262	1852.4	4.14	4.69
		9400	1880.0	4.15	4.69
		9538	1907.6	4.14	4.69
	HSDPA(16QAM)	9262	1852.4	4.17	4.68
		9400	1880.0	4.17	4.69
		9538	1907.6	4.17	4.68
	HSUPA(BPSK)	9262	1852.4	4.16	4.69
		9400	1880.0	4.16	4.69
		9538	1907.6	4.15	4.69

Test Plots (worst case)

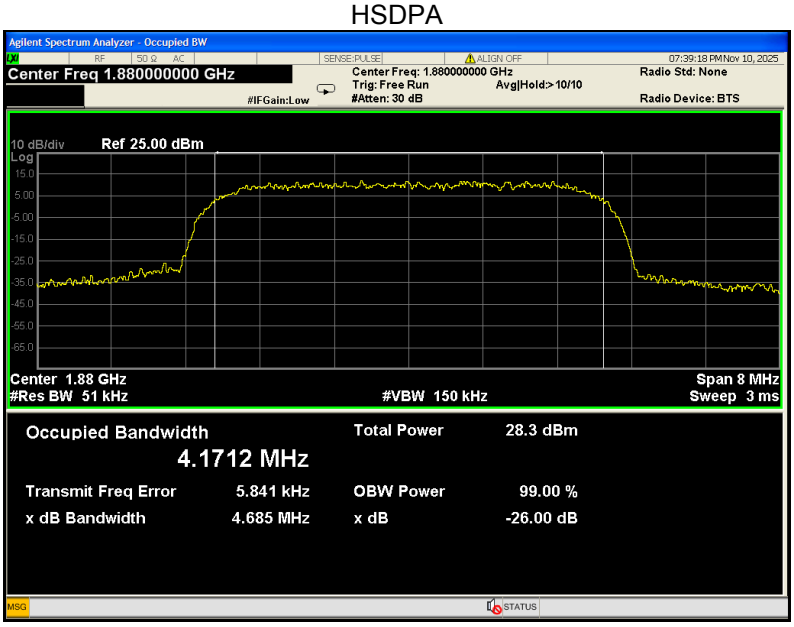
Cellular Band (Part 24E)

WCDMA band II

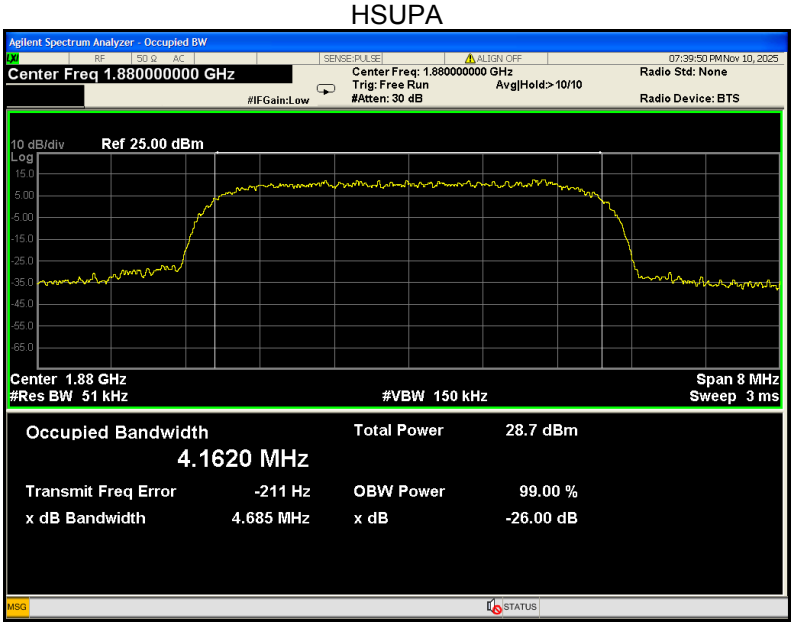
RMC12.2k



HSDPA



HSUPA


Agilent Spectrum Analyzer - Occupied BW
RF
50 Ω AC
SENSE:PULSE
ALIGN OFF
07:39:50 PM Nov 10, 2025
Center Freq 1.880000000 GHz
Center Freq: 1.880000000 GHz
Trig: Free Run
Avg|Hold:>10/10
#Atten: 30 dB
#IFGain:Low
Radio Std: None
Radio Device: BTS
10 dB/div
Ref 25.00 dBm
Log
15.0
5.00
-5.00
-15.0
-25.0
-35.0
-45.0
-55.0
-65.0
Center 1.88 GHz
#Res BW 51 kHz
#VBW 150 kHz
Span 8 MHz
Sweep 3 ms
Occupied Bandwidth
4.1620 MHz
Total Power 28.7 dBm
Transmit Freq Error -211 Hz
OBW Power 99.00 %
x dB Bandwidth 4.685 MHz
x dB -26.00 dB
MSG
STATUS

10 Spurious Emissions at Antenna Terminals

Test Requirement:	FCC Part 2.1051, 24.238(a)
Test Method:	ANSI/TIA-603-E:2016
	ANSI C63.26:2015
Test Mode:	TX transmitting

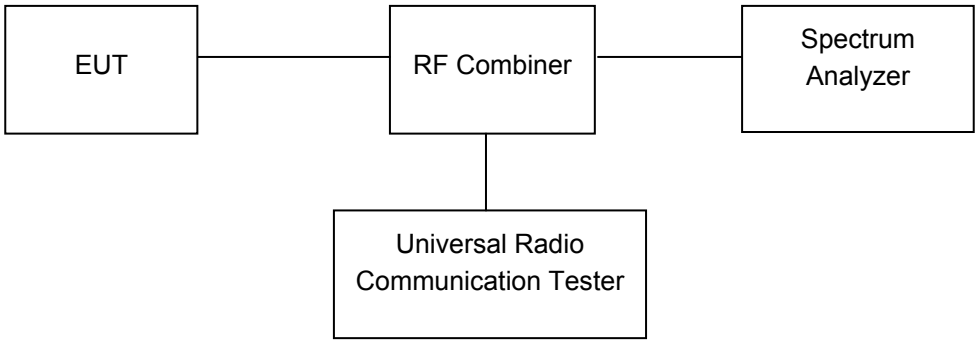
10.1 EUT Operation

Operating Environment **:**

Temperature:	23.5 °C
Humidity:	52.1 % RH
Atmospheric Pressure:	101.3kPa

10.2 Test Procedure

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



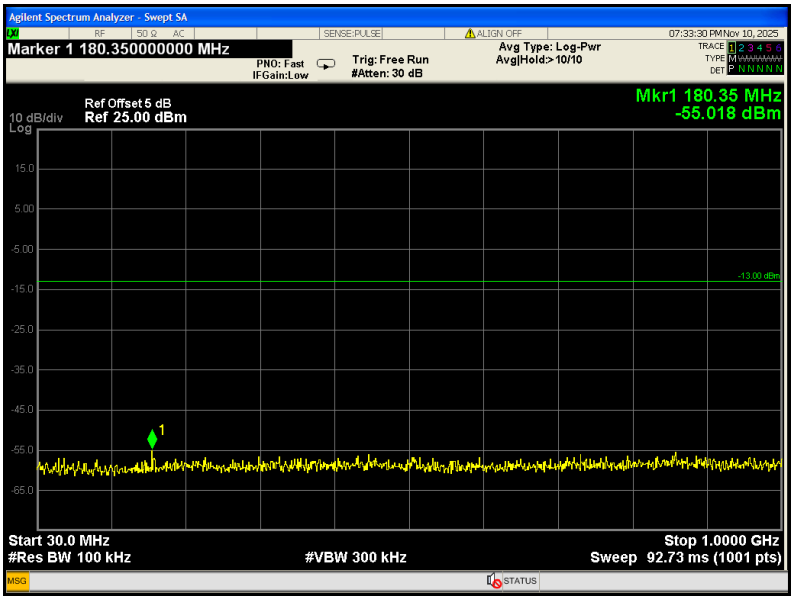
10.3 Test Result

Remark: All test data were reported and only the worst case (middle channel mode) test graphs were showed in test report.

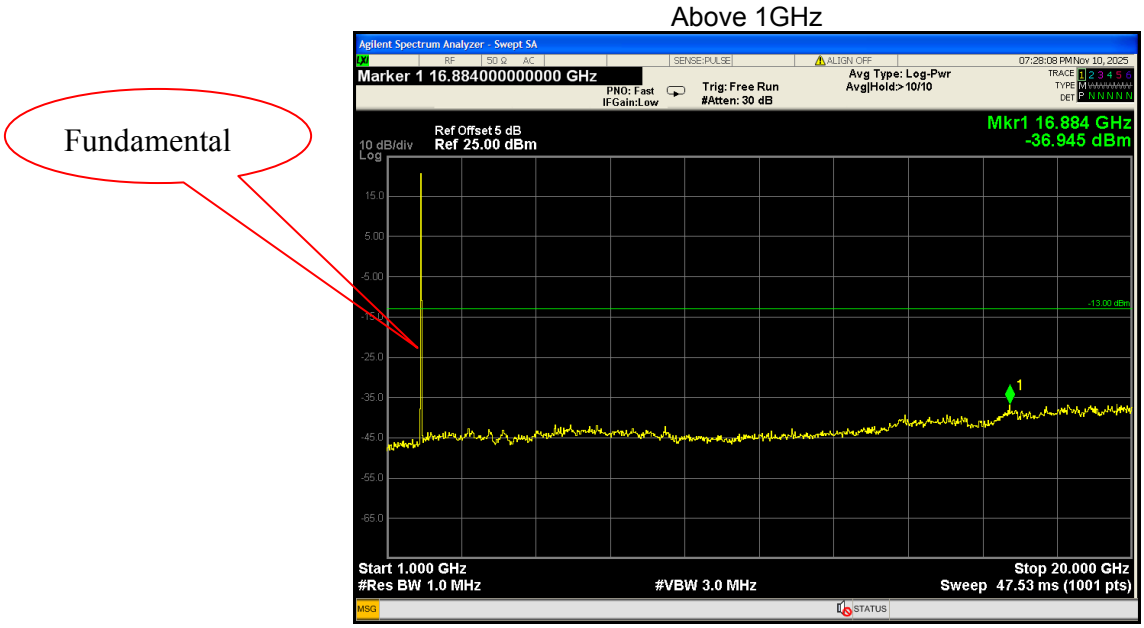
Cellular Band (Part 24E)

WCDMA band II - channel 9400

30MHz-1GHz

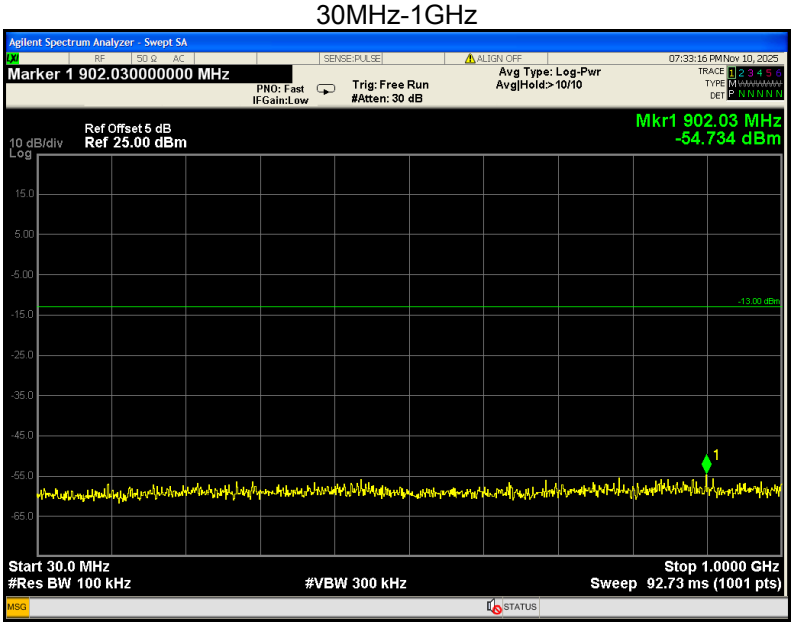


Above 1GHz

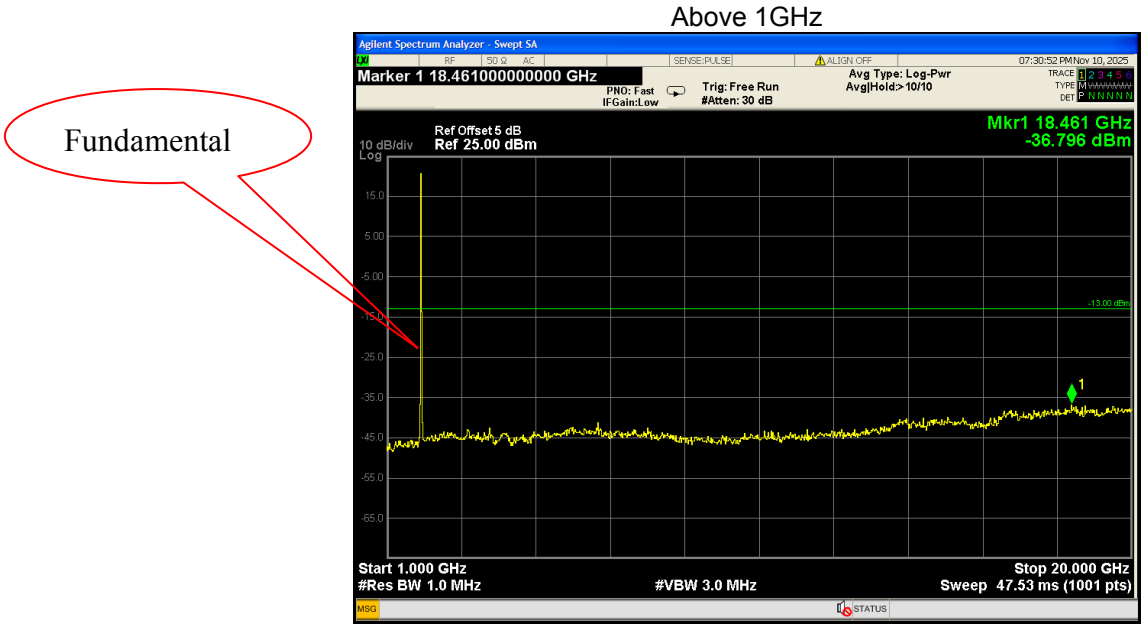


WCDMA band II - channel 9400 (HSDPA)

30MHz-1GHz

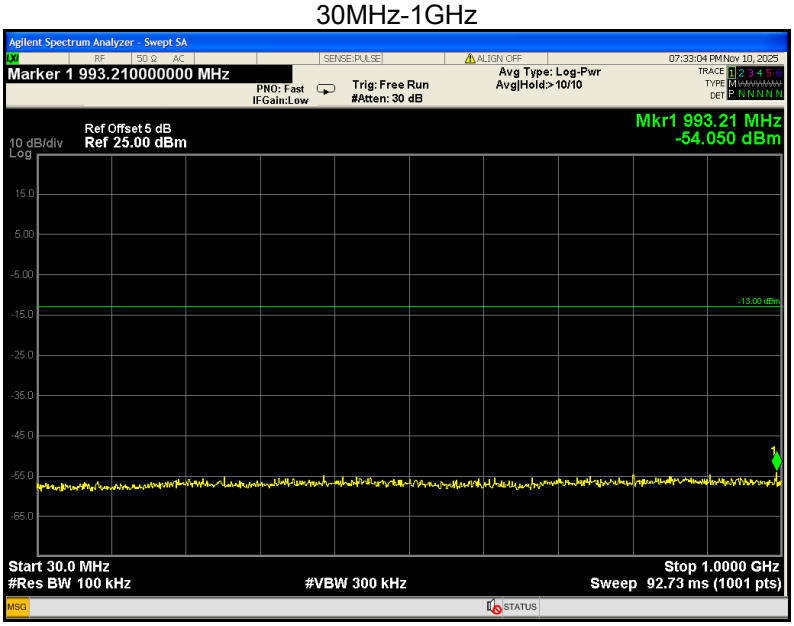


Above 1GHz

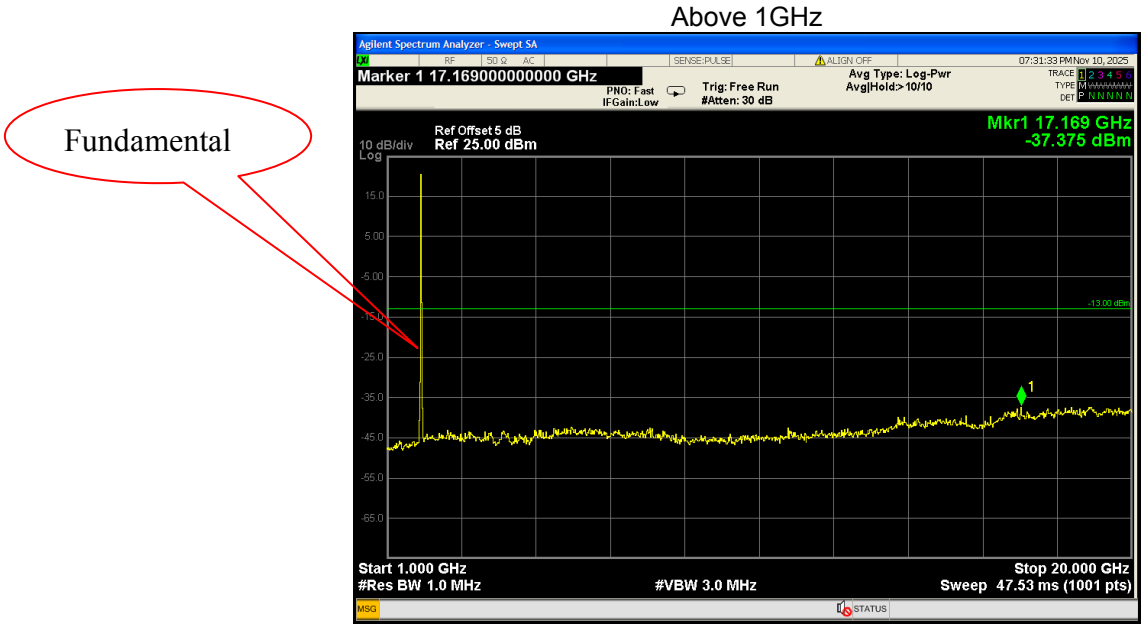


WCDMA band II - channel 9400 (HSUPA)

30MHz-1GHz



Above 1GHz



11 Spurious Radiated Emissions

Test Requirement:	FCC Part 2.1053, 24.238
Test Method:	ANSI/TIA-603-E:2016
	ANSI C63.26:2015
Test Mode:	TX transmitting

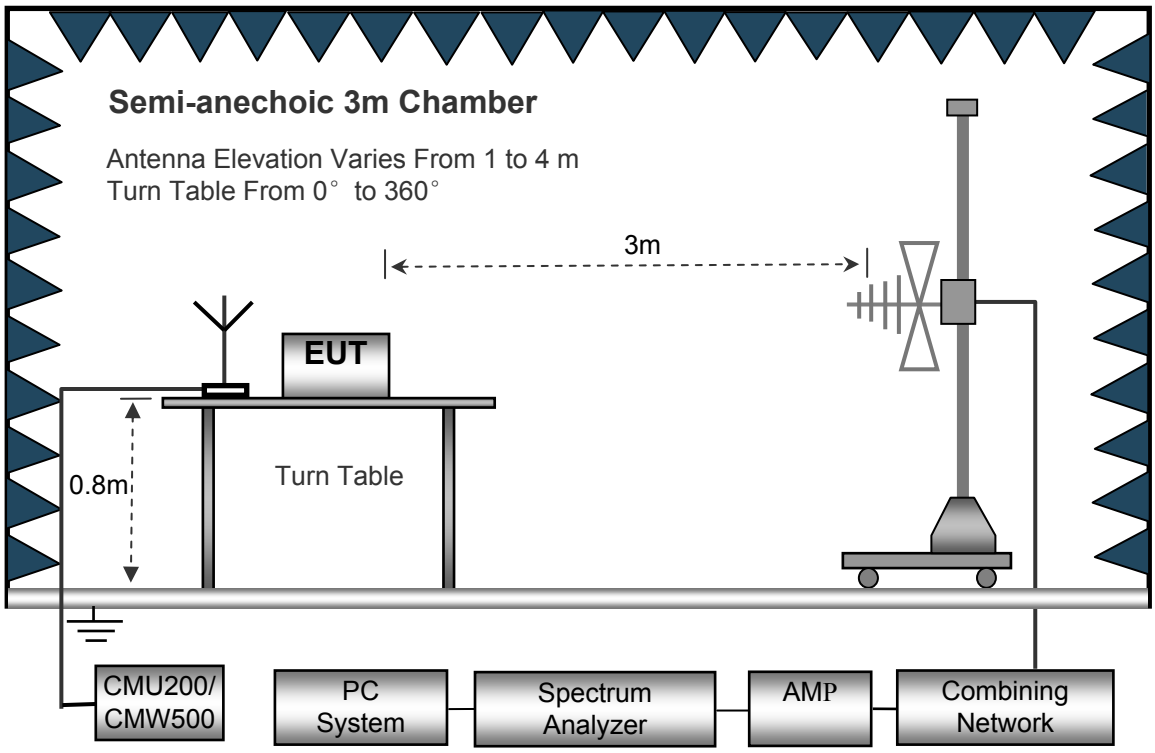
11.1 EUT Operation

Operating Environment **:**

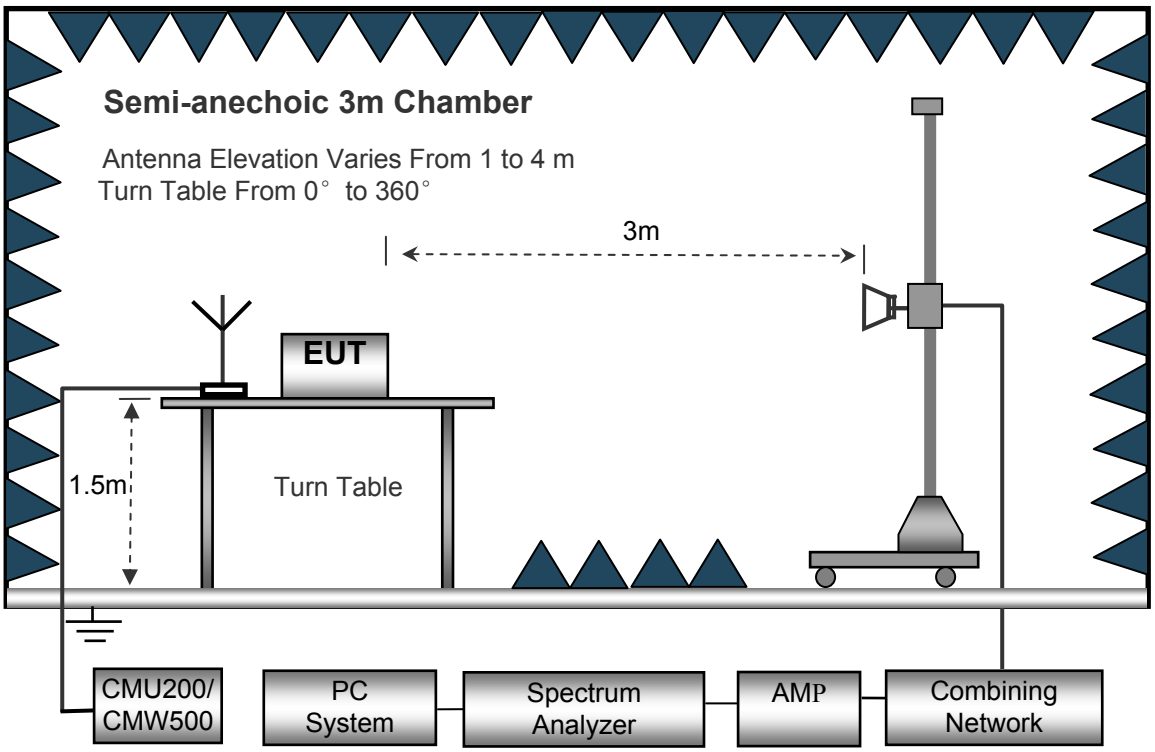
Temperature:	23.5 °C
Humidity:	52.1 % RH
Atmospheric Pressure:	101.2kPa

11.2 Test Setup

The radiated emission tests were performed in the 3m Semi- Anechoic Chamber test site.
The test setup for emission measurement from 30 MHz to 1 GHz.



The test setup for emission measurement above 1 GHz.



11.3 Spectrum Analyzer Setup

30MHz ~ 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 100kHz
Video Bandwidth..... 300kHz

Above 1GHz

Sweep Speed ..... Auto
Detector ..... PK
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 3MHz
Detector ..... Ave.
Resolution Bandwidth..... 1MHz
Video Bandwidth..... 10Hz

11.4 Test Procedure

1. The EUT is placed on a turntable, which is 0.8m for below 1GHz and 1.5m for above 1GHz above ground plane.
2. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level.
3. EUT is set 3m away from the receiving antenna, which is moved from 1m to 4m to find out the maximum emissions. The spectrum was investigated from 30MHz up to the tenth harmonic of the highest fundamental frequency.
4. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
6. The radiation measurements are tested under 3-axes(X,Y,Z) position(X denotes lying on the table, Y denotes side stand and Z denotes vertical stand), After pre-test, It was found that the worse radiation emission was get at the Z position. So the data shown was the Z position only.
7. Remove the EUT and replace it with substitution antenna. A signal generator was connected to the substitution antenna by a non-radiating cable. The absolute levels of the spurious emissions were measured by the substitution.
   Spurious emissions in dB = 10 lg (TXpwr in Watts/0.001) – the absolute level
   Spurious attenuation limit in dB = 43 + 10 Log10 (power out in Watts)
8. Repeat above procedures until the measurements for all frequencies are completed.

11.5 Summary of Test Results

For 26MHz~30MHz,

The measurements were more than 20 dB below the limit and not reported.

Remark: Test performed from 30MHz to 10th harmonics with low/middle/high channels, only the worst data were recorded.

Cellular Band (Part 24E)

Frequency	Receiver Reading	Turn table Angle	RX Antenna		Substituted			Absolute Level	Result	
			Height	Polar	SG Level	Cable	Antenna Gain		Limit	Margin
(MHz)	(dBμV)	Degree	(m)	(H/V)	(dBm)	(dB)	(dB)	(dBm)	(dBm)	(dB)
WCDMA Band II Channel 9400										
215.62	49.53	274	2.1	H	-60.98	2.01	9.40	-53.59	-13.00	-40.59
215.62	51.47	27	1.4	V	-56.12	2.01	9.40	-48.73	-13.00	-35.73
3760.00	50.35	201	1.1	H	-61.19	5.34	29.40	-37.13	-13.00	-24.13
3760.00	52.27	75	1.2	V	-57.54	5.34	29.40	-33.48	-13.00	-20.48
5640.00	31.84	43	2.2	H	-77.77	6.46	32.60	-51.63	-13.00	-38.63
5640.00	34.82	71	1.1	V	-74.06	6.46	32.60	-47.92	-13.00	-34.92

Note: 1) Absolute Level = SG Level - Cable loss + Antenna Gain

2) Margin = Limit- Absolute Level

12 Band Edge Measurement

Test Requirement:	FCC Part 2.1051, 24.238(a)
Test Method:	ANSI/TIA-603-E:2016
	ANSI C63.26:2015
Test Mode:	TX transmitting

12.1 EUT Operation

Operating Environment **:**

Temperature:	23.5 °C
Humidity:	52.3 % RH
Atmospheric Pressure:	101.3kPa

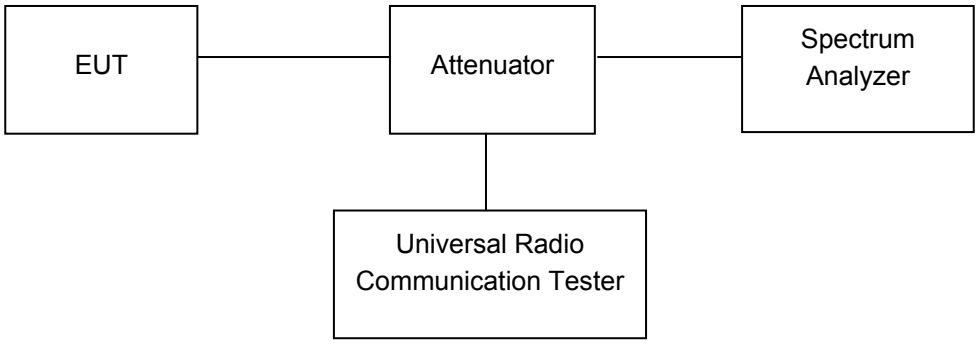
12.2 Test Procedure

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

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

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

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

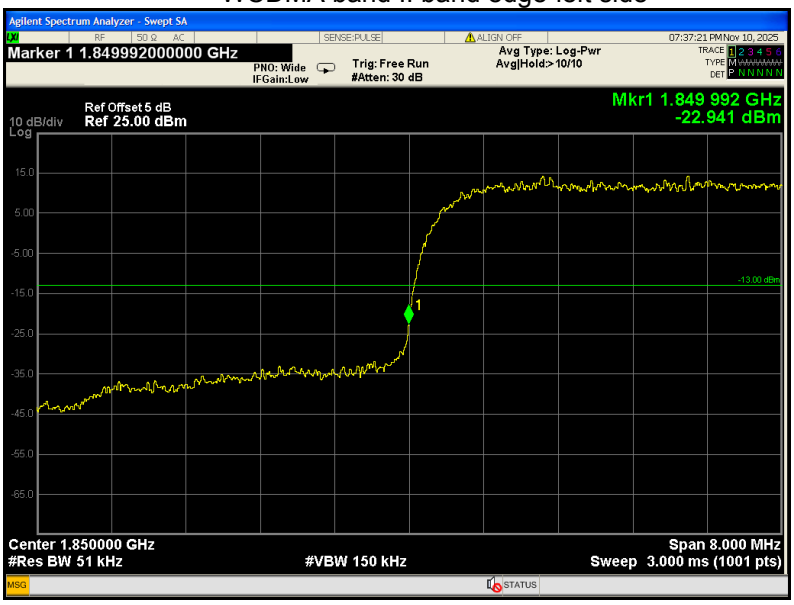


12.3 Test Result

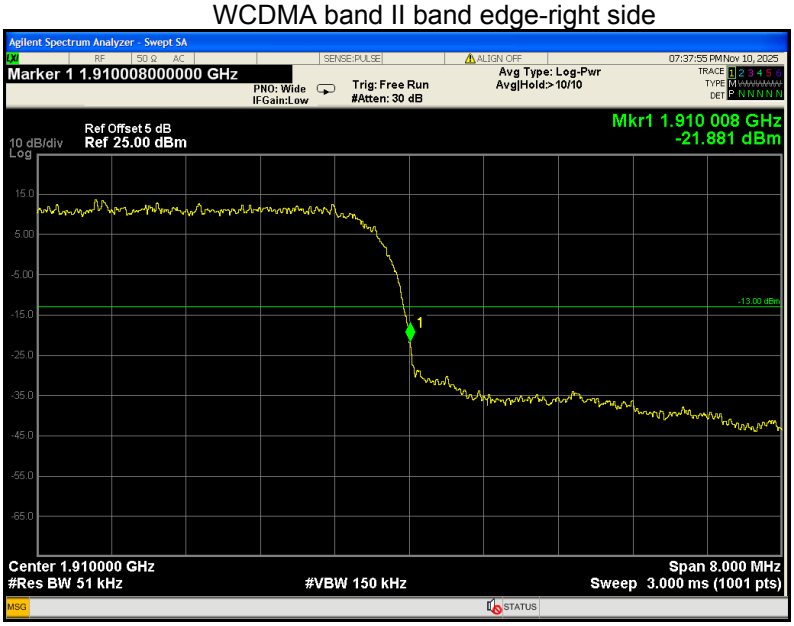
Test plots

Cellular Band (Part 24E)

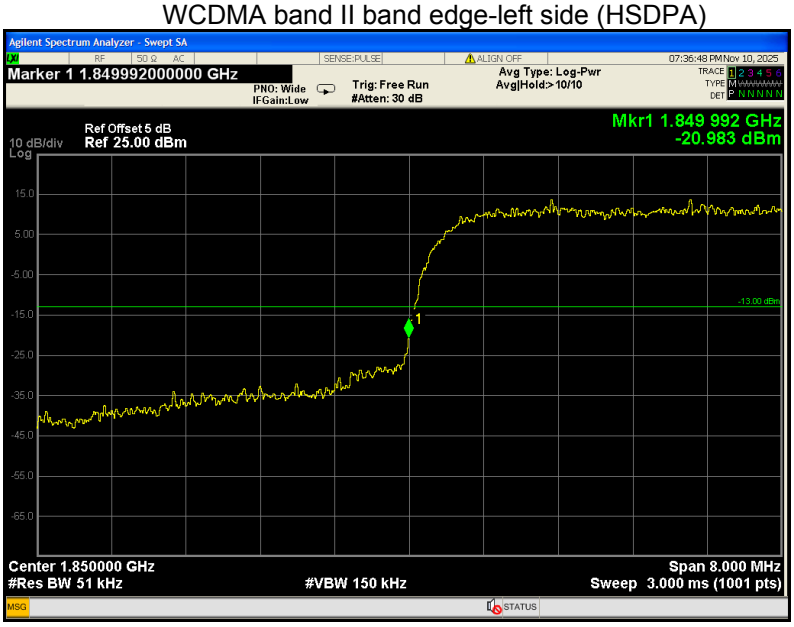
WCDMA band II band edge-left side



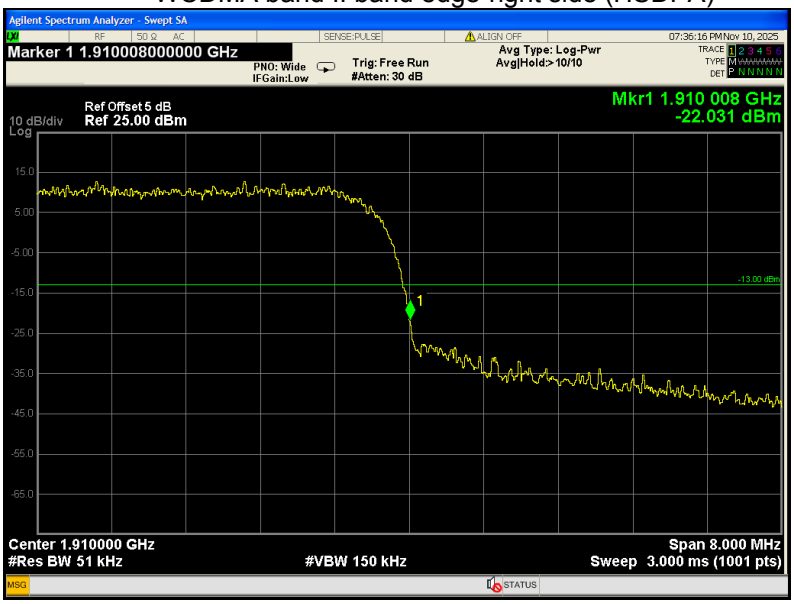
WCDMA band II band edge-right side



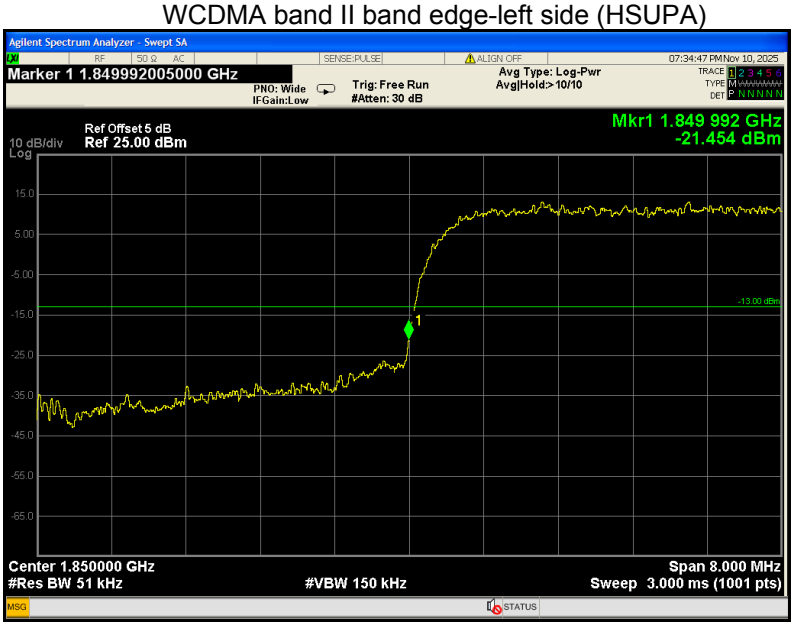
WCDMA band II band edge-left side (HSDPA)



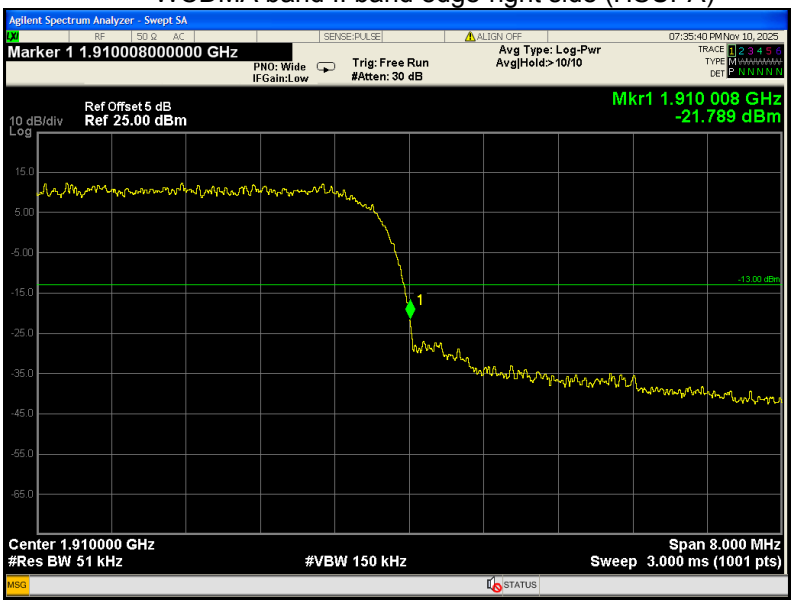
WCDMA band II band edge-right side (HSDPA)



WCDMA band II band edge-left side (HSUPA)



WCDMA band II band edge-right side (HSUPA)



13 Frequency Stability

Test Requirement: FCC Part 2.1055, 24.235

Test Method: ANSI/TIA-603-E:2016

ANSI C63.26:2015

Test Mode: TX transmitting

13.1 EUT Operation

Operating Environment **:**

Temperature: 22.9 °C

Humidity: 52.0 % RH

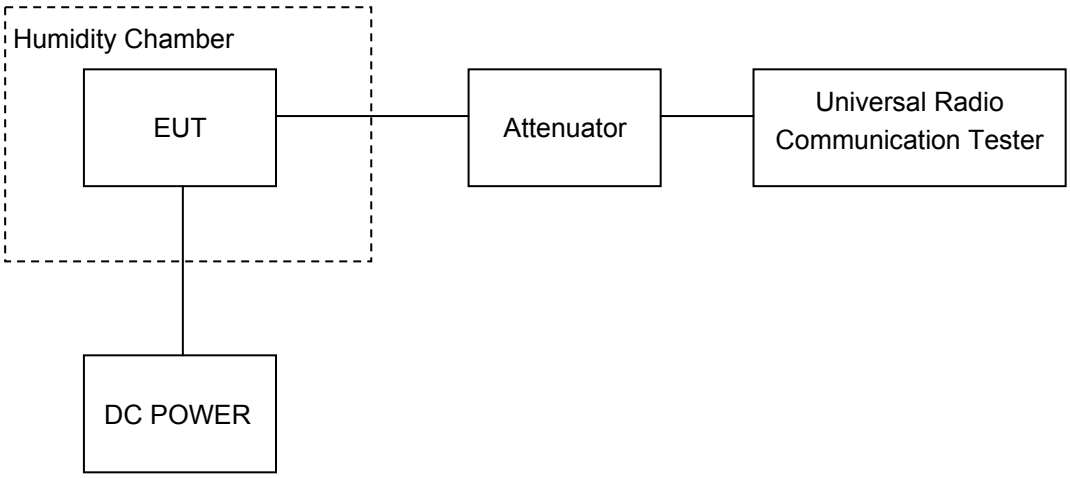
Atmospheric Pressure: 101.3kPa

13.2 Test Procedure

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

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

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



13.3 Test Result

PCS Band (Part 24E)

WCDMA Band II Test Frequency:1880.0MHz				
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	5	-12	-0.0064	2.5
40		3	0.0016	2.5
30		4	0.0021	2.5
20		-4	-0.0021	2.5
10		4	0.0021	2.5
0		-1	-0.0005	2.5
-10		5	0.0027	2.5
-20		-1	-0.0005	2.5
-30		-4	-0.0021	2.5
20	4.8	-1	-0.0005	2.5
20	5.5	-13	-0.0069	2.5

WCDMA Band II Test Frequency:1880.0MHz(HSDPA)				
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	5	-6	-0.0032	2.5
40		-10	-0.0053	2.5
30		-7	-0.0037	2.5
20		-4	-0.0021	2.5
10		-7	-0.0037	2.5
0		3	0.0016	2.5
-10		-11	-0.0059	2.5
-20		-6	-0.0032	2.5
-30		-1	-0.0005	2.5
20	4.8	3	0.0016	2.5
20	5.5	5	0.0027	2.5

WCDMA Band II Test Frequency:1880.0MHz(HSUPA)				
Temperature (℃)	Power Supply (VDC)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (ppm)
50	5	-6	-0.0032	2.5
40		1	0.0005	2.5
30		0	0.0000	2.5
20		-5	-0.0027	2.5
10		-3	-0.0016	2.5
0		3	0.0016	2.5
-10		1	0.0005	2.5
-20		-13	-0.0069	2.5
-30		-9	-0.0048	2.5
20	4.8	3	0.0016	2.5
20	5.5	-8	-0.0043	2.5

14 RF Exposure

Remark: refer to SAR test report: WTD25D09247158W005.

15 Photographs of test setup and EUT.

Note: Please refer to appendix: Appendix- L13-Photos.

====== End of Report ======