

TEST REPORT

Product Name: rugged tablet PC
FCC ID: 2ASDX-SD917R
Trademark: SENTER
Model Number: SD917R
Prepared For: Shandong Senter Electronic Co., Ltd.
Address: No. 18 Liuyishan Rd, New & Hi-Tech Area, Zibo, Shandong, China
Manufacturer: Shandong Senter Electronic Co., Ltd.
Address: No. 18 Liuyishan Rd, New & Hi-Tech Area, Zibo, Shandong, China
Prepared By: Shenzhen CTB Testing Technology Co., Ltd.
Address: 1&2/F., Building A, No.26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date: May. 31, 2023
Sample tested Date: May. 31, 2023 to Jul. 12, 2023
Issue Date: Jul. 12, 2023
Report No.: CTB230629041RFX
Test Standards: FCC Part 22H & 24E
Test Results: PASS
Remark: This is GSM radio test report.

Compiled by:

Reviewed by:

Approved by:

Zhou KuiArron LiuBin Mei / Director

Note: If there is any objection to the inspection results in this report, please submit a written report to the company within 15 days from the date of receiving the report. The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen CTB Testing Technology Co., Ltd. this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client. "*" indicates the testing items were fulfilled by subcontracted lab. "#" indicates the items are not in CNAS accreditation scope.

TABLE OF CONTENT

	Page
Test Report Declaration	
1. VERSION.....	3
2. TEST SUMMARY	4
3. MEASUREMENT UNCERTAINTY	5
4. PRODUCT INFORMATION AND TEST SETUP	6
4.1 Product Information	6
4.2 Test Setup Configuration.....	7
4.3 Support Equipment.....	7
4.4 Channel List	7
4.5 Test Mode	8
4.6 Test Environment	8
5. TEST FACILITY AND TEST INSTRUMENT USED	9
5.1 Test Facility	9
5.2 Test Instrument Used	9
6. RF OUTPUT POWER.....	11
6.1 Standard Applicable	11
6.2 Test Procedure.....	11
6.3 Environmental Conditions	11
6.4 Summary of Test Results/Plots	12
7. PEAK-TO-AVERAGE RATIO(PAR) OF TRANSMITTER	21
7.1 Standard Applicable	21
7.2 Test Procedure.....	21
7.3 Environmental Conditions	21
7.4 Summary of Test Results	22
8. EMISSION BANDWIDTH	24
8.1 Standard Applicable	24
8.2 Test Procedure.....	24
8.3 Environmental Conditions	24
8.4 Summary of Test Results/Plots	25
9. OUT OF BAND EMISSIONS AT ANTENNA TERMINAL	43
9.1 Standard Applicable	43
9.2 Test Procedure.....	43
9.3 Environmental Conditions	43
9.4 Summary of Test Results/Plots	44
10. SPURIOUS RADIATED EMISSIONS.....	74
10.1 Standard Applicable	74
10.2 Test Procedure.....	74
10.3 Environmental Conditions	74
10.4 Summary of Test Results/Plots	75
11. FREQUENCY STABILITY	79
11.1 Standard Applicable	79
11.2 Test Procedure.....	79
11.3 Environmental Conditions	79
11.4 Summary of Test Results/Plots	80
12. EUT PHOTO.....	93
13. EUT TEST PHOTO.....	94

(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
CTB230629041RFX	Jul. 12, 2023	Original	Valid

2. TEST SUMMARY

The Product has been tested according to the following specifications:

FCC Rules	Description of Test Item	Result
§1.1307, §2.1091	RF Exposure	Compliant
§22.913 (a), §24.232 (c)	RF Output Power	Compliant
§24.51	Peak-to-average Ratio(PAR) of Transmitter	Compliant
§22.917 (b), §24.238 (b)	Emission Bandwidth	Compliant
§22.917 (a), §24.238 (a)	Spurious Emissions at Antenna Terminal	Compliant
§22.917 (a), §24.238 (a)	Spurious Radiation Emissions	Compliant
§22.917 (a), §24.238 (a)	Out of Band Emissions	Compliant
§22.355, §24.235	Frequency Stability	Compliant

3. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Item	Uncertainty
Occupancy bandwidth	54.3kHz
Conducted output power Above 1G	0.9dB
Conducted output power below 1G	0.9dB
Power Spectral Density , Conduction	0.9dB
Conduction spurious emissions	2.0dB
Out of band emission	2.0dB
3m chamber Radiated spurious emission(30MHz-1GHz)	4.6dB
3m chamber Radiated spurious emission(1GHz-18GHz)	5.1dB
3m chamber Radiated spurious emission(18GHz-40GHz)	3.4dB
Receiver Reference Sensitivity level	1.9dB
humidity uncertainty	5.5%
Temperature uncertainty	0.63°C
frequency	1×10 ⁻⁷

4. PRODUCT INFORMATION AND TEST SETUP

4.1 Product Information

Model(s):	SD917R
Model Description:	N/A
Hardware Version:	V1.0
Software Version:	LP6203_XT80_EU_HD_SHIPPING-SAME_V1.1_2023.05.27
Operation Frequency:	GSM/GPRS/EDGE 850: 824~849MHz GSM/GPRS/EDGE 1900: 1850~1910MHz WCDMA Band 2: 1850~1910MHz WCDMA Band 4: 1710~1755MHz WCDMA Band 5: 824~849MHz
Max. RF output power:	GSM850: 31.82dBm GSM1900: 27.97dBm WCDMA Band 2: 22.98dBm WCDMA Band 4: 20.80dBm WCDMA Band 5: 21.33dBm
Type of Modulation:	GMSK, BPSK
Antenna installation:	Internal antenna
Antenna Gain:	GSM850: -1.5dBi, GSM1900: -1.0dBi WCDMA Band 2: -1.0dBi WCDMA Band 4: -1.0dBi WCDMA Band 5: -1.5dBi
Ratings:	Adapter: Input:100-240V~50/60Hz,0.6A Output: DC12.0V=1.5A, 18.0W DC 3.8V from battery

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

Item	Equipment	Mfr/Brand	Model/TypeNo.	SeriesNo.	Note
1.	Power Adapter	Huajin	HJ-1201500	/	/

Notes:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

4.4 Channel List

Testing Configure			
Support Band	Support Standard	Channel Frequency	Channel Number
GSM 850	GSM/GPRS/EDGE	824.2 MHz	128
		836.6 MHz	190
		848.8 MHz	251
PCS 1900	GSM/GPRS/EDGE	1850.2 MHz	512
		1880.0 MHz	661
		1909.8 MHz	810
		836.6 MHz	4183
		846.6 MHz	4233
WCDMA Band 2	WCDMA/HSDPA/HSUPA	1852.4 MHz	9262
		1880.0 MHz	9400
		1907.6 MHz	9538
WCDMA Band 4	WCDMA/HSDPA/HSUPA	1712.4 MHz	1312
		1740.0 MHz	1450
		1752.6 MHz	1513
WCDMA Band 5	WCDMA/HSDPA/HSUPA	826.4 MHz	4132
		836.6 MHz	4183
		846.6 MHz	4233

Note: the transmitter has been tested on the communications mode of GSM, GPRS, EDGE, WCDMA, HSDPA, HSUPA compliance test and record the worst case.

4.5 Test Mode

Test Mode List		
Test Mode	Description	Remark
TM1	GSM 850	Low, Middle, High Channels
TM2	GPRS 850	Low, Middle, High Channels
TM3	EDGE 850	Low, Middle, High Channels
TM4	GSM 1900	Low, Middle, High Channels
TM5	GPRS 1900	Low, Middle, High Channels
TM6	EDGE 1900	Low, Middle, High Channels
TM7	WCDMA Band 5	Low, Middle, High Channels
TM8	HSDPA Band 5	Low, Middle, High Channels
TM9	HSUPA Band 5	Low, Middle, High Channels
TM10	WCDMA Band 2	Low, Middle, High Channels
TM11	HSDPA Band 2	Low, Middle, High Channels
TM12	HSUPA Band 2	Low, Middle, High Channels
TM13	WCDMA Band 4	Low, Middle, High Channels
TM14	HSDPA Band 4	Low, Middle, High Channels
TM15	HSUPA Band 4	Low, Middle, High Channels

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	3.8V
Normal Temperature(°C)	23
Low Temperature(°C)	0
High Temperature(°C)	40

5. TEST FACILITY AND TEST INSTRUMENT USED

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at 1&2F., Building A, No. 26, Xinhe Road, Xinqiao, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	2024.07.05
2	Power Sensor	Agilent	U2021XA	MY56120032	2024.07.05
3	Power Sensor	Agilent	U2021XA	MY56120034	2024.07.05
4	Communication test set	R&S	CMW500	108058	2024.07.05
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	2024.07.05
6	Signal Generator	Agilent	N5181A	MY50140365	2024.07.05
7	Vector signal generator	Agilent	N5182A	MY47420195	2024.07.05
8	Communication test set	Agilent	E5515C	MY50102567	2024.07.06
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	2024.07.05
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	2024.07.06
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	2024.07.06
12	BT&WI-FI Automatic test software	Microwave	MTS8000	Ver. 2.0.0.0	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	2023.10.30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	2024.07.05
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/
16	966 chamber	C.R.T.	966	/	2024.08.11
17	Receiver	R&S	ESPI	100362	2024.07.05
18	Amplifier	HP	8447E	2945A02747	2024.07.05
19	Amplifier	Agilent	8449B	3008A01838	2024.07.05
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	2024.07.08



21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	2024.07.08
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	2024.07.08
24	loop antenna	ZHINAN	ZN30900A	GTS534	/
25	40G Horn antenna	A/H/System	SAS-574	588	2023.10.30
26	Amplifier	AEROFLEX	Aeroflex	097	2023.10.30

6. RF OUTPUT POWER

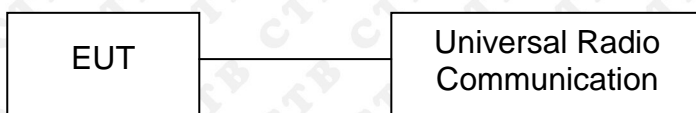
6.1 Standard Applicable

According to §22.913(a)(2), The ERP of mobile and portable stations transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to §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.

6.2 Test Procedure

Conducted output power test method:



Radiated power test method:

1. The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
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.

6.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	54%
ATM Pressure:	1010 mbar

6.4 Summary of Test Results/Plots

Max. Radiated Power

ERP For GSM Mode GSM850

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
824.2	31.04	1.5	0	H	1.5	1	30.54	38.45
824.2	31.30	1.5	0	V	1.5	1	30.80	38.45
Middle Channel								
836.6	31.16	1.5	0	H	1.5	1	30.66	38.45
836.6	30.64	1.5	31.43	V	1.5	1	30.14	38.45
High Channel								
848.8	30.67	1.5	0	H	1.5	1	30.17	38.45
848.8	30.47	1.5	0	V	1.5	1	29.97	38.45

EIRP For GSM Mode PCS1900

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
1850.2	27.84	1.5	0	H	1.9	1	26.94	33
1850.2	27.21	1.5	0	V	1.9	1	26.31	33
Middle Channel								
1880	27.24	1.5	0	H	1.9	1	26.34	33
1880	27.20	1.5	0	V	1.9	1	26.30	33
High Channel								
1909.8	26.07	1.5	0	H	1.9	1	25.17	33
1909.8	26.30	1.5	0	V	1.9	1	25.40	33



ERP For GPRS Mode GSM850

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
824.2	30.82	1.5	0	H	1.5	1	30.32	38.45
824.2	31.65	1.5	0	V	1.5	1	31.15	38.45
Middle Channel								
836.6	30.79	1.5	0	H	1.5	1	30.29	38.45
836.6	30.97	1.5	0	V	1.5	1	30.47	38.45
High Channel								
848.8	30.24	1.5	0	H	1.5	1	29.74	38.45
848.8	30.26	1.5	0	V	1.5	1	29.76	38.45

EIRP For GPRS Mode PCS1900

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
1850.2	27.85	1.5	0	H	1.9	1	26.95	33
1850.2	27.30	1.5	0	V	1.9	1	26.40	33
Middle Channel								
1880	26.93	1.5	0	H	1.9	1	26.03	33
1880	27.21	1.5	0	V	1.9	1	26.31	33
High Channel								
1909.8	26.38	1.5	0	H	1.9	1	25.48	33
1909.8	26.27	1.5	0	V	1.9	1	25.37	33



ERP For EDGE Mode GSM850

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
824.2	25.03	1.5	0	H	1.5	1	24.53	38.45
824.2	25.62	1.5	0	V	1.5	1	25.12	38.45
Middle Channel								
836.6	26.36	1.5	0	H	1.5	1	25.86	38.45
836.6	25.63	1.5	0	V	1.5	1	25.13	38.45
High Channel								
848.8	26.90	1.5	0	H	1.5	1	26.40	38.45
848.8	26.69	1.5	0	V	1.5	1	26.19	38.45

EIRP For EDGE Mode PCS1900

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
1850.2	24.47	1.5	0	H	1.9	1	23.57	33.00
1850.2	24.78	1.5	0	V	1.9	1	23.88	33.00
Middle Channel								
1880	24.55	1.5	0	H	1.9	1	23.65	33.00
1880	25.19	1.5	0	V	1.9	1	24.29	33.00
High Channel								
1909.8	25.34	1.5	0	H	1.9	1	24.44	33.00
1909.8	25.19	1.5	0	V	1.9	1	24.29	33.00

ERP For WCDMA Mode Band 5

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	21.17	1.5	0	H	1.5	1	20.67	38.45
826.4	21.30	1.5	0	V	1.5	1	20.80	38.45
Middle Channel								
836.6	20.13	1.5	0	H	1.5	1	19.63	38.45
836.6	20.95	1.5	0	V	1.5	1	20.45	38.45
High Channel								
846.6	20.87	1.5	0	H	1.5	1	20.37	38.45
846.6	20.38	1.5	0	V	1.5	1	19.88	38.45

ERP For HSDPA Mode Band 5

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	19.88	1.5	0	H	1.5	1	19.38	38.45
826.4	19.93	1.5	0	V	1.5	1	19.43	38.45
Middle Channel								
836.6	19.77	1.5	0	H	1.5	1	19.27	38.45
836.6	19.08	1.5	0	V	1.5	1	18.58	38.45
High Channel								
846.6	19.18	1.5	0	H	1.5	1	18.68	38.45
846.6	19.15	1.5	0	V	1.5	1	18.65	38.45

ERP For HSUPA Mode Band 5

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
826.4	17.85	1.5	0	H	1.5	1	17.35	38.45
826.4	18.29	1.5	0	V	1.5	1	17.79	38.45
Middle Channel								
836.6	19.50	1.5	0	H	1.5	1	19.00	38.45
836.6	19.42	1.5	0	V	1.5	1	18.92	38.45
High Channel								
846.6	19.27	1.5	0	H	1.5	1	18.77	38.45
846.6	19.51	1.5	0	V	1.5	1	19.01	38.45

EIRP For WCDMA Mode Band 2

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
1852.4	29.37	1.5	0	H	1.9	1	28.47	33
1852.4	29.01	1.5	0	V	1.9	1	28.11	33
Middle Channel								
1880	29.06	1.5	0	H	1.9	1	28.16	33
1880	28.00	1.5	0	V	1.9	1	27.10	33
High Channel								
1907.6	27.15	1.5	0	H	1.9	1	26.25	33
1907.6	27.71	1.5	0	V	1.9	1	26.81	33

EIRP For HSDPA Mode Band 2

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
1852.4	19.56	1.5	0	H	1.9	1	18.66	33
1852.4	20.64	1.5	0	V	1.9	1	19.74	33
Middle Channel								
1880	20.60	1.5	0	H	1.9	1	19.70	33
1880	19.44	1.5	0	V	1.9	1	18.54	33
High Channel								
1907.6	19.58	1.5	0	H	1.9	1	18.68	33
1907.6	18.97	1.5	0	V	1.9	1	18.07	33

EIRP For HSUPA Mode Band 2

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 24E Limit
MHz	dBm	Meter	Degree	H / V	dB	dB	dBm	dBm
Low Channel								
1852.4	18.12	1.5	0	H	1.9	1	17.22	33
1852.4	18.25	1.5	0	V	1.9	1	17.35	33
Middle Channel								
1880	19.48	1.5	0	H	1.9	1	18.58	33
1880	19.89	1.5	0	V	1.9	1	18.99	33
High Channel								
1907.6	19.26	1.5	0	H	1.9	1	18.36	33
1907.6	20.57	1.5	0	V	1.9	1	19.67	33

ERP For WCDMA Mode Band 4

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
1712.4	20.52	1.5	0	H	1.5	1	20.02	38.45
1712.4	19.70	1.5	0	V	1.5	1	19.20	38.45
Middle Channel								
1740	20.22	1.5	0	H	1.5	1	19.72	38.45
1740	20.26	1.5	0	V	1.5	1	19.76	38.45
High Channel								
1752.6	20.03	1.5	0	H	1.5	1	19.53	38.45
1752.6	20.39	1.5	0	V	1.5	1	19.89	38.45

ERP For HSDPA Mode Band 4

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
1712.4	19.22	1.5	0	H	1.5	1	18.72	38.45
1712.4	19.17	1.5	0	V	1.5	1	18.67	38.45
Middle Channel								
1740	19.50	1.5	0	H	1.5	1	19.00	38.45
1740	18.95	1.5	0	V	1.5	1	18.45	38.45
High Channel								
1752.6	18.86	1.5	0	H	1.5	1	18.36	38.45
1752.6	18.98	1.5	0	V	1.5	1	18.48	38.45

ERP For HSUPA Mode Band 4

Frequency	Substitute SG	Height	Table	Polar	Cable loss	Antenna Gain	Result	FCC Part 22H Limit
MHz	dBm	Meter	Degree	H / V	dB	dBd	dBm	dBm
Low Channel								
1712.4	18.39	1.5	0	H	1.5	1	17.89	38.45
1712.4	18.38	1.5	0	V	1.5	1	17.88	38.45
Middle Channel								
1740	19.46	1.5	0	H	1.5	1	18.96	38.45
1740	19.49	1.5	0	V	1.5	1	18.99	38.45
High Channel								
1752.6	1752.6	19.12	1.5	0	H	1.5	1	38.45
1752.6	1752.6	19.24	1.5	0	V	1.5	1	38.45

Note: Result = Substitute - Cable loss + Antenna Gain

**Max. Conducted Output Power**

For Cellular Band (GSM850)

Test Mode	Channel	Frequency (MHz)	Average Power (dBm)	FCC Part 22.913 Limit (dBm)
GSM	Low Channel	824.2	31.82	38.45
	Middle Channel	836.6	31.43	38.45
	High Channel	848.8	31.08	38.45
GPRS(1 Slot)	Low Channel	824.2	31.79	38.45
	Middle Channel	836.6	31.31	38.45
	High Channel	848.8	30.89	38.45
EDGE(1 Slot)	Low Channel	824.2	25.96	38.45
	Middle Channel	836.6	26.51	38.45
	High Channel	848.8	26.93	38.45

For PCS Band (GSM1900)

Test Mode	Channel	Frequency (MHz)	Average Power (dBm)	FCC Part 24.232 Limit (dBm)
GSM	Low Channel	1850.2	27.97	33.0
	Middle Channel	1880.0	27.85	33.0
	High Channel	1909.8	26.97	33.0
GPRS(1 Slot)	Low Channel	1850.2	27.94	33.0
	Middle Channel	1880.0	27.80	33.0
	High Channel	1909.8	26.94	33.0
EDGE(1 Slot)	Low Channel	1850.2	24.83	33.0
	Middle Channel	1880.0	25.31	33.0
	High Channel	1909.8	25.67	33.0



For WCDMA Band 5

Test Mode	Channel	Frequency (MHz)	Average Power (dBm)	FCC Part 22.913 Limit (dBm)
WCDMA	Low Channel	826.4	21.33	38.45
	Middle Channel	836.6	21.00	38.45
	High Channel	846.6	20.95	38.45
HSDPA	Low Channel	826.4	20.32	38.45
	Middle Channel	836.6	20.04	38.45
	High Channel	846.6	20.02	38.45
HSUPA	Low Channel	826.4	18.64	38.45
	Middle Channel	836.6	19.92	38.45
	High Channel	846.6	19.87	38.45

For WCDMA Band 2

Test Mode	Channel	Frequency (MHz)	Average Power (dBm)	FCC Part 24.232 Limit (dBm)
WCDMA	Low Channel	1852.4	22.98	33.00
	Middle Channel	1880.0	22.54	33.00
	High Channel	1907.6	22.84	33.00
HSDPA	Low Channel	1852.4	19.91	33.00
	Middle Channel	1880.0	20.23	33.00
	High Channel	1907.6	19.86	33.00
HSUPA	Low Channel	1852.4	18.25	33.00
	Middle Channel	1880.0	20.04	33.00
	High Channel	1907.6	19.59	33.00



For WCDMA Band 4

Test Mode	Channel	Frequency (MHz)	Average Power (dBm)	FCC Part 24.232 Limit (dBm)
WCDMA	Low Channel	1712.4	20.53	33.00
	Middle Channel	1740	20.80	33.00
	High Channel	1752.6	20.67	33.00
HSDPA	Low Channel	1712.4	19.60	33.00
	Middle Channel	1740	19.80	33.00
	High Channel	1752.6	19.73	33.00
HSUPA	Low Channel	1712.4	18.63	33.00
	Middle Channel	1740	19.67	33.00
	High Channel	1752.6	19.55	33.00

7. PEAK-TO-AVERAGE RATIO(PAR) OF TRANSMITTER

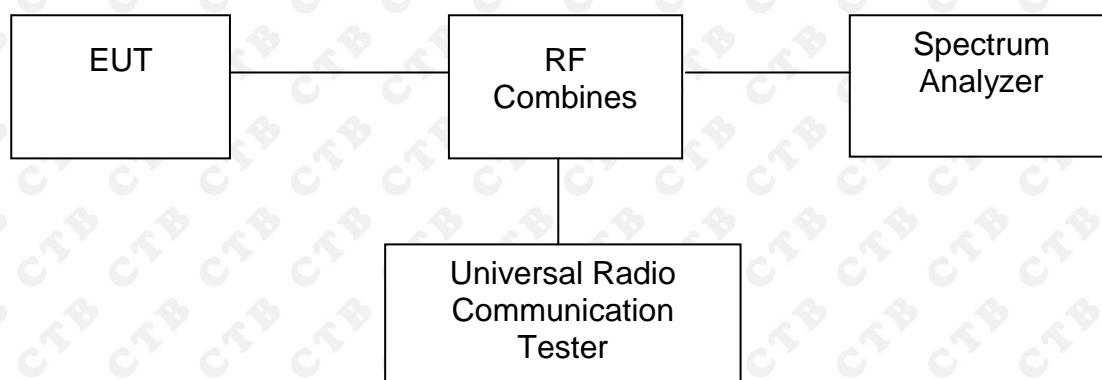
7.1 Standard Applicable

According to §24.232(d), Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

7.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 30kHz and the peak-to-average ratio (PAR) of the transmission was recorded. Record the maximum PAPR level associated with a probability of 0.1%.

Test Configuration for the emission bandwidth testing:



7.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	54%
ATM Pressure:	1010 mbar

7.4 Summary of Test Results

Only the worst case was selected to record
For GSM850

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
GSM	190	836.6	2.69	13
GPRS(1 Slot)	190	836.6	2.72	13
EDGE(1 Slot)	190	836.6	7.16	13

For PCS 1900

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
GSM	512	1850.2	2.69	13
GPRS(1 Slot)	512	1850.2	2.72	13
EDGE(1 Slot)	512	1850.2	6.03	13

For WCDMA Band 5

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
WCDMA	4182	836.4	2.94	13
HSDPA	4182	836.4	3.02	13
HSUPA	4182	836.4	3.47	13

For WCDMA Band 2

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
WCDMA	9400	1880	2.34	13
HSDPA	9400	1880	2.95	13
HSUPA	9400	1880	3.40	13

For WCDMA Band 4

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
WCDMA	1450	1740	3.05	13
HSDPA	1450	1740	3.13	13
HSUPA	1450	1740	3.57	13

GSM :



WCDMA:



8. EMISSION BANDWIDTH

8.1 Standard Applicable

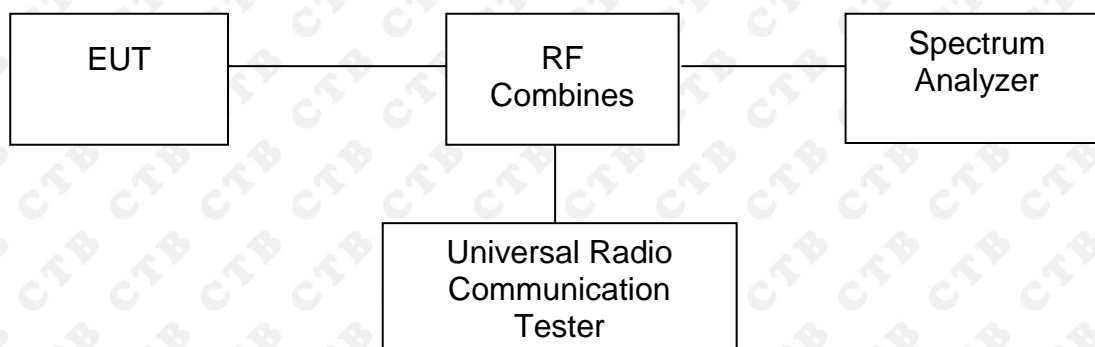
According to §22.917(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

According to §24.238(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

8.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 10kHz for GSM mode and 100kHz for WCDMA mode, VBW shall be at least 3 times the RBW, and the 26dB bandwidth was recorded.

Test Configuration for the emission bandwidth testing:



8.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	54%
ATM Pressure:	1010 mbar

8.4 Summary of Test Results/Plots

For Cellular Band

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM	128	824.2	247.536	313.547
	190	836.6	243.762	310.477
	251	848.8	244.818	317.932
GPRS	128	824.2	248.587	316.820
	190	836.6	245.268	305.265
	251	848.8	246.846	322.060
EDGE	128	824.2	255.534	321.329
	190	836.6	246.940	313.437
	251	848.8	254.249	315.457

For PCS Band

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM	512	1850.2	241.671	310.415
	661	1880.0	243.471	305.373
	810	1909.8	249.857	309.315
GPRS	512	1850.2	242.576	313.442
	661	1880.0	245.252	313.137
	810	1909.8	239.903	305.715
EDGE	512	1850.2	245.680	302.113
	661	1880.0	247.940	303.294
	810	1909.8	244.443	310.084

For Band 5

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
WCDMA	4132	826.4	4177.131	4714.226
	4183	836.6	4169.240	4686.951
	4233	846.6	4192.239	4727.734
HSDPA	4132	826.4	4172.653	4716.957
	4183	836.6	4183.596	4713.512
	4233	846.6	4198.752	4729.613
HSUPA	4132	826.4	4163.199	4716.169
	4183	836.6	4212.095	4974.194
	4233	846.6	4168.267	4691.974

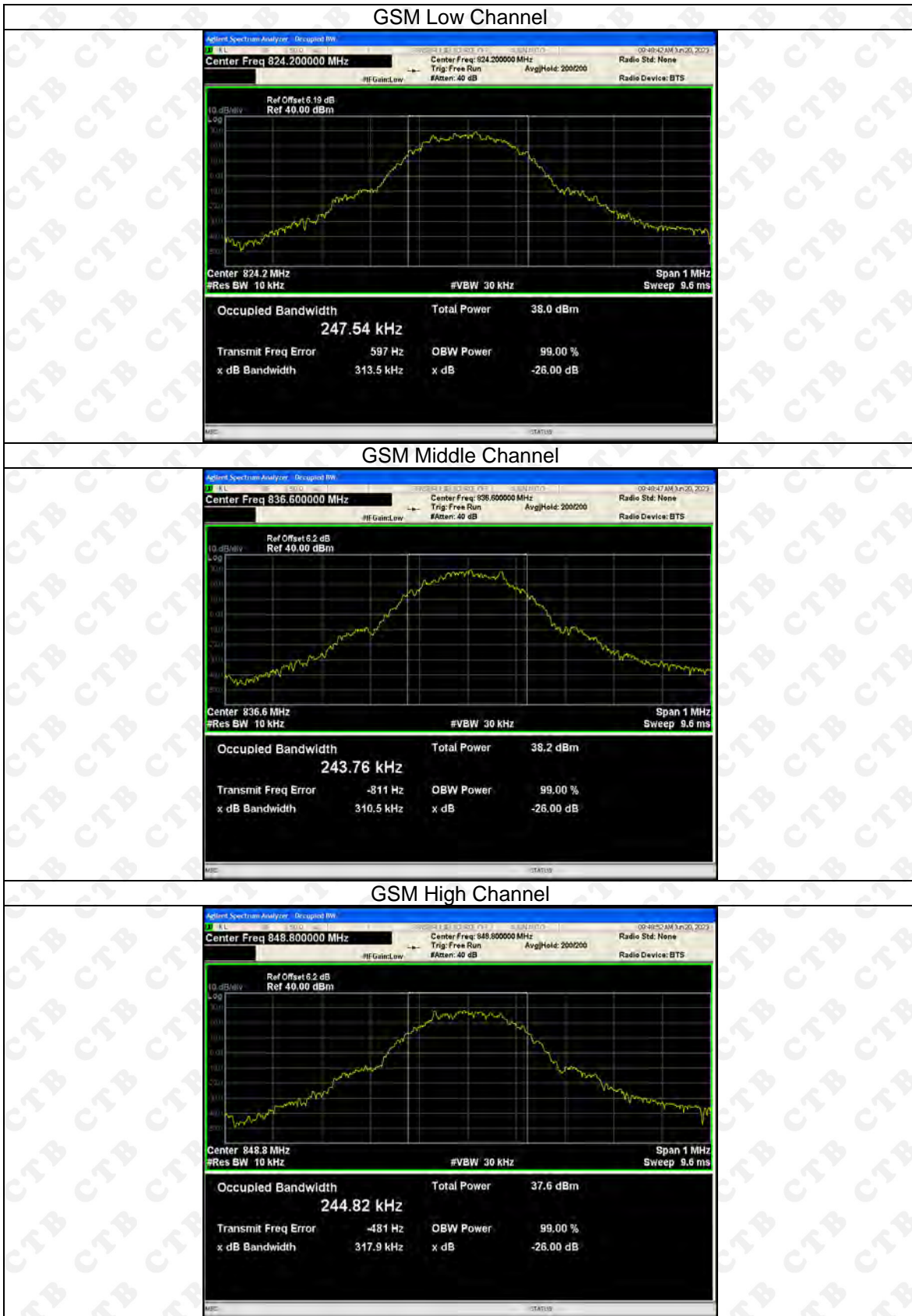
For Band 2

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
WCDMA	9262	1852.4	4312.763	5810.074
	9400	1880.0	4326.553	6000.000
	9538	1907.6	4405.789	6000.000
HSDPA	9262	1852.4	4178.113	4704.545
	9400	1880.0	4182.358	4740.170
	9538	1907.6	4177.894	4713.792
HSUPA	9262	1852.4	4173.442	4702.747
	9400	1880.0	4168.441	4696.685
	9538	1907.6	4181.505	4691.519

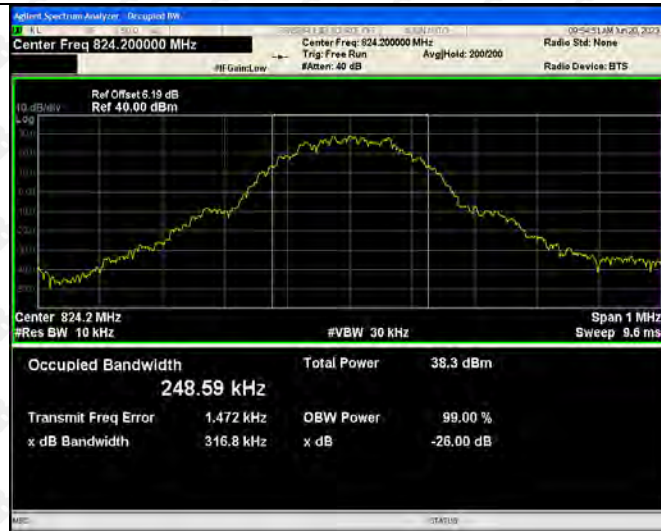
For Band 4

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
WCDMA	1312	1712.4	4165.332	4712.013
	1450	1740	4157.266	4685.407
	1513	1752.6	4180.170	4668.240
HSDPA	1312	1712.4	4191.535	4682.995
	1450	1740	4174.961	4697.162
	1513	1752.6	4169.363	4704.936
HSUPA	1312	1712.4	4174.021	4690.620
	1450	1740	4185.005	4716.088
	1513	1752.6	4168.771	4675.873

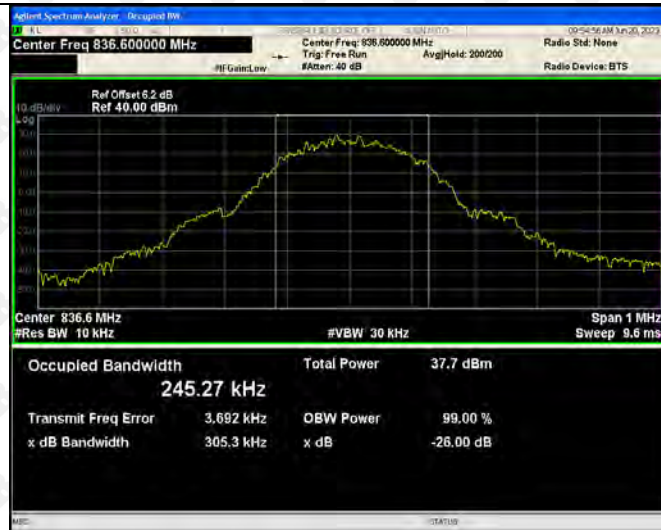
For Cellular Band



GPRS Low Channel



GPRS Middle Channel



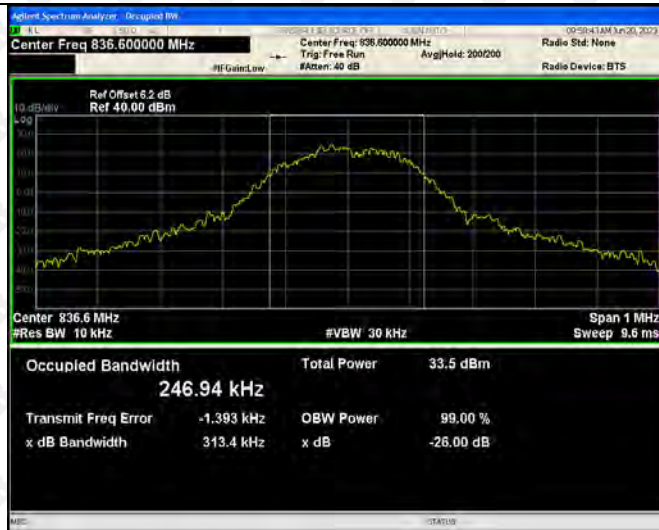
GPRS High Channel



EDGE Low Channel



EDGE Middle Channel



EDGE High Channel



For PCS Band



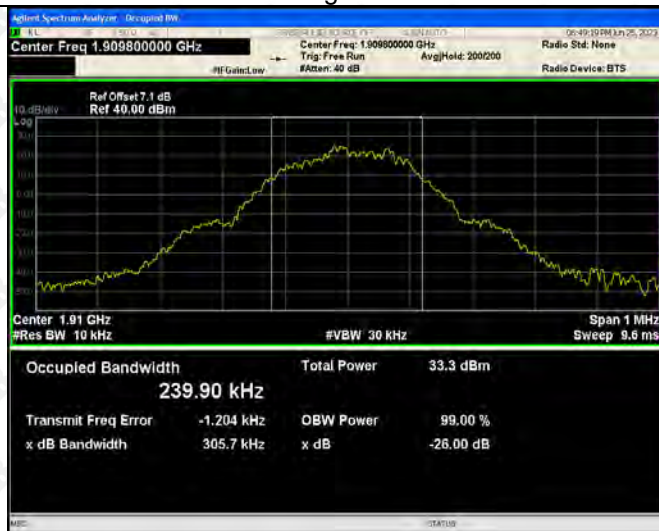
GPRS Low Channel



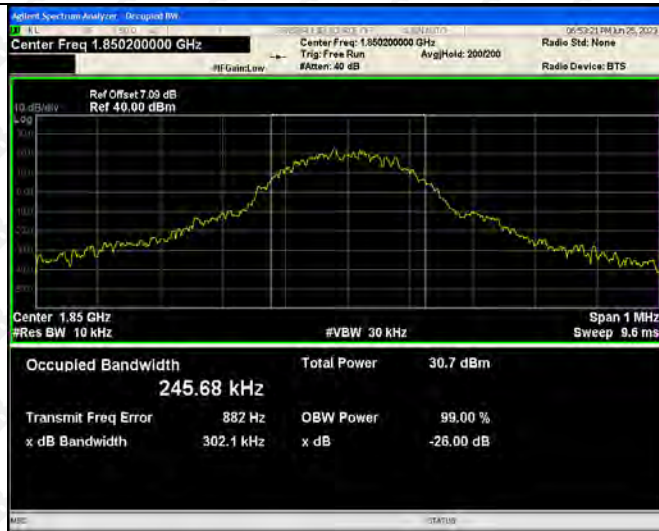
GPRS Middle Channel



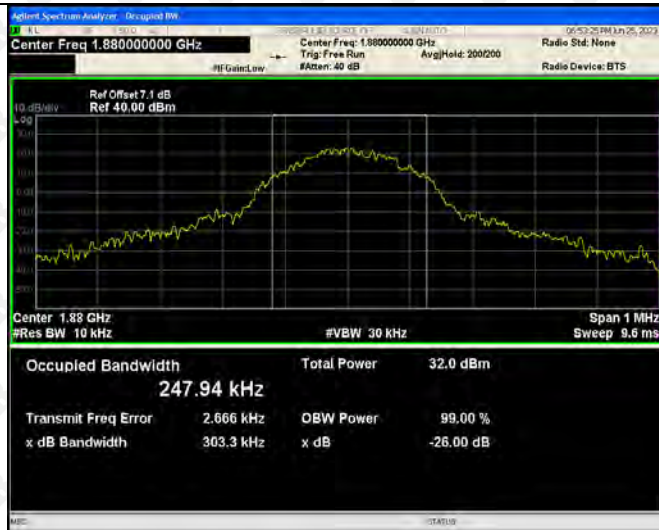
GPRS High Channel



EDGE Low Channel



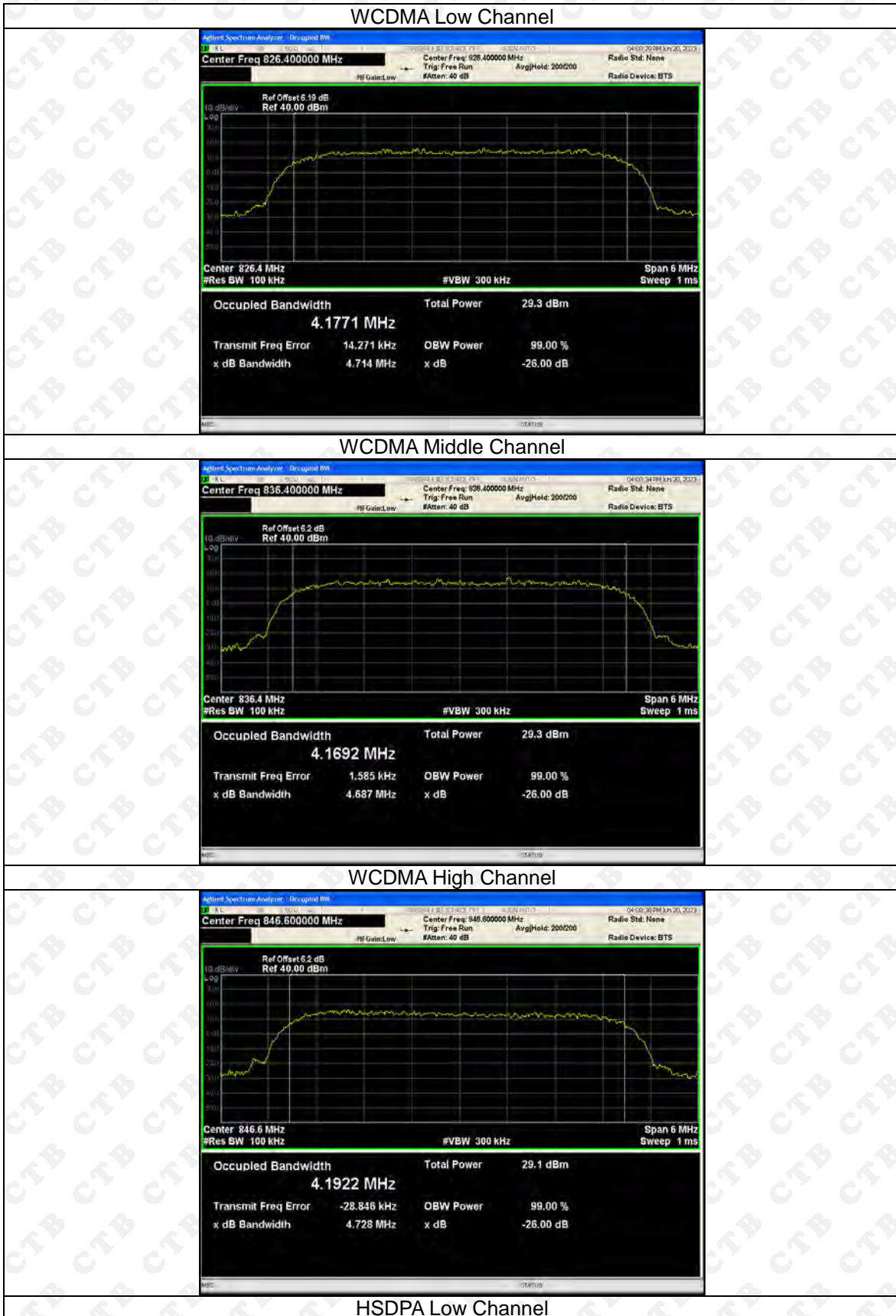
EDGE Middle Channel

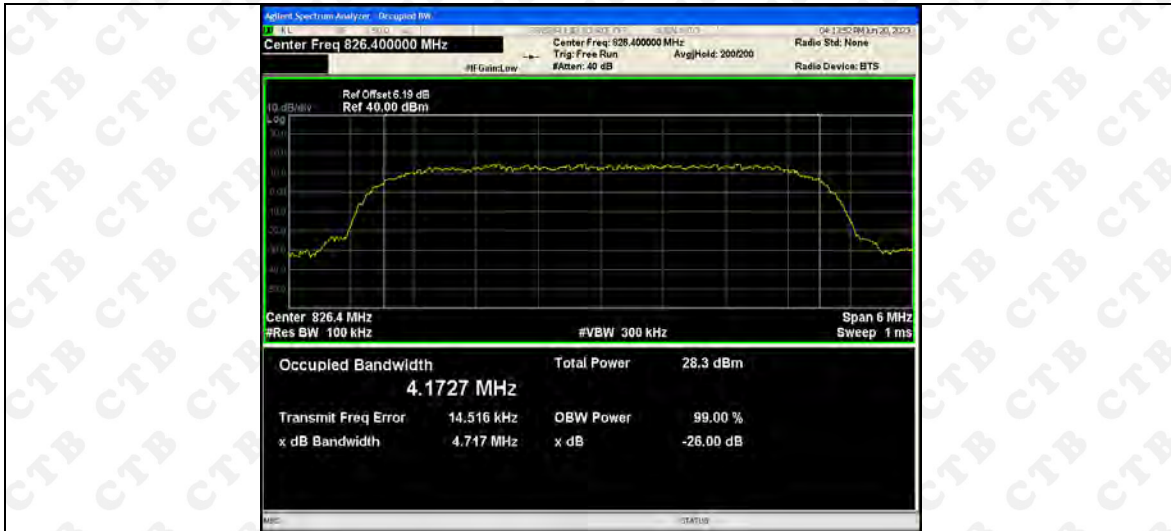


EDGE High Channel

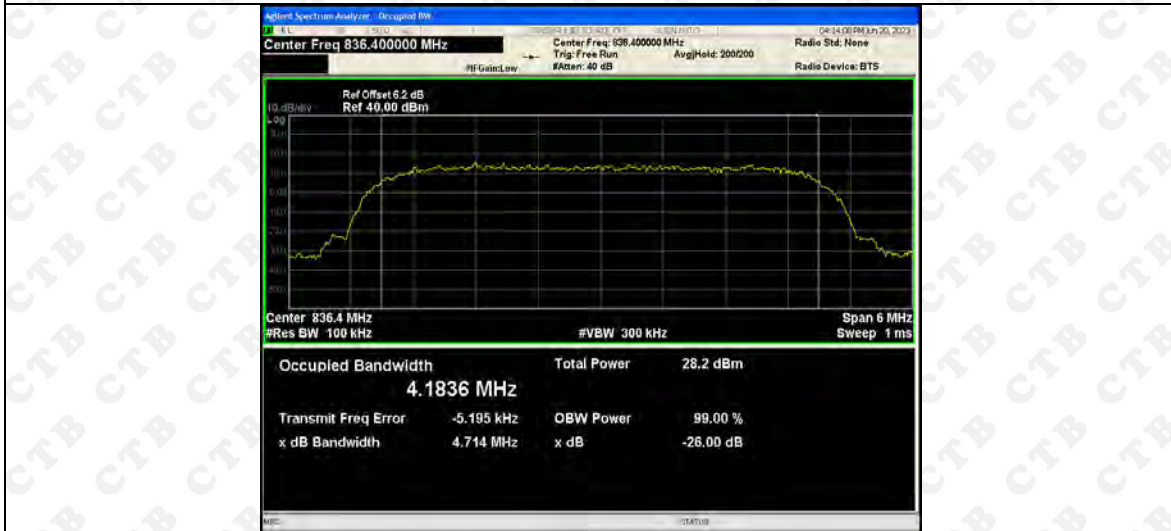


For Band V

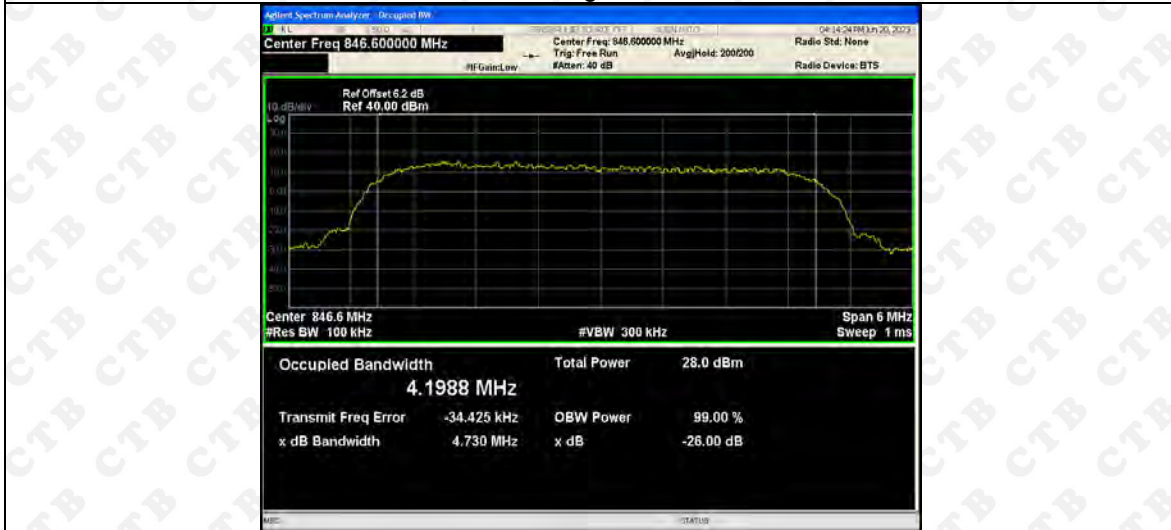




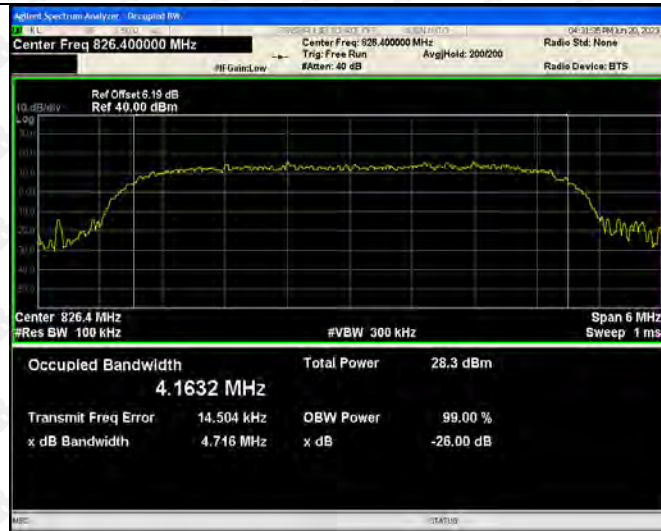
HSDPA Middle Channel



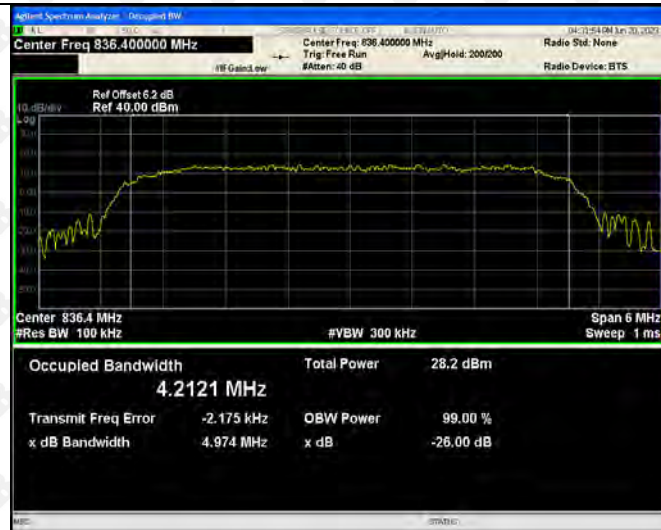
HSDPA High Channel



HSUPA Low Channel



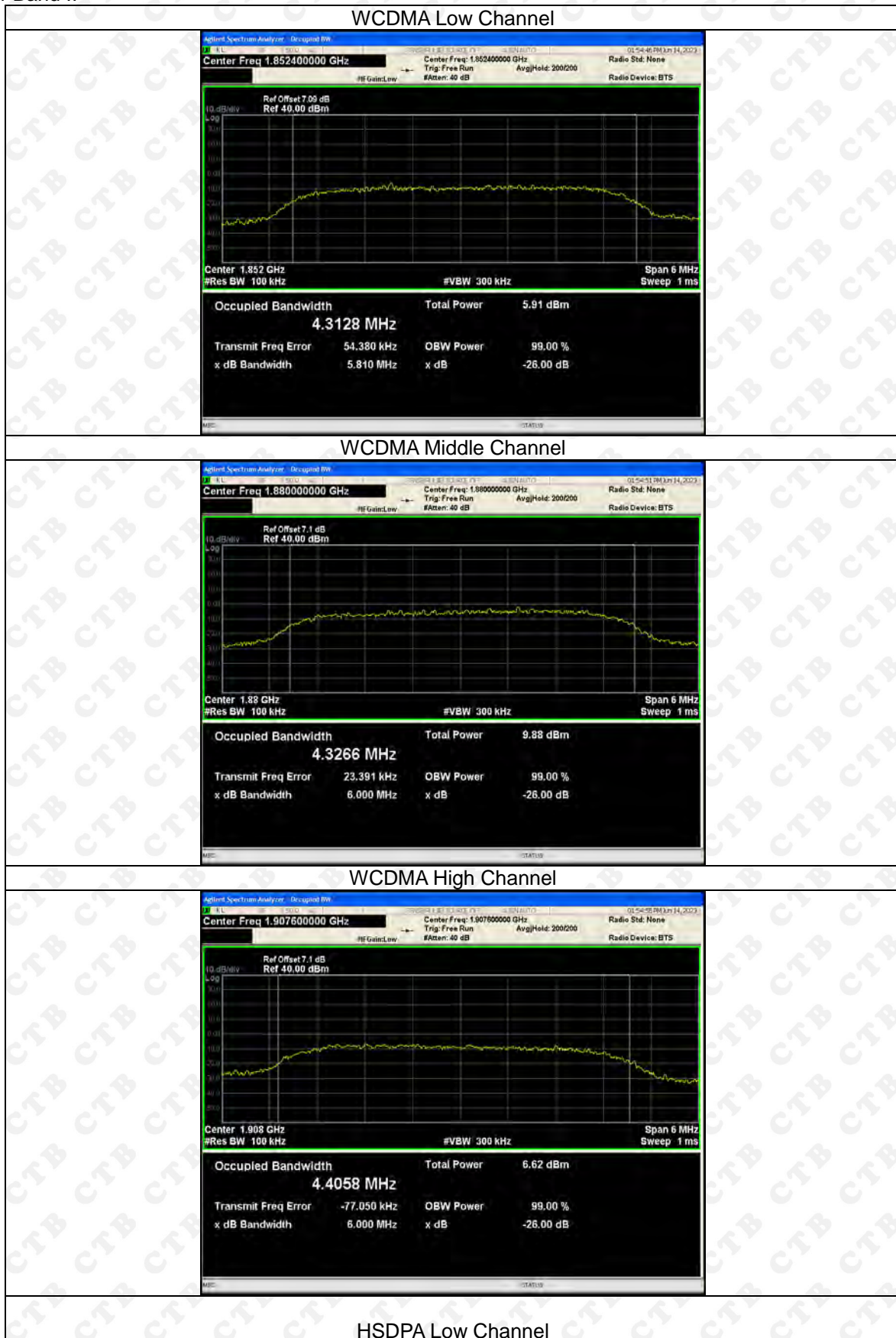
HSUPA Middle Channel

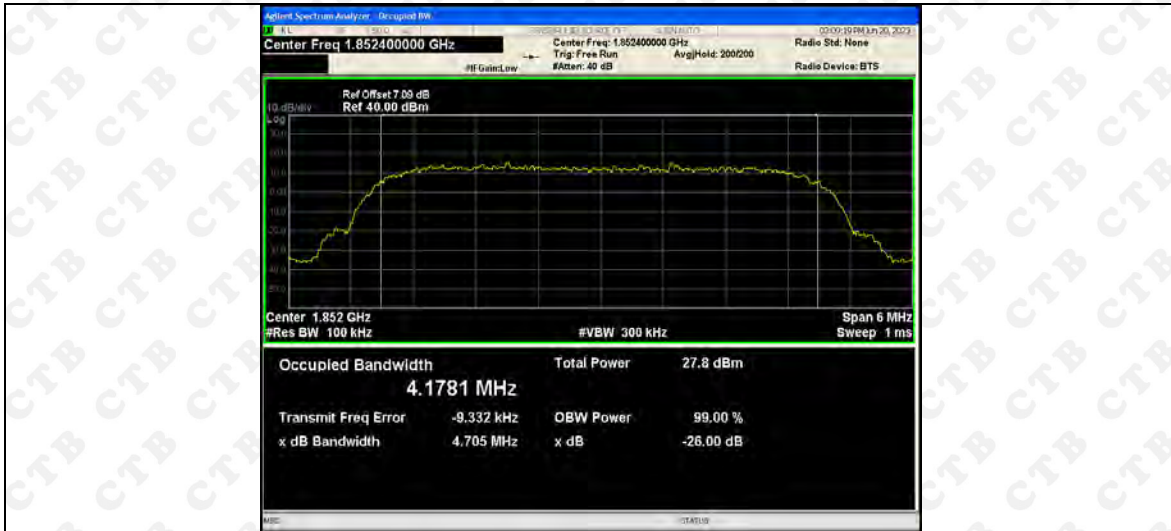


HSUPA High Channel

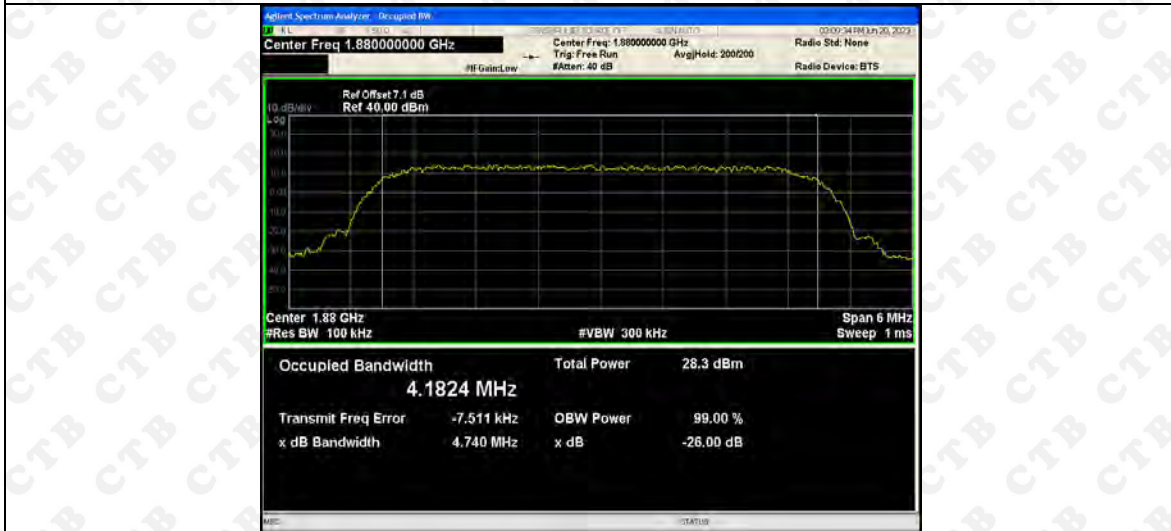


For Band II

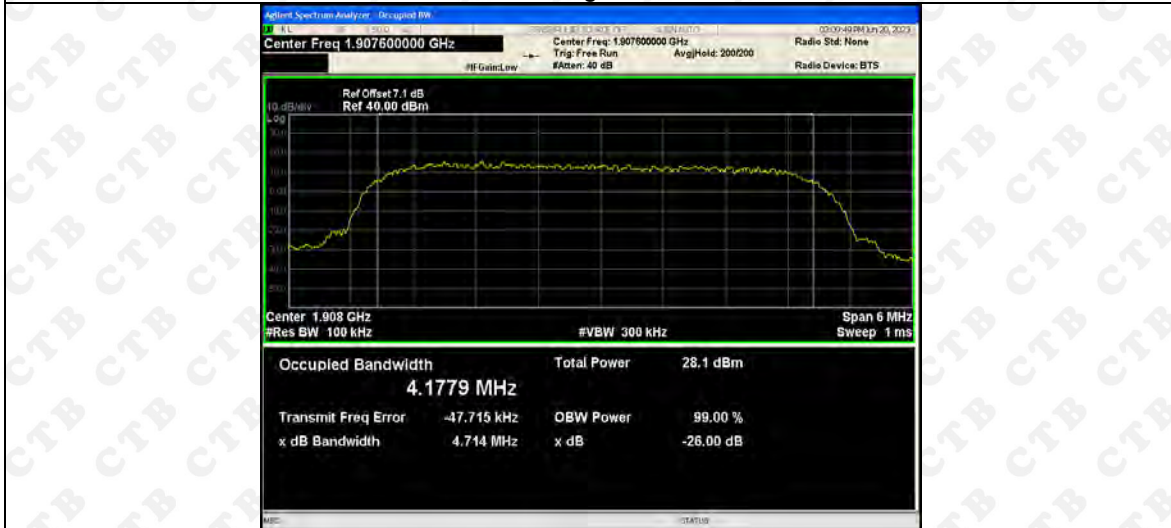




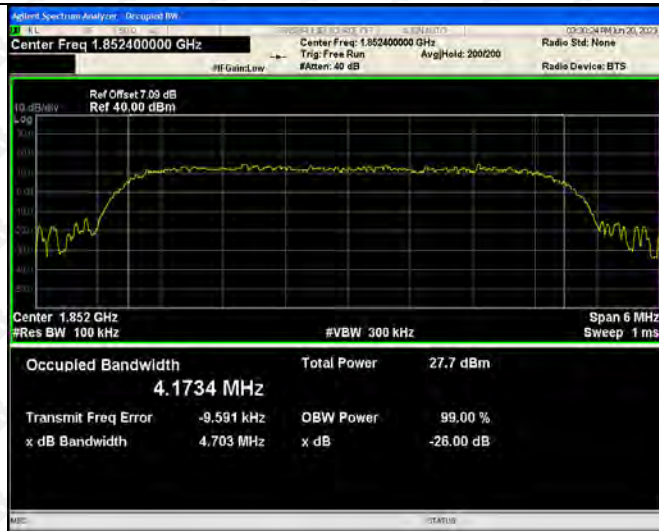
HSDPA Middle Channel



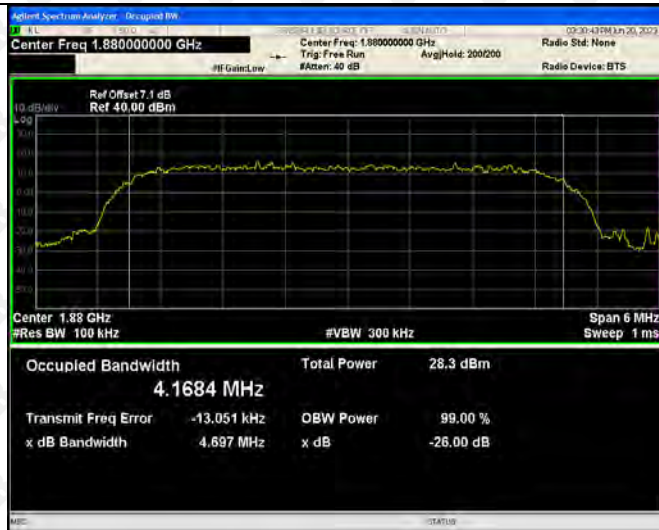
HSDPA High Channel



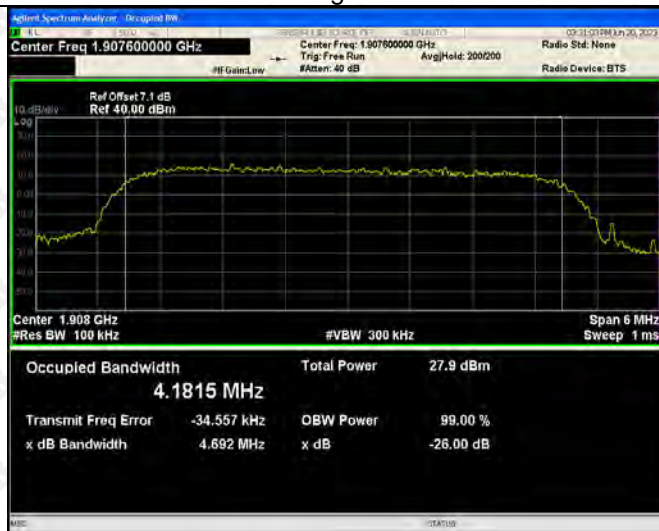
HSUPA Low Channel



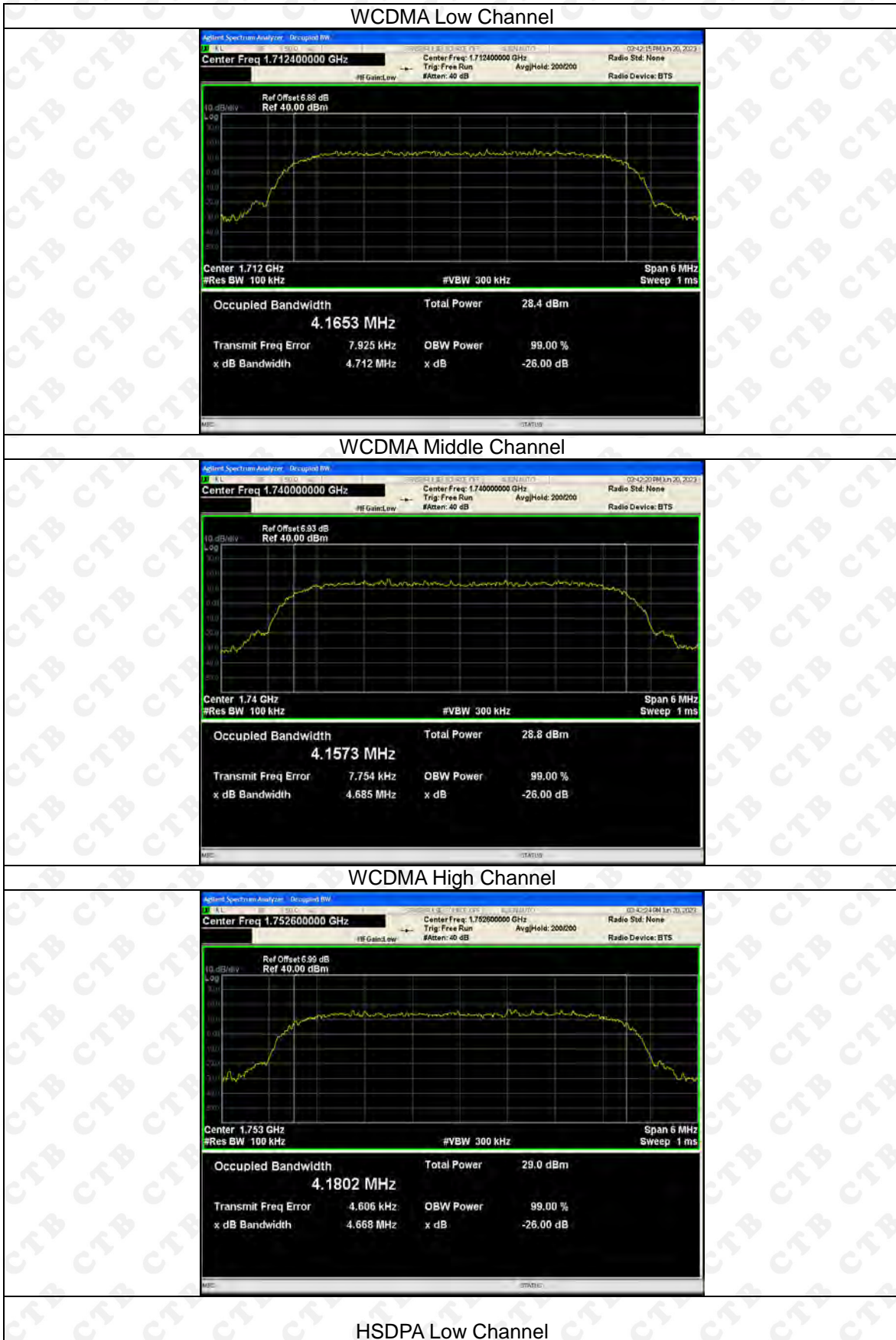
HSUPA Middle Channel

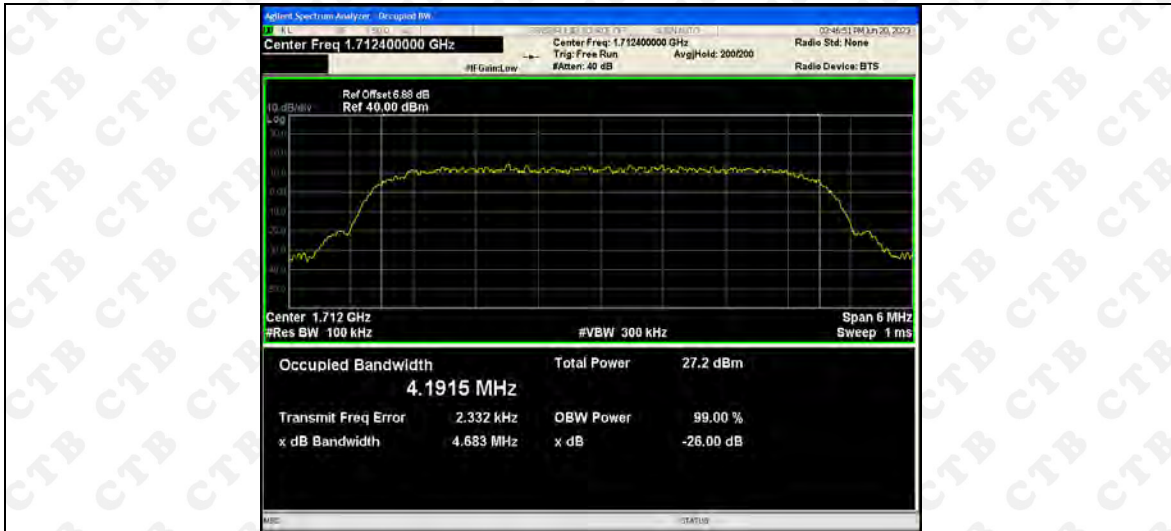


HSUPA High Channel

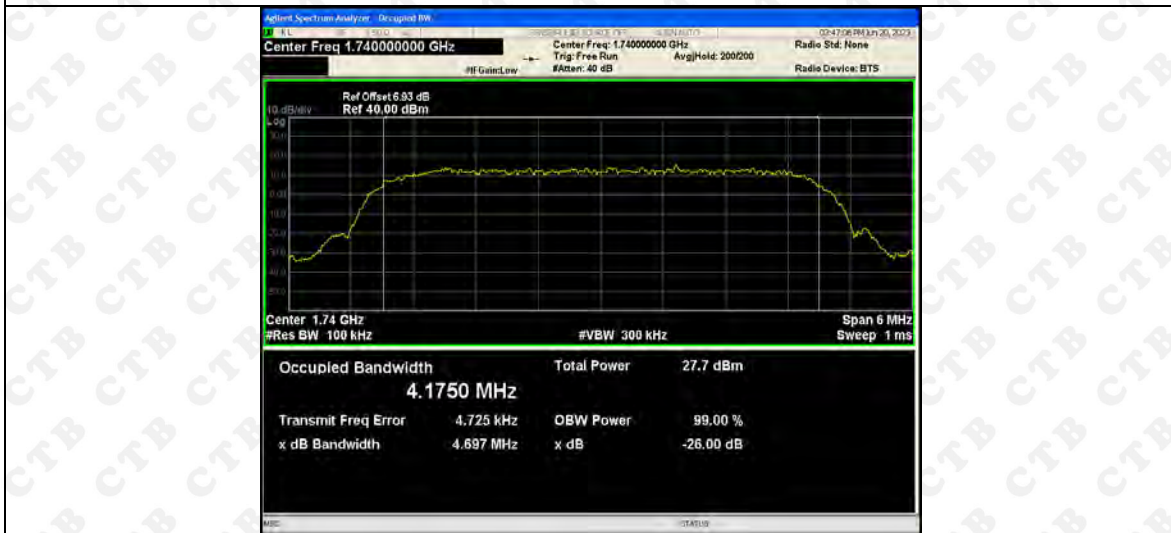


For Band IV





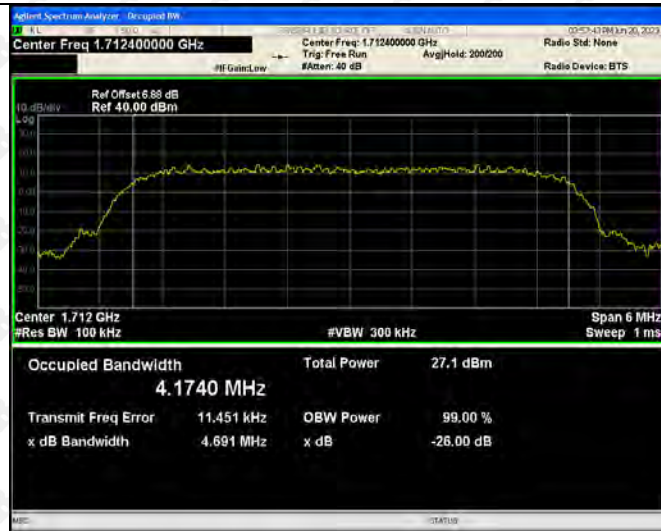
HSDPA Middle Channel



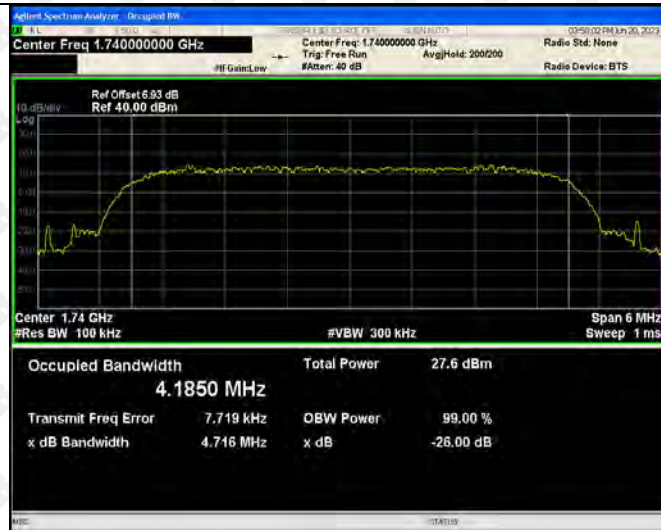
HSDPA High Channel



HSUPA Low Channel



HSUPA Middle Channel



HSUPA High Channel



9. OUT OF BAND EMISSIONS AT ANTENNA TERMINAL

9.1 Standard Applicable

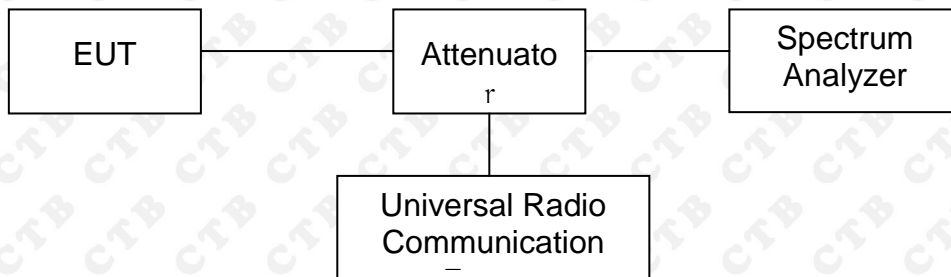
According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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.

9.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 100kHz and 1MHz for the scan frequency from 30MHz to 1GHz and the scan frequency from 1GHz to up to 10th harmonic.

Test Configuration for the out of band emissions testing:

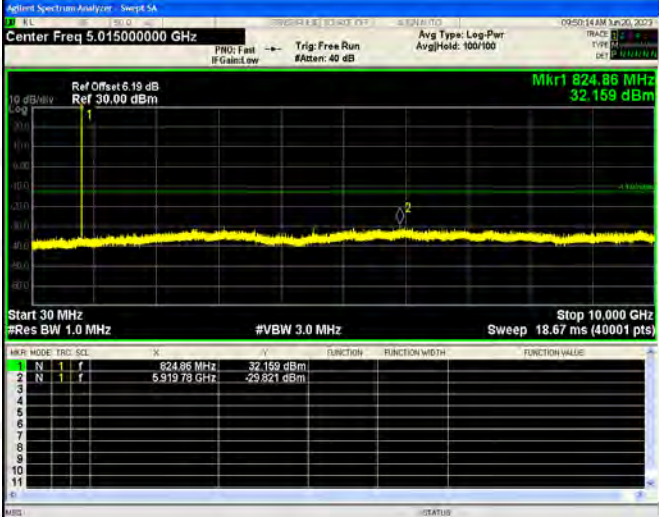
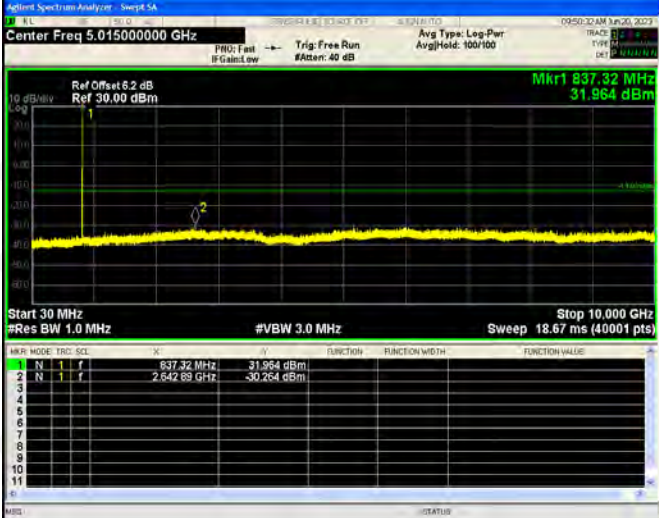
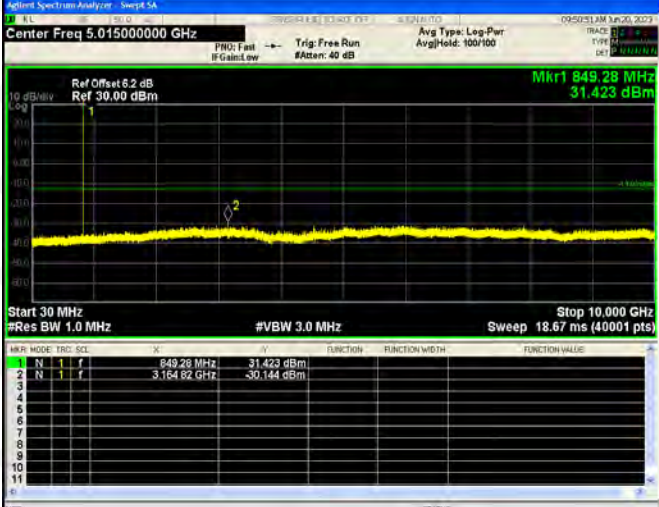


9.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	54%
ATM Pressure:	1010 mbar

9.4 Summary of Test Results/Plots

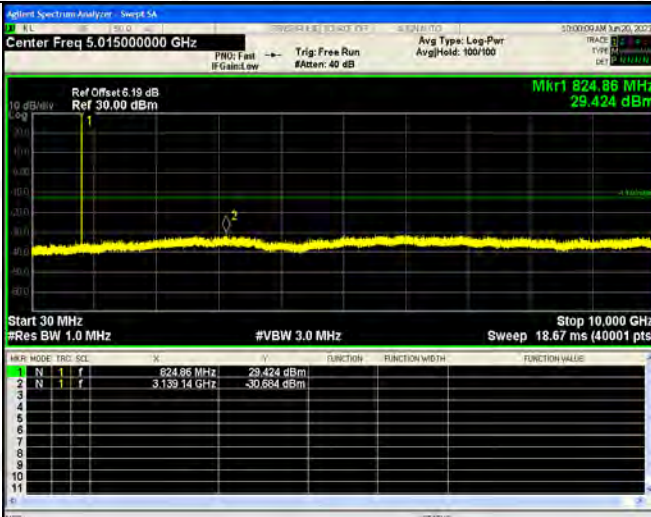
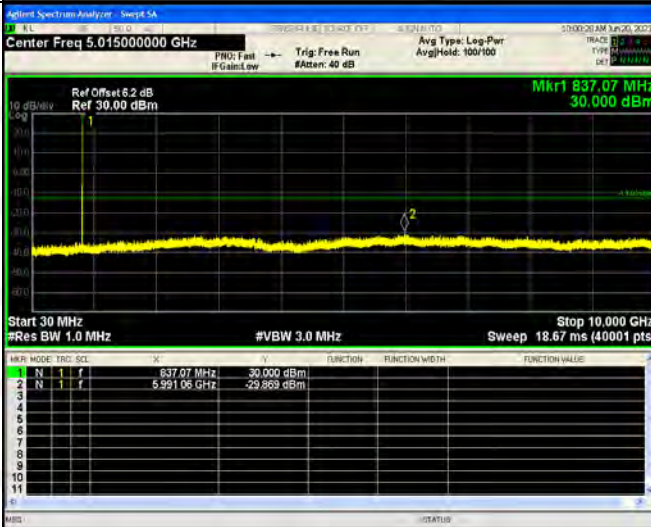
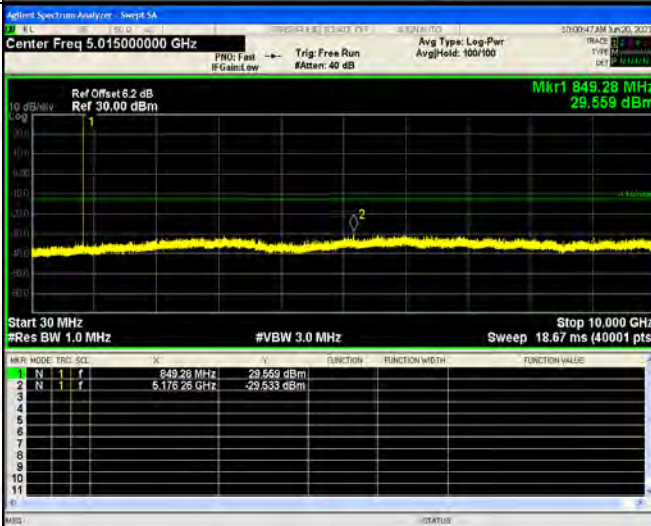
Please refer to the following test plots
For Cellular Band

<p>GSM Low Channel</p>		
<p>GSM Middle Channel</p>		
<p>GSM High Channel</p>		

<p>GSM Low Band Emission</p>		<p>Agilent Spectrum Analyzer - Swept SA Center Freq 824.200000 MHz PASS Ref Offset 6.19 dB Ref 30.00 dBm Mkr1 823.976 MHz -28.669 dBm Trace 1 Pass Center 824.200 MHz #Res BW 3.0 kHz #VBW 10 kHz Span 2.000 MHz Sweep 272.3 ms (1001 pts)</p>	
<p>GSM High Band Emission</p>		<p>Agilent Spectrum Analyzer - Swept SA Center Freq 848.800000 MHz PASS Ref Offset 6.2 dB Ref 30.00 dBm Mkr1 849.024 MHz -28.988 dBm Trace 1 Pass Center 848.800 MHz #Res BW 3.0 kHz #VBW 10 kHz Span 2.000 MHz Sweep 272.3 ms (1001 pts)</p>	

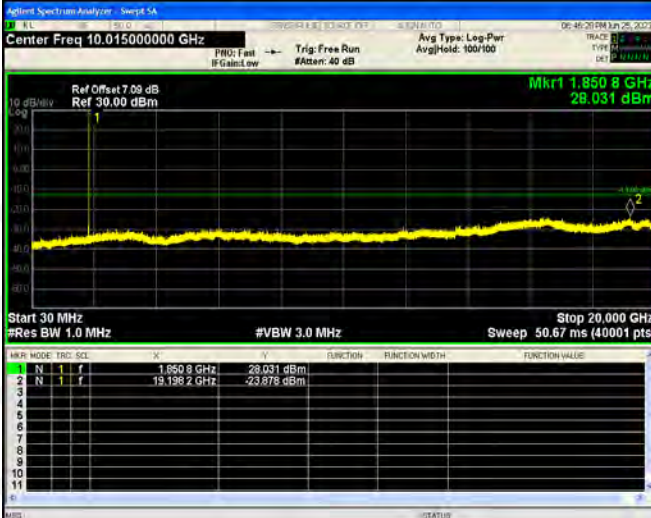

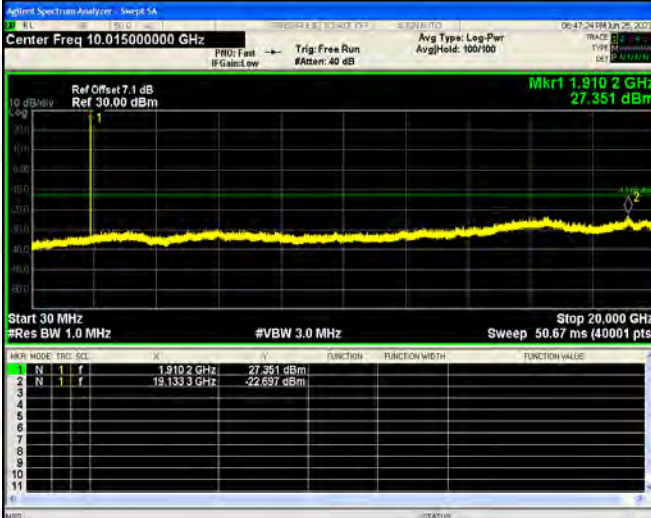
<p>GPRS Low Channel</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 5.015000000 GHz Ref Offset: 6.18 dB Ref: 30.00 dBm Mkr1 824.86 MHz 32.162 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10.000 GHz Sweep 18.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SEL</th> <th>X1</th> <th>Y1</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>824.86 MHz</td> <td>32.162 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>1.71717 GHz</td> <td>-26.682 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SEL	X1	Y1	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	824.86 MHz	32.162 dBm				2	N	1	f	1.71717 GHz	-26.682 dBm				
MKR	MODE	TRIG	SEL	X1	Y1	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	824.86 MHz	32.162 dBm																								
2	N	1	f	1.71717 GHz	-26.682 dBm																								
<p>GPRS Middle Channel</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 5.015000000 GHz Ref Offset: 6.2 dB Ref: 30.00 dBm Mkr1 837.07 MHz 31.909 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10.000 GHz Sweep 18.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SEL</th> <th>X1</th> <th>Y1</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>837.07 MHz</td> <td>31.909 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>4.63494 GHz</td> <td>-27.476 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SEL	X1	Y1	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	837.07 MHz	31.909 dBm				2	N	1	f	4.63494 GHz	-27.476 dBm				
MKR	MODE	TRIG	SEL	X1	Y1	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	837.07 MHz	31.909 dBm																								
2	N	1	f	4.63494 GHz	-27.476 dBm																								
<p>GPRS High Channel</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 5.015000000 GHz Ref Offset: 6.2 dB Ref: 30.00 dBm Mkr1 849.28 MHz 31.264 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10.000 GHz Sweep 18.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SEL</th> <th>X1</th> <th>Y1</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>849.28 MHz</td> <td>31.264 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>5.17926 GHz</td> <td>-26.348 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SEL	X1	Y1	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	849.28 MHz	31.264 dBm				2	N	1	f	5.17926 GHz	-26.348 dBm				
MKR	MODE	TRIG	SEL	X1	Y1	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	849.28 MHz	31.264 dBm																								
2	N	1	f	5.17926 GHz	-26.348 dBm																								

<p>GPRS Low Band Emission</p>		<p>Agilent Spectrum Analyzer - Swept SA Center Freq 824.200000 MHz PASS Ref Offset: 19 dB Ref 30.00 dBm Mkr1 823.994 MHz -27.166 dBm Trace 1 Pass Center 824.200 MHz #Res BW 3.0 kHz #VBW 10 kHz Span 2.000 MHz Sweep 272.3 ms (1001 pts)</p>	
<p>GPRS High Band Emission</p>		<p>Agilent Spectrum Analyzer - Swept SA Center Freq 848.800000 MHz PASS Ref Offset: 2 dB Ref 30.00 dBm Mkr1 849.008 MHz -29.898 dBm Trace 1 Pass Center 848.800 MHz #Res BW 3.0 kHz #VBW 10 kHz Span 2.000 MHz Sweep 272.3 ms (1001 pts)</p>	

<p>EDGE Low Channel</p>		
<p>EDGE Middle Channel</p>		
<p>EDGE High Channel</p>		

<p>EDGE Low Band Emission</p>			
<p>EDGE High Band Emission</p>			

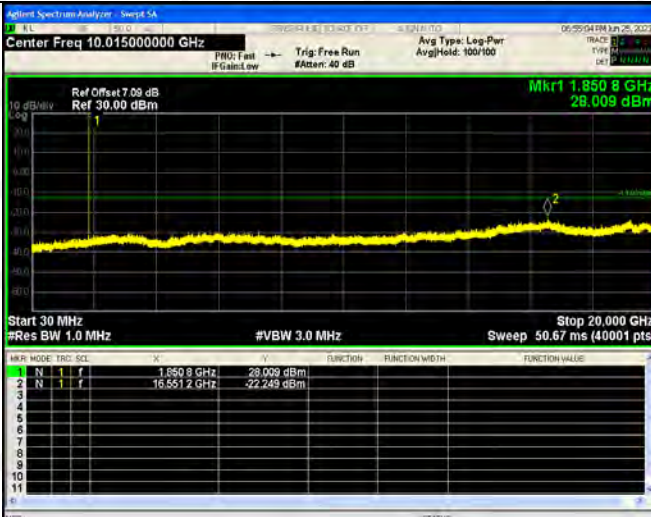
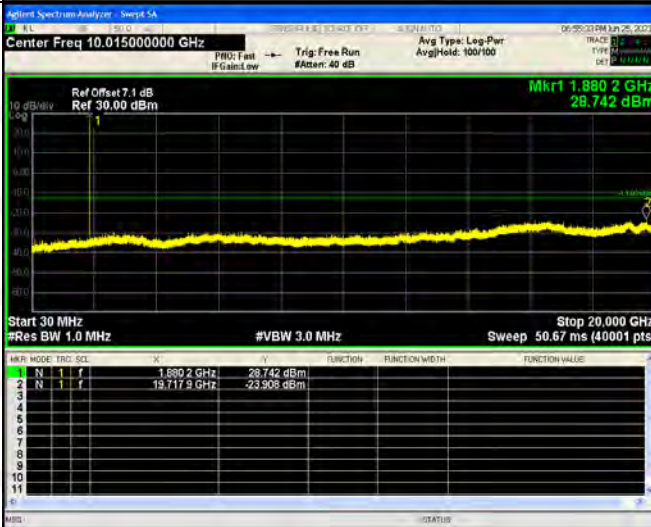
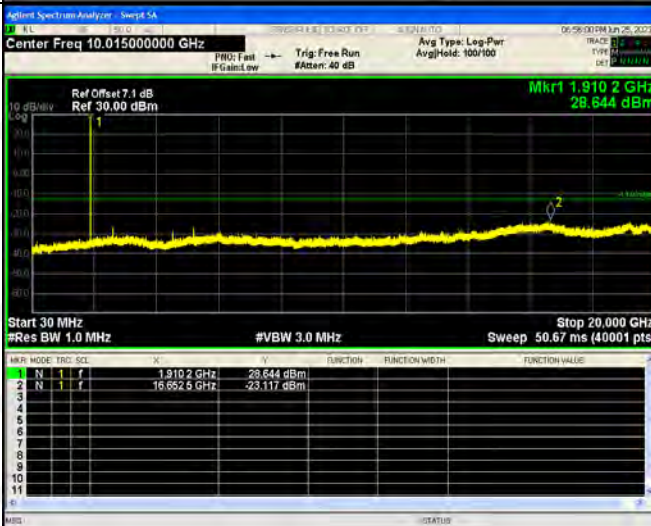
For PCS Band

<p>GSM Low Channel</p>		
<p>GSM Middle Channel</p>		
<p>GSM High Channel</p>		

<p>GSM Low Band Emission</p>			
<p>GSM High Band Emission</p>			

<p>GPRS Low Channel</p>	
<p>GPRS Middle Channel</p>	
<p>GPRS High Channel</p>	

<p>GPRS Low Band Emission</p>		<p>Agilent Spectrum Analyzer - Sweep 5A Center Freq 1.85020000 GHz Avg Type: RMS Avg/Hold: 100/100 Ref Offset: 7.00 dB Ref: 30.00 dBm Mkr1 1.849 976 GHz -32.858 dBm Trace 1 Pass Center 1.850200 GHz #Res BW 3.0 kHz #VBW 10 kHz* Span 2.000 MHz Sweep 272.3 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.910 2 GHz</td> <td>27.351 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>19.133 3 GHz</td> <td>-22.697 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.910 2 GHz	27.351 dBm				2	N	1	f	19.133 3 GHz	-22.697 dBm				
MKR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																						
1	N	1	f	1.910 2 GHz	27.351 dBm																									
2	N	1	f	19.133 3 GHz	-22.697 dBm																									
<p>GPRS High Band Emission</p>		<p>Agilent Spectrum Analyzer - Sweep 5A Center Freq 1.90980000 GHz Avg Type: RMS Avg/Hold: 100/100 Ref Offset: 7.1 dB Ref: 30.00 dBm Mkr1 1.910 018 GHz -32.306 dBm Trace 1 Pass Center 1.909800 GHz #Res BW 3.0 kHz #VBW 10 kHz* Span 2.000 MHz Sweep 272.3 ms (1001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.910 2 GHz</td> <td>27.351 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>19.133 3 GHz</td> <td>-22.697 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.910 2 GHz	27.351 dBm				2	N	1	f	19.133 3 GHz	-22.697 dBm				
MKR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																						
1	N	1	f	1.910 2 GHz	27.351 dBm																									
2	N	1	f	19.133 3 GHz	-22.697 dBm																									

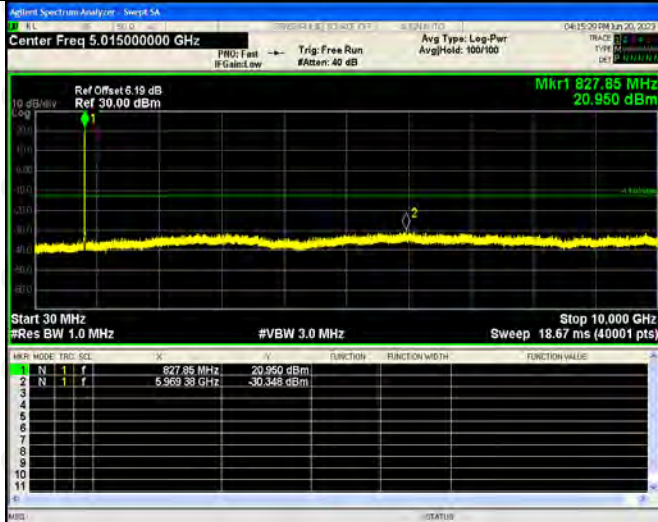
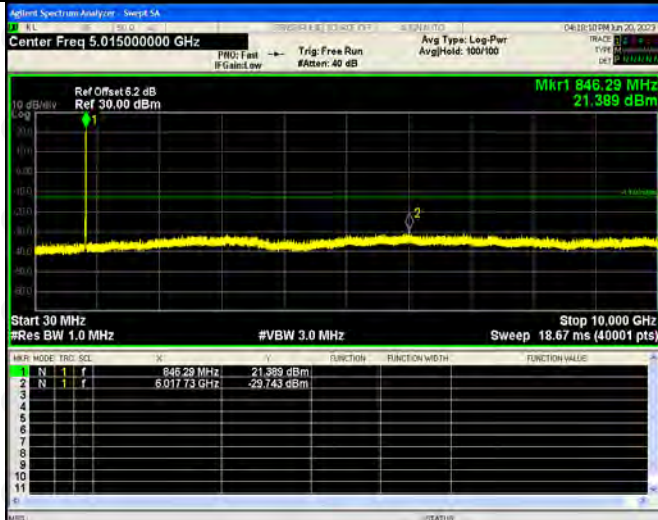
<p>EDGE Low Channel</p>		
<p>EDGE Middle Channel</p>		
<p>EDGE High Channel</p>		

<p>EDGE Low Band Emission</p>			
<p>EDGE High Band Emission</p>			

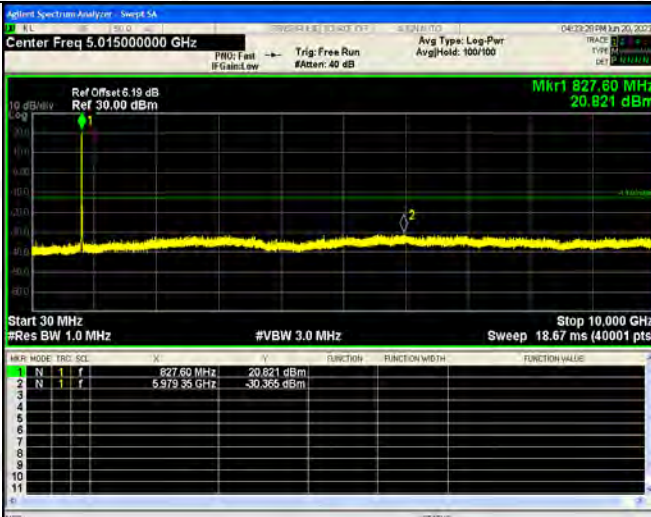
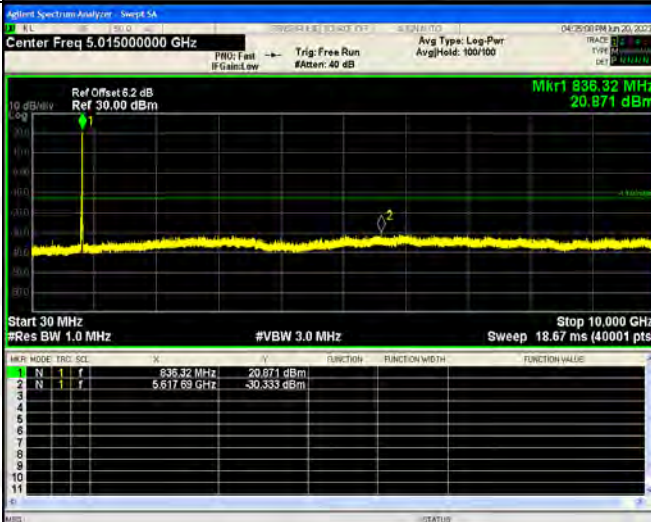
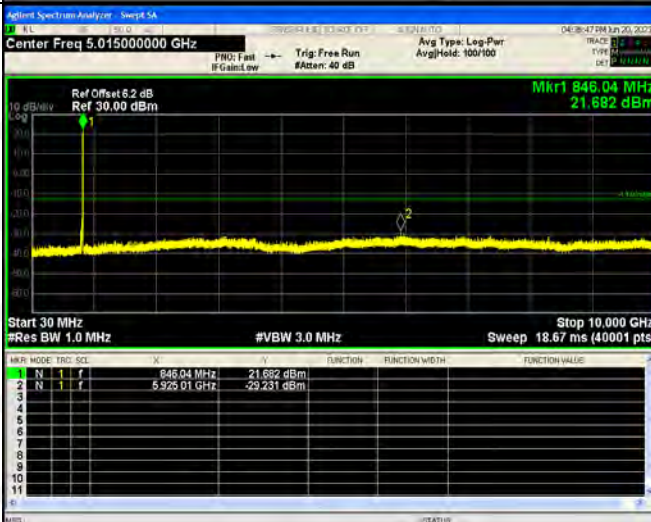
For Band V

<p>WCDMA Low Channel</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 5.015000000 GHz Ref Offset 6.19 dB Ref 30.00 dBm Mkr1 828.10 MHz 21.827 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10.000 GHz Sweep 18.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR MODE</th> <th>TRG</th> <th>SC1</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>f</td> <td>828.10 MHz</td> <td>21.827 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>f</td> <td>6.05637 GHz</td> <td>-29.247 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR MODE	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	f	828.10 MHz	21.827 dBm				2	N	f	6.05637 GHz	-29.247 dBm				
MKR MODE	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	f	828.10 MHz	21.827 dBm																						
2	N	f	6.05637 GHz	-29.247 dBm																						
<p>WCDMA Middle Channel</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 5.015000000 GHz Ref Offset 6.2 dB Ref 30.00 dBm Mkr1 835.83 MHz 21.626 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10.000 GHz Sweep 18.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR MODE</th> <th>TRG</th> <th>SC1</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>f</td> <td>835.83 MHz</td> <td>21.626 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>f</td> <td>5.98035 GHz</td> <td>-30.351 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR MODE	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	f	835.83 MHz	21.626 dBm				2	N	f	5.98035 GHz	-30.351 dBm				
MKR MODE	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	f	835.83 MHz	21.626 dBm																						
2	N	f	5.98035 GHz	-30.351 dBm																						
<p>WCDMA High Channel</p>	<p>Agilent Spectrum Analyzer - Swept SA Center Freq 5.015000000 GHz Ref Offset 6.2 dB Ref 30.00 dBm Mkr1 845.80 MHz 22.388 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10.000 GHz Sweep 18.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR MODE</th> <th>TRG</th> <th>SC1</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>f</td> <td>845.80 MHz</td> <td>22.388 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>f</td> <td>5.94720 GHz</td> <td>-30.793 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR MODE	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	f	845.80 MHz	22.388 dBm				2	N	f	5.94720 GHz	-30.793 dBm				
MKR MODE	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	f	845.80 MHz	22.388 dBm																						
2	N	f	5.94720 GHz	-30.793 dBm																						

<p>WCDMA Low Band Spurious Emission</p>			
<p>WCDMA High Band Spurious Emission</p>			

<p>HSDPA Low Channel</p>		
<p>HSDPA Middle Channel</p>		
<p>HSDPA High Channel</p>		

<p>HSDPA Low Band Spurious Emission</p>			
<p>HSDPA High Band Spurious Emission</p>			


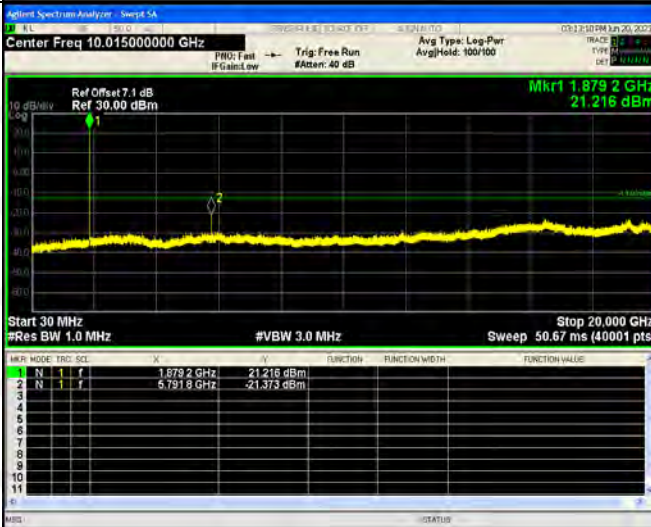
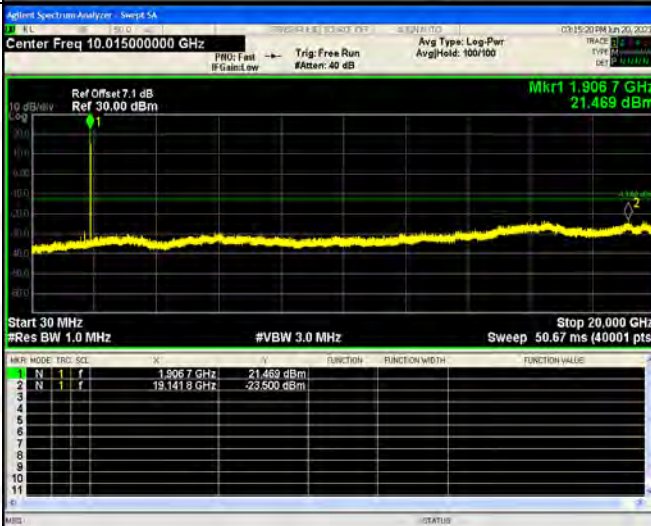
<p>HSUPA Low Channel</p>		
<p>HSUPA Middle Channel</p>		
<p>HSUPA High Channel</p>		

<p>HSUPA Low Band Spurious Emission</p>			
<p>HSUPA High Band Spurious Emission</p>			

For Band II

<p>WCDMA Low Channel</p>	<table border="1"> <thead> <tr> <th>MNR</th> <th>MODE</th> <th>TRIG</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.853 8 GHz</td> <td>-1.650 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>3.702 5 GHz</td> <td>-20.356 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.853 8 GHz	-1.650 dBm				2	N	1	f	3.702 5 GHz	-20.356 dBm				
MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.853 8 GHz	-1.650 dBm																								
2	N	1	f	3.702 5 GHz	-20.356 dBm																								
<p>WCDMA Middle Channel</p>	<table border="1"> <thead> <tr> <th>MNR</th> <th>MODE</th> <th>TRIG</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.881 7 GHz</td> <td>2.398 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>3.762 4 GHz</td> <td>-20.644 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.881 7 GHz	2.398 dBm				2	N	1	f	3.762 4 GHz	-20.644 dBm				
MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.881 7 GHz	2.398 dBm																								
2	N	1	f	3.762 4 GHz	-20.644 dBm																								
<p>WCDMA High Channel</p>	<table border="1"> <thead> <tr> <th>MNR</th> <th>MODE</th> <th>TRIG</th> <th>SCL</th> <th>X</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.906 7 GHz</td> <td>-0.237 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>3.814 3 GHz</td> <td>-23.039 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.906 7 GHz	-0.237 dBm				2	N	1	f	3.814 3 GHz	-23.039 dBm				
MNR	MODE	TRIG	SCL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.906 7 GHz	-0.237 dBm																								
2	N	1	f	3.814 3 GHz	-23.039 dBm																								

<p>WCDMA Low Band Spurious Emission</p>			
<p>WCDMA High Band Spurious Emission</p>			

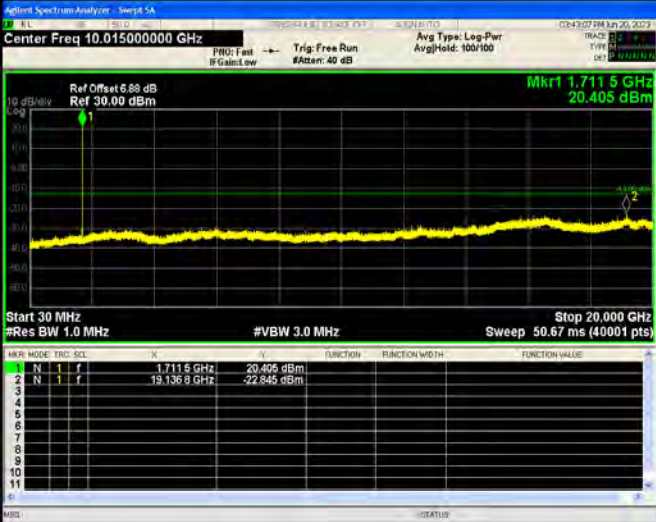
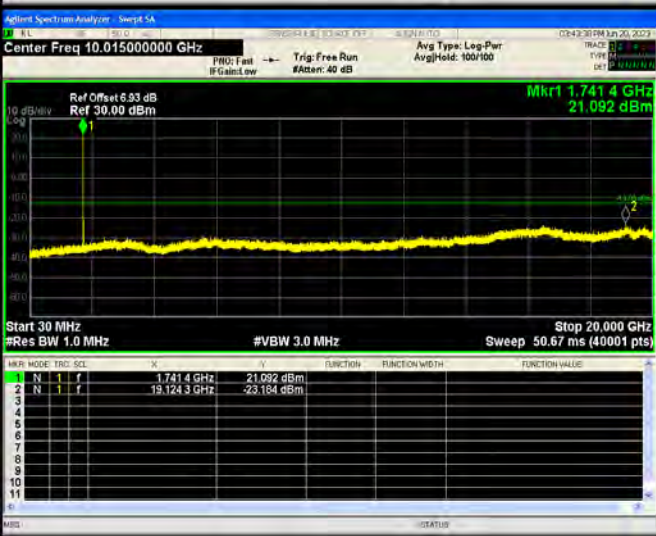
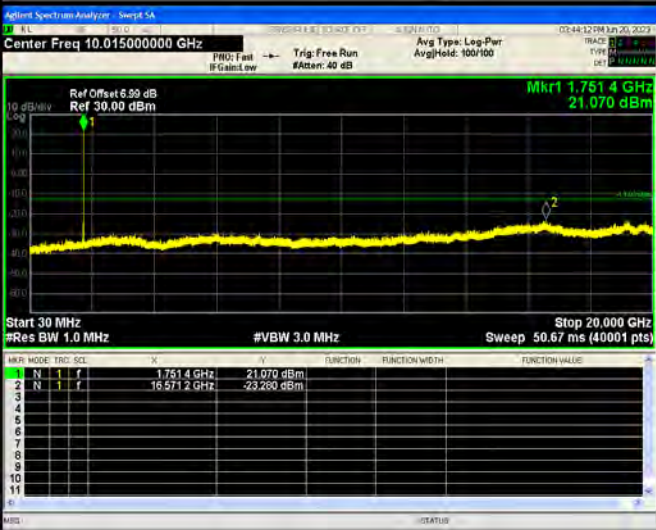
<p>HSDPA Low Channel</p>		
<p>HSDPA Middle Channel</p>		
<p>HSDPA High Channel</p>		

<p>HSDPA Low Band Spurious Emission</p>			
<p>HSDPA High Band Spurious Emission</p>			

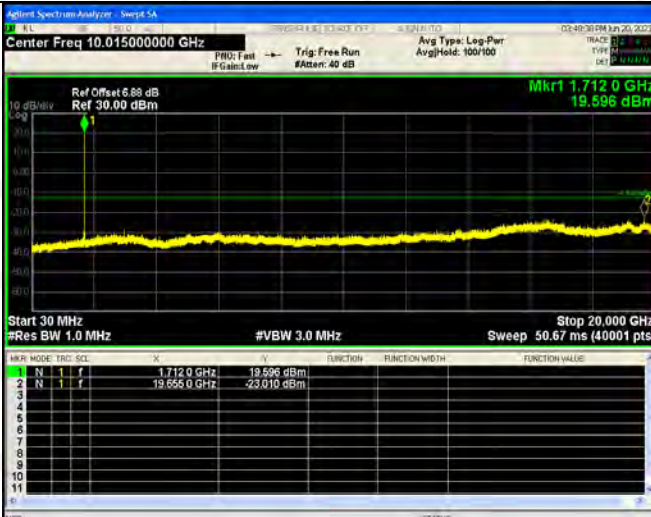
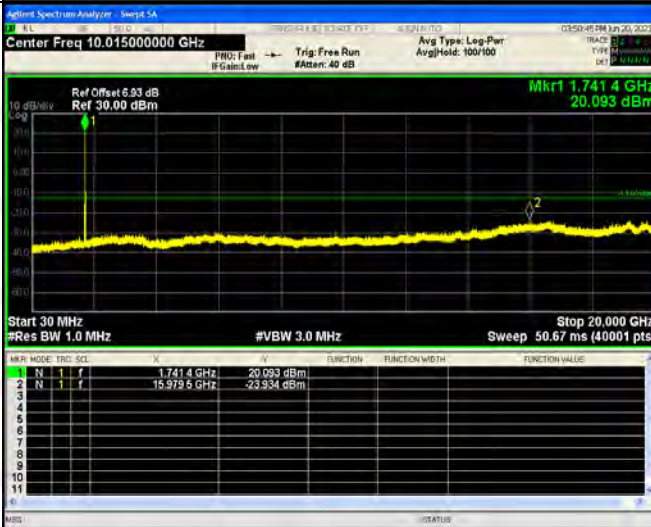
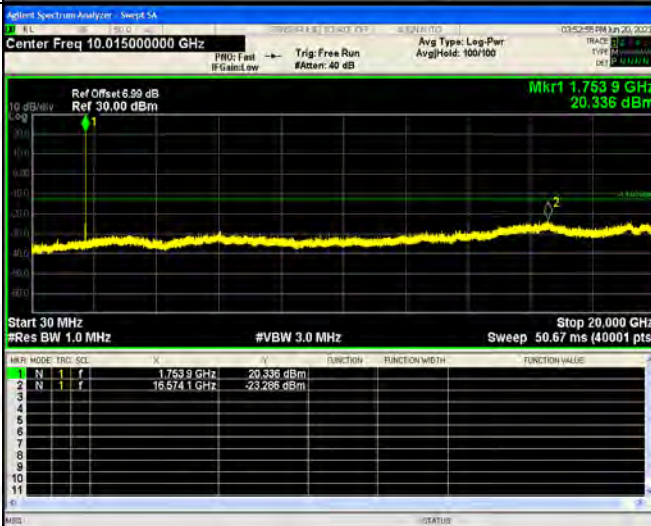
<p>HSUPA Low Channel</p>	<p>Agilent Spectrum Analyzer - Sweep SA Center Freq 10.01500000 GHz Ref Offset: 7.08 dB Ref: 30.00 dBm Mkr1 1.8518 GHz 20.462 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20.000 GHz Sweep 50.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SEL</th> <th>X1</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.8518 GHz</td> <td>20.462 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>19.1418 GHz</td> <td>-23.777 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SEL	X1	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8518 GHz	20.462 dBm				2	N	1	f	19.1418 GHz	-23.777 dBm				
MKR	MODE	TRIG	SEL	X1	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.8518 GHz	20.462 dBm																								
2	N	1	f	19.1418 GHz	-23.777 dBm																								
<p>HSUPA Middle Channel</p>	<p>Agilent Spectrum Analyzer - Sweep SA Center Freq 10.01500000 GHz Ref Offset: 7.1 dB Ref: 30.00 dBm Mkr1 1.8797 GHz 21.512 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20.000 GHz Sweep 50.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SEL</th> <th>X1</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.8797 GHz</td> <td>21.512 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>16.2022 GHz</td> <td>-23.541 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SEL	X1	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8797 GHz	21.512 dBm				2	N	1	f	16.2022 GHz	-23.541 dBm				
MKR	MODE	TRIG	SEL	X1	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.8797 GHz	21.512 dBm																								
2	N	1	f	16.2022 GHz	-23.541 dBm																								
<p>HSUPA High Channel</p>	<p>Agilent Spectrum Analyzer - Sweep SA Center Freq 10.01500000 GHz Ref Offset: 7.1 dB Ref: 30.00 dBm Mkr1 1.8812 GHz 22.005 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20.000 GHz Sweep 50.67 ms (40001 pts)</p> <table border="1"> <thead> <tr> <th>MKR</th> <th>MODE</th> <th>TRIG</th> <th>SEL</th> <th>X1</th> <th>Y</th> <th>FUNCTION</th> <th>FUNCTION WIDTH</th> <th>FUNCTION VALUE</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>N</td> <td>1</td> <td>f</td> <td>1.8812 GHz</td> <td>22.005 dBm</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>N</td> <td>1</td> <td>f</td> <td>19.1787 GHz</td> <td>-23.538 dBm</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>	MKR	MODE	TRIG	SEL	X1	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8812 GHz	22.005 dBm				2	N	1	f	19.1787 GHz	-23.538 dBm				
MKR	MODE	TRIG	SEL	X1	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.8812 GHz	22.005 dBm																								
2	N	1	f	19.1787 GHz	-23.538 dBm																								

<p>HSUPA Low Band Spurious Emission</p>			
<p>HSUPA High Band Spurious Emission</p>			

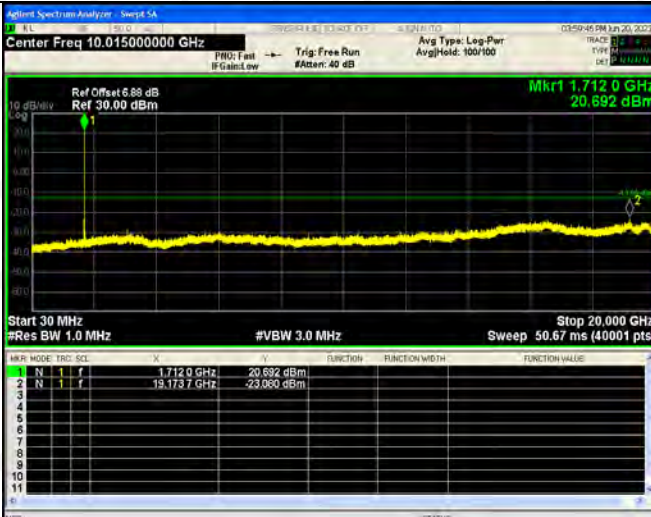
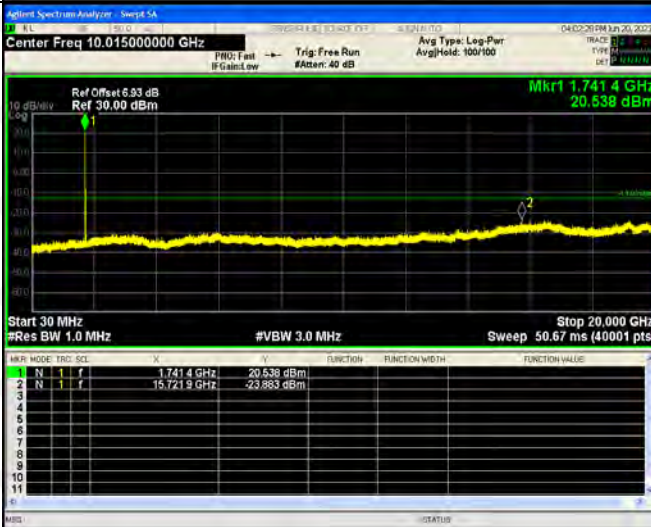
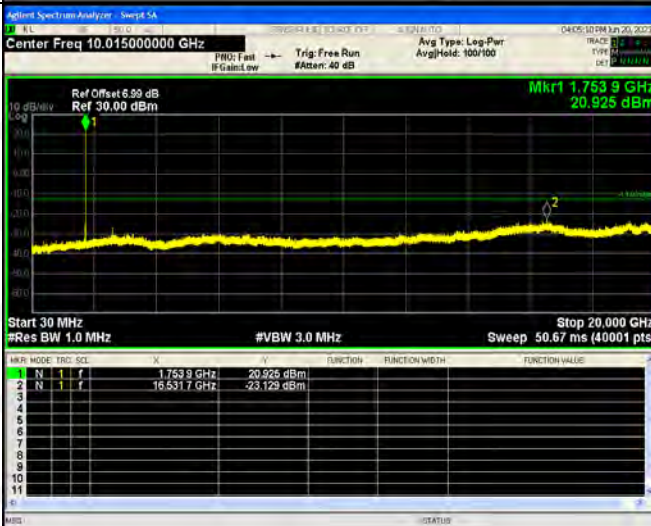
For Band IV

<p>WCDMA Low Channel</p>	
<p>WCDMA Middle Channel</p>	
<p>WCDMA High Channel</p>	

<p>WCDMA Low Band Spurious Emission</p>			
<p>WCDMA High Band Spurious Emission</p>			

<p>HSDPA Low Channel</p>		
<p>HSDPA Middle Channel</p>		
<p>HSDPA High Channel</p>		

<p>HSDPA Low Band Spurious Emission</p>			
<p>HSDPA High Band Spurious Emission</p>			

<p>HSUPA Low Channel</p>		
<p>HSUPA Middle Channel</p>		
<p>HSUPA High Channel</p>		

<p>HSUPA Low Band Spurious Emission</p>		<p>Agilent Spectrum Analyzer - Sweep SA Center Freq 1.71000000 GHz PASS Ref Offset 6.99 dB Ref 30.00 dBm Mkr1 1.709 998 GHz -24.791 dBm Center 1.710000 GHz #Res BW 100 kHz #VBW 300 kHz* Span 2.000 MHz Sweep 1.000 ms (1001 pts)</p>	
<p>HSUPA High Band Spurious Emission</p>		<p>Agilent Spectrum Analyzer - Sweep SA Center Freq 1.75500000 GHz PASS Ref Offset 6.99 dB Ref 30.00 dBm Mkr1 1.755 002 GHz -27.268 dBm Center 1.755000 GHz #Res BW 100 kHz #VBW 300 kHz* Span 2.000 MHz Sweep 1.000 ms (1001 pts)</p>	

10. SPURIOUS RADIATED EMISSIONS

10.1 Standard Applicable

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.

10.2 Test Procedure

- 1.The setup of EUT is according with per ANSI/TIA Standard 603D and ANSI C63.4-2014 measurement procedure.
- 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.

$\text{Spurious attenuation limit in dB} = 43 + 10 \log_{10}(\text{power out in Watts})$

10.3 Environmental Conditions

Temperature:	23 °C
Relative Humidity:	54%
ATM Pressure:	101 kPa
Test Voltage	DC 3.8V

10.4 Summary of Test Results/Plots

According to the data below, the FCC Part22.917 and 24.238 standards, and had the worst margin of:

Note: this EUT was tested in 3 orthogonal positions and the worst case position data was reported.

All test modes are performed, but only the worst case is recorded in this report.

For Cellular Band_GSM850 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (824.2MHz)						
41.71	-74.91	3.9	-71.01	-13	-58.01	H
1643.56	-54.76	4.83	-49.93	-13	-36.93	H
2470.52	-51.34	8.08	-43.26	-13	-30.26	H
36.83	-67.83	4.02	-63.81	-13	-50.81	V
1643.22	-54.30	4.48	-49.82	-13	-36.82	V
2463.60	-48.49	8.2	-40.29	-13	-27.29	V
Middle Channel (836.6MHz)						
43.48	-75.07	3.84	-71.23	-13	-58.23	H
1665.09	-53.81	4.62	-49.19	-13	-36.19	H
2500.52	-58.05	8.25	-49.80	-13	-36.80	H
39.11	-65.67	4.25	-61.42	-13	-48.42	V
1664.16	-50.99	4.54	-46.45	-13	-33.45	V
2505.74	-48.76	8.35	-40.41	-13	-29.75	V
High Channel (848.8MHz)						
42.29	-65.89	4.22	-70.11	-13	-57.11	H
1695.34	-56.60	4.87	-61.47	-13	-48.47	H
2543.05	-53.97	8.38	-62.35	-13	-49.35	H
39.73	-73.62	4.02	-77.64	-13	-64.64	V
1694.37	-54.64	4.56	-59.20	-13	-46.20	V
2545.91	-52.23	8.41	-60.64	-13	-47.64	V

For PCS Band_GSM1900 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1850.2MHz)						
38.34	-66.45	4.34	-62.11	-13	-49.11	H
3691.98	-55.81	10.54	-45.27	-13	-32.27	H
5547.27	-53.73	13.37	-40.36	-13	-27.36	H
37.15	-73.63	4.34	-69.29	-13	-56.29	V
3691.80	-49.21	10.54	-38.67	-13	-25.67	V
5545.84	-61.43	13.37	-48.06	-13	-35.06	V
Middle Channel (1880MHz)						
37.83	-75.02	4.02	-71.00	-13	-58.00	H
3750.39	-53.36	10.71	-42.65	-13	-29.65	H
5631.37	-53.25	13.73	-39.52	-13	-26.52	H
44.04	-70.43	4.14	-66.29	-13	-53.29	V
3755.15	-53.31	10.22	-43.09	-13	-30.09	V
5638.33	-59.42	13.16	-46.26	-13	-33.26	V
High Channel (1909.8MHz)						
41.06	-69.13	4.02	-65.11	-13	-52.11	H
3815.71	-60.22	4.9	-55.32	-13	-42.32	H
5727.23	-47.88	8.09	-39.79	-13	-26.79	H
36.60	-55.89	4.25	-51.64	-13	-38.64	V
3811.37	-58.66	4.93	-53.73	-13	-40.73	V
5725.15	-65.35	8.43	-56.92	-13	-43.92	V

For Band 5 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (826.4MHz)						
45.66	-74.69	3.91	-70.78	-13	-57.78	H
1647.67	-56.90	10.56	-46.34	-13	-33.34	H
2478.70	-60.27	13.5	-46.77	-13	-33.77	H
40.23	-68.04	3.93	-64.11	-13	-51.11	V
1645.47	-55.68	10.41	-45.27	-13	-32.27	V
2472.93	-57.29	13.16	-44.13	-13	-31.13	V
Middle Channel (836.6MHz)						
45.73	-70.42	4.02	-66.40	-13	-53.40	H
1671.17	-58.09	4.66	-53.43	-13	-40.43	H
2505.27	-46.92	8.34	-38.58	-13	-25.58	H
42.58	-53.77	4.17	-49.60	-13	-36.60	V
1671.92	-57.77	4.94	-52.83	-13	-39.83	V
2501.31	-59.20	8.19	-51.01	-13	-38.01	V
High Channel (846.6MHz)						
43.07	-66.14	3.87	-62.27	-13	-49.27	H
1691.73	-63.59	4.89	-58.70	-13	-45.70	H
2530.81	-47.70	8.42	-39.28	-13	-26.28	H
40.62	-54.83	3.95	-50.88	-13	-37.88	V
1684.39	-59.66	4.99	-54.67	-13	-41.67	V
2535.76	-61.13	8.12	-53.01	-13	-40.01	V

For Band 2 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1852.4MHz)						
43.90	-69.60	3.91	-65.69	-13	-52.69	H
1650.50	-51.87	10.56	-41.31	-13	-28.31	H
2470.63	-54.77	13.5	-41.27	-13	-28.27	H
42.57	-65.82	3.93	-61.89	-13	-48.89	V
1647.79	-51.29	10.41	-40.88	-13	-27.88	V
2479.11	-59.41	13.16	-46.25	-13	-33.25	V
Middle Channel (1880MHz)						
45.47	-70.63	4.02	-66.61	-13	-53.61	H
1667.83	-55.62	4.66	-50.96	-13	-37.96	H
2501.17	-44.35	8.34	-36.01	-13	-23.01	H
36.75	-60.04	4.17	-55.87	-13	-42.87	V
1664.82	-59.40	4.94	-54.46	-13	-41.46	V
2501.26	-56.22	8.19	-48.03	-13	-35.03	V
High Channel (1907.6MHz)						
40.34	-67.16	3.87	-63.29	-13	-50.29	H
1687.54	-63.35	4.89	-58.46	-13	-45.46	H
2531.28	-44.71	8.42	-36.29	-13	-23.29	H
41.51	-63.35	3.95	-59.40	-13	-46.40	V
1687.65	-56.60	4.99	-51.61	-13	-38.61	V
2538.43	-58.05	8.12	-49.93	-13	-36.93	V

For Band 4 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1712.4MHz)						
40.08	-68.95	3.91	-65.04	-13	-52.04	H
1650.76	-53.53	10.56	-42.97	-13	-29.97	H
2479.14	-59.90	13.5	-46.40	-13	-33.40	H
37.34	-68.19	3.93	-64.26	-13	-51.26	V
1646.67	-50.47	10.41	-40.06	-13	-27.06	V
2478.25	-58.00	13.16	-44.84	-13	-31.84	V
Middle Channel (1740MHz)						
46.18	-72.26	4.02	-68.24	-13	-55.24	H
1671.11	-55.69	4.66	-51.03	-13	-38.03	H
2506.51	-48.54	8.34	-40.20	-13	-27.20	H
44.26	-57.88	4.17	-53.71	-13	-40.71	V
1671.72	-57.06	4.94	-52.12	-13	-39.12	V
2503.04	-55.99	8.19	-47.80	-13	-34.80	V
High Channel (1752.6MHz)						
43.17	-72.50	3.87	-68.63	-13	-55.63	H
1685.32	-55.29	4.89	-50.40	-13	-37.40	H
2530.82	-48.81	8.42	-40.39	-13	-27.39	H
36.36	-61.98	3.95	-58.03	-13	-45.03	V
1686.45	-56.69	4.99	-51.70	-13	-38.70	V
2534.14	-63.94	8.12	-55.82	-13	-42.82	V

Note: Result=Reading+ Correct, Margin= Result- Limit

Note: Testing is carried out with frequency rang 9kHz to the tenth harmonics, other than listed in the table above are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

11. FREQUENCY STABILITY

11.1 Standard Applicable

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 Cellular Band

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

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

According to §27.54 The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

11.2 Test Procedure

According to §2.1055, the following test procedure was performed.

The Frequency Stability is measured directly with a Frequency Domain Analyzer. Frequency Deviation in ppm is calculated from the measured peak to peak value.

The Carrier Frequency Stability over Power Supply Voltage and over Temperature is measured with a Frequency Domain Analyzer in histogram mode

11.3 Environmental Conditions

Temperature:	23°C
Relative Humidity:	54%
ATM Pressure:	101kPa

11.4 Summary of Test Results/Plots

For Cellular Band GSM Mode

Reference Frequency(Middle Channel): 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	8.64	0.01033
40	NV	9.15	0.01093
30	NV	9.19	0.01099
20	NV	9.37	0.01120
10	NV	9.77	0.01167
0	NV	10.62	0.01269
-10	NV	10.49	0.01254
-20	NV	10.53	0.01259
-30	NV	10.76	0.01286

For PCS Band GSM Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	12.88	0.00685
40	NV	13.05	0.00694
30	NV	12.59	0.00670
20	NV	13.18	0.00701
10	NV	13.27	0.00706
0	NV	13.36	0.00710
-10	NV	13.84	0.00736
-20	NV	13.74	0.00731
-30	NV	14.31	0.00761

For Cellular Band GPRS Mode

Reference Frequency(Middle Channel): 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	8.85	0.01058
40	NV	9.69	0.01159
30	NV	9.87	0.01179
20	NV	9.06	0.01083
10	NV	10.19	0.01218
0	NV	10.67	0.01276
-10	NV	10.26	0.01226
-20	NV	10.39	0.01242
-30	NV	10.95	0.01309

For PCS Band GPRS Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	12.20	0.00649
40	NV	12.82	0.00682
30	NV	12.34	0.00656
20	NV	12.73	0.00677
10	NV	13.34	0.00710
0	NV	13.51	0.00719
-10	NV	13.94	0.00742
-20	NV	14.12	0.00751
-30	NV	14.12	0.00751

For Cellular Band EDGE Mode

Reference Frequency(Middle Channel): 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	11.09	0.01325
40	NV	11.92	0.01425
30	NV	11.64	0.01391
20	NV	11.45	0.01369
10	NV	11.99	0.01434
0	NV	12.18	0.01456
-10	NV	12.17	0.01455
-20	NV	12.35	0.01477
-30	NV	12.73	0.01522

For PCS Band EDGE Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	-10.27	-0.00546
40	NV	-9.46	-0.00503
30	NV	-9.63	-0.00512
20	NV	-9.61	-0.00511
10	NV	-9.04	-0.00481
0	NV	-9.17	-0.00488
-10	NV	-8.11	-0.00431
-20	NV	-8.38	-0.00446
-30	NV	-7.86	-0.00418

For WCDMA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.15	0.00018
40	NV	0.55	0.00066
30	NV	0.43	0.00051
20	NV	1.15	0.00138
10	NV	0.73	0.00087
0	NV	1.18	0.00141
-10	NV	0.54	0.00064
-20	NV	0.81	0.00097
-30	NV	0.97	0.00116

For WCDMA Band 2 Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.06	0.00007
40	NV	-0.50	-0.00060
30	NV	0.46	0.00055
20	NV	0.80	0.00096
10	NV	0.39	0.00047
0	NV	1.37	0.00164
-10	NV	1.15	0.00138
-20	NV	1.87	0.00223
-30	NV	1.77	0.00212

For WCDMA Band 4 Mode

Reference Frequency(Middle Channel): 1740 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.33	0.00040
40	NV	0.28	0.00033
30	NV	0.03	0.00004
20	NV	0.91	0.00109
10	NV	0.56	0.00067
0	NV	1.21	0.00145
-10	NV	1.02	0.00122
-20	NV	1.12	0.00134
-30	NV	0.95	0.00113

For HSDPA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.27	0.00032
40	NV	1.01	0.00121
30	NV	0.79	0.00095
20	NV	0.41	0.00049
10	NV	1.44	0.00172
0	NV	1.33	0.00160
-10	NV	1.68	0.00201
-20	NV	2.01	0.00240
-30	NV	2.40	0.00286

For HSDPA Band 2 Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	-0.34	-0.00041
40	NV	-0.07	-0.00008
30	NV	0.54	0.00065
20	NV	0.71	0.00085
10	NV	0.73	0.00088
0	NV	1.32	0.00158
-10	NV	1.01	0.00120
-20	NV	1.71	0.00204
-30	NV	1.23	0.00147

For HSDPA Band 4 Mode

Reference Frequency(Middle Channel): 1740 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.03	0.00004
40	NV	0.33	0.00040
30	NV	-0.18	-0.00022
20	NV	-0.09	-0.00011
10	NV	0.44	0.00053
0	NV	0.89	0.00106
-10	NV	0.99	0.00119
-20	NV	1.32	0.00158
-30	NV	2.01	0.00241

For HSUPA Band 5 Mode

Reference Frequency(Middle Channel): 836.6 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.91	0.00109
40	NV	1.09	0.00131
30	NV	0.72	0.00086
20	NV	0.76	0.00090
10	NV	1.06	0.00127
0	NV	1.46	0.00175
-10	NV	1.45	0.00173
-20	NV	1.84	0.00220
-30	NV	2.18	0.00261

For HSUPA Band 2 Mode

Reference Frequency(Middle Channel): 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.21	0.00025
40	NV	1.02	0.00122
30	NV	0.82	0.00098
20	NV	1.37	0.00164
10	NV	1.15	0.00138
0	NV	1.19	0.00142
-10	NV	2.20	0.00262
-20	NV	2.03	0.00243
-30	NV	2.08	0.00249

For HSUPA Band 4 Mode

Reference Frequency(Middle Channel): 1740 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		MCF (Hz)	Error (ppm)
50	NV	0.85	0.00102
40	NV	0.98	0.00117
30	NV	1.22	0.00146
20	NV	1.12	0.00133
10	NV	1.72	0.00205
0	NV	1.46	0.00174
-10	NV	1.46	0.00175
-20	NV	2.41	0.00288
-30	NV	2.40	0.00287

So, Frequency Stability Versus Input Voltage is:

Reference Frequency(Middle Channel): GSM 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	10.75	0.01285
	NV	11.09	0.01325
	HV	11.29	0.01350
Reference Frequency(Middle Channel): GSM 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	15.07	0.00801
	NV	14.72	0.00783
	HV	14.77	0.00785

Reference Frequency(Middle Channel): GPRS 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	11.05	0.01321
	NV	10.88	0.01301
	HV	11.72	0.01400
Reference Frequency(Middle Channel): GPRS 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	14.68	0.00781
	NV	14.94	0.00795
	HV	15.10	0.00803

Reference Frequency(Middle Channel): EDGE 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	12.96	0.01549
	NV	13.13	0.01570
	HV	13.29	0.01588
Reference Frequency(Middle Channel): EDGE 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	-7.94	-0.00949
	NV	-7.55	-0.00903
	HV	-7.30	-0.00873
Reference Frequency(Middle Channel): WCDMA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	0.88	0.00106
	NV	1.54	0.00185
	HV	1.87	0.00224
Reference Frequency(Middle Channel): WCDMA 1732.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	1.36	0.00162
	NV	1.27	0.00152
	HV	1.51	0.00181
Reference Frequency(Middle Channel): WCDMA 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	1.09	0.00130
	NV	1.68	0.00201
	HV	1.44	0.00173

Reference Frequency(Middle Channel): HSDPA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	1.26	0.00151
	NV	2.38	0.00285
	HV	2.34	0.00279

Reference Frequency(Middle Channel): HSDPA 1732.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	2.19	0.00262
	NV	3.01	0.00360
	HV	3.23	0.00386

Reference Frequency(Middle Channel): HSDPA 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	1.71	0.00204
	NV	2.07	0.00248
	HV	2.57	0.00308

Reference Frequency(Middle Channel): HSUPA 836.6MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	2.22	0.00266
	NV	2.76	0.00329
	HV	3.13	0.00375

Reference Frequency(Middle Channel): HSUPA 1732.4MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	2.00	0.00239
	NV	2.60	0.00311
	HV	2.76	0.00330

Reference Frequency(Middle Channel): HSUPA 1880 MHz, Limit: 2.5ppm			
Environment Temperature (°C)	Power Supplied (VDC)	Frequency Measure with Time Elapsed	
		Frequency (Hz)	Error (ppm)
20	LV	1.97	0.00236
	NV	2.68	0.00320
	HV	3.17	0.00378

12. EUT PHOTO

EUT Photo 1

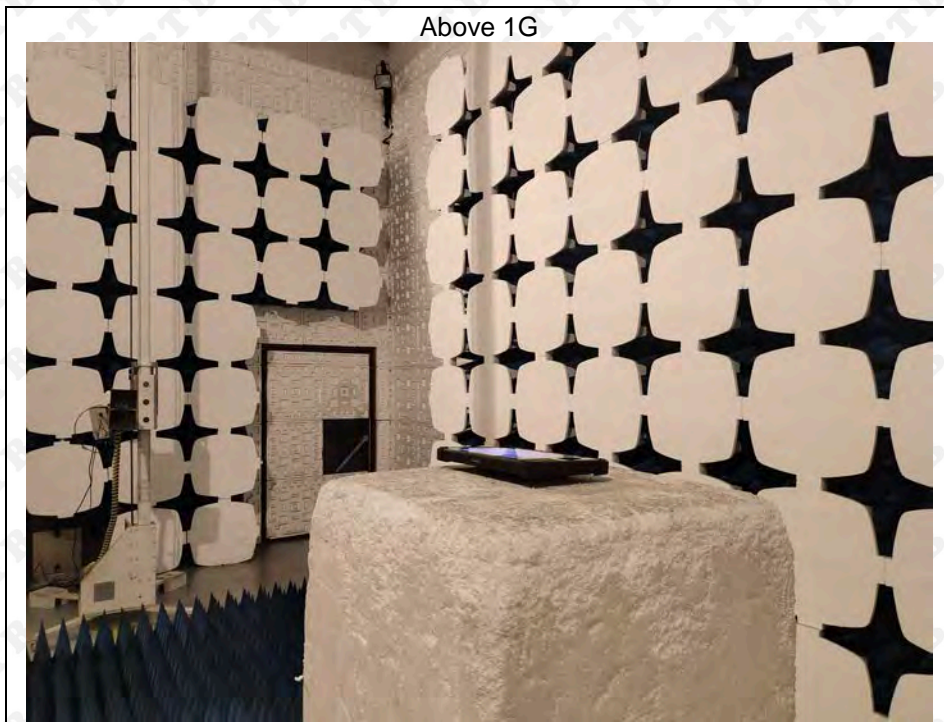
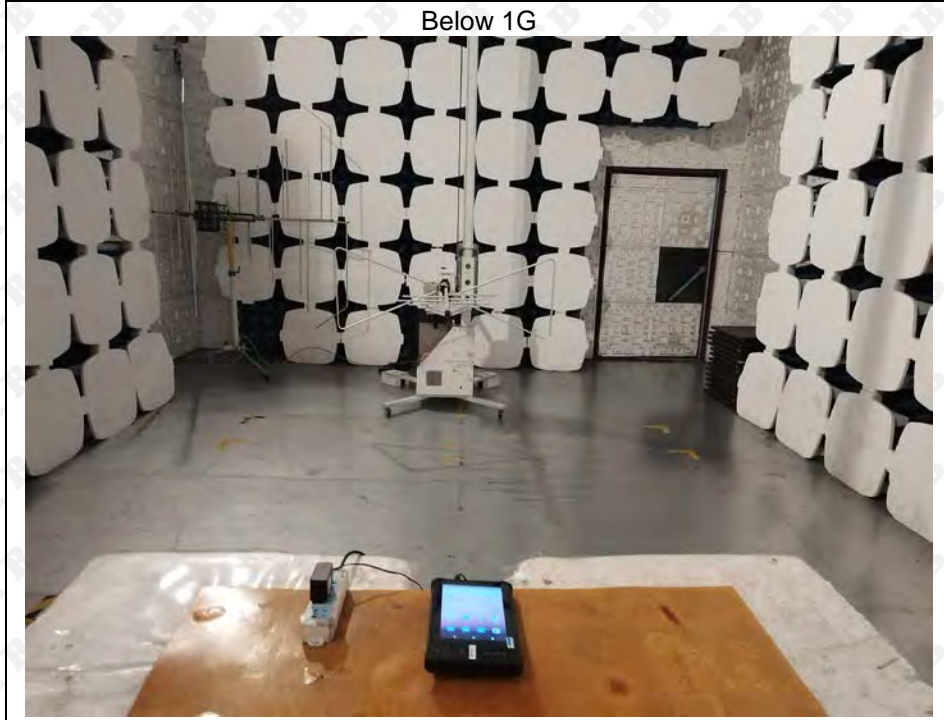


EUT Photo 2

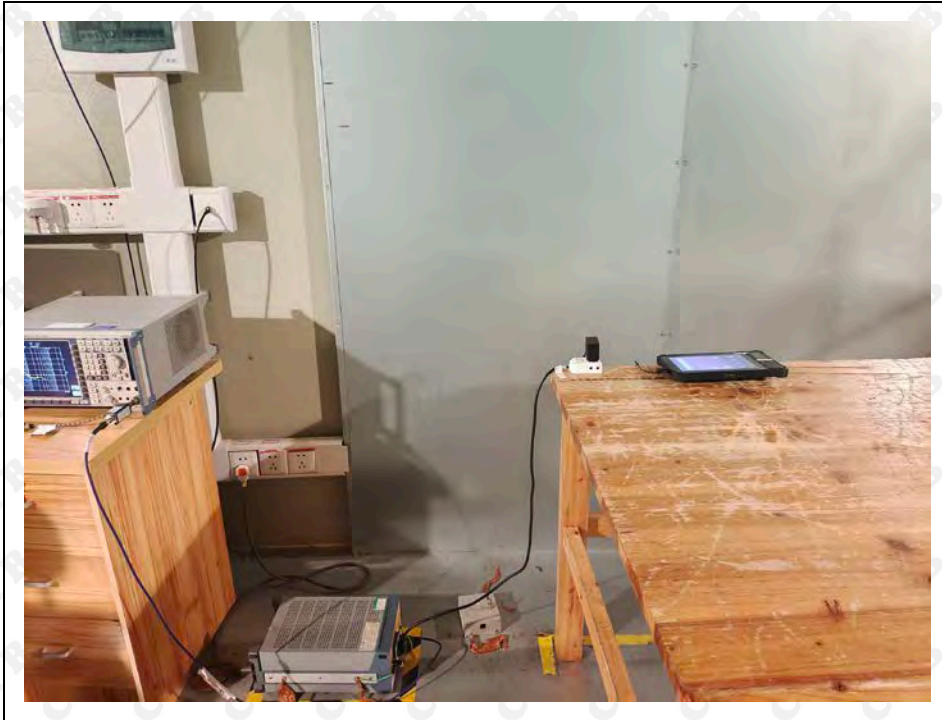


13. EUT TEST PHOTO

Radiated Emission



Conducted Emission



※※※※※ END OF REPORT ※※※※※