



TEST REPORT

Product Name: Kids Watch
FCC ID: 2BR2M-MX3
Trademark: N/A
Model Number: MX3, S21A, S21
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Sample Received Date: Aug. 12, 2025
Sample tested Date: Aug. 12, 2025 to Oct. 13, 2025
Issue Date: Oct. 13, 2025
Report No.: CTB25081206703RF04
Test Standards: FCC Part 22H & 24E
Test Results: PASS
Remark: This is GSM radio test report.

Compiled by:

Reviewed by:

Approved by:

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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.

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(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
CTB25081206703RF04	Oct. 13, 2025	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 camber 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):	MX3, S21A, S21
Model Description:	All the model are the same circuit and RF module, only the name and appearance are different. Test sample model: MX3
Hardware Version:	V1.0
Software Version:	Android8.1
Operation Frequency:	GSM/GPRS/EDGE 850: 824~849MHz GSM/GPRS/EDGE 1900: 1850~1910MHz WCDMA Band 2: 1850~1910MHz WCDMA Band 5: 824~849MHz
Max. RF output power:	GSM850: 22.47dBm GSM1900: 24.33dBm WCDMA Band 2: 18.40dBm WCDMA Band 5: 18.27dBm
Type of Modulation:	GMSK, BPSK
Antenna installation:	Internal antenna
Antenna Gain:	GSM850: -8.14dBi, GSM1900: -1.65dBi WCDMA Band 2: -1.65dBi WCDMA Band 5: -8.14dBi
Ratings:	DC 5V charging from adapter DC 3.85V by 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/Type No.	Series No.	Note
1	Adapter	JIYIN	JY-05100C	/	AE

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
WCDMA Band 5	WCDMA/HSDPA/HSUPA	826.4 MHz	4132
		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
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

4.6 Test Environment

Humidity(%):	54
Atmospheric Pressure(kPa):	101
Normal Voltage(DC):	3.85V
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, Xinhua 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.

FCC Test Firm Registration Number: CN1276

5.2 Test Instrument Used

No.	Equipment	Manufacturer	Type No.	Serial No.	Firmware Version	Calibrated Date	Calibrated until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	A.14.16	2025/5/23	2026/5/22
2	Power Sensor	Agilent	U2021XA	MY56120032	/	2025/5/23	2026/5/22
3	Power Sensor	Agilent	U2021XA	MY56120034	/	2025/5/23	2026/5/22
4	Communication test set	R&S	CMW500	108058	V3.5.80	2025/5/23	2026/5/22
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/5/23	2026/5/22
6	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2025/5/22	2026/5/21
7	Vector signal generator	Agilent	N5182A	MY47420195	A.01.87	2025/5/22	2026/5/21
8	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/5/22	2026/5/21
9	2.4 GHz Filter	Shenxiang	MSF2400-2483.5MS-1154	20181015001	/	2025/6/18	2026/6/17
10	5 GHz Filter	Shenxiang	MSF5150-5850 MS-1155	20181015001	/	2025/6/18	2026/6/17
11	Filter	Xingbo	XBLBQ-DZA120	190821-1-1	/	2025/5/24	2026/5/23
12	BT&WI-FI Automatic test software	Microwave	MTS8310	Ver. 2.0.0.0	/	/	/
13	Rohde & Schwarz SFU Broadcast Test System	R&S	SFU	101017	/	2024/10/31	2025/10/30
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	/	2025/5/22	2026/5/21
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/	/	/
16	966 chamber	C.R.T.	966	/	/	2024/6/23	2027/6/22
17	Receiver	R&S	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/5/23	2026/5/22

18	Amplifier	HP	8447E	2945A02747	/	2025/5/23	2026/5/22
19	Amplifier	Agilent	8449B	3008A01838	/	2025/6/2	2026/6/1
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/29	2026/6/28
21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	/	2025/6/1	2026/5/31
22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/	/	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/2	2026/6/1
24	loop antenna	ZHINAN	ZN30900A	GTS534	/	/	/
25	40G Horn antenna	A/H/System	SAS-574	588	/	2025/6/2	2026/6/1
26	Amplifier	AEROFLEX	Aeroflex	097	/	2025/6/2	2026/6/1
27	Power Meter	KEYSIGHT	N1912AP	N/A	A.05.00	2025/6/2	2026/6/1

6. RF OUTPUT POWER

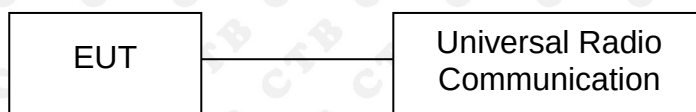
6.1 Standard Applicable

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	31.20	1.5	0	H	1.5	-8.14	21.56	38.45
824.2	32.03	1.5	0	V	1.5	-8.14	22.39	38.45
Middle Channel								
836.6	31.50	1.5	0	H	1.5	-8.14	21.86	38.45
836.6	31.30	1.5	0	V	1.5	-8.14	21.66	38.45
High Channel								
848.8	31.05	1.5	0	H	1.5	-8.14	21.41	38.45
848.8	31.41	1.5	0	V	1.5	-8.14	21.77	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	27.66	1.5	0	H	1.9	-1.65	24.11	33
1850.2	27.27	1.5	0	V	1.9	-1.65	23.72	33
Middle Channel								
1880	27.06	1.5	0	H	1.9	-1.65	23.51	33
1880	27.88	1.5	0	V	1.9	-1.65	24.33	33
High Channel								
1909.8	27.28	1.5	0	H	1.9	-1.65	23.73	33
1909.8	27.23	1.5	0	V	1.9	-1.65	23.68	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	31.39	1.5	0	H	1.5	-8.14	21.75	38.45
824.2	31.04	1.5	0	V	1.5	-8.14	21.40	38.45
Middle Channel								
836.6	31.84	1.5	0	H	1.5	-8.14	22.20	38.45
836.6	32.04	1.5	0	V	1.5	-8.14	22.40	38.45
High Channel								
848.8	31.90	1.5	0	H	1.5	-8.14	22.26	38.45
848.8	31.90	1.5	0	V	1.5	-8.14	22.26	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	27.51	1.5	0	H	1.9	-1.65	23.96	33
1850.2	27.86	1.5	0	V	1.9	-1.65	24.31	33
Middle Channel								
1880	27.10	1.5	0	H	1.9	-1.65	23.55	33
1880	27.72	1.5	0	V	1.9	-1.65	24.17	33
High Channel								
1909.8	27.08	1.5	0	H	1.9	-1.65	23.53	33
1909.8	27.35	1.5	0	V	1.9	-1.65	23.80	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	31.46	1.5	0	H	1.5	-8.14	21.82	38.45
824.2	31.02	1.5	0	V	1.5	-8.14	21.38	38.45
Middle Channel								
836.6	31.24	1.5	0	H	1.5	-8.14	21.60	38.45
836.6	32.11	1.5	0	V	1.5	-8.14	22.47	38.45
High Channel								
848.8	31.84	1.5	0	H	1.5	-8.14	22.20	38.45
848.8	31.55	1.5	0	V	1.5	-8.14	21.91	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	27.41	1.5	0	H	1.9	-1.65	23.86	33
1850.2	27.32	1.5	0	V	1.9	-1.65	23.77	33
Middle Channel								
1880	27.01	1.5	0	H	1.9	-1.65	23.46	33
1880	26.95	1.5	0	V	1.9	-1.65	23.40	33
High Channel								
1909.8	26.75	1.5	0	H	1.9	-1.65	23.20	33
1909.8	26.81	1.5	0	V	1.9	-1.65	23.26	33

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	21.63	1.5	0	H	1.5	-8.14	11.99	38.45
826.4	21.70	1.5	0	V	1.5	-8.14	12.06	38.45
Middle Channel								
836.6	21.46	1.5	0	H	1.5	-8.14	11.82	38.45
836.6	20.78	1.5	0	V	1.5	-8.14	11.14	38.45
High Channel								
846.6	21.27	1.5	0	H	1.5	-8.14	11.63	38.45
846.6	21.47	1.5	0	V	1.5	-8.14	11.83	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	21.52	1.5	0	H	1.5	-8.14	11.88	38.45
826.4	21.71	1.5	0	V	1.5	-8.14	12.07	38.45
Middle Channel								
836.6	21.55	1.5	0	H	1.5	-8.14	11.91	38.45
836.6	20.75	1.5	0	V	1.5	-8.14	11.11	38.45
High Channel								
846.6	21.36	1.5	0	H	1.5	-8.14	11.72	38.45
846.6	20.65	1.5	0	V	1.5	-8.14	11.01	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	20.21	1.5	0	H	1.9	-1.65	16.66	38.45
826.4	21.82	1.5	0	V	1.9	-1.65	18.27	38.45
Middle Channel								
836.6	20.87	1.5	0	H	1.9	-1.65	17.32	38.45
836.6	21.43	1.5	0	V	1.9	-1.65	17.88	38.45
High Channel								
846.6	20.46	1.5	0	H	1.9	-1.65	16.91	38.45
846.6	20.06	1.5	0	V	1.9	-1.65	16.51	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	21.64	1.5	0	H	1.9	-1.65	18.09	33
1852.4	21.37	1.5	0	V	1.9	-1.65	17.82	33
Middle Channel								
1880	20.68	1.5	0	H	1.9	-1.65	17.13	33
1880	21.81	1.5	0	V	1.9	-1.65	18.26	33
High Channel								
1907.6	20.81	1.5	0	H	1.9	-1.65	17.26	33
1907.6	21.69	1.5	0	V	1.9	-1.65	18.14	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	20.81	1.5	0	H	1.9	-1.65	17.26	33
1852.4	21.66	1.5	0	V	1.9	-1.65	18.11	33
Middle Channel								
1880	21.95	1.5	0	H	1.9	-1.65	18.40	33
1880	20.02	1.5	0	V	1.9	-1.65	16.47	33
High Channel								
1907.6	21.41	1.5	0	H	1.9	-1.65	17.86	33
1907.6	21.30	1.5	0	V	1.9	-1.65	17.75	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	20.10	1.5	0	H	1.9	-1.65	16.55	33
1852.4	20.88	1.5	0	V	1.9	-1.65	17.33	33
Middle Channel								
1880	21.62	1.5	0	H	1.9	-1.65	18.07	33
1880	21.02	1.5	0	V	1.9	-1.65	17.47	33
High Channel								
1907.6	21.76	1.5	0	H	1.9	-1.65	18.21	33
1907.6	20.24	1.5	0	V	1.9	-1.65	16.69	33

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	22.39	38.45
	Middle Channel	836.6	21.86	38.45
	High Channel	848.8	21.77	38.45
GPRS(1 Slot)	Low Channel	824.2	21.75	38.45
	Middle Channel	836.6	22.40	38.45
	High Channel	848.8	22.26	38.45
EDGE(1 Slot)	Low Channel	824.2	21.82	38.45
	Middle Channel	836.6	22.47	38.45
	High Channel	848.8	22.20	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	24.11	33.0
	Middle Channel	1880.0	24.33	33.0
	High Channel	1909.8	23.73	33.0
GPRS(1 Slot)	Low Channel	1850.2	24.31	33.0
	Middle Channel	1880.0	24.17	33.0
	High Channel	1909.8	23.80	33.0
EDGE(1 Slot)	Low Channel	1850.2	23.86	33.0
	Middle Channel	1880.0	23.46	33.0
	High Channel	1909.8	23.26	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	12.06	38.45
	Middle Channel	836.6	11.82	38.45
	High Channel	846.6	11.83	38.45
HSDPA	Low Channel	826.4	12.07	38.45
	Middle Channel	836.6	11.91	38.45
	High Channel	846.6	11.72	38.45
HSUPA	Low Channel	826.4	18.27	38.45
	Middle Channel	836.6	17.88	38.45
	High Channel	846.6	16.91	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	18.09	33.00
	Middle Channel	1880.0	18.26	33.00
	High Channel	1907.6	18.14	33.00
HSDPA	Low Channel	1852.4	18.11	33.00
	Middle Channel	1880.0	18.40	33.00
	High Channel	1907.6	17.86	33.00
HSUPA	Low Channel	1852.4	17.33	33.00
	Middle Channel	1880.0	18.07	33.00
	High Channel	1907.6	18.21	33.00

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

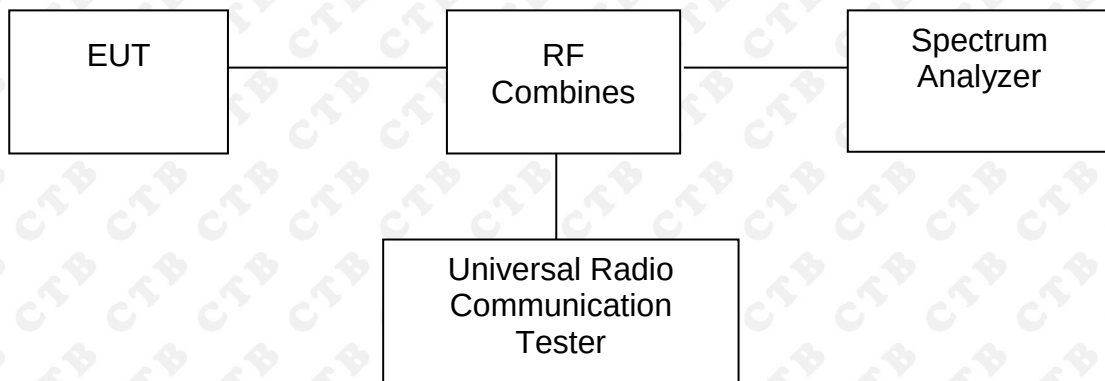
7.1 Standard Applicable

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	2.67	13
GPRS(1 Slot)	190	836.6	2.66	13
EDGE(1 Slot)	190	836.6	2.66	13

For PCS 1900

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
GSM	512	1850.2	2.67	13
GPRS(1 Slot)	512	1850.2	2.67	13
EDGE(1 Slot)	512	1850.2	2.67	13

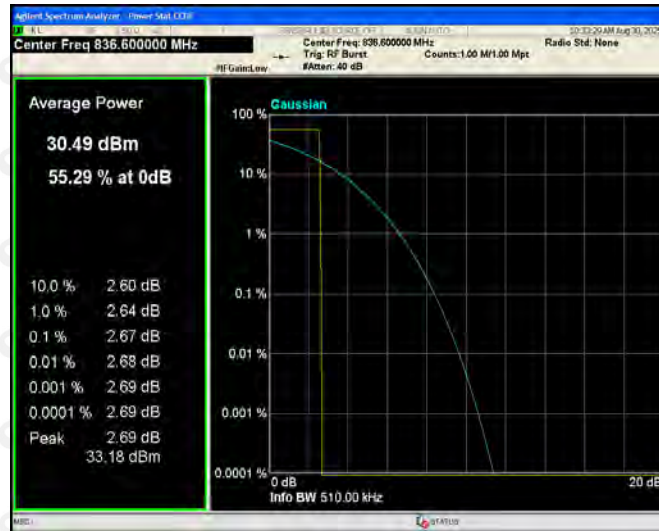
For WCDMA Band 5

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
WCDMA	4182	836.4	3.01	13
HSDPA	4182	836.4	3.02	13
HSUPA	4182	836.4	3.02	13

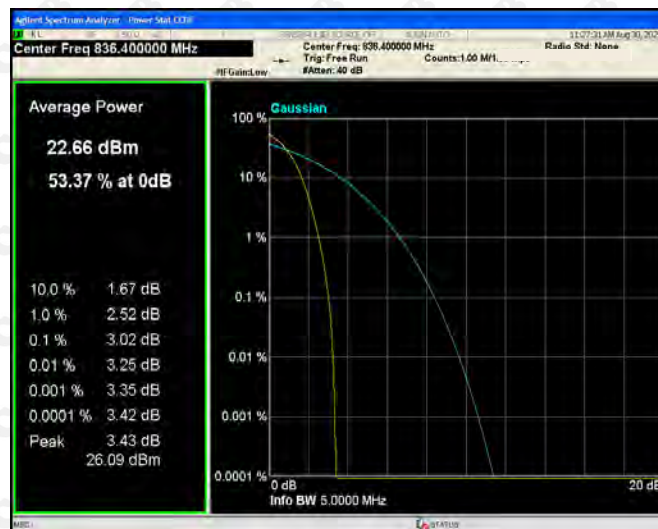
For WCDMA Band 2

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
WCDMA	9262	1852.4	2.91	13
HSDPA	9400	1852.4	2.78	13
HSUPA	9400	1852.4	2.75	13

GSM :



WCDMA:



8. EMISSION BANDWIDTH

8.1 Standard Applicable

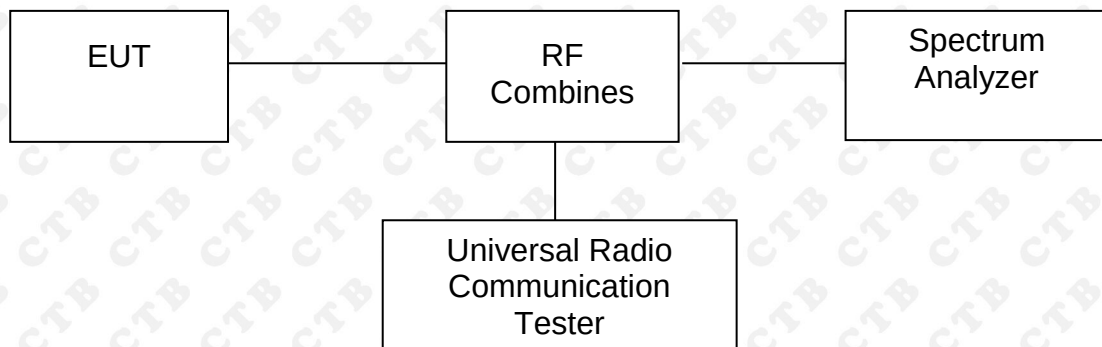
According to §22.917(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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	246.339	319.291
	190	836.6	242.828	314.159
	251	848.8	247.776	317.537
GPRS	128	824.2	242.091	310.197
	190	836.6	245.498	309.048
	251	848.8	244.676	312.363
EDGE	128	824.2	245.696	317.162
	190	836.6	246.961	326.607
	251	848.8	249.861	321.265

For PCS Band

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM	512	1850.2	250.241	320.751
	661	1880.0	243.055	318.419
	810	1909.8	255.695	322.488
GPRS	512	1850.2	243.438	309.745
	661	1880.0	252.457	325.059
	810	1909.8	240.324	313.786
EDGE	512	1850.2	239.217	301.711
	661	1880.0	244.050	319.074
	810	1909.8	244.295	320.855

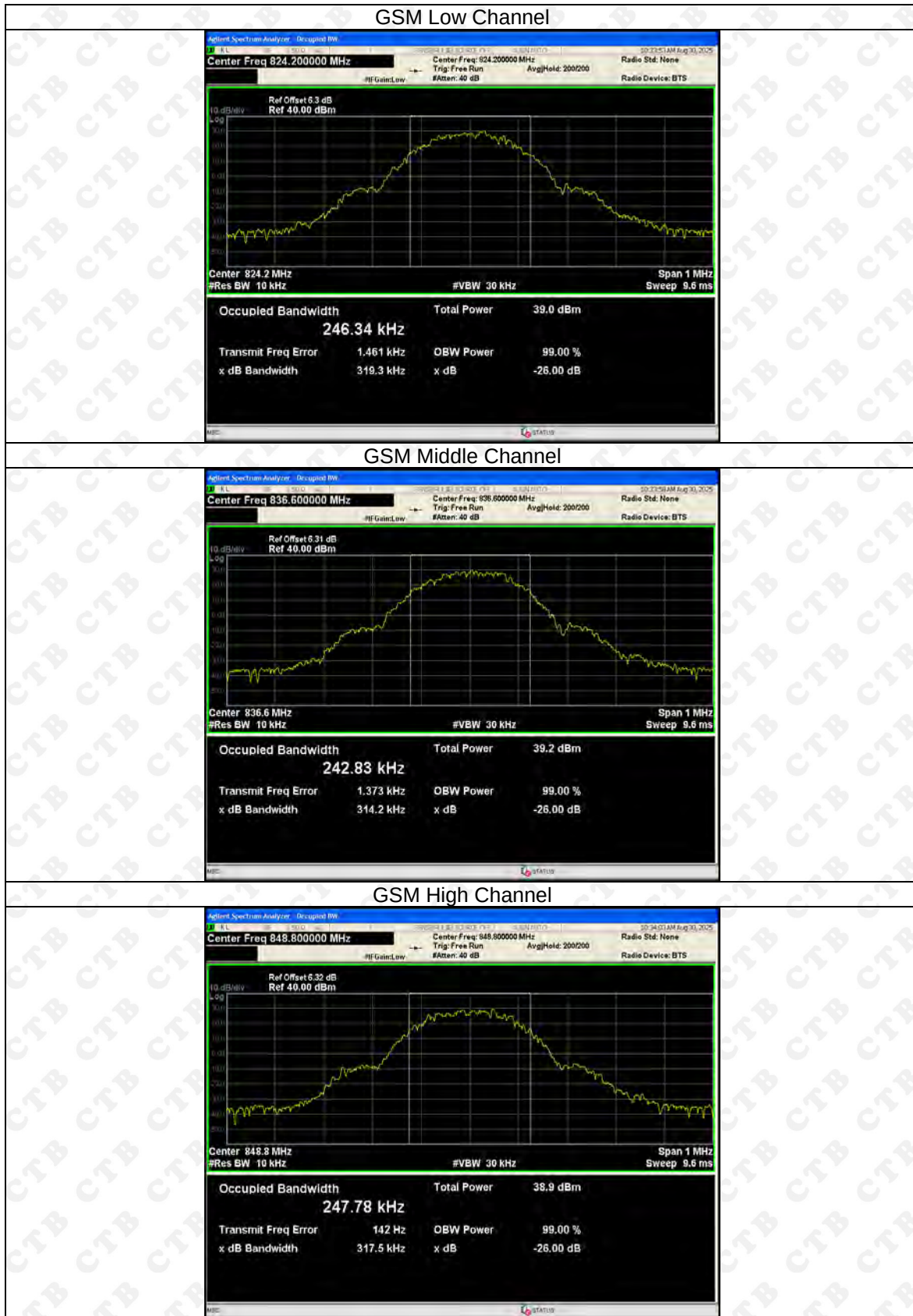
For Band 5

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
WCDMA	4132	826.4	4135.340	4686.217
	4183	836.6	4161.794	4660.940
	4233	846.6	4149.848	4684.902
HSDPA	4132	826.4	4159.364	4690.131
	4183	836.6	4169.997	4681.800
	4233	846.6	4155.410	4705.533
HSUPA	4132	826.4	4150.884	4680.557
	4183	836.6	4156.341	4687.786
	4233	846.6	4151.305	4676.025

For Band 2

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
WCDMA	9262	1852.4	4140.959	4652.620
	9400	1880.0	4143.594	4676.481
	9538	1907.6	4159.402	4691.367
HSDPA	9262	1852.4	4154.565	4635.857
	9400	1880.0	4163.761	4676.664
	9538	1907.6	4149.704	4683.145
HSUPA	9262	1852.4	4151.942	4643.093
	9400	1880.0	4161.756	4644.463
	9538	1907.6	4156.740	4674.865

For Cellular Band



GPRS Low Channel



GPRS Middle Channel



GPRS High Channel



EDGE Low Channel



EDGE Middle Channel



EDGE High Channel



For PCS Band

GSM Low Channel



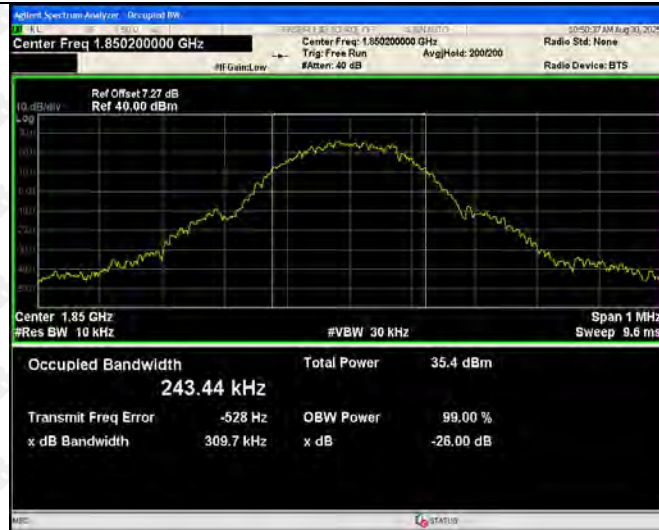
GSM Middle Channel



GSM High Channel



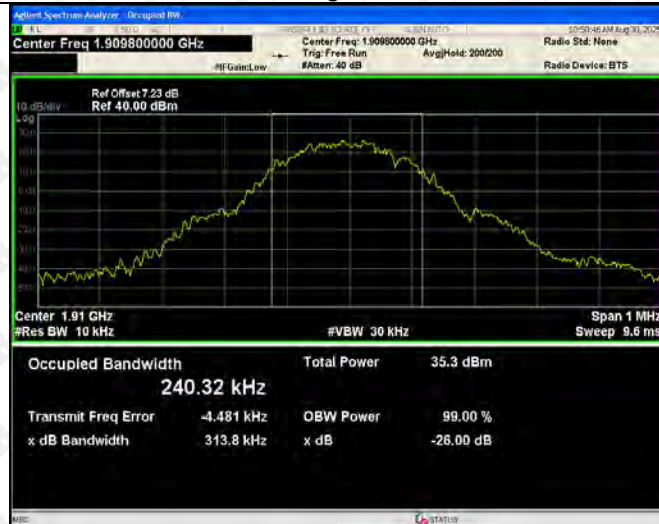
GPRS Low Channel



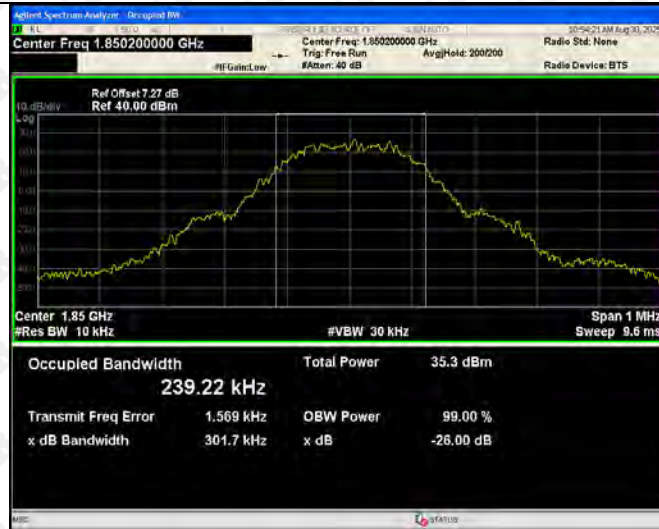
GPRS Middle Channel



GPRS High Channel



EDGE Low Channel



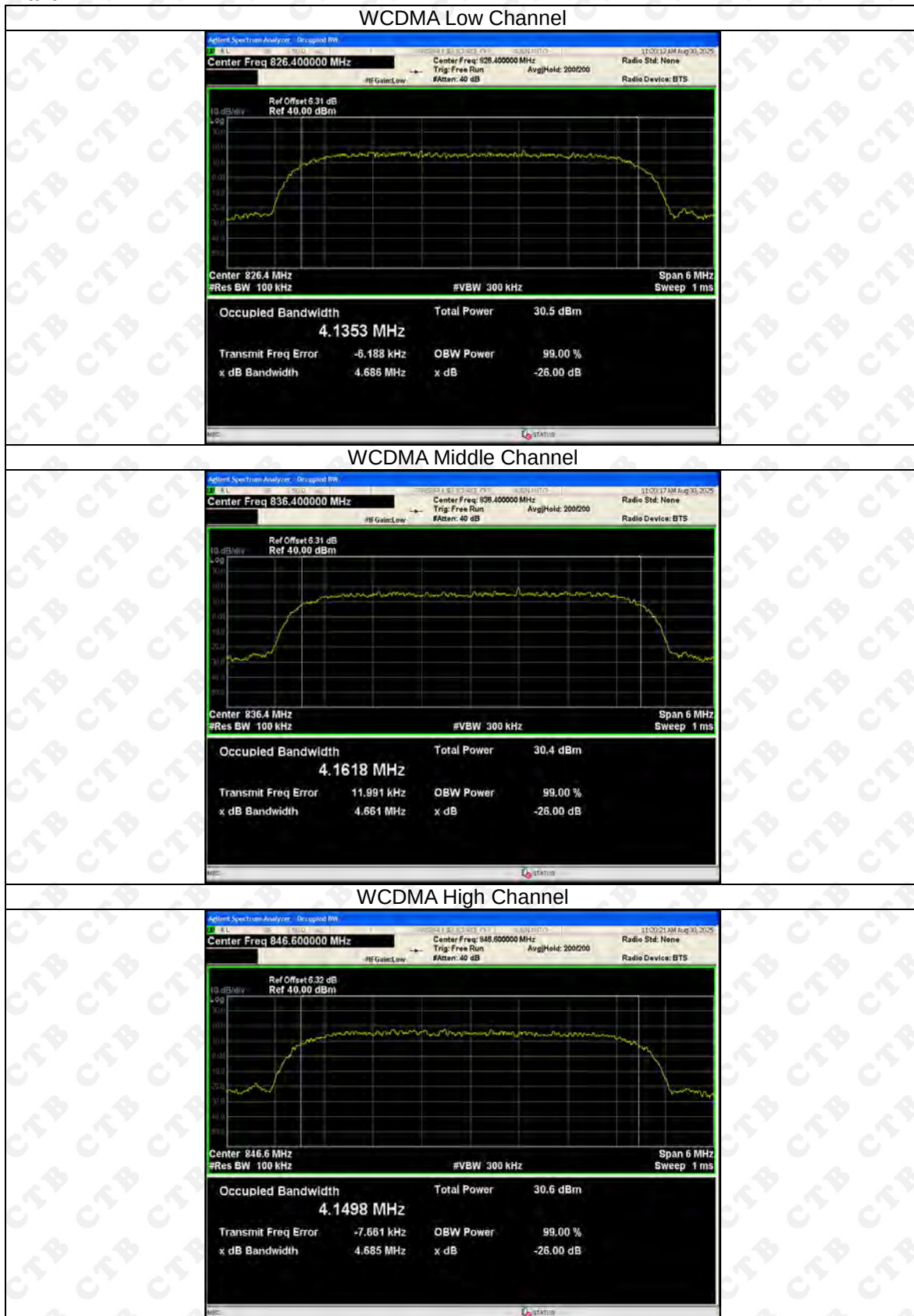
EDGE Middle Channel



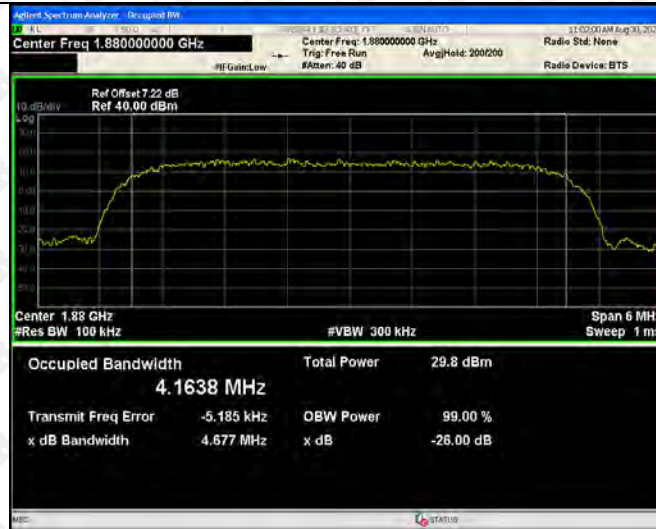
EDGE High Channel



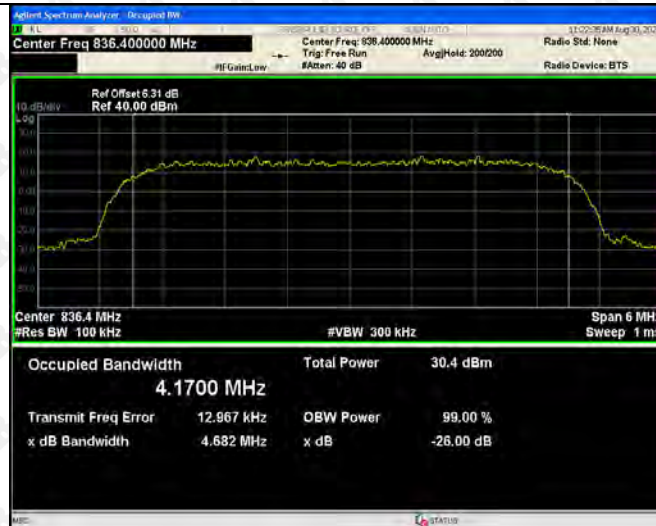
For Band V



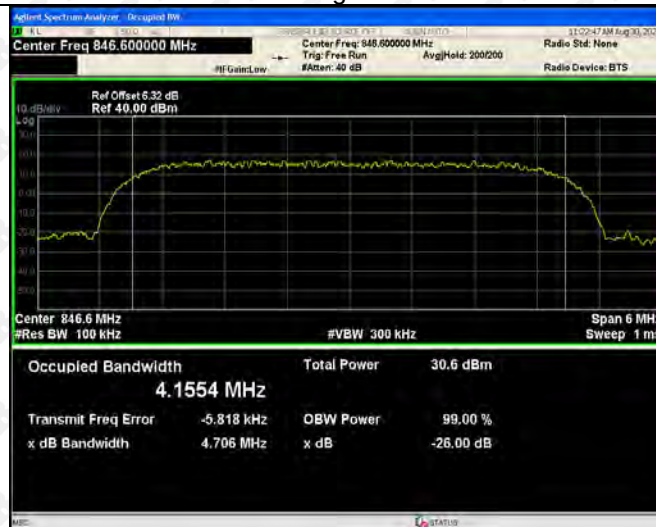
HSDPA Low Channel



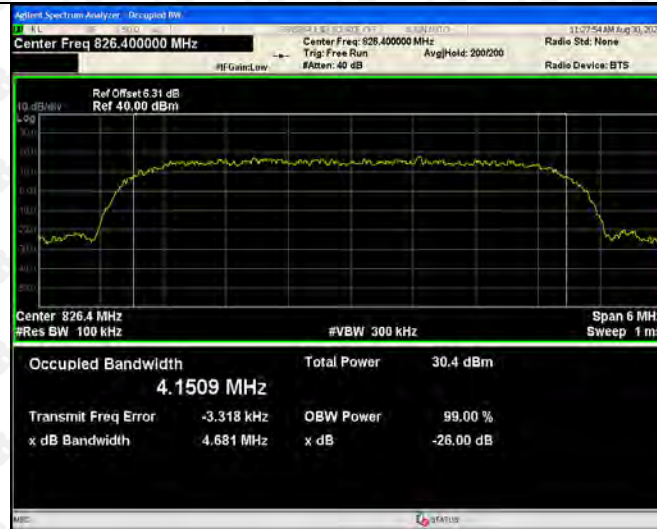
HSDPA Middle Channel



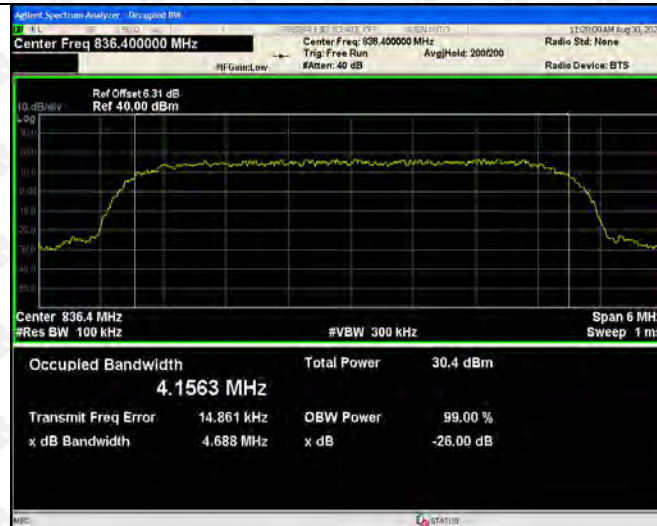
HSDPA High Channel



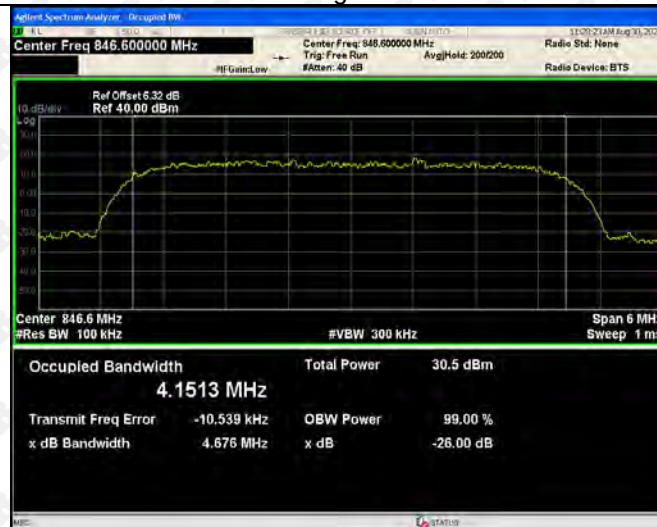
HSUPA Low Channel



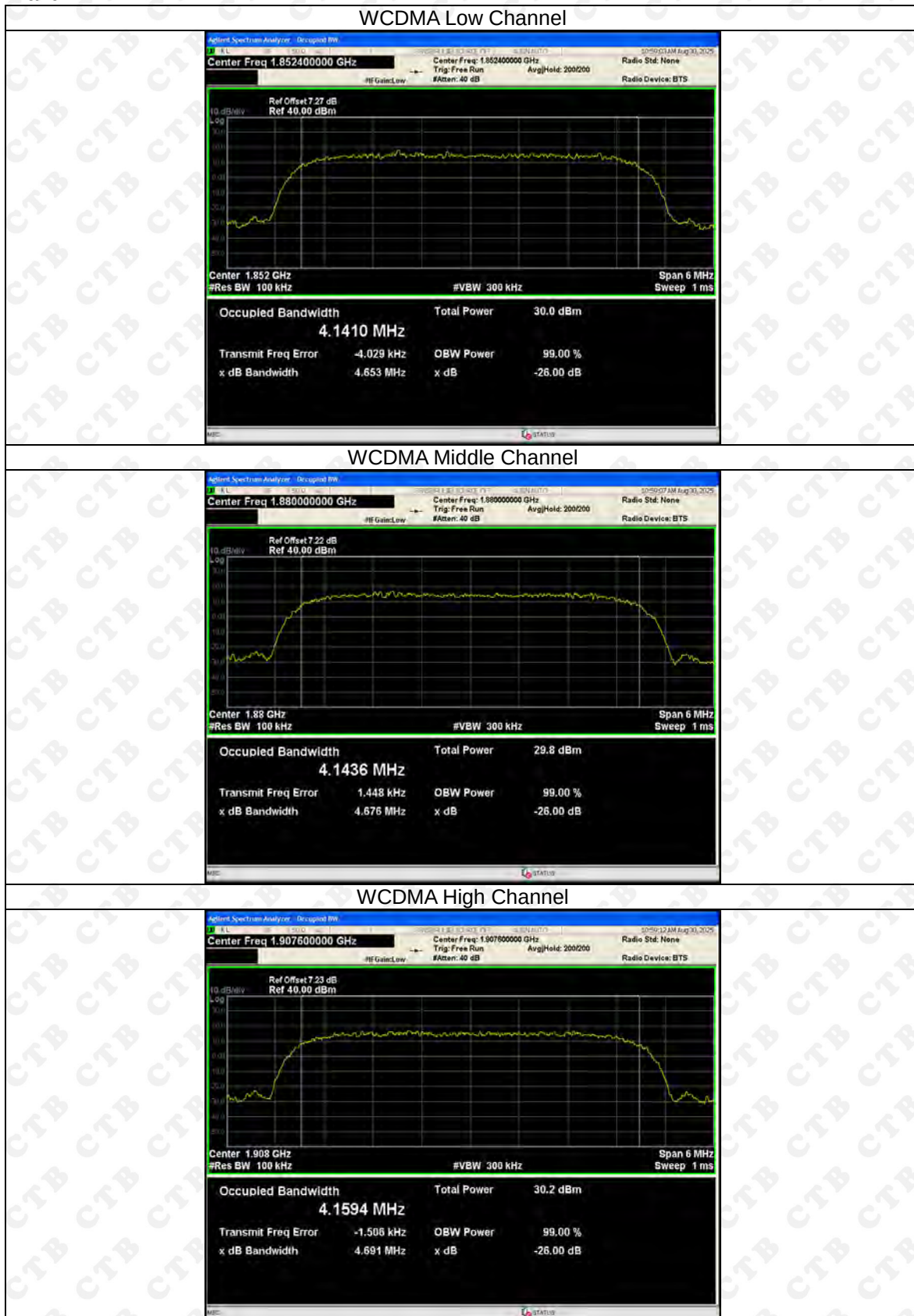
HSUPA Middle Channel



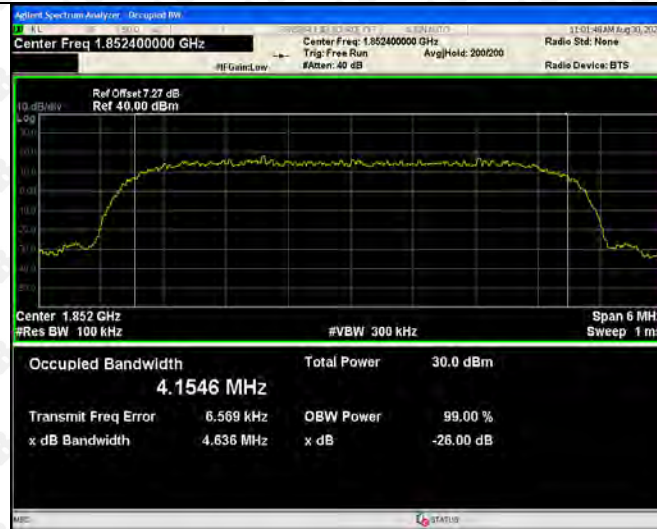
HSUPA High Channel



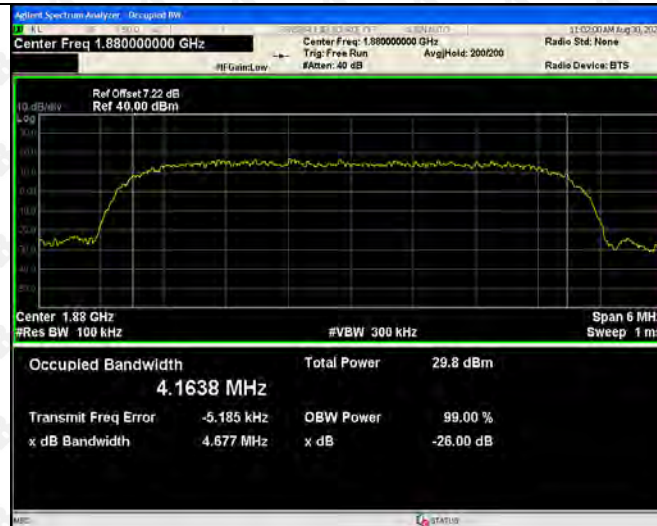
For Band II



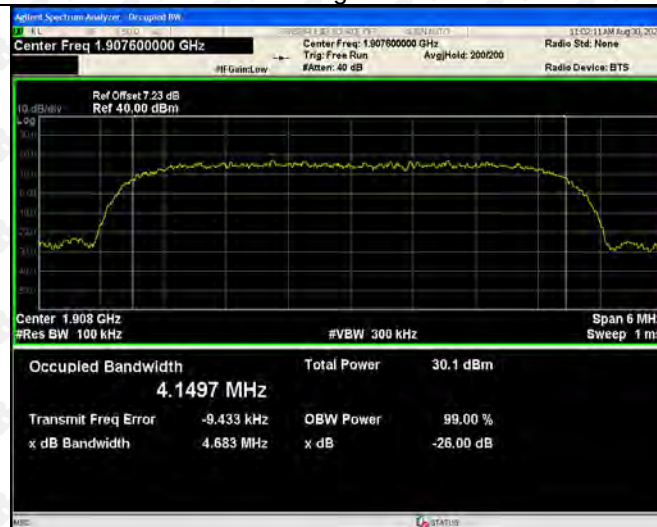
HSDPA Low Channel



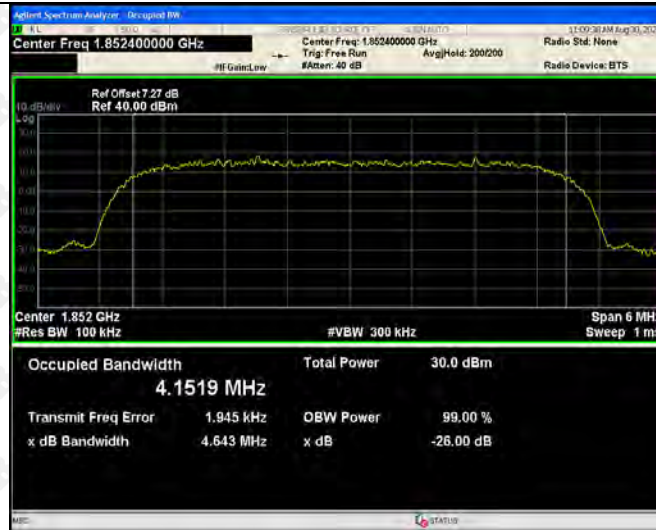
HSDPA Middle Channel



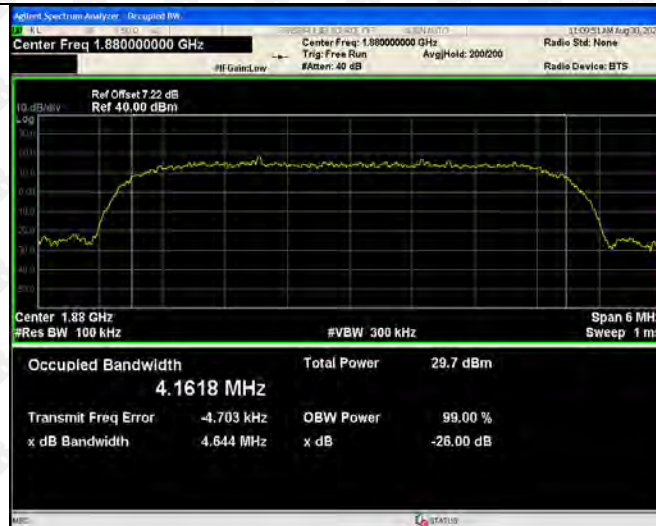
HSDPA High Channel



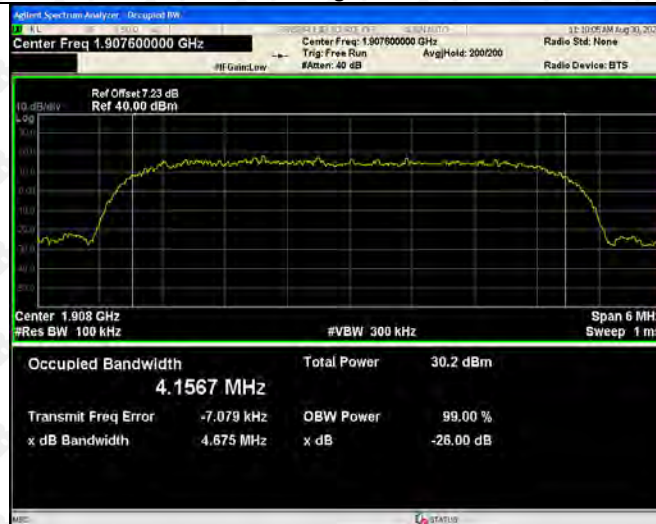
HSUPA Low Channel



HSUPA Middle Channel



HSUPA High Channel



9. OUT OF BAND EMISSIONS AT ANTENNA TERMINAL

9.1 Standard Applicable

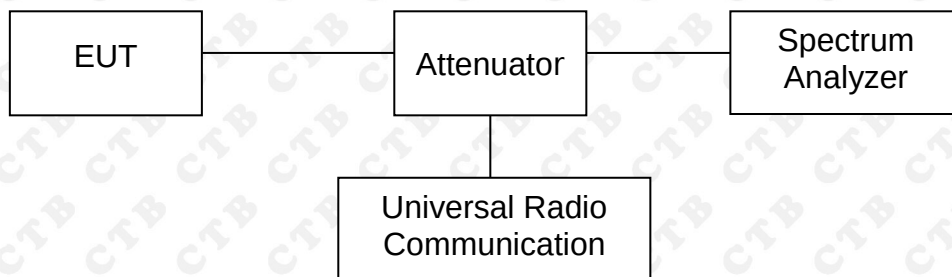
According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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:

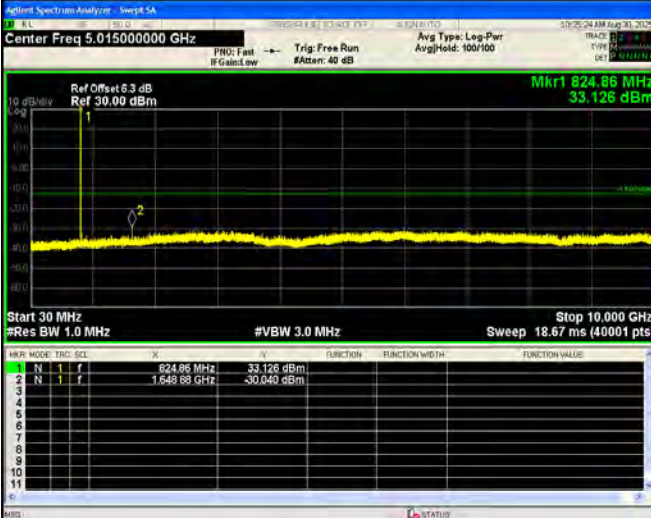
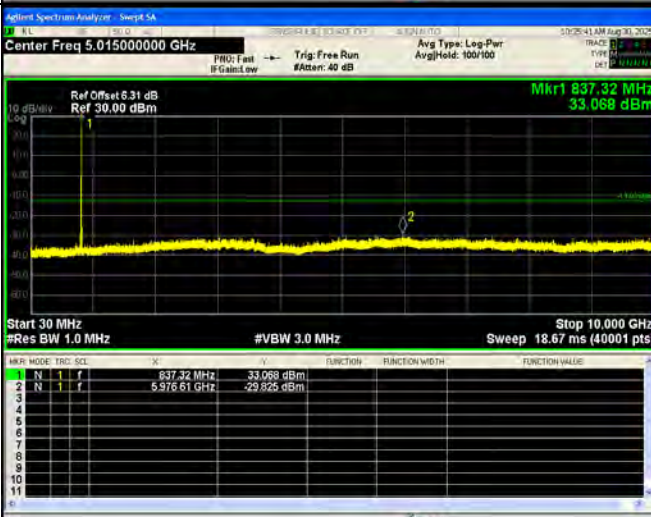
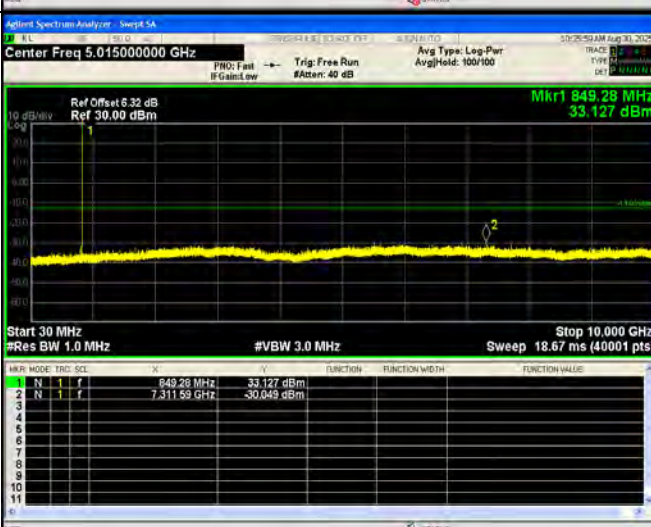


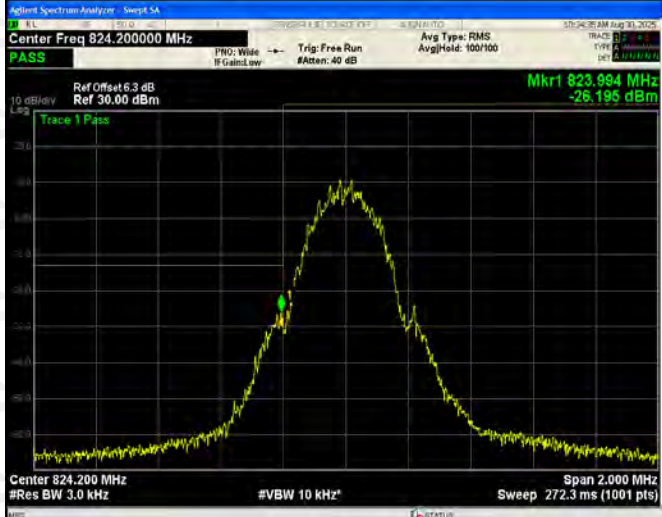
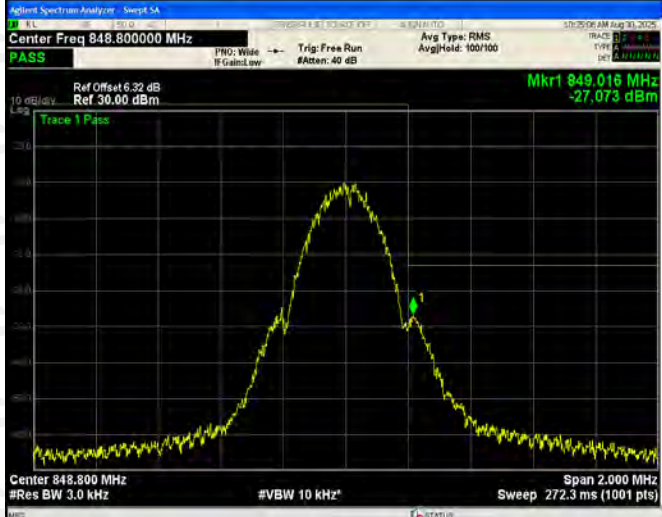
9.3 Environmental Conditions

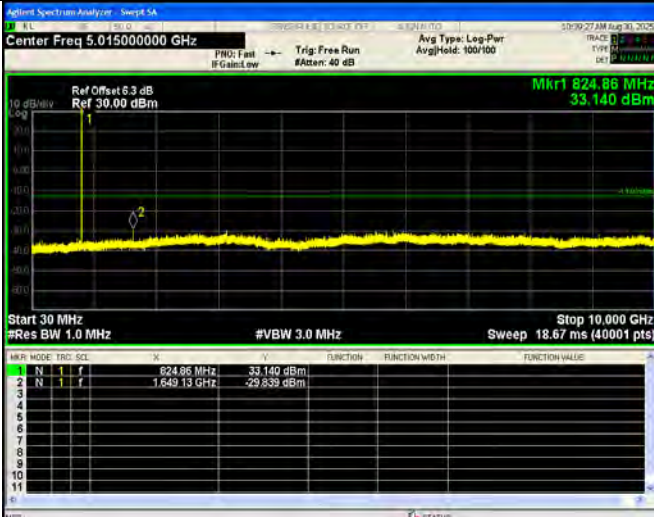
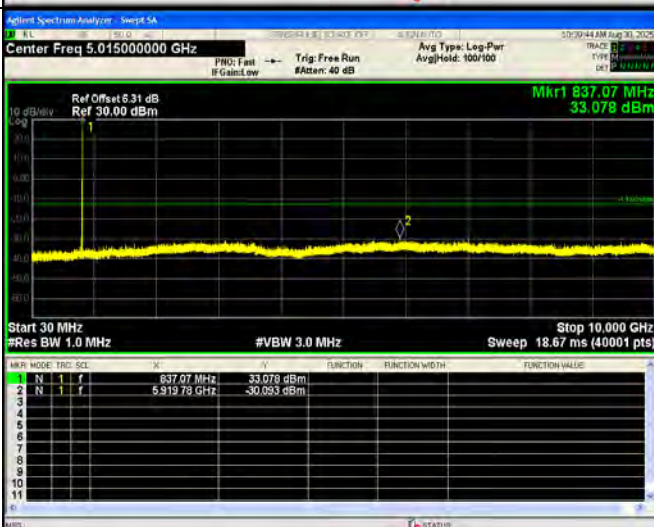
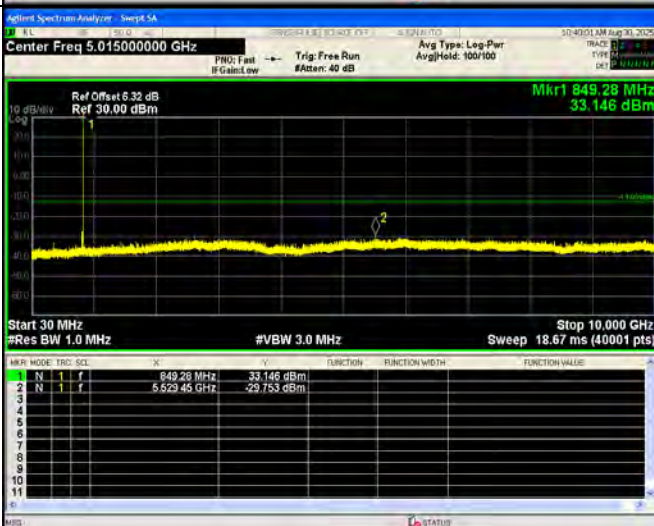
Temperature:	23 °C
Relative Humidity:	54%
ATM Pressure:	1010 mbar

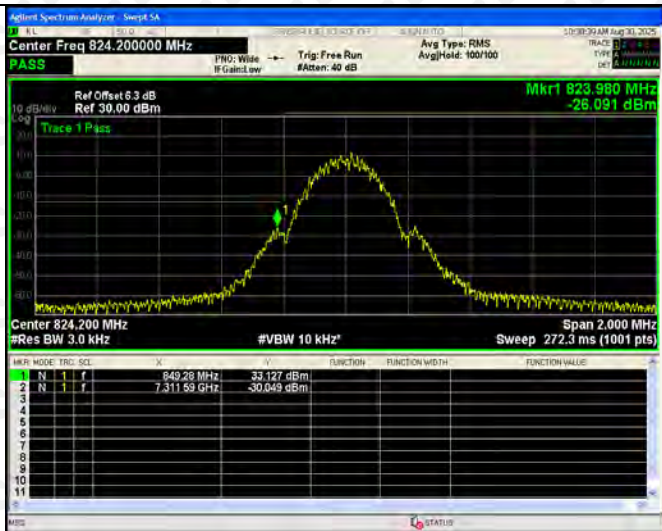
9.4 Summary of Test Results/Plots

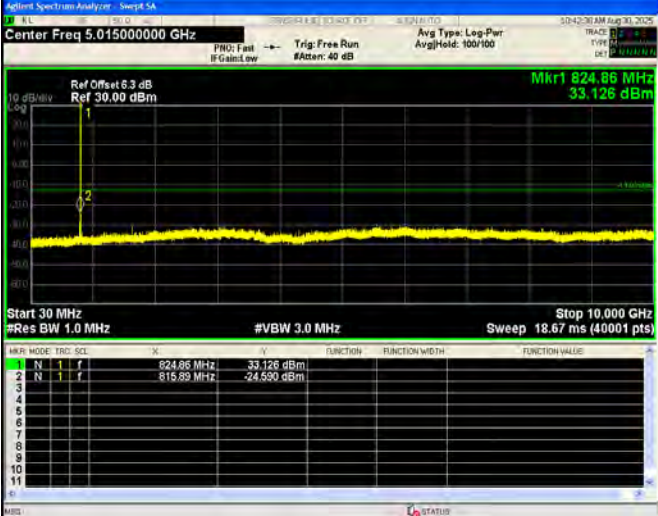
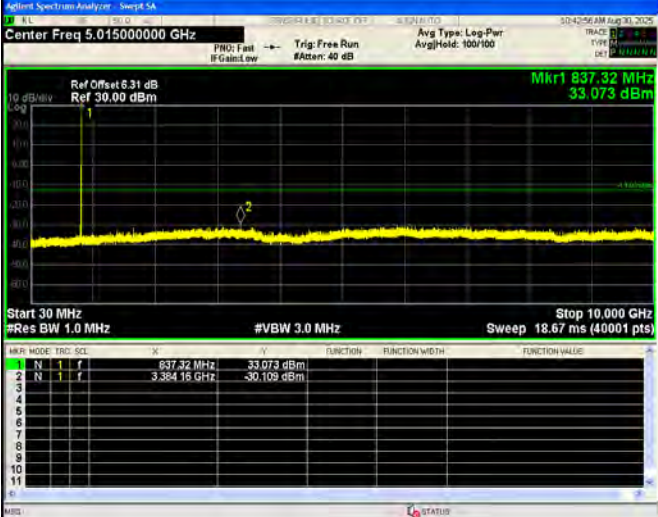
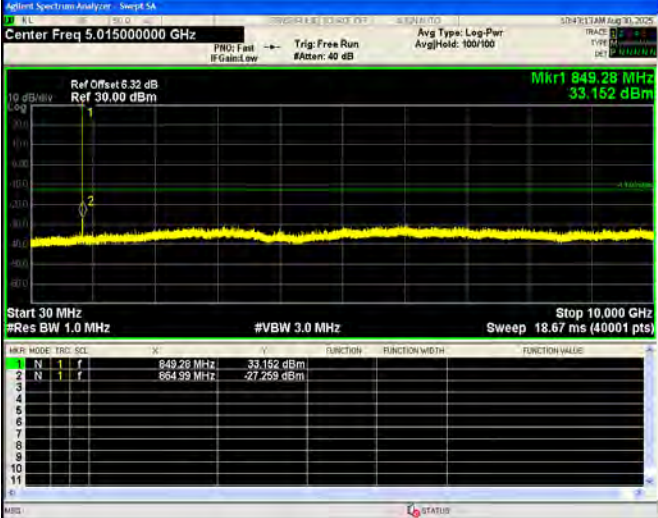
Please refer to the following test plots
For Cellular Band

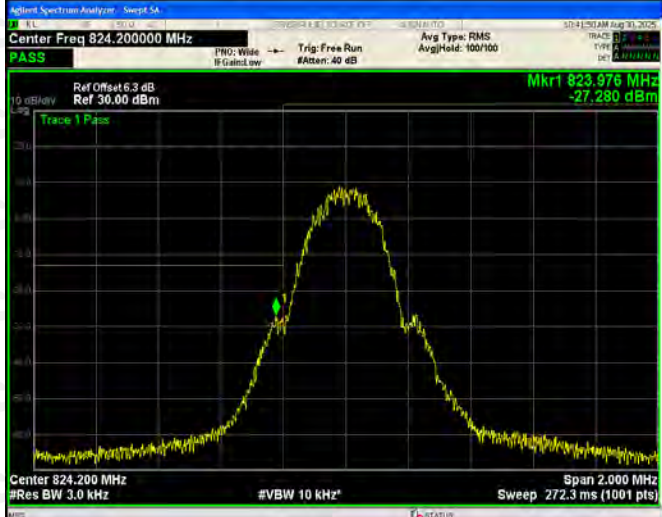
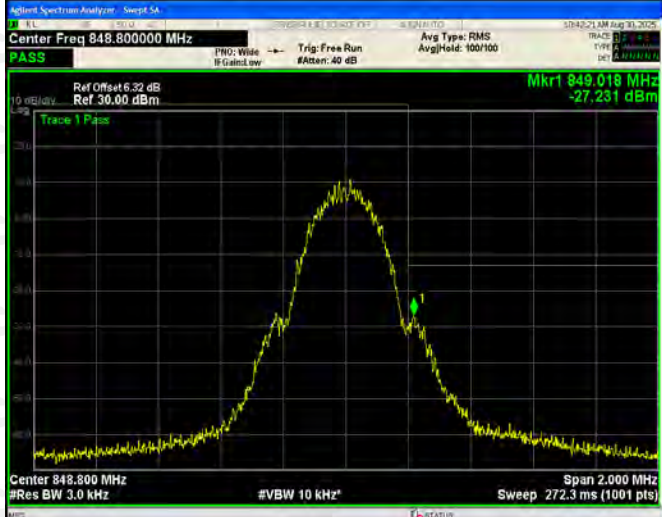
GSM Low Channel	
GSM Middle Channel	
GSM High Channel	

GSM Low Band Emission	
GSM High Band Emission	

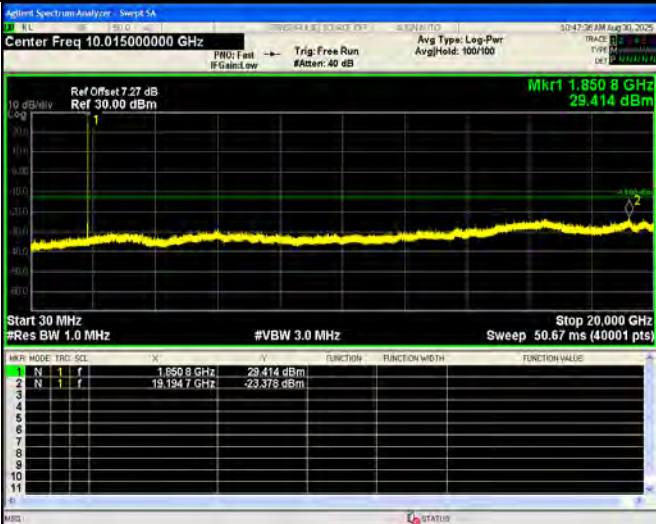
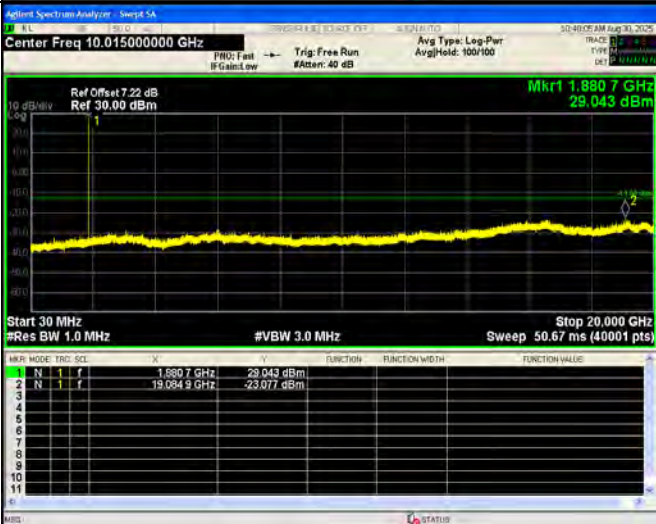
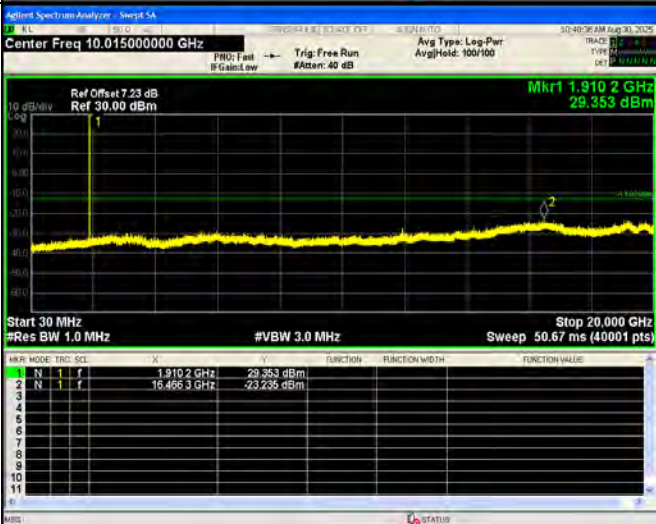
GPRS Low Channel	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 5.015000000 GHz Ref Offset 63 dB Ref 30.00 dBm Mkr1 824.86 MHz 33.140 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10,000 GHz Sweep 18.67 ms (40001 pts) <table><tr><th>MARK</th><th>MODE</th><th>TRIG</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>824.86 MHz</td><td>33.140 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>1.649 13 GHz</td><td>-29.839 dBm</td><td></td><td></td><td></td></tr></table>	MARK	MODE	TRIG	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	824.86 MHz	33.140 dBm				2	N	1	f	1.649 13 GHz	-29.839 dBm			
MARK	MODE	TRIG	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	N	1	f	824.86 MHz	33.140 dBm																							
2	N	1	f	1.649 13 GHz	-29.839 dBm																							
GPRS Middle Channel	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 5.015000000 GHz Ref Offset 63 dB Ref 30.00 dBm Mkr1 837.07 MHz 33.078 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10,000 GHz Sweep 18.67 ms (40001 pts) <table><tr><th>MARK</th><th>MODE</th><th>TRIG</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>837.07 MHz</td><td>33.078 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>5.919 78 GHz</td><td>-30.093 dBm</td><td></td><td></td><td></td></tr></table>	MARK	MODE	TRIG	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	837.07 MHz	33.078 dBm				2	N	1	f	5.919 78 GHz	-30.093 dBm			
MARK	MODE	TRIG	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	N	1	f	837.07 MHz	33.078 dBm																							
2	N	1	f	5.919 78 GHz	-30.093 dBm																							
GPRS High Channel	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 5.015000000 GHz Ref Offset 63 dB Ref 30.00 dBm Mkr1 849.28 MHz 33.146 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10,000 GHz Sweep 18.67 ms (40001 pts) <table><tr><th>MARK</th><th>MODE</th><th>TRIG</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>849.28 MHz</td><td>33.146 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>5.529 45 GHz</td><td>-29.753 dBm</td><td></td><td></td><td></td></tr></table>	MARK	MODE	TRIG	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	849.28 MHz	33.146 dBm				2	N	1	f	5.529 45 GHz	-29.753 dBm			
MARK	MODE	TRIG	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																				
1	N	1	f	849.28 MHz	33.146 dBm																							
2	N	1	f	5.529 45 GHz	-29.753 dBm																							

GPRS Low Band Emission		
GPRS High Band Emission		

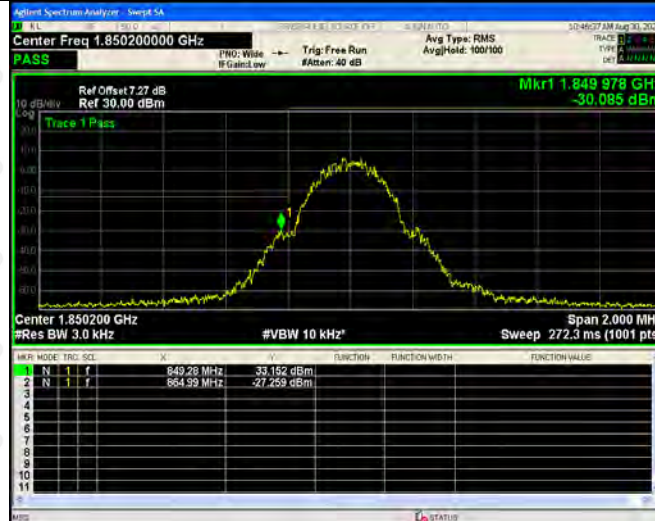
EDGE Low Channel	 Center Freq 5.015000000 GHz Ref Offset 63 dB Ref 30.00 dBm Mkr1 824.85 MHz 33.126 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10,000 GHz Sweep 18.67 ms (40001 pts) <table><tr><th>MR</th><th>MODE</th><th>FREQ</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>824.85 MHz</td><td>33.126 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>815.89 MHz</td><td>-24.590 dBm</td><td></td><td></td><td></td></tr></table>	MR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	824.85 MHz	33.126 dBm				2	N	1	f	815.89 MHz	-24.590 dBm				
MR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	824.85 MHz	33.126 dBm																								
2	N	1	f	815.89 MHz	-24.590 dBm																								
EDGE Middle Channel	 Center Freq 5.015000000 GHz Ref Offset 63 dB Ref 30.00 dBm Mkr1 837.32 MHz 33.073 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10,000 GHz Sweep 18.67 ms (40001 pts) <table><tr><th>MR</th><th>MODE</th><th>FREQ</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>837.32 MHz</td><td>33.073 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>3.38416 GHz</td><td>-30.109 dBm</td><td></td><td></td><td></td></tr></table>	MR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	837.32 MHz	33.073 dBm				2	N	1	f	3.38416 GHz	-30.109 dBm				
MR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	837.32 MHz	33.073 dBm																								
2	N	1	f	3.38416 GHz	-30.109 dBm																								
EDGE High Channel	 Center Freq 5.015000000 GHz Ref Offset 63 dB Ref 30.00 dBm Mkr1 849.28 MHz 33.152 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10,000 GHz Sweep 18.67 ms (40001 pts) <table><tr><th>MR</th><th>MODE</th><th>FREQ</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>849.28 MHz</td><td>33.152 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>864.99 MHz</td><td>-27.259 dBm</td><td></td><td></td><td></td></tr></table>	MR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	849.28 MHz	33.152 dBm				2	N	1	f	864.99 MHz	-27.259 dBm				
MR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	849.28 MHz	33.152 dBm																								
2	N	1	f	864.99 MHz	-27.259 dBm																								

EDGE Low Band Emission	
EDGE High Band Emission	

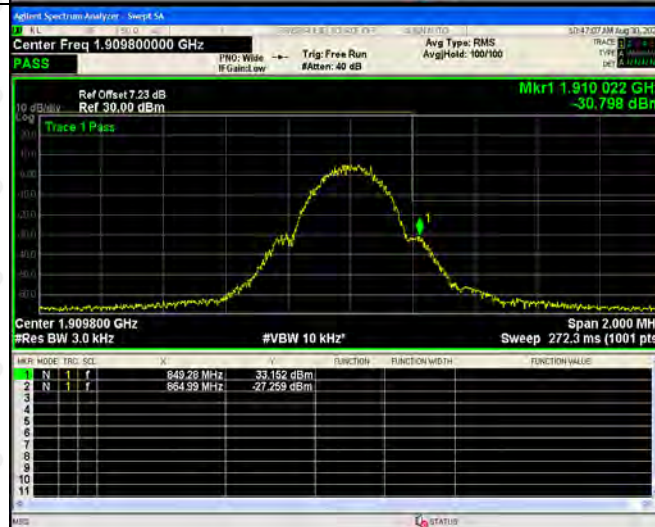
For PCS Band

GSM Low Channel	
GSM Middle Channel	
GSM High Channel	

GSM
Low
Band
Emission

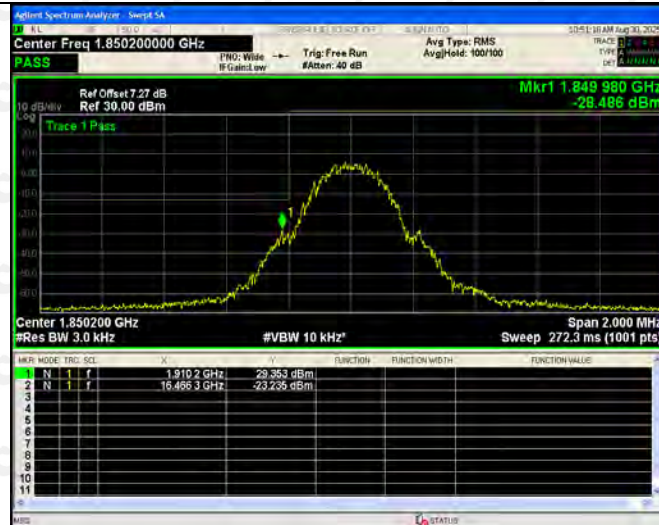


GSM
High
Band
Emission



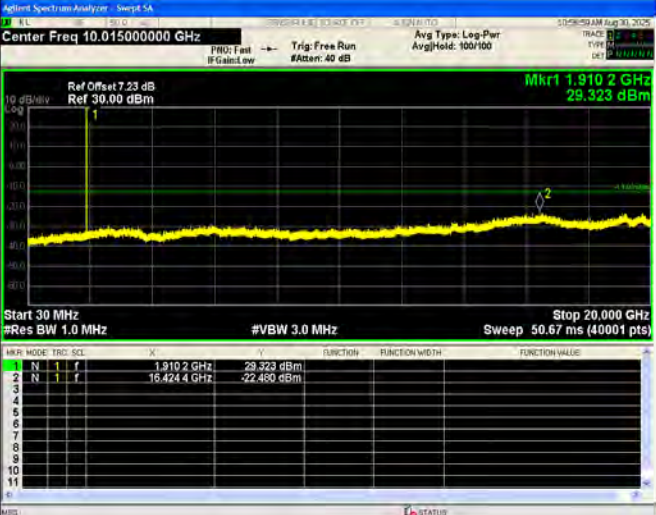
GPRS Low Channel	 Agilent Spectrum Analyzer - Swept SA Center Freq 10.015000000 GHz Ref Offset 7.27 dB Ref 30.00 dBm Mkr1 1.850 8 GHz 29.438 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MARK</th><th>MODE</th><th>FREQ</th><th>SCAL</th><th>UNIT</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1.850 8 GHz</td><td>f</td><td></td><td></td><td></td><td>29.438 dBm</td></tr><tr><td>2</td><td>N</td><td>19.190 7 GHz</td><td>f</td><td></td><td></td><td></td><td>-22.575 dBm</td></tr></table>	MARK	MODE	FREQ	SCAL	UNIT	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1.850 8 GHz	f				29.438 dBm	2	N	19.190 7 GHz	f				-22.575 dBm
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1	N	1.850 8 GHz	f				29.438 dBm																		
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GPRS Middle Channel	 Agilent Spectrum Analyzer - Swept SA Center Freq 10.015000000 GHz Ref Offset 7.22 dB Ref 30.00 dBm Mkr1 1.880 2 GHz 29.043 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MARK</th><th>MODE</th><th>FREQ</th><th>SCAL</th><th>UNIT</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1.880 2 GHz</td><td>f</td><td></td><td></td><td></td><td>29.043 dBm</td></tr><tr><td>2</td><td>N</td><td>15.678 5 GHz</td><td>f</td><td></td><td></td><td></td><td>-23.520 dBm</td></tr></table>	MARK	MODE	FREQ	SCAL	UNIT	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1.880 2 GHz	f				29.043 dBm	2	N	15.678 5 GHz	f				-23.520 dBm
MARK	MODE	FREQ	SCAL	UNIT	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																		
1	N	1.880 2 GHz	f				29.043 dBm																		
2	N	15.678 5 GHz	f				-23.520 dBm																		
GPRS High Channel	 Agilent Spectrum Analyzer - Swept SA Center Freq 10.015000000 GHz Ref Offset 7.23 dB Ref 30.00 dBm Mkr1 1.910 2 GHz 29.343 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MARK</th><th>MODE</th><th>FREQ</th><th>SCAL</th><th>UNIT</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1.910 2 GHz</td><td>f</td><td></td><td></td><td></td><td>29.343 dBm</td></tr><tr><td>2</td><td>N</td><td>16.515 7 GHz</td><td>f</td><td></td><td></td><td></td><td>-23.212 dBm</td></tr></table>	MARK	MODE	FREQ	SCAL	UNIT	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1.910 2 GHz	f				29.343 dBm	2	N	16.515 7 GHz	f				-23.212 dBm
MARK	MODE	FREQ	SCAL	UNIT	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																		
1	N	1.910 2 GHz	f				29.343 dBm																		
2	N	16.515 7 GHz	f				-23.212 dBm																		

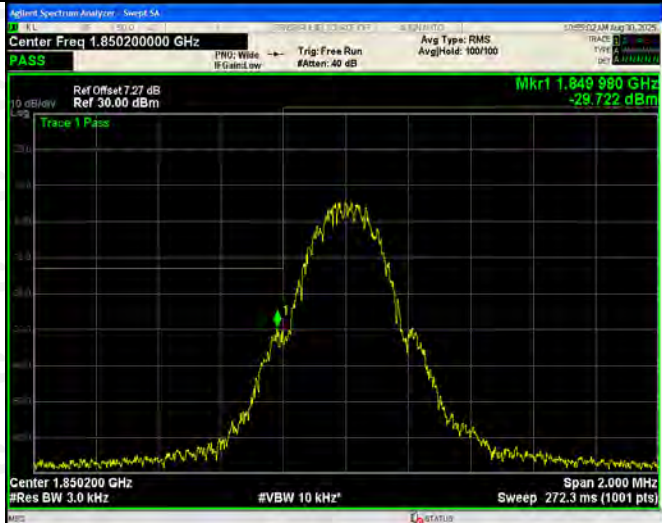
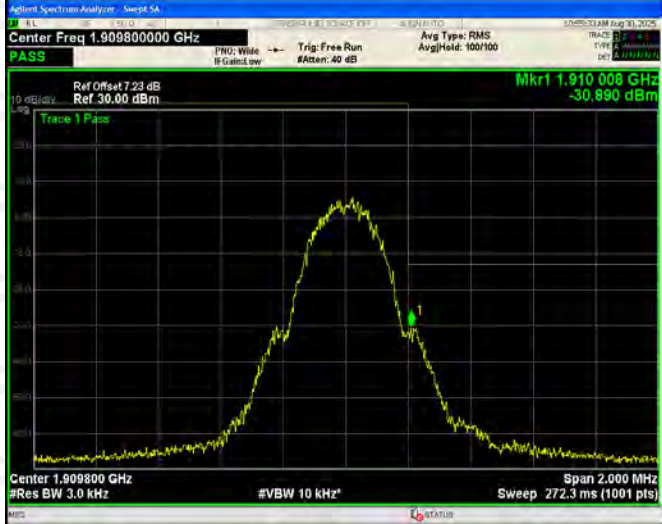
GPRS
Low
Band
Emission



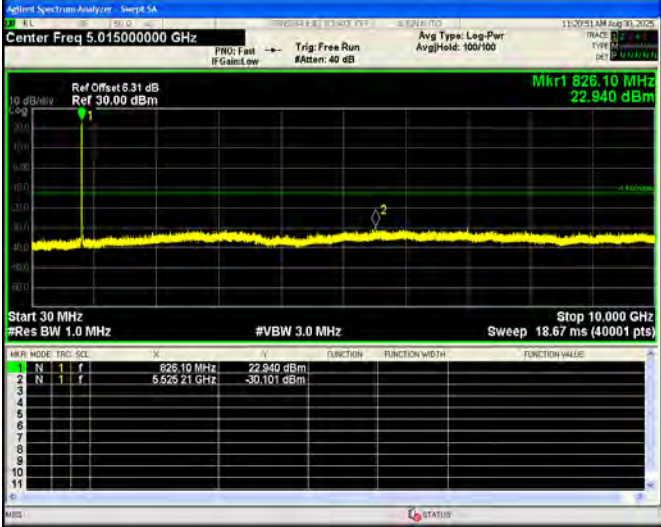
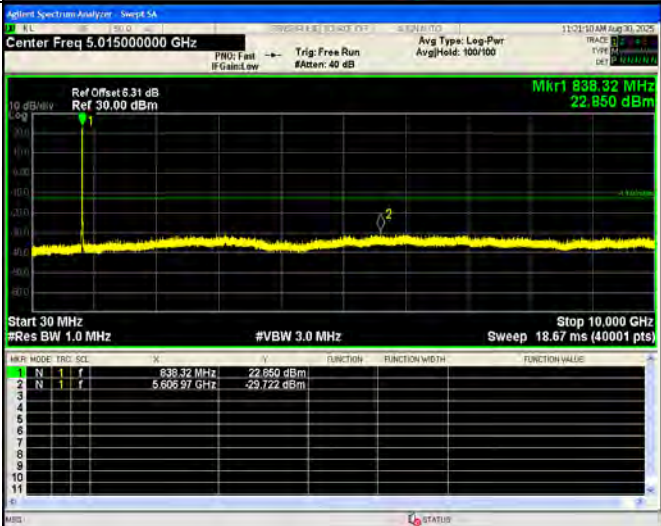
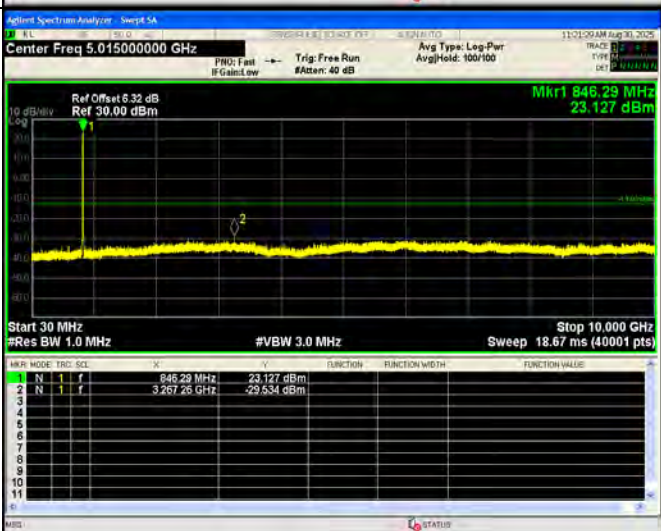
GPRS
High
Band
Emission



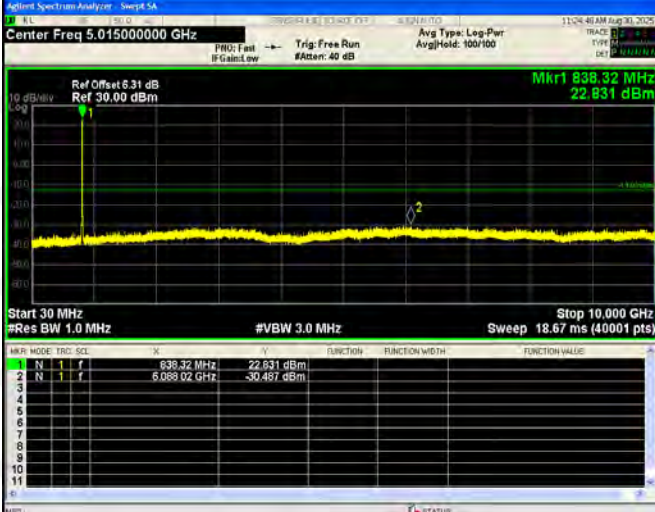
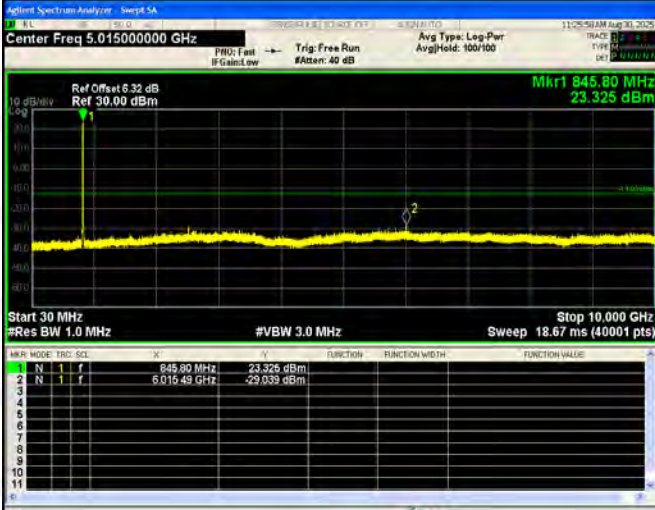
EDGE Low Channel	 Center Freq 10.015000000 GHz Ref Offset 7.27 dB Ref 30.00 dBm Mkr1 1.850 8 GHz 29.460 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MNR</th><th>MODE</th><th>FREQ</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.850 8 GHz</td><td>29.460 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>16.635 9 GHz</td><td>-23.459 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.850 8 GHz	29.460 dBm				2	N	1	f	16.635 9 GHz	-23.459 dBm				
MNR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.850 8 GHz	29.460 dBm																								
2	N	1	f	16.635 9 GHz	-23.459 dBm																								
EDGE Middle Channel	 Center Freq 10.015000000 GHz Ref Offset 7.22 dB Ref 30.00 dBm Mkr1 1.880 2 GHz 29.086 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MNR</th><th>MODE</th><th>FREQ</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.880 2 GHz</td><td>29.086 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>16.584 1 GHz</td><td>-23.087 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.880 2 GHz	29.086 dBm				2	N	1	f	16.584 1 GHz	-23.087 dBm				
MNR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
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2	N	1	f	16.584 1 GHz	-23.087 dBm																								
EDGE High Channel	 Center Freq 10.015000000 GHz Ref Offset 7.23 dB Ref 30.00 dBm Mkr1 1.910 2 GHz 29.323 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MNR</th><th>MODE</th><th>FREQ</th><th>SCN</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.910 2 GHz</td><td>29.323 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>16.424 4 GHz</td><td>-22.480 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.910 2 GHz	29.323 dBm				2	N	1	f	16.424 4 GHz	-22.480 dBm				
MNR	MODE	FREQ	SCN	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																					
1	N	1	f	1.910 2 GHz	29.323 dBm																								
2	N	1	f	16.424 4 GHz	-22.480 dBm																								

EDGE Low Band Emission	
EDGE High Band Emission	

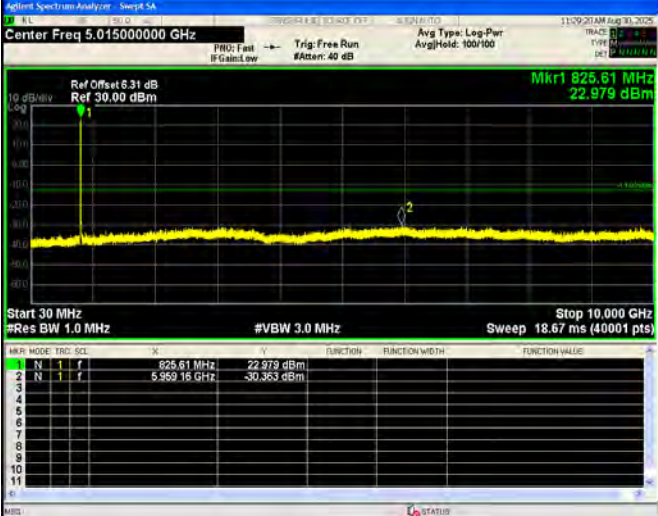
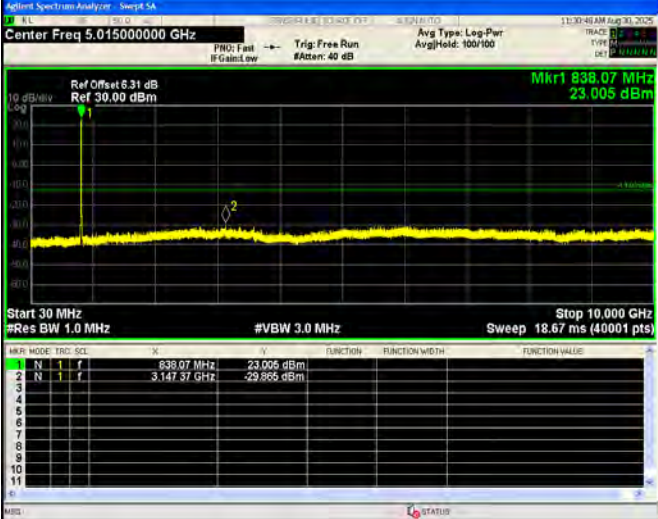
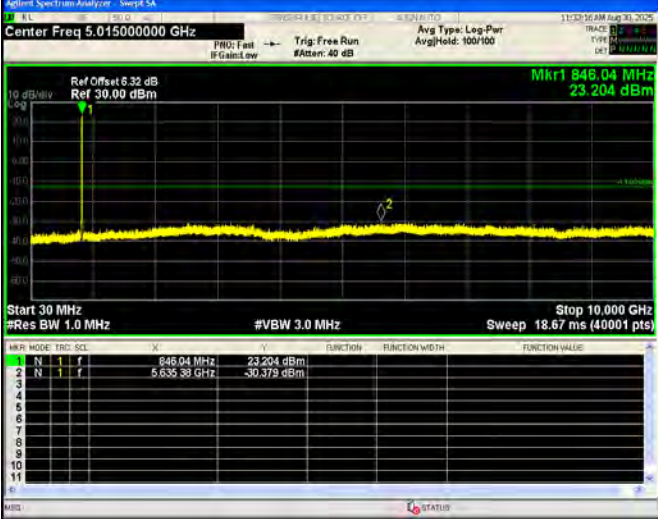
For Band V

WCDMA Low Channel	
WCDMA Middle Channel	
WCDMA High Channel	

WCDMA Low Band Spurious Emission		
WCDMA High Band Spurious Emission		

HSDPA Low Channel	 <table><tr><th>Mkr</th><th>Mode</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>N</td><td>826.10 MHz</td><td>22.973 dBm</td></tr><tr><td>2</td><td>N</td><td>5.97162 GHz</td><td>-29.937 dBm</td></tr></table>	Mkr	Mode	Freq	Power	1	N	826.10 MHz	22.973 dBm	2	N	5.97162 GHz	-29.937 dBm	
Mkr	Mode	Freq	Power											
1	N	826.10 MHz	22.973 dBm											
2	N	5.97162 GHz	-29.937 dBm											
HSDPA Middle Channel	 <table><tr><th>Mkr</th><th>Mode</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>N</td><td>838.32 MHz</td><td>22.831 dBm</td></tr><tr><td>2</td><td>N</td><td>6.08802 GHz</td><td>-30.487 dBm</td></tr></table>	Mkr	Mode	Freq	Power	1	N	838.32 MHz	22.831 dBm	2	N	6.08802 GHz	-30.487 dBm	
Mkr	Mode	Freq	Power											
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2	N	6.08802 GHz	-30.487 dBm											
HSDPA High Channel	 <table><tr><th>Mkr</th><th>Mode</th><th>Freq</th><th>Power</th></tr><tr><td>1</td><td>N</td><td>845.80 MHz</td><td>23.325 dBm</td></tr><tr><td>2</td><td>N</td><td>6.01549 GHz</td><td>-29.039 dBm</td></tr></table>	Mkr	Mode	Freq	Power	1	N	845.80 MHz	23.325 dBm	2	N	6.01549 GHz	-29.039 dBm	
Mkr	Mode	Freq	Power											
1	N	845.80 MHz	23.325 dBm											
2	N	6.01549 GHz	-29.039 dBm											

HSDPA Low Band Spurious Emission	
HSDPA High Band Spurious Emission	

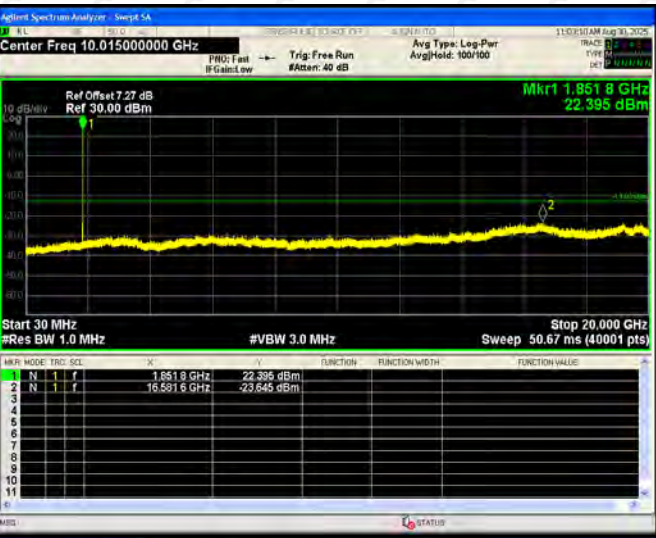
HSUPA Low Channel	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 5.015000000 GHz Ref Offset: 6.31 dB Ref 30.00 dBm Mkr1 825.61 MHz 22.979 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 18.67 ms (40001 pts) <table><thead><tr><th>MR Mode</th><th>TRG</th><th>SC1</th><th>X</th><th>Y</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr></thead><tbody><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>825.61 MHz</td><td>22.979 dBm</td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>5.959 16 GHz</td><td>-30.363 dBm</td><td></td><td></td></tr></tbody></table>	MR Mode	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	825.61 MHz	22.979 dBm			2	N	1	f	5.959 16 GHz	-30.363 dBm			
MR Mode	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	1	f	825.61 MHz	22.979 dBm																					
2	N	1	f	5.959 16 GHz	-30.363 dBm																					
HSUPA Middle Channel	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 5.015000000 GHz Ref Offset: 6.31 dB Ref 30.00 dBm Mkr1 838.07 MHz 23.005 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 18.67 ms (40001 pts) <table><thead><tr><th>MR 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>1</td><td>f</td><td>838.07 MHz</td><td>23.005 dBm</td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>3.147 37 GHz</td><td>-29.865 dBm</td><td></td><td></td></tr></tbody></table>	MR Mode	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	838.07 MHz	23.005 dBm			2	N	1	f	3.147 37 GHz	-29.865 dBm			
MR Mode	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
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2	N	1	f	3.147 37 GHz	-29.865 dBm																					
HSUPA High Channel	 Agilent Spectrum Analyzer - Sweep 5A Center Freq 5.015000000 GHz Ref Offset: 6.32 dB Ref 30.00 dBm Mkr1 846.04 MHz 23.204 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Sweep 18.67 ms (40001 pts) <table><thead><tr><th>MR 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>1</td><td>f</td><td>846.04 MHz</td><td>23.204 dBm</td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>5.635 38 GHz</td><td>-30.379 dBm</td><td></td><td></td></tr></tbody></table>	MR Mode	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	846.04 MHz	23.204 dBm			2	N	1	f	5.635 38 GHz	-30.379 dBm			
MR Mode	TRG	SC1	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	1	f	846.04 MHz	23.204 dBm																					
2	N	1	f	5.635 38 GHz	-30.379 dBm																					

HSUPA Low Band Spurious Emission	
HSUPA High Band Spurious Emission	

For Band II

WCDMA Low Channel	Agilent Spectrum Analyzer - Sweep 5A Center Freq 10.01500000 GHz Ref Offset 7.27 dB Ref 30.00 dBm Mkr1 1.8518 GHz 22.178 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20.000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MNR</th><th>MODE</th><th>TRIG</th><th>SCN</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.8518 GHz</td><td></td><td></td><td>22.178 dBm</td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>16.5152 GHz</td><td></td><td></td><td>-22.859 dBm</td></tr></table>	MNR	MODE	TRIG	SCN	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8518 GHz			22.178 dBm	2	N	1	f	16.5152 GHz			-22.859 dBm
MNR	MODE	TRIG	SCN	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																		
1	N	1	f	1.8518 GHz			22.178 dBm																		
2	N	1	f	16.5152 GHz			-22.859 dBm																		
WCDMA Middle Channel	Agilent Spectrum Analyzer - Sweep 5A Center Freq 10.01500000 GHz Ref Offset 7.22 dB Ref 30.00 dBm Mkr1 1.8792 GHz 22.344 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20.000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MNR</th><th>MODE</th><th>TRIG</th><th>SCN</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.8792 GHz</td><td></td><td></td><td>22.344 dBm</td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>19.7132 GHz</td><td></td><td></td><td>-23.350 dBm</td></tr></table>	MNR	MODE	TRIG	SCN	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8792 GHz			22.344 dBm	2	N	1	f	19.7132 GHz			-23.350 dBm
MNR	MODE	TRIG	SCN	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																		
1	N	1	f	1.8792 GHz			22.344 dBm																		
2	N	1	f	19.7132 GHz			-23.350 dBm																		
WCDMA High Channel	Agilent Spectrum Analyzer - Sweep 5A Center Freq 10.01500000 GHz Ref Offset 7.23 dB Ref 30.00 dBm Mkr1 1.9067 GHz 22.646 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20.000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MNR</th><th>MODE</th><th>TRIG</th><th>SCN</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.9067 GHz</td><td></td><td></td><td>22.646 dBm</td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>16.5317 GHz</td><td></td><td></td><td>-22.979 dBm</td></tr></table>	MNR	MODE	TRIG	SCN	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.9067 GHz			22.646 dBm	2	N	1	f	16.5317 GHz			-22.979 dBm
MNR	MODE	TRIG	SCN	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																		
1	N	1	f	1.9067 GHz			22.646 dBm																		
2	N	1	f	16.5317 GHz			-22.979 dBm																		

WCDMA Low Band Spurious Emission	
WCDMA High Band Spurious Emission	

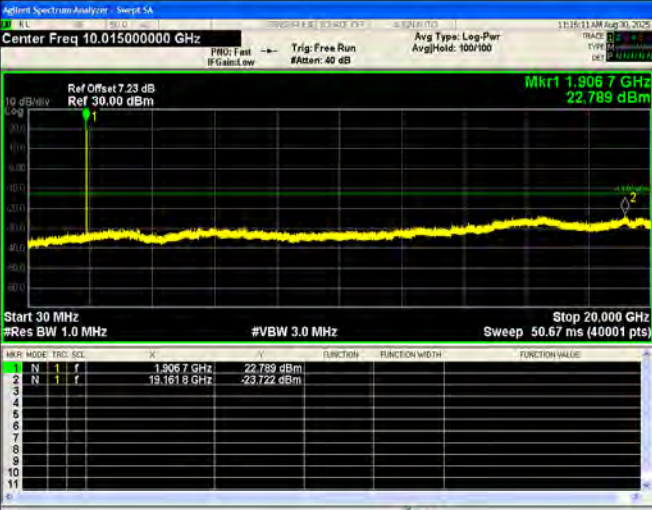
HSDPA Low Channel		
HSDPA Middle Channel		
HSDPA High Channel		

HSDPA
Low
Band
Spurious
Emission



HSDPA
High
Band
Spurious
Emission



HSUPA Low Channel	 Center Freq 10.015000000 GHz Ref Offset 7.27 dB Ref 30.00 dBm Mkr1 1.8518 GHz 22.386 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MR</th><th>MODE</th><th>TRC</th><th>SC</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.8518 GHz</td><td></td><td></td><td>22.386 dBm</td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>19.1583 GHz</td><td></td><td></td><td>-23.634 dBm</td></tr></table>	MR	MODE	TRC	SC	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8518 GHz			22.386 dBm	2	N	1	f	19.1583 GHz			-23.634 dBm	
MR	MODE	TRC	SC	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	1	f	1.8518 GHz			22.386 dBm																			
2	N	1	f	19.1583 GHz			-23.634 dBm																			
HSUPA Middle Channel	 Center Freq 10.015000000 GHz Ref Offset 7.22 dB Ref 30.00 dBm Mkr1 1.8792 GHz 22.284 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MR</th><th>MODE</th><th>TRC</th><th>SC</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.8792 GHz</td><td></td><td></td><td>22.284 dBm</td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>15.9995 GHz</td><td></td><td></td><td>-23.700 dBm</td></tr></table>	MR	MODE	TRC	SC	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8792 GHz			22.284 dBm	2	N	1	f	15.9995 GHz			-23.700 dBm	
MR	MODE	TRC	SC	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	1	f	1.8792 GHz			22.284 dBm																			
2	N	1	f	15.9995 GHz			-23.700 dBm																			
HSUPA High Channel	 Center Freq 10.015000000 GHz Ref Offset 7.23 dB Ref 30.00 dBm Mkr1 1.9067 GHz 22.789 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20,000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MR</th><th>MODE</th><th>TRC</th><th>SC</th><th>F</th><th>FUNCTION</th><th>FUNCTION WIDTH</th><th>FUNCTION VALUE</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>1.9067 GHz</td><td></td><td></td><td>22.789 dBm</td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>19.1618 GHz</td><td></td><td></td><td>-23.722 dBm</td></tr></table>	MR	MODE	TRC	SC	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.9067 GHz			22.789 dBm	2	N	1	f	19.1618 GHz			-23.722 dBm	
MR	MODE	TRC	SC	F	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE																			
1	N	1	f	1.9067 GHz			22.789 dBm																			
2	N	1	f	19.1618 GHz			-23.722 dBm																			

HSUPA Low Band Spurious Emission		
HSUPA High Band Spurious Emission		

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.

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 3.85V

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)						
42.49	-68.74	3.9	-64.84	-13	-51.84	H
1640.89	-54.89	4.83	-50.06	-13	-37.06	H
2468.21	-50.00	8.08	-41.92	-13	-28.92	H
38.92	-66.42	4.02	-62.40	-13	-49.40	V
1647.95	-55.05	4.48	-50.57	-13	-37.57	V
2467.59	-48.15	8.2	-39.95	-13	-26.95	V
Middle Channel (836.6MHz)						
39.51	-69.06	3.84	-65.22	-13	-52.22	H
1671.99	-54.68	4.62	-50.06	-13	-37.06	H
2508.93	-53.47	8.25	-45.22	-13	-32.22	H
40.50	-72.28	4.25	-68.03	-13	-55.03	V
1672.19	-54.35	4.54	-49.81	-13	-36.81	V
2501.90	-47.62	8.35	-39.27	-13	-29.75	V
High Channel (848.8MHz)						
40.11	-70.74	4.22	-74.96	-13	-61.96	H
1695.00	-54.72	4.87	-59.59	-13	-46.59	H
2538.61	-49.74	8.38	-58.12	-13	-45.12	H
42.12	-66.76	4.02	-70.78	-13	-57.78	V
1694.72	-50.35	4.56	-54.91	-13	-41.91	V
2543.07	-48.03	8.41	-56.44	-13	-43.44	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)						
40.24	-66.50	4.34	-62.16	-13	-49.16	H
3692.13	-56.81	10.54	-46.27	-13	-33.27	H
5541.97	-61.12	13.37	-47.75	-13	-34.75	H
40.40	-72.05	4.34	-67.71	-13	-54.71	V
3699.78	-52.79	10.54	-42.25	-13	-29.25	V
5544.20	-55.42	13.37	-42.05	-13	-29.05	V
Middle Channel (1880MHz)						
39.35	-72.97	4.02	-68.95	-13	-55.95	H
3755.49	-52.68	10.71	-41.97	-13	-28.97	H
5631.78	-59.37	13.73	-45.64	-13	-32.64	H
36.80	-70.30	4.14	-66.16	-13	-53.16	V
3752.37	-51.56	10.22	-41.34	-13	-28.34	V
5634.96	-55.00	13.16	-41.84	-13	-28.84	V
High Channel (1909.8MHz)						
37.54	-72.90	4.02	-68.88	-13	-55.88	H
3812.74	-60.36	4.9	-55.46	-13	-42.46	H
5720.41	-47.13	8.09	-39.04	-13	-26.04	H
41.19	-60.44	4.25	-56.19	-13	-43.19	V
3817.96	-59.28	4.93	-54.35	-13	-41.35	V
5719.48	-57.75	8.43	-49.32	-13	-36.32	V

For Band 5 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (826.4MHz)						
39.55	-71.97	3.91	-68.06	-13	-55.06	H
1646.50	-59.22	10.56	-48.66	-13	-35.66	H
2479.10	-55.01	13.5	-41.51	-13	-28.51	H
40.45	-67.59	3.93	-63.66	-13	-50.66	V
1643.14	-50.48	10.41	-40.07	-13	-27.07	V
2476.76	-53.85	13.16	-40.69	-13	-27.69	V
Middle Channel (836.6MHz)						
40.22	-70.79	4.02	-66.77	-13	-53.77	H
1666.95	-54.71	4.66	-50.05	-13	-37.05	H
2504.75	-47.61	8.34	-39.27	-13	-26.27	H
45.80	-61.40	4.17	-57.23	-13	-44.23	V
1663.52	-56.73	4.94	-51.79	-13	-38.79	V
2504.18	-61.83	8.19	-53.64	-13	-40.64	V
High Channel (846.6MHz)						
40.57	-71.70	3.87	-67.83	-13	-54.83	H
1691.44	-60.80	4.89	-55.91	-13	-42.91	H
2531.89	-50.07	8.42	-41.65	-13	-28.65	H
43.09	-56.15	3.95	-52.20	-13	-39.20	V
1692.70	-60.14	4.99	-55.15	-13	-42.15	V
2530.21	-60.13	8.12	-52.01	-13	-39.01	V

For Band 2 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1852.4MHz)						
39.50	-66.53	3.91	-62.62	-13	-49.62	H
1651.23	-55.54	10.56	-44.98	-13	-31.98	H
2479.09	-53.54	13.5	-40.04	-13	-27.04	H
40.32	-72.66	3.93	-68.73	-13	-55.73	V
1652.64	-50.67	10.41	-40.26	-13	-27.26	V
2474.51	-60.59	13.16	-47.43	-13	-34.43	V
Middle Channel (1880MHz)						
39.85	-67.47	4.02	-63.45	-13	-50.45	H
1666.86	-57.43	4.66	-52.77	-13	-39.77	H
2508.71	-47.12	8.34	-38.78	-13	-25.78	H
45.10	-62.56	4.17	-58.39	-13	-45.39	V
1668.49	-58.62	4.94	-53.68	-13	-40.68	V
2502.27	-61.19	8.19	-53.00	-13	-40.00	V
High Channel (1907.6MHz)						
37.92	-69.96	3.87	-66.09	-13	-53.09	H
1686.83	-60.42	4.89	-55.53	-13	-42.53	H
2538.83	-41.37	8.42	-32.95	-13	-19.95	H
36.95	-59.67	3.95	-55.72	-13	-42.72	V
1684.76	-61.06	4.99	-56.07	-13	-43.07	V
2533.74	-58.50	8.12	-50.38	-13	-37.38	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	8.53	0.01020
40	NV	9.37	0.01121
30	NV	9.40	0.01123
20	NV	9.43	0.01127
10	NV	9.78	0.01169
0	NV	10.25	0.01226
-10	NV	9.92	0.01186
-20	NV	10.82	0.01294
-30	NV	10.93	0.01307

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	12.46	0.00663
40	NV	12.80	0.00681
30	NV	12.84	0.00683
20	NV	12.96	0.00689
10	NV	13.26	0.00705
0	NV	13.74	0.00731
-10	NV	14.21	0.00756
-20	NV	14.26	0.00759
-30	NV	14.49	0.00771

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	9.27	0.01108
40	NV	9.65	0.01154
30	NV	9.10	0.01088
20	NV	9.04	0.01080
10	NV	9.66	0.01155
0	NV	10.59	0.01266
-10	NV	10.34	0.01236
-20	NV	11.02	0.01318
-30	NV	11.12	0.01329

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	12.28	0.00653
40	NV	12.74	0.00677
30	NV	12.72	0.00677
20	NV	12.85	0.00683
10	NV	13.10	0.00697
0	NV	13.29	0.00707
-10	NV	14.40	0.00766
-20	NV	13.74	0.00731
-30	NV	14.77	0.00786

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	11.07	0.01323
40	NV	11.62	0.01389
30	NV	12.00	0.01434
20	NV	11.48	0.01373
10	NV	11.60	0.01387
0	NV	12.16	0.01454
-10	NV	12.58	0.01504
-20	NV	12.91	0.01543
-30	NV	12.79	0.01529

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	-10.48	-0.00558
40	NV	-10.19	-0.00542
30	NV	-9.32	-0.00496
20	NV	-9.02	-0.00480
10	NV	-9.28	-0.00494
0	NV	-8.32	-0.00443
-10	NV	-8.39	-0.00446
-20	NV	-7.72	-0.00410
-30	NV	-7.61	-0.00405

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	-0.11	-0.00013
40	NV	0.60	0.00071
30	NV	0.82	0.00098
20	NV	0.22	0.00026
10	NV	1.12	0.00133
0	NV	1.32	0.00158
-10	NV	1.29	0.00154
-20	NV	0.68	0.00081
-30	NV	1.36	0.00163

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	-0.01	-0.00001
40	NV	-0.42	-0.00051
30	NV	0.40	0.00048
20	NV	0.31	0.00037
10	NV	0.41	0.00049
0	NV	0.92	0.00110
-10	NV	0.96	0.00115
-20	NV	1.07	0.00128
-30	NV	1.74	0.00208

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	0.22	0.00027
40	NV	1.16	0.00139
30	NV	0.64	0.00076
20	NV	0.77	0.00092
10	NV	0.83	0.00099
0	NV	1.13	0.00134
-10	NV	2.03	0.00243
-20	NV	2.59	0.00309
-30	NV	2.33	0.00278

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	-0.41	-0.00022
40	NV	0.17	0.00009
30	NV	0.80	0.00042
20	NV	0.82	0.00044
10	NV	1.23	0.00065
0	NV	1.22	0.00065
-10	NV	1.12	0.00060
-20	NV	1.29	0.00068
-30	NV	0.90	0.00048

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	-0.13	-0.00007
40	NV	-0.48	-0.00026
30	NV	-0.27	-0.00014
20	NV	0.68	0.00036
10	NV	0.52	0.00027
0	NV	1.02	0.00054
-10	NV	1.81	0.00096
-20	NV	1.82	0.00097
-30	NV	2.66	0.00142

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	4.62	0.00246
40	NV	4.98	0.00265
30	NV	5.54	0.00295
20	NV	6.06	0.00322
10	NV	6.34	0.00337
0	NV	6.51	0.00346
-10	NV	6.77	0.00360
-20	NV	7.06	0.00375
-30	NV	6.79	0.00361

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	11.23	0.01342
	NV	11.55	0.01381
	HV	11.15	0.01333
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	14.82	0.00788
	NV	15.07	0.00801
	HV	14.30	0.00761
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	11.21	0.01340
	NV	11.50	0.01374
	HV	12.05	0.01440
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	14.71	0.00783
	NV	14.72	0.00783
	HV	14.84	0.00789
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	12.47	0.01491
	NV	13.34	0.01596
	HV	13.24	0.01583
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	-8.39	-0.00446
	NV	-7.63	-0.00406
	HV	-7.53	-0.00400

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	0.79	0.00094
	NV	1.62	0.00194
	HV	1.32	0.00158
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	0.88	0.00051
	NV	0.63	0.00036
	HV	1.68	0.00097
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	1.85	0.00098
	NV	2.28	0.00273
	HV	2.59	0.00310

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	1.57	0.00187
	NV	1.88	0.00225
	HV	2.29	0.00274
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	6.46	0.00373
	NV	6.73	0.00389
	HV	7.00	0.00404
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	6.70	0.00356
	NV	7.41	0.00394
	HV	7.42	0.00395

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	2.70	0.00323
	NV	2.56	0.00306
	HV	3.25	0.00389
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	5.89	0.00340
	NV	5.43	0.00313
	HV	6.03	0.00348
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	8.41	0.00447
	NV	9.47	0.00504
	HV	8.95	0.00476

12. EUT TEST PHOTO

Radiated Emission

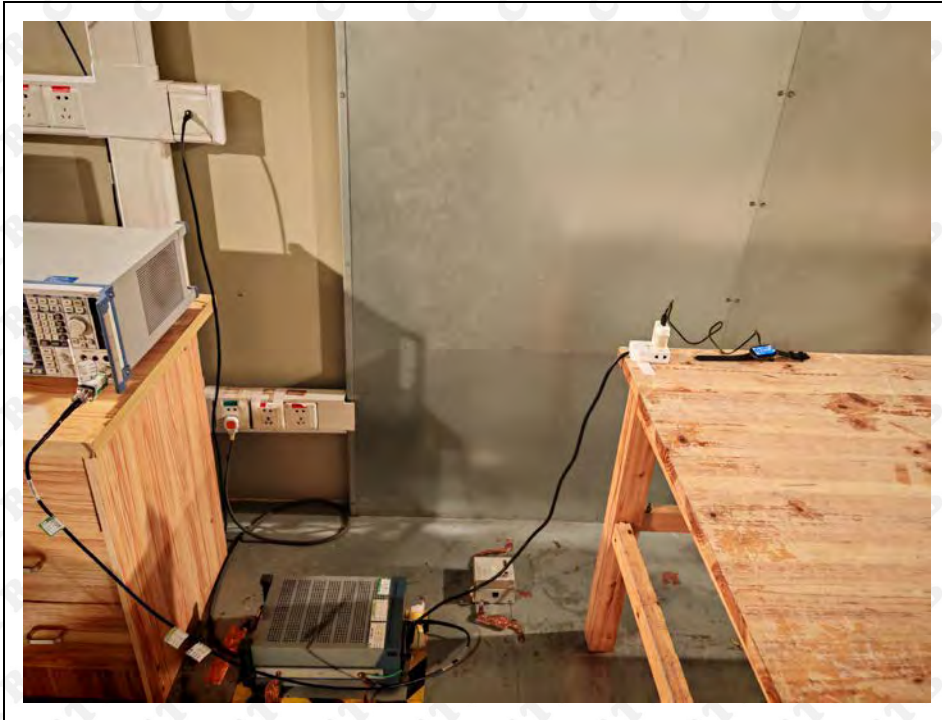
Below 1G



Above 1G



Conducted emission



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