



TEST REPORT

Product Name: Rugged Tablet PC
FCC ID: 2ASDX-S917V18

Trademark: **SENDER** 信通

Model Number: S917V18, PAD 6000M14, S917V17, S917V19, S917V20, S917
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Sample tested Date: Mar. 21, 2025 to Apr. 15, 2025
Issue Date: Apr. 15, 2025
Report No.: CTB25032103101RF07
Test Standards: FCC Part 22H & 24E
Test Results: PASS
Remark: This is GSM radio test report.

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(Note: N/A means not applicable)



1. VERSION

Report No.	Issue Date	Description	Approved
CTB25032103101RF07	Apr. 15, 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):	S917V18, PAD 6000M14, S917V17, S917V19, S917V20, S917
Model Description:	All the model are the same circuit and RF module, only the model names are different. Test sample model: S917V18
Hardware Version:	V1.0
Software Version:	V1.0
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: 32.57dBm GSM1900: 29.53dBm WCDMA Band 2: 23.49dBm WCDMA Band 5: 23.86dBm
Type of Modulation:	GMSK, BPSK
Antenna installation:	FPC antenna
Antenna Gain:	GSM850: -1.48dBi GSM1900: 0.9dBi WCDMA Band 2: 0.9dBi WCDMA Band 5: -1.48dBi
Ratings:	ADAPTER: INPUT: 100-240V~ 50/60Hz 0.5A Max OUTPUT: 5.0V=3.0A 15.0W/ 9.0V=2.0A 18.W/ 12.0V=1.5A 18.0W DC 3.8V 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.	Power Supply	ABP	QC0181GA	/	EUT

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):	3.8V
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, Xinxhe 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 until
1	Spectrum Analyzer	Agilent	N9020A	MY52090073	A.14.16	2025/6/28
2	Power Sensor	Agilent	U2021XA	MY56120032	/	2025/6/28
3	Power Sensor	Agilent	U2021XA	MY56120034	/	2025/6/28
4	Communication test set	R&S	CMW500	108058	V3.5.80	2025/6/28
5	Spectrum Analyzer	KEYSIGHT	N9020A	MY51289897	A.14.16	2025/6/28
6	Signal Generator	Agilent	N5181A	MY50140365	A.01.60	2025/6/28
7	Vector signal generator	Agilent	N5182A	MY47420195	A.01.87	2025/6/28
8	Communication test set	Agilent	E5515C	MY50102567	B.19.07 (E1962B)	2025/6/28
9	2.4 GHz Filter	Shenxiang	MSF2400-24 83.5MS-1154	20181015001	/	2025/6/30
10	5 GHz Filter	Shenxiang	MSF5150-58 50MS-1155	20181015001	/	2025/6/30
11	Filter	Xingbo	XBLBQ-DZA 120	190821-1-1	/	2025/6/30
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	/	2025/6/28
14	Temperature humidity chamber	Hongjing	TH-80CH	DG-15174	/	2025/6/28
15	234G Automatic test software	Microwave	MTS8200	Ver. 2.0.0.0	/	/
16	966 chamber	C.R.T.	966	/	/	2027/6/21
17	Receiver	R&S	ESPI	100362	RF_ATTEN_7 (104489/003)	2025/6/28
18	Amplifier	HP	8447E	2945A02747	/	2025/6/28
19	Amplifier	Agilent	8449B	3008A01838	/	2025/6/28
20	TRILOG Broadband Antenna	Schwarzbeck	VULB 9168	00869	/	2025/6/28
21	Double Ridged Broadband Horn Antenna	Schwarzbeck	BBHA9120D	01911	/	2025/6/28

22	EMI test software	Fala	EZ-EMC	FA-03A2 RE	/	/
23	Loop Antenna	Schwarzbeck	FMZB 1519B	1519B-224	/	2025/6/28
24	loop antenna	ZHINAN	ZN30900A	GTS534	/	/
25	40G Horn antenna	A/H/System	SAS-574	588	/	2025/6/28
26	Amplifier	AEROFLEX	Aeroflex	097	/	2025/6/28
27	Power Metter	KEYSIGHT	N1912AP	N/A	A.05.00	2025/6/28

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	32.26	1.5	0	H	1.5	-1.48	29.28	38.45
824.2	32.21	1.5	0	V	1.5	-1.48	29.23	38.45
Middle Channel								
836.6	32.25	1.5	0	H	1.5	-1.48	29.27	38.45
836.6	31.47	1.5	0	V	1.5	-1.48	28.49	38.45
High Channel								
848.8	31.70	1.5	0	H	1.5	-1.48	28.72	38.45
848.8	31.68	1.5	0	V	1.5	-1.48	28.70	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	28.15	1.5	0	H	1.9	0.9	27.15	33
1850.2	28.08	1.5	0	V	1.9	0.9	27.08	33
Middle Channel								
1880	28.53	1.5	0	H	1.9	0.9	27.53	33
1880	29.34	1.5	0	V	1.9	0.9	28.34	33
High Channel								
1909.8	28.39	1.5	0	H	1.9	0.9	27.39	33
1909.8	28.55	1.5	0	V	1.9	0.9	27.55	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	32.51	1.5	0	H	1.5	-1.48	29.53	38.45
824.2	31.68	1.5	0	V	1.5	-1.48	28.70	38.45
Middle Channel								
836.6	31.55	1.5	0	H	1.5	-1.48	28.57	38.45
836.6	32.41	1.5	0	V	1.5	-1.48	29.43	38.45
High Channel								
848.8	32.15	1.5	0	H	1.5	-1.48	29.17	38.45
848.8	32.11	1.5	0	V	1.5	-1.48	29.13	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	27.75	1.5	0	H	1.9	0.9	26.75	33
1850.2	28.07	1.5	0	V	1.9	0.9	27.07	33
Middle Channel								
1880	28.72	1.5	0	H	1.9	0.9	27.72	33
1880	28.89	1.5	0	V	1.9	0.9	27.89	33
High Channel								
1909.8	28.84	1.5	0	H	1.9	0.9	27.84	33
1909.8	28.35	1.5	0	V	1.9	0.9	27.35	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	26.47	1.5	0	H	1.5	-1.48	23.49	38.45
824.2	26.40	1.5	0	V	1.5	-1.48	23.42	38.45
Middle Channel								
836.6	26.47	1.5	0	H	1.5	-1.48	23.49	38.45
836.6	26.91	1.5	0	V	1.5	-1.48	23.93	38.45
High Channel								
848.8	25.70	1.5	0	H	1.5	-1.48	22.72	38.45
848.8	25.37	1.5	0	V	1.5	-1.48	22.39	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	22.99	1.5	0	H	1.9	0.9	21.99	33
1850.2	22.43	1.5	0	V	1.9	0.9	21.43	33
Middle Channel								
1880	23.08	1.5	0	H	1.9	0.9	22.08	33
1880	23.35	1.5	0	V	1.9	0.9	22.35	33
High Channel								
1909.8	22.92	1.5	0	H	1.9	0.9	21.92	33
1909.8	23.77	1.5	0	V	1.9	0.9	22.77	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	23.37	1.5	0	H	1.5	-1.48	20.39	38.45
826.4	23.40	1.5	0	V	1.5	-1.48	20.42	38.45
Middle Channel								
836.6	22.79	1.5	0	H	1.5	-1.48	19.81	38.45
836.6	23.48	1.5	0	V	1.5	-1.48	20.50	38.45
High Channel								
846.6	22.96	1.5	0	H	1.5	-1.48	19.98	38.45
846.6	23.29	1.5	0	V	1.5	-1.48	20.31	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	23.32	1.5	0	H	1.5	-1.48	20.34	38.45
826.4	23.39	1.5	0	V	1.5	-1.48	20.41	38.45
Middle Channel								
836.6	23.02	1.5	0	H	1.5	-1.48	20.04	38.45
836.6	23.33	1.5	0	V	1.5	-1.48	20.35	38.45
High Channel								
846.6	23.29	1.5	0	H	1.5	-1.48	20.31	38.45
846.6	23.71	1.5	0	V	1.5	-1.48	20.73	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	22.87	1.5	0	H	1.5	-1.48	19.89	38.45
826.4	23.10	1.5	0	V	1.5	-1.48	20.12	38.45
Middle Channel								
836.6	23.24	1.5	0	H	1.5	-1.48	20.26	38.45
836.6	22.92	1.5	0	V	1.5	-1.48	19.94	38.45
High Channel								
846.6	23.60	1.5	0	H	1.5	-1.48	20.62	38.45
846.6	23.13	1.5	0	V	1.5	-1.48	20.15	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	23.45	1.5	0	H	1.9	0.9	22.45	33
1852.4	23.14	1.5	0	V	1.9	0.9	22.14	33
Middle Channel								
1880	23.02	1.5	0	H	1.9	0.9	22.02	33
1880	24.11	1.5	0	V	1.9	0.9	23.11	33
High Channel								
1907.6	23.10	1.5	0	H	1.9	0.9	22.10	33
1907.6	23.79	1.5	0	V	1.9	0.9	22.79	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	23.05	1.5	0	H	1.9	0.9	22.05	33
1852.4	23.19	1.5	0	V	1.9	0.9	22.19	33
Middle Channel								
1880	24.18	1.5	0	H	1.9	0.9	23.18	33
1880	23.98	1.5	0	V	1.9	0.9	22.98	33
High Channel								
1907.6	22.26	1.5	0	H	1.9	0.9	21.26	33
1907.6	22.84	1.5	0	V	1.9	0.9	21.84	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	24.07	1.5	0	H	1.9	0.9	23.07	33
1852.4	23.82	1.5	0	V	1.9	0.9	22.82	33
Middle Channel								
1880	22.97	1.5	0	H	1.9	0.9	21.97	33
1880	24.23	1.5	0	V	1.9	0.9	23.23	33
High Channel								
1907.6	22.42	1.5	0	H	1.9	0.9	21.42	33
1907.6	23.36	1.5	0	V	1.9	0.9	22.36	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	32.55	38.45
	Middle Channel	836.6	32.43	38.45
	High Channel	848.8	32.41	38.45
GPRS(1 Slot)	Low Channel	824.2	32.57	38.45
	Middle Channel	836.6	32.46	38.45
	High Channel	848.8	32.43	38.45
EDGE(1 Slot)	Low Channel	824.2	26.78	38.45
	Middle Channel	836.6	26.94	38.45
	High Channel	848.8	26.23	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	28.67	33.0
	Middle Channel	1880.0	29.50	33.0
	High Channel	1909.8	29.11	33.0
GPRS(1 Slot)	Low Channel	1850.2	28.69	33.0
	Middle Channel	1880.0	29.53	33.0
	High Channel	1909.8	29.13	33.0
EDGE(1 Slot)	Low Channel	1850.2	23.15	33.0
	Middle Channel	1880.0	23.43	33.0
	High Channel	1909.8	23.79	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	23.78	38.45
	Middle Channel	836.6	23.51	38.45
	High Channel	846.6	23.83	38.45
HSDPA	Low Channel	826.4	23.77	38.45
	Middle Channel	836.6	23.49	38.45
	High Channel	846.6	23.86	38.45
HSUPA	Low Channel	826.4	23.73	38.45
	Middle Channel	836.6	23.51	38.45
	High Channel	846.6	23.83	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	23.47	33.00
	Middle Channel	1880.0	23.40	33.00
	High Channel	1907.6	23.30	33.00
HSDPA	Low Channel	1852.4	23.49	33.00
	Middle Channel	1880.0	23.36	33.00
	High Channel	1907.6	23.19	33.00
HSUPA	Low Channel	1852.4	23.41	33.00
	Middle Channel	1880.0	23.38	33.00
	High Channel	1907.6	23.25	33.00

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

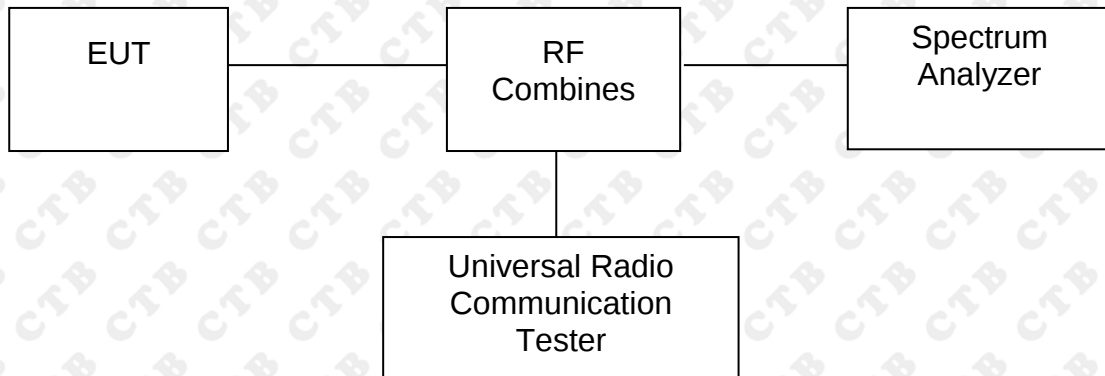
7.1 Standard Applicable

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	2.75	13
GPRS(1 Slot)	190	836.6	2.75	13
EDGE(1 Slot)	190	836.6	8.32	13

For PCS 1900

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
GSM	512	1850.2	2.94	13
GPRS(1 Slot)	512	1850.2	2.75	13
EDGE(1 Slot)	512	1850.2	8.14	13

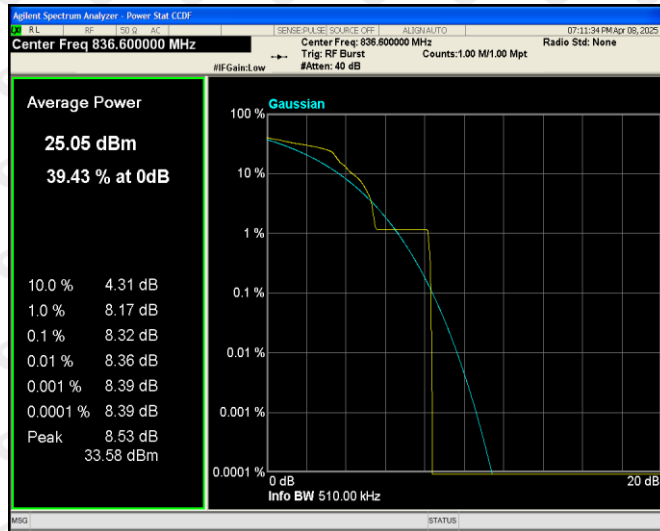
For WCDMA Band 5

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
WCDMA	4182	836.4	3.07	13
HSDPA	4182	836.4	4.88	13
HSUPA	4182	836.4	4.26	13

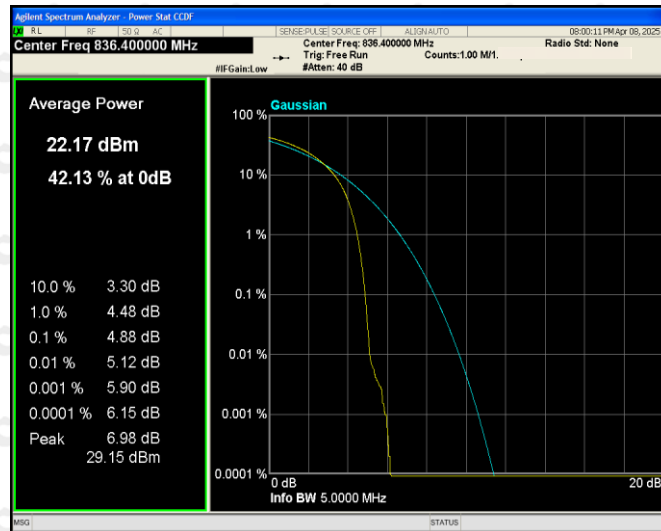
For WCDMA Band 2

Test Mode	Channel	Frequency (MHz)	PAR (dB)	Limit (dB)
WCDMA	9262	1852.4	2.57	13
HSDPA	9400	1852.4	4.61	13
HSUPA	9400	1852.4	4.00	13

GSM :



WCDMA:



8. EMISSION BANDWIDTH

8.1 Standard Applicable

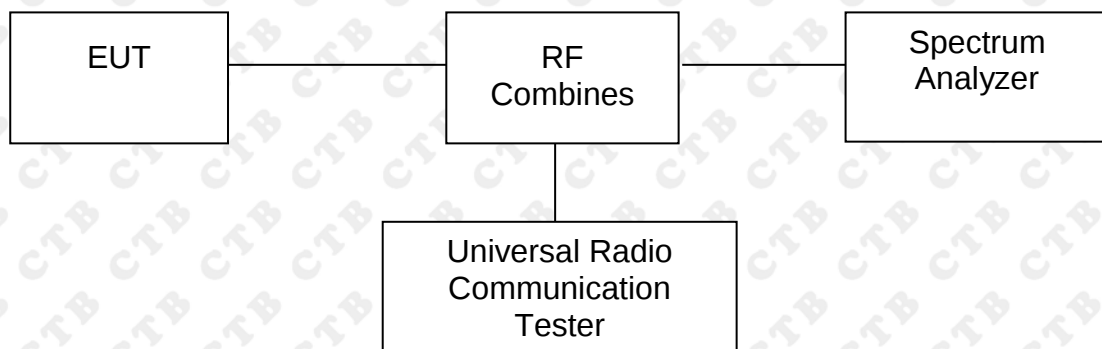
According to §22.917(b), The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

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	243.804	314.057
	190	836.6	245.205	318.130
	251	848.8	245.507	322.784
GPRS	128	824.2	244.843	318.936
	190	836.6	242.371	315.490
	251	848.8	249.176	324.954
EDGE	128	824.2	240.332	308.442
	190	836.6	246.430	289.239
	251	848.8	236.982	299.315

For PCS Band

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
GSM	512	1850.2	246.287	315.064
	661	1880.0	248.432	308.857
	810	1909.8	248.471	316.440
GPRS	512	1850.2	244.590	314.362
	661	1880.0	252.574	322.602
	810	1909.8	247.683	316.153
EDGE	512	1850.2	248.696	302.788
	661	1880.0	240.674	315.522
	810	1909.8	243.957	319.765

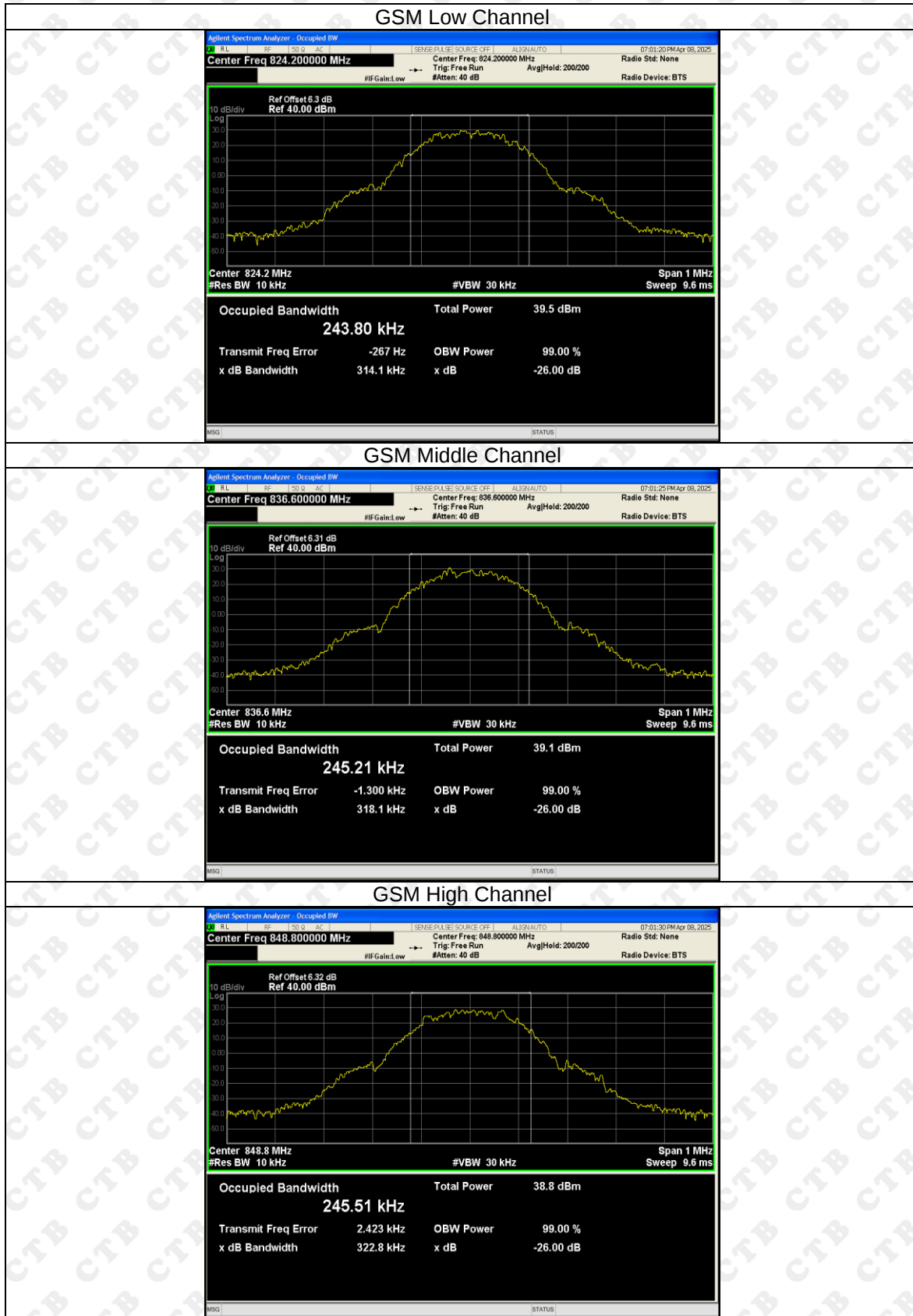
For Band 5

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
WCDMA	4132	826.4	4133.793	4710.367
	4183	836.6	4137.642	4665.739
	4233	846.6	4158.423	4723.883
HSDPA	4132	826.4	4142.173	4695.979
	4183	836.6	4131.255	4686.537
	4233	846.6	4141.276	4713.357
HSUPA	4132	826.4	4139.482	4703.548
	4183	836.6	4125.723	4712.863
	4233	846.6	4139.958	4795.686

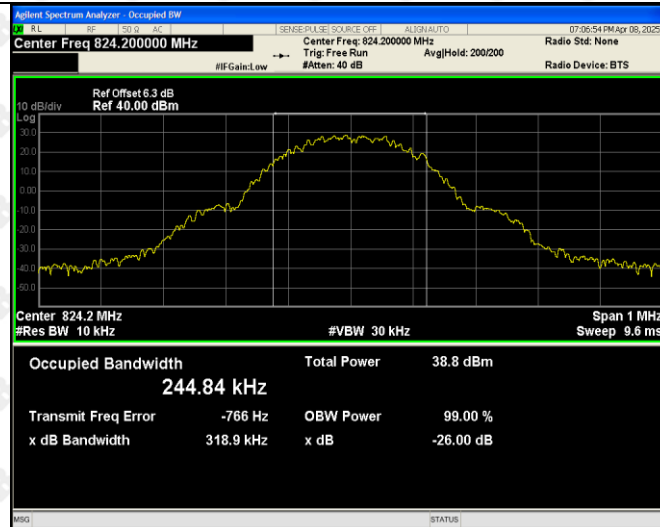
For Band 2

Test Mode	Channel	Frequency (MHz)	99% Emission Bandwidth (kHz)	26 dB Emission Bandwidth (kHz)
WCDMA	9262	1852.4	4154.790	4729.417
	9400	1880.0	4147.839	4779.487
	9538	1907.6	4151.502	4710.957
HSDPA	9262	1852.4	4149.809	4732.056
	9400	1880.0	4153.542	4713.044
	9538	1907.6	4144.699	4691.719
HSUPA	9262	1852.4	4155.179	4698.344
	9400	1880.0	4153.844	4735.946
	9538	1907.6	4160.003	4723.009

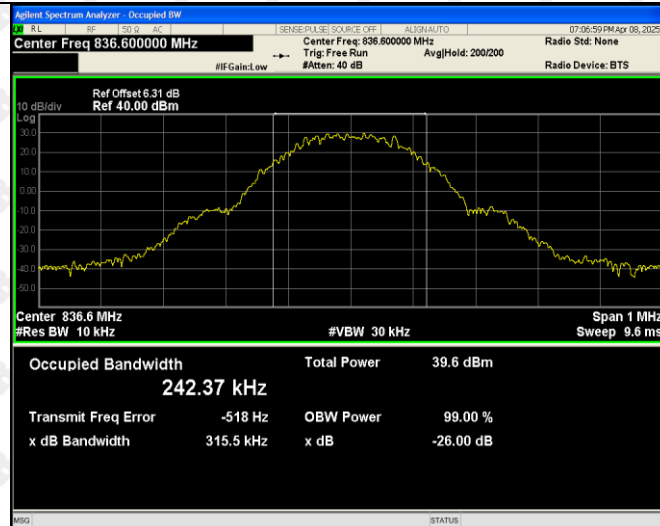
For Cellular Band



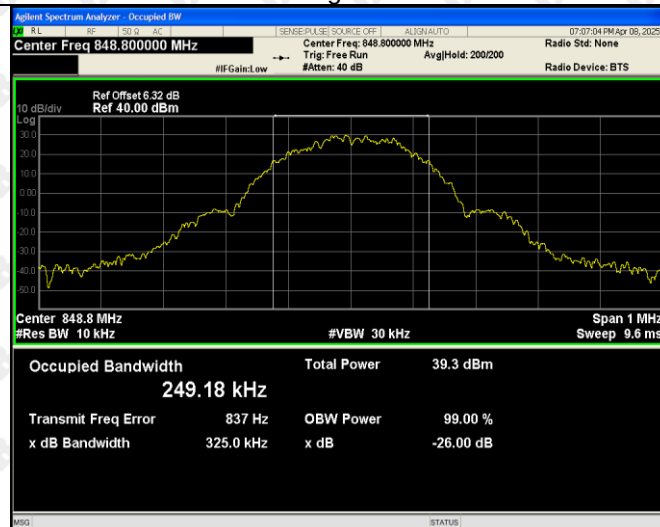
GPRS Low Channel



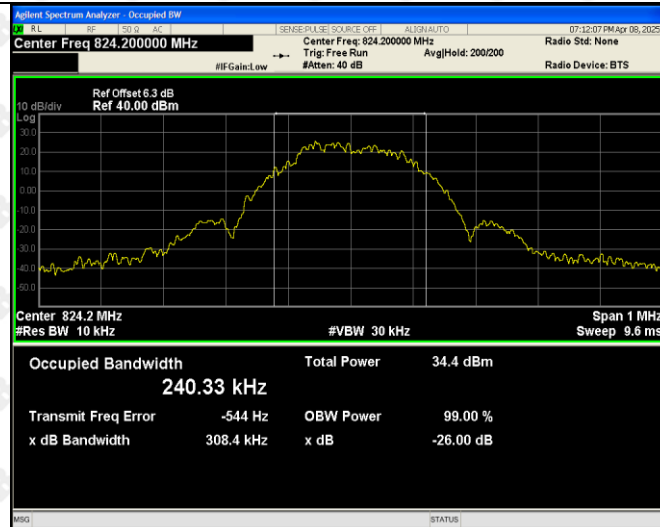
GPRS Middle Channel



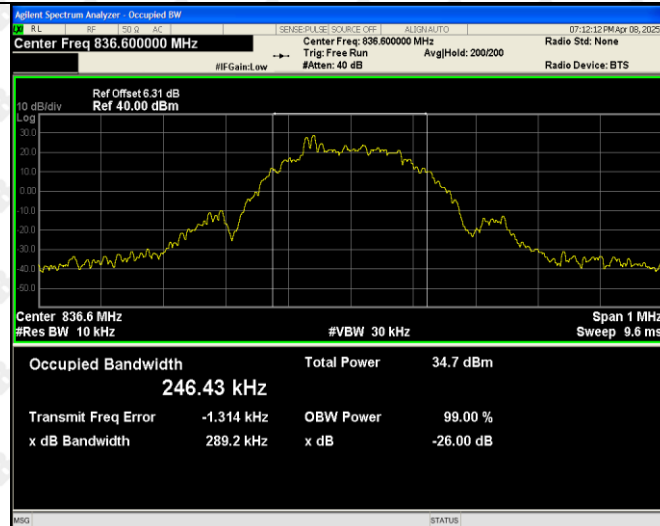
GPRS High Channel



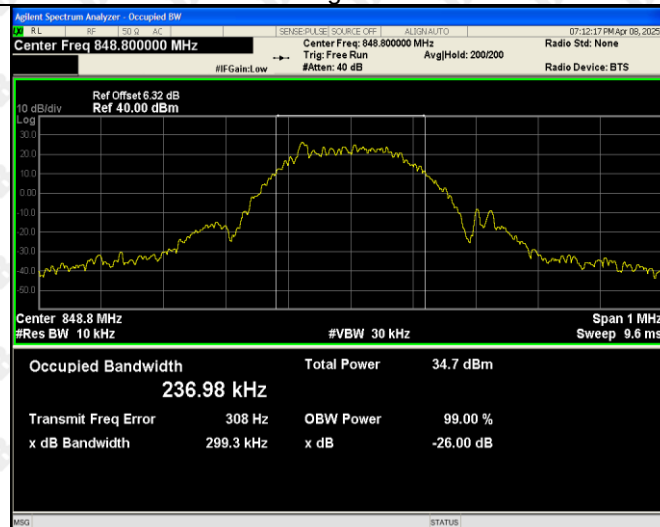
EDGE Low Channel



EDGE Middle Channel



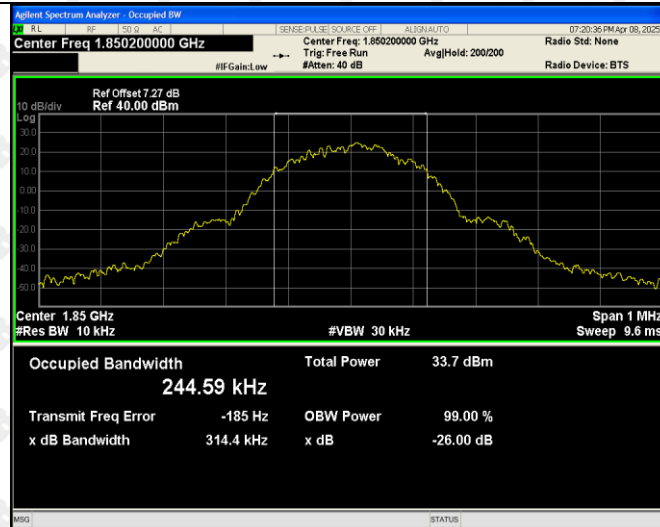
EDGE High Channel



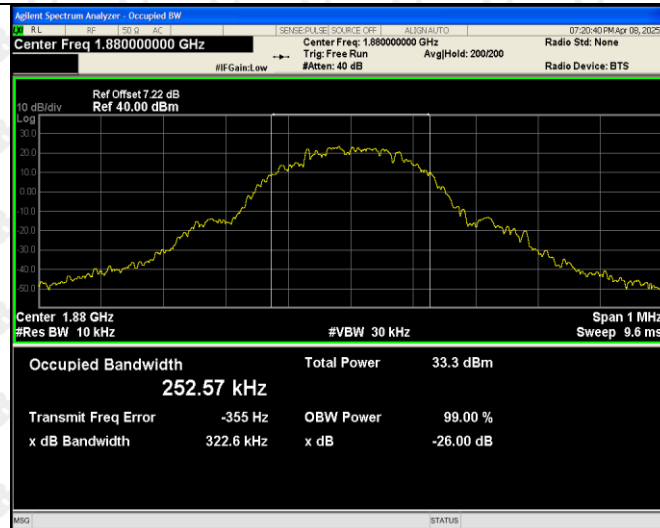
For PCS Band



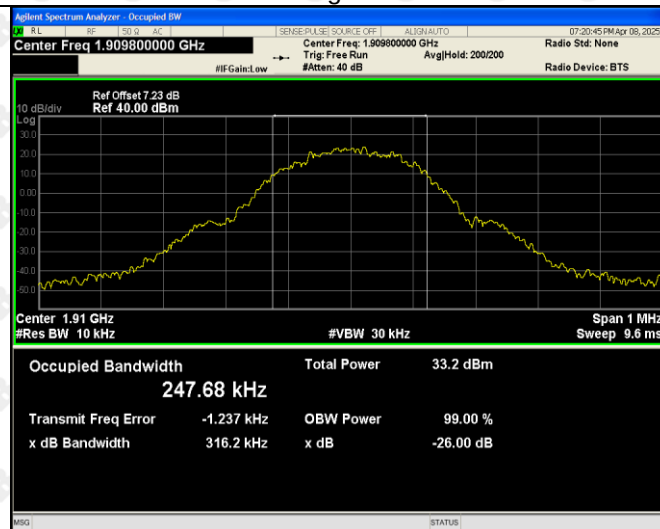
GPRS Low Channel



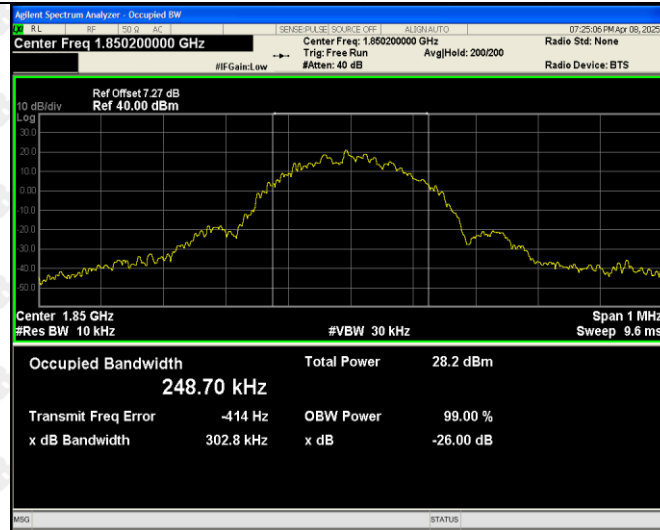
GPRS Middle Channel



GPRS High Channel



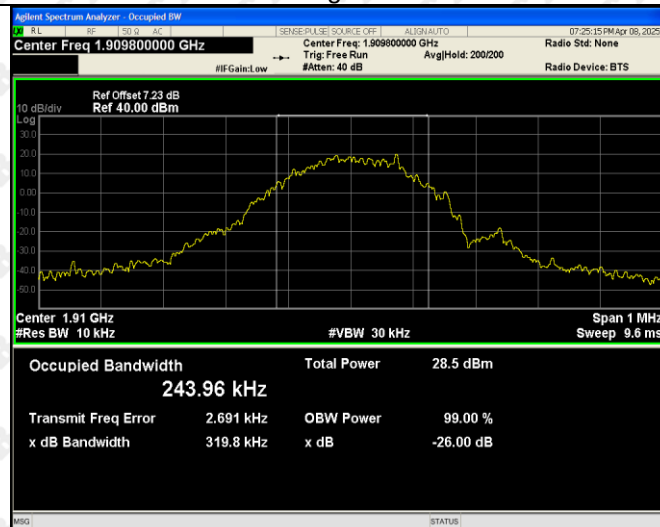
EDGE Low Channel



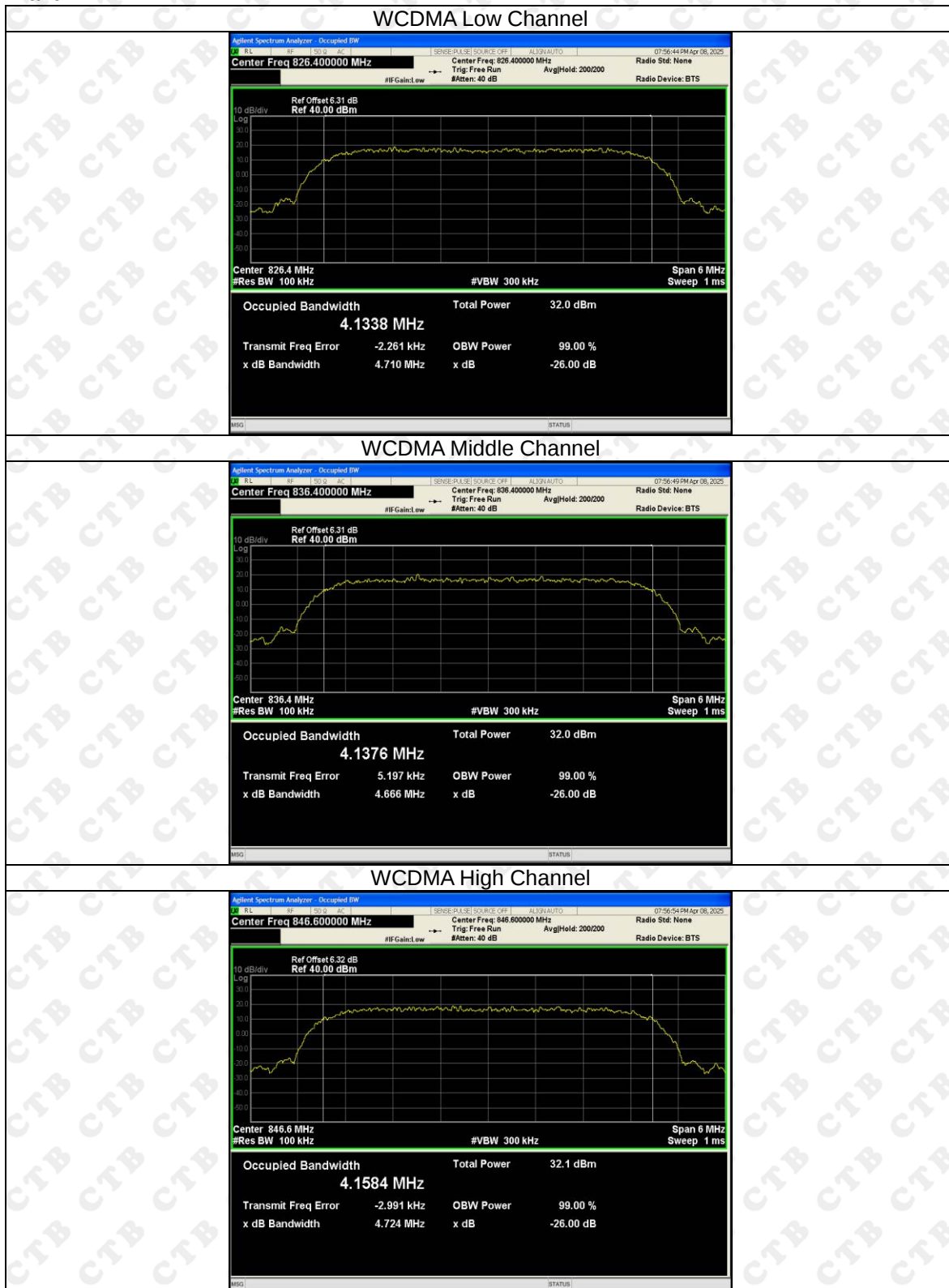
EDGE Middle Channel



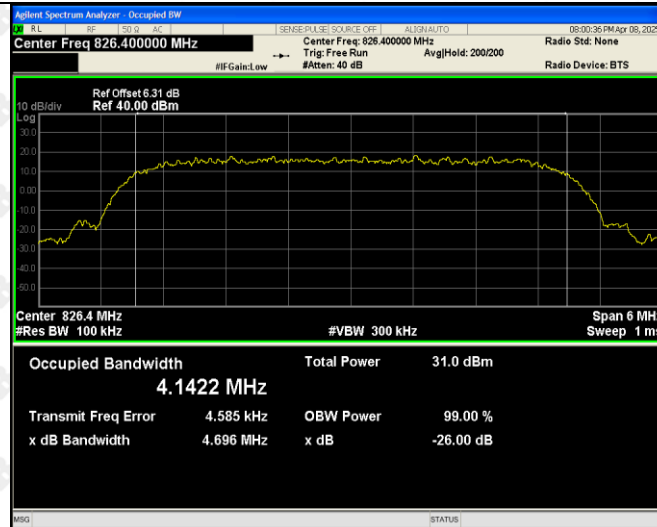
EDGE High Channel



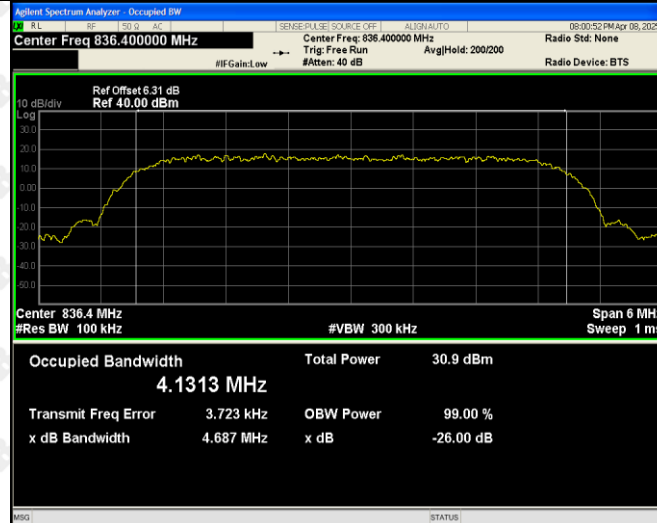
For Band V



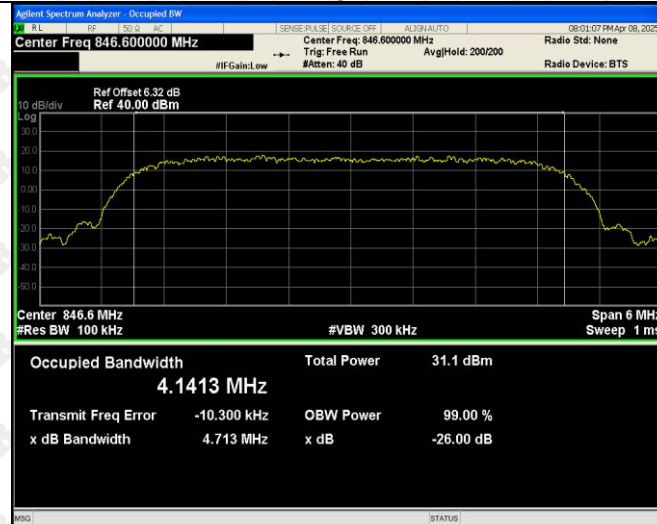
HSDPA Low Channel



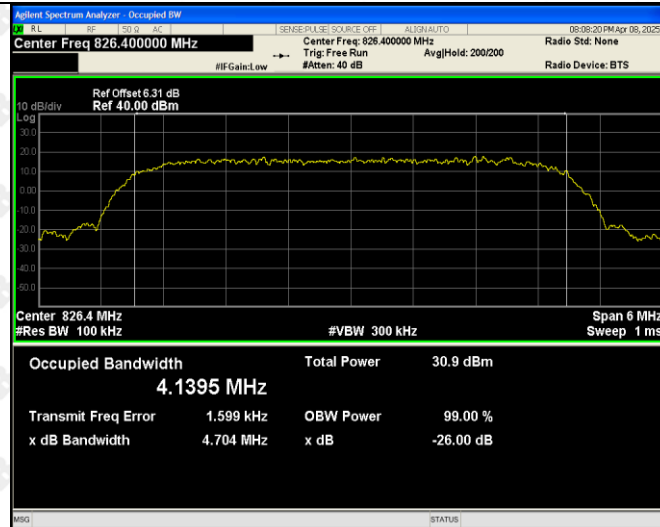
HSDPA Middle Channel



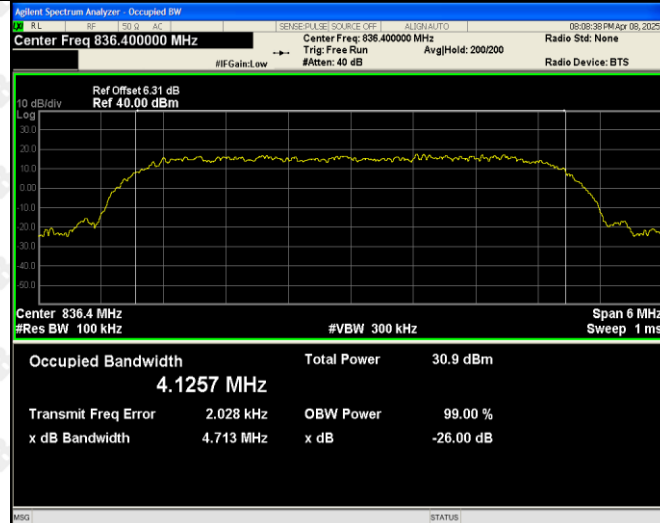
HSDPA High Channel



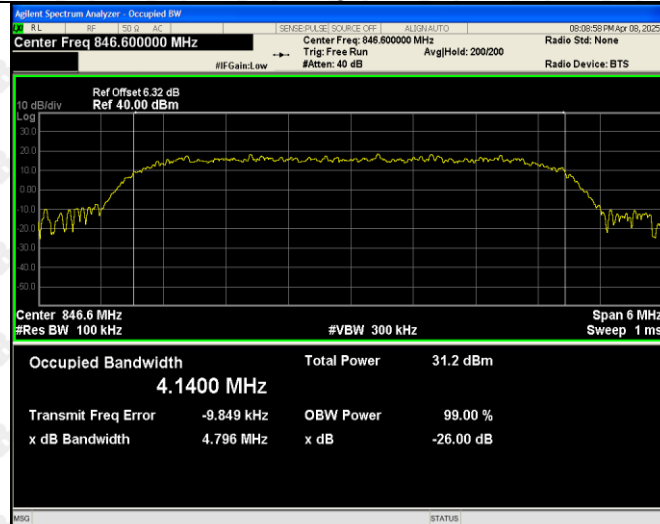
HSUPA Low Channel



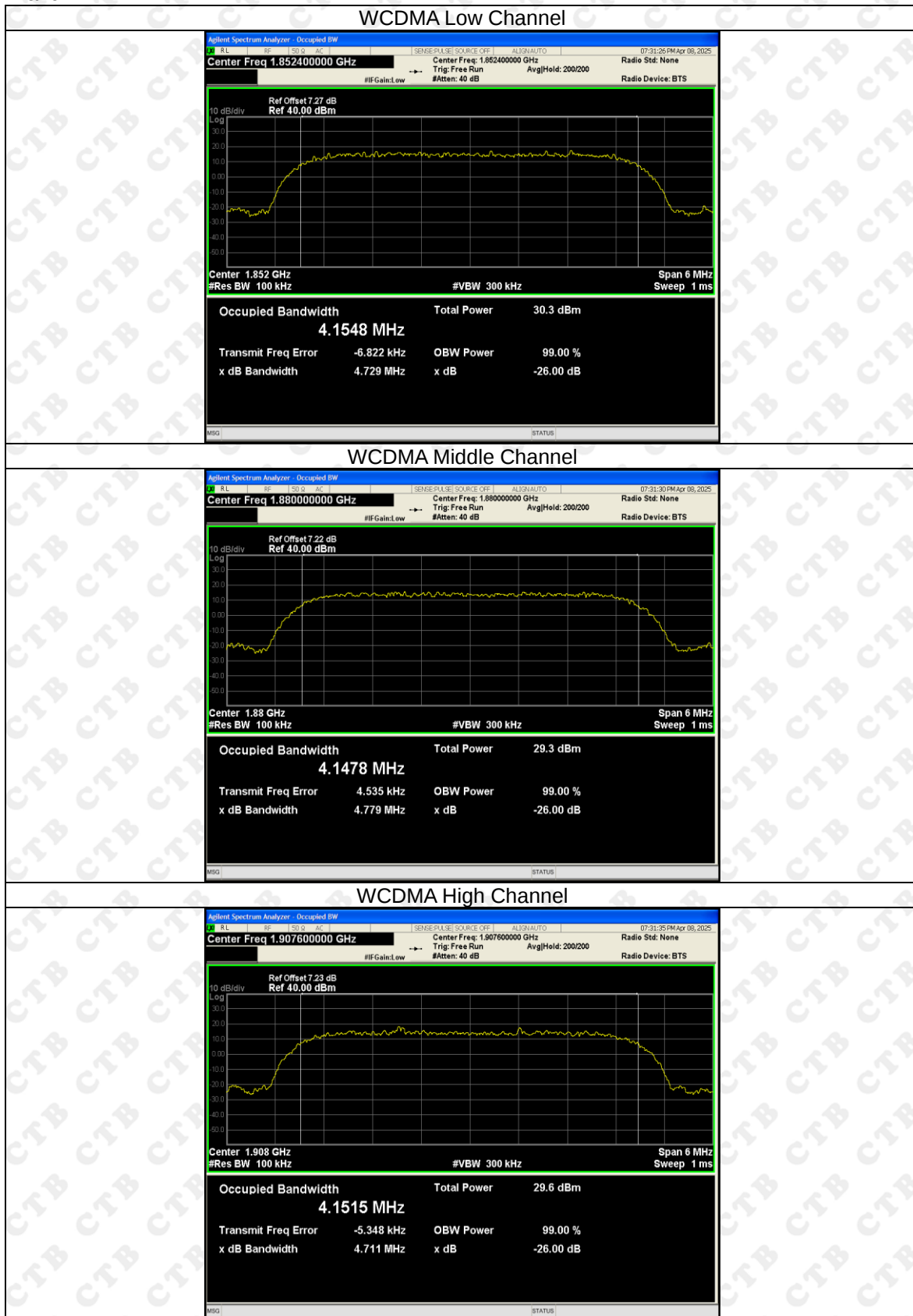
HSUPA Middle Channel



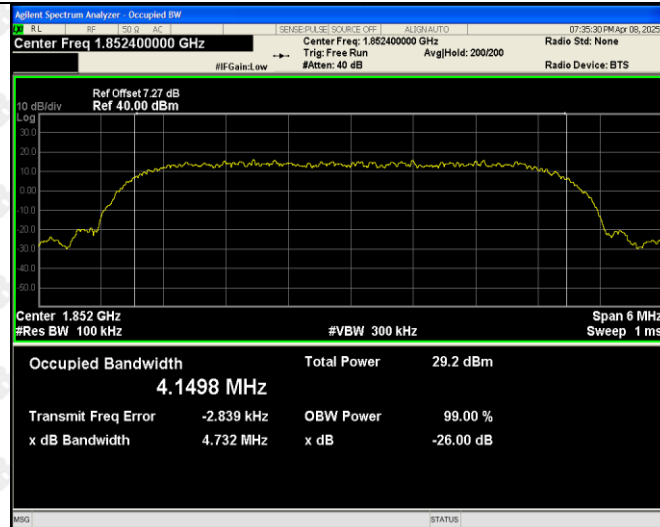
HSUPA High Channel



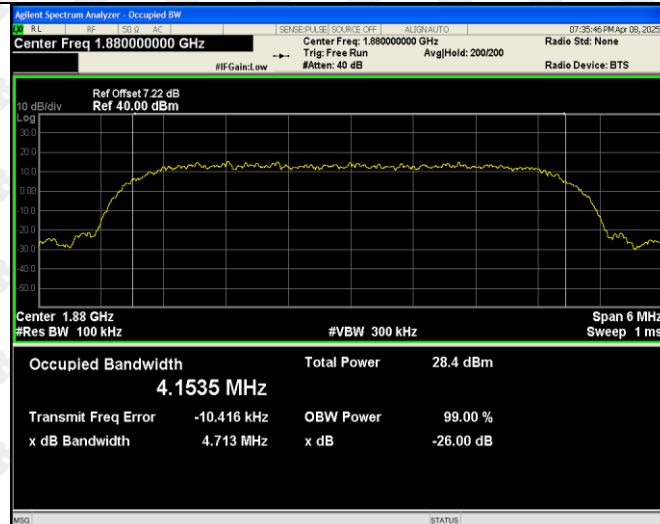
For Band II



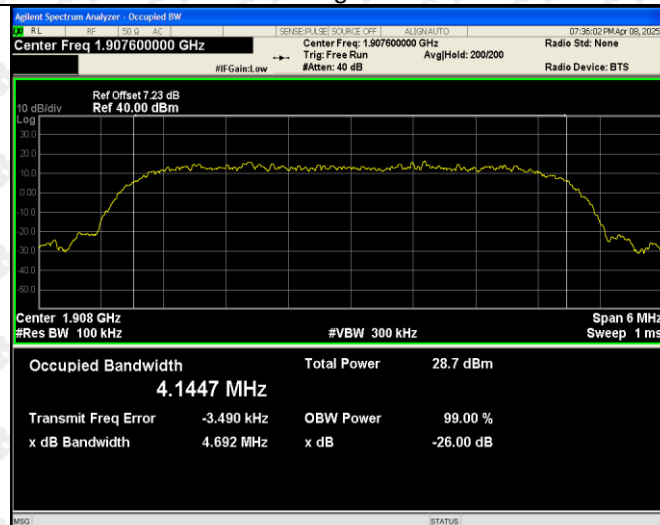
HSDPA Low Channel



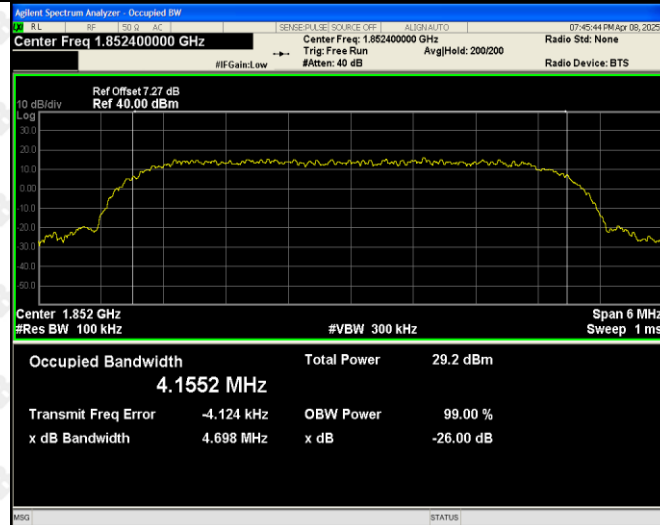
HSDPA Middle Channel



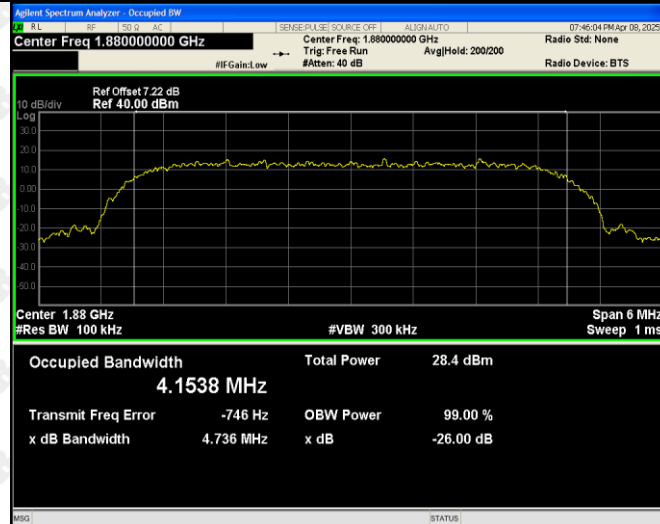
HSDPA High Channel



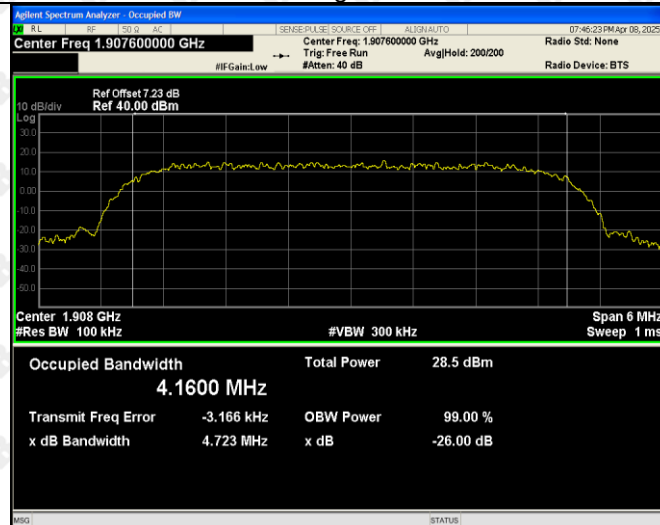
HSUPA Low Channel



HSUPA Middle Channel



HSUPA High Channel



9. OUT OF BAND EMISSIONS AT ANTENNA TERMINAL

9.1 Standard Applicable

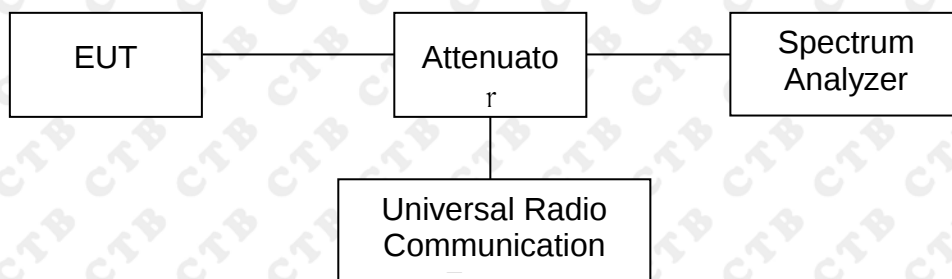
According to §22.917(a), the power of any emissions outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

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:

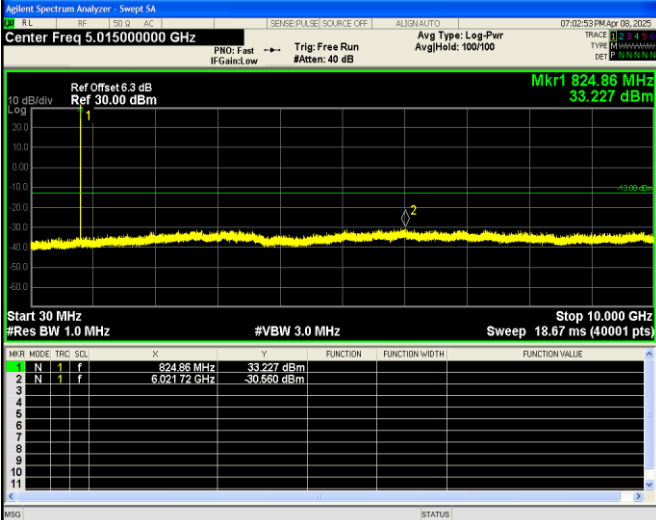
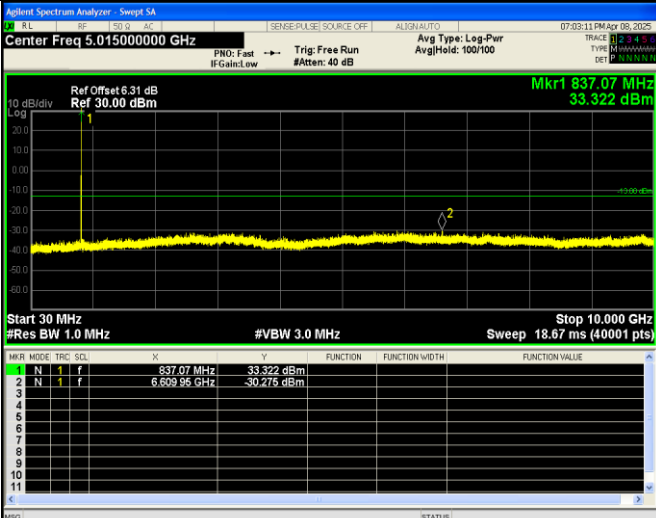
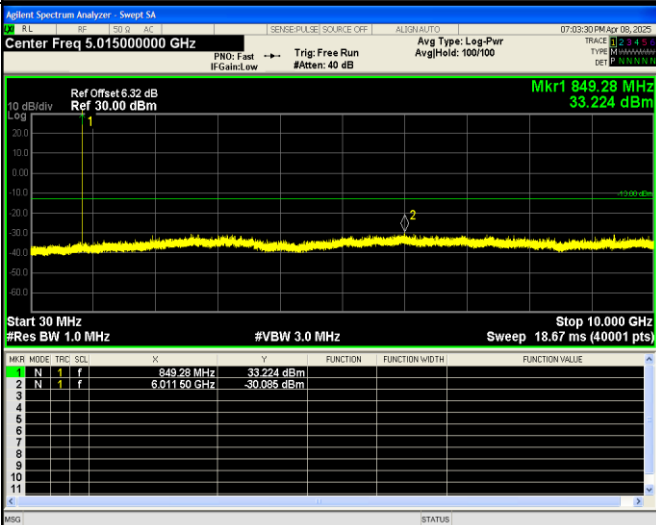


9.3 Environmental Conditions

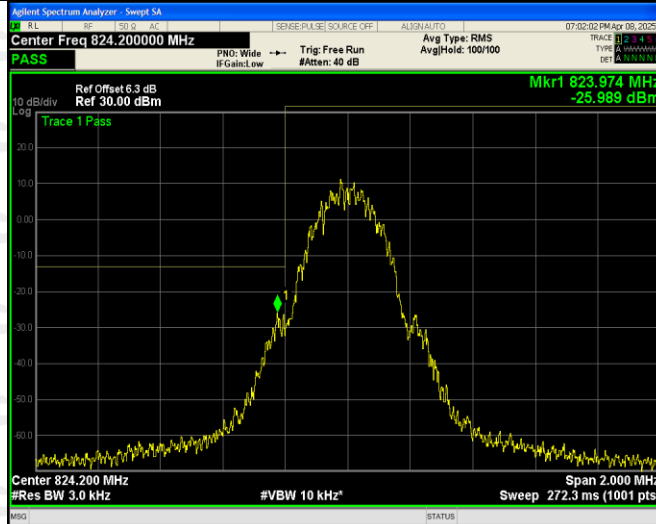
Temperature:	23 °C
Relative Humidity:	54%
ATM Pressure:	1010 mbar

9.4 Summary of Test Results/Plots

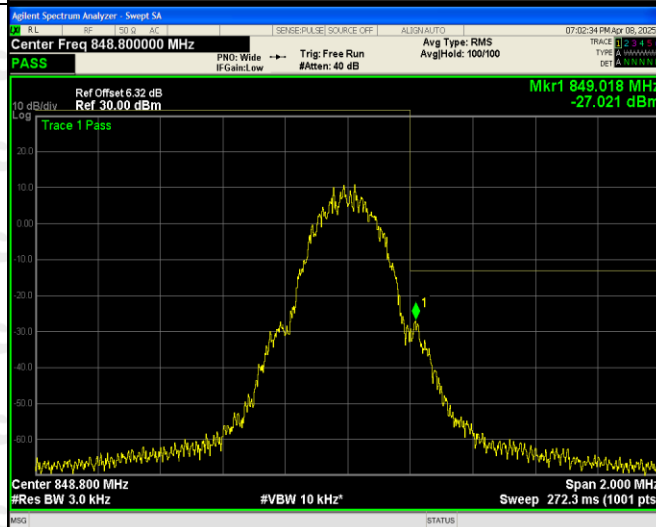
Please refer to the following test plots
For Cellular Band

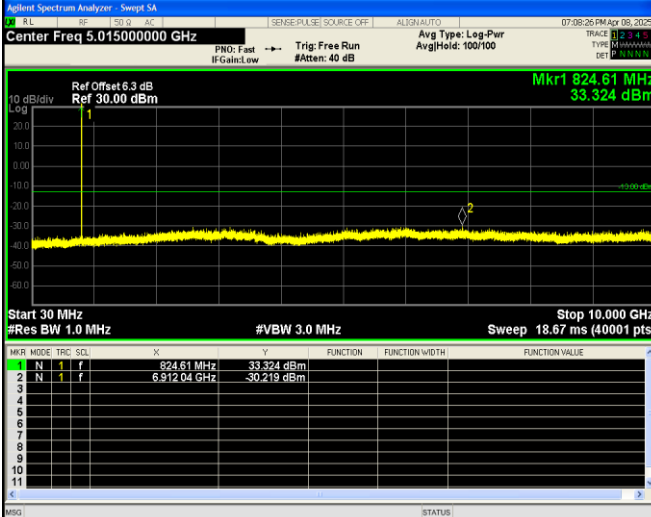
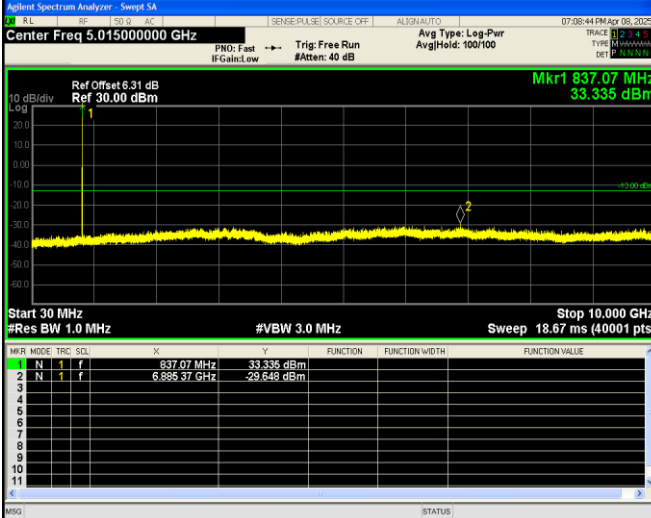
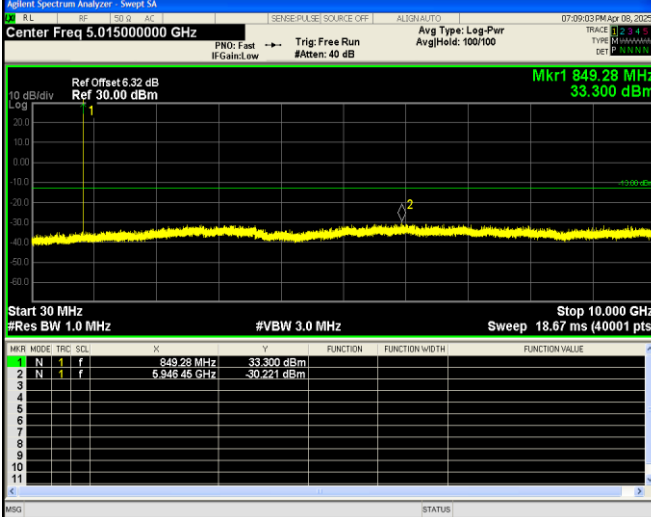
GSM Low Channel	
GSM Middle Channel	
GSM High Channel	

GSM
Low
Band
Emission

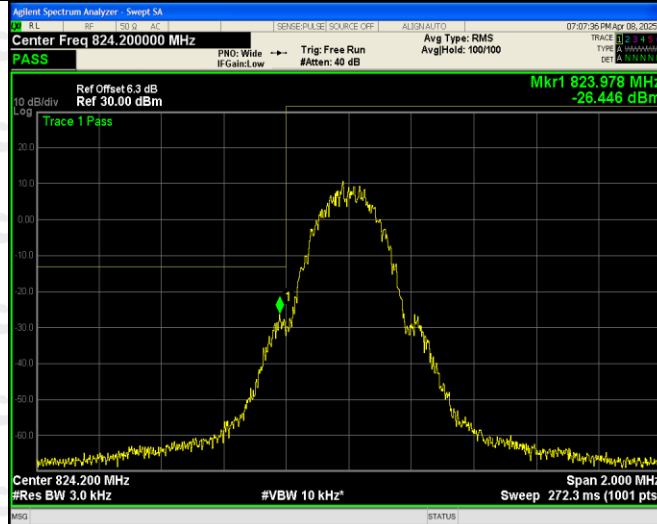


GSM
High
Band
Emission

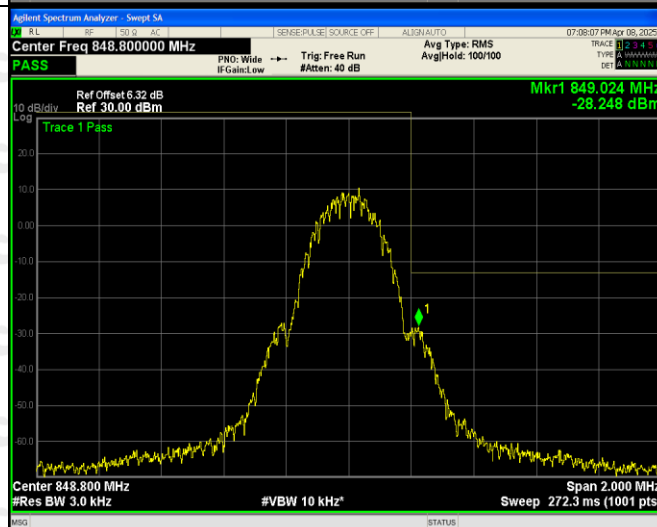


GPRS Low Channel	 <table><tr><th>Mkr</th><th>Mode</th><th>Trig</th><th>SQL</th><th>X</th><th>Y</th><th>Function</th><th>Function Width</th><th>Function Value</th></tr><tr><td>1</td><td>N</td><td>1</td><td>f</td><td>824.61 MHz</td><td>33.324 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>6.91204 GHz</td><td>-30.219 dBm</td><td></td><td></td><td></td></tr></table>	Mkr	Mode	Trig	SQL	X	Y	Function	Function Width	Function Value	1	N	1	f	824.61 MHz	33.324 dBm				2	N	1	f	6.91204 GHz	-30.219 dBm			
Mkr	Mode	Trig	SQL	X	Y	Function	Function Width	Function Value																				
1	N	1	f	824.61 MHz	33.324 dBm																							
2	N	1	f	6.91204 GHz	-30.219 dBm																							
GPRS Middle Channel	 <table><tr><th>Mkr</th><th>Mode</th><th>Trig</th><th>SQL</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>33.335 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>6.89537 GHz</td><td>-29.649 dBm</td><td></td><td></td><td></td></tr></table>	Mkr	Mode	Trig	SQL	X	Y	Function	Function Width	Function Value	1	N	1	f	837.07 MHz	33.335 dBm				2	N	1	f	6.89537 GHz	-29.649 dBm			
Mkr	Mode	Trig	SQL	X	Y	Function	Function Width	Function Value																				
1	N	1	f	837.07 MHz	33.335 dBm																							
2	N	1	f	6.89537 GHz	-29.649 dBm																							
GPRS High Channel	 <table><tr><th>Mkr</th><th>Mode</th><th>Trig</th><th>SQL</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>33.300 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>6.94646 GHz</td><td>-30.221 dBm</td><td></td><td></td><td></td></tr></table>	Mkr	Mode	Trig	SQL	X	Y	Function	Function Width	Function Value	1	N	1	f	849.28 MHz	33.300 dBm				2	N	1	f	6.94646 GHz	-30.221 dBm			
Mkr	Mode	Trig	SQL	X	Y	Function	Function Width	Function Value																				
1	N	1	f	849.28 MHz	33.300 dBm																							
2	N	1	f	6.94646 GHz	-30.221 dBm																							

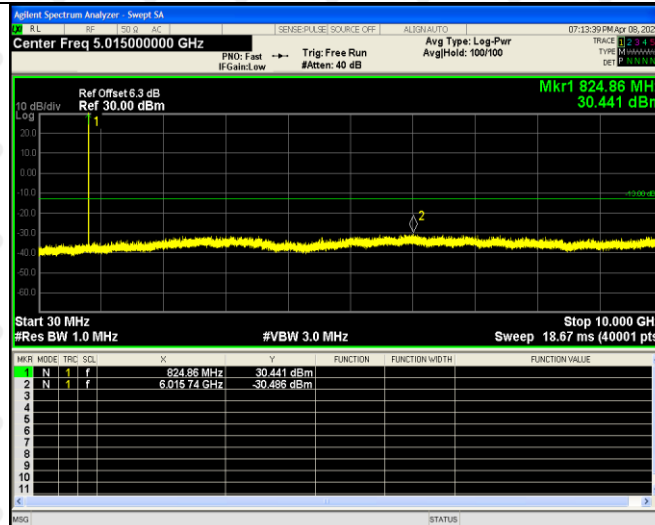
GPRS
Low
Band
Emission



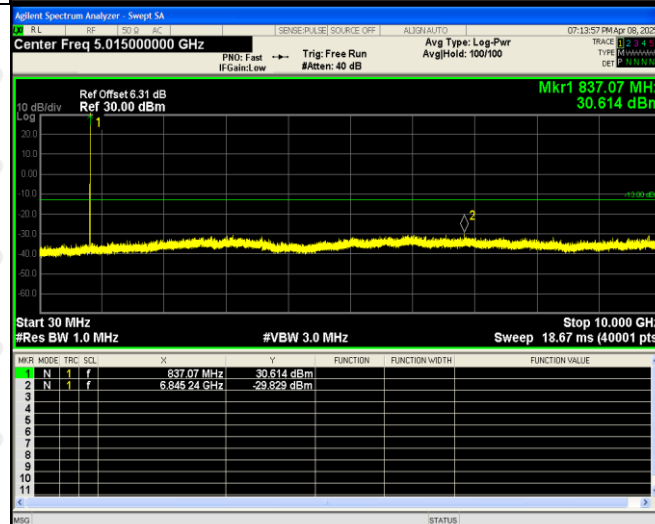
GPRS
High
Band
Emission



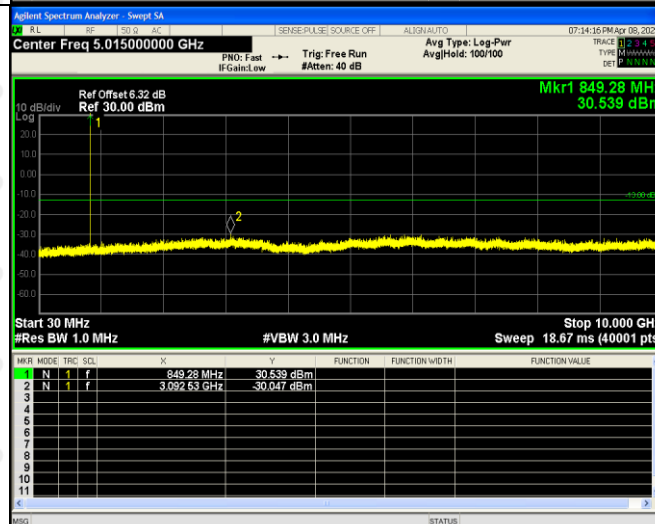
EDGE
Low
Channel



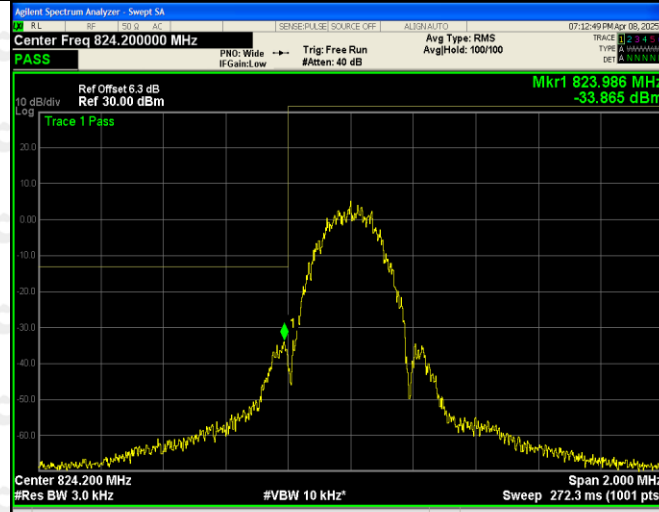
EDGE
Middle
Channel



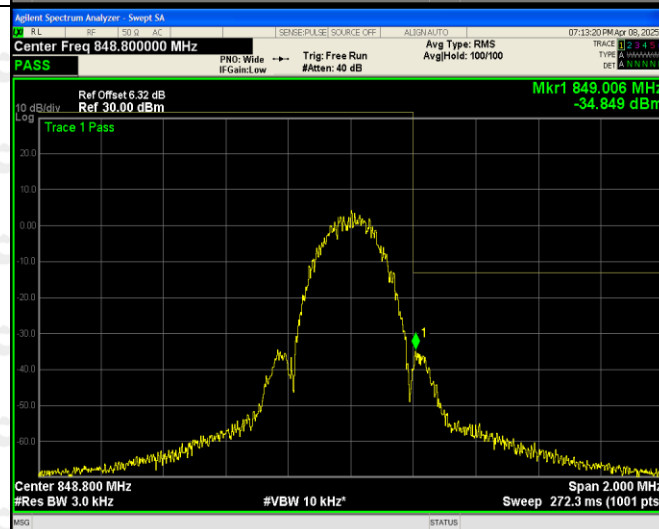
EDGE
High
Channel



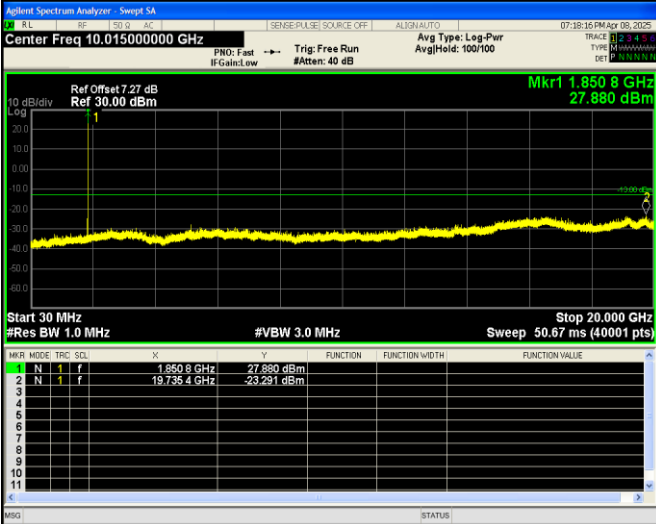
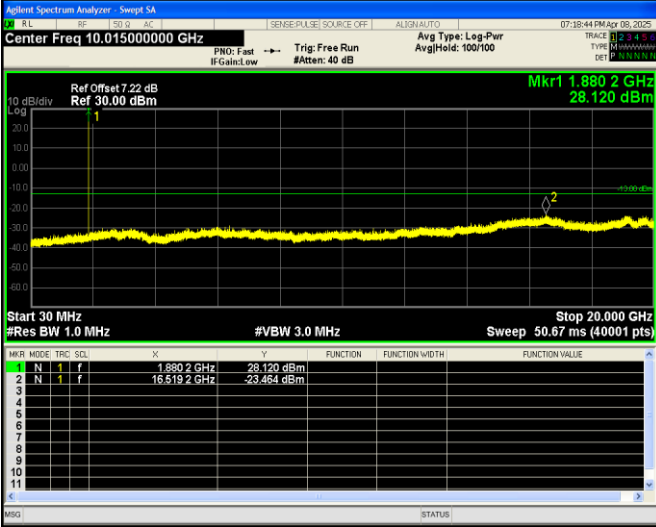
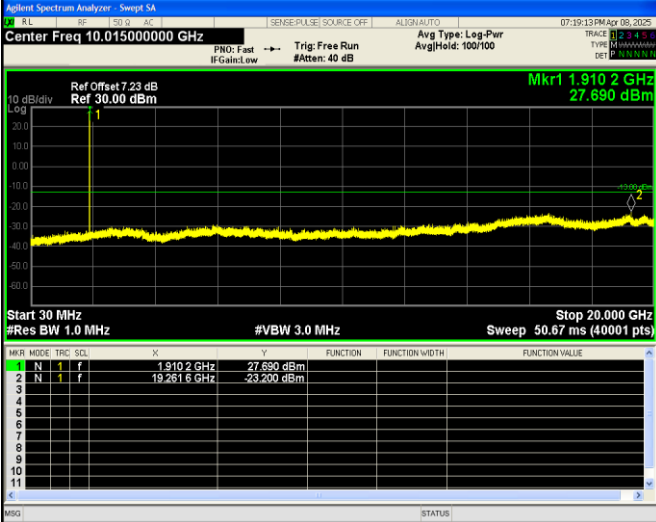
EDGE
Low
Band
Emission

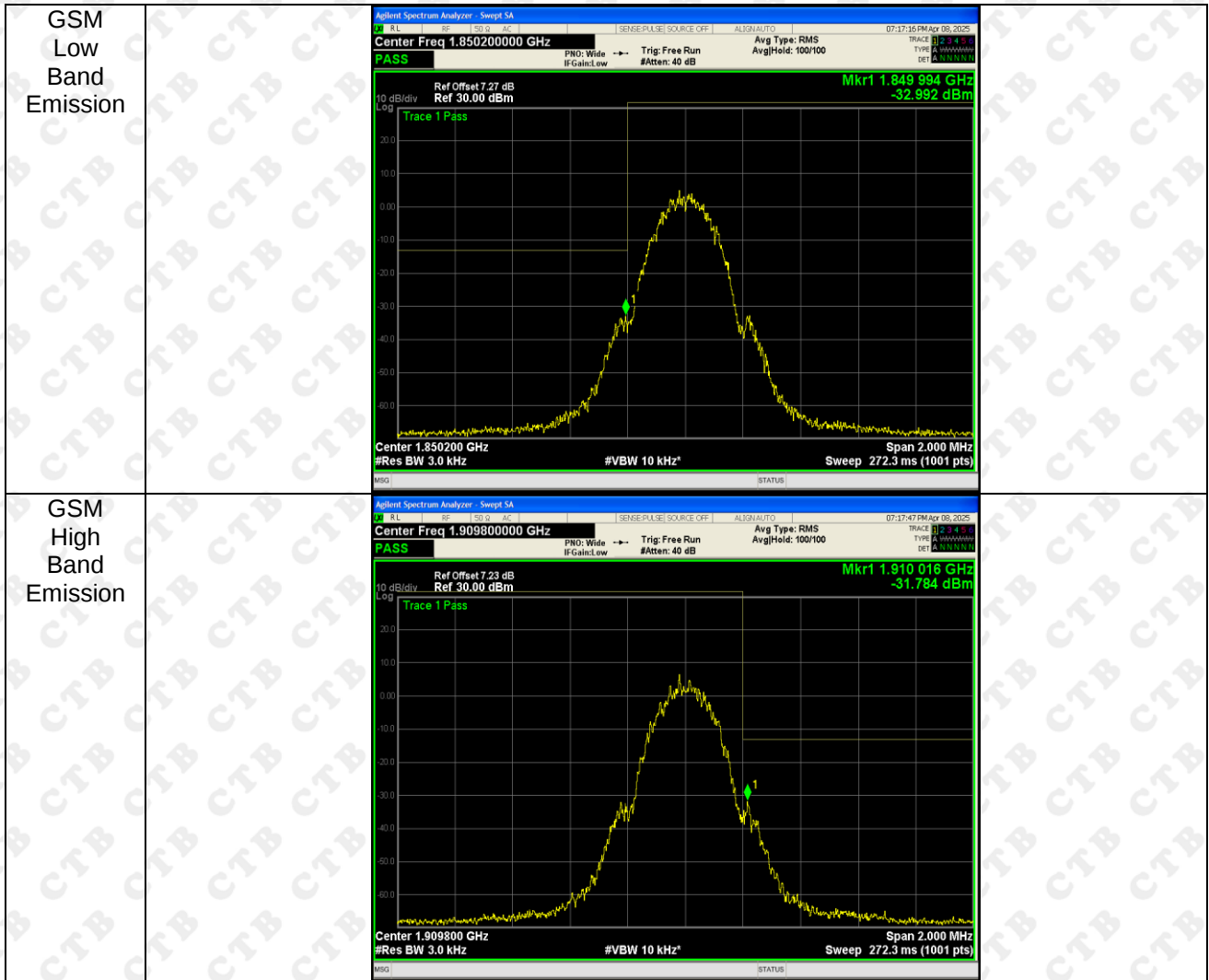


EDGE
High
Band
Emission

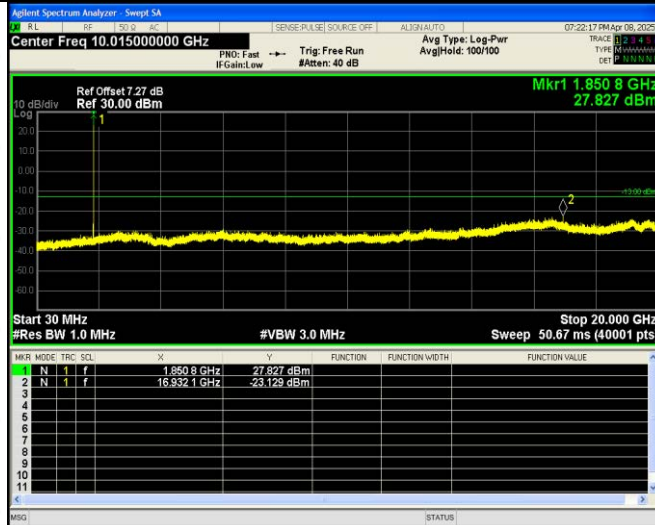


For PCS Band

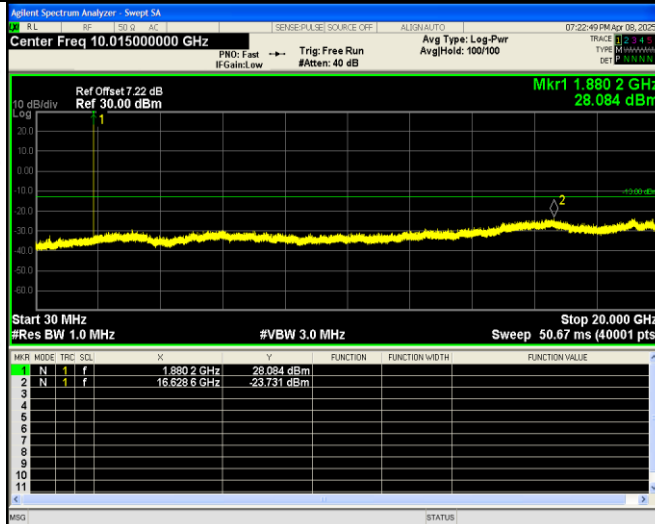
GSM Low Channel		
GSM Middle Channel		
GSM High Channel		



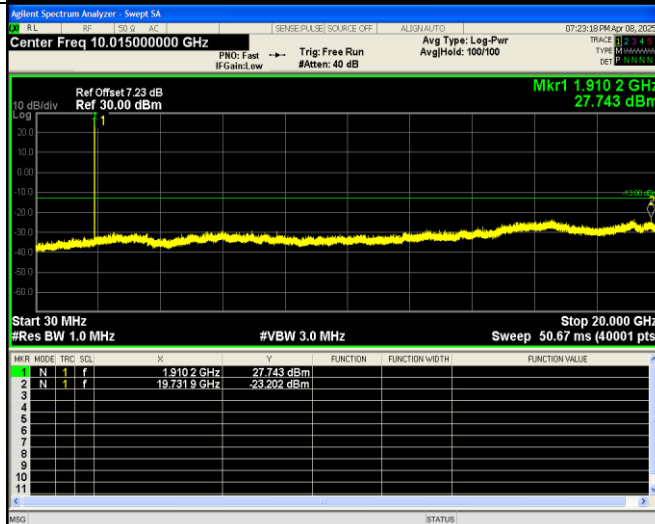
GPRS
Low
Channel



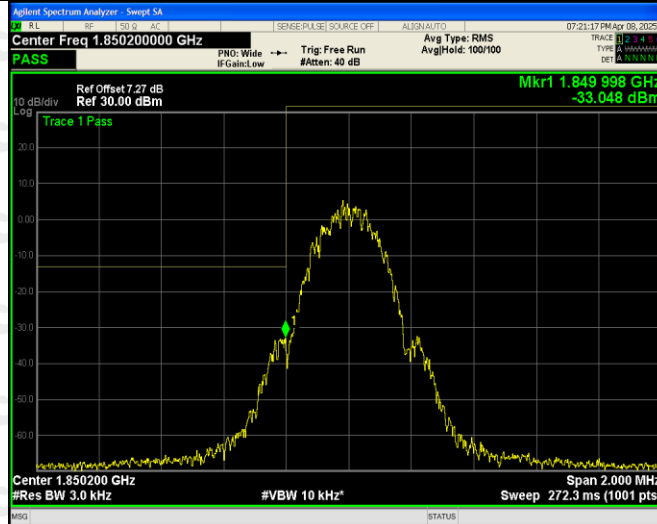
GPRS
Middle
Channel



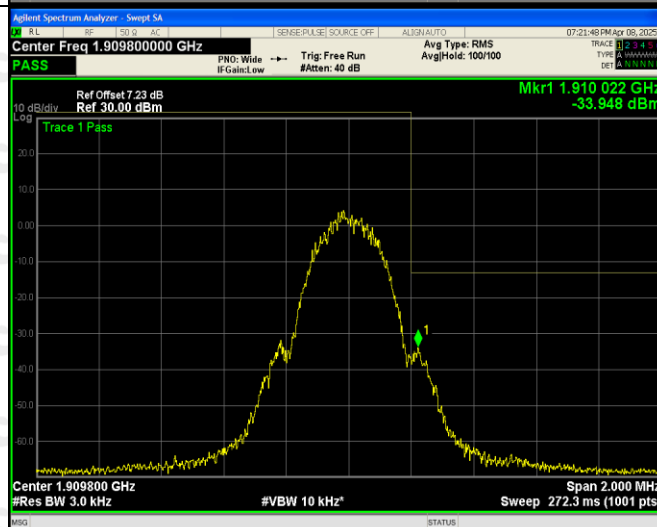
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High
Channel



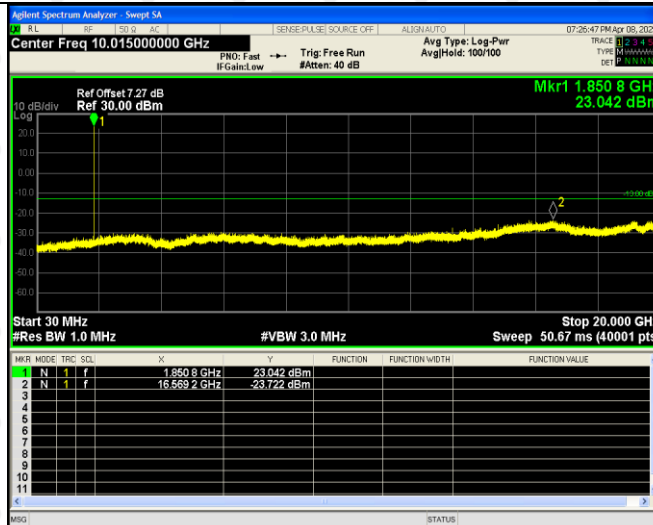
GPRS
Low
Band
Emission



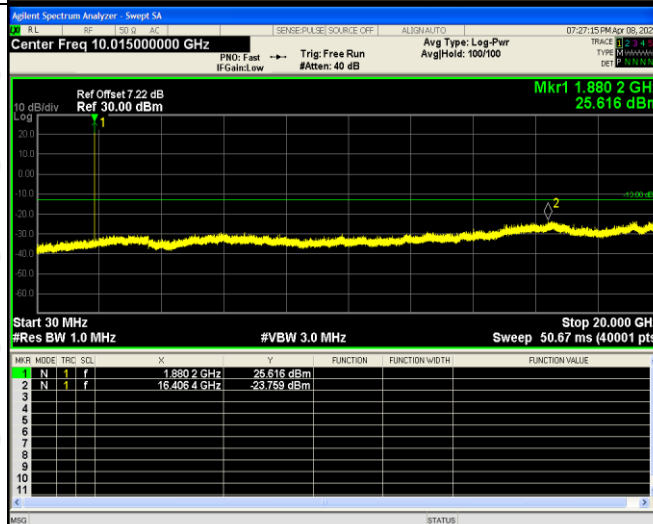
GPRS
High
Band
Emission



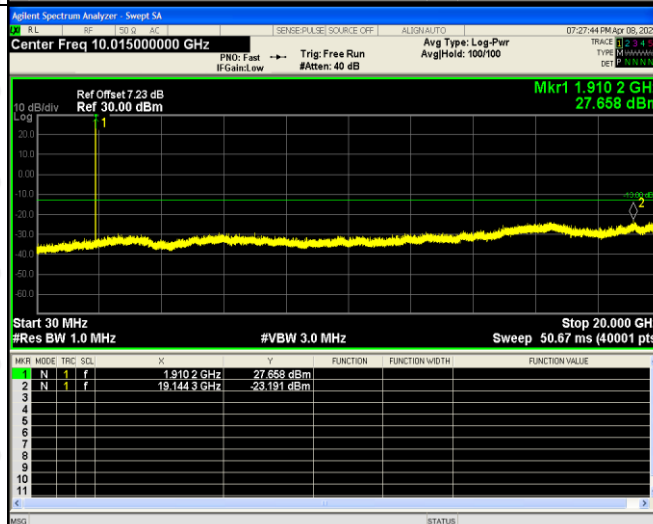
EDGE
Low
Channel



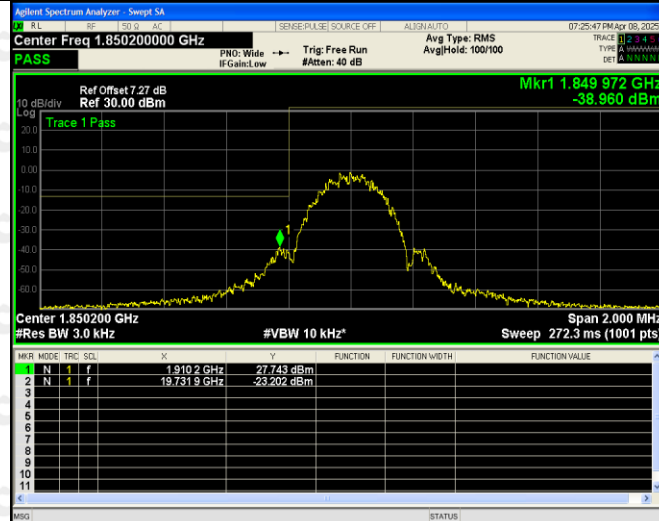
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Middle
Channel



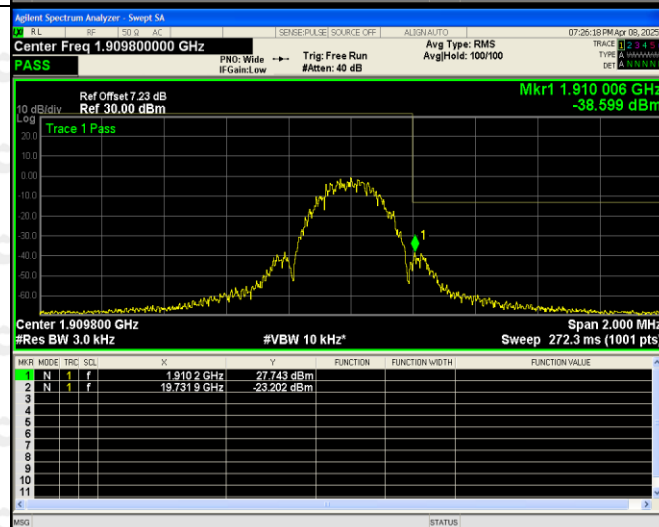
EDGE
High
Channel



EDGE
Low
Band
Emission



EDGE
High
Band
Emission



For Band V

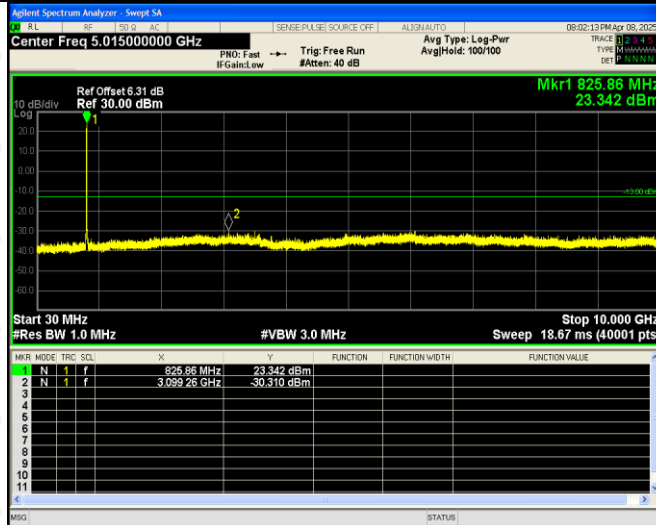
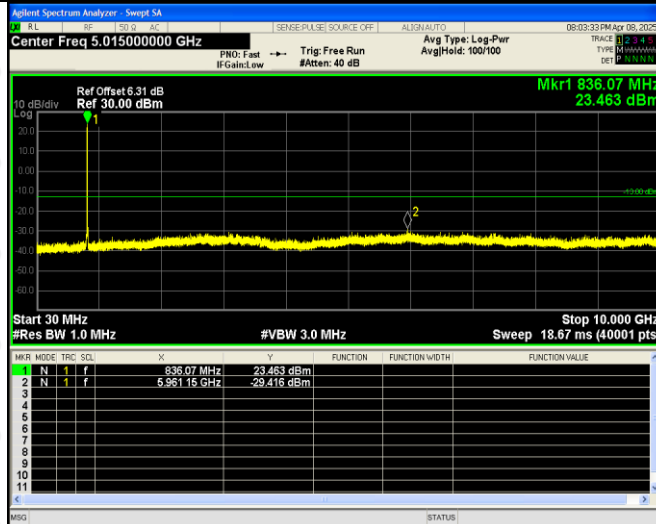
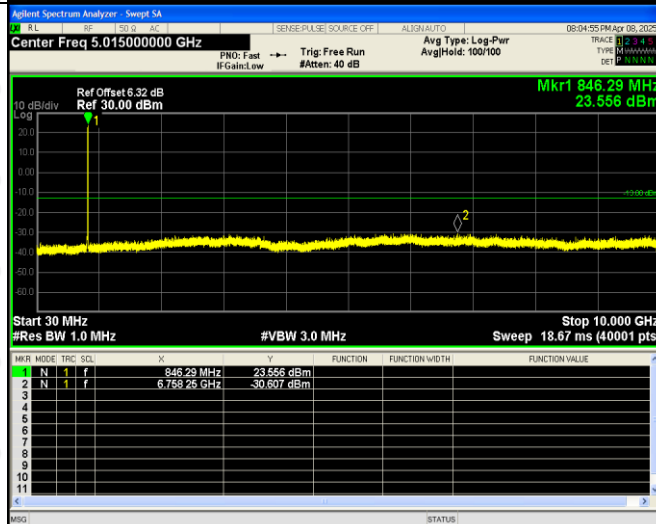
WCDMA Low Channel	Agilent Spectrum Analyzer - Sweep SA Center Freq 5.015000000 GHz Ref Offset 6.31 dB Ref 30.00 dBm Mkr1 825.86 MHz 24.406 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 10.000 GHz Sweep 18.67 ms (40001 pts) <table><tr><th>M/R</th><th>MODE</th><th>TRC</th><th>SQL</th><th>X</th><th>Y</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>825.86 MHz</td><td>24.406 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>6.035 93 GHz</td><td>-30.223 dBm</td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>6</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>7</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>8</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>9</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>10</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>11</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table>	M/R	MODE	TRC	SQL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	825.86 MHz	24.406 dBm				2	N	1	f	6.035 93 GHz	-30.223 dBm				3									4									5									6									7									8									9									10									11								
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WCDMA
Low
Band
Spurious
Emission



WCDMA
High
Band
Spurious
Emission



HSDPA
Low
Channel

HSDPA
Middle
Channel

HSDPA
High
Channel


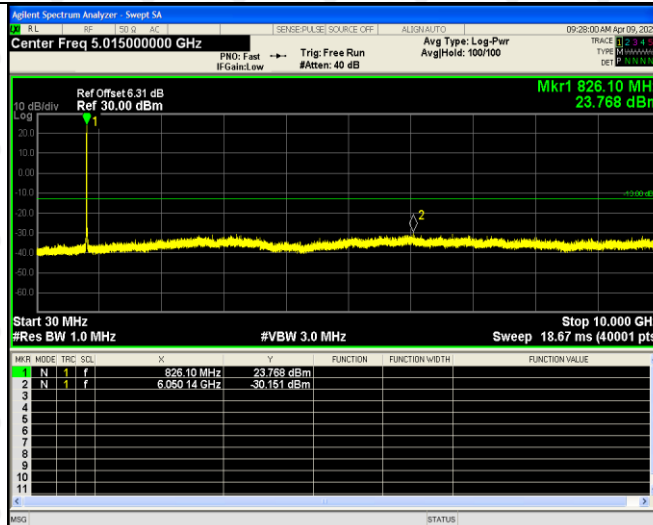
HSDPA
Low
Band
Spurious
Emission



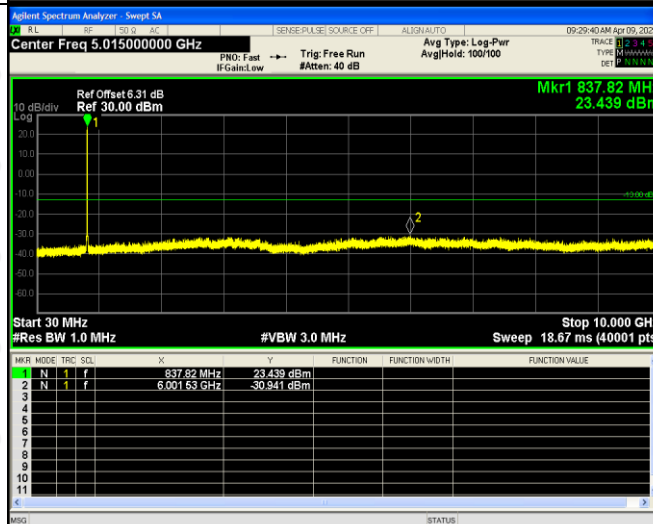
HSDPA
High
Band
Spurious
Emission



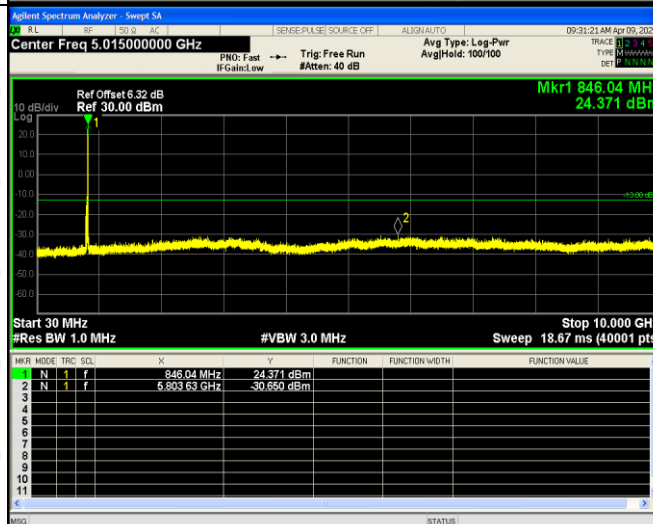
HSUPA
Low
Channel



HSUPA
Middle
Channel



HSUPA
High
Channel



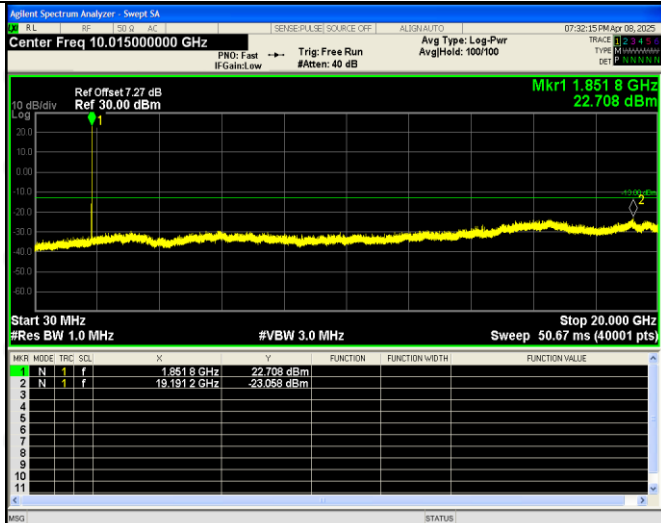
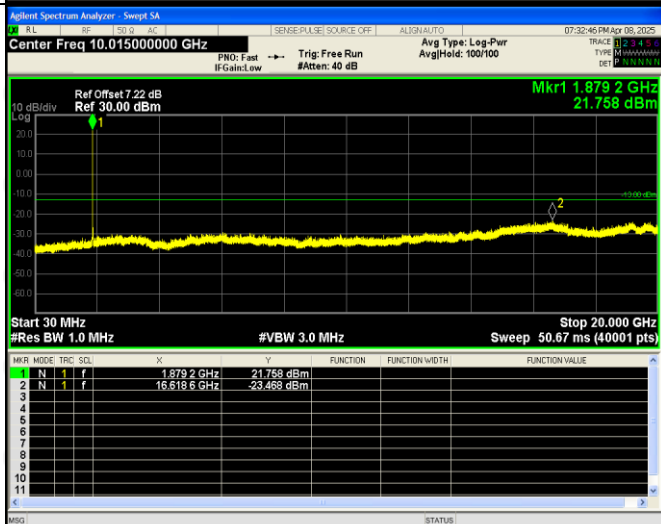
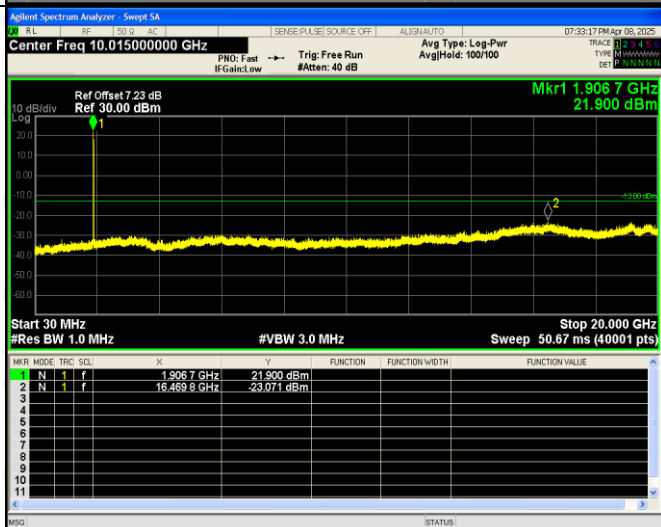
HSUPA
Low
Band
Spurious
Emission



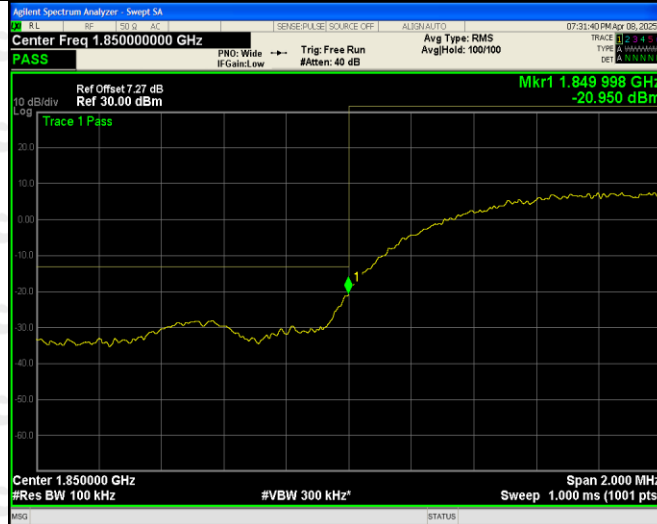
HSUPA
High
Band
Spurious
Emission



For Band II

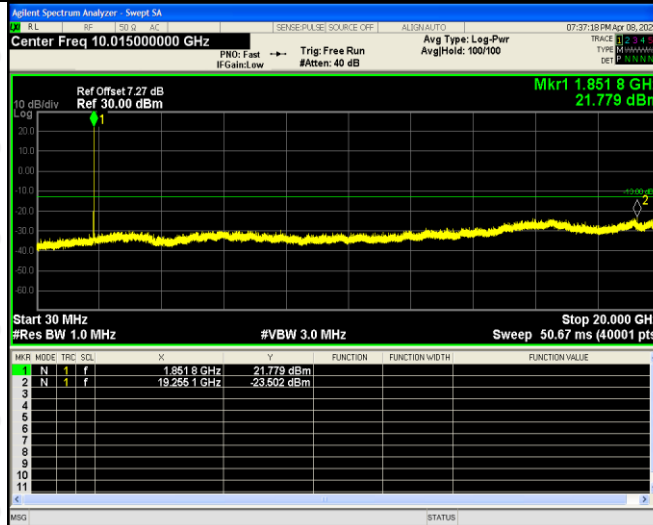
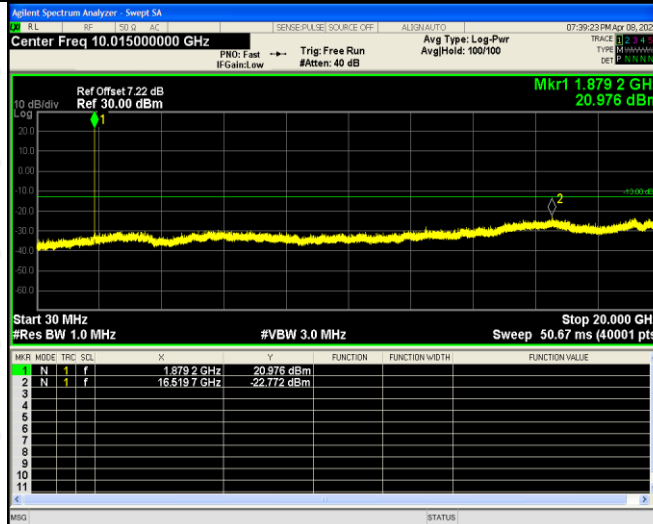
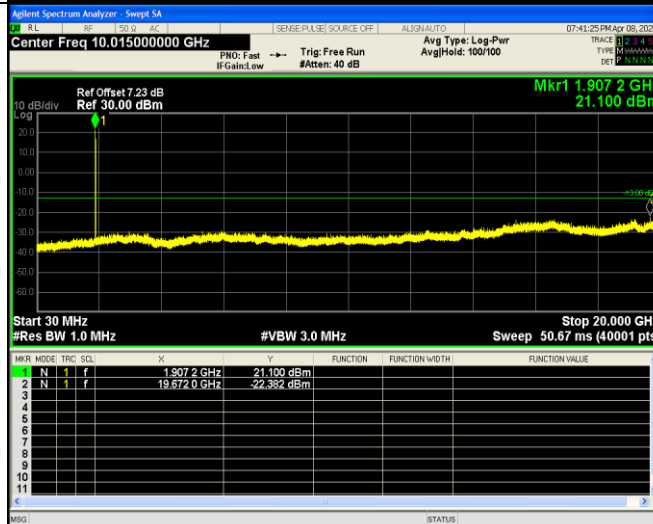
WCDMA Low Channel	 Agilent Spectrum Analyzer - Sweep SA Center Freq 10.015000000 GHz Ref Offset 7.27 dB Ref 30.00 dBm Mkr1 1.8518 GHz 22.708 dBm Start 30 MHz #Res BW 1.0 MHz #VBW 3.0 MHz Stop 20.000 GHz Sweep 50.67 ms (40001 pts) <table><tr><th>MNR</th><th>MODE</th><th>TRG</th><th>SOL</th><th>X</th><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>1.8518 GHz</td><td>22.708 dBm</td><td></td><td></td><td></td></tr><tr><td>2</td><td>N</td><td>1</td><td>f</td><td>19.1912 GHz</td><td>-23.058 dBm</td><td></td><td></td><td></td></tr></table>	MNR	MODE	TRG	SOL	X	Y	FUNCTION	FUNCTION WIDTH	FUNCTION VALUE	1	N	1	f	1.8518 GHz	22.708 dBm				2	N	1	f	19.1912 GHz	-23.058 dBm			
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WCDMA
Low
Band
Spurious
Emission

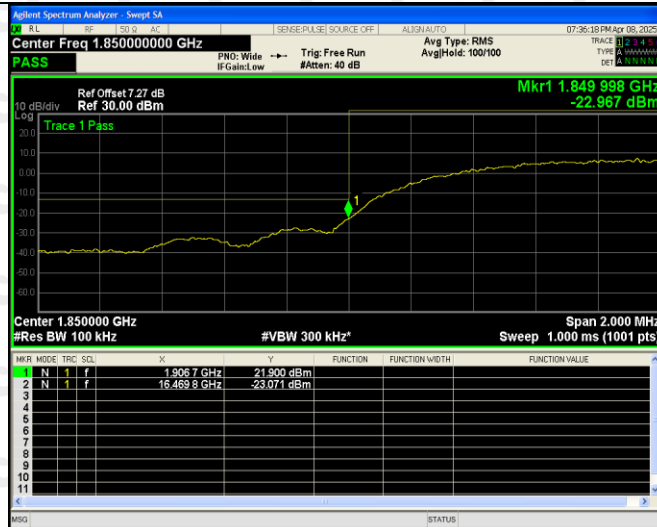


WCDMA
High
Band
Spurious
Emission



HSDPA
Low
Channel

HSDPA
Middle
Channel

HSDPA
High
Channel


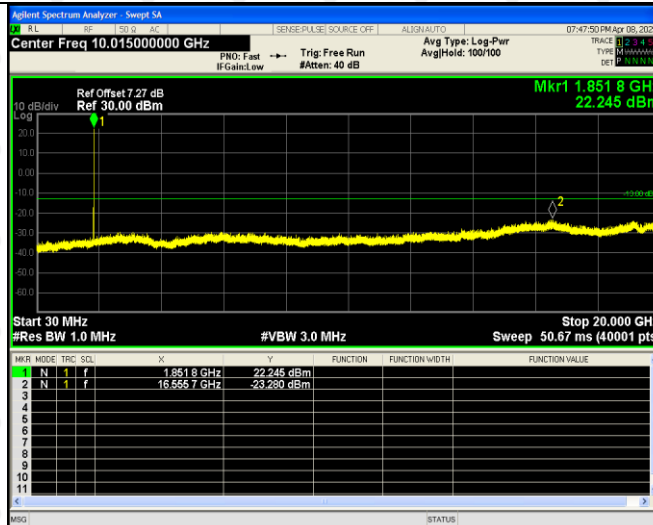
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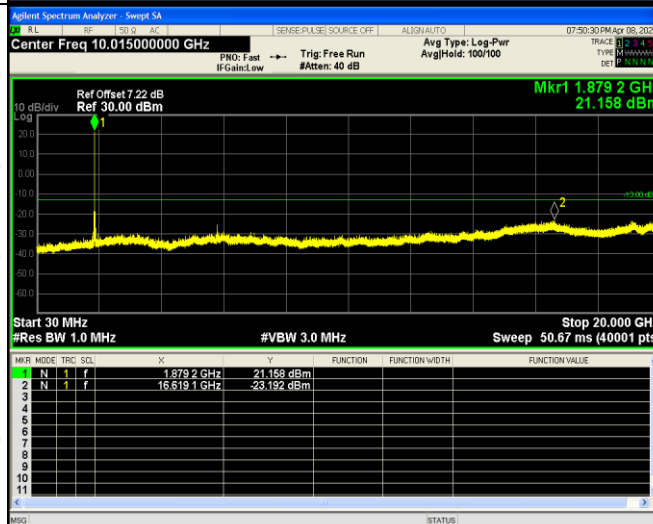
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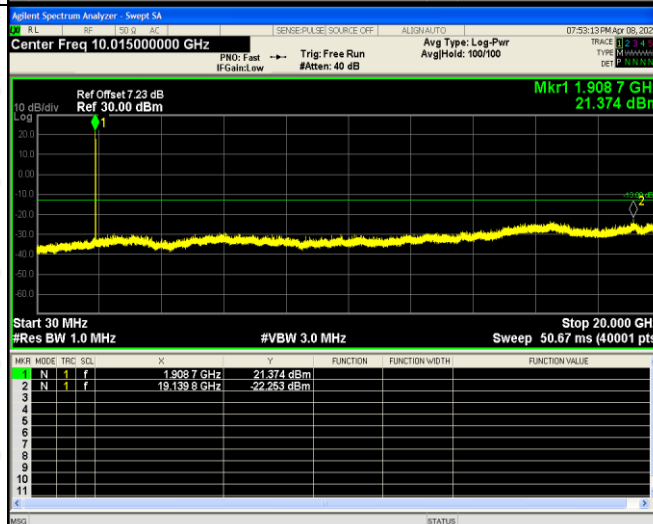
HSUPA
Low
Channel



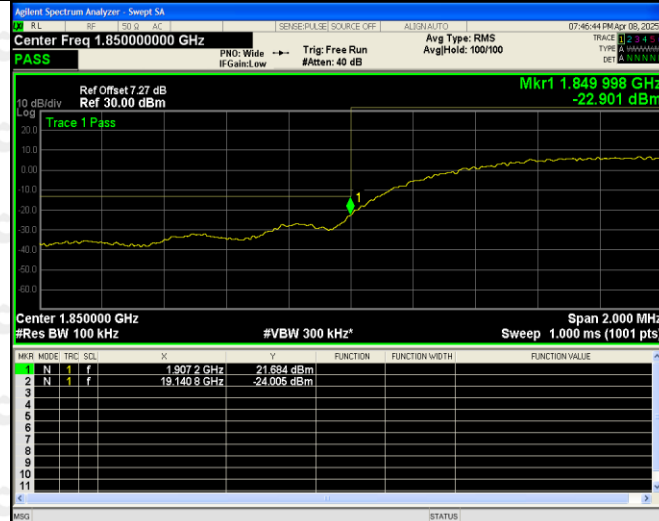
HSUPA
Middle
Channel



HSUPA
High
Channel



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 = $43 + 10 \log_{10}$ (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)						
44.06	-66.56	3.9	-62.66	-13	-49.66	H
1639.40	-50.33	4.83	-45.50	-13	-32.50	H
2466.43	-57.54	8.08	-49.46	-13	-36.46	H
39.30	-74.06	4.02	-70.04	-13	-57.04	V
1642.40	-56.22	4.48	-51.74	-13	-38.74	V
2469.63	-47.66	8.2	-39.46	-13	-26.46	V
Middle Channel (836.6MHz)						
37.86	-72.95	3.84	-69.11	-13	-56.11	H
1669.79	-56.99	4.62	-52.37	-13	-39.37	H
2505.56	-51.09	8.25	-42.84	-13	-29.84	H
41.90	-72.20	4.25	-67.95	-13	-54.95	V
1670.50	-48.21	4.54	-43.67	-13	-30.67	V
2505.88	-49.73	8.35	-41.38	-13	-29.75	V
High Channel (848.8MHz)						
38.23	-66.16	4.22	-70.38	-13	-57.38	H
1692.63	-57.38	4.87	-62.25	-13	-49.25	H
2538.30	-52.51	8.38	-60.89	-13	-47.89	H
45.87	-65.48	4.02	-69.50	-13	-56.50	V
1691.35	-46.98	4.56	-51.54	-13	-38.54	V
2543.60	-51.66	8.41	-60.07	-13	-47.07	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)						
40.11	-73.18	4.34	-68.84	-13	-55.84	H
3694.07	-54.75	10.54	-44.21	-13	-31.21	H
5545.82	-55.53	13.37	-42.16	-13	-29.16	H
45.11	-72.16	4.34	-67.82	-13	-54.82	V
3699.32	-55.77	10.54	-45.23	-13	-32.23	V
5547.36	-59.25	13.37	-45.88	-13	-32.88	V
Middle Channel (1880MHz)						
44.96	-71.68	4.02	-67.66	-13	-54.66	H
3758.52	-53.06	10.71	-42.35	-13	-29.35	H
5630.97	-58.54	13.73	-44.81	-13	-31.81	H
38.18	-70.67	4.14	-66.53	-13	-53.53	V
3753.15	-49.54	10.22	-39.32	-13	-26.32	V
5631.94	-60.18	13.16	-47.02	-13	-34.02	V
High Channel (1909.8MHz)						
43.66	-75.00	4.02	-70.98	-13	-57.98	H
3811.85	-57.84	4.9	-52.94	-13	-39.94	H
5726.97	-49.61	8.09	-41.52	-13	-28.52	H
44.99	-54.63	4.25	-50.38	-13	-37.38	V
3815.75	-57.89	4.93	-52.96	-13	-39.96	V
5726.65	-65.51	8.43	-57.08	-13	-44.08	V

For Band 5 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (826.4MHz)						
36.72	-73.99	3.91	-70.08	-13	-57.08	H
1647.60	-56.55	10.56	-45.99	-13	-32.99	H
2474.86	-58.05	13.5	-44.55	-13	-31.55	H
42.63	-72.81	3.93	-68.88	-13	-55.88	V
1646.98	-54.58	10.41	-44.17	-13	-31.17	V
2471.63	-56.81	13.16	-43.65	-13	-30.65	V
Middle Channel (836.6MHz)						
37.05	-74.91	4.02	-70.89	-13	-57.89	H
1663.94	-62.66	4.66	-58.00	-13	-45.00	H
2504.99	-45.33	8.34	-36.99	-13	-23.99	H
38.58	-57.59	4.17	-53.42	-13	-40.42	V
1669.50	-58.35	4.94	-53.41	-13	-40.41	V
2505.26	-60.46	8.19	-52.27	-13	-39.27	V
High Channel (846.6MHz)						
40.86	-70.38	3.87	-66.51	-13	-53.51	H
1692.15	-63.47	4.89	-58.58	-13	-45.58	H
2536.28	-41.96	8.42	-33.54	-13	-20.54	H
42.03	-63.30	3.95	-59.35	-13	-46.35	V
1693.01	-64.76	4.99	-59.77	-13	-46.77	V
2538.22	-57.03	8.12	-48.91	-13	-35.91	V

For Band 2 Mode

Frequency (MHz)	Reading (dBm)	Correct dB	Result (dBm)	Limit (dBm)	Margin (dB)	Polar H/V
Low Channel (1852.4MHz)						
41.36	-74.84	3.91	-70.93	-13	-57.93	H
1649.16	-52.89	10.56	-42.33	-13	-29.33	H
2476.53	-53.27	13.5	-39.77	-13	-26.77	H
43.28	-65.68	3.93	-61.75	-13	-48.75	V
1644.87	-50.46	10.41	-40.05	-13	-27.05	V
2475.46	-62.14	13.16	-48.98	-13	-35.98	V
Middle Channel (1880MHz)						
37.59	-65.84	4.02	-61.82	-13	-48.82	H
1672.75	-63.68	4.66	-59.02	-13	-46.02	H
2508.27	-42.42	8.34	-34.08	-13	-21.08	H
39.50	-56.34	4.17	-52.17	-13	-39.17	V
1665.73	-57.86	4.94	-52.92	-13	-39.92	V
2503.85	-65.78	8.19	-57.59	-13	-44.59	V
High Channel (1907.6MHz)						
41.70	-68.48	3.87	-64.61	-13	-51.61	H
1688.03	-60.44	4.89	-55.55	-13	-42.55	H
2532.09	-49.24	8.42	-40.82	-13	-27.82	H
46.06	-60.63	3.95	-56.68	-13	-43.68	V
1689.42	-58.30	4.99	-53.31	-13	-40.31	V
2532.26	-63.09	8.12	-54.97	-13	-41.97	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	9.05	0.01082
40	NV	8.84	0.01057
30	NV	9.33	0.01115
20	NV	9.16	0.01095
10	NV	9.85	0.01178
0	NV	9.94	0.01189
-10	NV	10.39	0.01242
-20	NV	10.77	0.01288
-30	NV	10.69	0.01278

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	12.39	0.00659
40	NV	12.36	0.00657
30	NV	12.93	0.00688
20	NV	13.01	0.00692
10	NV	13.19	0.00702
0	NV	14.07	0.00749
-10	NV	14.16	0.00753
-20	NV	14.06	0.00748
-30	NV	14.23	0.00757

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	8.48	0.01013
40	NV	8.99	0.01074
30	NV	9.59	0.01146
20	NV	9.12	0.01090
10	NV	10.20	0.01219
0	NV	10.75	0.01285
-10	NV	10.56	0.01262
-20	NV	10.97	0.01312
-30	NV	11.22	0.01342

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	12.66	0.00673
40	NV	12.56	0.00668
30	NV	12.36	0.00657
20	NV	12.31	0.00655
10	NV	12.92	0.00687
0	NV	13.41	0.00713
-10	NV	13.83	0.00736
-20	NV	14.06	0.00748
-30	NV	14.24	0.00758

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	10.72	0.01281
40	NV	11.68	0.01396
30	NV	11.40	0.01362
20	NV	12.00	0.01434
10	NV	11.59	0.01385
0	NV	11.75	0.01405
-10	NV	11.90	0.01422
-20	NV	12.43	0.01486
-30	NV	13.35	0.01595

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	-10.11	-0.00538
40	NV	-9.37	-0.00498
30	NV	-10.14	-0.00539
20	NV	-8.83	-0.00470
10	NV	-8.64	-0.00460
0	NV	-8.67	-0.00461
-10	NV	-8.57	-0.00456
-20	NV	-8.32	-0.00442
-30	NV	-8.22	-0.00437

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	-0.43	-0.00051
40	NV	0.49	0.00058
30	NV	0.41	0.00049
20	NV	0.80	0.00096
10	NV	1.00	0.00119
0	NV	0.91	0.00108
-10	NV	1.14	0.00136
-20	NV	1.22	0.00146
-30	NV	1.07	0.00128

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	-0.16	-0.00008
40	NV	0.59	0.00031
30	NV	0.08	0.00004
20	NV	1.02	0.00054
10	NV	0.39	0.00021
0	NV	0.61	0.00033
-10	NV	0.75	0.00040
-20	NV	1.18	0.00063
-30	NV	0.72	0.00038

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	-0.41	-0.00049
40	NV	-0.26	-0.00032
30	NV	0.80	0.00095
20	NV	0.03	0.00004
10	NV	0.75	0.00089
0	NV	1.05	0.00126
-10	NV	1.43	0.00171
-20	NV	1.74	0.00209
-30	NV	1.97	0.00235

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	-0.47	-0.00025
40	NV	-0.55	-0.00029
30	NV	0.18	0.00009
20	NV	-0.06	-0.00003
10	NV	0.62	0.00033
0	NV	1.13	0.00060
-10	NV	1.33	0.00071
-20	NV	1.36	0.00072
-30	NV	2.63	0.00140

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	0.11	0.00014
40	NV	0.93	0.00111
30	NV	0.64	0.00077
20	NV	1.15	0.00138
10	NV	1.66	0.00199
0	NV	1.39	0.00166
-10	NV	2.09	0.00250
-20	NV	2.56	0.00306
-30	NV	2.57	0.00307

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	4.33	0.00231
40	NV	5.25	0.00279
30	NV	5.50	0.00292
20	NV	5.50	0.00293
10	NV	5.93	0.00315
0	NV	6.68	0.00355
-10	NV	6.73	0.00358
-20	NV	6.65	0.00354
-30	NV	6.58	0.00350

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	10.64	0.01272
	NV	10.90	0.01303
	HV	11.14	0.01331
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	14.85	0.00790
	NV	15.12	0.00804
	HV	14.93	0.00794
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	10.57	0.01264
	NV	11.13	0.01331
	HV	11.75	0.01404
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	14.22	0.00756
	NV	14.74	0.00784
	HV	14.46	0.00769
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	12.87	0.01540
	NV	13.33	0.01594
	HV	13.16	0.01575
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	-7.53	-0.00401
	NV	-7.92	-0.00421
	HV	-7.28	-0.00387

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	1.31	0.00157
	NV	1.25	0.00149
	HV	1.85	0.00221
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	1.56	0.00090
	NV	1.12	0.00065
	HV	1.04	0.00060
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	2.56	0.00136
	NV	2.04	0.00243
	HV	2.82	0.00337

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	1.40	0.00167
	NV	1.54	0.00184
	HV	2.08	0.00249
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	5.79	0.00334
	NV	6.66	0.00384
	HV	6.36	0.00367
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	6.79	0.00361
	NV	7.49	0.00399
	HV	6.99	0.00372

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	2.53	0.00302
	NV	2.74	0.00327
	HV	2.96	0.00353
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	5.34	0.00309
	NV	5.80	0.00335
	HV	6.52	0.00376
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	9.26	0.00493
	NV	9.44	0.00502
	HV	9.82	0.00523

12. EUT TEST PHOTO

Radiated Emission

Below 1G



Above 1G



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