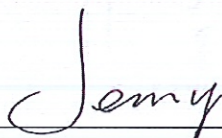


FCC RADIO TEST REPORT

Applicant..... : ICE Cobotics (Guangdong) Company Limited
Address..... : Fushan Section Road, Xiangshi Road, Liaobu Town, Dongguan City,
Guangdong Province, P.R. China
Manufacturer..... : ICE Cobotics (Guangdong) Company Limited
Address..... : Fushan Section Road, Xiangshi Road, Liaobu Town, Dongguan City,
Guangdong Province, P.R. China
Factory..... : ICE Cobotics (Guangdong) Company Limited
Address..... : Fushan Section Road, Xiangshi Road, Liaobu Town, Dongguan City,
Guangdong Province, P.R. China
Product Name..... : 4G Modem
Brand Name..... : ICE COBOTICS
Model No. : ICE400160-MODEM
FCC ID..... : 2AWHZ-ICE400160
Measurement Standard..... : 47 CFR FCC Part 2 / Part 22(H) / Part 24(E)
Receipt Date of Samples.... : November 31, 2021
Date of Tested..... : December 01, 2021 to May 11, 2022
Date of Report..... : May 11 2022

This report shows that above equipment is technically compliant with the requirements of the standards above. All test results in this report apply only to the tested sample(s). Without prior written approval of Dongguan Nore Testing Center Co., Ltd, this report shall not be reproduced except in full.


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Jenny Liu / Project Engineer

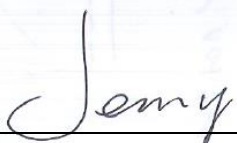

Approved by

Iori Fan / Authorized Signatory

FCC RADIO TEST REPORT

Applicant..... : ICE Cobotics (Guangdong) Company Limited
Address..... : Fushan Section Road, Xiangshi Road, Liaobu Town, Dongguan City,
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Prepared by

Jenny Liu / Project Engineer



Approved by

Iori Fan / Authorized Signatory

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1. Summary of Test Result

FCC Rules	Description of Test	Result	Remarks
§2.1046	Conducted Output Power	PASS	Reporting Only
§22.913 (a) (5)	Effective Radiated Power (ERP)	PASS	---
§24.232 (c)	Equivalent Isotropic Radiated Power (EIRP)	PASS	---
§24.232 (c)	Peak-to-Average Ratio	PASS	---
§2.1047	Modulation Characteristics	N/A	---
§2.1049	Occupied Bandwidth	PASS	Reporting Only
§2.1051 §22.917 (a) §24.238 (a)	Band Edge	PASS	---
	Spurious Emission at Antenna Terminal	PASS	---
§2.1053 §22.917 (a) §24.238 (a)	Field Strength of Spurious Radiation	PASS	---
§2.1055 §22.355 §24.235	Frequency Stability vs. Temperature & Voltage	PASS	---

2. General Description of EUT

Product Information	
Product Name:	4G Modem
Main Model Name:	ICE400160-MODEM
Additional Model Name:	N/A
Model Difference:	N/A
S/N:	40016021500002
Brand Name:	ICE COBOTICS
Hardware Version:	V4.3
Software Version:	V1.0.10
IMEI:	8601950534005061
Rating:	DC 12-48V / 200mA (Typical DC 12V)
Typical Arrangement:	Tabletop
I/O Port:	Refer to the user manual
Accessories Information	
Adapter:	N/A
Cable:	N/A
Other:	N/A
Additional Information	
Note:	N/A
Remark:	All the information above are provided by the manufacturer. More detailed feature of the EUT please refers to the user manual.

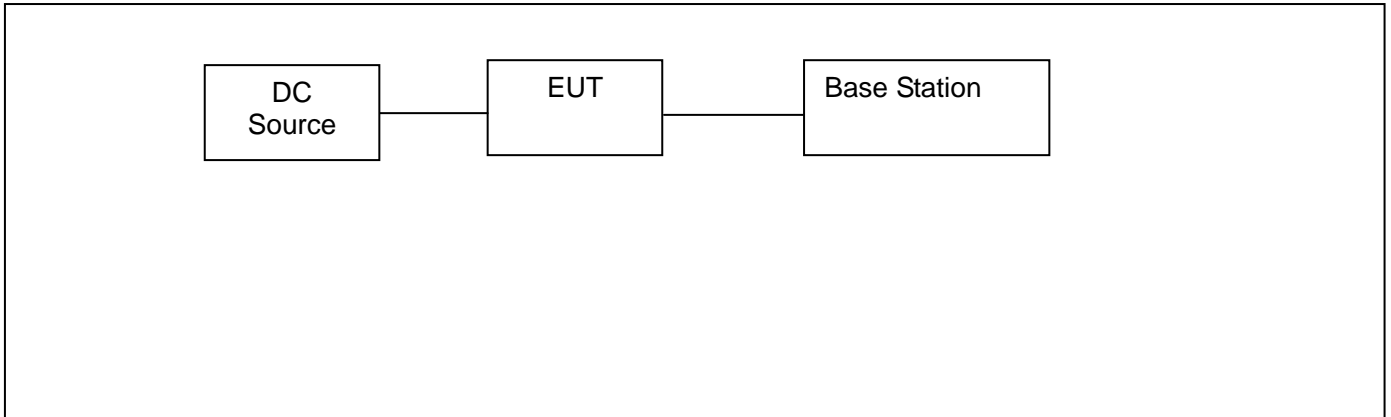
Technical Specification		
Frequency Range:	GSM 850 (GPRS/EDGE): 824.2 ~ 848.8 MHz GSM 1900 (GPRS/EDGE): 1805.2 ~ 1909.8 MHz WCDMA Band V: 826.4 ~ 846.6 MHz WCDMA Band II: 1852.4 ~ 1907.6 MHz	
Modulation Type:	GSM: GMSK, 8DPSK WCDMA: QPSK	
Antenna Type:	PIFA	
Antenna Gain:	GSM 850 (GPRS/EDGE): 0.69 dBi GSM 1900 (GPRS/EDGE): 2.82 dBi WCDMA Band II: 2.82 dBi WCDMA Band V: 0.69 dBi	
Max. EIRP:	GSM 850 (GPRS): 31.02 dBm GSM 850 (EDGE): 24.67dBm GSM 1900 (GPRS): 31.80 dBm GSM 1900 (EDGE): 28.17dBm WCDMA Band II: 25.59 dBm WCDMA Band V: 21.09 dBm	
Type of Emission:	GSM 850 (GPRS)	244KGXW
	GSM 850 (EDGE)	247KG7W
	GSM 1900 (GPRS)	244KGXW
	GSM 1900 (EDGE)	247KG7W
	WCDMA Band V RMC 12.2K	4M15F9W
	WCDMA Band II RMC 12.2K	4M14F9W
Remark:	N/A	

3. Test Channels and Modes Detail

Band	Mode	Channel	Frequency (MHz)
GSM 850	GPRS/EDGE	128	824.2
		189	836.4
		251	848.8
GSM 1900	GPRS/EDGE	512	1850.2
		661	1880.0
		810	1909.8
WCDMA Band V	RMC/HSDPA/HSUPA	4132	826.4
		4182	836.4
		4233	846.6
WCDMA Band II	RMC/HSDPA/HSUPA	9262	1852.4
		9400	1880.0
		9538	1907.6

Note: All modes and data rates and positions were considered and investigated respectively by performing full tests, and only the worst data were recorded and reported.

4. Configuration of EUT



5. Modification of EUT

No modifications are made to the EUT during all test items.

6. Description of Support Device

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

No.	Equipment	Brand	M/N	S/N	Cable Specification	Remarks
1	Base Station	Rohde & Schwarz	CMU 200	117060	---	Provided by the Lab
2	DC Source	Maynuo	MY8811	N/A	---	Provided by the Lab

7. Test Facility and Location

Test Site	:	Dongguan Nore Testing Center Co., Ltd. (Dongguan NTC Co., Ltd.)
Accreditations and Authorizations	:	<p>The Laboratory has been assessed and proved to be in compliance with CNAS/CL01 Listed by CNAS, August 13, 2018 The Certificate Registration Number is L5795.</p> <p>The Laboratory has been assessed and proved to be in compliance with ISO17025 Listed by A2LA, November 01, 2017 The Certificate Registration Number is 4429.01</p> <p>Listed by FCC, November 06, 2017 Test Firm Registration Number is 907417</p> <p>Listed by Industry Canada, June 08, 2017 The Certificate Registration Number is 46405-9743A The CAB identifier number is CN0015</p>
Test Site Location	:	Building D, Gaosheng Science and Technology Park, Hongtu Road, Nancheng District, Dongguan City, Guangdong Province, China

8. Applicable Standards and References

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

Test Standards:

47 CFR Part 2, 22(H), 24(E)

ANSI C63.26-2015

References Test Guidance:

FCC KDB 971168 D01 Power Meas. License Digital Systems v03r01

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

9. Deviations and Abnormalities from Standard Conditions

No additions, deviations and exclusions from the standard.

10. Test Environment Detail

Air Pressure:	98 ~ 102 kPa		
Relative Humidity:	30~75%		
Condition	Temperature (°C)	Voltage (V)	Note
Normal	20~25	12V / 48V	N.T. / N.V.
Extreme	-30	10.8	L.T. / L.V.
		52.8	L.T. / H.V.
	50	10.8	H.T. / L.V.
		52.8	H.T. / H.V.
<p>Where</p> <p>N.T. = Normal Temperature</p> <p>L.T. = Low Temperature</p> <p>H.T. = High Temperature</p> <p>N.V.= Normal Voltage</p> <p>L.V. = Low Voltage</p> <p>H.V. = High Voltage</p> <p>Note: For normal voltage, only the worst case was recorded.</p>			

11. Test Conditions

No.	Test Item	Test Conditions	Tested by	Remarks
1.	Conducted Output Power	N.V. / N.T.	Sean Yuan	See note 1
2.	Effective Radiated Power (ERP)	N.V. / N.T.	Sean Yuan	See note 1
3.	Equivalent Isotropic Radiated Power (EIRP)	N.V. / N.T.	Sean Yuan	See note 1
4.	Peak-to-Average Ratio	N.V. / N.T.	Sean Yuan	See note 1
5.	Modulation Characteristics	N.V. / N.T.	Sean Yuan	See note 1
6.	Occupied Bandwidth	N.V. / N.T.	Sean Yuan	See note 1
7.	Band Edge	N.V. / N.T.	Sean Yuan	See note 1
8.	Spurious Emission at Antenna Terminal	N.V. / N.T.	Sean Yuan	See note 1
9.	Field Strength of Spurious Radiation	N.V. / N.T.	Sean Yuan	See note 1
10.	Frequency Stability vs. Temperature & Voltage	N.V. / N.T. L.V. / L.T. H.V. / L.T. L.V. / H.T. H.V. / H.T.	Sean Yuan	See note 1

Note:

1. The testing climatic conditions for temperature, humidity, and atmospheric pressure are within: 15~35°C, 30~70%, 86~106kPa.

12. Sample Calculations

For all conducted test items, the spectrum analyzer offset or transducer is derived from RF cable loss and attenuator factor. The offset or transducer is equal to the RF cable loss plus attenuator factor.

Offset = RF cable loss + attenuator factor

For example:

RF Cable loss = 3.0 dB

Attenuator factor = 24.0 dB

Offset = 3.0 + 24.0 dB = 27.0 dB

13. Measurement Uncertainty

No.	Test Item	Uncertainty	Remarks
1.	Radio Frequency	$\pm 1.0 \times 10^{-6}$	---
2.	Conducted RF Power	$\pm 0.9\text{dB}$	---
3.	Conducted Spurious emissions	$\pm 1.2\text{dB}$	---
5.	Radiated Emissions (30MHz- 1GHz)	$\pm 4.68\text{dB}$	---
6.	Radiated Emissions (1Hz - 18 GHz)	$\pm 5.12\text{dB}$	---
7.	Temperature	$\pm 0.5^\circ\text{C}$	---
8.	Humidity	$\pm 2\%$	---
9.	DC Voltages	$\pm 1\%$	---

Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

14. Test Items and Results

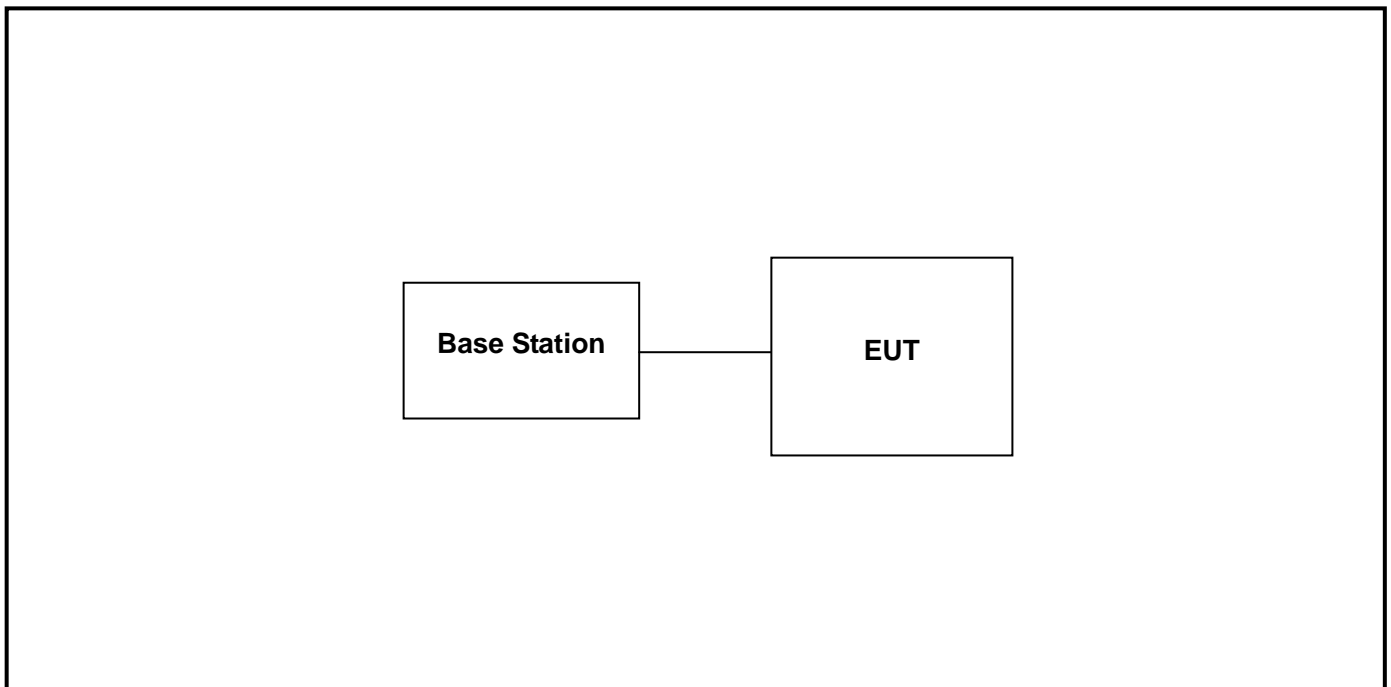
14.1 Conducted Output Power and ERP/EIRP Measurement

LIMIT

According to the requirements of FCC PART 22 and 24, the limits are as follows:

Rules	Items	Limits
§2.1046	Conducted Output Power	N/A
§22.913 (a) (5)	ERP	< 7 W
§24.232 (c) (5)	EIRP	< 2 W

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

- a. A base station simulator was used to establish communication with the EUT.
- b. Set the parameters to enforce EUT transmitting at the maximum power.
- c. Record the measured power in the radio frequency on the transmitter output terminals.

According to KDB 412172 D01 Power Approach,

$$\text{EIRP} = P_T + G_T - L_C, \text{ERP} = \text{EIRP} - 2.15$$

where,

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

TEST RESULTS

PASS

Please refer to the Appendix I.

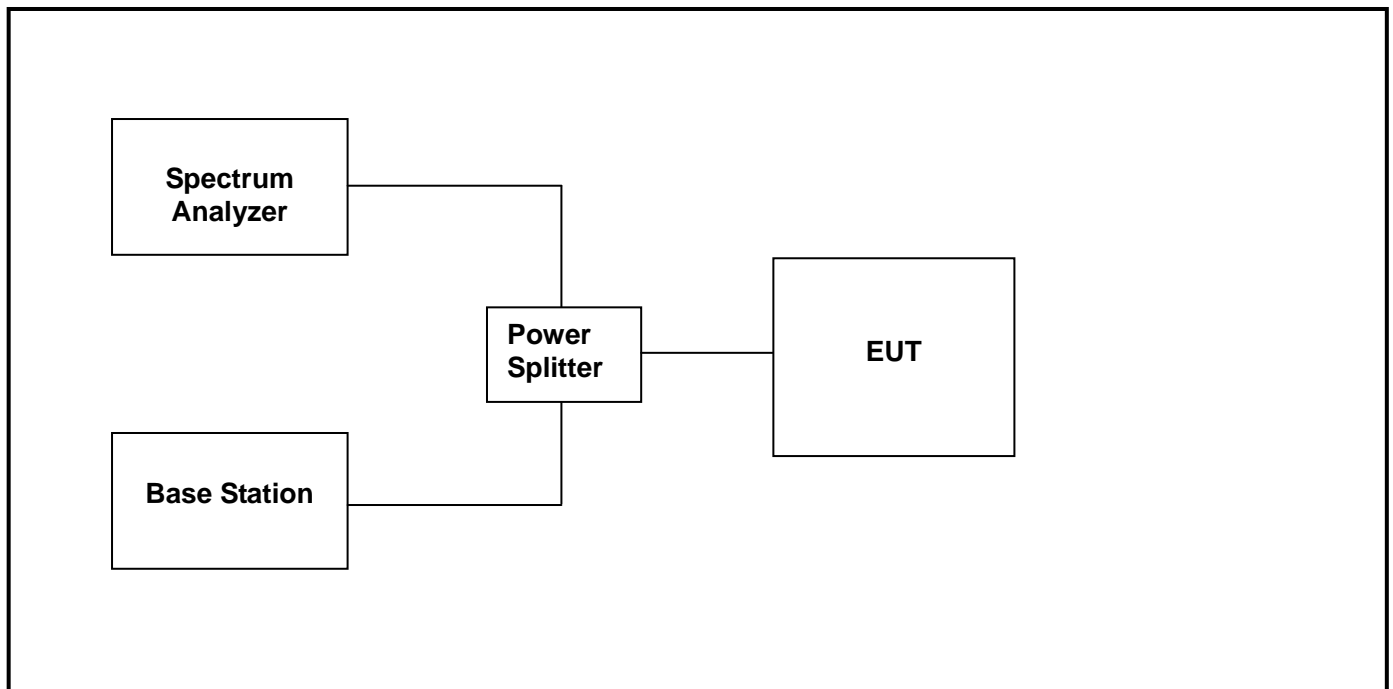
14.2 Peak-to-Average Ratio Measurement

LIMIT

According to the requirements of FCC PART 24, the limit is as follows:

Rules	Items	Limits
§24.232 (d)	Peak-to-average	<13 dB

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

- a. Connect the EUT to spectrum analyzer and base station via a power splitter.
- b. Set test equipment and EUT according to ANSI C63.26 Section 5.2.3.4.
- c. Set the spectrum analyzer to CCDF option.
- d. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.
- e. Record the deviation as peak-to-average ratio.

TEST RESULTS

PASS

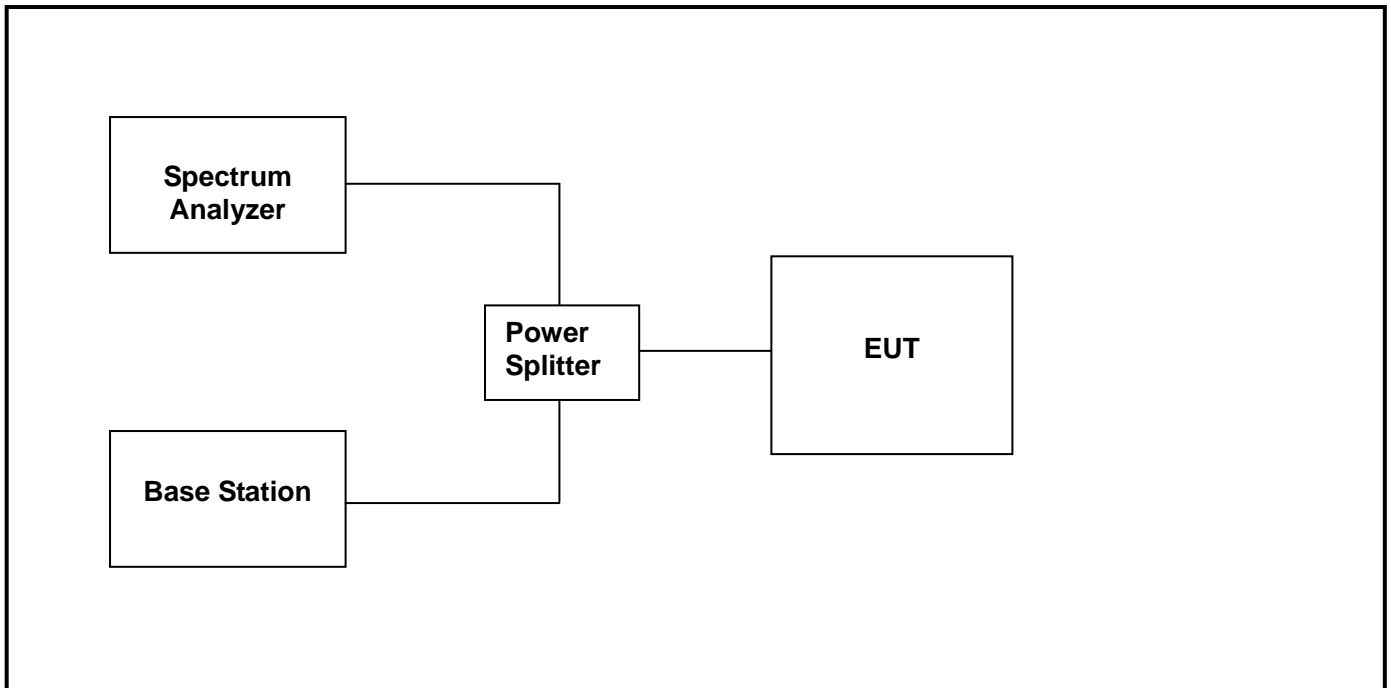
Please refer to the Appendix I.

14.3 Occupied Bandwidth Measurement

LIMIT

According to the requirements of FCC PART 2, section 1047, there are no limits specified.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

- a. Connect the EUT to spectrum analyzer and base station via a power splitter.
- b. Set the center frequency of the spectrum analyzer to the nominal EUT channel center frequency. The span range of the spectrum analyzer was set to between two and five times the anticipated OBW.
- c. Set the RBW of the spectrum analyzer to 1-5% of the anticipated OBW, and set the VBW at least 3 times the RBW.
- d. Set the detector of the spectrum analyzer to peak, and the trace mode to max hold,
- e. Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace. (this is the reference value)
- f. Determine the “-26 dB down amplitude” as equal to (Reference Value - X).
- g. Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB down amplitude” determined in step e. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
- h. Use the 99 % power bandwidth function of the spectrum analyzer to measure the 99 % power bandwidth.
- i. Record the measured 99 % and - 26 dB bandwidth.

TEST RESULTS

PASS

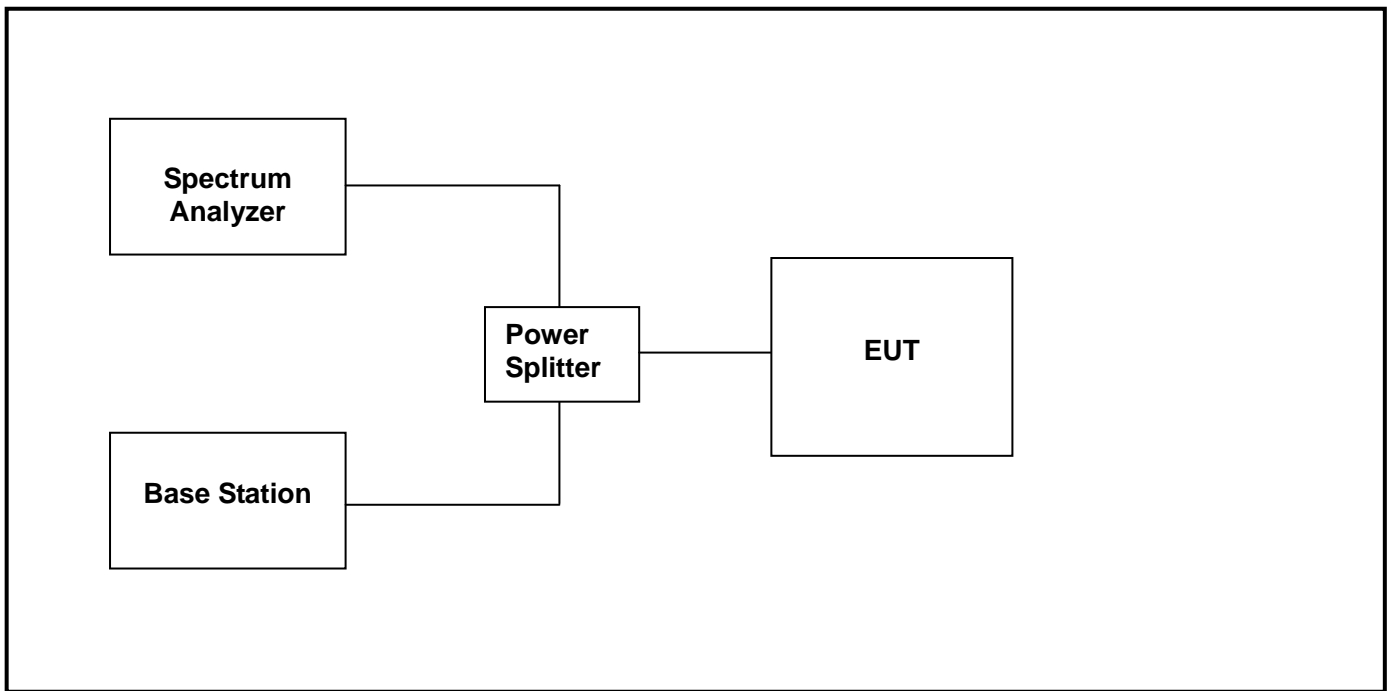
Please refer to the Appendix I.

14.4 Band Edge Measurement

LIMIT

According to the requirements of §22.917 (a) and §24.238 (a), the power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

- a. Connect the EUT to spectrum analyzer and base station via a power splitter.
- b. Set the test equipment and EUT according to ANSI C63.26 section 5.7.
- c. Record the band edges of low and high channels for the highest RF powers measured.

TEST RESULTS

PASS

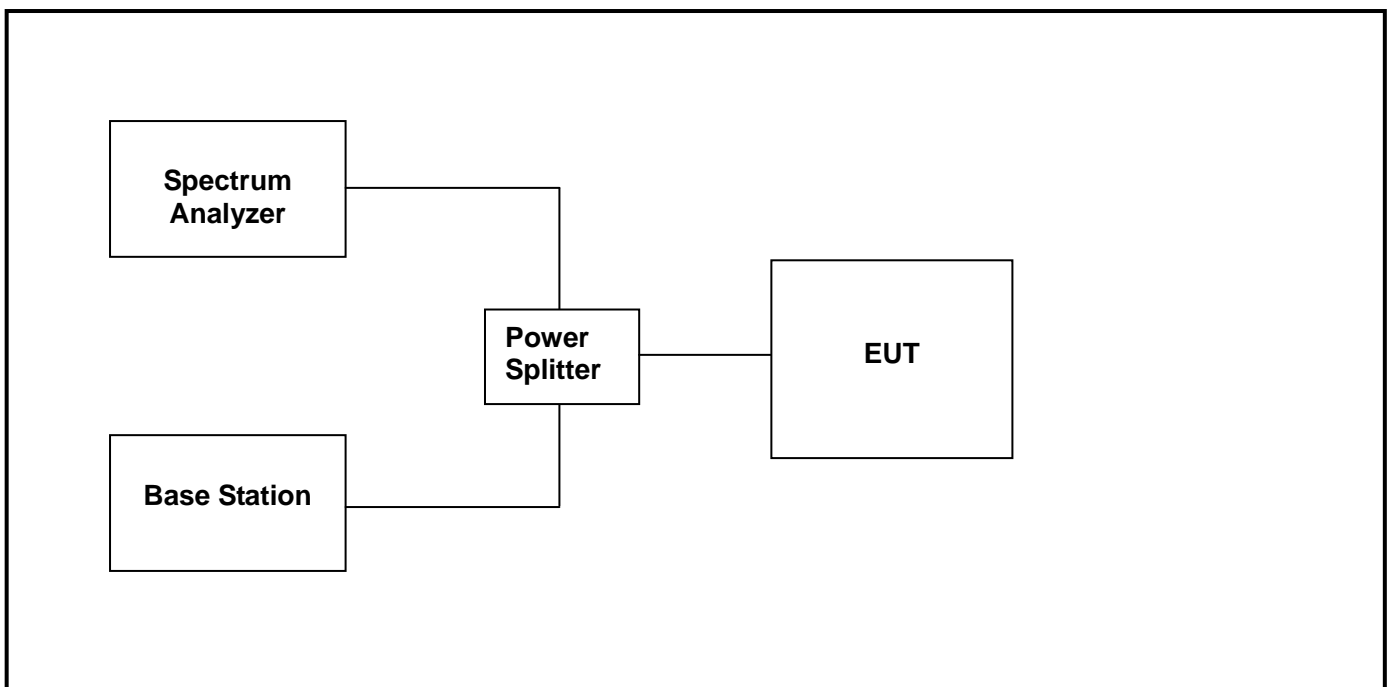
Please refer to the Appendix I.

14.5 Spurious Emissions at Antenna Terminal Measurement

LIMIT

According to the requirements of §22.917 (a) and §24.238 (a), the power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

- a. Connect the EUT to spectrum analyzer and base station via a power splitter.
- b. Set the test equipment and EUT according to ANSI C63.26 section 5.7.
- c. The middle channel for the highest RF power within the transmitting frequency was measured.
- d. The conducted spurious emission for the whole frequency range was taken.
- e. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- f. Record the conducted spurious emission measured.

TEST RESULTS

PASS

Please refer to the Appendix I.

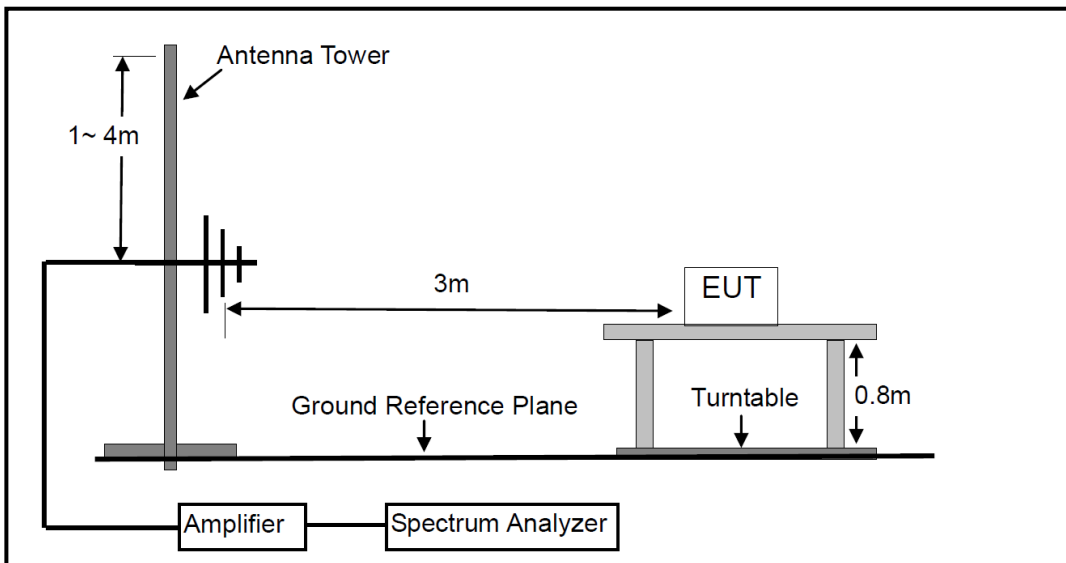
14.6 Field Strength of Spurious Radiation Measurement

LIMIT

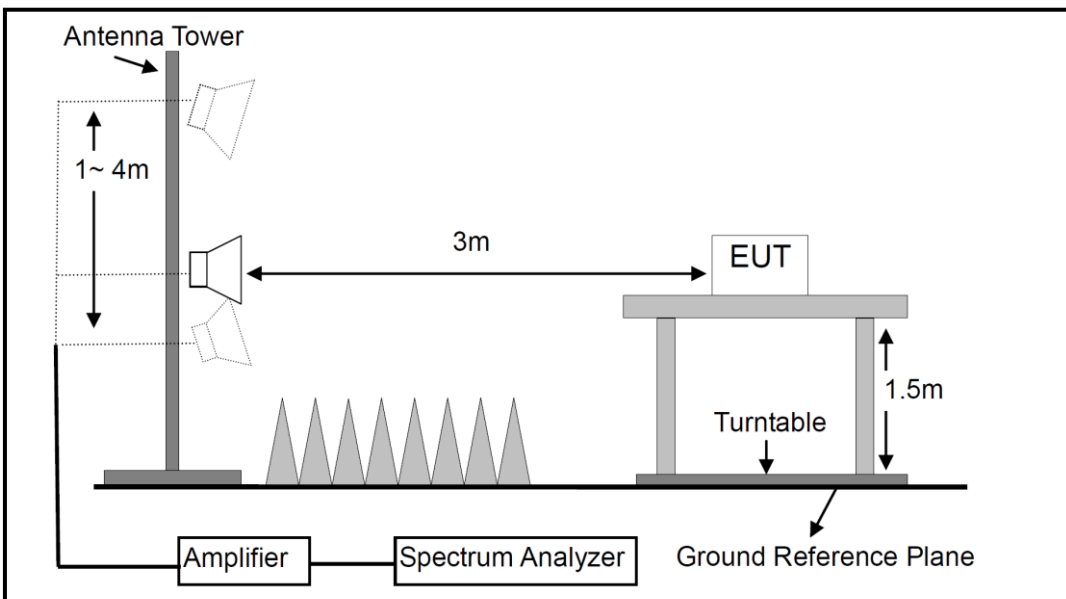
According to the requirements of §22.917 (a) and §24.238 (a), the power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least $43 + 10 \log (P)$ dB. It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

BLOCK DIAGRAM OF TEST SETUP

For 30-1000MHz



For Above 1GHz



TEST PROCEDURES

- a. Below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi- anechoic chamber room.
- b. For the radiated emission test above 1GHz:
- c. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter full anechoic chamber room. The table was rotated 360 degrees to determine the position of the highest radiation. Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.
- d. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- e. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- f. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to peak detect function and specified bandwidth with maximum hold mode.
- g. An antenna was substituted in place of the EUT and was driven by a signal generator.
- h. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission.

- i. Record the output power at antenna port.
- j. Repeat above steps f and g for another polarization.
- k. Calculate power in dBm by the following formula:
$$\text{EIRP (dBm)} = \text{S.G. Power} - \text{Tx Cable Loss} + \text{Tx Antenna Gain}$$
$$\text{ERP (dBm)} = \text{EIRP} - 2.15$$
- l. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
- m. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worst case, and it was recorded in the report.
- n. Repeat above procedures until all frequencies measured was complete.

TEST RESULTS

PASS

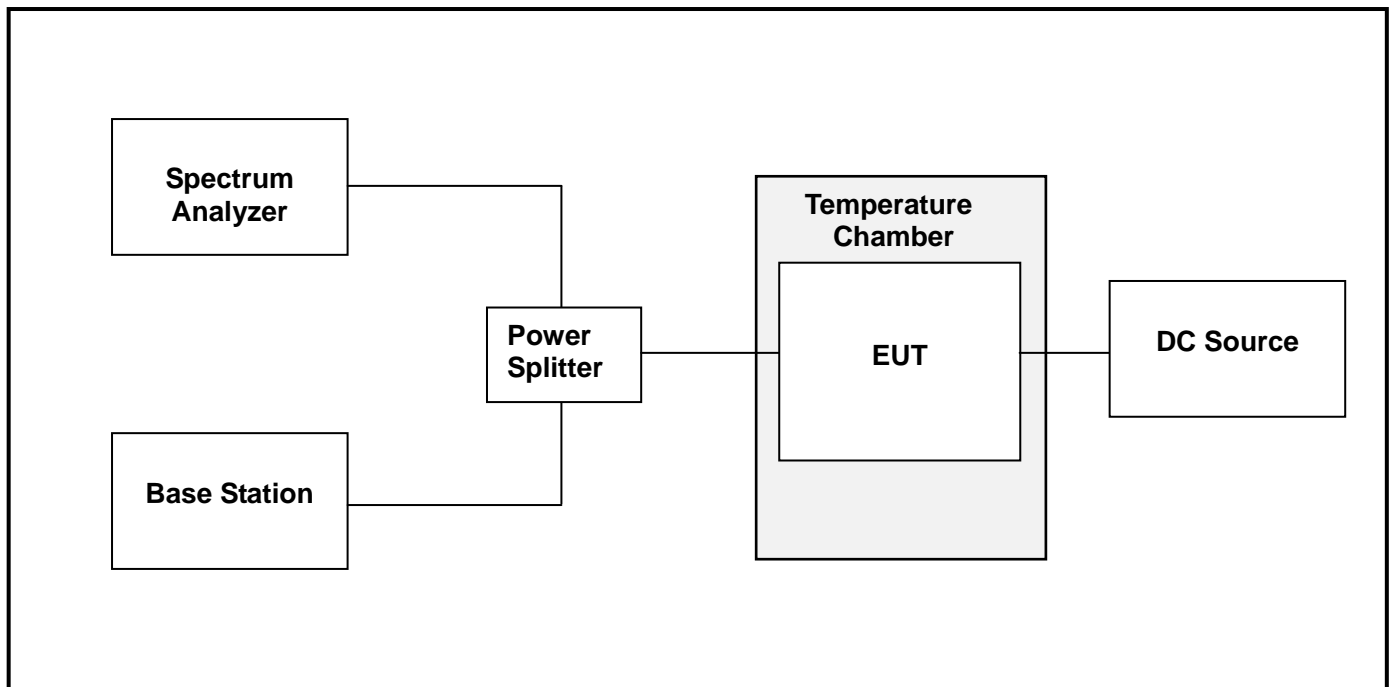
Please refer to the Appendix I.

14.7 Frequency Stability Measurement

LIMIT

According to the requirements of §22.355 and §24.235, the frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

BLOCK DIAGRAM OF TEST SETUP



TEST PROCEDURES

a. Place the EUT in the temperature chamber and connect it to spectrum analyzer and base station via a power splitter.

b. Temperature variation:

With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing.

Power was applied and the maximum change in frequency was recorded within one minute.

With Power OFF, the temperature was raised in 10°C step up to 50°C .

The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute.

c. Voltage variation:

With temperature $20\pm 5^{\circ}\text{C}$, the power supply voltage was varied from 85% to 115% of the nominal value.

d. Record the frequency variation measured.

TEST RESULTS

PASS

Please refer to the Appendix I.

15. Test Equipment List

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	Test Receiver	Rohde & Schwarz	ESCI7	100837	Mar. 13, 2022	1 Year
2.	Antenna	Schwarzbeck	VULB9162	9162-010	Mar. 23, 2022	2 Year
3.	Spectrum Analyzer	Rohde & Schwarz	FSU26	200409/026	Mar. 13, 2022	1 Year
4.	Spectrum Analyzer	Keysight	N9020A	MY54200831	Mar. 13, 2022	1 Year
5.	Spectrum Analyzer	Rohde & Schwarz	FSV40	101094	Mar. 13, 2022	1 Year
6.	Horn Antenna	Schwarzbeck	BBHA9170	9170-172	Mar. 23, 2022	2 Year
7.	Power Sensor	DARE	RPR3006W	15I00041SNO 64	Mar. 13, 2022	1 Year
8.	Communication Tester	Rohde & Schwarz	CMW500	149004	Mar. 13, 2022	1 Year
9.	Horn Antenna	COM-Power	AH-118	071078	Mar. 23, 2022	2 Year
10.	Pre-Amplifier	HP	HP 8449B	3008A00964	Mar. 13, 2022	1 Year
11.	Pre-Amplifier	HP	HP 8447D	1145A00203	Mar. 13, 2022	1 Year
12.	Temperature & Humidity Chamber	WANSHUN	SS-HWHS-80	N/A	Mar. 13, 2022	1 Year
13.	DC Source	Maynuo	MY8811	N/A	Mar. 13, 2022	1 Year
14.	Temporary antenna connector	TESCOM	SS402	N/A	N/A	N/A
20.	Chamber	SAEMC	9*7*7m	N/A	Apr. 21, 2021	2 Year
21.	Test Software	EZ	EZ_EMG	N/A	N/A	N/A

Note: For photographs of EUT and measurement, please refer to appendix in separate documents.

APPENDIX I

TEST RESULTS OF GSM/WCDMA

1. Conducted Output Power

GSM						
Band	GSM 850			GSM 1900		
Channel	128	189	251	512	661	810
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880.0	1909.8
Conducted output Power (dBm)						
GPRS 1 TX Slots	32.17	32.34	32.48	28.98	28.78	28.89
GPRS 2 TX Slots	31.25	31.46	31.14	27.57	27.95	27.62
GPRS 3 TX Slots	29.91	29.99	29.58	25.85	26.84	25.75
GPRS 4 TX Slots	28.32	28.47	28.18	24.73	24.77	24.42
EDGE 1 TX Slots	26.13	25.93	25.98	24.28	25.15	25.35
EDGE 2 TX Slots	24.66	24.93	25.10	22.67	23.82	24.54
EDGE 3 TX Slots	23.94	23.96	23.73	22.74	22.57	22.22
EDGE 4 TX Slots	22.79	22.82	22.93	20.95	21.44	21.39

WCDMA						
Band	Band V			Band II		
Channel	4132	4182	4233	9262	9400	9538
Frequency (MHz)	826.4	836.4	846.6	1852.4	1880.0	1907.6
Conducted output Power (dBm)						
RCM 12.2K	22.55	22.51	22.51	22.50	22.60	22.77
HSDPA Subtest -1	21.43	21.58	21.61	21.45	21.67	21.87
HSDPA Subtest -2	21.32	21.57	21.81	21.31	21.55	21.73
HSDPA Subtest -3	21.80	21.22	21.21	20.70	20.70	21.80
HSDPA Subtest -4	20.79	20.88	20.99	20.55	20.74	20.95
HSUPA Subtest -1	21.48	21.55	21.61	21.12	21.34	21.60
HSUPA Subtest -2	21.85	21.10	21.35	20.68	20.84	21.84
HSUPA Subtest -3	21.58	21.63	21.63	21.20	21.42	21.62
HSUPA Subtest -4	21.63	21.66	21.67	21.35	21.50	21.74
HSUPA Subtest -5	21.56	21.64	21.67	21.35	21.52	21.72

2. EIRP/ERP

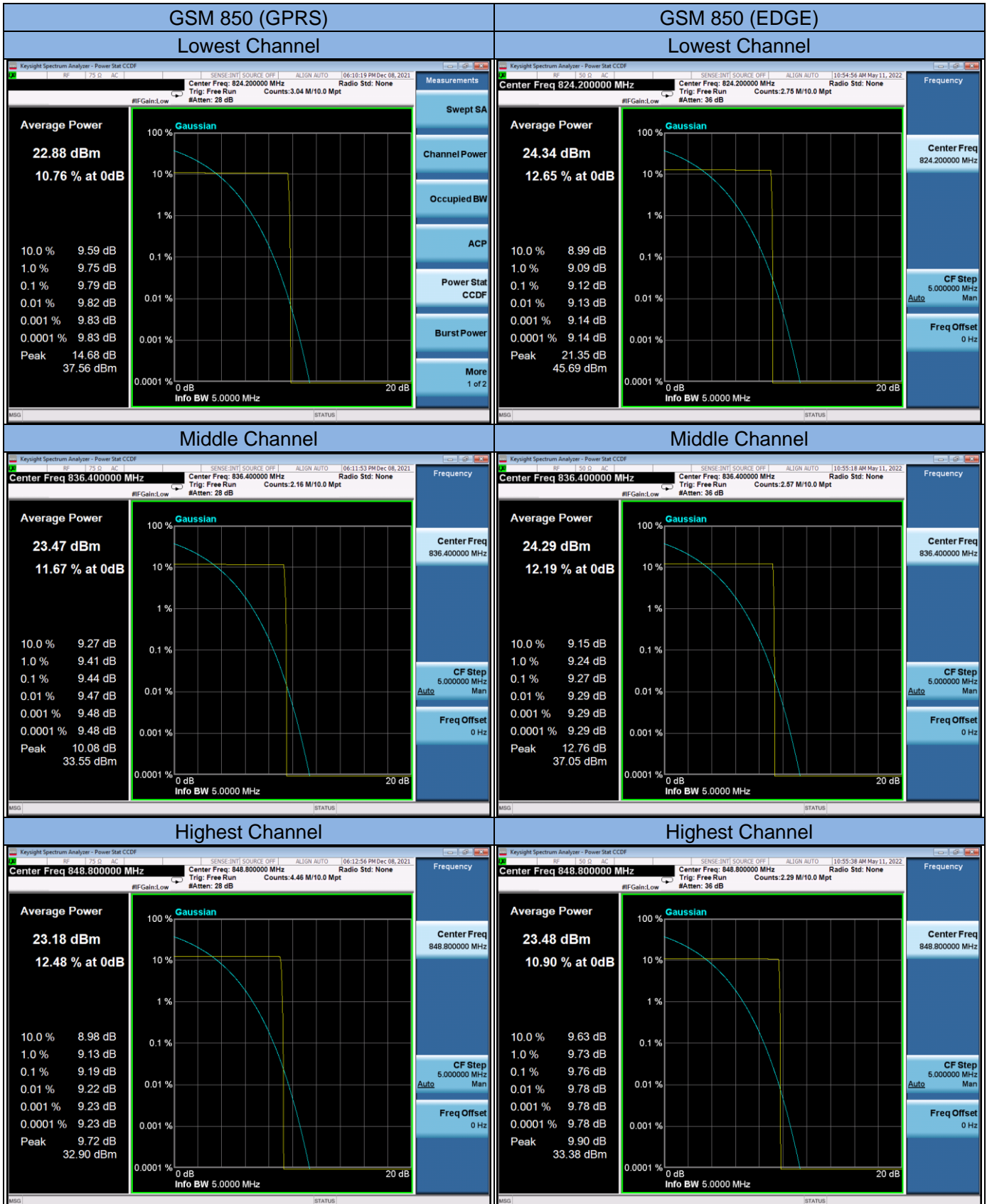
EIRP/ERP							
BAND	Channel	Frequency (MHz)	Power (dBm)	G _T - L _C (dB)	ERP (dBm)	Limit (dBm)	Result
GSM 850 (GPRS)	128	824.2	32.17	0.69	30.71	38.45	PASS
	190	836.4	32.34	0.69	30.88	38.45	PASS
	251	848.8	32.48	0.69	31.02	38.45	PASS
GSM 850 (EDGE)	128	824.2	26.13	0.69	24.67	38.45	PASS
	190	836.4	25.93	0.69	24.47	38.45	PASS
	251	848.8	25.98	0.69	24.52	38.45	PASS
GSM 1900 (GPRS)	512	1850.2	28.98	2.82	31.80	33.00	PASS
	661	1880.0	28.78	2.82	31.60	33.00	PASS
	810	1909.8	28.89	2.82	31.71	33.00	PASS
GSM 1900 (EDGE)	512	1850.2	24.28	2.82	27.10	33.00	PASS
	661	1880.0	25.15	2.82	27.97	33.00	PASS
	810	1909.8	25.35	2.82	28.17	33.00	PASS
WCDMA Band V (RMC 12.2K)	4132	826.4	22.55	0.69	21.09	38.45	PASS
	4182	836.4	22.51	0.69	21.05	38.45	PASS
	4233	846.6	22.51	0.69	21.05	38.45	PASS
WCDMA Band II (RMC 12.2K)	9262	1852.4	22.50	2.82	25.32	33.00	PASS
	9400	1880.0	22.60	2.82	25.42	33.00	PASS
	9538	1907.6	22.77	2.82	25.59	33.00	PASS

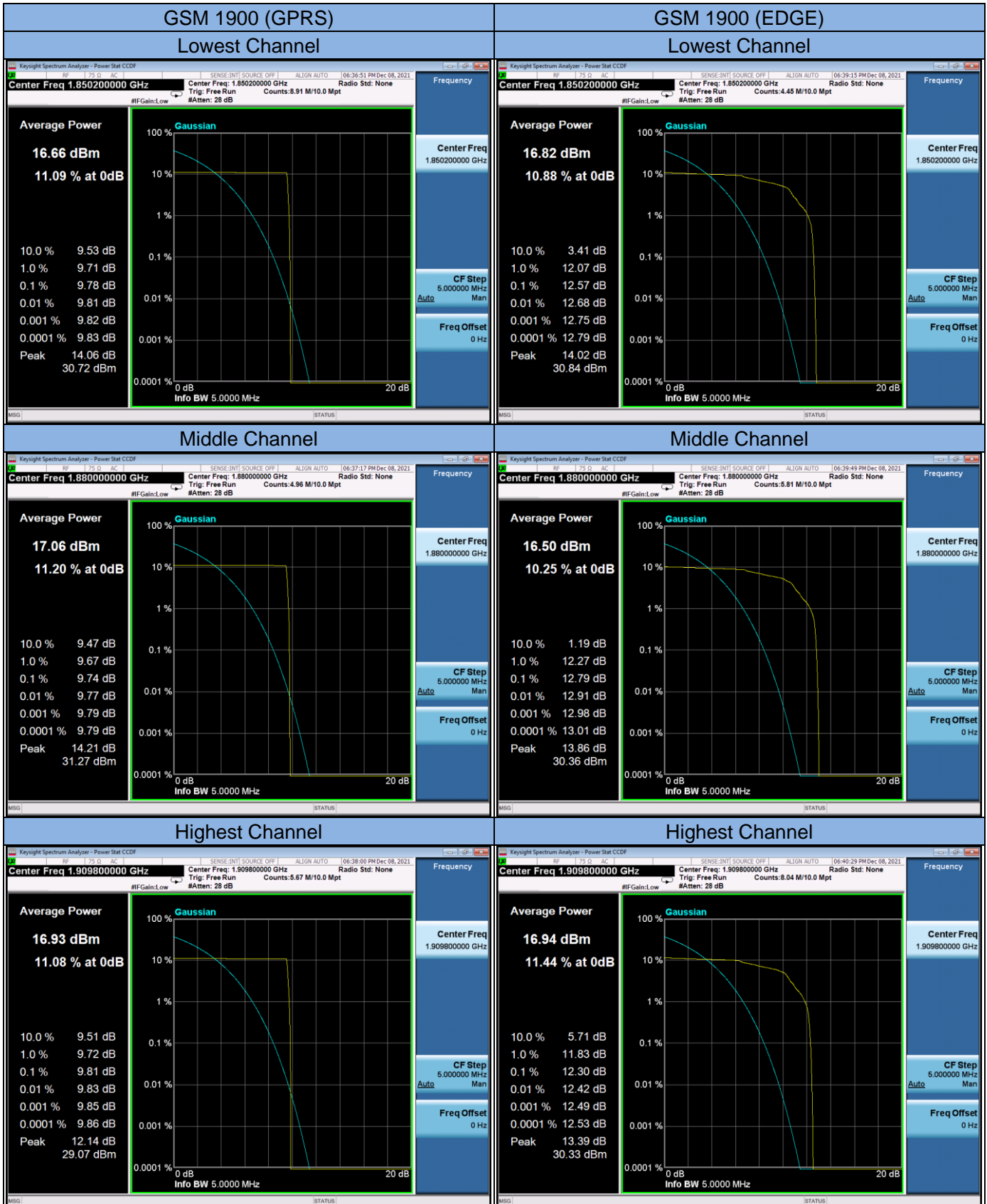
Remark: Only the worst case was recorded in the report.

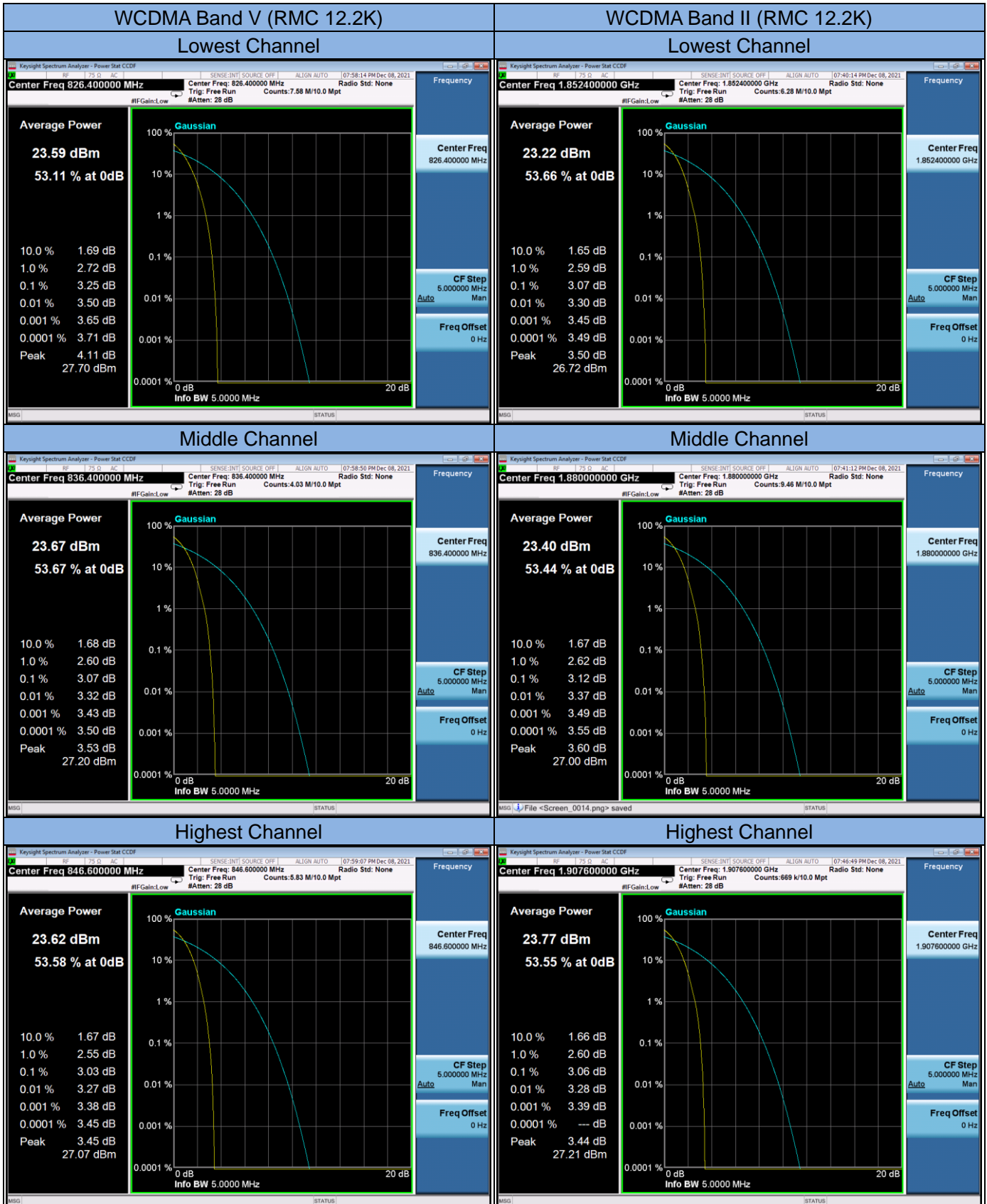
3. Peak-to-Average Ratio

Peak-to-Average Ratio					
BAND	Channel	Frequency (MHz)	Peak-to-Average Ratio (dB)	Limit (dBm)	Result
GSM 850 (GPRS)	128	824.2	9.79	13	PASS
	190	836.4	9.44	13	PASS
	251	848.8	9.19	13	PASS
GSM 850 (EDGE)	128	824.2	9.12	13	PASS
	190	836.4	9.27	13	PASS
	251	848.8	9.76	13	PASS
GSM 1900 (GPRS)	512	1850.2	9.78	13	PASS
	661	1880.0	9.74	13	PASS
	810	1909.8	9.81	13	PASS
GSM 1900 (EDGE)	512	1850.2	12.57	13	PASS
	661	1880.0	12.79	13	PASS
	810	1909.8	12.30	13	PASS
WCDMA Band V (RMC 12.2K)	4132	826.4	3.25	13	PASS
	4182	836.4	3.07	13	PASS
	4233	846.6	3.03	13	PASS
WCDMA Band II (RMC 12.2K)	9262	1852.4	3.07	13	PASS
	9400	1880.0	3.12	13	PASS
	9538	1907.6	3.06	13	PASS

Remark: Only the worst case was recorded in the report.

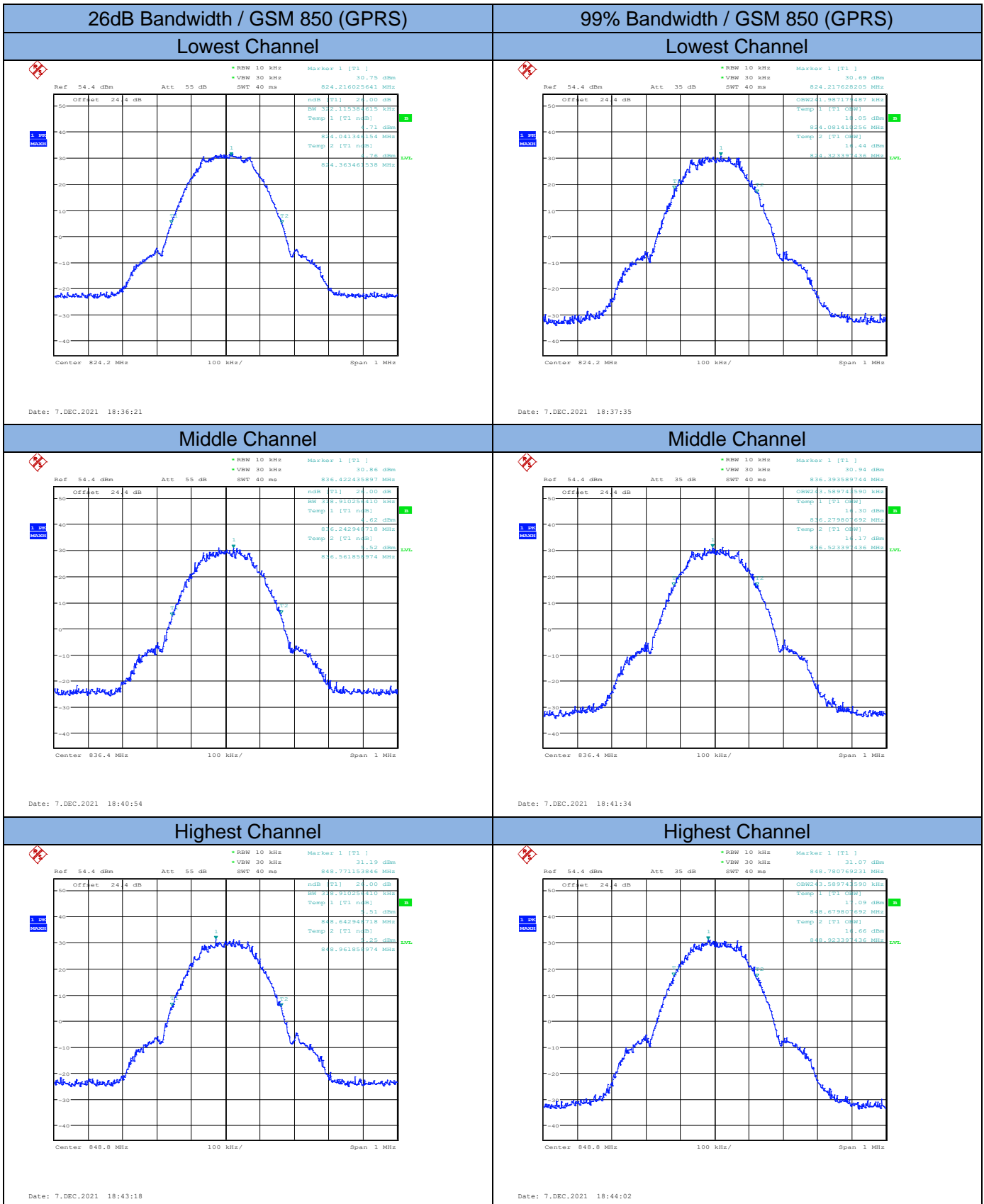


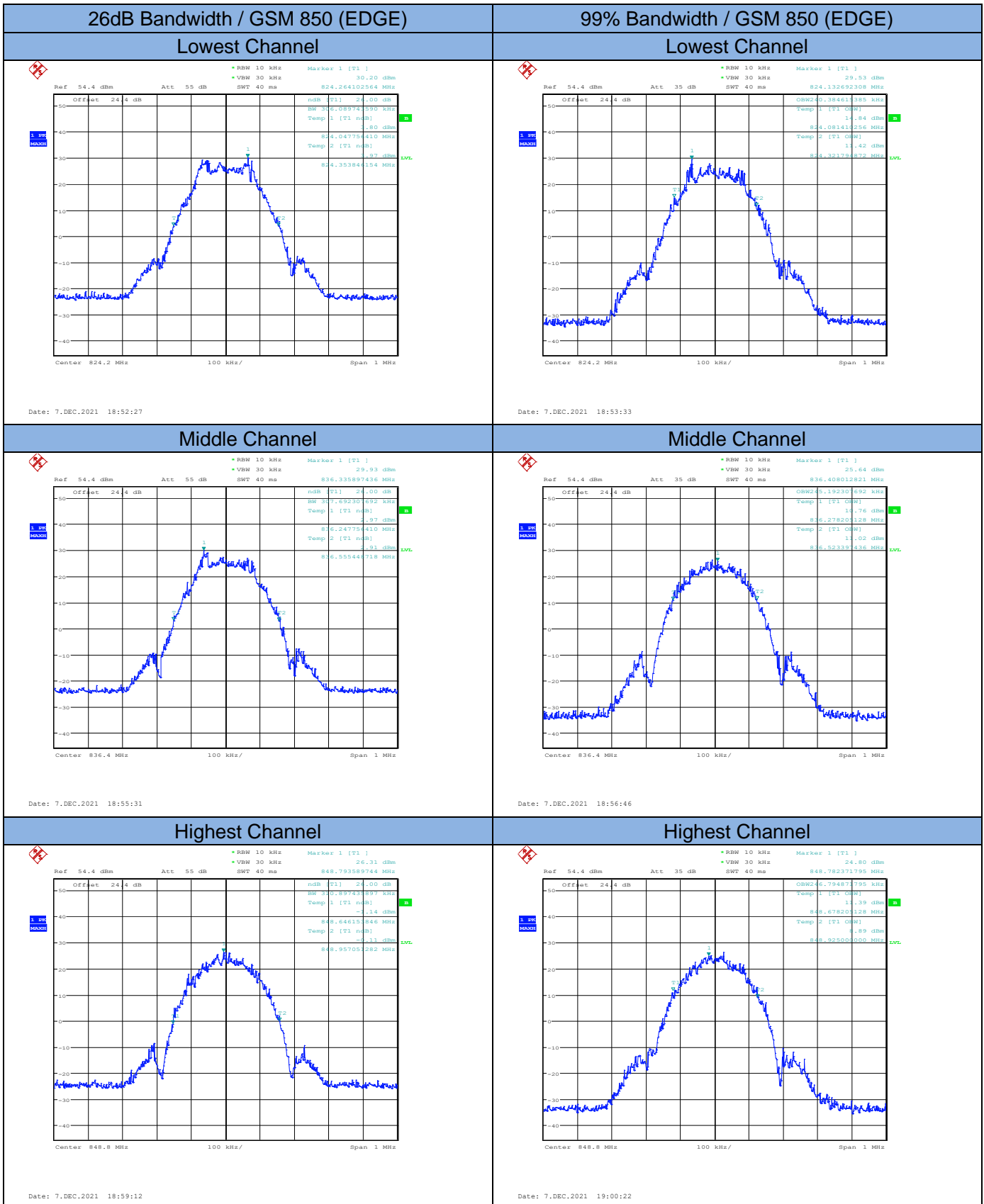


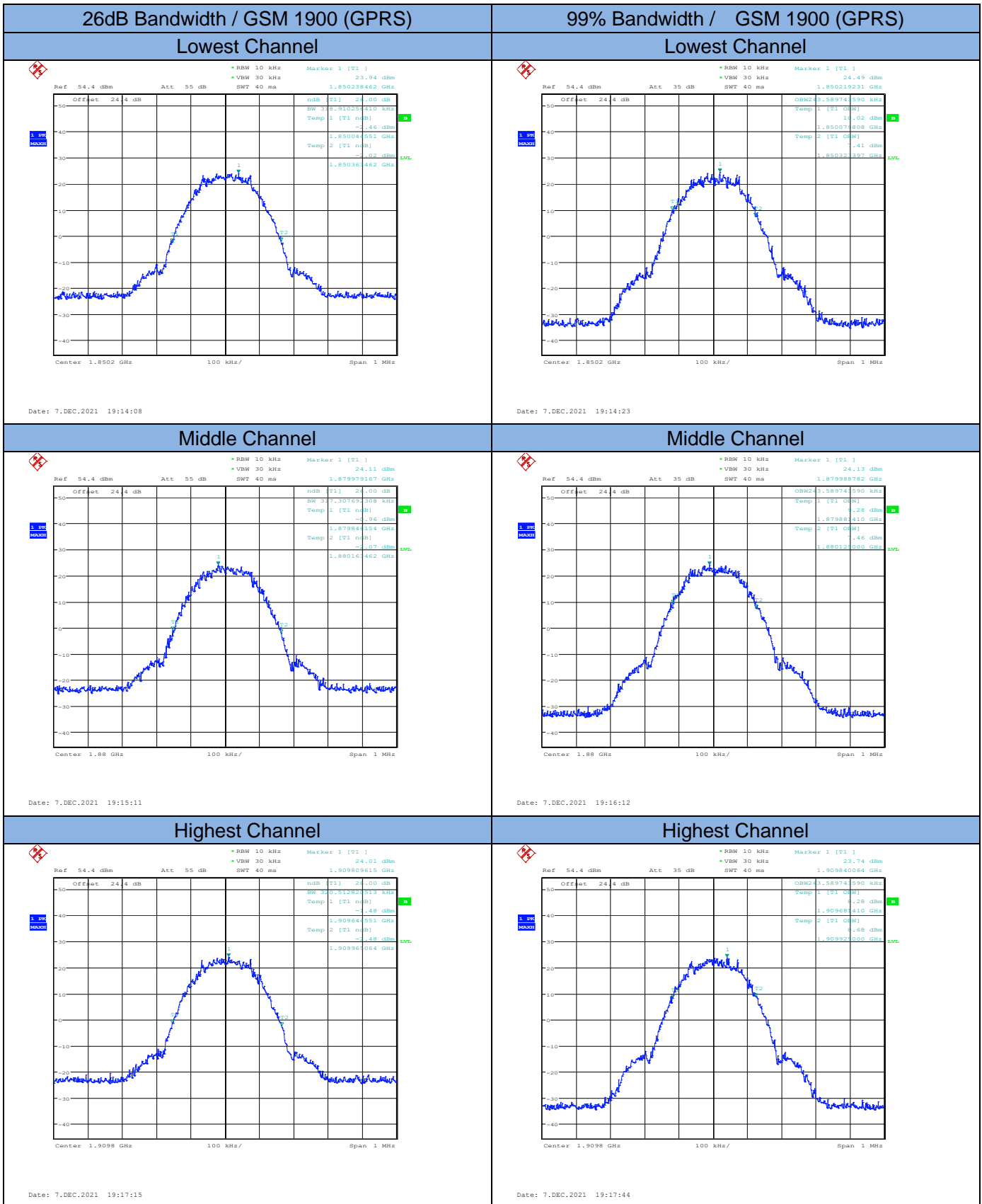


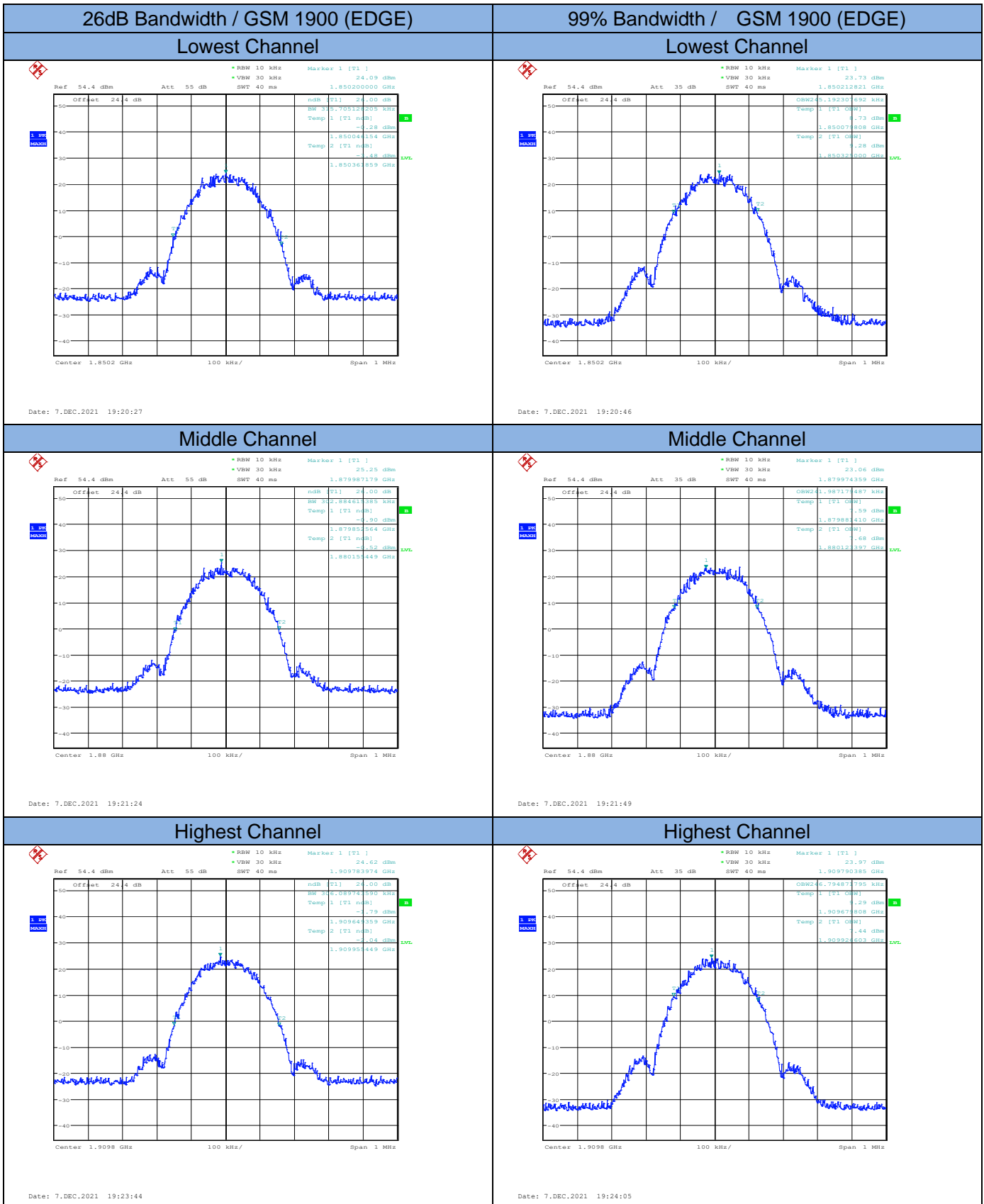
4. Occupied Bandwidth

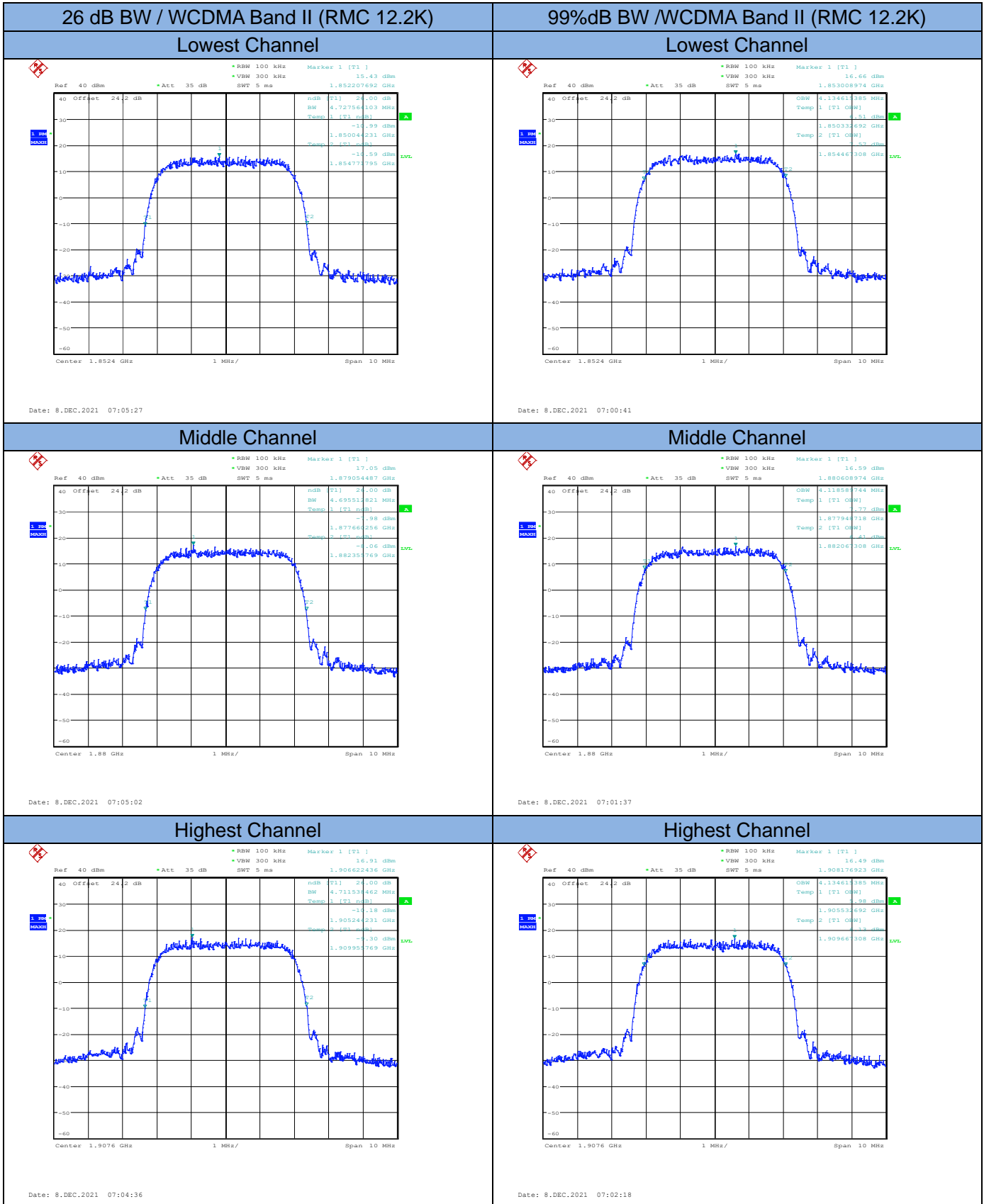
Occupied Bandwidth						
BAND	Channel	Frequency (MHz)	99% BW (MHz)	26dB BW (MHz)	Limit (MHz)	Result
GSM 850 (GPRS)	128	824.2	0.242	0.322	---	PASS
	190	836.4	0.244	0.319	---	PASS
	251	848.8	0.244	0.319	---	PASS
GSM 850 (EDGE)	128	824.2	0.240	0.306	---	PASS
	190	836.4	0.245	0.308	---	PASS
	251	848.8	0.247	0.311	---	PASS
GSM 1900 (GPRS)	512	1850.2	0.244	0.319	---	PASS
	661	1880.0	0.244	0.317	---	PASS
	810	1909.8	0.244	0.321	---	PASS
GSM 1900 (EDGE)	512	1850.2	0.245	0.316	---	PASS
	661	1880.0	0.242	0.303	---	PASS
	810	1909.8	0.247	0.306	---	PASS
WCDMA Band V (RMC 12.2K)	4132	826.4	4.151	4.696	---	PASS
	4182	836.4	4.135	4.696	---	PASS
	4233	846.6	4.135	4.712	---	PASS
WCDMA Band II (RMC 12.2K)	9262	1852.4	4.135	4.728	---	PASS
	9400	1880.0	4.119	4.696	---	PASS
	9538	1907.6	4.135	4.712	---	PASS

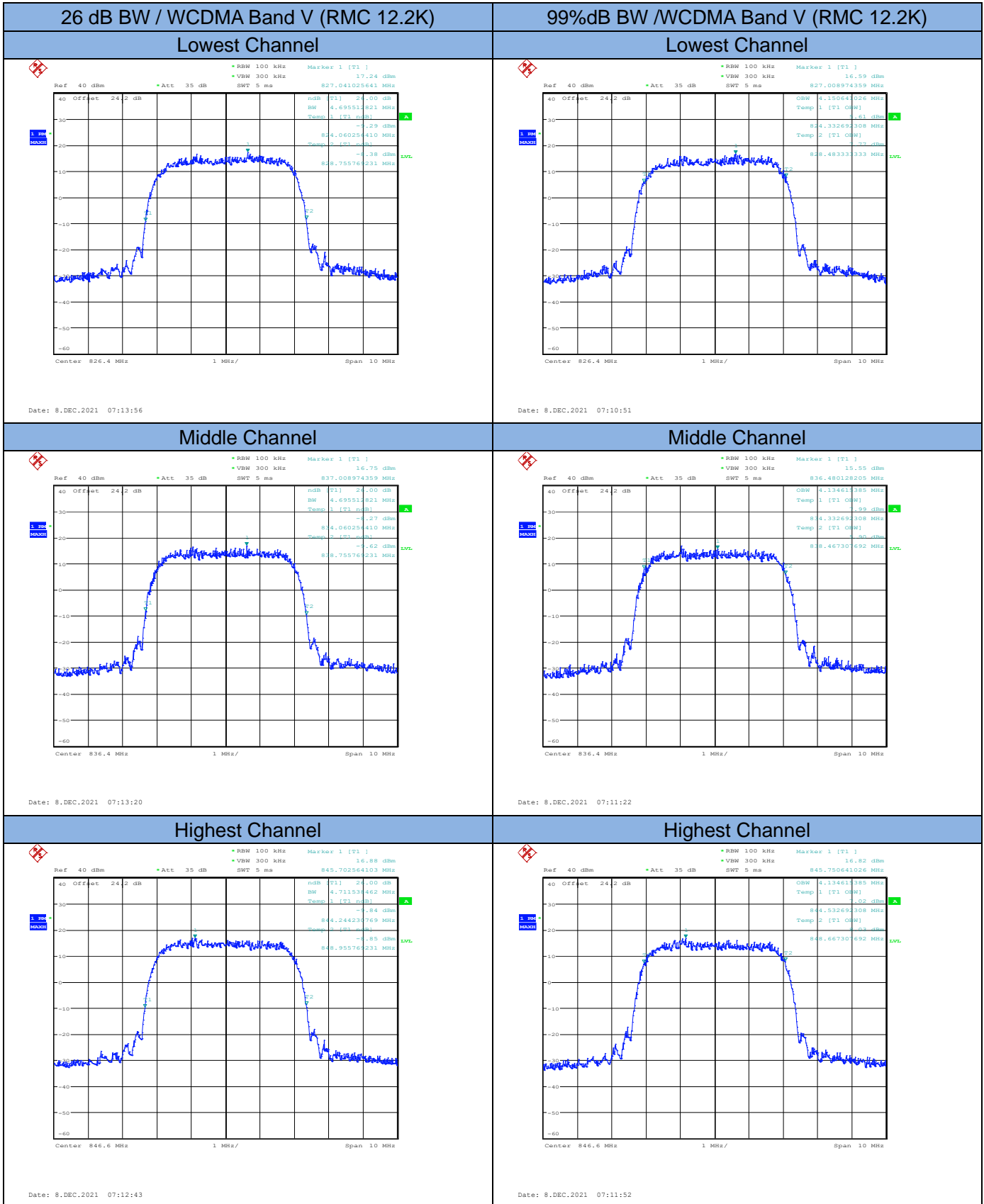




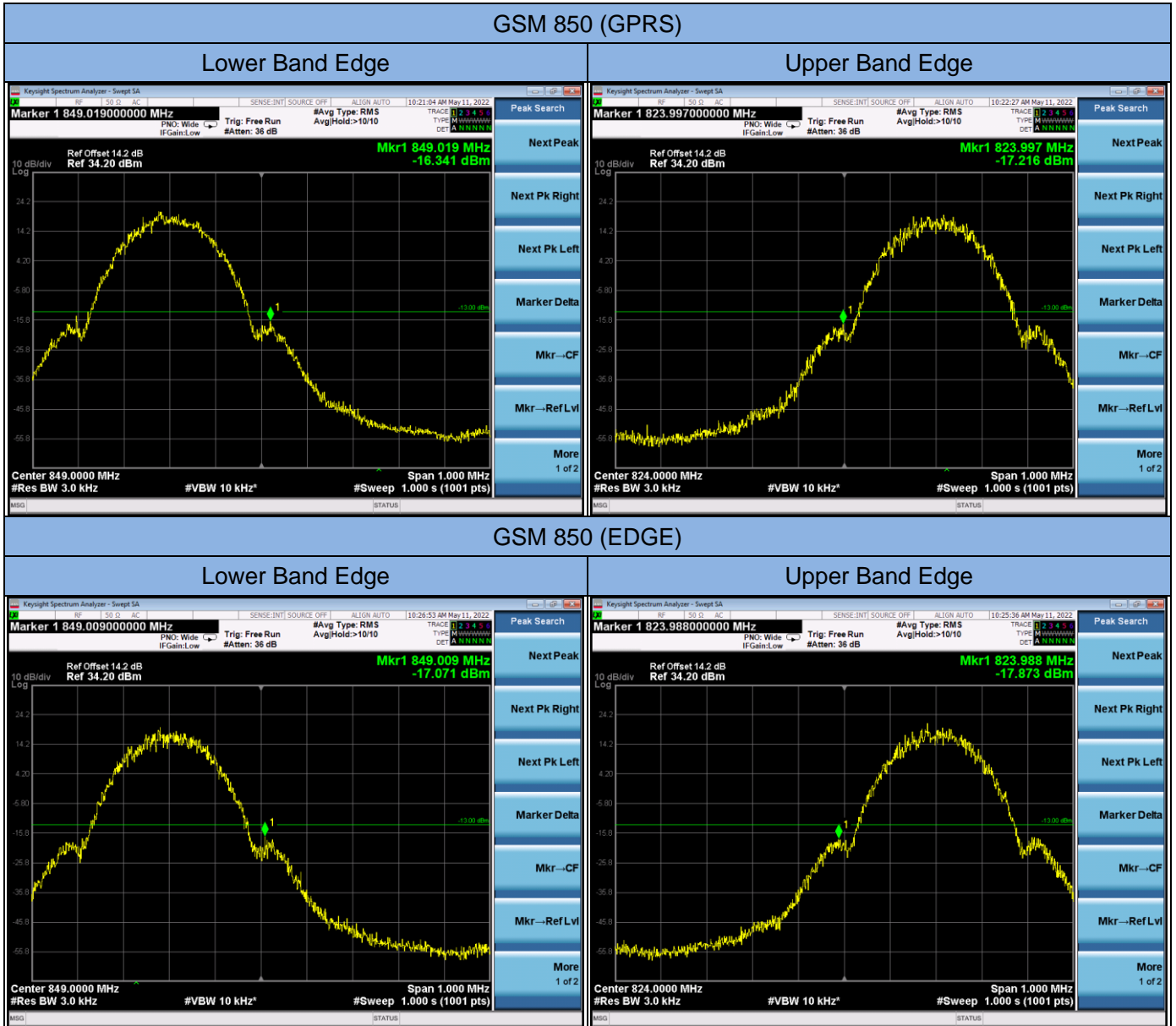






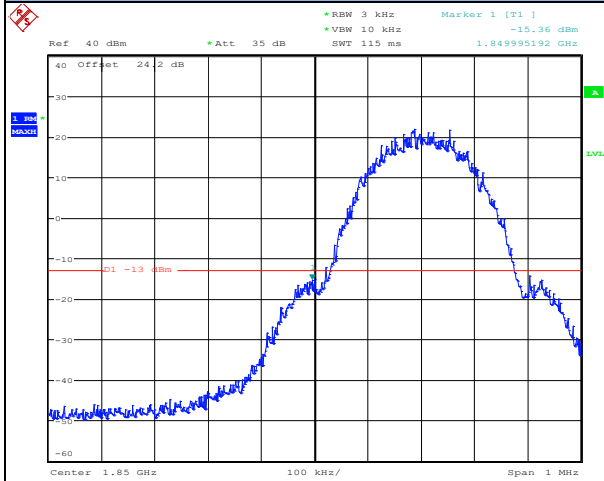


5. Conducted Band Edge



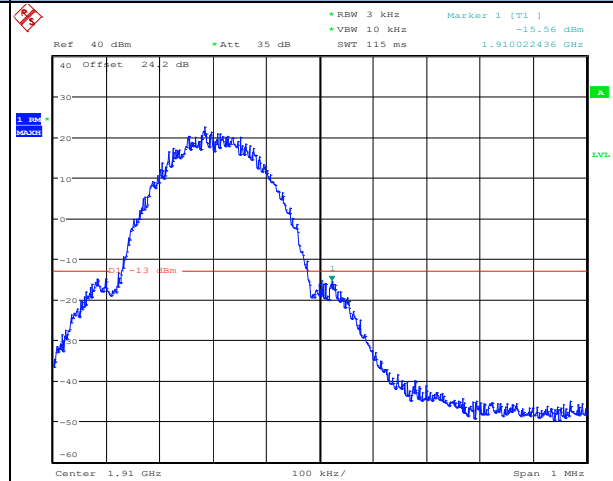
GSM 1900 (GPRS)

Lower Band Edge



Date: 8.DEC.2021 08:18:18

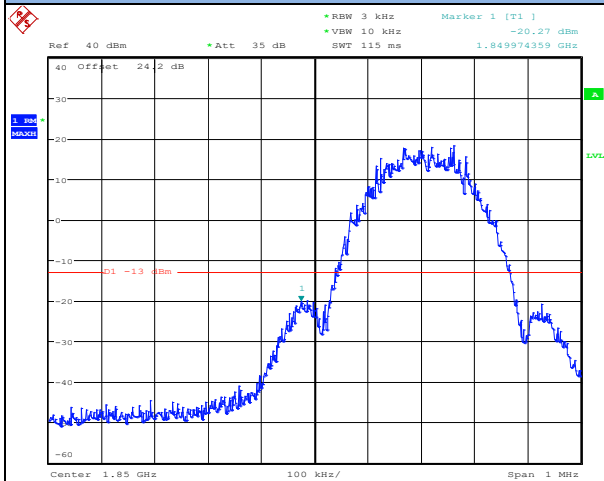
Upper Band Edge



Date: 8.DEC.2021 08:19:49

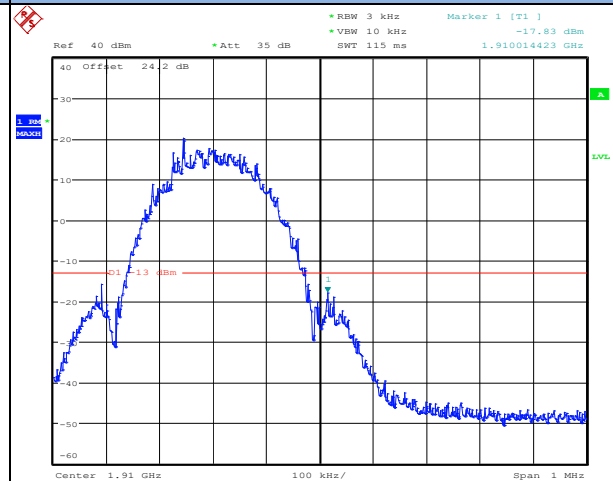
GSM 1900 (EDGE)

Lower Band Edge



Date: 8.DEC.2021 08:59:18

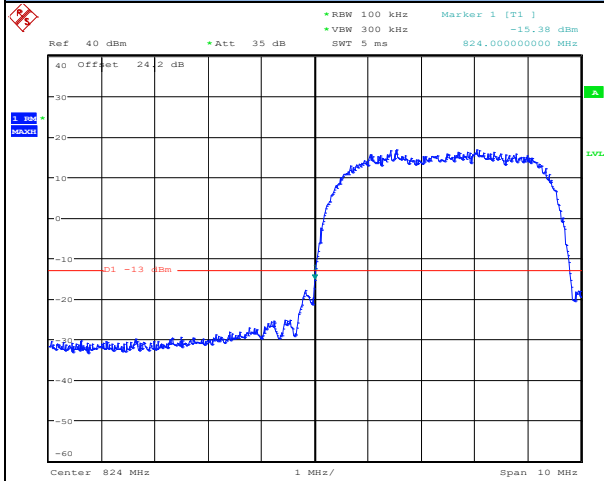
Upper Band Edge



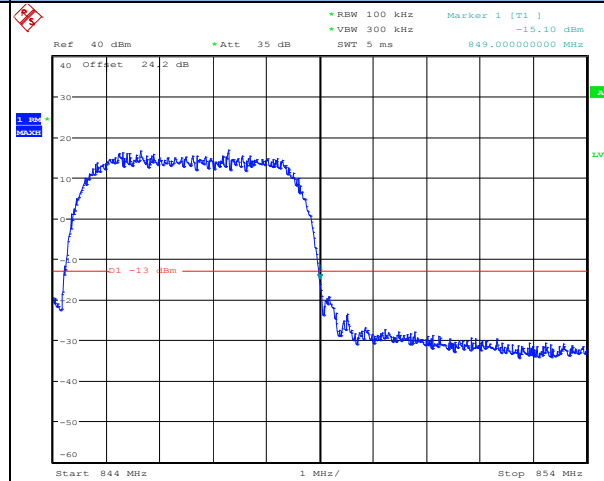
Date: 8.DEC.2021 09:00:49

WCDMA Band V (RMC 12.2K)

Lower Band Edge

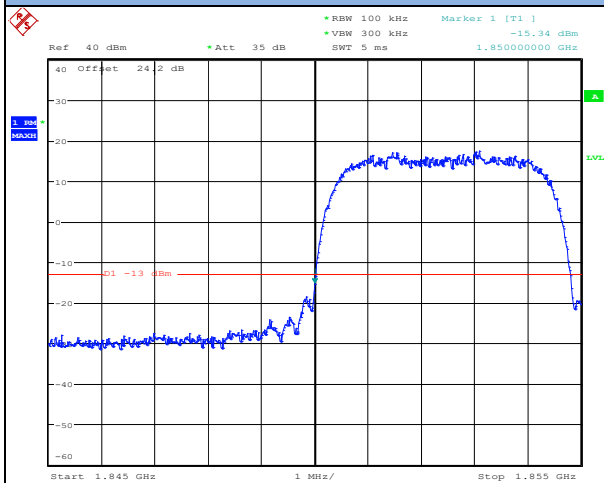


Upper Band Edge

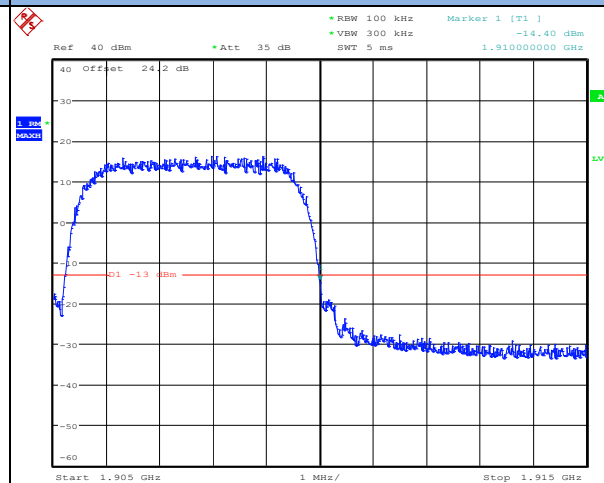


WCDMA Band II (RMC 12.2K)

Lower Band Edge



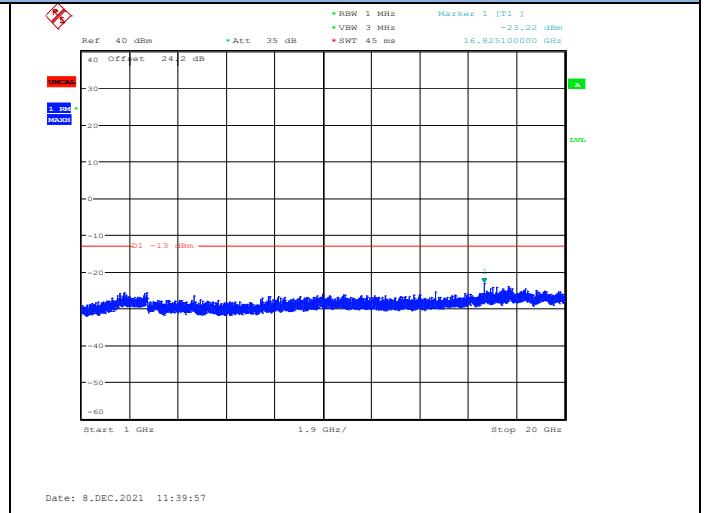
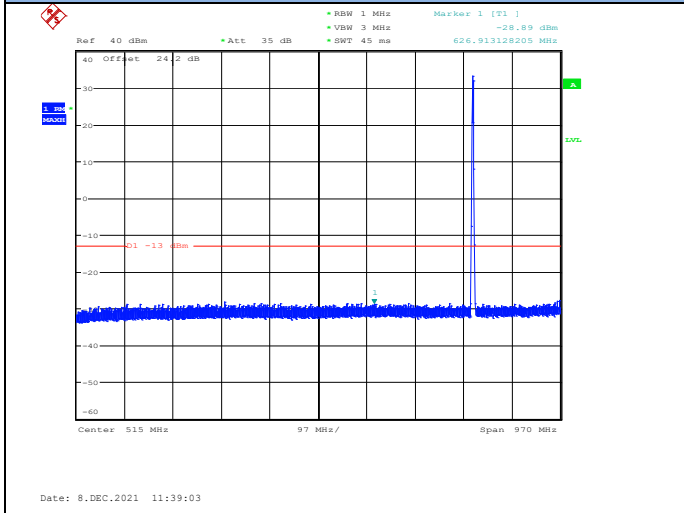
Upper Band Edge



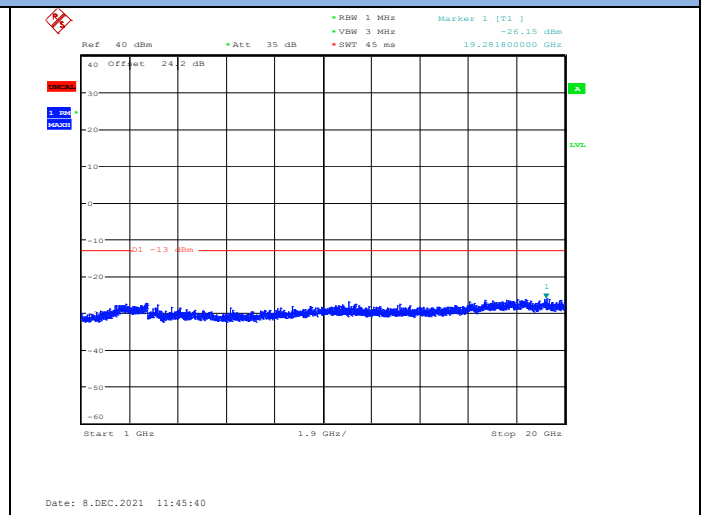
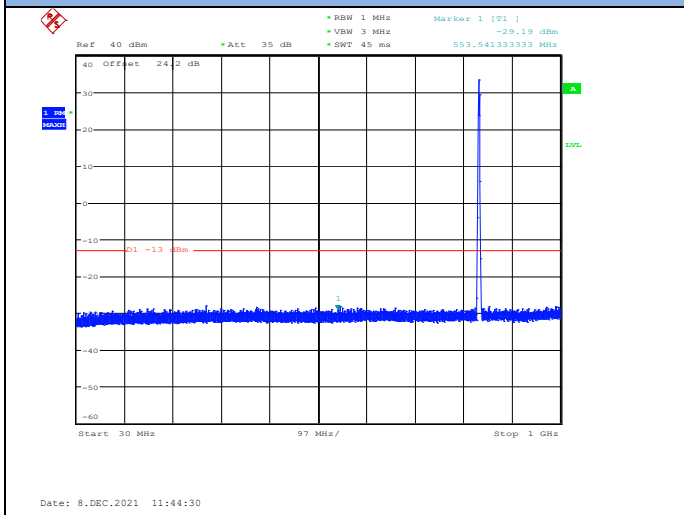
6. Spurious Emission at Antenna Terminal

GSM 850 (GPRS)

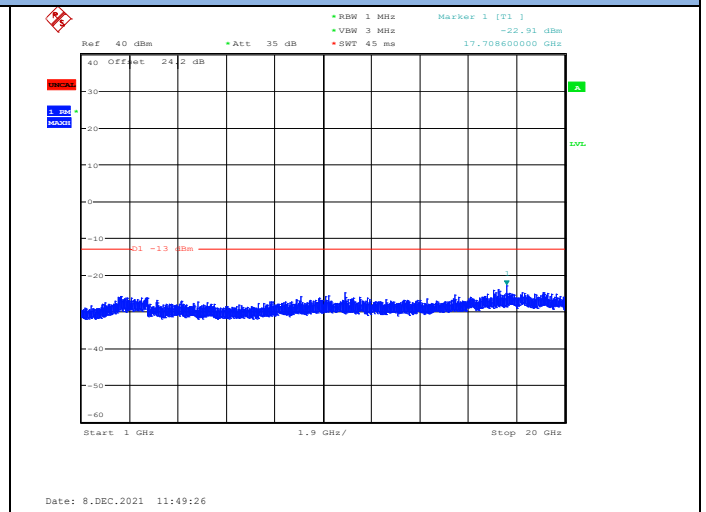
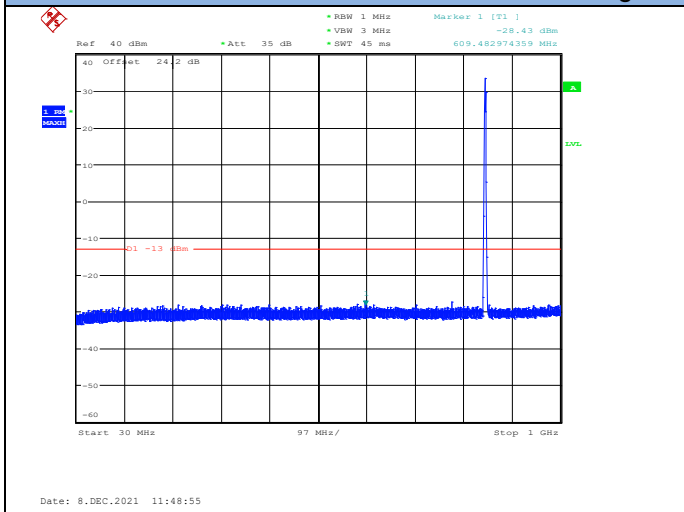
Lowest Channel



Middle Channel

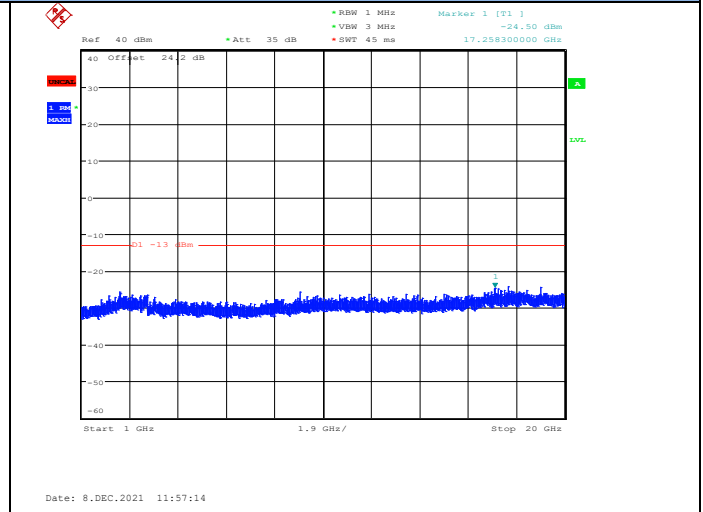
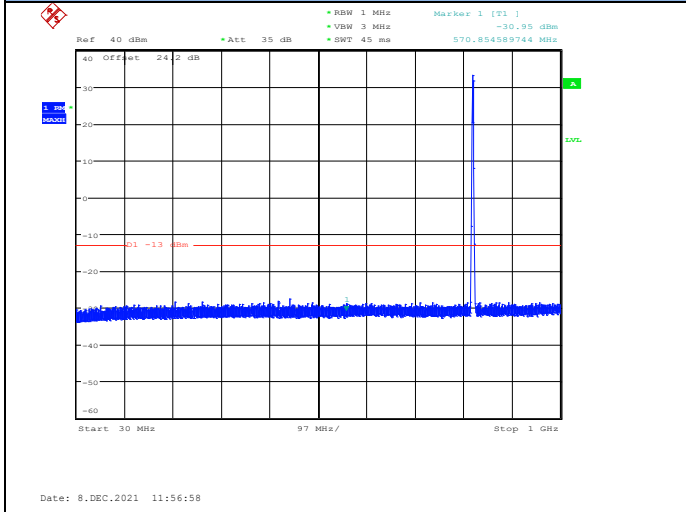


Highest Channel

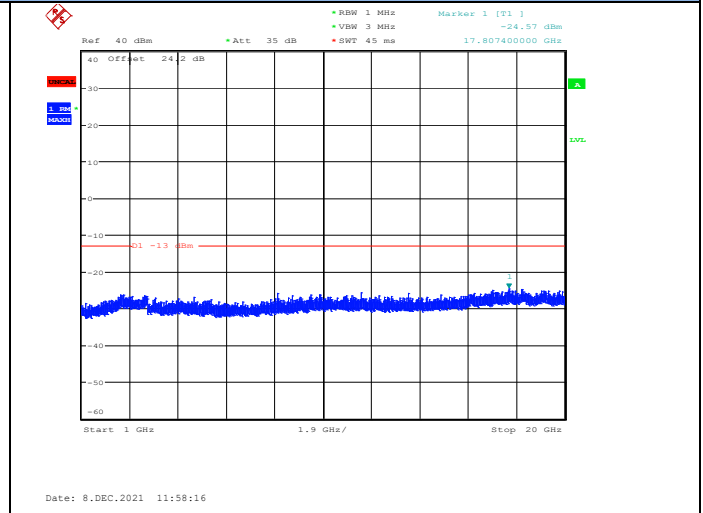
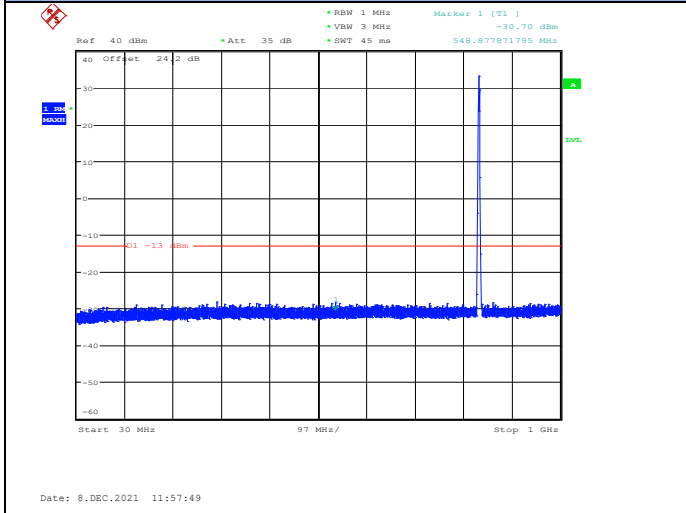


GSM 850 (EDGE)

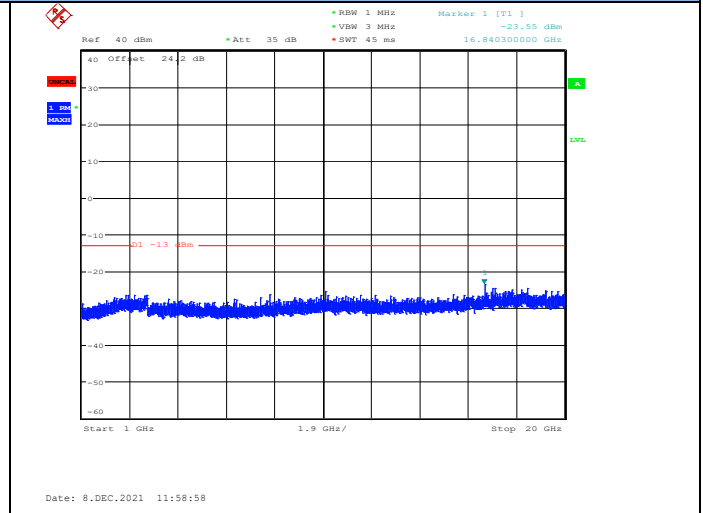
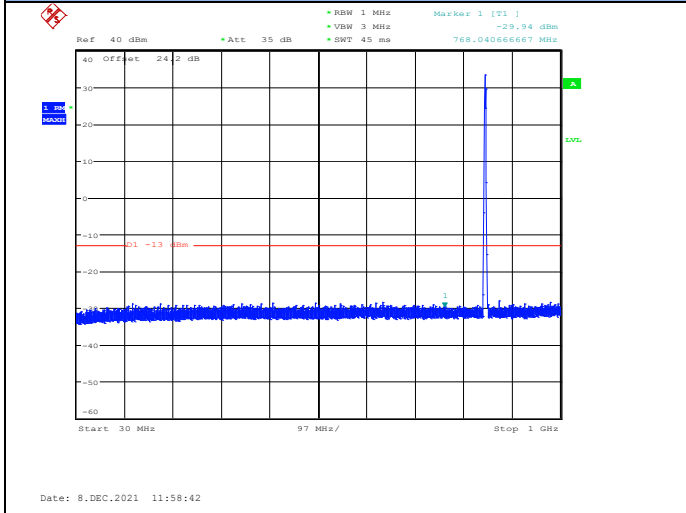
Lowest Channel



Middle Channel

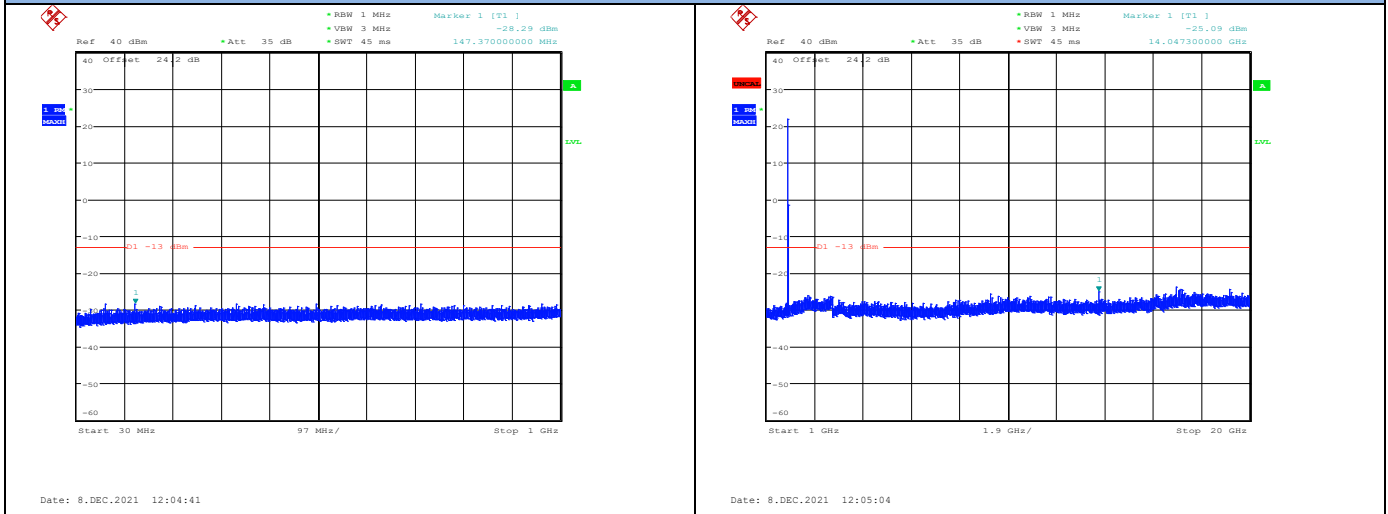


Highest Channel

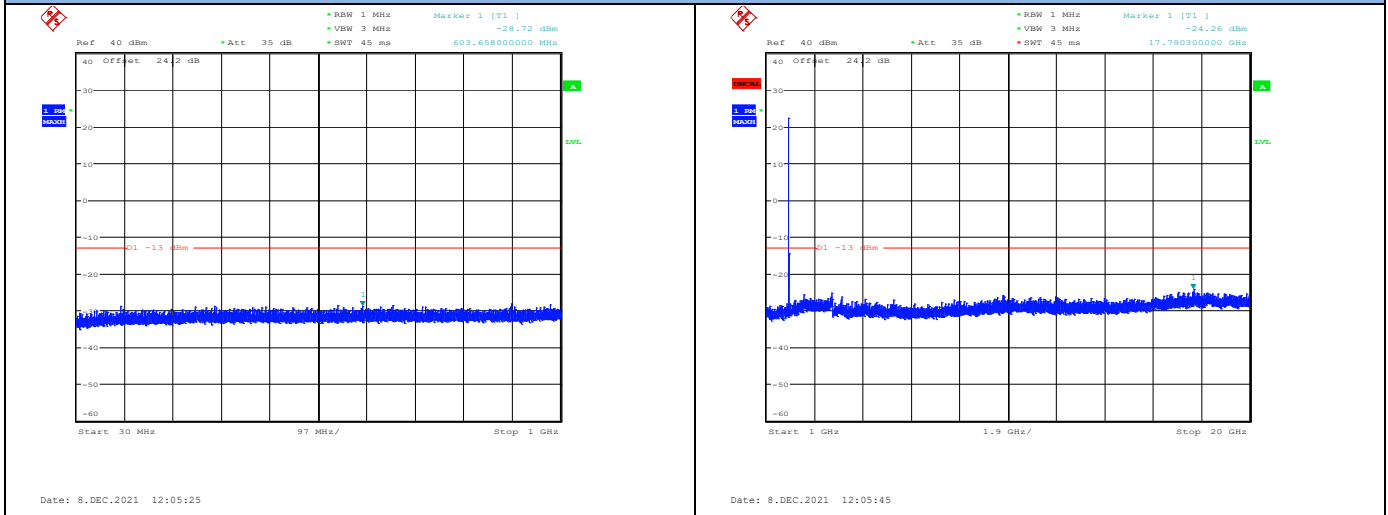


GSM 1900 (GPRS)

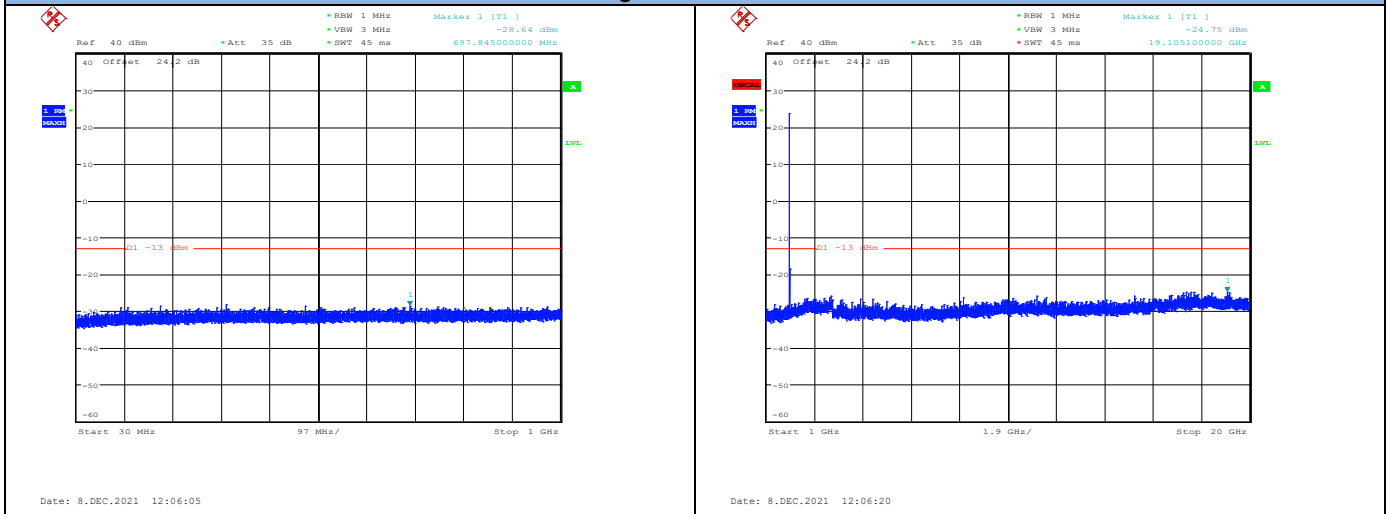
Lowest Channel



Middle Channel

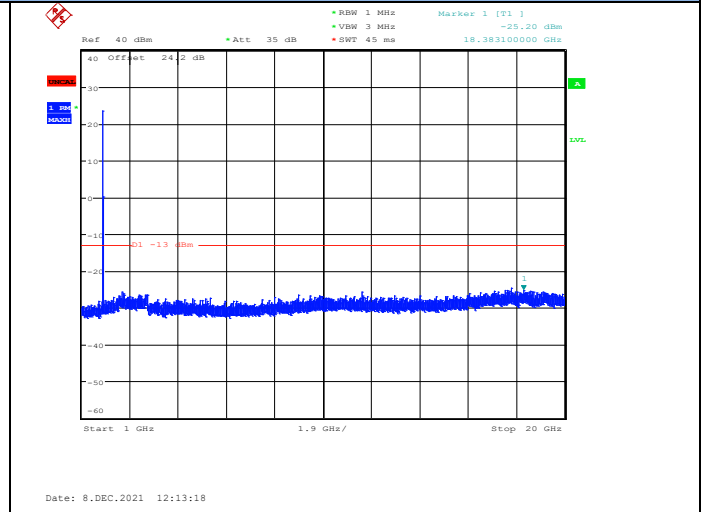
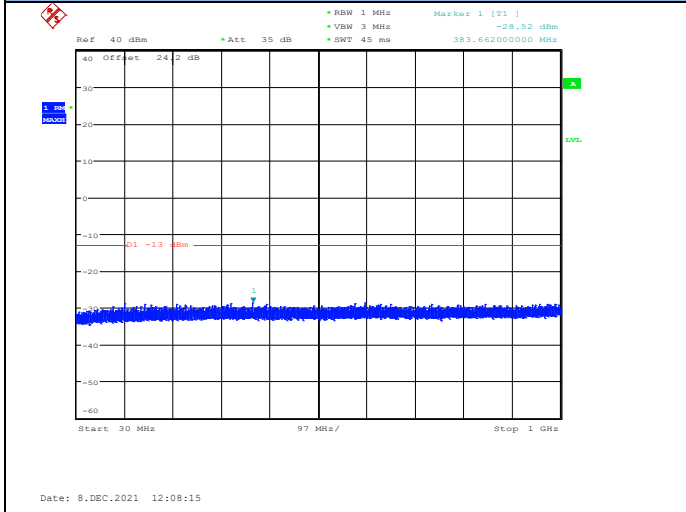


Highest Channel

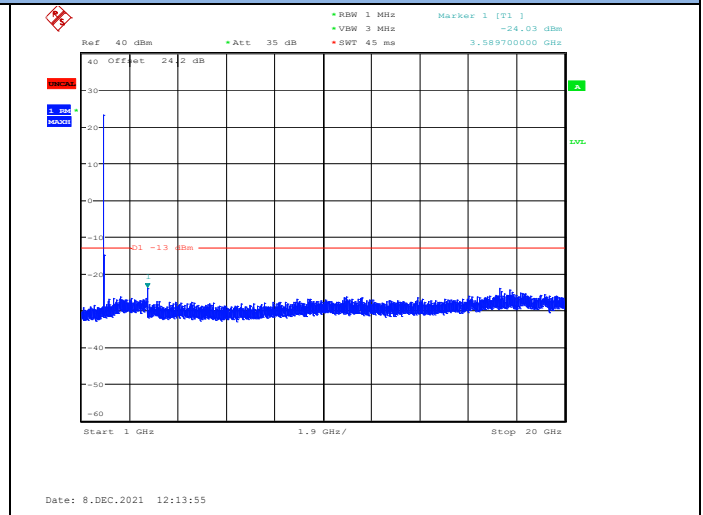
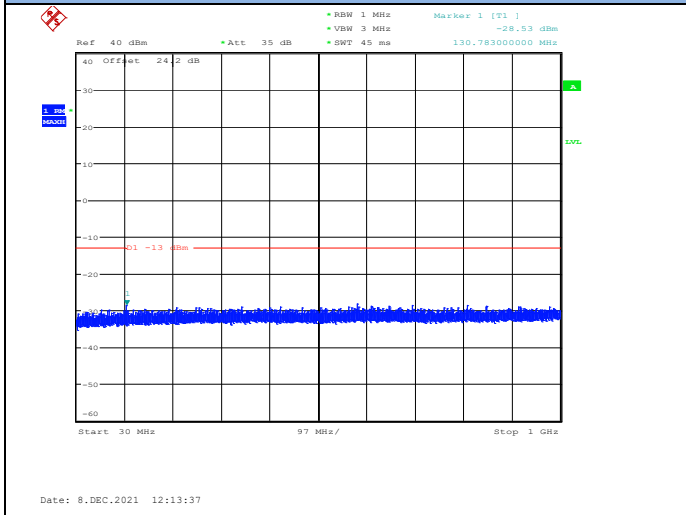


GSM 1900 (EDGE)

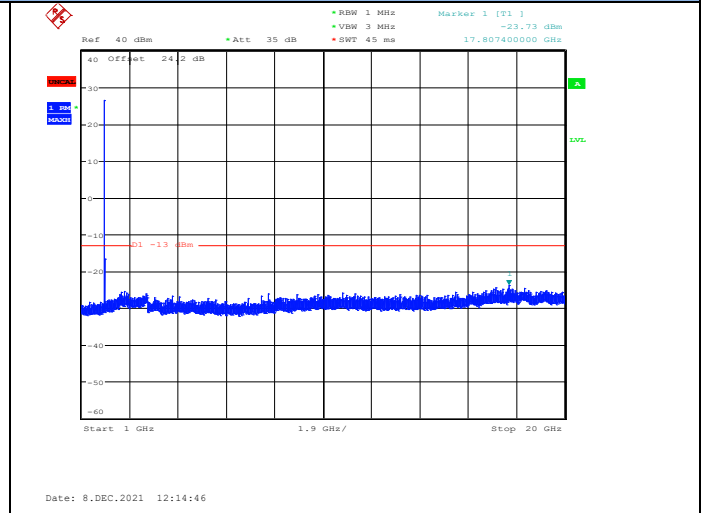
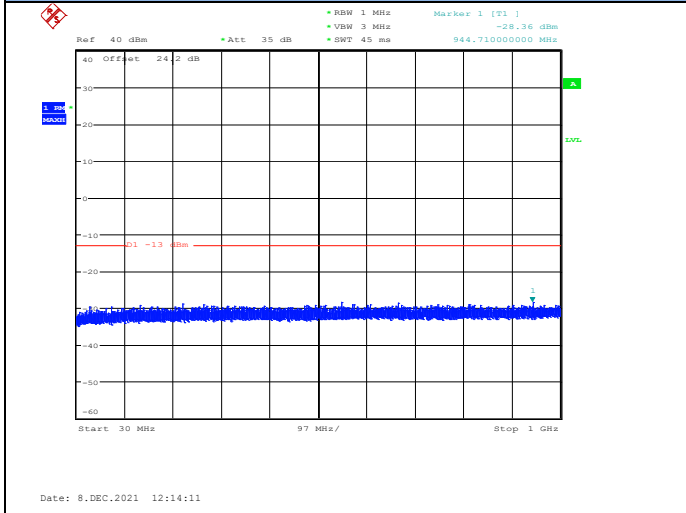
Lowest Channel



Middle Channel

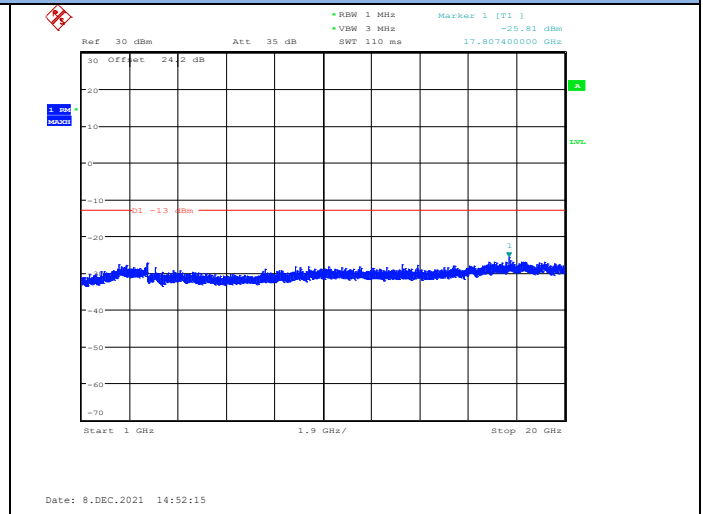
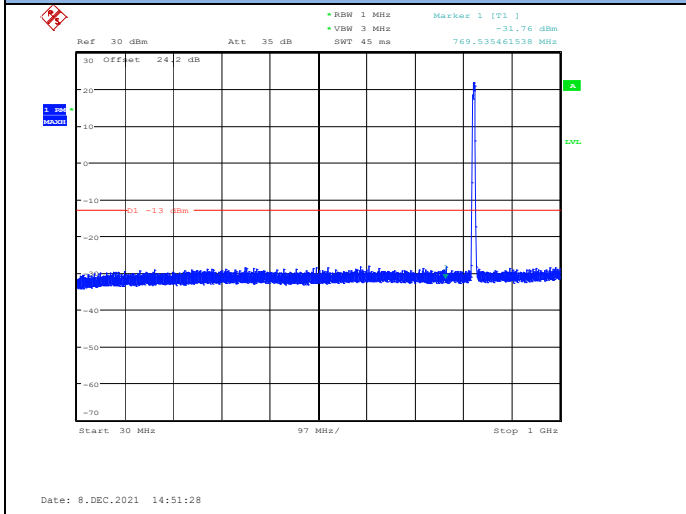


Highest Channel

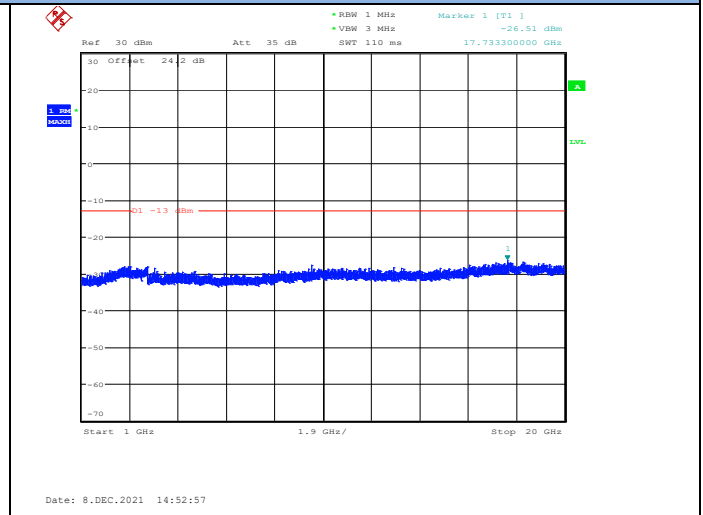
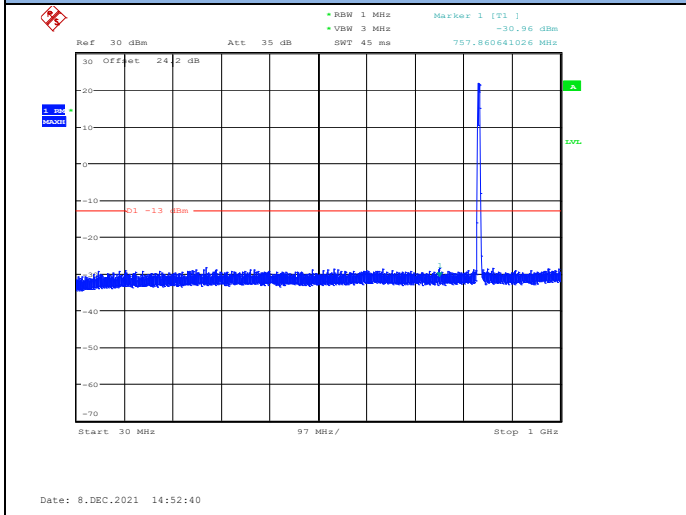


WCDMA Band V (RMC 12.2K)

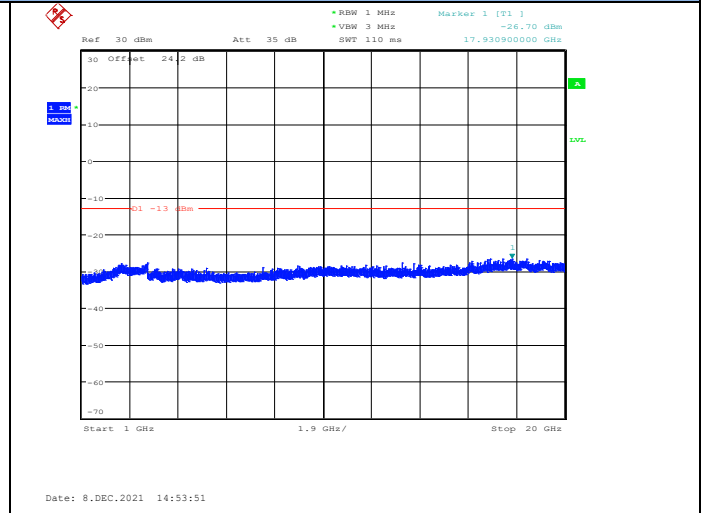
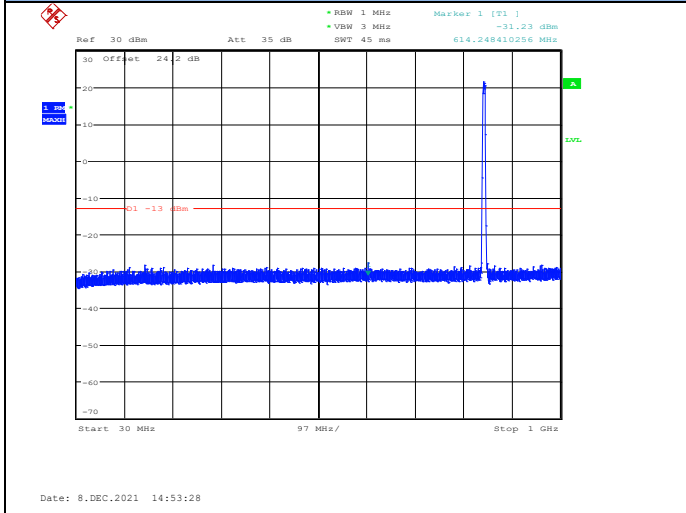
Lowest Channel



Middle Channel

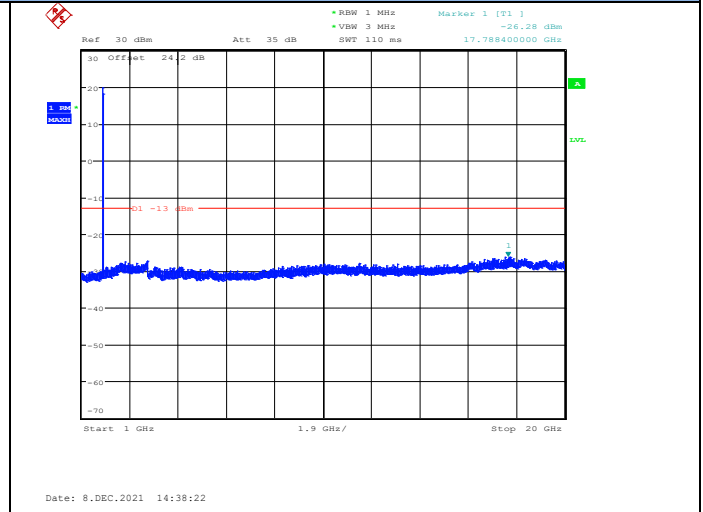
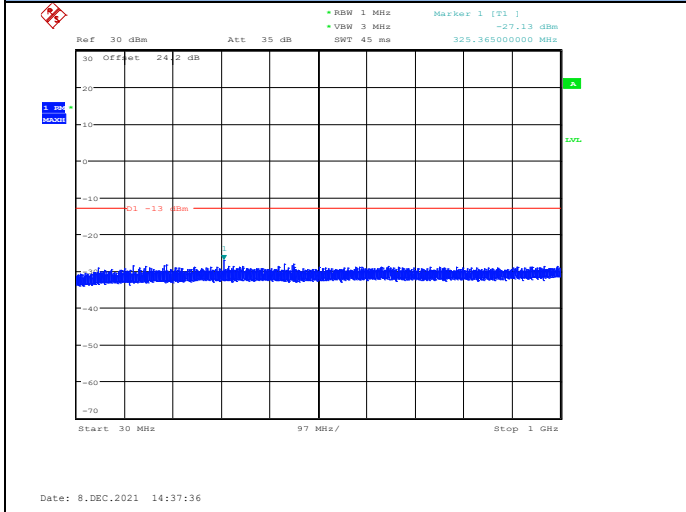


Highest Channel

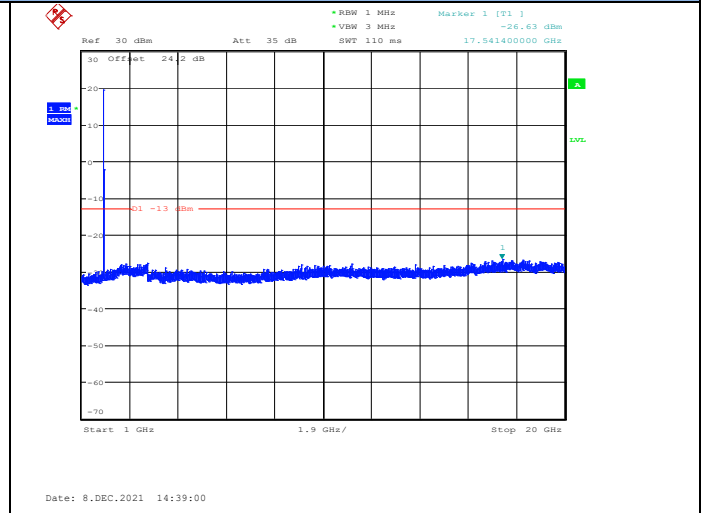
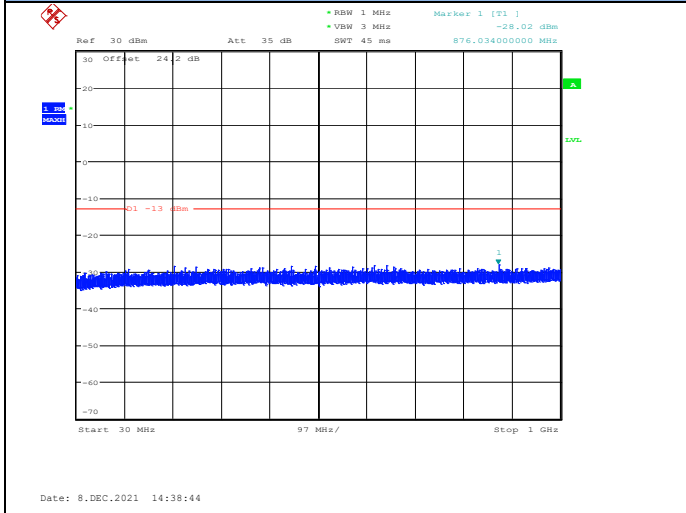


WCDMA Band II (RMC 12.2K)

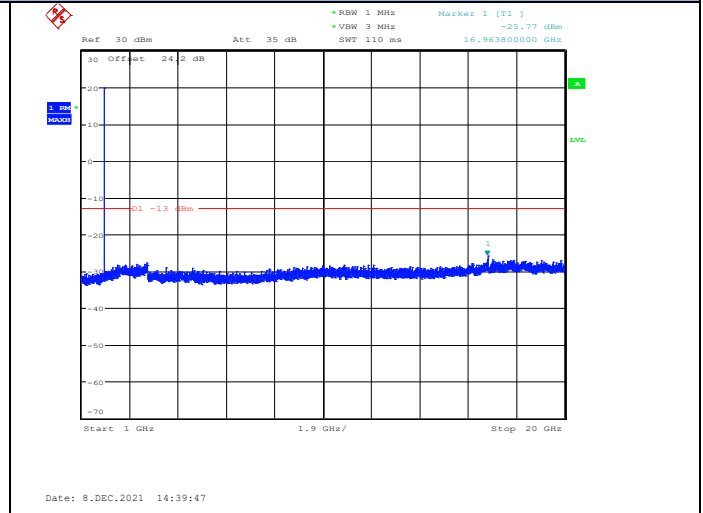
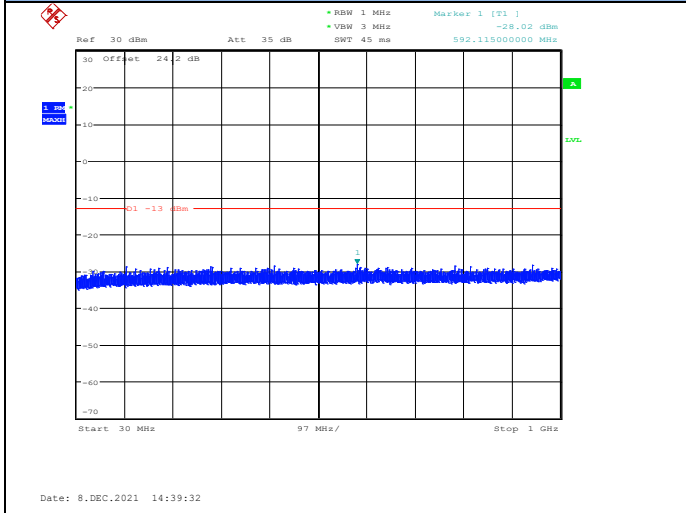
Lowest Channel



Middle Channel



Highest Channel



7. Field Strength of Spurious Radiation

GSM 850 (GPRS)					
Channel	Frequency (MHz)	Polarization (H/V)	Meas. Level (dBm)	Limit (dBm)	Margin (dBm)
Middle	6111.250	H	-44.24	-13	-31.24
	7653.438	H	-41.08	-13	-28.08
	8005.938	H	-40.63	-13	-27.63
	10047.500	H	-37.79	-13	-24.79
	5230.000	V	-45.31	-13	-32.31
	7550.625	V	-40.35	-13	-27.35
	8314.375	V	-38.47	-13	-25.47
	9856.563	V	-37.44	-13	-24.44
GSM 850 (EDGE)					
Middle	7212.813	H	-40.44	-13	-27.44
	8608.125	H	-38.68	-13	-25.68
	9166.250	H	-38.04	-13	-25.04
	10444.063	H	-37.27	-13	-24.27
	5053.750	V	-45.48	-13	-32.48
	6405.000	V	-44.77	-13	-31.77
	8079.375	V	-39.60	-13	-26.60
	8710.938	V	-38.64	-13	-25.64

Remark: 1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. Only the worst case was recorded in the report.

GSM 1900 (GPRS)					
Channel	Frequency (MHz)	Polarization (H/V)	Meas. Level (dBm)	Limit (dBm)	Margin (dBm)
Middle	7080.625	H	-40.30	-13	-27.30
	8167.500	H	-39.85	-13	-26.85
	8578.750	H	-38.72	-13	-25.72
	9739.063	H	-37.97	-13	-24.97
	7242.188	V	-40.55	-13	-27.55
	8578.750	V	-39.25	-13	-26.25
	9739.063	V	-38.70	-13	-25.70
	11677.813	V	-35.87	-13	-22.87
GSM 1900 (EDGE)					
Middle	6860.313	H	-41.09	-13	-28.09
	7844.375	H	-40.15	-13	-27.15
	9078.125	H	-38.79	-13	-25.79
	10297.188	H	-36.85	-13	-23.85
	7770.938	V	-39.96	-13	-26.96
	8373.125	V	-39.73	-13	-26.73
	9269.063	V	-38.81	-13	-25.81
	10370.625	V	-37.42	-13	-24.42

Remark: 1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. Only the worst case was recorded in the report.

WCDMA Band V (RMC 12.2K)					
Channel	Frequency (MHz)	Polarization (H/V)	Meas. Level (dBm)	Limit (dBm)	Margin (dBm)
Middle	7345.000	H	-40.70	-13	-27.70
	7800.313	H	-39.91	-13	-26.91
	8887.188	H	-38.34	-13	-25.34
	10032.813	H	-37.31	-13	-24.31
	7256.875	V	-41.68	-13	-28.68
	8769.688	V	-38.22	-13	-25.22
	10018.125	V	-38.67	-13	-25.67
	10590.938	V	-37.93	-13	-24.93
WCDMA Band II (RMC 12.2K)					
Middle	7198.125	H	-41.28	-13	-28.28
	8828.438	H	-38.38	-13	-25.38
	9269.063	H	-37.59	-13	-24.59
	10326.563	H	-37.54	-13	-24.54
	7198.125	V	-41.17	-13	-28.17
	7726.875	V	-41.02	-13	-28.02
	9048.750	V	-39.01	-13	-26.01
	10326.563	V	-37.41	-13	-24.41

Remark: 1. Spurious emissions within 30-1000MHz were found more than 20dB below limit line.
2. Only the worst case was recorded in the report.

8. Frequency Stability

GSM 850 (GPRS)					
Middle channel, $f_o = 836.4$ MHz					
Temperature (°C)	Power Supplied (Vdc)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (dBm)	Result
-30	12	-4	-0.004782	±2.5	PASS
-20		12	0.014347	±2.5	PASS
-10		6	0.007174	±2.5	PASS
0		9	0.010760	±2.5	PASS
20		2	0.002391	±2.5	PASS
30		-17	-0.020325	±2.5	PASS
40		-22	-0.026303	±2.5	PASS
50		-10	-0.011956	±2.5	PASS
20	10.8	-15	-0.017934	±2.5	PASS
	52.8	13	0.015543	±2.5	PASS
GSM 850 (EDGE)					
Middle channel, $f_o = 836.4$ MHz					
-30	12	9	0.010760	±2.5	PASS
-20		2	0.002391	±2.5	PASS
-10		2	0.002391	±2.5	PASS
0		6	0.007174	±2.5	PASS
20		-5	-0.005978	±2.5	PASS
30		-7	-0.008369	±2.5	PASS
40		6	0.007174	±2.5	PASS
50		-12	-0.014347	±2.5	PASS
20	10.8	8	0.009565	±2.5	PASS
	52.8	4	0.004782	±2.5	PASS

GSM 1900 (GPRS)					
Middle channel, $f_o = 1880.0$ MHz					
Temperature (°C)	Power Supplied (Vdc)	Frequency Error (Hz)	Frequency Error (ppm)	Limit (dBm)	Result
-30	12	-23	-0.012234	±2.5	PASS
-20		-17	-0.009043	±2.5	PASS
-10		-19	-0.010106	±2.5	PASS
0		21	0.011170	±2.5	PASS
20		25	0.013298	±2.5	PASS
30		29	0.015426	±2.5	PASS
40		-14	-0.007447	±2.5	PASS
50		11	0.005851	±2.5	PASS
20	10.8	20	0.010638	±2.5	PASS
	52.8	-17	-0.009043	±2.5	PASS
GSM 1900 (EDGE)					
Middle channel, $f_o = 1880.0$ MHz					
-30	12	-26	-0.013830	±2.5	PASS
-20		19	0.010106	±2.5	PASS
-10		22	0.011702	±2.5	PASS
0		15	0.007979	±2.5	PASS
20		-18	-0.009574	±2.5	PASS
30		-11	-0.005851	±2.5	PASS
40		-14	-0.007447	±2.5	PASS
50		17	0.009043	±2.5	PASS
20	10.8	-14	-0.007447	±2.5	PASS
	52.8	-13	-0.006915	±2.5	PASS