



Product Service

FCC & IC - TEST REPORT

Report Number : **68.950.11.183.01** Date of Issue: 27 February 2012

Model : **NPCC-1**

Product Type : Notebook Computer

Applicant : Novero Canada Inc

Address : 19 allstate parkway, suite 300, L3R 5A4 Markham

Ontario Canada

Production Facility : Wanlida Group Co., Ltd.

Address : Wanlida Industry Zone, Nanjing, Fujian, China 363601

Test Result : **Positive** **Negative**

Total pages including
Appendices : 37

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Product Service

2 Details about the Test Laboratory

Details about the Test Laboratory

Test site1:

Company name: Jiangsu TÜV Product Service Ltd. – Shenzhen Branch
6th Floor, H Hall,
Century Craftwork Culture Square,
No. 4001, Fuqiang Road,
Futian District 518048,
Shenzhen,P.R.C.

Telephone: 86 755 8828 6998

Fax: 86 755 8828 5299

Test site2:

Company name: Telecommunication Metrology Center of MIIT
No. 52 Huayuanbei Road,
Haidian District,
Beijing ,
China.

Telephone: 86 10 62303288

Fax: 86 10 62304793



3 Description of the Equipment Under Test

Description of the Equipment Under Test

Product: NPCC-1

Model no.: Notebook Computer

Brand Name: NOVERO

Options and accessories: NIL

Rating: DC 7.4V
Charged by external adapter MPA-631:
Adaptor Input: 100-240VAC, 50/60Hz, 1A Max
Adaptor Output: 12VDC, 2.5A

Antenna: Integral antenna inside the EUT, NOT accessible by end user
Gain:
0.76dBi @GSM850
3.00dBi @GSM1900
0.76dBi @WCDMA850
3.00dBi @WCDMA1900

RF Transmission Frequency: GSM/E-GSM: 850M/1900MHz
WCDMA: 850M/1900MHz

Description of the EUT: A certified wireless module was installed in this NPCC-1 Notebook Computer

The information of wireless module:
FCC ID: QISEM820W
IC ID: 6369A-EM820W
Applicant: HUAWEI TECHNOLOGIES CO. LTD.
Address: Huawei Industrial Base, Bantian, Longgang District
Shenzhen, 518129, China

Auxiliary Equipment and Cable Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
Universal Radio Communication Tester	Agilent	5515C	GB47460389



4 Summary of Test Standards

Test Standards	
FCC CFR47 Part 22: Subpart H	PUBLIC MOBILE SERVICES
FCC CFR47 Part 24: Subpart E	PERSONAL COMMUNICATIONS SERVICES
RSS-132 Issue 2	Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz
RSS-133 Issue 5	2 GHz Personal Communications Services



5 Summary of Test Results

Technical Requirements					
FCC Part 22 Subpart H, FCC Part 24 Subpart E, RSS-132, RSS-133					
Test Condition	Pages	Test Result			Test Location
		Pass	Fail	N/A	
22.913 Effective Radiated Power of Transmitter(ERP) 24.232 Effective Isotropic radiated power of Transmitter(EIRP) RSS-132 4.4 Conducted output power of transmitter Effective Radiated Power of Transmitter(ERP) RSS-133 6.4 Effective Isotropic radiated power of Transmitter(EIRP)	8	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test Site2
22.217 Spurious radiated emissions 24.238 Spurious radiated emissions RSS-132 4.5 Transmitter Unwanted Emissions RSS-133 6.5 Transmitter Unwanted Emissions	11	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Test Site2



6 General Remarks

Remarks

This submittal(s) (test report) is intended for the Class 2 permissive change of FCC ID: QISEM820W, IC ID: 6369A-EM820W to comply with FCC Part 22 Subpart H, FCC Part 24 Subpart E, RSS-132, RSS-133. Therefore, only 2 tests items (ERP, EIRP and Radiated Spurious Emission) were repeated to verify the compliance of change, and the test results are listed in the report.

SUMMARY:

All tests according to the regulations cited on page 5 were

- Performed

- **Not** Performed

The Equipment Under Test

- **Fulfills** the general approval requirements.

- **Does not** fulfill the general approval requirements.

Sample Received Date: 15 December 2011

Testing Start Date: 17 December 2011

Testing End Date: 29 December 2011

- Jiangsu TÜV Product Service Ltd. – Shenzhen Branch -

Tested By	<u>2012-02-24</u>	<u>Wangshanshan</u>	<u>Wang Shanshan</u>
Test Lab Engineer	Date	Name	Signature

Prepared By	<u>2012-02-24</u>	<u>Peter Kang</u>	<u>Peter Kang</u>
EMC Project Engineer	Date	Name	Signature

Reviewed By	<u>2012-02-24</u>	<u>Ken Li</u>	<u>[Signature]</u>
EMC Project Manager	Date	Name	Signature

7 Technical Requirement

7.1 Effective Radiated Power of Transmitter(ERP), Effective Isotropic radiated power of Transmitter(EIRP)

Test Method

ERP/EIPR:

- 1 The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2 The turntable shall be rotated for 360 degrees to determine the position of maximum emission level
- 3 EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions for fundamental frequency.
4. During the measurement of the EUT, the resolution bandwidth was set to 3MHz and the average bandwidth was set to 3MHz. The highest emission was recorded with the rotation of turntable and the lowering of the test antenna. The reading was recorded and the field strength(E in dBuV/m) was calculated.
5. ERP in frequency band 824-849MHz, and WIRP in frequency band 1851.25-1910MHz were measured using a substitution method. The EUT was replace by half-wave dipole(824-849MHz) or horn antenna(1851.25-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:
ERP=S.G. output(dBm) + Antenna Gain(dBd) – Cable loss(dB)
EIRP= S.G. output(dBm) + Antenna Gain(dBi) – Cable loss(dB)

Limits for ERP/EIRP measurements

FCC Rule	Limit W	Limit dBm
FCC Part 22H	≤7	≤38.45
FCC Part 24E	≤2	≤33.01
RSS-132	≤7	≤37.99
RSS-133	≤2	≤33.01

Conducted peak output power, ERP/EIPR

Test result for rule Part 22H, RSS-132

Mode	Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)
GSM850 GPRS	128	824.2	22.66	38.45/37.99
	190	836.6	23.47	38.45/37.99
	251	848.8	24.40	38.45/37.99
GSM850 EGPRS	128	824.2	20.05	38.45/37.99
	190	836.6	19.14	38.45/37.99
	251	848.8	20.27	38.45/37.99
WCDMA850	4132	826.4	18.57	38.45/37.99
	4183	836.6	18.20	38.45/37.99
	4233	846.6	18.40	38.45/37.99
HSDPA	4132	826.4	17.40	38.45/37.99
	4183	836.6	17.95	38.45/37.99
	4233	846.6	18.01	38.45/37.99
HSUPA	4132	826.4	17.58	38.45/37.99
	4183	836.6	17.85	38.45/37.99
	4233	846.6	17.98	38.45/37.99

Test result for rule Part 24E, RSS-133

Mode	Channel	Frequency (MHz)	E.I.R.P (dBm)	Limit (dBm)
GSM1900 GPRS	512	1850.2	25.80	33.01
	661	1880.0	24.10	33.01
	810	1909.8	23.85	33.01
GSM1900 EGPRS	512	1850.2	20.90	33.01
	661	1880.0	19.39	33.01
	810	1909.8	18.36	33.01
WCDMA1900	9262	1852.4	20.43	33.01
	9400	1880.0	18.80	33.01
	9538	1907.6	17.68	33.01
HSDPA	9262	1852.4	20.84	33.01
	9400	1880.0	20.01	33.01
	9538	1907.6	18.78	33.01
HSUPA	9262	1852.4	19.87	33.01
	9400	1880.0	19.50	33.01
	9538	1907.6	18.43	33.01

Test Equipment**Maximum transmit power Test**

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL.DUE.DATE
Universal Radio Communication Tester	Agilent	5515C	GB47460389	2012-09-21

7.3 Spurious radiated emissions

Test Method

- 1 The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2 The turntable shall be rotated for 360 degrees to determine the position of maximum emission level
- 3 EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5 each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

Limit

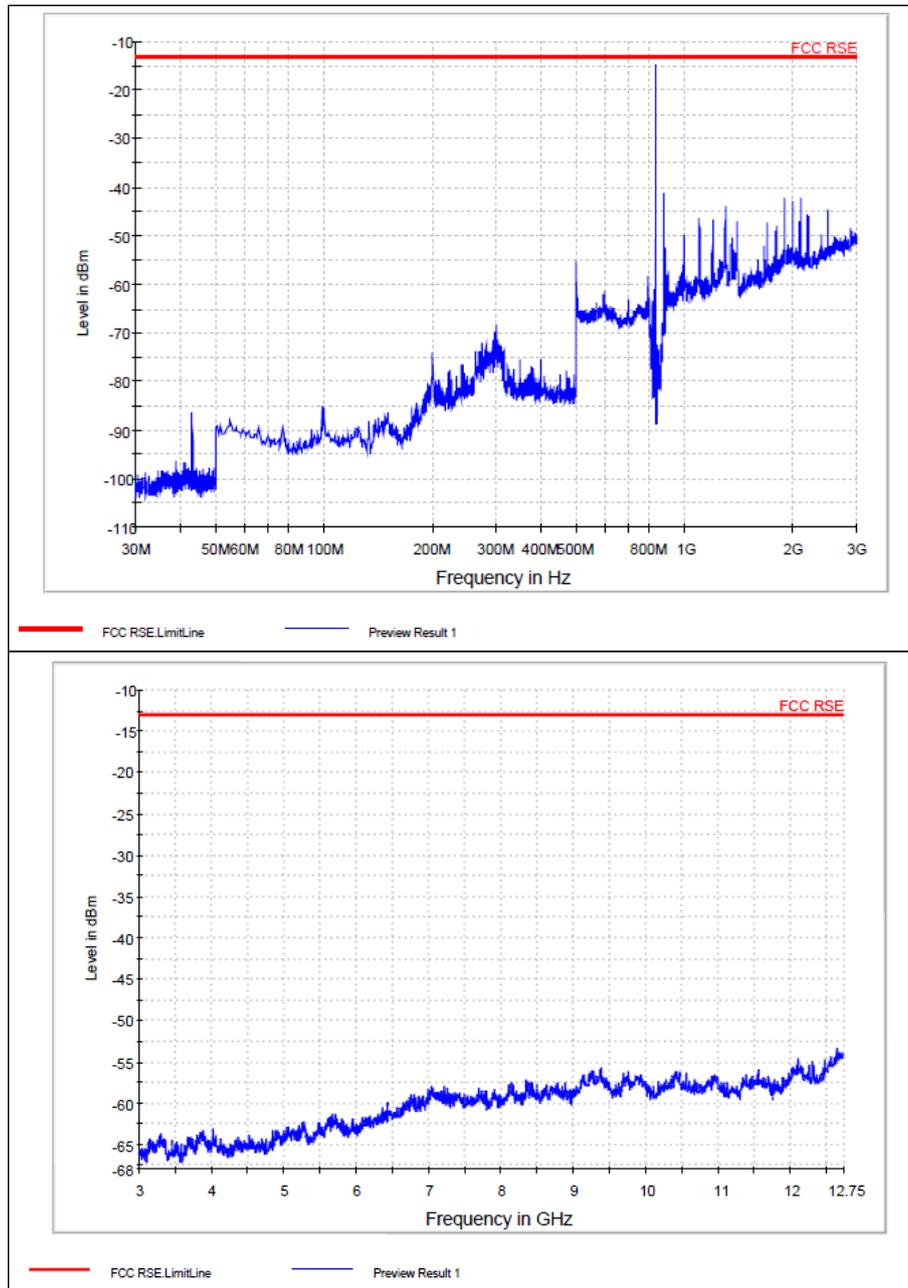
Frequency MHz	Limit Level dBm	Detector
30-20000	-13	Peak

Spurious radiated emissions

GPRS850 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

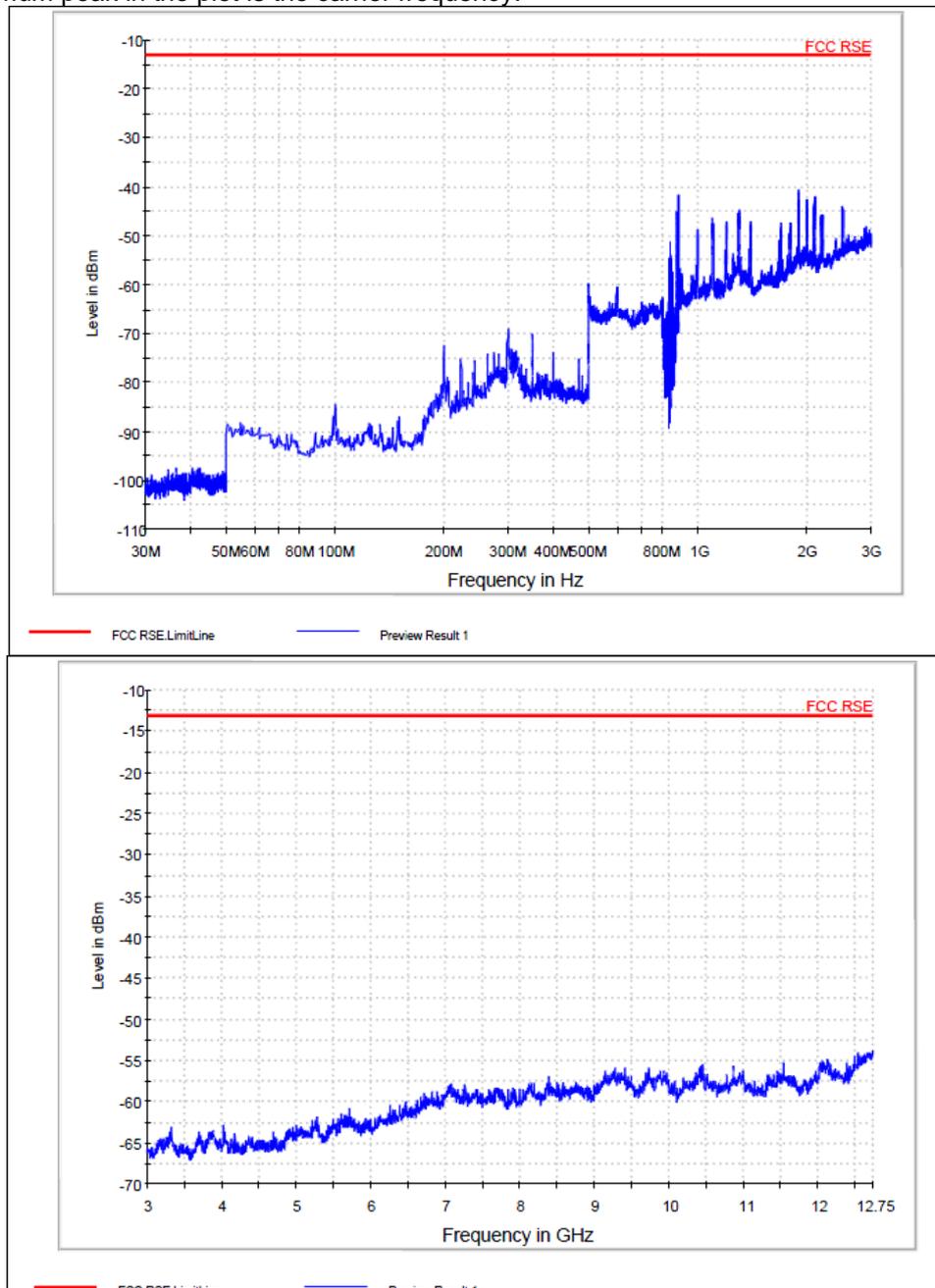


Spurious radiated emissions

GPRS850 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

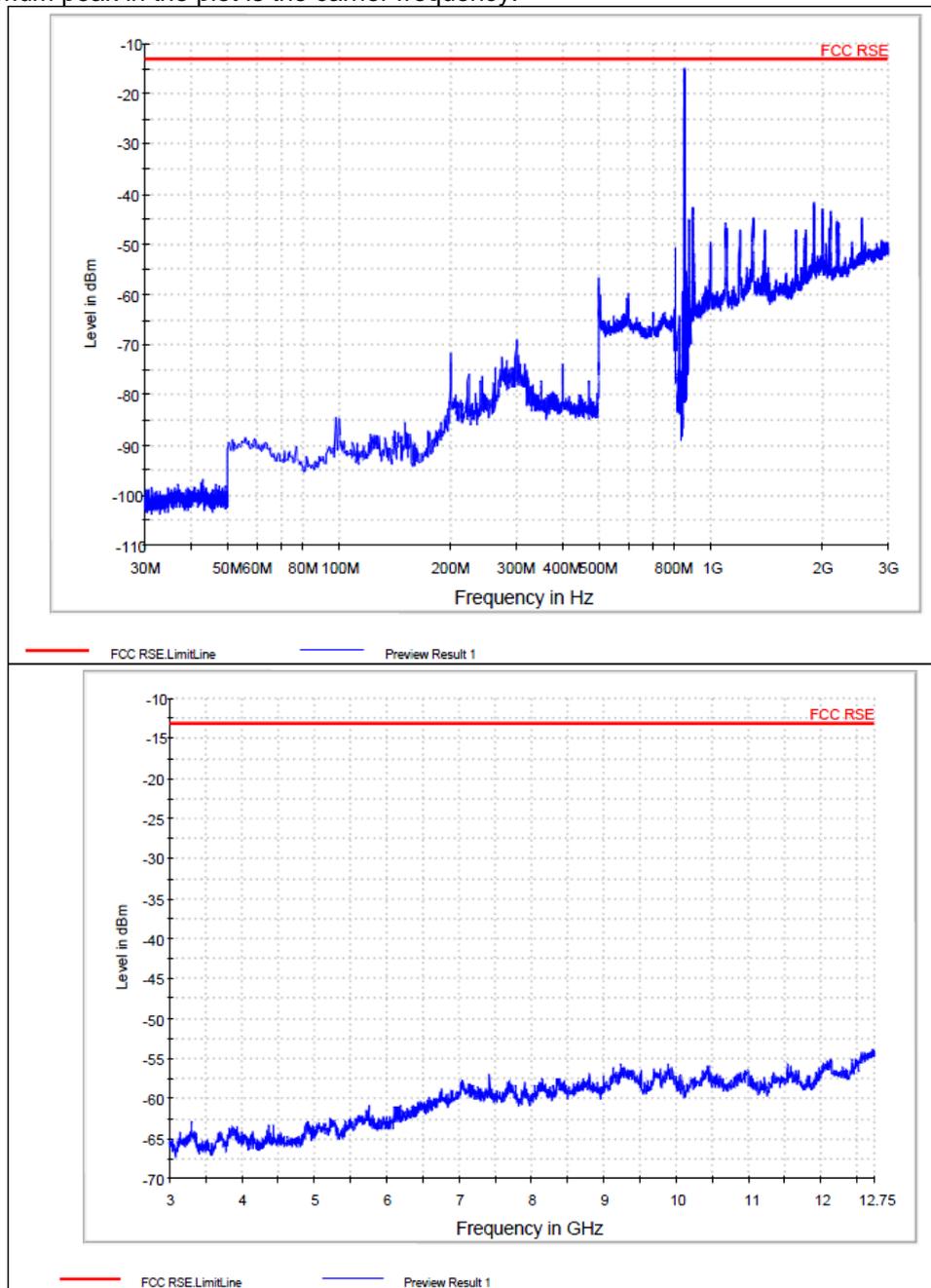


Spurious radiated emissions

GPRS850 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.

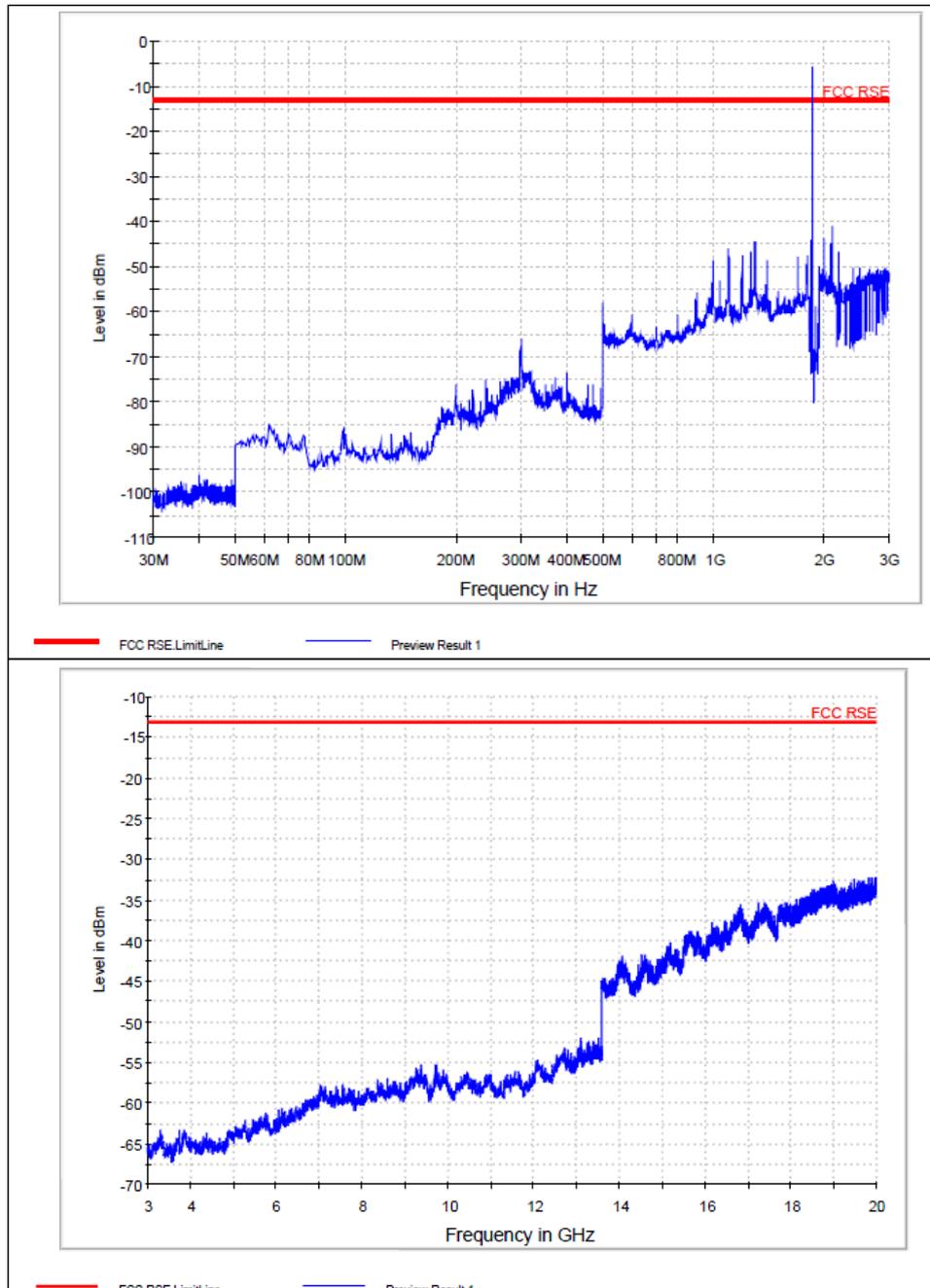


Spurious radiated emissions

GPRS1900 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

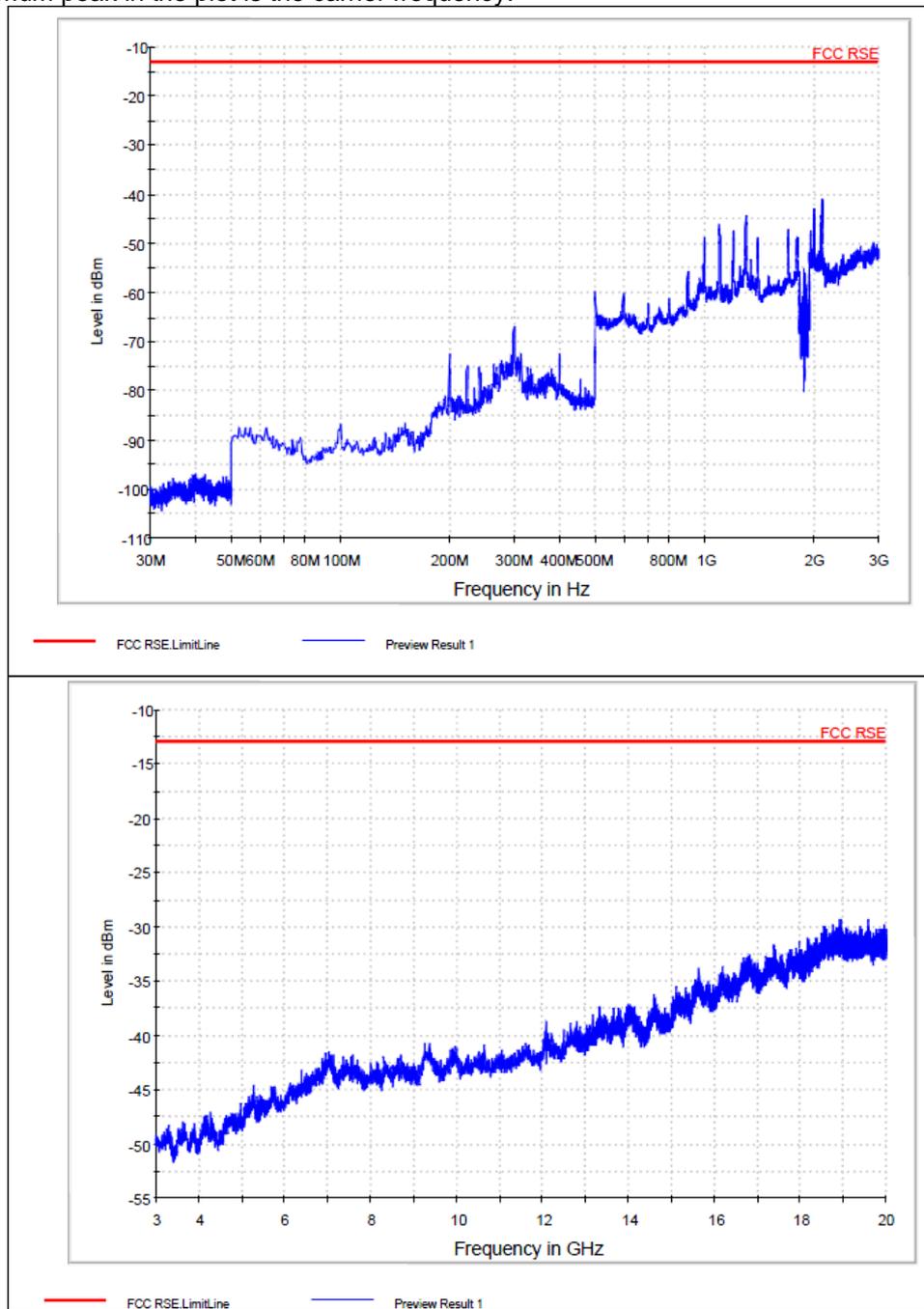


Spurious radiated emissions

GPRS1900 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

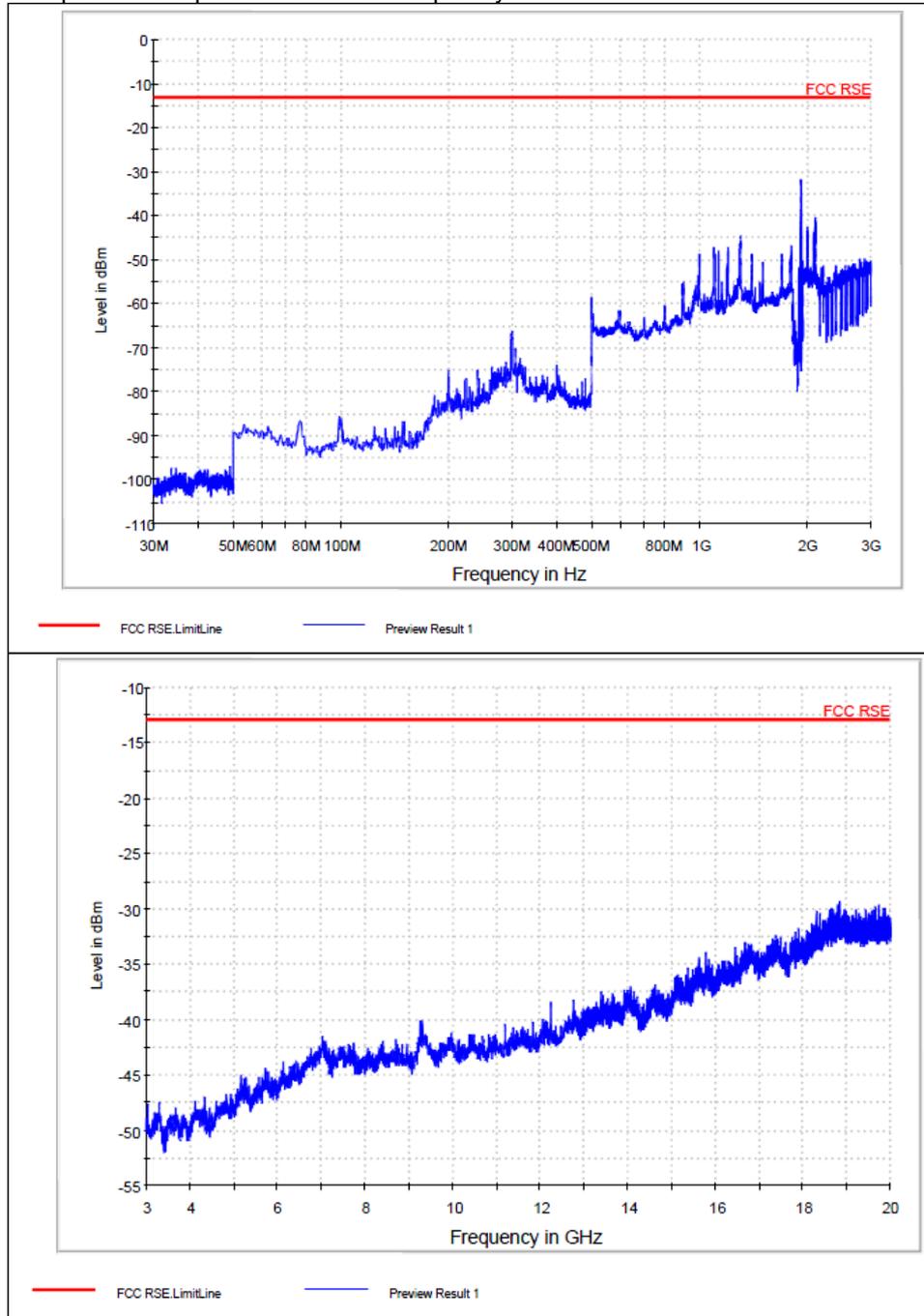


Spurious radiated emissions

GPRS1900 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.

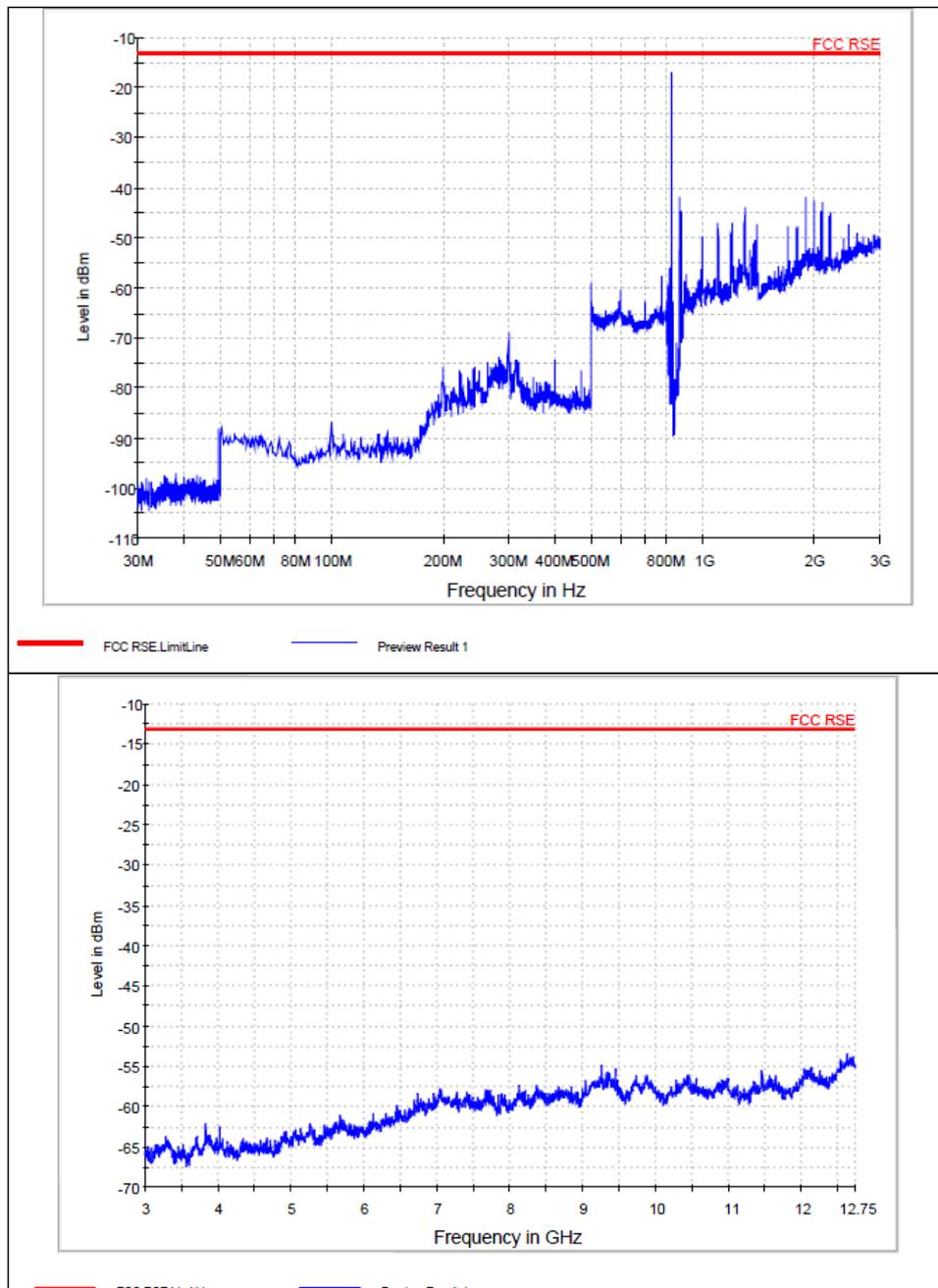


Spurious radiated emissions

EDGE850 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

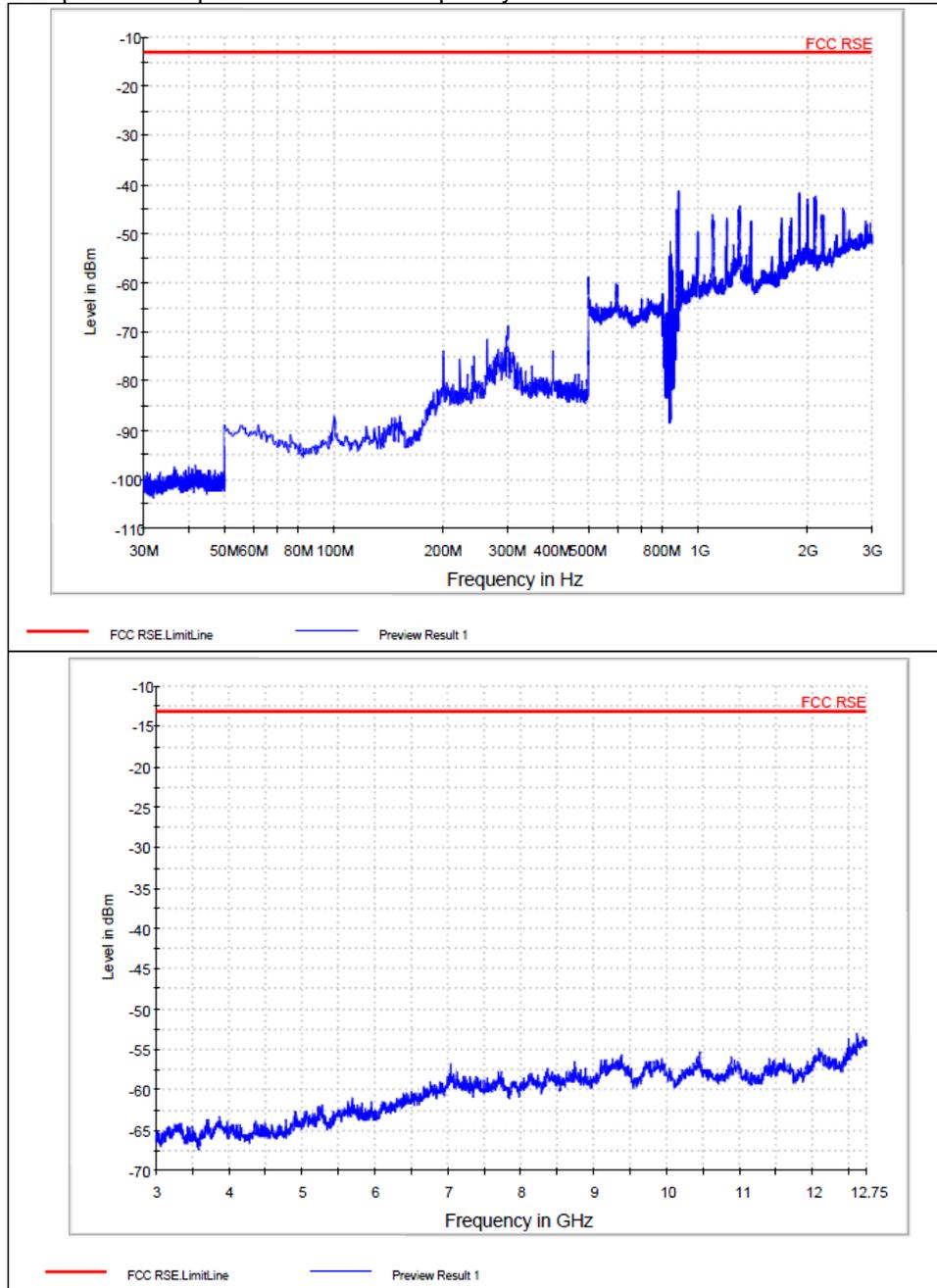


Spurious radiated emissions

EDGE850 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

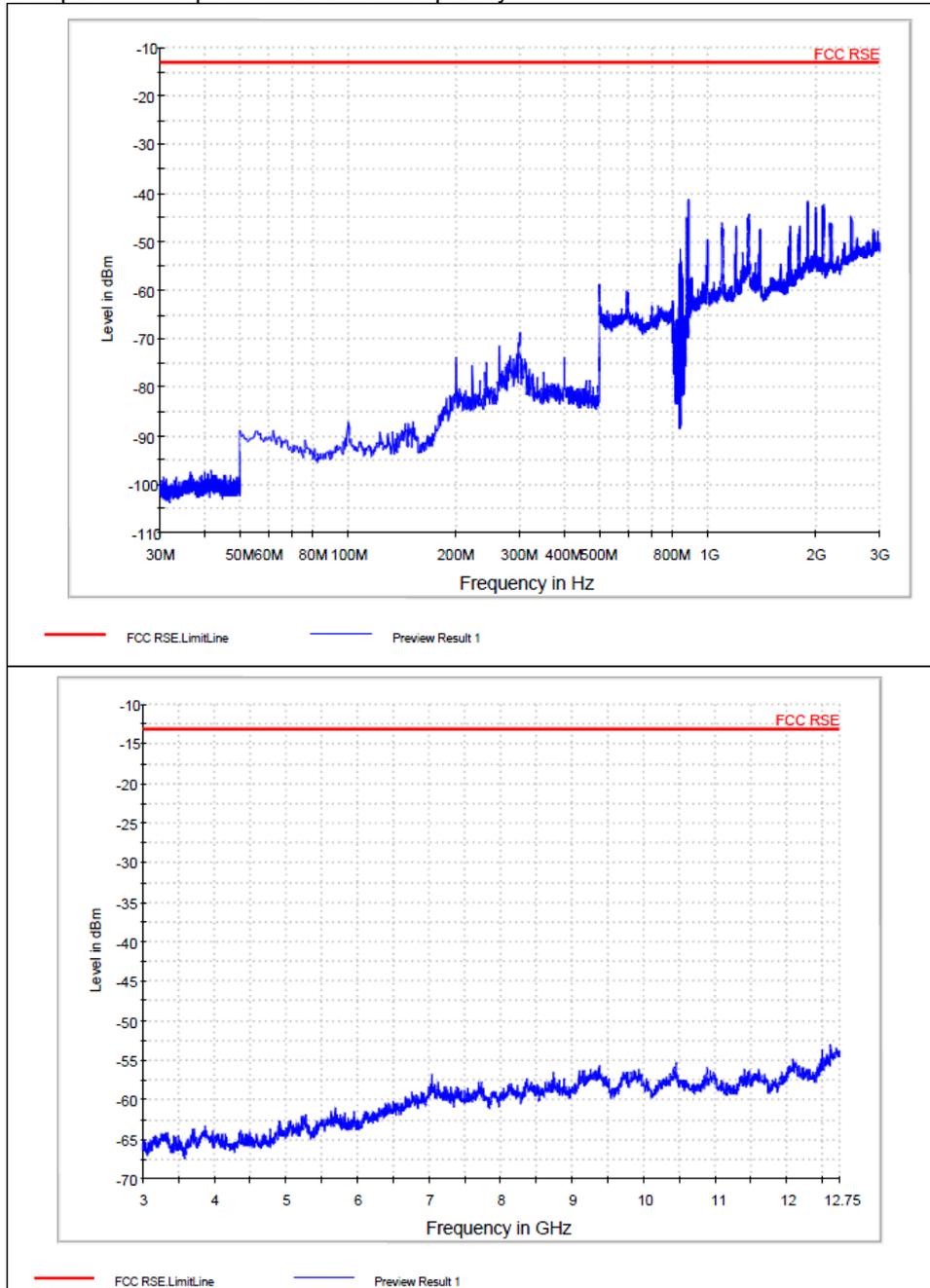


Spurious radiated emissions

EDGE850 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.

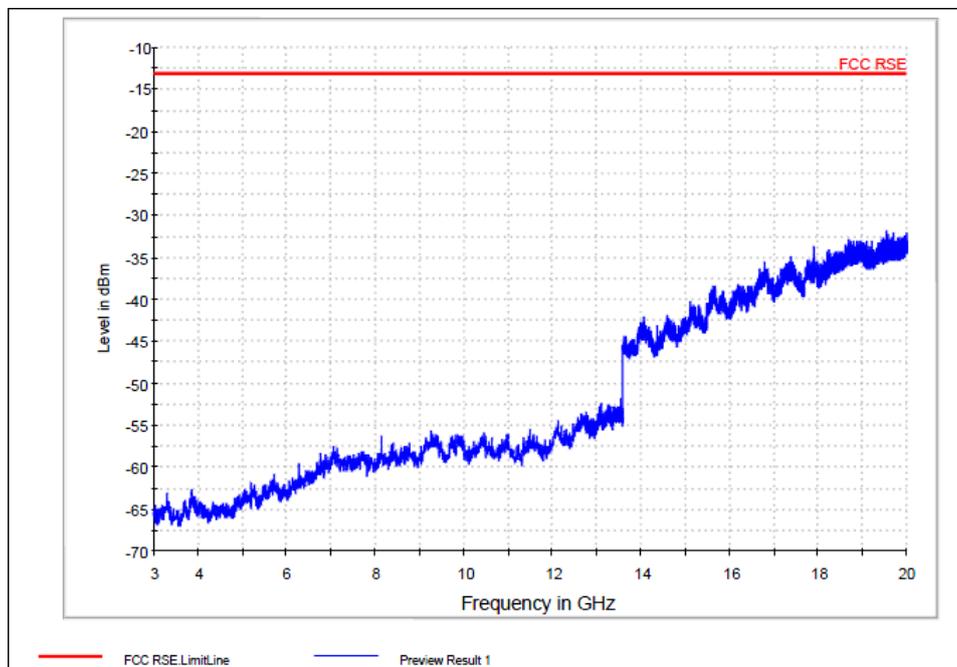
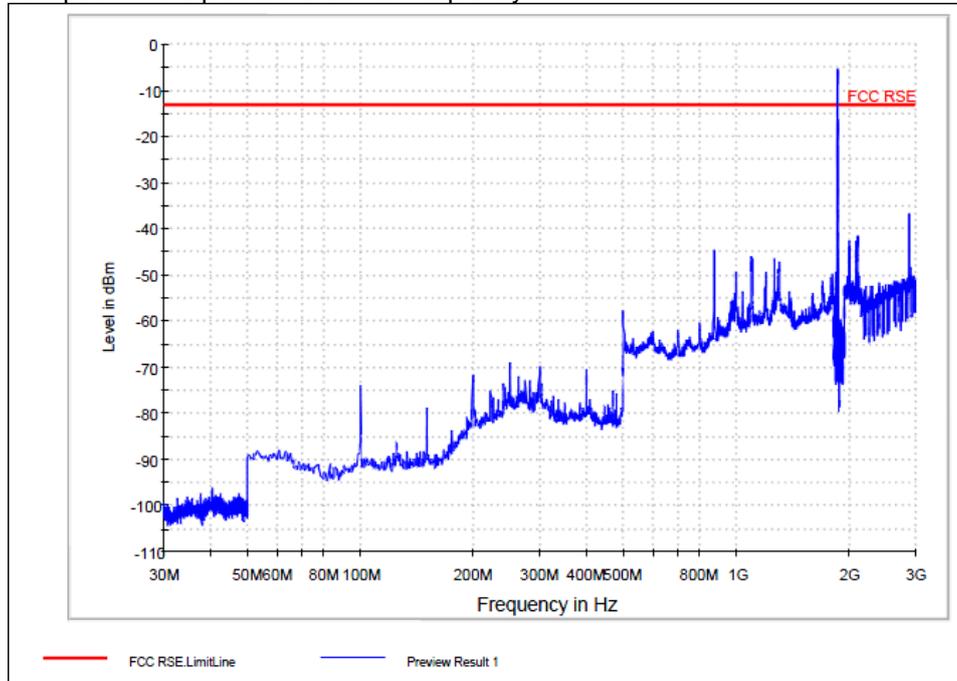


Spurious radiated emissions

EDGE1900 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

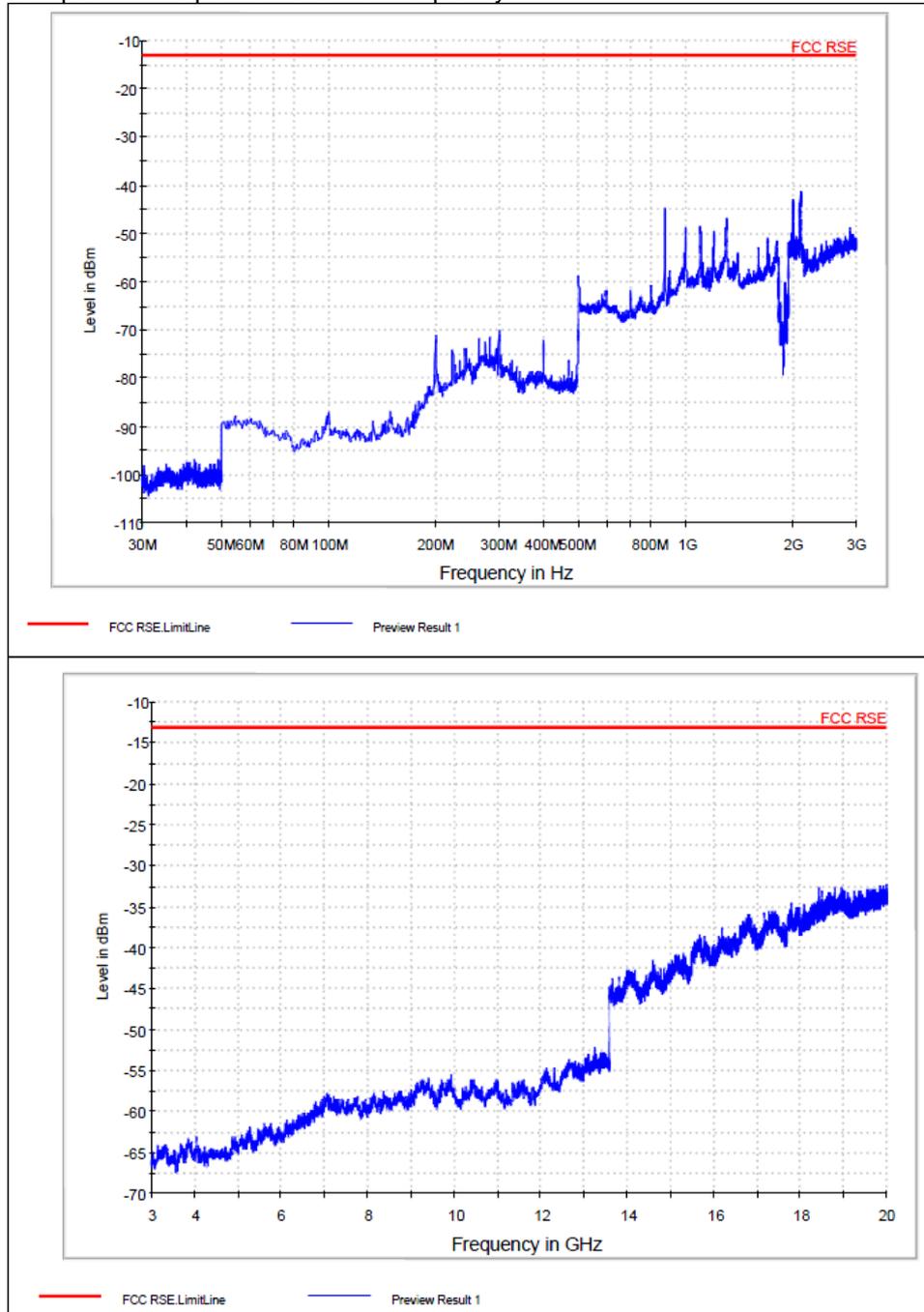


Spurious radiated emissions

EDGE1900 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

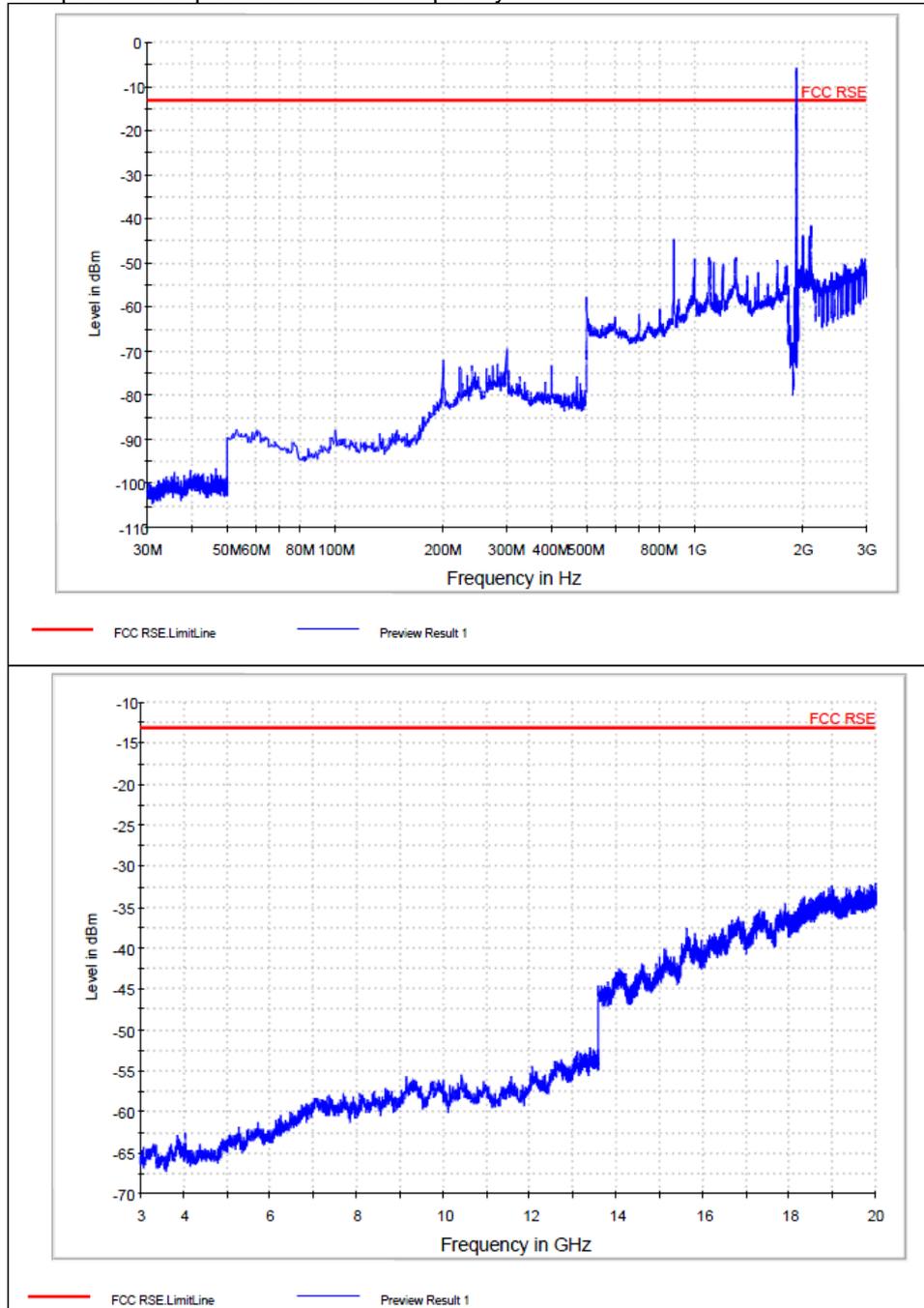


Spurious radiated emissions

EDGE1900 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.

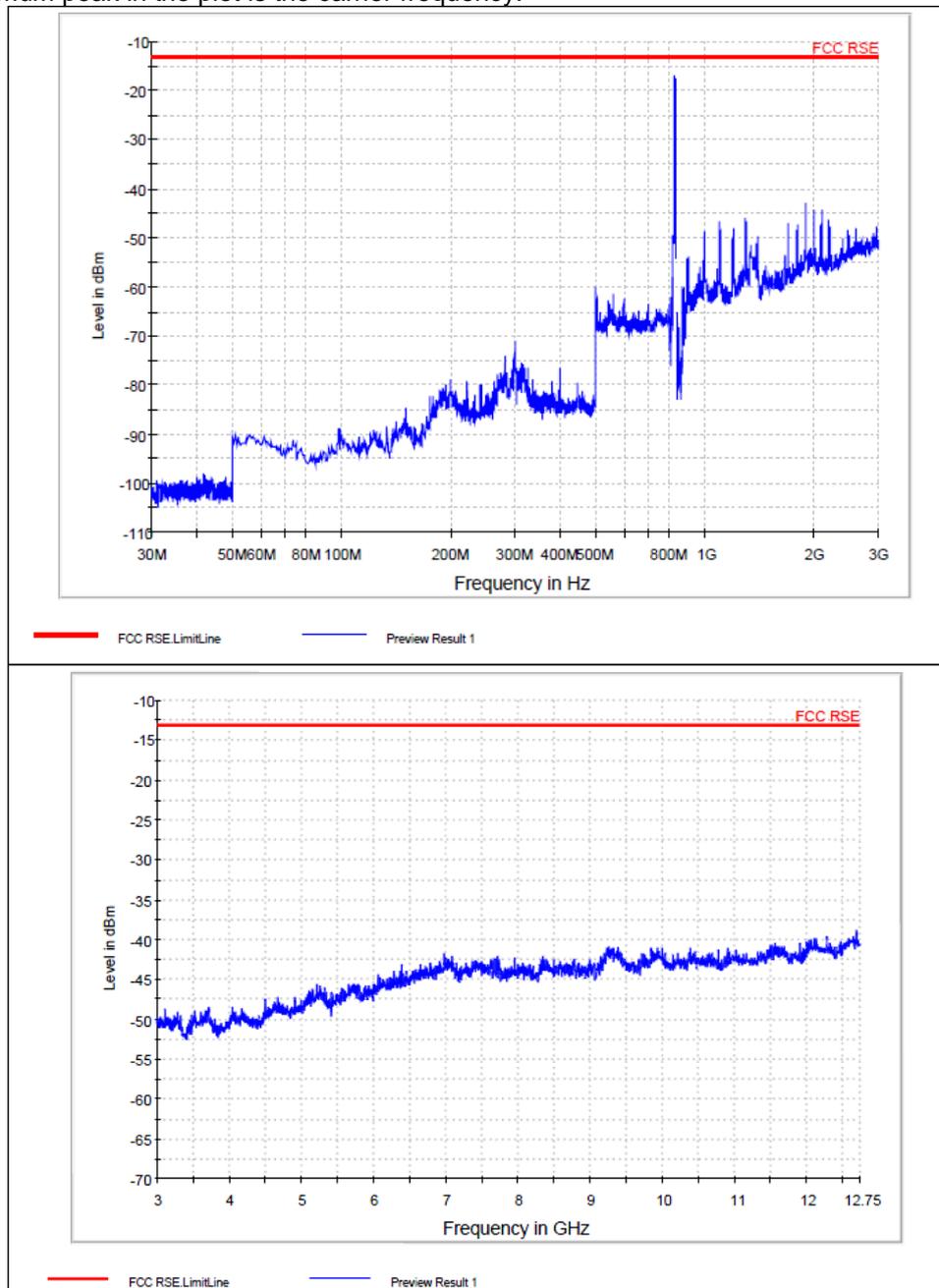


Spurious radiated emissions

WCDMA850 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

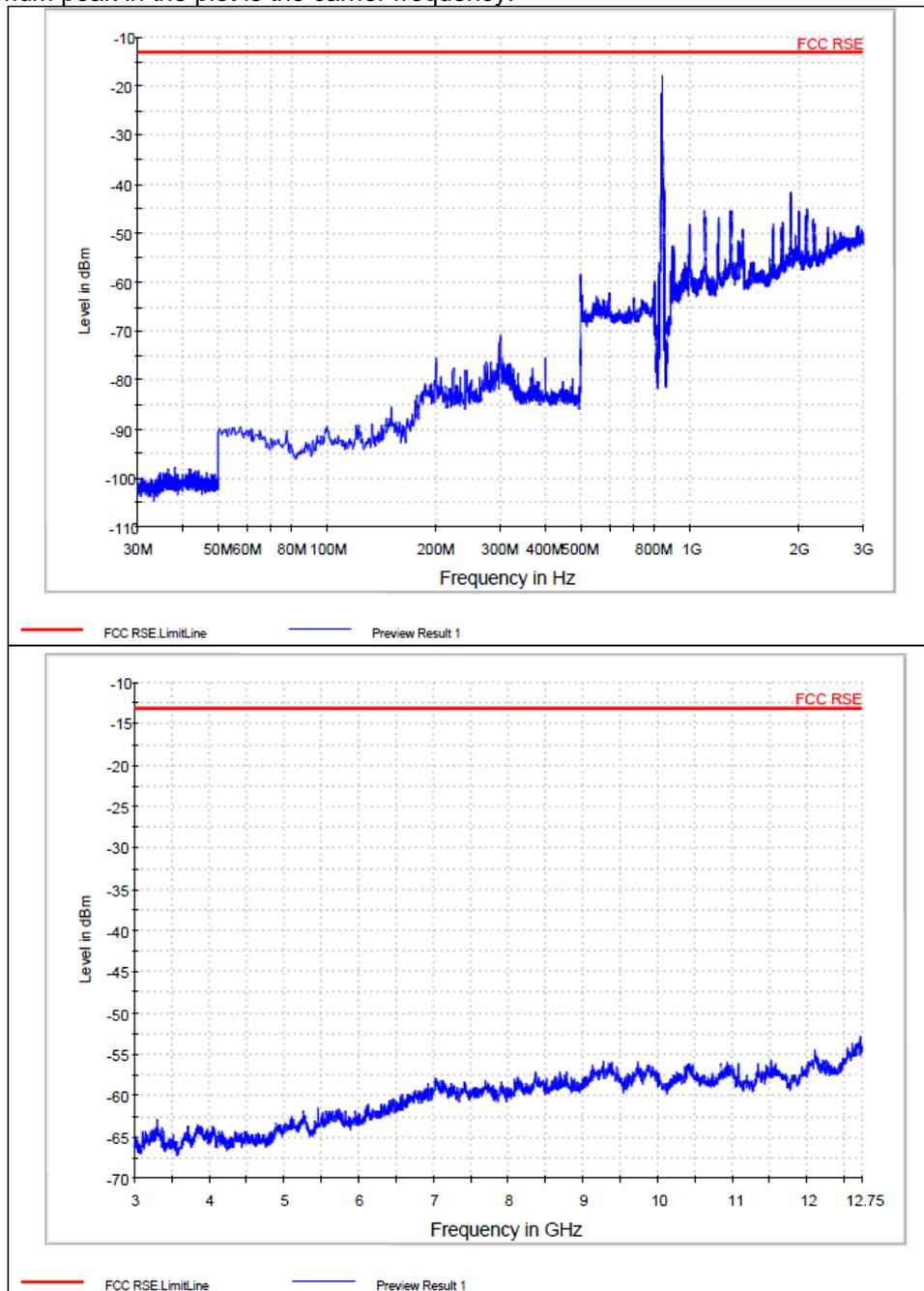


Spurious radiated emissions

WCDMA 850 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

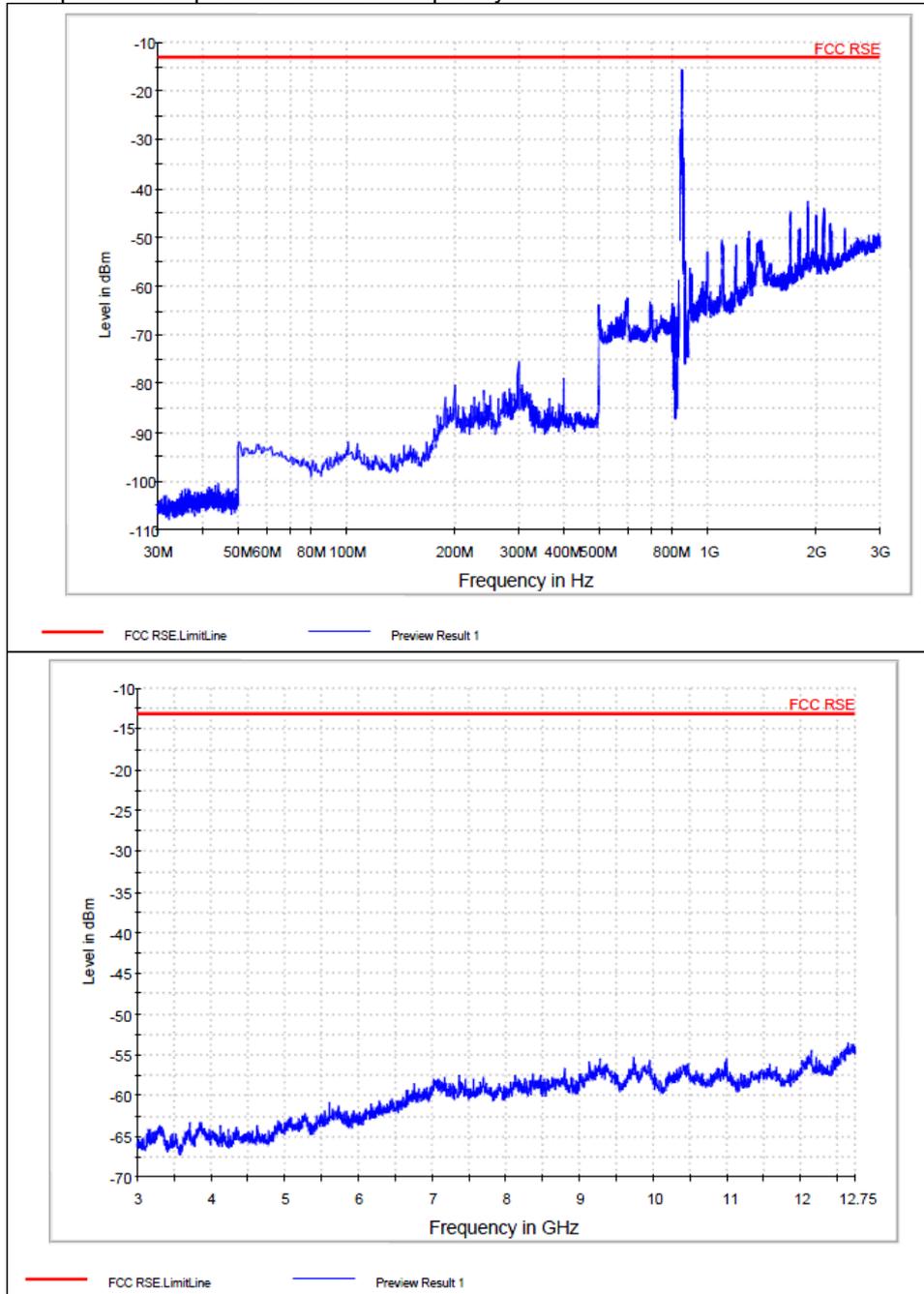


Spurious radiated emissions

WCDMA 850 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.

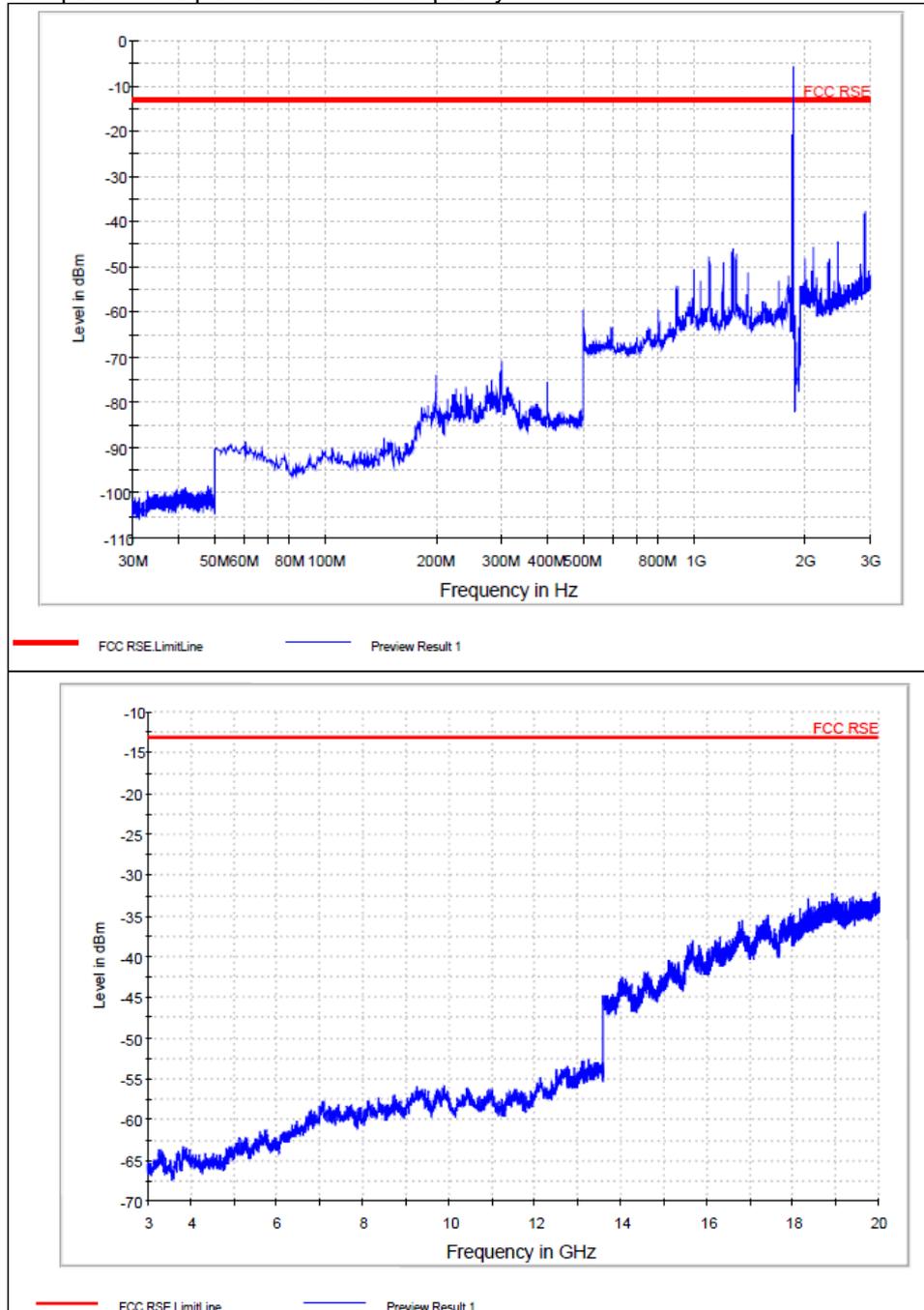


Spurious radiated emissions

WCDMA1900 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

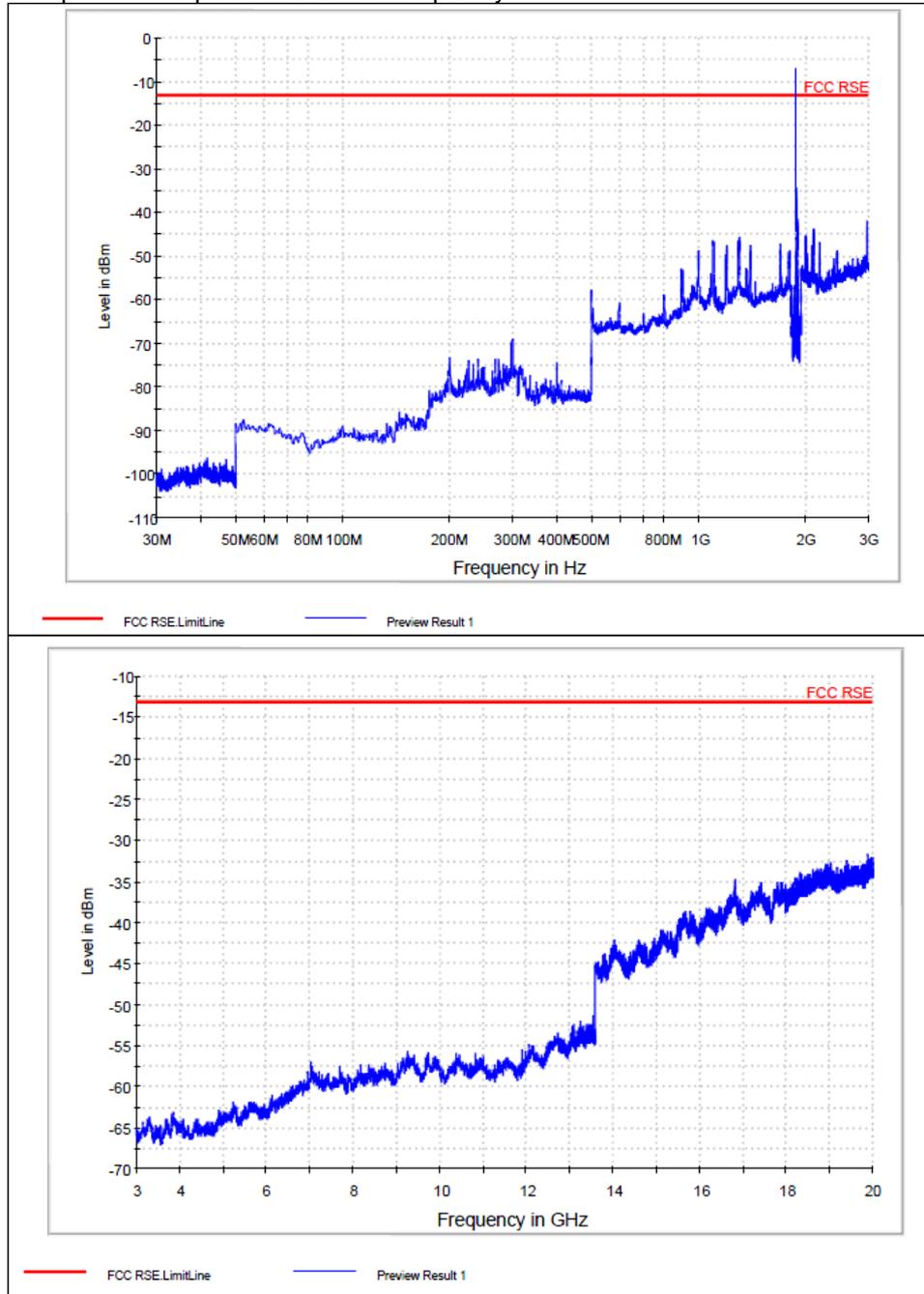


Spurious radiated emissions

WCDMA1900 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

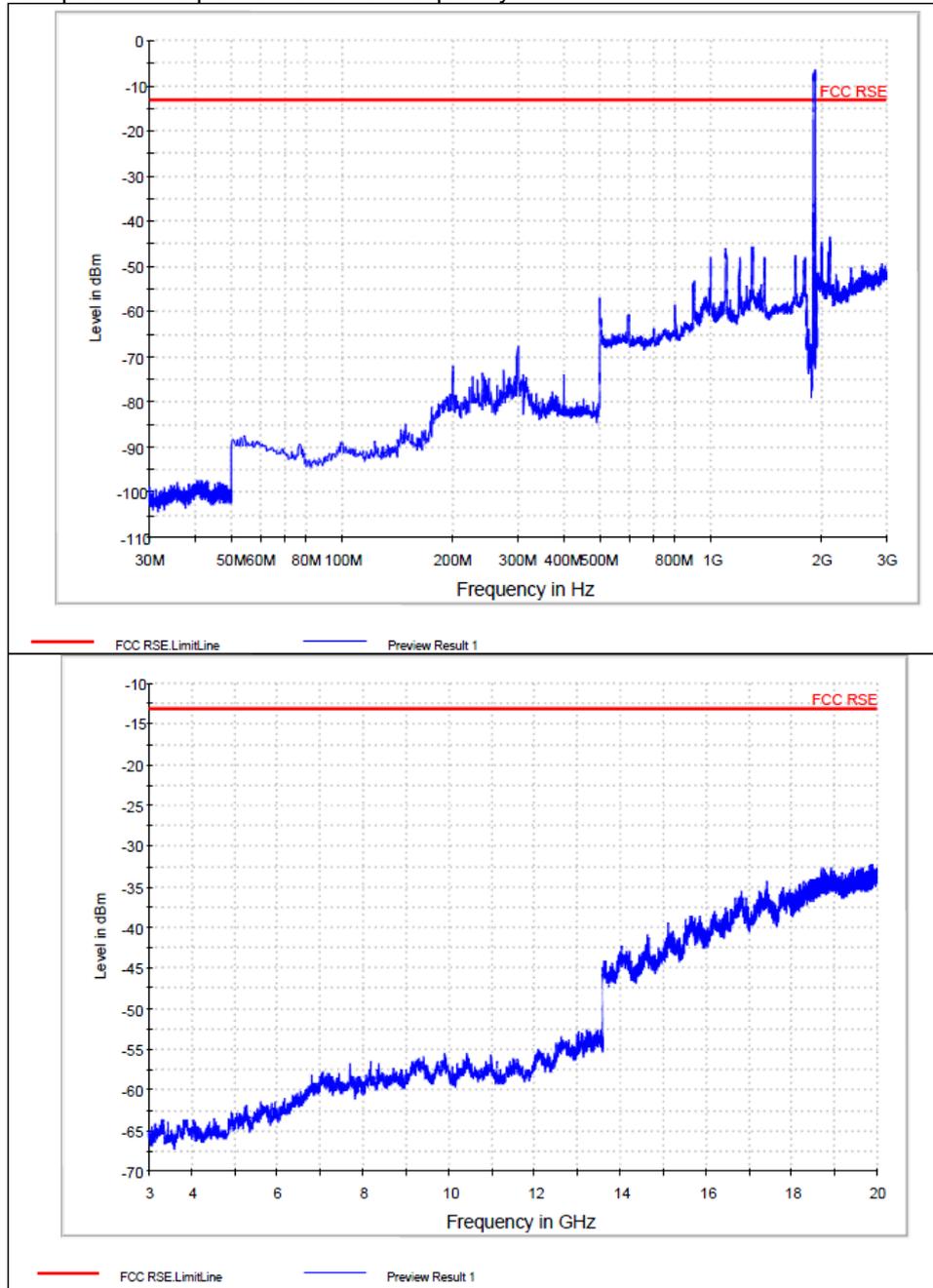


Spurious radiated emissions

WCDMA1900 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.

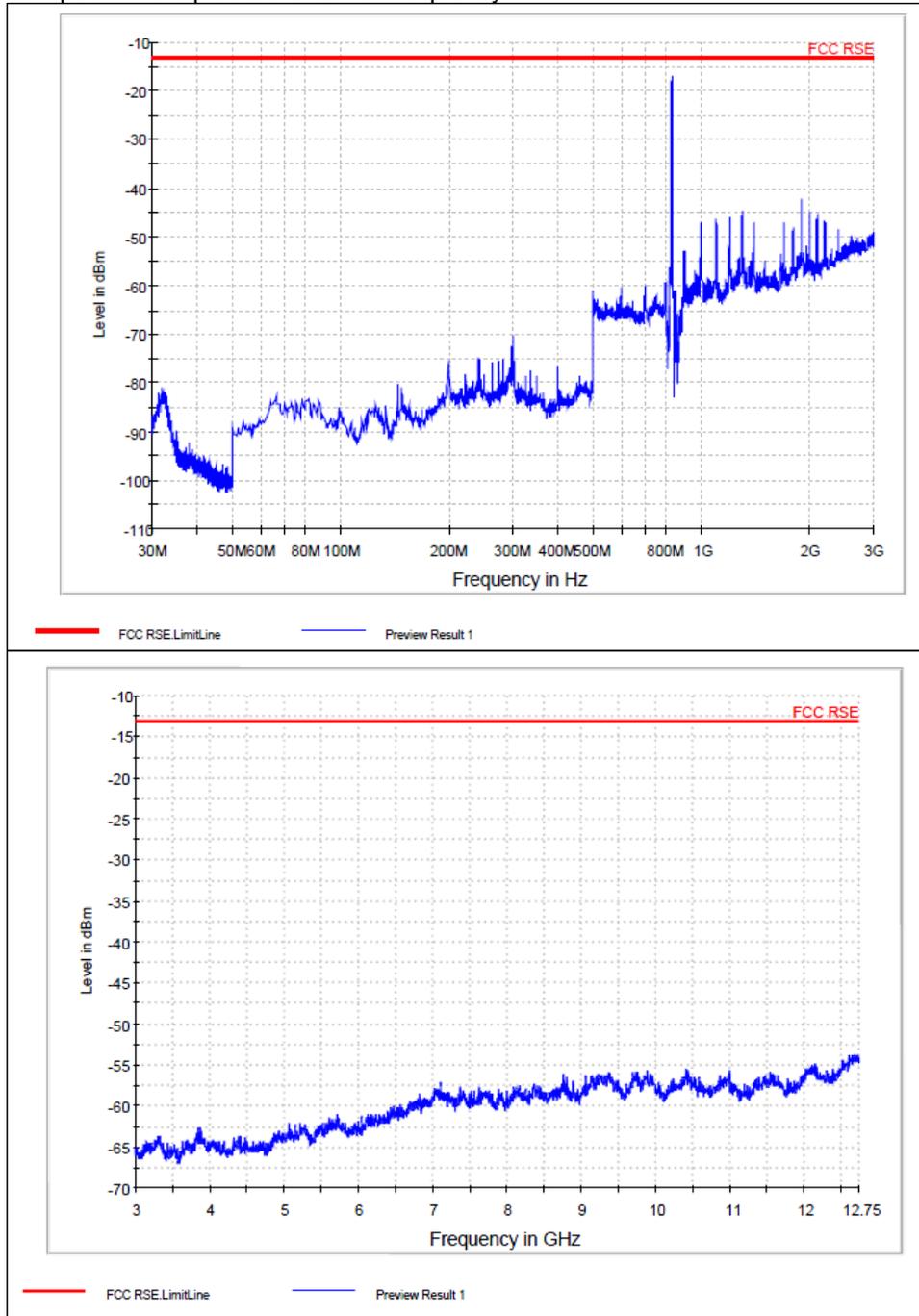


Spurious radiated emissions

HSPA850 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

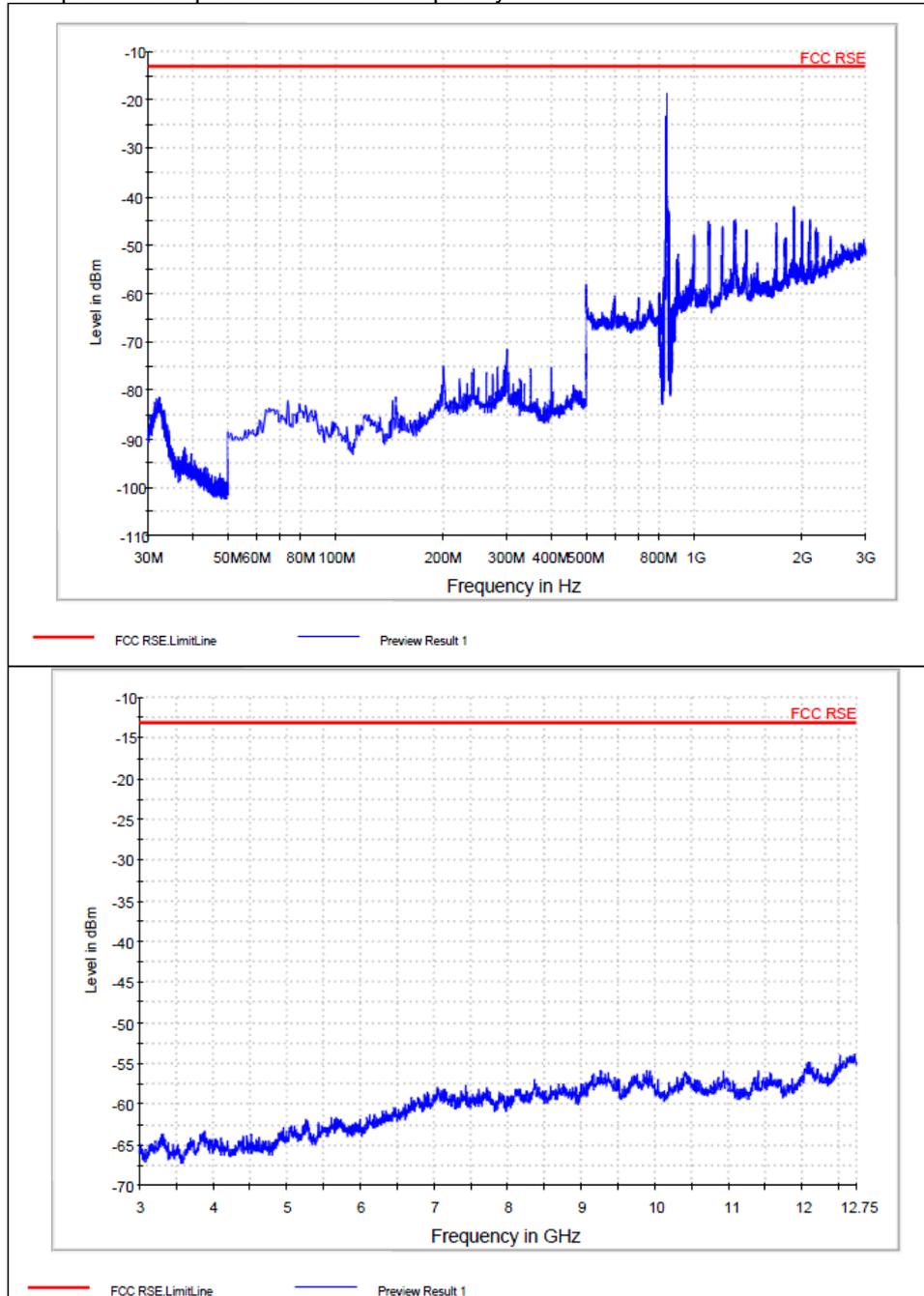


Spurious radiated emissions

HSPA850 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

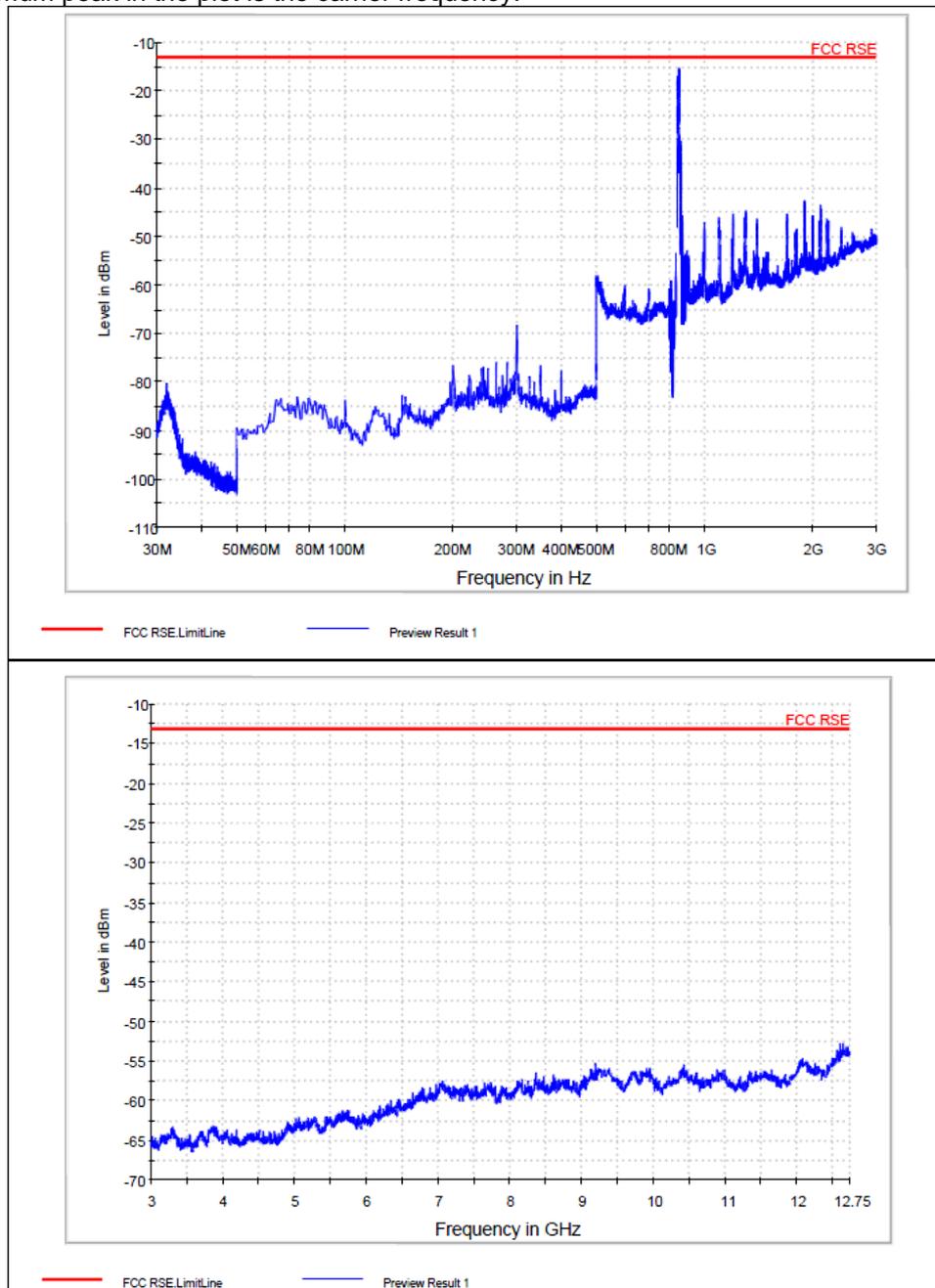


Spurious radiated emissions

HSPA850 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.

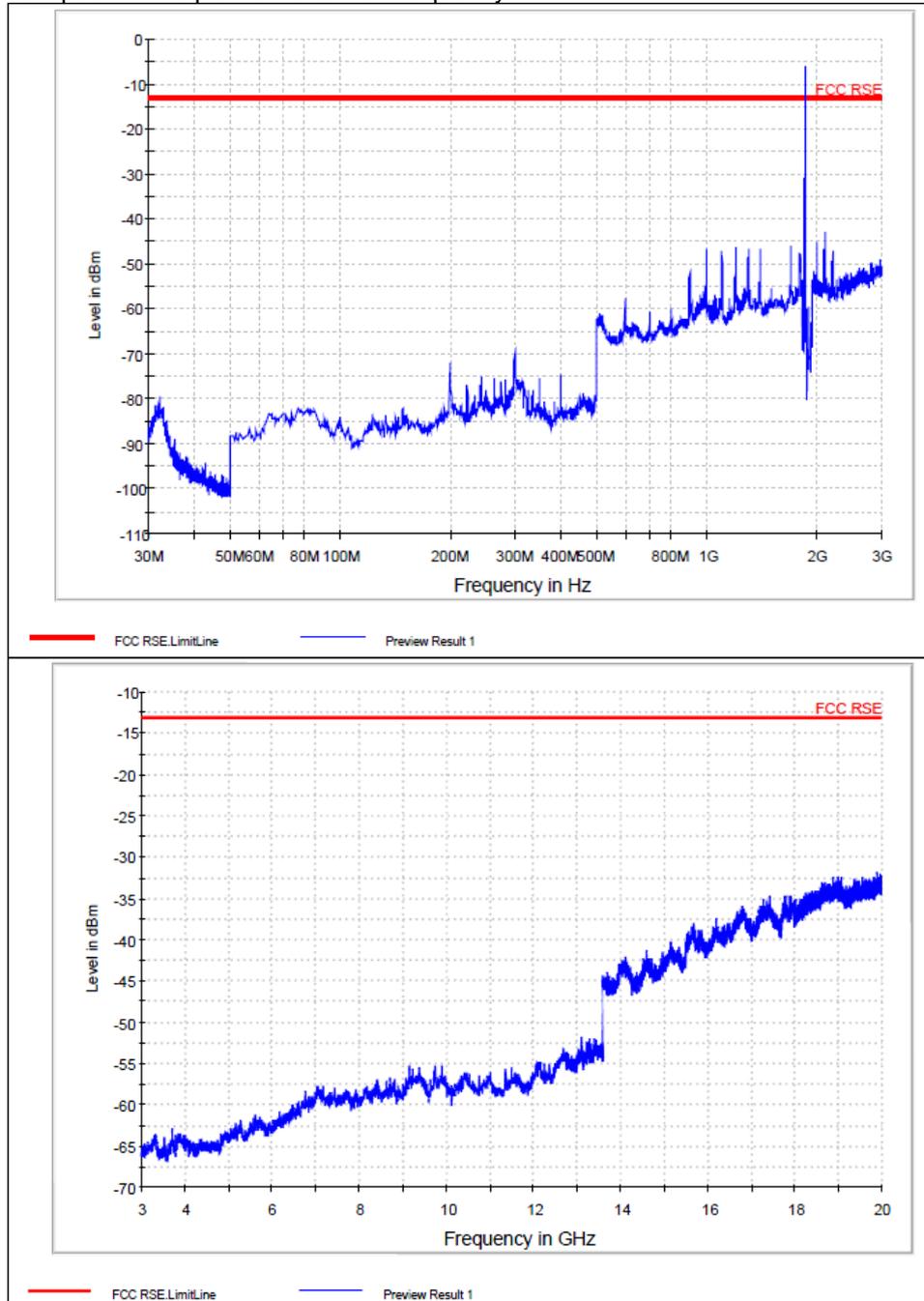


Spurious radiated emissions

HSPA1900 Modulation test result:

Low channel:

Note: The maximum peak in the plot is the carrier frequency.

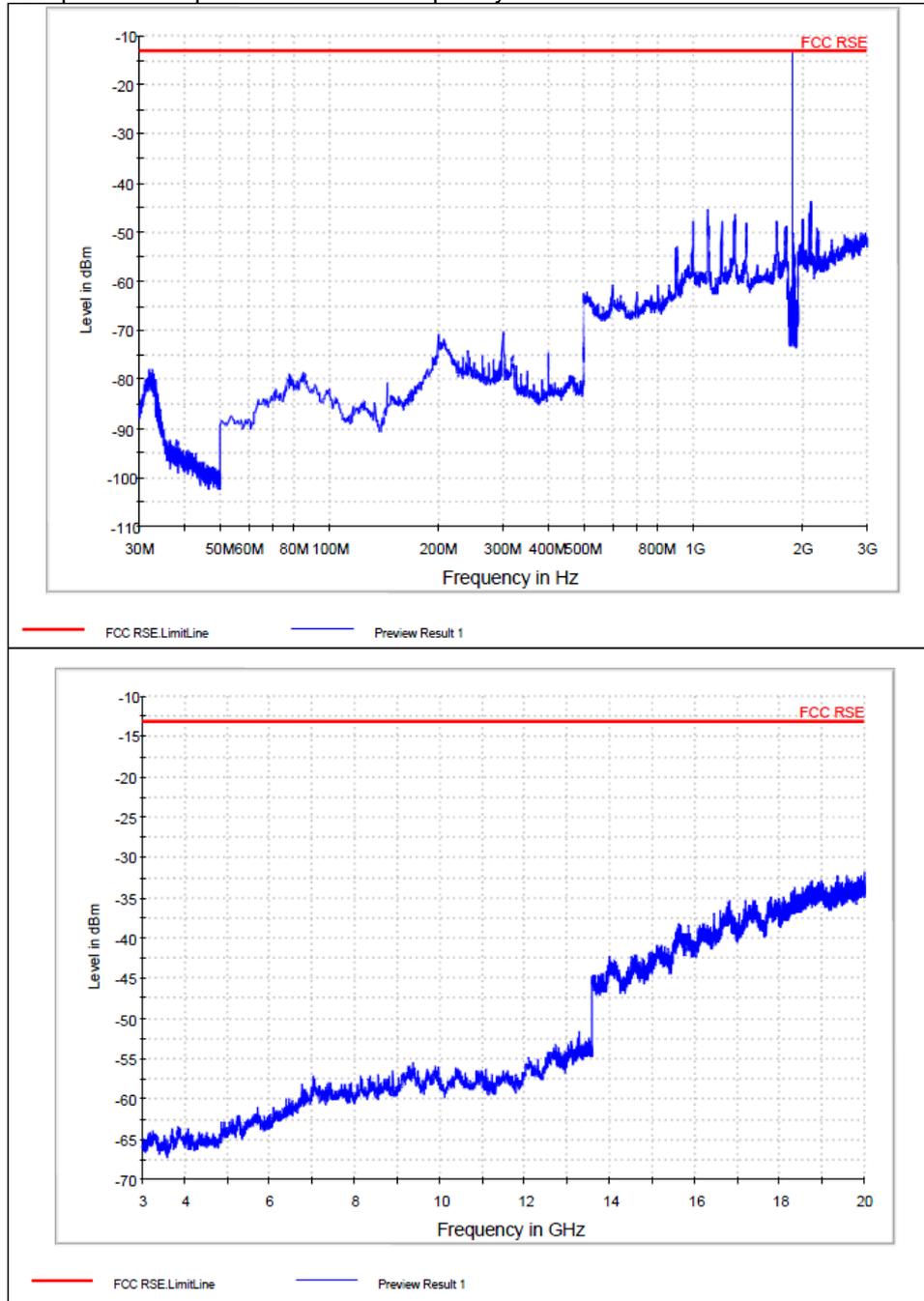


Spurious radiated emissions

HSPA1900 Modulation test result:

Mid channel:

Note: The maximum peak in the plot is the carrier frequency.

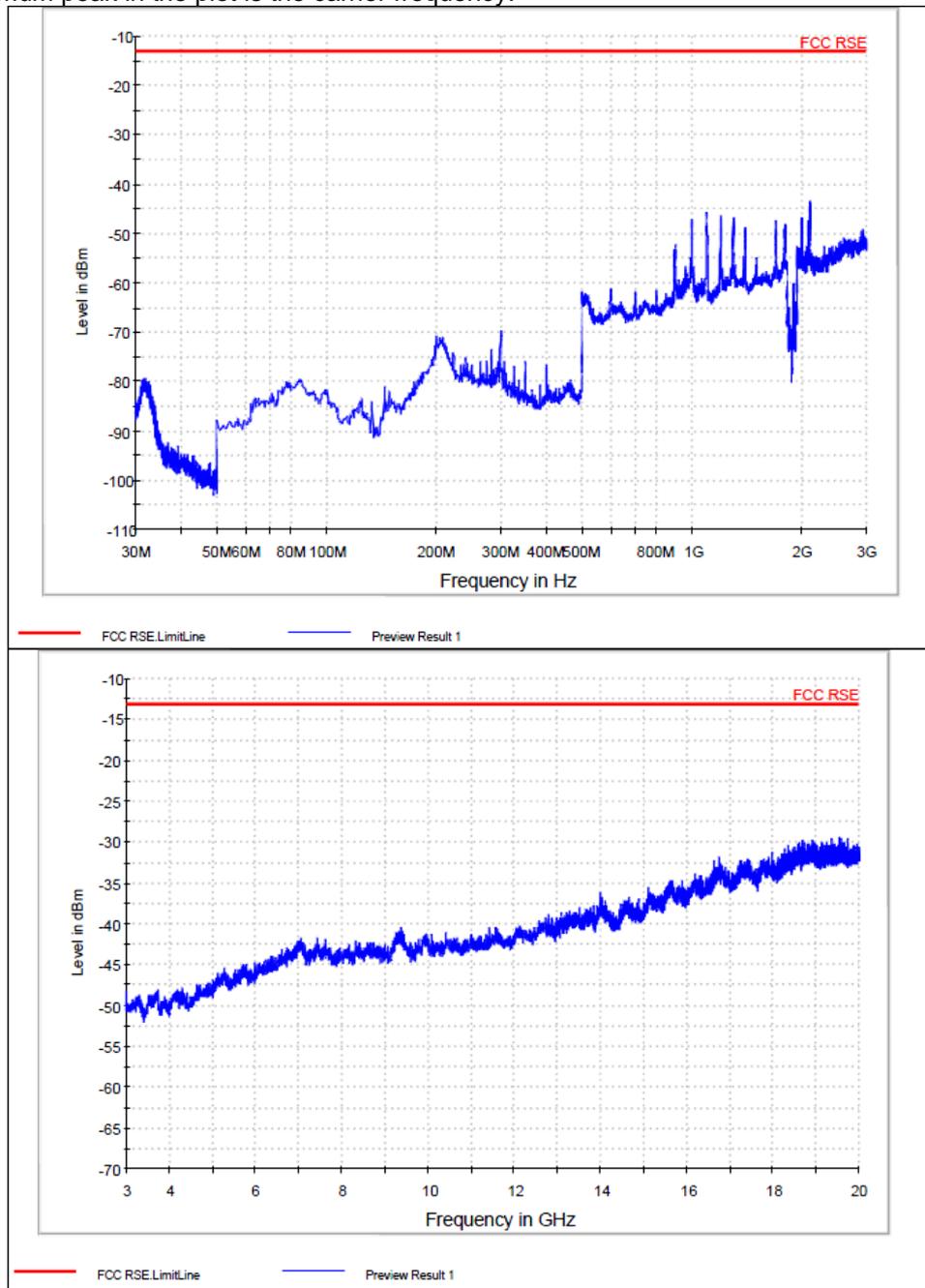


Spurious radiated emissions

HSPA1900 Modulation test result:

High channel:

Note: The maximum peak in the plot is the carrier frequency.





Test Equipment List

Spurious radiated emissions Test

DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	CAL.DUE.DATE
Horn Antenna	ETS-Lindgren	3160-09	LM4214	2013-03-02
EMI Antenna	Schwarzbeck	VULB 9163	9163 301	2012-04-29
Dual-Ridge Waveguide Horn Antenna	ETS-Lindgren	3164-05	00085724	2013-02-18
Universal Radio Communication Tester	Agilent	5515C	GB47460389	2012-09-21



8 System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

System Measurement Uncertainty

Items	Extended Uncertainty
Conducted Transmit Power test	U=0.76dB(k=2)
Spurious Emission test	U=1.61dB(k=2)