FCC LISTED,
REGISTRATION
NUMBER: 905266

IC LISTED,
REGISTRATION
NUMBER: IC 4621

Advanced Technologies for Wireless

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TEST REPORT

Report No.: 25903RET

TEST NAME: FCC PART 22, PART 24 & PART 15 (Electromagnetic emissions)

Product	:	3.5 G (HSDPA, WCDMA, GPRS, EGPRS) USB DATA MODEM
Trade Mark	:	GIANT ELECTRONICS
Model/type Ref.	:	D301
Manufacturer	:	GIANT ELECTRONICS LTD.
Requested by	:	GIANT ELECTRONICS LTD.
Other identification of the product	:	FCC ID: K7GD301 Prototype
Standard(s)	:	FCC Part 22 & 24 FCC Part 15, Subpart C

This test report includes 3 annexes and therefore the total number of pages is 127

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1. COMPETENCE AND GUARANTEES

Centro de Tecnología de las Comunicaciones (AT4 WIRELESS), S.A. is a laboratory with a measurement facility in compliance with the requirements of Section 2.948 of the FCC rules and has been added to the list of facilities whose measurements data will be accepted in conjunction with applications for Certification under Parts 15 or 18 of the Commission's Rules. Registration Number: 905266.

Centro de Tecnología de las Comunicaciones (AT4 WIRELESS), S.A. is a laboratory with a measurement site in compliance with the requirements of RSS 212, Issue 1 (Provisional) and has been added to the list of filed sites of the Canadian Certification and Engineering Bureau. Reference File Number: IC 4621.

In order to assure the traceability to other national and international laboratories, AT4 WIRELESS has a calibration and maintenance programme for its measuring equipment.

AT4 WIRELESS guarantees the reliability of the data presented in this report, which is the result of measurements and tests performed to the item under test on the date and under the conditions stated on the report and is based on the knowledge and technical facilities available at AT4 WIRELESS at the time of execution of the test.

AT4 WIRELESS is liable to the client for the maintenance by its personnel of the confidentiality of all information related to the item under test and the results of the test.

2. GENERAL CONDITIONS

1. This report only refers to the item that has undergone the test.
2. This report does not constitute or imply by its own an approval of the product by the Certification Bodies or competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without written approval of AT4 WIRELESS.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written approval of AT4 WIRELESS and the Accreditation Bodies.

3. CHARACTERISTICS OF THE TEST

3.1 TEST REQUESTED

Radio measurements according to FCC parts 22 and 24 for 3.5 G (HSDPA, WCDMA, GPRS, EGPRS) USB data modem.

1. Radio measurements according to FCC parts 22 and 24 for 3.5 G (HSDPA, WCDMA, GPRS, EGPRS) USB data modem.
2. Continuous conducted emission, power leads:

   Standard: FCC Rules and Regulations 47 CFR Part 15

   Limit: Class B

   Method: FCC Rules and Regulations 47 CFR Part 15, Subpart C

3.2 REQUIREMENTS AND METHOD

The test has been carried out according to the following documents and standards:

1. FCC part 22.
2. FCC part 24.
3. FCC Rules and Regulations 47 CFR Part 15, Subpart C: Limits and methods of measurements for radio frequency devices. Intentional radiators

Radiated testing was performed in AT4 WIRELESS' semi-anechoic chamber. This site has been fully described in a report submitted to the FCC and was accepted in a letter dated July 25, 2002. Radiated measurements were made in accordance with the general procedures of ANSI C63.4: 2003 and substitution method according to TIA/EIA 603-C: 2004.

The testing procedures used are:

1. PEEM001: Medida de la tensión perturbadora en bornes de alimentación según EN 55022.

Uncertainty (factor k=2) was calculated according to the following CETECOM's internal documents:

1. PODT000: Procedimiento para el cálculo de incertidumbres de medida
2. FEM12_07: Formato de cálculo de incertidumbre a aplicar en la medida de la tensión perturbadora en bornes de alimentación según EN 55022.

The instrumentation used to perform the testing is listed below:

1. Semianechoic Absorber Lined Chamber IR 11. BS.
2. Control Chamber IR 12.BC.
3. Spectrum Analyzer Agilent E4440A.
4. Bilog antenna CHASE CBL6111.
5. Antenna tripod EMCO 11968C.
6. Antenna mast EM 1072 NMT.
7. Rotating table EM 1084-4. ON.
8. Double-ridge Guide Horn antenna 1-18 GHz HP 11966E.
9. Double-ridge Guide Horn antenna 18-40 GHz Agilent 119665J.
10. RF pre-amplifier Miteq AFS5-04001300-15-10P-6.
11. RF pre-amplifier Miteq JS4-12002600-30-5A.
12. EMI Test Receiver R&S ESIB26.
13. Universal Radio communication Tester R&S CMU200.
14. Power splitter Picosecond 5333.
15. 10 dB attenuator HP 8491B.
16. Multi Device Controller EMCO 2090.

17. Climatic chamber HERAEUS VM 07/100.
18. DC Power supply R & S NGPE 40/40.
19. Transient limiter. HP 11947A.
20. Line Impedance Stabilization Network (L.I.S.N.) R&S. ESH2-Z5.

4. IDENTIFICATION DATA SUPPLIED BY THE APPLICANT

Identification data in this section has been supplied by the client.

4.1 APPLICANT

Name or Company: GIANT ELECTRONICS LTD.

Address: 7/F, Elite Industrial Building, 135-137 Hoi Bun Road, Kwun Tong, Kowloon

City: Hong Kong

Postal code: ----

Country: CHINA

Telephone: +852 2797 1428

Fax: +852 2343 6224

4.2 REPRESENTATIVE

Name: Derek Shek (Derek.shek.giant@elitecorp.com)

4.3 TEST SAMPLES SUPPLIER

Name or Company: GIANT ELECTRONICS LTD.

Address: Same as indicated in point 4.1.

Samples undergoing test have been selected by: **the client.**

4.4 IDENTIFICATION OF ITEM/ITEMS TESTED

Product: 3.5 G (HSDPA, WCDMA, GPRS, EGPRS) USB DATA MODEM

Trade mark: GIANT ELECTRONICS **Model:** D301

HW version: ES2.0 **SW version:** SLE-2.00-PRETEST1

Manufacturer: GIANT ELECTRONICS LTD.

Description: 3.5 G (HSDPA, WCDMA, GPRS, EGPRS) USB DATA MODEM

5. USAGE OF SAMPLES, PERIOD OF TESTING AND ENVIRONMENTAL CONDITIONS

5.1 USAGE OF SAMPLES

Sample M/01 is formed by the following elements:

Control No.	Description	Model	Serial No.	Date of reception
25903/09	3.5 G USB modem with integral antenna	D301	----	16/04/07

Sample M/02 is formed by the following elements:

Control No.	Description	Model	Serial No.	Date of reception
25903/43	3.5 G USB modem with antenna connector	D301	----	28/05/07

Sample S/01 is composed of the following elements:

Control No.	Description	Model	Serial No.	Date of reception
25903/16	2G/3G USB MODEM	D301	358356000548960	16/04/07

During the tests were used next ancillary equipment:

Internal Control Nr.	Description	Model	Serial number	Date of arrival
25903/-	DC power supply, property of AT4 WIRELESS	---	---	---
25903/-	CMU, property of AT4 WIRELESS	---	---	---
25903/-	Antenna, property of AT4 WIRELESS	Toshiba	---	---

1. Sample M/01 has undergone following test(s).

   Radiated power and radiated spurious emissions tests indicated in annexes A and B.

2. Sample M/02 has undergone following test(s).

   All tests indicated in annexes A and B, except radiated power and radiated spurious emissions.

3. Sample S/01 has undergone the following test(s):

   Continuous conducted emission, power leads in annex C.

5.2 PERIOD OF TESTING

The performed test started on 2007-05-03 and finished on 2007-06-14.

The tests as detailed in this report have been performed at AT4 WIRELESS.

5.3 ENVIROMENTAL CONDITIONS

In the control chamber the following limits were not exceeded during the test:

Temperature	Min. = 25 ºC Max. = 26 ºC
Relative humidity	Min. = 51 % Max. = 51 %
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 0,5 Ω

In the semianechoic chamber (21 meters x 11 meters x 8 meters) the following limits were not exceeded during the test.

Temperature	Min. = 26 ºC Max. = 26 ºC
Relative humidity	Min. = 52 % Max. = 52 %
Air pressure	Min. = 1020 mbar Max. = 1020 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 0,5 Ω
Normal site attenuation (NSA)	< ±4 dB at 10 m distance between item under test and receiver antenna, (30 MHz to 1000 MHz)
Field homogenousity	More than 75% of illuminated surface is between 0 and 6 dB (26 MHz to 1000 MHz).

In the chamber for conducted measurements the following limits were no exceeded during the test:

Temperature	Min. = 23 ºC Max. = 23 ºC
Relative humidity	Min. = 50 % Max. = 50 %
Air pressure	Min. = 1020 mbar Max. = 1020 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 0,5 Ω

6. TEST RESULTS

Abbreviations used in the VERDICT column of the following tables are:

P Pass

F Fail

NA not applicable

NM not measured

FCC PART 22 PARAGRAPH	VERDICT			
	NA	P	F	NM
Clause 22.913: RF output power		P		
Clause 2.1055: Frequency stability		P		
Clause 22.917: Spurious emissions at antenna terminals		P		
Clause 22.917: Radiated emissions		P		

FCC PART 24 PARAGRAPH	VERDICT			
	NA	P	F	NM
Clause 24.232: RF output power		P		
Clause 24.235: Frequency stability		P		
Clause 24.238: Spurious emissions at antenna terminals		P		
Clause 24.238: Radiated emissions		P		

MEASURING RESULTS FOR ELECTROMAGNETIC EMISSION	VERDICT			
	NA	P	F	NM
Continuous conducted emission, power leads. Class C		P		

7. REMARKS AND COMMENTS

HSDPA modulation mode has not been tested to prove FCC 22 and 24 compliance because it is an improved mode of operation only for Downlink (UE reception), but using the normal WCDMA mode for UL (Up Link, UE transmission). Therefore HSDPA has no associated a Power class or modulation scheme different than WCDMA mode for the UL transmission.

Taking into account the above comments, testing in HSDPA modulation mode is redundant for FCC parts 22/24 as it is the same as WCDMA mode as long as UE transmission is concerned. WCDMA modulation mode has been tested as indicated on the present test report.

8. SUMMARY

Based on the results of the performed test, stated in annex A the item under test is **IN COMPLIANCE** with the specifications listed in section 3.1 "TEST REQUESTED".

NOTE: The results presented in this Test Report apply only to the particular item under test declared in section 4.4 "IDENTIFICATION OF ITEM/ITEMS TESTED" of this document, as presented for test on the date(s) declared in section 5, "USAGE OF SAMPLES, PERIOD OF TESTING AND ENVIRONMENTAL CONDITIONS".

ANNEX A

TEST RESULTS FOR FCC PART 22

Report No: 25903RET

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TEST CONDITIONS

Power supply (V):

V_{nom} = 5.0 Vdc

V_{max} = Not declared

V_{min} = Not declared

The subscripts nom, min and max indicates voltage test conditions (nominal, minimum and maximum respectively, as declared by the applicant).

Type of power supply = DC Voltage from USB port

Type of antenna = Integral antenna

TEST FREQUENCIES:

GPRS AND EDGE MODULATION

Lowest channel (128): 824.2 MHz

Middle channel (190): 836.6 MHz

Highest channel (251): 848.8 MHz

WCDMA MODULATION

Lowest channel (4132): 826.4 MHz

Middle channel (4182): 836.4 MHz

Highest channel (4233): 846.6 MHz

RF Output Power (conducted and E.R.P.)

SPECIFICATION

§2.1046 and 22.913.

The Effective Radiated Power (E.R.P.) of mobile transmitter and auxiliary test transmitter must not exceed 7 Watts (38.45 dBm).

METHOD

The conducted RF output power measurements were made at the RF output terminals of the EUT using an attenuator, power splitter and spectrum analyser. The EUT was controlled via the Universal Radio Communication tester R&S CMU200 selecting maximum transmission power of the EUT and different modes of modulation.

For radiated measurements the EUT was placed on a 1 m high non-conductive stand inside an anechoic chamber. The measuring antenna was placed at 3 m distance and the maximum field strength was measured for the three channels. The EUT was controlled via the Universal Radio Communication tester R&S CMU200 selecting maximum transmission power of the EUT and different modes of modulation.

The Effective Radiated Power (E.R.P.) is obtained by using the Substitution Method according to ANSI/TIA/EIA-603-C: 2004.

RESULTS

MAXIMUM OUTPUT POWER (CONDUCTED). See plots in next pages.

GPRS MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	33.04	32.86	32.69
Maximum peak power (W)	2.01	1.93	1.86
Measurement uncertainty (dB)	±1.5		

EDGE MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	30.75	30.95	30.55
Maximum peak power (W)	1.19	1.24	1.13
Measurement uncertainty (dB)	±1.5		

WCDMA MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	27.57	27.33	27.33
Maximum peak power (W)	0.57	0.54	0.54
Measurement uncertainty (dB)	±1.5		

MAXIMUM EFFECTIVE RADIATED POWER E.R.P. (RADIATED).

GPRS MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	33.95	34.71	34.34
Maximum peak power (W)	2.48	2.96	2.72
Measurement uncertainty (dB)	± 3.8		

RBW= 1 MHz VBW = 3 MHz

EDGE MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	31.45	32.61	32.53
Maximum peak power (W)	1.40	1.82	1.79
Measurement uncertainty (dB)	± 3.8		

RBW= 1 MHz VBW = 3 MHz

WCDMA MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	28.70	28.52	28.80
Maximum peak power (W)	0.74	0.71	0.76
Measurement uncertainty (dB)	± 3.8		

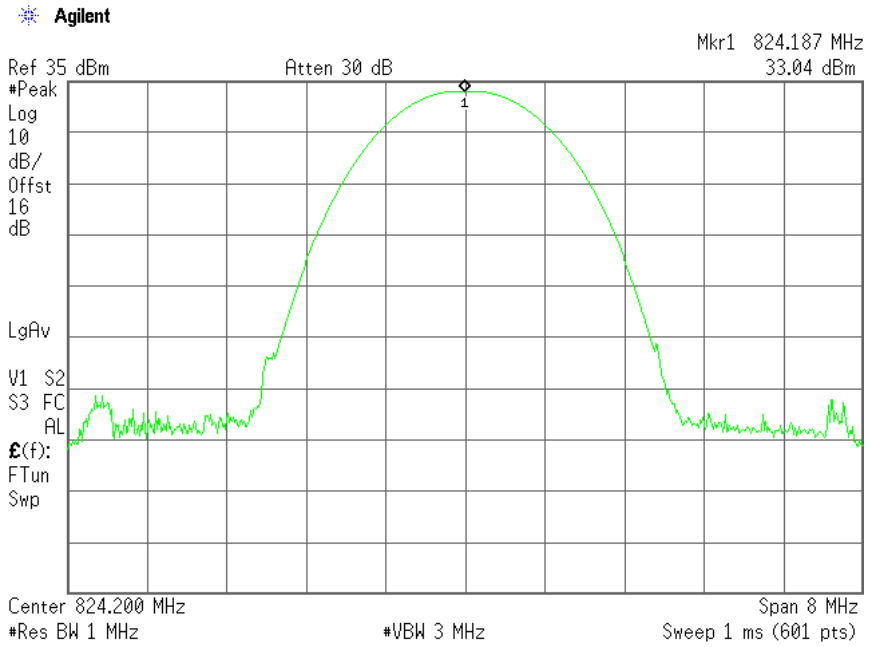
RBW= 8 MHz VBW = 8 MHz

Verdict: PASS

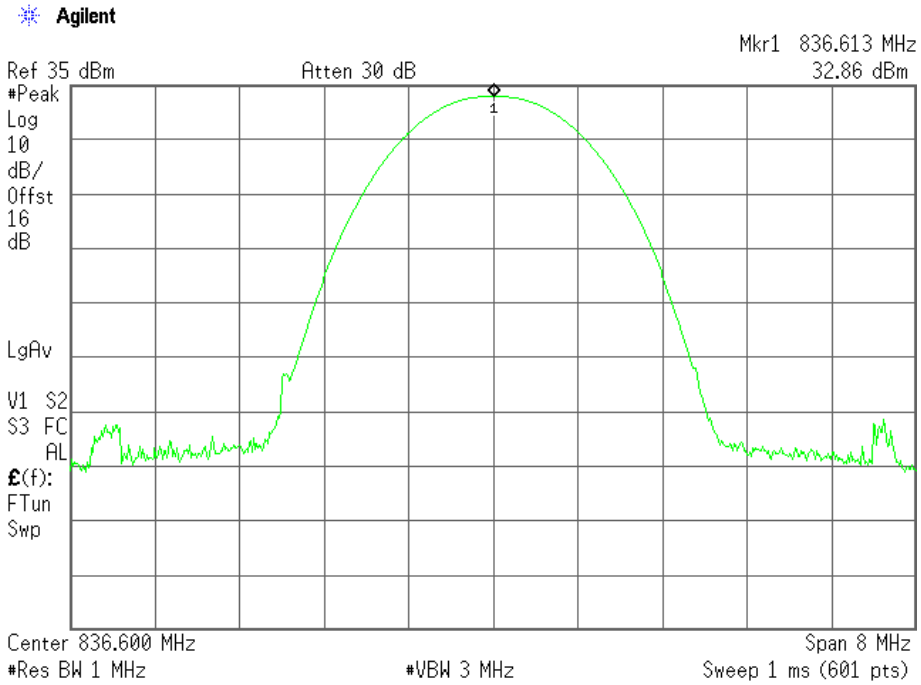
PEAK OUTPUT POWER (CONDUCTED).

GPRS MODULATION

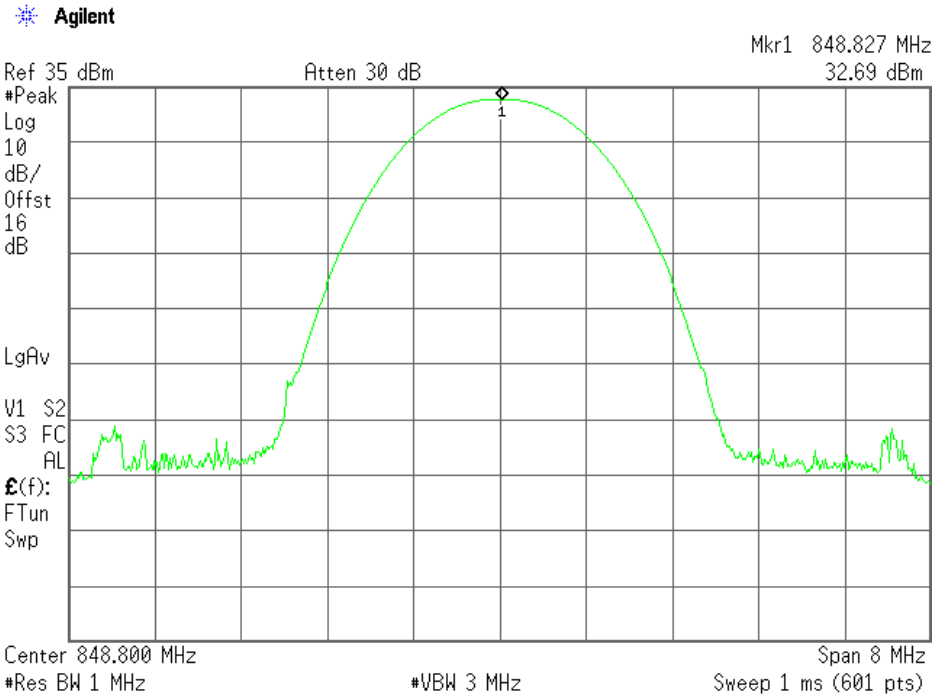
Lowest Channel.



Middle Channel.

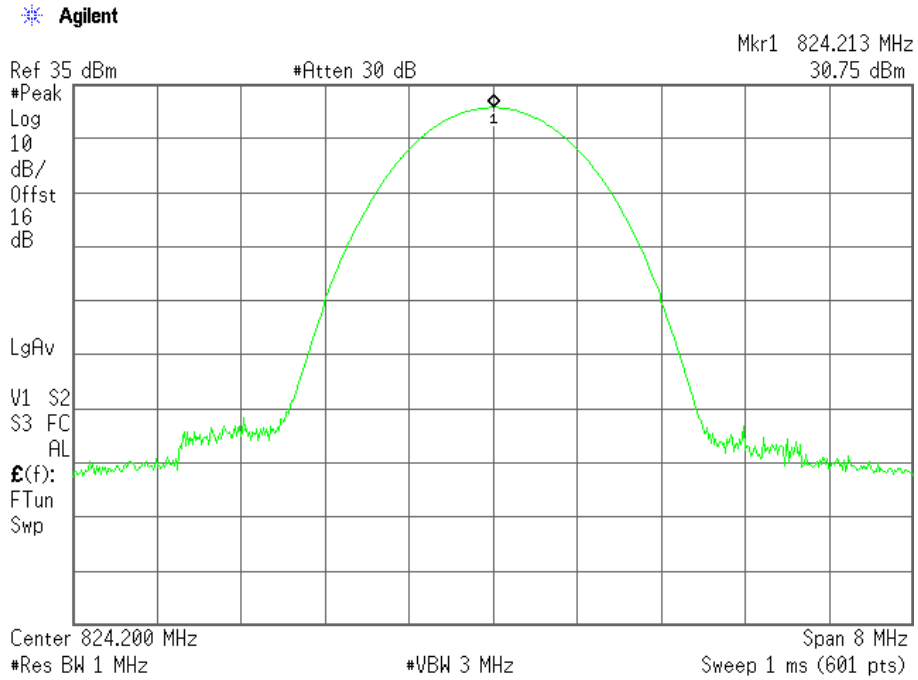


Highest Channel.

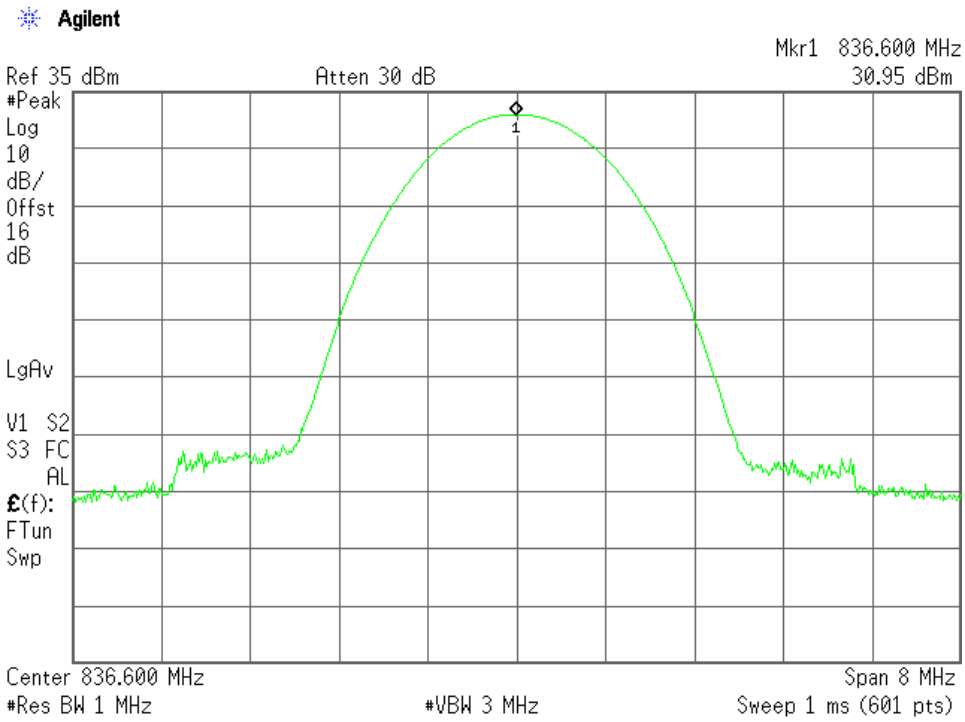


EDGE MODULATION

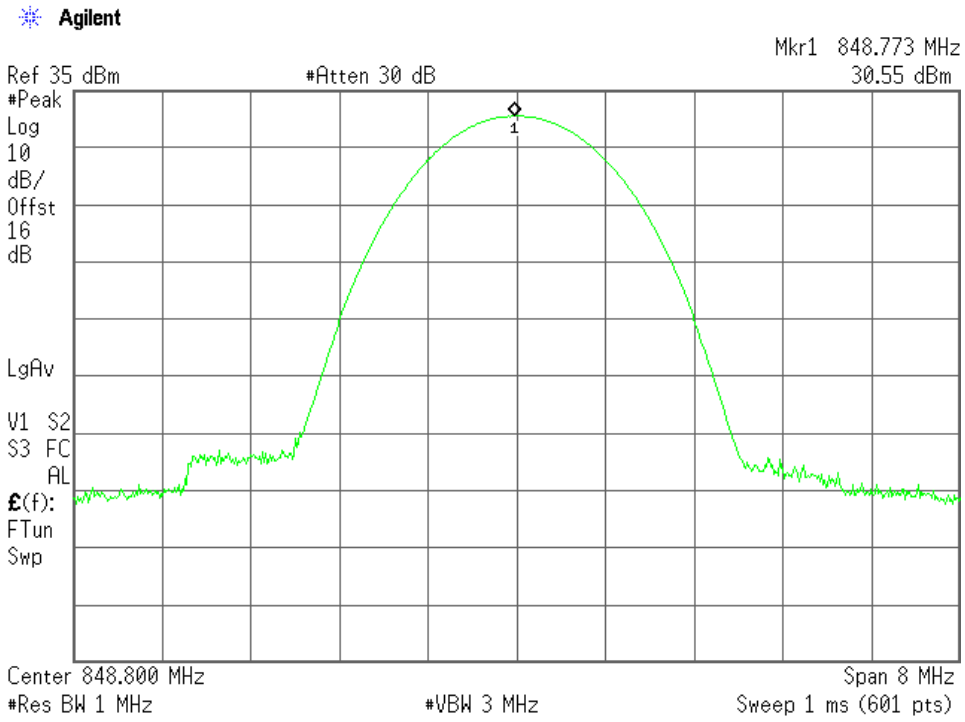
Lowest Channel.



Middle Channel.

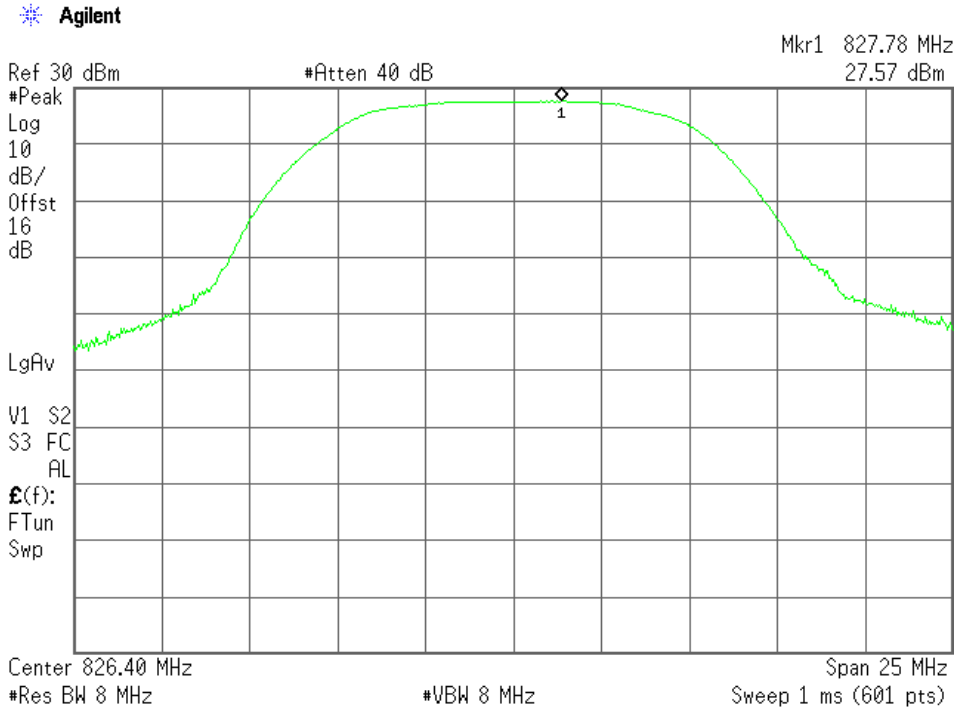


Highest Channel.

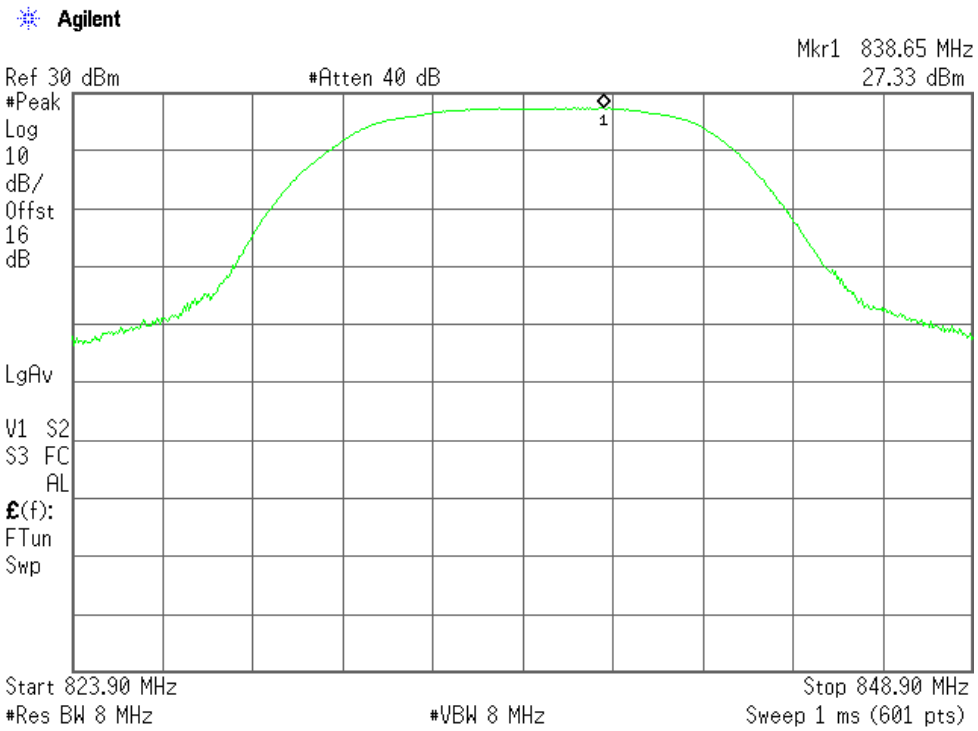


WCDMA MODULATION

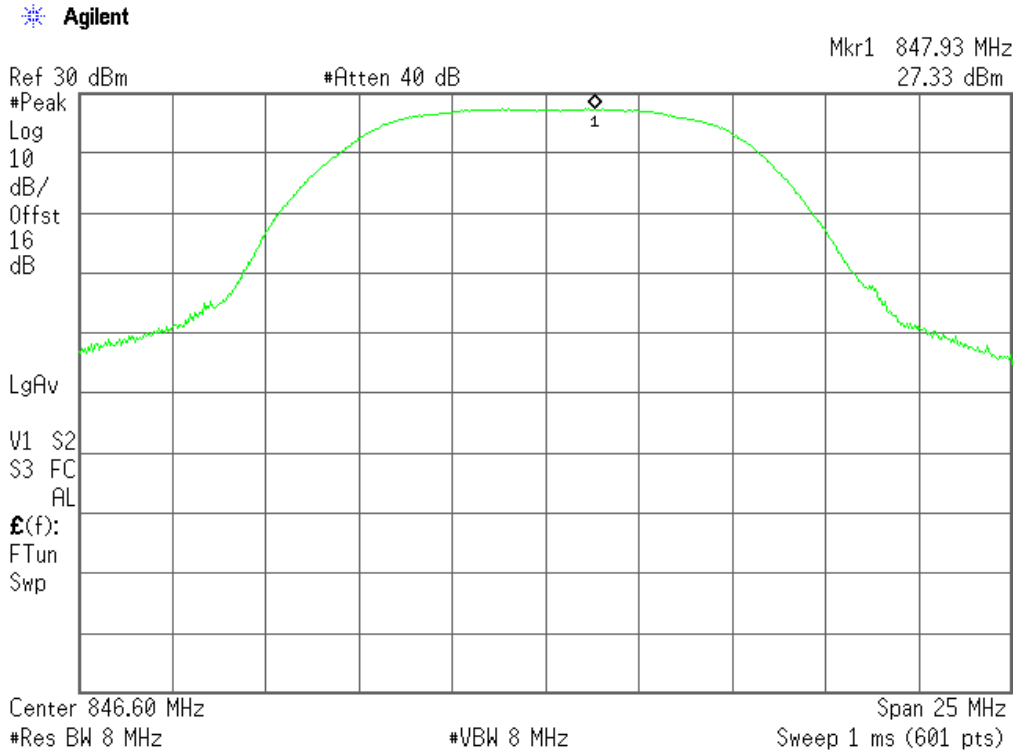
Lowest Channel.



Middle Channel.



Highest Channel.



Modulation Characteristics

SPECIFICATION

§2.1047

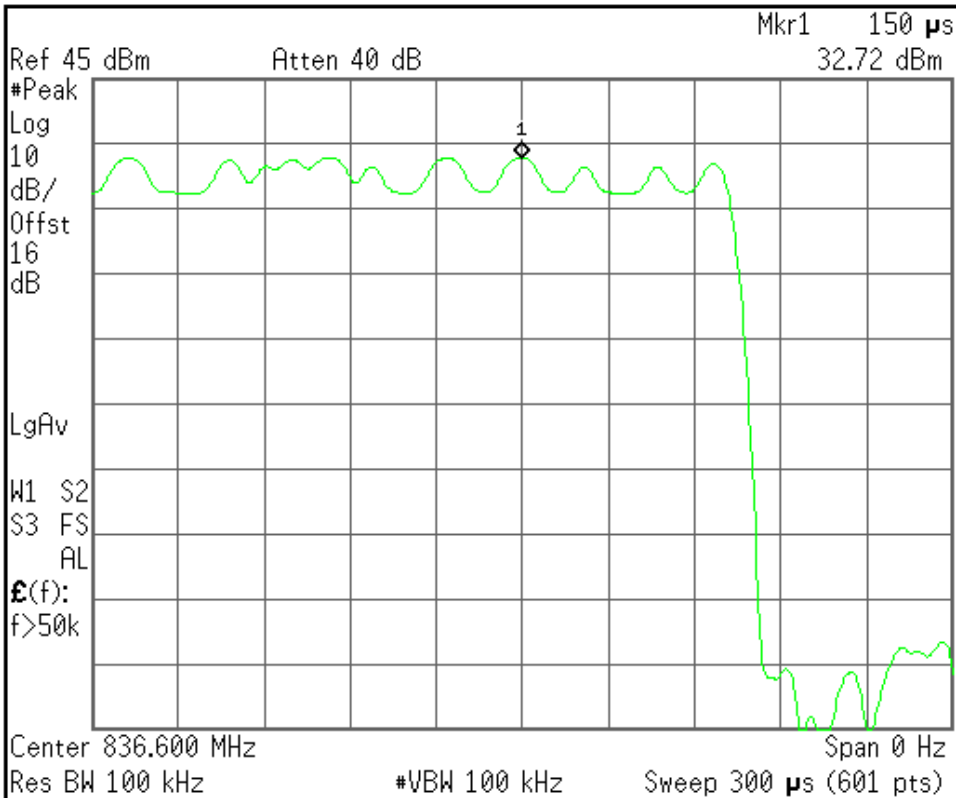
METHOD

The EUT uses GPRS (GMSK), EDGE (8-PSK) and WCDMA modulations, in which the information is digitised and coded into a bit stream..

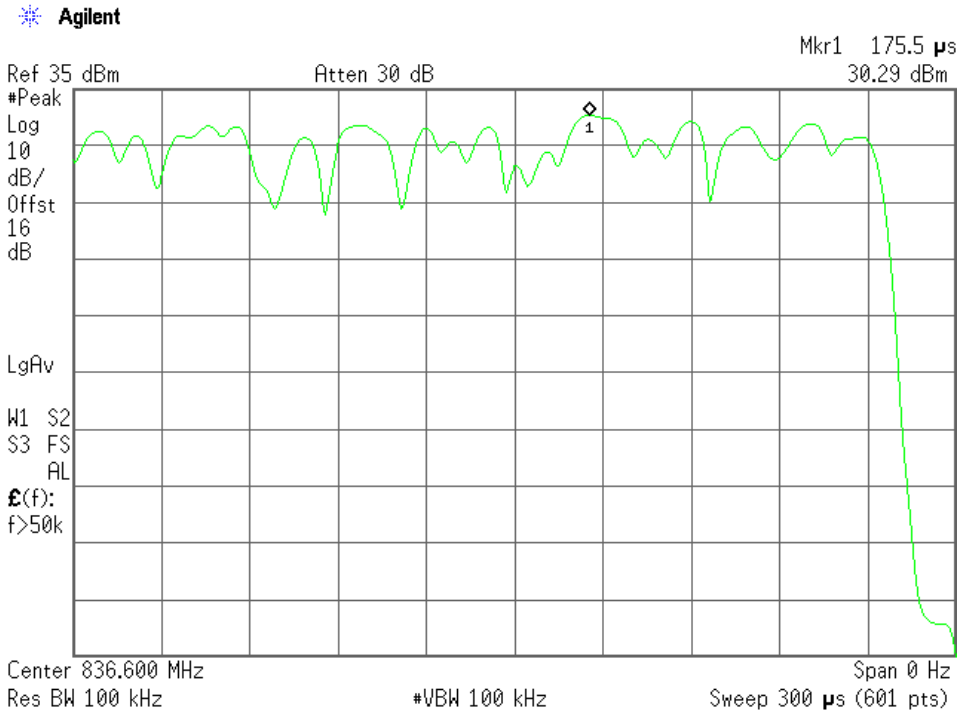
RESULTS

The following plot shows the modulation schemes in the EUT.

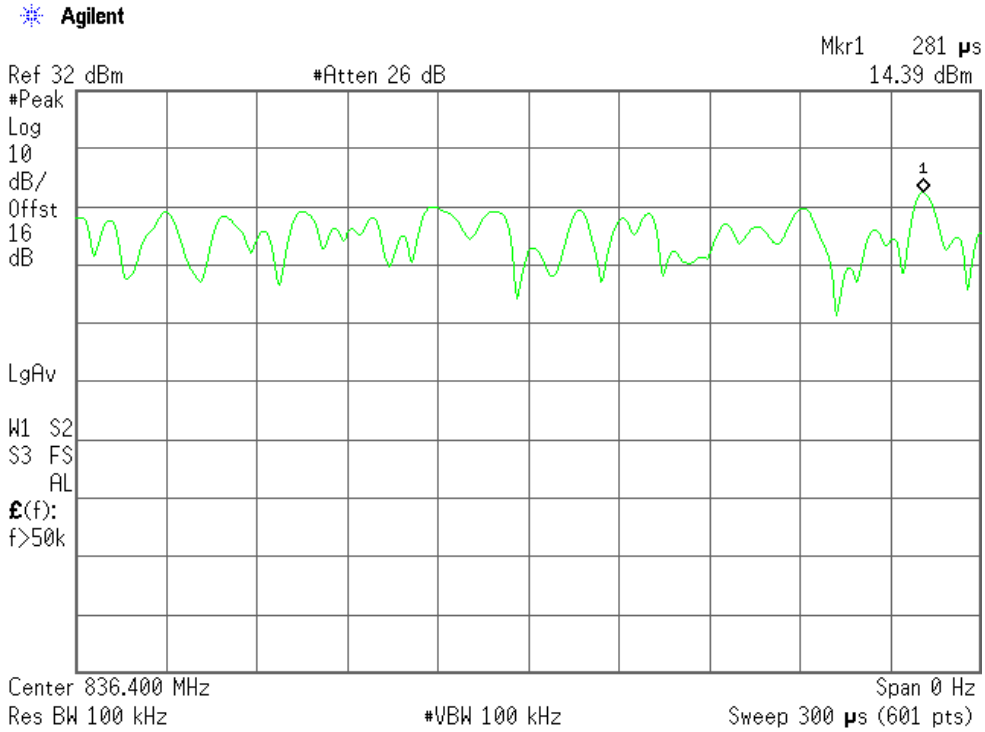
GPRS MODULATION



EDGE MODULATION



WCDMA MODULATION



Frequency Stability

SPECIFICATION

§2.1055

METHOD

The frequency tolerance measurements over temperature variations were made over the temperature range of –30ºC to +50ºC. The EUT was placed inside a climatic chamber and the temperature was raised hourly in 10ºC steps from –30ºC up to +50ºC.

The EUT was set in "call mode" in the middle channel using the Universal Radio Communication tester R&S CMU200, and the maximum frequency error was measured using the frequency meter of CMU200.

RESULTS

Frequency stability over temperature variations.

GPRS MODULATION

Temperature (ºC)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
+50	-24	-0.0287	-0.00000287
+40	14	0.0167	0.00000167
+30	-30	-0.0359	-0.00000359
+20	-21	-0.0251	-0.00000251
+10	-31	-0.0371	-0.00000371
0	-34	-0.0406	-0.00000406
-10	17	0.0203	0.00000203
-20	41	0.0490	0.00000490
-30	39	0.0466	0.00000466

EDGE MODULATION

Temperature (ºC)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
+50	-30	-0.0359	-0.00000359
+40	-25	-0.0299	-0.00000299
+30	-18	-0.0215	-0.00000215
+20	-26	-0.0311	-0.00000311
+10	-28	-0.0335	-0.00000335
0	-24	-0.0287	-0.00000287
-10	19	0.0227	0.00000227
-20	25	0.0299	0.00000299
-30	26	0.0311	0.00000311

WCMA MODULATION

Temperature (ºC)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
+50	33	0.0395	0.00000395
+40	-23	-0.0275	-0.00000275
+30	-17	-0.0203	-0.00000203
+20	-23	-0.0275	-0.00000275
+10	-29	-0.0347	-0.00000347
0	-25	-0.0299	-0.00000299
-10	-23	-0.0275	-0.00000275
-20	28	0.0335	0.00000335
-30	21	0.0251	0.00000251

Occupied Bandwidth

SPECIFICATION

§2.1049

METHOD

The EUT was configured to transmit a modulated carrier signal. An IF bandwidth of 3 kHz was used to determined the occupied bandwidth of the modulated emission for GPRS and EDGE modulation and 51 kHz for WCDMA modulation.

RESULTS

GPRS MODULATION

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	280	280	284
-26 dBc bandwidth (kHz)	315	320	321
Measurement uncertainty (kHz)	<±40		

EDGE MODULATION

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	282	275	281
-26 dBc bandwidth (kHz)	305	302	313
Measurement uncertainty (kHz)	<±40		

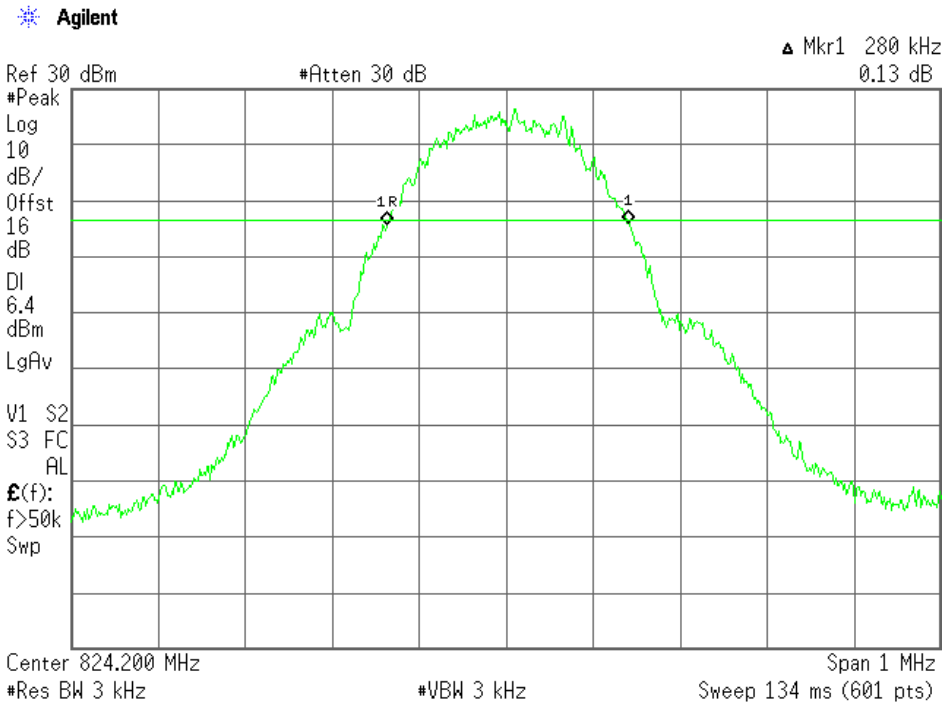
WCDMA MODULATION

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	4627	4640	4680
-26 dBc bandwidth (kHz)	4800	4813	4827
Measurement uncertainty (kHz)	<±513		

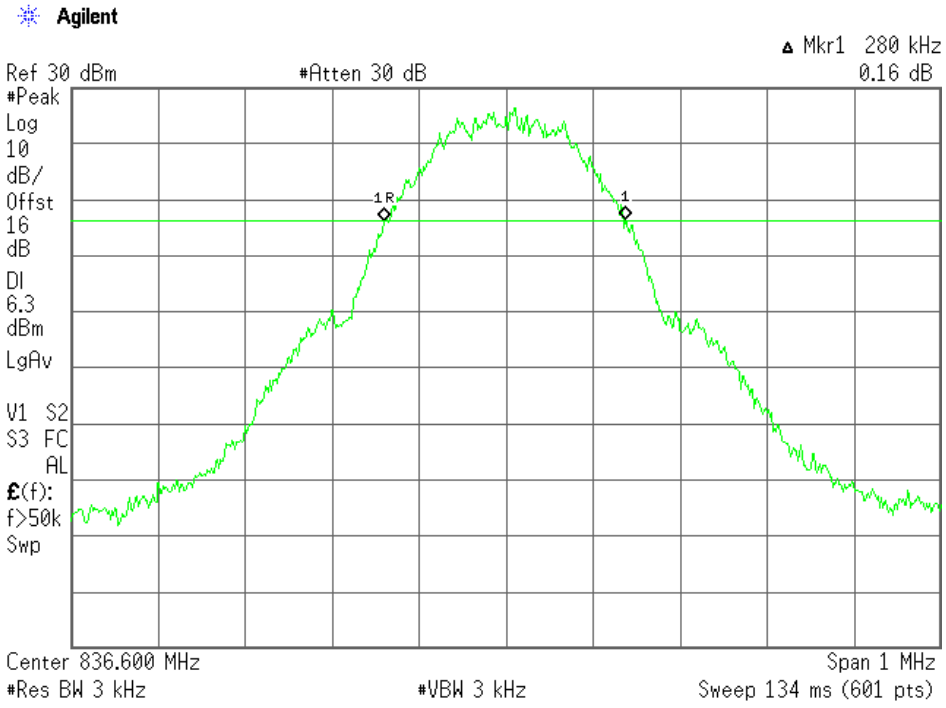
99% OCCUPIED BANDWIDTH

GPRS MODULATION

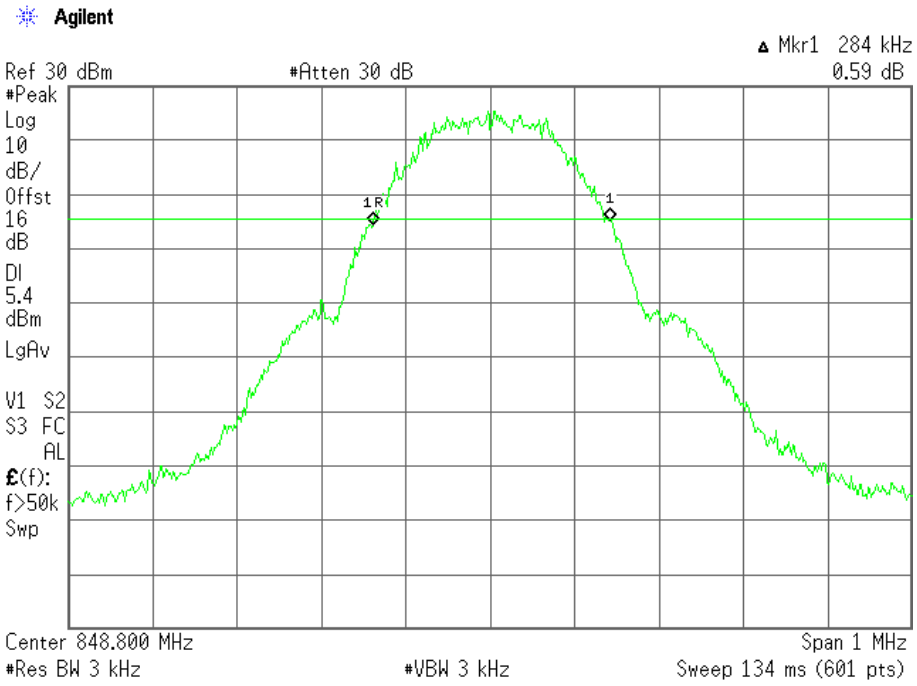
Lowest Channel



Middle Channel

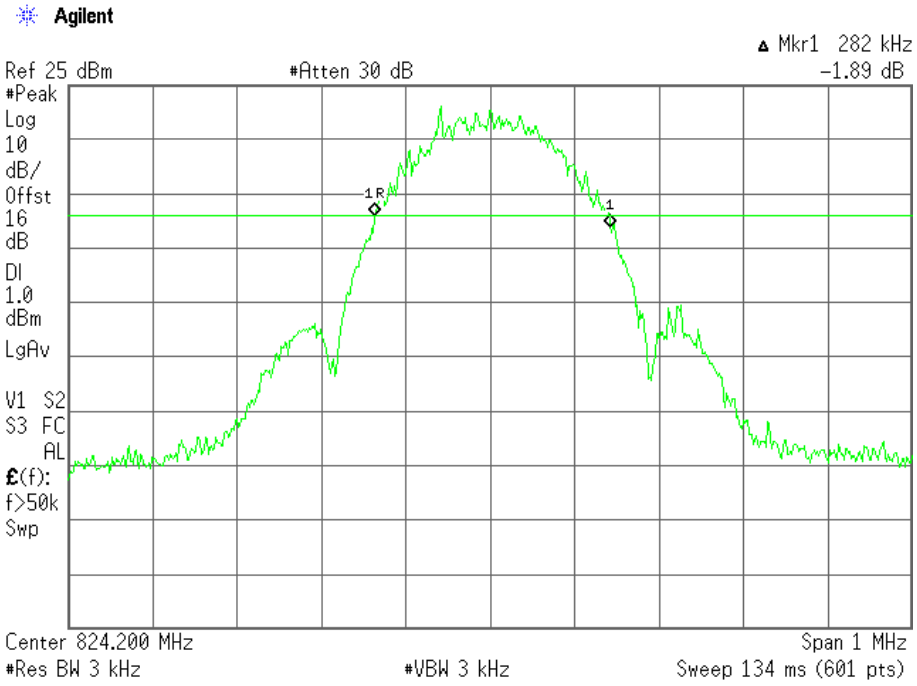


Highest Channel

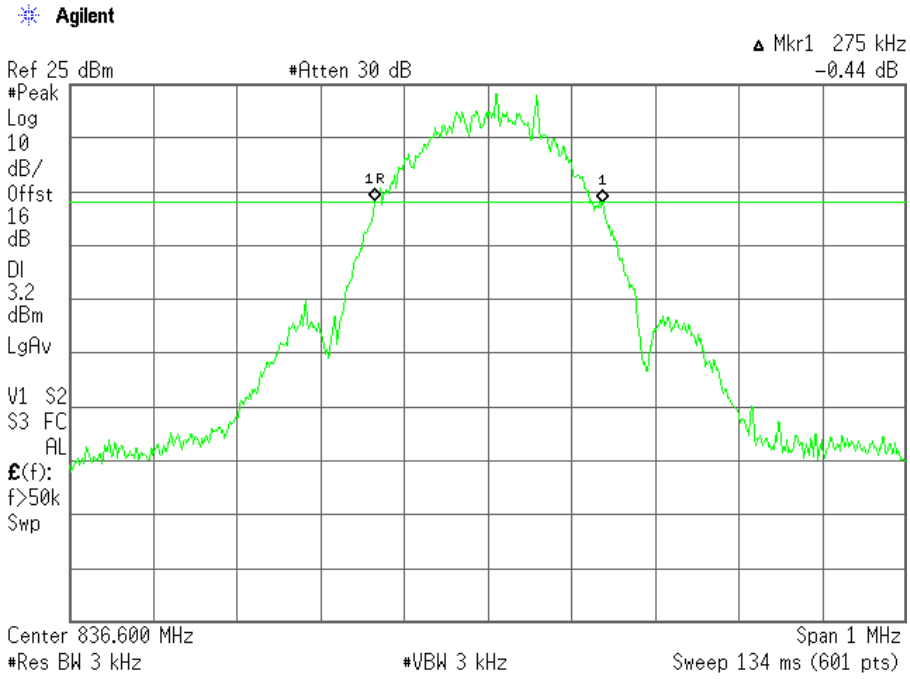


EDGE MODULATION

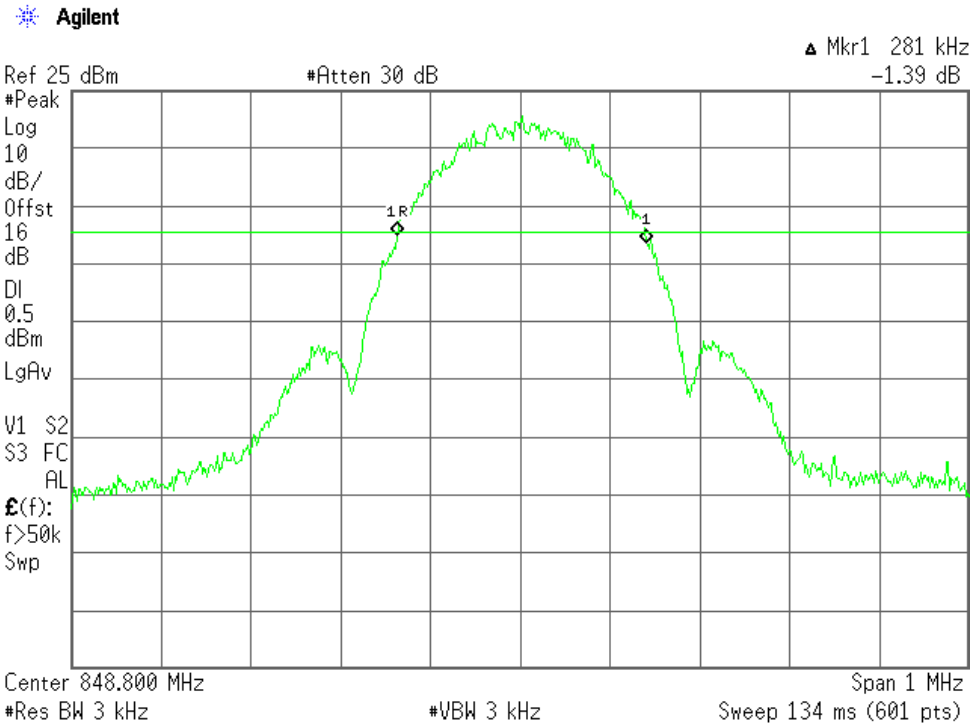
Lowest Channel



Middle Channel

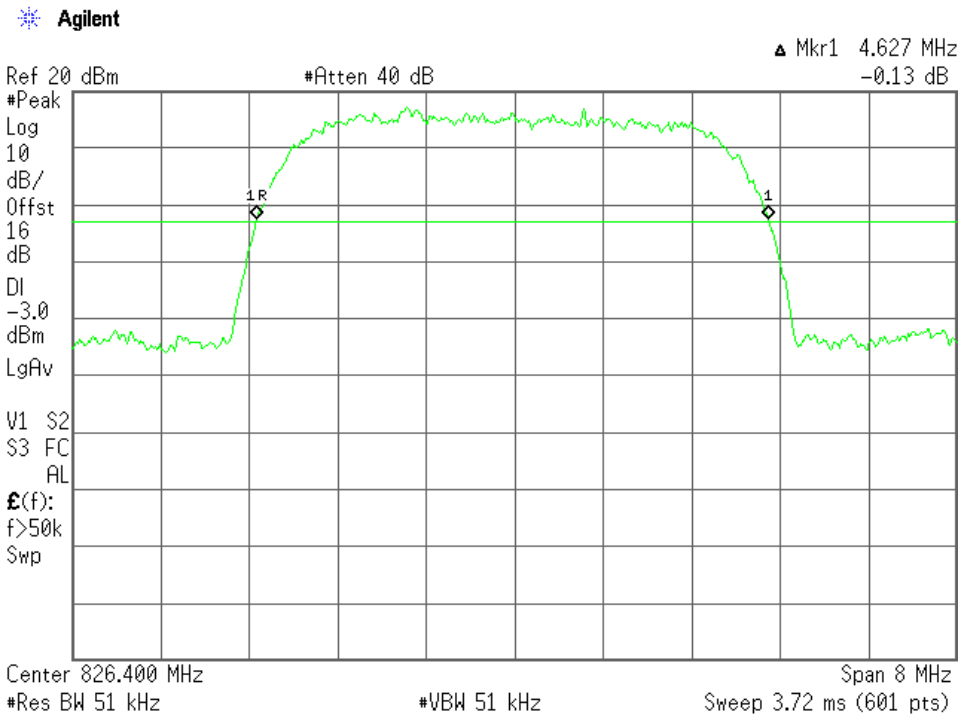


Highest Channel

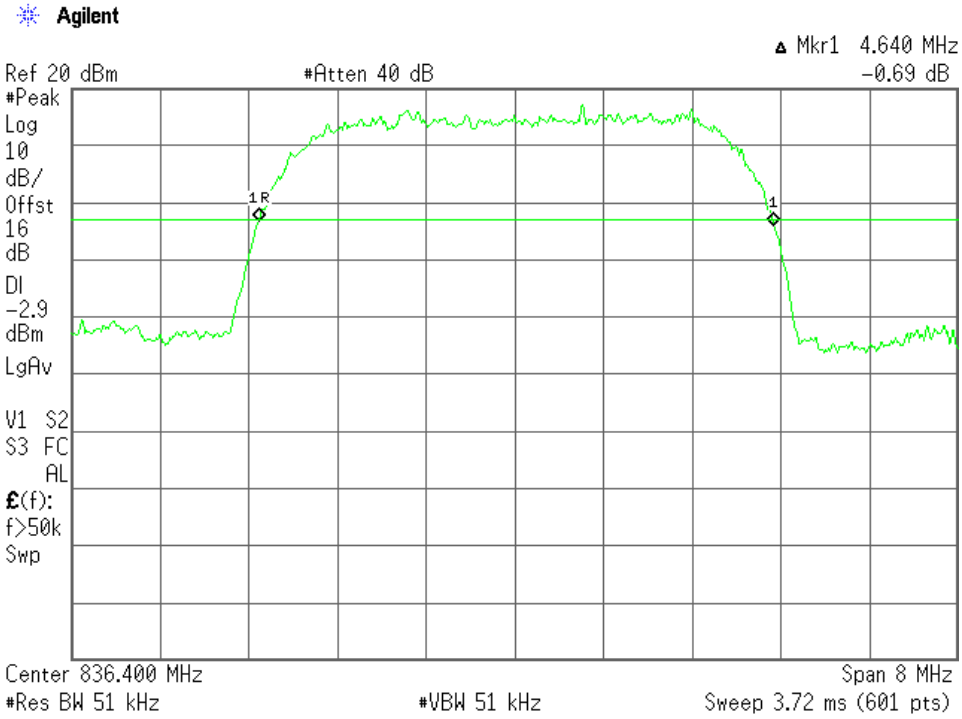


WCDMA MODULATION

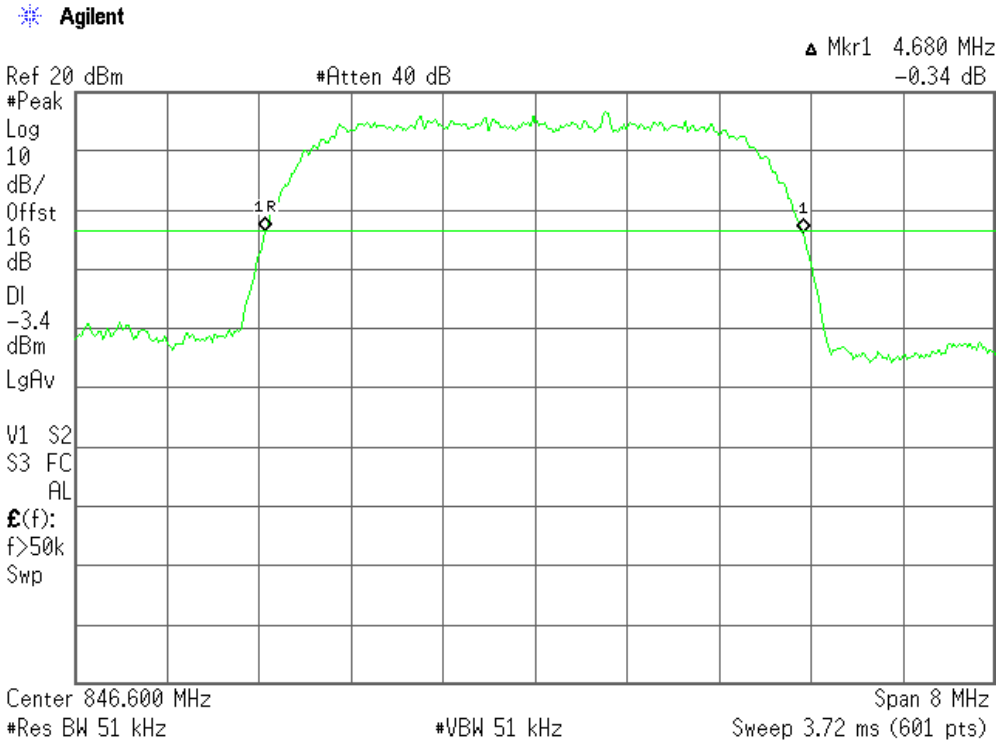
Lowest Channel



Middle Channel



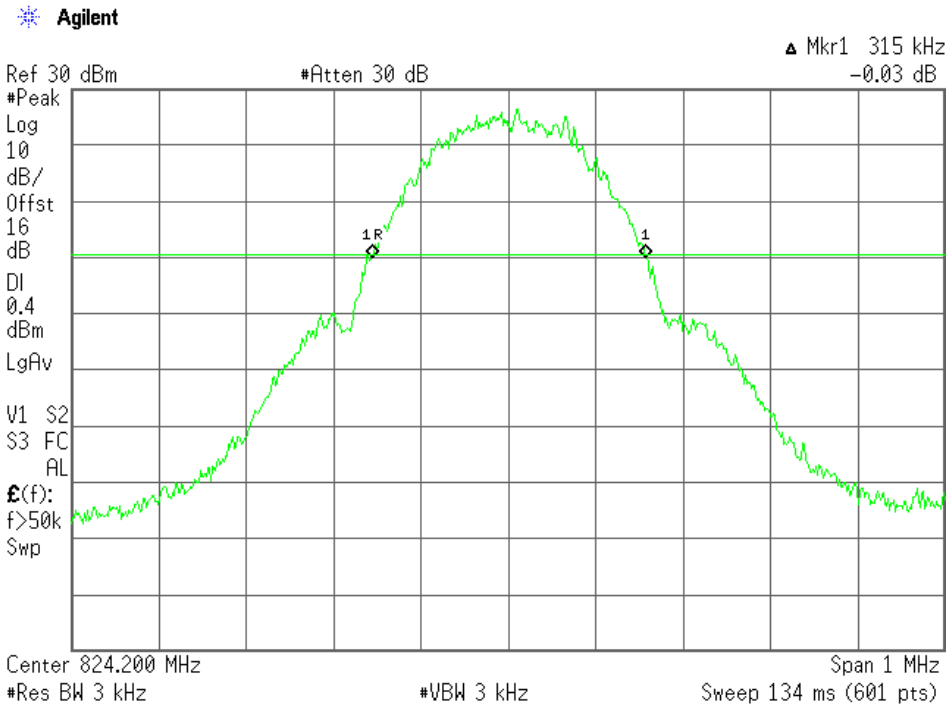
Highest Channel



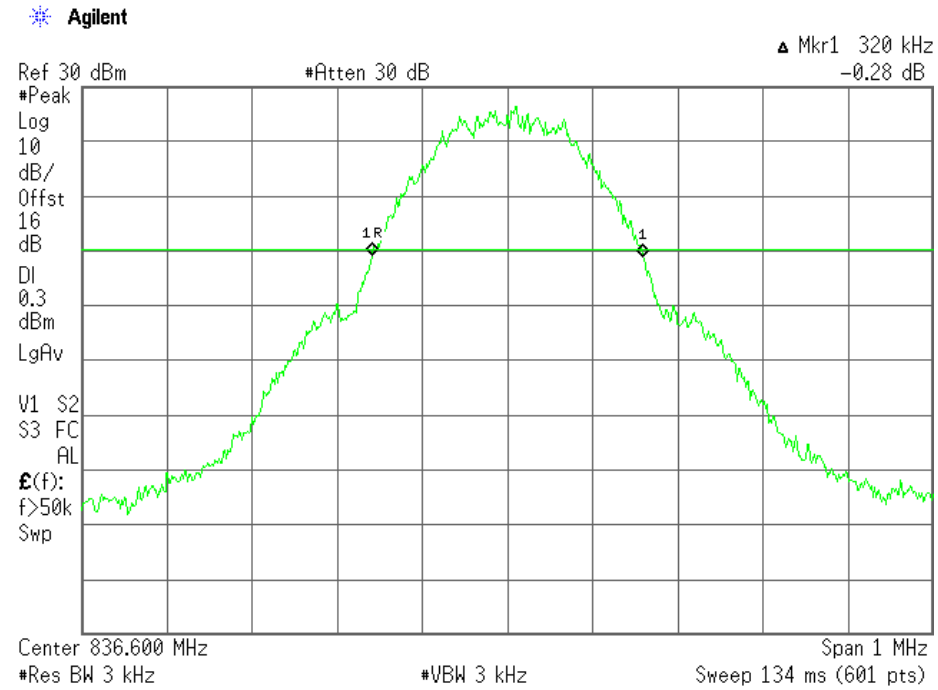
-26 dBc BANDWIDTH

GPRS MODULATION

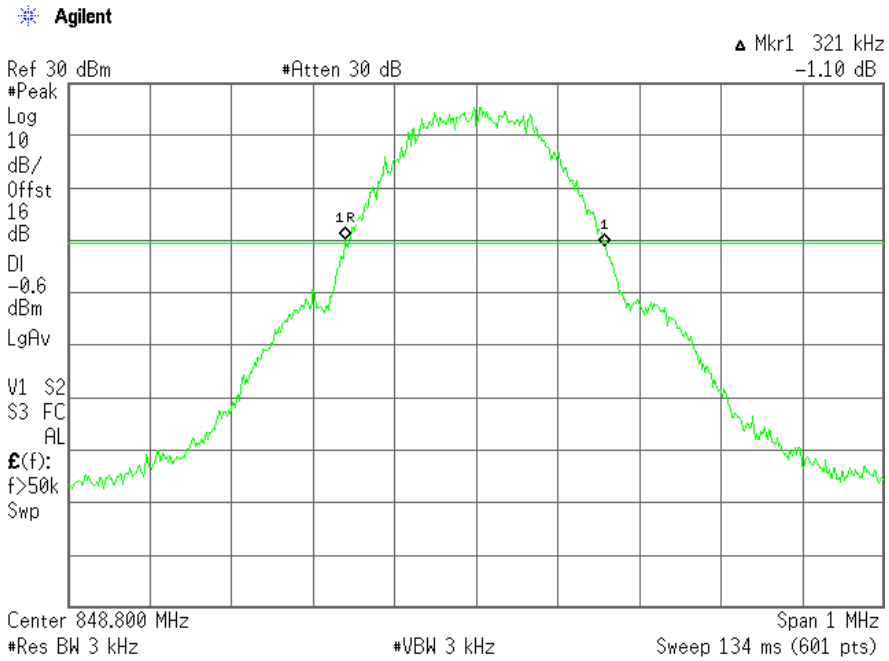
Lowest Channel



Middle Channel

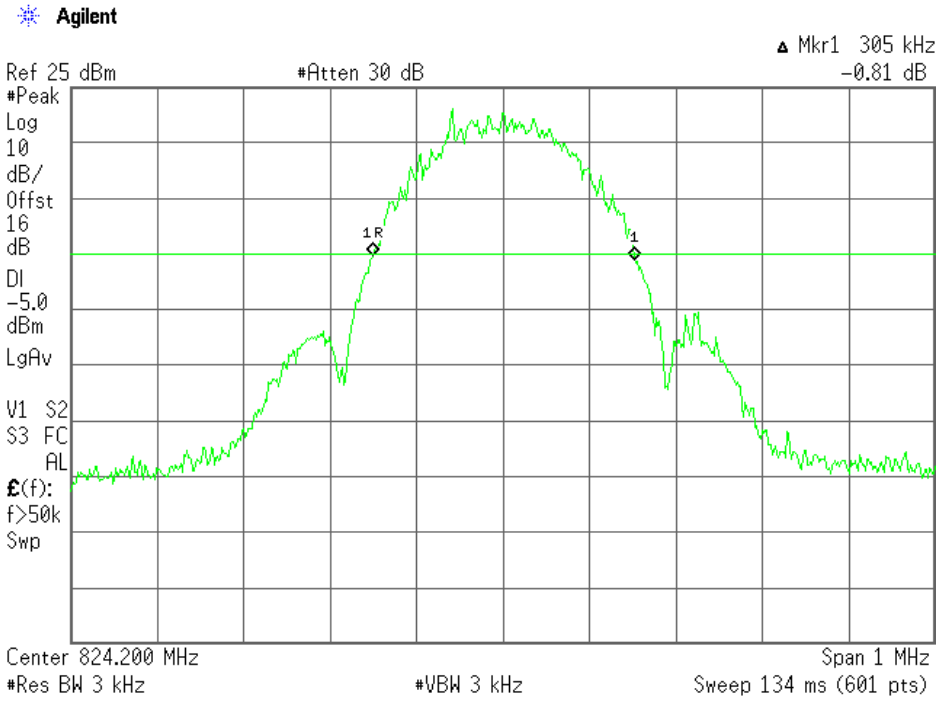


Highest Channel

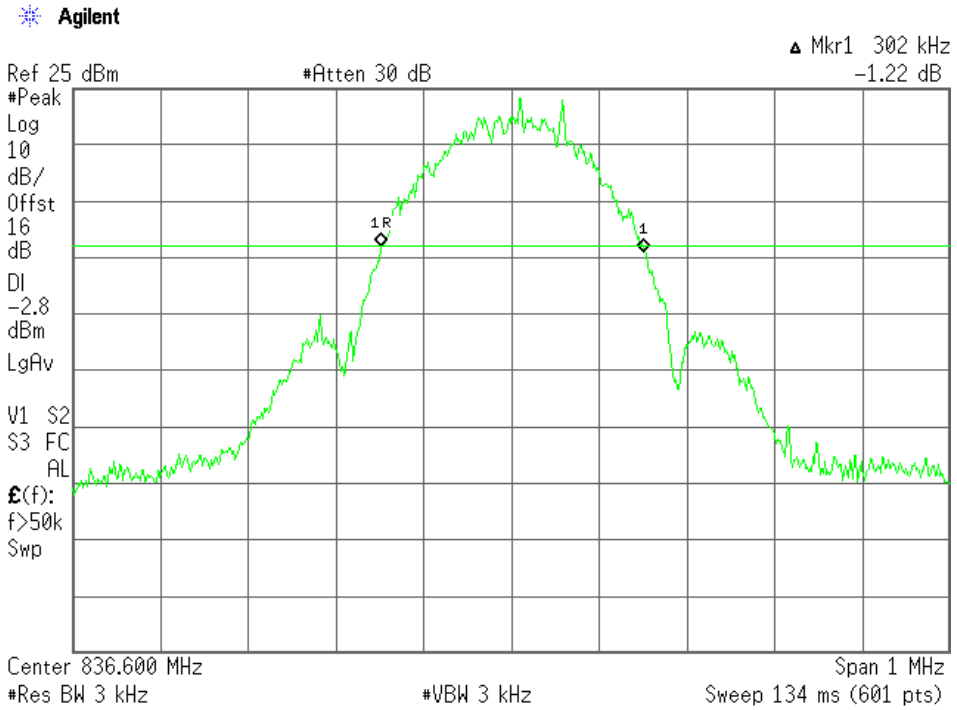


EDGE MODULATION

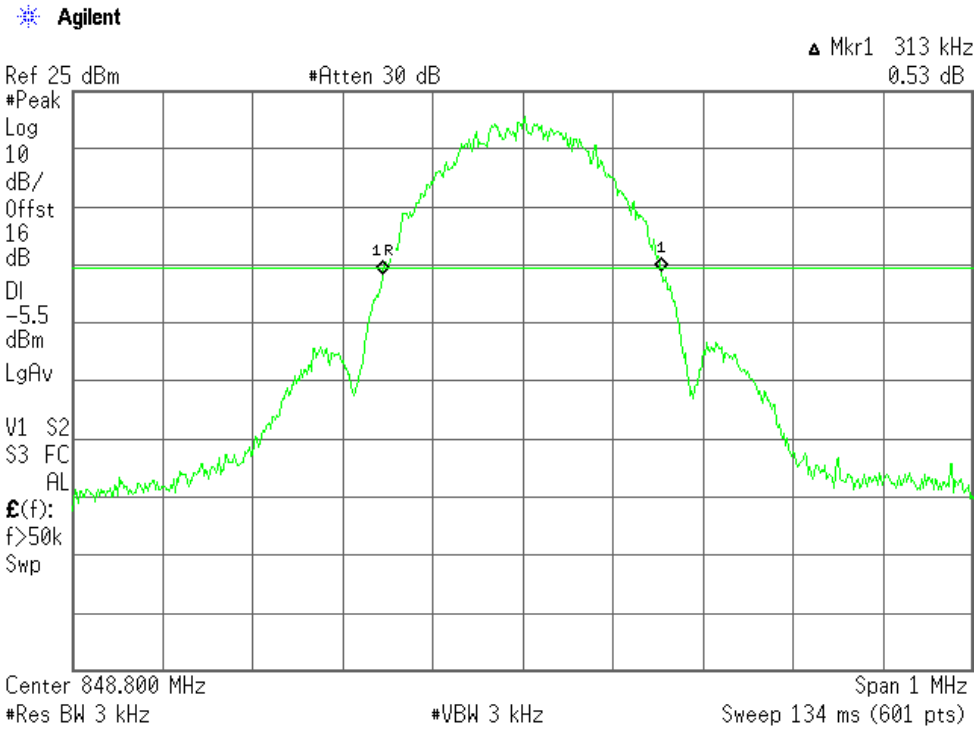
Lowest Channel



Middle Channel

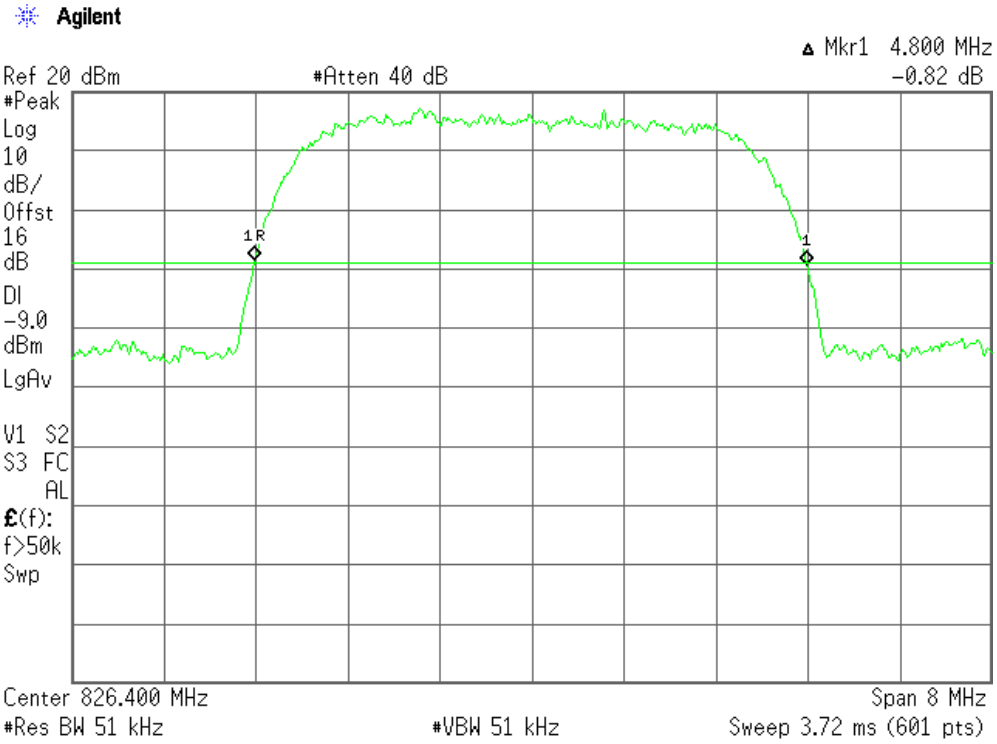


Highest Channel

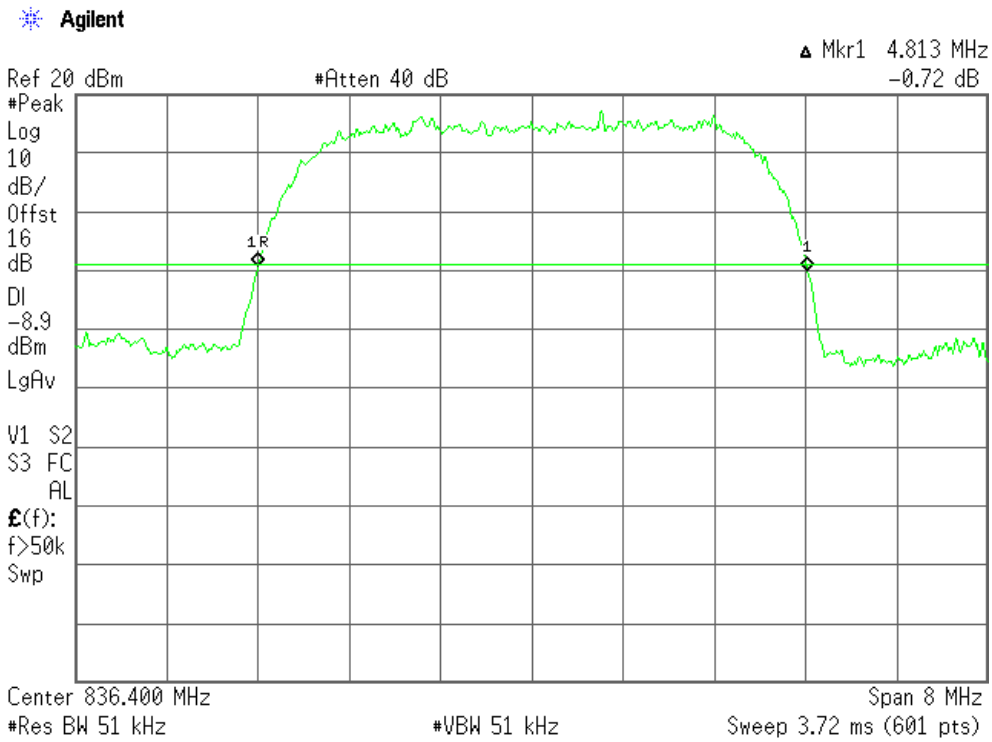


WCDMA MODULATION

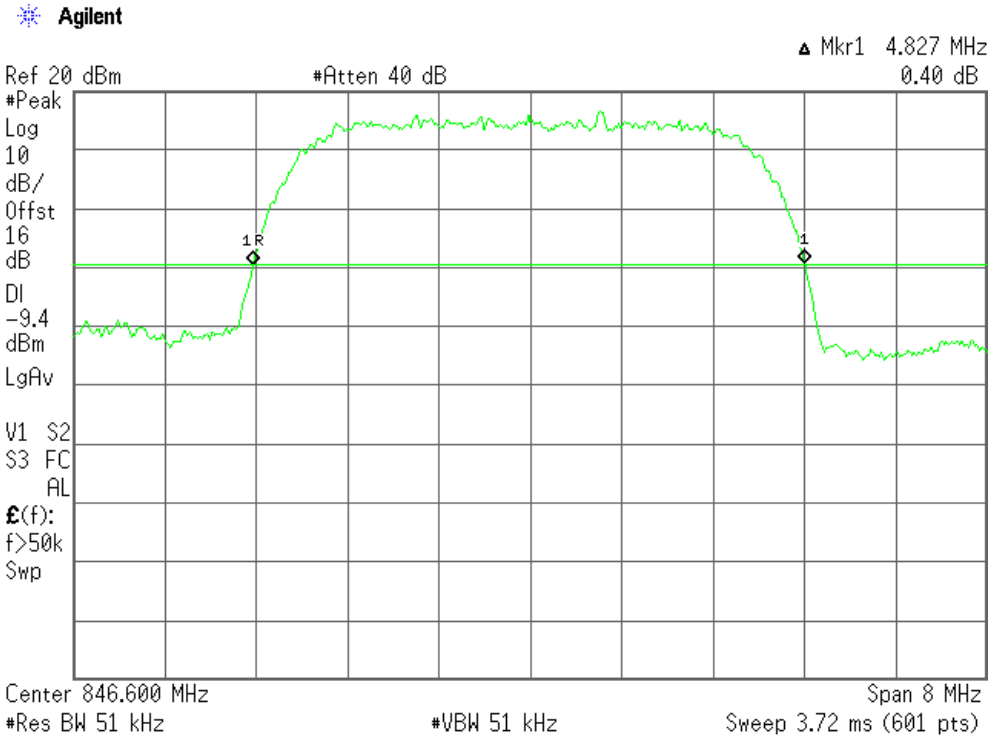
Lowest Channel



Middle Channel



Highest Channel



Spurious emissions at antenna terminals

SPECIFICATION

§2.1051 and §22.917

METHOD

The EUT RF output connector was connected to an spectrum analyser using an 50 ohm attenuator and the resolution bandwidth of the spectrum analyser was set to at least 100 kHz. The spectrum was investigated from 30 MHz to 10 GHz.

The reading of the spectrum analyser is corrected with the attenuation loss of connection between output terminal of EUT and input of the spectrum analyser.

Measurement Limit**:**

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB, P in watts.
At Po transmitting power, the specified minimum attenuation becomes 43+10log (Po), and the level in dBm relative Po becomes:

Po (dBm) – [43 + 10 log (Po in mwatts) - 30] = - 13 dBm

RESULTS (see plots in next pages)

GPRS MODULATION

1. CHANNEL: LOWEST
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

No spurious signals were found in all the range.

EDGE MODULATION

1. CHANNEL: LOWEST
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

No spurious signals were found in all the range.

WCDMA MODULATION

1. CHANNEL: LOWEST
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

No spurious signals were found in all the range.

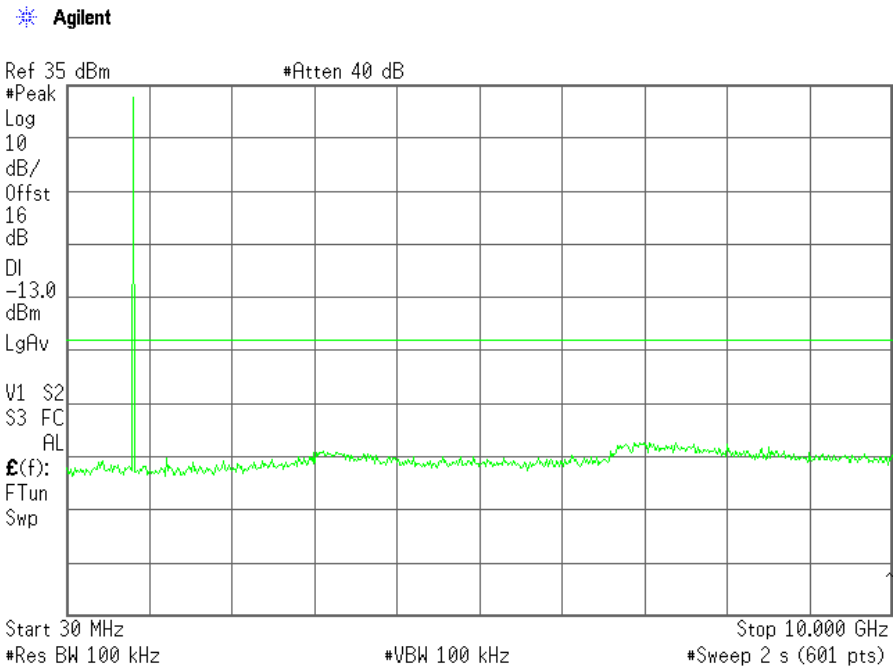
3. CHANNEL: HIGHEST

No spurious signals were found in all the range.

Verdict: PASS

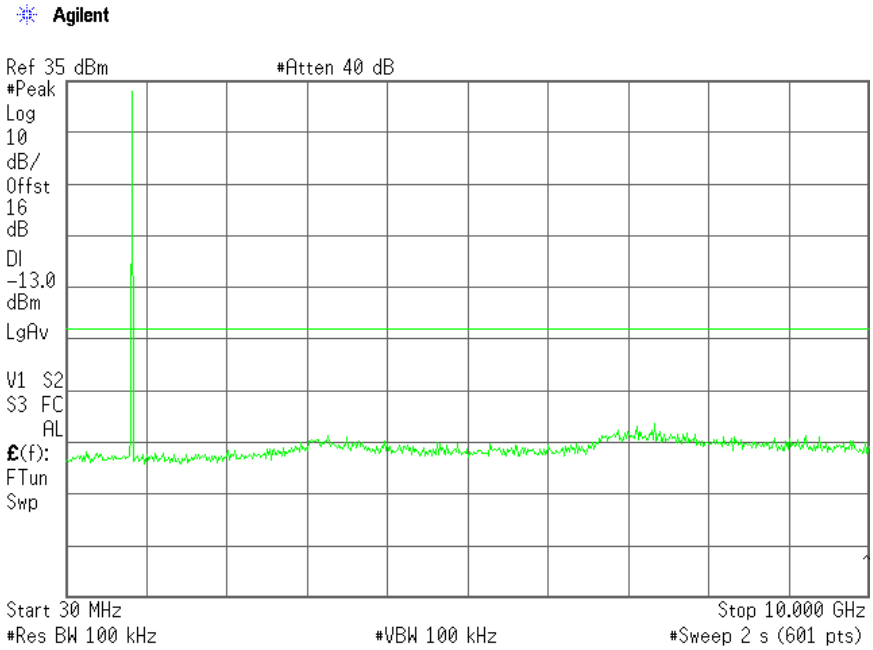
GPRS MODULATION

1. CHANNEL: LOWEST



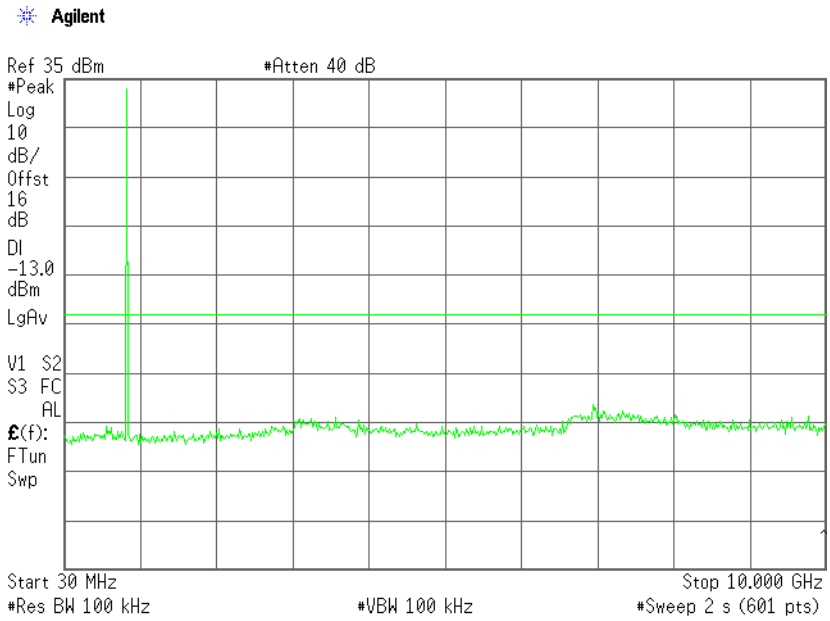
Note: The peak above the limit is the carrier frequency.

2. CHANNEL: MIDDLE



Note: The peak above the limit is the carrier frequency.

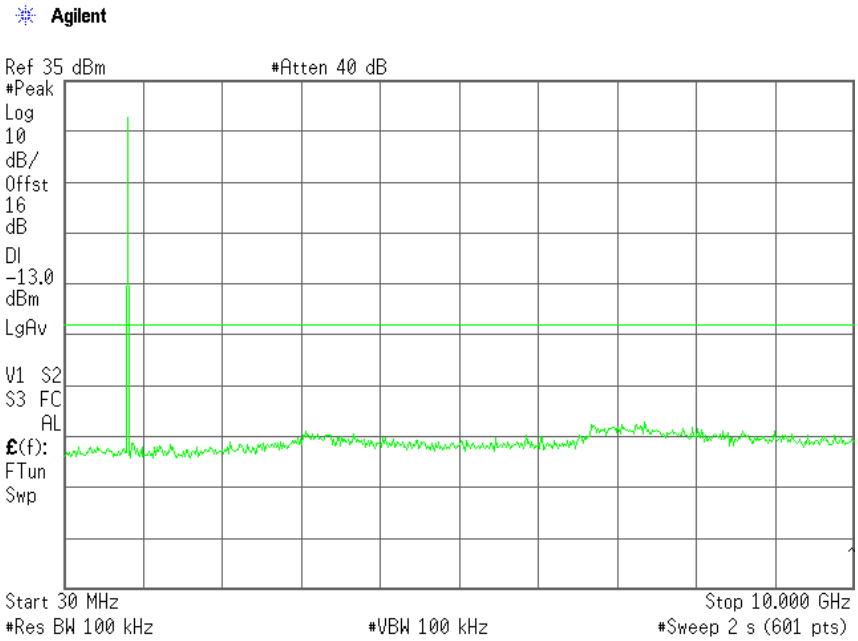
3. CHANNEL: HIGHEST



Note: The peak above the limit is the carrier frequency.

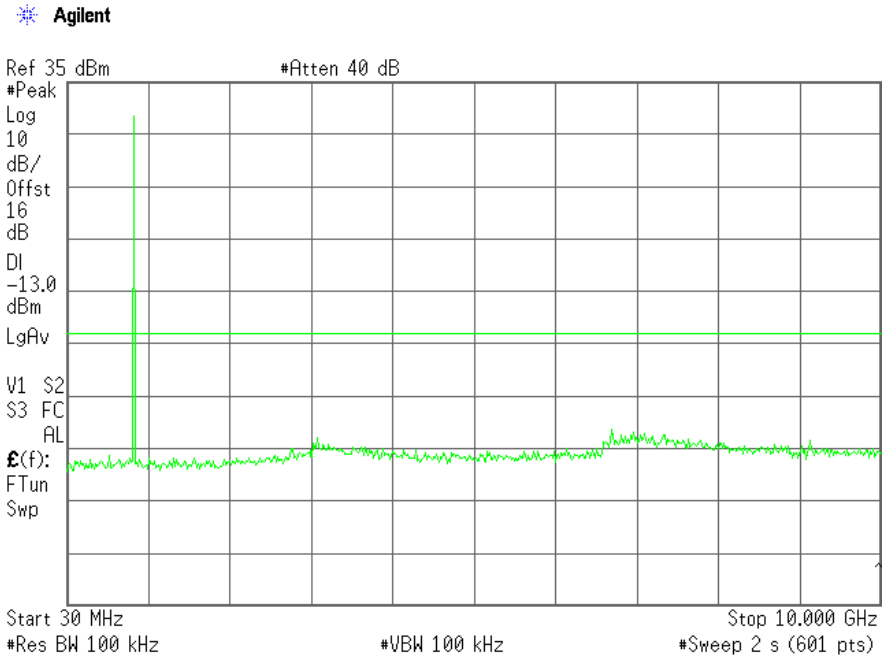
EDGE MODULATION

1. CHANNEL: LOWEST



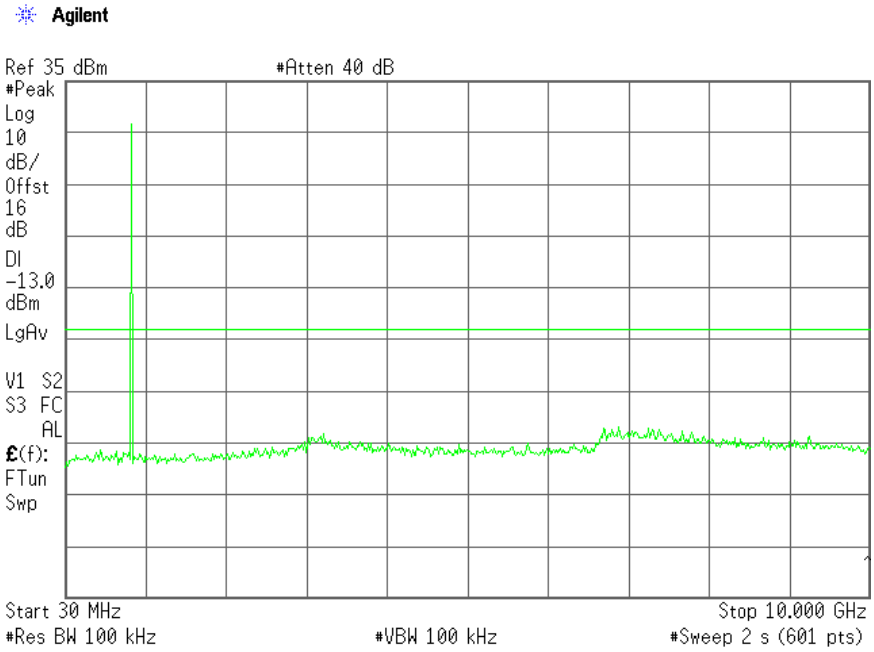
Note: The peak above the limit is the carrier frequency.

2. CHANNEL: MIDDLE



Note: The peak above the limit is the carrier frequency.

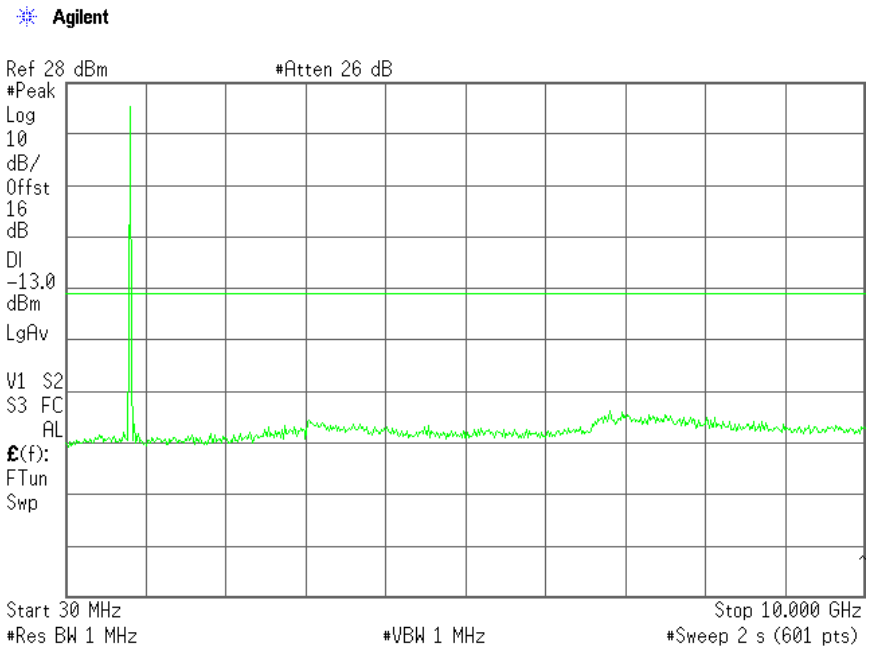
3. CHANNEL: HIGHEST



Note: The peak above the limit is the carrier frequency.

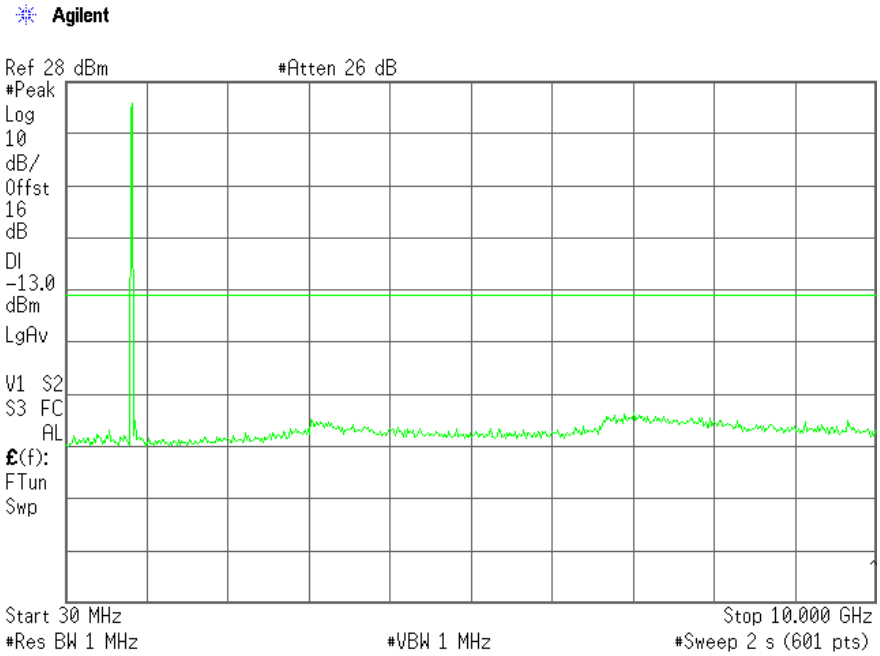
WCDMA MODULATION

1. CHANNEL: LOWEST



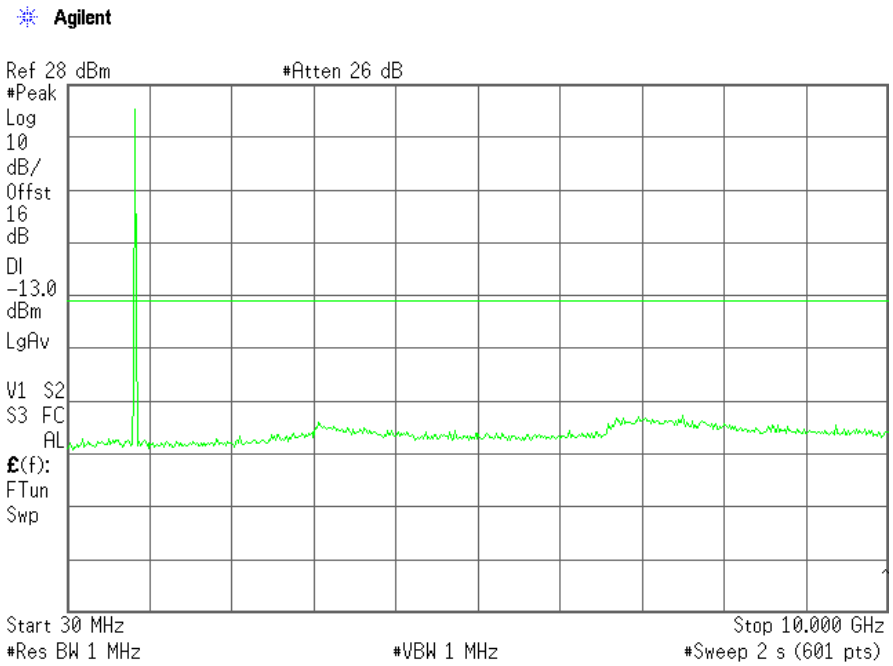
Note: The peak above the limit is the carrier frequency.

2. CHANNEL: MIDDLE



Note: The peak above the limit is the carrier frequency.

3. CHANNEL: HIGHEST



Note: The peak above the limit is the carrier frequency.

SPECIFICATION

§2.1051 and §22.917

METHOD

As indicated in FCC part 22, in the 1 MHz bands immediately outside and adjacent to the frequency block or band a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A resolution bandwidth of 3.3 kHz was used for GPRS and EDGE modulations, and 51 kHz for WCDMA modulation.

Measurement Limit**:**

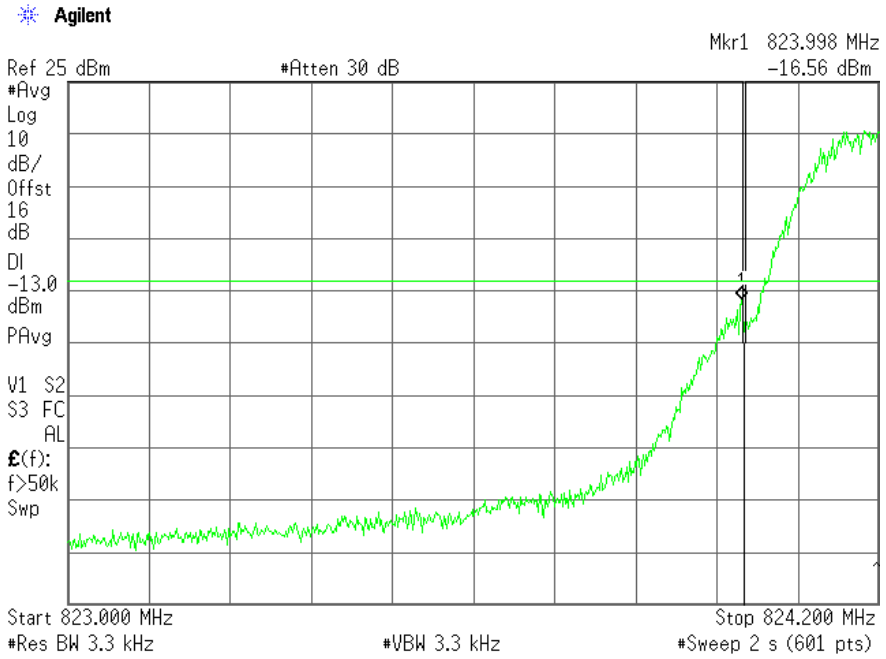
According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB, P in watts.
At Po transmitting power, the specified minimum attenuation becomes 43+10log (Po), and the level in dBm relative Po becomes:

Po (dBm) – [43 + 10 log (Po in mwatts) - 30] = - 13 dBm

RESULTS (see plots in next pages)

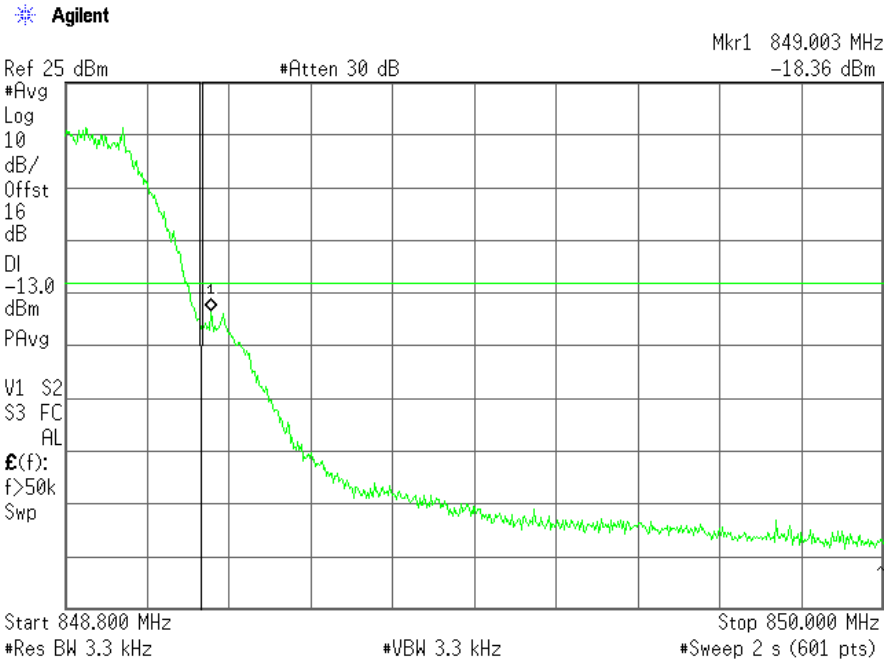
GPRS MODULATION

CHANNEL LOWEST



NOTE: The equipment transmits at the maximum output power

CHANNEL HIGHEST

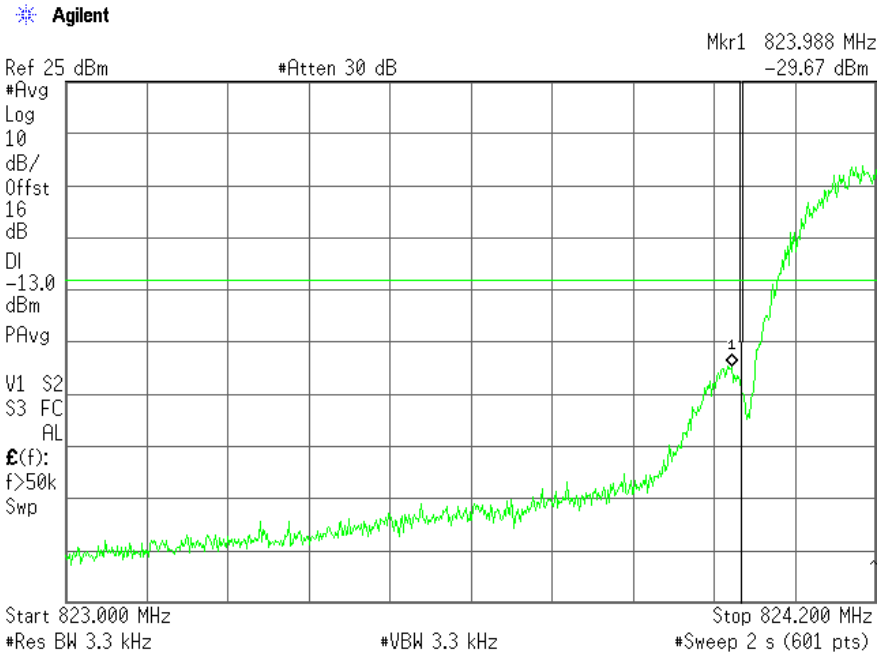


NOTE: The equipment transmits at the maximum output power

Verdict: PASS

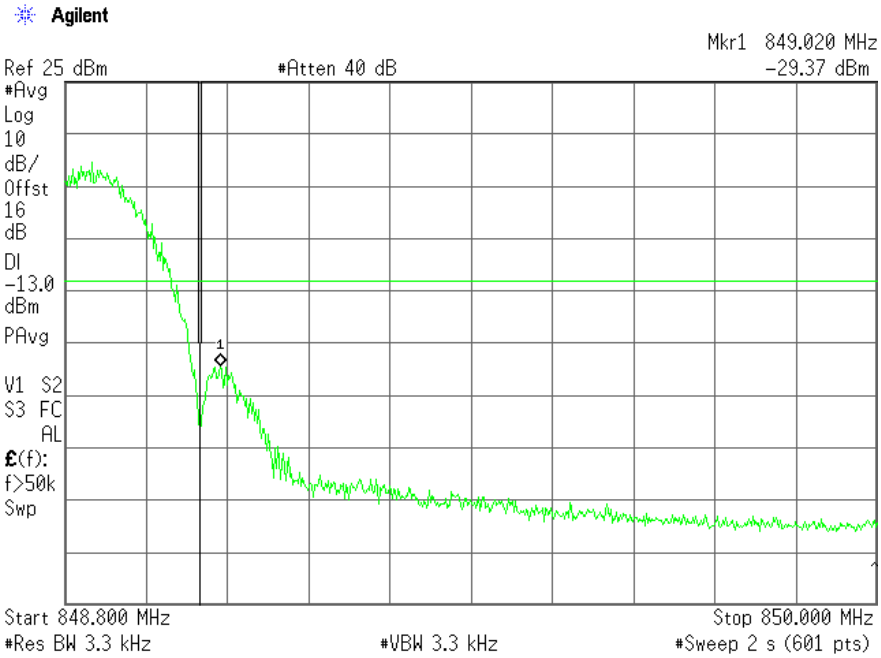
EDGE MODULATION

CHANNEL LOWEST



NOTE: The equipment transmits at the maximum output power

CHANNEL HIGHEST

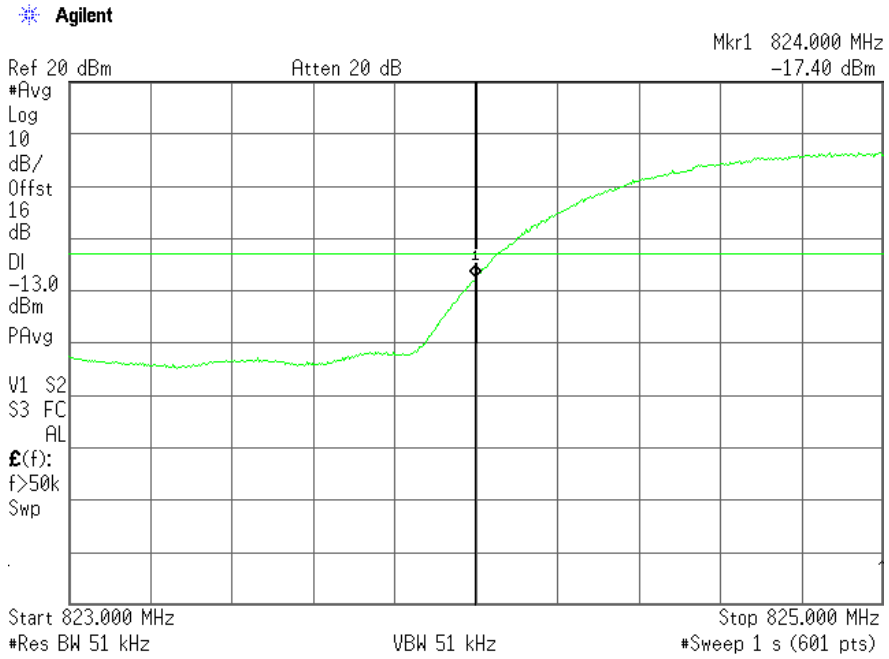


NOTE: The equipment transmits at the maximum output power

Verdict: PASS

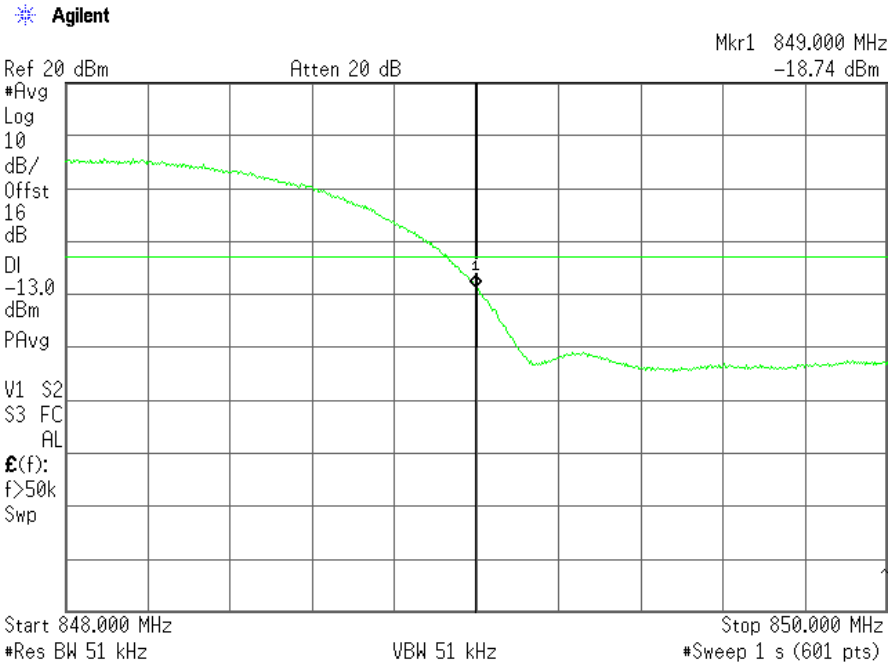
WCDMA MODULATION

CHANNEL LOWEST



NOTE: The equipment transmits at the maximum output power

CHANNEL HIGHEST



NOTE: The equipment transmits at the maximum output power

Verdict: PASS

Radiated emissions

SPECIFICATION

§ 22.917

METHOD

The measurement was performed with the EUT inside an anechoic chamber. The spectrum was scanned from 30 MHz to at least the 10th harmonic of the highest frequency generated within the equipment.

The EUT was placed on a 1 meter high non-conductive stand at a 3 meter distance from the measuring antenna for measurements below 1 GHz and at 1 m distance for measurements above 1 GHz.

Detected emissions were maximized at each frequency by rotating the EUT and adjusting the measuring antenna height and polarization. The maximum meter reading was recorded. The radiated emissions were measured with peak detector and 1 MHz bandwidth.

Each detected emissions were substituted by the Substitution method, in accordance with the ANSI/TIA/EIA-603-C: 2004.

Measurement Limit**:**

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB, P in watts.
At Po transmitting power, the specified minimum attenuation becomes 43+10log (Po), and the level in dBm relative Po becomes:

Po (dBm) – [43 + 10 log (Po in mwatts) - 30] = - 13 dBm

RESULTS

GPRS MODULATION

1. CHANNEL: LOWEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

EDGE MODULATION

1. CHANNEL: LOWEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

WCDMA MODULATION

1. CHANNEL: LOWEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.
No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-12.75 GHz.

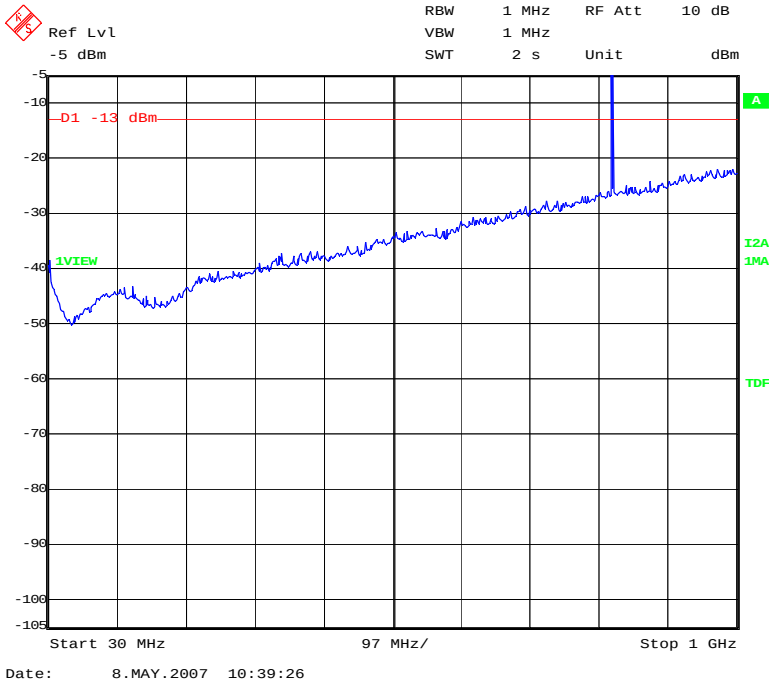
No spurious signals were found in all the range.

Verdict: PASS

GPRS MODULATION

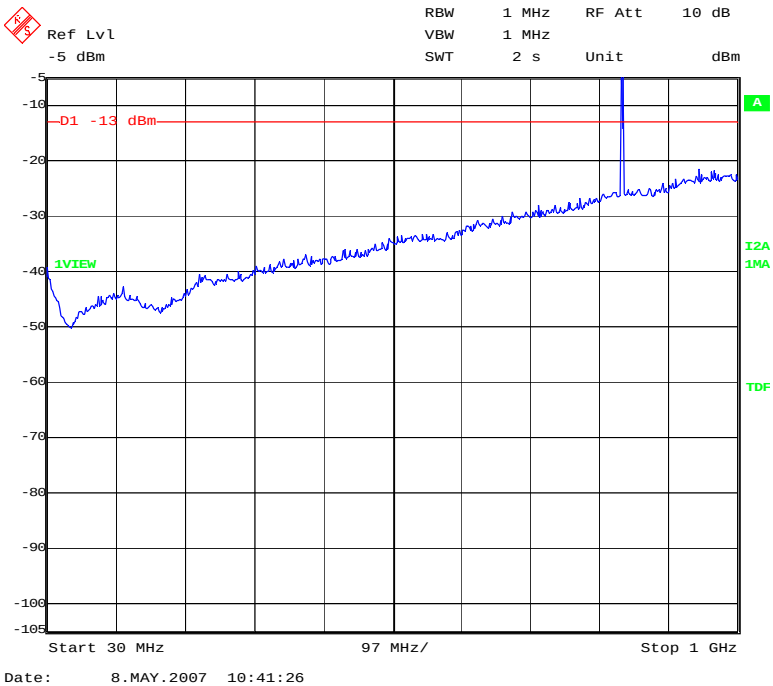
FREQUENCY RANGE 30 MHz-1000 MHz.

CHANNEL: LOWEST



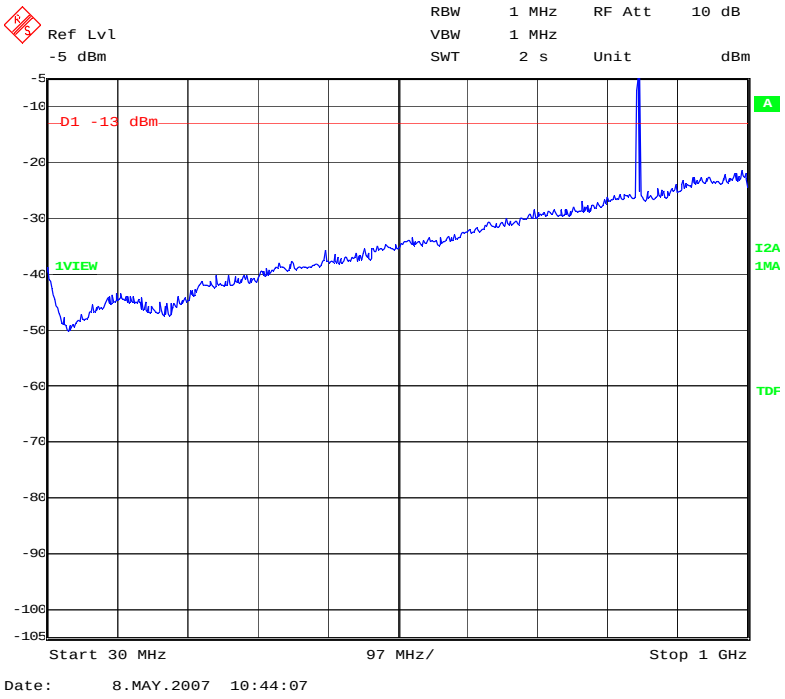
Note: The peak above the limit is the carrier frequency.

CHANNEL: MIDDLE



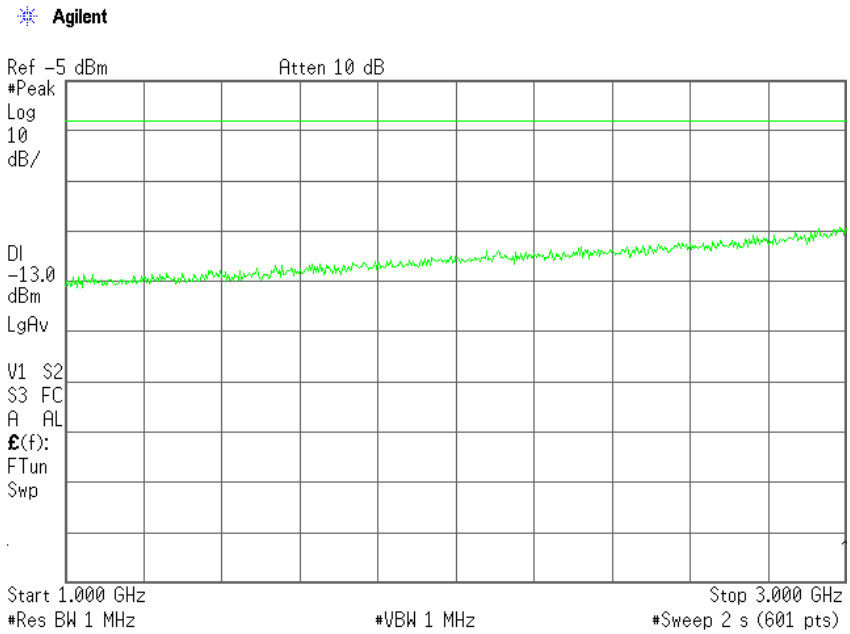
Note: The peak above the limit is the carrier frequency.

CHANNEL: HIGHEST



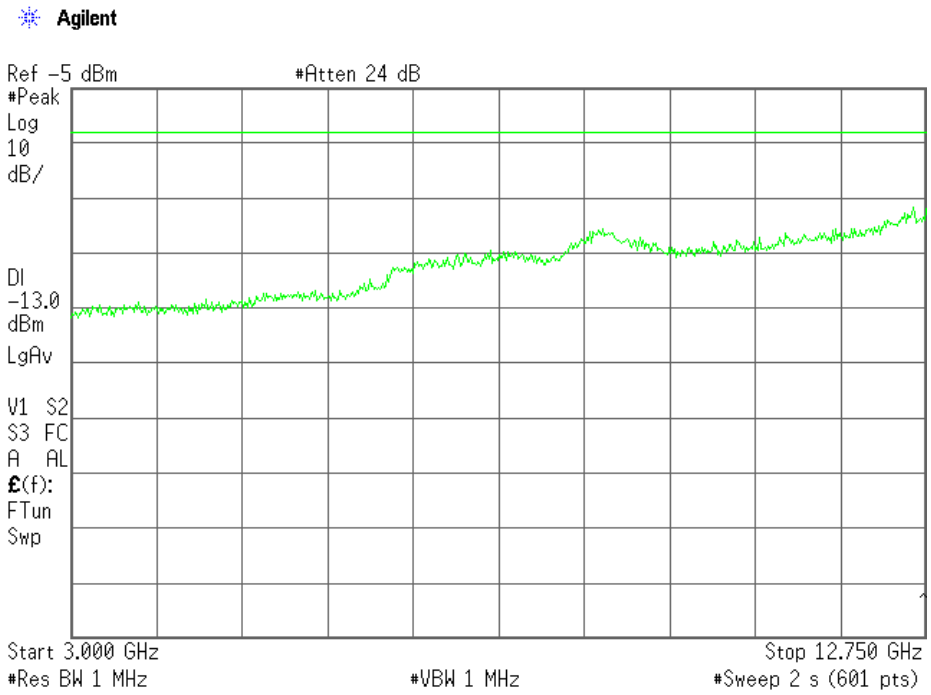
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 1 GHz to 3 GHz.



(This plot is valid for all three channels)

FREQUENCY RANGE 3 GHz to 12.75 GHz.

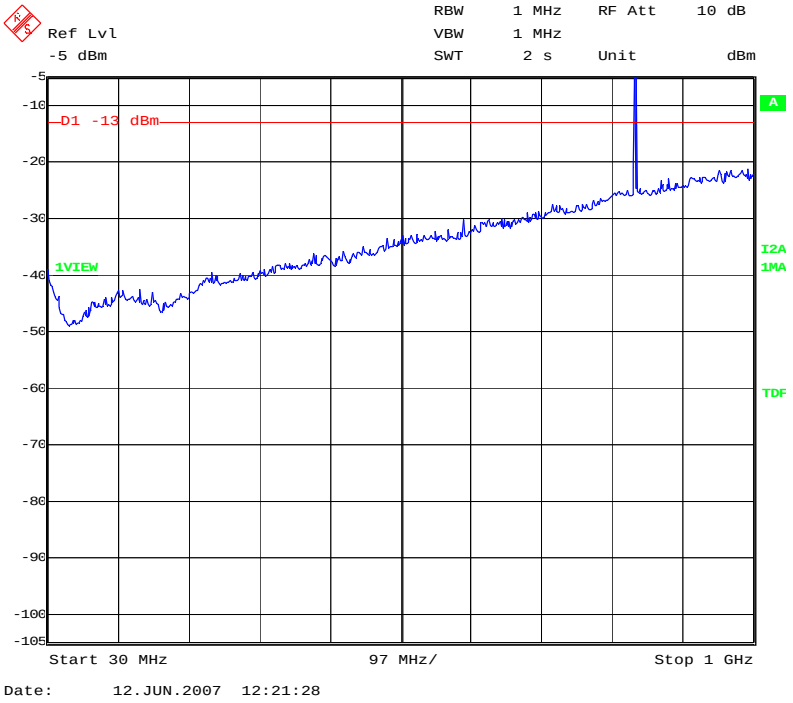


(This plot is valid for all three channels)

EDGE MODULATION

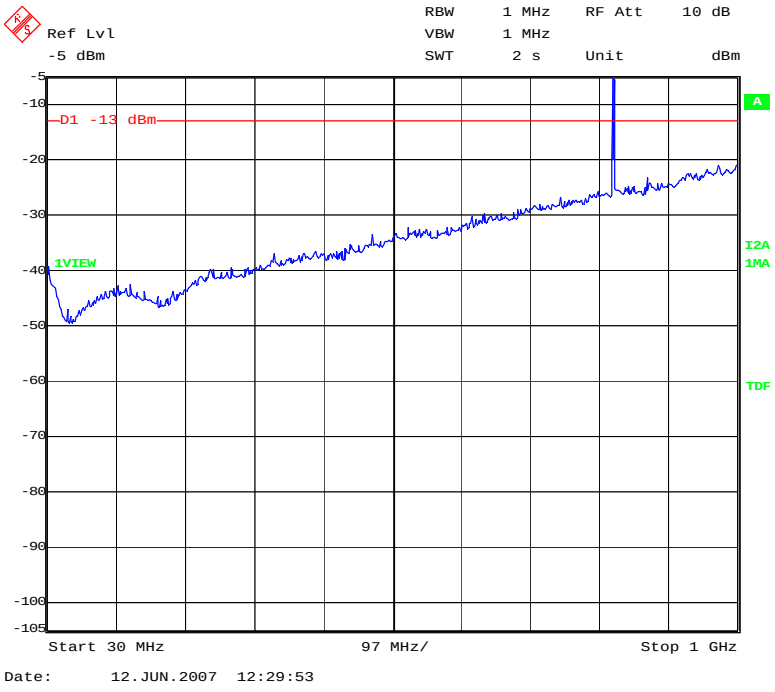
FREQUENCY RANGE 30 MHz-1000 MHz.

CHANNEL: LOWEST



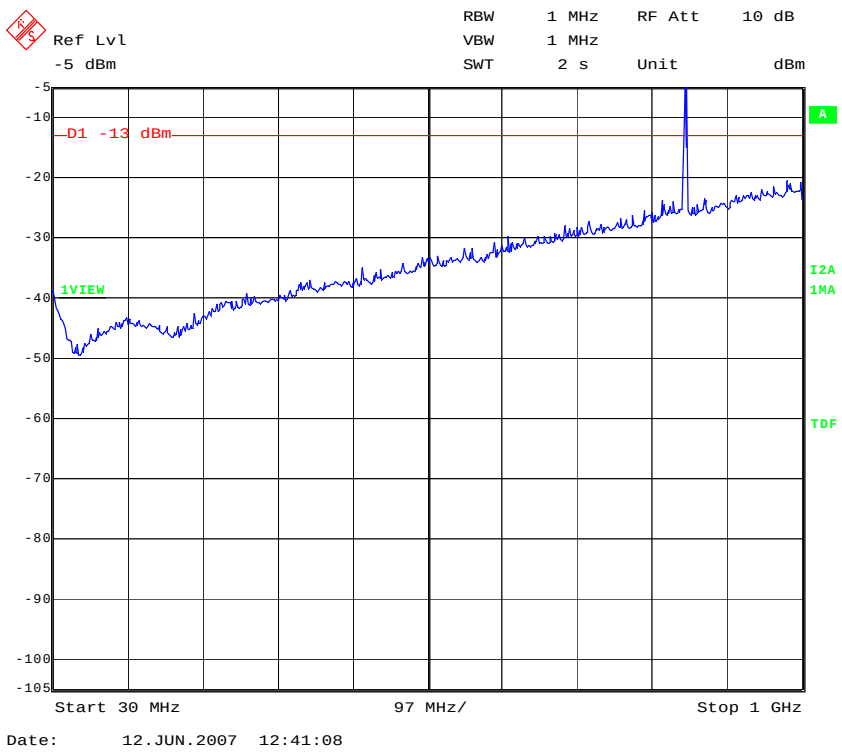
Note: The peak above the limit is the carrier frequency.

CHANNEL: MIDDLE



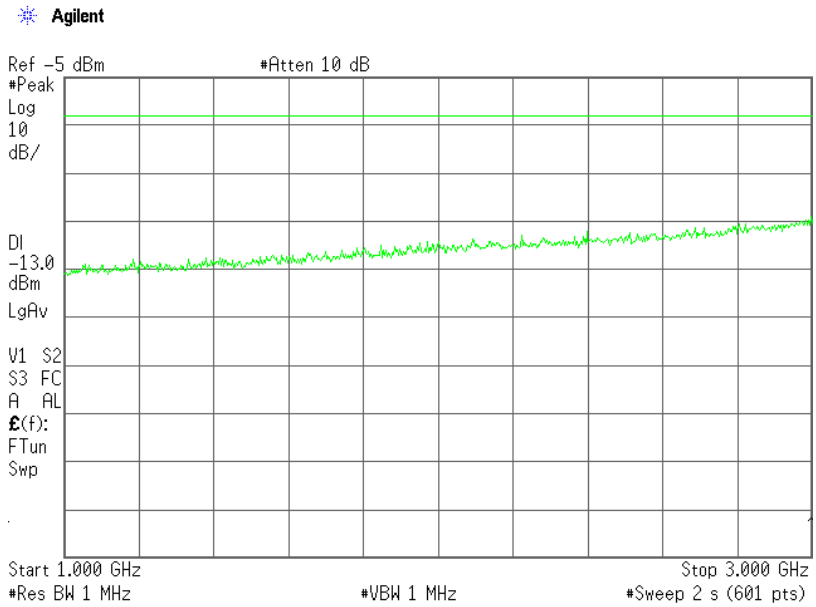
Note: The peak above the limit is the carrier frequency.

CHANNEL: HIGHEST



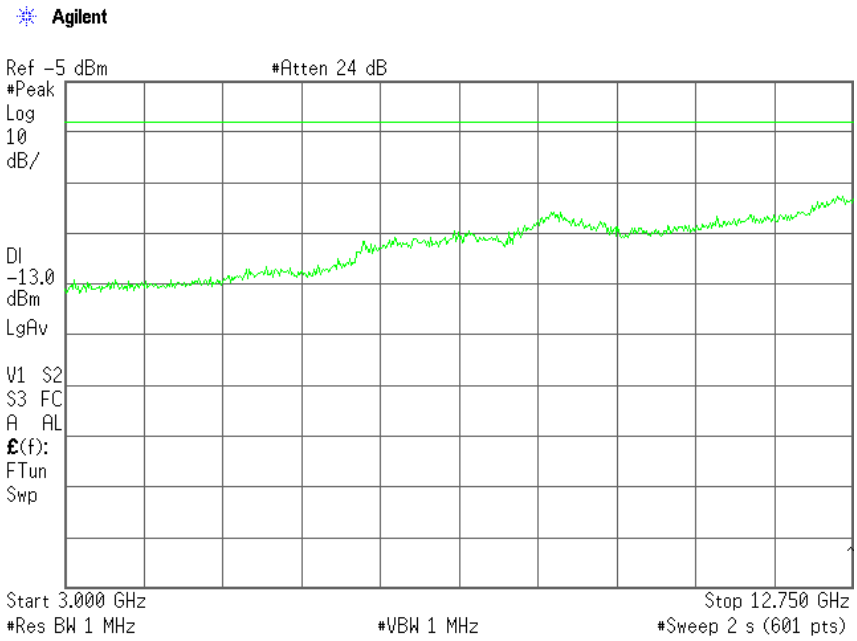
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 1 GHz to 3 GHz.



(This plot is valid for all three channels)

FREQUENCY RANGE 3 GHz to 12.75 GHz.

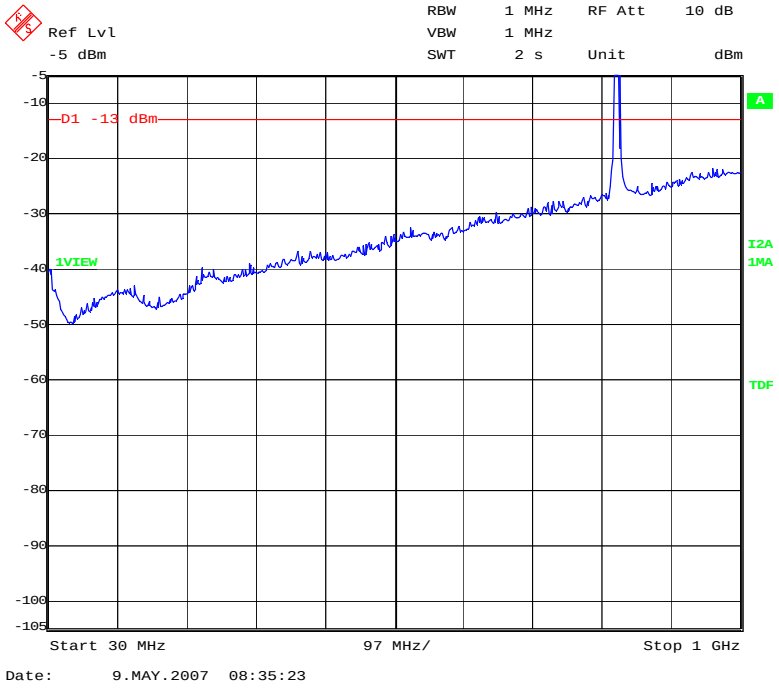


(This plot is valid for all three channels)

WCDMA MODULATION

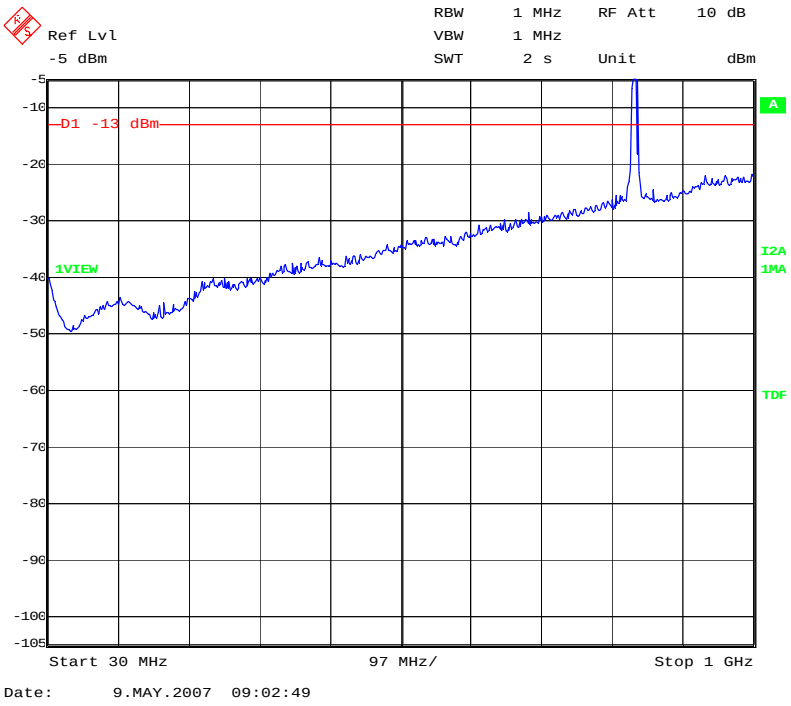
FREQUENCY RANGE 30 MHz-1000 MHz.

CHANNEL: LOWEST



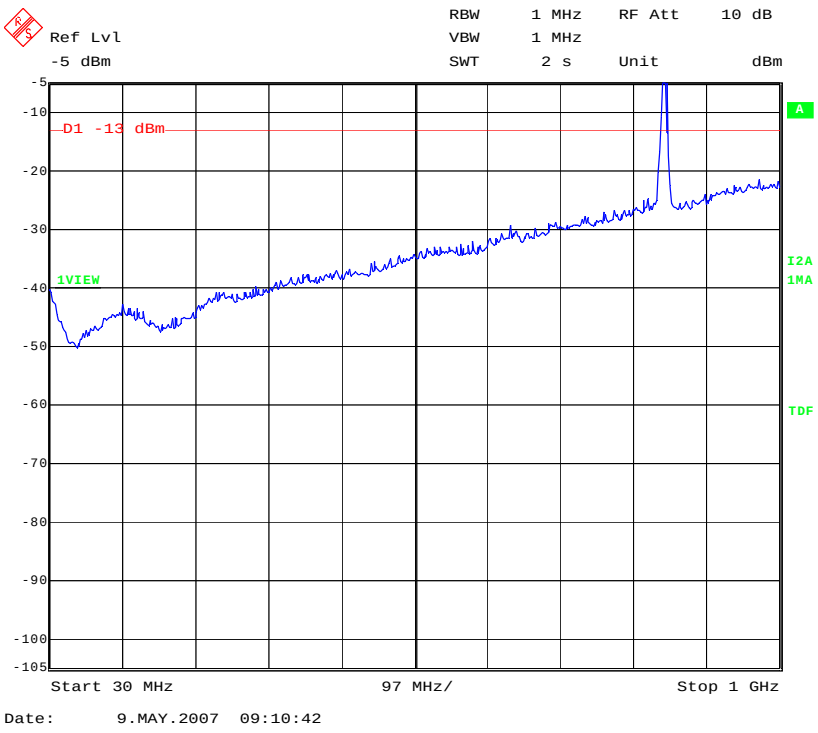
Note: The peak above the limit is the carrier frequency.

CHANNEL: MIDDLE



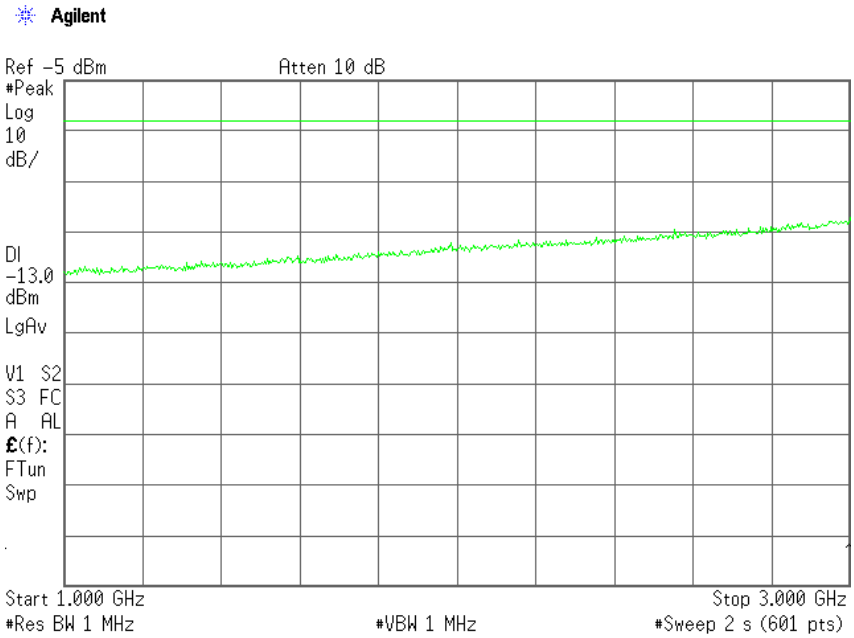
Note: The peak above the limit is the carrier frequency.

CHANNEL: HIGHEST



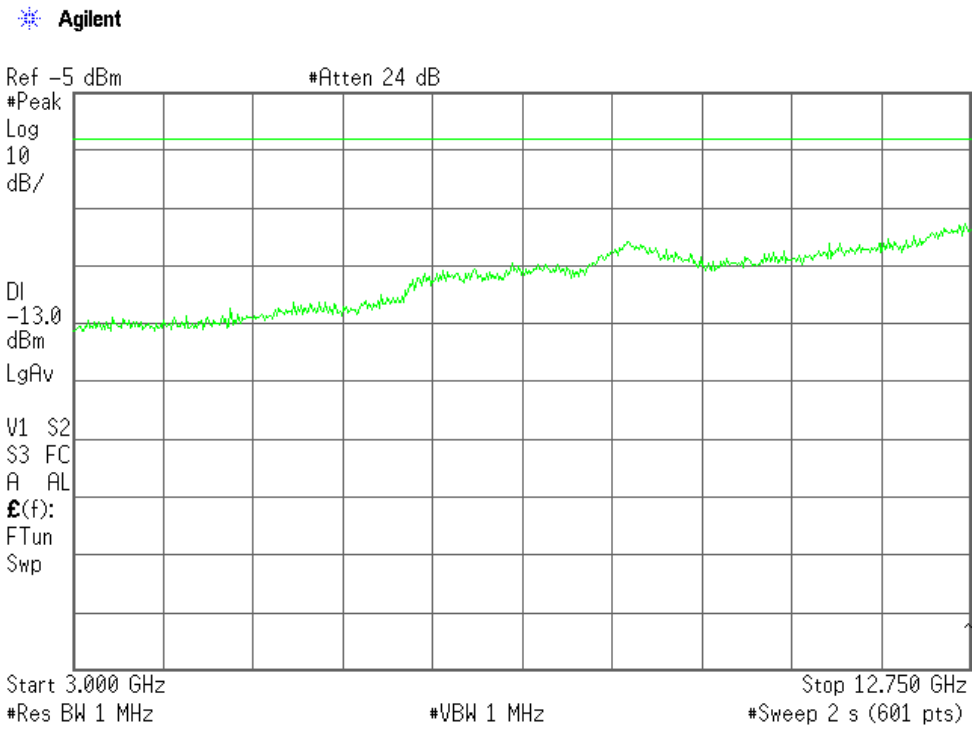
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 1 GHz to 3 GHz.



(This plot is valid for all three channels)

FREQUENCY RANGE 3 GHz to 12.75 GHz.



(This plot is valid for all three channels)

ANNEX B

TEST RESULTS FOR FCC PART 24

Report No: 25903RET

INDEX

Page

TEST CONDITIONS

Power supply (V):

V_{nom} = 5.0 Vdc

V_{max} = Not declared

V_{min} = Not declared

The subscripts nom, min and max indicates voltage test conditions (nominal, minimum and maximum respectively, as declared by the applicant).

Type of power supply = DC Voltage from USB port

Type of antenna = Integral antenna

TEST FREQUENCIES:

GPRS AND EDGE MODULATION

Lowest channel (512): 1850.2 MHz

Middle channel (662): 1880.2 MHz

Highest channel (810): 1909.8 MHz

WCDMA MODULATION

Lowest channel (9262): 1852.4 MHz

Middle channel (9400): 1880,0 MHz

Highest channel (9538): 1907,6 MHz

RF Output Power (conducted and E.I.R.P.)

SPECIFICATION

§2.1046 and 24.232

Mobile/portable stations are limited to 2 Watts (33 dBm) Effective Isotropic Radiated Power (E.I.R.P.) peak power.

METHOD

The conducted RF output power measurements were made at the RF output terminals of the EUT using an attenuator, power splitter and spectrum analyser. The EUT was controlled via the Universal Radio Communication tester R&S CMU200 selecting maximum transmission power of the EUT and different modes of modulation.

For radiated measurements the EUT was placed on a 1 m high non-conductive stand inside an anechoic chamber. The measuring antenna was placed at 1 m distance and the maximum field strength was measured for the three channels. The EUT was controlled via the Universal Radio Communication tester R&S CMU200 selecting maximum transmission power of the EUT and different modes of modulation.

The Effective Isotropic Radiated Power (E.I.R.P.) is obtained by using the Substitution Method according to ANSI/TIA/EIA-603-C: 2004.

RESULTS

MAXIMUM OUTPUT POWER (CONDUCTED). See plots in next pages.

GPRS MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	29.81	30.44	29.01
Maximum peak power (W)	0.96	1.11	0.80
Measurement uncertainty (dB)	±1.5		

EDGE MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	30.17	29.69	29.38
Maximum peak power (W)	1.04	0.93	0.87
Measurement uncertainty (dB)	±1.5		

WCDMA MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	26.72	26.62	26.29
Maximum peak power (W)	0.47	0.46	0.43
Measurement uncertainty (dB)	±1.5		

MAXIMUM EFFECTIVE ISOTROPIC RADIATED POWER E.I.R.P. (RADIATED).

GPRS MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	29.70	29.45	29.05
Maximum peak power (W)	0.93	0.88	0.80
Measurement uncertainty (dB)	± 3.8		

RBW= 1 MHz VBW = 3 MHz

EDGE MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	29.81	29.92	29.88
Maximum peak power (W)	0.96	0.98	0.97
Measurement uncertainty (dB)	± 3.8		

RBW= 1 MHz VBW = 3 MHz

WCDMA MODULATION

Channel	Lowest	Middle	Highest
Maximum peak power (dBm)	27.10	27.55	27.58
Maximum peak power (W)	0.51	0.57	0.57
Measurement uncertainty (dB)	± 3.8		

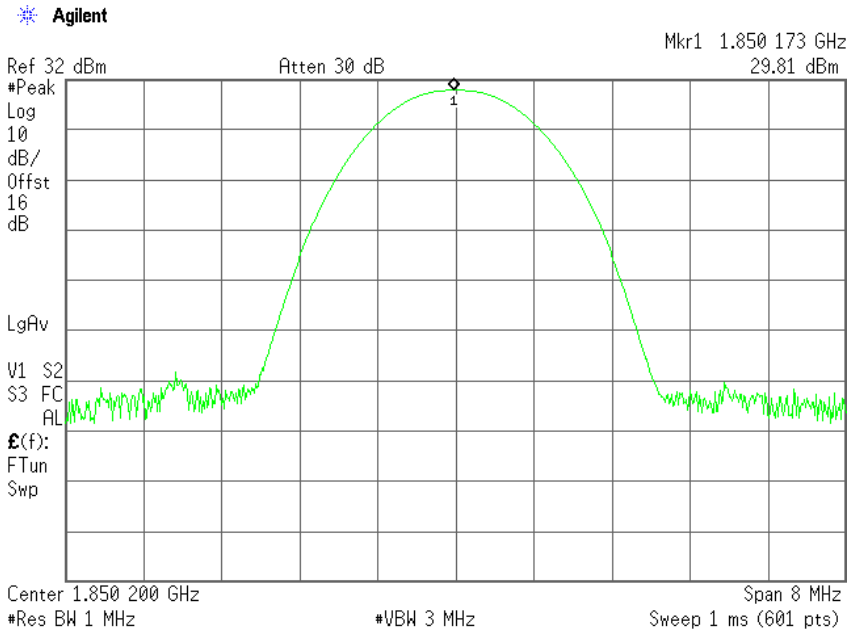
RBW= 8 MHz VBW = 8 MHz

Verdict: PASS

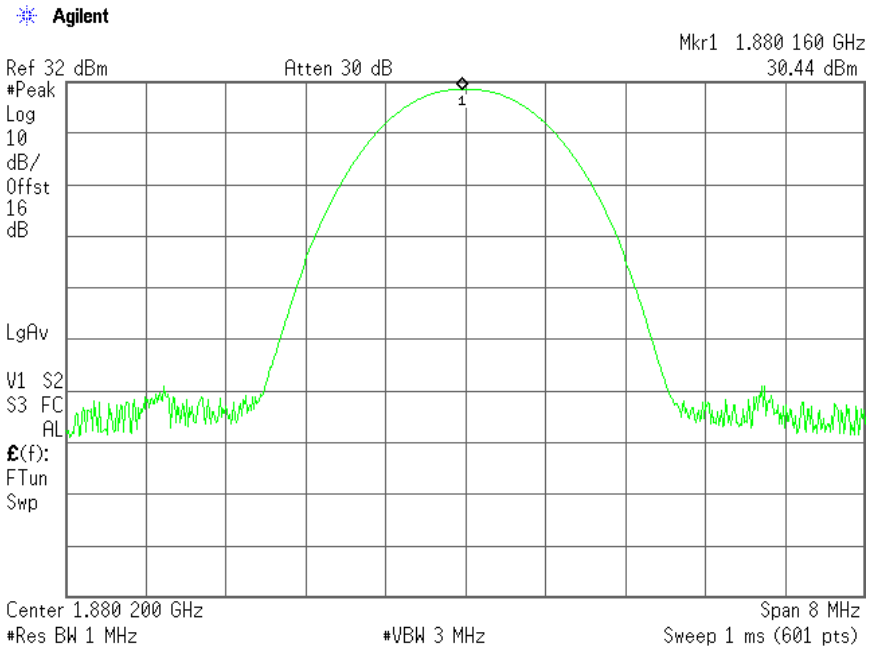
PEAK OUTPUT POWER (CONDUCTED).

GPRS MODULATION

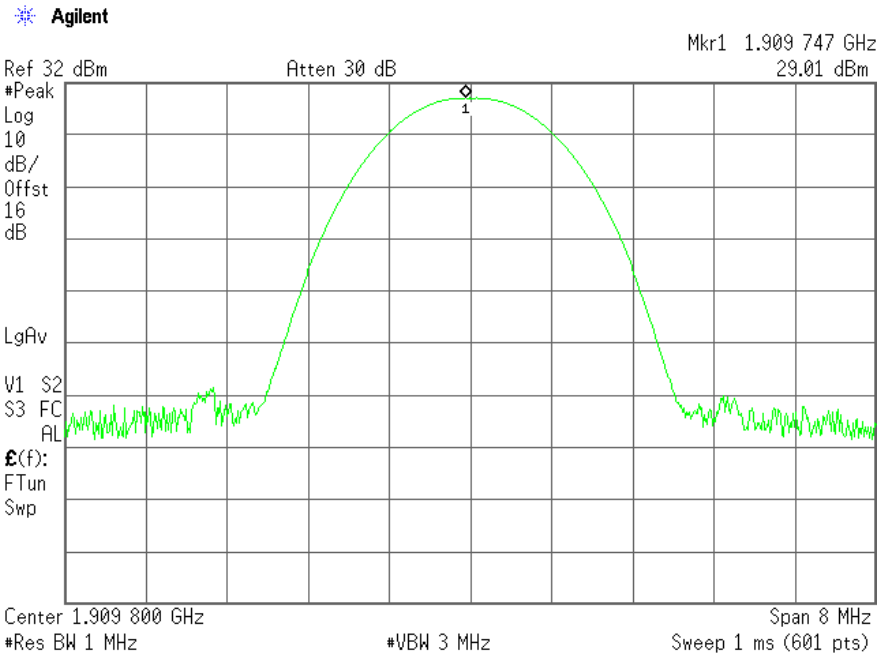
Lowest Channel.



Middle Channel.

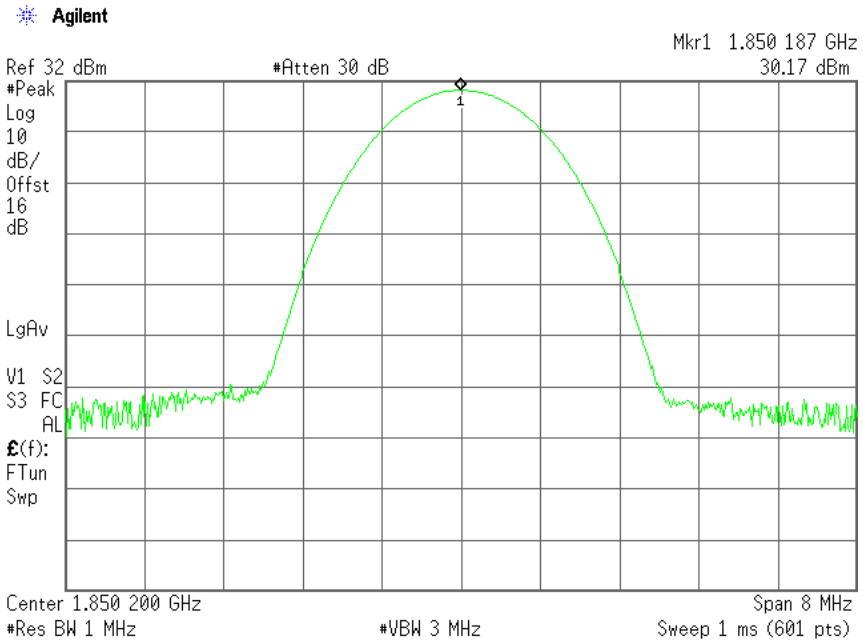


Highest Channel.

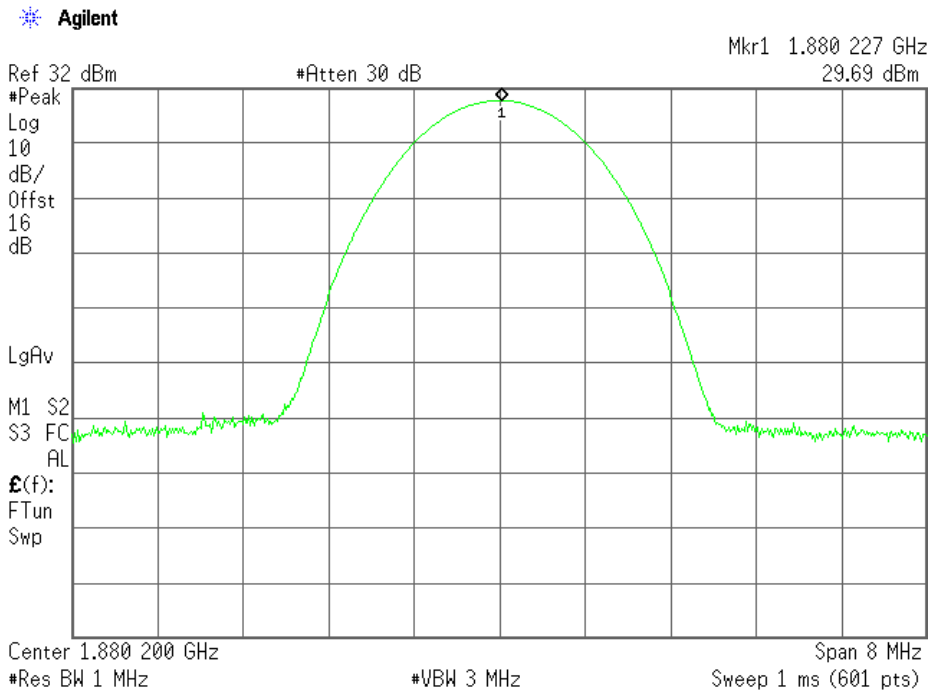


EDGE MODULATION

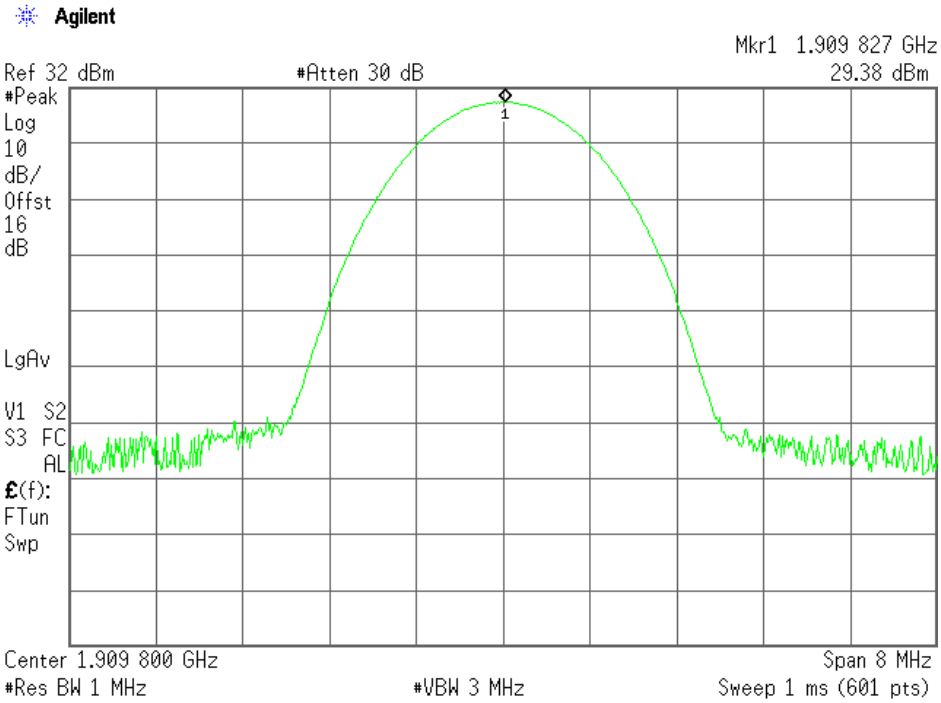
Lowest Channel.



Middle Channel.



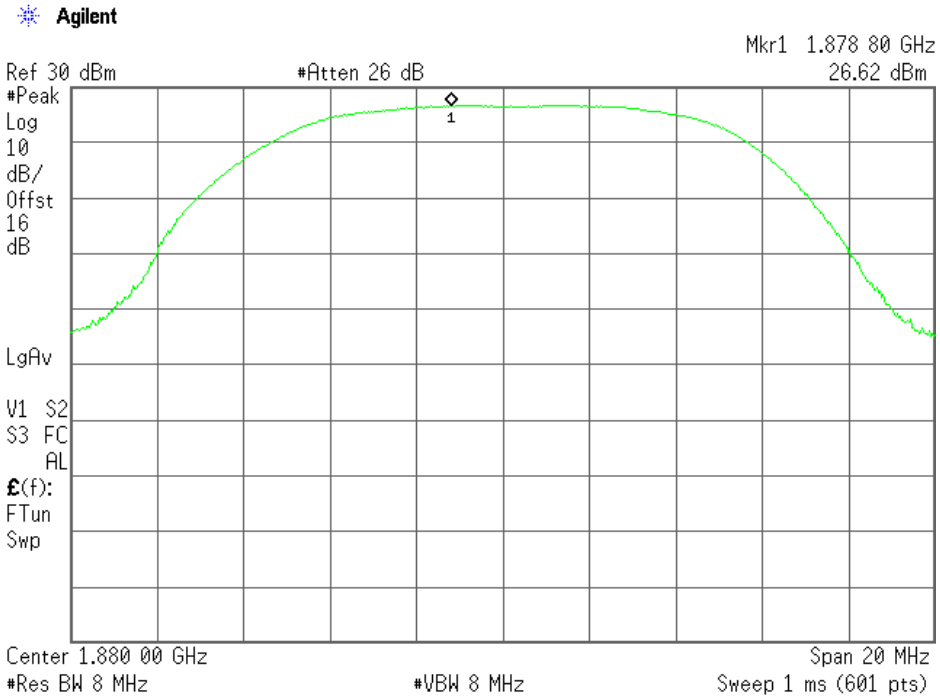
Highest Channel.



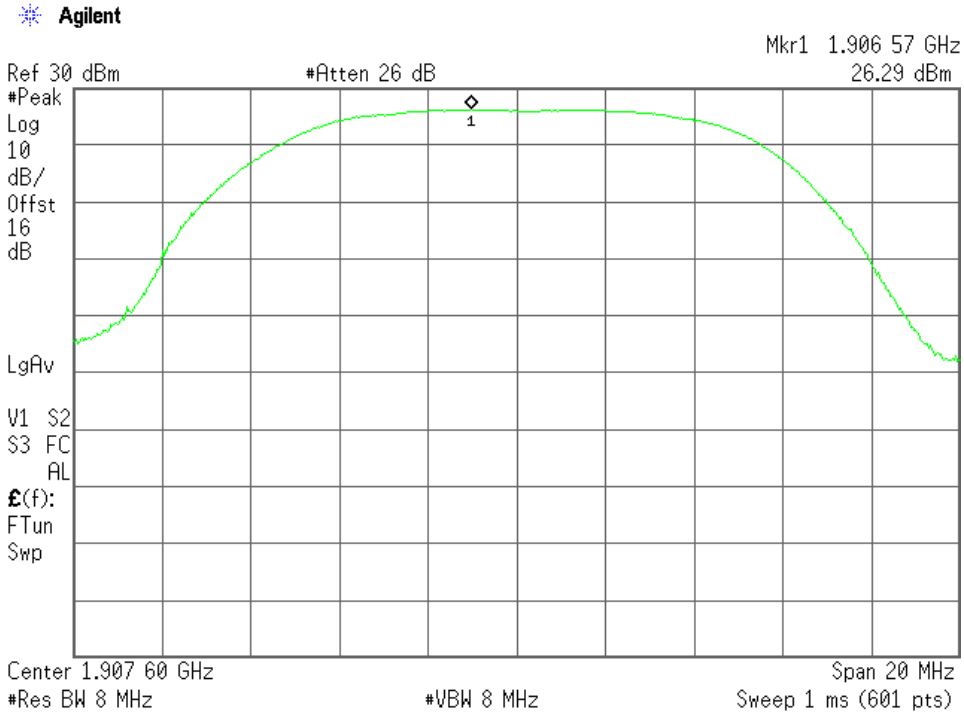
WCDMA MODULATION

Lowest Channel.

Middle Channel.



Highest Channel.



Modulation Characteristics

SPECIFICATION

§2.1047

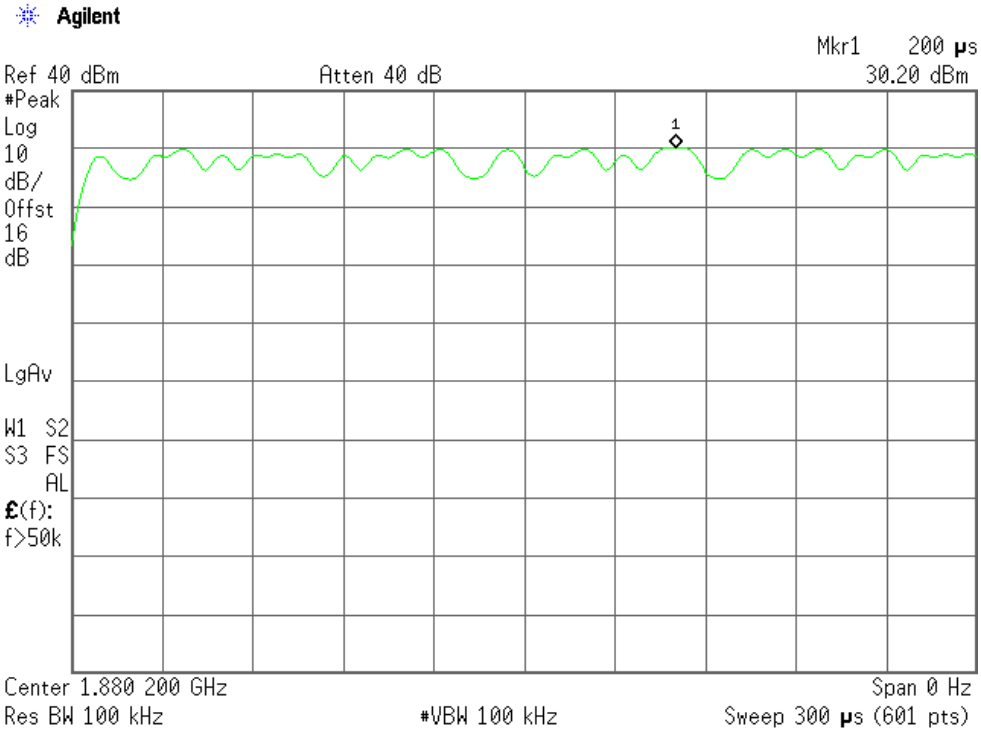
METHOD

The EUT uses GPRS (GMSK), EDGE (8-PSK) and WCDMA modulations, in which the information is digitised and coded into a bit stream..

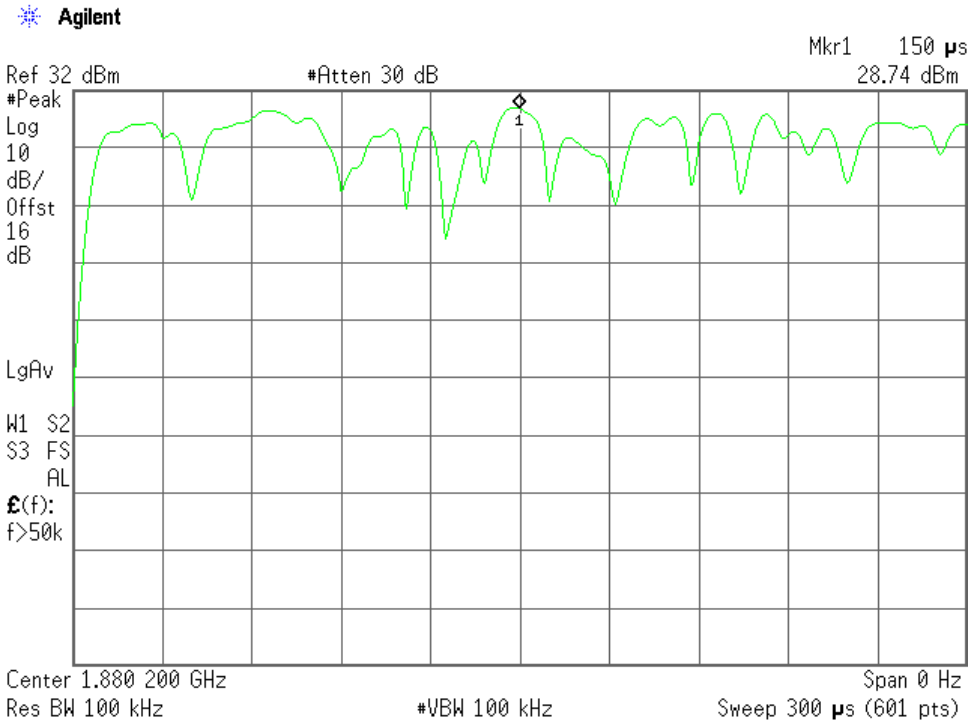
RESULTS

The following plot shows the modulation schemes in the EUT.

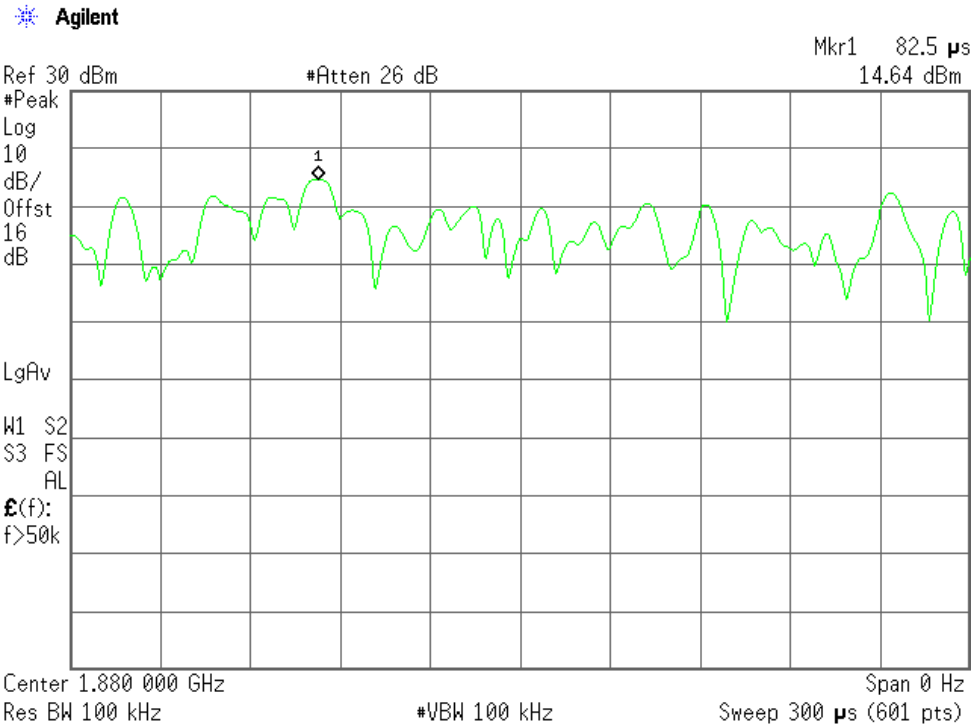
GPRS MODULATION



EDGE MODULATION



WCDMA MODULATION



Frequency Stability

SPECIFICATION

§2.1055 and 24.235

METHOD

The frequency tolerance measurements over temperature variations were made over the temperature range of –30ºC to +50ºC. The EUT was placed inside a climatic chamber and the temperature was raised hourly in 10ºC steps from –30ºC up to +50ºC.

The EUT was set in "call mode" in the middle channel using the Universal Radio Communication tester R&S CMU200, and the maximum frequency error was measured using the frequency meter of CMU200.

RESULTS

Frequency stability over temperature variations.

GPRS MODULATION

Temperature (ºC)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
+50	-30	-0.0160	-0.00000160
+40	4	0.0021	0.00000021
+30	-29	-0.0154	-0.00000154
+20	26	0.0138	0.00000138
+10	-30	-0.0160	-0.00000160
0	-25	-0.0133	-0.00000133
-10	-27	-0.0144	-0.00000144
-20	6	0.0032	0.00000032
-30	30	0.0160	0.00000160

EDGE MODULATION

Temperature (ºC)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
+50	-56	-0.0298	-0.00000298
+40	-58	-0.0308	-0.00000308
+30	-55	-0.0293	-0.00000293
+20	-49	-0.0261	-0.00000261
+10	-60	-0.0319	-0.00000319
0	-57	-0.0303	-0.00000303
-10	34	0.0181	0.00000181
-20	42	0.0223	0.00000223
-30	45	0.0239	0.00000239

WCMA MODULATION

Temperature (ºC)	Frequency Error (Hz)	Frequency Error (ppm)	Frequency Error (%)
+50	-78	-0.0415	-0.00000415
+40	-70	-0.0372	-0.00000372
+30	-47	-0.0250	-0.00000250
+20	64	0.0340	0.00000340
+10	-42	-0.0223	-0.00000223
0	48	0.0255	0.00000255
-10	43	0.0229	0.00000229
-20	50	0.0266	0.00000266
-30	45	0.0239	0.00000239

Occupied Bandwidth

SPECIFICATION

§2.1049

METHOD

The EUT was configured to transmit a modulated carrier signal. An IF bandwidth of 3 kHz was used to determined the occupied bandwidth of the modulated emission for GPRS and EDGE modulation and 51 kHz for WCDMA modulation.

RESULTS

GPRS MODULATION

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	285	285	287
-26 dBc bandwidth (kHz)	316	320	321
Measurement uncertainty (kHz)	<±40		

EDGE MODULATION

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	282	282	280
-26 dBc bandwidth (kHz)	311	314	311
Measurement uncertainty (kHz)	<±40		

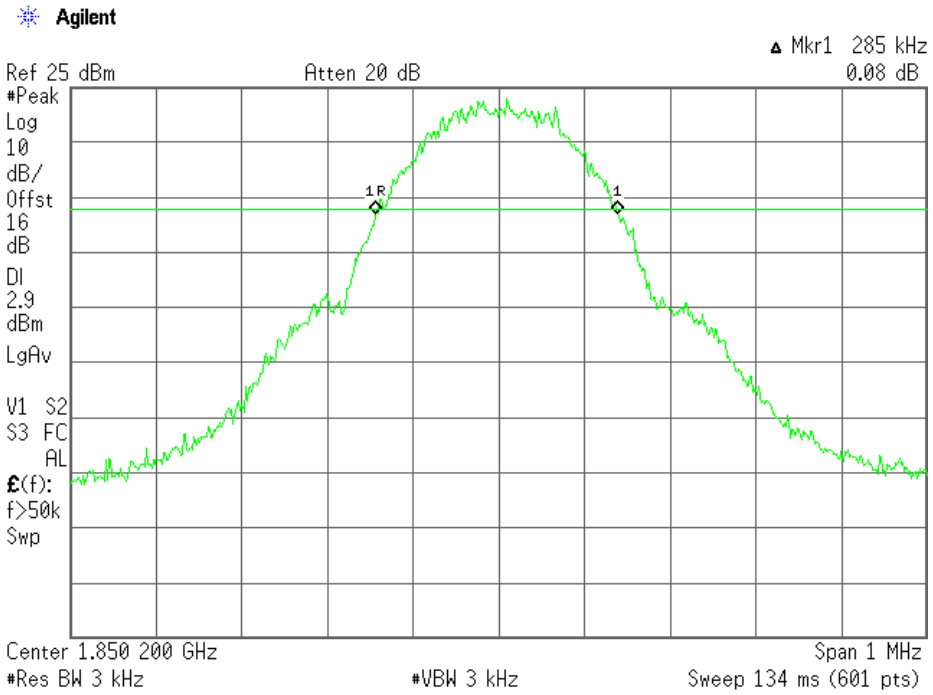
WCDMA MODULATION

Channel	Lowest	Middle	Highest
99% Occupied bandwidth (kHz)	4640	4653	4667
-26 dBc bandwidth (kHz)	4800	4800	4827
Measurement uncertainty (kHz)	<±513		

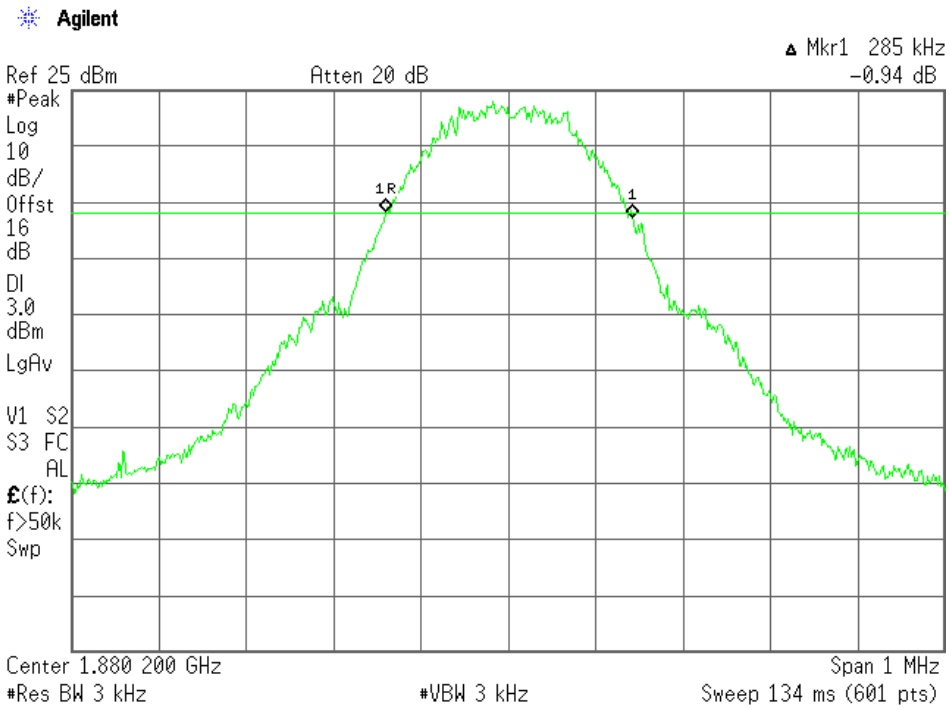
99% OCCUPIED BANDWIDTH

GPRS MODULATION

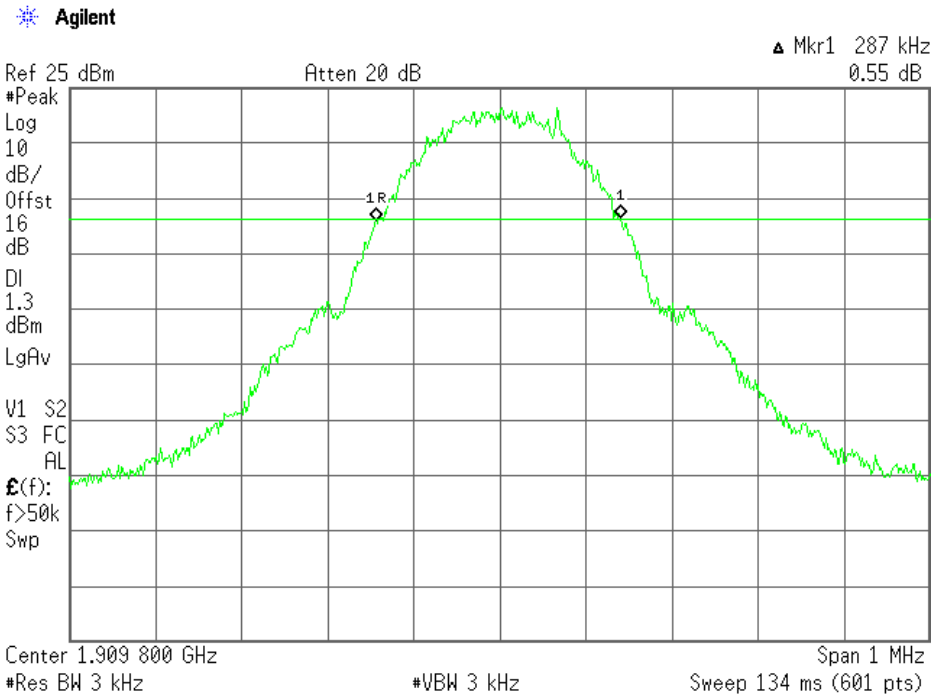
Lowest Channel



Middle Channel

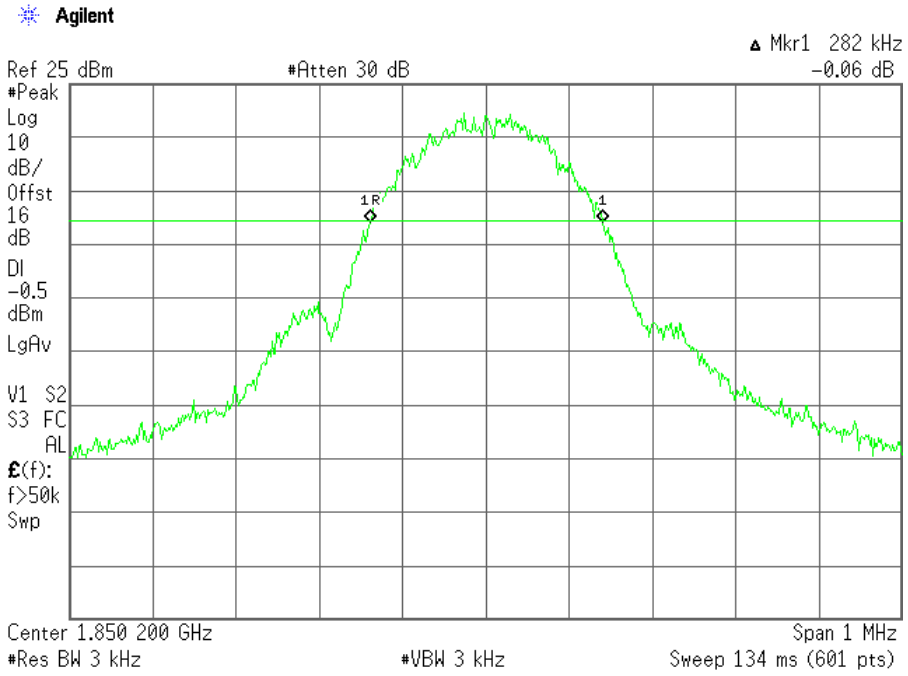


Highest Channel

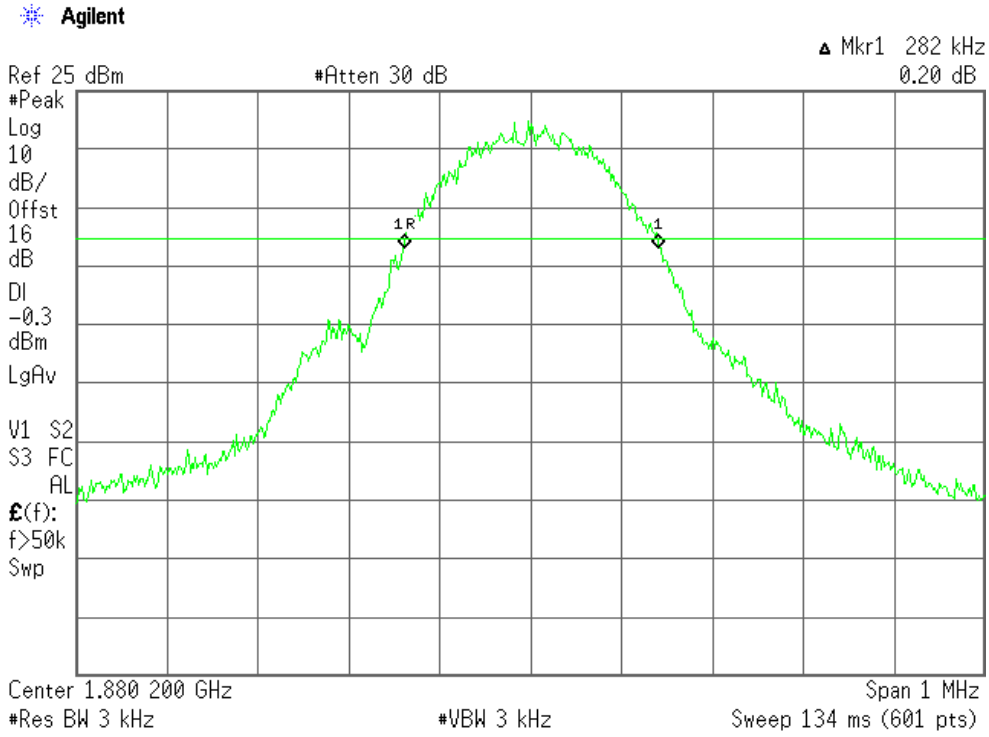


EDGE MODULATION

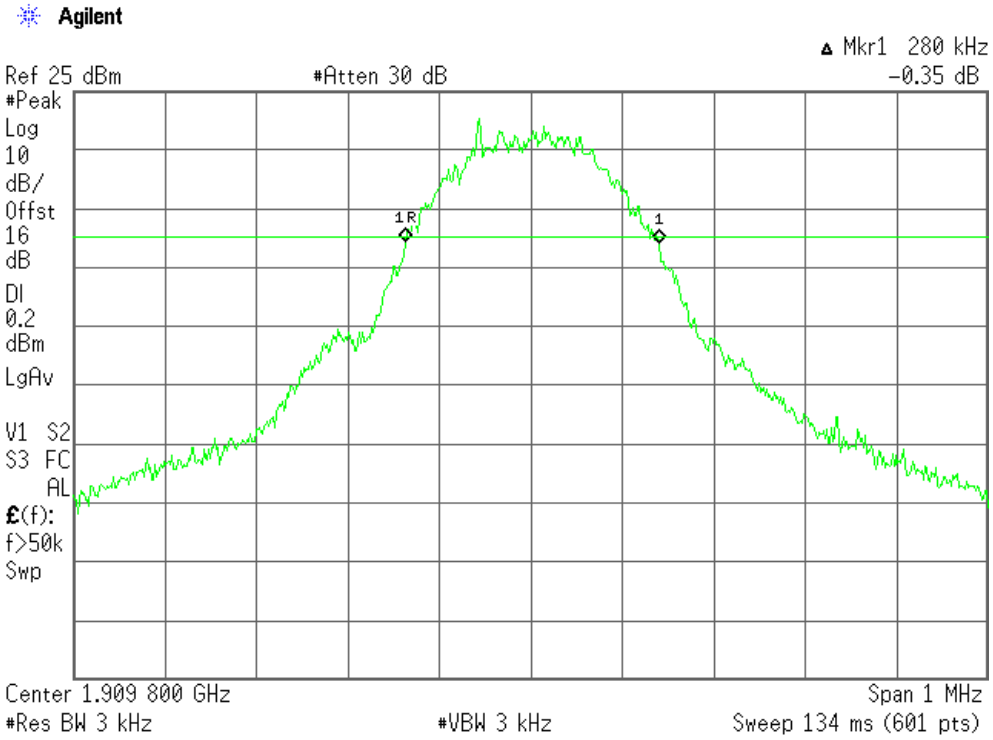
Lowest Channel



Middle Channel

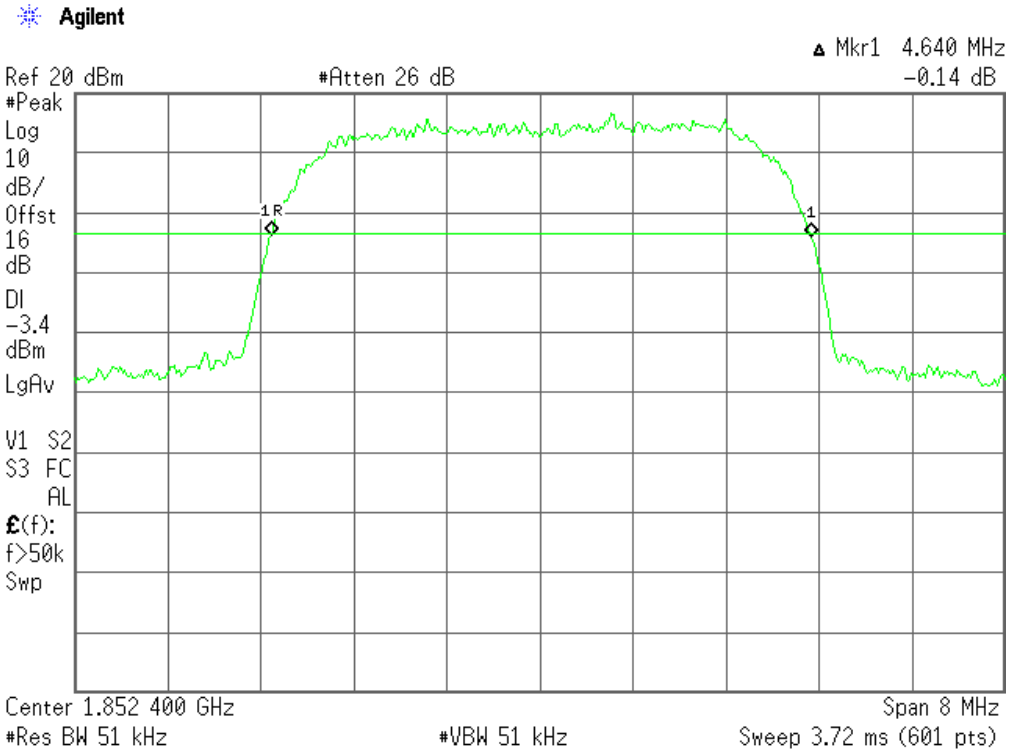


Highest Channel

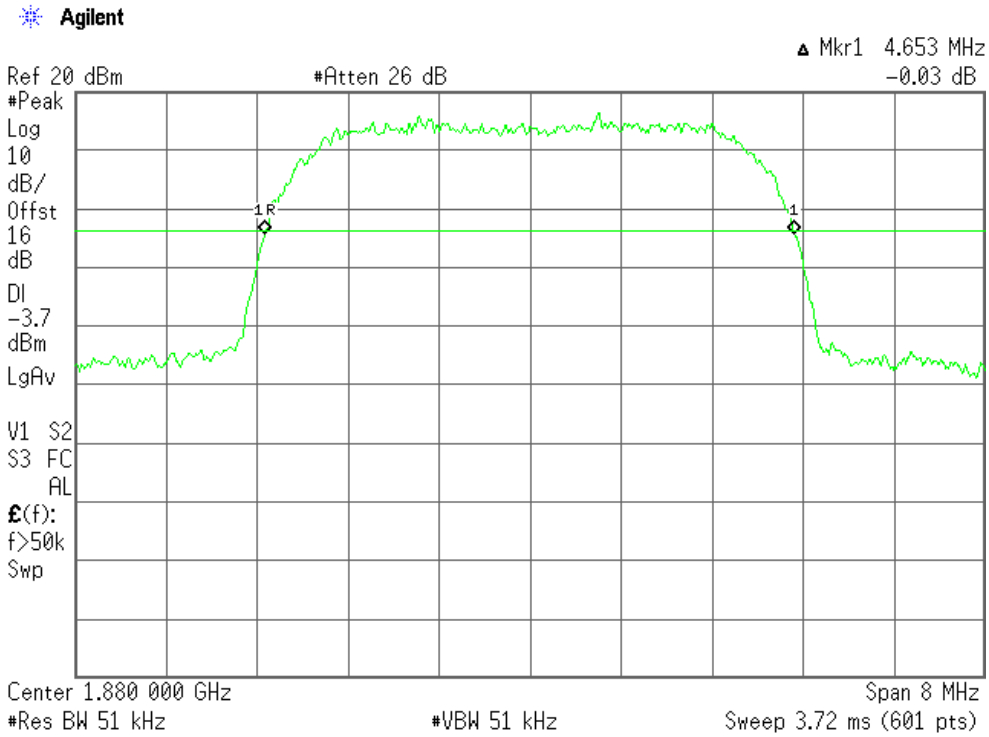


WCDMA MODULATION

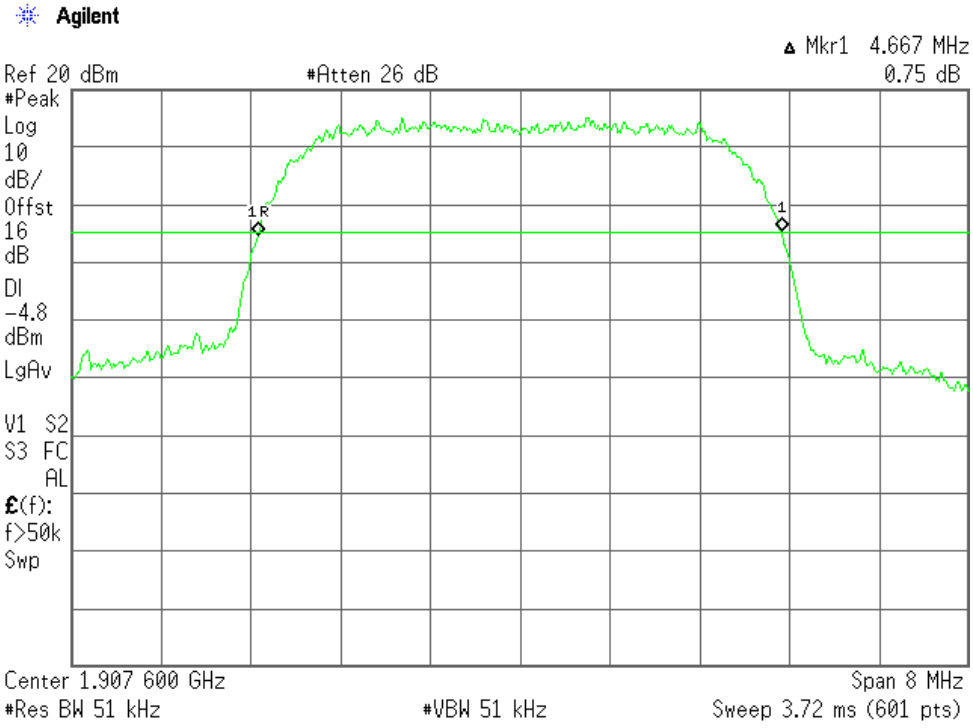
Lowest Channel



Middle Channel



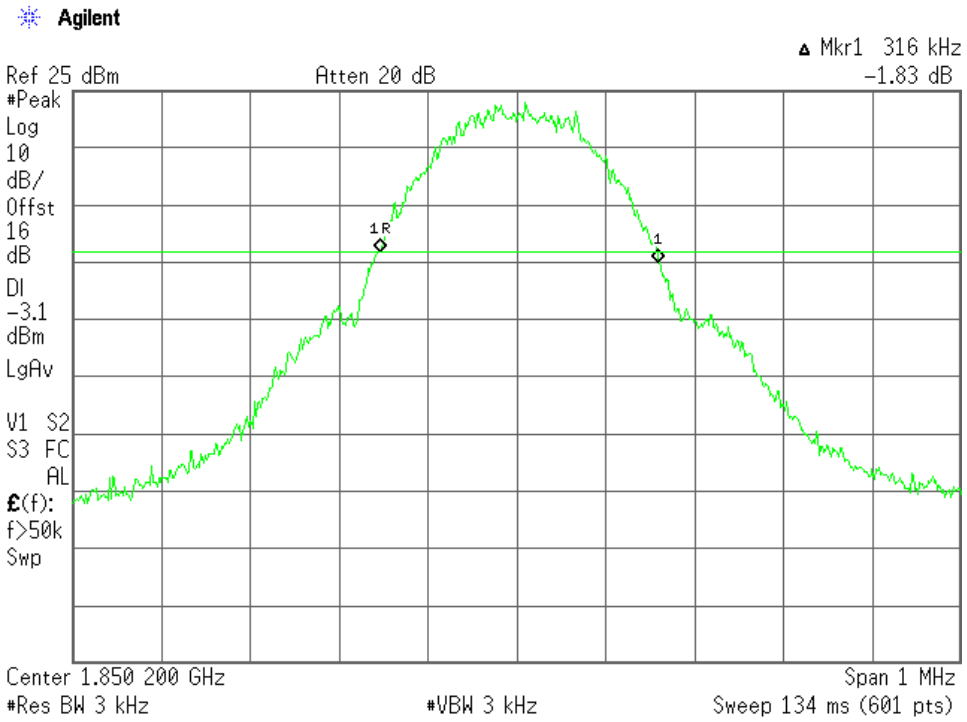
Highest Channel



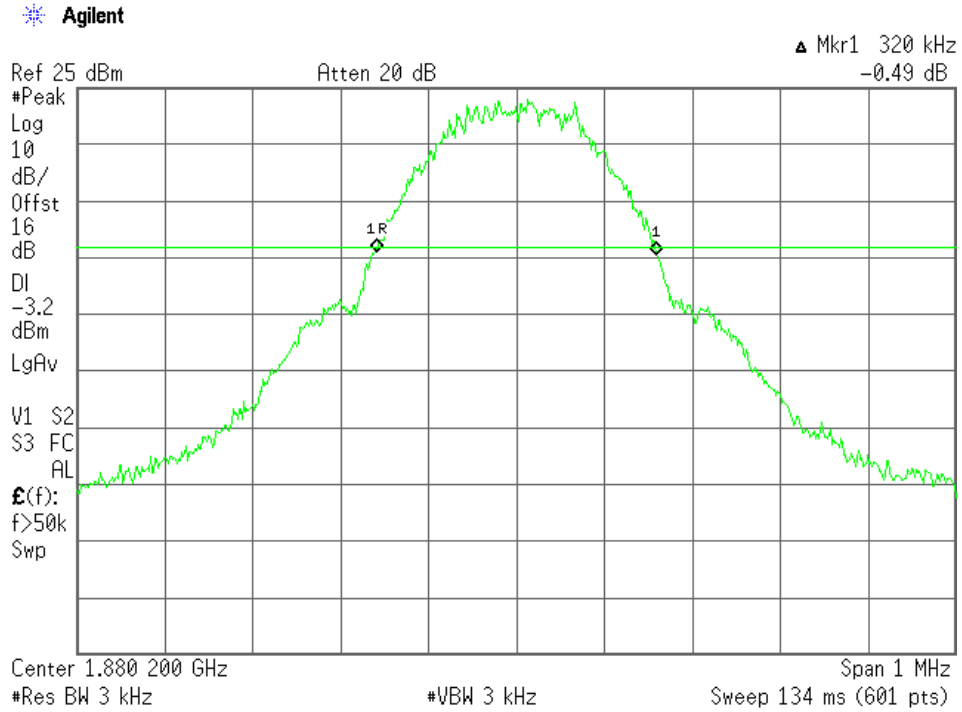
-26 dBc BANDWIDTH

GPRS MODULATION

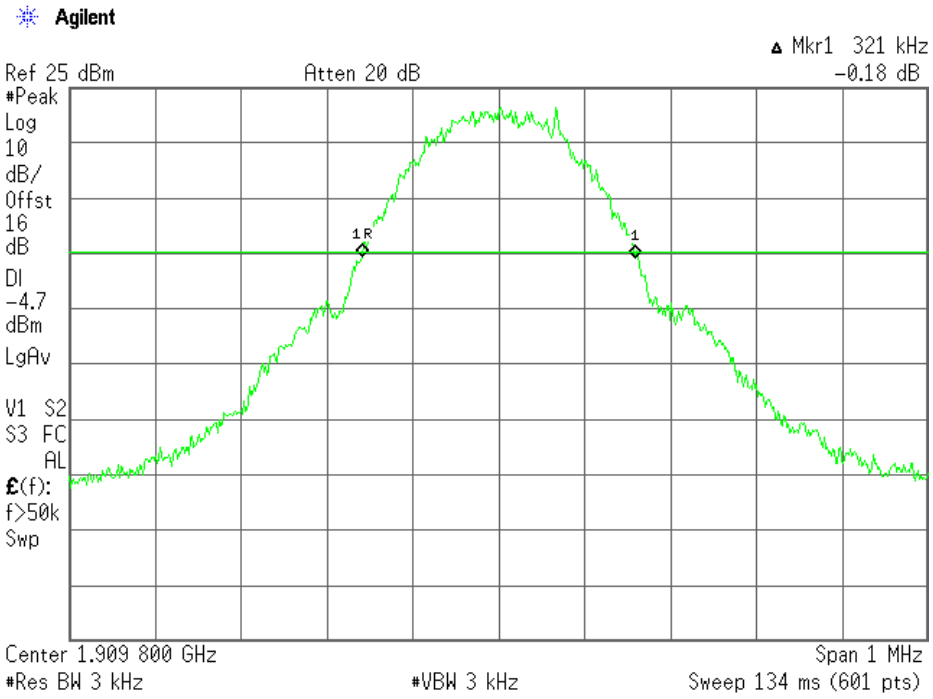
Lowest Channel



Middle Channel

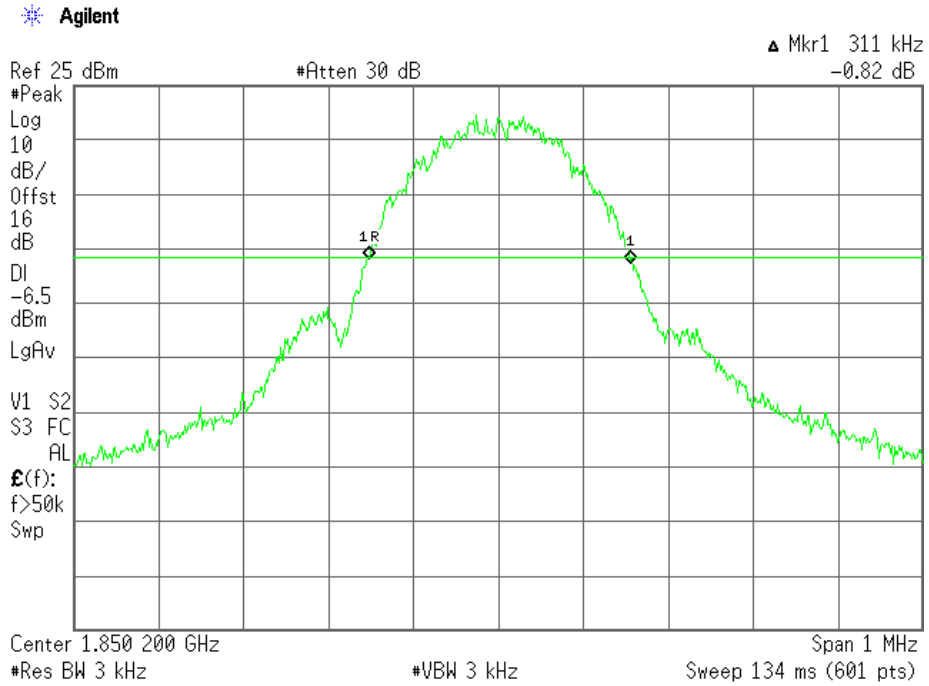


Highest Channel

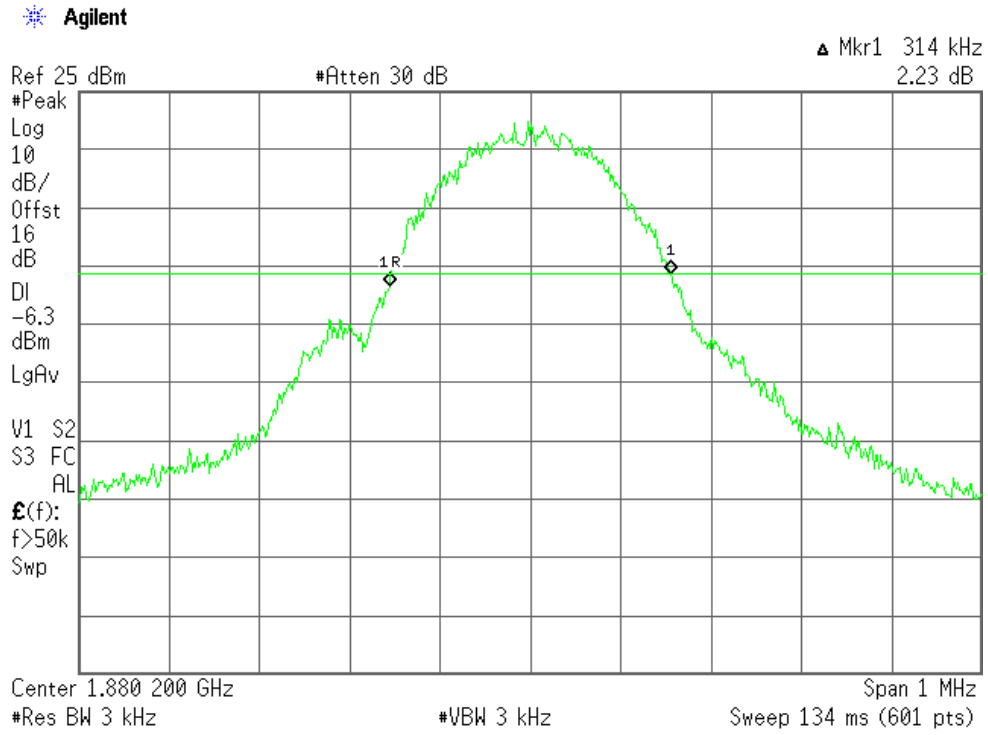


EDGE MODULATION

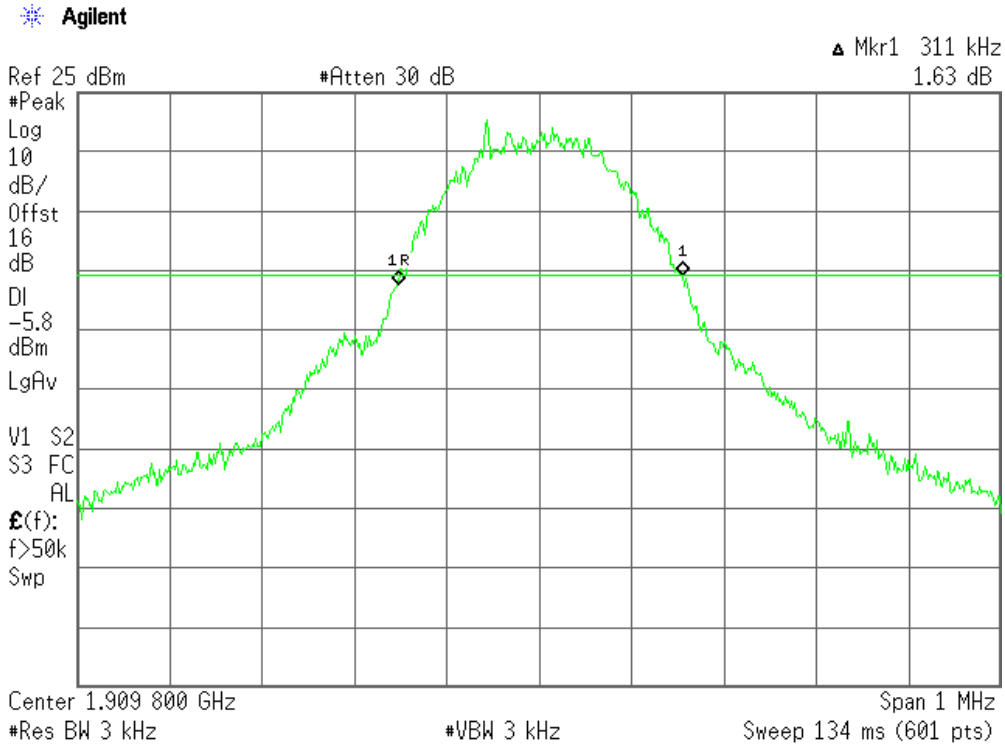
Lowest Channel



Middle Channel

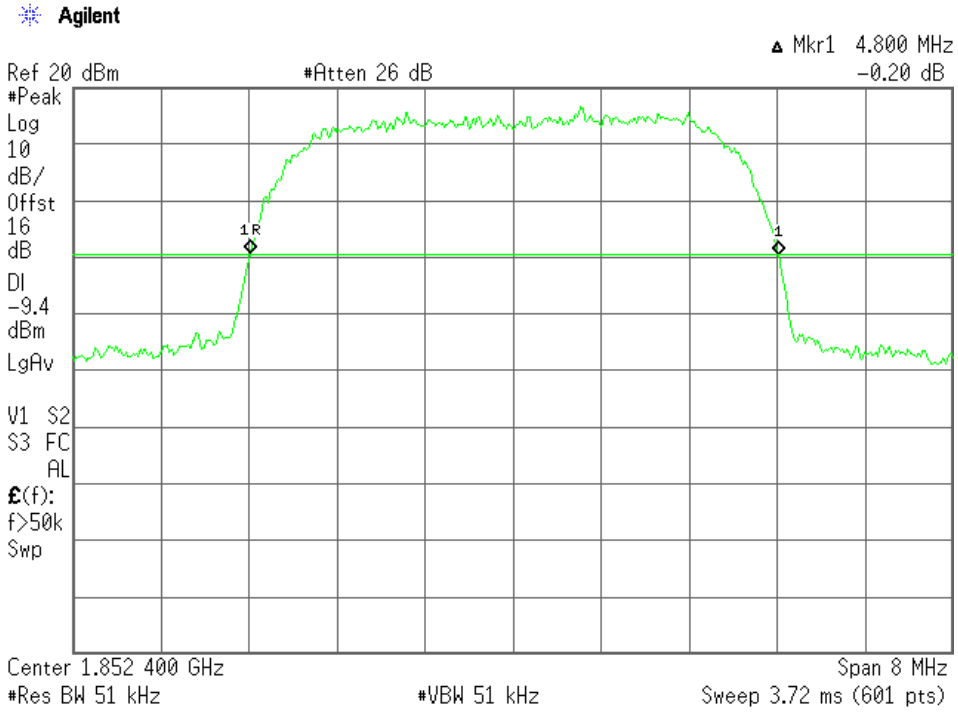


Highest Channel

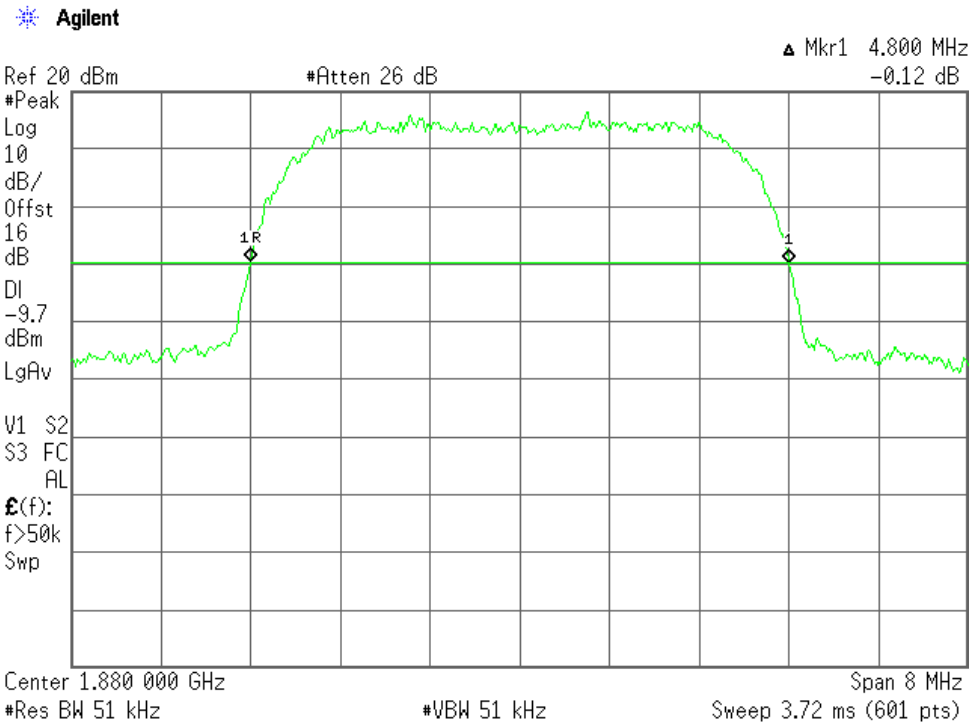


WCDMA MODULATION

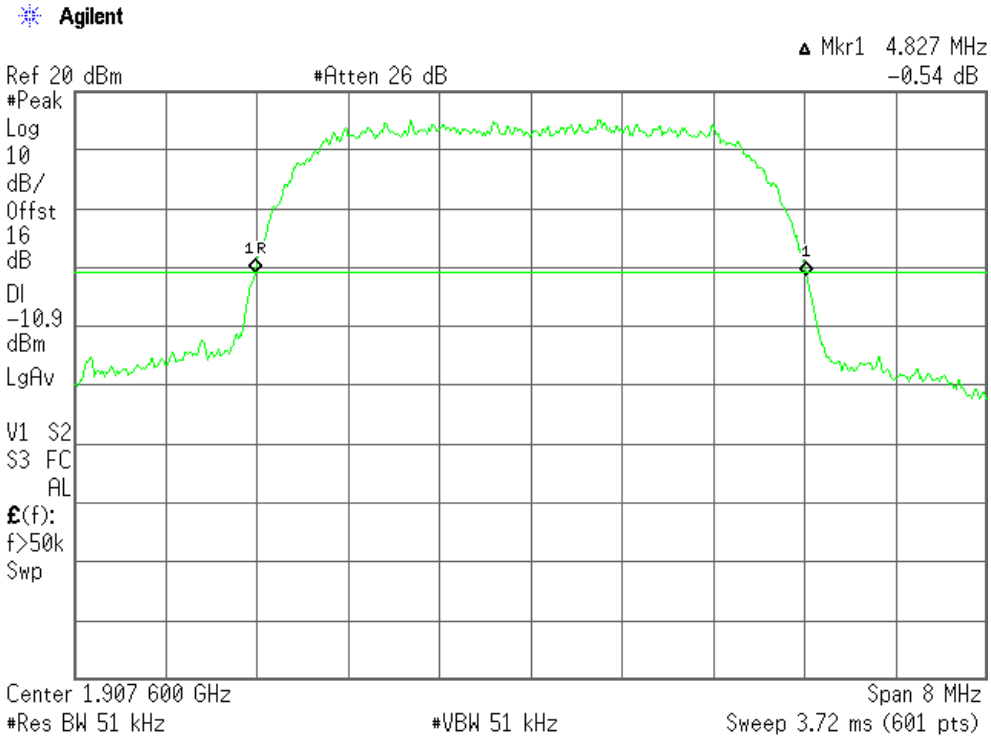
Lowest Channel



Middle Channel



Highest Channel



Spurious emissions at antenna terminals

SPECIFICATION

§2.1051 and §24.238

METHOD

The EUT RF output connector was connected to an spectrum analyser using an 50 ohm attenuator and the resolution bandwidth of the spectrum analyser was set to 1 MHz. The spectrum was investigated from 30 MHz to 20 GHz.

The reading of the spectrum analyser is corrected with the attenuation loss of connection between output terminal of EUT and input of the spectrum analyser.

Measurement Limit**:**

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB, P in watts.
At Po transmitting power, the specified minimum attenuation becomes 43+10log (Po), and the level in dBm relative Po becomes:

Po (dBm) – [43 + 10 log (Po in mwatts) - 30] = - 13 dBm

RESULTS (see plots in next pages)

GPRS MODULATION

1. CHANNEL: LOWEST
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

No spurious signals were found in all the range.

EDGE MODULATION

1. CHANNEL: LOWEST
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

No spurious signals were found in all the range.

WCDMA MODULATION

1. CHANNEL: LOWEST
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

No spurious signals were found in all the range.

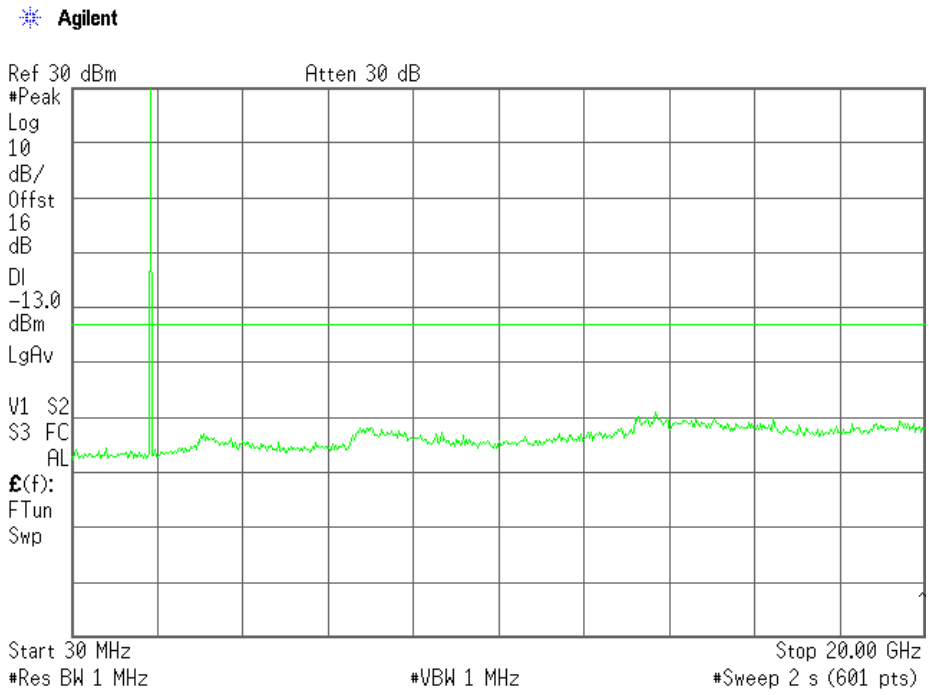
3. CHANNEL: HIGHEST

No spurious signals were found in all the range.

Verdict: PASS

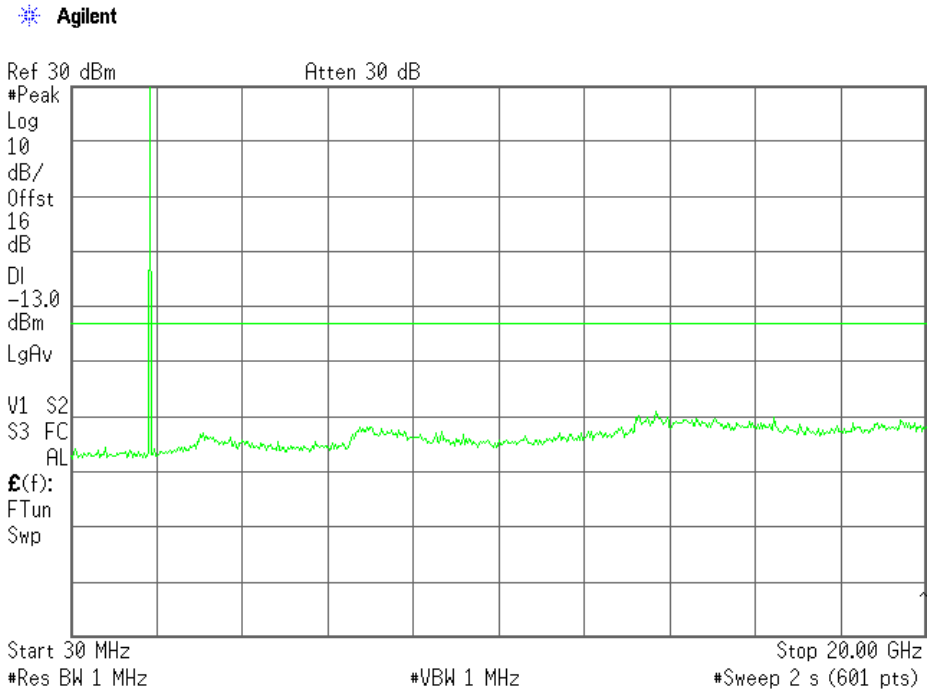
GPRS MODULATION

1. CHANNEL: LOWEST



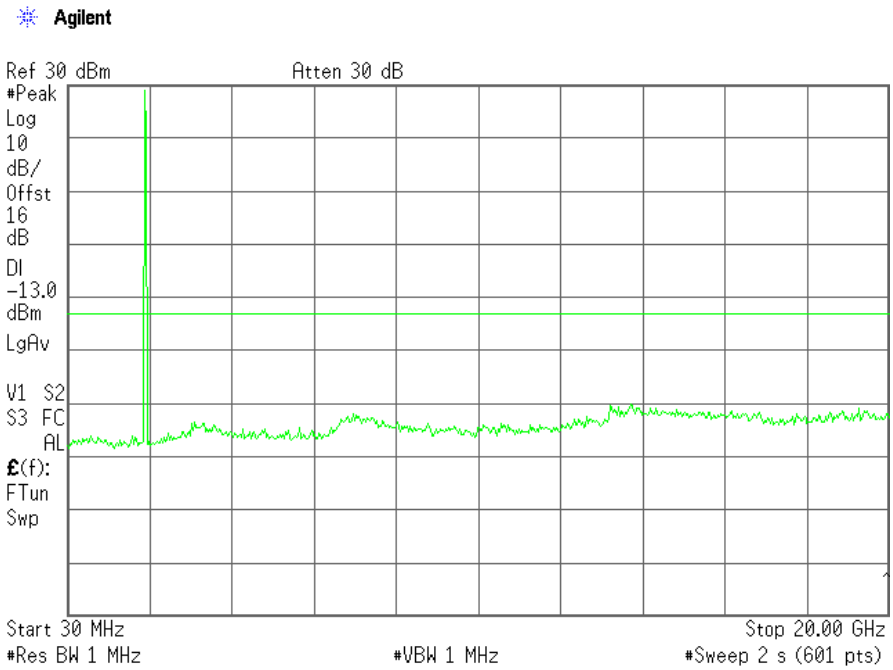
Note: The peak above the limit is the carrier frequency.

2. CHANNEL: MIDDLE



Note: The peak above the limit is the carrier frequency.

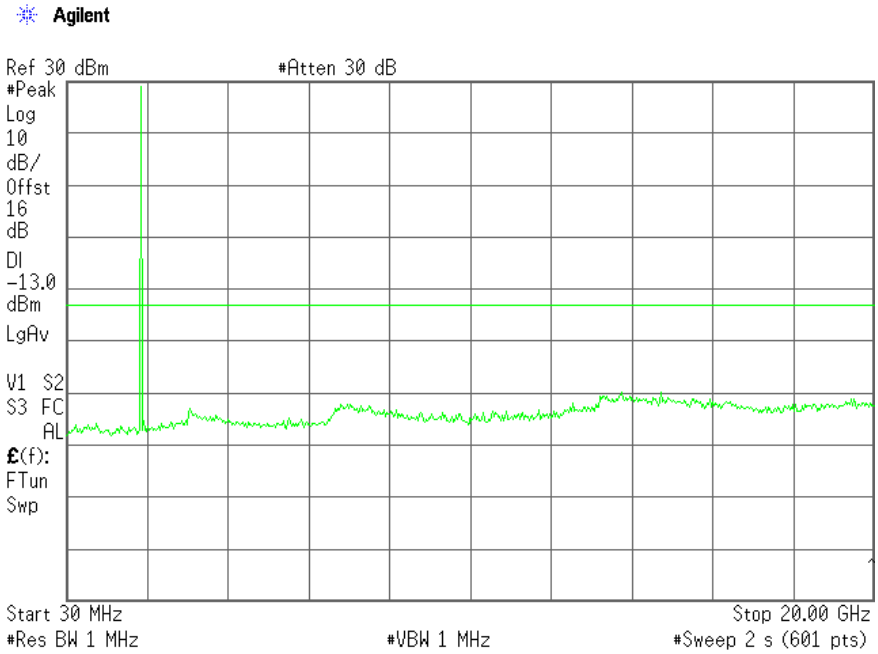
3. CHANNEL: HIGHEST



Note: The peak above the limit is the carrier frequency.

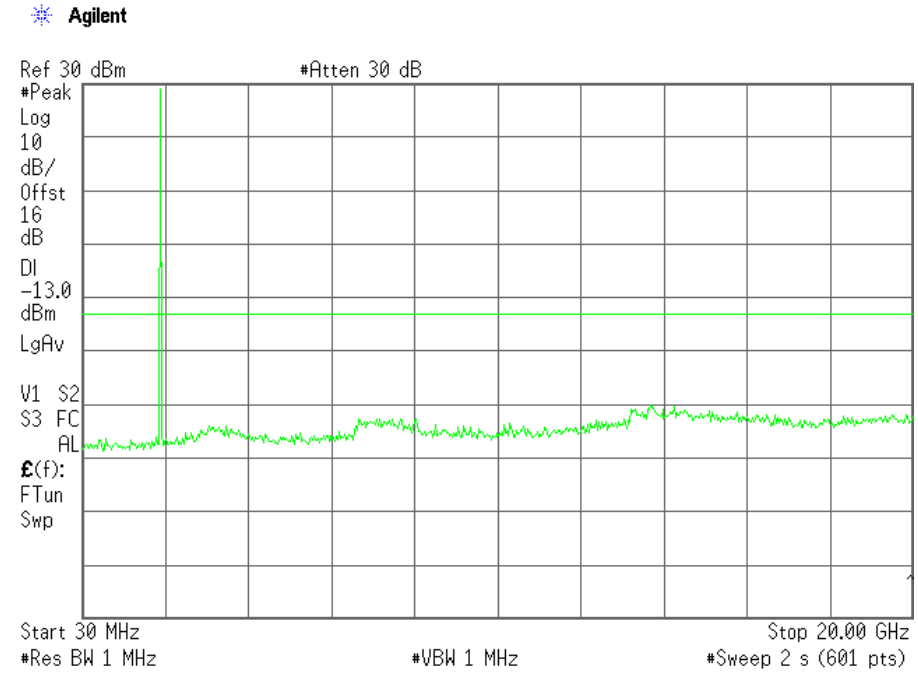
EDGE MODULATION

1. CHANNEL: LOWEST



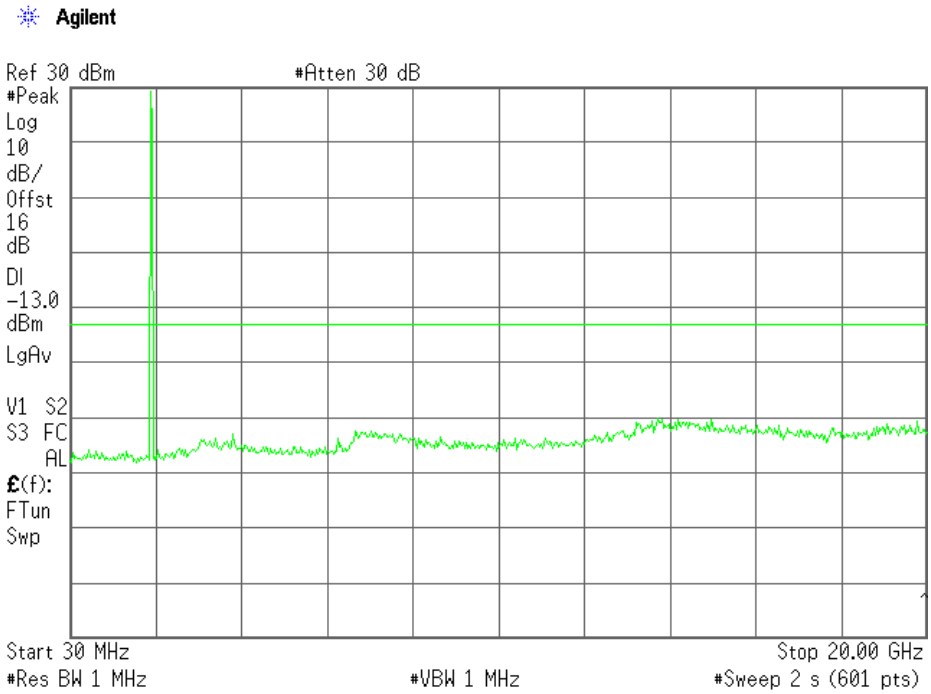
Note: The peak above the limit is the carrier frequency.

2. CHANNEL: MIDDLE



Note: The peak above the limit is the carrier frequency.

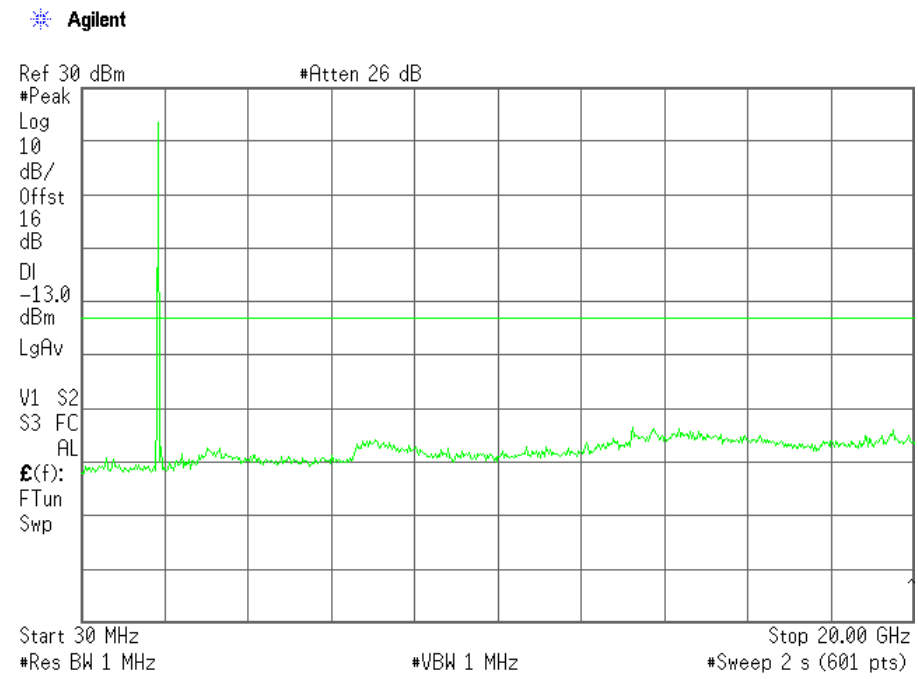
3. CHANNEL: HIGHEST



Note: The peak above the limit is the carrier frequency.

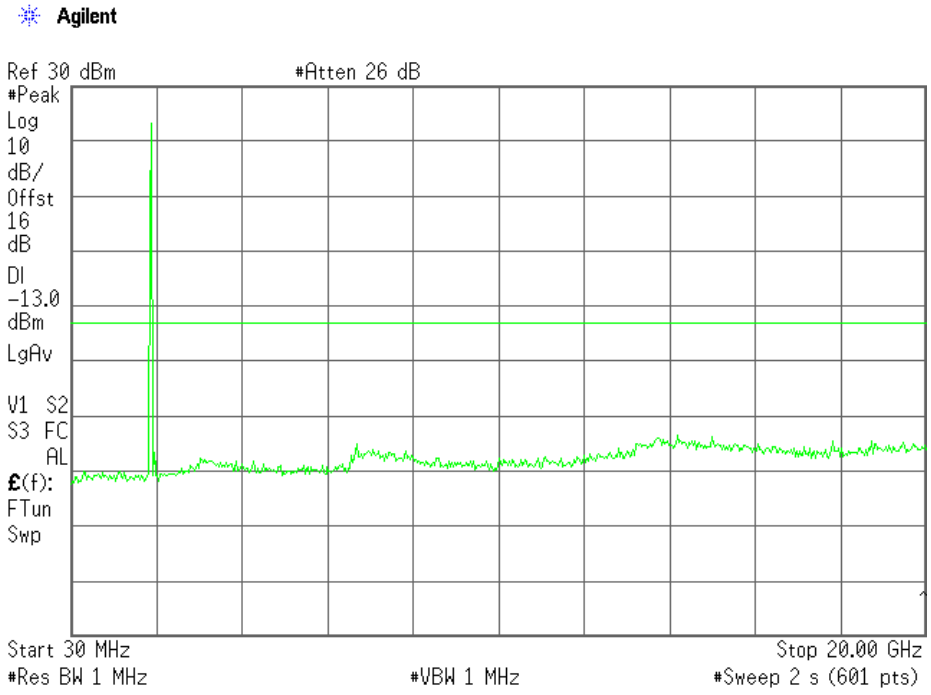
WCDMA MODULATION

1. CHANNEL: LOWEST



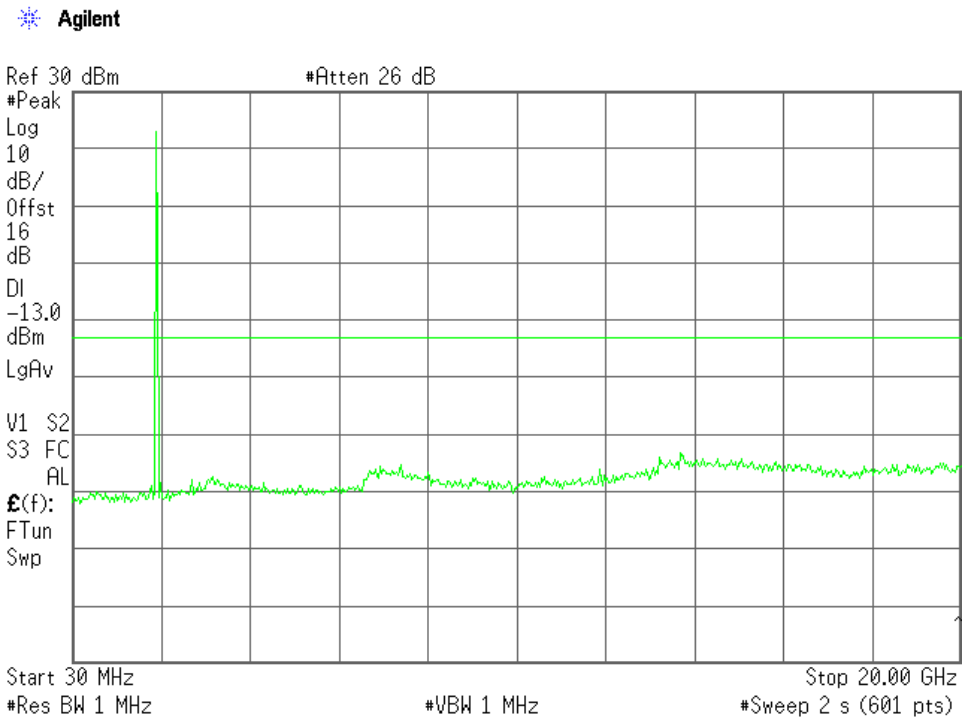
Note: The peak above the limit is the carrier frequency.

2. CHANNEL: MIDDLE



Note: The peak above the limit is the carrier frequency.

3. CHANNEL: HIGHEST



Note: The peak above the limit is the carrier frequency.

SPECIFICATION

§2.1051 and §24.238

METHOD

As indicated in FCC part 24, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. A resolution bandwidth of 3.3 kHz was used for GPRS and EDGE modulations, and 51 kHz for WCDMA modulation..

Measurement Limit**:**

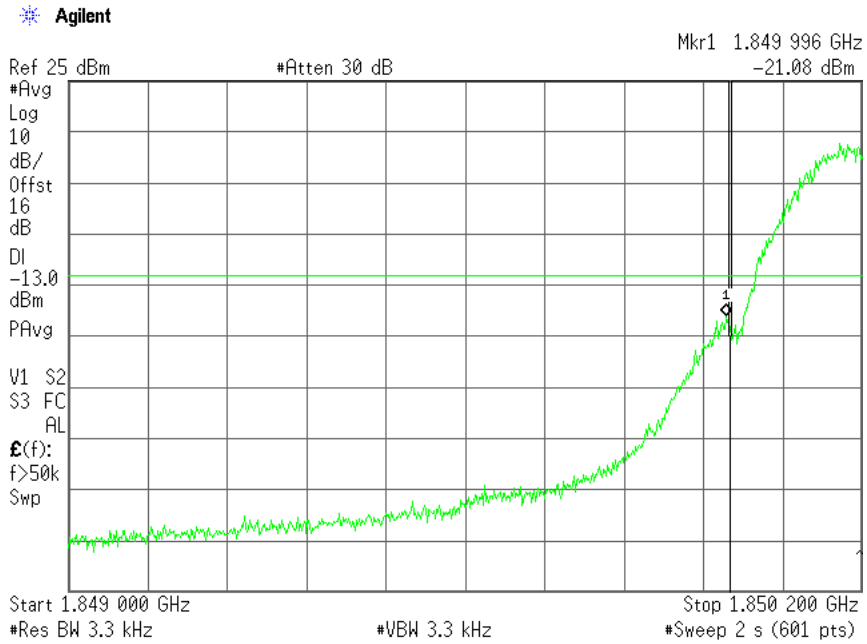
According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB, P in watts.
At Po transmitting power, the specified minimum attenuation becomes 43+10log (Po), and the level in dBm relative Po becomes:

Po (dBm) – [43 + 10 log (Po in mwatts) - 30] = - 13 dBm

RESULTS (see plots in next pages)

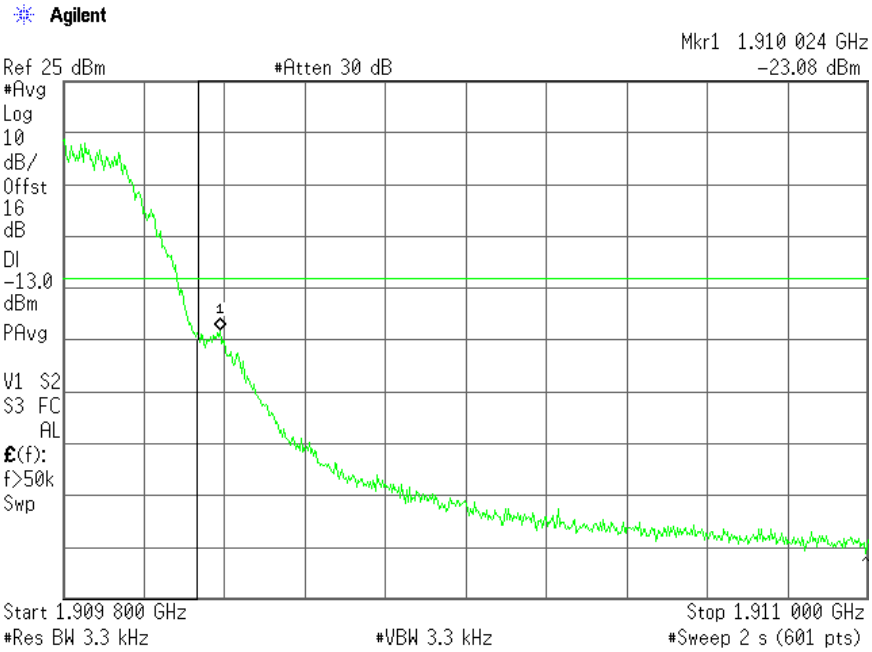
GPRS MODULATION

CHANNEL LOWEST



NOTE: The equipment transmits at the maximum output power

CHANNEL HIGHEST

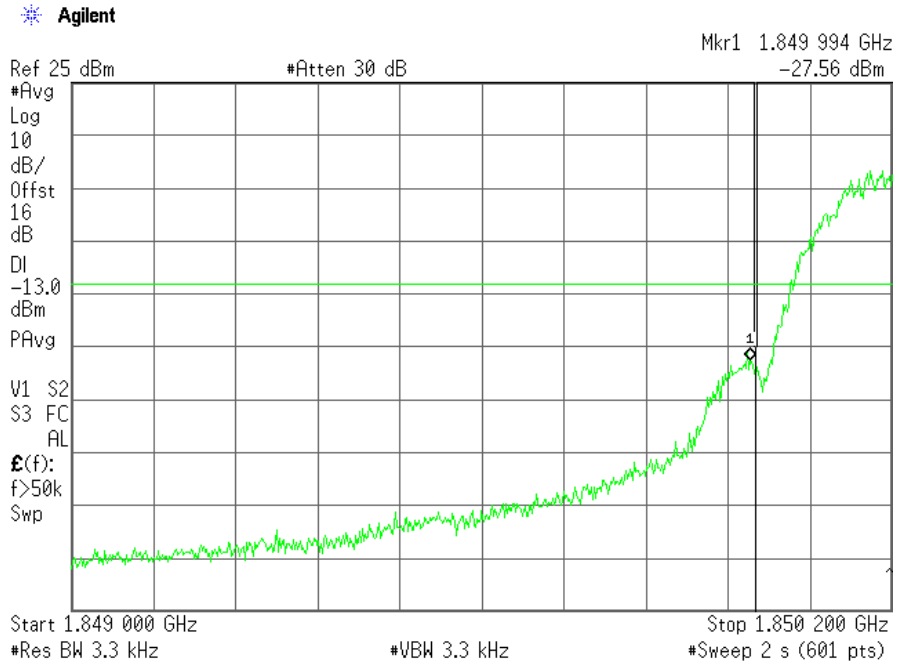


NOTE: The equipment transmits at the maximum output power

Verdict: PASS

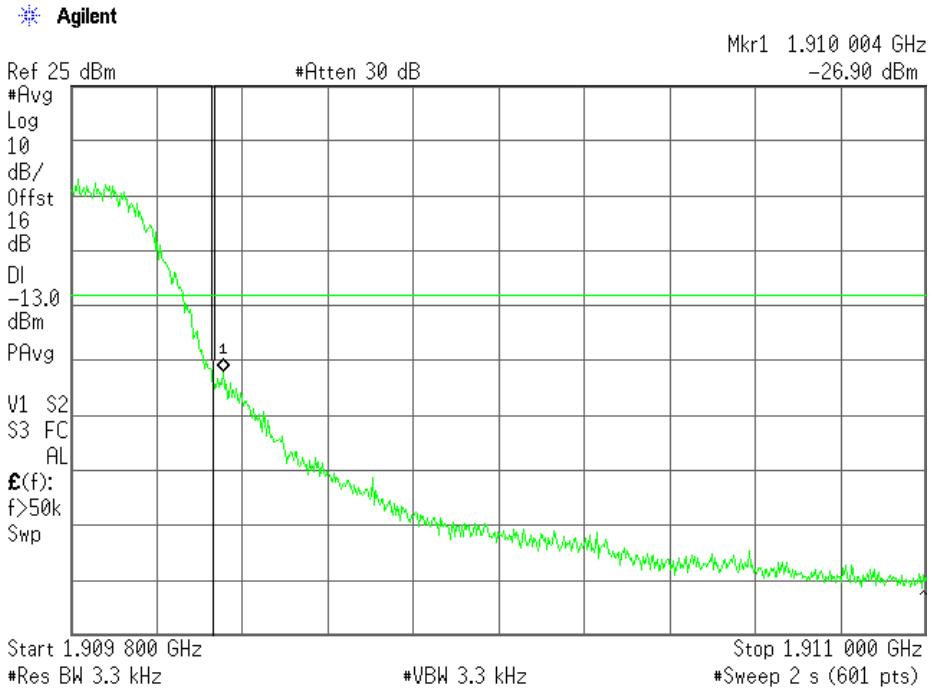
EDGE MODULATION

CHANNEL LOWEST



NOTE: The equipment transmits at the maximum output power

CHANNEL HIGHEST

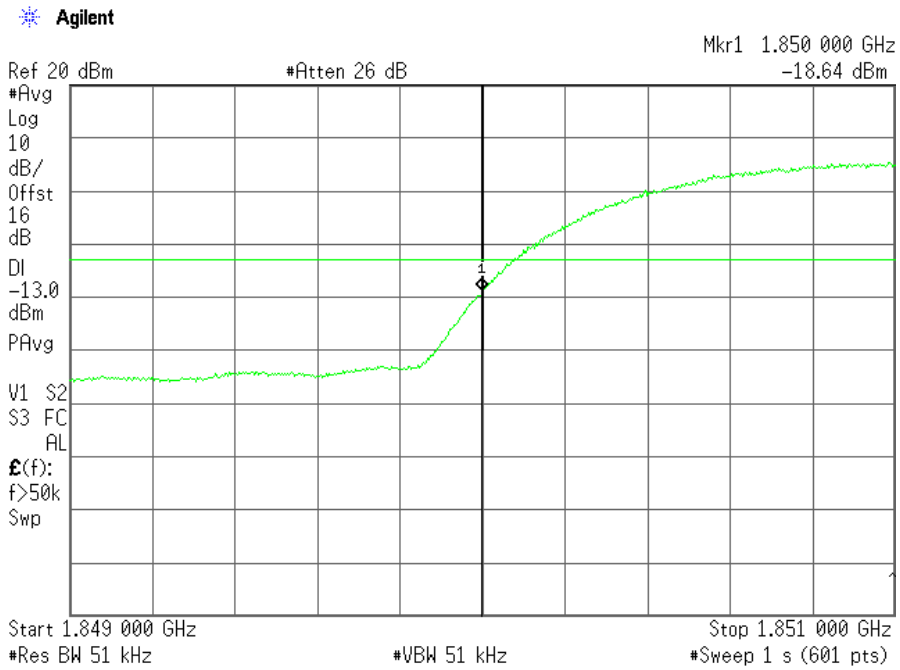


NOTE: The equipment transmits at the maximum output power

Verdict: PASS

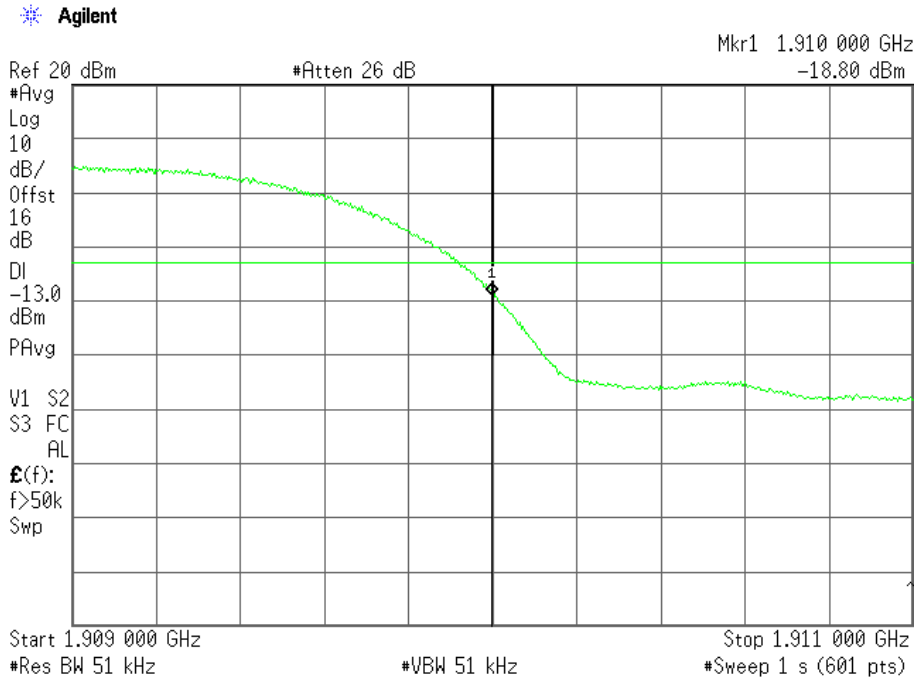
WCDMA MODULATION

CHANNEL LOWEST



NOTE: The equipment transmits at the maximum output power

CHANNEL HIGHEST



NOTE: The equipment transmits at the maximum output power

Verdict: PASS

Radiated emissions

SPECIFICATION

§ 24.238

METHOD

The measurement was performed with the EUT inside an anechoic chamber. The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment.

The EUT was placed on a 1 meter high non-conductive stand at a 3 meter distance from the measuring antenna for measurements below 1 GHz and at 1 m distance for measurements above 1 GHz.

Detected emissions were maximized at each frequency by rotating the EUT and adjusting the measuring antenna height and polarization. The maximum meter reading was recorded. The radiated emissions were measured with peak detector and 1 MHz bandwidth.

Each detected emissions were substituted by the Substitution method, in accordance with the ANSI/TIA/EIA-603-C: 2004.

Measurement Limit**:**

According to specification, the power of emissions shall be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB, P in watts.
At Po transmitting power, the specified minimum attenuation becomes 43+10log (Po), and the level in dBm relative Po becomes:

Po (dBm) – [43 + 10 log (Po in mwatts) - 30] = - 13 dBm

RESULTS

GPRS MODULATION

1. CHANNEL: LOWEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-20 GHz.
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-20 GHz.
No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-20 GHz.
No spurious signals were found in all the range.

EDGE MODULATION

1. CHANNEL: LOWEST

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-20 GHz.
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE

Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-20 GHz.
No spurious signals were found in all the range.

3. CHANNEL: HIGHEST

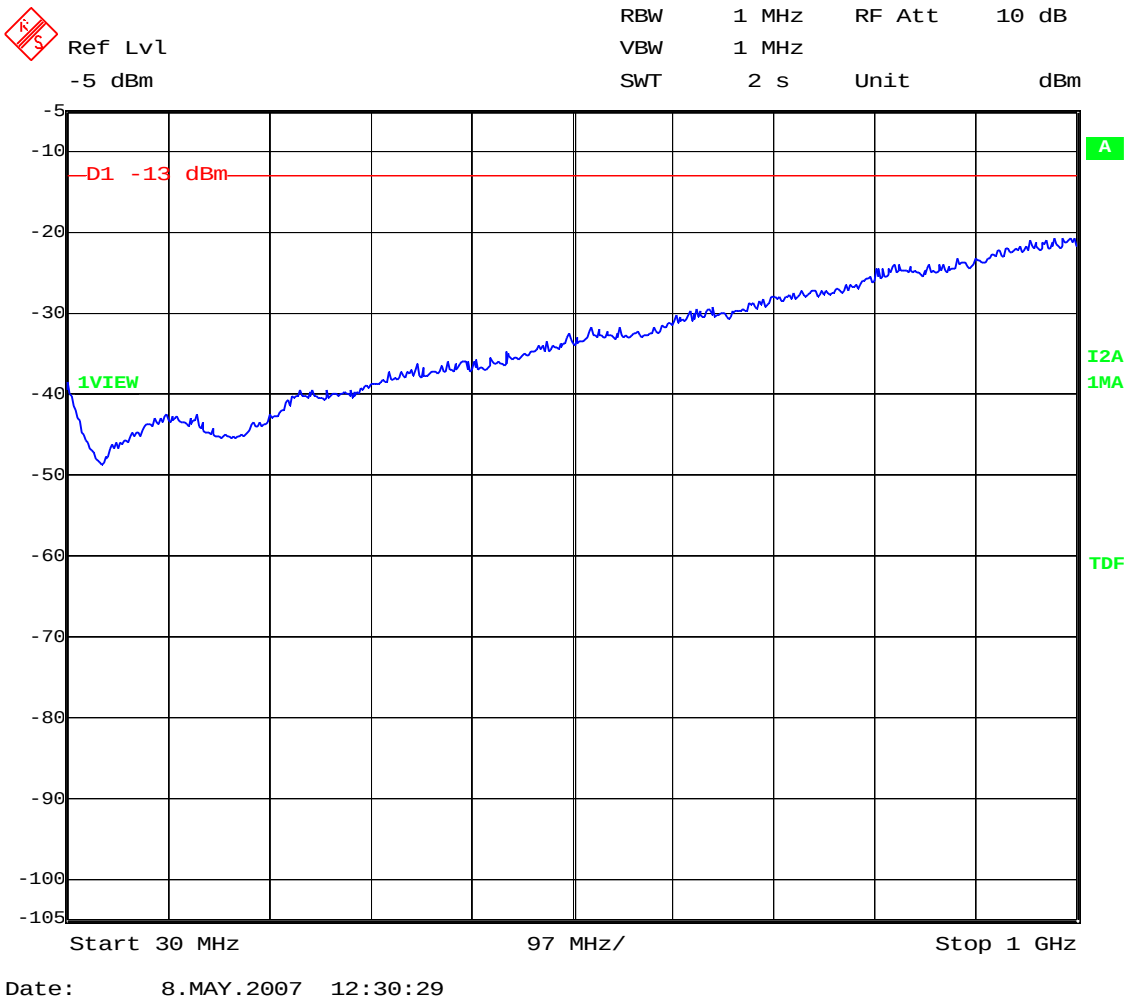
Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-20 GHz.
No spurious signals were found in all the range.

Verdict: PASS

GPRS MODULATION

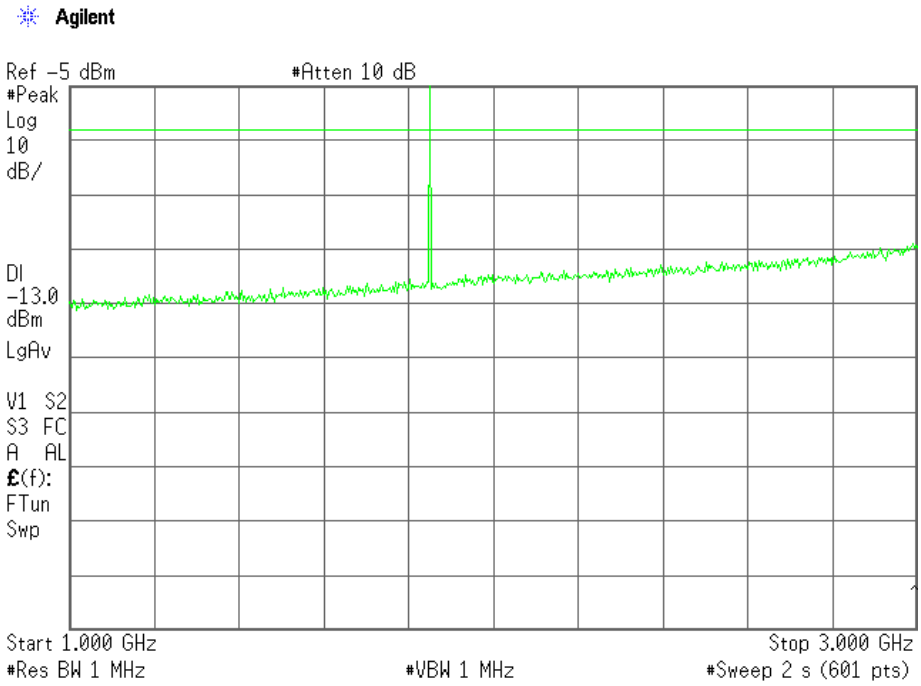
FREQUENCY RANGE 30 MHz-1000 MHz.



(This plot is valid for all three channels).

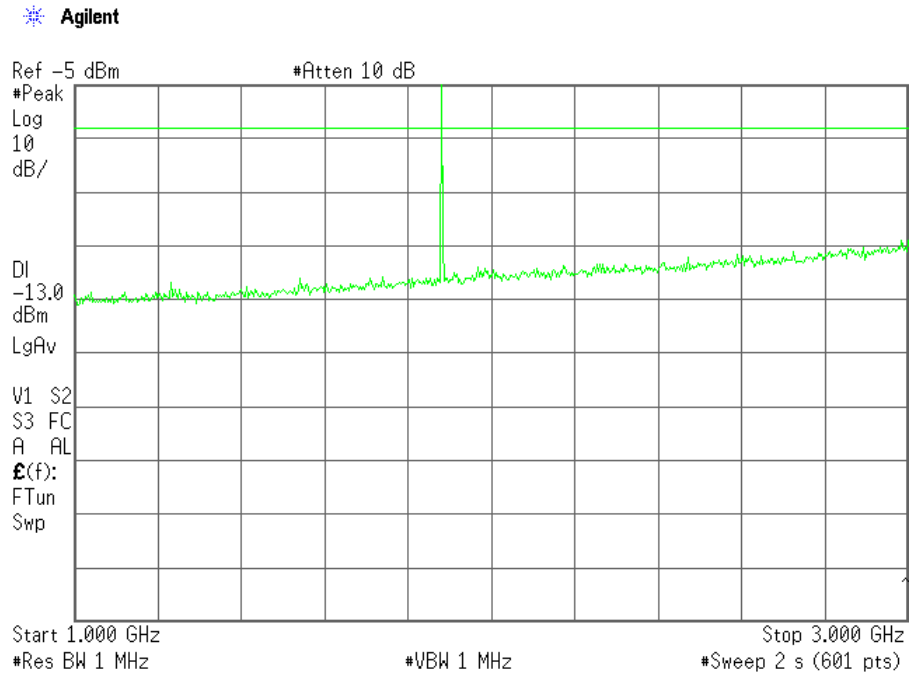
FREQUENCY RANGE 1 GHz to 3 GHz.

CHANNEL: LOWEST



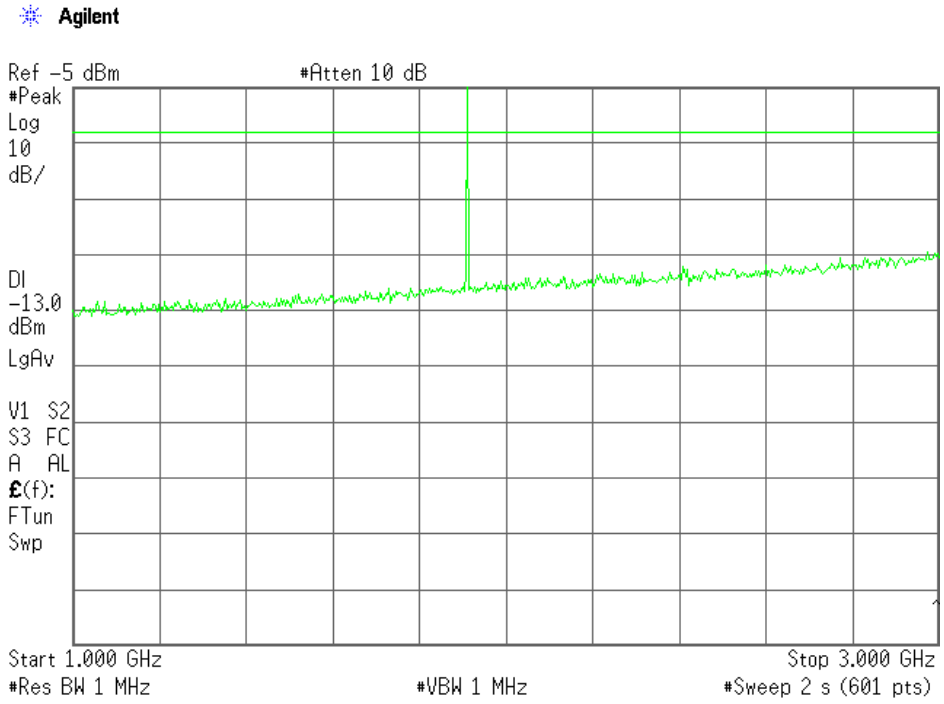
Note: The peak above the limit is the carrier frequency.

CHANNEL: MIDDLE



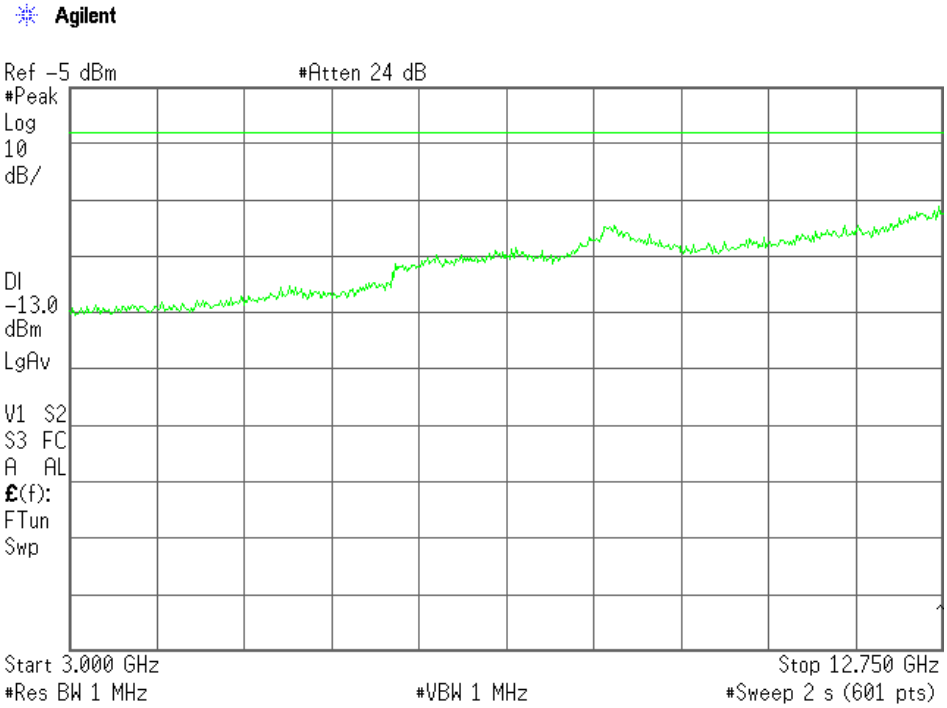
Note: The peak above the limit is the carrier frequency.

CHANNEL: HIGHEST



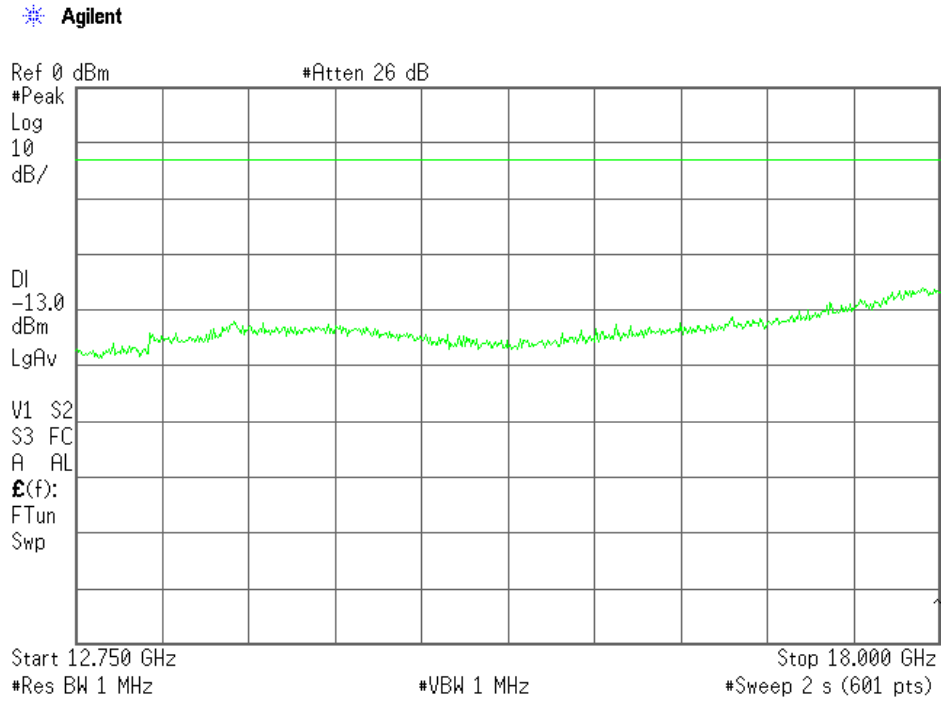
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 3 GHz to 12.75 GHz.



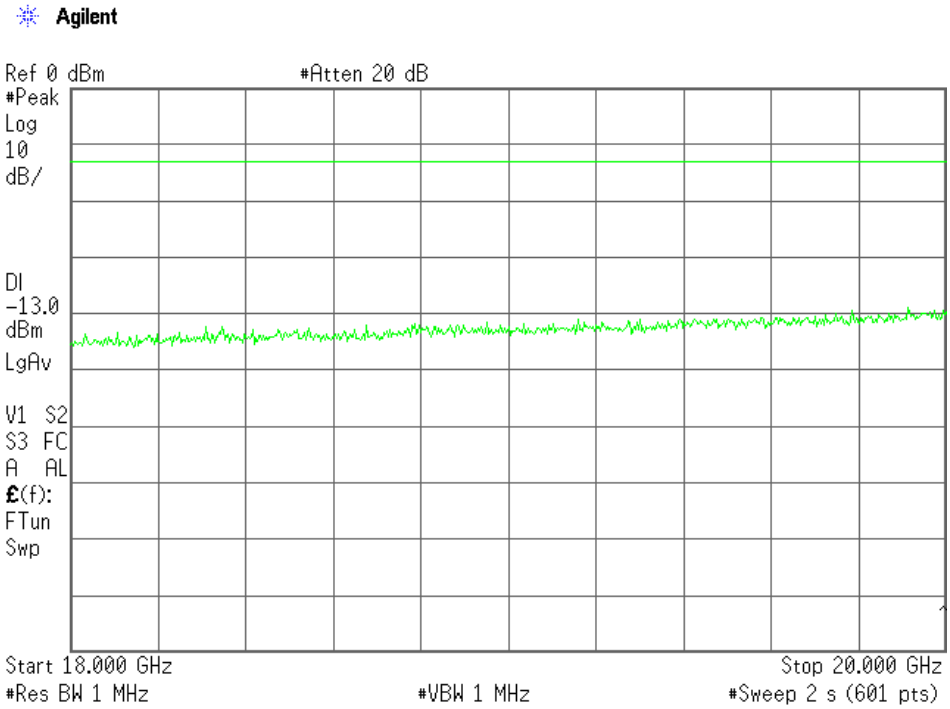
(This plot is valid for all three channels).

FREQUENCY RANGE 12.75 GHz TO 18 GHz.



(This plot is valid for all three channels).

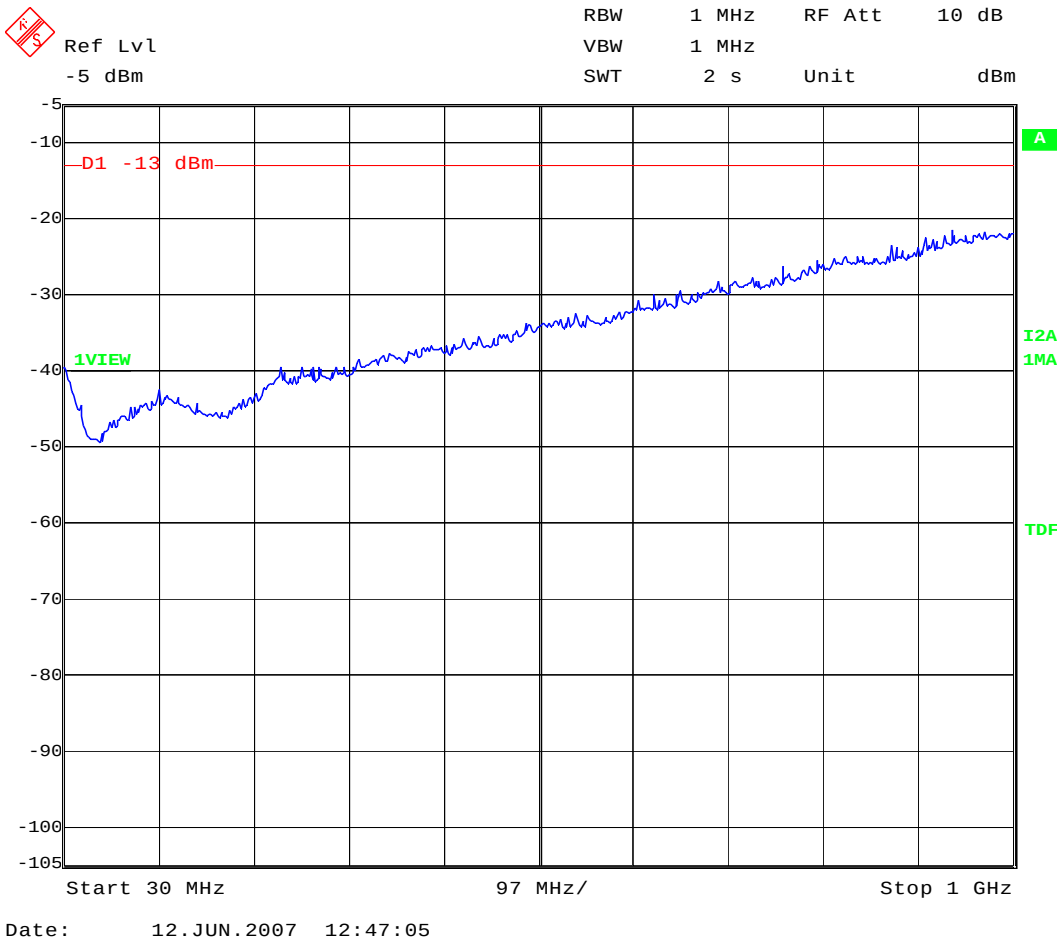
FREQUENCY RANGE 18 GHz TO 20 GHz.



(This plot is valid for all three channels).

EDGE MODULATION

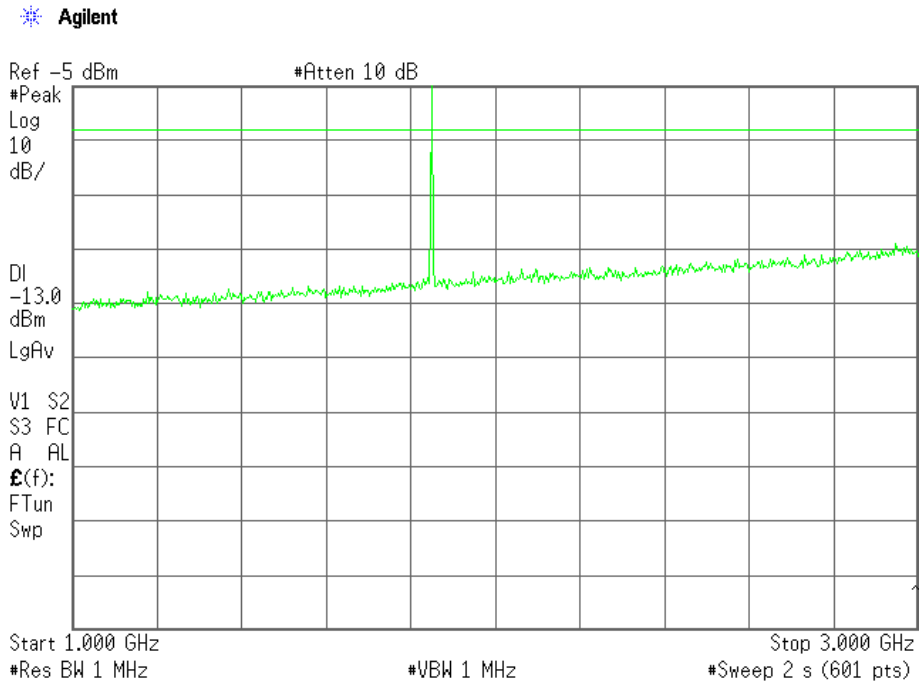
FREQUENCY RANGE 30 MHz-1000 MHz.



(This plot is valid for all three channels).

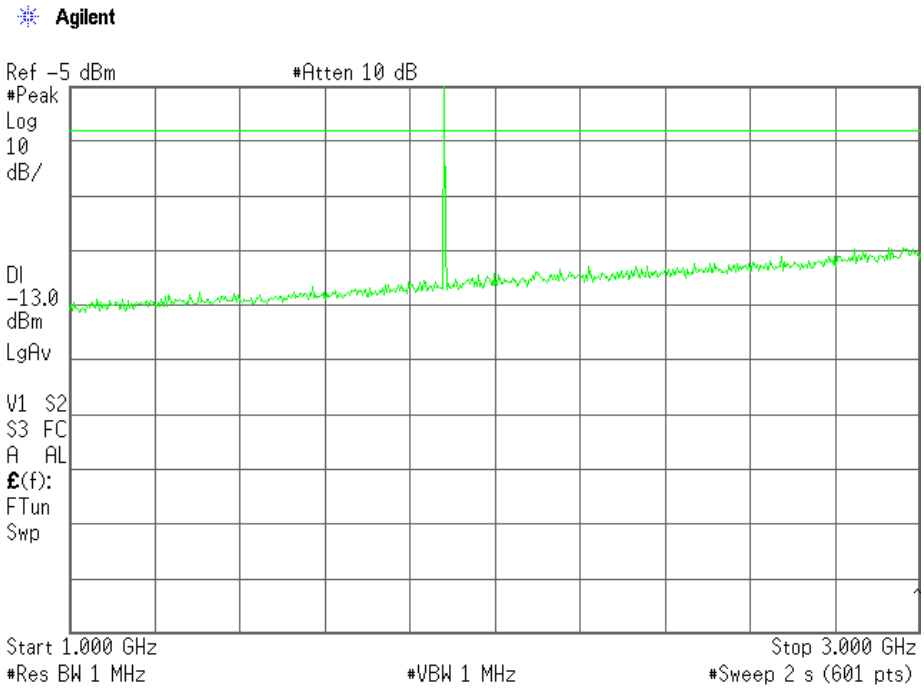
FREQUENCY RANGE 1 GHz to 3 GHz.

CHANNEL: LOWEST



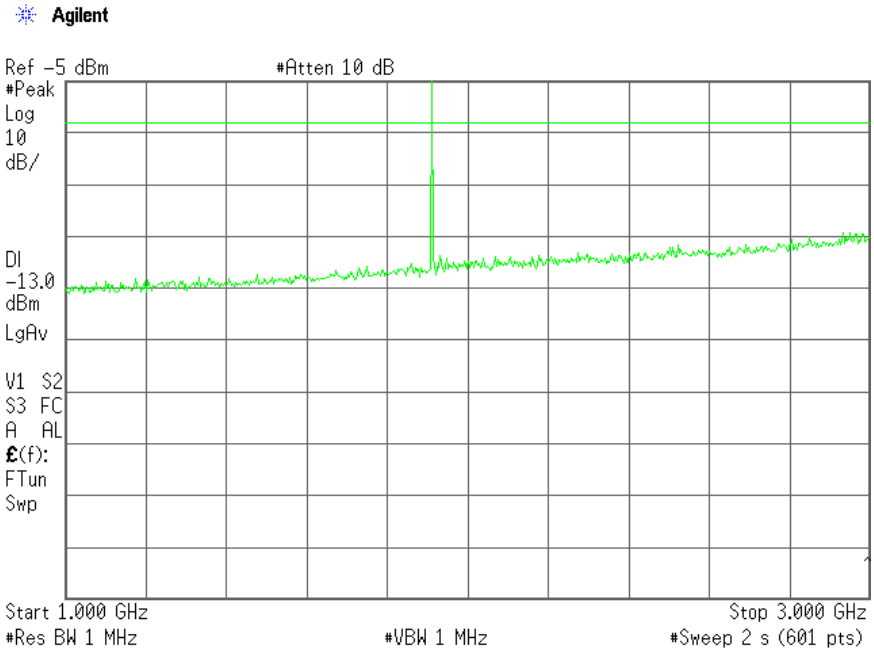
Note: The peak above the limit is the carrier frequency.

CHANNEL: MIDDLE



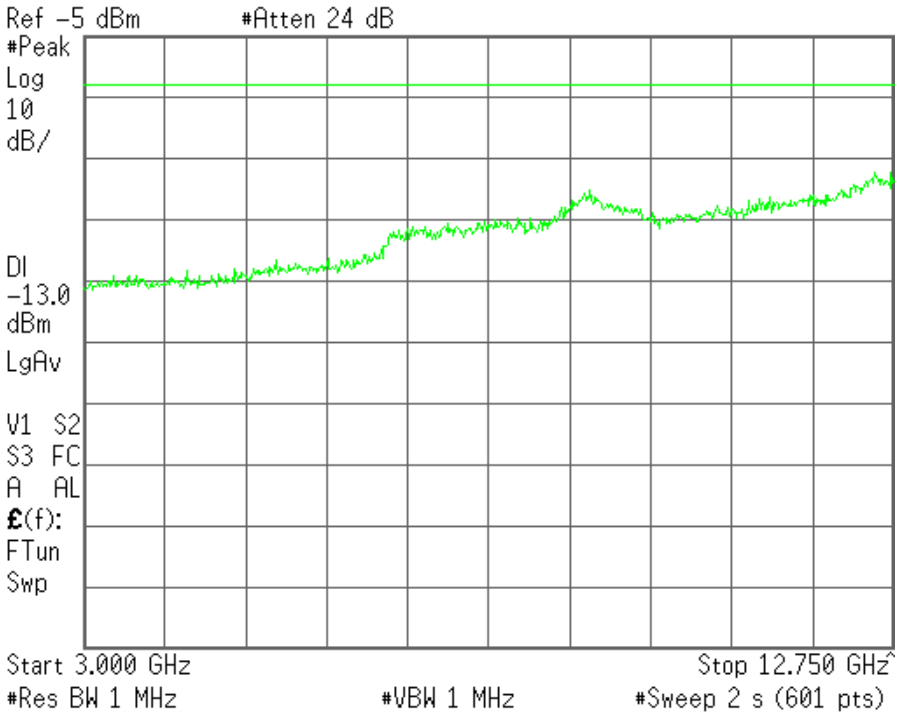
Note: The peak above the limit is the carrier frequency.

CHANNEL: HIGHEST



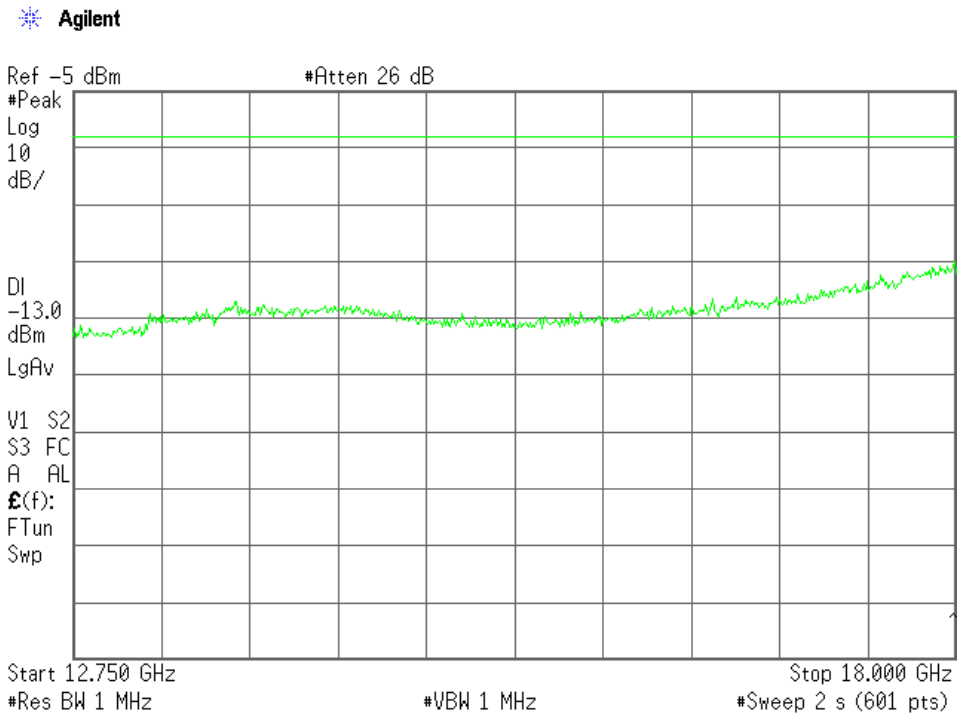
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 3 GHz to 12.75 GHz.



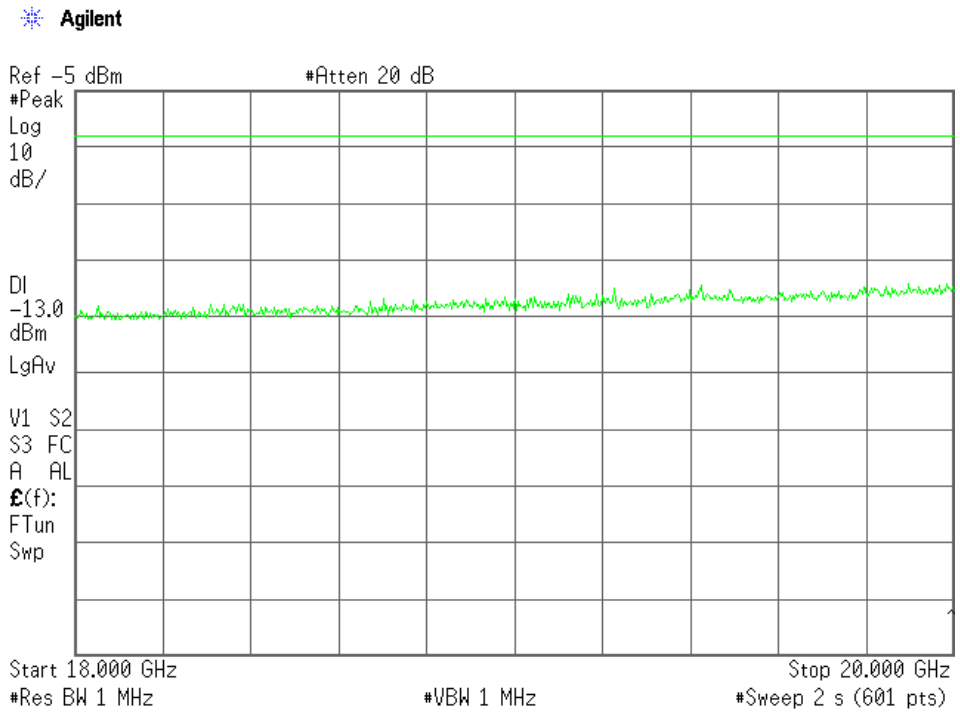
(This plot is valid for all three channels).

FREQUENCY RANGE 12.75 GHz TO 18 GHz.



(This plot is valid for all three channels).

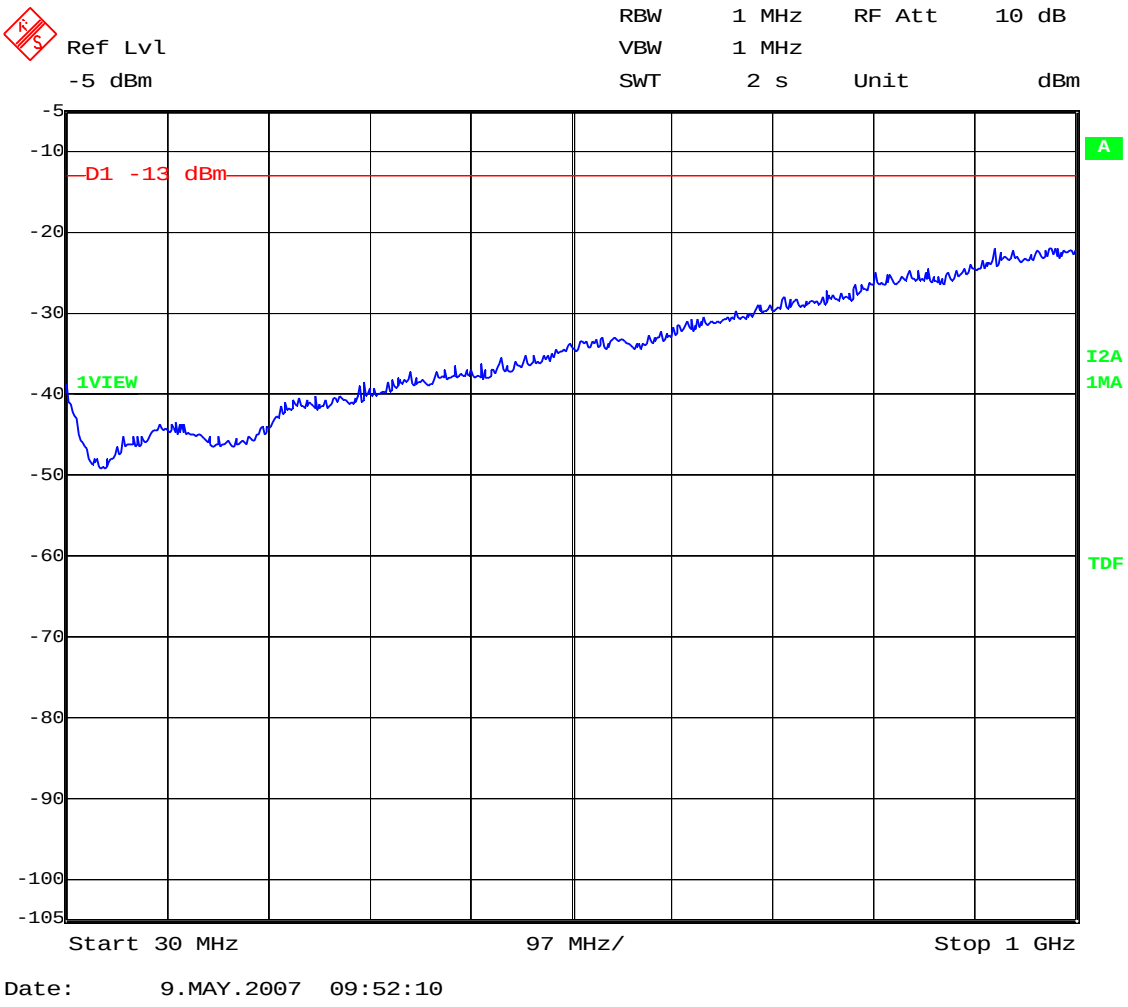
FREQUENCY RANGE 18 GHz TO 20 GHz.



(This plot is valid for all three channels).

WCDMA MODULATION

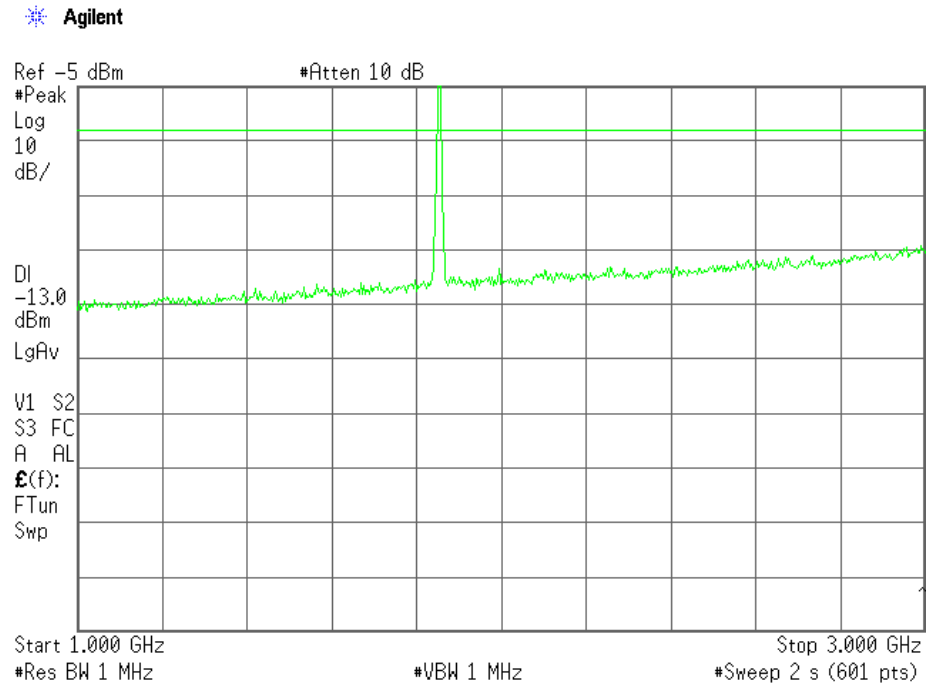
FREQUENCY RANGE 30 MHz-1000 MHz.



(This plot is valid for all three channels).

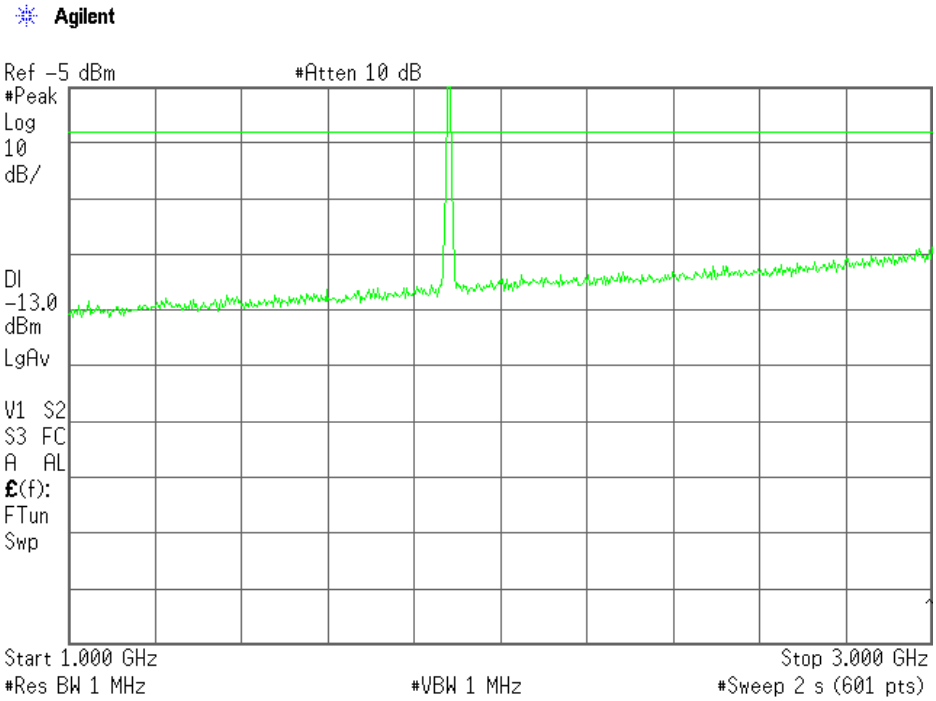
FREQUENCY RANGE 1 GHz to 3 GHz.

CHANNEL: LOWEST



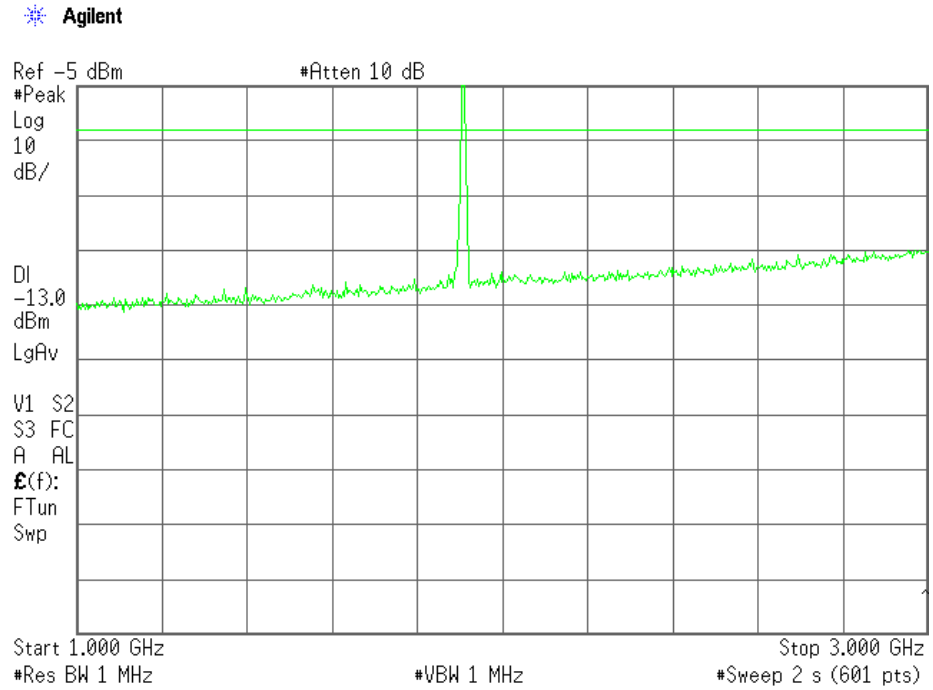
Note: The peak above the limit is the carrier frequency.

CHANNEL: MIDDLE



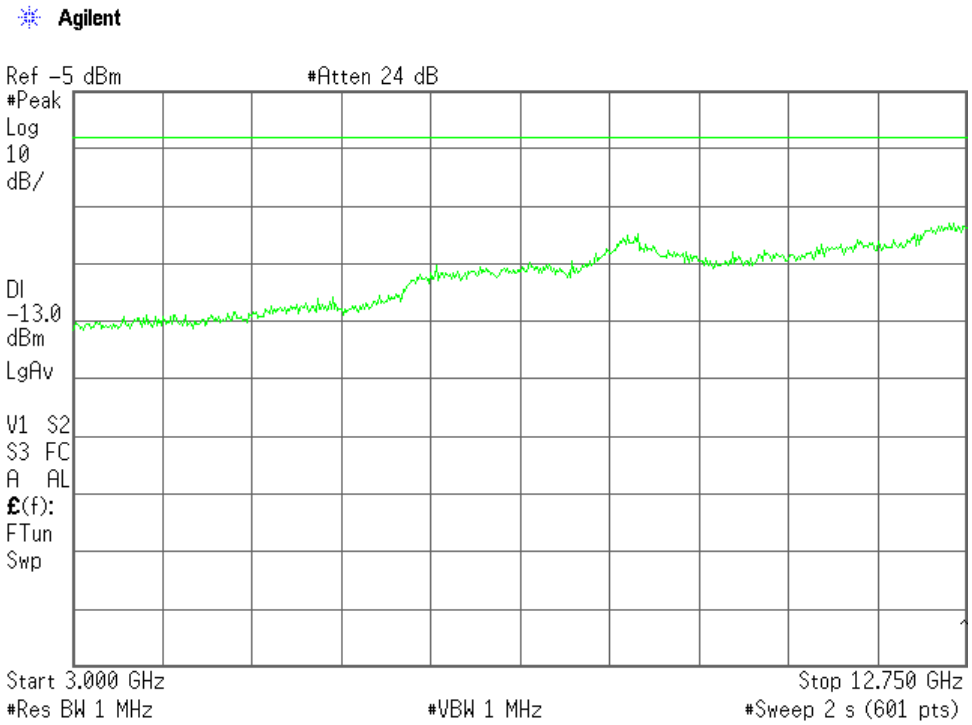
Note: The peak above the limit is the carrier frequency.

CHANNEL: HIGHEST



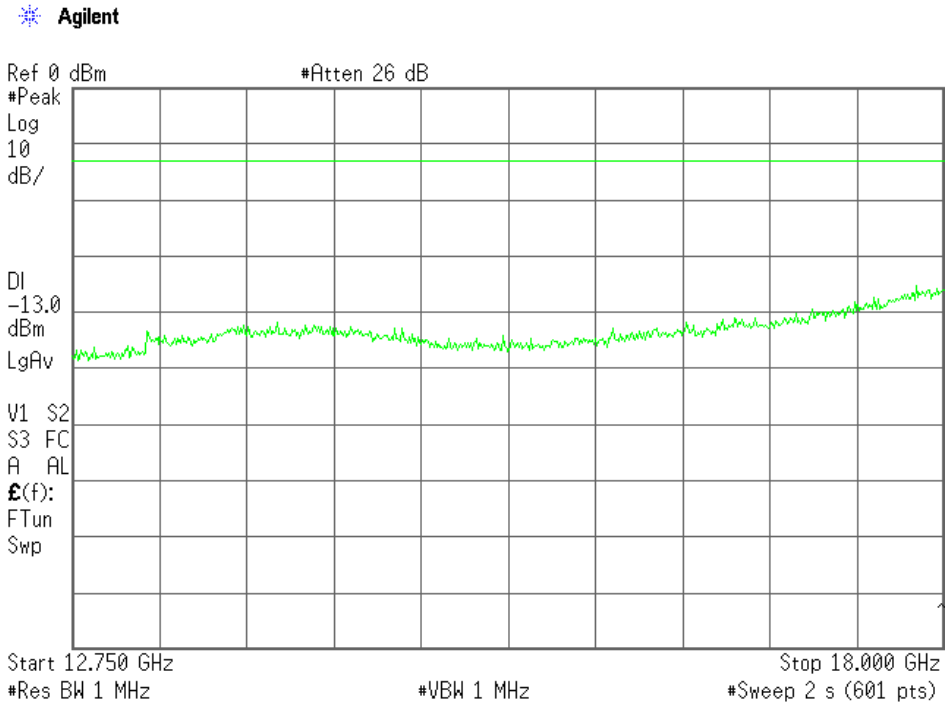
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 3 GHz to 12.75 GHz.



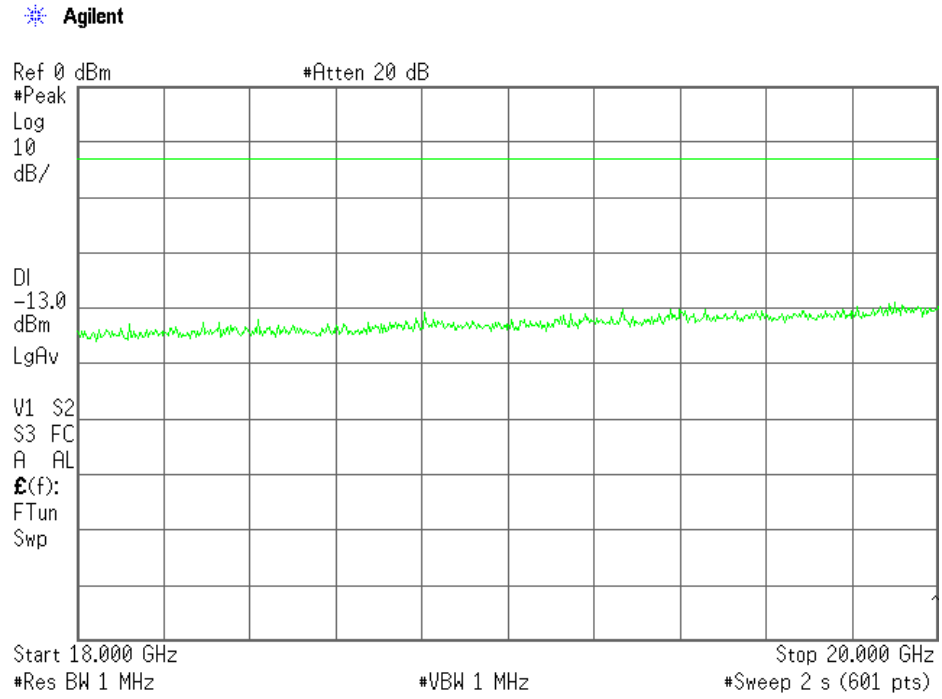
(This plot is valid for all three channels).

FREQUENCY RANGE 12.75 GHz TO 18 GHz.



(This plot is valid for all three channels).

FREQUENCY RANGE 18 GHz TO 20 GHz.



(This plot is valid for all three channels).

ANNEX C

MEASURING RESULTS FOR

ELECTROMAGNETIC EMISSION

Report No: 25903RET

For the sample under test, named S/01, and that was formed by the elements described in the clause “Identification of the tested item/items” of this test report.

INDEX:

1. - CONTINUOUS CONDUCTED EMISSION, POWER LEADS ON THE SAMPLE S/01

LIMITS OF INTERFERENCE

The applied limit for continuous conducted emissions in power leads, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart C in the frequency range 0,15 to 30 MHz, for Class B equipment was:

Frequency range (MHz)	Limit (dBµV)	
	Quasi-peak	Average
0,15 to 0,5	66-56	56-46
0,5 to 5	56	46
5 to 30	60	50

TEST METHOD

TEST METHOD

According to Part 15, Subpart C of FCC Rules.

OPERATING MODES OF EUT

Different tested operating modes (OM)

- OM#03: EUT ON. GSM TCH 850 MHz.
- OM#04: EUT ON. GSM TCH 1900 MHz.
- OM#11: EUT ON. UMTS TCH (Band II).
- OM#13: EUT ON. UMTS TCH (Band V).

TEST RESULTS

CCmmnnxx: CC, Conduction condition; mm: sample number; nn: operation mode; xx: wire.

- OM#03.

CDmmnnxx	Description	Result
CC01030N	Interference voltage on Neutral wire	PASS
CC0103L1	Interference voltage on phase wire	PASS

- OM#04.

CDmmnnxx	Description	Result
CC01040N	Interference voltage on Neutral wire	PASS
CC0104L1	Interference voltage on phase wire	PASS

- OM#11.

CDmmnnxx	Description	Result
CC01110N	Interference voltage on Neutral wire	PASS
CC0111L1	Interference voltage on phase wire	PASS

- OM#13.

CDmmnnxx	Description	Result
CC01130N	Interference voltage on Neutral wire	PASS
CC0113L1	Interference voltage on phase wire	PASS

GRAPH RESULTS

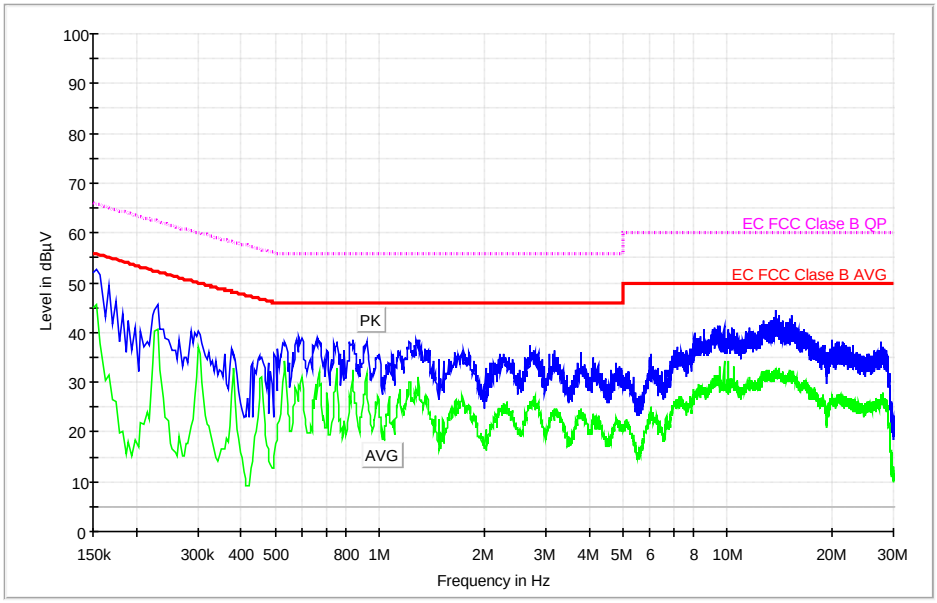
Continuous conducted emission: CC01030N (Peak and Average)

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#03
Fecha:	2007-05-03 20:26
Setup:	EMI conducted
Mode:	EUT ON. TCH 850MHz. Neutral noise.

EC FCC Clase B ESIB26 ALC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.154000	52.5	45.6
0.230000	45.7	40.6
0.534000	38.1	34.4
0.754000	38.2	32.5
0.838000	38.6	32.3
9.474000	41.2	33.1
9.778000	41.3	34.2
10.086000	40.7	34.2
12.686000	42.4	32.1
13.418000	42.4	31.7
13.786000	44.4	31.8
14.090000	43.3	32.0
15.162000	42.9	32.6
15.266000	43.3	31.6

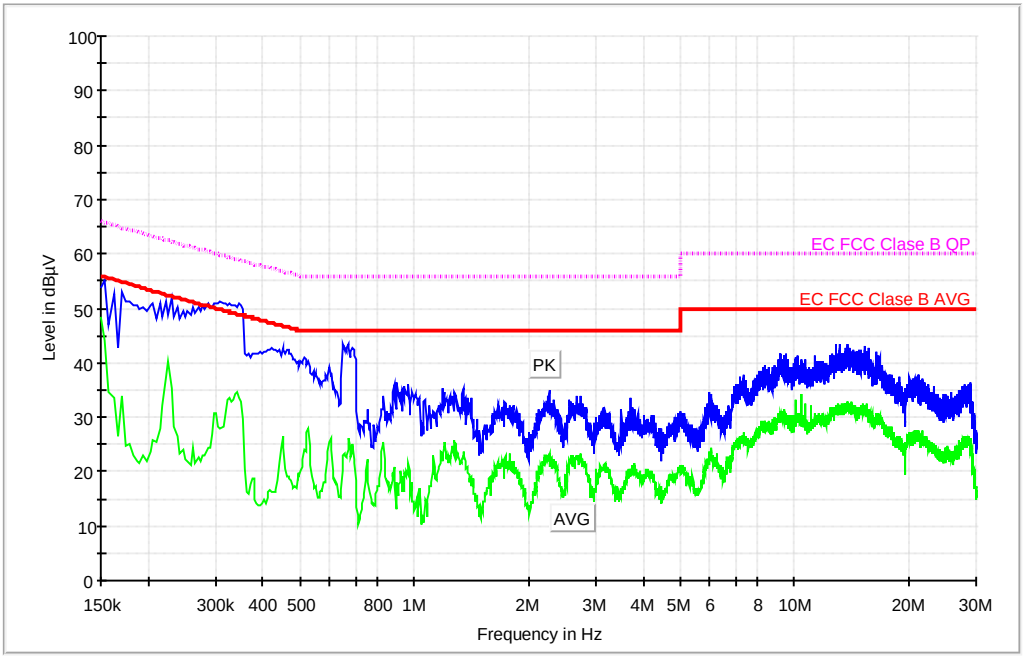
Continuous conducted emission: CC0103L1 (Peak and Average)

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#03
Fecha:	2007-05-03 20:31
Setup:	EMI conducted
Mode:	EUT ON. TCH 850MHz. Phase noise.

EC FCC Clase B ESIB26 ALC



Max PK-AVG

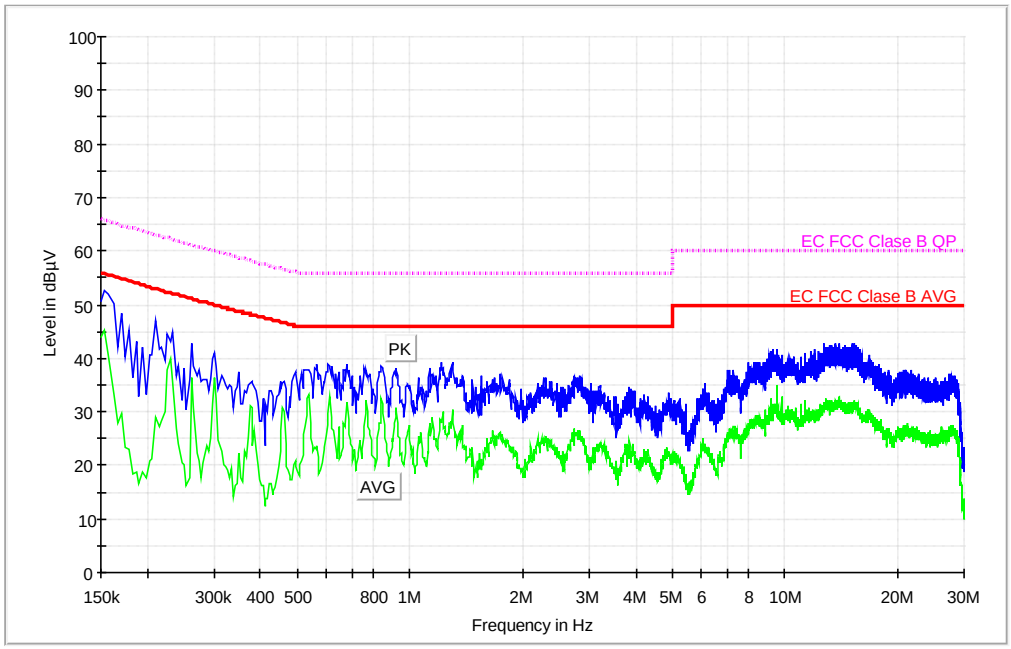
Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.154000	55.1	44.1
0.162000	52.8	33.6
0.170000	53.1	33.9
0.670000	43.5	23.9
12.830000	43.3	32.1
13.202000	43.3	31.9
13.738000	43.2	32.2
13.826000	43.3	32.1
14.334000	42.5	31.3
14.758000	42.5	31.1
14.866000	42.5	30.8
15.254000	43.2	31.5
15.374000	42.3	31.3
15.674000	42.7	31.6

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#04
Fecha:	2007-05-03 20:21
Setup:	EMI conducted
Mode:	EUT ON. TCH 1900MHz. Neutral noise.

EC FCC Clase B ESIB26 ALC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.154000	52.7	45.2
0.170000	48.4	29.6
0.178000	45.3	23.0
0.186000	43.1	18.6
0.210000	47.0	29.1
0.234000	44.9	35.8
0.262000	42.7	36.4
12.694000	42.9	30.9
13.182000	42.5	32.0
13.582000	42.5	31.4
13.606000	42.9	31.9
13.870000	42.9	32.8
15.142000	42.8	31.6
15.238000	42.7	31.7

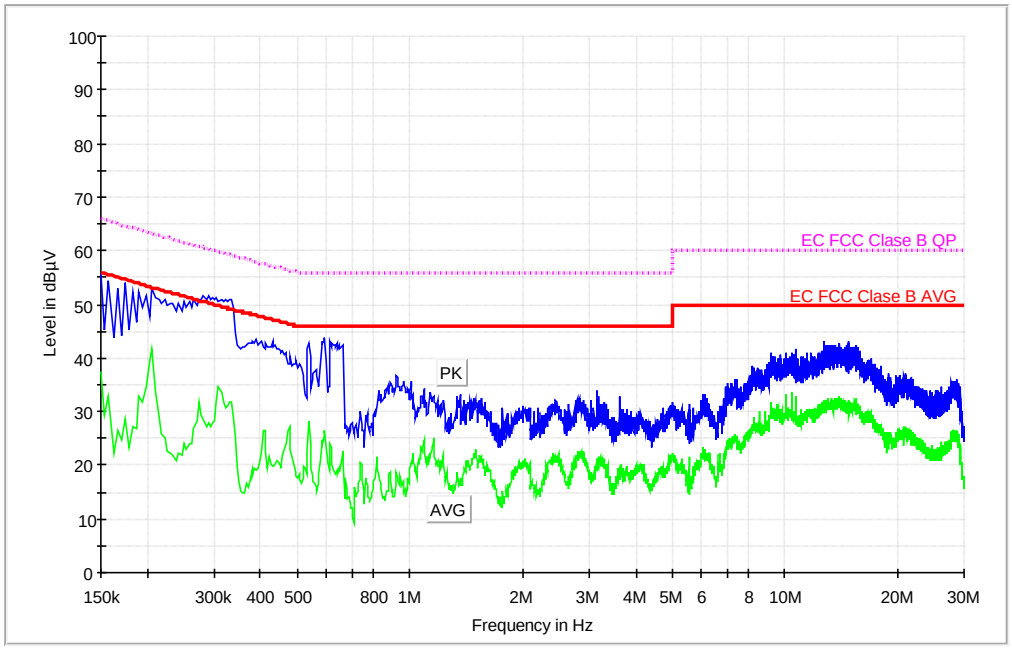
Continuous conducted emission: CC0104L1 (Peak and Average)

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#04
Fecha:	2007-05-03 20:13
Setup:	EMI conducted
Mode:	EUT ON. TCH 1900MHz. Phase noise.

EC FCC Clase B ESIB26 ALC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.150000	55.7	37.4
0.158000	54.3	32.8
0.166000	53.0	26.6
0.174000	54.1	28.6
0.182000	52.4	27.2
0.190000	52.1	32.8
0.206000	52.9	41.7
0.538000	42.9	28.1
0.594000	43.7	26.4
0.614000	43.0	23.9
12.694000	43.0	30.5
13.894000	42.9	31.4
14.706000	43.1	30.7
14.814000	42.8	31.0

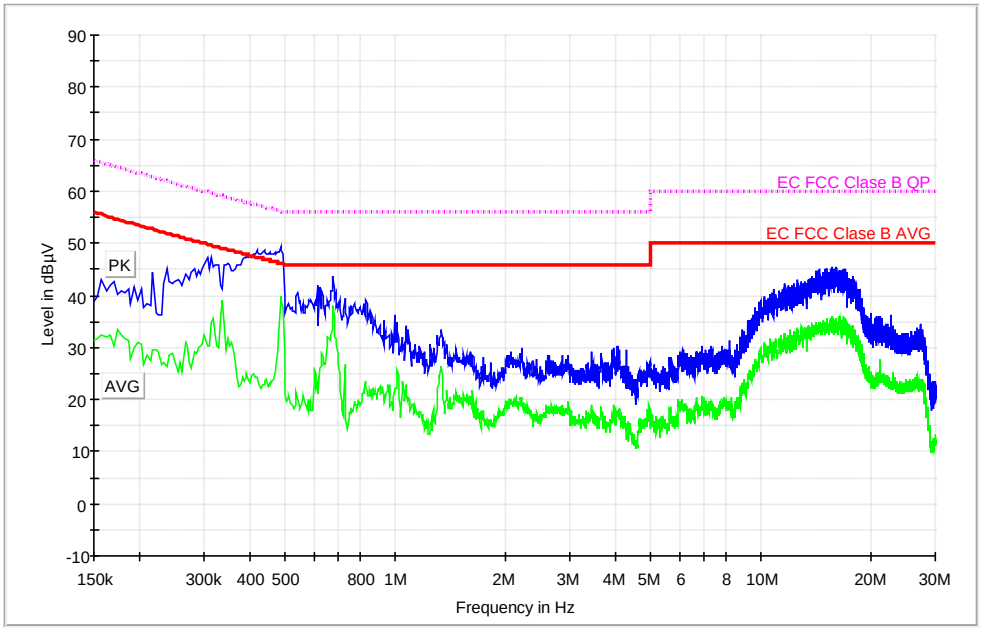
Continuous conducted emission: CC01110N (Peak and Average)

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#11
Fecha:	2007-05-08 15:51
Setup:	EMI conducted
Mode:	EUT ON. TCH UMTS (II). Neutral noise.

EC FCC Clase B ESIB26 CC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.306000	47.2	30.4
0.314000	47.3	35.0
0.486000	49.2	39.7
14.958000	45.1	33.4
15.078000	45.3	35.4
15.166000	45.1	35.1
15.562000	45.3	34.9
15.694000	45.3	35.9
15.774000	45.5	36.0
15.806000	45.0	35.1
16.098000	45.0	35.2
16.122000	45.5	35.6
16.822000	45.3	34.5
17.070000	45.0	34.8

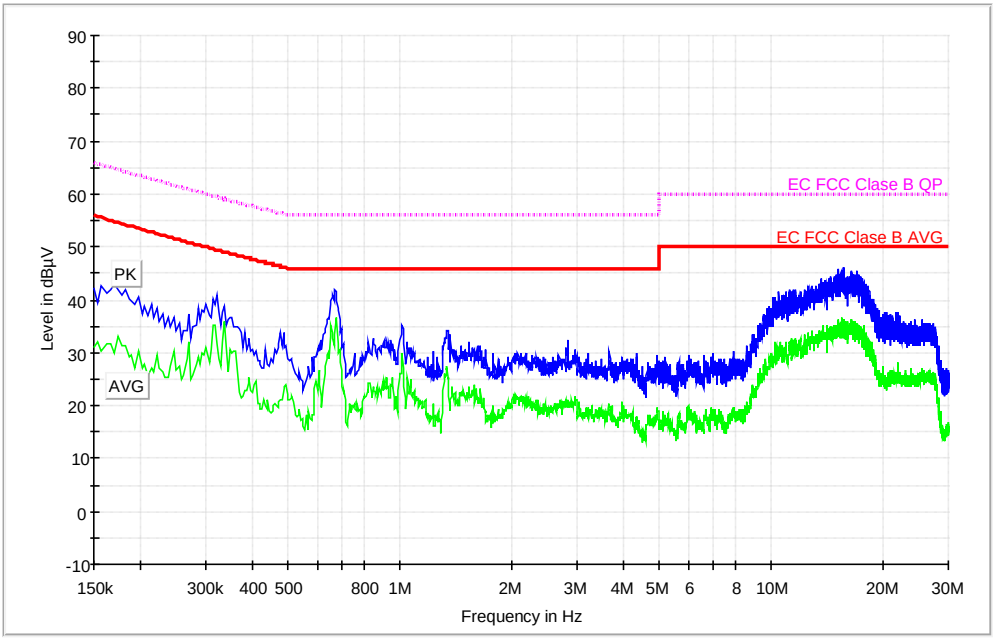
Continuous conducted emission: CC0111L1 (Peak and Average)

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#11
Fecha:	2007-05-08 15:50
Setup:	EMI conducted
Mode:	EUT ON. TCH UMTS (II). Phase noise.

EC FCC Clase B ESIB26 CC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
15.114000	45.9	36.3
15.170000	45.5	35.0
15.426000	45.5	35.9
15.702000	45.3	35.2
15.722000	45.0	35.2
15.750000	46.0	35.0
16.378000	45.3	34.7
16.442000	45.5	36.4
16.454000	45.1	35.7
16.474000	45.0	34.5
16.670000	44.9	34.4
16.774000	44.9	35.4
17.022000	45.4	35.4
17.138000	44.7	35.4

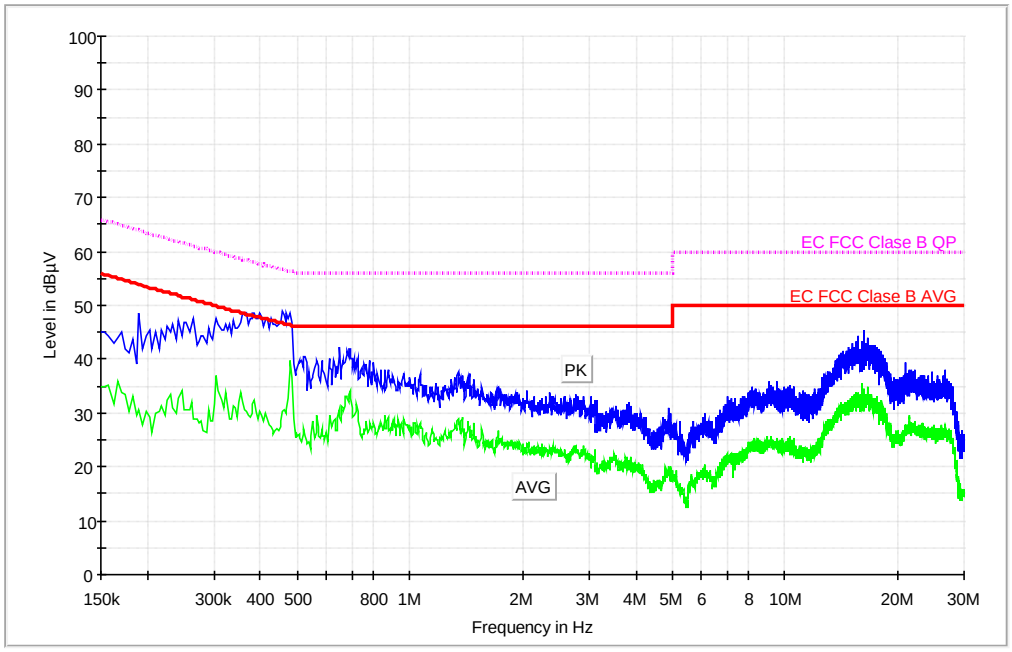
Continuous conducted emission: CC01130N (Peak and Average)

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#13
Fecha:	2007-05-08 13:16
Setup:	EMI conducted
Mode:	EUT ON. TCH UMTS (Band V). Neutral noise.

EC FCC Clase B ESPI CC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.150000	45.1	34.7
0.190000	48.6	30.5
0.266000	47.7	28.8
0.458000	49.0	30.4
0.650000	42.2	29.1
0.690000	42.1	33.3
0.778000	40.0	27.1
15.654000	44.4	33.6
16.042000	43.1	34.5
16.206000	45.4	34.1
16.570000	44.0	33.6
17.810000	41.8	31.8
20.902000	39.3	27.7
21.366000	38.2	28.7

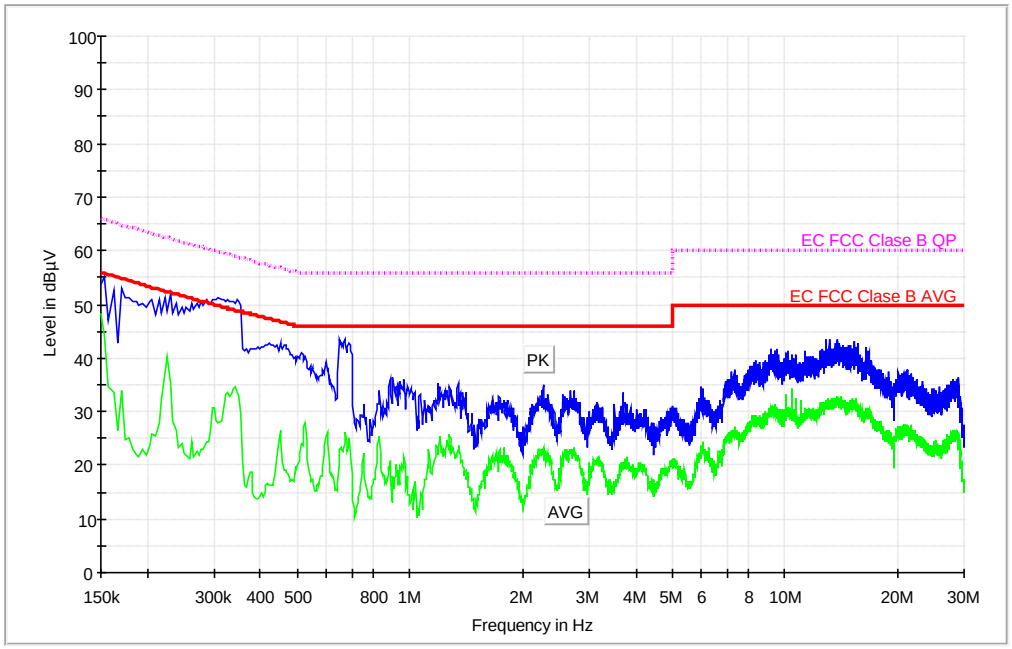
Continuous conducted emission: CC0113L1 (Peak and Average)

EMC32 Report

Test Information

Proyecto:	25903iem.003
Empresa:	GIANT ELECTRONICS
Muestra:	M/01
Modo operacion:	MO#03
Fecha:	2007-05-03 20:31
Setup:	EMI conducted
Mode:	EUT ON. TCH UMTS (Band V). Phase noise.

EC FCC Clase B ESIB26 ALC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.154000	55.1	44.1
0.162000	52.8	33.6
0.170000	53.1	33.9
0.670000	43.5	23.9
12.830000	43.3	32.1
13.202000	43.3	31.9
13.738000	43.2	32.2
13.826000	43.3	32.1
14.334000	42.5	31.3
14.758000	42.5	31.1
14.866000	42.5	30.8
15.254000	43.2	31.5
15.374000	42.3	31.3
15.674000	42.7	31.6

ANNEX D

PHOTOGRAPHS
(Number of photographs: 7)

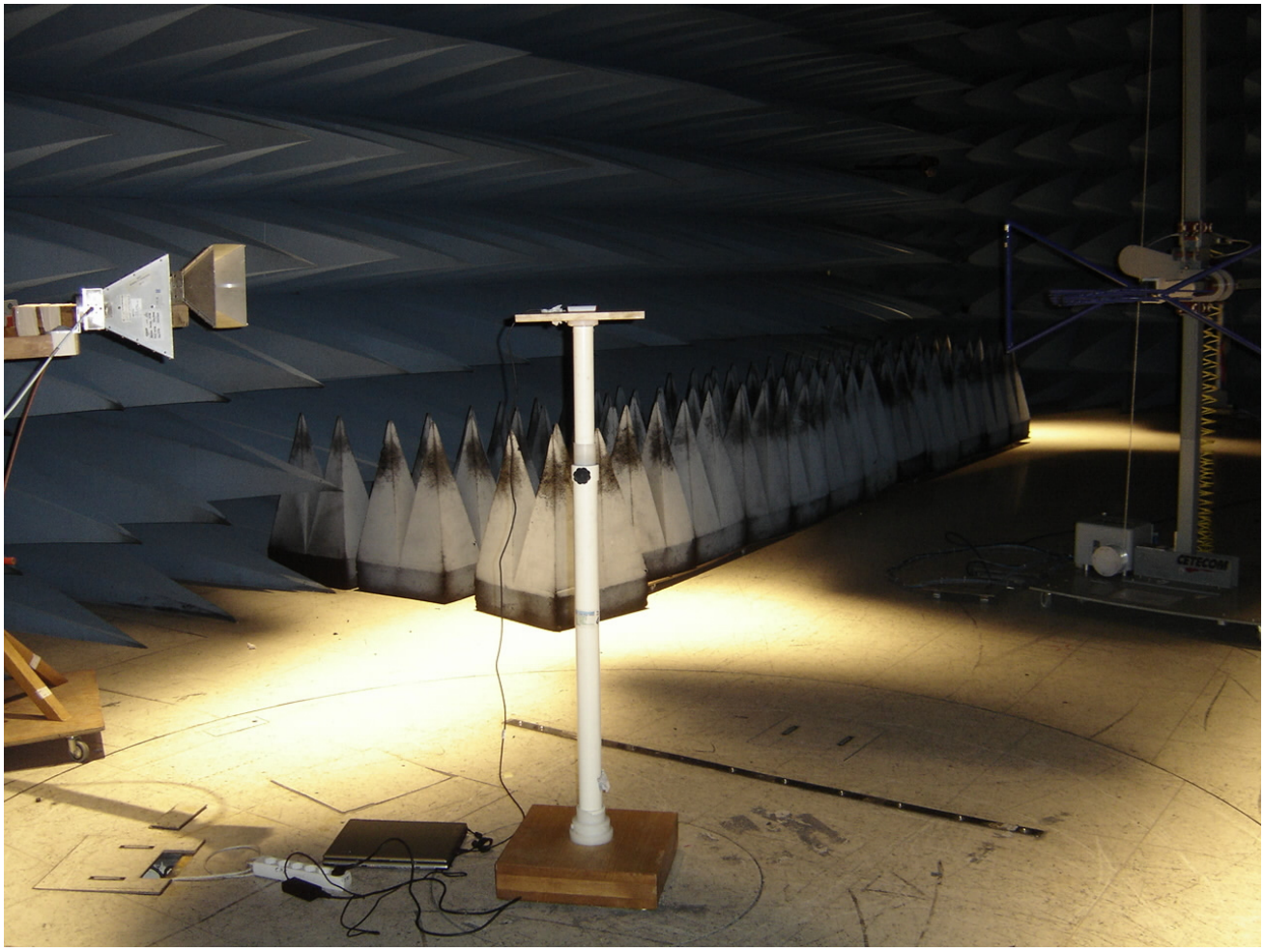
Report No.: 25903RET

1. Equipment (front view)

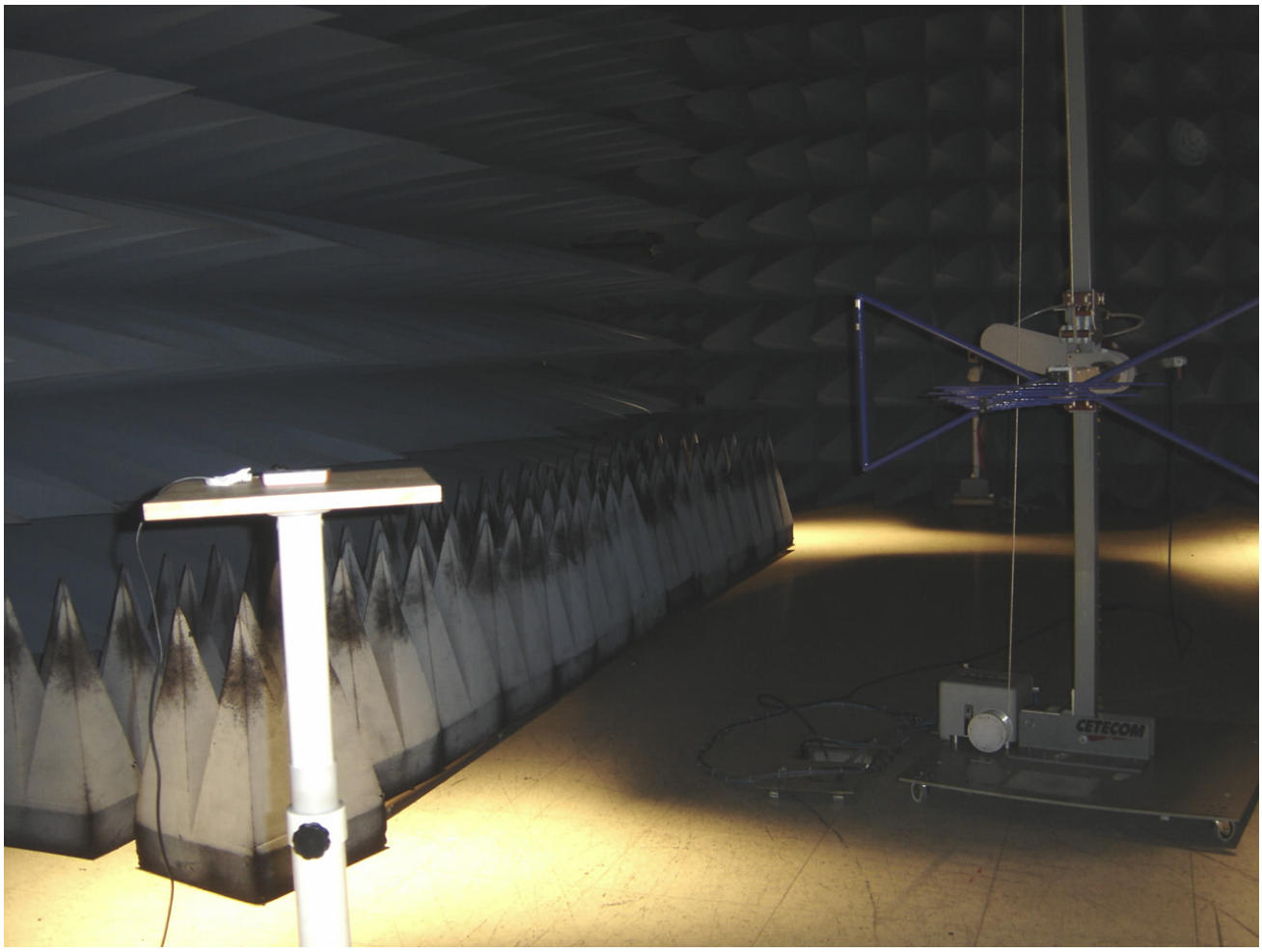
2. Equipment (back view)


3.5G (HSDPA) USB Modem

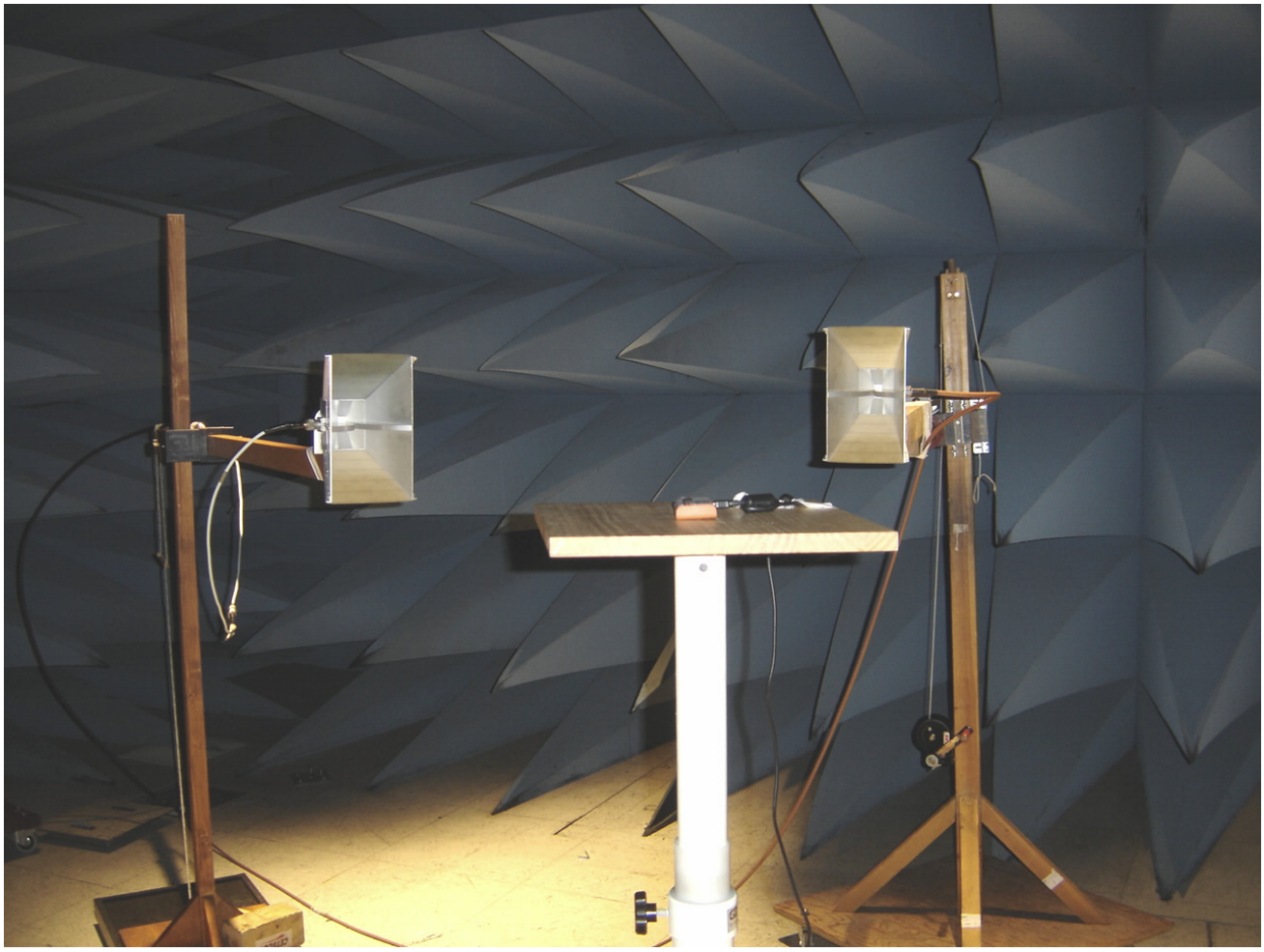
4. General test set-up for radiated measurements.



5. Test set-up for radiated measurements below 1 GHz.



6. Test set-up for radiated measurements above 1 GHz.



7. Test set-up for conducted measurements.