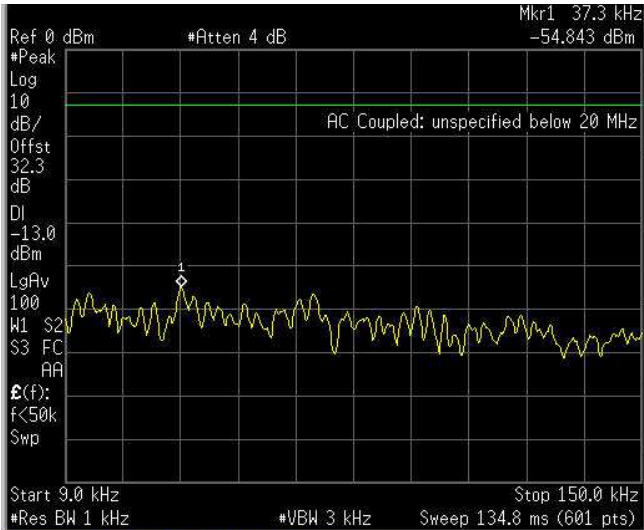
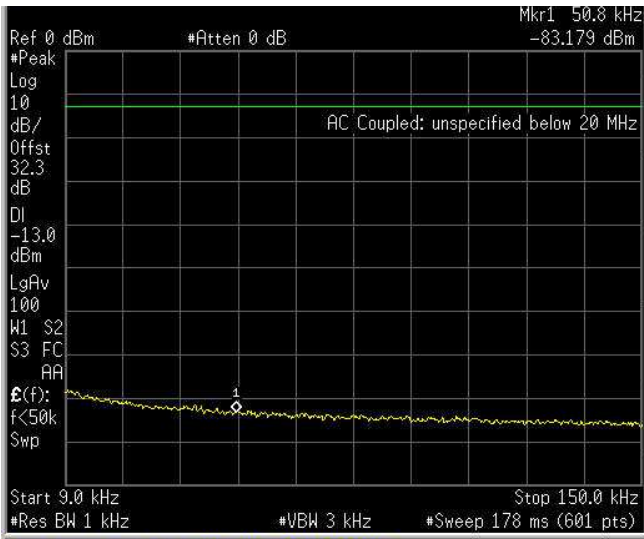


Test Data – Spurious Emissions at Antenna Terminals

Spurs – EDGE – Downlink 9 – 150 kHz

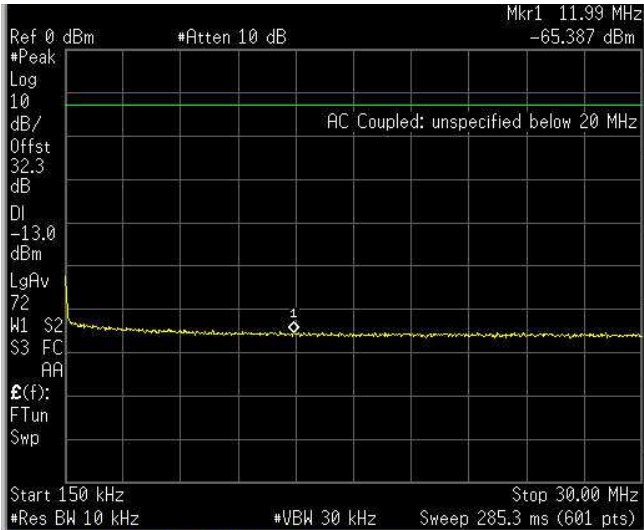


Spurs – EDGE – Uplink 9 – 150 kHz

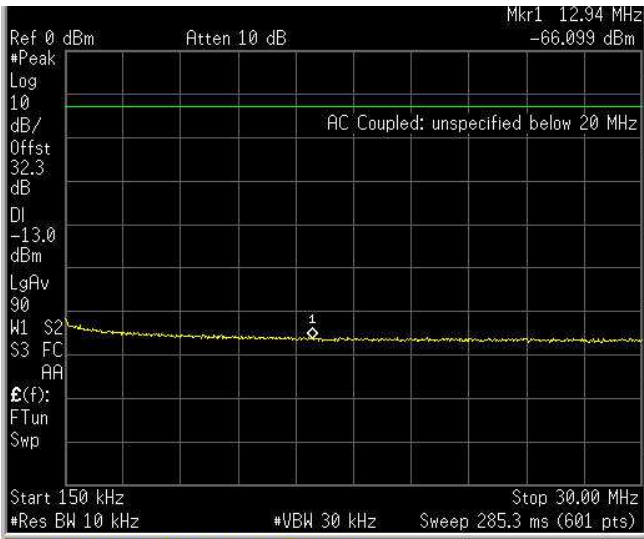


Test Data – Spurious Emissions at Antenna Terminals

Spurs – EDGE – Downlink 150 kHz – 30 MHz

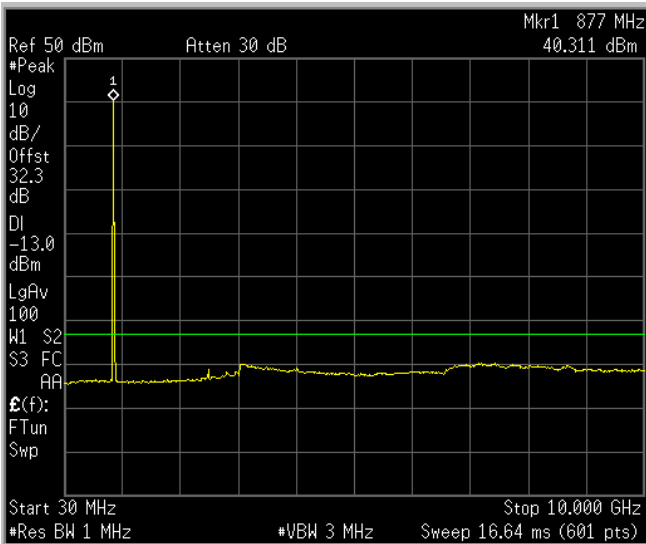


Spurs – EDGE – Uplink 150 kHz – 30 MHz

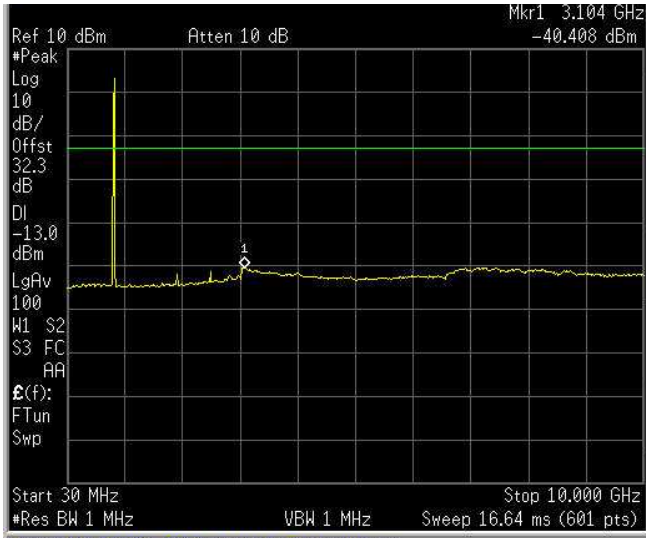


Test Data – Spurious Emissions at Antenna Terminals

Spurs – EDGE – Downlink 30 MHz – 10 GHz

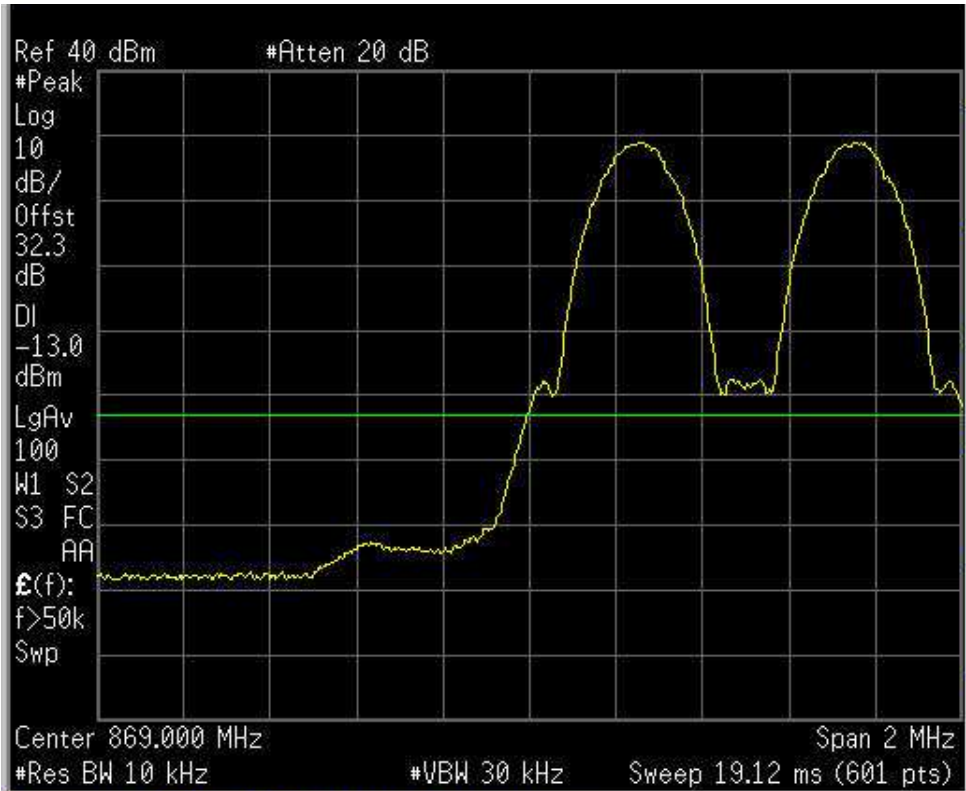


Spurs – EDGE – Uplink 30 MHz – 10 GHz



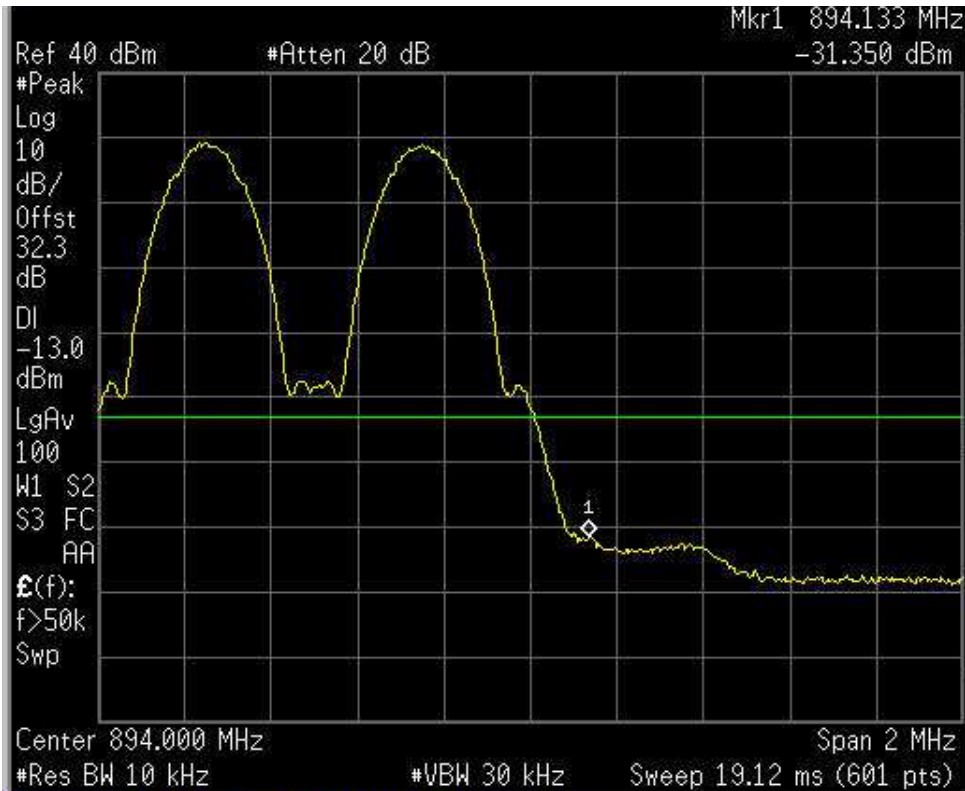
Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation
GSM
Downlink



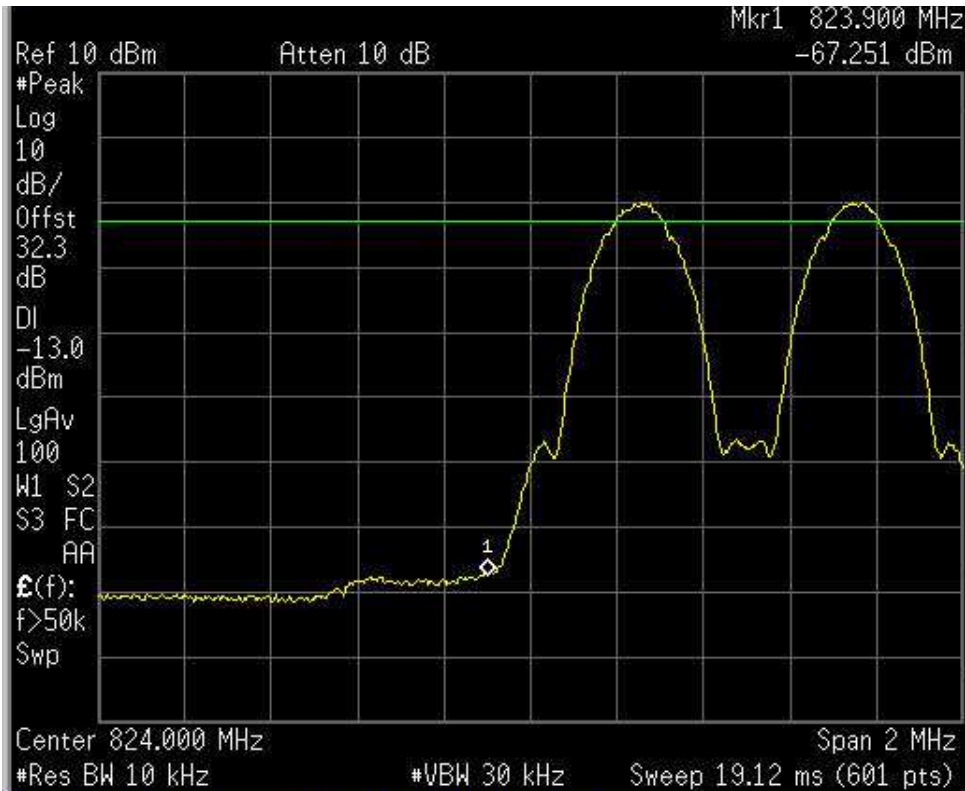
Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation
GSM
Downlink



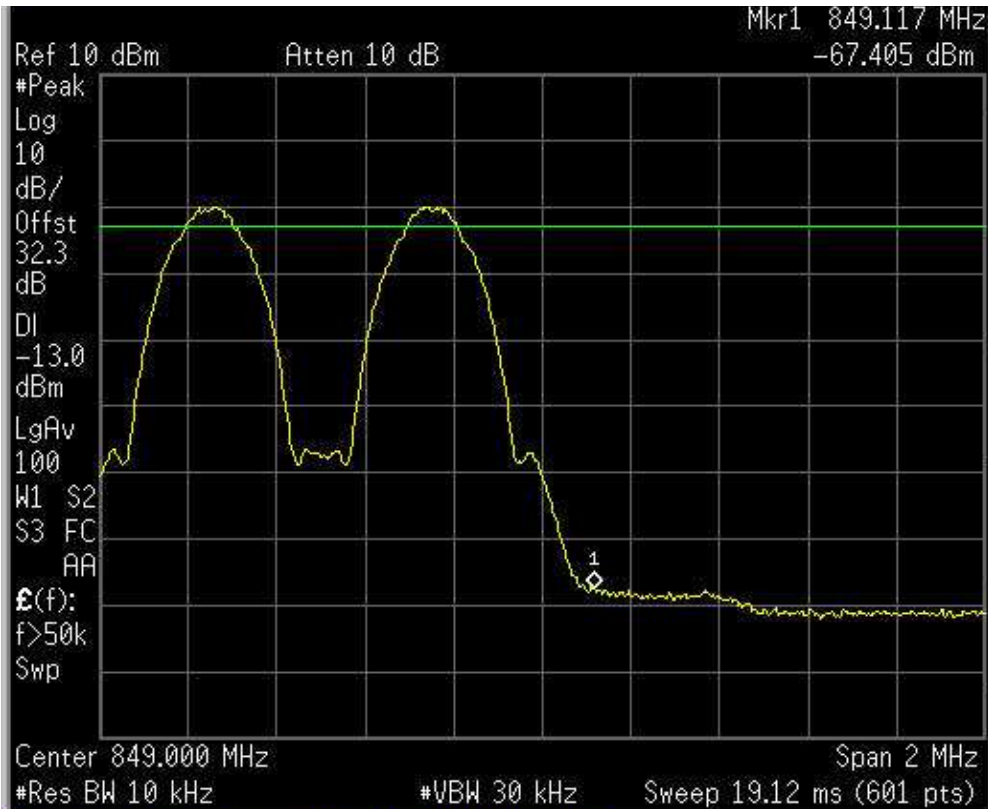
Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation
GSM
Uplink



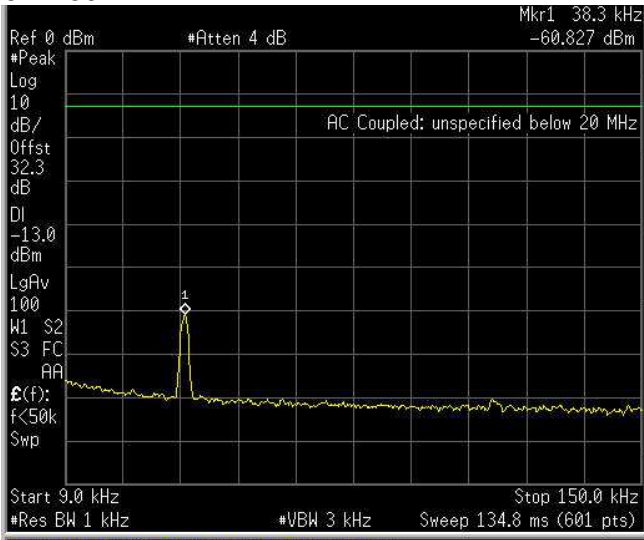
Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation
GSM
Uplink



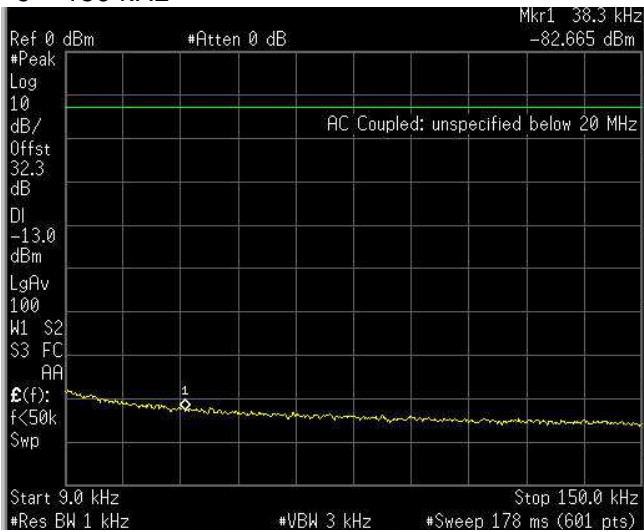
Test Data – Spurious Emissions at Antenna Terminals

Spurs – GSM – Downlink 9 – 150 kHz



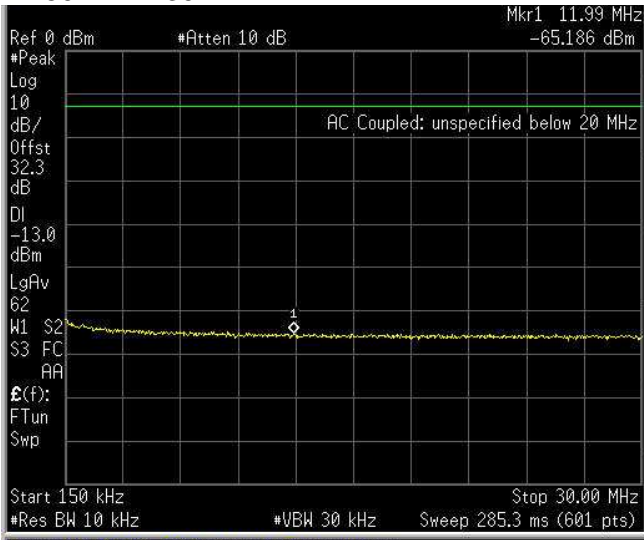
Spurs – GSM – Uplink

9 – 150 kHz

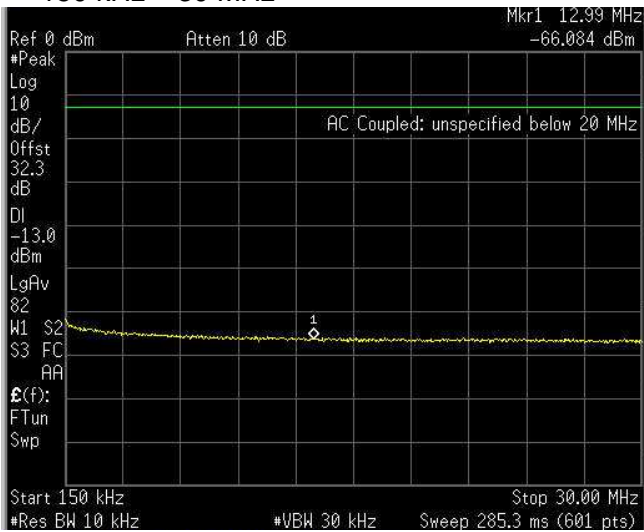


Test Data – Spurious Emissions at Antenna Terminals

Spurs – GSM – Downlink 150 kHz – 30 MHz

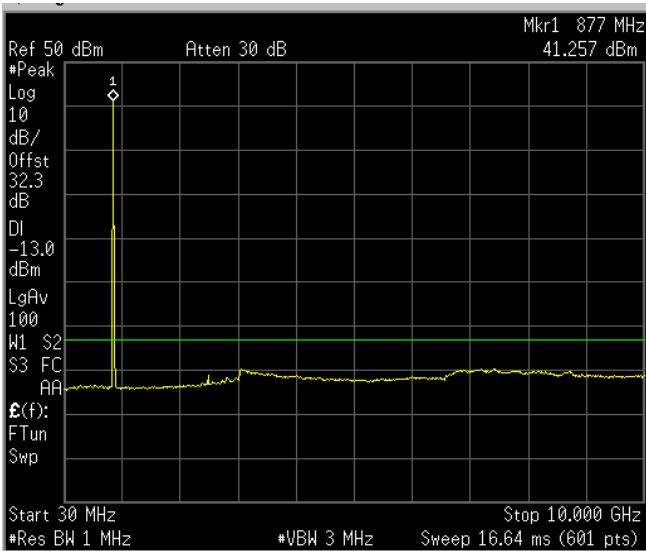


Spurs – GSM – Uplink 150 kHz – 30 MHz

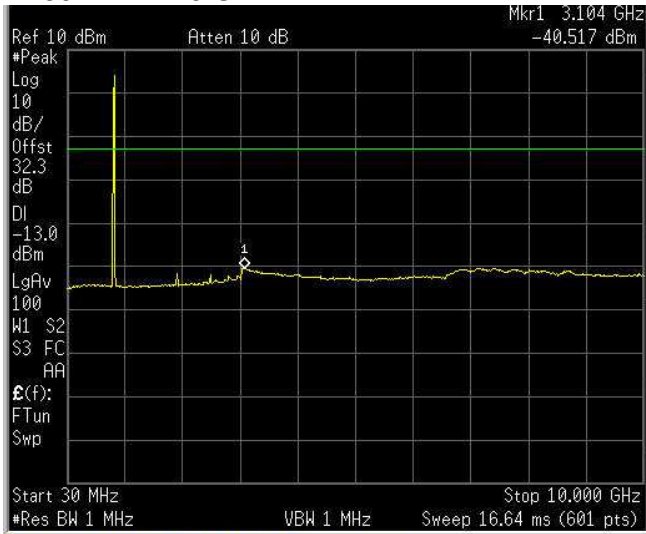


Test Data – Spurious Emissions at Antenna Terminals

Spurs – GSM – Downlink 30 MHz – 10 GHz

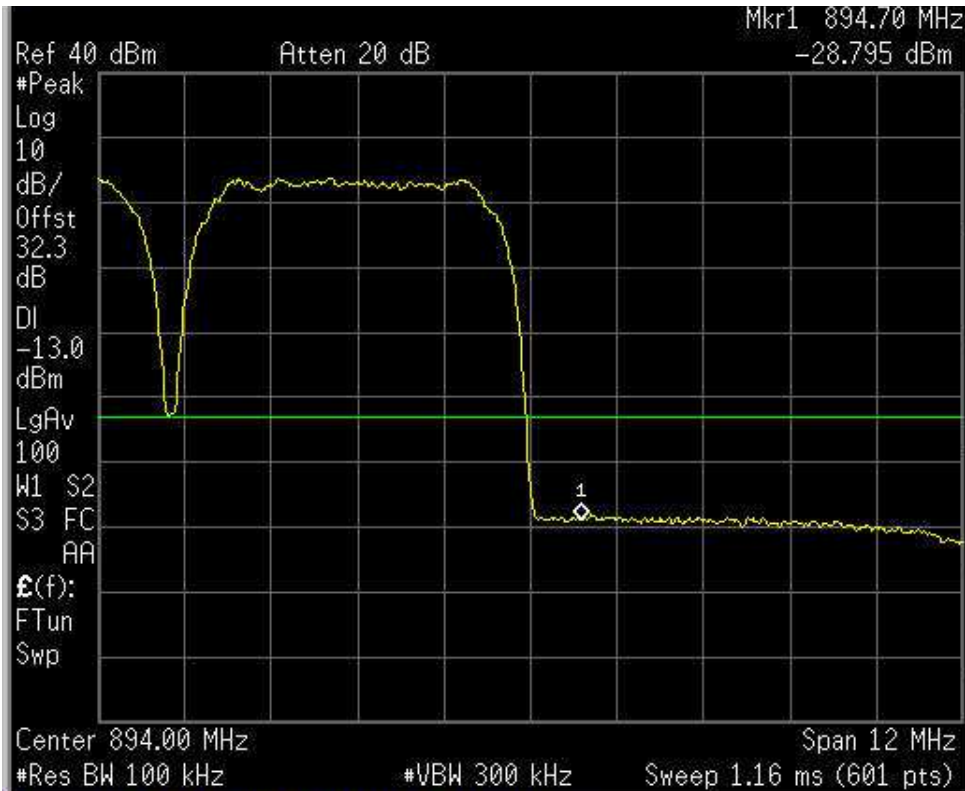


Spurs – GSM – Uplink 30 MHz – 10 GHz



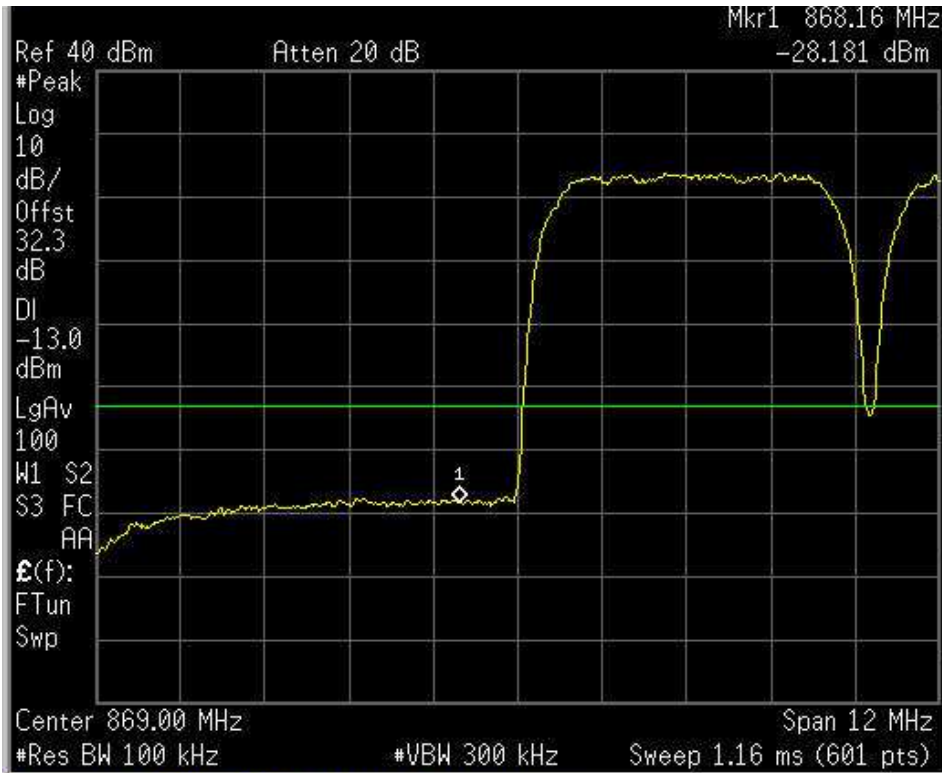
Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation
W-CDMA
Downlink



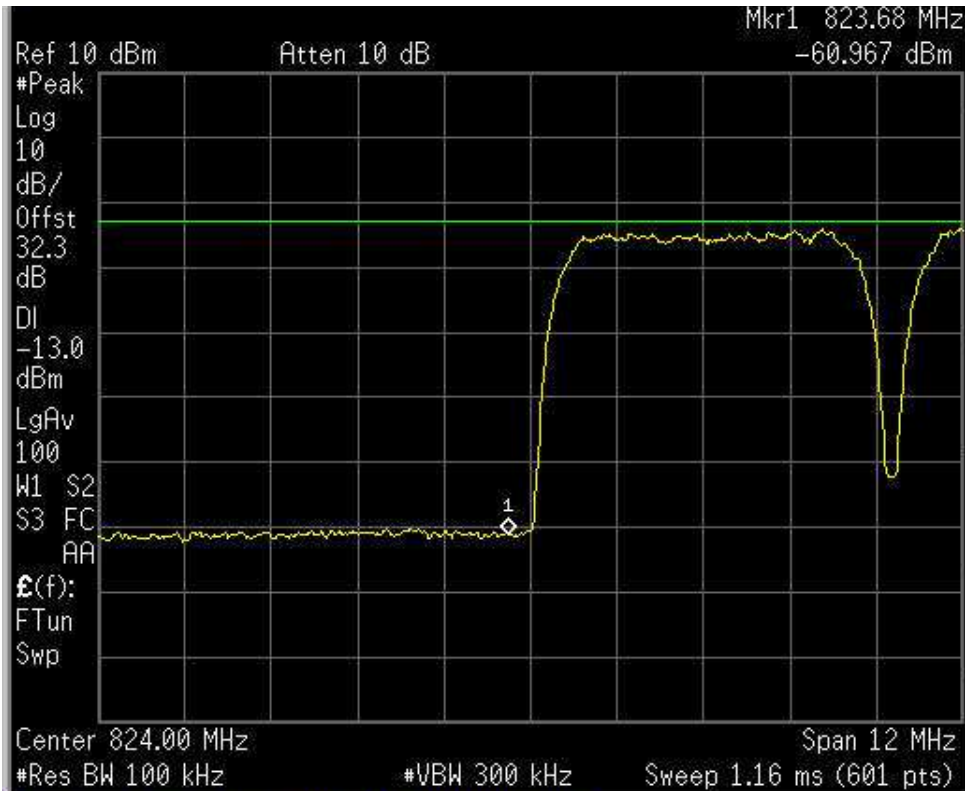
Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation
W-CDMA
Downlink



Test Data – Spurious Emissions at Antenna Terminals

Lower Bandedge Intermodulation
W-CDMA
Uplink





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Appendix A: Test results

Report number: **210165-3TRFWL**

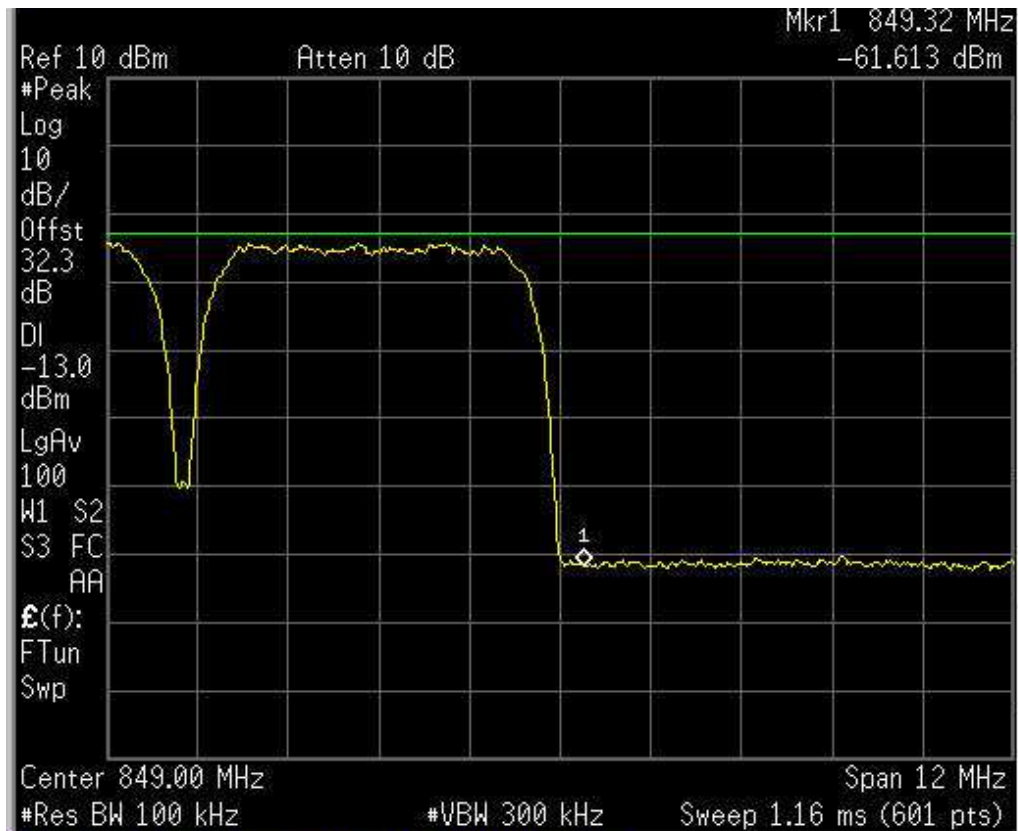
Specification: FCC 22 Subpart H

Test Data – Spurious Emissions at Antenna Terminals

Upper Bandedge Intermodulation

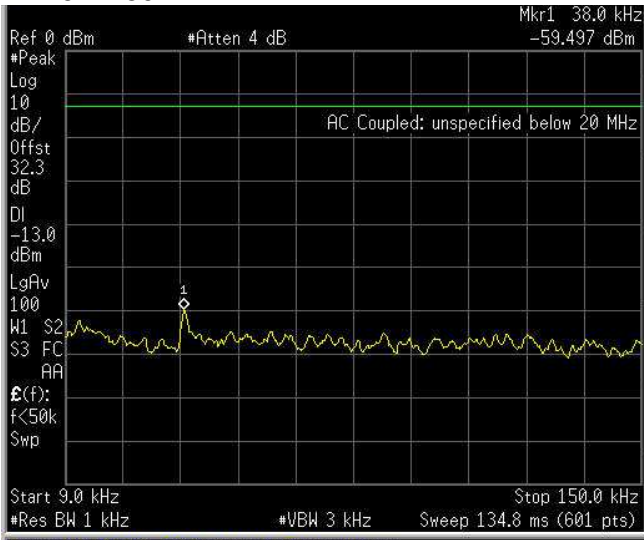
W-CDMA

Uplink

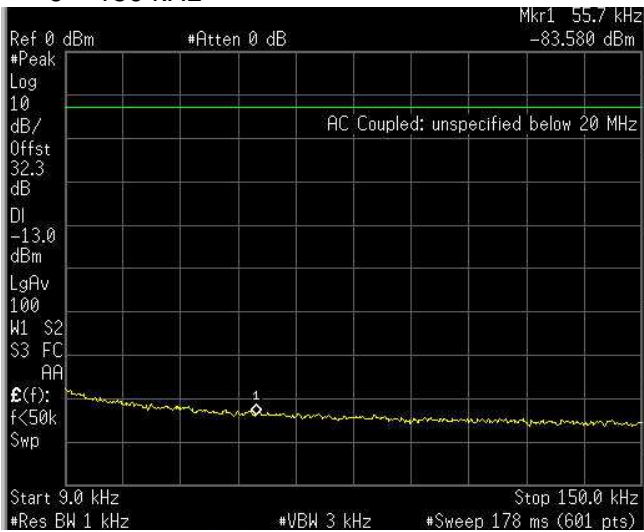


Test Data – Spurious Emissions at Antenna Terminals

Spurs – W-CDMA – Downlink 9 – 150 kHz

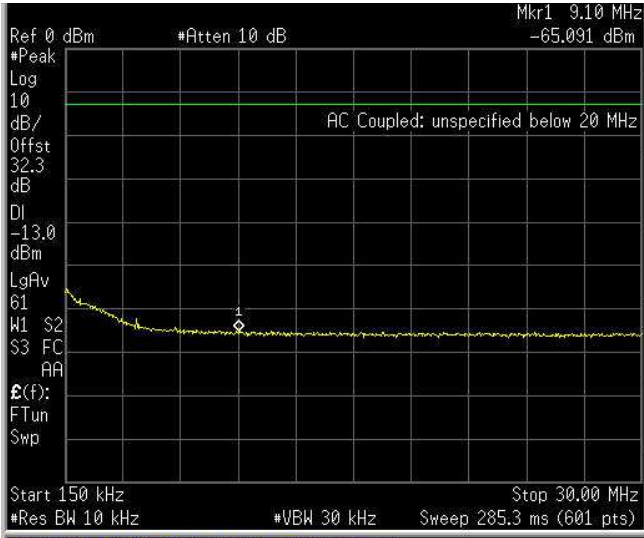


Spurs – W-CDMA – Uplink 9 – 150 kHz

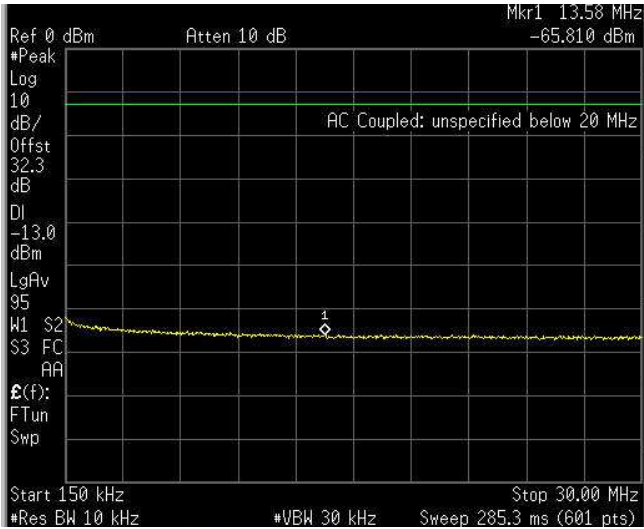


Test Data – Spurious Emissions at Antenna Terminals

Spurs – W-CDMA – Downlink 150 kHz – 30 MHz

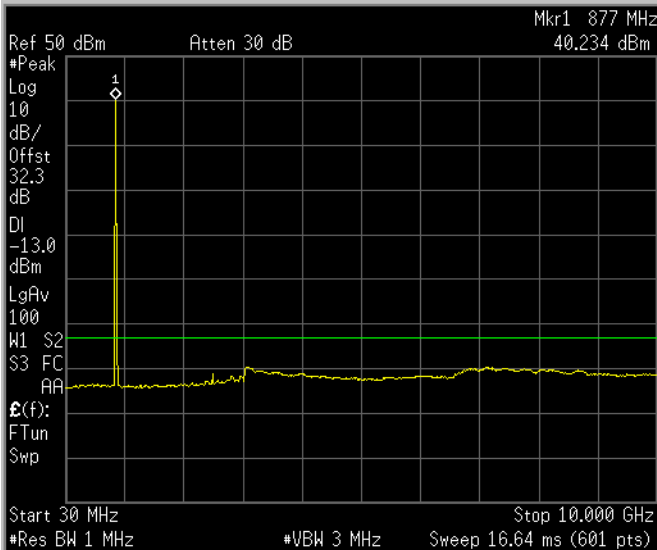


Spurs – W-CDMA – Uplink 150 kHz – 30 MHz

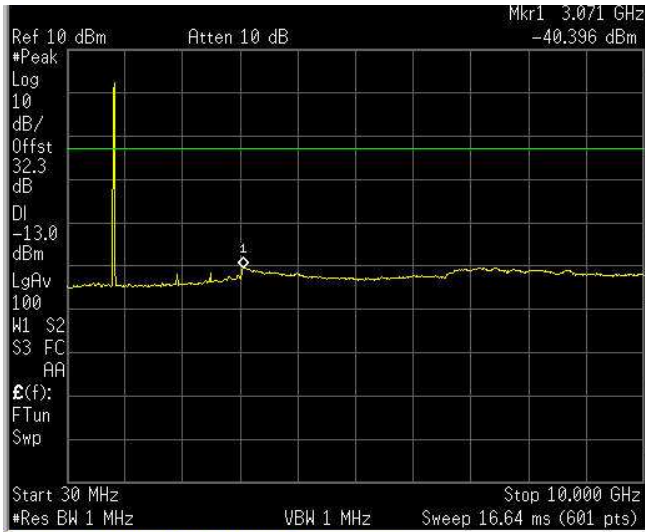


Test Data – Spurious Emissions at Antenna Terminals

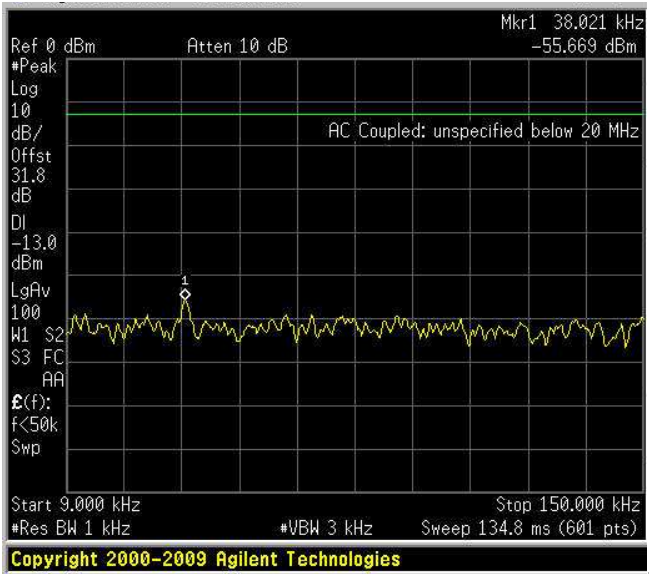
Spurs – W-CDMA – Downlink 30 MHz – 10 GHz



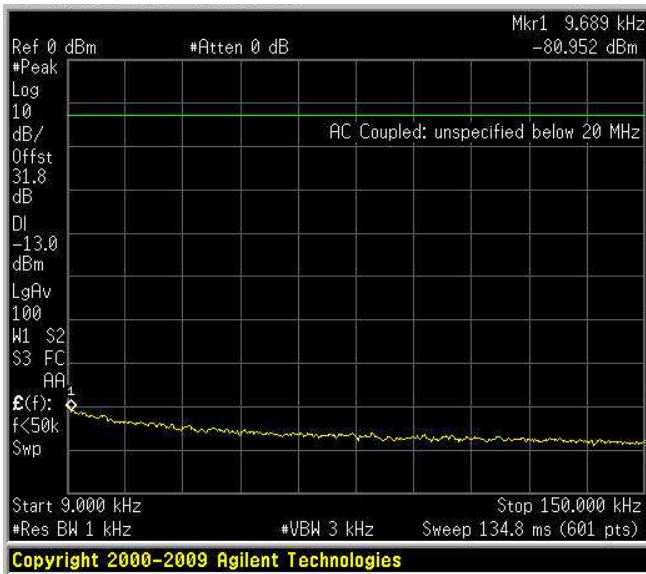
Spurs – W-CDMA – Uplink 30 MHz – 10 GHz



Downlink – 1,4 QAM
9 kHz – 150 kHz



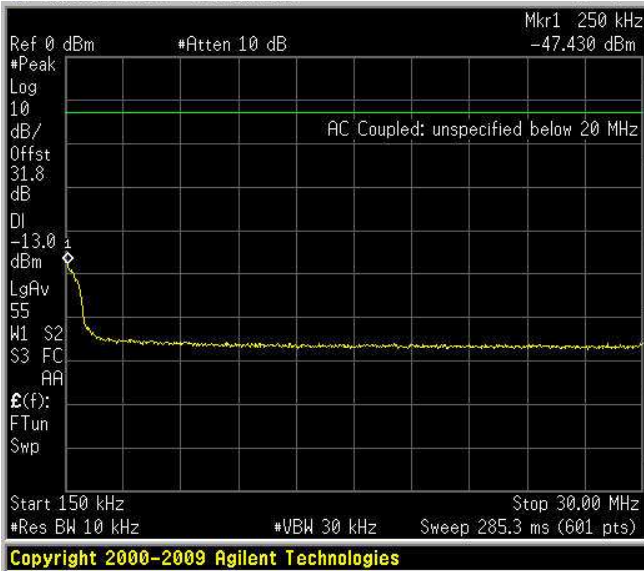
Uplink – 1,4 QAM
9 kHz – 150 kHz



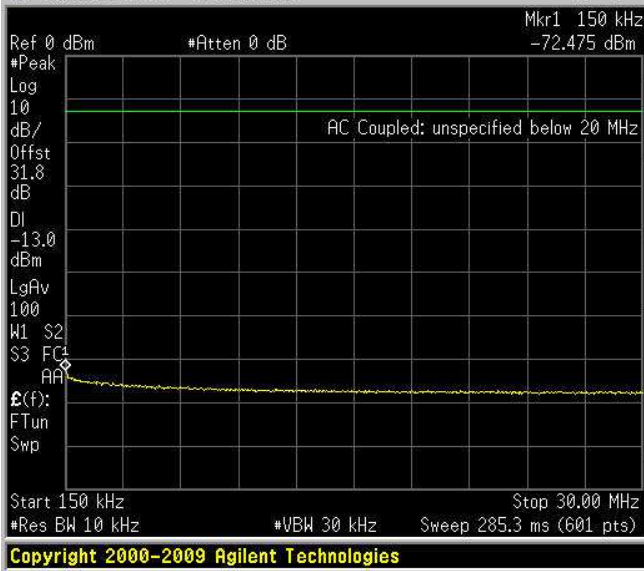
Only 1,4 QAM 9kHz-150kHz spurious emission plots are included here, other modulations spurious emission plots are negligible and the same.

Test data continued

Spurious Emissions at Antenna Terminals
Downlink – 1,4 QAM
150 kHz – 30MHz



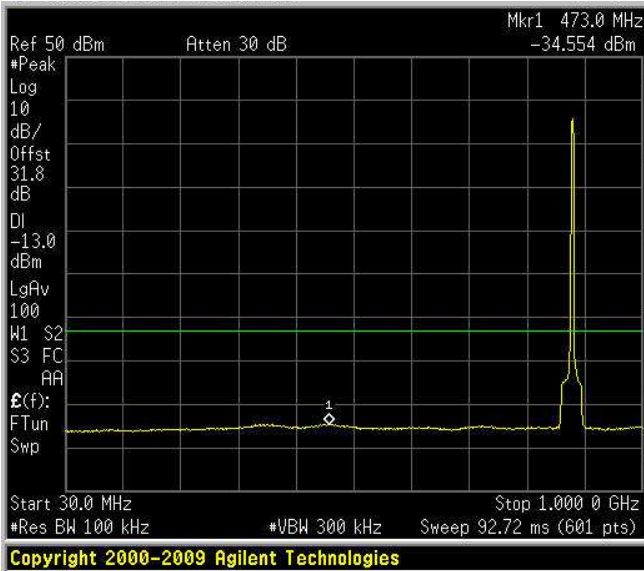
Spurious Emissions at Antenna Terminals
Uplink – 1,4 QAM
150 kHz – 30MHz



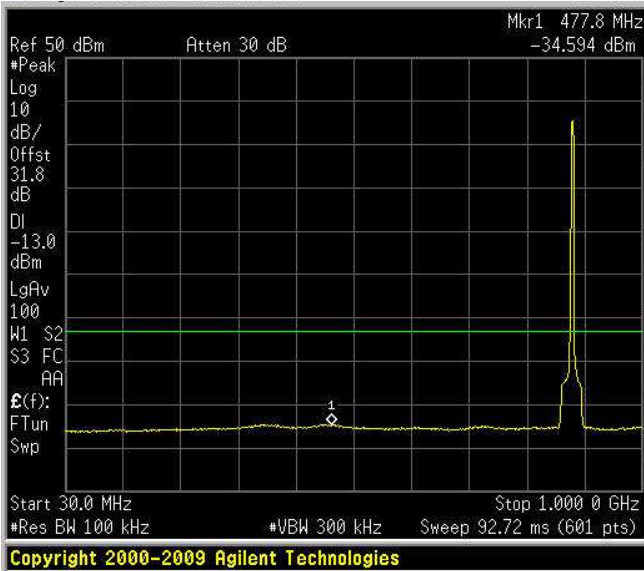
Only 1,4 QAM 150kHz-30MHz spurious emission plots are included here, other modulations spurious emission plots are negligible and the same.

Test data continued

Spurious Emissions at Antenna Terminals
Downlink – 3 QAM
30MHz – 1 GHz

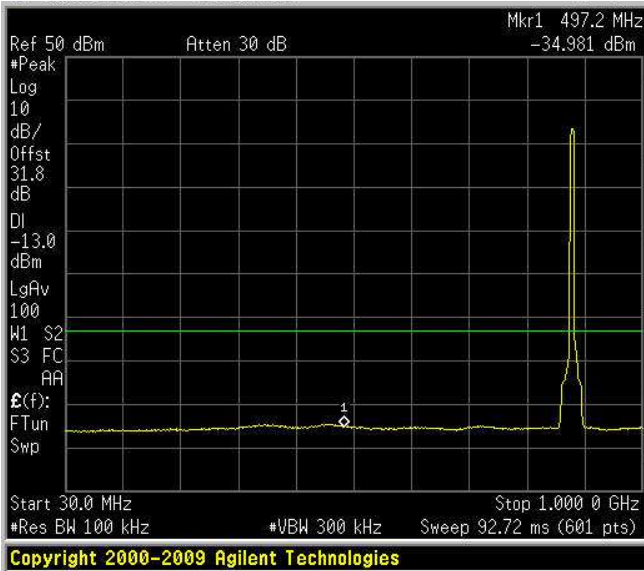


Spurious Emissions at Antenna Terminals
Downlink – 3 QPSK
30MHz – 1 GHz

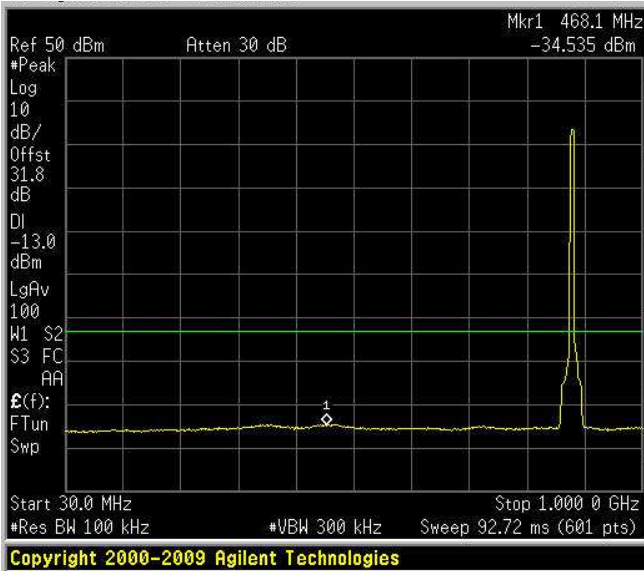


Test data continued

Spurious Emissions at Antenna Terminals
Downlink – 5 QAM
30MHz – 1 GHz



Spurious Emissions at Antenna Terminals
Downlink – 5 QPSK
30MHz – 1 GHz





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Appendix A: Test results

Report number: **210165-3TRFWL**

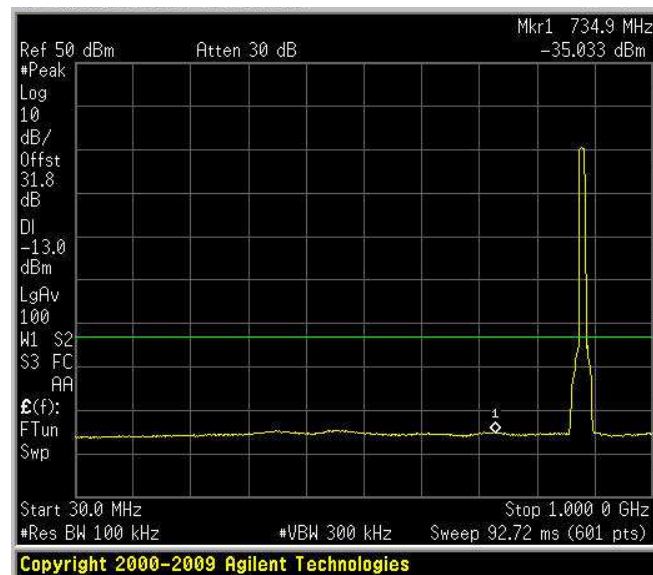
Specification: FCC 22 Subpart H

Test data continued

Spurious Emissions at Antenna Terminals

Downlink – 10 QAM

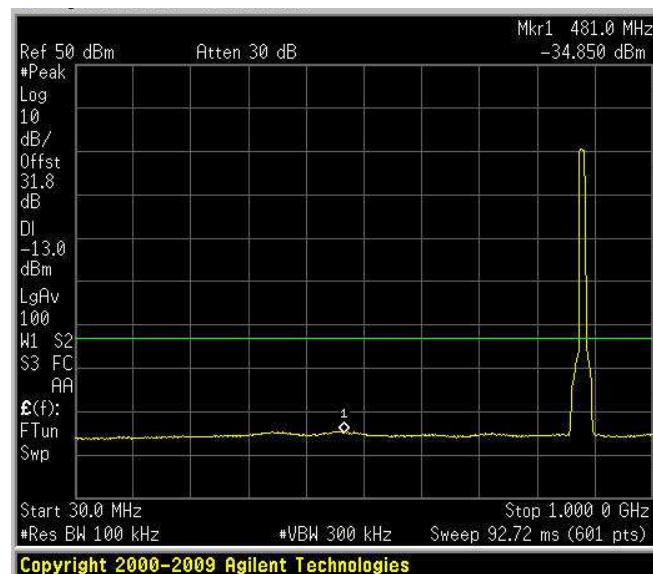
30MHz – 1 GHz



Spurious Emissions at Antenna Terminals

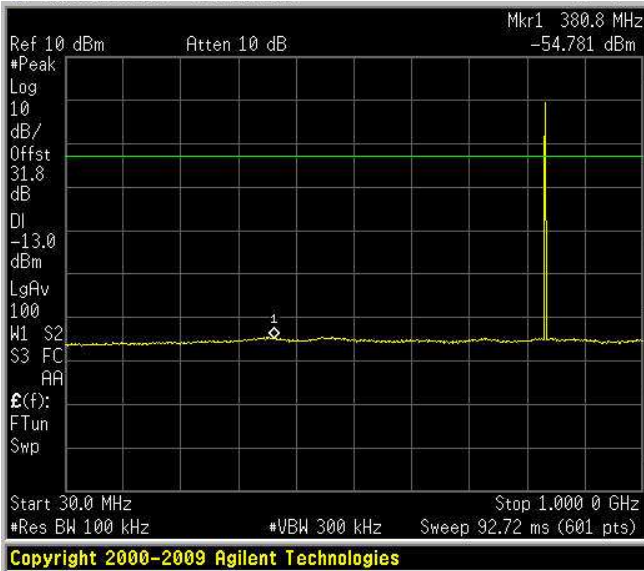
Downlink – 10 QPSK

30MHz – 1 GHz

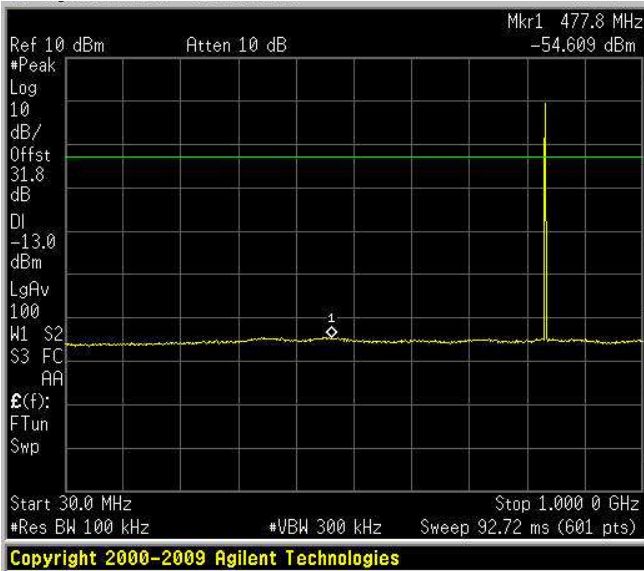


Test data continued

Spurious Emissions at Antenna Terminals
Uplink – 1,4 QAM
30MHz – 1 GHz

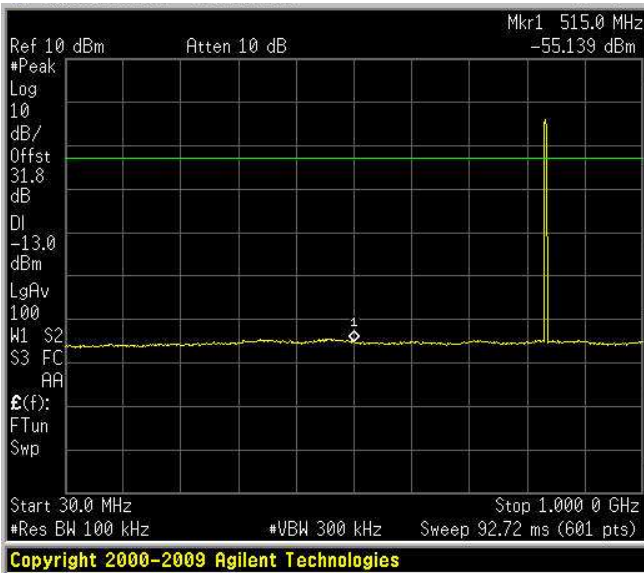


Spurious Emissions at Antenna Terminals
Uplink – 1,4 QPSK
30MHz – 1 GHz

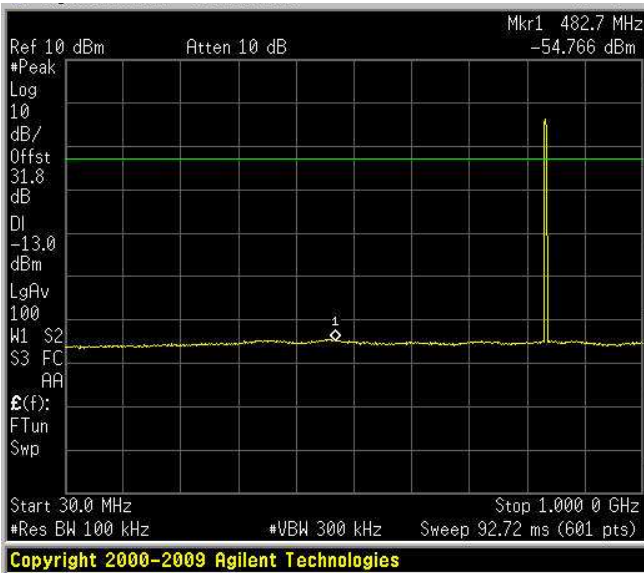


Test data continued

Spurious Emissions at Antenna Terminals
Uplink – 3 QAM
30MHz – 1 GHz

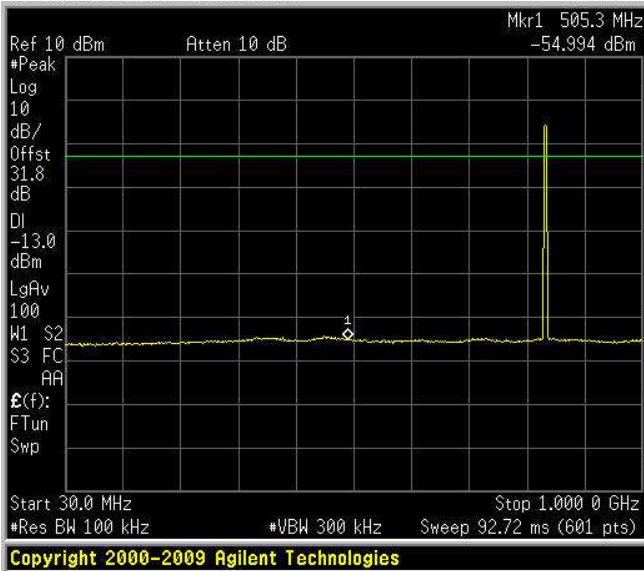


Spurious Emissions at Antenna Terminals
Uplink – 3 QPSK
30MHz – 1 GHz

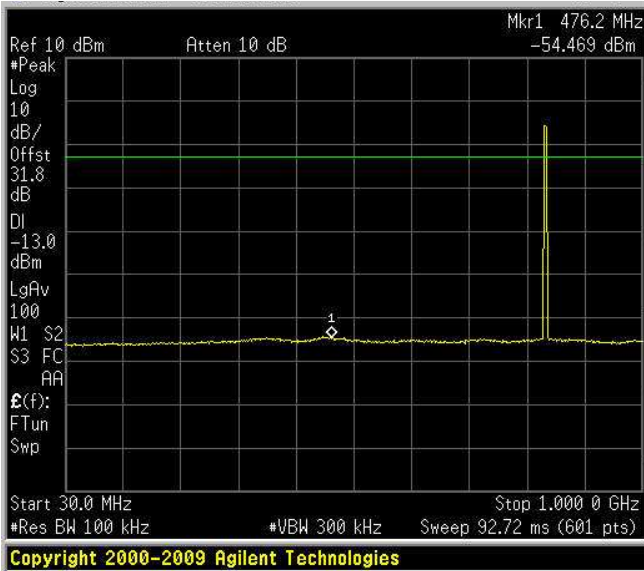


Test data continued

Spurious Emissions at Antenna Terminals
Uplink – 5 QAM
30MHz – 1 GHz

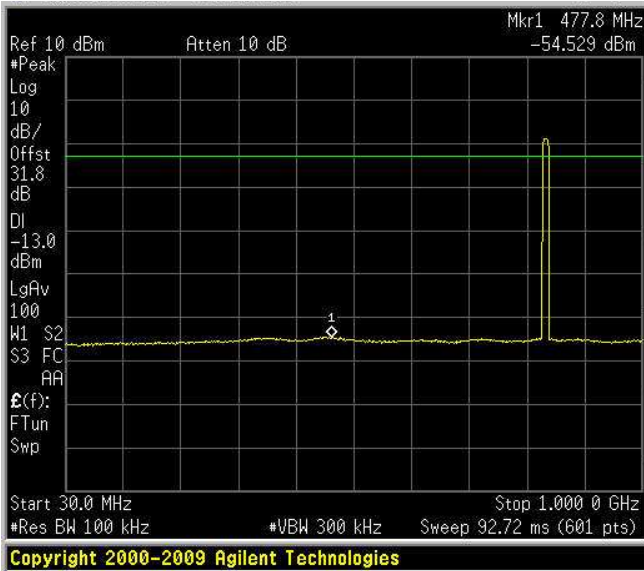


Spurious Emissions at Antenna Terminals
Uplink – 5 QPSK
30MHz – 1 GHz

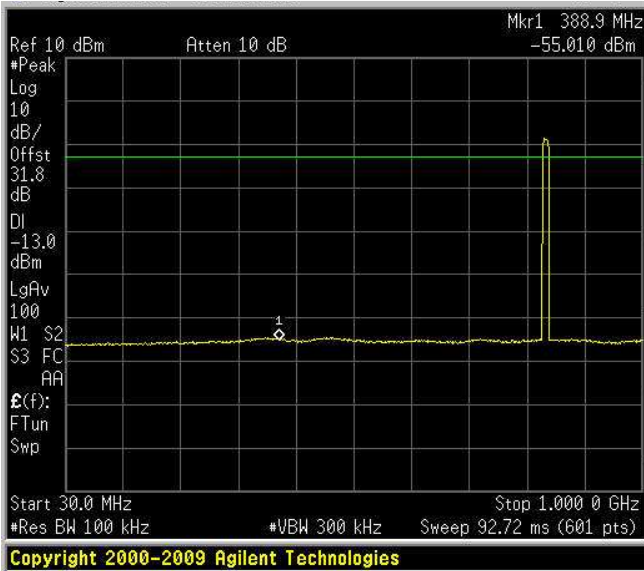


Test data continued

Spurious Emissions at Antenna Terminals
Uplink – 10 QAM
30MHz – 1 GHz



Spurious Emissions at Antenna Terminals
Uplink – 10 QPSK
30MHz – 1 GHz





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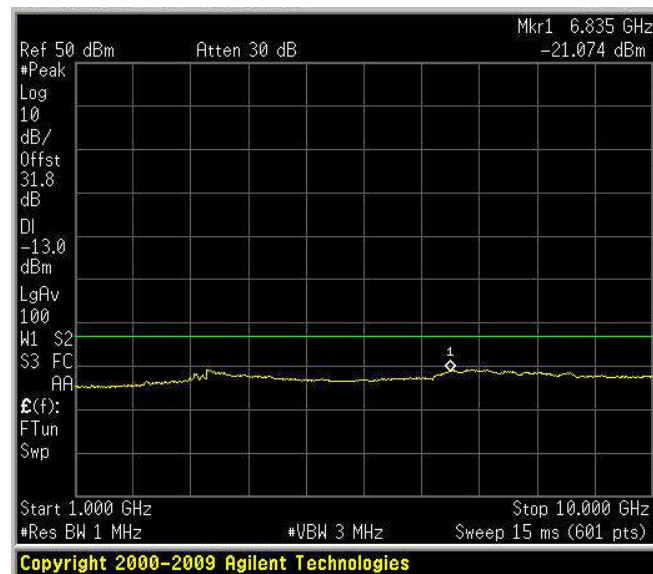
Appendix A: Test results

Report number: **210165-3TRFWL**

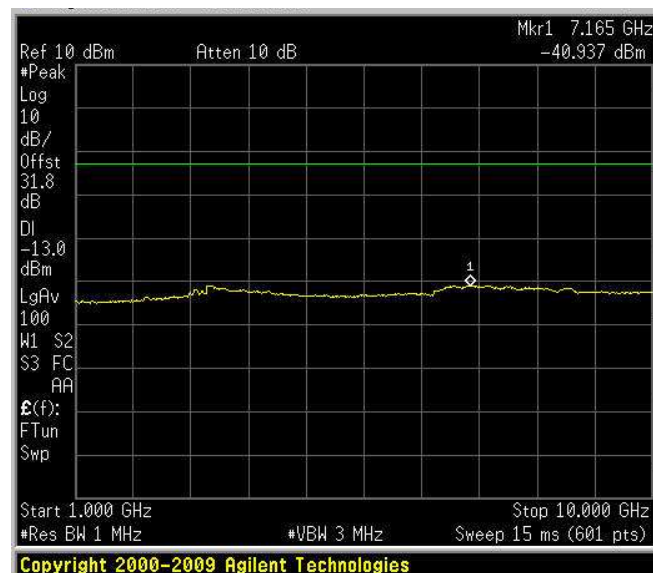
Specification: FCC 22 Subpart H

Test data continued

Downlink – 1,4 QAM
1 GHz – 10 GHz



Uplink – 1,4 QAM
1 GHz – 10 GHz



Only 1,4 QAM 1GHz-10GHz spurious emission plots are included here, other modulations spurious emission plots are negligible and the same.

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	Report number: 210165-3TRFWL
	Specification: FCC 22 Subpart H

Clause 22.917(a) Out of band spurious emissions at antenna terminal

Clause 22.917 Field strength of emissions

(a) Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.

(b) Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater. 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 narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 100 kHz or 1 percent of emission bandwidth, as specified).

Test date: 2012-06-04

Test results: **Pass**

Special notes

- The spectrum was searched from 30 MHz up to 10th harmonic
- The EUT was measured on three orthogonal axis.
- All measurements were performed at a distance of 3 m.
- Only the worst data presented in the test report.
- The EUT's antenna port was terminated with 50 Ω termination.

Method of Measurement

TIA/EIA-603-1992

The antenna substitution method is used to determine the equivalent radiated power at spurious frequencies. The spurious emissions are measured at a distance of 3 meters. The EUT is then replaced with a reference substitution antenna with a known gain referenced to a dipole. This antenna is fed with a signal at the spurious frequency. The level of the signal is adjusted to repeat the previously measured level. The resulting erp is the signal level fed to the reference antenna corrected for gain referenced to a dipole.

The calibration is carried out directly by dBm.

Special notes

- The spectrum was searched from 30 MHz to the 10th harmonic.
- All measurements were performed using a peak detector.
- The measurements were performed at the distance of 3 m.
- RBW within 30–1000 MHz was 100 kHz and 1 MHz above 1 GHz. VBW was wider than RBW.

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	Report number: 210165-3TRFWL
	Specification: FCC 22 Subpart H

Test Data:

The D.U.T. was positioned according to the radiated emissions set-up

The D.U.T. antenna connector was terminated by a 50 Ω shielded dummy load.

The spectrum was searched from 30 MHz to 1 GHz (RBW 100 kHz) & 1 GHz (RBW 1 MHz) to the tenth harmonic of the carrier.

There were no emissions detected above the noise floor which was at least 20 dB below the specification limit.



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Appendix A: Test results

Report number: **210165-3TRFWL**

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Clause 22.355 Frequency tolerance

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances as follows:

Base fixed station (ppm)	Mobile station (ppm)
1.5	2.5

Test date:

Test results:

Special notes

The resolution bandwidth was set to 10 kHz, video bandwidth was set to 100 Hz

NOT APPLICABLE; E.U.T. does not contain modulation circuitry



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Appendix A: Test results

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Clause 22.355 Frequency tolerance, continued

Test data

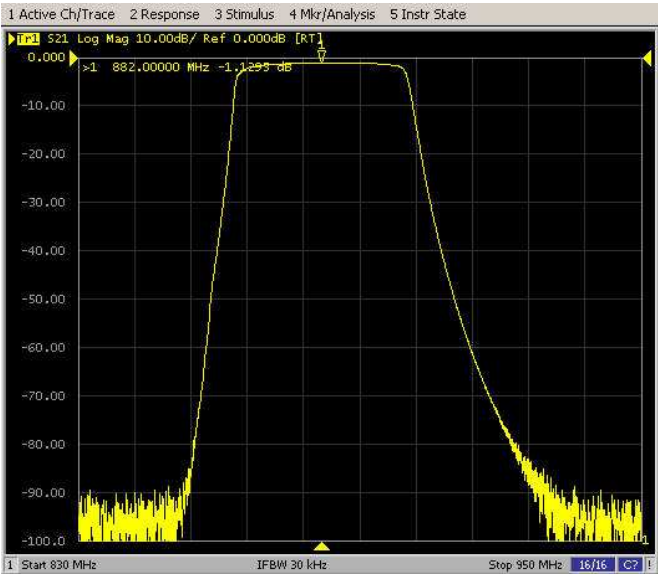
Conditions	Frequency (Hz)	Offset (ppm)	Limit (ppm)	Margin (ppm)
+50 °C, Nominal power			1.5	
+40 °C, Nominal power			1.5	
+30 °C, Nominal power			1.5	
+20 °C, +10% power			1.5	
+20 °C, Nominal power		Reference	1.5	
+20 °C, -10% power			1.5	
+10 °C, Nominal power			1.5	
0 °C, Nominal power			1.5	
-10 °C, Nominal power			1.5	
-20 °C, Nominal power				

- Note: Offset calculation: $\frac{F_{Measured} - F_{reference}}{F_{reference}} \times 1 \cdot 10^6$
- Maximum frequency drift is 0 kHz

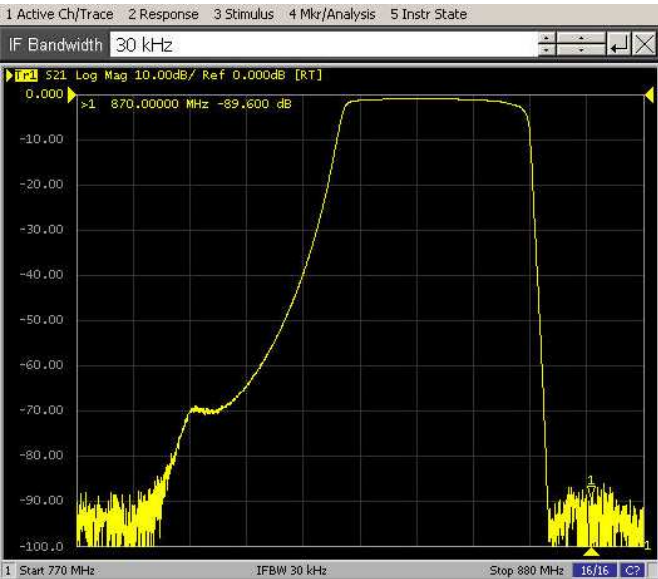
Filter Frequency Response

Test date: 2012-06-04

Test results: Pass



Down-link



Up-link



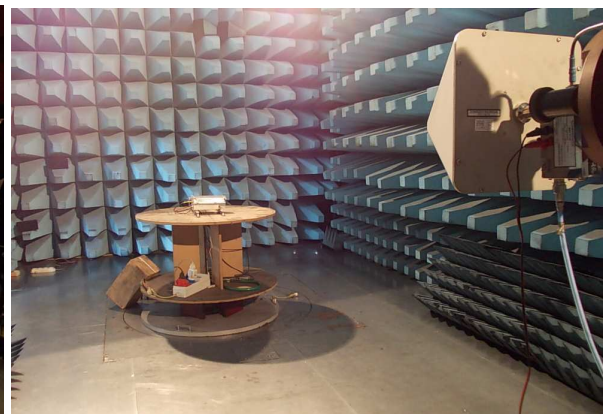
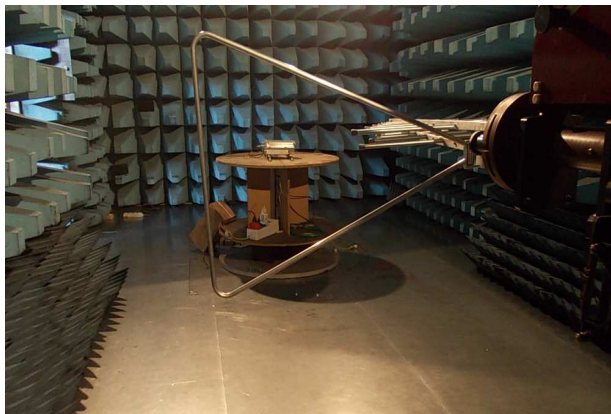
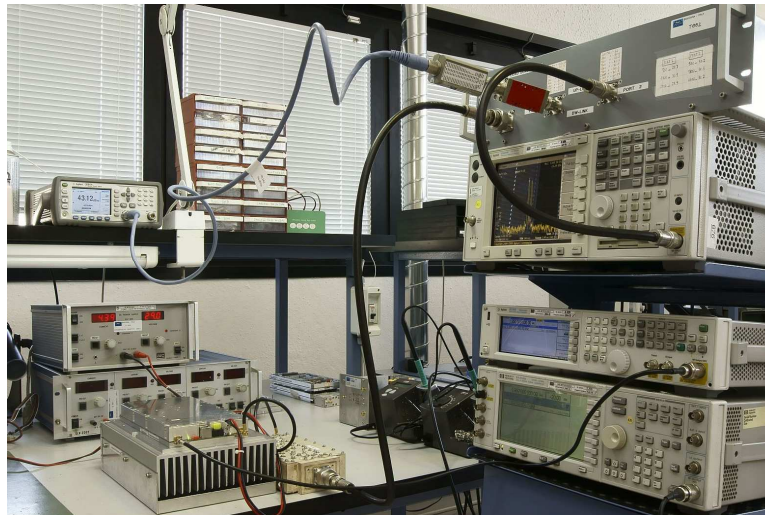
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Appendix A: Test results

Report number: **210165-3TRFWL**

Specification: FCC 22 Subpart H

Photo Set up



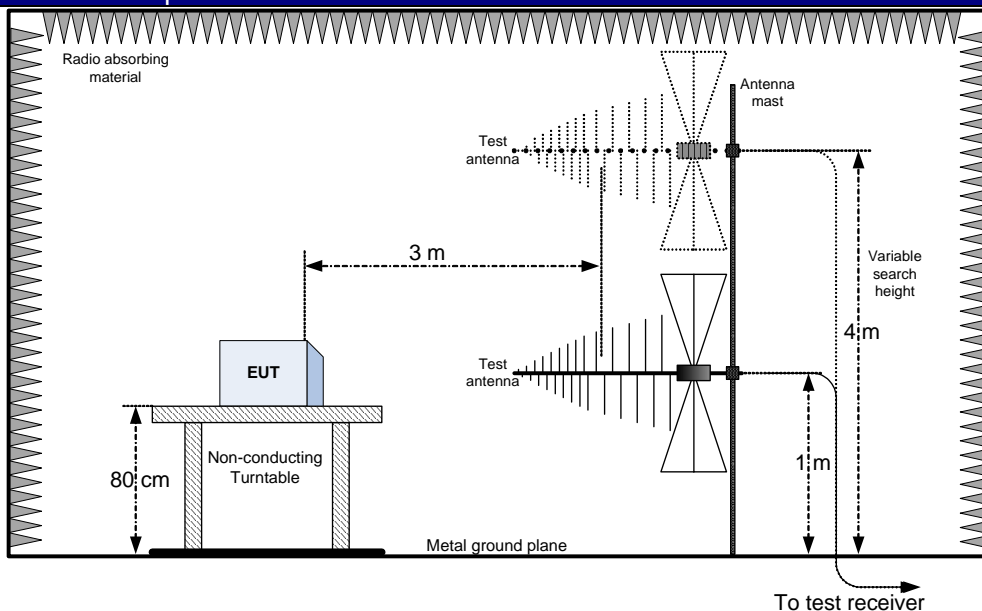
<div data-bbox="132 197 421 264">  Nemko </div> <div data-bbox="132 266 533 320"> Nemko Italy S.p.A. Via del Carroccio 4, 20046, Biassono, Italy. </div>	Appendix A: Test results	
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	Specification: FCC 22 Subpart H	

Photo EUT



Appendix B: Block diagrams of test set-ups

Radiated emissions set-up



Substitution method set-up

