

EMC Test Report

Project Number: 3161200**Report Number: 3161200EMC01****Revision Level: 3****Client: Aethon****Equipment Under Test: 802.11 a/b/g/n module and antennas****Model Number: 151256****Applicable Standards: FCC 15.247 - radiated spurious emissions****FCC 15.407 - radiated spurious emissions****RSS 210 - radiated spurious emissions****ANSI C63.10: 2009****Report issued on: 26NOV2013****Test Result: Compliant**

Tested by:

A handwritten signature in black ink, appearing to read 'B. Forster', written over a horizontal line.

Brian Forster, EMC Engineer

Reviewed by:

A handwritten signature in blue ink, appearing to read 'David Schramm', written over a horizontal line.

David Schramm, EMC Manager

Remarks:

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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1 Summary of Test Results

Test Description	Test Specification	Test Result
Field strength of spurious radiation	FCC 15.247, 15.407, ICES-003	Compliant

1.1 *Modifications Required for Compliance*

None

2 General Information

2.1 *Client Information*

Name: Aethon, Inc.
Address: 100 Business Center Drive
City, State, Zip, Country: Pittsburgh, PA 15205

2.2 *Test Laboratory*

Name: SGS North America, Inc.
Address: 620 Old Peachtree Road NW, Suite 100
City, State, Zip, Country: Suwanee, GA 30024, USA

2.3 *General Information of EUT*

Model Name: 151256

Rated Voltage: 24.2V DC
Test Voltage: 24.2V DC

Sample Received Date: 17 MAY 2013
Dates of testing: 01-20 SEP 2013

2.4 *Operating Modes and Conditions*

The EUT was configured in software to allow the EUT to transmit test data in a continuous mode.

2.5 EUT Connection Block Diagram



2.6 System Configurations

Device reference	Manufacturer	Description	Model Number	Serial Number
A	Aethon	802.11 a/b/g/n wireless module	151256	SGS:60105-6

3 Spurious Emissions

3.1 Test Result

Test Description	Test Specification	Test Result
Field strength of spurious radiation	FCC Part 15.247, 15.407, RSS 210	Compliant

3.2 Test Method

The test data was measured According to KDB 558074 Sections 11 and 12

The Maximum Antenna gain for the 802.11a/b/g/n antennas installed was 4.6dBi.

Radiated Measurements are reported for 802.11b as reflecting the worst case spurious emissions from cabinet and antenna measurements.

The maximum gain was added to all conducted emissions plots.

All measurements were taken with the following BW: 1MHz RBW/ 3MHz VBW



3.3 Test Site

10m Absorber Lined Shielded Enclosure (ALSE), Suwanee, GA

Environmental Conditions

Temperature: 24.5 °C

Relative Humidity: 50.1%

Atmospheric Pressure: 97.9 kPa

3.4 Test Equipment

Test Start Date: 10/10/2013

Tested By: bkf

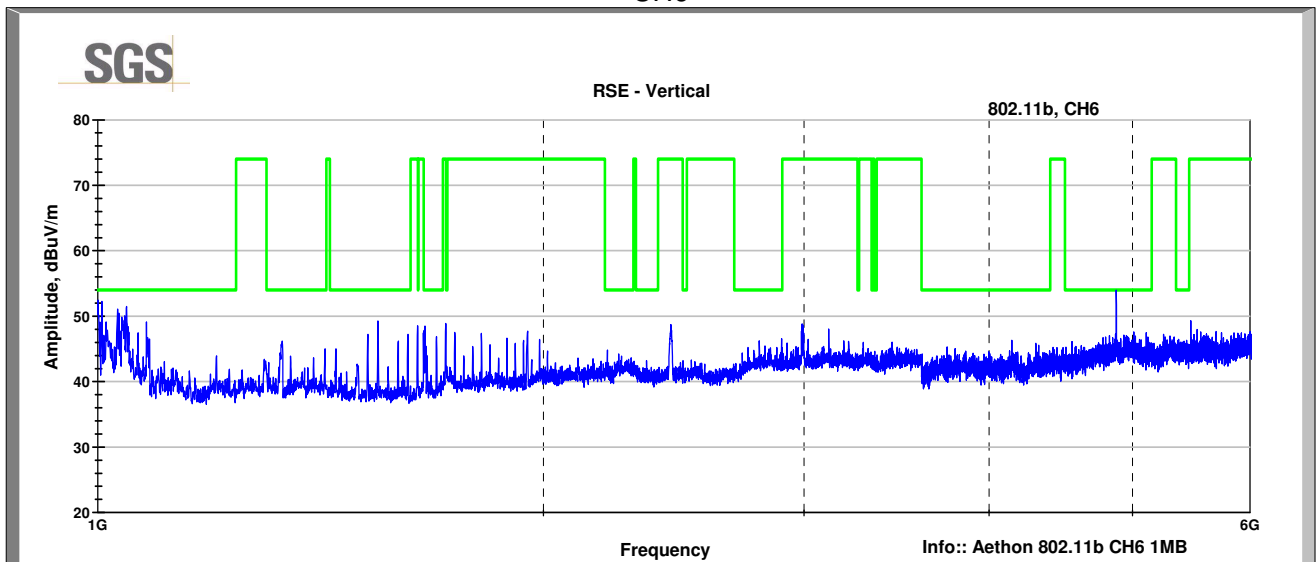
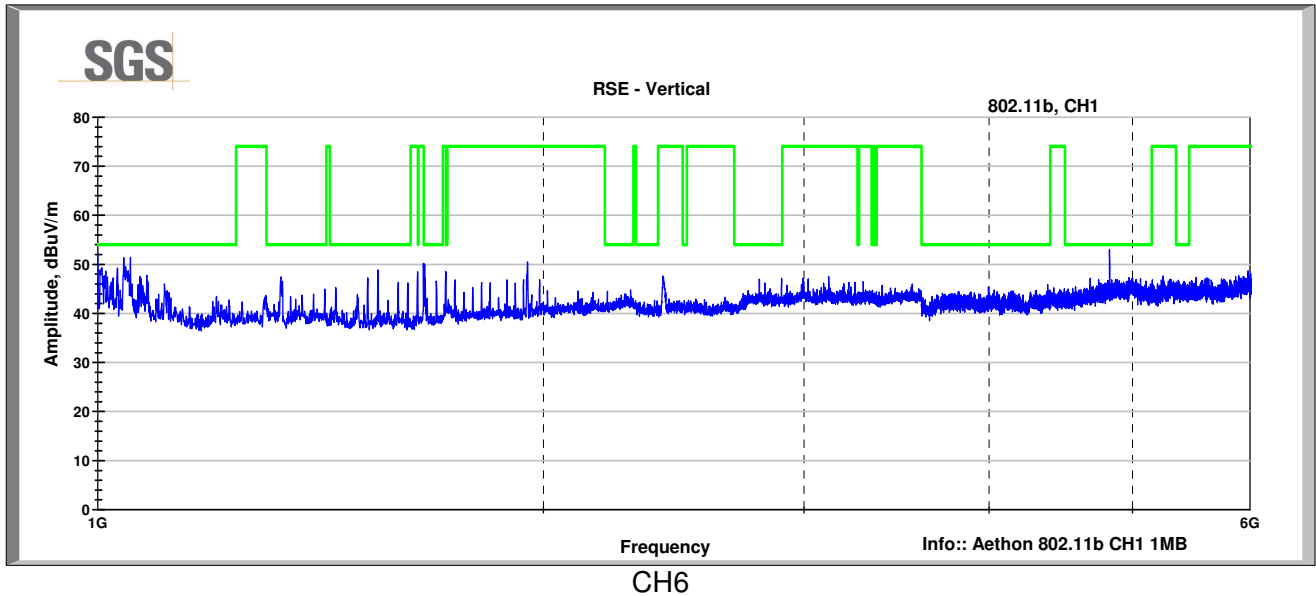
Test End Date: 10/10/2013

Equipment	Model	Manufacturer	Asset Number	Cal Due Date
Coaxial Cable	Sucoflex 102	Huber+Suhner	B079824	6-Aug-14
Filter	BRM50702	Microtronics	NA	Verified before use
Spectrum Analyzer	N9030A	Agilent	1114338	8-Jun-14
Spectrum Analyzer	FSV	R&S	B085749	28-Aug-14

Note: The calibration period equipment is 1 year.

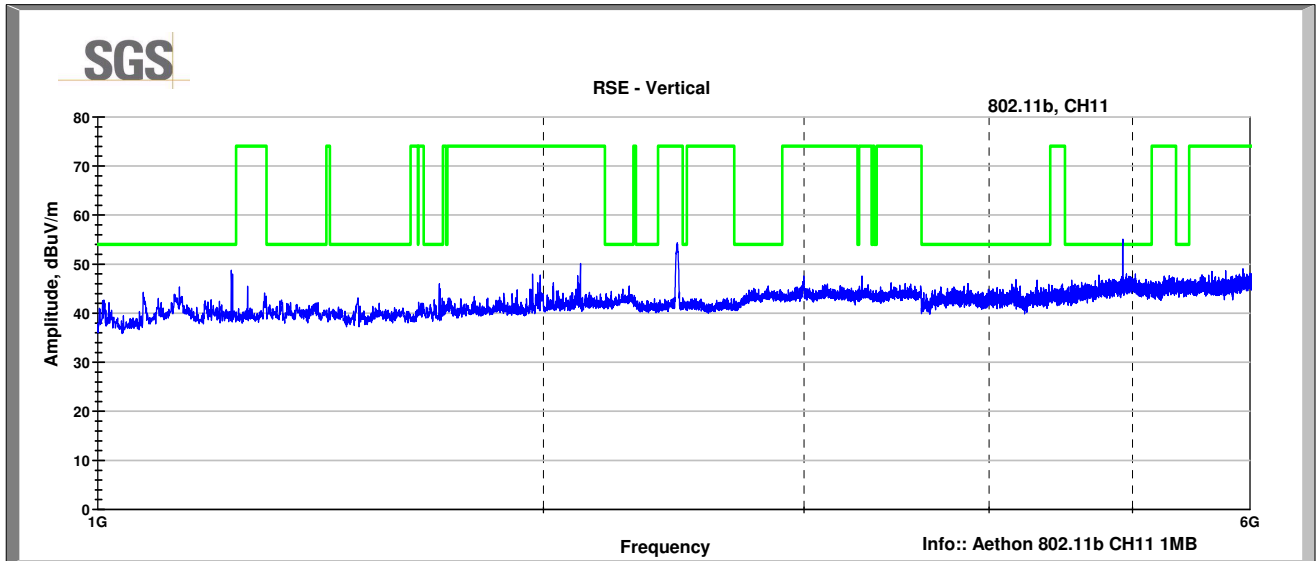
3.5 Test Data

Spurious Emissions 802.11b
Radiated 30 MHz to 6 GHz
Vertical
CH 1



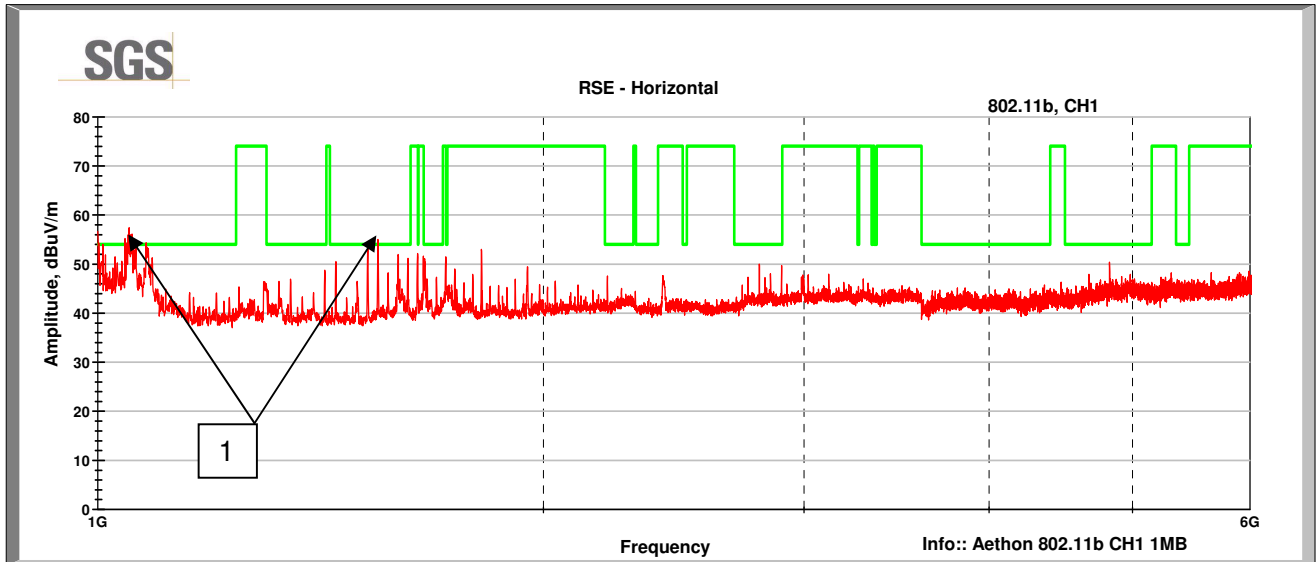
Frequency MHz	Raw RMS (dBuV)	Receive path correction (dB)	Corrected Peak (dBuV/m)	RMS Value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4874.30	44.5	7.1	54.0	51.6	54.0	-2.4

Ch 11

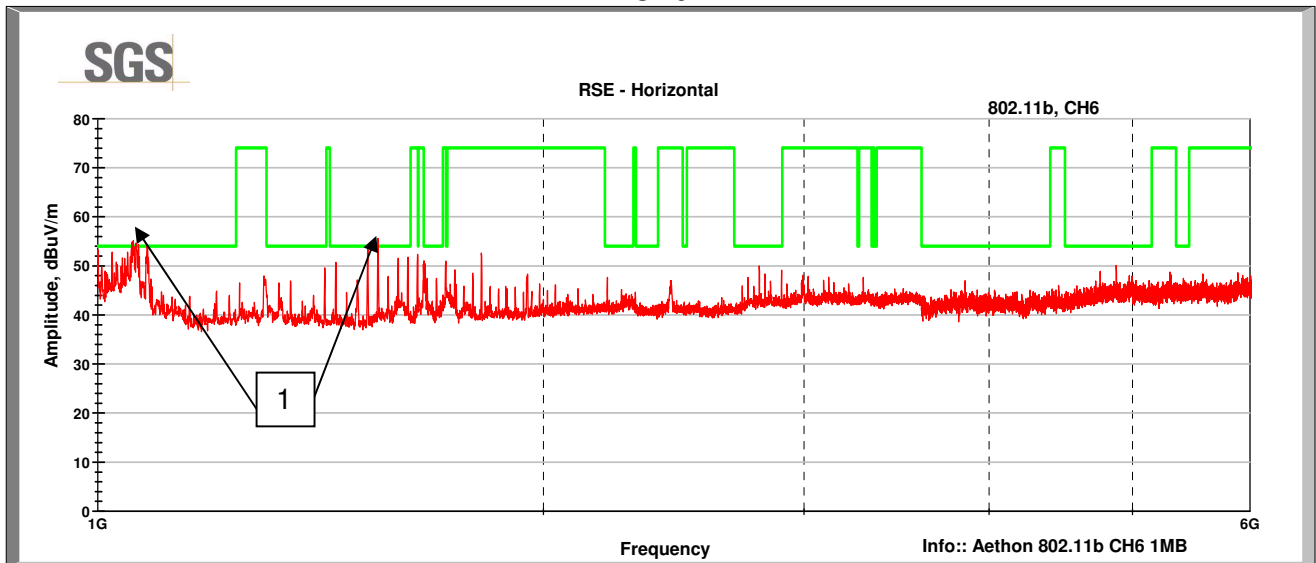


Frequency MHz	Raw Peak (dBuV)	Receive path correction (dB)	Corrected Peak (dBuV/m)	RMS Value (dBuV/m)	Limit (dBuV/m)	Margin (dB)
4924.17	45.5	7.1	55.0	52.6	54.0	-1.4

Horizontal CH1

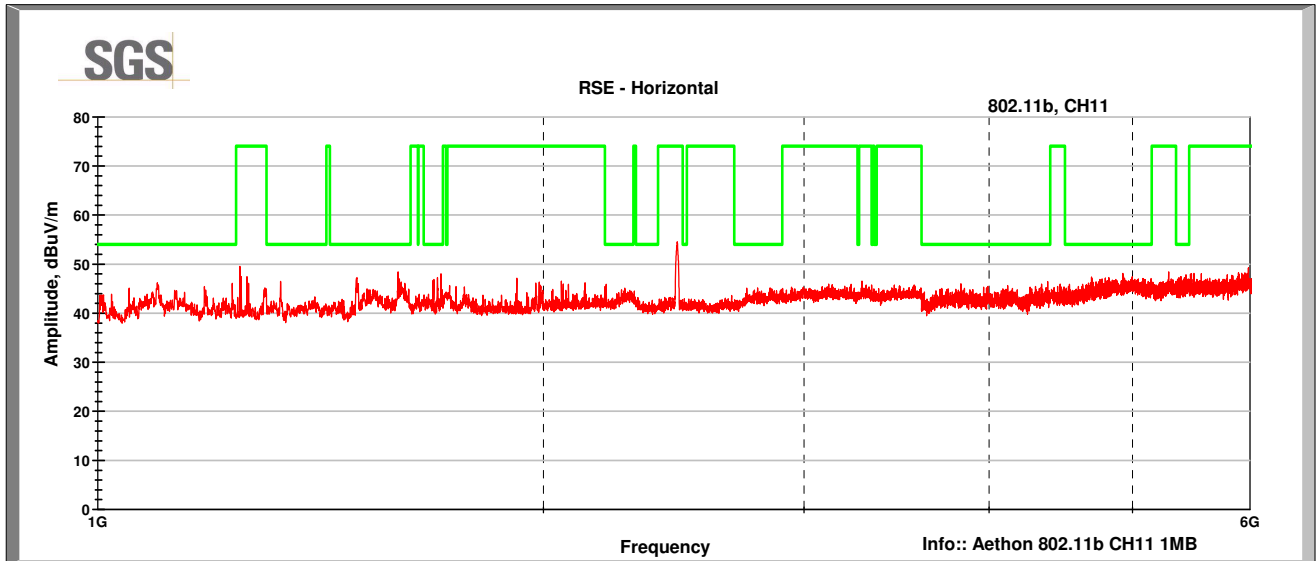


CH6

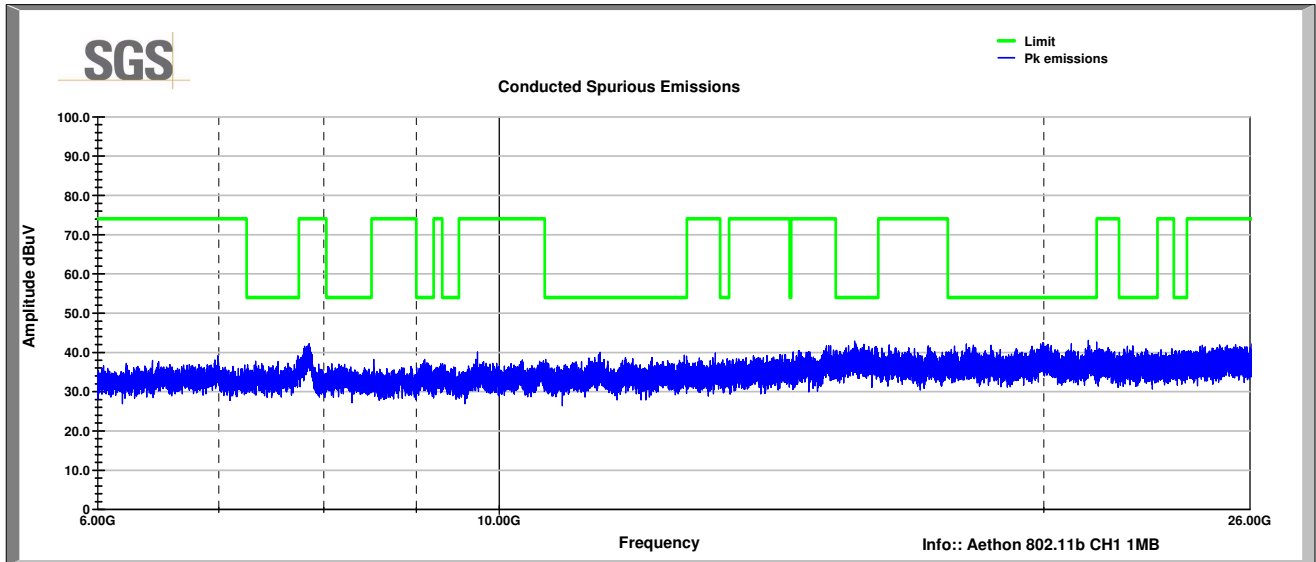


Note 1: Power supply and support PC emissions unrelated to intentional radiator

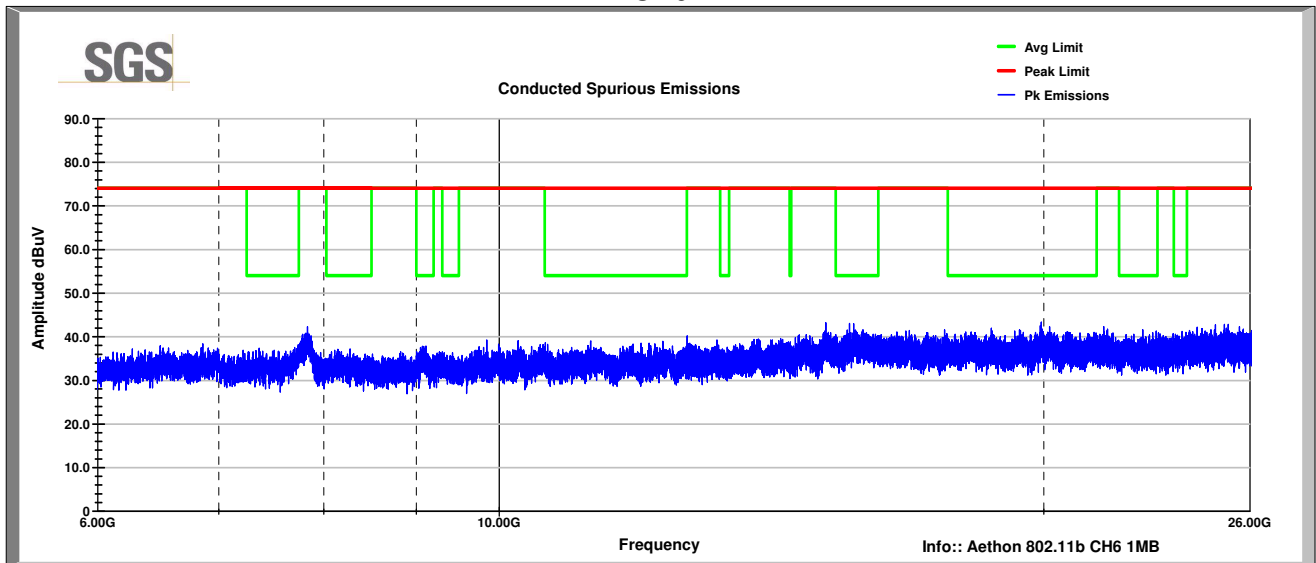
CH11



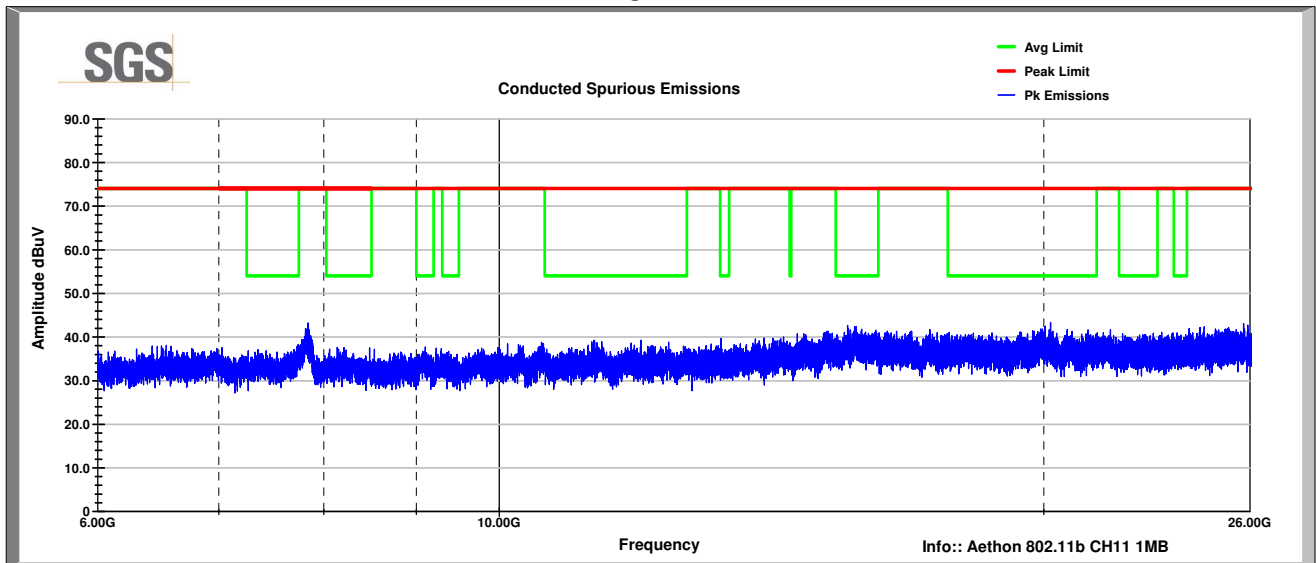
Conducted Spurious Emissions 6 – 26GHz CH1



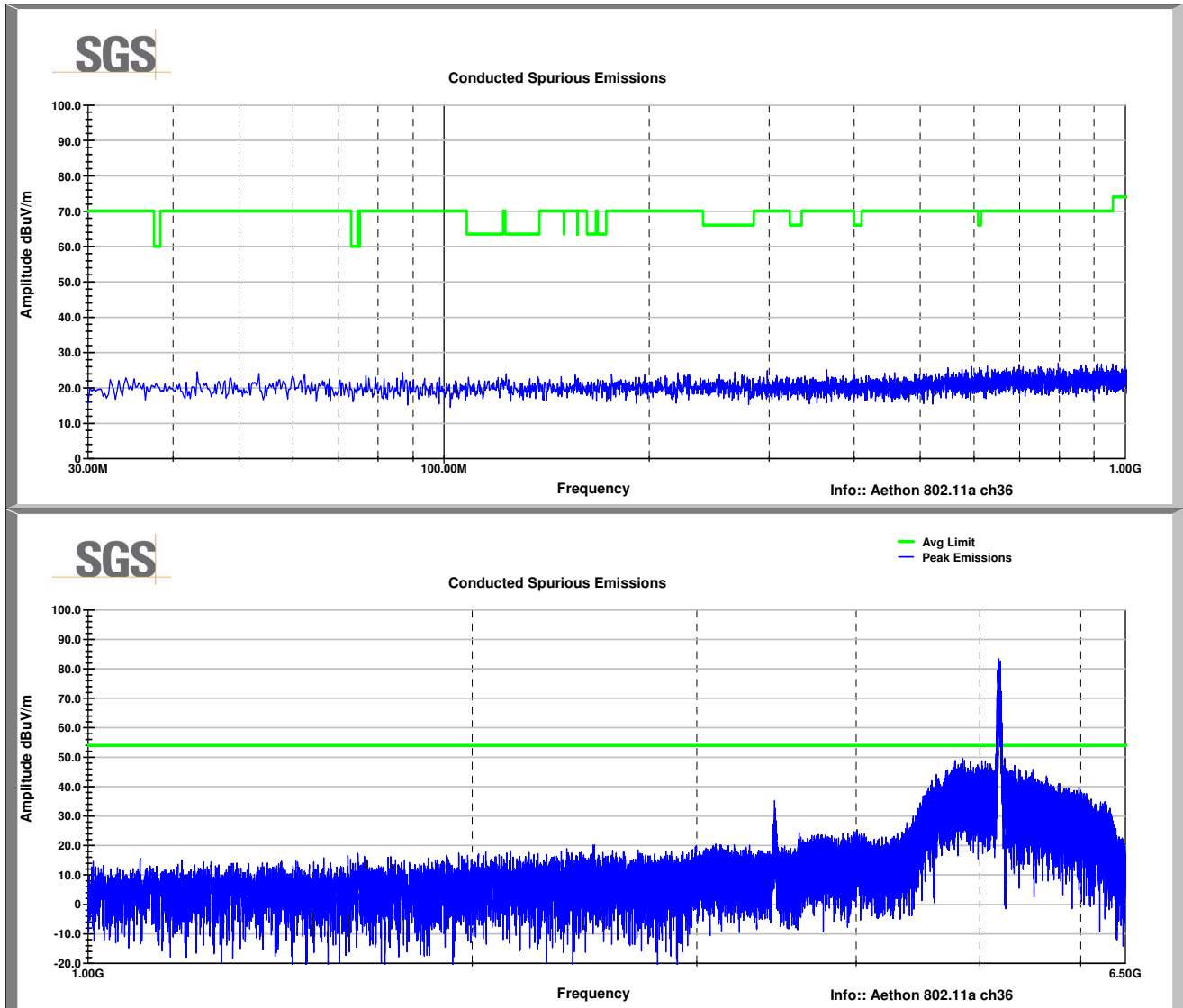
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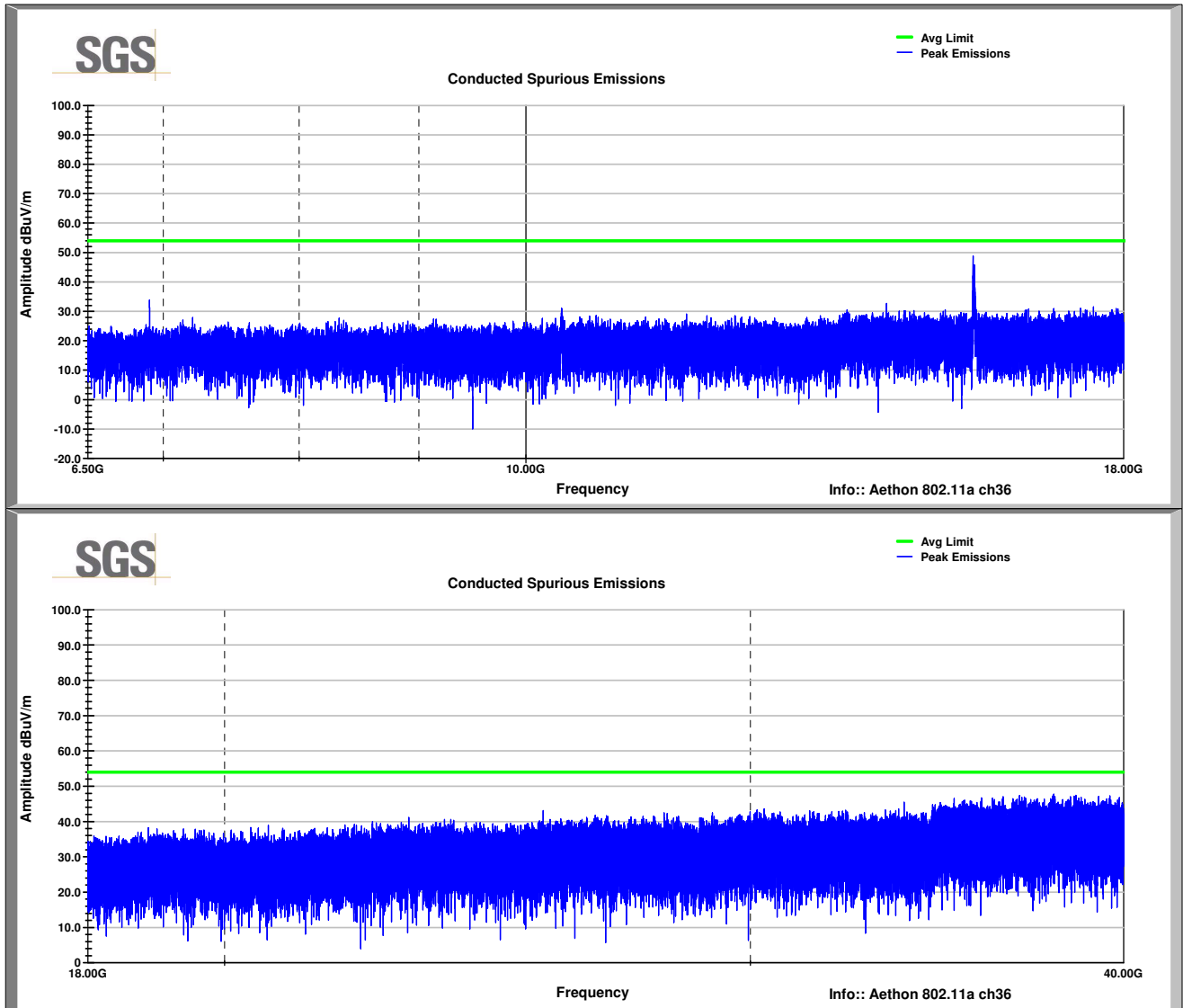


CH11

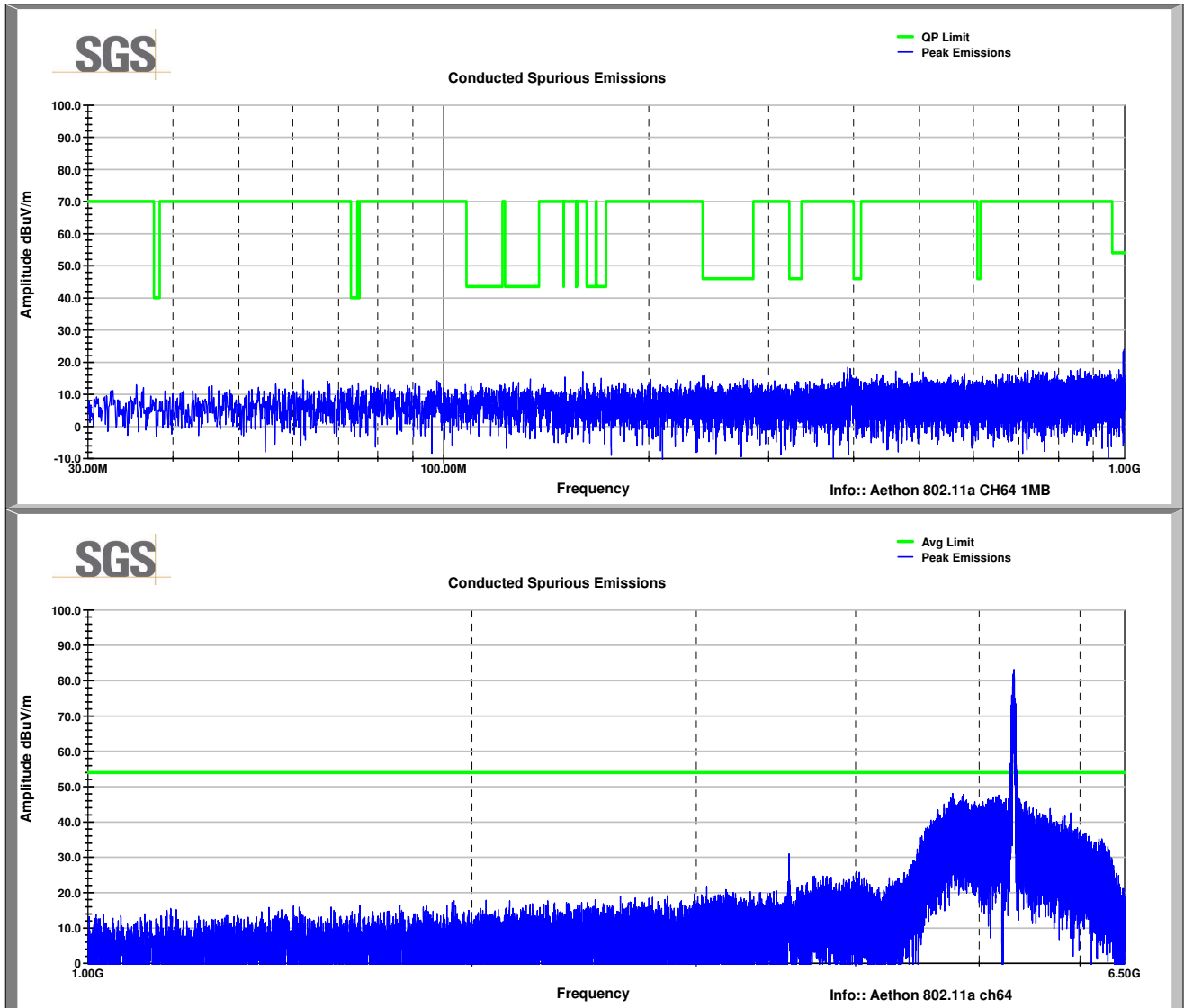


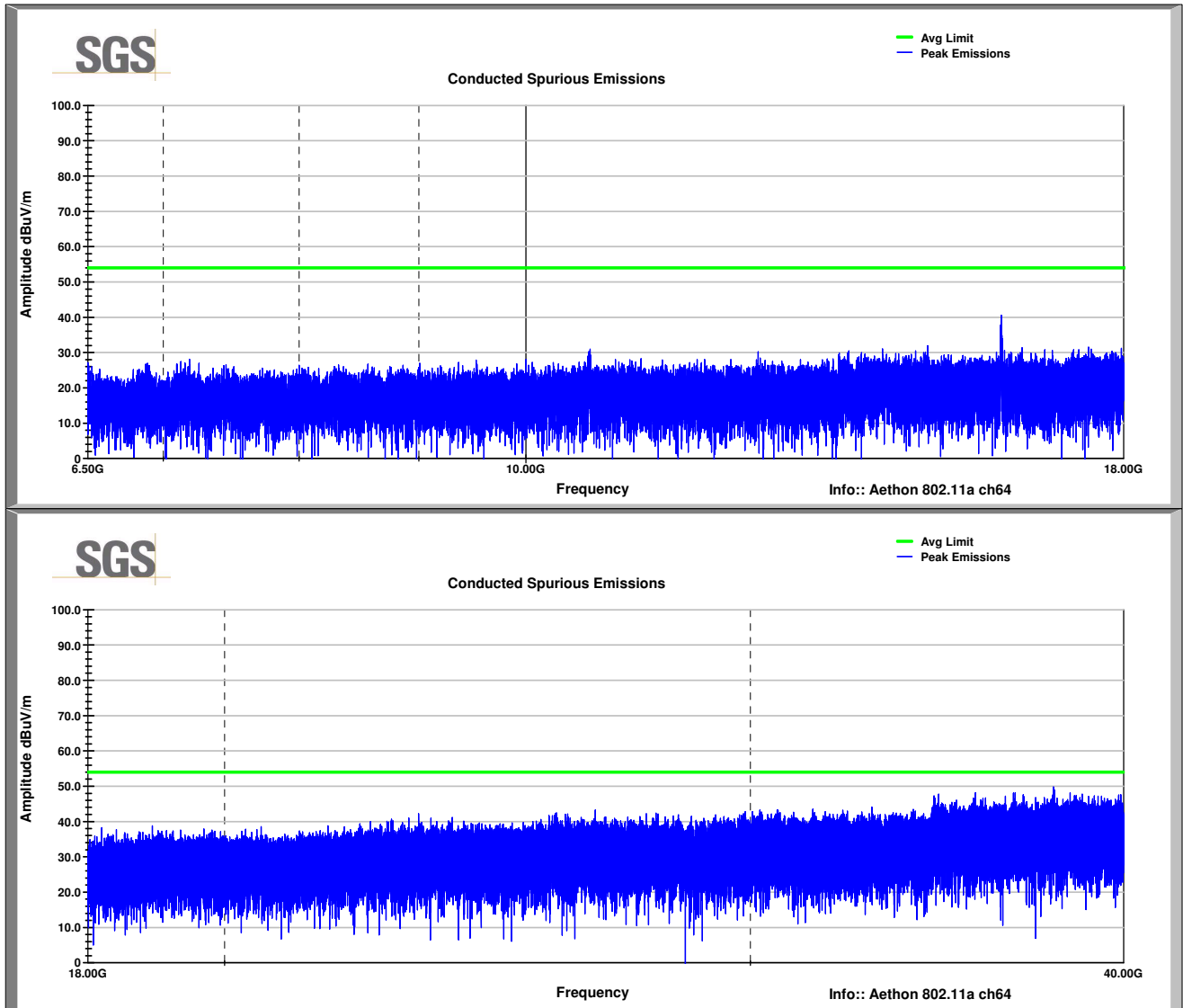
802.11a CH36



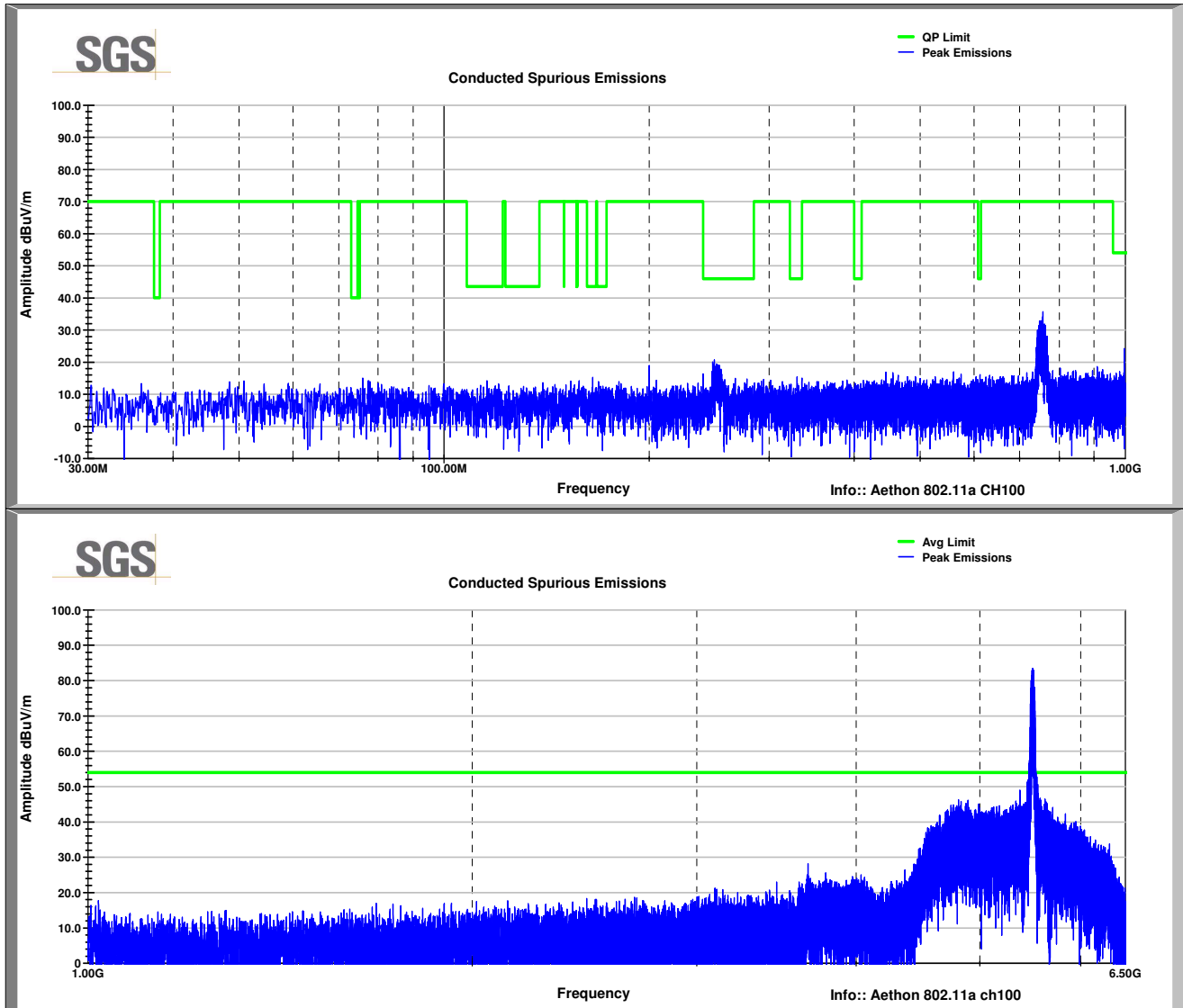


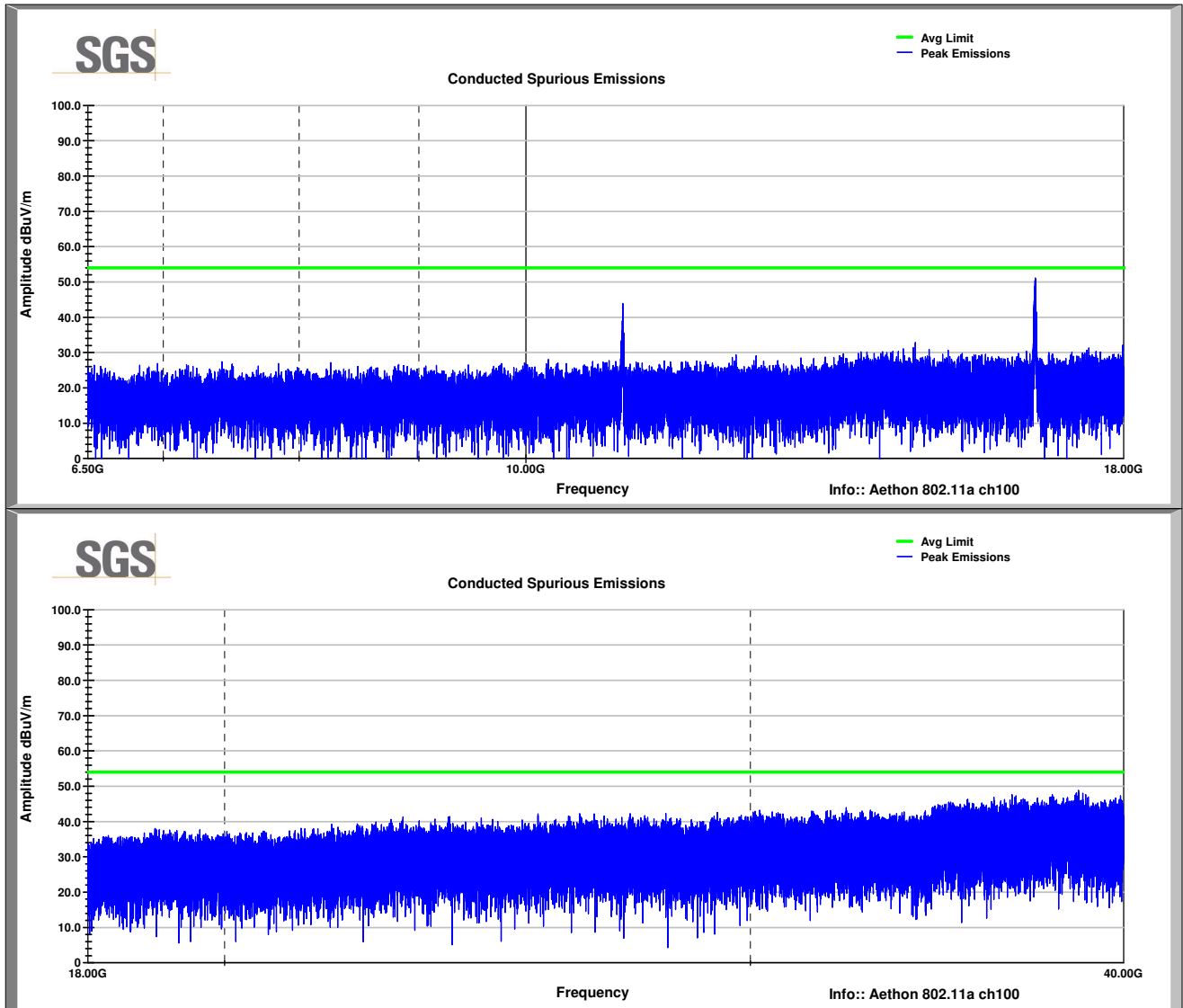
CH 64



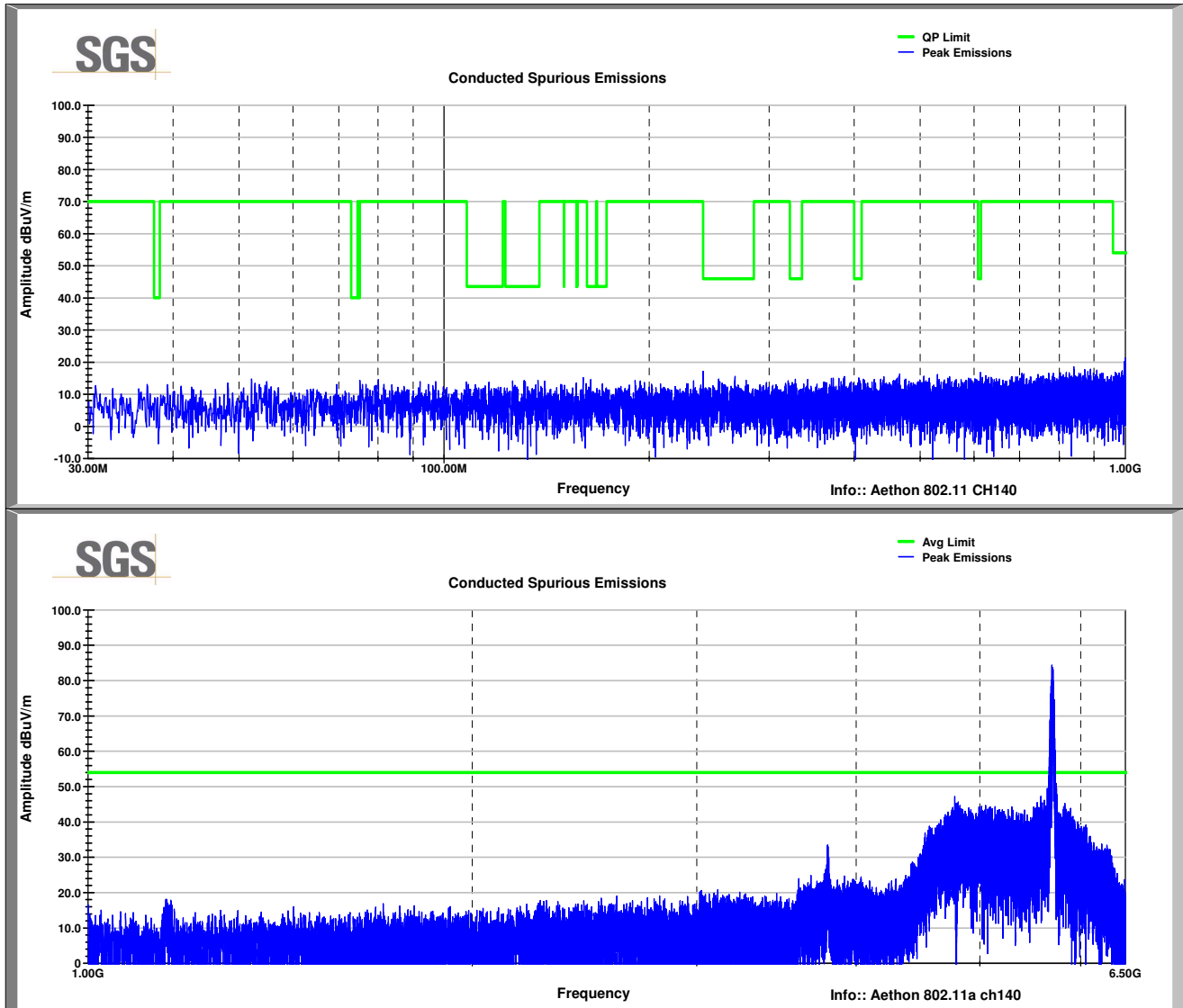


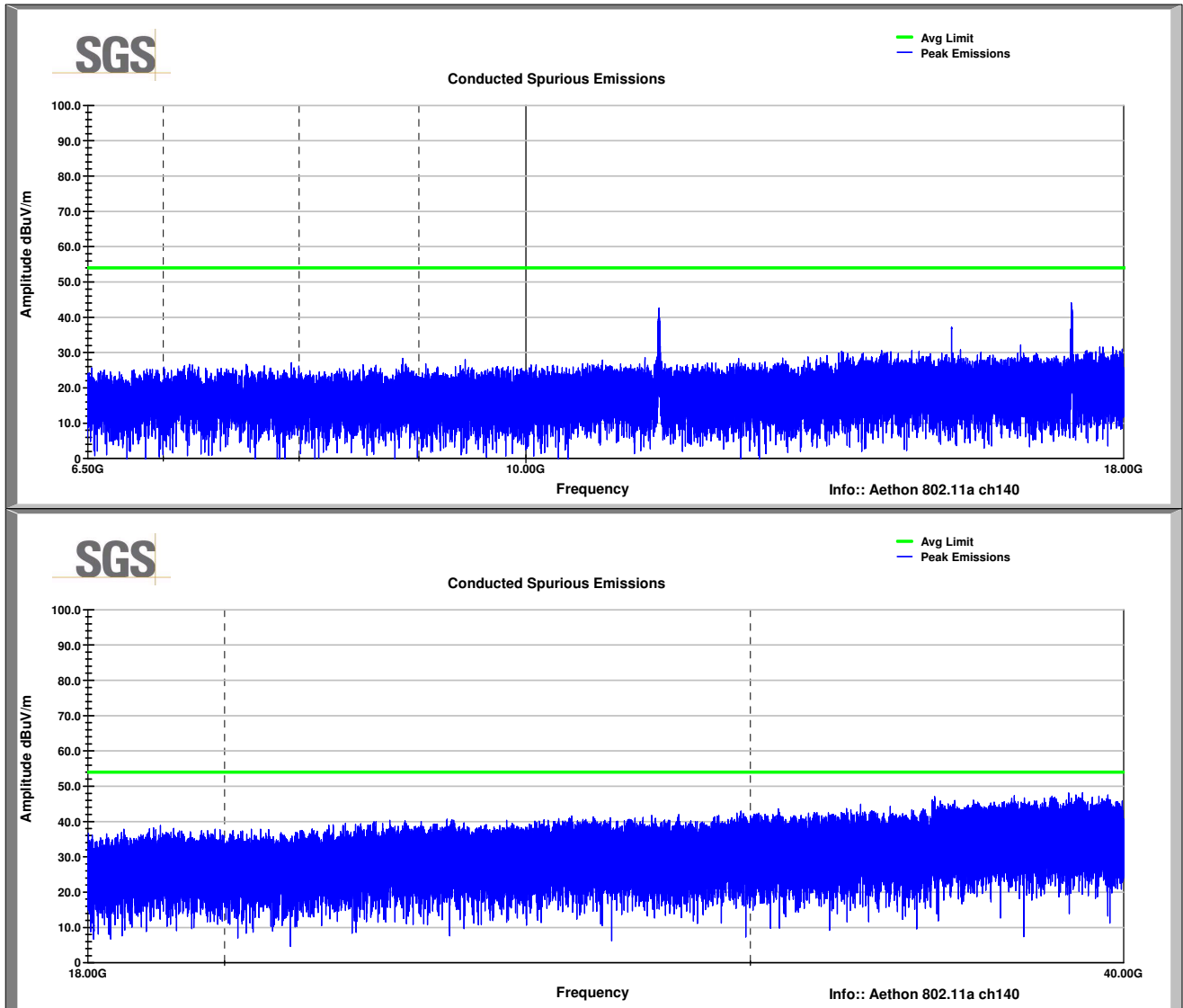
CH100



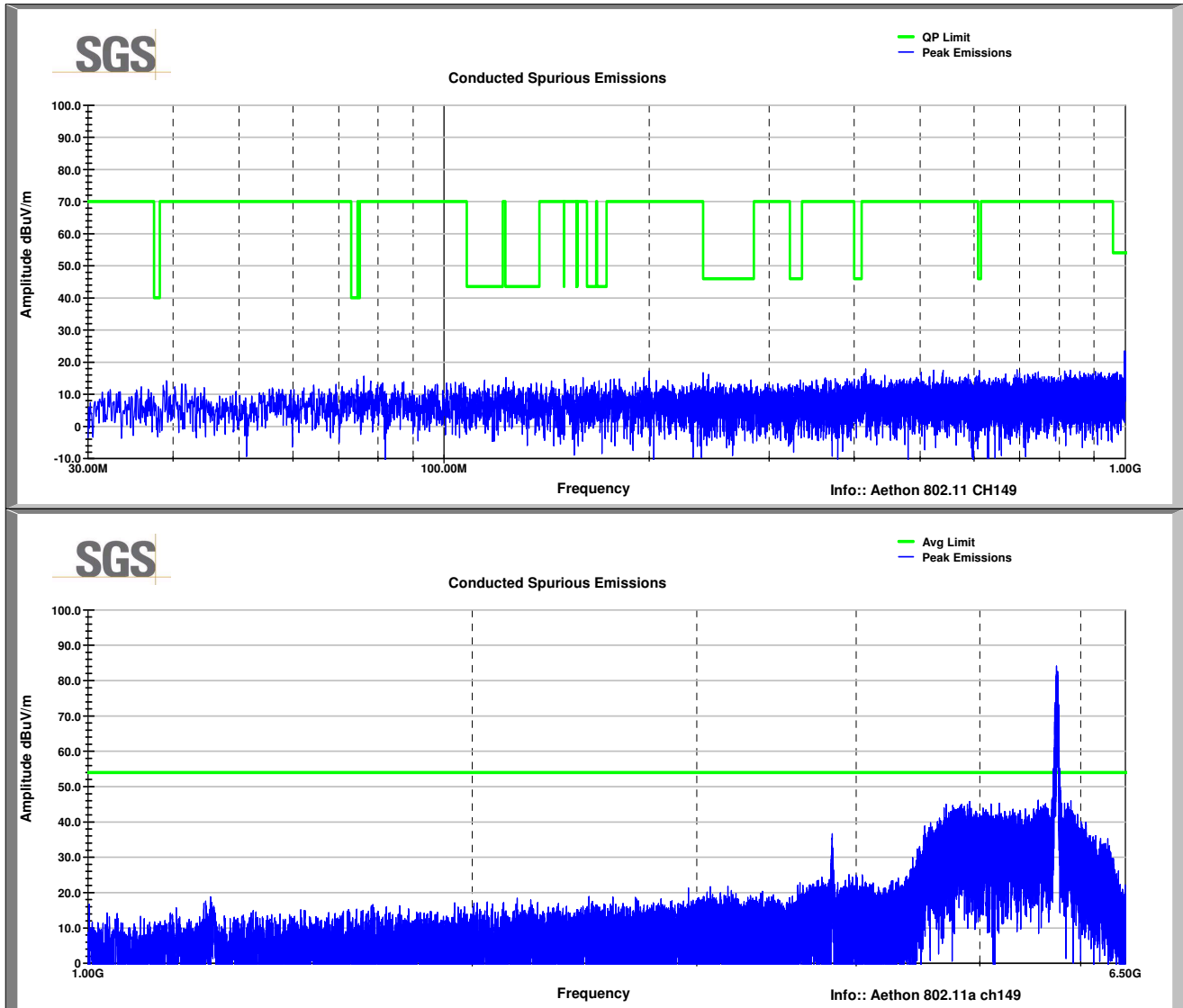


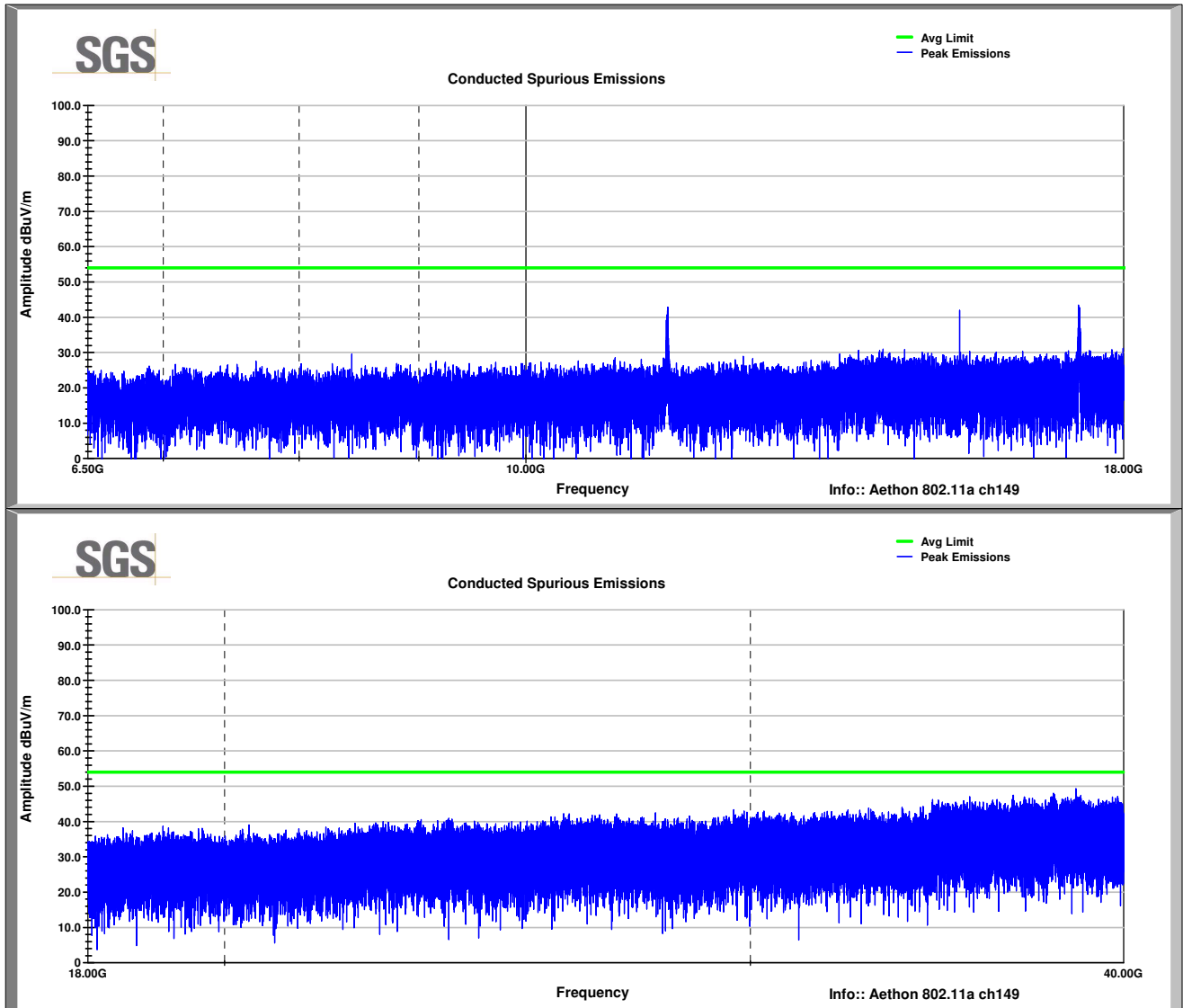
CH140



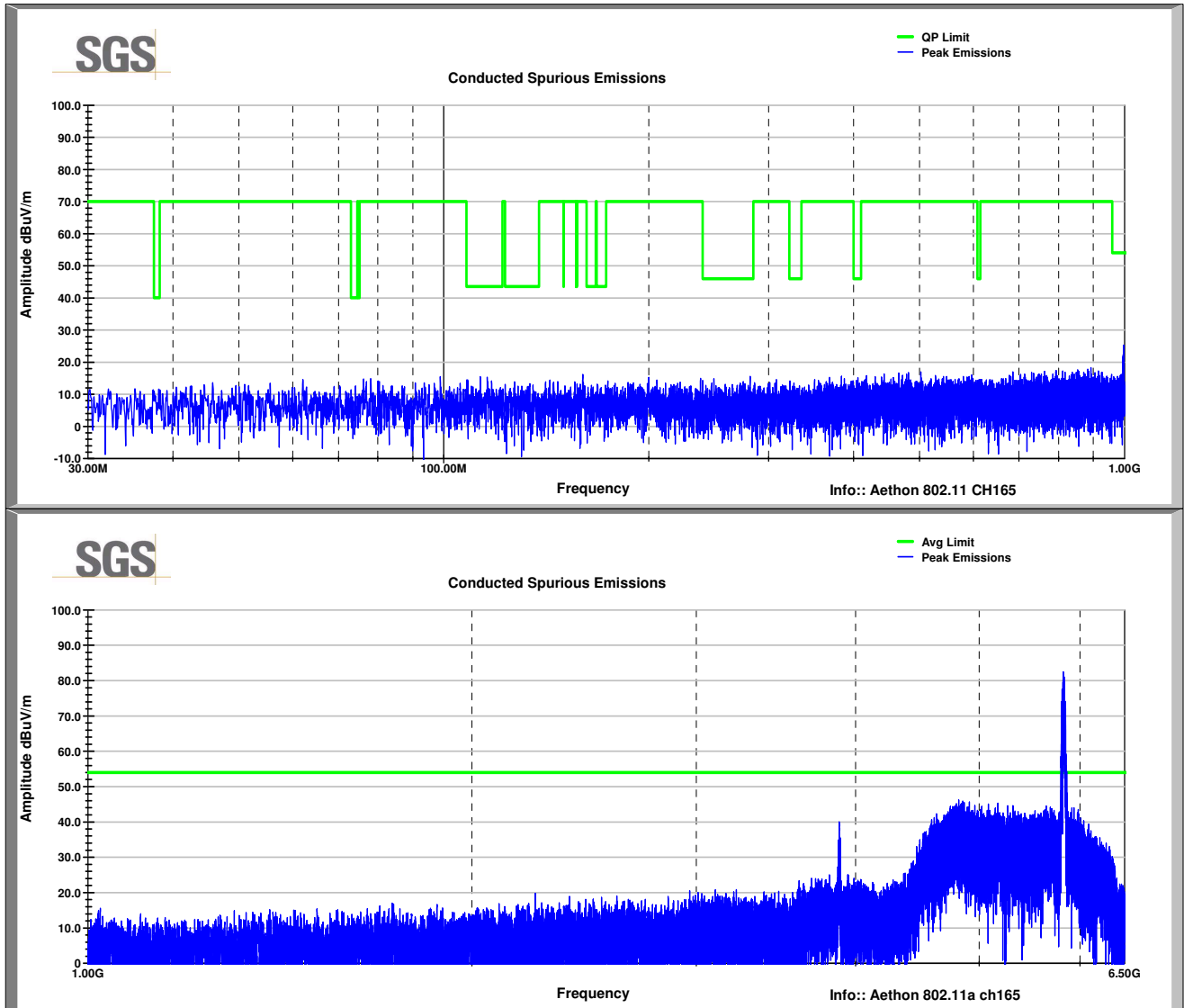


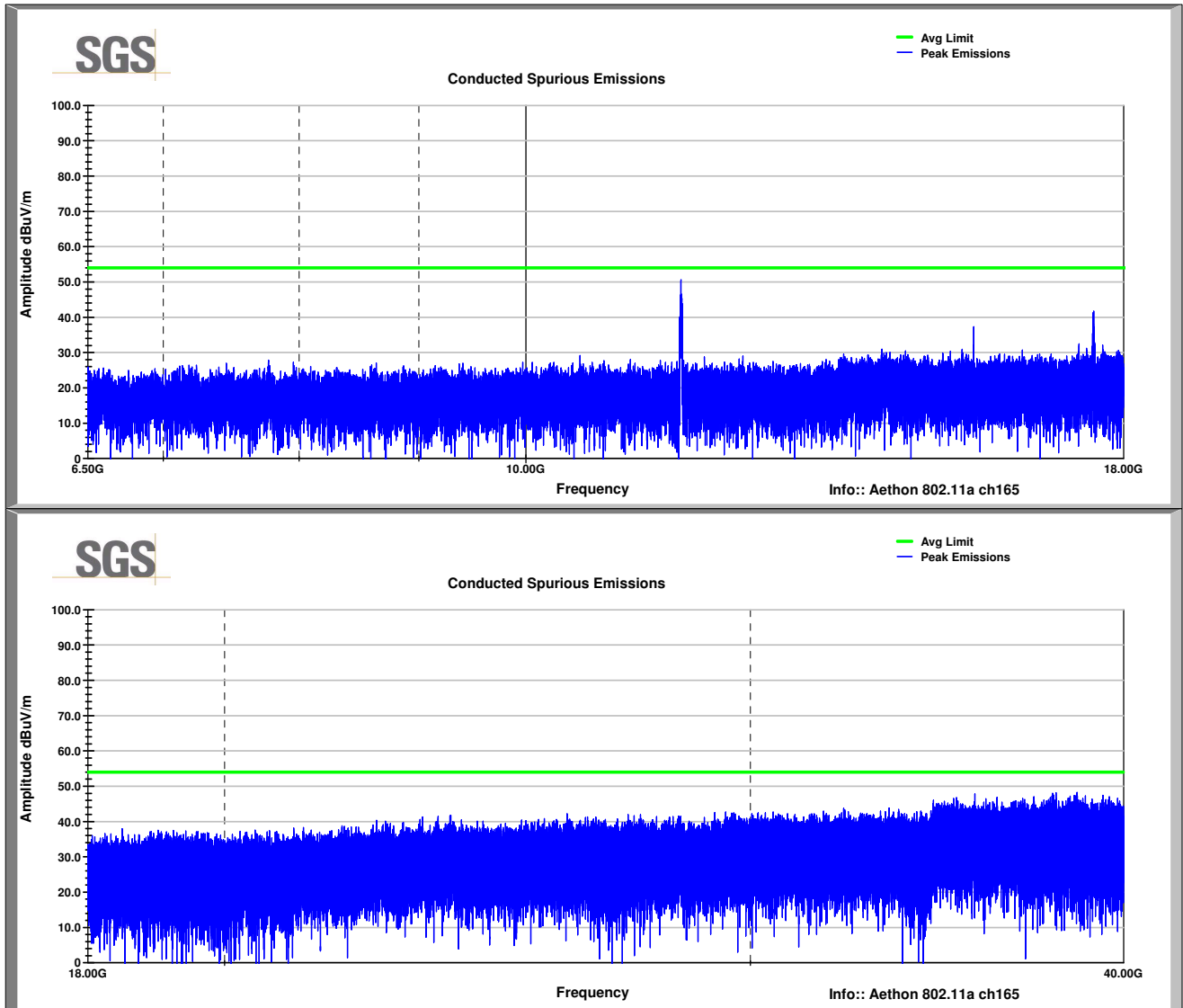
CH149





CH 165







4 Revision History

Revision Level	Description of changes	Revision Date
0	Initial release	11OCT2013
1	Spurious emissions plots corrected for supplied max antenna gain	19NOV2013
2	Modified product references to reflect module tested for Class II PC	26NOV2013
3	Corrected RMS measurement tables added bandwidth information	11DEC2013