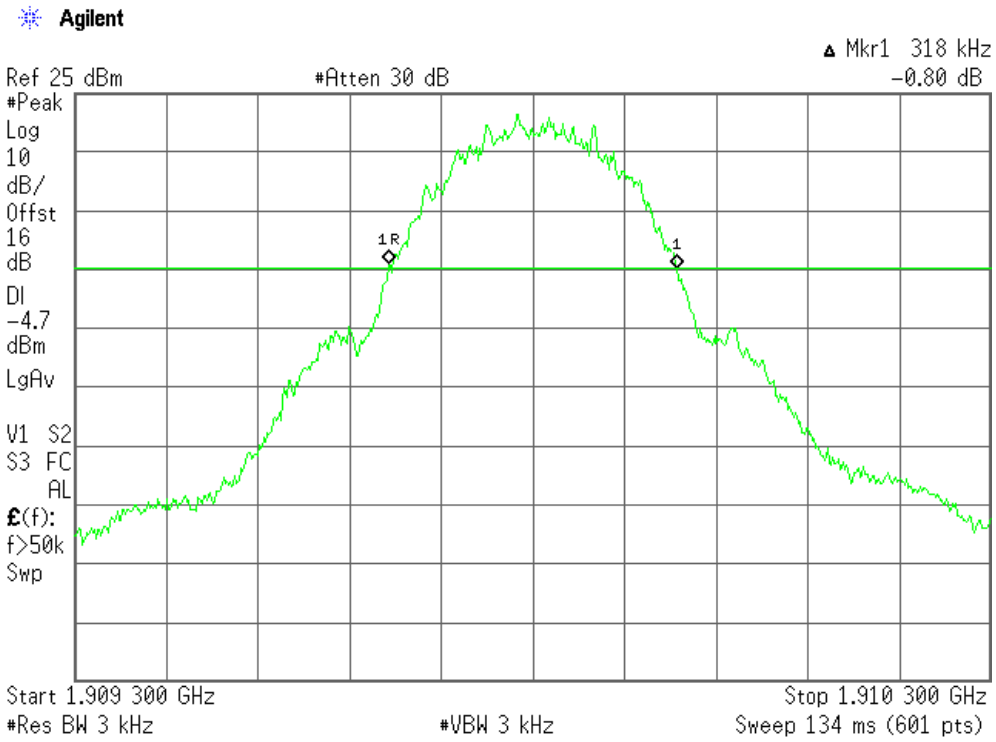
Highest Channel: 1909.8 MHz.



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)

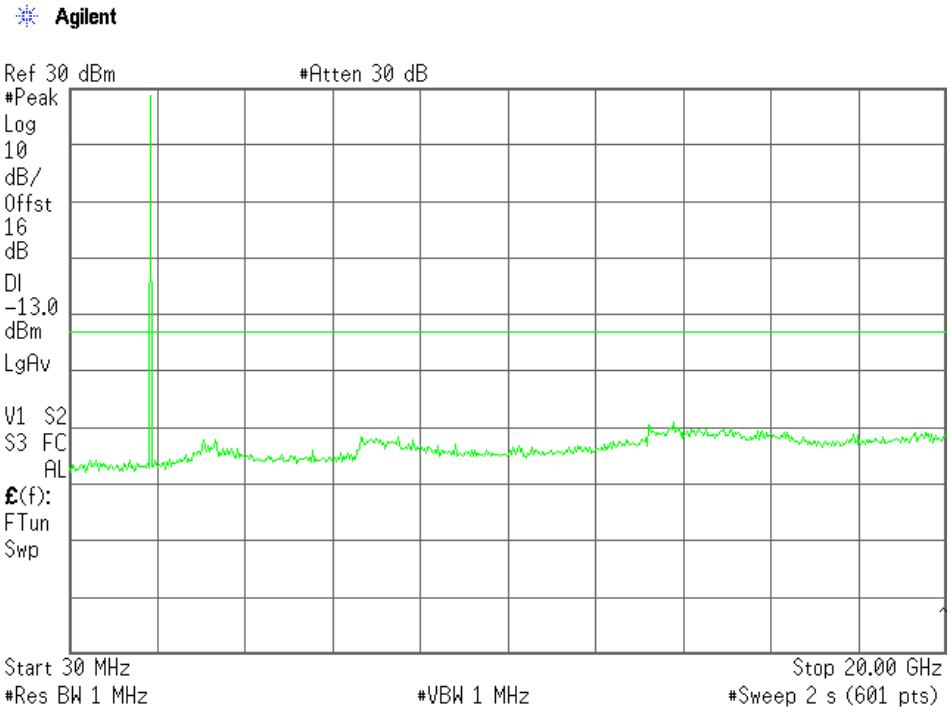
1. CHANNEL: LOWEST (1850.2 MHz).
No spurious signals were found in all the range.

2. CHANNEL: MIDDLE (1880.2 MHz).
No spurious signals were found in all the range.

3. CHANNEL: HIGHEST (1909.8 MHz).
No spurious signals were found in all the range.

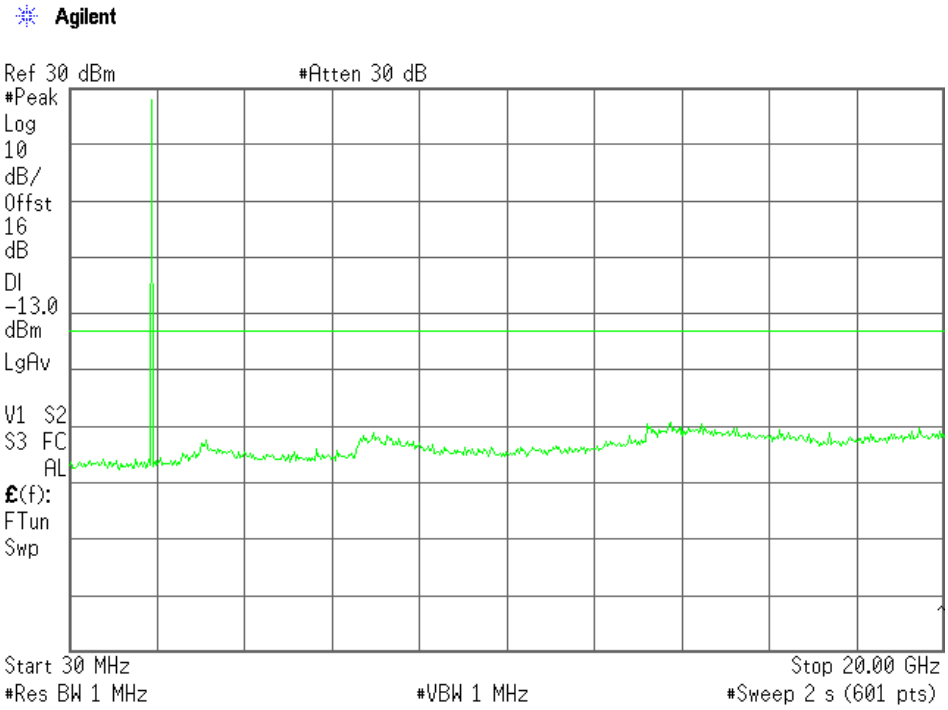
Verdict: PASS

1. CHANNEL: LOWEST (1850.2 MHz).



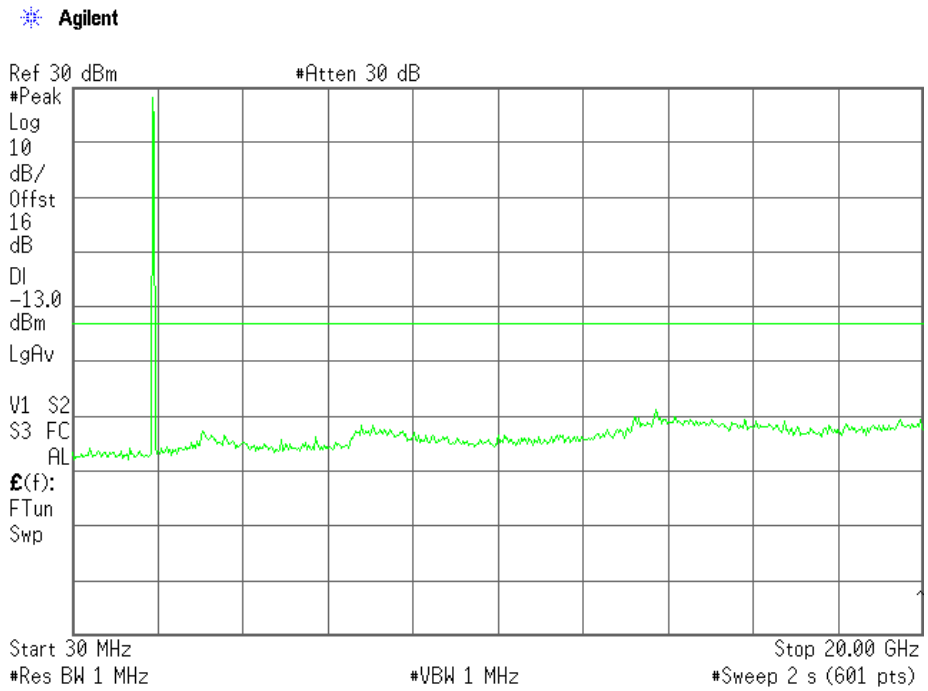
Note: The peak above the limit is the carrier frequency.

2. CHANNEL: MIDDLE (1880.2 MHz).



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

3. CHANNEL: HIGHEST (1909.8 MHz).



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.

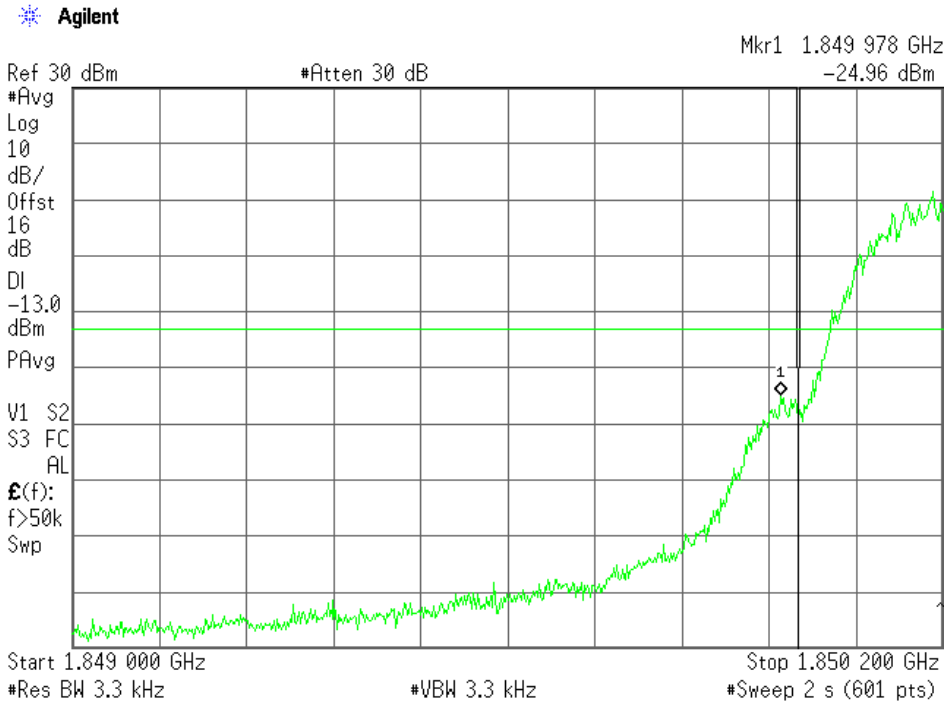
Measurement Limit**:**

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

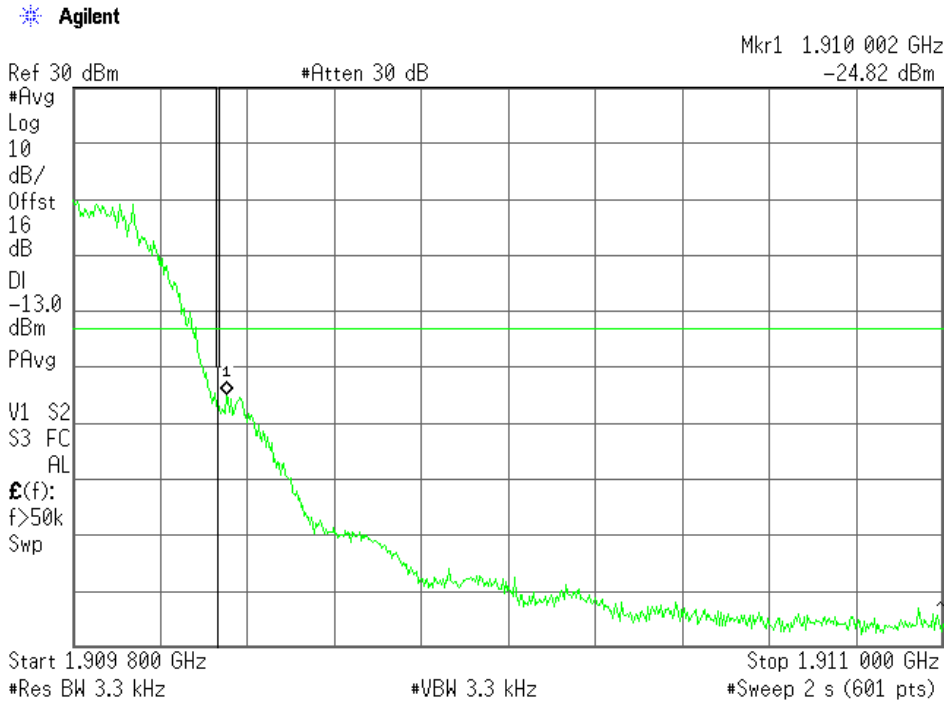
RESULTS (see plots in next pages)

BLOCK A. CHANNEL LOWEST (1850.2 MHz).



NOTE: The equipment transmits at the maximum output power (PCL = 0).

BLOCK C. CHANNEL HIGHEST (1909.8 MHz).



NOTE: The equipment transmits at the maximum output power (PCL = 0).

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

1. CHANNEL: LOWEST (1850.2MHz).

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

Frequency range 1 GHz-20 GHz.

Spurious frequency (MHz)	Level (dBm)	Polarization	Measurement uncertainty (dB)
3700.58	-31.06	Vertical	± 4.0
5550.33	-41.19	Vertical	± 4.0
7400.83	-30.80	Vertical	± 4.0
9251.33	-23.27	Vertical	± 4.0
11100.92	-29.48	Horizontal	± 4.0
12951.20	-33.59	Vertical	± 4.0
14802.17	-26.41	Vertical	± 4.0

2. CHANNEL: MIDDLE (1880.2 MHz).

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

Frequency range 1 GHz-20 GHz.

Spurious frequency (MHz)	Level (dBm)	Polarization	Measurement uncertainty (dB)
3760.53	-32.96	Vertical	± 4.0
5640.73	-39.95	Vertical	± 4.0
7521.08	-30.60	Vertical	± 4.0
9401.42	-27.05	Vertical	± 4.0
11281.08	-27.97	Horizontal	± 4.0
13160.93	-34.10	Vertical	± 4.0
15042.13	-27.53	Vertical	± 4.0

3. CHANNEL: HIGHEST (1909.8 MHz).

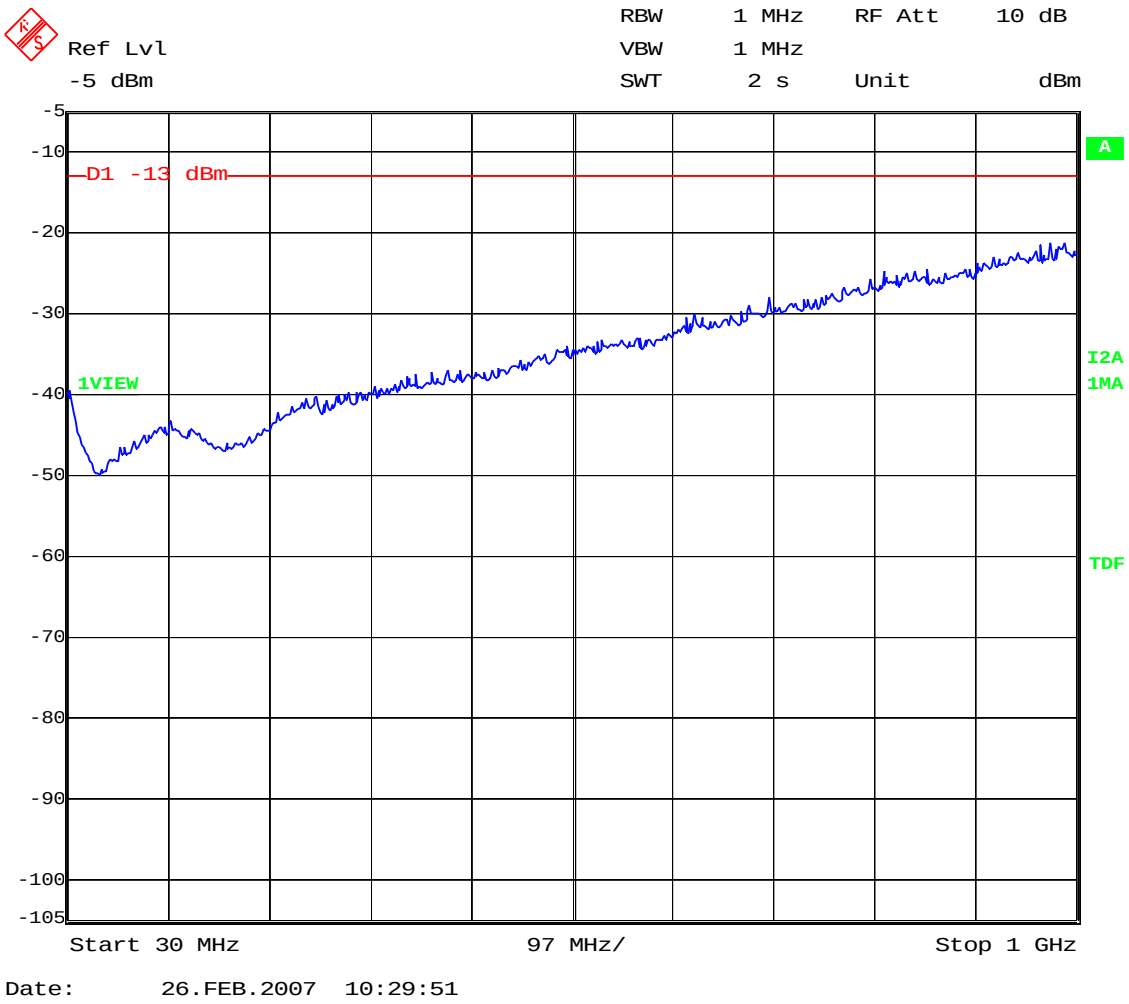
Frequency range 30 MHz-1000 MHz.
No spurious signals were found in all the range.

Frequency range 1 GHz-20 GHz.

Spurious frequency (MHz)	Level (dBm)	Polarization	Measurement uncertainty (dB)
3812.60	-32.01	Vertical	± 4.0
5729.43	-36.19	Vertical	± 4.0
7639.33	-27.80	Vertical	± 4.0
9549.23	-28.46	Vertical	± 4.0
11458.93	-25.82	Horizontal	± 4.0
13368.50	-32.40	Vertical	± 4.0
15278.30	-29.89	Vertical	± 4.0

Verdict: PASS

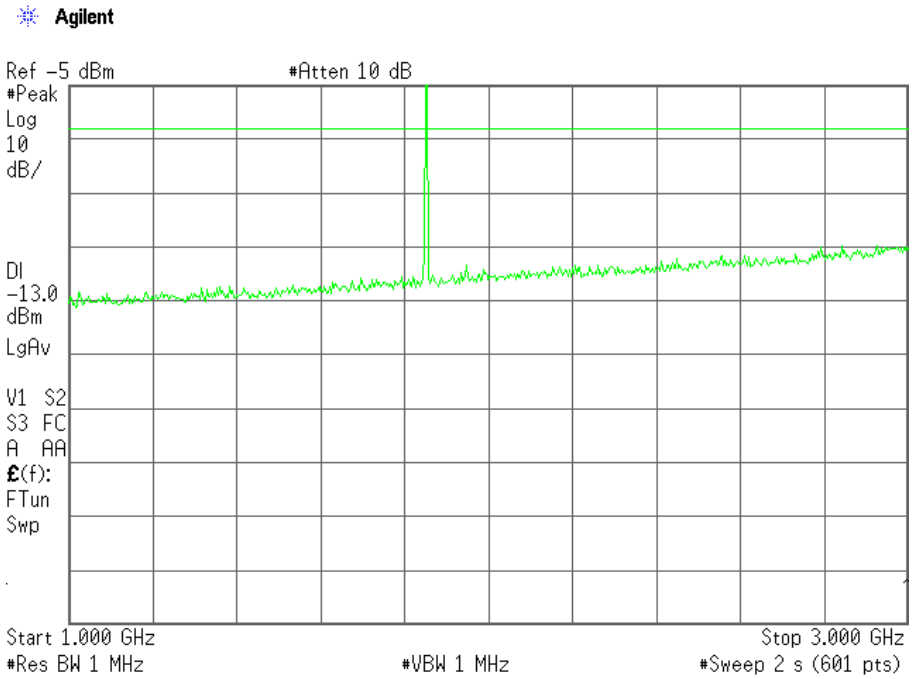
FREQUENCY RANGE 30 MHz-1000 MHz.



(This plot is valid for all three channels).

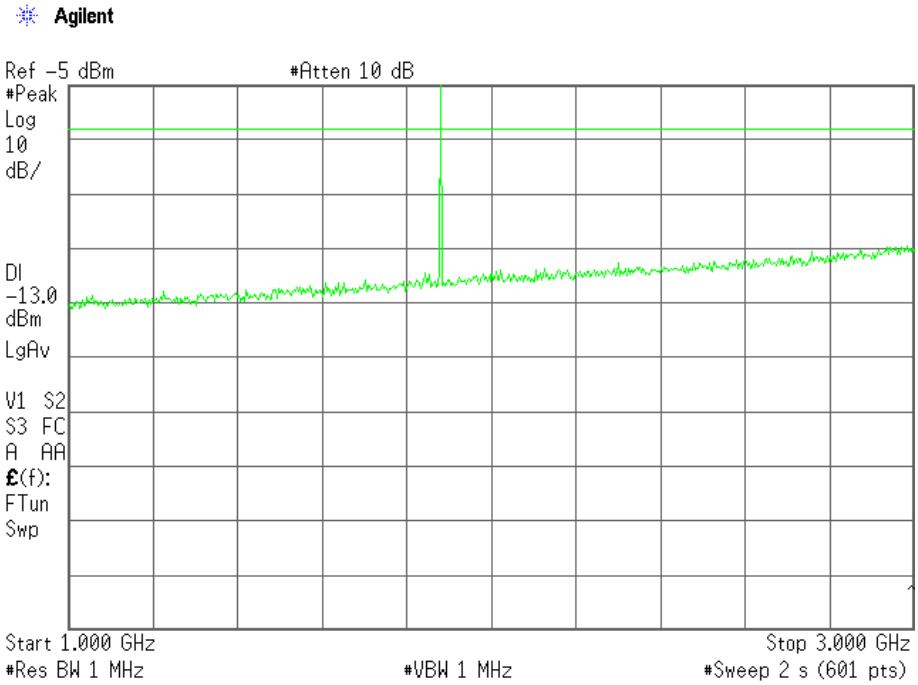
FREQUENCY RANGE 1 GHz to 3 GHz.

CHANNEL: LOWEST (1850.2 MHz)



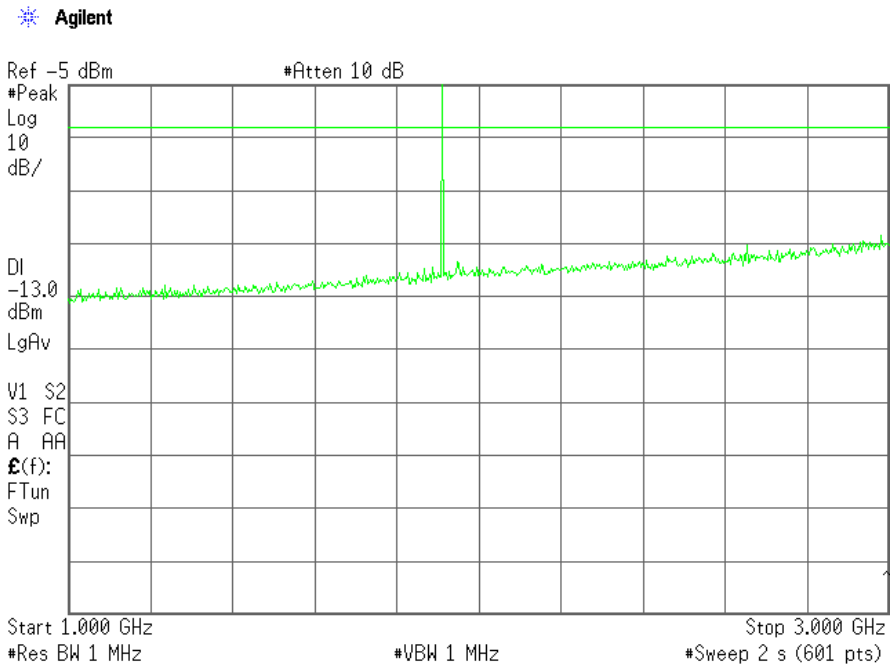
Note: The peak above the limit is the carrier frequency.

CHANNEL: MIDDLE (1880.2 MHz)



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

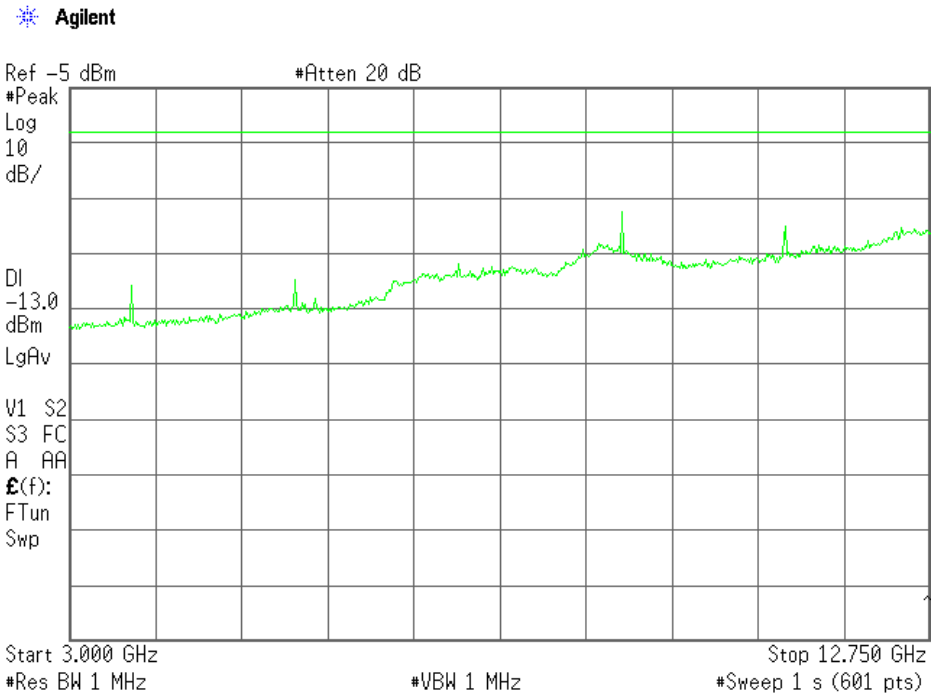
CHANNEL: HIGHEST (1909.8 MHz)



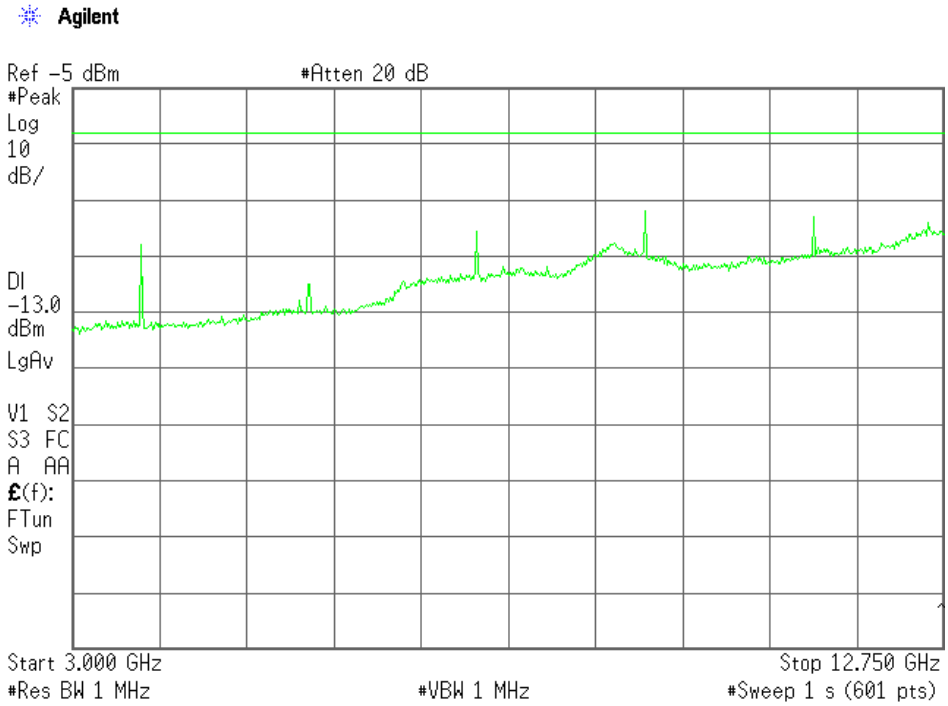
Note: The peak above the limit is the carrier frequency.

FREQUENCY RANGE 3 GHz to 12.75 GHz.

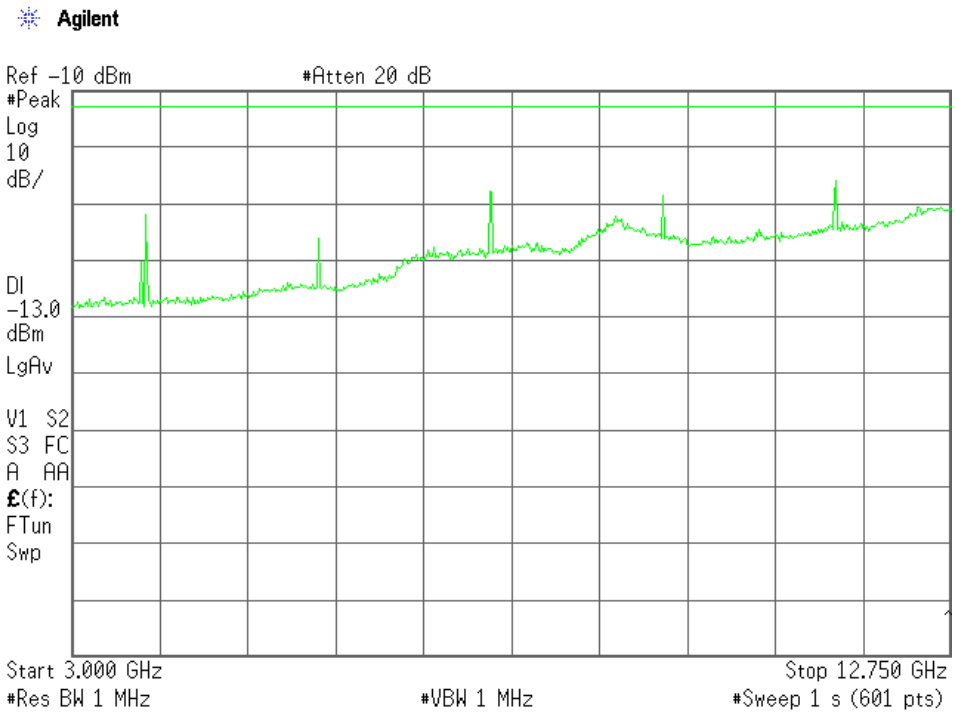
CHANNEL: LOWEST (1850.2 MHz)



CHANNEL: MIDDLE (1880.2 MHz)

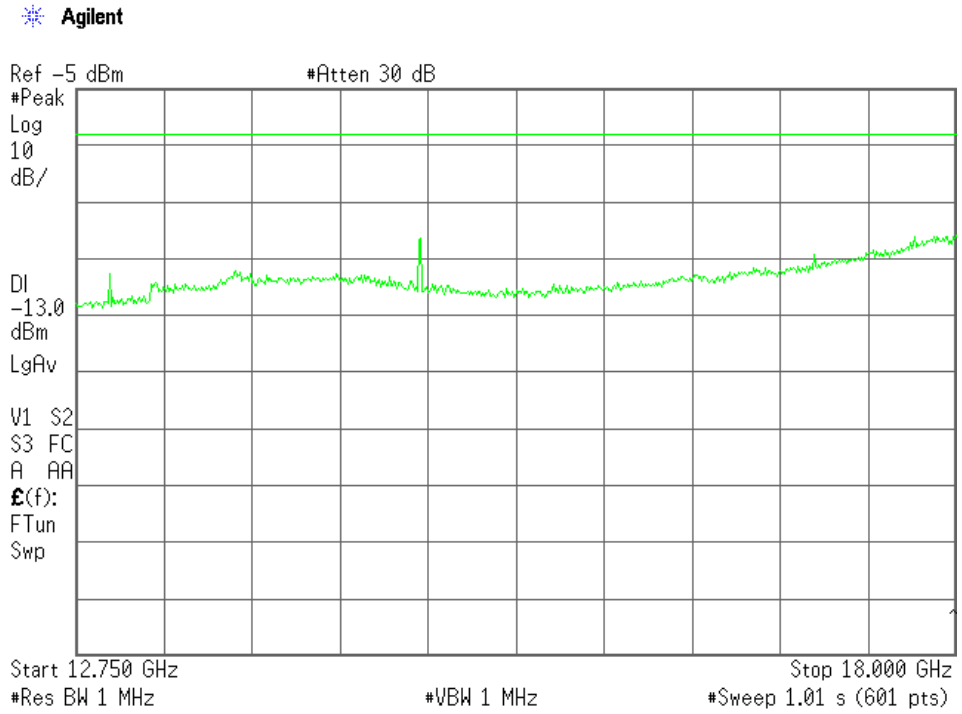


CHANNEL: HIGHEST (1909.8 MHz)

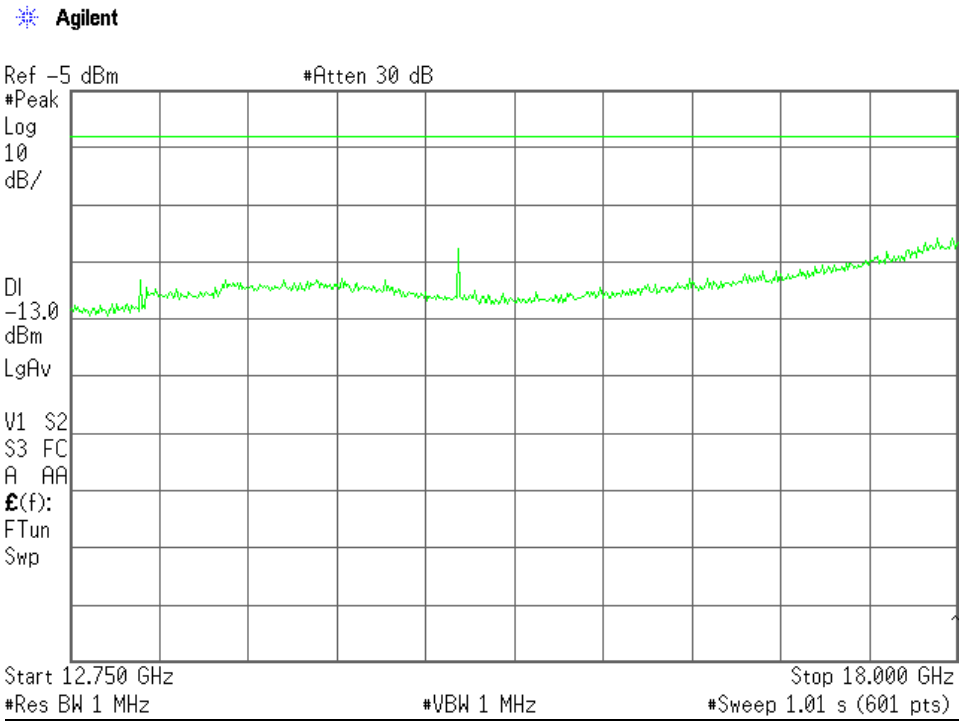


FREQUENCY RANGE 12.75 GHz TO 18 GHz.

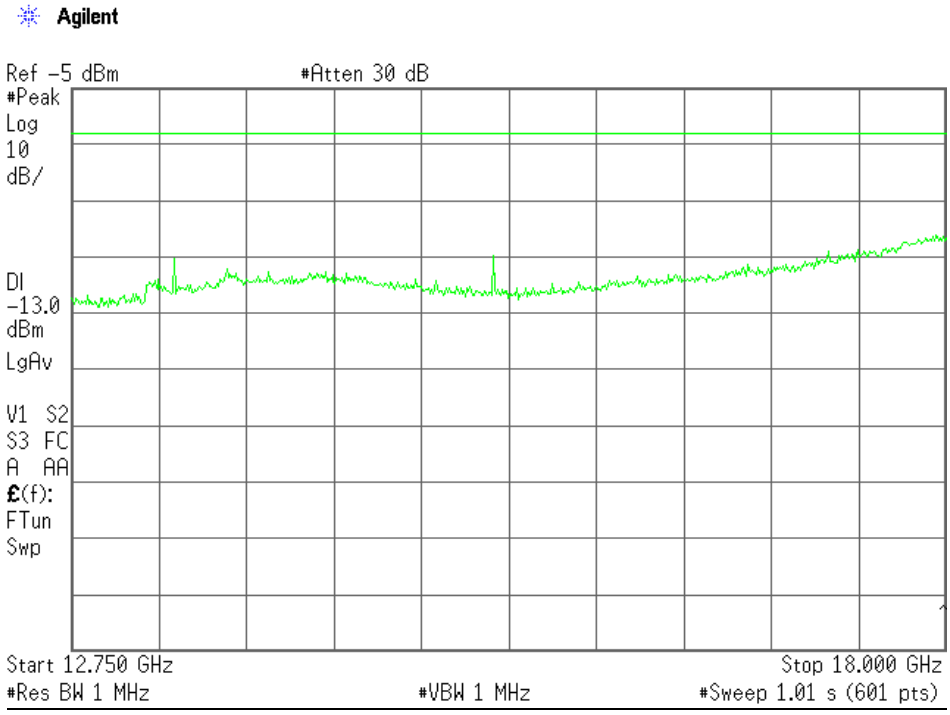
CHANNEL: LOWEST (1850.2 MHz)



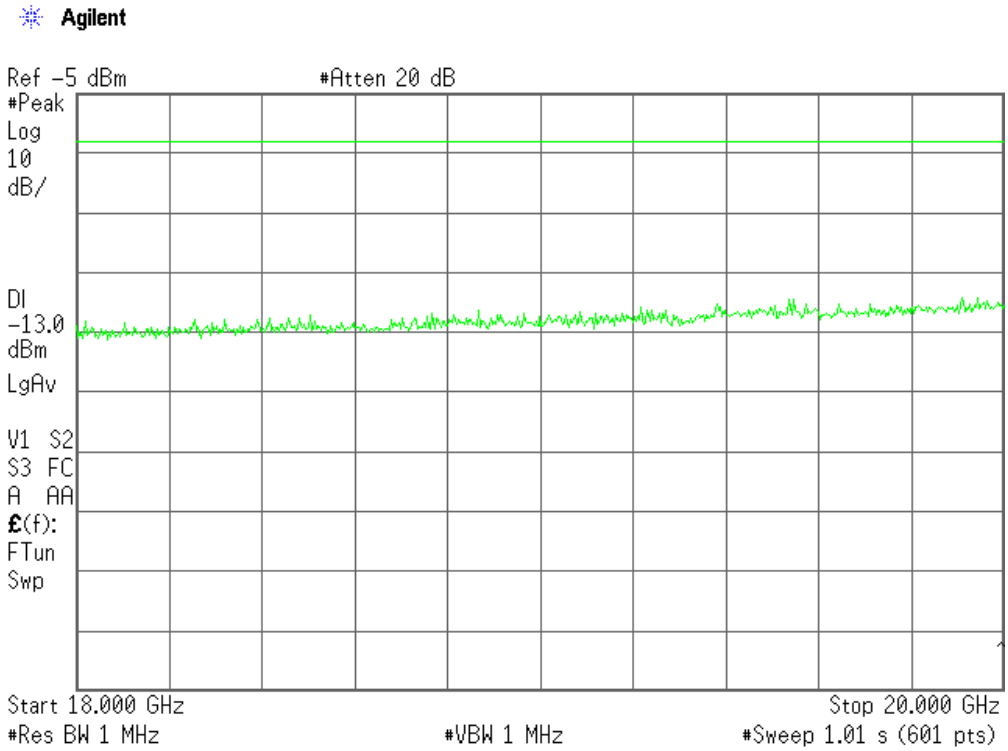
CHANNEL: MIDDLE (1880.2 MHz)



CHANNEL: HIGHEST (1909.8 MHz)



FREQUENCY RANGE 18 GHz TO 20 GHz.



(This plot is valid for all three channels).

ANNEX C

MEASURING RESULTS FOR

ELECTROMAGNETIC EMISSION

Report No: 25810RET.201

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

According to Part 15, Subpart B of FCC Rules.

Different tested operating modes (OM)

- OM#03: EUT ON. TCH 1900 MHz mode. Bluetooth mode deactivated Charging batteries.
- OM#04: EUT ON. TCH 850 MHz mode. Bluetooth mode deactivated Charging batteries.

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

3. - GRAPH RESULTS

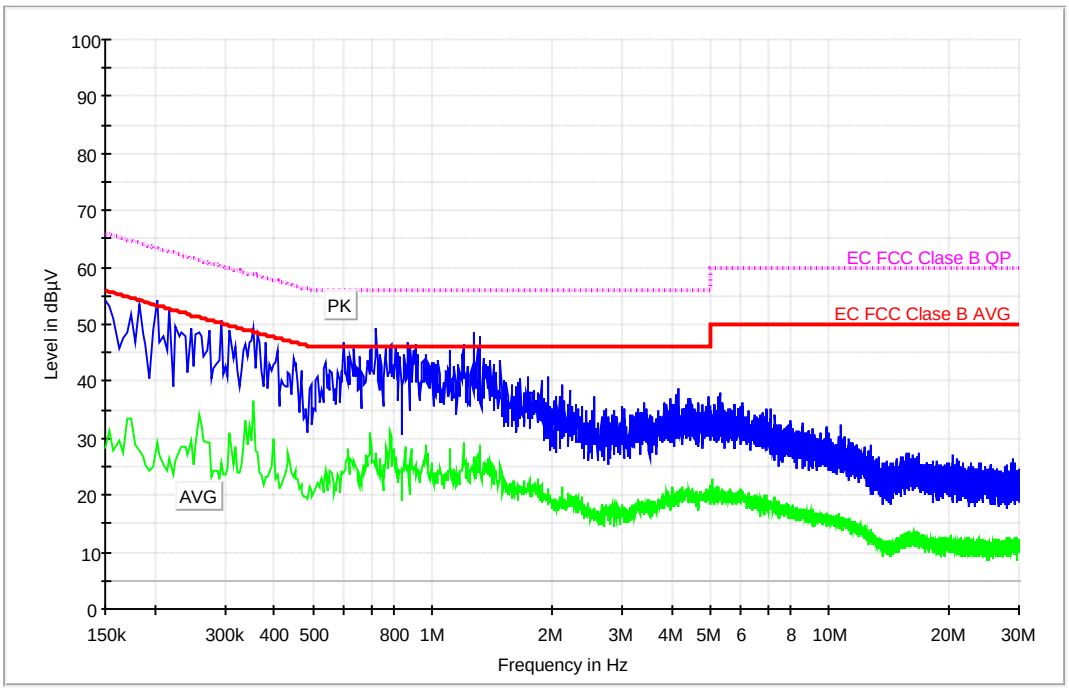
See next pages.

EMC32 Report

Test Information

Proyecto:	25810Biem.003
Empresa:	NEONODE
Muestra:	M/01
Modo operacion:	MO#03
Fecha:	2007-05-15 19:45
Setup:	EMI conducted
Mode:	EBP ON. TCH 1900MHz. Cargando baterías. Ruido en el neutro.

EC FCC Clase B ESPI CC



Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)	Comment
0.150000	54.2	28.3	
0.182000	53.4	27.9	
0.202000	54.1	29.1	
0.218000	52.8	26.5	
0.226000	49.6	26.1	
0.246000	49.4	29.7	
0.274000	49.1	29.3	
0.294000	50.6	25.6	
0.310000	48.8	30.8	
0.354000	49.3	36.5	
0.362000	48.1	27.3	
0.722000	49.2	27.6	
1.270000	48.5	26.7	