



Informe de ensayo n°:
 Test report No:

NIE: 46379REM.001A1

Test Report (Modification 1)

FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-13 Edition); ICES-003 ISSUE 5 (2012)

&

ANSI C63.4-2009: American National standard for methods of measurements of radio-noise emissions from low-voltage electrical and electronic equipment in the range of 9kHz to 40GHz.

Identification of item tested.....:	WLAN and BT, 2x2 PCIe M.2 adapter card
Trade	Intel® Dual Band Wireless-AC 8260
Model and /or type reference	8260NGWH
Versión final del HW	TF5
Final HW version	
Versión final del SW	DRTU 1.8.1-01336
Final SW version	
FCC ID	PD98260NGH & PD98260NGHU
IC	1000M-8260NGH
Features	802.11A/N/AC
Manufacturer	INTEL MOBILE COMMUNICATIONS 100 CENTER POINT CIRCLE, SUITE 2000, COLUMBIA SC 29210
Test method requested, standard.....:	FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-13 Edition); ICES-003 ISSUE 5 (2012) & ANSI C63.4-2009
Summary	IN COMPLIANCE
Approved by (name / position & signature).....:	Rafael López Martín LAB EMC Manager
Date of issue.....:	2015-05-27
Report template No.....:	FDT11_16

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Competences and guarantees

AT4 wireless is a testing laboratory accredited by the National Accreditation Body (ENAC -Entidad Nacional de Acreditación), to perform the tests indicated in the Certificate No. 51/LE 147.

In order to assure the traceability to other national and international laboratories, AT4 wireless has a calibration and maintenance program for its measurement equipment.

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

AT4 wireless is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

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General conditions

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on 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 previous written permission of AT4 wireless.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of AT4 wireless and the Accreditation Bodies.

Uncertainty

Uncertainty (factor $k=2$) was calculated according to the AT4 wireless internal document PODT000.

Usage of samples

Samples under test have been selected by: the Client.

Sample S/01 is composed of the next elements:

Control Nº	Description	Model	Serial number	Reception date
46379/009	WLAN and BT, 2x2 PCIe M.2 adapter card	8260NGWH	H74231-001	2015-05-25

Auxiliary elements used with the sample S/01:

Control Nº	Description	Model	Serial number	Reception date
46379/001	Laptop	DELL Latitude E5440	7CSYN32	2015-05-25
46379/003	Switching Power Supply	SINPRO SPU60-102	079990523 1249	2015-05-25
46379/004	Antenna Type: WIMAX/WLAN	---	---	2015-05-25
46379/005	Antenna Type: WIMAX/WLAN	---	---	2015-05-25
46379/006	Communication cable	---	2352876-1	2015-05-25
46379/007	USB cable	---	---	2015-05-25
46379/008	Board PCB00495	SfP Ext DB M2 2230	4955013-084	2015-05-25

Test sample description

The samples consist of a WLAN and BT, 2x2 PCIe M.2 adapter card.

Identification of the client

INTEL MOBILE COMMUNICATIONS
100 CENTER POINT CIRCLE, SUITE 2000, COLUMBIA
SC 29210

Testing period

The performed test started on 2015-05-25 and finished on the same day.
The tests have been performed at AT4 wireless.

Environmental conditions

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

Temperature	Min. = 15 °C Max. = 35 °C
Relative humidity	Min. = 20 % Max. = 80 %
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 1 Ω

In the semianechoic chamber, the following limits were not exceeded during the test.

Temperature	Min. = 15 °C Max. = 30 °C
Relative humidity	Min. = 45 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 1 Ω
Normal site attenuation (NSA)	< ±4 dB at 10 m distance between item under test and receiver antenna, (30 MHz to 1000 MHz)
Site VSWR	< ±6 dB at 3m distance between item under test and receiver antenna, (1 GHz to 18 GHz)
Field homogeneity	More than 75% of illuminated surface is between 0 and 6 dB (26 MHz to 18 GHz).

In the chamber for conducted measurements, the following limits were not exceeded during the test:

Temperature	Min. = 15 °C Max. = 30 °C
Relative humidity	Min. = 45 % Max. = 60 %
Air pressure	Min. = 860 mbar Max. = 1060 mbar
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 1 Ω

Modifications to the reference test report

It was introduced the following modifications in respect to the test report number 46379REM.001 related with the same samples, in the next clauses and sub-clauses:

By client request it was modified the data of the Identification of the item tested, Trademark and Model fields of the page 1 and the description of the operation modes 02; 03 and 04 according with the client indications.

This modification test report cancels and replaces the test report 46379REM.001.

Remarks and comments

The test has been performed by the technical personnel: Mario Alberto Ureña & Eduardo del Nogal.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 150 kHz to 30 MHz is $I = \pm 3,60$ dB for quasi-peak measurements, $I = \pm 3,48$ dB for peak measurements ($k = 2$).

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1 GHz is $I = \pm 4,57$ dB for quasi-peak measurements, $I = \pm 4,48$ dB for peak measurements ($k = 2$) and from 1 to 12,75 GHz is $I = \pm 3,43$ dB for average and peak measurements.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 12,75 GHz to 26 GHz is $I = \pm 4,09$ dB for average and peak measurements.

Testing verdicts (Legend)

Not applicable	N/A
Pass	P
Fail	F
Not measured	N/M

List of equipment used during the test					
CONTROL NUMBER	DESCRIPTION	MANUFACTURER	MODEL	LAST CALIBRATION	NEXT CALIBRATION
4523	EMI Receptor	ROHDE & SCHWARZ	ESU 26	2013-08-27	2015-08-27
1935	EMI Receptor	ROHDE & SCHWARZ	ESPI 3	2013-12-11	2015-12-11
2932	Bilog Hybrid Antenna	SUNOL	JB6	2014-05-11	2017-05-11
4656	Horn Antenna	SCHWARZBECK	BBHA 9170	2014-03-28	2017-03-28
1658	RF Amplifier	SCHAFFNER	CPA9231A	2013-06-11	2015-06-11
1975	RF Amplifier	MITEQ	JS4	2014-05-22	2016-05-22
3783	RF Amplifier	BONN ELEKTRONIK	BLMA 0118-3A	2015-05-15	2016-05-15
0258	Transient Limiter	HP	119471A	2014-10-02	2016-10-02
1650	Artificial Network	SCHWARZBECK	NNLK - 8121	2013-06-25	2015-06-25

Appendix A – Test result

CONTENT

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DESCRIPTION OF THE OPERATION MODES

The operation modes used by the samples to which the present report refers, are shown in the following table:

OPERATION MODE	DESCRIPTION
OM#01	EUT ON. Connected to laptop through USB cable. WiFi in IDLE mode. Bluetooth in IDLE mode. Power supply: 115Vac.
OM#02	EUT ON. Connected to laptop through USB cable. WiFi in transmission mode. Bluetooth in IDLE mode. Power supply: 115Vac.
OM#03	EUT ON. Connected to laptop through USB cable. WiFi in IDLE mode. Bluetooth in Tx mode. Power supply: 115Vac.

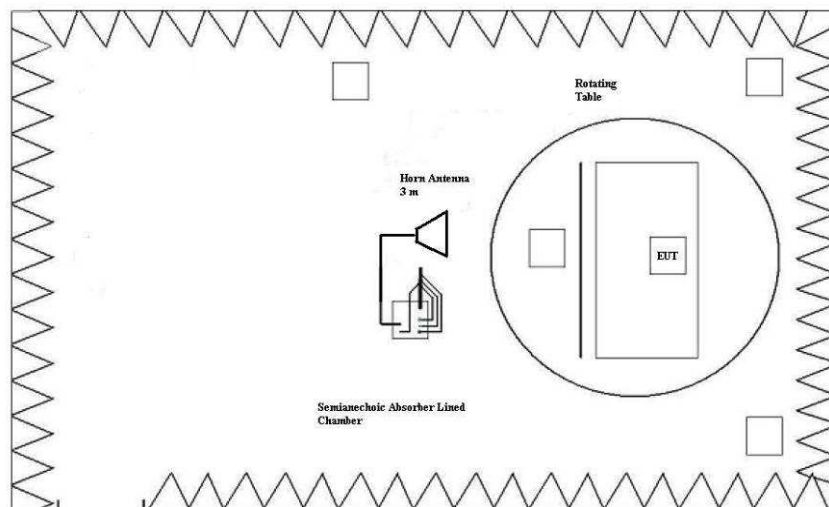
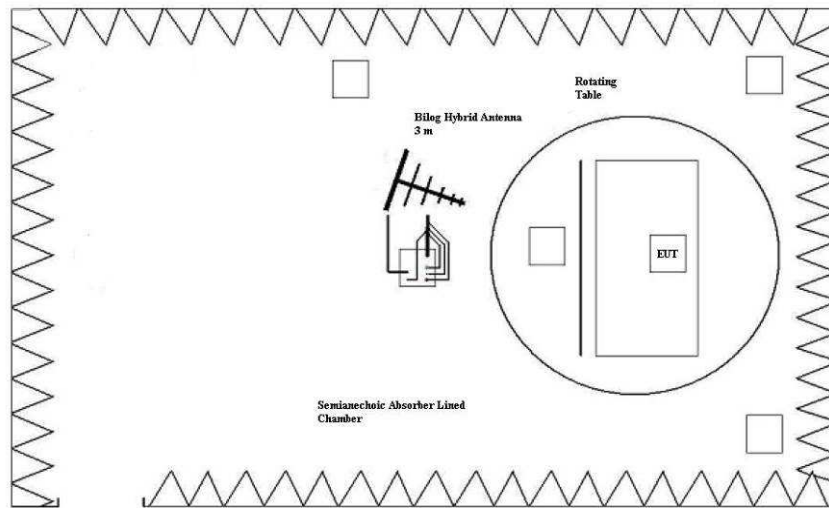
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE.

LIMITS:	Product standard:	FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B (10-01-13 Edition); ICES-003 ISSUE 5 (2012) & ANSI C63.4-2009
	Test standard:	FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B (10-01-13 Edition); ICES-003 ISSUE 5 (2012) & ANSI C63.4-2009

LIMITS OF INTERFERENCE CLASS B:

The applied limit for radiated emissions, 3 m distance, according with the requirements of FCC Rules and Regulations 47 CFR Part 15.109, Subpart B (10-01-13 Edition); ICES-003 ISSUE 5 (2012) & ANSI C63.4-2009 in the frequency range 30 MHz to 26 GHz, for Class B equipment, which is a transmitter in a band over 500 MHz, was:

Frequency range (MHz)	QP Limit for 3 m (µV/m)	QP Limit for 3 m (dBµV/m)
30 to 88	100	40
88 to 216	150	43,52
216 to 960	200	46,02
Above 960	500	53,98
Above 1000	Limit for 3m AVG	Limit for 3m PK
	53.98 dBµV/m	73.98 dBµV/m



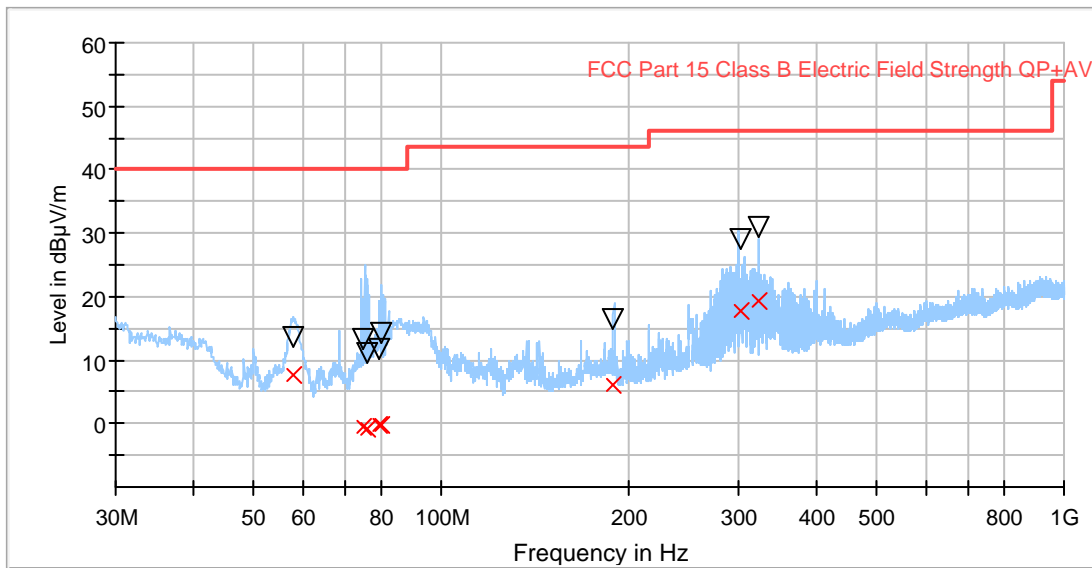
TESTED SAMPLES:	S/01
TESTED OPERATION MODES:	OM#01
TEST RESULTS :	CRmmnn: CR, Condición de Radiación; mm: Sample number; nn: Operation mode; rr: Measured range; PP: Antenna polarization.

CRmmnnrrpp	Description	Result
CR0101	Range: 30MHz o 1GHz.	P
CR0101_RA1_PH	Range: 1GHz o 18GHz. Horizontal polarization.	P
CR0101_RA1_PV	Range: 1GHz o 18GHz. Vertical polarization.	P
CR0101_RA2_PH	Range: 18GHz o 26GHz. Horizontal polarization.	P
CR0101_RA2_PV	Range: 18GHz o 26GHz. Vertical polarization.	P

Radiated Emission: CR0101

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in IDLE Mode. BLUETOOTH in IDLE Mode.

Full Spectrum



- Peak Preview
- FCC Part 15 Class B Electric Field Strength QP+AV
- X QuasiPeak
- ▽ MaxPeak

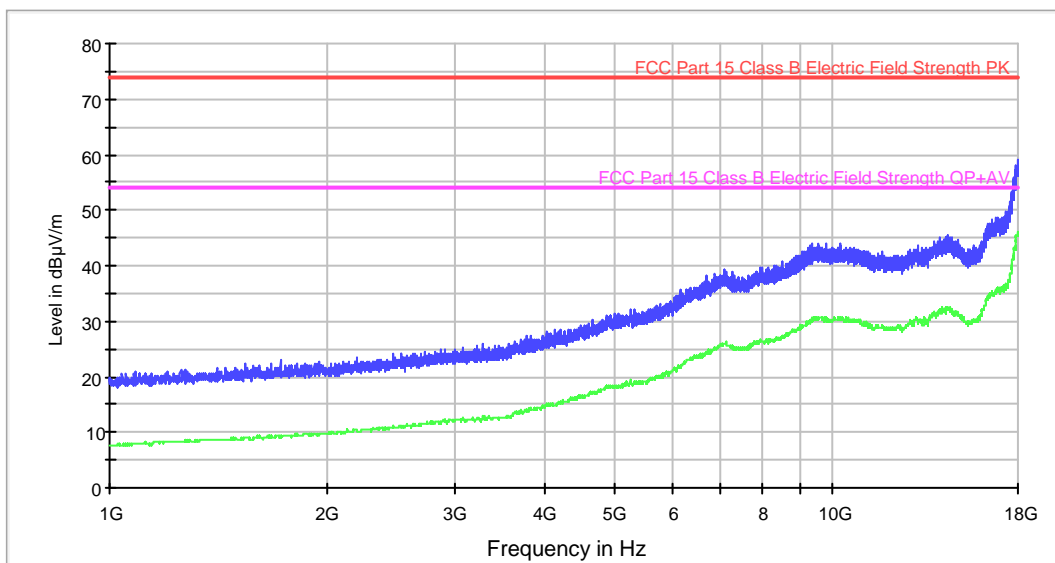
Final_Result

Frequency (MHz)	QuasiPeak (dBµV/m)	MaxPeak (dBµV/m)	Height (cm)	Pol	Azimuth (deg)
57.854545	---	13.60	291.0	V	259.0
57.854545	7.63	---	291.0	V	259.0
75.001299	-0.54	---	295.0	H	17.0
75.001299	---	13.31	295.0	H	17.0
75.787013	---	11.08	249.0	H	71.0
75.787013	-0.74	---	249.0	H	71.0
79.771429	-0.20	---	379.0	H	336.0
79.771429	---	11.63	379.0	H	336.0
79.842857	-0.16	---	130.0	H	344.0
79.842857	---	14.40	130.0	H	344.0
189.020779	---	16.58	134.0	H	116.0
189.020779	6.03	---	134.0	H	116.0
301.628571	17.71	---	133.0	H	342.0
301.628571	---	29.25	133.0	H	342.0
323.145455	---	31.13	111.0	H	6.0
323.145455	19.36	---	111.0	H	6.0

Radiated Emission: CR0101RA1_PH

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in IDLE Mode. BLUETOOTH in IDLE Mode. Horizontal polarization.

ER EMI FCC 15 Class B AMP_4659 (1-18GHz)



— Peak Scan
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — FCC Part 15 Class B Electric Field Strength QP+AV

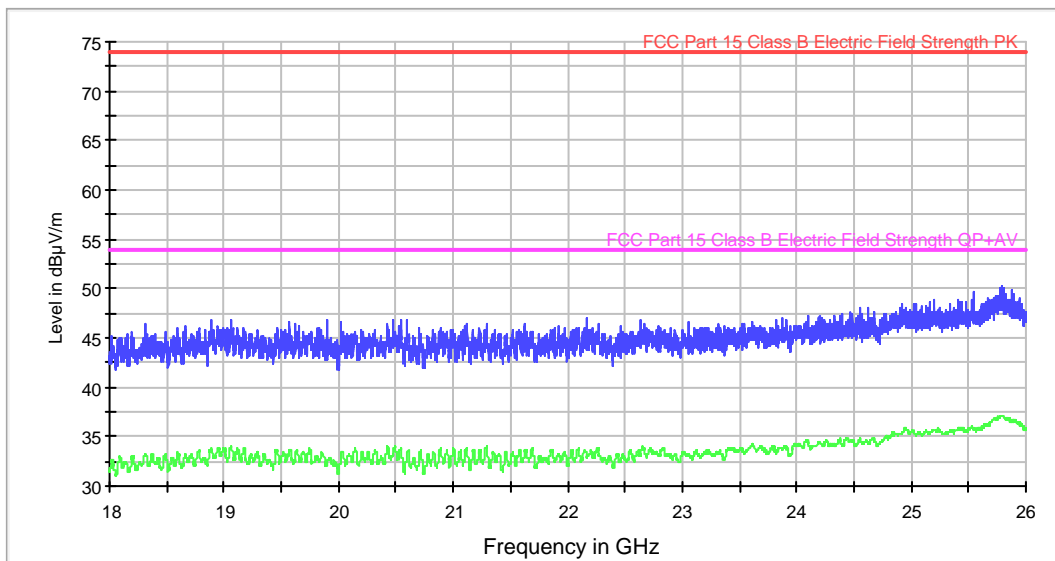
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
1271.000000	21.3	8.5
1722.000000	23.1	9.2
2197.000000	23.3	10.2
3085.000000	25.4	12.4
4200.000000	28.6	15.5
5639.000000	32.2	19.7
7054.000000	39.1	26.0
9377.000000	44.1	30.3
10252.000000	43.8	30.4
17956.000000	59.0	45.6

Radiated Emission: CR0101RA2_PH

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in IDLE Mode. BLUETOOTH in IDLE Mode. Horizontal polarization.

ER EMI FCC 15 Class B AMP_4729 (18-26GHz)



— Peak Scan
 — FCC Part 15 Class B Electric Field Strength PK
 — Average Scan
 — FCC Part 15 Class B Electric Field Strength QP+AV

Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
18317.000000	46.4	33.1
19056.000000	46.9	34.0
19905.000000	46.9	32.5
20478.000000	46.9	33.6
21290.000000	46.3	33.8
22160.000000	47.0	33.3
22640.000000	46.8	33.4
24096.000000	47.2	34.5
25042.000000	48.5	35.1
25798.000000	50.2	37.1

CONTINUOUS CONDUCTED EMISSION ON POWER LEADS

LIMITS:	Product standard :	FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B (10-01-13 Edition); ICES-003 ISSUE 5 (2012) & ANSI C63.4-2009
	Test standard :	FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B (10-01-13 Edition); ICES-003 ISSUE 5 (2012) & ANSI C63.4-2009

CLASS B

The applied limit for continuous conducted emissions in power leads, according with the requirements of FCC Rules and Regulations 47 CFR Part 15, Subpart B (10-01-13 Edition); ICES-003 ISSUE 5 (2012) & ANSI C63.4-2009, 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

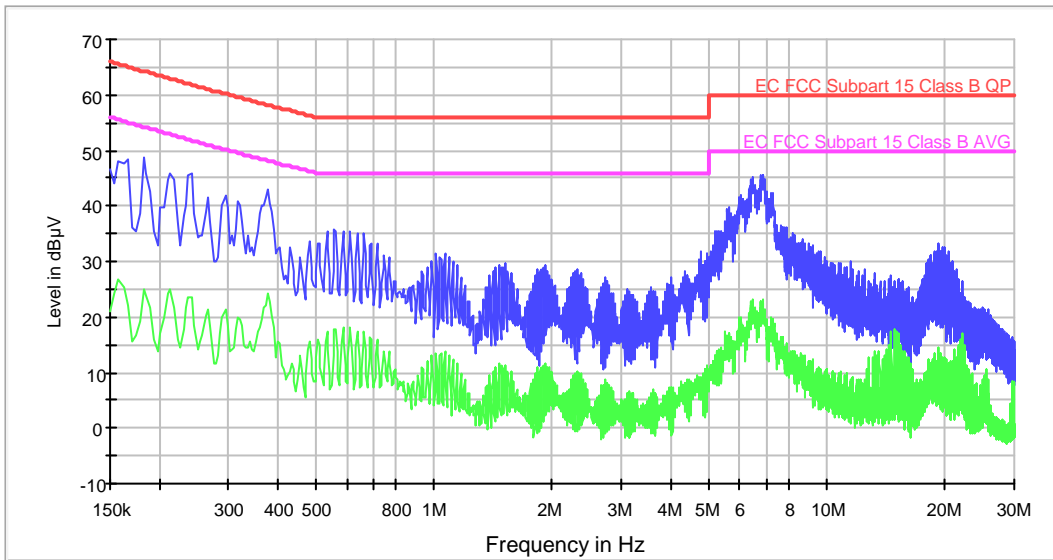
TESTED SAMPLES:	S/01
TESTED OPERATION MODES:	OM#01 to 03
TEST RESULTS :	CCmmnnhh: CC, Conducted Condition; mm: Sample number; nn: Operation mode; hh: wire

CCmmnnhh	Description	Result
CC01010N	Neutral wire noise	P
CC0101L1	Phase wire noise	P
CC01020N	Neutral wire noise	P
CC0102L1	Phase wire noise	P
CC01030N	Neutral wire noise	P
CC0103L1	Phase wire noise	P

Continuous Conducted Emission : CC01010N **Detector : Peak / Average / Cuasi-peak**

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in IDLE Mode. BLUETOOTH in IDLE Mode. Neutral Wire Noise.

EMI EC FCC Subpart 15 Class B CC



— Peak Scan — Average Scan
— EC FCC Subpart 15 Class B QP — EC FCC Subpart 15 Class B AVG

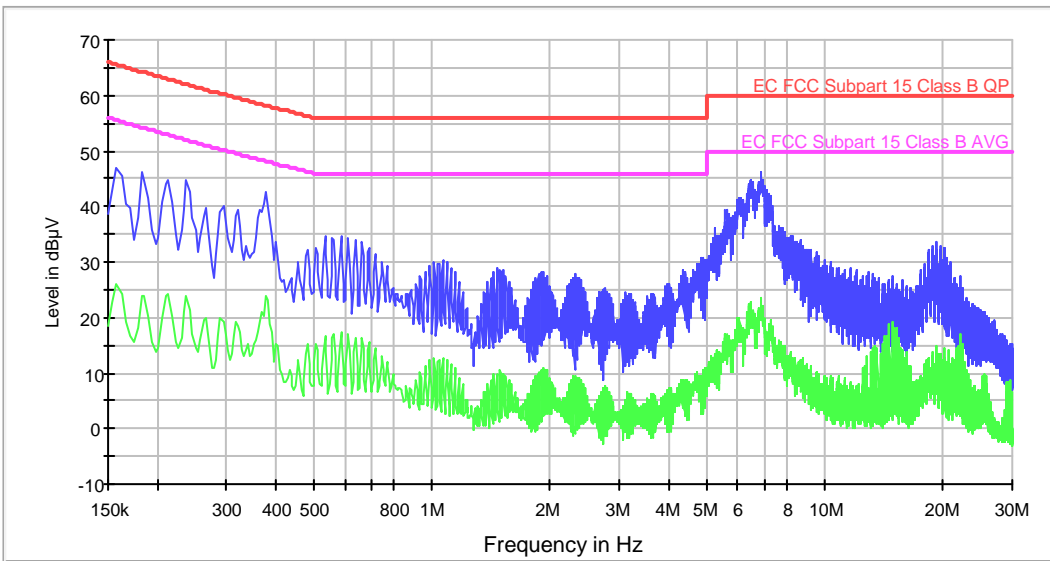
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.182000	48.7	25.0
0.378000	42.9	24.4
0.558000	35.7	17.6
1.066000	31.5	13.8
1.518000	29.6	11.2
2.318000	28.6	10.0
6.066000	41.7	17.5
6.866000	45.5	19.7
11.546000	29.9	8.6
19.198000	33.1	11.3

Continuous Conducted Emission : CC0101L1 **Detector : Peak / Average / Cuasi-peak**

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#01
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in IDLE Mode. BLUETOOTH in IDLE Mode. Phase Wire Noise.

EMI EC FCC Subpart 15 Class B CC



— Peak Scan — Average Scan
— EC FCC Subpart 15 Class B QP — EC FCC Subpart 15 Class B AVG

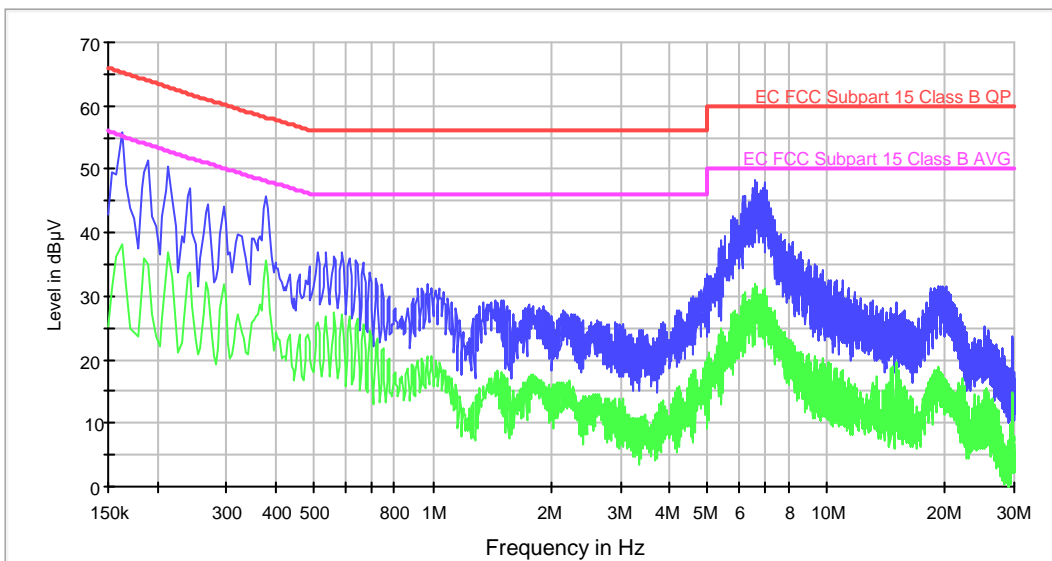
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.158000	46.9	26.1
0.378000	42.4	24.0
0.586000	34.7	17.2
1.066000	30.5	12.8
1.466000	28.7	9.9
2.318000	27.9	9.5
6.078000	41.6	19.4
6.878000	46.1	23.3
10.402000	30.0	9.4
19.222000	33.7	12.3

Continuous Conducted Emission : CC01020N **Detector : Peak / Average / Cuasi-peak**

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#02
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in Tx Mode. Bluetooth in IDLE mode. Neutral Wire Noise.

EMI EC FCC Subpart 15 Class B CC



— Peak Scan — Average Scan
 — EC FCC Subpart 15 Class B QP — EC FCC Subpart 15 Class B AVG

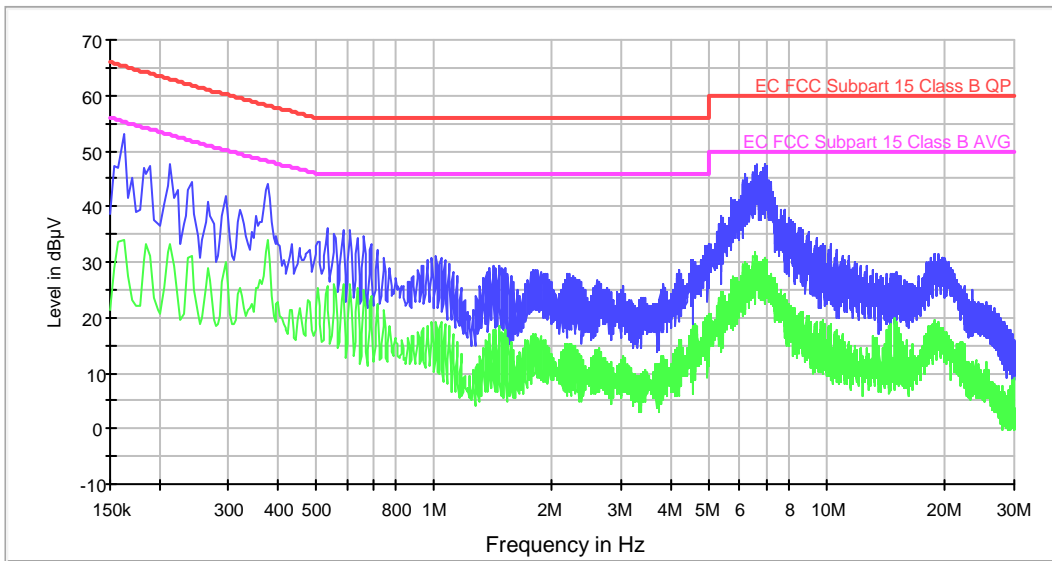
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.162000	55.9	38.1
0.378000	45.6	35.6
0.590000	37.0	27.3
0.746000	32.0	21.4
1.490000	29.5	17.6
2.154000	27.9	16.3
6.118000	44.6	29.3
6.598000	48.2	31.8
11.030000	32.3	17.8
19.202000	31.7	18.7

Continuous Conducted Emission : CC0102L1 **Detector : Peak / Average / Cuasi-peak**

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#02
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in Tx Mode. Bluetooth in IDLE mode. Phase Wire Noise.

EMI EC FCC Subpart 15 Class B CC



— Peak Scan — Average Scan
 — EC FCC Subpart 15 Class B QP — EC FCC Subpart 15 Class B AVG

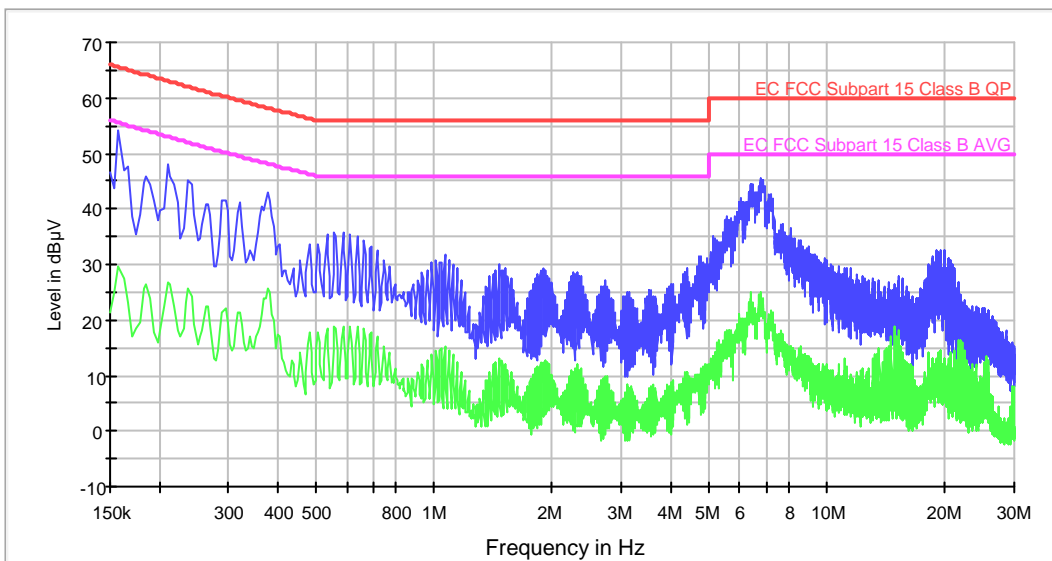
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.162000	53.0	34.0
0.378000	44.1	34.1
0.534000	36.0	25.7
1.014000	30.9	19.3
1.414000	29.5	17.6
2.214000	27.9	15.1
6.094000	44.1	28.3
6.974000	47.5	30.9
10.550000	32.1	17.9
18.870000	31.4	16.8

Continuous Conducted Emission : CC01030N **Detector : Peak / Average / Cuasi-peak**

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#03
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in IDLE Mode. Bluetooth in Tx mode. Neutral Wire Noise.

EMI EC FCC Subpart 15 Class B CC



— Peak Scan — Average Scan
 — EC FCC Subpart 15 Class B QP — EC FCC Subpart 15 Class B AVG

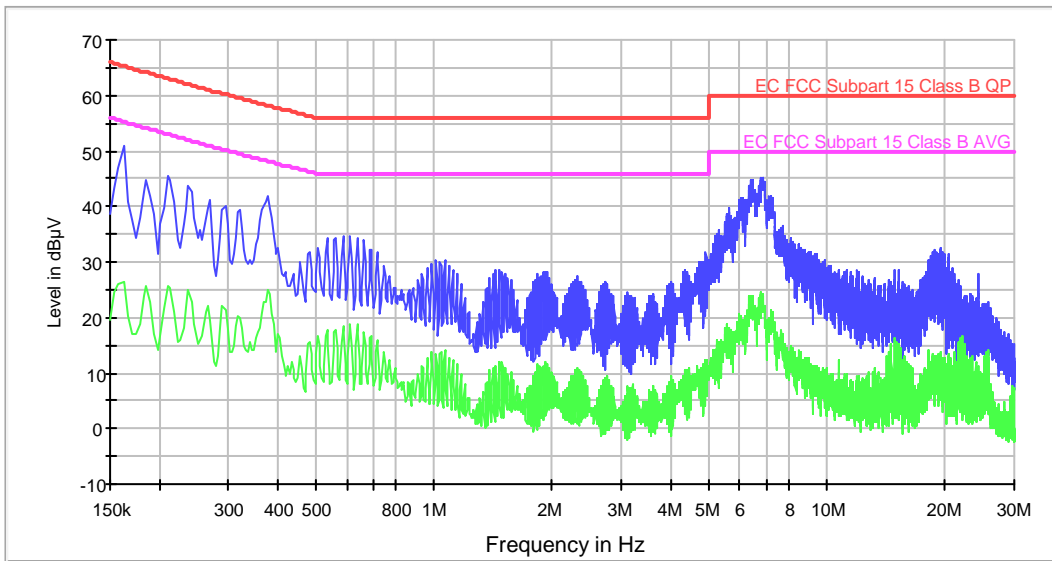
Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.158000	54.3	29.5
0.378000	43.1	25.7
0.586000	35.7	18.9
1.066000	31.7	15.3
1.466000	29.9	12.9
2.318000	28.6	11.9
6.022000	41.9	20.3
6.798000	45.5	24.1
10.774000	29.7	10.3
19.914000	32.5	11.8

Continuous Conducted Emission : CC0103L1 **Detector : Peak / Average / Cuasi-peak**

Project: 46379REM.001
 Company: INTEL
 Sample: S/01
 Operation mode: OM#03
 Description: EUT ON. Power Supply 115 Vac. Connected to laptop through USB cable. WiFi in IDLE Mode. Bluetooth in Tx mode. Phase Wire Noise.

EMI EC FCC Subpart 15 Class B CC



— Peak Scan — Average Scan
 — EC FCC Subpart 15 Class B QP — EC FCC Subpart 15 Class B AVG

Subrange Maxima

Frequency (MHz)	MaxPeak-ClearWrite (dBµV)	Average-ClearWrite (dBµV)
0.162000	50.8	26.6
0.378000	42.0	24.8
0.614000	34.8	18.9
1.014000	30.4	13.6
1.466000	28.5	11.9
2.318000	27.5	10.9
6.050000	41.5	19.6
6.850000	45.2	23.7
15.198000	28.7	15.3
19.494000	32.4	13.5

Appendix B - Photographs

