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Libro 82, Folio 133, Hoja MA3729

# ASSESSMENT REPORT

| | |
|---|---|
| **Report No.:** .....: | 44948RRE.001 |
| Approved by (name / position & signature) .....: | Rafael López<br>EMC LAB Manager |
| Issue date .....: | 2015-01-21 |

Firmado digitalmente por Rafael López Martín
Fecha: 2015.01.21 17:00:39 +01'00'

| | |
|---|---|
| **Identification of item evaluated** ....: | INTEL DUAL BAND WIRELESS – AC 3165 |
| Trademark .....: | Not Supplied |
| Model and/or type reference .....: | 3165NGW |
| Serial number .....: | n/a |
| Features .....: | 802.11 a/b/g/n/ac Wireless LAN + BT 4.0 |
| Other identifications | FCC: PD93165NG (factory install sku)<br>FCC: PD93165NGU (user install allowed)<br>IC: 1000M-3165NG |
| Description.....: | 2x2 PCIe M.2 adapter card |
| **Applicant** .....: | INTEL MOBILE COMMUNICATIONS |
| Address .....: | 100 Center Point Circle, Suite 200<br>Columbia, South Carolina 29210 USA |
| CIF/NIF/Passport.....: | Not Supplied |
| Contact person.....: | Steve Hackett |
| Telephone .....: | 803-216-2344 |
| e-mail: .....: | steven.c.hackett@intel.com |
| **Manufacturer** .....: | INTEL MOBILE COMMUNICATIONS |
| Address .....: | 100 Center Point Circle, Suite 200<br>Columbia, South Carolina, 29210 USA |
| CIF/NIF/Passport.....: | Not Supplied |
| Telephone / Fax.....: | 803-216-2344 |

**Assessment requested**

Evaluation of the possibility of extending the test results of Intel module 7265NGW contained in the test report 41273REM.001, dated 2014/03/12 to Intel module 3165NGW based on the similarity letter provided by INTEL (See Annex A).
Test Report 41273REM.001 reference standard are FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-10 Edition); ICES-003 ISSUE 5 & ANSI C63.10-2009: American National standard for Testing Unlicensed Wireless Devices.

| | |
|---|---|
| **Report template No** .....: | FDT70_00 |

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ANNEX B: Test results that apply to model 3165NGW ..... 6

## Competences and guarantees

AT4 wireless guarantees the reliability of the data presented in this report.

AT4 wireless is liable to the client for the maintenance of the confidentiality of all information related to the works executed. All information evaluated will be handled as confidential.

## General conditions

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## Documents used

Documents undergoing used for the evaluation has been provided by: **The applicant**.

| Title | Description | Reception date |
|---|---|---|
| 41273REM.001 | Test Report reference standard FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-10 Edition); ICESS-003 ISSUE 5 & ANSI C63.10-2009: American National standard for Testing Unlicensed Wireless Devices | 2014/12/15 |
| Similarity Declaration letter | Similarity declaration between Intel® Dual Band Wireless-AC 7265, model 7265NGW and Intel® Dual Band Wireless-AC 3165, model 3165NGW | 2014/12/15 |

## Summary

Considering the differences between Intel® Dual Band Wireless-AC 7265, model 7265NGW and Intel® Dual Band Wireless-AC 3165, model 3165NGW declared by the client (see Annex A), we conclude that the following test result from 41273REM.001 test report are fully applicable to model 3165NGW:

- RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE
- CONTINUOUS CONDUCTED EMISSION ON POWER LEADS

See Annex B for test results extracted from 41273REM.001 test report.

NOTE: The results presented in this Assessment Report apply only to the particular item under evaluation established in page 1 of this document.

# ANNEX A: Similarity Declaration letter

## Similarity Declaration between:

*Intel® Dual Band Wireless-AC 7265, model 7265NGW*

*And*

*Intel® Dual Band Wireless-AC 3165, model 3165NGW.*

**To whom it may concern,**

This statement letter is to declare that the two following products are exactly the same board, meaning same HW, same schematic, same layout, same BoM:

- Intel® Dual Band Wireless-AC 7265, model 7265NGW
- Intel® Dual Band Wireless-AC 3165, model 3165NGW

The only difference is disabling by EEprom all MIMO data rate for Intel® Dual Band Wireless-AC 3165, model 3165NGW (Please refer to below table for detailed data rate listing comparison)

**Model 7265NGW** supports 2 spatial streams and **Model 3165NGW** supports only 1 spatial stream.

IEEE 802.11n/ac Modulation Coding Schemes

| HT MCS Index | Modulation and Coding Rate | Spatial Streams | Data Rate (MBPS) | | | | | | VHT MCS Index |
|---|---|---|---|---|---|---|---|---|---|
| | | | 20 MHz Chan | | 40 MHz Chan | | 80 MHz Chan | | |
| | | | No SGI | SGI | No SGI | SGI | No SGI | SGI | |
| 0 | BPSK 1/2 | 1 | 6.5 | 7.2 | 13.5 | 15.0 | 29.3 | 32.5 | 0 |
| 1 | QPSK 1/2 | 1 | 13.0 | 14.4 | 27.0 | 30.0 | 58.5 | 65.0 | 1 |
| 2 | QPSK 3/4 | 1 | 19.5 | 21.7 | 40.5 | 45.0 | 87.8 | 97.5 | 2 |
| 3 | 16-QAM 1/2 | 1 | 26.0 | 28.9 | 54.0 | 60.0 | 117.0 | 130.0 | 3 |
| 4 | 16-QAM 3/4 | 1 | 39.0 | 43.3 | 81.0 | 90.0 | 175.5 | 195.0 | 4 |
| 5 | 64-QAM 2/3 | 1 | 52.0 | 57.8 | 108.0 | 120.0 | 234.0 | 260.0 | 5 |
| 6 | 64-QAM 3/4 | 1 | 58.5 | 65.0 | 121.5 | 135.0 | 263.3 | 292.5 | 6 |
| 7 | 64-QAM 5/6 | 1 | 65.0 | 72.2 | 135.0 | 150.0 | 292.5 | 325.0 | 7 |
| | 256-QAM 3/4 | 1 | 78.0 | 86.7 | 162.0 | 180.0 | 351.0 | 390.0 | 8 |
| | 256-QAM 5/6 | 1 | n/a | n/a | 180.0 | 200.0 | 390.0 | 433.3 | 9 |
| 8 | BPSK 1/2 | 2 | 13.0 | 14.4 | 27.0 | 30.0 | 58.5 | 65.0 | 0 |
| 9 | QPSK 1/2 | 2 | 26.0 | 28.9 | 54.0 | 60.0 | 117.0 | 130.0 | 1 |
| 10 | QPSK 3/4 | 2 | 39.0 | 43.3 | 81.0 | 90.0 | 175.5 | 195.0 | 2 |
| 11 | 16-QAM 1/2 | 2 | 52.0 | 57.8 | 108.0 | 120.0 | 234.0 | 260.0 | 3 |
| 12 | 16-QAM 3/4 | 2 | 78.0 | 86.7 | 162.0 | 180.0 | 351.0 | 390.0 | 4 |
| 13 | 64-QAM 2/3 | 2 | 104.0 | 115.6 | 216.0 | 240.0 | 468.0 | 520.0 | 5 |
| 14 | 64-QAM 3/4 | 2 | 117.0 | 130.0 | 243.0 | 270.0 | 526.5 | 585.0 | 6 |
| 15 | 64-QAM 5/6 | 2 | 130.0 | 144.4 | 270.0 | 300.0 | 585.0 | 650.0 | 7 |
| | 256-QAM 3/4 | 2 | 156.0 | 173.3 | 324.0 | 360.0 | 702.0 | 780.0 | 8 |
| | 256-QAM 5/6 | 2 | n/a | n/a | 360.0 | 400.0 | 780.0 | 866.7 | 9 |

Authorized signature by:
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Regulatory Program Manager

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SAS au capital de 2 000 000 Euros – RCS Grasse B 527 863 039 – NAF 7219Z – Siret 527 863 039 00022

# ANNEX B: Test results that apply to model 3165NGW

**APPENDIX B CONTENT:**

DESCRIPTION OF THE OPERATION MODES..... 7
RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE. ..... 8
CONTINUOUS CONDUCTED EMISSION ON POWER LEADS ..... 15

## DESCRIPTION OF THE OPERATION MODES

The operation modes described in this paragraph constitute a functionality of the sample under test for itself. Every operation mode takes a failure criteria for the immunity test that they were applying to it and a monitoring to guarantee performance of the same ones.

In the following table appears the operation modes used by the samples tested to that it refers the present test report.

| OPERATION MODE | DESCRIPTION |
|---|---|
| OM#01 | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. |
| OM#02 | EUT ON. WiFi transmitting in 2.4GHz. Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. |
| OM#03 | EUT ON. WiFi transmitting in 5GHz. Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. |
| OM#04 | EUT ON. Bluetooth in transmission mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. |

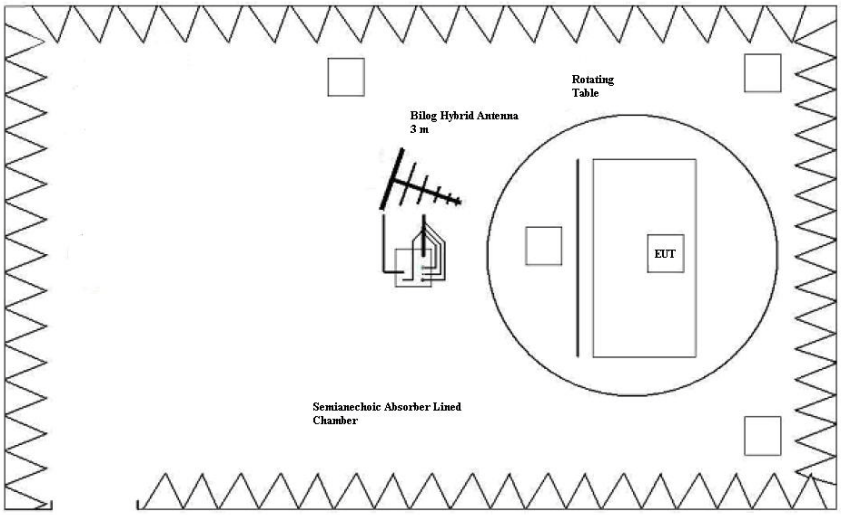
## RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE.

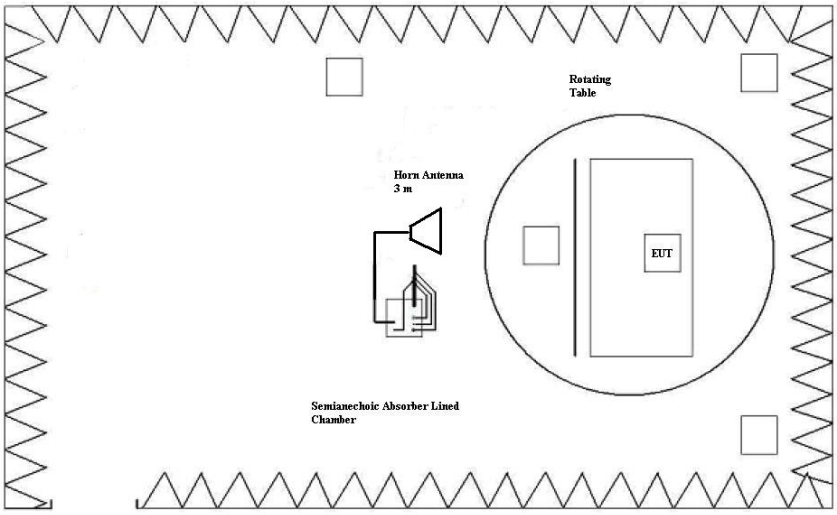
| | | |
|---|---|---|
| **LIMITS:** | Product standard: | FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B (10-01-10 Edition); ICESS-003 ISSUE 5 & ANSI C63.10-2009 |
| | Test standard: | FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B (10-01-10 Edition); ICESS-003 ISSUE 5 & ANSI C63.10-2009 |

**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 (10-01-10 Edition); ICESS-003 ISSUE 5 & ANSI C63.10-2009 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) | Limit for 3 m (μV/m) | 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 |



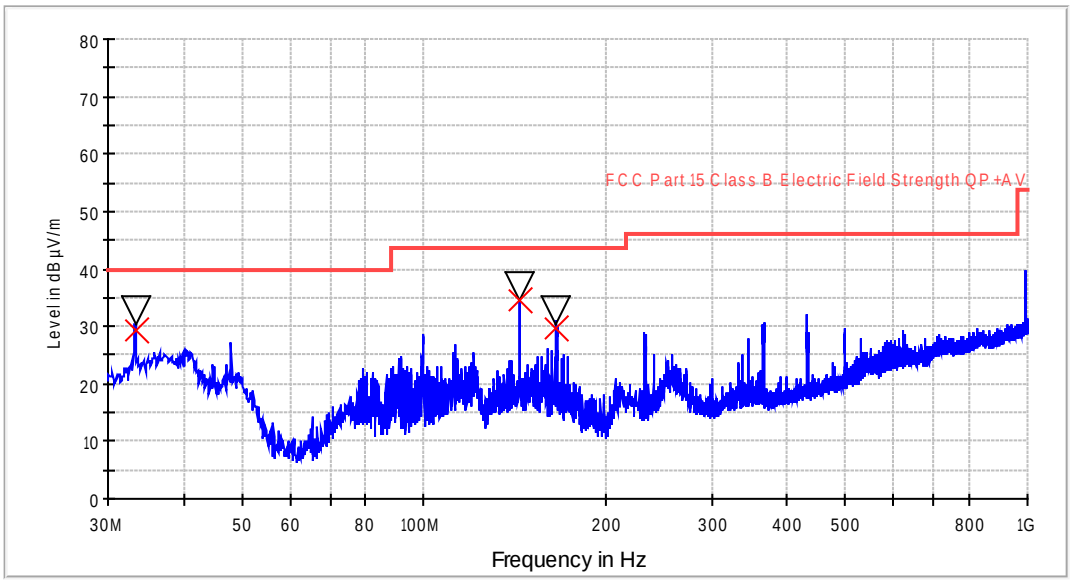
| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED OPERATION MODES:** | OM#01 |
| **TEST RESULTS :** | **CR**mmnn: CR, Radiation Condition; mm: Sample number; nn: Operation mode, xx: Polarisation. |

| CRmmnn | Description | Result |
|---|---|---|
| CR0101 | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Range 30-1000 MHz. | P |
| CR0101_RA1_PH | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Range 1-18 GHz. Horizontal pol. | P |
| CR0101_RA1_PV | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Range 1-18 GHz. Vertical pol. | P |
| CR0101_RA2_PH | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Range 18-26 GHz. Horizontal pol. | P |
| CR0101_RA2_PV | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Range 18-26 GHz. Vertical pol. | P |

**Radiated Emission: CR0101 (30MHz to 1GHz)**

| | |
|---|---|
| Project: | 41273REM.001 |
| Company: | INTEL |
| Sample: | S/01 |
| Operation mode: | OM#01 |
| Description: | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. |

## FCC class B




FCC Part 15 Class B Electric Field Strength QP+AV — Peak Preview
MaxPeak — QuasiPeak

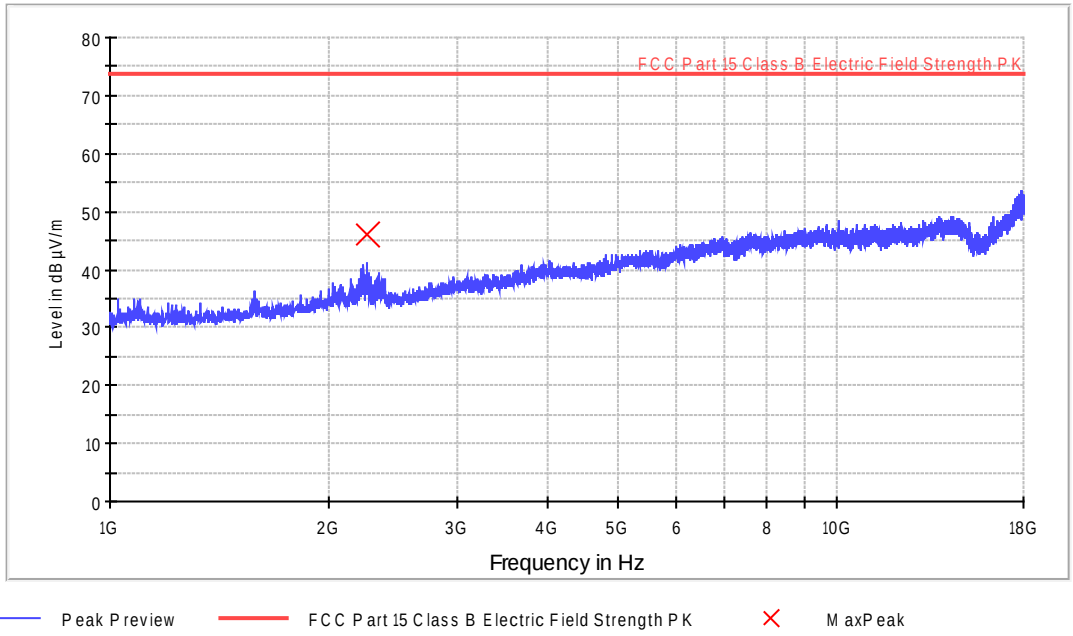
## Maximizations

| Frequency (MHz) | MaxPeak (dBµV/m) | QuasiPeak (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) |
|---|---|---|---|---|---|
| 33.327054 | 32.8 | 29.2 | 98.0 | V | 141.0 |
| 144.017034 | 37.1 | 34.5 | 103.0 | V | 174.0 |
| 166.015030 | 32.7 | 29.8 | 109.0 | V | 84.0 |

**Radiated Emission: CR0101_RA1_PH (1 – 18 GHz)**

| | |
|---|---|
| Project: | 41273REM.001 |
| Company: | INTEL |
| Sample: | S/01 |
| Operation mode: | OM#01 |
| Description: | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Horizontal polarization. |

## FCC 1-18GHz class B ESIB Horn0245 AMP3783



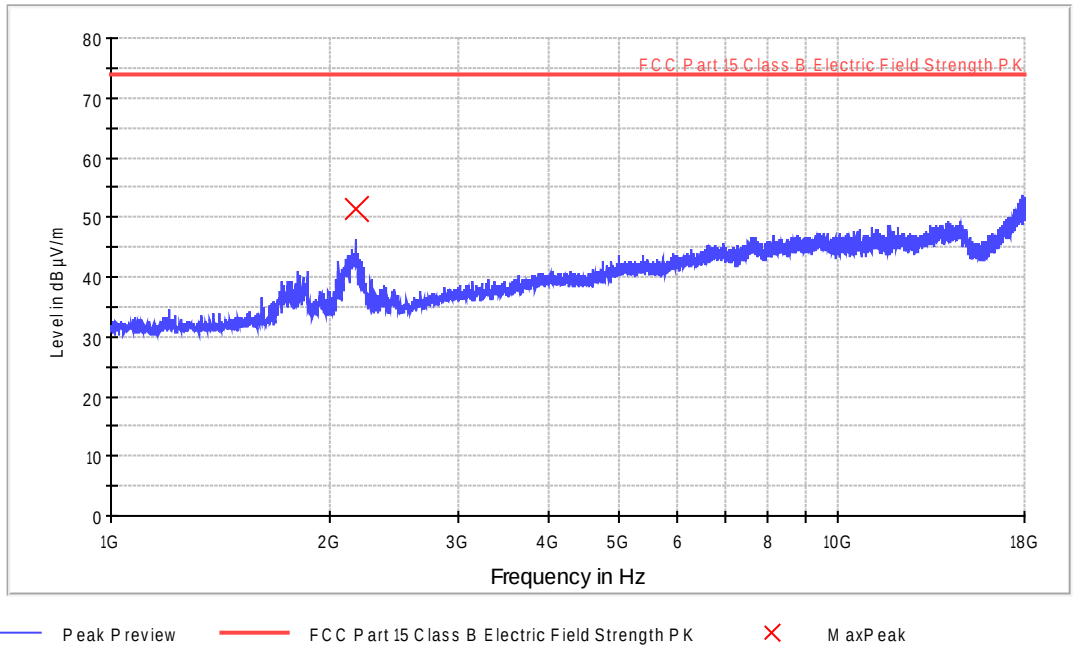

## Maximizations

| Frequency (MHz) | MaxPeak (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Comment |
|---|---|---|---|---|---|
| 2258.025000 | 46.2 | 98.0 | H | 112.0 | |

**Radiated Emission: CR0101_RA1_PV (1 – 18 GHz)**

| | |
|---|---|
| Project: | 41273REM.001 |
| Company: | INTEL |
| Sample: | S/01 |
| Operation mode: | OM#01 |
| Description: | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Vertical polarization. |

## FCC 1-18GHz class B ESIB Horn0245 AMP3783



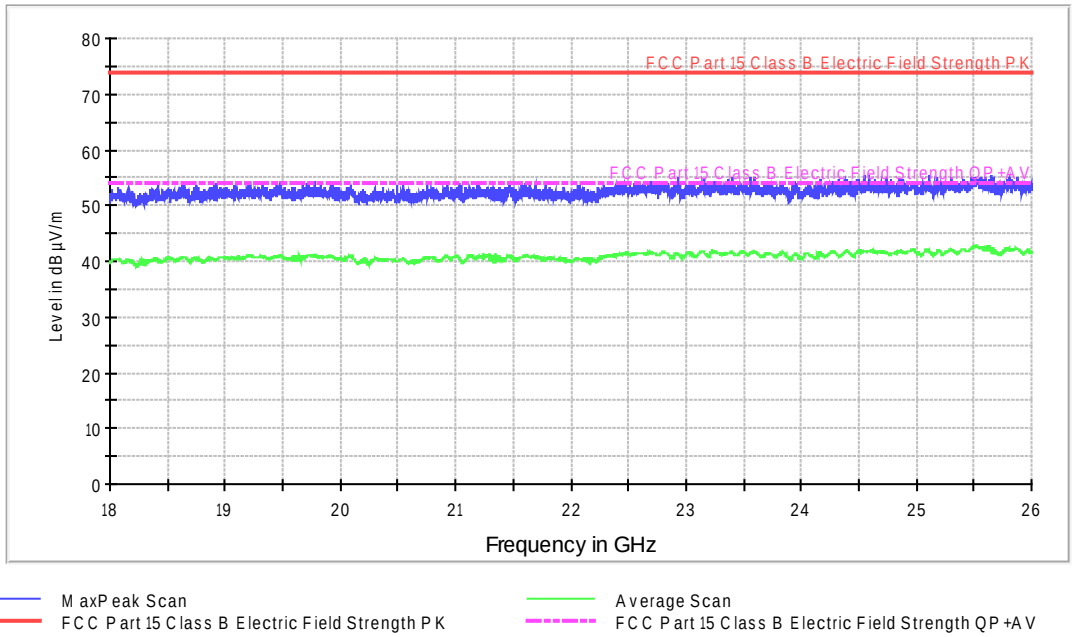

## Maximizations

| Frequency (MHz) | MaxPeak (dBµV/m) | QuasiPeak (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) | Comment |
|---|---|---|---|---|---|---|
| 2165.327054 | 51.4 | 29.2 | 98.0 | V | 141.0 | |

**Radiated Emission: CR0101_RA2_PH (18 – 26 GHz)**

| | |
|---|---|
| Project: | 41273REM.001 |
| Company: | INTEL |
| Sample: | S/01 |
| Operation mode: | OM#01 |
| Description: | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Horizontal polarization. |

## FCC 18-26GHz class B ESIB Horn1920 AMP1975



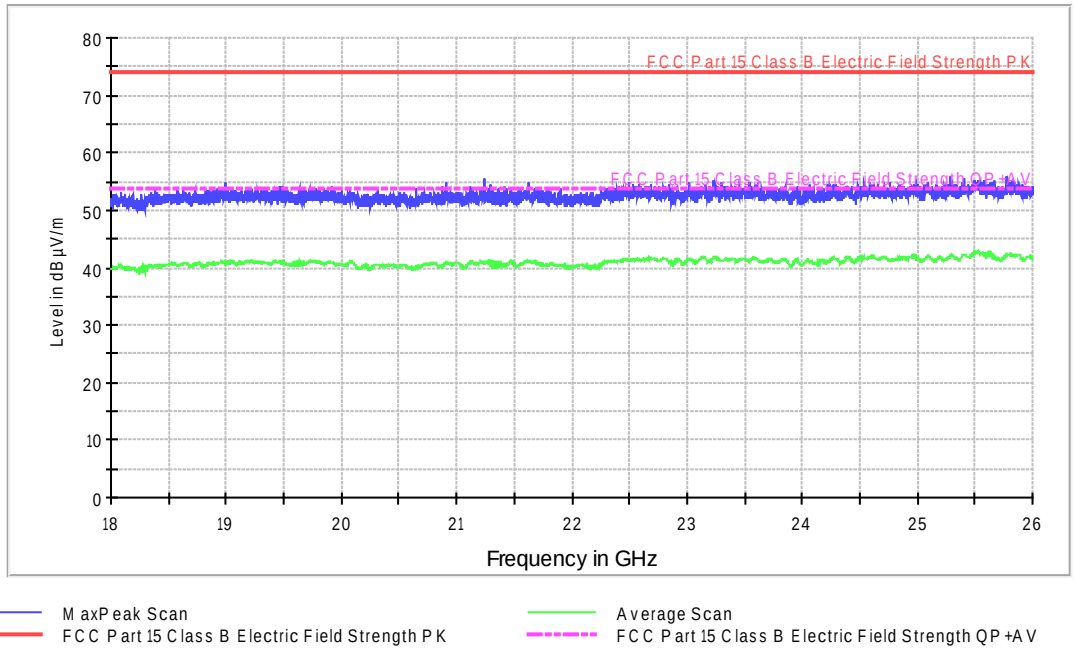

## Max PK-AVG

| Frequency (GHz) | MaxPeak-ClearWrite (dBµV/m) | Average-ClearWrite (dBµV/m) |
|---|---|---|
| 18.652000 | 53.5 | 40.6 |
| 19.332000 | 54.3 | 40.9 |
| 19.727000 | 54.4 | 41.1 |
| 20.755000 | 54.6 | 40.7 |
| 21.037000 | 54.2 | 40.6 |
| 22.410000 | 53.9 | 41.3 |
| 22.925000 | 55.0 | 41.4 |
| 23.401000 | 55.3 | 41.6 |
| 24.596000 | 55.4 | 41.9 |
| 25.110000 | 55.3 | 41.9 |

**Radiated Emission: CR0101_RA2_PV ( 18 -26 GHz)**

| | |
|---|---|
| Project: | 41273REM.001 |
| Company: | INTEL |
| Sample: | S/01 |
| Operation mode: | OM#01 |
| Description: | EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Vertical polarization. |

## FCC 18-26GHz class B ESIB Horn1920 AMP1975




## Max PK-AVG

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV/m) | Average-ClearWrite (dBµV/m) |
|---|---|---|
| 18583.000000 | 53.5 | 40.4 |
| 18990.000000 | 54.7 | 41.1 |
| 19910.000000 | 54.3 | 40.9 |
| 20653.000000 | 53.9 | 40.4 |
| 21246.000000 | 55.4 | 41.1 |
| 22441.000000 | 54.2 | 41.3 |
| 23232.000000 | 55.2 | 41.9 |
| 23307.000000 | 54.9 | 41.3 |
| 24983.000000 | 55.3 | 42.1 |
| 25779.000000 | 55.9 | 42.1 |

## CONTINUOUS CONDUCTED EMISSION ON POWER LEADS

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

**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 (10-01-10 Edition); ICESS-003 ISSUE 5 & ANSI C63.10-2009, 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 |

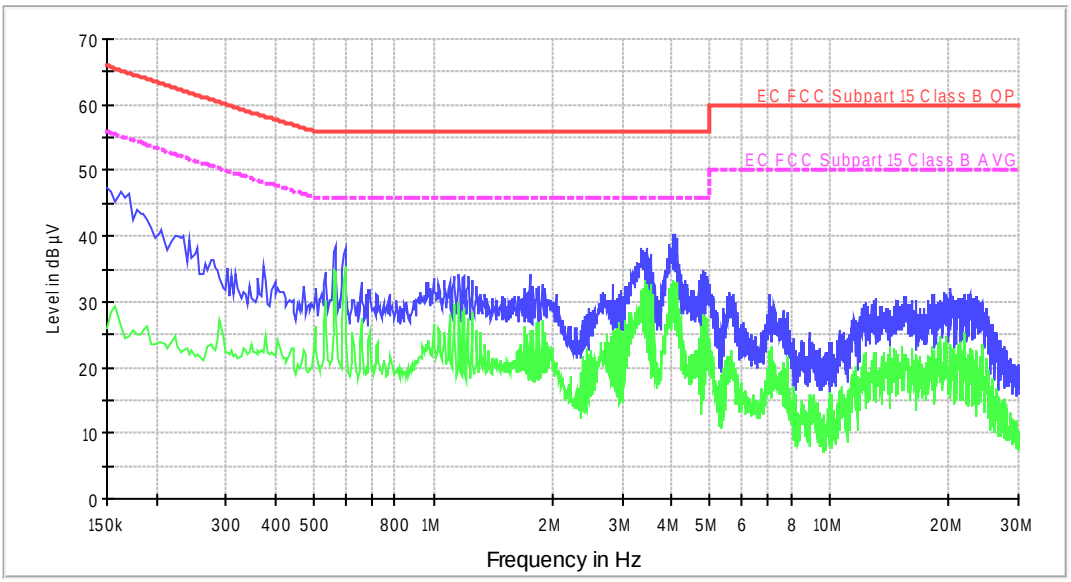
| | |
|---|---|
| **TESTED SAMPLES:** | S/01 |
| **TESTED OPERATION MODES:** | OM#01; 02; 03 & 04 |
| **TEST RESULTS :** | CCmmnnhh: CC, Conducted Condition; mm: Sample number; nn: Operation mode; hh: wire |

| **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 |
| CC01040N | Neutral wire noise | P |
| CC0104L1 | Phase wire noise | P |

| Continuous Conducted emission : CC01010N | Detector : Peak / Average / Cuasi-peak |
|---|---|

Project: 41273REM.001
Company: INTEL
Sample: S/01
Operation mode: OM#01
Description: EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Neutral wire Noise

# EMI EC FCC Subpart 15 Class B ESPI CC




MaxPeak
EC FCC Subpart 15 Class B QP
Average
EC FCC Subpart 15 Class B AVG

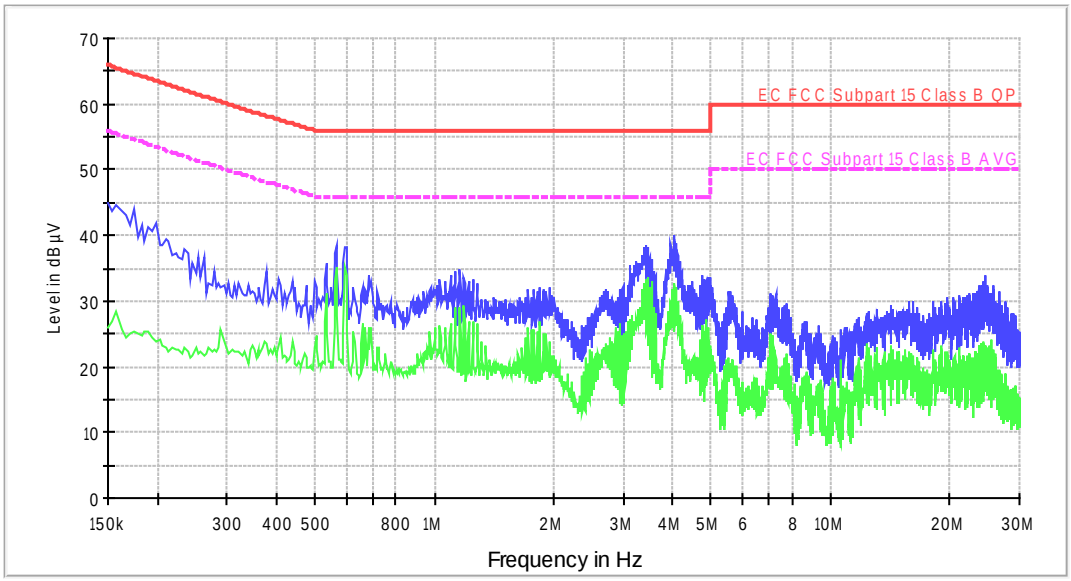
# Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.150000 | 47.4 | 25.9 |
| 0.278000 | 36.5 | 23.0 |
| 0.566000 | 38.4 | 34.5 |
| 1.158000 | 34.3 | 30.0 |
| 1.750000 | 34.4 | 21.6 |
| 3.354000 | 38.2 | 29.5 |
| 4.018000 | 40.4 | 32.8 |
| 7.058000 | 31.3 | 22.7 |
| 15.618000 | 30.9 | 21.4 |
| 20.114000 | 32.2 | 21.0 |

| Continuous Conducted emission : CC0101L1 | Detector : Peak / Average / Cuasi-peak |
|---|---|

Project: 41273REM.001
Company: INTEL
Sample: S/01
Operation mode: OM#01
Description: EUT ON. WiFi and Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Phase wire Noise

# EMI EC FCC Subpart 15 Class B ESPI CC




MaxPeak
EC FCC Subpart 15 Class B QP
Average
EC FCC Subpart 15 Class B AVG

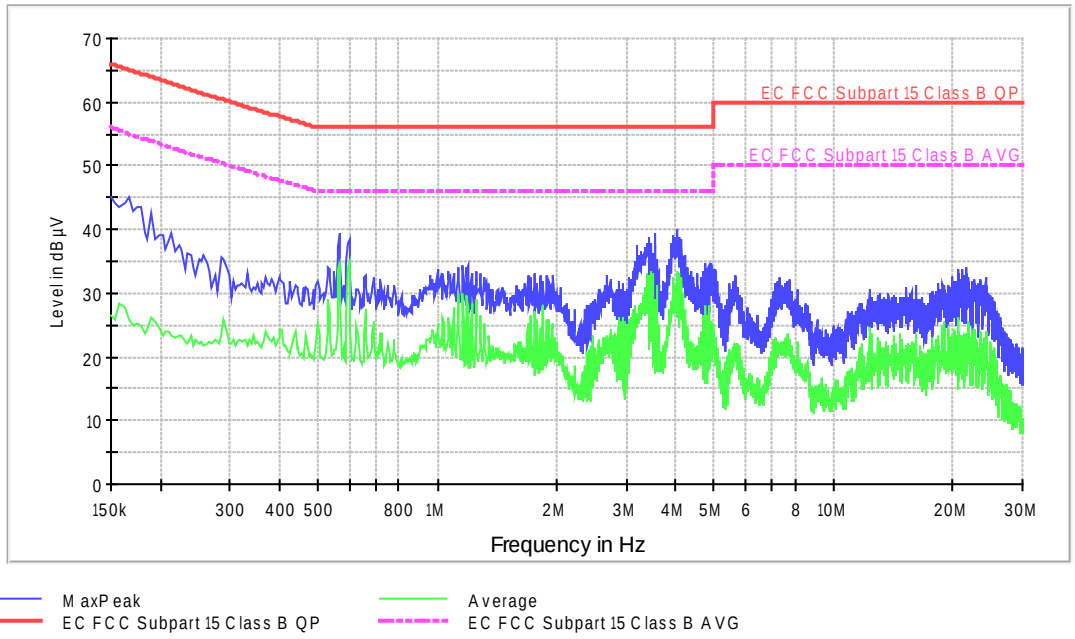
## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.150000 | 44.9 | 26.0 |
| 0.262000 | 36.7 | 21.6 |
| 0.566000 | 38.5 | 35.3 |
| 1.162000 | 34.7 | 28.9 |
| 1.254000 | 33.3 | 26.9 |
| 3.426000 | 38.5 | 33.3 |
| 4.018000 | 39.9 | 32.4 |
| 7.090000 | 31.2 | 24.3 |
| 15.826000 | 30.0 | 20.3 |
| 24.678000 | 33.8 | 21.5 |

| Continuous Conducted emission : CC01020N | Detector : Peak / Average / Cuasi-peak |
|---|---|

| | |
|---|---|
| Project: | 41273REM.001 |
| Company: | INTEL |
| Sample: | S/01 |
| Operation mode: | OM#02 |
| Description: | EUT ON. WiFi transmitting in 2.4GHz. Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Neutral wire Noise |

# EMI EC FCC Subpart 15 Class B ESPI CC



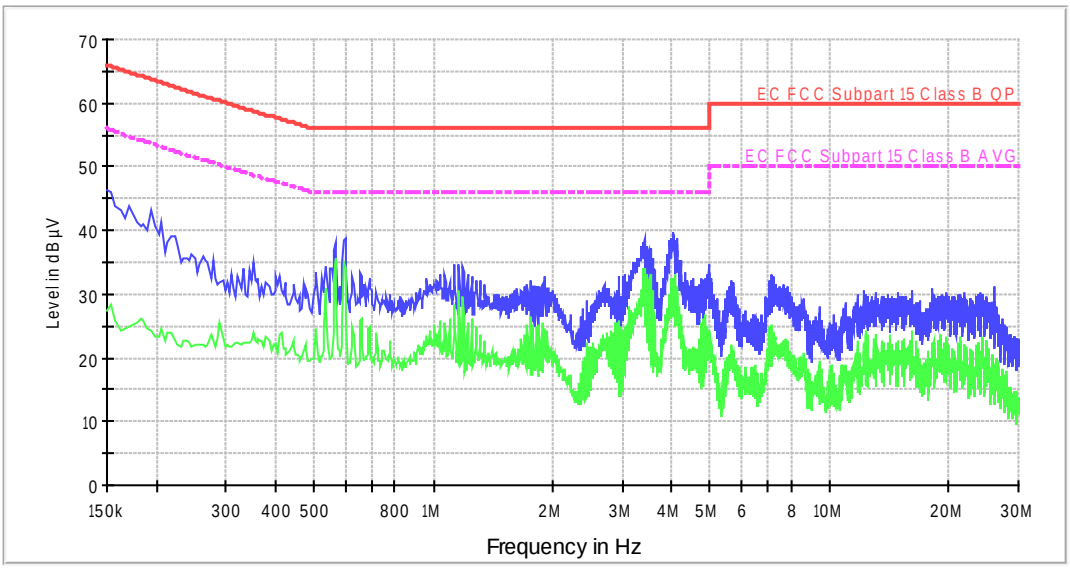

## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.150000 | 45.2 | 26.4 |
| 0.258000 | 35.8 | 21.7 |
| 0.566000 | 39.5 | 34.7 |
| 1.162000 | 34.4 | 29.1 |
| 1.254000 | 33.6 | 29.1 |
| 3.542000 | 39.5 | 29.1 |
| 4.018000 | 39.9 | 33.6 |
| 7.310000 | 32.4 | 22.0 |
| 16.170000 | 31.4 | 23.6 |
| 21.614000 | 34.1 | 20.0 |

| Continuous Conducted emission : CC0102L1 | Detector : Peak / Average / Cuasi-peak |
|---|---|

Project: 41273REM.001
Company: INTEL
Sample: S/01
Operation mode: OM#02
Description: EUT ON. WiFi transmitting in 2.4GHz. Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Phase wire Noise

## EMI EC FCC Subpart 15 Class B ESPI CC




MaxPeak
EC FCC Subpart 15 Class B QP
Average
EC FCC Subpart 15 Class B AVG

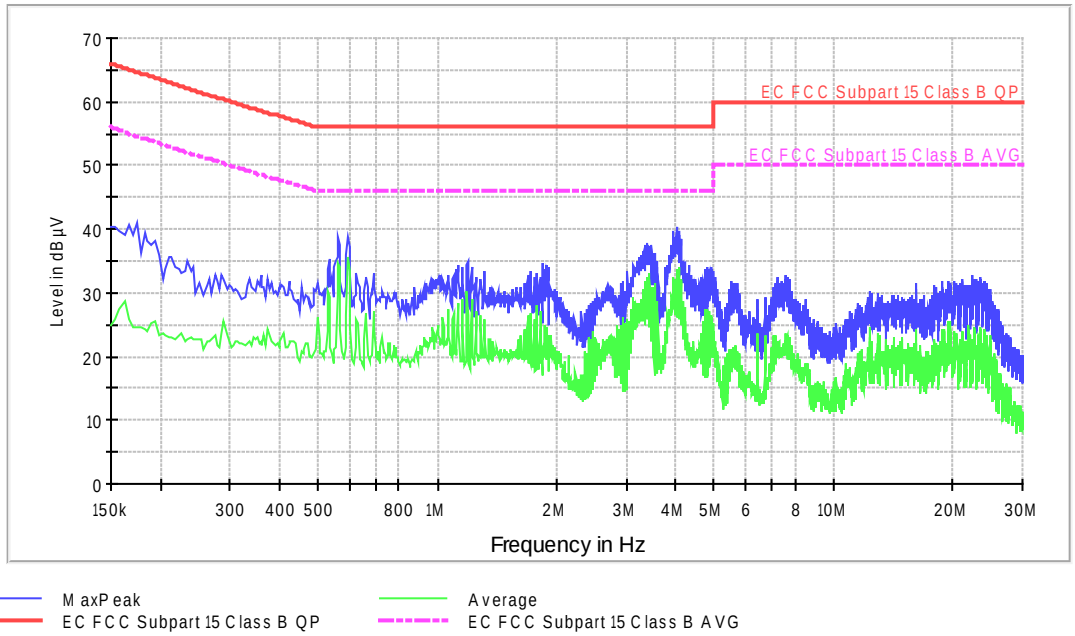
## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.150000 | 46.2 | 27.6 |
| 0.262000 | 35.9 | 22.0 |
| 0.598000 | 38.8 | 34.1 |
| 1.162000 | 34.6 | 30.7 |
| 1.910000 | 32.8 | 24.6 |
| 3.406000 | 38.9 | 28.4 |
| 4.026000 | 39.8 | 29.0 |
| 7.122000 | 33.3 | 25.4 |
| 16.230000 | 30.7 | 24.3 |
| 25.942000 | 31.3 | 17.3 |

| Continuous Conducted emission : CC01030N | Detector : Peak / Average / Cuasi-peak |
|---|---|

Project: 41273REM.001
Company: INTEL
Sample: S/01
Operation mode: OM#03
Description: EUT ON. WiFi transmitting in 5GHz. Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Neutral Wire Noise

## EMI EC FCC Subpart 15 Class B ESPI CC



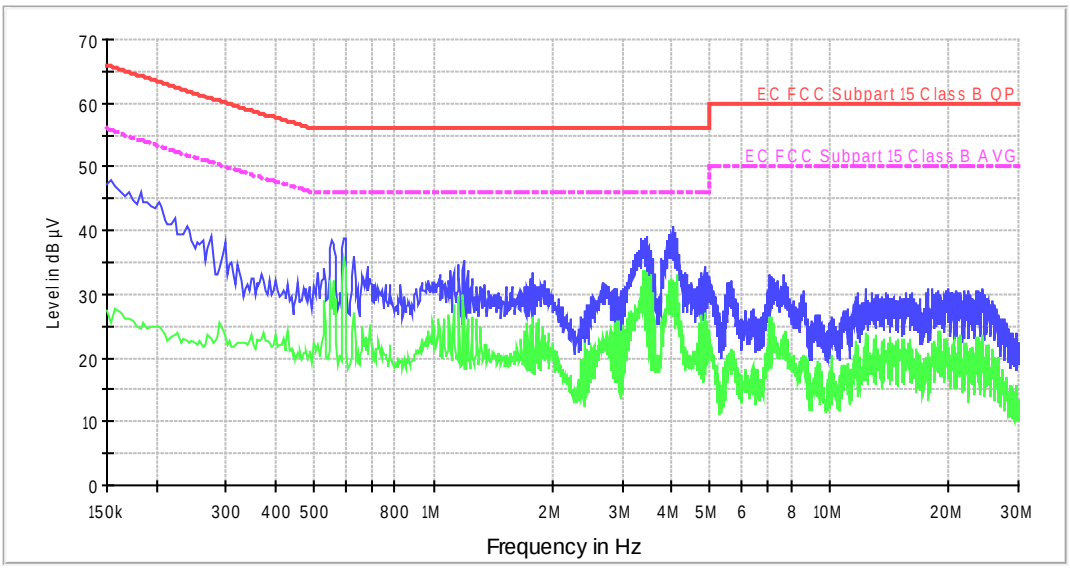

## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.174000 | 41.0 | 24.6 |
| 0.274000 | 32.8 | 23.2 |
| 0.562000 | 38.8 | 34.7 |
| 1.194000 | 35.0 | 26.6 |
| 1.846000 | 34.8 | 20.2 |
| 3.382000 | 37.8 | 30.9 |
| 4.010000 | 40.2 | 31.7 |
| 7.582000 | 32.8 | 23.5 |
| 16.230000 | 31.7 | 24.4 |
| 22.514000 | 32.8 | 21.4 |

| Continuous Conducted emission : CC0103L1 | Detector : Peak / Average / Cuasi-peak |
|---|---|

Project: 41273REM.001
Company: INTEL
Sample: S/01
Operation mode: OM#03
Description: EUT ON. WiFi transmitting in 5GHz. Bluetooth in IDLE mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Phase Wire Noise

## EMI EC FCC Subpart 15 Class B ESPI CC




MaxPeak
EC FCC Subpart 15 Class B QP
Average
EC FCC Subpart 15 Class B AVG

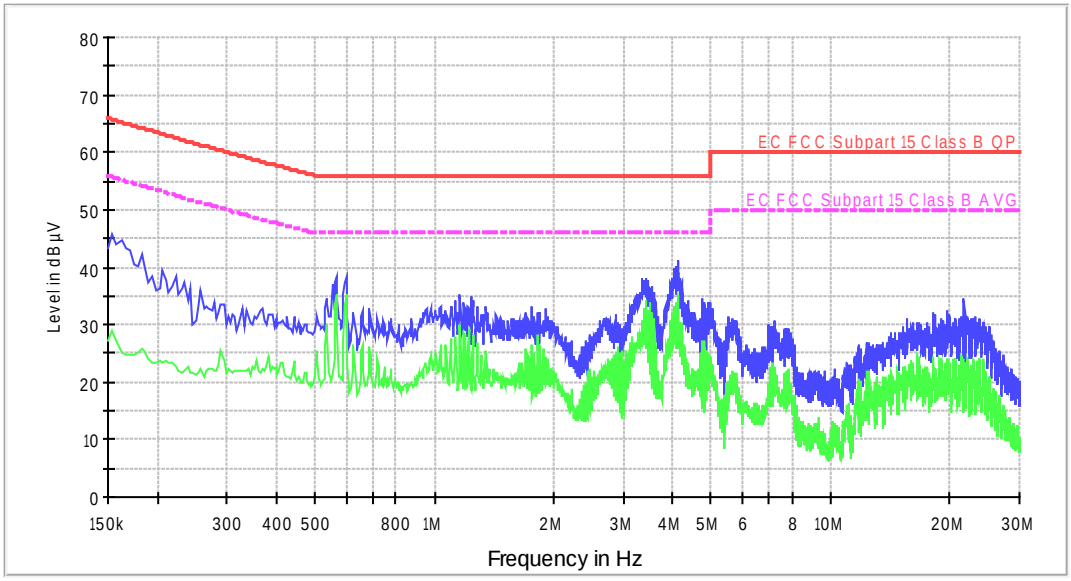
## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.154000 | 47.8 | 25.5 |
| 0.274000 | 39.1 | 23.1 |
| 0.598000 | 38.9 | 33.9 |
| 1.194000 | 35.5 | 26.4 |
| 1.786000 | 33.4 | 26.3 |
| 3.450000 | 39.1 | 33.3 |
| 4.034000 | 40.8 | 32.2 |
| 7.058000 | 33.2 | 20.8 |
| 12.418000 | 30.9 | 24.1 |
| 19.942000 | 31.0 | 21.2 |

| Continuous Conducted emission : CC01040N | Detector : Peak / Average / Cuasi-peak |
|---|---|

Project: 41273REM.001
Company: INTEL
Sample: S/01
Operation mode: OM#04
Description: EUT ON. Bluetooth in transmission mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Neutral wire noise.

## EMI EC FCC Subpart 15 Class B ESPI CC




MaxPeak
EC FCC Subpart 15 Class B QP
Average
EC FCC Subpart 15 Class B AVG

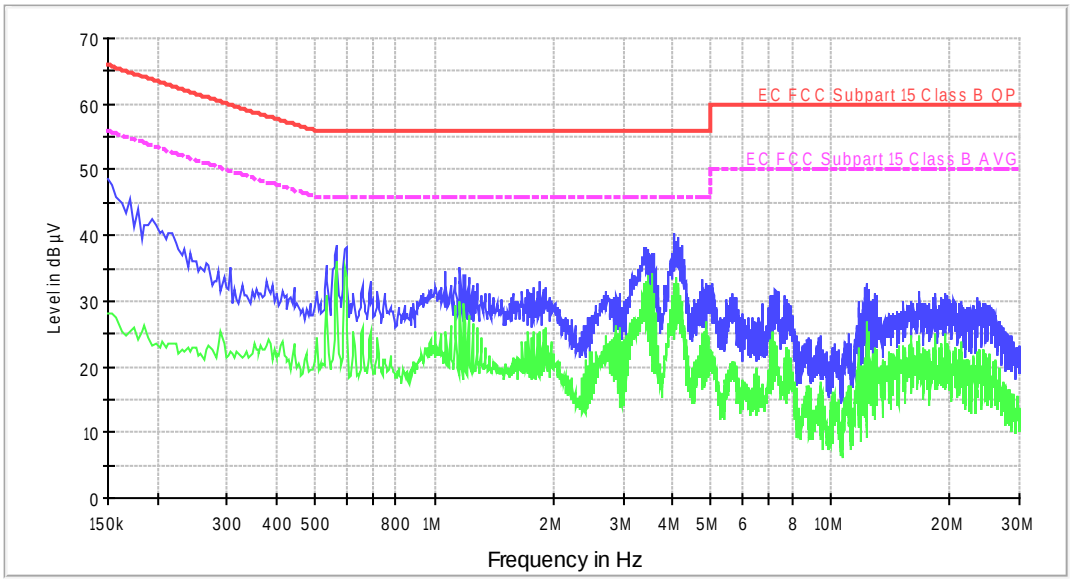
## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.154000 | 45.9 | 28.9 |
| 0.258000 | 35.9 | 22.2 |
| 0.598000 | 38.6 | 35.3 |
| 1.162000 | 35.2 | 30.0 |
| 1.254000 | 34.2 | 28.3 |
| 3.434000 | 38.1 | 26.9 |
| 4.110000 | 41.0 | 35.3 |
| 7.262000 | 30.8 | 19.5 |
| 15.618000 | 31.2 | 22.2 |
| 21.762000 | 34.5 | 21.5 |

| Continuous Conducted emission : CC0104L1 | Detector : Peak / Average / Cuasi-peak |
|---|---|

Project: 41273REM.001
Company: INTEL
Sample: S/01
Operation mode: OM#04
Description: EUT ON. Bluetooth in transmission mode. Auxiliary Laptop connected to power supply: 120Vac / 60Hz. Phase wire noise

## EMI EC FCC Subpart 15 Class B ESPI CC




MaxPeak — EC FCC Subpart 15 Class B QP
Average — EC FCC Subpart 15 Class B AVG

## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|---|---|---|
| 0.150000 | 48.6 | 28.0 |
| 0.266000 | 35.7 | 22.7 |
| 0.566000 | 38.6 | 36.1 |
| 1.162000 | 35.1 | 29.8 |
| 1.846000 | 32.9 | 24.7 |
| 3.426000 | 38.1 | 33.0 |
| 4.050000 | 40.3 | 32.4 |
| 7.266000 | 31.8 | 22.1 |
| 12.326000 | 32.7 | 20.1 |
| 19.546000 | 31.3 | 23.0 |

## Summary

Considering the results of the performed test according to standard **FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-10 Edition); ICESS-003 ISSUE 5 & ANSI C63.10-2009,** the items under test are **IN COMPLIANCE** with the requested specifications specified in the standard.

NOTE: The results presented in this Assessment Report apply only to the particular item under evaluation established in page 1 of this document.

## Remarks and comments

The tests have been realized by the technical personnel: Antonio Ruiz & Antonio Jurado.

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 150 kHz to 30 MHz is I = ± 3,60 dB for quasi-peak measurements, I = ± 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 = ± 4,57 dB for quasi-peak measurements, I = ± 4,48 dB for peak measurements (k = 2) and from 1 to 12,75 GHz is I = ± 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 = ± 4,09 dB for average and peak measurements.

**List of equipment used during the test**

| CONTROL NUMBER | DESCRIPTION | MANUFACTURER | MODEL | LAST CALIBRATION | NEXT CALIBRATION |
|---|---|---|---|---|---|
| 1999 | EMI Receptor | ROHDE & SCHWARZ | ESIB 26 | 2013-05-30 | 2015-05-30 |
| 1935 | EMI Receptor | ROHDE & SCHWARZ | ESPI 3 | 2013-12-11 | 2015-12-11 |
| 2932 | Bilog Hybrid Antenna | SUNOL | JB6 | 2011-05-11 | 2014-05-11 |
| 0245 | Horn Antenna | HP | 11966E | 2011-05-20 | 2014-05-20 |
| 1920 | Horn Antenna | AGILENT | 11966J | 2011-09-27 | 2014-09-27 |
| 1658 | RF Amplifier | SCHAFFNER | CPA9231A | 2013-06-11 | 2015-06-11 |
| 1975 | RF Amplifier | MITEQ | JS4 | 2013-04-18 | 2014-04-18 |
| 3783 | RF Amplifier | BONN ELEKTRONIK | BLMA 0118-3A | 2013-04-23 | 2014-04-23 |
| 0258 | Transient Limiter | HP | 119471A | 2012-09-19 | 2014-09-19 |
| 1650 | Artificial Network | SCHWARZBECK | NNLK - 8121 | 2013-06-25 | 2015-06-25 |
| 3545 | Temperature & Humidity probe | PICO TECHNOLOGY | HUMIDIPROBE | 2014-01-21 | 2015-01-21 |
| 3548 | Temperature & Humidity probe | PICO TECHNOLOGY | HUMIDIPROBE | 2014-01-21 | 2015-01-21 |
| 3556 | Temperature & Humidity probe | T & D | TR-72W | 2014-01-21 | 2015-01-21 |