



Test report No:

NIE: 51368REM.003A1

## Test report (Modification 1)

FCC Rules and Regulations CFR 47, Part 15, Subpart B (10-1-15 Edition),  
Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207

&  
ICES-003 ISSUE 6 (2016)

|                                                |                                                                                                                                                     |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Identification of item tested .....            | MANAGEMENT TOOL                                                                                                                                     |
| Trademark .....                                | JCM TECHNOLOGIES, S.A.                                                                                                                              |
| Model and/or type reference.....               | ASSISTANT FCC                                                                                                                                       |
| Other identification of the product .....      | S/N: XRBH-PCNT-PMJG-LNIP                                                                                                                            |
| Final HW version.....                          | 2000554 (S-ASSISTANT FCC)                                                                                                                           |
| Final SW version .....                         | BBII_02040200                                                                                                                                       |
| FCC ID .....                                   | U5Z-ASSISTANT                                                                                                                                       |
| IC .....                                       | 8572A-ASSISTANT                                                                                                                                     |
| Features.....                                  | Not provided data                                                                                                                                   |
| Manufacturer.....                              | JCM TECHNOLOGIES,S.A.<br>C/ Morgades,46 Bajos, 08500, Vic, Barcelona. SPAIN.                                                                        |
| Test method requested, standard .....          | FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107,<br>15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003<br>Issue 6 (2016) |
| Summary .....                                  | IN COMPLIANCE                                                                                                                                       |
| Approved by (name / position & signature)..... | Rafael López<br>EMC Lab Manager                                                                                                                     |
|                                                |                                                                 |
|                                                | Firmado digitalmente por<br>RAFAEL LÓPEZ MARTÍN<br>Fecha: 2017.02.09 10:31:26<br>+01'00'                                                            |
| Date of issue .....                            | 2017-02-07                                                                                                                                          |
| Report template No. ....                       | FDT08_18                                                                                                                                            |

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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 following elements:

| Control N° | Description     | Model         | Serial number       | Reception date |
|------------|-----------------|---------------|---------------------|----------------|
| 51368/048  | MANAGEMENT TOOL | ASSISTANT FCC | XRBH-PCNT-PMJG-LNIP | 2016-11-14     |
| 51368/049  | Usb cable       | ---           | ---                 | 2016-11-14     |

Auxiliary elements used with the sample S/01:

| Control N° | Description | Model | Serial number | Reception date |
|------------|-------------|-------|---------------|----------------|
| 51368/052  | Laptop      | HP    | ---           | 2016-11-14     |
| 51368/053  | Mains cord  | ---   | ---           | 2016-11-14     |
| 51368/054  | USB cable   | ---   | ---           | 2016-11-23     |

## Test sample description

The test sample consists of a tabletop, installer code management tool. It is supplied with software for PCs and a USB communications cable.

## Identification of the client

JCM TECHNOLOGIES,S.A.  
C/ Morgades, 46 Bajos, 08500, Vic, Barcelona. SPAIN.

## Testing period

The performed test started on 2016-12-06 and finished on 2016-12-07 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:

|                          |                                     |
|--------------------------|-------------------------------------|
| <b>Temperature</b>       | Min. = 15 °C<br>Max. = 35 °C        |
| <b>Relative humidity</b> | Min. = 30 %<br>Max. = 75 %          |
| <b>Air pressure</b>      | Min. = 860 mbar<br>Max. = 1060 mbar |

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

|                          |                                     |
|--------------------------|-------------------------------------|
| <b>Temperature</b>       | Min. = 15 °C<br>Max. = 35 °C        |
| <b>Relative humidity</b> | Min. = 30 %<br>Max. = 75 %          |
| <b>Air pressure</b>      | Min. = 860 mbar<br>Max. = 1060 mbar |

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

|                          |                                     |
|--------------------------|-------------------------------------|
| <b>Temperature</b>       | Min. = 15 °C<br>Max. = 35 °C        |
| <b>Relative humidity</b> | Min. = 30 %<br>Max. = 60 %          |
| <b>Air pressure</b>      | Min. = 860 mbar<br>Max. = 1060 mbar |

## Modifications to the reference test report

It was introduced the following modifications in respect to the test report number 51368REM.003 related with the same samples, in the next clauses and sub-clauses:

By client requirements it was added some clarifications to the operation modes tested.

This modification test report cancels and replaces the test report 51368REM.003.

## Remarks and comments

The tests have been performed by the technical personnel: Alberto Parada & Fco. Javier Fuentes.

The total uncertainty of the measurement system for the measured conducted disturbance characteristics of EUT from 150 kHz to 30 MHz is  $I = \pm 3,9$  dB for quasi-peak measurements,  $I = \pm 3,2$  dB for average measurements ( $k = 2$ )

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 30 MHz to 1000 MHz is  $I = \pm 4,9$  dB for quasi-peak measurements,  $I = \pm 4,6$  dB for peak measurements ( $k = 2$ )

The total uncertainty of the measurement system for the measured radio disturbance characteristics of EUT from 1000 MHz to 26GHz is  $I = \pm 2,6$  dB for peaks and average measurements ( $k = 2$ )

## 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 |
| 2942                                   | EMI TEST Receiver | ROHDE & SCHWARZ | ESU40              | 2016-06-14       | 2017-10-09       |
| 4578                                   | Bilog Antenna     | ETS LINDGREN    | 3142E              | 2014-03-17       | 2017-03-17       |
| 4658                                   | Preamplifier      | SCHWARZBECK     | BBV9743            | 2016-04-28       | 2017-04-28       |
| 4612                                   | Horn Antenna      | SCHWARZBECK     | BBHA 9120 D        | 2013-12-29       | 2016-12-29       |
| 3783                                   | Preamplifier      | BONN ELEKTRONIK | BLMA 0118-3A       | 2016-05-03       | 2017-05-03       |
| 4656                                   | Horn Antenna      | SCHWARZBECK     | BBHA 9170          | 2014-03-28       | 2017-03-28       |
| 1975                                   | Preamplifier      | MITEQ           | JS4-12002600-30-5A | 2015-10-06       | 2017-10-06       |
| 4570                                   | Thermohigrometer  | HW GROUP        | HWg-STE            | 2016-04-28       | 2017-04-28       |
| 4567                                   | Thermohigrometer  | HW GROUP        | HWg-STE            | 2016-04-28       | 2017-04-28       |

## Appendix A – Test result

**APPENDIX A CONTENT**

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## 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.

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. IDLE-reception mode at 868MHz and transmitting data between the tested equipment and the auxiliary PC. Power supply: 5Vdc by USB port through a laptop (Power Supply: 115Vac.) |
| OM#02          | EUT ON. 868MHz TX ON and transmitting data between the tested equipment and the auxiliary PC. Power supply: 5Vdc by USB port through a laptop (Power Supply: 115Vac.)                  |

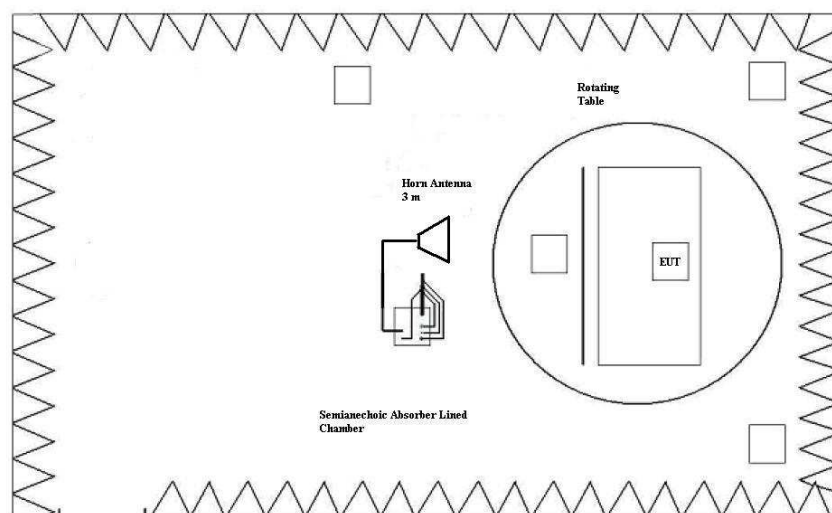
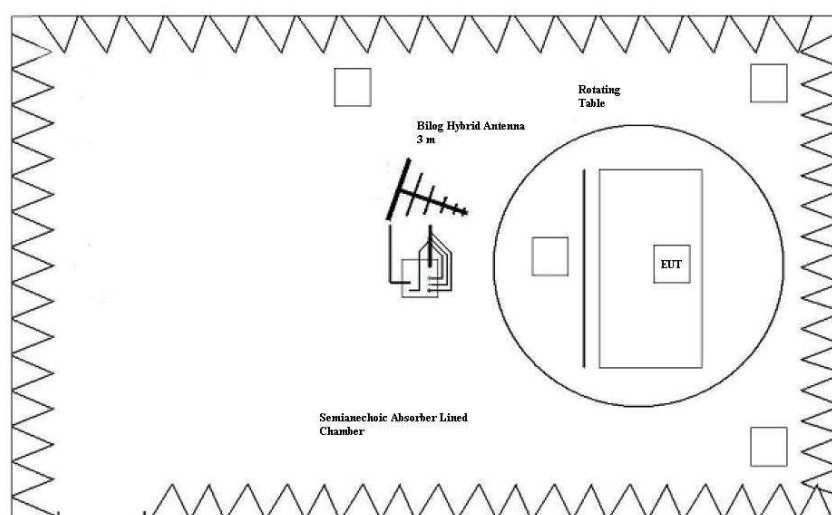
## RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE

|                |                   |                                                                                                                                               |
|----------------|-------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LIMITS:</b> | Product standard: | FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016) |
|                | Test standard:    | FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016) |

### 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, Subpart B (10-01-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016) 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 ( $\mu\text{V/m}$ ) | QP Limit for 3 m ( $\text{dB}\mu\text{V/m}$ ) |
|-----------------------|--------------------------------------|-----------------------------------------------|
| 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 $\text{dB}\mu\text{V/m}$       | 73.98 $\text{dB}\mu\text{V/m}$                |



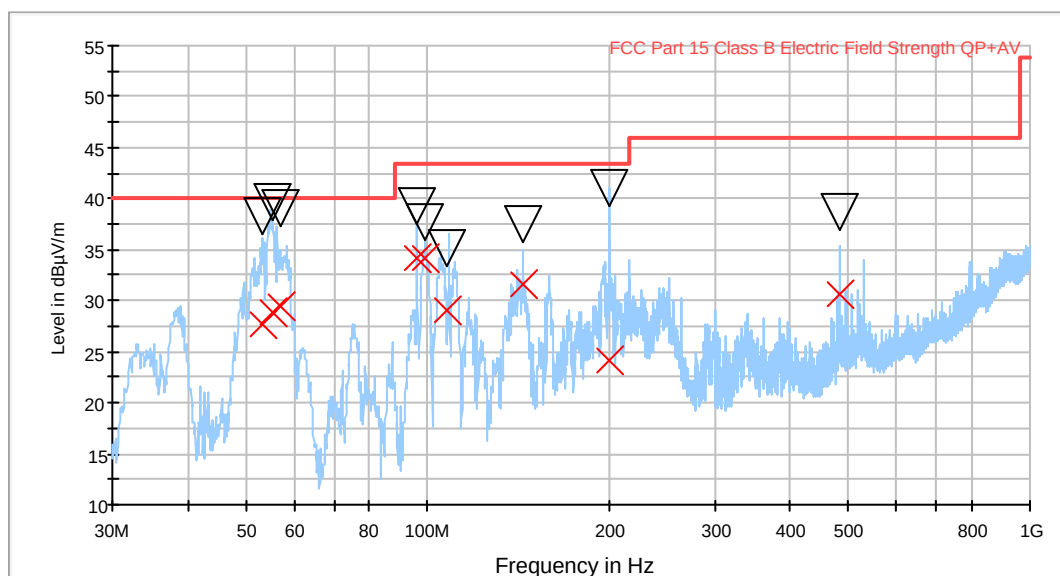
|                                |                                                                                                          |
|--------------------------------|----------------------------------------------------------------------------------------------------------|
| <b>TESTED SAMPLES:</b>         | S/01                                                                                                     |
| <b>TESTED OPERATION MODES:</b> | OM#01                                                                                                    |
| <b>TEST RESULTS:</b>           | CRmmnnRRPP: CR, Radiation Condition; mm: Sample number; nn: Operation mode; RR: Range; PP: Polarization. |

| CRmmnnRRPP   | Description                                     | Result |
|--------------|-------------------------------------------------|--------|
| CR0101LR     | Range: 30 MHz - 1000 MHz.                       | P      |
| CR0101HR1_PH | Range: 1 GHz - 18 GHz. Horizontal Polarization. | P      |
| CR0101HR1_PV | Range: 1 GHz - 18 GHz. Vertical Polarization.   | P      |

## Radiated Emission. CR0101LR

Project: 51368REM.003  
Company: JCM  
Sample: S/01  
Operation mode: OM#01  
Description: EUT ON. IDLE-reception mode at 868MHz. Power supply: 5Vdc by USB port through a laptop (Power Supply: 115Vac.)

## FCC class B



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

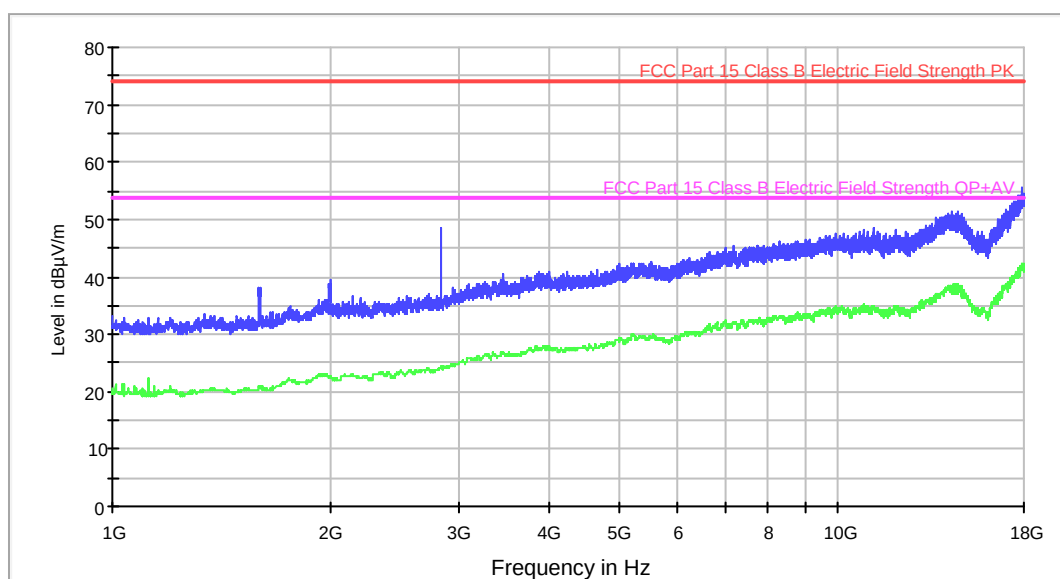
## Maximizations

| Frequency (MHz) | MaxPeak (dBµV/m) | QuasiPeak (dBµV/m) | Height (cm) | Polarization | Azimuth (deg) |
|-----------------|------------------|--------------------|-------------|--------------|---------------|
| 53.375150       | 38.3             | 27.7               | 121.0       | V            | 96.0          |
| 55.207415       | 39.6             | 28.9               | 192.0       | V            | 56.0          |
| 56.857916       | 39.0             | 29.4               | 110.0       | V            | 118.0         |
| 96.266934       | 39.3             | 34.2               | 190.0       | H            | -1.0          |
| 98.858918       | 37.7             | 34.2               | 170.0       | H            | 1.0           |
| 108.098597      | 35.2             | 29.0               | 244.0       | H            | 349.0         |
| 143.984970      | 37.4             | 31.6               | 149.0       | H            | 337.0         |
| 200.617836      | 41.0             | 24.1               | 220.0       | V            | -1.0          |
| 481.458918      | 38.6             | 30.6               | 163.0       | H            | 74.0          |

## Radiated Emission. CR0101HR1\_PH

Project: 51368REM.003  
Company: JCM  
Sample: S/01  
Operation mode: OM#01  
Description: EUT ON. IDLE-reception mode at 868MHz. Power supply: 5Vdc by USB port through a laptop (Power Supply: 115Vac.) Horizontal polarization.

## FCC 1-18GHz class B



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

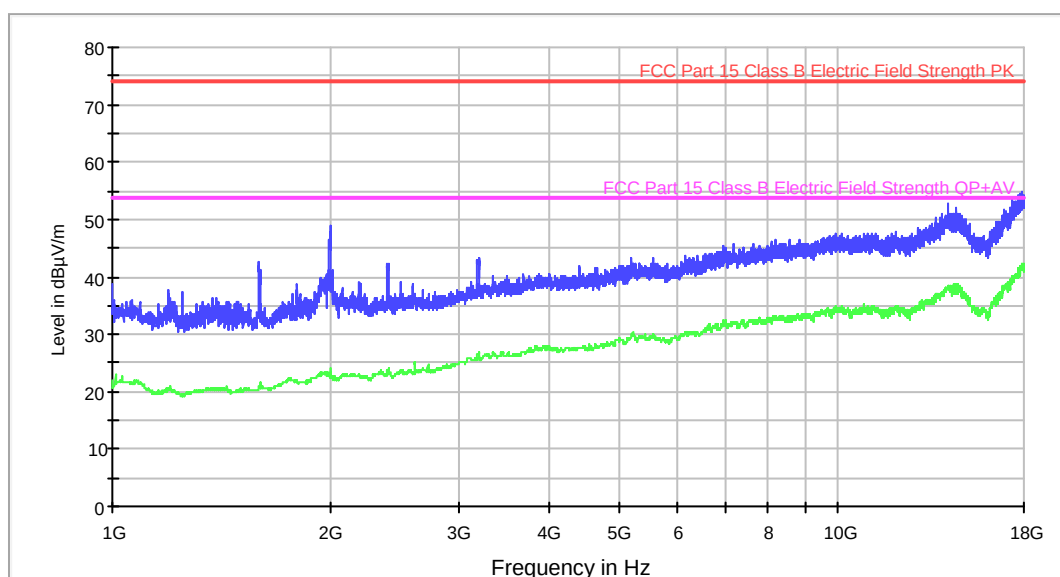
## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBμV/m) | Average-ClearWrite (dBμV/m) |
|-----------------|-----------------------------|-----------------------------|
| 1595.000000     | 38.0                        | 20.6                        |
| 1995.000000     | 39.4                        | 22.7                        |
| 2841.000000     | 48.6                        | 24.3                        |
| 6622.000000     | 44.4                        | 31.6                        |
| 10800.000000    | 48.1                        | 35.1                        |
| 17878.000000    | 55.4                        | 41.4                        |

## Radiated Emission. CR0101HR1\_PV

Project: 51368REM.003  
Company: JCM  
Sample: S/01  
Operation mode: OM#01  
Description: EUT ON. IDLE-reception mode at 868MHz. Power supply: 5Vdc by USB port through a laptop (Power Supply: 115Vac.) Vertical polarization.

## FCC 1-18GHz class B



— 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) |
|-----------------|-----------------------------|-----------------------------|
| 1593.000000     | 42.5                        | 20.8                        |
| 1997.000000     | 48.8                        | 23.3                        |
| 3194.000000     | 43.2                        | 26.8                        |
| 6799.000000     | 44.4                        | 31.9                        |
| 10084.000000    | 47.5                        | 34.4                        |
| 17884.000000    | 54.8                        | 41.7                        |

## CONTINUOUS CONDUCTED EMISSION

|                |                    |                                                                                                                                               |
|----------------|--------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>LIMITS:</b> | Product standard : | FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016) |
|                | Test standard :    | FCC CFR 47, Part 15, Subpart B (10-1-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016) |

### 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 (10-01-15 Edition), Secs. 15.107, 15.109 and Subpart C (10-1-15 Edition) Secs. 15.207 & ICES-003 Issue 6 (2016), in the frequency range 0,15 to 30 MHz, for Class B equipment was:

| Frequency range<br>(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      |

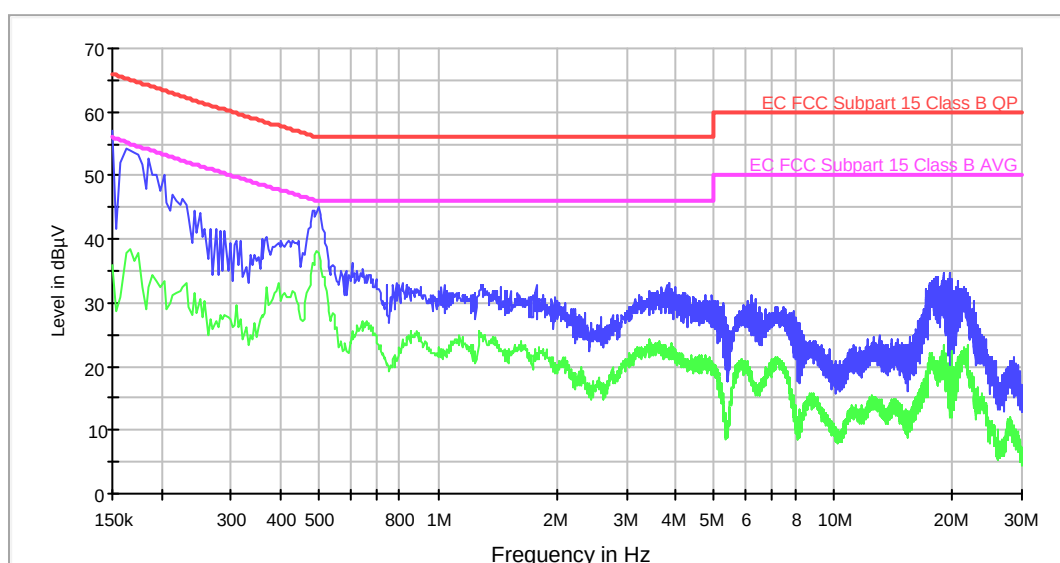
|                                |                                                                                    |
|--------------------------------|------------------------------------------------------------------------------------|
| <b>TESTED SAMPLES:</b>         | S/01                     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

| CCmmnnhh | Description         | Result |
|----------|---------------------|--------|
| CC01020N | Neutral wire noise. | P      |
| CC0102L1 | Phase wire noise.   | P      |

## Conducted Emission. CC01020N

Project: 51368REM.003  
Company: JCM  
Sample: S/01  
Operation mode: OM#02  
Description: EUT ON. 868MHz TX ON and transmitting data between the tested equipment and the auxiliary PC. Power supply: 5Vdc by USB port through a laptop (Power Supply: 115Vac.) 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

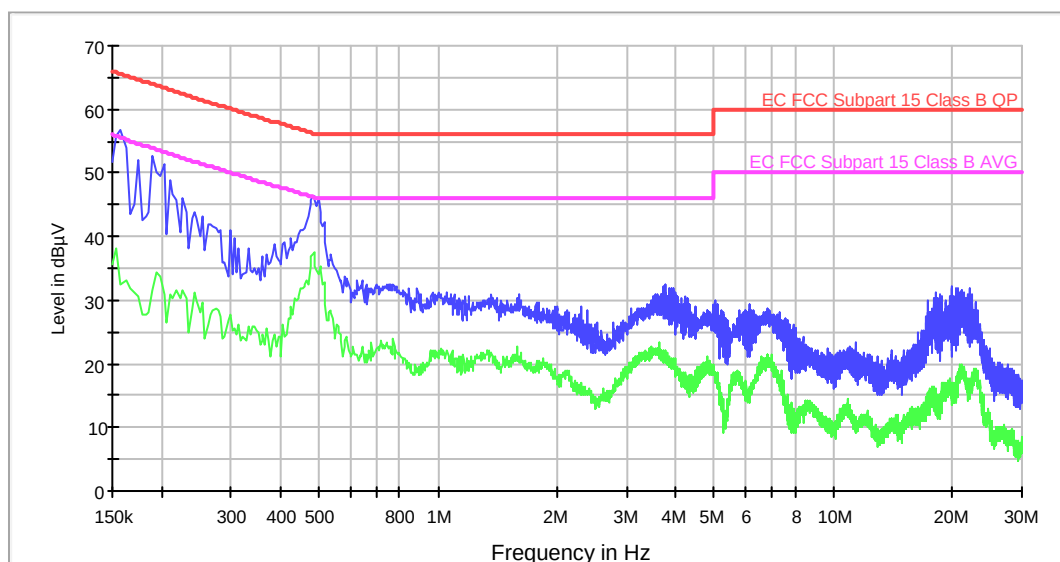
## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|-----------------|---------------------------|---------------------------|
| 0.150000        | 57.0                      | 35.8                      |
| 0.258000        | 41.7                      | 30.2                      |
| 0.498000        | 45.1                      | 38.0                      |
| 0.810000        | 33.1                      | 24.3                      |
| 1.302000        | 32.9                      | 24.1                      |
| 3.590000        | 31.8                      | 22.6                      |
| 3.850000        | 33.0                      | 22.8                      |
| 6.230000        | 31.2                      | 18.8                      |
| 17.542000       | 33.0                      | 20.3                      |
| 19.634000       | 34.7                      | 18.9                      |

## Conducted Emission. CC0102L1

Project: 51368REM.003  
Company: JCM  
Sample: S/01  
Operation mode: OM#02  
Description: EUT ON. 868MHz TX ON and transmitting data between the tested equipment and the auxiliary PC. Power supply: 5Vdc by USB port through a laptop (Power Supply: 115Vac.) Phase Wire Noise

## EMI EC FCC Subpart 15 Class B CC



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

## Subrange Maxima

| Frequency (MHz) | MaxPeak-ClearWrite (dBµV) | Average-ClearWrite (dBµV) |
|-----------------|---------------------------|---------------------------|
| 0.158000        | 56.6                      | 32.4                      |
| 0.266000        | 41.9                      | 27.6                      |
| 0.482000        | 46.5                      | 37.3                      |
| 0.746000        | 32.5                      | 23.2                      |
| 1.598000        | 31.0                      | 21.2                      |
| 3.554000        | 31.0                      | 21.8                      |
| 3.742000        | 32.5                      | 21.6                      |
| 6.166000        | 29.2                      | 16.0                      |
| 17.378000       | 29.8                      | 14.9                      |
| 19.838000       | 32.3                      | 16.3                      |