AT4 wireless, S.A.
Parque Tecnológico de Andalucía,
c/ Severo Ochoa nº 2
29590 Campanillas/ Málaga/ España
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MÁLAGA, C.I.F. A29 507 456
Registro Mercantil de Málaga,Tomo 1169,
Libro 82, Folio 133, Hoja MA3729

ENSAYOS Nº 51/LE203

TEST REPORT

REFERENCE STANDARD:

FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-12Edition)

FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B:

Radio frequency devices Subpart B. Unintentional radiators

NIE ..... :	40299REM.001
Approved by (name / position & signature) ..... :	Rafael López EMC Lab Manager
Elaboration date ..... :	2013-12-03

Firmado digitalmente por Rafael López Martín
Fecha: 2013.12.04 10:57:22 +01'00'

Identification of item tested ..... :	JOHNSON CONTROLS INC
Trademark ..... :	Johnson Controls Interiors
Model and/or type reference ..... :	CB2-BLUE15M
Other identification of the product ..... :	S/N: 2395897J000001E01 HW Version: 1 SW Version: 01.01.007
Features ..... :	Bluetooth v2.1+EDR
Description ..... :	Automotive Bluetooth Handsfree Module

Applicant ..... :	JOHNSON CONTROLS INC.
Address ..... :	915 East 32nd St. Holland MI 49423, USA
CIF/NIF/Passport ..... :	Not provided data
Contact person ..... :	Scott Keller
Telephone / Fax ..... :	+1 616 394 1568
e-mail ..... :	Scott.R.Keller@jci.com

Test samples supplier ..... :	JOHNSON CONTROLS INC.
Address ..... :	915 East 32nd St. Holland MI 49423, USA
CIF/NIF/Passport ..... :	Not provided data
Contact person ..... :	Scott Keller
Telephone / Fax ..... :	+1 616 394 1568
e-mail ..... :	Scott.R.Keller@jci.com
Manufacturer ..... :	JOHNSON CONTROLS INC.
Address ..... :	915 East 32nd St. Holland MI 49423, USA
CIF/NIF/Passport ..... :	Not provided data
Contact person ..... :	Scott Keller
Telephone / Fax ..... :	+1 616 394 1568
e-mail ..... :	Scott.R.Keller@jci.com
Test method requested ..... :	
Standard ..... :	FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-12Edition).
Test procedure ..... :	PEEM103
Report template No ..... :	FDT08_14

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Competences and guarantees

This certificate of conformity was issued in accordance with the decision Nº 3/2000 of the Joint Committee established under the Agreement on Mutual Recognition between the European Community and the United States of America. By this decision, AT4 wireless can act as Conformity Assessment Body (CAB) on Electromagnetic Compatibility. This Certificate applies to the samples listed at technical reports.

This laboratory is designed by the Federal Communications Commission (ES0004)

AT4 wireless is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, AT4 wireless has a calibration and maintenance programme 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.

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 following AT4 wireless's internal documents:

1. PODT000: Procedure for the measure uncertainty calculation.

Usage of samples

Samples under test have been selected by: The client.

Sample S/01 is composed of the following elements:

Control Nº	Description	Model	Serial Nº	Date of reception
40299B/09	Automotive Bluetooth Handsfree Module	CB2-BLUE15M	2395897J000001E01	2013-10-31

Auxiliary elements used with the sample S/01:

Control Nº	Description	Model	Serial Nº	Date of reception
40299B/25	Interface board	---	---	2013-10-31
40299B/26	Connection cable	---	---	2013-10-31

Testing period

The performed test started on 2013-11-17 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 ºC Max. = 35 ºC
Relative humidity	Min. = 20 % Max. = 80 %
Shielding effectiveness	> 100 dB
Electric insulation	> 10 kΩ
Reference resistance to earth	< 0,5 Ω

In the semianechoic chamber (21 meters x 11 meters x 8 meters), the following limits were not exceeded during the test.

Temperature	Min. = 15 ºC Max. = 30 ºC
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	< 0,5 Ω
Normal site attenuation (NSA)	< ±4 dB at 10 m distance between item under test and receiver antenna, (30 MHz to 1000 MHz)
Field homogeneity	More than 75% of illuminated surface is between 0 and 6 dB (26 MHz to 1000 MHz).

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

Temperature	Min. = 15 ºC Max. = 30 ºC
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	< 0,5 Ω

Summary

Considering the results of the performed tests according to standard **FCC Rules and Regulations 47 CFR Chapter I Part 15 Subpart B (10-01-12 Edition),** the items under test are **IN COMPLIANCE** with the requested specifications specified in the standard.

NOTE: The results presented in this Test Report apply only to the particular item under test established in page 1 of this document, as presented for test on the date(s) shown in section, "USAGE OF SAMPLES, TESTING PERIOD AND ENVIRONMENTAL CONDITIONS".

Remarks and comments

The tests have been realized by the technical personnel: Mario Alberto Ureña.

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.

*See the declaration of SW and HW version differences provided by the client on the next page.

Testing veredicts

Not applicable .....: NA

Pass.....: P

Fail .....: F

Not measured.....: NM

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
2942	EMI Receptor	ROHDE & SCHWARZ	ESU 40	2012-03-05	2014-03-05
245	Horn Antenna	HEWLETT PACKARD	11966E	2011-03-18	2014-03-18
246	Horn Antenna	HEWLETT PACKARD	11966E	2013-03-06	2015-03-06
1658	RF Amplifier	SCHAFFNER	CPA9231A	2013-06-17	2015-06-17
3541	Bilog Hybrid antenna	SUNOL SCIENCES CORPORATION	JB6	2012-06-01	2015-06-01
3556	Thermohygrograph	T&D	TR-72W	2012-11-30	2013-11-30
3822	Horn Antenna	ROHDE & SCHWARZ	HF907	2012-08-29	2015-08-29

Declaration of SW and/or HW Versions Differences

Johnson Controls Inc., with principal offices located at **5757 Green Bay Ave, Milwaukee WI, 53209, USA** hereinafter the 'Declarer' has executed the Bluetooth **#Associates/Adopters#** Agreement,

Declarer has developed a design which incorporates parts of the Interface as defined in the Applicable Agreement, as further defined by:

Design Name: **BLUETOOTH HANDSFREE MODULE "MY15 HFT"**

Design Model: **CB2-BLUE15M**

Hardware Version: **01**

Software Version: **01.01.000**

hereinafter the 'Design'

The Declarer wishes to Certify that the following SW/HW versions used in the Design during the process of testing have the following differences between them and in relation to final Software Version declared above:

First Change:

Old SW version: **01.01.000**
Old HW version: **01**
New SW version: **01.01.007**
New HW version: **01 (same hardware)**
Differences: **Max bluetooth transmit power limited to 4dB max (not including antenna gain) in order to pass Bluetooth core RF test under "Class 2" specification. No other changes to Bluetooth characteristics.**

Name: **Scott Keller**
Title: **Senior Product Engineer**
Company: **Johnson Controls, Inc.**

Phone: **+1 616 394 1568**
E-mail: **Scott.R.Keller@jci.com**

Scott Keller
Signature

Date: **2013-11-27**

APPENDIX A

Test Result

APPENDIX A CONTENT:

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. Equipment in Stand-By mode. Bluetooth transmission OFF. Power supply: 13.2Vdc.

RADIATED EMISSION. ELECTROMAGNETIC FIELD MEASURE.

LIMITS:	Product standard:	FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B
	Test standard:	FCC RULES AND REGULATIONS 47 CFR PART 15, SUBPART B

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 & IC RSS-Gen Issue 2, June 2007 in the frequency range 30 MHz to 25 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

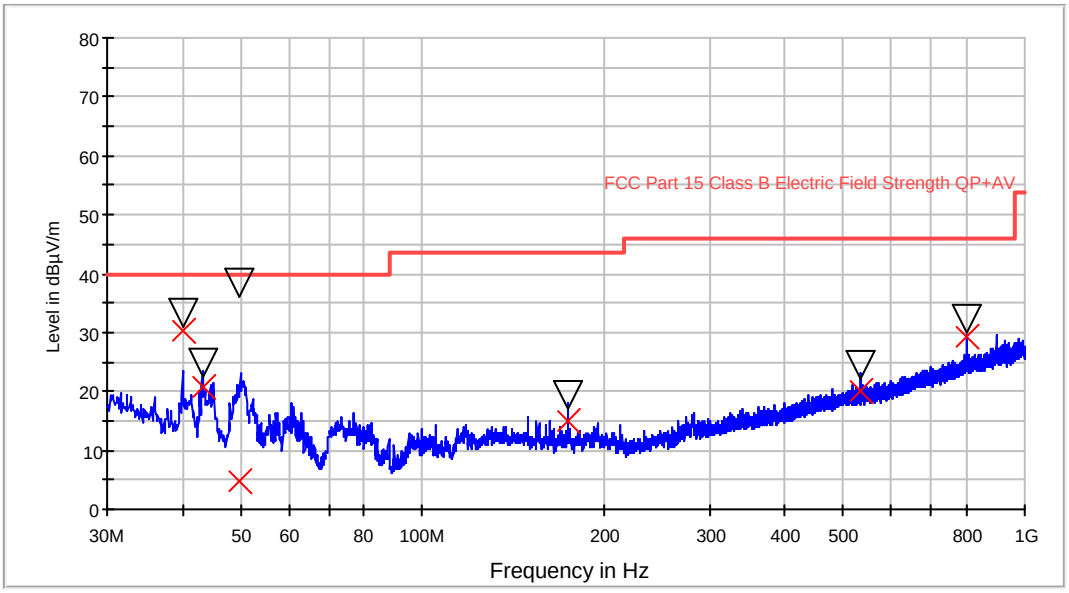
TESTED SAMPLES:	S/01
TESTED OPERATION MODES:	OM#01
TEST RESULTS :	**CR**mmnn: CR, Radiation Condition; mm: Sample number; nn: Operation mode, xx: Polarisation.

CRmmnn	**Description**	**Result**
CR0101	EUT ON. Equipment in Stand-By mode. Power supply: 13.2Vdc. Range 30MHz-1 GHz.	P
CR0101_RA1_PH	EUT ON. Equipment in Stand-By mode. Power supply: 13.2Vdc. Range 1-18 GHz. Horizontal Pol.	P
CR0101_RA1_PV	EUT ON. Equipment in Stand-By mode. Power supply: 13.2Vdc. Range 1-18 GHz. Vertical Pol.	P
CR0101_RA2_PH	EUT ON. Equipment in Stand-By mode. Power supply: 13.2Vdc. Range 18-26 GHz. Horizontal Pol.	P
CR0101_RA2_PV	EUT ON. Equipment in Stand-By mode. Power supply: 13.2Vdc. Range 18-26 GHz. Vertical Pol.	P

Radiated Emission: CR0101 (30MHz to 1GHz)

Project:	40299REM.001
Company:	JCI
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand-By mode. Power supply: 13.2 Vdc.

FCC class B Bilog Hybrid



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

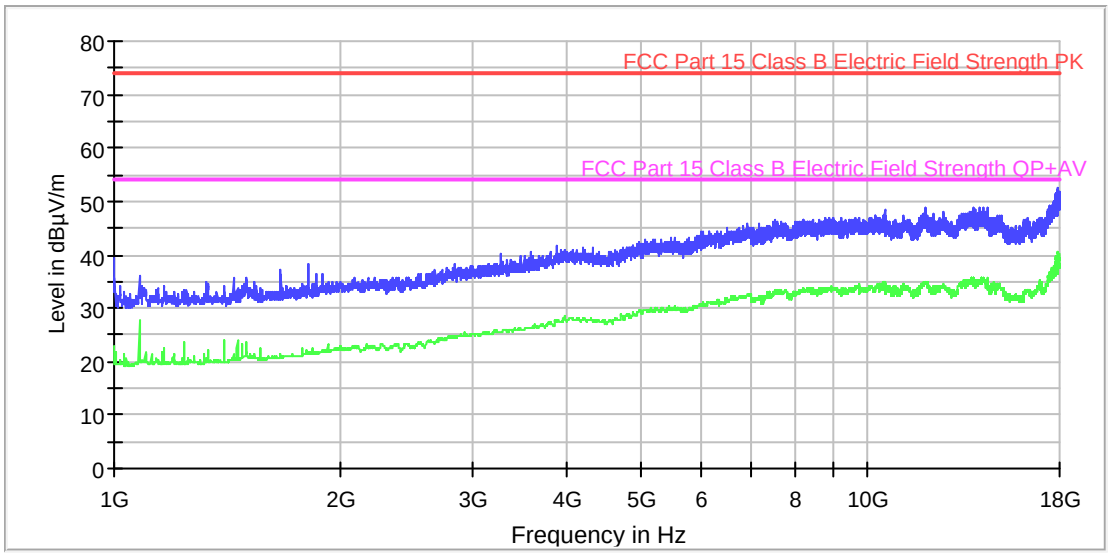
Maximizations

Frequency (MHz)	MaxPeak (dBµV/m)	QuasiPeak (dBµV/m)	Height (cm)	Polarization	Azimuth (deg)
39.990982	33.3	30.3	98.0	V	217.0
43.174950	24.8	20.8	98.0	V	121.0
49.632265	38.4	4.7	121.0	V	80.0
174.982966	19.5	15.0	140.0	H	86.0
533.282966	24.4	20.2	172.0	H	96.0
799.988978	32.4	29.4	145.0	H	64.0

Radiated Emission: CR0101_RA1_PH (1 – 18 GHz)

Project:	40299REM.001
Company:	JCI
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand-By mode. Power supply: 13.2 Vdc. Horizontal Polarization.

FCC 1-18GHz class B ESIB Bocina0245 AMP3783



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

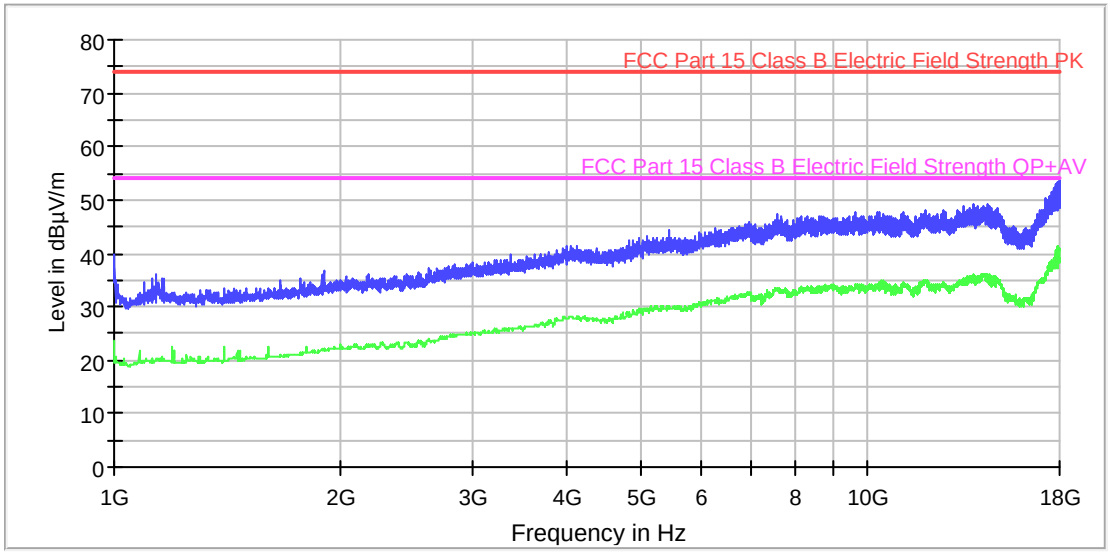
Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
1000.000000	39.3	23.0
1665.000000	37.3	21.2
1811.000000	38.3	21.5
3140.000000	38.4	25.3
3865.000000	41.7	27.8
5492.000000	43.2	29.8
7539.000000	46.6	33.5
9029.000000	47.1	33.8
11927.000000	48.7	34.9
17921.000000	52.5	40.3

Radiated Emission: CR0101_RA1_PV (1 – 18 GHz)

Project:	40299REM.001
Company:	JCI
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand-By mode. Power supply: 13.2 Vdc. Vertical Polarization.

FCC 1-18GHz class B ESIB Bocina0245 AMP3783



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

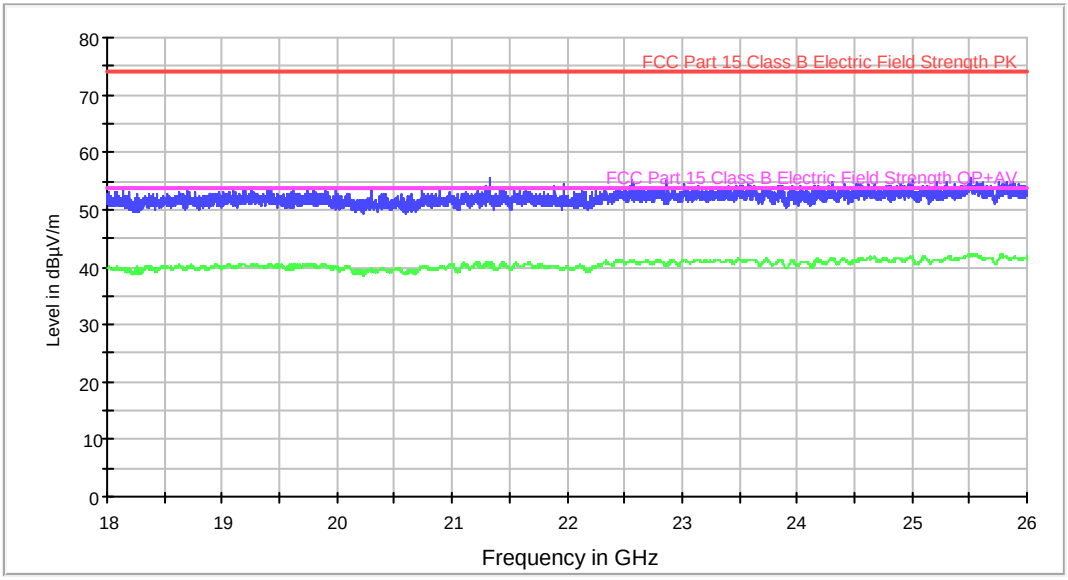
Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
1002.000000	39.7	19.7
1765.000000	35.2	21.3
1897.000000	37.0	22.1
3146.000000	38.5	25.3
4036.000000	41.2	28.2
5461.000000	44.1	29.9
7539.000000	46.1	33.4
9635.000000	47.7	33.8
13413.000000	48.7	34.9
17992.000000	53.7	40.4

Radiated Emission: CR0101_RA2_PH (18 – 26 GHz)

Project:	40299REM.001
Company:	JCI
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand-By mode. Power supply: 13.2 Vdc. Horizontal Polarization.

FCC 18-26GHz class B ESIB Horn1920 AMP1975



Peak Scan
FCC Part 15 Class B Electric Field Strength PK

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

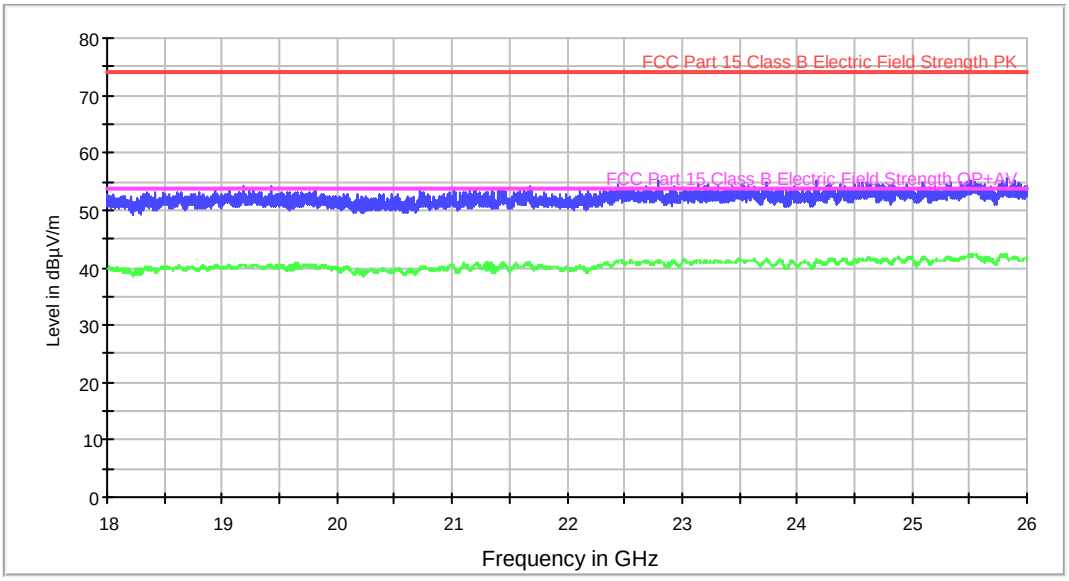
Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
18147.000000	53.3	39.9
18699.000000	53.7	39.9
19401.000000	53.8	40.3
19894.000000	53.7	40.4
20894.000000	53.5	40.0
21328.000000	55.6	40.8
21974.000000	54.4	39.8
22570.000000	55.3	41.1
23025.000000	54.6	41.2
24303.000000	54.8	41.5
25004.000000	55.3	41.6
25512.000000	55.4	42.1

Radiated Emission: CR0101_RA2_PV (18 – 26 GHz)

Project:	40299REM.001
Company:	JCI
Sample:	S/01
Operation mode:	OM#01
Description:	EUT ON. Stand-By mode. Power supply: 13.2 Vdc. Vertical Polarization.

FCC 18-26GHz class B ESIB Horn1920 AMP1975



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

Max PK-AVG

Frequency (MHz)	MaxPeak-ClearWrite (dBµV/m)	Average-ClearWrite (dBµV/m)
18350.000000	53.1	40.1
18938.000000	53.6	40.4
19423.000000	54.0	40.4
19809.000000	53.6	40.4
20726.000000	53.3	40.1
21147.000000	54.0	39.8
21679.000000	54.3	40.6
22798.000000	55.1	41.1
23141.000000	54.4	41.2
24170.000000	55.1	41.2
24567.000000	55.0	41.4
25821.000000	55.4	42.1

APPENDIX B: Photographs


2395897J000001E01
HONDA P/N: 39770-TZ3A-Y010-M1
JCI ASM NUMBER: 2395897 REV. 01 JOHNSON CONTROLS INTERIORS
S/W REV: 00.00.004
1909
E9 XXX-XX.XXXX
TRA
REGISTERED No:
DEALER No:
DA0038312/10
ex
XXXXXX
CONFIG. DS
BLUETOOTH ADDRESS: 0C:D9:C1:1C:11:7A
BLUETOOTH QD ID TBD
14/AUG/2013
DA NO 00125684
HONDA