JQA File No.: 400-190080-3
Issue Date : October 9, 2019

TEST REPORT

Applicant	:	JVC KENWOOD Corporation
Address	:	2967-3, Ishikawa-machi, Hachioji-shi. Tokyo, 192-8525, Japan
Products	:	Digital Media Receiver
Model No.	:	KD-X472DBT
Serial No.	:	134X0053
Test Standard	:	EN62479:2010
Test Results	:	**Passed**
Date of Test	:	September 27, 2019

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VLAC Lab Accreditation VLAC-001-5

- The test results in this test report was made by using the measuring instruments which are traceable to national standards of measurement in accordance with ISO/IEC 17025.
- The applicable standard, testing condition and testing method which were used for the tests are based on the request of the applicant.
- The test results presented in this report relate only to the offered test sample.
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Definitions for Abbreviation and Symbols Used In This Test Report

"EUT" means Equipment Under the Test.
"AE" means Associated Equipment.
"N/A" means that Not Applicable.
"N/T" means that Not Tested.

☑ - indicates that the listed condition, standard or equipment is applicable for this report.
☐ - indicates that the listed condition, standard or equipment is not applicable for this report.

1 Description of the Equipment Under Test

1	Manufacturer	:	JVC KENWOOD Corporation 2967-3, Ishikawa-machi, Hachioji-shi. Tokyo, 192-8525, Japan
2	Products	:	Digital Media Receiver
3	Model No.	:	KD-X472DBT
4	Serial No.	:	134X0053
5	Product Type	:	Pre-Production
6	Date of Manufacture	:	August, 2019
7	Power Rating	:	12.0 VDC (Nominal) 10.5-16.0 VDC (Operating voltage range)
8	Grounding	:	None
9	Modulation Type	:	FHSS Bluetooth 4.2 GFSK, π/4DQPSK and 8DPSK
10	Operating Frequency Range	:	2400.0 MHz –2483.5MHz
11	Highest Frequency Used/Generated	:	2483.5 MHz (for Transciever) 8.2 GHz (for Tuner IC)
12	Operating Temperature Range	:	-30°C to 70°C
13	RF Output Power	:	1.36 dBm e.i.r.p (Measured Value)
14	Antenna Type	:	PCB antenna (Integral)
15	Antenna Gain	:	0.25 dBi
16	Exposure tire	:	General public
17	Region of body	:	Limbs
18	Received Date of EUT	:	September 26, 2019

2 Summary of Test Results

Applied Standard : EN62479:2010
Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10MHz to 300GHz)

The EUT described in clause 1 was tested according to the applied standard shown above.
Details of the test configuration is shown in clause 6.
The conclusion for the test items of which are required by the applied standard is indicated under the test result.

☑ - The test result was passed for the test requirements of the applied standard.

☐ - The test result was failed for the test requirements of the applied standard.

☐ - The test result was not judged the test requirements of the applied standard.

In the approval of test results,
- Determining compliance with the limits in this report was based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.
- No deviations were employed from the applied standard.
- No modifications were conducted by JQA to achieve compliance to the limitations.

Reviewed by:

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Tested by:

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3 Test Procedure

EN62479:2010

Assessment of the compliance of low power electronic and electrical equipment with the basic restrictions related to human exposure to electromagnetic fields (10MHz to 300GHz)

ETSI EN 300 328 V2.1.1 (2016-11)

Wideband transmission systems;
Data transmission equipment operating in the 2,4 GHz ISM band and using wide band modulation techniques;
Harmonised Standard covering the essential requirements of article 3.2 of Directive 2014/53/EU

4 Test Location

Japan Quality Assurance Organization
SAFETY & EMC CENTER
Testing Dept.
EMC Testing Div.
4-4-4, Minamiosawa, Hachioji-shi, Tokyo 192-0364, Japan

5 Recognition of Test Laboratory

Japan Quality Assurance Organization, Safety & EMC Center Testing Dept. EMC Testing Div. is accredited under ISO/IEC 17025 by following accreditation bodies and the test facility of Testing Division is registered by the following bodies .

VLAC Code : VLAC-001-5 (Effective through : March 30, 2020)
VCCI Registration Number : A-0001 (Effective through : March 30, 2020)
FCC Registration Number : 349652 (Effective through : March 30, 2020)

Accredited as conformity assessment body for Japan electrical appliances and material law by METI. (Effective through : February 22, 2022)

6 Description of Test Setup

6.1 Test Configuration

The EUT consists of:

Sign	Item	Manufacturer	Model No.	Serial No.
A	Digital Media Receiver	JVC KENWOOD Corporation	KD-X472DBT	134X0053

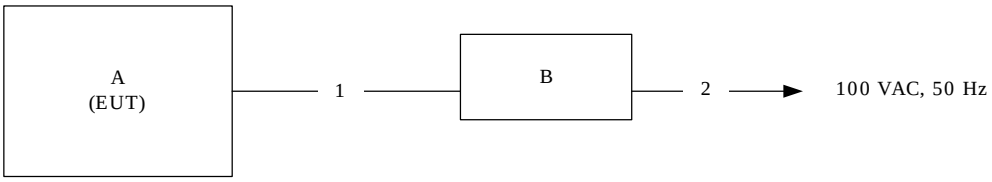
The AE used for testing:

Sign	Item	Manufacturer	Model No.	Serial No.
B	DC Power Supply	Kikusui Electronics Co., Ltd.	PAB 18-2.5DU	30061305

Type of Cable:

No.	Description	Identification (Manu. Etc.)	Connector Shielded	Cable Shielded	Ferrite Core	Length (m)
1	DC Power Cable	-	No	No	No	1.6
2	AC Power Cable	-	No	No	No	2.0

6.2 Test Arrangement (Drawings)



6.3 Operating Condition

Test Voltage : 12.0VDC

Operation Mode :
The EUT is set with the test mode, the specification of the test mode is as followings.
(1) Tx Mode (0ch : 2402MHz)
(2) Tx Mode (39ch : 2441MHz)
(3) Tx Mode (78ch : 2480MHz)
(4) Hopping Mode
(5) Rx Mode

Used application to controlled: The test mode is instructed by the applicant.

Unless otherwise stated this test report, the worst case testing settings for each mode is determined as follows, it is based on preliminary tests .(This was confirmed through separated measurement.)
All final tests in Tx mode were made at GFSK DH5.

EUT with temporary antenna port was used in conducted measurement.

7 Test Requirements

7.1 Maximum transmit power (Conducted Emission)

For the requirements, ☑ - Applicable [☑ - Tested. ☐ - Not tested by applicant request.]
☐ - Not Applicable

7.1.1 Test Results

For the standard, ☑ **- Passed** ☐ **- Failed** ☐ **- Not judged**

Min Limit Margin 14.66 dB

Uncertainty of measurement results +/- 0.7 dB(2σ)

Remarks : _____

7.1.2 Test Instruments

Type	Model	Manufacturer	ID No.	Last Cal.	Interval
Environmental Test Chamber	PFL-3K	Espec	-	N/A	N/A
USB Power Sensor	U2063XA	Keysight	PM02	2018/12	1 Year
RF Cable	MWX322	Junkosha	CS11	2018/12	1 Year
DC Power Supply	PAB 18-2.5DU	KIKUSUI	-	N/A	N/A
Digital Multi-meter	VOAC7413	Iwatsu Electric	MM01	2019/3	1 Year

7.1.3 Test Method and Test Setup (Diagrammatic illustration)

Choose the compliance route, as assessment of electromagnetic fields.

☐ A:
Typical usage, installation and the physical characteristics of equipment make it inherently compliant with the applicable EMF exposure levels such as those listed in the bibliography. This low-power equipment includes unintentional (or non-intentional) radiators, for example incandescent light bulbs and audio/visual (A/V) equipment, information technology equipment (ITE) and multimedia equipment (MME) that does not contain radio transmitters.

☐ B:
The input power level to electrical or electronic components that are capable of radiating electromagnetic energy in the relevant frequency range is so low that the available antenna power and/or the average total radiated power cannot exceed the low-power exclusion level defined in following.

☐ C:
The available antenna power and/or the average total radiated power are limited by product standards for transmitters to levels below the low-power exclusion level defined in following.

☑ D:
Measurements or calculations show that the available antenna power and/or the average total radiated power are below the low-power exclusion level defined in following.

Low-power exclusion level (Pmax)
Values of Pmax are derived from EMF exposure limits listed in Council Recommendation 1999/519/EC.
* The Council Recommendation 1999/519/EC is based on the ICNIRP guidelines with some additional restrictions.

Low-power electronic and electrical equipment is deemed to comply with the provisions of this standard if it can be demonstrated using routes B, C or D that the available antenna power and/or the average total radiated power is less than or equal to the applicable Pmax.

7.1.4 Test Data

Calculation of the exposure level
(These power measurement refer to JQA Test report (400-190080-1 for EN 300 328 v.2.1.1))

Date : September 27 ,2019
Temp. : 22 ℃
Humi. : 48 %

Mode of EUT : Tx (Hopping)
Test Port : Temporary antenna connector
Data Packet : DH5

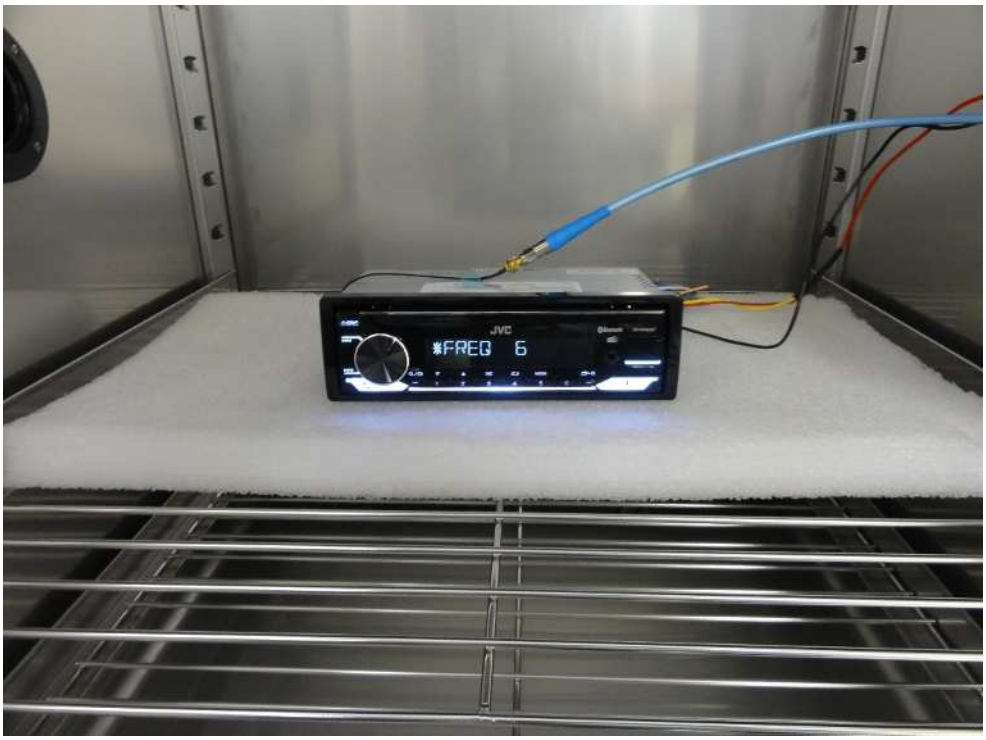
Temperature (℃)	Supply Voltage (VDC)	Correction Factor (dB)	Antenna Gain (dBi)	Meter Reading (dBm)	Power (dBm)	Limit (dBm)	Margin (dB)
-30.0	12.0	1.57	0.25	-1.15	0.67	20.00	19.33
30.0	12.0	1.57	0.25	-0.46	1.36	20.00	18.64
70.0	12.0	1.57	0.25	-0.97	0.85	20.00	19.15

Note : 1) The measurement was carried out with EUT with temporary antenna port.
2) The manufacturer defines the range of power supply voltage.
3) The correction facter containes the cable loss and attenuator loss.
4) The antenna gain value provided by applicant.
5) A sample calculation was made at (-30.0 ℃, 12.0 (VDC)).
CF + AG + MR = 1.57 + 0.25 + (-1.15) = 0.67 (dBm)
CF : Correction Factor AG : Antenna Gain
MR : Meter Reading

Low Power Exclusion Level (Pmax) is
4W/kg(SAR Limit) * 10g(Averaging mass) = 40mW = 16.02dBm

Low-power Exclusion Level (Pmax)(dBm)	Maximum Transmit Power (dBm)	Margin (dB)	Result
16.02	1.36	14.66	Passed

7.1.5 Test Setup (photograph)



Appendix A: Similar Models

The EUT has the following similar models.
The similar model details are shown as follow table;

Model	Brand	Difference
KD-X472DBT	JVC	Base
KD-X272DBT	JVC	Key coloe RED, None iPod/iPhone I/F, 1-Preout
KD-X470BHS	JVC	None LW,Non DAB, Destination
KMR-M506DAB	KENWOOD	2-Preout
KMM-BT506DAB	KENWOOD	2-Preout
KMM-X704	KENWOOD	None LW,Non DAB, Destination
KMM-BT728HD	KENWOOD	None LW,Non DAB, Destination