JQA File No. : 400-210069-14(S)
Issue Date : September 13, 2021

TEST REPORT

Applicant	:	JVCKENWOOD Corporation
Address	:	2967-3 Ishikawa-machi, Hachioji-shi, Tokyo 192-8525 Japan
Products	:	DIGITAL MEDIA RECEIVER
Model No.	:	KD-X472DBT
Serial No.	:	134X0055
Test Standard	:	ETSI EN 303 345-1 V1.1.1 (2019-06) ETSI EN 303 345-2 V1.1.1 (2020-02) ETSI EN 303 345-3 V1.1.1 (2021-06) ETSI EN 303 345-4 V1.1.1 (2021-06)
Test Results	:	**Passed**
Date of Receipt	:	September 26, 2019
Date of Test	:	October 2, 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.
- The contents for the equipment under test (EUT) such as identification information in clause 2 and 6 of this report were provided by the applicant. JQA is not responsible for the test results affected by the incorrect information.
- The contents of this test report cannot be used for the purposes, such as advertisement for consumers.
- This test report shall not be reproduced except in full without the written approval of JQA.
- VLAC does not approve, certify or warrant the product by this test report.

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REVISION HISTORY

File No.	Contents	Issue Date
400-210069-14	Initial Issue	August 18, 2021
400-210069-14(R)	Added radiated uncertainty	August 19, 2021
400-210069-14(S)	Correction of instrument calibration date	September 13, 2021

1 Summary of Test Results

Applied Standard : ETSI EN 303 345-1 V1.1.1 (2019-06)
Broadcast Sound Receivers;Part 1: Generic requirements and measuring methods
ETSI EN 303 345-2 V1.1.1 (2020-02)
Broadcast Sound Receivers;Part 2: AM broadcast sound service;
Harmonised Standard for access to radio spectrum
ETSI EN 303 345-3 V1.1.1 (2021-06)
Broadcast Sound Receivers;Part 3: FM broadcast sound service;
Harmonised Standard for access to radio spectrum
ETSI EN 303 345-4 V1.1.1 (2021-06)
Broadcast Sound Receivers;Part 4: DAB broadcast sound service;
Harmonised Standard for access to radio spectrum

Item	Standard (Procedure)	Result	Note
Sensitivity	ETSI EN 303 345-1 V1.1.1	PASS	-
Adjacent channel selectivity and blocking	ETSI EN 303 345-1 V1.1.1	PASS	-
Unwanted emissions in the sprious domain	EN55032:2015	Not Tested	1
1) Not tested by applicant request.			

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.
- Instrumentation uncertainty (MIU).
- The expanded MIUs for the CISPR measurement methods determined by JQA are less than U cispr according to CISPR 16-4-2.
- No deviations were employed from the applied standard.
- No measures were taken to reduce the influence of the surroundings.
- No modifications were conducted by JQA to achieve compliance to the limitations.

Reviewed by
Makimoto Kazuyuki / Manager
SAFETY & EMC CENTER
Testing Dept. EMC Testing Div.

K. Makimoto

Tested by
Naohiko Ueno / Assistant Manager
SAFETY & EMC CENTER
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N. Ueno

2 Description of the Equipment Under Test

2.1 General Information

Manufacturer	JVCKENWOOD Corporation 2967-3 Ishikawa-machi, Hachioji-shi, Tokyo 192-8525 Japan
Products	DIGITAL MEDIA RECEIVER
Model No.	KD-X472DBT
Serial No.	134X0055
Product Type	Pre-Production
Date of Manufacture	-
Power Rating	12.0 VDC (Nominal) 10.5-16.0 VDC (Operating voltage range)
EUT Grounding	None
Tuning Frequency Range	LW 153 – 279 kHz (IF 0 Hz) MW 531 – 1611 kHz (IF 93 kHz) FM 87.5 – 108 MHz (IF 128 kHz) DAB 174.928 – 239.200 MHz (IF 1.536 MHz)
Antenna Type	External 75 ohms (Unbalanced)

3 Test Location

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

4 Accreditation of Test Laboratory

JQA is accredited under ISO/IEC 17025 by following accreditation bodies and the test facility of Testing Division is registered by the following bodies

Test Facility	Accreditation or Registration		Expiry Date
	Body	Code/Number	
(1) Safety & EMC Center (2) SAITO (3) SHIKATSU (4) TSURU	VLAC	(1) VLAC-001-5 (2) VLAC-001-2 (3) VLAC-001-3 (4) VLAC-001-4	March 30, 2022
	VCCI	(1) A-0001 (2) A-0002 (3) A-0003 (4) A-0004	September 30, 2022
	BSMI	(2) SL2-IS-E-6006, SL2-IN-E-6006, SL2-R1/R2-E-6006, SL2-A1-E-6006 (4) SL2-IS-E-6004, SL2-IN-E-6004, SL2-R1/R2-E-6004, SL2-A1-E-6004	August 9, 2023
	FCC	(1) JP5192 (2) JP5008 (3) JP0004 (4) JP0005	March 30, 2022
	IC	(3) JP0014	November 30, 2021
	CNAS	(2) (4) L8352	October 8, 2025
	Conformity assessment body for Japan electrical appliances and material by METI		February 22, 2022

5 Measurement Uncertainty

Measurement Item	Method of measurement	Range	Uncertainty (*U*)
Sensitivity	Conducted	-	± 0.7 dB
Adjacent channel selectivity and blocking	Conducted	-	± 0.7 dB
Unwanted emissions in the spurious domain	Radiated	30 – 200 MHz 200 – 1000 MHz 1 – 6 GHz	± 4.6 dB ± 4.5 dB ± 4.2 dB

The reported expanded uncertainty of measurement, *U* is described with using the coverage factor k = 2, to give a level of confidence of approximately 95 %.

6 Setup of EUT

6.1 Test Configuration

The EUT consists of :

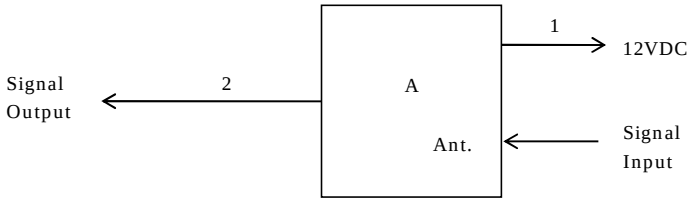
Sign	Item	Manufacturer	Model No.	Serial No.
A	DIGITAL MEDIA RECEIVER	JVCKENWOOD Corporation	KD-X472DBT	134X0055

The AE used for testing : None

Type of Cable used for testing:

No.	Description	Identification (Manu. Etc.)	Connector Shielded	Cable Shielded	Ferrite Core	Length (m)
1	DC Power Cable	--	--	No	No	0.3
2	Speaker Cable	--	--	No	No	1.8

6.2 Test Arrangement (Drawings)



6.3 Operating Condition

Power Supply Voltage : 12.0 VDC

Operating Mode

1. AM Reception
2. FM Reception
3. DAB Reception

7 Test Item

7.1 Sensitivity

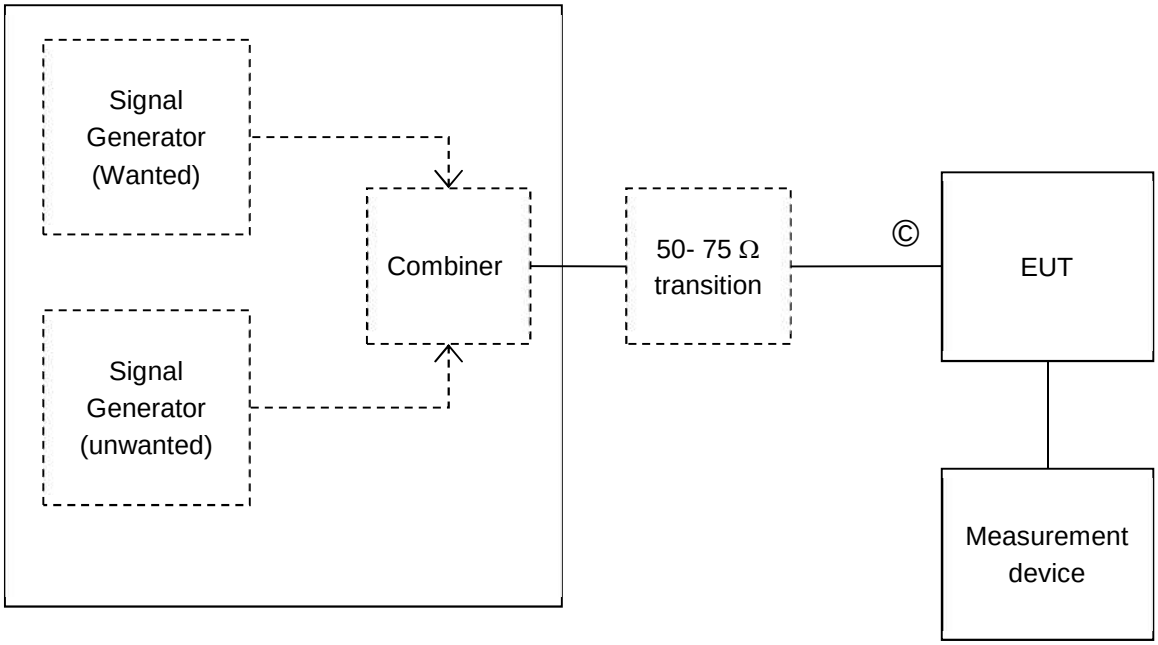
7.1.1 Test Site and Instruments

Shielded Room S-2				
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Cal. Due**
Broadcast Test Center	BTC	100267 (B-57)	Rohde & Schwarz	2020/03/28
Audio Analyzer	UPV	102060 (B-58)	Rohde & Schwarz	2020/03/29

NOTE : The calibration interval of the above test instruments is 12 months.
Calibration data is current at the time of testing.

7.1.2 Test Method and Test Setup (Diagrammatic illustration)

The measurement set-up is shown by the following. In this case, there is no need for careful screening from the external environment, although high field-strengths from potential interferers should be avoided.



© represents the calibration point of the system. The power levels of the two generators are measured here. Most test equipment is designed for 50 Ω systems, whereas domestic equipment is usually 75 Ω. Where the absolute level needs to be known, allowance shall be made for the loss in the transition, typically 6 dB for a minimum loss pad and 0 dB for a transformer. Care should be taken not to mix 50 Ω connectors and 75 Ω connectors, or damage could result.

Impairment criteria for sensitivity tests

Demodulation	Impairment criteria
AM	SNR ≥22 dBQ ref 40 % AM
FM	SNR ≥40 dBQ ref ±60,8 kHz deviation; clean audio (see note 1)
DAB	Clean audio (see note 2)
DRM	Clean audio (see note 2)
NOTE 1: Clean audio is defined as 10 seconds of audio with no subjective impairments (e.g. clicks resulting from FM threshold effects). NOTE 2: Clean audio is defined as 10 seconds of audio with no subjective impairments (e.g. muting, clicks, warbles or squeaks).	

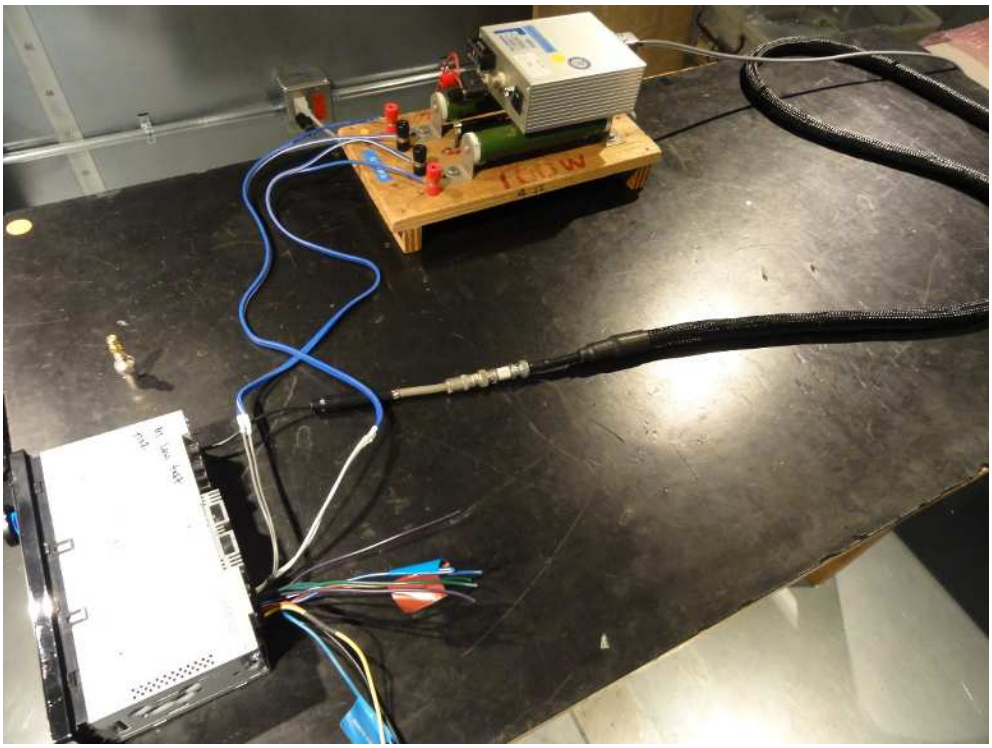
7.1.3 Test Data

Test Date :October 2, 2019
Temp.: 24 °C, Humi.:60 %, Atm.:996 hPa

Evaluation Port: Speaker Front

De-modulation	Tuned frequency band	Wanted signal centre frequency [MHz]	Limits (Conducted) [dBm]	Results [dBm]	Pass/Fail	Remark SNR (dBQ)
AM	LF	0.216	-65	-65.0	Pass	46.36
	MF	0.999	-65	-65.0	Pass	47.64
FM	VHF band II	98	-90	-90.0	Pass	49.00
DAB	VHF band III	202.928	-94	-94.0	Pass	--

7.1.4 Test Setup (Photographs)



7.2 Adjacent channel selectivity and blocking

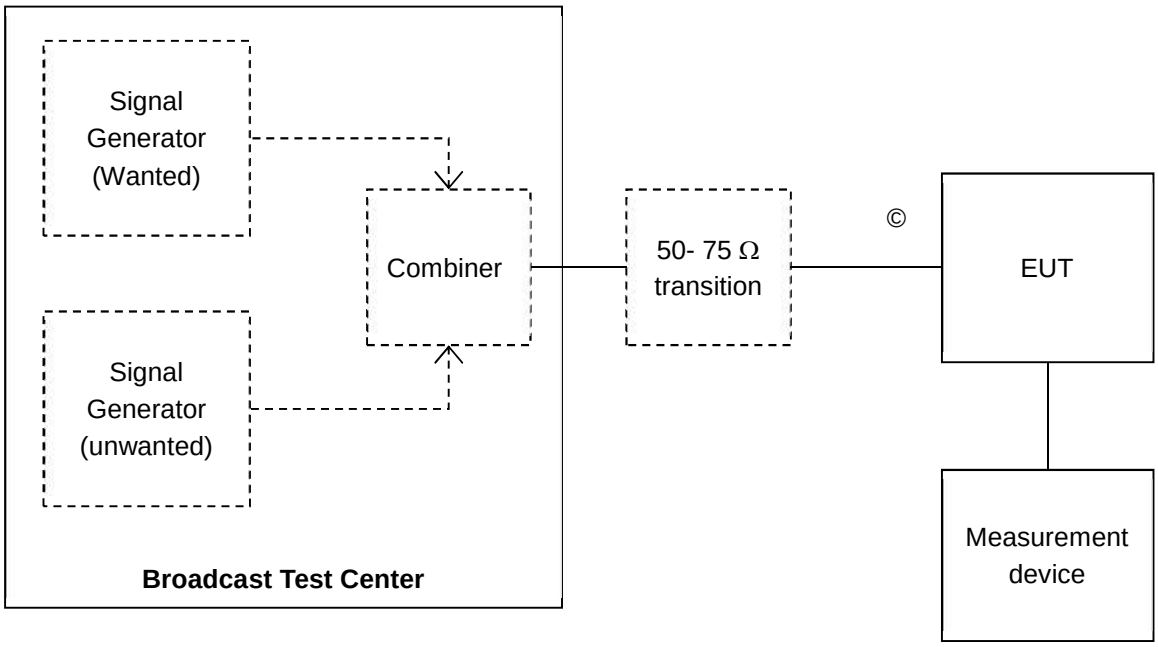
7.2.1 Test Site and Instruments

Shielded Room S-2				
Type	**Model**	**Serial No. (ID)**	**Manufacturer**	**Cal. Due**
Broadcast Test Center	BTC	100267 (B-57)	Rohde & Schwarz	2020/03/28
Audio Analyzer	UPV	102060 (B-58)	Rohde & Schwarz	2020/03/29

NOTE : The calibration interval of the above test instruments is 12 months.
Calibration data is current at the time of testing.

7.2.2 Test Method and Test Setup (Diagrammatic illustration)

The measurement set-up is shown by the following. In this case, there is no need for careful screening from the external environment, although high field-strengths from potential interferers should be avoided.



© represents the calibration point of the system. The power levels of the two generators are measured here. Most test equipment is designed for 50 Ω systems, whereas domestic equipment is usually 75 Ω. Where the absolute level needs to be known, allowance shall be made for the loss in the transition, typically 6 dB for a minimum loss pad and 0 dB for a transformer. Care should be taken not to mix 50 Ω connectors and 75 Ω connectors, or damage could result.

Impairment criteria for adjacent channel selectivity and blocking tests

Demodulation	Impairment criteria
AM	SNR ≥22 dBQ ref 40 % AM
FM	SNR ≥40 dBQ ref ±60,8 kHz deviation; clean audio (see note 1)
DAB	Clean audio (see note 2)
DRM	Clean audio (see note 2)
NOTE 1: Clean audio is defined as 10 seconds of audio with no subjective impairments (e.g. clicks resulting from FM threshold effects). NOTE 2: Clean audio is defined as 10 seconds of audio with no subjective impairments (e.g. muting, clicks, warbles or squeaks).	

7.2.3 Test Data

Test Date :October 2, 2019
Temp.:24 °C, Humi.:60 %, Atm.:996 hPa

1) AM

Evaluation Port: Speaker Front

Tuned frequency band	Wanted signal centre frequency [MHz]	Unwanted frequency	I/C ratio Limits (Conducted) [dB]	I/C ratio Results [dB]	Pass/Fail	Remark SNR (dBQ)
LF	0.216 (Level= -59 dBm)	N = -1	-5	-5.0	Pass	46.89
		N = -2	25	25.0	Pass	41.24
		N = -3	35	35.0	Pass	38.59
		Blocking(-)	40	40.0	Pass	32.72
		N = +1	-5	-5.0	Pass	47.50
		N = +2	25	25.0	Pass	43.73
		N = +3	35	35.0	Pass	38.73
		Blocking(+)	40	40.0	Pass	33.80

Tuned frequency band	Wanted signal centre frequency [MHz]	Unwanted frequency	I/C ratio Limits (Conducted) [dB]	I/C ratio Results [dB]	Pass/Fail	Remark SNR (dBQ)
MF	0.999 (Level= -59 dBm)	N = -1	-5	-5.0	Pass	47.96
		N = -2	25	25.0	Pass	47.15
		N = -3	35	35.0	Pass	37.99
		Blocking(-)	40	40.0	Pass	34.50
		N = +1	-5	-5.0	Pass	48.00
		N = +2	25	25.0	Pass	47.17
		N = +3	35	35.0	Pass	37.99
		Blocking(+)	40	40.0	Pass	34.55

2) FM

Evaluation Port: Speaker Front

Tuned frequency band	Wanted signal centre frequency [MHz]	Unwanted frequency	I/C ratio Limits (Conducted) [dB]	I/C ratio Results [dB]	Pass/Fail	Remark SNR (dBQ)
VHF Band II	98 (Level= -84 dBm)	N = -2	3	3.0	Pass	53.45
		N = -3	17	17.0	Pass	53.38
		N = -4	30	30.0	Pass	53.30
		Blocking(-)	30	30.0	Pass	53.37
		N = +2	3	3.0	Pass	53.42
		N = +3	17	17.0	Pass	53.29
		N = +4	30	30.0	Pass	53.53
		Blocking(+)	30	30.0	Pass	53.36

3) DAB

Evaluation Port: Speaker Front

Tuned frequency band	Wanted signal centre frequency [MHz]	Unwanted frequency	I/C ratio Limits (Conducted) [dB]	I/C ratio Results [dB]	Pass/Fail	Remark
VHF Band III	202.928 (Level= -70 dBm)	N = -1	35	35.0	Pass	
		N = -2	40	40.0	Pass	
		N = -3	45	45.0	Pass	
		Blocking(-)	40	40.0	Pass	
		N = +1	35	35.0	Pass	
		N = +2	40	40.0	Pass	
		N = +3	45	45.0	Pass	
		Blocking(+)	40	40.0	Pass	

7.2.4 Test Setup (Photographs)

Refer to 7.1.4 Test Setup photograph that is same configuration for measurement.

Appendix A: Similar Models

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

Brand	Contents / Model	Bluetooth Module	Panel coloring	Preout Channel on rear panel	Key color
JVC	KD-X472DBT	Provided	Black	3channels	Variable
JVC	KD-X272DBT	Provided	Black	1channel	Red
JVC	KD-X172DB	Not provided	Black	1channel	Red
JVC	KD-X38MDBT	Provided	Black	1channel	Variable
KENWOOD	KMM-BT506DAB	Provided	Black	2channels	Variable
	KMR-M506DAB	Provided	Silver	2channels	Variable
KENWOOD	KMM-BT407DAB	Provided	Black	1channel	Red
KENWOOD	KMM-DAB307	Provided	Black	1channel	Red

--- END OF REPORT ---