TEST REPORT

Ref. number : YE18759 Date of issue : July 27, 2018

Applicant information

Name	: JVC KENWOOD Corporation
Address	: 2967-3 Ishikawa cho, Hachioji-shi, Tokyo, 192-8525, Japan

Test Sample (EUT) Information

Type description	: DIGITAL MEDIA RECEIVER
Trade name/ Brand	: JVC
Model name	: KD-X262
Serial number(s)	: 113X0025
Rating	: 12V DC, 6A
Accessory	: None

Test Summary

Test laboratory	: JVC KENWOOD EMC CENTER 3-12, Moriyacho, Kanagawa-ku, Yokohama-shi, Kanagawa, 221-0022, Japan TEL +81-45-450-2473, FAX +81-45-450-2474
Date(s) of test	: July 10, 2018 – July 12, 2018
Test specification	: EN55035:2017
Test result	: Pass / The test results relate only to the sample tested.

Approved by

Hiroyuki Ryu, Manager

Tested and written by

Minoru Kobayashi, Engineer

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1. Scope of test

1.1 Emission

Measurements	Result	Remark
- Harmonic current emissions	N/A	N/A
- Voltage change fluctuations and flicker	N/A	N/A

1.2 Immunity

Measurements	Result	Remark
- Electrostatic discharge (ESD)	Test passed	None
- Radiated RF fields	Test passed	Note 1
- Electrical fast transients/burst	Test passed	None
- Surge	N/A	N/A
- Conducted disturbances (Inducted by radio-frequency fields)	Test passed	None
- Power frequency magnetic fields (50Hz)	N/A	N/A
- Voltage dips, short interruptions and voltage variations	N/A	N/A

Note 1 : Measurement was carried out only from the frequency range 80MHz to 1000MHz.

- Procedure : Assessment of conformity to test specification / Type examination
- This measurements report covered by this document have been performed in accordance with the requirements of ISO/IEC 17025 and are traceable to national or international standards of measurement.
- All tests were performed with no deviation from the standard EN55035.
- This test results responds to the tested sample.

2. Test facility

Ref. no. : EMCG002, shielded room. Size 10.8m x 3.8m x 3m/JSE

Ref. no. : EMCG081, shielded room. Size 8m x 5m x 3m / TDK

Ref. no. : EMCG080, small sized anechoic chamber (3m semi-anechoic chamber), size 8m x 4m x 3m/TOKIN

3. Test sample Information (additional)

Description : The EUT KD-X262 is a DIGITAL MEDIA RECEIVER.
EUT is provided radio tuner and audio amplifier (50W x4, 4Ω - 8Ω).
EUT is connected iPhone/iPad via the USB terminal and can be playback.
The EUT provides the clock, the max frequency 6.2208GHz.
For the features/Terminals of the EUT, the details are attached on next page.

Date of receipt	: June 14, 2018
Way of sampling	: Sent by client
EUT condition	: Pre production sample
EUT modifications	: No modification has been carried out by test laboratory

3.1 Features / Terminals of the EUT

Features	Terminals	Special options/terminals
	For rear	
☐ CD Player	☒ Wiring harness (14 cables),Note 2	☒ Detachable Faceplate
☐ DVD Player	☐ FRONT L/R(RCA)	☐ Bluetooth
☒ Radio Tuner	☐ REAR L/R (RCA)	☐
☒ iPod or iPhone	☐ SW L/R(RCA)	☐
☒ USB memory	☒ REAR/SW L/R(RCA)	☐
☐	☐ External optional accessory	☐
☐	☐ MIC (φ3.5, mono)	☐
☐	For front	☐
☐	☒ AUX (φ3.5, stereo)	☐
☐	☒ USB (Slave)	☐
☐	☐	☐
☐	☐	☐

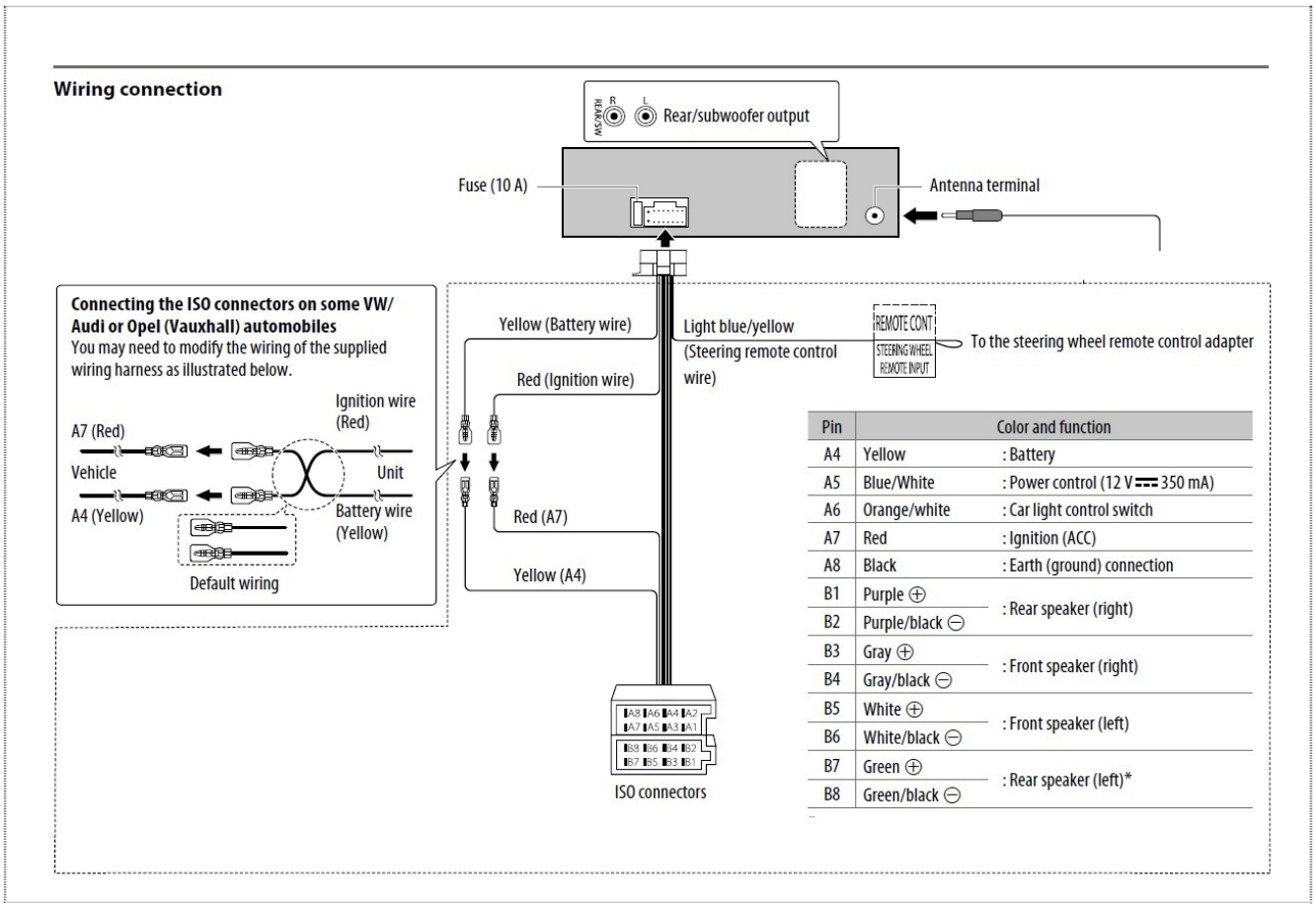
Note : "☒" indicates that the EUT equips the feature/terminal.

"☐" indicates that the EUT does not equip feature/terminal.

Note 2 : The detail as next page.

Remark : None

Wiring harness 14 pin cables



Pin	Color and function	
A4	Yellow	: Battery
A5	Blue/White	: Power control (12 V ⎓ 350 mA)
A6	Orange/white	: Car light control switch
A7	Red	: Ignition (ACC)
A8	Black	: Earth (ground) connection
B1	Purple ⊕	: Rear speaker (right)
B2	Purple/black ⊖	
B3	Gray ⊕	: Front speaker (right)
B4	Gray/black ⊖	
B5	White ⊕	: Front speaker (left)
B6	White/black ⊖	
B7	Green ⊕	: Rear speaker (left)*
B8	Green/black ⊖	

Each cable length is as follows

front speaker (left & right / 4 cables)	:	original/20cm + extension/80cm	→	100cm / 4Ω load
rear speaker (left & right / 4 cables)	:	original/20cm + extension/80cm	→	100cm/ 4Ω load
Ignition wire / 1 cable	:	original/20cm + extension/100cm	→	120cm / DC 12V
Battery wire / 1 cable	:	original/20cm + extension/100cm	→	120cm / DC 12V
Ground wire / 1 cable	:	original/20cm + extension/100cm	→	120cm / Ground
Power control wire /1 cable	:	16cm / opened		
Mute control wire /1 cable	:	16cm / opened		
Antenna control wire /1 cable	:	16cm / opened		

3.2 List of accessory

Type no.	Model no.	Serial no.	Manufacturer /Brand	CE
USB Flash Drive /Peripheral	Cruzer Glide 8GB	None	SanDisk	CE

3.3 list of cable

Cable type no.	Type no.	Connection	Shielded	Ferrite core	Length (m)
Wiring harness 14 pin cables	N/A	EUT	None	None	Note 1
REAR/SW L/R cable	RCA	EUT	Yes	None	1.6
AUX cable	3.5mm (Streo)	EUT	Yes	None	1.0
USB terminal cable	USB	EUT to USB Flash Drive	Yes	None	1.0

Note 1: for details, see “Wiring harness 14 pin cables“ of page 6

4. Test configuration

Power supply : 12V DC

4.1 Communication modes (operation modes)

4.1.1 Electrostatic discharge (ESD)

Test standard : EN55035:2017 with EN61000-4-2:2009

Communication modes :

1) EUT alone operated

The details of operation mode is as follows,

Communi-cation modes	Operation modes	4.2.3 Configuration of tested system
1)	1. EUT playback USB, 1kHz audio signal / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected	(1) EUT alone operating / USB mode, FM mode
1)	2. EUT FM 98MHz tuned / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected	

Note :

1. Software is used to exercise the EUT as follows

   Software is not used to exercise the EUT

2. Judgment of criterion B is judged by sound from Front speakers.

4.1.2 Radiated RF fields

Test standard : EN55035:2017 with EN61000-4-3:2006 + A1:2008 + A2:2010

Communication modes :

1) EUT alone operated

The details of operation modes are as follows,

Communi-cation modes	Operation modes	4.3.3 Configuration of tested system
1)	1. EUT playback USB, 1kHz audio signal / 4Ω dummy load x4 connected	(1) EUT alone operating / USB mode

Note :

1. Software is used to exercise the EUT as follows
   Software is not used to exercise the EUT
2. For Speakers output was adjust to approximately 500mW (1.42V) at 4Ω.
   The requirement is a wanted to unwanted audio signal (a sinusoidal signal at 1kHz) of >40dB at a wanted audio signal level of 500mW.
3. Judgment of criterion A was judged by electrical reference level from 4Ω dummy load of Front speakers.

4.1.3 Electrical fast transients/burst

Test standard : EN55035:2017 with EN61000-4-4:2004

Communication modes :

1) EUT alone operated

The details of operation mode are as follows,

Communi-cation modes	Operation modes	4.4.3 Configuration of tested system
1)	1. EUT playback USB, 1kHz audio signal / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected/ injection into Wiring harness(14p cables)	(1) EUT alone operating / USB mode, FM mode
1)	2. EUT playback USB, 1kHz audio signal / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected/ injection into REAR/SW L/R	
1)	3. EUT FM 98MHz tuned / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected/ injection into Wiring harness(14p cables)	
1)	4. EUT FM 98MHz tuned / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected/ injection into REAR/SW L/R	

Note :

1. Software is used to exercise the EUT as follows

   Software is not used to exercise the EUT

2. Judgment of criterion B is judged by sound from Front speakers.

4.1.4 Surge

Test standard : EN55035:2017 with EN61000-4-5:2006

EUT does not have a mains power supply (DC equipment).

4.1.5 Conducted disturbances (Inducted by radio-frequency fields)

Test standard : EN55035:2017 with EN61000-4-6:2009

Communication modes :

1) EUT alone operated

The details of operation modes are as follows,

Communi-cation modes	Operation modes	4.5.3 Configuration of tested system
1)	1. EUT playback USB, 1kHz audio signal / 4Ω dummy load x4 connected injection into Wiring harness(14p cables)	(1) EUT alone operating / USB mode, FM mode
1)	2. EUT playback USB, 1kHz audio signal / 4Ω dummy load x4 connected injection into REAR/SW L/R	
1)	3. EUT FM 98MHz tuned / 4Ω dummy load x4 connected injection into Wiring harness(14p cables)	
1)	4. EUT FM 98MHz tuned / 4Ω dummy load x4 connected injection into REAR/SW L/R	

Note :

1. Software is used to exercise the EUT as follows

   Software is not used to exercise the EUT
2. For Speakers output was adjust to approximately 500mW (1.42V) at 4Ω.

   The requirement is a wanted to unwanted audio signal (a sinusoidal signal at 1kHz) of >40dB at a wanted audio signal level of 500mW.
3. Judgment of criterion A was judged by electrical reference level from 4Ω dummy load of Front speakers.

4.1.6 Power frequency magnetic fields (50Hz)

Test standard : EN55035:2017 with EN61000-4-8:2010

EUT is not a device intrinsically susceptible to magnetic fields.

4.1.7 Voltage dips, short interruptions and voltage variations

Test standard : EN55035:2017 with EN61000-4-11:2004

EUT does not have a mains power supply (DC equipment).

4.2 Electrostatic discharge (ESD)

4.2.1 Summary of measurement setting

- The tests and measurements carried out EN55035 and EN61000-4-2, Electrostatic discharge (ESD).
- The set-up and conditions are “4.2.3” and “4.2.5 Photo of test configuration”.
- The test condition was performed as follows,

for EN55035

Charge voltage	:	Contact 2kV, 4kV Air 2kV, 4kV, 8kV
Polarity	:	positive / negative
Number of discharge	:	For contact discharge, EUT shall be exposed to at least 200 discharges, 100 each at negative and positive polarity, at a minimum of four test points (at minimum of 50 discharges at each point). One of the test points shall be subjected to at least 50 indirect discharges (contact) to centre of the front edge of the horizontal coupling plane. The remaining three test points shall each receive at least 50 direct contact discharge. The test shall be performed with signal discharges. On preselected points at least 10 signal discharges (in the most sensitive polarity) shall be applied. For air discharge, a minimum of 10 signal air discharges shall be applied to the selected test point for each such area.
Performance criterion	:	B

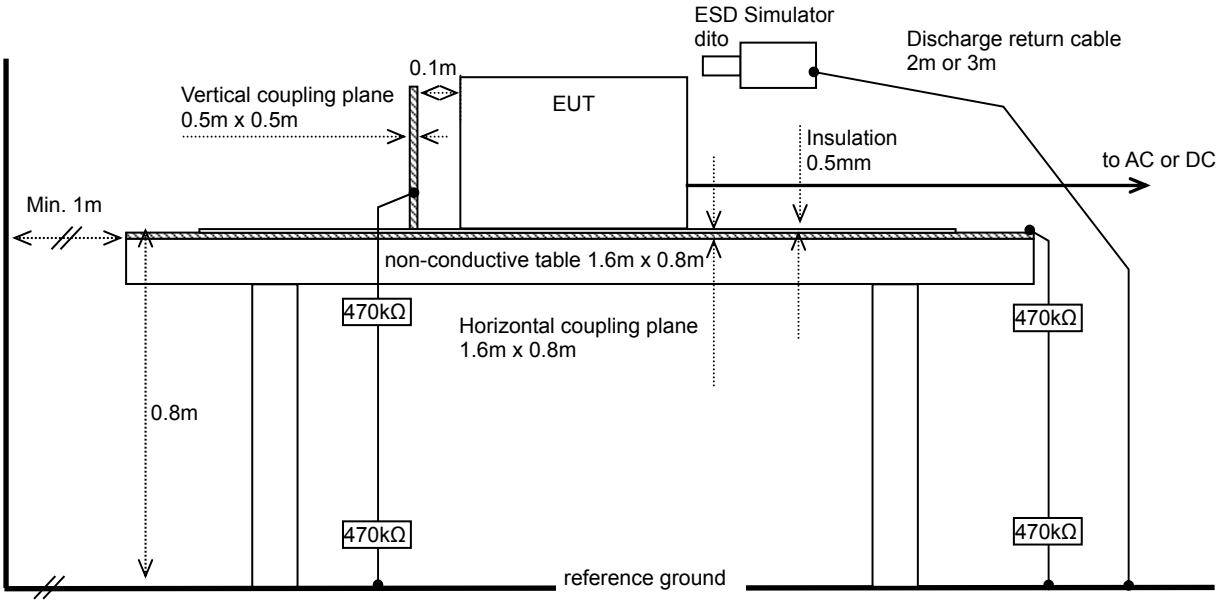
The test is carried out according to our test procedure VYES-T009 and VYES-T010.

4.2.2 Special test condition

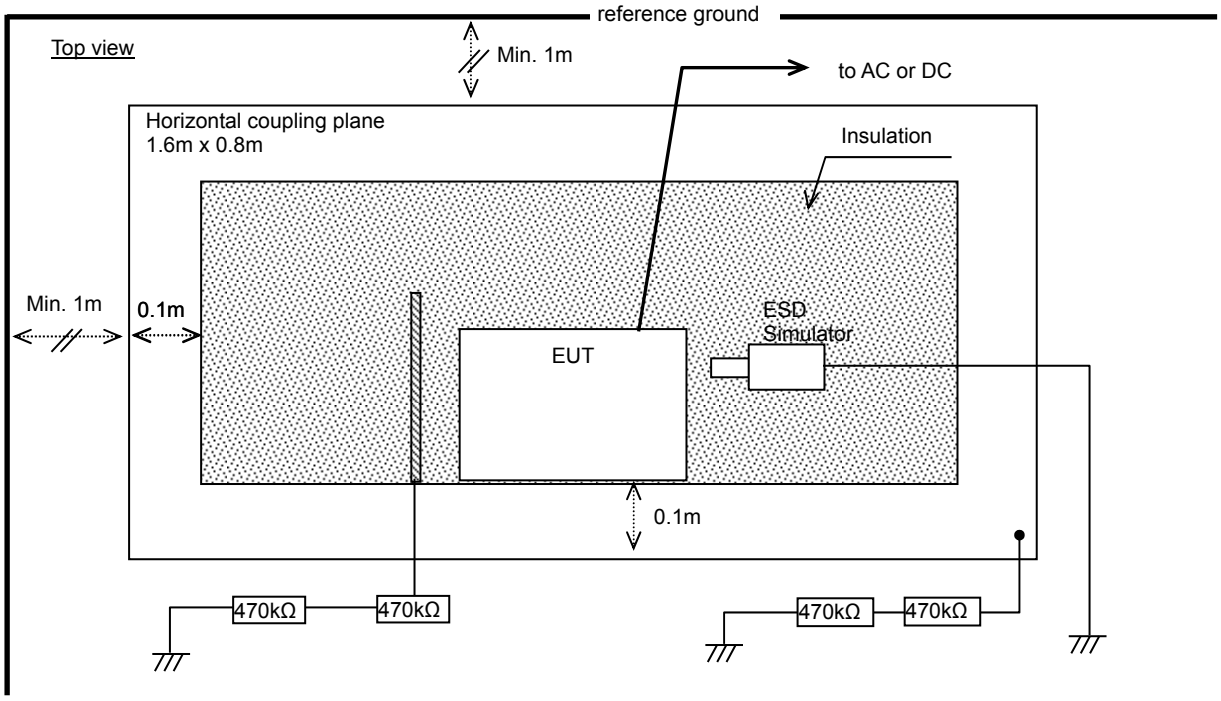
None

4.2.3 Configuration of tested system

- Side view



- Top view



4.2.4 Measuring instruments

Test Site : Shielded room 1/EMCG002

Description : Shielded room 10.8m x 3.8m x 3m, filtered power supply, air conditioned

	Instrument	Type no.	Serial no.	Manufacturer	Inst. no.	Latest cal.	Cal. Interval
☒	ESD Simulator	dito	V0639101829	EM TEST AG	EY0S081	Aug/13/2017	1 year
☒	Horizontal Coupling Plane	0.8m x 1.6mm	None	TSJ	EMCG087	N/A	N/A
☒	Vertical Coupling Plane	0.5m x 0.5mm	None	TSJ	EMCG089	N/A	N/A
☐	Luminance Meter	LS-100	41613003	Konica Minoruta	ZK4S090	Apr/10/2018	1 year
☒	Signal Generator	SMY	71400037	Rohde & Schwarz	EG2S247	Jun/20/2018	1 year
☒	DC Power Supply	PAN16-10	CK001767	KIKUSUI	EP1S145	Apr/10/2018	1 year
☐							
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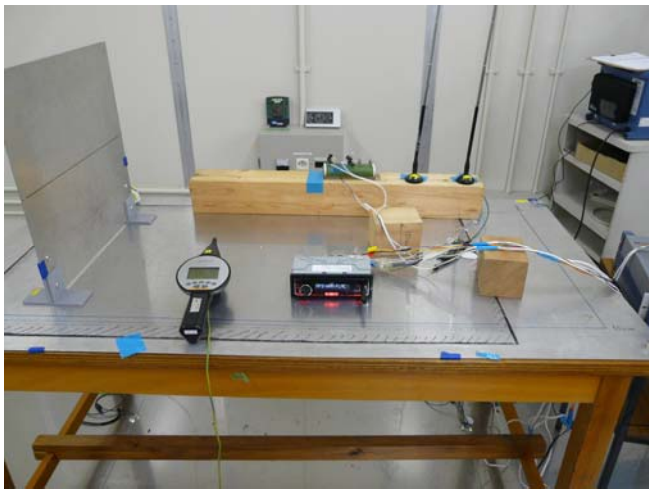
Note : "☒" indicates that these instruments were in use for this test.

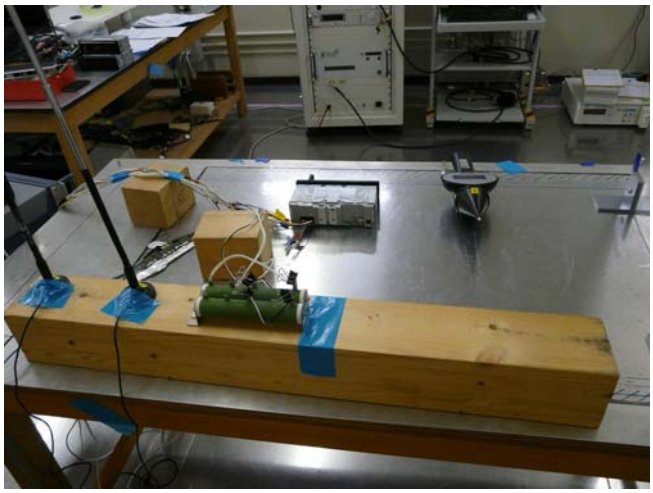
"☐" indicates that these instruments were not in use for this test.

4.2.5 Photo of test configuration

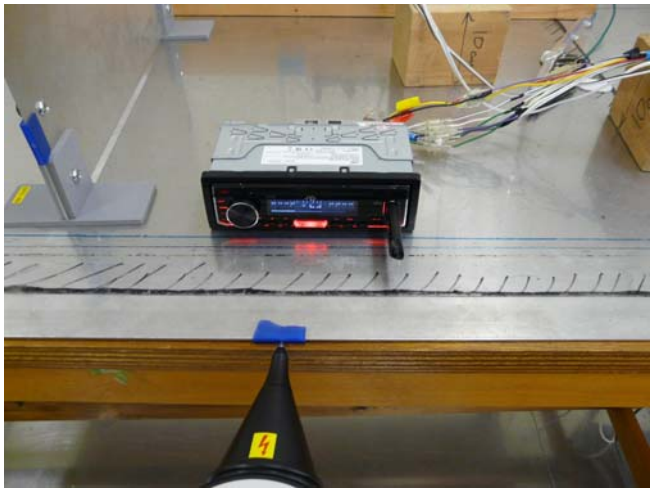
picture 1 : Measurement set-up



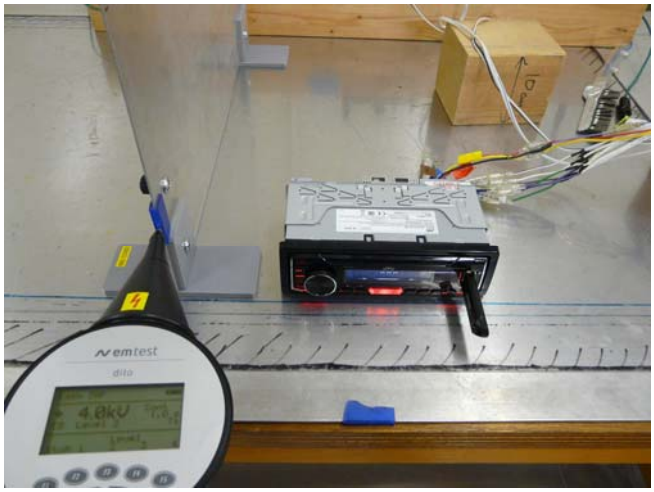
picture 2 : Measurement set-up



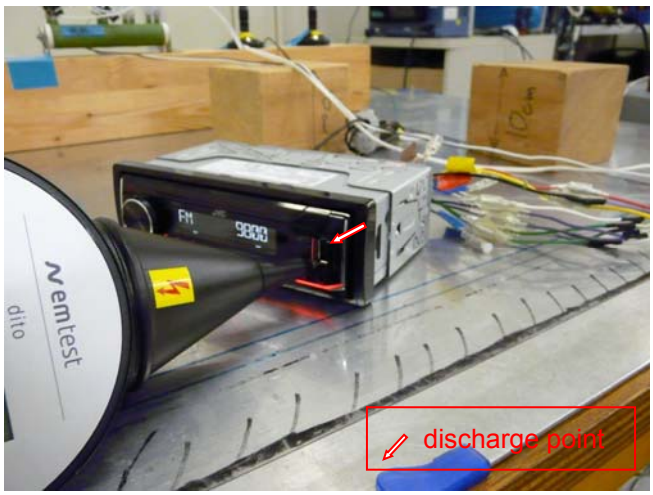
picture 3 : Contact discharge points/ HCP



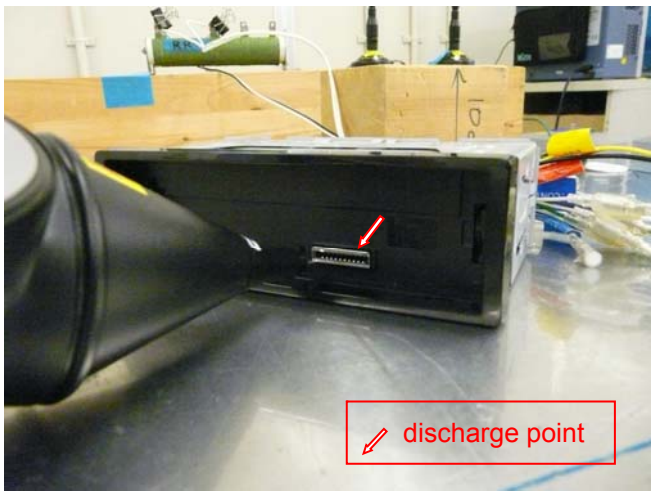
picture 4 : Contact discharge points/ VCP



picture 5 : Contact discharge points/ Front, USB

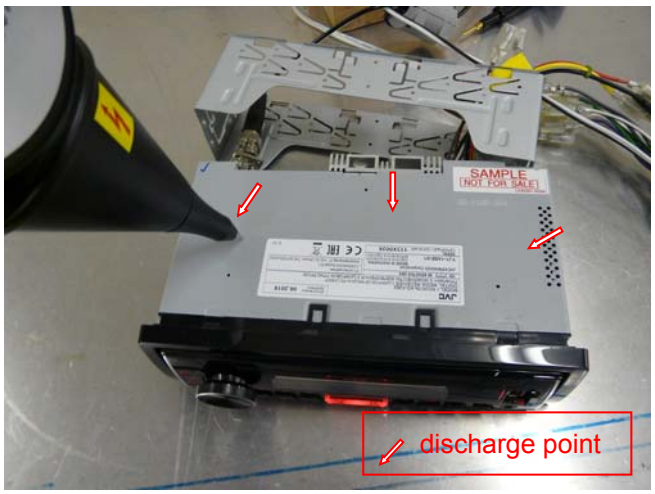


picture 6 : Contact discharge points/ Front, inside

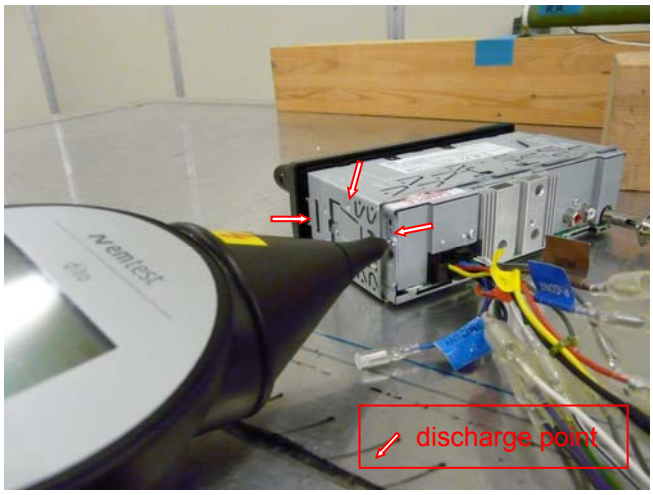


picture 7 : Contact discharge points/ Front, inside

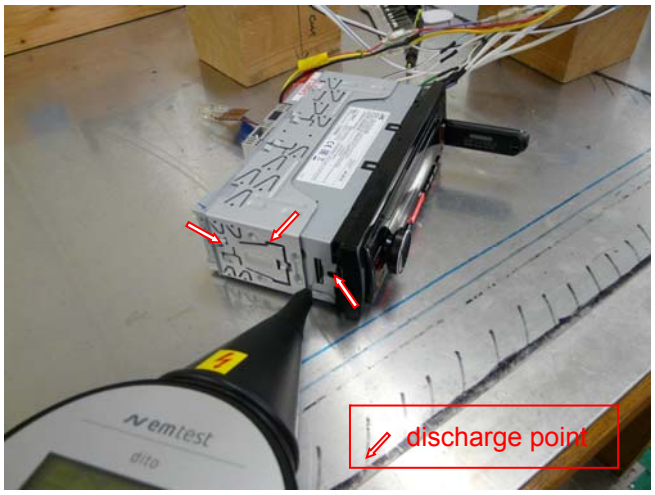
picture 8 : Contact discharge points/ Top



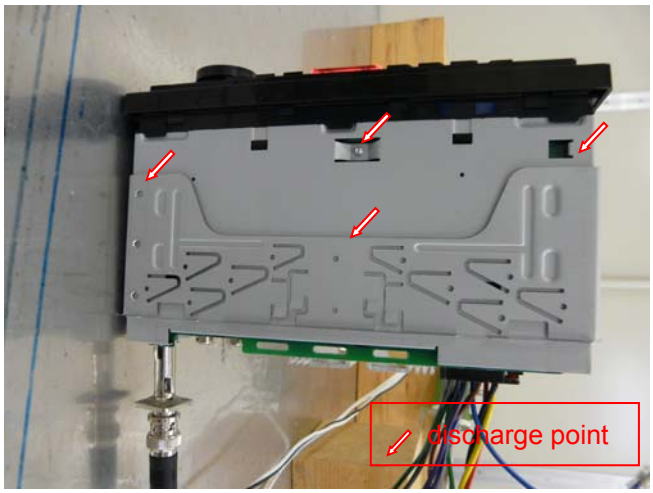
picture 9 : Contact discharge points/ Side



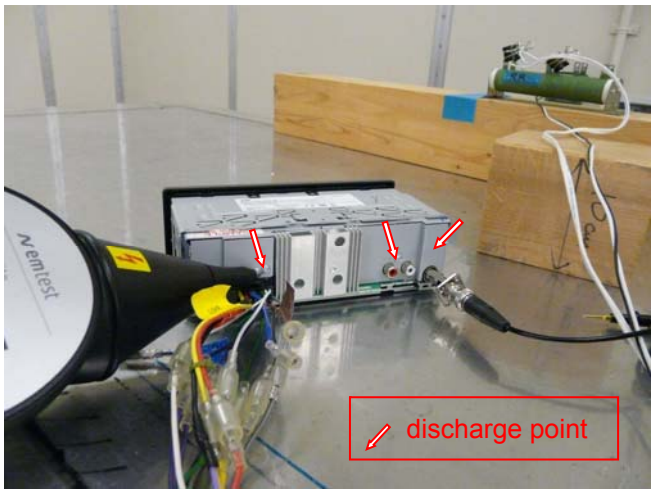
picture 10 : Contact discharge points / Side



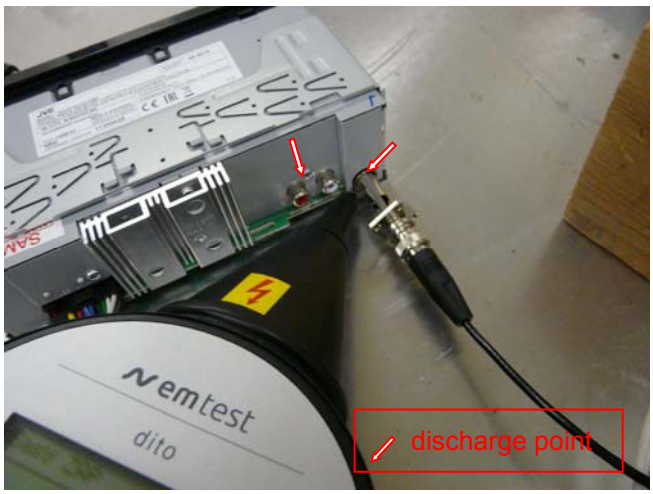
picture 11 : Contact discharge points/ Bottom



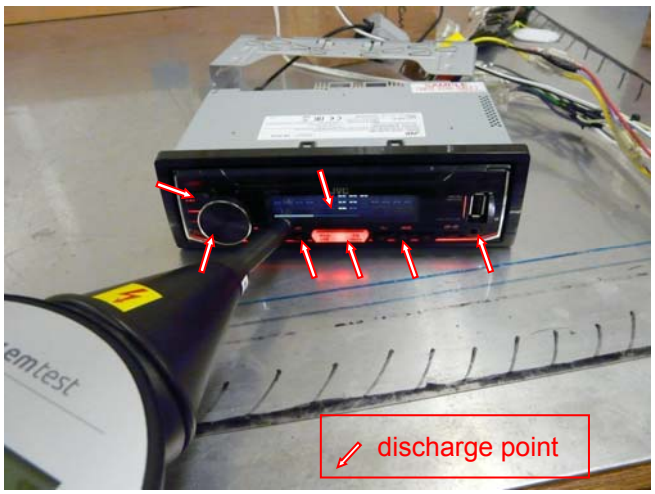
picture 12 : Contact discharge points/ Rear



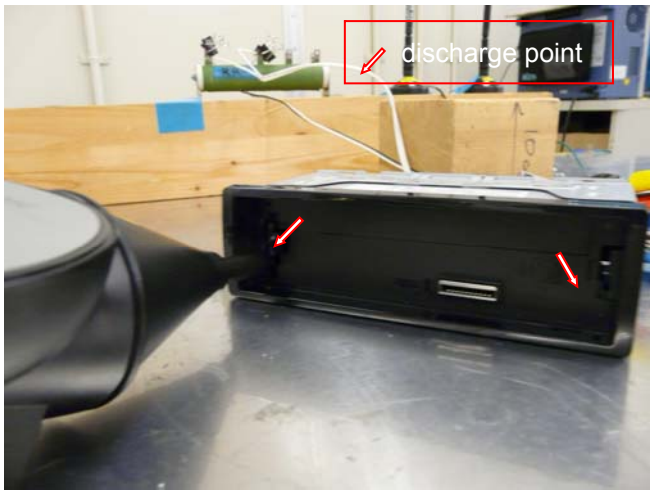
picture 13 : Contact discharge points/ Rear terminals



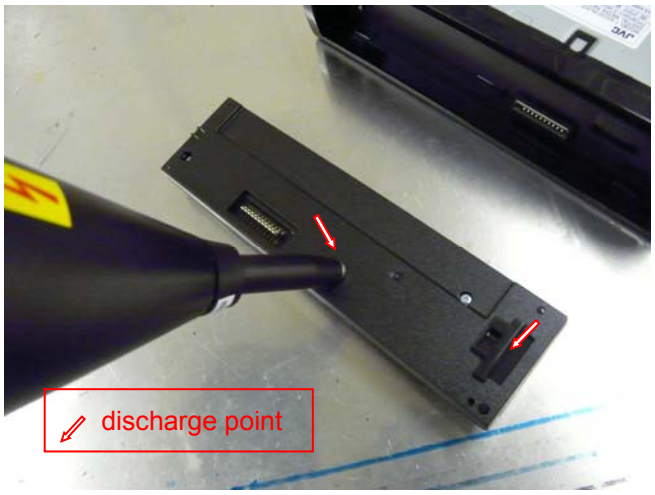
picture 14 : Air discharge points/ Front switch



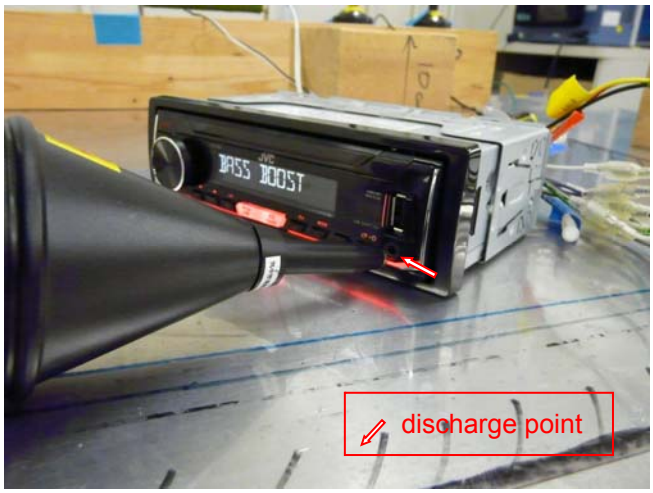
picture 15 : Air discharge points/ Front inside



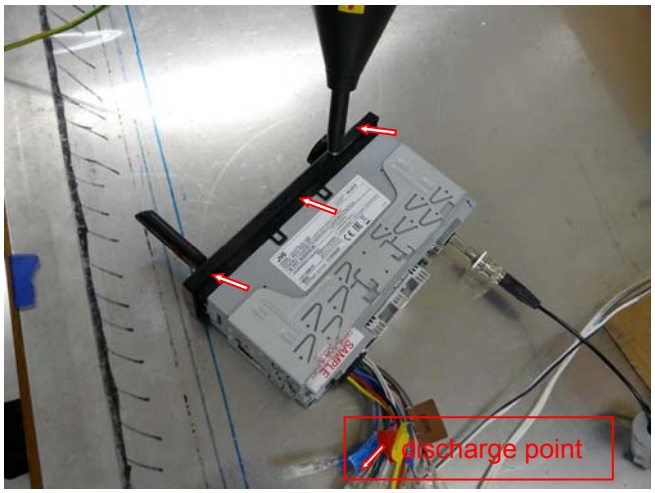
picture 16 : Air discharge points/ Front switch



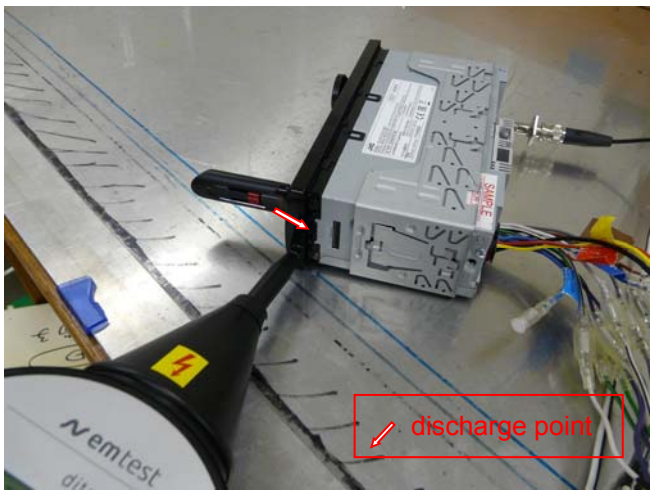
picture 17 : Air discharge points/ Front, φ3.5



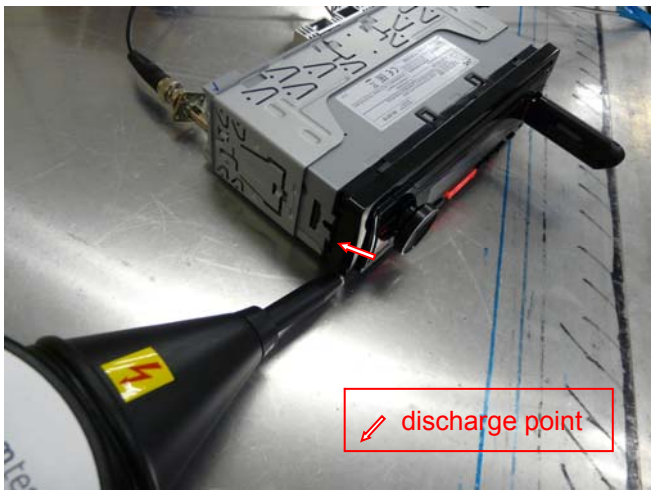
picture 18 : Air discharge points/ Top



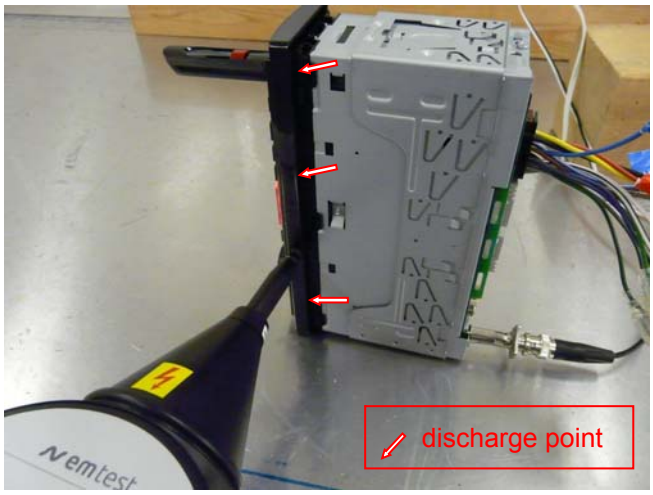
picture 19 : Air discharge points/ Side



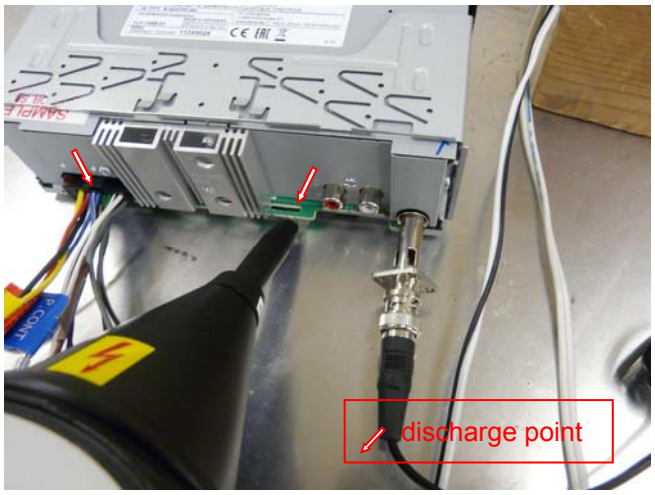
picture 20 : Air discharge points/ Side



picture 21 : Air discharge points/ Bottom



picture 22 : Air discharge points/ Rear, 14P



4.2.6 Measurement Uncertainty

Uncertainty for ESD rise time	:	±6.8%
Uncertainty for ESD peak current	:	±4.1%
Uncertainty for ESD I30 I60	:	±4.2%

The measurement uncertainties have been determined at a confidence level of approximately 95% (k=2).

The uncertainty value was calculated in accordance with IEC61000-4-2.

4.3 Radiated RF fields

4.3.1 Summary of measurement setting

- The tests and measurements carried out EN55035 and EN61000-4-3, Immunity from radiated RF fields.
- The set-up and conditions are “4.3.3” and “4.3.5 Photo of test configuration”.
- The immunity against radiated RF fields in the frequency range of 80MHz to 1000MHz was tested according EN55035.
- The immunity against radiated RF fields in the frequency range of above 1000MHz (1800MHz, 2600MHz, 3500MHz, 5000MHz) was tested according EN55035.
- The test set-up and the measurement was done according, EN61000-4-3 in 3m Semi-anechoic chamber/ EMCG080.
- The test condition was performed as follows,

RF emission frequency	: from 80MHz to 1000MHz
Fielded strength	: 3V/m
Modulation	: AM 80%, 1kHz
Frequency step size	: 1% of fundamental
Performance criterion	: A

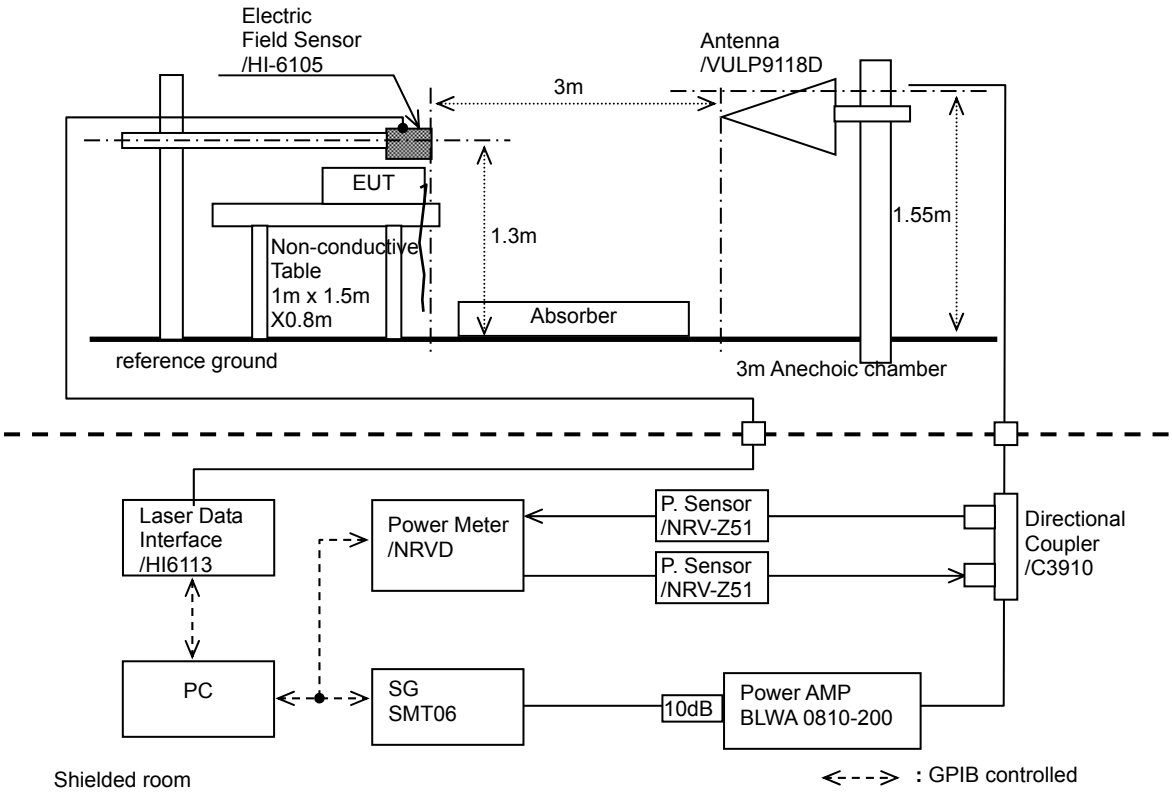
RF emission frequency	: 1800MHz, 2600MHz, 3500MHz, 5000MHz / frequency ±1%
Fielded strength	: 3V/m
Modulation	: AM 80%, 1kHz
Performance criterion	: A

The test is carried out according to our test procedure VYES-T011.

4.3.2 Special test condition

None

4.3.3 Configuration or tested system



4.3.4 Measuring instruments

Test Site : 3m Semi-anechoic chamber/EMCG080

Description : Small sized anechoic chamber 8m x 4m x 3.2m

	Instrument	Type no.	Serial no.	Manufacturer	Inst. no.	Latest cal.	Cal. Interval
☒	Log-Peri Broadband Antenna	VULP9118D	9118D616	Schwarzbeck	ZZ2S252	N/A	N/A
☒	Power Amplifier	BLWA 0810	066453B -20	Bonn Elektronik	EX0S105	May/9/2018	1 year
☒	Power Meter	NRVD	101657	Rohde & Schwarz	EX4S106	Jun/20/2017	1 year
☒	Electric Field Sensor	HI-6105	74929	ETS Lindgren	EX0S110	Jun/20/2017	1 year
☒	Software	IM5/R	0612115	Toyo Corp.	EMCG135	N/A	N/A
☒	Signal Generator	SMT06	100953	Rohde & Schwarz	EG2S109	Jun/21/2017	1 year
☒	Noise Meter	MN-446A	73011416	Meguro	EV2S136	Aug/13/2017	1 year
☒	Band pass filter	BP02	861102	Erika Fiedler	ZZ3S137	May/31/2018	1 year
☒	DC Power Supply	PAN16-10	CK001767	KIKUSUI	EP1S145	Apr/10/2018	1 year
☐							
☐							
☐							
☐							

Note : "☒" indicates that these instruments were in use for this test.

"☐" indicates that these instruments were not in use for this test.

4.3.5 Photo of test configuration

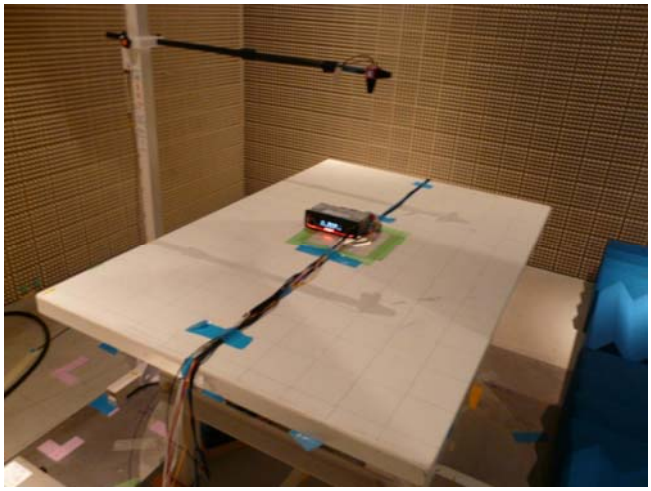
picture 1 : Measurement set-up

picture 2 : Measurement set-up

picture 3 : EUT alone/ Front side

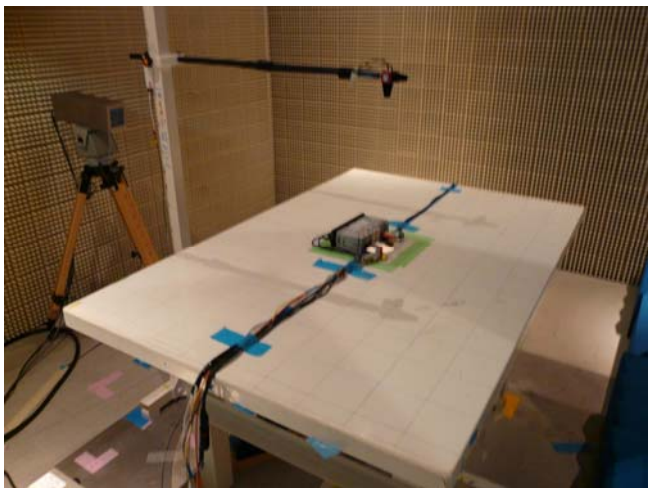
picture 4 : EUT alone/ Front side

picture 5 : EUT alone/ Left side



picture 6 : EUT alone/ Left side

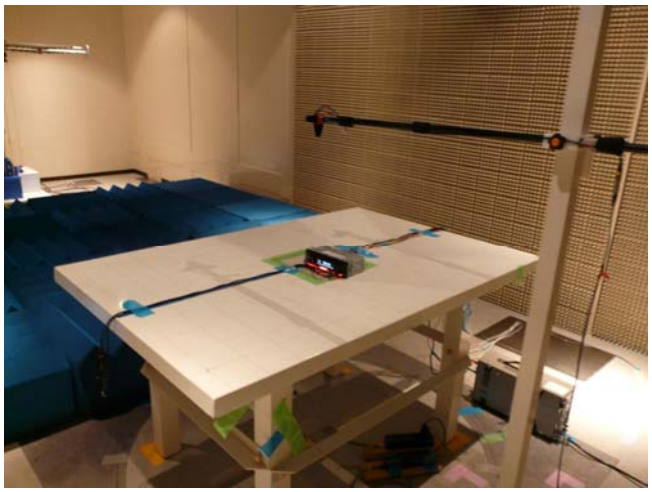
picture 7 : EUT alone/ Back side



picture 8 : EUT alone/ Back side

picture 9 : EUT alone / Right side

picture 10 : EUT alone/ Right side



4.3.6 Measurement uncertainty

Frequency range : 80MHz – 1000MHz

The uncertainty for the setting level of the Electric field strength : ±1.48dB

The measurement uncertainties have been determined at a confidence level of approximately 95% (k=2).

The uncertainty value was calculated in accordance with IEC61000-4-3.

4.4 Electrical fast transients/burst

4.4.1 Summary of measurement setting

- The tests and measurements carried out EN55035 and EN61000-4-4, Electrical fast transients/burst.
- The set-up and conditions are “4.4.3” and “4.4.5 Photo of test configuration”.
- The test condition was performed as follows,

Test voltage	: 1kV at AC power port 0.5kV at signal ports/telecommunication ports/DC power port
Rise time	: 5n sec
Duration	: 50n sec
Polarity	: positive/negative, for AC power port only
Repetition frequency	: 5kHz
Performance criterion	: B

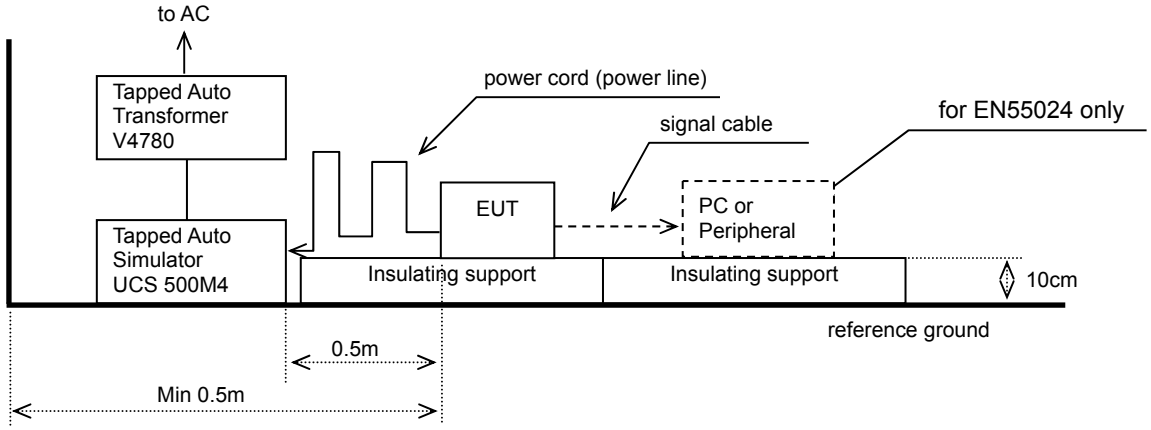
The test is carried out according to our test procedure VYES-T012 and VYES-T013.

4.4.2 Special test condition

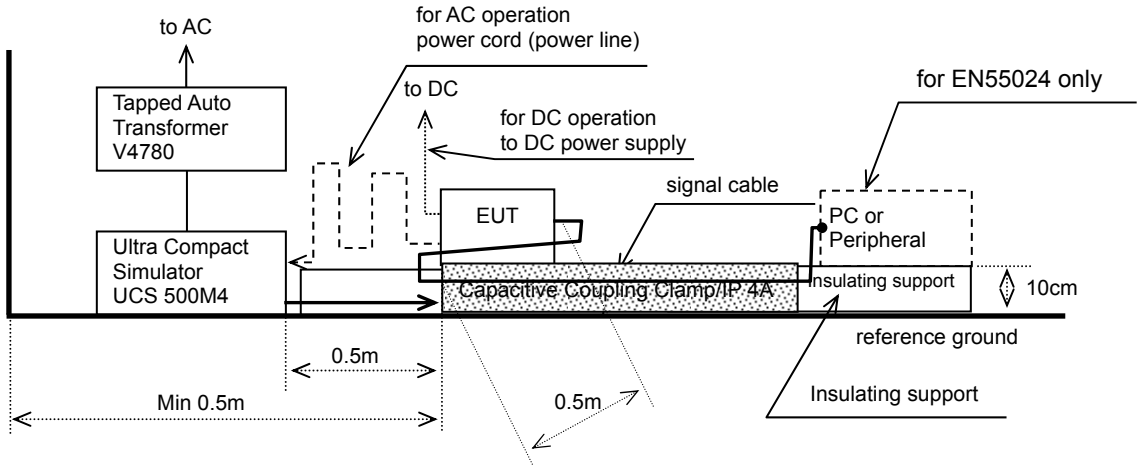
None

4.4.3 Configuration of tested system

- Power cord (mains line)



-Signal cable



4.4.4 Measuring instruments

Test Site : Shielded room 1/EMCG002

Description : Shielded room 10.8m x 3.8m x 3m, filtered power supply, air conditioned

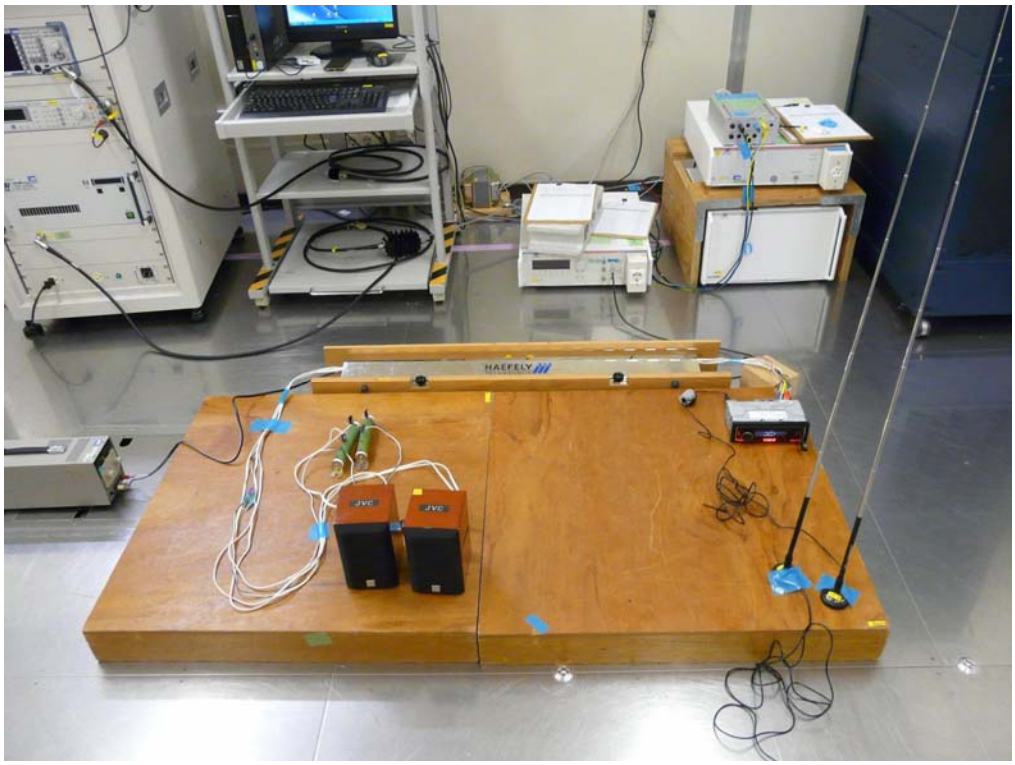
	Instrument	Type no.	Serial no.	Manufacturer	Inst. no.	Latest cal.	Cal. Interval
☒	Ultra Compact Simulator	UCS 500M4	V0639101830	EM TEST AG	ZY2S082	Jun/22/2017	1 year
☒	Tapped Auto Transformer	V 4780	P1549168407	EM TEST	EP4S251	Jun/22/2017	1 year
☐	Capacitive Coupling Clamp	IP 4A	154855	HAEFELY	EX0S134	Jun/22/2017	1 year
☐	Luminance Meter	LS-100	41613003	Konica Minoruta	ZK4S090	Apr/10/2018	1 year
☒	Software	ISMIEC	W9KA2UKU7	EM TEST AG	EMCG084	N/A	N/A
☒	Signal Generator	SMY	71400037	Rohde & Schwarz	EG2S247	Jun/20/2018	1 year
☒	DC Power Supply	PAN16-10	CK001767	KIKUSUI	EP1S145	Apr/10/2018	1 year
☐							
☐							
☐							
☐							
☐							
☐							

Note : "☒" indicates that these instruments were in use for this test.

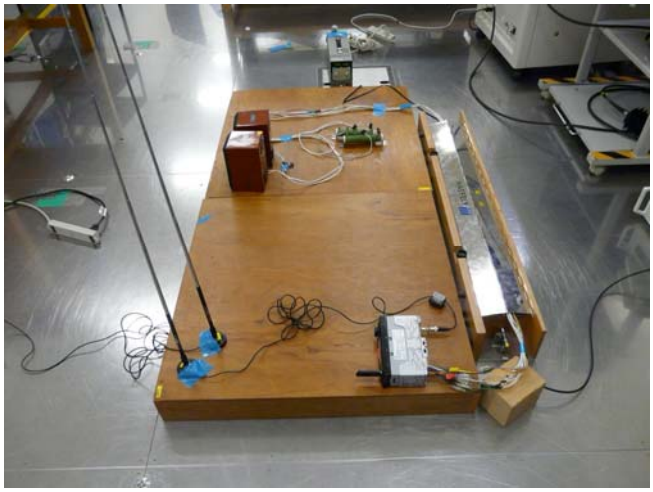
"☐" indicates that these instruments were not in use for this test.

4.4.5 Photo of test configuration

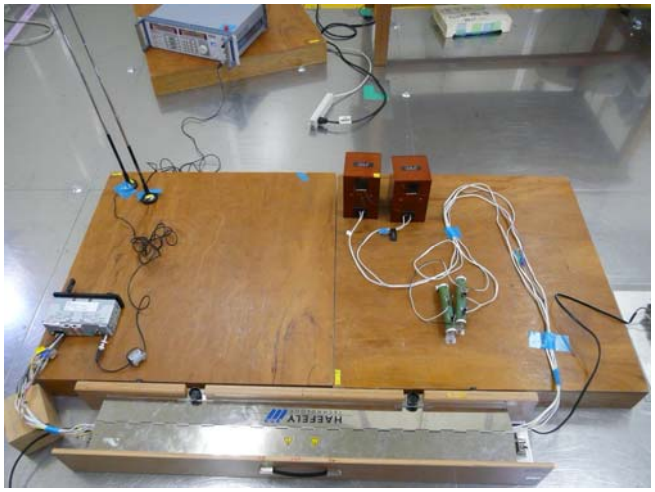
picture 1 : injunction into Wiring harness 14P/ USB mode, FM 98MHz mode



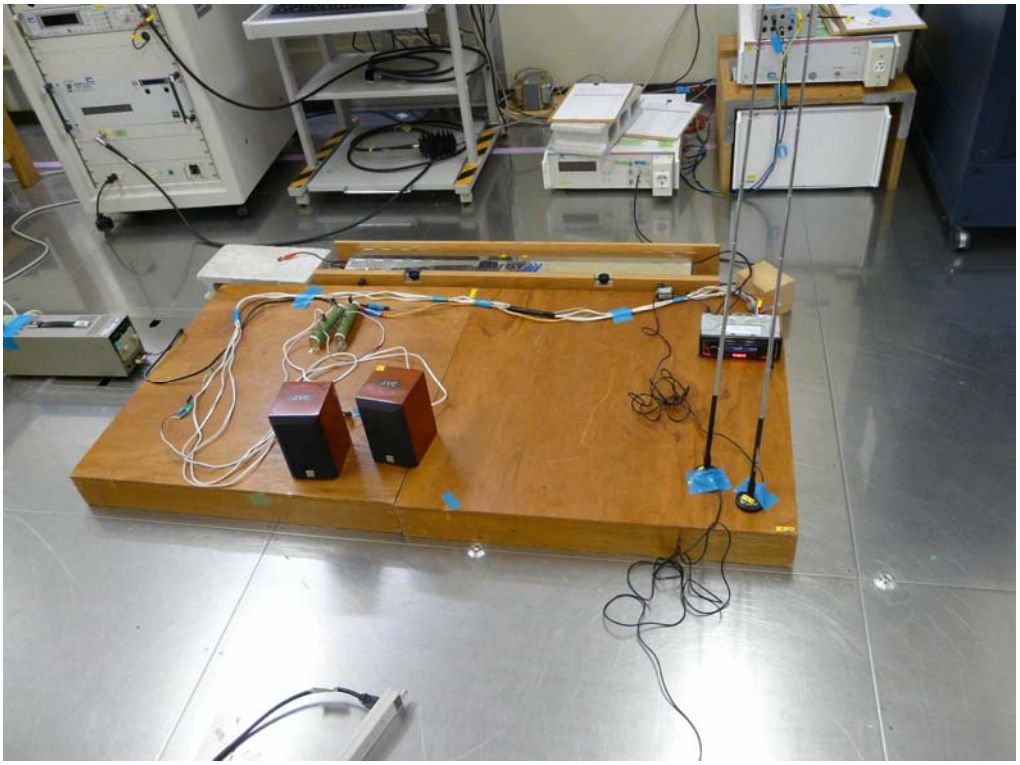
picture 2



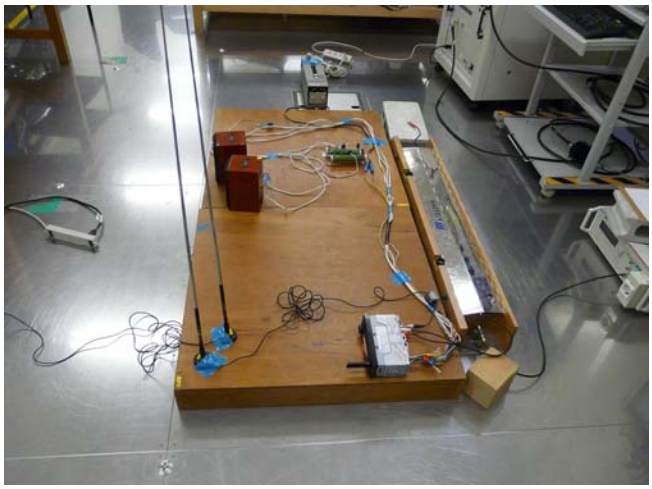
picture 3



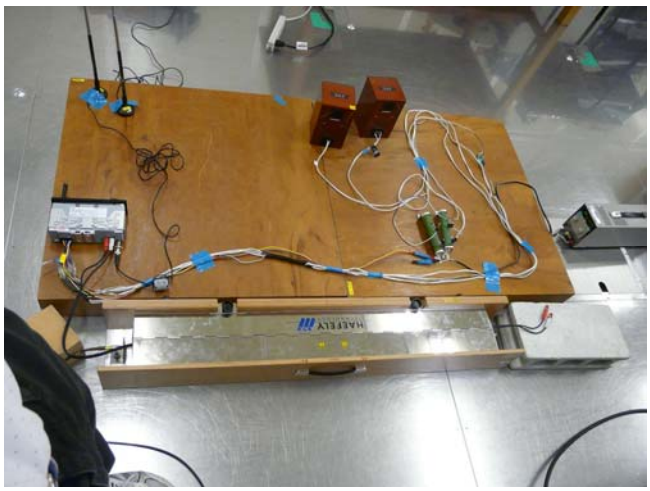
picture 4 : injunction into REAR/SW L/R/ USB mode, FM 98MHz mode



picture 5



picture 6



4.4.6 Measurement uncertainty

Uncertainty for the rise time	:	±4.09 %
Uncertainty for the peak voltage (Direct injection)	:	±3.80 %
Uncertainty for the peak voltage (Clamp)	:	±5.22 %
Uncertainty for the width of the voltage pulse	:	±1.51 %

The measurement uncertainties have been determined at a confidence level of approximately 95% (k=2).

4.5 Conducted disturbances (Inducted by radio-frequency fields)

4.5.1 Summary of measurement setting

- The tests and measurements carried out EN55035 and EN61000-4-6, conducted disturbances (Inducted by RF field)
- The set-up and conditions are “4.5.3” and “4.5.5 Photo of test configuration”.
- The test condition was performed as follows,

Test voltage	: 150kHz - 10MHz ⇒ 3V 10MHz - 30MHz, it changes linearly with respect to the logarithm of the frequency ⇒ 3V - 1V 30MHz - 80MHz ⇒ 3V
Modulation	: AM 80%, 1kHz
Frequency range	: 150kHz – 80MHz
Frequency step	: 1% of fundamental
Performance criterion	: A

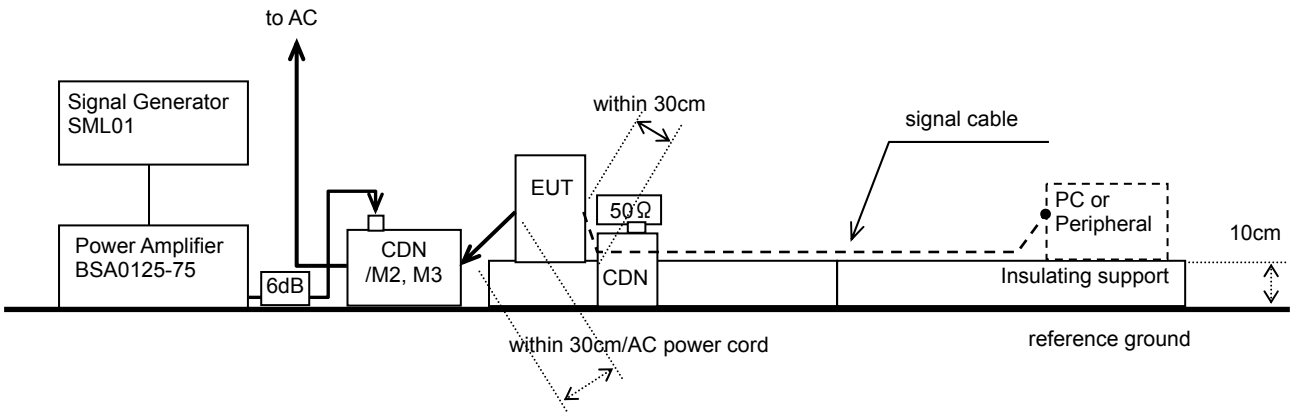
The test is carried out according to our test procedure VYES-T016 and VYES-T017.

4.5.2 Special test condition

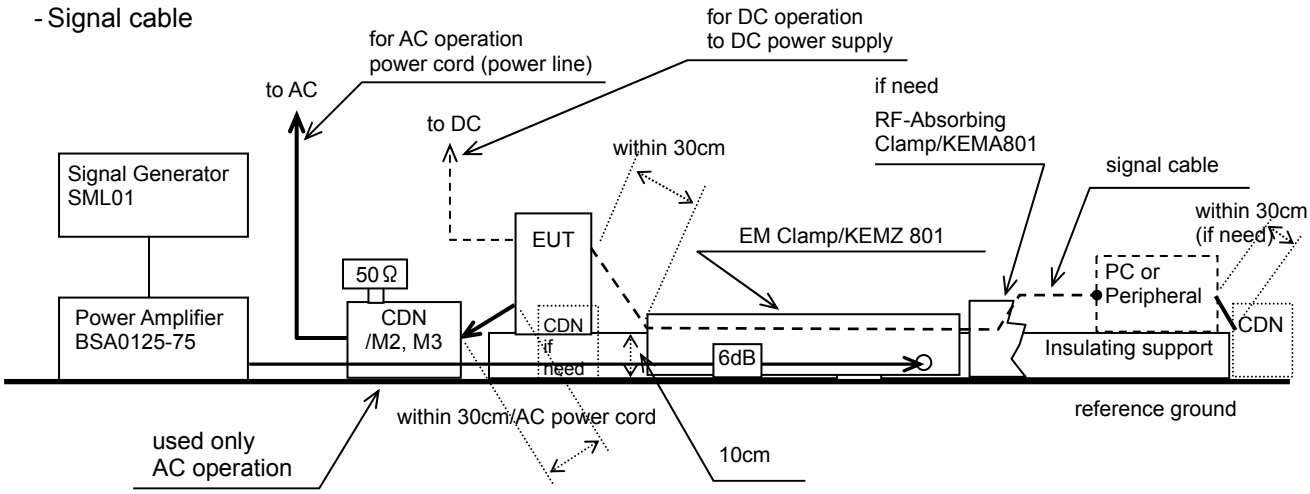
None

4.5.3 Configuration of tested system (Typical configuration)

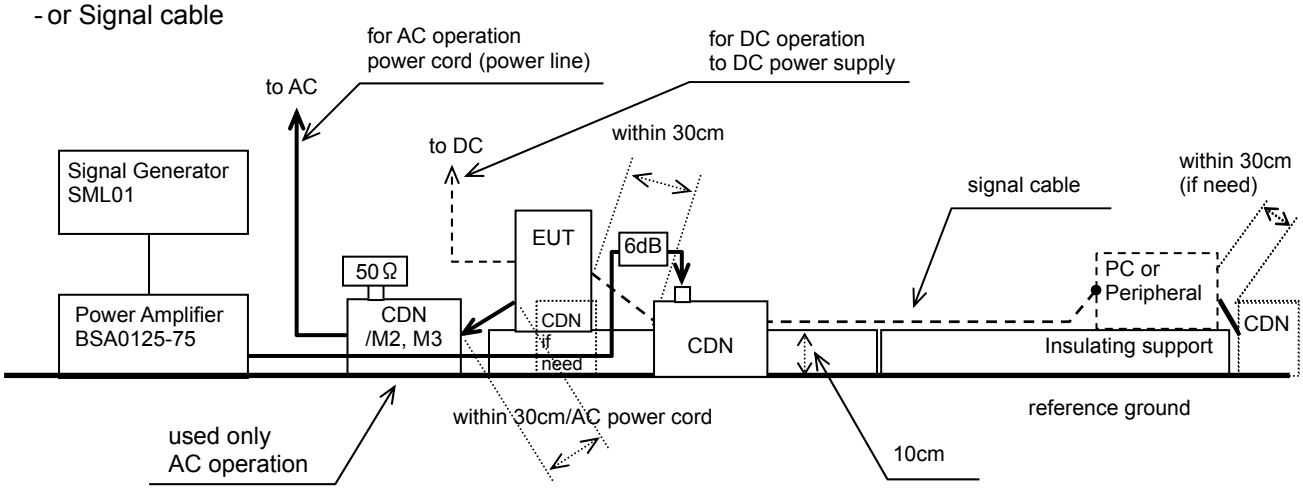
- Power cord (mains line)



- Signal cable



- or Signal cable



4.5.4 Measuring instruments

Test Site : Shielded room 1/EMCG002

Description : Shielded room 10.8m x 3.8m x 3m, filtered power supply, air conditioned

	Instrument	Type no.	Serial no.	Manufacturer	Inst. no.	Latest cal.	Cal. Interval
☒	Power Amplifiers	BSA0125-75	066453A	Bonn Elektronik	EX0S091	May/9/2018	1 year
☒	Signal Generator	SML01	105045	Rohde & Schwarz	EG2S092	Jun/21/2017	1 year
☒	Spectrum Analyzer	FSL3	100452	Rohde & Schwarz	EW0S093	Jun/20/2017	1 year
☒	EM Clamp	KEMZ 801	22061	Schaffner Chase	EX0S095	Aug/20/2017	1 year
☐	RF-Absorbing Clamp	KEMA 801	22968	Schaffner Chase	EX0S096	N/A	N/A
☒	Coaxial Attenuator	33-30-34	BU7425	AEROFLEX/ Weinschel	EQ1S102	May/25/2018	1 year
☒	Coaxial Attenuator	40-6-33	NX191	AEROFLEX/ Weinschel	EQ1S103	May/25/2018	1 year
☒	Coupling Decoupling Network	CDN M216	22658	Schaffner Chase	EX0S129	Aug/22/2017	1 year
☐	Coupling Decoupling Network	CDN M216	22659	Schaffner Chase	EX0S125	Aug/22/2017	1 year
☐	Coupling Decoupling Network	CDN M316	21941	Schaffner Chase	EX0S122	Aug/22/2017	1 year
☐	Coupling Decoupling Network	CDN M316	21940	Schaffner Chase	EX0S128	Aug/22/2017	1 year
☒	Coupling Decoupling Network	CDN USB/c	22977	Schaffner Chase	EX0S118	Aug/22/2017	1 year
☐	Coupling Decoupling Network	CDN USB/p	21790	Schaffner Chase	EX0S120	Aug/22/2017	1 year
☐	Coupling Decoupling Network	CDN S751	19260	Schaffner Chase	EX0S112	Aug/22/2017	1 year

cont.

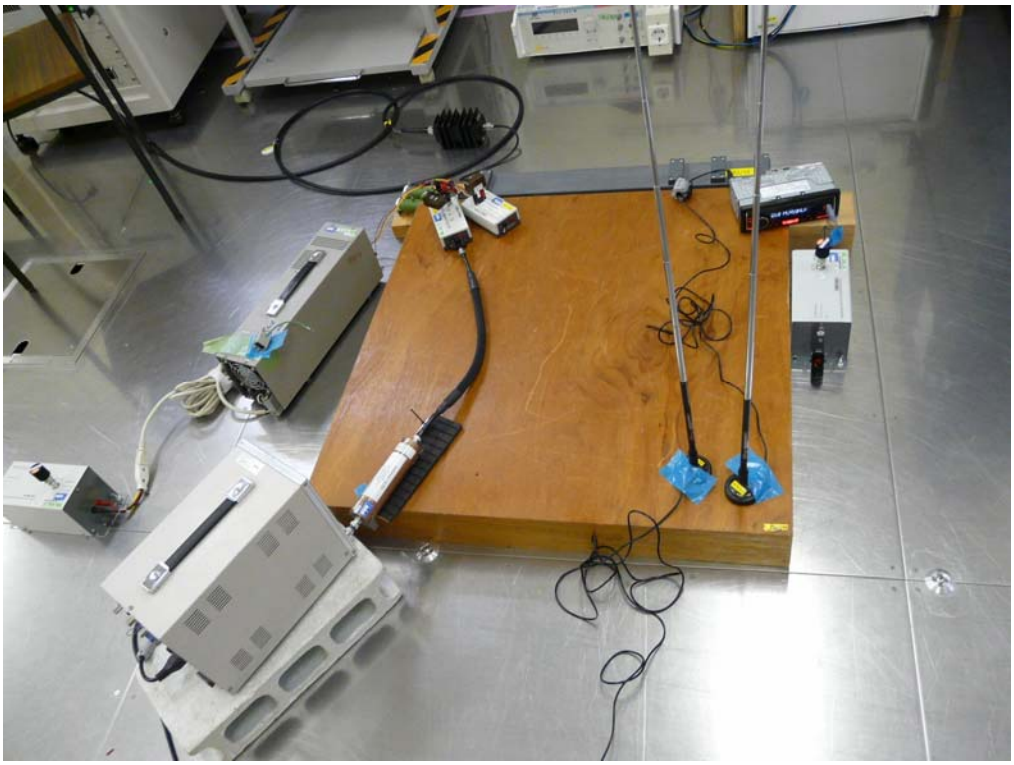
cont.

	Instrument	Type no.	Serial no.	Manufacturer	Inst. no.	Latest cal.	Cal. Interval
☐	Coupling Decoupling Network	CDN S2	12318	MEB (Schaffner)	EX0S222	Aug/22/2017	1 year
☐	Coupling Decoupling Network	CDN S2	12319	MEB (Schaffner)	EX0S224	Aug/22/2017	1 year
☐	Coaxial Terminator	CT-03BP	1117137	Tamagawa Elec.	EX0S193	Aug/21/2017	1 year
☒	Coaxial Terminator	CT-03BP	1117138	Tamagawa Elec.	EX0S194	Aug/21/2017	1 year
☒	Coaxial Terminator	CT-03BP	1131733	Tamagawa Elec.	EX0S195	Aug/21/2017	1 year
☒	Software	IM5/C	0612107	Toyo Corp.	EMCG136	N/A	N/A
☒	Noise Meter	MN-446A	73011416	Meguro	EV2S136	Aug/13/2017	1 year
☒	Band pass filter	BP02	861102	Erika Fiedler	ZZ3S137	May/31/2018	1 year
☒	DC Power Supply	PAN16-10	CK001767	KIKUSUI	EP1S145	Apr/10/2018	1 year
☒	Loudspeaker Load	RL (variable, open)	erfbf014	Erika Fiedler	ZZ3S177	May/7/2018	1 year
☒	Loudspeaker Load	RL (variable, open)	erfbf016	Erika Fiedler	ZZ3S179	May/7/2018	1 year
☐							
☐							

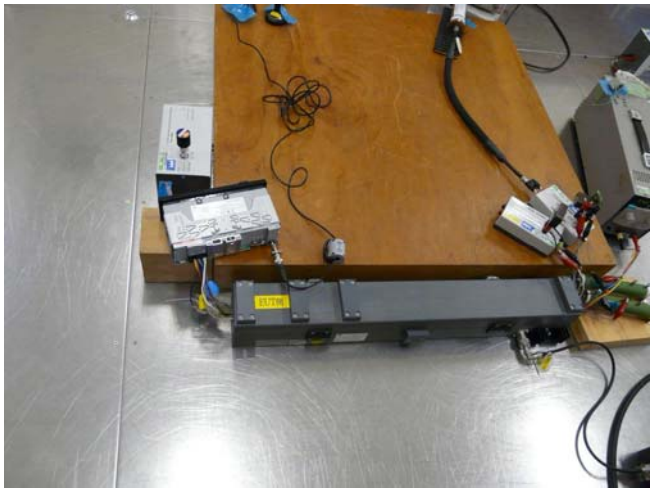
Note : "☒" indicates that these instruments were in use for this test.
"☐" indicates that these instruments were not in use for this test.

4.5.5 Photo of test configuration

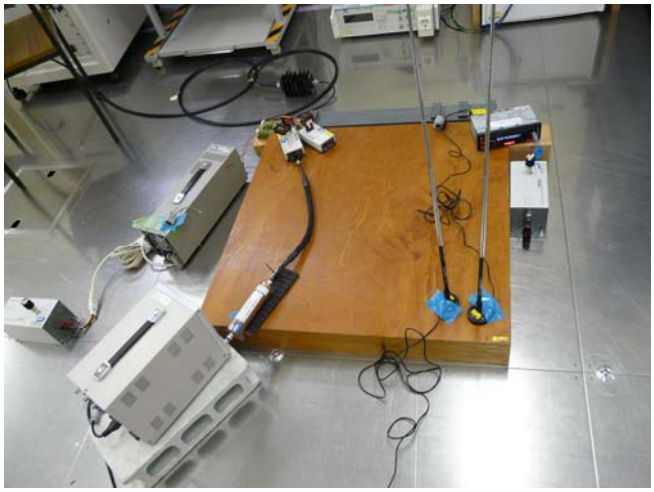
picture 1 : injunction into Wiring harness 14p/ USB mode, FM 98MHz mode



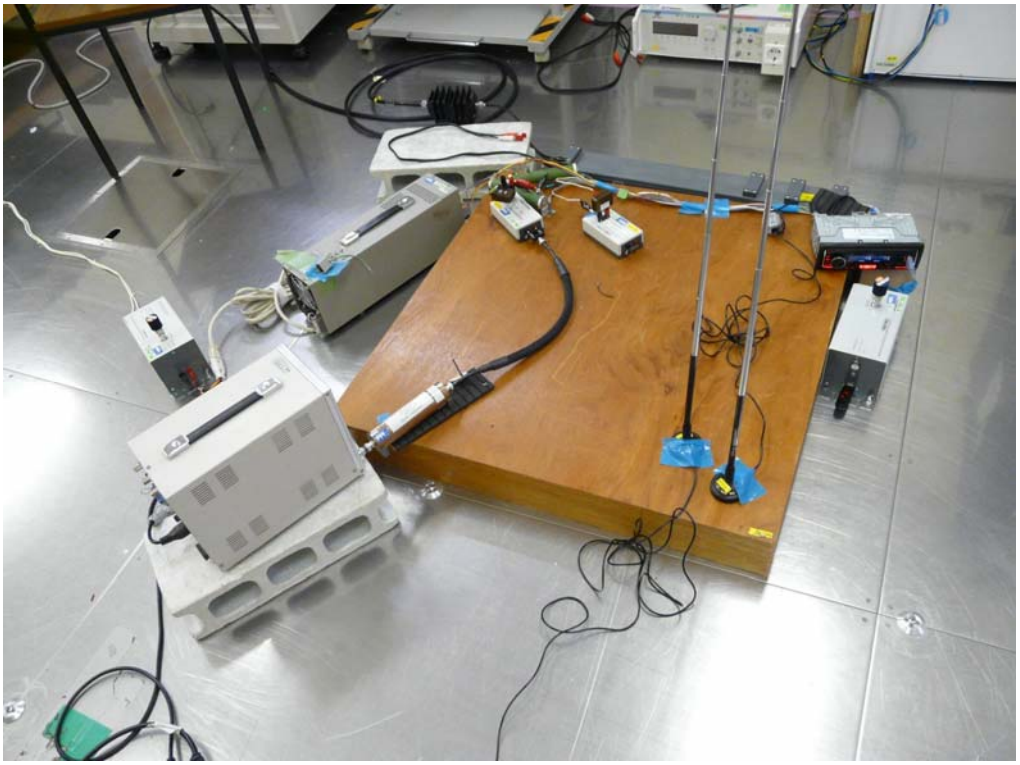
picture 2



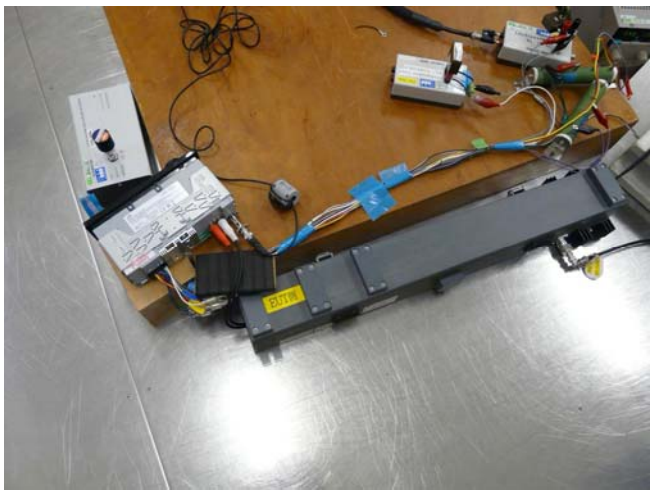
picture 3



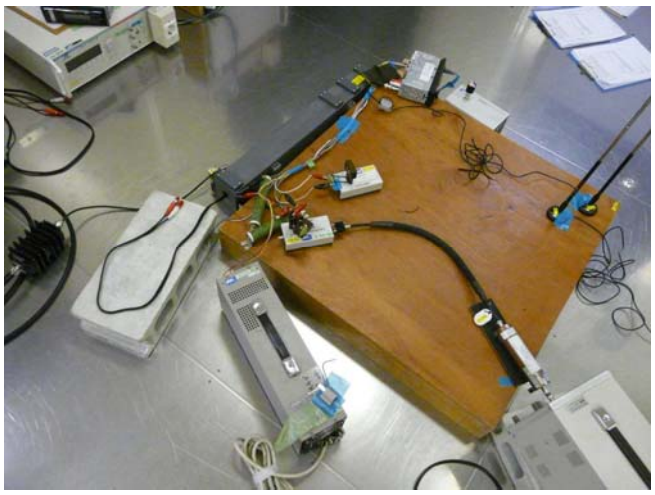
picture 4 : injunction into REAR/SW L/R/ USB mode, FM 98MHz mode



picture 5



picture 6



4.5.6 Measurement uncertainty

Frequency range	:	150kHz – 230MHz
The uncertainty for the setting level of the disturbance (CDN)	:	±2.03 dB
The uncertainty for the setting level of the disturbance (EM Clamp)	:	±3.33 dB

The measurement uncertainties have been determined at a confidence level of approximately 95% (k=2)

5. Measurement results

5.1 Electrostatic discharge (ESD) measurement results

Test specification : EN55035

Test set-up performed according EN61000-4-2

(1-1) Measurement results

Trade name/Brand	: KENWOOD	Temperature	: 24 degrees
Model name	: KD-X262	Humidity	: 57 %
Type description	: DIGITAL MEDIA RECEIVER	Air pressure	: 1015 mbar
Serial no	: 113X0025	Date	: July 11, 2018
Power supply	: DC 12V	Test engineer	: M. Kobayashi

Testing mode : EUT playback USB, 1kHz audio signal / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected

Comment : None

Remarks : Ground cable length of ESD Simulator is 2m.

Function of the EUT after test : OK

Result : OK, The EUT kept the criterion B for the required limits.

Direct discharge (contact discharge)				
Discharge to :	Remark/observation	pol.	level	Result
Screws and Chassis of EUT	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass

pol. = polarity of discharge, level = level of discharge

Direct discharge (air discharge)				
Discharge to :	Remark/observation	pol.	level	Result
Complete plastic enclosure	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
	No loss or influences of data transfer recognized.	+/–	8kV	pass

pol. = polarity of discharge, level = level of discharge

cont

cont.

Indirect discharge (contact discharge)				
Discharge to :	Remark/observation	pol.	level	Result
VCP front	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
VCP rear	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
VCP left	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
VCP right	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass

Indirect discharge (contact discharge)				
Discharge to :	Remark/observation	pol.	level	Result
HCP front	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
HCP rear	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
HCP left	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
HCP right	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass

VCP = Vertical coupling plate, HCP = Horizontal coupling plate

pol. = polarity of discharge, level = level of discharge

Remark : None

(1-2) Measurement results

Trade name/Brand	: KENWOOD	Temperature	: 24 degrees
Model name	: KD-X262	Humidity	: 63 %
Type description	: DIGITAL MEDIA RECEIVER	Air pressure	: 994 mbar
Serial no	: 113X0025	Date	: June 11, 2018
Power supply	: DC 12V	Test engineer	: M. Kobayashi

Testing mode : EUT playback FM 98MHz tuned / for Front, Speakers (L/R) connected, for Rear, 4Ω dummy load x2 connected

Comment : None

Remarks : Ground cable length of ESD Simulator is 2m.

Function of the EUT after test : OK

Result : OK, The EUT kept the criterion B for the required limits.

Direct discharge (contact discharge)				
Discharge to :	Remark/observation	pol.	level	Result
Screws and Chassis of EUT	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass

pol. = polarity of discharge, level = level of discharge

Direct discharge (air discharge)				
Discharge to :	Remark/observation	pol.	level	Result
Complete plastic enclosure	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
	No loss or influences of data transfer recognized.	+/–	8kV	pass

pol. = polarity of discharge, level = level of discharge

cont

cont.

Indirect discharge (contact discharge)				
Discharge to :	Remark/observation	pol.	level	Result
VCP front	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
VCP rear	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
VCP left	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
VCP right	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass

Indirect discharge (contact discharge)				
Discharge to :	Remark/observation	pol.	level	Result
HCP front	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
HCP rear	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
HCP left	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass
HCP right	No loss or influences of data transfer recognized.	+/–	2kV	pass
	No loss or influences of data transfer recognized.	+/–	4kV	pass

VCP = Vertical coupling plate, HCP = Horizontal coupling plate

pol. = polarity of discharge, level = level of discharge

Remark : During some discharges a click/blopp-noise in the video was recognized.

5.2 Radiated RF fields measurement results

Test specification : EN55035

Test set-up performed according EN61000-4-3.

(1-1) Measurement results

Trade name/Brand	: KENWOOD	Temperature	: 25 degrees
Model name	: KD-X262	Humidity	: 53 %
Type description	: DIGITAL MEDIA RECEIVER	Date	: July 12, 2018
Serial no	: 113X0025	Test engineer	: M. Kobayashi
Power supply	: DC 12V		

Testing mode : EUT playback USB, 1kHz audio signal/ 4Ω dummy load x4 connected

Comment : Measurement was carried out only from the frequency range 80MHz to 1GHz.
The audio output was evaluated according to the setup of Annex G, Fig.G.1.
The measurement acoustic interference ratio and/or the measured electrical interference ratio during the test shall be -20dB or better.
For Speakers output was adjust to approximately 500mW (1.42V) at 4Ω.
The requirement is a wanted to unwanted audio signal (a sinusoidal signal at 1kHz) of >26dB at a wanted audio signal level of 500mW.

Remarks : None

Function of the EUT after test : OK

Result : OK, The EUT kept the criterion A for the required limits.

Operation mode	Antenna pol.	Test level	EUT location	Remark/observation	Result
EUT playback USB/ 1kHz audio signal	Horizontal	3 V/m	Front	Sound, electrical interference ratio is more than 20dB.	pass
			Left		pass
			Rear		pass
			Right		pass
	Vertical	3 V/m	Front	Sound, electrical interference ratio is more than 20dB.	pass
			Left		pass
			Rear		pass
			Right		pass

Remark : None

5.3 Electrical fast transients/burst measurement results

Test Specification : EN55035

Test set-up performed according EN61000-4-4

(1-1) Measurement results

Trade name/Brand	: KENWOOD	Temperature	: 24 degrees
Model name	: KD-X262	Humidity	: 57 %
Type description	: DIGITAL MEDIA RECEIVER	Date	: July 11, 2018
Serial no	: 113X0025	Test engineer	: M. Kobayashi
Power supply	: DC 12V		

Testing mode : EUT playback USB, 1kHz audio signal/ for Front, Speakers (L/R) connected for Rear, 4Ω dummy load x2 connected

Comment : None

Remarks : None

Function of the EUT after test: OK

Result : OK, The EUT kept the criterion B for the required limits.

for Signal ports

EFT indirect discharge to Wiring Harness 14p/ REAR/SW L/R				
EFT to :	level	pol.	Remark/Observation level	Result
Wiring Harness 14p	0.5 kV	+	No loss or influences of data transfer recognized.	pass
		–	No loss or influences of data transfer recognized.	pass
REAR/SW L/R	0.5 kV	+	No loss or influences of data transfer recognized.	pass
		–	No loss or influences of data transfer recognized.	pass

Remark : During some EFT indirect discharge a click noise in the video was recognized.

(1-2) Measurement results

Trade name/Brand	: KENWOOD	Temperature	: 24 degrees
Model name	: KD-X262	Humidity	: 57 %
Type description	: DIGITAL MEDIA RECEIVER	Date	: July 11, 2018
Serial no	: 113X0025	Test engineer	: M. Kobayashi
Power supply	: DC 12V		

Testing mode : EUT playback FM 98MHz tuned/ for Front, Speakers (L/R) connected for Rear, 4Ω dummy load x2 connected

Comment : None

Remarks : None

Function of the EUT after test : OK

Result : OK, The EUT kept the criterion B for the required limits.

for Signal ports

EFT indirect discharge to Wiring Harness 14p/ REAR/SW L/R				
EFT to :	level	pol.	Remark/Observation level	Result
Wiring Harness	0.5 kV	+	No loss or influences of data transfer recognized.	pass
		–	No loss or influences of data transfer recognized.	pass
REAR/SW L/R	0.5 kV	+	No loss or influences of data transfer recognized.	pass
		–	No loss or influences of data transfer recognized.	pass

Remark : During some EFT indirect discharge a click noise in the video was recognized.

5.4 Conducted disturbances (Inducted by radio-frequency fields) measurement results

Test specification : EN55035

Test set-up performed according EN61000-4-6.

(1-1) Measurement results

Trade name/Brand	: KENWOOD	Temperature	: 24 degrees
Model name	: KD-X262	Humidity	: 59 %
Type description	: DIGITAL MEDIA RECEIVER	Date	: July 10, 2018
Serial no	: 113X0025	Test engineer	: M. Kobayashi
Power supply	: DC 12V		

Testing mode : EUT playback USB, 1kHz audio signal/ 4Ω dummy load x4 connected

Comment : The audio output was evaluated according to the setup of Annex G, Fig.G.1.
The measurement acoustic interference ratio and/or the measured electrical interference ratio during the test shall be -20dB or better.
For Speakers output was adjust to approximately 500mW (1.42V) at 4Ω.
The requirement is a wanted to unwanted audio signal (a sinusoidal signal at 1kHz) of >26dB at a wanted audio signal level of 500mW.

Remarks : None

Function of the EUT after test : OK

Result : OK, The EUT kept the criterion A for the required limits.

Measured with : CDN ■ Type : M2 □ Type : M3 □ Type : USB/p ■ Type : USB/c □ Type : S751
EM Clamp ■ Type : KEMZ 801

Note : "■" indicates that these instruments were in use for this test.
"□" indicates that these instruments were not in use for this test.

Injection port : Wiring Harness 14p, REAR/SW L/R Injection EM Clamp/ KEMZ801

Frequency	Level	Remark/Observation level	Result
0.15M – 10 MHz	3.0 V	No loss or influences of data transfer recognized.	pass
10M - 30MHz	3.0-1.0V	No loss or influences of data transfer recognized.	pass
30M – 80MHz	1.0V	No loss or influences of data transfer recognized.	pass

Remark : USB length of from EUT to CDN USB/c was less than 30cm.
Power cord length of from DC power supply (peripheral) to CDN M2 was less than 30cm.

(1-2) Measurement results

Trade name/Brand	: KENWOOD	Temperature	: 24 degrees
Model name	: KD-X262	Humidity	: 59 %
Type description	: DIGITAL MEDIA RECEIVER	Date	: July 10, 2018
Serial no	: 113X0025	Test engineer	: M. Kobayashi
Power supply	: DC 12V		

Testing mode : EUT FM 98MHz tuned / 4Ω dummy load x4 connected

Comment : The audio output was evaluated according to the setup of Annex G, Fig.G.1.
The measurement acoustic interference ratio and/or the measured electrical interference ratio during the test shall be -20dB or better.
For Speakers output was adjust to approximately 500mW (1.42V) at 4Ω.
The requirement is a wanted to unwanted audio signal (a sinusoidal signal at 1kHz) of >26dB at a wanted audio signal level of 500mW.

Remarks : None

Function of the EUT after test : OK

Result : OK, The EUT kept the criterion A for the required limits.

Measured with : CDN ■ Type : M2 □ Type : M3 □ Type : USB/p ■ Type : USB/c □ Type : S751
EM Clamp ■ Type : KEMZ 801

Note : "■" indicates that these instruments were in use for this test.
"□" indicates that these instruments were not in use for this test.

Injection port : Wiring Harness 14p, REAR/SW L/R Injection EM Clamp/ KEMZ801

Frequency	Level	Remark/Observation level	Result
0.15M – 10 MHz	3.0 V	No loss or influences of data transfer recognized.	pass
10M - 30MHz	3.0-1.0V	No loss or influences of data transfer recognized.	pass
30M – 80MHz	1.0V	No loss or influences of data transfer recognized.	pass

Remark : USB length of from EUT to CDN USB/c was less than 30cm.
Power cord length of from DC power supply (peripheral) to CDN M2 was less than 30cm.