RADIO TEST REPORT

Test Report No.: 30CE0153-YK-01-A

Applicant	:	**PIONEER CORPORATION**
Type of Equipment	:	**DVD AV RECEIVER**
Model No.	:	**AVH-P5200BT**
FCC ID	:	**AJDK027**
Test regulation	:	**FCC Part15 Subpart C: 2009**
Test result	:	**Complied**

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2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.

Date of test: December 28 and 29, 2009

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Table of Contents Page

1 Applicant information

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2 Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment	:	DVD AV RECEIVER
Model No.	:	AVH-P5200BT
Serial No.	:	Refer to 4.2 in this report.
Rating	:	DC14.4V
Country of Mass-production	:	Thailand
Condition of EUT	:	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No modification by the test lab.
Receipt Date of Sample	:	December 9, 2009

2.2 Product description

Model: AVH-P5200BT (referred to as the EUT in this report) is a DVD AV RECEIVER.
Clock frequency:
(1) FM/AM TUNER: 39.9MHz
(2) DVD DRIVE:
DC-DC CONVERTER: 2.25MHz
DVD DECODER: 27MHz, 33.8688MHz, 36.864MHz, 40.5MHz, 67.5MHz, 108MHz, 121.5MHz, 405MHz
PWM Motor Driver: 100kHz
(3) DC-DC CONVERTER: 365.78kHz / 425.10kHz, 476.63kHz / 524.29kHz
(4) SYSTEM MICRO COMPUTER: 45.29848MHz - 47.18592MHz/3.93216MHz
(5) SD/USB DECODER: 27MHz, 48MHz, 33.8688MHz, 36.864MHz, 40.5MHz, 67.5MHz, 108MHz, 121.5MHz, 405MHz
(6) DISPLAY CONVERTER: 9.597MHz, 33MHz, 264MHz
(7) Bluetooth module OSC: 26MHz
(8) LCD BACK LIGHT DRIVER: 476.63kHz / 524.29kHz

Equipment type	:	Transceiver
Frequency of operation	:	2402-2480MHz
Bandwidth & channel spacing	:	79MHz & 1MHz
Type of modulation	:	FHSS
Antenna type	:	Pattern
Antenna gain with cable loss	:	-0.12dBi
Antenna connector type	:	Micro coaxial (I-PEX: 20279 type)
ITU code	:	79M0F1D
Operation temperature range	:	-10 to +60 deg.C.

FCC Part15.31 (e)
The equipment provides the Bluetooth transmitter with stable power supply (DC 3.3 V), therefore, the equipment complies power supply regulation.

FCC Part15.203 Antenna requirement
The equipment and its antenna comply with this requirement since this antenna is built in the equipment and it cannot be replaced by end users.

3 Test specification, procedures and results

3.1 Test specification

Test specification : FCC Part 15 Subpart C: 2009, final revised on December 2, 2009
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.209 Radiated emission limits, general requirements
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

The EUT complies with FCC Part 15 Subpart B: 2009, final revised on December 2, 2009. The test has been performed by the customer.

3.2 Procedures & Results

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC Section 15.207	-	N/A *1)	N/A	N/A
Carrier frequency separation	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)	Conducted	N/A	*See data.	Complied
20dB bandwidth	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)	Conducted	N/A		Complied
Number of hopping frequency	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Dwell time	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (a)(1)(iii)	Conducted	N/A		Complied
Maximum peak output power	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (b)(1)	Conducted	N/A		Complied
Band edge compliance & Spurious emission	FCC Public Notice DA 00-705 & ANSI C63.4:2003 13. Measurement of intentional radiators	FCC Section15.247 (d) Section15.209	Conducted/ Radiated	N/A	6.9dB (12205MHz, Vertical, AV, Tx 2441MHz)	Complied

Note: UL Japan's EMI Work Procedures No.QPM05 and QPM15.
*1) The test is not applicable since the EUT has no AC mains.

3.3 Addition to standard

Item	Test Procedure	Specification	Remarks	Worst Margin	Results
Occupied bandwidth (99%)	ANSI C63.4:2003 13. Measurement of intentional radiators RSS-Gen 4.6.1	RSS-Gen 4.6.1	Conducted	-	Complied

* Other than above, no addition, exclusion nor deviation has been made from the standard.

3.4 Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

	No.1 open site (±)	No.2 open site (±)	No.1 semi-anechoic chamber (±)
Radiated emission (3m)			
30-300MHz	4.4 dB	4.5 dB	4.6 dB
300-1000MHz	4.6 dB	4.7 dB	4.7 dB
1-18GHz	3.8 dB	4.2 dB	4.5 dB
18-26.5GHz	4.4 dB	4.5 dB	4.5 dB

The data listed in this test report has enough margin, more than site margin.

Antenna port conducted test	(±)
Below 1GHz	0.4 dB
1GHz and above	0.7 dB

3.5 Test location

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Telephone number : +81 465 77 1011
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JAB Accreditation No. : RTL02610

No. 1 test site has been fully described in a report submitted to FCC office, and accepted on July 23, 2008 (Registration No.: 95486).
IC Registration No. : 2973B-1
No. 2 test site has been fully described in a report submitted to FCC office, and accepted on February 27, 2008 (Registration No.: 466226).
IC Registration No. : 2973B-3
No. 1 anechoic chamber has been fully described in a report submitted to FCC office, and accepted on October 22, 2008 (Registration No.: 95967).
IC Registration No. : 2973B-2

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	8.0 x 5.0 x 2.5	No.1 Semi-anechoic chamber	10.0 x 7.5 x 5.7
No.2 shielded room	5.0 x 4.0 x 2.5		
No.3 shielded room	4.0 x 5.0 x 2.7		

Open test site	Maximum measurement distance
No.1 open test site	30m
No.2 open test site	10m

4 System test configuration

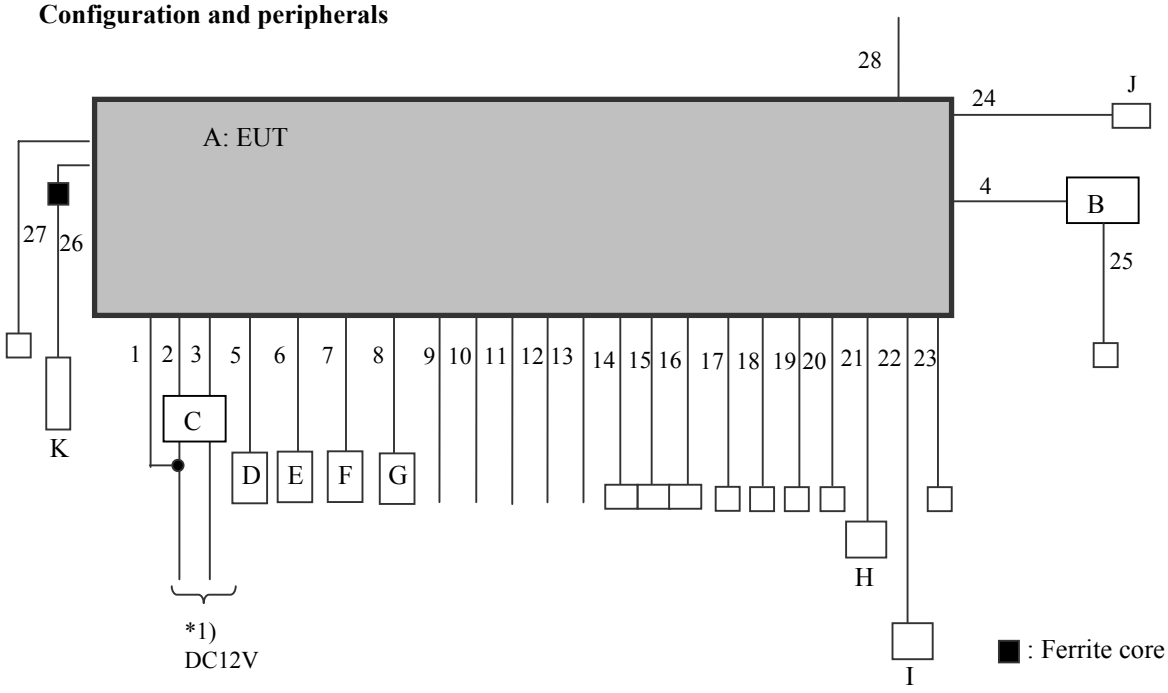
4.1 Justification

The system was configured in typical fashion (as a customer would normally use it) for testing.

Test item	Operating mode	Tested frequency
Carrier frequency separation	Transmitting Hopping ON/Inquiry, Payload: PRBS9	-
20dB bandwidth & Maximum peak output power	Transmitting Hopping OFF/Inquiry, Payload: PRBS9	2402MHz, 2441MHz, 2480MHz
Number of hopping frequency	Transmitting Hopping ON/Inquiry, Payload: PRBS9	-
Dwell time	Transmitting (Hopping ON) -DH1, -DH3, -DH5	-
	-Inquiry	
Spurious emission & Band edge compliance (Conducted)	Transmitting (DH5), Payload: PRBS9 -Hopping ON/Inquiry -Hopping OFF	Spurious emission: 2402MHz, 2441MHz, 2480MHz Band edge compliance: 2402MHz, 2480MHz
(Radiated)	Transmitting (DH5), Payload: PRBS9	
99% occupied bandwidth	Transmitting (DH5), Payload: PRBS9 -Hopping ON -Hopping OFF	2402MHz, 2441MHz, 2480MHz

* As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload (except Dwell time test)
** AFH function and EDR function are not used in the EUT.

4.2 Configuration and peripherals



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	DVD AV RECEIVER	AVH-P5200BT	*2)	PIONEER	EUT
B	Tuner Box	CXC8856	11	PIONEER	-
C	Filter	-	-	-	-
D	Speaker	TS-X350	-	PIONEER	-
E	Speaker	TS-X350	-	PIONEER	-
F	Dummy speaker load	RHA100N	-	-	-
G	Dummy speaker load	RHA100N	-	-	-
H	Wired Remote controller	RM-X2S	-	PIONEER	-
I	Hands free Microphone	-	-	PIONEER	-
J	Terminal Resister	-	-	-	-
K	USB memory	D33021	-	SONY	-

*1) DC power supply (Model No.: PAN55-20A) was used for DC 12.0V input.
*2) Radiated emission: TPIJ000035, Other test: TPIJ000032

List of cables used *3)

No.	Name	Length (m)	Shield		Remark
			Cable	Connector	
1	Accessory cable	0.15 + 2.5	Unshielded	Unshielded	-
2	Battery cable	0.15 + 2.5	Unshielded	Unshielded	-
3	Ground cable	0.15 + 2.5	Unshielded	Unshielded	-
4	Tuner cable	0.8	Shielded	Shielded	-
5	Speaker cable (Front L)	0.15 + 4.8	Unshielded	Unshielded	-
6	Speaker cable (Front R)	0.15 + 4.8	Unshielded	Unshielded	-
7	Speaker cable (Rear L)	0.15 + 4.8	Unshielded	Unshielded	-
8	Speaker cable (Rear R)	0.15 + 3.8	Unshielded	Unshielded	-
9	Parking cable	1.8	Unshielded	Unshielded	-
10	Reverse Gear Control cable	0.15 + 1.2	Unshielded	Unshielded	-
11	System Remote control cable	0.15 + 1.2	Unshielded	Unshielded	-
12	Mute cable	0.15 + 1.2	Unshielded	Unshielded	-
13	Illumination cable	0.15 + 3.0	Unshielded	Unshielded	-
14	RCA cable (Front Output)	3.0	Unshielded	Unshielded	Terminated
15	RCA cable (Rear Output)	3.0	Unshielded	Unshielded	Terminated
16	RCA cable (Subwoofer Output)	3.0	Unshielded	Unshielded	Terminated
17	RCA cable (Audio Input)	2.1	Unshielded	Unshielded	Terminated
18	Video cable (Video Input)	1.3	Unshielded	Unshielded	Terminated
19	Video cable (Rear Monitor Output)	1.7	Unshielded	Unshielded	Terminated
20	Video cable (Rear View Camera In)	1.3	Unshielded	Unshielded	Terminated
21	Wired Remote cable	1.7	Unshielded	Unshielded	-
22	MIC cable	3.5	Unshielded	Unshielded	-
23	Rear Monitor Output (Audio) Cable	1.4	Unshielded	Unshielded	Terminated
24	Terminal Resister cable (RGB Input)	2.0	Unshielded	Unshielded	-
25	Antenna Cable	0.7	Shielded	Shielded	Terminated
26	USB cable	0.5 + 3.0	Shielded	Unshielded	-
27	Quads mini Jack cable	2.0	Unshielded	Unshielded	Terminated
28	IP-BUS cable	1.6	Shielded	Unshielded	-

*3) All cables used for the measurement are exclusive use or marketed.

5 Carrier frequency separation

Test procedure
The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

6 20dB bandwidth & Occupied bandwidth (99%)

Test procedure
The bandwidth was measured with a spectrum analyzer connected to the antenna port.
The channel separation in Hopping mode and Inquiry mode was separated by 25kHz and 2/3 of the 20dB bandwidth.

Summary of the test results: Pass

7 Number of hopping frequency

Test procedure
The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

8 Dwell time

Test procedure
The Dwell time was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass

9 Maximum peak output power

Test procedure
The Maximum Peak Output Power was measured with a power meter connected to the antenna port.

Summary of the test results: Pass

10 Out of band emissions (Antenna port conducted)

Test procedure
The Out of Band Emissions was measured with a spectrum analyzer connected to the antenna port.

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a conducted measurement.

Summary of the test results: Pass

11 Out of band emissions (Radiated)

11.1 Operating environment

The test was carried out in No.1 anechoic chamber.

11.2 Test configuration

EUT was placed on a urethane platform of nominal size, 0.9m by 1.8m, raised 80cm above the conducting ground plane to prevent the reflection influence. The configuration was set in accordance with ANSI C63.4: 2003. Photographs of the set up are shown in Appendix 1.

11.3 Test conditions

Frequency range : 30MHz - 26GHz
Test distance : 3m

11.4 Test procedure

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3m.
The measuring antenna height was varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for both vertical and horizontal antenna polarization.
Measurements were performed with QP, PK, and AV detector.
The radiated emission measurements were made with the following detector function of the test receiver.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz, AV*1): RBW: 1MHz/VBW: See data
Measuring antenna	Biconical (30-300MHz) Logperiodic (300MHz-1GHz)	Horn

*1) When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

The EUT was tested in the direction normally used.

11.5 Band edge

Band edge level at 2390MHz and 2483.5MHz is below the limits of FCC 15.209 and band edge level at 2400MHz is below the 20dBc. Refer to the data.

11.6 Results

Summary of the test results : Pass *No noise was detected above the 5th order harmonics.

APPENDIX 1: Photographs of test setup

APPENDIX 2: Test Data

APPENDIX 3: Test instruments