RADIO TEST REPORT

Test Report No. : 12656071S-N

Applicant	:	**Nintendo Co., Ltd.**
Type of Equipment	:	**Game Console**
Model No.	:	**HDH-001**
FCC ID	:	**BKEHDH001**
Test regulation	:	**FCC Part 15 Subpart C: 2019** * NFC part
Test Result	:	**Complied (Refer to SECTION 3.2)**

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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.
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6. This test report covers Radio technical requirements.
   It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
8. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
9. The information provided from the customer for this report is identified in SECTION 1.

Date of test: December 19 to 24, 2018
February 8 to April 22, 2019

Representative test engineer:
Makoto Hosaka
Engineer
Consumer Technology Division

Approved by:
Akio Hayashi
Leader
Consumer Technology Division

☐ The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan.
☒ There is no testing item of "Non-accreditation".

RTL02610

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REVISION HISTORY

Original Test Report No.: 12656071S-N

Revision	Test report No.	Date	Page revised	Contents
- (Original)	12656071S-N	July 19, 2019	-	-

CONTENTS **PAGE**

SECTION 1: Customer information

Company Name	:	Nintendo Co., Ltd.
Address	:	11-1 Hokotate-cho, Kamitoba, Minami-ku, Kyoto 601-8501, Japan
Telephone Number	:	+81-75-662-9600
Facsimile Number	:	+81-75-662-9624
Contact Person	:	Kazuya Kuramoto

The information provided from the customer is as follows;
- Applicant, Type of Equipment, Model No., FCC ID on the cover and other relevant pages
- Operating/Test Mode(s) (Mode(s)) on all the relevant pages
- SECTION 1: Customer information
- SECTION 2: Equipment under test (E.U.T.)
- SECTION 4: Operation of E.U.T. during testing

* The laboratory is exempted from liability of any test results affected from the above information in SECTION 2 and 4.

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

2.1 Identification of E.U.T.

Type of Equipment	:	Game Console
Model No.	:	HDH-001
Serial No.	:	Refer to Section 4.2
Rating	:	DC 3.8 V (battery), AC Adapter input: AC 100 V - 240 V, 50 Hz / 60 Hz, 1 A, AC Adapter output: DC 5 V - DC 15 V, 2.6 A
Receipt Date of Sample (Information from test lab.)	:	December 19, 2018
Country of Mass-production	:	China
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT	:	No Modification by the test lab.

2.2 Product Description

Model: HDH-001 (referred to as the EUT in this report) is a Game Console.

Radio Specification

Wireless LAN, Bluetooth part:

Equipment type	:	Transmitter
Frequency of operation	:	Wireless LAN part: (2.4 GHz): 2412 MHz - 2472 MHz, (U-NII-1): 5180 MHz - 5240 MHz, (U-NII-2A): 5260 MHz - 5320 MHz, (U-NII-2C): 5500 MHz - 5700 MHz, (U-NII-3): 5745 MHz - 5825 MHz, Bluetooth (BDR/EDR/BTLE) part: 2402 MHz - 2480 MHz
Radio part clock frequency	:	37.4 MHz
Channel spacing	:	Wireless LAN part: (2.4 GHz): 5 MHz, (5 GHz): 20 MHz, Bluetooth part: (BDR/EDR): 1 MHz, (BT LE): 2 MHz
Type of modulation	:	Wireless LAN part: 2.4 GHz bands: DBPSK, DQPSK, CCK, OFDM, 5 GHz bands: OFDM Bluetooth (BT) part: BDR (Basic Data Rate): GFSK, EDR (Enhanced Data Rate): π/4-DQPSK, 8DPSK, BT LE (Low Energy mode): GFSK
Antenna type	:	Sheet metal antenna
Antenna connector type	:	(Ant: 0): MHF2, (Ant: 1): MHF2
Antenna gain	:	2.4 GHz bands: (Ant: 0): -0.904 dBi, (Ant: 1): -0.730 dBi 5 GHz bands: (Ant: 0): 2.949 dBi, (Ant: 1): 1.994 dBi
Power Supply (radio part input)	:	DC 1.8 V, DC 3.3 V
Operation temperature range	:	+5 deg.C to +35 deg.C

Remarks: This wireless module consists of 1 chip each of 5 GHz bands and 2.4 GHz bands.

(NFC part)

Equipment type	:	Transmitter
Frequency of operation	:	13.56 MHz
Radio part clock frequency	:	27.12 MHz
Type of modulation	:	ASK
Power Supply (radio part input)	:	DC 1.8 V, DC 5.0 V
Antenna type	:	Ferrite Chip Antenna
Operation temperature range	:	+5 deg.C to +35 deg.C

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification	:	FCC Part 15 Subpart C FCC Part 15 final revised on June 4, 2019 and effective July 5, 2019 except 15.258
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 15.215 Additional provisions to the general radiated emission limitations. Section 15.225 Operation within the bands 13.110 - 14.010 MHz.

* The revision on June 4, 2019, does not affect the test specification applied to the EUT.

* Also the EUT complies with FCC Part 15 Subpart B.

3.2 Procedures and results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted emission	ANSI C63.10:2013 6. Standard test methods	FCC 15.207	2.7 dB (13.56000 MHz, QP, L1, antenna terminated)	Complied# a)	-
	RSS-Gen 8.8	RSS-Gen 8.8			
Electric field strength of fundamental emission	ANSI C63.10:2013 6. Standard test methods	FCC 15.225 (a)	56.7 dB (Vertical)	Complied b)	Radiated
	RSS-Gen 6.4, 6.12	RSS-210 B.6			
Electric field strength of outside the allocated bands	ANSI C63.10:2013 6. Standard test methods	FCC 15.225 (b)(c)	37.8 dB (14.195 MHz, Vertical)	Complied b)	Radiated
	RSS-Gen 6.4, RSS-Gen 6.13	RSS-210 B.6			
Electric field strength of spurious emission	ANSI C63.10:2013 6. Standard test methods	FCC 15.209 FCC 15.225 (d)	1.1 dB (40.680 MHz, Vertical)	Complied# b)	Radiated
	RSS-Gen 6.4, 6.13	RSS-210 B.6			
20 dB bandwidth	ANSI C63.10:2013 6. Standard test methods	FCC 15.215 (c)	-	Complied c)	Radiated
	RSS-Gen 6.6	-			
Frequency tolerance	ANSI C63.10:2013 6. Standard test methods	FCC 15.225 (e)	-	Complied d)	Radiated
	RSS-Gen 6.11, 8.11	RSS-210 B.6			

Note: UL Japan's EMI Work Procedures No.13-EM-W0420 and 13-EM-W0422.
a) Refer to APPENDIX 1 (data of Conducted emission)
b) Refer to APPENDIX 1 (data of Radiated emission)
c) Refer to APPENDIX 1 (data of 20 dB bandwidth & 99 % Occupied bandwidth)
d) Refer to APPENDIX 1 (data of Frequency tolerance)

Symbols:
Complied The data of this test item has enough margin, more than the measurement uncertainty.
Complied# The data of this test item meets the limits unless the measurement uncertainty is taken into consideration.

FCC Part 15.31 (e)
This EUT provides the stable voltage constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement
It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement.

3.3 Addition to standard

Item	Test Procedure	Specification	Worst margin	Results	Remarks
99 % Occupied Bandwidth	RSS-Gen 6.7	**IC:** -	N/A	- c)	Conducted
c) Refer to APPENDIX 1 (data of 20 dB bandwidth & 99 % Occupied bandwidth)					

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

3.4 Uncertainty

There is no applicable rule of uncertainty in this applied standard. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.

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

Shonan EMC Lab.

Item	Frequency range	Uncertainty (+/-)				
		No. 1 SAC / SR	No. 2 SAC / SR	No. 3 SAC / SR	No. 4 SAC / SR	No. 5,6,8 SR
Conducted emission (AC Mains) LISN	150 kHz-30 MHz	2.9 dB	2.8 dB	2.9 dB	2.9 dB	2.9 dB
Radiated emission (Measurement distance: 3 m)	9 kHz-30 MHz	3.0 dB	3.0 dB	3.1 dB	-	-
	30 MHz-200 MHz	4.6 dB	4.6 dB	4.7 dB	-	-
	200 MHz-1 GHz	6.0 dB	6.0 dB	6.1 dB	-	-
	1 GHz-6 GHz	4.8 dB	4.8 dB	4.8 dB	-	-
	6 GHz-18 GHz	5.4 dB	5.4 dB	5.4 dB	-	-
	18 GHz-40 GHz	5.6 dB	5.6 dB	5.6 dB	-	-

SAC=Semi-Anechoic Chamber
SR= Shielded Room is applied besides radiated emission

Antenna terminal test	Uncertainty (+/-)
Bandwidth Measurement	0.61 %
Frequency Measurement	2.9 E-5
Temperature	0.59 deg.C.
Humidity	3.60%
Voltage	0.74%

3.5 Test Location

UL Japan, Inc. Shonan EMC Lab.
1-22-3, Megumigaoka, Hiratsuka-shi, Kanagawa-ken 259-1220 JAPAN
Telephone: +81 463 50 6400, Facsimile: +81 463 50 6401
JAB Accreditation No. RTL02610 (FCC Test Firm Registration Number: 839876, ISED Lab Company Number: 2973D)

Test site	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber	8.1 x 5.1 x 3.55	8.1 x 5.1	-
No.1 Shielded room	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.2 Shielded room	6.8 x 4.1 x 2.7	6.8 x 4.1	-
No.3 Shielded room	6.3 x 4.7 x 2.7	6.3 x 4.7	-
No.4 Shielded room	4.4 x 4.7 x 2.7	4.4 x 4.7	-
No.5 Shielded room	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.6 Shielded room	7.8 x 6.4 x 2.7	7.8 x 6.4	-
No.8 shielded room	3.45 x 5.5 x 2.4	3.45 x 5.5	-
No.1 Measurement room	2.55 x 4.1 x 2.5	-	-

3.6 Test data, Test instruments, and Test set up

Refer to APPENDIX.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating Mode(s)

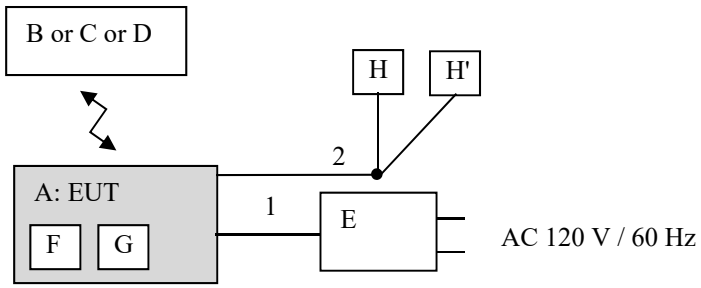
Test item	Operating mode	Tested frequency
All items except for Frequency Tolerance	Transmitting 13.56 MHz	13.56 MHz
Frequency Tolerance	Transmitting 13.56 MHz (Non-modulated)	13.56 MHz

Software for testing: Controller NFC Checker Ver.B.01
Power setting: Fixed

The carrier level and noise levels were confirmed with and without Tag, and the test was made with the condition that has the maximum noise.
Combinations of the worst case:

Radiated emission (Carrier)	Radiated emission (Below 30 MHz)	Radiated emission (Above 30 MHz)
With Tag (Type F)	With Tag (Type F)	With Tag (Type F)

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	Game Console	HDH-001	XJW01000026212 *1) XJW01000020999 *2)	Nintendo Co., Ltd.	EUT
B	Tag (type A)	NVL-001	-	Nintendo Co., Ltd.	Type A
C	Tag (type B)	-	-	-	Type B
D	Tag (type F)	-	-	-	Type F
E	AC Adapter	HAC-002	-	Nintendo Co., Ltd.	-
F	Game Card	HAC-008	DFCAA22L000	Nintendo Co., Ltd.	-
G	Micro SD Card	-	-	Transcend	-
H, H'	Headphone	-	-	Nintendo Co., Ltd.	-

*1) Used for radiated emission test, the EUT with antenna of conducted emission test and test fixture tests.
*2) Used for antenna terminated of conducted emission test.

List of cables used

No.	Cable Name	Length (m)	Shield		Remark
			Cable	Connector	
1	USB	1.8	Shielded	Shielded	-
2	Headphone	0.5 + 0.3	Unshielded	Unshielded	-

SECTION 5: Conducted Emission

Test Procedure and conditions

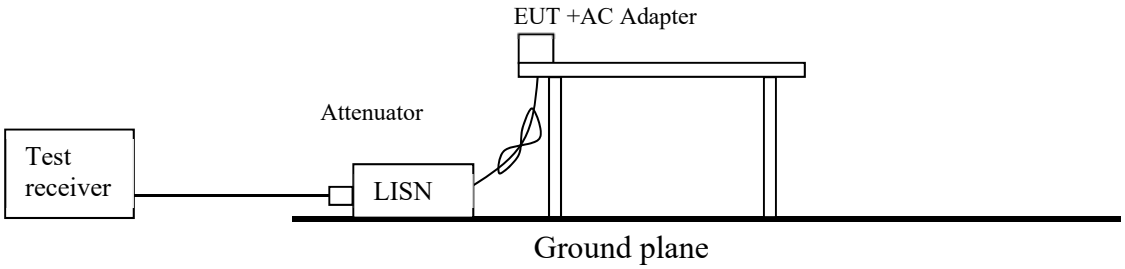
EUT was placed on a platform of nominal size, 1.0 m by 2.0 m, raised 0.8 m above the conducting ground plane. The table is made of expanded polystyrol and expanded polypropylene and the table top is covered with polycarbonate. That has very low permittivity.
The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80 cm from any other grounded conducting surface. EUT was located 80 cm from a Line Impedance Stabilization Network (LISN) / Artificial mains Network (AMN) and excess AC cable was bundled in center.

I/O cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30 cm to 40 cm long and were hanged at a 40 cm height to the ground plane.
The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT via AC Adapter in a Shielded room.
The EUT via AC Adapter was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Detector : QP and CISPR AV
Measurement range : 0.15 MHz - 30 MHz
Test data : APPENDIX
Test result : Pass

Figure 1: Test Setup



SECTION 6: Radiated Emission (Electric field strength of Fundamental emission and Spurious emission within the band)

Test Procedure

EUT was placed on a platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane.
The table is made of expanded polystyrol and expanded polypropylene and the table top is covered with polycarbonate. That has very low permittivity.
The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30 m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.
These tests were performed in semi anechoic chamber. Therefore the measured level of emissions may be higher than if measurements were made without a ground plane.
However test results were confirmed to pass against standard limit.

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3 m.

Frequency: From 9 kHz to 30 MHz at distance 3 m (Refer to Figure 2)
The EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for vertical polarization (antenna angle: 0 deg., 45 deg., 90 deg. and 135 deg.) and horizontal polarization. Drawing of the antenna direction is shown in Figure 1.

Frequency: From 30 MHz to 1 GHz at distance 3 m (Refer to Figure 2).
The measuring antenna height was varied between 1 m and 4 m 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.

	9 kHz to 90 kHz & 110 kHz to 150 kHz	90 kHz to 110 kHz	150 kHz to 490 kHz	490 kHz to 30 MHz	30 MHz to 1 GHz
Detector Type	PK/AV	QP	PK/AV	QP	QP
IF Bandwidth	200 Hz	200 Hz	10 kHz	9 kHz	120 kHz
Distance factor *1)	-80 dB	-80 dB	-80 dB	-40 dB	-
Measuring antenna	Loop antenna				Biconical (30 MHz - 199.99 MHz) Logperiodic (200 MHz - 1 GHz)

*1) FCC 15.31 (f)(2) (9 kHz-30 MHz)
Distance Factor: 40 x log (3 m / 300 m) = -80 dB
Distance Factor: 40 x log (3 m / 30 m) = -40 dB

Figure 2: Direction of the Loop Antenna

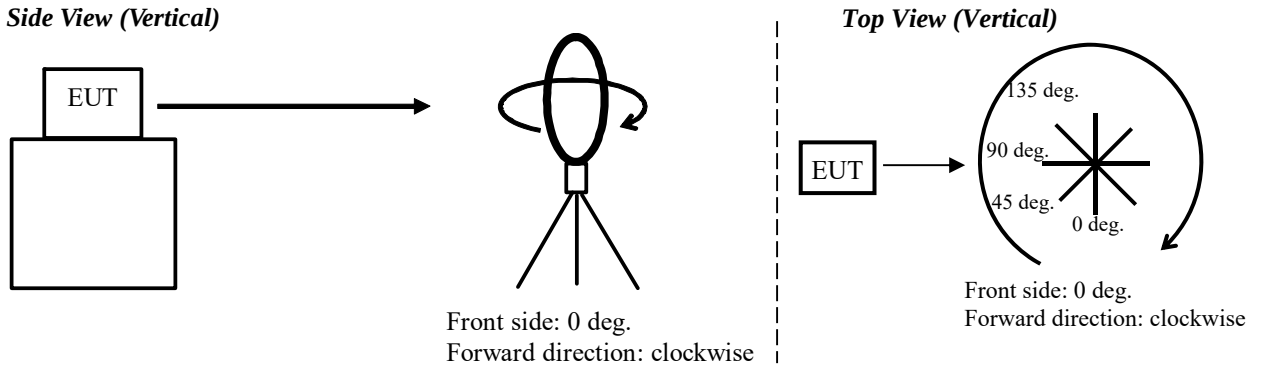
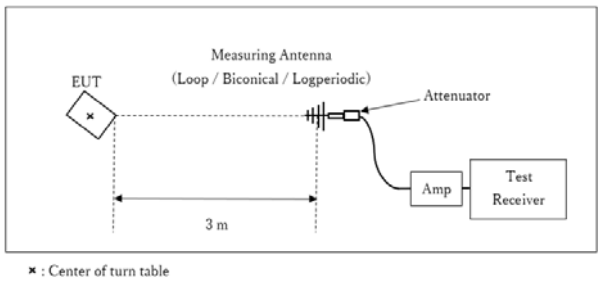


Figure 3: Test Setup

Below 1 GHz



Test Distance: 3 m

- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Antenna polarization	Below 30 MHz	Above 30 MHz
Horizontal	Y	X
Vertical	Z	X

The test results and limit are rounded off to one decimal place, so some differences might be observed.

Measurement range : 9 kHz - 1 GHz
Test data : APPENDIX
Test result : Pass

SECTION 7: 20 dB bandwidth & Occupied bandwidth (99 %)

Test procedure

The test was measured with a spectrum analyzer using a test fixture.

Test	Span	RBW	VBW	Sweep	Detector	Trace	Instrument used
20 dB Bandwidth	100 kHz	1 kHz	3 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
99 % Occupied Bandwidth	Enough width to display 20 dB Bandwidth	1 % of Span	Three times of RBW	Auto	Peak *1)	Max Hold *1)	Spectrum Analyzer
*1) The measurement was performed with Peak detector, Max Hold since the duty cycle was not 100 %.							

Test data : APPENDIX
Test result : Pass

SECTION 8: Frequency Tolerance

Test procedure

The frequency tolerance was measured with a frequency counter connected to the antenna port.
The temperature test was started after the temperature stabilization time of 30 minutes.
The test was begun from 50 deg.C and the temperature was lowered each 10 deg.C.

Test data : APPENDIX
Test result : Pass

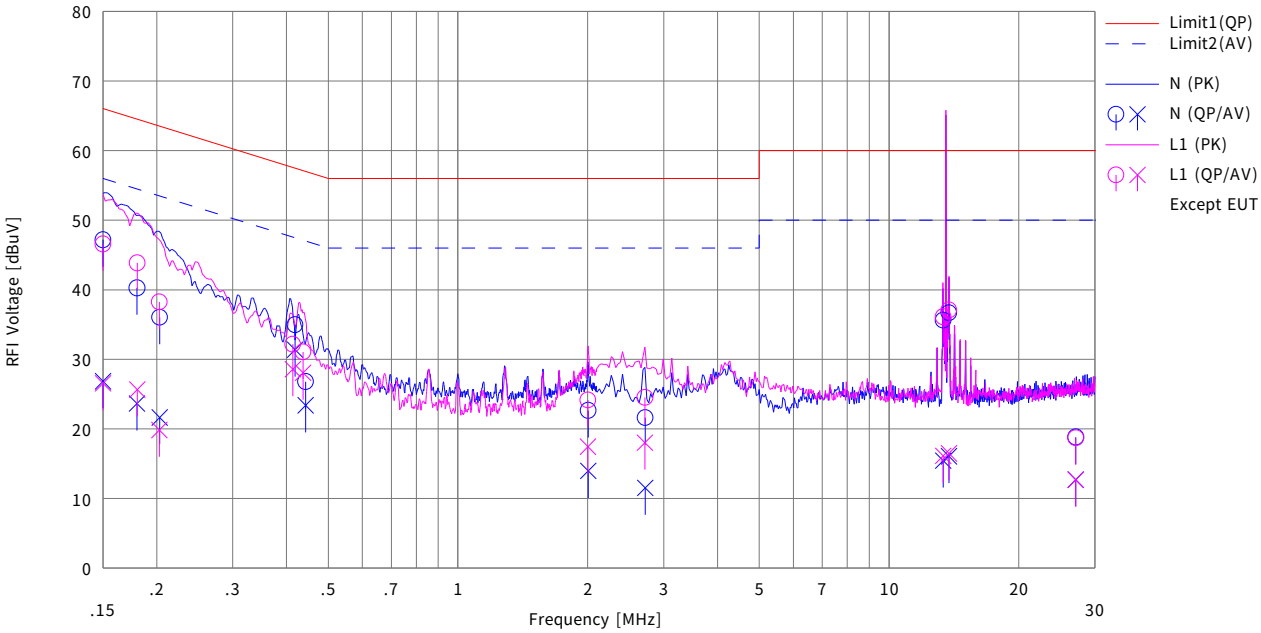
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2019/02/08

Company	: Nintendo Co., Ltd	Mode	: Transmitting 13.56 MHz
Kind of EUT	: Game console	Order No.	: 12656071S
Model No.	: HDH-001	Power	: AC 120 V / 60 Hz (AC Adapter input)
Serial No.	: XJW01000026212	Temp./Humi.	: 21 deg.C / 33 %RH
Remarks	: NFC type F		

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Makoto Hosaka



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	0.15000	34.60	14.30	12.55	47.15	26.85	66.00	56.00	18.8	29.1	N	
2	0.18014	27.70	11.10	12.55	40.25	23.65	64.50	54.50	24.2	30.8	N	
3	0.20317	23.50	9.10	12.54	36.04	21.64	63.50	53.50	27.4	31.8	N	
4	0.41909	22.40	18.80	12.57	34.97	31.37	57.50	47.50	22.5	16.1	N	
5	0.44281	14.20	10.80	12.58	26.78	23.38	57.00	47.00	30.2	23.6	N	
6	2.00420	9.90	1.20	12.75	22.65	13.95	56.00	46.00	33.3	32.0	N	
7	2.71845	8.80	-1.30	12.82	21.62	11.52	56.00	46.00	34.3	34.4	N	
8	13.34870	21.40	1.20	14.22	35.62	15.42	60.00	50.00	24.3	34.5	N	
9	13.77209	22.40	1.80	14.27	36.67	16.07	60.00	50.00	23.3	33.9	N	
10	27.12000	3.60	-2.50	15.21	18.81	12.71	60.00	50.00	41.1	37.2	N	
11	0.15000	34.00	14.00	12.55	46.55	26.55	66.00	56.00	19.4	29.4	L1	
12	0.18021	31.30	13.10	12.55	43.85	25.65	64.50	54.50	20.6	28.8	L1	
13	0.20293	25.70	7.30	12.54	38.24	19.84	63.50	53.50	25.2	33.6	L1	
14	0.41378	19.60	16.00	12.57	32.17	28.57	57.60	47.60	25.4	19.0	L1	
15	0.43734	18.50	15.50	12.57	31.07	28.07	57.10	47.10	26.0	19.0	L1	
16	2.00322	11.40	4.70	12.75	24.15	17.45	56.00	46.00	31.8	28.5	L1	
17	2.71503	11.70	5.20	12.82	24.52	18.02	56.00	46.00	31.4	27.9	L1	
18	13.34800	21.90	1.90	14.22	36.12	16.12	60.00	50.00	23.8	33.8	L1	
19	13.77204	22.80	2.20	14.27	37.07	16.47	60.00	50.00	22.9	33.5	L1	
20	27.12000	3.50	-2.50	15.21	18.71	12.71	60.00	50.00	41.2	37.2	L1	

Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN(AMN)+Cable+ATT)[dB]
LISN(AMN):SLS-02

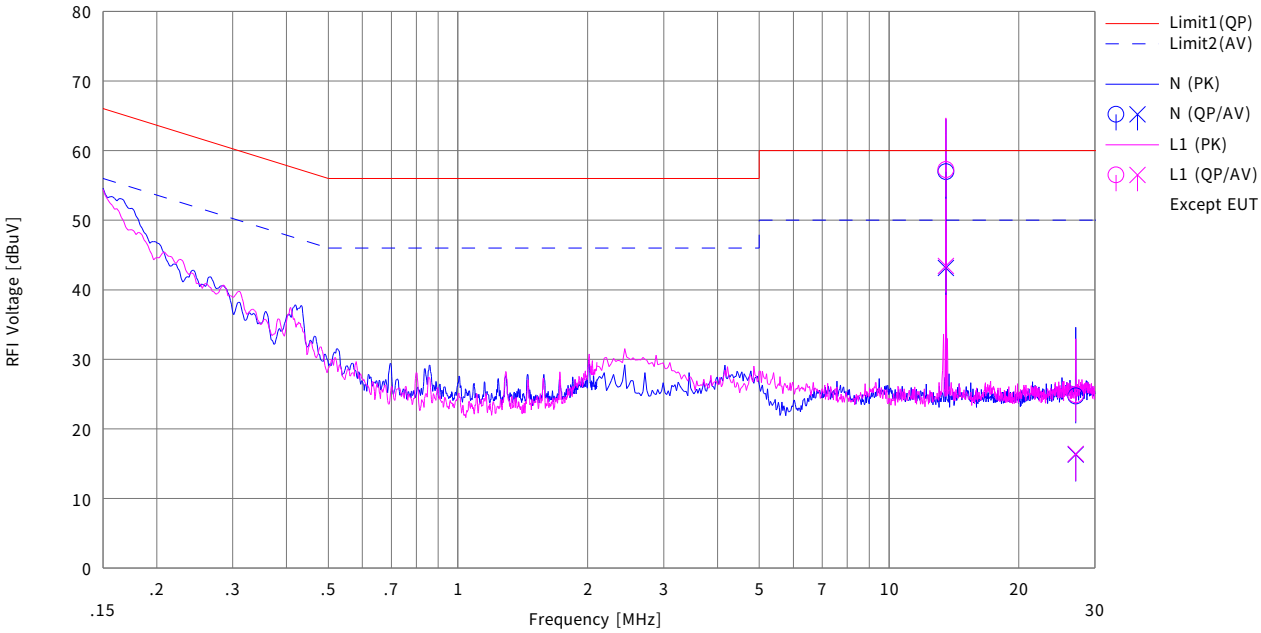
DATA OF CONDUCTED EMISSION TEST

UL Japan,Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2019/02/08

Company	: Nintendo Co., Ltd	Mode	: Transmitting 13.56 MHz
Kind of EUT	: Game console	Order No.	: 12656071S
Model No.	: HDH-001	Power	: AC 120 V / 60 Hz (AC Adapter input)
Serial No.	: XJW01000020999	Temp./Humi.	: 21 deg.C / 33 %RH
Remarks	: NFC type F (Antenna terminated)		

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Makoto Hosaka



No.	Freq.	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		<QP>	<AV>		<QP>	<AV>	<QP>	<AV>	<QP>	<AV>		
	[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	13.56000	42.70	28.90	14.24	56.94	43.14	60.00	50.00	3.0	6.8	N	
2	27.12000	9.50	1.10	15.21	24.71	16.31	60.00	50.00	35.2	33.6	N	
3	13.56000	43.00	29.20	14.24	57.24	43.44	60.00	50.00	2.7	6.5	L1	
4	27.12000	9.70	1.20	15.21	24.91	16.41	60.00	50.00	35.0	33.5	L1	

Calculation:Result[dBuV]=Reading[dBuV]+C.Fac(LISN(AMN)+Cable+ATT)[dB]
LISN(AMN):SLS-02

Radiated Emission

Electric field strength of Fundamental emission and Spurious emission within the band: FCC15.225(a)(b)(c)

UL Japan, Inc.
Shonan EMC Lab., No.2 Semi Anechoic Chamber

Company:	Nintendo Co., Ltd.	Regulation:	FCC Part15 Subpart C 15.225
Equipment:	Game Console	Test Distance:	3 m
Model:	HDH-001	Date:	December 24, 2018
Sample No.:	XJW01000026212	Temperature:	18 deg.C
Power:	AC 120 V/ 60 Hz (AC adaptor input)	Humidity:	42 %RH
Mode:	Transmitting 13.56 MHz	ENGINEER:	Makoto Hosaka

Remarks: : NFC type F (Axis:Hor_Y / Ver_Z) , Vertical polarization (antenna angle) of the worst case: 0deg

Fundamental emission

No.	FREQ	Test Receiver Reading		Antenna Factor	Loss	AMP GAIN	Distance factor	RESULT		LIMIT (30 m)	MARGIN	
		Hor	Ver					Hor	Ver		Hor	Ver
	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
1	13.560	62.1	73.4	19.1	6.6	31.9	-40.0	15.9	27.2	83.9	68.0	56.7

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+Distance factor[dB]

Distance factor: 40 x log (3 m/30 m) = -40 dB

Limits (30 m)

・13.553 MHz to 13.567 MHz : 83.9 dBuV/m (FCC 15.225(a))

Spurious emission within the band

No.	FREQ	Test Receiver Reading		Antenna Factor	Loss	AMP GAIN	Distance factor	RESULT		LIMIT (30 m)	MARGIN	
		Hor	Ver					Hor	Ver		Hor	Ver
	[MHz]	[dBuV]	[dBuV]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dBuV/m]	[dB]	[dB]
1	12.925	30.3	35.8	19.2	6.6	31.9	-40.0	-15.8	-10.3	29.5	45.3	39.8
2	13.110	30.1	30.1	19.2	6.6	31.9	-40.0	-16.1	-16.1	29.5	45.6	45.6
3	13.348	34.8	45.4	19.2	6.6	31.9	-40.0	-11.4	-0.8	40.5	51.9	41.3
4	13.410	30.2	33.4	19.2	6.6	31.9	-40.0	-16.0	-12.8	40.5	56.5	53.3
5	13.553	47.1	58.1	19.1	6.6	31.9	-40.0	0.9	11.9	50.4	49.5	38.5
6	13.567	47.7	58.7	19.1	6.6	31.9	-40.0	1.5	12.5	50.4	48.9	37.9
7	13.710	30.4	34.3	19.1	6.6	31.9	-40.0	-15.9	-12.0	40.5	56.4	52.5
8	13.772	35.7	46.4	19.1	6.6	31.9	-40.0	-10.6	0.1	40.5	51.1	40.4
9	14.010	30.2	30.3	19.1	6.6	31.9	-40.0	-16.1	-16.0	29.5	45.6	45.5
10	14.195	30.6	38.0	19.0	6.6	31.9	-40.0	-15.7	-8.3	29.5	45.2	37.8

Calculation:Result[dBuV/m]=Reading[dBuV]+Ant.Fac[dB/m]+Loss(Cable+ATT)[dB]-Gain(AMP)[dB]+Distance factor[dB]

Outside filed strength frequencies

・Fc±7 kHz: 13.553 MHz to 13.567 MHz

・Fc±150 kHz:13.410 MHz to 13.710 MHz

・Fc±450 kHz:13.110 MHz to 14.010 MHz

Fc = 13.56 MHz

Limits (30 m)

・13.410 MHz to 13.553 MHz and 13.567 MHz to 13.710 MHz : 50.4 dBuV/m (FCC 15.225(b))

・13.110 MHz to 13.410 MHz and 13.710 MHz to 14.010 MHz : 40.5 dBuV/m (FCC 15.225(c))

・Below 13.110 MHz and Above 14.010 MHz : 29.5 dBuV/m (FCC 15.225(d)and FCC 15.209)

Radiated Emission

UL Japan, Inc.
Shonan EMC Lab. No.2 Semi Anechoic Chamber

Company:	Nintendo Co., Ltd.	Regulation:	FCC Part15 Subpart C 15.225	
Equipment:	Game Console	Test Distance:	3 m	
Model:	HDH-001	Date:	December 19, 2018	December 24, 2018
Sample No.:	XJW01000026212	Temperature:	23 deg.C	18 deg.C
Power:	AC 120 V/ 60 Hz (AC adaptor input)	Humidity:	32 %RH	42 %RH
Mode:	Transmitting 13.56 MHz	ENGINEER:	Kazutaka Takeyama	Makoto Hosaka
EUT axis:	Below 30 MHz(Horizontal Y-axis, Vertical Z-axis), NFC type F, with Tag		(Above 30 MHz)	(Below 30 MHz)
	Above 30 MHz(Horizontal: X-axis, Vertical: X-axis), NFC type F, with Tag			
Remarks:	-			

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	27.12	QP	29.8	18.6	6.9	31.9	-40.0	-16.7	29.5	46.2	-	0	* Limit: 30 m
Hori.	40.680	QP	38.5	14.6	7.0	31.9	0.0	28.1	40.0	11.9	200	48	
Hori.	257.640	QP	31.1	12.0	5.9	31.7	0.0	17.3	46.0	28.7	100	277	
Hori.	405.500	QP	37.0	15.8	7.1	31.7	0.0	28.2	46.0	17.8	100	83	
Hori.	430.080	QP	37.6	16.1	7.2	31.7	0.0	29.2	46.0	16.8	100	78	
Hori.	577.53	QP	36.7	18.6	7.8	31.7	0.0	31.3	46.0	14.7	150	116	
Hori.	602.10	QP	36.7	19.3	7.9	31.6	0.0	32.2	46.0	13.8	157	119	
Vert.	27.120	QP	29.8	18.6	6.9	31.9	-40.0	-16.7	29.5	46.2	-	0	* Limit: 30 m
Vert.	40.680	QP	49.3	14.6	7.0	31.9	0.0	38.9	40.0	**1.1**	100	352	
Vert.	67.800	QP	39.0	6.8	7.1	31.9	0.0	21.0	40.0	19.0	100	219	

Result = Reading + Ant Factor + Loss (Cable+ATT+ΔAF(above 30 MHz)) - Gain(Amprifier) + Distance factor(below 30 MHz)

* Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

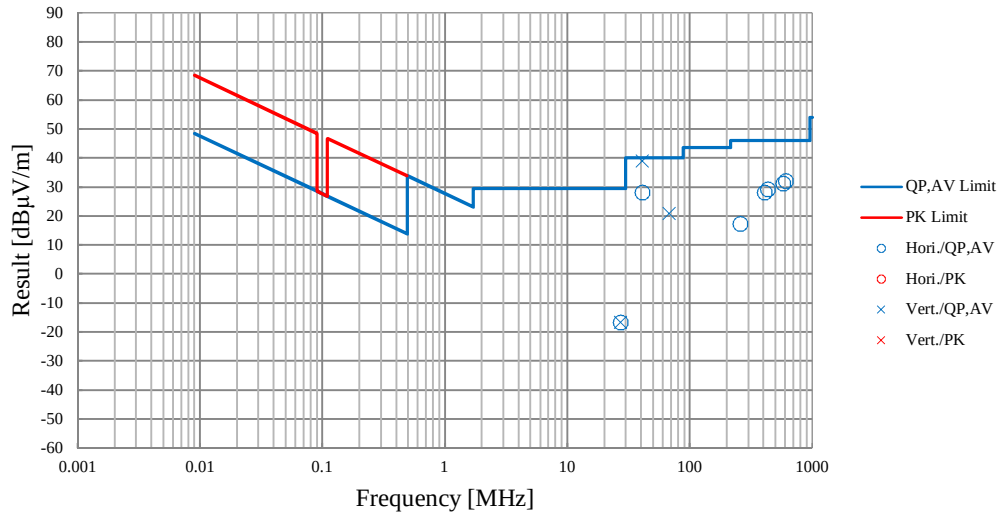
* Carrier level (Result at 3 m): Hor= 55.9 dBuV/m, Ver= 67.2 dBuV/m

Radiated Emission (Worst mode plot)

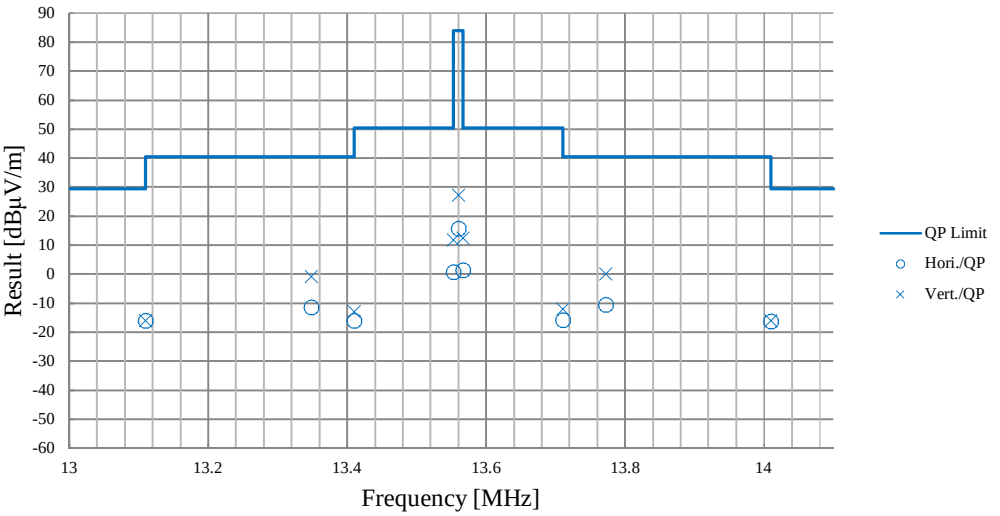
UL Japan, Inc.
Shonan EMC Lab. No.2 Semi Anechoic Chamber

Company:	Nintendo Co., Ltd.	Regulation:	FCC Part15 Subpart C 15.225
Equipment:	Game Console	Test Distance:	3 m
Model:	HDH-001	Date:	December 19, 2018 , December 24, 2018
Sample No.:	XJW01000026212	Temperature:	23 deg.C 18 deg.C
Power:	AC 120 V/ 60 Hz (AC adaptor input)	Humidity:	32 %RH 42 %RH
Mode:	Transmitting 13.56 MHz	ENGINEER:	Kazutaka Takeyama Makoto Hosaka
EUT axis:	Below 30 MHz(Horizontal Y-axis, Vertical Z-axis), NFC type F, with Tag Above 30 MHz(Horizontal: X-axis, Vertical: X-axis), NFC type F, with Tag		
Remarks:	These plots data contains sufficient number to show the trend of characteristic features for EUT.		

Spurious emission plot



Within band plot



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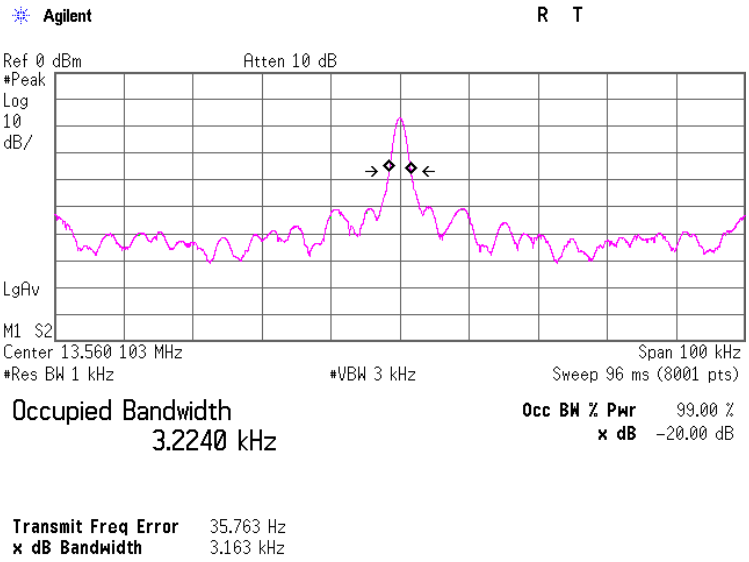
20 dB bandwidth & 99 % Occupied bandwidth: FCC 15.215 / RSS-Gen

UL Japan, Inc.
Shonan EMC Lab. No.5 Shielded Room

Company:	Nintendo Co., Ltd.	Regulation:	FCC Part15 Subpart C 15.215
Equipment:	Game Console		
Model:	HDH-001	Date:	March 23, 2019
Sample No.	XJW01000026212	Temperature:	23 deg.C
Power:	AC 120 V/ 60 Hz (AC adaptor input)	Humidity:	30 %RH
Mode:	Transmitting 13.56 MHz	ENGINEER:	Kenichi Adachi
	NFC type A, worst with tag		

20 dB Bandwidth: 3.163 kHz
99 % Occupied Bandwidth: 3.224 kHz



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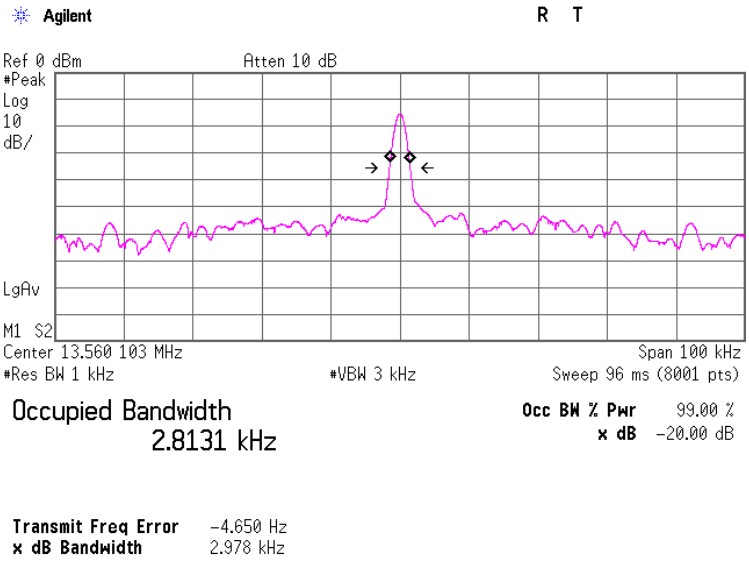
20 dB bandwidth & 99 % Occupied bandwidth: FCC 15.215 / RSS-Gen

UL Japan, Inc.
Shonan EMC Lab. No.5 Shielded Room

Company:	Nintendo Co., Ltd.	Regulation:	FCC Part15 Subpart C 15.215
Equipment:	Game Console		
Model:	HDH-001	Date:	March 23, 2019
Sample No.	XJW01000026212	Temperature:	23 deg.C
Power:	AC 120 V/ 60 Hz (AC adaptor input)	Humidity:	30 %RH
Mode:	Transmitting 13.56 MHz NFC type B, worst with tag	ENGINEER:	Kenichi Adachi

20 dB Bandwidth: 2.978 kHz
99 % Occupied Bandwidth: 2.813 kHz



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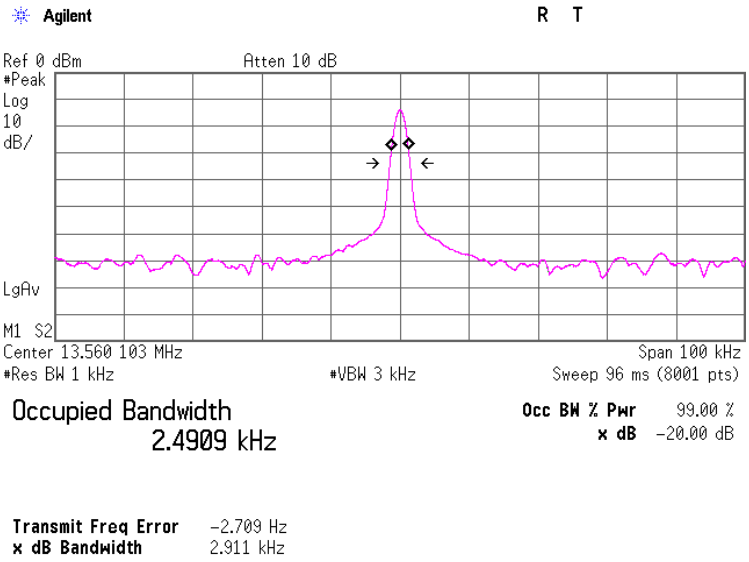
20 dB bandwidth & 99 % Occupied bandwidth: FCC 15.215 / RSS-Gen

UL Japan, Inc.
Shonan EMC Lab. No.5 Shielded Room

Company:	Nintendo Co., Ltd.	Regulation:	FCC Part15 Subpart C 15.215
Equipment:	Game Console		
Model:	HDH-001	Date:	March 23, 2019
Sample No.	XJW01000026212	Temperature:	23 deg.C
Power:	AC 120 V/ 60 Hz (AC adaptor input)	Humidity:	30 %RH
Mode:	Transmitting 13.56 MHz	ENGINEER:	Kenichi Adachi
	NFC type F, worst with tag		

20 dB Bandwidth: 2.911 kHz
99 % Occupied Bandwidth: 2.491 kHz



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Data of Frequency Tolerance

UL Japan, Inc.
Shonan EMC Lab. No.5 Shielded room

Company	Nintendo Co., Ltd.		
Equipment	Game Console	Regulation	FCC Part15 Subpart C 15.225 (e)
Model	HDH-001	Date	March 23, 2019
Serial No.	XJW01000026212	Temperature	23 deg.C
Power	DC 3.8 V ((Vbat) DC 3.8 V, (Vin) DC 15.0 V)	Humidity	30 %RH
Mode	Transmitting 13.56 MHz (None-modulated)	ENGINEER	Kenichi Adachi

Temperature Variation: -20 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.559848	-0.000152	-0.00112	0.010
after 2 minutes	13.56	13.560058	0.000058	0.00043	0.010
after 5 minutes	13.56	13.560035	0.000035	0.00026	0.010
after 10 minutes	13.56	13.560056	0.000056	0.00041	0.010

Temperature Variation: -10 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560187	0.000187	0.00138	0.010
after 2 minutes	13.56	13.560185	0.000185	0.00137	0.010
after 5 minutes	13.56	13.560170	0.000170	0.00125	0.010
after 10 minutes	13.56	13.560186	0.000186	0.00137	0.010

Temperature Variation: 0 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560180	0.000180	0.00133	0.010
after 2 minutes	13.56	13.560186	0.000186	0.00138	0.010
after 5 minutes	13.56	13.560188	0.000188	0.00138	0.010
after 10 minutes	13.56	13.560188	0.000188	0.00139	0.010

Temperature Variation: 10 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560170	0.000170	0.00126	0.010
after 2 minutes	13.56	13.560162	0.000162	0.00119	0.010
after 5 minutes	13.56	13.560160	0.000160	0.00118	0.010
after 10 minutes	13.56	13.560159	0.000159	0.00118	0.010

Temperature Variation: 20 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560103	0.000103	0.00076	0.010
after 2 minutes	13.56	13.560091	0.000091	0.00067	0.010
after 5 minutes	13.56	13.560101	0.000101	0.00075	0.010
after 10 minutes	13.56	13.560108	0.000108	0.00080	0.010

Data of Frequency Tolerance

Temperature Variation: 30 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560112	0.000112	0.00082	0.010
after 2 minutes	13.56	13.560093	0.000093	0.00069	0.010
after 5 minutes	13.56	13.560091	0.000091	0.00067	0.010
after 10 minutes	13.56	13.560091	0.000091	0.00067	0.010

Temperature Variation: 40 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560090	0.000090	0.00067	0.010
after 2 minutes	13.56	13.560084	0.000084	0.00062	0.010
after 5 minutes	13.56	13.560084	0.000084	0.00062	0.010
after 10 minutes	13.56	13.560084	0.000084	0.00062	0.010

Temperature Variation: 50 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560089	0.000089	0.00065	0.010
after 2 minutes	13.56	13.560094	0.000094	0.00069	0.010
after 5 minutes	13.56	13.560094	0.000094	0.00070	0.010
after 10 minutes	13.56	13.560095	0.000095	0.00070	0.010

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Data of Frequency Tolerance

UL Japan, Inc.
Shonan EMC Lab. No.1 Measurement room

Company	Nintendo Co., Ltd.		
Equipment	Game Console	Regulation	FCC Part15 Subpart C 15.225 (e)
Model	HDH-001	Date	April 9, 2019
Serial No.	XJW01000026212	Temperature	22 deg.C
Power	(Vbat) DC 3.8 V (No connected USB supply voltage)	Humidity	55 %RH
Mode	Transmitting 13.56 MHz (None-modulated)	ENGINEER	Kenichi Adachi

Voltage Variation: DC 3.8 V
Temperature Variation: 22 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560148	0.000148	0.00109	0.010
after 2 minutes	13.56	13.560117	0.000117	0.00086	0.010
after 5 minutes	13.56	13.560107	0.000107	0.00079	0.010
after 10 minutes	13.56	13.560098	0.000098	0.00072	0.010

Voltage Variation: DC 3.29 V *
Temperature Variation: 22 deg.C

* Vbat tested voltage was DC 3.29 V since the EUT did not operate with the voltage below 3.29 V.

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560131	0.000131	0.00096	0.010
after 2 minutes	13.56	13.560104	0.000104	0.00076	0.010
after 5 minutes	13.56	13.560096	0.000096	0.00071	0.010
after 10 minutes	13.56	13.560093	0.000093	0.00069	0.010

Voltage Variation: DC 4.32 V
Temperature Variation: 22 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560123	0.000123	0.00091	0.010
after 2 minutes	13.56	13.560098	0.000098	0.00073	0.010
after 5 minutes	13.56	13.560094	0.000094	0.00069	0.010
after 10 minutes	13.56	13.560092	0.000092	0.00068	0.010

* The temperature of this test condition was carried out 22 deg.C, since there was no difference between 20 deg. C and 22 deg.C.

Data of Frequency Tolerance

UL Japan, Inc.
Shonan EMC Lab. No.1 Measurement room

Company	Nintendo Co., Ltd.		
Equipment	Game Console	Regulation	FCC Part15 Subpart C 15.225 (e)
Model	HDH-001	Date	April 22, 2019
Serial No.	XJW01000026212	Temperature	24 deg.C
Power	(Vin) DC 5.0 V	Humidity	57 %RH
Mode	Transmitting 13.56 MHz (None-modulated)	ENGINEER	Kenichi Adachi

Voltage Variation: DC 5 V
Temperature Variation: 24 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560118	0.000118	0.00087	0.010
after 2 minutes	13.56	13.560094	0.000094	0.00069	0.010
after 5 minutes	13.56	13.560090	0.000090	0.00066	0.010
after 10 minutes	13.56	13.560089	0.000089	0.00065	0.010

Voltage Variation: DC 4.25 V
Temperature Variation: 24 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560137	0.000137	0.00101	0.010
after 2 minutes	13.56	13.560107	0.000107	0.00079	0.010
after 5 minutes	13.56	13.560098	0.000098	0.00072	0.010
after 10 minutes	13.56	13.560093	0.000093	0.00069	0.010

Voltage Variation: DC 5.75 V
Temperature Variation: 24 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560139	0.000139	0.00102	0.010
after 2 minutes	13.56	13.560108	0.000108	0.00080	0.010
after 5 minutes	13.56	13.560099	0.000099	0.00073	0.010
after 10 minutes	13.56	13.560092	0.000092	0.00068	0.010

* The temperature of this test condition was carried out 24 deg.C,
since there was no difference between 20 deg. C and 24 deg.C.

Data of Frequency Tolerance

UL Japan, Inc.
Shonan EMC Lab. No.1 Measurement room

Company	Nintendo Co., Ltd.		
Equipment	Game Console	Regulation	FCC Part15 Subpart C 15.225 (e)
Model	HDH-001	Date	April 22, 2019
Serial No.	XJW01000026212	Temperature	24 deg.C
Power	(Vin) DC 15 V (No connected battery voltage)	Humidity	57 %RH
Mode	Transmitting 13.56 MHz (None-modulated)	ENGINEER	Kenichi Adachi

Voltage Variation: DC 15 V
Temperature Variation: 24 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560135	0.000135	0.00099	0.010
after 2 minutes	13.56	13.560103	0.000103	0.00076	0.010
after 5 minutes	13.56	13.560094	0.000094	0.00069	0.010
after 10 minutes	13.56	13.560086	0.000086	0.00064	0.010

Voltage Variation: DC 12.75 V
Temperature Variation: 24 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560097	0.000097	0.00072	0.010
after 2 minutes	13.56	13.560087	0.000087	0.00064	0.010
after 5 minutes	13.56	13.560085	0.000085	0.00063	0.010
after 10 minutes	13.56	13.560085	0.000085	0.00063	0.010

Voltage Variation: DC 17.25 V
Temperature Variation: 24 deg.C

Test Conditions	Original Frequency (MHz)	Measure Frequency (MHz)	Frequency Error (MHz)	Frequency tolerance (%)	Limit (%)
startup	13.56	13.560100	0.000100	0.00074	0.010
after 2 minutes	13.56	13.560088	0.000088	0.00065	0.010
after 5 minutes	13.56	13.560086	0.000086	0.00063	0.010
after 10 minutes	13.56	13.560085	0.000085	0.00063	0.010

* The temperature of this test condition was carried out 24 deg.C,
since there was no difference between 20 deg. C and 24 deg.C.

APPENDIX 2

Test Instruments

EMI test equipment

Local ID	Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Due Date	Calibration Interval (Month)
SSA-03	TF	145801	Spectrum Analyzer	AGILENT	E4448A	MY48250152	2018/8/30	2019/8/31	12
KJM-02	CE	146432	Measure	TAJIMA	GL19-55	-	-	-	-
SAT3-13	CE	150923	Attenuator	JFW	50HF-003N		2019/1/25	2020/1/31	12
SCC-C9/C10/SRSE-03	CE	145036	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS4906	-/0901-271(RF Selector)	2019/4/19	2020/4/30	12
SLS-02	CE	145539	LISN	Rohde & Schwarz	ENV216	100512	2019/2/20	2020/2/29	12
SOS-06	CE	146294	Humidity Indicator	A&D	AD-5681	4062118	2018/12/5	2019/12/31	12
STM-05	CE	145762	Terminator	TME	CT-01 BP	-	2018/12/25	2019/12/31	12
STR-08	CE	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2018/11/28	2019/11/30	12
STS-03	CE	146210	Digital Hitester	HIOKI	3805-50	80997823	2018/10/16	2019/10/31	12
COTS-SEMI-5	CE,RE	170932	EMI Software	TSJ	TEPTO-DV3(RE,CE,ME,PE)	-	-	-	-
SAEC-02(NSA)	RE	145563	Semi-Anechoic Chamber	TDK	SAEC-02(NSA)	2	2019/4/4	2020/4/30	12
SAEC-ALL	RE	145568	Semi Anechoic Chamber(ME)	TDK	Semi Anechoic Chamber 3m/10m	1, 2, 3	2018/12/27	2020/12/31	24
SAF-02	RE	145004	Pre Amplifier	SONOMA	310N	290212	2019/2/5	2020/2/29	12
SAT3-11	RE	150921	Attenuator	JFW	50HF-003N	-	2019/1/25	2020/1/31	12
SAT6-02	RE	145045	Attenuator	JFW	50HF-006N	-	2019/2/5	2020/2/29	12
SAT6-12	RE	145158	Attenuator	HIROSE ELECTRIC CO.,LTD.	AT-406(40)	-	2018/8/23	2019/8/31	12
SBA-02	RE	145022	Biconical Antenna	Schwarzbeck	BBA9106	91032665	2018/6/5	2019/6/30	12
SCC-B1/B3/B5/B7/B8/B13/SRSE-02	RE	144975	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141P	-/0901-270(RF Selector)	2019/4/19	2020/4/30	12
SCC-B2/B4/B6/B7/B8/B13/SRSE-02	RE	144976	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141P	-/0901-270(RF Selector)	2019/4/19	2020/4/30	12
SJM-09	RE	145336	Measure	PROMART	SEN1935	-	-	-	-
SLA-06	RE	145528	Logperiodic Antenna	Schwarzbeck	VUSLP9111B	195	2018/6/5	2019/6/30	12
SLP-02	RE	145536	Loop Antenna	Rohde & Schwarz	HFH2-Z2	100218	2018/10/10	2019/10/31	12
SOS-03	RE	146317	Humidity Indicator	A&D	AD-5681	4063325	2018/10/25	2019/10/31	12
STR-07	RE	146209	Test Receiver	Rohde & Schwarz	ESU26	100484	2018/9/26	2019/9/30	12
STS-02	RE	145793	Digital Hitester	HIOKI	3805-50	80997819	2019/4/2	2020/4/30	12
KTS-07	TF	145111	Digital Tester	SANWA	PC500	7019232	2018/10/17	2019/10/31	12
SCH-01	TF	145200	Temperature and Humidity Chamber	ESPEC	PL-1KT	14020837	2018/4/11	2019/4/30	12
SFC-02	TF	172674	Universal Frequency Counter/Timer	KEYSIGHT	53230A	MY50010680	2018/12/20	2019/12/31	12
SOS-19	TF	175823	Humidity Indicator	CUSTOM	CTH-201	-	2018/12/5	2019/12/31	12
SSCA-01	TF	146178	Search coil	Langer	RF-R 400-1	02-0634	-	-	-

The expiration date of the calibration is the end of the expired month.
As for some calibrations performed after the tested dates , those test equipment have been controlled by means of an unbroken chains of calibrations .
All equipment is calibrated with valid calibrations . Each measurement data is traceable to the national or international standards
Test Item:
CE: Conducted emission,
RE: Radiated emission,
TF: Test Fixture tests