

PELOTON INTERACTIVE, INC.

TEST REPORT

SCOPE OF WORK:

47 CFR FCC Part 15.407 – Radio Spectrum report

Model:

PLTN-TC1VS-2

REPORT NUMBER

210500072THC-001

ISSUE DATE

May 31, 2021

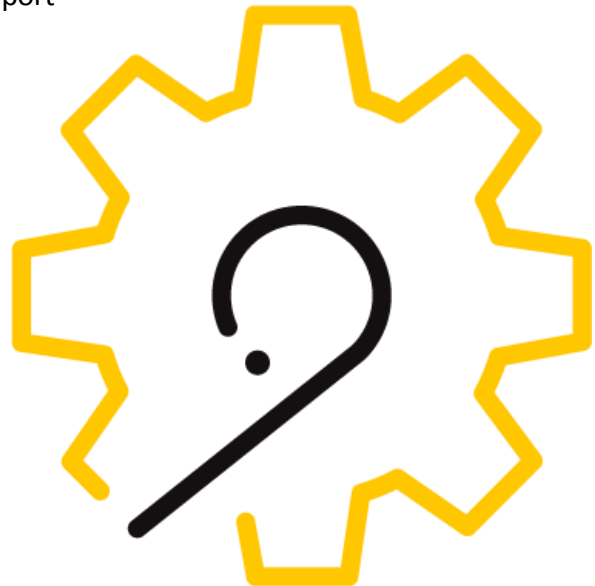
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FCC TEST REPORT

(Spot Check)

Applicant:	PELOTON INTERACTIVE, INC. 125 West 25th street, FL11, New York, NY 10001, USA
Product:	Peloton Tread Tablet
Model No.:	PLTN-TC1VS-2
FCC ID:	2AA3N- TC1VS2
Test Method/ Standard:	47 CFR FCC Part 15.407 KDB 789033 D02 v02r01 ANSI C63.10 2013 KDB 662911 D01 v02r01 KDB 905462 D02 v02
Test By:	Intertek Testing Services Taiwan Ltd., Hsinchu Laboratory No. 11, Lane 275, Ko-Nan 1 Street, Chia-Tung Li, Shiang-Shan District, Hsinchu City, Taiwan



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Revision History

Report No.	Issue Date	Revision Summary
180300405TWN-001	Jul. 09, 2018	Original report (FCC ID: 2AA3N- TC1VS)
210500072THC-001	May 31, 2021	The NFC module was removed from the EUT. Based on engineering judgement, spot testing was deemed necessary.

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Summary of Test Data

Test Requirement	Applicable Rule (Section 15.407)	Result
Maximum Conducted Output Power	15.407 (a)(1)/(2)/(3) KDB 789033 D02 v02r01	Pass
Power Spectrum Density	15.407 (a)(1)/(2)/(3) KDB 789033 D02 v02r01	Verified (Note)
Minimum Emission Bandwidth	15.407(a)(5), 15.407(e) KDB 789033 D02 v02r01	Verified (Note)
Emissions In Restricted Frequency Bands (Radiated emission measurements)	15.407(b), 15.209	Verified (Note)
Emission on The Band Edge	15.407(b), 15.209	Pass
Dynamic Frequency Selection (DFS)	15.407(h)(2) KDB 905462 D02 v02	Verified (Note)
AC Line Conducted Emission	15.407(b)(6) 15.207	Verified (Note)
Antenna requirement	15.203	Pass
Note: After evaluation, the test data refer to the report number: 180300405TWN-001, dated Jul. 09, 2018.		

Note: Please note that the test results with statement of conformity, the decision rules which are based on: Safety Testing: the specification, standard or IEC Guide 115.

Other Testing: the specification, standard and not taking into account the measurement uncertainty.

1. General Information

1.1 Identification of the EUT

Product:	Peloton Tread Tablet
Model No.:	PLTN-TC1VS-2
Operating Frequency:	1. 5180MHz~5240MHz 2. 5260MHz~5320MHz 3. 5500MHz~5700MHz 4. 5745MHz~5825MHz
Channel Number:	1. 7 channels for 5180MHz~5240MHz 2. 7 channels for 5260MHz~5320MHz 3. 18 channels for 5500MHz~5700MHz 4. 8 channels for 5745MHz~5825MHz
Rated Power:	DC 24V from adapter
Power Cord:	N/A
Sample receiving date:	2021/05/05
Sample condition:	Workable
Test Date(s):	2021/05/14 ~ 2021/05/20

1.2 Description of the EUT

Modulation mode	Transmit path	
	Chain 0 / Main	Chain 1 / AUX
802.11 a	V	V
802.11 ac (VHT20)	V	V
802.11 ac (VHT40)	V	V
802.11 ac (VHT80)	V	V

1.3 Antenna description

Antenna 1

Antenna Gain : 3.3 dBi
Antenna Type : PIFA antenna
Connector Type : I-Pex

Antenna 2

Antenna Gain : 3.6 dBi
Antenna Type : PIFA antenna
Connector Type : I-Pex

1.4 Operation mode

The EUT used “AMPAK RFTTestTool.apk ” to select different frequency and modulation.

Mode	Channel	Frequency (MHz)	Signal on time (ms)	Signal on+off time (ms)	Duty cycle	Duty factor (dB)	1/T Minimum VBW (kHz)
802.11a	120	5600	1.39	1.44	96.52%	0.31	0.72
802.11ac (VHT20)	120	5600	1.93	1.96	98.47%	0.13	0.01
802.11ac (VHT40)	118	5590	1.22	1.27	95.67%	0.38	0.82
802.11ac (VHT80)	106	5530	2.20	2.26	97.56%	0.21	0.45

1.5 Peripherals equipment

Peripherals	Brand	Model No.	Serial No.	Data cable
Adapter	EDAC	EA10681V-240	N/A	N/A

2. Maximum Conducted Output Power

2.1 Limit for maximum output power

Operating Frequency (MHz)	Conducted output power limit
5150~5725	< 0.25 W (24 dBm)
5725~5850	< 1 W (30 dBm)

Operating Frequency (MHz)	Maximum E.I.R.P. limit
5150~5725	< 1 W (30 dBm)
5725~5850	< 4 W (36 dBm)

2.2 Measuring instrument setting

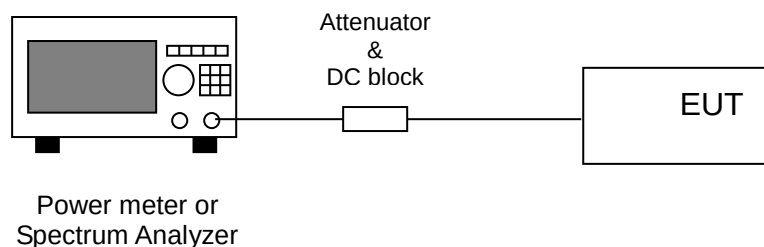
Power meter for Nominal Bandwidth less than 65MHz	
Power meter	Setting
Bandwidth	65MHz bandwidth is greater than the EUT emission bandwidth
Detector	Average

2.3 Test procedure

Test procedures refer to clause E) 3) b) measurement using a gated RF average power meter of KDB 789033 D02 v01r02

Test procedures refer to clause E) 2) b) Method SA-1 of KDB 789033 D02 v01r02

2.4 Test diagram



2.5 Test results

Temperature (°C) :	26
Relative Humidity (%) :	56
Test date :	2021/5/17

Mode	Channel	Frequency (MHz)	Conducted Output Power (AV)		Duty Factor	Ant 0 Gain (dBi)	E.I.R.P. (dBm)	Limit of Conducted Power (dBm)	Margin (dB)	Limit of E.I.R.P. (dBm)	Margin (dB)
			dBm	mW							
802.11a Chain0	36	5180	4.97	3.14	0.31	3.3	8.58	24.00	-18.72	30.00	-21.42
	44	5220	5.21	3.32	0.31	3.3	8.82	24.00	-18.48	30.00	-21.18
	48	5240	5.25	3.35	0.31	3.3	8.86	24.00	-18.44	30.00	-21.14
	52	5260	5.42	3.48	0.31	3.3	9.02	24.00	-18.28	30.00	-20.98
	60	5300	5.27	3.36	0.31	3.3	8.88	24.00	-18.42	30.00	-21.12
	64	5320	4.80	3.02	0.31	3.3	8.41	24.00	-18.89	30.00	-21.59
	100	5500	4.40	2.75	0.31	3.3	8.00	24.00	-19.30	30.00	-22.00
	120	5600	4.49	2.81	0.31	3.3	8.09	24.00	-19.21	30.00	-21.91
	140	5700	5.33	3.42	0.31	3.3	8.94	24.00	-18.36	30.00	-21.06
	149	5745	5.53	3.57	0.31	3.3	9.14	30.00	-24.16	36.00	-26.86
	157	5785	5.37	3.45	0.31	3.3	8.98	30.00	-24.32	36.00	-27.02
	165	5825	5.16	3.28	0.31	3.3	8.77	30.00	-24.53	36.00	-27.23
802.11a Chain1	36	5180	5.34	3.42	0.31	3.6	9.25	24.00	-18.35	30.00	-20.75
	44	5220	5.53	3.57	0.31	3.6	9.43	24.00	-18.17	30.00	-20.57
	48	5240	5.49	3.54	0.31	3.6	9.40	24.00	-18.20	30.00	-20.60
	52	5260	5.40	3.47	0.31	3.6	9.31	24.00	-18.29	30.00	-20.69
	60	5300	3.57	2.27	0.31	3.6	7.47	24.00	-20.13	30.00	-22.53
	64	5320	3.27	2.13	0.31	3.6	7.18	24.00	-20.42	30.00	-22.82
	100	5500	3.28	2.13	0.31	3.6	7.19	24.00	-20.41	30.00	-22.81
	120	5600	3.43	2.20	0.31	3.6	7.34	24.00	-20.26	30.00	-22.66
	140	5700	2.74	1.88	0.31	3.6	6.65	24.00	-20.95	30.00	-23.35
	149	5745	2.56	1.80	0.31	3.6	6.47	30.00	-27.13	36.00	-29.53
	157	5785	3.07	2.03	0.31	3.6	6.98	30.00	-26.62	36.00	-29.02
	165	5825	3.51	2.24	0.31	3.6	7.42	30.00	-26.18	36.00	-28.58

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Mode	Channel	Frequency (MHz)	Output Power (AV)		Total Power (AV)		Duty Factor	Result
			Chain 0	Chain 1				dBm
			dBm	dBm	mW	dBm		
802.11ac (VHT20) Chain0+1	36	5180	4.82	4.30	5.72	7.57	0.13	7.71
	44	5220	5.03	4.19	5.81	7.64	0.13	7.77
	48	5240	5.15	4.21	5.91	7.72	0.13	7.85
	52	5260	5.28	4.10	5.95	7.74	0.13	7.88
	60	5300	4.93	3.51	5.35	7.29	0.13	7.42
	64	5320	4.65	3.15	4.99	6.98	0.13	7.11
	100	5500	4.18	3.16	4.69	6.71	0.13	6.85
	120	5600	4.37	3.41	4.93	6.92	0.13	7.06
	140	5700	5.20	2.68	5.17	7.13	0.13	7.27
	149	5745	5.46	2.52	5.30	7.24	0.13	7.38
	157	5785	5.20	2.96	5.29	7.23	0.13	7.37
	165	5825	4.97	3.35	5.31	7.25	0.13	7.38
802.11ac (VHT40) Chain0+1	38	5190	3.38	2.12	3.81	5.81	0.38	6.19
	46	5230	3.73	1.73	3.85	5.86	0.38	6.24
	54	5270	3.38	1.78	3.68	5.66	0.38	6.05
	62	5310	3.25	1.34	3.47	5.41	0.38	5.79
	102	5510	2.57	1.14	3.11	4.92	0.38	5.31
	118	5590	3.56	2.12	3.90	5.91	0.38	6.29
	134	5670	3.24	0.74	3.29	5.18	0.38	5.56
	151	5755	3.66	0.37	3.41	5.33	0.38	5.72
	159	5795	3.85	1.29	3.77	5.77	0.38	6.15
802.11ac (VHT80) Chain0+1	42	5210	1.24	0.02	2.33	3.68	0.21	3.90
	58	5290	-0.30	-1.75	1.60	2.04	0.21	2.26
	106	5530	0.44	-0.64	1.97	2.94	0.21	3.16
	122	5610	1.18	-0.43	2.22	3.46	0.21	3.68
	155	5775	1.79	-1.38	2.24	3.50	0.21	3.71

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Mode	Ant 0 Gain (dBi)	Ant 1 Gain (dBi)	E.I.R.P. (dBm)	Limit of Conducted Power (dBm)	Margin (dB)	Limit of E.I.R.P. (dBm)	Margin (dB)
802.11ac (VHT20) Chain0+1	3.3	3.6	11.31	24.00	-16.29	30.00	-18.69
	3.3	3.6	11.37	24.00	-16.23	30.00	-18.63
	3.3	3.6	11.45	24.00	-16.15	30.00	-18.55
	3.3	3.6	11.48	24.00	-16.12	30.00	-18.52
	3.3	3.6	11.02	24.00	-16.58	30.00	-18.98
	3.3	3.6	10.71	24.00	-16.89	30.00	-19.29
	3.3	3.6	10.45	24.00	-17.15	30.00	-19.55
	3.3	3.6	10.66	24.00	-16.94	30.00	-19.34
	3.3	3.6	10.87	24.00	-16.73	30.00	-19.13
	3.3	3.6	10.98	30.00	-22.62	36.00	-25.02
	3.3	3.6	10.97	30.00	-22.63	36.00	-25.03
	3.3	3.6	10.98	30.00	-22.62	36.00	-25.02
802.11ac (VHT40) Chain0+1	3.3	3.6	9.79	24.00	-17.81	30.00	-20.21
	3.3	3.6	9.84	24.00	-17.76	30.00	-20.16
	3.3	3.6	9.65	24.00	-17.95	30.00	-20.35
	3.3	3.6	9.39	24.00	-18.21	30.00	-20.61
	3.3	3.6	8.91	24.00	-18.69	30.00	-21.09
	3.3	3.6	9.89	24.00	-17.71	30.00	-20.11
	3.3	3.6	9.16	24.00	-18.44	30.00	-20.84
	3.3	3.6	9.32	30.00	-24.28	36.00	-26.68
	3.3	3.6	9.75	30.00	-23.85	36.00	-26.25
802.11ac (VHT80) Chain0+1	3.3	3.6	7.50	24.00	-20.10	30.00	-22.50
	3.3	3.6	5.86	30.00	-27.74	30.00	-24.14
	3.3	3.6	6.76	30.00	-26.84	30.00	-23.24
	3.3	3.6	7.28	30.00	-26.32	30.00	-22.72
	3.3	3.6	7.31	30.00	-26.29	36.00	-28.69

3. Emission on The Band Edge

3.1 Measuring instrument setting

Spectrum analyzer settings	
Spectrum Analyzer function	Setting
Detector	Peak ; Average
RBW	1MHz
VBW	3 MHz ; 1/T Minimum kHz
Sweep	Auto couple
Restrict bands	4500~5150MHz
	5350 ~5460MHz
Attenuation	Auto

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	2400/F(kHz)	30
1.705~30	30	30
30-88	100	3
88-216	150	3
216-960	200	3
Above 960	500	3

3.2 Test procedure

1. Configure the EUT according to ANSI C63.10: 2013 The EUT was placed on the top of the turntable 1.5 meter above ground for above 1GHz and placed on the top of the turntable 0.8 meter above ground for below 1GHz. The center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the companion devices. The turntable was rotated by 360 degree to find the position of the maximum emission level.
3. The height of the receiving antenna was varied between one meter and four meters above ground to find the maximum emission field strength of the both horizontal and vertical polarization
4. If find the frequencies above the limit or below within 3dB, the antenna tower was scan (from 1m to 4m) and then the turntable was rotated to find the maximum reading.
5. Set the test-receiver system to peak or CISPR quasi-peak detector with specified

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bandwidth under maximum hold mode.

6. For emissions above 1GHz, use 1MHz VBW and 3MHz RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response.

7. If the emissions level of the EUT in peak mode was 3dB lower than the average limit specified then testing will be stopped and peak values of the EUT will be reported. Otherwise, the emissions which do not have 3dB margin will be measured using the quasi-peak method for below 1GHz.
8. For testing above 1GHz, The emissions level of the EUT in peak mode was lower than average limit, then testing will be stopped and peak values of the EUT will be reported, otherwise, the emission will be measured in average mode again and reported.
9. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be quasi-peak measured by receiver.

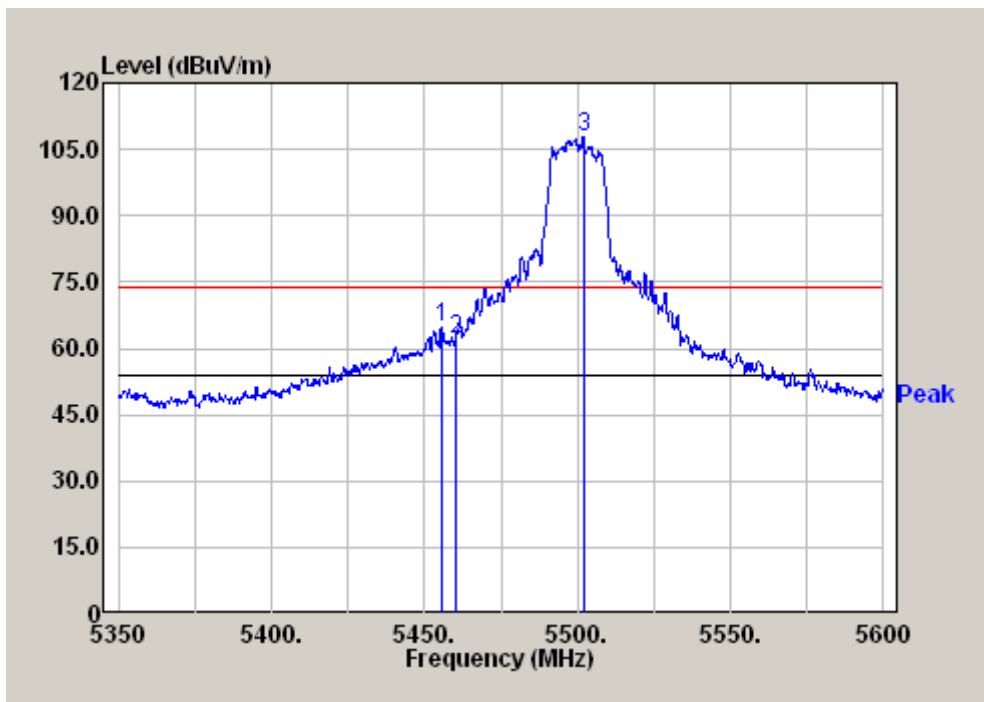
3.3 Test Result

Temperature (°C) :	27
Relative Humidity (%) :	57
Test date :	2021/5/14

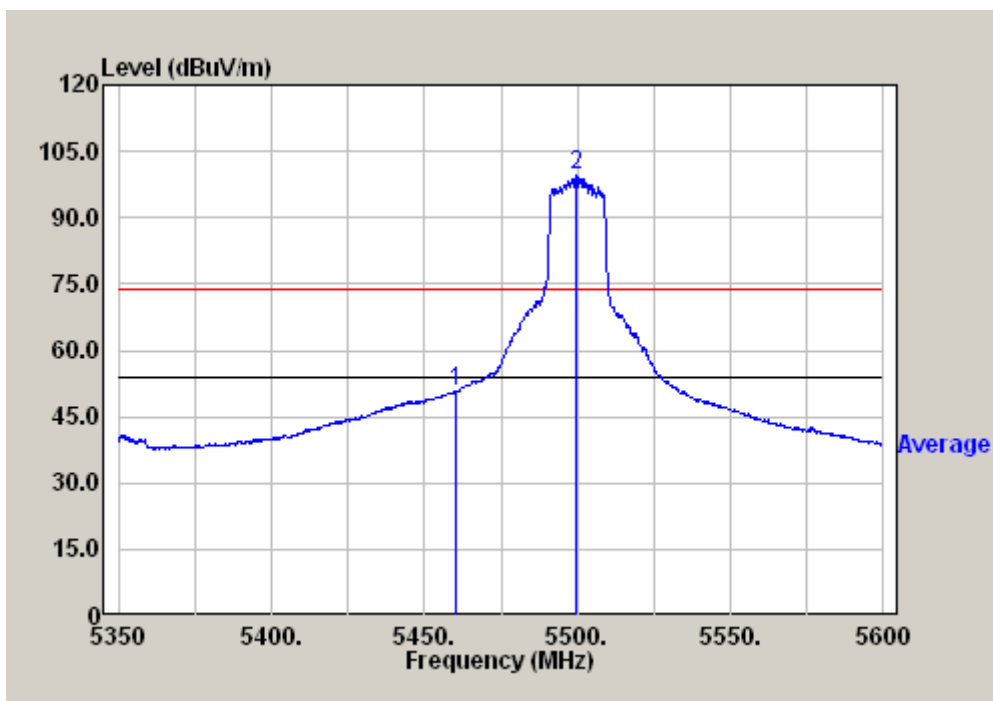
Mode	Frequency (MHz)	Spectrum Analyzer Detector	Ant. Pol. (H/V)	Correction Factor (dB/m)	Reading (dBμV)	Corrected Reading (dBμV/m)	Limit @ 3 m (dBμV/m)	Margin (dB)	Restricted band (MHz)
802.11ac (VHT20) Channel 100	5455.75	PK	V	7.62	57.18	64.80	74	-9.20	5350~5460
	5460.00	AV	V	7.63	43.14	50.77	54	-3.23	

Remark: Correction Factor = Antenna Factor + Cable Loss

Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch100 PK



Chain0+1 : Restricted Band Bandedge @ 802.11ac(VHT20) Mode Ch100 AV



Appendix A: Test equipment list

Test Equipment/ Test site	Brand	Model No.	Serial No.	Calibration Date	Next Calibration Date
EMI Test Receiver	Rohde & Schwarz	ESR7	101822	2020/08/18	2021/08/17
Signal Analyzer	Agilent	N9030A	MY51380492	2020/08/17	2021/08/16
Horn Antenna	SHWARZBECK	BBHA 9120 D	9120D-456	2021/01/11	2022/01/10
Pre-Amplifier	EMC Co.	EMC12635SE	980205	2021/01/13	2022/01/12
966-2(A) Cable	SUHNER	SUCOLEX 104	295105/4	2021/03/08	2022/03/07
966-2(B) Cable	SUHNER	SUCOFLEX 104P	CB0005	2021/03/08	2022/03/07
RF Cable	SUHNER	SUCOFLEX 104P	CB0006	2021/04/29	2022/04/28
966-2_3m Semi-Anechoic Chamber	966_2	CEM-966_2	N/A	2021/01/15	2022/01/14
20dB Attenuator	Mini-Circuits	BW-S20W5+	N/A	2020/05/27	2021/05/26
Test software	Audix	e3	V9	NCR	NCR

Note: No Calibration Required (NCR).

Appendix B: Measurement Uncertainty

This uncertainty represents an expanded uncertainty expressed at approximately the 95 % confidence level using a coverage factor of $k=2$.

Item	Uncertainty
Emission on the Band Edge Test	4.32 dB
Maximum Conducted Output Power	1.27 dB