RADIO TEST REPORT

Test Report No. 14219579S-C-R1

Customer	**PIONEER CORPORATION**
Description of EUT	**Display Audio**
Model Number of EUT	**AVH-0239ZT**
FCC ID	**AJDK120**
Test Regulation	**FCC Part 15 Subpart E**
Test Result	**Complied (Refer to SECTION 3)**
Issue Date	**June 7, 2022**
Remarks	**Antenna Terminal Conducted Tests only**

Representative Test Engineer	**Approved By**
T. Kawakami	K. Takeyama
Takahiro Kawakami Engineer	Kazutaka Takeyama Leader

CERTIFICATE 1266.03

☐ The testing in which "Non-accreditation" is displayed is outside the accreditation scopes in UL Japan, Inc.

☒ There is no testing item of "Non-accreditation".

Report Cover Page - Form-ULID-003532 (DCS:13-EM-F0429) Issue# 20.0

ANNOUNCEMENT

- This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
- The results in this report apply only to the sample tested.
- This sample tested is in compliance with the limits of the above regulation.
- The test results in this test report are traceable to the national or international standards.
- This test report must not be used by the customer to claim product certification, approval, or endorsement by the A2LA accreditation body.
- This test report covers Radio technical requirements.
  It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
- The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
- The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan, Inc. has been accredited.
- The information provided from the applicant for this report is identified in Section 1.
- For test report(s) referred in this report, the latest version (including any revisions) is always referred.

REVISION HISTORY

Original Test Report No.: 14219579S-C

This report is a revised version of 14219579S-C. 14219579S-C is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	14219579S-C	May 31, 2022	-
1	14219579S-C-R1	June 7, 2022	Replaced charts on page 24 and 25.

Reference: Abbreviations (Including words undescribed in this report)

A2LA	The American Association for Laboratory Accreditation	ICES	Interference-Causing Equipment Standard
AC	Alternating Current	IEC	International Electrotechnical Commission
AFH	Adaptive Frequency Hopping	IEEE	Institute of Electrical and Electronics Engineers
AM	Amplitude Modulation	IF	Intermediate Frequency
Amp, AMP	Amplifier	ILAC	International Laboratory Accreditation Conference
ANSI	American National Standards Institute	ISED	Innovation, Science and Economic Development Canada
Ant, ANT	Antenna	ISO	International Organization for Standardization
AP	Access Point	JAB	Japan Accreditation Board
ASK	Amplitude Shift Keying	LAN	Local Area Network
Atten., ATT	Attenuator	LIMS	Laboratory Information Management System
AV	Average	MCS	Modulation and Coding Scheme
BPSK	Binary Phase-Shift Keying	MRA	Mutual Recognition Arrangement
BR	Bluetooth Basic Rate	N/A	Not Applicable
BT	Bluetooth	NIST	National Institute of Standards and Technology
BT LE	Bluetooth Low Energy	NS	No signal detect.
BW	BandWidth	NSA	Normalized Site Attenuation
Cal Int	Calibration Interval	NVLAP	National Voluntary Laboratory Accreditation Program
CCK	Complementary Code Keying	OBW	Occupied Band Width
Ch., CH	Channel	OFDM	Orthogonal Frequency Division Multiplexing
CISPR	Comite International Special des Perturbations Radioelectriques	P/M	Power meter
CW	Continuous Wave	PCB	Printed Circuit Board
DBPSK	Differential BPSK	PER	Packet Error Rate
DC	Direct Current	PHY	Physical Layer
D-factor	Distance factor	PK	Peak
DFS	Dynamic Frequency Selection	PN	Pseudo random Noise
DQPSK	Differential QPSK	PRBS	Pseudo-Random Bit Sequence
DSSS	Direct Sequence Spread Spectrum	PSD	Power Spectral Density
EDR	Enhanced Data Rate	QAM	Quadrature Amplitude Modulation
EIRP, e.i.r.p.	Equivalent Isotropically Radiated Power	QP	Quasi-Peak
EMC	ElectroMagnetic Compatibility	QPSK	Quadri-Phase Shift Keying
EMI	ElectroMagnetic Interference	RBW	Resolution Band Width
EN	European Norm	RDS	Radio Data System
ERP, e.r.p.	Effective Radiated Power	RE	Radio Equipment
EU	European Union	RF	Radio Frequency
EUT	Equipment Under Test	RMS	Root Mean Square
Fac.	Factor	RSS	Radio Standards Specifications
FCC	Federal Communications Commission	Rx	Receiving
FHSS	Frequency Hopping Spread Spectrum	SA, S/A	Spectrum Analyzer
FM	Frequency Modulation	SG	Signal Generator
Freq.	Frequency	SVSWR	Site-Voltage Standing Wave Ratio
FSK	Frequency Shift Keying	TR	Test Receiver
GFSK	Gaussian Frequency-Shift Keying	Tx	Transmitting
GNSS	Global Navigation Satellite System	VBW	Video BandWidth
GPS	Global Positioning System	Vert.	Vertical
Hori.	Horizontal	WLAN	Wireless LAN

CONTENTS PAGE

SECTION 1: Customer Information **5**
SECTION 2: Equipment Under Test (EUT) **5**
SECTION 3: Test specification, Procedures & Results **7**
SECTION 4: Operation of EUT during testing **10**
SECTION 5: Antenna Terminal Conducted Tests **13**
APPENDIX 1: Test Data **14**
99 % Occupied Bandwidth 14
6 dB Bandwidth 16
Maximum Conducted Output Power 18
Maximum Power Spectral Density 26
Conducted Spurious Emission 33
APPENDIX 2: Test Instruments **34**
APPENDIX 3: Photographs of Test Setup **35**
Antenna Terminal Conducted Tests 35

SECTION 1: Customer Information

Company Name	PIONEER CORPORATION
Address	25-1 Yamada, Kawagoe-shi, Saitama-ken 350-8555, JAPAN
Telephone Number	+81-49-228-7787
Contact Person	Shigeru Yoshida

The information provided from the customer is as follows;
- Customer, Description of EUT, Model Number of EUT, 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 (EUT) other than the Receipt Date and Test Date
- SECTION 4: Operation of EUT 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 (EUT)

2.1 Identification of EUT

Description	Display Audio
Model Number	AVH-0239ZT
Serial Number	Refer to SECTION 4.2
Condition	Production prototype (Not for Sale: This sample is not equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	March 1, 2022
Test Date	March 3 to 29, 2022

2.2 Product Description

The EUT has following similar models.

Product description	Model number	Feature							
		Bluetooth	WiFi	GNSS	steering position of vehicle	type of vehicle	voice recognition	premium sound	destination
Display Audio*	AVH-0239ZT	A	A	A	Left	B	A	NA	South America
Display Audio	AVH-0039ZT	A	A	A	Left	B	A	NA	Southeast Asia
Display Audio	AVH-0139ZT	A	A	A	Right	B	A	NA	Southeast Asia
Display Audio	AVH-0339ZT	A	A	A	Right	B	NA	NA	Malaysia
Display Audio	AVH-0439ZT	A	A	A	Right	B	A	NA	South America
Display Audio	AVH-0539ZT	A	A	A	Right	B	A	NA	Indonesia
Display Audio	AVH-0639ZT	A	A	A	Right	B	A	A	Thailand
Display Audio	AVH-0639ZT	A	A	A	Right	B	A	A	Thailand
Display Audio	AVH-0739ZT	A	A	A	Left	B	A	A	Southeast Asia
Display Audio	AVH-0939ZY	A	A	A	Right	B	NA	NA	Southeast Asia
Display Audio	AVH-1039ZY	A	A	A	Right	B	NA	NA	Asia
Display Audio	AVH-1139ZY	A	A	A	Left	B	NA	NA	South America
Display Audio	AVH-1239ZY	A	A	A	Right	B	NA	NA	Southeast Asia
Display Audio	AVH-0539ZY	A	A	A	Right	C	NA	NA	Southeast Asia
Display Audio	AVH-0639ZY	A	A	A	Left	C	NA	NA	Southeast Asia
Display Audio	AVH-0739ZY	A	A	A	Left	C	NA	NA	South America
Display Audio	AVH-0839ZY	A	A	A	Right	C	NA	NA	South America

* Tested model, A: Applicable, NA: Not Applicable

General Specification

Rating	DC 13.2 V（DC 10.5 V to 16 V）
Operating temperature	-20 deg. C to +65 deg. C

Radio Specification

WLAN (IEEE802.11a/11n-20/11ac-20/11n-40/11ac-40/11ac-80)

Equipment Type	Transceiver	
Frequency of Operation	20 MHz Band:	5745 MHz
	40 MHz Band:	5755 MHz
	80 MHz Band:	5775 MHz
Type of Modulation	DSSS, OFDM	
Antenna Type	Internal Antenna	
Antenna Gain: G_{ANT}	-3.77 dBi	

Bluetooth (BR / EDR)

Equipment Type	Transceiver
Frequency of Operation	2402 MHz to 2480 MHz
Type of Modulation	GFSK, π/4- DQPSK , 8DPSK
Antenna Type	Internal Antenna
Antenna Gain	-3.60 dBi

SECTION 3: Test specification, Procedures & Results

3.1 Test Specification

Test Specification	FCC Part 15 Subpart E FCC Part 15 final revised on April 1, 2022 and effective May 2, 2022
Title	FCC 47 CFR Part 15 Radio Frequency Device Subpart E Unlicensed National Information Infrastructure Devices Section 15.407 General technical requirements

* The revision does not affect the test result conducted before its effective date.
* The customer has declared that the EUT has complied with FCC Part 15 Subpart B as SDoC.

3.2 Procedures and Results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	**FCC:** ANSI C63.10-2013	**FCC:** 15.407 (b) (6) / 15.207	-	N/A	*1)
	ISED: RSS-Gen 8.8	**ISED:** RSS-Gen 8.8			
26 dB Emission Bandwidth	**FCC:** KDB Publication Number 789033	**FCC:** 15.407 (a) (1) (2) (3)	-	N/A	*2)
	ISED: -	**ISED:** -			
Maximum Conducted Output Power	**FCC:** KDB Publication Number 789033	**FCC:** 15.407 (a) (1) (2) (3)	See data	Complied a)	Conducted
	ISED: -	**ISED:** RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1			
Maximum Power Spectral Density	**FCC:** KDB Publication Number 789033	**FCC :** 15.407 (a) (1) (2) (3)		Complied b)	Conducted
	ISED: -	**ISED:** RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.1			
Spurious Emission Restricted Edge	**FCC:** ANSI C63.10-2013 KDB Publication Number 789033	**FCC:** 15.407 (b), 15.205 and 15.209	See data	Complied c)	Conducted (< 30 MHz)
	ISED: -	**ISED:** RSS-247 6.2.1.2 6.2.2.2 6.2.3.2 6.2.4.2			
6 dB Emission Bandwidth	**FCC:** ANSI C63.10-2013	**FCC:** 15.407 (e)	See data	Complied d)	Conducted
	ISED: -	**ISED:** RSS-247 6.2.4.1			

Note: UL Japan, Inc.'s EMI Work Procedures: Work Instructions-ULID-003591 and Work Instructions-ULID-003593.
* In case any questions arise about test procedure, ANSI C63.10: 2013 is also referred.
*1) The test is not applicable since the EUT does not have AC Mains.
*2) The test is not applicable since the EUT supports only U-NII-3 band.

a) Refer to APPENDIX 1 (data of Maximum Conducted Output Power)
b) Refer to APPENDIX 1 (data of Maximum Power Spectral Density)
c) Refer to APPENDIX 1 (data of Conducted Spurious Emission)
d) Refer to APPENDIX 1 (data of 6 dB Bandwidth)

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)

The EUT provides stable voltage constantly to the RF Part regardless of input voltage.
Instead of a new battery, DC power supply was used for the test. That does not affect the test result, therefore the 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 of Section 15.203.

3.3 Addition to Standard

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
99 % Occupied Band Width	**ISED:** RSS-Gen 6.7	**ISED:** -	N/A	- a)	Conducted
a) Refer to APPENDIX 1 (data of 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 following 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.

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)_SPM-06	1.2 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-06	2.0 dB
Power Measurement above 1 GHz (Average Detector)_SPM-07	1.2 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-07	1.3 dB
Power Measurement above 1 GHz (Average Detector)_SPM-13	1.3 dB
Power Measurement above 1 GHz (Peak Detector)_SPM-13	1.3 dB
Spurious emission (Conducted) below 1GHz	0.93 dB
Spurious emission (Conducted) , Power Density measurement 1 GHz-3 GHz	0.92 dB
Spurious emission (Conducted) , Power Density measurement 3 GHz-18 GHz	2.3 dB
Spurious emission (Conducted) 18 GHz-26.5 GHz	2.3 dB
Spurious emission (Conducted) 26.5 GHz-40 GHz	2.3 dB
Bandwidth Measurement	0.012 %

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
A2LA Certificate Number: 1266.03
(FCC test firm registration number: 626366, ISED lab company number: 2973D / CAB identifier: JP0001)

Test site	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber	2973D-1	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber	2973D-2	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber	2973D-3	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 EUT during testing

4.1 Operating Mode(s)

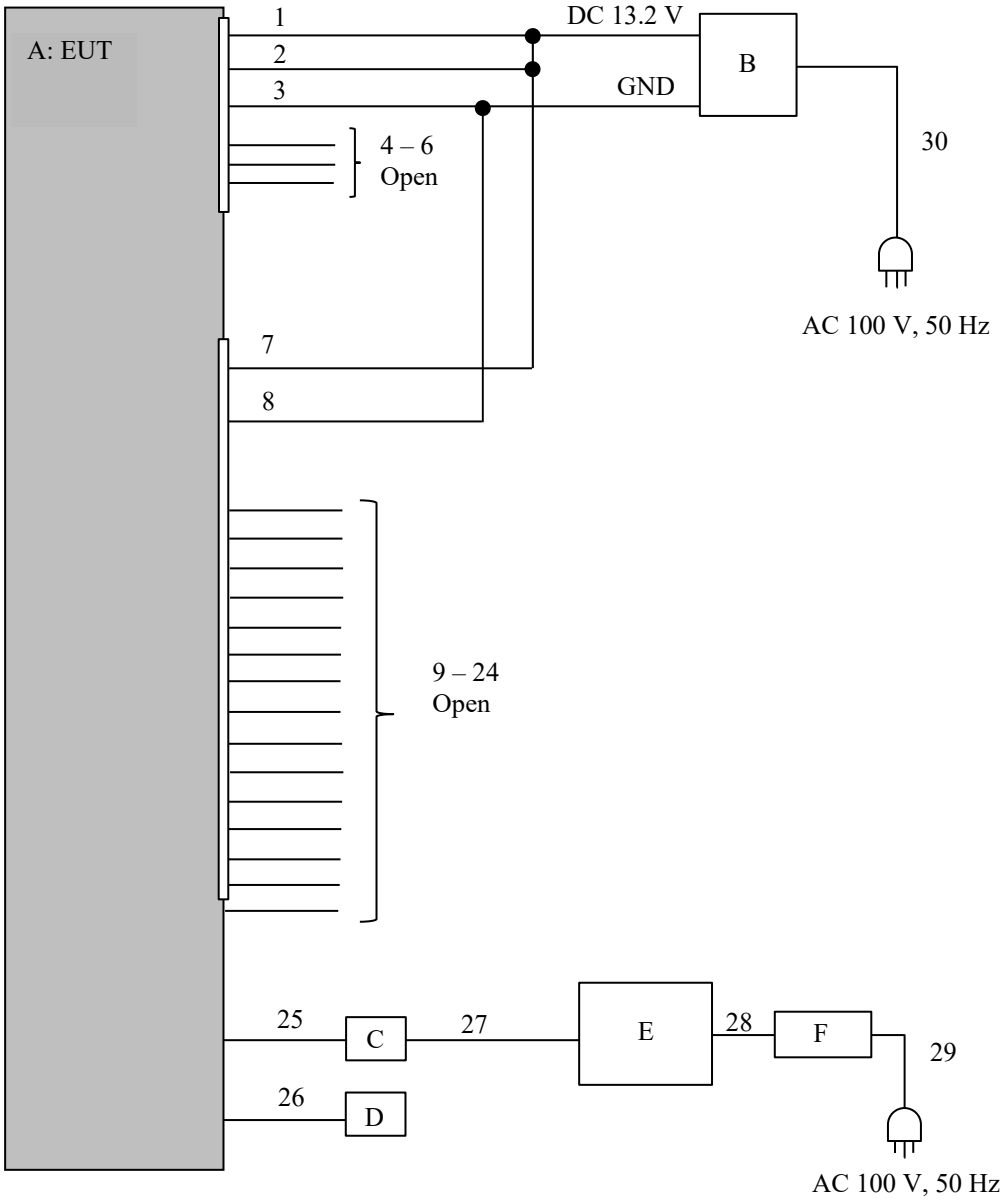
Test operating mode was determined as follows according to "Section 1 of 6 802.11 a/b/g/n testing - Managing Complex Regulatory Approvals -" of TCB Council Workshop October 2009 and also was judged the necessity of 802.11ac mode by the pre-test.

Mode	Remarks*
IEEE 802.11a (11a)	9 Mbps, PN9
IEEE 802.11n 20 MHz BW (11n-20)	MCS 3, PN9
IEEE 802.11ac 20 MHz BW (11ac-20)	MCS 2, PN9
IEEE 802.11n 40 MHz BW (11n-40)	MCS 0, PN9
IEEE 802.11ac 40 MHz BW (11ac-40)	MCS 5, PN9
IEEE 802.11ac 80 MHz BW (11ac-80)	MCS 3, PN9
*The worst condition was determined based on the test result of Maximum Conducted Output Power.	
*Power of the EUT was set by the software as follows; Power Setting: 11a/11n-20:14 dBm , 11n-40:13 dBm , 11ac-20/11ac-40/11ac-80:8 dBm Software: LabTool Version: 2.0.0.89 *This setting of software is the worst case. Any conditions under the normal use do not exceed the condition of setting. In addition, end users cannot change the settings of the output power of the product.	

*The Details of Operation Mode(s)

Test Item	Operating Mode	Tested Frequency			
		Lower Band	Middle Band	Additional Band	Upper Band
99 % Occupied Bandwidth, Maximum Conducted Output Power, Maximum Power Spectral Density	Tx 11a Tx 11n-20 Tx 11ac-20	-	-	-	5745 MHz
	Tx 11n-40 Tx 11ac-40	-	-	-	5755 MHz
	Tx 11ac-80	-	-	-	5775 MHz
6 dB Bandwidth	Tx 11a Tx 11n-20 Tx 11ac-20	-	-	-	5745 MHz
	Tx 11n-40 Tx 11ac-40	-	-	-	5755 MHz
	Tx 11ac-80	-	-	-	5775 MHz
Conducted Spurious Emission *1)	Tx 11a	-	-	-	5745 MHz
*1) The mode was tested as a representative, because it had the highest power at antenna terminal test.					

4.2 Configuration and Peripherals



* Cabling and setup(s) were taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support Equipment

No.	Item	Model Number	Serial Number	Manufacturer	Remarks
A	Display Audio	AVH-0239ZT	K1BA090	PIONEER CORPORATION	EUT
B	Power Supply(DC)	PAN35-10A	ML002085	KIKUSUI	-
C	Jig Board	-	-	-	-
D	Jig Board	-	-	-	-
E	Laptop Computer	PC-VJ23LLZGR	66000071A	NEC	-
F	AC Adapter	ADP-45TD E	6115924DB	NEC	-

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	ACC	0.5 + 1.8	Unshielded	Unshielded	-
2	B+	0.5 + 1.8	Unshielded	Unshielded	-
3	GND	0.5 + 1.8	Unshielded	Unshielded	-
4	FR+	0.5	Unshielded	Unshielded	-
5	FR-	0.5	Unshielded	Unshielded	-
6	FL+	0.5	Unshielded	Unshielded	-
7	B+	1.0 + 1.8	Unshielded	Unshielded	-
8	GND	1.0 + 1.8	Unshielded	Unshielded	-
9	V+	1.0	Unshielded	Unshielded	-
10	V-	1.0	Unshielded	Unshielded	-
11	CGND	1.0	Unshielded	Unshielded	-
12	CA+	1.0	Unshielded	Unshielded	-
13	IVI+	1.0	Unshielded	Unshielded	-
14	IVI-	1.0	Unshielded	Unshielded	-
15	ISLD	1.0	Unshielded	Unshielded	-
16	CSW+	1.0	Unshielded	Unshielded	-
17	FRSW	1.0	Unshielded	Unshielded	-
18	TX2+	1.0	Unshielded	Unshielded	-
19	TX2-	1.0	Unshielded	Unshielded	-
20	TX3+	1.0	Unshielded	Unshielded	-
21	TX3-	1.0	Unshielded	Unshielded	-
22	CNH1	1.0	Unshielded	Unshielded	-
23	CNL1	1.0	Unshielded	Unshielded	-
24	ADP3	1.0	Unshielded	Unshielded	-
25	Signal	0.15	Unshielded	Unshielded	*1)
26	Signal	0.25	Unshielded	Unshielded	*1)
27	USB	1.0	Shielded	Shielded	-
28	DC	1.8	Unshielded	Unshielded	-
29	AC	0.9	Unshielded	Unshielded	-
30	AC	2.0	Unshielded	Unshielded	-

*1) This cable is for testing and is not included with products.

SECTION 5: Antenna Terminal Conducted Tests

Test Procedure

The tests were made with below setting connected to the antenna port.

Test	Span	RBW	VBW	Sweep time	Detector	Trace	Instrument used and Test method
99 % Occupied Bandwidth *1)	Enough width to display emission skirts	1 % to 5 % of OBW	≥ 3 RBW	Auto	Peak	Max Hold	Spectrum Analyzer
6 dB Bandwidth	Enough to capture the emission	100 kHz	300 kHz	Auto	Peak	Max Hold	Spectrum Analyzer
Maximum Conducted Output Power	-	-	-	Auto	Average	-	Power Meter (Sensor: 160 MHz BW) (Method PM)
Maximum Power Spectral Density	Encompass the entire EBW	1 MHz or 100 kHz *2)	≥ 3 RBW	Auto	RMS Power Averaging (100 times)	Clear Write	Spectrum Analyzer
Conducted Spurious Emission*3) *4)	9 kHz to 150 kHz	200 Hz	620 Hz	Auto	Peak	Max Hold	Spectrum Analyzer
	150 kHz to 30 MHz	10 kHz	30 kHz				

* The test method was also referred to KDB 789033 D02 General UNII Test Procedures New Rules v02r01 "Guidelines for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices Part 15, Subpart E".

*1) Peak hold was applied as Worst-case measurement.
*2) KDB 789033 D02 says that RBW is set to be 500 kHz for 5.725 GHz to 5.850 GHz, but it is not possible with spectrum analyzer, so RBW Correction Factor (10 log(500 kHz / 100 kHz)) was added to the test result.
*3) In the frequency range below 30 MHz, RBW was narrowed to separate the noise contents.
Then, wide-band noise near the limit was checked separately, however the noise was not detected as shown in the chart. (9 kHz to 150 kHz: RBW = 200 Hz, 150 kHz to 30 MHz: RBW = 10 kHz)
*4) The limits in CFR 47, Part 15, Subpart C, paragraph 15.209(a), are identical to those in RSS-Gen section 8.9, Table 6, since the measurements are performed in terms of magnetic field strength and converted to electric field strength levels (as reported in the table) using the free space impedance of 377 Ohmes. For example, the measurement at frequency 9 kHz resulted in a level of 45.5 dBuV/m, which is equivalent to 45.5 – 51.5 = -6.0 dBuA/m, which has the same margin, 3 dB, to the corresponding RSS-Gen Table 6 limit as it has to 15.209(a) limit.

The test results and limit are rounded off to two decimals place, so some differences might be observed.
The equipment and cables were not used for factor 0 dB of the data sheets.

Test Data : APPENDIX
Test Result : Pass

APPENDIX 1: Test Data

99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx

11a

Tested Frequency [MHz]	99 % Occupied Bandwidth [kHz]	Limit [MHz]
5745	17076.8	-

11n-40

Tested Frequency [MHz]	99 % Occupied Bandwidth [kHz]	Limit [MHz]
5755	36612.2	-

11n-20

Tested Frequency [MHz]	99 % Occupied Bandwidth [kHz]	Limit [MHz]
5745	17861.8	-

11ac-40

Tested Frequency [MHz]	99 % Occupied Bandwidth [kHz]	Limit [MHz]
5755	36406.2	-

11ac-20

Tested Frequency [MHz]	99 % Occupied Bandwidth [kHz]	Limit [MHz]
5745	17837.5	-

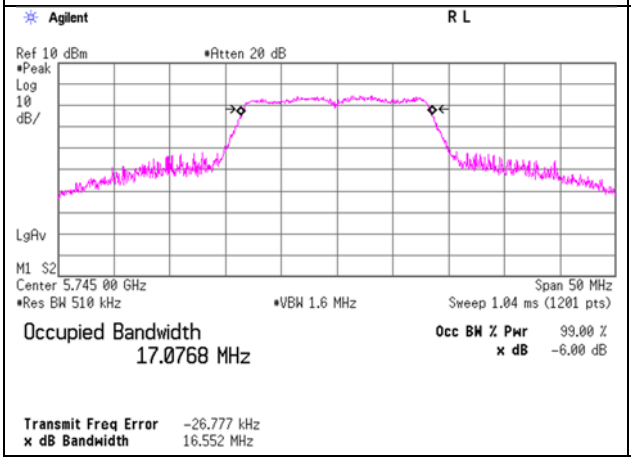
11ac-80

Tested Frequency [MHz]	99 % Occupied Bandwidth [kHz]	Limit [MHz]
5775	76462.2	-

99 % Occupied Bandwidth

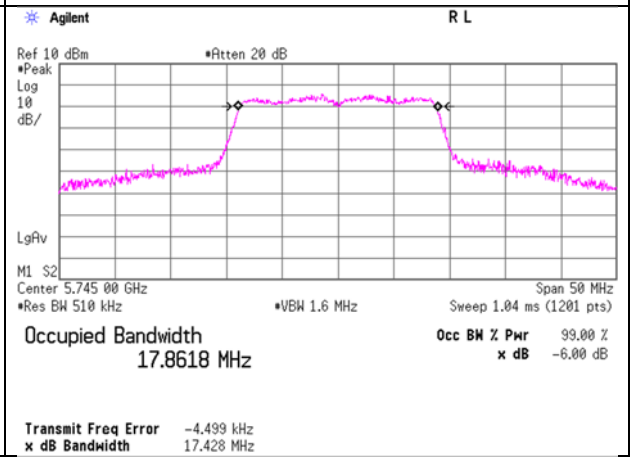
11a

5745 MHz



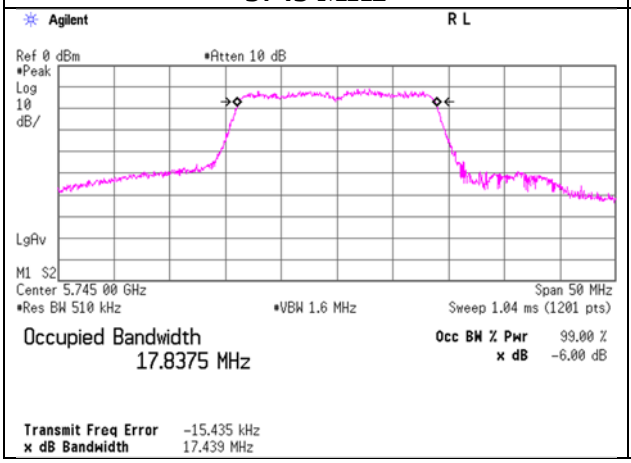
11n-20

5745 MHz



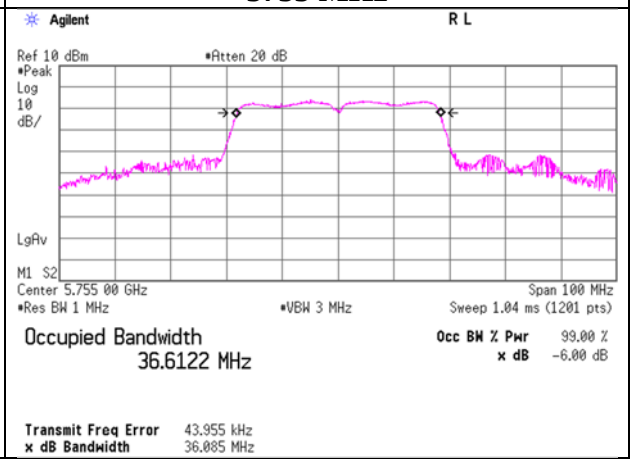
11ac-20

5745 MHz



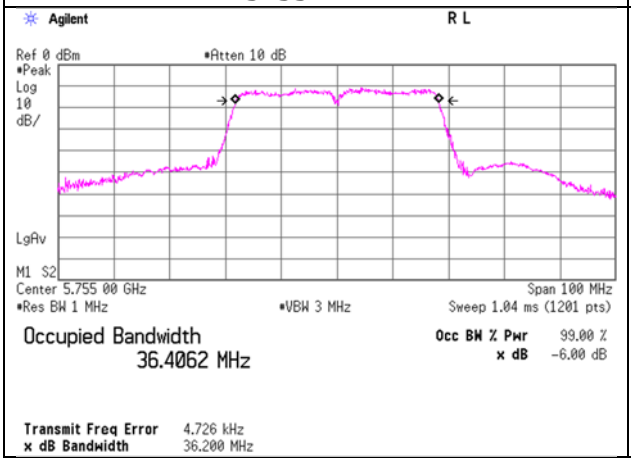
11n-40

5755 MHz



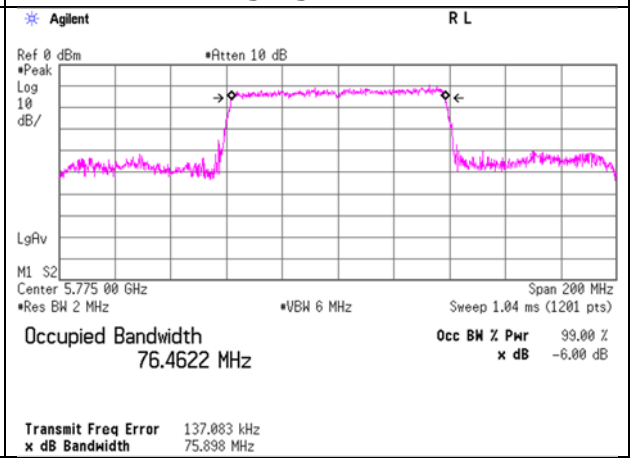
11ac-40

5755 MHz



11ac-80

5775 MHz



6 dB Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx

11a

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5745	16.372	> 0.500

11n-20

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5745	17.696	> 0.500

11ac-20

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5745	17.579	> 0.500

11n-40

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5755	35.493	> 0.500

11ac-40

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5755	36.442	> 0.500

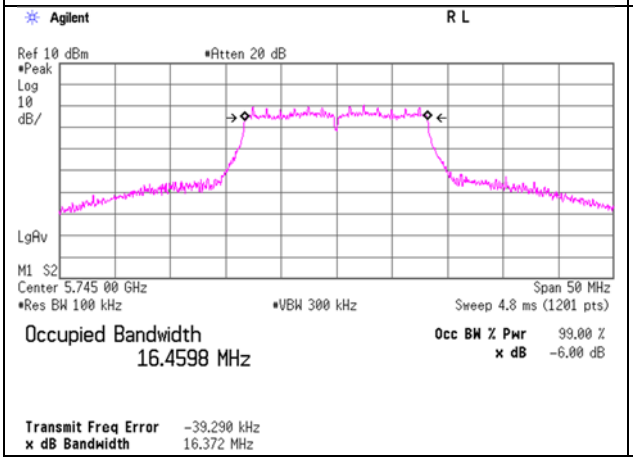
11ac-80

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5775	76.431	> 0.500

6 dB Bandwidth

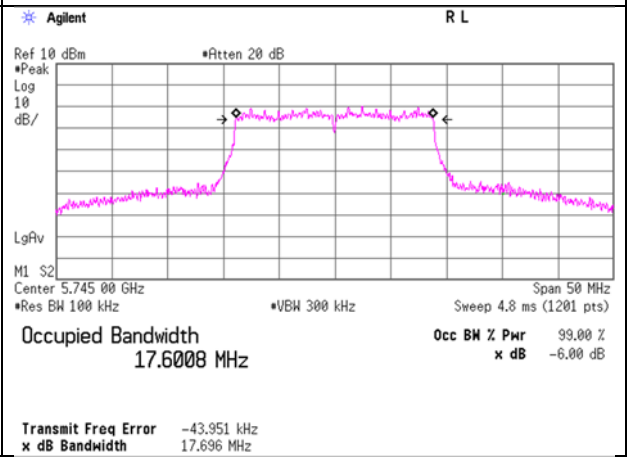
11a

5745 MHz



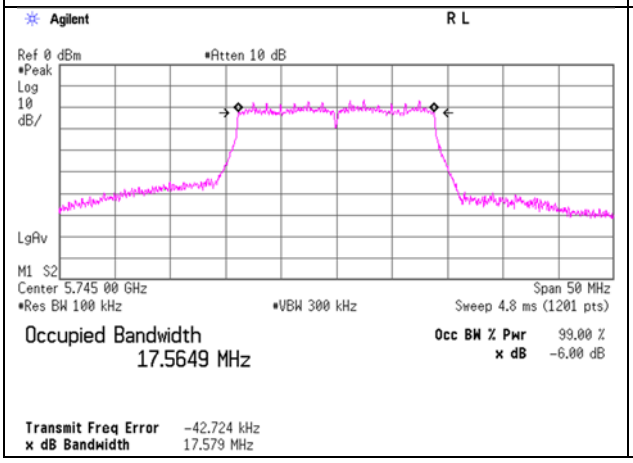
11n-20

5745 MHz



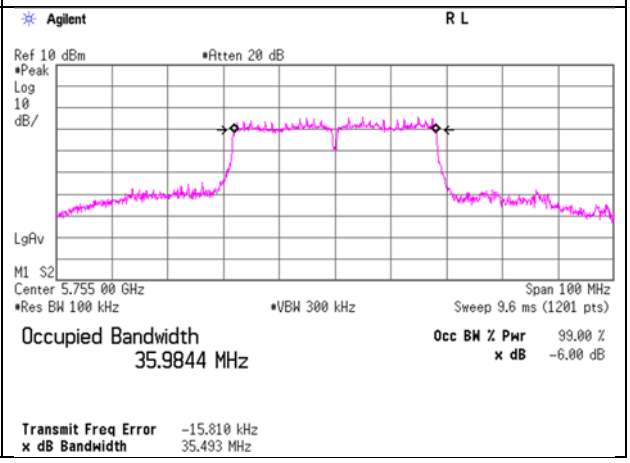
11ac-20

5745 MHz



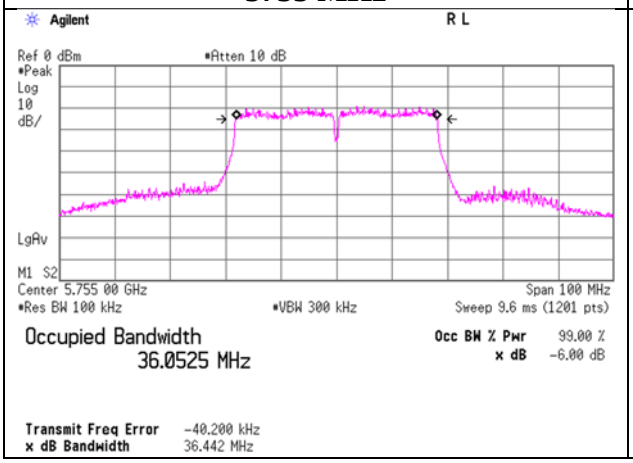
11n-40

5755 MHz



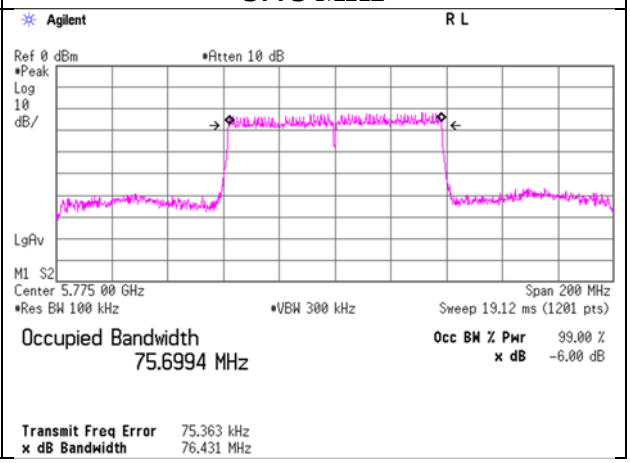
11ac-40

5755 MHz



11ac-80

5775 MHz



Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11a

Applied limit: 15.407, access point

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99 % OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5745	0.00	2.79	10.22	0.43	-3.77	-	17.077	13.44	22.06	30.00	16.56	9.67	9.26	36.00	26.33

Sample Calculation:
Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain
Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

5745 MHz

Rate Mbps	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
6	0.11	0.27	0.38	-
9	0.00	0.43	0.43	*
12	-0.19	0.53	0.34	-
18	-0.62	0.79	0.17	-
24	-0.79	1.01	0.22	-
36	-1.12	1.40	0.28	-
48	-1.56	1.71	0.15	-
54	-1.61	1.88	0.27	-

* Worst rate

Sample Calculation:
Burst power = Reading (timed average) + Duty factor
All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11n-20

Applied limit: 15.407, access point

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99 % OBW (B for IC)	Conducted Power Result		Conducted Power Limit	Conducted Power Margin	e.i.r.p. Result		e.i.r.p. Limit	e.i.r.p. Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5745	-0.91	2.79	10.22	1.02	-3.77	-	17.862	13.12	20.49	30.00	16.88	9.35	8.60	36.00	26.65

Sample Calculation:
Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain
Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

5745 MHz

MCS Number	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
0	-0.36	0.31	-0.05	-
1	-0.50	0.58	0.08	-
2	-0.72	0.81	0.09	-
3	-0.91	1.02	0.11	*
4	-1.59	1.41	-0.18	-
5	-1.78	1.73	-0.05	-
6	-1.83	1.84	0.01	-
7	-2.01	1.95	-0.06	-

* Worst rate

Sample Calculation:
Burst power = Reading (timed average) + Duty factor
All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11ac-20

Applied limit: 15.407, access point

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99 % OBW (B for IC)	Conducted Power Result		Conducted Power Limit	Conducted Power Margin	e.i.r.p. Result		e.i.r.p. Limit	e.i.r.p. Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5745	-6.75	2.79	10.22	0.80	-3.77	-	17.838	7.06	5.08	30.00	22.94	3.29	2.13	36.00	32.71

Sample Calculation:
Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain
Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

5745 MHz

MCS Number	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
0	-6.74	0.31	-6.43	-
1	-6.58	0.57	-6.01	-
2	-6.75	0.80	-5.95	*
3	-6.98	1.01	-5.97	-
4	-7.43	1.39	-6.04	-
5	-7.74	1.71	-6.03	-
6	-7.84	1.82	-6.02	-
7	-7.91	1.95	-5.96	-
8	-8.15	2.15	-6.00	-

* Worst rate

Sample Calculation:
Burst power = Reading (timed average) + Duty factor
All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11n-40

Applied limit: 15.407, access point

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99 % OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5755	-1.14	2.80	10.22	0.60	-3.77	-	36.612	12.48	17.68	30.00	17.52	8.71	7.42	36.00	27.29

Sample Calculation:
Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain
Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

5755 MHz

MCS Number	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
0	-1.14	0.60	-0.54	*
1	-1.59	1.05	-0.54	-
2	-2.35	1.44	-0.91	-
3	-2.61	1.76	-0.85	-
4	-3.16	2.24	-0.92	-
5	-3.54	2.64	-0.90	-
6	-3.64	2.80	-0.84	-
7	-3.72	2.93	-0.79	-

* Worst rate

Sample Calculation:
Burst power = Reading (timed average) + Duty factor
All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11ac-40

Applied limit: 15.407, access point

Tested Frequency [MHz]	Power Meter Reading [dBm]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	26 dB EBW (B for FCC) [MHz]	99 % OBW (B for IC) [MHz]	Conducted Power Result [dBm]	Conducted Power Result [mW]	Conducted Power Limit [dBm]	Conducted Power Margin [dB]	e.i.r.p. Result [dBm]	e.i.r.p. Result [mW]	e.i.r.p. Limit [dBm]	e.i.r.p. Margin [dB]
5755	-8.52	2.80	10.22	2.57	-3.77	-	36.406	7.07	5.09	30.00	22.93	3.30	2.14	36.00	32.70

Sample Calculation:
Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain
Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

5755 MHz

MCS Number	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
0	-6.82	0.58	-6.24	-
1	-7.17	1.04	-6.13	-
2	-7.51	1.42	-6.09	-
3	-7.79	1.73	-6.06	-
4	-8.24	2.17	-6.07	-
5	-8.52	2.57	-5.95	*
6	-8.69	2.68	-6.01	-
7	-8.83	2.84	-5.99	-
8	-9.12	3.01	-6.11	-
9	-9.28	3.13	-6.15	-

* Worst rate

Sample Calculation:
Burst power = Reading (timed average) + Duty factor
All comparison were carried out on same frequency and measurement factors.

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11ac-80

Applied limit: 15.407, access point

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	26 dB EBW (B for FCC)	99% OBW (B for IC)	Conducted Power Result		Conducted Power Limit	Conducted Power Margin	e.i.r.p. Result		e.i.r.p. Limit	e.i.r.p. Margin
[MHz]	[dBm]	[dB]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5775	-8.43	2.80	10.22	2.65	-3.77	-	76.462	7.24	5.29	30.00	22.76	3.47	2.22	36.00	32.53

Sample Calculation:
Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor
e.i.r.p. Result = Conducted Power Result + Antenna Gain
Conducted Power Limit (5725 MHz-5850 MHz) = 1W

5775 MHz

MCS Number	Reading (timed average) [dBm]	Duty factor [dB]	Burst power [dBm]	Remarks
0	-7.01	1.13	-5.88	-
1	-7.62	1.82	-5.80	-
2	-8.09	2.28	-5.81	-
3	-8.43	2.65	-5.78	*
4	-9.04	3.07	-5.97	-
5	-9.32	3.46	-5.86	-
6	-9.47	3.59	-5.88	-
7	-9.56	3.69	-5.87	-
8	-9.61	3.82	-5.79	-
9	-10.15	4.00	-6.15	-

* Worst rate

Sample Calculation:
Burst power = Reading (timed average) + Duty factor
All comparison were carried out on same frequency and measurement factors.

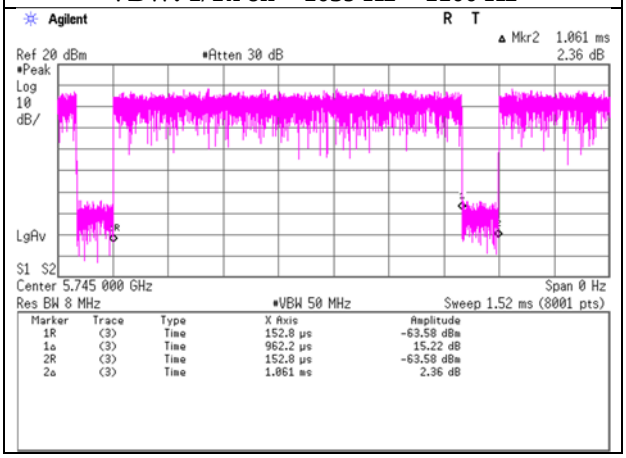
Burst rate confirmation

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx

11a 9 Mbps

Tx on / (Tx on + Tx off) =	**0.907**
Tx on / (Tx on + Tx off) * 100 =	**90.7 %**
Duty factor = 10 * log (1.061 / 0.962) =	**0.43 dB**

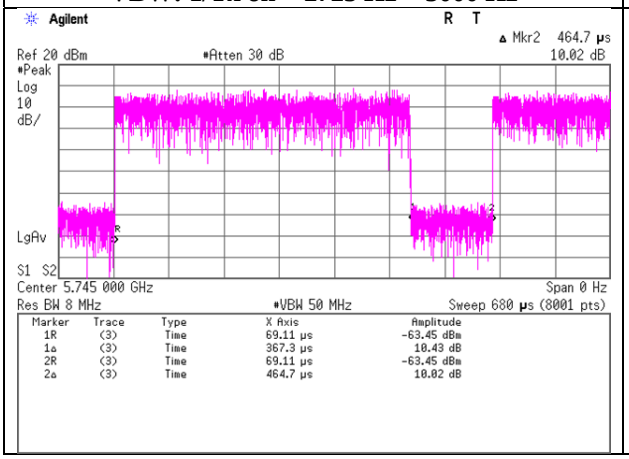
VBW: 1/Tx on = 1039 Hz < 1100 Hz



11n-20 MCS 3

Tx on / (Tx on + Tx off) =	**0.789**
Tx on / (Tx on + Tx off) * 100 =	**78.9 %**
Duty factor = 10 * log (0.465 / 0.367) =	**1.02 dB**

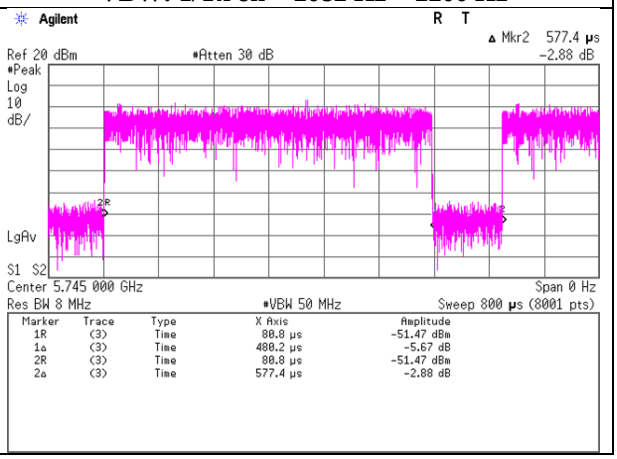
VBW: 1/Tx on = 2725 Hz < 3000 Hz



11ac-20 MCS 2

Tx on / (Tx on + Tx off) =	**0.832**
Tx on / (Tx on + Tx off) * 100 =	**83.2 %**
Duty factor = 10 * log (0.577 / 0.48) =	**0.80 dB**

VBW: 1/Tx on = 2082 Hz < 2200 Hz

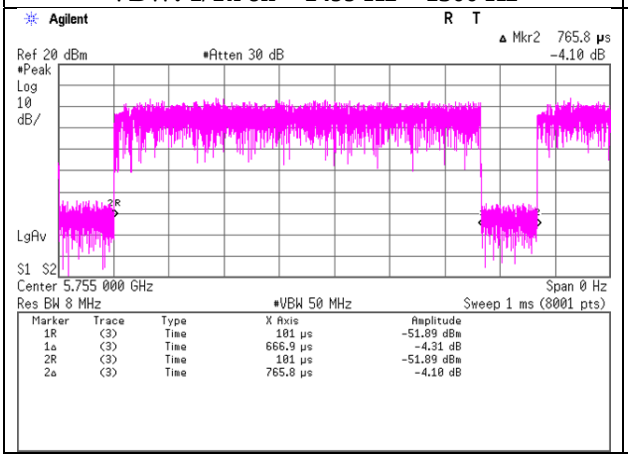


Burst rate confirmation

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 3, 2022
Temperature / Humidity	23 deg. C / 35 % RH
Engineer	Takahiro Kawakami
Mode	Tx

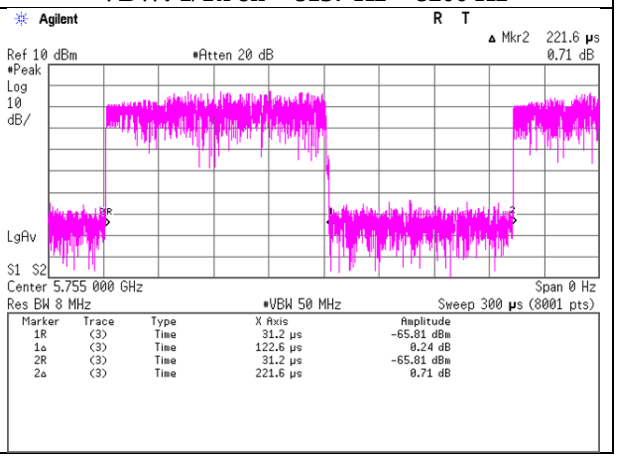
11n-40 MCS 0

Tx on / (Tx on + Tx off) = 0.871
Tx on / (Tx on + Tx off) * 100 = 87.1 %
Duty factor = 10 * log (0.766 / 0.667) = 0.60 dB
VBW: 1/Tx on = 1499 Hz < 1500 Hz



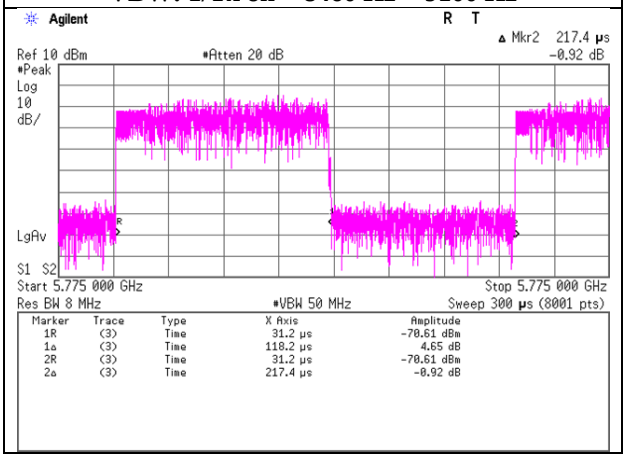
11ac-40 MCS 5

Tx on / (Tx on + Tx off) = 0.554
Tx on / (Tx on + Tx off) * 100 = 55.4 %
Duty factor = 10 * log (0.222 / 0.123) = 2.57 dB
VBW: 1/Tx on = 8157 Hz < 8200 Hz



11ac-80 MCS 3

Tx on / (Tx on + Tx off) = 0.544
Tx on / (Tx on + Tx off) * 100 = 54.4 %
Duty factor = 10 * log (0.217 / 0.118) = 2.65 dB
VBW: 1/Tx on = 8460 Hz < 9100 Hz



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11a

Applied limit: 15.407, access point

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5745	-18.98	2.79	10.22	0.43	-3.77	6.99	1.44	30.00	28.56	-2.33	36.00	38.33

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11n-20

Applied limit: 15.407, access point

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5745	-18.67	2.79	10.22	1.02	-3.77	6.99	2.34	30.00	27.66	-1.43	36.00	37.43

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11ac-20

Applied limit: 15.407, access point

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5745	-25.64	2.79	10.22	0.80	-3.77	6.99	-4.84	30.00	34.84	-8.61	36.00	44.61

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11n-40

Applied limit: 15.407, access point

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5755	-23.73	2.80	10.22	0.60	-3.77	6.99	-3.13	30.00	33.13	-6.90	36.00	42.90

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11ac-40

Applied limit: 15.407, access point

Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5755	-28.92	2.80	10.22	2.57	-3.77	6.99	-6.34	30.00	36.34	-10.11	36.00	46.11

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 4, 2022
Temperature / Humidity	24 deg. C / 31 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11ac-80

Applied limit: 15.407, access point

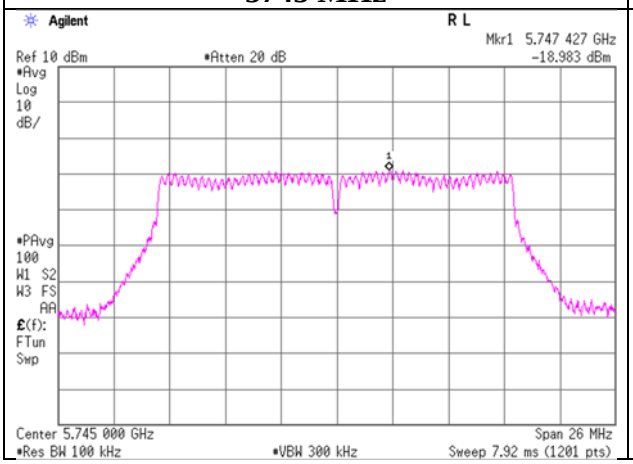
Tested Frequency [MHz]	PSD Reading [dBm /MHz]	Cable Loss [dB]	Atten. Loss [dB]	Duty Factor [dB]	Antenna Gain [dBi]	RBW Correction Factor [dB]	PSD (Conducted) Result [dBm /MHz]	PSD (Conducted) Limit [dBm /MHz]	PSD (Conducted) Margin [dB]	PSD (e.i.r.p.) Result [dBm /MHz]	PSD (e.i.r.p.) Limit [dBm /MHz]	PSD (e.i.r.p.) Margin [dB]
5775	-31.66	2.80	10.22	2.65	-3.77	6.99	-9.01	30.00	39.01	-12.78	36.00	48.78

Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty Factor + RBW Correction Factor
PSD Result (e.i.r.p.) = Conducted PSD Result + Antenna Gain

Maximum Power Spectral Density

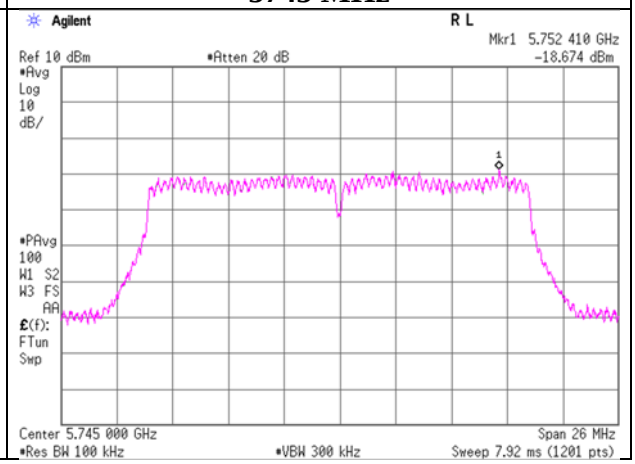
11a

5745 MHz



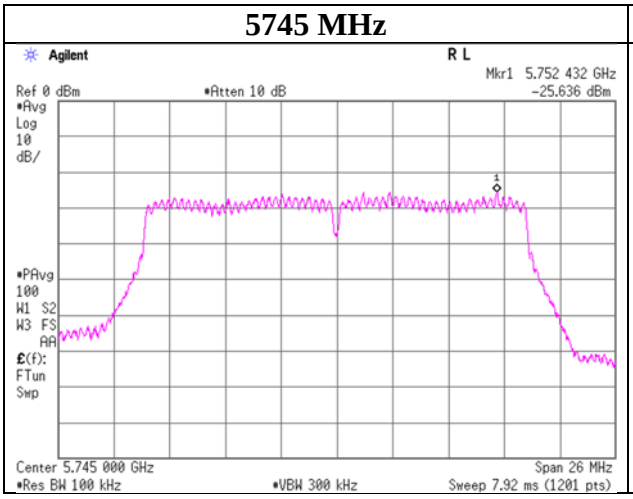
11n-20

5745 MHz



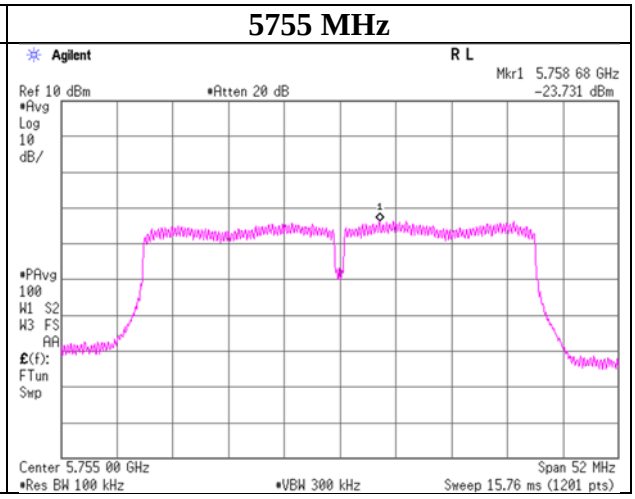
11ac-20

5745 MHz



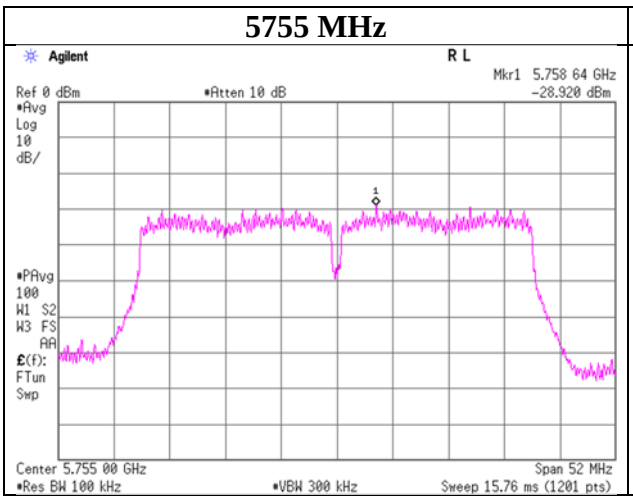
11n-40

5755 MHz



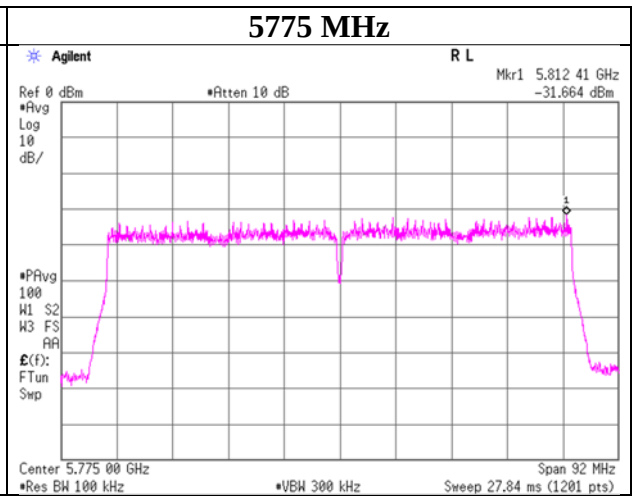
11ac-40

5755 MHz



11ac-80

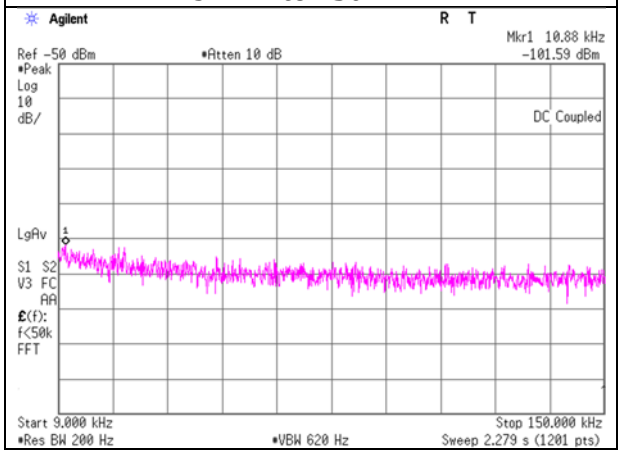
5775 MHz



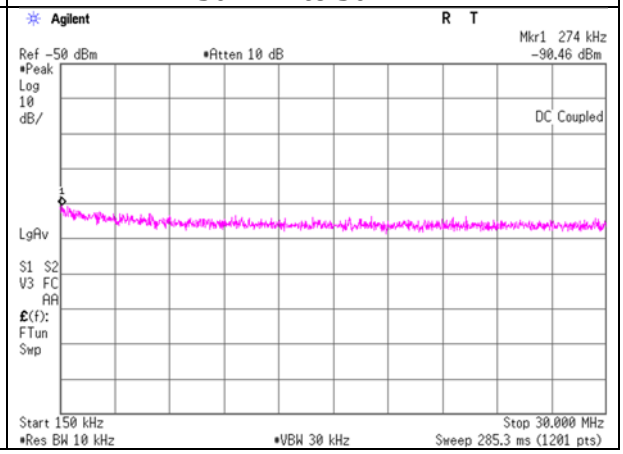
Conducted Spurious Emission

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	March 29, 2022
Temperature / Humidity	24 deg. C / 30 % RH
Engineer	Takahiro Kawakami
Mode	Tx 11a 5745 MHz

9 kHz to 150 kHz



150 kHz to 30 MHz



Frequency [kHz]	Reading [dBm]	Cable Loss [dB]	Attenuator [dB]	Antenna Gain* [dBi]	N (Number of Output)	EIRP [dBm]	Distance [m]	Ground bounce [dB]	E (field strength) [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Remark
10.88	-101.6	0.6	10.1	2.0	1	-88.9	300	6.0	-27.6	46.8	74.4	-
274.00	-90.5	0.6	10.1	2.0	1	-77.7	300	6.0	-16.5	18.8	35.3	-

E [dBuV/m] = EIRP [dBm] - 20 log (Distance [m]) + Ground bounce [dB] + 104.8 [dBuV/m]

EIRP[dBm] = Reading [dBm] + Cable loss [dB] + Attenuator Loss [dB] + Antenna gain [dBi] + 10 * log (N)

N: Number of output

*2.0 dBi was applied to the test result based on KDB 789033 since antenna gain was less than 2.0 dBi.

APPENDIX 2: Test Instruments

Test Equipment

Test Item	Local ID	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	SAT10-15	160493	Attenuator	Weinschel Corp.	54A-10	83406	2021/12/07	12
AT	SAT10-16	160494	Attenuator	Weinschel Corp.	54A-10	83420	2021/12/07	12
AT	SCC-G14	145175	Coaxial Cable	Suhner	SUCOFLEX 102	31600/2	2021/12/06	12
AT	SOS-27	191845	Humidity Indicator	CUSTOM. Inc	CTH-201	-	2021/08/02	12
AT	SPM-13	169910	Power Meter	Keysight Technologies Inc	8990B	MY51000448	2022/01/25	12
AT	SPSS-06	169911	Power sensor	Keysight Technologies Inc	N1923A	MY57270004	2022/01/25	12
AT	SRENT-22	202830	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY48250036	2021/12/01	12
AT	STM-G6	146207	Terminator	JFW	50T-128	-	2021/11/09	12
AT	STS-05	146212	Digital Hitester	HIOKI E.E. CORPORATION	3805-50	80997828	2021/09/14	12

***Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.**

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:

AT: Antenna Terminal Conducted test