

RADIO TEST REPORT

Test Report No. 15356903S-B-R2

Customer	Canon Inc.
Description of EUT	Wireless LAN Module
Model Number of EUT	K30400
FCC ID	AZDK30400
Test Regulation	FCC Part 15 Subpart E
Test Result	Complied
Issue Date	January 9, 2025
Remarks	WLAN (5 GHz band) part Except for DFS test

Representative Test EngineerShiro Kobayashi
Engineer**Approved By**Shinichi Takano
Engineer

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".

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- The information provided by the customer for this report is identified in SECTION 1.
- The laboratory is not responsible for information provided by the customer which can impact the validity of the results.
- For test report(s) referred in this report, the latest version (including any revisions) is always referred.

REVISION HISTORY

Original Test Report No. 15356903S-B

This report is a revised version of 15356903S-B-R1. 15356903S-B-R1 is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	15356903S-B	November 8, 2024	-
1	15356903S-B-R1	December 4, 2024	P7 Modified mode of the worst margin: Tx 11n-40 5500 MHz → Tx 11n-40 5550 MHz P96,98 The following note has been added to the data: *1) Not out of band emission (Leakage Power)
2	15356903S-B-R2	January 9, 2025	P81,84,86,97,99,101,105,107 Corrected limits for quaternary harmonics

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

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SECTION 1: Customer Information

Company Name	Canon Inc.
Address	451, Tsukagoshi 3-chome, Saiwai-ku, Kawasaki-shi, Kanagawa 212-8530, Japan
Telephone Number	+81-3-3758-2111
Contact Person	Shuma Hashimoto

The information provided by 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

SECTION 2: Equipment Under Test (EUT)

2.1 Identification of EUT

Description	Wireless LAN Module
Model Number	K30400
Serial Number	Refer to SECTION 4.2
Condition	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Modification	No Modification by the test lab
Receipt Date	June 14, 2024: Initial receipt July 10, 2024: Adjustment of shielding by customer (Does not affect Antenna Terminal conducted test)
Test Date	June 17 to August 6, 2024

2.2 Product Description

General Specification

Rating	DC 3.3 V
Operating temperature	0 deg. C to +45 deg. C

Radio Specification

This report contains data provided by the customer which can impact the validity of results. UL Japan, Inc. is only responsible for the validity of results after the integration of the data provided by the customer. The data provided by the customer is marked "a)" in the table below.

WLAN (IEEE802.11b/11g/11n-20)

Equipment Type	Transceiver
Frequency of Operation	2412 MHz to 2462 MHz
Type of Modulation	DSSS, OFDM
Antenna Gain ^{a)}	2.51 dBi

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

Equipment Type	Transceiver	
Frequency of Operation	20 MHz Band	5180 MHz to 5240 MHz 5260 MHz to 5320 MHz 5500 MHz to 5700 MHz 5745 MHz to 5825 MHz
	40 MHz Band	5190 MHz to 5230 MHz 5270 MHz to 5310 MHz 5510 MHz to 5670 MHz 5755 MHz to 5795 MHz
Type of Modulation	OFDM	
Antenna Gain ^{a)}	-0.47 dBi	(WLAN UNII-1 and UNII-2A band)
	0.41 dBi	(WLAN UNII-2C band)
	1.33 dBi	(WLAN UNII-3 band)

SECTION 3: Test specification, Procedures & Results

3.1 Test Specification

Test Specification	FCC Part 15 Subpart E The latest version on the first day of the testing period
Title	FCC 47 CFR Part 15 Radio Frequency Device Subpart E Unlicensed National Information Infrastructure Devices Section 15.407 General technical requirements

3.2 Procedures and Results

Item	Test Procedure	Specification	Worst Margin	Results	Remarks
Conducted Emission	FCC: ANSI C63.10-2013 ISED: RSS-Gen 8.8	FCC: 15.407 (b) (6) / 15.207 ISED: RSS-Gen 8.8	14.6 dB, 4.28766 MHz / 4.39500 MHz N, QP, Tx 11n-40 5550 MHz	Complied	-
26 dB Emission Bandwidth	FCC: KDB Publication Number 789033 ISED: -	FCC: 15.407 (a) (1) (2) (3) ISED: -	See data	Complied	Conducted
Maximum Conducted Output Power	FCC: KDB Publication Number 789033 ISED: -	FCC: 15.407 (a) (1) (2) (3) ISED: RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.2		Complied	Conducted
Maximum Power Spectral Density	FCC: KDB Publication Number 789033 ISED: -	FCC : 15.407 (a) (1) (2) (3) ISED: RSS-247 6.2.1.1 6.2.2.1 6.2.3.1 6.2.4.2		Complied	Conducted
Spurious Emission Restricted Band Edge	FCC: ANSI C63.10-2013 KDB Publication Number 789033 ISED: -	FCC: 15.407 (b), 15.205 and 15.209 ISED: RSS-247 6.2.1.2 6.2.2.2 6.2.3.2 6.2.4.3	0.9 dB 17475.000 MHz, PK, Vert., Tx 11a 5825 MHz	Complied	Conducted (< 30 MHz) / Radiated *1)
6 dB Emission Bandwidth	FCC: ANSI C63.10-2013 ISED: -	FCC: 15.407 (e) ISED: RSS-247 6.2.4.2	See data	Complied	Conducted
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) Radiated test was selected over 30 MHz based on FCC 15.407 (b) and KDB 789033 D02 G.3.b).					

FCC Part 15.31 (e)

The host device provides stable voltage constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement

FCC Part 15.203 Antenna requirement

The antenna is not removable from 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	-	Conducted

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

3.4 Uncertainty

Measurement uncertainty is not taken into account when stating conformity with a specified requirement.

Note: When margins obtained from test results are less than the measurement uncertainty, the test results may exceed the limit.

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

Item	Frequency range	Uncertainty (+/-)
Conducted Emission (AC Mains) LISN	150 kHz to 30 MHz	3.2 dB
Radiated Emission (Measurement distance: 3 m)	9 kHz to 30 MHz	3.3 dB
	30 MHz to 200 MHz	4.9 dB
	200 MHz to 1 GHz	6.2 dB
	1 GHz to 6 GHz	4.7 dB
	6 GHz to 18 GHz	5.3 dB
	18 GHz to 40 GHz	5.5 dB
Radiated Emission (Measurement distance: 1 m)	1 GHz to 18 GHz	5.6 dB
	18 GHz to 40 GHz	5.8 dB

Antenna terminal test	Uncertainty (+/-)
Power Measurement above 1 GHz (Average Detector)	1.3 dB
Power Measurement above 1 GHz (Peak Detector)	1.8 dB
Spurious Emission (Conducted) below 1 GHz	0.91 dB
Conducted Emissions Power Density Measurement 1 GHz to 3 GHz	1.3 dB
Conducted Emissions Power Density Measurement 3 GHz to 18 GHz	2.5 dB
Spurious Emission (Conducted) 18 GHz to 26.5 GHz	2.8 dB
Spurious Emission (Conducted) 26.5 GHz to 40 GHz	2.6 dB
Bandwidth Measurement	0.012 %
Duty Cycle and Time Measurement	0.27 %
Temperature	2.2 deg.C.
Humidity	4.0 %
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

A2LA Certificate Number: 1266.03

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

Test room	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance
No.1 Semi-anechoic chamber (SAC1)	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.2 Semi-anechoic chamber (SAC2)	20.6 x 11.3 x 7.65	20.6 x 11.3	10 m
No.3 Semi-anechoic chamber (SAC3)	12.7 x 7.7 x 5.35	12.7 x 7.7	5 m
No.4 Semi-anechoic chamber (SAC4)	8.1 x 5.1 x 3.55	8.1 x 5.1	-
Wireless anechoic chamber 1 (WAC1)	9.5 x 6.0 x 5.4	9.5 x 6.0	3 m
Wireless anechoic chamber 2 (WAC2)	9.5 x 6.0 x 5.4	9.5 x 6.0	3 m
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	-	-
No.2 Measurement room	4.5 x 3.5 x 2.5	-	-
Wireless shielded room 1	3.0 x 4.5 x 2.7	3.0 x 4.5	-
Wireless shielded room 2	3.0 x 4.5 x 2.7	3.0 x 4.5	-

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)

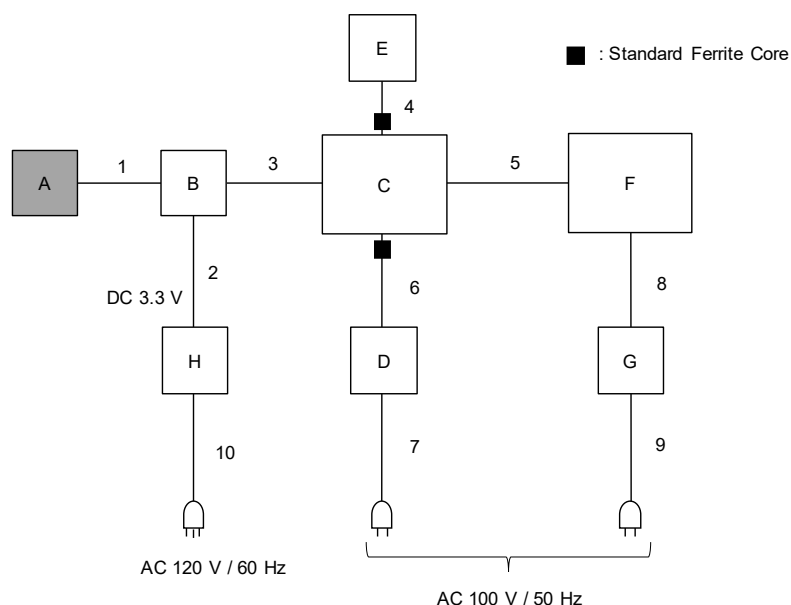
Mode	Remarks*																
IEEE 802.11a (11a)	54 Mbps, PN9																
IEEE 802.11n SISO 20 MHz BW (11n-20)	MCS 7, PN9																
IEEE 802.11n SISO 40 MHz BW (11n-40)	MCS 7, PN9																
*The condition was determined based on the test result of Maximum Conducted Output Power.																	
*Power of the EUT was set by the software as follows; Power Setting: 11a, 11n-20: <table> <tr> <td>14 dBm</td><td>5200 MHz to 5300 MHz, 5520 MHz to 5680 MHz</td></tr> <tr> <td>12 dBm</td><td>5180 MHz, 5320 MHz</td></tr> <tr> <td>11 dBm</td><td>5745 MHz to 5825 MHz</td></tr> <tr> <td>10 dBm</td><td>5500 MHz, 5700 MHz</td></tr> </table> 11n-40 <table> <tr> <td>14 dBm</td><td>5230 MHz, 5270 MHz, 5550 MHz to 5630 MHz</td></tr> <tr> <td>12 dBm</td><td>5310 MHz</td></tr> <tr> <td>11 dBm</td><td>5510 MHz, 5670 MHz, 5755 MHz, 5795 MHz</td></tr> <tr> <td>10 dBm</td><td>5190 MHz</td></tr> </table> Software: Labtool Version 1.0.0.15 FW Version: 16.80.21.128 (Date: 2023.9.21, Storage location: Driven by connected PC)		14 dBm	5200 MHz to 5300 MHz, 5520 MHz to 5680 MHz	12 dBm	5180 MHz, 5320 MHz	11 dBm	5745 MHz to 5825 MHz	10 dBm	5500 MHz, 5700 MHz	14 dBm	5230 MHz, 5270 MHz, 5550 MHz to 5630 MHz	12 dBm	5310 MHz	11 dBm	5510 MHz, 5670 MHz, 5755 MHz, 5795 MHz	10 dBm	5190 MHz
14 dBm	5200 MHz to 5300 MHz, 5520 MHz to 5680 MHz																
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12 dBm	5310 MHz																
11 dBm	5510 MHz, 5670 MHz, 5755 MHz, 5795 MHz																
10 dBm	5190 MHz																
*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.																	
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.																	

*The Details of Operation Mode(s)

Test Item	Operating Mode	Tested Frequency			
		Lower Band	Middle Band	Additional Band	Upper Band
Conducted emission, Radiated Spurious Emission (Below 1 GHz), Conducted Spurious Emission	Tx 11n-40 *1)	-	-	-	5550 MHz
26 dB Emission Bandwidth	Tx 11a Tx 11n-20	-	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	-
	Tx 11n-40	-	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	-
99 % Occupied Bandwidth, Maximum Conducted Output Power, Maximum Power Spectral Density	Tx 11a Tx 11n-20	5180 MHz 5220 MHz 5240 MHz	5260 MHz 5300 MHz 5320 MHz	5500 MHz 5580 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	Tx 11n-40	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5670 MHz	5755 MHz 5795 MHz
6 dB Bandwidth	Tx 11a Tx 11n-20	-	-	-	5745 MHz 5785 MHz 5825 MHz
	Tx 11n-40	-	-	-	5755 MHz 5795 MHz
Radiated Spurious Emission (Above 1 GHz)	Tx 11a Tx 11n-20 *2)	5180 MHz 5200 MHz 5240 MHz	5300 MHz 5320 MHz	5500 MHz 5520 MHz 5580 MHz 5680 MHz 5700 MHz	5745 MHz 5785 MHz 5825 MHz
	Tx 11n-40 *2)	5190 MHz 5230 MHz	5270 MHz 5310 MHz	5510 MHz 5550 MHz 5630 MHz 5670 MHz	5755 MHz 5795 MHz
*1) The mode was tested as a representative, because it had the highest power at antenna terminal test.					
*2) For those frequencies in 5200 / 5300 / 5520 / 5680 / 5270 / 5630 MHz, the test had been conducted only in band-edge.					

4.2 Configuration and Peripherals

<Conducted Emission and Radiated Spurious Emission test>



* 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	Wireless LAN Module	K30400	E024	Canon	EUT
B	WLAN JOINT PCB	-	-	Canon	-
C	Laptop Computer	Thinkpad X61s 7666-77J	LV-B8PVT 08/05	LENOVO	-
D	AC Adapter	42T4422	11S42T4422Z1ZF3D9BV4XN	Lenovo	-
E	USB DVD-ROM DRIVE	LDV-P8U2LBK	1225762	Logitec	-
F	Laptop Computer	dynabook Satellite B453 M	ZE127581H	TOSHIBA	*1)
		ThinkPad E14 Gen2	PF397TS8	LENOVO	-
G	AC Adapter	PA3917U-1ACA	G71C000DP410	TOSHIBA	*1)
		ADLX65YCC2D	8SSA10R16922C2TJ19M0AZJ	LENOVO	-
H	Power Supply(DC)	PAN35-10A	BP002287	Kikusui Electronics Corp.	-

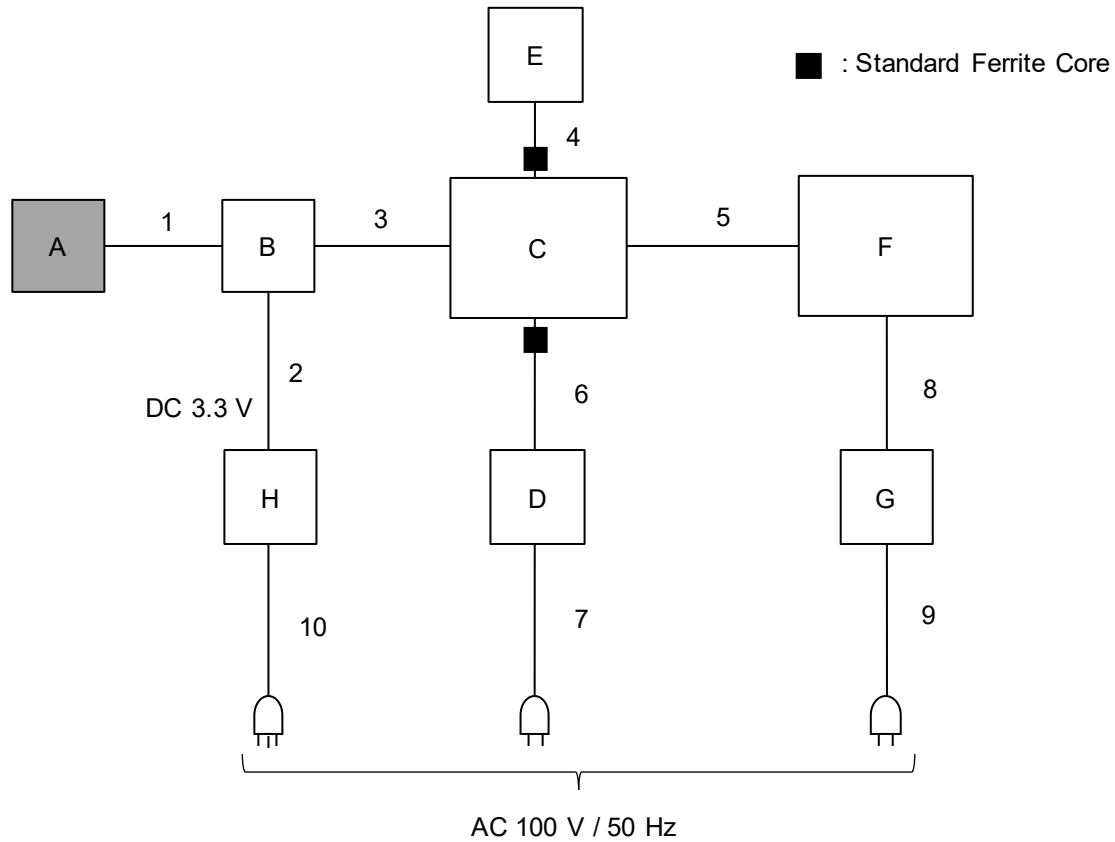
*1) Used for only Radiated Spurious Emission test.(Above 10 GHz)

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1.	Flat	0.1	Unshielded	Unshielded	-
2.	DC	0.3 + 2.0	Unshielded	Unshielded	-
3.	USB	1.0	Shielded	Shielded	-
4.	USB	0.4	Shielded	Shielded	-
5.	LAN	1.1	Unshielded	Unshielded	-
6.	DC	1.8	Unshielded	Unshielded	-
7.	AC	0.9	Unshielded	Unshielded	-
8.	DC	1.7	Unshielded	Unshielded	*1)
		1.8	Unshielded	Unshielded	-
9.	AC	0.8	Unshielded	Unshielded	*1)
		0.9	Unshielded	Unshielded	-
10.	AC	2.0	Unshielded	Unshielded	-

*1) Used for only Radiated Spurious Emission test.(Above 10 GHz)

<Antenna Terminal Conducted test>



Description of EUT and Support Equipment

No.	Item	Model number	Serial Number	Manufacturer	Remarks
A	Wireless LAN Module	K30400	E024	Canon	EUT
B	WLAN JOINT PCB	-	-	Canon	-
C	Laptop Computer	Thinkpad X61s 7666-77J	LV-B8PVT 08/05	LENOVO	-
D	AC Adapter	42T4422	11S42T4422Z 1ZF3D9BV4XN	Lenovo	-
E	USB DVD-ROM DRIVE	LDV-P8U2LBK	1225762	Logitec	-
F	Laptop Computer	dynabook Satellite B453 M	ZE127581H	TOSHIBA	-
G	AC Adapter	PA3917U-1ACA	G71C000DP410	TOSHIBA	-
H	Power Supply(DC)	PAN35-10A	ML002085	Kikusui	-

List of Cables Used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	Flat	0.1	Unshielded	Unshielded	-
2	DC	0.3 + 2.0	Unshielded	Unshielded	-
3	USB	1.0	Shielded	Shielded	-
4	USB	0.4	Shielded	Shielded	-
5	LAN	1.1	Unshielded	Unshielded	-
6	DC	1.8	Unshielded	Unshielded	-
7	AC	0.9	Unshielded	Unshielded	-
8	DC	1.7	Unshielded	Unshielded	-
9	AC	0.8	Unshielded	Unshielded	-
10	AC	2.0	Unshielded	Unshielded	-

SECTION 5: Conducted Emission

Test Procedure and Conditions

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane.

The rear of tabletop was located 40 cm to the vertical conducting plane. The rear of EUT, including peripherals was 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.

All unused 50 ohm connectors of the LISN (AMN) were resistivity terminated in 50 ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Shielded room.

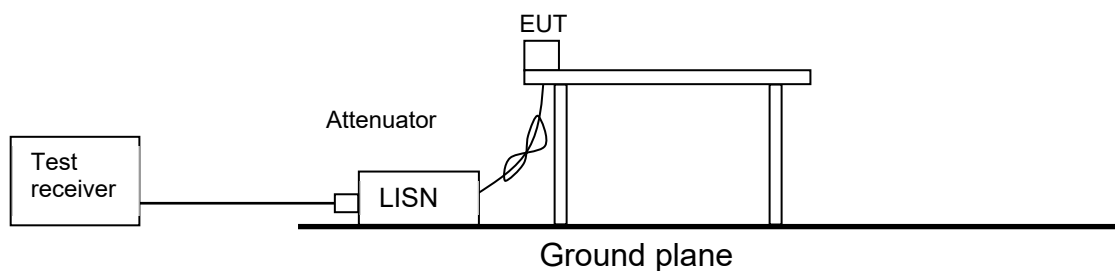
The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

Test results are rounded off and limit are rounded down, so some differences might be observed.

Detector	: QP and CISPR Average
Measurement Range	: 0.15 MHz to 30 MHz
Test Data	: APPENDIX
Test Result	: Pass

Figure 1: Test Setup



SECTION 6: Radiated Spurious Emission and Band Edge Compliance

Test Procedure

< Below 1 GHz >

EUT was placed on a urethane platform of nominal size, 1.0 m by 1.5 m, raised 0.8 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with a ground plane.

< Above 1 GHz >

EUT was placed on a urethane platform of nominal size, 0.5 m by 0.5 m, raised 1.5 m above the conducting ground plane. The Radiated Electric Field Strength has been measured in a Semi Anechoic Chamber with absorbent materials lined on a ground plane. Test antenna was aimed at the EUT for receiving the maximum signal and always kept within the illumination area of the 3 dB beamwidth of the antenna.

The height of the measuring antenna 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 strength.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer.

The measurements were made with the following detector function of the test receiver and the Spectrum analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

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

< Below 1 GHz >

The result also satisfied with the general limits specified in section 15.209 (a).

< Above 1 GHz >

Inside of restricted bands (Section 15.205):

Apply to limit in the Section 15.209 (a).

Outside of the restricted bands:

Apply to limit 68.2 dBuV/m, 3 m (-27 dBm e.i.r.p.*) in the Section 15.407 (b) (1) (2) (3).

For UNII-3 band Bandedge

-27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge in the section 15.407(b)(4)(i).

Restricted band edge:

Apply to limit in the Section 15.209 (a).

Since this limit is severer than the limit of the inside of restricted bands.

*Electric field strength to e.i.r.p. conversion:

$$E = \frac{1000000\sqrt{30P}}{3} \text{ (uV/m)} \quad : P \text{ is the e.i.r.p. (Watts)}$$

Test Antennas are used as below;

Frequency	Below 30 MHz	30 MHz to 200 MHz	200 MHz to 1 GHz	Above 1 GHz
Antenna Type	Loop	Biconical	Logperiodic	Horn

Frequency	Below 1 GHz		Above 1 GHz	
Instrument Used	Test Receiver		Spectrum Analyzer	
Detector	QP		Peak	Average
IF Bandwidth	BW: 120 kHz		RBW: 1 MHz VBW: 3 MHz	Method VB RBW: 1 MHz VBW: 1/T (T: burst length, refer to Burst rate confirmation sheet) Detector: Peak

Figure 2: Direction of the Loop Antenna

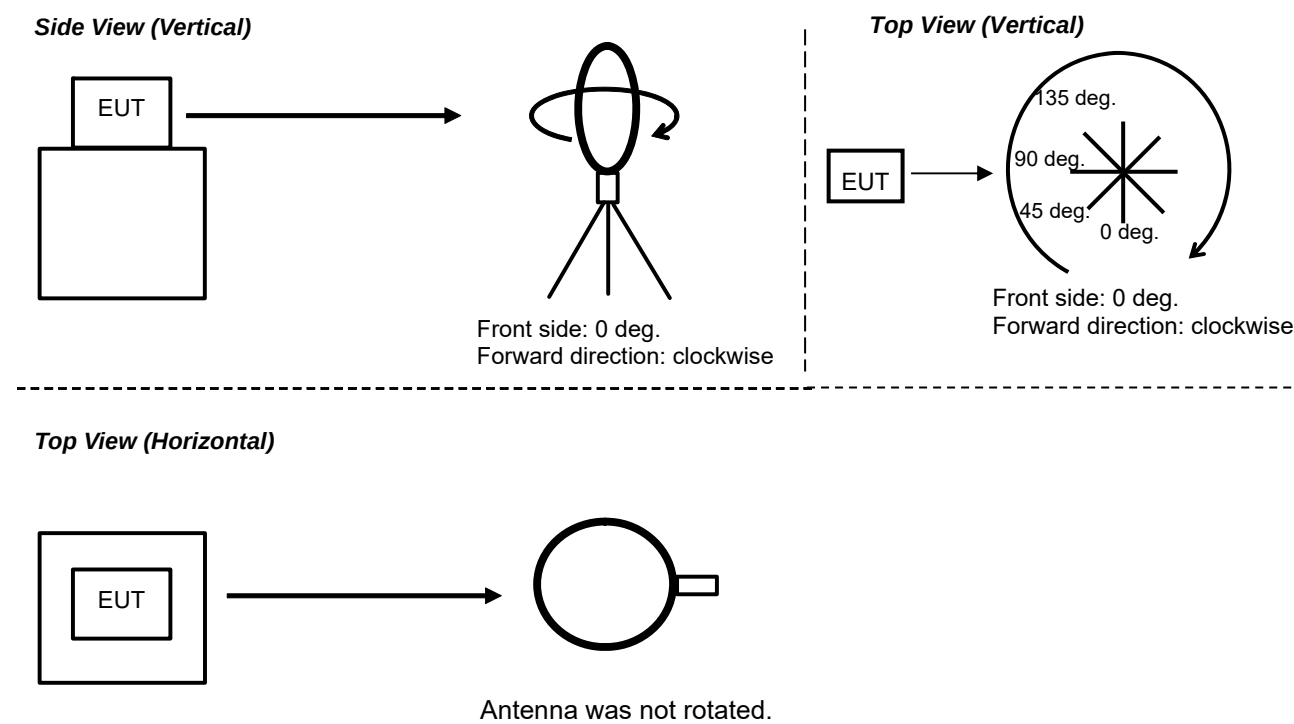
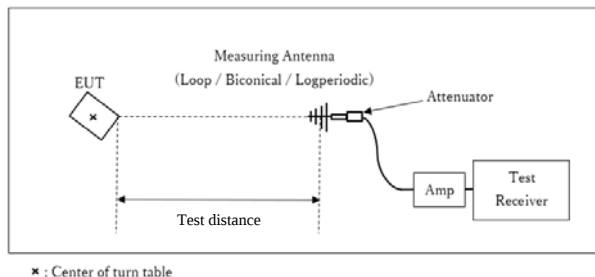


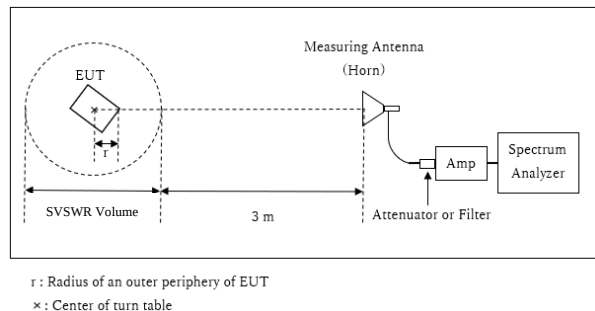
Figure 3: Test Setup

Below 1 GHz



Test Distance: 3 m

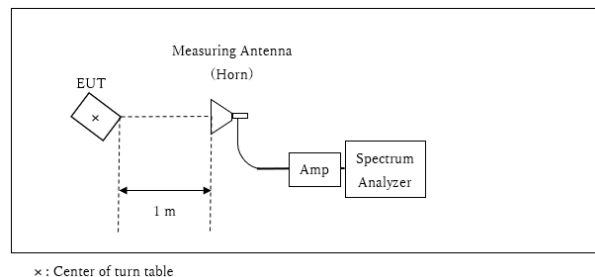
1 GHz to 10 GHz



Distance Factor: $20 \times \log (3.98 \text{ m} / 3.0 \text{ m}) = 2.46 \text{ dB}$
* Test Distance: $(3 + \text{SVSWR Volume} / 2) - r = 3.98 \text{ m}$

SVSWR Volume : 2.0 m
(SVSWR Volume has been calibrated based on CISPR 16-1-4.)
 $r = 0.02 \text{ m}$

10 GHz to 40 GHz



Distance Factor: $20 \times \log (1.0 \text{ m} / 3.0 \text{ m}) = -9.54 \text{ dB}$
*Test Distance: 1 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	Carrier	Spurious (Below 30 MHz)	Spurious (30 MHz - 1 GHz)	Spurious (1 GHz - 6.4 GHz)	Spurious (6.4 GHz - 10 GHz)	Spurious (10 GHz - 18 GHz)	Spurious (18 GHz - 26.5 GHz)	Spurious (26.5 GHz - 40 GHz)
Horizontal	X	X	X	X	X	Y	Z	X
Vertical	Y	X	X	Y	Y	X	Z	X

Test results are rounded off and limit are rounded down, so some differences might be observed.
There was no noise detection for below 30 MHz.

Measurement Range : 9 kHz to 40 GHz
Test Data : APPENDIX
Test Result : Pass

SECTION 7: 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
26 dB Bandwidth	Enough to capture the emission	Close to 1 % of EBW	> RBW	Auto	Peak	Max Hold	Spectrum Analyzer
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-G)
Maximum Power Spectral Density	Encompass the entire EBW	1 MHz or 470 kHz *2)	≥ 3 RBW	Auto	RMS Power Averaging (200 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				

*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 ($10 \log(500 \text{ kHz} / 470 \text{ kHz})$) 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 and the noise was detected as shown in the chart, and therefore, Radiated Emission below 30 MHz was performed.

*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 Ohms. 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.

Test results are rounded off and limit are rounded down, 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

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Shonan EMC Lab. No.3 Shielded Room
Date : 2024/07/31

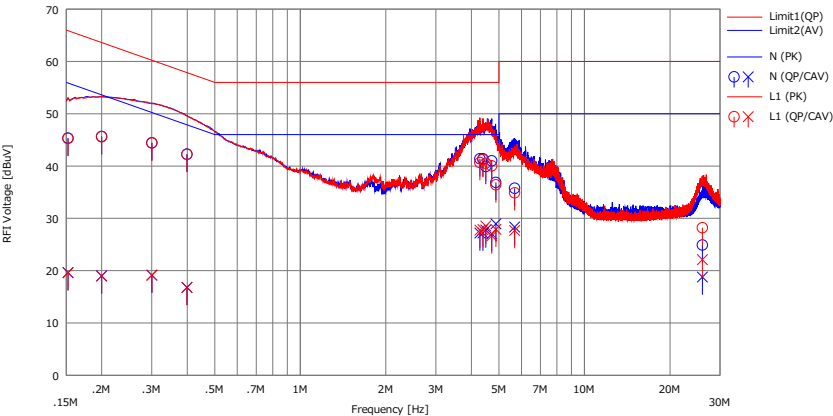
Mode : Tx 11n-40 5550 MHz

Power : DC 3.3 V (AC 120 V / 60 Hz)
Temp./Humi. : 25 deg.C / 35 %RH

Remarks : -

Limit : FCC_Part 15 Subpart C(15.207)

Engineer : Takahiro Suzuki



No.	Freq. [MHz]	Reading		C.Fac	Results		Limit		Margin		Phase	Comment
		(QP)	(CAV)		(QP)	(CAV)	(QP)	(AV)	(QP)	(AV)		
		[dBuV]	[dBuV]		[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]		
1	0.15218	29.93	4.22	15.41	45.34	19.63	65.88	55.88	20.5	36.2	N	
2	0.20008	30.23	3.59	15.42	45.65	19.01	63.61	53.61	17.9	34.6	N	
3	0.30046	29.00	3.71	15.44	44.44	19.15	60.23	50.23	15.7	31.0	N	
4	0.39943	26.82	1.37	15.44	42.26	16.81	57.87	47.87	15.6	31.0	N	
5	4.28766	25.72	11.52	15.67	41.39	27.19	56.00	46.00	14.6	18.8	N	
6	4.39500	25.71	11.51	15.68	41.39	27.19	56.00	46.00	14.6	18.8	N	
7	4.49675	24.23	12.07	15.68	39.91	27.75	56.00	46.00	16.0	18.2	N	
8	4.71567	25.29	11.36	15.70	40.99	27.06	56.00	46.00	15.0	18.9	N	
9	4.87598	21.16	13.25	15.71	36.87	28.96	56.00	46.00	19.1	17.0	N	
10	5.68206	19.98	12.59	15.76	35.74	28.35	60.00	50.00	24.2	21.6	N	
11	26.02388	8.34	2.23	16.56	24.90	18.79	60.00	50.00	35.1	31.2	N	
12	0.15218	29.85	4.18	15.42	45.27	19.60	65.88	55.88	20.6	36.2	L1	
13	0.20008	30.16	3.54	15.43	45.59	18.97	63.61	53.61	18.0	34.6	L1	
14	0.30046	28.95	3.69	15.45	44.40	19.14	60.23	50.23	15.8	31.0	L1	
15	0.39943	26.77	1.33	15.45	42.22	16.78	57.87	47.87	15.6	31.0	L1	
16	4.28766	25.00	12.08	15.66	40.66	27.74	56.00	46.00	15.3	18.2	L1	
17	4.39500	25.58	12.18	15.67	41.25	27.85	56.00	46.00	14.7	18.1	L1	
18	4.49675	24.87	12.86	15.67	40.54	28.53	56.00	46.00	15.4	17.4	L1	
19	4.71567	24.33	10.94	15.69	40.02	26.63	56.00	46.00	15.9	19.3	L1	
20	4.87598	20.71	12.21	15.70	36.41	27.91	56.00	46.00	19.5	18.0	L1	
21	5.68206	19.14	11.95	15.74	34.88	27.69	60.00	50.00	25.1	22.3	L1	
22	26.02388	11.95	5.85	16.25	28.20	22.10	60.00	50.00	31.8	27.9	L1	

Calculation: Result[dBuV]=Reading[dBuV]+C.Fac(LISN(AMN))+Cable+ATT[dB]
LISN(AMN): 145542

26 dB Emission Bandwidth and 99 % Occupied Bandwidth

Test place	Shonan EMC Lab. No.5 Shielded Room		
Date	June 18, 2024	July 23, 2024	August 6, 2024
Temperature / Humidity	25 deg. C / 54 % RH	26 deg. C / 39 % RH	24 deg. C / 47 % RH
Engineer	Shiro Kobayashi	Shiro Kobayashi	Shiro Kobayashi
Mode	Tx		

11a

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
5180	-	16561.7
5220	-	16554.5
5240	-	16552.1
5260	19.566	16561.9
5300	19.659	16550.1
5320	19.789	16543.0
5500	19.937	16545.1
5580	19.811	16564.2
5700	19.864	16552.8
5745	-	16537.8
5785	-	16549.9
5825	-	16548.4

11n-20

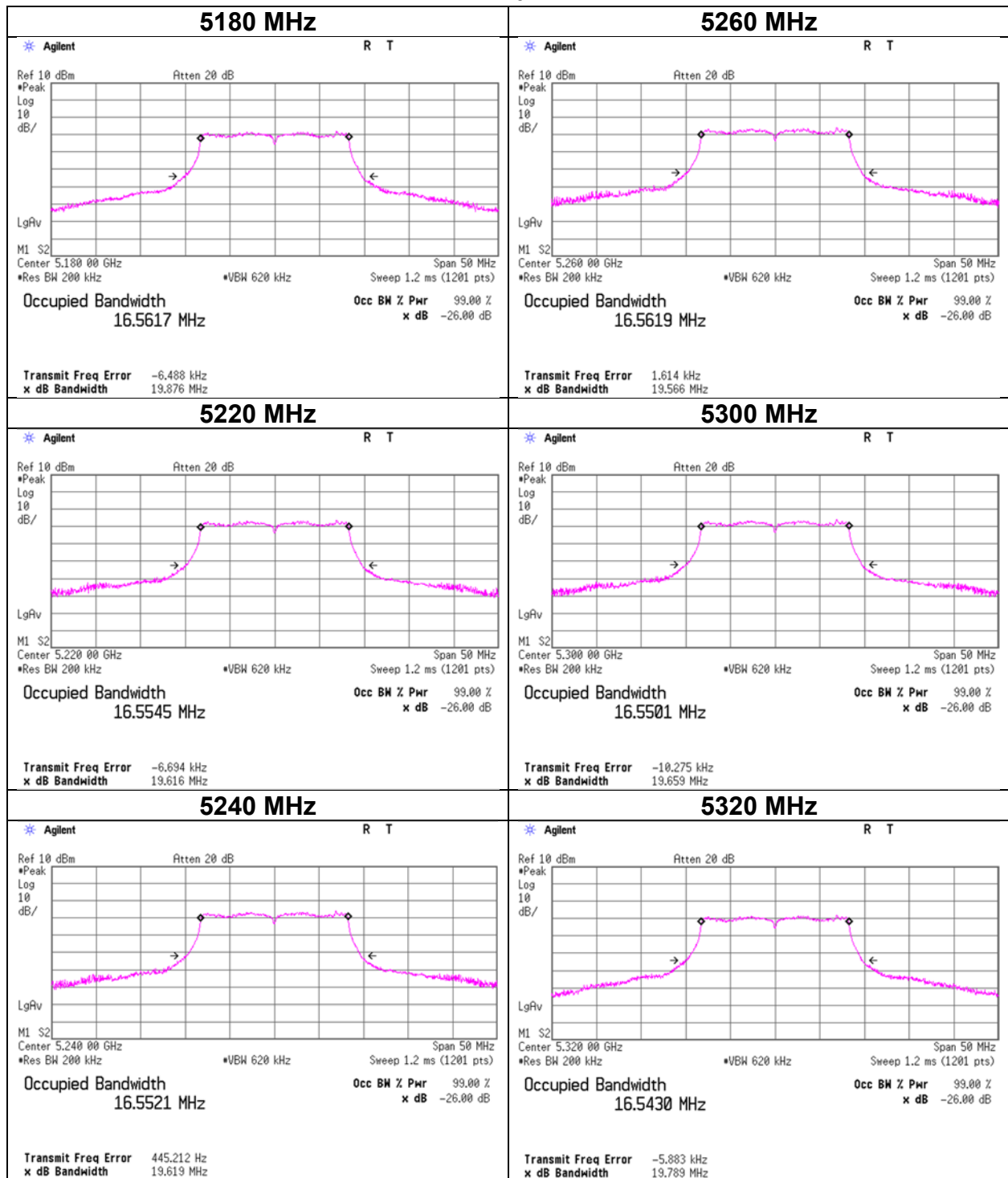
Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
5180	-	17705.0
5220	-	17724.9
5240	-	17717.5
5260	21.001	17716.9
5300	20.742	17719.9
5320	21.168	17711.8
5500	20.848	17706.5
5580	20.421	17734.2
5700	20.672	17714.8
5745	-	17712.8
5785	-	17700.8
5825	-	17708.2

11n-40

Tested Frequency [MHz]	26 dB Emission Bandwidth [MHz]	99 % Occupied Bandwidth [kHz]
5190	-	36207.3
5230	-	36248.0
5270	41.137	36236.7
5310	41.090	36222.2
5510	40.700	36195.6
5550	40.970	36289.6
5670	40.952	36208.5
5755	-	36196.1
5795	-	36195.1

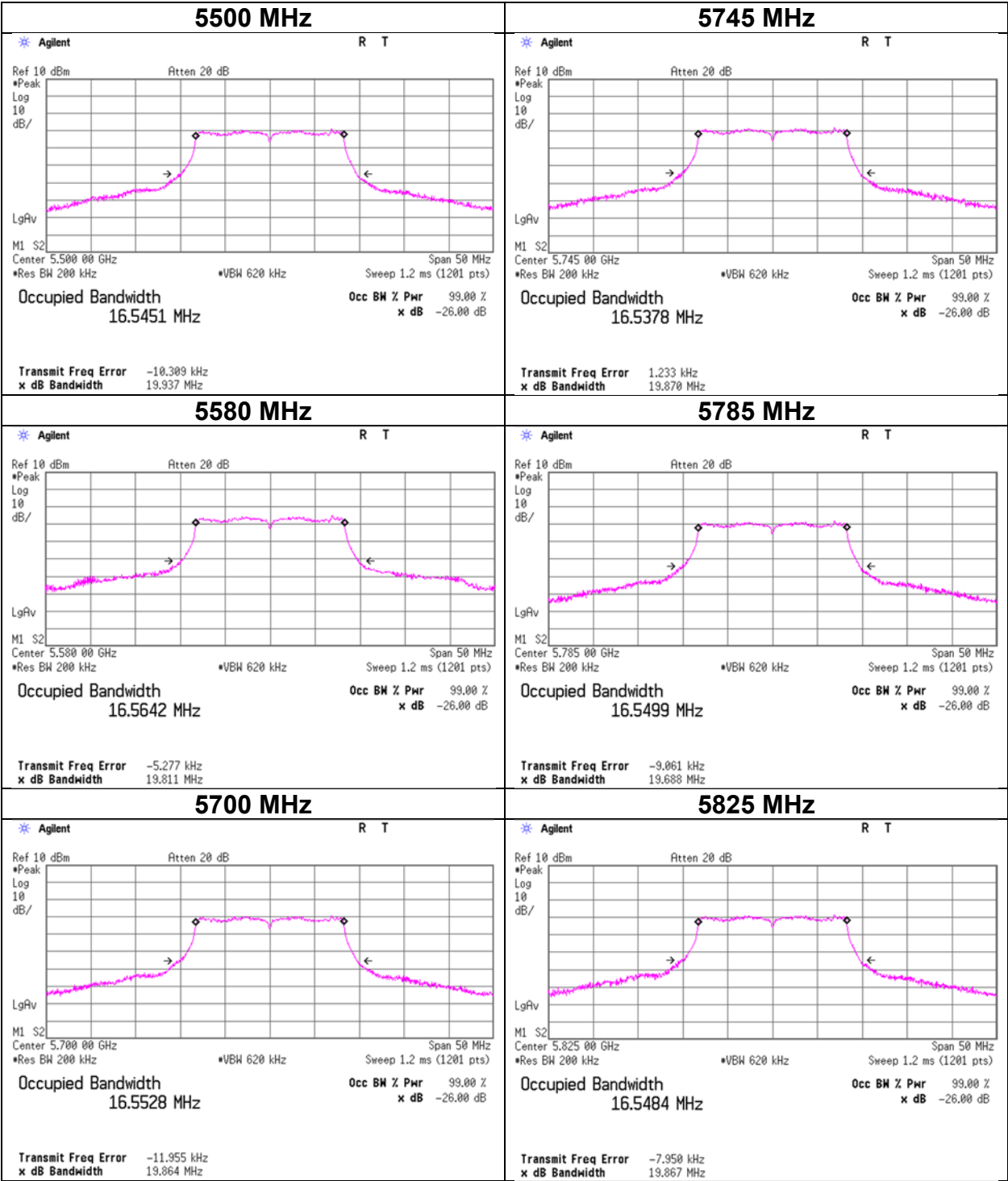
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

11a



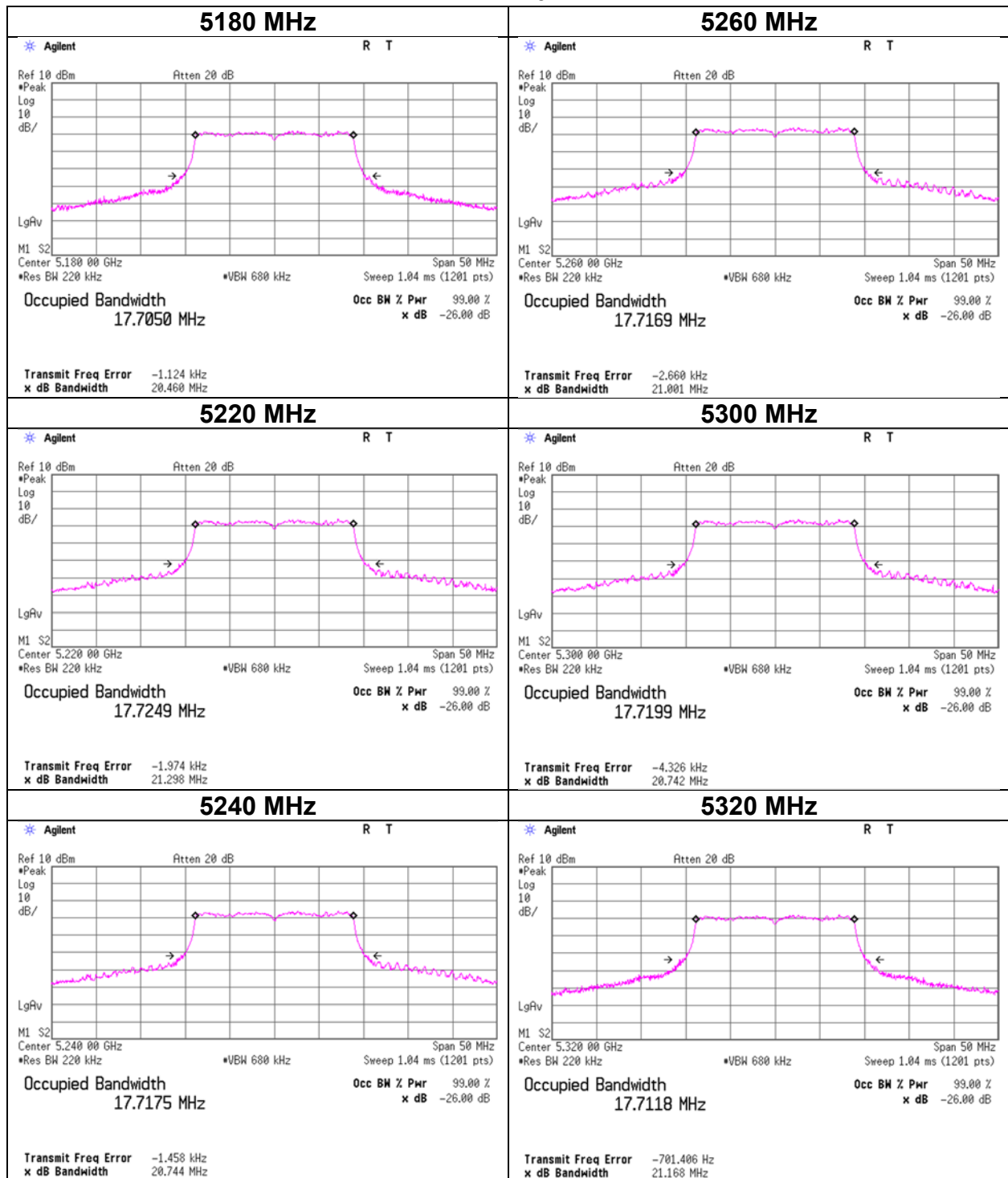
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

11a



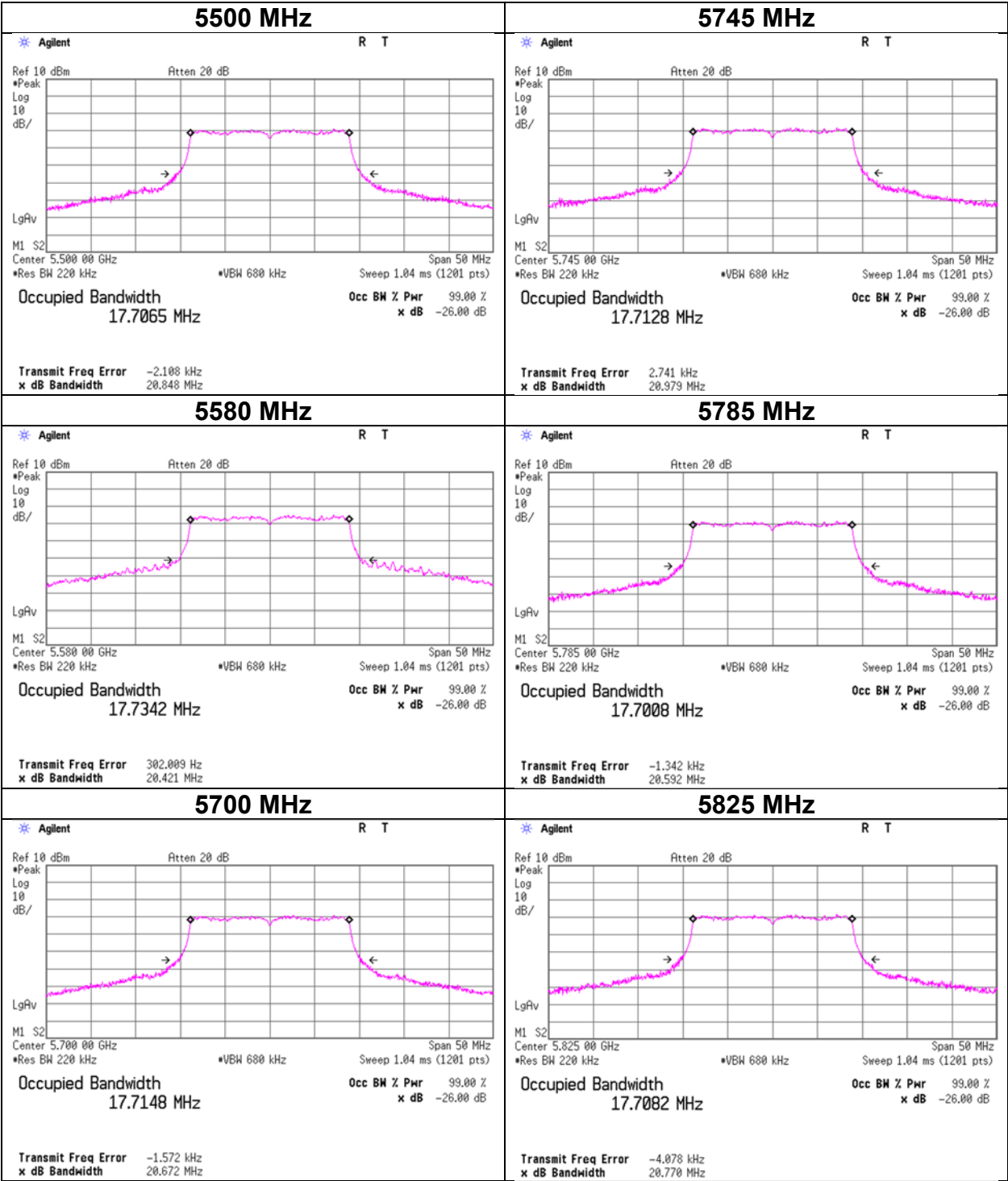
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

11n-20



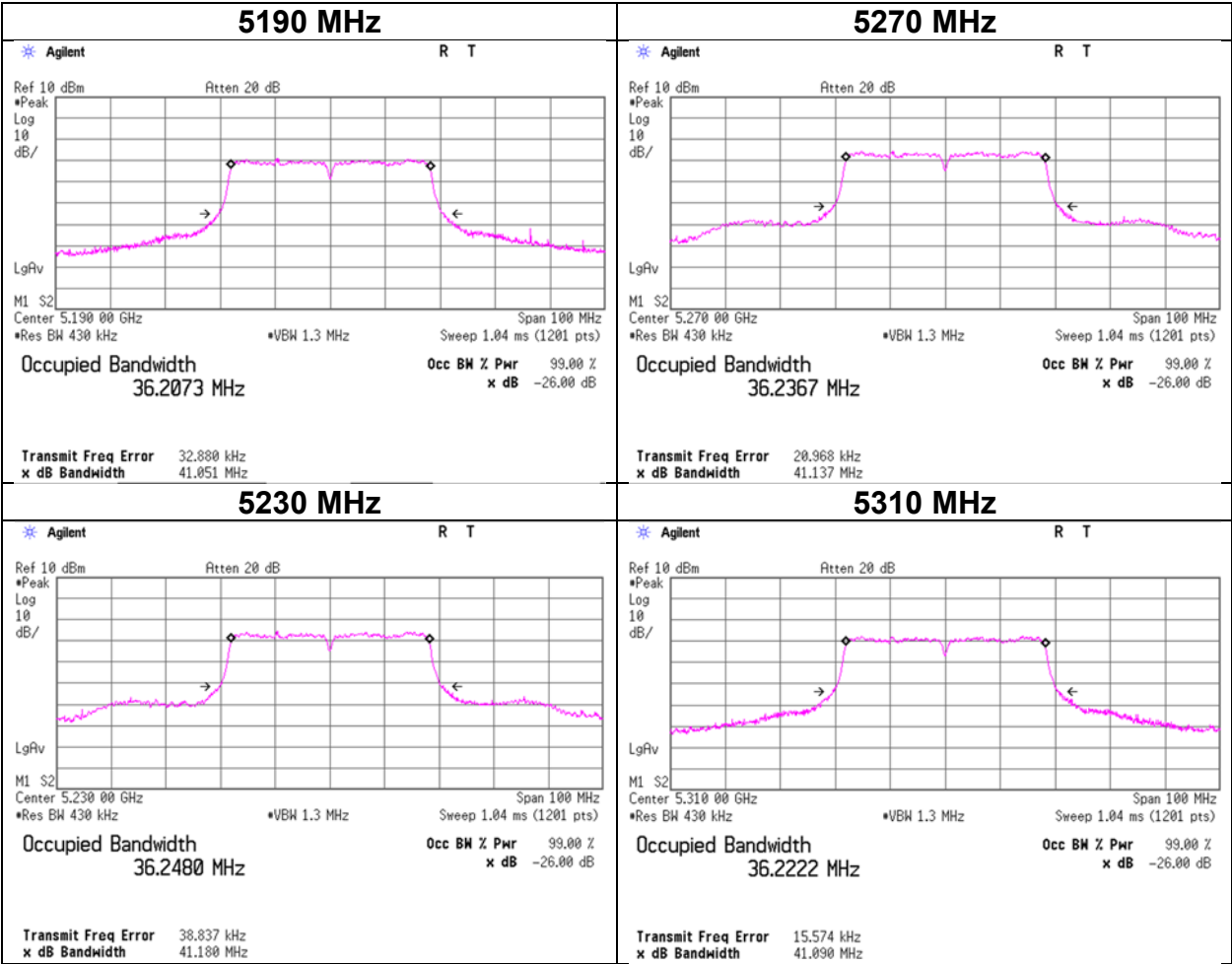
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

11n-20



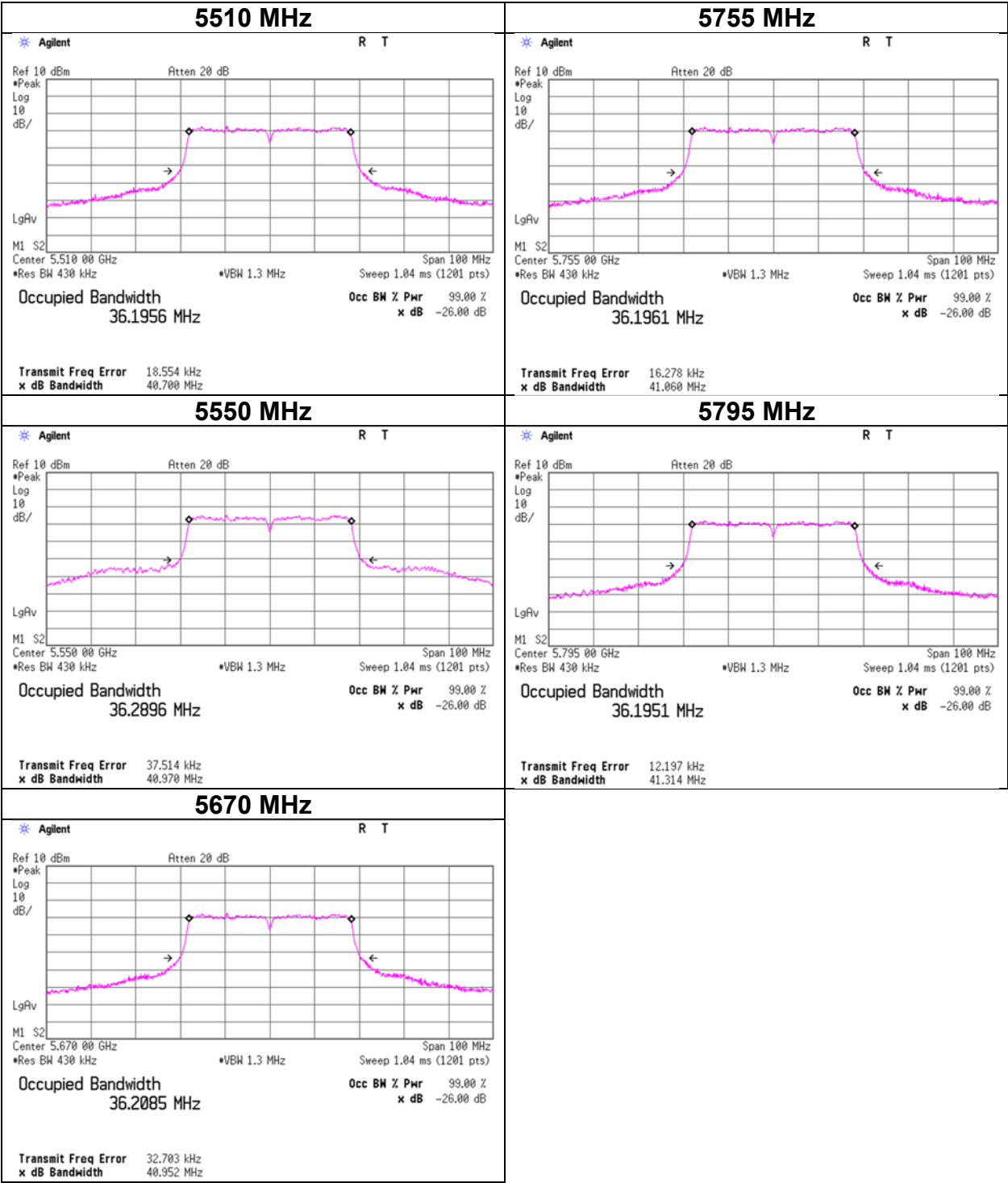
26 dB Emission Bandwidth and 99 % Occupied Bandwidth

11n-40



26 dB Emission Bandwidth and 99 % Occupied Bandwidth

11n-40



6 dB Bandwidth

Test place
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab. No.5 Shielded Room
June 18, 2024
25 deg. C / 54 % RH
Shiro Kobayashi
Tx

July 23, 2024
26 deg. C / 39 % RH
Shiro Kobayashi

11a

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5745	16.492	> 0.500
5785	16.492	> 0.500
5825	16.484	> 0.500

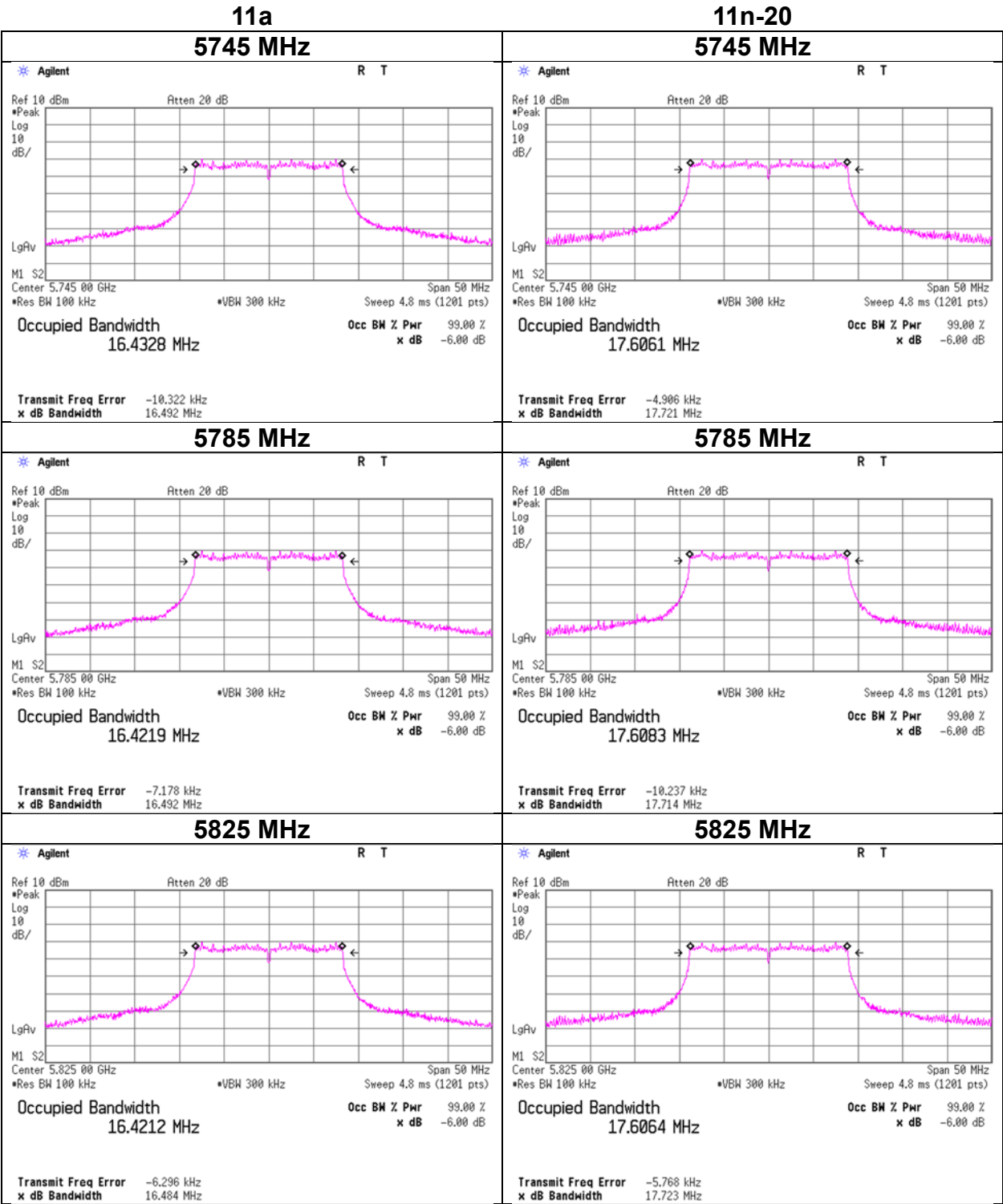
11n-20

Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5745	17.721	> 0.500
5785	17.714	> 0.500
5825	17.723	> 0.500

11n-40

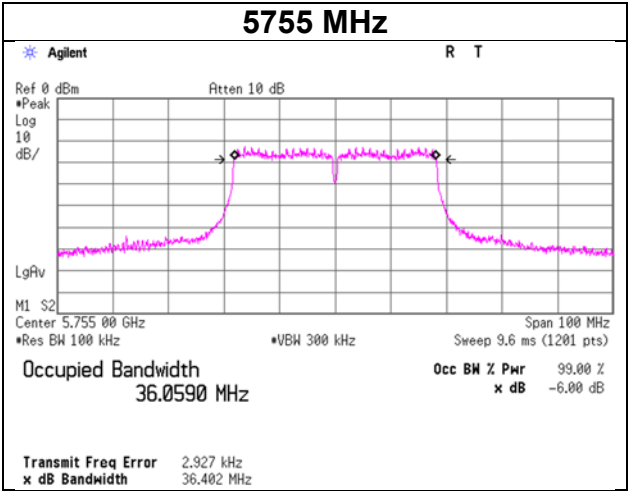
Tested Frequency [MHz]	6 dB Bandwidth [MHz]	Limit [MHz]
5755	36.402	> 0.500
5795	36.385	> 0.500

6 dB Bandwidth

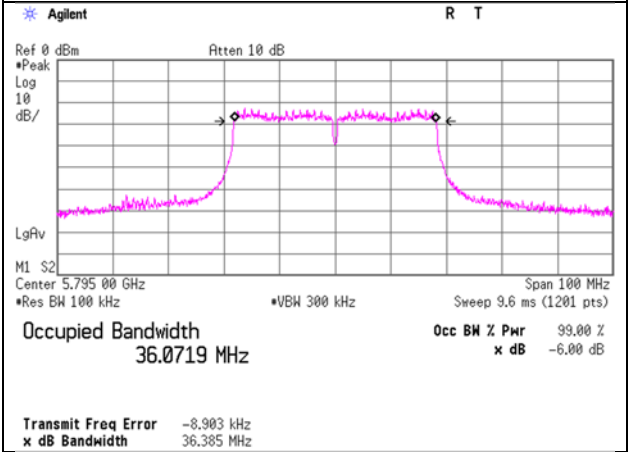


6 dB Bandwidth

11n-40
5755 MHz



5795 MHz



Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room	
Date	June 17, 2024	July 23, 2024
Temperature / Humidity	26 deg. C / 48 % RH	26 deg. C / 39 % RH
Engineer	Shiro Kobayashi	Shiro Kobayashi
Mode	Tx 11a	

11a

Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Antenna Gain	26 dB EBW (B for FCC)	99 % OBW (B for ISED)	Conducted Power				e.i.r.p.			
							Result	Result	Limit	Margin	Result	Result	Limit	Margin
[MHz]	[dBm]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5180	-9.67	1.56	20.25	-0.47	-	16.562	12.14	16.37	23.97	11.83	11.67	14.69	29.97	18.30
5220	-7.78	1.57	20.26	-0.47	-	16.554	14.05	25.41	23.97	9.92	13.58	22.80	29.97	16.39
5240	-7.80	1.57	20.26	-0.47	-	16.552	14.03	25.29	23.97	9.94	13.56	22.70	29.97	16.41
5260	-7.75	1.57	20.26	-0.47	19.566	16.562	14.08	25.59	23.91	9.83	13.61	22.96	29.97	16.36
5300	-7.77	1.58	20.26	-0.47	19.659	16.550	14.07	25.53	23.93	9.86	13.60	22.91	29.97	16.37
5320	-9.77	1.58	20.26	-0.47	19.789	16.543	12.07	16.11	23.96	11.89	11.60	14.45	29.97	18.37
5500	-10.72	1.60	20.26	0.41	19.937	16.545	11.14	13.00	23.97	12.83	11.55	14.29	29.97	18.42
5580	-6.72	1.61	20.26	0.41	19.811	16.564	15.15	32.73	23.96	8.81	15.56	35.97	29.97	14.41
5700	-10.82	1.62	20.26	0.41	19.864	16.553	11.06	12.76	23.97	12.91	11.47	14.03	29.97	18.50
5745	-9.84	1.62	20.26	1.33	-	16.538	12.04	16.00	30.00	17.96	13.37	21.73	36.00	22.63
5785	-10.06	1.63	20.26	1.33	-	16.550	11.83	15.24	30.00	18.17	13.16	20.70	36.00	22.84
5825	-10.26	1.63	20.26	1.33	-	16.548	11.63	14.55	30.00	18.37	12.96	19.77	36.00	23.04

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (UNII-1 for FCC)

Maximum Conducted Output Power

Test place Shonan EMC Lab. No.5 Shielded Room
Date June 17, 2024 July 23, 2024
Temperature / Humidity 26 deg. C / 48 % RH 26 deg. C / 39 % RH
Engineer Shiro Kobayashi Shiro Kobayashi
Mode Tx 11n-20

11n-20

Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Antenna Gain	26 dB EBW (B for FCC)	99 % OBW (B for ISED)	Conducted Power				e.i.r.p.			
							Result		Limit	Margin	Result		Limit	Margin
							[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
[MHz]	[dBm]	[dB]	[dB]	[dBi]	[MHz]	[MHz]	[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5180	-9.50	1.56	20.25	-0.47	-	17.705	12.31	17.02	23.97	11.66	11.84	15.28	29.97	18.13
5220	-7.67	1.57	20.26	-0.47	-	17.725	14.16	26.06	23.97	9.81	13.69	23.39	29.97	16.28
5240	-7.64	1.57	20.26	-0.47	-	17.718	14.19	26.24	23.97	9.78	13.72	23.55	29.97	16.25
5260	-7.60	1.57	20.26	-0.47	21.001	17.717	14.23	26.49	23.97	9.74	13.76	23.77	29.97	16.21
5300	-7.60	1.58	20.26	-0.47	20.742	17.720	14.24	26.55	23.97	9.73	13.77	23.82	29.97	16.20
5320	-9.56	1.58	20.26	-0.47	21.168	17.712	12.28	16.90	23.97	11.69	11.81	15.17	29.97	18.16
5500	-10.54	1.60	20.26	0.41	20.848	17.706	11.32	13.55	23.97	12.65	11.73	14.89	29.97	18.24
5580	-6.58	1.61	20.26	0.41	20.421	17.734	15.29	33.81	23.97	8.68	15.70	37.15	29.97	14.27
5700	-10.63	1.62	20.26	0.41	20.672	17.715	11.25	13.34	23.97	12.72	11.66	14.66	29.97	18.31
5745	-9.68	1.62	20.26	1.33	-	17.713	12.20	16.60	30.00	17.80	13.53	22.54	36.00	22.47
5785	-9.87	1.63	20.26	1.33	-	17.701	12.02	15.92	30.00	17.98	13.35	21.63	36.00	22.65
5825	-10.05	1.63	20.26	1.33	-	17.708	11.84	15.28	30.00	18.16	13.17	20.75	36.00	22.83

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (UNII-1 for FCC)

Maximum Conducted Output Power

Test place Shonan EMC Lab. No.5 Shielded Room
Date June 17, 2024 July 23, 2024 August 6, 2024
Temperature / Humidity 26 deg. C / 48 % RH 26 deg. C / 39 % RH 24 deg. C / 47 % RH
Engineer Shiro Kobayashi Shiro Kobayashi Shiro Kobayashi
Mode Tx 11n-40

11n-40 Applied limit: 15.407, mobile and portable client device

Tested Frequency	Power Meter Reading	Cable Loss	Atten. Loss	Antenna Gain	26 dB EBW (B for FCC)	99 % OBW (B for ISD)	Conducted Power				e.i.r.p.			
							Result		Limit	Margin	Result		Limit	Margin
							[dBm]	[mW]	[dBm]	[dB]	[dBm]	[mW]	[dBm]	[dB]
5190	-11.23	1.56	20.25	-0.47	-	36.207	10.58	11.43	23.97	13.39	10.11	10.26	29.97	19.86
5230	-7.69	1.57	20.26	-0.47	-	36.248	14.14	25.94	23.97	9.83	13.67	23.28	29.97	16.30
5270	-7.59	1.57	20.26	-0.47	41.137	36.237	14.24	26.55	23.97	9.73	13.77	23.82	29.97	16.20
5310	-9.59	1.58	20.26	-0.47	41.090	36.222	12.25	16.79	23.97	11.72	11.78	15.07	29.97	18.19
5510	-9.53	1.60	20.26	0.41	40.700	36.196	12.33	17.10	23.97	11.64	12.74	18.79	29.97	17.23
5550	-6.49	1.61	20.26	0.41	40.970	36.290	15.38	34.51	23.97	8.59	15.79	37.93	29.97	14.18
5670	-9.63	1.62	20.26	0.41	40.952	36.209	12.25	16.79	23.97	11.72	12.66	18.45	29.97	17.31
5755	-9.72	1.62	20.26	1.33	-	36.196	12.16	16.44	30.00	17.84	13.49	22.34	36.00	22.51
5795	-9.94	1.63	20.26	1.33	-	36.195	11.95	15.67	30.00	18.05	13.28	21.28	36.00	22.72

Sample Calculation:

Conducted Power Result = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss

e.i.r.p. Result = Conducted Power Result + Antenna Gain

Conducted Power Limit (5250 MHz-5350 MHz, 5470 MHz-5725 MHz) = 250 mW or (11 + 10logB) dBm, whichever is lower

Conducted Power Limit (5725 MHz-5850 MHz) = 1 W

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (UNII-1 for FCC)

Maximum Conducted Output Power

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	June 17, 2024
Temperature / Humidity	26 deg. C / 48 % RH
Engineer	Shiro Kobayashi
Mode	Tx

5180 MHz

Mode	Rate Mbps	Reading (timed average) [dBm]	Remarks
11a	6	-9.74	-
	9	-9.74	-
	12	-9.72	-
	18	-9.73	-
	24	-9.71	-
	36	-9.69	-
	48	-9.72	-
	54	-9.67	*

* Worst rate

All comparison were carried out on same frequency and measurement factors.

This measurement was performed only on the on time using the gate function of power meter.

5180 MHz

Mode	MCS Index	Reading (timed average) [dBm]	Remarks
11n-20	0	-9.57	-
	1	-9.59	-
	2	-9.57	-
	3	-9.56	-
	4	-9.55	-
	5	-9.53	-
	6	-9.52	-
	7	-9.50	*

* Worst rate

All comparison were carried out on same frequency and measurement factors.

This measurement was performed only on the on time using the gate function of power meter.

5190 MHz

Mode	MCS Index	Reading (timed average) [dBm]	Remarks
11n-40	0	-9.66	-
	1	-9.64	-
	2	-9.63	-
	3	-9.62	-
	4	-9.59	-
	5	-9.58	-
	6	-9.57	-
	7	-9.56	*

* Worst rate

All comparison were carried out on same frequency and measurement factors.

This measurement was performed only on the on time using the gate function of power meter.

*Rate Check were performed with different power setting than those on the previous page.

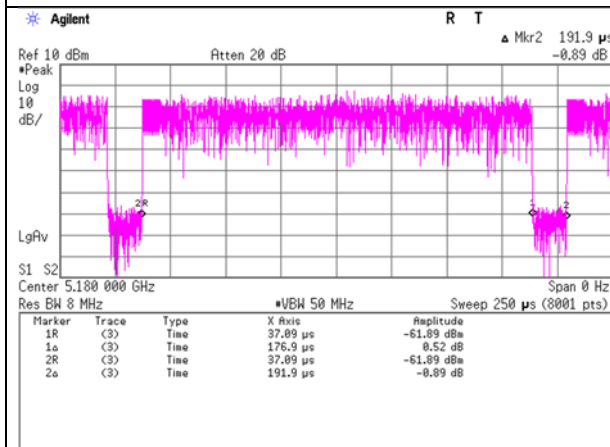
Burst rate confirmation

Test place
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab. No.5 Shielded Room
June 18, 2024
25 deg. C / 54 % RH
Shiro Kobayashi
Tx

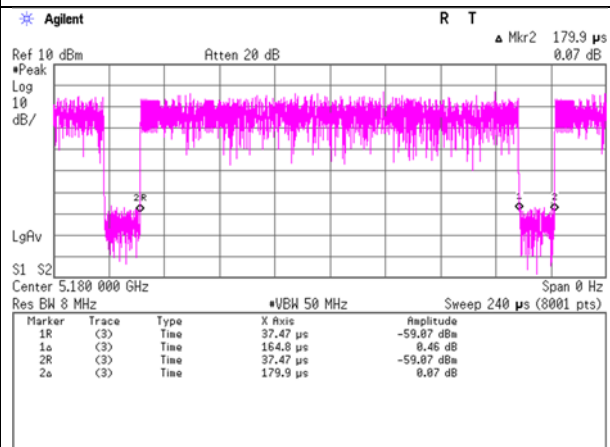
11a 54 Mbps

Tx on / (Tx on + Tx off) =	0.922
Tx on / (Tx on + Tx off) * 100 =	92.2 %
Duty factor = 10 * log (0.1919 / 0.1769) =	0.36 dB
VBW : 1 / On time = 5653 Hz < 10 kHz	



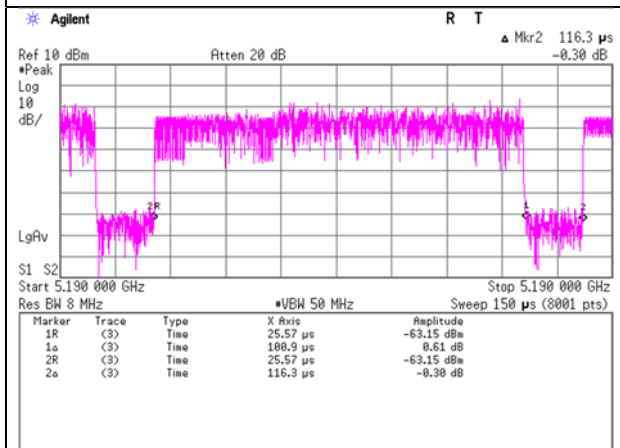
11n-20 MCS 7

Tx on / (Tx on + Tx off) =	0.916
Tx on / (Tx on + Tx off) * 100 =	91.6 %
Duty factor = 10 * log (0.1799 / 0.1648) :	0.39 dB
VBW : 1 / On time = 6068 Hz < 10 kHz	



11n-40 MCS 7

Tx on / (Tx on + Tx off) =	0.868
Tx on / (Tx on + Tx off) * 100 =	86.8 %
Duty factor = 10 * log (0.1163 / 0.1009) =	0.62 dB
VBW : 1 / On time = 9911 Hz < 10 kHz	



Maximum Power Spectral Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date June 18, 2024 July 23, 2024
Temperature / Humidity 25 deg. C / 54 % RH 26 deg. C / 39 % RH
Engineer Shiro Kobayashi Shiro Kobayashi
Mode Tx 11a

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	RBW Correction Factor	PSD (Conducted)			PSD (e.i.r.p.)		
							Result	Limit	Margin	Result	Limit	Margin
[MHz]	[dBm/MHz]	[dB]	[dB]	[dB]	[dBi]	[dB]	[dBm/MHz]	[dBm/MHz]	[dB]	[dBm/MHz]	[dBm/MHz]	[dB]
5180	-20.36	1.56	20.25	0.36	-0.47	0.00	1.81	11.00	9.19	1.34	17.00	15.66
5220	-18.53	1.57	20.26	0.36	-0.47	0.00	3.66	11.00	7.34	3.19	17.00	13.81
5240	-18.32	1.57	20.26	0.36	-0.47	0.00	3.87	11.00	7.13	3.40	17.00	13.60
5260	-18.10	1.57	20.26	0.36	-0.47	0.00	4.09	11.00	6.91	3.62	17.00	13.38
5300	-18.21	1.58	20.26	0.36	-0.47	0.00	3.99	11.00	7.01	3.52	17.00	13.48
5320	-19.94	1.58	20.26	0.36	-0.47	0.00	2.26	11.00	8.74	1.79	17.00	15.21
5500	-21.33	1.60	20.26	0.36	0.41	0.00	0.89	11.00	10.11	1.30	17.00	15.70
5580	-17.29	1.61	20.26	0.36	0.41	0.00	4.94	11.00	6.06	5.35	17.00	11.65
5700	-21.40	1.62	20.26	0.36	0.41	0.00	0.84	11.00	10.16	1.25	17.00	15.75
5745	-23.18	1.62	20.26	0.36	1.33	0.27	-0.67	30.00	30.67	0.66	36.00	35.34
5785	-23.45	1.63	20.26	0.36	1.33	0.27	-0.93	30.00	30.93	0.40	36.00	35.60
5825	-23.44	1.63	20.26	0.36	1.33	0.27	-0.92	30.00	30.92	0.41	36.00	35.59

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 \cdot \log(\text{Specified bandwidth} / \text{Measured bandwidth})$

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

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (UNII-1 for FCC)

Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room	
Date	June 18, 2024	July 23, 2024
Temperature / Humidity	25 deg. C / 54 % RH	26 deg. C / 39 % RH
Engineer	Shiro Kobayashi	Shiro Kobayashi
Mode	Tx 11n-20	

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	RBW Correction Factor	PSD (Conducted)			PSD (e.i.r.p.)		
							Result	Limit	Margin	Result	Limit	Margin
[MHz]	[dBm/MHz]	[dB]	[dB]	[dB]	[dBi]	[dB]	[dBm/MHz]	[dBm/MHz]	[dB]	[dBm/MHz]	[dBm/MHz]	[dB]
5180	-20.45	1.56	20.25	0.39	-0.47	0.00	1.75	11.00	9.25	1.28	17.00	15.72
5220	-18.68	1.57	20.26	0.39	-0.47	0.00	3.54	11.00	7.46	3.07	17.00	13.93
5240	-18.38	1.57	20.26	0.39	-0.47	0.00	3.84	11.00	7.16	3.37	17.00	13.63
5260	-18.38	1.57	20.26	0.39	-0.47	0.00	3.84	11.00	7.16	3.37	17.00	13.63
5300	-18.27	1.58	20.26	0.39	-0.47	0.00	3.96	11.00	7.04	3.49	17.00	13.51
5320	-20.37	1.58	20.26	0.39	-0.47	0.00	1.86	11.00	9.14	1.39	17.00	15.61
5500	-21.50	1.60	20.26	0.39	0.41	0.00	0.75	11.00	10.25	1.16	17.00	15.84
5580	-17.36	1.61	20.26	0.39	0.41	0.00	4.90	11.00	6.10	5.31	17.00	11.69
5700	-21.51	1.62	20.26	0.39	0.41	0.00	0.76	11.00	10.24	1.17	17.00	15.83
5745	-23.36	1.62	20.26	0.39	1.33	0.27	-0.82	30.00	30.82	0.51	36.00	35.49
5785	-23.62	1.63	20.26	0.39	1.33	0.27	-1.07	30.00	31.07	0.26	36.00	35.74
5825	-23.72	1.63	20.26	0.39	1.33	0.27	-1.17	30.00	31.17	0.16	36.00	35.84

Sample Calculation:

PSD: Power Spectral Density

The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.

RBW Correction Factor = $10 \cdot \log(\text{Specified bandwidth} / \text{Measured bandwidth})$

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

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (UNII-1 for FCC)

Maximum Power Spectral Density

Test place Shonan EMC Lab. No.5 Shielded Room
Date June 18, 2024 July 23, 2024 August 6, 2024
Temperature / Humidity 25 deg. C / 54 % RH 26 deg. C / 39 % RH 24 deg. C / 47 % RH
Engineer Shiro Kobayashi Shiro Kobayashi Shiro Kobayashi
Mode Tx 11n-40

Applied limit: 15.407, mobile and portable client device

Tested Frequency	PSD Reading	Cable Loss	Atten. Loss	Duty Factor	Antenna Gain	RBW Correction Factor	PSD (Conducted)			PSD (e.i.r.p.)		
							Result	Limit	Margin	Result	Limit	Margin
[MHz]	[dBm/MHz]	[dB]	[dB]	[dB]	[dBi]	[dB]	[dBm/MHz]	[dBm/MHz]	[dB]	[dBm/MHz]	[dBm/MHz]	[dB]
5190	-25.14	1.56	20.25	0.62	-0.47	0.00	-2.71	11.00	13.71	-3.18	17.00	20.18
5230	-21.59	1.57	20.26	0.62	-0.47	0.00	0.86	11.00	10.14	0.39	17.00	16.61
5270	-21.44	1.57	20.26	0.62	-0.47	0.00	1.01	11.00	9.99	0.54	17.00	16.46
5310	-23.30	1.58	20.26	0.62	-0.47	0.00	-0.84	11.00	11.84	-1.31	17.00	18.31
5510	-23.54	1.60	20.26	0.62	0.41	0.00	-1.06	11.00	12.06	-0.65	17.00	17.65
5550	-20.27	1.61	20.26	0.62	0.41	0.00	2.22	11.00	8.78	2.63	17.00	14.37
5670	-23.56	1.62	20.26	0.62	0.41	0.00	-1.06	11.00	12.06	-0.65	17.00	17.65
5755	-26.44	1.62	20.26	0.62	1.33	0.27	-3.67	30.00	33.67	-2.34	36.00	38.34
5795	-26.33	1.63	20.26	0.62	1.33	0.27	-3.55	30.00	33.55	-2.22	36.00	38.22

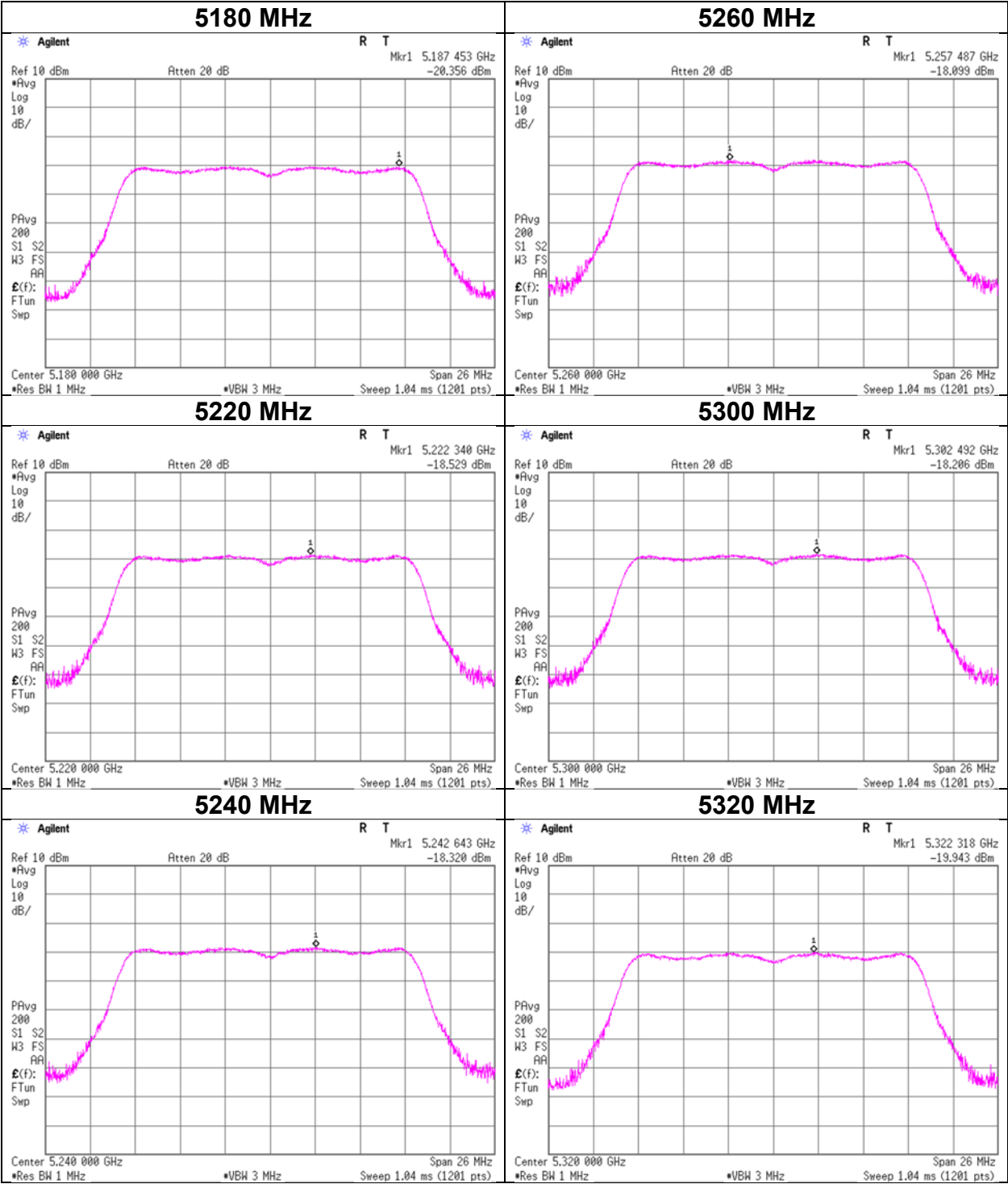
Sample Calculation:
PSD: Power Spectral Density
The PSD within 5725 MHz to 5825 MHz are based on any 500 kHz band.
RBW Correction Factor = 10 * log (Specified bandwidth / Measured bandwidth)
PSD Result (Conducted) = Reading + Cable Loss (including the cable(s) customer supplied) + Atten. Loss + Duty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

Although the EUT operates on Master mode, more stringent limit for Client device was applied. (UNII-1 for FCC)

Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	June 18, 2024
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shiro Kobayashi
Mode	Tx 11a

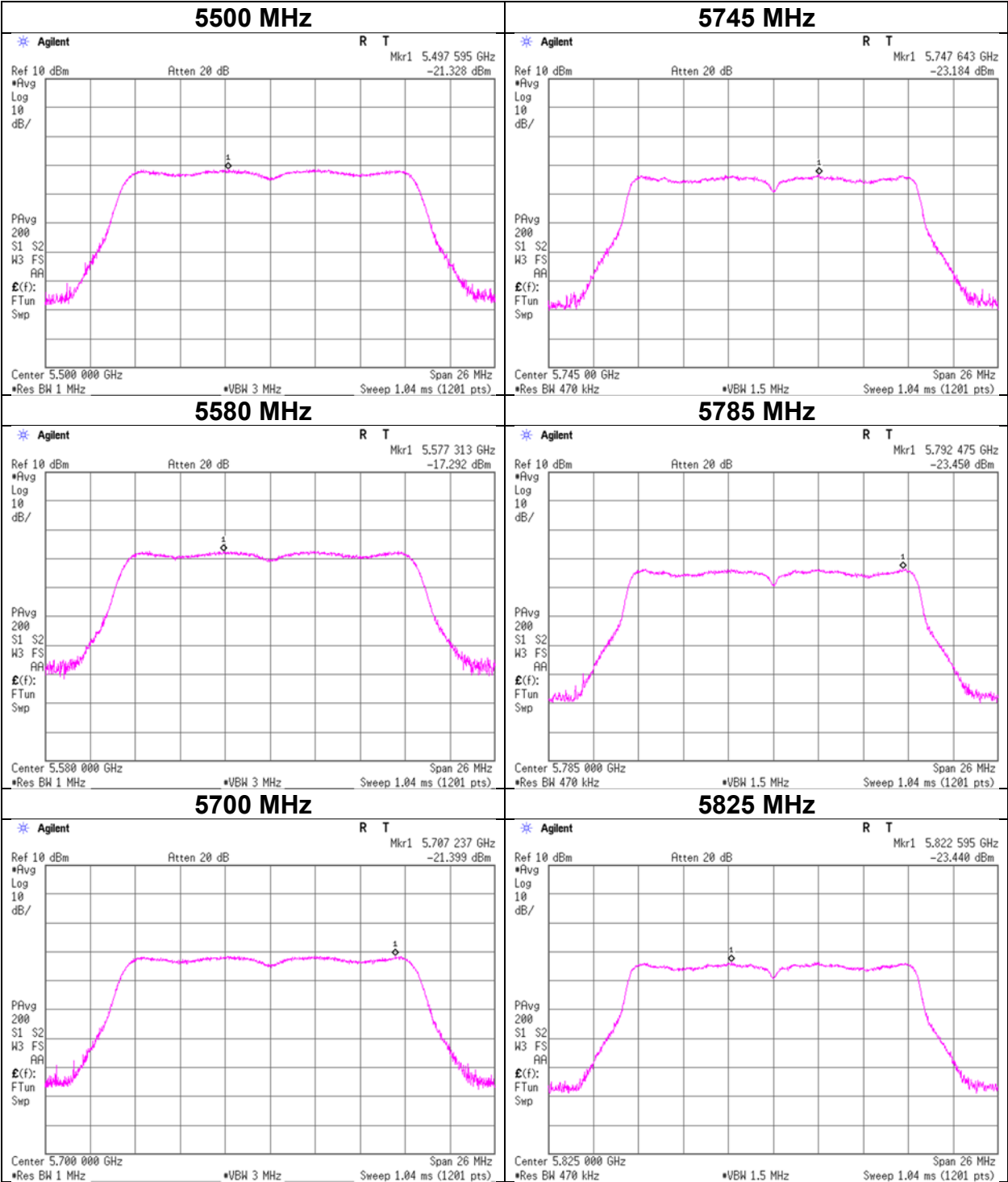
11a



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	June 18, 2024
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shiro Kobayashi
Mode	Tx 11a

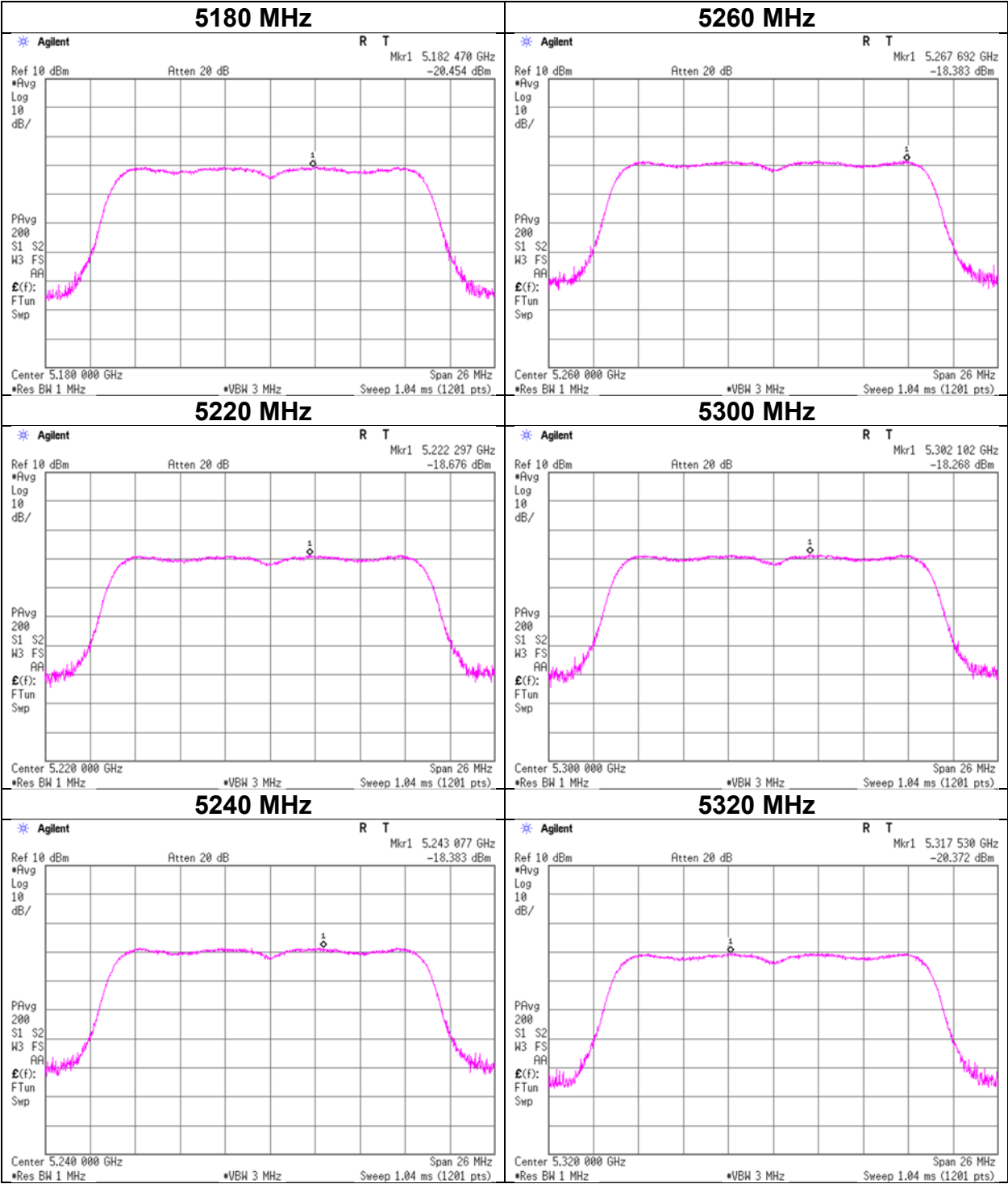
11a



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	June 18, 2024
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shiro Kobayashi
Mode	Tx 11n-20

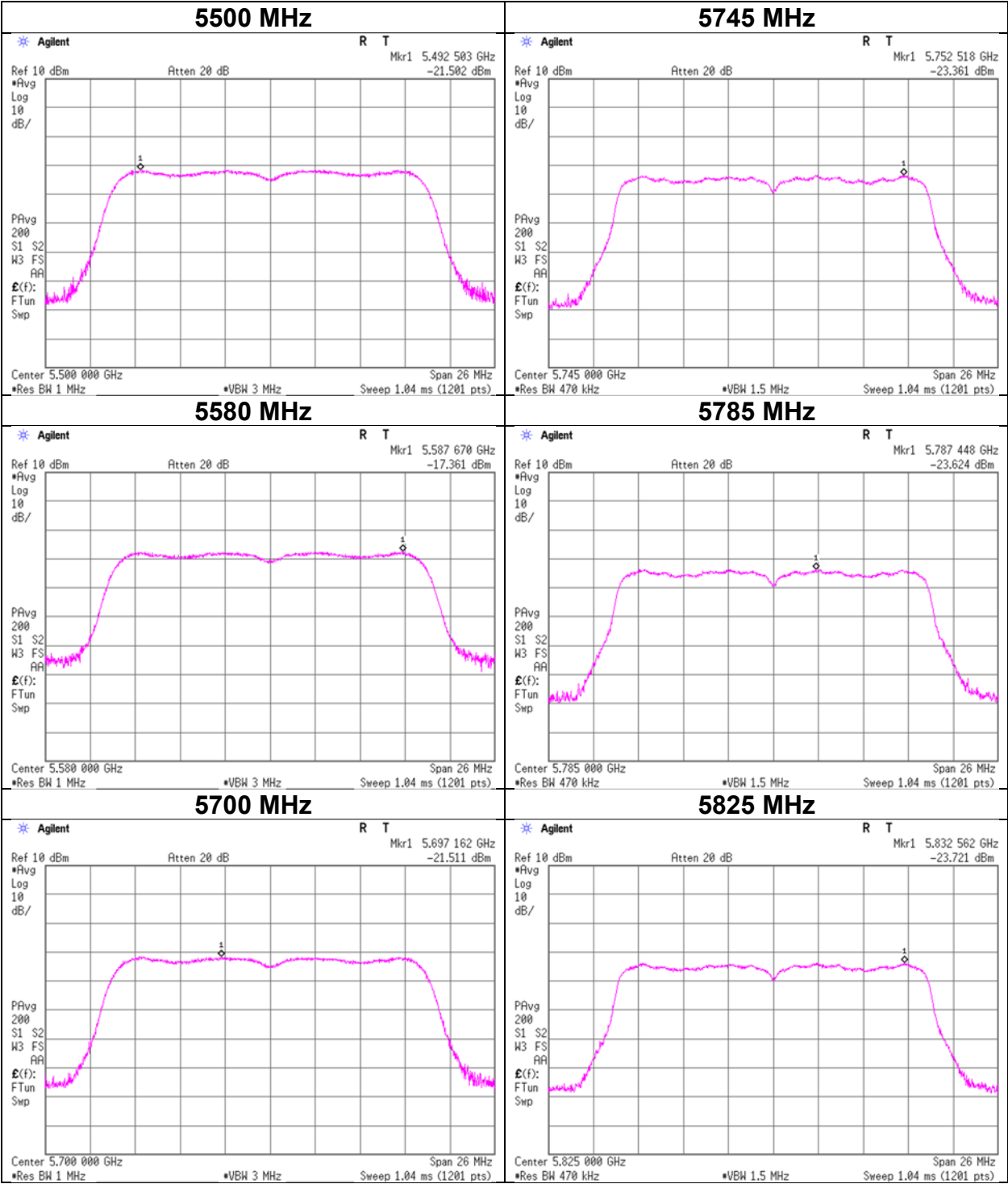
11n-20



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	June 18, 2024
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shiro Kobayashi
Mode	Tx 11n-20

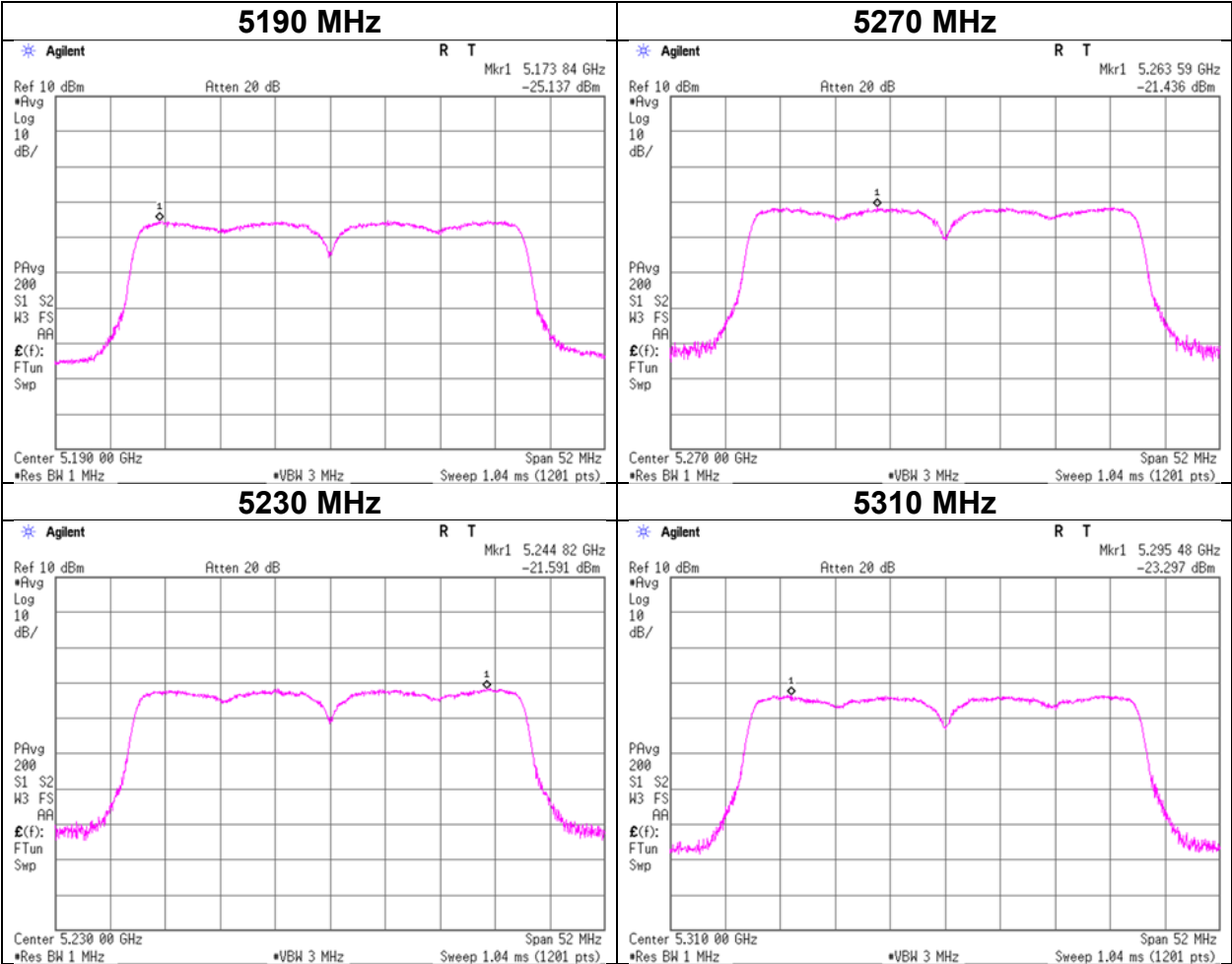
11n-20



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room	
Date	June 18, 2024	August 6, 2024
Temperature / Humidity	25 deg. C / 54 % RH	24 deg. C / 47 % RH
Engineer	Shiro Kobayashi	Shiro Kobayashi
Mode	Tx 11n-40	

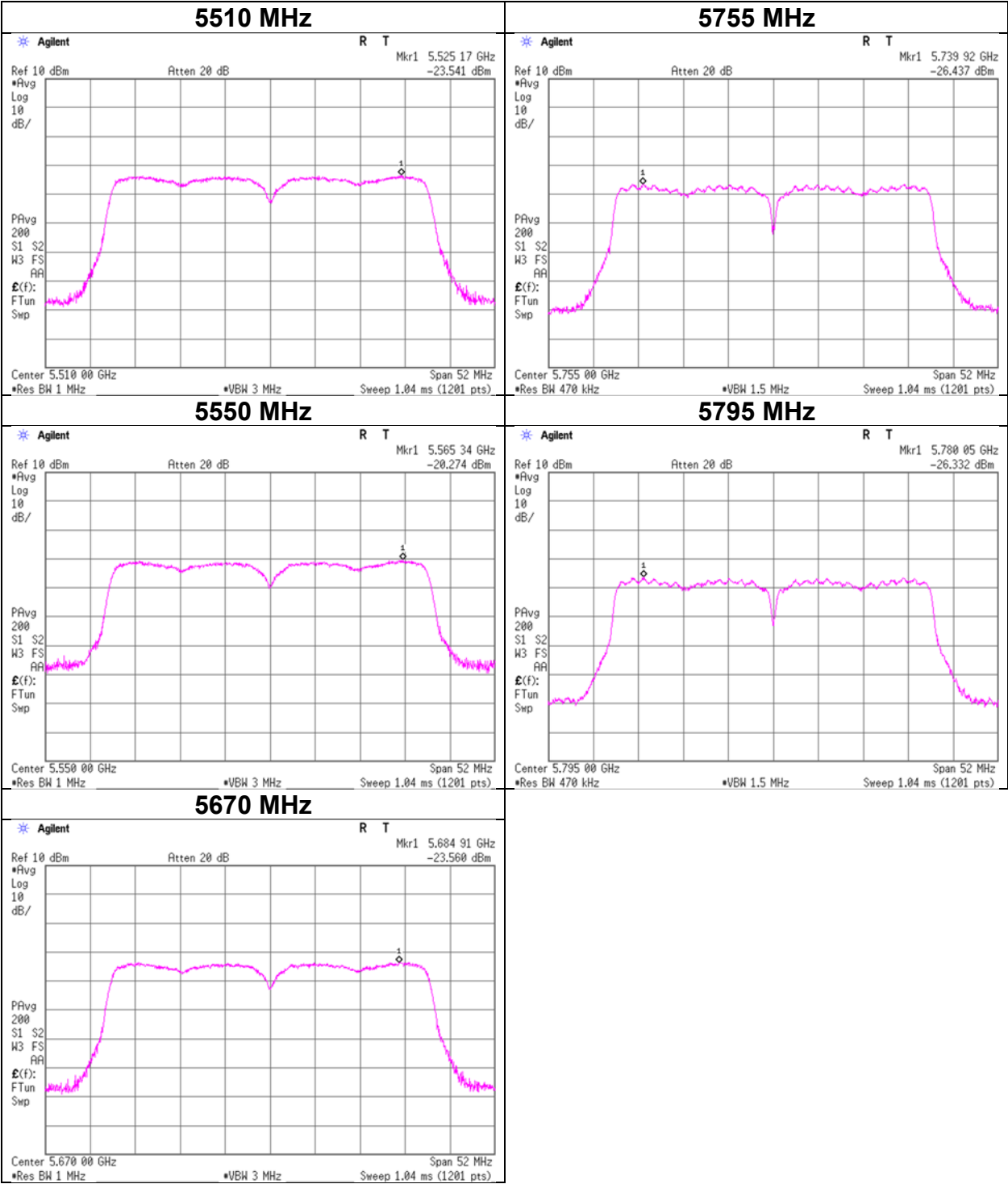
11n-40



Maximum Power Spectral Density

Test place	Shonan EMC Lab. No.5 Shielded Room
Date	June 18, 2024
Temperature / Humidity	25 deg. C / 54 % RH
Engineer	Shiro Kobayashi
Mode	Tx 11n-40

11n-40



Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 23, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	24 deg. C / 39 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5180 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5150.000	PK	55.46	31.88	16.88	42.99	2.46	63.69	73.9	10.2	120	6	-
Hori.	15540.000	PK	55.28	39.28	13.78	40.55	-9.54	58.25	73.9	15.6	144	349	-
Hori.	20720.000	PK	46.85	40.12	14.51	47.21	-9.54	44.73	73.9	29.1	149	129	-
Hori.	5150.000	AV	41.89	31.88	16.88	42.99	2.46	50.12	53.9	3.7	120	6	VBW: 10 kHz
Hori.	15540.000	AV	44.28	39.28	13.78	40.55	-9.54	47.25	53.9	6.6	144	349	VBW: 10 kHz
Hori.	20720.000	AV	41.27	40.12	14.51	47.21	-9.54	39.15	53.9	14.7	149	129	VBW: 10 kHz
Vert.	5150.000	PK	53.15	31.88	16.88	42.99	2.46	61.38	73.9	12.5	100	12	-
Vert.	15540.000	PK	55.55	39.28	13.78	40.55	-9.54	58.52	73.9	15.3	131	297	-
Vert.	20720.000	PK	46.04	40.12	14.51	47.21	-9.54	43.92	73.9	29.9	167	207	-
Vert.	5150.000	AV	40.55	31.88	16.88	42.99	2.46	48.78	53.9	5.1	100	12	VBW: 10 kHz
Vert.	15540.000	AV	44.20	39.28	13.78	40.55	-9.54	47.17	53.9	6.7	131	297	VBW: 10 kHz
Vert.	20720.000	AV	39.91	40.12	14.51	47.21	-9.54	37.79	53.9	16.1	167	207	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	6906.638	PK	50.90	35.67	8.48	43.19	2.46	54.32	-40.91	-27.0	13.9	124	2	-
Hori.	10360.000	PK	50.54	36.06	11.15	42.74	-9.54	45.47	-49.76	-27.0	22.7	150	0	-
Vert.	6906.638	PK	49.54	35.67	8.48	43.19	2.46	52.96	-42.27	-27.0	15.2	108	5	-
Vert.	10360.000	PK	50.14	36.06	11.15	42.74	-9.54	45.07	-50.16	-27.0	23.1	150	0	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

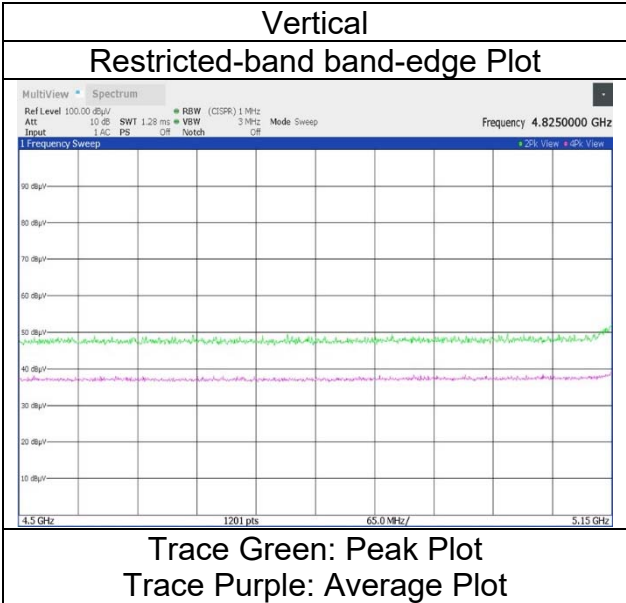
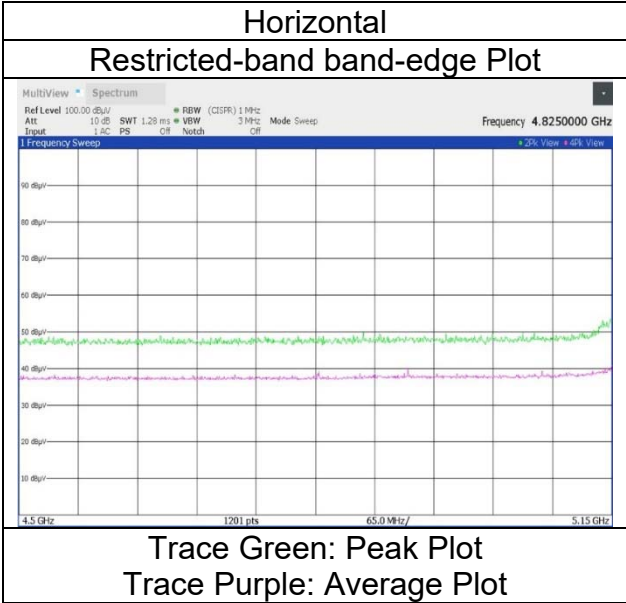
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5180 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 27, 2024
Temperature / Humidity 23 deg. C / 48 % RH
Engineer Yosuke Murakami
 (1 GHz to 6.4 GHz)
Mode Tx 11a 5200 MHz

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5150.000	PK	52.98	31.88	16.88	42.99	2.46	61.21	73.9	12.6	112	11	-
Hori.	5150.000	AV	40.09	31.88	16.88	42.99	2.46	48.32	53.9	5.5	112	11	VBW: 10 kHz
Vert.	5150.000	PK	51.24	31.88	16.88	42.99	2.46	59.47	73.9	14.4	107	16	-
Vert.	5150.000	AV	39.42	31.88	16.88	42.99	2.46	47.65	53.9	6.2	107	16	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

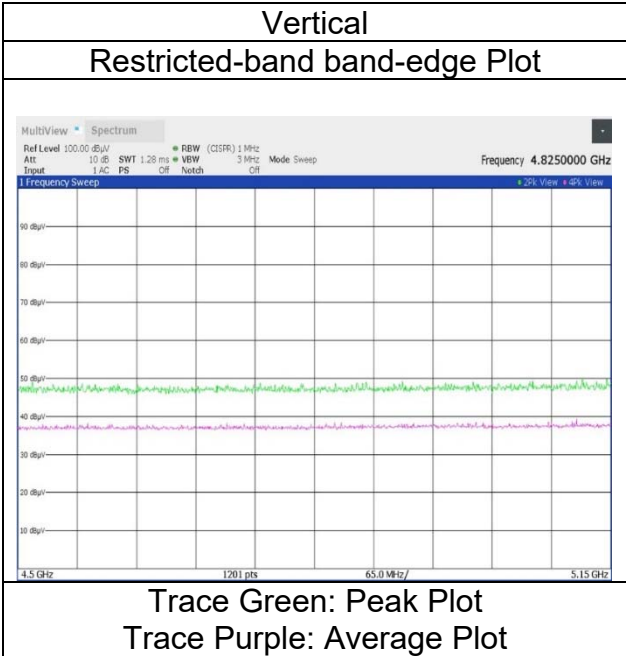
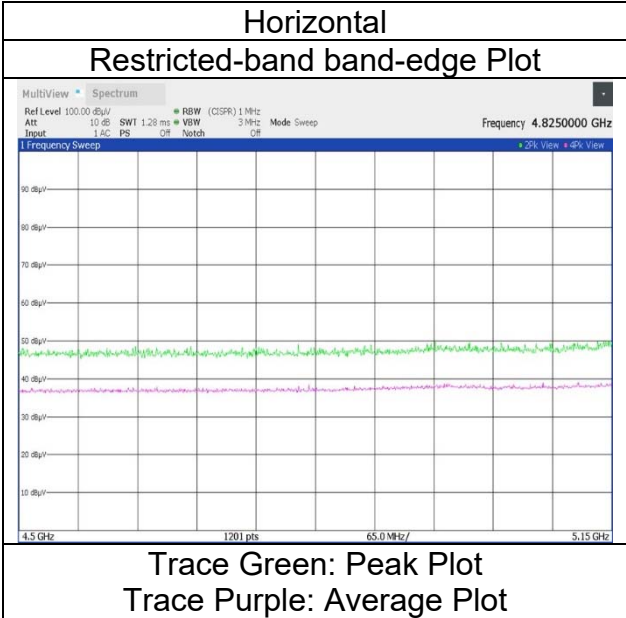
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5200 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 23, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	24 deg. C / 39 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5240 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	15720.000	PK	56.04	39.61	13.74	40.52	-9.54	59.33	73.9	14.5	139	294	-
Hori.	20960.000	PK	47.83	40.05	14.62	47.17	-9.54	45.79	73.9	28.1	172	66	-
Hori.	15720.000	AV	45.71	39.61	13.74	40.52	-9.54	49.00	53.9	4.9	139	294	VBW : 10 kHz
Hori.	20960.000	AV	43.76	40.05	14.62	47.17	-9.54	41.72	53.9	12.1	172	66	VBW : 10 kHz
Vert.	15720.000	PK	55.97	39.61	13.74	40.52	-9.54	59.26	73.9	14.6	138	303	-
Vert.	20960.000	PK	46.30	40.05	14.62	47.17	-9.54	44.26	73.9	29.6	168	204	-
Vert.	15720.000	AV	45.25	39.61	13.74	40.52	-9.54	48.54	53.9	5.3	138	303	VBW : 10 kHz
Vert.	20960.000	AV	41.79	40.05	14.62	47.17	-9.54	39.75	53.9	14.1	168	204	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	6986.352	PK	53.59	36.18	8.49	43.13	2.46	57.59	-37.64	-27.0	10.6	122	7	-
Hori.	10480.000	PK	50.34	36.19	11.20	42.73	-9.54	45.46	-49.77	-27.0	22.7	146	344	-
Vert.	6986.639	PK	52.05	36.18	8.49	43.13	2.46	56.05	-39.18	-27.0	12.1	111	32	-
Vert.	10480.000	PK	51.06	36.19	11.20	42.73	-9.54	46.18	-49.05	-27.0	22.0	131	236	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 27, 2024
Temperature / Humidity 23 deg. C / 48 % RH
Engineer Yosuke Murakami
(1 GHz to 6.4 GHz)
Mode Tx 11a 5300 MHz

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5350.000	PK	52.97	31.60	17.02	43.21	2.46	60.84	73.9	13.0	109	25	-
Hori.	5350.000	AV	40.11	31.60	17.02	43.21	2.46	47.98	53.9	5.9	109	25	VBW: 10 kHz
Vert.	5350.000	PK	50.84	31.60	17.02	43.21	2.46	58.71	73.9	15.1	100	4	-
Vert.	5350.000	AV	39.67	31.60	17.02	43.21	2.46	47.54	53.9	6.3	100	4	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

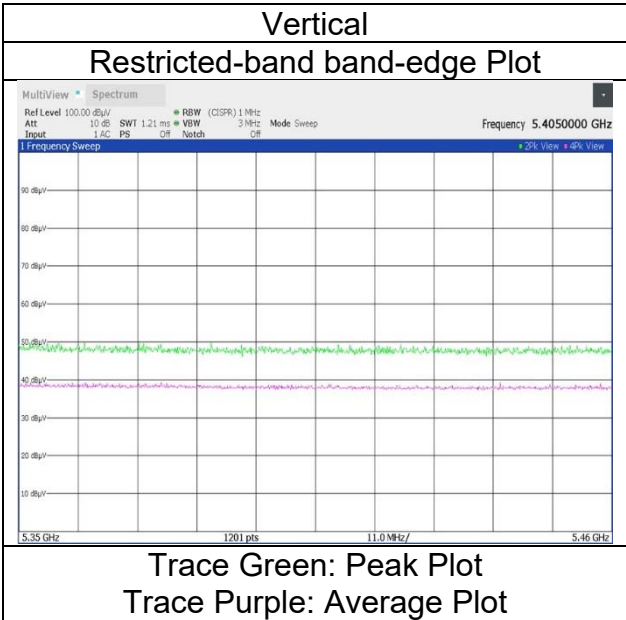
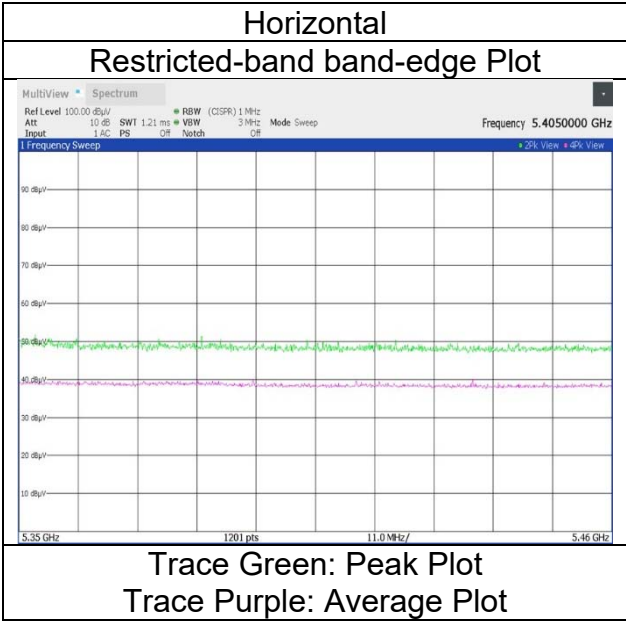
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5300 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 23, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	24 deg. C / 39 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5320 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5350.000	PK	54.94	31.60	17.02	43.21	2.46	62.81	73.9	11.0	100	18	-
Hori.	10640.000	PK	51.28	36.85	11.25	42.76	-9.54	47.08	73.9	26.8	150	0	-
Hori.	15960.000	PK	54.77	40.10	13.71	40.49	-9.54	58.55	73.9	15.3	141	294	-
Hori.	5350.000	AV	41.99	31.60	17.02	43.21	2.46	49.86	53.9	4.0	100	18	VBW : 10 kHz
Hori.	10640.000	AV	37.86	36.85	11.25	42.76	-9.54	33.66	53.9	20.2	150	0	VBW : 10 kHz
Hori.	15960.000	AV	43.97	40.10	13.71	40.49	-9.54	47.75	53.9	6.1	141	294	VBW : 10 kHz
Vert.	5350.000	PK	52.87	31.60	17.02	43.21	2.46	60.74	73.9	13.1	130	55	-
Vert.	10640.000	PK	49.46	36.85	11.25	42.76	-9.54	45.26	73.9	28.6	150	0	-
Vert.	15960.000	PK	54.99	40.10	13.71	40.49	-9.54	58.77	73.9	15.1	133	303	-
Vert.	5350.000	AV	40.09	31.60	17.02	43.21	2.46	47.96	53.9	5.9	130	55	VBW : 10 kHz
Vert.	10640.000	AV	37.74	36.85	11.25	42.76	-9.54	33.54	53.9	20.3	150	0	VBW : 10 kHz
Vert.	15960.000	AV	44.09	40.10	13.71	40.49	-9.54	47.87	53.9	6.0	133	303	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	7093.303	PK	49.46	36.69	8.56	43.19	2.46	53.98	-41.25	-27.0	14.2	134	2	-
Vert.	7093.303	PK	49.06	36.69	8.56	43.19	2.46	53.58	-41.65	-27.0	14.6	105	42	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]}^2 / 30 * 10^{\wedge}3)$

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

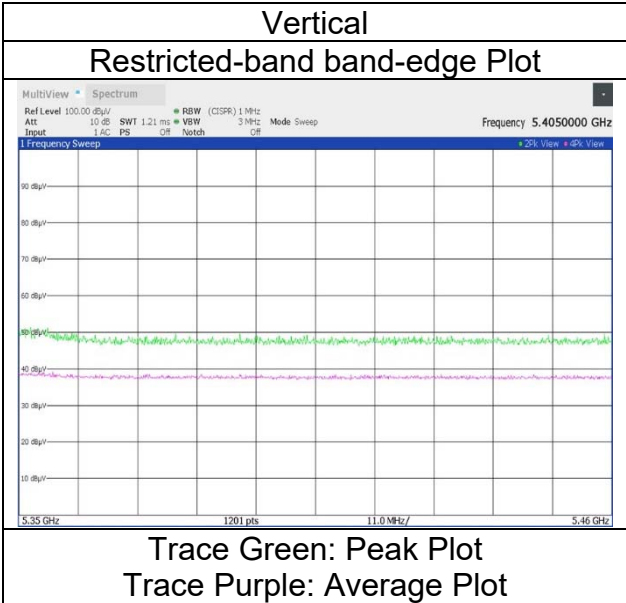
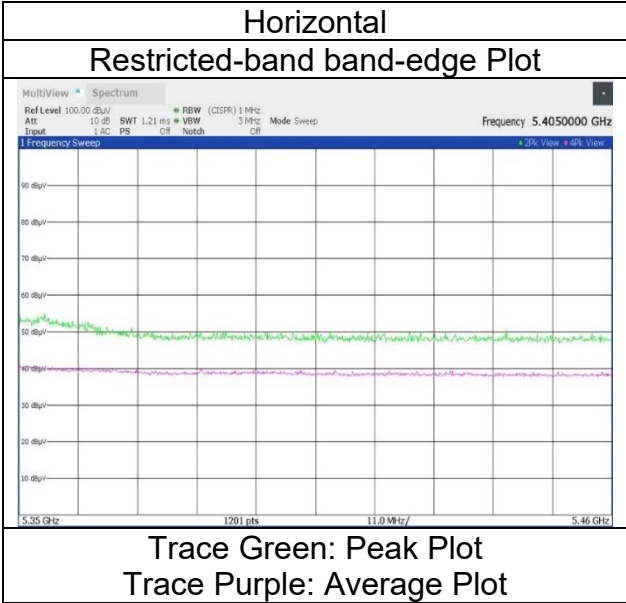
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5320 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 23, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	24 deg. C / 39 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5500 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5460.000	PK	53.40	31.87	17.09	43.34	2.46	61.48	73.9	12.4	100	5	-
Hori.	11000.000	PK	50.50	37.27	11.37	42.82	-9.54	46.78	73.9	27.1	150	0	-
Hori.	5460.000	AV	40.23	31.87	17.09	43.34	2.46	48.31	53.9	5.5	100	5	VBW: 10 kHz
Hori.	11000.000	AV	38.17	37.27	11.37	42.82	-9.54	34.45	53.9	19.4	150	0	VBW: 10 kHz
Vert.	5460.000	PK	50.61	31.87	17.09	43.34	2.46	58.69	73.9	15.2	149	46	-
Vert.	11000.000	PK	48.59	37.27	11.37	42.82	-9.54	44.87	73.9	29.0	150	0	-
Vert.	5460.000	AV	38.75	31.87	17.09	43.34	2.46	46.83	53.9	7.0	149	46	VBW: 10 kHz
Vert.	11000.000	AV	37.96	37.27	11.37	42.82	-9.54	34.24	53.9	19.6	150	0	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	53.54	31.89	17.10	43.35	2.46	61.64	-33.59	-27.0	6.5	100	5	-
Hori.	16500.000	PK	55.62	39.93	14.54	40.54	-9.54	60.01	-35.22	-27.0	8.2	142	297	-
Hori.	22000.000	PK	48.11	40.25	14.98	47.57	-9.54	46.23	-49.00	-27.0	22.0	158	131	-
Vert.	5470.000	PK	50.99	31.89	17.10	43.35	2.46	59.09	-36.14	-27.0	9.1	149	46	-
Vert.	16500.000	PK	52.01	39.93	14.54	40.54	-9.54	56.40	-38.83	-27.0	11.8	137	303	-
Vert.	22000.000	PK	47.12	40.25	14.98	47.57	-9.54	45.24	-49.99	-27.0	22.9	158	191	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

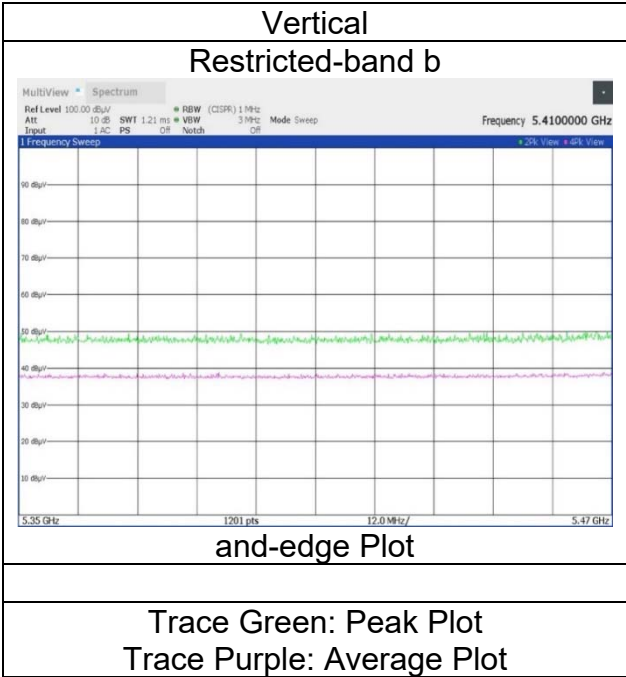
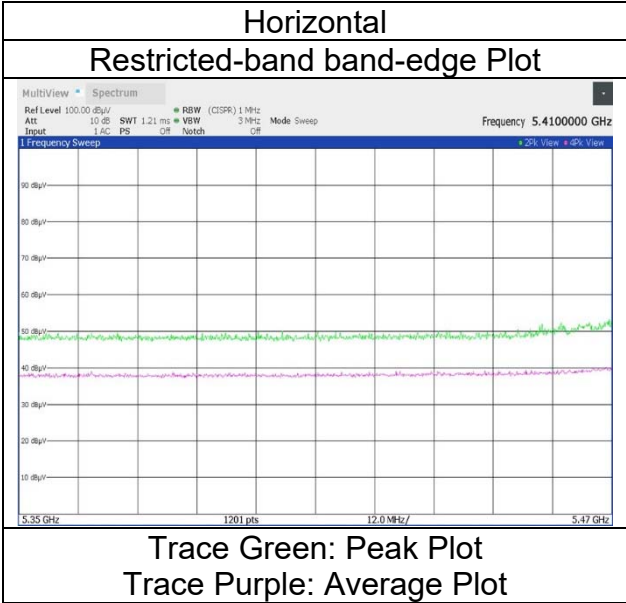
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5500 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 27, 2024
Temperature / Humidity 23 deg. C / 48 % RH
Engineer Yosuke Murakami
(1 GHz to 6.4 GHz)
Mode Tx 11a 5520 MHz

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5460.000	PK	51.64	31.87	17.09	43.34	2.46	59.72	73.9	14.1	102	358	-
Hori.	5460.000	AV	39.98	31.87	17.09	43.34	2.46	48.06	53.9	5.8	102	358	VBW: 10 kHz
Vert.	5460.000	PK	50.52	31.87	17.09	43.34	2.46	58.60	73.9	15.3	148	52	-
Vert.	5460.000	AV	39.17	31.87	17.09	43.34	2.46	47.25	53.9	6.6	148	52	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	52.91	31.89	17.10	43.35	2.46	61.01	-34.22	-27.0	7.2	102	358	-
Vert.	5470.000	PK	50.91	31.89	17.10	43.35	2.46	59.01	-36.22	-27.0	9.2	148	52	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG} ((10 \wedge (\text{Electric Field Strength [dBuV/m]} / 20) * 10 \wedge (-6) * \text{Distance : 3 [m]}) \wedge 2 / 30 * 10 \wedge 3)$

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

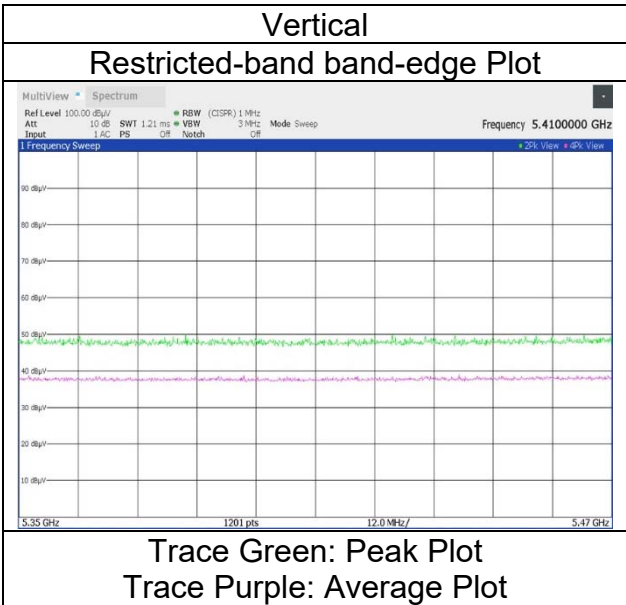
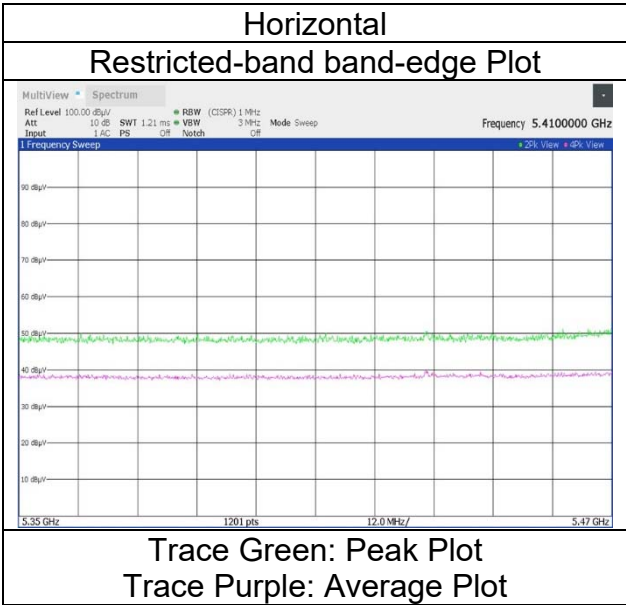
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5520 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 23, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	24 deg. C / 39 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5580 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11160.000	PK	53.69	37.29	11.48	42.70	-9.54	50.22	73.9	23.6	138	351	-
Hori.	22320.000	PK	47.12	40.28	15.09	47.55	-9.54	45.40	73.9	28.5	158	139	-
Hori.	11160.000	AV	41.96	37.29	11.48	42.70	-9.54	38.49	53.9	15.4	138	351	VBW : 10 kHz
Hori.	22320.000	AV	38.85	40.28	15.09	47.55	-9.54	37.13	53.9	16.7	158	139	VBW : 10 kHz
Vert.	11160.000	PK	54.48	37.29	11.48	42.70	-9.54	51.01	73.9	22.8	173	146	-
Vert.	22320.000	PK	46.22	40.28	15.09	47.55	-9.54	44.50	73.9	29.4	158	190	-
Vert.	11160.000	AV	43.26	37.29	11.48	42.70	-9.54	39.79	53.9	14.1	173	146	VBW : 10 kHz
Vert.	22320.000	AV	38.46	40.28	15.09	47.55	-9.54	36.74	53.9	17.1	158	190	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16740.000	PK	59.06	39.54	14.63	40.40	-9.54	63.29	-31.94	-27.0	4.9	134	299	-
Vert.	16740.000	PK	54.44	39.54	14.63	40.40	-9.54	58.67	-36.56	-27.0	9.5	135	301	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 27, 2024
Temperature / Humidity 23 deg. C / 48 % RH
Engineer Yosuke Murakami
Mode Tx 11a 5680 MHz

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	54.98	32.38	17.26	43.37	2.46	63.71	-31.52	-27.0	4.5	121	1	-
Vert.	5725.000	PK	52.14	32.38	17.26	43.37	2.46	60.87	-34.36	-27.0	7.3	124	43	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor
Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

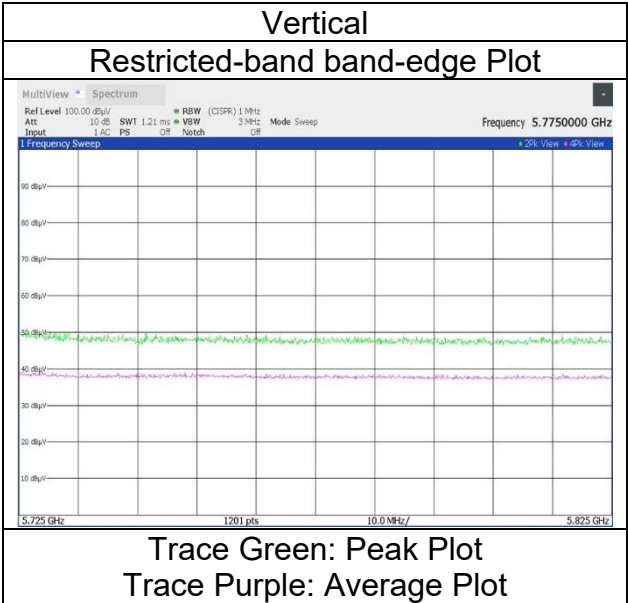
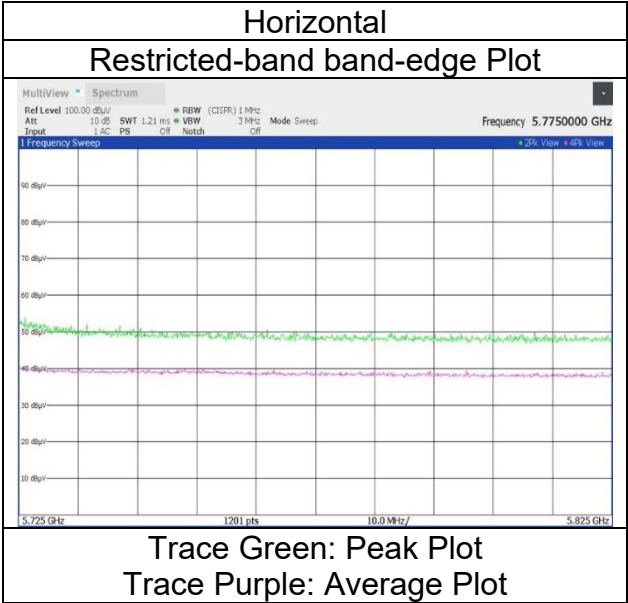
*Other frequency noises omitted in this report were not seen or have enough margin (more than 20 dB).

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5680 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 23, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	24 deg. C / 39 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5700 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11400.000	PK	55.21	37.73	11.64	42.52	-9.54	52.52	73.9	21.3	130	274	-
Hori.	22800.000	PK	44.73	40.20	15.26	47.37	-9.54	43.28	73.9	30.6	155	206	-
Hori.	11400.000	AV	43.38	37.73	11.64	42.52	-9.54	40.69	53.9	13.2	130	274	VBW : 10 kHz
Hori.	22800.000	AV	37.24	40.20	15.26	47.37	-9.54	35.79	53.9	18.1	155	206	VBW : 10 kHz
Vert.	11400.000	PK	52.00	37.73	11.64	42.52	-9.54	49.31	73.9	24.5	174	159	-
Vert.	22800.000	PK	43.48	40.20	15.26	47.37	-9.54	42.03	73.9	31.8	164	192	-
Vert.	11400.000	AV	41.64	37.73	11.64	42.52	-9.54	38.95	53.9	14.9	174	159	VBW : 10 kHz
Vert.	22800.000	AV	35.41	40.20	15.26	47.37	-9.54	33.96	53.9	19.9	164	192	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	56.21	32.38	17.26	43.37	2.46	64.94	-30.29	-27.0	3.2	103	3	-
Hori.	17100.000	PK	57.15	39.72	14.75	40.21	-9.54	61.87	-33.36	-27.0	6.3	144	301	-
Vert.	5725.000	PK	52.59	32.38	17.26	43.37	2.46	61.32	-33.91	-27.0	6.9	161	64	-
Vert.	17100.000	PK	52.31	39.72	14.75	40.21	-9.54	57.03	-38.20	-27.0	11.2	137	304	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]}^{\wedge}2 / 30 * 10^{\wedge}3)$

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

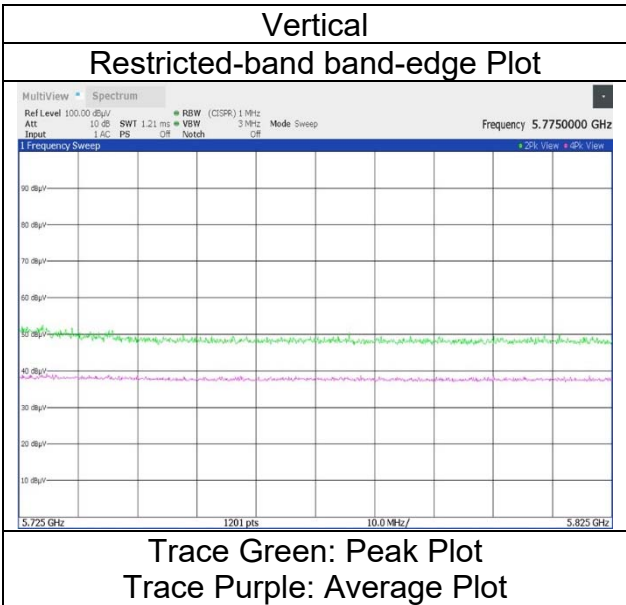
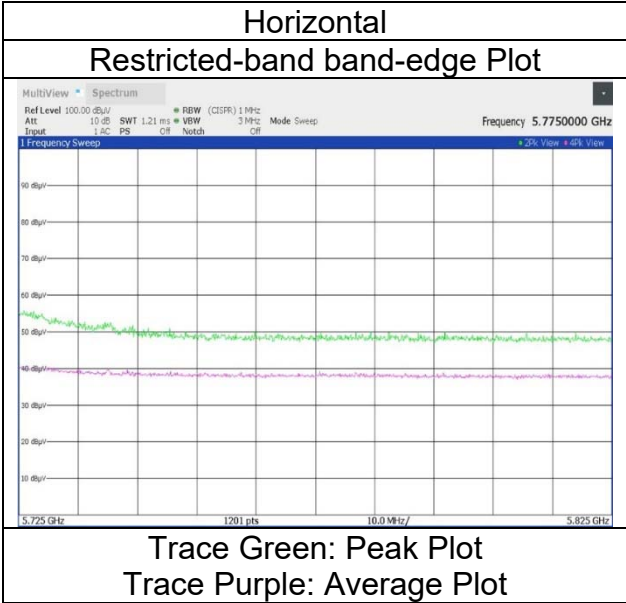
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5700 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 12, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	25 deg. C / 53 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Kouki Yamada	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5745 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11490.000	PK	54.20	37.82	11.79	42.45	-9.54	51.82	73.9	22.0	149	164	-
Hori.	22980.000	PK	44.44	40.16	15.33	47.27	-9.54	43.12	73.9	30.7	152	205	-
Hori.	11490.000	AV	43.17	37.82	11.79	42.45	-9.54	40.79	53.9	13.1	149	164	VBW : 10 kHz
Hori.	22980.000	AV	35.78	40.16	15.33	47.27	-9.54	34.46	53.9	19.4	152	205	VBW : 10 kHz
Vert.	11490.000	PK	53.48	37.82	11.79	42.45	-9.54	51.10	73.9	22.8	148	220	-
Vert.	22980.000	PK	42.64	40.16	15.33	47.27	-9.54	41.32	73.9	32.5	162	195	-
Vert.	11490.000	AV	42.30	37.82	11.79	42.45	-9.54	39.92	53.9	13.9	148	220	VBW : 10 kHz
Vert.	22980.000	AV	34.36	40.16	15.33	47.27	-9.54	33.04	53.9	20.8	162	195	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	49.78	32.13	17.21	43.37	2.46	58.21	-37.02	-27.0	10.0	108	354	-
Hori.	5700.000	PK	52.97	32.30	17.24	43.37	2.46	61.60	-33.63	10.0	43.6	108	354	-
Hori.	5720.000	PK	60.86	32.36	17.25	43.37	2.46	69.56	-25.67	15.6	41.2	108	354	-
Hori.	5725.000	PK	65.70	32.38	17.26	43.37	2.46	74.43	-20.80	27.0	47.8	108	354	-
Hori.	17235.000	PK	58.73	39.95	14.76	40.15	-9.54	63.75	-31.48	-27.0	4.4	130	272	-
Vert.	5650.000	PK	49.56	32.13	17.21	43.37	2.46	57.99	-37.24	-27.0	10.2	112	21	-
Vert.	5700.000	PK	50.02	32.30	17.24	43.37	2.46	58.65	-36.58	10.0	46.5	112	21	-
Vert.	5720.000	PK	55.68	32.36	17.25	43.37	2.46	64.38	-30.85	15.6	46.4	112	21	-
Vert.	5725.000	PK	61.71	32.38	17.26	43.37	2.46	70.44	-24.79	27.0	51.7	112	21	-
Vert.	17235.000	PK	60.01	39.95	14.76	40.15	-9.54	65.03	-30.20	-27.0	3.1	136	48	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

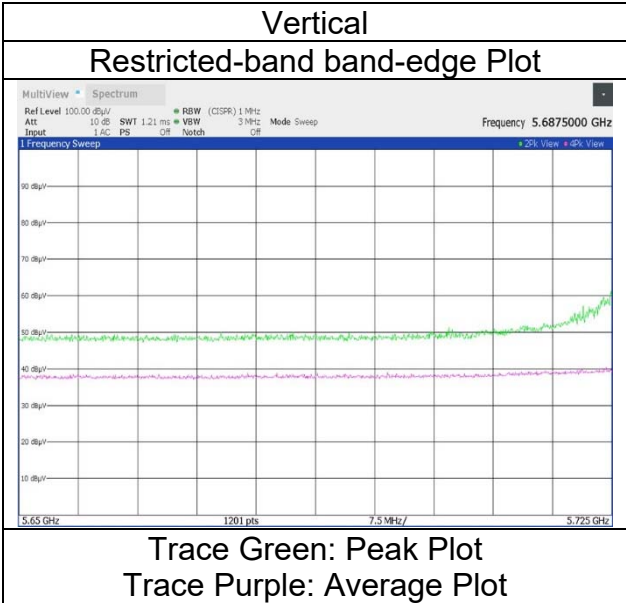
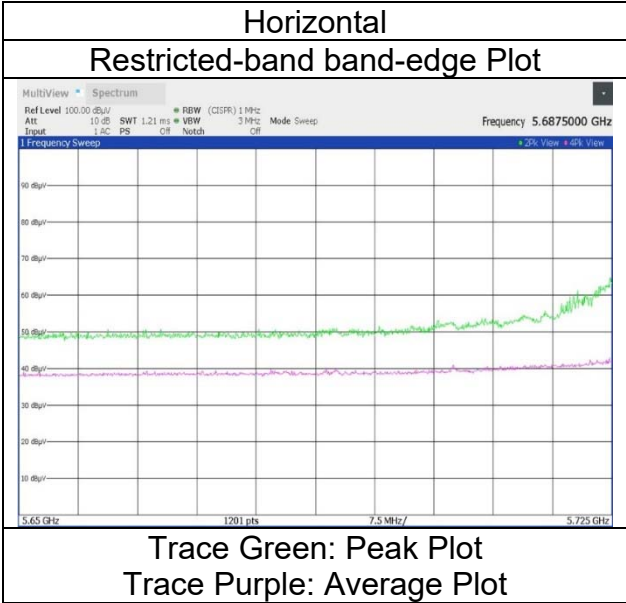
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5745 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 12, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	25 deg. C / 53 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Kouki Yamada	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5785 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11570.000	PK	54.28	37.91	11.84	42.41	-9.54	52.08	73.9	21.8	149	162	-
Hori.	11570.000	AV	43.25	37.91	11.84	42.41	-9.54	41.05	53.9	12.8	149	162	VBW : 10 kHz
Vert.	11570.000	PK	53.27	37.91	11.84	42.41	-9.54	51.07	73.9	22.8	151	220	-
Vert.	11570.000	AV	41.39	37.91	11.84	42.41	-9.54	39.19	53.9	14.7	151	220	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	17355.000	PK	59.27	40.15	14.84	40.10	-9.54	64.62	-30.61	-27.0	3.6	129	269	-
Hori.	23140.000	PK	42.69	40.13	15.40	47.13	-9.54	41.55	-53.68	-27.0	26.6	145	239	-
Vert.	17355.000	PK	60.11	40.15	14.84	40.10	-9.54	65.46	-29.77	-27.0	2.7	137	47	-
Vert.	23140.000	PK	41.88	40.13	15.40	47.13	-9.54	40.74	-54.49	-27.0	27.4	162	146	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance : 3 [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 27, 2024	July 12, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	23 deg. C / 48 % RH	25 deg. C / 53 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yosuke Murakami	Kouki Yamada	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11a 5825 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11650.000	PK	54.26	37.96	11.89	42.37	-9.54	52.20	73.9	21.7	151	165	-
Hori.	11650.000	AV	43.13	37.96	11.89	42.37	-9.54	41.07	53.9	12.8	151	165	VBW : 10 kHz
Vert.	11650.000	PK	52.73	37.96	11.89	42.37	-9.54	50.67	73.9	23.2	151	185	-
Vert.	11650.000	AV	41.19	37.96	11.89	42.37	-9.54	39.13	53.9	14.7	151	185	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5850.000	PK	57.34	32.76	17.34	43.37	2.46	66.53	-28.70	27.0	55.7	111	355	-
Hori.	5855.000	PK	55.20	32.77	17.34	43.37	2.46	64.40	-30.83	15.6	46.4	111	355	-
Hori.	5875.000	PK	50.84	32.81	17.36	43.37	2.46	60.10	-35.13	10.0	45.1	111	355	-
Hori.	5925.000	PK	50.26	32.92	17.39	43.36	2.46	59.67	-35.56	-27.0	8.5	111	355	-
Hori.	17475.000	PK	59.71	40.33	14.92	40.05	-9.54	65.37	-29.86	-27.0	2.8	128	271	-
Hori.	23300.000	PK	43.36	40.14	15.48	46.97	-9.54	42.47	-52.76	-27.0	25.7	145	208	-
Vert.	5850.000	PK	54.44	32.76	17.34	43.37	2.46	63.63	-31.60	27.0	58.6	143	10	-
Vert.	5855.000	PK	53.42	32.77	17.34	43.37	2.46	62.62	-32.61	15.6	48.2	143	10	-
Vert.	5875.000	PK	49.63	32.81	17.36	43.37	2.46	58.89	-36.34	10.0	46.3	143	10	-
Vert.	5925.000	PK	49.09	32.92	17.39	43.36	2.46	58.50	-36.73	-27.0	9.7	143	10	-
Vert.	17475.000	PK	61.65	40.33	14.92	40.05	-9.54	67.31	-27.92	-27.0	0.9	136	46	-
Vert.	23300.000	PK	42.24	40.14	15.48	46.97	-9.54	41.35	-53.88	-27.0	26.8	154	149	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

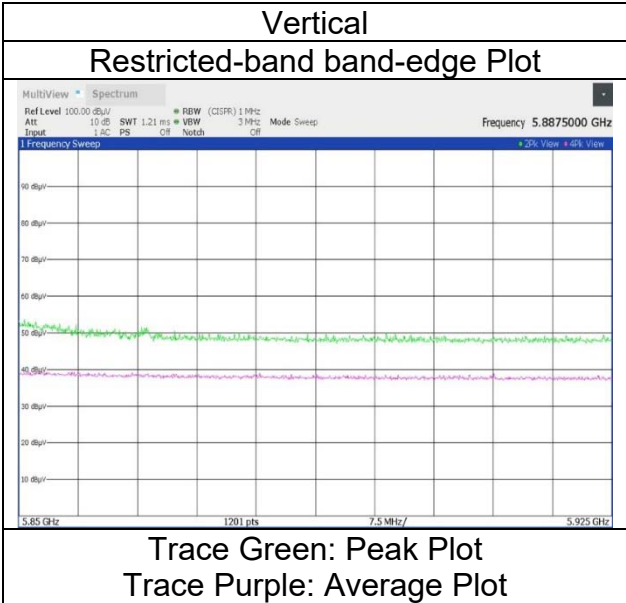
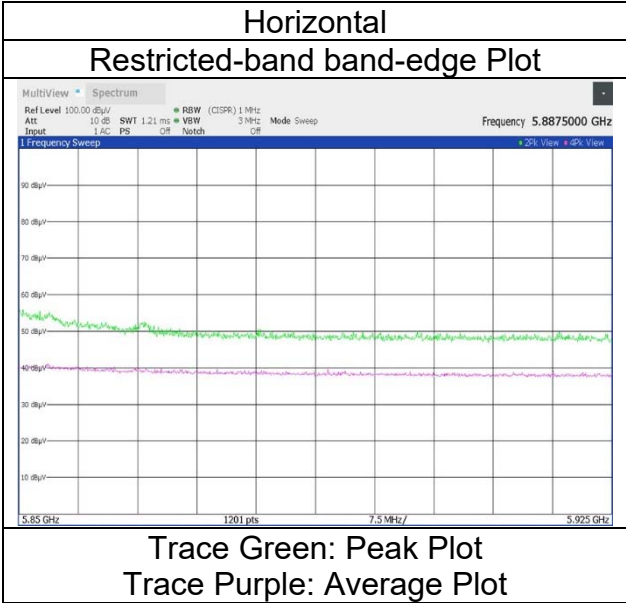
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 27, 2024
23 deg. C / 48 % RH
Yosuke Murakami
Tx 11a 5825 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5180 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5150.000	PK	54.85	31.88	16.88	42.99	2.46	63.08	73.9	10.8	109	22	-
Hori.	15540.000	PK	56.20	39.28	13.78	40.55	-9.54	59.17	73.9	14.7	137	304	-
Hori.	20720.000	PK	46.51	40.12	14.51	47.21	-9.54	44.39	73.9	29.5	139	130	-
Hori.	5150.000	AV	41.44	31.88	16.88	42.99	2.46	49.67	53.9	4.2	109	22	VBW: 10 kHz
Hori.	15540.000	AV	45.42	39.28	13.78	40.55	-9.54	48.39	53.9	5.5	137	304	VBW: 10 kHz
Hori.	20720.000	AV	41.19	40.12	14.51	47.21	-9.54	39.07	53.9	14.8	139	130	VBW: 10 kHz
Vert.	5150.000	PK	53.56	31.88	16.88	42.99	2.46	61.79	73.9	12.1	120	247	-
Vert.	15540.000	PK	54.73	39.28	13.78	40.55	-9.54	57.70	73.9	16.2	134	307	-
Vert.	20720.000	PK	45.16	40.12	14.51	47.21	-9.54	43.04	73.9	30.8	168	207	-
Vert.	5150.000	AV	41.10	31.88	16.88	42.99	2.46	49.33	53.9	4.5	120	247	VBW: 10 kHz
Vert.	15540.000	AV	44.60	39.28	13.78	40.55	-9.54	47.57	53.9	6.3	134	307	VBW: 10 kHz
Vert.	20720.000	AV	39.98	40.12	14.51	47.21	-9.54	37.86	53.9	16.0	168	207	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	6906.666	PK	51.51	35.67	8.48	43.19	2.46	54.93	-40.30	-27.0	13.3	118	12	-
Hori.	10360.000	PK	49.85	36.06	11.15	42.74	-9.54	44.78	-50.45	-27.0	23.4	150	0	-
Vert.	6906.666	PK	50.86	35.67	8.48	43.19	2.46	54.28	-40.95	-27.0	13.9	112	39	-
Vert.	10360.000	PK	49.22	36.06	11.15	42.74	-9.54	44.15	-51.08	-27.0	24.0	150	0	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance : 3 [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

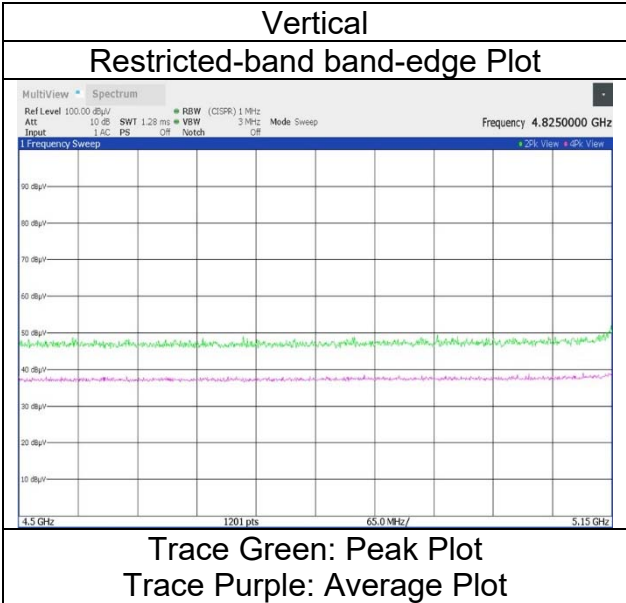
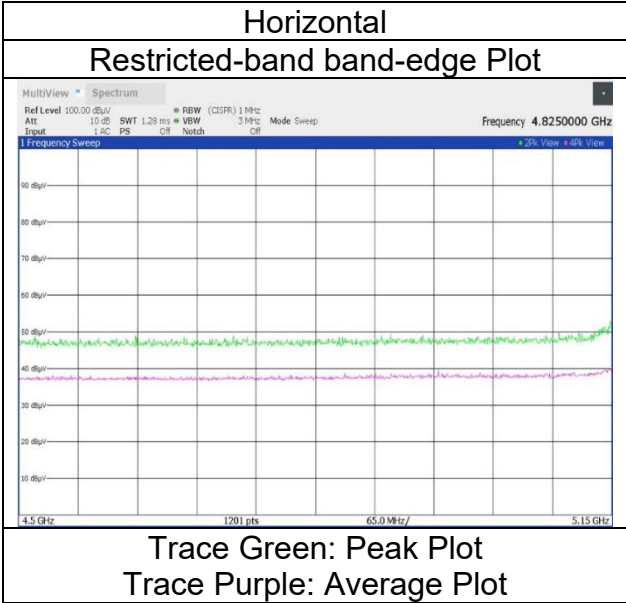
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5180 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 28, 2024
Temperature / Humidity 24 deg. C / 49 % RH
Engineer Yasumasa Owaki
Mode Tx 11n-20 5200 MHz

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5150.000	PK	52.65	31.88	16.88	42.99	2.46	60.88	73.9	13.0	115	6	-
Hori.	5150.000	AV	40.11	31.88	16.88	42.99	2.46	48.34	53.9	5.5	115	6	VBW: 10 kHz
Vert.	5150.000	PK	51.89	31.88	16.88	42.99	2.46	60.12	73.9	13.7	114	250	-
Vert.	5150.000	AV	40.04	31.88	16.88	42.99	2.46	48.27	53.9	5.6	114	250	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

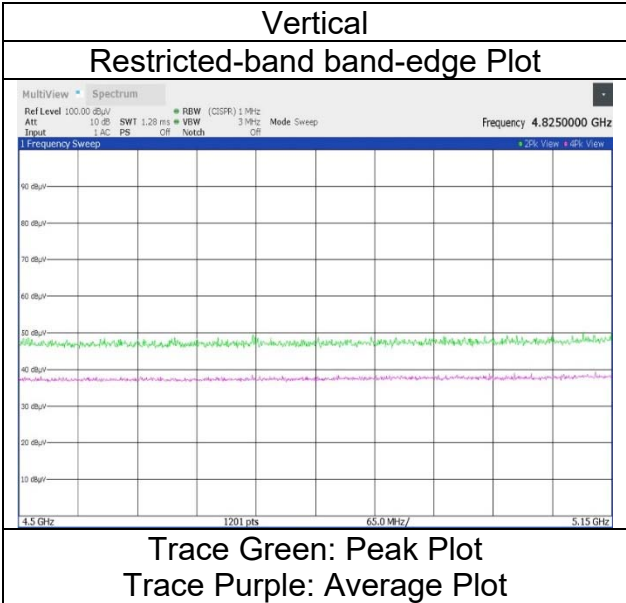
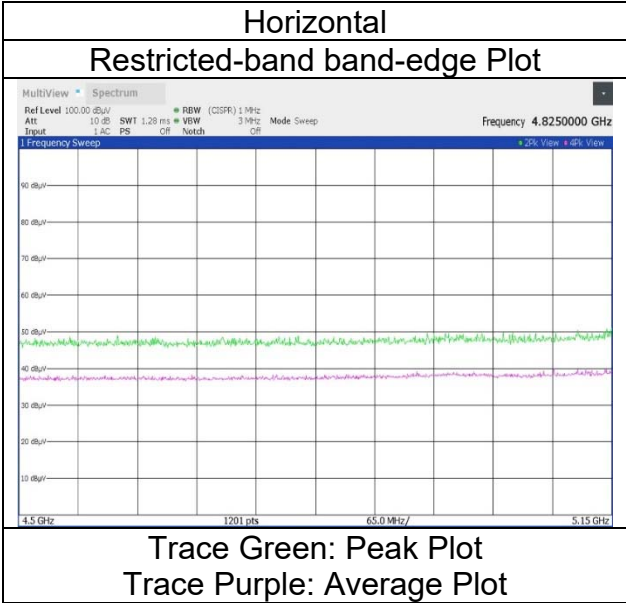
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5200 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5240 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	15720.000	PK	56.00	39.61	13.74	40.52	-9.54	59.29	73.9	14.6	140	304	-
Hori.	20960.000	PK	47.95	40.05	14.62	47.17	-9.54	45.91	73.9	27.9	155	129	-
Hori.	15720.000	AV	47.13	39.61	13.74	40.52	-9.54	50.42	53.9	3.4	140	304	VBW: 10 kHz
Hori.	20960.000	AV	43.74	40.05	14.62	47.17	-9.54	41.70	53.9	12.2	155	129	VBW: 10 kHz
Vert.	15720.000	PK	56.48	39.61	13.74	40.52	-9.54	59.77	73.9	14.1	138	307	-
Vert.	20960.000	PK	45.79	40.05	14.62	47.17	-9.54	43.75	73.9	30.1	168	203	-
Vert.	15720.000	AV	46.16	39.61	13.74	40.52	-9.54	49.45	53.9	4.4	138	307	VBW: 10 kHz
Vert.	20960.000	AV	41.50	40.05	14.62	47.17	-9.54	39.46	53.9	14.4	168	203	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	6986.666	PK	53.52	36.18	8.49	43.13	2.46	57.52	-37.71	-27.0	10.7	116	15	-
Hori.	10480.000	PK	48.78	36.19	11.20	42.73	-9.54	43.90	-51.33	-27.0	24.3	143	352	-
Vert.	6986.666	PK	51.47	36.18	8.49	43.13	2.46	55.47	-39.76	-27.0	12.7	102	38	-
Vert.	10480.000	PK	49.51	36.19	11.20	42.73	-9.54	44.63	-50.60	-27.0	23.6	123	228	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20)) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 28, 2024
Temperature / Humidity 24 deg. C / 49 % RH
Engineer Yasumasa Owaki
(1 GHz to 6.4 GHz)
Mode Tx 11n-20 5300 MHz

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5350.000	PK	52.96	31.60	17.02	43.21	2.46	60.83	73.9	13.0	109	28	-
Hori.	5350.000	AV	40.72	31.60	17.02	43.21	2.46	48.59	53.9	5.3	109	28	VBW: 10 kHz
Vert.	5350.000	PK	51.97	31.60	17.02	43.21	2.46	59.84	73.9	14.0	128	41	-
Vert.	5350.000	AV	39.82	31.60	17.02	43.21	2.46	47.69	53.9	6.2	128	41	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

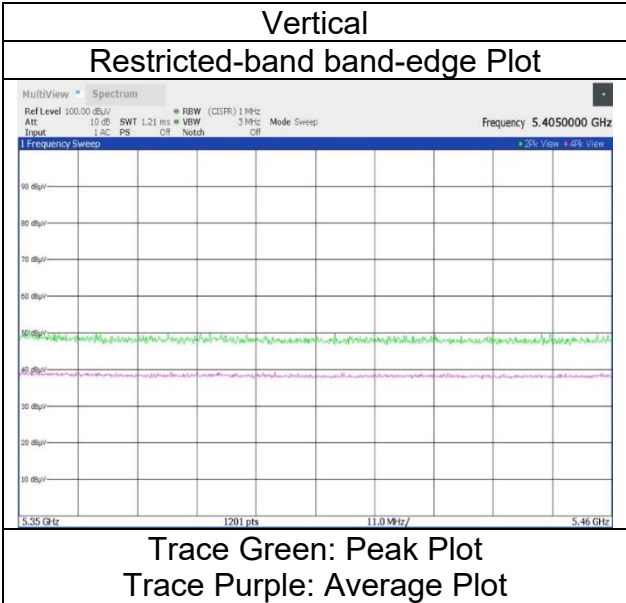
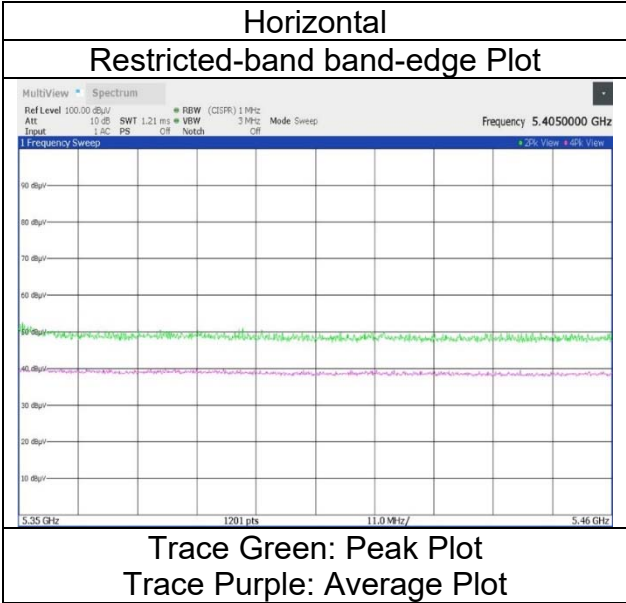
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5300 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5320 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5350.000	PK	54.17	31.60	17.02	43.21	2.46	62.04	73.9	11.8	148	14	-
Hori.	10640.000	PK	49.76	36.85	11.25	42.76	-9.54	45.56	73.9	28.3	134	9	-
Hori.	15960.000	PK	54.79	40.10	13.71	40.49	-9.54	58.57	73.9	15.3	138	304	-
Hori.	21280.000	PK	48.69	40.09	14.80	47.25	-9.54	46.79	73.9	27.1	168	130	-
Hori.	5350.000	AV	41.27	31.60	17.02	43.21	2.46	49.14	53.9	4.7	148	14	VBW: 10 kHz
Hori.	10640.000	AV	38.78	36.85	11.25	42.76	-9.54	34.58	53.9	19.3	134	9	VBW: 10 kHz
Hori.	15960.000	AV	45.41	40.10	13.71	40.49	-9.54	49.19	53.9	4.7	138	304	VBW: 10 kHz
Hori.	21280.000	AV	44.47	40.09	14.80	47.25	-9.54	42.57	53.9	11.3	168	130	VBW: 10 kHz
Vert.	5350.000	PK	53.33	31.60	17.02	43.21	2.46	61.20	73.9	12.7	133	304	-
Vert.	10640.000	PK	48.29	36.85	11.25	42.76	-9.54	44.09	73.9	29.8	119	228	-
Vert.	15960.000	PK	53.65	40.10	13.71	40.49	-9.54	57.43	73.9	16.4	140	302	-
Vert.	21280.000	PK	47.82	40.09	14.80	47.25	-9.54	45.92	73.9	27.9	168	204	-
Vert.	5350.000	AV	41.21	31.60	17.02	43.21	2.46	49.08	53.9	4.8	133	304	VBW: 10 kHz
Vert.	10640.000	AV	38.81	36.85	11.25	42.76	-9.54	34.61	53.9	19.2	119	228	VBW: 10 kHz
Vert.	15960.000	AV	44.37	40.10	13.71	40.49	-9.54	48.15	53.9	5.7	140	302	VBW: 10 kHz
Vert.	21280.000	AV	42.97	40.09	14.80	47.25	-9.54	41.07	53.9	12.8	168	204	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	7093.333	PK	50.46	36.69	8.56	43.19	2.46	54.98	-40.25	-27.0	13.2	100	12	-
Vert.	7093.333	PK	49.35	36.69	8.56	43.19	2.46	53.87	-41.36	-27.0	14.3	117	37	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

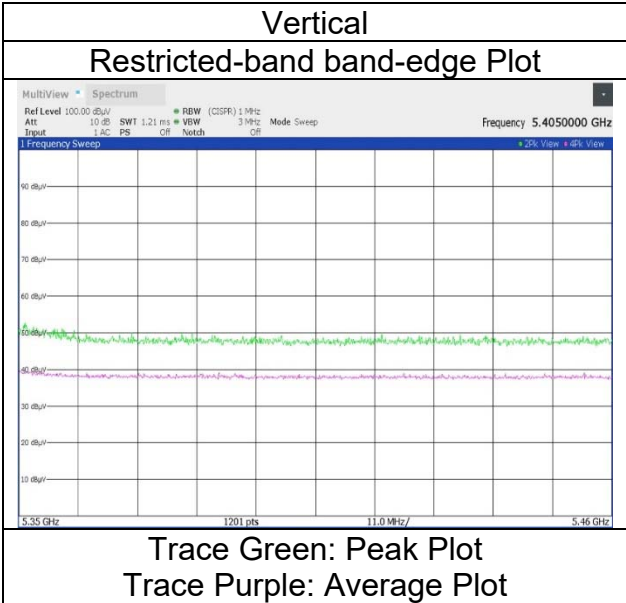
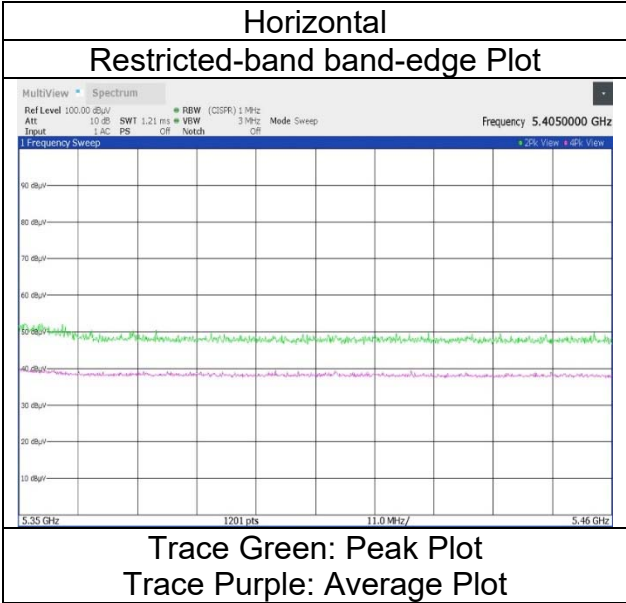
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5320 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5500 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5460.000	PK	52.67	31.87	17.09	43.34	2.46	60.75	73.9	13.1	136	30	-
Hori.	11000.000	PK	49.65	37.27	11.37	42.82	-9.54	45.93	73.9	27.9	150	0	-
Hori.	5460.000	AV	39.79	31.87	17.09	43.34	2.46	47.87	53.9	6.0	136	30	VBW: 10 kHz
Hori.	11000.000	AV	38.28	37.27	11.37	42.82	-9.54	34.56	53.9	19.3	150	0	VBW: 10 kHz
Vert.	5460.000	PK	51.09	31.87	17.09	43.34	2.46	59.17	73.9	14.7	110	28	-
Vert.	11000.000	PK	48.46	37.27	11.37	42.82	-9.54	44.74	73.9	29.1	150	0	-
Vert.	5460.000	AV	39.41	31.87	17.09	43.34	2.46	47.49	53.9	6.4	110	28	VBW: 10 kHz
Vert.	11000.000	AV	38.46	37.27	11.37	42.82	-9.54	34.74	53.9	19.1	150	0	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	52.92	31.89	17.10	43.35	2.46	61.02	-34.21	-27.0	7.2	136	30	-
Hori.	16500.000	PK	54.68	39.93	14.54	40.54	-9.54	59.07	-36.16	-27.0	9.1	137	305	-
Hori.	22000.000	PK	48.55	40.25	14.98	47.57	-9.54	46.67	-48.56	-27.0	21.5	176	311	-
Vert.	5470.000	PK	52.02	31.89	17.10	43.35	2.46	60.12	-35.11	-27.0	8.1	110	28	-
Vert.	16500.000	PK	53.66	39.93	14.54	40.54	-9.54	58.05	-37.18	-27.0	10.1	134	307	-
Vert.	22000.000	PK	47.45	40.25	14.98	47.57	-9.54	45.57	-49.66	-27.0	22.6	165	142	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place

Semi Anechoic Chamber

Date

Temperature / Humidity

Engineer

Mode

Shonan EMC Lab.

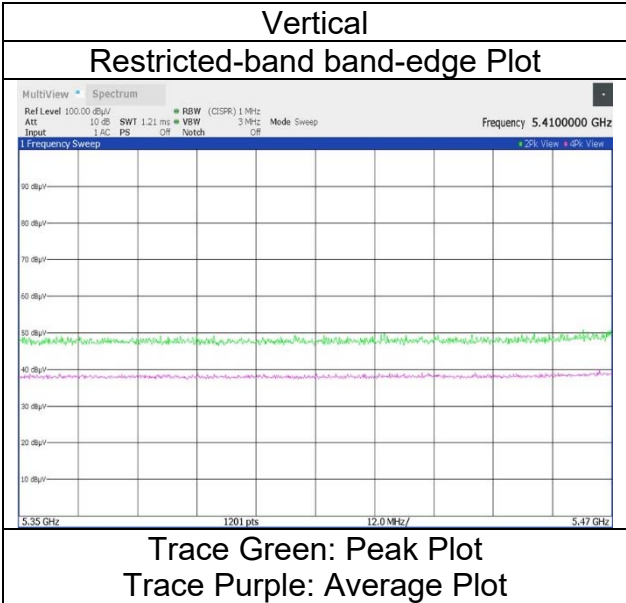
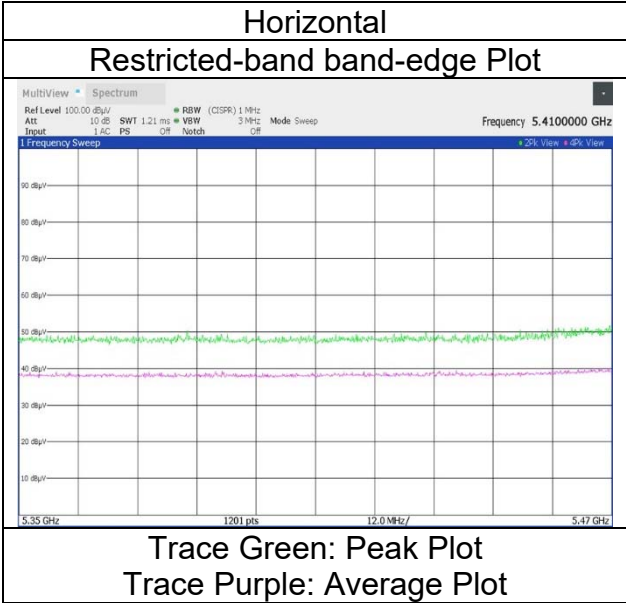
SAC 3

July 28, 2024

24 deg. C / 49 % RH

Yasumasa Owaki

Tx 11n-20 5500 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 28, 2024
Temperature / Humidity 24 deg. C / 49 % RH
Engineer Yasumasa Owaki
(1 GHz to 6.4 GHz)
Mode Tx 11n-20 5520 MHz

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5460.000	PK	52.09	31.87	17.09	43.34	2.46	60.17	73.9	13.7	106	30	-
Hori.	5460.000	AV	40.48	31.87	17.09	43.34	2.46	48.56	53.9	5.3	106	30	VBW: 10 kHz
Vert.	5460.000	PK	50.64	31.87	17.09	43.34	2.46	58.72	73.9	15.1	132	63	-
Vert.	5460.000	AV	39.09	31.87	17.09	43.34	2.46	47.17	53.9	6.7	132	63	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	52.66	31.89	17.10	43.35	2.46	60.76	-34.47	-27.0	7.4	106	30	-
Vert.	5470.000	PK	51.64	31.89	17.10	43.35	2.46	59.74	-35.49	-27.0	8.4	132	63	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG} ((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^2 / 30 * 10^{\wedge}3)$

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

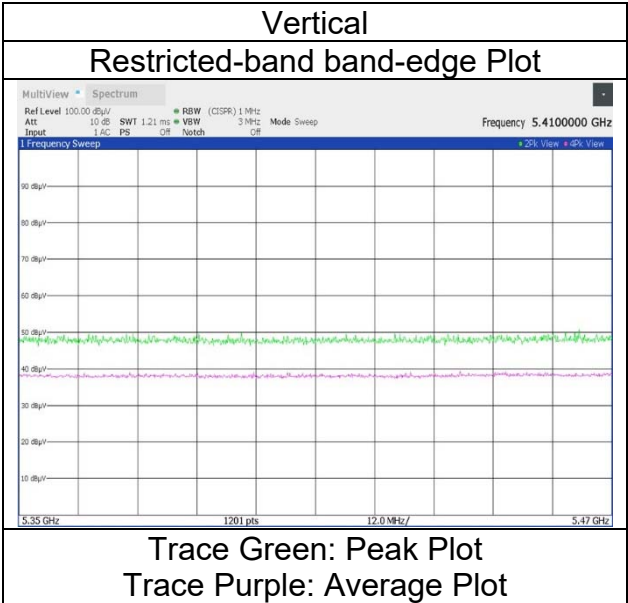
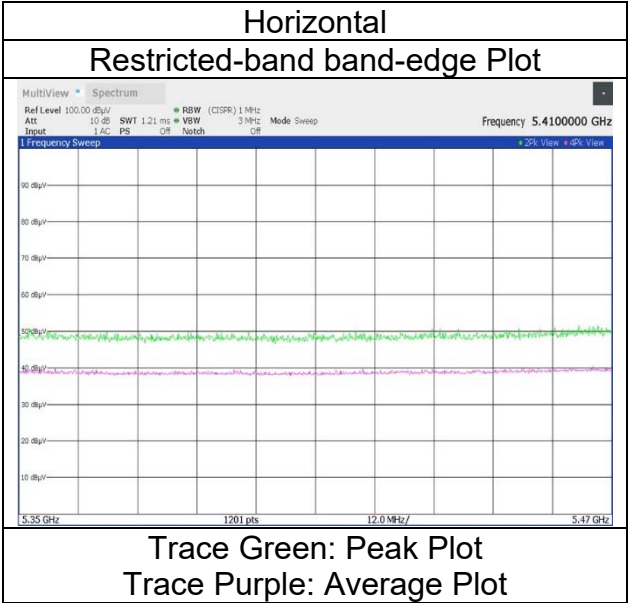
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5520 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5580 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11160.000	PK	55.70	37.29	11.48	42.70	-9.54	52.23	73.9	21.6	135	281	-
Hori.	22320.000	PK	48.25	40.28	15.09	47.55	-9.54	46.53	73.9	27.3	177	313	-
Hori.	11160.000	AV	45.11	37.29	11.48	42.70	-9.54	41.64	53.9	12.2	135	281	VBW : 10 kHz
Hori.	22320.000	AV	40.72	40.28	15.09	47.55	-9.54	39.00	53.9	14.9	177	313	VBW : 10 kHz
Vert.	11160.000	PK	51.36	37.29	11.48	42.70	-9.54	47.89	73.9	26.0	147	226	-
Vert.	22320.000	PK	46.44	40.28	15.09	47.55	-9.54	44.72	73.9	29.1	165	142	-
Vert.	11160.000	AV	41.50	37.29	11.48	42.70	-9.54	38.03	53.9	15.8	147	226	VBW : 10 kHz
Vert.	22320.000	AV	39.17	40.28	15.09	47.55	-9.54	37.45	53.9	16.4	165	142	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	16740.000	PK	58.72	39.54	14.63	40.40	-9.54	62.95	-32.28	-27.0	5.2	138	306	-
Vert.	16740.000	PK	56.25	39.54	14.63	40.40	-9.54	60.48	-34.75	-27.0	7.7	137	310	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 28, 2024
Temperature / Humidity 24 deg. C / 49 % RH
Engineer Yasumasa Owaki
 SAC 3
Mode Tx 11n-20 5680 MHz

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	55.74	32.38	17.26	43.37	2.46	64.47	-30.76	-27.0	3.7	113	5	-
Vert.	5725.000	PK	53.39	32.38	17.26	43.37	2.46	62.12	-33.11	-27.0	6.1	153	11	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

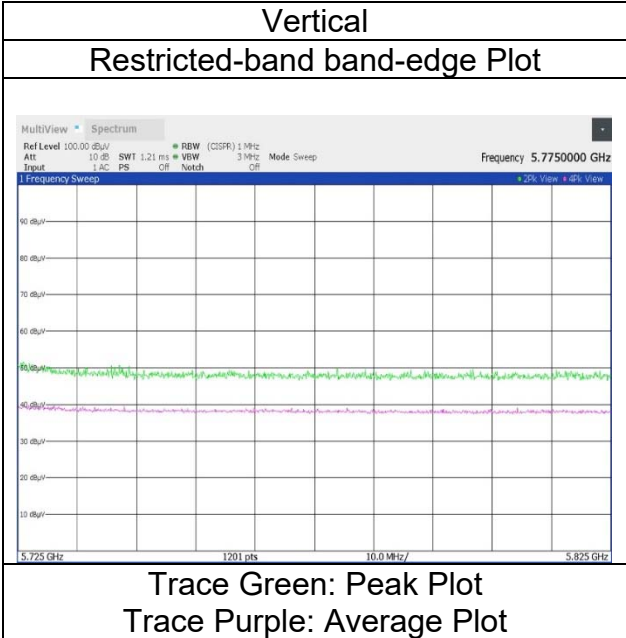
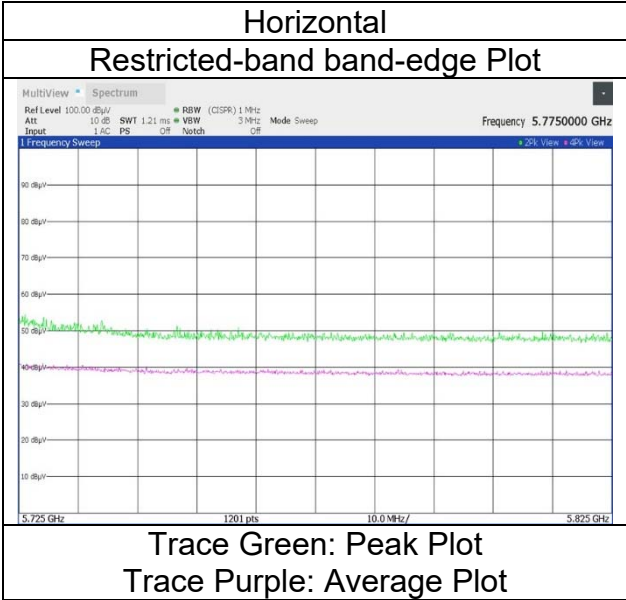
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5680 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5700 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11400.000	PK	55.24	37.73	11.64	42.52	-9.54	52.55	73.9	21.3	135	281	-
Hori.	22800.000	PK	43.96	40.20	15.26	47.37	-9.54	42.51	73.9	31.3	177	281	-
Hori.	11400.000	AV	43.91	37.73	11.64	42.52	-9.54	41.22	53.9	12.6	135	281	VBW: 10 kHz
Hori.	22800.000	AV	36.67	40.20	15.26	47.37	-9.54	35.22	53.9	18.6	177	281	VBW: 10 kHz
Vert.	11400.000	PK	50.03	37.73	11.64	42.52	-9.54	47.34	73.9	26.5	126	5	-
Vert.	22800.000	PK	44.29	40.20	15.26	47.37	-9.54	42.84	73.9	31.0	174	358	-
Vert.	11400.000	AV	40.11	37.73	11.64	42.52	-9.54	37.42	53.9	16.4	126	5	VBW: 10 kHz
Vert.	22800.000	AV	35.64	40.20	15.26	47.37	-9.54	34.19	53.9	19.7	174	358	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	55.10	32.38	17.26	43.37	2.46	63.83	-31.40	-27.0	4.3	107	353	-
Hori.	17100.000	PK	57.00	39.72	14.75	40.21	-9.54	61.72	-33.51	-27.0	6.5	135	309	-
Vert.	5725.000	PK	54.05	32.38	17.26	43.37	2.46	62.78	-32.45	-27.0	5.4	151	12	-
Vert.	17100.000	PK	53.32	39.72	14.75	40.21	-9.54	58.04	-37.19	-27.0	10.1	140	306	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

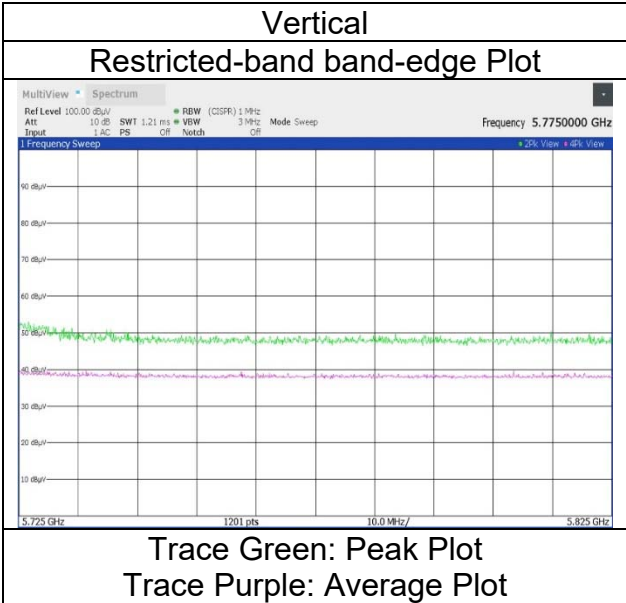
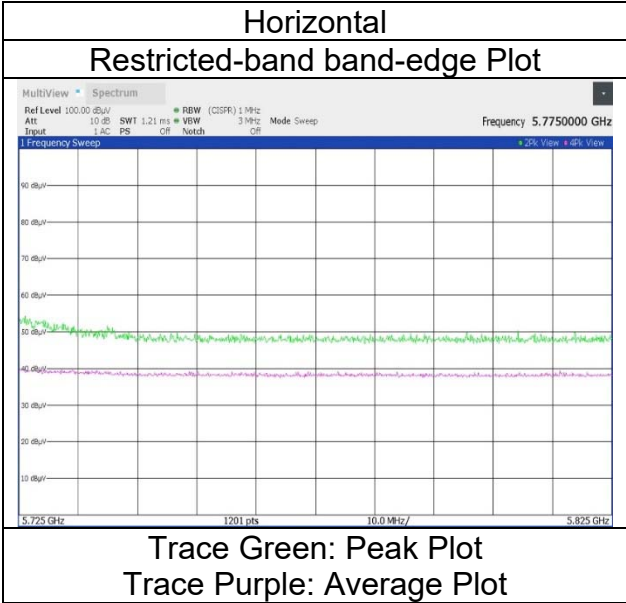
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5700 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 12, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	25 deg. C / 53 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Kouki Yamada	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5745 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11490.000	PK	54.50	37.82	11.79	42.45	-9.54	52.12	73.9	21.7	151	160	-
Hori.	22980.000	PK	43.88	40.16	15.33	47.27	-9.54	42.56	73.9	31.3	141	210	-
Hori.	11490.000	AV	42.76	37.82	11.79	42.45	-9.54	40.38	53.9	13.5	151	160	VBW: 10 kHz
Hori.	22980.000	AV	36.24	40.16	15.33	47.27	-9.54	34.92	53.9	18.9	141	210	VBW: 10 kHz
Vert.	11490.000	PK	53.52	37.82	11.79	42.45	-9.54	51.14	73.9	22.7	150	215	-
Vert.	22980.000	PK	43.16	40.16	15.33	47.27	-9.54	41.84	73.9	32.0	170	2	-
Vert.	11490.000	AV	41.65	37.82	11.79	42.45	-9.54	39.27	53.9	14.6	150	215	VBW: 10 kHz
Vert.	22980.000	AV	34.08	40.16	15.33	47.27	-9.54	32.76	53.9	21.1	170	2	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	50.24	32.13	17.21	43.37	2.46	58.67	-36.56	-27.0	9.5	105	338	-
Hori.	5700.000	PK	51.91	32.30	17.24	43.37	2.46	60.54	-34.69	10.0	44.6	105	338	-
Hori.	5720.000	PK	58.47	32.36	17.25	43.37	2.46	67.17	-28.06	15.6	43.6	105	338	-
Hori.	5725.000	PK	61.71	32.38	17.26	43.37	2.46	70.44	-24.79	27.0	51.7	105	338	-
Hori.	17235.000	PK	58.96	39.95	14.76	40.15	-9.54	63.98	-31.25	-27.0	4.2	137	270	-
Vert.	5650.000	PK	49.56	32.13	17.21	43.37	2.46	57.99	-37.24	-27.0	10.2	146	13	-
Vert.	5700.000	PK	50.11	32.30	17.24	43.37	2.46	58.74	-36.49	10.0	46.4	146	13	-
Vert.	5720.000	PK	57.01	32.36	17.25	43.37	2.46	65.71	-29.52	15.6	45.1	146	13	-
Vert.	5725.000	PK	59.90	32.38	17.26	43.37	2.46	68.63	-26.60	27.0	53.6	146	13	-
Vert.	17235.000	PK	59.87	39.95	14.76	40.15	-9.54	64.89	-30.34	-27.0	3.3	135	48	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]}^{\wedge}2 / 30 * 10^{\wedge}3)$

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

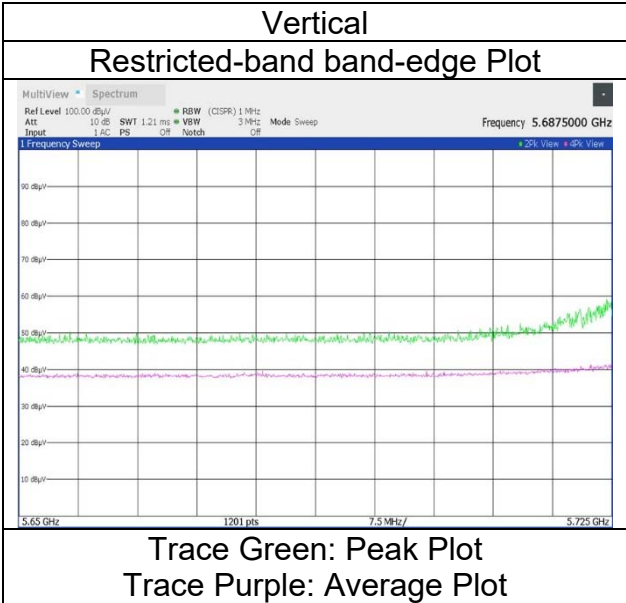
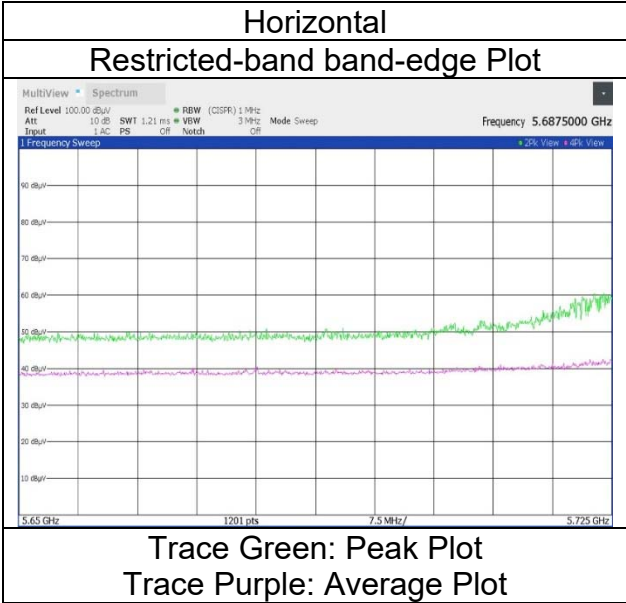
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5745 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 12, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	25 deg. C / 53 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Kouki Yamada	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5785 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11570.000	PK	54.50	37.91	11.84	42.41	-9.54	52.30	73.9	21.6	151	163	-
Hori.	11570.000	AV	43.17	37.91	11.84	42.41	-9.54	40.97	53.9	12.9	151	163	VBW : 10 kHz
Vert.	11570.000	PK	53.25	37.91	11.84	42.41	-9.54	51.05	73.9	22.8	140	224	-
Vert.	11570.000	AV	41.48	37.91	11.84	42.41	-9.54	39.28	53.9	14.6	140	224	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	17355.000	PK	59.38	40.15	14.84	40.10	-9.54	64.73	-30.50	-27.0	3.4	130	272	-
Hori.	23140.000	PK	43.72	40.13	15.40	47.13	-9.54	42.58	-52.65	-27.0	25.6	148	206	-
Vert.	17355.000	PK	59.95	40.15	14.84	40.10	-9.54	65.30	-29.93	-27.0	2.9	137	50	-
Vert.	23140.000	PK	42.84	40.13	15.40	47.13	-9.54	41.70	-53.53	-27.0	26.5	112	145	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance} : 3[\text{m}])^{\wedge}2 / 30 * 10^{\wedge}3)$

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 28, 2024	July 12, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	24 deg. C / 49 % RH	25 deg. C / 53 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yasumasa Owaki	Kouki Yamada	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-20 5825 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11650.000	PK	54.54	37.96	11.89	42.37	-9.54	52.48	73.9	21.4	152	163	-
Hori.	11650.000	AV	43.19	37.96	11.89	42.37	-9.54	41.13	53.9	12.7	152	163	VBW: 10 kHz
Vert.	11650.000	PK	52.55	37.96	11.89	42.37	-9.54	50.49	73.9	23.4	151	221	-
Vert.	11650.000	AV	41.33	37.96	11.89	42.37	-9.54	39.27	53.9	14.6	151	221	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5850.000	PK	57.67	32.76	17.34	43.37	2.46	66.86	-28.37	27.0	55.3	150	352	-
Hori.	5855.000	PK	54.43	32.77	17.34	43.37	2.46	63.63	-31.60	15.6	47.2	150	352	-
Hori.	5875.000	PK	50.69	32.81	17.36	43.37	2.46	59.95	-35.28	10.0	45.2	150	352	-
Hori.	5925.000	PK	50.18	32.92	17.39	43.36	2.46	59.59	-35.64	-27.0	8.6	150	352	-
Hori.	17475.000	PK	59.94	40.33	14.92	40.05	-9.54	65.60	-29.63	-27.0	2.6	130	271	-
Hori.	23300.000	PK	43.40	40.14	15.48	46.97	-9.54	42.51	-52.72	-27.0	25.7	151	110	-
Vert.	5850.000	PK	55.87	32.76	17.34	43.37	2.46	65.06	-30.17	27.0	57.1	116	10	-
Vert.	5855.000	PK	53.22	32.77	17.34	43.37	2.46	62.42	-32.81	15.6	48.4	116	10	-
Vert.	5875.000	PK	50.79	32.81	17.36	43.37	2.46	60.05	-35.18	10.0	45.1	116	10	-
Vert.	5925.000	PK	50.63	32.92	17.39	43.36	2.46	60.04	-35.19	-27.0	8.1	116	10	-
Vert.	17475.000	PK	60.95	40.33	14.92	40.05	-9.54	66.61	-28.62	-27.0	1.6	137	46	-
Vert.	23300.000	PK	41.92	40.14	15.48	46.97	-9.54	41.03	-54.20	-27.0	27.2	162	132	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

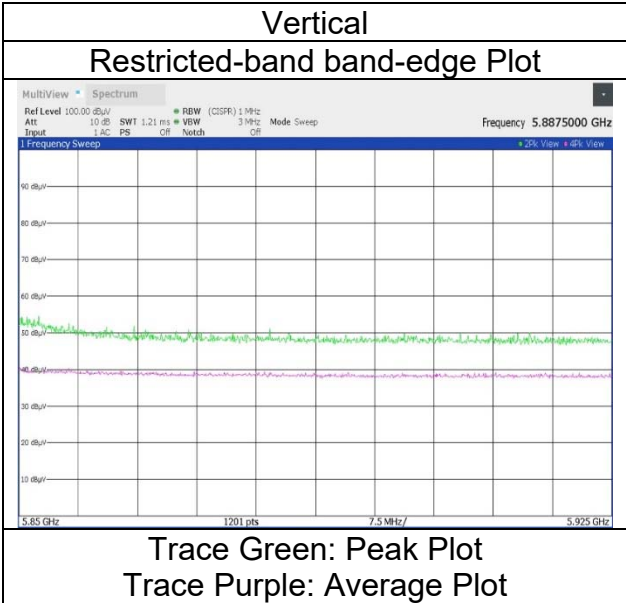
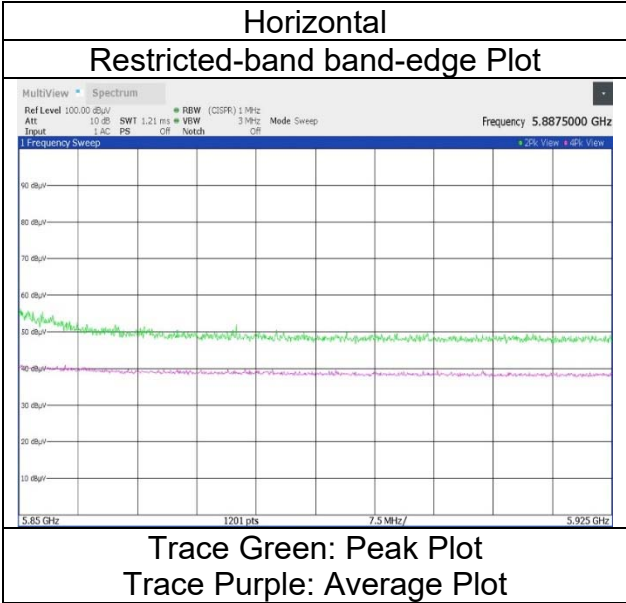
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 28, 2024
24 deg. C / 49 % RH
Yasumasa Owaki
Tx 11n-20 5825 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.	
Semi Anechoic Chamber	SAC 3	SAC 3
Date	July 30, 2024	July 31, 2024
Temperature / Humidity	26 deg. C / 39 % RH	26 deg. C / 40 % RH
Engineer	Yusuke Tanikawara	Yuta Shiba
	(1 GHz to 10 GHz)	(10 GHz to 40 GHz)
Mode	Tx 11n-40 5190 MHz	

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5150.000	PK	55.55	31.88	16.88	42.99	2.46	63.78	73.9	10.1	151	15	-
Hori.	15570.000	PK	49.87	39.31	13.77	40.54	-9.54	52.87	73.9	21.0	165	245	-
Hori.	20760.000	PK	45.94	40.11	14.33	47.20	-9.54	43.64	73.9	30.2	151	173	-
Hori.	5150.000	AV	44.25	31.88	16.88	42.99	2.46	52.48	53.9	1.4	151	15	VBW: 10 kHz
Hori.	15570.000	AV	37.70	39.31	13.77	40.54	-9.54	40.70	53.9	13.2	165	245	VBW: 10 kHz
Hori.	20760.000	AV	40.67	40.11	14.33	47.20	-9.54	38.37	53.9	15.5	151	173	VBW: 10 kHz
Vert.	5150.000	PK	53.74	31.88	16.88	42.99	2.46	61.97	73.9	11.9	117	252	-
Vert.	15570.000	PK	50.48	39.31	13.77	40.54	-9.54	53.48	73.9	20.4	136	313	-
Vert.	20760.000	PK	45.37	40.11	14.33	47.20	-9.54	43.07	73.9	30.8	176	217	-
Vert.	5150.000	AV	42.54	31.88	16.88	42.99	2.46	50.77	53.9	3.1	117	252	VBW: 10 kHz
Vert.	15570.000	AV	40.84	39.31	13.77	40.54	-9.54	43.84	53.9	10.0	136	313	VBW: 10 kHz
Vert.	20760.000	AV	39.26	40.11	14.33	47.20	-9.54	36.96	53.9	16.9	176	217	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	6920.000	PK	49.79	35.76	8.49	43.18	2.46	53.32	-41.91	-27.0	14.9	131	6	-
Hori.	10380.000	PK	48.81	36.07	11.16	42.74	-9.54	43.76	-51.47	-27.0	24.4	100	0	-
Vert.	6920.000	PK	49.85	35.76	8.49	43.18	2.46	53.38	-41.85	-27.0	14.8	131	356	-
Vert.	10380.000	PK	43.39	36.07	11.16	42.74	-9.54	38.34	-56.89	-27.0	29.8	150	0	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance : 3 [m]}))^{\wedge}2 / 30 * 10^{\wedge}3)$

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

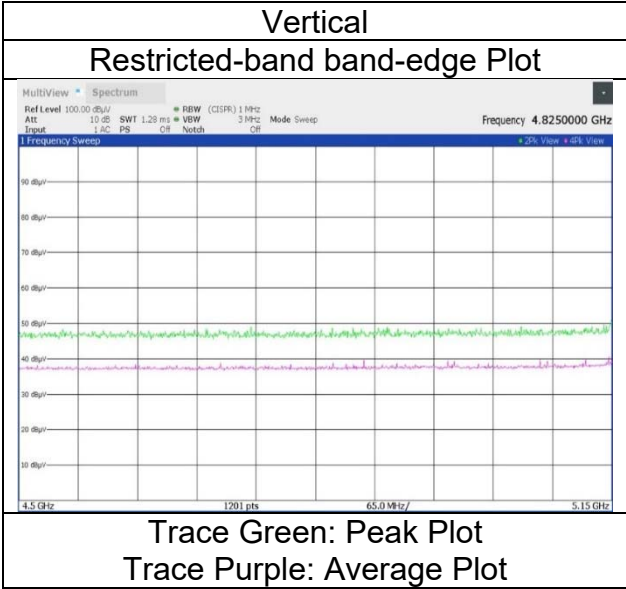
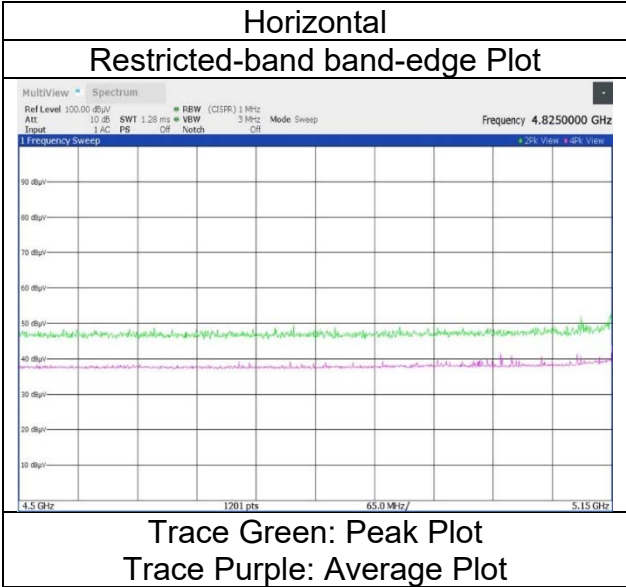
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5190 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.	
Semi Anechoic Chamber	SAC 3	SAC 3
Date	July 30, 2024	July 31, 2024
Temperature / Humidity	26 deg. C / 39 % RH	26 deg. C / 40 % RH
Engineer	Yusuke Tanikawara	Yuta Shiba
	(1 GHz to 10 GHz)	(10 GHz to 40 GHz)
Mode	Tx 11n-40 5230 MHz	

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5150.000	PK	52.33	31.88	16.88	42.99	2.46	60.56	73.9	13.3	147	20	-
Hori.	15690.000	PK	50.76	39.48	13.75	40.53	-9.54	53.92	73.9	19.9	138	288	-
Hori.	20920.000	PK	46.57	40.07	14.41	47.17	-9.54	44.34	73.9	29.5	152	172	-
Hori.	5150.000	AV	42.50	31.88	16.88	42.99	2.46	50.73	53.9	3.1	147	20	VBW: 10 kHz
Hori.	15690.000	AV	41.08	39.48	13.75	40.53	-9.54	44.24	53.9	9.6	138	288	VBW: 10 kHz
Hori.	20920.000	AV	40.89	40.07	14.41	47.17	-9.54	38.66	53.9	15.2	152	172	VBW: 10 kHz
Vert.	5150.000	PK	50.82	31.88	16.88	42.99	2.46	59.05	73.9	14.8	165	247	-
Vert.	15690.000	PK	53.25	39.48	13.75	40.53	-9.54	56.41	73.9	17.4	138	312	-
Vert.	20920.000	PK	44.92	40.07	14.41	47.17	-9.54	42.69	73.9	31.2	100	0	-
Vert.	5150.000	AV	40.54	31.88	16.88	42.99	2.46	48.77	53.9	5.1	165	247	VBW: 10 kHz
Vert.	15690.000	AV	43.73	39.48	13.75	40.53	-9.54	46.89	53.9	7.0	138	312	VBW: 10 kHz
Vert.	20920.000	AV	38.96	40.07	14.41	47.17	-9.54	36.73	53.9	17.1	100	0	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	6973.333	PK	51.55	36.10	8.49	43.14	2.46	55.46	-39.77	-27.0	12.7	130	5	-
Hori.	10460.000	PK	49.39	36.15	11.20	42.73	-9.54	44.47	-50.76	-27.0	23.7	150	0	-
Vert.	6973.333	PK	50.53	36.10	8.49	43.14	2.46	54.44	-40.79	-27.0	13.7	107	40	-
Vert.	10460.000	PK	49.00	36.15	11.20	42.73	-9.54	44.08	-51.15	-27.0	24.1	150	0	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance : } 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

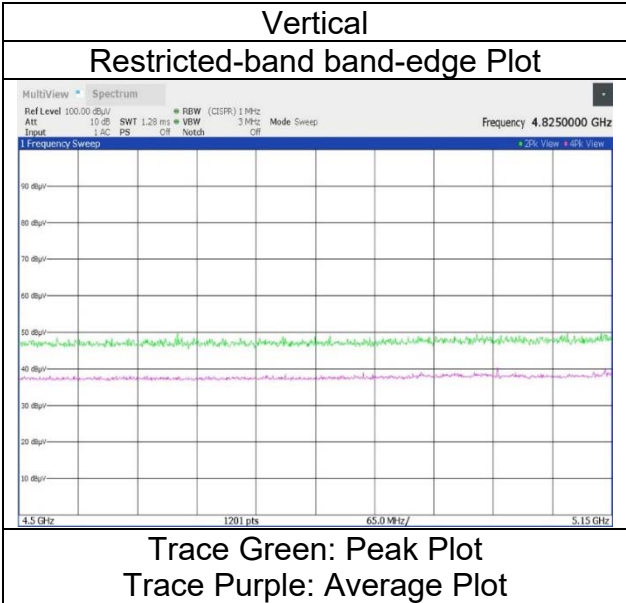
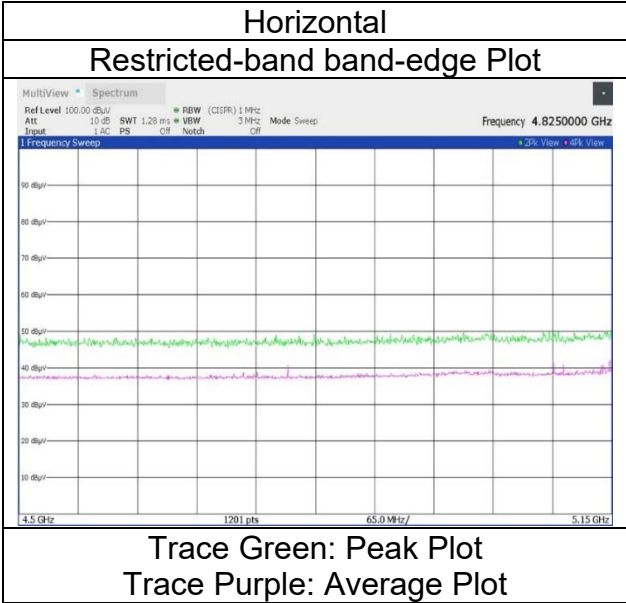
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5230 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 30, 2024
Temperature / Humidity 26 deg. C / 39 % RH
Engineer Yusuke Tanikawara
(1 GHz to 6.4 GHz)
Mode Tx 11n-40 5270 MHz

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5350.000	PK	53.71	31.60	17.02	43.21	2.46	61.58	73.9	12.3	111	22	-
Hori.	5354.690	PK	54.76	31.61	17.03	43.22	2.46	62.64	73.9	11.2	111	22	-
Hori.	5350.000	AV	42.54	31.60	17.02	43.21	2.46	50.41	53.9	3.4	111	22	VBW: 10 kHz
Hori.	5354.690	AV	42.75	31.61	17.03	43.22	2.46	50.63	53.9	3.2	111	22	VBW: 10 kHz, *1)
Vert.	5350.000	PK	51.97	31.60	17.02	43.21	2.46	59.84	73.9	14.0	131	43	-
Vert.	5354.717	PK	53.94	31.61	17.03	43.22	2.46	61.82	73.9	12.0	131	43	-
Vert.	5350.000	AV	41.11	31.60	17.02	43.21	2.46	48.98	53.9	4.9	131	43	VBW: 10 kHz
Vert.	5354.717	AV	41.68	31.61	17.03	43.22	2.46	49.56	53.9	4.3	131	43	VBW: 10 kHz, *1)

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

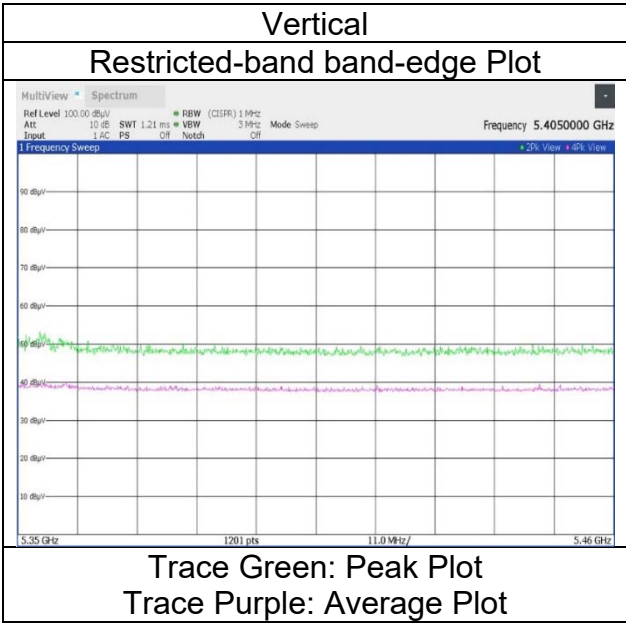
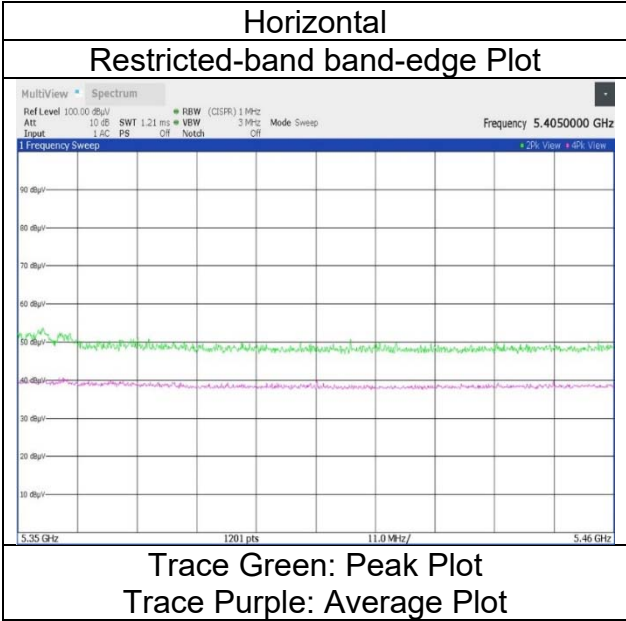
10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

*1) Not out of band emission (Leakage Power)

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5270 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 30, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	26 deg. C / 39 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yusuke Tanikawara	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-40 5310 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5350.000	PK	56.57	31.60	17.02	43.21	2.46	64.44	73.9	9.4	156	6	-
Hori.	5358.327	PK	56.66	31.62	17.03	43.22	2.46	64.55	73.9	9.3	156	6	-
Hori.	5367.463	PK	54.64	31.65	17.04	43.23	2.46	62.56	73.9	11.3	156	6	-
Hori.	5371.570	PK	55.31	31.66	17.04	43.24	2.46	63.23	73.9	10.6	156	6	-
Hori.	10620.000	PK	49.00	36.75	11.25	42.75	-9.54	44.71	73.9	29.1	150	0	-
Hori.	15930.000	PK	52.23	40.04	13.72	40.50	-9.54	55.95	73.9	17.9	142	304	-
Hori.	21240.000	PK	48.51	40.08	14.78	47.24	-9.54	46.59	73.9	27.3	138	128	-
Hori.	5350.000	AV	42.56	31.60	17.02	43.21	2.46	50.43	53.9	3.4	156	6	VBW: 10 kHz
Hori.	5358.327	AV	41.91	31.62	17.03	43.22	2.46	49.80	53.9	4.1	156	6	VBW: 10 kHz, *1)
Hori.	5367.463	AV	41.87	31.65	17.04	43.23	2.46	49.79	53.9	4.1	156	6	VBW: 10 kHz, *1)
Hori.	5371.570	AV	41.32	31.66	17.04	43.24	2.46	49.24	53.9	4.6	156	6	VBW: 10 kHz, *1)
Hori.	10620.000	AV	37.85	36.75	11.25	42.75	-9.54	33.56	53.9	20.3	150	0	VBW: 10 kHz
Hori.	15930.000	AV	42.70	40.04	13.72	40.50	-9.54	46.42	53.9	7.4	142	304	VBW: 10 kHz
Hori.	21240.000	AV	44.99	40.08	14.78	47.24	-9.54	43.07	53.9	10.8	138	128	VBW: 10 kHz
Vert.	5350.000	PK	53.45	31.60	17.02	43.21	2.46	61.32	73.9	12.5	102	7	-
Vert.	5358.235	PK	54.23	31.62	17.03	43.22	2.46	62.12	73.9	11.7	102	7	-
Vert.	5365.616	PK	53.86	31.65	17.03	43.23	2.46	61.77	73.9	12.1	102	7	-
Vert.	10620.000	PK	49.03	36.75	11.25	42.75	-9.54	44.74	73.9	29.1	150	0	-
Vert.	15930.000	PK	51.15	40.04	13.72	40.50	-9.54	54.87	73.9	19.0	143	307	-
Vert.	21240.000	PK	47.14	40.08	14.78	47.24	-9.54	45.22	73.9	28.6	170	207	-
Vert.	5350.000	AV	40.47	31.60	17.02	43.21	2.46	48.34	53.9	5.5	102	7	VBW: 10 kHz
Vert.	5358.235	AV	40.21	31.62	17.03	43.22	2.46	48.10	53.9	5.8	102	7	VBW: 10 kHz, *1)
Vert.	5365.616	AV	39.75	31.65	17.03	43.23	2.46	47.66	53.9	6.2	102	7	VBW: 10 kHz, *1)
Vert.	10620.000	AV	38.11	36.75	11.25	42.75	-9.54	33.82	53.9	20.0	150	0	VBW: 10 kHz
Vert.	15930.000	AV	42.44	40.04	13.72	40.50	-9.54	46.16	53.9	7.7	143	307	VBW: 10 kHz
Vert.	21240.000	AV	42.61	40.08	14.78	47.24	-9.54	40.69	53.9	13.2	170	207	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

*1) Not out of band emission (Leakage Power)

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	7080.000	PK	49.45	36.64	8.55	43.18	2.46	53.92	-41.31	-27.0	14.3	132	11	-
Vert.	7080.000	PK	49.06	36.64	8.55	43.18	2.46	53.53	-41.70	-27.0	14.7	110	33	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \log((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance : 3 [m]}^2 / 30 * 10^{\wedge}(-3))$

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

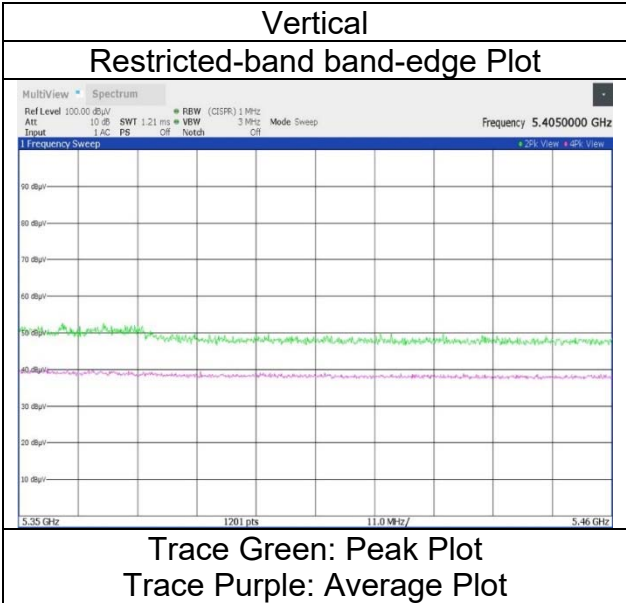
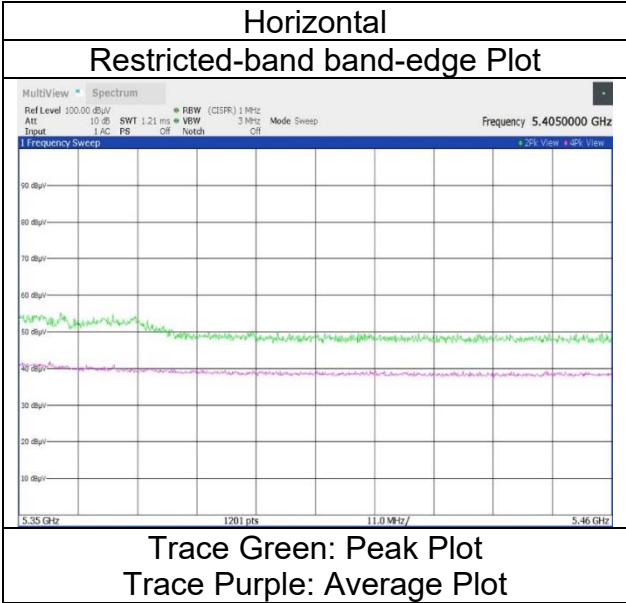
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5310 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 30, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	26 deg. C / 39 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yusuke Tanikawara	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-40 5510 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	5460.000	PK	52.93	31.87	17.09	43.34	2.46	61.01	73.9	12.8	106	9	-
Hori.	11020.000	PK	49.01	37.24	11.38	42.80	-9.54	45.29	73.9	28.6	142	277	-
Hori.	22040.000	PK	48.96	40.24	14.99	47.57	-9.54	47.08	73.9	26.8	180	308	-
Hori.	5460.000	AV	41.21	31.87	17.09	43.34	2.46	49.29	53.9	4.6	106	9	VBW: 10 kHz
Hori.	11020.000	AV	38.37	37.24	11.38	42.80	-9.54	34.65	53.9	19.2	142	277	VBW: 10 kHz
Hori.	22040.000	AV	42.87	40.24	14.99	47.57	-9.54	40.99	53.9	12.9	180	308	VBW: 10 kHz
Vert.	5460.000	PK	50.53	31.87	17.09	43.34	2.46	58.61	73.9	15.2	161	61	-
Vert.	11020.000	PK	49.59	37.24	11.03	42.80	-9.54	45.52	73.9	28.3	133	220	-
Vert.	22040.000	PK	46.82	40.24	14.99	47.57	-9.54	44.94	73.9	28.9	165	141	-
Vert.	5460.000	AV	39.65	31.87	17.09	43.34	2.46	47.73	53.9	6.1	161	61	VBW: 10 kHz
Vert.	11020.000	AV	39.27	37.24	11.03	42.80	-9.54	35.20	53.9	18.7	133	220	VBW: 10 kHz
Vert.	22040.000	AV	39.22	40.24	14.99	47.57	-9.54	37.34	53.9	16.5	165	141	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	56.36	31.89	17.10	43.35	2.46	64.46	-30.77	-27.0	3.7	106	9	-
Hori.	16530.000	PK	51.54	39.88	14.55	40.52	-9.54	55.91	-39.32	-27.0	12.3	139	304	-
Vert.	5470.000	PK	53.00	31.89	17.10	43.35	2.46	61.10	-34.13	-27.0	7.1	161	61	-
Vert.	16530.000	PK	50.67	39.88	13.86	40.52	-9.54	54.35	-40.88	-27.0	13.8	134	307	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6) * \text{Distance : 3 [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

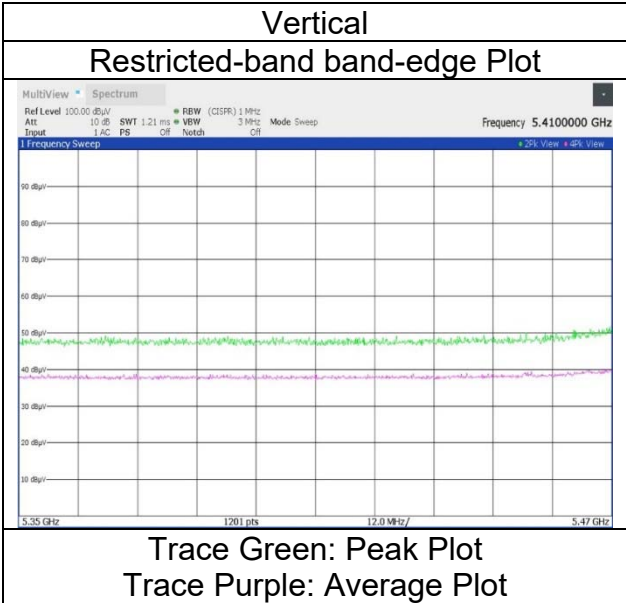
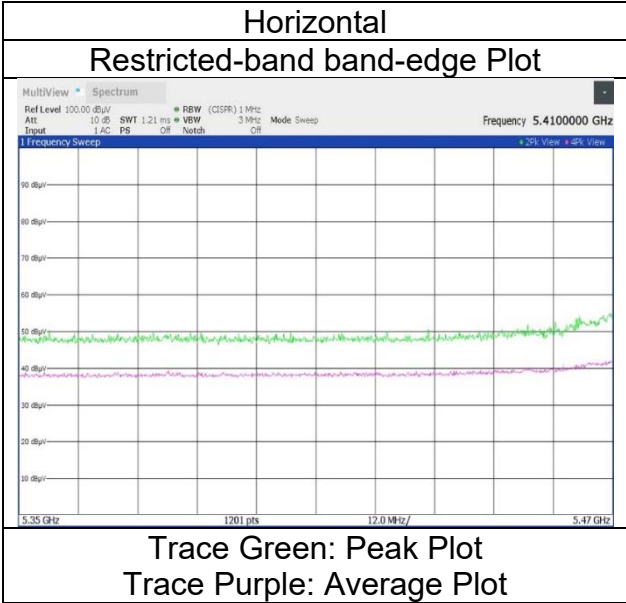
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5510 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	SAC 1	SAC 3	SAC 3
Date	July 30, 2024	July 30, 2024	July 24, 2024
Temperature / Humidity	24 deg. C / 51 % RH	26 deg. C / 39 % RH	20 deg. C / 50 % RH
Engineer	Yosuke Murakami (Below 30 MHz) (30 MHz to 1000 MHz)	Yusuke Tanikawara (1 GHz to 10 GHz)	Yuta Shiba (10 GHz to 18 GHz)
	SAC 3 July 25, 2024 22 deg C / 39 % RH Yuta Shiba (18 GHz to 26.5 GHz)	SAC 3 July 25, 2024 22 deg C / 39 % RH Yuta Shiba (26.5 GHz to 40 GHz)	

Mode Tx 11n-40 5550 MHz

(below 1 GHz and above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	168.840	QP	39.10	15.66	8.99	31.80	0.00	31.95	43.5	11.5	266	122	-
Hori.	5460.000	PK	51.63	31.87	17.09	43.34	2.46	59.71	73.9	14.1	124	7	-
Hori.	11100.000	PK	51.62	37.23	11.45	42.74	-9.54	48.02	73.9	25.8	144	281	-
Hori.	22200.000	PK	48.48	40.29	15.04	47.56	-9.54	46.71	73.9	27.1	179	307	-
Hori.	5460.000	AV	40.04	31.87	17.09	43.34	2.46	48.12	53.9	5.7	124	7	VBW: 10 kHz
Hori.	11100.000	AV	43.29	37.23	11.45	42.74	-9.54	39.69	53.9	14.2	144	281	VBW: 10 kHz
Hori.	22200.000	AV	42.59	40.29	15.04	47.56	-9.54	40.82	53.9	13.0	179	307	VBW: 10 kHz
Vert.	41.813	QP	35.30	14.14	7.32	31.84	0.00	24.92	40.0	15.0	100	88	-
Vert.	46.688	QP	40.30	12.35	7.43	31.84	0.00	28.24	40.0	11.7	100	87	-
Vert.	60.378	QP	42.60	8.08	7.27	31.84	0.00	26.11	40.0	13.8	100	359	-
Vert.	72.466	QP	46.50	6.30	7.77	31.83	0.00	28.74	40.0	11.2	100	28	-
Vert.	84.469	QP	46.70	7.10	8.43	31.83	0.00	30.40	40.0	9.6	100	158	-
Vert.	98.185	QP	42.40	9.92	8.29	31.82	0.00	28.79	43.5	14.7	100	27	-
Vert.	113.973	QP	40.50	12.44	8.17	31.81	0.00	29.30	43.5	14.2	100	173	-
Vert.	167.999	QP	41.30	15.66	9.00	31.80	0.00	34.16	43.5	9.3	100	1	-
Vert.	179.272	QP	37.40	16.11	8.99	31.80	0.00	30.70	43.5	12.8	100	163	-
Vert.	5460.000	PK	50.69	31.87	17.09	43.34	2.46	58.77	73.9	15.1	124	313	-
Vert.	11100.000	PK	51.10	37.23	11.09	42.74	-9.54	47.14	73.9	26.7	119	222	-
Vert.	22200.000	PK	47.07	40.29	15.04	47.56	-9.54	45.30	73.9	28.6	164	138	-
Vert.	5460.000	AV	39.21	31.87	17.09	43.34	2.46	47.29	53.9	6.6	124	313	VBW: 10 kHz
Vert.	11100.000	AV	41.94	37.23	11.09	42.74	-9.54	37.98	53.9	15.9	119	222	VBW: 10 kHz
Vert.	22200.000	AV	39.53	40.29	15.04	47.56	-9.54	37.76	53.9	16.1	164	138	VBW: 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5470.000	PK	53.65	31.89	17.10	43.35	2.46	61.75	-33.48	-27.0	6.4	124	7	-
Hori.	16650.000	PK	54.48	39.66	14.60	40.45	-9.54	58.75	-36.48	-27.0	9.4	140	305	-
Vert.	5470.000	PK	51.67	31.89	17.10	43.35	2.46	59.77	-35.46	-27.0	8.4	124	313	-
Vert.	16650.000	PK	52.71	39.66	13.91	40.45	-9.54	56.29	-38.94	-27.0	11.9	136	307	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 4)

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

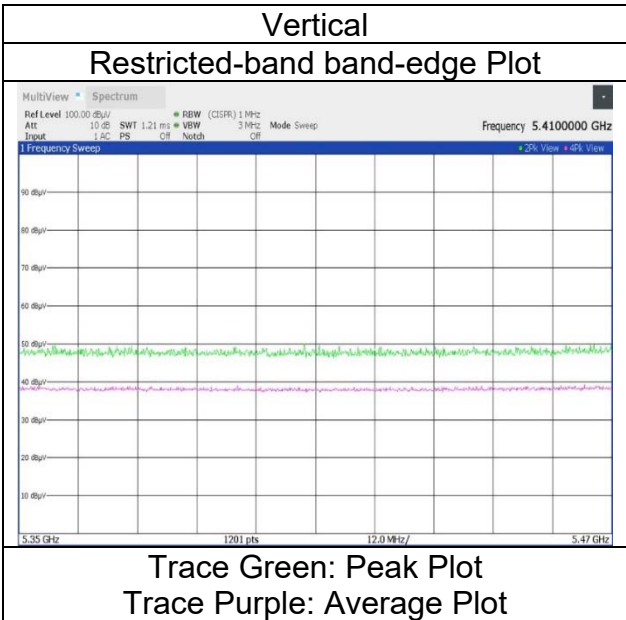
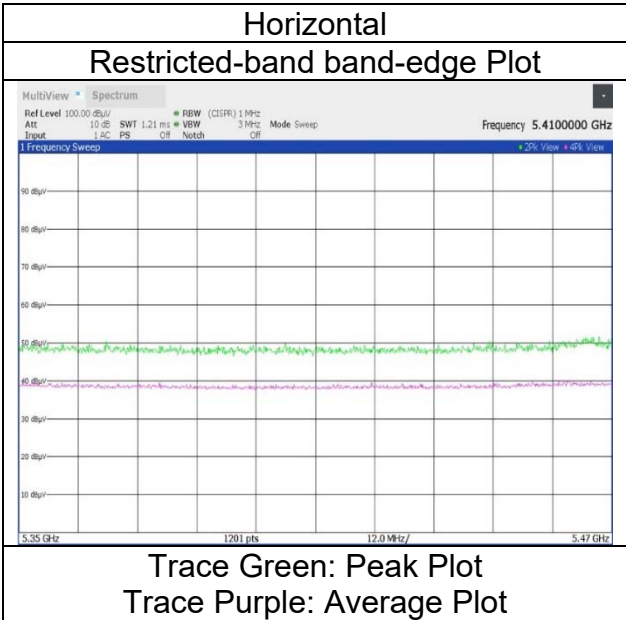
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5550 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place Shonan EMC Lab.
Semi Anechoic Chamber SAC 3
Date July 30, 2024
Temperature / Humidity 26 deg. C / 39 % RH
Engineer Yusuke Tanikawara
(1 GHz to 6.4 GHz)
Mode Tx 11n-40 5630 MHz

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)														
Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP) [dBm]	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	52.66	32.38	17.26	43.37	2.46	61.39	-33.84	-27.0	6.8	111	20	-
Vert.	5725.000	PK	51.33	32.38	17.26	43.37	2.46	60.06	-35.17	-27.0	8.1	168	62	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

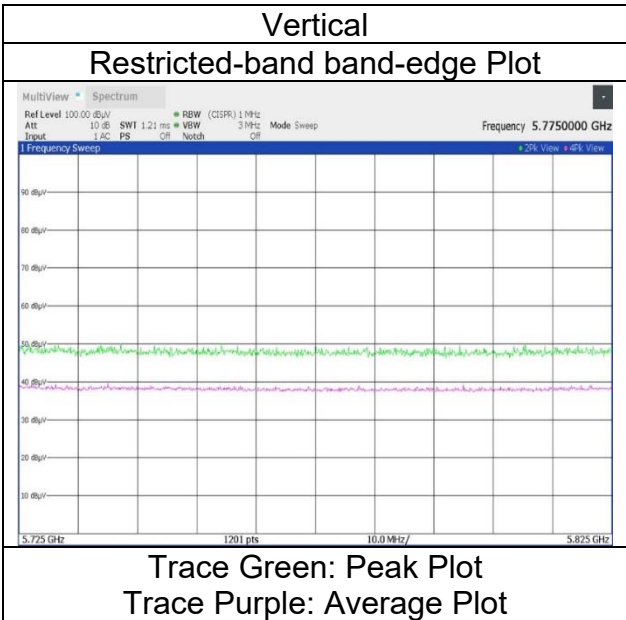
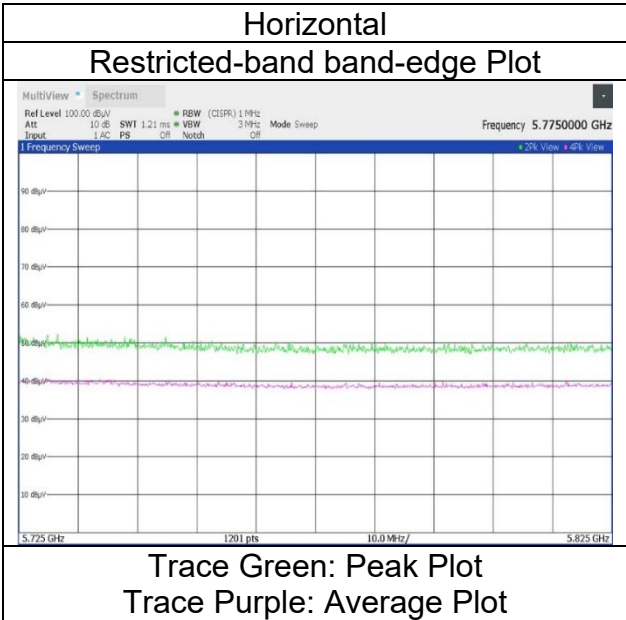
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5630 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 30, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	26 deg. C / 39 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yusuke Tanikawara	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-40 5670 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11340.000	PK	51.44	37.59	11.61	42.56	-9.54	48.54	73.9	25.3	141	283	-
Hori.	22680.000	PK	45.31	40.21	15.22	47.44	-9.54	43.76	73.9	30.1	153	206	-
Hori.	11340.000	AV	43.97	37.59	11.61	42.56	-9.54	41.07	53.9	12.8	141	283	VBW : 10 kHz
Hori.	22680.000	AV	37.80	40.21	15.22	47.44	-9.54	36.25	53.9	17.6	153	206	VBW : 10 kHz
Vert.	11340.000	PK	49.86	37.59	11.24	42.56	-9.54	46.59	73.9	27.3	113	215	-
Vert.	22680.000	PK	44.06	40.21	15.22	47.44	-9.54	42.51	73.9	31.3	163	194	-
Vert.	11340.000	AV	40.85	37.59	11.24	42.56	-9.54	37.58	53.9	16.3	113	215	VBW : 10 kHz
Vert.	22680.000	AV	36.09	40.21	15.22	47.44	-9.54	34.54	53.9	19.3	163	194	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5725.000	PK	54.75	32.38	17.26	43.37	2.46	63.48	-31.75	-27.0	4.7	103	3	-
Hori.	5729.588	PK	55.34	32.39	17.26	43.37	2.46	64.08	-31.15	-27.0	4.1	103	3	-
Hori.	17010.000	PK	53.33	39.65	14.71	40.25	-9.54	57.90	-37.33	-27.0	10.3	142	308	-
Vert.	5725.000	PK	53.08	32.38	17.26	43.37	2.46	61.81	-33.42	-27.0	6.4	152	59	-
Vert.	5729.232	PK	53.42	32.39	17.26	43.37	2.46	62.16	-33.07	-27.0	6.0	152	59	-
Vert.	17010.000	PK	51.82	39.65	14.03	40.25	-9.54	55.71	-39.52	-27.0	12.5	136	307	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20)) * 10^{\wedge}(-6)) * \text{Distance} : 3\text{ [m]})^{\wedge}2 / 30 * 10^{\wedge}3)$

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

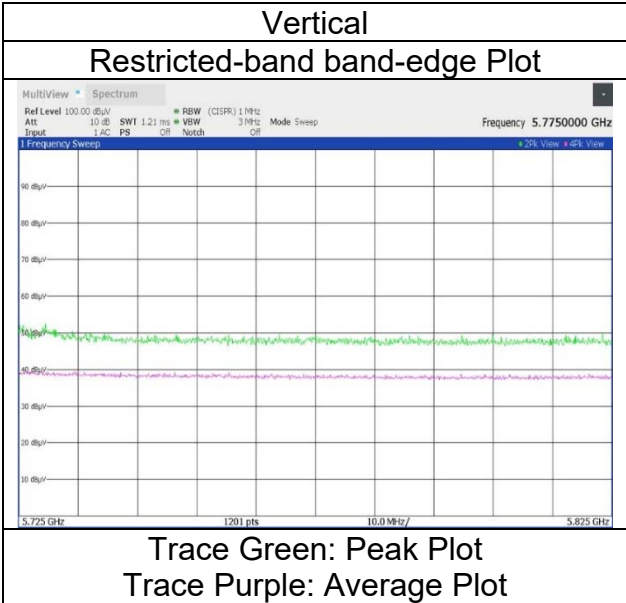
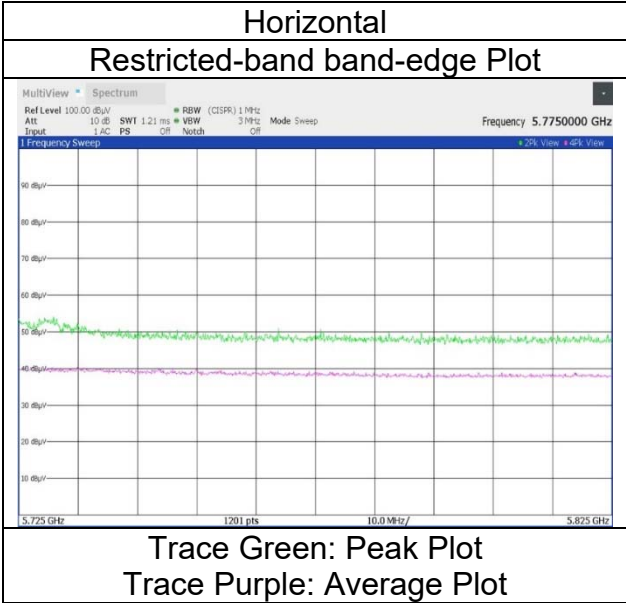
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 39 % RH
Yusuke Tanikawara
Tx 11n-40 5670 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 30, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	26 deg. C / 40 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yuta Shiba	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-40 5755 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11510.000	PK	55.28	37.85	11.72	42.44	-9.54	52.87	73.9	21.0	137	284	-
Hori.	23020.000	PK	43.70	40.15	15.35	47.24	-9.54	42.42	73.9	31.4	153	207	-
Hori.	11510.000	AV	47.14	37.85	11.72	42.44	-9.54	44.73	53.9	9.1	137	284	VBW : 10 kHz
Hori.	23020.000	AV	36.60	40.15	15.35	47.24	-9.54	35.32	53.9	18.5	153	207	VBW : 10 kHz
Vert.	11510.000	PK	50.02	37.85	11.34	42.44	-9.54	47.23	73.9	26.6	140	216	-
Vert.	23020.000	PK	42.81	40.15	15.35	47.24	-9.54	41.53	73.9	32.3	158	158	-
Vert.	11510.000	AV	40.96	37.85	11.34	42.44	-9.54	38.17	53.9	15.7	140	216	VBW : 10 kHz
Vert.	23020.000	AV	34.83	40.15	15.35	47.24	-9.54	33.55	53.9	20.3	158	158	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5650.000	PK	50.41	32.13	17.21	43.37	2.46	58.84	-36.39	-27.0	9.3	102	14	-
Hori.	5700.000	PK	52.46	32.30	17.24	43.37	2.46	61.09	-34.14	10.0	44.1	102	14	-
Hori.	5715.000	PK	58.57	32.35	17.25	43.37	2.46	67.26	-27.97	14.2	42.1	102	14	-
Hori.	5719.348	PK	60.17	32.36	17.25	43.37	2.46	68.87	-26.36	15.5	41.8	102	14	-
Hori.	5720.000	PK	59.58	32.36	17.25	43.37	2.46	68.28	-26.95	15.6	42.5	102	14	-
Hori.	5725.000	PK	61.86	32.38	17.26	43.37	2.46	70.59	-24.64	27.0	51.6	102	14	-
Hori.	17265.000	PK	55.60	40.02	14.80	40.14	-9.54	60.74	-34.49	-27.0	7.4	141	307	-
Vert.	5650.000	PK	50.50	32.13	17.21	43.37	2.46	58.93	-36.30	-27.0	9.3	110	1	-
Vert.	5700.000	PK	51.76	32.30	17.24	43.37	2.46	60.39	-34.84	10.0	44.8	110	1	-
Vert.	5715.000	PK	57.04	32.35	17.25	43.37	2.46	65.73	-29.50	14.2	43.6	110	1	-
Vert.	5719.362	PK	56.45	32.36	17.25	43.37	2.46	65.15	-30.08	15.5	45.5	110	1	-
Vert.	5720.000	PK	58.08	32.36	17.25	43.37	2.46	66.78	-28.45	15.6	44.0	110	1	-
Vert.	5725.000	PK	58.30	32.38	17.26	43.37	2.46	67.03	-28.20	27.0	55.2	110	1	-
Vert.	17265.000	PK	52.01	40.02	14.18	40.14	-9.54	56.53	-38.70	-27.0	11.7	138	307	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = 10 * LOG ((10 ^ (Electric Field Strength [dBuV/m] / 20)) * 10 ^ (-6) * Distance : 3 [m]) ^ 2 / 30 * 10 ^ 3)

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

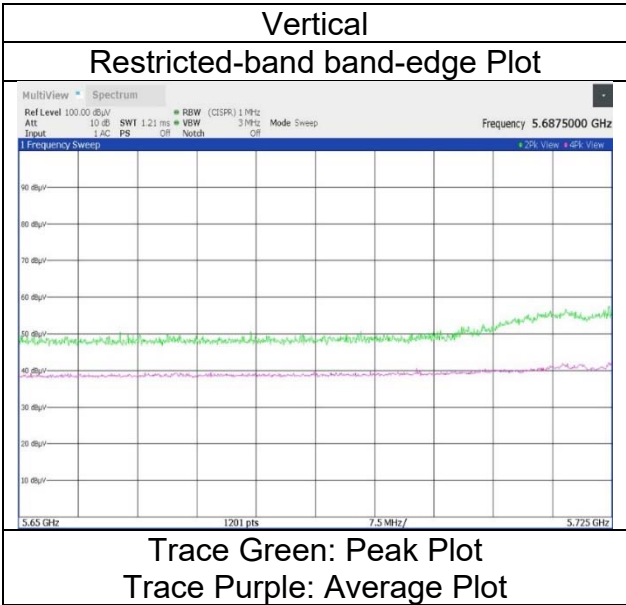
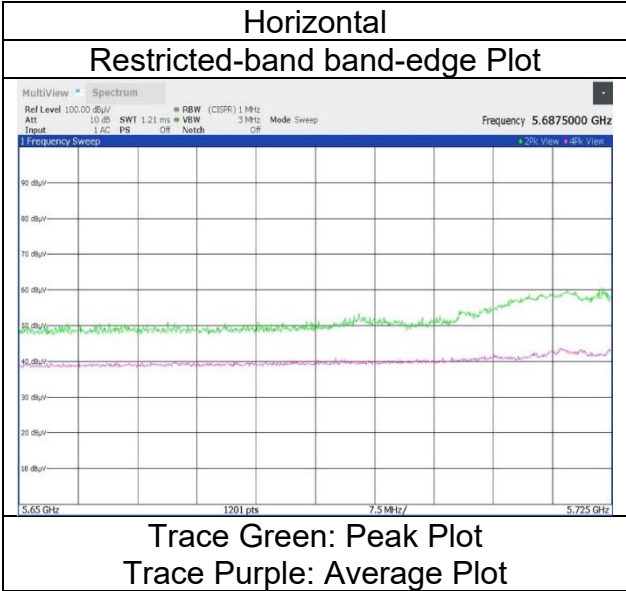
Distance factor : 1 GHz - 10 GHz : 20log (3.98 m / 3.0 m) = 2.46 dB

10 GHz - 40 GHz : 20log (1.0 m / 3.0 m) = -9.54 dB

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 40 % RH
Yuta Shiba
Tx 11n-40 5755 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission

Test place	Shonan EMC Lab.			
Semi Anechoic Chamber	SAC 3	SAC 3	SAC 3	SAC 3
Date	July 30, 2024	July 24, 2024	July 25, 2024	July 25, 2024
Temperature / Humidity	26 deg. C / 40 % RH	20 deg. C / 50 % RH	22 deg. C / 39 % RH	25 deg. C / 41 % RH
Engineer	Yuta Shiba	Yuta Shiba	Yuta Shiba	Yosuke Murakami
	(1 GHz to 10 GHz)	(10 GHz to 18 GHz)	(18 GHz to 26.5 GHz)	(26.5 GHz to 40 GHz)
Mode	Tx 11n-40 5795 MHz			

(above 1 GHz Inside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

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.	11590.000	PK	53.43	37.91	11.79	42.40	-9.54	51.19	73.9	22.7	141	284	-
Hori.	11590.000	AV	45.82	37.91	11.79	42.40	-9.54	43.58	53.9	10.3	141	284	VBW : 10 kHz
Vert.	11590.000	PK	50.33	37.91	11.40	42.40	-9.54	47.70	73.9	26.2	122	135	-
Vert.	11590.000	AV	40.12	37.91	11.40	42.40	-9.54	37.49	53.9	16.4	122	135	VBW : 10 kHz

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

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

Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

(Calculation) (above 1 GHz Outside of the restricted band)

(* PK: Peak, AV: Average, QP: Quasi-Peak)

Polarity	Frequency [MHz]	Detector	Reading [dBuV]	Ant.Fac. [dB/m]	Loss [dB]	Gain [dB]	Distance Factor [dB]	Result [dBuV/m]	Result (EIRP [dBm])	Limit [dBm]	Margin [dB]	Height [cm]	Angle [deg.]	Remark
Hori.	5850.000	PK	54.88	32.76	17.34	43.37	2.46	64.07	-31.16	27.0	58.1	120	7	-
Hori.	5855.000	PK	55.31	32.77	17.34	43.37	2.46	64.51	-30.72	15.6	46.3	120	7	-
Hori.	5860.000	PK	53.10	32.78	17.35	43.37	2.46	62.32	-32.91	14.2	47.1	120	7	-
Hori.	5875.000	PK	50.46	32.81	17.36	43.37	2.46	59.72	-35.51	10.0	45.5	120	7	-
Hori.	5925.000	PK	49.49	32.92	17.39	43.36	2.46	58.90	-36.33	-27.0	9.3	120	7	-
Hori.	17385.000	PK	56.09	40.22	14.85	40.09	-9.54	61.53	-33.70	-27.0	6.7	140	307	-
Hori.	23180.000	PK	44.17	40.13	15.42	47.09	-9.54	43.09	-52.14	-27.0	25.1	128	204	-
Vert.	5850.000	PK	53.44	32.76	17.34	43.37	2.46	62.63	-32.60	27.0	59.6	153	352	-
Vert.	5855.000	PK	53.95	32.77	17.34	43.37	2.46	63.15	-32.08	15.6	47.6	153	352	-
Vert.	5860.000	PK	51.84	32.78	17.35	43.37	2.46	61.06	-34.17	14.2	48.3	153	352	-
Vert.	5875.000	PK	50.56	32.81	17.36	43.37	2.46	59.82	-35.41	10.0	45.4	153	352	-
Vert.	5925.000	PK	49.02	32.92	17.39	43.36	2.46	58.43	-36.80	-27.0	9.8	153	352	-
Vert.	17385.000	PK	52.85	40.22	14.25	40.09	-9.54	57.69	-37.54	-27.0	10.5	137	304	-
Vert.	23180.000	PK	42.13	40.13	15.42	47.09	-9.54	41.05	-54.18	-27.0	27.1	131	11	-

Result [dBuV/m] = Reading + Ant.Fac. + Loss (Cable+(Attenuator or Filter)(below 18 GHz)) - Gain(Amplifier) + Distance factor

Result (EIRP [dBm]) = $10 * \text{LOG}((10^{\wedge}(\text{Electric Field Strength [dBuV/m]} / 20) * 10^{\wedge}(-6)) * \text{Distance} : 3 [\text{m}])^{\wedge}2 / 30 * 10^{\wedge}3)$

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

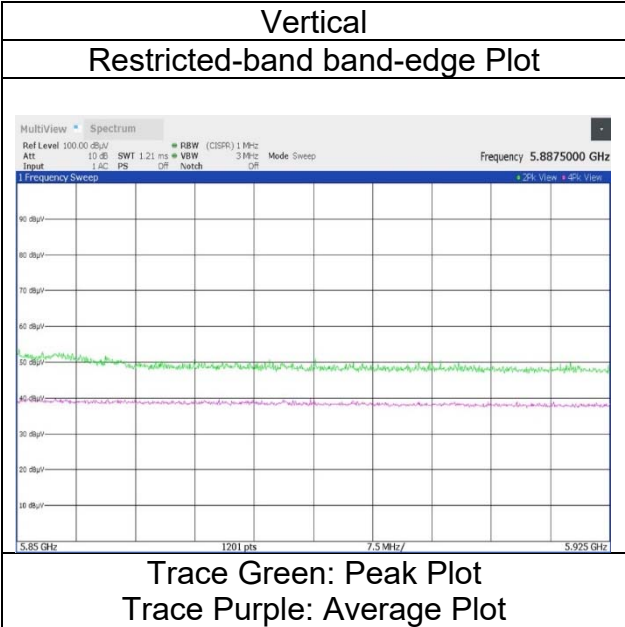
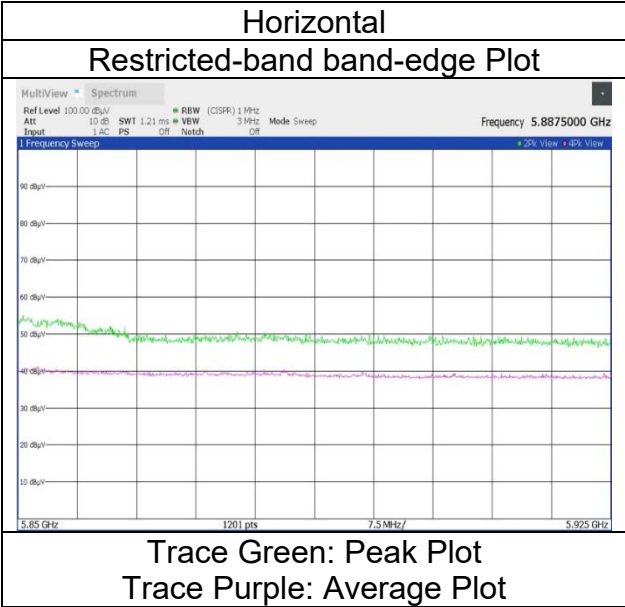
Distance factor : 1 GHz - 10 GHz : $20\log(3.98\text{ m} / 3.0\text{ m}) = 2.46\text{ dB}$

10 GHz - 40 GHz : $20\log(1.0\text{ m} / 3.0\text{ m}) = -9.54\text{ dB}$

Radiated Spurious Emission

Test place
Semi Anechoic Chamber
Date
Temperature / Humidity
Engineer
Mode

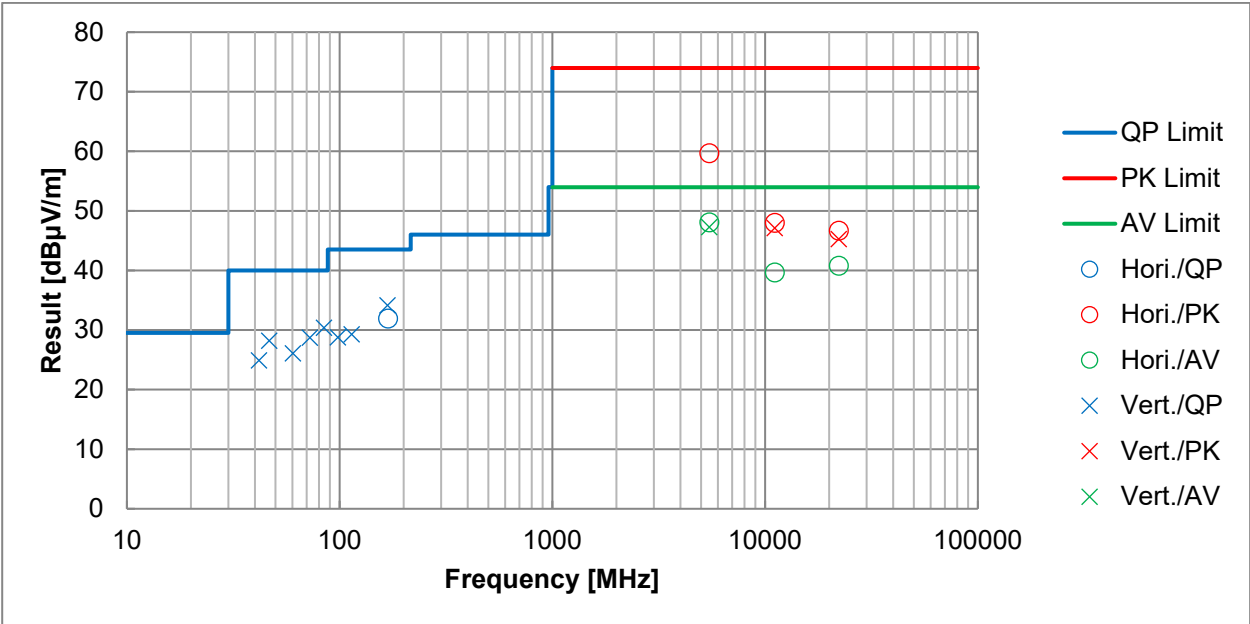
Shonan EMC Lab.
SAC 3
July 30, 2024
26 deg. C / 40 % RH
Yuta Shiba
Tx 11n-40 5795 MHz



* The measurement was conducted for a sufficiently long enough time to detect any possible spurious emissions.
Final result of restricted band edge was shown in tabular data.

Radiated Spurious Emission
(Plot data, Worst case mode for Maximum Conducted Output Power)

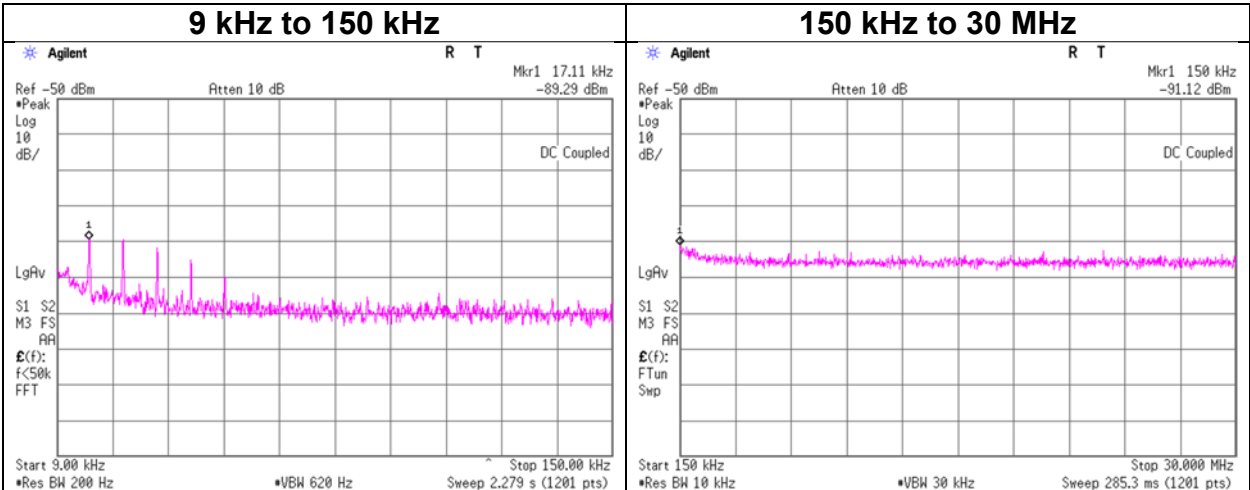
Test place	Shonan EMC Lab.		
Semi Anechoic Chamber	SAC 1	SAC 3	SAC 3
Date	July 30, 2024	July 30, 2024	July 24, 2024
Temperature / Humidity	24 deg. C / 51 % RH	26 deg. C / 39 % RH	20 deg. C / 50 % RH
Engineer	Yosuke Murakami (Below 30 MHz) (30 MHz to 1000 MHz)	Yusuke Tanikawara (1 GHz to 10 GHz)	Yuta Shiba (10 GHz to 18 GHz)
	SAC 3 July 25, 2024 22 deg C / 39 % RH Yuta Shiba (18 GHz to 26.5 GHz)	SAC 3 July 25, 2024 22 deg C / 39 % RH Yuta Shiba (26.5 GHz to 40 GHz)	
Mode	Tx 11n-40 5550 MHz		



*These plots data contains sufficient number to show the trend of characteristic features for EUT.

Conducted Spurious Emission

Test place Shonan EMC Lab. No.5 Shielded Room
Date July 23, 2024
Temperature / Humidity 26 deg. C / 39 % RH
Engineer Shiro Kobayashi
Mode Tx 11n-40 5550 MHz



Frequency	Reading	Cable Loss	Attenuator	Antenna Gain*	N	EIRP	Distance	Ground bounce	E	Limit	Margin	Remark
[kHz]	[dBm]	[dB]	[dB]	[dBi]	(Number of Output)	[dBm]	[m]	[dB]	(field strength) [dBuV/m]	[dBuV/m]	[dB]	
17.11	-89.29	0.43	20.21	2.00	1	-66.7	300	6.0	-5.4	42.9	48.3	-
150.00	-91.12	0.43	20.21	2.00	1	-68.5	300	6.0	-7.2	24.0	31.2	-

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 (1/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
AT	145040	Coaxial Cable	Suhner	SUCOFLEX 102	30790/2	2024/03/07	12
AT	145111	Digital Tester	SANWA	PC500	7019232	2023/09/25	12
AT	146247	Power Meter	Keysight Technologies Inc	8990B	MY51000272	2024/05/14	12
AT	146310	Power sensor	Keysight Technologies Inc	N1923A	MY5326009	2024/05/14	12
AT	160899	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46185516	2023/12/29	12
AT	169910	Power Meter	Keysight Technologies Inc	8990B	MY51000448	2023/09/28	12
AT	169911	Power sensor	Keysight Technologies Inc	N1923A	MY57270004	2023/09/28	12
AT	191845	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/07	12
AT	235604	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY45300743	2024/05/23	12
AT	145155	Attenuator	Weinschel Corp.	54A-20	31484	2024/04/04	12
CE	145036	Coaxial Cable&RF Selector	Suhner/Suhner/TOYO	RG223U/141PE/NS 4906	-/0901-271(RF Selector)	2024/04/01	12
CE	145538	LISN	Rohde & Schwarz	ENV216	100511	2024/02/06	12
CE	145542	LISN	Rohde & Schwarz	ENV216	100516	2024/02/06	12
CE	145762	Terminator	TME	CT-01 BP	-	2023/12/08	12
CE	146294	Humidity Indicator	A&D Company	AD-5681	4062118	-	-
CE	199786	Attenuator	JFW	50HF-006N	-	2024/06/14	12
CE,RE	146210	Digital Hitester	HIOKI E.E. CORPORATION	3805-50	80997823	2023/09/25	12
CE,RE	146432	Tape Measure	TAJIMA	GL19-55	-	-	-
CE,RE	150463	Test Receiver	Rohde & Schwarz	ESW44	101581	2023/08/25	12
CE,RE	170932	EMI Software	TSJ (Techno Science Japan)	TEPTO-DV3(RE,CE,ME,PE)	Ver 3.1.0546	-	-
RE	144899	Attenuator	Inmet	18N-6dB	-	2023/12/08	12
RE	144959	Attenuator	JFW	50HF-003N	-	2023/08/22	12
RE	144967	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	2024/04/01	12
RE	144968	Coaxial Cable&RF Selector	Fujikura/Fujikura/Suhner/Suhner/Suhner/TOYO	8D2W/12DSFA/141PE/141PE/141PE/141PE/NS4906	-/0901-269(RF Selector)	2024/04/01	12
RE	145003	Pre Amplifier	SONOMA	310N	290211	2024/02/13	12
RE	145005	Pre Amplifier	Toyo Corporation	TPA0118-36	2046104	2024/02/16	12
RE	145007	Pre Amplifier	Toyo Corporation	HAP18-26W	19	2024/03/05	12
RE	145129	Pre Amplifier	Toyo Corporation	HAP26-40W	B3208602403-176	2024/05/09	12
RE	145136	Attenuator	Keysight Technologies Inc	8493C-010	74864	2023/10/12	12
RE	145137	Attenuator	Keysight Technologies Inc	8493C-010	74865	2023/10/11	12
RE	145161	Biconical Antenna	Schwarzbeck Mess-Elektronik OHG	BBA9106	91032664	2024/04/10	12
RE	145176	Coaxial Cable	Suhner	SUCOFLEX 102	32703/2	2023/08/23	12
RE	145377	Highpass Filter	Micro-Tronics	HPM50112	28	2023/10/11	12
RE	145501	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA9120D	9120D-739	2024/03/20	12
RE	145512	Horn Antenna	ETS-Lindgren	3160-09	00094868	2024/06/20	12

Test Equipment (2/2)

Test Item	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Cal Int
RE	145514	Horn Antenna	ETS-Lindgren	3160-10	00092383	2024/06/20	12
RE	145536	Loop Antenna	Rohde & Schwarz	HFH2-Z2	100218	2024/04/10	12
RE	145566	Semi-Anechoic Chamber	TDK	SAEC-03(SVSWR)	3	2024/05/23	12
RE	145568	Semi Anechoic Chamber(ME)	TDK	Semi Anechoic Chamber 3m/10m	1, 2, 3	2022/12/24	24
RE	145597	Semi-Anechoic Chamber	TDK	SAEC-01(NSA)	1	2024/04/16	12
RE	145790	Test Receiver	Rohde & Schwarz	ESU40	100093	2024/04/19	12
RE	145792	Digital Hitester	HIOKI E.E. CORPORATION	3805-50	80997812	2023/09/25	12
RE	156380	Coaxial Cable	Huber+Suhner	SUCOFLEX_104_E	SN MY 13406/4E	2024/05/09	12
RE	167096	Attenuator	JFW	50HF-006N	-	2024/02/13	12
RE	168300	Coaxial Cable	Huber+Suhner	SUCOFLEX 104	800375/4A	-	-
RE	179540	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	802815/2	2024/03/05	12
RE	191837	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
RE	191840	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
RE	194601	Coaxial Cable	Fjikura	5D-2W	-	2023/12/08	12
RE	194685	Horn Antenna	Schwarzbeck Mess-Elektronik OHG	BBHA 9120 C	711	2024/03/20	12
RE	196945	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803414/2	2024/03/12	12
RE	200010	Coaxial Cable	Huber+Suhner	SUCOFLEX 104	575618/4	2024/06/05	12
RE	207279	Tape Measure	ASKUL	-	-	-	-
RE	236416	Logperiodic Antenna	Schwarzbeck Mess-Elektronik OHG	VULP 9118 B	00974	2024/07/03	12
RE	243217	Coaxial Cable	Hayashi-Repic co., Ltd.	SMS13-13A26-NMS13-9.0m	49306-01-04	2023/12/20	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

CE: Conducted Emission

RE: Radiated Emission