## Report on the RF Testing of:

KYOCERA Corporation Mobile Phone, Model: EB1146 FCC ID: JOYEB1146

## In accordance with FCC Part15 Subpart C

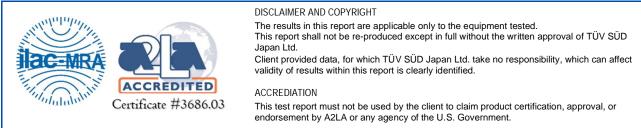
Prepared for: KYOCERA Corporation Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku Yokohama-shi, Kanagawa, Japan Phone: +81-45-943-6253 Fax: +81-45-943-6314

## COMMERCIAL-IN-CONFIDENCE

Document Number: JPD-TR-22192-0

SIGNATURE			
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NAME	JOB TITLE	RESPONSIBLE FOR	ISSUE DATE
Hiroaki Suzuki	Deputy Manager of RF Group	Approved Signatory	2022,11,17
Signatures in this approve	al box have checked this document in line with the rec	quirements of TÜV SÜD Japan Lto	d. document control rules.

#### EXECUTIVE SUMMARY – Result: Complied A sample of this product was tested and the result above was confirmed in accordance with FCC Part15 Subpart C.



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## TÜV SÜD Japan Ltd.





Japan

Inspire trust.





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## 1 Summary of Test

#### 1.1 Modification history of the test report

Document Number	Modification History	Issue Date
JPD-TR-22192-0	First Issue	Refer to the cover page

#### 1.2 Standards

CFR47 FCC Part 15 Subpart C

#### 1.3 Test methods

ANSI C63.10-2013 KDB 558074 D01 15.247 Meas Guidance v05r02

#### 1.4 Deviation from standards

None

#### 1.5 List of applied test(s) of the EUT

Test item section	Test item	Condition	Result	Remark
15.247(a)(2)	DTS Bandwidth / Occupied Bandwidth (99%)	Conducted	PASS	-
15.247(b)(3)	Maximum conducted (average) output power	Conducted	PASS	-
15.247(d)	Band Edge Compliance of RF Conducted Emissions	Conducted	PASS	-
15.247(d)		Conducted	PASS	-
15.205 15.209	Spurious Emissions	Radiated	PASS	-
15.247(d) 15.205 15.209	Restricted Bands of Operation	Radiated	PASS	-
15.247(e)	Transmitter Power Spectral Density	Conducted	PASS	-
15.207	AC Power Line Conducted Emissions	Conducted	PASS	-

#### 1.6 Test information

None

#### 1.7 Test set up

Table-top

#### 1.8 Test period

6-October-2022 - 19-October-2022



## 2 Equipment Under Test

All information in this chapter was provided by the applicant.

#### 2.1 EUT information

KYOCERA Corporation
Yokohama Office 2-1-1 Kagahara, Tsuzuki-ku Yokohama-shi, Kanagawa, Japan
Phone: +81-45-943-6253 Fax: +81-45-943-6314
Mobile Phone
EB1146
354663600011776, 354663600011206, 354663600011222
Kyocera
3
Pre-Production
Battery: DC 3.87 V
(W) 69 mm × (D) 153 mm × (H) 8.9 mm
Indoor and Outdoor use
-20 °C to 60 °C
DMT
0.110YO.9017.a
Not applicable
IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20),
IEEE802.11b /11g /11n (HT20): 2412 MHz-2462 MHz
11 Channels
IEEE802.11b: DSSS (DBPSK, DQPSK, CCK) IEEE802.11g / 11n (HT20): OFDM (BPSK, QPSK, 16QAM, 64QAM)
IEEE802.11b: 1, 2, 5.5, 11Mbps IEEE802.11g: 6, 9, 12, 18, 24, 36, 48, 54Mbps IEEE802.11n (HT20 LGI): 6.5, 13, 19.5, 26, 39, 52, 58.5, 65Mbps IEEE802.11n (HT20 SGI): 7.2, 14.4, 21.7, 28.9, 43.3, 57.8, 65, 72.2Mbps
5 MHz
54.576 mW (IEEE802.11b) 214.289 mW (IEEE802.11g) 245.471 mW (IEEE802.11n: HT20)
Internal antenna
-0.5 dBi



#### 2.2 Modification to the EUT

#### The table below details modifications made to the EUT during the test project.

[	Modification State Description of Modification		Modification fitted by	Date of Modification
	Model: EB1146, Serial Number: 354663600011776, 354663600011206, 354663600011222			
	0 As supplied by the applicant		Not Applicable	Not Applicable

#### 2.3 Variation of family model(s)

#### 2.3.1 List of family model(s)

Not applicable

#### 2.3.2 Reason for selection of EUT

Not applicable

#### 2.4 Operating channels and frequencies

Channel	Frequency [MHz]
1	2412
2	2417
3	2422
4	2427
5	2432
6	2437
7	2442
8	2447
9	2452
10	2457
11	2462



#### 2.5 Description of test mode

The EUT had been tested under operating condition. There are three channels have been tested as following:

Tested Channel [11b, 11g, 11n(HT20)]	Frequency [MHz]
Low	2412
Middle	2437
High	2462

The pre-test has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates.

Tested Channel	Modulation Type	Data Rate
Low, Middle, High	IEEE802.11b: DSSS	1Mbps
Low, Middle, High	IEEE802.11g: OFDM	6Mbps
Low, Middle, High	IEEE802.11n (HT20 LGI): OFDM	MCS0 (6.5Mbps)

The field strength of spurious emissions was measured at each position of all three axis X, Y and Z to compare the level, and the maximum noise.

The worst emission was found in Z-axis and the worst case recorded.

Pre-scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates and antenna ports.

#### 2.6 Operating flow

#### - Tx mode

- i) Test program setup to the Software
- ii) Select a Test mode

[IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20)] Operating frequency: Channel Low: 2412MHz, Channel Middle: 2437MHz, Channel High: 2462MHz

iii) Start test mode

#### - Rx mode

- i) Test program setup to the Software
- Select a Test mode [IEEE802.11b, IEEE802.11g, IEEE802.11n (HT20)]
   Operating frequency: Channel Low: 2412MHz, Channel Middle: 2437MHz, Channel High: 2462MHz
- iii) Start test mode



## **3** Configuration of Equipment

Numbers assigned to equipment on the diagram in "3.3 System configuration" correspond to the list in "3.1 Equipment used" and "3.2 Cable(s) used".

This test configuration is based on the manufacture's instruction.

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

#### 3.1 Equipment used

No.	Equipment	Company	Model No.	Serial No.	FCC ID/DoC	Comment
1	Mobile Phone	KYOCERA	EB1146	354663600011776, 354663600011206, 354663600011222	JOYEB1146	EUT
2	AC Adapter	KDDI	0602PQA	N/A	N/A	*

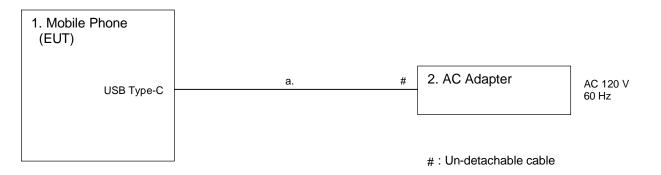
\*:AC power line Conducted Emission Test.

#### 3.2 Cable(s) used

No.	Equipment	Length[m]	Shield	Connector	Comment
а	USB cable (for AC Adapter)	1.5	No	Plastic	*
* * * *					

\*: AC power line Conducted Emission Test.

#### 3.3 System configuration





## 4 Test Result

#### 4.1 DTS Bandwidth / Occupied Bandwidth (99%)

#### 4.1.1 Measurement procedure

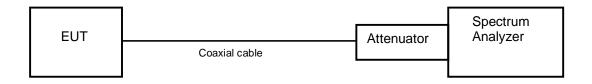
#### [FCC 15.247(a)(2), KDB 558074 D01 v05r02, Section 8.2]

The bandwidth at 6dB down from the highest inband spectral density is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- a) RBW = 100kHz.
- b) VBW  $\geq$  3 x RBW.
- c) Sweep time = auto-couple.
- d) Detector = peak.
- e) Trace mode = max hold.

- Test configuration



#### 4.1.2 Limit

The minimum permissible 6 dB bandwidth is 500 kHz.



#### 4.1.3 Measurement result

Date	:	19-October-2022
Temperature	:	19.9 [°C]
Humidity	:	38.1 [%]
Test place	:	Shielded room No.4

Test engineer :

Kazunori Saito

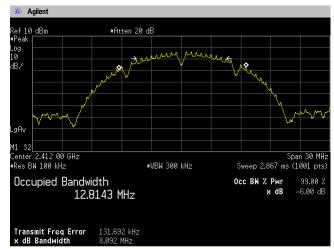
Channal		DTS Bandwidth [MHz]	
Channel	IEEE802.11b	IEEE802.11g	IEEE802.11n (HT20)
Low	8.092	15.495	15.359
Middle	8.570	15.354	15.159
High	8.085	11.348	15.148

Channel		Occupied Bandwidth (99%) [MH	z]
Channel	IEEE802.11b	IEEE802.11g	IEEE802.11n (HT20)
Low	12.814	16.357	17.544
Middle	12.856	16.363	17.554
High	12.495	16.120	17.502

#### 4.1.4 Trace data

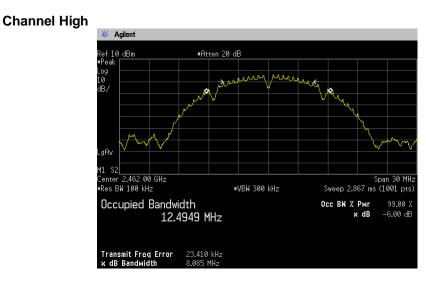
#### [IEEE802.11b]

**Channel Low** 



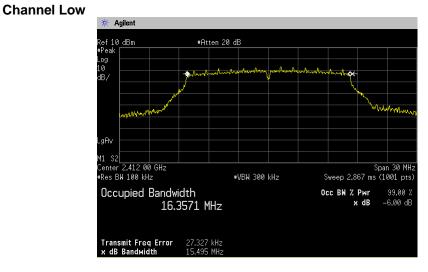
**Channel Middle** 



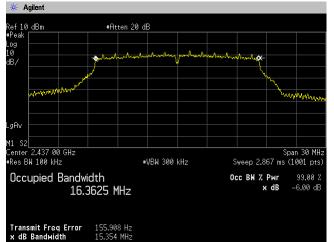


Japan

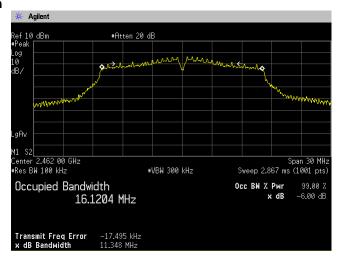
#### [IEEE802.11g]



**Channel Middle** 

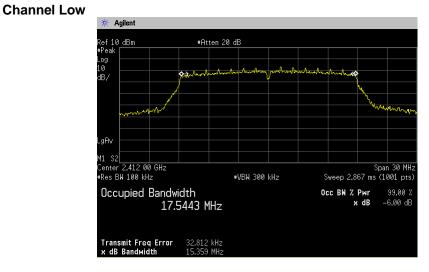


**Channel High** 





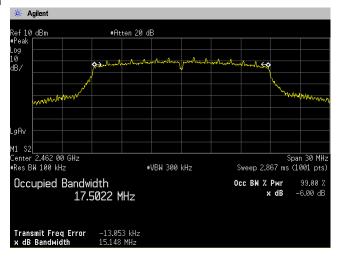
#### [IEEE802.11n (HT20)]



#### **Channel Middle**

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ef 10 dBm Peak	#Atten 20	dR					
og							
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						N.	withoung
gAv							
1 \$2 Senter 2.437 00 GHz						 Sn	an 30 MH:
Res BW 100 kHz		#VBW 300	kHz	S	weep 2.8		1001 pts
Occupied Bandwi	idth			00	CBW %	Рwr	99.00 %
	5542 MHz				×	dB	-6.00 dB
±7.5	5546-1112						
Transmit Freg Error	4 479 kHz						
x dB Bandwidth	15.159 MHz						

#### **Channel High**







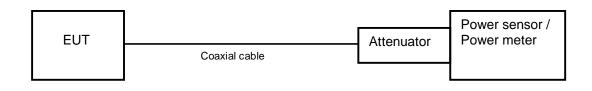
#### 4.2 Maximum Conducted Output Power

#### 4.2.1 Measurement procedure

#### [FCC 15.247(b)(3), KDB 558074 D01 v05r02, Section 8.3.1.3]

The peak power is measured with a power sensor connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

#### - Test configuration



#### 4.2.2 Limit

1 W (1000 mW) or less



#### 4.2.3 **Measurement result**

Date Temperature	:	14-October-2022 24.8 [°C]			
Humidity	:	48.3 [%]	Test engineer	:	
Test place	:	Shielded room No.4	-		Taiki Watanabe

# [IEEE802.11b] Battery Full

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Peak Output Power (mW)	Limit (mW)	Result
Low	2412	6.43	10.52	16.95	49.545	≦1000	PASS
Middle	2437	6.85	10.52	17.37	54.576	≦1000	PASS
High	2462	6.56	10.52	17.08	51.050	≦1000	PASS

# [IEEE802.11g] Battery Full

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Peak Output Power (mW)	Limit (mW)	Result
Low	2412	12.79	10.52	23.31	214.289	≦1000	PASS
Middle	2437	12.31	10.52	22.83	191.867	≦1000	PASS
High	2462	11.42	10.52	21.94	156.315	≦1000	PASS

#### [IEEE802.11n (HT20)] **Battery Full**

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Peak Output Power (mW)	Limit (mW)	Result
Low	2412	13.38	10.52	23.90	245.471	≦1000	PASS
Middle	2437	13.33	10.52	23.85	242.661	≦1000	PASS
High	2462	12.57	10.52	23.09	203.704	≦1000	PASS

Calculation;

Reading (dBm) + Factor (dB) = Level (dBm)  $10\log P = Level (dBm)$   $P = 10^{(Maximum Peak Output Power / 10)} (mW)$ 



#### 4.3 Band Edge Compliance of RF Conducted Emissions

#### 4.3.1 Measurement procedure

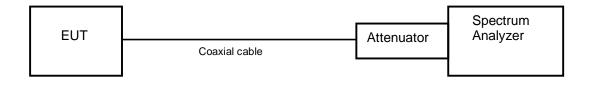
#### [FCC 15.247(d), KDB 558074 D01 v05r02, Section 8.5]

The Band Edge is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- a) Span = Arbitrary setting. (Setting suitable for measurement.)
- b) RBW = 100kHz.
- c) VBW  $\ge$  3 x RBW
- d) Sweep time = auto-couple.
- e) Detector = peak.
- f) Trace mode = max hold.

#### - Test configuration



#### 4.3.2 Limit

In any 100 kHz bandwidth outside the frequency band the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.



#### 4.3.3 Measurement result

Date	:	7-October-2022
Temperature	:	23.2 [°C]
Humidity	:	39.3 [%]
Test place	:	Shielded room No.4

Test engineer :

Taiki Watanabe

#### [IEEE802.11b]

Channel	Frequency (MHz)	RF Power Level (dBm)	Band-edge Frequency (MHz)	Band- edge Level (dBm)	Difference Level (dBm)	Limit (dBm)	Result
Low	2412	-4.33	2399.52	-56.32	51.99	At least 20dB below from peak of RF	PASS
High	2462	-3.99	2487.98	-65.30	61.31	At least 20dB below from peak of RF	PASS

## [IEEE802.11g]

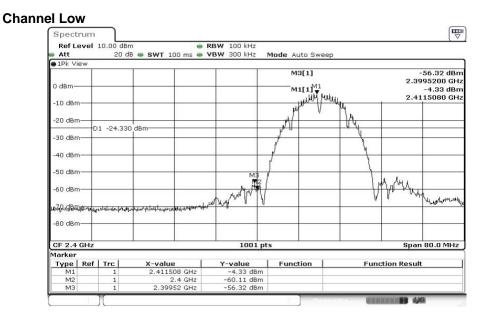
Channel	Frequency (MHz)	RF Power Level (dBm)	Band-edge Frequency (MHz)	Band- edge Level (dBm)	Difference Level (dBm)	Limit (dBm)	Result
Low	2412	-7.28	2399.84	-45.43	38.15	At least 20dB below from peak of RF	PASS
High	2462	-7.25	2483.58	-54.06	46.81	At least 20dB below from peak of RF	PASS

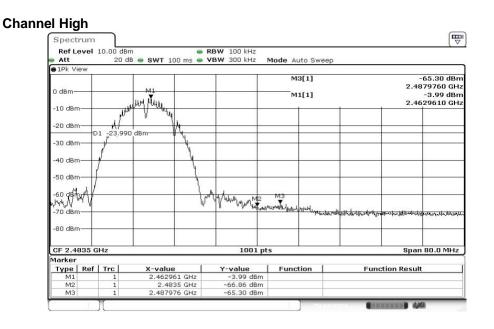
#### [IEEE802.11n (HT20)]

Channel	Frequency (MHz)	RF Power Level (dBm)	Band-edge Frequency (MHz)	Band- edge Level (dBm)	Difference Level (dBm)	Limit (dBm)	Result
Low	2412	-7.30	2399.44	-44.50	37.20	At least 20dB below from peak of RF	PASS
High	2462	-7.74	2484.46	-52.18	44.44	At least 20dB below from peak of RF	PASS

#### 4.3.4 Trace data

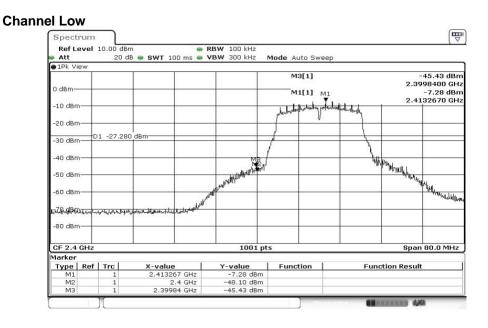
#### [IEEE802.11b]

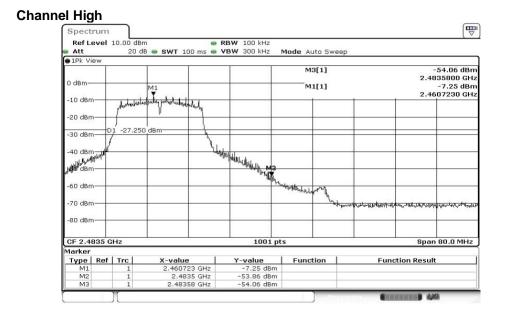






#### [IEEE802.11g]

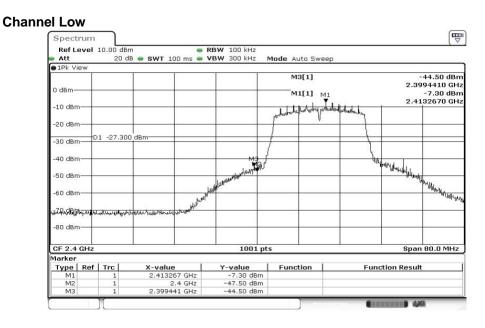


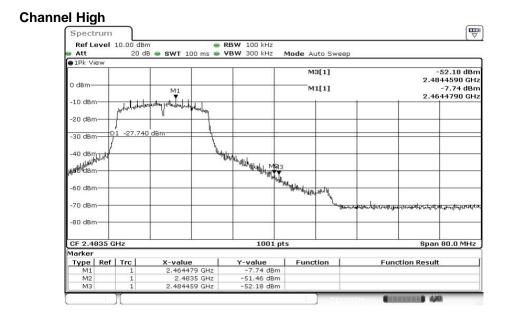






#### [IEEE802.11n (HT20)]







#### 4.4 Spurious emissions - Conducted -

#### 4.4.1 Measurement procedure

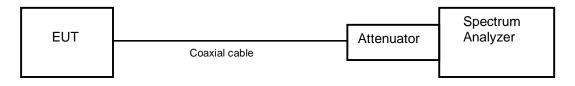
#### [FCC 15.247(d), KDB 558074 D01 v05r02, Section 8.5]

The spurious emissions (Conducted) are measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- a) Span = wide enough to fully capture the emission being measured.
- b) RBW = 100 kHz.
- c)́ VBW ≥ RBW.
- d) Sweep time = auto-couple.
- e) Detector = peak.
- f) Trace mode = max hold.

#### - Test configuration



#### 4.4.2 Limit

In any 100 kHz bandwidth outside the frequency band the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.



#### 4.4.3 Measurement result

Date	: 6-October-2022		
Temperature	: 22.4 [°C]		
Humidity	: 45.4 [%]	Test engineer	:
Test place	: Shielded room No.4	-	Taiki Watanabe

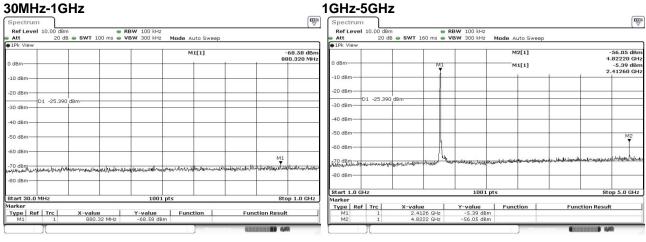
#### [IEEE802.11b、IEEE802.11g、IEEE802.11n (HT20)]

Channel	Frequency [MHz]	Limit [dB]	Results Chart	Result
Low	2412	At least 20dB below from peak of RF	See the trace Data	PASS
Middle	2437	At least 20dB below from peak of RF	See the trace Data	PASS
High	2462	At least 20dB below from peak of RF	See the trace Data	PASS



#### 4.4.4 Trace data

#### [IEEE802.11b] Channel Low 30MHz-1GHz



#### 5GHz-10GHz

1Pk Vi	3W								
						M1[1	1		-64.41 dBm 6.19130 GHz
0 dBm—	-					1	1		6.19130 GH
-10 dBm	_								-
-20 dBm	_								_
-30 dBm		25.390	dBm-	-					
-40 dBm	_								-
-50 dBm									
-60 dBm			M1	-					_
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-80 dBm	_								
Start 5	0 GHz			14	1001 p	its	~	St	op 10.0 GHz
larker									

#### 10GHz-15GHz

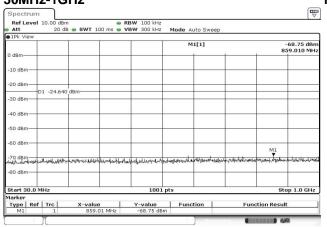
Ref Level		m B <b>- SWT</b> 100 ms -	RBW 100 kHz	Mode Auto Swe		
1Pk View	20 0	5 - 3W1 100 ms	VBW 300 KH2	Mode Auto Swe	ah	
1 dBm				M1[1]	2 2	-64.26 dBr 14.53300 GH
J dBm-						
-10 dBm					_	
-20 dBm						
2022/2022/2022	01 -25,390	) dBm				
-30 dBm	201051		+ +			
-40 dBm					_	
50 dBm						
-60 dBm						M1
10 dBm	osur-wereshill	and a phase of the second s	end. Warred were lased or	Waterprotections	delater the second strategy and	here approved to delay and
-80 dBm						
Start 10.0 (	GHz		1001 p	ts		Stop 15.0 GHz
larker	1 - I			1		
Type Ref M1	1 1	X-value 14.533 GHz	Y-value -64.26 dBm	Function	Functio	n Result
	717				<b>E B B B B B B B B B B</b>	430

#### 15GHz-20GHz

#### 20GHz-25GHz

Ref Level         10.00 dBm              RBW           Att         20 dB         SWT         100 ms         VBW            IPk View			Ref Level 10.00 dE Att 20 1Pk View	dB 🖶 SWT 100 ms 🖶 V	BW 100 kHz BW 300 kHz Mode	Auto Sweep	
0 dBm-	M1[1]	-61.09 dBm 19.28820 GHz	0 dBm-			M1[1]	-61.89 dB 20.32220 GF
-10 dBm			-10 dBm				
-20 dBm D1 -25.390 dBm			-20 dBm	00 dBm			
40 dBm			-40 dBm				
-50 dBm		M1	-50 dBm				
-60 dBm 	underformertree mechanical Mankahigewitter the second state of the second second second second second second se	Male work Monte and the share the	-70 dBm	.ergPaythysolidistaliyldesatirvitetivedhetisede	landf-burgh-absorbling-bablaticanni	when the most have been a start of the second	or and the second s
-80 dBm			-80 dBm				
Start 15.0 GHz	1001 pts	Stop 20.0 GHz	Start 20.0 GHz		1001 pts		Stop 25.0 GHz
	value Function Fu	Inction Result	Marker Type Ref Trc M1 1	X-value 20.3222 GHz	Y-value Fu	nction Fi	unction Result

#### **Channel Middle** 30MHz-1GHz



#### 1GHz-5GHz Spectrum Ref Level 10.00 di Att 20 Mode Auto Sweep • 1Pk V M2[1] -58.76 dBm 4.87410 GHz -4.64 dBm 2.43660 GHz M1[1] -10 dBn -20 dBm D1 -24.640 -30 dBm 40 dBn 50 dBn 60 dBm 70 dBm alway julia -80 dBn Stop 5.0 GHz Star 1ark 1001 Marker Type Ref Trc M1 1 M2 1 Y-value Function -4.64 dBm -58.76 dBm X-value 2.4366 GHz 4.8741 GHz Function Result

#### 5GHz-10GHz

Spectrum           Ref Level 10.00 dBm           Att         20 dB           SWT 100 m	RBW 100 kHz ns      VBW 300 kHz     Mode Auto Sweep		Spectrum Ref Level 10.00 dB	m <b>• RBW</b> 100 kH IB <b>• SWT</b> 100 ms <b>• VBW</b> 300 kH		E C
1Pk View	In the source where where were sweep		● 1Pk View		- Mode Auto Sweep	
0 dBm	M1[1]	-64.01 dBm 6.79070 GHz	0 dBm		M1[1]	-63.88 dB 13.82870 GF
-10 dBm			-10 dBm			
-20 dBm D1 -24,640 dBm			-20 dBm-D1 -24.64	0 dBm		
-30 dBm			-30 dBm			
-50 dBm			-50 dBm			
-60 dBm	M2	served and redention for bill the medical to be stated on a low makers which	-60 dBm	where the second way that has been a second s	Universition of the state of th	MI
-80 dBm			-80 dBm			
Start 5.0 GHz	1001 pts	Stop 10.0 GHz	Start 10.0 GHz	100	1 pts	Stop 15.0 GHz
Marker           Type         Ref         Trc         X-value           M1         1         6.7907         0	Y-value Function	Function Result	Marker Type Ref Trc M1 1	X-value Y-value 13.8287 GHz -63.88 d	Function Bm	Function Result
)[		(11111111) 4/4				(10000000) 494

#### 15GHz-20GHz

#### 20GHz-25GHz

10GHz-15GHz

1Pk Vi	ew.										1Pk View
0 dBm-						M1[	1]	2		-60.91 dBm .24330 GHz	0 dBm-
U UBIII-											U UBIII-
-10 dBn	-				-						-10 dBm-
-20 dBn	-										-20 dBm-
		-24.640	dBm								
-30 dBn											-30 dBm
-40 dBn	-				-						-40 dBm
-50 dBn											-50 dBm
-60 dBn									M1		-60 dB
-DU UBN	enterious	Harris Labor	shall a start and a start and a start and a start a sta	-kikon Mardia	the work of the of the second	no-wanter	Numeraly	my freederstrond	hillion which	modulinstanifications,	-60 about
-70 dBn	+	2005 AN		. SA		00.000	0 240 25				-70 dBm-
-80 dBn	-										-80 dBm
Start 1	5.0 GH	Iz			1001	pts			Stor	20.0 GHz	Start 20.0
Marker				221			22				Marker
Type	Ref	Trc	X-value	3 GHz	Y-value -60.91 dBr	Functio	in	Functio	on Result	t	Type   Re

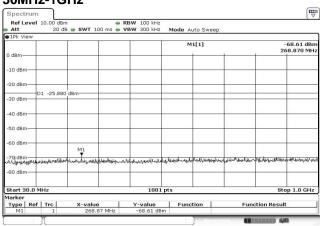
Att 20 dB •		RBW 100 kHz VBW 300 kHz	Mode Auto Sweep		
1Pk View				-	
			M1[1]		-61.79 dB 20.31220 GH
0 dBm					
-10 dBm					
-20 dBm D1 -24,640 dB					
-30 dBm	m				
-40 dBm					
-50 dBm		_			
-60 dBm	06 N2 3				
-70 dBm	intradual annalishing	A colored and a second the later of the second s	viquond and the objection of	international states and the second second	Meneripation Levellaholder
-80 dBm					
Start 20.0 GHz	107	1001 p	ts		Stop 25.0 GH:
Marker					
Type Ref Trc M1 1	20.3122 GHz	-61.79 dBm	Function	Function	n Result

# SUD Japan

M2

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## Channel High 30MHz-1GHz



#### 1GHz-5GHz Spectrum Ref Level 10.00 di Att 20 Mode Auto Sweep • 1Pk V M2[1] -58.15 dBm 4.92210 GHz -5.88 dBm 2.46050 GHz M1[1] MJ -10 dBn -20 dBm D1 -25.880 -30 dBm 40 dBn 50 dBr M2 60 dBn -70 dBmdistantioner of 80 dBn op 5.0 GHz Star 1ark 100 Marker Type Ref Trc M1 1 M2 1 Y-value Function -5.88 dBm -58.15 dBm X-value 2.4605 GHz 4.9221 GHz Function Result III 646

#### 5GHz-10GHz

1Pk View				1Pk View	-		1 1		
dBm		M1[1]	-64.27 dBm 6.97550 GHz	0 dBm				M1[1]	-63.94 dt 10.60690 G
0 dBm				-10 dBm-					
0 dBm				-20 dBm-					
D1 -25.880 dBm				-30 dBm	D1 -25.880	dBm			
0 dBm				-40 dBm					
0 dBm				-50 dBm—					
io dBm	141.	- Heren when the south and the souther the	have been and the second and the sec	-60 dBm -70 dBm	T T	Rightheor Angerson and so for fail	union materia	Mathematical	angh Jake Aglen all the march and the stress
0 dBm				-80 dBm-					
art 5.0 GHz	NY CO	1001 pts	Stop 10.0 GHz	Start 10.0	GHz		1001 p	ts	Stop 15.0 GF
nrker ype   Ref   Trc   3	(-value   Y	-value   Function	Function Result	Marker Type Re	flitrol	X-value	Y-value	Function	Function Result

G

#### 15GHz-20GHz

#### 20GHz-25GHz

10GHz-15GHz

●1Pk Vi	ew.						●1Pk View
					M1[1]	-61.06 dBn 19.41310 GH	
0 dBm-					1		0 dBm-
-10 dBn	+						-10 dBm
-20 dBn	-						-20 dBm
-30 dBn		1 -25.880	dBm				-30 dBm
-40 dBn	+						-40 dBm
-50 dBn	+						-50 dBm
-60 dBm						M1	-60 dBn
-70 dBn	where	ellenter (reduction)	an in the second s	ulfenereraturations	aweltstantenterter	y month a last fair south and the state of the	H yahaya Maringan -70 dBm-
-80 dBn	+						-80 dBm
Start 1	5.0 G	Hz		1001 pt	s	Stop 20.0 GHz	Start 20.0
Marker			0	() () ()	Function	Function Result	Marker
Type	Ret	1	X-value 19.4131 GH	Y-value z -61.06 dBm	Function	Function Result	Type Re M1

Ref Level 10.00	) dBm 20 dB 👄 SWT		BW 100 kHz	Mode Auto Sv		
1Pk View	20 UB 🖷 SWI	100 ms 🖶 🖌	BW 300 KH2	Mode Auto SV	veep	
IFK TIOW				M1[1]		-61.86 dBi 20.35710 GH
0 dBm			+ +	1		1 1
-10 dBm						
-20 dBm						
-30 dBm	5.880 dBm					· · · · · · · · · · · · · · · · · · ·
-40 dBm			-			
-50 dBm						
-60 dBm			2.00			
-70 dBm	allingtondefination	elevered with the terrine	willight the contraction of the little between the	whether big shulp	بديوها والمعامية والمواعد ويرين	an you want an
-80 dBm						
Start 20.0 GHz		192	1001	pts		Stop 25.0 GHz
1arker		2741		1251	20	
Type Ref Tro		lue	Y-value -61.86 dBn	Function	Fund	ction Result

# Japan

Ì



Spectrum					[₩
Ref Level 10.00 dBm		RBW 100 kHz			
	👄 SWT 100 ms 👄 '	VBW 300 kHz 1	Mode Auto Swee	p	
1Pk View					
			M1[1]		-69.35 dBn 947.190 MHz
0 dBm			-		947.190 МП
10 dBm					_
20 dBm					
-30 dBm D1 -30.330	dBm				_
-40 dBm					_
-50 dBm		-			_
-60 dBm					_
70 dBm					M1
begar will wanter it with deterted in	ومدارا المؤولان والمراجع المؤاجر بالمتحلي المروي والمحار	halfer share share have been a head	or which the second states	wayn bywranden terfel al bren ywan de brennoge	where we are a series of the s
-80 dBm					-
Start 30.0 MHz		1001 pt	s		top 1.0 GHz
larker					
Type Ref Trc M1 1	X-value 947.19 MHz	-69.35 dBm	Function	Function Res	ult
T T			1.		4.365

#### 1GHz-5GHz

10GHz-15GHz

Ref Lev	rel 10.00 dE	m dB <b>= SWT</b> 100		BW 100 kHz	Mode A	ito Sweep		
1Pk View				511 000 M H	mode Ac	ito oneop		
					M:	2[1]		-65.45 dB 4.93010 GF
0 dBm-					M	1[1]		-10.33 dB
-10 dBm-			M1				-	2.40860 GH
			1	1 1				
-20 dBm-								
30 d8m-	D1 -30.33	0_dBm	_					
-40 dBm-		+	_					
-50 dBm-								
-60 dBm-			-11-					
			W		1805			
-70 dBm-	interfeature and the second	monounder adoption	queed to	production to be the state of the second states of	pet and a state of the state of	the state	disanta sina malan	martin and an and an and an
-80 dBm-				-				
Start 1.0	GH7			1001 p	te			Stop 5.0 GH
Marker	GILE			1001				0.000 0.0 011
Type   F	Ref   Trc	X-value	1	Y-value	Funct	ion	Functio	on Result
M1 M2	1	2.4086		-10.33 dBm -65.45 dBm				

#### 5GHz-10GHz

Spectrum					
Ref Level 10.00 dBr Att 20 d	n 😑 SWT 100 ms 👄	RBW 100 kHz	Mode Auto Sweep		
1Pk View		1011 300 KHZ	HOUE AUTO SWEEL		
			M1[1]		-63.53 dBm 6.99550 GH
0 dBm		-	1	1	6.99330 GH
-10 dBm					-
-20 dBm		_			
-30 dBm D1 -30.330	) dBm				_
-40 dBm					_
-50 dBm					-
-60 dBm		MI			_
wold Barrow which the work	and the second second second second	al about many and the	haddenlandatha	advantanages the hand and which which	an plant symbols
-80 dBm					_
Start 5.0 GHz		1001 pt	s	s	top 10.0 GHz
Marker	Marca I	the strengtheory of			
Type Ref Trc M1 1	X-value 6.9955 GHz	-63.53 dBm	Function	Function Res	sult

#### Spectrum Ref Level 10.0 Att RBW 100 kHz SWT 100 ms VBW 300 kHz Mode Auto Sweep M1[1] -63.48 dBm 14.64790 GHz dBr 10 dBm -20 dBm-30 dBr 1 -30.33 40 dBm 50 dBm -60 dBn Hurr -70 dBm -80 dBm Start 10.0 GHz 1001 pt Stop 15.0 GHz Marker Type Ref Trc M1 1 Y-value Function Function Result X-value 14.6479 GH

#### 20GHz-25GHz Spectrum ٦

Ref Le Att	vel 10	0.00 dBm 20 dB	- SWT 10		BW 100 kHz		uto Sweep			
●1Pk Vie	w	10 00			DIT GOO MIL	induc A	ito oneep			
						м	1[1]			62.38 dB
0 dBm—	+			8	-		-	1	20	.36210 G
-10 dBm-										
-20 dBm-										
-30 dBm-	D1	-30.330	dBm		-					
-40 dBm-										
-50 dBm-	+									
-60 dBM	<u>ا</u> ا									
Water bole to the for		Hallala Lav. L	Notes and a second	the Another	marchandrow	had all the another	Loui, birth	W. HARMAN	الماس	and the bill
-70 dBm-	waynes.	teratory and			1.444	Suffiel (part	- How O'STRATED OF	in the second fille	of the section and	anse and the
-80 dBm-										
-80 dBm-										
Start 20	.0 GH	z			100:	L pts			Stop	25.0 GH
Marker		1.0								
Type M1	Ref	Trc 1	X-value 20.362		Y-value -62.38 dB	Func	tion	Fund	tion Result	t

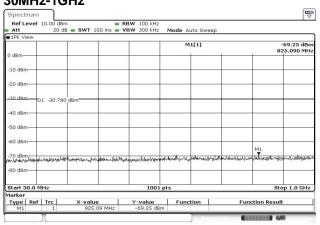
## 15GHz-20GHz

Att		20 dB	SWT	100 ms 😑	VBW 300 kHz	Mode Aut	o Sweep			
●1Pk Vi	ew.			-						
						M1[	1]			-60.73 dBn
0 dBm-	-		5		-	- 1	1			.22030 GH
-10 dBm			-							
-20 dBm	4			_						
-30 d8m	D1	-30.330	dBm							
-40 dBm										
-50 dBm	-			-	-					-
-60 dBm							1.7 . 1.0. 141		M1	
-70 dBrr	white whi	in when the	NUMBURS	repaired	howangerman	where the states of the states	under all Maladiates	on the second of the	And and a contraction of the second	Jahr Martin
-80 dBm										
Start 1	5.0 GH	z			1001	ots			Sto	p 20.0 GHz
Marker	n (	~ 1			na all meri al prove	1		-		
Type M1	Ref	Trc 1	X-valu	283 GHz	-60.73 dBm	Functio	on	Fund	tion Resu	lt

# TÜV SÜD Japan Ltd.



#### Channel Middle 30MHz-1GHz



#### 1GHz-5GHz

Ref Level	10.00 dbr		e D	BW 100 kHz				
Att		n B 👄 SWT 100 m			Mode A	uto Swee	an	
1Pk View					noue A	00000000	·P	
					M	2[1]		-66.13 dBr
0 dBm		-						4.08290 GH
			M1		IVI	1[1]		-10.78 dBr 2.44060 GH
-10 dBm			T			-		1 1
-20 dBm								
-30 dBm	1 -30.780	dam						
L	1 -30.780	dBm						
-40 dBm								
-50 dBm			-11-					
-60 dBm							M2	
			14				T	6 . C
-70 dBm	manutal his	and the second second	w Luu	the the second of the second	Anorth Bagget	Hunstern	الم يعالينا هاديم حصرت أحيالها	hundhingungenishikkorl
-80 dBm	24250 - 3							
Start 1.0 GF				1001 pt				Stop 5.0 GHz
Marker	2			1001 pt	.5			atup 3.0 GH2
Type   Ref	Trc	X-value	Ĩ	Y-value	Eunc	tion	Fun	ction Result
M1	1	2.4406 G	Hz	-10.78 dBm				
M2	1	4.0829 G	H2	-66.13 dBm				

#### 5GHz-10GHz

Spectrum								\
Ref Level			RBW 100 kHz s VBW 300 kHz		te Curen			
1Pk View	20 0	5 <b>3 W</b> 1 100 m	5 W YBW 300 KH2	MOUE AU	ILO SWEEP			
				MI	l[1]			64.10 dBm
0 dBm							6	78070 GHa
-10 dBm								
-20 dBm								
-30.dBm-0	01 -30.780	dBm						
-40 dBm								
-50 dBm								
-60 dBm			M1					
-96-1818	munderpriver	personal and the stranger between the	where the shine	erenel day i bleade	the market and the second	a heriority introduce	www.allala.deplers	artunin der weitige
-80 dBm								
Start 5.0 GF	Ηz		1001	L pts			Stop	10.0 GHz
Marker	r 1		1					
Type Ref M1	Trc 1	X-value 6.7807 GI	Y-value Hz -64.10 dE	Funct	ion	Func	tion Result	

#### 10GHz-15GHz

Ref Level 1 Att				RBW 100 kHz /BW 300 kHz	Mode A	uto Sweep			
1Pk View									
					м	1[1]			63.31 dBr 59290 GH
0 dBm						1			
-10 dBm		-						-	
-20 dBm									
-30.dBm-0:	-30.78	dBm							
-40 dBm									
-50 dBm		-							
-60 dBm									M1
Maggard dBm	here and a star	(ordengthrough	laborlan delawya	leftertage-gestable-gebieder	minikykawa	ant historication	Whango Jahan Malak	halenhean Allehad	ability sections.
-80 dBm									
Start 10.0 G	-lz			1001 p	ts			Stop	15.0 GHz
larker	-								
Type Ref M1	Trc 1	X-value	29 GHz	-63.31 dBm	Func	tion	Func	tion Result	

#### 15GHz-20GHz

Ref Le	vel 10.00 dBr	n B 🖶 SWT 100 ms 曼	RBW 100 kHz	Mode Auto Swe	200	
e 1Pk Vie		0 0 0 0 0 1 1 0 0 m 5 0	DH SOUTH	HOLE AUTO SWE	iep	
				M1[1]		-61.39 dB 19.22330 GF
0 dBm—		2			1	
-10 dBm			_			
-20 dBm						
-30 dBm	D1 -30.780	) dBm				
-40 dBm						
-50 dBm	_					
-60 dBm						M1
Huchthaute	home and the server to the server and the server an	المواحا المرمي محمد المنطقة المعالي المحمد المعالين المح	and all and the second second	had a state of the state of the state	man conservation for the	hallow from the states and the
-70 dBm	_					
-80 dBm						
Start 1	5.0 GHz		1001 p	ts		Stop 20.0 GH
Marker Type	Ref   Trc	X-value	Y-value	Function	Fund	ion Result
M1	1	19.2233 GHz	-61.39 dBm	runction	T unc	lon Result

#### 20GHz-25GHz

Spectrum					1
Ref Level 10.00 dBr	n	• RBW 100 kHz			
Att 20 d	B 👄 SWT 100 ms (	• VBW 300 kHz	Mode Auto Sweep	0	
1Pk View					
			M1[1]		-62.44 dBr 20.07240 GH
0 dBm					20.07240 GH
-10 dBm					
-20 dBm					
20 0011					
-30.dBm D1 -30.780	dBm				_
-40 dBm		_			
-50 dBm				- <u>-</u>	
90 dBm					
20 dem human	والموالي والمراجع والمراجع والمراجع	Harley we Harrison the Andrew	Budden marke the	unpurport	usilation a desilation of
-70 dBm				and a sector designed	
-80 dBm					
Start 20.0 GHz		1001 p	its		Stop 25.0 GHz
/larker					
Type   Ref   Trc	X-value	Y-value	Function	Function R	esult
M1 1	20.0724 GHz	-62.44 dBm			



## Channel High

Spectrum						
Ref Level			RBW 100 kHz			
Att	20 dB	👄 SWT 100 ms	VBW 300 kHz	Mode Auto Swee	ер	
1Pk View						
				M1[1]		-68.73 dBn 824.120 MH
0 dBm				1	- E - E	624.120 MH
-10 dBm						
-20 dBm						
-30 dBm	1 -31.030	dBm			-	
-40 dBm						
-40 dBill						
-50 dBm						
-60 dBm						
					M:	
-70 dBm	الالالبراط والجميداني	a hotely Agrandie Barrow bolton	most line trans real another	add a source and the second	multiple market during the	myahilahilahalahilah
-80 dBm						
Start 30.0 M	L17		1001	ate .		Stop 1.0 GHz
Marker			1001			0100 110 012
Type   Ref	Trc	X-value	Y-value	Function	Functio	n Result
M1	1	824.12 MHz	-68.73 dBm	1		

#### 1GHz-5GHz

#### Ref Level 10.00 dBm Att 20 dB 1Pk Vier -66.30 dBm 4.71430 GHz -11.03 dBm 2.46050 GHz M2[1] ) dBm M1[1] M1 -10 dBm -20 dBm-30.dBm-D1 -31.030 40 dBm--50 dBm -60 dBm M2 -70 dBmmandpromotore -80 dBm-Start 1.0 GH top 5.0 GHz Marker Type Ref Trc M1 1 M2 1 X-value Y-value Function 2.4605 GHz -11.03 dBm 4.7143 GHz -66.30 dBm Function Result CONTRACTOR AND

## 10GHz-15GHz

Spectrum					₹
Att 20 dB	e SWT 100 ms e '	RBW 100 kHz	Mode Auto Sweep		
1Pk View	awi 100 ms	VBW 300 KH2	HOUR AUTO SWEEP		
			M1[1]	-63.81	
0 dBm			-	6.96050	J GH
-10 dBm					
-20 dBm					
-30 dBm D1 -31.030 d	Bm				
-40 dBm					
-50 dBm					
-60 dBm		Ma			
ul de de la de La de la d	anternecklynnether and the second	have not an advantage la	manuscoulungation	warder and a second a	adage
-80 dBm		_			
Start 5.0 GHz		1001 pt	s	Stop 10.0	GHz
Marker	Muselus I	M	Function	Counting Deput	
Type Ref Trc M1 1	X-value 6.9605 GHz	-63.81 dBm	Function	Function Result	

1Pk View								
					M1[	1]		-63.72 dB
0 dBm							12	10.60190 GH
-10 dBm								
20 dBm								
30 dBm	1 -31.030	dam						
	1 -31.030			1 1				
40 dBm			-	-				
50 dBm								
60 dBm 🕂	41 ¥							
may have a second	Muchappenes	Juliatermination	-	becarbet on or provident	anot-contribution of the	المهاراليوروالللولي وا	wond line the grade	identerination in recipioned
/0 ubiii								
80 dBm								
Start 10.0 G	Hz		·	1001	ots			Stop 15.0 GHz
larker	( I						-	
Type Ref M1	Trc 1	X-valu	e D19 GHz	-63.72 dBm	Functio	on	Function	Result

#### 15GHz-20GHz

5GHz-10GHz

Ref Level	10.00 dBm		RBW 100 kHz		
Att	20 dB	8 👄 SWT 100 ms 👄	VBW 300 kHz	Mode Auto Sweep	
●1Pk View			1	M1[1]	-59.58 dB
I				MILI	19.27320 GF
0 dBm		1			
-10 dBm					
-20 dBm					
-30 dBm-0	01 -31.030	dBm			
-40 dBm					
-50 dBm					· · · · · · · · · · · · · · · · · · ·
-60 dBm					M1
-70 dBm	lions of high to	naninan	within providential stated	nichally and a same of the form	erecolors and the second se
-80 dBm					
Start 15.0 C	Hz		1001 p	ts	Stop 20.0 GHz
		X-value	Y-value	Function	Function Result
Marker Type   Ref					

#### 20GHz-25GHz

Pofloyol	1 10.00 dBn			RBW 100 kHz					
Att				VBW 300 kHz	Mode A	uto Sweep			
1Pk View									
					м	1[1]			-61.22 dBn
0 dBm				-		1	1		1
-10 dBm									
-20 dBm									
-30 dBm	D1 -31.030	dBm							
-40 dBm									
-50 dBm									
-60 dBm									
-70 dBm	horderstation of the second	entron when the hast of the	relforgenderme	or all the second se	unananananan	e-shurphyperited	ant and the second second	astronay developer	resplansive
-80 dBm									
Start 20.0	GHz			1001	pts			Sto	p 25.0 GHz
larker	d and		. î	the effective Restore	1				
Type Ret M1	f Trc	X-value	22 GHz	-61.22 dBr	Func	tion	Fund	tion Resul	t

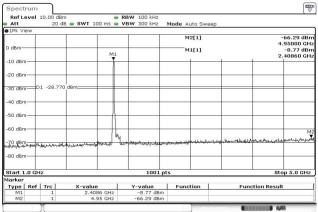




#### [IEEE802.11n (HT20)] Channel Low 30MHz-1GHz

Ref Level	ID OD dBm		RBW 100 kHz		
Att		. SWT 100 ms .		1ode Auto Swee	P
1Pk View					
				M1[1]	-68.98 690.390
0 dBm			-		
-10 dBm					
-20 dBm					
-30 dBm 0	1 -28.770	dBm			
-40 dBm					
-50 dBm					
-60 dBm					
000000000000000000000000000000000000000					11
-70 dBm	Andrahapered	burnership of the province	autorially out or which the	البهر المقاصمية الالمحام ويرامية	have a for the stand and the second south the ready
-80 dBm	8			2.0	
Start 30.0 M	Hz		1001 pts	5	Stop 1.0 G
Marker					×
Type Ref	Trc	X-value 690,39 MHz	Y-value -68,98 dBm	Function	Function Result

#### 1GHz-5GHz



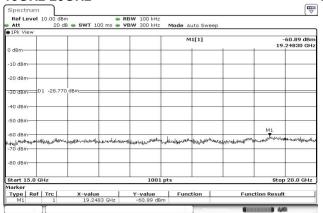
#### 5GHz-10GHz

D1Pk Vi	ew		-		VBW 300 kHz		ito Sweep				
						M1[1]			-64.18 dBn 6.55590 GH		
0 dBm-											
-10 dBn	-										
-20 dBn	-				· · · · ·						
-30 dBn		1 -28.770	dBm:		-			-			
-40 dBn								-			
-50 dBn	-				-						
-60 dBn			13	M1				-			
いが自然	where and	neutron (1994).	langer an	hytullitanii(titan	when and the second	alderate/hidd	with a formation of the	a share shrowing a	liphotorin a huse	And had an the second sec	
-80 dBn	-										
Start 5	.0 GH	z			1001	pts			Sto	o 10.0 GHz	
Marker Type	Ref	Tre	X-value	. 1	Y-value	Funct	ion	Fund	tion Resul		
M1		1		59 GHz	-64.18 dBm						

#### 10GHz-15GHz

Ref Le	evel	10.00 dBm 20 dB			BW 100 kHz BW 300 kHz	Mode A	uto Sweep			
• 1Pk Vi	ew									
						M1[1] -6 13.8				
0 dBm—				-					10.	
-10 dBm	-			-	-					
-20 dBm	-									
-30 dBm	D	1 -28.770	dBm====							
-40 dBm	-									
-50 dBm	-									
-60 dBm	-			-				M1		
70 dBm	الاغتبيه	who much his	legendycomercesculu	idhild sortygeter	-gy19952100066666-66676600	rwa.deara	chitte-alphouldb	durate series	manaly an	rdurinvelanich
-80 dBm	+									
Start 1	0.0 G	Hz			1001	pts			Stop	15.0 GHz
1arker Type	Ref	Teo I	X-valu		Y-value	Func	tion	Euro	tion Result	
M1	rer	1		86 GHz	-64.61 dBn		cion	Func	cion Result	

#### 15GHz-20GHz

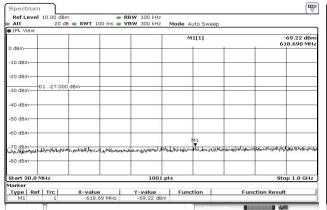


#### 20GHz-25GHz

	evel	10.00 dBm		RBW 100 kHz			
Att 1Pk Vi		20 dB	🖷 SWT 100 ms 🖷	VBW 300 kHz	Mode Auto Swee	ep	
DIPK VI	ew		r r		M1[1]		-62.19 dB
					MILLI		20.32220 GH
0 dBm-	-			-	1		
-10 dBm							
-20 dBm							
-20 dBh							
-30 dBm		1 -28.770	dBm			_	
							1
-40 dBm							
	·						
-50 dBm	-			-			
-60 dB	1						
-60 dB		2010/12	- 100 IN		CA1200 1211-002 1202 1202		2004 D2 95 300
-70 dBm	- Alas	outhornalition	numbers it in support a prime with the	and a second surplicity of the second s	authorization	the market the sources and the second	antertally drived work
-70 UBI							
-80 dBm	-						
Start 2	0.0.0	LI7		1001 p	te		Stop 25.0 GH:
Marker	0.0 0			1001 p			0.0p 20.0 dra
Type	Ref	Trc	X-value	Y-value	Function	Function	Result
M1		1	20.3222 GHz	-62.19 dBm			







Ref Level Att			RBW 100 kHz VBW 300 kHz	Mode Auto Swe	ер	
0 dBm		M	L	M2[1]		-66.02 dBn 4.87410 GH -7.00 dBn 2.44060 GH
-10 dBm						2.44060 GH
-20 dBm						
-30 dBm 0	1 -27.000	dBm				
-40 dBm					_	
-50 dBm					_	
-60 dBm						M2
-70 dBm Pulk & Andrew -80 dBm	Adrahabang	millionartonialitation	underst president and the	warder og van de	angali daga sa	man and the second s
Start 1.0 GH	2		1001 p			Stop 5.0 GHz
larker			1001 p			500 0.0 GHz
Type Ref M1	Trc 1	X-value 2.4406 GHz	-7.00 dBm	Function	Func	tion Result

#### 5GHz-10GHz

	vel :	LO.OO dBm			100 kHz					
Att		20 dB	e SWT 100 m	s 👄 VBW	300 kHz 1	Mode Au	ito Sweep			
TLE AR						м	1[1]			64.03 dBr 93060 GH
0 dBm—										33000 GH
-10 dBm	_									
-20 dBm	_									
-30 dBm	D	1 -27.000	dBm							
-40 dBm	_									
-50 dBm	_									
-60 dBm				M1						
-Howeld in	11444	uruha padat	herdet have a calence to	happeddiller	المعتبدين المريد والمعاد المعاد ا	labrahue	Priselly Black and	libed - Heferower	muthilipuper	elle plannente
-80 dBm	-									
Start 5	0 GH	z			1001 pt	s			Stop	0 10.0 GHz
	Ref		X-value		value	Func	tion	Fund	tion Result	
M1		1	6.9306 G	Hz ·	64.03 dBm					

#### 10GHz-15GHz

●1Pk Vi	ew									
						м	1[1]			64.23 dBr 84370 GH
0 dBm—	-								13.	84370 GH
-10 dBm	-									
-20 dBm										
-30 dBm	D	1 -27.000	dBm							
-40 dBm	-									
-50 dBm	-									
-60 dBm	-							M1		
-70 dBn	when	new actuality whe	, the open of a plane is a plane	unnensko	bytering allowing	well, Allang	Laboriteinungetriku	haupat, gerale with the of	lisheredering	pholosukayout
-80 dBn	+									
Start 1	0.0 G	Hz			1001 p	ts			Stop	15.0 GHz
1arker Type	Ref	Trc	X-value	1	Y-value	Fund	Nan I	F	tion Result	

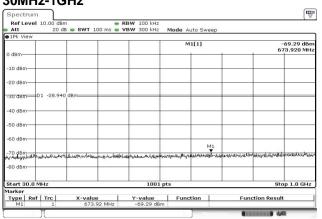
#### 15GHz-20GHz

Att	10.00 dBn 20 dB			3W 100 kHz 3W 300 kHz	Mode Au	uto Sweep			
●1Pk View					M1[1] -61. 19.373				
0 dBm									
-10 dBm									
-20 dBm									
-30 dBm	D1 -27.000	dBm							
							1	1	
-40 dBm									
-50 dBm			-						
-60 dBm	DA 12	15						M1	
чинан (Newman) -70 dBm	Money of the second	liverskillerkerstreel	eby tophic nations	outran warmen	arthe and the second	hospital plans have	afger and and the above the larger	High Langer	en all and a filler
-80 dBm									
Start 15.0	GHz			1001	pts			Stop	20.0 GHz
1arker	f   Trc	X-value		Y-value	Fund			ion Result	

#### 20GHz-25GHz

Ref Leve Att	10.00 dBm 20 dE		<ul> <li>RBW 100 kH</li> <li>VBW 300 kH</li> </ul>		uto Sweep			
●1Pk View								
				N	11[1]			61.83 dB 29720 GF
0 dBm							20.	29720 GF
-10 dBm—	-			-				
-20 dBm—				-				
-30 dBm-	D1 -27.000	dBm						
-40 dBm—								
-50 dBm—								
-60 dBm			-					
ൾഡില്ലാണ്സിപ്പം -70 dBm—	ulaut.watend	Rose-Hallinghowing anger Ra	abeline remarking	all sighter and the second	a House contraction for	Williamarkan	- marchaellertother	-installed
-80 dBm—								
Start 20.0	GHz		100	01 pts			Stop	25.0 GH
Marker Type   Re	of   Trc	X-value	Y-value	Fund	tion	Fund	tion Result	
M1	1	20.2972 G	Iz -61.83 (	dBm				

## Channel High 30MHz-1GHz



#### 1GHz-5GHz

	evel :	10.00 dBm			3W 100 kHz				
Att		20 dB	<b>SWT</b> 100 m	5 <b>e</b> V	BW 300 kHz	Mode A	uto Swee	р	
DIPK VI	ew				<u>г г</u>	M	12[1]		-66.02 dBr
0 dBm-									4.91810 GH
U UBIII-				M1		M	11[1]		-8.94 dBi 2.45650 GH
-10 dBm	-			Ţ					2.43630 GF
	~								
-20 dBm				-	++				
			10						
-30 dBn		1 -28.940	dBm					_	
-40 dBm									
-40 UBII				7					
-50 dBm							-		
				11					
-60 dBm				-11			-	-	Ma
-				1			1		and the set of the second
ill and	Winner	sicconscions	hour matter through the pol	at yat	demistrene (auto	Margaropana w	Area Malanes		and the second second
-80 dBm	-				· · · · · · · · · · · ·			_	
	a								
Start 1	.0 GH	z			1001 p	ots			Stop 5.0 GHz
larker									
Type	Ref	Trc	X-value	1	Y-value	Fund	tion	Func	tion Result
M1		1	2.4565 G		-8.94 dBm				

#### 5GHz-10GHz

1Pk Vie	8W									
						M1[1]				64.56 dBr
0 dBm—					-				6.	.82370 GH
-10 dBm					-					
-20 dBm					-					
-30 dBm	D1 -2	8.940 dt	3m		-					
-40 dBm	_									
-50 dBm										
-60 dBm	_	_		M1	-					
-Horatin	water the state of	astal bill out	مائلها المريانال	and a contraction of the second	human	engrillane-enter	weelstalitedeese,	terrent destroy by	hard and have all and	almanna had
-80 dBm	_	_								
Start 5	0 GHz				1001	pts			Stop	0 10.0 GHz
Marker Type	Ref   Tro		X-valu		Y-value	Func			tion Result	

#### 10GHz-15GHz

●1Pk Vi	ew						
					M1[1]		-63.79 dBn 10.26220 GH
0 dBm-			-				10120220 011
-10 dBn	i		-			_	
-20 dBn	<u> </u>		_				
-30 dBn	D1 -28	3.940 dBm===	_			_	_
-40 dBn	·						
-50 dBn	n						
-60 (#Bh			-				
-70 dBn	and theme	ware and a state of the	whenrywall	how he are the strategy i	holenniguberegenertationhut	alerpoor millowing on the way	hand glace have been and a state of the stat
-80 dBn							
	0.0 GHz			1001 pt	s		Stop 15.0 GHz
Start 1 larker Type	0.0 GHz Ref   Trc	X-va		1001 pt	s Function	Function F	

#### 15GHz-20GHz

#### Ref Level 10.00 c Mode Auto Sweep Att 1Pk Viev M1[1] -61.38 dBr 19.22830 GH dBn -10 dBm--20 dBm-01 -28.94 -30 dBm--40 dBm -50 dBm--60 dBm դու "Թևիիսդ -70 dBm — MI ant days Maghalett Johnson -80 dBm-Start 15.0 GHz Marker Type Ref Trc M1 1 1001 pts Stop 20.0 GHz X-value 19.2283 Y-value Function Function Result **III** 440

#### 20GHz-25GHz

Att	20 de	8 👄 SWT 100 ms (	WBW 300 KHZ	Mode Auto Swee	p	
				M1[1]		-61.37 dB 20.31220 GF
0 dBm						
-10 dBm						
-20 dBm—					-	
-30 dBm	D1 -28.940	dBm	-			
-40 dBm						
-50 dBm—			_		-	
-60 dB					_	
-70 dBm	distanticher disserved	Lauly-Ulm Josephills-Allabytic	istendard the states whether the	whether of the second stands and the second s	deep the type of the street of the	sheen the philes of a second second
-80 dBm			_			
Start 20.0	GHz		1001	ots		Stop 25.0 GHz
Marker Type   Re	f   Trc	X-value	Y-value	Function	Fund	tion Result

SUD



#### 4.5 Spurious Emissions - Radiated -

#### 4.5.1 Measurement procedure

#### [FCC 15.247(d), 15.205, 15.209, KDB 558074 D01 v05r02, Section 8.6]

Test was applied by following conditions.

Test method Frequency range Test place EUT was placed on	:	ANSI C63.10 9 kHz to 25 GHz 3m Semi-anechoic chamber Styrofoam table / (W) $1.0 \times (D) 1.0 \times (H) 0.8$ m (below 1 GHz) Styrofoam table / (W) $0.6 \times (D) 0.6 \times (H)1.5$ m (above 1 GHz)
Antenna distance	:	3 m
Test receiver setting - Detector - Bandwidth Spectrum analyzer setting - Peak - Average	:	Below 1 GHz Average (9 kHz-90 kHz, 110 kHz-490 kHz), Quasi-peak 200 Hz, 120 kHz Above 1 GHz RBW=1 MHz, VBW=3 MHz, Span=0 Hz, Sweep=auto 11b: RBW=1 MHz, VBW=3 kHz, Span=0 Hz, Sweep=auto 11g, 11n: RBW=1 MHz, VBW=1 kHz, Span=0 Hz, Sweep=auto Display mode=Linear

#### Average Measurement Setting [VBW]

mode	Duty Cycle (%)	Ton [µs]	Toff [µs]	1/Ton (kHz)	Determined VBW Setting
11b	97.07	993.25	30	1.007	3kHz
11g	95.49	1375	65	0.727	1kHz
11n(HT20)	95.86	1275	55	0.784	1kHz

Although these tests were performed other than open area test site, adequate comparison measurements

were confirmed against 30 m open are test site.

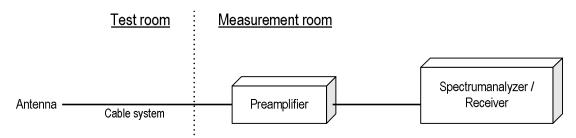
Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

Radiated emission measurements are performed at 3m distance with the broadband antenna (Loop antenna, Biconical antenna, Log periodic antenna and Double ridged guide antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1m to 4m and stopped at height producing the maximum emission. As for the Loop antenna, it is positioned with its plane vertical, and the center of the Loop antenna is 1m above the ground plane.

The EUT is Placed on a turntable, which is 0.8m/1.5m above ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. The test results represent the worst cases emission for each emission with manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation. Sufficient time for the EUT, support equipment, and test equipment are allowed in order for them to warm up to their normal operating condition.



- Test configuration



#### 4.5.2 Calculation method

[9 kHz to 150 kHz] Emission level = Reading + (Ant factor + Cable system loss) Margin = Limit – Emission level

[150 kHz to 25 GHz] Emission level = Reading + (Ant factor + Cable system loss - Amp. Gain) Margin = Limit – Emission level

Example:

Limit @ 4824.0 MHz: 74.0 dBuV/m (Peak Limit) S.A Reading = 49.5 dBuV Cable system loss = 8.4 dB Result = 49.5 + 8.4 = 45.1 dBuV/m Margin = 74.0 - 45.1 = 16.1 dB

#### 4.5.3 Limit

Frequency	Field s	Distance	
[MHz]	[uV/m]	[dBuV/m]	[m]
0.009-0.490	2400 / F [kHz]	20logE [uV/m]	300
0.490-1.705	24000 / F [kHz]	20logE [uV/m]	30
1.705-30	30	29.5	30
30-88	100	40.0	3
88-216	150	43.5	3
216-960	200	46.0	3
Above 960	500	54.0	3

Note:

1. The lower limit shall apply at the transition frequencies.

2. Emission level [dBuV/m] = 20log Emission [uV/m]

3. As shown in 15.35(b), for frequencies above 1000 MHz, the field strength limits are based on average detector, however, the peak field strength of any emission shall not exceed the maximum permitted average limits, specified above by more than 20 dB under any condition modulation.



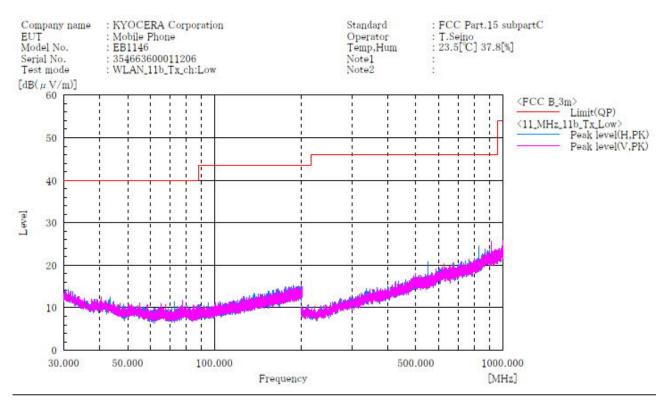
#### 4.5.4 Test data

Date Temperature Humidity Test place	:	12-October-2022 23.5 [°C] 37.8 [%] 3m Semi-anechoic chamber	Test engineer :	_	Tadahiro Seino
Date Temperature Humidity Test place	: :	7-October-2022 22.8 [°C] 36.2 [%] 3m Semi-anechoic chamber	Test engineer :	_	Chiaki Kanno
Date Temperature Humidity Test place	: : :	13-October-2022 23.4 [°C] 35.2 [%] 3m Semi-anechoic chamber	Test engineer :	_	Chiaki Kanno



#### 4.5.4.1 Transmission mode

#### [11b] Channel Low BELOW 1GHz



#### Final Result

No.	Frequency	<b>(</b> P)	c.f	Height	Angle
	[MHz]		$\left[ \mathrm{d}B\left( 1/m\right) \right]$	[cm]	[°]

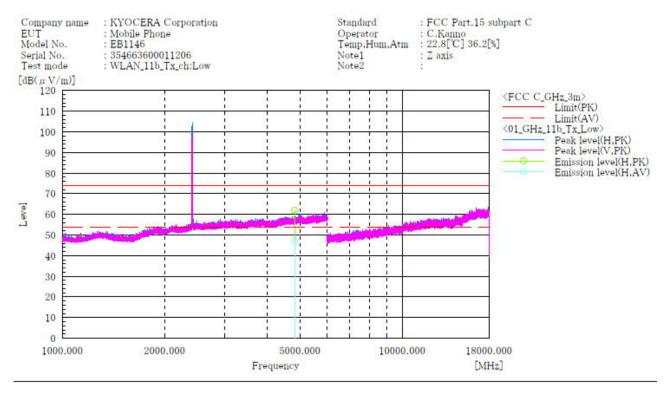
#### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



#### [11b] Channel Low ABOVE 1GHz



#### Final Result

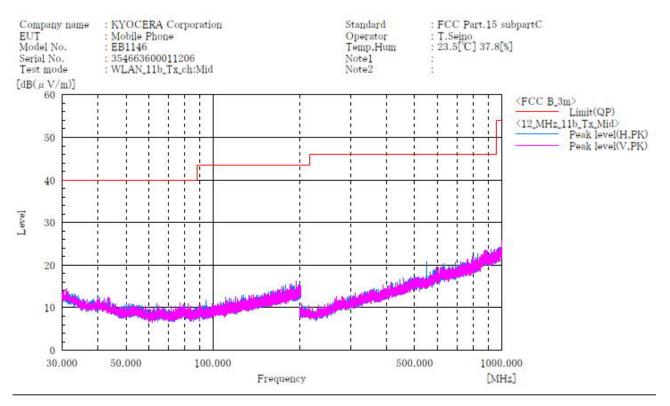
No.	Frequency	(P)	Reading	Reading	c. 1	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
			PK	AV		PK	AV	PK	AV	PK	AV			
	[MH:] 4824.000		$[dB(\mu V)]$	$[dB(\mu V)]$	[dB(1/m)]	$[dB(\mu V/m)]$	$[dB(\mu V/m)]$	PK [dB(µV/m)] 74.0	$[dB(\mu V/m)]$	[dB]	[dB]	[cm]	[" ]	
1	4824,000	H	51.7	37.0	10.2	61.9	47.2	74.0	54.0	12.1	6.8	100.0	123.0	

#### Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



#### [11b] Channel Middle BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle
	[MHz]		[dB(1/m)]	[cm]	[°]

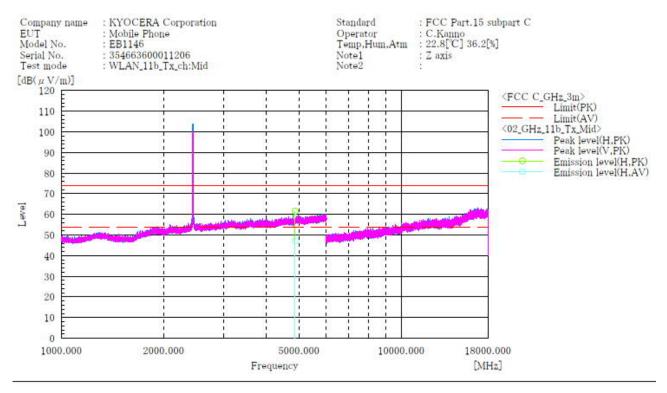
Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



#### [11b] Channel Middle ABOVE 1GHz



Final Result

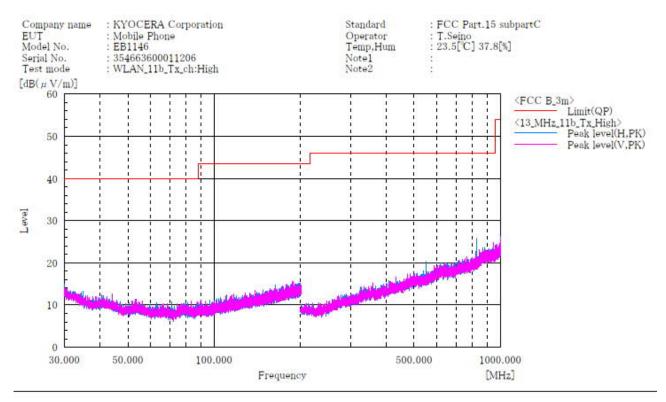
No.	Frequency	(P)	Reading	Reading	c. 1	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
			PK	AV	1.10	PK	AV	PK	AV	PK	AV			
	[MH:] 4874.000		$[dB(\mu V)]$	$[dB(\mu V)]$	[dB(1/m)]	$[dB(\mu V/m)]$	$[dB(\mu V/m)]$	[dB(µV/m)] 74.0	$[dB(\mu V/m)]$	dB.	[dB]	[cm] 100.0	C. J.	
1	4874,000	H	51.3	36, 8	10.4	01.7	47.2	74.0	34.0	12.3	6, 8	100.0	39.0	

Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



[11b] Channel High BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle

[MHz]	[dB(1/m)]	[cm]	["	]	

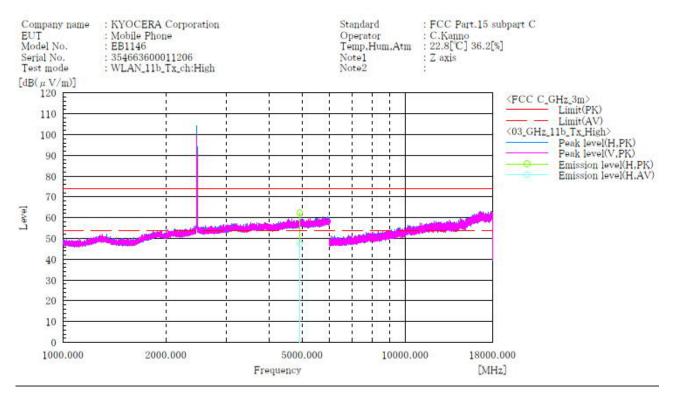
Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



[11b] Channel High ABOVE 1GHz



Final Result

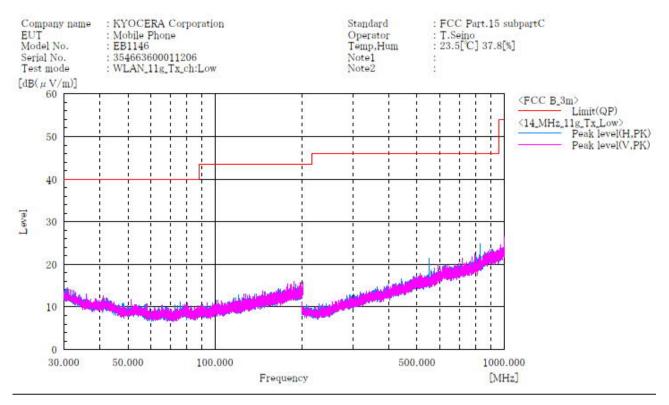
No.	Frequency	(P)	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
1	[MH:] 4924.000	н	$\begin{bmatrix} PK \\ [dB(\mu V)] \\ 51.6 \end{bmatrix}$	AV [dB(μV)] 36.9	[dB(1/m)]	$\begin{bmatrix} dB(\mu V/m) \end{bmatrix}$	$\begin{bmatrix} dB \begin{pmatrix} AV \\ \mu V/m \end{pmatrix} \end{bmatrix}$	PK [dB(μV/n)] 74.0	$\begin{bmatrix} dB (\mu V/m) \end{bmatrix}$	PK [dB]	AV [dB]	[cm]	[°]	

Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



#### [11g] Channel Low BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle
	[MHz]		$\left[\mathrm{d}B\left(1/m\right)\right]$	[cm]	[°]

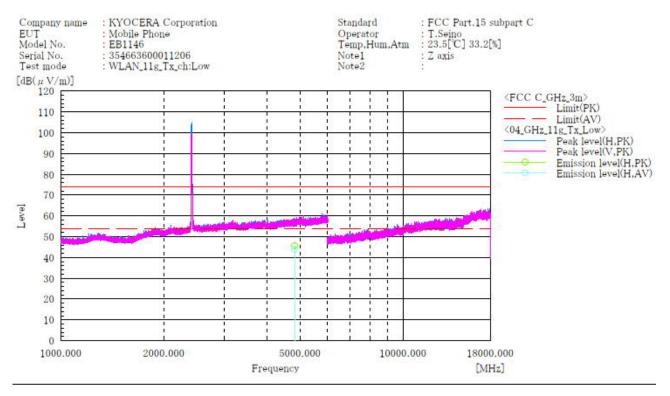
#### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



#### [11g] Channel Low ABOVE 1GHz



#### Final Result

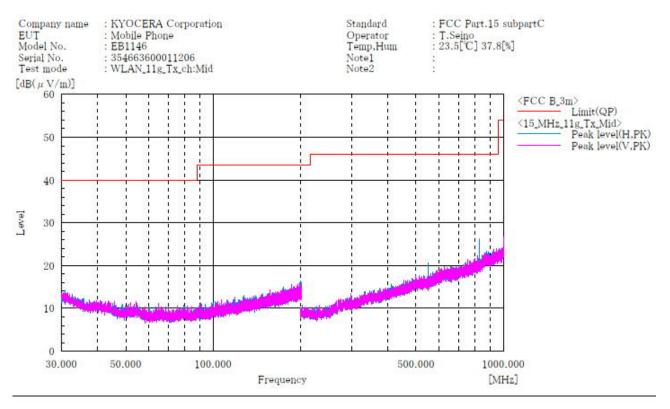
No.	Frequency	(P)	Reading	Reading	c. f	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
	Der 1		PK	AV	5	PK	AV	PK [dB(µV/m)] 74.0	AV	PK	AV			
1	[MHz] 4824,000	н	dB(µV)]	33 7	[dB(1/m)]	(dB(µV/m))	43.9	$[dB(\mu V/m)]$	$[dB(\mu V/m)]$	18 3	10 1	169 0	213 0	

#### Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



#### [11g] Channel Middle BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle
	[MHz]		[dB(1/m)]	[cm]	[°]

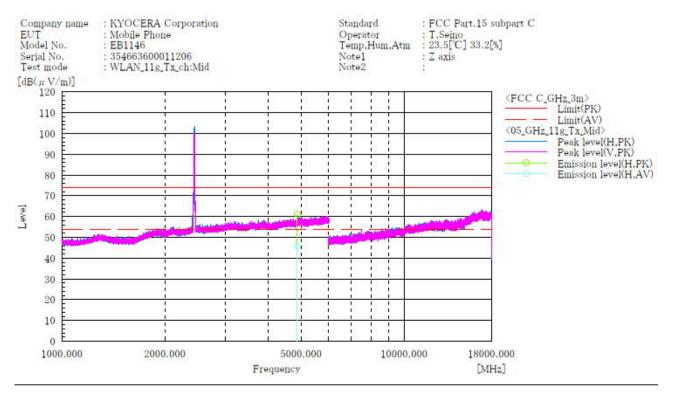
Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



#### [11g] Channel Middle ABOVE 1GHz



#### Final Result

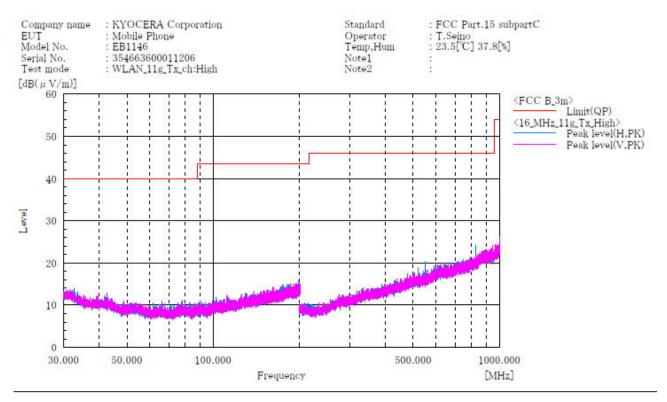
No.	Frequency	(P)	Reading	Reading	c. f	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
1	[MH:] 4874.000	Н	$\begin{bmatrix} dB(\mu V) \end{bmatrix} \\ 50.7 \end{bmatrix}$	AV [dB(μV)] 35.5	[dB(1/m)]	[dB(µV/m)] 61.1	[dB(µV/m)] 45.9	[dB(µV/n)] 74.0	AV [dB(μV/m)] 54.0	[dB] 12.9	[dB] 8.1	[cm] 163.0	[° ] 210.0	

Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



[11g] Channel High BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c. <b>f</b>	Height	Angle
	[MHz]		[dB(1/m)]	[cm]	[°]

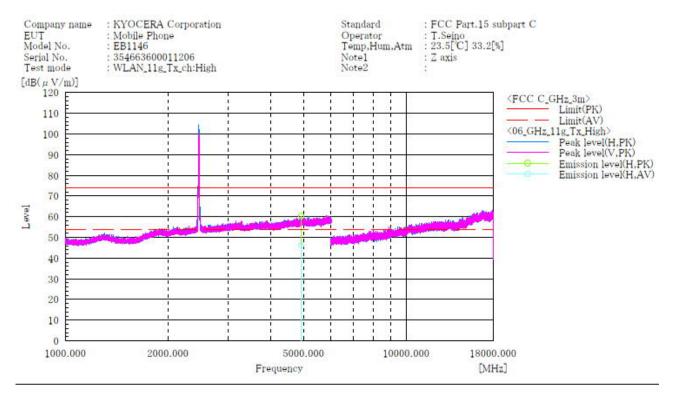
#### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



[11g] Channel High ABOVE 1GHz



Final Result

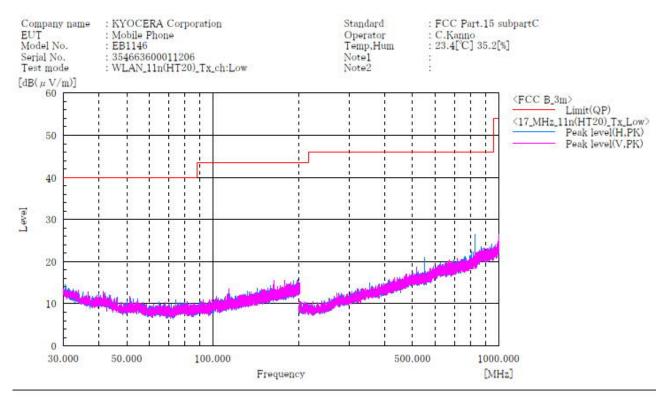
No.	Frequency	(P)	Reading	Reading	c. f	Result	Result	Limit PK	Limit	Margin	Margin	Height	Angle	Remark
1	[MH:] 4924.000	H	[dB(µV)] 49.7	[dB(µV)] 35.5	[dB(1/m)] 10.7	[dB(µV/m)] 60.4	$[dB(\mu V/m)]$ 46.2	[dB(µV/n)] 74.0	AV [dB(μV/m)] 54.0	[dB] 13.6	[dB] 7.8	[cm] [62, 0	[° ] 213.0	

Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



#### [11n(HT20)] Channel Low BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle
	[MHz]		[dB(1/m)]	[cm]	[°]

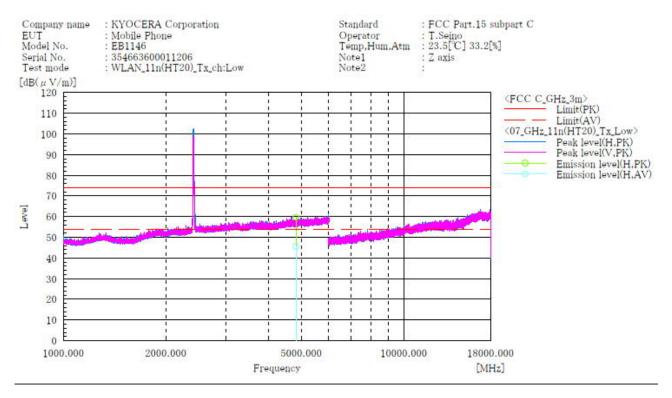
#### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



#### [11n(HT20)] Channel Low ABOVE 1GHz



#### Final Result

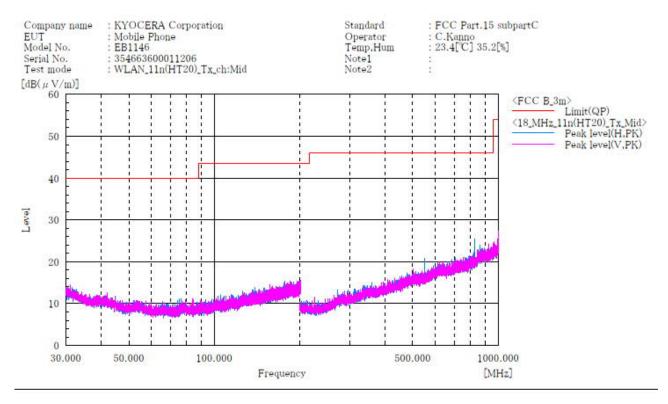
No.	Frequency	(P)	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
	[MH:] 4824.000		PK [dB(µV)]	AV [dB(µV)]	[dB(1/m)]	$[dB(\mu V/m)]$	$\begin{bmatrix} dB(\mu V/m) \end{bmatrix}$	PK [dB(µV/m)] 74.0	$\begin{bmatrix} dB(\mu V/m) \end{bmatrix}$	PK [dB]	AV [dB]	[cm]	[° ]	
1	4824.000	H	49.5	35.3	10.2	59.7	45.5	74.0	54.0	14.3	8.5	141.0	217.0	

#### Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



#### [11n(HT20)] Channel Middle BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle	
	[MHz]		[dB(1/m)]	[cm]	[° ]	

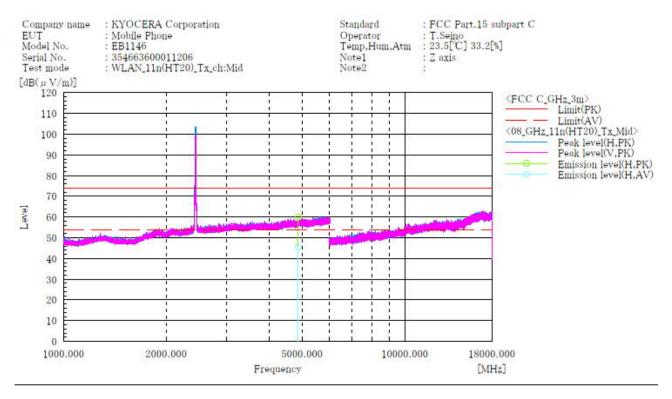
#### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



#### [11n(HT20)] Channel Middle ABOVE 1GHz



#### Final Result

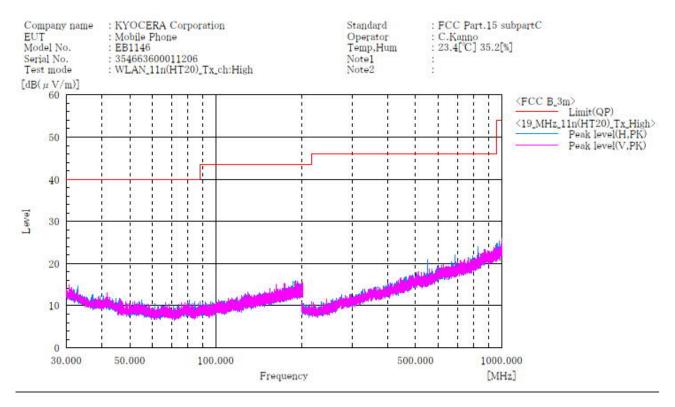
No.	Frequency	(P)	Reading	Reading	c. f	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
	Data-1		PK	AV	LID (1 /m) ]	PK LIP ( W (-) ]	AV AV	PK FAR ( NI (-) ]	AV AV	PK	AV	[]	79 T	
1	[MH:] 4874.000	H	49.4	35.3	10.4	59.8	45.7	$\begin{bmatrix} dB(\mu V/n) \\ 74.0 \end{bmatrix}$	54.0	14.2	8.3	142.0	215.0	

#### Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



#### [11n(HT20)] Channel High BELOW 1GHz



#### Final Result

no. If educity (1) C.1 Height Migre	No.	Frequency	(P)	c.f	Height	Angle
-------------------------------------	-----	-----------	-----	-----	--------	-------

[MHz]	[dB(1/m)]	[cm]	[°]

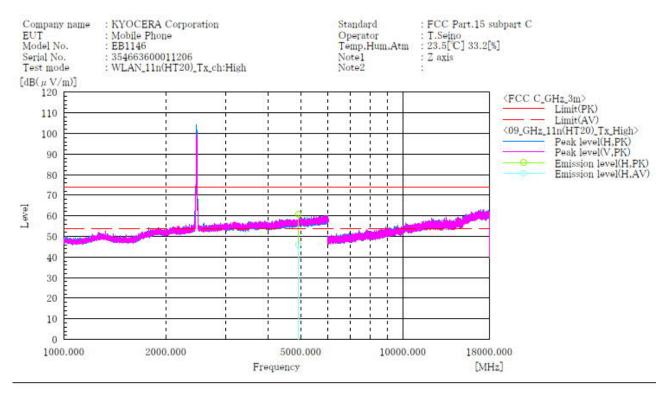
Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz at the 3 meters distance.



#### [11n(HT20)] Channel High ABOVE 1GHz



Final Result

No.	Frequency	(P)	Reading	Reading	c.f	Result	Result	Limit	Limit	Margin	Margin	Height	Angle	Remark
1	[MH:] 4924.000	Н	PK [dB(μV)] 50.1	AV [dB(μV)] 35.4	$\begin{bmatrix} dB(1/m) \\ 10.7 \end{bmatrix}$	PK [dB(µV/m)] 60.8	$\begin{bmatrix} dB(\mu V/m) \end{bmatrix}$	PK [dB(µV/m)] 74.0	AV [dB(μV/m)] 54.0	[dB] 13.2	AV [dB] 7.9	[cm] 159.0	[° ] 209. 0	

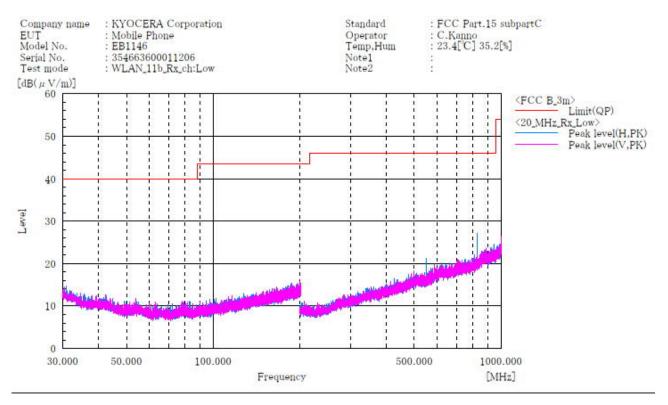
Note:

- 1. Emission Level (Margin) = Limit [Reading + Factor (Antenna + Cable Amp)]
- 2. No emission were detected in frequency range 18GHz to 25GHz at the 3 meters distance.



#### 4.5.4.2 Receive mode

#### Channel Low BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle
	[MHz]		[dB(1/m)]	[cm]	[°]

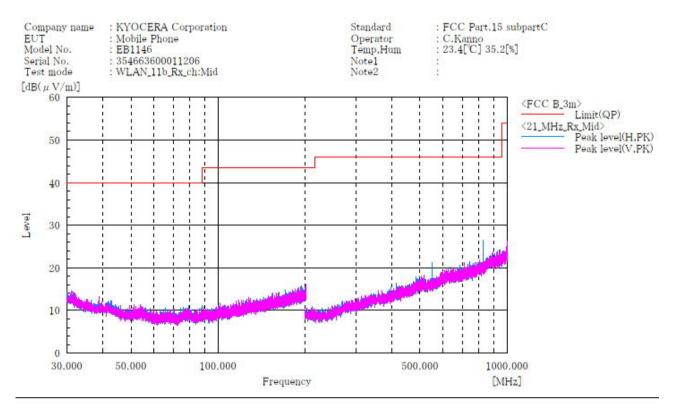
#### Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 25GHz at the 3 meters distance.



#### Channel Middle BELOW 1GHz



Final Result

No.	Frequency	(P)	c.f	Height	Angle	
	[MHz]		[dB(1/m)]	[cm]	[°]	

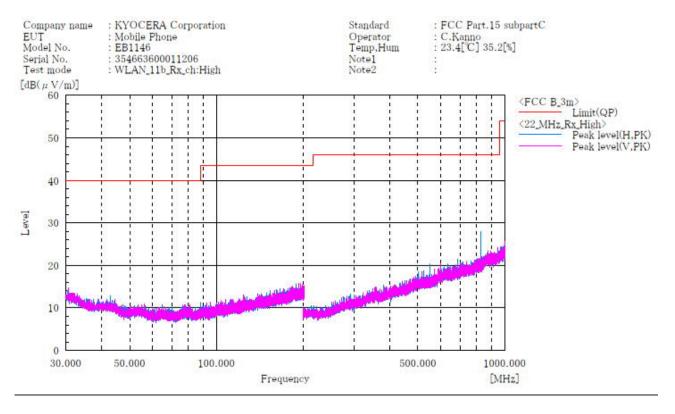
Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 25GHz at the 3 meters distance.



#### Channel High BELOW 1GHz



#### Final Result

No.	Frequency	(P)	c.f	Height	Angle	
	[MHz]		$[\mathrm{d}B(1/m)]$	[cm]	[°]	

Note:

1. Emission Level (Margin) = Limit - [Reading + Factor (Antenna + Cable - Amp)]

2. No emission were detected in frequency range 9kHz to 1000MHz and 1GHz to 25GHz at the 3 meters distance.



#### 4.6 Restricted Band of Operation

#### 4.6.1 Measurement procedure

#### [FCC 15.247(d), 15.205, 15.209, KDB 558074 D01 v05r02, Section 8.6]

Test was applied by following conditions.

Test method Test place EUT was placed on Antenna distance	: :	ANSI C63.10 3m Semi-anechoic chamber Styrofoam table / (W) $1.0 \times (D) 1.0 \times (H) 0.8 \text{ m}$ (below 1 GHz) Styrofoam table / (W) $0.6 \times (D) 0.6 \times (H) 1.5 \text{ m}$ (above 1 GHz) 3m
Spectrum analyzer setting - Peak - Average	:	RBW=1 MHz, VBW=3 MHz, Span=Arbitrary setting, Sweep=auto 11b: RBW=1 MHz, VBW=3 kHz, Span= Arbitrary setting, Sweep=auto 11g, 11n : RBW=1 MHz, VBW=1 kHz, Span= Arbitrary setting, Sweep=auto Display mode=Linear

#### Average Measurement Setting [VBW]

Mode	Duty Cycle (%)	Ton [µs]	Toff [μs]	1/Ton (kHz)	Determined VBW Setting
11b	97.07	993.25	30	1.007	3kHz
11g	95.49	1375	65	0.727	1kHz
11n(HT20)	95.86	1275	55	0.784	1kHz

Although these tests were performed other than open area test site, adequate comparison measurements

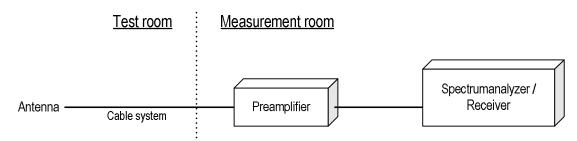
were confirmed against 30 m open are test site.

Therefore, sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 937606.

Radiated emission measurements are performed at 3m distance with the broadband antenna (Double ridged guide antenna). The antenna is positioned both the horizontal and vertical planes of polarization and height is varied 1m to 4m and stopped at height producing the maximum emission.

The EUT is Placed on a turntable, which is 0.8m/1.5m above ground plane. The turntable shall be rotated for 360 degrees to determine the position of maximum emission level. The test results represent the worst case emission for each emission with manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation. Sufficient time for the EUT, support equipment, and test equipment are allowed in order for them to warm up to their normal operating condition.

- Test configuration





#### 4.6.2 Limit

Emission at the boundary of the restricted band provided by 15.205 shall be lower than 15.209 limit.

#### 4.6.3 Measurement Result

#### [IEEE802.11b、IEEE802.11g、IEEE802.11n (HT20)]

Channel	Frequency [MHz]	Results Chart	Result
Low	2412	See the Trace Data	Pass
High	2462	See the Trace Data	Pass

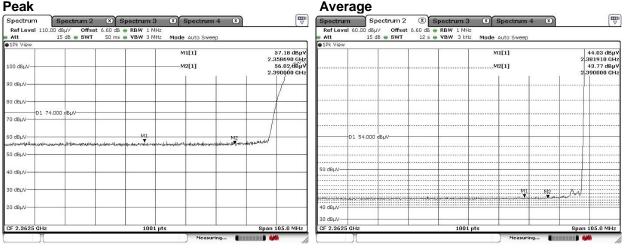
#### 4.6.4 Test data

Date	:	12-October-2022			
Temperature	:	23.5 [°C]			
Humidity	:	37.8 [%]	Test engineer	:	
Test place	:	3m Semi-anechoic chamber	-		Chiaki Kanno



#### [IEEE802.11b]

#### Channel Low Horizontal Peak



#### Vertical Peak

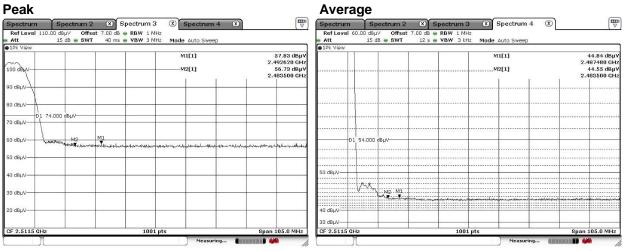
#### Average

Att 15 dB SWT	50 ms 🖷 YBW 3 MHz		1	1Pk View				
.00 dBµV		M1[1] —M2[1]	57.07 dBµV 2.356800 GHz 55.58 dBµV 2.390000 GHz			 	м1[1] м2[1]	43.84 2:387360 43.53 2:390000
0 dBµV								
D1 74,000 dBuV			1			 		
) dBµV						 		 
	MI anaradhaantanahanahanah	alunghinikan kunun ku	M2 Winderson		01 54.000 dBµV			
dByV	T	อิมพูลิสส์สภาจิมสะกัจมีเสียกการอิมุชโตรงหนึ่ง	M2	C	)1 54.000 dBµV			
I dBµV	T	augeneense van de seeren aan de seeren a In de seeren aan de seeren a	NZ June June Alert	C	)1 54.000 dBµV			



#### [IEEE802.11b]

#### Channel High Horizontal Peak



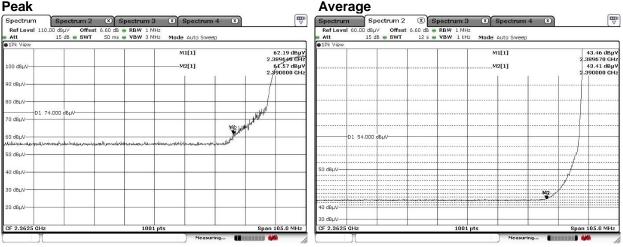
#### Vertical Book

Peak			Average			
Spectrum 2 🛞 Spectrum 3				trum 2 🛛 🛞 Spectrum 3	Spectrum 4 🛞	
	IHz IHz Mode Auto Sweep		Ref Level 60.00 dBµV Att 15 dB	Offset 7.00 dB - RBW 1 MHz SWT 12 s - YBW 3 kHz	Mode Auto Sweep	
●1Pk View 100 dBµV	M1[1] M2[1]	58.16 dBμV 2.491260 GHz 55.83 dBμV 2.483500 GHz	IPk View		M1[1] M2[1]	44.79 dBµ 2.488000 GF 43.99 dBµ 2.483500 GF
90 dBµV						
70 dBµV 60 dBµV 10-10-10-10-10-10-10-10-10-10-10-10-10-1	eller som de service ander darbeiter ander de service	เปลาให้ไปปี	01 54.000 dBµ	N		
50 dBµV						
40 dBµV			50 dBµV	MI		
20 dBµV			40 dBµV		a fra , web	
CF 2.5115 GHz 1001			30 dBµV	1001 p		Span 105.0 MHz



### [IEEE802.11g]

#### Channel Low Horizontal Peak



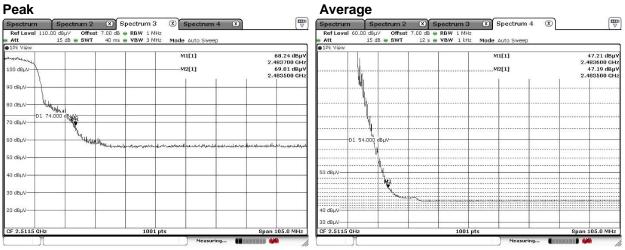
### Vertical

#### Peak Average Spectrum Spectrum 2 Spectrum 3 Spectrum 4 Spectrum 4 Ref Level 110.00 dbµ/ Offset 6.60 db RBW 1 MHz Att Spectrum 4 43.17 dBµV 2.388930 GHz 43.18 dBµV 2.390000 GHz M1[1] 57.34 dBμV 2.383550 GHz 56.16 dBμV 2.390000 GHz M1[1] 100 dBuV M2[1] M2[1] 90 dBµV 80 dBµV D1 74.000 dBµV 70 dBµVj. 60 dBµ\ D1 54.000 dBuV M2 write nutrit 50 dBµV 40 dBµ\ 0 dBµV 30 dBµV MANE2 20 dBµV-40 dBµV 30 dBuV F 2.3625 100 05.0 MHz F 2.3625 GHz 1001 pt: 8pan 105.0 MHz Spa 1111 .....



### [IEEE802.11g]

#### Channel High Horizontal Peak



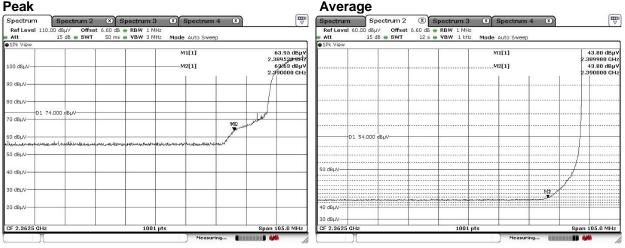
#### Vertical Book

Peak		Average				
Spectrum 2 (X) Spectrum 3 (X) Spectrum 4	×	Spectrum S		ectrum 3 🛛 🙁	Spectrum 4 🙁	
Ref Level         110.00         dBµV         Offset         7.00         dB ●         RBW         1 MHz           Att         15 dB ●         SWT         40 ms ●         YBW 3 MHz         Mode         Auto Sweep				RBW 1 MHz YBW 1 kHz Mod	le Auto Sweep	
●LDk View M1[1] 	63.58 dBµV 2.483700 GHz 62.83 dBµV 2.483500 GHz	1Pk View			M1[1] M2[1]	44.88 dBµ 2.493600 GH 44.83 dBµ 2.483500 GH
00 dBµV- 80 dBµV- D 74,000 dBµV- D 74,000 dBµV- D 74,000 dBµV- D 74,000 dBµV-						
60 dB/V	rgeiteren staterbannen jaren ber	D1 54.000	) dBµV			
40 dBµV		50 dBµV				
30 dBµV		40 dBμV	1,92 			4011003132100 001044449500
CF 2.5115 GHz 1001 pts	Span 105.0 MHz	30 dBµV CF 2.5115 GHz		1001 pts		Span 105.0 MHz



#### [IEEE802.11n (HT20)]

#### Channel Low Horizontal Peak



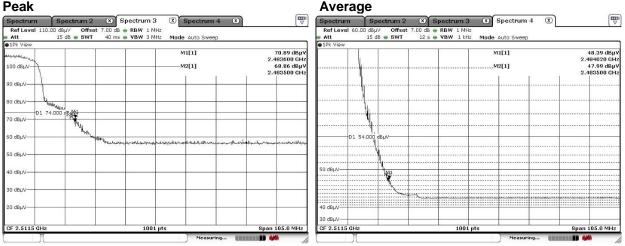
### Vertical

#### Peak Average Spectrum Spectrum 2 Spectrum 3 Spectrum 4 Spectrum 4 Ref Level 110.00 dbµ/ Offset 6.60 db RBW 1 MHz Att Spectrum 4 59.49 dBµV 2.389320 GHz 58.85 dBµW 2.390000 GHz 43.23 dBµV .388930 GHz 43.16 dBµV .390000 GHz M1[1] M1[1] 100 dBuV M2[1] M2[1] 90 dBµV 80 dBµV D1 74.000 dBµV 70 dBµV-W 1012 60 dBµ\ D1 54.000 dBuV autorita Mulu 50 dBµV 40 dBµV 0 dBµV 30 dBµV MAI2 20 dBµV-40 dBµV 30 dBuV F 2.3625 100 Spar 05.0 MHz F 2.3625 GH 1001 pt: 8pan 105.0 MHz .....



#### [IEEE802.11n (HT20)]

#### Channel High Horizontal Peak



### Vertical

#### Peak Average Spectrum Spectrum 3 Spectrum 4 Spectrum 4 Ref Level 60.00 dBµV Offset 7.00 db = RBW 1 NHt; Att 15 db = SWT 12 s = VBW 1 kHt; IPk View IPk View IPk View IPk View IPk View IPk View Spectrum Spectrum 2 Spectrum 3 Ref Level 110.00 dbµ/ Offset 7.00 db @ RBW 1 MHz Att 15 db @ SWT 40 ms @ VBW 3 MHz IPR View 100 db @ SWT 10 ms @ VBW 3 MHz Spectrum 4 🛛 Mode Auto Sy M1[1] 65.44 dBµV 2.484650 GHz 64.32 dBµV 2.483500 GHz M1[1] 45.78 dBμV 2.483710 GHz 45.72 dBμV 2.483500 GHz M2[1] M2[1] 90 dBuV D1 74,000 dBµV BD dBµV 70 dBµV 60 dBµV .000 50 dBµ 40 dBµV 0 dBµV 1362 30 dBµ\ HO dBµV-20 dBµV-30 dBuV F 2.5115 100 Spar 05.0 MHz F 2.5115 GHz 1001 pt: 8pan 105.0 MHz



#### 4.7 Transmitter Power Spectral Density

#### 4.7.1 Measurement procedure

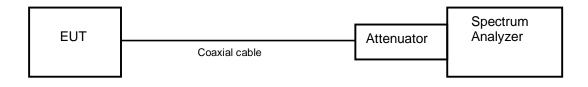
#### [FCC 15.247(e), KDB 558074 D01 v05r02, Section 8.4]

The peak power is measured with a spectrum analyzer connected to the antenna terminal, while EUT is operating in transmission mode at the appropriate center frequency.

The spectrum analyzer is set to;

- a) Span = 1.5 times the 6 dB bandwidth.
- b) RBW = 3kHz 100kHz.
- c) VBW  $\geq$  3 x RBW.
- d) Sweep time = auto-couple.
- e) Detector = peak.
- f) Trace mode = max hold.

#### - Test configuration



#### 4.7.2 Limit

The peak power spectral density shall not be greater than 8 dBm in any 3 kHz band.

#### 4.7.3 Measurement result

Date	:	11-October-2022				
Temperature	:	22.5 [°C]				
Humidity	:	46.1 [%]	Test e	engineer	:	
Test place	:	Shielded room No.4				Taiki Watanabe



#### [IEEE802.11b]

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
Low	2412	-16.21	10.52	-5.69	8.00	13.69	PASS
Middle	2437	-17.38	10.52	-6.86	8.00	14.86	PASS
High	2462	-17.63	10.52	-7.11	8.00	15.11	PASS

Calculation;

Transmitter Power Spectral Density Level (Margin) = Limit – (Reading + Factor)

#### [IEEE802.11g]

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
Low	2412	-19.87	10.52	-9.35	8.00	17.35	PASS
Middle	2437	-19.99	10.52	-9.47	8.00	17.47	PASS
High	2462	-19.91	10.52	-9.39	8.00	17.39	PASS

Calculation;

Transmitter Power Spectral Density Level (Margin) = Limit – (Reading + Factor)

#### [IEEE802.11n (HT20)]

Channel	Center Frequency (MHz)	Reading (dBm)	Factor (dB)	Level (dBm)	Limit (dBm)	Margin (dBm)	Result
Low	2412	-20.68	10.52	-10.16	8.00	18.16	PASS
Middle	2437	-20.92	10.52	-10.40	8.00	18.40	PASS
High	2462	-22.65	10.52	-12.13	8.00	20.13	PASS

Calculation;

Transmitter Power Spectral Density Level (Margin) = Limit – (Reading + Factor)

#### 4.7.4 Trace data

### [IEEE802.11b]

**Channel Low** 

Att	20.00 dBn 30 dB		RBN 0 ms		Mode Aut	to FFT			
1Pk View		0 0111 /			Houe Hu				
						41[1]			16.21 dBr
10 dBm						1		2.41	13560 GH
0 dBm			-				2	-	-
-10 dBm				M1					
-20 dBm			June Land		whent	destronal modeling	and white		
0.011010000	alanton	and all here	and the second	1	1		march	when	
-30 dBm	$\nabla f$				¥ l			T	and the present
-40 dBm-	-¥							Ψ	
-50 dBm			-			-			-
-60 dBm									
-70 dBm							-	-	5

#### **Channel Middle**

1Pk View		0 ms 🖷 VBN		Mode Aut				
				,	11[1]			17.38 dBr 62360 GH
10 dBm					1		-	
0 dBm					-	2		
-10 dBm			M1					
-20 dBm	 and the stand	aptition windows all in a		pourtuchiles	ford abad have showing the of	Martyper and		
-30 dBm				/			$\overline{\mathbf{V}}$	and a first and and
-50 dBm								
-60 dBm					-			
-70 dBm					-	-		

### Channel High

			1		11[1]			17.63 dBr
					11[1]			09960 GH
10 dBm								-
0 dBm								
-10 dBm			3.7					
-20 dBm		and the factor of the finite	MI	Junelune	, and a state of the state of t	Hundre .		~
-30 dBm	North States and			V		- Adultaly	my a	Mar.
40 dBm	w						V	and a server
-50 dBm		_			-			-
-60 dBm								
-70 dBm						-		8

Japan

### [IEEE802.11g]

Spectrum	ſ						
Ref Level 20.	00 dBm 30 dB 👄 SWT :		3 kHz	de Auto FFT			
1Pk View	30 GB 🥌 SW1 :	lu ms 🖷 VBW	IU KHZ MIO	de Auto FFT			
				M1[1]	15		19.87 dBm 36230 GHz
10 dBm							
0 dBm							
-10 dBm							
-20 dBm	La esta		AN BABAR	MI V MANA ANANA	ntahaada		
-30 dBm	MANN	wwwwww	140400 \\\*	ARAA MARARA	namana	柳竹	
			ų			h.	
-40 dBm	N"					Muhu	
-50 dBm						,	WAR
N08464							x harry
-70 dBm		-	-			-	
CF 2.412 GHz			1001 pt	_		Snan	25.0 MHz
CF 2.412 GH2			1001 pt	3		apan 44	

#### **Channel Middle**

Att :	30 dB 🥌 SW	T 10 ms 🖷 VB	W 10 kHz	Mode Auto	FFT			
				M1	[1]			-19.99 dBn 407460 GH:
10 dBm								
0 dBm							5	-
-10 dBm	_							
					M1			
-20 dBm			1 MAGAN	black.				
	NUMBER	MMMMM	hun	MUMM	whith	with	M	
-30 dBm	NUMAN	MMMMMM	MMM	MAANA	wwww	with	4	
-30 dBm	NANN	www.www	MMM	MAAAAAA	wwww	within	M	
-30 dBm	NAWW	daman and a second s	- Mining	MMM	wwww	white	4	
30 dBm 40 dBm 50 dBm	NHWIN	MAMAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA	MMM	MMMM	www	wuhu	4	
-20 dBm -30 dBm -40 dBm -50 dBm -50 dBm -70 dBm	NWWW			MAAA	www	whyn	4	- When

### Channel High

Att 30 d	iB 👄 SWT 10 m:	s 👄 VBW 10 kHz	Mode Auto FFT		
			M1[1]		-19.91 dBn 2.4613760 GH
10 dBm					2.1010700 011
0 dBm					
107070000					
-10 dBm	-				
-20 dBm	-	M			
M	MMMMM	MANAMANN	y when when	MMANAN	
30 dBm			Ψ	1	
					(a
40 dBm				2	"Ma
MANY	-		-	-	- Wu
50 dBm					WWW
50 dBm					hy hum
-40 dBm					- WWWW

Japan

### [IEEE802.11n (HT20)]

#### **Channel Low**

Ref Level Att		n B 👄 SWT	• R 10 ms • V	BW 3 kHz BW 10 kHz	Mode Au	to FFT			
●1Pk View									
						м1[1]			20.68 dBr
10 dBm						+	+	-	
0 dBm									
-10 dBm			_	_					
				M1					
-20 dBm		20.001		no Indudit	ANANAA J	ALAAAA.	ANNA AL		-
-30 dBm	MA	MANN	AAAAAAA	1449 00 Mar	III a kanab	OAAAAAAAAAAAAA	www.wh	MM	
oo abiii					Ψ				
-40 dBm			_					h	
	1ª							~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	
-50 dBm									M.
Appropriet									Mary
-70 dBm			-	-		1			
CF 2.412 G	HZ			100	1 pts			Span	25.0 MHz

#### **Channel Middle**

Att 30 d 1Pk View	iB 👄 SWT 10 ms 🖷	<b>VBW</b> 10 kHz	Mode Auto FFT			
			M1[1]			0.92 dBn 4270 GH
10 dBm			1			
0 dBm					-	
10 dBm						
20 dBm	www.www	M1	badda addi	in the second		
1		ANAAWA BAAA	I I V V V V V V V V V V V V V V V V V V	VIRAAMAAAA. MA	144644	
30 dBm /1///	MAN MARA 444		W 1	04004040468	NANN	
30 dBm	Add Al action and a day		V I		WVVVA	
40 dBm	NODALOAAAA				NV V/VI	
40 dBm						Y
40 dBm						L.
30 dBm						L.

### **Channel High**

Att 1Pk View	0.00 dBm 30 dB	SWT 10	e RBV ms e VBV		Mode Auto	D FFT			
					м	1[1]			22.65 dBr 07510 GH
10 dBm									ororo di
0 dBm							e.		
-10 dBm									
-20 dBm				M1	• [ ] ] ]				-
-30 dBm	MM	WANN	MAAM	MANNA	MANAM	mmm	Whanny	Why	
40 dBm				1	1				
50 dBm	r <sup>n</sup>							h	0
SU dBm								J	ų,
, e									Why
60 dBmh									1.
-60 dBm/ ///////////////////////////////////									

Japan



#### 4.8 AC Power Line Conducted Emissions

#### 4.8.1 Measurement procedure

#### [FCC 15.207]

Test was applied by following conditions.

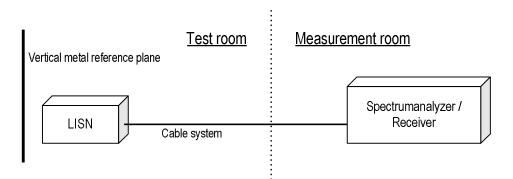
Test method	:	ANSI C63.10
Frequency range	:	0.15 MHz to 30 MHz
Test place	:	3m Semi-anechoic chamber
EUT was placed on	:	FRP table / (W) 2.0 × (D) 1.0 × (H) 0.8 m
Vertical Metal Reference Plane	:	(W) 2.0 × (H) 2.0 m, 0.4 m away from EUT
Test receiver setting		
- Detector	:	Quasi-peak, Average
- Bandwidth	:	9 kHz

EUT and peripherals are connected to  $50\Omega/50 \mu$ H Line Impedance Stabilization Network (LISN) which are connected to reference ground plane, and are placed 80cm away from EUT. Excess of AC power cable is bundled in center.

LISN for peripheral is terminated in  $50\Omega$ .

EUT operating mode is selected to emit the maximum noise. Overall frequency range is investigated with spectrum analyzer using peak detector. Maximum emission configuration is determined by manipulating the EUT, peripherals, interconnecting cables. Then, emission measurements are performed with test receiver in above setting to each current-carrying conductor of the mains port. Sufficient time for EUT, peripherals and test equipment is provided in order for them to warm up to their normal operating condition. If the average limit is met when using a quasi-peak detector receiver, the EUT shall be deemed to meet both limits.

- Test configuration



#### 4.8.2 Calculation method

Emission level = Reading + (LISN. Factor + Cable system loss) Margin = Limit – Emission level

Example: Limit @ 0.403 MHz: 57.8 dB $\mu$ V(Quasi-peak) : 47.8 dB $\mu$ V(Average) (Quasi peak)Reading = 22.7 dB $\mu$ V c.f. = 10.4 dB Emission level = 22.7 + 10.4 = 33.1 dB $\mu$ V Margin = 57.8 - 33.1 = 24.7 dB (Average) Reading = 6.5 dB $\mu$ V c.f. = 10.4 dB Emission level = 6.5 + 10.4 = 16.9 dB $\mu$ V Margin = 47.8 - 16.9 = 30.9 dB



#### 4.8.3 Limit

Frequency	Limit			
[MHz]	QP [dBuV]	AV [dBuV]		
0.15-0.5	66-56*	56-46*		
0.5-5	56	46		
5-30	60	50		

\*: The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.5MHz.



#### 4.8.4 Test data

Date Temperature Humidity Test place	<ul> <li>17-October-2022</li> <li>21.3 [°C]</li> <li>48.3 [%]</li> <li>3m Semi-anechoic chamber</li> </ul>	Test engineer : Tadahiro Seino
Company Name EUT Model No. Serial No. Test mode [dB(µV)]	: KYOCERA Corporation : Mobile Phone : EB1146 : 354663600011206 : WLAN_11b_Tx	Standard       : FCC Part.15 Subpart C         Operator       : T.Seino         Temp,Hum,Atm       : 21.3[°C] 48.3[%]         Note1       :         Note2       :
80 70 60		<pre></pre>
50 1 1 2 30		Emission level-AV(L1) Emission level-QP(L2) Emission level-AV(L2)
20		
0.150	0.500 1.000 Frequency	5.000 10.000 30.000 [MHz]

#### Final Result

No.	Frequency	Reading QP	Reading CAV	c.f	Result QP	Result CAV	Limit QP	Limit AV	Margin QP	Margin CAV
	[MHz]	$[dB(\mu V)]$	$[dB(\mu V)]$	[dB]	$[dB(\mu V)]$	$[dB(\mu V)]$	$[dB(\mu V)]$	$[dB(\mu V)]$	[dB]	[dB]
1	0.150	42.3	15.9	10.3	52.6	26.2	66.0	56.0	13.4	29.8
23	0.699	22.0	12.1	10.2	32.2	22.3	56.0	46.0	23.8	23.7
	4.996	16.9	6.8	10.4	27.3	17.2	56.0	46.0	28.7	28.8
45	7.002	23.7	13.1	10.5	34.2	23.6	60.0	50.0	25.8	26.4
5	7.033	22.7	12.1	10.5	33.2	22.6	60.0	50.0	26.8	27.4
6	7.059	23.1	12.7	10.5	33.6	23.2	60.0	50.0	26.4	26.8
	L2 Phase									
No.	Frequency	Reading QP	Reading CAV	c.f	Result QP	Result CAV	QP Limit	Limit AV	Margin QP	Margin CAV
	[MHz]	$[dB(\mu V)]$	$[dB(\mu V)]$	[dB]	$[dB(\mu V)]$	$[dB(\mu V)]$	$[dB(\mu V)]$	$[dB(\mu V)]$	[dB]	[dB]
1	0.150	43.0	17.0	10.3	53.3	27.3	66.0	56.0	12.7	28.7
2	0.701	20.6	10.5	10.2	30.8	20.7	56.0	46.0	25.2	25.3
-		16 0	4.9	10.4	26.6	15.3	56.0	46.0	29.4	30.7
23	4.987	16.2								
3 4	6.998	24.2	12.4	10.5	34.7	22.9	60.0	50.0	25.3	27.1
3456							60.0 60.0 60.0		25.3 25.4 25.3	



### 5 Antenna requirement

According to FCC section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The antenna is a special antenna mounted inside of the EUT. Therefore, the EUT complies with the antenna requirement of FCC section 15.203.



### 6 Measurement Uncertainty

Expanded uncertainties stated are calculated with a coverage Factor k=2. Please note that these results are not taken into account when measurement uncertainty considerations contained in ETSI TR 100 028 Parts 1 and 2 determining compliance or non-compliance with test result.

Test item	Measurement uncertainty
Conducted emission, AMN (9 kHz – 150 kHz)	±3.7 dB
Conducted emission, AMN (150 kHz – 30 MHz)	±3.3 dB
Radiated emission (9kHz – 30 MHz)	±3.2 dB
Radiated emission (30 MHz – 1000 MHz)	±5.5 dB
Radiated emission (1 GHz – 6 GHz)	±4.8 dB
Radiated emission (6 GHz – 18 GHz)	±4.4 dB
Radiated emission (18 GHz – 40 GHz)	±6.4 dB
Radio Frequency	±1.3 * 10 <sup>-8</sup>
RF power, conducted	±0.7 dB
Adjacent channel power	±1.5 dB
Temperature	±0.6 °C
Humidity	±1.2 %
Voltage (DC)	±0.4 %
Voltage (AC, <10kHz)	±0.2 %

Judge		Measured value and standard limit value
PASS	Case1	value         ice_rtainty       -Uncertainty         Even if it takes uncertainty into consideration,         Measured value       a standard limit value is fulfilled.         Although measured value is in a standard limit value,         a limit value won't be fulfilled if uncertainty is taken into consideration.
FAIL	Case3	Although measured value exceeds a standard limit value, a limit value will be fulfilled if uncertainty is taken into consideration. Even if it takes uncertainty into consideration, a standard limit value isn't fulfilled.



### 7 Laboratory Information

Testing was performed and the report was issued at:

### TÜV SÜD Japan Ltd. Yonezawa Testing Center

Address:5-4149-7 Hachimanpara, Yonezawa-shi, Yamagata, 992-1128 JapanPhone:+81-238-28-2881

# Accreditation and Registration A2LA

Certificate #3686.03

VLAC Accreditation No.: VLAC-013

BSMI Laboratory Code: SL2-IN-E-6018, SL2-A1-E-6018

Innovation, Science and Economic Development Canada ISED#: 4224A

VCCI Council Registration number: A-0166



### Appendix A. Test Equipment

#### Antenna port conducted test

Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
Spectrum analyzer	Agilent Technologies	E4440A	US44302655	30-Sep-2023	05-Sep-2022
Attenuator	Weinschel	56-10	J4993	31-Dec-2022	21-Dec-2021
Power meter	ROHDE&SCHWARZ	NRP2	103269	31-Mar-2023	02-Mar-2022
Power sensor	ROHDE&SCHWARZ	NRP-Z81	102467	31-Mar-2023	02-Mar-2022
Radiated emission					
Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESCI	100765	30-Sep-2023	14-Sep-2022
Spectrum analyzer	Agilent Technologies	E4440A	US44302655	30-Sep-2023	05-Sep-2022
Spectrum analyzer	ROHDE&SCHWARZ	FSV40	101731	31-Mar-2023	03-Mar-2022
Preamplifier	SONOMA	310	372170	30-Sep-2023	28-Sep-2022
Loop antenna	ROHDE&SCHWARZ	HFH2-Z2	100515	30-Apr-2023	18-Apr-2022
Attenuator	TOYO Connector	NA-PJ-6	N/A(S507)	28-Feb-2023	03-Feb-2022
Biconical antenna	Schwarzbeck	VHBB9124/BBA9106	1333	31-Dec-2022	15-Dec-2021
Log periodic antenna	Schwarzbeck	VUSLP9111B	346	31-Oct-2022	15-Oct-2021
Attenuator	TOYO Connector	NA-PJ-6/6dB	N/A(S541)	30-Sep-2023	28-Sep-2022
Attenuator	TAMAGAWA.ELEC	CFA-10/3dB	N/A(S503)	31-Jul-2023	14-Jul-2022
Preamplifier	TSJ	MLA-100M18-B02-40	1929118	31-Dec-2022	22-Dec-2021
Attenuator	AEROFLEX	26A-10	081217-08	31-Dec-2022	22-Dec-2021
Double ridged guide antenna	ETS LINDGREN	3117	00052315	30-Jun-2023	22-Jun-2022
Attenuator	HUBER+SUHNER	6803.17.B	N/A(2340)	31-Dec-2022	23-Dec-2021
Double ridged guide antenna	A.H.Systems Inc.	SAS-574	469	31-Aug-2023	19-Aug-2022
Preamplifier	TSJ	MLA-1840-B03-35	1240332	31-Aug-2023	19-Aug-2022
Notch Filter	Micro-Tronics	BRM50702	G433	30-Sep-2023	28-Sep-2022
		SUCOFLEX104/9m	MY30037/4	31-Dec-2022	22-Dec-2021
		SUCOFLEX104/1m	my24610/4	31-Dec-2022	22-Dec-2021
Manager and the		SUCOFLEX104/8m	SN MY30033/4	31-Dec-2022	22-Dec-2021
Microwave cable	HUBER+SUHNER	SUCOFLEX104/1m	MY32976/4	31-Dec-2022	22-Dec-2021
		SUCOFLEX104/2m	SN MY28404/4	31-Dec-2022	22-Dec-2021
		SUCOFLEX104/7m	41625/6	31-Dec-2022	22-Dec-2021
PC	DELL	DIMENSION E521	75465BX	N/A	N/A
Software	TOYO Corporation	EP5/RE-AJ	0611193/V6.0.140	N/A	N/A
Absorber	RIKEN	PFP30	N/A	N/A	N/A
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-NSA)	31-May-2023	28-May-2022
3m Semi an-echoic Chamber	TOKIN	N/A	N/A(9002-SVSWR)	31-May-2023	28-May-2022

#### Conducted emission at mains port

Conducted chilipsion at 1					
Equipment	Company	Model No.	Serial No.	Cal. Due	Cal. Date
EMI Receiver	ROHDE&SCHWARZ	ESCI	100765	30-Sep-2023	14-Sep-2022
Attenuator	HUBER+SUHNER	6810.01.A	N/A (S411)	31-Dec-2022	22-Dec-2021
Line impedance stabilization network	Kyoritsu Electrical Works, Ltd.	TNW-407F2	12-17-110-2	30-Jun-2023	15-Jun-2022
Microwave cable	HUBER+SUHNER	SUCOFLEX104/5m	MY33601/4	31-Oct-2022	26-Oct-2021
Microwave cable	HUBER+SUHNER	SUCOFLEX104/2m	MY37268/4	31-Oct-2022	28-Oct-2021
Coaxial cable	HUBER+SUHNER	RG214/U/10m	N/A (S194)	31-Dec-2022	22-Dec-2021
PC	DELL	DIMENSION	75465BX	N/A	N/A
Software	TOYO Corporation	EP5/CE-AJ	0611193/V5.4.11	N/A	N/A

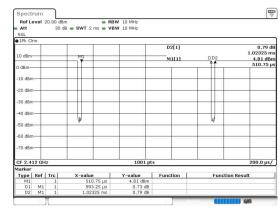
\*: The calibrations of the above equipment are traceable to NIST or equivalent standards of the reference organizations.



### Appendix B. Duty Cycle

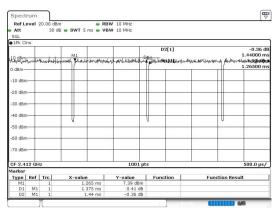
### [Plot & Calculation]

11b



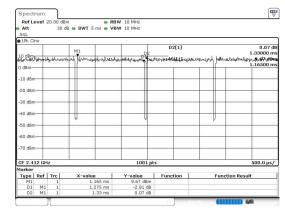
Duty Cycle = Ton / (Ton + Toff) = 993.25[µs] / (993.25[µs] + 30[µs]) =97.07[%]

11g



Duty Cycle = Ton / (Ton + Toff) =  $1375[\mu s] / (1375[\mu s] + 65[\mu s]) = 95.49[\%]$ 





Duty Cycle = Ton / (Ton + Toff) =  $1275[\mu s] / (1275[\mu s] + 55[\mu s]) = 95.86[\%]$