SAR TEST REPORT

Test Report No.: 13734830S-A-R1

Applicant : **Canon Inc.**
Type of Equipment : **Built-in Wireless module with Bluetooth in Flat Panel Detector**
Model Number of EUT : **WM01B**
FCC ID : **AZDWM01B**
Test Standard : **FCC 47CFR §2.1093**
Test Result : **Complied** **(Refer to Section 3)**

Highest Reported SAR [W/kg]				Host platform			-	Remarks (2.4GHz band)				Remarks (5GHz band)				Reference SAR test report
Partial-body		Hand		No.	Type	Model		Conducted output power (Burst average) [dBm]				Conducted output power (Burst average) [dBm]				
Limit: 1.6 (1g)		Limit: 4 (10g)														
2.4GHz band	5GHz band	2.4GHz band	5GHz band					[MHz]	Mode	Measured	Max.	[MHz]	Mode	Measured	Max	
0.14 (Antenna 1)	**0.48** (Antenna 1)	**0.28** (Antenna 1)	**0.31** (Antenna 1)	1	Flat Panel Detector	WM5B01	Partial body	2412	b	12.37	14	5550	n40	11.40	13	(This report)
							Hand	2412	b	12.37	14	5310	n40	11.67	13	

*. **Highest reported SAR of all test configurations and in this platform for partial-body and hand are 0.14 W/kg and 0.28 W/kg in 2.4GHz (DTS) band, 0.48 W/kg, and 0.31 W/kg in 5GHz (U-NII) band respectively.**
*. Highest estimated summed reported SAR value for simultaneous transmission BT LE + WLAN (5GHz band) in this platform is enough lower than limit.
*. Since highest reported SAR (1g) and SAR (10g) on this platform obtained in accordance with KDB447498 D01 (v06) was kept under 1.2 W/kg (SAR (1g)), 3 W/kg (SAR(10g)), the EUT was approved to operate this "Flat Panel Detector" series single platform.
*. Max.:Maximum, (Mode) b: IEEE 802.11b, n40: IEEE 802.11n(40HT).

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested is in compliance with the limits of the above regulation.
4. The test results in this test report are traceable to the national or international standards.
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6. This test report covers Radio technical requirements. It does not cover administrative issues such as Manual or non-Radio test related Requirements. (if applicable)
7. The all test items in this test report are conducted by UL Japan, Inc. Shonan EMC Lab.
8. The opinions and the interpretations to the result of the description in this report are outside scopes where UL Japan has been accredited.
9. The information provided from the customer for this report is identified in SECTION 1.
10. This report (-R1) is a revised version of 13734830S-A. 13734830S-A report is replaced with this report.

Date of test: May 12~20, 2021

Test engineer: H. Naka
Hiroshi Naka (Engineer)

Approved by: T. Imamura
Toyokazu Imamura (Leader)

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

CERTIFICATE 1266.03

REVISION HISTORY

Revision	Test report No.	Date	Page revised	Contents
Original	13734830S-A	September 7, 2021	-	-
-R1	13734830S-A-R1	October 22, 2021	p4, 9, 11, 32	(p4)Corrected antenna model to "ANT2444-16B/M-AB-285" from "ANT2444-L". (p9)Corrected software version to "Ver.1.0 (FW Ver.41) (2021/03/25)" from "Version 1.0 (2021/03/23)". (p11)Corrected tune-up limit (max.) power of BT LE ((2440, 2480) MHz) to 5 dBm from 2 dBm. (p32)Corrected calibration date of SPB-02 to "2021/4/21" from "2021/4/14". (p32)Corrected calibration date of SEPP-02 to "2021/4/14" from "2021/4/21".

*. By issue of new revision report, the report of an old revision becomes invalid.

Reference : Abbreviations (Including words undescribed in this report) (radio_r0v03_200214)

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

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Contents of appendixes

SECTION 1: Customer information

Company Name	Canon Inc.
Address	9-1, Imaikamicho, Nakahara-ku, Kawasaki, Kanagawa 211-8501, Japan
Telephone Number	+81-3-3758-2111
Contact Person	Tetsuo Watanabe

The information provided from the customer is as follows;
- Applicant, Type of Equipment, Model No., FCC ID on the cover and other relevant pages
- SECTION 1: Customer information
- SECTION 2: Equipment under test (EUT)
- SECTION 4: Operation of EUT during testing
- Appendix 1: The part of Antenna location information, Description of EUT and Support Equipment

* The laboratory is exempted from liability of any test results affected from the above information in SECTION 2, SECTION 4 and Appendix 1.

SECTION 2: Equipment under test (EUT)

2.1 Identification of EUT and platform

	EUT	Host platform
Type of Equipment	Built-in Wireless Module with Bluetooth	Flat Panel Detector
Model Number	WM01B	WM5B01 (*2)
Serial Number	f4:a9:97:ff:d0:bc	21MED-0036
Condition of sample	Engineering prototype (*1)	Engineering prototype (*1)
Country of Mass-production	Japan	Japan
Receipt Date of Sample	March 29, 2021 (*. No modification by the Lab.)	
Category Identified	Portable device	
Rating (EUT)	DC3.3V supplied form the platform.	
Feature of EUT	The EUT is a Built-in Wireless Module with Bluetooth, model: WM01B which installs into the specified platform as "Flat Panel Detector".	
SAR Accessory	None	

*1. Not for sale: The sample is equivalent to mass-produced items.
*2. Another name for the model WM5B01 is AR-D3543W or CXDI-703C Wireless. (Refer to clause 2.3 in this report.)

2.2 Product Description (WM01B)

Equipment type	Transceiver
Frequency of operation	*. The operation frequency in each operation band refer to remarks in below.
Channel spacing	BT-LE: 2MHz (BT-LE) / WLAN: 5 MHz (2.4GHz band), 20 MHz (5GHz band)
Bandwidth	BT-LE: 79 MHz (FHSS) / WLAN: 20 MHz (b, g, a, n20, ac20), 40 MHz (n40, ac40), 80 MHz (ac80)
Type of modulation	BT-LE: GFSK / WLAN: DSSS: DBPSK, DQPSK, CCK (b), WLAN: OFDM: BPSK, QPSK, 16QAM, 64QAM (g, a, n20, ac20, n40, ac40, ac80), 256QAM (ac80)
Typical power and tune-up limit (maximum) power	*. The specification of typical and maximum transmit power (which may occur) refer to remarks in below. *. The measured output power (conducted) as SAR reference power refers to section 5 in this report.

Antenna quantity	2 pcs. (*3)	
Antenna model	**Antenna 2:** ANT2444-16B/M-AB-285	**Antenna 1:** ANT2444-16B/M-AB-285
Antenna cable length	285 mm	285 mm
Antenna gain (*. max.peak)	2.86 dBi (2.4GHz band), 3.05 dBi (5GHz band) (*including 285mm cable loss)	2.86 dBi (2.4GHz band), 3.05 dBi (5GHz band) (*including 285mm cable loss)
Antenna type / connector type	Monopole (1/4λ) / PCB side: MHF, Antenna side: soldered	Monopole (1/4λ) / PCB side: MHF, Antenna side: soldered

*3. A transmission is performed from one of antenna 2 or antenna 1 (diversity). A transmission of WLAN(2.4GHz) and BT-LE is time-division-processing. Therefore, simultaneously transmitted SAR was only considered for the WLAN(5GHz) and BT-LE.

*. Typical power and tune-up limit power (as "maximum power")

	Mode	Data rate	Output power (Typical and maximum) [dBm] (*. The measured output power (conducted) refers to section 5 in this report.)														
			2.4GHz			U-NII-1			U-NII-2A			U-NII-2C			U-NII-3		
			F [MHz]	Typical	Max.	F [MHz]	Typical	Max.	F [MHz]	Typical	Max.	F [MHz]	Typical	Max.	F [MHz]	Typical	Max.
	BT-LE	1Mbps, 2Mbps	2402~2480	3	**5**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	b	1~11Mbps	2412~2462	12	**14**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	g	6~54Mbps	2412~2462	12	**14**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	a	6~54Mbps	N/A	N/A	N/A	5180~5240	11	**13**	5260~5320	11	**13**	5500~5580, 5660~5700	11	**13**	5745~5825	11	**13**
	n20	MCS0~7	2412~2462	12	**14**	5180~5240	11	**13**	5260~5320	11	**13**	5500~5580, 5660~5700	11	**13**	5745~5825	11	**13**
	ac20	MCS0~8	N/A	N/A	N/A	5180~5240	11	**13**	5260~5320	11	**13**	5500~5580, 5660~5700	11	**13**	5745~5825	11	**13**
	n40	MCS0~7	2422~2452	11	**13**	5190, 5230	11	**13**	5270, 5310	11	**13**	5510, 5550, 5670	11	**13**	5755, 5795	11	**13**
	ac40	MCS0~9	N/A	N/A	N/A	5190, 5230	11	**13**	5270, 5310	11	**13**	5510, 5550, 5670	11	**13**	5755, 5795	11	**13**
	ac80	MCS0~9	N/A	N/A	N/A	5210	8.5	**10.5**	5290	8.5	**10.5**	5530	8.5	**10.5**	5775	8.5	**10.5**

*. F: Frequency; Max.: maximum; N/A: Not applicable; (mode) BT-LE: Bluetooth low energy, b: IEEE 802.11b, g: IEEE 802.11g, a: IEEE 802.11a, n20: IEEE 802.11n(20HT), n40: IEEE 802.11n(40HT), ac20: IEEE 802.11ac(20VHT), ac40: IEEE 802.11n (40VHT), ac80: IEEE 802.11ac(80VHT).
*. The EUT do not use the special transmitting technique such as "beam-forming" and "time-space code diversity."
*. The EUT only supports BT-LE, does not support BR/EDR even though the EUT supports Bluetooth 5.2.
*. Maximum tune-up tolerance limit is conducted burst average power and is defined by a customer as Duty cycle 100% (continuous transmitting).

2.3 Host platform information

This EUT (Built-in Wireless Module with Bluetooth, model: WM01B) is installed into the following "Flat Panel Detector" series models.
The host platform has the following "Model number" and specified "Medical equipment model number."

	Host platform information				SAR test information	
No.	Type of equipment	Model number	Medical equipment model number	Remarks	SAR test status	Reference SAR test report
1	Flat Panel Detector	WM5B01	CXDI-703C Wireless, AR-D3543W	14"×17" detector, Wireless BOP model	Tested	13734830S-A (this report)

2.4 SAR test consideration of this host platform

This platform is a large-sized transportable equipment and has a part coming in contact directly with a patient. An operator (a patient become an operator uncommonly) maintains EUT by hand. (Refer to photographs of Appendix 1-3: Usage example)
Because there is not the KDB for the product which is such a design specifications, we decide the SAR test method in below.

Physical characteristics of platform: WM5B01
Dimensions: 384 × 460 × 15.7 mm

- This platform is a transportable equipment, but, because it is a large-sized equipment, an operator (or a patient) fixes the edge of platform to stands and pushes or supports platform to a patient's body part (head, body, arm, hand, foot, etc.) by hand at the time of use.
  The X-ray imaging by platform changes the imaging part of the patient's body at every imaging after having needed several minutes for setting.
- The image transfer time (continuous transfer time) per one imaging is two or three seconds, it is short enough.
  The imaging of the same part can be performed consecutively several times.
  In the case of serial imaging, the image transfer time (continuous transfer time) occupies two or three seconds among the image intervals of 15 seconds. (Duty Cycle: < 20 %)
- On this account, the time when an operator (or patient) is really exposed to RF energy is short.
- In addition, an operator is only a doctor or a legally certified person because platform is medical equipment.
  - Explanatory note in the manual-
  "Only a physician or a legally certified operation should use the product."

In consideration of the terms of use mentioned above, we decide the SAR examination as the following contents.

a) **The front (imaging area side) and side edge of platform carries out the Partial-body SAR examination.**
   The front of platform comes in contact with a patient directly. In addition, consecutive RF energy may be exposed to the same neighborhood part of the patient although duty cycle is less than 20%.
   Because the front of platform comes in contact with a patient directly, we measure the Partial-body SAR at the position of the touch to a phantom around the antenna of the front and side-edge of platform with continuous transmission in 100% duty cycle as a worse condition.

b) **The back of platform carries out the Hand SAR examination.**
   An operator (or a patient) fixes the edge of platform to stands and pushes or supports platform to a patient's body part (head, body, arm, hand, foot, etc.) by hand and by holding back of platform at the time of use.
   In addition, consecutive RF energy may be exposed to the same neighborhood part of the patient although duty cycle is less than 20%.
   We measure the Hand SAR at the position of the touch to a phantom around the antenna of the back of platform with continuous transmission in 100% duty cycle as a worse condition.

*. In addition, because the following instructions for the operator are mentioned in a manual, the physical part of the operator does not touch directly the antenna part of the back.
   - Explanatory note in the manual -
   "Please do not adhere to your hands and body to an antenna part to restrain exposure of the RF energy when conducting an X-ray examination."

SECTION 3: Test specification, procedures and results

3.1 Test specification

FCC47CFR §2.1093: Radiofrequency radiation exposure evaluation: portable devices.

The US Federal Communications Commission has released the report and order "Guidelines for Evaluating the Environmental Effects of RF Radiation", ET Docket No. 93-62 in August 1996. The order requires routine SAR evaluation prior to equipment authorization of portable transmitter devices, including portable telephones. For consumer products, the applicable limit is 1.6 mW/g for an uncontrolled environment and 8.0 mW/g for an occupational/controlled environment as recommended by the ANSI/IEEE standard C95.1-1992. The device should be evaluated at maximum output power (radiated from the antenna) under "worst-case" conditions for normal or intended use, incorporating normal antenna operating positions, device peak performance frequencies and positions for maximum RF energy coupling in accordance with the following measurement procedures.

The tests documented in this report were performed in accordance with FCC 47 CFR Parts 2, IEEE Std.1528-2013 (latest), the following FCC Published RF exposure KDB procedures, and TCB workshop updates.

KDB 447498 D01 (v06):	General RF exposure guidance
KDB 248227 D01 (v02r02):	SAR Guidance for IEEE 802.11 (Wi-Fi) transmitters
KDB 865664 D01 (v01r04):	SAR measurement 100MHz to 6GHz
IEEE Std. 1528-2013:	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.

3.2 Exposure limit

Environments of exposure limit	Whole-Body (averaged over the entire body)	Partial-Body (averaged over any 1g of tissue)	Hands, Wrists, Feet and Ankles (averaged over any 10g of tissue)
(A) Limits for Occupational /Controlled Exposure (W/kg)	0.4	8.0	20.0
(B) Limits for General population /Uncontrolled Exposure (W/kg)	0.08	1.6	4.0

***. Occupational/Controlled Environments:** are defined as locations where there is exposure that may be incurred by people who are aware of the potential for exposure, (i.e. as a result of employment or occupation).

***. General Population/Uncontrolled Environments:** are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.

The limit applied in this test report is;

General population / uncontrolled exposure, Partial-Body (averaged over any 1g of tissue) limit: 1.6 W/kg (*. Refers to clause 2.3)
General population / uncontrolled exposure, Hands (averaged over any 10g of tissue) limit: 4 W/kg (*. Refers to clause 2.3)

3.3 Addition, deviation and exclusion to the test procedure

No addition, exclusion nor deviation has been made from the test procedure.

3.4 Test Location

UL Japan, Inc., Shonan EMC Lab.
1-22-3 Megumigaoka, Hiratsuka-shi, Kanagawa-ken 259-1220 JAPAN
Telephone number: +81 463 50 6400 / Facsimile number: +81 463 50 6401

*. A2LA Certificate Number: 1266.03 (FCC Test Firm Registration Number: 626366, ISED Lab Company Number: 2973D / CAB identifier: JP0001)

Used?	Place	Width × Depth × Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Maximum measurement distance	Used?	Place	Width × Depth × Height (m)	Size of reference ground plane (m) / horizontal conducting plane
☐	No.1 Semi-anechoic chamber	20.6 × 11.3 × 7.65	20.6 × 11.3	10 m	☐	No.4 Shielded room	4.4 × 4.7 × 2.7	4.4 × 4.7
☐	No.2 Semi-anechoic chamber	20.6 × 11.3 × 7.65	20.6 × 11.3	10 m	☐	No.5 Shielded room	7.8 × 6.4 × 2.7	7.8 × 6.4
☐	No.3 Semi-anechoic chamber	12.7 × 7.7 × 5.35	12.7 × 7.7	5 m	☐	No.6 Shielded room	7.8 × 6.4 × 2.7	7.8 × 6.4
☐	No.4 Semi-anechoic chamber	8.1 × 5.1 × 3.55	8.1 × 5.1	-	☒	**No.7 Shielded room**	2.76 × 3.76 × 2.4	2.76 × 3.76
☐	No.1 Shielded room	6.8 × 4.1 × 2.7	6.8 × 4.1	-	☐	No.8 Shielded room	3.45 × 5.5 × 2.4	3.45 × 5.5
☐	No.2 Shielded room	6.8 × 4.1 × 2.7	6.8 × 4.1	-	☐	No.1 Measurement room	2.55 × 4.1 × 2.5	2.55 × 4.1
☐	No.3 Shielded room	6.3 × 4.7 × 2.7	6.3 × 4.7	-				

3.5 Procedures and Results

Test Procedure	SAR measurement: KDB 447498 D01, KDB 248227 D01, KDB 865664 D01, IEC Std. 1528		
Category	FCC 47CFR §2.1093 (Portable device)	SAR type	Partial-body (SAR (1g)), Hands (SAR(10g))

		BT-LE		WLAN (DTS)		WLAN (U-NII-1)		WLAN (U-NII-2A)		WLAN (U-NII-2C)		WLAN (U-NII-3)		Simultaneous transmission	
Frequency [MHz]		2402~2480		2412~2462		5180~5240		5260~5320		5500~5700 (excluding 5600~5650)		5745~5825			
Results (SAR)		**Complied** (Low power) (Refer to Section 4)		**Complied** (Refer to Section 6)		**Complied** (Refer to Section 6)		**Complied** (Refer to Section 6)		**Complied** (Refer to Section 6)		**Complied** (Refer to Section 6)		**Complied** (Refer to Section 6)	
SAR [W/kg]	Type	1g	10g	1g	10g	1g	10g	1g	10g	1g	10g	1g	10g	1g	10g
		Partial-body	Hands	Partial-body	Hands	Partial-body	Hands	Partial-body	Hands	Partial-body	Hands	Partial-body	Hands	Partial-body	Hands
	Limit	1.6	4	1.6	4	1.6	4	1.6	4	1.6	4	1.6	4	1.6	4
	Scaled	**n/a**	**n/a**	**0.14**	**0.28**	**0.31**	**0.31** (0.306)	**0.36**	**0.31** (0.313)	**0.48**	**0.29**	**0.33**	**0.23**	**<1.6**	**<4**
	Measured	n/a	n/a	0.095	0.192	0.220	0.227	0.268	0.225	0.334	0.203	0.242	0.171	(Estimated)	(Estimated)
	Antenna (*1)	-	-	1	1	2	1	1	1	1	1	1	1	-	-
	Liquid type	-	-	Head	Head	Head	Head	Head	Head	Head	Head	Head	Head	-	-
Operation mode		-	-	b	b	n40	n40	n40	n40	n40	n40	n40	n40	The sum SAR of estimated SAR of "BT LE + WLAN (5GHz)" was smaller than limit.	
Frequency[MHz]		-	-	2412	2412	5190	5230	5310	5310	5550	5550	5795	5795		
Output power	Measured [dBm]	-	-	12.37	12.37	11.51	11.60	11.67	11.67	11.40	11.40	11.62	11.62		
	Tune-up limit [dBm]	5	5	14	14	13	13	13	13	13	13	13	13		
	Tune-up limit [mW]	3	3	25	25	20	20	20	20	20	20	20	20		
Power scaled factor		-	-	1.46	1.46	1.41	1.38	1.36	1.36	1.45	1.45	1.37	1.37		
Duty cycle [%]		-	-	100	100	100	100	100	100	100	100	100	100		
Duty scaled factor		-	-	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		

Note: UL Japan's SAR Work Procedures No.13-EM-W0429 and 13-EM-W0430. No addition, deviation nor exclusion has been made from standards
*1. SAR value indicated the big one of either antenna 2 or antenna 1 in table and in each operation band.
*. A transmission is performed from one of antenna 2 or antenna 1 (diversity). A transmission of WLAN(2.4GHz) and BT-LE is time-division-processing. Therefore, simultaneously transmitted SAR was only considered for the WLAN(5GHz) and BT-LE.
*. (Calculating formula) Scaled SAR to tune-up limit power (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)
where; Power scaled factor [-] = 1 / (10 ^ ("Δmax (tune-up limit power - burst average power), dB" / 10)), Duty scaled factor [-] = 100(%) / (duty cycle, %)
*. n/a: Not applicable; (mode) b: IEEE 802.11b,n40: IEEE 802.11n(40HT).
*. "yellow marker" in the table; The highest reported SAR(1g) and SAR(10g) of each band (DTS, U-NII) is shaded with yellow marker.

Test outline: Where the EUT is built into a new platform, it was verified whether multi-platform conditions can be suited in according with section 2) of 5.2.2 in KDB447498 D01 (v06).

Consideration of the test results:	**The highest reported SAR of this platform (1) was kept; ≤ 1.2 W/kg (SAR(1g)), ≤ 3 W/kg (SAR(10g))** Since highest reported SAR (1g,10g) on this EUT's platform obtained in accordance with KDB447498 D01 (v06) was kept under 1.2 W/kg (SAR(1g)), kept under 3 W/kg (SAR(10g)) , this EUT was approved to operate multi-platform.

This device is in compliance with Specific Absorption Rate (SAR) for general population/uncontrolled exposure limits (1.6 W/kg for partial body, 4 W/kg for hands) specified in FCC 47 CFR part 2 (2.1093) and had been tested in accordance with the measurement methods and procedures specified in FCC KDB publications and IEEE 1528-2013.

3.6 SAR measurement procedure

3.6.1 Normal SAR measurement procedure

Step 1: Confirmation before SAR testing

Before SAR test, the RF wiring for the sample had been switched to the antenna conducted power measurement line from the antenna line and the average power was measured. The SAR test reference power measurement and the SAR test were proceeded with the lowest data rate (which has the higher time-based average power typically) on each operation mode. Therefore, the average output power was measured on the lower, middle (or near middle), upper and specified channels with the lowest data rate of each operation mode. The power of other data rate was also measured to confirm the time-base average power and when if it's required. The power measurement result is shown in Section 5.

*. The EUT transmission power was verified that it was within 2dB lower than the maximum tune-up tolerance limit when it was set the rated power. (Clause 4.1, KDB447498 D01 (v06))

Step 2: Power reference measurement

Measurement of the E-field at a fixed location above the central position of flat phantom (or/and furthermore an interpolated peak SAR location of area scan in step 2) was used as a reference value for assessing the power drop.

Step 3: Area Scan (Area scan parameters: KDB 865664 D01 (v01r04).)

The SAR distribution at the exposed side of head or body position was measured at a distance of each device from the inner surface of the shell. The area covered the entire dimension of the antenna of EUT and suitable horizontal grid spacing of EUT. Based on these data, the area of the maximum absorption was determined by splines interpolation.

	≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface	5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location	30° ± 1°	20° ± 1°
Maximum area scan spatial resolution: Δx_{Area}, Δy_{Area}	≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
	When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	

Step 4: Zoom Scan and post-processing (Zoom scan parameters: KDB 865664 D01 (v01r04).)

Zoom Scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1 g and 10 g of simulated tissue. The Zoom Scan measures points (refer to table below) within a cube whose base faces are centered on the maxima found in a preceding area scan job within the same procedure.

A volume of 30 mm (X) × 30 mm (Y) × 30 mm (Z) (or more) was assessed by measuring 7×7×7 points (or more), ≤ 3GHz.

A volume of 28 mm (X) × 28 mm (Y) × 24mm (Z) (or more) was assessed by measuring 8×8×7 points (or more) (by "Ratio step" method (*1)), > 3 GHz.

When the SAR of the highest peak is within 2 dB of the SAR limit, additional zoom scans are proceeded for other peaks within 2 dB of the highest peak that have not been included in any zoom scan to ensure there is no increase in SAR. If the zoom scan measured as defined above complies with both of the following criteria. or if the peak spatial-average SAR is below 0.1 W/kg, no additional measurements are needed.

*. The smallest horizontal distance from the local SAR peaks to all points 3 dB below the SAR peak shall be larger than the horizontal grid steps in both x and y directions and recorded.

*. The ratio of the SAR at the second measured point to the SAR at the closest measured point at the x-y location of the measured maximum SAR value shall be at least 30 % and recorded.

				f ≤ 3 GHz	3 GHz < f ≤ 6 GHz
1	Maximum zoom scan spatial resolution: Δx_{Zoom}, Δy_{Zoom}			≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
2	Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: $\Delta z_{Zoom}(n)$		≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
3		graded grid	$\Delta z_{Zoom}(1)$: between 1st two points closest to phantom surface	≤ 4 mm	3 – 4 GHz: ≤ 3 mm 4 – 5 GHz: ≤ 2.5 mm 5 – 6 GHz: ≤ 2 mm
4			$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5 ·$\Delta z_{Zoom}(n-1)$ mm	
5	Minimum zoom scan volume	x, y, z		≥ 30 mm	3 – 4 GHz: ≥ 28 mm 4 – 5 GHz: ≥ 25 mm 5 – 6 GHz: ≥ 22 mm
	* The asterisk table-footnote is per KDB Pub. 865664 D01 v01r04. NOTE For uniformity purposes the integer frequency increments of rows 1 to 3 and 5 apply, rather than the corresponding variable and fixed parameters given in IEC 62209-1:2016 and IEC 62209-2:2010/AMD1:2019.				

Step 5: Power drift measurement

The Power Drift Measurement measures the field at the same location as the most recent power reference measurement within the same procedure, and with the same settings. The Power Drift Measurement gives the field difference in dB from the reading conducted within the last Power Reference Measurement. This allows a user to monitor the power drift of the device under test within a batch process. The measurement procedure is the same as Step 2. It was checked that the power drift is within ±5% in the evaluation procedure of SAR testing. The verification of power drift during the SAR test is that DASY system calculates the power drift by measuring the e-filed at the same location at beginning and the end of the scan measurement for each test position. The result is shown in SAR plot data of APPENDIX 2.

*. DASY system calculation Power drift value[dB] =20log(Ea)/(Eb) (where, Before SAR testing: Eb[V/m] / After SAR testing: Ea[V/m])
Limit of power drift[W] = ±5%; Power drift limit (X) [dB] = 10log(P_drift)=10log(1.05/1) = 10log(1.05)-10log(1) = 0.21dB
from E-filed relations with power; S=E×H=E^2/η=P/(4×π×r^2) (η: Space impedance) → P=(E^2×4×π×r^2)/η
Therefore, The correlation of power and the E-filed
Power drift limit (X) dB=10log(P_drift) = 10log(E_drift)^2=20log(E_drift)
From the above mentioned, **the calculated power drift of DASY system must be the less than (±) 0.21dB.**

Step 6: Z-Scan

The Z Scan measures points along a vertical straight line. The line runs along the Z-axis of a one-dimensional grid. In order to get a reasonable extrapolation the extrapolated distance should not be larger than the step size in Z-direction.

*. The all SAR tests were conservatively performed with test separation distance 0 mm. The phantom bottom thickness is approx. 2mm. Typical distance from probe tip to dipole centers is 1mm. The distance between the SAR probe tip to the surface of test device which is touched the bottom surface of the phantom is approx. 3 mm for 2.4GHz band and 2.4 mm for 5GHz band.

*1. "Ratio step" method parameters used; the first measurement point: "1.4mm" from the phantom surface, the initial z grid separation: "1.4mm", subsequent graded grid ratio: "1.4". These parameters comply with the requirement of KDB 865664 D01and recommended by Schmid & Partner Engineering AG (DASY5 manual).

SECTION 4: Operation of EUT during testing

4.1 Operating modes for SAR testing

The EUT has BT LE and IEEE 802.11b, g, a, n(20HT), n(40HT), ac(20VHT), ac(40VHT) and ac(80VHT) continuous transmitting modes. The frequency and the modulation used in the SAR testing are shown as a following.

Operation mode	BT LE		b	g	n20	n40	a	n20	ac20	n40	ac40	ac80	a	n20	ac20	n40	ac40	ac80
band	2.4GHz band						U-NII-1 (*4)						U-NII-2A					
Tx band [MHz]	2402~2480		2412~2462			2422~2452	5180~5240			5190, 5230		5210	5260~5320			5270, 5310		5290
Antenna # (*1)	2 or 1		2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1
Bandwidth [MHz]	1		20	20	20	40	20	20	20	40	40	80	20	20	20	40	40	80
Max.power [dBm]	5		**14**	**14**	**14**	13	**13**	**13**	**13**	**13**	**13**	10.5	**13**	**13**	**13**	**13**	**13**	10.5
Modulation	GFSK		DSSS	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM
D/R [Mbps, MCS#]	1	2	1	6	MCS0	MCS0	6	MCS0	MCS0	MCS0	MCS0	MCS0	6	MCS0	MCS0	MCS0	MCS0	MCS0
Frequency tested [MHz]	n/a (*2)	n/a (*2)	2412, 2437, 2462	n/a (*3)	n/a (*3)	n/a (*3)	n/a (*6)	n/a (*6)	n/a (*6)	5190, 5230	n/a (*6)	n/a (*5)	n/a (*6)	n/a (*6)	n/a (*6)	5270, 5310	n/a (*6)	n/a (*5)

Operation mode	a	n20	ac20	n40	ac40	ac80	a	n20	ac20	n40	ac40	ac80
band	U-NII-2C						U-NII-3					
Tx band [MHz]	5500~5580, 5660~5700			5510,5550,5670		5530	5745~5825			5755, 5795		5775
Antenna # (*1)	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1	2 or 1
Bandwidth [MHz]	20	20	20	40	40	80	20	20	20	40	40	80
Max.power [dBm]	**13**	**13**	**13**	**13**	**13**	10.5	**13**	**13**	**13**	**13**	**13**	10.5
Modulation	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM
D/R [Mbps, MCS#]	6	MCS0	MCS0	MCS0	MCS0	MCS0	6	MCS0	MCS0	MCS0	MCS0	MCS0
Frequency tested [MHz]	n/a (*6)	n/a (*6)	n/a (*6)	5510, 5550, 5670	n/a (*6)	n/a (*5)	n/a (*6)	n/a (*6)	n/a (*6)	5755, 5795	n/a	n/a (*5)

Controlled software	Test name	Software name	Version	Date	Storage location / Remarks
	Power measurement and SAR test	labtool Operation	Ver.1.0 (FW Ver.41)	2021/03/25	*. Memory of platform (firmware)

*. Max.power: Maximum power (tune-up limit power), D/R: Data rate, n/a: SAR test was not applied.
*. (mode) BT LE: Bluetooth Low Energy, b: IEEE 802.11b, g: IEEE 802.11g, a: IEEE 802.11a, n20: IEEE 802.11n(20HT), n40: IEEE 802.11n(40HT), ac20: IEEE 802.11ac(20VHT), ac40: IEEE 802.11n(40VHT), ac80: IEEE 802.11ac(80VHT)
*1. A transmission is performed from one of antenna 2 or antenna 1 (diversity). A transmission of WLAN(2.4GHz) and BT-LE is time-division-processing. Therefore, simultaneously transmitted SAR was only considered for the WLAN(5GHz) and BT-LE.
*2. Since BT LE is enough lower power, SAR test is exempted. (refer to clause 4.3).
*3. (KDB 248227 D01) Since reported SAR (1g, 10g) of DSSS mode which had highest output power was enough small, SAR test was only applied DSSS mode.
*4. SAR test of U-NII-1 band was also applied for the reference purpose, even though the reported SAR(1g) and SAR(10g) of U-NII-2A band were enough low.
*5. Since the maximum output power was lower than other mode, the SAR test was reduced.
*6. (KDB 248227 D01) Initial SAR test was applied to the operation mode which has higher bandwidth with the highest tune-up power and lowest data rate (lowest modulation).

4.2 RF exposure conditions

After considering the outline of platform the SAR test was applied to the platform surface in follows.

Setup	Explanation of SAR test setup plan (*. Refer to Appendix 1 for test setup photographs which had been tested.)	Antenna 1 (switch side)		Antenna 2 (bottom side)		SAR type
		D [mm]	SAR Tested /Reduced	D [mm]	SAR Tested /Reduced	
Front	A front surface (patient side) of platform was touched to the Flat phantom.	**7.55**	**Tested**	**7.65**	**Tested**	Partial-body touch
Side (Right) (Antenna 1)	A right side surface (switch, antenna 1 side) of platform was touched to the Flat phantom.	**22.65**	**Tested**	**33**	Reduced (*1)	
Side (Left)	A left side surface of platform was touched to the Flat phantom.	**355.35**	Reduced (>200 mm)	**301**	Reduced (>200 mm)	
Top	A top side edge surface of platform was touched to the Flat phantom.	**274.4**	Reduced (>200 mm)	**430**	Reduced (>200 mm)	
Bottom	A bottom side surface (antenna 2) of platform was touched to the Flat phantom.	**135.6**	Reduced (*1)	**24**	**Tested**	
Back	A back surface (operator handling, etc.) of platform was touched to the Flat phantom.	**4.65**	**Tested**	**4.55**	**Tested**	Hands hold

*. **D:** Antenna separation distance. It is the distance from the antenna inside platform the outer surface of platform which user may touch.
. Size of platform: 384 × 460 × 15.7 (thickness) [mm] (. Size of EUT: 28 (W) × 32 (D) × 3 (thickness) [mm])
*1. Refer to clause 4.3 "SAR test exclusion considerations accordance to KDB 447498 D01.

4.3 SAR test exclusion considerations accordance to KDB 447498 D01

The following is based on KDB447498D01.

Step 1) The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

[(max.power of channel, including tune-up tolerance, mW) / (min.test separation distance, mm)] × [√f (GHz)] ≤ 3.0 (for SAR(1g)), 7.5(for SAR(10g)) ····formula (1)

If power is calculated from the upper formula (1);

[SAR(1g) test exclusion thresholds, mW] = 3 × [test separation distance, mm] / [√f (GHz)] ····formula (2)

1. The upper frequency of the frequency band was used in order to calculate standalone SAR test exclusion considerations.
2. Power and distance are rounded to the nearest mW and mm before calculation
3. The result is rounded to one decimal place for comparison
4. The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.

When the calculated threshold value by a numerical formula above-mentioned in the following table is ≤ 3.0 (SAR1g), ≤ 7.5 (SAR10g), SAR test can be excluded.

Step 2) At 1500 MHz to 6 GHz and for test separation distances > 50 mm, the SAR test exclusion threshold is determined according to the following,

[test exclusion thresholds, mW] = [(Power allowed at numeric threshold for 50mm in formula (1))] + [(test separation distance, mm) - (50mm)] × 10 ··formula (3)

1. The upper frequency of the frequency band was used in order to calculate standalone SAR test exclusion considerations.
2. Power and distance are rounded to the nearest mW and mm before calculation

When output power is less than the calculated threshold value by a numerical formula above-mentioned in the following table, SAR test is excluded.

[SAR exclusion calculations for step 1) antenna ≤50mm from the user, and for step 2) antenna > 50mm from the user.]

				Calculated threshold value												
Antenna #:				Antenna 1			Antenna 2				Antenna 1			Antenna 2	
Setup:				**Back**	**Front**	**Right**	**Back**	**Front**	**Bottom**	**Right**	**Bottom**	**Top**	**Left**	**Left**	**Top**
Antenna separation distance [mm]:				≤5 (4.65)	8	23	≤5 (4.55)	8	24	33	>50 (136)	>200 (274)	>200 (355)	>200 (301)	>200 (430)
SAR type				10g	1g	1g	10g	1g	1g	1g	1g	1g	1g	1g	1g
Judge by SAR exclusion calculation				≤ 7.5	≤ 3.0	≤ 3.0	≤ 7.5	≤ 3.0	≤ 3.0	≤ 3.0	-	-	-	-	-
Mode	Higher Tx Frequency [GHz]	Tune-up limit power (conducted)		Step 1) SAR exclusion calculations for antenna ≤50mm from the user. Judge: "Exempt" when ≤ 3.0 (SAR (1g)), ≤ 7.5 (SAR (1g)); "Test" (SAR test required) when >3.0 (SAR(1g)), >7.5 (SAR (1g))							Step 2) > 50mm from the user Judge: "Exempt" when Tue-up limit power.is less than calculated threshold power value.		
		[dBm]	[mW]										
BT LE	2.48	5	**3**	0.9, Exempt	0.6, Exempt	0.2, Exempt	0.9, Exempt	0.5, Exempt	0.2, Exempt	0.1, Exempt	95mW@50mm, Exempt	Since user to antenna is >200mm, SAR test is not required.	Since user to antenna is >200mm, SAR test is not required.
b,g,n20	2.462	14	**25**	**7.8, Test**	**4.9, Test**	1.7, Exempt	**7.8, Test**	**4.9, Test**	1.6, Exempt	1.2, Exempt	96mW@50mm, Exempt		
n40	2.462	13	**20**	6.3, Exempt	**3.9, Test**	1.4, Exempt	6.3, Exempt	**3.9, Test**	1.3, Exempt	1.0, Exempt			
a,n20,ac20	5.24	13	**20**	**9.2, Test**	**5.7, Test**	2.0, Exempt	**9.2, Test**	**5.7, Test**	1.9, Exempt	1.4, Exempt	65mW@50mm, Exempt		
n40,ac40	5.23	13	**20**	**9.1, Test**	**5.7, Test**	2.0, Exempt	**9.1, Test**	**5.7, Test**	1.9, Exempt	1.4, Exempt			
ac80	5.21	10.5	**11**	5.0, Exempt	**3.1, Test**	1.1, Exempt	5.0, Exempt	2.9, Exempt	1.1, Exempt	0.8, Exempt			
a,n20,ac20	5.32	13	**20**	**9.2, Test**	**5.8, Test**	2.0, Exempt	**9.2, Test**	**5.8, Test**	1.9, Exempt	1.4, Exempt	65mW@50mm, Exempt		
n40,ac40	5.31	13	**20**	**9.2, Test**	**5.8, Test**	2.0, Exempt	**9.2, Test**	**5.8, Test**	1.9, Exempt	1.4, Exempt			
ac80	5.29	10.5	**11**	5.1, Exempt	**3.2, Test**	1.1, Exempt	5.1, Exempt	2.9, Exempt	1.1, Exempt	0.8, Exempt			
a,n20,ac20	5.7	13	**20**	**9.5, Test**	**6.0, Test**	2.1, Exempt	**9.5, Test**	**6.0, Test**	2.0, Exempt	1.4, Exempt	63mW@50mm, Exempt		
n40,ac40	5.67	13	**20**	**9.5, Test**	**6.0, Test**	2.1, Exempt	**9.5, Test**	**6.0, Test**	2.0, Exempt	1.4, Exempt			
ac80	5.53	10.5	**11**	5.2, Exempt	**3.2, Test**	1.1, Exempt	5.2, Exempt	2.9, Exempt	1.1, Exempt	0.8, Exempt			
a,n20,ac20	5.825	13	**20**	**9.7, Test**	**6.0, Test**	2.1, Exempt	**9.7, Test**	**6.0, Test**	2.0, Exempt	1.5, Exempt	62mW@50mm, Exempt		
n40,ac40	5.795	13	**20**	**9.6, Test**	**6.0, Test**	2.1, Exempt	**9.6, Test**	**6.0, Test**	2.0, Exempt	1.5, Exempt			
ac80	5.775	10.5	**11**	5.3, Exempt	**3.3, Test**	1.1, Exempt	5.3, Exempt	3.0, Exempt	1.1, Exempt	0.8, Exempt			

*. The table shows the upper frequency which has the maximum power (as "Tune-up limit") in each operation band, in mode and on the single antenna transmission.

*. (mode) b: IEEE 802.11b, g: IEEE 802.11g, a: IEEE 802.11a, n20: IEEE 802.11n(20HT), n40: IEEE 802.11n(40HT), ac20: IEEE 802.11ac(20VHT), ac40: IEEE 802.11n(40VHT), ac80: IEEE 802.11ac(80VHT).

Notes: 1. Power and distance are rounded to the nearest mW and mm before calculation.

<Conclusion for consideration for SAR test reduction>

1) The all SAR tests were conservatively performed with test separation distance 0mm.
2) For WLAN operation, "Back" and "Front" setup are applied the SAR test. "Right" setup for antenna 1 and "Bottom" setup for antenna 2 are also applied the SAR test because of an antenna radiated slit is existed on these surface.
   The SAR test of other SAR test setup including "Top" and "Side (Left)" setup are reduced, because there have enough antenna separation distance and the SAR test exclusion judge was "test can be reduced".
3) For BT LE operation, the SAR test was exempted, because the power of BT LE was enough small and the SAR test exclusion judge was "test can be reduced".

By the determined test setup shown above, the SAR test was applied in the following procedures.

Step 1	(KDB 248227 D01) On 2.4GHz band, worst SAR search by DSSS mode with a highest measurement output power channel. Add SAR test for OFDM mode at the worst SAR condition of DSSS mode, if it is required.
Step 2 ~Step 4	(KDB 248227 D01) On 5GHz band, Worst SAR search by largest channel bandwidth mode with a highest measurement output power channel. Add test for another bandwidth mode, if it is required. Repeat same test procedure in above for U-NII-2A band (Step 2a), U-NII-2C band (Step 3) and U-NII-3 band (Step 4). Repeat same test procedure for U-NII-1 band (Step 2b), if it is required.

*. During SAR test, the radiated power is always monitored by Spectrum Analyzer.

SECTION 5: Confirmation before testing

5.1 SAR reference power measurement (antenna terminal conducted average power of EUT)

Mode	Data rate [Mbps] or Index#	Frequency		Power spec.		Duty cycle			Antenna 2 (-divsw "0") power (WLAN or Bluetooth)							Antenna 1 (-divsw "1") power (WLAN or Bluetooth)						
				Typical	Tune-up limit (Max.)	Duty cycle	Duty factor	Scaled factor	Setting power	Burst average		Δ from Max.	Tune-up factor	Time average		Setting power	Burst average		Δ from Max.	Tune-up factor	Time average	
		[MHz]	CH	[dBm]	[dBm]	[%]	[dB]	[-]	[-]	[dBm]	[mW]	[dB]	[-]	[dBm]	[mW]	[-]	[dBm]	[mW]	[dB]	[-]	[dBm]	[mW]
BT LE	PHY1	2402	0	3	5	63.9	1.94	1.56	3	3.66	2.32	-1.34	1.36	1.74	1.49	3	3.72	2.36	-1.28	1.34	1.80	1.51
	PHY1	2440	19	3	5	63.9	1.94	1.56	3	3.59	2.29	-1.41	1.38	1.67	1.47	3	3.64	2.31	-1.36	1.37	1.72	1.49
	PHY1	2480	39	3	5	63.9	1.94	1.56	3	3.38	2.18	-1.62	1.45	1.46	1.40	3	3.43	2.20	-1.57	1.44	1.51	1.42
	PHY2	2402	0	3	5	34.5	4.62	2.90	3	3.60	2.29	-1.40	1.38	-1.02	0.79	3	3.65	2.32	-1.35	1.36	-0.97	0.80
	PHY2	2440	19	3	5	34.5	4.62	2.90	3	3.51	2.24	-1.49	1.41	-1.11	0.77	3	3.57	2.28	-1.43	1.39	-1.05	0.79
	PHY2	2480	39	3	5	34.5	4.62	2.90	3	3.31	2.14	-1.69	1.48	-1.31	0.74	3	3.37	2.17	-1.63	1.46	-1.25	0.75
b	1	2412	1	12	14	100	0.00	1.00	12	12.29	16.94	-1.71	1.48	12.29	16.94	12	12.37	17.26	-1.63	1.46	12.37	17.26
	1	2437	6	12	14	100	0.00	1.00	12	12.51	17.82	-1.49	1.41	12.51	17.82	12	12.60	18.20	-1.40	1.38	12.60	18.20
	1	2462	11	12	14	100	0.00	1.00	12	12.68	18.54	-1.32	1.36	12.68	18.54	12	12.78	18.97	-1.22	1.32	12.78	18.97
g	6	2412	1	12	14	100	0.00	1.00	12	12.26	16.83	-1.74	1.49	12.26	16.83	12	12.35	17.18	-1.65	1.46	12.35	17.18
	6	2437	6	12	14	100	0.00	1.00	12	12.48	17.70	-1.52	1.42	12.48	17.70	12	12.57	18.07	-1.43	1.39	12.57	18.07
	6	2462	11	12	14	100	0.00	1.00	12	12.65	18.41	-1.35	1.36	12.65	18.41	12	12.74	18.79	-1.26	1.34	12.74	18.79
n20	MCS0	2412	1	12	14	100	0.00	1.00	11	12.43	17.50	-1.57	1.44	12.43	17.50	11	12.53	17.91	-1.47	1.40	12.53	17.91
	MCS0	2437	6	12	14	100	0.00	1.00	11	12.66	18.45	-1.34	1.36	12.66	18.45	11	12.73	18.75	-1.27	1.34	12.73	18.75
	MCS0	2462	11	12	14	100	0.00	1.00	11	12.81	19.10	-1.19	1.32	12.81	19.10	11	12.91	19.54	-1.09	1.29	12.91	19.54
n40	MCS0	2422	3	11	13	100	0.00	1.00	11	11.49	14.09	-1.51	1.42	11.49	14.09	11	11.57	14.35	-1.43	1.39	11.57	14.35
	MCS0	2437	6	11	13	100	0.00	1.00	11	11.61	14.49	-1.39	1.38	11.61	14.49	11	11.70	14.79	-1.30	1.35	11.70	14.79
	MCS0	2452	9	11	13	100	0.00	1.00	11	11.72	14.86	-1.28	1.34	11.72	14.86	11	11.80	15.14	-1.20	1.32	11.80	15.14
a	6	5180	36	11	13	100	0.00	1.00	12	11.37	13.71	-1.63	1.46	11.37	13.71	12	11.40	13.80	-1.60	1.45	11.40	13.80
	6	5200	40	11	13	100	0.00	1.00	12	11.37	13.71	-1.63	1.46	11.37	13.71	12	11.40	13.80	-1.60	1.45	11.40	13.80
	6	5220	44	11	13	100	0.00	1.00	12	11.41	13.84	-1.59	1.44	11.41	13.84	12	11.49	14.09	-1.51	1.42	11.49	14.09
	6	5240	48	11	13	100	0.00	1.00	12	11.35	13.65	-1.65	1.46	11.35	13.65	12	11.41	13.84	-1.59	1.44	11.41	13.84
	6	5260	52	11	13	100	0.00	1.00	12	11.31	13.52	-1.69	1.48	11.31	13.52	12	11.39	13.77	-1.61	1.45	11.39	13.77
	6	5280	56	11	13	100	0.00	1.00	12	11.19	13.15	-1.81	1.52	11.19	13.15	12	11.27	13.40	-1.73	1.49	11.27	13.40
	6	5300	60	11	13	100	0.00	1.00	12	11.48	14.06	-1.52	1.42	11.48	14.06	12	11.59	14.42	-1.41	1.38	11.59	14.42
	6	5320	64	11	13	100	0.00	1.00	12	11.34	13.61	-1.66	1.47	11.34	13.61	12	11.44	13.93	-1.56	1.43	11.44	13.93
	6	5500	100	11	13	100	0.00	1.00	11	11.13	12.97	-1.87	1.54	11.13	12.97	11	11.18	13.12	-1.82	1.52	11.18	13.12
	6	5580	116	11	13	100	0.00	1.00	11	11.22	13.24	-1.78	1.51	11.22	13.24	11	11.20	13.18	-1.80	1.51	11.20	13.18
	6	5700	140	11	13	100	0.00	1.00	11	11.32	13.55	-1.68	1.47	11.32	13.55	11	11.21	13.21	-1.79	1.51	11.21	13.21
	6	5745	149	11	13	100	0.00	1.00	11	11.45	13.96	-1.55	1.43	11.45	13.96	11	11.35	13.65	-1.65	1.46	11.35	13.65
	6	5785	157	11	13	100	0.00	1.00	11	11.58	14.39	-1.42	1.39	11.58	14.39	11	11.45	13.96	-1.55	1.43	11.45	13.96
	6	5825	165	11	13	100	0.00	1.00	11	11.74	14.93	-1.26	1.34	11.74	14.93	11	11.59	14.42	-1.41	1.38	11.59	14.42
n20 (20HT)	MCS0	5180	36	11	13	100	0.00	1.00	12	11.54	14.26	-1.46	1.40	11.54	14.26	12	11.57	14.35	-1.43	1.39	11.57	14.35
	MCS0	5200	40	11	13	100	0.00	1.00	12	11.53	14.22	-1.47	1.40	11.53	14.22	12	11.56	14.32	-1.44	1.39	11.56	14.32
	MCS0	5220	44	11	13	100	0.00	1.00	12	11.59	14.42	-1.41	1.38	11.59	14.42	12	11.66	14.66	-1.34	1.36	11.66	14.66
	MCS0	5240	48	11	13	100	0.00	1.00	12	11.52	14.19	-1.48	1.41	11.52	14.19	12	11.58	14.39	-1.42	1.39	11.58	14.39
	MCS0	5260	52	11	13	100	0.00	1.00	12	11.48	14.06	-1.52	1.42	11.48	14.06	12	11.54	14.26	-1.46	1.40	11.54	14.26
	MCS0	5280	56	11	13	100	0.00	1.00	12	11.35	13.65	-1.65	1.46	11.35	13.65	12	11.42	13.87	-1.58	1.44	11.42	13.87
	MCS0	5300	60	11	13	100	0.00	1.00	12	11.65	14.62	-1.35	1.36	11.65	14.62	12	11.74	14.93	-1.26	1.34	11.74	14.93
	MCS0	5320	64	11	13	100	0.00	1.00	12	11.51	14.16	-1.49	1.41	11.51	14.16	12	11.61	14.49	-1.39	1.38	11.61	14.49
	MCS0	5500	100	11	13	100	0.00	1.00	11	11.32	13.55	-1.68	1.47	11.32	13.55	11	11.38	13.74	-1.62	1.45	11.38	13.74
	MCS0	5580	116	11	13	100	0.00	1.00	11	11.41	13.84	-1.59	1.44	11.41	13.84	11	11.40	13.80	-1.60	1.45	11.40	13.80
	MCS0	5700	140	11	13	100	0.00	1.00	11	11.49	14.09	-1.51	1.42	11.49	14.09	11	11.37	13.71	-1.63	1.46	11.37	13.71
	MCS0	5745	149	11	13	100	0.00	1.00	11	11.62	14.52	-1.38	1.37	11.62	14.52	11	11.49	14.09	-1.51	1.42	11.49	14.09
	MCS0	5785	157	11	13	100	0.00	1.00	11	11.75	14.96	-1.25	1.33	11.75	14.96	11	11.61	14.49	-1.39	1.38	11.61	14.49
	MCS0	5825	165	11	13	100	0.00	1.00	11	11.91	15.52	-1.09	1.29	11.91	15.52	11	11.76	15.00	-1.24	1.33	11.76	15.00
ac20 (20VHT)	MCS0	5180	36	11	13	100	0.00	1.00	12	11.54	14.26	-1.46	1.40	11.54	14.26	12	11.56	14.32	-1.44	1.39	11.56	14.32
	MCS0	5200	40	11	13	100	0.00	1.00	12	11.53	14.22	-1.47	1.40	11.53	14.22	12	11.56	14.32	-1.44	1.39	11.56	14.32
	MCS0	5220	44	11	13	100	0.00	1.00	12	11.59	14.42	-1.41	1.38	11.59	14.42	12	11.64	14.59	-1.36	1.37	11.64	14.59
	MCS0	5240	48	11	13	100	0.00	1.00	12	11.51	14.16	-1.49	1.41	11.51	14.16	12	11.57	14.35	-1.43	1.39	11.57	14.35
	MCS0	5260	52	11	13	100	0.00	1.00	12	11.48	14.06	-1.52	1.42	11.48	14.06	12	11.54	14.26	-1.46	1.40	11.54	14.26
	MCS0	5280	56	11	13	100	0.00	1.00	12	11.37	13.71	-1.63	1.46	11.37	13.71	12	11.43	13.90	-1.57	1.44	11.43	13.90
	MCS0	5300	60	11	13	100	0.00	1.00	12	11.65	14.62	-1.35	1.36	11.65	14.62	12	11.74	14.93	-1.26	1.34	11.74	14.93
	MCS0	5320	64	11	13	100	0.00	1.00	12	11.51	14.16	-1.49	1.41	11.51	14.16	12	11.61	14.49	-1.39	1.38	11.61	14.49
	MCS0	5500	100	11	13	100	0.00	1.00	11	11.31	13.52	-1.69	1.48	11.31	13.52	11	11.39	13.77	-1.61	1.45	11.39	13.77
	MCS0	5580	116	11	13	100	0.00	1.00	11	11.41	13.84	-1.59	1.44	11.41	13.84	11	11.41	13.84	-1.59	1.44	11.41	13.84
	MCS0	5700	140	11	13	100	0.00	1.00	11	11.49	14.09	-1.51	1.42	11.49	14.09	11	11.39	13.77	-1.61	1.45	11.39	13.77
	MCS0	5745	149	11	13	100	0.00	1.00	11	11.63	14.55	-1.37	1.37	11.63	14.55	11	11.49	14.09	-1.51	1.42	11.49	14.09
	MCS0	5785	157	11	13	100	0.00	1.00	11	11.75	14.96	-1.25	1.33	11.75	14.96	11	11.59	14.42	-1.41	1.38	11.59	14.42
	MCS0	5825	165	11	13	100	0.00	1.00	11	11.91	15.52	-1.09	1.29	11.91	15.52	11	11.76	15.00	-1.24	1.33	11.76	15.00
n40 (40HT)	MCS0	5190	38	11	13	100	0.00	1.00	12	11.51	14.16	-1.49	1.41	11.51	14.16	12	11.55	14.29	-1.45	1.40	11.55	14.29
	MCS0	5230	46	11	13	100	0.00	1.00	12	11.52	14.19	-1.48	1.41	11.52	14.19	12	11.60	14.45	-1.40	1.38	11.60	14.45
	MCS0	5270	54	11	13	100	0.00	1.00	12	11.39	13.77	-1.61	1.45	11.39	13.77	12	11.47	14.03	-1.53	1.42	11.47	14.03
	MCS0	5310	62	11	13	100	0.00	1.00	12	11.56	14.32	-1.44	1.39	11.56	14.32	12	11.67	14.69	-1.33	1.36	11.67	14.69
	MCS0	5510	102	11	13	100	0.00	1.00	11	11.30	13.49	-1.70	1.48	11.30	13.49	11	11.36	13.68	-1.64	1.46	11.36	13.68
	MCS0	5550	110	11	13	100	0.00	1.00	11	11.36	13.68	-1.64	1.46	11.36	13.68	11	11.40	13.80	-1.60	1.45	11.40	13.80
	MCS0	5670	134	11	13	100	0.00	1.00	11	11.54	14.26	-1.46	1.40	11.54	14.26	11	11.43	13.90	-1.57	1.44	11.43	13.90
	MCS0	5755	151	11	13	100	0.00	1.00	11	11.64	14.59	-1.36	1.37	11.64	14.59	11	11.50	14.13	-1.50	1.41	11.50	14.13
	MCS0	5795	159	11	13	100	0.00	1.00	11	11.78	15.07	-1.22	1.32	11.78	15.07	11	11.62	14.52	-1.38	1.37	11.62	14.52

(cont'd)

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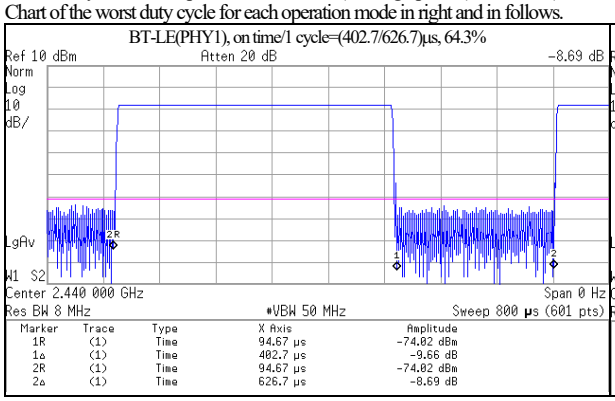
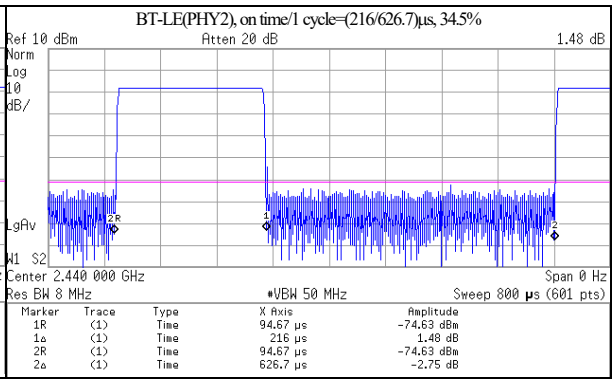
Mode	Data rate [Mbps] or Index#	Frequency		Power spec.		Duty cycle			Antenna 2 (-divsw "0") power (WLAN or Bluetooth)							Antenna 1 (-divsw "1") power (WLAN or Bluetooth)					
				Typical	Tune-up limit (Max.)	Duty cycle	Duty factor	Scaled factor	Setting power	Burst average		Δ from Max.	Tune-up factor	Time average		Setting power	Burst average		Δ from Max.	Tune-up factor	Time average	
		[MHz]	CH	[dBm]	[dBm]	[%]	[dB]	[-]	[-]	[dBm]	[mW]	[dB]	[-]	[dBm]	[mW]	[-]	[dBm]	[mW]	[dB]	[-]	[dBm]	[mW]
ac40 (40VHT)	MCS0	5190	38	11	13	100	0.00	1.00	12	11.52	14.19	-1.48	1.41	11.52	14.19	12	11.53	14.22	-1.47	1.40	11.53	14.22
	MCS0	5230	46	11	13	100	0.00	1.00	12	11.51	14.16	-1.49	1.41	11.51	14.16	12	11.60	14.45	-1.40	1.38	11.60	14.45
	MCS0	5270	54	11	13	100	0.00	1.00	12	11.40	13.80	-1.60	1.45	11.40	13.80	12	11.53	14.22	-1.47	1.40	11.53	14.22
	MCS0	5310	62	11	13	100	0.00	1.00	12	11.56	14.32	-1.44	1.39	11.56	14.32	12	11.66	14.66	-1.34	1.36	11.66	14.66
	MCS0	5510	102	11	13	100	0.00	1.00	11	11.29	13.46	-1.71	1.48	11.29	13.46	11	11.37	13.71	-1.63	1.46	11.37	13.71
	MCS0	5550	110	11	13	100	0.00	1.00	11	11.35	13.65	-1.65	1.46	11.35	13.65	11	11.39	13.77	-1.61	1.45	11.39	13.77
	MCS0	5670	134	11	13	100	0.00	1.00	11	11.37	13.71	-1.63	1.46	11.37	13.71	11	11.43	13.90	-1.57	1.44	11.43	13.90
	MCS0	5755	151	11	13	100	0.00	1.00	11	11.65	14.62	-1.35	1.36	11.65	14.62	11	11.49	14.09	-1.51	1.42	11.49	14.09
	MCS0	5795	159	11	13	100	0.00	1.00	11	11.78	15.07	-1.22	1.32	11.78	15.07	11	11.62	14.52	-1.38	1.37	11.62	14.52
ac80 (80VHT)	MCS0	5210	42	8.5	10.5	100	0.00	1.00	9	9.01	7.96	-1.49	1.41	9.01	7.96	9	9.05	8.04	-1.45	1.40	9.05	8.04
	MCS0	5290	58	8.5	10.5	100	0.00	1.00	9	8.80	7.59	-1.70	1.48	8.80	7.59	9	8.88	7.73	-1.62	1.45	8.88	7.73
	MCS0	5530	106	8.5	10.5	100	0.00	1.00	8	8.74	7.48	-1.76	1.50	8.74	7.48	8	8.81	7.60	-1.69	1.48	8.81	7.60
	MCS0	5775	155	8.5	10.5	100	0.00	1.00	8	9.25	8.41	-1.25	1.33	9.25	8.41	8	9.10	8.13	-1.40	1.38	9.10	8.13

*. The SAR test powers by setting power were not more than 2dB lower than maximum tune-up power (KDB 447498 D01 (v06) requirement).
*. CH: Channel; Max: Maximum; n/a: not applied; (mode) BT-LE: Bluetooth Low Energy; b: IEEE 802.11b, g: IEEE 802.11g, a: IEEE 802.11a, n20: IEEE 802.11n(20HT), n40: IEEE 802.11n(40HT), ac20: IEEE 802.11ac(20VHT), ac40: IEEE 802.11n(40VHT), ac80: IEEE 802.11ac(80VHT).

*. Calculating formula: Burst power (dBm) = (P/M Reading, dBm)+(Cable loss, dB)+(Attenuator, dB)+(duty factor, dB)
Time average power (dBm) = (P/M Reading, dBm)+(Cable loss, dB)+(Attenuator, dB)
Duty cycle: (duty cycle, %) = (Tx on time, ms) / (1 cycle time, ms) × 100, where Duty factor (dBm) = 10 × log (100/(duty cycle, %))
Duty cycle scaled factor: Duty cycle correction factor for obtained SAR value, Duty scaled factor [-] = 100(%) / (duty cycle, %)
Δ from max. (Deviation form maximum power, dB) = (Burst power measured (average, dBm)) - (Max.tune-up limit power (average, dBm))
Power scaled factor [-] = 1 / (10 ^ ("Δ from max., dB" / 10))
*. Date measured: May 10~11, 2021 / Measured by: H. Naka/ Place: Preparation room of No. 7 shield room. (23 deg.C./ (45~60) %RH)
*. Uncertainty of antenna port conducted test (Average power); 0.91 dB (BW80MHz) / Uncertainty of Duty cycle and time measurement: 0.27 %
*. Chart of the worst duty cycle for each operation mode in right and in follows.





SECTION 6: SAR Measurement results

6.1 SAR test reduction consideration

(KDB 447498 D01, General RF Exposure Guidance) Testing of other required channels within the operating mode of a frequency band is not required when the reported 1g or 10g SAR for the mid-band or highest output power channel is:
(1) ≤ 0.8 W/kg or 2.0 W/kg, for 1g or 10g respectively, when the transmission band is ≤ 100 MHz
(2) ≤ 0.6 W/kg or 1.5 W/kg, for 1g or 10g respectively, when the transmission band is between 100 MHz and 200 MHz
(3) ≤ 0.4 W/kg or 1.0 W/kg, for 1g or 10g respectively, when the transmission band is ≥ 200 MHz
The SAR has been measured with highest transmission duty factor supported by the test mode tool for WLAN and/or Bluetooth. When the transmission duty factor could not be 100%, the reported SAR will be scaled to 100% transmission duty factor to determine compliance. The scaling factor for the duty factor is defined as (100% / (transmission duty cycle (%))).
When SAR is not measured at the maximum power level allowed for production unit, the measured SAR will be scaled to the maximum tune-up tolerance limit to determine compliance. The scaling factor for the tune-up power is defined as "(maximum tune-up limit (mW)) / (measured conducted power (mW))".
*. The reported SAR (scaled SAR) would be calculated by "(measured SAR) × (duty cycle scaling factor) × (tune-up power scaling factor)".

(KDB 248227 D01, SAR Guidance for WLAN Transmitters)
When the reported SAR of the initial test configuration is > 0.8 W/kg, SAR measurement is required for subsequent next highest measured output power channel(s) in the initial test configuration until reported SAR is ≤ 1.2 W/kg or all required channels are tested.

For 2.4GHz band, the highest measured maximum output power channel of DSSS was selected for SAR measurement, When the reported SAR is ≤ 0.8 W/kg, no further SAR test is required in this exposure configuration. Otherwise, SAR is required for that exposure configuration using the next highest measured output power channel. When any reported SAR is > 1.2 W/kg, SAR is required for the third channel. For OFDM modes (802.11g/n), SAR is not required when the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

For 5GHz band, the initial test configuration was selected accordance to the transmission mode with the highest maximum output power. When the reported SAR is > 0.8 W/kg, SAR is required for the subsequent highest measured output power channel until the reported SRA result is ≤ 1.2 W/kg or all required channels are measured. For other transmission modes, SAR is not required when the highest reported SAR for initial test configuration is adjusted by the ratio of subsequent test configuration to initial test configuration specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg.

6.2 Tissue simulating liquid measurement

6.2.1 Target of tissue simulating liquid

Nominal dielectric values of the tissue simulating liquids in the phantom are listed in the following table. (Appendix A, KDB 865664 v01r04)

Target Frequency	Head		Body	
(MHz)	ε_r	σ(S/m)	ε_r	σ(S/m)
1800~2000	40.0	1.40	53.3	1.52
2450	39.2	1.80	52.7	1.95

Target Frequency	Head		Body	
(MHz)	ε_r	σ(S/m)	ε_r	σ(S/m)
3000	38.5	2.40	52.0	2.73
5800	35.3	5.27	48.2	6.00

NOTE The italicized values were linearly interpolated between the non-italicized values that are immediately above and below these values, except the values at 6000 MHz which were linearly extrapolated from the values at 3000 MHz and 5800 MHz. Above 5800MHz were obtained using linear extrapolation.

6.2.2 Liquid measurement (Liquid verification)

Frequency [MHz]	Liquid type	Liquid parameters (*a)													ΔSAR Coefficients(*b)			Date measured
		Liquid Temp. [deg.C.]	Liquid depth of phantom [mm]	Permittivity (εr) [-]					Δend, >48hrs [%] (*1)	Conductivity [S/m]					Δend, >48hrs [%] (*1)	ΔSAR (1g) [%]	ΔSAR (10g) [%]	Correction required?	
				Target value	Measured Value	Measured Δεr [%]	Measured Interpolated	Measured Limit [%]		Target value	Measured Value	Measured Δσ [%]	Measured Interpolated	Measured Limit [%]					
5510	Head	22.5	152	***35.63***	35.61	-0.1	☐	10	begin	***4.973***	4.897	-1.5	☐	10	begin	0.1	0.1	not required.	
5550				***35.59***	35.53	-0.2	☐	10	begin	***5.014***	4.944	-1.4	☐	10	begin	0.1	0.1	not required.	May 12, 2021
5670				***35.45***	35.35	-0.3	☐	10	begin	***5.137***	5.079	-1.1	☐	10	begin	0.1	0.1	not required.	
5190	Head	22.5	152	***36.00***	36.17	0.5	☐	10	begin	***4.645***	4.540	-2.3	☐	10	begin	0.0	0.0	not required.	
5230				***35.95***	36.13	0.5	☐	10	begin	***4.686***	4.588	-2.1	☐	10	begin	0.0	0.0	not required.	May 13, 2021
5270				***35.91***	36.03	0.3	☐	10	begin	***4.727***	4.632	-2.0	☐	10	begin	0.0	0.0	not required.	
5310				***35.86***	35.98	0.3	☐	10	begin	***4.768***	4.672	-2.0	☐	10	begin	0.0	0.0	not required.	
5755	Head	22.5	152	***35.35***	35.21	-0.4	☑	10	begin	***5.224***	5.182	-0.8	☑	10	begin	0.1	0.1	not required.	May 14, 2021
5795				***35.31***	35.13	-0.5	☑	10	begin	***5.265***	5.237	-0.5	☑	10	begin	0.1	0.1	not required.	
2412	Head	22.5	150	***39.27***	40.34	2.7	☑	10	begin	***1.766***	1.825	3.3	☑	10	begin	1.0	0.5	not required.	
2437				***39.22***	40.30	2.8	☑	10	begin	***1.788***	1.845	3.2	☑	10	begin	0.9	0.4	not required.	May 17, 2021
2462				***39.18***	40.26	2.8	☑	10	begin	***1.813***	1.865	2.9	☑	10	begin	0.8	0.3	not required.	
5510	Head	22.5	150	***35.63***	35.33	-0.8	☐	10	begin	***4.973***	4.842	-2.6	☐	10	begin	0.3	0.3	not required.	
5550				***35.59***	35.25	-1.0	☐	10	begin	***5.014***	4.885	-2.6	☐	10	begin	0.3	0.4	not required.	May 18, 2021
5670				***35.45***	35.04	-1.2	☐	10	begin	***5.137***	5.032	-2.0	☐	10	begin	0.3	0.4	not required.	
5190	Head	22.5	150	***36.00***	35.83	-0.5	☐	10	begin	***4.645***	4.491	-3.3	☐	10	begin	0.2	0.3	not required.	
5230				***35.95***	35.78	-0.5	☐	10	begin	***4.686***	4.534	-3.3	☐	10	begin	0.2	0.3	not required.	May 19, 2021
5270				***35.91***	35.68	-0.6	☐	10	begin	***4.727***	4.580	-3.2	☐	10	begin	0.2	0.3	not required.	
5310				***35.86***	35.64	-0.6	☐	10	begin	***4.768***	4.617	-3.2	☐	10	begin	0.2	0.3	not required.	
5755	Head	22.5	150	***35.35***	34.91	-1.2	☑	10	begin	***5.224***	5.122	-2.0	☑	10	begin	0.3	0.4	not required.	May 20, 2021
5795				***35.31***	34.84	-1.3	☑	10	begin	***5.265***	5.173	-1.8	☑	10	begin	0.3	0.4	not required.	

*1. "begin": SAR test has ended within 24 hours from the liquid parameter measurement, "< 48 hrs": Since SAR test has ended within 48 hours (2 days) from the liquid parameter measurement and a change in the liquid temperature was within 1 degree, liquid parameters measured on first day were used on next day continuously, "value (%)": Since the SAR test series took longer than 48 hours, the liquid parameters were measured on every 48 hours period and on the date which was end of test series. Since the difference of liquid parameters between the beginning and next measurement was smaller than 5%, the liquid parameters measured in beginning were used until end of each test series.
Calculating formula: "Δend(>48 hrs) (%)"" = {(dielectric properties, end of test series) / (dielectric properties, beginning of test series) -1} × 100

*a. The target values of (2000, 2450, 3000, 5800) MHz are parameters defined in Appendix A of KDB 865664 D01. For other frequencies, the target nominal dielectric values shall be obtained by linear interpolation between the higher and lower tabulated figures. Above 5800MHz were obtained using linear extrapolation.

*b. The coefficients in below are parameters defined in IEEE Std.1528-2013.
Calculating formula: $\Delta SAR(1g) = C\varepsilon r \times \Delta\varepsilon r + C\sigma \times \Delta\sigma$, $C\varepsilon r = -7.854E\text{-}4 \times f^3 + 9.402E\text{-}3 \times f^2 - 2.742E\text{-}2 \times f - 0.2026$ / $C\sigma = 9.804E\text{-}3 \times f^3 - 8.661E\text{-}2 \times f^2 + 2.981E\text{-}2 \times f + 0.7829$
Calculating formula: $\Delta SAR(10g) = C\varepsilon r \times \Delta\varepsilon r + C\sigma \times \Delta\sigma$, $C\varepsilon r = 3.456 \times 10^{-3} \times f^3 - 3.531 \times 10^{-2} \times f^2 + 7.675 \times 10^{-2} \times f - 0.1860$ / $C\sigma = 4.479 \times 10^{-3} \times f^3 - 1.586 \times 10^{-2} \times f^2 - 0.1972 \times f + 0.7717$
Since the calculated ΔSAR values of the tested liquid had shown positive correction, the measured SAR was not converted by ΔSAR correction.
Calculating formula: ΔSAR corrected SAR (W/kg) = (Measured SAR (W/kg)) × (100 - (ΔSAR(%)) / 100

*. Calibration frequency of the SAR measurement probe (and used conversion factors for each frequency.)
The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Liquid	SAR test frequency	Probe calibration frequency	Validity	Conversion factor	Uncertainty
Head	(2412, 2437, 2462) MHz	2450 MHz	within ± 50 MHz of calibration frequency	7.35	± 12.0 %
Head	(5190, 5230, 5270, 5310) MHz	5250 MHz	within ± 110 MHz of calibration frequency	5.14	± 13.1 %
Head	(5510, 5550, 5670) MHz	5600 MHz	within ± 110 MHz of calibration frequency	4.56	± 13.1 %
Head	(5755, 5795) MHz	5800 MHz	within ± 110 MHz of calibration frequency	4.60	± 13.1 %

6.3 SAR results

Test setup				Mode and Frequency (*2)			Duty cycle		Power correction			SAR results [W/kg] (Max.value of multi-peak)				SAR type	SAR Limit [W/kg]	SAR plot # in Appx. 2-2	Setup photo # in Appx. 1-3	Remarks
ANT #	Test position	Gap [mm]	Source power: Battery ID	Mode (D/R)	[MHz]	CH	Duty [%]	Duty scaled factor	Max. tune-up limit [dBm]	Measured conducted [dBm]	Power scaled factor	Measured	ΔSAR [%]	ΔSAR corrected	Scaled (*b)					
				Mark with "*" is the initial mode & frequency.																
1) 2.4GHz Band (*1)																				
2	Back	0	Battery 1	b (1Mbps)*	2462*	11	100	1.00	14	12.68	1.36	0.143	Positive	n/a (*a)	**0.194**	10g	4	1a-2	P1	-
2	Back	0	Battery 1	b (1Mbps)*	2437	6	100	1.00	14	12.51	1.41	0.125	Positive	n/a (*a)	**0.176**	10g	4	-	P1	-
2	Back	0	Battery 1	b (1Mbps)*	2412	1	100	1.00	14	12.29	1.48	0.098	Positive	n/a (*a)	**0.145**	10g	4	-	P1	-
1	Back	0	Battery 1	b (1Mbps)*	2462*	11	100	1.00	14	12.78	1.32	0.212	Positive	n/a (*a)	**0.280**	10g	4	-	P1	-
1	Back	0	Battery 2	b (1Mbps)*	2437	6	100	1.00	14	12.60	1.38	0.183	Positive	n/a (*a)	**0.253**	10g	4	-	P1	-
1	Back	0	Battery 2	b (1Mbps)*	2412	1	100	1.00	14	12.37	1.46	0.192	Positive	n/a (*a)	**0.280**	10g	4	1a-1	P1	-
2	Front	0	Battery 2	b (1Mbps)*	2462*	11	100	1.00	14	12.68	1.36	0.012	Positive	n/a (*a)	**0.016**	1g	1.6	-	P2	-
1	Front	0	Battery 2	b (1Mbps)*	2462*	11	100	1.00	14	12.78	1.32	0.012	Positive	n/a (*a)	**0.016**	1g	1.6	-	P2	-
2	Bottom (ant.2)	0	Battery 1	b (1Mbps)*	2462*	11	100	1.00	14	12.68	1.36	0.076	Positive	n/a (*a)	**0.103**	1g	1.6	-	P3	-
2	Bottom (ant.2)	0	Battery 1	b (1Mbps)*	2437	6	100	1.00	14	12.51	1.41	0.088	Positive	n/a (*a)	**0.124**	1g	1.6	1b-2	P3	-
2	Bottom (ant.2)	0	Battery 1	b (1Mbps)*	2412	1	100	1.00	14	12.29	1.48	0.077	Positive	n/a (*a)	**0.114**	1g	1.6	-	P3	-
1	Side (ant.1)	0	Battery 1	b (1Mbps)*	2462*	11	100	1.00	14	12.78	1.32	0.075	Positive	n/a (*a)	**0.099**	1g	1.6	-	P4	-
1	Side (ant.1)	0	Battery 1	b (1Mbps)*	2437	6	100	1.00	14	12.60	1.38	0.097	Positive	n/a (*a)	**0.134**	1g	1.6	-	P4	-
1	Side (ant.1)	0	Battery 1	b (1Mbps)*	2412	1	100	1.00	14	12.37	1.46	0.095	Positive	n/a (*a)	**0.139**	1g	1.6	1b-1	P4	-
2) U-NII-2A (5.3GHz) (and U-NII-1 (5.2GHz)) Band																				
2	Back	0	Battery1	n40(MCS0)*	5310*	62	100	1.00	13	11.56	1.39	0.154	Positive	n/a (*a)	**0.214**	10g	4	2a-2	P1	-
2	Back	0	Battery1	n40(MCS0)*	5270	54	100	1.00	13	11.39	1.45	0.127	Positive	n/a (*a)	**0.184**	10g	4	-	P1	-
1	Back	0	Battery1	n40(MCS0)*	5310*	62	100	1.00	13	11.67	1.36	0.225	Positive	n/a (*a)	**0.306**	10g	4	2a-1	P1	-
1	Back	0	Battery1	n40(MCS0)*	5270	54	100	1.00	13	11.47	1.42	0.200	Positive	n/a (*a)	**0.284**	10g	4	-	P1	-
2	Front	0	Battery2	n40(MCS0)*	5310*	62	100	1.00	13	11.56	1.39	0.021	Positive	n/a (*a)	**0.029**	1g	1.6	-	P2	-
1	Front	0	Battery2	n40(MCS0)*	5310*	62	100	1.00	13	11.67	1.36	0.020	Positive	n/a (*a)	**0.027**	1g	1.6	-	P2	-
2	Bottom (ant.2)	0	Battery1	n40(MCS0)*	5310	62	100	1.00	13	11.56	1.39	0.256	Positive	n/a (*a)	**0.356**	1g	1.6	2b-2	P3	-
2	Bottom (ant.2)	0	Battery1	n40(MCS0)*	5270	54	100	1.00	13	11.39	1.45	0.183	Positive	n/a (*a)	**0.265**	1g	1.6	-	P3	-
1	Side (ant.1)	0	Battery1	n40(MCS0)*	5310*	62	100	1.00	13	11.67	1.36	0.268	Positive	n/a (*a)	**0.364**	1g	1.6	2b-1	P4	-
1	Side (ant.1)	0	Battery1	n40(MCS0)*	5270	54	100	1.00	13	11.47	1.42	0.206	Positive	n/a (*a)	**0.293**	1g	1.6	-	P4	-
2	Back	0	Battery 2	n40(MCS0)*	5190	38	100	1.00	13	11.51	1.41	0.155	Positive	n/a (*a)	**0.219**	10g	4	2c-2	P1	-
2	Back	0	Battery 2	n40(MCS0)*	5230*	46	100	1.00	13	11.52	1.41	0.117	Positive	n/a (*a)	**0.165**	10g	4	-	P1	-
1	Back	0	Battery 2	n40(MCS0)*	5190	38	100	1.00	13	11.55	1.40	0.207	Positive	n/a (*a)	**0.290**	10g	4	-	P1	-
1	Back	0	Battery 2	n40(MCS0)*	5230*	46	100	1.00	13	11.60	1.38	0.227	Positive	n/a (*a)	**0.313**	10g	4	2c-1	P1	-
2	Bottom (ant.2)	0	Battery 2	n40(MCS0)*	5190	38	100	1.00	13	11.51	1.41	0.220	Positive	n/a (*a)	**0.310**	1g	1.6	2d-1	P3	-
2	Bottom (ant.2)	0	Battery 2	n40(MCS0)*	5230*	46	100	1.00	13	11.52	1.41	0.192	Positive	n/a (*a)	**0.271**	1g	1.6	-	P3	-
1	Side (ant.1)	0	Battery 2	n40(MCS0)*	5190	38	100	1.00	13	11.55	1.40	0.203	Positive	n/a (*a)	**0.284**	1g	1.6	-	P4	-
1	Side (ant.1)	0	Battery 2	n40(MCS0)*	5230*	46	100	1.00	13	11.60	1.38	0.207	Positive	n/a (*a)	**0.286**	1g	1.6	2d-2	P4	-
3) U-NII-2C (5.6GHz) Band																				
2	Back	0	Battery 1	n40(MCS0)*	5670*	134	100	1.00	13	11.54	1.4	0.190	Positive	n/a (*a)	**0.266**	10g	4	3a-2	P1	-
2	Back	0	Battery 1	n40(MCS0)*	5550	110	100	1.00	13	11.36	1.46	0.172	Positive	n/a (*a)	**0.251**	10g	4		P1	-
2	Back	0	Battery 1	n40(MCS0)*	5510	102	100	1.00	13	11.31	1.48	0.167	Positive	n/a (*a)	**0.247**	10g	4	-	P1	-
1	Back	0	Battery 2	n40(MCS0)*	5670*	134	100	1.00	13	11.43	1.44	0.187	Positive	n/a (*a)	**0.269**	10g	4	-	P1	-
1	Back	0	Battery 2	n40(MCS0)*	5550	110	100	1.00	13	11.40	1.45	0.203	Positive	n/a (*a)	**0.294**	10g	4	3a-1	P1	-
1	Back	0	Battery 2	n40(MCS0)*	5510	102	100	1.00	13	11.36	1.46	0.201	Positive	n/a (*a)	**0.293**	10g	4	-	P1	-
2	Front	0	Battery 1	n40(MCS0)*	5670*	134	100	1.00	13	11.43	1.44	0.028	Positive	n/a (*a)	**0.040**	1g	1.6	-	P2	-
1	Front	0	Battery 1	n40(MCS0)*	5670*	134	100	1.00	13	11.54	1.40	0.024	Positive	n/a (*a)	**0.034**	1g	1.6	-	P2	-
2	Bottom (ant.2)	0	Battery 2	n40(MCS0)*	5670*	134	100	1.00	13	11.54	1.40	0.282	Positive	n/a (*a)	**0.395**	1g	1.6	-	P3	-
2	Bottom (ant.2)	0	Battery 2	n40(MCS0)*	5550	110	100	1.00	13	11.36	1.46	0.271	Positive	n/a (*a)	**0.396**	1g	1.6	3b-2	P3	-
2	Bottom (ant.2)	0	Battery 2	n40(MCS0)*	5510	102	100	1.00	13	11.31	1.48	0.225	Positive	n/a (*a)	**0.333**	1g	1.6	-	P3	-
1	Side (ant.1)	0	Battery 1	n40(MCS0)*	5670*	134	100	1.00	13	11.43	1.44	0.318	Positive	n/a (*a)	**0.458**	1g	1.6	-	P4	-
1	Side (ant.1)	0	Battery 1	n40(MCS0)*	5550	110	100	1.00	13	11.40	1.45	0.334	Positive	n/a (*a)	**0.484**	1g	1.6	3b-1	P4	-
1	Side (ant.1)	0	Battery 1	n40(MCS0)*	5510	102	100	1.00	13	11.36	1.46	0.273	Positive	n/a (*a)	**0.399**	1g	1.6	-	P4	-
4) U-NII-3 (5.8GHz) Band																				
2	Back	0	Battery 1	n40(MCS0)*	5755	151	100	1.00	13	11.64	1.37	0.154	Positive	n/a (*a)	**0.211**	10g	4	4a-2	P1	-
2	Back	0	Battery 2	n40(MCS0)*	5795*	159	100	1.00	13	11.78	1.32	0.153	Positive	n/a (*a)	**0.202**	10g	4	-	P1	-
1	Back	0	Battery 1	n40(MCS0)*	5755	151	100	1.00	13	11.50	1.41	0.152	Positive	n/a (*a)	**0.214**	10g	4	-	P1	-
1	Back	0	Battery 1	n40(MCS0)*	5795*	159	100	1.00	13	11.62	1.37	0.171	Positive	n/a (*a)	**0.234**	10g	4	4a-1	P1	-
2	Front	0	Battery 1	n40(MCS0)*	5795	159	100	1.00	13	11.78	1.32	0.016	Positive	n/a (*a)	**0.021**	1g	1.6	-	P2	-
1	Front	0	Battery 1	n40(MCS0)*	5795*	159	100	1.00	13	11.62	1.37	0.026	Positive	n/a (*a)	**0.036**	1g	1.6	-	P2	-
2	Bottom (ant.2)	0	Battery 2	n40(MCS0)*	5795*	159	100	1.00	13	11.78	1.32	0.193	Positive	n/a (*a)	**0.255**	1g	1.6	4b-2	P3	-
2	Bottom (ant.2)	0	Battery 2	n40(MCS0)*	5755	151	100	1.00	13	11.64	1.37	0.179	Positive	n/a (*a)	**0.245**	1g	1.6	-	P3	-
1	Side (ant.1)	0	Battery 2	n40(MCS0)*	5755	151	100	1.00	13	11.50	1.41	0.210	Positive	n/a (*a)	**0.296**	1g	1.6	-	P4	-
1	Side (ant.1)	0	Battery 2	n40(MCS0)*	5795*	159	100	1.00	13	11.62	1.37	0.242	Positive	n/a (*a)	**0.332**	1g	1.6	4b-1	P4	-

Notes: *. The higher scaled (reported) SAR in each operation band is marked (shaded yellow marker).
*. Appx. Appendix, ant: antenna; (mode) b: IEEE 802.11b, n40: IEEE 802.11n(40HT); Max.: maximum.; n/a: not applied. Gap: It is the separation distance between the platform surface and the bottom outer surface of phantom; Battery ID: Refer to Appendix 1.
. During test, the EUT was operated with full charged battery and connected an IF cable (except "Side (ant 1)" setup).

*a. Since the calculated ΔSAR values of the tested liquid had shown positive correction, the measured SAR was not converted by ΔSAR correction.
Calculating formula: ΔSAR corrected SAR (W/kg) = (Measured SAR (W/kg)) × (100 - (ΔSAR(%)) / 100
*b. Calculating formula: Scaled SAR (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)
where, Duty scaled factor [-] = 100(%) / (duty cycle, %), Power scaled factor [-] = 10 ^ (((Max.tune-up limit, dBm) - (Measured conducted, dBm)) / 10)

*1. (KDB 248227 D01) When the highest reported SAR for DSSS is adjusted by the ratio of OFDM to DSSS specified maximum output power and the adjusted SAR is ≤ 1.2 W/kg, SAR test of OFDM mode was reduced.

OFDM mode	Maximum tune-up tolerance limit				OFDM scaled factor [-]	DSSS worst reported SAR value				**Estimated SAR value: OFDM [W/kg]**	Exclusion limit [W/kg]	Standalone SAR test of OFDM mode require?
	DSSS		OFDM									
	[dBm]	[mW] (a)	[dBm]	[mW] (b)	(b)/(a)×100	SAR type	Setup	Antenna	[W/kg]			
g	14.0	25	14.0	25	1.00	10g	Back	Antenna 1	0.280	**0.28**	**≤ 1.2**	**No**
n20	14.0	25	14.0	25	1.00	10g	Back	Antenna 1	0.280	**0.28**	**≤ 1.2**	**No**
n40	14.0	25	13.0	20	0.80	10g	Back	Antenna 1	0.280	**0.22**	**≤ 1.2**	**No**
g	14.0	25	14.0	25	1.00	1g	Side (ant.1)	Antenna 1	0.138	**0.14**	**≤ 1.2**	**No**
n20	14.0	25	14.0	25	1.00	1g	Side (ant.1)	Antenna 1	0.138	**0.14**	**≤ 1.2**	**No**
n40	14.0	25	13.0	20	0.80	1g	Side (ant.1)	Antenna 1	0.138	**0.11**	**≤ 1.2**	**No**

*. (mode) b: IEEE 802.11b, g: IEEE 802.11g, n20: IEEE 802.11n(20HT), n40: IEEE 802.11n(40HT).

6.4 Simultaneous transmission evaluation

Result: Simultaneous transmission SAR measurement (Volume Scan) was not required because the sum of the estimated SAR(1g) was within 1.6 W/kg (as SAR (1g) limit), SAR (10g) was .within 4 W/kg (as SAR (10g) limit).

According to KDB447498 D01; when standalone SAR test exclusion applies to an antenna that transmits simultaneously with other antennas, the standalone SAR must be estimated according to following to determine simultaneous transmission SAR test exclusion:

[(max. power of channel, including tune-up tolerance, mW) / (minimum test separation distance, mm)]·[√f(GHz)/x] W/kg

*. for test separation distances ≤ 50 mm; where x = 7.5 for 1-g SAR and x = 18.75 for 10g SAR

*. 0.4 W/kg for 1-g SAR and 1.0 W/kg for 10g SAR, when the test separation distances is > 50 mm.

*. When the minimum separation distance is < 5mm, the distance is used 5mm to determine SAR test exclusion.

SISO/ MIMO	Possible of "Simultaneous transmission" condition (*1)	Upper Frequency [GHz]		Tune-up limit power (conducted) (mW)		Estimated SAR value [W/kg]												**Estimated Σ SAR value**					
						Back	Front	Right	Bottom	Left	Top	Back	Front	Right	Bottom	Left	Top	Back	Front	Right	Bottom	Left	Top
						Antenna 2: LE						Antenna 2: WLAN(5Ghz)						limit: 1.6W/kg (1g), 4 W/kg (10g)					
		LE	WLAN	LE	WLAN	10g	1g	1g	1g	1g	1g	10g	1g	1g	1g	1g	1g	10g	1g	1g	1g	1g	1g
SISO	BT LE+5.2GHzWLAN	2.48	5.24	3	20	0.05	0.08	0.02	0.03	(0.4)	(0.4)	0.49	0.76	0.19	0.25	(0.4)	(0.4)	**0.54**	**0.84**	**0.21**	**0.28**	(0.8)	(0.8)
SISO	BT LE+5.3GHzWLAN	2.48	5.32	3	20	0.05	0.08	0.02	0.03	(0.4)	(0.4)	0.49	0.77	0.19	0.26	(0.4)	(0.4)	**0.54**	**0.85**	**0.21**	**0.29**	(0.8)	(0.8)
SISO	BT LE+5.6GHzWLAN	2.48	5.7	3	20	0.05	0.08	0.02	0.03	(0.4)	(0.4)	0.51	0.80	0.19	0.27	(0.4)	(0.4)	**0.56**	**0.88**	**0.21**	**0.30**	(0.8)	(0.8)
SISO	BT LE+5.8GHzWLAN	2.48	5.825	3	20	0.05	0.08	0.02	0.03	(0.4)	(0.4)	0.52	0.81	0.20	0.27	(0.4)	(0.4)	**0.57**	**0.89**	**0.22**	**0.30**	(0.8)	(0.8)
D0: antenna 2 separation distance from surface [mm]						≤5	8	33	24	301	430	≤5	8	33	24	301	430						
						Antenna 1: LE						Antenna 1:WLAN (5GHz)											
SISO	BT LE+5.2GHzWLAN	2.48	5.24	3	20	0.05	0.08	0.03	(0.4)	(0.4)	(0.4)	0.49	0.76	0.27	(0.4)	(0.4)	(0.4)	**0.54**	**0.84**	**0.30**	(0.8)	(0.8)	(0.8)
SISO	BT LE+5.3GHzWLAN	2.48	5.32	3	20	0.05	0.08	0.03	(0.4)	(0.4)	(0.4)	0.49	0.77	0.27	(0.4)	(0.4)	(0.4)	**0.54**	**0.85**	**0.30**	(0.8)	(0.8)	(0.8)
SISO	BT LE+5.6GHzWLAN	2.48	5.7	3	20	0.05	0.08	0.03	(0.4)	(0.4)	(0.4)	0.51	0.80	0.28	(0.4)	(0.4)	(0.4)	**0.56**	**0.88**	**0.31**	(0.8)	(0.8)	(0.8)
SISO	BT LE+5.8GHzWLAN	2.48	5.825	3	20	0.05	0.08	0.03	(0.4)	(0.4)	(0.4)	0.51	0.80	0.28	(0.4)	(0.4)	(0.4)	**0.56**	**0.88**	**0.31**	(0.8)	(0.8)	(0.8)
D1: antenna 1 separation distance from surface [mm]						≤5	8	23	136	355	274	≤5	8	23	136	355	274						

*1. A transmission is performed from one of antenna 2 or antenna 1 (diversity). A transmission of WLAN(2.4GHz) and BT-LE is time-division-processing. Therefore, simultaneously transmitted SAR was only considered for the WLAN(5GHz) and BT-LE.

Notes: 1. Power and distance are rounded to the nearest mW and mm before calculation.
2. The upper frequency of the frequency band had maximum output power and was used in order to calculate standalone SAR test exclusion considerations.
3. The estimated Σ SAR 1g value is calculated based on the same configuration and the same test position.
4. The estimated results (SAR value, SPLSR value) are rounded to two decimal place for comparison.
5. When standalone SAR testing is not required, an estimated SAR can be applied to determine simultaneous transmission SAR test exclusion.
6. (Calculating formula) Per KDB447498 D01(v06), SPLSR = (SAR1 + SAR2)^1.5 / (minimum antenna separation distance, mm)
where; the minimum antenna separation distance is determined by the closest physical separation of the antennas, according to geometric center of the antennas.

<SAR Summation Analysis>
Simultaneous transmission SAR test exclusion is determined for each operating configuration and exposure condition according to reported standalone SAR of each applicable simultaneous transmitting antenna. When the sum of SAR of all simultaneous transmitting antennas in an operating mode and exposure condition is within the SAR limit (SAR(1g): 1.6 W/kg, SAR(10g): 4 W/kg), the simultaneous transmission SAR is not required. When the sum of SAR is greater than the SAR limit (SAR(1g): 1.6 W/kg, SAR(10g): 4 W/kg), SAR test exclusion is determined by the SPLSR.

6.5 SAR Measurement Variability (Repeated measurement requirement)

In accordance with published RF Exposure KDB procedure 865664 D01 (v01r04) SAR measurement 100 MHz to 6 GHz. These additional measurements are repeated after the completion of all measurements requiring the same head or body tissue-equivalent medium in a frequency band. The test device should be returned to ambient conditions (normal room temperature) with the battery fully charged before it is re-mounted on the device holder for the repeated measurement(s) to minimize any unexpected variations in the repeated results.

1) Repeated measurement is not required when the original highest measured SAR(1g) is < 0.80 W/kg; steps 2) through 4) do not apply.
2) When the original highest measured SAR is ≥ 0.80 W/kg, repeat that measurement once.
3) Perform a second repeated measurement only if the ratio of largest to smallest SAR for the original and first repeated measurements is > 1.20 or when the original or repeated measurement is ≥ 1.45 W/kg (~ 10% from the 1-g SAR limit).
4) Perform a third repeated measurement only if the original, first or second repeated measurement is ≥1.5 W/kg and the ratio of largest to smallest SAR for the original, first and second repeated measurements is > 1.20.

Since all the measured SAR are less than 0.8 W/kg (SAR(1g), 2 W/kg (SAR(10g)), the repeated measurement is not required.

6.6 Device holder perturbation verification

When the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification (by Urethane form alone) is required by using the highest SAR configuration among all applicable frequency bands.

Since all the reported (scaled) SAR are less than 1.2 W/kg (SAR(1g), 3 W/kg (SAR(10g)), the "device holder perturbation verification" measurement is not performed.