SAR & PD Test Report

Test Report No. 14781156S-A-R2

Customer	**Canon Inc.**
Description of EUT	**Communication Module**
Model Number of EUT	**ES205**
FCC ID	**AZD248**
Test Regulation	**FCC 47CFR 2.1093**
Test Result	**Complied**
Issue Date	**July 4, 2024**
Remarks	-

Representative Test Engineer	Approved By
H. Naka	T. Imamura
Hiroshi Naka Engineer	Toyokazu Imamura Engineer

CERTIFICATE 1266.03

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

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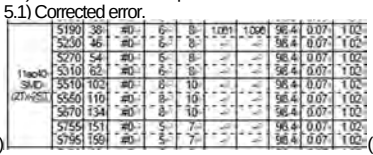
REVISION HISTORY

Original Test Report No.: 14781156S-A

This report is a revised version of 14781156S-A. 14781156S-A is replaced with this report.

Revision	Test Report No.	Date	Page Revised Contents
- (Original)	14781156S-A	April 8, 2024	-
-R1	14781156S-A-R1	June 21, 2024	(p7 and other pages) Corrected a typo in SMD to SDM. (P5,6,11) Corrected WLAN 7GHz upper frequency from 7115 MHz to 7095 MHz (p8,3.3) Added additional TCB Workshop content to the procedure, as well as SEPAG's instruction manual and application note regarding 6~10 GHz PD. (p11) For the "SAR tested frequency" column, an asterisk (*3) was added for those actually tested. (p13, 4.2) Corrected threshold power for Antenna 1 at 12 mm (from 8 to 9 mW at WLAN 5.2&5.3 GHz). (p17, 5.1) Corrected error. (was)  (new)  (p14,22) The duty cycle and scaled factor for BT LE were corrected to 64.2% and 1.56, respectively. (p23, 7.1.2) (WLAN 5.2GHz band) The duty cycle and scaled factor for 11ax (SDM) at 5210 MHz were corrected to 98.5% and 1.02, respectively. (p26, 7.1.5) Top, 11ax(SDM), 5985 MHz measured APD was revised from 1.71 to 1.72 W/m^2 and reported APD from 2.041 to 2.053 W/m^2. (p26, 7.1.5) The bottom of the Test setup column in the table was corrected from "Top-Left" to "Top-Right". (p42) The title of Plot 6-1 was corrected to Antenna1. The title of Plot 6-2 was corrected to Antenna2. (p20, 56, 57) The deviation of the liquid's electrical characteristic value was changed to 10%, and the uncertainty table was also changed. (p58) Corrects the "CAL: Calibration Repeatability" of the PD measurement to calibration.
-R2	14781156S-A-R2	July 4, 2024	(p13, 4.2) Corrected threshold power for Antenna 1 at 12 mm (from 8 to 9 mW at 5.6&5.8GHz). (p17) The max power of 11ax40 OFDMA CDD at 5755 and 5795 MHz were corrected to 6 dBm from 5 dBm. (p18) The max power of 11ax40 OFDMA SDM at 5755 and 5795 MHz were corrected to 6 dBm from 5 dBm. The typical power of 11ac80 CDD&SDM, 11ax80 CDD&SDM at 5775 MHz were corrected to 5 dBm from 7 dBm. The max power of 11ac80 CDD&SDM, 11ax80 CDD&SDM at 5775 MHz were corrected to 7 dBm from 9 dBm.

Reference : Abbreviations (Including words undescribed in this report) (R15v240501S08v240520)

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
APD	Absorbed Power Density
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
CDD	Cyclic Delay Diversity
CFR	Code of Federal Regulations
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
ETSI	European Telecommunications Standards Institute
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
HE	High Efficiency (e.g. IEEE 802.11ax20HE)
HT	High Throughput (e.g. IEEE 802.11n20HT)
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
IPD	Incident Power Density
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
MIMO	Multiple Input Multiple Output (Radio)
MPE	Maximum Permissible Exposure
MRA	Mutual Recognition Arrangement
MU-MIMO	Multi-User Multiple Input Multiple Output (Radio)
N/A	Not Applicable, Not Applied
NII	National Information Infrastructure (Radio)
NIST	National Institute of Standards and Technology
NR	New Radio
NS	Nerve Stimulation
NSA	Normalized Site Attenuation
NVLAP	National Voluntary Laboratory Accreditation Program
OBW	Occupied Band Width
OFDM	Orthogonal Frequency Division Multiplexing
PD	Power Density
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
RAT	Radio Access Technology
RBW	Resolution Band Width
RDS	Radio Data System
RE	Radio Equipment
RF	Radio Frequency
RMS	Root Mean Square
RSS	Radio Standards Specifications
RU	Resource Unit
Rx	Receiving
SA, S/A	Spectrum Analyzer
SAR	Specific Absorption Rate
SDM	Space Division Multiplexing
SISO	Single Input Single Output (Radio)
SG	Signal Generator
SPLSR	SAR to Peak Location Separation Ratio
SVSWR	Site-Voltage Standing Wave Ratio
TER	Total Exposure Ratio
TSL	Tissue Simulation Liquid
T/R	Test Receiver
Tx	Transmitting
U-NII	Unlicensed National Information Infrastructure (Radio)
URS	Unintentional Radiator(s)
VBW	Video BandWidth
Vert.	Vertical
VHT	Very High Throughput (e.g. IEEE 802.11ac20VHT)
WLAN	Wireless LAN
Wi-Fi, WiFi	Wireless LAN, trademarked by Wi-Fi Alliance
WPT	Wireless Power Transmit

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Contents of appendixes

SECTION 1: Customer information

Company Name	Canon Inc.
Address	30-2, Shimomaruko 3-chome, Ohta-ku, Tokyo 146-8501 Japan
Telephone Number	+81-3-5482-7283
Contact Person	Tomohiro Suzuki

The information provided from the customer is as follows;
- Customer name, Company name, 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

SECTION 2: Equipment under test (EUT)

2.1 Identification of EUT

Type	Communication Module
Model Number	ES205
Serial Number	DE1-A1-091
Rating	DC 3.3 V
Condition of sample	Engineering prototype (Not for sale: The sample is equivalent to mass-produced items.)
Receipt Date of sample	November 30, 2023 (*. Power measurement sample. No modification by the Lab.) February 2, 2024 (*. Power measurement sample (lower power for 6 GHz band). No modification by the Lab.) March 1, 2024 (*. SAR sample. No modification by the Lab.)
Test Date (SAR)	March 4~13, 2024

2.2 Product Description

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

General

Feature of EUT	Model number: ES205 (referred to as the EUT in this report) is a Communication Module which has WLAN and Bluetooth functions and installed into the specified host platform.

Radio specification

Type	WLAN and Bluetooth module	
Equipment type	Transceiver	
Frequency of operation	Bluetooth: 2402 MHz ~ 2480 MHz WLAN 2.4 GHz Band: 2412 MHz ~ 2462 MHz WLAN 5.2 GHz Band (U-NII-1): 5180 MHz ~ 5240 MHz WLAN 5.3 GHz Band (U-NII-2A): 5260 MHz ~ 5320 MHz WLAN 5.6 GHz Band (U-NII-2C): 5500 MHz ~ 5700 MHz (*. excluding 5600 ~ 5650 MHz)	WLAN 5.8 GHz Band (U-NII-3): 5745 MHz ~ 5825 MHz WLAN 6.2 GHz Band (U-NII-5): 5955 MHz ~ 6415 MHz WLAN 6.5 GHz Band (U-NII-6): 6435 MHz ~ 6515 MHz WLAN 6.7 GHz Band (U-NII-7): 6535 MHz ~ 6855 MHz WLAN 7.0 GHz Band (U-NII-8): 6875 MHz ~ 7095 MHz
Supported modulations	Bluetooth: BR/EDR/BT LE (FHSS, GFSK (*. EDR: GFSK+ π/4-DQPSK, GFSK+ 8DPSK)) WLAN 2.4 GHz band) DSSS) 11b: DBPSK/DQPSK/CCK WLAN 2.4 GHz band) OFDM) 11g/n/ax: BPSK/QPSK/16QAM/64QAM, 11ax: 256QAM/1024QAM WLAN 5.2, 5.3, 5.6, 5.8 GHz band) OFDM) 11a/n/ac/ax: BPSK/QPSK/16QAM/64QAM, 11ac/ax: 256QAM, 11ax: 1024QAM WLAN 6.2, 6.5, 6.7, 7.0 GHz band) OFDM)11a/ax: BPSK, 11ax: QPSK/16QAM/64QAM/256QAM/1024QAM	
	WLAN 2.4 GHz band) OFDMA) 11ax: BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM, RU: 26~242 WLAN 5.2, 5.3, 5.6, 5.8 GHz band) OFDMA) 11ax: BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM, RU: 26~996 WLAN 6.2, 6.5, 6.7, 7.0 GHz band) OFDMA)11ax: BPSK/QPSK/16QAM/64QAM/256QAM/1024QAM, RU: 26~996	
Typical and maximum transmit power	*. The specification of typical and maximum transmit power (which may occur) refer to remarks in below "Table of Typical power and Maximum tune-up tolerance limit power". The measured output power (conducted) as SAR reference power refers to section 5 in this report.	
Antenna quantity	2 pcs. (*. Separation distance between each antenna refers to Appendix 1-1.)	
Antenna ID	Antenna 1	Antenna 2
Support operation mode	Bluetooth, WLAN 2.4,5,6,7GHz band	WLAN 2.4,5,6,7GHz band
Antenna type	Pattern antenna	Pattern antenna
Antenna connector type	PCB side: MHF2, Antenna side: soldered	PCB side: MHF2, Antenna side: soldered
Antenna gain (max. gain) (*including cable loss)	2.67 dBi (2.4 GHz band), 5.14 dBi (WLAN 5.2&5.3 GHz band), 3.53 dBi (WLAN 5.6 GHz band), 3.05 dBi (WLAN 5.8 GHz band), 1.61 dBi (WLAN 6.2&6.5 GHz band),0.60 dBi (WLAN 6.7&7.0 GHz band)	2.67 dBi (2.4 GHz band), 5.14 dBi (WLAN 5.2&5.3 GHz band), 3.53 dBi (WLAN 5.6 GHz band), 3.05 dBi (WLAN 5.8 GHz band), 1.61 dBi (WLAN 6.2&6.5 GHz band),0.6 dBi (WLAN 6.7&7.0 GHz band)

Description of Host Platform

Manufacture	Canon Inc.
Product name	Digital Camera
Model number	DS126918
Condition of sample	Engineering prototype (Not for sale: The sample is equivalent to mass-produced items.)
Rating	DC 7.2 V (Li-ion Battery, Refer to Appendix 1-2) (*. The SAR test was performed in battery operation.)
SAR Category Identified	Portable device (*. Since EUT may contact to a localized human body during wireless operation, the partial-body SAR (1g) shall be observed.)
Exposure Category	General Population/Uncontrolled Exposure.
SAR Accessory	None, There are no accessories that would affect SAR test.

***. Table of Typical power and Maximum power (= Maximum tune-up tolerance limit power)**
Maximum tune-up tolerance limit is conducted burst average power and is defined by a customer as Duty cycle 100% (continuous transmitting).

Band	Channel	Frequency [MHz]	Mode	BW [MHz]	RU (OFDMA) [tone]	Typical power and Maximum tune-up tolerance limit power (Duty cycle 100%)															
						SISO (*1)					CDD					SDM					
						D/R [Mbps] or MCS Index#	Typical [dBm]		Max. [dBm]		Typical [dBm]			Max. [dBm]	Note	D/R [Mbps] or MCS Index#	Typical [dBm]			Max. [dBm]	Note
							Ant.1	Ant.2	Ant.1	Ant.2	Ant.1	Ant.2	SUM	SUM			Ant.1	Ant.2	SUM	SUM	
Bluetooth	0~79	2402~2480	BR	1	N/A	1	3	N/A	6	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	0~79	2402~2480	EDR	1	N/A	2, 3	0	N/A	3	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
	0~39	2402~2480	BT LE	2	N/A	1, 2	3	N/A	6	N/A	N/A	N/A	N/A	N/A		N/A	N/A	N/A	N/A	N/A	
WLAN 2.4 GHz	1~11	2412~2462	11b	20	N/A	1~11	N/A	N/A	N/A	N/A	8	8	11	13		N/A	N/A	N/A	N/A	N/A	
			11g		N/A	6~54	N/A	N/A	N/A	N/A	8	8	11	13		N/A	N/A	N/A	N/A	N/A	
			11n		N/A	#0~7	N/A	N/A	N/A	N/A	8	8	11	13		#8~15	8	8	11	13	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	8	8	11	13		#0~11	8	8	11	13	
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	8	8	11	13		#0~9	8	8	11	13	
WLAN 5.2 GHz & WLAN 5.3 GHz	36~48 & 52~64	5180~5240 & 5260~5320	11a	20	N/A	6~54	N/A	N/A	N/A	N/A	6	6	9	11		N/A	N/A	N/A	N/A	N/A	
			11n		N/A	#0~7	N/A	N/A	N/A	N/A	6	6	9	11		#8~15	6	6	9	11	
			11ac		N/A	#0~8	N/A	N/A	N/A	N/A	6	6	9	11		#0~8	6	6	9	11	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	6	6	9	11		#0~11	6	6	9	11	
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	5	5	8	11		#0~9	6	6	9	11	
	38, 46 & 54, 62	5190, 5230 & 5270, 5310	11n	40	N/A	#0~7	N/A	N/A	N/A	N/A	6	6	9	11		#8~15	6	6	9	11	
			11ac		N/A	#0~9	N/A	N/A	N/A	N/A	6	6	9	11		#0~9	6	6	9	11	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	6	6	9	11		#0~11	6	6	9	11	
			11ax/OFDMA		484	#0~11	N/A	N/A	N/A	N/A	5	5	8	10	*lower	#0~11	5	5	8	10	*lower
	42 & 58	5210 & 5290	11ac	80	N/A	#0~9	N/A	N/A	N/A	N/A	6	6	9	11		#0~9	6	6	9	11	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	6	6	9	11		#0~11	6	6	9	11	
			11ax/OFDMA		996	#0~11	N/A	N/A	N/A	N/A	4	4	7	9	*lower	#0~11	4	4	7	9	*lower
WLAN 5.6 GHz	100~116, 132~140	5500~5580, 5660~5700	11a	20	N/A	6~54	N/A	N/A	N/A	N/A	8	8	11	13		N/A	N/A	N/A	N/A	N/A	
			11n		N/A	#0~7	N/A	N/A	N/A	N/A	8	8	11	13		#8~15	8	8	11	13	
			11ac		N/A	#0~8	N/A	N/A	N/A	N/A	8	8	11	13		#0~8	8	8	11	13	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	8	8	11	13		#0~11	8	8	11	13	
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	8	8	11	13		#0~9	8	8	11	13	
	102, 110, 134	5510, 550, 5670	11n	40	N/A	#0~7	N/A	N/A	N/A	N/A	8	8	11	13		#8~15	8	8	11	13	
			11ac		N/A	#0~9	N/A	N/A	N/A	N/A	8	8	11	13		#0~9	8	8	11	13	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	8	8	11	13		#0~11	8	8	11	13	
			11ax/OFDMA		484	#0~11	N/A	N/A	N/A	N/A	8	8	11	13		#0~11	8	8	11	13	
	106	5530	11ac	80	N/A	#0~9	N/A	N/A	N/A	N/A	8	8	11	13		#0~9	8	8	11	13	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	8	8	11	13		#0~11	8	8	11	13	
			11ax/OFDMA		996	#0~11	N/A	N/A	N/A	N/A	7	7	10	12	*lower	#0~11	7	7	10	12	*lower
WLAN 5.8 GHz	149~165	5745~5825	11a	20	N/A	6~54	N/A	N/A	N/A	N/A	5	5	8	10		N/A	N/A	N/A	N/A	N/A	
			11n		N/A	#0~7	N/A	N/A	N/A	N/A	5	5	8	10		#8~15	5	5	8	10	
			11ac		N/A	#0~8	N/A	N/A	N/A	N/A	5	5	8	10		#0~8	5	5	8	10	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	5	5	8	10		#0~11	5	5	8	10	
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	5	5	8	10		#0~9	5	5	8	10	
	151,159	5755, 5795	11n	40	N/A	#0~7	N/A	N/A	N/A	N/A	5	5	8	10		#8~15	5	5	8	10	
			11ac		N/A	#0~9	N/A	N/A	N/A	N/A	5	5	8	10		#0~9	5	5	8	10	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	5	5	8	10		#0~11	5	5	8	10	
			11ax/OFDMA		484	#0~11	N/A	N/A	N/A	N/A	4	4	7	9	*lower	#0~11	4	4	7	9	*lower
	155	5775	11ac	80	N/A	#0~9	N/A	N/A	N/A	N/A	5	5	8	10		#0~9	5	5	8	10	
			11ax/OFDM		N/A	#0~11	N/A	N/A	N/A	N/A	5	5	8	10		#0~11	5	5	8	10	
			11ax/OFDMA		996	#0~11	N/A	N/A	N/A	N/A	3	3	6	8	*lower	#0~11	3	3	6	8	*lower
WLAN 6.2 GHz	1~93	5955~6415	11a	20	N/A	6	N/A	N/A	N/A	N/A	-1	-1	2	4	*lower	N/A	N/A	N/A	N/A	N/A	
			11ax/OFDM		N/A	#0~2	N/A	N/A	N/A	N/A	-1	-1	2	4	*lower	#0~2	3	3	6	7	*lower
						#3~11	N/A	N/A	N/A	N/A	0	0	3	5	*lower	#3~11	3	3	6	8	*lower
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	-1	-1	2	4	*lower	#0~9	3	3	6	7	*lower
	3~91	5965~6405	11ax/OFDM	40	N/A	#0~2	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~2	5	5	8	10	*lower
						#3~11	N/A	N/A	N/A	N/A	3	3	6	8		#3~11	6	6	9	11	*MIMO>CDD
			11ax/OFDMA		484	#0~11	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~11	5	5	8	10	*lower
	7~87	5985~6385	11ax/OFDM	80	N/A	#0~11	N/A	N/A	N/A	N/A	3	3	6	8		#0~11	6	6	9	11	*MIMO>CDD
			11ax/OFDMA		996	#0~11	N/A	N/A	N/A	N/A	1	1	4	6	*lower	#0~11	4	4	7	9	*lower
WLAN 6.5 GHz	97~113	6435~6515	11a	20	N/A	6	N/A	N/A	N/A	N/A	-1	-1	2	4	*lower	N/A	N/A	N/A	N/A	N/A	
			11ax/OFDM		N/A	#0~2	N/A	N/A	N/A	N/A	-1	-1	2	4	*lower	#0~2	3	3	6	7	*lower
						#3~11	N/A	N/A	N/A	N/A	0	0	3	5	*lower	#3~11	3	3	6	8	*lower
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	-1	-1	2	4	*lower	#0~9	3	3	6	7	*lower
	99, 107	6445~ 6485	11ax/OFDM	40	N/A	#0~2	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~2	5	5	8	10	*lower
						#3~11	N/A	N/A	N/A	N/A	3	3	6	8		#3~11	6	6	9	11	*MIMO>CDD
			11ax/OFDMA		484	#0~11	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~11	5	5	8	10	*lower
	103, 119	6465, 6545	11ax/OFDM	80	N/A	#0~11	N/A	N/A	N/A	N/A	3	3	6	8		#0~11	6	6	9	11	*MIMO>CDD
			11ax/OFDMA		996	#0~11	N/A	N/A	N/A	N/A	1	1	4	6	*lower	#0~11	4	4	7	9	*lower
WLAN 6.7 GHz	117~181	6535~6855	11a	20	N/A	6	N/A	N/A	N/A	N/A	0	0	3	5	*lower	N/A	N/A	N/A	N/A	N/A	
			11ax/OFDM		N/A	#0~2	N/A	N/A	N/A	N/A	0	0	3	5	*lower	#0~2	3	3	6	8	*lower
						#3~11	N/A	N/A	N/A	N/A	1	1	4	6	*lower	#3~11	4	4	7	9	*lower
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	0	0	3	5	*lower	#0~9	3	3	6	8	*lower
	115~179	6525~6845	11ax/OFDM	40	N/A	#0~2	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~2	5	5	8	10	*lower
						#3~11	N/A	N/A	N/A	N/A	3	3	6	8	*lower	#3~11	6	6	9	11	*lower
			11ax/OFDMA		484	#0~11	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~11	5	5	8	10	*lower
	135~167	6625~6785	11ax/OFDM	80	N/A	#0~11	N/A	N/A	N/A	N/A	4	4	7	9	*lower	#0~11	7	7	10	12	*MIMO>CDD
			11ax/OFDMA		996	#0~11	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~11	5	5	8	10	*lower
WLAN 7 GHz	189~229	6875~7095	11a	20	N/A	6	N/A	N/A	N/A	N/A	0	0	3	5	*lower	N/A	N/A	N/A	N/A	N/A	
			11ax/OFDM		N/A	#0~2	N/A	N/A	N/A	N/A	0	0	3	5	*lower	#0~2	3	3	6	8	*lower
						#3~11	N/A	N/A	N/A	N/A	1	1	4	6	*lower	#3~11	4	4	7	9	*lower
			11ax/OFDMA		242	#0~9	N/A	N/A	N/A	N/A	0	0	3	5	*lower	#0~9	3	3	6	8	*lower
	195~227	6885~7085	11ax/OFDM	40	N/A	#0~2	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~2	5	5	8	10	*lower
						#3~11	N/A	N/A	N/A	N/A	3	3	6	8	*lower	#3~11	6	6	9	11	*lower
			11ax/OFDMA		484	#0~11	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~11	5	5	8	10	*lower
	199, 215	6865~7025	11ax/OFDM	80	N/A	#0~11	N/A	N/A	N/A	N/A	4	4	7	9	*lower	#0~11	7	7	10	12	*MIMO>CDD
			11ax/OFDMA		996	#0~11	N/A	N/A	N/A	N/A	2	2	5	7	*lower	#0~11	5	5	8	10	*lower

*1. Independent transmission from a single antenna is disabled by firmware.
*. The higher maximum output power in each operation band is marked with yellow marker (x.xxx).
*. D/R: data rate, Ant.: antenna, Max. Maximum tune-up limit power.
*. Transmit power is the value from each single chain. When the device transmits 2 streams of data, total power should be +3.0dB.
*. The EUT do not use the special transmitting technique such as “beam-forming” and “time-space code diversity.”
*. WLAN (excluding 2.4GHz band) and Bluetooth are transmitted simultaneously. Therefore, simultaneously transmitted SAR is considered.
*. For WLAN 6.2, 6.5, 6.7, 7.0 GHz band, the power specification is determined by the frequency at which the first channel is located.
*. Since OFDMA has maximum power in the largest RU, only the power in the largest RU is listed in the table.

SECTION 3: Maximum SAR&PD value, test specification and procedures

3.1 Summary of Maximum SAR & PD Value

Mode / Band	Highest Reported SAR [W/kg]								
	Partial-body (Flat phantom)(Separation 0 mm)			Head (SAM phantom)			Limbs (Flat phantom)		
	Type	Antenna 1	Antenna 2	Type	Antenna 1	Antenna 2	Type	Antenna 1	Antenna 2
WLAN 2.4 GHz	SAR (1g)	0.37	0.34	SAR (1g)	N/A	N/A	SAR (10g)	N/A	N/A
WLAN 5 GHz (5.2, 5.3, 5.6, 5.8 GHz band)	SAR (1g)	0.90	0.57	SAR (1g)	N/A	N/A	SAR (10g)	N/A	N/A
WLAN 6 GHz (6.2 GHz band)	SAR (1g)	0.49	0.33	SAR (1g)	N/A	N/A	SAR (10g)	N/A	N/A
Bluetooth	SAR (1g)	0.10	N/A	SAR (1g)	N/A	N/A	SAR (10g)	N/A	N/A
Simultaneous Transmission (*1)	SAR (1g)	1.00 (*. SUM of SAR1g was <1.6 W/kg) (See 7.2)		SAR (1g)	N/A		SAR (10g)	N/A	
Limit applied	Partial bod y: 1.6 W/kg (SAR(1g)) for general population/uncontrolled exposure is specified in FCC 47 CFR 2.1093.								
Test Procedure	Refer to Section 3.2 in this report. In addition; UL Japan's SAR measurement work procedures No. ULID-003599 (13-EM-W0430). UL Japan's SAR measurement equipment calibration and inspection work procedures No. ULID-003598 (13-EM-W0429).								

Mode / Band	Highest Standalone Transmission		Highest Simultaneous Transmission
	psPDtot+ [W/m^2] (Averaging Area: 4 cm^2) (*2)		Total Exposure Ratio (*3)
WLAN 6 GHz (6.2, 6.5, 6.7, 7.0 GHz band)	6.11 (Antenna 1) (*1)	3.84 (Antenna 2) (*1)	0.67 (BT+WLAN 6 GHz)
Limit applied	10 W/m^2 for general population/uncontrolled exposure is specified in FCC 47 CFR 2.1093. However, since measurement uncertainty of PD test data was > 30% (k=2), methods of IEC 62479 was applied for reporting purposes and approval limit was reduced to 8.9 W/m^2.		
Test Procedure	Refer to Section 3.2 in this report. In addition; UL Japan's Power density measurement procedure No. ULID-003619 (13-EM-W0863).		

*1. An Antenna 1 supports both WLAN and Bluetooth. An antenna 2 is only supported WLAN. For WLAN operation, both of antenna 1 and antenna 2 is always transmitted by method of CDD or SDM. WLAN 2.4 GHz and Bluetooth cannot transmit simultaneously on an antenna 1. WLAN 5 GHz or 6GHz and Bluetooth can transmit simultaneously on an antenna 1. Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.
*2. According to the TCB Workshop Oct. 2018 notes, the average power density results are presented using averaging areas of 4 cm^2.
*3. Total exposure ratio (TER) calculated by taking ratio of reported SAR divided by SAR limit and adding it to measured power density divided by power density limit. Numerical sum of the two ratios should be less than 1.

For Module approval;

Test outline: Where the EUT is built into this platform, it was verified whether multi-platform conditions can be suited in according with clause 4.2.4 in KDB 447498 D04 (v01).

Consideration of the test results:	**The highest reported SAR (1g) of this platform was kept; ≤ 1.2 W/kg.** ***. Since highest reported SAR (1g) on this EUT's platform obtained in accordance with KDB447498 D04 (v01) was kept under 1.2 W/kg, this EUT was approved to operate same type of multi-platform.**

Conclusion

The SAR test values found for the device were separately below the maximum limit of 1.6 W/kg.
The PD test values found for the device were separately below the maximum limit of 8.9 W/m^2 (*4).
For the simultaneous transmission, sum of SAR values were below the maximum limit of 1.6 W/kg. Calculated total exposure ratio (TER) was less than 1.

*4. Since measurement uncertainty of PD test data was > 30% (k = 2), methods of IEC 62479 was applied for reporting purposes and approval limit was reduced to 8.9 W/m^2.

3.2 RF Exposure limit

SAR Exposure Limit (100 kHz ~ 6 GHz)		
	General Population / Uncontrolled Exposure (*1)	Occupational / Controlled Exposure (*2)
Spatial Peak SAR (*3) (Whole Body)	0.08 W/kg	0.4 W/kg
Spatial Peak SAR (*4) (Partial-Body, Head or Body)	1.6 W/kg	8 W/kg
Spatial Peak SAR (*5) (Hands / Feet / Ankle / Wrist)	4 W/kg	20 W/kg
Power Density Exposure Limit (1500 MHz ~ 100000 MHz)		
	General Population / Uncontrolled Exposure	Occupational / Controlled Exposure
Power Density (S)	1.0 mW/cm^2 (*6, *7)	5 mW/cm^2

*. For the purpose of this Regulation, FCC has adopted the SAR and RF exposure limits established in FCC 47 CFR 1.1310: Radiofrequency radiation exposure limits.
*1. General Population / Uncontrolled Environments are defined as locations where there is the exposure of individuals who have no knowledge or control of their exposure.
*2. Occupational / Controlled Environments are defined as locations where there is exposure that may be incurred by persons who are aware of the potential for exposure, (i.e. as a result of employment or occupation).
*3. The Spatial Average value of the SAR averaged over the whole body.
*4. The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time
*5. The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time
*6. 1 mW/cm^2= 10 W/m^2
*7. According to APPENDIX OVER6G of KDB 388624 D02 Pre-Approval Guidance List v18r03, test report estimated IPD measurement uncertainty (e.g., per methods of IEC/IEEE 63195-1). Furthermore, similar to that KDB Pub. 865664 D02 has 30% as maximum expanded measurement uncertainty for SAR test data, where PD test data expanded measurement uncertainty > 30% (k = 2), methods of e.g., IEC 62479 apply for reporting purposes. (See clause 7.5 in this report)

The limit applied to this device which tested in this report is;

Limit of Spatial Peak SAR (Partial-Body)	**1.6 W/kg**	**General population / uncontrolled exposure**
Limit of Power Density	**1.0 mW/cm^2**	**General population / uncontrolled exposure**

3.3 Test specification

Standard	Description	Version
47 CFR 2.1093	(Limit) Radiofrequency radiation exposure evaluation: portable devices	-
ANSI/IEEE C95.1	IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 KHz to 300 GHz	1992
IEEE Std. 1528	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques.	2013
KDB 248227 D01	SAR Guidance for IEEE 802.11 (Wi-Fi) transmitters v02r02	v02r02
KDB 447498 D04	Interim General RF Exposure Guidance v01	v01
KDB 447498 D03	OET Bulletin 65, Supplement C Cross-Reference v01	v01
KDB 865664 D01	SAR measurement 100 MHz to 6 GHz v01r04	v01r04
KDB 865664 D02	RF exposure compliance reporting and documentation considerations v01r02	v01r02
KDB 388624 D02	Pre-approval guidance list-APPENDIX OVER6G	v18r03
IEC/IEEE 62209-1528 (*1)	(including > 6GHz SAR) Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz). - Secs. 6.1, 7.4.2, 7.7 - *f* above 4 MHz SAR provisions (TCB workshop, 2022-10)	2020
IEC/IEEE 63195-1	(IPD) Assessment of power density of human exposure to radio frequency fields from wireless devices in close proximity to the head and body (frequency range of 6 GHz to 300 GHz) – Part 1: Measurement procedure. - Secs. 6.1-6.4, 6.5.1, 6.6, 6.7.1.3, 6.7.2, 6.7.3, 7.2.4.2, 7.4, 8 (TCB workshop, 2022-10)	2022
IEC TR 63170	(IPD) Measurement procedure for the evaluation of power density related to human exposure to radio frequency fields from wireless communication devices operating between 6 GHz and 100 GHz	2018
IEC PAS 63446 (*2)	(APD) Conversion method of specific absorption rate to absorbed power density for the assessment of human exposure to radio frequency electromagnetic fields from wireless devices in close proximity to the head and body - Frequency range of 6 GHz to 10 GHz	2022

*1. Used for SAR measurements above 6 GHz. The measurement uncertainty budget is suggested by IEC/IEEE 62209-1528:2020 and determined by SPEAG, DASY8 Manual for Module SAR/mmWave. Refer to Appendix3-3 for more details.
*2. Used for APD measurements above 6 GHz and as a target value for system verification.

In addition to the above, the following information was used:

TCB workshop 2016-10	(RF Exposure Procedure) Bluetooth Duty Factor.
TCB workshop 2016-10	(RF Exposure Procedure) DUT Holder Perturbations; When the highest reported SAR of an antenna is > 1.2 W/kg, holder perturbation verification is required for each antenna, using the highest SAR configuration among all applicable frequency bands.
TCB workshop 2017-05	(RF Exposure Procedure) Broadband liquid above 3 GHz. Allow application of 10% tissue dielectric tolerance correction in KDB 865664 D01.
TCB workshop 2018-04	(RF Exposure Procedure) Allow Expedited Area Scans. (including mother scans)
TCB workshop 2019-04	(RF Exposure Procedure) 802.11ax SAR Testing
TCB workshop 2019-04	(RF Exposure Procedure) Tissue Simulating Liquids (TSL) FCC has permitted the use of single head tissue simulating liquid specified in IEC 62209 for all SAR tests. If FCC parameters are used, 5 % tolerance. If IEC parameters, 10 %.
TCB workshop 2019-04	(RF Exposure Policy) SAR Zoom-Scan Update.
TCB workshop 2021-04	(RF Exposure Procedure) Application of specific phantoms. (case by case, PAG)
TCB workshop 2018-04	PD(RF Exposure Procedure) Spatial Averaging Requirements. (4cm^2 acceptable, either a circular or square averaging area)
TCB workshop 2018-10	PD(RF Exposure Procedure) Reporting of both total field PD (psPDtot+) and normal component of derived PD (psPDn+). TER.
TCB workshop 2019-04	PD(RF Exposure Procedure) Millimeter wave RF Exposure Evaluation
TCB workshop 2019-11	PD(RF Exposure Procedure) Millimeter wave Scan Requirement
TCB workshop 2020-10	PD(Updates on Guidelines for 5G Equipment Authorization) U-NII 6-7 GHz RF exposure.
TCB workshop 2021-04	PD(RF Exposure Procedure) Summary and status of interim RF exposure test procedures for U-NII 6-7 GHz portable devices (five frequencies)
TCB workshop 2022-10	PD(RF Exposure Procedure) f-above 6 GHz portable devices, Selected SAR&IPD Test Frequencies, IEC/IEEE Standards w.r.t. KDB 865664
SPEAG; DASY8 MODULE mmWave SYSTEM HANDBOOK (incl. SW Module mmWave 3.0)(2022-02)	
SEPAG; SAR, Absorbed & Incident Power Density with DASY8, APPLICATION NOTE, Updated Interim Procedures (Version 7.0) for 6 - 10 GHz (2023-01)	

3.4 Addition, deviation and exclusion to the test procedure

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

3.5 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)

Place	Width × Depth × Height (m)	Size of reference ground plane (m) / horizontal conducting plane
No.7 Shielded room	2.76 × 3.76 × 2.4	2.76 × 3.76

3.6 SAR measurement procedure

3.6.1 SAR Definition

SAR is defined as the time derivative (rate) of the incremental energy (dW) absorbed by (dissipated in) an incremental mass (dm) contained in a volume element (dV) of a given density (ρ). The equation description is shown in right.	$SAR = \frac{d}{dt}\left(\frac{dW}{dm}\right) = \frac{d}{dt}\left(\frac{dW}{\rho * dV}\right)$
SAR measurement can be related to the electrical field in the tissue by the equation in right. SAR is expressed in units of Watts per kilogram (W/kg). Where : σ = conductivity of the tissue (S/m), ρ = mass density of the tissue (kg/m³), E = RMS electric field strength in tissue (V/m)	$SAR = \frac{\sigma \lvert E \rvert^2}{\rho}$

3.6.2 Full SAR measurement procedure

The SAR measurement procedures are as follows: (1) The EUT is installed engineering testing software that provides continuous transmitting signal; (2) Measure output power through RF cable and power meter; (3) Set scan area, grid size and other setting on the DASY software; (4) Find out the largest SAR result on these testing positions of each band; (5) Measure SAR results for other channels in worst SAR testing position if the SAR of highest power channel is larger than 0.8 W/kg.

*. According to the test standard, the recommended procedure for assessing the peak spatial-average SAR value consists of the following steps:
Step 1) Power measurement -.> SAR: Step 2) Power reference measurement -> Step 3) Area scan -> Step 4) Zoom scan -> Step 5) Power drift measurement

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. This SAR reference power measurement was proceeded with the lowest data rate (which may have the higher time-based average power typically) on each operation mode and on the lower, middle (or near middle), upper and specified channels. The power measurement result is shown in Section 5.

*. The EUT transmission power used SAR test was verified that it was not more than 2 dB lower than the maximum tune-up tolerance limit. (KDB447498 D04 (v01))

Step 2: Power reference measurement

Measured psSAR value at a peak location of Fast Area Scan was used as a reference value for assessing the power drop.

Step 3: Area Scan

(Scan parameters: KDB 865664 D01, IEC/IEEE 62209-1528 (> 6GHz))

Area Scans are used to determine the peak location of the measured field before doing a finer measurement around the hotspot. Peak location can be found accurately even on coarse grids using the advanced interpolation routines implemented in DASY8. Area Scans measure a two dimensional volume covering the full device under test area. DASY8 uses Fast Averaged SAR algorithm to compute the 1 g and 10 g of simulated tissue from the Area Scan. DASY8 can either manually or automatically generates Area Scan grid settings based on device dimensions. In automatically case, the scan extent is defined by the device dimensions plus additional 15mm on each side. In manually, the scan covered the entire dimension of the antenna of EUT.

Step 4: Zoom Scan and post-processing

(Scan parameters: KDB 865664 D01, IEC/IEEE 62209-1528 (> 6GHz))

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 minimum volume of 30 mm (x) × 30 mm (y) × 30 mm (z) was assessed by "Ratio step" method (*1), for 2.4 GHz band. (Step XY: 5 mm)
*. A minimum volume of 24 mm (x) × 24 mm (y) × 24 mm (z) was assessed by "Ratio step" method (*1), for 5 GHz band (Step XY: 4 mm).
*. A minimum volume of 24 mm (x) × 24 mm (y) × 24 mm (z) was assessed by "Ratio step" method (*1), for 6 GHz band (Step XY: 3.4 mm).

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.

			$f \leq 3$ GHz	3 GHz < $f \leq$ 10 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface			5 mm ± 1 mm	1/2 × δ × ln(2) mm ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location			5 ° ± 1 °(flat phantom only) 30 ° ± 1 °(other phantom)	5 ° ± 1 °(flat phantom only) 30 ° ± 1 °(other phantom)
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 > 6 GHz : ≤ 60/*f* mm, or half of the corresponding zoom scan length, whichever is smaller.
			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.	
Maximum zoom scan spatial resolution: Δx_{Area}, Δy_{Area}			≤ 2 GHz : ≤ 8 mm, 2~3 GHz : ≤ 5 mm (*1)	3~4 GHz : ≤ 5 mm (*1), 4~6 GHz : ≤ 4 mm (*1) > 6 GHz : ≤ 24/*f* mm
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 > 6 GHz : ≤ 10/(*f*-1) mm
	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 > 6 GHz : ≤ 12/*f* mm
		$\Delta z_{Zoom}(n>1)$: between subsequent points	≤ 1.5 × Δz_{zoom} (n-1) mm	
Minimum zoom scan volume	x, y, z		≥ 30 mm	3~4 GHz : ≥ 28 mm, 4~ 5 GHz : ≥ 25 mm, 5~6 GHz : ≥ 22 mm > 6 GHz : ≥ 22 mm

Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see IEEE Std 1528-2013 (≤ 6 GHz) and IEC/IEEE 62209-1528 (≤ 10 GHz) for details.
*1. When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB Publication 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz. (KDB 865664 D01)
*. The scan parameters of > 6GHz is defined IEC/IEEE 62209-1528.

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 project. The Power Drift Measurement gives the SAR 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. It was checked that the power drift was within ± 5% (0.21 dB) in single SAR project run. The verification of power drift during the SAR test shown in SAR plot data of APPENDIX 2.

*. The most of SAR tests were conservatively performed with test separation distance 0 mm. The phantom bottom thickness is approx. 2mm. Therefore, the distance between the SAR probe tip to the surface of test device which is touched the bottom surface of the phantom is approx. 2.4 mm. Typical distance from probe tip to probe's dipole centers is 1mm.
*1. "Ratio step" method parameters used; the first measurement point: "1.4 mm" from the phantom surface, the initial z grid separation: "1.5 mm", subsequent graded grid ratio: "1.5" for 2.4 GHz band and the initial z grid separation: "1.4 mm", subsequent graded grid ratio: "1.4" for above 5 GHz. These parameters comply with the requirement of KDB 865664 D01and recommended by Schmid & Partner Engineering AG (DASY8 manual).

3.7 Power Density measurement procedure

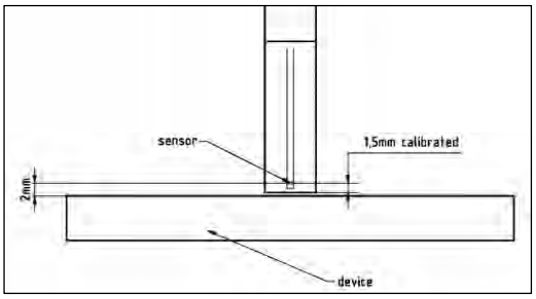
3.7.1 Power Density Definition

Power density (PD) is defined as the rates of energy transfer per area for an electromagnetic filed. According to the IEC TR 63170, the formula in right is used to determine the local power density (for time harmonic fields):	$S = \frac{1}{2} \Re (E \times H^*) \cdot \hat{n}$
And the spatial-average power density distribution on the evaluate surface is determined as the equation in right: Where: E is the complex electric field peak phasor and H is the complex conjugate magnetic field peak phasor, respectively. A is the spatial average area specified by the applicable exposure or regulatory requirement. Power density is expressed in unit of watt per square meter (W/m^2).	$Sav = \frac{1}{2A} \Re (\int (E \times H^*) \cdot \hat{n}\ dA$

3.7.2 Power Density measurement procedure

Power Density Assessment Based on E-field

According to the IEEE/IEC 63195-1, within a short distance from the transmitting source, power density is determined based on both electric and magnetic fields. Generally, the magnitude and phase of two components of either the E-field or H-field are needed on a sufficiently large surface to fully characterize the total E-field and H-field distributions. The measurement points are chosen according to the requirements of the methodology used. The following procedure was used



(1) Measure the E-field on the measurement surface at a reference location where the field is well above the noise level. This reference level will be used at the end of this procedure to assess output power drift of the EUT during the measurement.
(2) Scan the electric field on the measurement surface. The requirements of measurement surface dimensions and spatial resolution are dependent on the measurement system and assessment methodology applied. Measurements are therefore conducted according to the instructions provided by SPEAG user's manual.
(3) Measurement spatial resolution can depend on the measured field characteristic and measurement methodology used by the system. Planar scanners typically require a step size of less than $\lambda/2$.
(4) Calculated H-field from measured field by using reconstruction algorithm since only E-field is directly measured on the evaluation surface. Reconstruction algorithms can also be used to obtain field information from the measured data. In substance, reconstruction algorithms are the set of algorithms, mathematical techniques and procedures that are applied to the measured field on the measurement surface to determine E- and H-field (amplitude and phase) on the surface.
(5) Determine the spatial-average power density distribution on the evaluation surface by the following formula. The spatial averaging area, A, is specified by the applicable exposure limits or regulatory requirements. The average area was specified according to regulatory requirements.

$$Sav = \frac{1}{2A} \Re (\int (E \times H^*) \cdot \hat{n}\ dA$$

(6) The maximum spatial-average and/or local power density on the evaluation surface is the final quantity to determine compliance against applicable limits. The spatial averaging area, $4cm^2$, is specified by the Oct. 2018 TCB Workshop notes requirements.
(7) Measure the E-field on the measurement surface position at the reference location chosen in step (1). The power drift of the EUT is estimated as the difference between the squared amplitude of the field values taken in steps (1) and (7). When the drift is smaller than ± 5 %, this term should be considered in the uncertainty budget. Drifts larger than 5 % due to the design and operating characteristics of the device should be accounted for or addressed according to regulatory requirements to determine compliance.

Remarks: RF Exposure Evaluation Policy for sources with frequency between 6000 MHz and 8500 MHz (KDB 388624 DO2)

1. For frequencies up to 8500 MHz provide spatial peak SAR evaluation based on IEC/IEEE 62209-1528:2020, along with applicable product-specific procedures among KDB Pubs. 648474, 616217, 941225. SAR test data shall account for device tune-up tolerance (that is referred to as "Reported SAR" in KDB 447498).
2. This policy considers a device compliant for Equipment Authorization purposes, so long as the SAR evaluation of step 1. is within the same SAR limits that have been established for frequencies below 6000 MHz (e.g., 1.6 W/kg for 1-g average SAR). In this case, the SAR evaluations are taken as a conservative compliance demonstration to the MPE power density limits of 47 CFR 1.1310(d)(3).
3. Documentation is required to support evaluation with MPE limits providing power density data in accordance with the following:
   3.1 For the test configurations of step 1 having the highest SAR, evaluate Incident Power Density (IPD), using a suitable near-field probe and a total-field/power-density reconstruction method.
   3.2 Report estimated IPD measurement uncertainty (e.g., per methods of IEC/IEEE 63195-1:2022)
   3.3 Power density test data shall account for device tune-up tolerance
   3.4 If supported by the test system, also report estimated Absorbed (epithelial) Power Density (APD)
4. The process of steps 1 to 4 shall be repeated for at least five channels, at the channel center frequency, selected to cover uniformly the largest frequency ranges used in the device, between 5925 MHz and 8500 MHz, and consistent with KDB Publication 248227 test configuration provisions.
5. For the purpose of SAR test exemption, analyses of simultaneous transmission combinations of RF sources with frequencies from 4 MHz and 8500 MHz (where the lowest frequency is per KDB Publication 447498-D01 SAR evaluation requirements11), may be performed according to the SPLSR approach (id.). Accordingly, no further compliance evaluation is needed for all antenna pairs for which the SPLSR exemption is applicable.

3.7.3 Total Field and Power Density Reconstruction

Computation of the power density in general requires knowledge of the electric (E-) and magnetic (H-) field amplitudes and phases in the plane of incidence. Reconstruction of these quantities from pseudo-vector E-field measurements is feasible, as they are constrained by Maxwell's equations. The manufacturer SPEAG have developed a reconstruction approach based on the Gerchberg-Saxton algorithm (PTP-PR) used in Module mmWave V2.x, which benefits from the availability of the E-field polarization ellipse information obtained with the EUmmWV4 probe. This reconstruction algorithm, together with the ability of the probe to measure extremely close to the source without perturbing the field, permits reconstruction of the E- and H-fields, as well as of the power density, on measurement planes located as near as $\lambda/5$ or more smaller away. However, the required measurement effort and the resulting uncertainties were not satisfactory.
Recently, SPEAG and IT'IS achieved a breakthrough by developing a novel equivalent source reconstruction (ESR) algorithm, that models an unknown and inaccessible transmitter as a set of distributed known auxiliary sources below the surface of the device enclosure. The positions, amplitudes, and phases of these sources are then determined to reconstruct the measured near-fields optimally. As a result, the transmitters inside any enclosure can be replaced with these equivalent sources in any radiation problem, including exposure assessment scenarios. This method is published [1] and implemented in DASY8 Module mmWave V3.2.

[1] K. S. Cujia, A. Fallahi, S. Reboux and N. Kuster, "Experimental Exposure Evaluation From the Very Close Near- to the Far-Field Using a Multiple-Multipole Source Reconstruction Algorithm," in IEEE Transactions on Antennas and Propagation, vol. 70, no. 9, pp. 8461-8472, Sept. 2022, doi: 10.1109/TAP.2022.3177564..

SECTION 4: Operation of EUT during testing

4.1 Operating modes for testing

The EUT has Bluetooth and IEEE 802.11b, 11g, 11a, 11n, 11ac and 11ax (OFDM/OFDMA) continuous transmitting modes. The frequency and the modulation used in the SAR/PD testing are shown as a following.

Operation mode	11b	11g	11n20		11ax20				BR	EDR		BT LE	
Band / Test method	WLAN 2.4 GHz / SAR								Bluetooth / SAR				
Tx band [MHz]	2412~2462								2402~2480				
Tx type (*1) (Number of Tx antenna)	CDD (2)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	Antenna #1 (1)				
Max.power [dBm]	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	6	3	3	6	6
D/R [Mbps], MCS# (*2)	1	6	#0	#8	#0	#0	#0	#0	1	2	3	1	2
Modulation	DSSS	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	-	-	-	-	-
SAR tested frequency	(*3)	N/A	N/A	N/A	N/A	(*3)	N/A	(*3)	(*3)	N/A	N/A	(*3)	N/A

Operation mode	11a	11n20		11ac20		11ax20				11n40		11ac40		11ax40				11ac80				11ax80	
Band / Test method	WLAN 5.2 GHz (*4) / SAR																						
Tx band [MHz]	5180~5240									5190,5230								5210					
Tx type (*1) (Number of Tx antenna)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)
Max.power [dBm]	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	10 (7+7)	10 (7+7)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	9 (6+6)	9 (6+6)
D/R [Mbps], MCS# (*2)	6	#0	#8	#0	#0	#0	#0	#0	#0	#0	#8	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0
Modulation	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996
SAR tested frequency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	(*3)	(*3)	(*3)	N/A	N/A

Operation mode	11a	11n20		11ac20		11ax20				11n40		11ac40		11ax40				11ac80				11ax80	
Band	WLAN 5.3 GHz (*4) / SAR																						
Tx band [MHz]	5260~5320									5270,5310								5290					
Tx type (*1) (Number of Tx antenna)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)
Max.power [dBm]	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	10 (7+7)	10 (7+7)	11 (8+8)	11 (8+8)	11 (8+8)	11 (8+8)	9 (6+6)	9 (6+6)
D/R [Mbps], MCD# (*2)	6	#0	#8	#0	#0	#0	#0	#0	#0	#0	#8	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0
Modulation	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996
SAR tested frequency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	(*3)	(*3)	(*3)	N/A	N/A

Operation mode	11a	11n20		11ac20		11ax20				11n40		11ac40		11ax40				11ac80				11ax80	
Band / Test method	WLN 5.6 GHz / SAR																						
Tx band [MHz]	5500~5580, 5660~5700									5510, 5550, 5670								5530					
Tx type (*1) (Number of Tx antenna)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)
Max.power [dBm]	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	13 (10+10)	12 (9+9)	12 (9+9)
D/R [Mbps], MCS# (*2)	6	#0	#8	#0	#0	#0	#0	#0	#0	#0	#8	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0
Modulation	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996
SAR tested frequency	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	(*3)	(*3)	(*3)	(*3)	(*3)	N/A	N/A

Operation mode	11a	11n20		11ac20		11ax20				11n40		11ac40		11ax40				11ac80				11ax80	
Band / Test method	WLAN 5.8 GHz / SAR																						
Tx band [MHz]	5745~5825									5755, 5795								5775					
Tx type (*1) (Number of Tx antenna)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)
Max.power [dBm]	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	9 (6+6)	9 (6+6)	10 (7+7)	10 (7+7)	10 (7+7)	10 (7+7)	8 (5+5)	8 (5+5)
D/R [Mbps], MCS# (*2)	6	#0	#8	#0	#0	#0	#0	#0	#0	#0	#8	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0	#0
Modulation	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDM	OFDM	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996
SAR tested frequency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	(*3)	(*3)	N/A	N/A

Operation mode	11a	11ax20					11ax40				11ax80				11a	11ax20					11ax40				11ax80			
Band / Test method	WLAN 6.2 GHz (*5) / PD														WLAN 6.5 GHz (*5) / PD													
Tx band [MHz]	5955~6415					5965~6405					5985~6385				6435~6515					6445, 6485					6465, 6545			
Tx type (*1) (Number of Tx antenna)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)
Max.power [dBm]	4 (1+1)	5 (2+2)	8 (5+5)	4 (1+1)	7 (4+4)	8 (5+5)	11 (8+8)	7 (4+4)	10 (7+7)	8 (5+5)	11 (8+8)	6 (3+3)	9 (6+6)	4 (1+1)	5 (2+2)	8(5+5)	4 (1+1)	7 (4+4)	8 (5+5)	11 (8+8)	7 (4+4)	10 (7+7)	8 (5+5)	11 (8+8)	6 (3+3)	9 (6+6)			
D/R [Mbps], MCS# (*2)	6	#3	#3	#0	#0	#3	#3	#0	#0	#0	#0	#0	#0	6	#3	#3	#0	#0	#3	#3	#0	#0	#0	#0	#0	#0			
Modulation	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996			
SAR/APD tested frequency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A			
IPD tested frequency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A			

Operation mode	11a	11ax20					11ax40				11ax80				11a	11ax20					11ax40				11ax80			
Band / Test method	WLAN 6.7 GHz (*5) / PD														WLAN 7 GHz (*5) / PD													
Tx band [MHz]	6535~6855					6525~6845					6625~6785				6875~7095					6885~7085					6865~7025			
Tx type (*1) (Number of Tx antenna)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)	CDD (2)	SDM (2)
Max.power [dBm]	5 (2+2)	6 (3+3)	9 (6+6)	5 (2+2)	8 (5+5)	8 (5+5)	11 (8+8)	7 (4+4)	10 (7+7)	9 (6+6)	12 (9+9)	7 (4+4)	10 (7+7)	5 (2+2)	6 (3+3)	9 (6+6)	5 (2+2)	8 (5+5)	8 (5+5)	11 (8+8)	7 (4+4)	10 (7+7)	9 (6+6)	12 (9+9)	7 (4+4)	10 (7+7)				
D/R [Mbps], MCS# (*2)	6	#3	#3	#0	#0	#3	#3	#0	#0	#0	#0	#0	#0	6	#3	#3	#0	#0	#3	#3	#0	#0	#0	#0	#0	#0				
Modulation	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996	OFDM	OFDM	OFDM	OFDMA RU:242	OFDMA RU:242	OFDM	OFDM	OFDMA RU:484	OFDMA RU:484	OFDM	OFDM	OFDMA RU:996	OFDMA RU:996			
SAR/APD tested frequency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A				
IPD tested frequency	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	(*3)	N/A	N/A				

*. The higher maximum output power in each operation band is marked with yellow marker (x.xxx).
*. D/R: Data Rate, Max.power: Maximum power (tune-up limit power), N/A: SAR/APD/IPD test was not applied.
*1. Independent transmission from a single antenna is disabled by firmware. The EUT only supports one stream by two antennas (CDD, 2Tx+1ST) or two streams by two antennas (SDM, 2Tx+2ST).
*2. (KDB 248227 D01) Initial SAR test was applied to the operation mode which has higher bandwidth with the highest tune-up power and lower data rate.
*3. The tested frequencies refer to SAR test results in Section 7.

*4. SAR test of WLAN 5.2GHz band was also applied, even though the reported SAR(1g) of WLAN 5.3GHz band were enough low.
*5. For WLAN 6.2&6.5&6.7&7.0 GHz band, the power specification is determined by the frequency at which the first channel is located.

	Test name	Software name	Version	Date	Storage location / Remarks
Controlled software	Power	RF Test	4.2.0 0049(0c)	2023-11-30	Host platform firmware., Host PC (Tera-term (V.4.106))
	measurement	RF Test	4.2.0 0049(0c)	2024-02-02	Host platform firmware., Host PC (Tera-term (V.4.106))
	SAR	RF Test	4.2.0 0049(0c)	2024-03-01	Host platform firmware.

***. OFDM Transmission Mode SAR Test Configuration and Channel Selection Requirements**
(KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters) The initial test configuration for 2.4 GHz and 5 GHz OFDM transmission modes is determined by the 802.11 configuration with the highest maximum output power specified for production units, including tune-up tolerance, in each standalone and aggregated frequency band. SAR for the initial test configuration is measured using the highest maximum output power channel determined by the default power measurement procedures.
When multiple channel bandwidth configurations in a frequency band have the same specified maximum output power, largest channel bandwidth, lowest order modulation and lowest data rate, the lowest order 802.11 mode is selected.

***. SAR test reduction considerations**
(KDB 447498 D04(v01), 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 for 1g , or 2.0 W/kg for 10g respectively, when the transmission band is ≤ 100 MHz
(2) ≤ 0.6 W/kg for 1g, or 1.5 W/kg for 10g respectively, when the transmission band is between 100 MHz and 200 MHz
(3) ≤ 0.4 W/kg for 1g, or 1.0 W/kg for 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. 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.

(KDB 248227 D01, SAR Guidance for Wi-Fi Transmitters) (Clause 5.1.1 Initial Test Position SAR Test Reduction Procedure)
DSSS and OFDM configurations are considered separately according to the required SAR procedures. SAR is measured in the initial test position using the 802.11 transmission mode configuration required by the DSSS procedure or initial test configuration and subsequent test configuration(s) according to the OFDM procedures. The initial test position procedure is described in the following:
a) When the reported SAR of the initial test position is ≤ 0.4 W/kg, further SAR measurement is not required for the other (remaining) test positions in that exposure configuration and 802.11 transmission mode combinations within the frequency band or aggregated band. SAR is also not required for that exposure configuration in the subsequent test configuration(s).
b) When the reported SAR of the initial test position is > 0.4 W/kg, SAR is repeated for the 802.11 transmission mode configuration tested in the initial test position using subsequent highest extrapolated or estimated 1-g SAR conditions determined by area scans or next closest/smallest test separation distance and maximum RF coupling test positions based on manufacturer justification, on the highest maximum output power channel, until the reported SAR is ≤ 0.8 W/kg or all required test positions (left, right, touch, tilt or subsequent surfaces and edges) are tested.
c) For all positions/configurations tested using the initial test position and subsequent test positions, when the reported SAR is > 0.8 W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤ 1.2 W/kg or all required channels are tested. Additional power measurements may be required for this step, which should be limited to those necessary for identifying the subsequent highest output power channels.

For 2.4 GHz 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 5 GHz 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 SAR 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.

4.2 RF exposure conditions (Test exemption)

Antenna separation distances in each test setup plan are shown as follows.

	Antenna ID:	1		2
	Operation mode:	BT	WLAN	WLAN
Setup	Explanation of EUT setup (*. Refer to Appendix 1 for test setup photographs.)	D [mm]	D [mm]	D [mm]
Front	The front surface of host platform was touched to the Flat phantom.	3.5	3.5	6.3
Top-Right	The right portion of the convexity of the top surface of host platform was touched to the Flat phantom.	10.0	10.0	5.7
Top	The top surface of host platform was touched to the Flat phantom.	11.5	11.5	7.7
Top-Left	The left portion of the convexity of the top surface of host platform was touched to the Flat phantom.	13.0	13.0	8.7
Back	The back surface of host platform was touched to the Flat phantom.	45.4	45.4	35.5
Bottom	The bottom surface existed) of host platform was touched to the Flat phantom.	85.9	85.9	94.2

*. **D:** Antenna separation distance. It is the distance from the antenna inside host device to the outer surface of host device which user may touch.
*. Details of "antenna separation distance" and "Size of host device" are shown in Appendix 1-1.

SAR test exemption consideration by KDB 447498 D04 (v01)

*. Freq.: Frequency												Judge of SAR test exemption ("Test "or "Exempt") (upper row) / SAR based Threshold power (lower row)											
												Antenna 1 separation distance [mm]						Antenna 2 separation distance [mm]					
Tx mode	Higher Freq. [MHz]	Max. conducted output power Single [dBm]	SUM [dBm]	SUM [mW]	Antenna 1 Gain [dBi]	Antenna 1 ERP [dBm]	Antenna 1 ERP [mW]	Antenna 2 Gain [dBi]	Antenna 2 ERP [dBm]	Antenna 2 ERP [mW]	SUM ERP [mW]	< 5 Front SAR1g	10 Top-Right SAR1g	12 Top SAR1g	13 Top-Left SAR1g	45 Back SAR1g	>50 (86) Bottom SAR1g	6 Top-Right SAR1g	6 Front SAR1g	8 Top SAR1g	9 Top-Left SAR1g	36 Back SAR1g	>50 (94) Bottom SAR1g
BT	2480	6	-	-	2.67	6.52	4	-	-	-	4	**Test** 3 mW	Exempt 10 mW	Exempt > 10 mW	Exempt > 10 mW	Exempt > 100 mW	Exempt > 100 mW	N/A -	N/A -	N/A -	N/A -	N/A -	N/A -
WLAN 2.4 GHz	2462	10	13	20	2.67	10.52	11	2.67	13.52	11	22	**Test** 3 mW	**Test** 10 mW	**Test** 14 mW	**Test** 17 mW	Exempt > 100 mW	Exempt > 100 mW	**Test** 4 mW	**Test** 4 mW	**Test** 7 mW	**Test** 8 mW	Exempt > 100 mW	Exempt > 100 mW
WLAN 5.2 GHz	5240	8	11	13	5.14	10.99	13	5.14	13.99	13	26	**Test** 1 mW	**Test** 6 mW	**Test** 9 mW	**Test** 11 mW	Exempt > 100 mW	Exempt > 100 mW	**Test** 2 mW	**Test** 2 mW	**Test** 4 mW	**Test** 5 mW	Exempt > 100 mW	Exempt > 100 mW
WLAN 5.3 GHz	5320	8	11	13	5.14	10.99	13	5.14	13.99	13	26	**Test** 1 mW	**Test** 6 mW	**Test** 9 mW	**Test** 11 mW	Exempt > 100 mW	Exempt > 100 mW	**Test** 2 mW	**Test** 2 mW	**Test** 4 mW	**Test** 5 mW	Exempt > 100 mW	Exempt > 100 mW
WLAN 5.6 GHz	5700	10	13	20	3.53	11.38	14	3.53	14.38	14	28	**Test** 1 mW	**Test** 6 mW	**Test** 9 mW	**Test** 10 mW	Exempt > 100 mW	Exempt > 100 mW	**Test** 2 mW	**Test** 2 mW	**Test** 4 mW	**Test** 5 mW	Exempt > 100 mW	Exempt > 100 mW
WLAN 5.8 GHz	5825	7	10	10	3.05	7.90	6	3.05	10.90	6	12	**Test** 1 mW	**Test** 6 mW	**Test** 9 mW	**Test** 10 mW	Exempt > 100 mW	Exempt > 100 mW	**Test** 2 mW	**Test** 2 mW	**Test** 4 mW	**Test** 5 mW	Exempt > 100 mW	Exempt > 4 W (*2)

*. Since Antenna 1 and 2 are located very close to each other, the SAR exclusion threshold power was determined by the sum of the power of Antenna 1 and 2.
*. Antenna separation distance is rounded to the nearest integer numbers (in mm) before calculation.
*. (Calculating formula) ERP (dBm) = (max. conducted output power, dBm) + (antenna gain, dBi) – 2.15

<Conclusion for consideration for SAR test reduction>

1) All SAR tests were conservatively performed with test separation distance 0 mm.
2) (WLAN operation) "Front", "Top-Right", "Top" and "Top-Left" setups are applied SAR test.
3) (Bluetooth operation) Worst SAR setup of WLAN mode is applied SAR test.

SAR-based thresholds (Pth (mW) shown below table of "Example Power Thresholds [mW]" are derived based on frequency, power, and separation distance of the RF source. The formula defines the thresholds in general for either available maximum time-averaged power or maximum time-averaged effective radiated power (ERP), whichever is greater. The SAR-based exemption is calculated by Formula (B.2) in below, applies for single fixed, mobile, and portable RF sources with available maximum time-averaged power or effective radiated power (ERP), whichever is greater, of less than or equal to the threshold Pth (mW).
When 10-g extremity SAR applies, SAR test exemption may be considered by applying a factor of 2.5 to the SAR-based exemption thresholds.
*. This method shall only be used at separation distances from 0.5 cm to 40 cm and at frequencies from 0.3 GHz to 6 GHz (inclusive).

Table: Example Power Thresholds [mW] for SAR(1g) (Shaded values in the threshold power values are standard values. Table B.2 of KDB 447498 D04 (v01))

Frequency [MHz] \ Distance [mm]	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	35	40	45	50
2402	3	4	5	7	9	10	12	15	17	20	22	25	28	32	35	39	42	46	50	55	59	64	68	73	78	84	112	144	180	220
2450	**3**	4	5	7	8	**10**	12	15	17	19	**22**	25	28	31	35	**38**	42	46	50	54	**59**	63	68	73	78	**83**	**111**	**143**	**179**	**219**
2462	3	4	5	7	8	10	12	14	17	19	22	25	28	31	35	38	42	46	50	54	58	63	68	73	78	83	111	143	179	219
2480	**3**	4	5	7	8	10	12	14	17	19	22	25	28	31	35	38	42	46	50	54	58	63	67	72	77	82	111	143	179	218
3600	**2**	3	4	5	6	**8**	10	11	13	16	**18**	20	23	26	29	**32**	35	38	42	45	**49**	53	57	62	66	**71**	**96**	**125**	**158**	**195**
5240	1	2	3	4	5	6	8	9	11	13	14	17	19	21	24	26	29	32	35	38	42	45	49	53	57	61	83	110	140	174
5320	1	2	3	4	5	6	8	9	11	12	14	16	19	21	23	26	29	32	35	38	41	45	48	52	56	60	83	109	139	173
5700	1	2	3	4	5	6	7	9	10	12	14	16	18	20	23	25	28	31	34	37	40	43	47	51	55	59	81	107	136	170
5800	**1**	2	3	4	5	**6**	7	9	10	12	**14**	16	18	20	22	**25**	28	30	33	36	**40**	43	47	50	54	**58**	**80**	**106**	**136**	**169**
5825	1	2	3	4	5	6	7	9	10	12	14	16	18	20	22	25	28	30	33	36	40	43	47	50	54	58	80	106	135	169
5885	1	2	3	4	5	6	7	8	10	12	14	16	18	20	22	25	27	30	33	36	39	43	46	50	54	58	80	105	135	168
6000	1	2	3	4	5	6	7	8	10	12	13	15	17	20	22	24	27	30	33	36	39	42	46	50	53	57	79	105	134	167

TABLE B.1—THRESHOLDS FOR SINGLE RF SOURCES SUBJECT TO ROUTINE ENVIRONMENTAL EVALUATION

RF Source Frequency			Minimum Distance			Threshold ERP
f_L MHz		f_H MHz	$\lambda_L / 2\pi$		$\lambda_H / 2\pi$	W
0.3	–	1.34	159 m	–	35.6 m	$1.920\ R^2$
1.34	–	30	35.6 m	–	1.6 m	$3.450\ R^2/f^2$
30	–	300	1.6 m	–	159 mm	$3.83\ R^2$
300	–	1,500	159 mm	–	31.8 mm	$0.0128\ R^2 f$
1,500	–	100,000	31.8 mm	–	0.5 mm	$19.2 R^2$

Subscripts L and H are low and high; λ is wavelength.
From §1.1307(b)(3)(i)(C), modified by adding Minimum Distance columns.

R is in meter, f is in MHz
Threshold ERP [W] = 19.2 × R^2 (~formula (A.1))
(Distance: over 40 cm)

Calculating formula:

$$P_{th}\,(\text{mW}) = ERP_{20\,\text{cm}}\,(\text{mW}) = \begin{cases} 2040f & 0.3\ \text{GHz} \le f < 1.5\ \text{GHz} \\ 3060 & 1.5\ \text{GHz} \le f \le 6\ \text{GHz} \end{cases} \quad \text{(B.1)}$$

$$P_{th}\,(\text{mW}) = \begin{cases} ERP_{20\,\text{cm}}(d/20\,\text{cm})^x & d \le 20\ \text{cm} \\ ERP_{20\,\text{cm}} & 20\ \text{cm} < d \le 40\ \text{cm} \end{cases} \quad \text{(B.2)}$$

$$x = -\log_{10}\left(\frac{60}{ERP_{20\,\text{cm}}\sqrt{f}}\right)$$

and f is in GHz, d is the separation distance (cm), and $ERP_{20\text{cm}}$ is per Formula (B.1).

SECTION 5: Confirmation before testing

5.1 Test reference power measurement

Mode	Frequency		D/R or MCS Index# /RU	Power spec. on each antenna		Duty cycle					Antenna 1 power					Antenna 2 power					SUM power (Antenna 1+2)				
			(OFDMA)	Typical	Max.	On time	1 cycle time	Duty cycle	duty factor	scaled factor	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	SUM target	SUM max.	SUM Burst Ave.	Δ Max.	SUM Time Ave.
	[MHz]	CH		[dBm]	[dBm]	[ms]	[ms]	[%]	[dB]	[-]	[-]	[dBm]	[dB]	[-]	[dBm]	[-]	[dBm]	[dB]	[-]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]	[dBm]
BR (DH5)	2402	0	1 Mbps	-	6	2.891	3.753	77.0	1.14	1.30	fix	4.98	-1.02	1.26	3.84										
	2441	39	1 Mbps	-	6	-	-	77.0	1.14	1.30	fix	5.15	-0.85	1.22	4.01										
	2480	78	1 Mbps	-	6	-	-	77.0	1.14	1.30	fix	4.71	-1.29	1.35	3.57										
EDR (2DH5)	2402	0	2 Mbps	-	3	2.895	3.755	77.1	1.13	1.30	fix	0.91	-2.09	1.62	-0.22										
	2441	39	2 Mbps	-	3	-	-	77.1	1.13	1.30	fix	1.11	-1.89	1.55	-0.02										
	2480	78	2 Mbps	-	3	-	-	77.1	1.13	1.30	fix	0.55	-2.45	1.76	-0.58										
EDR (3DH5)	2402	0	3 Mbps	-	3	2.892	3.745	77.2	1.12	1.30	fix	0.84	-2.16	1.64	-0.28										
	2441	39	3 Mbps	-	3	-	-	77.2	1.12	1.30	fix	1.08	-1.92	1.56	-0.04										
	2480	78	3 Mbps	-	3	-	-	77.2	1.12	1.30	fix	0.57	-2.43	1.75	-0.55										
BT LE	2402	0	1 Mbps	-	6	0.4018	0.6254	64.2	1.92	1.56	fix	4.91	-1.09	1.29	2.99										
	2440	19	1 Mbps	-	6	-	-	64.2	1.92	1.56	fix	5.00	-1.00	1.26	3.08										
	2480	39	1 Mbps	-	6	-	-	64.2	1.92	1.56	fix	4.88	-1.12	1.29	2.96										
BT LE	2402	0	2 Mbps	-	6	0.2041	0.6253	32.6	4.87	3.07	fix	4.96	-1.04	1.27	0.09										
	2440	19	2 Mbps	-	6	-	-	32.6	4.87	3.07	fix	5.06	-0.94	1.24	0.19										
	2480	39	2 Mbps	-	6	-	-	32.6	4.87	3.07	fix	4.90	-1.10	1.29	0.03										
11b CDD (2Tx-1ST)	2412	1	1 Mbps	8	10	1.418	1.429	99.2	0.03	1.01	10	8.87	-1.13	1.30	8.84		8.86	-1.14	1.30	8.83	11	**13**	11.88	-1.12	11.85
	2437	6	1 Mbps	8	10	-	-	99.2	0.03	1.01	10	8.70	-1.30	1.35	8.67		8.61	-1.39	1.38	8.58	11	**13**	11.66	-1.34	11.63
	2462	11	1 Mbps	8	10	-	-	99.2	0.03	1.01	10	8.61	-1.39	1.38	8.58		8.22	-1.78	1.51	8.19	11	**13**	11.43	-1.57	11.40
11g CDD (2Tx-1ST)	2412	1	6 Mbps	8	10	1.065	1.084	98.2	0.08	1.02	11	8.93	-1.07	1.28	8.85		9.24	-0.76	1.19	9.16	11	**13**	12.10	-0.90	12.02
	2437	6	6 Mbps	8	10	-	-	98.2	0.08	1.02	11	8.70	-1.30	1.35	8.62		8.91	-1.09	1.29	8.83	11	**13**	11.82	-1.18	11.74
	2462	11	6 Mbps	8	10	-	-	98.2	0.08	1.02	11	8.80	-1.20	1.32	8.72		8.76	-1.24	1.33	8.68	11	**13**	11.79	-1.21	11.71
11n20 CDD (2Tx-1ST)	2412	1	#0	8	10	1.078	1.093	98.4	0.07	1.02	11	8.90	-1.10	1.29	8.84		9.27	-0.73	1.18	9.21	11	**13**	12.10	-0.90	12.04
	2437	6	#0	8	10	-	-	98.4	0.07	1.02	11	8.82	-1.18	1.31	8.76		8.88	-1.12	1.29	8.82	11	**13**	11.86	-1.14	11.80
	2462	11	#0	8	10	-	-	98.4	0.07	1.02	11	8.60	-1.40	1.38	8.54		8.47	-1.53	1.42	8.41	11	**13**	11.54	-1.46	11.48
11n20 SDM (2Tx-2ST)	2412	1	#8	8	10	1.062	1.081	98.2	0.08	1.02	11	8.88	-1.12	1.29	8.80		9.36	-0.64	1.16	9.28	11	**13**	12.14	-0.86	12.06
	2437	6	#8	8	10	-	-	98.2	0.08	1.02	11	8.76	-1.24	1.33	8.68		8.86	-1.14	1.30	8.78	11	**13**	11.82	-1.18	11.74
	2462	11	#8	8	10	-	-	98.2	0.08	1.02	11	8.83	-1.17	1.31	8.75		8.49	-1.51	1.42	8.41	11	**13**	11.67	-1.33	11.59
11ax20 OFDM CDD (2Tx-1ST)	2412	1	#0	8	10	1.094	1.114	98.2	0.08	1.02	11	9.03	-0.97	1.25	8.95		9.40	-0.60	1.15	9.32	11	**13**	12.23	-0.77	12.15
	2437	6	#0	8	10	-	-	98.2	0.08	1.02	11	8.87	-1.13	1.30	8.79		9.00	-1.00	1.26	8.92	11	**13**	11.95	-1.05	11.87
	2462	11	#0	8	10	-	-	98.2	0.08	1.02	11	8.94	-1.06	1.28	8.86		8.68	-1.32	1.36	8.60	11	**13**	11.82	-1.18	11.74
11ax20 OFDM SDM (2Tx-2ST)	2412	1	#0	8	10	1.084	1.103	98.3	0.07	1.02	11	9.01	-0.99	1.26	8.94		9.37	-0.63	1.16	9.30	11	**13**	12.20	-0.80	12.13
	2437	6	#0	8	10	-	-	98.3	0.07	1.02	11	8.83	-1.17	1.31	8.76		8.96	-1.04	1.27	8.89	11	**13**	11.91	-1.09	11.84
	2462	11	#0	8	10	-	-	98.3	0.07	1.02	11	8.87	-1.13	1.30	8.80		8.79	-1.21	1.32	8.72	11	**13**	11.84	-1.16	11.77
11ax20 OFDMA CDD (2Tx-1ST)	2412	1	#0/242	8	10	1.003	1.021	98.2	0.08	1.02	10	8.85	-1.15	1.30	8.77		9.30	-0.70	1.17	9.22	11	**13**	12.09	-0.91	12.01
	2437	6	#0/242	8	10	-	-	98.2	0.08	1.02	10	8.71	-1.29	1.35	8.63		9.10	-0.90	1.23	9.02	11	**13**	11.92	-1.08	11.84
	2462	11	#0/242	8	10	-	-	98.2	0.08	1.02	10	8.50	-1.50	1.41	8.42		8.54	-1.46	1.40	8.46	11	**13**	11.53	-1.47	11.45
11ax20 OFDMA SDM (2Tx-2ST)	2412	1	#0/242	8	10	0.9782	0.9966	98.2	0.08	1.02	10	8.78	-1.22	1.32	8.70		9.30	-0.70	1.17	9.22	11	**13**	12.06	-0.94	11.98
	2437	6	#0/242	8	10	-	-	98.2	0.08	1.02	10	8.70	-1.30	1.35	8.62		9.09	-0.91	1.23	9.01	11	**13**	11.91	-1.09	11.83
	2462	11	#0/242	8	10	-	-	98.2	0.08	1.02	10	8.47	-1.53	1.42	8.39		8.52	-1.48	1.41	8.44	11	**13**	11.50	-1.50	11.42
11a CDD (2Tx-1ST) * 2024-02-07 for 6GHz band	5180	36	6 Mbps	6	8	1.004	1.019	98.5	0.07	1.02	7	6.59	-1.41	1.38	6.52		6.71	-1.29	1.35	6.64	9	11	9.66	-1.34	9.59
	5200	40	6 Mbps	6	8	-	-	98.5	0.07	1.02	7	6.57	-1.43	1.39	6.50		6.85	-1.15	1.30	6.78	9	11	9.72	-1.28	9.65
	5220	44	6 Mbps	6	8	-	-	98.5	0.07	1.02	7	6.59	-1.41	1.38	6.52		6.87	-1.13	1.30	6.80	9	11	9.74	-1.26	9.67
	5240	48	6 Mbps	6	8	-	-	98.5	0.07	1.02	7	6.47	-1.53	1.42	6.40		6.92	-1.08	1.28	6.85	9	11	9.71	-1.29	9.64
	5260	52	6 Mbps	6	8	-	-	98.5	0.07	1.02	7	6.96	-1.04	1.27	6.89		7.19	-0.81	1.21	7.12	9	11	10.09	-0.91	10.02
	5280	56	6 Mbps	6	8	-	-	98.5	0.07	1.02	7	6.85	-1.15	1.30	6.78		7.13	-0.87	1.22	7.06	9	11	10.00	-1.00	9.93
	5300	60	6 Mbps	6	8	-	-	98.5	0.07	1.02	7	6.94	-1.06	1.28	6.87		6.93	-1.07	1.28	6.86	9	11	9.94	-1.06	9.87
	5320	64	6 Mbps	6	8	-	-	98.5	0.07	1.02	7	6.78	-1.22	1.32	6.71		6.87	-1.13	1.30	6.80	9	11	9.83	-1.17	9.76
	5500	100	6 Mbps	8	10	-	-	98.5	0.07	1.02	8	7.91	-2.09	1.62	7.84		8.34	-1.66	1.47	8.27	11	13	11.14	-1.86	11.07
	5580	116	6 Mbps	8	10	-	-	98.5	0.07	1.02	8	7.92	-2.08	1.61	7.85		8.51	-1.49	1.41	8.44	11	13	11.24	-1.76	11.17
	5700	140	6 Mbps	8	10	-	-	98.5	0.07	1.02	8	7.82	-2.18	1.65	7.75		8.44	-1.56	1.43	8.37	11	13	11.15	-1.85	11.08
	5745	149	6 Mbps	5	7	-	-	98.5	0.07	1.02	6	5.84	-1.16	1.31	5.77		6.47	-0.53	1.13	6.40	8	10	9.18	-0.82	9.11
	5785	157	6 Mbps	5	7	-	-	98.5	0.07	1.02	6	5.84	-1.16	1.31	5.77		6.45	-0.55	1.14	6.38	8	10	9.17	-0.83	9.10
	5825	165	6 Mbps	5	7	-	-	98.5	0.07	1.02	6	6.05	-0.95	1.24	5.98		6.43	-0.57	1.14	6.36	8	10	9.26	-0.74	9.19
	5955	1	6 Mbps	-1	1	1.071	1.086	98.6	0.06	1.01	0	0.16	-0.84	1.21	0.10		0.31	-0.69	1.17	0.25	2	4	3.24	-0.76	3.18
	6175	45	6 Mbps	-1	1	-	-	98.6	0.06	1.01	0	0.44	-0.56	1.14	0.38		0.24	-0.76	1.19	0.18	2	4	3.36	-0.64	3.30
	6195	49	6 Mbps	-1	1	-	-	98.6	0.06	1.01	0	0.41	-0.59	1.15	0.35		-0.10	-1.10	1.29	-0.16	2	4	3.18	-0.82	3.12
	6415	93	6 Mbps	-1	1	-	-	98.6	0.06	1.01	0	-0.21	-1.21	1.32	-0.27		-0.23	-1.23	1.33	-0.29	2	4	2.79	-1.21	2.73
	6435	97	6 Mbps	-1	1	-	-	98.6	0.06	1.01	0	0.41	-0.59	1.15	0.35		-0.15	-1.15	1.30	-0.21	2	4	3.16	-0.84	3.10
	6475	105	6 Mbps	-1	1	-	-	98.6	0.06	1.01	0	0.12	-0.88	1.22	0.06		0.22	-0.78	1.20	0.16	2	4	3.18	-0.82	3.12
	6515	113	6 Mbps	-1	1	-	-	98.6	0.06	1.01	0	-0.02	-1.02	1.26	-0.08		-0.21	-1.21	1.32	-0.27	2	4	2.90	-1.10	2.84
	6535	117	6 Mbps	0	2	-	-	98.6	0.06	1.01	1	0.58	-1.42	1.39	0.52		0.85	-1.15	1.30	0.79	3	5	3.73	-1.27	3.67
	6695	149	6 Mbps	0	2	-	-	98.6	0.06	1.01	1	0.74	-1.26	1.34	0.68		1.60	-0.40	1.10	1.54	3	5	4.22	-0.78	4.16
	6855	181	6 Mbps	0	2	-	-	98.6	0.06	1.01	1	0.56	-1.44	1.39	0.50		0.80	-1.20	1.32	0.74	3	5	3.69	-1.31	3.63
	6875	185	6 Mbps	0	2	-	-	98.6	0.06	1.01	1	0.78	-1.22	1.32	0.72		0.70	-1.30	1.35	0.64	3	5	3.75	-1.25	3.69
	6995	209	6 Mbps	0	2	-	-	98.6	0.06	1.01	1	0.39	-1.61	1.45	0.33		0.43	-1.57	1.44	0.37	3	5	3.40	-1.60	3.34
	7095	229	6 Mbps	0	2	-	-	98.6	0.06	1.01	1	0.42	-1.58	1.44	0.36		0.42	-1.58	1.44	0.36	3	5	3.42	-1.58	3.36
11n20 CDD (2Tx-1ST)	5180	36	#0	6	8	1.080	1.094	98.7	0.06	1.01	7	6.46	-1.54	1.43	6.40		6.61	-1.39	1.38	6.55	9	11	9.55	-1.45	9.49
	5200	40	#0	6	8	-	-	98.7	0.06	1.01	7	6.40	-1.60	1.45	6.34		6.66	-1.34	1.36	6.60	9	11	9.54	-1.46	9.48
	5220	44	#0	6	8	-	-	98.7	0.06	1.01	7	6.50	-1.50	1.41	6.44		6.79	-1.21	1.32	6.73	9	11	9.66	-1.34	9.60
	5240	48	#0	6	8	-	-	98.7	0.06	1.01	7	6.48	-1.52	1.42	6.42		6.69	-1.31	1.35	6.63	9	11	9.60	-1.40	9.54
	5260	52	#0	6	8	-	-	98.7	0.06	1.01	7	6.73	-1.27	1.34	6.67		6.69	-1.31	1.35	6.63	9	11	9.72	-1.28	9.66
	5280	56	#0	6	8	-	-	98.7	0.06	1.01	7	6.69	-1.31	1.35	6.63		6.68	-1.32	1.36	6.62	9	11	9.70	-1.30	9.64
	5300	60	#0	6	8	-	-	98.7	0.06	1.01	7	6.64	-1.36	1.37	6.58		6.82	-1.18	1.31	6.76	9	11	9.74	-1.26	9.68
	5320	64	#0	6	8	-	-	98.7	0.06	1.01	7	6.64	-1.36	1.37	6.58		6.93	-1.07	1.28	6.87	9	11	9.80	-1.20	9.74
	5500	100	#0	8	10	-	-	98.7	0.06	1.01	8	7.87	-2.13	1.63	7.81		8.24	-1.76	1.50	8.18	11	13	11.07	-1.93	11.01
	5580	116	#0	8	10	-	-	98.7	0.06	1.01	8	7.87	-2.13	1.63	7.81		8.45	-1.55	1.43	8.39	11	13	11.18	-1.82	11.12
	5700	140	#0	8	10	-	-	98.7	0.06	1.01	8	7.78	-2.22	1.67	7.72		8.30	-1.70	1.48	8.24	11	13	11.06	-1.94	11.00
	5745	149	#0	5	7	-	-	98.7	0.06	1.01	6	5.54	-1.46	1.40	5.48		6.22	-0.78	1.20	6.16	8	10	8.90	-1.10	8.84
	5785	157	#0	5	7	-	-	98.7	0.06	1.01	6	5.60	-1.40	1.38	5.54		6.18	-0.82	1.21	6.12	8	10	8.91	-1.09	8.85
	5825	165	#0	5	7	-	-	98.7	0.06	1.01	6	5.82	-1.18	1.31	5.76		6.11	-0.89	1.23	6.05	8	10	8.98	-1.02	8.92

Mode	Frequency		D/R or MCS Index# /RU (OFDMA)	Power spec. on each antenna		Duty cycle					Antenna 1 power						Antenna 2 power					SUM power (Antenna 1+2)				
				Typical	Max.	On time	1 cycle time	Duty cycle	duty factor	scaled factor	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	SUM target	SUM max.	SUM Burst Ave.	Δ Max.	SUM Time Ave.
	[MHz]	CH		[dBm]	[dBm]	[ms]	[ms]	[%]	[dB]	[-]	[-]	[dBm]	[dB]	[-]	[dBm]	[-]	[dBm]	[dB]	[-]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]	[dBm]
11n20 SDM (2Tx-2ST)	5180	36	#8	6	8	1.063	1.079	98.5	0.07	1.02	7	6.59	-1.41	1.38	6.52		6.73	-1.27	1.34	6.66	9	11	9.67	-1.33	9.60
	5200	40	#8	6	8	-	-	98.5	0.07	1.02	7	6.60	-1.40	1.38	6.53		6.71	-1.29	1.35	6.64	9	11	9.67	-1.33	9.60
	5220	44	#8	6	8	-	-	98.5	0.07	1.02	7	6.54	-1.46	1.40	6.47		6.69	-1.31	1.35	6.62	9	11	9.63	-1.37	9.56
	5240	48	#8	6	8	-	-	98.5	0.07	1.02	7	6.44	-1.56	1.43	6.37		6.71	-1.29	1.35	6.64	9	11	9.59	-1.41	9.52
	5260	52	#8	6	8	-	-	98.5	0.07	1.02	7	6.68	-1.32	1.36	6.61		6.63	-1.37	1.37	6.56	9	11	9.67	-1.33	9.60
	5280	56	#8	6	8	-	-	98.5	0.07	1.02	7	6.70	-1.30	1.35	6.63		6.72	-1.28	1.34	6.65	9	11	9.72	-1.28	9.65
	5300	60	#8	6	8	-	-	98.5	0.07	1.02	7	6.69	-1.31	1.35	6.62		6.91	-1.09	1.29	6.84	9	11	9.81	-1.19	9.74
	5320	64	#8	6	8	-	-	98.5	0.07	1.02	7	6.73	-1.27	1.34	6.66		6.81	-1.19	1.32	6.74	9	11	9.78	-1.22	9.71
	5500	100	#8	8	10	-	-	98.5	0.07	1.02	8	8.00	-2.00	1.58	7.94		8.21	-1.79	1.51	8.15	11	13	11.12	-1.88	11.06
	5580	116	#8	8	10	-	-	98.5	0.07	1.02	8	7.72	-2.28	1.69	7.66		8.32	-1.68	1.47	8.26	11	13	11.04	-1.96	10.98
	5700	140	#8	8	10	-	-	98.5	0.07	1.02	8	7.78	-2.22	1.67	7.72		8.28	-1.72	1.49	8.22	11	13	11.05	-1.95	10.99
	5745	149	#8	5	7	-	-	98.5	0.07	1.02	6	5.73	-1.27	1.34	5.66		6.34	-0.66	1.16	6.27	8	10	9.06	-0.94	8.99
	5785	157	#8	5	7	-	-	98.5	0.07	1.02	6	5.82	-1.18	1.31	5.75		6.12	-0.88	1.22	6.05	8	10	8.98	-1.02	8.91
	5825	165	#8	5	7	-	-	98.5	0.07	1.02	6	5.85	-1.15	1.30	5.78		6.31	-0.69	1.17	6.24	8	10	9.10	-0.90	9.03
11ac20 CCD (2Tx-1ST)	5180	36	#0	6	8	1.088	1.103	98.6	0.06	1.01	7	6.49	-1.51	1.42	6.43		6.59	-1.41	1.38	6.53	9	11	9.55	-1.45	9.49
	5200	40	#0	6	8	-	-	98.6	0.06	1.01	7	6.51	-1.49	1.41	6.45		6.57	-1.43	1.39	6.51	9	11	9.55	-1.45	9.49
	5220	44	#0	6	8	-	-	98.6	0.06	1.01	7	6.61	-1.39	1.38	6.55		6.84	-1.16	1.31	6.78	9	11	9.74	-1.26	9.68
	5240	48	#0	6	8	-	-	98.6	0.06	1.01	7	6.46	-1.54	1.43	6.40		6.61	-1.39	1.38	6.55	9	11	9.55	-1.45	9.49
	5260	52	#0	6	8	-	-	98.6	0.06	1.01	7	6.80	-1.20	1.32	6.74		6.76	-1.24	1.33	6.70	9	11	9.79	-1.21	9.73
	5280	56	#0	6	8	-	-	98.6	0.06	1.01	7	6.75	-1.25	1.33	6.69		6.79	-1.21	1.32	6.73	9	11	9.78	-1.22	9.72
	5300	60	#0	6	8	-	-	98.6	0.06	1.01	7	6.81	-1.19	1.32	6.75		6.81	-1.19	1.32	6.75	9	11	9.82	-1.18	9.76
	5320	64	#0	6	8	-	-	98.6	0.06	1.01	7	6.64	-1.36	1.37	6.58		6.97	-1.03	1.27	6.91	9	11	9.82	-1.18	9.76
	5500	100	#0	8	10	-	-	98.6	0.06	1.01	8	7.81	-2.19	1.66	7.75		8.32	-1.68	1.47	8.26	11	13	11.08	-1.92	11.02
	5580	116	#0	8	10	-	-	98.6	0.06	1.01	8	7.85	-2.15	1.64	7.79		8.37	-1.63	1.46	8.31	11	13	11.13	-1.87	11.07
	5700	140	#0	8	10	-	-	98.6	0.06	1.01	8	7.79	-2.21	1.66	7.73		8.28	-1.72	1.49	8.22	11	13	11.05	-1.95	10.99
	5745	149	#0	5	7	-	-	98.6	0.06	1.01	6	5.61	-1.39	1.38	5.55		6.33	-0.67	1.17	6.27	8	10	9.00	-1.00	8.94
	5785	157	#0	5	7	-	-	98.6	0.06	1.01	6	5.90	-1.10	1.29	5.84		6.10	-0.90	1.23	6.04	8	10	9.01	-0.99	8.95
	5825	165	#0	5	7	-	-	98.6	0.06	1.01	6	5.86	-1.14	1.30	5.80		6.20	-0.80	1.20	6.14	8	10	9.04	-0.96	8.98
11ac20 SDM (2Tx-2ST)	5180	36	#0	6	8	1.073	1.089	98.5	0.07	1.02	7	6.58	-1.42	1.39	6.51		6.67	-1.33	1.36	6.60	9	11	9.64	-1.36	9.57
	5200	40	#0	6	8	-	-	98.5	0.07	1.02	7	6.43	-1.57	1.44	6.36		6.74	-1.26	1.34	6.67	9	11	9.60	-1.40	9.53
	5220	44	#0	6	8	-	-	98.5	0.07	1.02	7	6.53	-1.47	1.40	6.46		6.71	-1.29	1.35	6.64	9	11	9.63	-1.37	9.56
	5240	48	#0	6	8	-	-	98.5	0.07	1.02	7	6.44	-1.56	1.43	6.37		6.82	-1.18	1.31	6.75	9	11	9.65	-1.35	9.58
	5260	52	#0	6	8	-	-	98.5	0.07	1.02	7	6.73	-1.27	1.34	6.66		6.85	-1.15	1.30	6.78	9	11	9.80	-1.20	9.73
	5280	56	#0	6	8	-	-	98.5	0.07	1.02	7	6.70	-1.30	1.35	6.63		6.70	-1.30	1.35	6.63	9	11	9.71	-1.29	9.64
	5300	60	#0	6	8	-	-	98.5	0.07	1.02	7	6.77	-1.23	1.33	6.70		6.84	-1.16	1.31	6.77	9	11	9.81	-1.19	9.74
	5320	64	#0	6	8	-	-	98.5	0.07	1.02	7	6.63	-1.37	1.37	6.56		6.92	-1.08	1.28	6.85	9	11	9.79	-1.21	9.72
	5500	100	#0	8	10	-	-	98.5	0.07	1.02	8	7.81	-2.19	1.66	7.74		8.42	-1.58	1.44	8.35	11	13	11.14	-1.86	11.07
	5580	116	#0	8	10	-	-	98.5	0.07	1.02	8	7.77	-2.23	1.67	7.70		8.31	-1.69	1.48	8.24	11	13	11.06	-1.94	10.99
	5700	140	#0	8	10	-	-	98.5	0.07	1.02	8	7.84	-2.16	1.64	7.77		8.33	-1.67	1.47	8.26	11	13	11.10	-1.90	11.03
	5745	149	#0	5	7	-	-	98.5	0.07	1.02	6	5.75	-1.25	1.33	5.68		6.34	-0.66	1.16	6.27	8	10	9.07	-0.93	9.00
	5785	157	#0	5	7	-	-	98.5	0.07	1.02	6	5.85	-1.15	1.30	5.78		6.30	-0.70	1.17	6.23	8	10	9.10	-0.90	9.03
	5825	165	#0	5	7	-	-	98.5	0.07	1.02	6	5.88	-1.12	1.29	5.81		6.10	-0.90	1.23	6.03	8	10	9.00	-1.00	8.93
11ax20 OFDM CDD (2Tx-1ST)	5180	36	#0	6	8	1.096	1.112	98.6	0.06	1.01	7	6.36	-1.64	1.46	6.30		6.65	-1.35	1.36	6.59	9	11	9.52	-1.48	9.46
	5200	40	#0	6	8	-	-	98.6	0.06	1.01	7	6.39	-1.61	1.45	6.33		6.51	-1.49	1.41	6.45	9	11	9.46	-1.54	9.40
	5220	44	#0	6	8	-	-	98.6	0.06	1.01	7	6.39	-1.61	1.45	6.33		6.65	-1.35	1.36	6.59	9	11	9.53	-1.47	9.47
	5240	48	#0	6	8	-	-	98.6	0.06	1.01	7	6.46	-1.54	1.43	6.40		6.61	-1.39	1.38	6.55	9	11	9.55	-1.45	9.49
	5260	52	#0	6	8	-	-	98.6	0.06	1.01	7	6.76	-1.24	1.33	6.70		6.70	-1.30	1.35	6.64	9	11	9.74	-1.26	9.68
	5280	56	#0	6	8	-	-	98.6	0.06	1.01	7	6.69	-1.31	1.35	6.63		6.69	-1.31	1.35	6.63	9	11	9.70	-1.30	9.64
	5300	60	#0	6	8	-	-	98.6	0.06	1.01	7	6.68	-1.32	1.36	6.62		6.75	-1.25	1.33	6.69	9	11	9.73	-1.27	9.67
	5320	64	#0	6	8	-	-	98.6	0.06	1.01	7	6.57	-1.43	1.39	6.51		6.68	-1.32	1.36	6.62	9	11	9.64	-1.36	9.58
	5500	100	#0	8	10	-	-	98.6	0.06	1.01	8	7.79	-2.21	1.66	7.73		8.41	-1.59	1.44	8.35	11	13	11.12	-1.88	11.06
	5580	116	#0	8	10	-	-	98.6	0.06	1.01	8	7.73	-2.27	1.69	7.67		8.23	-1.77	1.50	8.17	11	13	11.00	-2.00	10.94
	5700	140	#0	8	10	-	-	98.6	0.06	1.01	8	7.78	-2.22	1.67	7.72		8.27	-1.73	1.49	8.21	11	13	11.04	-1.96	10.98
	5745	149	#0	5	7	-	-	98.6	0.06	1.01	6	5.68	-1.32	1.36	5.62		6.29	-0.71	1.18	6.23	8	10	9.01	-0.99	8.95
	5785	157	#0	5	7	-	-	98.6	0.06	1.01	6	5.72	-1.28	1.34	5.66		6.26	-0.74	1.19	6.20	8	10	9.01	-0.99	8.95
	5825	165	#0	5	7	-	-	98.6	0.06	1.01	6	5.93	-1.07	1.28	5.87		6.30	-0.70	1.17	6.24	8	10	9.13	-0.87	9.07
*. 2024-02-07 for 6GHz band	5955	1	#3	0	**2**	1.072	1.089	98.4	0.07	1.02	1	0.80	-1.20	1.32	0.73		0.82	-1.18	1.31	0.75	3	5	3.82	-1.18	3.75
	6175	45	#3	0	2	-	-	98.4	0.07	1.02	1	1.16	-0.84	1.21	1.09		0.96	-1.04	1.27	0.89	3	5	4.08	-0.92	4.01
	6195	49	#3	0	2	-	-	98.4	0.07	1.02	1	1.13	-0.87	1.22	1.06		0.86	-1.14	1.30	0.79	3	5	4.01	-0.99	3.94
	6415	93	#3	0	2	-	-	98.4	0.07	1.02	1	0.47	-1.53	1.42	0.40		0.94	-1.06	1.28	0.87	3	5	3.71	-1.29	3.64
	6435	97	#3	0	2	-	-	98.4	0.07	1.02	1	1.08	-0.92	1.24	1.01		0.95	-1.05	1.27	0.88	3	5	4.01	-0.99	3.94
	6475	105	#3	0	2	-	-	98.4	0.07	1.02	1	0.85	-1.15	1.30	0.78		0.85	-1.15	1.30	0.78	3	5	3.87	-1.13	3.80
	6515	113	#3	0	2	-	-	98.4	0.07	1.02	1	0.76	-1.24	1.33	0.69		0.84	-1.16	1.31	0.77	3	5	3.80	-1.20	3.73
	6535	117	#3	1	**3**	-	-	98.4	0.07	1.02	2	1.50	-1.50	1.41	1.43		1.69	-1.31	1.35	1.62	4	6	4.61	-1.39	4.54
	6695	149	#3	1	3	-	-	98.4	0.07	1.02	2	1.73	-1.27	1.34	1.66		2.14	-0.86	1.22	2.07	4	6	4.96	-1.04	4.89
	6855	181	#3	1	3	-	-	98.4	0.07	1.02	2	1.74	-1.26	1.34	1.67		1.81	-1.19	1.32	1.74	4	6	4.79	-1.21	4.72
	6875	185	#3	1	**3**	-	-	98.4	0.07	1.02	2	1.39	-1.61	1.45	1.32		1.89	-1.11	1.29	1.82	4	6	4.67	-1.33	4.60
	6995	209	#3	1	**3**	-	-	98.4	0.07	1.02	2	1.33	-1.67	1.47	1.26		1.96	-1.04	1.27	1.89	4	6	4.67	-1.33	4.60
	7095	229	#3	1	**3**	-	-	98.4	0.07	1.02	2	1.78	-1.22	1.32	1.71		1.17	-1.83	1.52	1.10	4	6	4.50	-1.50	4.43
11ax20 OFDM SDM (2Tx-2ST)	5180	36	#0	6	8	1.087	1.103	98.5	0.07	1.02	7	6.46	-1.54	1.43	6.39		6.60	-1.40	1.38	6.53	9	11	9.54	-1.46	9.47
	5200	40	#0	6	8	-	-	98.5	0.07	1.02	7	6.39	-1.61	1.45	6.32		6.62	-1.38	1.37	6.55	9	11	9.52	-1.48	9.45
	5220	44	#0	6	8	-	-	98.5	0.07	1.02	7	6.36	-1.64	1.46	6.29		6.68	-1.32	1.36	6.61	9	11	9.54	-1.46	9.47
	5240	48	#0	6	8	-	-	98.5	0.07	1.02	7	6.35	-1.65	1.46	6.28		6.60	-1.40	1.38	6.53	9	11	9.49	-1.51	9.42
	5260	52	#0	6	8	-	-	98.5	0.07	1.02	7	6.63	-1.37	1.37	6.56		6.80	-1.20	1.32	6.73	9	11	9.73	-1.27	9.66
	5280	56	#0	6	8	-	-	98.5	0.07	1.02	7	6.55	-1.45	1.40	6.48		6.80	-1.20	1.32	6.73	9	11	9.69	-1.31	9.62
	5300	60	#0	6	8	-	-	98.5	0.07	1.02	7	6.54	-1.46	1.40	6.47		6.77	-1.23	1.33	6.70	9	11	9.67	-1.33	9.60
	5320	64	#0	6	8	-	-	98.5	0.07	1.02	7	6.58	-1.42	1.39	6.51		6.70	-1.30	1.35	6.63	9	11	9.65	-1.35	9.58
*. 2024-02-07 for 6GHz band	5500	100	#0	8	10	-	-	98.5	0.07	1.02	8	7.86	-2.14	1.64	7.79		8.34	-1.66	1.47	8.27	11	13	11.12	-1.88	11.05
	5580	116	#0	8	10	-	-	98.5	0.07	1.02	8	7.75	-2.25	1.68	7.68		8.23	-1.77	1.50	8.16	11	13	11.01	-1.99	10.94
	5700	140	#0	8	10	-	-	98.5	0.07	1.02	8	7.65	-2.35	1.72	7.58		8.38	-1.62	1.45	8.31	11	13	11.04	-1.96	10.97
	5745	149	#0	5	7	-	-	98.5	0.07	1.02	6	5.72	-1.28	1.34	5.65		6.30	-0.70	1.17	6.23	8	10	9.03	-0.97	8.96
	5785	157	#0	5	7	-	-	98.5	0.07	1.02	6	5.76	-1.24	1.33	5.69		6.22	-0.78	1.20	6.15	8	10	9.01	-0.99	8.94
	5825	165	#0	5	7	-	-	98.5	0.07	1.02	6	5.79	-1.21	1.32	5.72		6.36	-0.64	1.16	6.29	8	10	9.10	-0.90	9.03

Mode	Frequency		D/R or MCS Index# /RU (OFDMA)	Power spec. on each antenna		Duty cycle					Antenna 1 power						Antenna 2 power					SUM power (Antenna 1+2)				
				Typical	Max.	On time	1 cycle time	Duty cycle	duty factor	scaled factor	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	SUM target	SUM max.	SUM Burst Ave.	Δ Max.	SUM Time Ave.
	[MHz]	CH		[dBm]	[dBm]	[ms]	[ms]	[%]	[dB]	[-]	[-]	[dBm]	[dB]	[-]	[dBm]	[-]	[dBm]	[dB]	[-]	[dBm]	[dBm]	[dBm]	[dB]	[dBm]	[dBm]
(cont'd) 11ax20 OFDM SDM (2Tx-2ST) *. 2024-02-07 for 6GHz band	5955	1	#3	3	**5**	1.079	1.095	98.5	0.07	1.02	4	3.91	-1.09	1.29	3.84		4.09	-0.91	1.23	4.02	3	5	7.01	-0.99	6.94
	6175	45	#3	3	5	-	-	98.5	0.07	1.02	4	4.22	-0.78	1.20	4.15		3.97	-1.03	1.27	3.90	3	5	7.10	-0.90	7.03
	6195	49	#3	3	5	-	-	98.5	0.07	1.02	4	4.21	-0.79	1.20	4.14		3.87	-1.13	1.30	3.80	3	5	7.06	-0.94	6.99
	6415	93	#3	3	5	-	-	98.5	0.07	1.02	4	3.35	-1.65	1.46	3.28		3.78	-1.22	1.32	3.71	3	5	6.58	-1.42	6.51
	6435	97	#3	3	5	-	-	98.5	0.07	1.02	4	4.08	-0.92	1.24	4.01		4.09	-0.91	1.23	4.02	3	5	7.09	-0.91	7.02
	6475	105	#3	3	5	-	-	98.5	0.07	1.02	4	3.86	-1.14	1.30	3.79		3.47	-1.53	1.42	3.40	3	5	6.67	-1.33	6.60
	6515	113	#3	3	5	-	-	98.5	0.07	1.02	4	4.13	-0.87	1.22	4.06		3.67	-1.33	1.36	3.60	3	5	6.92	-1.08	6.85
	6535	117	#3	4	**6**	-	-	98.5	0.07	1.02	5	4.53	-1.47	1.40	4.46		4.77	-1.23	1.33	4.70	4	6	7.66	-1.34	7.59
	6695	149	#3	4	6	-	-	98.5	0.07	1.02	5	4.44	-1.56	1.43	4.37		4.71	-1.29	1.35	4.64	4	6	7.59	-1.41	7.52
	6855	181	#3	4	6	-	-	98.5	0.07	1.02	5	4.23	-1.77	1.50	4.16		4.13	-1.87	1.54	4.06	4	6	7.19	-1.81	7.12
	6875	185	#3	4	**6**	-	-	98.5	0.07	1.02	5	4.63	-1.37	1.37	4.56		4.31	-1.69	1.48	4.24	4	6	7.48	-1.52	7.41
	6995	209	#3	4	**6**	-	-	98.5	0.07	1.02	5	4.36	-1.64	1.46	4.29		4.18	-1.82	1.52	4.11	4	6	7.28	-1.72	7.21
	7095	229	#3	4	**6**	-	-	98.5	0.07	1.02	5	4.44	-1.56	1.43	4.37		4.69	-1.31	1.35	4.62	4	6	7.57	-1.43	7.50
11ax20 OFDMA CDD (2Tx-1ST) *. 2024-02-07 for 6GHz band	5180	36	#0/242	6	8	1.003	1.019	98.4	0.07	1.02	6	6.15	-1.85	1.53	6.08		6.46	-1.54	1.43	6.39	9	11	9.32	-1.68	9.25
	5200	40	#0/242	6	8	-	-	98.4	0.07	1.02	6	6.15	-1.85	1.53	6.08		6.37	-1.63	1.46	6.30	9	11	9.27	-1.73	9.20
	5220	44	#0/242	6	8	-	-	98.4	0.07	1.02	6	6.20	-1.80	1.51	6.13		6.30	-1.70	1.48	6.23	9	11	9.26	-1.74	9.19
	5240	48	#0/242	6	8	-	-	98.4	0.07	1.02	6	6.06	-1.94	1.56	5.99		6.46	-1.54	1.43	6.39	9	11	9.28	-1.72	9.21
	5260	52	#0/242	6	8	-	-	98.4	0.07	1.02	6	6.27	-1.73	1.49	6.20		6.36	-1.64	1.46	6.29	9	11	9.33	-1.67	9.26
	5280	56	#0/242	6	8	-	-	98.4	0.07	1.02	6	6.23	-1.77	1.50	6.16		6.41	-1.59	1.44	6.34	9	11	9.33	-1.67	9.26
	5300	60	#0/242	6	8	-	-	98.4	0.07	1.02	6	6.25	-1.75	1.50	6.18		6.62	-1.38	1.37	6.55	9	11	9.45	-1.55	9.38
	5320	64	#0/242	6	8	-	-	98.4	0.07	1.02	6	6.21	-1.79	1.51	6.14		6.48	-1.52	1.42	6.41	9	11	9.36	-1.64	9.29
	5500	100	#0/242	8	10	-	-	98.4	0.07	1.02	8	8.32	-1.68	1.47	8.25		8.73	-1.27	1.34	8.66	11	13	11.54	-1.46	11.47
	5580	116	#0/242	8	10	-	-	98.4	0.07	1.02	8	8.27	-1.73	1.49	8.20		8.80	-1.20	1.32	8.73	11	13	11.55	-1.45	11.48
	5700	140	#0/242	8	10	-	-	98.4	0.07	1.02	8	8.19	-1.81	1.52	8.12		8.75	-1.25	1.33	8.68	11	13	11.49	-1.51	11.42
	5745	149	#0/242	5	7	-	-	98.4	0.07	1.02	5	5.52	-1.48	1.41	5.45		6.00	-1.00	1.26	5.93	8	10	8.77	-1.23	8.70
	5785	157	#0/242	5	7	-	-	98.4	0.07	1.02	5	5.61	-1.39	1.38	5.54		5.81	-1.19	1.32	5.74	8	10	8.72	-1.28	8.65
	5825	165	#0/242	5	7	-	-	98.4	0.07	1.02	5	5.60	-1.40	1.38	5.53		5.78	-1.22	1.32	5.71	8	10	8.70	-1.30	8.63
	5955	1	#0/242	-1	**1**	-	-	98.4	0.07	1.02	-1	0.65	-0.35	1.08	0.58		0.42	-0.58	1.14	0.35	2	4	3.54	-0.46	3.47
	6175	45	#0/242	-1	1	-	-	98.4	0.07	1.02	-1	0.28	-0.72	1.18	0.21		0.55	-0.45	1.11	0.48	2	4	3.44	-0.56	3.37
	6195	49	#0/242	-1	1	-	-	98.4	0.07	1.02	-1	0.11	-0.89	1.23	0.04		0.47	-0.53	1.13	0.40	2	4	3.30	-0.70	3.23
	6415	93	#0/242	-1	1	-	-	98.4	0.07	1.02	-1	0.05	-0.95	1.24	-0.02		0.29	-0.71	1.18	0.22	2	4	3.18	-0.82	3.11
	6435	97	#0/242	-1	1	-	-	98.4	0.07	1.02	-1	0.50	-0.50	1.12	0.43		-0.04	-1.04	1.27	-0.11	2	4	3.24	-0.76	3.17
	6475	105	#0/242	-1	1	-	-	98.4	0.07	1.02	-1	0.37	-0.63	1.16	0.30		-0.26	-1.26	1.34	-0.33	2	4	3.07	-0.93	3.00
	6515	113	#0/242	-1	1	-	-	98.4	0.07	1.02	-1	0.49	-0.51	1.12	0.42		-0.36	-1.36	1.37	-0.43	2	4	3.10	-0.90	3.03
	6535	117	#0/242	0	**2**	-	-	98.4	0.07	1.02	0	1.31	-0.69	1.17	1.24		1.12	-0.88	1.22	1.05	3	5	4.22	-0.78	4.15
	6695	149	#0/242	0	2	-	-	98.4	0.07	1.02	0	0.90	-1.10	1.29	0.83		1.26	-0.74	1.19	1.19	3	5	4.10	-0.90	4.03
	6855	181	#0/242	0	2	-	-	98.4	0.07	1.02	0	0.66	-1.34	1.36	0.59		0.71	-1.29	1.35	0.64	3	5	3.69	-1.31	3.62
	6875	185	#0/242	0	**2**	-	-	98.4	0.07	1.02	0	0.52	-1.48	1.41	0.45		0.53	-1.47	1.40	0.46	3	5	3.54	-1.46	3.47
	6995	209	#0/242	0	**2**	-	-	98.4	0.07	1.02	0	0.56	-1.44	1.39	0.49		0.49	-1.51	1.42	0.42	3	5	3.54	-1.46	3.47
	7095	229	#0/242	0	**2**	-	-	98.4	0.07	1.02	0	0.44	-1.56	1.43	0.37		0.54	-1.46	1.40	0.47	3	5	3.50	-1.50	3.43
11ax20 OFDMA SDM (2Tx-2ST) *. 2024-02-07 for 6GHz band	5180	36	#0/242	6	8	0.9815	0.9967	98.5	0.07	1.02	6	6.11	-1.89	1.55	6.04		6.41	-1.59	1.44	6.34	9	11	9.27	-1.73	9.20
	5200	40	#0/242	6	8	-	-	98.5	0.07	1.02	6	6.14	-1.86	1.53	6.07		6.37	-1.63	1.46	6.30	9	11	9.27	-1.73	9.20
	5220	44	#0/242	6	8	-	-	98.5	0.07	1.02	6	6.18	-1.82	1.52	6.11		6.50	-1.50	1.41	6.43	9	11	9.36	-1.64	9.29
	5240	48	#0/242	6	8	-	-	98.5	0.07	1.02	6	6.06	-1.94	1.56	5.99		6.49	-1.51	1.42	6.42	9	11	9.29	-1.71	9.22
	5260	52	#0/242	6	8	-	-	98.5	0.07	1.02	6	6.27	-1.73	1.49	6.20		6.35	-1.65	1.46	6.28	9	11	9.32	-1.68	9.25
	5280	56	#0/242	6	8	-	-	98.5	0.07	1.02	6	6.18	-1.82	1.52	6.11		6.38	-1.62	1.45	6.31	9	11	9.29	-1.71	9.22
	5300	60	#0/242	6	8	-	-	98.5	0.07	1.02	6	6.45	-1.55	1.43	6.38		6.61	-1.39	1.38	6.54	9	11	9.54	-1.46	9.47
	5320	64	#0/242	6	8	-	-	98.5	0.07	1.02	6	6.20	-1.80	1.51	6.13		6.48	-1.52	1.42	6.41	9	11	9.36	-1.64	9.29
	5500	100	#0/242	8	10	-	-	98.5	0.07	1.02	8	8.09	-1.91	1.55	8.02		8.75	-1.25	1.33	8.68	11	13	11.44	-1.56	11.37
	5580	116	#0/242	8	10	-	-	98.5	0.07	1.02	8	8.24	-1.76	1.50	8.17		8.75	-1.25	1.33	8.68	11	13	11.51	-1.49	11.44
	5700	140	#0/242	8	10	-	-	98.5	0.07	1.02	8	8.18	-1.82	1.52	8.11		8.66	-1.34	1.36	8.59	11	13	11.44	-1.56	11.37
	5745	149	#0/242	5	7	-	-	98.5	0.07	1.02	5	5.51	-1.49	1.41	5.44		5.98	-1.02	1.26	5.91	8	10	8.76	-1.24	8.69
	5785	157	#0/242	5	7	-	-	98.5	0.07	1.02	5	5.53	-1.47	1.40	5.46		5.99	-1.01	1.26	5.92	8	10	8.77	-1.23	8.70
	5825	165	#0/242	5	7	-	-	98.5	0.07	1.02	5	5.55	-1.45	1.40	5.48		5.80	-1.20	1.32	5.73	8	10	8.69	-1.31	8.62
	5955	1	#0/242	2	**4**	-	-	98.5	0.07	1.02	2	3.12	-0.88	1.22	3.05		3.47	-0.53	1.13	3.40	5	7	6.30	-0.70	6.23
	6175	45	#0/242	2	4	-	-	98.5	0.07	1.02	2	3.47	-0.53	1.13	3.40		3.65	-0.35	1.08	3.58	5	7	6.57	-0.43	6.50
	6195	49	#0/242	2	4	-	-	98.5	0.07	1.02	2	3.25	-0.75	1.19	3.18		3.46	-0.54	1.13	3.39	5	7	6.36	-0.64	6.29
	6415	93	#0/242	2	4	-	-	98.5	0.07	1.02	2	2.80	-1.20	1.32	2.73		3.20	-0.80	1.20	3.13	5	7	6.02	-0.98	5.95
	6435	97	#0/242	2	4	-	-	98.5	0.07	1.02	2	3.21	-0.79	1.20	3.14		2.88	-1.12	1.29	2.81	5	7	6.05	-0.95	5.98
	6475	105	#0/242	2	4	-	-	98.5	0.07	1.02	2	3.03	-0.97	1.25	2.96		2.82	-1.18	1.31	2.75	5	7	5.93	-1.07	5.86
	6515	113	#0/242	2	4	-	-	98.5	0.07	1.02	2	3.25	-0.75	1.19	3.18		2.76	-1.24	1.33	2.69	5	7	6.02	-0.98	5.95
	6535	117	#0/242	3	**5**	-	-	98.5	0.07	1.02	3	3.96	-1.04	1.27	3.89		4.01	-0.99	1.26	3.94	6	8	7.00	-1.00	6.93
	6695	149	#0/242	3	5	-	-	98.5	0.07	1.02	3	3.89	-1.11	1.29	3.82		3.81	-1.19	1.32	3.74	6	8	6.86	-1.14	6.79
	6855	181	#0/242	3	5	-	-	98.5	0.07	1.02	3	3.69	-1.31	1.35	3.62		3.39	-1.61	1.45	3.32	6	8	6.55	-1.45	6.48
	6875	185	#0/242	3	**5**	-	-	98.5	0.07	1.02	3	3.39	-1.61	1.45	3.32		3.51	-1.49	1.41	3.44	6	8	6.45	-1.55	6.38
	6995	209	#0/242	3	**5**	-	-	98.5	0.07	1.02	3	3.14	-1.86	1.53	3.07		3.36	-1.64	1.46	3.29	6	8	6.26	-1.74	6.19
	7095	229	#0/242	3	**5**	-	-	98.5	0.07	1.02	3	3.30	-1.70	1.48	3.23		3.48	-1.52	1.42	3.41	6	8	6.40	-1.60	6.33
11n40 CDD (2Tx-1ST)	5190	38	#0	6	8	1.062	1.076	98.7	0.06	1.01	7	6.81	-1.19	1.32	6.75		7.12	-0.88	1.22	7.06	9	11	9.98	-1.02	9.92
	5230	46	#0	6	8	-	-	98.7	0.06	1.01	7	6.78	-1.22	1.32	6.72		7.22	-0.78	1.20	7.16	9	11	10.01	-0.99	9.95
	5270	54	#0	6	8	-	-	98.7	0.06	1.01	7	7.10	-0.90	1.23	7.04		7.28	-0.72	1.18	7.22	9	11	10.20	-0.80	10.14
	5310	62	#0	6	8	-	-	98.7	0.06	1.01	7	7.28	-0.72	1.18	7.22		7.29	-0.71	1.18	7.23	9	11	10.30	-0.70	10.24
	5510	102	#0	8	10	-	-	98.7	0.06	1.01	8	8.11	-1.89	1.55	8.05		8.39	-1.61	1.45	8.33	11	13	11.26	-1.74	11.20
	5550	110	#0	8	10	-	-	98.7	0.06	1.01	8	8.16	-1.84	1.53	8.10		8.50	-1.50	1.41	8.44	11	13	11.34	-1.66	11.28
	5670	134	#0	8	10	-	-	98.7	0.06	1.01	8	8.09	-1.91	1.55	8.03		8.62	-1.38	1.37	8.56	11	13	11.37	-1.63	11.31
	5755	151	#0	5	7	-	-	98.7	0.06	1.01	6	5.94	-1.06	1.28	5.88		6.20	-0.80	1.20	6.14	8	10	9.08	-0.92	9.02
	5795	159	#0	5	7	-	-	98.7	0.06	1.01	6	5.87	-1.13	1.30	5.81		6.33	-0.67	1.17	6.27	8	10	9.12	-0.88	9.06
11n40 SDM (2Tx-2ST)	5190	38	#8	6	8	1.059	1.075	98.5	0.07	1.02	7	6.79	-1.21	1.32	6.72		7.16	-0.84	1.21	7.09	9	11	9.99	-1.01	9.92
	5230	46	#8	6	8	-	-	98.5	0.07	1.02	7	6.70	-1.30	1.35	6.63		7.14	-0.86	1.22	7.07	9	11	9.94	-1.06	9.87
	5270	54	#8	6	8	-	-	98.5	0.07	1.02	7	7.09	-0.91	1.23	7.02		7.28	-0.72	1.18	7.21	9	11	10.20	-0.80	10.13
	5310	62	#8	6	8	-	-	98.5	0.07	1.02	7	7.11	-0.89	1.23	7.04		7.28	-0.72	1.18	7.21	9	11	10.21	-0.79	10.14
	5510	102	#8	8	10	-	-	98.5	0.07	1.02	8	8.14	-1.86	1.53	8.07		8.49	-1.51	1.42	8.42	11	13	11.33	-1.67	11.26
	5550	110	#8	8	10	-	-	98.5	0.07	1.02	8	8.19	-1.81	1.52	8.12		8.55	-1.45	1.40	8.48	11	13	11.38	-1.62	11.31
	5670	134	#8	8	10	-	-	98.5	0.07	1.02	8	8.02	-1.98	1.58	7.95		8.72	-1.28	1.34	8.65	11	13	11.40	-1.60	11.33
	5755	151	#8	5	7	-	-	98.5	0.07	1.02	6	5.98	-1.02	1.26	5.91		6.27	-0.73	1.18	6.20	8	10	9.14	-0.86	9.07
	5795	159	#8	5	7	-	-	98.5	0.07	1.02	6	5.89	-1.11	1.29	5.82		6.34	-0.66	1.16	6.27	8	10	9.13	-0.87	9.06

Mode	Frequency		D/R or MCS Index# /RU (OFDMA)	Power spec. on each antenna		Duty cycle					Antenna 1 power					Antenna 2 power					SUM power (Antenna 1+2)				
				Typical	Max.	On time	1 cycle time	Duty cycle	duty factor	scaled factor	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	SUM target	SUM max.	SUM Burst Ave.	Δ Max.	SUM Time Ave.
	[MHz]	CH		[dBm]	[dBm]	[ms]	[ms]	[%]	[dB]	[-]	[-]	[dBm]	[dB]	[-]	[dBm]	[-]	[dBm]	[dB]	[-]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]	[dBm]
11ac40 CDD (2Tx-1ST)	5190	38	#0	6	8	1.068	1.083	98.6	0.06	1.01	7	6.72	-1.28	1.34	6.66		7.09	-0.91	1.23	7.03	9	11	9.92	-1.08	9.86
	5230	46	#0	6	8	-	-	98.6	0.06	1.01	7	6.76	-1.24	1.33	6.70		7.20	-0.80	1.20	7.14	9	11	10.00	-1.00	9.94
	5270	54	#0	6	8	-	-	98.6	0.06	1.01	7	7.08	-0.92	1.24	7.02		7.09	-0.91	1.23	7.03	9	11	10.10	-0.90	10.04
	5310	62	#0	6	8	-	-	98.6	0.06	1.01	7	7.13	-0.87	1.22	7.07		7.31	-0.69	1.17	7.25	9	11	10.23	-0.77	10.17
	5510	102	#0	8	10	-	-	98.6	0.06	1.01	8	8.11	-1.89	1.55	8.05		8.39	-1.61	1.45	8.33	11	13	11.26	-1.74	11.20
	5550	110	#0	8	10	-	-	98.6	0.06	1.01	8	8.03	-1.97	1.57	7.97		8.53	-1.47	1.40	8.47	11	13	11.30	-1.70	11.24
	5670	134	#0	8	10	-	-	98.6	0.06	1.01	8	8.09	-1.91	1.55	8.03		8.62	-1.38	1.37	8.56	11	13	11.37	-1.63	11.31
	5755	151	#0	5	7	-	-	98.6	0.06	1.01	6	5.95	-1.05	1.27	5.89		6.22	-0.78	1.20	6.16	8	10	9.10	-0.90	9.04
	5795	159	#0	5	7	-	-	98.6	0.06	1.01	6	5.91	-1.09	1.29	5.85		6.33	-0.67	1.17	6.27	8	10	9.14	-0.86	9.08
11ac40 SDM (2Tx-2ST)	5190	38	#0	6	8	1.061	1.076	98.6	0.06	1.01	7	6.76	-1.24	1.33	6.70		7.14	-0.86	1.22	7.08	9	11	9.97	-1.03	9.91
	5230	46	#0	6	8	-	-	98.6	0.06	1.01	7	6.85	-1.15	1.30	6.79		7.14	-0.86	1.22	7.08	9	11	10.01	-0.99	9.95
	5270	54	#0	6	8	-	-	98.6	0.06	1.01	7	7.07	-0.93	1.24	7.01		7.20	-0.80	1.20	7.14	9	11	10.15	-0.85	10.09
	5310	62	#0	6	8	-	-	98.6	0.06	1.01	7	7.12	-0.88	1.22	7.06		7.27	-0.73	1.18	7.21	9	11	10.20	-0.80	10.14
	5510	102	#0	8	10	-	-	98.6	0.06	1.01	8	8.09	-1.91	1.55	8.03		8.52	-1.48	1.41	8.46	11	13	11.32	-1.68	11.26
	5550	110	#0	8	10	-	-	98.6	0.06	1.01	8	8.01	-1.99	1.58	7.95		8.51	-1.49	1.41	8.45	11	13	11.28	-1.72	11.22
	5670	134	#0	8	10	-	-	98.6	0.06	1.01	8	8.04	-1.96	1.57	7.98		8.53	-1.47	1.40	8.47	11	13	11.30	-1.70	11.24
	5755	151	#0	5	7	-	-	98.6	0.06	1.01	6	5.95	-1.05	1.27	5.89		6.41	-0.59	1.15	6.35	8	10	9.20	-0.80	9.14
	5795	159	#0	5	7	-	-	98.6	0.06	1.01	6	5.87	-1.13	1.30	5.81		6.34	-0.66	1.16	6.28	8	10	9.12	-0.88	9.06
11ax40 CDD (2Tx-1ST) * 2024-02-07 for 6GHz band	5190	38	#0	6	8	1.079	1.096	98.4	0.07	1.02	7	6.53	-1.47	1.40	6.46		7.02	-0.98	1.25	6.95	9	11	9.80	-1.20	9.73
	5230	46	#0	6	8	-	-	98.4	0.07	1.02	7	6.62	-1.38	1.37	6.55		7.07	-0.93	1.24	7.00	9	11	9.86	-1.14	9.79
	5270	54	#0	6	8	-	-	98.4	0.07	1.02	7	7.02	-0.98	1.25	6.95		7.20	-0.80	1.20	7.13	9	11	10.12	-0.88	10.05
	5310	62	#0	6	8	-	-	98.4	0.07	1.02	7	7.02	-0.98	1.25	6.95		7.27	-0.73	1.18	7.20	9	11	10.16	-0.84	10.09
	5510	102	#0	8	10	-	-	98.4	0.07	1.02	8	8.00	-2.00	1.58	7.93		8.38	-1.62	1.45	8.31	11	13	11.21	-1.79	11.14
	5550	110	#0	8	10	-	-	98.4	0.07	1.02	8	8.07	-1.93	1.56	8.00		8.41	-1.59	1.44	8.34	11	13	11.25	-1.75	11.18
	5670	134	#0	8	10	-	-	98.4	0.07	1.02	8	8.07	-1.93	1.56	8.00		8.40	-1.60	1.45	8.33	11	13	11.25	-1.75	11.18
	5755	151	#0	5	7	-	-	98.4	0.07	1.02	6	5.87	-1.13	1.30	5.80		6.40	-0.60	1.15	6.33	8	10	9.15	-0.85	9.08
	5795	159	#0	5	7	-	-	98.4	0.07	1.02	6	5.96	-1.04	1.27	5.89		6.33	-0.67	1.17	6.26	8	10	9.16	-0.84	9.09
	5965	3	#3	3	5	1.069	1.085	98.5	0.07	1.02	4	3.43	-1.57	1.44	3.36		4.17	-0.83	1.21	4.10	6	8	6.82	-1.18	6.75
	6165	43	#3	3	5	-	-	98.5	0.07	1.02	4	3.66	-1.34	1.36	3.59		4.10	-0.90	1.23	4.03	6	8	6.89	-1.11	6.82
	6205	51	#3	3	5	-	-	98.5	0.07	1.02	4	3.80	-1.20	1.32	3.73		4.11	-0.89	1.23	4.04	6	8	6.97	-1.03	6.90
	6405	91	#3	3	5	-	-	98.5	0.07	1.02	4	3.63	-1.37	1.37	3.56		3.53	-1.47	1.40	3.46	6	8	6.59	-1.41	6.52
	6445	99	#3	3	5	-	-	98.5	0.07	1.02	4	4.09	-0.91	1.23	4.02		3.45	-1.55	1.43	3.38	6	8	6.79	-1.21	6.72
	6485	107	#3	3	5	-	-	98.5	0.07	1.02	4	3.95	-1.05	1.27	3.88		3.54	-1.46	1.40	3.47	6	8	6.76	-1.24	6.69
	6525	115	#3	3	5	-	-	98.5	0.07	1.02	4	4.18	-0.82	1.21	4.11		3.59	-1.41	1.38	3.52	6	8	6.91	-1.09	6.84
	6685	147	#3	3	5	-	-	98.5	0.07	1.02	4	3.97	-1.03	1.27	3.90		3.86	-1.14	1.30	3.79	6	8	6.92	-1.08	6.85
	6845	179	#3	3	5	-	-	98.5	0.07	1.02	4	3.22	-1.78	1.51	3.15		3.93	-1.07	1.28	3.86	6	8	6.60	-1.40	6.53
	6885	187	#3	3	5	-	-	98.5	0.07	1.02	4	3.95	-1.05	1.27	3.88		3.63	-1.37	1.37	3.56	6	8	6.80	-1.20	6.73
	6965	203	#3	3	5	-	-	98.5	0.07	1.02	4	3.59	-1.41	1.38	3.52		3.87	-1.13	1.30	3.80	6	8	6.75	-1.25	6.68
	7005	211	#3	3	5	-	-	98.5	0.07	1.02	4	3.24	-1.76	1.50	3.17		3.78	-1.22	1.32	3.71	6	8	6.53	-1.47	6.46
	7085	227	#3	3	5	-	-	98.5	0.07	1.02	4	3.29	-1.71	1.48	3.22		3.91	-1.09	1.29	3.84	6	8	6.62	-1.38	6.55
11ax40 SDM (2Tx-2ST) * 2024-02-07 for 6GHz band	5190	38	#0	6	8	1.079	1.095	98.5	0.07	1.02	7	6.50	-1.50	1.41	6.44		6.90	-1.10	1.29	6.84	9	11	9.72	-1.28	9.66
	5230	46	#0	6	8	-	-	98.5	0.07	1.02	7	6.67	-1.33	1.36	6.61		7.12	-0.88	1.22	7.06	9	11	9.91	-1.09	9.85
	5270	54	#0	6	8	-	-	98.5	0.07	1.02	7	7.05	-0.95	1.24	6.99		7.03	-0.97	1.25	6.97	9	11	10.05	-0.95	9.99
	5310	62	#0	6	8	-	-	98.5	0.07	1.02	7	7.03	-0.97	1.25	6.97		7.24	-0.76	1.19	7.18	9	11	10.15	-0.85	10.09
	5510	102	#0	8	10	-	-	98.5	0.07	1.02	8	8.02	-1.98	1.58	7.96		8.32	-1.68	1.47	8.26	11	13	11.18	-1.82	11.12
	5550	110	#0	8	10	-	-	98.5	0.07	1.02	8	8.11	-1.89	1.55	8.05		8.40	-1.60	1.45	8.34	11	13	11.27	-1.73	11.21
	5670	134	#0	8	10	-	-	98.5	0.07	1.02	8	8.00	-2.00	1.58	7.94		8.51	-1.49	1.41	8.45	11	13	11.27	-1.73	11.21
	5755	151	#0	5	7	-	-	98.5	0.07	1.02	6	5.80	-1.20	1.32	5.74		6.33	-0.67	1.17	6.27	8	10	9.08	-0.92	9.02
	5795	159	#0	5	7	-	-	98.5	0.07	1.02	6	5.85	-1.15	1.30	5.79		6.30	-0.70	1.17	6.24	8	10	9.10	-0.90	9.04
	5965	3	#3	6	8	1.174	1.191	98.6	0.06	1.01	7	6.71	-1.29	1.35	6.65		6.82	-1.18	1.31	6.76	9	11	9.78	-1.22	9.72
	6165	43	#3	6	8	-	-	98.6	0.06	1.01	7	7.16	-0.84	1.21	7.10		7.17	-0.83	1.21	7.11	9	11	10.17	-0.83	10.11
	6205	51	#3	6	8	-	-	98.6	0.06	1.01	7	6.92	-1.08	1.28	6.86		7.02	-0.98	1.25	6.96	9	11	9.98	-1.02	9.92
	6405	91	#3	6	8	-	-	98.6	0.06	1.01	7	6.88	-1.12	1.29	6.82		6.23	-1.77	1.50	6.17	9	11	9.58	-1.42	9.52
	6445	99	#3	6	8	-	-	98.6	0.06	1.01	7	7.05	-0.95	1.24	6.99		6.54	-1.46	1.40	6.48	9	11	9.81	-1.19	9.75
	6485	107	#3	6	8	-	-	98.6	0.06	1.01	7	7.05	-0.95	1.24	6.99		6.55	-1.45	1.40	6.49	9	11	9.82	-1.18	9.76
	6525	115	#3	6	8	-	-	98.6	0.06	1.01	7	7.11	-0.89	1.23	7.05		6.81	-1.19	1.32	6.75	9	11	9.97	-1.03	9.91
	6685	147	#3	6	8	-	-	98.6	0.06	1.01	7	6.85	-1.15	1.30	6.79		6.60	-1.40	1.38	6.54	9	11	9.74	-1.26	9.68
	6845	179	#3	6	8	-	-	98.6	0.06	1.01	7	6.15	-1.85	1.53	6.09		6.58	-1.42	1.39	6.52	9	11	9.38	-1.62	9.32
	6885	187	#3	6	8	-	-	98.6	0.06	1.01	7	6.49	-1.51	1.42	6.43		6.69	-1.31	1.35	6.63	9	11	9.60	-1.40	9.54
	6965	203	#3	6	**8**	-	-	98.6	0.06	1.01	7	6.48	-1.52	1.42	6.42		6.62	-1.38	1.37	6.56	9	11	9.56	-1.44	9.50
	7005	211	#3	6	8	-	-	98.6	0.06	1.01	7	6.50	-1.50	1.41	6.44		6.48	-1.52	1.42	6.42	9	11	9.50	-1.50	9.44
	7085	227	#3	6	8	-	-	98.6	0.06	1.01	7	6.53	-1.47	1.40	6.47		6.46	-1.54	1.43	6.40	9	11	9.51	-1.49	9.45
11ax40 OFDMA CDD (2Tx-1ST) * 2024-02-07 for 6GHz band	5190	38	#0/484	5	7	1.004	1.016	98.8	0.05	1.01	5	5.57	-1.43	1.39	5.52		5.57	-1.43	1.39	5.52	8	10	8.59	-1.41	8.54
	5230	46	#0/484	5	7	-	-	98.8	0.05	1.01	5	5.43	-1.57	1.44	5.38		5.59	-1.41	1.38	5.54	8	10	8.52	-1.48	8.47
	5270	54	#0/484	5	7	-	-	98.8	0.05	1.01	5	5.81	-1.19	1.32	5.76		5.66	-1.34	1.36	5.61	8	10	8.74	-1.26	8.69
	5310	62	#0/484	5	7	-	-	98.8	0.05	1.01	5	5.87	-1.13	1.30	5.82		5.95	-1.05	1.27	5.90	8	10	8.92	-1.08	8.87
	5510	102	#0/484	8	10	-	-	98.8	0.05	1.01	8	8.22	-1.78	1.51	8.17		8.87	-1.13	1.30	8.82	11	13	11.57	-1.43	11.52
	5550	110	#0/484	8	10	-	-	98.8	0.05	1.01	8	8.13	-1.87	1.54	8.08		9.01	-0.99	1.26	8.96	11	13	11.60	-1.40	11.55
	5670	134	#0/484	8	10	-	-	98.8	0.05	1.01	8	8.35	-1.65	1.46	8.30		8.87	-1.13	1.30	8.82	11	13	11.63	-1.37	11.58
	5755	151	#0/484	4	6	-	-	98.8	0.05	1.01	4	4.53	-1.47	1.40	4.48		5.02	-0.98	1.25	4.97	7	9	7.80	-1.20	7.75
	5795	159	#0/484	4	6	-	-	98.8	0.05	1.01	4	4.75	-1.25	1.33	4.70		5.07	-0.93	1.24	5.02	7	9	7.92	-1.08	7.87
	5965	3	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.86	-1.14	1.30	2.81		3.30	-0.70	1.17	3.25	5	7	6.10	-0.90	6.05
	6165	43	#0/484	2	4	-	-	98.8	0.05	1.01	2	3.18	-0.82	1.21	3.13		3.33	-0.67	1.17	3.28	5	7	6.26	-0.74	6.21
	6205	51	#0/484	2	4	-	-	98.8	0.05	1.01	2	3.05	-0.95	1.24	3.00		3.23	-0.77	1.19	3.18	5	7	6.15	-0.85	6.10
	6405	91	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.68	-1.32	1.36	2.63		2.68	-1.32	1.36	2.63	5	7	5.68	-1.32	5.63
	6445	99	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.78	-1.22	1.32	2.73		2.67	-1.33	1.36	2.62	5	7	5.74	-1.26	5.69
	6485	107	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.68	-1.32	1.36	2.63		2.65	-1.35	1.36	2.60	5	7	5.67	-1.33	5.62
	6525	115	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.76	-1.24	1.33	2.71		2.47	-1.53	1.42	2.42	5	7	5.63	-1.37	5.58
	6685	147	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.59	-1.41	1.38	2.54		2.69	-1.31	1.35	2.64	5	7	5.66	-1.34	5.61
	6845	179	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.63	-1.37	1.37	2.58		2.41	-1.59	1.44	2.36	5	7	5.53	-1.47	5.48
	6885	187	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.17	-1.83	1.52	2.12		2.72	-1.28	1.34	2.67	5	7	5.47	-1.53	5.42
	6965	203	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.11	-1.89	1.55	2.06		2.45	-1.55	1.43	2.40	5	7	5.30	-1.70	5.25
	7005	211	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.22	-1.78	1.51	2.17		2.64	-1.36	1.37	2.59	5	7	5.45	-1.55	5.40
	7085	227	#0/484	2	4	-	-	98.8	0.05	1.01	2	2.26	-1.74	1.49	2.21		2.50	-1.50	1.41	2.45	5	7	5.39	-1.61	5.34

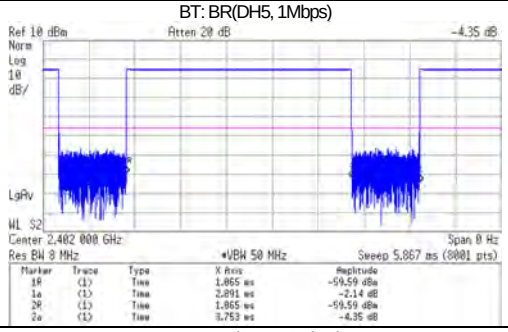
Mode	Frequency		D/R or MCS Index# /RU	Power spec. on each antenna		Duty cycle					Antenna 1 power					Antenna 2 power					SUM power (Antenna 1+2)				
			(OFDMA)	Typical	Max.	On time	1 cycle time	Duty cycle	duty factor	scaled factor	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	SUM target	SUM max.	SUM Burst Ave.	Δ Max.	SUM Time Ave.
	[MHz]	CH		[dBm]	[dBm]	[ms]	[ms]	[%]	[dB]	[-]	[-]	[dBm]	[dB]	[-]	[dBm]	[-]	[dBm]	[dB]	[-]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]	[dBm]
11ax40 OFDMA SDM (2Tx-2ST)	5190	38	#0/484	5	7	0.9923	1.006	98.6	0.06	1.01	5	5.53	-1.47	1.40	5.47		5.61	-1.39	1.38	5.55	8	10	8.58	-1.42	8.52
	5230	46	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.50	-1.50	1.41	5.44		5.68	-1.32	1.36	5.62	8	10	8.60	-1.40	8.54
	5270	54	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.79	-1.21	1.32	5.73		5.74	-1.26	1.34	5.68	8	10	8.77	-1.23	8.71
	5310	62	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.77	-1.23	1.33	5.71		5.86	-1.14	1.30	5.80	8	10	8.83	-1.17	8.77
	5510	102	#0/484	8	10	-	-	98.6	0.06	1.01	8	8.15	-1.85	1.53	8.09		8.82	-1.18	1.31	8.76	11	13	11.51	-1.49	11.45
	5550	110	#0/484	8	10	-	-	98.6	0.06	1.01	8	8.14	-1.86	1.53	8.08		8.99	-1.01	1.26	8.93	11	13	11.60	-1.40	11.54
	5670	134	#0/484	8	10	-	-	98.6	0.06	1.01	8	8.28	-1.72	1.49	8.22		9.08	-0.92	1.24	9.02	11	13	11.71	-1.29	11.65
	5755	151	#0/484	4	6	-	-	98.6	0.06	1.01	4	4.68	-1.32	1.36	4.62		5.09	-0.91	1.23	5.03	7	9	7.90	-1.10	7.84
	5795	159	#0/484	4	6	-	-	98.6	0.06	1.01	4	4.81	-1.19	1.32	4.75		5.08	-0.92	1.24	5.02	7	9	7.96	-1.04	7.90
	5965	3	#0/484	5	7	-	-	98.6	0.06	1.01	5	6.12	-0.88	1.22	6.06		5.99	-1.01	1.26	5.93	8	10	9.06	-0.94	9.00
	6165	43	#0/484	5	7	-	-	98.6	0.06	1.01	5	6.03	-0.97	1.25	5.97		5.63	-1.37	1.37	5.57	8	10	8.85	-1.15	8.79
	6205	51	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.86	-1.14	1.30	5.80		5.87	-1.13	1.30	5.81	8	10	8.87	-1.13	8.81
	6405	91	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.67	-1.33	1.36	5.61		5.46	-1.54	1.43	5.40	8	10	8.58	-1.42	8.52
	6445	99	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.56	-1.44	1.39	5.50		5.56	-1.44	1.39	5.50	8	10	8.57	-1.43	8.51
	6485	107	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.55	-1.45	1.40	5.49		5.32	-1.68	1.47	5.26	8	10	8.44	-1.56	8.38
	6525	115	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.77	-1.23	1.33	5.71		5.32	-1.68	1.47	5.26	8	10	8.56	-1.44	8.50
	6685	147	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.60	-1.40	1.38	5.54		5.54	-1.46	1.40	5.48	8	10	8.58	-1.42	8.52
	6845	179	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.07	-1.93	1.56	5.01		5.27	-1.73	1.49	5.21	8	10	8.18	-1.82	8.12
	6885	187	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.19	-1.81	1.52	5.13		5.58	-1.42	1.39	5.52	8	10	8.39	-1.61	8.33
	6965	203	#0/484	5	**7**	-	-	98.6	0.06	1.01	5	4.87	-2.13	1.63	4.81		5.61	-1.39	1.38	5.55	8	10	8.27	-1.73	8.21
	7005	211	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.11	-1.89	1.55	5.05		5.70	-1.30	1.35	5.64	8	10	8.43	-1.57	8.37
	7085	227	#0/484	5	7	-	-	98.6	0.06	1.01	5	5.28	-1.72	1.49	5.22		5.20	-1.80	1.51	5.14	8	10	8.25	-1.75	8.19
11ac80 CDD (2Tx-1ST)	5210	42	#0	6	8	1.056	1.072	98.5	0.07	1.02	7	6.38	-1.62	1.45	6.31		7.03	-0.97	1.25	6.96	9	11	9.73	-1.27	9.66
	5290	58	#0	6	8	-	-	98.5	0.07	1.02	7	6.68	-1.32	1.36	6.61		7.22	-0.78	1.20	7.15	9	11	9.97	-1.03	9.90
	5530	106	#0	8	10	-	-	98.5	0.07	1.02	8	8.04	-1.96	1.57	7.97		8.34	-1.66	1.47	8.27	11	13	11.20	-1.80	11.13
	5775	155	#0	5	7	-	-	98.5	0.07	1.02	6	5.61	-1.39	1.38	5.54		6.01	-0.99	1.26	5.94	8	10	8.83	-1.17	8.76
11ac80 SDM (2Tx-2ST)	5210	42	#0	6	8	1.056	1.071	98.6	0.06	1.01	7	6.38	-1.62	1.45	6.32		7.11	-0.89	1.23	7.05	9	11	9.77	-1.23	9.71
	5290	58	#0	6	8	-	-	98.6	0.06	1.01	7	6.68	-1.32	1.36	6.62		7.22	-0.78	1.20	7.16	9	11	9.97	-1.03	9.91
	5530	106	#0	8	10	-	-	98.6	0.06	1.01	8	8.09	-1.91	1.55	8.03		8.46	-1.54	1.43	8.40	11	13	11.29	-1.71	11.23
	5775	155	#0	5	7	-	-	98.6	0.06	1.01	6	5.59	-1.41	1.38	5.53		6.05	-0.95	1.24	5.99	8	10	8.84	-1.16	8.78
11ax80 CDD (2Tx-1ST)	5210	42	#0	6	8	1.071	1.086	98.6	0.06	1.01	7	6.20	-1.80	1.51	6.14		7.03	-0.97	1.25	6.97	9	11	9.65	-1.35	9.59
	5290	58	#0	6	8	-	-	98.6	0.06	1.01	7	6.60	-1.40	1.38	6.54		7.09	-0.91	1.23	7.03	9	11	9.86	-1.14	9.80
	5530	106	#0	8	10	-	-	98.6	0.06	1.01	8	8.02	-1.98	1.58	7.96		8.25	-1.75	1.50	8.19	11	13	11.15	-1.85	11.09
	5775	155	#0	5	7	-	-	98.6	0.06	1.01	6	5.66	-1.34	1.36	5.60		6.05	-0.95	1.24	5.99	8	10	8.87	-1.13	8.81
	5985	7	#0	3	5	-	-	98.6	0.06	1.01	4	3.91	-1.09	1.29	3.85		4.22	-0.78	1.20	4.16	6	8	7.08	-0.92	7.02
	6145	39	#0	3	5	-	-	98.6	0.06	1.01	4	3.94	-1.06	1.28	3.88		4.74	-0.26	1.06	4.68	6	8	7.37	-0.63	7.31
	6225	55	#0	3	5	-	-	98.6	0.06	1.01	4	3.83	-1.17	1.31	3.77		4.69	-0.31	1.07	4.63	6	8	7.29	-0.71	7.23
	6385	87	#0	3	5	-	-	98.6	0.06	1.01	4	3.90	-1.10	1.29	3.84		4.02	-0.98	1.25	3.96	6	8	6.96	-1.04	6.90
	6465	103	#0	3	5	-	-	98.6	0.06	1.01	4	3.81	-1.19	1.32	3.75		4.60	-0.40	1.10	4.54	6	8	7.23	-0.77	7.17
	6545	119	#0	3	5	-	-	98.6	0.06	1.01	4	4.01	-0.99	1.26	3.95		4.24	-0.76	1.19	4.18	6	8	7.13	-0.87	7.07
	6625	135	#0	4	6	-	-	98.6	0.06	1.01	5	5.05	-0.95	1.24	4.99		4.76	-1.24	1.33	4.70	7	9	7.92	-1.08	7.86
	6705	151	#0	4	6	-	-	98.6	0.06	1.01	5	4.92	-1.08	1.28	4.86		4.92	-1.08	1.28	4.86	7	9	7.92	-1.08	7.86
	6785	167	#0	4	6	-	-	98.6	0.06	1.01	5	4.91	-1.09	1.29	4.85		4.89	-1.11	1.29	4.83	7	9	7.91	-1.09	7.85
	6865	183	#0	4	6	-	-	98.6	0.06	1.01	5	5.01	-0.99	1.26	4.95		4.94	-1.06	1.28	4.88	7	9	7.99	-1.01	7.93
	6945	199	#0	4	**6**	-	-	98.6	0.06	1.01	5	4.77	-1.23	1.33	4.71		4.70	-1.30	1.35	4.64	7	9	7.75	-1.25	7.69
	7025	215	#0	4	6	-	-	98.6	0.06	1.01	5	4.52	-1.48	1.41	4.46		5.20	-0.80	1.20	5.14	7	9	7.88	-1.12	7.82
11ax80 SDM (2Tx-2ST)	5210	42	#0	6	8	1.077	1.093	98.5	0.07	1.02	7	6.23	-1.77	1.50	6.16		7.05	-0.95	1.24	6.98	9	11	9.67	-1.33	9.60
	5290	58	#0	6	8	-	-	98.5	0.07	1.02	7	6.67	-1.33	1.36	6.60		7.07	-0.93	1.24	7.00	9	11	9.89	-1.11	9.82
	5530	106	#0	8	10	-	-	98.5	0.07	1.02	8	8.03	-1.97	1.57	7.96		8.30	-1.70	1.48	8.23	11	13	11.18	-1.82	11.11
	5775	155	#0	5	7	-	-	98.5	0.07	1.02	6	5.72	-1.28	1.34	5.65		5.95	-1.05	1.27	5.88	8	10	8.85	-1.15	8.78
	5985	7	#0	6	8	-	-	98.5	0.07	1.02	7	6.69	-1.31	1.35	6.62		7.32	-0.68	1.17	7.25	9	11	10.03	-0.97	9.96
	6145	39	#0	6	8	-	-	98.5	0.07	1.02	7	7.35	-0.65	1.16	7.28		7.62	-0.38	1.09	7.55	9	11	10.50	-0.50	10.43
	6225	55	#0	6	8	-	-	98.5	0.07	1.02	7	7.26	-0.74	1.19	7.19		7.25	-0.75	1.19	7.18	9	11	10.27	-0.73	10.20
	6385	87	#0	6	8	-	-	98.5	0.07	1.02	7	7.14	-0.86	1.22	7.07		7.21	-0.79	1.20	7.14	9	11	10.19	-0.81	10.12
	6465	103	#0	6	8	-	-	98.5	0.07	1.02	7	7.27	-0.73	1.18	7.20		7.67	-0.33	1.08	7.60	9	11	10.48	-0.52	10.41
	6545	119	#0	6	8	-	-	98.5	0.07	1.02	7	7.39	-0.61	1.15	7.32		6.77	-1.23	1.33	6.70	9	11	10.10	-0.90	10.03
	6625	135	#0	7	9	-	-	98.5	0.07	1.02	8	8.13	-0.87	1.22	8.06		7.80	-1.20	1.32	7.73	10	12	10.98	-1.02	10.91
	6705	151	#0	7	9	-	-	98.5	0.07	1.02	8	7.96	-1.04	1.27	7.89		8.30	-0.70	1.17	8.23	10	12	11.14	-0.86	11.07
	6785	167	#0	7	9	-	-	98.5	0.07	1.02	8	7.79	-1.21	1.32	7.72		7.92	-1.08	1.28	7.85	10	12	10.86	-1.14	10.79
	6865	183	#0	7	9	-	-	98.5	0.07	1.02	8	7.94	-1.06	1.28	7.87		7.79	-1.21	1.32	7.72	10	12	10.87	-1.13	10.80
	6945	199	#0	7	**9**	-	-	98.5	0.07	1.02	8	7.63	-1.37	1.37	7.56		7.69	-1.31	1.35	7.62	10	12	10.67	-1.33	10.60
	7025	215	#0	7	9	-	-	98.5	0.07	1.02	8	7.55	-1.45	1.40	7.48		7.52	-1.48	1.41	7.45	10	12	10.55	-1.45	10.48
11ax80 OFDMA CDD (2Tx-1ST)	5210	42	#0/996	4	6	0.9972	1.012	98.5	0.07	1.02	4	4.36	-1.64	1.46	4.29		4.62	-1.38	1.37	4.55	7	9	7.51	-1.49	7.44
	5290	58	#0/996	4	6	-	-	98.5	0.07	1.02	4	4.72	-1.28	1.34	4.65		4.92	-1.08	1.28	4.85	7	9	7.82	-1.18	7.75
	5530	106	#0/996	7	9	-	-	98.5	0.07	1.02	7	7.63	-1.37	1.37	7.56		8.01	-0.99	1.26	7.94	10	12	10.83	-1.17	10.76
	5775	155	#0/996	3	5	-	-	98.5	0.07	1.02	3	3.43	-1.57	1.44	3.36		4.11	-0.89	1.23	4.04	6	8	6.79	-1.21	6.72
	5985	7	#0/996	1	3	-	-	98.5	0.07	1.02	1	1.93	-1.07	1.28	1.86		2.01	-0.99	1.26	1.94	4	6	4.98	-1.02	4.91
	6145	39	#0/996	1	3	-	-	98.5	0.07	1.02	1	2.03	-0.97	1.25	1.96		2.30	-0.70	1.17	2.23	4	6	5.19	-0.81	5.12
	6225	55	#0/996	1	3	-	-	98.5	0.07	1.02	1	1.81	-1.19	1.32	1.74		2.35	-0.65	1.16	2.28	4	6	5.11	-0.89	5.04
	6385	87	#0/996	1	3	-	-	98.5	0.07	1.02	1	1.52	-1.48	1.41	1.45		1.67	-1.33	1.36	1.60	4	6	4.61	-1.39	4.54
	6465	103	#0/996	1	3	-	-	98.5	0.07	1.02	1	1.37	-1.63	1.46	1.30		2.57	-0.43	1.10	2.50	4	6	5.02	-0.98	4.95
	6545	119	#0/996	1	3	-	-	98.5	0.07	1.02	1	1.92	-1.08	1.28	1.85		1.55	-1.45	1.40	1.48	4	6	4.76	-1.24	4.69
	6625	135	#0/996	2	4	-	-	98.5	0.07	1.02	2	2.55	-1.45	1.40	2.48		2.33	-1.67	1.47	2.26	5	7	5.45	-1.55	5.38
	6705	151	#0/996	2	4	-	-	98.5	0.07	1.02	2	2.69	-1.31	1.35	2.62		2.88	-1.12	1.29	2.81	5	7	5.80	-1.20	5.73
	6785	167	#0/996	2	4	-	-	98.5	0.07	1.02	2	2.46	-1.54	1.43	2.39		2.58	-1.42	1.39	2.51	5	7	5.53	-1.47	5.46
	6865	183	#0/996	2	4	-	-	98.5	0.07	1.02	2	2.43	-1.57	1.44	2.36		2.38	-1.62	1.45	2.31	5	7	5.42	-1.58	5.35
	6945	199	#0/996	2	**4**	-	-	98.5	0.07	1.02	2	2.45	-1.55	1.43	2.38		2.31	-1.69	1.48	2.24	5	7	5.39	-1.61	5.32
	7025	215	#0/996	2	4	-	-	98.5	0.07	1.02	2	2.08	-1.92	1.56	2.01		2.61	-1.39	1.38	2.54	5	7	5.35	-1.65	5.28

Mode	Frequency		D/R or MCS Index# /RU (OFDMA)	Power spec. on each antenna		Duty cycle					Antenna 1 power					Antenna 2 power					SUM power (Antenna 1+2)				
				Typical	Max.	On time	1 cycle time	Duty cycle	duty factor	scaled factor	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	Set pwr.	Burst Ave.	Δ Max.	Tune-up factor	Time Ave.	SUM target	SUM max.	SUM Burst Ave.	Δ Max.	SUM Time Ave.
	[MHz]	CH		[dBm]	[dBm]	[ms]	[ms]	[%]	[dB]	[-]	[-]	[dBm]	[dB]	[-]	[dBm]	[-]	[dBm]	[dB]	[-]	[dBm]	[dBm]	[dBm]	[dBm]	[dB]	[dBm]
11ax80 OFDMA SDM (2TX-2ST)	5210	42	#0/996	4	6	0.9912	1.003	98.8	0.05	1.01	4	4.32	-1.68	1.47	4.27		4.52	-1.48	1.41	4.47	7	9	7.43	-1.57	7.38
	5290	58	#0/996	4	6	-	-	98.8	0.05	1.01	4	4.70	-1.30	1.35	4.65		4.90	-1.10	1.29	4.85	7	9	7.81	-1.19	7.76
	5530	106	#0/996	7	9	-	-	98.8	0.05	1.01	7	7.60	-1.40	1.38	7.55		8.01	-0.99	1.26	7.96	10	12	10.82	-1.18	10.77
	5775	155	#0/996	3	5	-	-	98.8	0.05	1.01	3	3.36	-1.64	1.46	3.31		4.06	-0.94	1.24	4.01	6	8	6.74	-1.26	6.69
	5985	7	#0/996	4	6	-	-	98.8	0.05	1.01	4	4.75	-1.25	1.33	4.70		4.63	-1.37	1.37	4.58	7	9	7.70	-1.30	7.65
	6145	39	#0/996	4	6	-	-	98.8	0.05	1.01	4	4.98	-1.02	1.26	4.93		5.10	-0.90	1.23	5.05	7	9	8.06	-0.94	8.01
	6225	55	#0/996	4	6	-	-	98.8	0.05	1.01	4	4.79	-1.21	1.32	4.74		5.05	-0.95	1.24	5.00	7	9	7.93	-1.07	7.88
	6385	87	#0/996	4	6	-	-	98.8	0.05	1.01	4	4.34	-1.66	1.47	4.29		4.47	-1.53	1.42	4.42	7	9	7.42	-1.58	7.37
	6465	103	#0/996	4	6	-	-	98.8	0.05	1.01	4	4.40	-1.60	1.45	4.35		5.36	-0.64	1.16	5.31	7	9	7.92	-1.08	7.87
	6545	119	#0/996	4	6	-	-	98.8	0.05	1.01	4	4.59	-1.41	1.38	4.54		4.73	-1.27	1.34	4.68	7	9	7.67	-1.33	7.62
	6625	135	#0/996	5	7	-	-	98.8	0.05	1.01	5	5.50	-1.50	1.41	5.45		5.20	-1.80	1.51	5.15	8	10	8.36	-1.64	8.31
	6705	151	#0/996	5	7	-	-	98.8	0.05	1.01	5	5.44	-1.56	1.43	5.39		5.60	-1.40	1.38	5.55	8	10	8.53	-1.47	8.48
	6785	167	#0/996	5	7	-	-	98.8	0.05	1.01	5	5.34	-1.66	1.47	5.29		5.34	-1.66	1.47	5.29	8	10	8.35	-1.65	8.30
	6865	183	#0/996	5	7	-	-	98.8	0.05	1.01	5	5.33	-1.67	1.47	5.28		5.60	-1.40	1.38	5.55	8	10	8.48	-1.52	8.43
	6945	199	#0/996	5	7	-	-	98.8	0.05	1.01	5	5.23	-1.77	1.50	5.18		5.59	-1.41	1.38	5.54	8	10	8.42	-1.58	8.37
	7025	215	#0/996	5	7	-	-	98.8	0.05	1.01	5	5.32	-1.68	1.47	5.27		5.60	-1.40	1.38	5.55	8	10	8.47	-1.53	8.42

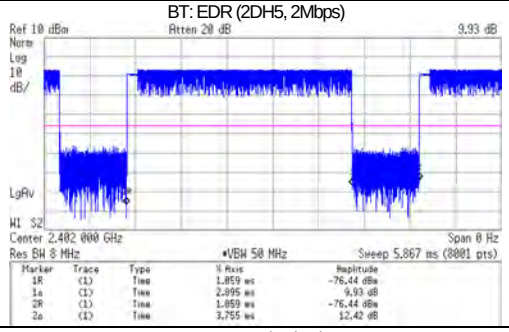
*. The power setting was adjusted so that measured average total power (SUM power) of antenna 1 and antenna 2 was not more than 2 dB lower than the maximum tune-up tolerance limit. (except Bluetooth.)
*. CH: Channel; Power spec.: Power specification; Max.: Maximum; Set pwr.: Setting power by tested software; Burst Ave.: Burst average power; Time Ave.: Time-based average power; SUM Ave.: Sum average power of two antennas; ST: Stream, Tx: Transmit.

*. Calculating formula: Time average power (dBm) = (P/M Reading, dBm)+(Cable loss, dB)+(Attenuator, dB)
Burst power (dBm) = (P/M Reading, dBm)+(Cable loss, dB)+(Attenuator, dB)+(duty factor, dB)
Duty cycle: (duty cycle, %) = (Tx on time) / (1 cycle time) × 100, 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 Max. (Deviation form max. power, dB) = (Burst power measured (average, dBm)) - (Max.tune-up limit power (average, dBm))
Tune-up factor: Power tune-up factor for obtained SAR value, Tune-up factor [-] = 1 / (10 ^ ("Deviation from max., dB" / 10))
*. Date measured: December 6~11, 2023 / Measured by: H. Naka/ Place: Preparation room of No. 7 shield room. (24 deg.C./ (40~45) %RH)
*. Date measured: February 7, 2024 (11a-6GHz, 11ax low power) / Measured by: H. Naka/ Place: Preparation room of No. 7 shield room. (23 deg.C./ 35 %RH)
*. Uncertainty of antenna port conducted test; (±) 0.81 dB (Average power), (±) 0.27 % (duty cycle).
*. Chart of the duty cycle for Bluetooth (lower than 85 %) in below. The duty cycle of WLAN operation was more than 95 %.

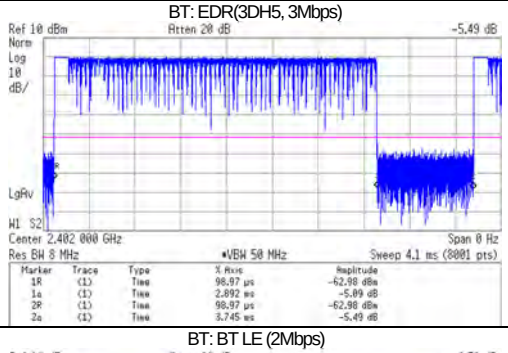
BT: BR(DH5, 1Mbps)



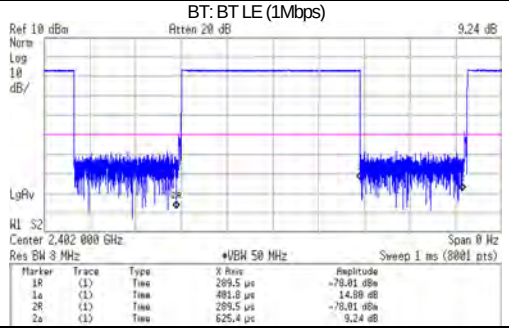
BT: EDR (2DH5, 2Mbps)



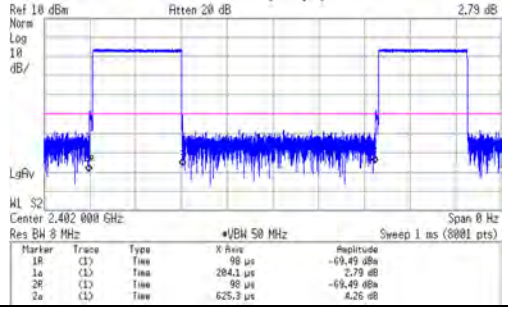
BT: EDR(3DH5, 3Mbps)



BT: BT LE (1Mbps)



BT: BT LE (2Mbps)



SECTION 6: Tissue simulating liquid

6.1 Liquid measurement

Frequency [MHz]	Liquid type	Liquid parameters												ΔSAR Coefficients (*a)			Date measured
				Permittivity (εr) [-]					Conductivity [S/m]					Interpolated ? ☐: No ☑: Yes	ΔSAR		
					Measured (*3)					Measured (*3)					1g [%]	10g [%]	ΔSAR correct Required?	
		Liquid Temp. [deg.C.]	Liquid depth of phantom [mm]	Target value	Value	Δεr [%]	Limit [%]	Δend, >48hrs. (*1)	Target value	Value	Δσ [%]	Limit [%]	Δend, >48hrs. (*1)					
2450 (*2)	Head	22.0	150	**39.2**	39.45	0.6	10	reference	**1.80**	1.859	3.3	10	reference	☐	1.1	0.6	no	2024-03-04, before test.
5250(*2)	Head	22.0	150	**35.93**	34.64	-3.6	10	reference	**4.706**	4.558	-3.1	10	reference	☐	0.6	0.9	no	
5600(*2)	Head	22.0	150	**35.53**	34.04	-4.2	10	reference	**5.065**	4.946	-2.3	10	reference	☐	0.7	0.9	no	
5800(*2)	Head	22.0	150	**35.3**	33.69	-4.6	10	reference	**5.27**	5.180	-1.7	10	reference	☐	0.8	0.9	no	
2450(*2)	Head	22.0	150	**39.2**	39.29	0.2	10	-0.4%	**1.80**	1.837	2.1	10	-1.2%	☐	1.3	0.7	no	2024-03-06, +48 hrs. from 03-04 (initial measured).
5250(*2)	Head	22.0	150	**35.93**	34.73	-3.3	10	0.2%	**4.706**	4.496	-4.5	10	-1.4%	☐	0.7	1.0	no	
5600(*2)	Head	22.0	150	**35.53**	34.14	-3.9	10	0.3%	**5.065**	4.879	-3.7	10	-1.4%	☐	0.8	1.0	no	
5800(*2)	Head	22.0	150	**35.3**	33.82	-4.2	10	0.4%	**5.27**	5.102	-3.2	10	-1.5%	☐	0.9	1.1	no	
2450(*2)	Head	22.0	150	**39.2**	39.22	0.0	10	-0.6%	**1.80**	1.853	2.9	10	-0.3%	☐	1.7	0.9	no	2024-03-07, end of test period.
5250(*2)	Head	22.0	150	**35.93**	34.58	-3.8	10	-0.2%	**4.706**	4.499	-4.4	10	-1.3%	☐	0.7	1.0	no	
5600(*2)	Head	22.0	150	**35.53**	34.01	-4.3	10	-0.1%	**5.065**	4.881	-3.6	10	-1.3%	☐	0.8	1.0	no	
5800(*2)	Head	22.0	150	**35.3**	33.67	-4.6	10	-0.1%	**5.27**	5.105	-3.1	10	-1.4%	☐	0.9	1.1	no	
6500(*2)	Head	22.0	150	**34.5**	32.50	-5.8	10	begin	**6.07**	5.945	-2.1	10	begin	☐	1.1	1.5	no	2024-03-11, before test.
2402	Head	22.0	150	**39.29**	39.52	0.6	10	> 48 hrs.	**1.757**	1.817	3.4	10	> 48 hrs.	☐	1.5	0.8	no	2024-03-04, before test. There were used until 2024-03-07 with re-monitored every 48 hrs. (The deviation from the first time was less than 2 %.)
2412				**39.27**	39.50	0.6	10	> 48 hrs.	**1.766**	1.825	3.3	10	> 48 hrs.	☐	1.5	0.8	no	
2437				**39.22**	39.46	0.6	10	> 48 hrs.	**1.788**	1.847	3.3	10	> 48 hrs.	☐	1.5	0.8	no	
2440				**39.22**	39.46	0.6	10	> 48 hrs.	**1.791**	1.850	3.3	10	> 48 hrs.	☐	1.5	0.8	no	
2441				**39.22**	39.45	0.6	10	> 48 hrs.	**1.792**	1.851	3.3	10	> 48 hrs.	☐	1.5	0.8	no	
2462				**39.19**	39.43	0.6	10	> 48 hrs.	**1.813**	1.867	3.0	10	> 48 hrs.	☐	1.3	0.7	no	
2480				**39.16**	39.40	0.6	10	> 48 hrs.	**1.833**	1.881	2.6	10	> 48 hrs.	☐	1.1	0.6	no	
5180				**36.01**	34.77	-3.5	10	> 48 hrs.	**4.635**	4.484	-3.3	10	> 48 hrs.	☐	0.8	1.1	no	
5190				**36.00**	34.75	-3.5	10	> 48 hrs.	**4.645**	4.495	-3.2	10	> 48 hrs.	☐	0.8	1.1	no	
5210				**35.97**	34.71	-3.5	10	> 48 hrs.	**4.665**	4.516	-3.2	10	> 48 hrs.	☐	0.8	1.1	no	
5220				**35.96**	34.69	-3.5	10	> 48 hrs.	**4.676**	4.526	-3.2	10	> 48 hrs.	☐	0.8	1.1	no	
5230				**35.95**	34.68	-3.5	10	> 48 hrs.	**4.686**	4.536	-3.2	10	> 48 hrs.	☐	0.8	1.1	no	
5240				**35.94**	34.66	-3.6	10	> 48 hrs.	**4.696**	4.547	-3.2	10	> 48 hrs.	☐	0.8	1.1	no	
5260				**35.92**	34.62	-3.6	10	> 48 hrs.	**4.717**	4.570	-3.1	10	> 48 hrs.	☐	0.8	1.1	no	
5270				**35.91**	34.61	-3.6	10	> 48 hrs.	**4.727**	4.582	-3.1	10	> 48 hrs.	☐	0.8	1.1	no	
5290				**35.88**	34.57	-3.6	10	> 48 hrs.	**4.747**	4.605	-3.0	10	> 48 hrs.	☐	0.8	1.1	no	
5300				**35.87**	34.56	-3.7	10	> 48 hrs.	**4.758**	4.617	-3.0	10	> 48 hrs.	☐	0.8	1.1	no	
5310				**35.86**	34.54	-3.7	10	> 48 hrs.	**4.768**	4.627	-3.0	10	> 48 hrs.	☐	0.8	1.1	no	
5320				**35.85**	34.53	-3.7	10	> 48 hrs.	**4.778**	4.639	-2.9	10	> 48 hrs.	☐	0.8	1.1	no	
5500				**35.64**	34.21	-4.0	10	> 48 hrs.	**4.963**	4.833	-2.6	10	> 48 hrs.	☐	0.9	1.2	no	
5510				**35.63**	34.20	-4.0	10	> 48 hrs.	**4.973**	4.845	-2.6	10	> 48 hrs.	☐	0.9	1.2	no	
5530				**35.95**	34.68	-3.5	10	> 48 hrs.	**4.686**	4.536	-3.2	10	> 48 hrs.	☐	0.8	1.1	no	
5550				**35.59**	34.13	-4.1	10	> 48 hrs.	**5.014**	4.890	-2.5	10	> 48 hrs.	☐	0.9	1.2	no	
5580				**35.55**	34.08	-4.1	10	> 48 hrs.	**5.045**	4.923	-2.4	10	> 48 hrs.	☐	0.9	1.2	no	
5670				**35.45**	33.91	-4.3	10	> 48 hrs.	**5.137**	5.029	-2.1	10	> 48 hrs.	☐	1.0	1.2	no	
5700				**35.41**	33.87	-4.4	10	> 48 hrs.	**5.168**	5.063	-2.0	10	> 48 hrs.	☐	1.0	1.2	no	
5745				**35.36**	33.80	-4.4	10	> 48 hrs.	**5.214**	5.109	-2.0	10	> 48 hrs.	☐	1.0	1.2	no	
5755				**35.35**	33.78	-4.5	10	> 48 hrs.	**5.224**	5.118	-2.0	10	> 48 hrs.	☐	1.0	1.2	no	
5775				**35.33**	33.72	-4.5	10	> 48 hrs.	**5.244**	5.145	-1.9	10	> 48 hrs.	☐	1.0	1.2	no	
5785				**35.32**	33.70	-4.6	10	> 48 hrs.	**5.255**	5.159	-1.8	10	> 48 hrs.	☐	1.0	1.2	no	
5795				**35.31**	33.69	-4.6	10	> 48 hrs.	**5.265**	5.174	-1.7	10	> 48 hrs.	☐	1.0	1.2	no	
5825				**35.27**	33.68	-4.5	10	> 48 hrs.	**5.296**	5.210	-1.6	10	> 48 hrs.	☐	1.0	1.2	no	
5985	Head	22.0	150	**35.09**	33.38	-4.9	10	begin	**5.460**	5.351	-2.0	10	begin	☐	1.1	1.3	no	2024-03-11, before test.
6225				**34.78**	32.95	-5.3	10	begin	**5.756**	5.637	-2.1	10	begin	☐	1.0	1.3	no	
6465				**34.50**	32.54	-5.7	10	begin	**6.032**	5.910	-2.0	10	begin	☐	1.1	1.4	no	
6705				**34.22**	32.12	-6.1	10	begin	**6.308**	6.193	-1.8	10	begin	☐	1.2	1.5	no	
7025				**33.85**	31.61	-6.6	10	begin	**6.679**	6.548	-2.0	10	begin	☐	1.3	1.7	no	

*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

*2. These frequencies were for system check.

*3. The electrical properties of the liquid at <6 GHz were controlled to within 5% even with a limit of 10%.

*. The dielectric parameters were checked prior to assessment using the DAK-3.5 dielectric probe.

*. The target values refers to clause 6.2 of this report.

*a. The coefficients in below are parameters defined in IEEE Std.1528-2013 (≤ 6GHz), in IEC/IEEE 62209-1528:2020 (> 6 GHz).
(Calculating formula,4 MHz~6 GHz): $\Delta SAR(1g) = C\varepsilon r \times \Delta\varepsilon r + C\sigma \times \Delta\sigma$, $C\varepsilon = -7.854E\text{-}4 \times f^3 + 9.402E\text{-}3 \times f^2 - 2.742E\text{-}2 \times f + 0.2026$ / $C\sigma = 9.804E\text{-}3 \times f^3 - 8.661E\text{-}2 \times f^2 + 2.981E\text{-}2 \times f + 0.7829$
$\Delta SAR(10g) = C\varepsilon r \times \Delta\varepsilon r + C\sigma \times \Delta\sigma$, $C\varepsilon = 3.456 \times 10^{-3} \times f^3 - 3.531 \times 10^{-2} \times f^2 + 7.675 \times 10^{-2} \times f + 0.1860$ / $C\sigma = 4.479 \times 10^{-3} \times f^3 - 1.586 \times 10^{-2} \times f^2 + 0.1972 \times f + 0.7717$
(Calculating formula, above 6GHz): $\Delta SAR(1g) = C\varepsilon r \times \Delta\varepsilon r + C\sigma \times \Delta\sigma$, $C\varepsilon = -0.198$ / $C\sigma = 0$, $\Delta SAR(10g) = C\varepsilon r \times \Delta\varepsilon r + C\sigma \times \Delta\sigma$, $C\varepsilon = -0.250$ / $C\sigma = 0$
(Calculating formula): ΔSAR corrected SAR (W/kg) = (Measured SAR (W/kg)) × (100 - (ΔSAR(%)) / 100
Since the calculated ΔSAR values of the tested liquid had shown positive correction, the measured SAR was not converted by ΔSAR correction conservatively.

6.2 Target of TSL (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

*. For other frequencies, the target nominal dielectric values were obtained by linear interpolation between the higher and lower tabulated figures. Above 5800MHz were obtained using linear extrapolation.

For above 6000 MHz, nominal dielectric values of the TSL (head) in the phantom refer to the following table. (Table 2, IEC/IEEE 62209-1528)

Frequency (MHz)	Real part of the complex relative permittivity, ε_r	Conductivity, σ(S/m)	Value of Interpolated (I/P), Extrapolated (E/P)	Frequency (MHz)	Real part of the complex relative permittivity, ε_r	Conductivity, σ(S/m)	Value of Interpolated (I/P), Extrapolated (E/P)
2000	**40.0**	**1.40**	☐	*5400*	*35.8*	*4.86*	☑ (I/P)
2100	*39.8*	*1.49*	☑ (I/P)	*5600*	*35.5*	*5.07*	☑ (I/P)
2450	**39.2**	**1.80**	☐	**5800**	**35.3**	**5.27**	☐
2600	*39.0*	*1.96*	☑ (I/P)	*6000*	*35.1*	*5.48*	☑ (E/P)
3000	**38.5**	**2.40**	☐	*6500*	*34.5*	*6.07*	☑ (E/P)
5000	*36.2*	*4.45*	☑ (I/P)	*7000*	*33.9*	*6.65*	☑ (E/P)
5200	*36.0*	*4.66*	☑ (I/P)	*7500*	*33.3*	*7.24*	☑ (E/P)

NOTE: For convenience, permittivity and conductivity values are linearly interpolated for frequencies that are not a part of the original data from Drossos et al (*2). The italicized values (with checked mark ☑ of "Value of Interpolated (I/P), Extrapolated (E/P)" column) were linearly interpolated between the non-italicized (below 5800 MHz) or extrapolated (above 5800 MHz) from the non-italicized values that are immediately above and below these values.

*2. Drossos, A., Santomaa, V., and Kuster, N., "The dependence of electromagnetic energy absorption upon human head tissue composition in the frequency range of 300-3000 MHz," IEEE Trans. Microwave Theory Tech., Nov. 2000, vol. 48, no. 11, pp. 1988–1995.

6.3 Simulated tissue composition

Liquid type	Head	Control No.	SSLHV6-01	Model No. / Product No.	HBBL600-10000V6 / SL AAH U16 BC
Ingredient: Mixture [%]	Water: >77, Ethanediol: <5.2, Sodium petroleum sulfonate:<2.9, Hexylene Glycol: <2.9, alkoxylated alcohol (>C_{16}):<2.0				
Tolerance specification	± 10%				
Temperature gradients [% / deg.C]	permittivity: -0.19 / conductivity: -0.57 (at 2.6 GHz), permittivity: +0.31 / conductivity: -1.43 (at 5.5 GHz) (*)				
Manufacture	Schmid & Partner Engineering AG		Note: *. speag_920-SLAAxyy-E_1.12.15CL (Maintenance of tissue simulating liquid)		

SECTION 7: Measurement results

7.1 Measurement results

7.1.1 SAR measurement results (2.4 GHz band)

Test setup			Mode and Frequency			Duty cycle		Power correction			SAR results [W/kg] (Max.value of multi-peak)						SAR plot # in Appx. 2	Setup photo# in Appx. 1-3	ΣSAR 1g [W/kg] (SPLSR, Limit: < 0.04) (*c)	Memo
Ant.	Test position	Gap [mm]	Mode (D/R) Mark with "*" is the initial WLAN test mode	[MHz]	CH	Duty cycle [%]	Duty scaled factor	Max. tune-up limit [dBm]	Measured conducted [dBm]	Power scaled (tune-up) factor	Measured SAR	ΔSAR [%]	ΔSAR corrected	**Reported SAR (*b)**	SAR type	Limit				
1	Front	0	BR (DH5)	2402	0	77.0	1.30	6	4.98	1.26	0.040	+sign	N/A (*a)	**0.066**	1g	1.6	-	S1	-	-
1				2441	39	77.0	1.30	6	5.15	1.22	0.061	+sign	N/A (*a)	**0.097**	1g	1.6	1-3	S1	-	-
1				2480	78	77.0	1.30	6	4.71	1.35	0.049	+sign	N/A (*a)	**0.086**	1g	1.6	-	S1	-	-
1	Front	0	BT LE (1Mbps)	2440	19	64.2	1.56	6	5.00	1.26	0.047	+sign	N/A (*a)	**0.092**	1g	1.6	-	S1	-	-
1	Top	0	BR (DH5)	2441	39	77.0	1.30	6	5.15	1.22	0.030	+sign	N/A (*a)	**0.048**	1g	1.6	-	S2		
1	Front	0	11b* (1Mbps, CDD)	2412	1	99.2	1.01	10	8.87	1.30	0.168	+sign	N/A (*a)	**0.221**	1g	1.6	-	S1	**0.221**	-
2									8.86	1.30	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11b* (1Mbps, CDD)	2437	6	99.2	1.01	10	8.70	1.35	0.221	+sign	N/A (*a)	**0.301**	1g	1.6	-	S1	**0.301**	-
2									8.61	1.38	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11b* (1Mbps, CDD)	2462	11	99.2	1.01	10	8.61	1.38	0.267	+sign	N/A (*a)	**0.372**	1g	1.6	1-1	S1	**0.372**	-
2									8.22	1.51	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20 (MCS0, SDM)	2412	1	98.3	1.02	10	9.01	1.26	0.179	+sign	N/A (*a)	**0.230**	1g	1.6	-	S1	**0.230**	-
2									9.37	1.16	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20 (MCS0, SDM)	2437	6	98.3	1.02	10	8.83	1.31	0.224	+sign	N/A (*a)	**0.299**	1g	1.6	-	S1	**0.299**	-
2									8.96	1.27	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20 (MCS0, SDM)	2462	11	98.3	1.02	10	8.87	1.30	0.256	+sign	N/A (*a)	**0.339**	1g	1.6	-	S1	**0.339**	-
2									8.79	1.32	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	2412	1	98.2	1.02	10	8.78	1.32	0.173	+sign	N/A (*a)	**0.233**	1g	1.6	-	S1	**0.233**	OFDMA
2									9.30	1.17	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	2437	6	98.2	1.02	10	8.70	1.35	0.222	+sign	N/A (*a)	**0.306**	1g	1.6	-	S1	**0.306**	OFDMA
2									9.09	1.23	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	2462	11	98.2	1.02	10	8.47	1.42	0.245	+sign	N/A (*a)	**0.355**	1g	1.6	-	S1	**0.355**	OFDMA
2									8.52	1.41	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1	Top	0	11b* (1Mbps, CDD)	2412	1	99.2	1.01	10	8.87	1.30	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.219**	-
2									8.86	1.30	0.167		N/A (*a)	**0.219**	1g	1.6			(-)	
1			11b* (1Mbps, CDD)	2437	6	99.2	1.01	10	8.70	1.35	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.297**	-
2									8.61	1.38	0.213		N/A (*a)	**0.297**	1g	1.6			(-)	
1			11b* (1Mbps, CDD)	2462	11	99.2	1.01	10	8.61	1.38	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.339**	-
2									8.22	1.51	0.222		N/A (*a)	**0.3386**	1g	1.6			(-)	
1			11ax20 (MCS0, SDM)	2412	1	98.3	1.02	10	9.01	1.26	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.212**	-
2									9.37	1.16	0.179		N/A (*a)	**0.212**	1g	1.6			(-)	
1			11ax20 (MCS0, SDM)	2437	6	98.3	1.02	10	8.83	1.31	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.254**	-
2									8.96	1.27	0.196		N/A (*a)	**0.254**	1g	1.6			(-)	
1			11ax20 (MCS0, SDM)	2462	11	98.3	1.02	10	8.87	1.30	N/D	+sign	N/A (*a)	N/D	1g	1.6	1-2	S2	**0.339**	-
2									8.79	1.32	0.252		N/A (*a)	**0.3393**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	2412	1	98.2	1.02	10	8.78	1.32	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.221**	OFDMA
2									9.30	1.17	0.185		N/A (*a)	**0.221**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	2437	6	98.2	1.02	10	8.70	1.35	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.252**	OFDMA
2									9.09	1.23	0.201		N/A (*a)	**0.252**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	2462	11	98.2	1.02	10	8.47	1.42	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.335**	OFDMA
2									8.52	1.41	0.233		N/A (*a)	**0.335**	1g	1.6			(-)	
1	Top -Left	0	11b* (1Mbps, CDD)	2437	6	99.2	1.01	10	8.70	1.35	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S3	**0.091**	-
2									8.61	1.38	0.065		N/A (*a)	**0.091**	1g	1.6			(-)	
1	Top -Right	0	11b* (1Mbps, CDD)	2437	6	99.2	1.01	10	8.70	1.35	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S4	**0.102**	-
2									8.61	1.38	0.073		N/A (*a)	**0.102**	1g	1.6			(-)	
1	Back	0	11b* (1Mbps, CDD)	2437	6	99.2	1.01	10	8.70	1.35	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									8.61	1.38	N/A		N/A (*a)	N/A	1g	1.6				
1	Bottom	0	11b* (1Mbps, CDD)	2437	6	99.2	1.01	10	8.70	1.35	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									8.61	1.38	N/A		N/A (*a)	N/A	1g	1.6				

*. The highest Reported (scaled) SAR on each antenna is marked with yellow marker (x.xxx), respectively.
*. N/D: No peak SAR was observed for the corresponding antenna in the area scan. Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.
*****. Appx. Appendix; D: Antenna separation distance between antennas; Gap: It is separation distance between the device surface and the bottom outer surface of phantom.
*. Before SAR test, the battery was full charged. During SAR test, the radiated power is always monitored by Spectrum Analyzer or/and MAIA.
*. (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 [-] (b)/(a)×100	DSSS worst reported SAR(1g) value			**Estimated SAR value: OFDM [W/kg]**	Exclusion limit [W/kg]	Standalone SAR test of OFDM mode require?
	DSSS		OFDM			Antenna	Setup	[W/kg]			
	[dBm]	[mW] (a)	[dBm]	[mW] (b)							
11g	10	10	10	10	1.00	1	Front	0.372	**0.37**	**≤ 1.2**	**No**
						2	Top	0.339	**0.34**	**≤ 1.2**	**No**
11n20 (CDD,SDM)	10	10	10	10	1.00	1	Front	0.372	**0.37**	**≤ 1.2**	**No**
						2	Top	0.339	**0.34**	**≤ 1.2**	**No**
11ax20 (CDD,SDM)	10	10	10	10	1.00	1	Front	0.372	**0.37**	**≤ 1.2**	**No**
						2	Top	0.339	**0.34**	**≤ 1.2**	**No**

*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: Reported (Scaled) SAR (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)
where, Duty scaled factor [-] = 100(%) / (measured duty cycle, %), Power scaled factor [-] = 10 ^ (((Max.power, dBm) - (Measured power, dBm)) / 10)
*c. Calculating formula: ΣSAR1g (W/kg) = Reported SAR1g "ant.1" + "ant.2", SPLSR(limit: ≤ 0.04) = (ΣSAR1g)^1.5 / (antenna separation distance, mm) (when ΣSAR1g: >1.6 W/kg)
*. 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: ± 5%)

Liquid	SAR test frequency	Probe calibration frequency	Validity	Conversion factor (X,Y,Z)	Uncertainty
Head	(2402, 2412, 2437, 2440, 2441, 2462, 2480) MHz	2450 MHz	within ± 50 MHz of calibration frequency	6.83, 7.07, 6.68	± 12.0 %

7.1.2 SAR measurement results (WLAN 5.3 GHz band and WLAN 5.2 GHz band)

Test setup			Mode and Frequency			Duty cycle		Power correction			SAR results [W/kg] (Max.value of multi-peak)						SAR plot # in Appx. 2	Setup photo# in Appx. 1-3	ΣSAR 1g [W/kg] (SPLSR, Limit: < 0.04) (*c)	Memo
Ant.	Test position	Gap [mm]	Mode (D/R) Mark with "*" is the initial WLAN test mode	[MHz]	CH	Duty cycle [%]	Duty scaled factor	Max. tune-up limit [dBm]	Measured conducted [dBm]	Power scaled (tune-up) factor	Measured SAR	ΔSAR [%]	ΔSAR corrected	Reported SAR (*b)	SAR type	Limit				
a) WLAN 5.3 GHz band																				
1	Front	0	11ac80 (MCS0, CDD)	5290	58	98.5	1.02	8	6.68	1.36	0.288	+sign	N/A (*a)	**0.400**	1g	1.6	-	S1	**0.400**	-
2									7.22	1.20	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax80 (MCS0, CDD)	5290	58	98.6	1.01	8	6.60	1.38	0.277	+sign	N/A (*a)	**0.386**	1g	1.6	-	S1	**0.386**	-
2									7.09	1.23	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5260	52	98.5	1.02	8	6.27	1.49	0.298	+sign	N/A (*a)	**0.453**	1g	1.6	2a-2	S1	**0.453**	OFDMA
2									6.35	1.46	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5300	60	98.5	1.02	8	6.45	1.43	0.259	+sign	N/A (*a)	**0.378**	1g	1.6	-	S1	**0.378**	OFDMA
2									6.61	1.38	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5320	64	98.5	1.02	8	6.20	1.51	0.234	+sign	N/A (*a)	**0.360**	1g	1.6	-	S1	**0.360**	OFDMA
2									6.48	1.42	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1	Top	0	11ac80 (MCS0, SDM)	5290	58	98.6	1.01	8	6.68	1.36	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.455**	-
2									7.22	1.20	0.375		N/A (*a)	**0.455**	1g	1.6			(-)	
1			11ax80 (MCS0, SDM)	5290	58	98.6	1.01	8	6.67	1.36	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.457**	-
2									7.07	1.24	0.365		N/A (*a)	**0.457**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5260	52	98.5	1.02	8	6.27	1.49	N/D	+sign	N/A (*a)	N/D	1g	1.6	2a-1	S2	**0.512**	OFDMA
2									6.35	1.46	0.344		N/A (*a)	**0.512**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5300	60	98.5	1.02	8	6.45	1.43	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.455**	OFDMA
2									6.61	1.38	0.323		N/A (*a)	**0.455**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5320	64	98.5	1.02	8	6.20	1.51	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.430**	OFDMA
2									6.48	1.42	0.297		N/A (*a)	**0.430**	1g	1.6			(-)	
1	Top -Left	0	11ac80 (MCS0, SDM)	5290	58	98.6	1.01	8	6.68	1.36	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S3	**0.103**	-
2									7.22	1.20	0.085		N/A (*a)	**0.103**	1g	1.6			(-)	
1	Top -Right	0	11ac80 (MCS0, SDM)	5290	58	98.6	1.01	8	6.68	1.36	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S4	**0.205**	-
2									7.22	1.20	0.169		N/A (*a)	**0.205**	1g	1.6			(-)	
1	Back	0	11ac80 (MCS0, SDM)	5290	58	98.6	1.01	8	6.68	1.36	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									7.22	1.20	N/A		N/A (*a)	N/A	1g	1.6				
1	Bottom	0	11ac80 (MCS0, SDM)	5290	58	98.6	1.01	8	6.68	1.36	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									7.22	1.20	N/A		N/A (*a)	N/A	1g	1.6				
b) WLAN 5.2 GHz band																				
1	Front	0	11ac80 (MCS0, CDD)	5210	42	98.5	1.02	8	6.38	1.45	0.320	+sign	N/A (*a)	**0.473**	1g	1.6	-	S1	**0.473**	-
2									7.03	1.25	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax80 (MCS0, CDD)	5210	42	98.6	1.01	8	6.20	1.51	0.287	+sign	N/A (*a)	**0.438**	1g	1.6	-	S1	**0.438**	-
2									7.03	1.25	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5180	36	98.5	1.02	8	6.11	1.55	0.332	+sign	N/A (*a)	**0.525**	1g	1.6	2b-2	S1	**0.525**	OFDMA
2									6.41	1.44	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5220	44	98.5	1.02	8	6.18	1.52	0.297	+sign	N/A (*a)	**0.460**	1g	1.6	-	S1	**0.460**	OFDMA
2									6.50	1.41	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5240	48	98.5	1.02	8	6.06	1.56	0.291	+sign	N/A (*a)	**0.463**	1g	1.6	-	S1	**0.463**	OFDMA
2									6.49	1.42	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1	Top	0	11ac80 (MCS0, SDM)	5210	42	98.6	1.01	8	6.38	1.45	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.451**	-
2									7.11	1.23	0.363		N/A (*a)	**0.451**	1g	1.6			(-)	
1			11ax80 (MCS0, SDM)	5210	42	98.5	1.02	8	6.23	1.50	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.472**	-
2									7.05	1.24	0.373		N/A (*a)	**0.472**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5180	36	98.5	1.02	8	6.11	1.55	N/D	+sign	N/A (*a)	N/D	1g	1.6	2b-1	S2	**0.571**	OFDMA
2									6.41	1.44	0.389		N/A (*a)	**0.571**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5220	44	98.5	1.02	8	6.18	1.52	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.555**	OFDMA
2									6.50	1.41	0.386		N/A (*a)	**0.555**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5240	48	98.5	1.02	8	6.06	1.56	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.552**	OFDMA
2									6.49	1.42	0.381		N/A (*a)	**0.552**	1g	1.6			(-)	

*. The highest Reported (scaled) SAR on each antenna is marked with yellow marker (x.xxx), respectively.
*. N/D: No peak SAR was observed for the corresponding antenna in the area scan. Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.
*****. Appx. Appendix; D: Antenna separation distance between antennas; Gap: It is separation distance between the device surface and the bottom outer surface of phantom.
*. Before SAR test, the battery was full charged. During SAR test, the radiated power is always monitored by Spectrum Analyzer or/and MAIA.

*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: Reported (Scaled) SAR (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)
where, Duty scaled factor [-] = 100(%) / (measured duty cycle, %), Power scaled factor [-] = 10 ^ (((Max.power, dBm) - (Measured power, dBm)) / 10)
*c. Calculating formula: ΣSAR1g (W/kg) = Reported SAR1g "ant.1" + "ant.2", SPLSR(limit: ≤ 0.04) = (ΣSAR1g)^1.5 / (antenna separation distance, mm) (when ΣSAR1g: >1.6 W/kg)
*. 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: ± 5%)

Liquid	SAR test frequency	Probe calibration frequency	Validity	Conversion factor (X,Y,Z)	Uncertainty
Head	(5260, 5290, 5300, 5320) MHz	5250 MHz	within ± 110MHz of calibration frequency	5.47, 5.16, 5.18	± 13.1 %
Head	(5180, 5210, 5220, 5240) MHz	5250 MHz	within ± 110MHz of calibration frequency	5.47, 5.16, 5.18	± 13.1 %

7.1.3 SAR measurement results (WLAN 5.6 GHz band)

Test setup			Mode and Frequency			Duty cycle		Power correction	SAR results [W/kg] (Max.value of multi-peak)								SAR plot # in Appx. 2	Setup photo# in Appx. 1-3	ΣSAR 1g [W/kg] (SPLSR, Limit: < 0.04) (*c)	Memo
Ant.	Test position	Gap [mm]	Mode (D/R) Mark with "*" is the initial WLAN test mode	[MHz]	CH	Duty cycle [%]	Duty scaled factor	Max. tune-up limit [dBm]	Measured conducted [dBm]	Power scaled (tune-up) factor	Measured SAR	ΔSAR [%]	ΔSAR corrected	Reported SAR (*b)	SAR type	Limit				
1	Front	0	11ac80 (MCS0, CDD)	5530	106	98.5	1.02	10	8.04	1.57	0.402	+sign	N/A (*a)	**0.644**	1g	1.6	-	S1	**0.644**	-
2									8.34	1.47	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ac80 (MCS0, SDM)	5530	106	98.6	1.01	10	8.09	1.55	0.377	+sign	N/A (*a)	**0.590**	1g	1.6	-	S1	**0.590**	-
2									8.46	1.43	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax80 (MCS0, CDD)	5530	106	98.6	1.01	10	8.02	1.58	0.384	+sign	N/A (*a)	**0.613**	1g	1.6	-	S1	**0.613**	-
2									8.25	1.50	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax80 (MCS0, SDM)	5530	106	98.5	1.02	10	8.03	1.57	0.414	+sign	N/A (*a)	**0.663**	1g	1.6	-	S1	**0.663**	-
2									8.30	1.48	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11n40 (MCS8, SDM)	5510	102	98.5	1.02	10	8.14	1.53	0.395	+sign	N/A (*a)	**0.616**	1g	1.6	-	S1	**0.616**	-
2									8.49	1.42	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11n40 (MCS8, SDM)	5550	110	98.5	1.02	10	8.19	1.52	0.433	+sign	N/A (*a)	**0.671**	1g	1.6	-	S1	**0.671**	-
2									8.55	1.40	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11n40 (MCS8, SDM)	5670	134	98.5	1.02	10	8.02	1.58	0.500	+sign	N/A (*a)	**0.806**	1g	1.6	-	S1	**0.806**	-
2									8.72	1.34	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax40/OFDMA (RU484-65) (MCS0,SDM)	5510	102	98.6	1.01	10	8.15	1.53	0.432	+sign	N/A (*a)	**0.668**	1g	1.6	-	S1	**0.668**	OFDMA
2									8.82	1.31	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax40/OFDMA (RU484-65) (MCS0,SDM)	5550	110	98.6	1.01	10	8.14	1.53	0.464	+sign	N/A (*a)	**0.717**	1g	1.6	-	S1	**0.717**	OFDMA
2									8.99	1.26	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax40/OFDMA (RU484-65) (MCS0,SDM)	5670	134	98.6	1.01	10	8.28	1.49	0.557	+sign	N/A (*a)	**0.838**	1g	1.6	-	S1	**0.838**	OFDMA
2									9.08	1.24	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11a (6Mbps, CDD)	5500	100	98.5	1.02	10	7.91	1.62	0.397	+sign	N/A (*a)	**0.656**	1g	1.6	-	S1	**0.656**	-
2									8.34	1.47	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11a (6Mbps, CDD)	5580	116	98.5	1.02	10	7.92	1.61	0.499	+sign	N/A (*a)	**0.819**	1g	1.6	-	S1	**0.819**	-
2									8.51	1.41	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11a (6Mbps, CDD)	5700	140	98.5	1.02	10	7.82	1.65	0.510	+sign	N/A (*a)	**0.858**	1g	1.6	-	S1	**0.858**	-
2									8.44	1.43	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5500	100	98.5	1.02	10	8.09	1.55	0.436	+sign	N/A (*a)	**0.689**	1g	1.6	-	S1	**0.689**	OFDMA
2									8.75	1.33	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5580	116	98.5	1.02	10	8.24	1.50	0.531	+sign	N/A (*a)	**0.812**	1g	1.6	-	S1	**0.812**	OFDMA
2									8.75	1.33	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5700	140	98.5	1.02	10	8.18	1.52	0.580	+sign	N/A (*a)	**0.899**	1g	1.6	3-1	S1	**0.899**	OFDMA
2									8.66	1.36	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1	Top	0	11ac80 (MCS0, CDD)	5530	106	98.5	1.02	10	8.04	1.57	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.399**	-
2									8.34	1.47	0.246		N/A (*a)	**0.369**	1g	1.6			(-)	
1			11ac80 (MCS0, SDM)	5530	106	98.6	1.01	10	8.09	1.55	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.400**	-
2									8.46	1.43	0.277		N/A (*a)	**0.400**	1g	1.6			(-)	
1			11ax80 (MCS0, SDM)	5530	106	98.5	1.02	10	8.03	1.57	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.424**	-
2									8.30	1.48	0.281		N/A (*a)	**0.424**	1g	1.6			(-)	
1			11ax40/OFDMA (RU484-65) (MCS0,SDM)	5510	102	98.6	1.01	10	8.15	1.53	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.433**	OFDMA
2									8.82	1.31	0.327		N/A (*a)	**0.433**	1g	1.6			(-)	
1			11ax40/OFDMA (RU484-65) (MCS0,SDM)	5550	110	98.6	1.01	10	8.14	1.53	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.379**	OFDMA
2									8.99	1.26	0.298		N/A (*a)	**0.379**	1g	1.6			(-)	
1			11ax40/OFDMA (RU484-65) (MCS0,SDM)	5670	134	98.6	1.01	10	8.28	1.49	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.366**	OFDMA
2									9.08	1.24	0.292		N/A (*a)	**0.366**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5500	100	98.5	1.02	10	8.09	1.55	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.429**	OFDMA
2									8.75	1.33	0.316		N/A (*a)	**0.429**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5580	116	98.5	1.02	10	8.24	1.50	N/D	+sign	N/A (*a)	N/D	1g	1.6	3-2	S2	**0.478**	OFDMA
2									8.75	1.33	0.352		N/A (*a)	**0.478**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5700	140	98.5	1.02	10	8.18	1.52	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.452**	OFDMA
2									8.66	1.36	0.326		N/A (*a)	**0.452**	1g	1.6			(-)	
1	Top -Left	0	11ac80 (MCS0, CDD)	5530	106	98.5	1.02	10	8.04	1.57	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S3	**0.118**	-
2									8.34	1.47	0.079		N/A (*a)	**0.118**	1g	1.6			(-)	
1	Top -Right	0	11ac80 (MCS0, CDD)	5530	106	98.5	1.02	10	8.04	1.57	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S4	**0.180**	-
2									8.34	1.47	0.120		N/A (*a)	**0.180**	1g	1.6			(-)	
1	Back	0	11ac80 (MCS0, CDD)	5530	106	98.5	1.02	10	8.04	1.57	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									8.34	1.47	N/A		N/A (*a)	N/A	1g	1.6				
1	Bottom	0	11ac80 (MCS0, CDD)	5530	106	98.5	1.02	10	8.04	1.57	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									8.34	1.47	N/A		N/A (*a)	N/A	1g	1.6				

*. The highest Reported (scaled) SAR on each antenna is marked with yellow marker (x.xxx), respectively.

*. N/D: No peak SAR was observed for the corresponding antenna in the area scan. Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.

*****. Appx. Appendix; D: Antenna separation distance between antennas; Gap: It is separation distance between the device surface and the bottom outer surface of phantom.

*. Before SAR test, the battery was full charged. During SAR test, the radiated power is always monitored by Spectrum Analyzer or/and MAIA.

*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: Reported (Scaled) SAR (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)
where, Duty scaled factor [-] = 100(%) / (measured duty cycle, %), Power scaled factor [-] = 10 ^ (((Max.power, dBm) - (Measured power, dBm)) / 10)

*c. Calculating formula: ΣSAR1g (W/kg) = Reported SAR1g "ant.1" + "ant.2", SPLSR(limit ≤ 0.04) = (ΣSAR1g)^1.5 / (antenna separation distance, mm) (when ΣSAR1g: >1.6 W/kg)

*. 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: ± 5%)

Liquid	SAR test frequency	Probe calibration frequency	Validity	Conversion factor (X,Y,Z)	Uncertainty
Head	(5510, 5530, 5550, 5670, 5700) MHz	5600 MHz	within ± 110MHz of calibration frequency	4.78, 4.48, 4.49	± 13.1 %

7.1.4 SAR measurement results (WLAN 5.8 GHz band)

Test setup			Mode and Frequency			Duty cycle		Power correction			SAR results [W/kg] (Max.value of multi-peak)						SAR plot # in Appx. 2	Setup photo# in Appx. 1-3	ΣSAR 1g [W/kg] (SPLSR, Limit: < 0.04) (*c)	Memo
Ant.	Test position	Gap [mm]	Mode (D/R) Mark with "*" is the initial WLAN test mode	[MHz]	CH	Duty cycle [%]	Duty scaled factor	Max. tune-up limit [dBm]	Measured conducted [dBm]	Power scaled (tune-up) factor	Measured SAR	ΔSAR [%]	ΔSAR corrected	Reported SAR (*b)	SAR type	Limit				
1	Front	0	11ac80 (MCS0, CDD)	5775	155	98.5	1.02	7	5.61	1.38	0.297	+sign	N/A (*a)	**0.418**	1g	1.6	-	S1	**0.418**	-
2									6.01	1.26	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax80 (MCS0, CDD)	5775	155	98.6	1.01	7	5.66	1.36	0.311	+sign	N/A (*a)	**0.427**	1g	1.6	-	S1	**0.427**	-
2									6.06	1.24	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5745	149	98.5	1.02	7	5.51	1.41	0.311	+sign	N/A (*a)	**0.447**	1g	1.6	-	S1	**0.447**	OFDMA
2									5.98	1.26	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5785	157	98.5	1.02	7	5.53	1.40	0.316	+sign	N/A (*a)	**0.451**	1g	1.6	4-1	S1	**0.451**	OFDMA
2									5.99	1.26	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5825	165	98.5	1.02	7	5.55	1.40	0.312	+sign	N/A (*a)	**0.446**	1g	1.6	-	S1	**0.446**	OFDMA
2									5.80	1.32	N/D		N/A (*a)	N/D	1g	1.6			(-)	
1	Top	0	11ac80 (MCS0, SDM)	5775	155	98.6	1.01	7	5.59	1.38	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.228**	-
2									6.05	1.24	0.182		N/A (*a)	**0.228**	1g	1.6			(-)	
1			11ax80 (MCS0, SDM)	5775	155	98.6	1.01	7	5.72	1.34	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.217**	-
2									5.95	1.27	0.169		N/A (*a)	**0.217**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5745	149	98.5	1.02	7	5.51	1.41	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.245**	OFDMA
2									5.98	1.26	0.191		N/A (*a)	**0.245**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5785	157	98.5	1.02	7	5.53	1.40	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S2	**0.243**	OFDMA
2									5.99	1.26	0.189		N/A (*a)	**0.243**	1g	1.6			(-)	
1			11ax20/OFDMA (RU242-61)(MCS0,SDM)	5825	165	98.5	1.02	7	5.55	1.40	N/D	+sign	N/A (*a)	N/D	1g	1.6	4-2	S2	**0.292**	OFDMA
2									5.80	1.32	0.217		N/A (*a)	**0.292**	1g	1.6			(-)	
1	Top -Left	0	11ac80 (MCS0, SDM)	5775	155	98.6	1.01	7	5.59	1.38	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S3	**0.115**	-
2									6.05	1.24	0.092		N/A (*a)	**0.115**	1g	1.6			(-)	
1	Top -Right	0	11ac80 (MCS0, SDM)	5775	155	98.6	1.01	7	5.59	1.38	N/D	+sign	N/A (*a)	N/D	1g	1.6	-	S4	**0.105**	-
2									6.05	1.24	0.084		N/A (*a)	**0.105**	1g	1.6			(-)	
1	Back	0	11ac80 (MCS0, SDM)	5775	155	98.6	1.01	7	5.59	1.38	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									6.05	1.24	N/A		N/A (*a)	N/A	1g	1.6				
1	Bottom	0	11ac80 (MCS0, SDM)	5775	155	98.6	1.01	7	5.59	1.38	N/A	+sign	N/A (*a)	N/A	1g	1.6	-	-	-	*.Exempt, See 4.2.
2									6.05	1.24	N/A		N/A (*a)	N/A	1g	1.6				

*. The highest Reported (scaled) SAR on each antenna is marked with yellow marker (x.xxx), respectively.
*. N/D: No peak SAR was observed for the corresponding antenna in the area scan. Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.
**. Appx. Appendix; D: Antenna separation distance between antennas; Gap: It is separation distance between the device surface and the bottom outer surface of phantom.
*. Before SAR test, the battery was full charged. During SAR test, the radiated power is always monitored by Spectrum Analyzer or/and MAIA.

*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: Reported (Scaled) SAR (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)
where, Duty scaled factor [-] = 100(%) / (measured duty cycle, %), Power scaled factor [-] = 10 ^ (((Max.power, dBm) - (Measured power, dBm)) / 10)
*c. Calculating formula: ΣSAR1g (W/kg) = Reported SAR1g "ant.1" + "ant.2", SPLSR(limit ≤ 0.04) = (ΣSAR1g)^1.5 / (antenna separation distance, mm) (when ΣSAR1g: >1.6 W/kg)
*. 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: ± 5%)

Liquid	SAR test frequency	Probe calibration frequency	Validity	Conversion factor (X,Y,Z)	Uncertainty
Head	(5745, 5775, 5785, 5825) MHz	5800 MHz	within ± 110MHz of calibration frequency	4.87, 4.59, 4.57	± 13.1 %

7.1.5 SAR/APD measurement results (WLAN 6.2/6.5/6.7/7.0 GHz band)

Test setup			Mode and Frequency			Duty cycle		Power correction			SAR results [W/kg] (Max.value of multi-peak)						APD results [W/m²] (4cm²) (*2) (Max.value of multi-peak)						SAR plot # in Appx. 2	Setup photo # in Appx. 1-3
Ant.	Test position	Gap [mm]	Mode (D/R) Mark with "*" is the initial WLAN test mode	[MHz]	CH	Duty [%]	Duty scaled factor	Max. tune-up limit [dBm]	Measured conducted [dBm]	Power scaled (tune-up) factor	Measure	ΔSAR corrected	Reported SAR (*b)	ΣSAR (SPLSR, Limit < 0.04) (*c)	SAR type	Limit	Measure SAR8g [W/kg]	Measure psAPD [W/m²]	ΔSAR corrected	Reported APD (*b)	ΣAPD (*d)	Limit		
1	Front	0	11ax80 (MCS0, SDM)	5985 (*1)	7	98.5	1.02	8	6.69	1.35	0.352	N/A (*a)	**0.485**	0.485	1g	1.6	0.112	2.24	N/A (*a)	**3.084**	3.084	20	5-1	A1
2									7.32	1.17	N/D	N/A (*a)	N/D	(-)	1g	1.6	N/D	N/D	N/A (*a)	N/D		20	-	A1
1			11ax80 (MCS0, SDM)	6225	55	98.5	1.02	8	7.26	1.19	0.269	N/A (*a)	**0.327**	0.327	1g	1.6	0.094	1.89	N/A (*a)	**2.294**	2.294	20	-	A1
2									7.25	1.19	N/D	N/A (*a)	N/D	(-)	1g	1.6	N/D	N/D	N/A (*a)	N/D		20	-	A1
1			11ax80 (MCS0, SDM)	6465	103	98.5	1.02	8	7.27	1.18	0.247	N/A (*a)	**0.297**	0.297	1g	1.6	0.090	1.80	N/A (*a)	**2.166**	2.166	20	-	A1
2									7.67	1.08	N/D	N/A (*a)	N/D	(-)	1g	1.6	N/D	N/D	N/A (*a)	N/D		20	-	A1
1			11ax80 (MCS0, SDM)	6705	151	98.5	1.02	9	7.96	1.27	0.294	N/A (*a)	**0.381**	0.381	1g	1.6	0.112	2.24	N/A (*a)	**2.902**	2.902	20	-	A1
2									8.30	1.17	N/D	N/A (*a)	N/D	(-)	1g	1.6	N/D	N/D	N/A (*a)	N/D		20	-	A1
1			11ax80 (MCS0, SDM)	7025	215	98.5	1.02	9	7.55	1.40	0.307	N/A (*a)	**0.438**	0.438	1g	1.6	0.105	2.11	N/A (*a)	**3.013**	3.013	20	-	A1
2									7.52	1.41	N/D	N/A (*a)	N/D	(-)	1g	1.6	N/D	N/D	N/A (*a)	N/D		20	-	A1
1	Top	0	11ax80 (MCS0, SDM)	5985 (*1)	7	98.5	1.02	8	6.69	1.35	N/D	N/A (*a)	N/D	0.328	1g	1.6	N/D	N/D	N/A (*a)	N/D	2.053	20	-	A2
2									7.32	1.17	0.275	N/A (*a)	**0.328**	(-)	1g	1.6	0.086	1.72	N/A (*a)	**2.053**		20	5-2	A2
1			11ax80 (MCS0, SDM)	6225	55	98.5	1.02	8	7.26	1.19	N/D	N/A (*a)	N/D	0.322	1g	1.6	N/D	N/D	N/A (*a)	N/D	2.100	20	-	A2
2									7.25	1.19	0.265	N/A (*a)	**0.322**	(-)	1g	1.6	0.086	1.73	N/A (*a)	**2.100**		20	-	A2
1			11ax80 (MCS0, SDM)	6465	103	98.5	1.02	8	7.27	1.18	N/D	N/A (*a)	N/D	0.343	1g	1.6	N/D	N/D	N/A (*a)	N/D	2.390	20	-	A2
2									7.67	1.08	0.311	N/A (*a)	**0.343**	(-)	1g	1.6	0.109	2.17	N/A (*a)	**2.390**		20	-	A2
1			11ax80 (MCS0, SDM)	6705	151	98.5	1.02	9	7.96	1.27	N/D	N/A (*a)	N/D	0.380	1g	1.6	N/D	N/D	N/A (*a)	N/D	2.637	20	-	A2
2									8.30	1.17	0.318	N/A (*a)	**0.380**	(-)	1g	1.6	0.111	2.21	N/A (*a)	**2.637**		20	-	A2
1			11ax80 (MCS0, SDM)	7025	215	98.5	1.02	9	7.55	1.40	N/D	N/A (*a)	N/D	0.551	1g	1.6	N/D	N/D	N/A (*a)	N/D	3.639	20	-	A2
2									7.52	1.41	0.383	N/A (*a)	**0.551**	(-)	1g	1.6	0.127	2.53	N/A (*a)	**3.639**		20	-	A2
1	Top -Left	0	11ax80 (MCS0, SDM)	5985 (*1)	7	98.5	1.02	8	6.69	1.35	N/D	N/A (*a)	N/D	0.090	1g	1.6	N/D	N/D	N/A (*a)	N/D	0.681	20	-	A3
2									7.32	1.17	0.075	N/A (*a)	**0.090**	(-)	1g	1.6	0.029	0.571	N/A (*a)	**0.681**		20	-	A3
1			11ax80 (MCS0, SDM)	6225	55	98.5	1.02	8	7.26	1.19	N/D	N/A (*a)	N/D	0.117	1g	1.6	N/D	N/D	N/A (*a)	N/D	0.876	20	-	A3
2									7.25	1.19	0.096	N/A (*a)	**0.117**	(-)	1g	1.6	0.036	0.722	N/A (*a)	**0.876**		20	-	A3
1			11ax80 (MCS0, SDM)	6465	103	98.5	1.02	8	7.27	1.18	N/D	N/A (*a)	N/D	0.088	1g	1.6	N/D	N/D	N/A (*a)	N/D	0.672	20	-	A3
2									7.67	1.08	0.080	N/A (*a)	**0.088**	(-)	1g	1.6	0.031	0.610	N/A (*a)	**0.672**		20	-	A3
1			11ax80 (MCS0, SDM)	6705	151	98.5	1.02	9	7.96	1.27	N/D	N/A (*a)	N/D	0.141	1g	1.6	N/D	N/D	N/A (*a)	N/D	1.018	20	-	A3
2									8.30	1.17	0.118	N/A (*a)	**0.141**	(-)	1g	1.6	0.042	0.853	N/A (*a)	**1.018**		20	-	A3
1			11ax80 (MCS0, SDM)	7025	215	98.5	1.02	9	7.55	1.40	N/D	N/A (*a)	N/D	0.293	1g	1.6	N/D	N/D	N/A (*a)	N/D	1.841	20	-	A3
2									7.52	1.41	0.204	N/A (*a)	**0.293**	(-)	1g	1.6	0.064	1.28	N/A (*a)	**1.841**		20	-	A3
1	Top -Right	0	11ax80 (MCS0, SDM)	5985 (*1)	7	98.5	1.02	8	6.69	1.35	N/D	N/A (*a)	N/D	0.153	1g	1.6	N/D	N/D	N/A (*a)	N/D	1.086	20	-	A4
2									7.32	1.17	0.128	N/A (*a)	**0.153**	(-)	1g	1.6	0.046	0.910	N/A (*a)	**1.086**		20	-	A4
1			11ax80 (MCS0, SDM)	6225	55	98.5	1.02	8	7.26	1.19	N/D	N/A (*a)	N/D	0.151	1g	1.6	N/D	N/D	N/A (*a)	N/D	1.185	20	-	A4
2									7.25	1.19	0.124	N/A (*a)	**0.151**	(-)	1g	1.6	0.049	0.976	N/A (*a)	**1.185**		20	-	A4
1			11ax80 (MCS0, SDM)	6465	103	98.5	1.02	8	7.27	1.18	N/D	N/A (*a)	N/D	0.139	1g	1.6	N/D	N/D	N/A (*a)	N/D	1.083	20	-	A4
2									7.67	1.08	0.126	N/A (*a)	**0.139**	(-)	1g	1.6	0.049	0.983	N/A (*a)	**1.083**		20	-	A4
1			11ax80 (MCS0, SDM)	6705	151	98.5	1.02	9	7.96	1.27	N/D	N/A (*a)	N/D	0.146	1g	1.6	N/D	N/D	N/A (*a)	N/D	1.179	20	-	A4
2									8.30	1.17	0.122	N/A (*a)	**0.146**	(-)	1g	1.6	0.049	0.988	N/A (*a)	**1.179**		20	-	A4
1			11ax80 (MCS0, SDM)	7025	215	98.5	1.02	9	7.55	1.40	N/D	N/A (*a)	N/D	0.214	1g	1.6	N/D	N/D	N/A (*a)	N/D	1.453	20	-	A4
2									7.52	1.41	0.149	N/A (*a)	**0.214**	(-)	1g	1.6	0.050	1.01	N/A (*a)	**1.453**		20	-	A4

*1. Since the frequency 5985 MHz (BW80MHz) spans both below and above 6 GHz, compliance was confirmed for both SAR and APD.
*2. The results of APD are reference purpose only.
*. The highest Reported (scaled) SAR/APR on each antenna is marked with yellow marker (x.xxx), respectively.
*. N/D: No peak SAR was observed for the corresponding antenna in the area scan. Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.
*. Appx. Appendix; D: Antenna separation distance between antennas; Gap: It is separation distance between the device surface and the bottom outer surface of phantom.
*. Before SAR test, the battery was full charged. During SAR test, the radiated power is always monitored by Spectrum Analyzer or/and MAIA.

*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: Reported (Scaled) SAR (W/kg) = (Measured SAR (W/kg)) × (Duty scaled factor) × (Power scaled factor)
. Reported (Scaled) APD (W/m²) = (Measured APD (W/m²)) × (Duty scaled factor) × (Power scaled factor)
where, Duty scaled factor [-] = 100(%) / (measured duty cycle, %), Power scaled factor [-] = 10 ^ (((Max.power, dBm) - (Measured power, dBm)) / 10)
*c. Calculating formula: ΣSAR1g (W/kg) = Reported SAR1g "ant.1" + "ant.2", SPLSR(limit: ≤ 0.04) = (ΣSAR1g)^1.5 / (antenna separation distance, mm) (when ΣSAR1g: >1.6 W/kg)
*d. Calculating formula: ΣAPD (W/m²) = Reported APD "ant.1" + "ant.2"
*. 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: ± 10%)

Liquid	SAR test frequency	Probe calibration frequency	Validity	Conversion factor (X,Y,Z)	Uncertainty
Head	(5985, 6225, 6465, 6705, 7025) MHz	6500 MHz	-600/+700 MHz of calibration frequency	5.05, 5.08, 4.90	± 18.6 %

7.1.6 IPD measurement results (WLAN 6.2/6.5/6.7/7.0 GHz band)

Test setup			Mode and Frequency			Duty cycle		Power correction			IPD results [W/m^2]								SAR plot # in Appx. 2	Setup photo# in Appx. 1-3	Memo
Ant.	Test position	Gap [mm]	Mode (D/R) Mark with "*" is the initial mode & frequency.	[MHz]	CH	Duty [%]	Duty scaled factor	Max. tune-up limit [dBm]	Measured conducted [dBm]	Power scaled (tune-up) factor	E Peak [V/m]	H Peak [A/m]	Measured psPD	**Reported psPD** (*a)	PD type	Shape	Area [cm2]	Limit (See §7.5)			
1	Front	2	11ax80 (MCS0, SDM)	5985 (*1)	7	98.5	1.02	8	6.69	1.35	53.4	0.206	4.44	**6.114**	tot+	Circle	4	8.9	6-1	D1	SAR&IPD
2									7.32	1.17	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D1	-
1			11ax80 (MCS0, SDM)	6225	55	98.5	1.02	8	7.26	1.19	41.1	0.210	2.70	**3.277**	tot+	Circle	4	8.9	-	D1	-
2									7.25	1.19	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D1	-
1			11ax80 (MCS0, SDM)	6465	103	98.5	1.02	8	7.27	1.18	50.3	0.259	4.49	**5.404**	tot+	Circle	4	8.9	-	D1	-
2									7.67	1.08	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D1	-
1			11ax80 (MCS0, SDM)	6705	151	98.5	1.02	9	7.96	1.27	54.3	0.266	4.11	**5.324**	tot+	Circle	4	8.9	-	D1	-
2									8.30	1.17	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D1	-
1			11ax80 (MCS0, SDM)	7025	215	98.5	1.02	9	7.55	1.40	54.4	0.259	3.16	**4.512**	tot+	Circle	4	8.9	-	D1	-
2									7.52	1.41	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D1	-
1	Top	2	11ax80 (MCS0, SDM)	5985 (*1)	7	98.5	1.02	8	6.69	1.35	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D2	-
2									7.32	1.17	39.8	0.134	3.22	**3.843**	tot+	Circle	4	8.9	6-2	D2	SAR&IPD
1			11ax80 (MCS0, SDM)	6225	55	98.5	1.02	8	7.26	1.19	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D2	-
2									7.25	1.19	40.0	0.170	3.03	**3.678**	tot+	Circle	4	8.9	-	D2	-
1			11ax80 (MCS0, SDM)	6465	103	98.5	1.02	8	7.27	1.18	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D2	-
2									7.67	1.08	46.9	0.138	2.26	**2.490**	tot+	Circle	4	8.9	-	D2	-
1			11ax80 (MCS0, SDM)	6705	151	98.5	1.02	9	7.96	1.27	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D2	-
2									8.30	1.17	47.6	0.133	2.91	**3.473**	tot+	Circle	4	8.9	-	D2	-
1			11ax80 (MCS0, SDM)	7025	215	98.5	1.02	9	7.55	1.40	N/D	N/D	N/D	N/D	tot+	Circle	4	8.9	-	D2	-
2									7.52	1.41	48.8	0.148	2.65	**3.811**	tot+	Circle	4	8.9	-	D2	-

*1. Since the frequency 5985 MHz (BW80MHz) spans both below and above 6 GHz, compliance was confirmed for both SAR and IPD.
*. The highest Reported (scaled) psPDtot are marked with yellow marker (x.xxx), respectively.
*. N/D: No peak SAR was observed for the corresponding antenna in the area scan. Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.
**. ANT: Antenna, Appx. Appendix, Max.: maximum., Gap: It is the separation distance between the probe sensor and device surface.
**. 1.0 W/m^2 = 0.1 mW/cm^2.
*. Before SAR test, the battery was full charged. During SAR test, the radiated power is always monitored by Spectrum Analyzer or/and MAIA.

*a. Calculating formula: Reported (Scaled) psPD (W/m^2) = (Measured psPD (W/m^2)) × (Duty scaled factor) × (Power scaled factor)
where, Duty scaled factor [-] = 100(%) / (measured duty cycle, %), Power scaled factor [-] = 10 ^ (((Max.power, dBm) - (Measured power, dBm)) / 10)

7.2 Simultaneous transmission evaluation

Result: Simultaneous transmission SAR on pair of antennas complied either sum of the SAR(1g) is < 1.6 W/kg, or TER is < 1.0.

According to KDB 447498, when the sum of SAR is greater than the limit, SAR test exclusion is determined by the SAR to peak location separation ratio (SPLSR), and the simultaneously transmitting antennas must be considered one pair at a time. The ratio is determined by {(SAR1+SAR2)^1.5} / (separation distance between the peak SAR locations for the antenna pair, mm), round to two decimal digits, and must be s 0.04 for all antenna pairs in the configuration to qualify for 1g SAR test exclusion.

*. The table below shows the combinations of transmissions (as "use case") that can be sent simultaneously from two antennas.

Setup		Use cases	Antenna 1					Antenna 2				Antenna 1+2	
			SAR 1g [W/kg]				IPD [W/m^2]	SAR 1g [W/kg]			IPD [W/m^2]	SUM SAR 1g [W/kg] (< 6GHz)	TER [-]
			BT	WLAN 2.4 GHz	WLAN 5 GHz	WLAN 6 GHz (≦6GHz)	WLAN 6 GHz (>6GHz)	WLAN 2.4 GHz	WLAN 5 GHz	WLAN 6 GHz (≦6GHz)	WLAN 6 GHz (>6GHz)	Limit: 1.6 W/kg SPSLR: < 0.04	Limit: 1.0
Front	1	CDD/SDM WLAN 2.4 GHz + BT	0.097	0.372	N/A	N/A	N/A	N/D	N/D	N/D	N/D	**N/A** (*1)	**N/A**
	2	CDD/SDM WLAN 5 GHz + BT	0.097	N/A	0.899	N/A	N/A	N/D	N/D	N/D	N/D	**0.996**	**N/A**
	3	CDD/SDM WLAN 6 GHz (≦6GHz) + BT	0.097	N/A	N/A	0.485	N/A	N/D	N/D	N/D	N/D	**0.582**	**N/A**
	4	CDD/SDM WLAN 6 GHz (>6GHz) + BT	0.097	N/A	N/A	N/A	6.114	N/D	N/D	N/D	N/D	**N/A**	**0.672** (0.097/1.6+6.114/10)
Top	1	CDD/SDM WLAN 2.4 GHz + BT	0.048	N/D	N/D	N/D	N/D	0.340	N/A	N/A	N/A	**N/A** (*1)	**N/A**
	2	CDD/SDM WLAN 5 GHz + BT	0.048	N/D	N/D	N/D	N/D	N/A	0.571	N/A	N/A	**0.619**	**N/A**
	3	CDD/SDM WLAN 6 GHz (≦6GHz) + BT	0.048	N/D	N/D	N/D	N/D	N/A	N/A	0.328	N/A	**0.376**	**N/A**
	4	CDD/SDM WLAN 6 GHz (>6GHz) + BT	0.048	N/D	N/D	N/D	N/D	N/A	N/A	N/A	3.843	**N/A**	**0.414** (0.048/1.6+3.843/10)

*1. An Antenna 1 supports both WLAN and Bluetooth. An antenna 2 is only supported WLAN. For WLAN operation, both of antenna 1 and antenna 2 is always transmitted by method of CDD or SDM. WLAN 2.4 GHz and Bluetooth cannot transmit simultaneously on an antenna 1. WLAN 5 GHz or 6GHz and Bluetooth can transmit simultaneously on an antenna 1.
Antenna 1 and 2 are positioned at approximately 90 degrees, with the front of the product radiating mostly from the antenna 1 side and the top of the product radiating mostly from the antenna 2 side.

*. For SAR measurement, simultaneous transmission SAR measurement (Volume Scan) is not required for antenna pair because the either sum of the SAR(1g) is < 1.6 W/kg or the SPLSR is < 0.04 (when sum of the SAR(1g) is over 1.6 W/kg) for all circumstances that require SPLSR calculation.

*. Calculating formula: SPLSR = (SAR1 + SAR2)^1.5 / (minimum antenna separation distance, mm)

$$TER = \sum_{i=0}^{Ns} \left(\frac{SAR_i}{SAR_{lim\,i,i}} \right) + \sum_{j=0}^{N_{PD}} \left(\frac{PD_j}{PD_{lim,j}} \right)$$

7.3 SAR Measurement Variability (Repeated measurement requirement)

Result: Pass ("Largest to Smallest SAR Ratio" is smaller than KDB 865664 D01 requirement.)

In accordance with published RF Exposure KDB 865664 D01: 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.

7.4 Device holder perturbation verification (SAR)

Result: Since all the reported (scaled) SAR were less than 1.2 W/kg (SAR(1g)), the additional "device holder perturbation verification" measurement was not considered.

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.

7.5 Requirements on the Uncertainty Evaluation

7.5.1 SAR Uncertainty Evaluation

Decision Rule ☑ Uncertainty is not included.
☐ Uncertainty is included.

*. The highest measured SAR(1g) is less than 1.5 W/kg and the highest measured SAR(10g) is less than 3.75 W/kg. Therefore, per KDB 865664 D01, the extended measurement uncertainty analysis described in IEEE 1528-2013 is not required.
*. The uncertainty (k=2) of SAR measurement for 2.4 GHz ~6 GHz is smaller than 30 %. Therefore methods of e.g., IEC 62479:2010 is not applied for reporting purposes.

7.5.2 Power Density Uncertainty Evaluation

Decision Rule ☐ Uncertainty is not included.
☑ Uncertainty is included.

According to APPENDIX OVER6G of KDB 388624 D02 Pre-Approval Guidance List v18r03, test report estimated IPD measurement uncertainty (e.g., per methods of IEC/IEEE 63195-1:2022). Furthermore, similar to that KDB Pub. 865664 D02 has 30% as maximum expanded measurement uncertainty for SAR test data, where PD test data expanded measurement uncertainty > 30% (k = 2), methods of e.g., IEC 62479:2010 apply for reporting purposes.
According to IEC 62479:2010;
Equation (1) shall be used to determine whether the measured value L*m* complies with a "reduced" limit if the actual measurement uncertainty of the applicable assessment method is 30 % or more. If the computed assessment uncertainty is larger than the specified maximum allowed uncertainty value for any particular method and if it is also larger than the maximum default uncertainty value of 30 %, then a penalty value shall be added to the assessment result before comparison with the limit. Conversely, one can also reduce the applicable limit L*lim* with the same penalty value, and compare the actual measured L*m* value with the reduced limit. The right-hand side of Equation (1) shows how the limit L*lim* is reduced in case the computed uncertainty is larger then 30 %.

$$L_m \leq \left[\frac{1}{0.7+\frac{U(L_m)}{L_m}}\right] L_{lim} \qquad \text{Equation (1)}$$

L*m* is the measured value; L*lim* is the exposure limit; U(L*m*) is the absolute value of the expanded uncertainty.
In this test, the relative uncertainty of a certain PD assessment method was 41.9 % (1.52 dB).
Using above equation, the acceptance criterion for the measured value is 0.89 L*lim*.
The uncertainty penalty (the amount of reduction of the limit) is U*pen* = L*lim* – 0.89L*lim* =0.11L*lim*

$$L_m \leq \left[\frac{1}{0.7+\frac{U(L_m)}{L_m}}\right] L_{lim} = \left(\frac{1}{0.7+0.42}\right) L_{lim} = \frac{1}{1.12} L_{lim} = 0.89\ L_{lim}$$

APPENDIX 2: Measurement data

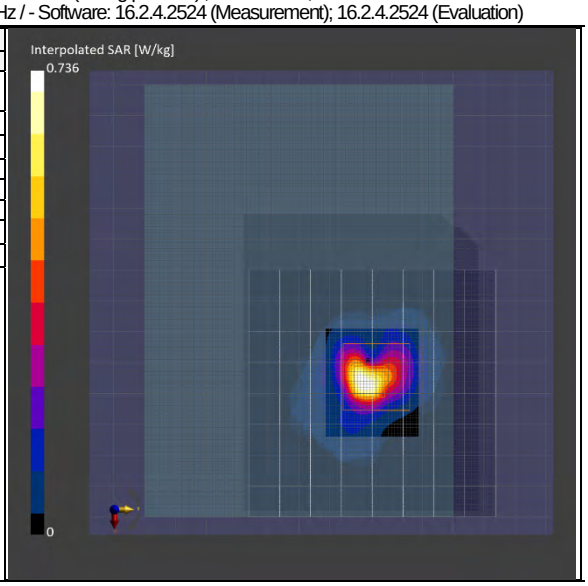
Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna)

Plot 1-1: SAR1g: (2.4GHz band) Antenna 1 side, Front & touch, 11b(1Mbps)/CDD, 2462 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: 11b(1Mbps, 2Tx-1ST) UID: 0 (CW)) ; Frequency: 2462 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 2462 MHz; Conductivity: 1.867 S/m; Permittivity: 39.43

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (6.83, 7.07, 6.68)@2462 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	80.0×80.0	30.0× 30.0 ×30.0	psSAR 1g [W/kg]	0.225	**0.267**
Grid Steps [mm]	10.0×10.0	5.0× 5.0 ×1.5	psSAR 10g [W/kg]	0.098	**0.100**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.02	-0.10
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.5	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	75.5
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	5.9



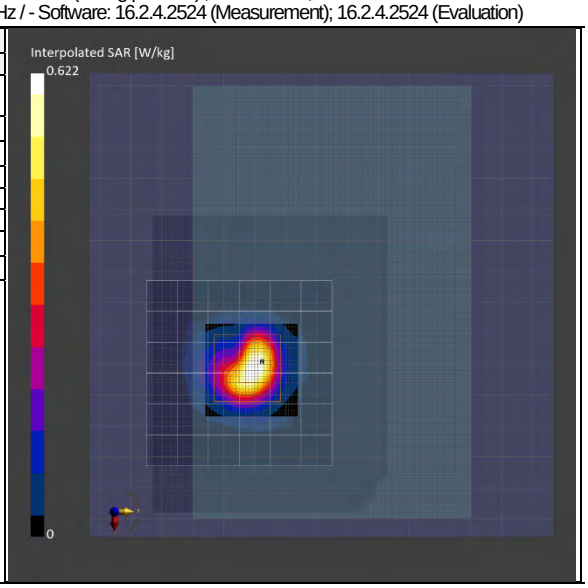
Remarks: *. Date tested: 2024-03-04;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 22 deg.C. / 59 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/4-22,24h7,b(1),2x1,2462,frt-tp

Plot 1-2: SAR1g: (2.4GHz band) Antenna 2 side, Top & touch, 11ax20(MCS0)/SDM, 2462 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: 11ax20(MCS0, 2Tx-2ST)(UID: 0 (CW)) ; Frequency: 2462 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 2462 MHz; Conductivity: 1.867 S/m; Permittivity: 39.43

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (6.83, 7.07, 6.68)@2462 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	30.0× 30.0 ×30.0	psSAR 1g [W/kg]	0.225	**0.252**
Grid Steps [mm]	10.0×10.0	5.0× 5.0 ×1.5	psSAR 10g [W/kg]	0.096	**0.096**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.01	-0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.5	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	75.5
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	6.5



Remarks: *. Date tested: 2024-03-07;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 22 deg.C. / 77 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/7-4,24h23,ax20(0),2x2,2462,tp

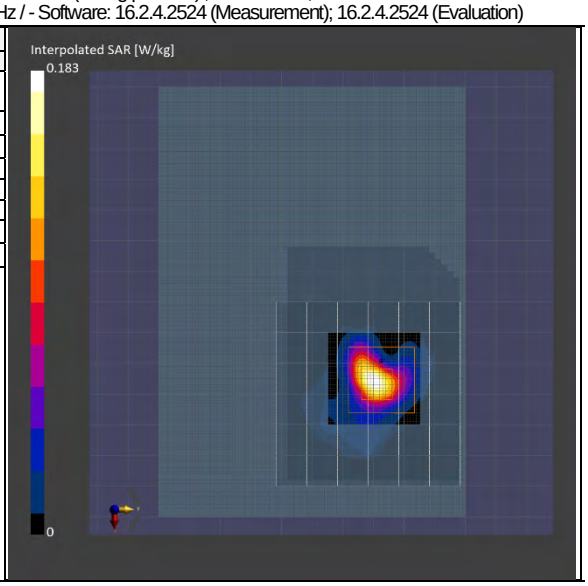
APPENDIX 2: Measurement data / Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna) (cont'd)

Plot 1-3: SAR1g: (2.4GHz band) Antenna 1, Front & touch, Bluetooth (BR, DH5), 2441 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: BR (DH5) (UID: 0 (CW)) ; Frequency: 2441 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 2441 MHz; Conductivity: 1.851 S/m; Permittivity: 39.45

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (6.83, 7.07, 6.68)@2441 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	30.0× 30.0 ×30.0	psSAR 1g [W/kg]	0.055	**0.061**
Grid Steps [mm]	10.0×10.0	5.0× 5.0 ×1.5	psSAR 10g [W/kg]	0.022	**0.020**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.08	0.07
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.5	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	70.1
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	5.7



Remarks: *. Date tested: 2024-03-04;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 69 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/4-16,24h1,dh5,at1,2441,frt-tp

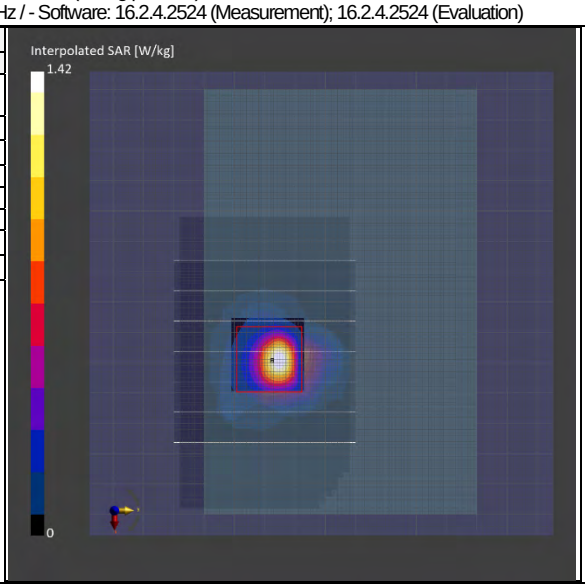
APPENDIX 2: Measurement data / Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna) (cont'd)

Plot 2a-1: SAR1g: (5.3 GHz band) Antenna 2 side, Top & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5260 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61)(UID: 0 (CW)) ; Frequency: 5260 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5260 MHz; Conductivity: 4.570 S/m; Permittivity: 34.62

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.47, 5.16, 5.18)@5260 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.248	**0.344**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.079	**0.081**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.07	0.04
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	65.1
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	4.8



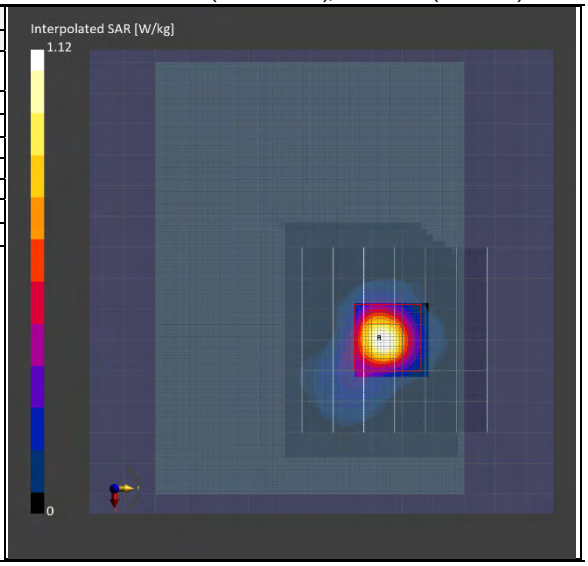
Remarks: *. Date tested: 2024-03-06;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 72 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-23,5h62,ru242-61,ax20a(m0),2x2,5260,tp

Plot 2a-2: SAR1g: (5.3 GHz band) Antenna 1 side, Front & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5260 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61) (UID: 0 (CW)) ; Frequency: 5260 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5260 MHz; Conductivity: 4.570 S/m; Permittivity: 34.62

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.47, 5.16, 5.18)@5260 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.261	**0.298**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.082	**0.085**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.02	-0.01
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	64.3
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.6



Remarks: *. Date tested: 2024-03-05;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 77 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/5-22,5h34,ru242-61,ax20a(m0),2x2,5260,frt-tp

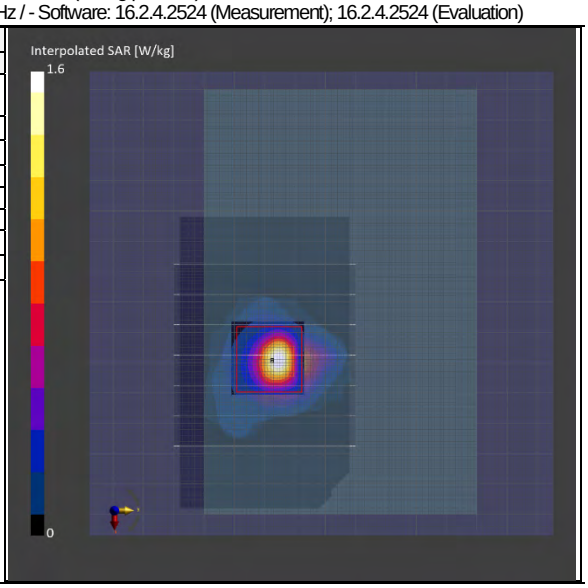
APPENDIX 2: Measurement data / Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna) (cont'd)

Plot 2b-1: SAR1g: (5.2 GHz band) Antenna 2 side, Top & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5180 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61)(UID: 0 (CW)) ; Frequency: 5180 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5180 MHz; Conductivity: 4.484 S/m; Permittivity: 34.77

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.47, 5.16, 5.18)@5180 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.287	**0.389**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.087	**0.094**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.05	0.16
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	65.5
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	5.6



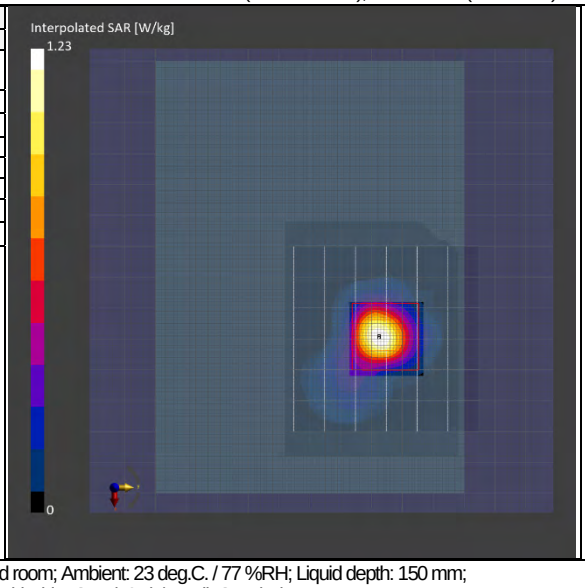
Remarks: *. Date tested: 2024-03-06;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 78 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-26,5h65,ru242-61,ax20a(m0),2x2,5180,tp

Plot 2b-2: SAR1g: (5.2 GHz band) Antenna 1 side, Front & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5180 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61) (UID: 0 (CW)) ; Frequency: 5180.000 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5180 MHz; Conductivity: 4.484 S/m; Permittivity: 34.77

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.47, 5.16, 5.18)@5180.000 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.300	**0.332**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.089	**0.094**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.05	0.02
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	65.5
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.3



Remarks: *. Date tested: 2024-03-05;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 77 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/5-25,5h37,ru242-61,ax20a(m0),2x2,5180,frt-tp

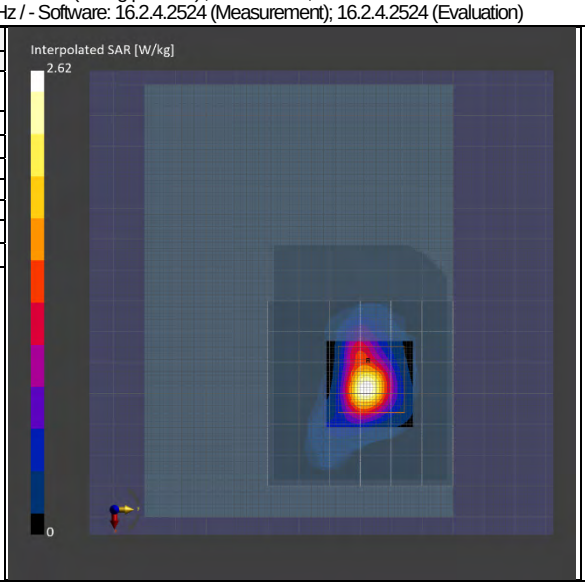
APPENDIX 2: Measurement data / Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna) (cont'd)

Plot 3-1: SAR1g: (5.6 GHz band) Antenna 1 side, Front & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5700 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61)(UID: 0 (CW)) ; Frequency: 5700 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5700 MHz; Conductivity: 5.063 S/m; Permittivity: 33.87

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.78, 4.48, 4.49)@5700 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.547	**0.580**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.155	**0.158**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.02	0.03
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	60.2
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	6.1



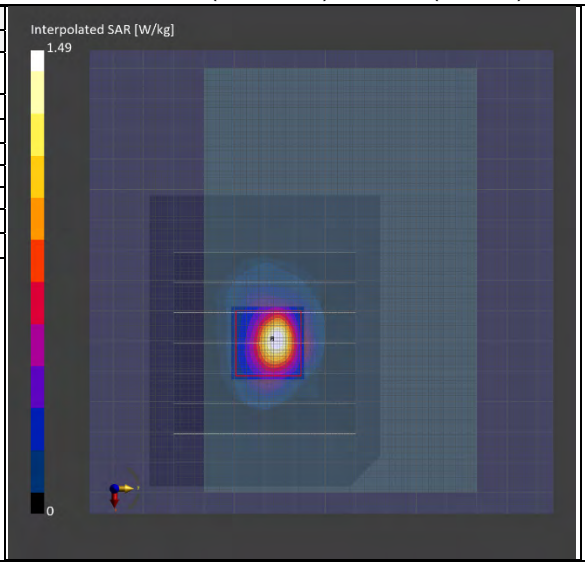
Remarks: *. Date tested: 2024-03-05;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 72 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/5-6,5h18,ru242-61,ax20a(m0),2x2,5700,frt-tp

Plot 3-2: SAR1g: (5.6 GHz band) Antenna 2 side, Top & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5580 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61)(UID: 0 (CW)) ; Frequency: 5580 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5580 MHz; Conductivity: 4.923 S/m; Permittivity: 34.08

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.78, 4.48, 4.49)@5580 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.292	**0.352**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.090	**0.095**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.03	0.08
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	62.4
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	6.1



Remarks: *. Date tested: 2024-03-06;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 22 deg.C. / 76 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-12,5h51,ru242-61,ax20a(m0),2x2,5580,tp

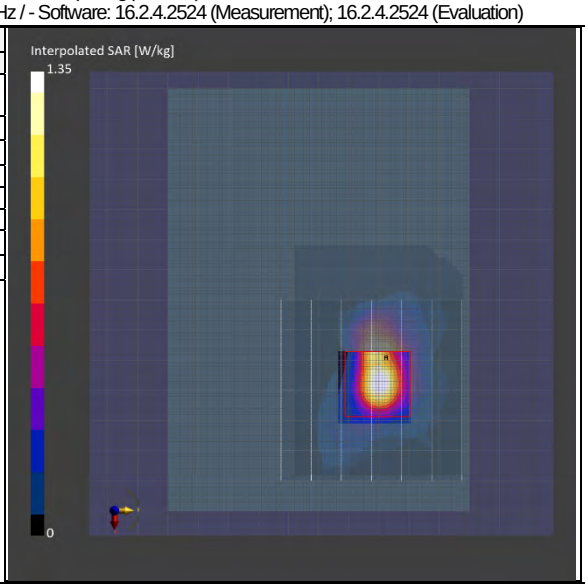
APPENDIX 2: Measurement data / Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna) (cont'd)

Plot 4-1: SAR1g: (5.8 GHz band) Antenna 1 side, Front & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5785 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61) (UID: 0 (CW)) ; Frequency: 5785 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5785 MHz; Conductivity: 5.159 S/m; Permittivity: 33.70

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.87, 4.59, 4.57)@5785 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.304	**0.316**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.096	**0.093**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.03	-0.08
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	62.6
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	6.5



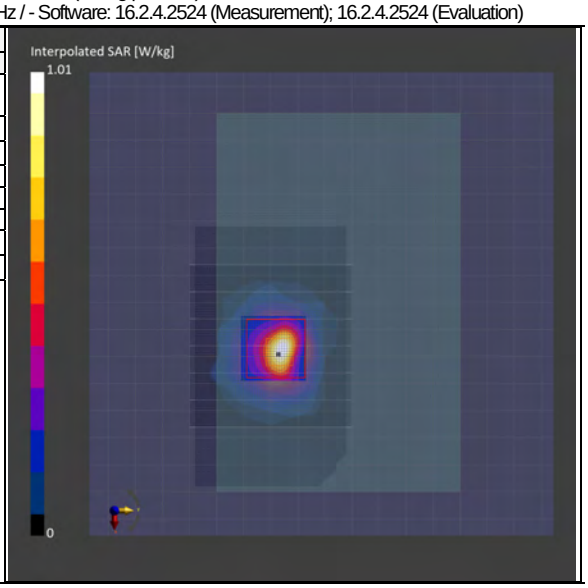
Remarks: *. Date tested: 2024-03-06;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 75 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-2,5h41,ru242-61,ax20a(m0),2x2,5785,frt-tp

Plot 4-2: SAR1g: (5.8 GHz band) Antenna 2 side, Top & touch, 11ax20(MCS0)/SDM/OFDMA(RU242-61), 5825 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: OFDMA/11ax20(MCS0, 2Tx-2ST)(RU242-61)(UID: 0 (CW)) ; Frequency: 5825 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5825 MHz; Conductivity: 5.210 S/m; Permittivity: 33.68

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.87, 4.59, 4.57)@5825 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.174	**0.217**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.057	**0.058**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.12	0.20
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	60.3
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	5.4



Remarks: *. Date tested: 2024-03-06;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 77 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-31,5h70,ru242-61,ax20a(m0),2x2,5825,tp

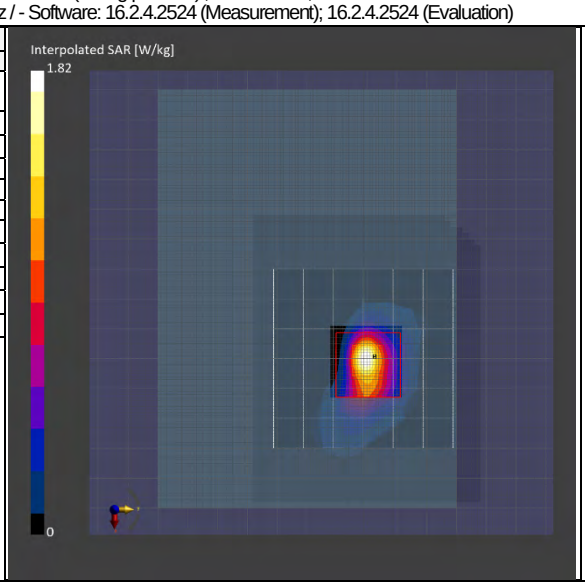
APPENDIX 2: Measurement data / Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna) (cont'd)

Plot 5-1: SAR1g: (6.2/6.5/6.7/7.0 GHz band) Antenna 1 side, Front & touch, 11ax80(MCS0)/SDM, 5985 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: 11ax80(MCS0, 2Tx-1ST) (UID: 0 (CW)) ; Frequency: 5985 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5985 MHz; Conductivity: 5.351 S/m; Permittivity: 33.38

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.05, 5.08, 4.9)@5985 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.358	**0.352**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.099	**0.094**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.16	-0.20
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	55.6
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	5.4
			psSAR 8g [W/kg]	0.115	**0.112**
			psAPD 1 cm^2-sq. [W/m^2]	N/A	**3.52**
			psAPD 4 cm^2-sq. [W/m^2]	N/A	**2.24**



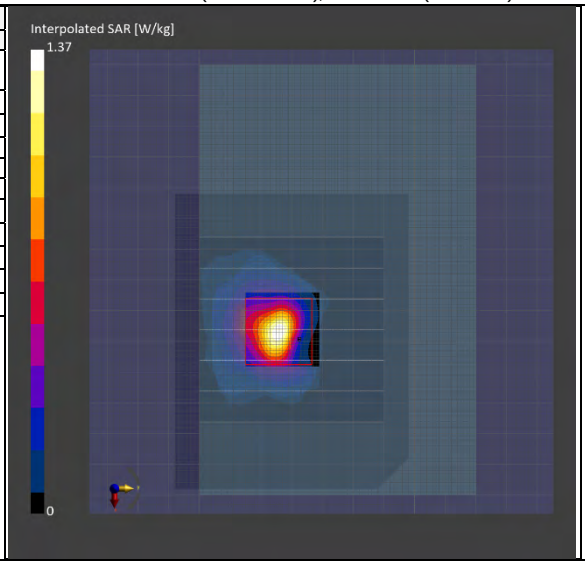
Remarks: *. Date tested: 2024-03-11;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 67 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240311-_apd_14781156_es205-1+ds126919_canon.d8sar- 3/11-1,6h1,ax80(0),2x2,5985,frt-tp

Plot 5-2: SAR1g: (6.2/6.5/6.7/7.0 GHz band) Antenna 2 side, Top & touch, 11ax80(MCS0)/SDM, 5985 MHz

EUT: Communication Module+Digital Camera; Model: ES205+DS126918; Serial:DE1-A1-091+000101900023
Mode: 11ax80(MCS0, 2Tx-1ST) (UID: 0 (CW)) ; Frequency: 5985 MHz ; Test Distance: 0.00 mm
TSL parameters used: Head(v6) ; f= 5985 MHz; Conductivity: 5.351 S/m; Permittivity: 33.38

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated: 2024-01-09) / - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.05, 5.08, 4.9)@5985 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	60.0×60.0	24.0× 24.0 ×22.0	psSAR 1g [W/kg]	0.236	**0.275**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR 10g [W/kg]	0.076	**0.072**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.00	-0.08
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	All points	M2/M1 [%]	N/A	55.2
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	5.1
			psSAR 8g [W/kg]	0.087	**0.086**
			psAPD 1 cm^2-sq. [W/m^2]	N/A	**2.75**
			psAPD 4 cm^2-sq. [W/m^2]	N/A	**1.72**



Remarks: *. Date tested: 2024-03-11;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 69 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240311-_apd_14781156_es205-1+ds126919_canon.d8sar- 3/11-11,6h11,ax80(0),2x2,5985,tp

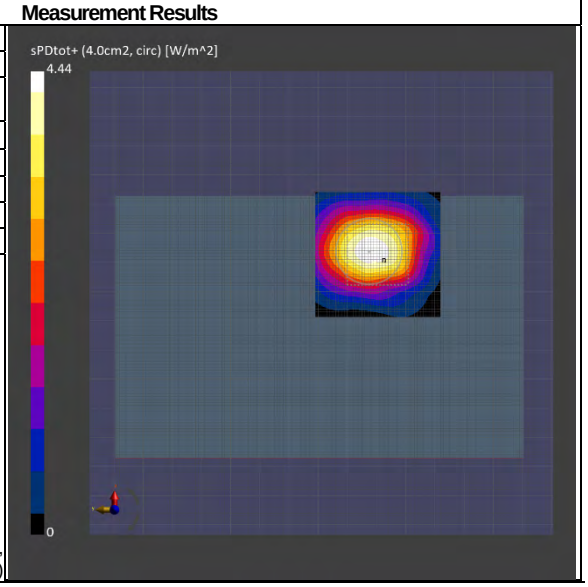
APPENDIX 2: Measurement data / Appendix 2-1: Plot(s) of Worst Reported Exposure Value (in each operation band, on each antenna) (cont'd)

Plot 6-1: IPD: (6.2/6.5/6.7/7.0 GHz band) Antenna 1 side, Front & touch, 11ax80(MCS0)/SDM, 5985 MHz

EUT: Communication Module+Digital Camera ; Model: ES205+DS126918 ; Serial:DE1-A1-091+000101900023
Mode: 11ax80(MCS0, 2Tx-2ST) (UID: 0 (CW)) ; Frequency: 5985 MHz ; Test Distance: 2.00 mm

DASY8 mmW Configuration: - Electronics:DAE4 Sn626 (Cal.: 2024-01-09)/ - Phantom: mmWave ; Serial: 1115 ; Phantom section: 5G / Medium Name: Air - Probe: EUmmWV4 - SN9668_F1-55GHz (Cal.: 2024-01-08) ; ConvF: (1.0 ,1.0) / - Software: 3.2.2.2358 (Measurement & Evaluation)

Scan Setup		Measurement Results	
Item	**5G Scan**	**Item**	**Results**
Grid Extents [mm]	40.0 × 40.0	**Ave. Area [cm²]**	**4**
Grid Steps [lambda]	0.04075095875871267 × 0.04075095875871267	Ave. type	Circular
Sensor Surface [mm]	2.0	**psPDn+ [W/m²]**	**3.29**
MAIA monitored	Y	**psPDtot+ [W/m²]**	**4.44**
		E max. [V/m]	53.4
		H max. [V/m]	0.206
		Power Drift [dB]	-0.20



↑ (+X: Left/Robot),
← (+Y: Front/Robot)

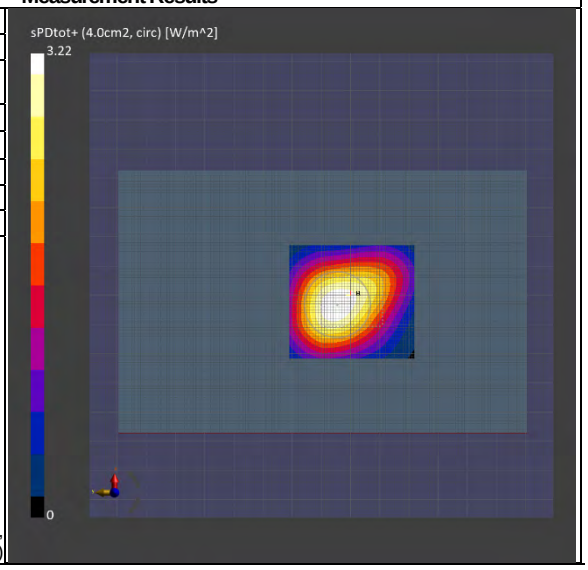
Remarks: *. Date tested:2024-03-12 ;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 24 deg.C. / 66 %RH
*. Project file name-Measurement Group: 240312-_ipd_14781156_es205-1+ds126919_canon.d8mmwv - 3/12-6,6h6,ax80(m0),2x2,5985,frt

Plot 6-2: IPD: (6.2/6.5/6.7/7.0 GHz band) Antenna 2 side, Top & touch, 11ax80(MCS0)/SDM, 5985 MHz

EUT: Communication Module+Digital Camera ; Model: ES205+DS126918 ; Serial:DE1-A1-091+000101900023
Mode: 11ax80(MCS0, 2Tx-2ST) (UID: 0 (CW)) ; Frequency: 5985 MHz ; Test Distance: 2.00 mm

DASY8 mmW Configuration: - Electronics:DAE4 Sn626 (Cal.: 2024-01-09)/ - Phantom: mmWave ; Serial: 1115 ; Phantom section: 5G / Medium Name: Air - Probe: EUmmWV4 - SN9668_F1-55GHz (Cal.: 2024-01-08) ; ConvF: (1.0 ,1.0) / - Software: 3.2.2.2358 (Measurement & Evaluation)

Scan Setup		Measurement Results	
Item	**5G Scan**	**Item**	**Results**
Grid Extents [mm]	35.0 × 40.0	**Ave. Area [cm²]**	**4**
Grid Steps [lambda]	0.04075095875871267 × 0.04075095875871267	Ave. type	Circular
Sensor Surface [mm]	2.0	**psPDn+ [W/m²]**	**2.71**
MAIA monitored	Y	**psPDtot+ [W/m²]**	**3.22**
		E max. [V/m]	39.8
		H max. [V/m]	0.134
		Power Drift [dB]	-0.20



↑ (+X: Left/Robot),
← (+Y: Front/Robot)

Remarks: *. Date tested:2024-03-12 ;Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 68 %RH
*. Project file name-Measurement Group: 240312-_ipd_14781156_es205-1+ds126919_canon.d8mmwv - 3/12-1,6h1,ax80(m0),2x2,5985,tp

APPENDIX 3: Test instruments

Appendix 3-1: Equipment used

Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
AT	191844	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
AT	169910	Power Meter	Keysight Technologies Inc	8990B	MY51000448	2023/09/28	12
AT	169911	Power sensor	Keysight Technologies Inc	N1923A	MY57270004	2023/09/28	12
AT	169912	Power sensor	Keysight Technologies Inc	N1923A	MY57290005	2023/09/28	12
AT	236500	Attenuator	To-Conne Co., Ltd.	SA-PJ-10	-	2023/12/04	12
AT	236504	Attenuator	To-Conne Co., Ltd.	SA-PJ-10	-	2023/12/04	12
AT	150461	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46186392	2023/05/02	12
AT	196947	Coaxial Cable	Huber+Suhner	SUCOFLEX 102	803478/2	2023/03/02	12

*. AT was measured 2023-12-06~2023-12-11. (Refer to Section 5 in this report.)

Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
AT	191844	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
AT	169910	Power Meter	Keysight Technologies Inc	8990B	MY51000448	2023/09/28	12
AT	169911	Power sensor	Keysight Technologies Inc	N1923A	MY57270004	2023/09/28	12
AT	169912	Power sensor	Keysight Technologies Inc	N1923A	MY57290005	2023/09/28	12
AT	236500	Attenuator	To-Conne Co., Ltd.	SA-PJ-10	-	2023/12/04	12
AT	236504	Attenuator	To-Conne Co., Ltd.	SA-PJ-10	-	2023/12/04	12
AT	160899	Spectrum Analyzer	Keysight Technologies Inc	E4440A	MY46185516	2024/02/07	12
AT	145175	Coaxial Cable	Suhner	SUCOFLEX 102	31600/2	2023/12/08	12

*. AT was measured 2024-02-07. (Refer to Section 5 in this report.)

Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
SAR	224031	DASY8 Module SAR/APD soft	Schmid & Partner Engineering AG	ver.16.2.4.2524	9-2506F07D	-	-
SAR	144886	Dielectric assessment kit soft	Schmid & Partner Engineering AG	DAK ver.3.0.6.14	9-0EE103A4	-	-
SAR	224020	DASY8 PC	Hewlett Packard	HP Z4 G4 Workstation	CZC1198G21	-	-
SAR	225155	Mounting Platform	Schmid & Partner Engineering AG	MP8E-TX2-60L Basic	-	-	-
SAR	224032	6-axis Robot	Schmid & Partner Engineering AG	TX2-60L spe	F/22/0033789/A/001	2023/08/29	12
SAR	224023	Robot Controller	Schmid & Partner Engineering AG	CS9spe-TX2-60	F/22/0033789/C/001	-	-
SAR	224025	Measurement Server	Schmid & Partner Engineering AG	DASY8 Measurement Server	10042	2024/02/01	12
SAR	224026	Electro-Optical Converter	Schmid & Partner Engineering AG	EOC8-60	1027	-	-
SAR	224027	Light Beam Unit	Schmid & Partner Engineering AG	LIGHTBEAM-85	2069	-	-
SAR	227155	SP2 Manual Control Pendant	Schmid & Partner Engineering AG	D21144507 C	22066839	-	-
SAR	144944	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	626	2024/01/09	12
SAR	146235	Dosimetric E-Field Probe	Schmid & Partner Engineering AG	EX3DV4	3907	2024/01/15	12
SAR	224034	Flat Phantom	Schmid & Partner Engineering AG	ELI V8.0	2161	2023/08/21	12
SAR	145596	Device holder	Schmid & Partner Engineering AG	Mounting device for transmitter	-	2023/08/29	12
SAR	224028	Modulation & Audio Interference Analyzer	Schmid & Partner Engineering AG	MAIA	1582	-	-
SAR	145090	Dipole Antenna	Schmid & Partner Engineering AG	D2450V2	822	2024/01/05	12
SAR	145091	Dipole Antenna (5GHz)	Schmid & Partner Engineering AG	D5GHzV2	1070	2024/01/17	12
SAR	230872	RF Power Source	Schmid & Partner Engineering AG	POWERSOURCE1	4300	2024/01/03	12
SAR	145500	Dielectric probe	Schmid & Partner Engineering AG	DAK3.5	1129	2024/01/16	12
SAR	146258	Network Analyzer	Keysight Technologies Inc	8753ES	US39171777	2023/10/05	12
SAR	145106	Ruler(150mm,L)	SHINWA	12103	-	2024/02/26	12
SAR	145086	Ruler(300mm)	SHINWA	13134	-	2024/02/26	12
SAR	145087	Ruler(100x50mm,L)	SHINWA	12101	-	2024/02/26	12
SAR	150560	Ruler(150mm)	SHINWA	14001	-	2024/02/26	12
SAR	144986	Thermo-Hygrometer data logger	SATO KEIRYOKI	SK-L200THIIα/SK-LTHIIα-2	015246/08169	2023/08/04	12
SAR	201967	Digital thermometer	HANNA	Checktemp-4	A01440226111	2023/08/04	12
SAR	201968	Digital thermometer	HANNA	Checktemp-4	A01310946111	2023/08/04	12
SAR	191844	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
SAR	146176	Spectrum Analyzer	ADVANTEST	R3272	101100994	-	-
SAR	146185	DI water	MonotaRo	34557433	-	-	-
SAR	146112	Primepure Ethanol	Kanto Chemical Co., Inc.	14032-79	-	-	-
SAR	207714	Head Tissue Simulating Liquid	Schmid & Partner Engineering AG	HBBL600-10000V6	SL AAH U16 BC	-	-

*. SAR test was performed 2024-03-04~2024-03-07.

Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
APD	224031	DASY8 Module SAR/APD soft	Schmid & Partner Engineering AG	ver.16.2.4.2524	9-2506F07D	-	-
APD	144886	Dielectric assessment kit soft	Schmid & Partner Engineering AG	DAK ver.3.0.6.14	9-0EE103A4	-	-
APD	224020	DASY8 PC	Hewlett Packard	HP Z4 G4 Workstation	CZC1198G21	-	-
APD	225155	Mounting Platform	Schmid & Partner Engineering AG	MP8E-TX2-60L Basic	-	-	-
APD	224032	6-axis Robot	Schmid & Partner Engineering AG	TX2-60L spe	F/22/0033789/A/001	2023/08/29	12
APD	224023	Robot Controller	Schmid & Partner Engineering AG	CS9spe-TX2-60	F/22/0033789/C/001	-	-
APD	224025	Measurement Server	Schmid & Partner Engineering AG	DASY8 Measurement Server	10042	2024/02/01	12
APD	224026	Electro-Optical Converter	Schmid & Partner Engineering AG	EOC8-60	1027	-	-
APD	224027	Light Beam Unit	Schmid & Partner Engineering AG	LIGHTBEAM-85	2069	-	-
APD	227155	SP2 Manual Control Pendant	Schmid & Partner Engineering AG	D21144507 C	22066839	-	-
APD	144944	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	626	2024/01/09	12
APD	146235	Dosimetric E-Field Probe	Schmid & Partner Engineering AG	EX3DV4	3907	2024/01/15	12
APD	224034	Flat Phantom	Schmid & Partner Engineering AG	ELI V8.0	2161	2023/08/21	12
APD	145596	Device holder	Schmid & Partner Engineering AG	Mounting device for transmitter	-	2023/08/29	12
APD	224028	Modulation & Audio Interference Analyzer	Schmid & Partner Engineering AG	MAIA	1582	-	-
APD	243049	Dipole Antenna (6.5GHz)	Schmid & Partner Engineering AG	D6.5GHzV2	1108	2024/01/03	12

(cont'd)

(cont'd)

Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
APD	235176	Signal Generator	Rohde & Schwarz	SMB 100A	183690	2024/02/05	12
APD	144988	Power meter	Keysight Technologies Inc	E4417A	GB41290718	2023/09/27	12
APD	146308	Power sensor	Keysight Technologies Inc	E9327A	US40440545	2023/09/27	12
APD	144990	Power sensor	Keysight Technologies Inc	E9327A	US40440544	2023/09/27	12
APD	225418	Directional coupler (dual)	TAP Microwave	TDC20180A20D	22100556	2023/12/04	12
APD	145105	Power meter	Anritsu Corporation	ML2495A	6K00003356	2023/09/27	12
APD	144991	Power sensor	Anritsu Corporation	MA2411B	12088	2023/09/27	12
APD	236501	Coaxial Cable	To-Conne Co., Ltd.	TC-038-SP-SP-200	23E09-01	2023/12/04	12
APD	236503	Coaxial Cable	To-Conne Co., Ltd.	TC-038-SP-SP-1800	23E09-02	2023/12/04	12
APD	215438	Attenuator	To-Conne Co., Ltd.	SA-PJ-20	-	2023/12/04	12
APD	145500	Dielectric probe	Schmid & Partner Engineering AG	DAK3.5	1129	2024/01/16	12
APD	145895	Network Analyzer	Keysight Technologies Inc	5071C	MY46106282	2023/12/27	12
APD	145106	Ruler(150mm,L)	SHINWA	12103	-	2023/02/08	12
APD	145086	Ruler(300mm)	SHINWA	13134	-	2024/02/26	12
APD	145087	Ruler(100x50mm,L)	SHINWA	12101	-	2024/02/26	12
APD	150560	Ruler(150mm)	SHINWA	14001	–	2024/02/26	12
APD	144986	Thermo-Hygrometer data logger	SATO KEIRYOKI	SK-L200THIIα/SK-LTHIIα-2	015246/08169	2023/08/04	12
APD	201967	Digital thermometer	HANNA	Checktemp-4	A01440226111	2023/08/04	12
APD	201968	Digital thermometer	HANNA	Checktemp-4	A01310946111	2023/08/04	12
APD	191844	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
APD	146176	Spectrum Analyzer	ADVANTEST	R3272	101100994	-	-
APD	146185	DI water	MonotaRo	34557433	-	-	-
APD	146112	Primepure Ethanol	Kanto Chemical Co., Inc.	14032-79	-	-	-
APD	207714	Head Tissue Simulating Liquid	Schmid & Partner Engineering AG	HBBL600-10000V6	SL AAH U16 BC	-	-

*. APD test was performed 2024-03-11.

Test Name	LIMS ID	Description	Manufacturer	Model	Serial	Last Calibration Date	Calibration Interval (Month)
IPD	227149	DASY8 Module mmWave soft	Schmid & Partner Engineering AG	ver.3.2.2.2358	9-2506F07D_mmW	-	-
IPD	224020	DASY8 PC	Hewlett Packard	HP Z4 G4 Workstation	CZC1198G21	-	-
IPD	225155	Mounting Platform	Schmid & Partner Engineering AG	MP8E-TX2-60L Basic	-	-	-
IPD	224032	6-axis Robot	Schmid & Partner Engineering AG	TX2-60L spe	F/22/0033789/A/001	2023/08/29	12
IPD	224023	Robot Controller	Schmid & Partner Engineering AG	CS9spe-TX2-60	F/22/0033789/C/001	-	-
IPD	224025	Measurement Server	Schmid & Partner Engineering AG	DASY8 Measurement Server	10042	2024/02/01	12
IPD	224026	Electro-Optical Converter	Schmid & Partner Engineering AG	EOC8-60	1027	-	-
IPD	224027	Light Beam Unit	Schmid & Partner Engineering AG	LIGHTBEAM-85	2069	-	-
IPD	227155	SP2 Manual Control Pendant	Schmid & Partner Engineering AG	D21144507 C	22066839	-	-
IPD	144944	Data Acquisition Electronics	Schmid & Partner Engineering AG	DAE4	626	2024/01/09	12
IPD	227150	mmWave probe	Schmid & Partner Engineering AG	EUmmWV4	9668	2024/01/08	12
IPD	227151	mmWave Phantom	Schmid & Partner Engineering AG	QD 015 025 CA	1115	-	-
IPD	227154	EummW Probe Cup	Schmid & Partner Engineering AG	SM PEU 500 AA	-	-	-
IPD	224028	Modulation & Audio Interference Analyzer	Schmid & Partner Engineering AG	MAIA	1582	-	-
IPD	238558	Coaxial-fed rectangular patch verification source	Schmid & Partner Engineering AG	P6500V2	1012	2024/01/20	12
IPD	235176	Signal Generator	Rohde & Schwarz	SMB 100A	183690	2024/02/05	12
IPD	144988	Power meter	Keysight Technologies Inc	E4417A	GB41290718	2023/09/27	12
IPD	146308	Power sensor	Keysight Technologies Inc	E9327A	US40440545	2023/09/27	12
IPD	144990	Power sensor	Keysight Technologies Inc	E9327A	US40440544	2023/09/27	12
IPD	225418	Directional coupler (dual)	TAP Microwave	TDC20180A20D	22100556	2023/12/04	12
IPD	145105	Power meter	Anritsu Corporation	ML2495A	6K00003356	2023/09/27	12
IPD	144991	Power sensor	Anritsu Corporation	MA2411B	12088	2023/09/27	12
IPD	236501	Coaxial Cable	To-Conne Co., Ltd.	TC-038-SP-SP-200	23E09-01	2023/12/04	12
IPD	236503	Coaxial Cable	To-Conne Co., Ltd.	TC-038-SP-SP-1800	23E09-02	2023/12/04	12
IPD	215438	Attenuator	To-Conne Co., Ltd.	SA-PJ-20	-	2023/12/04	12
IPD	150560	Ruler(150mm)	SHINWA	14001	–	2024/02/26	12
IPD	144986	Thermo-Hygrometer data logger	SATO KEIRYOKI	SK-L200THIIα/SK-LTHIIα-2	015246/08169	2023/08/04	12
IPD	191844	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/08/03	12
IPD	146176	Spectrum Analyzer	ADVANTEST	R3272	101100994	-	-

*. IPD test was performed 2024-03-12~03-13.

The expiration date of calibration is the end of the expired month.
As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chain of calibrations.
All equipment is calibrated with valid calibrations. Each measurement data is traceable to the national or international standards.
*. Hyphens for Last Calibration Date and Cal Int (month) are instruments that Calibration is not required (e.g. software), or instruments checked in advance before use.

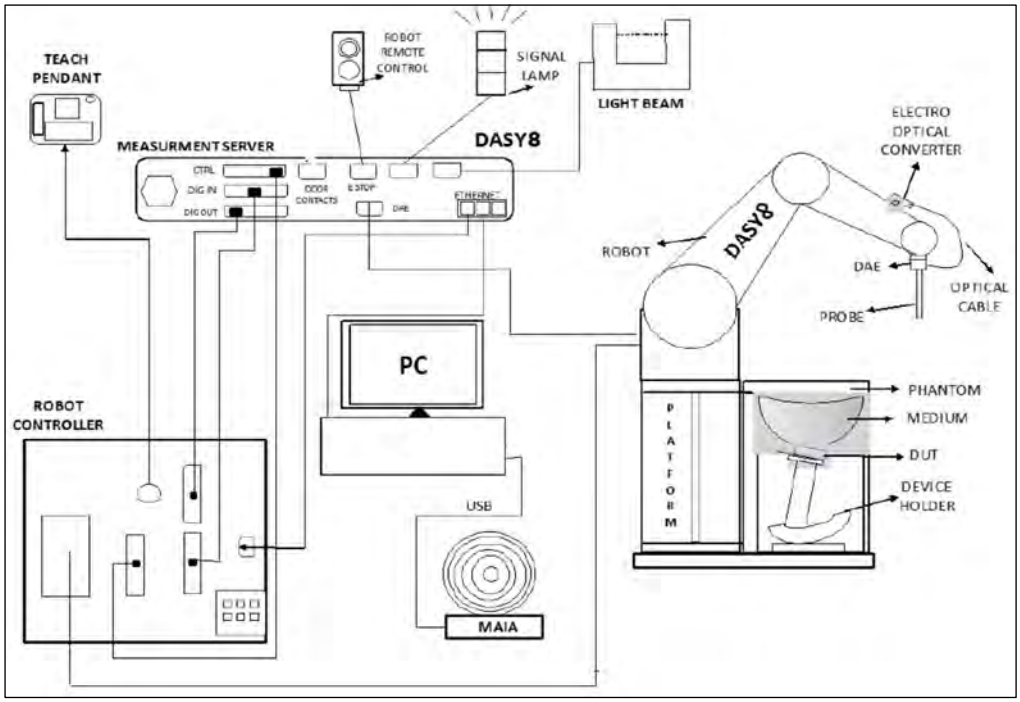
[Test Item] AT: Antenna terminal conducted power, SAR: Specific Absorption Rate, APD: Absorbed Power Density, IPD: Incident Power Density

*. LIMS ID: 146112, the parameters of primepure Ethanol (as reference liquid) used for the simulated tissue parameter confirmation was defined the NPL Report MAT23 (http://www.npl.co.uk/content/conpublication/4295)

Appendix 3-2: Measurement System

Appendix 3-2-1: SAR Measurement System

These measurements were performed with the automated near-field scanning system DASY8 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot), which positions the probes with a positional repeatability of better than ± 0.03 mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines to the data acquisition unit. The SAR measurements were conducted with the dosimetry probes EX3DV4 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation.

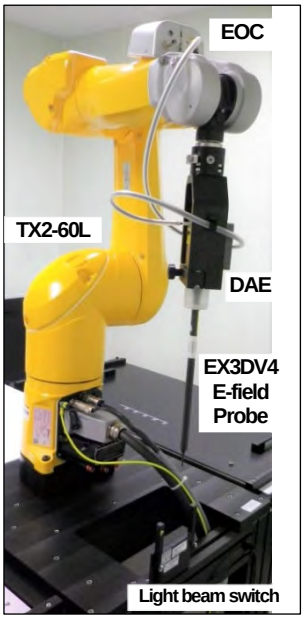


The DASY8 SAR/APD system for performing compliance tests consist of the following items:

- 6-axis robotic arm (Stäubli TX2-60L) for positioning the probe
- Mounting Platform for keeping the phantoms at a fixed location relative to the robot
- Measurement Server for handling all time-critical tasks, such as measurement data acquisition and supervision of safety features
- EOC (Electrical to Optical Converter) for converting the optical signal from the DAE to electrical before being transmitted to the measurement server
- LB (Light-Beam unit) for probe alignment (measurement of the exact probe length and eccentricity)
- SAR probe (EX3DV4 probes) for measuring the E-field distribution in the phantom. The SAR distribution and the psSAR (peak spatial averaged SAR) are derived from the E-field measurement.
- SAR phantom that represents a physical model with an equivalent human anatomy. A Specific Anthropomorphic Mannequin (SAM) head is usually used for handheld devices, and a Flat phantom is used for body-worn devices.
- TSL (Tissue Simulating Liquid) representing the dielectric properties of used tissue, e.g. Head Simulating Liquid, HSL.
- DAE (Data Acquisition Electronics) for reading the probe voltages and transmitting it to the DASY8 PC.
- Device Holder for positioning the DUT beneath the phantom.
- MAIA (Modulation and Interference Analyzer) for confirming the accuracy of the probe linearization parameters
- Operator PC for running the DASY8 software to define/execute the measurements
- System validation kits for system check/validation purposes.

Platforms

The platform is a multi-phantom support structure made of a wood and epoxy composite (ε = 3.3 and loss tangent δ < 0.07). It is a strong and rigid structure transparent to electric and magnetic fields (nonmetallic components).



TX2-60L robot, CS9 robot controller

•Number of Axes : 6 •Repeatability : ± 0.03 mm •Manufacture : Stäubli

DASY8 Measurement server

The DASY8 Measurement Server handles all time critical tasks such as acquisition of measurement data, detection of phantom surface, control of robot movements, supervision of safety features.

•Manufacture : Schmid & Partner Engineering AG

Data Acquisition Electronic (DAE)

The DAE is used to acquire the probe sensor voltages and transfer them to the DASY8 Measurement Server, and to report mechanical surface detection and probe collisions. The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter, and a command decoder with a control logic unit. Transmission to the DASY8 Measurement Server is accomplished through an optical downlink for data and status information and an optical uplink for commands and the clock. The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts used for mechanical surface detection and probe collision detection.

•Measurement Range : 1 µV to > 200 mV (2 range settings: 4 mV (low), 400 mV (high))
•Input Offset voltage : < 1 µV (with auto zero) •Input Resistance : 200 MΩ
•Battery operation : > 10 hrs. (with two rechargeable 9 V battery)
•Manufacture : Schmid & Partner Engineering AG

Electro-Optical Converter (EOC8-TX2-60L)

The Electrical to Optical Converter (EOC8) supports as data exchange between the DAE and the measurement server (optical connector) and data acquisition based on Ethernet protocol.

•Manufacture : Schmid & Partner Engineering AG

Light Beam Switch

The light beam unit allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm, as well as the probe length and the horizontal probe offset, are measured. The software then corrects all movements within the measurement jobs, such that the robot coordinates are valid for the probe tip. The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.

•Manufacture : Schmid & Partner Engineering AG

SAR measurement software

•Software version : Refer to Appendix 3-1 (Equipment used) •Manufacture : Schmid & Partner Engineering AG

E-Field Probe

•Model : EX3DV4 •Frequency : 4 MHz to 10 GHz, Linearity: ±0.2 dB (30 MHz to 10 GHz)
•Construction : Symmetrical design with triangular core, Built-in shielding against static charges, PEEK enclosure material (resistant to organic solvents, e.g., DGBE).
•CF : Refer to calibration data of Appendix. (CF: Conversion Factors)
•Directivity : ± 0.1 dB in TSL (rotation around probe axis) / ± 0.3 dB in TSL (rotation normal to probe axis)
•Dynamic Range : 10 µW/g to > 100 mW/g; Linearity: ± 0.2 dB (noise: typically < 1 µW/g)
•Dimension : Overall length: 330 mm (Tip: 20 mm) / Tip diameter: 2.5 mm (Body: 12 mm)
Typical distance from probe tip to dipole centers: 1mm
•Application : High precision dosimetric measurement in any exposure scenario (e.g., very strong gradient fields). Only probe which enables compliance testing for frequencies up to 6GHz with precision of better 30%.
•Manufacture : Schmid & Partner Engineering AG

ELI Phantom

The ELI phantom is used for compliance testing of handheld and body-mounted wireless devices in the frequency range of 4 MHz to 10 GHz. ELI is fully compatible with the IEC/IEEE 62209-1528 standard and all known tissue simulating liquids.
ELI V8.0 phantom shell has optimized pretension in the bottom surface during production, such that the phantom is more robust and with reduced sagging.

•Model Number : ELI V8.0 flat phantom •Shell Material : Vinyl ester, fiberglass reinforced (VE-GF)
•Shell Thickness : 2.0 ± 0.2 mm (bottom plate) •Dimensions : 600 mm × 400 mm (oval) (volume: Approx. 30 liters)
•Manufacture : Schmid & Partner Engineering AG

Device Holder, Laptop holder, support material

Accurate device positioning is crucial for accurate and repeatable measurements. The positions in which the devices must be measured are defined by the standards. The device holder is designed to cope with the different positions given in the standard. It has two scales for device rotation (with respect to the body axis) and device inclination (with respect to the line between the ear reference points). The rotation center for both scales is the ear reference point (ERP). Thus the device needs no repositioning when changing the angles. The DASY device holder is constructed of low-loss POM material having the following dielectric parameters: relative permittivity ε=3 and loss tangent δ=0.02. The amount of dielectric material has been reduced in the closest vicinity of the device, since measurements have suggested that the influence of the clamp on the test results could thus be lowered.

☒ Device holder: In combination with the ELI phantom, the Mounting Device enables the rotation of the mounted transmitter device in spherical coordinates. Transmitter devices can be easily and accurately positioned. The low-loss dielectric urethane foam was used for the mounting section of device holder.
•Material : Polyoxymethylene (POM) •Manufacture: Schmid & Partner Engineering AG
☐ Laptop holder: A simple but effective and easy-to-use extension for the Mounting Device; facilitates testing of larger devices (e.g., laptops, cameras, etc.) according to IEC 62209-2.
•Material : Polyoxymethylene (POM), PET-G, Foam •Manufacture: Schmid & Partner Engineering AG
☒ Support form: Urethane foam

Data storage and evaluation (post processing)

The uplink signal transmitted by the DUT is measured inside the TSL by the probe, which is accurately positioned at a precisely known distance and with a normal orientation with respect to the phantom surface. The dipole / loop sensors at the probe tips pick up the signal and generate a voltage, which is measured by the voltmeter inside the DAE. The DAE returns digital values, which are converted to an optical signal and transmitted via the EOC to the measurement server. The data is finally transferred to the DASY8 software for further post processing. In addition, the DASY8 software periodically requests a measurement with short-circuited inputs from the DAE to compensate the amplifier offset and drift. This procedure is called DAE zeroing.
The operator has access to the following low level measurement settings:
• the integration time is the voltage acquisition time at each measurement point. It is typically 0.5 s.
• the zeroing period indicates how often the DAE zeroing is performed.
In parallel, the MAIA measures the characteristics of the uplink signal via the air interface and sends this information to the DASY8 software, which compares them to the communication system defined by the operator. A warning is issued if any difference is detected.

The measurement data is now acquired and can be post processed to compute the psSAR1g /8g /10g.
The measured voltages are not directly proportional to SAR and must be linearized. The formulas below are based on [1] (*1).
The measured voltage is first linearized using the (a, b, c, d) set of parameters specific to the communication system and sensor:

$$V_{compi} = U_i + U_i^2 \cdot \frac{10^{\frac{d}{10}}}{d_{cp_i}}$$

with	V_{compi}	= compensated voltage of channel i (μV)	(i = x,y,z)
	U_i	= input voltage of channel i (μV)	(i = x,y,z)
	d	= PMR factor d (dB)	(Probe parameter)
	dcp_i	= diode compression point of channel i (μV)	(Probe parameter, i = x,y,z)

$$V_{compi}{}_{dB\sqrt{\mu V}} = 10 \cdot \log_{10}(V_{compi})$$

$$corr_i = a_i \cdot e^{-(\frac{b_i - 10\log_{10}(V_{compi})}{c_i})^2}$$

with	$corr_i$	= correction factor of channel i (dB)	(i = x,y,z)
	$V_{compi}{}_{dB\sqrt{\mu V}}$	= compensated voltage of channel i (dB$\sqrt{\mu V}$)	(i = x,y,z)
	a_i	= PMR factor a of channel *i* (dB)	(Probe parameter, i = x,y,z)
	b_i	= PMR factor b of channel *i* (dB$\sqrt{\mu V}$)	(Probe parameter, i = x,y,z)
	c_i	= PMR factor c of channel *i* (-)	(Probe parameter, i = x,y,z)

The voltage $V_{i}{}_{dB\sqrt{\mu V}}$ is the linearized voltage in dB$\sqrt{\mu V}$):

$$V_{i}{}_{dB\sqrt{\mu V}} = V_{compi}{}_{dB\sqrt{\mu V}} - corr_i$$

with	$V_{i}{}_{dB\sqrt{\mu V}}$	= linearized voltage of channel i (dB$\sqrt{\mu V}$)	(i = x,y,z)
	$V_{compi}{}_{dB\sqrt{\mu V}}$	= compensated voltage of channel i (dB$\sqrt{\mu V}$)	(i = x,y,z)
	$Corr_i$	= PMR factor a of channel *i* (dB)	(i = x,y,z)

Finally, the linearized voltage is converted in μV :

$$V_i = 10^{\frac{V_{i}{}_{dB\sqrt{\mu V}}}{10}}$$

with	V_i	= linearized voltage of channel i (μV)	(i = x,y,z)
	$V_{compi}{}_{dB\sqrt{\mu V}}$	= linearized voltage of channel i (dB$\sqrt{\mu V}$)	(i = x,y,z)

The Field data for each channel are calculated using the linearized voltage:

E-fieldprobes: $$E_i = \sqrt{\frac{V_i}{Norm_i \cdot ConvF}}$$

with	V_i	= linearized voltage of channel i in μV	(i = x,y,z)
	$Norm_i$	= sensor sensitivity of channel i in μV/(V/m)2 for E-field Probes	(i = x,y,z)
	$ConvF$	= sensitivity enhancement in solution	
	E_i	= electric field strength of channel i in V/m	(i = x,y,z)

The RMS value of the field components gives the total field strength (Hermitian magnitude) :

$$E_{tot} = \sqrt{E_x^2 + E_y^2 + E_z^2}$$

The E-field data value is used to calculate SAR :

$$SAR = E_{tot}^2 \cdot \frac{\sigma}{\rho \cdot 1000}$$

with	SAR	= local specific absorption rate in mW/g
	Etot	= total field strength in V/m
	σ	= conductivity in [Ω/m] or [S/m]
	ρ	= equivalent tissue density in g/cm3

Note: The resulting linearized voltage is only approximated because the probe UID is used 0 (CW) for the test signal in this test report.

(*1) [1] Jagadish Nadakuduti, Sven Kuehn, Marcel Fehr, Mark Douglas Katja Pokovic and Niels Kuster, "The Effect of Diode Response of electromagnetic Field Probes for the Measurements of Complex Signals." IEEE Transactions on Electromagnetic Compatibility, vol. 54, pp. 1195–1204, Dec. 2012.

Appendix 3-2-2: SAR system check results

*. Prior to the SAR assessment of EUT, the Daily check was performed to test whether the SAR system was operating within its target of ±10%. The Daily check results are in the table below.

Daily check results (*. Abbreviations: F: Frequency, Meas.: Measured, Cal.: Calibration value, STD: Standard value, Dev.: Deviation)

Liquid type: Head / Date	F [MHz]	ΔSAR 1g [%]	ΔSAR 10g [%]	Pin [dBm]	SAR (1g) [W/kg] (*b) Meas. (*a)	SAR (1g) 1W scaled	SAR (1g) Target Cal. (*c)	SAR (1g) Target STD (*d)	SAR (1g) Deviation Cal. [%]	SAR (1g) Deviation STD [%]	SAR (10g) [W/kg] (*b) Meas. (*c)	SAR (10g) 1W scaled	SAR (10g) Target Cal. (*c)	SAR (10g) Target STD (*d)	SAR (10g) Deviation Cal. [%]	SAR (10g) Deviation STD [%]	SAR (8g) [W/kg] (*b) Meas. (*c)	SAR (8g) 1W scaled	SAR (8g) Target Cal. (*c)	SAR (8g) Target STD (*d)	SAR (8g) Deviation Cal. [%]	SAR (8g) Deviation STD [%]	APD (4cm²) [W/m²] Meas. (*c)	APD (4cm²) 1W scaled	APD (4cm²) Target Cal. (*c)	APD (4cm²) Target STD (*e)	APD (4cm²) Deviation Cal. [%]	APD (4cm²) Deviation STD [%]	Dev. Limit [%]
2024-03-04	2450	1.4	0.8	17.01	2.65	52.02	53.4	52.4	-2.6	-0.7	1.24	24.49	25	24	-2.0	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-04	5600	0.9	1.2	16.99	4.39	87	84.8	N/A	2.6	N/A	1.25	24.7	24.4	N/A	1.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-05	5250	0.8	1.1	16.97	4.06	80.93	81.2	N/A	-0.3	N/A	1.16	23.05	23.4	N/A	-1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-05	5600	0.9	1.2	16.99	4.41	87.4	84.8	N/A	3.1	N/A	1.25	24.7	24.4	N/A	1.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-05	5800	1.0	1.2	16.96	4.13	82.34	80.4	78	2.4	5.6	1.17	23.28	22.9	21.9	1.7	6.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-06	5250	0.8	1.1	16.97	4.14	82.52	81.2	N/A	1.6	N/A	1.19	23.65	23.4	N/A	1.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-06	5600	0.9	1.2	16.99	4.45	88.2	84.8	N/A	4.0	N/A	1.27	25.1	24.4	N/A	2.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-06	5800	1.0	1.2	16.96	4.18	83.33	80.4	78	3.6	6.8	1.18	23.48	22.9	21.9	2.5	7.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-06	2450	1.4	0.8	17.01	2.66	52.22	53.4	52.4	-2.2	-0.3	1.24	24.49	25	24	-2.0	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-07	2450	1.4	0.8	17.01	2.66	52.22	53.4	52.4	-2.2	-0.3	1.24	24.49	25	24	-2.0	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-07	5250	0.8	1.1	16.97	4.02	80.13	81.2	N/A	-1.3	N/A	1.16	23.05	23.4	N/A	-1.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-07	5600	0.9	1.2	16.99	4.43	87.8	84.8	N/A	3.5	N/A	1.26	24.9	24.4	N/A	2.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-07	5800	1.0	1.2	16.96	4.14	82.54	80.4	78	2.7	5.8	1.17	23.28	22.9	21.9	1.7	6.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	≤ 10
2024-03-11	6500	1.1	1.5	50mW	13.8	273	289	N/A	-5.5	N/A	2.59	51.02	53.7	N/A	-5.0	N/A	3.14	61.86	65.5	N/A	-5.6	N/A	62.9	1258	1310	1290	-4.0	-2.5	≤ 10

*a. (2.45, 5.25, 5.6, 5.8 GHz) The Measured SAR/ value is obtained at 17 dBm (50 mW) setting of POWERSOURCE1 (LIMS ID#230872, S/N: 4300) calibrated by Schmid & Partner Engineering AG, the data sheet was filed in this report.
(6.5 GHz) The Measured SAR/APD value is obtained at 50 mW of SG (SMB 100A) output (LIMS ID#235176, S/N: 183690).

*b. The measured SAR value of Daily check was compensated for tissue dielectric deviations (ΔSAR) and scaled to 1W of output power in order to compare with the manufacture's calibration target value which was normalized.
ΔSAR corrected SAR (1g) (W/kg) = (Measured SAR(1g) (W/kg)) × (100 - (ΔSAR1g(%)) / 100
ΔSAR corrected SAR (10g,8g) (W/kg) = (Measured SAR(10g,8g) (W/kg)) × (100 - (ΔSAR10g(%)) / 100

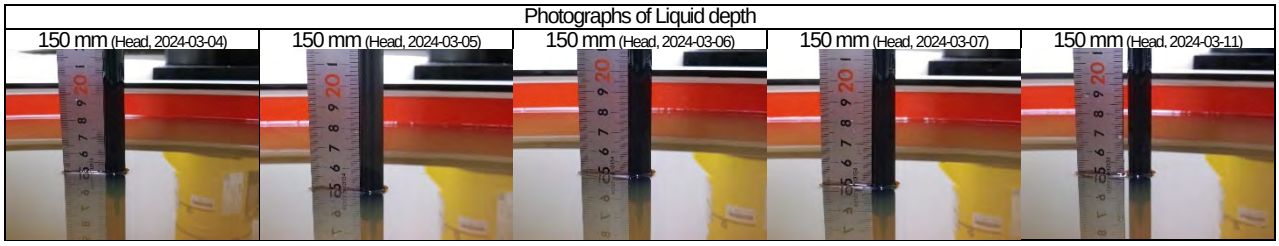
*c. The target value is a parameter defined in the calibration data sheet of D2450V2 (sn:822) dipole, D5GHzV2 (sn:1070) dipole and D6.5GHzV2 dipole antenna (sn: 1108) calibrated by Schmid & Partner Engineering AG, the data sheet was filed in this report.

*d. The target value (normalized to 1W) is defined in IEEE Std.1528. or IEEE/IEC 62209-1528.

*e. The target value (normalized to 1W) is defined in IEC PAS 63446.

Appendix 3-2-3: SAR system check measurement data

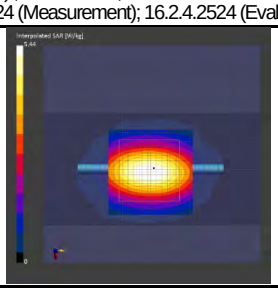
Photographs of Liquid depth



Dipole: D2450V2 - SN822 ; Mode: CW (0) ; Frequency: 2450 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 2450 MHz; Conductivity: 1.859 S/m; Permittivity: 39.45

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (6.83, 7.07, 6.68)@2450 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	30.0× 30.0 ×30.0	psSAR1g [W/kg]	2.65	**2.65**
Grid Steps [mm]	10.0×10.0	5.0× 5.0 ×1.5	psSAR10g [W/kg]	1.23	**1.24**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.00	0.02
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.5	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	80.1
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	9.0

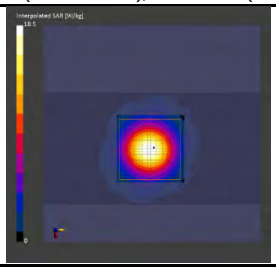


Remarks: *. Date tested:2024-03-04 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (70~80) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/4-0b

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5600 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5600 MHz; Conductivity: 4.946 S/m; Permittivity: 34.04

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.78, 4.48, 4.49)@5600 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	4.09	**4.39**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.14	**1.25**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.06	-0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	N/A	N/A	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	61.2
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.2



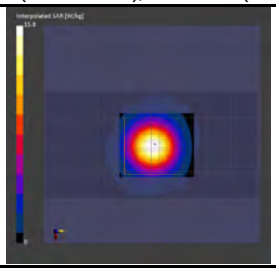
Remarks: *. Date tested:2024-03-04 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (70~80) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/4-0a

Appendix 3-2-3: SAR system check measurement data (cont'd)

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5250 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5250 MHz; Conductivity: 4.558 S/m; Permittivity: 34.64

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.47, 5.16, 5.18)@5250 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	3.81	**4.06**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.08	**1.16**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.00	-0.01
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	64.5
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.4

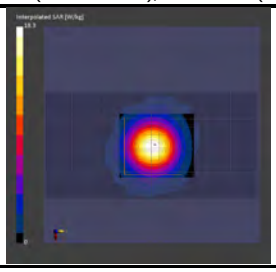


Remarks: *. Date tested:2024-03-05 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23)deg.C. / (70~80) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/5-0a

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5600 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5600 MHz; Conductivity: 4.946 S/m; Permittivity: 34.04

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.78, 4.48, 4.49)@5600 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	4.11	**4.41**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.16	**1.25**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.01	0.01
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	61.9
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.4

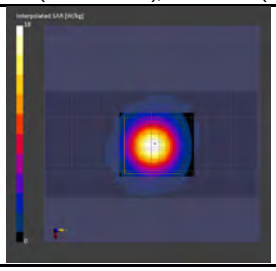


Remarks: *. Date tested:2024-03-05 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23)deg.C. / (70~80) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/5-0b

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5800 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5800 MHz; Conductivity: 5.180 S/m; Permittivity: 33.69

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.87, 4.59, 4.57)@5800. MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	3.84	**4.13**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.07	**1.17**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.01	0.01
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	59.5
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.2

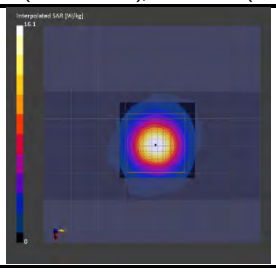


Remarks: *. Date tested:2024-03-05 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23)deg.C. / (70~80) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/5-0c

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5250 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5250 MHz; Conductivity: 4.558 S/m; Permittivity: 34.64

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.47, 5.16, 5.18)@5250 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	3.90	**4.14**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.11	**1.19**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	0.00	-0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	65.0
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.2



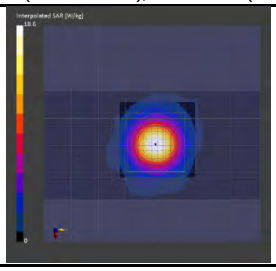
Remarks: *. Date tested:2024-03-06 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (65~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-0a

Appendix 3-2-3: SAR system check measurement data (cont'd)

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5600 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5600 MHz; Conductivity: 4.946 S/m; Permittivity: 34.04

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.78, 4.48, 4.49)@5600 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	4.15	**4.45**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.18	**1.27**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.01	-0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	62.0
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.2

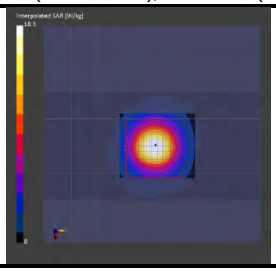


Remarks: *. Date tested:2024-03-06 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (65~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-0b

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5800 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5800 MHz; Conductivity: 5.180 S/m; Permittivity: 33.69

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.87, 4.59, 4.57)@5800 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	3.90	**4.18**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.09	**1.18**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.04	0.02
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	60.2
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.4

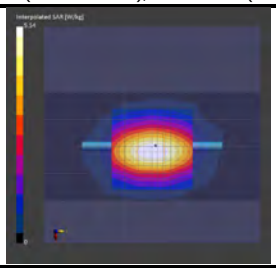


Remarks: *. Date tested:2024-03-06 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (65~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-0c

Dipole: D2450V2 - SN822 ; Mode: CW (0) ; Frequency: 2450 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 2450 MHz; Conductivity: 1.859 S/m; Permittivity: 39.45

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (6.83, 7.07, 6.68)@2450 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	30.0× 30.0 ×30.0	psSAR1g [W/kg]	2.65	**2.66**
Grid Steps [mm]	10.0×10.0	5.0× 5.0 ×1.5	psSAR10g [W/kg]	1.24	**1.24**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.01	0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.5	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	VMS + 6p	M2/M1 [%]	N/A	80.2
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	9.0

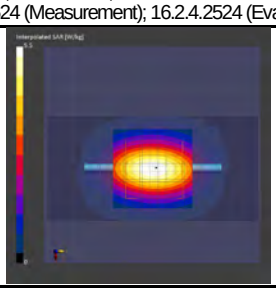


Remarks: *. Date tested:2024-03-06 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (65~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/6-0d

Dipole: D2450V2 - SN822 ; Mode: CW (0) ; Frequency: 2450 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 2450 MHz; Conductivity: 1.859 S/m; Permittivity: 39.45

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (6.83, 7.07, 6.68)@2450 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	30.0× 30.0 ×30.0	psSAR1g [W/kg]	2.66	**2.66**
Grid Steps [mm]	10.0×10.0	5.0× 5.0 ×1.5	psSAR10g [W/kg]	1.23	**1.24**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.00	0.01
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.5	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	VMS + 6p	All points	M2/M1 [%]	N/A	79.9
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	9.0



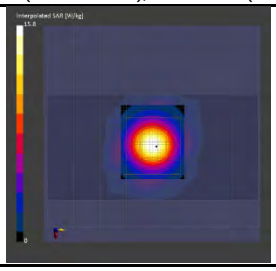
Remarks: *. Date tested:2024-03-07 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (70~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/7-0a

Appendix 3-2-3: SAR system check measurement data (cont'd)

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5250 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5250 MHz; Conductivity: 4.558 S/m; Permittivity: 34.64

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.47, 5.16, 5.18)@5250 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	3.75	**4.02**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.07	**1.16**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.05	-0.02
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	64.2
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.4

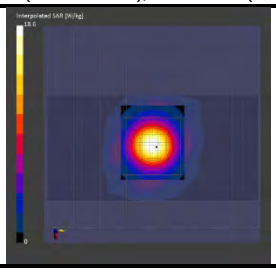


Remarks: *. Date tested:2024-03-07 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (70~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/7-0b

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5600 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5600 MHz; Conductivity: 4.946 S/m; Permittivity: 34.04

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.78, 4.48, 4.49)@5600 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	4.13	**4.43**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.16	**1.26**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.06	-0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	61.5
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.4

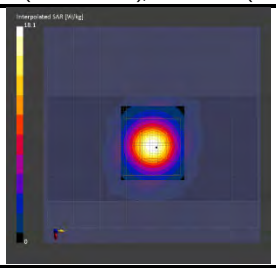


Remarks: *. Date tested:2024-03-07 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (70~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/7-0c

Dipole: D5GHzV2 - SN1070 ; Mode: CW (0) ; Frequency: 5800 MHz ; Test Distance: 10 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 5800 MHz; Conductivity: 5.180 S/m; Permittivity: 33.69

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (4.87, 4.59, 4.57)@5800 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	40.0×80.0	24.0× 24.0 ×22.0	psSAR1g [W/kg]	3.83	**4.14**
Grid Steps [mm]	10.0×10.0	4.0× 4.0 ×1.4	psSAR10g [W/kg]	1.07	**1.17**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.06	-0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	60.0
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	7.4

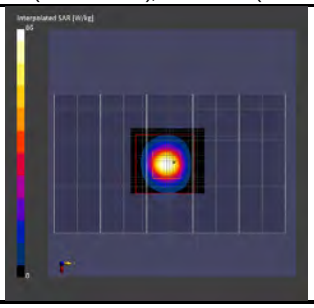


Remarks: *. Date tested:2024-03-07 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / (70~75) %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240304-_14781156_es205-1+ds126919_canon.d8sar- 3/7-0d

Dipole: D6.5GHzV2 - SN1108 ; Mode: CW (0) ; Frequency: 6500 MHz ; Test Distance: 5 mm (dipole to liquid); Power: 17.0 dBm
TSL parameters used: Head(v6) ; f= 6500 MHz; Conductivity: 5.945 S/m; Permittivity: 32.50

DASY8 Configuration: - Electronics: DAE4 - SN626 (Calibrated:2024-01-09)/ - Phantom: ELI V8.0 (20deg probe tilt) ; Serial: 2161 ; Phantom section: Flat
- Probe: EX3DV4 - SN3907(Calibrated: 2024-01-15); ConvF: (5.05, 5.08, 4.9)@6500 MHz / - Software: 16.2.4.2524 (Measurement); 16.2.4.2524 (Evaluation)

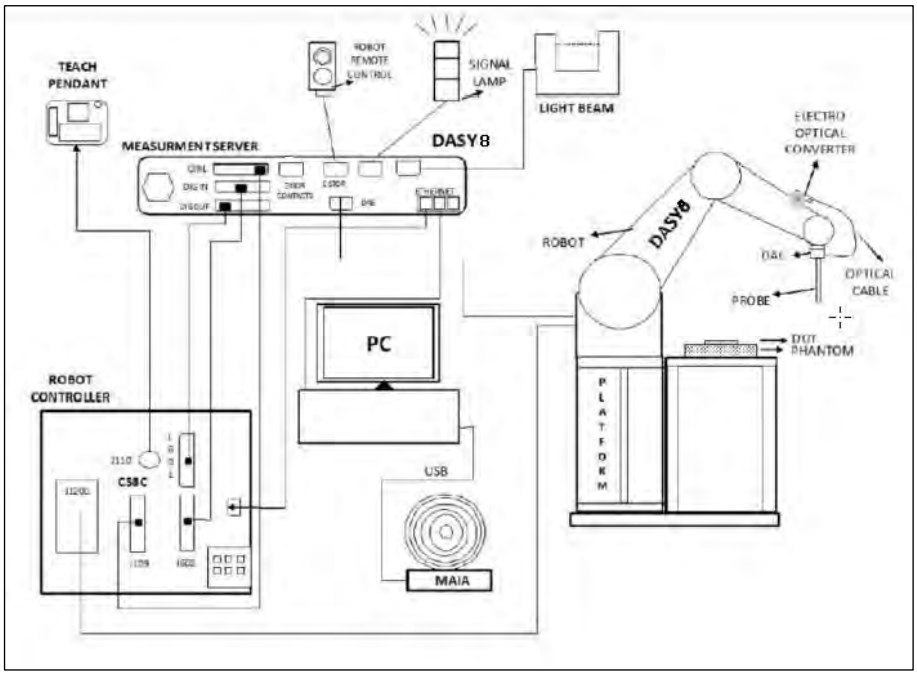
Scan Setup			Measurement Results		
Setup Items	Area Scan	Zoom Scan	Meas. Items	Area Scan	Zoom Scan
Grid Extents [mm]	51.0×85.0	22.0× 22.0 ×22.0	psSAR1g [W/kg]	11.8	**13.8**
Grid Steps [mm]	8.5×8.5	3.4× 3.4 ×1.4	psSAR10g [W/kg]	2.31	**2.59**
Sensor Surface [mm]	3.0	1.4	Power Drift [dB]	-0.14	0.00
Graded Grid	N/A	Yes	Power Scaling	Disabled	Disabled
Grading Ratio	N/A	1.4	Scaling Factor [dB]	N/A	N/A
MAIA monitored	Y	Y	TSL Correction	No correction	No correction
Surface Detection	All points	All points	M2/M1 [%]	N/A	50.6
Scan Method	Measured	Measured	Dist 3dB Peak [mm]	N/A	4.8
			psSAR8g [W/kg]	2.78	3.14
			PD 1 cm^2-sq. [W/m^2]	N/A	138
			PD 4 cm^2-sq. [W/m^2]	N/A	62.9



Remarks: *. Date tested:2024-03-11 ; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 60 %RH; Liquid depth: 150 mm;
*. Liquid temperature: 22.0 deg.C. ± 0.5 deg.C. (22.0 deg.C., in check); *. Red cubic: big=SAR(10g) / small=SAR(1g)
*. Project file name-Measurement Group: 240311-_apd_14781156_es205-1+ds126919_canon.d8sar- 3/11-0a

Appendix 3-2-4: Power Density Measurement System

These measurements were performed with the automated near-field scanning system DASY8 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot), which positions the probes with a positional repeatability of better than ± 0.03 mm. The power density (PD) measurements were conducted with EUmmWV4 (manufactured by SPEAG) which has two dipoles optimally arranged to obtain pseudo-vector information and minimum three measurements/point, 120º rotated around probe axis.

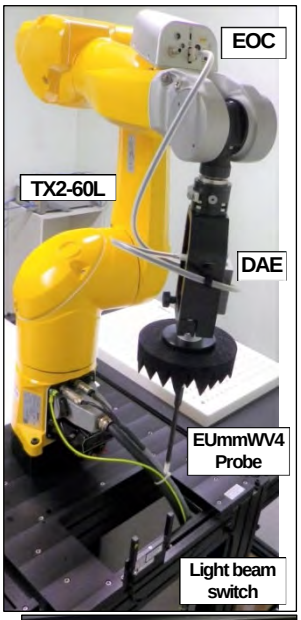


The DASY8 Power Density system for performing compliance tests consist of the following items:

- 6-axis robotic arm (Stäubli TX2-60L) for positioning the probe
- Mounting Platform for keeping the phantoms at a fixed location relative to the robot
- Measurement Server for handling all time-critical tasks, such as measurement data acquisition and supervision of safety features
- EOC (Electrical to Optical Converter) for converting the optical signal from the DAE to electrical before being transmitted to the measurement server
- LB (Light-Beam unit) for probe alignment (measurement of the exact probe length and eccentricity)
- mmWave probe (EUmmWV4) for measuring the E-field with pseudo-vector information.
- The mmWave phantom for approximates free-space conditions.
- DAE (Data Acquisition Electronics) for reading the probe voltages and transmitting it to the DASY8 PC.
- Device Holder for positioning the DUT on the mmWave phantom.
- MAIA (Modulation and Interference Analyzer) for confirming the accuracy of the probe linearization parameters
- Operator PC for running the DASY8 mmWave software to define/execute the measurements
- System validation kits for system check/validation purposes.

Platforms

The platform is a multi-phantom support structure made of a wood and epoxy composite (ε = 3.3 and loss tangent δ < 0.07). It is a strong and rigid structure transparent to electric and magnetic fields (nonmetallic components).



TX2-60L robot, CS9 robot controller

•Number of Axes : 6 •Repeatability : ± 0.03 mm •Manufacture : Stäubli

DASY8 Measurement server

The DASY8 Measurement Server handles all time critical tasks such as acquisition of measurement data, detection of phantom surface, control of robot movements, supervision of safety features.
•Manufacture : Schmid & Partner Engineering AG

Data Acquisition Electronic (DAE)

The DAE is used to acquire the probe sensor voltages and transfer them to the DASY8 Measurement Server, and to report mechanical surface detection and probe collisions. The DAE consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter, and a command decoder with a control logic unit. Transmission to the DASY8 Measurement Server is accomplished through an optical downlink for data and status information and an optical uplink for commands and the clock. The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts used for mechanical surface detection and probe collision detection.
•Measurement Range : 1 µV to > 200 mV (2 range settings: 4 mV (low), 400 mV (high))
•Input Offset voltage : < 1 µV (with auto zero) •Input Resistance : 200 MΩ
•Battery operation : > 10 hrs. (with two rechargeable 9 V battery)
•Manufacture : Schmid & Partner Engineering AG

Electro-Optical Converter (EOC8-TX2-60L)

The Electrical to Optical Converter (EOC8) supports as data exchange between the DAE and the measurement server (optical connector) and data acquisition based on Ethernet protocol.
•Manufacture : Schmid & Partner Engineering AG

Light Beam Switch

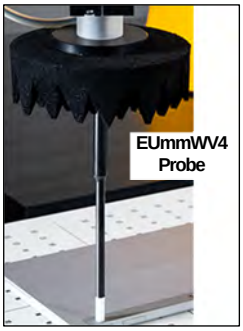
The light beam unit allows automatic "tooling" of the probe. During the process, the actual position of the probe tip with respect to the robot arm, as well as the probe length and the horizontal probe offset, are measured. The software then corrects all movements within the measurement jobs, such that the robot coordinates are valid for the probe tip. The repeatability of this process is better than 0.1 mm. If a position has been taught with an aligned probe, the same position will be reached with another aligned probe within 0.1mm, even if the other probe has different dimensions. During probe rotations, the probe tip will keep its actual position.
•Manufacture : Schmid & Partner Engineering AG

SAR measurement software

•Software version : Refer to Appendix 3-1 (Equipment used) •Manufacture : Schmid & Partner Engineering AG

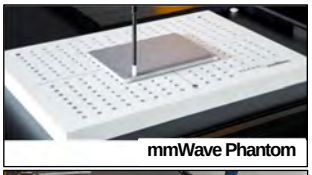
Probe

•Model : EUmmWV4 •Frequency : 750 MHz to 110 GHz •Conversion Factors (CF) : 1.0 (Air)
•Construction : Two dipoles optimally arranged to obtain pseudo-vector information. Minimum three measurements/point, 120º rotated around probe axis. Sensors (0.8 mm length) printed on glass substrate protected by high density foam. Low perturbation of the measured field. Requires positioner which can do accurate probe rotation.
•Dynamic Range : <20 V/m ~ 10000 V/m with PRE-10 (min <20 V/m ~ 2000 V/m)
•Dimension : Overall length: 320 mm (Tip: 20 mm) / Tip diameter: encapsulation 8 mm (internal sensor <1mm) Distance from probe tip to dipole centers: <2 mm / Sensor displacement to probe's calibration point: <0.3 mm
•Application : E-field measurements of 5G devices and other mm-wave transmitters operating above 6 GHz in <2 mm distance from device (free-space). Power density, H-field, and far-field analysis using total field reconstruction (DASY8/6 Module mmWave or ICEy-mmW module required)
•Manufacture : Schmid & Partner Engineering AG



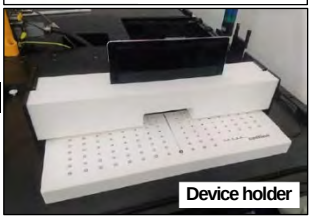
mmWave Phantom

The mmWave phantom approximates free-space conditions, allowing to evaluate not only the antenna side of the device but also the front (screen) or any opposite-radiating side of wireless devices operating above 10 GHz without distorting the radiofrequency (RF) field. It consists of a 40 mm thick Rohacell plate used as a test bed which has a loss tangent (tan δ) ≤ 0.05 and a relative permittivity (er) s1.2. The high-performance RF absorbers are placed below the foam.
•Model Number: QD 015 025 CA •Manufacture : Schmid & Partner Engineering AG



Device Holder, support material

The solid low-density mmWave device under test (DUT) holder warrants no impact on the DUT radiation performance and an easy positioning of the DUT in a vertical test configuration. Three configurations are available: holder for larger devices (e.g., tablets), small devices (e.g., smart phones), and a combined phantom for both small and large devices.
☐ Device holder: •Model Number : QD 015 025 CA •Material : Rohacell
•Manufacture : Schmid & Partner Engineering AG
☒ Support form: Urethane foam



Data storage and evaluation (post processing)

Computation of the Electric Field Polarization Ellipse

For the numerical description of an arbitrarily oriented ellipse in three-dimensional space, five parameters are needed: the semi-major axis (a), the semi-minor axis (b), two angles describing the orientation of the normal vector of the ellipse (ϕ, θ), and one angle describing the tilt of the semi-major axis (ψ). For the two extreme cases, i.e., circular and linear polarizations, only three parameters (a, ϕ, and θ) are sufficient for the description of the incident field.

For the reconstruction of the ellipse parameters from measured data, the problem can be reformulated as a nonlinear search problem. The semi-major and semi-minor axes of an elliptical field can be expressed as functions of the three angles (ϕ, θ, and ψ). The parameters can be uniquely determined to minimize the error based on least-squares for the given set of angles and the measured data. In this way, the number of free parameters is reduced from five to three, which means that at least three sensor readings are necessary to gain sufficient information for the reconstruction of the ellipse parameters. However, to suppress the noise and increase the reconstruction accuracy, it is desirable to overdetermine the system of equations. The solution to use a probe consisting of two sensors angled by γ1 and γ2 toward the probe axis and to perform measurements at three angular positions of the probe, i.e., at β1, β2, and β3, results in overdeterminations by a factor of two. If more information or increased accuracy is required, more rotation angles can be added.

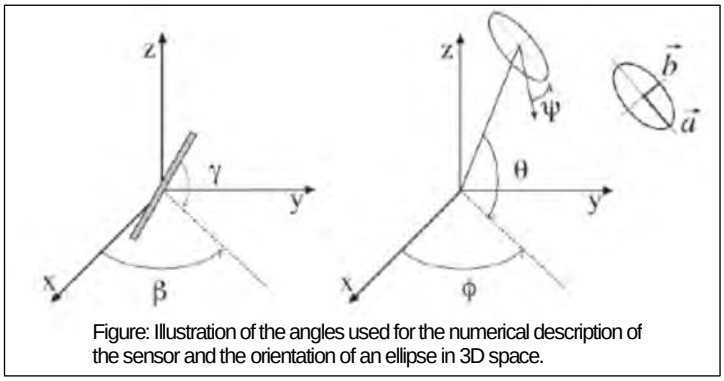


Figure: Illustration of the angles used for the numerical description of the sensor and the orientation of an ellipse in 3D space.

The reconstruction of the ellipse parameters can be separated into linear and non-linear parts that are best solved by the Givens algorithm combined with a downhill simplex algorithm. To minimize the mutual coupling, sensor angles are set with a shift of 90° (γ2 = γ1 + 90°), and, for simplification, the first rotation angle of the probe (β1) can be set to 0°. More details can be found in [1].

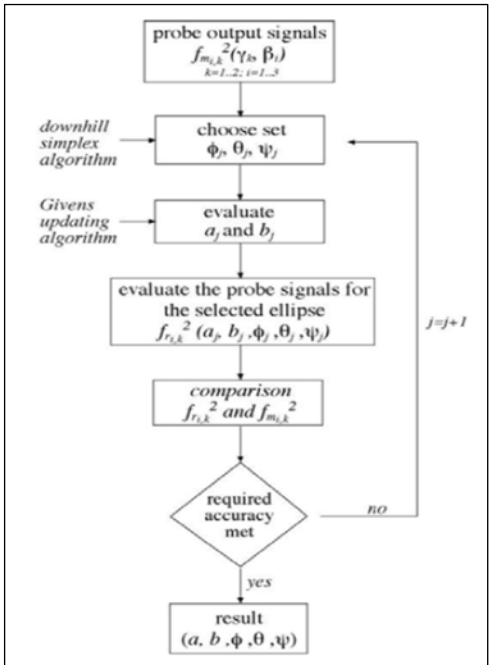


Figure: Numerical algorithm for reconstructing the ellipse parameters

Total Field and Power Flux Density Reconstruction

Plane-to-Plane Phase Reconstruction (PTP-PR)

Computation of the PD in general requires knowledge of the electric (E-) and magnetic (H-) field amplitudes and phases in the plane of incidence. Reconstruction of these quantities from pseudo-vector E-field measurements is feasible, as they are constrained by Maxwell's equations.

The Plane-to-Plane Phase Reconstruction (PTP-PR) reconstruction approach based on the Gerchberg-Saxton algorithm [2, 3], which benefits from the availability of the E-field polarization ellipse information obtained with the EUmmWVx probe. This reconstruction algorithm, together with the ability of the probe to measure extremely close to the source without perturbing the field, permits reconstruction of the E- and H-fields and the PD on measurement planes located as near as λ/2π [3]. At closer distances, the uncertainty might be larger.

Equivalent Source Reconstruction (ESR)

In order to overcome the main limitations of PTP-PR at distances d ≤ λ/2π from the EUT, i.e., in the reactive near-field and beyond planar evaluation surfaces, SPEAG and the IT'IS Foundation (Zurich, Switzerland) have joined forces in a research collaboration to develop a novel equivalent source reconstruction (ESR) algorithm, that models an unknown and inaccessible transmitter not anymore in terms of plane waves but as a set of distributed known auxiliary sources below the surface of the device enclosure. The locations, amplitudes, and phases of these sources are then determined to optimally reconstruct the measured near-fields. As a result, the transmitters inside any enclosure can be replaced with these equivalent sources in any radiation problem, including exposure assessment scenarios. ESR even enables back transformation within a limited range.

This approach has three main advantages:

- lower reconstruction errors in the reactive near-field regions, which ease compliance testing of EUT operating in the 6 - 110 GHz frequency range
- evaluation of phones with non-planar surfaces, e.g., a flat surface with a protruding camera module
- possibility to perform phase reconstruction in any parts of the radiation region, without any limitation to planar measurement domains. In other words, measurements can be done on a conformal surface or even on scattered points in the radiation domain and still obtain reliable data on the phase variations. This opens the way for evaluations on non-planar device surfaces (e.g., virtual-reality goggles) and enable full-wave simulations using measurement results only, i.e., without requiring models for the transmitters.

Power Flux Density Averaging

The average of the reconstructed power density is evaluated on the measurement plane. Two averaging geometries are available: a circle and a rotating square. The averaging area is defined by the user; typical values are 1 cm2 and 4 cm2. The three variants of the spatial-average Power Density (sPD) defined in the IEC 63195 standard draft are computed by integration of the Poynting vector:

- **sPDn+** : surface normal propagating power flux density into the phantom
- **sPDtot+** : total propagating power flux density into the phantom
- **sPDmod+**:total power flux density into the phantom considering near-field exposure.

[1] K. Pokovic, T. Schmid, J. Frohlich, and N. Kuster. Novel probes and evaluation procedures to assess field magnitude and polarization. IEEE Transactions on Electromagnetic Compatibility 42(2): 240–244, 2000
[2] R. W. Gerchberg and W. O. Saxton. A practical algorithm for the determination of phase from image and diffraction plane pictures. Optik 35(2): 237–246, 1972
[3] A. P. Anderson and S. Sali. New possibilities for phase less microwave diagnostics. Part 1: Error reduction techniques. IEE Proceedings H – Microwaves, Antennas and Propagation 132(5): 291–298, 1985

Appendix 3-2-5: Power Density system check results

*. Prior to the PD assessment of EUT, the Daily check was performed to test whether the PD system was operating within its target of 10%. The Daily check results are in the table below.

Date	Freq. [MHz]	Gap [mm]	Max. E [V/m]	Ave. Type	psPDn+ [W/m2] 4cm²				psPDtot+ [W/m2] 4cm²				psPDmod+ [W/m2] 4cm²				Ave [W/m²] 4cm²			psPDn+ [W/m2] 1cm²				psPDtot+ [W/m2] 1cm²				psPDmod+ [W/m2] 1cm²				Ave [W/m²] 1cm²			Dev. Limit [%]
					Meas.	1W	Target	Dev. [%]	Meas.	1W	Target	Dev. [%]	Meas.	1W	Target	Dev. [%]	1W	Target	Dev. [%]	Meas.	1W	Target	Dev. [%]	Meas.	1W	Target	Dev. [%]	Meas.	1W	Target	Dev. [%]	1W	Target	Dev. [%]	
2024-03-12	6500	10	175	Circular	43.4	868	851	2.0	46.8	936	933	0.3	50.4	1008	1010	-0.2	937	931	0.6	57.6	1152	1150	0.2	58.8	1176	1180	-0.3	60.8	1216	1220	-0.3	1181	1183	-0.2	≤ 10
				Square	43.3	866	847	2.2	46.7	934	929	0.5	50.2	1004	1000	0.4	935	925	1.1	57.6	1152	1150	0.2	58.8	1176	1180	-0.3	60.8	1216	1220	-0.3	1181	1183	-0.2	≤ 10

. Dev.: Deviation (Dev.[%]=100((Meas.)/(target)-1)), Freq.: Frequency, Meas.: Measured, Ave.: Average.
*. The Measured IPD value is obtained at 50 mW.
*. Gap: Distance Patch to Measured Plane.
*. 1W: Measured result normalized to 1W input power.
*. The target value is a parameter defined in the calibration data sheet of P6500V2 (sn: 1012) antenna calibrated by Schmid & Partner Engineering AG (Certification No. P6500-PD-1012_Jan24, the data sheet was filed in this report).

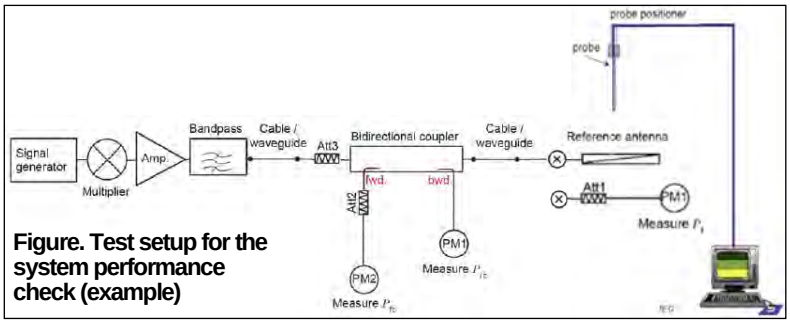


Figure. Test setup for the system performance check (example)

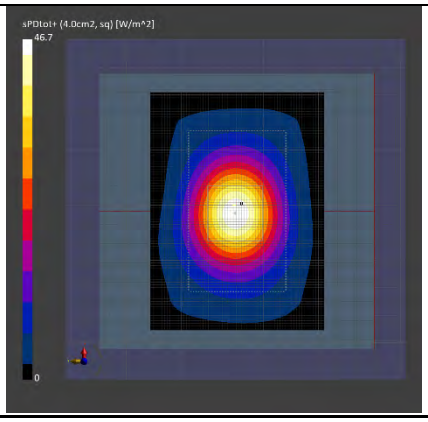
Appendix 3-2-6: Power Density system check measurement data

EUT: 6.5GHz Verify Source ; Model: P6500V2 ; Serial:1012 ; Size (WxHxD(Thickness) (mm)): 100.0 x 100.0 x 100.0); Position: FRONT
Mode: CW (UID: 0 (CW)) ; Frequency: 6500 MHz ; Test Distance: 8.00 mm

DASY8 mmW Configuration: - Electronics:DAE4 Sn626 (Cal.: 2024-01-09)/ - Phantom: mmWave ; Serial: 1115 ; Phantom section: 5G / Medium Name: Air - Probe: EUmmWV4 - SN9668_F1-55GHz (Cal.: 2024-01-08) ; ConvF: (1.0 ,1.0) / - Software: 3.2.2.2358 (Measurement & Evaluation)

Scan Setup		Measurement Results		
Item	5G Scan	Item	Results	
Grid Extents [mm]	80.0 × 60.0	**Ave. Area [cm²]**	4	
Grid Steps [lambda]	0.125 × 0.125	Ave. type	**Circular**	**Square**
Sensor Surface [mm]	8.0	**psPDn+ [W/m²]**	**43.4**	**43.3**
MAIA monitored	Y	**psPDtot+ [W/m²]**	**46.8**	**46.7**
		psPDmod+ [W/m²]	**50.4**	**50.2**
		E max. [V/m]	175	
		H max. [V/m]	0.386	
		Power Drift [dB]	0.02	
		Ave. Area [cm²]	1	
Measurement Results		**Ave. type**	**Circular**	**Square**
Max.(Sn) [W/m²]	64.0	**psPDn+ [W/m²]**	**57.6**	**57.6**
Max.(Stot) [W/m²]	64.2	**psPDtot+ [W/m²]**	**58.8**	**58.8**
Max.(|Stot|)[W/m²]	64.7	**psPDmod+ [W/m²]**	**60.8**	**60.8**

↑ (+X: Left/Robot),
← (+Y: Front/Robot)



Remarks: *. Date tested:2024-03-12; Tested by: Hiroshi Naka; Tested place:No.7 shielded room; Ambient: 23 deg.C. / 60 %RH
*. Project file name-Measurement Group: daily_P6500.d8mmwv - 24-03-12,daily,14781156

Appendix 3-3: Measurement Uncertainty

Uncertainty of SAR measurement (2.4 GHz ~ 6 GHz) (*. liquid: head(v6), DAK, Wi-Fi(BT)) (v11r05)							1g SAR	10g SAR
Symbol	Error Description	Uncertainty (Unc.)	Probability distribution	Divisor	ci (1g)	ci (10g)	ui (1g) (Std. Unc.)	ui (10g) (Std. Unc.)
Measurement System (DASY8)								
CF	Probe Calibration (EX3DV4) (*.HSL:10%)	± 14.0 %	Normal	2	1	1	± 7.0 %	± 7.0 %
CFdifit	Probe Calibration Drift	± 1.7 %	Rectangular	√3	1	1	± 1.0 %	± 1.0 %
LIN	Probe Linearity	± 4.7 %	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
BBS	Broadband Signal	± 2.6 %	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
ISO1	Probe Isotropy	± 7.6 %	Rectangular	√3	1	1	± 4.4 %	± 4.4 %
DAE	Data Acquisition	± 1.2 %	Normal	1	1	1	± 1.2 %	± 1.2 %
AMB	RF Ambient (noise&refrection) (< 12μW/g)	± 1.0 %	Normal	1	1	1	± 1.0 %	± 1.0 %
Δsys	Probe Positioning	± 0.5 %	Normal	1	0.33	0.33	± 0.2 %	± 0.2 %
DAT	Data Processing	± 2.3 %	Normal	1	1	1	± 2.3 %	± 2.3 %
Phantom and Device Error								
LIQ(σ)	Conductivity (measured) (DAK)	± 5.0 %	Normal	2	0.78	0.71	± 2.0 %	± 1.8 %
LIQ(Tσ)	Conductivity (temperature) (≤ 2 deg.C.)	± 2.4 %	Rectangular	√3	0.78	0.71	± 1.1 %	± 1.0 %
EPS	Phantom Permittivity (liquid to antenna: ≥ 5 mm)	± 14.0 %	Rectangular	√3	0.25	0.25	± 2.0 %	± 2.0 %
DIS	Distance EUT-TSL	± 2.7 %	Normal	1	2	2	± 5.4 %	± 5.4 %
Dxyz	Test Sample positioning	± 1.8 %	Normal	1	1	1	± 5.0 %	± 5.0 %
H	Device holder uncertainty	± 3.6 %	Normal	1	1	1	± 3.6 %	± 3.6 %
MOD	EUT Modulation	± 2.4 %	Rectangular	√3	1	1	± 1.4 %	± 1.4 %
TAS	Time-average SAR	± 0.0 %	Rectangular	√3	1	1	± 0.0 %	± 0.0 %
RFdrift	Drift of output power (measured, < 0.2 dB)	± 4.7 %	Normal	2	1	1	± 2.4 %	± 2.4 %
Correction to the SAR results								
C(e,σ)	Deviation to Target (e',σ: ≤ 10 %, IEC head)	± 1.9 %	Normal	1	1	0.84	± 1.9 %	± 1.6 %
C(R)	SAR Scaling	± 0 %	Rectangular	√3	1	1	± 0.0 %	± 0.0 %
u(ΔSAR)	**(SAR: 2.4 GHz~6 GHz) Combined Standard Uncertainty**					**RSS**	**± 12.3** %	**± 12.3** %
U	**(SAR: 2.4 GHz~6 GHz) Expanded Uncertainty**					**k=2**	**± 24.6 %**	**± 24.6 %**

*. This uncertainty budget is suggested by IEC/IEEE 62209-1528 and determined by SPEAG, DASY8 Module SAR Manual, 2022-08 (Chapter 6.3, DASY8 Uncertainty Budget for Hand-held/Body-worn Devices, Frequency band: 300 MHz - 3 GHz range and 3 GHz – 6 GHz range). All listed error components have veff equal to ∞.

Uncertainty of SAR daily check (2.4 GHz ~ 6 GHz) (*. liquid: head(v6), DAK, CW) (v11r05)							1g SAR	10g SAR
Symbol	Error Description	Uncertainty (Unc.)	Probability distribution	Divisor	ci (1g)	ci (10g)	ui (1g) (Std. Unc.)	ui (10g) (Std. Unc.)
Measurement System (DASY8)								
CF	Probe Calibration (EX3DV4) (*.HSL:10%)	± 14.0 %	Normal	2	1	1	± 7.0 %	± 7.0 %
CFdifit	Probe Calibration Drift	± 1.7 %	Rectangular	√3	1	1	± 1.0 %	± 1.0 %
LIN	Probe Linearity	± 4.7 %	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
ISO2	Probe Isotropy	± 4.7 %	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
DAE	Data Acquisition	± 1.2 %	Normal	1	1	1	± 1.2 %	± 1.2 %
AMB	RF Ambient (noise&refrection) (<12uW/g)	± 1.0 %	Normal	1	1	1	± 1.0 %	± 1.0 %
Δsys	Probe Positioning	± 0.5 %	Normal	1	0.33	0.33	± 0.2 %	± 0.2 %
DAT	Data Processing	± 2.3 %	Normal	1	1	1	± 2.3 %	± 2.3 %
Phantom and Device Error								
LIQ(σ)	Conductivity (measured) (DAK)	± 5.0 %	Normal	2	0.78	0.71	± 2.0 %	± 1.8 %
LIQ(Tσ)	Conductivity (temperature) (≤ 2 deg.C.)	± 2.4 %	Rectangular	√3	0.78	0.71	± 1.1 %	± 1.0 %
EPS	Phantom Permittivity (liquid to antenna: ≥ 5 mm)	± 14.0 %	Rectangular	√3	0.25	0.25	± 2.0 %	± 2.0 %
VAL	Validation antenna uncertainty	± 5.5 %	Rectangular	√3	1	1	± 3.2 %	± 3.2 %
Pin	Uncertainty in accepted power	± 2.5 %	Normal	2	1	1	± 1.3 %	± 1.3 %
DIS	Distance EUT-TSL	± 2.0 %	Normal	1	2	2	± 4.0 %	± 4.0 %
Dxyz	Test Sample positioning	± 1.0 %	Normal	1	1	1	± 1.0 %	± 1.0 %
RFdrift	Drift of output power (measured, < 0.1 dB)	± 2.3 %	Rectangular	√3	1	1	± 1.3 %	± 1.3 %
Correction to the SAR results								
C(e,σ)	Deviation to Target (e',σ: ≤ 10 %. IEC head)	± 1.9 %	Normal	1	1	0.84	± 1.9 %	± 1.6 %
u(ΔSAR)	**(SAR daily check: 2.4 GHz~6 GHz) Combined Standard Uncertainty**					**RSS**	**± 10.8** %	**± 10.7** %
U	**(SAR daily check: 2.4 GHz~6 GHz) Expanded Uncertainty**					**k=2**	**± 21.6 %**	**± 21.4 %**

*. This uncertainty budget is suggested by IEC/IEEE 62209-1528 and determined by SPEAG, DASY8 Module SAR Manual, 2022-08 (Chapter 6.2, DASY8 Uncertainty Budget for System Verification, Frequency band: 300 MHz - 6 GHz range). All listed error components have veff equal to ∞.

*. Table of uncertainties are listed for ISO/IEC 17025.
*. Although this standard determines only the limit value of uncertainty, there is no applicable rule of uncertainty in this. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.

Appendix 3-3: Measurement Uncertainty (cont'd)

Uncertainty of SAR measurement (6 GHz ~ 10 GHz) (*. liquid: head(v6), DAK, Wi-Fi(BT)) (v12r02)							**1g SAR**	**10g SAR**
Symbol	Error Description	Uncertainty (Unc.)	Probability distribution	Divisor	ci (1g)	ci (10g)	ui (1g) (Std. Unc.)	ui (10g) (Std. Unc.)
Measurement System (DASY8)								
CF	Probe Calibration (EX3DV4)	± 18.6 %	Normal	2	1	1	± 9.3 %	± 9.3 %
CFdrift	Probe Calibration Drift	± 1.7 %	Rectangular	√3	1	1	± 1.0 %	± 1.0 %
LIN	Probe Linearity	± 4.7 %	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
BBS	Broadband Signal	± 2.6 %	Rectangular	√3	1	1	± 1.5 %	± 1.5 %
ISO1	Probe Isotropy	± 7.6 %	Rectangular	√3	1	1	± 4.4 %	± 4.4 %
DAE	Data Acquisition	± 2.4 %	Normal	1	1	1	± 2.4 %	± 2.4 %
AMB	RF Ambient (noise&refrection) (< 12μW/g)	± 1.0 %	Normal	1	1	1	± 1.0 %	± 1.0 %
Δsys	Probe Positioning	± 0.5 %	Normal	1	0.33	0.33	± 0.2 %	± 0.2 %
DAT	Data Processing	± 3.5 %	Normal	1	1	1	± 3.5 %	± 3.5 %
Phantom and Device Error								
LIQ(σ)	Conductivity (measured) (DAK)	± 5.0 %	Normal	2	0.78	0.71	± 2.0 %	± 1.8 %
LIQ(Tσ)	Conductivity (temperature) (≤ 2 deg.C.)	± 2.4 %	Rectangular	√3	0.78	0.71	± 1.1 %	± 1.0 %
EPS	Phantom Permittivity (liquid to antenna: ≥ 5 mm)	± 14.0 %	Rectangular	√3	0.25	0.25	± 2.0 %	± 2.0 %
DIS	Distance EUT-TSL	± 2.4 %	Normal	1	2	2	± 4.8 %	± 4.8 %
Dxyz	Test Sample positioning	± 5.0 %	Normal	2	1	1	± 2.5 %	± 2.5 %
H	Device holder uncertainty	± 3.6 %	Normal	1	1	1	± 3.6 %	± 3.6 %
MOD	EUT Modulation (SMC)	± 2.4 %	Rectangular	√3	1	1	± 1.4 %	± 1.4 %
TAS	Time-average SAR	± 0.0 %	Rectangular	√3	1	1	± 0.0 %	± 0.0 %
RFdrift	Drift of output power (measured, < 0.2 dB)	± 4.7 %	Normal	2	1	1	± 2.4 %	± 2.4 %
Correction to the SAR results								
C(e,σ)	Deviation to Target (e',σ: ≤ 10 %, IEC head)	± 1.9 %	Normal	1	1	0.84	± 1.9 %	± 1.6 %
C(R)	SAR Scaling	± 0 %	Rectangular	√3	1	1	± 0.0 %	± 0.0 %
u(ΔSAR)	**(SAR: 6 GHz ~ 10 GHz) Combined Standard Uncertainty**					**RSS**	**± 14.5** %	**± 14.4** %
U	**(SAR: 6 GHz ~ 10 GHz) Expanded Uncertainty (k=2)**					**k=2**	**± 29.0 %**	**± 28.8 %**

*. This uncertainty budget is suggested by IEC/IEEE 62209-1528 and determined by SPEAG, DASY8 Module SAR Manual, 2022-08 (Chapter 6.3, DASY8 Uncertainty Budget for Hand-held/Body-worn Devices, Frequency band: 6 GHz - 10 GHz range). All listed error components have veff equal to ∞.

Uncertainty of APD measurement (6 GHz ~ 10 GHz) (*. liquid: head(v6), DAK-3.5, Wi-Fi(BT)) (v12r02)							**1g SAR/1cm²APD**	**8g SAR/4cm²APD**
Symbol	Error Description	Uncertainty (Unc.)	Probability distribution	Divisor	ci (1g) / ($1cm^2$)	ci (8g.10g) / ($4cm^2$)	ui (1g) / ($1cm^2$) (Std. Unc.)	ui (8g, 10g) / ($4cm^2$) (Std. Unc.)
SAR	SAR measurement: 6 GHz~10 GHz, (1g, 10g)	± 14.5 %, 14.4 %	Normal	1	1	1	± 14.5 %	± 14.4 %
PDC	Power Density Conversion (*1)	± 13.5 %	Rectangular	√3	1	1	± 7.8 %	± 7.8 %
u(ΔSAR)	**(SAR: 6GHz ~ 10GHz) Combined Standard Uncertainty**					**RSS**	**± 16.5** %	**± 16.3** %
U	**(SAR: 6GHz ~ 10GHz) Expanded Uncertainty (k=2)**					**k=2**	**± 33.0 %**	**± 32.6 %**

*. This uncertainty budget is suggested by SPEAG, DASY8 Application Note: SAR, APD&PD at 6-10 GHz (Ver.7.0), 2023-01. All listed error components have veff equal to ∞.

Uncertainty of SAR daily check (6 GHz ~ 10 GHz) (*. liquid: head(v6), DAK, CW) (v12r02)							**1g SAR**	**10g SAR**
Symbol	Error Description	Uncertainty (Unc.)	Probability distribution	Divisor	ci (1g)	ci (10g)	ui (1g) (Std. Unc.)	ui (10g) (Std. Unc.)
Measurement System (DASY8)								
CF	Probe Calibration (EX3DV4)	± 18.6 %	Normal	2	1	1	± 9.3 %	± 9.3 %
CFdrift	Probe Calibration Drift	± 1.7 %	Rectangular	√3	1	1	± 1.0 %	± 1.0 %
LIN	Probe Linearity	± 4.7 %	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
ISO2	Probe Isotropy	± 4.7 %	Rectangular	√3	1	1	± 2.7 %	± 2.7 %
DAE	Data Acquisition	± 2.4 %	Normal	1	1	1	± 2.4 %	± 2.4 %
AMB	RF Ambient (noise&refrection) (<12uW/g)	± 1.0 %	Normal	1	1	1	± 1.0 %	± 1.0 %
Δsys	Probe Positioning	± 0.5 %	Normal	1	0.33	0.33	± 0.2 %	± 0.2 %
DAT	Data Processing	± 3.5 %	Normal	1	1	1	± 3.5 %	± 3.5 %
Phantom and Device Error								
LIQ(σ)	Conductivity (measured) (DAK)	± 5.0 %	Normal	2	0.78	0.71	± 2.0 %	± 1.8 %
LIQ(Tσ)	Conductivity (temperature) (≤ 2 deg.C.)	± 2.4 %	Rectangular	√3	0.78	0.71	± 1.1 %	± 1.0 %
EPS	Phantom Permittivity (liquid to antenna: ≥ 5 mm)	± 14.0 %	Rectangular	√3	0.25	0.25	± 2.0 %	± 2.0 %
VAL	Validation antenna uncertainty	± 5.5 %	Rectangular	√3	1	1	± 3.2 %	± 3.2 %
Pin	Uncertainty in accepted power	± 2.5 %	Normal	2	1	1	± 1.3 %	± 1.3 %
DIS	Distance EUT-TSL (spacer: 5mm)	± 2.4 %	Normal	1	2	2	± 4.8 %	± 4.8 %
Dxyz	Test Sample positioning	± 1.0 %	Normal	1	1	1	± 1.0 %	± 1.0 %
RFdrift	Drift of output power (measured, < 0.1 dB)	± 2.3 %	Rectangular	√3	1	1	± 1.3 %	± 1.3 %
Correction to the SAR results								
C(e,σ)	Deviation to Target (e',σ: ≤ 10 %. IEC head)	± 1.9 %	Normal	1	1	0.84	± 1.9 %	± 1.6 %
u(ΔSAR)	**(SAR daily check: 6 GHz ~ 10 GHz) Combined Standard Uncertainty**						**± 13.55** %	**± 13.5** %
U	**(SAR daily check: 6 GHz ~ 10 GHz) Expanded Uncertainty (k=2)**						**± 27.1 %**	**± 27.0 %**

*. This uncertainty budget is suggested by IEC/IEEE 62209-1528 and determined by SPEAG, DASY8 Module SAR Manual, 2022-08 (Chapter 6.2, DASY8 Uncertainty Budget for System Verification, Frequency band: 6 GHz - 10 GHz range). All listed error components have veff equal to ∞.

Uncertainty of APD daily check (6 GHz ~ 10 GHz) (*. liquid: head(v6), DAK-3.5, Wi-Fi(BT)) (v12r01)							**1g SAR/1cm²APD**	**8g SAR/4cm²APD**
Symbol	Error Description	Uncertainty (Unc.)	Probability distribution	Divisor	ci (1g) / ($1cm^2$)	ci (8g.10g) / ($4cm^2$)	ui (1g) / ($1cm^2$) (Std. Unc.)	ui (8g, 10g) / ($4cm^2$) (Std. Unc.)
SAR	SAR daily check: 6 GHz~10 GHz, (1g, 10g)	± 13.55 %, 13.5 %	Normal	1	1	1	± 13.55 %	± 13.5 %
PDC	Power Density Conversion (*1)	± 13.5 %	Rectangular	√3	1	1	± 7.8 %	± 7.8 %
u(ΔSAR)	**(SAR: 6GHz ~ 10GHz) Combined Standard Uncertainty**					**RSS**	**± 15.6** %	**± 15.6** %
U	**(SAR: 6GHz ~ 10GHz) Expanded Uncertainty (k=2)**					**k=2**	**± 31.2 %**	**± 31.2 %**

*. This uncertainty budget is suggested by SPEAG, DASY8 Application Note: SAR, APD&PD at 6-10 GHz (Ver.7.0), 2023-01. All listed error components have veff equal to ∞.

*. Table of uncertainties are listed for ISO/IEC 17025.
*. Although this standard determines only the limit value of uncertainty, there is no applicable rule of uncertainty in this. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.
*1. The conservative uncertainty for PDC (rectangular distribution) is described in IEC PAS 63446 as 13.5 % (0.55 dB).

Appendix 3-3: Measurement Uncertainty (cont'd)

Uncertainty of PD measurement (v01r01)						
Symbol	Error Description	Uncertainty (± dB)	Probability distribution	Divisor	ci	Standard Uncertainty (ui) (± dB)
Measurement System (DASY8)						
CAL	Calibration	0.49	Normal	1	1	0.49
COR	Probe correction	0	Rectangular	√3	1	0
FRS	Frequency response (BW ≦1GHz)	0.2	Rectangular	√3	1	0.12
SCC	Sensor cross coupling	0	Rectangular	√3	1	0
ISO	Isotropy	0.5	Rectangular	√3	1	0.29
LIN	Linearity	0.2	Rectangular	√3	1	0.12
PSC	Probe scattering	0	Rectangular	√3	1	0
PRO	Probe positioning offset	0.3	Rectangular	√3	1	0.17
PPR	Probe positioning repeatability	0.04	Rectangular	√3	1	0.02
SMO	Sensor mechanical offset	0	Rectangular	√3	1	0
PSR	Probe spatial resolution	0	Rectangular	√3	1	0
FLD	Field impedance dependence	0	Rectangular	√3	1	0
APD	Amplitude and phase drift	0	Rectangular	√3	1	0
APN	Amplitude and phase noise	0.04	Rectangular	√3	1	0.02
TR	Measurement area truncation	0	Rectangular	√3	1	0
DAQ	Data acquisition	0.03	Normal	1	1	0.03
SMP	Sampling	0	Rectangular	√3	1	0
REC	Field reconstruction	0.6	Rectangular	√3	1	0.35
TRA	Forward transformation	0	Rectangular	√3	1	0
SCA	Power density scaling	0	Rectangular	√3	1	0
SAV	Spatial averaging	0.1	Rectangular	√3	1	0.06
SDL	System detection limit	0.04	Rectangular	√3	1	0.02
DUT and environmental factors						
PC	Probe coupling with DUT	0	Rectangular	√3	1	0
MOD	Modulation response	0.4	Rectangular	√3	1	0.23
IT	Integration time	0	Rectangular	√3	1	0
RT	Response time	0	Rectangular	√3	1	0
DH	Device holder influence	0.1	Rectangular	√3	1	0
DA	DUT alignment	0	Rectangular	√3	1	0
AC	RF ambient conditions	0.04	Rectangular	√3	1	0.02
AR	Ambient Reflections	0.04	Rectangular	√3	1	0.02
MSI	Immunity / secondary reception	0	Rectangular	√3	1	0
DRI	Drift of the DUT	0.21	Rectangular	√3	1	0.12
u	**(PD) Combined Standard Uncertainty**				**RSS**	**± 0.76 dB**
U	**(PD) Expanded Uncertainty (k=2)**				**k=2**	**± 1.52 dB (41.9 %)**

*. This uncertainty budget is suggested by IEC/IEEE 63195-1:2022 and determined by SPEAG, DASY8 Module mmWave Manual, 2022-02. All listed error components have veff equal to ∞.

Uncertainty of PD System Check (v01r01)						
Symbol	Error Description	Uncertainty (± dB)	Probability distribution	Divisor	ci	Standard Uncertainty (ui) (± dB)
Measurement System (DASY8)						
CAL	Calibration Repeatability	0.21	Normal	1	1	0.21
COR	Probe correction	0	Rectangular	√3	1	0
FRS	Frequency response (BW ≦1GHz)	0.2	Rectangular	√3	0	0
SCC	Sensor cross coupling	0	Rectangular	√3	1	0
ISO	Isotropy	0.3	Rectangular	√3	1	0.17
LIN	Linearity	0.2	Rectangular	√3	1	0.12
PSC	Probe scattering	0	Rectangular	√3	1	0
PRO	Probe positioning offset	0.11	Rectangular	√3	1	0.06
PPR	Probe positioning repeatability	0.04	Rectangular	√3	1	0.02
SMO	Sensor mechanical offset	0	Rectangular	√3	1	0
PSR	Probe spatial resolution	0	Rectangular	√3	1	0
FLD	Field impedance dependence	0	Rectangular	√3	1	0
APD	Amplitude and phase drift	0	Rectangular	√3	1	0
APN	Amplitude and phase noise	0.04	Rectangular	√3	0	0
TR	Measurement area truncation	0	Rectangular	√3	1	0
DAQ	Data acquisition	0.03	Normal	1	1	0.03
SMP	Sampling	0	Rectangular	√3	1	0
REC	Field reconstruction	0.6	Rectangular	√3	0.3	0.1
TRA	Forward transformation	0	Rectangular	√3	1	0
SCA	Power density scaling	0	Rectangular	√3	1	0
SAV	Spatial averaging	0.1	Rectangular	√3	0	0
SDL	System detection limit	0.04	Rectangular	√3	1	0.02
DUT and environmental factors						
PC	Probe coupling with DUT	0	Rectangular	√3	1	0
IT	Integration time	0	Rectangular	√3	1	0
RT	Response time	0	Rectangular	√3	1	0
DA	DUT alignment	0	Rectangular	√3	1	0
AC	RF ambient conditions	0.04	Rectangular	√3	1	0.02
AR	Ambient Reflections	0.04	Rectangular	√3	1	0.02
MSI	Immunity / secondary reception	0	Rectangular	√3	0	0
DRI	Drift of the DUT	0.21	Rectangular	√3	1	0.12
u	**(PD) Combined Standard Uncertainty**				**RSS**	**± 0.33 dB**
U	**(PD) Expanded Uncertainty (k=2)**				**k=2**	**± 0.66 dB**

*. Uncertainty budget for system verification using mmWave sources for the evaluation plane at 2mm from the patch antenna.
*. This uncertainty budget is suggested by IEC/IEEE 63195-1:2022 and determined by SPEAG, DASY8 Module mmWave Manual, 2022-02. All listed error components have veff equal to ∞.

*. Table of uncertainties are listed for ISO/IEC 17025.
*. Although this standard determines only the limit value of uncertainty, there is no applicable rule of uncertainty in this. Therefore, the results are derived depending on whether or not laboratory uncertainty is applied.