

Annex A. Plots of SAR and Power Density System Verification

The plots for system verification are shown as follows.

Measurement Report

P01 UNII-5_802.11ax HE160_Bottom_0mm_Ch47_Sample1_Ant 1_P-Sensor_w

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
BEDW-WTW-P21080874	312.0 x 220.0 x 12.0		Laptop

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat,	Bottom 0.00	U-NII-5	WLAN, 10755-AAC	6185.0 47	5.6	5.69	34.3

Hardware Setup

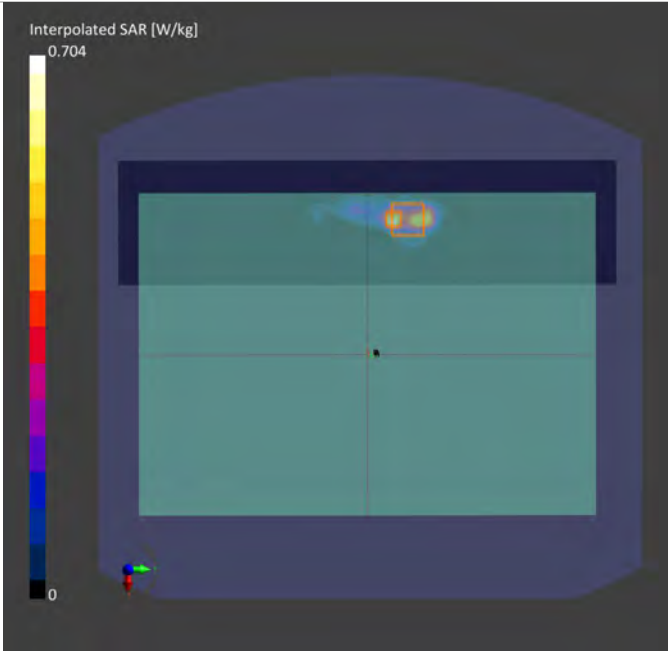
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2105	H50T72N1 , 2021-Sep-30	EX3DV4 - SN7554, 2021-08-26	DAE4 Sn1589, 2021-08-20

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	85.0 x 340.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2021-09-30	2021-09-30
psSAR1g [W/Kg]	0.403	0.564
psSAR10g [W/Kg]	0.124	0.134
Power Drift [dB]	-0.06	0.02



Power Density Plot No.:

P01 UNII-5_802.11ax HE160_Bottom_0mm_Ch79_Sample1_Ant 0_P-Sensor_w

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	IMEI	DUT Type
BEDW-WTW-P21080874	312.0 x 220.0 x 12.0		Laptop

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5GAir	Bottom 2.00	U-NII-5	WLAN 10755	6345.0 79	1.0

Hardware Setup

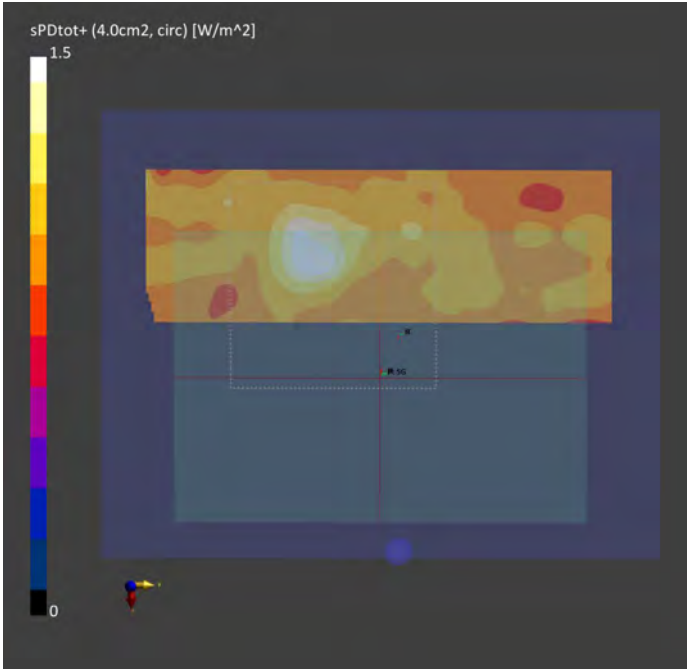
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave	Air---	EUmmWV4 - SN9438_F1-55GHz, 2021-07-26	DAE4 Sn1589, 2021-08-20

Scan Setup

	5G Scan
Grid Extents [mm]	25.0 x 25.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	2.0

Measurement Results

	5G Scan
Date	2021-09-30
Avg. Area [cm²]	4.00
pStotavg[W/m²]	1.50
pSnavg [W/m²]	1.34
Epeak [V/m]	39.5
Power Drift [dB]	0.06



Annex B. Plots of SAR and Power Density Measurement

The plots for highest measured SAR and Power Density in each exposure configuration, wireless mode and frequency band combination are shown as follows.

Measurement

S01 System Check_H6.5GHz_210930

Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
SPEAG	50.0 x 10.0 x 8.0		-

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	FRONT 10.00		UID 0	6500	5.6	6.19	33.8

Hardware Setup

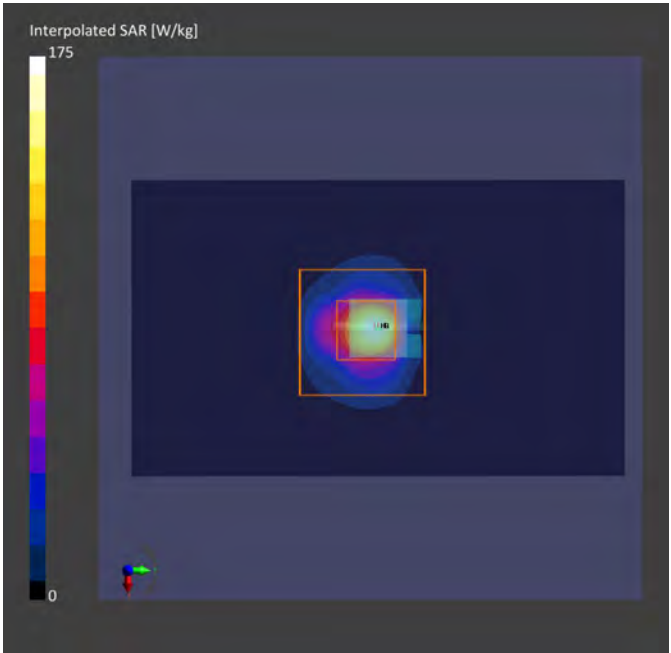
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2105	H50T72N1 , 2021-Sep-30	EX3DV4 - SN7554, 2021-08-26	DAE4 Sn1589, 2021-08-20

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	51.0 x 85.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	8.5 x 8.5	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2021-09-30	2021-09-30
psSAR1g [W/Kg]	22.6	27.5
psSAR10g [W/Kg]	4.55	5.08
Power Drift [dB]	-0.09	-0.06



Test Lab: Bureau Veritas ADT SAR/HAC/PD Testing Lab

Power Density Plot No.:

PD_System Check_10 GHz_2021.09.30

Device under Test Properties

Name, Manufacturer	Dimensions [mm]	IMEI	DUT Type
SPEAG, 5G Verification Source 10 GHz	100.0 x 100.0 x 172.0	SN: 1025	-

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5GAir	FRONT 10.00	Validation band	CW	10000.0	1.0

Hardware Setup

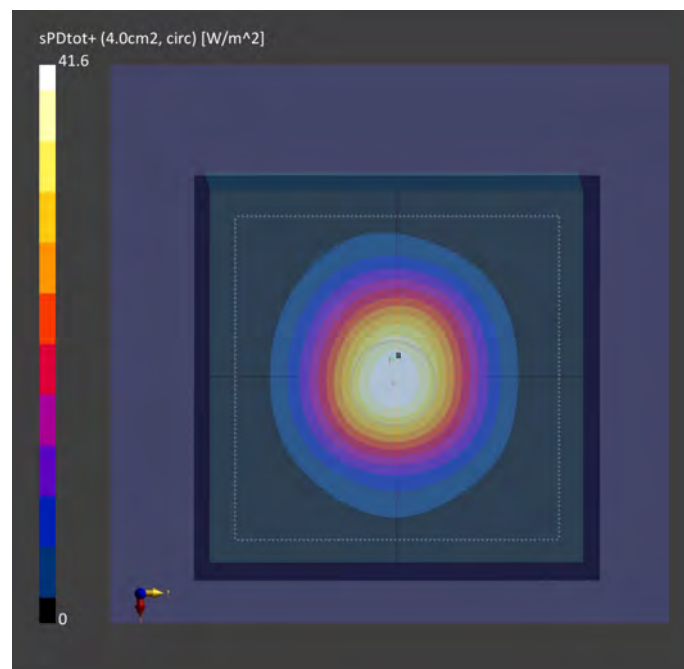
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave	--Air--	EUmmWV4 - SN9438_F1-55GHz, 2021-07-26	DAE4 Sn1589, 2021-08-20

Scan Setup

	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.25 x 0.25
Sensor Surface [mm]	10.0

Measurement Results

	5G Scan
Date	2021-09-30
Avg. Area [cm ²]	4.00
pStotavg[W/m ²]	41.6
pS _n avg [W/m ²]	41.4
E _{peak} [V/m]	135
Power Drift [dB]	0.03



Annex C. Tissue & System Verification

The measuring results for tissue simulating liquid and system check are shown as below.

Note:

1. For Section 4.3, the dielectric properties of the tissue simulating liquid have been measured within 24 hours before the SAR testing and within ± 10 % of the target values. Liquid temperature during the SAR testing has kept within ± 2 °C.
2. For Section 4.4, The SAR measurement system was validated according to procedures in KDB 865664 D01. The validation status in tabulated summary is as below.
3. For Section 4.5, Comparing to the reference SAR value provided by SPEAG in dipole calibration certificate, the deviation of system check results is within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots please refer to Annex A of this report.

Tissue Verification									Validation for CW			Validation for Modulation				System Validation					Note			
Plot No.	Frequency (MHz)	Liquid Temp. (°C)	Conductivity (σ)	Permittivity (ε _r)	Targeted Conductivity (σ)	Targeted Permittivity (ε _r)	Deviation Conductivity (σ)	Deviation Permittivity (ε _r)	Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR	Date	Frequency (MHz)	Targeted 1g SAR (W/kg)	Measured 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N	Output Power (dB)
S01	6500	23.4	6.19	33.8	6.07	34.5	1.98	-2.03	Pass	Pass	Pass	OFDM	N/A	Pass	Sep. 30, 2021	6500	290.00	27.5	275.00	-5.17	1029	7554	1589	20

Plot No.	Test Date	Frequency [GHz]	mmWave Probe S/N	Verification Source S/N	Averaging Area [cm ²]	Distance [mm]	Target Power Density [W/m ²]	Measured Power Density [W/m ²]	Deviation [%]
P01	Sep. 30, 2021	10	9438	1025	4	10.0	42.7	41.6	-2.58%

Annex D. Maximum Target Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

WLAN Tune-up Power (Full)							
UNII-5							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	1	5945	5.0	5.0	2.0	2.0	5.0
	5	5965	5.0	5.0	2.0	2.0	5.0
	9	5985	5.0	5.0	2.0	2.0	5.0
	13	6005	5.0	5.0	2.0	2.0	5.0
	17	6025	5.0	5.0	2.0	2.0	5.0
	21	6045	5.0	5.0	2.0	2.0	5.0
	25	6065	5.0	5.0	2.0	2.0	5.0
	29	6085	5.0	5.0	2.0	2.0	5.0
	33	6105	5.0	5.0	2.0	2.0	5.0
	37	6125	5.0	5.0	2.0	2.0	5.0
	41	6145	5.0	5.0	2.0	2.0	5.0
	45	6165	5.0	5.0	2.0	2.0	5.0
	49	6185	5.0	5.0	2.0	2.0	5.0
	53	6205	5.0	5.0	2.0	2.0	5.0
	57	6225	5.0	5.0	2.0	2.0	5.0
	61	6245	5.0	5.0	2.0	2.0	5.0
	65	6265	5.0	5.0	2.0	2.0	5.0
	69	6285	5.0	5.0	2.0	2.0	5.0
	73	6305	5.0	5.0	2.0	2.0	5.0
	77	6325	5.0	5.0	2.0	2.0	5.0
	81	6345	5.0	5.0	2.0	2.0	5.0
	85	6365	5.0	5.0	2.0	2.0	5.0
	89	6385	5.0	5.0	2.0	2.0	5.0
	93	6405	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	3	5955	8.0	8.0	5.0	5.0	8.0
	11	5995	8.0	8.0	5.0	5.0	8.0
	19	6035	8.0	8.0	5.0	5.0	8.0
	27	6075	8.0	8.0	5.0	5.0	8.0
	35	6115	8.0	8.0	5.0	5.0	8.0
	43	6155	8.0	8.0	5.0	5.0	8.0
	51	6195	8.0	8.0	5.0	5.0	8.0
	59	6235	8.0	8.0	5.0	5.0	8.0
	67	6275	8.0	8.0	5.0	5.0	8.0
	75	6315	8.0	8.0	5.0	5.0	8.0
	83	6355	8.0	8.0	5.0	5.0	8.0
	91	6395	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	7	5975	10.5	10.5	7.5	7.5	10.5
	23	6055	10.5	10.5	7.5	7.5	10.5
	39	6135	10.5	10.5	7.5	7.5	10.5
	55	6215	10.5	10.5	7.5	7.5	10.5
	71	6295	10.5	10.5	7.5	7.5	10.5
	87	6375	10.5	10.5	7.5	7.5	10.5
802.11ax HE160	15	6015	13.5	13.5	10.5	10.5	13.5
	47	6175	13.5	13.5	10.5	10.5	13.5
	79	6335	13.5	13.5	10.5	10.5	13.5

WLAN Tune-up Power (Full)							
UNII-6							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	97	6425	5.0	5.0	2.0	2.0	5.0
	101	6445	5.0	5.0	2.0	2.0	5.0
	105	6465	5.0	5.0	2.0	2.0	5.0
	109	6485	5.0	5.0	2.0	2.0	5.0
	113	6505	5.0	5.0	2.0	2.0	5.0
	117	6525	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	99	6435	8.0	8.0	5.0	5.0	8.0
	107	6475	8.0	8.0	5.0	5.0	8.0
	115	6515	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	103	6455	10.5	10.5	7.5	7.5	10.5
	119	6535	10.5	10.5	7.5	7.5	10.5
802.11ax HE160	111	6495	13.5	13.5	10.5	10.5	13.5

WLAN Tune-up Power (Full)							
UNII-7							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	121	6545	5.0	5.0	2.0	2.0	5.0
	125	6565	5.0	5.0	2.0	2.0	5.0
	129	6585	5.0	5.0	2.0	2.0	5.0
	133	6605	5.0	5.0	2.0	2.0	5.0
	137	6625	5.0	5.0	2.0	2.0	5.0
	141	6645	5.0	5.0	2.0	2.0	5.0
	145	6665	5.0	5.0	2.0	2.0	5.0
	149	6685	5.0	5.0	2.0	2.0	5.0
	153	6705	5.0	5.0	2.0	2.0	5.0
	157	6725	5.0	5.0	2.0	2.0	5.0
	161	6745	5.0	5.0	2.0	2.0	5.0
	165	6765	5.0	5.0	2.0	2.0	5.0
	169	6785	5.0	5.0	2.0	2.0	5.0
	173	6805	5.0	5.0	2.0	2.0	5.0
	177	6825	5.0	5.0	2.0	2.0	5.0
	181	6845	5.0	5.0	2.0	2.0	5.0
	185	6865	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	123	6555	8.0	8.0	5.0	5.0	8.0
	131	6595	8.0	8.0	5.0	5.0	8.0
	139	6635	8.0	8.0	5.0	5.0	8.0
	147	6675	8.0	8.0	5.0	5.0	8.0
	155	6715	8.0	8.0	5.0	5.0	8.0
	163	6755	8.0	8.0	5.0	5.0	8.0
	171	6795	8.0	8.0	5.0	5.0	8.0
	179	6835	8.0	8.0	5.0	5.0	8.0
	187	6875	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	135	6615	10.5	10.5	7.5	7.5	10.5
	151	6695	10.5	10.5	7.5	7.5	10.5
	167	6775	10.5	10.5	7.5	7.5	10.5
	183	6855	10.5	10.5	7.5	7.5	10.5
802.11ax HE160	143	6655	13.5	13.5	10.5	10.5	13.5
	175	6815	13.5	13.5	10.5	10.5	13.5

WLAN Tune-up Power (Full)							
UNII-8							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	189	6885	5.0	5.0	2.0	2.0	5.0
	193	6905	5.0	5.0	2.0	2.0	5.0
	197	6925	5.0	5.0	2.0	2.0	5.0
	201	6945	5.0	5.0	2.0	2.0	5.0
	205	6965	5.0	5.0	2.0	2.0	5.0
	209	6985	5.0	5.0	2.0	2.0	5.0
	213	7005	5.0	5.0	2.0	2.0	5.0
	217	7025	5.0	5.0	2.0	2.0	5.0
	221	7045	5.0	5.0	2.0	2.0	5.0
	225	7065	5.0	5.0	2.0	2.0	5.0
	229	7085	5.0	5.0	2.0	2.0	5.0
	233	7105	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	195	6915	8.0	8.0	5.0	5.0	8.0
	203	6955	8.0	8.0	5.0	5.0	8.0
	211	6995	8.0	8.0	5.0	5.0	8.0
	219	7035	8.0	8.0	5.0	5.0	8.0
	227	7075	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	199	6935	10.5	10.5	7.5	7.5	10.5
	215	7015	10.5	10.5	7.5	7.5	10.5
802.11ax HE160	207	6975	13.5	13.5	10.5	10.5	13.5

WLAN Tune-up Power (Reduction)							
UNII-5							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	1	5945	5.0	5.0	2.0	2.0	5.0
	5	5965	5.0	5.0	2.0	2.0	5.0
	9	5985	5.0	5.0	2.0	2.0	5.0
	13	6005	5.0	5.0	2.0	2.0	5.0
	17	6025	5.0	5.0	2.0	2.0	5.0
	21	6045	5.0	5.0	2.0	2.0	5.0
	25	6065	5.0	5.0	2.0	2.0	5.0
	29	6085	5.0	5.0	2.0	2.0	5.0
	33	6105	5.0	5.0	2.0	2.0	5.0
	37	6125	5.0	5.0	2.0	2.0	5.0
	41	6145	5.0	5.0	2.0	2.0	5.0
	45	6165	5.0	5.0	2.0	2.0	5.0
	49	6185	5.0	5.0	2.0	2.0	5.0
	53	6205	5.0	5.0	2.0	2.0	5.0
	57	6225	5.0	5.0	2.0	2.0	5.0
	61	6245	5.0	5.0	2.0	2.0	5.0
	65	6265	5.0	5.0	2.0	2.0	5.0
	69	6285	5.0	5.0	2.0	2.0	5.0
	73	6305	5.0	5.0	2.0	2.0	5.0
	77	6325	5.0	5.0	2.0	2.0	5.0
	81	6345	5.0	5.0	2.0	2.0	5.0
	85	6365	5.0	5.0	2.0	2.0	5.0
	89	6385	5.0	5.0	2.0	2.0	5.0
	93	6405	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	3	5955	8.0	8.0	5.0	5.0	8.0
	11	5995	8.0	8.0	5.0	5.0	8.0
	19	6035	8.0	8.0	5.0	5.0	8.0
	27	6075	8.0	8.0	5.0	5.0	8.0
	35	6115	8.0	8.0	5.0	5.0	8.0
	43	6155	8.0	8.0	5.0	5.0	8.0
	51	6195	8.0	8.0	5.0	5.0	8.0
	59	6235	8.0	8.0	5.0	5.0	8.0
	67	6275	8.0	8.0	5.0	5.0	8.0
	75	6315	8.0	8.0	5.0	5.0	8.0
	83	6355	8.0	8.0	5.0	5.0	8.0
	91	6395	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	7	5975	10.0	10.0	7.0	7.0	10.0
	23	6055	10.0	10.0	7.0	7.0	10.0
	39	6135	10.0	10.0	7.0	7.0	10.0
	55	6215	10.0	10.0	7.0	7.0	10.0
	71	6295	10.0	10.0	7.0	7.0	10.0
	87	6375	10.0	10.0	7.0	7.0	10.0
802.11ax HE160	15	6015	10.0	10.0	7.0	7.0	10.0
	47	6175	10.0	10.0	7.0	7.0	10.0
	79	6335	10.0	10.0	7.0	7.0	10.0

WLAN Tune-up Power (Reduction)							
UNII-6							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	97	6425	5.0	5.0	2.0	2.0	5.0
	101	6445	5.0	5.0	2.0	2.0	5.0
	105	6465	5.0	5.0	2.0	2.0	5.0
	109	6485	5.0	5.0	2.0	2.0	5.0
	113	6505	5.0	5.0	2.0	2.0	5.0
	117	6525	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	99	6435	8.0	8.0	5.0	5.0	8.0
	107	6475	8.0	8.0	5.0	5.0	8.0
	115	6515	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	103	6455	8.5	8.5	5.5	5.5	8.5
	119	6535	8.5	8.5	5.5	5.5	8.5
802.11ax HE160	111	6495	8.5	8.5	5.5	5.5	8.5

WLAN Tune-up Power (Reduction)							
UNII-7							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	121	6545	5.0	5.0	2.0	2.0	5.0
	125	6565	5.0	5.0	2.0	2.0	5.0
	129	6585	5.0	5.0	2.0	2.0	5.0
	133	6605	5.0	5.0	2.0	2.0	5.0
	137	6625	5.0	5.0	2.0	2.0	5.0
	141	6645	5.0	5.0	2.0	2.0	5.0
	145	6665	5.0	5.0	2.0	2.0	5.0
	149	6685	5.0	5.0	2.0	2.0	5.0
	153	6705	5.0	5.0	2.0	2.0	5.0
	157	6725	5.0	5.0	2.0	2.0	5.0
	161	6745	5.0	5.0	2.0	2.0	5.0
	165	6765	5.0	5.0	2.0	2.0	5.0
	169	6785	5.0	5.0	2.0	2.0	5.0
	173	6805	5.0	5.0	2.0	2.0	5.0
	177	6825	5.0	5.0	2.0	2.0	5.0
	181	6845	5.0	5.0	2.0	2.0	5.0
	185	6865	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	123	6555	8.0	8.0	5.0	5.0	8.0
	131	6595	8.0	8.0	5.0	5.0	8.0
	139	6635	8.0	8.0	5.0	5.0	8.0
	147	6675	8.0	8.0	5.0	5.0	8.0
	155	6715	8.0	8.0	5.0	5.0	8.0
	163	6755	8.0	8.0	5.0	5.0	8.0
	171	6795	8.0	8.0	5.0	5.0	8.0
	179	6835	8.0	8.0	5.0	5.0	8.0
	187	6875	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	135	6615	8.5	8.5	5.5	5.5	8.5
	151	6695	8.5	8.5	5.5	5.5	8.5
	167	6775	8.5	8.5	5.5	5.5	8.5
	183	6855	8.5	8.5	5.5	5.5	8.5
802.11ax HE160	143	6655	8.5	8.5	5.5	5.5	8.5
	175	6815	8.5	8.5	5.5	5.5	8.5

WLAN Tune-up Power (Reduction)							
UNII-8							
Mode	Channel	Frequency	SISO Ant 0 Max Tune up	SISO Ant 1 Max Tune up	MIMO Ant 0 Tune up	MIMO Ant 1 Tune up	MIMO Ant 0+1 Max Tune up
802.11ax HE20	189	6885	5.0	5.0	2.0	2.0	5.0
	193	6905	5.0	5.0	2.0	2.0	5.0
	197	6925	5.0	5.0	2.0	2.0	5.0
	201	6945	5.0	5.0	2.0	2.0	5.0
	205	6965	5.0	5.0	2.0	2.0	5.0
	209	6985	5.0	5.0	2.0	2.0	5.0
	213	7005	5.0	5.0	2.0	2.0	5.0
	217	7025	5.0	5.0	2.0	2.0	5.0
	221	7045	5.0	5.0	2.0	2.0	5.0
	225	7065	5.0	5.0	2.0	2.0	5.0
	229	7085	5.0	5.0	2.0	2.0	5.0
	233	7105	5.0	5.0	2.0	2.0	5.0
802.11ax HE40	195	6915	8.0	8.0	5.0	5.0	8.0
	203	6955	8.0	8.0	5.0	5.0	8.0
	211	6995	8.0	8.0	5.0	5.0	8.0
	219	7035	8.0	8.0	5.0	5.0	8.0
	227	7075	8.0	8.0	5.0	5.0	8.0
802.11ax HE80	199	6935	9.5	9.5	6.5	6.5	9.5
	215	7015	9.5	9.5	6.5	6.5	9.5
802.11ax HE160	207	6975	9.5	9.5	6.5	6.5	9.5

Annex E. Measured Conducted Power Result

The measuring conducted power (Unit: dBm) are shown as below.

WLAN Conducted Power (Full)			
UNII-5 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	15	6025	13.43
	47	6185	13.47
	79	6345	13.46

UNII-6 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	111	6505	13.43

UNII-7 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	143	6665	13.45
	175	6825	13.47

UNII-8 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	207	6985	13.46

WLAN Conducted Power (Full)			
UNII-5 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	15	6025	13.43
	47	6185	13.46
	79	6345	13.45

UNII-6 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	111	6505	13.43

UNII-7 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	143	6665	13.45
	175	6825	13.48

UNII-8 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	207	6985	13.46

WLAN Conducted Power (Full)					
UNII-5 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	15	6025	10.46	10.43	13.46
	47	6185	10.48	10.46	13.48
	79	6345	10.45	10.42	13.45

UNII-6 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	111	6505	10.45	10.43	13.45

UNII-7 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	143	6665	13.46	13.46	16.47
	175	6825	13.48	13.45	16.48

UNII-8 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	207	6985	10.47	10.46	13.48

WLAN Conducted Power (Reduction)			
UNII-5 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	15	6025	9.91
	47	6185	9.94
	79	6345	9.96

UNII-6 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	111	6505	8.34

UNII-7 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	143	6665	8.41
	175	6825	8.48

UNII-8 Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11ax HE160	207	6985	9.38

WLAN Conducted Power (Reduction)			
UNII-5 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	15	6025	9.77
	47	6185	9.81
	79	6345	9.98

UNII-6 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	111	6505	8.47

UNII-7 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	143	6665	8.48
	175	6825	8.42

UNII-8 Ant 1			
Mode	Channel	Frequency	SISO Ant 1 Avg. Power
802.11ax HE160	207	6985	9.42

WLAN Conducted Power (Reduction)					
UNII-5 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	15	6025	6.97	6.74	9.87
	47	6185	6.75	6.78	9.78
	79	6345	6.95	6.86	9.92

UNII-6 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	111	6505	5.49	5.41	8.46

UNII-7 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	143	6665	5.48	5.45	8.48
	175	6825	5.45	5.42	8.45

UNII-8 Ant 0+1					
Mode	Channel	Frequency	MIMO Ant 0 Avg. Power	MIMO Ant 1 Avg. Power	MIMO Ant 0+1 Avg. Power
802.11ax HE160	207	6985	6.45	6.42	9.45

Annex F. SAR and Power Density Test Result

SAR Results for Body Exposure Condition.

Note:

1. SAR testing for WLAN was performed on the maximum power mode.

SAR and Power Density Test Result																											
System & Position						DUT & Accessory			SAR																		
Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Channel	Sample	Ant Status	P-Sensor	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)	Measured APD W/m ² (4cm ²)	Grid Step [λ]	iPD [W/m ²]	Scaling Factor for Measurement Uncertainty	Averaging Area [cm ²]	Power Drift [dB]	Normal psPD [W/m ²]	Scaled Normal psPD [W/m ²]	Total psPD [W/m ²]	Scaled Total psPD [W/m ²]	
1P	UNII-5	802.11ax HE160	Bottom	0	79	1	Ant 0	w/	98.51	1.02	10.00	9.96	1.01	0.07	0.429	0.44	3.02	0.25	4.42	1.545	4.00	0.06	1.34	2.11	1.50	2.36	
	UNII-5	802.11ax HE160	Bottom	0	79	1	Ant 1	w/	97.53	1.03	10.00	9.98	1.00	-0.05	0.464	0.48	2.31			-			-			-	
	UNII-5	802.11ax HE160	Bottom	0	79	1	Ant 0+1	w/	96.90	1.03	10.00	9.92	1.02	0.08	0.329	0.35	1.72	0.25	5.73	1.545	4.00	-0.12	0.899	1.43	0.913	1.45	
	UNII-5	802.11ax HE160	Bottom	0	15	1	Ant 1	w/	97.53	1.03	10.00	9.77	1.05	0.11	0.554	0.60	2.67			-			-			-	
1S	UNII-5	802.11ax HE160	Bottom	0	47	1	Ant 1	w/	97.53	1.03	10.00	9.81	1.04	0.02	0.564	0.60	2.49	0.25	5.40	1.545	4.00	0.05	1.25	1.99	1.26	2.01	
	UNII-6	802.11ax HE160	Bottom	0	111	1	Ant 1	w/	97.53	1.03	8.50	8.47	1.01	-0.03	0.331	0.34	1.47			-			-			-	
	UNII-7	802.11ax HE160	Bottom	0	143	1	Ant 1	w/	97.53	1.03	8.50	8.48	1.00	0.16	0.252	0.26	1.28			-			-			-	
	UNII-7	802.11ax HE160	Bottom	0	175	1	Ant 1	w/	97.53	1.03	8.50	8.42	1.02	0.05	0.239	0.25	1.15			-			-			-	
	UNII-8	802.11ax HE160	Bottom	0	207	1	Ant 1	w/	97.53	1.03	9.50	9.42	1.02	-0.02	0.286	0.30	1.31			-			-			-	
	UNII-5	802.11ax HE160	Bottom	0	47	2	Ant 1	w/	97.53	1.03	10.00	9.81	1.04	0.01	0.413	0.44	3.26			-			-			-	
	UNII-5	802.11ax HE160	Bottom	0	47	3	Ant 1	w/	97.53	1.03	10.00	9.81	1.04	-0.16	0.351	0.38	2.23			-			-			-	
	UNII-5	802.11ax HE160	Bottom	0	47	4	Ant 1	w/	97.53	1.03	10.00	9.81	1.04	-0.03	0.302	0.32	2.08			-			-			-	
																					-			-			-
																					-			-			-
																					-			-			-

Annex G. SAR Measurement Variability

Since all the measured SAR_{1g} are less than 0.8 W/kg, the repeated measurement is not required.

Annex H. Analysis of Simultaneous Transmission SAR

The analysis of simultaneous transmission SAR are shown as below.

<Possibilities of Simultaneous Transmission>

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous TX Combination	Capable Transmit Configurations	Body Exposure Condition
A	WWAN+WIFI6E_Ant0	Yes
B	WWAN+WIFI6E_Ant1	Yes
C	WWAN+WIFI6E_Ant0+1	Yes
D	WWAN+WIFI6E_Ant0 + BT_Ant1	Yes
E	WWAN+WIFI6E_Ant0+1 + BT_Ant1	Yes

Notes

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. Simultaneous TX Combination A can be covered by D
3. Simultaneous TX Combination C can be covered by E

Simultaneous Transmission SAR Evaluation (Body)

Band	Position	1	2	3	4	5	B (1+3)	D (1+2+5)	E (1+4+5)
		Max WWAN	WIFI6E Ant 0	WIFI6E Ant 1	WIFI6E Ant 0+1	BT Ant 1	Summimg result 1g SAR W/kg	Summimg result 1g SAR W/kg	Summimg result 1g SAR W/kg
		1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg			
WCDMA II	Bottom	0.67	0.44	0.60	0.35	0.21	1.27	1.32	1.23
WCDMA IV	Bottom	0.57	0.44	0.60	0.35	0.21	1.17	1.22	1.13
WCDMA V	Bottom	0.64	0.44	0.60	0.35	0.21	1.24	1.29	1.20
LTE 2	Bottom	0.67	0.44	0.60	0.35	0.21	1.27	1.32	1.23
LTE 4	Bottom	0.46	0.44	0.60	0.35	0.21	1.06	1.11	1.02
LTE 5	Bottom	0.54	0.44	0.60	0.35	0.21	1.14	1.19	1.10
LTE 7	Bottom	0.67	0.44	0.60	0.35	0.21	1.27	1.32	1.23
LTE 12	Bottom	0.51	0.44	0.60	0.35	0.21	1.11	1.16	1.07
LTE 13	Bottom	0.51	0.44	0.60	0.35	0.21	1.11	1.16	1.07
LTE 14	Bottom	0.53	0.44	0.60	0.35	0.21	1.13	1.18	1.09
LTE 17	Bottom	0.55	0.44	0.60	0.35	0.21	1.15	1.20	1.11
LTE 25	Bottom	0.65	0.44	0.60	0.35	0.21	1.25	1.30	1.21
LTE 26	Bottom	0.50	0.44	0.60	0.35	0.21	1.10	1.15	1.06
LTE 30	Bottom	0.66	0.44	0.60	0.35	0.21	1.26	1.31	1.22
LTE 38	Bottom	0.84	0.44	0.60	0.35	0.21	1.44	1.49	1.40
LTE 41	Bottom	0.84	0.44	0.60	0.35	0.21	1.44	1.49	1.40
LTE 66	Bottom	0.57	0.44	0.60	0.35	0.21	1.17	1.22	1.13

Annex I. SAR to Peak Location Separation Ratio Analysis.

Since sum of simultaneous transmission SAR is less than the SAR limit for Body : SAR_{1g} 1.6 W/kg. There is no requirement for SAR to Peak Location Separation Ratio Analysis.

Annex J. Calibration of Test Equipment List

Calibration of Test Equipment List are shown as below.

Equipments used for SAR Testing

Equipment	Manufacturer	Model	SN	Cal. Date	Cal. Interval
System Validation Dipole	SPEAG	D6.5GHzV2	1029	Feb. 10, 2021	1 Year
System Verification Source	SPEAG	5G Verification Source 10 GHz	1025	Jan. 19, 2021	1 Year
Dosimetric E-Field Probe	SPEAG	EX3DV4	7554	Aug. 26, 2021	1 Year
E-Field Probe	SPEAG	EUmmWV4	9438	Jul. 26, 2021	1 Year
Data Acquisition Electronics	SPEAG	DAE4	1589	Aug. 20, 2021	1 Year
Spectrum Analyzer	R&S	FSL6	102006	Apr. 06, 2021	1 Year
Universal Wireless Test Set	Anritsu	MT8870A/MU887000A	6201699387	Sep. 22, 2021	1 Year
Thermometer	YFE	YF-160A	191100743	Apr. 12, 2021	1 Year
Dielectric Assessment Kit	SPEAG	DAKS-3.5	1151	Jul. 14, 2021	1 Year
Powersource1	SPEAG	SE_UMS_160 BA	4010	Jul. 13, 2021	1 Year