Report on the Specific Absorption Rate Testing of the A3403

Apple Inc.
Model: A3403

In accordance with FCC 47 CFR 2.1093 (2023)

Add value.
Inspire trust.

TUV SUD Limited
Digitally signed by TUV SUD Limited
Date: 2024.10.15 08:49:34 +01'00'

Prepared for: Apple Inc.
One Apple Park Way
Cupertino
California
95014
USA

FCC ID: BCGA3403

COMMERCIAL-IN-CONFIDENCE

Document Number: 75960544-58 Issue:01

SIGNATURE			
NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Jon Kenny	Technical Director	Authorised Signatory	11 October 2024

Signatories in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

EXECUTIVE SUMMARY
A sample of this product was tested and found to be compliant with FCC 47 CFR 2.1093 (2023) for the tests detailed in section 1.5.

ACCREDITATION
Results of tests covered by our Flexible UKAS Accreditation Schedule are marked FS (Flexible Scope)
Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited))
Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

TÜV SÜD
is a trading name of TUV SUD Ltd
Registered in Scotland at East Kilbride,
Glasgow G75 0QF, United Kingdom
Registered number: SC215164

TUV SUD Ltd is a
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100
Fax: +44 (0) 1489 558101
www.tuv-sud.co.uk

TÜV SÜD
Octagon House
Concorde Way
Fareham
Hampshire PO15 5RL
United Kingdom

CONTENTS

Section **Page No**

1 REPORT SUMMARY 3

1.1 Report Modification Record 4
1.2 Introduction 4
1.3 Identification of the EUT 5
1.4 Brief Summary of Results 6
1.5 Power Tables (Tune Up Values) 41
1.6 Conducted Power Measurements 78

2 TEST DETAILS 90

2.1 DASY Measurement System 91

3 TEST EQUIPMENT USED 99

3.1 Test Equipment Used 100
3.2 Test Software 102
3.3 Test Verification 103
3.4 Dielectric Properties of Simulant Liquids 105
3.5 Test Conditions 106
3.6 Measurement Uncertainty 107

4 ACCREDITATION, DISCLAIMERS AND COPYRIGHT 114

4.1 Accreditation, Disclaimers and Copyright 115

ANNEX A Probe Calibration Reports A.2
ANNEX B Dipole Calibration Reports B.2
ANNEX C SAR Plots C.2
ANNEX D Thread Technology Duty Factor Correction D.2

SECTION 1

REPORT SUMMARY

Specific Absorption Rate testing of the A3403

1.1 REPORT MODIFICATION RECORD

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	11-Oct-2024

Table 1

1.2 INTRODUCTION

The information contained in this report is intended to show verification of the Specific Absorption Rate testing of the A3403 to the requirements of FCC 47 CFR 2.1093 (2023).

Objective	To determine the Equipment Under Test's (EUT) compliance with the requirements specified within FCC 47 CFR 2.1093 (2023).
Applicant	Apple Inc.
EUT/Sample Identification	Refer to section 1.3
Test Specification/Issue/Date	FCC 47 CFR 2.1093 (2023)
Start of Test	01-October-2024
Finish of Test	09-October-2024
Related Document(s)	FCC 47 CFR 1.1310 ICNIRP 2020 IEC-IEEE 62209-1528:2020 IEC-IEEE 63195-1:2022 KDB 248227 - D01 v02r02 KDB 447498 - D01 v06 KDB 865664 - D01 v01r04 SPEAG, DASY8 Application Note: SAR, APD & PD at 6 - 10 GHz (Version 6.0), August 2022 October 2020 TCBC Workshop Notes
Name of Engineer(s)	Umesh Kabbur Sruthy Sudevan Sohaib Abbas Bukhari Valentinas Luza Prince Elvis Gomes Gualberta Madeira Christopher Sincock

1.3 IDENTIFICATION OF THE EUT

The table below details identification of the EUT(s) that have been used to carry out the testing within this report.

Model: A3403			
Serial Number	Hardware Version	Software Version	Firmware
LNFVDYVTJH	Rev 1.0	24A32191p	WLAN: 23.30.16 Bluetooth: 22.1.65.459
KPWWWRWPXH	Rev 1.0	24A32191p	WLAN: 23.30.16 Bluetooth: 22.1.65.459
G3FXH3X3L5	Rev 1.0	24A32191p	WLAN: 23.30.16 Bluetooth: 22.1.65.459

Table 2

1.4 BRIEF SUMMARY OF RESULTS

The measurements shown in this report were made to the requirements of FCC 47 CFR 2.1093 (2023).

1.4.1 Summary of Maximum Values

The maximum 1g volume averaged stand-alone SAR found during this Assessment:

Max 1g SAR (W/kg) Body	0.767 (Measured)	0.861 (Scaled)
The maximum 1g volume averaged SAR level measured for all the tests performed did not exceed the limits for FCC General Population/Uncontrolled Exposure Partial Body of 1.6 W/kg in accordance with FCC 47 CFR 1.1310.		

Table 3

The maximum iPD 4cm^2 found during this Assessment:

Max iPD 4cm^2 (W/m^2)	5.500 (Measured)
The maximum iPD averaged over 4cm^2 measured for all the tests performed did not exceed the standalone limits for FCC General Population/Uncontrolled Exposure of 10.00 W/m^2 in accordance with FCC 47 CFR 1.1310.	

Table 4

The maximum 1g volume averaged stand-alone Reported SAR found during this assessment for each supported mode:

Technology	Band	Test Configuration	Max Reported SAR (W/kg)
Bluetooth (5 or 6 GHz WLAN OFF)	2450 MHz	Body	0.230
Bluetooth (5 or 6 GHz WLAN ON)	2450 MHz	Body	0.183
Narrowband (2.4 GHz WLAN OFF)	5150-5250 MHz 5725-5850 MHz	Body	0.552
Narrowband (2.4 GHz WLAN ON)	5150-5250 MHz 5725-5850 MHz	Body	0.233
Thread (5 or 6 GHz WLAN OFF)	2450 MHz	Body	0.474*
Thread (5 or 6 GHz WLAN ON)	2450 MHz	Body	0.162*
WLAN	2450 MHz	Body	0.747
WLAN	5200 / 5300 MHz	Body	0.861
WLAN	5500 / 5600 MHz	Body	0.803
WLAN	5800 MHz	Body	0.771
WLAN	6000 MHz	Body	0.315
The maximum 1g volume averaged SAR level measured for all the tests performed (including simultaneous transmission analysis results) did not exceed the limits for General Population/Uncontrolled Exposure Partial Body of 1.6 W/kg. *Measured results for Thread were scaled down from 100% duty cycle to 60.96% Refer to Annex D			

Table 5

1.4.2 Simultaneous Transmission

Combinations of Simultaneous Transmission this EUT can achieve are the following:

- 5 or 6 GHz WLAN + 2.4GHz Bluetooth
- 5 or 6 GHz WLAN + 2.4GHz Thread
- 5 or 6 GHz Narrowband + 2.4GHz WLAN

Position	5 or 6GHz WLAN 1g SAR (W/Kg) (Core 1)	2.4GHz Bluetooth 1g SAR (W/Kg) (Core 1)	Sum of 1g SAR (W/Kg)	Peak Location Separation Ratio required?	Peak Location Separation Ratio
Bottom	0.861	0.183	1.044	No	N/A

Table 6

Position	5 or 6GHz WLAN 1g SAR (W/Kg) (Core 1)	2.4GHz Thread 1g SAR (W/kg) (Core 1)	Sum of 1g SAR (W/Kg)	Peak Location Separation Ratio required?	Peak Location Separation Ratio
Bottom	0.861	0.130	0.991	No	N/A

Table 7

Position	Narrowband UNII-3 1g SAR (W/kg) (Core 0)	2.4 GHz WLAN 1g SAR (W/kg) (Core 0)	Sum of 1g SAR (W/Kg)	Peak Location Separation Ratio required?	Peak Location Separation Ratio
Bottom	0.233	0.747	0.980	No	N/A

Table 8

1.4.3 Total Exposure Ratio

6 GHz WLAN + 2.4GHz Bluetooth

Position	6 GHz WLAN Exposure Ratio iPD Value (Core 1)	Bluetooth Exposure Ratio (Core 1)	Total Exposure Ratio	Total Exposure Ratio less than 1.0
Bottom	0.550	0.114	0.664	Yes

Table 9

6 GHz WLAN + 2.4GHz Thread

Position	6 GHz WLAN Exposure Ratio iPD Value (Core 1)	Thread Exposure Ratio (Core 1)	Total Exposure Ratio	Total Exposure Ratio less than 1.0
Bottom	0.550	0.081	0.631	Yes

Table 10

Each antenna is separated to the extent that the SAR distributions do not overlap and only same core Simultaneous Transmission is considered.

KDB 447498 D01 - Section 4.3.2: Simultaneous test exclusion is applicable as the sum of 1g SAR of all simultaneously transmitting antennas in an operating mode and exposure condition combination is within the SAR limit or within the Peak Location Separation Ratio.

1.4.4 Test Results Summary

1.4.5 Results Summary Tables

Bluetooth - LE - SISO Core 0 (5 or 6 GHz WLAN OFF) (ePA):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	0	2402	16.27	17.00	0.046	0.054	-
0mm Bottom	0	2402	16.27	17.00	0.134	0.159	C.01
0mm Bottom	39	2442	16.14	17.00	0.128	0.156	-
0mm Bottom	78	2480	16.09	17.00	0.102	0.126	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 11

Bluetooth - EDR - SISO Core 1 (5 or 6 GHz WLAN OFF) (ePA):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	39	2441	15.34	16.50	0.008	0.010	-
0mm Bottom	0	2402	15.24	16.50	0.141	0.188	-
0mm Bottom	39	2441	15.34	16.50	0.176	0.230	C.02
0mm Bottom	78	2480	15.22	16.50	0.156	0.209	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 12

Bluetooth - BDR - SISO Core 2 (5 or 6 GHz WLAN OFF) (iPA):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	39	2441	12.65	13.00	0.033	0.036	-
0mm Bottom	0	2402	12.53	13.00	0.061	0.068	-
0mm Bottom	39	2441	12.65	13.00	0.066	0.072	C.03
0mm Bottom	78	2480	12.64	13.00	0.059	0.064	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 13

Bluetooth - EDR – SISO Core 0 (5 or 6 GHz WLAN ON) (ePA):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	39	2441	14.93	15.50	0.024	0.027	-
0mm Bottom	0	2402	15.09	15.50	0.156	0.171	-
0mm Bottom	39	2441	14.93	15.50	0.155	0.177	C.04
0mm Bottom	78	2480	14.88	15.50	0.137	0.158	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 14

Bluetooth - EDR - SISO Core 1 (5 or 6 GHz WLAN ON) (ePA):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	39	2441	15.34	15.50	0.008	0.008	-
0mm Bottom	0	2402	15.24	15.50	0.141	0.150	-
0mm Bottom	39	2441	15.34	15.50	0.176	0.183	C.02
0mm Bottom	78	2480	15.22	15.50	0.156	0.166	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 15

Bluetooth - BDR - SISO Core 2 (5 or 6 GHz WLAN ON) (iPA):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	39	2441	12.65	13.00	0.033	0.036	-
0mm Bottom	0	2402	12.53	13.00	0.061	0.068	-
0mm Bottom	39	2441	12.65	13.00	0.066	0.072	C.03
0mm Bottom	78	2480	12.64	13.00	0.059	0.064	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 16

Narrowband - UNII-1 - HDR8 - SISO Core 0 (2.4 GHz WLAN OFF) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5250	13.59	14.00	0.171	0.188	-
0mm Bottom	Bottom	5150	13.34	14.00	0.278	0.324	-
0mm Bottom	Middle	5200	13.28	14.00	0.341	0.402	-
0mm Bottom	Top	5250	13.59	14.00	0.381	0.419	C.05
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 17

Narrowband - UNII-1 - HDR8 - SISO Core 1 (2.4 GHz WLAN OFF) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5250	13.89	14.00	0.165	0.169	-
0mm Bottom	Bottom	5150	13.71	14.00	0.335	0.358	-
0mm Bottom	Middle	5200	13.49	14.00	0.290	0.326	-
0mm Bottom	Top	5250	13.89	14.00	0.358	0.367	C.06
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 18

Narrowband - UNII-3 - HDR4 - SISO Core 0 (2.4 GHz WLAN OFF) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5850	14.21	15.00	0.204	0.245	-
0mm Bottom	Bottom	5725	14.34	15.00	0.379	0.441	-
0mm Bottom	Middle	5788	14.18	15.00	0.428	0.517	-
0mm Bottom	Top	5850	14.21	15.00	0.460	0.552	C.07
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 19

Narrowband - UNII-3 - HDR4 - SISO Core 1 (2.4 GHz WLAN OFF) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5850	14.13	15.00	0.197	0.241	-
0mm Bottom	Bottom	5725	14.12	15.00	0.386	0.473	-
0mm Bottom	Middle	5788	14.30	15.00	0.413	0.485	-
0mm Bottom	Top	5850	14.13	15.00	0.400	0.489	C.08
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 20

Narrowband - UNII-1 - HDR4 - SISO Core 0 (2.4 GHz WLAN ON) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5250	10.15	10.50	0.074	0.080	-
0mm Bottom	Bottom	5150	10.00	10.50	0.119	0.134	-
0mm Bottom	Middle	5200	9.81	10.50	0.158	0.185	C.09
0mm Bottom	Top	5250	10.15	10.50	0.166	0.180	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 21

Narrowband - UNII-1 - HDR4 - SISO Core 1 (2.4 GHz WLAN ON) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5250	11.05	11.50	0.089	0.099	-
0mm Bottom	Bottom	5150	10.54	11.50	0.146	0.182	-
0mm Bottom	Middle	5200	10.71	11.50	0.139	0.167	-
0mm Bottom	Top	5250	11.05	11.50	0.171	0.190	C.10
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 22

Narrowband - UNII-3 - BDR - SISO Core 0 (2.4 GHz WLAN ON) (iPA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5850	10.51	11.00	0.114	0.128	-
0mm Bottom	Bottom	5725	10.25	11.00	0.178	0.212	-
0mm Bottom	Middle	5788	10.56	11.00	0.191	0.211	-
0mm Bottom	Top	5850	10.51	11.00	0.208	0.233	C.11
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 23

Narrowband - UNII-3 - BDR - SISO Core 1 (2.4 GHz WLAN ON) (iPA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	Top	5850	10.47	11.00	0.077	0.087	-
0mm Bottom	Bottom	5725	10.32	11.00	0.153	0.179	-
0mm Bottom	Middle	5788	10.48	11.00	0.167	0.188	-
0mm Bottom	Top	5850	10.47	11.00	0.186	0.210	C.12
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 24

Thread - SISO Core 0 (5 or 6 GHz WLAN OFF) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)*	Scan Figure Number
0mm Rear of Display	18	2440	20.13	21.00	0.166	0.203	-
0mm Bottom	11	2405	20.07	21.00	0.323	0.400	-
0mm Bottom	18	2440	20.13	21.00	0.335	0.410	C.13
0mm Bottom	26	2480	20.12	21.00	0.260	0.319	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) *Measured results for Thread were scaled down from 100% duty cycle to 60.96%. Refer to Annex D							

Table 25

Thread - SISO Core 1 (5 or 6 GHz WLAN OFF) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)*	Scan Figure Number
0mm Rear of Display	18	2440	20.46	21.00	0.134	0.151	-
0mm Bottom	11	2405	20.12	21.00	0.291	0.356	-
0mm Bottom	18	2440	20.46	21.00	0.419	0.474	C.14
0mm Bottom	26	2480	20.19	21.00	0.384	0.463	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) *Measured results for Thread were scaled down from 100% duty cycle to 60.96%. Refer to Annex D							

Table 26

Thread - SISO Core 2 (5 or 6 GHz WLAN OFF) (iPA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)*	Scan Figure Number
0mm Rear of Display	26	2480	8.39	9.00	0.008	0.009	-
0mm Bottom	11	2405	8.11	9.00	0.020	0.025	-
0mm Bottom	18	2440	8.34	9.00	0.020	0.023	-
0mm Bottom	26	2480	8.39	9.00	0.023	0.026	C.15
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) *Measured results for Thread were scaled down from 100% duty cycle to 60.96%. Refer to Annex D							

Table 27

Thread - SISO Core 0 (5 or 6 GHz WLAN ON) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)*	Scan Figure Number
0mm Rear of Display	18	2440	14.86	15.50	0.043	0.049	-
0mm Bottom	11	2405	14.96	15.50	0.123	0.139	-
0mm Bottom	18	2440	14.86	15.50	0.140	0.162	C.16
0mm Bottom	26	2480	15.08	15.50	0.113	0.124	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) *Measured results for Thread were scaled down from 100% duty cycle to 60.96%. Refer to Annex D							

Table 28

Thread - SISO Core 1 (5 or 6 GHz WLAN ON) (ePA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)*	Scan Figure Number
0mm Rear of Display	18	2440	14.80	15.50	0.038	0.044	-
0mm Bottom	11	2405	14.69	15.50	0.085	0.103	-
0mm Bottom	18	2440	14.80	15.50	0.111	0.130	C.17
0mm Bottom	26	2480	14.98	15.50	0.110	0.124	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) *Measured results for Thread were scaled down from 100% duty cycle to 60.96%. Refer to Annex D							

Table 29

Thread - SISO Core 2 (5 or 6 GHz WLAN ON) (iPA):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)*	Scan Figure Number
0mm Rear of Display	26	2480	8.39	9.00	0.008	0.009	-
0mm Bottom	11	2405	8.11	9.00	0.020	0.025	-
0mm Bottom	18	2440	8.34	9.00	0.020	0.023	-
0mm Bottom	26	2480	8.39	9.00	0.023	0.026	C.15
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) *Measured results for Thread were scaled down from 100% duty cycle to 60.96%. Refer to Annex D							

Table 30

WLAN - 2.4 GHz - 802.11b DSSS - 20 MHz - 1 Mbps - SISO (Core 0):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	1	2412	18.90	19.00	0.192	0.196	-
0mm Bottom	1	2412	18.90	19.00	0.544	0.557	C.18
0mm Bottom	6	2437	18.88	19.00	0.537	0.552	-
0mm Bottom	11	2462	18.92	19.00	0.501	0.510	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 31

WLAN - 2.4 GHz - 802.11b DSSS - 20 MHz - 1 Mbps - SISO (Core 1):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	11	2462	18.90	19.00	0.189	0.193	-
0mm Bottom	1	2412	18.85	19.00	0.439	0.454	-
0mm Bottom	6	2437	18.95	19.00	0.532	0.538	-
0mm Bottom	11	2462	18.90	19.00	0.547	0.560	C.19
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 32

WLAN - 2.4 GHz - 802.11g OFDM - 20 MHz - 6 Mbps - SISO (Core 0):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	6	2437	19.61	20.00	0.215	0.235	-
0mm Bottom	2	2417	19.59	20.00	0.601	0.661	-
0mm Bottom	6	2437	19.61	20.00	0.609	0.666	C.20
0mm Bottom	10	2457	19.59	20.00	0.563	0.619	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 33

WLAN - 2.4 GHz - 802.11g OFDM - 20 MHz - 6 Mbps - SISO (Core 1):
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	6	2437	19.50	20.00	0.204	0.229	-
0mm Bottom	2	2417	19.69	20.00	0.561	0.603	-
0mm Bottom	6	2437	19.50	20.00	0.575	0.645	C.21
0mm Bottom	10	2457	19.67	20.00	0.594	0.641	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 34

WLAN - 2.4 GHz - 802.11n/ac - HT20 - MIMO Core 0 & Core 1:
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display (Core 0)	6	2437	19.16	20.00	0.206	0.250	-
0mm Rear of Display (Core 1)	6	2437	19.66	20.00	0.206	0.223	
0mm Bottom (Core 0)	10	2457	19.37	20.00	0.593	0.686	-
0mm Bottom (Core 1)	10	2457	19.70	20.00	0.652	0.699	
0mm Bottom (Core 0)	2	2417	19.04	19.50	0.633	0.704	-
0mm Bottom (Core 1)	2	2417	19.45	19.50	0.516	0.522	
0mm Bottom (Core 0)	6	2437	19.16	20.00	0.616	0.747	C.22
0mm Bottom (Core 1)	6	2437	19.66	20.00	0.614	0.664	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 35

WLAN - U-NII-1 - 802.11ac - VHT80 - SISO Core 0
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	42	5210	13.23	13.50	0.173	0.184	-
0mm Bottom	42	5210	13.23	13.50	0.594	0.632	C.23
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 36

WLAN - U-NII-1 - 802.11ac - VHT80 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	42	5210	15.05	15.50	0.287	0.318	-
0mm Bottom	42	5210	15.05	15.50	0.621	0.689	C.24
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 37

WLAN - U-NII-1 - 802.11ac - VHT80 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display (Core 0)	42	5210	13.16	13.50	0.228	0.247	-
0mm Rear of Display (Core 1)	42	5210	14.04	15.25	0.239	0.316	
0mm Bottom (Core 0)	42	5210	13.16	13.50	0.543	0.587	C.25
0mm Bottom (Core 1)	42	5210	14.04	15.25	0.594	0.785	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 38

WLAN - U-NII-2A - 802.11ac – VHT80 - SISO Core 0
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	58	5290	13.45	13.75	0.264	0.283	-
0mm Bottom	58	5290	13.45	13.75	0.533	0.571	C.26
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 39

WLAN - U-NII-2A - 802.11n/ac - HT40 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	62	5310	15.25	15.75	0.347	0.389	-
0mm Bottom	54	5270	15.40	15.75	0.792	0.858	-
0mm Bottom	62	5310	15.25	15.75	0.767	0.861	C.27
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 40

WLAN - U-NII-2A - 802.11n/ac - HT40 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display (Core 0)	54	5270	13.38	13.75	0.230	0.250	-
0mm Rear of Display (Core 1)	54	5270	15.35	15.75	0.337	0.370	
0mm Bottom (Core 0)	54	5270	13.38	13.75	0.568	0.619	-
0mm Bottom (Core 1)	54	5270	15.35	15.75	0.689	0.755	
0mm Bottom (Core 0)	62	5310	13.26	13.75	0.678	0.759	C.28
0mm Bottom (Core 1)	62	5310	14.36	14.50	0.683	0.705	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 41

WLAN - U-NII-2C - 802.11ac - VHT80 - SISO Core 0
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	106	5530	14.40	14.75	0.239	0.259	-
0mm Bottom	106	5530	14.40	14.75	0.694	0.752	C.29
0mm Bottom	122	5610	14.48	14.75	0.642	0.683	-
0mm Bottom	138	5690	14.36	14.75	0.535	0.585	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 42

WLAN - U-NII-2C - 802.11ac - VHT80 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	122	5610	15.22	15.50	0.665	0.709	-
0mm Bottom	138	5690	15.16	15.50	0.591	0.639	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 43

WLAN - U-NII-2C - 802.11n/ac - HT40 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	102	5510	15.09	15.50	0.338	0.371	-
0mm Bottom	102	5510	15.09	15.50	0.725	0.797	C.30
0mm Bottom	110	5550	15.20	15.50	0.722	0.774	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 44

WLAN - U-NII-2C - 802.11n/ac - HT40 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display (Core 0)	102	5510	14.15	14.75	0.234	0.269	-
0mm Rear of Display (Core 1)	102	5510	15.19	15.50	0.360	0.387	
0mm Bottom (Core 0)	102	5510	14.15	14.75	0.577	0.662	C.31
0mm Bottom (Core 1)	102	5510	15.19	15.50	0.748	0.803	
0mm Bottom (Core 0)	110	5550	14.35	14.75	0.579	0.635	-
0mm Bottom (Core 1)	110	5550	15.21	15.50	0.735	0.786	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 45

WLAN - U-NII-2C - 802.11ac - VHT80 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core 0)	122	5610	14.46	14.75	0.588	0.629	-
0mm Bottom (Core 1)	122	5610	14.89	15.50	0.646	0.743	
0mm Bottom (Core 0)	138	5690	14.47	14.75	0.548	0.584	-
0mm Bottom (Core 1)	138	5690	15.05	15.50	0.586	0.650	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 46

WLAN - U-NII-3 - 802.11ac - VHT80 - SISO Core 0
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	155	5775	13.97	14.25	0.262	0.279	-
0mm Bottom	155	5775	13.97	14.25	0.635	0.677	C.32
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 47

WLAN - U-NII-3 - 802.11ac - VHT80 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	155	5775	15.05	15.50	0.361	0.400	-
0mm Bottom	155	5775	15.05	15.50	0.684	0.759	C.33
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 48

WLAN - U-NII-3 - 802.11ac - VHT80 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display (Core 0)	155	5775	13.94	14.25	0.273	0.293	-
0mm Rear of Display (Core 1)	155	5775	15.05	15.50	0.359	0.398	
0mm Bottom (Core 0)	155	5775	13.94	14.25	0.641	0.688	C.34
0mm Bottom (Core 1)	155	5775	15.05	15.50	0.695	0.771	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 49

WLAN - 6 GHz 802.11ax – HE40 - SISO Core 0
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	123	6565	11.00	11.25	0.280	0.297	-
0mm Bottom	179	6845	12.13	12.50	0.254	0.277	-
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 50

WLAN - 6 GHz 802.11ax – HE80 - SISO Core 0
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	167	6785	12.04	12.25	0.265	0.278	-
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 51

WLAN - 6 GHz 802.11ax – HE160 - SISO Core 0
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	143	6665	12.17	12.50	0.182	0.185	-
0mm Bottom	15	6025	11.61	12.00	0.253	0.277*	-
0mm Bottom	47	6185	12.32	12.50	0.325	0.339	-
0mm Bottom	79	6345	11.38	11.75	0.274	0.298	-
0mm Bottom	143	6665	12.17	12.25	0.345	0.351	C.35
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position. * Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 52

WLAN - 6 GHz 802.11ax – HE40 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display	179	6845	12.75	13.00	0.179	0.190	-
0mm Bottom	123	6565	12.70	13.00	0.250	0.268	-
0mm Bottom	179	6845	12.75	13.00	0.363	0.385	C.36
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 53

WLAN - 6 GHz 802.11ax - HE80 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	167	6785	11.98	12.25	0.326	0.347	-
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 54

WLAN - 6 GHz 802.11ax - HE160 - SISO Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	15	6025	12.11	12.75	0.272	0.315*	-
0mm Bottom	47	6185	12.69	13.00	0.283	0.304	-
0mm Bottom	79	6345	12.71	13.00	0.204	0.218	-
0mm Bottom	143	6665	12.00	12.25	0.258	0.273	-
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position. * Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 55

WLAN - 6 GHz - 802.11ax – HE40 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Rear of Display (Core 0)	179	6845	12.16	12.50	0.119	0.129	-
0mm Rear of Display (Core 1)	179	6845	12.66	13.00	0.177	0.191	
0mm Bottom (Core 0)	123	6565	11.10	11.25	0.297	0.307	-
0mm Bottom (Core 1)	123	6565	12.21	13.00	0.200	0.240	
0mm Bottom (Core 0)	179	6845	12.16	12.50	0.234	0.253	C.37
0mm Bottom (Core 1)	179	6845	12.66	13.00	0.384	0.415	
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 56

WLAN - 6 GHz - 802.11ax - HE80 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core 0)	167	6785	11.71	12.25	0.241	0.273	-
0mm Bottom (Core 1)	167	6785	12.08	12.25	0.341	0.355	
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 57

WLAN - 6 GHz - 802.11ax - HE160 - MIMO Core 0 & Core 1
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core 0)	15	6025	11.55	12.00	0.277	0.307*	-
0mm Bottom (Core 1)	15	6025	12.48	12.75	0.273	0.291*	
0mm Bottom (Core 0)	47	6185	11.87	12.50	0.277	0.320	-
0mm Bottom (Core 1)	47	6185	12.92	13.00	0.273	0.278	
0mm Bottom (Core 0)	79	6345	11.46	11.75	0.253	0.270	-
0mm Bottom (Core 1)	79	6345	12.71	13.00	0.176	0.188	
0mm Bottom (Core 0)	143	6665	11.40	12.25	0.327	0.398	-
0mm Bottom (Core 1)	143	6665	11.77	12.25	0.310	0.346	
The SAR values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position. * Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g)							

Table 58

WLAN - 6 GHz 802.11ax – HE40 - SISO Core 0
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Bottom	123	6565	11.00	11.25	2.060	2.182	-
0mm Bottom	179	6845	12.13	12.50	1.860	2.025	-
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 59

WLAN - 6 GHz 802.11ax – HE80 - SISO Core 0
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Bottom	167	6785	12.04	12.25	1.960	2.057	-
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 60

WLAN - 6 GHz 802.11ax – HE160 - SISO Core 0
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Rear of Display	143	6665	12.17	12.50	1.320	1.345	-
0mm Bottom	15	6025	11.61	12.00	1.860	2.035	-
0mm Bottom	47	6185	12.32	12.50	2.440	2.543	-
0mm Bottom	79	6345	11.38	11.75	2.000	2.178	-
0mm Bottom	143	6665	12.17	12.25	2.540	2.587	-
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 61

WLAN - 6 GHz 802.11ax - HE40 - SISO Core 1
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Rear of Display	179	6845	12.75	13.00	1.280	1.356	-
0mm Bottom	123	6565	12.70	13.00	1.880	2.014	-
0mm Bottom	179	6845	12.75	13.00	2.620	2.775	-
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 62

WLAN - 6 GHz 802.11ax - HE80 - SISO Core 1
Body Absorbed Power Density (APD) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Bottom	167	6785	11.98	12.25	2.420	2.575	-
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 63

WLAN - 6 GHz 802.11ax – HE160 - SISO Core 1
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Bottom	15	6025	12.11	12.75	2.140	2.480	-
0mm Bottom	47	6185	12.69	13.00	2.300	2.470	-
0mm Bottom	79	6345	12.71	13.00	1.720	1.839	-
0mm Bottom	143	6665	12.00	12.25	1.860	1.970	-
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 64

WLAN - 6 GHz - 802.11ax – HE40 - MIMO Core 0 & Core 1
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Rear of Display (Core 0)	179	6845	12.16	12.50	0.900	0.973	-
0mm Rear of Display (Core 1)	179	6845	12.66	13.00	1.340	1.449	
0mm Bottom (Core 0)	123	6565	11.10	11.25	2.200	2.277	-
0mm Bottom (Core 1)	123	6565	12.21	13.00	1.480	1.775	
0mm Bottom (Core 0)	179	6845	12.16	12.50	1.760	1.903	-
0mm Bottom (Core 1)	179	6845	12.66	13.00	2.800	3.028	
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 65

WLAN - 6 GHz - 802.11ax - HE80 - MIMO Core 0 & Core 1
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Bottom (Core 0)	167	6785	11.71	12.25	1.760	1.993	-
0mm Bottom (Core 1)	167	6785	12.08	12.25	2.480	2.579	
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 66

WLAN - 6 GHz - 802.11ax - HE160 - MIMO Core 0 & Core 1
Body Absorbed Power Density (APD) 4cm2 Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured APD 4cm^2 (W/m^2)	Scaled APD 4cm^2 (W/m^2)	Scan Figure Number
0mm Bottom (Core 0)	15	6025	11.55	12.00	2.080	2.307	-
0mm Bottom (Core 1)	15	6025	12.48	12.75	2.180	2.320	
0mm Bottom (Core 0)	47	6185	11.87	12.50	2.060	2.382	-
0mm Bottom (Core 1)	47	6185	12.92	13.00	2.280	2.322	
0mm Bottom (Core 0)	79	6345	11.46	11.75	1.880	2.010	-
0mm Bottom (Core 1)	79	6345	12.71	13.00	1.500	1.604	
0mm Bottom (Core 0)	143	6665	11.40	12.25	2.380	2.895	-
0mm Bottom (Core 1)	143	6665	11.77	12.25	2.280	2.546	
The APD values above do not have a regulatory limit. They are provided in line with FCC procedures to derive the maximum iPD test position.							

Table 67

6 GHz - 802.11ax – HE40 - MCS0 - Core 1
Incident Power Density (iPD) 4cm^2 Results

Test Position	Channel Number	Frequency (MHz)	Measured iPD 4cm^2 (W/m^2)	Standalone iPD limit (W/m^2)	Exposure Ratio	Scan Figure Number
0mm Bottom	179	6845	5.500	10.00	0.550	C.38

Table 68

1.4.6 Technical Description

The equipment under test (EUT) was a portable laptop computer.

1.4.7 Interim Procedures for FCC Radio Frequency Exposure Evaluations

The interim procedure for FCC Radio Frequency (RF) exposure evaluations of U-NII 6-7 GHz band portable devices have been made available during the TCB workshop in October 2020. The procedure is summarized below:

- Evaluate SAR / APD with DASY Module SAR V16.0 or higher. The configurations to be tested are defined in the relevant Knowledge Database (KDB). The peak spatial averaged SAR (psSAR) and the peak spatial averaged absorbed Power Density (psAPD) are reported.

- For the configuration with the highest SAR / APD, evaluate the PD with DASY Module mmWave V3.0 or higher.

1.4.8 Test Configuration and Modes of Operation

The testing was performed with an integral battery supplied and manufactured by Apple Inc.

Supported technologies are Bluetooth (BDR/EDR/HDR/LE), 2.4 GHz Thread, 5 GHz Narrowband (BDR/HDR), 2.4 GHz WLAN (802.11b/g/n/ax), 5 GHz and 6 GHz WLAN (802.11a/n/ac/ax). 2x2 MIMO is supported for WLAN.

2x2 MIMO is supported for WLAN.

Where the device supports Low Power (LP) and Standard Power (SP) in a relevant frequency band of operation, the Standard Power option was always selected. This resulted in the highest output power always being selected where a choice is available.

For each scan, the device was configured into a continuous transmission test mode at a maximum power defined by the customer.

Testing was performed in each position at the frequency that gave the highest output power for each band.

Conducted power measurements were performed on a modified device (accessible conducted port) and the measured SAR results were power scaled to the maximum declared tune-up level.

For each antenna, the bottom surface, and the rear of the EUT display were assessed for SAR.

For the 6 GHz frequency bands the transmission mode used for testing was determined by the 802.11 configuration with the highest declared output power in each frequency band. Where multiple 802.11 configurations have the same specified output power, testing was performed using the mode with the largest channel bandwidth with the lowest order modulation and lowest data rate.

For SAR assessment, the relevant surfaces of the device were placed against an Elliptical phantom with a 0mm separation distance.

The Elliptical Flat Phantom dimensions are 600mm major axis and 400mm minor axis with a shell thickness of 2mm. The phantom was filled to a minimum depth of 150mm with the appropriate liquid. The dielectric properties were in accordance with the requirements specified in KDB 865665.

Included in this report are descriptions of the test method; the equipment used and an analysis of the test uncertainties applicable and diagrams indicating the locations of maximum SAR, APD and iPD for each relevant test position.

1.4.9 Antenna Location Diagram

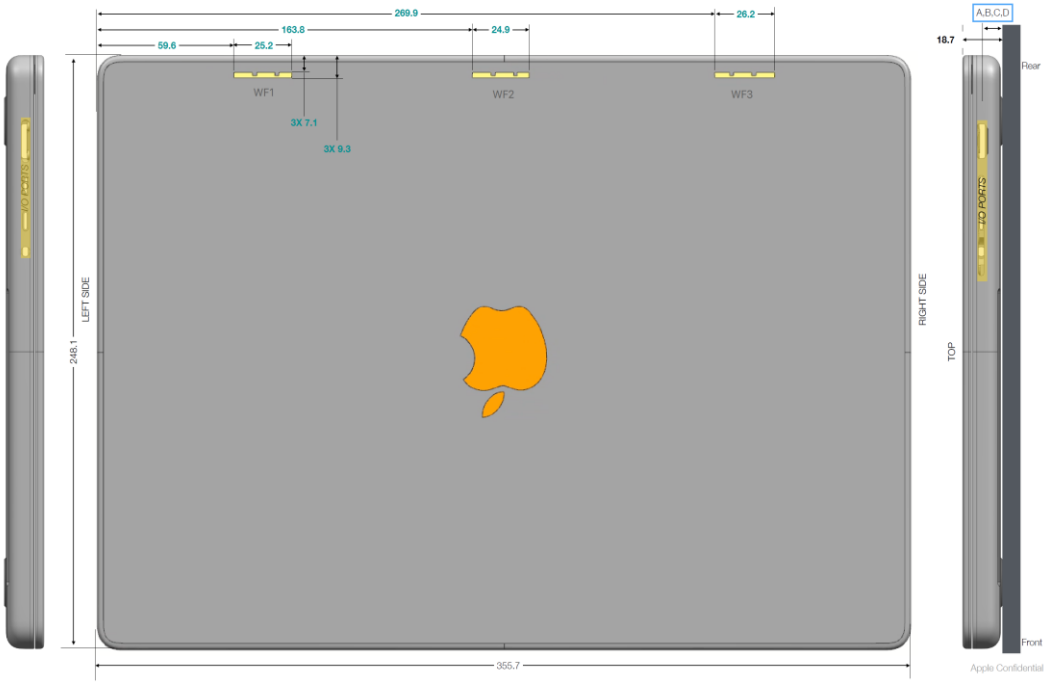

Figure 1

1.4.10 Deviations from Standard

Initially, area scans were completed covering the whole of the bottom surface of the EUT to determine that there were no other RF radiators (unintentional) other than the antennas. The actual SAR measurements were completed using smaller area scans covering the antenna locations only.

2.4 GHz

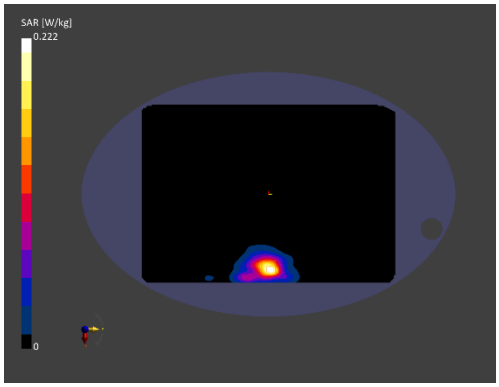

Figure 2 - (Core 0)

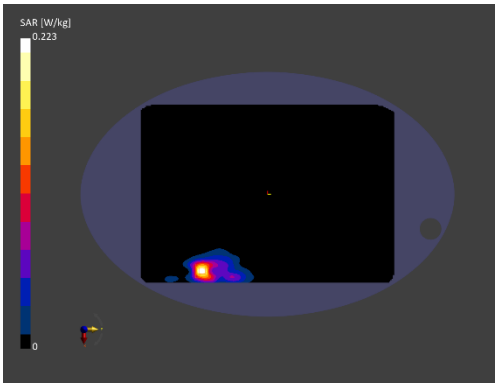

Figure 3 - (Core 1)

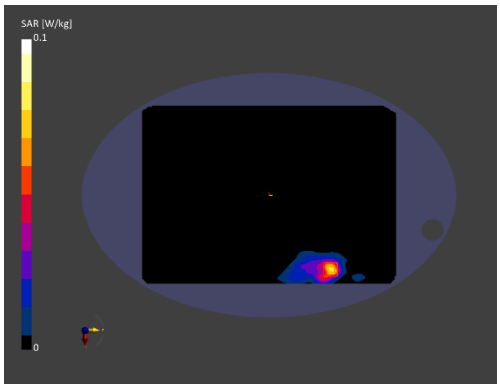

Figure 4 - (Core 2)

5 GHz

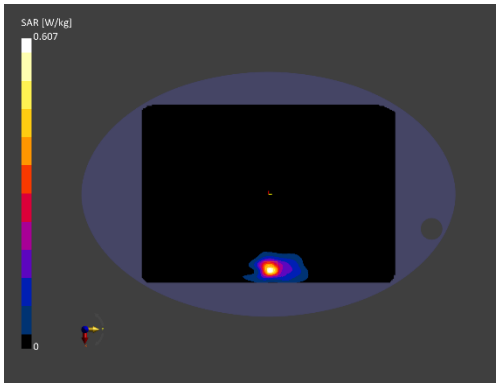

Figure 5 - (Core 0)

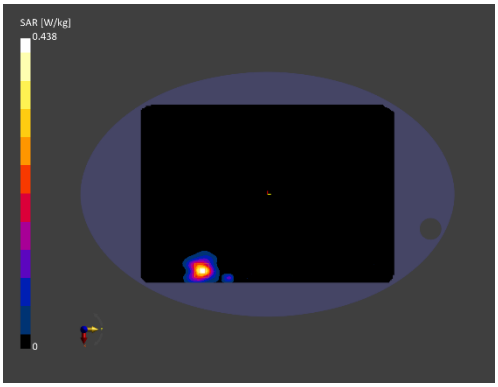

Figure 6 - (Core 1)

6 GHz

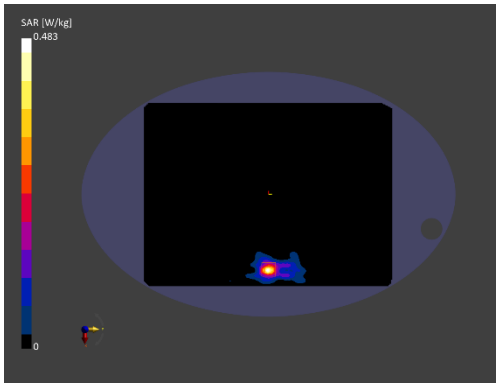

Figure 7 - (Core 0)

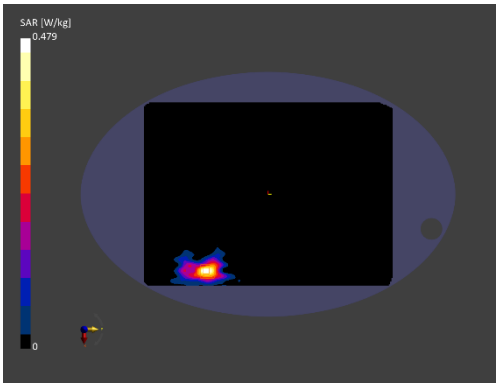

Figure 8 - (Core 1)

1.5 POWER TABLES (TUNE UP VALUES)

Note: All values in dBm
NS= Not Supported

2.4 GHz Bluetooth 5 GHz OFF

PA	BT Core	Channel	BDR (dBm)	EDR (dBm)	LE (dBm)	HDR4 (dBm)	HDR8 (dBm)
iPA	0	All	13.00	9.50	6.50	6.00	6.00
ePA	0		NS	16.50	17.00	15.00	13.00
iPA	1		13.00	9.50	6.50	6.00	6.00
ePA	1		NS	16.50	14.00	15.00	13.00
iPA	2		13.00	9.50	6.50	6.00	6.00

Table 69

2.4 GHz Bluetooth 5 GHz OFF - TXBF

PA	BT Core	Channel	BDR TXBF (dBm)	EDR TXBF (dBm)	LE TXBF (dBm)	HDR4 TXBF (dBm)	HDR8 TXBF (dBm)
iPA	0	All	13.00	9.50	6.50	6.00	6.00
ePA	0		NS	13.50	17.00	15.00	13.00
iPA	1		13.00	9.50	6.50	6.00	6.00
ePA	1		NS	13.50	14.00	15.00	13.00
iPA	2		NS	NS	NS	NS	NS

Table 70

2.4 GHz Bluetooth 5 GHz ON

PA	BT Core	Channel	BDR (dBm)	EDR (dBm)	LE (dBm)	HDR4 (dBm)	HDR8 (dBm)
iPA	0	All	13.00	9.50	6.50	6.00	6.00
ePA	0		NS	15.50	15.50	15.00	13.00
iPA	1		13.00	9.50	6.50	6.00	6.00
ePA	1		NS	15.50	14.00	15.00	13.00
iPA	2		13.00	9.50	6.50	6.00	6.00

Table 71

2.4 GHz Bluetooth 5 GHz ON - TXBF

PA	BT Core	Channel	BDR TXBF (dBm)	EDR TXBF (dBm)	LE TXBF (dBm)	HDR4 TXBF (dBm)	HDR8 TXBF (dBm)
iPA	0	All	13.00	9.50	6.50	6.00	6.00
ePA	0		NS	13.50	15.50	15.00	13.00
iPA	1		13.00	9.50	6.50	6.00	6.00
ePA	1		NS	13.50	14.00	15.00	13.00
iPA	2		NS	NS	NS	NS	NS

Table 72

Narrowband UNII-1 - When 2.4 GHz WLAN OFF

PA	BT Core	Channel	BDR (dBm)	HDR4 (dBm)	HDR8 (dBm)	BDR TXBF (dBm)	HDR4 TXBF (dBm)	HDR8 TXBF (dBm)
iPA	0	All	10.00	4.50	4.50	5.50	4.50	4.50
ePA	0		NS	12.00	14.00	NS	7.50	9.50
iPA	1		10.00	4.50	4.50	5.50	4.50	4.50
ePA	1		NS	12.00	14.00	NS	7.50	9.50

Table 73

Narrowband UNII-1 - When 2.4 GHz WLAN ON

PA	BT Core	Channel	BDR (dBm)	HDR4 (dBm)	HDR8 (dBm)	BDR TXBF (dBm)	HDR4 TXBF (dBm)	HDR8 TXBF (dBm)
iPA	0	All	10.00	4.50	4.50	5.50	4.50	4.50
ePA	0		NS	10.50	10.50	NS	7.50	9.50
iPA	1		10.00	4.50	4.50	5.50	4.50	4.50
ePA	1		NS	11.50	11.50	NS	7.50	9.50

Table 74

Narrowband UNII-3 - When 2.4 GHz WLAN OFF

PA	BT Core	Channel	BDR (dBm)	HDR4 (dBm)	HDR8 (dBm)	BDR TXBF (dBm)	HDR4 TXBF (dBm)	HDR8 TXBF (dBm)
iPA	0	All	11.00	4.50	4.50	11.00	4.50	4.50
ePA	0		NS	15.00	15.00	NS	15.00	15.00
iPA	1		11.00	4.50	4.50	11.00	4.50	4.50
ePA	1		NS	15.00	15.00	NS	15.00	15.00

Table 75

Narrowband UNII-3 - When 2.4 GHz WLAN ON

PA	BT Core	Channel	BDR (dBm)	HDR4 (dBm)	HDR8 (dBm)	BDR TXBF (dBm)	HDR4 TXBF (dBm)	HDR8 TXBF (dBm)
iPA	0	All	11.00	4.50	4.50	11.00	4.50	4.50
ePA	0		NS	11.00	11.00	NS	11.00	11.00
iPA	1		11.00	4.50	4.50	11.00	4.50	4.50
ePA	1		NS	11.00	11.00	NS	11.00	11.00

Table 76

2.4 GHz Thread - When 5 GHz OFF

PA	BT Core	Channel	Thread (dBm)
iPA	0	All	13.00
ePA	0		21.00
iPA	1		13.00
ePA	1		21.00
iPA	2		9.00
ePA	2		NS

2.4 GHz Thread - When 5 GHz ON

PA	BT Core	Channel	Thread (dBm)
iPA	0	All	13.00
ePA	0		15.50
iPA	1		13.00
ePA	1		15.50
iPA	2		9.00
ePA	2		NS

Table 77

2.4 GHz WLAN SISO Core 0 & Core 1

Channel	Centre Frequency (MHz)	b (SISO)	g (SISO) Low Rate	11n/11ac HT20 (SISO) Low Rate	11ax/11be HE20 (SISO) Low Rate	11ax/11be HE20 RU106 (SISO)	11ax/11be HE20 RU52 (SISO)	11ax/11be HE20 RU26 (SISO)
1	2412	19.00	17.50	16.50	15.50	17.00	17.50	14.50
2	2417	19.00	20.00	20.00	19.25	17.50	17.50	14.50
3	2422	19.00	20.00	20.00	20.00	19.25	17.50	14.50
4	2427	19.00	20.00	20.00	20.00	20.00	17.50	14.50
5	2432	19.00	20.00	20.00	20.00	20.00	17.50	14.50
6	2437	19.00	20.00	20.00	20.00	20.00	17.50	14.50
7	2442	19.00	20.00	20.00	20.00	20.00	17.50	14.50
8	2447	19.00	20.00	20.00	20.00	20.00	17.50	14.50
9	2452	19.00	20.00	20.00	20.00	20.00	17.50	14.50
10	2457	19.00	20.00	20.00	20.00	18.00	17.50	14.50
11	2462	19.00	18.50	18.00	16.50	17.75	17.50	14.50
12	2467	17.50	16.25	15.50	14.50	15.00	16.50	14.50
13	2472	15.75	9.00	8.50	7.75	-1.00	-2.00	-5.00

Table 78

2.4 GHz WLAN MIMO Core 0 & Core 1

Channel	Centre Frequency (MHz)	11n/11ac HT20 (2Tx, nonTxBF) Low Rate	11ax/11be HE20 (2Tx, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, nonTxBF)	11ax/11be HE20 RU52 (2Tx, nonTxBF)	11ax/11be HE20 RU26 (2Tx, nonTxBF)
1	2412	14.75	13.00	16.00	16.00	14.50
2	2417	19.50	17.75	17.25	17.50	14.50
3	2422	20.00	19.75	18.25	17.50	14.50
4	2427	20.00	19.75	19.25	17.50	14.50
5	2432	20.00	20.00	20.00	17.50	14.50
6	2437	20.00	20.00	20.00	17.50	14.50
7	2442	20.00	20.00	20.00	17.50	14.50
8	2447	20.00	20.00	20.00	17.50	14.50
9	2452	20.00	20.00	18.00	17.50	14.50
10	2457	20.00	18.50	17.25	17.50	14.50
11	2462	16.00	15.00	17.25	17.50	14.50
12	2467	14.00	12.50	14.00	15.50	14.50
13	2472	8.00	7.25	-3.50	-6.25	-8.50

Table 79

5 GHz WLAN - 20 MHz BW - SISO Core 0

Channel	Centre Frequency (MHz)	a (SISO) Low Rate	11n/11ac HT20 (SISO) Low Rate	11ax/11be HE20 (SISO) Low Rate	11ax/11be HE20 RU106 (SISO)	11ax/11be HE20 RU52 (SISO)	11ax/11be HE20 RU26 (SISO)
36	5180	13.50	13.50	13.50	13.50	13.50	12.00
40	5200	13.50	13.50	13.50	13.50	13.50	12.00
44	5220	13.50	13.50	13.50	13.50	13.50	12.00
48	5240	13.50	13.50	13.50	13.50	13.50	12.00
52	5260	13.75	13.75	13.75	13.75	13.75	NS
56	5280	13.75	13.75	13.75	13.75	13.75	NS
60	5300	13.75	13.75	13.75	13.75	13.75	NS
64	5320	13.75	13.75	13.75	13.75	13.75	NS
100	5500	14.75	14.75	14.75	14.75	14.50	NS
104	5520	14.75	14.75	14.75	14.75	14.75	NS
108	5540	14.75	14.75	14.75	14.75	14.75	NS
112	5560	14.75	14.75	14.75	14.75	14.75	NS
116	5580	14.75	14.75	14.75	14.75	14.75	NS
120	5600	14.75	14.75	14.75	14.75	14.75	NS
124	5620	14.75	14.75	14.75	14.75	14.75	NS
128	5640	14.75	14.75	14.75	14.75	14.75	NS
132	5660	14.75	14.75	14.75	14.75	14.75	NS
136	5680	14.75	14.75	14.75	14.75	14.75	NS
140	5700	14.75	14.75	14.75	14.75	12.50	NS
144	5720	14.75	14.75	14.75	14.75	14.75	NS
149	5745	14.25	14.25	14.25	14.25	14.25	13.50
153	5765	14.25	14.25	14.25	14.25	14.25	13.50
157	5785	14.25	14.25	14.25	14.25	14.25	13.50
161	5805	14.25	14.25	14.25	14.25	14.25	13.50
165	5825	14.25	14.25	14.25	14.25	14.25	13.50

Table 80

5 GHz WLAN - 20 MHz BW - MIMO Core 0 - CDD

Channel	Centre Frequency (MHz)	11n/11ac HT20 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE20 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU26 (2Tx, CDD, nonTxBF)
36	5180	13.50	13.50	13.25	10.25	7.25
40	5200	13.50	13.50	13.25	10.25	7.25
44	5220	13.50	13.50	13.25	10.25	7.25
48	5240	13.50	13.50	13.25	10.25	7.25
52	5260	13.75	13.75	12.25	9.25	NS
56	5280	13.75	13.75	12.25	9.25	NS
60	5300	13.75	13.75	12.25	9.25	NS
64	5320	13.75	13.75	12.25	9.25	NS
100	5500	14.75	14.75	13.75	10.75	NS
104	5520	14.75	14.75	13.75	10.75	NS
108	5540	14.75	14.75	13.75	10.75	NS
112	5560	14.75	14.75	13.75	10.75	NS
116	5580	14.75	14.75	13.75	10.75	NS
120	5600	14.75	14.75	13.75	10.75	NS
124	5620	14.75	14.75	13.75	10.75	NS
128	5640	14.75	14.75	13.75	10.75	NS
132	5660	14.75	14.75	13.75	10.75	NS
136	5680	14.75	14.75	13.75	10.75	NS
140	5700	14.75	14.75	12.75	9.75	NS
144	5720	14.75	14.75	13.75	10.75	NS
149	5745	14.25	14.25	14.25	14.25	13.50
153	5765	14.25	14.25	14.25	14.25	13.50
157	5785	14.25	14.25	14.25	14.25	13.50
161	5805	14.25	14.25	14.25	14.25	13.50
165	5825	14.25	14.25	14.25	14.25	13.50

Table 81

5 GHz WLAN - 20 MHz BW - MIMO Core 0 - SDM

Channel	Centre Frequency (MHz)	11n/11ac HT20 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE20 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU26 (2Tx, SDM, nonTxBF)	11n/11ac VHT20 (2Tx, TxBF) Low Rate
36	5180	13.50	13.50	13.50	12.00	9.00	13.50
40	5200	13.50	13.50	13.50	12.00	9.00	13.50
44	5220	13.50	13.50	13.50	12.00	9.00	13.50
48	5240	13.50	13.50	13.50	12.00	9.00	13.50
52	5260	13.75	13.75	13.75	12.00	NS	13.75
56	5280	13.75	13.75	13.75	12.00	NS	13.75
60	5300	13.75	13.75	13.75	12.00	NS	13.75
64	5320	13.75	13.75	13.75	12.00	NS	13.75
100	5500	14.75	14.75	14.75	12.00	NS	14.75
104	5520	14.75	14.75	14.75	12.00	NS	14.75
108	5540	14.75	14.75	14.75	12.00	NS	14.75
112	5560	14.75	14.75	14.75	12.00	NS	14.75
116	5580	14.75	14.75	14.75	12.00	NS	14.75
120	5600	14.75	14.75	14.75	12.00	NS	14.75
124	5620	14.75	14.75	14.75	12.00	NS	14.75
128	5640	14.75	14.75	14.75	12.00	NS	14.75
132	5660	14.75	14.75	14.75	12.00	NS	14.75
136	5680	14.75	14.75	14.75	12.00	NS	14.75
140	5700	14.75	14.75	14.75	9.75	NS	14.75
144	5720	14.75	14.75	14.75	12.00	NS	14.75
149	5745	14.25	14.25	14.25	14.25	13.50	14.25
153	5765	14.25	14.25	14.25	14.25	13.50	14.25
157	5785	14.25	14.25	14.25	14.25	13.50	14.25
161	5805	14.25	14.25	14.25	14.25	13.50	14.25
165	5825	14.25	14.25	14.25	14.25	13.50	14.25

Table 82

5 GHz WLAN - 20 MHz BW - SISO Core 1

Channel	Centre Frequency (MHz)	a (SISO) Low Rate	11n/11ac HT20 (SISO) Low Rate	11ax/11be HE20 (SISO) Low Rate	11ax/11be HE20 RU106 (SISO)	11ax/11be HE20 RU52 (SISO)	11ax/11be HE20 RU26 (SISO)
36	5180	15.50	15.50	15.50	15.50	15.00	12.00
40	5200	15.50	15.50	15.50	15.50	15.00	12.00
44	5220	15.50	15.50	15.50	15.50	15.00	12.00
48	5240	15.50	15.50	15.50	15.50	15.00	12.00
52	5260	15.75	15.75	15.75	15.75	15.00	NS
56	5280	15.75	15.75	15.75	15.75	15.00	NS
60	5300	15.75	15.75	15.75	15.75	15.00	NS
64	5320	15.75	15.75	15.75	15.50	15.00	NS
100	5500	15.50	15.50	15.50	15.50	14.50	NS
104	5520	15.50	15.50	15.50	15.50	15.00	NS
108	5540	15.50	15.50	15.50	15.50	15.00	NS
112	5560	15.50	15.50	15.50	15.50	15.00	NS
116	5580	15.50	15.50	15.50	15.50	15.00	NS
120	5600	15.50	15.50	15.50	15.50	15.00	NS
124	5620	15.50	15.50	15.50	15.50	15.00	NS
128	5640	15.50	15.50	15.50	15.50	15.00	NS
132	5660	15.50	15.50	15.50	15.50	15.00	NS
136	5680	15.50	15.50	15.50	15.50	15.00	NS
140	5700	15.50	15.50	15.50	15.50	12.50	NS
144	5720	15.50	15.50	15.50	15.50	15.00	NS
149	5745	15.50	15.50	15.50	15.50	15.50	13.50
153	5765	15.50	15.50	15.50	15.50	15.50	13.50
157	5785	15.50	15.50	15.50	15.50	15.50	13.50
161	5805	15.50	15.50	15.50	15.50	15.50	13.50
165	5825	15.50	15.50	15.50	15.50	15.50	13.50

Table 83

5 GHz WLAN - 20 MHz BW - MIMO Core 1 - CDD

Channel	Centre Frequency (MHz)	11n/11ac HT20 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE20 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU26 (2Tx, CDD, nonTxBF)
36	5180	15.25	15.25	13.25	10.25	7.25
40	5200	15.25	15.25	13.25	10.25	7.25
44	5220	15.25	15.25	13.25	10.25	7.25
48	5240	15.25	15.25	13.25	10.25	7.25
52	5260	14.25	14.25	12.25	9.25	NS
56	5280	14.25	14.25	12.25	9.25	NS
60	5300	14.25	14.25	12.25	9.25	NS
64	5320	14.25	14.25	12.25	9.25	NS
100	5500	15.50	15.50	13.75	10.75	NS
104	5520	15.50	15.50	13.75	10.75	NS
108	5540	15.50	15.50	13.75	10.75	NS
112	5560	15.50	15.50	13.75	10.75	NS
116	5580	15.50	15.50	13.75	10.75	NS
120	5600	15.50	15.50	13.75	10.75	NS
124	5620	15.50	15.50	13.75	10.75	NS
128	5640	15.50	15.50	13.75	10.75	NS
132	5660	15.50	15.50	13.75	10.75	NS
136	5680	15.50	15.50	13.75	10.75	NS
140	5700	15.50	15.00	12.75	9.75	NS
144	5720	15.50	15.50	13.75	10.75	NS
149	5745	15.50	15.50	15.50	15.50	13.50
153	5765	15.50	15.50	15.50	15.50	13.50
157	5785	15.50	15.50	15.50	15.50	13.50
161	5805	15.50	15.50	15.50	15.50	13.50
165	5825	15.50	15.50	15.50	15.50	13.50

Table 84

5 GHz WLAN - 20 MHz BW - MIMO Core 1 - SDM

Channel	Centre Frequency (MHz)	11n/11ac HT20 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE20 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU26 (2Tx, SDM, nonTxBF)	11n/11ac VHT20 (2Tx, TxBF) Low Rate
36	5180	15.50	15.50	15.00	12.00	9.00	15.25
40	5200	15.50	15.50	15.00	12.00	9.00	15.25
44	5220	15.50	15.50	15.00	12.00	9.00	15.25
48	5240	15.50	15.50	15.00	12.00	9.00	15.25
52	5260	15.75	15.75	15.00	12.00	NS	14.25
56	5280	15.75	15.75	15.00	12.00	NS	14.25
60	5300	15.75	15.75	15.00	12.00	NS	14.25
64	5320	15.75	15.75	15.00	12.00	NS	14.25
100	5500	15.50	15.50	15.00	12.00	NS	15.50
104	5520	15.50	15.50	15.00	12.00	NS	15.50
108	5540	15.50	15.50	15.00	12.00	NS	15.50
112	5560	15.50	15.50	15.00	12.00	NS	15.50
116	5580	15.50	15.50	15.00	12.00	NS	15.50
120	5600	15.50	15.50	15.00	12.00	NS	15.50
124	5620	15.50	15.50	15.00	12.00	NS	15.50
128	5640	15.50	15.50	15.00	12.00	NS	15.50
132	5660	15.50	15.50	15.00	12.00	NS	15.50
136	5680	15.50	15.50	15.00	12.00	NS	15.50
140	5700	15.50	15.50	15.00	9.75	NS	14.75
144	5720	15.50	15.50	15.00	12.00	NS	15.50
149	5745	15.50	15.50	15.50	15.50	13.50	15.50
153	5765	15.50	15.50	15.50	15.50	13.50	15.50
157	5785	15.50	15.50	15.50	15.50	13.50	15.50
161	5805	15.50	15.50	15.50	15.50	13.50	15.50
165	5825	15.50	15.50	15.50	15.50	13.50	15.50

Table 85

5 GHz WLAN - 40 MHz BW - SISO Core 0

Channel	Centre Frequency (MHz)	11n/11ac HT40 (SISO) Low Rate	11ax/11be HE40 (SISO) Low Rate	11ax/11be HE40 RU106 (SISO)	11ax/11be HE40 RU52 (SISO)	11ax/11be HE40 RU26 (SISO)
38	5190	13.50	13.50	13.50	13.50	10.50
46	5230	13.50	13.50	13.50	13.50	10.50
54	5270	13.75	13.75	13.75	13.50	NS
62	5310	13.75	13.75	13.75	10.75	NS
102	5510	14.75	14.75	14.75	13.50	NS
110	5550	14.75	14.75	14.75	13.50	NS
118	5590	14.75	14.75	14.75	13.50	NS
126	5630	14.75	14.75	14.75	13.50	NS
134	5670	14.75	14.75	14.75	13.50	NS
142	5710	14.75	14.75	14.75	13.50	NS
151	5755	14.25	14.25	14.25	13.50	10.50
159	5795	14.25	14.25	14.25	13.50	10.50

Table 86

5 GHz WLAN - 40 MHz BW - MIMO Core 0 - CDD

Channel	Centre Frequency (MHz)	11n/11ac HT40 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE40 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU26 (2Tx, CDD, nonTxBF)
38	5190	13.50	13.50	11.00	9.50	7.25
46	5230	13.50	13.50	13.25	10.25	7.25
54	5270	13.75	13.75	12.25	9.25	NS
62	5310	13.75	13.25	9.00	7.00	NS
102	5510	14.75	14.25	13.50	10.75	NS
110	5550	14.75	14.75	13.75	10.75	NS
118	5590	14.75	14.75	13.75	10.75	NS
126	5630	14.75	14.75	13.75	10.75	NS
134	5670	14.75	14.75	13.75	10.75	NS
142	5710	14.75	14.75	13.75	10.75	NS
151	5755	14.25	14.25	14.25	13.50	10.50
159	5795	14.25	14.25	14.25	13.50	10.50

Table 87

5 GHz WLAN – 40 MHz BW – MIMO Core 0 – SDM

Channel	Centre Frequency (MHz)	11n/11ac HT40 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE40 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU26 (2Tx, SDM, nonTxBF)	11n/11ac VHT40 (2Tx, TxBF) Low Rate
38	5190	13.50	13.50	11.00	9.50	9.00	13.50
46	5230	13.50	13.50	13.50	12.00	9.00	13.50
54	5270	13.75	13.75	13.75	12.00	NS	13.75
62	5310	13.75	13.25	9.00	7.00	NS	13.75
102	5510	14.75	14.25	13.50	10.75	NS	14.00
110	5550	14.75	14.75	14.75	12.00	NS	14.75
118	5590	14.75	14.75	14.75	12.00	NS	14.75
126	5630	14.75	14.75	14.75	12.00	NS	14.75
134	5670	14.75	14.75	14.75	12.00	NS	14.75
142	5710	14.75	14.75	14.75	12.00	NS	14.75
151	5755	14.25	14.25	14.25	13.50	10.50	14.25
159	5795	14.25	14.25	14.25	13.50	10.50	14.25

Table 88

5 GHz WLAN – 40 MHz BW – SISO Core 1

Channel	Centre Frequency (MHz)	11n/11ac HT40 (SISO) Low Rate	11ax/11be HE40 (SISO) Low Rate	11ax/11be HE40 RU106 (SISO)	11ax/11be HE40 RU52 (SISO)	11ax/11be HE40 RU26 (SISO)
38	5190	15.50	15.50	15.50	13.50	10.50
46	5230	15.50	15.50	15.50	13.50	10.50
54	5270	15.75	15.75	15.75	13.50	NS
62	5310	15.75	15.50	13.75	10.75	NS
102	5510	15.50	15.50	15.00	13.50	NS
110	5550	15.50	15.50	15.50	13.50	NS
118	5590	15.50	15.50	15.50	13.50	NS
126	5630	15.50	15.50	15.50	13.50	NS
134	5670	15.50	15.50	15.50	13.50	NS
142	5710	15.50	15.50	15.50	13.50	NS
151	5755	15.50	15.50	15.50	13.50	10.50
159	5795	15.50	15.50	15.50	13.50	10.50

Table 89

5 GHz WLAN – 40 MHz BW – MIMO Core 1 – CDD

Channel	Centre Frequency (MHz)	11n/11ac HT40 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE40 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU26 (2Tx, CDD, nonTxBF)
38	5190	15.50	15.50	11.00	9.50	7.25
46	5230	15.50	15.50	13.25	10.25	7.25
54	5270	15.75	15.75	12.25	9.25	NS
62	5310	14.50	13.25	9.00	7.00	NS
102	5510	15.50	14.25	13.50	10.75	NS
110	5550	15.50	15.50	13.75	10.75	NS
118	5590	15.50	15.50	13.75	10.75	NS
126	5630	15.50	15.50	13.75	10.75	NS
134	5670	15.50	15.50	13.75	10.75	NS
142	5710	15.50	15.50	13.75	10.75	NS
151	5755	15.50	15.50	15.50	13.50	10.50
159	5795	15.50	15.50	15.50	13.50	10.50

Table 90

5 GHz WLAN – 40 MHz BW – MIMO Core 1 – SDM

Channel	Centre Frequency (MHz)	11n/11ac HT40 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE40 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU26 (2Tx, SDM, nonTxBF)	11n/11ac VHT40 (2Tx, TxBF) Low Rate
38	5190	15.50	15.50	11.00	9.50	9.00	15.50
46	5230	15.50	15.50	15.00	12.00	9.00	15.50
54	5270	15.75	15.75	15.00	12.00	NS	15.75
62	5310	14.50	13.25	9.00	7.00	NS	14.00
102	5510	15.50	14.25	13.50	10.75	NS	14.00
110	5550	15.50	15.50	15.00	12.00	NS	15.50
118	5590	15.50	15.50	15.00	12.00	NS	15.50
126	5630	15.50	15.50	15.00	12.00	NS	15.50
134	5670	15.50	15.50	15.00	12.00	NS	15.50
142	5710	15.50	15.50	15.00	12.00	NS	15.50
151	5755	15.50	15.50	15.50	13.50	10.50	15.50
159	5795	15.50	15.50	15.50	13.50	10.50	15.50

Table 91

5 GHz WLAN – 80 MHz BW – SISO Core 0

Channel	Centre Frequency (MHz)	11ac VHT80 (SISO) Low Rate	11ax/11be HE80 (SISO) Low Rate	11ax/11be HE80 RU106 (SISO)	11ax/11be HE80 RU52 (SISO)	11ax/11be HE80 RU26 (SISO)
42	5210	13.50	13.50	12.25	9.25	7.00
58	5290	13.75	13.50	9.75	6.00	NS
106	5530	14.75	14.25	10.00	8.50	NS
122	5610	14.75	14.75	13.50	10.50	NS
138	5690	14.75	14.75	13.50	10.50	NS
155	5775	14.25	14.25	13.50	10.50	7.50

Table 92

5 GHz WLAN – 80 MHz BW – MIMO Core 0 – CDD

Channel	Centre Frequency (MHz)	11ac VHT80 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE80 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU26 (2Tx, CDD, nonTxBF)
42	5210	13.50	13.50	7.50	5.00	4.00
58	5290	12.50	12.50	7.00	4.00	NS
106	5530	13.75	13.25	7.00	5.00	NS
122	5610	14.75	14.75	13.50	10.50	NS
138	5690	14.75	14.75	13.50	10.50	NS
155	5775	14.25	14.25	13.50	10.50	7.50

Table 93

5 GHz WLAN – 80 MHz BW – MIMO Core 0 – SDM

Channel	Centre Frequency (MHz)	11ac VHT80 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE80 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU26 (2Tx, SDM, nonTxBF)	11ac VHT80 (2Tx, TxBF) Low Rate
42	5210	13.50	13.50	7.50	5.00	4.00	13.50
58	5290	12.50	12.50	7.00	4.00	NS	11.25
106	5530	13.75	13.25	7.00	5.00	NS	13.50
122	5610	14.75	14.75	13.50	10.50	NS	14.75
138	5690	14.75	14.75	13.50	10.50	NS	14.75
155	5775	14.25	14.25	13.50	10.50	7.50	14.25

Table 94

5 GHz WLAN – 80 MHz BW – SISO Core 1

Channel	Centre Frequency (MHz)	11ac VHT80 (SISO) Low Rate	11ax/11be HE80 (SISO) Low Rate	11ax/11be HE80 RU106 (SISO)	11ax/11be HE80 RU52 (SISO)	11ax/11be HE80 RU26 (SISO)
42	5210	15.50	15.50	12.25	9.25	7.00
58	5290	14.00	13.50	9.75	6.00	NS
106	5530	15.25	14.25	10.00	8.50	NS
122	5610	15.50	15.50	13.50	10.50	NS
138	5690	15.50	15.50	13.50	10.50	NS
155	5775	15.50	15.50	13.50	10.50	7.50

Table 95

5 GHz WLAN – 80 MHz BW – MIMO Core 1 – CDD

Channel	Centre Frequency (MHz)	11ac VHT80 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE80 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU26 (2Tx, CDD, nonTxBF)
42	5210	15.25	15.00	7.50	5.00	4.00
58	5290	12.50	12.50	7.00	4.00	NS
106	5530	13.75	13.25	7.00	5.00	NS
122	5610	15.50	15.50	13.50	10.50	NS
138	5690	15.50	15.50	13.50	10.50	NS
155	5775	15.50	15.50	13.50	10.50	7.50

Table 96

5 GHz WLAN – 80 MHz BW – MIMO Core 1 – SDM

Channel	Centre Frequency (MHz)	11ac VHT80 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE80 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU26 (2Tx, SDM, nonTxBF)	11ac VHT80 (2Tx, TxBF) Low Rate
42	5210	15.25	15.00	7.50	5.00	4.00	14.75
58	5290	12.50	12.50	7.00	4.00	NS	11.25
106	5530	13.75	13.25	7.00	5.00	NS	13.50
122	5610	15.50	15.50	13.50	10.50	NS	15.50
138	5690	15.50	15.50	13.50	10.50	NS	15.50
155	5775	15.50	15.50	13.50	10.50	7.50	15.50

Table 97

5 GHz WLAN – 160 MHz BW – SISO Core 0 & Core 1

Channel	Centre Frequency (MHz)	11ac VHT160 (SISO) Low Rate	11ax/11be HE160 (SISO) Low Rate	11ax/11be HE160 RU106 (SISO)	11ax/11be HE160 RU52 (SISO)	11ax/11be HE160 RU26 (SISO)
50	5250	13.00	13.50	10.50	7.50	NS
114	5570	12.50	12.00	10.50	7.50	NS

Table 98

5 GHz WLAN – 160 MHz BW – MIMO Core 0 & Core 1 – CDD

Channel	Centre Frequency (MHz)	11ac VHT160 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE160 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE160 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE160 RU26 (2Tx, CDD, nonTxBF)
50	5250	11.25	12.00	8.00	5.00	NS
114	5570	12.00	11.50	8.00	5.00	NS

Table 99

5 GHz WLAN – 160 MHz BW – MIMO Core 0 & Core 1 – SDM

Channel	Centre Frequency (MHz)	11ac VHT160 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE160 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU26 (2Tx, SDM, nonTxBF)	11ac VHT160 (2Tx, TxBF) Low Rate
50	5250	12.00	12.25	8.00	5.00	NS	NS
114	5570	11.50	11.50	8.00	5.00	NS	NS

Table 100

6 GHz WLAN – 20 MHz – SISO Core 0 & Core 1 – LP

Channel	Centre Frequency (MHz)	a (SISO) Low Rate	11ax/11be HE20 (SISO) Low Rate	11ax/11be HE20 RU106 (SISO)	11ax/11be HE20 RU52 (SISO)	11ax/11be HE20 RU26 (SISO)
2	5935	NS	NS	NS	NS	NS
1	5955	2.50	2.50	-0.50	-3.50	-6.50
5	5975	2.50	2.50	-0.50	-3.50	-6.50
47362	5995-6095	2.50	2.50	-0.50	-3.50	-6.50
33-61	6115-6255	2.75	2.75	-0.25	-3.25	-6.25
65-85	6275-6375	3.50	3.50	0.50	-2.50	-5.50
89	6395	3.50	3.50	0.50	-2.50	-5.50
93	6415	3.50	3.50	0.50	-2.50	-5.50
97-113	6435-6515	5.00	5.00	2.00	-1.00	-4.00
117-181	6535-6855	3.25	3.25	0.25	-2.75	-5.75
185	6875	3.25	3.25	0.25	-2.75	-5.75
189-225	6895-7075	5.00	5.00	2.00	-1.00	-4.00
229	7095	5.00	5.00	2.00	-1.00	-4.00
233	7115	0.50	NS	NS	NS	NS

Table 101

6 GHz WLAN – 20 MHz – MIMO Core 0 & Core 1 – CDD – LP

Channel	Centre Frequency (MHz)	11ax/11be HE20 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU52 (2Tx, CDD, nonTxBF)
2	5935	NS	NS	NS
1	5955	-2.50	-5.50	-8.50
5	5975	-2.50	-5.50	-8.50
47362	5995-6095	-2.50	-5.50	-8.50
33-61	6115-6255	-1.75	-4.75	-7.75
65-85	6275-6375	-1.00	-4.00	-7.00
89	6395	-1.00	-4.00	-7.00
93	6415	-1.00	-4.00	-7.00
97-113	6435-6515	-0.50	-3.50	-6.50
117-181	6535-6855	-2.25	-5.25	-8.25
185	6875	-2.25	-5.25	-8.25
189-225	6895-7075	-0.75	-3.75	-6.75
229	7095	-0.75	-3.75	-6.75
233	7115	NS	NS	NS

Table 102

6 GHz WLAN – 20 MHz – MIMO Core 0 & Core 1 – SDM – LP

Channel	Centre Frequency (MHz)	11ax/11be HE20 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU26 (2Tx, SDM, nonTxBF)
2	5935	NS	NS	NS	NS
1	5955	0.50	-2.50	-5.50	-8.50
5	5975	0.50	-2.50	-5.50	-8.50
47362	5995-6095	0.50	-2.50	-5.50	-8.50
33-61	6115-6255	1.00	-2.00	-5.00	-8.00
65-85	6275-6375	1.75	-1.25	-4.25	-7.25
89	6395	1.75	-1.25	-4.25	-7.25
93	6415	1.75	-1.25	-4.25	-7.25
97-113	6435-6515	2.50	-0.50	-3.50	-6.50
117-181	6535-6855	0.75	-2.25	-5.25	-8.25
185	6875	0.75	-2.25	-5.25	-8.25
189-225	6895-7075	2.25	-0.75	-3.75	-6.75
229	7095	2.25	-0.75	-3.75	-6.75
233	7115	NS	NS	NS	NS

Table 103

6 GHz WLAN – 40 MHz – SISO Core 0 & Core 1 – LP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (SISO) Low Rate	11ax/11be HE40 RU106 (SISO)	11ax/11be HE40 RU52 (SISO)	11ax/11be HE40 RU26 (SISO)
3	5965	5.00	-0.50	-3.50	-6.50
11	6005	5.00	-0.50	-3.50	-6.50
19-27	6045-6085	5.00	-0.50	-3.50	-6.50
35-59	6125-6245	5.25	-0.25	-3.25	-6.25
67-75	6285-6325	6.00	0.50	-2.50	-5.50
83	6365	6.00	0.50	-2.50	-5.50
91	6405	6.00	0.50	-2.50	-5.50
99-107	6445-6485	7.50	2.00	-1.00	-4.00
115	6525	5.75	0.25	-2.75	-5.75
123-179	6565-6845	5.75	0.25	-2.75	-5.75
187	6885	5.75	0.25	-2.75	-5.75
195-219	6925-7045	7.50	2.00	-1.00	-4.00
227	7085	7.50	2.00	-1.00	-4.00

Table 104

6 GHz WLAN – 40 MHz – MIMO Core 0 & Core 1 – CDD – LP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU52 (2Tx, CDD, nonTxBF)
3	5965	0.00	-5.50	-8.50
11	6005	0.00	-5.50	-8.50
19-27	6045-6085	0.00	-5.50	-8.50
35-59	6125-6245	0.75	-4.75	-7.75
67-75	6285-6325	1.50	-4.00	-7.00
83	6365	1.50	-4.00	-7.00
91	6405	1.50	-4.00	-7.00
99-107	6445-6485	2.00	-3.50	-6.50
115	6525	0.25	-5.25	-8.25
123-179	6565-6845	0.25	-5.25	-8.25
187	6885	0.25	-5.25	-8.25
195-219	6925-7045	1.75	-3.75	-6.75
227	7085	1.75	-3.75	-6.75

Table 105

6 GHz WLAN – 40 MHz – MIMO Core 0 & Core 1 – SDM – LP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE40 (2Tx, TxBF) Low Rate
3	5965	3.00	-2.50	-5.50	-8.50	NS
11	6005	3.00	-2.50	-5.50	-8.50	NS
19-27	6045-6085	3.00	-2.50	-5.50	-8.50	NS
35-59	6125-6245	3.50	-2.00	-5.00	-8.00	NS
67-75	6285-6325	4.25	-1.25	-4.25	-7.25	1.50
83	6365	4.25	-1.25	-4.25	-7.25	1.50
91	6405	4.25	-1.25	-4.25	-7.25	1.50
99-107	6445-6485	5.00	-0.50	-3.50	-6.50	2.00
115	6525	3.25	-2.25	-5.25	-8.25	NS
123-179	6565-6845	3.25	-2.25	-5.25	-8.25	NS
187	6885	3.25	-2.25	-5.25	-8.25	NS
195-219	6925-7045	4.75	-0.75	-3.75	-6.75	1.75
227	7085	4.75	-0.75	-3.75	-6.75	1.75

Table 106

6 GHz WLAN – 80 MHz – SISO Core 0 & Core 1 – LP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (SISO) Low Rate	11ax/11be HE80 RU106 (SISO)	11ax/11be HE80 RU52 (SISO)	11ax/11be HE80 RU26 (SISO)
7	5985	8.00	-0.50	-3.50	-6.50
23	6065	8.00	-0.50	-3.50	-6.50
39-55	6145-6225	8.25	-0.25	-3.25	-6.25
71	6305	9.00	0.50	-2.50	-5.50
87	6385	9.00	0.50	-2.50	-5.50
103	6465	10.50	2.00	-1.00	-4.00
119	6545	8.75	0.25	-2.75	-5.75
135-167	6625-6785	8.75	0.25	-2.75	-5.75
183	6865	8.75	0.25	-2.75	-5.75
199	6945	10.50	2.00	-1.00	-4.00
215	7025	10.50	2.00	-1.00	-4.00

Table 107

6 GHz WLAN – 80 MHz – MIMO Core 0 & Core 1 – CDD – LP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU52 (2Tx, CDD, nonTxBF)
7	5985	3.00	-5.50	-8.50
23	6065	3.00	-5.50	-8.50
39-55	6145-6225	3.75	-4.75	-7.75
71	6305	4.50	-4.00	-7.00
87	6385	4.50	-4.00	-7.00
103	6465	5.00	-3.50	-6.50
119	6545	3.25	-5.25	-8.25
135-167	6625-6785	3.25	-5.25	-8.25
183	6865	3.25	-5.25	-8.25
199	6945	4.75	-3.75	-6.75
215	7025	4.75	-3.75	-6.75

Table 108

6 GHz WLAN – 80 MHz – MIMO Core 0 & Core 1 – SDM – LP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE80 (2Tx, TxBF) Low Rate
7	5985	6.00	-2.50	-5.50	-8.50	3.00
23	6065	6.00	-2.50	-5.50	-8.50	3.00
39-55	6145-6225	6.50	-2.00	-5.00	-8.00	3.75
71	6305	7.25	-1.25	-4.25	-7.25	4.50
87	6385	7.25	-1.25	-4.25	-7.25	4.50
103	6465	8.00	-0.50	-3.50	-6.50	5.00
119	6545	6.25	-2.25	-5.25	-8.25	3.25
135-167	6625-6785	6.25	-2.25	-5.25	-8.25	3.25
183	6865	6.25	-2.25	-5.25	-8.25	3.25
199	6945	7.75	-0.75	-3.75	-6.75	4.75
215	7025	7.75	-0.75	-3.75	-6.75	4.75

Table 109

6 GHz WLAN – 160 MHz – SISO Core 0 – LP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (SISO) Low Rate	11ax/11be HE160 RU106 (SISO)	11ax/11be HE160 RU52 (SISO)	11ax/11be HE160 RU26 (SISO)
15	6025	11.00	-0.50	-3.50	-6.50
47	6185	11.25	-0.25	-3.25	-6.25
79	6345	11.75	0.50	-2.50	-5.50
111	6505	11.25	0.25	-2.75	-5.75
143	6665	11.75	0.25	-2.75	-5.75
175	6825	11.75	0.25	-2.75	-5.75
207	6985	12.25	2.00	-1.00	-4.00

Table 110

6 GHz WLAN – 160 MHz – MIMO Core 0 & Core 1 – CDD - LP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE160 RU52 (2Tx, CDD, nonTxBF)
15	6025	6.00	-5.50	-8.50
47	6185	6.75	-4.75	-7.75
79	6345	7.50	-4.00	-7.00
111	6505	6.25	-5.25	-8.25
143	6665	6.25	-5.25	-8.25
175	6825	6.25	-5.25	-8.25
207	6985	7.75	-3.75	-6.75

Table 111

6 GHz WLAN - 160 MHz - MIMO Core 0 & Core 1 - SDM - LP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU26 (2Tx, SDM, nonTxBF)
15	6025	9.00	-2.50	-5.50	-8.50
47	6185	9.50	-2.00	-5.00	-8.00
79	6345	10.25	-1.25	-4.25	-7.25
111	6505	9.25	-2.25	-5.25	-8.25
143	6665	9.25	-2.25	-5.25	-8.25
175	6825	9.25	-2.25	-5.25	-8.25
207	6985	10.75	-0.75	-3.75	-6.75

Table 112

6 GHz WLAN - 20 MHz - SISO Core 0 - SP

Channel	Centre Frequency (MHz)	a (SISO) Low Rate	11ax/11be HE20 (SISO) Low Rate	11ax/11be HE20 RU106 (SISO)	11ax/11be HE20 RU52 (SISO)	11ax/11be HE20 RU26 (SISO)
2	5935	NS	NS	NS	NS	NS
1	5955	12.00	12.00	12.00	12.00	11.00
5	5975	12.00	12.00	12.00	12.00	11.00
47362	5995-6095	12.00	12.00	12.00	12.00	11.00
33-61	6115-6255	12.50	12.50	12.50	12.50	11.25
65-85	6275-6375	11.75	11.75	11.75	11.75	11.75
89	6395	11.75	11.75	11.75	11.75	11.75
93	6415	11.75	11.75	11.75	11.75	11.75
97-113	6435-6515	NS	NS	NS	NS	NS
117-128	5585-5640	11.25	11.25	11.25	11.25	11.25
129-160	5645-5800	12.25	12.25	12.25	12.25	11.75
161-181	5805-5905	12.50	12.50	12.50	12.50	11.75
185	6875	NS	NS	NS	NS	NS
189-225	6895-7075	NS	NS	NS	NS	NS
229	7095	NS	NS	NS	NS	NS
233	7115	NS	NS	NS	NS	NS

Table 113

6 GHz WLAN - 20 MHz - MIMO Core 0 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE20 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU26 (2Tx, CDD, nonTxBF)
2	5935	NS	NS	NS	NS
1	5955	12.00	12.00	9.00	6.00
5	5975	12.00	12.00	9.00	6.00
47362	5995-6095	12.00	12.00	9.00	6.00
33-61	6115-6255	12.50	12.50	9.75	6.75
65-85	6275-6375	11.75	11.75	10.50	7.50
89	6395	11.75	11.75	10.50	7.50
93	6415	11.75	11.75	10.50	7.50
97-113	6435-6515	NS	NS	NS	NS
117-128	5585-5640	11.25	11.25	9.25	6.25
129-160	5645-5800	12.25	12.25	9.25	6.25
161-181	5805-5905	12.50	12.25	9.25	6.25
185	6875	NS	NS	NS	NS
189-225	6895-7075	NS	NS	NS	NS
229	7095	NS	NS	NS	NS
233	7115	NS	NS	NS	NS

Table 114

6 GHz WLAN - 20 MHz - MIMO Core 0 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE20 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE20 (2Tx, TxBF) Low Rate
2	5935	NS	NS	NS	NS	NS
1	5955	12.00	12.00	12.00	9.00	12.00
5	5975	12.00	12.00	12.00	9.00	12.00
47362	5995-6095	12.00	12.00	12.00	9.00	12.00
33-61	6115-6255	12.50	12.50	12.50	9.50	12.50
65-85	6275-6375	11.75	11.75	11.75	10.25	11.75
89	6395	11.75	11.75	11.75	10.25	11.75
93	6415	11.75	11.75	11.75	10.25	11.75
97-113	6435-6515	NS	NS	NS	NS	NS
117-128	5585-5640	11.25	11.25	11.25	9.25	11.25
129-160	5645-5800	12.25	12.25	12.25	9.25	12.25
161-181	5805-5905	12.50	12.50	12.25	9.25	12.50
185	6875	NS	NS	NS	NS	NS
189-225	6895-7075	NS	NS	NS	NS	NS
229	7095	NS	NS	NS	NS	NS
233	7115	NS	NS	NS	NS	NS

Table 115

6 GHz WLAN - 20 MHz - SISO Core 1 - SP

Channel	Centre Frequency (MHz)	a (SISO) Low Rate	11ax/11be HE20 (SISO) Low Rate	11ax/11be HE20 RU106 (SISO)	11ax/11be HE20 RU52 (SISO)	11ax/11be HE20 RU26 (SISO)
2	5935	NS	NS	NS	NS	NS
1	5955	12.75	12.75	12.75	12.75	11.00
5	5975	12.75	12.75	12.75	12.75	11.00
47362	5995-6095	12.75	12.75	12.75	12.75	11.00
33-61	6115-6255	13.00	13.00	13.00	13.00	11.25
65-85	6275-6375	13.00	13.00	13.00	13.00	12.00
89	6395	13.00	13.00	13.00	13.00	12.00
93	6415	13.00	13.00	13.00	13.00	12.00
97-113	6435-6515	NS	NS	NS	NS	NS
117-128	5585-5640	13.00	13.00	13.00	13.00	11.75
129-160	5645-5800	12.25	12.25	12.25	12.25	11.75
161-181	5805-5905	13.00	13.00	13.00	13.00	11.75
185	6875	NS	NS	NS	NS	NS
189-225	6895-7075	NS	NS	NS	NS	NS
229	7095	NS	NS	NS	NS	NS
233	7115	NS	NS	NS	NS	NS

Table 116

6 GHz WLAN - 20 MHz - MIMO Core 1 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE20 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE20 RU26 (2Tx, CDD, nonTxBF)
2	5935	NS	NS	NS	NS
1	5955	12.75	12.00	9.00	6.00
5	5975	12.75	12.00	9.00	6.00
47362	5995-6095	12.75	12.00	9.00	6.00
33-61	6115-6255	13.00	12.75	9.75	6.75
65-85	6275-6375	13.00	13.00	10.50	7.50
89	6395	13.00	13.00	10.50	7.50
93	6415	13.00	13.00	10.50	7.50
97-113	6435-6515	NS	NS	NS	NS
117-128	5585-5640	13.00	12.25	9.25	6.25
129-160	5645-5800	12.25	12.25	9.25	6.25
161-181	5805-5905	13.00	12.25	9.25	6.25
185	6875	NS	NS	NS	NS
189-225	6895-7075	NS	NS	NS	NS
229	7095	NS	NS	NS	NS
233	7115	NS	NS	NS	NS

Table 117

6 GHz WLAN - 20 MHz - MIMO Core 1 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE20 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE20 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE20 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE20 (2Tx, TxBF) Low Rate
2	5935	NS	NS	NS	NS	NS
1	5955	12.75	12.75	12.00	9.00	12.75
5	5975	12.75	12.75	12.00	9.00	12.75
47362	5995-6095	12.75	12.75	12.00	9.00	12.75
33-61	6115-6255	13.00	13.00	12.50	9.50	13.00
65-85	6275-6375	13.00	13.00	13.00	10.25	13.00
89	6395	13.00	13.00	13.00	10.25	13.00
93	6415	13.00	13.00	13.00	10.25	13.00
97-113	6435-6515	NS	NS	NS	NS	NS
117-128	5585-5640	13.00	13.00	12.25	9.25	13.00
129-160	5645-5800	12.25	12.25	12.25	9.25	12.25
161-181	5805-5905	13.00	13.00	12.25	9.25	13.00
185	6875	NS	NS	NS	NS	NS
189-225	6895-7075	NS	NS	NS	NS	NS
229	7095	NS	NS	NS	NS	NS
233	7115	NS	NS	NS	NS	NS

Table 118

6 GHz WLAN - 40 MHz - SISO Core 0 - SP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (SISO) Low Rate	11ax/11be HE40 RU106 (SISO)	11ax/11be HE40 RU52 (SISO)	11ax/11be HE40 RU26 (SISO)
3	5965	12.00	12.00	12.00	10.50
11	6005	12.00	12.00	12.00	10.50
19-27	6045-6085	12.00	12.00	12.00	10.50
35-59	6125-6245	12.50	12.50	12.50	10.50
67-75	6285-6325	11.75	11.75	11.75	10.50
83	6365	11.75	11.75	11.75	10.50
91	6405	11.75	11.75	11.75	10.50
99-107	6445-6485	NS	NS	NS	NS
115	6525	NS	NS	NS	NS
123-128	5615-5640	11.25	11.25	11.25	10.50
129-160	5645-5800	12.25	12.25	12.25	10.50
161-179	6845	12.50	12.50	12.50	10.50
187	6885	NS	NS	NS	NS
195-219	6925-7045	NS	NS	NS	NS
227	7085	NS	NS	NS	NS

Table 119

6 GHz WLAN - 40MHz - MIMO Core 0 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU26 (2Tx, CDD, nonTxBF)
3	5965	12.00	12.00	9.00	6.00
11	6005	12.00	12.00	9.00	6.00
19-27	6045-6085	12.00	12.00	9.00	6.00
35-59	6125-6245	12.50	12.50	9.75	6.75
67-75	6285-6325	11.75	11.75	10.50	7.50
83	6365	11.75	11.75	10.50	7.50
91	6405	11.75	11.75	10.50	7.50
99-107	6445-6485	NS	NS	NS	NS
115	6525	NS	NS	NS	NS
123-128	5615-5640	11.25	11.25	9.25	6.25
129-160	5645-5800	12.25	12.25	9.25	6.25
161-179	6845	12.50	12.25	9.25	6.25
187	6885	NS	NS	NS	NS
195-219	6925-7045	NS	NS	NS	NS
227	7085	NS	NS	NS	NS

Table 120

6 GHz WLAN - 40 MHz - MIMO Core 0 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE40 (2Tx, TxBF) Low Rate
3	5965	12.00	12.00	12.00	9.00	12.00
11	6005	12.00	12.00	12.00	9.00	12.00
19-27	6045-6085	12.00	12.00	12.00	9.00	12.00
35-59	6125-6245	12.50	12.50	12.50	9.50	12.50
67-75	6285-6325	11.75	11.75	11.75	10.25	11.75
83	6365	11.75	11.75	11.75	10.25	11.75
91	6405	11.75	11.75	11.75	10.25	11.75
99-107	6445-6485	NS	NS	NS	NS	NS
115	6525	NS	NS	NS	NS	NS
123-128	5615-5640	11.25	11.25	11.25	9.25	11.25
129-160	5645-5800	12.25	12.25	12.25	9.25	12.25
161-179	6845	12.50	12.50	12.25	9.25	12.50
187	6885	NS	NS	NS	NS	NS
195-219	6925-7045	NS	NS	NS	NS	NS
227	7085	NS	NS	NS	NS	NS

Table 121

6 GHz WLAN - 40 MHz - SISO Core 1 - SP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (SISO) Low Rate	11ax/11be HE40 RU106 (SISO)	11ax/11be HE40 RU52 (SISO)	11ax/11be HE40 RU26 (SISO)
3	5965	12.75	12.75	12.75	10.50
11	6005	12.75	12.75	12.75	10.50
19-27	6045-6085	12.75	12.75	12.75	10.50
35-59	6125-6245	13.00	13.00	13.00	10.50
67-75	6285-6325	13.00	13.00	13.00	10.50
83	6365	13.00	13.00	13.00	10.50
91	6405	13.00	13.00	13.00	10.50
99-107	6445-6485	NS	NS	NS	NS
115	6525	NS	NS	NS	NS
123-128	5615-5640	13.00	13.00	13.00	10.50
129-160	5645-5800	12.25	12.25	12.25	10.50
161-179	6845	13.00	13.00	13.00	10.50
187	6885	NS	NS	NS	NS
195-219	6925-7045	NS	NS	NS	NS
227	7085	NS	NS	NS	NS

Table 122

6 GHz WLAN - 40 MHz - MIMO Core 1 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE40 RU26 (2Tx, CDD, nonTxBF)
3	5965	12.75	12.00	9.00	6.00
11	6005	12.75	12.00	9.00	6.00
19-27	6045-6085	12.75	12.00	9.00	6.00
35-59	6125-6245	13.00	12.75	9.75	6.75
67-75	6285-6325	13.00	13.00	10.50	7.50
83	6365	13.00	13.00	10.50	7.50
91	6405	13.00	13.00	10.50	7.50
99-107	6445-6485	NS	NS	NS	NS
115	6525	NS	NS	NS	NS
123-128	5615-5640	13.00	12.25	9.25	6.25
129-160	5645-5800	12.25	12.25	9.25	6.25
161-179	6845	13.00	12.25	9.25	6.25
187	6885	NS	NS	NS	NS
195-219	6925-7045	NS	NS	NS	NS
227	7085	NS	NS	NS	NS

Table 123

6 GHz WLAN - 40 MHz - MIMO Core 1 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE40 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE40 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE40 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE40 (2Tx, TxBF) Low Rate
3	5965	12.75	12.75	12.00	9.00	12.75
11	6005	12.75	12.75	12.00	9.00	12.75
19-27	6045-6085	12.75	12.75	12.00	9.00	12.75
35-59	6125-6245	13.00	13.00	12.50	9.50	13.00
67-75	6285-6325	13.00	13.00	13.00	10.25	13.00
83	6365	13.00	13.00	13.00	10.25	13.00
91	6405	13.00	13.00	13.00	10.25	13.00
99-107	6445-6485	NS	NS	NS	NS	NS
115	6525	NS	NS	NS	NS	NS
123-128	5615-5640	13.00	13.00	12.25	9.25	13.00
129-160	5645-5800	12.25	12.25	12.25	9.25	12.25
161-179	6845	13.00	13.00	12.25	9.25	13.00
187	6885	NS	NS	NS	NS	NS
195-219	6925-7045	NS	NS	NS	NS	NS
227	7085	NS	NS	NS	NS	NS

Table 124

6 GHz WLAN - 80 MHz - SISO Core 0 - SP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (SISO) Low Rate	11ax/11be HE80 RU106 (SISO)	11ax/11be HE80 RU52 (SISO)	11ax/11be HE80 RU26 (SISO)
7	5985	12.00	12.00	10.50	7.50
23	6065	12.00	12.00	10.50	7.50
39-55	6145-6225	12.50	12.50	10.50	7.50
71	6305	11.75	11.75	10.50	7.50
87	6385	11.75	11.75	10.50	7.50
103	6465	NS	NS	NS	NS
119	6545	NS	NS	NS	NS
135-167	6625-6785	12.25	12.25	10.50	7.50
183	6865	NS	NS	NS	NS
199	6945	NS	NS	NS	NS
215	7025	NS	NS	NS	NS

Table 125

6 GHz WLAN - 80 MHz - MIMO Core 0 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU26 (2Tx, CDD, nonTxBF)
7	5985	12.00	12.00	9.00	6.00
23	6065	12.00	12.00	9.00	6.00
39-55	6145-6225	12.50	12.50	9.75	6.75
71	6305	11.75	11.75	10.50	7.50
87	6385	11.75	11.75	10.50	7.50
103	6465	NS	NS	NS	NS
119	6545	NS	NS	NS	NS
135-167	6625-6785	12.25	12.25	9.25	6.25
183	6865	NS	NS	NS	NS
199	6945	NS	NS	NS	NS
215	7025	NS	NS	NS	NS

Table 126

6 GHz WLAN - 80 MHz - MIMO Core 0 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE80 (2Tx, TxBF) Low Rate
7	5985	12.00	12.00	10.50	7.50	12.00
23	6065	12.00	12.00	10.50	7.50	12.00
39-55	6145-6225	12.50	12.50	10.50	7.50	12.50
71	6305	11.75	11.75	10.50	7.50	11.75
87	6385	11.75	11.75	10.50	7.50	11.75
103	6465	NS	NS	NS	NS	NS
119	6545	NS	NS	NS	NS	NS
135-167	6625-6785	12.25	12.25	10.50	7.50	12.25
183	6865	NS	NS	NS	NS	NS
199	6945	NS	NS	NS	NS	NS
215	7025	NS	NS	NS	NS	NS

Table 127

6 GHz WLAN - 80 MHz - SISO Core 1 - SP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (SISO) Low Rate	11ax/11be HE80 RU106 (SISO)	11ax/11be HE80 RU52 (SISO)	11ax/11be HE80 RU26 (SISO)
7	5985	12.75	12.75	10.50	7.50
23	6065	12.75	12.75	10.50	7.50
39-55	6145-6225	13.00	13.00	10.50	7.50
71	6305	13.00	13.00	10.50	7.50
87	6385	13.00	13.00	10.50	7.50
103	6465	NS	NS	NS	NS
119	6545	NS	NS	NS	NS
135-167	6625-6785	12.25	12.25	10.50	7.50
183	6865	NS	NS	NS	NS
199	6945	NS	NS	NS	NS
215	7025	NS	NS	NS	NS

Table 128

6 GHz WLAN - 80 MHz - MIMO Core 1 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE80 RU26 (2Tx, CDD, nonTxBF)
7	5985	12.75	12.00	9.00	6.00
23	6065	12.75	12.00	9.00	6.00
39-55	6145-6225	13.00	12.75	9.75	6.75
71	6305	13.00	13.00	10.50	7.50
87	6385	13.00	13.00	10.50	7.50
103	6465	NS	NS	NS	NS
119	6545	NS	NS	NS	NS
135-167	6625-6785	12.25	12.25	9.25	6.25
183	6865	NS	NS	NS	NS
199	6945	NS	NS	NS	NS
215	7025	NS	NS	NS	NS

Table 129

6 GHz WLAN - 80 MHz - MIMO Core 1 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE80 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE80 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE80 RU26 (2Tx, SDM, nonTxBF)	11ax/11be HE80 (2Tx, TxBF) Low Rate
7	5985	12.75	12.75	10.50	7.50	12.75
23	6065	12.75	12.75	10.50	7.50	12.75
39-55	6145-6225	13.00	13.00	10.50	7.50	13.00
71	6305	13.00	13.00	10.50	7.50	13.00
87	6385	13.00	13.00	10.50	7.50	13.00
103	6465	NS	NS	NS	NS	NS
119	6545	NS	NS	NS	NS	NS
135-167	6625-6785	12.25	12.25	10.50	7.50	12.25
183	6865	NS	NS	NS	NS	NS
199	6945	NS	NS	NS	NS	NS
215	7025	NS	NS	NS	NS	NS

Table 130

6 GHz WLAN - 160 MHz - SISO Core 0 - SP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (SISO) Low Rate	11ax/11be HE160 RU106 (SISO)	11ax/11be HE160 RU52 (SISO)	11ax/11be HE160 RU26 (SISO)
15	6025	12.00	10.50	7.50	4.50
47	6185	12.50	10.50	7.50	4.50
79	6345	11.75	10.50	7.50	4.50
111	6505	NS	NS	NS	NS
143	6665	12.25	10.50	7.50	4.50
175	6825	NS	NS	NS	NS
207	6985	NS	NS	NS	NS

Table 131

6 GHz WLAN - 160 MHz - MIMO Core 0 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE160 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE160 RU26 (2Tx, CDD, nonTxBF)
15	6025	12.00	10.50	7.50	4.50
47	6185	12.50	10.50	7.50	4.50
79	6345	11.75	10.50	7.50	4.50
111	6505	NS	NS	NS	NS
143	6665	12.25	10.50	7.50	4.50
175	6825	NS	NS	NS	NS
207	6985	NS	NS	NS	NS

Table 132

6 GHz WLAN - 160 MHz - MIMO Core 0 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU26 (2Tx, SDM, nonTxBF)
15	6025	12.00	10.50	7.50	4.50
47	6185	12.50	10.50	7.50	4.50
79	6345	11.75	10.50	7.50	4.50
111	6505	NS	NS	NS	NS
143	6665	12.25	10.50	7.50	4.50
175	6825	NS	NS	NS	NS
207	6985	NS	NS	NS	NS

Table 133

6 GHz WLAN - 160 MHz - SISO Core 1 - SP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (SISO) Low Rate	11ax/11be HE160 RU106 (SISO)	11ax/11be HE160 RU52 (SISO)	11ax/11be HE160 RU26 (SISO)
15	6025	12.75	10.50	7.50	4.50
47	6185	13.00	10.50	7.50	4.50
79	6345	13.00	10.50	7.50	4.50
111	6505	NS	NS	NS	NS
143	6665	12.25	10.50	7.50	4.50
175	6825	NS	NS	NS	NS
207	6985	NS	NS	NS	NS

Table 134

6 GHz WLAN - 160 MHz - MIMO Core 1 - CDD - SP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (2Tx, CDD, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, CDD, nonTxBF)	11ax/11be HE160 RU52 (2Tx, CDD, nonTxBF)	11ax/11be HE160 RU26 (2Tx, CDD, nonTxBF)
15	6025	12.75	10.50	7.50	4.50
47	6185	13.00	10.50	7.50	4.50
79	6345	13.00	10.50	7.50	4.50
111	6505	NS	NS	NS	NS
143	6665	12.25	10.50	7.50	4.50
175	6825	NS	NS	NS	NS
207	6985	NS	NS	NS	NS

Table 135

6 GHz WLAN - 160 MHz - MIMO Core 1 - SDM - SP

Channel	Centre Frequency (MHz)	11ax/11be HE160 (2Tx, SDM, nonTxBF) Low Rate	11ax/11be HE160 RU106 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU52 (2Tx, SDM, nonTxBF)	11ax/11be HE160 RU26 (2Tx, SDM, nonTxBF)
15	6025	12.75	10.50	7.50	4.50
47	6185	13.00	10.50	7.50	4.50
79	6345	13.00	10.50	7.50	4.50
111	6505	NS	NS	NS	NS
143	6665	12.25	10.50	7.50	4.50
175	6825	NS	NS	NS	NS
207	6985	NS	NS	NS	NS

Table 136

1.6 CONDUCTED POWER MEASUREMENTS

1.6.1 Method

Conducted Power Measurements were made using a power meter.

Bluetooth (When WLAN OFF)

(BT Core 0 – ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Bluetooth	0	PSK	77	3-DH5	2402	16.27	17.00
Bluetooth	39	PSK	77	3-DH5	2442	16.14	17.00
Bluetooth	78	PSK	77	3-DH5	2480	16.09	17.00

Table 137

(BT Core 1 – ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Bluetooth	0	PSK	77	3-DH5	2402	15.24	16.50
Bluetooth	39	PSK	77	3-DH5	2442	15.34	16.50
Bluetooth	78	PSK	77	3-DH5	2480	15.22	16.50

Table 138

(BT Core 2 – iPA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Bluetooth	0	GFSK	77	1-DH5	2402	12.53	13.00
Bluetooth	39	GFSK	77	1-DH5	2442	12.65	13.00
Bluetooth	78	GFSK	77	1-DH5	2480	12.64	13.00

Table 139

Bluetooth (When WLAN ON)

(BT Core 0 - ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Bluetooth	0	PSK	77	3-DH5	2402	15.09	15.50
Bluetooth	39	PSK	77	3-DH5	2442	14.93	15.50
Bluetooth	78	PSK	77	3-DH5	2480	14.88	15.50

Table 140

(BT Core 1 - ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Bluetooth	0	PSK	77	3-DH5	2402	15.24	15.50
Bluetooth	39	PSK	77	3-DH5	2442	15.34	15.50
Bluetooth	78	PSK	77	3-DH5	2480	15.22	15.50

Table 141

(BT Core 2 - iPA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Bluetooth	0	GFSK	77	1-DH5	2402	12.53	13.00
Bluetooth	39	GFSK	77	1-DH5	2442	12.65	13.00
Bluetooth	78	GFSK	77	1-DH5	2480	12.64	13.00

Table 142

Narrowband UNII-1 - When 2.4 GHz WLAN OFF

(UNII-1 - Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	8-DPSK	78	8DH5	5150	13.34	14.00
Narrowband	Middle	8-DPSK	78	8DH5	5200	13.28	14.00
Narrowband	Top	8-DPSK	78	8DH5	5250	13.59	14.00

Table 143

(UNII-1 - Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	8-DPSK	78	8DH5	5150	13.71	15.00
Narrowband	Middle	8-DPSK	78	8DH5	5200	13.49	14.50
Narrowband	Top	8-DPSK	78	8DH5	5250	13.89	14.50

Table 144

Narrowband UNII-1 - When 2.4 GHz WLAN ON

(UNII-1 - Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	8-DPSK	78	4DH5	5150	10.00	10.50
Narrowband	Middle	8-DPSK	78	4DH5	5200	9.81	10.50
Narrowband	Top	8-DPSK	78	4DH5	5250	10.15	10.50

Table 145

(UNII-1 - Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	8-DPSK	78	4DH5	5150	10.54	11.50
Narrowband	Middle	8-DPSK	78	4DH5	5200	10.71	11.50
Narrowband	Top	8-DPSK	78	4DH5	5250	11.05	11.50

Table 146

Narrowband U-NII-3- When 2.4 GHz WLAN OFF

(UNII-3 - Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	8-DPSK	78	4DH5	5725	14.34	15.00
Narrowband	Middle	8-DPSK	78	4DH5	5788	14.18	15.00
Narrowband	Top	8-DPSK	78	4DH5	5850	14.21	15.00

Table 147

(UNII-3 - Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	8-DPSK	78	4DH5	5725	14.12	15.00
Narrowband	Middle	8-DPSK	78	4DH5	5788	14.30	15.00
Narrowband	Top	8-DPSK	78	4DH5	5850	14.13	15.00

Table 148

Narrowband U-NII-3 - When 2.4 GHz WLAN ON

(UNII-3 - Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	GFSK	78	1-DH5	5725	10.25	11.00
Narrowband	Middle	GFSK	78	1-DH5	5788	10.56	11.00
Narrowband	Top	GFSK	78	1-DH5	5850	10.51	11.00

Table 149

(UNII-3 - Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Narrowband	Bottom	GFSK	78	1-DH5	5725	10.32	11.00
Narrowband	Middle	GFSK	78	1-DH5	5788	10.48	11.00
Narrowband	Top	GFSK	78	1-DH5	5850	10.47	11.00

Table 150

Thread (When 5 GHz WLAN OFF)

(Core 0 - ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Thread	11	OQPSK	100	N/A	2405	20.07	21.00
Thread	18	OQPSK	100	N/A	2440	20.13	21.00
Thread	26	OQPSK	100	N/A	2480	20.12	21.00

Table 151

(Core 1 - ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Thread	11	OQPSK	100	N/A	2405	20.12	21.00
Thread	18	OQPSK	100	N/A	2440	20.46	21.00
Thread	26	OQPSK	100	N/A	2480	20.19	21.00

Table 152

(Core 2 - iPA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Thread	11	OQPSK	100	N/A	2405	8.11	9.00
Thread	18	OQPSK	100	N/A	2440	8.34	9.00
Thread	26	OQPSK	100	N/A	2480	8.39	9.00

Table 153

Thread (When 5 GHz WLAN ON)

(Core 0 - ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Thread	11	OQPSK	100	N/A	2405	14.96	15.50
Thread	18	OQPSK	100	N/A	2440	14.86	15.50
Thread	26	OQPSK	100	N/A	2480	15.08	15.50

Table 154

(Core 1 - ePA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Thread	11	OQPSK	100	N/A	2405	14.69	15.50
Thread	18	OQPSK	100	N/A	2440	14.80	15.50
Thread	26	OQPSK	100	N/A	2480	14.98	15.50

Table 155

(Core 2 - iPA)

Technology	Channel	Modulation	Duty Cycle (%)	Packet Type	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
Thread	11	OQPSK	100	N/A	2405	8.11	9.00
Thread	18	OQPSK	100	N/A	2440	8.34	9.00
Thread	26	OQPSK	100	N/A	2480	8.39	9.00

Table 156

WLAN 2.4 GHz - SISO

(Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11b	1	BPSK	100	1.00	2412	18.90	19.00
802.11b	6	BPSK	100	1.00	2437	18.88	19.00
802.11b	11	BPSK	100	1.00	2462	18.92	19.00

Table 157

(Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11b	1	BPSK	100	1.00	2412	18.85	19.00
802.11b	6	BPSK	100	1.00	2437	18.95	19.00
802.11b	11	BPSK	100	1.00	2462	18.90	19.00

Table 158

WLAN 2.4 GHz - SISO

(Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11g	2	BPSK	100	6.00	2417	19.59	20.00
802.11g	6	BPSK	100	6.00	2437	19.61	20.00
802.11g	10	BPSK	100	6.00	2457	19.59	20.00

Table 159

(Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11g	2	BPSK	100	6.00	2417	19.69	20.00
802.11g	6	BPSK	100	6.00	2437	19.50	20.00
802.11g	10	BPSK	100	6.00	2457	19.67	20.00

Table 160

WLAN 2.4 GHz - (2TX, non TXBF) MIMO

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11n/ac (Core 0)	2	BPSK	100	6.50	2417	19.04	19.50
802.11n/ac (Core 1)	2	BPSK	100	6.50	2417	19.45	19.50
802.11n/ac (Core 0)	6	BPSK	100	6.50	2437	19.16	20.00
802.11n/ac (Core 1)	6	BPSK	100	6.50	2437	19.66	20.00
802.11n/ac (Core 0)	10	BPSK	100	6.50	2457	19.37	20.00
802.11n/ac (Core 1)	10	BPSK	100	6.50	2457	19.70	20.00

Table 161

WLAN U-NII 1/2A - 5.2/5.3 GHz SISO

(Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ac	42	BPSK	100	29.30	5210	13.23	13.50
802.11ac	58	BPSK	100	29.30	5290	13.45	13.75

Table 162

(Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ac	42	BPSK	100	29.30	5210	15.05	15.50
802.11n/ac	54	BPSK	100	29.30	5270	15.40	15.75
802.11n/ac	62	BPSK	100	29.30	5310	15.32	15.75

Table 163

WLAN U-NII 1/2A - 5.2/5.3 GHz MIMO

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ac (Core 0)	42	BPSK	100	29.30	5210	13.16	13.50
802.11ac (Core 1)	42	BPSK	100	29.30	5210	14.04	15.25
802.11n/ac (Core 0)	54	BPSK	100	29.30	5270	13.38	13.75
802.11n/ac (Core 1)	54	BPSK	100	29.30	5270	15.35	15.75
802.11n/ac (Core 0)	62	BPSK	100	29.30	5310	13.26	13.75
802.11n/ac (Core 1)	62	BPSK	100	29.30	5310	14.36	14.50

Table 164

WLAN U-NII 2C - 5.5 GHz SISO

(Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ac	106	BPSK	100	29.30	5530	14.40	14.75
802.11ac	122	BPSK	100	29.30	5610	14.48	14.75
802.11ac	138	BPSK	100	29.30	5690	14.36	14.75

Table 165

(Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11n/ac	102	BPSK	100	13.50	5510	15.09	15.50
802.11n/ac	110	BPSK	100	13.50	5550	15.20	15.50
802.11ac	122	BPSK	100	29.30	5610	15.22	15.50
802.11ac	138	BPSK	100	29.30	5690	15.16	15.50

Table 166

WLAN U-NII 2C - 5.5 GHz (2Tx, CDD, non TxBF) MIMO

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11n/ac (Core 0)	102	BPSK	100	13.50	5510	14.15	14.75
802.11n/ac (Core 1)	102	BPSK	100	13.50	5510	15.19	15.50
802.11n/ac (Core 0)	110	BPSK	100	13.50	5550	14.35	14.75
802.11n/ac (Core 1)	110	BPSK	100	13.50	5550	15.21	15.50
802.11ac (Core 0)	122	BPSK	100	29.30	5610	14.46	14.75
802.11ac (Core 1)	122	BPSK	100	29.30	5610	14.89	15.50
802.11ac (Core 0)	138	BPSK	100	29.30	5690	14.47	14.75
802.11ac (Core 1)	138	BPSK	100	29.30	5690	15.05	15.50

Table 167

WLAN U-NII 3 - 5.8GHz SISO

(Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ac	155	BPSK	100	29.30	5775	13.97	14.25

Table 168

(Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ac	155	BPSK	100	29.30	5775	15.05	15.50

Table 169

WLAN U-NII 3 - 5.8 GHz MIMO

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ac	155	BPSK	100	29.30	5775	13.94	14.25
802.11ac	155	BPSK	100	29.30	5775	15.05	15.50

Table 170

WLAN 6 GHz SISO

(Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ax/be	15	BPSK	100	72.10	6025	11.61	12.00
802.11ax/be	47	BPSK	100	72.10	6185	12.32	12.50
802.11ax/be	79	BPSK	100	72.10	6345	11.38	11.75
802.11ax/be	123	BPSK	100	17.20	6565	11.00	11.25
802.11ax/be	143	BPSK	100	72.10	6665	12.17	12.25
802.11ax/be	167	BPSK	100	36.00	6785	12.04	12.25
802.11ax/be	179	BPSK	100	36.00	6845	12.13	12.50

Table 171

(Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ax/be	15	BPSK	100	72.10	6025	12.11	12.75
802.11ax/be	47	BPSK	100	72.10	6185	12.69	13.00
802.11ax/be	79	BPSK	100	72.10	6345	12.71	13.00
802.11ax/be	123	BPSK	100	17.20	6565	12.70	13.00
802.11ax/be	143	BPSK	100	72.10	6665	12.00	12.25
802.11ax/be	167	BPSK	100	36.00	6785	11.98	12.25
802.11ax/be	179	BPSK	100	36.00	6845	12.75	13.00

Table 172

WLAN 6 GHz MIMO

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	Tune Up (dBm)
802.11ax/be (Core 0)	15	BPSK	100	72.10	6025	11.55	12.00
802.11ax/be (Core 1)	15	BPSK	100	72.10	6025	12.48	12.75
802.11ax/be (Core 0)	47	BPSK	100	72.10	6185	11.87	12.50
802.11ax/be (Core 1)	47	BPSK	100	72.10	6185	12.92	13.00
802.11ax/be (Core 0)	79	BPSK	100	72.10	6345	11.46	11.75
802.11ax/be (Core 1)	79	BPSK	100	72.10	6345	12.71	13.00
802.11ax/be (Core 0)	123	BPSK	100	17.20	6565	11.10	11.25
802.11ax/be (Core 1)	123	BPSK	100	17.20	6565	12.21	13.00
802.11ax/be (Core 0)	143	BPSK	100	72.10	6665	11.40	12.25
802.11ax/be (Core 1)	143	BPSK	100	72.10	6665	11.77	12.25
802.11ax/be (Core 0)	167	BPSK	100	36.00	6785	11.71	12.25
802.11ax/be (Core 1)	167	BPSK	100	36.00	6785	12.08	12.25
802.11ax/be (Core 0)	179	BPSK	100	36.00	6845	12.16	12.50
802.11ax/be (Core 1)	179	BPSK	100	36.00	6845	12.66	13.00

Table 173

SECTION 2

TEST DETAILS

Specific Absorption Rate testing of the A3403

2.1 DASY MEASUREMENT SYSTEM

2.1.1 System Description

The DASY system for performing compliance tests consists of the following items:

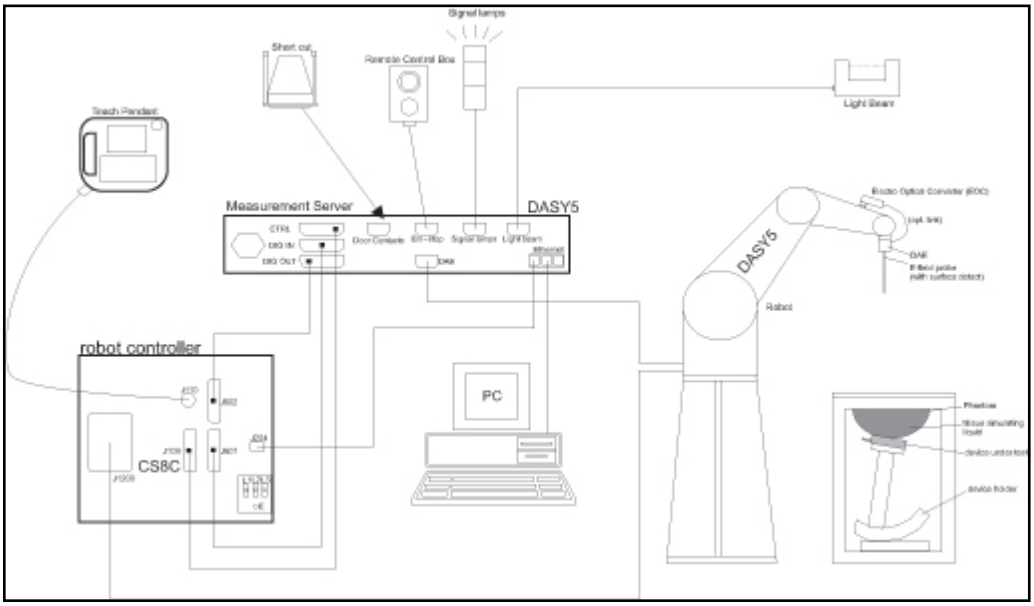

Figure 9 - System Description Diagram

A standard high precision 6-axis robot (Stäubli TX=RX family) with controller, teach pendant and software. An arm extension for accommodating the data acquisition electronics (DAE).

An isotropic field probe optimized and calibrated for the targeted measurement.

A data acquisition electronics (DAE) which performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. The unit is battery powered with standard or rechargeable batteries. The signal is optically transmitted to the EOC.

The Electro-optical converter (EOC) performs the conversion from optical to electrical signals for the digital communication to the DAE. To use optical surface detection, a special version of the EOC is required. The EOC signal is transmitted to the measurement server.

The function of the measurement server is to perform the time critical tasks such as signal filtering, control of the robot operation and fast movement interrupts.

The Light Beam used is for probe alignment. This improves the (absolute) accuracy of the probe positioning.

A computer running the DASY software to display and interact with the robot and information.

There is a remote control and a teach pendant as well as additional circuitry for robot safety such as warning lamps, etc.

The phantom, the device holder and other accessories according to the targeted measurement.

2.1.2 Probe Specification

The probes used by the DASY system are isotropic E-field probes, constructed with a symmetric design and a triangular core. The probes have built-in shielding against static charges and are contained within a PEEK enclosure material. These probes are specially designed and calibrated for use in liquids with high permittivity. The frequency range of the probes are from 6 MHz to 6 GHz.

2.1.3 Data Acquisition Electronics

The data acquisition electronics (DAE4 or DAE3) consist 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 measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

The mechanical probe mounting device includes two different sensor systems for frontal and sideways probe contacts. They are used for mechanical surface detection and probe collision detection. The input impedance of both the DAE4 as well as of the DAE3 box is 200MOhm; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

2.1.4 SAR Evaluation Description

The cDASY software includes all numerical procedures necessary to evaluate the spatial peak SAR values.

Fast Area Scan:

The Fast Area Scan provides an easy, time efficient and accurate way to define the optimal power reference location. The location of the power reference and power drift measurements for the subsequent Area, Fast Volume and Zoom Scans will be automatically set at the maximum of the Fast Area Scan.

Area Scan:

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 cDASY Module SAR. Area Scans measure a two dimensional volume covering the full device under test area. cDASY Module SAR uses Fast Averaged SAR algorithm to compute the 1g and 10g of simulated tissue from the Area Scan.

Fast Volume Scans:

Fast Volume Scans are 3D scans used to assess the peak spatial SAR values within an averaging volume containing 1g and 10g of simulated tissue. It is compatible with any phantom. For regular phantoms, the measurement grid is generated by projecting a plane onto the phantom surface as for Area and Zoom scans. For specific phantoms, the measurement grid is generated by a conformal offset to the phantom surface at the desired distances. The grid extents can be set by the end user to cover the DUT dimensions or the whole measurable area of the phantom.

Zoom Scan:

Zoom scans are used to assess the peak spatial SAR values within a cubic averaging volume containing 1g and 10g of simulated tissue. Zoom scans measure a three dimensional volume (cube). The bottom face of the cube is Centreed on the maximum of the preceding Area Scan in the same measurement group. For maxima at border of the phantom, the zoom scan can be enabled to automattically extend in order to ensure correct evaluation of peak spatial SAR.

Zoom Scans can be performed in two different modes:

- Smart Mode: the grid settings are adjusted on the fly based on the distribution being measured to fulfill to the IEC 62209-2 Amendment 1 criteria on grid resolution.
- Custom Mode: the user specifies the grid settings to be used. In both modes, Zoom Scans are always anchored to the peak location of the preceding Fast Area / Area / Fast Volume Scan.

2.1.5 DASY Absorbed Power Density Evaluation

The DASY measurement system will output the absorbed power density result values by default from version 16.0 of DASY software onwards. All the measurement details described in this section are utilised to collect the required data which is the converted automatically within the software and displayed for frequencies above 5.9 GHz.

2.2 DASY 6 mmWave PD Module

2.2.1 Measurement System

A DASY 6 Measurement System equipped with the DASY 6 mmWave module was used to carry out the peak spatially averaged power density (psPD) measurements. It consists of a 6-axis industrial robot and controller that provides a highly accurate positioning system, a PC for the system control software, a near field probe (EUmmWVx), a probe alignment sensor and the 5G phantom. The high accuracy positioning system places the near field probe at the key location points of the maximum electromagnetic field.

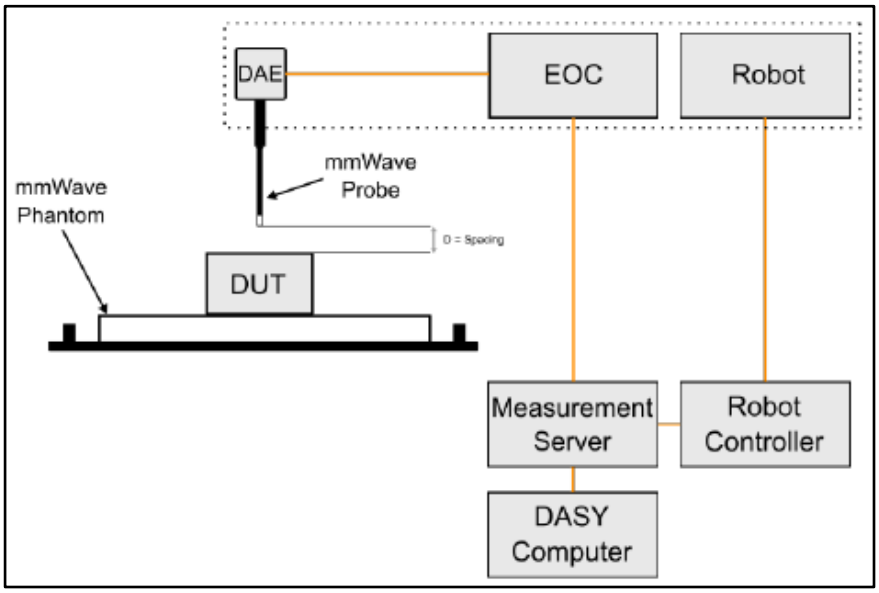

Figure 10 - Typical measurement setup for PD measurement with DASY 6

2.2.2 EUmmWVx E-Field Probe Details

The EUmmWVx probe utilises two dipole elements that are specifically arranged to allow for the generation of pseudo-vector data.

Frequency Range	750 MHz - 110 GHz
Dynamic Range	<20 V/m - 10'000 V/m with PRE-10 (min <20 V/m - 2000 V/m)
Position Precision	<0.2 mm (DASY6)
Dimensions	Overall length: 320 mm (tip: 20 mm) Tip and body diameter: encapsulation 8 mm (internal sensor <1mm) Distance from probe tip to sensor Y cal point:1.5 mm Distance from probe tip to sensor X cal point:1.5 mm
Applications	E-field measurements of 5G devices and other mm-wave transmitters operating above 10GHz in <2 mm distance from device (free-space) Power density, H-field, and far-field analysis using total field reconstruction.
Compatibility	cDASY6 + 5G-Module SW1.0 and higher

Table 1747

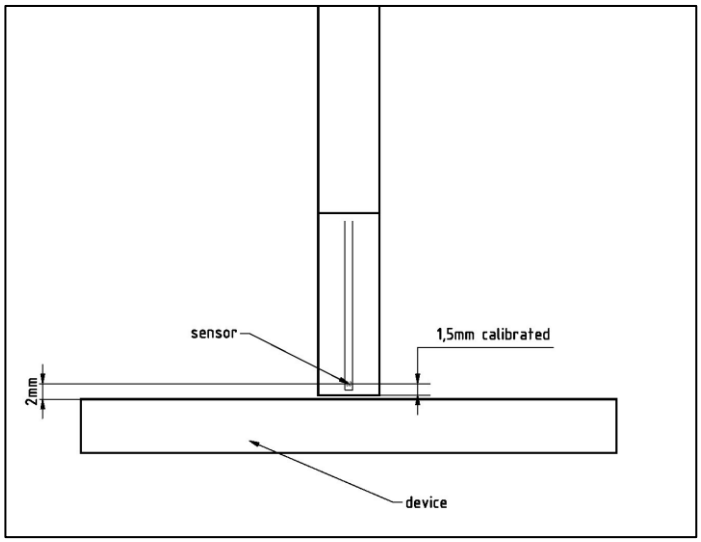

Figure 11 - Diagram of the distance sensor to the EUT surface

2.2.3 Peak Spatially Averaged Power Density Assessment based on E-Field Measurements

Power density was determined for both the electric and magnetic fields within a small distance from the transmitting source. In general, the magnitude and phase of two components of either E-field or H-field are needed on a sufficiently large surface to characterise their total distributions. Despite this being the case, a solution based on the direct measurement of the E and H field can be used to compute power density. The measurement approach to achieve this is given below.

a) The local E-field is measured at a reference point on the measurement surface where the field is well above the system noise floor. This reference point is re-visited at the end of the measurement routine and re-measured to determine and assess the power drift of the EUT.

b) The electric field on the measurement surface was scanned using instructions provided by the test system manufacturer. The spatial resolution of the measurement can depend on the measured field characteristic and measurement methodology used by the test system. The planar scan step size is configured to be λ/4.

c) DASY6 uses a reconstruction algorithm to calculate the H-field from the measured E-field. As the power density calculation requires amplitude and phase, reconstruction algorithms can also be used to obtain field information from the measured E-field data, for example phase information from the amplitude if only the amplitude is measured. Three measurements per point on two measurement planes separated by λ/4 are carried out in order for the H-field and phase data to be reconstructed.

d) Using the equation below the total peak spatially averaged power density (psPD) distribution on the evaluation surface can be determined. The applicable regulatory requirements specify the spatial averaging area A. A circular shape is used.

$$psPD = \frac{1}{2A_{av}} \iint_{A_{av}} || Re\{E \times H^*\} || \, dA$$

e) The final quantity used to determine compliance against the applicable limits is the maximum spatial average on the evaluation.

f) Following the measurement of the power drift as described in step a) the drift was assessed. If the drift deviated by more than 5% then the power density test and drift measurements shall be repeated.

2.2.4 Reconstruction Algorithm

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 test system utilises a reconstruction approach based on the Gerchberg-Saxton algorithm 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.

2.2.5 Standalone PD Limit

The following formula provides the reference levels for local exposure to electromagnetic fields from >6 GHz to 300GHz for general public as referenced in ICNIRP 2020:

$$55/f_{\mathrm{G}}{}^{0.177}$$

The FCC Oct 2020 TCB workshop states their own incident power density limit of 1mW/cm^2 plane-wave equivalent, averaged over 4 cm^2 as reflected in FCC 47 CFR 1.1310.

2.2.6 Exposure Ratio

The following formulas used to calculate the exposure ratio of SAR, APD and iPD respectively as referenced in ICNIRP 2020:

SAR $$\sum_{i=100\ \mathrm{kHz}}^{300\ \mathrm{GHz}} \frac{\mathrm{SAR}_i}{\mathrm{SAR}_{\mathrm{BR}}} \leq 1$$

APD $$\sum_{i>6\ \mathrm{GHz}}^{30\ \mathrm{GHz}} \frac{S_{\mathrm{ab},4\mathrm{cm},i}}{S_{\mathrm{ab},4\mathrm{cm},\mathrm{BR}}} \leq 1$$

iPD $$\sum_{i>6\ \mathrm{GHz}}^{30\ \mathrm{GHz}} \left(\frac{S_{\mathrm{inc},4\mathrm{cm},i}}{S_{\mathrm{inc},4\mathrm{cm},\mathrm{RL},i}} \right) \leq 1$$

2.2.7 Total Exposure Ratio (TER)

The total exposure ratio is the sum of local specific absorption rate (SAR), local absorbed power density (APD) and local incident power density (iPD) referenced in ICNIRP 2020:

where, SAR_i and SAR_{BR} are the local SAR level at frequency *i* and the local SAR basic restriction given in ICNIRP 2020. $S_{ab,4cm,i}$ and $S_{ab,4cm,BR}$ are the 4cm² absorbed power density level at frequency *i* and the 4cm² absorbed power density basic restriction given in ICNIRP 2020. $S_{inc,4cm,i}$ and $S_{inc,4cm,RL,i}$ are the local 4cm² incident power density at frequency *i* and the local 4cm² incident power density reference level at frequency *i* given in ICNIRP 2020.

$$\sum_{i=100\ \mathrm{kHz}}^{6\ \mathrm{GHz}} \frac{\mathrm{SAR}_i}{\mathrm{SAR}_{\mathrm{BR}}} + \sum_{i>6\ \mathrm{GHz}}^{30\ \mathrm{GHz}} \frac{S_{ab,4cm,i}}{S_{ab,4cm,BR}} + \sum_{i>6\ \mathrm{GHz}}^{30\ \mathrm{GHz}} \left(\frac{S_{inc,4cm,i}}{S_{inc,4cm,RL,i}} \right) \leq 1$$

TER is applied when simultaneous transmission of the different types of measurement is tested, and basic restriction limits cannot be applied. The TER of the applicable measurements is calculated and summed up to not exceed 1.

SECTION 3

TEST EQUIPMENT USED

3.1 TEST EQUIPMENT USED

The following test equipment was used at TÜV SÜD Product Service:

Instrument Description	Manufacturer	Model Type	TE Number	Cal Period (months)	Calibration Due Date
Directional Coupler	Hewlett Packard	11692D	0452	-	TU
Hygrometer	Rotronic	I-1000	2829	12	21-May-2025
SAR 2450 MHz dipole	SPEAG	D2450V2	3875	12	07-Dec-2024
SAR 5GHz Dipole	SPEAG	D5GHzV2	4309	12	14-Dec-2024
Network Analyser	Keysight Technologies	E5063A	5018	12	10-Oct-2024
Flat phantom (Body)	SPEAG	ELI v8.0	5332	-	TU
Measurement server	SPEAG	DASY 6	5337	-	TU
DASY 6 Robot	SPEAG	TX90 XL	5340	-	TU
Validation source for SAR system	SPEAG	POWERSOURCE1-SE UMS 160 BA	5371	12	01-Dec-2024
SAR 6.5GHz dipole	SPEAG	D6.5GHzV2	6156	12	02-Nov-2024
Thermo-hygrometer	R.S Components	1364	6352	12	13-Jun-2025
Isotropic E-field Probe	Schmid & Partner Engineering AG	UmmWV4	S/N 9507	12	06-Sep-2025
2m Coaxial Cable Assy	Junkosha	MWX221-02000AMSAMS/A	6361	12	16-May-2025
1m Coaxial Cable Assy	Junkosha	MWX221-01000AMSAMS/A	6378	12	16-May-2025
1m Coaxial Cable Assy	Junkosha	MWX221-01000AMSAMS/A	6380	12	16-May-2025
Flat phantom (Body)	SPEAG	ELI v8.0	6491	-	TU
Measurement server	SPEAG	DASY 8	6492	-	TU
DASY 8 Robot	SPEAG	TX2 90XL	6494	-	TU
Dosimetric SAR Probe	SPEAG	EX3DV4	6497	12	14-Aug-2025
Dosimetric SAR Probe	SPEAG	EX3DV4	6498	12	14-Feb-2025
Data Acquisition Electronics	SPEAG	DAE4ip	6500	12	13-Feb-2025
Data Acquisition Electronics	SPEAG	DAE4ip	6501	12	07-Aug-2025

Instrument Description	Manufacturer	Model Type	TE Number	Cal Period (months)	Calibration Due Date
Dielectric Assessment Kit	SPEAG	DAK-3.5	6502	-	TU
Validation source for SAR system	SPEAG	POWERSOURCE1-SE UMS 160 CB	6503	12	01-Mar-2025
Diode Power Sensor	Rohde & Schwarz	NRP18S	6533	24	11-Apr-2026
Diode Power Sensor	Rohde & Schwarz	NRP18S	6534	24	17-Apr-2025
Power Meter	Rohde & Schwarz	NRX	6535	-	TU
Amplifier	Mini-Circuits	ZVE-3W-183+	6540	-	TU
Dosimetric SAR Probe	SPEAG	EX3DV4	6573	12	13-May-2025
Data Acquisition Electronics	SPEAG	DAE4ip	6574	12	03-May-2025
Signal Generator	Rohde & Schwarz	SMR20	6677	12	04-Oct-2025
Signal Generator	Rohde & Schwarz	SMP02	6682	12	04-Oct-2024
Patch Antenna 5G Verification Source	SPEAG	P6500V1	6704	12	07-Nov-2024
Attenuator 5W 10dB DC-18GHz	Aaren	AT40A-4041-D18-10	6758	12	08-Mar-2025
Thermometer	LKM Electronics	DTM 3000	6693	12	06-Nov-2024
DASY 8 Robot	SPEAG	TX2 90XL	6827	-	TU
Measurement server	SPEAG	DASY 8	6829	-	TU
Flat phantom (Body)	SPEAG	ELI v8.0	6830	-	TU
Tissue Simulant Liquid	SPEAG	HBBL 600-10000	Batch 3	-	Note 1
Tissue Simulant Liquid	SPEAG	HBBL 600-10000	Batch 5	-	Note 1
Tissue Simulant Liquid	SPEAG	HBBL 600-10000	Batch 6	-	Note 1

Table 175

TU - Traceability Unscheduled

Note 1: The calibration dates for the relevant batches of TSL can be found in the fluid parameter tables within this report.

3.2 TEST SOFTWARE

The following software was used to control the TÜV SÜD Product Service DASY System.

Instrument	Version Number
DASY System	cDASY8 Module SAR V16.2.2.1588
DASY System	cDASY6 Module SAR V16.2.2.1588
DASY System	cDASY6 Module mmWave V3.2.0.1840

Table 176

3.3 TEST VERIFICATION

3.3.1 System Performance Check Results

Prior to formal testing being performed a System Check was performed in accordance with KDB 865664 and the results were compared against the calibration certificates of each corresponding system verification dipole. The following results were obtained and within the ±10% acceptance criteria. A system performance check in DASY Module mmWave was also performed with the Verification Source available at 6500 MHz in accordance with IEC-IEEE 63195-1.

System Performance Check Results

SAR System Check

Date	Frequency (MHz)	Fluid Type	Measured Max 1g SAR (W/kg) *	Max 1g SAR Target (W/kg)	Percentage Deviation from Target 1g (%)
03/10/2024	2450	HBBL B3	50.28	52.60	-4.41
04/10/2024	2450	HBBL B3	49.68	52.60	-5.55
01/10/2024	5200	HBBL B5	78.81	78.80	0.02
04/10/2024	5200	HBBL B5	79.81	78.80	1.28
05/10/2024	5300	HBBL B5	83.80	80.90	3.59
01/10/2024	5500	HBBL B5	83.80	84.60	-0.94
02/10/2024	5500	HBBL B5	81.41	84.60	-3.77
05/10/2024	5500	HBBL B5	83.80	84.60	-0.94
01/10/2024	5600	HBBL B5	86.39	83.00	4.09
02/10/2024	5600	HBBL B5	83.60	83.00	0.72
05/10/2024	5600	HBBL B5	85.80	83.00	3.37
01/10/2024	5800	HBBL B5	76.62	81.10	-5.53
02/10/2024	5800	HBBL B5	73.43	81.10	-9.46
04/10/2024	5800	HBBL B5	78.81	81.10	-2.82
02/10/2024	6500	HBBL B6	305.00	296.00	3.04
03/10/2024	6500	HBBL B6	314.00	296.00	6.08

Table 177

APD System Check

Date	Frequency (MHz)	Fluid Type	Absorbed Power Density over 4cm^2 (W/m^2) *	Absorbed Power Density Target over 4cm^2 (W/m^2)	Percentage Deviation from Target 4cm^2 (%)
02/10/2024	6500	HBBL B6	1400.00	1330.00	5.26
03/10/2024	6500	HBBL B6	1440.00	1330.00	8.27

Table 178

iPD System Check

Date	Frequency (MHz)	Medium	Measured psPDtot + (W/m^2)	Target psPDtot + (W/m^2)	Percentage Deviation from Target (%)
08/10/2024	6500	Air	159.00	156.00	1.92

Table 179

*Normalised to a forward power of 1W.

3.4 DIELECTRIC PROPERTIES OF SIMULANT LIQUIDS

The fluid properties of the simulant fluids used during routine SAR evaluation meet the dielectric properties required in KDB 865664.

The dielectric properties of the tissue simulant liquids used are within the ±10% acceptance criteria for the SAR testing at TÜV SÜD Product Service and are as follows:

Fluid Type and Frequency	Relative Permittivity Measured	Relative Permittivity Target	Conductivity Measured (S/m)	Conductivity Target (S/m)	Date	Fluid Temperature °C
HBBL B3 2450 MHz	39.94	39.20	1.82	1.80	02/10/2024	21.58
HBBL B3 2450 MHz	39.66	39.20	1.81	1.80	03/10/2024	21.96
HBBL B5 5200 MHz	34.89	35.98	4.47	4.65	30/09/2024	20.52
HBBL B5 5200 MHz	35.01	35.98	4.44	4.65	04/10/2024	21.52
HBBL B5 5300 MHz	34.82	35.87	4.54	4.76	04/10/2024	21.52
HBBL B5 5500 MHz	34.35	35.65	4.81	4.96	30/09/2024	20.52
HBBL B5 5500 MHz	35.10	35.65	4.88	4.96	02/10/2024	21.11
HBBL B5 5500 MHz	34.46	35.65	4.76	4.96	04/10/2024	21.52
HBBL B5 5600 MHz	34.17	35.52	4.92	5.06	30/09/2024	20.52
HBBL B5 5600 MHz	34.92	35.52	5.00	5.06	02/10/2024	21.11
HBBL B5 5600 MHz	34.28	35.52	4.87	5.06	04/10/2024	21.52
HBBL B5 5800 MHz	33.81	35.30	5.15	5.27	30/09/2024	20.52
HBBL B5 5800 MHz	34.55	35.30	5.24	5.27	02/10/2024	21.11
HBBL B5 5800 MHz	33.95	35.30	5.11	5.27	04/10/2024	21.52
HBBL B6 6500 MHz	32.24	34.46	5.93	6.07	02/10/2024	21.05

Table 180

3.5 TEST CONDITIONS

3.5.1 Test Laboratory Conditions

Ambient temperature: Within +18.00°C to +25.00°C.

The actual temperature during the testing ranged from 20.70°C to 22.10°C.

The actual humidity during the testing ranged from 42.4.0% to 53.10% RH.

The temperature of the fluid during testing does not deviate by more than 2°C for each set of tests.

3.5.2 Test Fluid Temperature Range

Frequency	Body / Head Fluid	Min Temperature °C	Max Temperature °C
2450	HBBL B3	21.58	21.96
5200	HBBL B5	20.52	21.52
5300	HBBL B5	20.68	21.52
5500	HBBL B5	20.52	21.52
5600	HBBL B5	20.52	21.52
5800	HBBL B5	20.52	21.52
6500	HBBL B6	20.98	21.05

Table 181

3.6 MEASUREMENT UNCERTAINTY

Full SAR Measurements, 300 MHz to 3 GHz

Source of Uncertainty	Uncertainty ± %	Probability distribution	Div	c_i (1g)	Standard Uncertainty ± % (1g)
Measurement System Errors					
Probe Calibration	12.0	Normal	2.00	1.00	6.0
Probe Calibration Drift	1.7	Rectangular	1.73	1.00	1.0
Probe Linearity	4.7	Rectangular	1.73	1.00	2.7
Broadband Signal	3.0	Rectangular	1.73	1.00	1.7
Probe Isotropy	7.6	Rectangular	1.73	1.00	4.4
Data Acquisition	0.3	Normal	1.00	1.00	0.3
RF Ambient	1.8	Normal	1.00	1.00	1.8
Probe Positioning	0.2	Normal	1.00	0.14	0.0
Data Processing	1.2	Normal	1.00	1.00	1.2
Phantom and Device errors					
Liquid Conductivity Meas.	2.5	Normal	1.00	0.78	2.0
Liquid Conductivity Temp	3.3	Rectangular	1.73	0.78	1.5
Phantom Permittivity	14.0	Rectangular	1.73	0.00	0.0
Distance DUT - TSL	2.0	Normal	1.00	2.00	4.0
Device Positioning (±0.5mm)	1.0	Normal	1.00	1.00	1.0
Device Holder	3.6	Normal	1.00	1.00	3.6
Device Modulation	2.4	Rectangular	1.73	1.00	1.4
Time-average SAR	2.6	Rectangular	1.73	1.00	1.5
DUT Drift	5.0	Normal	1.00	1.00	5.0
Correction to the SAR results					
Deviation to Target	1.9	Normal	1.00	1.00	1.9
SAR Scaling	0.0	Rectangular	1.73	1.00	0.0
Combined Standard Uncertainty		**RSS**			11.8
Expanded Standard Uncertainty		**K=2**			23.7

Table 182

Full SAR Measurements, 3 GHz to 6 GHz

Source of Uncertainty	Uncertainty ± %	Probability distribution	Div	c_i (1g)	Standard Uncertainty ± % (1g)
Measurement System Errors					
Probe Calibration	14.0	Normal	2.00	1.00	7.0
Probe Calibration Drift	1.7	Rectangular	1.73	1.00	1.0
Probe Linearity	4.7	Rectangular	1.73	1.00	2.7
Broadband Signal	2.6	Rectangular	1.73	1.00	1.5
Probe Isotropy	7.6	Rectangular	1.73	1.00	4.4
Data Acquisition	0.3	Normal	1.00	1.00	0.3
RF Ambient	1.8	Normal	1.00	1.00	1.8
Probe Positioning	0.2	Normal	1.00	0.33	0.1
Data Processing	2.3	Normal	1.00	1.00	2.3
Phantom and Device errors					
Liquid Conductivity Meas.	2.5	Normal	1.00	0.78	2.0
Liquid Conductivity Temp	3.4	Rectangular	1.73	0.78	1.5
Phantom Permittivity	14.0	Rectangular	1.73	0.25	2.0
Distance DUT - TSL	2.0	Normal	1.00	2.00	4.0
Device Positioning (±0.5mm)	1.0	Normal	1.00	1.00	1.0
Device Holder	3.6	Normal	1.00	1.00	3.6
Device Modulation	2.4	Rectangular	1.73	1.00	1.4
Time-average SAR	2.6	Rectangular	1.73	1.00	1.5
DUT Drift	5.0	Normal	1.00	1.00	5.0
Correction to the SAR results					
Deviation to Target	1.9	Normal	1.00	1.00	1.9
SAR Scaling	0.0	Rectangular	1.73	1.00	0.0
Combined Standard Uncertainty		**RSS**			12.7
Expanded Standard Uncertainty		**K=2**			25.3

Table 183

Full SAR Measurements, 6 GHz to 10 GHz

Source of Uncertainty	Uncertainty ± %	Probability distribution	Div	c_i (1g)	Standard Uncertainty ± % (1g)
Measurement System Errors					
Probe Calibration	18.6	Normal	2.00	1.00	9.3
Probe Calibration Drift	1.7	Rectangular	1.73	1.00	1.0
Probe Linearity	4.7	Rectangular	1.73	1.00	2.7
Broadband Signal	2.8	Rectangular	1.73	1.00	1.6
Probe Isotropy	7.6	Rectangular	1.73	1.00	4.4
Data Acquisition	0.3	Normal	1.00	1.00	0.3
RF Ambient	1.8	Normal	1.00	1.00	1.8
Probe Positioning	0.2	Normal	1.00	0.67	0.1
Data Processing	3.5	Normal	1.00	1.00	3.5
Phantom and Device errors					
Liquid Conductivity Meas.	2.5	Normal	1.00	0.78	2.0
Liquid Conductivity Temp	2.4	Rectangular	1.73	0.78	1.1
Phantom Permittivity	14.0	Rectangular	1.73	0.50	4.0
Distance DUT - TSL	2.0	Normal	1.00	2.00	4.0
Device Positioning (±0.5mm)	1.0	Normal	1.00	1.00	1.0
Device Holder	3.6	Normal	1.00	1.00	3.6
Device Modulation	2.4	Rectangular	1.73	1.00	1.4
Time-average SAR	2.6	Rectangular	1.73	1.00	1.5
DUT Drift	5.0	Normal	1.00	1.00	5.0
Correction to the SAR results					
Deviation to Target	1.9	Normal	1.00	1.00	1.9
SAR Scaling	0.0	Rectangular	1.73	1.00	0.0
Combined Standard Uncertainty		**RSS**			14.7
Expanded Standard Uncertainty		**K=2**			29.4

Table 184

Full APD Measurements, 6 GHz to 10 GHz

Symbol	Error Description	Value %	Probability distribution	Divisor	c_i (1 g)	Std Uncertainty (1 g)	c_i (10 g)	Std Uncertainty (10 g)
Measurement System Errors								
CF	Probe Calibration	18.60	normal 2	2.000	1	9.30	1	9.30
CF_{DRIFT}	Probe Calibration Drift	1.70	rectangular	1.732	1	0.98	1	0.98
LIN	Probe Linearity	4.70	rectangular	1.732	1	2.71	1	2.71
BBS	Broadband Signal	2.80	rectangular	1.732	1	1.62	1	1.62
ISO	Probe Isotropy	7.60	rectangular	1.732	1	4.39	1	4.39
DAE	Other Probe+Electronic	0.30	normal 1	1.000	1	0.30	1	0.30
DAE	Boundary Effects + Corrections	4.00	rectangular	1.732	1	2.31	1	2.31
DAE	Sensor Offset & Uncertainty	0.10	normal 1	1.000	1	0.10	1	0.10
AMB	RF Ambient	3.00	normal 1	1.000	1	3.00	1	3.00
Δsys	Probe Positioning	0.01	normal 1	1.000	0.5	0.00	0.5	0.00
DAT	Data Processing	1.00	rectangular	1.732	1	0.58	1	0.58
Phantom and Device Errors								
LIQ(σ)	Conductivity (meas)^{DAK}	2.50	normal 1	1.000	0.78	1.95	0.71	1.78
LIQ(Tσ)	Conductivity (temp)^{BB}	2.40	rectangular	1.732	0.78	1.08	0.71	0.98
EPS	Phantom Permittivity	14.00	rectangular	1.732	0.5	4.04	0.5	4.04
DIS	Distance DUT – TSL	2.00	normal 1	1.000	2	4.00	2	4.00
Dxyz	Device Positioning	1.00	normal 1	1.000	1	1.00	1	1.00
H	Device Holder	3.60	normal 1	1.000	1	3.60	1	3.60
MOD	DUT Modulation^{m}	2.40	rectangular	1.732	1	1.39	1	1.39
TAS	Time-average SAR	1.70	rectangular	1.732	1	0.98	1	0.98
Rfdrift	DUT drift	5.00	normal 1	1.000	1	5.00	1	5.00
VAL	Val Antenna Unc.^{val}	0.00	normal 1	1.000	1	0.00	1	0.00
Rfin	Unc. Input Power^{val}	0.00	normal 1	1.000	1	0.00	1	0.00
Correction To The SAR Results								
C(ε, σ)	Deviation to Target	1.90	normal 1	1.000	1	1.90	0.84	1.60
C(R)	SAR scaling	0.00	rectangular	1.732	1	0.00	1	0.00
APD								
PDC	Power Density Conversion	13.50	rectangular	1.732	1	7.79	1	7.79
u(ΔSAR)	Combined Standard Uncertainty	-	normal	-	-	16.58	-	16.52
U	Expanded Uncertainty	-	normal k =	2.00	-	33.2	-	33

Table 185

DASY6 Uncertainty Budget for iPD

Symbol	Error Description	Value dB	Probability distribution	Divisor	c_i	u_i(y) dB	$(u_i(y))^2$	v_i or v_{eff}	ui^4(y)
Uncertainty terms dependent on the measurement system									
CAL	Calibration	0.49	normal 1	1.000	1	0.49	0.240	∞	0
COR	Probe correction	0.00	rectangular	1.732	1	0.00	0.000	∞	0
FRS	Frequency response (BW ≤ 1 GHz)	0.20	rectangular	1.732	1	0.12	0.013	∞	0
SCC	Sensor cross coupling	0.00	rectangular	1.732	1	0.00	0.000	∞	0
ISO	Isotropy	0.50	rectangular	1.732	1	0.29	0.083	∞	0
LIN	Linearity	0.20	rectangular	1.732	1	0.12	0.013	∞	0
PSC	Probe scattering	0.00	rectangular	1.732	1	0.00	0.000	∞	0
PPO	Probe positioning offset	0.30	rectangular	1.732	1	0.17	0.030	∞	0
PPR	Probe positioning repeatability	0.04	rectangular	1.732	1	0.02	0.001	∞	0
SMO	Sensor mechanical offset	0.00	rectangular	1.732	1	0.00	0.000	∞	0
PSR	Probe spatial resolution	0.00	rectangular	1.732	1	0.00	0.000	∞	0
FLD	Field impedance dependence	0.00	rectangular	1.732	1	0.00	0.000	∞	0
APD	Amplitude and phase drift	0.00	rectangular	1.732	1	0.00	0.000	∞	0
APN	Amplitude and phase noise	0.04	rectangular	1.732	1	0.02	0.001	∞	0
TR	Measurement area truncation	0.00	rectangular	1.732	1	0.00	0.000	∞	0
DAQ	Data acquisition	0.03	normal 1	1.000	1	0.03	0.001	∞	0
SMP	Sampling	0.00	rectangular	1.732	1	0.00	0.000	∞	0
REC	Field reconstruction	0.60	rectangular	1.732	1	0.35	0.120	∞	0
TRA	FTE/MEO	0.70	rectangular	1.732	1	0.40	0.163	∞	0
SCA	Power density scaling	0.00	rectangular	1.732	1	0.00	0.000	∞	0
SAV	Spatial averaging	0.10	rectangular	1.732	1	0.06	0.003	∞	0
SDL	System detection limit	0.04	rectangular	1.732	1	0.02	0.001	∞	0
Uncertainty terms dependent on the DUT and environmental factors									
PC	Probe coupling with DUT	0.00	rectangular	1.732	1	0.00	0.000	∞	0
MOD	Modulation response	0.40	rectangular	1.732	1	0.23	0.053	∞	0
IT	Integration time	0.00	rectangular	1.732	1	0.00	0.000	∞	0
RT	Response time	0.00	rectangular	1.732	1	0.00	0.000	∞	0
DH	Device holder influence	0.10	rectangular	1.732	1	0.06	0.003	∞	0
DA	DUT alignment	0.00	rectangular	1.732	1	0.00	0.000	∞	0
REF	Reflections in laboratory	0.10	rectangular	1.732	1	0.06	0.003	∞	0
TEM	Laboratory temperature	0.10	rectangular	1.732	1	0.06	0.003	∞	0
AC	RF ambient conditions	0.04	rectangular	1.732	1	0.02	0.001	∞	0
AR	Ambient reflections	0.04	rectangular	1.732	1	0.02	0.001	∞	0
MSI	Immunity / secondary reception	0.00	rectangular	1.732	1	0.00	0.000	∞	0
DRI	Drift of the DUT	0.00	rectangular	1.732	1	0.00	0.000	∞	0
$u_c(F_S)$	Combined Standard Uncertainty (w/ FTE/MEO)	-	normal	-	-	0.86	0.734	∞	0
$U(F_S)$	Expanded Uncertainty (w/ FTE/MEO)	-	normal k =	2.00	-	1.7	-	∞	-

Table 186

DASY6 mmWave Uncertainty Budget - System Performance Check

Symbol	Error Description	Value dB	Probability distribution	Divisor	c_i	u_i(y) dB	$(u_i(y))^2$ dB	v_i or v_{eff}	ui^4(y)
Uncertainty terms dependent on the measurement system									
CAL	Calibration Repeatability	0.21	normal 1	1.000	1	0.21	0.044	∞	0
COR	Probe correction	0.00	rectangular	1.732	1	0.00	0.000	∞	0
FRS	Frequency response (BW ≤ 1 GHz)	0.20	rectangular	1.732	0	0.00	0.000	∞	0
SCC	Sensor cross coupling	0.00	rectangular	1.732	1	0.00	0.000	∞	0
ISO	Isotropy	0.30	rectangular	1.732	1	0.17	0.030	∞	0
LIN	Linearity	0.20	rectangular	1.732	1	0.12	0.013	∞	0
PSC	Probe scattering	0.00	rectangular	1.732	1	0.00	0.000	∞	0
PPO	Probe positioning offset	0.11	rectangular	1.732	1	0.06	0.004	∞	0
PPR	Probe positioning repeatability	0.04	rectangular	1.732	1	0.02	0.001	∞	0
SMO	Sensor mechanical offset	0.00	rectangular	1.732	1	0.00	0.000	∞	0
PSR	Probe spatial resolution	0.00	rectangular	1.732	1	0.00	0.000	∞	0
FLD	Field impedance dependence	0.00	rectangular	1.732	1	0.00	0.000	∞	0
APD	Amplitude and phase drift	0.00	rectangular	1.732	1	0.00	0.000	∞	0
APN	Amplitude and phase noise	0.04	rectangular	1.732	0	0.00	0.000	∞	0
TR	Measurement area truncation	0.00	rectangular	1.732	1	0.00	0.000	∞	0
DAQ	Data acquisition	0.03	normal 1	1.000	1	0.03	0.001	∞	0
SMP	Sampling	0.00	rectangular	1.732	1	0.00	0.000	∞	0
REC	Field reconstruction	0.60	rectangular	1.732	0.3	0.10	0.011	∞	0
TRA	Forward transformation	0.00	rectangular	1.732	1	0.00	0.000	∞	0
SCA	Power density scaling	0.00	rectangular	1.732	1	0.00	0.000	∞	0
SAV	Spatial averaging	0.10	rectangular	1.732	0	0.00	0.000	∞	0
SDL	System detection limit	0.04	rectangular	1.732	1	0.02	0.001	∞	0
Uncertainty terms dependent on the DUT and environmental factors									
PC	Probe coupling with DUT	0.00	rectangular	1.732	1	0.00	0.000	∞	0
MOD	Modulation response	0.40	rectangular	1.732	0	0.00	0.000	∞	0
IT	Integration time	0.00	rectangular	1.732	1	0.00	0.000	∞	0
RT	Response time	0.00	rectangular	1.732	1	0.00	0.000	∞	0
DH	Device holder influence	0.10	rectangular	1.732	0	0.00	0.000	∞	0
REF	Reflections in laboratory	0.10	rectangular	1.732	1	0.06	0.003	∞	0
TEM	Laboratory temperature	0.10	rectangular	1.732	1	0.06	0.003	∞	0
DA	DUT alignment	0.00	rectangular	1.732	1	0.00	0.000	∞	0
AC	RF ambient conditions	0.04	rectangular	1.732	1	0.02	0.001	∞	0
AR	Ambient reflections	0.04	rectangular	1.732	1	0.02	0.001	∞	0
MSI	Immunity / secondary reception	0.00	rectangular	1.732	0	0.00	0.000	∞	0
DRI	Drift of the DUT	0.10	rectangular	1.732	1	0.06	0.003	∞	0
$u_c(F_S)$	Combined Standard Uncertainty (w/ FTE/MEO)	-	normal	-	-	0.34	0.115	∞	0
$U(F_S)$	Expanded Uncertainty (w/ FTE/MEO)	-	normal k =	2.00	-	0.7		∞	-

Table 187

3.6.1 Decision Rule

Accuracy Method

Determination of conformity with the specification limits is based on the decision rule according to IEC Guide 115: 2007, Clause 4.4.3 and 4.5.1. (Procedure 2). The measurement results are directly compared with the test limit to determine conformance with the requirements of the standard.

Risk: The uncertainty of measurement about the measured result is negligible with regard to the final pass/fail decision. The measurement result can be directly compared with the test limit to determine conformance with the requirement (compare IEC Guide 115). The level of risk to falsely accept and falsely reject items is further described in ILAC-G8."

SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

This non-binding report has been prepared by TÜV SÜD with all reasonable skill and care.

The document is confidential to the potential Client and TÜV SÜD. No part of this document may be reproduced without the prior written approval of TÜV SÜD.

This report relates only to the actual item/items tested.

Results of tests covered by our Flexible UKAS Accreditation Schedule are marked FS (Flexible Scope).

Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation.

ANNEX A

PROBE CALIBRATION REPORT

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client	TüV SÜD Fareham, United Kingdom	Certificate No.	EX-7805_Feb24

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:7805
Calibration procedure(s)	QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6, QA CAL-25.v8 Calibration procedure for dosimetric E-field probes
Calibration date	February 14, 2024

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
OCP DAK-3.5 (weighted)	SN: 1249	05-Oct-23 (OCP-DAK3.5-1249_Oct23)	Oct-24
OCP DAK-12	SN: 1016	05-Oct-23 (OCP-DAK12-1016_Oct23)	Oct-24
Reference 20 dB Attenuator	SN: CC2552 (20x)	30-Mar-23 (No. 217-03809)	Mar-24
DAE4	SN: 660	16-Mar-23 (No. DAE4-660_Mar23)	Mar-24
Reference Probe EX3DV4	SN: 7349	03-Nov-23 (No. EX3-7349_Nov23)	Nov-24

Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-22)	In house check: Jun-24
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-22)	In house check: Jun-24
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by	Jeffrey Katzman	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: February 14, 2024

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
S Swiss Calibration Service

Accreditation No.: **SCS 0108**

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices – Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z*: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- *DCPx,y,z*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal. DCP does not depend on frequency nor media.
- *PAR*: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters*: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ±50 MHz to ±100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

Parameters of Probe: EX3DV4 - SN:7805

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc ($k = 2$)
Norm (μV/(V/m)^2) [A]	0.62	0.61	0.71	±10.1%
DCP (mV) [B]	106.5	106.8	106.3	±4.7%

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB$\sqrt{\mu V}$	C	D dB	VR mV	Max dev.	Max Unc[E] $k = 2$
0	CW	X	0.00	0.00	1.00	0.00	143.0	±2.5%	±4.7%
		Y	0.00	0.00	1.00		131.9		
		Z	0.00	0.00	1.00		121.0		
10352	Pulse Waveform (200Hz, 10%)	X	1.54	60.76	6.34	10.00	60.0	±3.0%	±9.6%
		Y	1.39	60.12	6.21		60.0		
		Z	1.47	60.41	6.23		60.0		
10353	Pulse Waveform (200Hz, 20%)	X	22.00	74.00	9.00	6.99	80.0	±2.7%	±9.6%
		Y	0.82	60.00	5.11		80.0		
		Z	0.83	60.00	4.93		80.0		
10354	Pulse Waveform (200Hz, 40%)	X	0.04	125.69	0.10	3.98	95.0	±3.0%	±9.6%
		Y	0.41	158.60	17.89		95.0		
		Z	24.00	72.00	7.00		95.0		
10355	Pulse Waveform (200Hz, 60%)	X	7.72	159.15	26.25	2.22	120.0	±1.5%	±9.6%
		Y	0.33	60.00	3.30		120.0		
		Z	9.77	158.08	12.75		120.0		
10387	QPSK Waveform, 1 MHz	X	0.57	65.44	13.50	1.00	150.0	±2.8%	±9.6%
		Y	0.94	73.38	18.15		150.0		
		Z	0.55	64.20	12.89		150.0		
10388	QPSK Waveform, 10 MHz	X	1.40	67.23	14.48	0.00	150.0	±0.9%	±9.6%
		Y	1.76	70.92	16.71		150.0		
		Z	1.36	66.42	14.19		150.0		
10396	64-QAM Waveform, 100 kHz	X	1.63	64.08	15.63	3.01	150.0	±0.9%	±9.6%
		Y	1.84	66.27	16.88		150.0		
		Z	1.71	64.70	15.80		150.0		
10399	64-QAM Waveform, 40 MHz	X	2.87	66.92	15.41	0.00	150.0	±1.3%	±9.6%
		Y	2.94	67.43	15.91		150.0		
		Z	2.82	66.49	15.20		150.0		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	3.82	66.52	15.49	0.00	150.0	±2.1%	±9.6%
		Y	3.97	67.19	16.00		150.0		
		Z	3.77	66.07	15.29		150.0		

Note: For details on UID parameters see Appendix

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Linearization parameter uncertainty for maximum specified field strength.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

Parameters of Probe: EX3DV4 - SN:7805

Sensor Model Parameters

	C1 fF	C2 fF	α V^{-1}	T1 $ms\,V^{-2}$	T2 $ms\,V^{-1}$	T3 ms	T4 V^{-2}	T5 V^{-1}	T6
x	8.8	62.84	32.91	4.19	0.00	4.90	0.50	0.00	1.00
y	9.0	63.68	32.62	4.61	0.00	4.90	0.56	0.00	1.00
z	9.2	65.89	32.77	3.99	0.00	4.90	0.58	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	-7.5°
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

Note: Measurement distance from surface can be increased to 3–4 mm for an *Area Scan* job.