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Report On

Specific Absorption Rate Testing of the A2681

Covering FCC 47CFR 2.1093, RSS 102 Issue 5 and related documents

FCC ID: BCGA2681

IC: 579C-A2681

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Document 75954444 Report 22 Issue 2

May 2022



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REPORT ON Specific Absorption Rate Testing of the A2681
Document 7595444 Report 22 Issue 2
May 2022

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17 May 2022



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SECTION 1

REPORT SUMMARY

Specific Absorption Rate Testing of the
A2681



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 May 2022
2	IC Certification Number added	16 May 2022



1.2 INTRODUCTION

The information contained in this report is intended to show verification of the Specific Absorption Rate Testing of the A2681 to the requirements of KDB 447498 D01 v06 General RF Exposure Guidance.

Objective	To perform Specific Absorption Rate testing to determine the Equipment Under Test's (EUT's) compliance with the requirements specified of KDB 447498 D01 v06 General RF Exposure Guidance, for the series of tests carried out.
Applicant	Apple Inc
Manufacturer	Apple Inc
Manufacturing Description	Laptop Computer
Model Number	A2681
Serial/IMEI Number(s)	WR7HKYWH9Q CFPJXR7DGX
Number of Samples Tested	2
Hardware Version	REV 1.0
Software Version	21E61410w
Test Specification/Issue/Date	KDB 447498 D01 v06 General RF Exposure Guidance RSS-102 Issue 5 March 2015
Order Number	0540240615
Date of Receipt	08/02/2022
Start of Test	06-April-2022
Finish of Test	10-May-2022
Related Document(s)	FCC 47CFR 2.1093: 2015 KDB 865664 – D01 v01r04 KDB 865664 – D02 v01r02 KDB 648474 – D04 v01r03 KDB 248227 – D01 v02r02 IEEE Std 1528 - 2013 IEC/IEEE 62209-1528:2020
Name of Engineer(s)	Kamil Nawabzada Mohamud Mohamud



1.3 BRIEF SUMMARY OF RESULTS (FCC)

The measurements shown in this report were made in accordance with the requirements specified KDB 447498 D01 v06 General RF Exposure Guidance.

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

Max 1g SAR (W/kg) Body - Stand-alone	0.84 (Measured)	1.02 (Scaled)
Max 1g SAR (W/kg) Body - Simultaneous Transmission	1.34 (Scaled)	
The maximum 1g volume averaged SAR level measured for all the tests performed did not exceed the limits for General Population/Uncontrolled Exposure (W/kg) Partial Body of 1.6 W/kg.		

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

RAT	Band	Test Configuration	Max Reported SAR (W/kg) (Scaled)
Bluetooth (5 GHz WLAN off)	2450 MHz	Body	0.41
Bluetooth (5 GHz WLAN on)	2450 MHz	Body	0.32
WLAN	2450 MHz	Body	1.00
WLAN	5200 / 5300 MHz	Body	0.89
WLAN	5500 MHz	Body	1.02
WLAN	5800 MHz	Body	0.99
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 (W/kg) Partial Body of 1.6 W/kg.			

Simultaneous Transmission.

Position	5GHz WLAN- 1g SAR (W/kg)	Bluetooth (5 GHz WLAN on) 1g SAR (W/kg)	Sum of 1g SAR (W/Kg)	Peak Location Separation Ratio required?	Peak Location Separation Ratio
Bottom	1.02	0.32	1.34	No.	N/A

Each antenna is separated to the extent that the SAR distributions do not overlap, however Bluetooth and 5GHz WLAN can operate on the same antenna. Bluetooth operates at a lower power level when the 5 GHz WLAN is active. The highest overall reported SAR values of 5GHz WLAN and Bluetooth (5GHz WLAN on) results were used for the summation of the simultaneous transmission as shown in the table above.

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.



1.4 BRIEF SUMMARY OF RESULTS (ISED)

The measurements shown in this report were made in accordance with the requirements specified RSS-102 Issue 5 March 2015.

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

Max 1g SAR (W/kg) Body - Stand-alone	0.80 (Measured)	0.86 (Scaled)
Max 1g SAR (W/kg) Body - Simultaneous Transmission	1.27 (Scaled)	
The maximum 1g volume averaged SAR level measured for all the tests performed did not exceed the limits for General Population/Uncontrolled Exposure (W/kg) Partial Body of 1.6 W/kg.		

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

RAT	Band	Test Configuration	Max Reported SAR (W/kg)
Bluetooth (5 GHz WLAN off)	2450 MHz	Body	0.40
Bluetooth (5 GHz WLAN on)	2450 MHz	Body	0.41
WLAN	2450 MHz	Body	0.84
WLAN	5200 / 5300 MHz	Body	0.75
WLAN	5500 MHz	Body	0.86
WLAN	5800 MHz	Body	0.84
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 (W/kg) Partial Body of 1.6 W/kg.			

Simultaneous Transmission.

Position	5GHz WLAN- 1g SAR (W/kg)	Bluetooth (5 GHz WLAN on) 1g SAR (W/kg)	Sum of 1g SAR (W/Kg)	Peak Location Separation Ratio required?	Peak Location Separation Ratio
Bottom	0.86	0.41	1.27	No	N/A

Each antenna is separated to the extent that the SAR distributions do not overlap, however Bluetooth and 5GHz WLAN can operate on the same antenna. Bluetooth operates at a lower power level when the 5 GHz WLAN is active. The highest overall 5GHz WLAN and Bluetooth (5 GHz WLAN on) results were used for a conservative estimate.

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.



1.5 TEST RESULTS SUMMARY

1.5.1 System Performance / Validation Check Results

Prior to formal testing being performed a System Check was performed in accordance with KDB 865664 and the results were compared against published data in Standard IEEE 1528-2003. The following results were obtained: -

System performance / Validation results

Date	Frequency (MHz)	Fluid Type	Measured Max 1g SAR (W/kg) *	Max 1g SAR (W/kg) Target	Percentage Drift on Reference (%)
04/04/2022	2450	HBBL	50.28	52.4	-4.04
06/04/2022	5200	HBBL	78.81	76.5	3.02
06/04/2022	2450	HBBL	50.68	52.4	-3.28
07/04/2022	2450	HBBL	50.48	52.4	-3.66
08/04/2022	5200	HBBL	77.42	76.5	1.20
08/04/2022	5500	HBBL	81.61	83.3	-2.03
09/04/2022	5200	HBBL	77.62	76.5	1.46
09/04/2022	5500	HBBL	84.60	83.3	1.56
10/04/2022	5300	HBBL	78.41	78.3	0.15
12/04/2022	5300	HBBL	78.27	78.3	-0.03
13/04/2022	5200	HBBL	72.62	76.5	-4.80
19/04/2022	5800	HBBL	77.22	78.0	-1.00
19/04/2022	2450	HBBL	51.88	52.4	-1.00
20/04/2022	5800	HBBL	79.01	78.0	1.30
10/05/2022	5200	HBBL	79.41	76.5	3.81

*Normalised to a forward power of 1W



1.5.2 Results Summary Tables (FCC)

Bluetooth - EDR – 3-DH5 – SISO Core 0 (5GHz WIFI OFF) (ePA):
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	16.18	16.50	Full	0.37	0.40	-
0mm Rear of Display	0	2402	16.18	16.50	Full	0.14	0.16	-
0mm Bottom	39	2441	16.12	16.50	Full	0.38	0.41	C.1
0mm Bottom	78	2480	16.47	16.50	Full	0.36	0.36	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: ≤ 0.8W/kg when the transmission band is ≤ 100MHz ≤ 0.6W/kg when the transmission band is between 100MHz and 200MHz ≤ 0.4W/kg when the transmission band is ≥ 200MHz *Bluetooth opertates at lower power when the 5GHz WiFi is enabled.								

Bluetooth - EDR – 3-DH5 – SISO Core 1 (5GHz WIFI OFF) (ePA):
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	16.48	16.50	Full	0.38	0.38	C.2
0mm Rear of Display	0	2402	16.48	16.50	Full	0.14	0.14	-
0mm Bottom	39	2441	16.50	16.50	Full	0.37	0.37	-
0mm Bottom	78	2480	16.49	16.50	Full	0.35	0.35	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: ≤ 0.8W/kg when the transmission band is ≤ 100MHz ≤ 0.6W/kg when the transmission band is between 100MHz and 200MHz ≤ 0.4W/kg when the transmission band is ≥ 200MHz *Bluetooth opertates at lower power when the 5GHz WiFi is enabled.								



Bluetooth - EDR – 3-DH5 – SISO Core 0 (5GHz WIFI ON) (ePA):
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	15.43	15.50	Full	0.30	0.30	-
0mm Rear of Display	0	2402	15.43	15.50	Full	0.12	0.13	-
0mm Bottom	39	2441	15.48	15.50	Full	0.32	0.32	C.3
0mm Bottom	78	2480	15.43	15.50	Full	0.31	0.32	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ *Bluetooth operates at lower power when the 5GHz WiFi is enabled.								

Bluetooth - EDR – 3-DH5 – SISO Core 1 (5GHz WIFI ON) (ePA):
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	15.48	15.50	Full	0.28	0.28	C.4
0mm Bottom	39	2441	15.12	15.50	Full	0.26	0.28	-
0mm Bottom	78	2480	15.17	15.50	Full	0.24	0.25	-
0mm Rear of Display	0	2402	15.48	15.50	Full	0.11	0.11	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2 *Bluetooth operates at lower power when the 5GHz WiFi is enabled.								



WLAN - 2450 MHz - 802.11b - 20 MHz - 1 Mbps – SISO Core 0:
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	1	2412	18.47	19.50	Full	0.79	1.00	C.5
0mm Rear of Display	1	2412	18.47	19.50	Full	0.23	0.29	-
0mm Bottom	7	2442	18.74	19.50	Full	0.69	0.83	-
0mm Bottom	11	2462	18.51	19.50	Full	0.68	0.86	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: ≤ 0.8W/kg when the transmission band is ≤ 100MHz ≤ 0.6W/kg when the transmission band is between 100MHz and 200MHz ≤ 0.4W/kg when the transmission band is ≥ 200MHz KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

WLAN - 2450 MHz - 802.11b - 20 MHz - 1 Mbps – SISO Core 1:
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	1	2412	18.71	19.75	Full	0.55	0.70	-
0mm Rear of Display	7	2442	18.81	19.75	Full	0.21	0.26	-
0mm Bottom	7	2442	18.81	19.75	Full	0.63	0.77	C.6
0mm Bottom	11	2462	18.66	19.75	Full	0.59	0.24	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: ≤ 0.8W/kg when the transmission band is ≤ 100MHz ≤ 0.6W/kg when the transmission band is between 100MHz and 200MHz ≤ 0.4W/kg when the transmission band is ≥ 200MHz KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



WLAN - 2450 MHz - 802.11n - HT20- 2x2 MIMO Core 0 and Core 1:
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core0)	2	2417	18.70	19.50	Full	0.70	0.84	C.7
0mm Bottom (Core1)	2	2417	18.58	19.50	Full	0.68	0.85	
0mm Bottom (Core 0)	7	2442	18.43	19.50	Full	0.68	0.87	C.8
0mm Bottom (core 1)	7	2442	18.52	19.50	Full	0.62	0.77	
0mm Bottom (Core0)	10	2457	18.69	19.50	Full	0.67	0.81	-
0mm Bottom (Core1)	10	2457	18.71	19.50	Full	0.62	0.75	
0mm Rear of Display (Core0)	7	2442	18.43	19.50	Full	0.18	0.23	-
0mm Rear of Display(Core1)	7	2442	18.52	19.50	Full	0.24	0.30	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 - A duty factor scaling was applied to the scaled SAR as per section 2.2								

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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	38	5190	13.94	15.25	Full	0.56	0.75	C.9
0mm Rear of Display	38	5190	13.94	15.25	Full	0.15	0.20	-
0mm Bottom	46	5230	13.65	15.25	Full	0.52	0.75	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 - A duty factor scaling was applied to the scaled SAR as per section 2.2								



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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	38	5190	13.80	15.50	Full	0.42	0.62	-
0mm Rear of Display	38	5190	13.80	15.50	Full	0.10	0.15	-
0mm Bottom	46	5230	13.66	15.50	Full	0.51	0.78	C.10
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	54	5270	13.98	15.00	Full	0.47	0.60	C.11
0mm Bottom	62	5310	13.96	15.00	Full	0.48	0.61	-
0mm Rear of Display	62	5310	13.96	15.00	Full	0.13	0.16	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	54	5270	14.68	15.50	Full	0.74	0.89	C.12
0mm Rear of Display	54	5270	14.68	15.50	Full	0.17	0.21	-
0mm Bottom	62	5310	14.47	15.00	Full	0.68	0.76	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	138	5690	13.22	14.00	Full	0.84	1.01	C.13
0mm Rear of Display	138	5690	13.22	14.00	Full	0.19	0.23	-
0mm Bottom	106	5530	13.96	14.00	Full	0.77	0.78	-
0mm Bottom	122	5610	12.91	14.00	Full	0.63	0.82	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	138	5690	13.16	14.00	Full	0.53	0.64	C.14
0mm Rear of Display	138	5690	13.16	14.00	Full	0.17	0.21	-
0mm Bottom	106	5530	13.05	14.00	Full	0.36	0.45	-
0mm Bottom	122	5610	13.10	14.00	Full	0.42	0.51	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

WLAN - U-NII-2A - 802.11ac HT40 2x2 MIMO Core 0 and Core 1:
 Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core 0)	54	5270	13.99	14.50	Full	0.52	0.58	C.15
0mm Bottom (Core1)	54	5270	13.36	14.50	Full	0.49	0.64	
0mm Bottom (Core0)	62	5310	14.02	14.50	Full	0.52	0.59	-
0mm Bottom (Core1)	62	5310	13.62	14.50	Full	0.47	0.57	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



WLAN - U-NII-2C - 802.11ac VHT80 2x2 MIMO Core 0 and Core 1:
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core0)	138	5690	12.95	14.00	Full	0.81	1.02	C.16
0mm Bottom (Core1)	138	5690	13.19	14.00	Full	0.81	0.98	
0mm Rear of Display (Core0)	138	5690	13.95	14.00	Full	0.19	0.19	-
0mm Rear of Display (Core1)	138	5690	13.19	14.00	Full	0.14	0.17	
0mm Bottom (Core0)	106	5530	13.02	14.00	Full	0.63	0.79	-
0mm Bottom (Core1)	106	5530	12.83	14.00	Full	0.46	0.60	
0mm Bottom (Core0)	122	5610	12.66	14.00	Full	0.75	1.02	C.17
0mm Bottom (Core1)	122	5610	13.13	14.00	Full	0.51	0.62	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: ≤ 0.8W/kg when the transmission band is ≤ 100MHz ≤ 0.6W/kg when the transmission band is between 100MHz and 200MHz ≤ 0.4W/kg when the transmission band is ≥ 200MHz KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



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)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	155	5775	13.47	14.25	Full	0.83	1.00	C.18
0mm Rear of Display	155	5775	13.47	14.25	Full	0.14	0.16	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: ≤ 0.8W/kg when the transmission band is ≤ 100MHz ≤ 0.6W/kg when the transmission band is between 100MHz and 200MHz ≤ 0.4W/kg when the transmission band is ≥ 200MHz KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

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)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	155	5775	13.18	14.25	Full	0.71	1.00	C19
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: ≤ 0.8W/kg when the transmission band is ≤ 100MHz ≤ 0.6W/kg when the transmission band is between 100MHz and 200MHz ≤ 0.4W/kg when the transmission band is ≥ 200MHz KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



WLAN - U-NII-3 - 802.11ac VHT80 2x2 MIMO Core 0 and Core 1:
 Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core0)	155	5775	13.27	14.25	Full	0.73	0.91	C.20
0mm Bottom (Core1)	155	5775	13.21	14.25	Full	0.73	0.93	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



1.5.3 Results Summary Tables (ISED)

Bluetooth - EDR – 3-DH5 – SISO Core 0 (5GHz WIFI OFF) (ePA):
 Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	16.18	16.50	Full	0.37	0.40	-
0mm Rear of Display	0	2402	16.12	16.50	Full	0.14	0.16	-
0mm Bottom	78	2480	16.47	16.50	Full	0.36	0.36	-
0mm Bottom	39	2441	16.12	16.50	Full	0.38	0.41	C.1
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$								

Bluetooth - EDR – 3-DH5 – SISO Core 1 (5GHz WIFI OFF) (ePA):
 Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	16.48	16.50	Full	0.38	0.38	C.2
0mm Rear of Display	0	2402	16.48	16.50	Full	0.14	0.14	-
0mm Bottom	39	2441	16.50	16.50	Full	0.37	0.37	-
0mm Bottom	78	2480	16.49	16.50	Full	0.35	0.35	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$								



Bluetooth - EDR – 3-DH5 – SISO Core 0 (5GHz WIFI ON) (ePA):
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	15.43	15.50	Full	0.30	0.30	-
0mm Rear of Display	0	2402	15.43	15.50	Full	0.12	0.13	-
0mm Bottom	39	2441	15.48	15.50	Full	0.32	0.32	C.3
0mm Bottom	78	2480	15.43	15.50	Full	0.31	0.32	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$								

Bluetooth - EDR – 3-DH5 – SISO Core 1 (5GHz WIFI ON) (ePA):
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	0	2402	15.48	15.50	Full	0.28	0.28	C.4
0mm Bottom	39	2441	15.12	15.50	Full	0.26	0.28	-
0mm Bottom	78	2480	15.17	15.50	Full	0.24	0.25	-
0mm Rear of Display	0	2402	15.48	15.50	Full	0.11	0.11	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



WLAN - 2450 MHz - 802.11b - 20 MHz - 1 Mbps – SISO Core 0:
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	1	2412	18.47	18.75	Full	0.79	0.84	C.5
0mm Rear of Display	1	2412	18.47	18.75	Full	0.23	0.24	-
0mm Bottom	7	2442	18.74	18.75	Full	0.69	0.69	-
0mm Bottom	11	2462	18.51	18.75	Full	0.68	0.72	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

WLAN - 2450 MHz - 802.11b - 20 MHz - 1 Mbps – SISO Core 1:
Body Specific Absorbtion Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	1	2412	18.71	19.00	Full	0.54	0.58	-
0mm Bottom	7	2442	18.81	19.00	Full	0.62	0.65	C7
0mm Bottom	11	2462	18.66	19.00	Full	0.58	0.62	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



WLAN - 2450 MHz - 802.11n - HT20- 2x2 MIMO Core 0 and Core 1:
 Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core0)	2	2417	18.70	18.75	Full	0.69	0.71	C.8
0mm Bottom (Core1)	2	2417	18.58	18.75	Full	0.68	0.71	
0mm Bottom (Core0)	7	2442	18.43	18.75	Full	0.68	0.73	C.9
0mm Bottom (Core1)	7	2442	18.52	18.75	Full	0.62	0.65	
0mm Bottom (Core0)	10	2457	18.69	18.75	Full	0.67	0.68	-
0mm Bottom (Core1)	10	2457	18.71	18.75	Full	0.62	0.63	
0mm Rear of Display (Core0)	7	2442	18.43	18.75	Full	0.18	0.19	-
0mm Rear of Display (Core1)	7	2442	18.52	18.75	Full	0.24	0.25	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 - A duty factor scaling was applied to the scaled SAR as per section 2.2								



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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	38	5190	13.94	14.00	Full	0.56	0.57	C.10
0mm Rear of Display	38	5190	13.94	14.00	Full	0.15	0.15	-
0mm Bottom	46	5230	13.65	14.00	Full	0.52	0.56	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	38	5190	13.80	14.00	Full	0.42	0.44	-
0mm Rear of Display	38	5190	13.80	14.00	Full	0.10	0.11	-
0mm Bottom	46	5230	13.66	14.00	Full	0.51	0.55	C.10
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	54	5270	13.98	14.25	Full	0.47	0.50	C.11
0mm Bottom	62	5310	13.96	14.25	Full	0.48	0.51	-
0mm Rear of Display	62	5310	13.96	14.25	Full	0.13	0.14	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	54	5270	14.68	14.75	Full	0.74	0.75	C.11
0mm Rear of Display	54	5270	14.68	14.75	Full	0.17	0.17	-
0mm Bottom	62	5310	14.47	14.75	Full	0.68	0.72	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	138	5690	13.22	13.25	Full	0.84	0.85	C.12
0mm Rear of Display	138	5690	13.22	13.25	Full	0.19	0.19	-
0mm Bottom	106	5530	13.96	13.25	Full	0.77	0.83	-
0mm Bottom	122	5610	12.91	13.25	Full	0.63	0.69	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

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

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	138	5690	13.16	13.25	Full	0.53	0.54	C.13
0mm Rear of Display	138	5690	13.16	13.25	Full	0.17	0.18	-
0mm Bottom	106	5530	13.05	13.25	Full	0.36	0.38	-
0mm Bottom	122	5610	13.10	13.25	Full	0.42	0.43	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



WLAN - U-NII-2A - 802.11ac VHT80 2x2 MIMO Core 0 and Core 1:
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core0)	54	5270	13.99	14.25	Full	0.52	0.55	C.14
0mm Bottom (Core1)	54	5270	13.62	14.25	Full	0.49	0.57	
0mm Bottom (Core0)	62	5310	14.02	14.25	Full	0.52	0.55	-
0mm Bottom (Core1)	62	5310	13.62	14.25	Full	0.47	0.54	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



WLAN - U-NII-2C - 802.11ac VHT80 2x2 MIMO Core 0 and Core 1:
Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core0)	138	5690	12.95	13.25	Full	0.81	0.86	C.16
0mm Bottom (Core1)	138	5690	13.19	13.25	Full	0.81	0.82	
0mm Rear of Display (Core0)	138	5690	12.95	13.25	Full	0.19	0.21	-
0mm Rear of Display (Core1)	138	5690	13.19	13.25	Full	0.14	0.14	
0mm Bottom (Core0)	106	5530	13.02	13.25	Full	0.63	0.66	-
0mm Bottom (Core1)	106	5530	12.83	13.25	Full	0.46	0.50	
0mm Bottom (Core0)	122	5610	12.66	13.25	Full	0.75	0.86	-
0mm Bottom (Core1)	122	5610	13.13	13.25	Full	0.51	0.53	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

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)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	155	5775	13.47	13.50	Full	0.83	0.84	C.18
0mm Rear of Display	155	5775	13.47	13.50	Full	0.14	0.14	-
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8W/kg$ when the transmission band is $\leq 100MHz$ $\leq 0.6W/kg$ when the transmission band is between 100MHz and 200MHz $\leq 0.4W/kg$ when the transmission band is $\geq 200MHz$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



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)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom	155	5775	13.18	13.50	Full	0.71	0.76	C.19
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								

WLAN - U-NII-3 - 802.11ac VHT80 2x2 MIMO Core 0 and Core 1:
 Body Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	SAR Scan Type	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
0mm Bottom (Core0)	155	5775	13.27	13.50	Full	0.73	0.76	C.20
0mm Bottom (Core1)	155	5775	13.21	13.50	Full	0.73	0.78	
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) KDB 447498 D01 - Testing of other required channels within the operation mode of a frequency band is not required when the reported 1g SAR for mid-band or highest output power channel is: $\leq 0.8\text{W/kg}$ when the transmission band is $\leq 100\text{MHz}$ $\leq 0.6\text{W/kg}$ when the transmission band is between 100MHz and 200MHz $\leq 0.4\text{W/kg}$ when the transmission band is $\geq 200\text{MHz}$ KDB248227 D01 v02 - Testing was not required for OFDM as per Section 5.2.2 KDB248227 D01 v02 – A duty factor scaling was applied to the scaled SAR as per section 2.2								



1.5.4 Technical Description

The equipment under test was an Apple laptop computer with Bluetooth and IEEE 802.11 a/b/g/n/ac/ax Wi-Fi in the 2.4 GHz and 5 GHz bands. A full technical description can be found in the manufacturer's documentation.

1.5.5 Test Configuration and Modes of Operation

The testing was performed with an integral battery supplied and manufactured by Apple Inc. The battery was fully charged before each measurement and there were no external connections.

Supported technologies are Bluetooth (BDR/EDR//HDR/LE-1M/LE-M2), 2.4 GHz WLAN (802.11b/g/n/ax) and 5 GHz WLAN (802.11a/n/ac/ax). 2x2 MIMO is supported for WLAN.

Bluetooth operates at lower power when the 5GHz WLAN is enabled. The report makes references to Bluetooth (5GHz Wi-Fi on) and Bluetooth (5GHz Wi-Fi off), for clarity testing was performed with the Bluetooth and Wi-Fi transmitters working independently, the references are pointing to Bluetooth power levels only.

WLAN and Bluetooth testing were achieved using the device's internal software, scripts and settings supplied by the customer. For each scan, the device was configured into a continuous transmission test mode at maximum power. Testing was performed in each position at the frequency that gave the highest output power for each band. Some SAR levels were found to be higher than the thresholds set in KDB 447498 D01 therefore additional testing was required at the relevant frequencies / channels of the bands.

Conducted power measurements were performed on a modified device (accessible conducted ports) 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 5GHz 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



1.6 FCC POWER TABLES (TUNE UP VALUES)

Note: All Values in dBm

Bluetooth 5GHz Off

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	16.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	16.5	13	13	15	15

Bluetooth 5GHz Off – TXBF

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	13.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	13.5	13	13	15	15

Bluetooth 5GHz On

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	15.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	15.5	13	13	15	15

Bluetooth 5GHz On – TXBF

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	13.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	13.5	13	13	15	15

NS = Not Supported



2.4 GHz WiFi SISO Core 0

Channel	Center Frequency (MHz)	b (SISO)	g (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
1	2412	19.5	19	18.75	17.5	17.5	17.5	14.5
2	2417	19.5	19.5	19.5	19.5	19.5	17.5	14.5
3	2422	19.5	19.5	19.5	19.5	19.5	17.5	14.5
4	2427	19.5	19.5	19.5	19.5	19.5	17.5	14.5
5	2432	19.5	19.5	19.5	19.5	19.5	17.5	14.5
6	2437	19.5	19.5	19.5	19.5	19.5	17.5	14.5
7	2442	19.5	19.5	19.5	19.5	19.5	17.5	14.5
8	2447	19.5	19.5	19.5	19.5	19.5	17.5	14.5
9	2452	19.5	19.5	19.5	19.5	19.5	17.5	14.5
10	2457	19.5	19.5	19.5	19.5	19.5	17.5	14.5
11	2462	19.5	17.5	17.5	16	17.25	17	14.5
12	2467	18.5	15.5	15.5	14	14.25	15	14
13	2472	16.75	6	6	4.5	2	0.75	-2.25

2.4 GHz WiFi SISO Core 1

Channel	Center Frequency (MHz)	b (SISO)	g (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
1	2412	19.75	19	18.75	17.5	17.5	17.5	14.5
2	2417	19.75	19.75	19.75	19.75	19.75	17.5	14.5
3	2422	19.75	19.75	19.75	19.75	19.75	17.5	14.5
4	2427	19.75	19.75	19.75	19.75	19.75	17.5	14.5
5	2432	19.75	19.75	19.75	19.75	19.75	17.5	14.5
6	2437	19.75	19.75	19.75	19.75	19.75	17.5	14.5
7	2442	19.75	19.75	19.75	19.75	19.75	17.5	14.5
8	2447	19.75	19.75	19.75	19.75	19.75	17.5	14.5
9	2452	19.75	19.75	19.75	19.75	19.75	17.5	14.5
10	2457	19.75	19.75	19.75	19.75	19.75	17.5	14.5
11	2462	19.75	17.5	17.5	16	17.25	17	14.5
12	2467	18.5	15.5	15.5	14	14.25	15	14
13	2472	16.75	6	6	4.5	2	0.75	-2.25



2.4 GHz WiFi MIMO Core 0 and Core 1

Channel	Center Frequency (MHz)	b (2Tx, DSSS)	11n/11ac HT20 (2Tx, non TXBF)	11ax HE20 (2Tx, non TXBF)	11ax HE20 RU106 (2Tx, non TXBF)	11ax HE20 RU52 (2Tx, non TXBF)	11ax HE20 RU26 (2Tx, non TXBF)
1	2412	NS	17.25	16.5	17.25	17.5	14.5
2	2417	NS	19.5	19.5	18.75	17.5	14.5
3	2422	NS	19.5	19.5	19.5	17.5	14.5
4	2427	NS	19.5	19.5	19.5	17.5	14.5
5	2432	NS	19.5	19.5	19.5	17.5	14.5
6	2437	NS	19.5	19.5	19.5	17.5	14.5
7	2442	NS	19.5	19.5	19.5	17.5	14.5
8	2447	NS	19.5	19.5	19.5	17.5	14.5
9	2452	NS	19.5	19.5	19.5	17.5	14.5
10	2457	NS	19.5	18.5	19.5	17.5	14.5
11	2462	NS	16	14.5	17.25	17	14.5
12	2467	NS	13.5	12	14.25	15	14
13	2472	NS	3.5	2	0.25	0	-4.75



5 GHz WiFi- 20 MHz BW – SISO Core 0

Channel	Center Frequency (MHz)	a (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
36	5180	15.25	15.25	15.25	13	13.5	7
40	5200	15.25	15.25	15.25	15.25	13.5	10.5
44	5220	15.25	15.25	15.25	15.25	13.5	10.5
48	5240	15.25	15.25	15.25	15.25	13.5	10.5
52	5260	15	15	15	15	13	NS
56	5280	15	15	15	15	13	NS
60	5300	15	15	15	15	13	NS
64	5320	15	15	15	13	10	NS
100	5500	14	14	14	14	13.5	NS
104	5520	14	14	14	14	13.5	NS
108	5540	14	14	14	14	13.5	NS
112	5560	14	14	14	14	13.5	NS
116	5580	14	14	14	14	13.5	NS
120	5600	14	14	14	14	13.5	NS
124	5620	14	14	14	14	13.5	NS
128	5640	14	14	14	14	13.5	NS
132	5660	14	14	14	14	13.5	NS
136	5680	14	14	14	14	13.5	NS
140	5700	14	14	14	14	13.5	NS
144	5720	14	14	14	14	13.5	NS
149	5745	14.25	14.25	14.25	14.25	14.25	13
153	5765	14.25	14.25	14.25	14.25	14.25	13
157	5785	14.25	14.25	14.25	14.25	14.25	13
161	5805	14.25	14.25	14.25	14.25	14.25	13
165	5825	14.25	14.25	14.25	14.25	14.25	13



5 GHz WiFi- 20 MHz BW – SISO Core 1

Channel	Center Frequency (MHz)	a (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
36	5180	15.5	15.5	15.5	13	13.5	7
40	5200	15.5	15.5	15.5	15.5	13.5	10.5
44	5220	15.5	15.5	15.5	15.5	13.5	10.5
48	5240	15.5	15.5	15.5	15.5	13.5	10.5
52	5260	15.5	15.5	15.5	15.5	13	NS
56	5280	15.5	15.5	15.5	15.5	13	NS
60	5300	15.5	15.5	15.5	15.5	13	NS
64	5320	15.5	15.5	15.5	13	10	NS
100	5500	14	14	14	14	13.5	NS
104	5520	14	14	14	14	13.5	NS
108	5540	14	14	14	14	13.5	NS
112	5560	14	14	14	14	13.5	NS
116	5580	14	14	14	14	13.5	NS
120	5600	14	14	14	14	13.5	NS
124	5620	14	14	14	14	13.5	NS
128	5640	14	14	14	14	13.5	NS
132	5660	14	14	14	14	13.5	NS
136	5680	14	14	14	14	13.5	NS
140	5700	14	14	14	14	13.5	NS
144	5720	14	14	14	14	13.5	NS
149	5745	14.25	14.25	14.25	14.25	14.25	13
153	5765	14.25	14.25	14.25	14.25	14.25	13
157	5785	14.25	14.25	14.25	14.25	14.25	13
161	5805	14.25	14.25	14.25	14.25	14.25	13
165	5825	14.25	14.25	14.25	14.25	14.25	13

NS = Not Supported



5 GHz WiFi- 20 MHz BW – MIMO Core 0 and Core 1

Channel	Center Frequency (MHz)	11n/11ac HT20 (2Tx, non TXBF)	11ax HE20 (2Tx, non TXBF)	11ax HE20 RU106 (2Tx, non TXBF)	11ax HE20 RU52 (2Tx, non TXBF)	11ax HE20 RU26 (2Tx, non TXBF)	11n/11ac HT20 (2Tx, TxBF)
36	5180	15.25	14	14	11	8	14.5
40	5200	15.25	15.25	14	11	8	15.25
44	5220	15	15	13	10	NS	14.5
48	5240	15	13.75	13	8	NS	13.25
52	5260	14	14	13.75	10.75	NS	14
56	5280	14	14	13.75	10.75	NS	14
60	5300	14	14	13.75	10.75	NS	14
64	5320	14	14	13.75	10.75	NS	14
100	5500	14	14	13.75	10.75	NS	14
104	5520	14	14	13.75	10.75	NS	14
108	5540	14.25	14.25	14.25	14.25	13	14.25
112	5560	14.25	14.25	14.25	14.25	13	14.25
116	5580	15.25	14	14	11	8	14.5
120	5600	15.25	15.25	14	11	8	15.25
124	5620	15	15	13	10	NS	14.5
128	5640	15	13.75	13	8	NS	13.25
132	5660	14	14	13.75	10.75	NS	14
136	5680	14	14	13.75	10.75	NS	14
140	5700	14	14	13.75	10.75	NS	14
144	5720	14	14	13.75	10.75	NS	14
149	5745	14	14	13.75	10.75	NS	14
153	5765	14	14	13.75	10.75	NS	14
157	5785	14.25	14.25	14.25	14.25	13	14.25
161	5805	14.25	14.25	14.25	14.25	13	14.25
165	5825	15.25	14	14	11	8	14.5

NS = Not Supported



5 GHz WiFi- 40 MHz BW – SISO Core 0

Channel	Center Frequency (MHz)	11n/11ac HT40 (SISO)	11ax HE40 (SISO)	11ax HE40 RU106 (SISO)	11ax HE40 RU52 (SISO)	11ax HE40 RU26 (SISO)
38	5190	15.25	14.5	15.25	13.5	10.5
46	5230	15.25	15.25	15.25	13.5	10.5
54	5270	15	15	15	13	NS
62	5310	15	14.5	14.5	13	NS
102	5510	14	14	14	13.25	NS
110	5550	14	14	14	13.5	NS
118	5590	14	14	14	13.5	NS
126	5630	14	14	14	13.5	NS
134	5670	14	14	14	13.5	NS
142	5710	14	14	14	13.5	NS
151	5755	14.25	14.25	14.25	14.25	13
159	5795	14.25	14.25	14.25	14.25	13

5 GHz WiFi- 40 MHz BW – SISO Core 1

Channel	Center Frequency (MHz)	11n/11ac HT40 (SISO)	11ax HE40 (SISO)	11ax HE40 RU106 (SISO)	11ax HE40 RU52 (SISO)	11ax HE40 RU26 (SISO)
38	5190	15.5	14.5	15.5	13.5	10.5
46	5230	15.5	15.5	15.5	13.5	10.5
54	5270	15.5	15.5	15.5	13	NS
62	5310	15	14.5	14.5	13	NS
102	5510	14	14	14	13.25	NS
110	5550	14	14	14	13.5	NS
118	5590	14	14	14	13.5	NS
126	5630	14	14	14	13.5	NS
134	5670	14	14	14	13.5	NS
142	5710	14	14	14	13.5	NS
151	5755	14.25	14.25	14.25	14.25	13
159	5795	14.25	14.25	14.25	14.25	13

NS = Not Supported



5 GHz WiFi – 40 MHz BW – MIMO Core 0 and Core 1

Channel	Center Frequency (MHz)	11n/11ac HT40 (2Tx, non TXBF)	11ax HE40 (2Tx, non TXBF)	11ax HE40 RU106 (2Tx, non TXBF)	11ax HE40 RU52 (2Tx, non TXBF)	11ax HE40 RU26 (2Tx, non TXBF)	11n/11ac HT40 (2Tx, TXBF)
38	5190	15.25	14	14	11	8	14.5
46	5230	15.25	15.25	14	11	8	15.25
54	5270	15	15	13	10	NS	14.5
62	5310	15	13.75	13	8	NS	13.25
102	5510	14	14	13.75	10.75	NS	14
110	5550	14	14	13.75	10.75	NS	14
118	5590	14	14	13.75	10.75	NS	14
126	5630	14	14	13.75	10.75	NS	14
134	5670	14	14	13.75	10.75	NS	14
142	5710	14	14	13.75	10.75	NS	14
151	5755	14.25	14.25	14.25	14.25	13	14.25
159	5795	14.25	14.25	14.25	14.25	13	14.25

NS = Not Supported



5 GHz – 80 MHz BW SISO Core 0 / Core 1

Channel	Center Frequency (MHz)	11ac VHT80 (SISO)	11ax HE80 (SISO)	11ax HE80 RU106 (SISO)	11ax HE80 RU52 (SISO)	11ax HE80 RU26 (SISO)
42	5210	13.5	13.75	13	11	9
58	5290	13.25	13.5	11	7	NS
106	5530	14	14	12	11	NS
122	5610	14	14	14	13.5	NS
138	5690	14	14	14	13.5	NS
155	5775	14.25	14.25	14.25	14.25	13

NS = Not Supported

5 GHz – 80 MHz BW MIMO Core 0 and Core1

Channel	Center Frequency (MHz)	11ac VHT80 (2Tx, non TXBF)	11ax HE80 (2Tx, non TXBF)	11ax HE80 RU106 (2Tx, non TXBF)	11ax HE80 RU52 (2Tx, non TXBF)	11ax HE80 RU26 (2Tx, non TXBF)	11ac VHT80 (2Tx, TXBF)
42	5210	13.5	12.5	11	9	7	12
58	5290	12.75	11.75	8.5	5.5	NS	11.25
106	5530	14	14	9	7	NS	14
122	5610	14	14	13.75	10.75	NS	14
138	5690	14	14	13.75	10.75	NS	14
155	5775	14.25	14.25	14.25	14.25	13	14.25

NS = Not Supported



1.7 ISED POWER TABLES (TUNE UP VALUES)

Note: All Values in dBm

Bluetooth 5GHz Off

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	16.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	16.5	13	13	15	15

Bluetooth 5GHz Off – TXBF

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	13.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	13.5	13	13	15	15

Bluetooth 5GHz On

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	15.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	15.5	13	13	15	15

Bluetooth 5GHz On – TXBF

BT Core	PA	Channel	BDR	EDR	LE Data	LE ADV	HDR4	HDR8
0	iPA	All	13	9.5	13	13	6	6
0	ePA		13	13.5	13	13	15	15
1	iPA		13	9.5	13	13	6	6
1	ePA		13	13.5	13	13	15	15

NS = Not Supported



2.4 GHz WiFi SISO Core 0

Channel	Center Frequency (MHz)	b (SISO)	g (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
1	2412	18.75	18.75	18.75	17.5	17.5	17.5	14.5
2	2417	18.75	18.75	18.75	18.75	18.75	17.5	14.5
3	2422	18.75	18.75	18.75	18.75	18.75	17.5	14.5
4	2427	18.75	18.75	18.75	18.75	18.75	17.5	14.5
5	2432	18.75	18.75	18.75	18.75	18.75	17.5	14.5
6	2437	18.75	18.75	18.75	18.75	18.75	17.5	14.5
7	2442	18.75	18.75	18.75	18.75	18.75	17.5	14.5
8	2447	18.75	18.75	18.75	18.75	18.75	17.5	14.5
9	2452	18.75	18.75	18.75	18.75	18.75	17.5	14.5
10	2457	18.75	18.75	18.75	18.75	18.75	17.5	14.5
11	2462	18.75	17.5	17.5	16	17.25	17	14.5
12	2467	18.5	15.5	15.5	14	14.25	15	14
13	2472	16.75	6	6	4.5	2	0.75	-2.25

2.4 GHz WiFi SISO Core 1

Channel	Center Frequency (MHz)	b (SISO)	g (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
1	2412	19	19	18.75	17.5	17.5	17.5	14.5
2	2417	19	19	19	19	19	17.5	14.5
3	2422	19	19	19	19	19	17.5	14.5
4	2427	19	19	19	19	19	17.5	14.5
5	2432	19	19	19	19	19	17.5	14.5
6	2437	19	19	19	19	19	17.5	14.5
7	2442	19	19	19	19	19	17.5	14.5
8	2447	19	19	19	19	19	17.5	14.5
9	2452	19	19	19	19	19	17.5	14.5
10	2457	19	19	19	19	19	17.5	14.5
11	2462	19	17.5	17.5	16	17.25	17	14.5
12	2467	18.5	15.5	15.5	14	14.25	15	14
13	2472	16.75	6	6	4.5	2	0.75	-2.25



2.4 GHz WiFi MIMO Core 0 and Core 1

Channel	Center Frequency (MHz)	b (2Tx, DSSS)	11n/11ac HT20 (2Tx, non TXBF)	11ax HE20 (2Tx, non TXBF)	11ax HE20 RU106 (2Tx, non TXBF)	11ax HE20 RU52 (2Tx, non TXBF)	11ax HE20 RU26 (2Tx, non TXBF)
1	2412	NS	17.25	16.5	17.25	17.5	14.5
2	2417	NS	18.75	18.75	18.75	17.5	14.5
3	2422	NS	18.75	18.75	18.75	17.5	14.5
4	2427	NS	18.75	18.75	18.75	17.5	14.5
5	2432	NS	18.75	18.75	18.75	17.5	14.5
6	2437	NS	18.75	18.75	18.75	17.5	14.5
7	2442	NS	18.75	18.75	18.75	17.5	14.5
8	2447	NS	18.75	18.75	18.75	17.5	14.5
9	2452	NS	18.75	18.75	18.75	17.5	14.5
10	2457	NS	18.75	18.5	18.75	17.5	14.5
11	2462	NS	16	14.5	17.25	17	14.5
12	2467	NS	13.5	12	14.25	15	14
13	2472	NS	3.5	2	0.25	0	-4.75



5 GHz WiFi- 20 MHz BW – SISO Core 0

Channel	Center Frequency (MHz)	a (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
36	5180	11.5	11.5	11.5	9.5	6.5	3.5
40	5200	11.5	11.5	11.5	9.5	6.5	3.5
44	5220	11.5	11.5	11.5	9.5	6.5	3.5
48	5240	11.5	11.5	11.5	9.5	6.5	3.5
52	5260	14.25	14.25	14.25	14.25	13	NS
56	5280	14.25	14.25	14.25	14.25	13	NS
60	5300	14.25	14.25	14.25	14.25	13	NS
64	5320	14.25	14.25	14.25	13	10	NS
100	5500	13.25	13.25	13.25	13.25	13.25	NS
104	5520	13.25	13.25	13.25	13.25	13.25	NS
108	5540	13.25	13.25	13.25	13.25	13.25	NS
112	5560	13.25	13.25	13.25	13.25	13.25	NS
116	5580	13.25	13.25	13.25	13.25	13.25	NS
120	5600	13.25	13.25	13.25	13.25	13.25	NS
124	5620	13.25	13.25	13.25	13.25	13.25	NS
128	5640	13.25	13.25	13.25	13.25	13.25	NS
132	5660	13.25	13.25	13.25	13.25	13.25	NS
136	5680	13.25	13.25	13.25	13.25	13.25	NS
140	5700	13.25	13.25	13.25	13.25	13.25	NS
144	5720	13.25	13.25	13.25	13.25	13.25	NS
149	5745	13.5	13.5	13.5	13.5	13.5	13
153	5765	13.5	13.5	13.5	13.5	13.5	13
157	5785	13.5	13.5	13.5	13.5	13.5	13
161	5805	13.5	13.5	13.5	13.5	13.5	13
165	5825	13.5	13.5	13.5	13.5	13.5	13

NS = Not Supported



5 GHz WiFi- 20 MHz BW – SISO Core 1

Channel	Center Frequency (MHz)	a (SISO)	11n/11ac HT20 (SISO)	11ax HE20 (SISO)	11ax HE20 RU106 (SISO)	11ax HE20 RU52 (SISO)	11ax HE20 RU26 (SISO)
36	5180	11.5	11.5	11.5	9.5	6.5	3.5
40	5200	11.5	11.5	11.5	9.5	6.5	3.5
44	5220	11.5	11.5	11.5	9.5	6.5	3.5
48	5240	11.5	11.5	11.5	9.5	6.5	3.5
52	5260	14.75	14.75	14.75	14.75	13	NS
56	5280	14.75	14.75	14.75	14.75	13	NS
60	5300	14.75	14.75	14.75	14.75	13	NS
64	5320	14.75	14.75	14.75	13	10	NS
100	5500	13.25	13.25	13.25	13.25	13.25	NS
104	5520	13.25	13.25	13.25	13.25	13.25	NS
108	5540	13.25	13.25	13.25	13.25	13.25	NS
112	5560	13.25	13.25	13.25	13.25	13.25	NS
116	5580	13.25	13.25	13.25	13.25	13.25	NS
120	5600	13.25	13.25	13.25	13.25	13.25	NS
124	5620	13.25	13.25	13.25	13.25	13.25	NS
128	5640	13.25	13.25	13.25	13.25	13.25	NS
132	5660	13.25	13.25	13.25	13.25	13.25	NS
136	5680	13.25	13.25	13.25	13.25	13.25	NS
140	5700	13.25	13.25	13.25	13.25	13.25	NS
144	5720	13.25	13.25	13.25	13.25	13.25	NS
149	5745	13.5	13.5	13.5	13.5	13.5	13
153	5765	13.5	13.5	13.5	13.5	13.5	13
157	5785	13.5	13.5	13.5	13.5	13.5	13
161	5805	13.5	13.5	13.5	13.5	13.5	13
165	5825	13.5	13.5	13.5	13.5	13.5	13

NS = Not Supported



5 GHz WiFi- 20 MHz BW – MIMO Core 0 and Core 1

Channel	Center Frequency (MHz)	11n/11ac HT20 (2Tx, non TXBF)	11ax HE20 (2Tx, non TXBF)	11ax HE20 RU106 (2Tx, non TXBF)	11ax HE20 RU52 (2Tx, non TXBF)	11ax HE20 RU26 (2Tx, non TXBF)	11n/11ac HT20 (2Tx, TxBF)
36	5180	9	9	7	4	1	6
40	5200	9	9	7	4	1	6
44	5220	9	9	7	4	1	6
48	5240	9	9	7	4	1	6
52	5260	14.25	14.25	13	10	NS	12
56	5280	14.25	14.25	13	10	NS	12
60	5300	14.25	14.25	13	10	NS	12
64	5320	14.25	14.25	12.5	10	NS	12
100	5500	13.25	13.25	13	10.75	NS	12.5
104	5520	13.25	13.25	13.25	10.75	NS	12.5
108	5540	13.25	13.25	13.25	10.75	NS	12.5
112	5560	13.25	13.25	13.25	10.75	NS	12.5
116	5580	13.25	13.25	13.25	10.75	NS	12.5
120	5600	13.25	13.25	13.25	10.75	NS	12.5
124	5620	13.25	13.25	13.25	10.75	NS	12.5
128	5640	13.25	13.25	13.25	10.75	NS	12.5
132	5660	13.25	13.25	13.25	10.75	NS	12.5
136	5680	13.25	13.25	13.25	10.75	NS	12.5
140	5700	13.25	13.25	13.25	10.75	NS	12.5
144	5720	13.25	13.25	13.25	10.75	NS	12.5
149	5745	13.5	13.5	13.5	13.5	13	13.5
153	5765	13.5	13.5	13.5	13.5	13	13.5
157	5785	13.5	13.5	13.5	13.5	13	13.5
161	5805	13.5	13.5	13.5	13.5	13	13.5
165	5825	13.5	13.5	13.5	13.5	13	13.5

NS = Not Supported



5 GHz WiFi- 40 MHz BW – SISO Core 0

Channel	Center Frequency (MHz)	11n/11ac HT40 (SISO)	11ax HE40 (SISO)	11ax HE40 RU106 (SISO)	11ax HE40 RU52 (SISO)	11ax HE40 RU26 (SISO)
38	5190	14	14	9.5	6.5	3.5
46	5230	14	14	9.5	6.5	3.5
54	5270	14.25	14.25	14.25	13	NS
62	5310	14.25	14.25	14.25	13	NS
102	5510	13.25	13.25	13.25	13.25	NS
110	5550	13.25	13.25	13.25	13.25	NS
118	5590	13.25	13.25	13.25	13.25	NS
126	5630	13.25	13.25	13.25	13.25	NS
134	5670	13.25	13.25	13.25	13.25	NS
142	5710	13.25	13.25	13.25	13.25	NS
151	5755	13.5	13.5	13.5	13.5	13
159	5795	13.5	13.5	13.5	13.5	13

5 GHz WiFi- 40 MHz BW – SISO Core 1

Channel	Center Frequency (MHz)	11n/11ac HT40 (SISO)	11ax HE40 (SISO)	11ax HE40 RU106 (SISO)	11ax HE40 RU52 (SISO)	11ax HE40 RU26 (SISO)
38	5190	14	14	9.5	6.5	3.5
46	5230	14	14	9.5	6.5	3.5
54	5270	14.75	14.75	14.75	13	NS
62	5310	14.75	14.5	14.5	13	NS
102	5510	13.25	13.25	13.25	13.25	NS
110	5550	13.25	13.25	13.25	13.25	NS
118	5590	13.25	13.25	13.25	13.25	NS
126	5630	13.25	13.25	13.25	13.25	NS
134	5670	13.25	13.25	13.25	13.25	NS
142	5710	13.25	13.25	13.25	13.25	NS
151	5755	13.5	13.5	13.5	13.5	13
159	5795	13.5	13.5	13.5	13.5	13

NS = Not Supported



5 GHz WiFi – 40 MHz BW – MIMO Core 0 and Core 1

Channel	Center Frequency (MHz)	11n/11ac HT40 (2Tx, non TXBF)	11ax HE40 (2Tx, non TXBF)	11ax HE40 RU106 (2Tx, non TXBF)	11ax HE40 RU52 (2Tx, non TXBF)	11ax HE40 RU26 (2Tx, non TXBF)	11n/11ac HT40 (2Tx, TXBF)
38	5190	11.5	11.5	7	4	1	8.5
46	5230	11.5	11.5	7	4	1	8.5
54	5270	14.25	14.25	13	10	NS	14.25
62	5310	14.25	13.75	13	8	NS	13.25
102	5510	13.25	13.25	13.25	10.75	NS	13.25
110	5550	13.25	13.25	13.25	10.75	NS	13.25
118	5590	13.25	13.25	13.25	10.75	NS	13.25
126	5630	13.25	13.25	13.25	10.75	NS	13.25
134	5670	13.25	13.25	13.25	10.75	NS	13.25
142	5710	13.25	13.25	13.25	10.75	NS	13.25
151	5755	13.5	13.5	13.5	13.5	13	13.5
159	5795	13.5	13.5	13.5	13.5	13	13.5

NS = Not Supported



5 GHz – 80 MHz BW SISO Core 0 / Core 1

Channel	Center Frequency (MHz)	11ac VHT80 (SISO)	11ax HE80 (SISO)	11ax HE80 RU106 (SISO)	11ax HE80 RU52 (SISO)	11ax HE80 RU26 (SISO)
42	5210	13.5	13.75	9.5	6.5	3.5
58	5290	13.25	13.5	11	7	NS
106	5530	13.25	13.25	12	11	NS
122	5610	13.25	13.25	13.25	13.25	NS
138	5690	13.25	13.25	13.25	13.25	NS
155	5775	13.5	13.5	13.5	13.5	13

NS = Not Supported

5 GHz – 80 MHz BW MIMO Core 0 and Core1

Channel	Center Frequency (MHz)	11ac VHT80 (2Tx, non TXBF)	11ax HE80 (2Tx, non TXBF)	11ax HE80 RU106 (2Tx, non TXBF)	11ax HE80 RU52 (2Tx, non TXBF)	11ax HE80 RU26 (2Tx, non TXBF)	11ac VHT80 (2Tx, TXBF)
42	5210	12.5	12.5	7	4	1	9.5
58	5290	12.75	11.75	8.5	5.5	NS	11.25
106	5530	13.25	13.25	9	7	NS	13.25
122	5610	13.25	13.25	13.25	10.75	NS	13.25
138	5690	13.25	13.25	13.25	10.75	NS	13.25
155	5775	13.5	13.5	13.5	13.5	13	13.5

NS = Not Supported



1.8 POWER MEASUREMENTS

1.8.1 Method

Conducted power measurements were made using Boonton power meters.

1.8.2 Conducted Power Measurements

Bluetooth (5 GHz Wifi Off) - EDR

(BT Core 0 - ePA)

Technology	Channel	Modulation	Packet Type	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
EDR	0	8-DPSK	3-DH5	2402	16.18	16.50	16.50
EDR	39	8-DPSK	3-DH5	2441	16.12	16.50	16.50
EDR	78	8-DPSK	3-DH5	2480	16.47	16.50	16.50

(BT Core 1 - ePA)

Technology	Channel	Modulation	Packet Type	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
EDR	0	8-DPSK	3-DH5	2402	16.48	16.50	16.50
EDR	39	8-DPSK	3-DH5	2441	16.50	16.50	16.50
EDR	78	8-DPSK	3-DH5	2480	16.49	16.50	16.50



Bluetooth (5 GHz Wifi On) - EDR

(BT Core 0 -ePA)

Technology	Channel	Modulation	Packet Type	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
BDR	0	GFSK	DH5	2402	15.43	15.50	15.50
BDR	39	GFSK	DH5	2441	15.48	15.50	15.50
BDR	78	GFSK	DH5	2480	15.43	15.50	15.50

(BT Core 1 -ePA)

Technology	Channel	Modulation	Packet Type	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
BDR	0	GFSK	DH5	2402	15.48	15.50	15.50
BDR	39	GFSK	DH5	2441	15.12	15.50	15.50
BDR	78	GFSK	DH5	2480	15.17	15.50	15.50



WLAN 2450 MHz - SISO

(2.4 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11b	1	BPSK	100	1	2412	18.47	19.50	18.75
802.11b	7	BPSK	100	1	2442	18.74	19.50	18.75
802.11b	11	BPSK	100	1	2462	18.51	19.50	18.75

(2.4 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11b	1	BPSK	100	1	2412	18.71	19.75	19.00
802.11b	7	BPSK	100	1	2442	18.81	19.75	19.00
802.11b	11	BPSK	100	1	2462	18.66	19.75	19.00



WLAN 2450 MHz - 2x2 MIMO

(2.4 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11n	2	BPSK	100	6.5	2417	18.70	19.50	18.75
802.11n	7	BPSK	100	6.5	2442	18.43	19.50	18.75
802.11n	10	BPSK	100	6.5	2457	18.69	19.50	18.75

(2.4 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11n	2	BPSK	100	6.5	2417	18.58	19.50	18.75
802.11n	7	BPSK	100	6.5	2442	18.52	19.50	18.75
802.11n	10	BPSK	100	6.5	2457	18.71	19.50	18.75



WLAN U-NII 1 - SISO

(5 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80	38	BPSK	100	29.3	5190	13.94	15.25	14.00
802.11ac VHT80	46	BPSK	100	29.3	5230	13.65	15.25	14.00

(5 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80	46	BPSK	100	29.3	5230	13.65	15.25	14..00



WLAN U-NII 1 - 2x2 MIMO SDM

(5 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT40	46	BPSK	100	29.3	5230	15.2*	15.25	11.50

* Tested at FCC Power setting.

(5 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT40	46	BPSK	100	29.3	5230	14.90	15.25	11.50



WLAN U-NII 2A - SISO

(5 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT40	54	BPSK	100	29.3	5270	14.68	15.5	14.75
802.11ac VHT40	62	BPSK	100	29.3	5310	14.47	15.00	14.75

WLAN U-NII 2A - 2x2 MIMO SDM

(5 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT40 SDM	54	BPSK	100	29.3	5270	13.99	15.25	14.25
802.11ac VHT40 SDM	62	BPSK	100	29.3	5310	14.02	15	14.25

(5 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT40 SDM	54	BPSK	100	29.3	5270	12.36	15.5	14.25
802.11ac VHT40 SDM	62	BPSK	100	29.3	5310	13.62	15	14.25



WLAN U-NII 2C - SISO

(5 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80 -CDD	106	BPSK	100	29.3	5530	12.96	14.00	13.25
802.11ac VHT80 -CDD	122	BPSK	100	29.3	5610	12.91	14.00	13.25
802.11ac VHT80 -CDD	138	BPSK	100	29.3	5690	13.22	14.00	13.25

(5 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80 -CDD	106	BPSK	100	29.3	5530	13.05	14.00	13.25
802.11ac VHT80 -CDD	122	BPSK	100	29.3	5610	13.1	14.00	12.75
802.11ac VHT80 -CDD	138	BPSK	100	29.3	5690	13.16	14.00	13.25



WLAN U-NII 2C - 2x2 MIMO

(5 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80 -SDM	106	BPSK	100	29.3	5530	13.02	14.00	13.25
802.11ac VHT80 -SDM	122	BPSK	100	29.3	5610	12.66	14.00	13.25
802.11ac VHT80 -SDM	138	BPSK	100	29.3	5690	12.95	14.00	13.25

(5 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80 -SDM	106	BPSK	100	29.3	5530	12.83	14.00	13.25
802.11ac VHT80 -SDM	122	BPSK	100	29.3	5610	13.13	14.00	13.25
802.11ac VHT80 -SDM	138	BPSK	100	29.3	5690	13.19	14.00	13.25



WLAN U-NII 3 - SISO

(5 GHz Core 0)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80 -SDM	155	BPSK	100	29.3	5775	13.47	14.25	13.50

(5 GHz Core 1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80 -SDM	155	BPSK	100	29.3	5775	13.18	14.25	13.50



WLAN U-NII 3 – MIMO

5 GHz (Core 0-1)

Technology	Channel	Modulation	Duty Cycle (%)	Rate (Mbps)	Frequency (MHz)	Measured Power (dBm)	FCC Tune Up (dBm)	ISED Tune Up (dBm)
802.11ac VHT80 -SDM (Core0)	155	BPSK	100	29.3	5775	13.27	14.25	13.50
802.11ac VHT80 -SDM (Core1)	155	BPSK	100	29.3	5775	13.21	14.25	13.50



SECTION 2

TEST DETAILS

Specific Absorption Rate Testing of the
A2681

2.1 DASY5 MEASUREMENT SYSTEM

2.1.1 System Description

The DASY5 system for performing compliance tests consists of the following items:

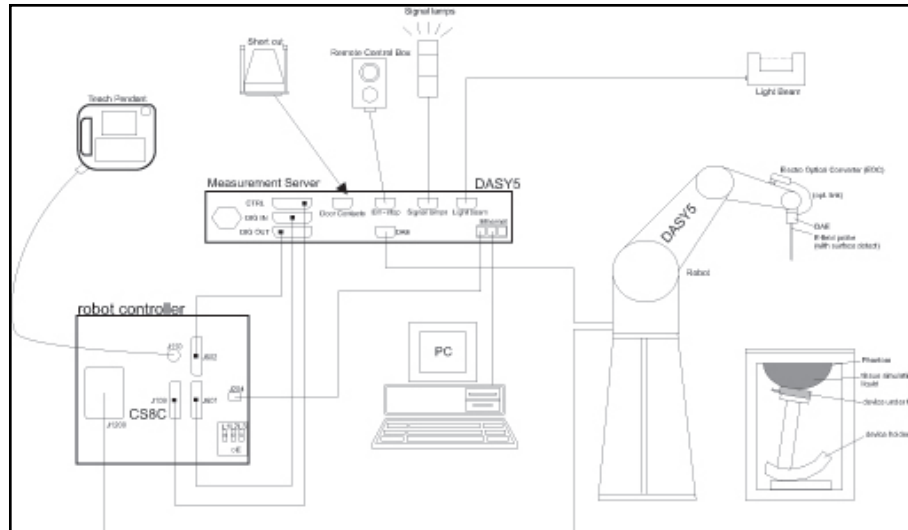


Figure 1 System Description Diagram

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 Win10 professional operating system and the DASY6 software.

Remote control and 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 permittivities. 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 200M Ω ; the inputs are symmetrical and floating. Common mode rejection is above 80 dB.

2.1.4 SAR Evaluation Description

The DASY6 software includes all numerical procedures necessary to evaluate the spatial peak SAR values.

Based on the IEEE 1528 standard, a new algorithm has been implemented. The spatial-peak SAR can be computed over any required mass.

The base for the evaluation is a "cube" measurement in a volume of 30mm³ (7x7x7 points). The measured volume must include the 1 g and 10 g cubes with the highest averaged SAR values. For that purpose, the centre of the measured volume is aligned to the interpolated peak SAR value of a previously performed area scan. If the 10g cube or both cubes are not entirely inside the measured volumes, the system issues a warning regarding the evaluated spatial peak values within the Post processing engine (SEMCAD X). This means that if the measured volume is shifted, higher values might be possible. To get the correct values you can use a finer measurement grid for the area scan. In complicated field distributions, a large grid spacing for the area scan might miss some details and give an incorrectly interpolated peak location.

The entire evaluation of the spatial peak values is performed within the Post-processing engine (SEMCAD X). The system always gives the maximum values for the 1 g and 10 g cubes. The algorithm to find the cube with highest averaged SAR is divided into the following stages:

1. extraction of the measured data (grid and values) from the Zoom Scan
2. calculation of the SAR value at every measurement point based on all stored data (A/D values and measurement parameters)
3. generation of a high-resolution mesh within the measured volume
4. interpolation of all measured values from the measurement grid to the high-resolution grid
5. extrapolation of the entire 3-D field distribution to the phantom surface over the distance from sensor to surface
6. calculation of the averaged SAR within masses of 1 g and 10 g



2.1.5 Interpolation, Extrapolation and Detection of Maxima

The probe is calibrated at the centre of the dipole sensors which is located 1 to 2.7mm away from the probe tip. During measurements, the probe stops shortly above the phantom surface, depending on the probe and the surface detecting system. Both distances are included as parameters in the probe configuration file. The software always knows exactly how far away the measured point is from the surface. As the probe cannot directly measure at the surface, the values between the deepest measured point and the surface must be extrapolated.

In DASYS5, the choice of the coordinate system defining the location of the measurement points has no influence on the uncertainty of the interpolation, Maxima Search and extrapolation routines. The interpolation, extrapolation and maximum search routines are all based on the modified Quadratic Shepard's method. Thereby, the interpolation scheme combines a least-square fitted function method and a weighted average method which are the two basic types of computational interpolation and approximation. The DASYS5 routines construct a once-continuously differentiable function that interpolates the measurement values as follows:

For each measurement point a trivariate (3-D) / bivariate (2-D) quadratic is computed. It interpolates the measurement values at the data point and forms a least-square fit to neighbouring measurement values. The spatial location of the quadratic with respect to the measurement values is attenuated by an inverse distance weighting. This is performed since the calculated quadratic will fit measurement values at nearby points more accurately than at points located further away.

After the quadratics are calculated for all measurement points, the interpolating function is calculated as a weighted average of the quadratics.

There are two control parameters that govern the behaviour of the interpolation method. One specifies the number of measurement points to be used in computing the least-square fits for the local quadratics. These measurement points are the ones nearest the input point for which the quadratic is being computed. The second parameter specifies the number of measurement points that will be used in calculating the weights for the quadratics to produce the final function. The input data points used there are the ones nearest the point at which the interpolation is desired. Appropriate defaults are chosen for each of the control parameters.

The trivariate quadratics that have been previously computed for the 3-D interpolation and whose input data are at the closest distance from the phantom surface, are used in order to extrapolate the fields to the surface of the phantom.

In order to determine all the field maxima in 2-D (Area Scan) and 3-D (Zoom Scan), the measurement grid is refined by a default factor of 10 and the interpolation function is used to evaluate all field values between corresponding measurement points. Subsequently, a linear search is applied to find all the candidate maxima. In a last step, nonphysical maxima are removed and only those maxima which are within 2 dB of the global maximum value are retained.

In the Area Scan, the gradient of the interpolation function is evaluated to find all the extrema of the SAR distribution. The uncertainty on the locations of the extrema is less than 1/20 of the grid size. Only local maxima within 2 dB of the global maximum are searched and passed for the Zoom Scan measurement.

In the Zoom Scan, the interpolation function is used to extrapolate the Peak SAR from the lowest measurement points to the inner phantom surface (the extrapolation distance). The uncertainty increases with the extrapolation distance. To keep the uncertainty within 1% for the 1 g and 10 g cubes, the extrapolation distance should not be larger than 5mm.



2.1.6 Averaging and Determination of Spatial Peak SAR

The interpolated data is used to average the SAR over the 1g and 10g cubes by spatially discretising the entire measured volume. The resolution of this spatial grid used to calculate the averaged SAR is 1mm or about 42875 interpolated points. The resulting volumes are defined as cubical volumes containing the appropriate tissue parameters that are centered at the location. The location is defined as the centre of the incremental volume (voxel).

The spatial-peak SAR must be evaluated in cubical volumes containing a mass that is within 5% of the required mass. The cubical volume centred at each location, as defined above, should be expanded in all directions until the desired value for the mass is reached, with no surface boundaries of the averaging volume extending beyond the outermost surface of the considered region. In addition, the cubical volume should not consist of more than 10% of air. If these conditions are not satisfied, then the centre of the averaging volume is moved to the next location. Otherwise, the exact size of the final sampling cube is found using an inverse polynomial approximation algorithm, leading to results with improved accuracy. If one boundary of the averaging volume reaches the boundary of the measured volume during its expansion, it will not be evaluated at all. Reference is kept of all locations used and those not used for averaging the SAR. All average SAR values are finally assigned to the centred location in each valid averaging volume.

All locations included in an averaging volume are marked to indicate that they have been used at least once. If a location has been marked as used but has never been assigned to the centre of a cube, the highest averaged SAR value of all other cubical volumes which have used this location for averaging is assigned to this location. Only those locations that are not part of any valid averaging volume should be marked as unused. For the case of an unused location, a new averaging volume must be constructed which will have the unused location centred at one surface of the cube. The remaining five surfaces are expanded evenly in all directions until the required mass is enclosed, regardless of the amount of included air. Of the six possible cubes with one surface centred on the unused location, the smallest cube is used, which still contains the required mass.

If the final cube containing the highest averaged SAR touches the surface of the measured volume, an appropriate warning is issued within the Post-processing engine.



SECTION 3

TEST EQUIPMENT USED



3.1 TEST EQUIPMENT USED

The following test equipment was used at TÜV SÜD:

Instrument	Manufacturer	Type No.	TE No.	Calibration Period (months)	Calibration Expiry Date
Thermometer	Digitron	T208	2340	12	24-Nov-2022
Hygromer	Rotronic	Hygropalm	2404	12	15-Jun-2022
Balun Transformer	Minns Baluns	KDL 04 E	3063	-	TU
Meter & T/C	R.S Components	Meter 615-8206 & Type K T/C	3612	12	12-Aug-2022
Laptop Device Holder	SPEAG	MDA4LAP	4693	-	TU
SAR 2450 MHz Dipole	SPEAG	D2450V2	3875	12	09-Dec-2022
SAR 5GHz Dipole	SPEAG	D5GHzV2	4309	12	13-Dec-2022
Dosimetric SAR Probe	SPEAG	EX3DV4	5330	12	18-Jun-2022
Dosimetric SAR Probe	SPEAG	EX3DV4	4700	12	13-Dec-2022
Data Acquisition Electronics	SPEAG	DAE 4 - SD 000 D04 BM	4689	12	06-Dec-2022
Dielectric Assessment Kit	SPEAG	DAK 200MHz to 20GHz	4690	-	TU
Dielectric Probe Stand	SPEAG	Stand	4691	-	TU
Measurement Server	SPEAG	DASY 5 Measurement Server	4692	-	TU
Mounting Platform for TX90XL Robot and Phantoms	SPEAG	MP6C-TX90XL Mounting Platform Extended	4702	-	TU
Robot	SPEAG	TX90 XLspeag Robot	4704	-	TU
Network Analyser	Keysight Technologies	E5063A	5018	12	30-Jul-2022
Data Acquisition Electronics	SPEAG	DAE 4 - SD 000 D04 BN	5327	12	09-Jun-2022
Measurement server	SPEAG	DASY 6 Measurement Server	5337	-	TU
Mounting Platform TX90XL Robot & Phantoms	SPEAG	MP6C-TX90XL Mounting Platform Extended	5338	-	TU
Robot	SPEAG	TX90 XL Stäubli Robot	5340	-	TU
Power Sensor	Boonton	RTP5008	5830	12	10-Jun-2022
Power Sensor	Boonton	RTP5008	5832	12	10-Jun-2022
Power Source for SAR system validation	SPEAG	POWERSOURCE1-SE UMS 160 BA	5371	12	08-Dec-2022
Tissue Simulant Liquid	SPEAG	HBBL 600 -6000	Batch 1	Weekly	27-Apr-2022
Tissue Simulant Liquid	SPEAG	HBBL 600 -6000	Batch 2	Weekly	17-May-2022

TU - Traceability Unscheduled



3.2 TEST SOFTWARE

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

Instrument	Version Number
DASY system	DASY6 V6.14.0.959



3.3 DIELECTRIC PROPERTIES OF SIMULANT LIQUIDS

The fluid properties of the simulant fluids used during routine SAR evaluation meet the dielectric properties required KDB 865665.

The dielectric properties of the tissue simulant liquids used for the SAR testing at TÜV SÜD Product Service are as follows:-

Fluid Type and Frequency	Relative Permittivity Target	Relative Permittivity Measured	Conductivity Target (S/m)	Conductivity Measured (S/m)	Date	Fluid Temperature °C
HBBL @ 2450 MHz	39.20	39.08	1.80	1.72	04/04/2022	21.5
HBBL @ 2450 MHz	39.20	39.53	1.80	1.81	07/04/2022	21.4
HBBL @ 2450 MHz	39.20	41.31	1.80	1.81	13/04/2022	20.7
HBBL @ 5200 MHz	35.98	35.43	4.65	4.60	07/04/2022	21.6
HBBL @ 5300 MHz	35.87	35.23	4.75	4.77	07/04/2022	21.6
HBBL @ 5500 MHz	35.64	34.84	4.96	4.95	07/04/2022	21.6
HBBL @ 5200 MHz	35.98	34.59	4.65	4.34	04/04/2022	21.5
HBBL @ 5300 MHz	35.87	34.41	4.75	4.45	04/04/2022	21.5
HBBL @ 5500 MHz	35.64	34.07	4.96	4.67	04/04/2022	21.5
HBBL @ 5800 MHz	35.30	34.33	5.27	5.08	20/04/2022	22.0
HBBL @ 5200 MHz	35.98	35.68	4.65	4.48	10/05/2022	20.5



3.4 TEST CONDITIONS

3.4.1 Test Laboratory Conditions

Ambient temperature: Within +15°C to +35°C.

The actual temperature during the testing ranged from 22.4°C to 23.4°C.

The actual humidity during the testing ranged from 19.6% to 37.9% RH.

3.4.2 Test Fluid Temperature Range

Frequency	Body / Head Fluid	Min Temperature °C	Max Temperature °C
2450 MHz	Body	21.5	21.8
5500 MHz	Body	20.74	21.89

3.4.3 SAR Drift

The SAR Drift was within acceptable limits during scans. The maximum SAR Drift was recorded as -0.20 dB. The measurement uncertainty budget for this assessment includes the maximum SAR Drift figures.



3.5 MEASUREMENT UNCERTAINTY

Body, Full SAR Measurements, 300 MHz to 3 GHz -

Source of Uncertainty	Uncertainty ± %	Probability distribution	Div	c _i (1g)	Standard Uncertainty ± % (1g)	V _i (V _{eff})
Measurement System						
Probe calibration	6.0	N	1.00	1.00	6.0	Infinity
Axial Isotropy	4.7	R	1.73	0.70	1.9	Infinity
Hemispherical Isotropy	9.6	R	1.73	0.70	3.9	Infinity
Boundary effect	1.0	R	1.73	1.00	0.6	Infinity
Linearity	4.7	R	1.73	1.00	2.7	Infinity
System Detection limits	1.0	R	1.73	1.00	0.6	Infinity
Modulation response	2.4	R	1.73	1.00	1.4	Infinity
Readout electronics	0.3	N	1.00	1.00	0.3	Infinity
Response time	0.8	R	1.73	1.00	0.5	Infinity
Integration time	2.6	R	1.73	1.00	1.5	Infinity
RF ambient noise	3.0	R	1.73	1.00	1.7	Infinity
RF ambient reflections	3.0	R	1.73	1.00	1.7	Infinity
Probe positioner	0.4	R	1.73	1.00	0.2	Infinity
Probe positioning	2.9	R	1.73	1.00	1.7	Infinity
Max SAR Evaluation	2.0	R	1.73	1.00	1.2	Infinity
Test sample related						
Device Positioning	2.9	N	1.00	1.00	2.9	145
Device Holder	3.6	N	1.00	1.00	3.6	5
Input Power and SAR Drift	5.0	R	1.73	1.00	2.9	Infinity
Phantom and Setup						
Phantom uncertainty	6.1	R	1.73	1.00	3.5	Infinity
SAR Correction	1.9	R	1.73	1.00	1.1	Infinity
Liquid conductivity Meas.	2.5	R	1.73	0.78	1.1	Infinity
Liquid Permittivity Meas.	2.5	R	1.73	0.23	0.3	Infinity
Temp. Unc. Conductivity	3.4	R	1.73	0.78	1.5	Infinity
Temp. Unc. Permittivity	0.4	R	1.73	0.23	0.1	Infinity
Combined Standard Uncertainty		RSS			11.2	361
Expanded Standard Uncertainty		K=2			22.3	



Body, Full SAR Measurements, 3 GHz to 6 GHz

Source of Uncertainty	Uncertainty \pm %	Probability distribution	Div	c_i (1g)	Standard Uncertainty \pm % (1g)	V_i (V_{eff})
Measurement System						
Probe calibration	6.6	N	1.00	1.00	6.6	Infinity
Axial Isotropy	4.7	R	1.73	0.70	1.9	Infinity
Hemispherical Isotropy	9.6	R	1.73	0.70	3.9	Infinity
Boundary effect	2.0	R	1.73	1.00	1.2	Infinity
Linearity	4.7	R	1.73	1.00	2.7	Infinity
System Detection limits	1.0	R	1.73	1.00	0.6	Infinity
Modulation response	2.4	R	1.73	1.00	1.4	Infinity
Readout electronics	0.3	N	1.00	1.00	0.3	Infinity
Response time	0.8	R	1.73	1.00	0.5	Infinity
Integration time	2.6	R	1.73	1.00	1.5	Infinity
RF ambient noise	3.0	R	1.73	1.00	1.7	Infinity
RF ambient reflections	3.0	R	1.73	1.00	1.7	Infinity
Probe positioner	0.8	R	1.73	1.00	0.5	Infinity
Probe positioning	6.7	R	1.73	1.00	3.9	Infinity
Max SAR Evaluation	4.0	R	1.73	1.00	2.3	Infinity
Test sample related						
Device Positioning	2.9	N	1.00	1.00	2.9	145
Device Holder	3.6	N	1.00	1.00	3.6	5
Input Power and SAR Drift	5.0	R	1.73	1.00	2.9	Infinity
Phantom and Setup						
Phantom uncertainty	6.6	R	1.73	1.00	3.8	Infinity
SAR Correction	1.9	R	1.73	1.00	1.1	Infinity
Liquid conductivity Meas.	2.5	R	1.73	0.78	1.1	Infinity
Liquid Permittivity Meas.	2.5	R	1.73	0.23	0.3	Infinity
Temp. Unc. Conductivity	3.4	R	1.73	0.78	1.5	Infinity
Temp. Unc. Permittivity	0.4	R	1.73	0.23	0.1	Infinity
Combined Standard Uncertainty		RSS			12.3	748
Expanded Standard Uncertainty		K=2			24.6	

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 report relates only to the actual item/items tested.

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

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

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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
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 UK**

Certificate No: **EX3-3759_Dec21**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3759**

Calibration procedure(s) **QA CAL-01.v9, QA CAL-12.v9, QA CAL-14.v6, QA CAL-23.v5,
QA CAL-25.v7
Calibration procedure for dosimetric E-field probes**

Calibration date: **December 13, 2021**

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 NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: CC2552 (20x)	09-Apr-21 (No. 217-03343)	Apr-22
DAE4	SN: 660	23-Dec-20 (No. DAE4-660_Dec20)	Dec-21
Reference Probe ES3DV2	SN: 3013	30-Dec-20 (No. ES3-3013_Dec20)	Dec-21
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Leif Klynsner	Laboratory Technician	
Approved by:	Niels Kuster	Quality Manager	

Issued: December 14, 2021

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



**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
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Accredited by the Swiss Accreditation Service (SAS)

Accreditation No.: **SCS 0108**

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
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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:

- 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.
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z}** = NORM_{x,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*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). 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
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,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 NORM_{x,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 NORM_x (no uncertainty required).



EX3DV4 – SN:3759

December 13, 2021

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3759

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$) ^A	0.47	0.44	0.43	± 10.1 %
DCP (mV) ^B	100.9	99.9	100.8	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB μV	C	D dB	VR mV	Max dev.	Max Unc ^E (k=2)
0	CW	X	0.00	0.00	1.00	0.00	135.1	± 1.9 %	± 4.7 %
		Y	0.00	0.00	1.00		140.4		
		Z	0.00	0.00	1.00		148.7		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	20.00	88.93	18.84	10.00	60.0	± 4.0 %	± 9.6 %
		Y	20.00	90.24	20.31		60.0		
		Z	20.00	91.57	20.69		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	20.00	90.21	18.41	6.99	80.0	± 2.6 %	± 9.6 %
		Y	20.00	90.79	19.28		80.0		
		Z	20.00	93.01	20.40		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	20.00	93.76	18.81	3.98	95.0	± 1.7 %	± 9.6 %
		Y	20.00	90.62	17.60		95.0		
		Z	20.00	96.75	20.88		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	20.00	92.22	16.91	2.22	120.0	± 1.2 %	± 9.6 %
		Y	20.00	85.76	13.95		120.0		
		Z	20.00	100.66	21.33		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	1.62	66.27	14.69	1.00	150.0	± 3.0 %	± 9.6 %
		Y	1.49	64.76	13.67		150.0		
		Z	1.59	65.96	14.64		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	2.17	67.87	15.51	0.00	150.0	± 1.0 %	± 9.6 %
		Y	2.02	66.62	14.60		150.0		
		Z	2.13	67.64	15.43		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	2.61	68.79	18.10	3.01	150.0	± 0.9 %	± 9.6 %
		Y	2.59	67.83	17.41		150.0		
		Z	3.00	71.03	18.96		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	3.50	67.21	15.73	0.00	150.0	± 2.8 %	± 9.6 %
		Y	3.38	66.60	15.27		150.0		
		Z	3.44	66.98	15.63		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.66	65.15	15.23	0.00	150.0	± 4.6 %	± 9.6 %
		Y	4.83	65.62	15.40		150.0		
		Z	4.79	65.61	15.46		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 E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



EX3DV4– SN:3759

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3759

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	41.2	306.62	35.33	11.59	0.00	5.07	0.21	0.35	1.01
Y	44.7	337.78	36.15	11.99	0.41	5.10	0.00	0.51	1.01
Z	42.7	316.28	35.03	14.82	0.06	5.10	1.16	0.27	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	173.2
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.



DASY/EASY - Parameters of Probe: EX3DV4 - SN:3759

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
128	52.8	0.76	12.08	12.08	12.08	0.00	1.00	± 13.3 %
450	43.5	0.87	10.68	10.68	10.68	0.16	1.30	± 13.3 %
750	41.9	0.89	10.22	10.22	10.22	0.29	1.06	± 12.0 %
835	41.5	0.90	9.88	9.88	9.88	0.27	1.06	± 12.0 %
900	41.5	0.97	9.53	9.53	9.53	0.37	0.80	± 12.0 %
1300	40.8	1.14	9.01	9.01	9.01	0.30	1.29	± 12.0 %
1450	40.5	1.20	8.63	8.63	8.63	0.36	0.86	± 12.0 %
1640	40.2	1.31	8.55	8.55	8.55	0.22	0.86	± 12.0 %
1750	40.1	1.37	8.44	8.44	8.44	0.23	0.86	± 12.0 %
1810	40.0	1.40	8.39	8.39	8.39	0.19	0.86	± 12.0 %
1900	40.0	1.40	8.25	8.25	8.25	0.25	0.86	± 12.0 %
2000	40.0	1.40	7.98	7.98	7.98	0.29	0.86	± 12.0 %
2300	39.5	1.67	7.66	7.66	7.66	0.16	0.90	± 12.0 %
2450	39.2	1.80	7.43	7.43	7.43	0.25	0.90	± 12.0 %
2600	39.0	1.96	7.20	7.20	7.20	0.24	0.90	± 12.0 %
3300	38.2	2.71	6.53	6.53	6.53	0.35	1.30	± 13.1 %
3500	37.9	2.91	6.50	6.50	6.50	0.35	1.35	± 13.1 %
3700	37.7	3.12	6.45	6.45	6.45	0.35	1.35	± 13.1 %
4100	37.2	3.53	5.95	5.95	5.95	0.40	1.60	± 13.1 %
5200	36.0	4.66	4.53	4.53	4.53	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.43	4.43	4.43	0.40	1.80	± 13.1 %
5500	35.6	4.96	3.95	3.95	3.95	0.40	1.80	± 13.1 %
5600	35.5	5.07	3.81	3.81	3.81	0.40	1.80	± 13.1 %
5800	35.3	5.27	3.85	3.85	3.85	0.40	1.80	± 13.1 %

^C Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^F At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



EX3DV4- SN:3759

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3759

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
6500	34.5	6.07	5.10	5.10	5.10	0.20	0.25	± 18.6 %

^C Frequency validity above 6GHz is ± 700 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

^F At frequencies 6-10 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

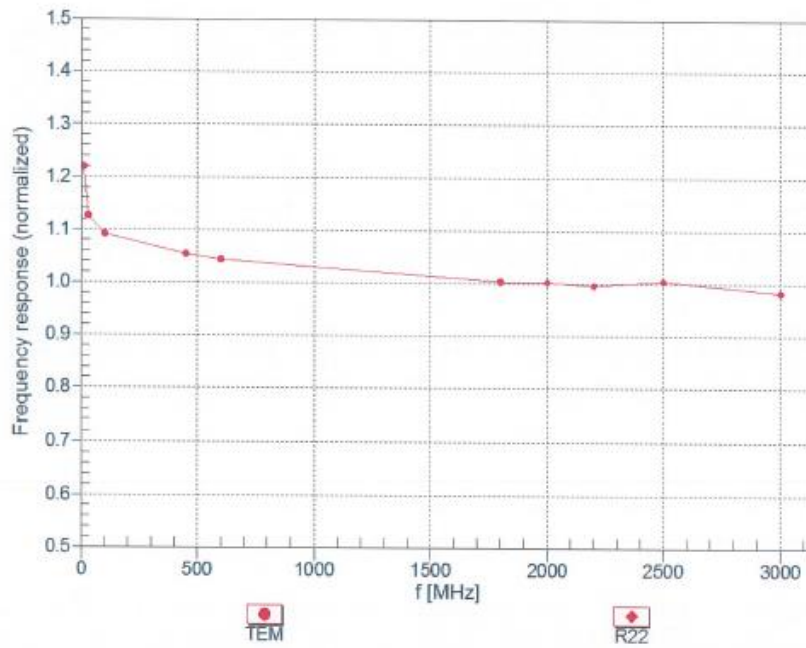
^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz; below ± 2% for frequencies between 3-6 GHz; and below ± 4% for frequencies between 6-10 GHz at any distance larger than half the probe tip diameter from the boundary.



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Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

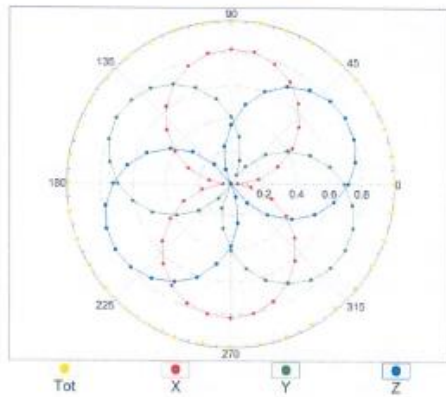


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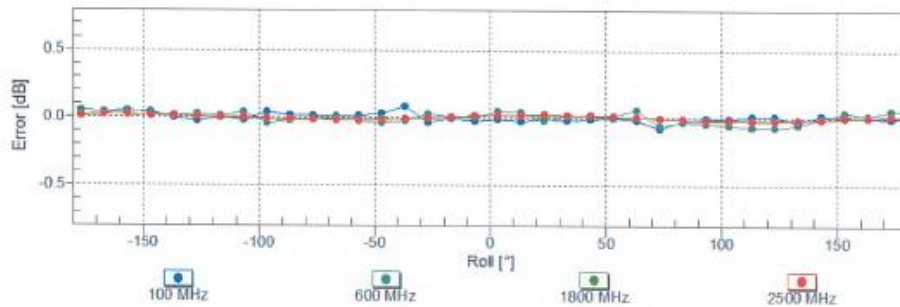
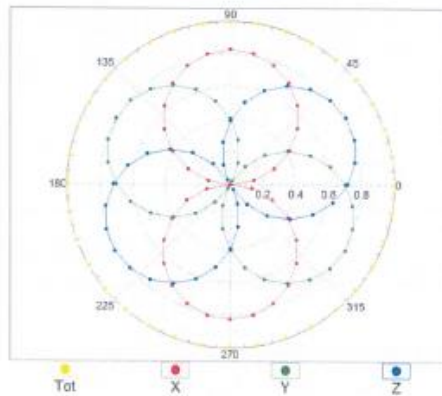
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Receiving Pattern (ϕ), $\theta = 0^\circ$

f=600 MHz,TEM



f=1800 MHz,R22



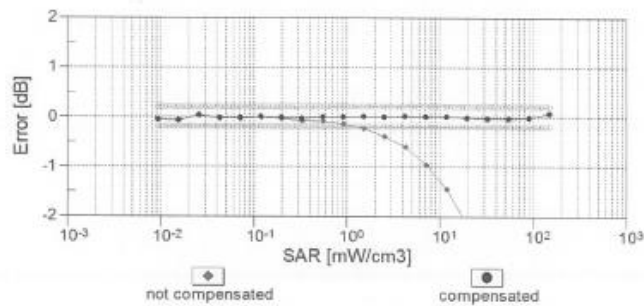
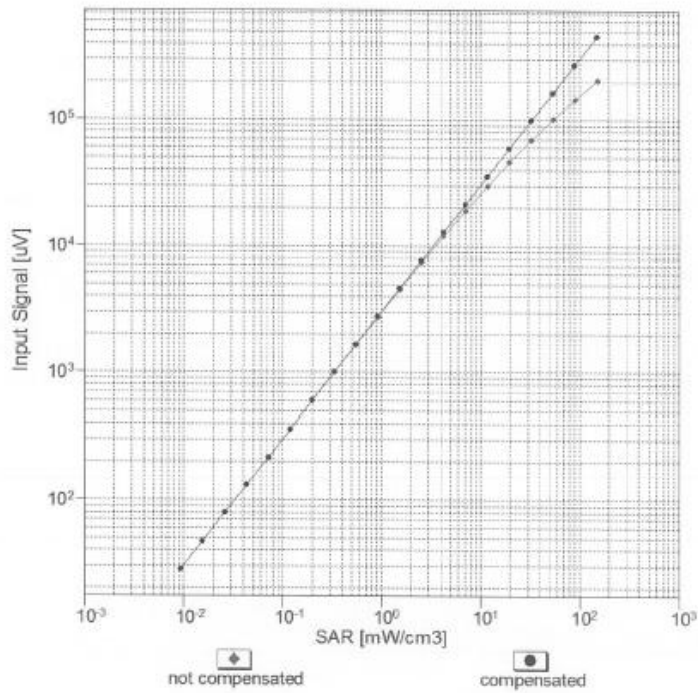
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)



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Dynamic Range f(SAR_{head}) (TEM cell , f_{eval}= 1900 MHz)



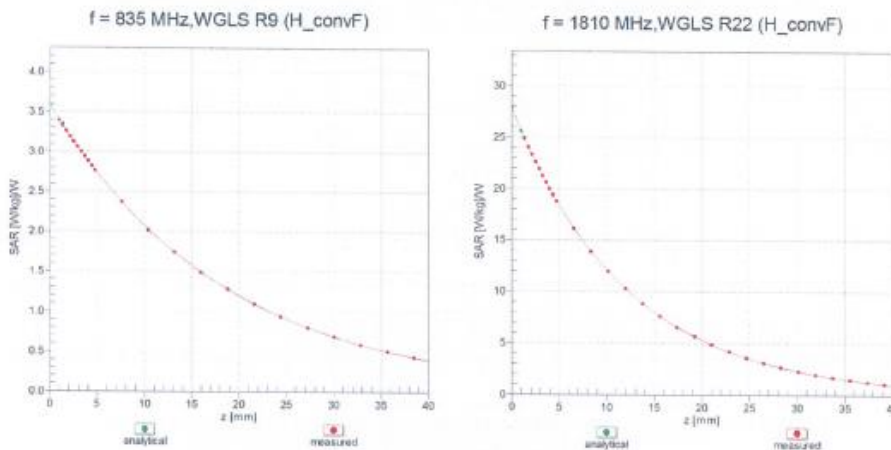
Uncertainty of Linearity Assessment: ± 0.6% (k=2)



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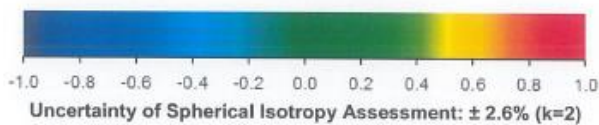
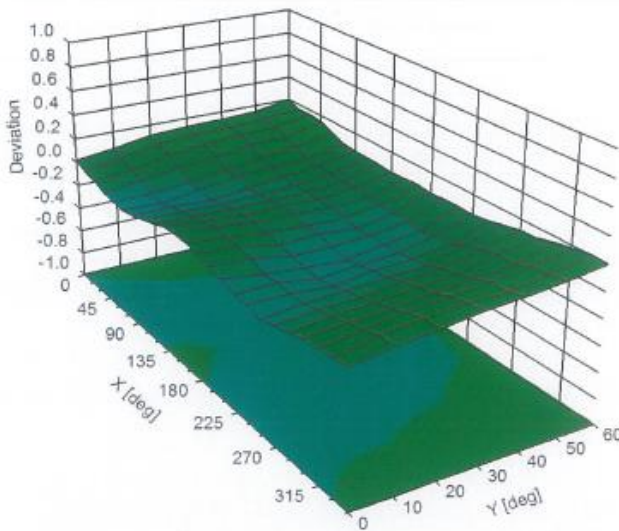
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Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc [±] (k=2)
0	-	CW	CW	0.00	± 4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAB	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10098	CAB	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %

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10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAD	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAD	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAD	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAD	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAD	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAD	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAE	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAF	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAG	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAE	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAF	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	AAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10176	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAI	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10178	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	CAG	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10181	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %

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10182	CAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	AAD	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	AAE	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10187	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10189	AAF	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAD	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	CAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAD	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAD	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	CAD	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAD	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAD	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %
10220	CAD	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAD	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAD	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAD	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAD	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAB	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10241	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10249	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %
10260	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %

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10261	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10270	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAA	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAA	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6 %
10295	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10297	AAD	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %
10300	AAD	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WiMAX	12.03	± 9.6 %
10302	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WiMAX	12.57	± 9.6 %
10303	AAA	IEEE 802.16e WiMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	12.52	± 9.6 %
10304	AAA	IEEE 802.16e WiMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WiMAX	11.86	± 9.6 %
10305	AAA	IEEE 802.16e WiMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)	WiMAX	15.24	± 9.6 %
10306	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)	WiMAX	14.67	± 9.6 %
10307	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WiMAX	14.49	± 9.6 %
10308	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WiMAX	14.46	± 9.6 %
10309	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3)	WiMAX	14.58	± 9.6 %
10310	AAA	IEEE 802.16e WiMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3)	WiMAX	14.57	± 9.6 %
10311	AAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAA	IDEN 1:3	IDEN	10.51	± 9.6 %
10314	AAA	IDEN 1:6	IDEN	13.48	± 9.6 %
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1.71	± 9.6 %
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10317	AAD	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.98	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAE	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)	WLAN	8.37	± 9.6 %
10401	AAE	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	± 9.6 %
10402	AAE	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAB	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %
10410	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %

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10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10417	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6 %
10422	AAC	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAC	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAC	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAC	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAC	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAC	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAA	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10447	AAD	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAD	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %
10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10453	AAD	Validation (Square, 10ms, 1ms)	Test	10.00	± 9.6 %
10456	AAC	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc)	WLAN	8.63	± 9.6 %
10457	AAA	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAA	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
10459	AAA	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAA	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10462	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.30	± 9.6 %
10463	AAB	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10464	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10467	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10469	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10470	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10471	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10472	AAF	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10473	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10474	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAE	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10477	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10479	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	± 9.6 %
10484	AAC	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 9.6 %
10485	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAF	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	± 9.6 %
10488	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 %

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10489	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10491	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10492	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 %
10493	AAE	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	± 9.6 %
10496	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10497	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10498	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 9.6 %
10499	AAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.68	± 9.6 %
10500	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10501	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 9.6 %
10502	AAC	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6 %
10503	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 9.6 %
10504	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10505	AAF	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10506	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10507	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.36	± 9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10509	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	± 9.6 %
10510	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	± 9.6 %
10511	AAE	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	± 9.6 %
10514	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	± 9.6 %
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10519	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 %
10520	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8.12	± 9.6 %
10521	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
10522	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10523	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.08	± 9.6 %
10524	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN	8.27	± 9.6 %
10525	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)	WLAN	8.36	± 9.6 %
10526	AAC	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc)	WLAN	8.42	± 9.6 %
10527	AAC	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc dc)	WLAN	8.21	± 9.6 %
10528	AAC	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10529	AAC	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc dc)	WLAN	8.36	± 9.6 %
10531	AAC	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN	8.43	± 9.6 %
10532	AAC	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10533	AAC	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc dc)	WLAN	8.38	± 9.6 %
10534	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.45	± 9.6 %
10535	AAC	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)	WLAN	8.45	± 9.6 %
10536	AAC	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc dc)	WLAN	8.32	± 9.6 %
10537	AAC	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc dc)	WLAN	8.44	± 9.6 %
10538	AAC	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc dc)	WLAN	8.54	± 9.6 %
10540	AAC	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc dc)	WLAN	8.39	± 9.6 %
10541	AAC	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc dc)	WLAN	8.46	± 9.6 %
10542	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10543	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc dc)	WLAN	8.65	± 9.6 %
10544	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc dc)	WLAN	8.47	± 9.6 %
10545	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10546	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc dc)	WLAN	8.35	± 9.6 %



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10547	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc dc)	WLAN	8.49	± 9.6 %
10548	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc dc)	WLAN	8.37	± 9.6 %
10550	AAC	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc dc)	WLAN	8.39	± 9.6 %
10551	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc dc)	WLAN	8.50	± 9.6 %
10552	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc dc)	WLAN	8.42	± 9.6 %
10553	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc dc)	WLAN	8.45	± 9.6 %
10554	AAD	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 %
10555	AAD	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 %
10556	AAD	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc dc)	WLAN	8.50	± 9.6 %
10557	AAD	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	± 9.6 %
10558	AAD	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc dc)	WLAN	8.61	± 9.6 %
10560	AAD	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	± 9.6 %
10561	AAD	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6 %
10562	AAD	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	± 9.6 %
10563	AAD	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc dc)	WLAN	8.77	± 9.6 %
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	± 9.6 %
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.13	± 9.6 %
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.00	± 9.6 %
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.37	± 9.6 %
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	± 9.6 %
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	8.30	± 9.6 %
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10583	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10584	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10585	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10586	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10587	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10588	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10589	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10590	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10591	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN	8.63	± 9.6 %
10592	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10593	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN	8.64	± 9.6 %
10594	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10595	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc dc)	WLAN	8.74	± 9.6 %
10596	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN	8.71	± 9.6 %
10597	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)	WLAN	8.72	± 9.6 %
10598	AAC	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN	8.50	± 9.6 %
10599	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 %
10600	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10601	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	± 9.6 %
10602	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	± 9.6 %
10603	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	± 9.6 %
10604	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 %



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10605	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc dc)	WLAN	8.97	± 9.6 %
10606	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10607	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc dc)	WLAN	8.64	± 9.6 %
10608	AAC	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc dc)	WLAN	8.77	± 9.6 %
10609	AAC	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc dc)	WLAN	8.57	± 9.6 %
10610	AAC	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc dc)	WLAN	8.78	± 9.6 %
10611	AAC	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10612	AAC	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10613	AAC	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc dc)	WLAN	8.94	± 9.6 %
10614	AAC	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.59	± 9.6 %
10615	AAC	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10616	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc dc)	WLAN	8.82	± 9.6 %
10617	AAC	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc dc)	WLAN	8.81	± 9.6 %
10618	AAC	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc dc)	WLAN	8.58	± 9.6 %
10619	AAC	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc dc)	WLAN	8.86	± 9.6 %
10620	AAC	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	± 9.6 %
10621	AAC	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10622	AAC	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc dc)	WLAN	8.68	± 9.6 %
10623	AAC	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10624	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	± 9.6 %
10625	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc dc)	WLAN	8.96	± 9.6 %
10626	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10627	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10628	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)	WLAN	8.71	± 9.6 %
10629	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10630	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc dc)	WLAN	8.72	± 9.6 %
10631	AAC	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc dc)	WLAN	8.81	± 9.6 %
10632	AAC	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10633	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc dc)	WLAN	8.83	± 9.6 %
10634	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc dc)	WLAN	8.80	± 9.6 %
10635	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10636	AAD	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10637	AAD	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10638	AAD	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc dc)	WLAN	8.86	± 9.6 %
10639	AAD	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10640	AAD	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc dc)	WLAN	8.98	± 9.6 %
10641	AAD	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc dc)	WLAN	9.06	± 9.6 %
10642	AAD	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc dc)	WLAN	9.06	± 9.6 %
10643	AAD	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc dc)	WLAN	8.89	± 9.6 %
10644	AAD	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc dc)	WLAN	9.05	± 9.6 %
10645	AAD	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	± 9.6 %
10646	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAE	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAE	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
10654	AAD	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %
10655	AAE	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAA	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAA	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAA	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAA	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAA	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAA	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAC	IEEE 802.11ax (20MHz, MCS0, 90pc dc)	WLAN	9.09	± 9.6 %
10672	AAC	IEEE 802.11ax (20MHz, MCS1, 90pc dc)	WLAN	8.57	± 9.6 %



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10673	AAC	IEEE 802.11ax (20MHz, MCS2, 90pc dc)	WLAN	8.78	± 9.6 %
10674	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10675	AAC	IEEE 802.11ax (20MHz, MCS4, 90pc dc)	WLAN	8.90	± 9.6 %
10676	AAC	IEEE 802.11ax (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10677	AAC	IEEE 802.11ax (20MHz, MCS6, 90pc dc)	WLAN	8.73	± 9.6 %
10678	AAC	IEEE 802.11ax (20MHz, MCS7, 90pc dc)	WLAN	8.78	± 9.6 %
10679	AAC	IEEE 802.11ax (20MHz, MCS8, 90pc dc)	WLAN	8.89	± 9.6 %
10680	AAC	IEEE 802.11ax (20MHz, MCS9, 90pc dc)	WLAN	8.80	± 9.6 %
10681	AAC	IEEE 802.11ax (20MHz, MCS10, 90pc dc)	WLAN	8.62	± 9.6 %
10682	AAC	IEEE 802.11ax (20MHz, MCS11, 90pc dc)	WLAN	8.83	± 9.6 %
10683	AAC	IEEE 802.11ax (20MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10684	AAC	IEEE 802.11ax (20MHz, MCS1, 99pc dc)	WLAN	8.26	± 9.6 %
10685	AAC	IEEE 802.11ax (20MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10686	AAC	IEEE 802.11ax (20MHz, MCS3, 99pc dc)	WLAN	8.28	± 9.6 %
10687	AAC	IEEE 802.11ax (20MHz, MCS4, 99pc dc)	WLAN	8.45	± 9.6 %
10688	AAC	IEEE 802.11ax (20MHz, MCS5, 99pc dc)	WLAN	8.29	± 9.6 %
10689	AAC	IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8.55	± 9.6 %
10690	AAC	IEEE 802.11ax (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10691	AAC	IEEE 802.11ax (20MHz, MCS8, 99pc dc)	WLAN	8.25	± 9.6 %
10692	AAC	IEEE 802.11ax (20MHz, MCS9, 99pc dc)	WLAN	8.29	± 9.6 %
10693	AAC	IEEE 802.11ax (20MHz, MCS10, 99pc dc)	WLAN	8.25	± 9.6 %
10694	AAC	IEEE 802.11ax (20MHz, MCS11, 99pc dc)	WLAN	8.57	± 9.6 %
10695	AAC	IEEE 802.11ax (40MHz, MCS0, 90pc dc)	WLAN	8.78	± 9.6 %
10696	AAC	IEEE 802.11ax (40MHz, MCS1, 90pc dc)	WLAN	8.91	± 9.6 %
10697	AAC	IEEE 802.11ax (40MHz, MCS2, 90pc dc)	WLAN	8.61	± 9.6 %
10698	AAC	IEEE 802.11ax (40MHz, MCS3, 90pc dc)	WLAN	8.89	± 9.6 %
10699	AAC	IEEE 802.11ax (40MHz, MCS4, 90pc dc)	WLAN	8.82	± 9.6 %
10700	AAC	IEEE 802.11ax (40MHz, MCS5, 90pc dc)	WLAN	8.73	± 9.6 %
10701	AAC	IEEE 802.11ax (40MHz, MCS6, 90pc dc)	WLAN	8.86	± 9.6 %
10702	AAC	IEEE 802.11ax (40MHz, MCS7, 90pc dc)	WLAN	8.70	± 9.6 %
10703	AAC	IEEE 802.11ax (40MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10704	AAC	IEEE 802.11ax (40MHz, MCS9, 90pc dc)	WLAN	8.56	± 9.6 %
10705	AAC	IEEE 802.11ax (40MHz, MCS10, 90pc dc)	WLAN	8.69	± 9.6 %
10706	AAC	IEEE 802.11ax (40MHz, MCS11, 90pc dc)	WLAN	8.66	± 9.6 %
10707	AAC	IEEE 802.11ax (40MHz, MCS0, 99pc dc)	WLAN	8.32	± 9.6 %
10708	AAC	IEEE 802.11ax (40MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10709	AAC	IEEE 802.11ax (40MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10710	AAC	IEEE 802.11ax (40MHz, MCS3, 99pc dc)	WLAN	8.29	± 9.6 %
10711	AAC	IEEE 802.11ax (40MHz, MCS4, 99pc dc)	WLAN	8.39	± 9.6 %
10712	AAC	IEEE 802.11ax (40MHz, MCS5, 99pc dc)	WLAN	8.67	± 9.6 %
10713	AAC	IEEE 802.11ax (40MHz, MCS6, 99pc dc)	WLAN	8.33	± 9.6 %
10714	AAC	IEEE 802.11ax (40MHz, MCS7, 99pc dc)	WLAN	8.26	± 9.6 %
10715	AAC	IEEE 802.11ax (40MHz, MCS8, 99pc dc)	WLAN	8.45	± 9.6 %
10716	AAC	IEEE 802.11ax (40MHz, MCS9, 99pc dc)	WLAN	8.30	± 9.6 %
10717	AAC	IEEE 802.11ax (40MHz, MCS10, 99pc dc)	WLAN	8.48	± 9.6 %
10718	AAC	IEEE 802.11ax (40MHz, MCS11, 99pc dc)	WLAN	8.24	± 9.6 %
10719	AAC	IEEE 802.11ax (80MHz, MCS0, 90pc dc)	WLAN	8.81	± 9.6 %
10720	AAC	IEEE 802.11ax (80MHz, MCS1, 90pc dc)	WLAN	8.87	± 9.6 %
10721	AAC	IEEE 802.11ax (80MHz, MCS2, 90pc dc)	WLAN	8.76	± 9.6 %
10722	AAC	IEEE 802.11ax (80MHz, MCS3, 90pc dc)	WLAN	8.55	± 9.6 %
10723	AAC	IEEE 802.11ax (80MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10724	AAC	IEEE 802.11ax (80MHz, MCS5, 90pc dc)	WLAN	8.90	± 9.6 %
10725	AAC	IEEE 802.11ax (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10726	AAC	IEEE 802.11ax (80MHz, MCS7, 90pc dc)	WLAN	8.72	± 9.6 %
10727	AAC	IEEE 802.11ax (80MHz, MCS8, 90pc dc)	WLAN	8.66	± 9.6 %
10728	AAC	IEEE 802.11ax (80MHz, MCS9, 90pc dc)	WLAN	8.65	± 9.6 %



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10729	AAC	IEEE 802.11ax (80MHz, MCS10, 90pc dc)	WLAN	8.64	± 9.6 %
10730	AAC	IEEE 802.11ax (80MHz, MCS11, 90pc dc)	WLAN	8.67	± 9.6 %
10731	AAC	IEEE 802.11ax (80MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10732	AAC	IEEE 802.11ax (80MHz, MCS1, 99pc dc)	WLAN	8.46	± 9.6 %
10733	AAC	IEEE 802.11ax (80MHz, MCS2, 99pc dc)	WLAN	8.40	± 9.6 %
10734	AAC	IEEE 802.11ax (80MHz, MCS3, 99pc dc)	WLAN	8.25	± 9.6 %
10735	AAC	IEEE 802.11ax (80MHz, MCS4, 99pc dc)	WLAN	8.33	± 9.6 %
10736	AAC	IEEE 802.11ax (80MHz, MCS5, 99pc dc)	WLAN	8.27	± 9.6 %
10737	AAC	IEEE 802.11ax (80MHz, MCS6, 99pc dc)	WLAN	8.36	± 9.6 %
10738	AAC	IEEE 802.11ax (80MHz, MCS7, 99pc dc)	WLAN	8.42	± 9.6 %
10739	AAC	IEEE 802.11ax (80MHz, MCS8, 99pc dc)	WLAN	8.29	± 9.6 %
10740	AAC	IEEE 802.11ax (80MHz, MCS9, 99pc dc)	WLAN	8.48	± 9.6 %
10741	AAC	IEEE 802.11ax (80MHz, MCS10, 99pc dc)	WLAN	8.40	± 9.6 %
10742	AAC	IEEE 802.11ax (80MHz, MCS11, 99pc dc)	WLAN	8.43	± 9.6 %
10743	AAC	IEEE 802.11ax (160MHz, MCS0, 90pc dc)	WLAN	8.94	± 9.6 %
10744	AAC	IEEE 802.11ax (160MHz, MCS1, 90pc dc)	WLAN	9.16	± 9.6 %
10745	AAC	IEEE 802.11ax (160MHz, MCS2, 90pc dc)	WLAN	8.93	± 9.6 %
10746	AAC	IEEE 802.11ax (160MHz, MCS3, 90pc dc)	WLAN	9.11	± 9.6 %
10747	AAC	IEEE 802.11ax (160MHz, MCS4, 90pc dc)	WLAN	9.04	± 9.6 %
10748	AAC	IEEE 802.11ax (160MHz, MCS5, 90pc dc)	WLAN	8.93	± 9.6 %
10749	AAC	IEEE 802.11ax (160MHz, MCS6, 90pc dc)	WLAN	8.90	± 9.6 %
10750	AAC	IEEE 802.11ax (160MHz, MCS7, 90pc dc)	WLAN	8.79	± 9.6 %
10751	AAC	IEEE 802.11ax (160MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10752	AAC	IEEE 802.11ax (160MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10753	AAC	IEEE 802.11ax (160MHz, MCS10, 90pc dc)	WLAN	9.00	± 9.6 %
10754	AAC	IEEE 802.11ax (160MHz, MCS11, 90pc dc)	WLAN	8.94	± 9.6 %
10755	AAC	IEEE 802.11ax (160MHz, MCS0, 99pc dc)	WLAN	8.64	± 9.6 %
10756	AAC	IEEE 802.11ax (160MHz, MCS1, 99pc dc)	WLAN	8.77	± 9.6 %
10757	AAC	IEEE 802.11ax (160MHz, MCS2, 99pc dc)	WLAN	8.77	± 9.6 %
10758	AAC	IEEE 802.11ax (160MHz, MCS3, 99pc dc)	WLAN	8.69	± 9.6 %
10759	AAC	IEEE 802.11ax (160MHz, MCS4, 99pc dc)	WLAN	8.58	± 9.6 %
10760	AAC	IEEE 802.11ax (160MHz, MCS5, 99pc dc)	WLAN	8.49	± 9.6 %
10761	AAC	IEEE 802.11ax (160MHz, MCS6, 99pc dc)	WLAN	8.58	± 9.6 %
10762	AAC	IEEE 802.11ax (160MHz, MCS7, 99pc dc)	WLAN	8.49	± 9.6 %
10763	AAC	IEEE 802.11ax (160MHz, MCS8, 99pc dc)	WLAN	8.53	± 9.6 %
10764	AAC	IEEE 802.11ax (160MHz, MCS9, 99pc dc)	WLAN	8.54	± 9.6 %
10765	AAC	IEEE 802.11ax (160MHz, MCS10, 99pc dc)	WLAN	8.54	± 9.6 %
10766	AAC	IEEE 802.11ax (160MHz, MCS11, 99pc dc)	WLAN	8.51	± 9.6 %
10767	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.99	± 9.6 %
10768	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10769	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10770	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10771	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10772	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	± 9.6 %
10773	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.03	± 9.6 %
10774	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	± 9.6 %
10775	AAD	5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6 %
10776	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10777	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10778	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10779	AAC	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10780	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.6 %
10781	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	± 9.6 %
10782	AAD	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10783	AAE	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	± 9.6 %
10784	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	± 9.6 %



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10785	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10786	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10787	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	± 9.6 %
10788	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10789	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10790	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10791	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	± 9.6 %
10792	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	± 9.6 %
10793	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	± 9.6 %
10794	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10795	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.84	± 9.6 %
10796	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	± 9.6 %
10797	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	± 9.6 %
10798	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10799	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10801	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	± 9.6 %
10802	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	± 9.6 %
10803	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	± 9.6 %
10805	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10806	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10809	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10810	AAD	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10812	AAD	5G NR (CP-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10817	AAE	5G NR (CP-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10818	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10819	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	± 9.6 %
10820	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	± 9.6 %
10821	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10822	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10823	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10824	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.39	± 9.6 %
10825	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10827	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	± 9.6 %
10828	AAD	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	± 9.6 %
10829	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10830	AAD	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.63	± 9.6 %
10831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	± 9.6 %
10832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	± 9.6 %
10833	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10834	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	± 9.6 %
10835	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10836	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	± 9.6 %
10837	AAD	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.68	± 9.6 %
10839	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	± 9.6 %
10840	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	± 9.6 %
10841	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.71	± 9.6 %
10843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.49	± 9.6 %
10844	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10846	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10854	AAD	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10856	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	± 9.6 %
10858	AAD	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.36	± 9.6 %
10859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	± 9.6 %
10860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %

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10861	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.40	± 9.6 %
10863	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10864	AAD	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.37	± 9.6 %
10865	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.41	± 9.6 %
10866	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10868	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	± 9.6 %
10869	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10870	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	± 9.6 %
10871	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10872	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.52	± 9.6 %
10873	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10874	AAD	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10875	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10876	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	± 9.6 %
10877	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	± 9.6 %
10878	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10879	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	± 9.6 %
10880	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	± 9.6 %
10881	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	± 9.6 %
10882	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	± 9.6 %
10883	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.57	± 9.6 %
10884	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	6.53	± 9.6 %
10885	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	± 9.6 %
10886	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	± 9.6 %
10887	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	± 9.6 %
10888	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	± 9.6 %
10889	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	± 9.6 %
10890	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	± 9.6 %
10891	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	± 9.6 %
10892	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.41	± 9.6 %
10897	AAC	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	± 9.6 %
10898	AAB	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10899	AAB	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.67	± 9.6 %
10900	AAB	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10901	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10902	AAB	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10903	AAB	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10904	AAB	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10905	AAB	5G NR (DFT-s-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10906	AAB	5G NR (DFT-s-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	± 9.6 %
10907	AAC	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	± 9.6 %
10908	AAB	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10909	AAB	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.96	± 9.6 %
10910	AAB	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10911	AAB	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	± 9.6 %
10912	AAB	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10913	AAB	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10914	AAB	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	± 9.6 %
10915	AAB	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	± 9.6 %
10916	AAB	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10917	AAB	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10918	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10919	AAB	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	± 9.6 %
10920	AAB	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.87	± 9.6 %
10921	AAB	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10922	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	± 9.6 %

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10923	AAB	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10924	AAB	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10925	AAB	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	± 9.6 %
10926	AAB	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	± 9.6 %
10927	AAB	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	± 9.6 %
10928	AAC	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10929	AAC	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10930	AAC	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	± 9.6 %
10931	AAC	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10932	AAC	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10933	AAC	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10934	AAC	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10935	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	± 9.6 %
10936	AAC	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10937	AAC	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	± 9.6 %
10938	AAC	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	± 9.6 %
10939	AAC	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	± 9.6 %
10940	AAC	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	± 9.6 %
10941	AAC	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10942	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10943	AAD	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	± 9.6 %
10944	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.81	± 9.6 %
10945	AAC	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	± 9.6 %
10946	AAC	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.83	± 9.6 %
10947	AAC	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10948	AAC	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10949	AAC	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	± 9.6 %
10950	AAC	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	± 9.6 %
10951	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	± 9.6 %
10952	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.25	± 9.6 %
10953	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	± 9.6 %
10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.23	± 9.6 %
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	± 9.6 %
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.14	± 9.6 %
10957	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.31	± 9.6 %
10958	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	± 9.6 %
10959	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	± 9.6 %
10960	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	± 9.6 %
10961	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.36	± 9.6 %
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	± 9.6 %
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10964	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	± 9.6 %
10965	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	± 9.6 %
10966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	± 9.6 %
10967	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	± 9.6 %
10968	AAB	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	± 9.6 %
10972	AAB	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	± 9.6 %
10973	AAB	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.06	± 9.6 %
10974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.28	± 9.6 %
10978	AAA	ULLA BDR	ULLA	2.23	± 9.6 %
10979	AAA	ULLA HDR4	ULLA	7.02	± 9.6 %
10980	AAA	ULLA HDR8	ULLA	8.82	± 9.6 %
10981	AAA	ULLA HDRp4	ULLA	1.50	± 9.6 %
10982	AAA	ULLA HDRp8	ULLA	1.44	± 9.6 %

^E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



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Accreditation No.: **SCS 0108**

Client **TÜV SÜD UK**

Certificate No: **EX3-7536_Jun21**

CALIBRATION CERTIFICATE

Object: **EX3DV4 - SN:7536**

Calibration procedure(s): **QA CAL-01.v9, QA CAL-14.v6, QA CAL-23.v5, QA CAL-25.v7
Calibration procedure for dosimetric E-field probes**

Calibration date: **June 18, 2021**

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 NRP	SN: 104778	09-Apr-21 (No. 217-03291/03292)	Apr-22
Power sensor NRP-Z91	SN: 103244	09-Apr-21 (No. 217-03291)	Apr-22
Power sensor NRP-Z91	SN: 103245	09-Apr-21 (No. 217-03292)	Apr-22
Reference 20 dB Attenuator	SN: CC2552 (20x)	09-Apr-21 (No. 217-03343)	Apr-22
DAE4	SN: 660	23-Dec-20 (No. DAE4-660_Dec20)	Dec-21
Reference Probe ES3DV2	SN: 3013	30-Dec-20 (No. ES3-3013_Dec20)	Dec-21
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642UD1700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-21

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: June 21, 2021

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



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Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,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:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
- IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
- KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}:** Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)_{x,y,z} = NORM_{x,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.
- DCP_{x,y,z}:** DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). 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
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,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 NORM_{x,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 NORM_x (no uncertainty required).



EX3DV4 – SN:7536

June 18, 2021

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7536

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.56	0.62	0.65	± 10.1 %
DCP (mV) ^B	93.7	99.7	97.6	

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB· μV	C	D dB	VR mV	Max dev.	Max Unc ^C (k=2)
0	CW	X	0.00	0.00	1.00	0.00	135.0	± 2.5 %	± 4.7 %
		Y	0.00	0.00	1.00		140.4		
		Z	0.00	0.00	1.00		128.5		
10352-AAA	Pulse Waveform (200Hz, 10%)	X	2.03	64.57	9.42	10.00	60.0	± 4.8 %	± 9.6 %
		Y	20.00	90.60	19.90		60.0		
		Z	2.89	67.95	11.11		60.0		
10353-AAA	Pulse Waveform (200Hz, 20%)	X	1.38	63.65	8.27	6.99	80.0	± 3.4 %	± 9.6 %
		Y	20.00	92.61	19.76		80.0		
		Z	2.68	69.17	10.84		80.0		
10354-AAA	Pulse Waveform (200Hz, 40%)	X	1.20	65.62	8.54	3.98	95.0	± 1.8 %	± 9.6 %
		Y	20.00	97.59	20.87		95.0		
		Z	20.00	86.87	15.41		95.0		
10355-AAA	Pulse Waveform (200Hz, 60%)	X	15.56	85.19	14.00	2.22	120.0	± 1.0 %	± 9.6 %
		Y	20.00	103.77	22.60		120.0		
		Z	20.00	92.50	17.20		120.0		
10387-AAA	QPSK Waveform, 1 MHz	X	1.72	65.73	15.00	1.00	150.0	± 1.8 %	± 9.6 %
		Y	1.61	64.67	14.16		150.0		
		Z	1.83	67.12	15.78		150.0		
10388-AAA	QPSK Waveform, 10 MHz	X	2.27	67.78	15.69	0.00	150.0	± 1.0 %	± 9.6 %
		Y	2.09	66.35	14.82		150.0		
		Z	2.43	69.12	16.47		150.0		
10396-AAA	64-QAM Waveform, 100 kHz	X	2.85	70.35	18.91	3.01	150.0	± 0.8 %	± 9.6 %
		Y	2.71	69.16	18.19		150.0		
		Z	2.94	70.91	19.35		150.0		
10399-AAA	64-QAM Waveform, 40 MHz	X	3.56	67.04	15.79	0.00	150.0	± 0.8 %	± 9.6 %
		Y	3.47	66.50	15.37		150.0		
		Z	3.52	67.01	15.87		150.0		
10414-AAA	WLAN CCDF, 64-QAM, 40MHz	X	4.94	65.60	15.56	0.00	150.0	± 1.9 %	± 9.6 %
		Y	4.88	65.42	15.35		150.0		
		Z	4.84	65.39	15.50		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 E²-field uncertainty inside TSL (see Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^C Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.



EX3DV4- SN:7536

June 18, 2021

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7536

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	49.5	372.25	35.96	11.39	0.00	4.96	1.51	0.14	1.01
Y	45.9	342.63	35.35	9.76	0.00	5.03	1.46	0.14	1.01
Z	46.7	349.47	35.68	12.24	0.00	4.97	1.08	0.21	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-143.4
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.



DASY/EASY - Parameters of Probe: EX3DV4 - SN:7536

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth (mm) ^g	Unc (k=2)
450	43.5	0.87	11.78	11.78	11.78	0.16	1.30	± 13.3 %
750	41.9	0.89	11.00	11.00	11.00	0.48	0.98	± 12.0 %
835	41.5	0.90	10.60	10.60	10.60	0.40	1.01	± 12.0 %
900	41.5	0.97	10.41	10.41	10.41	0.58	0.80	± 12.0 %
1450	40.5	1.20	9.20	9.20	9.20	0.42	0.80	± 12.0 %
1640	40.2	1.31	9.02	9.02	9.02	0.32	0.86	± 12.0 %
1750	40.1	1.37	8.98	8.98	8.98	0.31	0.86	± 12.0 %
1900	40.0	1.40	8.58	8.58	8.58	0.34	0.86	± 12.0 %
2100	39.8	1.49	8.49	8.49	8.49	0.35	0.86	± 12.0 %
2300	39.5	1.67	8.21	8.21	8.21	0.33	0.90	± 12.0 %
2450	39.2	1.80	7.82	7.82	7.82	0.34	0.90	± 12.0 %
2600	39.0	1.96	7.63	7.63	7.63	0.37	0.90	± 12.0 %
5200	36.0	4.66	5.48	5.48	5.48	0.40	1.80	± 13.1 %
5300	35.9	4.76	5.37	5.37	5.37	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.90	4.90	4.90	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.85	4.85	4.85	0.40	1.80	± 13.1 %
5800	35.3	5.27	4.80	4.80	4.80	0.40	1.80	± 13.1 %

^c Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^f At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

^g Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



EX3DV4- SN:7536

June 18, 2021

DASY/EASY - Parameters of Probe: EX3DV4 - SN:7536

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^c	Relative Permittivity ^f	Conductivity (S/m) ^f	ConvF X	ConvF Y	ConvF Z	Alpha ^g	Depth ^d (mm)	Unc (k=2)
2450	52.7	1.95	7.80	7.80	7.80	0.39	0.90	± 12.0 %
5200	49.0	5.30	4.95	4.95	4.95	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.85	4.85	4.85	0.50	1.90	± 13.1 %
5500	48.6	5.65	4.50	4.50	4.50	0.50	1.90	± 13.1 %
5600	48.5	5.77	4.41	4.41	4.41	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.40	4.40	4.40	0.50	1.90	± 13.1 %

^c Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Validity of ConvF assessed at 6 MHz is 4-9 MHz, and ConvF assessed at 13 MHz is 9-19 MHz. Above 5 GHz frequency validity can be extended to ± 110 MHz.

^f At frequencies below 3 GHz, the validity of tissue parameters (ϵ and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ϵ and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

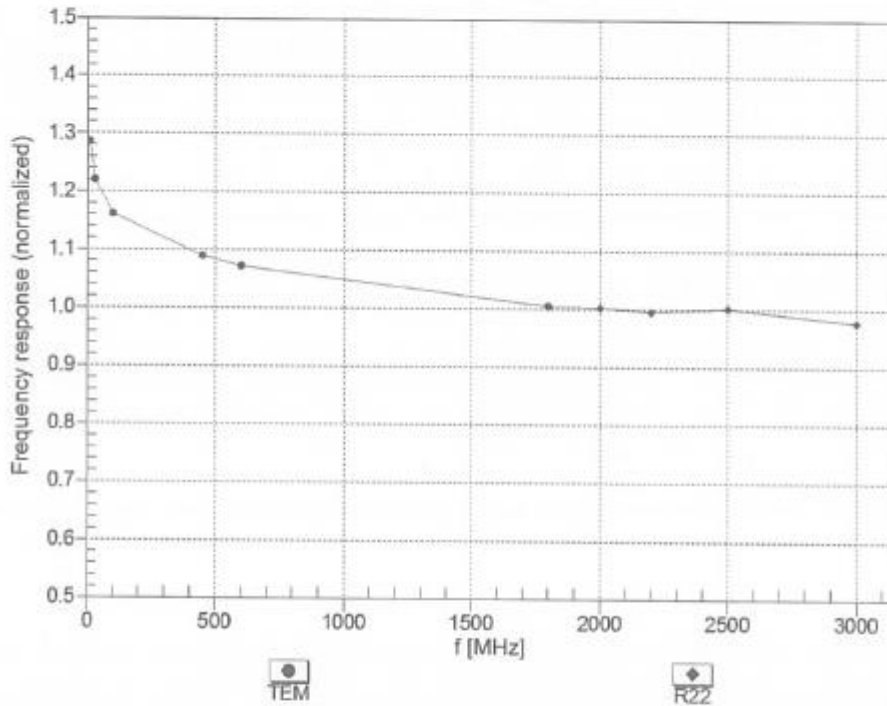
^g Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.



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Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)



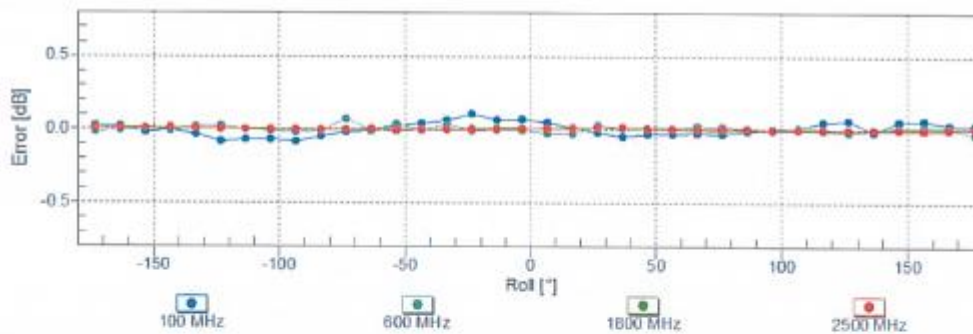
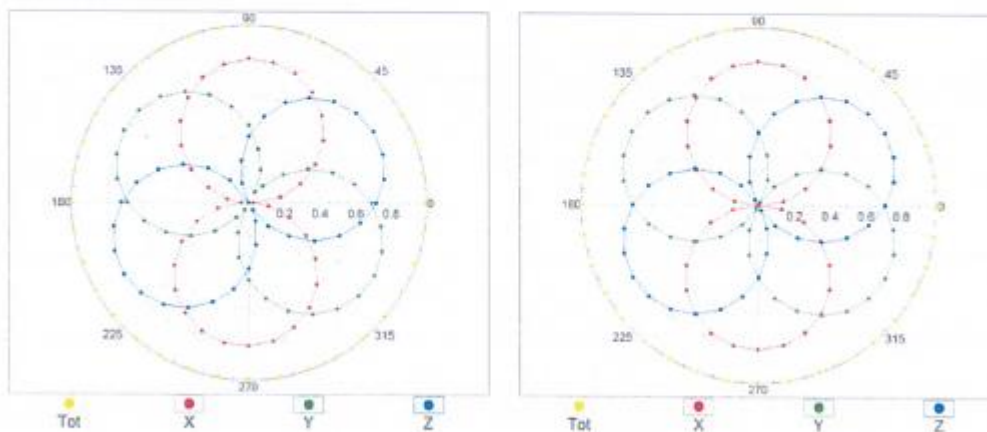
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Receiving Pattern (ϕ), $\theta = 0^\circ$

f=600 MHz,TEM

f=1800 MHz,R22



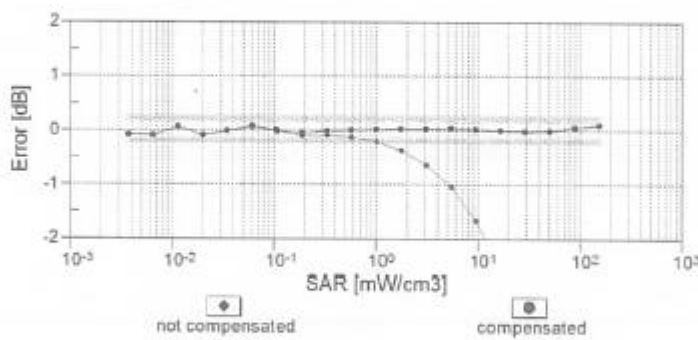
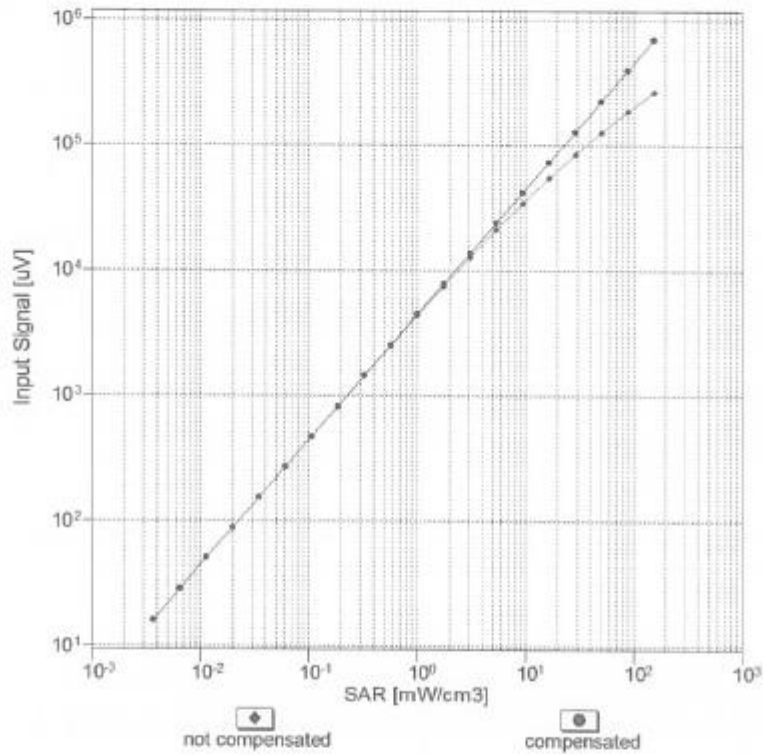
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)



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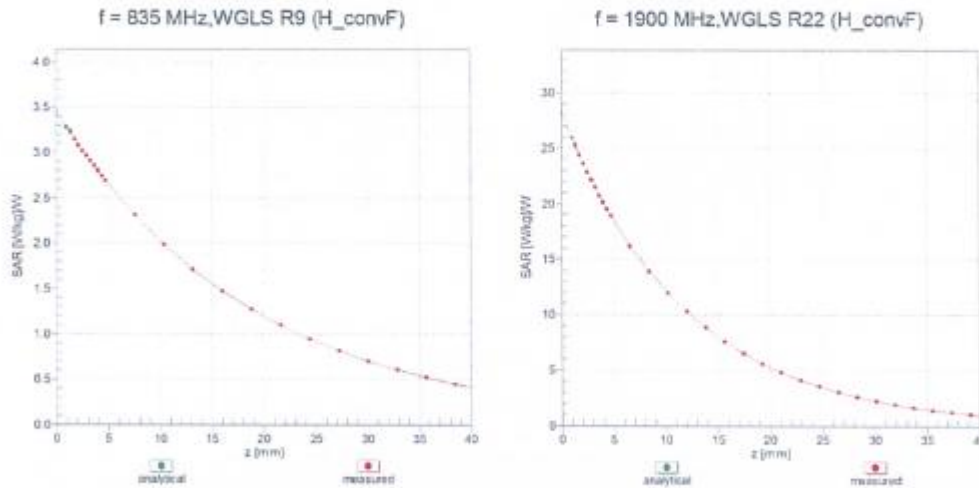
Dynamic Range $f(SAR_{head})$ (TEM cell , $f_{eval}= 1900$ MHz)



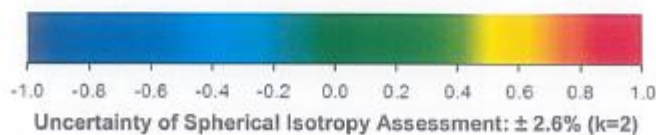
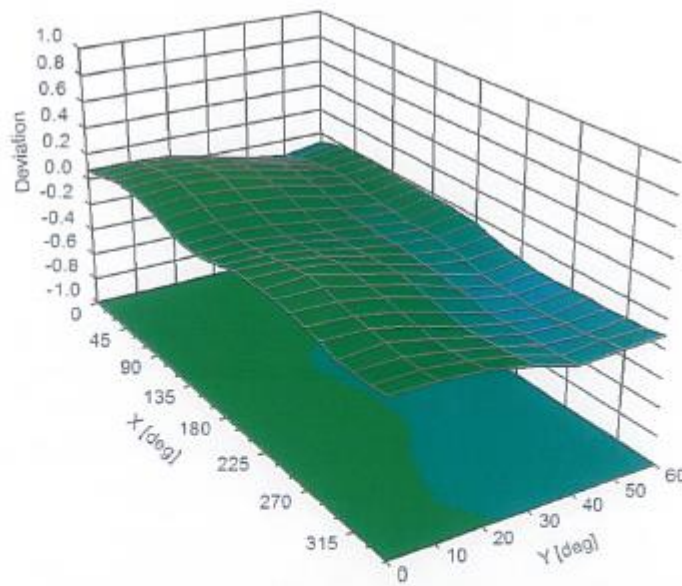
Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)



Conversion Factor Assessment



Deviation from Isotropy in Liquid Error (ϕ, θ), f = 900 MHz





Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^b (k=2)
0		CW	CW	0.00	± 4.7 %
10010	CAA	SAR Validation (Square, 100ms, 10ms)	Test	10.00	± 9.6 %
10011	CAB	UMTS-FDD (WCDMA)	WCDMA	2.91	± 9.6 %
10012	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.87	± 9.6 %
10013	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps)	WLAN	9.46	± 9.6 %
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	9.39	± 9.6 %
10023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	± 9.6 %
10024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	6.56	± 9.6 %
10025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	± 9.6 %
10026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	± 9.6 %
10027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	± 9.6 %
10028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	± 9.6 %
10029	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2)	GSM	7.78	± 9.6 %
10030	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH1)	Bluetooth	5.30	± 9.6 %
10031	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH3)	Bluetooth	1.87	± 9.6 %
10032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	± 9.6 %
10033	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH1)	Bluetooth	7.74	± 9.6 %
10034	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH3)	Bluetooth	4.53	± 9.6 %
10035	CAA	IEEE 802.15.1 Bluetooth (PI/4-DQPSK, DH5)	Bluetooth	3.83	± 9.6 %
10036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	8.01	± 9.6 %
10037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluetooth	4.77	± 9.6 %
10038	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	± 9.6 %
10039	CAB	CDMA2000 (1xRTT, RC1)	CDMA2000	4.57	± 9.6 %
10042	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Halfrate)	AMPS	7.78	± 9.6 %
10044	CAA	IS-91/EIA/TIA-553 FDD (FDMA, FM)	AMPS	0.00	± 9.6 %
10048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Slot, 24)	DECT	13.80	± 9.6 %
10049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	± 9.6 %
10056	CAA	UMTS-TDD (TD-SCDMA, 1.28 Mcps)	TD-SCDMA	11.01	± 9.6 %
10058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	± 9.6 %
10059	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	± 9.6 %
10060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.83	± 9.6 %
10061	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	± 9.6 %
10062	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	± 9.6 %
10063	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	± 9.6 %
10064	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	± 9.6 %
10065	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	± 9.6 %
10066	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.38	± 9.6 %
10067	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	± 9.6 %
10068	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	± 9.6 %
10069	CAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	± 9.6 %
10071	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 9 Mbps)	WLAN	9.83	± 9.6 %
10072	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 12 Mbps)	WLAN	9.62	± 9.6 %
10073	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN	9.94	± 9.6 %
10074	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 24 Mbps)	WLAN	10.30	± 9.6 %
10075	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 36 Mbps)	WLAN	10.77	± 9.6 %
10076	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.94	± 9.6 %
10077	CAB	IEEE 802.11g WiFi 2.4 GHz (DSSS/OFDM, 54 Mbps)	WLAN	11.00	± 9.6 %
10081	CAB	CDMA2000 (1xRTT, RC3)	CDMA2000	3.97	± 9.6 %
10082	CAB	IS-54 / IS-136 FDD (TDMA/FDM, PI/4-DQPSK, Fullrate)	AMPS	4.77	± 9.6 %
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	6.56	± 9.6 %
10097	CAC	UMTS-FDD (HSDPA)	WCDMA	3.98	± 9.6 %
10098	DAC	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	± 9.6 %



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10099	CAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	± 9.6 %
10100	CAC	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	± 9.6 %
10101	CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10102	CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10103	DAC	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10104	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	± 9.6 %
10105	CAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	± 9.6 %
10108	CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	± 9.6 %
10109	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10110	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10111	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	± 9.6 %
10112	CAG	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	± 9.6 %
10113	CAG	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10114	CAG	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10115	CAG	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	8.46	± 9.6 %
10116	CAG	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	8.15	± 9.6 %
10117	CAG	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	± 9.6 %
10118	CAD	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	± 9.6 %
10119	CAD	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	8.13	± 9.6 %
10140	CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10141	CAD	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	± 9.6 %
10142	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10143	CAD	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	± 9.6 %
10144	CAC	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	± 9.6 %
10145	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	± 9.6 %
10146	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	± 9.6 %
10147	CAC	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	± 9.6 %
10149	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	± 9.6 %
10150	CAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10151	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	± 9.6 %
10152	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10153	CAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	± 9.6 %
10154	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	± 9.6 %
10155	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10156	CAF	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	± 9.6 %
10157	CAE	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	± 9.6 %
10158	CAE	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	± 9.6 %
10159	CAG	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	± 9.6 %
10160	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	± 9.6 %
10161	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	± 9.6 %
10162	CAG	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	± 9.6 %
10166	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	5.46	± 9.6 %
10167	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.21	± 9.6 %
10168	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	± 9.6 %
10169	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10170	CAG	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10171	CAE	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	± 9.6 %
10172	CAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10173	CAE	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10174	CAF	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10175	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10176	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10177	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10178	CAE	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10179	AAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10180	CAG	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %



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10181	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10182	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10183	CAG	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10184	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10185	CAI	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	± 9.6 %
10186	CAG	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10187	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	5.73	± 9.6 %
10188	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.52	± 9.6 %
10189	CAE	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	± 9.6 %
10193	CAE	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	± 9.6 %
10194	AAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WLAN	8.12	± 9.6 %
10195	CAE	IEEE 802.11n (HT Greenfield, 65 Mbps, 64-QAM)	WLAN	8.21	± 9.6 %
10196	CAE	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WLAN	8.10	± 9.6 %
10197	AAE	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10198	CAF	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10219	CAF	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	± 9.6 %
10220	AAF	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	± 9.6 %
10221	CAC	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	± 9.6 %
10222	CAC	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.06	± 9.6 %
10223	CAD	IEEE 802.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	± 9.6 %
10224	CAD	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	± 9.6 %
10225	CAD	UMTS-FDD (HSPA+)	WCDMA	5.97	± 9.6 %
10226	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	± 9.6 %
10227	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	± 9.6 %
10228	CAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	± 9.6 %
10229	DAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10230	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10231	CAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	± 9.6 %
10232	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10233	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10234	CAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10235	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10236	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10237	CAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10238	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	± 9.6 %
10239	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	± 9.6 %
10240	CAB	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	± 9.6 %
10241	CAB	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	± 9.6 %
10242	CAD	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	± 9.6 %
10243	CAD	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	± 9.6 %
10244	CAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10245	CAG	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	± 9.6 %
10246	CAG	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10247	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	± 9.6 %
10248	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	± 9.6 %
10249	CAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	± 9.6 %
10250	CAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	± 9.6 %
10251	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	± 9.6 %
10252	CAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10253	CAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	± 9.6 %
10254	CAB	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	± 9.6 %
10255	CAB	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	± 9.6 %
10256	CAB	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	± 9.6 %
10257	CAD	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	± 9.6 %
10258	CAD	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	± 9.6 %
10259	CAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	± 9.6 %



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10260	CAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	± 9.6 %
10261	CAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	± 9.6 %
10262	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	± 9.6 %
10263	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	± 9.6 %
10264	CAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	± 9.6 %
10265	CAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	± 9.6 %
10266	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	± 9.6 %
10267	CAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	± 9.6 %
10268	CAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	± 9.6 %
10269	CAB	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	± 9.6 %
10270	CAB	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.58	± 9.6 %
10274	CAB	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	± 9.6 %
10275	CAD	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	± 9.6 %
10277	CAD	PHS (QPSK)	PHS	11.81	± 9.6 %
10278	CAD	PHS (QPSK, BW 884MHz, Rolloff 0.5)	PHS	11.81	± 9.6 %
10279	CAG	PHS (QPSK, BW 884MHz, Rolloff 0.38)	PHS	12.18	± 9.6 %
10290	CAG	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	± 9.6 %
10291	CAG	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	± 9.6 %
10292	CAG	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	± 9.6 %
10293	CAG	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	± 9.6 %
10295	CAG	CDMA2000, RC1, SO3, 1/8th Rate 25 fr.	CDMA2000	12.49	± 9.6 %
10297	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	± 9.6 %
10298	CAF	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	± 9.6 %
10299	CAF	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	± 9.6 %
10300	CAC	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	± 9.6 %
10301	CAC	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC)	WIMAX	12.03	± 9.6 %
10302	CAB	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, QPSK, PUSC, 3CTRL)	WIMAX	12.57	± 9.6 %
10303	CAB	IEEE 802.16e WIMAX (31:15, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	12.52	± 9.6 %
10304	CAA	IEEE 802.16e WIMAX (29:18, 5ms, 10MHz, 64QAM, PUSC)	WIMAX	11.86	± 9.6 %
10305	CAA	IEEE 802.16e WIMAX (31:15, 10ms, 10MHz, 64QAM, PUSC)	WIMAX	15.24	± 9.6 %
10306	CAA	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 64QAM, PUSC)	WIMAX	14.67	± 9.6 %
10307	AAB	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, PUSC)	WIMAX	14.49	± 9.6 %
10308	AAB	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	± 9.6 %
10309	AAB	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, 16QAM, AMC 2x3)	WIMAX	14.58	± 9.6 %
10310	AAB	IEEE 802.16e WIMAX (29:18, 10ms, 10MHz, QPSK, AMC 2x3)	WIMAX	14.57	± 9.6 %
10311	AAB	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	6.06	± 9.6 %
10313	AAD	iDEN 1:3	iDEN	10.51	± 9.6 %
10314	AAD	iDEN 1:6	iDEN	13.48	± 9.6 %
10315	AAD	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96pc dc)	WLAN	1.71	± 9.6 %
10316	AAD	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10317	AAA	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc dc)	WLAN	8.36	± 9.6 %
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	± 9.6 %
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	± 9.6 %
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.96	± 9.6 %
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	± 9.6 %
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	± 9.6 %
10387	AAA	QPSK Waveform, 1 MHz	Generic	5.10	± 9.6 %
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	± 9.6 %
10396	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	± 9.6 %
10399	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	± 9.6 %
10400	AAD	IEEE 802.11ac WiFi (20MHz, 64-QAM, 99pc dc)	WLAN	8.37	± 9.6 %
10401	AAA	IEEE 802.11ac WiFi (40MHz, 64-QAM, 99pc dc)	WLAN	8.60	± 9.6 %
10402	AAA	IEEE 802.11ac WiFi (80MHz, 64-QAM, 99pc dc)	WLAN	8.53	± 9.6 %
10403	AAB	CDMA2000 (1xEV-DO, Rev. 0)	CDMA2000	3.76	± 9.6 %
10404	AAB	CDMA2000 (1xEV-DO, Rev. A)	CDMA2000	3.77	± 9.6 %
10406	AAD	CDMA2000, RC3, SO32, SCH0, Full Rate	CDMA2000	5.22	± 9.6 %

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10410	AAA	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub=2,3,4,7,8,9)	LTE-TDD	7.82	± 9.6 %
10414	AAA	WLAN CCDF, 64-QAM, 40MHz	Generic	8.54	± 9.6 %
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc dc)	WLAN	1.54	± 9.6 %
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10417	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Long)	WLAN	8.14	± 9.6 %
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc, Short)	WLAN	8.19	± 9.6 %
10422	AAA	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	± 9.6 %
10423	AAA	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	± 9.6 %
10424	AAE	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	± 9.6 %
10425	AAE	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	± 9.6 %
10426	AAE	IEEE 802.11n (HT Greenfield, 90 Mbps, 16-QAM)	WLAN	8.45	± 9.6 %
10427	AAB	IEEE 802.11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	± 9.6 %
10430	AAB	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	± 9.6 %
10431	AAC	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	± 9.6 %
10432	AAB	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10433	AAC	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	± 9.6 %
10434	AAG	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	± 9.6 %
10435	AAA	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10447	AAA	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	± 9.6 %
10448	AAA	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.53	± 9.6 %
10449	AAC	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.51	± 9.6 %
10450	AAA	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	± 9.6 %
10451	AAA	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	± 9.6 %
10453	AAC	Validation (Square, 10ms, 1ms)	Test	10.00	± 9.6 %
10456	AAC	IEEE 802.11ac WiFi (160MHz, 64-QAM, 99pc dc)	WLAN	8.63	± 9.6 %
10457	AAC	UMTS-FDD (DC-HSDPA)	WCDMA	6.62	± 9.6 %
10458	AAC	CDMA2000 (1xEV-DO, Rev. B, 2 carriers)	CDMA2000	6.55	± 9.6 %
10459	AAC	CDMA2000 (1xEV-DO, Rev. B, 3 carriers)	CDMA2000	8.25	± 9.6 %
10460	AAC	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	± 9.6 %
10461	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10462	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.30	± 9.6 %
10463	AAD	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10464	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10465	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10466	AAC	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10467	AAA	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10468	AAF	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10469	AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.56	± 9.6 %
10470	AAD	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10471	AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10472	AAC	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10473	AAA	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.82	± 9.6 %
10474	AAC	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10475	AAD	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10477	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.32	± 9.6 %
10478	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.57	± 9.6 %
10479	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10480	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.18	± 9.6 %
10481	AAA	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10482	AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.71	± 9.6 %
10483	AAA	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, Sub)	LTE-TDD	8.39	± 9.6 %
10484	AAB	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.47	± 9.6 %
10485	AAB	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.59	± 9.6 %
10486	AAB	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.38	± 9.6 %
10487	AAC	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.60	± 9.6 %



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10488	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.70	± 9.6 %
10489	AAC	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10490	AAF	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10491	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10492	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.41	± 9.6 %
10493	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10494	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10495	AAF	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.37	± 9.6 %
10496	AAE	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10497	AAE	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10498	AAE	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Sub)	LTE-TDD	8.40	± 9.6 %
10499	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Sub)	LTE-TDD	8.68	± 9.6 %
10500	AAF	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Sub)	LTE-TDD	7.67	± 9.6 %
10501	AAF	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Sub)	LTE-TDD	8.44	± 9.6 %
10502	AAB	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Sub)	LTE-TDD	8.52	± 9.6 %
10503	AAB	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Sub)	LTE-TDD	7.72	± 9.6 %
10504	AAB	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Sub)	LTE-TDD	8.31	± 9.6 %
10505	AAC	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Sub)	LTE-TDD	8.54	± 9.6 %
10506	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10507	AAC	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Sub)	LTE-TDD	8.36	± 9.6 %
10508	AAF	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Sub)	LTE-TDD	8.55	± 9.6 %
10509	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Sub)	LTE-TDD	7.99	± 9.6 %
10510	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Sub)	LTE-TDD	8.49	± 9.6 %
10511	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Sub)	LTE-TDD	8.51	± 9.6 %
10512	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Sub)	LTE-TDD	7.74	± 9.6 %
10513	AAF	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Sub)	LTE-TDD	8.42	± 9.6 %
10514	AAE	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Sub)	LTE-TDD	8.45	± 9.6 %
10515	AAE	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10516	AAE	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc dc)	WLAN	1.57	± 9.6 %
10517	AAF	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc dc)	WLAN	1.58	± 9.6 %
10518	AAF	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 99pc dc)	WLAN	8.23	± 9.6 %
10519	AAF	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 99pc dc)	WLAN	8.39	± 9.6 %
10520	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 99pc dc)	WLAN	8.12	± 9.6 %
10521	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 99pc dc)	WLAN	7.97	± 9.6 %
10522	AAB	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10523	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 99pc dc)	WLAN	8.08	± 9.6 %
10524	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 99pc dc)	WLAN	8.27	± 9.6 %
10525	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 99pc dc)	WLAN	8.36	± 9.6 %
10526	AAF	IEEE 802.11ac WiFi (20MHz, MCS1, 99pc dc)	WLAN	8.42	± 9.6 %
10527	AAF	IEEE 802.11ac WiFi (20MHz, MCS2, 99pc dc)	WLAN	8.21	± 9.6 %
10528	AAF	IEEE 802.11ac WiFi (20MHz, MCS3, 99pc dc)	WLAN	8.36	± 9.6 %
10529	AAF	IEEE 802.11ac WiFi (20MHz, MCS4, 99pc dc)	WLAN	8.36	± 9.6 %
10531	AAF	IEEE 802.11ac WiFi (20MHz, MCS6, 99pc dc)	WLAN	8.43	± 9.6 %
10532	AAF	IEEE 802.11ac WiFi (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10533	AAE	IEEE 802.11ac WiFi (20MHz, MCS8, 99pc dc)	WLAN	8.38	± 9.6 %
10534	AAE	IEEE 802.11ac WiFi (40MHz, MCS0, 99pc dc)	WLAN	8.45	± 9.6 %
10535	AAE	IEEE 802.11ac WiFi (40MHz, MCS1, 99pc dc)	WLAN	8.45	± 9.6 %
10536	AAF	IEEE 802.11ac WiFi (40MHz, MCS2, 99pc dc)	WLAN	8.32	± 9.6 %
10537	AAF	IEEE 802.11ac WiFi (40MHz, MCS3, 99pc dc)	WLAN	8.44	± 9.6 %
10538	AAF	IEEE 802.11ac WiFi (40MHz, MCS4, 99pc dc)	WLAN	8.54	± 9.6 %
10540	AAA	IEEE 802.11ac WiFi (40MHz, MCS6, 99pc dc)	WLAN	8.39	± 9.6 %
10541	AAA	IEEE 802.11ac WiFi (40MHz, MCS7, 99pc dc)	WLAN	8.46	± 9.6 %
10542	AAA	IEEE 802.11ac WiFi (40MHz, MCS8, 99pc dc)	WLAN	8.65	± 9.6 %
10543	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 99pc dc)	WLAN	8.65	± 9.6 %
10544	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 99pc dc)	WLAN	8.47	± 9.6 %
10545	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %

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10546	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 99pc dc)	WLAN	8.35	± 9.6 %
10547	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 99pc dc)	WLAN	8.49	± 9.6 %
10548	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 99pc dc)	WLAN	8.37	± 9.6 %
10550	AAC	IEEE 802.11ac WiFi (80MHz, MCS6, 99pc dc)	WLAN	8.38	± 9.6 %
10551	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 99pc dc)	WLAN	8.50	± 9.6 %
10552	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 99pc dc)	WLAN	8.42	± 9.6 %
10553	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 99pc dc)	WLAN	8.45	± 9.6 %
10554	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 99pc dc)	WLAN	8.48	± 9.6 %
10555	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 99pc dc)	WLAN	8.47	± 9.6 %
10556	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 99pc dc)	WLAN	8.50	± 9.6 %
10557	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 99pc dc)	WLAN	8.52	± 9.6 %
10558	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 99pc dc)	WLAN	8.61	± 9.6 %
10560	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 99pc dc)	WLAN	8.73	± 9.6 %
10561	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 99pc dc)	WLAN	8.56	± 9.6 %
10562	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 99pc dc)	WLAN	8.69	± 9.6 %
10563	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 99pc dc)	WLAN	8.77	± 9.6 %
10564	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc dc)	WLAN	8.25	± 9.6 %
10565	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc dc)	WLAN	8.45	± 9.6 %
10566	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc dc)	WLAN	8.13	± 9.6 %
10567	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc dc)	WLAN	8.00	± 9.6 %
10568	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc dc)	WLAN	8.37	± 9.6 %
10569	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc dc)	WLAN	8.10	± 9.6 %
10570	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc dc)	WLAN	8.30	± 9.6 %
10571	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10572	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 90pc dc)	WLAN	1.99	± 9.6 %
10573	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10574	AAC	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 90pc dc)	WLAN	1.98	± 9.6 %
10575	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10576	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10577	AAC	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10578	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10579	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10580	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10581	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10582	AAD	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10583	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc dc)	WLAN	8.59	± 9.6 %
10584	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 9 Mbps, 90pc dc)	WLAN	8.60	± 9.6 %
10585	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 12 Mbps, 90pc dc)	WLAN	8.70	± 9.6 %
10586	AAD	IEEE 802.11a/h WiFi 5 GHz (OFDM, 18 Mbps, 90pc dc)	WLAN	8.49	± 9.6 %
10587	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 24 Mbps, 90pc dc)	WLAN	8.36	± 9.6 %
10588	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 36 Mbps, 90pc dc)	WLAN	8.76	± 9.6 %
10589	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 48 Mbps, 90pc dc)	WLAN	8.35	± 9.6 %
10590	AAA	IEEE 802.11a/h WiFi 5 GHz (OFDM, 54 Mbps, 90pc dc)	WLAN	8.67	± 9.6 %
10591	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc dc)	WLAN	8.63	± 9.6 %
10592	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10593	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS2, 90pc dc)	WLAN	8.64	± 9.6 %
10594	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10595	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS4, 90pc dc)	WLAN	8.74	± 9.6 %
10596	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS5, 90pc dc)	WLAN	8.71	± 9.6 %
10597	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS6, 90pc dc)	WLAN	8.72	± 9.6 %
10598	AAA	IEEE 802.11n (HT Mixed, 20MHz, MCS7, 90pc dc)	WLAN	8.50	± 9.6 %
10599	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS0, 90pc dc)	WLAN	8.79	± 9.6 %
10600	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10601	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS2, 90pc dc)	WLAN	8.82	± 9.6 %
10602	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS3, 90pc dc)	WLAN	8.94	± 9.6 %
10603	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS4, 90pc dc)	WLAN	9.03	± 9.6 %



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10604	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS5, 90pc dc)	WLAN	8.76	± 9.6 %
10605	AAA	IEEE 802.11n (HT Mixed, 40MHz, MCS6, 90pc dc)	WLAN	8.97	± 9.6 %
10606	AAC	IEEE 802.11n (HT Mixed, 40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10607	AAC	IEEE 802.11ac WiFi (20MHz, MCS0, 90pc dc)	WLAN	8.64	± 9.6 %
10608	AAC	IEEE 802.11ac WiFi (20MHz, MCS1, 90pc dc)	WLAN	8.77	± 9.6 %
10609	AAC	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc dc)	WLAN	8.57	± 9.6 %
10610	AAC	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc dc)	WLAN	8.78	± 9.6 %
10611	AAC	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10612	AAC	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10613	AAC	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc dc)	WLAN	8.94	± 9.6 %
10614	AAC	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc dc)	WLAN	8.59	± 9.6 %
10615	AAC	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10616	AAC	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc dc)	WLAN	8.82	± 9.6 %
10617	AAC	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc dc)	WLAN	8.81	± 9.6 %
10618	AAC	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc dc)	WLAN	8.58	± 9.6 %
10619	AAC	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc dc)	WLAN	8.86	± 9.6 %
10620	AAC	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc dc)	WLAN	8.87	± 9.6 %
10621	AAC	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10622	AAC	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc dc)	WLAN	8.68	± 9.6 %
10623	AAC	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc dc)	WLAN	8.82	± 9.6 %
10624	AAC	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc dc)	WLAN	8.96	± 9.6 %
10625	AAC	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc dc)	WLAN	8.96	± 9.6 %
10626	AAC	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10627	AAC	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc dc)	WLAN	8.88	± 9.6 %
10628	AAC	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc dc)	WLAN	8.71	± 9.6 %
10629	AAC	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10630	AAC	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc dc)	WLAN	8.72	± 9.6 %
10631	AAC	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc dc)	WLAN	8.81	± 9.6 %
10632	AAC	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10633	AAC	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc dc)	WLAN	8.83	± 9.6 %
10634	AAC	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc dc)	WLAN	8.80	± 9.6 %
10635	AAC	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc dc)	WLAN	8.81	± 9.6 %
10636	AAC	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc dc)	WLAN	8.83	± 9.6 %
10637	AAC	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc dc)	WLAN	8.79	± 9.6 %
10638	AAC	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc dc)	WLAN	8.86	± 9.6 %
10639	AAC	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc dc)	WLAN	8.85	± 9.6 %
10640	AAC	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc dc)	WLAN	8.98	± 9.6 %
10641	AAC	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc dc)	WLAN	9.06	± 9.6 %
10642	AAC	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc dc)	WLAN	9.06	± 9.6 %
10643	AAC	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc dc)	WLAN	8.89	± 9.6 %
10644	AAC	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc dc)	WLAN	9.05	± 9.6 %
10645	AAC	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc dc)	WLAN	9.11	± 9.6 %
10646	AAC	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10647	AAC	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Sub=2,7)	LTE-TDD	11.96	± 9.6 %
10648	AAC	CDMA2000 (1x Advanced)	CDMA2000	3.45	± 9.6 %
10652	AAC	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	± 9.6 %
10653	AAC	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	± 9.6 %
10654	AAC	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.96	± 9.6 %
10655	AAC	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	± 9.6 %
10658	AAC	Pulse Waveform (200Hz, 10%)	Test	10.00	± 9.6 %
10659	AAC	Pulse Waveform (200Hz, 20%)	Test	6.99	± 9.6 %
10660	AAC	Pulse Waveform (200Hz, 40%)	Test	3.98	± 9.6 %
10661	AAC	Pulse Waveform (200Hz, 60%)	Test	2.22	± 9.6 %
10662	AAC	Pulse Waveform (200Hz, 80%)	Test	0.97	± 9.6 %
10670	AAC	Bluetooth Low Energy	Bluetooth	2.19	± 9.6 %
10671	AAD	IEEE 802.11ax (20MHz, MCS0, 90pc dc)	WLAN	9.09	± 9.6 %

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10672	AAD	IEEE 802.11ax (20MHz, MCS1, 90pc dc)	WLAN	8.57	± 9.6 %
10673	AAD	IEEE 802.11ax (20MHz, MCS2, 90pc dc)	WLAN	8.78	± 9.6 %
10674	AAD	IEEE 802.11ax (20MHz, MCS3, 90pc dc)	WLAN	8.74	± 9.6 %
10675	AAD	IEEE 802.11ax (20MHz, MCS4, 90pc dc)	WLAN	8.90	± 9.6 %
10676	AAD	IEEE 802.11ax (20MHz, MCS5, 90pc dc)	WLAN	8.77	± 9.6 %
10677	AAD	IEEE 802.11ax (20MHz, MCS6, 90pc dc)	WLAN	8.73	± 9.6 %
10678	AAD	IEEE 802.11ax (20MHz, MCS7, 90pc dc)	WLAN	8.78	± 9.6 %
10679	AAD	IEEE 802.11ax (20MHz, MCS8, 90pc dc)	WLAN	8.89	± 9.6 %
10680	AAD	IEEE 802.11ax (20MHz, MCS9, 90pc dc)	WLAN	8.80	± 9.6 %
10681	AAG	IEEE 802.11ax (20MHz, MCS10, 90pc dc)	WLAN	8.62	± 9.6 %
10682	AAF	IEEE 802.11ax (20MHz, MCS11, 90pc dc)	WLAN	8.63	± 9.6 %
10683	AAA	IEEE 802.11ax (20MHz, MCS0, 99pc dc)	WLAN	8.42	± 9.6 %
10684	AAC	IEEE 802.11ax (20MHz, MCS1, 99pc dc)	WLAN	8.26	± 9.6 %
10685	AAC	IEEE 802.11ax (20MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10686	AAC	IEEE 802.11ax (20MHz, MCS3, 99pc dc)	WLAN	8.28	± 9.6 %
10687	AAE	IEEE 802.11ax (20MHz, MCS4, 99pc dc)	WLAN	8.45	± 9.6 %
10688	AAE	IEEE 802.11ax (20MHz, MCS5, 99pc dc)	WLAN	8.29	± 9.6 %
10689	AAD	IEEE 802.11ax (20MHz, MCS6, 99pc dc)	WLAN	8.55	± 9.6 %
10690	AAE	IEEE 802.11ax (20MHz, MCS7, 99pc dc)	WLAN	8.29	± 9.6 %
10691	AAB	IEEE 802.11ax (20MHz, MCS8, 99pc dc)	WLAN	8.25	± 9.6 %
10692	AAA	IEEE 802.11ax (20MHz, MCS9, 99pc dc)	WLAN	8.29	± 9.6 %
10693	AAA	IEEE 802.11ax (20MHz, MCS10, 99pc dc)	WLAN	8.25	± 9.6 %
10694	AAA	IEEE 802.11ax (20MHz, MCS11, 99pc dc)	WLAN	8.57	± 9.6 %
10695	AAA	IEEE 802.11ax (40MHz, MCS0, 90pc dc)	WLAN	8.78	± 9.6 %
10696	AAA	IEEE 802.11ax (40MHz, MCS1, 90pc dc)	WLAN	8.91	± 9.6 %
10697	AAA	IEEE 802.11ax (40MHz, MCS2, 90pc dc)	WLAN	8.61	± 9.6 %
10698	AAA	IEEE 802.11ax (40MHz, MCS3, 90pc dc)	WLAN	8.89	± 9.6 %
10699	AAA	IEEE 802.11ax (40MHz, MCS4, 90pc dc)	WLAN	8.82	± 9.6 %
10700	AAA	IEEE 802.11ax (40MHz, MCS5, 90pc dc)	WLAN	8.73	± 9.6 %
10701	AAA	IEEE 802.11ax (40MHz, MCS6, 90pc dc)	WLAN	8.86	± 9.6 %
10702	AAA	IEEE 802.11ax (40MHz, MCS7, 90pc dc)	WLAN	8.70	± 9.6 %
10703	AAA	IEEE 802.11ax (40MHz, MCS8, 90pc dc)	WLAN	8.82	± 9.6 %
10704	AAA	IEEE 802.11ax (40MHz, MCS9, 90pc dc)	WLAN	8.56	± 9.6 %
10705	AAA	IEEE 802.11ax (40MHz, MCS10, 90pc dc)	WLAN	8.69	± 9.6 %
10706	AAC	IEEE 802.11ax (40MHz, MCS11, 90pc dc)	WLAN	8.66	± 9.6 %
10707	AAC	IEEE 802.11ax (40MHz, MCS0, 99pc dc)	WLAN	8.32	± 9.6 %
10708	AAC	IEEE 802.11ax (40MHz, MCS1, 99pc dc)	WLAN	8.55	± 9.6 %
10709	AAC	IEEE 802.11ax (40MHz, MCS2, 99pc dc)	WLAN	8.33	± 9.6 %
10710	AAC	IEEE 802.11ax (40MHz, MCS3, 99pc dc)	WLAN	8.29	± 9.6 %
10711	AAC	IEEE 802.11ax (40MHz, MCS4, 99pc dc)	WLAN	8.39	± 9.6 %
10712	AAC	IEEE 802.11ax (40MHz, MCS5, 99pc dc)	WLAN	8.67	± 9.6 %
10713	AAC	IEEE 802.11ax (40MHz, MCS6, 99pc dc)	WLAN	8.33	± 9.6 %
10714	AAC	IEEE 802.11ax (40MHz, MCS7, 99pc dc)	WLAN	8.26	± 9.6 %
10715	AAC	IEEE 802.11ax (40MHz, MCS8, 99pc dc)	WLAN	8.45	± 9.6 %
10716	AAC	IEEE 802.11ax (40MHz, MCS9, 99pc dc)	WLAN	8.30	± 9.6 %
10717	AAC	IEEE 802.11ax (40MHz, MCS10, 99pc dc)	WLAN	8.48	± 9.6 %
10718	AAC	IEEE 802.11ax (40MHz, MCS11, 99pc dc)	WLAN	8.24	± 9.6 %
10719	AAC	IEEE 802.11ax (80MHz, MCS0, 90pc dc)	WLAN	8.81	± 9.6 %
10720	AAC	IEEE 802.11ax (80MHz, MCS1, 90pc dc)	WLAN	8.87	± 9.6 %
10721	AAC	IEEE 802.11ax (80MHz, MCS2, 90pc dc)	WLAN	8.76	± 9.6 %
10722	AAC	IEEE 802.11ax (80MHz, MCS3, 90pc dc)	WLAN	8.55	± 9.6 %
10723	AAC	IEEE 802.11ax (80MHz, MCS4, 90pc dc)	WLAN	8.70	± 9.6 %
10724	AAC	IEEE 802.11ax (80MHz, MCS5, 90pc dc)	WLAN	8.90	± 9.6 %
10725	AAC	IEEE 802.11ax (80MHz, MCS6, 90pc dc)	WLAN	8.74	± 9.6 %
10726	AAC	IEEE 802.11ax (80MHz, MCS7, 90pc dc)	WLAN	8.72	± 9.6 %
10727	AAC	IEEE 802.11ax (80MHz, MCS8, 90pc dc)	WLAN	8.66	± 9.6 %