Report on the Specific Absorption Rate Testing of the SC2021 and SC2321

Sepura Limited
Model: SC2021 and SC2321

In accordance with FCC 47 CFR 2.1093 and RSS-102 Issue 6 (2023-12)

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FCC ID SC2321: XX6SC2321X
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NAME	**JOB TITLE**	**RESPONSIBLE FOR**	**ISSUE DATE**
Jon Kenny	Technical Director	Report signatory	17 January 2025

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

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR 2.1093 and RSS-102 Issue 6 (2023-12), for the tests detailed in section 1.

ACCREDITATION

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

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SECTION 1

REPORT SUMMARY

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	17-Jan-2025

Table 1

1.2 INTRODUCTION

The information contained in this report is intended to show verification of the Specific Absorption Rate testing of the TETRA handheld PTT radio to the requirements of FCC 47 CFR 2.1093 and RSS-102 Issue 6 (2023-12).

Objective	To determine the Equipment Under Test's (EUT) compliance with the requirements specified within FCC 47 CFR 2.1093 and RSS-102 Issue 6 (2023-12).
Applicant	Sepura Limited
EUT/Sample Identification	Refer to section 1.3
Test Specification/Issue/Date	FCC 47 CFR 2.1093 and RSS-102 Issue 6 (2023-12)
Start of Test	21-06-2024
Finish of Test	19-07-2024
Related Document(s)	KDB 865664 - D01 v01r04 KDB 447498 - D01 v06 KDB 248227 – D01 v02r01 KDB 643646 - D01 v01r03 IEC-IEEE 62209-1528:2020
Name of Engineer(s)	Umesh Kabbur Luza, Valentinas

1.3 IDENTIFICATION OF THE EUT

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

Model: SC2021			
Serial Number	Hardware Version	Software Version	Firmware
1PR002417GKZ790	PLX-2V16515-03 (HW Mod State 12, Revision B024)	1807 009 07367	N/A
Model: SC2321			
Serial Number	Hardware Version	Software Version	Firmware
1PR002417GKZ79V	PLX-2V16505-03 (mod state 12, revision B022)	1822 008 08522	N/A

Table 2

1.4 BRIEF SUMMARY OF RESULTS

The measurements shown in this report were made to the requirements of FCC 47 CFR 2.1093 and RSS-102 Issue 6 (2023-12).

1.4.1 Summary of Maximum Values

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

Max 1g SAR (W/kg) Head	3.990 (Measured)	4.187 (Scaled)
Max 1g SAR (W/kg) Body	3.190 (Measured)	3.317 (Scaled)
Max 1g SAR (W/kg) Front of Face	0.514 (Measured)	0.534 (Scaled)
The maximum 1g volume averaged SAR level measured for all the tests performed did not exceed the limits for FCC occupational exposure Partial Body of 8 W/kg in accordance with FCC 47 CFR 1.1310 and RSS-102 Issue 6 (2023-12).		

Table 3

The maximum 1g volume average SAR found during this assessment for TETRA, Bluetooth and WLAN simultaneous operation:

Max 1g SAR (W/kg) Head	4.563 (Scaled)
Max 1g SAR (W/kg) Body	4.058 (Scaled)
Max 1g SAR (W/kg) Front of Face	0.910 (Scaled)
The maximum 1g volume averaged SAR level measured for all the tests performed did not exceed the limits for FCC occupational exposure Partial Body of 8 W/kg in accordance with FCC 47 CFR 1.1310 and RSS-102 Issue 6 (2023-12).	

Table 4

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

Technology	Antenna	Band	Test Configuration	Max Reported SAR (W/kg)
TETRA PTT Radio	300-02070 (White)	136-150	Head	2.515
TETRA PTT Radio	300-02071 (Green)	136-150	Head	3.094
TETRA PTT Radio	300-02071 (Green)	149-165	Head	2.443
TETRA PTT Radio	300-02072 (Blue)	149-165	Head	1.102
TETRA PTT Radio	300-02072 (Blue)	162-174	Head	1.715
TETRA PTT Radio	300-02073 (Yellow)	162-174	Head	4.187
TETRA PTT Radio	300-02070 (White)	136-150	Body	0.968
TETRA PTT Radio	300-02071 (Green)	136-150	Body	1.997
TETRA PTT Radio	300-02071 (Green)	149-165	Body	1.612
TETRA PTT Radio	300-02072 (Blue)	149-165	Body	2.235
TETRA PTT Radio	300-02072 (Blue)	162-174	Body	2.400
TETRA PTT Radio	300-02073 (Yellow)	162-174	Body	3.317
TETRA PTT Radio	300-02070 (White)	136-150	Front of Face	0.334
TETRA PTT Radio	300-02071 (Green)	136-150	Front of Face	0.061
TETRA PTT Radio	300-02071 (Green)	149-165	Front of Face	0.363
TETRA PTT Radio	300-02072 (Blue)	149-165	Front of Face	0.097
TETRA PTT Radio	300-02072 (Blue)	162-174	Front of Face	0.534
TETRA PTT Radio	300-02073 (Yellow)	162-174	Front of Face	0.082
The maximum 1g volume averaged SAR level measured for all the tests performed did not exceed the limits for FCC occupational exposure Partial Body of 8 W/kg in accordance with FCC 47 CFR 1.1310 and RSS-102 Issue 6 (2023-12).				

Table 5

1.5 TEST RESULTS SUMMARY

1.5.1 Results Summary Tables

1.5.2 Head SAR Results

The following results were tested with Battery B (300-01853) unless otherwise specified

TETRA - White antenna (300-02070) - (136MHz-150MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Touch Left	2	143.00	34.85	35.00	1.190	1.232	-
Tilt Left	2	143.00	34.85	35.00	2.430	2.515	D.01
Touch Right	2	143.00	34.85	35.00	0.957	0.990	-
Tilt Right	2	143.00	34.85	35.00	1.750	1.811	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 6

TETRA - Green antenna (300-02071) - (136MHz-150MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Touch Left	2	143.00	34.85	35.00	0.324	0.335	-
Tilt Left	2	143.00	34.85	35.00	2.990	3.094	D.02
Touch Right	2	143.00	34.85	35.00	0.228	0.236	-
Tilt Right	2	143.00	34.85	35.00	0.505	0.523	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 7

TETRA - Green antenna (300-02071) - (149MHz-165MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Touch Left	6	157.00	34.83	35.00	1.240	1.289	-
Tilt Left	6	157.00	34.83	35.00	2.350	2.443	D.03
Touch Right	6	157.00	34.83	35.00	0.987	1.026	-
Tilt Right	6	157.00	34.83	35.00	2.240	2.329	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 8

TETRA - Blue antenna (300-02072) - (149MHz-165MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Touch Left	6	157.00	34.83	35.00	0.450	0.468	-
Tilt Left	6	157.00	34.83	35.00	1.060	1.102	D.04
Touch Right	6	157.00	34.83	35.00	0.288	0.299	-
Tilt Right	6	157.00	34.83	35.00	0.801	0.833	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 9

TETRA - Blue antenna (300-02072) - (162MHz-174MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Touch Left	12	174.00	34.83	35.00	1.350	1.404	-
Tilt Left	12	174.00	34.83	35.00	1.650	1.715	D.05
Touch Right	12	174.00	34.83	35.00	1.270	1.320	-
Tilt Right	12	174.00	34.83	35.00	1.620	1.684	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 10

TETRA - Yellow antenna (300-02073) - (162MHz-174MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Touch Left	12	174.00	34.83	35.00	0.459	0.477	-
Tilt Left	12	174.00	34.83	35.00	3.990	4.148	-
Touch Right	12	174.00	34.83	35.00	0.341	0.355	-
Tilt Right	12	174.00	34.83	35.00	1.410	1.466	-
Tilt Left	11	170.00	34.79	35.00	3.990	4.187	D.06
Tilt Left	8	162.00	34.75	35.00	1.600	1.694	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is > 4 W/kg and ≤ 6 W/kg so testing was carried out on other required channels for the antenna							

Table 11

TETRA - Worst case overall test with battery A (300-01852):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Tilt Left	12	174.00	34.83	35.00	3.250	3.379	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, testing was carried out with an additional battery using the antenna which resulted in highest SAR among all antennas tested. The tested SAR is ≤ 4 W/kg so testing of additional battery in combination with the remaining antennas is unnecessary.							

1.5.3 Body SAR Results

The following results were tested with Battery A (300-01852) unless otherwise specified

TETRA - White antenna (300-02070) - (136MHz-150MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Front 0mm	2	143.00	34.85	35.00	0.388	0.402	-
Back 0mm	2	143.00	34.85	35.00	0.485	0.502	-
Left Edge 0mm	2	143.00	34.85	35.00	0.815	0.843	-
Right Edge 0mm	2	143.00	34.85	35.00	0.603	0.624	-
Bottom Edge 0mm	2	143.00	34.85	35.00	0.935	0.968	D.07
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 12

TETRA - Green antenna (300-02071) - (136MHz-150MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Front 0mm	2	143.00	34.85	35.00	1.700	1.759	-
Back 0mm	2	143.00	34.85	35.00	1.220	1.263	-
Left Edge 0mm	2	143.00	34.85	35.00	0.148	0.153	-
Right Edge 0mm	2	143.00	34.85	35.00	1.930	1.997	D.08
Bottom Edge 0mm	2	143.00	34.85	35.00	0.463	0.479	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 13

TETRA - Green antenna (300-02071) - (149MHz-165MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Front 0mm	6	157.00	34.83	35.00	0.625	0.650	-
Back 0mm	6	157.00	34.83	35.00	0.535	0.556	-
Left Edge 0mm	6	157.00	34.83	35.00	0.778	0.809	-
Right Edge 0mm	6	157.00	34.83	35.00	0.838	0.871	-
Bottom Edge 0mm	6	157.00	34.83	35.00	1.550	1.612	D.09
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 14

TETRA - Blue antenna (300-02072) - (149MHz-165MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Front 0mm	6	157.00	34.83	35.00	1.930	2.007	-
Back 0mm	6	157.00	34.83	35.00	1.490	1.549	-
Left Edge 0mm	6	157.00	34.83	35.00	0.191	0.199	-
Right Edge 0mm	6	157.00	34.83	35.00	2.150	2.235	D.10
Bottom Edge 0mm	6	157.00	34.83	35.00	0.524	0.545	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 15

TETRA - Blue antenna (300-02072) - (162MHz-174MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Front 0mm	12	174.00	34.83	35.00	0.599	0.623	-
Back 0mm	12	174.00	34.83	35.00	0.563	0.585	-
Left Edge 0mm	12	174.00	34.83	35.00	0.825	0.858	-
Right Edge 0mm	12	174.00	34.83	35.00	0.635	0.660	-
Bottom Edge 0mm	12	174.00	34.83	35.00	2.308	2.400	D.11
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 16

TETRA - Yellow antenna (300-02073) - (162MHz-174MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
Front 0mm	12	174.00	34.83	35.00	2.990	3.109	D.12
Back 0mm	12	174.00	34.83	35.00	1.370	1.424	-
Left Edge 0mm	12	174.00	34.83	35.00	0.126	0.131	-
Right Edge 0mm	12	174.00	34.83	35.00	2.040	2.121	-
Bottom Edge 0mm	12	174.00	34.83	35.00	0.360	0.374	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, the tested SAR is > 4 W/kg and ≤ 6 W/kg so testing was carried out on other required channels for the antenna.							

Table 17

TETRA - Worst case configuration in each antenna tested with audio accessory D (300-01169):
Specific Absorption Rate (SAR) 1g Results

Antenna	Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
300-02070 (White)	Bottom Edge 0mm	2	143.00	34.85	35.00	0.286	0.296	-
300-02071 (Green)	Right Edge 0mm	2	143.00	34.85	35.00	1.022	1.058	-
300-02071 (Green)	Bottom Edge 0mm	6	157.00	34.83	35.00	1.230	1.279	-
300-02072 (Blue)	Right Edge 0mm	6	157.00	34.83	35.00	0.907	0.943	-
300-02072 (Blue)	Bottom Edge 0mm	12	174.00	34.83	35.00	2.020	2.100	-
300-02073 (Yellow)	Front 0mm	12	174.00	34.83	35.00	0.655	0.681	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A4, testing was carried out with an audio accessory on all antennas and the tested SAR is ≤ 4 W/kg so testing of all other required channels is not necessary for that audio accessory.								

Table 18

TETRA - Worst case overall test with battery B (300-01853)
Specific Absorption Rate (SAR) 1g Results

Antenna	Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
300-02073 (Yellow)	Front 0mm	12	174.00	34.83	35.00	3.190	3.317	D.13
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, testing was carried out with an additional battery using the antenna which resulted in highest SAR among all antennas tested. The tested SAR is ≤ 4 W/kg so testing of additional battery in combination with the default body-worn and audio accessory and remaining antennas is unnecessary.								

Table 19

TETRA - Worst case overall test with body worn accessory L (300-01387):
Specific Absorption Rate (SAR) 1g Results

Antenna	Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
300-02073 (Yellow)	Front 0mm	12	174.00	34.83	35.00	0.338	0.351	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary.								

Table 20

TETRA - Worst case overall test with audio accessory D (300-01169) and body worn accessory L (300-01387):
Specific Absorption Rate (SAR) 1g Results

Antenna	Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
300-02073 (Yellow)	Front 0mm	12	174.00	34.83	35.00	0.322	0.335	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A2, testing was carried out with an default audio and boddy worn accessory using the antenna which resulted in highest SAR among all antennas tested.The tested SAR is ≤ 4 W/kg so testing of all other required channels is not necessary for that audio and body worn accessory combination.								

Table 21

1.5.4 Front of Face SAR Results

The following results were tested with Battery B (300-01853) unless otherwise specified

TETRA - White antenna (300-02070) - (136MHz-150MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
25mm Front of face	2	143.00	34.85	35.00	0.323	0.334	D.14
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 22

TETRA - Green antenna (300-02071) - (136MHz-150MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
25mm Front of face	2	143.00	34.85	35.00	0.059	0.061	D.15
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 23

TETRA - Green antenna (300-02071) - (149MHz-165MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
25mm Front of face	6	157.00	34.83	35.00	0.349	0.363	D.16
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 24

TETRA - Blue antenna (300-02072) - (149MHz-165MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
25mm Front of face	6	157.00	34.83	35.00	0.093	0.097	D.17
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 25

TETRA - Blue antenna (300-02072) - (162MHz-174MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
25mm Front of face	12	174.00	34.83	35.00	0.514	0.534	D.18
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 26

TETRA - Yellow antenna (300-02073) - (162MHz-174MHz):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
25mm Front of face	12	174.00	34.83	35.00	0.079	0.082	D.19
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, the tested SAR is ≤ 3.5 W/kg so testing of all other required channels is not necessary for the antenna.							

Table 27

TETRA - Worst case overall test with battery A (300-01852):
Specific Absorption Rate (SAR) 1g Results

Test Position	Channel Number	Frequency (MHz)	Measured Average Power (dBm)	Tune Up (dBm)	Measured 1g SAR (W/kg)	Scaled 1g SAR (W/kg)	Scan Figure Number
25mm Front of face	12	174.00	34.83	35.00	0.508	0.528	-
Limit for Occupational (Controlled Exposure) 8 W/kg (1g) As referenced in KDB 643646 Appendix A1, testing was carried out with an additional battery using the antenna which resulted in highest SAR among all antennas tested. The tested SAR is ≤ 4 W/kg so testing of additional battery in combination with the remaining antennas is unnecessary.							

1.5.5 Technical Description

The equipment under test (EUT) was an occupational TETRA handheld radio.

1.5.6 Test Configuration and Modes of Operation

The testing was performed with an integral battery supplied and manufactured by Sepura limited.

SC2021 supported technologies are TETRA and WLAN 2.4GHz (802.11b/g/n).

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

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

Conducted power measurements were performed on the device via the antenna port, and the measured SAR results were power scaled to the maximum declared tune-up level.

The test positions that are used in this report were defined by the client and based on normal use operation of the EUT in an occupational environment.

The device was tested in a stand-alone configuration first and then additional accessories were identified that would need to be additionally considered.

Once these accessories were identified they were tested in the configurations that yielded the maximum SAR conditions. These tests demonstrated that the SAR was not increased using the accessories.

For head SAR assessment, testing was performed with the device in the specified test positions at maximum power. The device was placed against a Specific Anthropomorphic Mannequin (SAM) phantom. The phantom was filled with an appropriate simulant liquid to a depth of 150mm measured at ear canal.

For front of face testing the device was positioned against Elliptical Flat Phantom with a separation distance of 25mm.

For body SAR assessment, testing was performed on relevant surfaces of the EUT. The device was placed at 0mm from the bottom of the flat phantom for all body testing.

The Elliptical Flat Phantom dimensions are 600mm major axis and 400mm minor axis with a shell thickness of 2mm. The phantom was filled to a minimum depth of 150mm with the appropriate liquid. The dielectric properties of SAM and ELI phantom filled liquids were in accordance with the requirements specified in KDB 865664 and IEC-IEEE 62209-1528.

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

Optional accessories

Accessory	Description	Part Number
Battery A	Li-Pol, 1160 mAh	300-01852
Battery B	Li-Pol, 1880 mAh	300-01853
Antenna A	Helical Extended (136 – 150 MHz) colour code White	300-02070
Antenna B	Helical Extended (136 – 165 MHz) colour code Green	300-02071
Antenna C	Helical Extended (149 – 174 MHz) colour code Blue	300-02072
Antenna D	Helical Extended (162 – 174 MHz) colour code Yellow	300-02073
Audio Accessory A	Standard Remote Speaker Microphone (RSM)	300-00389
Audio Accessory B	Advanced Remote Speaker Microphone (RSM) (37 cm Lead)	300-00734
Audio Accessory C	Advanced Remote Speaker Microphone (RSM) (60 cm Lead)	300-00733
Audio Accessory D	IP67 sRSM Speaker Microphone (Standard Lead Length)	300-01169
Audio Accessory E	IP67 sRSM Speaker Microphone (Short Lead Length)	300-01982
Audio Accessory F	IP67 Ultra CSM (with Heavy Duty Large Clip)	300-01123
Audio Accessory G	IP67 Ultra CSM Peltor Interface (with Heavy Duty Large Clip)	300-01152
Audio Accessory H	IP67 Ultra RSM (with Heavy Duty Large Clip)	300-01124
Audio Accessory I	IP67 Ultra RSM Peltor Interface (with Heavy Duty Large Clip)	300-01153
Audio Accessory J	m-RSM – Mini Remote Speaker Microphone	300-01979
Audio Accessory K	EM2 Ear Hanger, RAC (50 cm)	300-00579
Audio Accessory L	EM2 Ear Hanger, RAC (90 cm)	300-00580
Audio Accessory M	EM2 Ear Hanger, RSM (50 cm)	300-00581
Audio Accessory N	EH6 Ear Hanger, RAC (50 cm)	300-00562
Audio Accessory O	EH6 Ear Hanger, RAC (90 cm)	300-00563
Audio Accessory P	EH6 Ear Hanger, RSM	300-00564
Audio Accessory Q	STP In-Ear Tactical Headset (RAC)	300-00746
Audio Accessory R	STP Genesis II Headset (RAC)	300-00747
Audio Accessory S	RAC Two-Wire Kit: G-Type Ear Hanger	300-01626
Audio Accessory T	RAC Two-Wire Kit: Acoustic Tube Ear Hanger	300-01628
Audio Accessory U	STP/SC2 RAC One-Wire Kit, Acoustic Tube Ear Hanger	300-02017
Audio Accessory V	Heavy-Duty Headset	300-00852
Audio Accessory W	Heavy-Duty Helmut Headset	300-00850
Audio Accessory X	GSM-Style In-Line Hands-Free Kit (RAC)	300-00428
Audio Accessory Y	Two-Wire Kit (RAC)	300-00755
Body Worn Accessory A	Klickfast Six Dock Kit	300-00012
Body Worn Accessory B	Shoulder Strap	300-00900
Body Worn Accessory C	Extended Belt Loop	300-00912
Body Worn Accessory D	Klickfast Stud	300-00718
Body Worn Accessory E	Klickfast Dock (50 cm)	300-00322
Body Worn Accessory F	Klickfast Dock (60 cm)	300-00323
Body Worn Accessory G	Dock Tag	300-00045

Body Worn Accessory H	SC20 Belt Clip	300-01589
Body Worn Accessory I	Lanyard	300-00013
Body Worn Accessory J	Heavy Duty Leather Case	300-01386
Body Worn Accessory K	Lightweight Leather Case	300-01385
Body Worn Accessory L	SC20/STP Nylon Holster	300-01387

Table 28

The following accessories were selected in line with KDB643646 D01.

Accessory	Description	Part Number
Antenna A	Helical Extended (136 – 150 MHz) colour code White	300-02070
Antenna B	Helical Extended (136 – 165 MHz) colour code Green	300-02071
Antenna C	Helical Extended (149 – 174 MHz) colour code Blue	300-02072
Antenna D	Helical Extended (162 – 174 MHz) colour code Yellow	300-02073
Battery A	Li-Pol, 1160 mAh	300-01852
Battery B	Li-Pol, 1880 mAh	300-01853
Audio Accessory D	IP67 sRSM Speaker Microphone (Standard Lead Length)	300-01169
Body Worn Accessory L	SC20/STP Nylon Holster	300-01387

Initial tests were conducted for SC2021 with different combinations of battery and antenna. By referencing those the highest capacity (Thick) battery (B) selected as a default battery for all head testing and additional lower capacity (Thin) battery (A) tested for the antenna and channel configuration that resulted in highest head SAR among all the antenna tested. The lower capacity (Thin) battery (A) selected as a default battery for all body testing and additional highest capacity (Thick) battery (B) tested for the antenna and channel configuration that resulted in highest body SAR among all the antenna tested. This is in line with guidance contained within KDB643646 D01.

The IP67 sRSM Speaker Microphone (D) and SC20/STP Nylon Holster (L) are selected as standard body worn accessories with the SC2021. Testing was initially carried out without the audio accessory and then the overall maximum SAR position in each antenna band configuration was tested with the audio accessory.

Testing was conducted for each antenna band configuration without the holster accessory at the minimum possible separation distance (0mm) and then the highest overall SAR position was repeated with the holster accessory to demonstrate that the SAR was lower with the accessory in use.

Results showing the overall worst-case configurations with the accessories in use are included in this test report.

1.5.7 Deviations from Standard

None.

1.6 POWER TABLES (TUNE UP VALUES)

Note: All values in dBm

Technology	Channel	Frequency (MHz)	Tune Up (dBm)
TETRA-TDMA	1	136.00	35.00
TETRA-TDMA	2	143.00	35.00
TETRA-TDMA	3	149.00	35.00
TETRA-TDMA	4	150.00	35.00
TETRA-TDMA	5	153.00	35.00
TETRA-TDMA	6	157.00	35.00
TETRA-TDMA	7	161.00	35.00
TETRA-TDMA	8	162.00	35.00
TETRA-TDMA	9	165.00	35.00
TETRA-TDMA	10	168.00	35.00
TETRA-TDMA	11	170.00	35.00
TETRA-TDMA	12	174.00	35.00

Table 29

1.7 CONDUCTED POWER MEASUREMENTS

1.7.1 Method

Conducted Power Measurements were made using a power meter.

1.7.2 Measured Results

TETRA

Technology	Channel	Modulation	Frequency (MHz)	Measured Power (dBm)
TETRA-TDMA	1	DQPSK	136.00	34.85
TETRA-TDMA	2	DQPSK	143.00	34.85
TETRA-TDMA	3	DQPSK	149.00	34.83
TETRA-TDMA	4	DQPSK	150.00	34.83
TETRA-TDMA	5	DQPSK	153.00	34.83
TETRA-TDMA	6	DQPSK	157.00	34.83
TETRA-TDMA	7	DQPSK	161.00	34.76
TETRA-TDMA	8	DQPSK	162.00	34.75
TETRA-TDMA	9	DQPSK	165.00	34.74
TETRA-TDMA	10	DQPSK	168.00	34.76
TETRA-TDMA	11	DQPSK	170.00	34.79
TETRA-TDMA	12	DQPSK	174.00	34.83

Table 30

SECTION 2

TEST DETAILS

Specific Absorption Rate Testing of the SC2021 and SC2321

2.1 DASY6 MEASUREMENT SYSTEM

2.1.1 System Description

The DASY6 system for performing compliance tests consists of the following items:

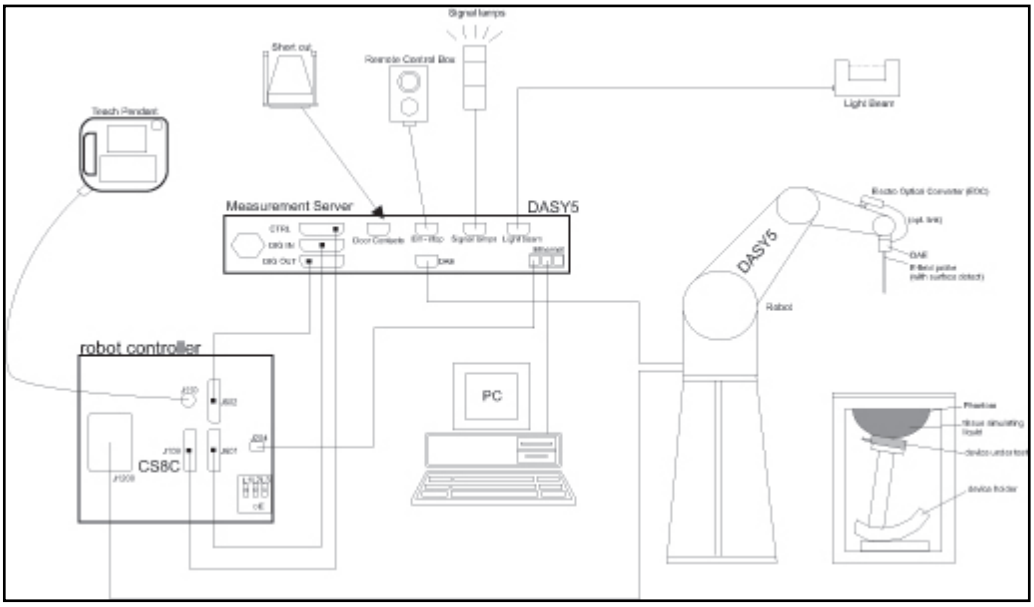

Figure 1 - System Description Diagram

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 the DASY software to display and interact with the robot and information.

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

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

2.1.2 Probe Specification

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

2.1.3 Data Acquisition Electronics

The data acquisition electronics (DAE4 or DAE3) consist of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder with a control logic unit. Transmission to the measurement server is accomplished through an optical downlink for data and status information, as well as an optical uplink for commands and the clock.

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

2.1.4 SAR Evaluation Description

The cDASY6 software includes all numerical procedures necessary to evaluate the spatial peak SAR values.

Fast Area Scan:

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

Area Scan:

Area Scans are used to determine the peak location of the measured field before doing a finer measurement around the hotspot. Peak location can be found accurately even on coarse grids using the advanced interpolation routines implemented in cDASY6 Module SAR. Area Scans measure a two dimensional volume covering the full device under test area. cDASY6 Module SAR uses Fast Averaged SAR algorithm to compute the 1g and 10g of simulated tissue from the Area Scan.

Fast Volume Scans:

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

Zoom Scan:

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

Zoom Scans can be performed in two different modes:

- Smart Mode: the grid settings are adjusted on the fly based on the distribution being measured to fulfill to the IEC 62209-2 Amendment 1 criteria on grid resolution.

- Custom Mode: the user specifies the grid settings to be used. In both modes, Zoom Scans are always anchored to the peak location of the preceding Fast Area / Area / Fast Volume Scan.

2.1.5 Head Test Positions

This recommended practice specifies two test positions for the handset against the head phantom, the “Cheek” position and the “Tilted” position. The handset should be tested in both positions on the left and right sides of the SAM phantom. In each test position the centre of the earpiece of the device is placed directly at the entrance of the auditory canal. The angles mentioned in the test positions used are referenced to the line connecting both auditory canal openings. The plane this line is on is known as the reference plane. Testing is performed on the right and left-hand sides of the generic phantom head.

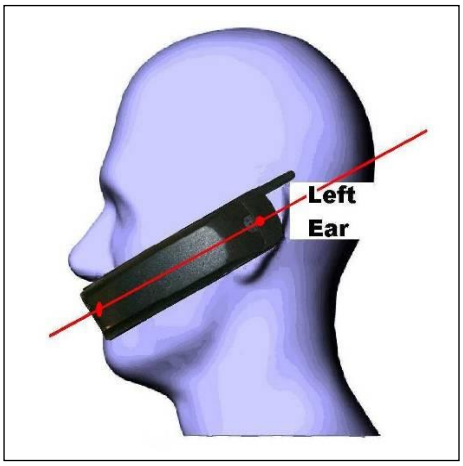

Figure 2 - Side view of mobile next to head showing alignment.

The Cheek Position

The Cheek Position is where the mobile is in the reference plane and the line between the mobile and the line connecting both auditory canal openings is reduced until any part of the mobile touches any part of the generic twin phantom head.

The Tilt Position

The Tilt Position is where the mobile is in the reference Cheek position and the phone is kept in contact with the auditory canal at the earpiece; the bottom of the phone is then tilted away from the phantom mouth by 15°.

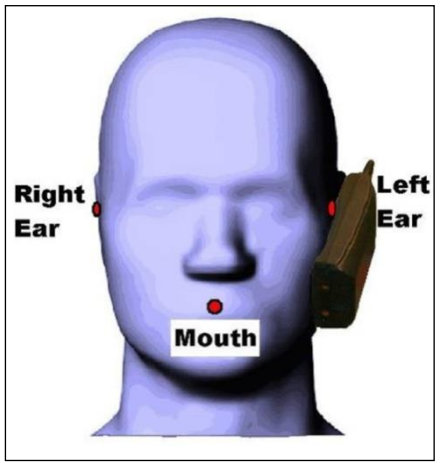

Figure 3 - Cheek position

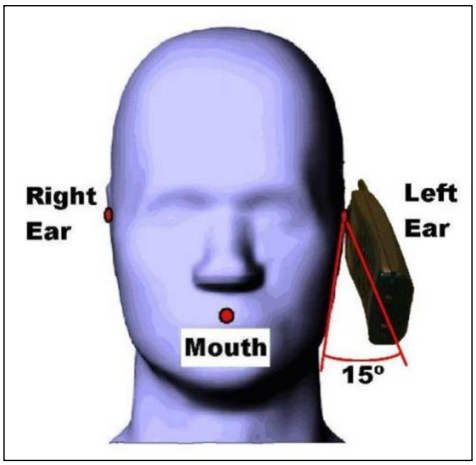

Figure 4 - Tilt Position

SECTION 3

TEST EQUIPMENT USED

3.1 TEST EQUIPMENT USED

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

Instrument Description	Manufacturer	Model Type	TE Number	Cal Period (months)	Calibration Due Date
Robot	SPEAG	TX90 XL	5340	-	TU
Dosimetric Probe	SPEAG	EX3DV4	4700	12	14-Dec-2024
Data Acquisition Electronics	SPEAG	DAE4	6501	12	05-Aug-2024
Measurement server	SPEAG	SE UMS 270 CA	5337	-	TU
Body Phantom	SPEAG	ELI V8.0	5332	-	TU
Head Phantom	SPEAG	SAM Twin - V8.0		-	TU
SAR EUT holder	SPEAG	n/a	3870	-	TU
SAR EUT holder	SPEAG	n/a	4693	-	TU
Validation Source 150MHz	SPEAG	CLA150	6507	12	22-Jan-2025
Power Meter	Rohde & Schwarz	NRX	6535	-	TU
Power Sensor	Rohde & Schwarz	NRP18S	6534	24	17-Apr-2025
Power Sensor	Rohde & Schwarz	NRP18S	6533	24	11-Apr-2026
Signal Generator: 250kHz to 4MHz	Hewlett Packard	ESG4000A	0038	12	19-Dec-2024
Signal Generator: 10MHz to 20GHz	Rohde & Schwarz	SMP02	6682	12	04-Oct-2024
Directional Coupler	Agilent Technologies	778D-011	SN: MY52180239	-	TU
Amplifier	Vectawave Technology	VTL5400	0051	-	TU
Attenuator	Aaren	AT40A-4041-D18-10	6758	12	08-Mar-2025
Attenuator	Aaren	AT40A-4041-D18-30	6672	12	07-Sep-2024
Network Analyser	Keysight Technologies	MY54502603	5018	12	10-Oct-2024
Dielectric Assessment Kit	SPEAG	DAK 4MHz to 3GHz	6814	-	TU
Thermometer	LKM Electronics	DTM 3000	4697	12	04-Sep-2024

Instrument Description	Manufacturer	Model Type	TE Number	Cal Period (months)	Calibration Due Date
Hygrometer	Rotronic	I-1000	2829	12	21-May-2025
Validation Dipole 2450MHz	SPEAG	D2450V2	3875	12	07-Dec-2024
Tissue Simulant Liquid	SPEAG	HBBL4-250V3	Batch 1	-	Note 1
Tissue Simulant Liquid	SPEAG	HBBL600-10000V6	Batch 7	-	Note 1

Table 31

TU - Traceability Unscheduled

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

3.2 TEST SOFTWARE

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

Instrument	Version Number
DASY System	cDASY6 Module SAR V16.2.2.1588

Table 32

3.3 TEST VERIFICATION

3.3.1 System Performance Check Results

Prior to formal testing being performed a System Check was performed in accordance with KDB 865664 and IEC-IEEE 62209-1528 the results were compared against the calibration certificates of each corresponding system verification dipole. The following results were obtained and within the ±10% acceptance criteria.

System Performance Check Results

Date	Frequency (MHz)	Fluid Type	Measured Max 1g SAR (W/kg) *	Max 1g SAR Target (W/kg)	Percentage Deviation from Target 1g (%)
24/06/2024	150MHz	HBBL4-250V3	3.40	3.61	-5.82
25/06/2024	150MHz	HBBL4-250V3	3.62	3.61	0.28
29/06/2024	150MHz	HBBL4-250V3	3.36	3.61	-6.93
01/07/2024	150MHz	HBBL4-250V3	3.50	3.61	-3.05
02/07/2024	150MHz	HBBL4-250V3	3.45	3.61	-4.43
04/07/2024	150MHz	HBBL4-250V3	3.38	3.61	-6.37
05/07/2024	150MHz	HBBL4-250V3	3.47	3.61	-3.88
10/07/2024	150MHz	HBBL4-250V3	3.42	3.61	-5.26
13/07/2024	150MHz	HBBL4-250V3	3.36	3.61	-6.93
15/07/2024	150MHz	HBBL4-250V3	3.45	3.61	-4.43
16/07/2024	150MHz	HBBL4-250V3	3.65	3.61	1.11
17/07/2024	150MHz	HBBL4-250V3	3.66	3.61	1.39
19/07/2024	2450MHz	HBBL600-10000V6	49.28	52.60	-6.31

Table 33

*Normalised to a forward power of 1W.

3.4 DIELECTRIC PROPERTIES OF SIMULANT LIQUIDS

The fluid properties of the simulant fluids used during routine SAR evaluation meet the dielectric properties required KDB 865664 and IEC-IEEE 62209-1528.

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

Fluid Type and Frequency	Relative Permittivity Measured	Relative Permittivity Target	Conductivity Measured (S/m)	Conductivity Target (S/m)	Date	Fluid Temperature °C
HBBL4-250V3 150MHz	50.94	52.30	0.75	0.76	24/06/2024	21.07
HBBL4-250V3 150MHz	51.34	52.30	0.76	0.76	28/06/2024	21.00
HBBL4-250V3 150MHz	51.59	52.30	0.76	0.76	01/07/2024	21.43
HBBL4-250V3 150MHz z	51.49	52.30	0.77	0.76	03/07/2024	21.00
HBBL4-250V3 150MHz	51.50	52.30	0.76	0.76	08/07/2024	21.31
HBBL4-250V3 150MHz	51.63	52.30	0.77	0.76	12/07/2024	21.07
HBBL4-250V3 150MHz	52.32	52.30	0.79	0.76	15/07/2024	21.40
HBBL600-10000V6 2450MHz	39.50	39.20	1.80	1.80	19/07/2024	21.49

Table 34

3.5 TEST CONDITIONS

3.5.1 Test Laboratory Conditions

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

The actual temperature during the testing ranged from 20.91°C to 22.80°C.

The actual humidity during the testing ranged from 42.00% to 60.80% RH.

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

3.5.2 Test Fluid Temperature Range

Frequency	Body / Head Fluid	Min Temperature °C	Max Temperature °C
150MHz	Head	21.00	21.43
2450MHz	Head	21.49	21.49

Table 35

3.6 MEASUREMENT UNCERTAINTY

Full SAR Measurements, 4 MHz to 300 MHz

Source of Uncertainty	Uncertainty ± %	Probability distribution	Div	c_i (1g)	Standard Uncertainty ± % (1g)
Measurement System Errors					
Probe Calibration	13.3	Normal	2.00	1.00	6.65
Probe Calibration Drift	1.70	Rectangular	1.73	1.00	1.0
Probe Linearity	4.70	Rectangular	1.73	1.00	2.7
Broadband Signal	0.60	Rectangular	1.73	1.00	0.3
Probe Isotropy	7.60	Rectangular	1.73	1.00	4.4
Data Acquisition	0.80	Normal	1.00	1.00	0.8
RF Ambient	1.80	Normal	1.00	1.00	1.8
Probe Positioning	0.006	Normal	1.00	0.04	0.10
Data Processing	1.20	Normal	1.00	1.00	1.2
Phantom and Device errors					
Liquid Conductivity Meas.	2.50	Normal	1.00	0.78	2.0
Liquid Conductivity Temp	5.40	Rectangular	1.73	0.78	2.4
Phantom Permittivity	14.00	Rectangular	1.73	0.00	0.0
Distance DUT - TSL	2.00	Normal	1.00	2.00	4.0
Device Positioning	1.00	Normal	1.00	1.00	1.0
Device Holder	3.60	Normal	1.00	1.00	3.6
Device Modulation	2.40	Rectangular	1.73	1.00	1.4
Time-average SAR	1.70	Rectangular	1.73	1.00	1.0
DUT Drift	2.50	Normal	1.00	1.00	2.5
Val Antenna	0.00	Normal	1.00	1.00	0.0
Unc. Input Power	0.00	Normal	1.00	1.00	0.0
Correction to the SAR results					
Deviation to Target	1.9	Normal	1.00	1.00	1.9
SAR Scaling	0.0	Rectangular	1.73	1.00	0.0
Combined Standard Uncertainty		**RSS**			11.4
Expanded Standard Uncertainty		**K=2**			22.8

Table 36

Full SAR Measurements, 300 MHz to 3 GHz

Source of Uncertainty	Uncertainty ± %	Probability distribution	Div	c_i (10g)	Standard Uncertainty ± % (10g)
Measurement System Errors					
Probe Calibration	12.0	Normal	2.00	1.00	6.0
Probe Calibration Drift	1.7	Rectangular	1.73	1.00	1.0
Probe Linearity	4.7	Rectangular	1.73	1.00	2.7
Broadband Signal	3.0	Rectangular	1.73	1.00	1.7
Probe Isotropy	7.6	Rectangular	1.73	1.00	4.4
Data Acquisition	0.3	Normal	1.00	1.00	0.3
RF Ambient	1.8	Normal	1.00	1.00	1.8
Probe Positioning	0.2	Normal	1.00	0.14	0.0
Data Processing	1.2	Normal	1.00	1.00	1.2
Phantom and Device errors					
Liquid Conductivity Meas.	2.5	Normal	1.00	0.71	1.8
Liquid Conductivity Temp	3.3	Rectangular	1.73	0.71	1.4
Phantom Permittivity	14.0	Rectangular	1.73	0.00	0.0
Distance DUT - TSL	2.0	Normal	1.00	2.00	4.0
Device Positioning (±0.5mm)	1.0	Normal	1.00	1.00	1.0
Device Holder	3.6	Normal	1.00	1.00	3.6
Device Modulation	2.4	Rectangular	1.73	1.00	1.4
Time-average SAR	2.6	Rectangular	1.73	1.00	1.5
DUT Drift	5.0	Normal	1.00	1.00	5.0
Correction to the SAR results					
Deviation to Target	1.9	Normal	1.00	0.84	1.6
SAR Scaling	0.0	Rectangular	1.73	1.00	0.0
Combined Standard Uncertainty		**RSS**			11.7
Expanded Standard Uncertainty		**K=2**			23.5

Table 37

3.6.1 Decision Rule

Accuracy Method

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

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

SECTION 4

ACCREDITATION, DISCLAIMERS AND COPYRIGHT

4.1 ACCREDITATION, DISCLAIMERS AND COPYRIGHT

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

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

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

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

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

ANNEX A

PROBE CALIBRATION REPORT

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

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

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

Accreditation No.: **SCS 0108**

Client TüV SÜD
Fareham, United Kingdom

Certificate No. EX-3759_Dec23

CALIBRATION CERTIFICATE

Object	EX3DV4 - SN:3759
Calibration procedure(s)	QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6, QA CAL-25.v8 Calibration procedure for dosimetric E-field probes
Calibration date	December 14, 2023

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
OCP DAK-3.5 (weighted)	SN: 1249	05-Oct-23 (OCP-DAK3.5-1249_Oct23)	Oct-24
OCP DAK-12	SN: 1016	05-Oct-23 (OCP-DAK12-1016_Oct23)	Oct-24
Reference 20 dB Attenuator	SN: CC2552 (20x)	30-Mar-23 (No. 217-03809)	Mar-24
DAE4	SN: 660	16-Mar-23 (No. DAE4-660_Mar23)	Mar-24
Reference Probe ES3DV2	SN: 3013	06-Jan-23 (No. ES3-3013_Jan23)	Jan-24

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

	Name	Function	Signature
Calibrated by	Jeton Kastrati	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: December 14, 2023

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

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Accreditation No.: SCS 0108

Glossary

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

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

Parameters of Probe: EX3DV4 - SN:3759

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc ($k = 2$)
Norm ($\mu V/(V/m)^2$) [A]	0.53	0.49	0.50	±10.1%
DCP (mV) [B]	99.9	99.4	101.4	±4.7%

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B $dB\sqrt{\mu V}$	C	D dB	VR mV	Max dev.	Max Unc[E] $k = 2$
0	CW	X	0.00	0.00	1.00	0.00	133.9	±3.1%	±4.7%
		Y	0.00	0.00	1.00		147.7		
		Z	0.00	0.00	1.00		126.8		
10352	Pulse Waveform (200Hz, 10%)	X	20.00	91.98	21.18	10.00	60.0	±2.7%	±9.6%
		Y	20.00	90.78	20.49		60.0		
		Z	20.00	91.69	21.28		60.0		
10353	Pulse Waveform (200Hz, 20%)	X	20.00	94.28	21.18	6.99	80.0	±1.5%	±9.6%
		Y	20.00	92.50	20.37		80.0		
		Z	20.00	92.35	20.37		80.0		
10354	Pulse Waveform (200Hz, 40%)	X	20.00	97.66	21.32	3.98	95.0	±1.0%	±9.6%
		Y	20.00	96.48	21.03		95.0		
		Z	20.00	93.50	19.39		95.0		
10355	Pulse Waveform (200Hz, 60%)	X	20.00	98.86	20.46	2.22	120.0	±0.9%	±9.6%
		Y	20.00	100.43	21.58		120.0		
		Z	20.00	93.26	17.86		120.0		
10387	QPSK Waveform, 1 MHz	X	1.44	63.82	13.35	1.00	150.0	±2.8%	±9.6%
		Y	1.66	65.75	14.57		150.0		
		Z	1.55	65.35	14.18		150.0		
10388	QPSK Waveform, 10 MHz	X	1.90	65.41	14.13	0.00	150.0	±1.0%	±9.6%
		Y	2.21	67.64	15.34		150.0		
		Z	2.09	67.18	15.03		150.0		
10396	64-QAM Waveform, 100 kHz	X	2.43	66.69	16.85	3.01	150.0	±1.0%	±9.6%
		Y	2.98	70.85	18.91		150.0		
		Z	2.95	70.08	18.40		150.0		
10399	64-QAM Waveform, 40 MHz	X	3.28	65.87	14.94	0.00	150.0	±2.0%	±9.6%
		Y	3.38	66.39	15.30		150.0		
		Z	3.43	66.88	15.48		150.0		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	4.69	64.97	15.04	0.00	150.0	±3.8%	±9.6%
		Y	4.76	65.21	15.23		150.0		
		Z	4.84	65.67	15.44		150.0		

Note: For details on UID parameters see Appendix

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

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 to 7).
[B] Linearization parameter uncertainty for maximum specified field strength.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

Parameters of Probe: EX3DV4 - SN: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	43.9	329.15	35.58	13.00	0.16	5.10	0.00	0.43	1.01
y	45.7	339.58	35.17	17.40	0.00	5.09	1.67	0.18	1.01
z	44.5	332.02	35.37	13.72	0.42	5.09	0.58	0.42	1.01

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	30.3°
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.

Parameters of Probe: EX3DV4 - SN:3759

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz)[C]	Relative Permittivity[F]	Conductivity[F] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc ($k=2$)
6	55.0	0.75	18.00	18.00	18.00	0.00	1.25	±13.3%
13	55.0	0.75	16.08	16.08	16.08	0.00	1.25	±13.3%
30	55.0	0.75	15.55	15.55	15.55	0.00	1.25	±13.3%
64	54.2	0.75	13.35	13.35	13.35	0.00	1.25	±13.3%
128	52.8	0.76	12.32	12.32	12.32	0.00	1.25	±13.3%
150	52.3	0.76	11.88	11.88	11.88	0.00	1.25	±13.3%
220	49.0	0.81	11.34	11.34	11.34	0.00	1.25	±13.3%
300	45.3	0.87	11.58	11.58	11.58	0.09	1.00	±13.3%
450	43.5	0.87	10.70	10.70	10.70	0.16	1.30	±13.3%
750	41.9	0.89	8.81	8.74	9.28	0.39	1.27	±12.0%
835	41.5	0.90	9.38	8.83	9.43	0.37	1.27	±12.0%
900	41.5	0.97	8.95	8.59	9.38	0.37	1.27	±12.0%
1300	40.8	1.14	8.42	8.26	9.04	0.48	1.27	±12.0%
1450	40.5	1.20	8.13	8.02	8.74	0.46	1.27	±12.0%
1640	40.2	1.31	8.23	8.13	8.90	0.44	1.27	±12.0%
1750	40.1	1.37	8.60	8.51	9.38	0.27	1.27	±12.0%
1810	40.0	1.40	8.18	8.08	8.84	0.30	1.27	±12.0%
1900	40.0	1.40	8.08	8.00	8.74	0.29	1.27	±12.0%
1950	40.0	1.40	8.04	7.92	8.67	0.30	1.27	±12.0%
2000	40.0	1.40	8.24	8.15	8.93	0.30	1.27	±12.0%
2100	39.8	1.49	7.42	7.31	8.02	0.31	1.27	±12.0%
2300	39.5	1.67	7.40	7.27	7.94	0.32	1.27	±12.0%
2450	39.2	1.80	7.48	7.40	8.09	0.31	1.27	±12.0%
2550	39.1	1.91	7.09	7.00	7.62	0.30	1.27	±12.0%
2600	39.0	1.96	7.13	7.00	7.67	0.30	1.27	±12.0%
3300	38.2	2.71	6.80	6.70	7.32	0.35	1.27	±14.0%
3500	37.9	2.91	6.85	6.75	7.37	0.35	1.27	±14.0%
3700	37.7	3.12	6.54	6.51	7.09	0.36	1.27	±14.0%

[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] The probes are calibrated using tissue simulating liquids (TSL) that deviate for ε and σ by less than ±5% from the target values (typically better than ±3%) and are valid for TSL with deviations of up to ±10%. If TSL with deviations from the target of less than ±5% are used, the calibration uncertainties are 11.1% for 0.7 - 3 GHz and 13.1% for 3 - 6 GHz.

[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.

Parameters of Probe: EX3DV4 - SN:3759

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz)[C]	Relative Permittivity[F]	Conductivity[F] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc ($k = 2$)
4100	37.2	3.53	6.46	6.36	6.99	0.37	1.27	±14.0%
5200	36.0	4.66	5.62	5.59	6.15	0.34	1.60	±14.0%
5300	35.9	4.76	5.43	5.38	5.86	0.35	1.67	±14.0%
5500	35.6	4.96	4.98	4.88	5.39	0.42	1.61	±14.0%
5600	35.5	5.07	4.80	4.69	5.22	0.43	1.67	±14.0%
5800	35.3	5.27	4.77	4.68	5.25	0.40	1.86	±14.0%

[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] The probes are calibrated using tissue simulating liquids (TSL) that deviate for ε and σ by less than ±5% from the target values (typically better than ±3%) and are valid for TSL with deviations of up to ±10%. If TSL with deviations from the target of less than ±5% are used, the calibration uncertainties are 11.1% for 0.7 - 3 GHz and 13.1% for 3 - 6 GHz.

[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.

Parameters of Probe: EX3DV4 - SN:3759

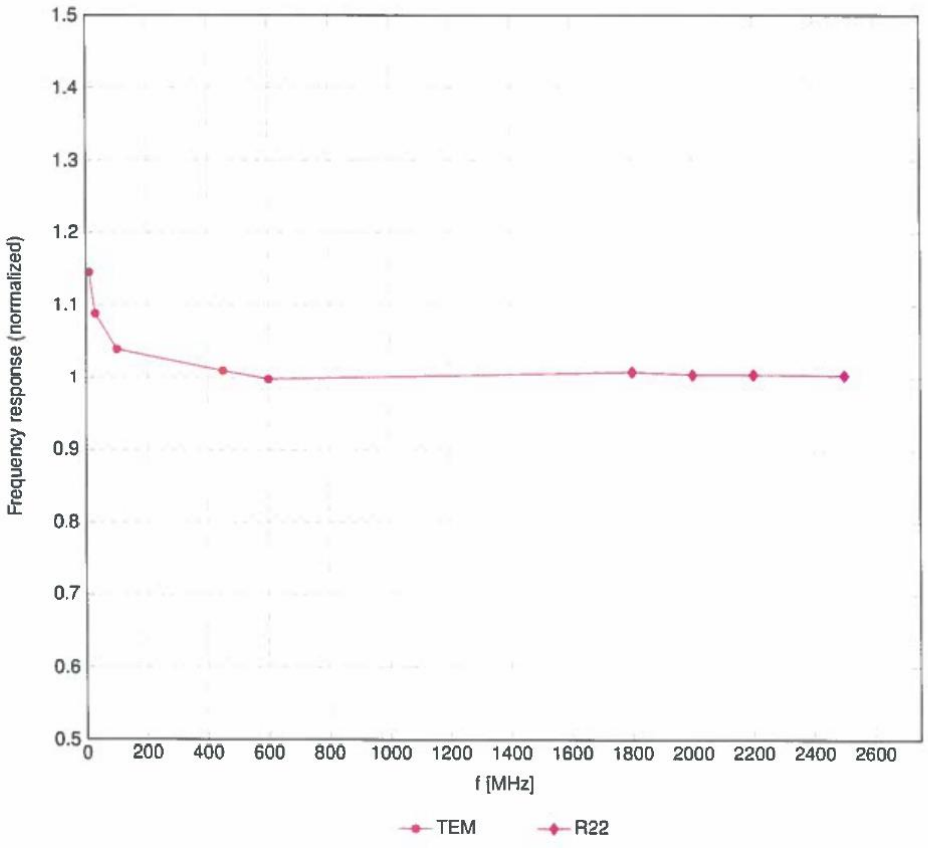
Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz)[C]	Relative Permittivity[F]	Conductivity[F] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha[G]	Depth[G] (mm)	Unc ($k = 2$)
6500	34.5	6.07	5.18	4.92	5.71	0.20	2.50	±18.6%

[C] Frequency validity at 6.5 GHz is −600/+700 MHz, and ±700 MHz at or above 7 GHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.
[F] The probes are calibrated using tissue simulating liquids (TSL) that deviate for ε and σ by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.
[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.

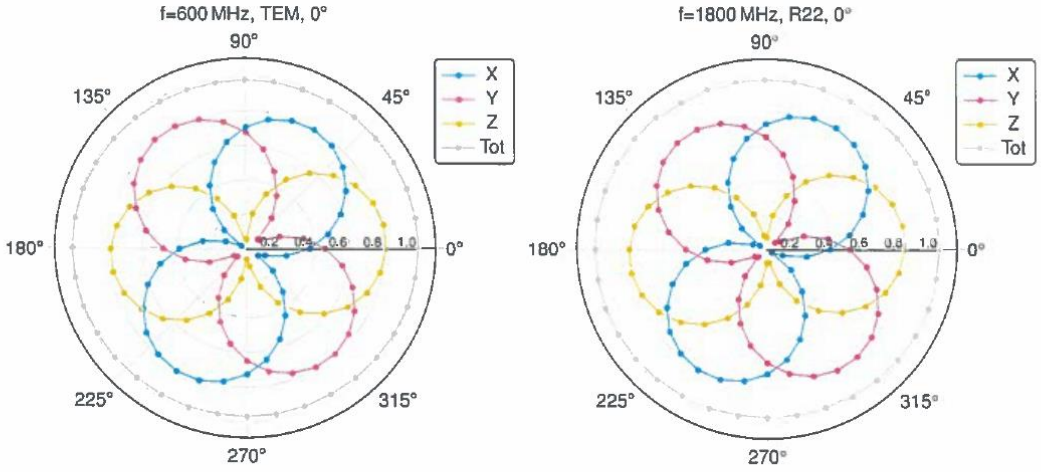
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide:R22)



Uncertainty of Frequency Response of E-field: ±6.3% (k=2)

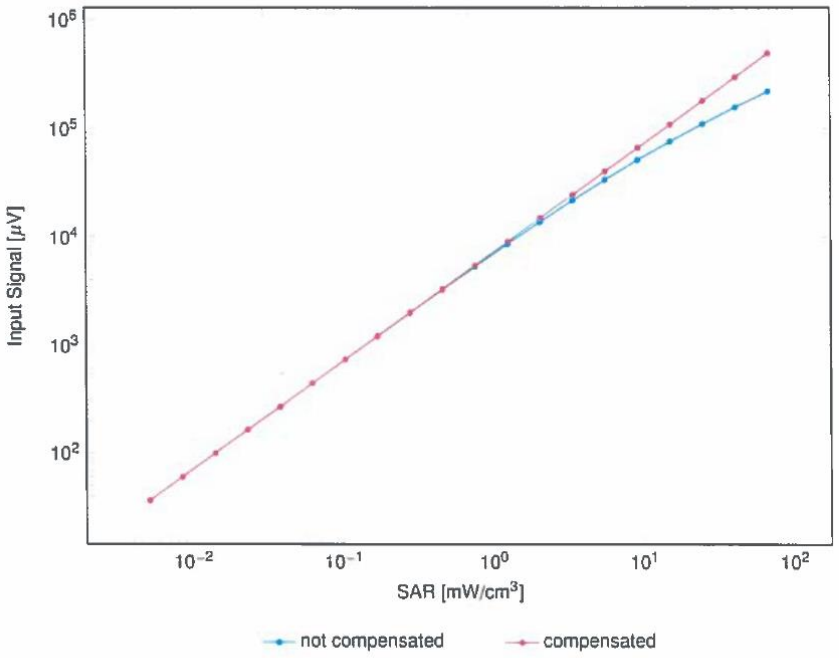
Receiving Pattern (ϕ), $\vartheta = 0°$

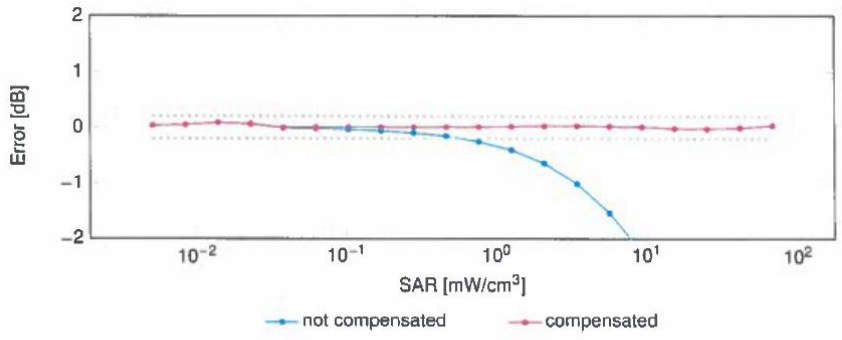


Uncertainty of Axial Isotropy Assessment: ±0.5% (k=2)

Dynamic Range f(SAR_{head})

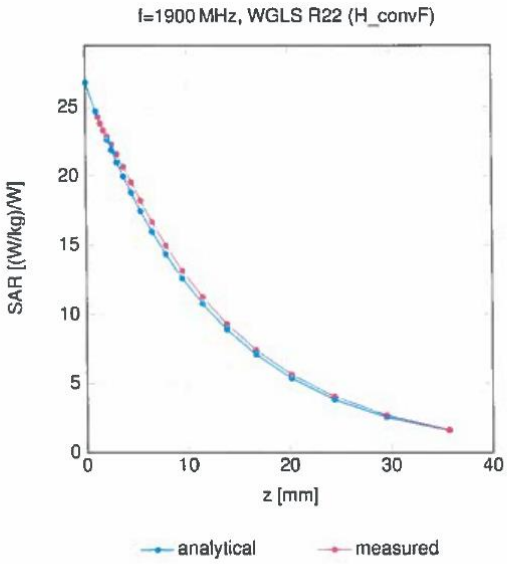
(TEM cell, f_{eval} = 1900MHz)





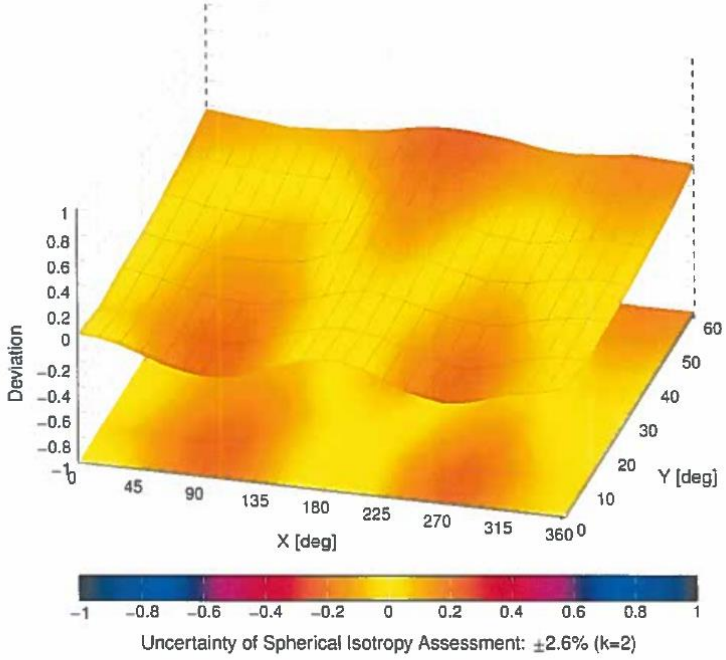
Uncertainty of Linearity Assessment: ±0.6% (k=2)

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^E $k=2$
0		CW	CW	0.00	±4.7
10010	CAB	SAR Validation (Square, 100 ms, 10 ms)	Test	10.00	±9.6
10011	CAC	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	CAC	UMTS-FDD (HSDPA)	WCDMA	3.98	±9.6
10098	CAC	UMTS-FDD (HSUPA, Subtest 2)	WCDMA	3.98	±9.6
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	9.55	±9.6
10100	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	5.67	±9.6
10101	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6
10102	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10103	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-TDD	9.29	±9.6
10104	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-TDD	9.97	±9.6
10105	CAH	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-TDD	10.01	±9.6
10108	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	5.80	±9.6
10109	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10110	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	±9.6
10111	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	±9.6

UID	Rev	Communication System Name	Group	PAR (dB)	Unc^E $k=2$
10112	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	6.59	±9.6
10113	CAH	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	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	6.49	±9.6
10141	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	6.53	±9.6
10142	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6
10143	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	6.35	±9.6
10144	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	±9.6
10145	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	5.76	±9.6
10146	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6.41	±9.6
10147	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.72	±9.6
10149	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	6.42	±9.6
10150	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10151	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-TDD	9.28	±9.6
10152	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	±9.6
10153	CAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	±9.6
10154	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	±9.6
10155	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10156	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	±9.6
10157	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	±9.6
10158	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	±9.6
10159	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	6.56	±9.6
10160	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	±9.6
10161	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10162	CAF	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	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	5.73	±9.6
10170	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10171	AAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	6.49	±9.6
10172	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-TDD	9.21	±9.6
10173	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10174	CAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10175	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	±9.6
10176	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10177	CAJ	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	±9.6
10178	CAH	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10179	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10180	CAH	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10181	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	5.72	±9.6
10182	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	6.52	±9.6
10183	AAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10184	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	5.73	±9.6
10185	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	6.51	±9.6
10186	AAF	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	AAG	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

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10225	CAC	UMTS-FDD (HSPA+)	WCDMA	5.97	±9.6
10226	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.49	±9.6
10227	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	±9.6
10228	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-TDD	9.22	±9.6
10229	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10230	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10231	CAE	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-TDD	9.19	±9.6
10232	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10233	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10234	CAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-TDD	9.21	±9.6
10235	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10236	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10237	CAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-TDD	9.21	±9.6
10238	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-TDD	9.48	±9.6
10239	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TDD	10.25	±9.6
10240	CAG	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-TDD	9.21	±9.6
10241	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	±9.6
10242	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6
10243	CAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-TDD	9.46	±9.6
10244	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±9.6
10245	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	±9.6
10246	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.30	±9.6
10247	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-TDD	9.91	±9.6
10248	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-TDD	10.09	±9.6
10249	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-TDD	9.29	±9.6
10250	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	±9.6
10251	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDD	10.17	±9.6
10252	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TDD	9.24	±9.6
10253	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-TDD	9.90	±9.6
10254	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-TDD	10.14	±9.6
10255	CAG	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9.20	±9.6
10256	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.96	±9.6
10257	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.08	±9.6
10258	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.34	±9.6
10259	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.98	±9.6
10260	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.97	±9.6
10261	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-TDD	9.24	±9.6
10262	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-TDD	9.83	±9.6
10263	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TDD	10.16	±9.6
10264	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-TDD	9.23	±9.6
10265	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-TDD	9.92	±9.6
10266	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-TDD	10.07	±9.6
10267	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-TDD	9.30	±9.6
10268	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TDD	10.06	±9.6
10269	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-TDD	10.13	±9.6
10270	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-TDD	9.56	±9.6
10274	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.10)	WCDMA	4.87	±9.6
10275	CAC	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 884 MHz, Rolloff 0.5)	PHS	11.81	±9.6
10279	CAA	PHS (QPSK, BW 884 MHz, 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	AAE	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	5.81	±9.6
10298	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDD	5.72	±9.6
10299	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	±9.6
10300	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-FDD	6.60	±9.6
10301	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC)	WiMAX	12.03	±9.6
10302	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols)	WiMAX	12.57	±9.6
10303	AAA	IEEE 802.16e WiMAX (31:15, 5 ms, 10 MHz, 64QAM, PUSC)	WiMAX	12.52	±9.6
10304	AAA	IEEE 802.16e WiMAX (29:18, 5 ms, 10 MHz, 64QAM, PUSC)	WiMAX	11.86	±9.6
10305	AAA	IEEE 802.16e WiMAX (31:15, 10 ms, 10 MHz, 64QAM, PUSC, 15 symbols)	WiMAX	15.24	±9.6
10306	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 64QAM, PUSC, 18 symbols)	WiMAX	14.67	±9.6

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10307	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, PUSC, 18 symbols)	WiMAX	14.49	±9.6
10308	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, PUSC)	WiMAX	14.46	±9.6
10309	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, 16QAM, AMC 2x3, 18 symbols)	WiMAX	14.58	±9.6
10310	AAA	IEEE 802.16e WiMAX (29:18, 10 ms, 10 MHz, QPSK, AMC 2x3, 18 symbols)	WiMAX	14.57	±9.6
10311	AAE	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 duty cycle)	WLAN	1.71	±9.6
10316	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 96pc duty cycle)	WLAN	8.36	±9.6
10317	AAE	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 96pc duty cycle)	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 (20 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	±9.6
10401	AAE	IEEE 802.11ac WiFi (40 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	±9.6
10402	AAE	IEEE 802.11ac WiFi (80 MHz, 64-QAM, 99pc duty cycle)	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	AAH	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe Conf=4)	LTE-TDD	7.82	±9.6
10414	AAA	WLAN CCDF, 64-QAM, 40 MHz	Generic	8.54	±9.6
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	±9.6
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6
10417	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preambule)	WLAN	8.14	±9.6
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Short preambule)	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	AAE	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1)	LTE-FDD	8.28	±9.6
10431	AAE	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	8.38	±9.6
10432	AAD	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6
10433	AAD	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6
10434	AAB	W-CDMA (BS Test Model 1, 64 DPCH)	WCDMA	8.60	±9.6
10435	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10447	AAE	LTE-FDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.56	±9.6
10448	AAE	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7.53	±9.6
10449	AAD	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7.51	±9.6
10450	AAD	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.48	±9.6
10451	AAB	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	WCDMA	7.59	±9.6
10453	AAE	Validation (Square, 10 ms, 1 ms)	Test	10.00	±9.6
10456	AAC	IEEE 802.11ac WiFi (160 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.63	±9.6
10457	AAB	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	AAB	UMTS-FDD (WCDMA, AMR)	WCDMA	2.39	±9.6
10461	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10462	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.30	±9.6
10463	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6
10464	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10465	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10466	AAD	LTE-TDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10467	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10468	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10469	AAG	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6
10470	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10471	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6