

Appendix A.7 Probe Calibration certificate (EX3DV4 SN7840)

Calibration Laboratory of
Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No. **EX-7840_Aug24**

CALIBRATION CERTIFICATE

Object: **EX3DV4 - SN:7840**

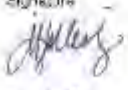
Calibration procedure(s): **QA CAL-01.v10, QA CAL-12.v10, QA CAL-14.v7, QA CAL-23.v6,
QA CAL-25.v8**
Calibration procedure for dosimetric E-field probes

Calibration date: **August 20, 2024**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.
Calibration Equipment used (M&E critical for calibration)

Primary Standards	ID	Cal. Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104773	28-Mar-24 (No. 217-04036/04037)	Mar-25
Power sensor NRP-231	SN: 103844	28-Mar-24 (No. 217-04036)	Mar-25
OCP DAK 8.5 (weighted)	SN: 1249	05-Oct-23 (OCP DAK8.5-1249_Oct23)	Oct-24
OCP DAK-12	SN: 1016	05-Oct-23 (OCP DAK12-1016_Oct23)	Oct-24
Reference 20 dB Attenuator	SN: CC2552 (20dB)	26-Mar-24 (No. 217-04016)	Mar-25
DA54	SN: 860	23-Feb-24 (No. JAF-4-660_Feb24)	Feb-25
Reference Probe EX3DV4	SN: 7349	03-Jun-24 (No. EX5-7349_Jun24)	Jun-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GP41293874	08-Apr-16 (in house check Jun-24)	In house check: Jun-26
Power sensor E4412A	SN: MY41436087	08-Apr-16 (in house check Jun-24)	In house check: Jun-26
Power sensor E4412A	SN: 000110210	08-Apr-16 (in house check Jun-24)	In house check: Jun-26
RF generator HP 8348C	SN: US3642UD1700	04-Aug-99 (in house check Jun-24)	In house check: Jun-26
Network Analyzer E8363A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by	Joanna Uehns	Laboratory Technician	
Approved by	Sven Böhn	Technical Manager	

Issued: August 20, 2024

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 ψ	ψ 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., $\psi = 0$ 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 62208-1528, "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, Identification And Procedures (Frequency Range of 4MHz 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 $\theta = 0$ ($f \leq 900$ 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 E-field uncertainty inside TSL (see below ConvF).
- $NORM(f)_{x,y,z} = NORM_{x,y,z} \cdot \text{frequency_response}$ (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. 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 $f < 900$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 900$ 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 $NORM_{x,y,z} \cdot \text{ConvF}$ 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 $NORM_{x,y,z}$ (no uncertainty required).

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Parameters of Probe: EX3DV4 - SN:7840

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k = 2)
Norm ($\mu V/(V/m)^2$) ^A	0.71	0.61	0.66	±10.1%
DCP (mV) ^B	106.9	107.1	107.4	±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	121.1	±1.8%	±4.7%
		Y	0.00	0.00	1.00		132.2		
		Z	0.00	0.00	1.00		149.1		
10352	Pulse Waveform (200Hz, 10%)	X	1.71	61.32	6.73	10.00	60.0	±3.2%	±9.6%
		Y	1.49	60.38	6.31		60.0		
		Z	1.48	60.41	6.30		60.0		
10353	Pulse Waveform (200Hz, 20%)	X	4.00	70.00	9.00	6.99	80.0	±2.2%	±9.6%
		Y	22.00	74.00	9.00		80.0		
		Z	0.80	60.00	4.94		80.0		
10354	Pulse Waveform (200Hz, 40%)	X	0.05	129.54	0.24	3.98	95.0	±2.6%	±9.6%
		Y	0.04	128.96	0.65		95.0		
		Z	0.01	123.11	0.51		95.0		
10355	Pulse Waveform (200Hz, 60%)	X	6.45	160.00	26.02	2.22	120.0	±1.4%	±9.6%
		Y	6.41	159.97	17.48		120.0		
		Z	8.35	159.68	3.89		120.0		
10387	QPSK Waveform, 1 MHz	X	0.63	65.88	13.86	1.00	150.0	±3.2%	±9.6%
		Y	0.42	61.69	11.62		150.0		
		Z	0.52	62.35	11.66		150.0		
10388	QPSK Waveform, 10 MHz	X	1.45	67.26	14.74	0.00	150.0	±0.9%	±9.6%
		Y	1.13	64.96	12.91		150.0		
		Z	1.28	64.90	13.41		150.0		
10396	64-QAM Waveform, 100 kHz	X	1.89	64.64	15.95	3.01	150.0	±1.1%	±9.6%
		Y	1.59	63.55	15.35		150.0		
		Z	1.55	63.00	15.18		150.0		
10399	64-QAM Waveform, 40 MHz	X	2.90	66.83	15.43	0.00	150.0	±1.5%	±9.6%
		Y	2.65	66.05	14.86		150.0		
		Z	2.77	65.81	14.82		150.0		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	3.86	66.34	15.48	0.00	150.0	±2.4%	±9.6%
		Y	3.66	66.48	15.26		150.0		
		Z	3.74	65.54	15.02		150.0		

Note: For details on UID parameters see Appendix

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

^A The uncertainties of Norm X,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Pages 5 and 6).

^B Linearization parameter uncertainty for maximum specified field strength.

^C 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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EX3DV4 - SN:7840

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Parameters of Probe: EX3DV4 - SN:7840**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	9.6	68.55	32.96	1.22	0.00	4.90	0.43	0.00	1.00
y	7.2	51.96	32.94	1.44	0.00	4.90	0.32	0.00	1.00
z	9.9	71.19	33.34	2.36	0.00	4.90	0.11	0.01	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	-75.2°
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.

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Parameters of Probe: EX3DV4 - SN:7840

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^E	Conductivity ^F (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc ^H (k = 2)
750	41.9	0.89	8.95	8.96	8.85	0.36	1.27	±11.0%
850	41.5	0.92	8.57	8.58	8.47	0.36	1.27	±11.0%
900	41.5	0.97	8.41	8.41	8.31	0.36	1.27	±11.0%
1750	40.1	1.37	7.38	7.38	7.29	0.35	1.27	±11.0%
1900	40.0	1.40	7.20	7.20	7.11	0.35	1.27	±11.0%
2300	39.5	1.67	6.99	6.99	6.90	0.34	1.27	±11.0%
2450	39.2	1.80	6.81	6.82	6.73	0.34	1.27	±11.0%
2600	39.0	1.96	6.71	6.72	6.63	0.34	1.27	±11.0%
5250	35.9	4.71	5.50	5.50	5.43	0.30	1.27	±13.1%
5600	35.5	5.07	5.08	5.08	5.02	0.27	1.27	±13.1%
5800	35.3	5.27	5.07	5.07	5.01	0.26	1.27	±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 5 MHz is 4–6 MHz, and ConvF assessed at 13 MHz is 8–19 MHz. Above 5 GHz frequency validity can be extended to ±110 MHz.

^E The probes are calibrated using tissue simulating liquids (TSL) that deviate for ϵ and σ by less than 15% from the target values (typically better than 13%) and are valid for TSL with deviations of up to ±10% if SAR correction is applied.

^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.

^H The stated uncertainty is the total calibration uncertainty (k = 2) of Norm ConvF. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 82209-1529:2020.

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Parameters of Probe: EX3DV4 - SN:7840

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 ^H (K = 2)
6500	34.5	6.07	5.15	5.15	5.09	0.20	1.27	±18.6%

^C Frequency validity at 6.5GHz is -500~+700 MHz, and ±700 MHz at or above 7GHz. 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%.

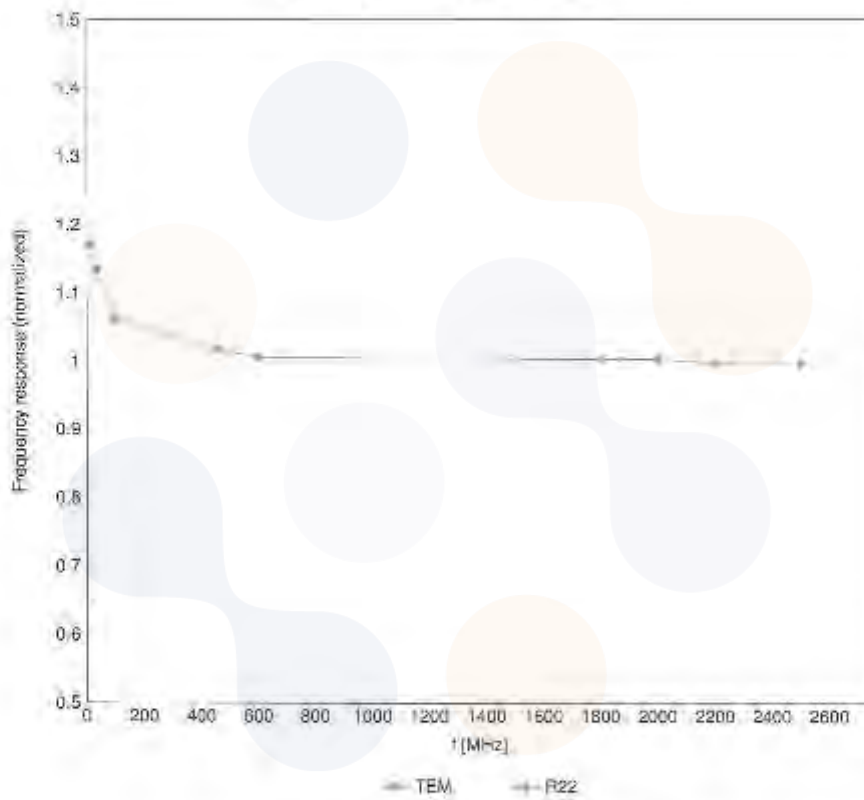
^G Alpha/Depth are determined during calibration. SPEAC warrants that the remaining deviation due to the boundary effect after compensation is always less than ±1% for frequencies below 3 GHz; below ±2% for frequencies between 3-6 GHz; and below ±4% for frequencies between 6-10 GHz at any distance larger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

^H The stated uncertainty is the total calibration uncertainty (K = 2) of Norm-ConvF. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 62209-1529:2020.

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Frequency Response of E-Field
(TEM-Cell:IF110 EXX, Waveguide:R22)

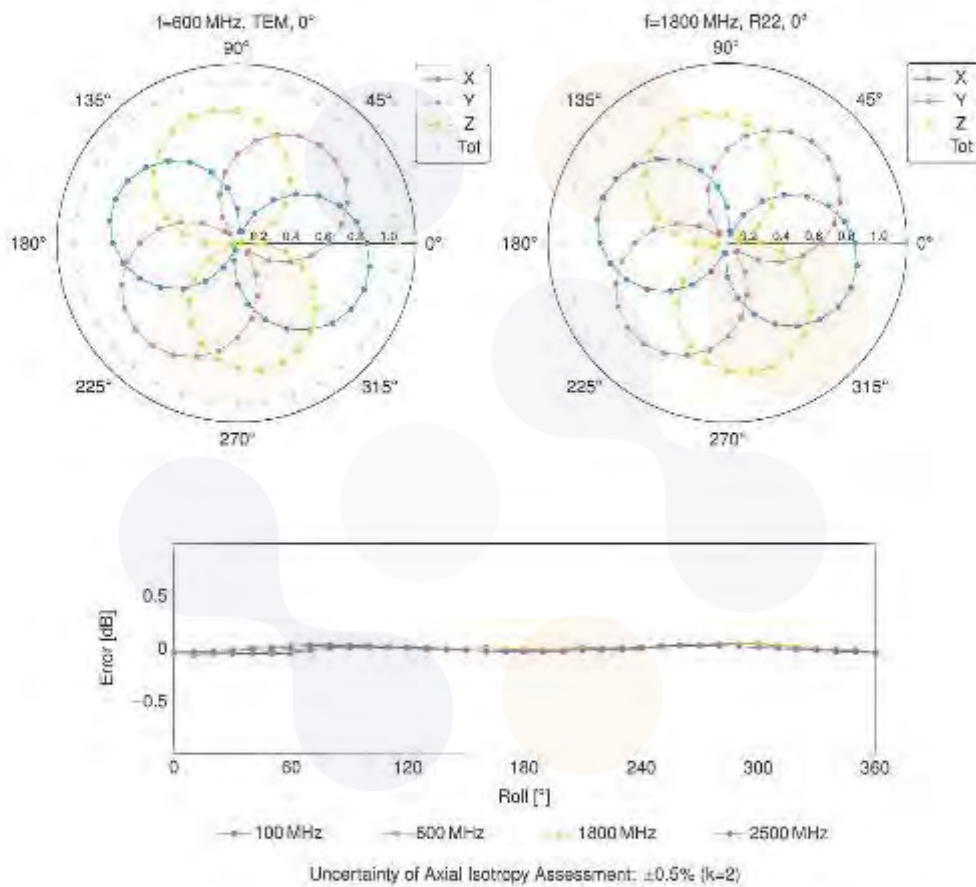


Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

EX3DV4 - SN:7840

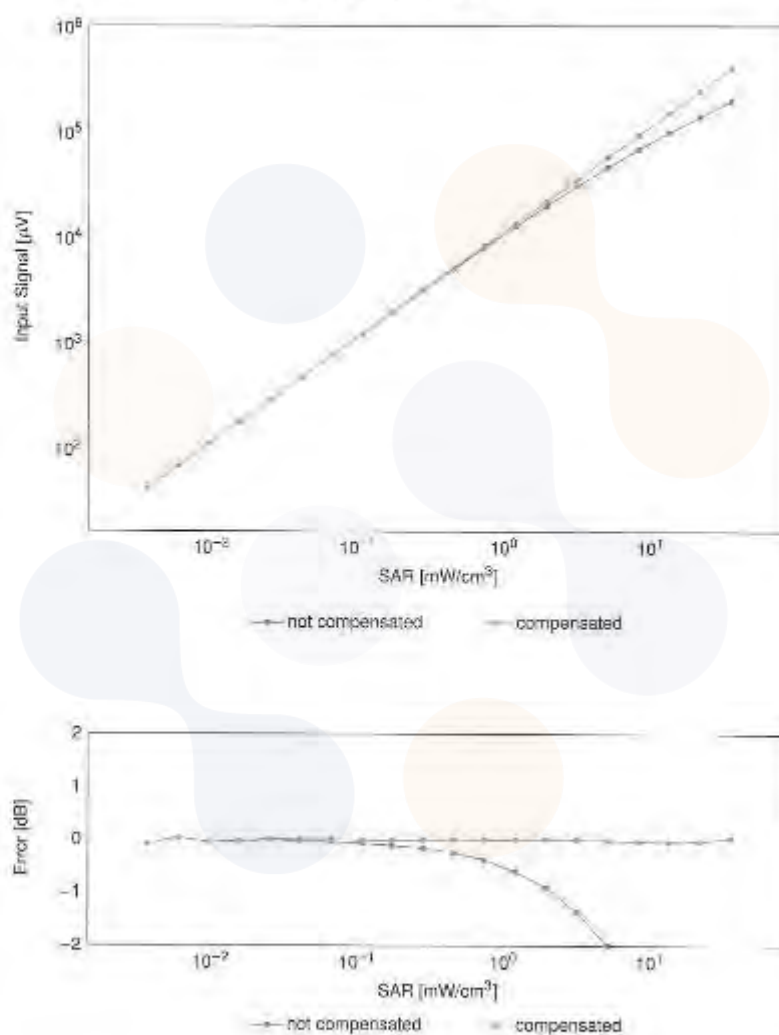
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Receiving Pattern (ϕ), $\theta = 0^\circ$



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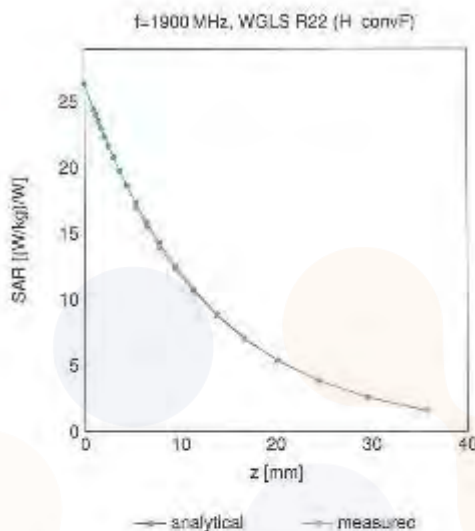
Dynamic Range f(SAR_{head})(TEM cell, f_{eval} = 1900MHz)

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

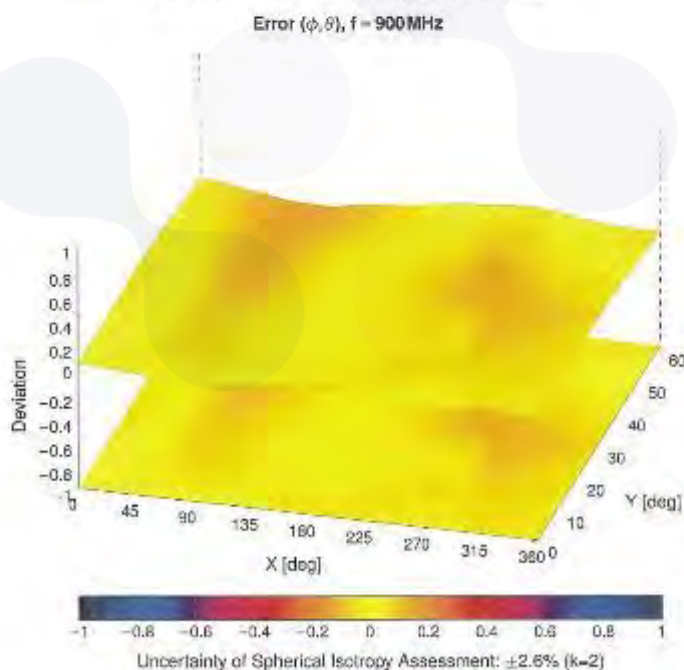
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Conversion Factor Assessment



Deviation from Isotropy in Liquid



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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	8.57	±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	1.18	±9.6
10033	CAA	IEEE 802.15.1 Bluetooth (Pi4 QPSK, DH1)	Bluetooth	7.74	±9.6
10034	CAA	IEEE 802.15.1 Bluetooth (Pi4 QPSK, DH2)	Bluetooth	4.53	±9.6
10035	CAA	IEEE 802.15.1 Bluetooth (Pi4 QPSK, DH5)	Bluetooth	3.83	±9.6
10036	CAA	IEEE 802.15.1 Bluetooth (8-PSK, DH1)	Bluetooth	8.01	±9.6
10037	CAA	IEEE 802.15.1 Bluetooth (8-PSK, DH3)	Bluetooth	4.77	±9.6
10038	CAA	IEEE 802.15.1 Bluetooth (8-PSK, 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, Pi4-QPSK, Fullrate)	AMPS	7.78	±9.6
10044	CAA	IS-91/EV-DO-A-3G FDD (FDMA, FM)	AMPS	0.00	±9.6
10048	CAA	DECT (TDD, TDMA-FDM, GFSK, Full Slot, 24)	DECT	18.80	±9.6
10049	CAA	DECT (TDD, TDMA-FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6
10050	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 802.11g WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.50	±9.6
10062	CAE	IEEE 802.11a/n WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	8.88	±9.6
10063	CAE	IEEE 802.11a/n WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	8.83	±9.6
10064	CAE	IEEE 802.11a/n WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	8.08	±9.6
10065	CAE	IEEE 802.11a/n WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	9.00	±9.6
10066	CAE	IEEE 802.11a/n WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	9.28	±9.6
10067	CAE	IEEE 802.11a/n WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	10.12	±9.6
10068	CAE	IEEE 802.11a/n WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	±9.6
10069	CAE	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	9.63	±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, Pi4-QPSK, Fullrate)	AMPS	4.77	±9.6
10086	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, Subset 2)	WCDMA	3.98	±9.6
10099	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-4)	GSM	8.55	±9.6
10100	CAE	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	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	CAE	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	CAE	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	±9.6
10110	CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	5.75	±9.6
10111	CAE	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	±9.6

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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	8.59	±9.6
10113	CAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	8.82	±9.6
10114	CAE	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	9.10	±9.6
10115	CAE	IEEE 802.11n (HT Greenfield, 81 Mbps, 16-QAM)	WLAN	9.40	±9.6
10116	CAE	IEEE 802.11n (HT Greenfield, 135 Mbps, 64-QAM)	WLAN	9.15	±9.6
10117	CAE	IEEE 802.11n (HT Mixed, 13.5 Mbps, BPSK)	WLAN	9.07	±9.6
10118	CAE	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	9.50	±9.6
10119	CAF	IEEE 802.11n (HT Mixed, 135 Mbps, 64-QAM)	WLAN	9.13	±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	8.42	±9.6
10150	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	8.60	±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	5.78	±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	6.66	±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, 8 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	AAQ	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	6.50	±9.6
10190	CAE	IEEE 802.11n (HT Greenfield, 6.5 Mbps, BPSK)	WLAN	8.09	±9.6
10194	CAE	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	CAF	IEEE 802.11n (HT Mixed, 39 Mbps, 16-QAM)	WLAN	8.13	±9.6
10198	CAE	IEEE 802.11n (HT Mixed, 65 Mbps, 64-QAM)	WLAN	8.27	±9.6
10219	CAE	IEEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	±9.6
10220	CAE	IEEE 802.11n (HT Mixed, 43.8 Mbps, 16-QAM)	WLAN	8.13	±9.6
10221	CAE	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	±9.6
10222	CAE	IEEE 802.11n (HT Mixed, 15 Mbps, BPSK)	WLAN	8.05	±9.6
10223	CAE	IEEE 802.11n (HT Mixed, 80 Mbps, 16-QAM)	WLAN	8.48	±9.6
10224	CAE	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.05	±9.6

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10225	CAC	UMTS-FDD (HS-PA4)	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	CAG	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	±9.6
10242	CAG	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	±9.6
10243	CAG	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	9.80	±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	10.09	±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	9.58	±9.6
10274	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel3.10)	WCDMA	4.87	±9.6
10275	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel3.4)	WCDMA	3.88	±9.6
10277	GAA	PHS (QPSK)	PHS	11.81	±9.6
10278	GAA	PHS (QPSK, BW 884 MHz, Roll-off 0.5)	PHS	11.81	±9.6
10279	GAA	PHS (QPSK, BW 884 MHz, Roll-off 0.38)	PHS	12.18	±9.6
10280	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	±9.6
10281	AAB	CDMA2000, RC3, SO55, Full Rate	CDMA2000	3.46	±9.6
10282	AAB	CDMA2000, RC3, SO32, Full Rate	CDMA2000	3.39	±9.6
10283	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	±9.6
10286	AAB	CDMA2000, RC1, SO3, 1/8th Rate 25 ft	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	6.80	±9.6
10301	AAA	IEEE 802.16e WIMAX (28:18, 5 ms, 10 MHz, QPSK, PUSC)	WIMAX	12.03	±9.6
10302	AAA	IEEE 802.16e WIMAX (28:18, 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 (28:18, 5 ms, 10 MHz, 64QAM, PUSC)	WIMAX	11.66	±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 (28:18, 10 ms, 10 MHz, 64QAM, PUSC, 18 symbols)	WIMAX	14.67	±9.6

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10307	AAA	IEEE 802.16e WIMAX (20:16, 10 ms, 10MHz, QPSK, PUSC, 18 symbols)	WIMAX	14.48	±9.6
10308	AAA	IEEE 802.16e WIMAX (20:16, 10 ms, 10MHz, 16QAM, PUSC)	WIMAX	14.46	±9.6
10309	AAA	IEEE 802.16e WIMAX (20:16, 10 ms, 10MHz, 16QAM, AMC 2x3, 18 symbols)	WIMAX	14.58	±9.6
10310	AAA	IEEE 802.16e WIMAX (20:16, 10 ms, 10MHz, QPSK, AMC 2x3, 18 symbols)	WIMAX	14.57	±9.6
10311	AAE	LTE-FDD (SC-FDMA, 100% RB, 15MHz, QPSK)	LTE-FDD	6.06	±9.6
10313	AAA	IDEN 1:3	IDEN	10.51	±9.6
10314	AAA	IDEN 1:5	IDEN	13.46	±9.6
10315	AAS	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.71	±9.6
10316	AAS	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.36	±9.6
10317	AAE	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.36	±9.6
10362	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	±9.5
10363	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	±9.5
10364	AAA	Pulse Waveform (200Hz, 40%)	Generic	3.96	±9.5
10365	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	±9.6
10366	AAA	Pulse Waveform (200Hz, 80%)	Generic	0.97	±9.6
10367	AAA	QPSK Waveform, 1 MHz	Generic	5.10	±9.6
10368	AAA	QPSK Waveform, 10 MHz	Generic	5.22	±9.6
10369	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	±9.6
10369	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	±9.6
10400	AAF	IEEE 802.11ac WiFi (20 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.37	±9.6
10401	AAF	IEEE 802.11ac WiFi (40 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	±9.6
10402	AAF	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	AAS	CDMA2000, RCH, SCH, SCH, Full Rate	CDMA2000	5.22	±9.6
10410	AAH	LTE-TDD (SC-FDMA, 1 RB, 10MHz, 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	AAD	IEEE 802.11a 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 preamble)	WLAN	8.14	±9.6
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS OFDM, 6 Mbps, 99pc duty cycle, Short preamble)	WLAN	8.18	±9.6
10422	AAD	IEEE 802.11n (HT Greenfield, 7.2 Mbps, BPSK)	WLAN	8.32	±9.6
10423	AAD	IEEE 802.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	±9.6
10424	AAD	IEEE 802.11n (HT Greenfield, 72.2 Mbps, 64-QAM)	WLAN	8.40	±9.6
10425	AAD	IEEE 802.11n (HT Greenfield, 15 Mbps, BPSK)	WLAN	8.41	±9.6
10426	AAD	IEEE 802.11n (HT Greenfield, 30 Mbps, 16-QAM)	WLAN	8.46	±9.6
10427	AAD	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	6.26	±9.6
10431	AAE	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1)	LTE-FDD	6.36	±9.6
10432	AAD	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1)	LTE-FDD	6.34	±9.6
10433	AAD	LTE-FDD (OFDMA, 20 MHz, E-TM 3.1)	LTE-FDD	6.34	±9.6
10434	AAB	W-CDMA (BS Test Model 1, 64 DPCCH)	WCDMA	8.60	±9.6
10435	AAG	LTE-TDD (SC-FDMA, 1 RB, 80 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	7.55	±9.6
10448	AAE	LTE-FDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-FDD	7.53	±9.6
10449	AAD	LTE-FDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 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 DPCCH, Clipping 44%)	WCDMA	7.59	±9.6
10453	AAE	Validation (Square, 10 ms, 1 ms)	Test	10.00	±9.6
10456	AAD	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	6.66	±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

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KR25-SPF0015-B
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10472	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10473	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10474	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	9.32	±9.6
10475	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10477	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10478	AAG	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10479	AAG	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10480	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.18	±9.6
10481	AAC	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6
10482	AAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.71	±9.6
10483	AAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	±9.6
10484	AAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	±9.6
10485	AAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	±9.6
10486	AAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	±9.6
10487	AAG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.80	±9.6
10488	AAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	±9.6
10489	AAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6
10490	AAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10491	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10492	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.41	±9.6
10493	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6
10494	AAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10495	AAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	±9.6
10496	AAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10497	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.67	±9.6
10498	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	±9.6
10499	AAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.88	±9.6
10500	AAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.87	±9.6
10501	AAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.44	±9.6
10502	AAD	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.52	±9.6
10503	AAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	±9.6
10504	AAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6
10505	AAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10506	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10507	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	±9.6
10508	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6
10509	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	±9.6
10510	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	±9.6
10511	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	±9.6
10512	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10513	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	±9.6
10514	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6
10515	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	±9.6
10516	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	±9.6
10517	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.58	±9.6
10518	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	±9.6
10519	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	±9.6
10520	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	8.12	±9.6
10521	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	7.97	±9.6
10522	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6
10523	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	8.08	±9.6
10524	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	8.27	±9.6
10525	AAD	IEEE 802.11ac WiFi (20 MHz, MCS0, 99pc duty cycle)	WLAN	8.36	±9.6
10526	AAD	IEEE 802.11ac WiFi (20 MHz, MCS1, 99pc duty cycle)	WLAN	8.42	±9.6
10527	AAD	IEEE 802.11ac WiFi (20 MHz, MCS2, 99pc duty cycle)	WLAN	8.21	±9.6
10528	AAD	IEEE 802.11ac WiFi (20 MHz, MCS3, 99pc duty cycle)	WLAN	8.35	±9.6
10529	AAD	IEEE 802.11ac WiFi (20 MHz, MCS4, 99pc duty cycle)	WLAN	8.35	±9.6
10531	AAD	IEEE 802.11ac WiFi (20 MHz, MCS6, 99pc duty cycle)	WLAN	8.43	±9.6
10532	AAD	IEEE 802.11ac WiFi (20 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6
10533	AAD	IEEE 802.11ac WiFi (20 MHz, MCS8, 99pc duty cycle)	WLAN	8.38	±9.6
10534	AAD	IEEE 802.11ac WiFi (40 MHz, MCS0, 99pc duty cycle)	WLAN	8.45	±9.6
10535	AAD	IEEE 802.11ac WiFi (40 MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.6
10536	AAD	IEEE 802.11ac WiFi (40 MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6
10537	AAD	IEEE 802.11ac WiFi (40 MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±9.6
10538	AAD	IEEE 802.11ac WiFi (40 MHz, MCS4, 99pc duty cycle)	WLAN	8.54	±9.6
10540	AAD	IEEE 802.11ac WiFi (40 MHz, MCS5, 99pc duty cycle)	WLAN	8.39	±9.6

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10541	AAD	IEEE 802.11ac WiFi (40 MHz, MCS7, 99pc duty cycle)	WLAN	6.46	±9.5
10542	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 99pc duty cycle)	WLAN	6.65	±9.5
10543	AAD	IEEE 802.11ac WiFi (40 MHz, MCS9, 99pc duty cycle)	WLAN	6.65	±9.5
10544	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 99pc duty cycle)	WLAN	6.47	±9.5
10545	AAD	IEEE 802.11ac WiFi (80 MHz, MCS1, 99pc duty cycle)	WLAN	6.66	±9.5
10546	AAD	IEEE 802.11ac WiFi (80 MHz, MCS2, 99pc duty cycle)	WLAN	6.85	±9.5
10547	AAD	IEEE 802.11ac WiFi (80 MHz, MCS3, 99pc duty cycle)	WLAN	6.49	±9.5
10548	AAD	IEEE 802.11ac WiFi (80 MHz, MCS4, 99pc duty cycle)	WLAN	6.37	±9.5
10550	AAD	IEEE 802.11ac WiFi (80 MHz, MCS6, 99pc duty cycle)	WLAN	6.38	±9.5
10551	AAD	IEEE 802.11ac WiFi (80 MHz, MCS7, 99pc duty cycle)	WLAN	6.50	±9.5
10552	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 99pc duty cycle)	WLAN	6.42	±9.5
10553	AAD	IEEE 802.11ac WiFi (80 MHz, MCS9, 99pc duty cycle)	WLAN	6.45	±9.5
10554	AAD	IEEE 802.11ac WiFi (160 MHz, MCS0, 99pc duty cycle)	WLAN	6.48	±9.5
10555	AAD	IEEE 802.11ac WiFi (160 MHz, MCS1, 99pc duty cycle)	WLAN	6.47	±9.5
10556	AAD	IEEE 802.11ac WiFi (160 MHz, MCS2, 99pc duty cycle)	WLAN	6.50	±9.5
10557	AAD	IEEE 802.11ac WiFi (160 MHz, MCS3, 99pc duty cycle)	WLAN	6.52	±9.5
10558	AAD	IEEE 802.11ac WiFi (160 MHz, MCS4, 99pc duty cycle)	WLAN	6.61	±9.5
10560	AAD	IEEE 802.11ac WiFi (160 MHz, MCS5, 99pc duty cycle)	WLAN	6.73	±9.5
10561	AAD	IEEE 802.11ac WiFi (160 MHz, MCS7, 99pc duty cycle)	WLAN	6.56	±9.5
10562	AAD	IEEE 802.11ac WiFi (160 MHz, MCS8, 99pc duty cycle)	WLAN	6.69	±9.5
10563	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 99pc duty cycle)	WLAN	6.77	±9.5
10564	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	WLAN	6.25	±9.5
10565	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	6.45	±9.5
10566	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	WLAN	6.13	±9.5
10567	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	6.00	±9.5
10568	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	WLAN	6.37	±9.5
10569	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WLAN	6.10	±9.5
10570	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	WLAN	6.30	±9.5
10571	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 99pc duty cycle)	WLAN	1.98	±9.5
10572	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.99	±9.5
10573	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.98	±9.5
10574	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.98	±9.5
10575	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle)	WLAN	6.58	±9.5
10576	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	WLAN	6.60	±9.5
10577	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	6.70	±9.5
10578	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycle)	WLAN	6.49	±9.5
10579	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	6.35	±9.5
10580	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 99pc duty cycle)	WLAN	6.75	±9.5
10581	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WLAN	6.35	±9.5
10582	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty cycle)	WLAN	6.67	±9.5
10583	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	6.59	±9.5
10584	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	6.60	±9.5
10585	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	6.70	±9.5
10586	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN	6.48	±9.5
10587	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)	WLAN	6.96	±9.5
10588	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 36 Mbps, 99pc duty cycle)	WLAN	6.76	±9.5
10589	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 48 Mbps, 99pc duty cycle)	WLAN	6.35	±9.5
10590	AAD	IEEE 802.11a/n WiFi 5 GHz (OFDM, 54 Mbps, 99pc duty cycle)	WLAN	6.67	±9.5
10591	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS0, 99pc duty cycle)	WLAN	6.63	±9.5
10592	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS1, 99pc duty cycle)	WLAN	6.79	±9.5
10593	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS2, 99pc duty cycle)	WLAN	6.64	±9.5
10594	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS3, 99pc duty cycle)	WLAN	6.74	±9.5
10595	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS4, 99pc duty cycle)	WLAN	6.74	±9.5
10596	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS5, 99pc duty cycle)	WLAN	6.71	±9.5
10597	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS6, 99pc duty cycle)	WLAN	6.72	±9.5
10598	AAD	IEEE 802.11n (HT Mixed, 20 MHz, MCS7, 99pc duty cycle)	WLAN	6.50	±9.5
10599	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS0, 99pc duty cycle)	WLAN	6.79	±9.5
10600	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS1, 99pc duty cycle)	WLAN	6.88	±9.5
10601	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS2, 99pc duty cycle)	WLAN	6.82	±9.5
10602	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS3, 99pc duty cycle)	WLAN	6.84	±9.5
10603	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS4, 99pc duty cycle)	WLAN	6.03	±9.5
10604	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS5, 99pc duty cycle)	WLAN	6.76	±9.5
10605	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS6, 99pc duty cycle)	WLAN	6.97	±9.5
10606	AAD	IEEE 802.11n (HT Mixed, 40 MHz, MCS7, 99pc duty cycle)	WLAN	6.82	±9.5
10607	AAD	IEEE 802.11ac WiFi (20 MHz, MCS0, 99pc duty cycle)	WLAN	6.64	±9.5
10608	AAD	IEEE 802.11ac WiFi (20 MHz, MCS1, 99pc duty cycle)	WLAN	6.77	±9.5

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10509	AAD	IEEE 802.11ac WiFi (20MHz, MCS2, 90pc duty cycle)	WLAN	8.57	±0.6
10510	AAD	IEEE 802.11ac WiFi (20MHz, MCS3, 90pc duty cycle)	WLAN	8.78	±0.6
10511	AAD	IEEE 802.11ac WiFi (20MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±0.6
10512	AAD	IEEE 802.11ac WiFi (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±0.6
10513	AAD	IEEE 802.11ac WiFi (20MHz, MCS6, 90pc duty cycle)	WLAN	8.94	±0.6
10514	AAD	IEEE 802.11ac WiFi (20MHz, MCS7, 90pc duty cycle)	WLAN	8.59	±0.6
10515	AAD	IEEE 802.11ac WiFi (20MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±0.6
10516	AAD	IEEE 802.11ac WiFi (40MHz, MCS0, 90pc duty cycle)	WLAN	8.82	±0.6
10517	AAD	IEEE 802.11ac WiFi (40MHz, MCS1, 90pc duty cycle)	WLAN	8.61	±0.6
10518	AAD	IEEE 802.11ac WiFi (40MHz, MCS2, 90pc duty cycle)	WLAN	8.58	±0.6
10519	AAD	IEEE 802.11ac WiFi (40MHz, MCS3, 90pc duty cycle)	WLAN	8.66	±0.6
10520	AAD	IEEE 802.11ac WiFi (40MHz, MCS4, 90pc duty cycle)	WLAN	8.57	±0.6
10521	AAD	IEEE 802.11ac WiFi (40MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±0.6
10522	AAD	IEEE 802.11ac WiFi (40MHz, MCS6, 90pc duty cycle)	WLAN	8.88	±0.6
10523	AAD	IEEE 802.11ac WiFi (40MHz, MCS7, 90pc duty cycle)	WLAN	8.82	±0.6
10524	AAD	IEEE 802.11ac WiFi (40MHz, MCS8, 90pc duty cycle)	WLAN	8.98	±0.6
10525	AAD	IEEE 802.11ac WiFi (40MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±0.6
10526	AAD	IEEE 802.11ac WiFi (80MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±0.6
10527	AAD	IEEE 802.11ac WiFi (80MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±0.6
10528	AAD	IEEE 802.11ac WiFi (80MHz, MCS2, 90pc duty cycle)	WLAN	8.71	±0.6
10529	AAD	IEEE 802.11ac WiFi (80MHz, MCS3, 90pc duty cycle)	WLAN	8.65	±0.6
10530	AAD	IEEE 802.11ac WiFi (80MHz, MCS4, 90pc duty cycle)	WLAN	8.72	±0.6
10531	AAD	IEEE 802.11ac WiFi (80MHz, MCS5, 90pc duty cycle)	WLAN	8.81	±0.6
10532	AAD	IEEE 802.11ac WiFi (80MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±0.6
10533	AAD	IEEE 802.11ac WiFi (80MHz, MCS7, 90pc duty cycle)	WLAN	8.83	±0.6
10534	AAD	IEEE 802.11ac WiFi (80MHz, MCS8, 90pc duty cycle)	WLAN	8.80	±0.6
10535	AAD	IEEE 802.11ac WiFi (80MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±0.6
10536	AAE	IEEE 802.11ac WiFi (160MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±0.6
10537	AAE	IEEE 802.11ac WiFi (160MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±0.6
10538	AAE	IEEE 802.11ac WiFi (160MHz, MCS2, 90pc duty cycle)	WLAN	8.85	±0.6
10539	AAE	IEEE 802.11ac WiFi (160MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±0.6
10540	AAE	IEEE 802.11ac WiFi (160MHz, MCS4, 90pc duty cycle)	WLAN	8.88	±0.6
10541	AAE	IEEE 802.11ac WiFi (160MHz, MCS5, 90pc duty cycle)	WLAN	8.08	±0.6
10542	AAE	IEEE 802.11ac WiFi (160MHz, MCS6, 90pc duty cycle)	WLAN	8.06	±0.6
10543	AAE	IEEE 802.11ac WiFi (160MHz, MCS7, 90pc duty cycle)	WLAN	8.89	±0.6
10544	AAE	IEEE 802.11ac WiFi (160MHz, MCS8, 90pc duty cycle)	WLAN	9.06	±0.6
10545	AAE	IEEE 802.11ac WiFi (160MHz, MCS9, 90pc duty cycle)	WLAN	9.11	±0.6
10546	AAH	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, CPB, UL Subframe=2,7)	LTE-TDD	11.96	±0.6
10547	AAH	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, CPB, UL Subframe=2,7)	LTE-TDD	11.96	±0.6
10548	AAA	CDMA2000 (1x Advanced)	CDMA2000	3.45	±0.6
10549	AAF	LTE-TDD (OFDMA, 5 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.91	±0.6
10550	AAF	LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.42	±0.6
10551	AAF	LTE-TDD (OFDMA, 15 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	6.98	±0.6
10552	AAF	LTE-TDD (OFDMA, 20 MHz, E-TM 3.1, Clipping 44%)	LTE-TDD	7.21	±0.6
10553	AAB	Pulse Waveform (200Hz, 10%)	Test	10.00	±0.6
10554	AAB	Pulse Waveform (200Hz, 20%)	Test	6.89	±0.6
10555	AAB	Pulse Waveform (200Hz, 40%)	Test	3.98	±0.6
10556	AAB	Pulse Waveform (200Hz, 60%)	Test	2.22	±0.6
10557	AAB	Pulse Waveform (200Hz, 90%)	Test	0.57	±0.6
10558	AAA	Bluetooth Low Energy	Bluetooth	2.19	±0.6
10559	AAC	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	9.09	±0.6
10560	AAC	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.57	±0.6
10561	AAC	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.76	±0.6
10562	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.74	±0.6
10563	AAC	IEEE 802.11ax (20MHz, MCS4, 90pc duty cycle)	WLAN	8.90	±0.6
10564	AAC	IEEE 802.11ax (20MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±0.6
10565	AAC	IEEE 802.11ax (20MHz, MCS6, 90pc duty cycle)	WLAN	8.73	±0.6
10566	AAC	IEEE 802.11ax (20MHz, MCS7, 90pc duty cycle)	WLAN	8.70	±0.6
10567	AAC	IEEE 802.11ax (20MHz, MCS8, 90pc duty cycle)	WLAN	8.89	±0.6
10568	AAC	IEEE 802.11ax (20MHz, MCS9, 90pc duty cycle)	WLAN	8.80	±0.6
10569	AAC	IEEE 802.11ax (20MHz, MCS10, 90pc duty cycle)	WLAN	8.62	±0.6
10570	AAC	IEEE 802.11ax (20MHz, MCS11, 90pc duty cycle)	WLAN	8.65	±0.6
10571	AAC	IEEE 802.11ax (20MHz, MCS0, 90pc duty cycle)	WLAN	8.42	±0.6
10572	AAC	IEEE 802.11ax (20MHz, MCS1, 90pc duty cycle)	WLAN	8.26	±0.6
10573	AAC	IEEE 802.11ax (20MHz, MCS2, 90pc duty cycle)	WLAN	8.33	±0.6
10574	AAC	IEEE 802.11ax (20MHz, MCS3, 90pc duty cycle)	WLAN	8.28	±0.6

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10687	AAC	IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle)	WLAN	8.45	±9.5
10688	AAC	IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle)	WLAN	8.29	±9.5
10689	AAC	IEEE 802.11ax (20 MHz, MCS6, 99pc duty cycle)	WLAN	8.55	±9.5
10690	AAC	IEEE 802.11ax (20 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.5
10691	AAC	IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle)	WLAN	8.25	±9.5
10692	AAC	IEEE 802.11ax (20 MHz, MCS9, 99pc duty cycle)	WLAN	8.29	±9.5
10693	AAC	IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle)	WLAN	8.25	±9.5
10694	AAC	IEEE 802.11ax (20 MHz, MCS11, 99pc duty cycle)	WLAN	8.57	±9.5
10695	AAC	IEEE 802.11ax (40 MHz, MCS0, 90pc duty cycle)	WLAN	8.78	±9.5
10696	AAC	IEEE 802.11ax (40 MHz, MCS1, 90pc duty cycle)	WLAN	8.91	±9.5
10697	AAC	IEEE 802.11ax (40 MHz, MCS2, 90pc duty cycle)	WLAN	8.81	±9.5
10698	AAC	IEEE 802.11ax (40 MHz, MCS3, 90pc duty cycle)	WLAN	8.99	±9.5
10699	AAC	IEEE 802.11ax (40 MHz, MCS4, 90pc duty cycle)	WLAN	8.82	±9.5
10700	AAC	IEEE 802.11ax (40 MHz, MCS5, 90pc duty cycle)	WLAN	8.73	±9.5
10701	AAC	IEEE 802.11ax (40 MHz, MCS6, 90pc duty cycle)	WLAN	8.66	±9.5
10702	AAC	IEEE 802.11ax (40 MHz, MCS7, 90pc duty cycle)	WLAN	8.70	±9.5
10703	AAC	IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.5
10704	AAC	IEEE 802.11ax (40 MHz, MCS9, 90pc duty cycle)	WLAN	8.56	±9.5
10705	AAC	IEEE 802.11ax (40 MHz, MCS10, 90pc duty cycle)	WLAN	8.69	±9.5
10706	AAC	IEEE 802.11ax (40 MHz, MCS11, 90pc duty cycle)	WLAN	8.66	±9.5
10707	AAC	IEEE 802.11ax (40 MHz, MCS0, 99pc duty cycle)	WLAN	8.32	±9.5
10708	AAC	IEEE 802.11ax (40 MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.5
10709	AAC	IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle)	WLAN	8.33	±9.5
10710	AAC	IEEE 802.11ax (40 MHz, MCS3, 99pc duty cycle)	WLAN	8.29	±9.5
10711	AAC	IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)	WLAN	8.39	±9.5
10712	AAC	IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle)	WLAN	8.67	±9.5
10713	AAC	IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)	WLAN	8.33	±9.5
10714	AAC	IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)	WLAN	8.26	±9.5
10715	AAC	IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)	WLAN	8.45	±9.5
10716	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)	WLAN	8.30	±9.5
10717	AAC	IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle)	WLAN	8.48	±9.5
10718	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	8.24	±9.5
10719	AAC	IEEE 802.11ax (80 MHz, MCS0, 90pc duty cycle)	WLAN	8.81	±9.5
10720	AAC	IEEE 802.11ax (80 MHz, MCS1, 90pc duty cycle)	WLAN	8.67	±9.5
10721	AAC	IEEE 802.11ax (80 MHz, MCS2, 90pc duty cycle)	WLAN	8.75	±9.5
10722	AAC	IEEE 802.11ax (80 MHz, MCS3, 90pc duty cycle)	WLAN	8.55	±9.5
10723	AAC	IEEE 802.11ax (80 MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±9.5
10724	AAC	IEEE 802.11ax (80 MHz, MCS5, 90pc duty cycle)	WLAN	8.30	±9.5
10725	AAC	IEEE 802.11ax (80 MHz, MCS6, 90pc duty cycle)	WLAN	8.74	±9.5
10726	AAC	IEEE 802.11ax (80 MHz, MCS7, 90pc duty cycle)	WLAN	8.72	±9.5
10727	AAC	IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle)	WLAN	8.68	±9.5
10728	AAC	IEEE 802.11ax (80 MHz, MCS9, 90pc duty cycle)	WLAN	8.65	±9.5
10729	AAC	IEEE 802.11ax (80 MHz, MCS10, 90pc duty cycle)	WLAN	8.64	±9.5
10730	AAC	IEEE 802.11ax (80 MHz, MCS11, 90pc duty cycle)	WLAN	8.67	±9.5
10731	AAC	IEEE 802.11ax (80 MHz, MCS0, 99pc duty cycle)	WLAN	8.42	±9.5
10732	AAC	IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)	WLAN	8.45	±9.5
10733	AAC	IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle)	WLAN	8.40	±9.5
10734	AAC	IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle)	WLAN	8.25	±9.5
10735	AAC	IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)	WLAN	8.33	±9.5
10736	AAC	IEEE 802.11ax (80 MHz, MCS5, 99pc duty cycle)	WLAN	8.27	±9.5
10737	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	8.36	±9.5
10738	AAC	IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle)	WLAN	8.42	±9.5
10739	AAC	IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle)	WLAN	8.29	±9.5
10740	AAC	IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)	WLAN	8.49	±9.5
10741	AAC	IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle)	WLAN	8.40	±9.5
10742	AAC	IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle)	WLAN	8.43	±9.5
10743	AAC	IEEE 802.11ax (160 MHz, MCS0, 90pc duty cycle)	WLAN	8.94	±9.5
10744	AAC	IEEE 802.11ax (160 MHz, MCS1, 90pc duty cycle)	WLAN	9.16	±9.5
10745	AAC	IEEE 802.11ax (160 MHz, MCS2, 90pc duty cycle)	WLAN	8.63	±9.5
10746	AAC	IEEE 802.11ax (160 MHz, MCS3, 90pc duty cycle)	WLAN	9.11	±9.5
10747	AAC	IEEE 802.11ax (160 MHz, MCS4, 90pc duty cycle)	WLAN	9.04	±9.5
10748	AAC	IEEE 802.11ax (160 MHz, MCS5, 90pc duty cycle)	WLAN	8.35	±9.5
10749	AAC	IEEE 802.11ax (160 MHz, MCS6, 90pc duty cycle)	WLAN	8.90	±9.5
10750	AAC	IEEE 802.11ax (160 MHz, MCS7, 90pc duty cycle)	WLAN	8.79	±9.5
10751	AAC	IEEE 802.11ax (160 MHz, MCS8, 90pc duty cycle)	WLAN	8.92	±9.5
10752	AAC	IEEE 802.11ax (160 MHz, MCS9, 90pc duty cycle)	WLAN	8.81	±9.5

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10753	AAC	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.03	+9.6
10754	AAC	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.04	+9.6
10755	AAC	IEEE 802.11ax (160MHz, MCS0, 99pc duty cycle)	WLAN	8.84	+9.6
10756	AAC	IEEE 802.11ax (160MHz, MCS1, 99pc duty cycle)	WLAN	8.77	+9.6
10757	AAC	IEEE 802.11ax (160MHz, MCS2, 99pc duty cycle)	WLAN	8.77	+9.6
10758	AAC	IEEE 802.11ax (160MHz, MCS3, 99pc duty cycle)	WLAN	8.69	+9.6
10759	AAC	IEEE 802.11ax (160MHz, MCS4, 99pc duty cycle)	WLAN	8.58	+9.6
10760	AAC	IEEE 802.11ax (160MHz, MCS5, 99pc duty cycle)	WLAN	8.48	+9.6
10761	AAC	IEEE 802.11ax (160MHz, MCS6, 99pc duty cycle)	WLAN	8.58	+9.6
10762	AAC	IEEE 802.11ax (160MHz, MCS7, 99pc duty cycle)	WLAN	8.48	+9.6
10763	AAC	IEEE 802.11ax (160MHz, MCS8, 99pc duty cycle)	WLAN	8.53	+9.6
10764	AAC	IEEE 802.11ax (160MHz, MCS9, 99pc duty cycle)	WLAN	8.54	+9.6
10765	AAC	IEEE 802.11ax (160MHz, MCS10, 99pc duty cycle)	WLAN	8.54	+9.6
10766	AAC	IEEE 802.11ax (160MHz, MCS11, 99pc duty cycle)	WLAN	8.51	+9.6
10767	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	7.90	+9.6
10768	AAE	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	+9.6
10769	AAE	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	+9.6
10770	AAE	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	+9.6
10771	AAE	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	+9.6
10772	AAE	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.23	+9.6
10773	AAE	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.03	+9.6
10774	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	+9.6
10775	AAE	5G NR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	+9.6
10776	AAE	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	+9.6
10777	AAE	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	+9.6
10778	AAE	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	+9.6
10779	AAE	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	+9.6
10780	AAE	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	+9.6
10781	AAE	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	+9.6
10782	AAE	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	AAE	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.29	+9.6
10785	AAE	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.40	+9.6
10786	AAE	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.35	+9.6
10787	AAE	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.44	+9.6
10788	AAE	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.38	+9.6
10789	AAE	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	+9.6
10790	AAE	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	AAE	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	+9.6
10793	AAE	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	+9.6
10794	AAE	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	+9.6
10795	AAE	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.94	+9.6
10796	AAE	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.92	+9.6
10797	AAE	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	+9.6
10798	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.88	+9.6
10799	AAE	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	+9.6
10800	AAE	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.89	+9.6
10801	AAE	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.87	+9.6
10802	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	+9.6
10803	AAE	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	+9.6
10804	AAE	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	+9.6
10805	AAE	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	+9.6
10806	AAE	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	+9.6
10807	AAE	5G NR (CP-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	+9.6
10808	AAE	5G NR (CP-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	+9.6
10809	AAE	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	+9.6
10810	AAE	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.33	+9.6
10811	AAE	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.30	+9.6
10812	AAE	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	+9.6
10813	AAE	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	+9.6
10814	AAE	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	+9.6
10815	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	+9.6
10816	AAE	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.42	+9.6
10817	AAE	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	+9.6
10818	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.43	+9.6

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10829	AAF	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	9.40	±9.6
10830	AAE	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.93	±9.6
10831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.73	±9.6
10832	AAF	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	7.79	±9.6
10834	AAE	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.75	±9.6
10835	AAF	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
10836	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.88	±9.6
10837	AAF	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.80	±9.6
10838	AAF	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
10840	AAE	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.67	±9.6
10841	AAF	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, 80 kHz)	5G NR FR1 TDD	8.48	±9.6
10844	AAE	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.34	±9.6
10846	AAE	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.41	±9.6
10854	AAE	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.34	±9.6
10855	AAD	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.36	±9.6
10856	AAE	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.37	±9.6
10857	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.35	±9.6
10858	AAE	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.38	±9.6
10859	AAF	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.34	±9.6
10860	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.41	±9.6
10861	AAF	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.40	±9.6
10863	AAF	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.41	±9.6
10864	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.37	±9.6
10865	AAF	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 80 kHz)	5G NR FR1 TDD	8.41	±9.6
10866	AAF	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
10868	AAF	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.89	±9.6
10869	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
10870	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.86	±9.6
10871	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
10872	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.82	±9.6
10873	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	5.81	±9.6
10874	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	5.85	±9.6
10875	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±9.6
10876	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	±9.6
10877	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.95	±9.6
10878	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	±9.6
10879	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	±9.6
10880	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	±9.6
10881	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.75	±9.6
10882	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	5.96	±9.6
10883	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.67	±9.6
10884	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	5.53	±9.6
10885	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	5.61	±9.6
10886	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	5.65	±9.6
10887	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.79	±9.6
10888	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	±9.6
10889	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.02	±9.6
10890	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	±9.6
10891	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.13	±9.6
10892	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.41	±9.6
10897	AAE	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	±9.6
10899	AAC	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	AAC	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	±9.6
10901	AAB	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.66	±9.6
10902	AAC	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
10903	AAD	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.59	±9.6
10904	AAC	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.58	±9.6
10906	AAD	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	5.88	±9.6
10907	AAE	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	±9.6
10908	AAC	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.92	±9.6
10909	AAB	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	±9.6
10910	AAC	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.83	±9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^k k = 2
10911	AAB	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.52	±9.5
10912	AAC	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10913	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10914	AAC	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.55	±9.5
10915	AAD	5G NR (DFT-s-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.53	±9.5
10916	AAD	5G NR (DFT-s-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.57	±9.5
10917	AAD	5G NR (DFT-s-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10918	AAE	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.55	±9.5
10919	AAC	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.55	±9.5
10920	AAB	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.57	±9.5
10921	AAC	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10922	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.52	±9.5
10923	AAC	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10924	AAD	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10925	AAC	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.55	±9.5
10926	AAD	5G NR (DFT-s-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10927	AAD	5G NR (DFT-s-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.54	±9.5
10928	AAD	5G NR (DFT-s-OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.5
10929	AAD	5G NR (DFT-s-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.5
10930	AAC	5G NR (DFT-s-OFDM, 1 RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.5
10931	AAC	5G NR (DFT-s-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.5
10932	AAC	5G NR (DFT-s-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.5
10933	AAC	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.5
10934	AAC	5G NR (DFT-s-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.5
10935	AAD	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.5
10936	AAD	5G NR (DFT-s-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.50	±9.5
10937	AAD	5G NR (DFT-s-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.77	±9.5
10938	AAC	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.50	±9.5
10939	AAC	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.5
10940	AAC	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.59	±9.5
10941	AAC	5G NR (DFT-s-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.53	±9.5
10942	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.55	±9.5
10943	AAD	5G NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.55	±9.5
10944	AAD	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.5
10945	AAD	5G NR (DFT-s-OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.55	±9.5
10946	AAC	5G NR (DFT-s-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.53	±9.5
10947	AAC	5G NR (DFT-s-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.57	±9.5
10948	AAC	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.54	±9.5
10949	AAC	5G NR (DFT-s-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.57	±9.5
10950	AAC	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.54	±9.5
10951	AAD	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.52	±9.5
10952	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	5.25	±9.5
10953	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	5.15	±9.5
10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	5.22	±9.5
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	5.42	±9.5
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	5.14	±9.5
10957	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	5.31	±9.5
10958	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	5.51	±9.5
10959	AAA	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	5.33	±9.5
10960	AAF	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.32	±9.5
10961	AAC	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.35	±9.5
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.40	±9.5
10963	AAC	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.55	±9.5
10964	AAE	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.29	±9.5
10965	AAC	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	±9.5
10966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.55	±9.5
10967	AAC	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	±9.5
10968	AAD	5G NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.49	±9.5
10972	AAC	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.59	±9.5
10973	AAD	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	9.05	±9.5
10974	AAD	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	10.25	±9.5
10978	AAA	ULLA BDR	ULLA	1.15	±9.5
10979	AAA	ULLA HDR4	ULLA	5.58	±9.5
10980	AAA	ULLA HDR8	ULLA	10.32	±9.5
10981	AAA	ULLA HDRp4	ULLA	3.19	±9.5
10982	AAA	ULLA HDRp8	ULLA	3.43	±9.5

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E k = 2
10993	AAC	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.31	+9.6
10994	AAB	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	9.42	+9.6
10995	AAC	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.54	+9.6
10996	AAB	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.50	+9.6
10997	AAC	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.53	+9.6
10998	AAB	5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.30	+9.6
10999	AAC	5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.33	+9.6
10990	AAB	5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.52	+9.6
11008	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz)	5G NR FR1 TDD	10.24	+9.6
11004	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	10.73	+9.6
11005	AAA	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.70	+9.6
11006	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.55	+9.6
11007	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.46	+9.6
11008	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.51	+9.6
11009	AAA	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.76	+9.6
11010	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.95	+9.6
11011	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.96	+9.6
11012	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.98	+9.6
11013	AAB	IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle)	WLAN	8.47	+9.6
11014	AAB	IEEE 802.11be (320 MHz, MCS2, 99pc duty cycle)	WLAN	8.45	+9.6
11015	AAB	IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle)	WLAN	8.44	+9.6
11016	AAB	IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle)	WLAN	8.44	+9.6
11017	AAB	IEEE 802.11be (320 MHz, MCS5, 99pc duty cycle)	WLAN	8.41	+9.6
11018	AAB	IEEE 802.11be (320 MHz, MCS6, 99pc duty cycle)	WLAN	8.40	+9.6
11019	AAB	IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	+9.6
11020	AAB	IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle)	WLAN	8.27	+9.6
11021	AAB	IEEE 802.11be (320 MHz, MCS9, 99pc duty cycle)	WLAN	8.46	+9.6
11022	AAB	IEEE 802.11be (320 MHz, MCS10, 99pc duty cycle)	WLAN	8.36	+9.6
11023	AAB	IEEE 802.11be (320 MHz, MCS11, 99pc duty cycle)	WLAN	8.09	+9.6
11024	AAB	IEEE 802.11be (320 MHz, MCS12, 99pc duty cycle)	WLAN	8.42	+9.6
11025	AAB	IEEE 802.11be (320 MHz, MCS13, 99pc duty cycle)	WLAN	8.37	+9.6
11026	AAB	IEEE 802.11be (320 MHz, MCS0, 99pc duty cycle)	WLAN	8.39	+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.

Appendix A.8 Probe Calibration certificate (EX3DV4_SN7851)

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 **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No. **EX-7851_Jul24**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:7851**

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 **July 17, 2024**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.
Calibration Equipment used (MSTE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	26-Mar-24 (No. 217-04036/04037)	Mar-25
Power sensor NRP-291	SN: 103244	26-Mar-24 (No. 217-04036)	Mar-25
CCP DAK-3.5 (weighted)	SN: 1249	05-Oct-23 (CCP-DAK3.5-1249 Oct23)	Oct-24
CCP DAK-12	SN: 1016	05-Oct-23 (CCP-DAK12-1016 Oct23)	Oct-24
Reference 20 dB Attenuator	SN: CC2552 (20x)	26-Mar-24 (No. 217-04045)	Mar-25
DAE4	SN: 660	23-Feb-24 (No. DAE4-660 Feb24)	Feb-25
Reference Probe EX3DV4	SN: 7348	03-Jun-24 (No. EX3-7348_Jun24)	Jun-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41292674	06-Apr-16 (in house check Jun-24)	In house check: Jun-28
Power sensor E4412A	SN: MY41480387	06-Apr-16 (in house check Jun-24)	In house check: Jun-28
Power sensor E4412A	SN: 000110210	06-Apr-18 (in house check Jun-24)	In house check: Jun-28
RF generator HP 8640C	SN: US3642001700	04-Aug-89 (in house check Jun-24)	In house check: Jun-28
Network Analyzer E6356A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by	Jouna Uusheja	Laboratory Technician	
Approved by	Sven Köhn	Technical Manager	
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			
Issued: July 17, 2024			

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



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

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**

Glossary

TSL	issue-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., $\theta = 0$ 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 865654, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}: Assessed for E-field polarization $\theta = 0$ ($f \leq 900$ 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_{lin}(_{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. 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 for Temperature Transfer Standard for ($f \leq 900$ MHz) and inside waveguide using analytical field distributions based on power measurements for ($f > 900$ 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:7851

July 17, 2024

Parameters of Probe: EX3DV4 - SN:7851

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$) ^A	0.65	0.67	0.67	$\pm 10.1\%$
DCP (mV) ^B	108.8	106.5	108.3	$\pm 4.7\%$

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	144.6	$\pm 1.2\%$	$\pm 4.7\%$
		Y	0.00	0.00	1.00		120.0		
		Z	0.00	0.00	1.00		123.9		
10352	Pulse Waveform (200Hz, 10%)	X	1.71	61.35	6.70	10.00	60.0	$\pm 3.0\%$	$\pm 9.6\%$
		Y	1.64	61.01	6.70		60.0		
		Z	1.79	61.72	7.00		60.0		
10353	Pulse Waveform (200Hz, 20%)	X	0.53	60.00	4.96	6.99	60.0	$\pm 2.5\%$	$\pm 9.6\%$
		Y	0.78	60.00	4.99		60.0		
		Z	0.62	60.00	5.08		60.0		
10354	Pulse Waveform (200Hz, 40%)	X	0.09	129.06	0.08	8.98	95.0	$\pm 2.8\%$	$\pm 9.6\%$
		Y	0.13	136.73	0.53		95.0		
		Z	0.14	131.51	0.06		95.0		
10355	Pulse Waveform (200Hz, 60%)	X	8.80	158.38	20.22	2.22	120.0	$\pm 1.5\%$	$\pm 9.6\%$
		Y	7.31	159.97	26.92		120.0		
		Z	9.22	158.25	17.19		120.0		
10357	QPSK Waveform, 1 MHz	X	0.42	61.74	11.34	1.00	150.0	$\pm 3.4\%$	$\pm 9.6\%$
		Y	0.49	63.30	12.60		150.0		
		Z	0.45	62.63	11.84		150.0		
10358	QPSK Waveform, 10 MHz	X	1.15	64.94	13.05	0.00	150.0	$\pm 1.0\%$	$\pm 9.6\%$
		Y	1.28	66.17	13.77		150.0		
		Z	1.25	65.43	13.53		150.0		
10398	64-QAM Waveform, 100 kHz	X	1.66	64.30	15.71	3.01	150.0	$\pm 0.9\%$	$\pm 9.6\%$
		Y	1.72	64.73	15.94		150.0		
		Z	1.74	64.89	15.82		150.0		
10399	64-QAM Waveform, 40 MHz	X	2.67	65.99	14.78	0.00	150.0	$\pm 1.5\%$	$\pm 9.6\%$
		Y	2.76	66.47	15.12		150.0		
		Z	2.74	66.12	14.91		150.0		
10414	WLAN CCDF, 64-QAM, 40 MHz	X	3.73	66.45	15.27	0.03	150.0	$\pm 2.7\%$	$\pm 9.6\%$
		Y	3.84	66.09	15.16		150.0		
		Z	3.85	66.53	15.41		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 show the C^2 field uncertainty (see TSI) (see Pages 5 and 6).

^B Densization parameter uncertainty for maximum specified field strength.

^E Uncertainty is determined using the one standard deviation from three responses applying rectangular distribution and is expressed for the square of the field values.

EX3DV4 - SN:7851

July 17, 2024

Parameters of Probe: EX3DV4 - SN:7851

Sensor Model Parameters

	C1 tF	C2 tF	α V ⁻¹	T1 ms V ⁻²	T2 ms V ⁻¹	T3 ms	T4 V ⁻²	T5 V ⁻¹	T6
x	8.1	56.96	31.89	3.61	0.00	4.91	0.46	0.00	1.00
y	7.9	55.82	32.40	0.92	0.00	4.90	0.50	0.00	1.00
z	9.0	63.27	32.03	3.48	0.00	4.92	0.69	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	-45.8°
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	837 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 mode.

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Parameters of Probe: EX3DV4 - SN:7851

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^Q	Relative Permittivity ^F	Conductivity ^F (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc ^H (k=2)
750	41.8	0.89	9.71	9.53	9.06	0.35	1.27	±11.0%
850	41.5	0.92	9.54	9.35	8.80	0.35	1.27	±11.0%
900	41.5	0.97	9.36	9.18	8.73	0.35	1.27	±11.0%
1750	40.1	1.37	8.13	7.96	7.59	0.35	1.27	±11.0%
1900	40.0	1.40	7.87	7.72	7.34	0.36	1.27	±11.0%
2300	39.5	1.67	7.72	7.58	7.20	0.36	1.27	±11.0%
2450	39.2	1.80	7.44	7.30	6.94	0.36	1.27	±11.0%
2600	39.0	1.96	7.52	7.38	7.01	0.36	1.27	±11.0%
3300	38.2	2.71	6.66	6.53	6.21	0.36	1.27	±13.1%
3500	37.9	2.91	6.74	6.61	6.29	0.36	1.27	±13.1%
3700	37.7	3.12	6.75	6.63	6.30	0.37	1.27	±13.1%
3900	37.5	3.32	6.80	6.68	6.16	0.37	1.27	±13.1%
4100	37.2	3.53	6.48	6.36	6.04	0.37	1.27	±13.1%
4400	36.9	3.84	6.31	6.19	5.89	0.37	1.27	±13.1%
4600	36.7	4.04	6.15	6.04	5.74	0.37	1.27	±13.1%
4800	36.4	4.25	6.16	6.04	5.74	0.37	1.27	±13.1%
4950	36.3	4.40	6.05	5.93	5.64	0.36	1.27	±13.1%
5250	35.9	4.71	5.47	5.36	5.10	0.33	1.27	±13.1%
5600	35.5	5.07	4.63	4.74	4.51	0.29	1.27	±13.1%
5800	35.3	5.27	4.93	4.84	4.60	0.27	1.27	±13.1%

^Q Frequency validity above 300 MHz or ±100 MHz only applies for DAS-VI 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 ±8 MHz and ConvF assessed at 13 MHz is 5–13 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 lower than ±0%) and are valid for TSL with deviations of up to ±10% if SAR correction is applied.

^G Alpha/Depth are determined during calibration. SPEAG warns 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 3–5 GHz at any distance larger than half the probe tip diameter from the boundary.

^H The stated uncertainty is the total calibration uncertainty (k=2) of Norm-ConvF. This is equivalent to the uncertainty component with the symbol, CP F, Table 9 of IEC/IEEE 62209-13:2020.

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Parameters of Probe: EX3DV4 - SN:7851

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 ^H (k = 2)
6500	34.5	6.07	5.48	5.38	5.11	0.20	1.27	±18.6%
7000	33.9	6.65	5.59	5.48	5.21	0.20	1.27	±18.6%

^C Frequency validity at 6.5 GHz is ~800~700 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.

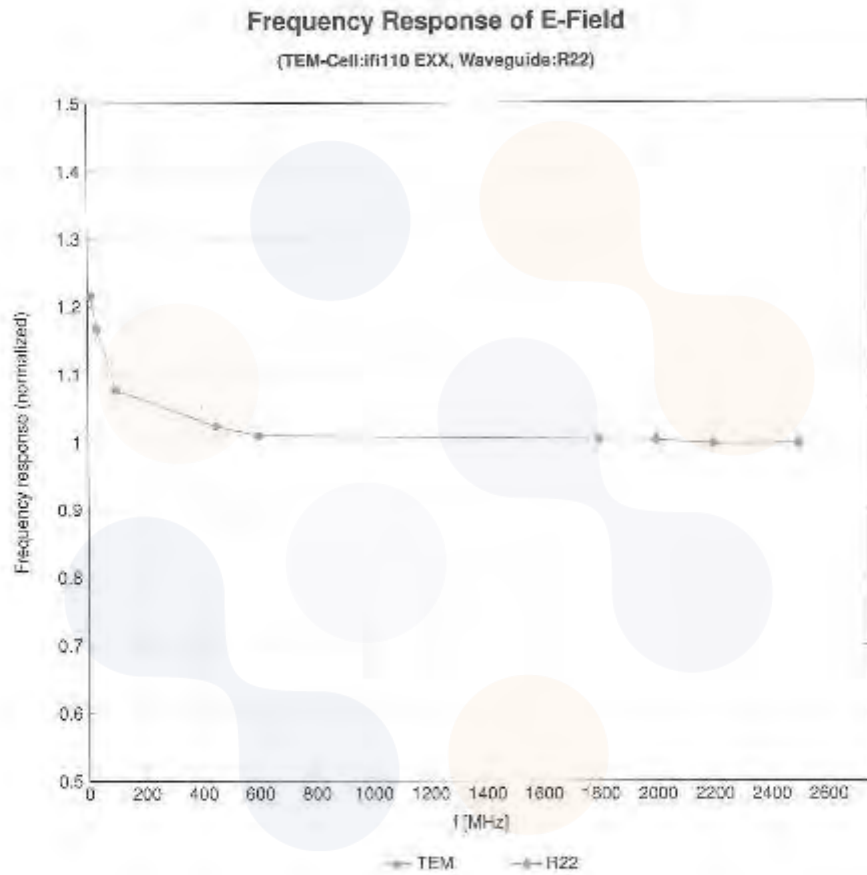
^F The probes are calibrated using tissue simulating liquids (TSL) that deviate for ϵ and σ by less than ±10% from the target values (typically better than ±6%) and are valid for TSL with deviations of up to ±10%.

^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.

^H The stated uncertainty is the total calibration uncertainty (k = 2) of Norm-CalvK. This is equivalent to the uncertainty component with the symbol CF in Table 9 of IEC/IEEE 62209-1528:2020.

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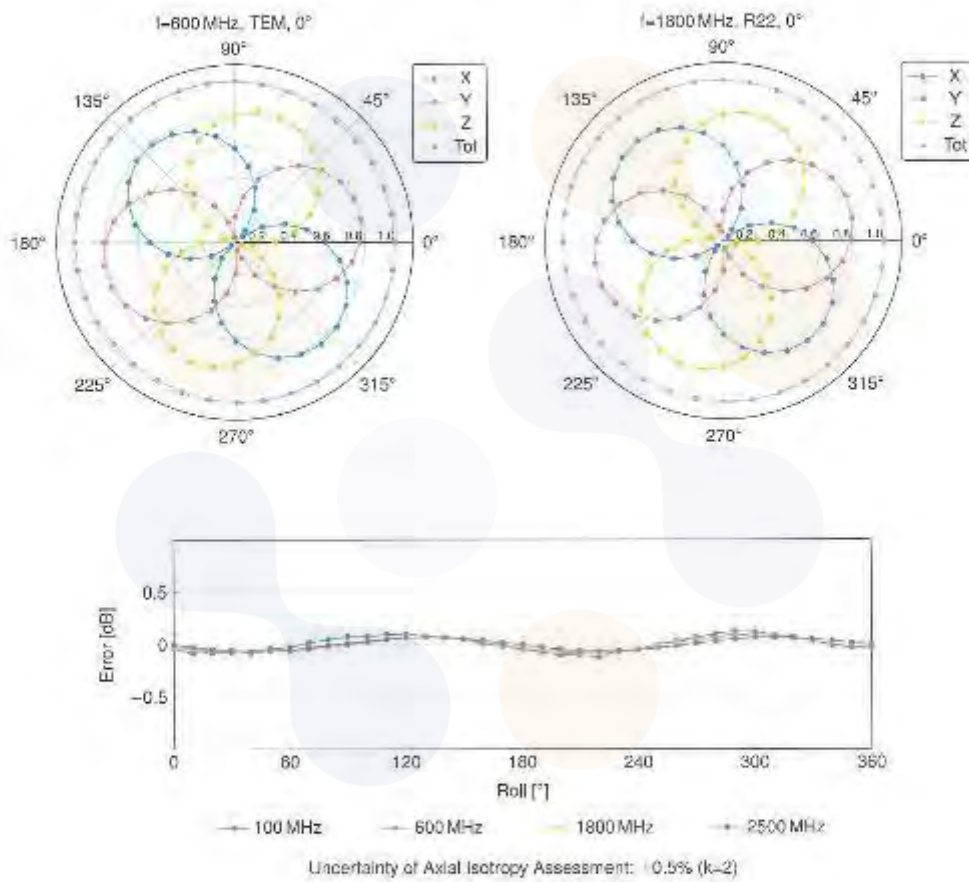


Uncertainty of Frequency Response of E field: $\pm 6.3\%$ (k=2)

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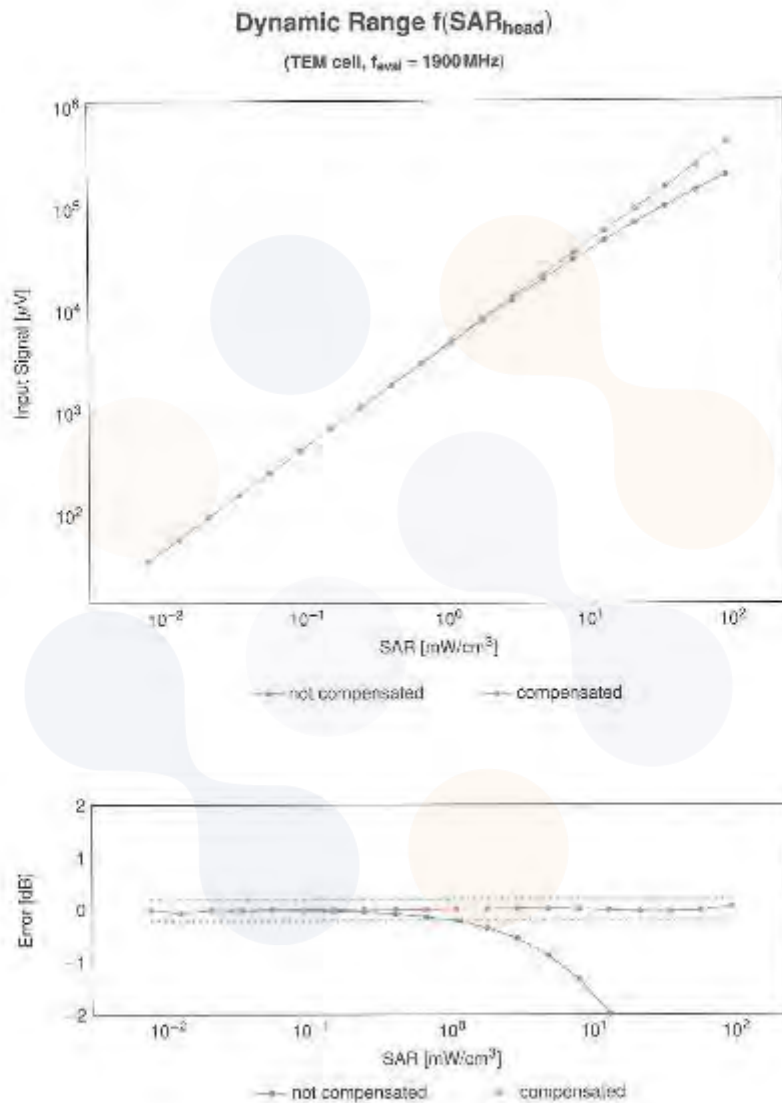
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Receiving Pattern (ϕ), $\theta = 0^\circ$



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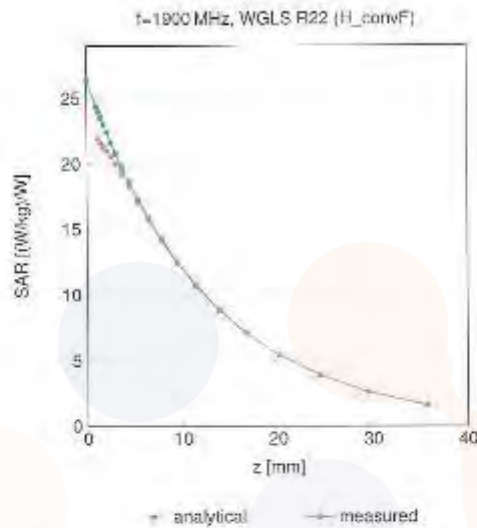


Uncertainty of Linearity Assessment: ±0.6% (k=2)

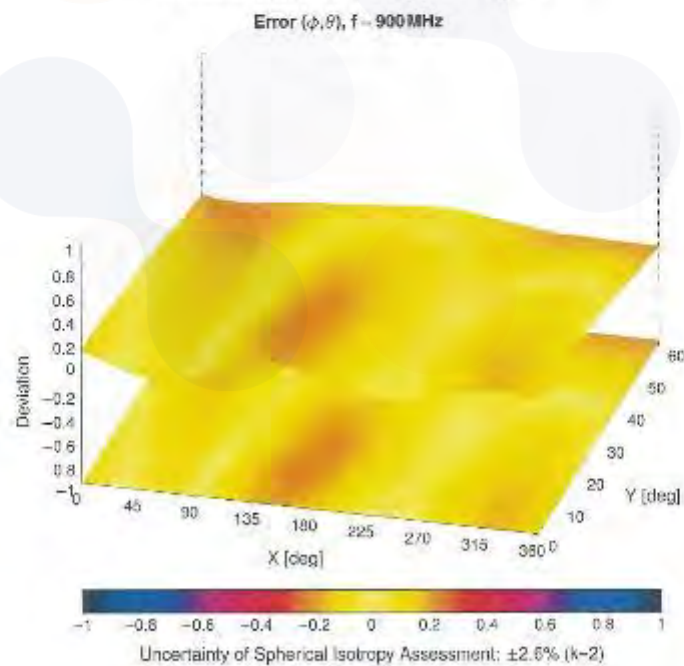
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Conversion Factor Assessment



Deviation from Isotropy in Liquid



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Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PMR (dB)	Unc ² A = 2
0		CW	CW	0.00	+4.7
10010	CAR	SAW Validation (Square, 100 ms, 10 ms)	test	10.00	+9.6
10011	CAC	UMTS-FDD (WCDMA)	WCDMA	2.54	+9.6
10012	CAR	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	WLAN	1.67	+9.6
10013	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 6 Mbps)	WLAN	3.46	+9.6
10021	DAC	GSM-FDD (TDMA, GMSK)	GSM	3.35	+9.6
10023	DAC	GPRS-FDD (TDMA, GMSK, TS 0-0)	GSM	3.57	+9.6
10024	DAC	GPRS-FDD (TDMA, GMSK, TS 0-1)	GSM	5.55	+9.6
10025	DAC	EDGE-FDD (TDMA, 8PSK, TS 0-1)	GSM	12.52	+9.6
10026	DAC	EDGE-FDD (TDMA, 8PSK, TS 0-1)	GSM	3.55	+9.6
10027	DAC	GPRS-FDD (TDMA, GMSK, TS 0-1-2)	GSM	4.80	+9.6
10028	DAC	GPRS-FDD (TDMA, GMSK, TS 0-1-3)	GSM	3.55	+9.6
10029	DAC	EDGE-FDD (TDMA, 8PSK, TS 0-1-2)	GSM	7.78	+9.6
10030	CAR	IEEE 802.15.1 Bluetooth (DPSK, DH1)	Bluetooth	5.36	+9.6
10031	CAR	IEEE 802.15.1 Bluetooth (DPSK, DH3)	Bluetooth	1.67	+9.6
10032	CAR	IEEE 802.15.1 Bluetooth (DPSK, DH5)	Bluetooth	1.16	+9.6
10033	CAR	IEEE 802.15.1 Bluetooth (P4-DQPSK, DH1)	Bluetooth	7.74	+9.6
10034	CAR	IEEE 802.15.1 Bluetooth (P4-DQPSK, DH2)	Bluetooth	4.50	+9.6
10035	CAR	IEEE 802.15.1 Bluetooth (P4-DQPSK, DH5)	Bluetooth	3.80	+9.6
10036	CAR	IEEE 802.15.1 Bluetooth (B-DPSK, DH1)	Bluetooth	3.01	+9.6
10037	CAR	IEEE 802.15.1 Bluetooth (B-DPSK, DH3)	Bluetooth	4.77	+9.6
10038	CAR	IEEE 802.15.1 Bluetooth (B-DPSK, DH5)	Bluetooth	4.10	+9.6
10039	CAR	CDMA2000 (1xRTT, FDD)	CDMA2000	4.57	+9.6
10042	CAR	IS-94 / IS-136 FDD (TDMA/FDM, P4-DQPSK, Fullrate)	AMPS	7.78	+9.6
10044	CAR	IS-94 / IS-136 FDD (TDMA/FDM, P4-DQPSK, Halfrate)	AMPS	0.00	+9.6
10045	CAR	DECT (TSC, TDMA/FDM, GFSK, Full Slot, 2s)	DECT	15.80	+9.6
10049	CAR	DECT (TSC, TDMA/FDM, GFSK, Double Slot, 12s)	DECT	10.75	+9.6
10056	CAR	UMTS-TDD (SCDMA, 128 Mbps)	TU SCDMA	11.09	+9.6
10059	DAC	EDGE-FDD (TDMA, 8-PSK, TS 0-1-2-3)	GSM	3.59	+9.6
10059	CAR	IEEE 802.11b WiFi 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	+9.6
10060	CAR	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WLAN	2.55	+9.6
10061	CAR	IEEE 802.11b WiFi 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.59	+9.6
10062	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 6 Mbps)	WLAN	3.80	+9.6
10063	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 9 Mbps)	WLAN	3.53	+9.6
10064	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 12 Mbps)	WLAN	3.08	+9.6
10065	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 18 Mbps)	WLAN	3.30	+9.6
10066	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 24 Mbps)	WLAN	3.38	+9.6
10067	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 36 Mbps)	WLAN	4.12	+9.6
10068	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	+9.6
10069	CAR	IEEE 802.11a WiFi 5 GHz (OFDM, 54 Mbps)	WLAN	10.56	+9.6
10071	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 9 Mbps)	WLAN	3.83	+9.6
10072	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 12 Mbps)	WLAN	3.82	+9.6
10073	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 18 Mbps)	WLAN	3.94	+9.6
10074	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 24 Mbps)	WLAN	10.30	+9.6
10075	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 36 Mbps)	WLAN	10.77	+9.6
10076	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 48 Mbps)	WLAN	10.94	+9.6
10077	CAR	IEEE 802.11g WiFi 2.4 GHz (DSSS+OFDM, 54 Mbps)	WLAN	11.00	+9.6
10081	CAR	CDMA2000 (1xRTT, FDD)	CDMA2000	3.57	+9.6
10082	CAR	IS-94 / IS-136 FDD (TDMA/FDM, P4-DQPSK, Fullrate)	AMPS	4.77	+9.6
10090	DAC	GPRS-FDD (TDMA, GMSK, TS 0-4)	GSM	3.56	+9.6
10097	CAC	UMTS-FDD (WCDMA)	WCDMA	3.58	+9.6
10098	CAC	UMTS-FDD (WCDMA, Subtype 3)	WCDMA	3.08	+9.6
10099	DAC	EDGE-FDD (TDMA, 8PSK, TS 0-4)	GSM	3.55	+9.6
10100	CAR	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	3.57	+9.6
10101	CAR	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	3.62	+9.6
10102	CAR	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.89	+9.6
10103	CAR	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	LTE-FDD	3.29	+9.6
10104	CAR	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	3.87	+9.6
10105	CAR	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM)	LTE-FDD	6.01	+9.6
10108	CAR	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	LTE-FDD	3.80	+9.6
10109	CAR	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM)	LTE-FDD	6.43	+9.6
10110	CAR	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, QPSK)	LTE-FDD	3.75	+9.6
10111	CAR	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM)	LTE-FDD	6.44	+9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc E = 2
10112	DAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM)	LTE-FDD	8.59	+9.6
10113	DAH	LTE-FDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-FDD	8.62	+9.6
10114	CAF	IEEE 802.11n (HT Greenfield, 13.5Mbps, BPSK)	WLAN	8.10	+9.6
10115	CAF	IEEE 802.11n (HT Greenfield, 8 Mbps, 64-QAM)	WLAN	8.46	+9.6
10116	CAF	IEEE 802.11n (HT Greenfield, 12.5Mbps, 64-QAM)	WLAN	8.15	+9.6
10117	CAF	IEEE 802.11n (HT Mixed, 13.5Mbps, QPSK)	WLAN	8.07	+9.6
10118	CAC	IEEE 802.11n (HT Mixed, 81 Mbps, 16-QAM)	WLAN	8.59	+9.6
10119	CAC	IEEE 802.11n (HT Mixed, 135Mbps, 64-QAM)	WLAN	8.13	+9.6
10140	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-FDD	8.48	+9.6
10141	CAF	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM)	LTE-FDD	8.53	+9.6
10142	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	8.79	+9.6
10143	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-FDD	8.25	+9.6
10144	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	8.65	+9.6
10145	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-FDD	8.76	+9.6
10146	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	8.4	+9.6
10147	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	8.72	+9.6
10148	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	8.42	+9.6
10149	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	8.50	+9.6
10150	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	8.25	+9.6
10151	DAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	LTE-FDD	8.99	+9.6
10152	DAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	8.99	+9.6
10153	DAH	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	10.05	+9.6
10154	DAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	8.75	+9.6
10155	DAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM)	LTE-FDD	8.43	+9.6
10156	DAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	8.75	+9.6
10157	CAF	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	8.49	+9.6
10158	CAF	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	8.68	+9.6
10159	DAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM)	LTE-FDD	8.58	+9.6
10160	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	8.82	+9.6
10161	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	8.43	+9.6
10162	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	8.58	+9.6
10163	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LTE-FDD	8.48	+9.6
10164	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-FDD	8.21	+9.6
10165	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-FDD	8.79	+9.6
10166	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	LTE-FDD	8.79	+9.6
10167	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	8.52	+9.6
10168	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	8.99	+9.6
10169	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	8.21	+9.6
10170	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	8.48	+9.6
10171	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	8.52	+9.6
10172	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	8.48	+9.6
10173	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM)	LTE-FDD	8.48	+9.6
10174	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM)	LTE-FDD	8.25	+9.6
10175	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	8.72	+9.6
10176	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-FDD	8.52	+9.6
10177	CAF	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	8.79	+9.6
10178	CAF	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	8.52	+9.6
10179	CAF	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-FDD	8.50	+9.6
10180	CAF	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 64-QAM)	LTE-FDD	8.50	+9.6
10181	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, QPSK)	LTE-FDD	8.79	+9.6
10182	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDD	8.52	+9.6
10183	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	8.50	+9.6
10184	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, QPSK)	LTE-FDD	8.73	+9.6
10185	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDD	8.51	+9.6
10186	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 64-QAM)	LTE-FDD	8.50	+9.6
10187	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, QPSK)	LTE-FDD	8.78	+9.6
10188	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FDD	8.52	+9.6
10189	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-FDD	8.50	+9.6
10190	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.06	+9.6
10191	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10192	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10193	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10194	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10195	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10196	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10197	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10198	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10199	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10200	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10201	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10202	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10203	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10204	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10205	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10206	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10207	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10208	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10209	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10210	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10211	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10212	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10213	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10214	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10215	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10216	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10217	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10218	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10219	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10220	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10221	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10222	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10223	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6
10224	CAC	IEEE 802.11n (HT Greenfield, 6.5Mbps, BPSK)	WLAN	8.12	+9.6

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EXSDM4 - SN:7851

July 17, 2024

UID	Rev	Communication System Name	Group	PAR (dB)	Unc ² k = 2
10225	CAC	UMTS-FDD (HS-PA)	WCDMA	5.87	+8.6
10226	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.45	+8.6
10227	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.26	+8.6
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	9.45	+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	9.19	+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	9.88	+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	10.05	+9.6
10246	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-TDD	9.39	+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	10.7	+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	9.98	+9.6
10257	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-TDD	10.09	+9.6
10258	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, QPSK)	LTE-TDD	9.24	+9.6
10259	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM)	LTE-TDD	9.99	+9.6
10260	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TDD	9.94	+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	9.28	+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	9.70	+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	9.55	+9.6
10271	CAC	UMTS-FDD (HS-PA, Subnet: 5, 3GPP Rel9.1)	WCDMA	4.87	+8.6
10272	CAC	UMTS-FDD (HS-PA, Subnet: 5, 3GPP Rel9.1)	WCDMA	3.96	+8.6
10273	CAA	PHS (QPSK)	PHS	11.81	+8.6
10274	CAA	PHS (QPSK, BW 884 MHz, Polarity: G)	PHS	12.18	+8.6
10275	CAA	PHS (QPSK, BW 884 MHz, Polarity: G)	PHS	12.18	+8.6
10276	CAA	PHS (QPSK, BW 884 MHz, Polarity: G)	PHS	12.18	+8.6
10277	CAA	PHS (QPSK, BW 884 MHz, Polarity: G)	PHS	12.18	+8.6
10278	CAA	PHS (QPSK, BW 884 MHz, Polarity: G)	PHS	12.18	+8.6
10279	CAA	PHS (QPSK, BW 884 MHz, Polarity: G)	PHS	12.18	+8.6
10280	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.5	+9.6
10281	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.45	+9.6
10282	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.79	+9.6
10283	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10284	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10285	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10286	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10287	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10288	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10289	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10290	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10291	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10292	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10293	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10294	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10295	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10296	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10297	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10298	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10299	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10300	AAE	CDMA2000, RC1, 5055, Full Rate	CDMA2000	3.50	+9.6
10301	AAA	IEEE 802.16e WIMAX (20.18, 5ms, 10 MHz, QPSK, PUSC)	WIMAX	12.02	+9.6
10302	AAA	IEEE 802.16e WIMAX (20.18, 5ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols)	WIMAX	12.57	+9.6
10303	AAA	IEEE 802.16e WIMAX (20.18, 5ms, 10 MHz, 64QAM, PUSC)	WIMAX	12.52	+9.6
10304	AAA	IEEE 802.16e WIMAX (20.18, 5ms, 10 MHz, 64QAM, PUSC)	WIMAX	11.88	+9.6
10305	AAA	IEEE 802.16e WIMAX (20.18, 5ms, 10 MHz, 64QAM, PUSC, 15 symbols)	WIMAX	15.31	+9.6
10306	AAA	IEEE 802.16e WIMAX (20.18, 5ms, 10 MHz, 64QAM, PUSC, 15 symbols)	WIMAX	15.57	+9.6

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EX3DM - SN:7851

July 17, 2024

UID	Rev	Communication System Name	Group	PAR (dB)	Unc ¹ k = 2
10307	AAA	IEEE 802.11a WLAN (20MHz, 10ms, 10MHz, QPSK, FSSS, 18 symbols)	WLAN	14.43	+5.6
10308	AAA	IEEE 802.11a WLAN (20MHz, 10ms, 10MHz, QAM, PUSC)	WLAN	14.46	+5.6
10309	AAA	IEEE 802.11a WLAN (20MHz, 10ms, 10MHz, QAM, AMC 2cc, 18 symbols)	WLAN	14.58	+5.6
10310	AAA	IEEE 802.11a WLAN (20MHz, 10ms, 10MHz, QPSK, AMC 2cc, 18 symbols)	WLAN	14.67	+5.6
10311	AAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	8.08	+9.6
10313	AAA	IDEN 1.3	IDEN	10.51	+9.6
10314	AAA	IDEN 1.5	IDEN	12.10	+9.6
10315	AAE	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96ps duty cycle)	WLAN	7.7	+9.6
10316	AAE	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 54Mbps, 96ps duty cycle)	WLAN	8.26	+9.6
10317	AAE	IEEE 802.11g WiFi 2.4 GHz (OFDM, 54Mbps, 96ps duty cycle)	WLAN	8.26	+9.6
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	+9.6
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	8.99	+9.6
10354	AAA	Pulse Waveform (200Hz, 40%)	Generic	7.96	+9.6
10355	AAA	Pulse Waveform (200Hz, 60%)	Generic	6.92	+9.6
10356	AAA	Pulse Waveform (200Hz, 80%)	Generic	5.87	+9.6
10357	AAA	QPSK Waveform, 1 MHz	Generic	5.19	+9.6
10358	AAA	QPSK Waveform, 10 MHz	Generic	5.22	+9.6
10390	AAA	64-QAM Waveform, 100 kHz	Generic	6.27	+9.6
10391	AAA	64-QAM Waveform, 40 MHz	Generic	6.27	+9.6
10400	AAE	IEEE 802.11ac WiFi (80MHz, 64-QAM, 96ps duty cycle)	WLAN	8.37	+9.6
10401	AAE	IEEE 802.11ac WiFi (80MHz, 64-QAM, 96ps duty cycle)	WLAN	8.60	+9.6
10402	AAE	IEEE 802.11ac WiFi (80MHz, 64-QAM, 96ps duty cycle)	WLAN	8.58	+9.6
10403	AAE	CDMA2000 1xEV-DO, Rev. 0	CDMA2000	8.76	+9.6
10404	AAE	CDMA2000 1xEV-DO, Rev. A	CDMA2000	8.77	+9.6
10405	AAE	CDMA2000 1xEV-DO, Rev. A	CDMA2000	8.78	+9.6
10410	AAE	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9, Subframe=Control)	LTE-FDD	7.62	+9.6
10414	AAA	WLAN 802.11n 40MHz	Generic	8.54	+9.6
10415	AAA	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps, 96ps duty cycle)	WLAN	7.54	+9.6
10416	AAA	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM, 54Mbps, 96ps duty cycle)	WLAN	8.23	+9.6
10417	AAE	IEEE 802.11n WiFi 40MHz (OFDM, 8Mbps, 96ps duty cycle)	WLAN	9.23	+9.6
10418	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 5 Mbps, 96ps duty cycle, Long preamble)	WLAN	9.14	+9.6
10419	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 5 Mbps, 96ps duty cycle, Short preamble)	WLAN	9.18	+9.6
10420	AAE	IEEE 802.11n (HT Greenfield, 7.2Mbps, 96ps)	WLAN	8.32	+9.6
10421	AAE	IEEE 802.11n (HT Greenfield, 43.2Mbps, 96ps)	WLAN	8.47	+9.6
10422	AAE	IEEE 802.11n (HT Greenfield, 72.2Mbps, 96ps)	WLAN	8.40	+9.6
10423	AAE	IEEE 802.11n (HT Greenfield, 15Mbps, 96ps)	WLAN	8.41	+9.6
10424	AAE	IEEE 802.11n (HT Greenfield, 40Mbps, 96ps)	WLAN	8.45	+9.6
10425	AAE	IEEE 802.11n (HT Greenfield, 15Mbps, 96ps)	WLAN	8.41	+9.6
10426	AAE	IEEE 802.11n (HT Greenfield, 15Mbps, 96ps)	WLAN	8.41	+9.6
10427	AAE	IEEE 802.11n (HT Greenfield, 15Mbps, 96ps)	WLAN	8.41	+9.6
10428	AAE	LTE-FDD (SC-FDMA, 5MHz, E-TM 3.1)	LTE-FDD	5.28	+9.6
10429	AAE	LTE-FDD (SC-FDMA, 10MHz, E-TM 3.1)	LTE-FDD	5.36	+9.6
10430	AAE	LTE-FDD (SC-FDMA, 15MHz, E-TM 3.1)	LTE-FDD	5.34	+9.6
10431	AAE	LTE-FDD (SC-FDMA, 20MHz, E-TM 3.1)	LTE-FDD	5.34	+9.6
10432	AAE	WCDMA (SS Test Model 1, 1/4 DPCCH)	WCDMA	8.50	+9.6
10433	AAE	LTE-TDD (SC-FDMA, 1 RB, 20MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	+9.6
10434	AAE	LTE-FDD (SC-FDMA, 5MHz, E-TM 3.1, Clipping 40%)	LTE-FDD	7.55	+9.6
10435	AAE	LTE-FDD (SC-FDMA, 10MHz, E-TM 3.1, Clipping 40%)	LTE-FDD	7.53	+9.6
10436	AAE	LTE-FDD (SC-FDMA, 15MHz, E-TM 3.1, Clipping 40%)	LTE-FDD	7.51	+9.6
10437	AAE	LTE-FDD (SC-FDMA, 20MHz, E-TM 3.1, Clipping 40%)	LTE-FDD	7.48	+9.6
10438	AAE	WCDMA (SS Test Model 1, 1/4 DPCCH, Clipping 40%)	WCDMA	7.59	+9.6
10439	AAE	Validation (Square, 10ms, 1ms)	Test	10.00	+9.6
10440	AAE	IEEE 802.11ac WiFi (80MHz, 64-QAM, 96ps duty cycle)	WLAN	8.63	+9.6
10441	AAE	UMTS-FDD (DC-HSPA)	WCDMA	6.62	+9.6
10442	AAA	CDMA2000 1xEV-DO, Rev. B, 2.5sinus)	CDMA2000	6.35	+9.6
10443	AAA	CDMA2000 1xEV-DO, Rev. B, 3.5sinus)	CDMA2000	6.35	+9.6
10444	AAE	UMTS-FDD (WCDMA, 4MP)	WCDMA	6.35	+9.6
10445	AAE	LTE-TDD (SC-FDMA, 1 RB, 1.4MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	+9.6
10446	AAE	LTE-TDD (SC-FDMA, 1 RB, 1.4MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.50	+9.6
10447	AAE	LTE-TDD (SC-FDMA, 1 RB, 1.4MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	+9.6
10448	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	+9.6
10449	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	+9.6
10450	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	+9.6
10451	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	+9.6
10452	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	+9.6
10453	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.66	+9.6
10454	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	+9.6
10455	AAE	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	+9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ¹ k = 2
10472	AA5	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10473	AA5	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	±9.6
10474	AA5	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.02	±9.6
10475	AA5	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10477	AA5	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6
10478	AA5	LTE-TDD (SC-FDMA, 1 RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.57	±9.6
10479	AA5	LTE-TDD (SC-FDMA, 50% RB, 14 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10480	AA5	LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.16	±9.6
10481	AA5	LTE-TDD (SC-FDMA, 50% RB, 14 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6
10482	AA5	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	6.71	±9.6
10483	AA5	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.39	±9.6
10484	AA5	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.47	±9.6
10485	AA5	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	±9.6
10486	AA5	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	±9.6
10487	AA5	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.60	±9.6
10488	AA5	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	±9.6
10489	AA5	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.31	±9.6
10490	AA5	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.64	±9.6
10491	AA5	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10492	AA5	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.4	±9.6
10493	AA5	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6
10494	AA5	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10495	AA5	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.37	±9.6
10496	AA5	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10497	AA5	LTE-TDD (SC-FDMA, 100% RB, 14 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.87	±9.6
10498	AA5	LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.40	±9.6
10499	AA5	LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.80	±9.6
10500	AA5	LTE-TDD (SC-FDMA, 100% RB, 14 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.80	±9.6
10501	AA5	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6
10502	AA5	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.82	±9.6
10503	AA5	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.72	±9.6
10504	AA5	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.3	±9.6
10505	AA5	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
10506	AA5	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10507	AA5	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.38	±9.6
10508	AA5	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.55	±9.6
10509	AA5	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.99	±9.6
10510	AA5	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.49	±9.6
10511	AA5	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.51	±9.6
10512	AA5	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.74	±9.6
10513	AA5	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.42	±9.6
10514	AA5	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.45	±9.6
10515	AAA	IEEE 802.11a WLAN (2.4 GHz, DSSS, 2 Mbps, 99% duty cycle)	WLAN	1.58	±9.6
10516	AAA	IEEE 802.11b WLAN (2.4 GHz, DSSS, 5.5 Mbps, 99% duty cycle)	WLAN	1.67	±9.6
10517	AAA	IEEE 802.11g WLAN (2.4 GHz, DSSS, 11 Mbps, 99% duty cycle)	WLAN	1.98	±9.6
10518	AAA	IEEE 802.11a WLAN (5 GHz, OFDM, 9 Mbps, 99% duty cycle)	WLAN	8.25	±9.6
10519	AAA	IEEE 802.11a WLAN (5 GHz, OFDM, 12 Mbps, 99% duty cycle)	WLAN	8.55	±9.6
10520	AAA	IEEE 802.11a WLAN (5 GHz, OFDM, 18 Mbps, 99% duty cycle)	WLAN	9.12	±9.6
10521	AAA	IEEE 802.11a WLAN (5 GHz, OFDM, 24 Mbps, 99% duty cycle)	WLAN	7.97	±9.6
10522	AAA	IEEE 802.11a WLAN (5 GHz, OFDM, 36 Mbps, 99% duty cycle)	WLAN	9.45	±9.6
10523	AAA	IEEE 802.11a WLAN (5 GHz, OFDM, 48 Mbps, 99% duty cycle)	WLAN	8.05	±9.6
10524	AAA	IEEE 802.11a WLAN (5 GHz, OFDM, 54 Mbps, 99% duty cycle)	WLAN	9.27	±9.6
10525	AAA	IEEE 802.11ac WLAN (20 MHz, MCS0, 99% duty cycle)	WLAN	11.38	±9.6
10526	AAA	IEEE 802.11ac WLAN (20 MHz, MCS1, 99% duty cycle)	WLAN	9.42	±9.6
10527	AAA	IEEE 802.11ac WLAN (20 MHz, MCS2, 99% duty cycle)	WLAN	9.21	±9.6
10528	AAA	IEEE 802.11ac WLAN (20 MHz, MCS3, 99% duty cycle)	WLAN	8.36	±9.6
10529	AAA	IEEE 802.11ac WLAN (20 MHz, MCS4, 99% duty cycle)	WLAN	8.36	±9.6
10530	AAA	IEEE 802.11ac WLAN (20 MHz, MCS5, 99% duty cycle)	WLAN	8.48	±9.6
10531	AAA	IEEE 802.11ac WLAN (20 MHz, MCS6, 99% duty cycle)	WLAN	8.55	±9.6
10532	AAA	IEEE 802.11ac WLAN (20 MHz, MCS7, 99% duty cycle)	WLAN	8.55	±9.6
10533	AAA	IEEE 802.11ac WLAN (20 MHz, MCS8, 99% duty cycle)	WLAN	8.55	±9.6
10534	AAA	IEEE 802.11ac WLAN (40 MHz, MCS0, 99% duty cycle)	WLAN	8.45	±9.6
10535	AAA	IEEE 802.11ac WLAN (40 MHz, MCS1, 99% duty cycle)	WLAN	8.45	±9.6
10536	AAA	IEEE 802.11ac WLAN (40 MHz, MCS2, 99% duty cycle)	WLAN	8.32	±9.6
10537	AAA	IEEE 802.11ac WLAN (40 MHz, MCS3, 99% duty cycle)	WLAN	8.4	±9.6
10538	AAA	IEEE 802.11ac WLAN (40 MHz, MCS4, 99% duty cycle)	WLAN	8.54	±9.6
10539	AAA	IEEE 802.11ac WLAN (40 MHz, MCS5, 99% duty cycle)	WLAN	8.55	±9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^F k = 2
10541	AAD	IEEE 802.11ac WiFi 140 MHz, MCS7, 99pc duty cycle	WLAN	8.46	±0.6
10542	AAD	IEEE 802.11ac WiFi 140 MHz, MCS8, 99pc duty cycle	WLAN	8.85	±0.6
10543	AAD	IEEE 802.11ac WiFi 140 MHz, MCS9, 99pc duty cycle	WLAN	8.65	±0.6
10544	AAD	IEEE 802.11ac WiFi 160 MHz, MCS8, 99pc duty cycle	WLAN	8.77	±0.6
10545	AAD	IEEE 802.11ac WiFi 160 MHz, MCS9, 99pc duty cycle	WLAN	8.55	±0.6
10546	AAD	IEEE 802.11ac WiFi 160 MHz, MCS8, 99pc duty cycle	WLAN	8.35	±0.6
10547	AAD	IEEE 802.11ac WiFi 160 MHz, MCS9, 99pc duty cycle	WLAN	8.49	±0.6
10548	AAD	IEEE 802.11ac WiFi 160 MHz, MCS4, 99pc duty cycle	WLAN	8.37	±0.6
10550	AAD	IEEE 802.11ac WiFi 160 MHz, MCS8, 99pc duty cycle	WLAN	8.28	±0.6
10551	AAD	IEEE 802.11ac WiFi 160 MHz, MCS7, 99pc duty cycle	WLAN	8.54	±0.6
10552	AAD	IEEE 802.11ac WiFi 160 MHz, MCS8, 99pc duty cycle	WLAN	8.48	±0.6
10553	AAD	IEEE 802.11ac WiFi 160 MHz, MCS9, 99pc duty cycle	WLAN	8.45	±0.6
10554	AAD	IEEE 802.11ac WiFi 180 MHz, MCS9, 99pc duty cycle	WLAN	8.45	±0.6
10555	AAD	IEEE 802.11ac WiFi 180 MHz, MCS9, 99pc duty cycle	WLAN	8.47	±0.6
10556	AAD	IEEE 802.11ac WiFi 180 MHz, MCS2, 99pc duty cycle	WLAN	8.50	±0.6
10557	AAD	IEEE 802.11ac WiFi 180 MHz, MCS3, 99pc duty cycle	WLAN	8.52	±0.6
10558	AAD	IEEE 802.11ac WiFi 180 MHz, MCS4, 99pc duty cycle	WLAN	8.51	±0.6
10560	AAD	IEEE 802.11ac WiFi 180 MHz, MCS5, 99pc duty cycle	WLAN	8.72	±0.6
10561	AAD	IEEE 802.11ac WiFi 180 MHz, MCS7, 99pc duty cycle	WLAN	8.56	±0.6
10562	AAD	IEEE 802.11ac WiFi 180 MHz, MCS8, 99pc duty cycle	WLAN	8.69	±0.6
10563	AAD	IEEE 802.11ac WiFi 180 MHz, MCS9, 99pc duty cycle	WLAN	8.77	±0.6
10564	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 9 Mbps, 99pc duty cycle	WLAN	8.25	±0.6
10565	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 12 Mbps, 99pc duty cycle	WLAN	8.45	±0.6
10566	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 18 Mbps, 99pc duty cycle	WLAN	8.13	±0.6
10567	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 24 Mbps, 99pc duty cycle	WLAN	8.00	±0.6
10568	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 36 Mbps, 99pc duty cycle	WLAN	8.37	±0.6
10569	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 48 Mbps, 99pc duty cycle	WLAN	8.10	±0.6
10570	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 54 Mbps, 99pc duty cycle	WLAN	8.20	±0.6
10571	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS, 1 Mbps, 99pc duty cycle	WLAN	1.89	±0.6
10572	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS, 2 Mbps, 99pc duty cycle	WLAN	1.95	±0.6
10573	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS, 5.5 Mbps, 99pc duty cycle	WLAN	1.98	±0.6
10574	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS, 11 Mbps, 99pc duty cycle	WLAN	1.98	±0.6
10575	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 6 Mbps, 99pc duty cycle	WLAN	5.59	±0.6
10576	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 9 Mbps, 99pc duty cycle	WLAN	6.60	±0.6
10577	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 12 Mbps, 99pc duty cycle	WLAN	6.70	±0.6
10578	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 18 Mbps, 99pc duty cycle	WLAN	6.49	±0.6
10579	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 24 Mbps, 99pc duty cycle	WLAN	6.38	±0.6
10580	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 36 Mbps, 99pc duty cycle	WLAN	6.78	±0.6
10581	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 48 Mbps, 99pc duty cycle	WLAN	6.35	±0.6
10582	AAA	IEEE 802.11g WiFi 2.4 GHz, DSSS-OFDM, 54 Mbps, 99pc duty cycle	WLAN	6.67	±0.6
10583	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 6 Mbps, 99pc duty cycle	WLAN	8.58	±0.6
10584	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 9 Mbps, 99pc duty cycle	WLAN	8.60	±0.6
10585	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 12 Mbps, 99pc duty cycle	WLAN	8.70	±0.6
10586	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 18 Mbps, 99pc duty cycle	WLAN	8.45	±0.6
10587	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 24 Mbps, 99pc duty cycle	WLAN	8.56	±0.6
10588	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 36 Mbps, 99pc duty cycle	WLAN	8.76	±0.6
10589	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 48 Mbps, 99pc duty cycle	WLAN	8.35	±0.6
10590	AAD	IEEE 802.11a WiFi 5 GHz, OFDM, 54 Mbps, 99pc duty cycle	WLAN	8.57	±0.6
10591	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS9, 99pc duty cycle	WLAN	8.53	±0.6
10592	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS9, 99pc duty cycle	WLAN	8.79	±0.6
10593	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS8, 99pc duty cycle	WLAN	8.94	±0.6
10594	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS9, 99pc duty cycle	WLAN	8.74	±0.6
10595	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS4, 99pc duty cycle	WLAN	8.74	±0.6
10596	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS5, 99pc duty cycle	WLAN	8.71	±0.6
10597	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS6, 99pc duty cycle	WLAN	8.72	±0.6
10598	AAD	IEEE 802.11n HT Mixed, 20 MHz, MCS7, 99pc duty cycle	WLAN	8.50	±0.6
10599	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS9, 99pc duty cycle	WLAN	8.79	±0.6
10600	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS7, 99pc duty cycle	WLAN	8.68	±0.6
10601	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS2, 99pc duty cycle	WLAN	8.62	±0.6
10602	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS3, 99pc duty cycle	WLAN	8.84	±0.6
10603	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS4, 99pc duty cycle	WLAN	8.03	±0.6
10604	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS5, 99pc duty cycle	WLAN	8.70	±0.6
10605	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS6, 99pc duty cycle	WLAN	8.97	±0.6
10606	AAD	IEEE 802.11n HT Mixed, 40 MHz, MCS7, 99pc duty cycle	WLAN	8.82	±0.6
10607	AAD	IEEE 802.11ac WiFi 160 MHz, MCS9, 99pc duty cycle	WLAN	8.54	±0.6
10608	AAD	IEEE 802.11ac WiFi 160 MHz, MCS9, 99pc duty cycle	WLAN	8.72	±0.6

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UID	Rev	Communication System Name	Group	FAR (dB)	Uplink E-2
10609	AAD	IEEE 802.11ac WiFi (20 MHz, MCS2, 90pc duty cycle)	WLAN	9.57	±9.8
10610	AAD	IEEE 802.11ac WiFi (20 MHz, MCS3, 90pc duty cycle)	WLAN	9.79	±9.8
10611	AAD	IEEE 802.11ac WiFi (20 MHz, MCS4, 90pc duty cycle)	WLAN	9.79	±9.8
10612	AAD	IEEE 802.11ac WiFi (20 MHz, MCS5, 90pc duty cycle)	WLAN	9.77	±9.8
10613	AAD	IEEE 802.11ac WiFi (20 MHz, MCS6, 90pc duty cycle)	WLAN	9.94	±9.8
10614	AAD	IEEE 802.11ac WiFi (20 MHz, MCS7, 90pc duty cycle)	WLAN	9.59	±9.8
10615	AAD	IEEE 802.11ac WiFi (20 MHz, MCS8, 90pc duty cycle)	WLAN	9.82	±9.8
10616	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.82	±9.8
10617	AAD	IEEE 802.11ac WiFi (40 MHz, MCS9, 90pc duty cycle)	WLAN	9.81	±9.8
10618	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.88	±9.8
10619	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.86	±9.8
10620	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10621	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.77	±9.8
10622	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.82	±9.8
10623	AAD	IEEE 802.11ac WiFi (40 MHz, MCS7, 90pc duty cycle)	WLAN	9.82	±9.8
10624	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.85	±9.8
10625	AAD	IEEE 802.11ac WiFi (40 MHz, MCS9, 90pc duty cycle)	WLAN	9.86	±9.8
10626	AAD	IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)	WLAN	9.83	±9.8
10627	AAD	IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)	WLAN	9.85	±9.8
10628	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)	WLAN	9.71	±9.8
10629	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)	WLAN	9.05	±9.8
10630	AAD	IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)	WLAN	9.72	±9.8
10631	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)	WLAN	9.01	±9.8
10632	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)	WLAN	9.74	±9.8
10633	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)	WLAN	9.58	±9.8
10634	AAD	IEEE 802.11ac WiFi (80 MHz, MCS8, 90pc duty cycle)	WLAN	9.30	±9.8
10635	AAD	IEEE 802.11ac WiFi (80 MHz, MCS9, 90pc duty cycle)	WLAN	9.8	±9.8
10636	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.83	±9.8
10637	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.79	±9.8
10638	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.88	±9.8
10639	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.83	±9.8
10640	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.86	±9.8
10641	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.03	±9.8
10642	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.08	±9.8
10643	AAD	IEEE 802.11ac WiFi (160 MHz, MCS7, 90pc duty cycle)	WLAN	9.83	±9.8
10644	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.05	±9.8
10645	AAD	IEEE 802.11ac WiFi (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.11	±9.8
10646	AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, DSSS, UL Subframe=2,7)	LTE-TDD	1.98	±9.8
10647	AAD	LTE-TDD (SC-FDMA, 1 RB, 5 MHz, DSSS, UL Subframe=2,7)	LTE-TDD	1.98	±9.8
10648	AAD	CDMA2000 (1x Advantec)	CDMA2000	9.48	±9.8
10649	AAD	LTE-TDD (OFDMA, 5 MHz, E-MB, Clipping 44%)	LTE-TDD	9.9	±9.8
10650	AAD	LTE-TDD (OFDMA, 10 MHz, E-MB, Clipping 44%)	LTE-TDD	7.42	±9.8
10651	AAD	LTE-TDD (OFDMA, 15 MHz, E-MB, Clipping 44%)	LTE-TDD	9.96	±9.8
10652	AAD	LTE-TDD (OFDMA, 20 MHz, E-MB, Clipping 44%)	LTE-TDD	7.21	±9.8
10653	AAD	Pulse Waveform (200Hz, 10%)	Test	10.00	±9.8
10654	AAD	Pulse Waveform (200Hz, 20%)	Test	9.99	±9.8
10655	AAD	Pulse Waveform (200Hz, 40%)	Test	9.98	±9.8
10656	AAD	Pulse Waveform (200Hz, 60%)	Test	9.97	±9.8
10657	AAD	Pulse Waveform (200Hz, 80%)	Test	9.97	±9.8
10658	AAD	Pulse Waveform (200Hz, 100%)	Test	9.97	±9.8
10659	AAD	Pulse Waveform (200Hz, 10%)	Test	9.99	±9.8
10660	AAD	Pulse Waveform (200Hz, 20%)	Test	9.98	±9.8
10661	AAD	Pulse Waveform (200Hz, 40%)	Test	9.97	±9.8
10662	AAD	Pulse Waveform (200Hz, 60%)	Test	9.97	±9.8
10663	AAD	Pulse Waveform (200Hz, 80%)	Test	9.97	±9.8
10664	AAD	Pulse Waveform (200Hz, 100%)	Test	9.97	±9.8
10665	AAD	Pulse Waveform (200Hz, 10%)	Test	9.99	±9.8
10666	AAD	Pulse Waveform (200Hz, 20%)	Test	9.98	±9.8
10667	AAD	Pulse Waveform (200Hz, 40%)	Test	9.97	±9.8
10668	AAD	Pulse Waveform (200Hz, 60%)	Test	9.97	±9.8
10669	AAD	Pulse Waveform (200Hz, 80%)	Test	9.97	±9.8
10670	AAD	Pulse Waveform (200Hz, 100%)	Test	9.97	±9.8
10671	AAD	IEEE 802.11ac WiFi (20 MHz, MCS2, 90pc duty cycle)	WLAN	9.57	±9.8
10672	AAD	IEEE 802.11ac WiFi (20 MHz, MCS3, 90pc duty cycle)	WLAN	9.79	±9.8
10673	AAD	IEEE 802.11ac WiFi (20 MHz, MCS4, 90pc duty cycle)	WLAN	9.79	±9.8
10674	AAD	IEEE 802.11ac WiFi (20 MHz, MCS5, 90pc duty cycle)	WLAN	9.77	±9.8
10675	AAD	IEEE 802.11ac WiFi (20 MHz, MCS6, 90pc duty cycle)	WLAN	9.94	±9.8
10676	AAD	IEEE 802.11ac WiFi (20 MHz, MCS7, 90pc duty cycle)	WLAN	9.59	±9.8
10677	AAD	IEEE 802.11ac WiFi (20 MHz, MCS8, 90pc duty cycle)	WLAN	9.82	±9.8
10678	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.82	±9.8
10679	AAD	IEEE 802.11ac WiFi (40 MHz, MCS9, 90pc duty cycle)	WLAN	9.81	±9.8
10680	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.88	±9.8
10681	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.86	±9.8
10682	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10683	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10684	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10685	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10686	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10687	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10688	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10689	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10690	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10691	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10692	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10693	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10694	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10695	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10696	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10697	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10698	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10699	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8
10700	AAD	IEEE 802.11ac WiFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	9.87	±9.8

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10687	AAC	IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle)	WLAN	9.45	±9.5
10688	AAC	IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle)	WLAN	9.29	±9.5
10689	AAC	IEEE 802.11ax (20 MHz, MCS9, 99pc duty cycle)	WLAN	9.50	±9.5
10690	AAC	IEEE 802.11ax (20 MHz, MCS7, 99pc duty cycle)	WLAN	9.29	±9.5
10691	AAC	IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle)	WLAN	9.25	±9.5
10692	AAC	IEEE 802.11ax (20 MHz, MCS8, 99pc duty cycle)	WLAN	9.29	±9.5
10693	AAC	IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle)	WLAN	9.25	±9.5
10694	AAC	IEEE 802.11ax (20 MHz, MCS11, 99pc duty cycle)	WLAN	9.57	±9.5
10695	AAC	IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)	WLAN	9.79	±9.5
10696	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	9.91	±9.5
10697	AAC	IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle)	WLAN	9.51	±9.5
10698	AAC	IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)	WLAN	9.89	±9.5
10699	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)	WLAN	9.92	±9.5
10700	AAC	IEEE 802.11ax (40 MHz, MCS5, 99pc duty cycle)	WLAN	9.79	±9.5
10701	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)	WLAN	9.95	±9.5
10702	AAC	IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)	WLAN	9.70	±9.5
10703	AAC	IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)	WLAN	9.82	±9.5
10704	AAC	IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)	WLAN	9.66	±9.5
10705	AAC	IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle)	WLAN	9.69	±9.5
10706	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	9.88	±9.5
10707	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)	WLAN	9.32	±9.5
10708	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	9.55	±9.5
10709	AAC	IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle)	WLAN	9.33	±9.5
10710	AAC	IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)	WLAN	9.29	±9.5
10711	AAC	IEEE 802.11ax (40 MHz, MCS4, 99pc duty cycle)	WLAN	9.39	±9.5
10712	AAC	IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)	WLAN	9.67	±9.5
10713	AAC	IEEE 802.11ax (40 MHz, MCS6, 99pc duty cycle)	WLAN	9.33	±9.5
10714	AAC	IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)	WLAN	9.25	±9.5
10715	AAC	IEEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)	WLAN	9.45	±9.5
10716	AAC	IEEE 802.11ax (40 MHz, MCS9, 99pc duty cycle)	WLAN	9.30	±9.5
10717	AAC	IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle)	WLAN	9.48	±9.5
10718	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	9.24	±9.5
10719	AAC	IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)	WLAN	9.63	±9.5
10720	AAC	IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)	WLAN	9.87	±9.5
10721	AAC	IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle)	WLAN	9.76	±9.5
10722	AAC	IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle)	WLAN	9.55	±9.5
10723	AAC	IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)	WLAN	9.70	±9.5
10724	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	9.93	±9.5
10725	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	9.74	±9.5
10726	AAC	IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle)	WLAN	9.72	±9.5
10727	AAC	IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle)	WLAN	9.85	±9.5
10728	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	9.65	±9.5
10729	AAC	IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle)	WLAN	9.64	±9.5
10730	AAC	IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle)	WLAN	9.67	±9.5
10731	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	9.42	±9.5
10732	AAC	IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)	WLAN	9.46	±9.5
10733	AAC	IEEE 802.11ax (80 MHz, MCS2, 99pc duty cycle)	WLAN	9.40	±9.5
10734	AAC	IEEE 802.11ax (80 MHz, MCS3, 99pc duty cycle)	WLAN	9.25	±9.5
10735	AAC	IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)	WLAN	9.88	±9.5
10736	AAC	IEEE 802.11ax (80 MHz, MCS5, 99pc duty cycle)	WLAN	9.27	±9.5
10737	AAC	IEEE 802.11ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	9.35	±9.5
10738	AAC	IEEE 802.11ax (80 MHz, MCS7, 99pc duty cycle)	WLAN	9.12	±9.5
10739	AAC	IEEE 802.11ax (80 MHz, MCS8, 99pc duty cycle)	WLAN	9.29	±9.5
10740	AAC	IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)	WLAN	9.68	±9.5
10741	AAC	IEEE 802.11ax (80 MHz, MCS10, 99pc duty cycle)	WLAN	9.60	±9.5
10742	AAC	IEEE 802.11ax (80 MHz, MCS11, 99pc duty cycle)	WLAN	9.49	±9.5
10743	AAC	IEEE 802.11ax (160 MHz, MCS0, 99pc duty cycle)	WLAN	9.94	±9.5
10744	AAC	IEEE 802.11ax (160 MHz, MCS1, 99pc duty cycle)	WLAN	9.70	±9.5
10745	AAC	IEEE 802.11ax (160 MHz, MCS2, 99pc duty cycle)	WLAN	9.93	±9.5
10746	AAC	IEEE 802.11ax (160 MHz, MCS3, 99pc duty cycle)	WLAN	9.77	±9.5
10747	AAC	IEEE 802.11ax (160 MHz, MCS4, 99pc duty cycle)	WLAN	9.04	±9.5
10748	AAC	IEEE 802.11ax (160 MHz, MCS5, 99pc duty cycle)	WLAN	9.95	±9.5
10749	AAC	IEEE 802.11ax (160 MHz, MCS6, 99pc duty cycle)	WLAN	9.00	±9.5
10750	AAC	IEEE 802.11ax (160 MHz, MCS7, 99pc duty cycle)	WLAN	9.79	±9.5
10751	AAC	IEEE 802.11ax (160 MHz, MCS8, 99pc duty cycle)	WLAN	9.82	±9.5
10752	AAC	IEEE 802.11ax (160 MHz, MCS9, 99pc duty cycle)	WLAN	9.01	±9.5

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ² k = 2
10753	AAC	IEEE 802.11ax (160MHz, MCS7, 80ps duty cycle)	WLAN	8.00	+9.6
10754	AAC	IEEE 802.11ax (160MHz, MCS7, 80ps duty cycle)	WLAN	8.94	+9.6
10755	AAC	IEEE 802.11ax (160MHz, MCS8, 80ps duty cycle)	WLAN	8.64	+9.6
10756	AAC	IEEE 802.11ax (160MHz, MCS7, 80ps duty cycle)	WLAN	8.77	+9.6
10757	AAC	IEEE 802.11ax (160MHz, MCS8, 80ps duty cycle)	WLAN	8.72	+9.6
10758	AAC	IEEE 802.11ax (160MHz, MCS9, 80ps duty cycle)	WLAN	8.69	+9.6
10759	AAC	IEEE 802.11ax (160MHz, MCS8, 80ps duty cycle)	WLAN	8.58	+9.6
10760	AAC	IEEE 802.11ax (160MHz, MCS9, 80ps duty cycle)	WLAN	8.69	+9.6
10761	AAC	IEEE 802.11ax (160MHz, MCS8, 80ps duty cycle)	WLAN	8.58	+9.6
10762	AAC	IEEE 802.11ax (160MHz, MCS7, 80ps duty cycle)	WLAN	8.49	+9.6
10763	AAC	IEEE 802.11ax (160MHz, MCS8, 80ps duty cycle)	WLAN	8.53	+9.6
10764	AAC	IEEE 802.11ax (160MHz, MCS9, 80ps duty cycle)	WLAN	8.54	+9.6
10765	AAC	IEEE 802.11ax (160MHz, MCS10, 80ps duty cycle)	WLAN	8.54	+9.6
10766	AAC	IEEE 802.11ax (160MHz, MCS11, 80ps duty cycle)	WLAN	8.51	+9.6
10767	AAG	5G NR (CP-OFDM, 1RB, 5MHz, QPSK, 15kHz)	5G NR FR1 TDD	7.99	+9.6
10768	AAC	5G NR (CP-OFDM, 1RB, 10MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.01	+9.6
10769	AAD	5G NR (CP-OFDM, 1RB, 15MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.01	+9.6
10770	AAC	5G NR (CP-OFDM, 1RB, 20MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.02	+9.6
10771	AAC	5G NR (CP-OFDM, 1RB, 25MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.02	+9.6
10772	AAC	5G NR (CP-OFDM, 1RB, 30MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.23	+9.6
10773	AAC	5G NR (CP-OFDM, 1RB, 40MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.33	+9.6
10774	AAC	5G NR (CP-OFDM, 1RB, 50MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.02	+9.6
10775	AAC	5G NR (CP-OFDM, 50%RB, 5MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.31	+9.6
10776	AAC	5G NR (CP-OFDM, 50%RB, 10MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.30	+9.6
10777	AAC	5G NR (CP-OFDM, 50%RB, 15MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.30	+9.6
10778	AAC	5G NR (CP-OFDM, 50%RB, 20MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.34	+9.6
10779	AAC	5G NR (CP-OFDM, 50%RB, 25MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.49	+9.6
10780	AAC	5G NR (CP-OFDM, 50%RB, 30MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.38	+9.6
10781	AAC	5G NR (CP-OFDM, 50%RB, 40MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.38	+9.6
10782	AAC	5G NR (CP-OFDM, 50%RB, 50MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.43	+9.6
10783	AAC	5G NR (CP-OFDM, 100%RB, 5MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.31	+9.6
10784	AAC	5G NR (CP-OFDM, 100%RB, 10MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.29	+9.6
10785	AAC	5G NR (CP-OFDM, 100%RB, 15MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.40	+9.6
10786	AAC	5G NR (CP-OFDM, 100%RB, 20MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.35	+9.6
10787	AAC	5G NR (CP-OFDM, 100%RB, 25MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.44	+9.6
10788	AAC	5G NR (CP-OFDM, 100%RB, 30MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.39	+9.6
10789	AAC	5G NR (CP-OFDM, 100%RB, 40MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.37	+9.6
10790	AAC	5G NR (CP-OFDM, 100%RB, 50MHz, QPSK, 15kHz)	5G NR FR1 TDD	8.39	+9.6
10791	AAG	5G NR (CP-OFDM, 1RB, 5MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.83	+9.6
10792	AAC	5G NR (CP-OFDM, 1RB, 10MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.99	+9.6
10793	AAD	5G NR (CP-OFDM, 1RB, 15MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.95	+9.6
10794	AAC	5G NR (CP-OFDM, 1RB, 20MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.82	+9.6
10795	AAC	5G NR (CP-OFDM, 1RB, 25MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.91	+9.6
10796	AAC	5G NR (CP-OFDM, 1RB, 30MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.92	+9.6
10797	AAC	5G NR (CP-OFDM, 1RB, 40MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.01	+9.6
10798	AAC	5G NR (CP-OFDM, 1RB, 50MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.99	+9.6
10799	AAC	5G NR (CP-OFDM, 1RB, 60MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.93	+9.6
10800	AAC	5G NR (CP-OFDM, 1RB, 80MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.93	+9.6
10801	AAC	5G NR (CP-OFDM, 1RB, 100MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.87	+9.6
10802	AAC	5G NR (CP-OFDM, 1RB, 120MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.93	+9.6
10803	AAC	5G NR (CP-OFDM, 50%RB, 10MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10804	AAC	5G NR (CP-OFDM, 50%RB, 15MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.37	+9.6
10805	AAC	5G NR (CP-OFDM, 50%RB, 20MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10806	AAC	5G NR (CP-OFDM, 50%RB, 25MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10807	AAC	5G NR (CP-OFDM, 50%RB, 30MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10808	AAC	5G NR (CP-OFDM, 50%RB, 40MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10809	AAC	5G NR (CP-OFDM, 50%RB, 50MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10810	AAC	5G NR (CP-OFDM, 50%RB, 60MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10811	AAC	5G NR (CP-OFDM, 50%RB, 80MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10812	AAC	5G NR (CP-OFDM, 50%RB, 100MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10813	AAC	5G NR (CP-OFDM, 50%RB, 120MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10814	AAC	5G NR (CP-OFDM, 100%RB, 10MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10815	AAC	5G NR (CP-OFDM, 100%RB, 15MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10816	AAC	5G NR (CP-OFDM, 100%RB, 20MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10817	AAC	5G NR (CP-OFDM, 100%RB, 25MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10818	AAC	5G NR (CP-OFDM, 100%RB, 30MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10819	AAC	5G NR (CP-OFDM, 100%RB, 40MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10820	AAC	5G NR (CP-OFDM, 100%RB, 50MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10821	AAC	5G NR (CP-OFDM, 100%RB, 60MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10822	AAC	5G NR (CP-OFDM, 100%RB, 80MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10823	AAC	5G NR (CP-OFDM, 100%RB, 100MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10824	AAC	5G NR (CP-OFDM, 100%RB, 120MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10825	AAC	5G NR (CP-OFDM, 100%RB, 80MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10826	AAC	5G NR (CP-OFDM, 100%RB, 90MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10827	AAC	5G NR (CP-OFDM, 100%RB, 90MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6
10828	AAC	5G NR (CP-OFDM, 100%RB, 90MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.34	+9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	UncF 6-9
10829	AAF	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.48	±0.8
10830	AAE	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.83	±0.8
10831	AAE	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.73	±0.8
10832	AAE	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.74	±0.8
10833	AAE	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.70	±0.8
10834	AAE	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.75	±0.8
10835	AAF	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.70	±0.8
10836	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.66	±0.8
10837	AAF	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.62	±0.8
10838	AAF	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.70	±0.8
10840	AAE	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.67	±0.8
10841	AAF	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.71	±0.8
10842	AAE	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.48	±0.8
10844	AAE	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±0.8
10846	AAE	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±0.8
10854	AAE	5G NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±0.8
10855	AAE	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.38	±0.8
10856	AAE	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	±0.8
10857	AAE	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	±0.8
10858	AAE	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.36	±0.8
10859	AAE	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	±0.8
10860	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±0.8
10861	AAE	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.40	±0.8
10862	AAE	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±0.8
10864	AAE	5G NR (CP-OFDM, 100% RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.37	±0.8
10865	AAF	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.41	±0.8
10866	AAF	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.60	±0.8
10868	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10869	AAE	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.76	±0.8
10870	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.80	±0.8
10871	AAF	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.75	±0.8
10872	AAE	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.82	±0.8
10873	AAF	5G NR (DFT-s-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.81	±0.8
10874	AAF	5G NR (DFT-s-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.88	±0.8
10875	AAF	5G NR (CP-OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±0.8
10876	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.39	±0.8
10877	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	7.86	±0.8
10878	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.41	±0.8
10879	AAE	5G NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	±0.8
10890	AAE	5G NR (CP-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.38	±0.8
10891	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.70	±0.8
10892	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.80	±0.8
10893	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.57	±0.8
10894	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.58	±0.8
10895	AAE	5G NR (DFT-s-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.61	±0.8
10896	AAE	5G NR (DFT-s-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.68	±0.8
10897	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	7.78	±0.8
10898	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	8.35	±0.8
10899	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.10	±0.8
10900	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 16QAM, 120 kHz)	5G NR FR2 TDD	8.40	±0.8
10901	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.13	±0.8
10902	AAE	5G NR (CP-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.11	±0.8
10907	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.45	±0.8
10908	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.67	±0.8
10909	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.67	±0.8
10910	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10911	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10912	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10913	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10914	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10915	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10916	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10917	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10918	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10919	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8
10920	AAE	5G NR (DFT-s-OFDM, 1 RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.68	±0.8

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ¹ k=2
10911	AAJ	SG NR (DF-SS-OFDM, 50% RB, 25 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.93	±0.6
10912	AAJ	SG NR (DF-SS-OFDM, 50% RB, 30 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.94	±0.6
10913	AAJ	SG NR (DF-SS-OFDM, 50% RB, 40 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.94	±0.6
10914	AAJ	SG NR (DF-SS-OFDM, 50% RB, 50 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.85	±0.6
10915	AAJ	SG NR (DF-SS-OFDM, 50% RB, 60 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.83	±0.6
10916	AAJ	SG NR (DF-SS-OFDM, 50% RB, 80 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.87	±0.6
10917	AAJ	SG NR (DF-SS-OFDM, 50% RB, 100 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.84	±0.6
10918	AAJ	SG NR (DF-SS-OFDM, 100% RB, 5 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.86	±0.6
10919	AAJ	SG NR (DF-SS-OFDM, 100% RB, 10 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.88	±0.6
10920	AAJ	SG NR (DF-SS-OFDM, 100% RB, 15 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.87	±0.6
10921	AAJ	SG NR (DF-SS-OFDM, 100% RB, 20 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.84	±0.6
10922	AAJ	SG NR (DF-SS-OFDM, 100% RB, 25 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.82	±0.6
10923	AAJ	SG NR (DF-SS-OFDM, 100% RB, 30 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.84	±0.6
10924	AAJ	SG NR (DF-SS-OFDM, 100% RB, 40 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.84	±0.6
10925	AAJ	SG NR (DF-SS-OFDM, 100% RB, 50 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.85	±0.6
10926	AAJ	SG NR (DF-SS-OFDM, 100% RB, 60 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.84	±0.6
10927	AAJ	SG NR (DF-SS-OFDM, 100% RB, 80 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.84	±0.6
10928	AAJ	SG NR (DF-SS-OFDM, 100% RB, 100 MHz, QPSK, 30kHz)	SG NR FR1 TDD	5.82	±0.6
10929	AAJ	SG NR (DF-SS-OFDM, 100% RB, 15 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.82	±0.6
10930	AAJ	SG NR (DF-SS-OFDM, 100% RB, 20 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.82	±0.6
10931	AAJ	SG NR (DF-SS-OFDM, 100% RB, 25 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.81	±0.6
10932	AAJ	SG NR (DF-SS-OFDM, 100% RB, 30 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.81	±0.6
10933	AAJ	SG NR (DF-SS-OFDM, 100% RB, 40 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.81	±0.6
10934	AAJ	SG NR (DF-SS-OFDM, 100% RB, 50 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.81	±0.6
10935	AAJ	SG NR (DF-SS-OFDM, 100% RB, 60 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.81	±0.6
10936	AAJ	SG NR (DF-SS-OFDM, 100% RB, 80 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.80	±0.6
10937	AAJ	SG NR (DF-SS-OFDM, 100% RB, 100 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.80	±0.6
10938	AAJ	SG NR (DF-SS-OFDM, 100% RB, 15 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.82	±0.6
10939	AAJ	SG NR (DF-SS-OFDM, 100% RB, 20 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.82	±0.6
10940	AAJ	SG NR (DF-SS-OFDM, 100% RB, 25 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.82	±0.6
10941	AAJ	SG NR (DF-SS-OFDM, 100% RB, 30 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.83	±0.6
10942	AAJ	SG NR (DF-SS-OFDM, 100% RB, 40 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.85	±0.6
10943	AAJ	SG NR (DF-SS-OFDM, 100% RB, 50 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.85	±0.6
10944	AAJ	SG NR (DF-SS-OFDM, 100% RB, 60 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.81	±0.6
10945	AAJ	SG NR (DF-SS-OFDM, 100% RB, 80 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.85	±0.6
10946	AAJ	SG NR (DF-SS-OFDM, 100% RB, 100 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.85	±0.6
10947	AAJ	SG NR (DF-SS-OFDM, 100% RB, 15 MHz, QPSK, 15kHz)	SG NR FR1 TDD	5.87	±0.6
10948	AAJ	SG NR (DF-SS-OFDM, 100% RB, 20 MHz, QPSK, 15kHz)	SG NR FR1 TDD	5.84	±0.6
10949	AAJ	SG NR (DF-SS-OFDM, 100% RB, 30 MHz, QPSK, 15kHz)	SG NR FR1 TDD	5.87	±0.6
10950	AAJ	SG NR (DF-SS-OFDM, 100% RB, 40 MHz, QPSK, 15kHz)	SG NR FR1 TDD	5.84	±0.6
10951	AAJ	SG NR (DF-SS-OFDM, 100% RB, 50 MHz, QPSK, 15kHz)	SG NR FR1 TDD	5.82	±0.6
10952	AAJ	SG NR (DF-SS-OFDM, 100% RB, 60 MHz, QPSK, 15kHz)	SG NR FR1 TDD	5.82	±0.6
10953	AAA	SG NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.25	±0.6
10954	AAA	SG NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.16	±0.6
10955	AAA	SG NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.23	±0.6
10956	AAA	SG NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.42	±0.6
10957	AAA	SG NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.14	±0.6
10958	AAA	SG NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.31	±0.6
10959	AAA	SG NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.31	±0.6
10960	AAA	SG NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30kHz)	SG NR FR1 FDD	6.33	±0.6
10961	AAJ	SG NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.32	±0.6
10962	AAJ	SG NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.35	±0.6
10963	AAJ	SG NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.40	±0.6
10964	AAJ	SG NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.55	±0.6
10965	AAJ	SG NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.25	±0.6
10966	AAJ	SG NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.27	±0.6
10967	AAJ	SG NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.32	±0.6
10968	AAJ	SG NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.42	±0.6
10969	AAJ	SG NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.19	±0.6
10970	AAJ	SG NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.49	±0.6
10971	AAJ	SG NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.58	±0.6
10972	AAJ	SG NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.68	±0.6
10973	AAJ	SG NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.25	±0.6
10974	AAJ	SG NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30kHz)	SG NR FR1 TDD	6.49	±0.6
10975	AAA	ULLA B3R	ULLA	1.18	±0.6
10976	AAA	ULLA HBR4	ULLA	8.58	±0.6
10977	AAA	ULLA HBR8	ULLA	10.32	±0.6
10978	AAA	ULLA (100ps)	ULLA	3.18	±0.6
10979	AAA	ULLA (100ps)	ULLA	3.43	±0.6

Certificate No: EX-7851 Jul24

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EX3DV4 - SN7351

July 17, 2024

UID	Rev	Communication System Name	Group	PAR (dB)	Unc ¹ k = 2
0983	AAC	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15% _{CP})	5G NR FR1 TDD	9.31	±9.6
0984	AAB	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 15% _{CP})	5G NR FR1 TDD	9.42	±9.6
0985	AAC	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30% _{CP})	5G NR FR1 TDD	9.54	±9.6
0986	AAB	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30% _{CP})	5G NR FR1 TDD	9.59	±9.6
0987	AAC	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30% _{CP})	5G NR FR1 TDD	9.59	±9.6
0988	AAB	5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30% _{CP})	5G NR FR1 TDD	9.38	±9.6
0989	AAC	5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 64-QAM, 30% _{CP})	5G NR FR1 TDD	9.33	±9.6
10990	AAB	5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30% _{CP})	5G NR FR1 TDD	9.52	±9.6
11003	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15% _{CP})	5G NR FR1 TDD	10.44	±9.6
11004	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30% _{CP})	5G NR FR1 TDD	10.73	±9.6
11005	AAA	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15% _{CP})	5G NR FR1 FDD	9.70	±9.6
11006	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15% _{CP})	5G NR FR1 FDD	9.35	±9.6
11007	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15% _{CP})	5G NR FR1 FDD	9.45	±9.6
11008	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15% _{CP})	5G NR FR1 FDD	9.51	±9.6
11009	AAA	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 30% _{CP})	5G NR FR1 FDD	9.79	±9.6
11010	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 30% _{CP})	5G NR FR1 FDD	9.05	±9.6
11011	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30% _{CP})	5G NR FR1 FDD	9.36	±9.6
11012	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30% _{CP})	5G NR FR1 FDD	9.93	±9.6
11013	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.47	±9.6
11014	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.45	±9.6
11015	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.44	±9.6
11016	AAB	IEEE 802.11ac (320 MHz, MCS4, 99ps duty cycle)	WLAN	9.77	±9.6
11017	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.11	±9.6
11018	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.40	±9.6
11019	AAB	IEEE 802.11ac (320 MHz, MCS7, 99ps duty cycle)	WLAN	9.29	±9.6
11020	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.27	±9.6
11021	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.46	±9.6
11022	AAB	IEEE 802.11ac (320 MHz, MCS10, 99ps duty cycle)	WLAN	9.36	±9.6
11023	AAB	IEEE 802.11ac (320 MHz, MCS11, 99ps duty cycle)	WLAN	9.09	±9.6
11024	AAB	IEEE 802.11ac (320 MHz, MCS12, 99ps duty cycle)	WLAN	9.47	±9.6
11025	AAB	IEEE 802.11ac (320 MHz, MCS18, 99ps duty cycle)	WLAN	9.37	±9.6
11026	AAB	IEEE 802.11ac (320 MHz, MCS9, 99ps duty cycle)	WLAN	9.39	±9.6

¹ Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

Appendix A.9 Dipole Calibration certificate (CLA13_SN1019)

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



S Schweizerischer Kalibrierdienst
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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No. **CLA13-1019_May24**

CALIBRATION CERTIFICATE

Object **CLA13 - SN: 1019**

Calibration procedure(s) **QA CAL-15.v11
Calibration Procedure for SAR Validation Sources below 700 MHz**

Calibration date **May 21, 2024**

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

All calibrations have been conducted in the closed laboratory facility, environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

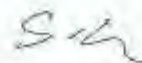
Calibration Equipment used (M&PE critical for calibration):

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104775	26-Mar-24 (No. 217-04036/04037)	Mar-25
Power sensor NRP-Z91	SN: 103244	26-Mar-24 (No. 217-04036)	Mar-25
Power sensor NRP-Z91	SN: 103245	26-Mar-24 (No. 217-04037)	Mar-25
Reference 20 dB Attenuator	SN: CC2552 (20x)	26-Mar-24 (No. 217-04046)	Mar-25
Type-N mismatch combination	SN: 310992 / 03327	26-Mar-24 (No. 217-04047)	Mar-25
Reference Probe EX3DV4	SN: 3877	10-Jan-24 (No. EX3 3877 Jan24)	Jan-25
DAA4	SN: 654	15-Jan-24 (No. DAA4-654 Jan24)	Jan-25
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter NRP2	SN: 107193	08-Nov-21 (in house check Dec-22)	In house check: Dec-24
Power sensor NRP-Z91	SN: 100922	15-Dec-09 (in house check Dec-22)	In house check: Dec-24
Power sensor NRP-Z91	SN: 100416	01-Jan-04 (in house check Dec-22)	In house check: Dec-24
RF generator HP 8648C	SN: US5642U01709	04-Aug-89 (in house check Jun-22)	In house check: Jun-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

Calibrated by: **Name: Kresimir Franjic** Function: **Laboratory Technician**

Signature 

Approved by: **Name: Sven Köhr** Function: **Technical Manager**

Signature 

Issued: May 23, 2024

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

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland



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The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

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"

Additional Documentation:

- DASY System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The source is mounted in a touch configuration below the center marking of the flat phantom.
- Return Loss:** This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	ELI4 Flat Phantom	Shell thickness: 2 ± 0.2 mm
EUT Positioning	Touch Position	
Zoom Scan Resolution	$dx, dy = 4.0$ mm, $dz = 1.4$ mm	Graded Ratio = 1.4 (Z direction)
Frequency	13 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	55.0	0.75 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	52.4 ± 6 %	0.72 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm ² (1 g) of Head TSL	Condition	
SAR measured	1 W input power	0.545 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	0.557 W/kg ± 18.4 % (k=2)

SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
SAR measured	1 W input power	0.338 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	0.346 W/kg ± 18.0 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.5 Ω + 4.9 j Ω
Return Loss	-24.8 dB

Additional EUT Data

Manufactured by	SPEAG
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DASY5 Validation Report for Head TSL

Date: 21.05.2024

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: CLA13; Type: CLA13; Serial: CLA13 - SN: 1019

Communication System: UID 0 - CW; Frequency: 13 MHz

Medium parameters used: $f = 13$ MHz; $\sigma = 0.72$ S/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3877; ConvF(15.33, 15.33, 15.33) @ 13 MHz; Calibrated: 10.01.2024
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 15.01.2024
- Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2034
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

CLA Calibration for IISL-LF Tissue/CLA-13, touch configuration, Pin=1W/Zoom Scan, dist=1.4mm (8x10x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 31.32 V/m; Power Drift = 0.00 dB

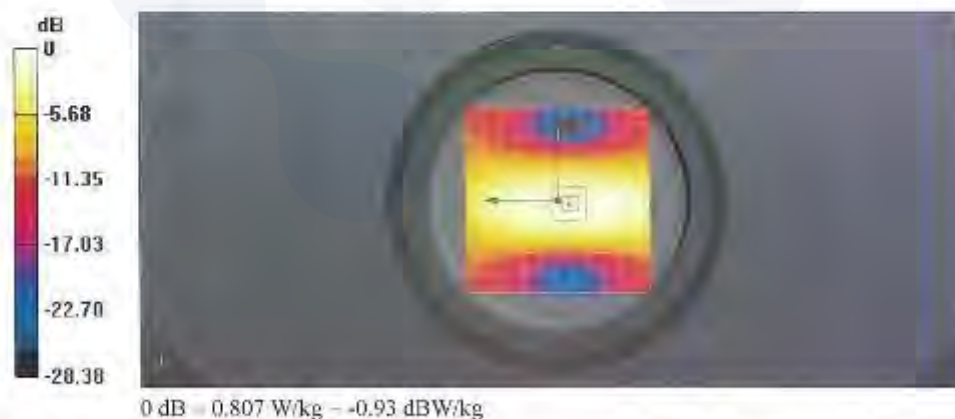
Peak SAR (extrapolated) = 1.14 W/kg

SAR(1 g) = 0.545 W/kg; SAR(10 g) = 0.338 W/kg

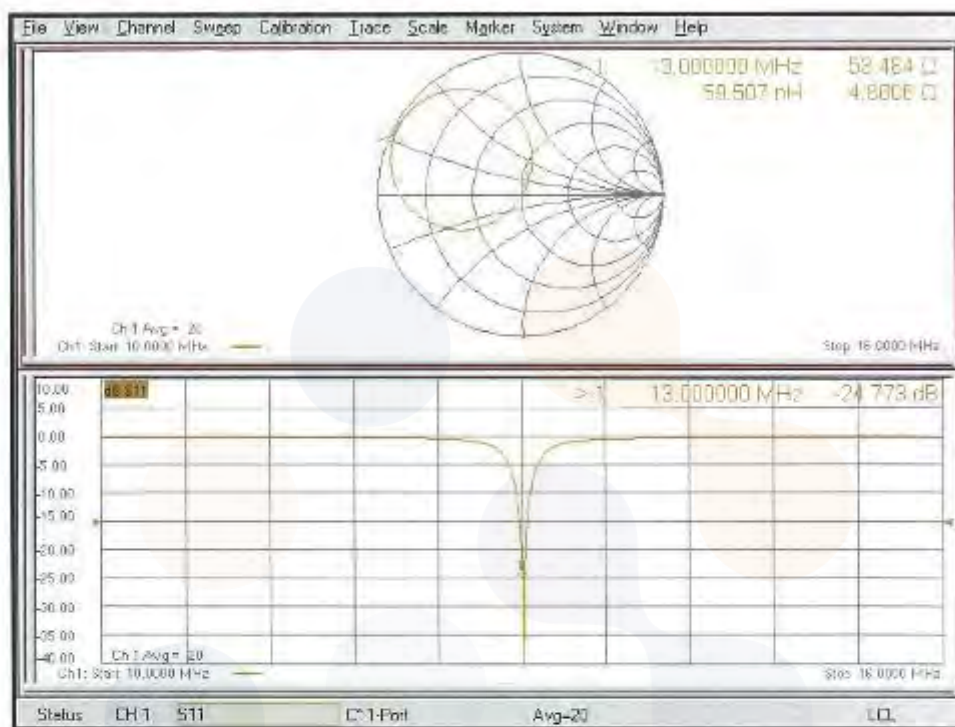
Smallest distance from peaks to all points 3 dB below = 20.9 mm

Ratio of SAR at M2 to SAR at M1 = 77.4%

Maximum value of SAR (measured) = 0.807 W/kg



Impedance Measurement Plot for Head TSL



Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SPF0015-B Page (568) of (714)	 KCTL
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Appendix A.10 Dipole Calibration certificate (D750V3_SN1224)

Calibration Laboratory of
Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland



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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
Eurofins KCTL
 Gyeonggi-do, Republic of Korea

Certificate No. **D750V3-1224_Sep24**

CALIBRATION CERTIFICATE

Object **D750V3 - SN: 1224**

Calibration procedure(s) **QA CAL-05.v12**
Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date **September 16, 2024**

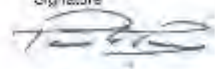
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Cal
Power Sensor R&S NRP-83T	SN: 100857	28-Mar-24 (No. 217-04038)	Mar-25
Power Sensor R&S NRP15A	SN: 101459	22-Jul-24 (No. 4030A315008547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101832	25-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch: Short [S4188] Attenuator [S4423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
OCP DAK-12	SN: 1018	05-Oct-23 (No. OCP-DAK12-1016_Cor23)	Oct-24
OCP DAK 3.5	SN: 1249	05-Oct-23 (No. OCP-DAK3.5-1249_Cor23)	Oct-24
Reference Probe EX3DV4	SN: 7949	03-Jun-24 (No. EX3-7949_Jun24)	Jun-25
DAE4ip	SN: 1838	10-Jan-24 (No. DAE4ip-1838_Jan24)	Jan-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1000	28-May-24 (No. 675-ACAD_Source_Box-240528)	May-25
Signal Generator R&S SMB100A	SN: 182081	28-May-24 (No. 675-CAL16-S4586-240528)	May-25
Mismatch: SMA	SN: 1103	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paulo Pina	Laboratory Technician	
Approved by	Sven Köhn	Technical Manager	
Issued: September 16, 2024 This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

Certificate No: D750V3-1224_Sep24

Page 1 of 6

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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**

Glossary

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x, y, z
N/A not applicable or not measured

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"

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- **Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- **Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- **Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- **Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- **SAR measured:** SAR measured at the stated antenna input power.
- **SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- **SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D750V3 - SN: 1224

September 16, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with spacer
Zoom Scan Resolution	dx, dy = 6mm; dz = 1.5mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	750MHz $\pm$ 1MHz	

Head TSL parameters at 750 MHz

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.890 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	43.2 $\pm$ 6%	0.890 mho/m $\pm$ 6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	2.14 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.52 W/kg $\pm$ 17.0% (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	1.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	5.53 W/kg $\pm$ 16.5% (k=2)

D750V3 - SN: 1224

September 18, 2024

Appendix (Additional assessments outside the scope of SCS 0109)

Antenna Parameters with Head TSL at 750 MHz

Impedance	$52.3 \Omega + j2.0 \Omega$
Return Loss	-30.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.034 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D750V3 - SN: 1224

September 16, 2024

System Performance Check Report

Summary

Device	Frequency (MHz)	TSL	Power (dBm)
D750V3 - SN: 1224	750	HSL	74

Exposure Conditions

Phantom Section	TSL Test Distance (mm)	Band	Group, UIC	Frequency (MHz, Channel Number)	Conversion Factor	TSL Conductivity (S/m)	TSL Perm (dF/m)
Flat	15	CW, 0-1		750, 0	0.0	0.16	45.2

Hardware Setup

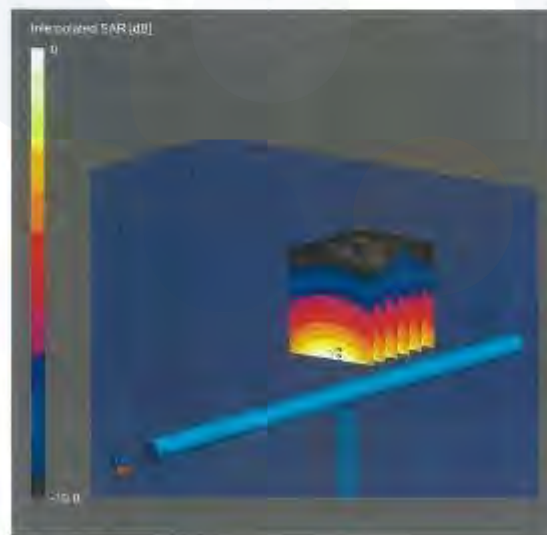
Phantom	TSL Measured Date	Probe, Calibration Date	DAQ, Calibration Date
Flat V4 B-mod	HSL, 2024-09-16	EX30V4 - SK7349, 2024-06-03	DAQ401-Sr1336/2024-05-10

Scans Setup

	Zoom Scan
Grid Extents (mm)	80 X 30 X 80
Grid Steps (mm)	8.0 x 3.0 x 1.5
Sensor Surface (mm)	1.0
Graded Grid	Yes
Grading Ratio	1.5
WVA	N/A
Surface Detection	NMS - 6s
Scan Method	Measured

Measurement Results

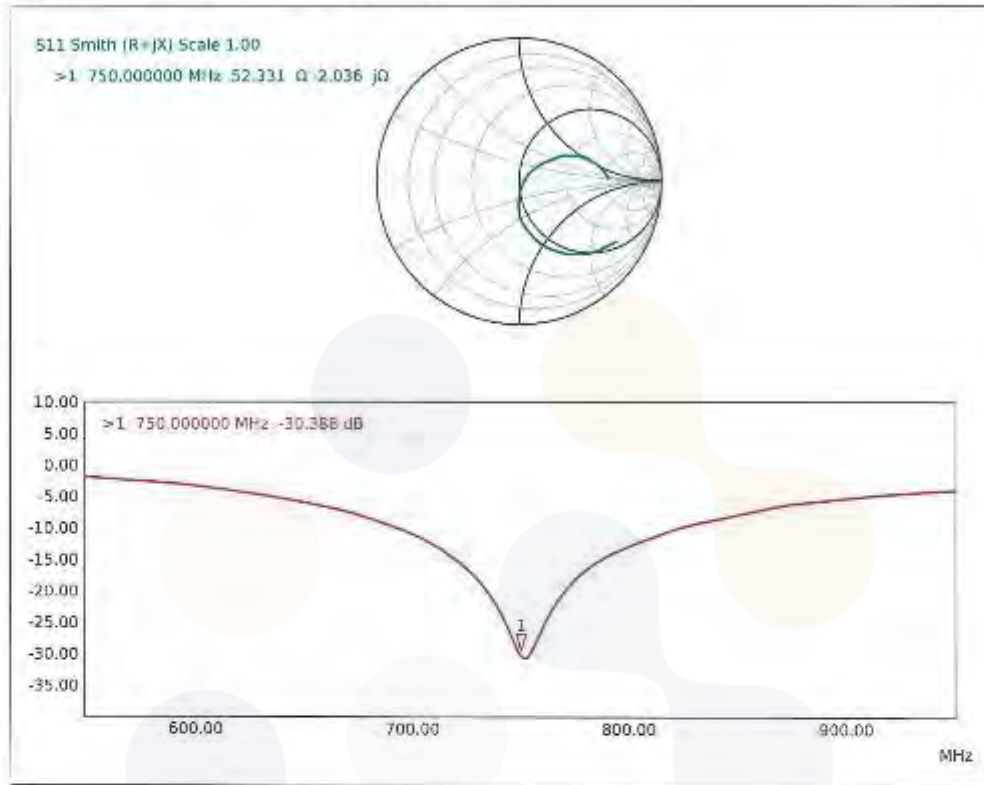
	Zoom Scan
Date	2024-09-16
pSAR _{1g} (W/Kg)	2.14
pSAR _{0g} (W/Kg)	1.29
Power Error (dB)	-0.01
Power Scaling	Disabled
Scaling Factor (dB)	
TSL Correction	Positive / Negative



D750V3 - SN: 1224

September 16, 2024

Impedance Measurement Plot for Head TSL



Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SPF0015-B Page (574) of (714)	 
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Appendix A.11 Dipole Calibration certificate (D850V2_SN1030)

Calibration Laboratory of
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 Zeughausstrasse 43, 8004 Zurich, Switzerland




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 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client: **Eurofins KCTL**
 Gyeonggi-do, Republic of Korea

Certificate No.: **D850V2-1030_Sep24**

CALIBRATION CERTIFICATE

Object: **D850V2 - SN: 1030**

Calibration procedure(s): **QA CAL-05.v12**
Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date: **September 16, 2024**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
 All calibrations have been conducted in the closed laboratory facility: environment temperature (22.12)°C and humidity < 70%.
 Calibration Equipment used (M&PE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Ca.
Power Sensor R&S NRP-331	SN: 100967	28-Mar-24 (No. 217-04038)	Mar-25
Power Sensor R&S NRP18A	SN: 101859	28-Jul-24 (No. 4030A315008547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101832	25-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch; Short [54188] Attenuator [94423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
OCF DAK-12	SN: 1016	05-Oct-23 (No. OCF-DAK12-1016_Oct23)	Oct-24
OCF DAK-3.5	SN: 1249	05-Oct-23 (No. OCF-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX30V4	SN: 7349	03-Jun-24 (No. EX3-7349_Jun24)	Jun-25
DAE4p	SN: 1836	10-Jan-24 (No. DAE4p-1836_Jan24)	Jan-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1000	28-May-24 (No. 675-ACAD_Source_Box-240528)	May-25
Signal Generator R&S SMB100A	SN: 182081	28-May-24 (No. 675-CAL16-54588-240528)	May-25
Mismatch; SMA	SN: 1102	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paulo Pina	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: September 16, 2024
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Accreditation No.: **SCS 0108**

Glossary

TSL: tissue simulating liquid
Cov/F: sensitivity in TSL / NORM x,y,z
N/A: not applicable or not measured

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"

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- **Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- **Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- **Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- **Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- **SAR measured:** SAR measured at the stated antenna input power.
- **SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- **SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D850V2 - SN: 1090

September 16, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1:

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with spacer
Zoom Scan Resolution	$\Delta x, \Delta y = 6\text{mm}, \Delta z = 1.5\text{mm}$	Graded Ratio = 1.5 mm (Z direction)
Frequency	850MHz $\pm 1\text{MHz}$	

Head TSL parameters at 850 MHz

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.920 mho/m
Measured Head TSL parameters	$(22.0 \pm 0.2)^\circ\text{C}$	$42.9 \pm 6\%$	$0.910 \text{ mho/m} \pm 6\%$
Head TSL temperature change during test	$< 0.5^\circ\text{C}$		

SAR result with Head TSL at 850 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	2.51 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	$9.39 \text{ W/kg} \pm 17.0\% (k = 2)$

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	1.62 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	$6.45 \text{ W/kg} \pm 16.5\% (k = 2)$

D850V2 - SN: 1030

September 16, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 850 MHz

Impedance	47.8 Ω - 4.0 Ω
Return Loss	-26.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.438 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semi-rigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small and caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the 'Measurement Conditions' paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D850V2 - SN: 1030

September 16, 2024

System Performance Check Report

Summary

Probe	Frequency (MHz)	TSL	Power (dBm)
D850V2 - SN1030	850	RSL	21

Exposure Conditions

Phantom Section, TSL	Test Distance (mm)	Band	Group, UIC	Frequency (MHz)	Channel Number	Conversion Factor	TSL Conductivity (S/m)	TSL Permittivity
Flat	15	0W, 0—	850, 0			9.18	0.81	42.9

Hardware Setup

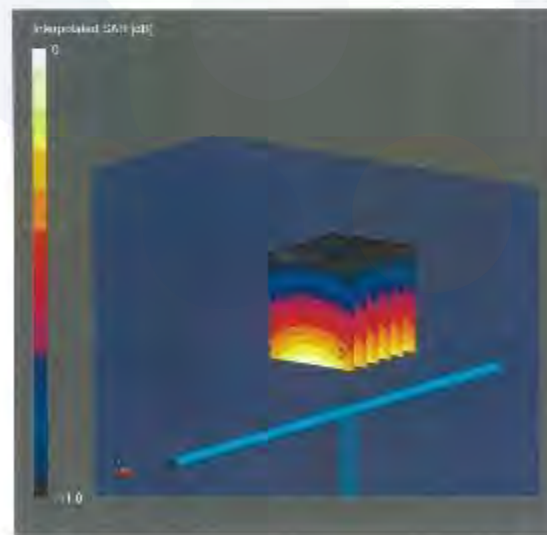
Phantom	TSL, Measured Date	Probe, Calibration Date	DAT, Calibration Date
Flat, 9-med	RSL, 2024-09-10	D850V4 - SN7549, 2024-06-04	D850V2 SN1030, 2024-01-10

Scans Setup

	Zoom Scan
Grid Pattern (mm)	30 x 30 x 30
Grid Steps (mm)	6.0 x 6.0 x 1.5
Sensor Surface (mm)	1.4
Graded Grid	Yes
Grading Ratio	1.5
SWA	N/A
Surface Detection	VMS - 60
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2024-09-16
ptSAR1g (W/Kg)	2.31
ptSAR10g (W/Kg)	1.62
Power Dens (dB)	0.00
Power Scaling	Disabled
Scaling Factor (dB)	
TSL Correction	Positive / Negative

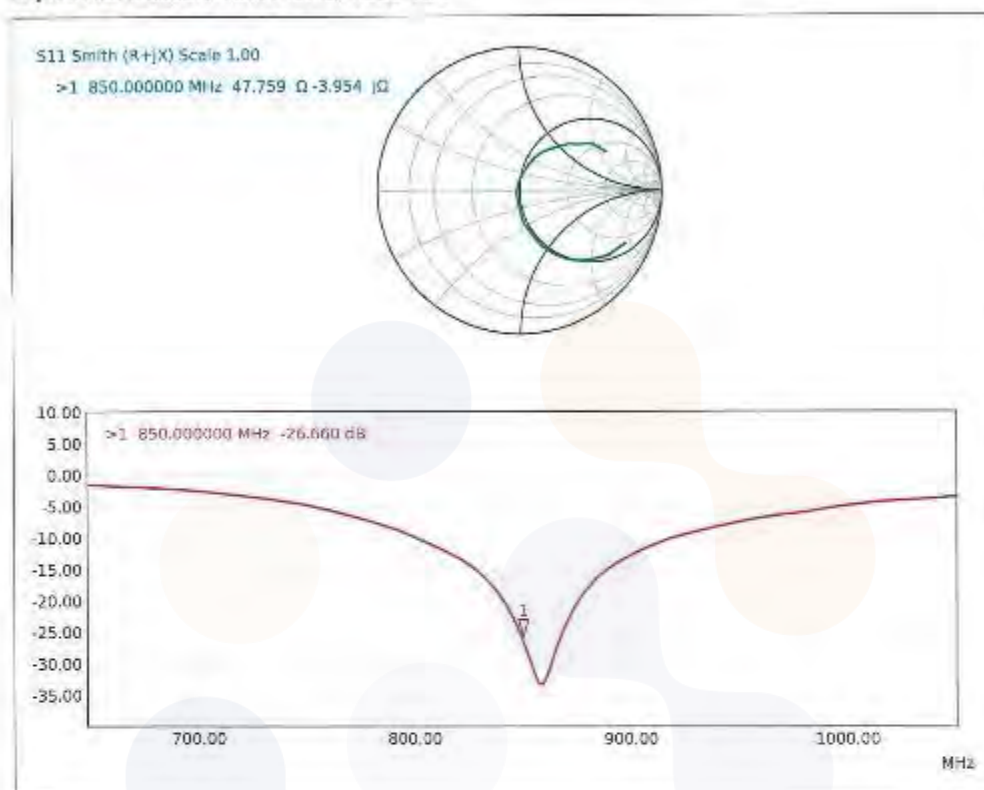


0 dB = 3.88 W/Kg

D850V2 · SN: 1030

September 18, 2024

Impedance Measurement Plot for Head TSL



Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SPF0015-B Page (580) of (714)	 KCTL
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Appendix A.12 Dipole Calibration certificate (D1750V2 SN1195)

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Zaighausstrasse 43, 8004 Zurich, Switzerland



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No. **D1750V2-1195_Sep24**

CALIBRATION CERTIFICATE

Object: D1750V2 - SN: 1195

Calibration procedure(s): QA CAL-05.v12
Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date: September 13, 2024

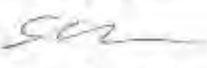
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

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

Calibration Equipment used (MATE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Cal
Power Sensor R&S NRP-33T	SN: 100967	28-Mar-24 (No. 217-04038)	Mar-25
Power Sensor R&S NRP18A	SN: 101889	22-Jul-24 (No. 4030A315008547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101832	25-Jan-24 (No. 4030-815007551)	Jan-25
Mismatch, Short, [S4188] Attenuator [S4423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
OCF DAK-12	SN: 1016	05-Oct-23 (No. OCF-DAK12-1016_Oct23)	Oct-24
OCF DAK-3.5	SN: 1249	05-Oct-23 (No. OCF-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX3DV4	SN: 7549	05-Jun-24 (No. EX3-7549_Jun24)	Jun-25
DAE4ip	SN: 1836	10-Jun-24 (No. DAE4ip-1836_Jan24)	Jan-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1000	28-May-24 (No. 675-ACAD_Source_Box-240523)	May-25
Signal Generator R&S SMR100A	SN: 182081	28-May-24 (No. 675-CAL16-S4588-240523)	May-25
Mismatch, SMA	SN: 1102	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paulo Pine	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	
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Certificate No.: D1750V2-1195_Sep24

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Accreditation No.: **SCS 0108**

Glossary

TSL tissue simulating liquid
CorWF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

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 655654, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid-filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D1750V2 - SN: 1195

September 13, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with spacer
Zoom Scan Resolution	dx, dy = 6mm, dz = 1.5mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	1750MHz ±1MHz	

Head TSL parameters at 1750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ±0.2)°C	41.3 ±6%	1.34 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 1750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	9.29 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.0 W/kg ±17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	4.96 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	19.7 W/kg ±16.5% (k = 2)

D1750V2 - SN: 1195

September 13, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 1750 MHz

Impedance	47.1 Ω + 2.5 j Ω
Return Loss	-28.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.217 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data is not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D1750V2 - SN: 1195

September 13, 2024

System Performance Check Report

Summary

Device	Frequency (MHz)	TS	Power (dBm)
D1750V2 - SN:1195	1750	HSL	24

Exposure Conditions

Phantom Section, TS	Test Distance (mm)	Band	Group, UID	Frequency (MHz), Channel Number	Conversion Factor	TSL Conductivity (S/m)	TSI Permittivity
Flat	0	CW, 0--	1750, 0		7.56	1.34	41.3

Hardware Setup

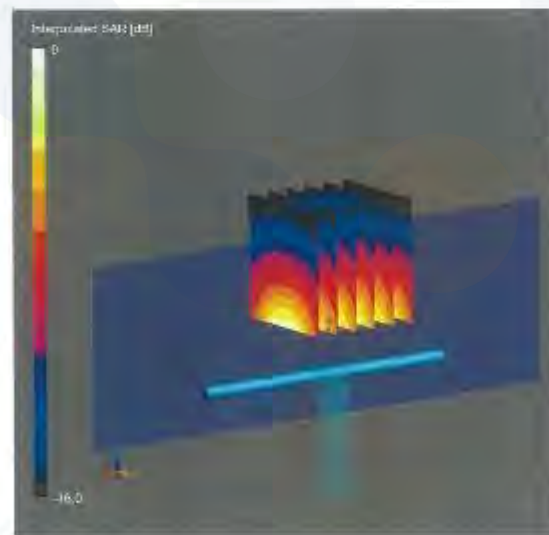
Phantom	TS, Measured Date	Probe, Calibration Date	CPE, Calibration Date
MPP V6.0 Right	HSL, 2024-09-13	HC30V4 - SN7346, 2024-08-02	DAFep S61 R70, 2024-01-10

Scans Setup

	Zoom Scan
Grid Extent (mm)	30 x 30 x 30
Grid Steps (mm)	6.0 x 6.0 x 1.5
Sensor Surface (mm)	1.4
Coated Grid	Yes
Coating Ratio	1.5
N/A	N/A
Surface Detection	All points
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2024-09-13
psSA1g [W/Kg]	3.29
psSA10g [W/Kg]	4.98
Power Dens. (dB)	0.06
Power Scaling	Disabled
Scaling Factor (dB)	
TSI Correction	Positive / Negative

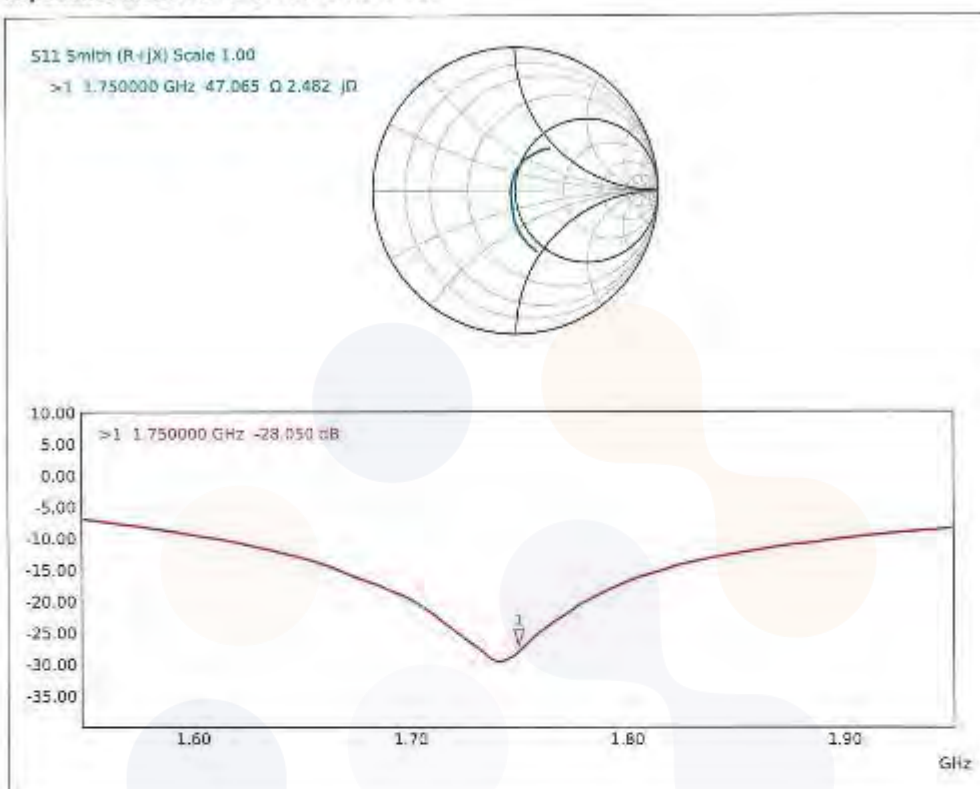


0 dB = 16.2 W/Kg

D1750V2 - SN: 1195

September 13, 2024

Impedance Measurement Plot for Head TSL



Appendix A.13 Dipole Calibration certificate (D1900V2_SN5d248)

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Accreditation No.: **SCS 0108**

Client: **Eurofins KCTL**
 Gyeonggi-do, Republic of Korea

Certificate No. **D1900V2-5d248_Sep24**

CALIBRATION CERTIFICATE

Object: **D1900V2 - SN: 5d248**

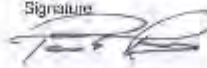
Calibration procedure(s): **QA CAL-05.v12**
 Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date: **September 16, 2024**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
 All calibrations have been conducted in the closed laboratory facility, environment temperature (22 ± 3)°C and humidity < 70%.
 Calibration Equipment used (M&TE critical for calibration):

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Cal
Power Sensor R&S NRP-33T	SN: 100937	28-Mar-24 (No. 217-04038)	Mar-25
Power Sensor R&S NRP18A	SN: 101859	22-Jul-24 (No. 4090A315008547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101832	25-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch: Short [S4188] Attenuator [S4423]	SN: 1152	26-Mar-24 (No. 217-04050)	Mar-25
OCP DAK-12	SN: 1016	05-Oct-23 (No. OCP-DAK12-1016_Oct23)	Oct-24
OCP DAK-3.5	SN: 1249	05-Oct-23 (No. OCP-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX8DV4	SN: 7349	09-Jun-24 (No. EX3-7349_Jun24)	Jun-25
DAE4p	SN: 1836	10-Jan-24 (No. DAE4p-1836_Jan24)	Jan-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1200	28-May-24 (No. 676-ACAD_Source_Box-240525)	May-25
Signal Generator R&S SMB100A	SN: 162061	28-May-24 (No. 676-CAL16-S4588-240528)	May-25
Mismatch: SMA	SN: 1102	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paula Pina	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	

Issued: September 16, 2024
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Certificate No: D1900V2-5d248_Sep24

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Accreditation No.: **SCS 0108**

Glossary

TSL: tissue simulating liquid
ConvF: sensitivity in TSL / NORM x,y,z
N/A: not applicable or not measured

Calibration Is Performed According to the Following Standards

- IEC/IEEE 62209-1525, "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 1525: 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"

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- **Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- **Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- **Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- **Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- **SAR measured:** SAR measured at the stated antenna input power.
- **SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- **SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D1900V2 - SN: 5d248

September 16, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with spacer
Zoom Scan Resolution	dx, dy = 6mm, dz = 1.5mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	1900MHz $\pm$ 1MHz	

Head TSL parameters at 1900 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.5 $\pm$ 5%	1.40 mho/m $\pm$ 6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 1900 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	9.96 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	39.7 W/kg $\pm$ 17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	5.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.8 W/kg $\pm$ 16.5% (k = 2)

D1900V2 - SN: 5d248

September 16, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 1900 MHz

Impedance	48.9 Ω + 5.9 j Ω
Return Loss	-24.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.194 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D1900V2 - SN: 5d248

September 16, 2024

System Performance Check Report

Summary

Device	Frequency (MHz)	TSL	Power (dBm)
D1900V2 - SN5d248	1900	HSU	24

Exposure Conditions

Phantom Section, TSL	Test Distance (mm)	Band	Coupler ID	Frequency (MHz), Channel Number	Conversion Factor	TSL Conductivity (S/m)	TSL Humidity
Flax	10	CW, 0--		1900, 0	2.75	1.60	60.5

Hardware Setup

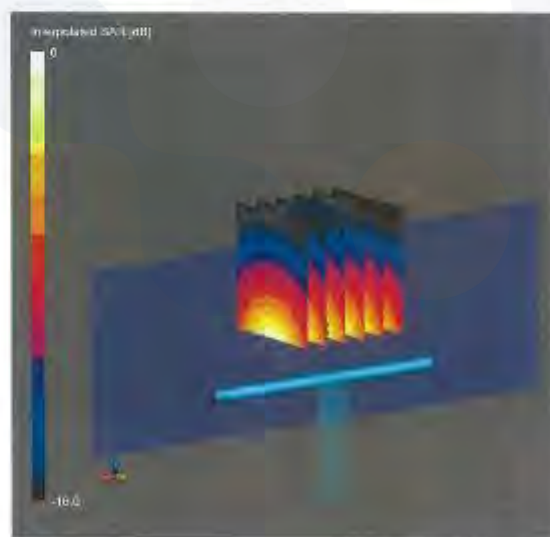
Phantom	TSL Measured Date	Probe Calibration Date	DAS Calibration Date
WPPVR-D Center	HSU, 2024-09-10	D030WA - SN7344, 2024-09-03	D0404b-S-1886, 2024-01-10

Scans Setup

	Zoom Scan
Grid Patterns (mm)	10 x 10 x 10
Grid Steps (mm)	6.0 x 6.0 x 1.5
Sensor Surface (mm)	1.4
Graded Grid	Yes
Grading Ratio	1.5
MMA	N/A
Surface Detection	All points
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2024-09-18
psSAR _{avg} [W/kg]	9.96
psSAR _{10g} [W/kg]	5.22
Power Dth (dB)	0.01
Power Scaling	Disabled
Scaling Factor (dB)	
TSL Correction	Positive / Negative

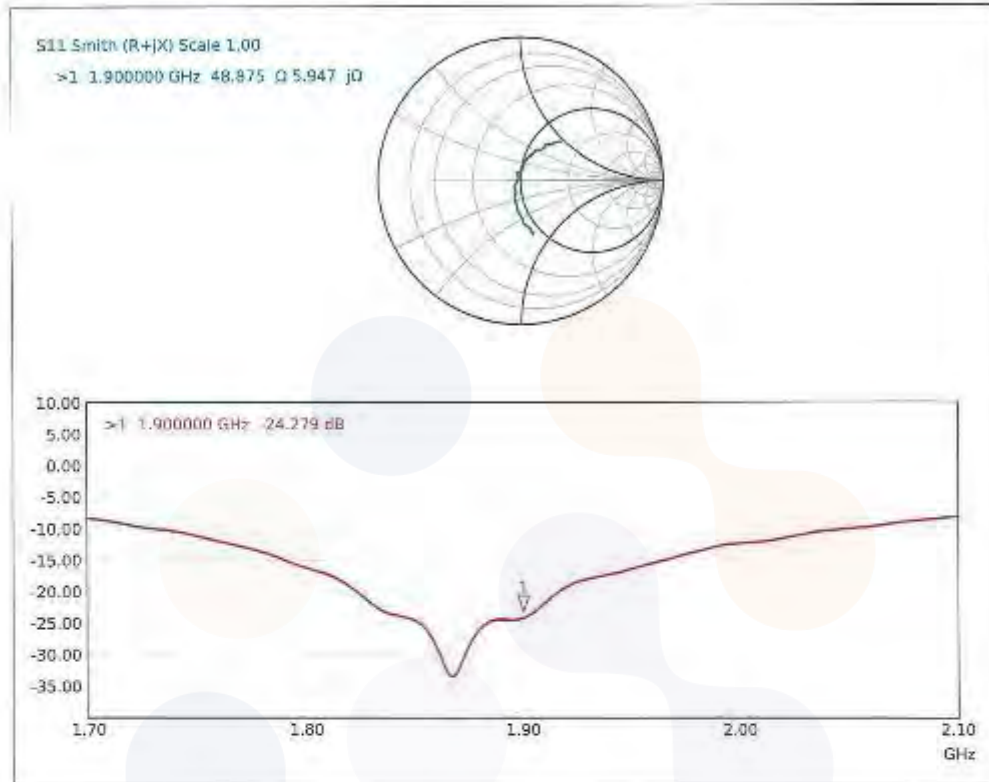


0 dB = 17.9 W/Kg

D1900V2 - SN: 5d248

September 16, 2024

Impedance Measurement Plot for Head TSL



Appendix A.14 Dipole Calibration certificate (D2300V2_SN1109)

Calibration Laboratory of

Schmid & Partner
Engineering AG

Zaughausstrasse 43, 8004 Zurich, Switzerland



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S Swiss Calibration Service

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0109**

Client **Onetech**
Gyeonggi-do, Republic of Korea

Certificate No. **D2300V2-1109_Jul24**

CALIBRATION CERTIFICATE

Object **D2300V2 - SN: 1109**

Calibration procedure(s) **QA CAL-05.v12**
Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

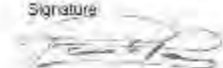
Calibration date **July 10, 2024**

This calibration certificate documents the traceability to national standards, which realizes 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&T E critical for calibration)

Primary Standards	ID	Cal. Date / Certificate No.	Scheduled Cal.
Power Sensor R&S NRP-33T	SN: 100967	28-Mar-24 (No. 217-04088)	Mar-25
Power Sensor R&S NRP184	SN: 101859	21-Mar-24 (No. 4030A315037801)	Mar-25
Spectrum Analyzer R&S FSV40	SN: 101832	25-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch; Short (S4188) Attenuator (S4423)	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
OCP DAK-12	SN: 1018	05-Oct-23 (No. OCP-DAK12-1018_Oct23)	Oct-24
OCP DAK-3.5	SN: 1248	05-Oct-23 (No. OCP-DAK3 5-1248_Oct23)	Oct-24
Reference Probe EX3DV4	SN: 7348	05-Jun-24 (No. EX3-7348_Jun24)	Jun-25
DAE4p	SN: 1836	10-Jan-24 (No. DAE4p-1836_Jan24)	Jan-25
Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1030	28-May-24 (No. 875-ACAD_Source_Box-240528)	May-25
Signal Generator R&S SMR100A	SN: 182081	28-May-24 (No. 0001 300719404)	May-25
Mismatch: SMA	SN: 1132	22-May-24 (No. 875-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paula Pina	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	
Issued: July 10, 2024			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

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Zeughausstrasse 43, 8004 Zurich, Switzerland



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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**

Glossary

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

Calibration is Performed According to the Following Standards

- IEC/IEEE 62203-1528, "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 865804, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- **Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- **Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the 1st phantom section, with the arms oriented parallel to the body axis.
- **Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- **Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- **SAR measured:** SAR measured at the stated antenna input power.
- **SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- **SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D2300V2 - SN: 1109

July 10, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with spacer
Zoom Scan Resolution	dx, dy = 5mm; dz = 1.5mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	2300MHz ± 1 MHz	

Head TSL parameters at 2300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.5	1.67 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	38.5 $\pm$ 8%	1.67 mho/m $\pm$ 8%
Head TSL temperature change during test	$\leq$ 0.5 °C		

SAR result with Head TSL at 2300 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	12.2 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	48.6 W/kg $\pm$ 17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	5.90 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.5 W/kg $\pm$ 16.5% (k = 2)

D2300V2 - SN: 1109

July 10, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 2300 MHz

Impedance	47.0 Ω -j0.7 jΩ
Return Loss	-30.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.169 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
-----------------	-------

D2300V2 - SN: 1109

July 10, 2024

System Performance Check Report

Summary

Dipole	Frequency (MHz)	TSL	Power (dBm)
D2300V2 - SN: 1109	2300	HSL	24

Exposure Conditions

Physical Sector, TSL	Test Distance (mm)	Band	Group, UIC	Frequency (MHz)	Channel Number	Conversion Factor	TSL Conductivity (S/m)	TSL Permittivity
Far	10	CW, 0--	2300, C			2.49	1.63	38.5

Hardware Setup

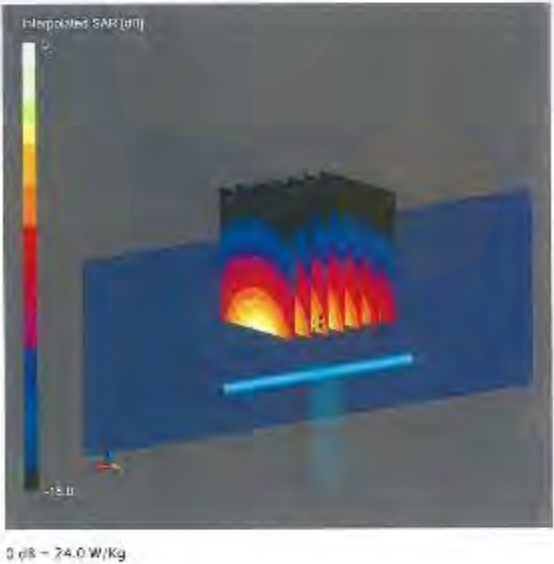
Hardware	TSL Measured Date	Probe, Calibration Date	DAB, Calibration Date
NTP VLS Center	HSL, 2024-07-10	PR3004 - SN2346, 2024-06-03	DAB16 Sep1830, 2024-01-10

Scans Setup

	Zoom Scan
Grid Extents (mm)	10 x 10 x 10
Grid Steps (mm)	5.0 x 5.0 x 1.5
Sensor Surface (mm)	1.4
Graded Grid	Yes
Grading Ratio	1.5
WAPA	N/A
Surface Detection	WMS - 5p
Scan Method	Measured

Measurement Results

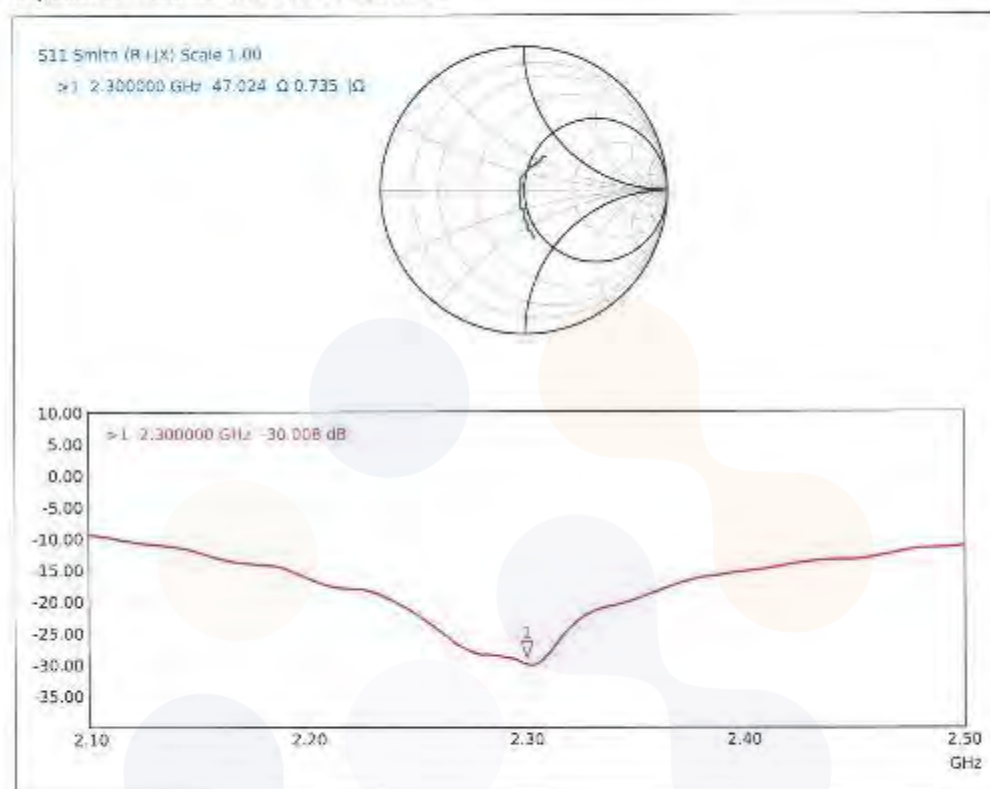
	Zoom Scan
Date	2024-07-10
ptSAR _{1g} (W/Kg)	12.2
μSAR _{10g} (W/Kg)	5.90
Power Ctrl. (dB)	0.00
Power Scaling	Disabled
Scaling Factor (dB)	
TSL Connection	Positive / Negative



D2300V2 - SN: 1109

July 10, 2024

Impedance Measurement Plot for Head TSL



Appendix A.15 Dipole Calibration certificate (D2450V2_SN1091)

Calibration Laboratory of
Schmid & Partner
Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland



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Accreditation No.: **SCS 0108**

Client: **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No.: **D2450V2-1091_Sep24**

CALIBRATION CERTIFICATE

Object: **D2450V2 - SN: 1091**

Calibration procedure(s): **QA CAL-05.v12**
Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date: **September 13, 2024**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Ca
Power Sensor R&S NRP 33T	SN: 100367	28-Mar-24 (No. 217-04038)	Mar-25
Power Sensor R&S NRP18A	SN: 101859	29-Jul-24 (No. 4090A315008547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101832	25-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch; Short [S4189] Attenuator [S4423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
OCP DAK-12	SN: 1016	05-Oct-23 (No. OCP_DAK12-1016_Oct23)	Oct-24
OCP DAK 3.5	SN: 1249	05-Oct-23 (No. OCP-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX3DV4	SN: 7348	05-Jun-24 (No. EX3-7348_Jun24)	Jun-25
DAE4ip	SN: 1836	10-Jan-24 (No. DAE4ip-1836_Jan24)	Jan-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1000	28-May-24 (No. 675-ACAD_Source_Box-240528)	May-25
Signal Generator R&S SMB100A	SN: 182081	28-May-24 (No. 675-CAL16-S4598-240528)	May-25
Mismatch SMA	SN: 1102	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paulo Pina	Laboratory Technician	
Approved by	Sven Kuhn	Technical Manager	

Issued: September 16, 2024

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**Calibration Laboratory of
Schmid & Partner
Engineering AG**

Zaughausstrasse 43, 8004 Zurich, Switzerland



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Glossary

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

Calibration is Performed According to the Following Standards

- IEC/IEEE 68209-1528, "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"

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR by nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D2450V2 - SN: 1091

September 13, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with spacer
Zoom Scan Resolution	dx, dy = 5mm, dz = 1.5mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	2450MHz $\pm$ 1MHz	

Head TSL parameters at 2450 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.8 $\pm$ 6%	1.85 mho/m $\pm$ 6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 2450 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	12.9 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	51.4 W/kg $\pm$ 17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	6.08 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.2 W/kg $\pm$ 16.5% (k = 2)

D2450V2 - SN: 1091

September 13, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 2450 MHz

Impedance	51.7 Ω $\pm$ 2.5 Ω
Return Loss	-30.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.153 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D2450V2 - SN: 1091

September 13, 2024

System Performance Check Report

Summary

Device	Frequency [MHz]	TSL	Power [dBm]
D2450V2 - SN1091	2450	HS	74

Exposure Conditions

Human Section, TSL	Test Distance [mm]	Band	Group, ID	Frequency [MHz]	Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Toe	10	LW, 0		2450, 0		7.24	1.35	17.8

Hardware Setup

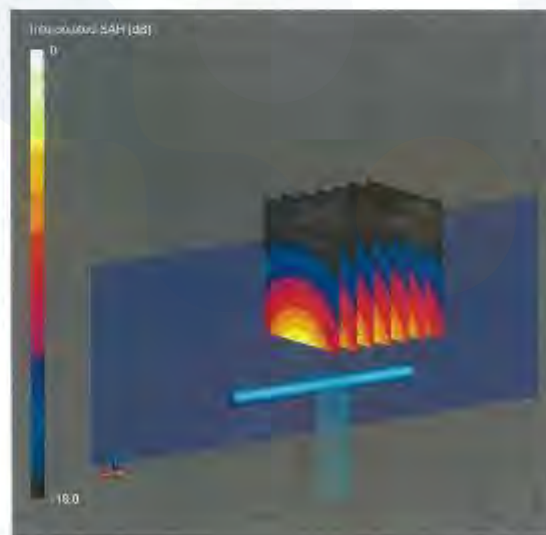
Hardware	TSL Measured Date	Probe Calibration Date	DMS Calibration Date
MFF V10 Right	HS, 2024-02-13	202094 - SN1349, 2024-06-03	DMSep SN1836, 2024-01-10

Scans Setup

	Zoom Scan
Grid Coords [mm]	32 x 30 x 30
Grid Steps [mm]	5.0 x 5.0 x 1.5
Sensor Surface [mm ²]	1.4
Graded Grid	Yes
Grating Ratio	1:5
WALA	N/A
Surface Detection	VMS + Ep
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2024-09-13
psAR1g [W/Kg]	12.9
psAR10g [W/Kg]	6.08
Power Drift [dB]	-0.01
Power Scaling	Disabled
Scaling Factor [dB]	
TSL Correction	Positive / Negative

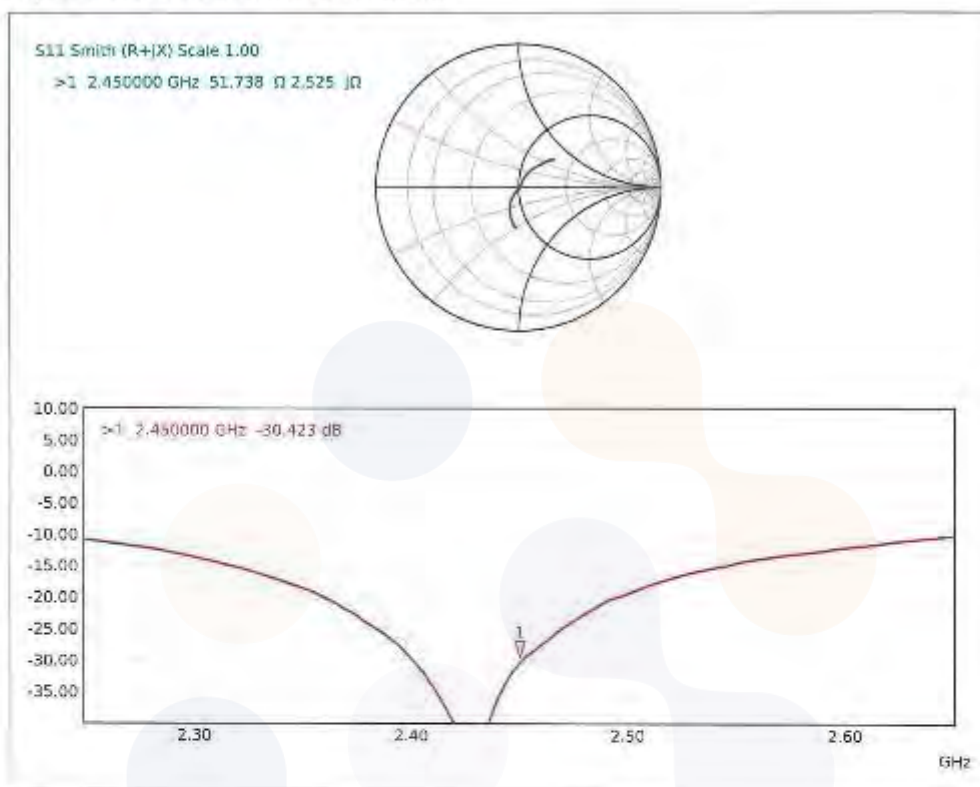


6 dB = 76.8 W/Kg

D2450V2 - SN: 1091

September 13, 2024

Impedance Measurement Plot for Head TSL



Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SPF0015-B Page (604) of (714)	 KCTL
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Appendix A.16 Dipole Calibration certificate (D2600V2 SN1200)

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




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Accreditation No.: **SCS 0108**

Client

Eurofins KCTL
 Gyeonggi-do, Republic of Korea

Certificate No.

D2600V2-1200_Sep24

CALIBRATION CERTIFICATE

Object

D2600V2 - SN: 1200

Calibration procedure(s)

QA CAL-05.v12
 Calibration Procedure for SAR Validation Sources between 0.7 - 3 GHz

Calibration date

September 13, 2024

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.
 All calibrations have been conducted in the closed laboratory facility: environment temperature (22±3)°C and humidity < 70%.
 Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Cal
Power Sensor R&S NRP-33T	SN: 100567	28-Mar-24 (No. 217-04038)	Mar-25
Power Sensor R&S NRP18A	SN: 101658	22-Jul-24 (No. 4030A316008547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101832	26-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch: Smau [S4186] Attenuator [S4423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
ODP DAK-12	SN: 1016	05-Oct-23 (No. ODP-DAK12-1016_Oct23)	Oct-24
ODP DAK-9.5	SN: 1249	05-Oct-23 (No. ODP-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX50V4	SN: 7349	03-Jun-24 (No. EX3-7349_Jun24)	Jun-25
DAE4ip	SN: 1836	10-Jan-24 (No. DAE4ip-1836_Jan24)	Jan-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1000	28-May-24 (No. 675-ACAD_Source_Box-240528)	May-25
Signal Generator R&S SMB100A	SN: 182081	28-May-24 (No. 675-CAL16-54588-240528)	May-25
Mismatch: SMA	SN: 1102	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paulo Pine	Laboratory Technician	
Approved by	Sven Köhn	Technical Manager	

Issued: September 16, 2024
 This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D2600V2-1200_Sep24 Page 1 of 6

This test report shall not be reproduced, except in full, without the written approval
 KCTL-TIA002-004/6(220705) KP24-08490

Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland



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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**

Glossary

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

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
- KOB 865864, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- **Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- **Antenna Parameters with TSL:** The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- **Feed Point Impedance and Return Loss:** These parameters are measured with the dipole positioned under the liquid filled phantom. The Impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- **Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- **SAR measured:** SAR measured at the stated antenna input power.
- **SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- **SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D2600V2 - SN: 1200

September 13, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY8 Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with spacer
Zoom Scan Resolution	dx, dy = 5mm, dz = 1.5mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	2600MHz $\pm$ 1MHz	

Head TSL parameters at 2600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.0	1.96 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.2 $\pm$ 6%	2.01 mho/m $\pm$ 6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 2600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	14.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	57.3 W/kg $\pm$ 17.0% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	24 dBm input power	6.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.5 W/kg $\pm$ 16.5% (k = 2)

D2600V2 - SN: 1200

September 13, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 2600 MHz

Impedance	48.2 Ω - 1.8 j Ω
Return Loss	-31.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.152 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D2600V2 - SN: 1200

September 13, 2024

System Performance Check Report

Summary

Model	Frequency (MHz)	TSL	Power (dBm)
D2600V2 - SN1200	2600	FSL	24

Exposure Conditions

Phantom Section, TSL	Test Distance (mm)	Band	Group, JID	Frequency (MHz), Channel Number	Conversion Factor	TSL Conductivity (S/m)	TSL Permittivity
FSL	10	CM, 0~	2600, 0		7.29	2.01	27.2

Hardware Setup

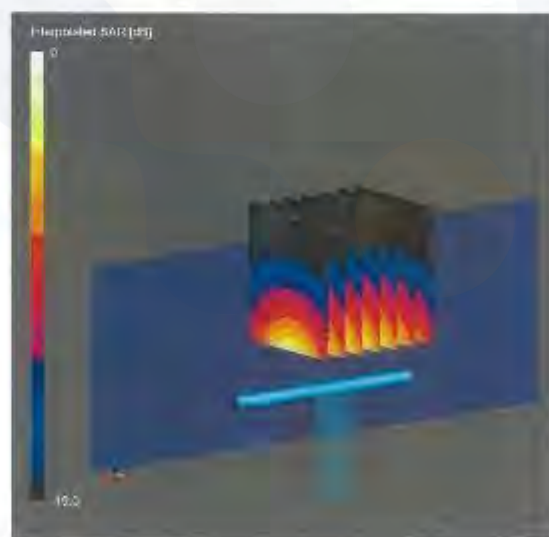
Phantom	TSL, Measured Date	Probe, Calibration Date	DAB, Calibration Date
MPT VS 6 Right	FSL, 2024-09-12	PCT094 - SN7369, 2024-09-03	DAB412-S1436, 2024-01-10

Scans Setup

	Scans Setup
Grid Exents (mm)	30 x 10 x 30
Grid Steps (mm)	5.0 x 5.0 x 1.5
Sensor Surface (mm)	1.4
Graded Grid	Yes
Grading Ratio	1.5
NADA	N/A
Surface Detection	All points
Scan Method	Measured

Measurement Results

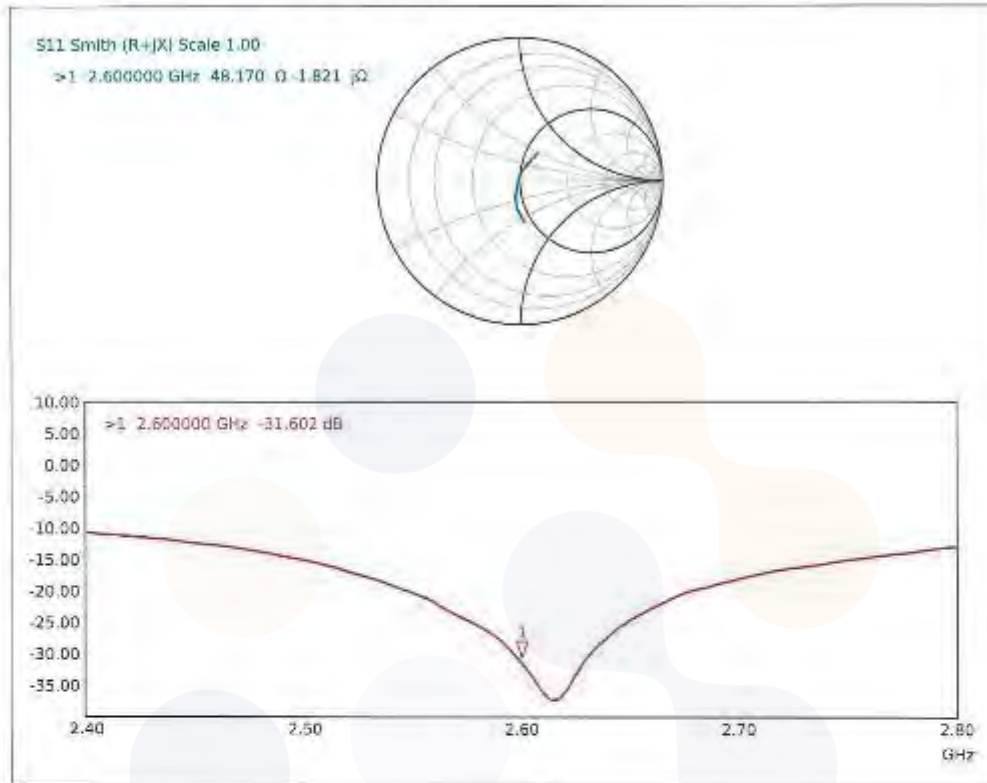
	Measurement Results
Date	2024-09-13
psSAR _{avg} (W/Kg)	14.4
psSAR _{10g} (W/Kg)	16.40
Power (DBS, dB)	-0.04
Power Scaling	Default
Scaling Factor (dB)	
TSL Correction	Positive / Negative



D2600V2 - SN: 1200

September 13, 2024

Impedance Measurement Plot for Head TSL



Appendix A.17 Dipole Calibration certificate (D3500V2_SN1146)

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 **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No. **D3500V2-1146_Sep24**

CALIBRATION CERTIFICATE

Object **D3500V2 - SN: 1146**

Calibration procedure(s) **QA CAL-22.v7**
Calibration Procedure for SAR Validation Sources between 3 - 10 GHz

Calibration date **September 19, 2024**

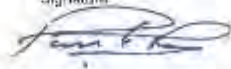
This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of this certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22.13)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Cal
Power Sensor R&S NRP 331	SN: 100867	28-Mar-24 (No. 217-04039)	Mar-25
Power Sensor R&S NRP16A	SN: 101659	22-Jul-24 (No. 4090A31500547)	Jul-25
Spectrum Analyzer R&S FSV40	SN: 101632	25-Jan-24 (No. 4030-315007551)	Jan-25
Mismatch; Short [S4188] Attenuator [S4423]	SN: 1152	28-Mar-24 (No. 217-04050)	Mar-25
DCP DAK-12	SN: 1016	05-Oct-23 (No. DCP-DAK12-1016_Oct23)	Oct-24
DCP DAK-3.5	SN: 1249	05-Oct-23 (No. DCP-DAK3.5-1249_Oct23)	Oct-24
Reference Probe EX3DV4	SN: 7349	03-Jun-24 (No. EX3-7349_Jun24)	Jun-25
DAE4ip	SN: 1636	10-Jan-24 (No. DAE4ip-1636_Jan24)	Jan-25

Secondary Standards	ID	Check Date (in house)	Scheduled Check
ACAD Source Box	SN: 1000	28-May-24 (No. 675-ACAD_Source_Box-240528)	May-25
Signal Generator R&S SMR100A	SN: 182081	28-May-24 (No. 675-CAL15-S4588-240528)	May-25
Mismatch, SMA	SN: 1102	22-May-24 (No. 675-Mismatch_SMA-240522)	May-25

	Name	Function	Signature
Calibrated by	Paulo Pires	Laboratory Technician	
Approved by	Sven Kühn	Technical Manager	
Issued: September 19, 2024			
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			

Calibration Laboratory of

Schmid & Partner
Engineering AG
Zughausstrasse 49, 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**

Glossary

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

Calibration is Performed According to the Following Standards

- IEC/IEEE 52205-1528, "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 865864, "SAR Measurement Requirements for 100 MHz to 6 GHz".

Additional Documentation

- DASY System Handbook

Methods Applied and Interpretation of Parameters

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D3500V2 - SN: 1146

September 19, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1:

DASY Version	DASY8 Module SAR	10.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with spacer
Zoom Scan Resolution	dx, dy = 5mm, dz = 1.4mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	3400MHz $\pm$ 1MHz 3500MHz $\pm$ 1MHz	

Head TSL parameters at 3400 MHz

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	2.81 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.8 $\pm$ 6%	2.84 mho/m $\pm$ 6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 3400 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	7.01 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	70.1 W/kg $\pm$ 19.9% (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	2.65 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	26.5 W/kg $\pm$ 19.5% (k=2)

D3500V2 - SN: 1146

September 19, 2024

Head TSL parameters at 3500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	37.3	2.91 mho/m
Measured Head TSL parameters	(22.0 ±0.2) °C	37.6 ±2%	2.91 mho/m ±6%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 3500 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	6.57 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	65.7 W/kg ±19.9% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	2.47 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.7 W/kg ±19.5% (k = 2)

D3500V2 - SN: 1146

September 19, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 3400 MHz

Impedance	43.0 Ω - 5.9 j Ω
Return Loss	-20.1 dB

Antenna Parameters with Head TSL at 3500 MHz

Impedance	50.3 Ω - 1.6 j Ω
Return Loss	-35.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1,135 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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D3500V2 - SN: 1146

September 19, 2024

System Performance Check Report

Summary

Device	Frequency (MHz)	TSI	Power (dBm)
D3500V2 - SN: 1146	3400	HSL	70

Exposure Conditions

Position	Section	TSI	Test Distance (mm)	Band	Group	U/D	Frequency (MHz)	Channel Number	Conversion factor	ISL Conductivity (S/m)	TSI Permeability
Top	10			CW, 0--	1400, 0				6.56	2.84	37.8

Hardware Setup

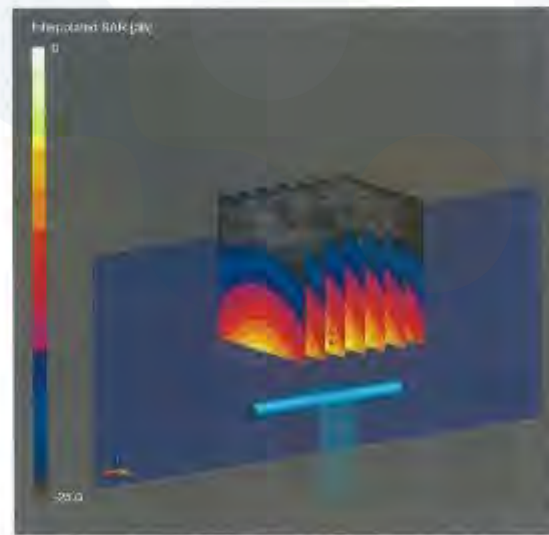
Phantom	TSI Measurement Date	Probe Calibration Date	DAS Calibration Date
HTF VNA Center	HSL 2024-09-19	D3500V2 - SN: 7344, 2024-09-03	DAS4ip SP1836, 2024-07-10

Scans Setup

	Scout Scan
Grid Extents (mm)	28 x 28 x 28
Grid Steps (mm)	5.0 x 5.0 x 1.4
Sensor Surface (mm)	1.4
Probe Grid	Yes
Griding Ratio	1.5
MVA	6/4
Surface Detection	All points
Scan Method	Measured

Measurement Results

	Scout Scan
Date	2024-09-19
rsSAR1g (W/Kg)	7.01
psSAR1g (W/Kg)	2.65
Power Dens (dB)	0.06
Power Scaling	Disabled
Scaling Factor (dB)	
TSI Correction	Positive / Negative



D3500V2 - SN: 1146

September 19, 2024

System Performance Check Report

Summary

Dipole	Frequency (MHz)	TSL	Power (dBm)
D3500V2 - SN:1146	3500	HS	70

Exposure Conditions

Phantom Section, TSL	Test Distance (mm)	Band	Group, IID	Frequency (MHz), Channel Number	Conversion Factor	TSL Conductivity (S/m)	TSL Permittivity
Flat	0	Cat. 0	3500.0		0.01	2.91	37.6

Hardware Setup

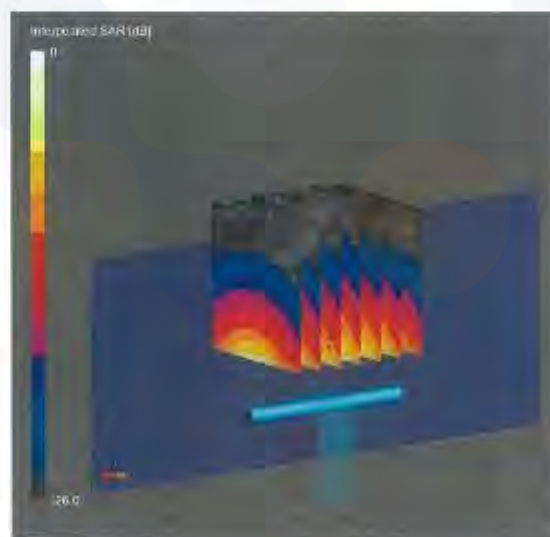
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
MTP Vial Center	HSL 2024-09-19	ES2094 - SN7349, 2024-06-03	DAE41P-Sr1836, 2024-07-10

Scans Setup

	Zoom Scan
Grid Dimensions (mm)	28 x 28 x 28
Grid Steps (mm)	6.0 x 6.0 x 1.4
Sensor Surface (mm)	1.4
Graded Grid	Yes
Grading Ratio	1.5
HAAS	N/A
Surface Position	All points
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2024-09-19
peSAR1g (W/Kg)	6.57
usSAR10g (W/Kg)	7.47
Power Drift (dB)	-0.03
Power Scaling	Disabled
Scaling Factor (dB)	
TSL Correction	Positive / Negative

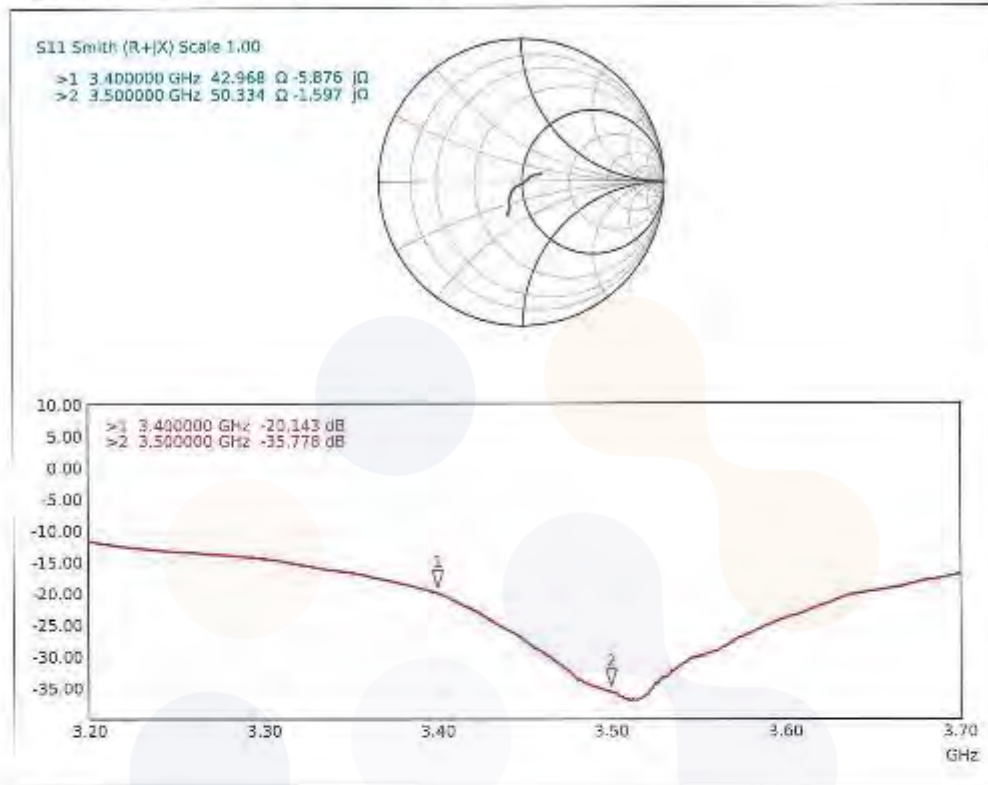


0 dB = 17.4 W/Kg

D3500V2 - SN: 1146

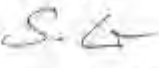
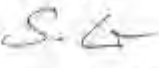
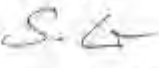
September 19, 2024

Impedance Measurement Plot for Head TSL



Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SPF0015-B Page (618) of (714)	 KCTL
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Appendix A.18 Dipole Calibration certificate (D3700V2_SN1027)

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 Eurofins KCTL Gyeonggi-do, Republic of Korea	Certificate No. D3700V2-1027_Aug24																																																					
CALIBRATION CERTIFICATE																																																						
<table border="0" style="width: 100%;"> <tr> <td style="width: 30%;">Object</td> <td>D3700V2 - SN: 1027</td> </tr> <tr> <td>Calibration procedure(s)</td> <td>QA CAL-22.v7 Calibration Procedure for SAR Validation Sources between 3 - 10 GHz</td> </tr> <tr> <td>Calibration date</td> <td>August 21, 2024</td> </tr> </table> 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)			Object	D3700V2 - SN: 1027	Calibration procedure(s)	QA CAL-22.v7 Calibration Procedure for SAR Validation Sources between 3 - 10 GHz	Calibration date	August 21, 2024																																														
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Calibrated by	Krešimir Franjo	Laboratory Technician																																																				
Approved by	Sven Könn	Technical Manager																																																				

Certificate No: D3700V2-1027_Aug24

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



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S Swiss Calibration Service

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The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary

TSL tissue simulating liquid
ConyF sensitivity in TSL / NORM $k_{y,z}$
N/A not applicable or not measured

Calibration is Performed According to the Following Standards

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

Additional Documentation

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- **Electrical Delay:** One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- **SAR measured:** SAR measured at the stated antenna input power.
- **SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- **SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

D3700V2 - SN: 1027

August 21, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASYs Module SAR	16.4.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with spacer
Zoom Scan Resolution	dx, dy = 5mm, dz = 1.4mm	Graded Ratio = 1.5 mm (Z direction)
Frequency	3700MHz $\pm$ 1MHz	

Head TSL parameters at 3700 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	37.7	3.12 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	38.1 $\pm$ 8%	3.08 mho/m $\pm$ 8%
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 3700 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	6.82 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	68.2 W/kg $\pm$ 19.9% (k = 2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	20 dBm input power	2.50 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	25.0 W/kg $\pm$ 19.5% (k = 2)

D3700V2 - SN: 1027

August 21, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 3700 MHz

Impedance	$45.1 \Omega + j 0 \Omega$
Return Loss	-23.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.131 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured. The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard. No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAC
-----------------	-------

D3700V2 - SN: 1027

August 21, 2024

System Performance Check Report

Summary

Device	Frequency (MHz)	TSL	Power (dBm)
D3700V2 - SN:1027	3700	BSL	20

Exposure Conditions

Phantom Section, TSL	Test Distance (mm)	Band	Group, UIC	Frequency (MHz)	Channel Number	Conversion Factor	TSL Conductivity (S/m)	TSL Permittivity
Flat	10	CW, C-1		3700, 0		8.54	3.08	38.1

Hardware Setup

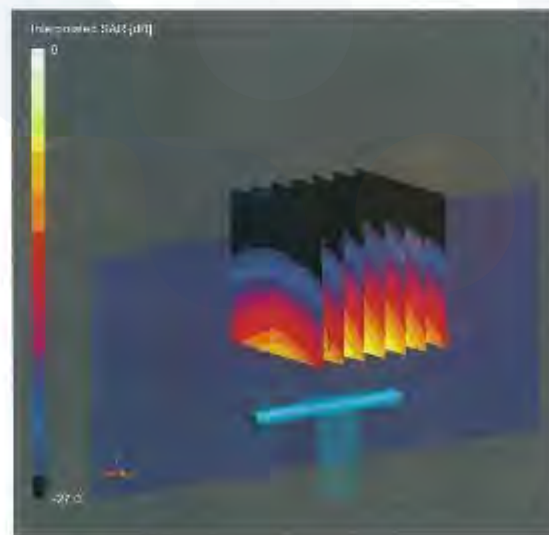
Phantom	TSL, Measured Date	Probe, Calibration Date	CNE, Calibration Date
MWP VS.0 Right	BSL, 2024-08-21	D3700V4 - SN:7549, 2024-06-03	DNAReg on 826, 2024-01-10

Scans Setup

	Zoom Scan
Grid Extents (mm)	28 x 28 x 28
Grid Steps (mm)	5.0 x 5.0 x 1.4
Sensor Surface (mm)	1.4
Graded Grid	Yes
Grading Ratio	1.5
MAA	N/A
Surface Detection	VMS - B
Scan Method	Measured

Measurement Results

	Zoom Scan
Date	2024-08-21
ptSAR1 g (W/Kg)	0.02
ptSAR1 dg (W/Kg)	2.50
Power Drift (dB)	-0.05
Power Scaling	Disabled
Scaling Factor (dB)	
TSL Correction	Positive / Negative

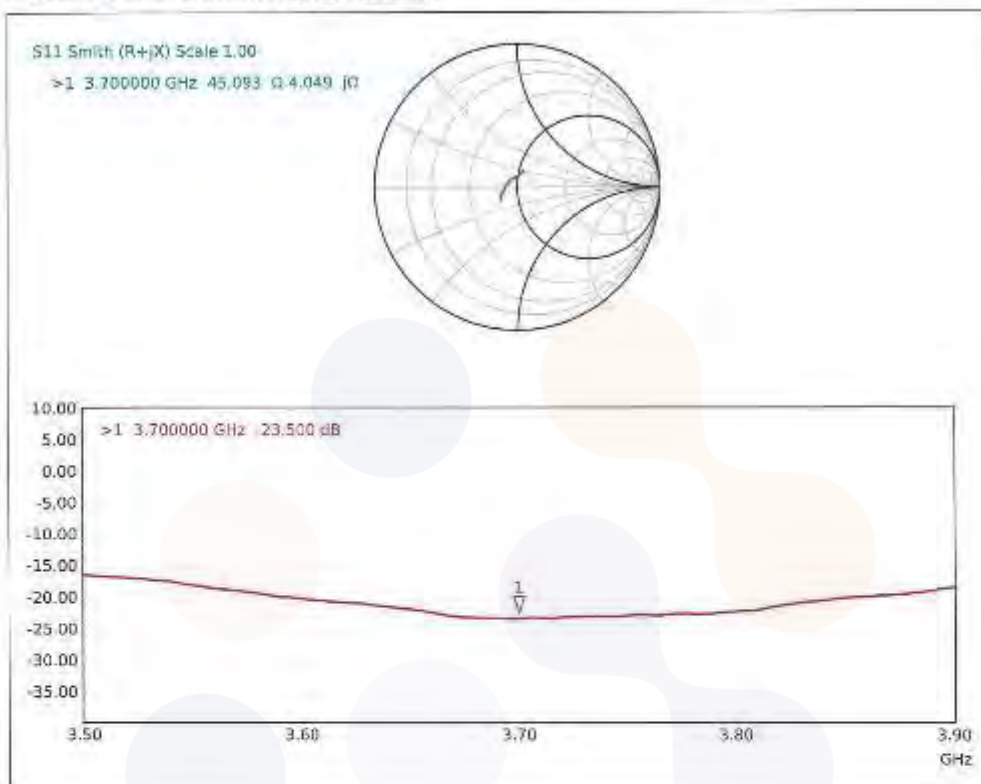


0 dB = 18.9 W/Kg

D3700V2 - SN: 1027

August 21, 2024

Impedance Measurement Plot for Head TSL



Appendix A.19 Dipole Calibration certificate (D3900V2 SN1043)

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



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client: **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No. **D3900V2-1043_Feb24**

CALIBRATION CERTIFICATE

Object: **D3900V2 - SN: 1043**

Calibration procedure(s): **QA CAL-22-V7
Calibration Procedure for SAR Validation Sources between 3-10 GHz**

Calibration date: **February 15, 2024**

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

All calibrations have been conducted in the closed laboratory facility: environment temperature: $(22 \pm 3)^\circ\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&PE 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-Z81	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
Power sensor NRP-Z81	SN: 103245	30-Mar-23 (No. 217-03805)	Mar-24
Reference 20 dB Attenuator	SN: B19394 (20k)	30-Mar-23 (No. 217-03805)	Mar-24
Type-K mismatch combination	SN: 210882 / 06327	30-Mar-23 (No. 217-03810)	Mar-24
Reference Probe EX3DV4	SN: 3503	07-Mar-23 (No. EX3-3503_Mar23)	Mar-24
DAE-1	SN: 601	30-Jan-24 (No. DAE4-601_Jan24)	Jan-25
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: G639512475	30-Oct-14 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: U837282793	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: MY411093315	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
RF generator R&S SMT-08	SN: 130972	15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Network Analyzer Agilent E6358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

Calibrated by:	Name Paulin Pina	Function Laboratory Technician	Signature 
Approved by:	Name Sven Kuten	Function Technical Manager	Signature 

Issued: February 15, 2024

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

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



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S Swiss Calibration Service

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The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

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"

Additional Documentation:

- DASY System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The source is mounted in a touch configuration below the center marking of the flat phantom.
- Return Loss:** This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3900 MHz $\pm$ 1 MHz 4100 MHz $\pm$ 1 MHz	

Head TSL parameters at 3900 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	37.5	3.32 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.6 $\pm$ 6 %	3.24 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 3900 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.87 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	69.1 W/kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.1 W/kg $\pm$ 19.5 % (k=2)

Head TSL parameters at 4100 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	37.2	3.53 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	37.6 $\pm$ 6 %	3.42 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	---	---

SAR result with Head TSL at 4100 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.70 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	67.4 W/kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.5 W/kg $\pm$ 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 3900 MHz

Impedance, transformed to feed point	47.0 Ω - 2.9 j Ω
Return Loss	- 27.3 dB

Antenna Parameters with Head TSL at 4100 MHz

Impedance, transformed to feed point	57.0 Ω + 0.3 j Ω
Return Loss	- 23.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.105 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea TEL: 82-70-5008-1021 FAX: 82-505-299-8311 www.kctl.co.kr	Report No.: KR25-SPF0015-B Page (628) of (714)	
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DASY5 Validation Report for Head TSL

Date: 15.02.2024

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 3900 MHz; Type: D3900V2; Serial: D3900V2 - SN:1043

Communication System: UID 0 - CW; Frequency: 3900 MHz, Frequency: 4100 MHz

Medium parameters used: $f = 3900$ MHz; $\sigma = 3.24$ S/m; $\epsilon_r = 37.8$; $\rho = 1000$ kg/m³

Medium parameters used: $f = 4100$ MHz; $\sigma = 3.42$ S/m; $\epsilon_r = 37.6$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(7.39, 7.39, 7.39) @ 3900 MHz, ConvF(7.26, 7.26, 7.26) @ 4100 MHz; Calibrated: 07.03.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.01.2024
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100 mW, d=10mm, f=3900MHz/Zoom Scan,

dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 71.03 V/m; Power Drift = -0.00 dB

Peak SAR (extrapolated) = 19.4 W/kg

SAR(1 g) = 6.87 W/kg; SAR(10 g) = 2.41 W/kg

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 74.3%

Maximum value of SAR (measured) = 13.6 W/kg

Dipole Calibration for Head Tissue/Pin=100 mW, d=10mm, f=4100MHz/Zoom Scan,

dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 68.30 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 19.1 W/kg

SAR(1 g) = 6.70 W/kg; SAR(10 g) = 2.34 W/kg

Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 74.3%

Maximum value of SAR (measured) = 13.3 W/kg

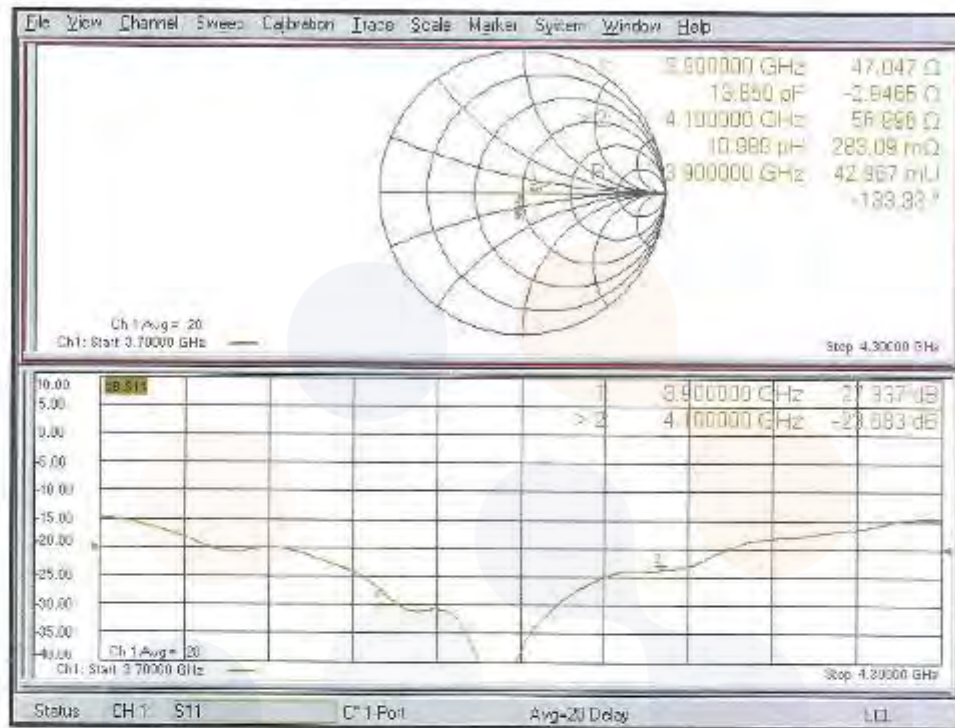
Eurofins KCTL Co.,Ltd.

65, Sinwon-ro, Yeongtong-gu,
Suwon-si, Gyeonggi-do, 16677, Korea
TEL: 82-70-5008-1021 FAX: 82-505-299-8311
www.kctl.co.kr

Report No.:
KR25-SPF0015-B
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Impedance Measurement Plot for Head TSL



Appendix A.20 Dipole Calibration certificate (D5GHzV2 SN1134)

**Calibration Laboratory of
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S Swiss Calibration Service

Accreditation No.: **SCS 0108**

Client: **Eurofins KCTL**
Gyeonggi-do, Republic of Korea

Certificate No. **D5GHzV2-1134_Jan24**

CALIBRATION CERTIFICATE

Object: **D5GHzV2 - SN:1134**

Calibration procedure(s): **QA-CAL-22.v7**
Calibration Procedure for SAR Validation Sources between 3-10 GHz

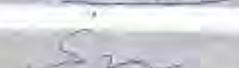
Calibration date: **January 17, 2024**

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

All calibrations have been conducted in the closest laboratory facility: environment temperature (23.1 ± 0.3)°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. 217-03604/03605)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03604)	Mar-24
Power sensor NRP-Z91	SN: 103245	30-Mar-23 (No. 217-03605)	Mar-24
Reference 20 dB Attenuator	SN: 549384 (20k)	30-Mar-23 (No. 217-03609)	Mar-24
Type-N mismatch combination	SN: 310982 / 08327	30-Mar-23 (No. 217-03610)	Mar-24
Reference Probe EX3DV4	SN: 3503	07-Mar-23 (No. EX3-3503_Mar23)	Mar-24
DAEs	SN: 601	03-Oct-23 (No. DAE4-601_Oct23)	Oct-24
Secondary Standards	ID #	Check Date (In house)	Scheduled Check
Power meter E4118B	SN: GB33612475	30-Oct-14 (In house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: US37282783	07-Oct-15 (In house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: MY41063315	07-Oct-15 (In house check Oct-22)	In house check: Oct-24
RF generator B&S SMT-06	SN: 100972	15-Jun-15 (In house check Oct-22)	In house check: Oct-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (In house check Oct-22)	In house check: Oct-24

Calibrated by:	Name: Paula Pina	Function: Laboratory Technician	Signature: 
Approved by:	Name: Sven Roth	Function: Technical Manager	Signature: 

Issued: January 18, 2024

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

Certificate No: D5GHzV2-1134_Jan24

Page 1 of 8

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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

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"

Additional Documentation:

- DASY System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions:** Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL:** The source is mounted in a touch configuration below the center marking of the flat phantom.
- Return Loss:** This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- SAR measured:** SAR measured at the stated antenna input power.
- SAR normalized:** SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters:** The measured TSL parameters are used to calculate the nominal SAR result.

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%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 1.4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz $\pm$ 1 MHz 5600 MHz $\pm$ 1 MHz 5800 MHz $\pm$ 1 MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	36.5 $\pm$ 6 %	4.65 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.68 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	79.0 W/kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.8 W/kg $\pm$ 19.5 % (k=2)

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	36.1 $\pm$ 6 %	5.04 mho/m $\pm$ 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	82.4 W/kg $\pm$ 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.36 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.7 W/kg $\pm$ 19.5 % (k=2)

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied:

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.9 ± 6 %	5.22 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	—	—

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.84 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	78.6 W/kg ± 19.9 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	Condition	
SAR measured	100 mW input power	2.22 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.4 W/kg ± 19.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	48.6 Ω - 7.8 j Ω
Return Loss	- 22.0 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.8 Ω - 2.2 j Ω
Return Loss	- 25.9 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	54.8 Ω - 2.7 j Ω
Return Loss	- 25.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.204 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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DASY5 Validation Report for Head TSL

Date: 17.01.2024

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1134

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.65$ S/m; $\epsilon_r = 36.5$; $\rho = 1000$ kg/m³

Medium parameters used: $f = 5600$ MHz; $\sigma = 5.04$ S/m; $\epsilon_r = 36.1$; $\rho = 1000$ kg/m³

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.22$ S/m; $\epsilon_r = 35.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.5, 5.5, 5.5) @ 5250 MHz, ConvF(5.1, 5.1, 5.1) @ 5600 MHz, ConvF(5.01, 5.01, 5.01) @ 5800 MHz; Calibrated: 07.03.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 03.10.2023
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 75.52 V/m; Power Drift = -0.09 dB

Peak SAR (extrapolated) = 26.5 W/kg

SAR(1 g) = 7.88 W/kg; SAR(10 g) = 2.28 W/kg

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 71.1%

Maximum value of SAR (measured) = 18.2 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 73.91 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 29.6 W/kg

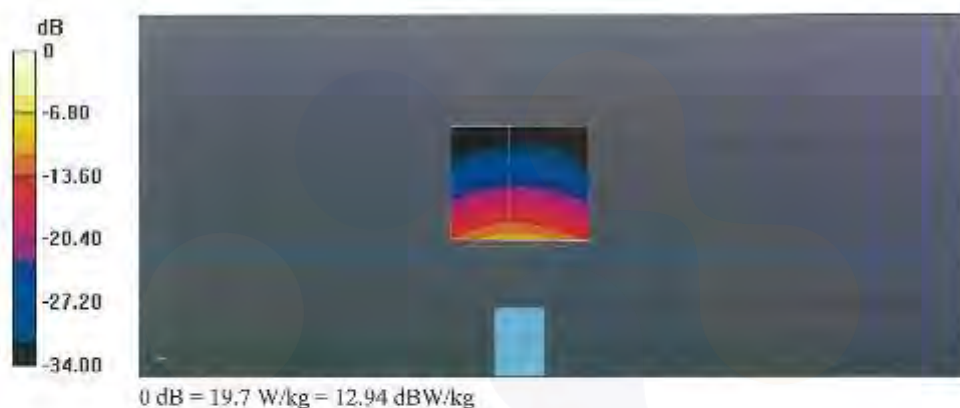
SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.36 W/kg

Smallest distance from peaks to all points 3 dB below = 7.2 mm

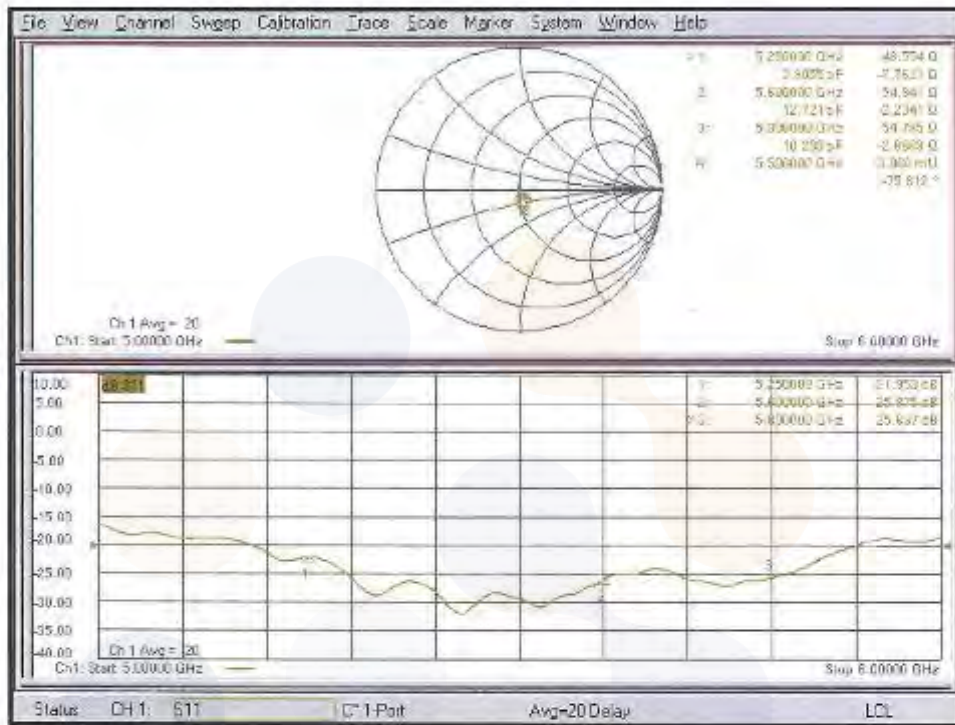
Ratio of SAR at M2 to SAR at M1 = 68.6%

Maximum value of SAR (measured) = 19.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan,
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.16 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 30.0 W/kg
SAR(1 g) = 7.84 W/kg; SAR(10 g) = 2.23 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 66.5%
Maximum value of SAR (measured) = 19.2 W/kg



Impedance Measurement Plot for Head TSL



Appendix A.21 Justification for Extended SAR Dipole Calibrations

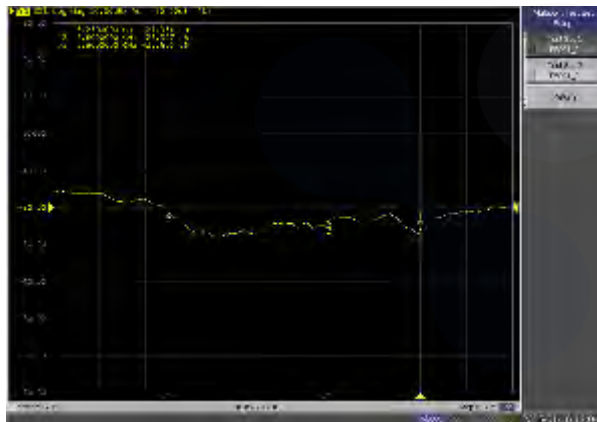
Instead of the typical annual calibration recommended by measurement standards, longer calibration intervals of up to three years may be considered when it is demonstrated that the SAR target, impedance and return loss of a dipole have remain stable according to the following requirements

KDB 865664 D01v01r04 requirements

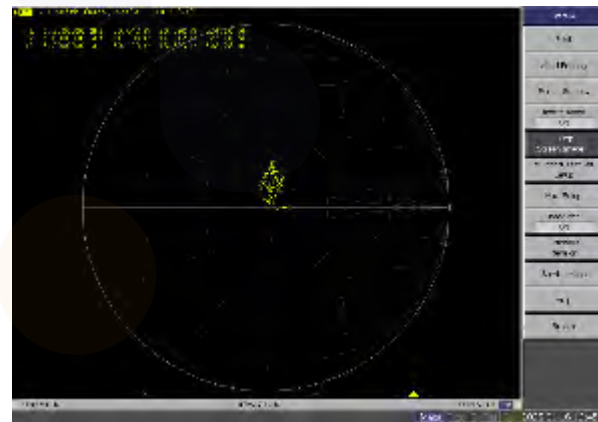
- a) return loss : < - 20 dB, within 20 % of previous measurement
- b) impedance : within 5 Ω from previous measurement.

[D5GHzV2 SN1134]

Dipole Antenna	Head/ Body	Freq. (MHz)	Date of Measurement	Return Loss (dB)	Δ %	Impedance (Ω)	Δ Ω
D5GHzV2 SN 1134	Head	5 250.0	2024-01-17	-21.95	2.73	48.55	1.49
			2025-01-16	-21.35		50.04	
		5 600.0	2024-01-17	-25.88	9.92	54.84	-3.73
			2025-01-16	-23.31		51.11	
		5 800.0	2024-01-17	-25.64	-0.89	54.79	-4.65
			2025-01-16	-25.87		50.14	



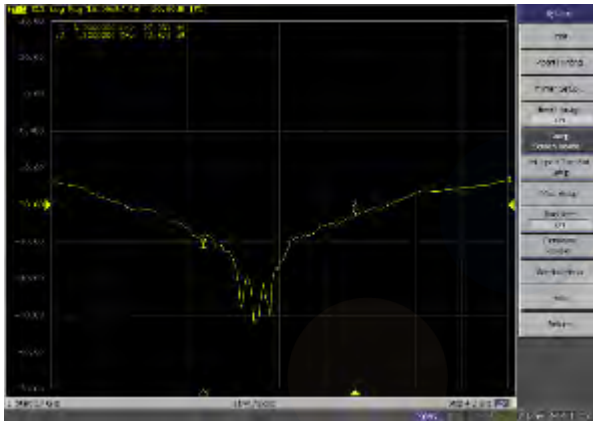
< Figure 1. Measurement result of Head Return Loss>



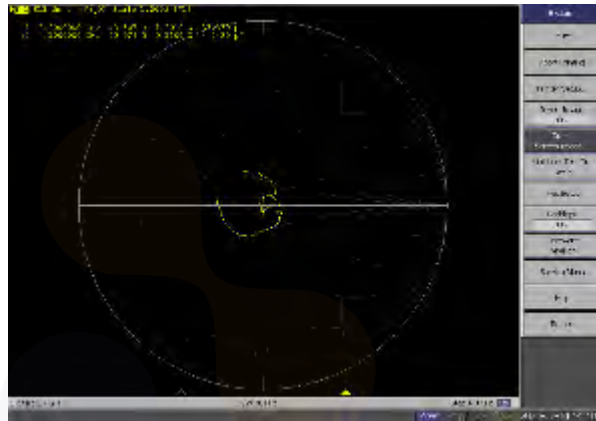
< Figure 2. Measurement result of Head Impedance>

[D3900V2 SN1043]

Dipole Antenna	Head/ Body	Freq. (MHz)	Date of Measurement	Return Loss (dB)	Δ %	Impedance (Ω)	Δ Ω
D3900V2 SN1043	Head	3 900.0	2024-02-15	-27.34	-2.17	47.05	2.46
			2025-02-14	-27.93		49.51	
		4 100.0	2024-02-15	-23.68	3.42	57.00	2.08
			2025-02-14	-22.87		59.08	



< Figure 1. Measurement result of Head Return Loss>



< Figure 2. Measurement result of Head Impedance>