

November 24, 2023

UID	Bev	Communication System Name	Group	PAR (dB)	Ung ^{II} k =
10911	AAB	50 NR (DFT+s-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.93	±9.6
10912	AAB	5G NR (DFTs-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TOD	5.84	±9.6
10913	AAB	5G NR (DFTs-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10914	AAB	5G NB (DFTs OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	5.85	±9.6
10915	AAB	5G NR (DFT=-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	SG NR FR1 TOD	5.83	±9.6
10916	AAB	5G NR (DFT-e-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	5.87	19.6
10917	AAB	5G NR (DFTs-OFDM, 50% RB, 100 MHz, QPSK, 30 KHz)	50 NR FR1 TDD	6.94	±9.6
10918	AAC.	5G NR (DFT-s-OFDM, 100% RB, 5MHz, QPSK, 30 kHz)	56 NR FR1 TDD	5.86	±9.6
10919	AAB	5G NR (DFT+0-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	19.6
10920	AAB	5G NR (DFT-e-OFDM, 100% R8, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TOD	5.87	±0.6
10921	AAB	5G NR (DFT-e-OFDM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	19.6
10922	AAB	5G NR (DFT-s-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	±0.6
10923	AAB	5G NR (DFT-6-OFDM, 100% R8, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10924	AAB	5G NR (DFT-s-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	19.0
10925	BAA	5G NR (DFTs-OFDM, 100% R8, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	28.6
10926	AAB	5G NR (DFT= OFDM, 100% R8, 60 MHz, QPSK, 30 kHz)	50 NR FR1 TDD	the second se	and the second se
10927	AAB	5G NR (DFT-s-OFDM, 100% R8, 80 MHz, QPSK, 30 kHz)		5,84	±9.6
10928	AAC	5G NR (DFT=OFDM, 1 RB, 5 MHz, QPSK, 15 kHz)	50 NR FR1 TDD	5.94	±₩.8
10929	AAC		50 NR FR1 FDD	5.52	±9.6
10930	AAC	5G NR (DFT+ OFOM, 1 R8, 10 MHz, QPSK, 15kHz)	53 NR FR1 FDD	5.52	±9.8
10931	AAC	5G NR (DFT=-OFDM, 1 RB, 15MHz, QPSK, 15HHz)	5G NR FR1 FDD	5.52	29.5
10932	AAC	5G NR (DFT=OFDM, 1 R8, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.6
	AAC	5G NR (DFTs-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.8
10933		5G NR (DFTs-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5,51	±9.6
10934	AAC	5G NR (DFT-e-OFDM, 1 RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	±9.6
10935	AAD	5G NR (DFT-8-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.61	±9.6
10938	AAC	5G NR (DFT-s-OFDM, 50% R8, 5 MHz, QPSK, 15 kHz)	5G NR FR1 FD0	6.90	±9.6
10937	AAC	5G NR (DFTe-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FD0	8.77	±9.6
10938	AAC	5G NR (DFT-s-OFDM, 50% RB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.90	19.6
10939	AAC	5G NR (DFT-s-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.82	19.6
10940	AAC	5G NR (DFT-s-OFDM, 50% RB, 25 MHz, GPSK, 15 kHz)	50 NR FR1 FDD	5.89	±9.6
10941	AAC	5G NR (DFT-e-OFDM, 50% RB, 30 MHz, QPSK, 15 kHz)	50 NR FR1 FDD	5.83	±9.6
10942	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	±9.6
10943	AAD	5G NR (DFT-6-OFDM, 50% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.95	±9.6
10944	AAC	53 NR (DFT-s-OFDM, 100% R8, 5 MHz, QP5K, 15 kHz)	5G NR FR1 FDD	5.81	±9.8
10945	AAC	5G NR (DFT-e-OFDM, 100% R8, 10 MHz, QPSK, 15 kHz)	50 NR FR1 FDD	5.85	±9.6
10946	AAC	5G NR (DFT-e-OFDM, 100% RB, 15 MHz, QPSK, 15 kHz)	50 NR FR1 FDD	5.83	±9.6
10947	AAG	5G NR (OFT-II-OFOM, 100% RB, 20 MHz, OPSK, 15 kHz)	5G NR FR1 FDD	5.87	±9.6
10948	AAC	5G NR (DFT+-OFDM, 100% R8, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	±9.6
10949	AAC:	5G NR (DFTs-OFDM, 100% RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.87	±9.6
10960	AAC.	5G NR (DFTs OFDM, 100% RB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.94	±9.6
10951	AAD.	5G NR (DFT-e-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	SG NR FR1 FDD	5.92	±9.6
10962	AAA.	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.25	19.6
10963	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	19.6
10954	AAA	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 84-QAM, 15 kHz)	5G NR FR1 FDD	8.23	10.0
10955	AAA	5G NR DL (CP-OFDM, TM 3.1, 20MHz, 64-QAM, 15 kHz)	5G NR FR1 FD0	8.42	±9.6
10.956	AAA	5G NR DL (CF-OFDM, TM 3.1, 5 MHz, 84-QAM, 30 kHz)	5G NR FR1 FDD	8,14	29.0
10957	AAA:	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 84-QAM, 30 kHz)	5G NR FRI FDD	8.31	29.0
10958	AAA	53 NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	±9.6
10969	AAA	53 NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.33	the second second second second
10960	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 84-QAM, 15kHz)	SG NR FRI TDD	9.32	19.6
10961	AAB	SG NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	50 NR FR1 TOD		±9.6
10962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 15 kHz)	50 NR FR1 TDD	9.36	±9.0
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)		9.40	±9.6
10954	AAC	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD 5G NR FR1 TDD	9.55	±9.6
10985	AAB	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 54-QAM, 30 KHz)		9.29	±9.6
10966	AAB	5G NR OL (CP-OFDM, TM 3.1, 15MHz, 64-QAM, 30 KHz)	50 NR FR1 TDD	9.37	±9.8
10967	BAA	50 NR DL (CP-OFDM, TM 3.1, 20 MHz, 64-DAM, 30 kHz)	5G NR FR1 TDD	9.55	±9.6
10968	AAB	50 NR DL (CP-OFDM, TM 3.1, 100 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.42	8.9±
10972	AAB	50 NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TOD	9.49	3.6±
10973	AAB	50 NR (DFT-s-OFDM, 1 RB, 100 MHz, QFSK, 36 kHz)	5G NR FR1 TDD	11.59	±9.6
10974	AAB	50 NR (CP-OFDM, 100% R8, 100 MHz, 256-QAM, 30 kHz)	5G NR FR1 TDD	9.06	±9.6
1097E	AAA	ULLA BDR	5G NR FR1 TDD	10.28	±9.6
10978	AAA	ULLA HDR4	ULLA	1,16	±9.6
10990	AAA	ULLA HDRE	ULLA	8.58	±9.6
and the second se	AAA	ULLA HDRp4	ULLA	10.32	±9.6
10981	Contraction of the		ULLA	3.19	±9.6
2890	AAA	ULLA HDRp8	ULLA	3.43	±9.6

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E k = 3
10983	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15kHz)	5G NR FR1 TOD	9.31	19.6
10984	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz)	5G NR FR1 TOD	9.42	+9.6
10985	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)	5G NR FRI TOD	9.54	19.6
10986	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	SG NR FRI TOO	9.50	19.6
10987	AAA	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.53	±9.6
10988	AAA	5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.38	±9.6
10.989	AAA	5G NR DL (CP-OFDM, TM 3.1, 80 MHz, 84-QAM, 30 kHz)	5G NR FR1 TDD	9.33	±9.6
10,990	AAA	5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 kHz)	5G NR FRI TDO	9.52	±9.6
11003	AAA,	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 84-QAM, 15 kHz)	5G NR FR1 TDD	10.24	±9.6
11004	AAA	5G NR DL (CP-DFDM, TM 3.1, 30 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	10.73	±9.6
11,005	AAA	5G NR DL (CP-OFDM, TM 3.1, 25 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.70	±9.6
11005	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-DAM, 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	±9.8
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, 54-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	8.68	±9.6
11013	AAA	IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle)	WLAN	8.47	±9.6
11014	AAA	IEEE 802.11bs (320 MHz, MCS2, 99pc duty cycle)	WEAN	8.45	+9.6
11015	AAA	IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle)	WLAN	B.44	±9.6
11016	AAA.	IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle)	WLAN	8,44	+9.6
11.017	AAA	IEEE 802.11be (320 MHz, MCS5, 99pc duty cycle)	WLAN	8.41	19.6
11018	AAA.	IEEE 802.11be (320 MHz, MCS6, 99pc duty cycle)	WLAN	8.40	+9.8
11019	AAA	IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.8
11020	AAA	IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle)	WLAN	8.27	±9.6
11021	AAA	IEEE 802.11be (320 MHz, MCS8, 98pc duty cycle)	WLAN	8.48	±9.6
11022	AAA	IEEE 802.11be (320 MHz, MCS10, 98pc duty cycle)	WLAN	8.36	+9.6
11023	AAA.	IEEE 802.11be (320 MHz, MCS11, 98pc duty cycle)	WLAN	8.09	+9.6
11024	AAA	IEEE 802.11be (320 MHz, MCS12, 99pc duty cycle)	WLAN	8.42	+8.6
11025	AAA	IEEE 802,11be (320 MHz, MCS13, 99pc duty cycle)	WLAN	6.37	±9.6
11026	AAA	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.

Certificate No. EV.7633 Mauros



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lient HCT Gyeonggi-do, Ri	epublic of Korea	Q	ertificate No.	EX-7751_Oct	123
CALIBRATION C	ERTIFICATE				
DejdO	EX3DV4 - SN:7	751	g. 11 S	1.1	
Calibration procedure(s)	QA CAL-25.v8	, QA CAL-12.v10, edure for dosimet			v6,
Calibration date	October 06, 202	23			
Calibration Equipment used			and the s		- 5 -16
Primary Standards Power meter NRP2	ID SN: 104778	Cel Date (Certific 30-Mar-23 (No. 2			d Calibration
Power sensor NRP-291	SN: 103244	30-Mar-23 (No. 2		Mar-24 Mar-24	
OCP DAK-3.5 (weighted)	SN: 1249	20-Oct-22 (OCP-I			
OCP DAK-12	SN: 1018	20-Oct-22 (OCP-I			
Reference 20 dB Attenuator	SN: CC2552 (20x)	30-Mar-23 (No. 2		Mar-24	
DAE4	SN: 660	16-Mar-23 (No. D		1.0000000000000000000000000000000000000	
Reference Probe ES3DV2	SN: 3013	06-Jan-23 (No. El	53-3013_Jan23)	Jan-24	
Secondary Standards	10	Check Date (in ho	11001	Scheduled	Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in hou			heck: dun-24
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in hou			heck: Jun-24
Power sensor E4412A	SN: 000110210	05-Apr-16 (in hou	se check Jun-22)	In house c	heck; Jun-24
RF generator HP 8648C Network Analyzer E8358A	SN: US3642U01700 SN: US41080477	04-Aug-09 (in hou			heck: Jun-24
TELEVISION PRIMITY AND EDGORPH	Control Contro	31-Mar-14 (in hou	se check (3d1-22)	In house o	heck: Oct-24
	Name	Function		Signature	
Calibrated by	Jeton Kastrati	Laboratory	Technician	-Ue	1
Approved by	Sven Kühn	Technical I	Manager	SE	
This calibration certificate shu	all not be reproduced excep	t in full without written a	pproval of the lat	Issued: Octob poratory.	er 06, 2023
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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Service suisse d'étalonnage Servizio svizzero di taratura Swiss Calibration Service

Accreditation No.: SCS 0108

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

Glossarv

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization # = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz; R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E²-field uncertainty inside TSL (see below CanvF)
- NORM(f)x,y,z = NORMx,y,z * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- . DCPx.y.z: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal. DCP does not depend on frequency nor media.
- PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VBx,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 ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for t > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx, y.z * CorwF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): In a field of low gradients realized using a flat phantom exposed by a patch antenna
- · Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- · Connector Angle: The angle is assessed using the Information gained by determining the NORMx (no uncertainty required).

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Parameters of Probe: EX3DV4 - SN:7751

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k = 2)
Norm (µV/(V/m) ²) A	0.55	0.53	0.60	±10.1%
DCP (mV) B	104.7	106.0	103.1	±4.7%

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dBõV	c	D dB	VR mV	Max dev.	Max Unc ^E k = 2
0	CW	X	0.00	0.00	1.00	0.00	131.8	±3.8%	±4.7%
		Y	0.00	0.00	1.00		149.8		
	Contraction of the Chapter Monthly	Z	0.00	0.00	1.00	in the second	139.9		
10352	Pulse Waveform (200Hz, 10%)	X	1,40	60.00	6.02	10.00	60.0	±3.2%	±9.6%
		Y	1.39	60.00	5.84		60.0	-	
		Z	1.69	61.23	6.75	1	60.0	· · · · ·	
10353	Pulse Waveform (200Hz, 29%)	X	0.93	60.00	5.02	6.99	80.0	±3.0%	±9.6%
		Y	8.00	68.00	7.00		80.0		
	and the second sec	2	0.85	60.00	5.09	-	80.0		
10354	Pulse Waveform (200Hz, 40%)	X	0.54	60.00	4.10	3.98	95.0	±1.8%	±9.6%
		Y	0.52	60.00	3.65		95.0		
		Z	0.47	60.00	3.92		95.0	· · · · ·	
10355	Pulse Waveform (200Hz, 60%)	X	0.34	60.00	3.41	2.22	120.0		±9.69
		Y	16.03	148.13	0.35		120.0		
		Z	14.88	96.89	0.64		120.0	-	
10387	OPSK Waveform, 1 MHz	X	0.72	65.87	13.00	1.00	150.0	±4.2%	±9.6%
		Y	0.61	63.09	11.00		150.0		1.11
		Z	0.61	62.68	11.16		150.0		
10388	OPSK Waveform, 10 MHz	X	1.48	66.66	14.29	0.00	150.0	±1.4%	±9.6%
		Y	1.35	64.86	13.18	1.11.1	150.0	(= 200 il)	=1000
		Z	1.34	84.74	13.13	fi i	150.0		
10396	64-QAM Waveform, 100 kHz	X	1.89	66.67	17.01	3.01	150.0	±0.8%	±9.6%
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Y	1.76	65.29	16.30	222000	150.0		1000
		Z	1.75	64.94	15.83		150.0		
10399	64-QAM Waveform, 40 MHz	X	2.93	66.75	15.19	0.00	150.0	±2.7%	±9.6%
	Construction of the state of th	Y	2.85	65.95	14.71	00000000	150.0	0	
		Z	2.84	65.92	14.64		150.0		
10414	WLAN CODF, 64-QAM, 40 MHz	X	3.97	66.30	15.36	0.00	150.0	±4.7%	±9.6%
	CONTRACTOR OF A	Y	3.92	65.68	15.02	15036460	150.0	SS/SAEVCE:	
		Z	3.87	65.68	14.92		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 effect the E²-field uncertainty inside TSL (see Pages 6 and 6).
 Eunerization parameter uncertainty for maximum specified field strength.
 E Uncertainty is determined using the max, deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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Parameters of Probe: EX3DV4 - SN:7751

Sensor Model Parameters

	C1 IF	C2 1F	V ⁻¹	T1 msV ⁻²	T2 msV ⁻¹	T3 ms	T4 V ⁻²	T5 V ⁻¹	T6
x	11.3	79.07	31.32	7,50	0.00	4.90	0,57	0.00	1.00
y I	12.1	86.61	32.85	6.60	0.00	4.90	0.48	0.00	1.01
2	11.4	79.63	31.15	3.95	0.00	4.90	0.49	0.00	1.00

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle	-81.7°
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 Scarr job.

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Parameters of Probe: EX3DV4 - SN:7751

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity [#] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k = 2)
750	41.9	0.89	9.98	9.98	9.98	0.42	0.93	±12.0%
835	41.5	0.90	9.62	9.62	9.62	0.39	0.80	±12.0%
900	41.5	0.97	9.50	9.50	9.50	0.40	0.87	±12.0%
1750	40.1	1.37	8.47	8.47	8.47	0.29	0.86	±12.0%
1900	40.0	1.40	8.13	8,13	8.13	0.27	0.86	±12.0%
2300	39.5	1,67	7.94	7.94	7.94	0.32	0.90	±12.0%
2450	39.2	1.80	7.71	7,71	7.71	0.32	0.90	±12.0%
2600	39.0	1.96	7.47	7.47	7.47	0.32	0.90	±12.0%
3300	38.2	2.71	6.94	6,94	6.94	0.30	1.30	±14.0%
3500	37.9	2.91	6.87	6.87	6.87	0.30	1.35	±14.0%
3700	37.7	3.12	6.47	6.47	6.47	0.30	1.35	±14.0%
3900	37,5	3.32	6.02	6:02	6.02	0.40	1.60	±14.0%
4950	36.3	4.40	5.66	5.66	5.66	0.40	1.80	±14.0%
5250	35.9	4.71	5.20	5.20	5.20	0.40	1.80	±14.0%
5600	35.5	5.07	4.51	4.51	4.51	0.40	1.80	±14.0%
5750	35.4	5.22	4.70	4.70	4.70	0.40	1.80	±14.0%
5800	35.3	5.27	4.66	4.66	4.66	0.40	1.80	±14.0%

^O Finquency velicity 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 traguency and the uncertainty for the indicated requency band. Frequency validity below 300 MHz is ±10, 25, 40, 50 and 70 MHz is 5-19 MHz. Above 5 GHz traguency validity can be extended to ±10 MHz. The uncertainty is the assessed at 13 MHz is 5-19 MHz. Above 5 GHz traguency validity can be extended to ±10 MHz. The traget values (typically befor than ±3%) and are valid to TSL with deviations of up to ±10%. If TSL with deviations from the target of less than ±5% and used, the calibration uncertainties are 11.1% for 0.7 - 3 GHz and 13.1% for 0.7 - 3 GHz and 13.1% for 0.7 - 3 GHz and 13.1% for 0.7 - 3 GHz.

¹⁰ Alpha/Depth are determined during satisfation. SPEAG wentants 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 3-8 GHz at any distance larger than that the probe tip diameter from the boundary.

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Parameters of Probe: EX3DV4 - SN:7751

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity [#] (S/m)	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k = 2)
6500	34.5	6.07	5.20	5.20	5.20	0.20	2.50	±18.6%

.

^O Fraquency validity at 6.5 GHz is ~600/+700 MHz, and ±700 MHz at or above 7 GHz. The uncertainty is the RSS of the CorwF 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 *z* and *σ* by less than ±10% from the target values (typically better than ±0%) and are valid for TSL with deviations of up to ±10%.

than ±1% for frequencies below 3 GHz; below ±2% for frequencies between 3-6 GHz; and below ±4% for frequencies between 5-10 GHz at any distance larger than half the probe tip diameter from the boundary.

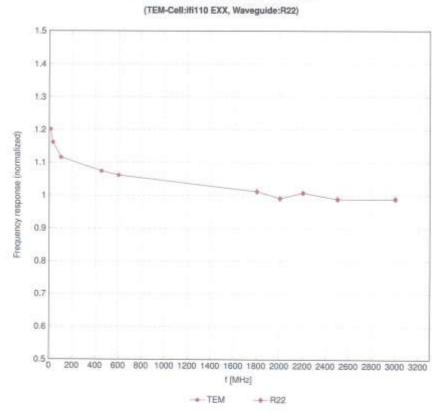
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^O Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less



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Frequency Response of E-Field

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

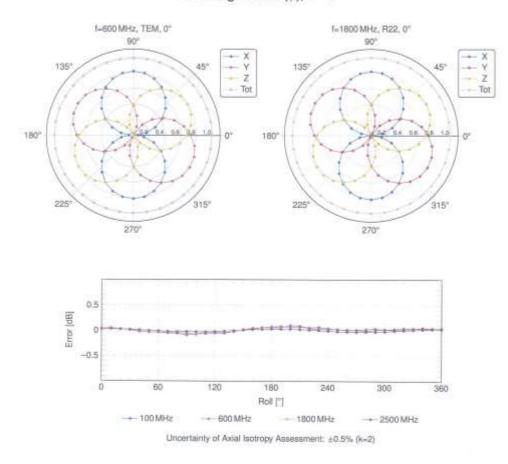
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EX3DV4 - SN:7751



Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$

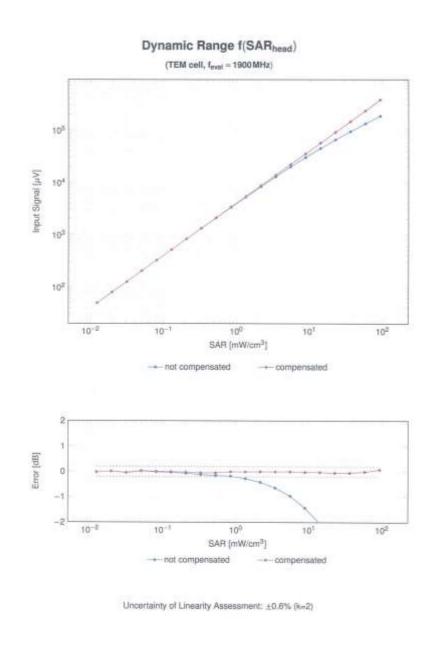
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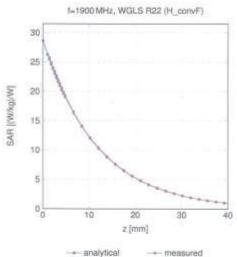
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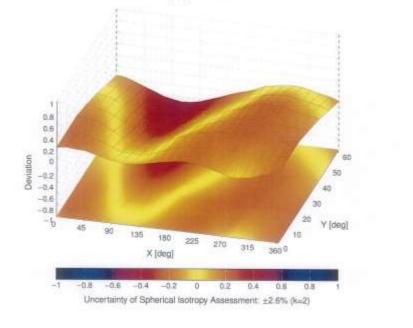


Conversion Factor Assessment

- analysical -- measured

Deviation from Isotropy in Liquid

Error (ϕ, θ) , f = 900 MHz



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Appendix: Modulation Calibration Parameters

UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E k =
. 0		CW.	GW	0.00	±4.7
10010	CAB	SAR Validation (Square, 100 ms, 10 ms)	Test	10.00	±9.6
10011	CAC	UMTS-FOD (WCDMA)	WCOMA	2.91	±9.6
10012	CAB	IEEE 802.11b WIFI 2.4 GHz (DSSS, 1 Mbpk)	WLAN	1.87	+9.6
10013	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 6 Mtxxx)	WLAN	9.46	±8.6
0021	DAC	GSM-FDD (TOMA, GMSK)	GSM	9.39	+8.6
0023	DAC	GPRS-FDD (TDMA, GMSK, TN 0)	GSM	9.57	19.6
0024	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1)	GSM	8.58	±0.6
0025	DAC	EDGE-FDD (TDMA, 8PSK, TN 0)	GSM	12.62	+9.6
0026	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1)	GSM	9.55	+9.6
0027	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2)	GSM	4.80	+9.6
0028	DAC	GPRS-FDD (TDMA, GMSK, TN 0-1-2-3)	GSM	3.55	±9.6
0029	DAC	EDGE-FDD (TDMA, BPSK, TN 0-1-2)	GSM	7.78	+11.6
0030	CAA	IEEE 802.15.1 Bustooth (GFSK, DH1)	Bluelooth	5.30	±0.6
	CAA			1.87	19.6
0031		IEEE 802.15.1 Bluitooth (GFSK, DH3)	Bluetooth		
0.032	CAA	IEEE 802.15.1 Bluetooth (GFSK, DH5)	Bluetooth	1.16	±9.6
0.033	CAA	IEEE 802.15.1 Bluetooth (Pl/4-DOPSK, DH1)	Bluetoath	7,74	±9.6
0034	CAA	IEEE 802 15.1 Bluetooth (PV4-DQPSK, DH3)	Bluetooth	4.53	±9.8
0.095	CAA	IEEE 802.15.1 Bluetooth (Pt/4-DOP5K, DH5)	Bluebooth	3.83	±9.6
0.036	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH1)	Bluetooth	B.01	19.6
10.037	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH3)	Bluehooth	4,77	±9.6
860.01	CAA	IEEE 802.15.1 Bluetooth (8-DPSK, DH5)	Bluetooth	4.10	±9.6
10.039	CAB	COMA2000 (1xHTT, RC1)	CDMA2000	4.57	±0.6
10042	CAB	IS-54 / IS-136 FDD (TDMA/FOM, PV4-DOPSK, Hafrate)	AMPS	7.78	±9.6
10044	CAA	1S-91/EIA/TIA-553 FOD (FOMA, FM)	AMPS	.0.00	±9.6
t0048	CAA	DECT (TDD, TDMA/FDM, GFSK, Full Skit, 24)	DECT	13.00	±9.6
10.049	CAA	DECT (TDD, TDMA/FDM, GFSK, Double Slot, 12)	DECT	10.79	±9.6
10056	CAA	UMTS-TOO (TD-SCOMA, 1.28 Mcps)	TD-SCDMA	11.01	±9.6
10.058	DAC	EDGE-FDD (TDMA, 8PSK, TN 0-1-2-3)	GSM	6.52	19.6
10.058	CAB	IEEE 802.11b WIFI 2.4 GHz (DSSS, 2 Mbps)	WLAN	2.12	±9.6
10,060	CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 5.5 Mbps)	WEAN	2.83	+9.6
10001	CAB	IEEE 802,11b WIFI 2.4 GHz (DSSS, 11 Mbps)	WLAN	3.60	±9.6
590.01	CAD	IEEE 8(2.11am WFr 5 GHz (OFDM, 6 Mbps)	WLAN	8.68	+0.6
10063	CAD	IEEE 802.11a/h WIFI 5 GHz (OFDM, 9 Mbps)	WLAN	8.63	+9.6
10064	CAD	IEEE BOZ 11a/h WIFI 5 GHz (OFDM, 12 Mbps)	WLAN	9.09	+9.6
10065	CAD	IEEE 802.11a/h WFI 5 GHz (OFDM, 18 Mbox)	WEAN	9.00	±9.6
10.066	CAD	IEEE 802.11wh WIFI 5 GHz (OFDM, 24 Mbps)	WLAN	0.38	+9.6
10067	CAD	IEEE 802.11a/h WFI 5 GHz (OFDM, 36 Mbos)	WLAN	10.12	19.6
10068	CAD	IEEE 802.11a/h WFI 5 GHz (OFDM, 48 Mbps)	WLAN	10.24	+9.6
10069	CAD	IEEE 802.11a/h WIFI 5 GHz (OFDM, 54 Mbos)	WLAN	10.56	
10071	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSSIOFDM, 9 Mbps)	WEAN	9.83	±9.8 ±9.6
10072	CAB	IEEE 602 11g WIFI 2.4 GHz (DSSS/DFDM, 12 Mbps)	WLAN	9.62	
10073	CAB	IEEE B02.11g WFi 2.4 GHz (DSSS/OFDM, 18 Mbps)	WLAN		±9.8
10074	CAB	IEEE B02.11g WFI 2.4 GHz (DSSS/OFDM, 24 Mbps)	and the second	9.94	±0.8
10075	CAB	IEEE 832.11g WFI 2.4 GHz (USSS/UFDW, 24 W0ps) IEEE 802.11g WFI 2.4 GHz (DSSS/UFDW, 36 Mbps)	WLAN	10.30	±9.6
10075			WLAN	10.77	±9.6
	CAB	IEEE 802.11g WIFI 2.4 GHz (DSSS/OFDM, 48 Mbps)	WLAN	10.54	±9,8
10077		IEEE 802.11g WFI 2.4 GHz (OSSS/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, Pt/4-DQPSK, Fu/rate)	AMPS.	4.77	±9.6
10090	DAC	GPRS-FDD (TDMA, GMSK, TN 0-4)	GSM	8,56	±9.6
10097	GAC	UMTS-FDD (HSDPA)	WCDMA	3.96	±8;8
10098	EAC	UMTS-FDD (HSUPA, Sublest 2)	WCDMA	3.98	±9,8
10099	DAC	EDGE FDD (TDMA, BPSK, TN 0-4)	GSM	9.55	±9.6
0100	CAF	LTE-FDD (SC-FOMA, 100% RB, 20 MHz, GPSK)	LTE-FDD	5.67	±9.6
0101	CAF	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, 16-QAM)	LTE-FDD	0.42	±9.6
0102	CAF	LTE-FOD (SC-FOMA, 100% RB, 20MHz, 64-QAM)	LTE-FDD	6.60	±0.0
10103	CAH	LTE-TOD (SC-FOMA, 100% RB, 20 MHz, QPSK)	LTE-7DD	9,29	±9.6
0104	CAH	LTE-TDD (SC-FDMA, 100% RB, 20MHz, 18-QAM)	LTE-TDD	9.97	±9.6
10105	CAH	LTE-TOD (SC-FDMA, 100% RB, 20MHz, 64-QAM)	LTE-TDO	10.01	+9.6
10108	CAH	LTE-FOD (SC-FOMA, 100% RB, 10 MHz, OPSK)	LTE-FDO	5.80	±9.0
10.109	CAH	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, 16-OAM)	LTE-FDD	6,43	19.6
10110	CAH	LTE-FDD (SC-FDMA, 100% RB, 5MHz, QPSK)	LTE-FD0	5.75	+9.6
10111	CAH	LTE-FDD (SC-FDMA, 100% RB, 5MHz, 18-QAM)	LTE-FDD	8.44	19.6

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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E k =
10112	CAH	LTE FDD (SC FDMA, 100% RB, 10 MHz, 54-QAM)	LTE-FOD	6.59	±9.6
10113	GAH	LTE-FDD (SC-FDMA, 100% RB; 5 MHz, 64-QAM)	LTE-FDD	6.62	±9.6
10114	CAD	IEEE 802.11n (HT Greenfield, 13.5 Mbps, BPSK)	WLAN	8.10	±9.6
0115	CAD	IEEE 802.11n OT Greenfield, 81 Mbps, 16-QAMI	WLAN	8.48	±.9.8
0116	CAD	IEEE 802.11n (HT Greenfield, 135 Mbps, 84-QAM)	WLAN	8.15	+0.fl
0117	CAD	IEEE 802.110 (HT Mixed, 13.5 Mbps, BPSK)	WLAN	8.07	+9.8
10118	GAD	IEEE 802.11n (HT Mixed, 81 Mbps, 16-GAM)	WLAN	8.59	±9.8
0119	CAO	IEEE 802.11n (HT Mixed, 135 Moos, 64-QAM)	WLAN	8.13	+9.6
0140	CAF	LTE-FDD (SC-FDMA, 100% RB, 15MHz, 16-QAM)	LITE-FDD	6.49	+9.6
0141	CAF	LTE-FOD (SC-FDMA, 100% RB, 15MHz, 64-QAM)	LTE-FDD	6.53	19.6
description, and provide					
0142	CAF	LTE-FOD (SC-FDMA, 100% RB, 3 MHz, QPSK)	LTE-FDD	6.73	±9.fi
0143	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 16-GAM)	LTE-FDD	0.35	±9:0
0144	CAF	LTE-FDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-FDD	6.65	±9.8
0145	CAG	LTE-FDD (SC-FDMA, 100% R8, 1.4 MHz, QPSK)	LTE-FDD	5.76	±9.6
0.146	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-FDD	6,41	±日,日
0147	CAG	LTE-FDD (SC-FDMA, 100% RB, 1.4 MHz, 64-QAM)	LTE-FDD	6,72	±9.6
0149	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-FDD	.6.42	+9.6
0.150	CAF	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, 64-QAM)	LTE-FDD	.6.60	±9:6
0.151	EAH	LTE-TOD (SC-FDMA, 50% BB, 20 MHz, QPSK)	LTE-TDD	9.29	19.6
0152	CAH	LTE-TOD (SC-FDMA, 50% RB, 20 MHz, 16-QAM)	LTE-TDD	9.92	19.6
0153	CAH	LTE-TDD (SC-FOMA, 50% RB, 20 MHz, 64-QAM)	LTE-TDD	10.05	+5.6
0154	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-FDD	5.75	+9.6
0155	CAH	LTE-FDD (SC-FDMA, 50% RE, 10 MHz, 18-QAM)	L7E-FDD	6.43	±9.8
0156	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, QPSK)	LTE-FDD	5.79	+8.8
10157	CAH	LTE-FDD (SC-FDMA, 50% RB, 5 MHz, 16-QAM)	LTE-FDD	6.49	+0.6
0158	CAH	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-FDD	6.62	+9.6
0158	CAH		1 TAT2 2 717		
		LTE-FOD (SC-FOMA, 50% RB, 5 MHz, 64-DAM)	LTE-FDD	0.56	±9.8
09100	CAF	LTE-FDD (SC-FOMA, 50% RB, 15 MHz, QPSK)	LTE-FDD	5.82	±9.8
10161	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 16-QAM)	LTE-FDD	6.43	19.6
0162	CAF	LTE-FDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM)	LTE-FDD	6.58	+9.8
0166	CAG	LTE-FOD (SC-FOMA, 50% RB, 1.4 MHz, QPSK)	LTE-FOD	5.46	±9.6
0167	CAG	LTE-FDD (SC-FDMA, 50% RB, 1.4 MHz; 16-QAM)	LTE-FDD	6.21	±9.6
0198	CAG	LTE-FCD (SC-FOMA, 50% BB, 1.4 MHz, 64-QAM)	LTE-FDD	6.79	±9.8
0189	CAF	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, OPSK)	LTE-FDD	5.73	2.9.6
0170	CAF	LTE-FOD (SC-FDMA, 1 RB, 20 MHz, 15-GAM)	LTE-FDD	6.52	+9.6
10171	AAF	LTE-FDD (SC-FDMA, 1 RB, 28 MHz, 64-CAM)	LTE-FDD	6.49	±9.0
0172	CAH	LTE-TOD (SC-FDMA: 1 RB, 20 MHz, GPSK)	LTE-TDD	9.21	±9.6
0173	CAH	LTE-TOD (SC-FOMA, 1 RE 20 MHz, 16-QAM)	LTE-TOD	9.48	+0.5
0174	CAH	LTE-TOD (SC-FOMA, 1 RB, 20 MHz, 64-QAM)	LTE-TDD	10.25	+0.6
0175	GAH	LTE-FDD (BC-FDMA, 1 RB, 10 MHz, QPSK)	LTE-FDD	5.72	±9.6
0176	CAH	LTE-FDD (SC-FDMA, 1 RB. 10 MHz, 16-QAM)	LTE-FDD	6.52	19.6
0177	CAJ	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, QPSK)	LTE-FDD	5.73	+8.6
0.178	CAH	LTE-FDD (SC-FDMA, 1 RB, 5 MHz, 16-QAM)	LTE-FDD	0.73	
0179	CAH	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, 64-QAM)		- 971 Mile-	±9.6
	CAH		LTE-FDD	6.50	±9.6
0180		LTE-FDD (SC-FDMA, 1 RE, 5MHz, 64-QAM)	LTE-FDD	6.50	±9.6
0.181	CAF	LTE-FDD (SC-FDMA, I RB, 15MHz, QPSK)	LTE-FDO	5.72	±9.6
0.182	CAF	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 16-QAM)	LTE-FDO	6.52	±9.6
0183	AAE	LTE-FDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-FDD	0,50	±9.6
0.184	CAF.	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, GPSK)	LTE-FOO	5.73	±9.6
0.185	CAF	LTE-FDD (SC-FDMA, 1 RB, 3 MHz, 16-QAM)	LTE-FDO	6.51	10.6
0.186	AAF	LTE-FDD (SC-FDMA, 1 R8, 3 MHz, 64-QAM)	LTE-FDD	6.50	::9.6
0.187	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, GPSK)	LTE-FDD	5.73	29.6
8610	CAG	LTE-FDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	LTE-FOD	6.52	±9.6
0189	AAG	LTE-FDD (SC-FDMA, 1 RB, 1,4 MHz, 64-QAM)	LTE-FDD	6.50	19.6
0193	CAD	IEEE 802.11n (HT Greenfield, 6.5 Mbps, 8PSK)	WEAN	8.09	+9.6
0 194	CAD	IEEE 802.11n (HT Greenfield, 39 Mbps, 16-QAM)	WEAN	8.12	±9.6
0 195	CAD	IEEE 802.11n (HT Greenfield, 65 Mbps, 54-QAM)	WLAN	8.21	19.6
0.196	CAD	IEEE 802.11n (HT Mixed, 6.5 Mbps, BPSK)	WEAN	8.10	19.6
0197	CAD	IEEE 802.11n (HT Mixed, 29 Mbps, 18-QAM)	WLAN		and the second sec
0 188	CAD	IEEE B02.11n (HT Mood, 65Mbps, 64-QAM)	102202	8.13	±9.6
0219	CAD		WEAN	8.27	±8.8
		EEE 802.11n (HT Mixed, 7.2 Mbps, BPSK)	WLAN	8.03	±9.6
0220	CAD	IEEE 802.11n (HT Mixed, 43.3 Mbps, 16-QAM)	WLAN	8.13	±9.6
0221	CAD	IEEE 802.11n (HT Mixed, 72.2 Mbps, 64-QAM)	WLAN	8.27	±9.6
0335	CAD	IEEE 802.11n (HT Mixed, 15Mbps, BPSK)	WLAN	8.06	±9.6
0223	GAD	IEEE B02.11n (HT Mixed, 90 Mbps, 16-QAM)	WLAN	8.48	±9.6
0224	CAO	IEEE 802.11n (HT Mixed, 150 Mbps, 64-QAM)	WLAN	8.08	±B.6

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UID	Bev	Communication System Name	Group	PAR (dB)	Unc ^E k =
10225	CAC	UMTS-FDD (HSPA+)	WCDMA	5.97	±8.6
10226	CAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM)	ETE-TDD	9.49	±9.6
10227	CAC	LTE-TDO (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM)	LTE-TOD	10.26	±9.8
10226	CAC	LTE-TDD (SC-FDMA, 1 BB, 1.4 MHz, GPSK)	LTE-TDD	9.22	±9.6
10229	CAE	LTE-TOD (SC-FDMA, 1 RB, 3MHz, 16-QAM)	LTE-TDD	9.48	+9.6
10230	DAE	LTE-TOD (SC-FOMA, 1 RB, 3MHz, 64 QAM)	LTE-TDD	10.25	+9.6
10231	CAE	LTE-TCD (SC-FDMA, 1 RB, 3 MHz, OPSK)	LTE-TDD	9.19	±9.6
0232	CAH	LTE-TDD (SC-FDMA, 1 RB, 5MHz, 16-QAM)	LTE-TDD	9.48	±9.0
0235	CAH	LTE-TOD (SC-FDMA, 1 RB, SMH), 64-QAMI	LTE-TDD	10.25	19.8
10234	CAH	LTE-TDD (SC-FDMA, 1 RB, SMHz, OPSK)	LTE-TDD	0.21	±0.6
0235	CAH	LTE-TOD (SC-FDMA, 1 RB, 10 MHz, 16-QAM)	LTE-TDD	9.48	19.6
0236	CAH	LTE-TDO (SC-FDMA, 1 RB, 10 MHz, 64-QAM)	LTE-TOD	10.25	+0.6
0237	CAH	LTE-TOD (SC-FOMA, 1 RB, 10 MHz, OPSIC)	LTE-TOD	9,21	+9.6
0238	CAG	LTE-TOD (SC-FDMA, 1 RB, 15MHz, 18-QAM)	LTE-TDD	9.48	±9.0
0239	CAG			10.25	
		LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-QAM)	LTE-TOD		±9.6
0240	CAG	LTE-TOD (SC-FOMA, 1 RB, 15 MHz, OPSK)	LTE-TDD	9.21	±9.6
0241	CAC	LTE-TOD (SC-FDMA, 50% RB, 1.4 MHz, 16-QAM)	LTE-TDD	9.82	3.6t
0242	CAG	LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM)	LTE-TDD	9.86	土臣,但
0243	CAC	LTE-TOD (SC-FDMA, 50% RB, 1.4 MHz, QPSK)	LIE-TDD	9.46	\$9.6
0244	CAE	LTE-TOD (SC-FOMA, 50% RB, 3 MHz, 16-QAM)	LTE-TDD	10.06	±8,6
0.245	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 64-QAM)	LTE-TDD	10.06	±9.6
0.246	CAE	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, OPSK)	LTE-TDD	9.30	±9.6
0.247	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 16-DAM)	LTE-TDD	0.01	±9.0
0.248	CAH	LTE-TDD (SC-FDMA, 50% R8, 5 MHz, 64-GAM)	LTE-TDD	10.09	±0.0
0.249	CAH	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, OPSK)	LTE-TOO	9.29	±9.6
0.250	CAH	LTE-TDD (SC-FDMA, S0% RB, 10 MHz, 16-QAM)	LTE-TDD	9.81	±9.6
0.251	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM)	LTE-TDO	10.17	+9.6
0.252	CAH	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	LTE-TOO	9.24	:0.6
0.253	CAG	LTE-TDD (SC-FDMA, 50% FIB, 15 MHz, 16-QAM)	LTE-TDO	9.90	±11.6
0254	CAG	LTE-TDD (SC-FDMA, 50% RB, 15MHz, 64-QAM)	LTE-TDD	10.14	#9.6
0.255	CAG	LTE-TOD (SC-FOMA, 50% RB, 15 MHz, QPSK)	LTE-TDD	9,20	+9.5
0.258	CAC	LTE-TDD (SC-FDMA, 100% RB, 1.4 MHz, 16-QAM)	LTE-TDO	9,96	+9.6
0.257	CAC	LTE TDD (SC-FDMA, 100% FB, 1.4 MHz, 64-QAM)	LTE-TDO	10.08	10.6
0.258	CAC	LTE-TOD ISC-FDMA, 100% RE, 1-4 MHz, QPSR)	LTE-TOO	11.00	19.6
0.259	CAE	LTE-TOD (SC-FDMA, 100% PB, 3 MHz, 16 QAM)	LTE-TOO	9.98	23.6
0.260	CAE	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM)	LTE-TOO	9.97	±9.6
0.261	CAE	LTE-TDD (SC-FDMA, 190% RE, 3 MHz, QPSK)	LTE-TOO	0.24	±9.6
0.262	CAH	LTE-TOD (SC-FDMA, 100% R8, 5MHz, 16-QAM)	LTE-TOD	9.83	#9.6
0.263	CAH	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM)	LTE-TOD	10.16	19.0
0.264	CAH	LTE-TDD (SC-FDMA, 100% RB, 5MHz, OPSK)	LTE-TDO		
11265	CAH	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 18-DAM)		9.23	±9.6
0.266	CAH		LTE-TOO	9.92	19.6
	and a state of some of	LTE-TDD (SC-FDMA, 100% AB, 10 MHz, 64 GAM)	LTE-TOD	10.07	1.0.6
0.267	CAH	LTE-TDD (SC-FDMA, 100% FB, 10 MHz, QPSk)	LTE-TOD	9.30	1,9.6
0.268	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-QAM)	LTE-TOD	10.06	±9.8
0.568	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 64-GAM)	LTE-TOD	10.13	主急非
0270	CAG	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, dPSK)	LTE-TOD	0.58	1.9.6
0274	CAC	UMTS-FDD (HSUPA, Sublest 5, 3GPP Ref8,10)	WCDMA	4.87	±9.8
0275	CAC	UMTS-FDD (HSUPA, Subtest 5, 3GPP Rel8.4)	WCDMA	3.96	±8.8
0277	CAA	PHS (QPSK)	PHS	11.81	±9.6
0278	CAA	PH5 (QPSK, BW 884 MHz, Polloff 0.5)	PHS	11.81	±9.6
0229	CAA	PHS (QPSK, BW 884 MHz, Rolloff 0.38)	PHS	12.18	±9.8
0.680	AAB	CDMA2000, RC1, SO55, Full Rate	CDMA2000	3.91	±9.6
0291	AAB	CDMA2000, RC3, SO55, Full Rate	COMA2000	3.46	土形,街
0282	AAB	CDMA2000, RC3, SC32, Full Rate	COMA2000	3.39	±9.6
0.293	AAB	CDMA2000, RC3, SO3, Full Rate	CDMA2000	3.50	±8.6
0.295	AAB	CDMA2000, RC1, SO3, 1/8h Rate 25 tr.	COMA2000	12.40	±9.0
0297	AAE	LTE-FDD (SC-FDMA, 50% R8, 20 MHz, QPSK)	LTE-FDO	5.81	±9.6
865.0	AAE	LTE-FOD (SC-FDMA, 50% RB, 3 MHz, QPSK)	LTE-FDO	5.72	:9.6
0.299	AAE	LTE-FDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM)	LTE-FDD	6.39	+9.6
0.300	AAE	LTE-FDD (SC-FDMA, 50% HB, 3 MHz, 54-QAM)	LTE-FDO	6.60	+9.6
0.301	AAA	IEEE 802.16e WIMAX (29.18, 5 ms, 10 MHz, QPSK, PUSC)	WMAX	12.83	10.0
9.002	AAA	IEEE 802 16e WIMAX (29:18, 5 ms, 10 MHz, QPSK, PUSC, 3 CTRL symbols)	WMAX	12.57	+9.6
0303	AAA	IEEE 802.16e WIMAX (31.15, 5 ms, 10 MHz, 64QAM, PUSC)	WIMAX	12.52	19.6
0.304	AAA	IEEE 802 16e WIMAX (29:18, 5 ms. 10 MHz, 64 QAM, PUSC)	WIMAX		the second se
0.306	AAA	IEEE 802 16e WIMAX (31:15, 10 ms, 10 MHz, 64QAM, PUBC, 15 symbols)	WINDAX	11,86	±9.6
	AAA	EEE B02.16e WIMAX (29:18, 10ms, 10 MHz, 64QAM, PUBC, 18 symbols)	WINAX	15.24	±9.6 ±9.6

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10307	AAA	IEEE 802.18e WIMAX (29:18, 10 ms, 10 MHz, QPSK, PUSC, 18 symbols)	WIMAX	14.49	29.6
10308	AAA	IEEE 802.16e WIMAX (29-18, 10 ms, 10 MHz, 16QAM, PUSC)	WIMAX	14.46	±9.6
10389	AAA	IEEE 802.16e WIMAX (29:18, 10 me, 10 MHz, 19QAM, AMC 2x3, 18 symbols)	WIMAX	14.58	±9.6
10310	AAA	IEEE 802.18e WIMAX (29:18, 10 ms, 10 MHz, QP5K, AMC 2x3, 18 symbols)	WIMAX	14.57	+9.6
10311	AAE	LTE-FDD (SC-FDMA, 100% RB, 15 MHz, QPSK)	LTE-FDD	8.05	+9.6
10313	AAA	IDEN 1:3	EDEN.	10.51	±9.6
10314	AAA	IDEN 1:6	IDEN .	13.48	±9.8
10315	AAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mops, 96pc duty cycle)	WLAN	1.71	±9.6
10318	AAB	IEEE 802.11g WiFi 2.4 GHz (ERP-OFDM; 6 Mbps, 98pc duty cycle)	WLAN	8,36	+9.6
10317	AAD	IEEE 802.11a WIFI 5 GHz (DFDM, 8 Mops. 96pc duty cycle)	WLAN	8.36	±8.6
10352	AAA	Pulse Waveform (200Hz, 10%)	Generic	10.00	±9.6
10353	AAA	Pulse Waveform (200Hz, 20%)	Generic	6.99	19.6
10354	AAA.	Pulse Waveform (200Hz, 40%)	Generic	3.98	±9.8
10395	AAA	Pulse Waveform (200Hz, 60%)	Generic	2.22	±0.6
10356	AAA	Pulse Waveform (290Hz, 80%)	Generic	0.97	±8.0
10387	AAA	OPSK Waveform, 1MHz	Generic	5.10	±9.6
10388	AAA	QPSK Waveform, 10 MHz	Generic	5.22	±9.6
10,396	AAA	64-QAM Wayafarm, 100 kHz	Generic	£.27	±9.6
10399	444	64-QAM Waveform, 40 MHz	Generic	6.27	±8.6
10.400	AAE	IEEE 802.11ac WiFi (20 MHz, 64 QAM, 99pc duty cycla)	WLAN	6.37	±9.6
10401	AAE	IEEE 802.11ac WiFi (40 MHz, 64-QAM, 99pc duty cycle)	WLAN	8.60	±9:8
10402	AAE	IEEE 802.11ac WIFI (80 MHz, 64-GAM, 99pc duty cycle)	WLAN	8.53	±9.群
10483	AAB	CDMA2000 (1xEV-DD, Rev. 0)	CDMA2000	3,79	±時.目
10.404	AAB	COMA2000 (1xEV-DO, Rev. A)	CD5/A2000	3.77	±8.0
10408	AAB	CDMA2800, RC3, SO32, SCH0, Full Rate	CDMA2008	5.22	±9.8
10410	AAH	LTE-TDD (SC-FDMA, 1 RB. 10 MHz, QPSK, UL Subhane=2,3,4,7,6,9, Subhane Cont=4)	LTE-TOD	7.82	±9.6
10414	AAA	WLAN CODF, 64-QAM, 40 MHz	Generic	8.54	±9.6
10.415	AAA	IEEE 802.116 W/FI 2.4 GHz (0SSS, 1 Mbps, 99pc duty cycle)	WLAN	1.54	主母相
10418	AAA	IEEE 802.11g WIFI 2.4 GHz (ERP-OFOM, 6 Mbps, 98pc duty cycle)	WILAN	8.23	±9.0
10417	AAC	IEEE 802.11a/h WIFI 5 GHJ (OFDM, 6 Mbps, 99pc duty cycle)	WLAN	8.23	主乐日
10418	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 6 Mbps, 99pc duty cycle, Long preembule)	WLAN	8.54	±9.8
10419	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFOM, 6 Mbps, 99pc duty cycle, Short preambule)	WLAN	8,19	±8:0
10422	AAG	IEEE 802.11n (HT Greenleid, 7.2 Mbps, BPSK)	WLAN	8.32	±9.0
13423	AAC	IEEE S02.11n (HT Greenfield, 43.3 Mbps, 16-QAM)	WLAN	8.47	±9.8
10.424	AAC	IEEE 802.11n (HT Greenfeld, 72.2 Mbps, 64 GAM)	WLAN	8,40	+19.8
10425	AAC	IEEE 802.11n (HT Greenfield, 15 Mbps, 8PSK)	WLAN	8.41	1.9±
10426	AAC	IEEE 802.11n (HT Graanfield, 90 Mbps, 18-CAM)	WLAN	8.45	±9.6
10.427	AAC	IEEE 502,11n (HT Greenfield, 150 Mbps, 64-QAM)	WLAN	8.41	±9.8
10430	AAE	LTE-FDD (OFDNA, 5 MHz, E-TM 3.1) LTE-FDD (OFDNA, 10 MHz, E-TM 3.1)	LTE-FDD	8.28	±8.6
10431	AAD		LTE-FDD	.8.38	±9.6
10.433	AAD	LTE-FDD (OFDMA, 15MHz, E-TM 3.1)	LTE-FDD	8.34	±9.6
10433	AAB	LTE-FDD (OFDMA, 26MHz, E-TM 3.1)	LTE-FDD	8,34	19.6
10435	AAG	W-CDMA (BS Text Model 1, 64 DPCH)	WCDMA	8.60	±9.6
10435	AAE	LTE-TOD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe-2,3,4,7,8,9)	LTE-TDO	58,7	±8.5
10.448	AAE	LTE-FDD (OFDMA, 5MHz, E-TM 3.1, Clipping 44%) LTE-FDD (OFDMA, 10MHz, E-TM 3.1, Clippin 44%)	LTE-FDD	7,56	±9.6
10440	AAD	LTE-FDD (OFDMA, 15MHz, E-TM 3.1, Cliping 44%)	LTE-FDD	7,53	±9.6
10450	AAD	LTE-FDD (CFDMA, 2014Hz, E-TM 3.1, Cipping 44%)	LTE-FDD	7.51	±9.6
10451	AAB	W-CDMA (BS Test Model 1, 64 DPCH, Clipping 44%)	LTE-FDD	7,48	±9.6
10453	AAE	Validation (Square, 10ms, 1ms)	WCOMA Test	7,59	±9.6
0456	AAC	IEEE 802.11ac WFI (100 MHz, 64-QAM, 99pc duty cycle)			19.6
0.467	AAB	UMTS-FDD (DC-HSDPA)	WEAN	5,63	8,6
10458	AAA	COMA2000 (1xEVEO, Rev. E, 2 carriers)	CDMA2800	0.62	±9.6
10456	AAA	COMA2000 (1xEV-DO, Hev. 6, 2 camers) COMA2000 (1xEV-DO, Rev. 8, 3 camers)	CDMA2000 CDMA2000		8.8
0460	AAB	UMTS-FDD (WCDMA, AMR)	and a state of the	8.25	19.6
0461	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4MHz, QPSK, UL Subframe-2,3,4,7,8,9)	WCOMA LTE-TDD	2.39	+9.6
0462	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 16-QAM, UL Subhame-2.3,4,7,6,8)	LTE-TOD	8.30	±8.6
0463	AAC	LTE-TDD (SC-FDMA, 1 RB, 1.4 MHz, 64-QAM, UL Subhamer.2.3,4,7,8,9)	and the second state of th		±9.6
0464	AAD	LTE-TDD (SC-FDMA, 1785, 1434Hz, GPSK, UL Subhame-23,4,7,8,9) LTE-TDD (SC-FDMA, 1785, 3MHz, QPSK, UL Subhame-23,4,7,8,9)	LTE-TDD	8.56	19.6
10465	AAD	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 16-QAM, UL Subhame=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3MHz, 16-QAM, UL Subhame=2,3,4,7,8,9)		7,82	±9.6
0466	AAD	LTE-TDD (SC-FDMA, 1 RB, 3MHz, 64-QAM, UL Subfame-2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 3MHz, 64-QAM, UL Subfame-2,3,4,7,8,9)	LTE-TDD	8.32	+9.6
10466	AAG	LTE-TDD (SC-FDMA, 1 HB, SMHz, 64-QAM, DJ, Subhanne-2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 HB, 5MHz, QPSK, UL Subhanne-2,3,4,7,8,9)	LTE-TOD	8.57	3.04
10468	AAG	LTE-TOD (SC-FDMA, 198), 5MHz, GFSR, 0L Subframe=2,3,4,7,8,91 LTE-TOD (SC-FDMA, 1 R8, 5MHz, 18-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.82	19.6
10468	AAG	LTE-TDD (SC-FDMA, 1 HB, 5MHz, 16-QAM, U, Subhame=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 HB, 5MHz, 64-QAM, UL Subhame=2,3,4,7,8,9)	LTE-TDD	8,32	+9.6
10469	AAG	LTE-TDD (SC+DMA, 1 HB, SMHz, S4-QAM, 0, Subhane=2,3,4,7,8,9) LTE-TDD (SC-FDMA, 1 RB, 10MHz, QPSK, UL Subhane=2,3,4,7,8,9)	LTE-TDD	8.56	±9.6
10471	and a second second		LTE-TDD	7.82	±9.8
1.140.1	AAG	LTE-TDD (SC-FDMA, 1 RB, 10 MHz, 18-QAM, UL Subframe=2,3,4,7,8,9)	LTE-TDD	8.32	±9.6

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10472	AAG	LTE-TOD (SC-FDMA, 1 RB, 10 MHz, 64-QAM, UL Subtrame=2,3,4,7,8,9)	LTE-TOD	8.57	±9.6
10:473	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, OPSK, UL Subtrame=2,3,4,7,8,9)	LTE-TOD	7.82	±9.0
0474	AAF	LTE-TDO (SC-FDMA, 3 RB, 15 MHz, 16-CAM, UL Subframe=2.3,4,7,8,8)	LTE-TOD	8.32	±9.6
0475	AAF	LTE-TDD (SC-FDMA, 1 RB, 15 MHz, 64-OAM, UL Subframe=2.3,4,7,8,9)	LTE-TUD	8.57	+9.8
0477	AAG	LTE-TOD (SC-FDMA, 1 RB, 20 MHz, 16-DAM, UL Subframes/2,3,4,7,8,9)	LTE-TOD	8.32	+8.6
0478	AAG.	LTE-TDO (SC FOMA, 1 RB, 20 MHz, 64 OAM, UL Subhame: 2,3,4,7,8,9)	LIE-TOD	8.57	+9.0
0479	AAC	LTE-TDD (SC FDMA, 50% RB, 1.4 MHz, QPSK, UL Subframe+2.3,4,7.8.9)	LTE-TDD	7.74	±9.6
0480	AAC	LTE-TOD (SC-FDMA, 58% RB, 1.4 MHz, 16-QAM, UL Subhame-2.3.4.7.8.9)	LTE-TDD	8.18	
0481	AAC				\$9.6
		LTE-TDD (SC-FDMA, 50% RB, 1.4 MHz, 64-QAM, UI, Subhame-2.3.4,7,8.9)	LTE-TDD	8.45	±9,6
0.482	AAD	LTE-TOD (SC-FDMA, 60% RB, 3 MHz, QPSK, UL Subframe+2.3,4,7,8,9)	LTE-TOD	75.71	±9.6
1483	AAD	LTE-TDD (SC-FDMA, 50% RB, 3 MHz, 16-QAM, UL Subtramo-2,3,4,7,8,9)	LTE-TDD	6.39	±9.6
0484	AAD	LTE-TDD (SC-FDMA, 58% FIB, 3 MHz, 64-QAM, UL Subhame~2,3,4,7,8,9)	LTE-TOD	8.47	19.6
0.485	AAG.	LTE-TDD (BC-FDMA, 50% RB, 5 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.59	士班.日
0.486	-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
0.487	ANG	LTE-TDD (SC-FDMA, 50% RB, 5 MHz, 64-QAM, UL Subhame-2,3,4,7,8,9)	LTE-TOD	8.60	±9.6
0.488	AAG	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, GPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDD	7.70	±8.6
3489	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
0.490	DAA:	LTE-TDD (SC-FDMA, 50% RB, 10 MHz, 64-QAM, UL Subhame-2,3,4,7,8,9)	LTE-TDD	8.54	±9.6
0491	AAF	LTE-TOD (SC-FOMA, 50% RB, 15MHz, QPSK, UL Subframe=2.3,4,7,8,9)	LTE-TOD	7.74	19.6
5840	AAF	LTE-TOD (SC-FDMA, 58% RB, 15 MHz, 16 QAM, UL Subframe-2,3,4,7,8,9)	LTE-TDD	0.41	+9.6
0493	AAF	LTE-TDD (SC-FDMA, 50% RB, 15 MHz, 64-QAM, UL Subtrame-2,3,4,7,8,9)	LTE-TDD	8.55	+8.6
0494	AAG	LTE-TDD (SC-FDMA, 50% RB, 20 MHz, QPSK, UL Subframe-2.3,4,7,8,9)	LTE-TDD	7.74	±9.6
0.495	AAG	LTE-TOD (SC-FDMA, 50% RB, 20 MHz, 16-QAM, UL Subhame-2, 3, 4, 7, 8, 9)	LTE-TDO	8.37	±0.6
0496	AAG	LTE-TDD (SC-FDMA, 58% RB, 20 MHz, 64-QAW, UL Subframe=2,3,4,7,8,9)	LTE-TDO	8.54	+8.6
0497	AAG	LTE-TOD (SC-FDMA, 100% FIB, 1.4 MHz, QPSK, UL Subframe=2,3.4,7,8,9)	1.TE-T00	7.67	19.6
6498	AAC	LTE-TDD (SC-FDMA, 100% PB, 1.4MHz, 16-QAM, UL Subtrame-2.3,4,7,8,9)	LTE-TDO		
0 499	AAC	LTE-TOD (SC-FDMA, 100% RB, 1.4MHz, 64-QAM, U. Subrame-2.1.4,7.8.9)	LTE/TDD	8.40	+9.6
0.500	AAD	LTE-TOD (SC-FDMA, 100% RB, 3MHz, QPSK, UL Sobrame-2,3,4,7,8,9)	and the second se	8.68	±9.6
0.501	AAD		LTE-TOD	7.67	±9.6
0.502	AAD	LTE-TDD (SC-FDMA, 100% AB, 3 MHz, 16-QAM, UL Subhame=2,3,4,7,8,9)	LTE-TOD	8.44	±9.6
	AAG	LTE-TDD (SC-FDMA, 100% RB, 3 MHz, 64-QAM, UL Subtrame=2.3.4,7,8.9)	LTE-TOD	8.52	28,6
0.500		LTE-TDD (SC-FDMA, 100% FB, 5MHz, QPSK, UL Subframe-2,3,4,7,8,9)	LTE-TOO	7,72	19.6
0.504	AAG	LTE-TDD (SC-FDMA, 100% HB, 5MHz, 16-QAM, UL Subhame+2,3,4,7,8,9)	LTE-TOO	8.31	±9.6
0.505	AAG	LTE-TDD (SC-FDMA, 100% RB, 5 MHz, 64-QAM, UL Subfraine=2,3,4,7,8,9)	LTE-TOO	0.54	±9.6
0.506	EVA	LTE-TDD (SC-FDMA, 100% R8, 10 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TED	7.74	±9.6
0.507	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 18-DAM, UL Subframe=2,3,4,7,8,8)	LTE-TOD	8.36	±9.6
8,02.0	AAG	LTE-TDD (SC-FDMA, 100% RB, 10 MHz, 64-DAM, UL Subtrame=2,3,4,7,8,9)	LTE-TOD	8.55	19.6
1508	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, QPSK, UL Subframe=2,3,4,7,8,9)	LTE-TDO	7.99	+9.6
0510	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 16-GAM, UL Subtrame=2,3,4,7,8,9)	LTE-TOD	0.49	+9.6
0511	AAF	LTE-TDD (SC-FDMA, 100% RB, 15 MHz, 84-QAM, UL Subtrame=2,3,4,7,8,9)	LTE-TOD	8.51	+8.8
0.512	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, QPSK, UL Subhame=2,3,4,7,8,9)	LTE-TOD	7.74	±9.8
0513	AAG	LTE-TDD (SC-FDMA, 100% RB, 20 MHz, 16-OAM, UL Subhame-2,3,4,7,8,9)	LTE-TOD	8.42	+9.6
0514	AAG	LTE-TOD (SC FDMA, 100% RB, 20 MHz, 64-QAM, UL Subframe-2.3.4.7.8.9)	LTE-TDD	8.45	+8.0
0515	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 2 Mbps, 99pc duty cycle)	WLAN	1.58	±9.8.
0516	AAA	IEEE 802.11b WIFI 2.4 GHz (OSSS, 5.5 Mbps, 99pc duty cycle)	WLAN	1.57	±9.6
0617	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 11 Mbps, 99pc duty cycle)	WLAN	1.50	+9.6
05tB	AAC	IEEE 802.11a/h WFI 5 GHz (OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.23	+9.6
0519	AAC	IEEE 802.11wh WFI 5 GHz (OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.39	
0520	AAC	IEEE S02.11a/h WFi 5 GHz (OFDM, 18 Mbps, 99pc duty cycle)	WLAN		±9.8
0521	AAC	IEEE 802.11ah WFI 5 GHz (OFDM, 24 Mbps, 99pc duty cycle)		8.12	±9.6
0522	AAC	IEEE 802,11ah WFI 5 GHz (OFDM, 24 Mops, Wept duty cycle)	WLAN	7.97	土豆,有
0523	AAC		WLAN	8.45	±9,8
0523	AAC	IEEE 802 11a/h WFI 5 GHz (OFDM, 48 Mops, 99pc duty cycle)	WLAN	8.08	±8:0
	1.0.00	IEEE S02.11a/h WIFISGHz (OFDM, 54 Mops, 99pc duty cycle)	WLAN	8.27	±9,6±
525	AAC	IEEE 802.11ac WIFI (20 MHz, MCS0, 99pc duty cycle)	WLAN	8.36	+9.5
526	AAC	IEEE 802.11ac WIFI (20 MHz, MCS1, 99pc duty cycle)	WLAN	8.42	±9.6
527	AAC	IEEE 802.11ac Willi (20 MHz, MCS2, 95pc duty cycle)	WLAN	8.21	±9.6
528	MAC	IEEE 802.11ac WIFI (20 MHz, MCS3, 99pc duty cycle)	WLAN	8.90	±0.6
529	AAC	IEEE 802 11 ac WIFI (20 MHz, WCS4, 99pc duty cycle)	WLAN	0.36	:0.6
3531	AAC	IEEE 802 11ac WIFI (20 MHz, MCS6, 99pc duty cycle)	WLAN	8,43	:9.6
1532	AAC	IEEE 802.11ac WIFI (20 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	±9.6
(633	AAC	IEEE 802.11ac WIFI (20 MHz; MCS8, 99pc duty cycle)	WLAN	8.38	±9.6
1534	AAC	IEEE 802.11ac WFI (40 MHz, MCS0, 99pc duty cycle)	WLAN	8.45	+9.6
3635	AAG	IEEE 802.11ac WIFI (40 MHz, MCS1, 98pc duty cycle)	WLAN	8.45	±9.6
0600	AAC	IEEE 802.11ac WIFI (40 MHz, MCS2, 99pc duty cycle)	WLAN	8.32	±9.6 ±9.8
0537	AAC	IEEE 802.11ac WIFI (40 MHz, MCB3, 99pc duty cycle)	WLAN	8.44	±0.6
538	AAC	IEEE 802.11ac WiFi (40 MHz, MC54, 98pc duty cycle)	WLAN	8,44	
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UID	Bev	Communication System Name	Group	PAR (dB)	Unc ^E # =
10541	AAC	IEEE 802.11ac WIFI (40 MHz, MCS7, IIBpc duty cycle)	WLAN	8.46	±0.6
10542	AAD	IEEE 802.11ac WIFI (40 MHz, MCS8, 99pc duty cycle)	WLAN	8,65	±8.6
10543	AAC	IEEE 802,11ac WIFI (40 MHz, MCS8, 99pc duty cycle)	WILAN	8,65	±9.6
0544	AAC	IEEE 802.11ac WiFi (80 MHz, MCS0, 98pc duty cycle)	WLAN	8,47	±9.6
0545	AAC	IEEE 800.11ac WiFi (80 MHz, MCS1, 90pc duty cycle)	WLAN	8.55	+9.6
0546	AAG	IEEE 802.11ac WIFI (80 MHz, MCS2, 98pc duty cycle)	WLAN	8.35	+9.6
0547	AAC	IEEE 802.11ac WIFI (80 MHz, MCS3, 98pc duty cycle)	WLAN	5,49	±9.6
0548	AAC	IEEE 802.11ac WIFI /80 MHz, MCS4, 99pc duty cycle)	WLAN	8.37	±9.6
0550	AAC	IEEE 802.11ec WiFi (60 MHz, MCS6, 90pc duty cycle)	WLAN	8.38	19.6
0551	AAC	IEEE 802.11ac WIFI (80 MHz, MCS7, 98pc duty cycle)	WEAN	8.50	±0.6
0552	AAC	IEEE 802.11ac WIFI (80 MHz, MCS8, 98pc duty cycle)	WLAN	8.42	±8.6
0553	AAC	IEEE 802.11ac WiFi (80 MHz, MCS9, 99bc duty cycle)	WLAN	8.45	±9.6
0554	AAD	IEEE 802.11ac WiFi (160 MHz, MCS0, 99pc duty cycle)	WLAN	8.48	19.6
0555	AAD	IEEE 802 11 ac WFI (160 MHz, MCS1, 98pc duty cycle)	WEAN	8.47	+9.6
0556	AAD	IEEE 802 11ac WFI (160 MHz, MCS1, Mpc duty cycle)	WEAN	8.50	19.6
0557	AAD		WLAN	8,50	+9.6
		IEEE 802.11ac WIFI (160 MHz, MCS3, 99pc duty cycle)			
0555	AAD	IEEE 802.11ac WIFI (160 MHz, MCS4, 99pc duty cycle)	WLAN	8.61	±9.6
0580	AAD	IEEE 802.11ac WIFI (160 MHz, MCS6, 99pc duty cycle)	WEAN	8.73	±9.6
0561	AAD	IEEE 802.11ac WIFI (160 MHz, MCS7, 90pc duty cycle)	WLAN	8.56	±0.6
0562	AAD	IEEE 802.11ac WIFI (160 MHz, MCS8, 99pc duty cycle)	WLAN	8.69	土泉.日
0563	AAD	IEEE 802.11ac WIFI (160 MHz, MCS9, 99pc duty cycle)	WLAN	8.77	±9,6
0584	AAA	IEEE 802.11g WFi 2.4 GHz (DSSS-OFDM, 9 Mbps, 99pc duty cycle)	WLAN	8.25	±9.6
0565	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 12 Mbps, 99pc duty cycle)	WLAN	8.45	±9.6
0566	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 99pc duty cycla)	WLAN	8.13	±9,6
0567	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 24 Mbps, 99pc duty cycle)	WLAN	8.00	±9.6
0568	AAA	IEEE 802.11g WIFi 2.4 GHz (DSSS-OFDM, 30 Mbps, 99pc duty cycle)	WLAN	8.37	±0.6
0589	AAA	IEEE 802.11g W/Fi 2.4 GHz (DSSS-OFDM, 48 Mbps, 99pc duty cycle)	WEAN	8.10	±9.6
0570	AAA	IEEE 802.11g W/FI 2.4 GHz (DSSS-OFDM, 54 Mbps, 99pc duty-cycle)	WLAN	8.30	±9.6
0571	AAA	IEEE 802.116 WFI 2.4 GHz (OSSS, 1 Mbps, 90pc duty cycle)	WLAN	1.96	±9.6
0572	AAA	IEEE 802.11b W/Fi 2.4 GHz (DSSS, 2 Mbps, 90pc duty cycle)	WLAN	1.99	±9.6
0573	AAA	IEEE 802.11b WFI 2.4 GHz (DSSS, 5.5 Mbps, 90pc duty cycle)	WLAN	1.98	+9.6
0574	AAA	IEEE 802.11b WIFI 2.4 GHz (DSSS, 11 Mbps, 90pc duty cycle)	WLAN	1.98	+9.6
0575	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS-OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	+9.6
0578	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 9 Mbps, 90pc duty cycle)	WLAN	8.60	+9.6
0677	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS OFDM, 12 Mbos, 90pc duty cycle)	WLAN	8.70	+9.6
0578	AAA	IEEE 802.11g WIFI 2.4 GHz (DSSS-OFDM, 18 Mbps, 90pc duty cycle)	WLAN	8.40	±0.6
0579	AAA	IEEE 802.11g WFi 2.4 GHz (DSSS-OFDM, 24 Mbgs, 90pc duty cycle)	WEAN	8.36	+0.6
0680	AAA	IEEE 802.11g WiFi 2.4 GHz (DSSS-OFDM, 36 Mbps, 90pc duty cycle)	WLAN	8.76	+8.6
0581	AAA	IEEE 802.11g WFi 2.4 GHz (DSSS-OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±0.6
0582	AAA	IEEE 802.11g WFI 2.4 GHz (DSSS-OFDM, 54 Mbps, 90pc duty cycle)	WLAN	8.67	±9.6
0583	AAC	IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps, 90pc duty cycle)	WLAN	8.59	
0584	AAC	IEEE 802.11ah WFI 5 GHz (OFDM, 9 Mbps, 90pc duty cycle)	WEAN	6.60	19.6
0585	AAC	IEEE 802.11a/h WFI 5GHz (OFDM, 12 Mpps, 90pc duty cycle)	1022 2007 0		±9.6
0585	AAC	IEEE and that WE COLL (CEDIA 1948 and Strands)	WLAN	8.70	±0.0
		IEEE 802.11a/t WFI 5 GHz (OFDM, 18 Mops, 90pc duty cycle)	WLAN	8.49	±9.0
0587	AAC	IEEE 808.11a/h WIFI 5 GHz (OFDM, 24 Mbps, 90pc duty cycle)	WLAN	8.36	±0,8
0588	AAC	IEEE 802.11wh WiFi 5 GHz (OFDM, 36 Mops, 90pc duty cycle)	WLAN	8.76	±8.6
0589	AAC	IEEE 802.11a/h WiFi SGHz (OFDM, 48 Mbps, 90pc duty cycle)	WLAN	8.35	±8.0
0590	AAC	IEEE 802.11a/h WFI 5 GHz (CFDM, 54 Mbps, 90pc duty cycle)	WLAN	8,87	±9.6
0.591	AAG	IEEE 802.11n (HT Mixed, 20 MHz, MCS0, 90pc duty cycle)	WLAN	8.63	±9.6
0.592	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±9.6
0.593	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS2, 90pc duty cycle)	WLAN	0.64	±9.6
0.594	AAC .	IEEE 802.11n (HT Mixed, 20 MHz, MCS3, 90pc duty cycle)	WLAN	8,74	± 9.6
0.595	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MC64, 90pc duty cycle)	WLAN	8,74	±9.6
0,596	AAC	IEEE 802 11n (HT Mixed, 20 MHz, MCS5, 90pc duty cycle)	WLAN	B.71	±9.6
0.597	AAC,	IEEE 802.11n (HT Mixed, 20 MHz, MCS6, 90pc duty cycle)	WLAN	8.72	±9.6
0.598	AAC	IEEE 802.11n (HT Mixed, 20 MHz, MCS7, 90pc duty cycle)	WLAN	8.50	±9.8
0.599	AAC	IEEE 002 11n (HT Mixed, 40 MHz, MCSD, 90pc duty cycle)	WLAN	11.79	8.6±
0000	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS1, 90pc duty cycle)	WLAN	8.88	±9.6
0.60t	AAC	IEEE 802 11 n (HT Mixed, 40 MHz, MCS2, 90pc duty cycle)	WLAN	8.82	±9.6
0.002	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS3, 90pc duty cycle)	WLAN	8.94	8.64
0603	AAC	IEEE 902.11n (HT Mixed, 40 MHz, MCS4, 90pc duty cycle)	WLAN.	8.03	+9.6
0-604	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS5, 90pc duty cycle)	WLAN	8.76	±9.6
0.605	AAC	IEEE 802 11n (HT Mixed, 40 MHz, MCS6, 80pc duty cycle)	WLAN	8.97	±9.6
0606	AAC	IEEE 802.11n (HT Mixed, 40 MHz, MCS7, 90pc duty cycle)	WLAN	8.82	19.6
0607	AAC	IEEE 802 11 ac WFI (20 MHz, MCS9, 90pc duty cycle)	WLAN	8.64	
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UID	Rev	Communication System Name	Group	PAR (dB)	Unc ^E K =
609.01	AAC	IEEE 802.11ac WFI (20 MHz, MCS2, 90pc duty cycle)	WLAN	8.67	±8.6
0.60	AAC	IEEE 802.11ac WIFI (20 MHz, MCS3, 90pc duty cycle)	WLAN	8.79	±8.8
0.611	AAC	IEEE 802.11ac WIFI (20 MHz, MCS4, 90pc duty cycle)	WLAN	8.70	±9.8
\$780	AAC.	IEEE 802 11ac WIFI (20 MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.5
0613	AAC	IEEE 802.11ac WFI (20 MHz, MCS6, 90pc duty cycle)	WLAN	8.94	±9.8
0614	AAC	IEEE 802.11ac WFI (20 MHz, MCS7, 90pc duty cycle)	WLAN	8.59	±9.6
0615	AAC	IEEE 002.11ac WIFI (20 MHz, MCS8, 90pc duty type)	WLAN	0.82	±9.6
0-616	AAC	IEEE 802.11ac WIFI (40 MHz, MCS0, 90pc duty cycle)	WLAN	8.82	±9.0
0617	AAC	IEEE 802.11ac WIFI (40 MHz, MCS1, 90pc duty cycle)	WLAN	8.81	+9.6
8180	AAC	IEEE 802.11ac WFI (40 MHz, MCS2, 90pc duty cycle)	WLAN	8.58	±9.6
0.619	AAC	IEEE 802 11ac WIFI (40 MHz, MCS3, 90pc duty cycle)	WLAN	8.66	±9.0
0.620	AAC	IEEE 802 11ac WIFI (40 MHz, MCS4, 90pc duty cycle)	WLAN	8.87	±9.8
0.621	AAC	IEEE 802 11ac WIFI (40 MHz, MCS5, 90pc duty cycle)	WLAN	8.77	±9.6
0.622	AAG	IEEE 802.11as WIFi (40 MHz, MCS8, 90pc duty cycle)	WLAN	8.68	±9.6
653	AAC	IEEE 802.11ac WIFI (40 MHz, MCS7, 90pc duty cycle)	WLAN	8.82	19.6
0.624	AAC	IEEE 802.11ac WIFI (40 MHz, WCS1, 50pc duty cycle)	WLAN	8.99	and the second se
0.625	AAC		1.0000000		19.6
		IEEE 802.11ac WIFI (40 MHz, MCS9, 90pc duty cycle)	WLAN	8.96	±8.8
0.626	AAG	IEEE 802.11ac WIFI (80 MHz, MCS0, 90pc duty cycle)	WLAN	8.83	±9.6
0.627	AAC	IEEE 802.11ap W/FI (80 MHz, MCS1, 90pp duty cycle)	WLAN	8.88	±9.8
0.628	AAC	IEEE 802.11ac WiFi (80 MHz, MCS2, 90pc duty cycle)	WLAN	8,71	±8.6
0.629	AAC	IEEE 802.11ac WiFi (80 MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±8,8
0.630	ANC	IEEE 802.11ac WIFI (80 MHz, MCS4, 90pc duty cycle)	WLAN	8,72	±9.6
0.631	AAC	IEEE 802.11ac WIFI (80 MHz, MCS5, 90pc duty cycle)	WLAN	8.81	±9.6
0.63%	AAC	IEEE 802 11ac WIFI (80 MHz, MCS6, 90pc duty cycle)	WLAN	8,74	19.6
0.633	AAC	IEEE 802 11ac WIFI (80 MHz, MCS7, 90pc duty cycle)	WLAN	8.83	+9.6
0-634	AAC .	IEEE 802.11ac WFI (80 MHz, MCS8, 90pc duty cycle)	WLAN	8.80	+8.6
0.635	AAC	IEEE 802.11ac WIFI (80 MHz, MCS9, 90pc duty cycle)	WEAN	8.81	±9.6
0636	AAD	IEEE 802.11ac WiFi (160 MHz, MCS0, 90pc duty cycle)	WEAN	8.83	±0.6
0637	AAD	IEEE 802.11ac WFI (160 MHz, MCS1, 90pc duty cycle)	WLAN	8.79	±0.6
0638	AAD	IEEE 802.11ac WFI (160 MHz, MCS2, 90ac duty cycle)	WLAN	8.86	+9.6
8690	GAA	IEEE 802.11ac WIFI (160 MHz, MCS3, 90pc duty cycle)	WLAN	8.85	±9.6
0640	AAD	IEEE 802.11a:: WIFI (160 MHz, MCS4, 90pc duty cycle)	WLAN	0.98	+9.6
0641	AAD	IEEE 802.11ac WFI (160MHz, MCS5, 90ac duly cycle)	WEAN	8.06	±9.6
0642	AAD	IEEE 802.11 ac WFI (160 MHz, MC86, 90pc duty cycle)	WLAN	9.06	+9.6
0643	AAD	IEEE 802 11ac WFI (160 MHz, MCS7, 90pc duty cycle)	WLAN	8.89	±8.6
0644	AAD	IEEE 802 11ac WFI (160 MHz, MCS8, 90pc duty cycle)	WLAN	9.05	±9.6
0648	AAD	EEE 802.11ac WFI (160 MHz, MCS9, 90pc duty cycle)	WLAN	9.11	19.6
0646	AAH	LTE-TDD (SC-FDMA, 1 R8, 5 MHz, QPSK, UL Subtramo-2,7)	LTE-TDD	11.96	19.6
0647	AAG	LTE-TDD (SC-FDMA, 1 R8, 20 MH); OPSK, UL Subtrame=2,7)	LTE-TDD		
0648	AAA	CDMA2600 (1x Advanced)	CDMA2000	11,86	±9.6
0652	AAF	LTE-TDD (OFDMA, 5MHz, E-TM 3.1, Clipping 44%)		3.45	±9.6
0653	AAF		LTE-TOD	5.91	±9.6
		LTE-TDD (OFDMA, 10 MHz, E-TM 3.1, Cipping 44%)	LTE-TOD	7,42	±9,6
0654	AAE	LTE-TDO (OFDMA, 15 MHz, E-TM 3.1, Olipping 44%)	LTE-TDD	6.96	±8.6
0655	AAF	LTE-TDD (OFDMA, 29 MHz, E-TM 3.1, Gloping 44%)	LTE-TDD	7.21	土井, 0
0658	AAB	Pulse Waveform (200Hz, 10%)	Test	10.00	±9,6
0659	AAB	Pulse Wavelorm (200Hz, 20%)	Test	6,99	±9.6
2665	AAB	Pulse Waveform (200Hz, 40%)	Test	3,98	土田,田
1661	AAB	Pulse Waveform (200Hz, 60%)	Test	2.22	±9,8
0.665	AAB	Pulse Waveform (200Hz, 80%)	Test	0.97	±9.6
3670	AAA;	Bluetooth Low Energy	Bluetpoth	2.19	±9.0
067T	AAC.	IEEE 802.11 ax (20 MHz, MCS0, 90pc duty cycle)	WLAN	9,09	±9.6
3672	AAC:	IEEE 802.11ax (20 MHz, MCS1, 90pc duty cycle)	WLAN	0.57	±9.6
1673	AAG	IEEE 802.11 Ax (20 MHz, MCS2, 90pc duty cycle)	WLAN	8.78	±9.8
1674	AAC	IEEE 802.11 ax (20 MHz, MCS3, 90pc duty cycle)	WLAN	H.74	±9.6
(675	AAC	IEEE 802.11ax (20 MHz, MCS4, 90pc duty cycle)	WLAN	8.90	+9.6
1676	AAC	IEEE 002.11ax (20 MHz, MCSS, 90pc duty cycle)	WLAN	8.77	+9.6
1677	AAC.	IEEE 802.11as (20 MHz, MCS6, 90pc duty cycle)	WLAN	8.73	±9.6
0678	AAC	IEEE 002.11ax (20 MHz, MCS7, 90pc duty cycle)	WLAN	8.78	+9.6
0679	AAC	IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle)	WLAN	8.89	±9.6
0680	AAC	IEEE 802.11ax (20 MHz, MCS8, 90pc duty cycle)	WLAN	8.80	±9.6
0681	AAC.	IEEE 802.11ax (20 MHz, MCE10, 90pc duty cycle)	WEAN	8.62	±9.6
0682	AAC	IEEE 802.11ax (20 MHz, MCIS11, 90pc duty cycle)	WLAN	8.62	±9.8 ±5.8
0683	AAC	IEEE 802.11ax (20 MHz, MCS0, 99pc duty cycle)	WLAN	8.42	
0684	AAC	IEEE 802.11av (20 MHz, MCS1, 99pc duty cycle)		a la citat	±9.6
0685	AAC	IEEE 802.11ax (20 MHz, MCS2, 99pc duty cycle)	WLAN	8.26	±9.6
0686	AAC		WLAN	8.33	±9.8
	energy.	IEEE 602.11 ax (20 MHz, MCS3, 96pc duty cycle)	WEAN	8.28	±9.8

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UID	Bev	Communication System Name	Group	PAR (d8)	Uno ^E K =
10687	AAC	IEEE 802.11ax (20 MHz, MCS4, 99pc duty cycle)	WEAN	8.45	±9.6
8890	AAC	IEEE 802.11ax (20 MHz, MCS5, 99pc duty cycle)	WLAN	6.29	±9.6
0689	AAC	IEEE 802.11ax (20 MHz, MC58, 99pc duty cycle)	WLAN	8.55	19.6
0690	AAC	IEEE 802.11ax (20 MHz, MCS7, 98pc duty cycle)	WLAN	8.29	+9.6
0691	AAC	EEE 802.11ax (20 MHz, MCS8, 98pc duty cycle)	WLAN	8.25	±9.6
0692	AAC	IEEE 802 11 ax (20 MHz, MCS8, 99pc duty cycle)	WEAN	8.29	±9.6
0693	AAC	IEEE 802.11ax (20 MHz, MCS10, 99pc duty cycle)	WLAN	8.25	±9.6
0684	AAC	IEEE 802.11ax (20 MHz, MC511, 99pc duty cycle)	WLAN	8.57	19.6
0685	AAG	IEEE 802.11as (40 MHz, MCS0, 90pc duty cycle)	WLAN	8.78	19.6
0.096	AAC	IEEE 802.11ax (40 MHz, MCS1, 90pc duty cycle)	WLAN	8.91	19.6
	AAC				
0697	and the second second	IEEE 802 11 ax (40 MHz, MCS2, 90pc duty cycle)	WLAN	0.61	±9.6
0696	AAC	IEEE 802.11ax (40 MHz, MC53, 90pc duty cycle)	WLAN	8.89	±9,6
0699	AAC	IEEE B02.11ax (40 MHz, MCS4, 90pc duty cycle)	WLAN		±9.6
0700	AAC	IEEE 802.11ax (40 MHz, MCS5, 90pc duty cycle)	WLAN	8.73	±9.6
0701	AAC	IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle)	WLAN	0.86	±8,6
0702	AAC	IEEE 802.11ax (40 MHz, MC57, 90pc duty cycle)	WLAN	8.70	±9.0
0703	AAC	IEEE 802.11ax (40 MHz, MCS8, 90pc duty cycle)	WLAN	8.82	±9.6
0704	AAC	IEEE 802.11ax (40 MHz, MCS9, 90pc duty cycle)	WLAN	8.56	±9.8
0706	AAC	IEEE 802.11ax (40 MHz, MCS10, 90pc duty cycle)	WLAN	8,69	±9.6
0706	AAC	IEEE 802.11ax (40 MHz; MCS11, 90pc duty cycle)	WLAN	8.66	±9.6
0707	AAC	IEEE 802.11ax (40 MHz, MCS0, 99pc duty cycle)	WLAN	8.52	+9.6
0706	AAC	IEEE 802.11ax (40 MHz, MCS1, 99pc duty cycle)	WLAN	8.55	±9.6
0700	AAC	IEEE 802.11ax (40 MHz, MCS2, 99pc duty cycle)	WEAN	.8.33	+9.6
0710	AAC	EEE 802.11ax (40 MHz, MCS3, 98pc duty cycle)	WLAN	8.29	+9.6
0711	AAC	IEEE 802.11ax (40 MHz, MC54, 99pc duty cycle)	WLAN	8.39	:9.6
0712	AAC	IEEE 802.11 at (40 MHz, MCSS, 99pc duty cycle)	WLAN	8.67	+9.6
8713	AAC	IEEE 802.11as (40 MHz, MCS8, 99pc duty cycle)	WEAN	8.33	±9.8
0714	AAC	IEEE 802.11ax (40 MHz, MCS7, 99pc duty cycle)	WLAN	8,26	19.6
0715	AAC	EEE 802.11ax (40 MHz, MCS8, 99pc duty cycle)	WLAN	8,45	19.6
0718	AAC	IEEE 802.11ax (40 MHz, MCSB, 99pc duty cycla)	WLAN	8.30	the second s
0717	AAC				±8.6
California and	and the second second	IEEE 802.11ax (40 MHz, MCS10, 99pc duty cycle)	WLAN	8,48	±9.6
0718	AAC	IEEE 802.11ax (40 MHz, MCS11, 99pc duty cycle)	WLAN	8.24	主印.6
0719	AAC	IEEE 802.11ax (80 MHz, MCS0, 90pc duty cycle)	WLAN	8.81	±9,8
0720	AAC	IEEE 802.11ex (90 MHz, MCS1, 90pc duty cycle)	WLAN	8.87	大日,日
0721	AAC	IEEE 802.11ax (80 MHz, MCS2, 90pc duty cycle)	WLAN	8.76	±9.6
0722	AAC	IEEE 802.11ax (80 MHz, MCS3, 90pc duty cycle)	WLAN	8.55	±9.6
0723	AAC	IEEE 800.11ax (80 Minz, MCS4, 90pc duty cycle)	WLAN	8.70	±9,6
0724	AAC	IEEE 802.11ax (80 MHz, MCS5, 90pc duty cycle)	WLAN	8.90	±9.6
0725	AAC	IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle)	WLAN	0.74	土母:日
0728	AAG	IEEE 802.11ax (89 MHz, MCS7, 80pc duty cycle)	WLAN	8.72	±9.6
0727	AAC:	IEEE 802.11ax (80 MHz, MCS8, 90pc duty cycle)	WLAN	8.66	±9.6
0728	AAG	IEEE 802.11ax (80 MHz, MCS9, 90pc duty cycle)	WLAN	8.65	±9.8
6729	AAC	IEEE 802.11ax (80 MHz, MCB10, 90pc duty cycle)	WLAN	8.64	±9.6
0730	AAC	IEEE 802.11ax (80 MHz, MCS11, 90pc duty cycle)	WLAN	8.67	±9.6
0731	AAC.	IEEE 802.11ax (80 MHz, MC50, 99pc duty cycle)	WLAN	8.42	±9.6
0732	AAC	IEEE 802.11ax (80 MHz, MCS1, 99pc duty cycle)	WLAN	8.46	19.6
0733	AAC:	IEEE 802.11 ax (80 MHz, MCS2, 99pc duty rycle)	WLAN	8,40	+9.6
0734	AAC	IEEE 802 11 Ak (80 MHz, MCS3, 99pc duty cycle)	WLAN	8.25	±9.6
0735	AAC	IEEE 802.11ax (80 MHz, MCS4, 99pc duty cycle)	WLAN	8.33	±9.6
0736	AAC	IEEE 802.11 ax (80 MHz, MC55, 99pc duty cycle)	WLAN	8.27	±9.6
0737	AAC	IEEE 902,11 ax (80 MHz, MCS6, 99pc duty cycle)	WLAN	8.36	±9.6
0738	AAC	IEEE 802.11ax (00 MHz, MCS7, 99pc duty cycle)	WLAN		
0739	AAC	IEEE 802 11ax (80 MHz, MCS8, 99pc duty cycle)		8.42	±9.6
0740	AAC	IEEE 802.11ax (80 MHz, MCS9, 99pc duty cycle)	WLAN	8.25	±9.6
3741	AAC	IEEE 802.11ax (80 MHz, MCS10, 98pc duty cycle)		8,48	19.6
5742	AAC	IEEE 802 11ax (80 MHz, MCS11, 98pc duty cycle)	WLAN	8.40	+9.8
3743	AAC		WLAN	8,43	±9.6
the state of the s	AAC	IEEE 802.11ax (160 MHz, MCS0, 90pc duty cycle)	WLAN	8,94	19.8
0744	and the local state	IEEE 802.11ax (160 MHz, MCS1, 90pc duty cycle)	WLAN	9,16	±9.5
0745	AAC	IEEE 802.11ax (160 MHz, MCS2, 90pc duty cycle)	WEAN	8.93	±9,6
0.748	AAC	IEEE 802.11ax (160 MHz, MCS3, Mpc duty cycle)	WLAN	G.11	=9.6
0747	AAC	IEEE 802.11ax (160 MHz, MCB4, 50pc duty cycle)	WLAN	9.04	#B.6
0748	AAC	IEEE 802.11ax (160 MHz, MCS5, 90pc duty cycle)	WLAN	8,93	=9.6
0749	AAC:	IEEE 802.11ax (160 MHz, MCSR, 90pc duty cycle)	WLAN	8:90	±9.6
0.750	AAC	IEEE 802.11ax (160 MHz, MCS7, 90pc duty cycle)	WLAN	8.79	19.6
2751	AAC.	IEEE 802.11 ax (160 MHz, MGS8, 90pc duty cycle)	WLAN	8.82	19.6
0.762	AAC:	IEEE 802.11ax (160 MHz, MCS8, 90pc duty cycla)	WLAN	8.81	19.6

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10753	AAG	IEEE 802.11ax (160 MHz, MCS10, 90pc duty cycle)	WLAN	9.00	±0.6
10754	A4C	IEEE 802.11ax (160 MHz, MCS11, 90pc duty cycle)	WLAN	8.94	18.8
10.755	AAD	IEEE 882.11ax (160 MHz, MCS0, 89pc duty cycle)	WLAN	8.64	±0.6
10756	AAC	IEEE 802.11ax (160 MHz, MCB1, 99pc duty cycle)	WLAN	8.77	±9.6
10,757	AAC.	IEEE 802 11ax (160 MHz, MCS2, 99pc duty cycle)	WLAN	8,77	±9.8
10758	-AAC	IEEE 802.11ax (160 MHz, MCS3, 99pc duty cycle)	WLAN	8.89	±0.6
10750	AAC	IEEE 802.11ax (160 MHz, MCS4, 99pc duty cycle)	WLAN	8.58	19.6
10760	AAC	IEEE 802.11ax (166 MHz, MCSS, 90pc duty cycle)	WLAN	8.49	:8.6
10761	AAC	IEEE 802.11ax (160 MHz, MCS6, 99pc duty cycle)	WLAN	8.58	±9.6
10762	AAC	IEEE 802.11ax (160 MHz, MCS7, 99pc duty cycla)	WLAN	8.49	20.6
10763	AAC	IEEE 802.11ax (100 MHz, MCS8, 99pc duty cycle)	WLAN	8.53	±9.6
10764	AAC	IEEE 802.11 as (160 MHz, MCS9, 99pc duty cycle)	WLAN	8.54	+9.6
10765	AAC	IEEE 802.11ax (160 MHz, MCS10, 99pc duty cycle)	WLAN	8.54	±9.6
10786	AAC	IEEE 902.11ax (160 MHz, MCS11, 99pc duty cycle)	WLAN	8.51	±9.6
10767	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 15kHz)	5G NR FR1 TDD	7.99	±9.0
10768	AAO	5G NR (CP-OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	±9.6
0769	AAD	5G NR (CP-OFDM, 1 HB, 15 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.01	+9.6
10770	(AAO)	5G NR (CP-OFDM, 1 RB, 20 MHz, GPSK, 15 kHz)	5G NR FR1 TDD	11.02	±8.0
10771	AAD	5G NR (CP-OFDM, 1 RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.02	19.0
10772	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, GPSK, 15 kHz)	5G NR FR1 TDD	8.23	±9.6
10773	AAD	5G NR (CP-OFDM, 1 RE, 40 MHz, QPSK, 15kHz)	5G NR FRI TDD	8.03	±9.6
0774	AAD	5G NR (CP-OFDM, 1 RB, 50 MHz, GPSK, 15kHz)	5G NR FR1 TDD	8.02	+9.6
0775	AAD	50 MR (CP-OFDM, 50% RB, 5 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.31	+9.6
0776	CAA	5G NR (CP-OFDM, 50% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.30	+9.0
0777	AAC	5G NR (CP-OFDM, 50% RB, 15 MHz, GPSK, 15 kHz)	5G NR FR1 TDD	8.30	±9.8
0778	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.34	+9.8
0779	AAC	5G NR (CP-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.42	+9.6
0780	AAD	5G NR (CP-OFDM, 5D% RB, 30 MHz, QPSK, 15 kHz)	50 NR FR1 TDD	8.38	±0.fi
0781	AAD	5G NR (CP-OFDM, 50% R8, 40MHz, GPSK, 15kHz)	5G NR FR1 TDO	8.38	±9.6
0.782	AAD	5G NR (CP-OFOM, 50% R8, 50 MHz, GPSK, 15 kHz)	5G NR FR1 TDO	8.43	+9.8
0783	AAE	5G NR (CP-OFCM, 100% RB, 5MHz, QPSK, 15kHz)	5G NR FR1 TDO	.8.91	+9.8
0784	AAD	5G NR (CP-OFCM, 100% RB, 10 MHz, CPSK, 15kHz)	SG NR FR1 TDO	8.29	±8.6
0.785	AAD	50 NR (CP-OF0M, 100% RB, 15 MHz, QPSK, 15 kHz)	SG NR FR1 TDD	8.40	±9.6
0786	AAD	5G NR (CP-OFDM, 100% R8, 20 MHz, QPSK, 15 kHz)	5G NR FRI TDD	8.95	29.6
6787	AAD	5G NR (CP-OFDM, 100% RE 25 MHz, OPSK, 15 kHz)	5G NR FRI TOD	8.44	=9.6
0788	AAD	5G NR (CP-OFDM, 100% RE, 30 MHz, OPSK, 15 kHz)	5G NR FR1 TDD	11.39	+9.6
0788	AAD	5G NR (CP-OFDM, 100% HB, 40 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	8.37	+9.6
0790	CAA	5G NR (CP-OFDM, 100% RB, 50 MHz, OPSK, 16 MHz)	5G NR FR1 TDD	8.39	10.0
0791	AAE	5G NR (CP-OFDM, 1 RB, 5 MHz, QPSK, 30hHz)	5G NR FR1 TDD	7.83	+9.6
0792	AAD	5G NFI (CP-OFDM, 1 RB, 10 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	7.92	+9.6
0793	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.95	+9.0
0794	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.82	+9.8
0795	AAD	50 NR (CP-OF0M, 1 RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TOO	7.84	±9.6
0795	AAD	5G NR (CP-OFDM, 1 RB, 30 MHz, QPSK, 30 KHz)	SG NR FR1 TDO	7.82	+9.6
0797	AAD	5G NR (CP-OFDM, 1 RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.01	+0.6
0798	AAD	5G NR (CP-OFOM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TOD	7.89	±9.8
0799	AAD	5G NR (CP-OFOM, 1 RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.93	±0.6
0.801	AAD	5G NR (CP-OFDM, 1 RB, 80 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	7.89	±9.0
\$08.0	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	7.67	+9.6
0.803	AAD	5G NR (CP-OFOM, 1 RB, 100 MHz, QPSK, 30kHz)	5G NR FR1 TDD	7.97	±9.6
0805	AAD	5G NR (CP-OFDM, 50% RB, 10 MHz, OPSK, 30 kHz)	5G NR FR1 TDD	8.94	±9.0 ±9.0
8.806	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, QPSK, 30 kHz)	56 NR FR1 TDD	0.37	0.6±
0.809	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, OPSK, 30 kHz)	5G NR FR1 TDD	8.34	+9.6
0.810	GAA	50 NR (OP-OFDM, 50% RB, 40 MHz, QP8K, 30 kHz)	5G NR FR1 TDD	8.34	±9.6
0812	AAD	5G NR (CP-OFDM, 50% RB, 60 MHz, OPSK, 30 kHz)	50 NR FR1 TDD	8.35	±9.6
0817	AAE	5G NR (CP-OFDM, 199% R8, 5MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.35	+9.6
0818	AAD	50 NR (CP-OFDM, 100% R8, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8.34	+9.6
0819	AAD	5G NR (CP-OFOM, 100% RB, 15 MHz, QPSK, 30 kHz)	50 NR FRI TOD	8.33	±9.6
0580	AAD	5G NR (CP-DFDM, 100% RB, 20 MHz, QP5K, 30 kHz)	SG NR FR1 TDD	8.30	
0821	AAD	5G NR (CP-DFOM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD		19.6
0822	AAD	5G NR (CP-OFOM, 100% RB, 30 MHz, QPSK, 30 kHz)	16 NR FRI TDD	8.41	+9,8
0.823	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)		8.41	#9.6
0.824	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, QPSK, 30 kHz)	5G NR FRI TOD	6.38	三日,6
0.825	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 30 kHz)	SG NR FR† TOD	8,39	+9.6
0.827	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, GP3K, 30 KHz)	5G NR FR1 TDD	8.41	±9.6
	AAD	SG NR (CP-OFDM, 100% RE, 80 MHz, QPSK, 30 KHz)	5G NR FR1 TDD 5G NR FR1 TDD	8.42	±9.6
0.828				8.43	+9.6

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UND	Hev	Communication System Name	Group	PAR (dB)	Unc ^E k =
10829	AAD	5G NR (CP-OFDM, 109% RB, 100 MHz, QPSK, 30kHz)	5G NR FR1 TDD	8.40	±9.0
10830	AAD	5G NR (CP-OFCM, 1 R8, 10 MHz, QPSK, 00 kHz)	50 NR FR1 TDD	7.63	±8.0
10831	AAD	5G NR (CP-OFDM, 1 RB, 15 MHz, QPSK, 60 kHz)	50 NR FR1 TDD	7.73	土泉市
10832	AAD	5G NR (CP-OFDM, 1 RB, 20 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.74	±9.6
10833	AAD	5G NR (CP-OFDM, 1 R8, 25 MHz, CPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9.6
10834	GAA	5G NR (CP-OFOM, 1 RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TDO	7.75	士兒苗
10835	AAD.	5G NR (CP-OFOM, 1 R8, 40 MHz, QPSK, 60 MHz)	5G NR FR1 TDO	7.70	±9.6
10836	AAD	5G NR (CP-OFOM, 1 R8, 50 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.66	±9:8
10837	AAD.	5G NR (CP-OFDM, 1 RB, 60 MHz, QPSK, 80 MHz)	5G NR FR1 TDD	7.68	±9.8
10.839	AAD	5G NR (CP-OFDM, 1 AB, 80 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	7.70	±9,6
10.840	AAD	5G NR (CP-OFDM, 1 RB, 90 MHz, QPSK, 68 kHz)	5G NR FR1 TDD	7.67	· 土日,石
10:841	AAD	5G NR (CP-OFDM, 1 RB, 100 MHz, OPSK, 60kHz)	5G NR FR1 TDD	7.71	±8,6
10.843	AAD	5G NR (CP-OFDM, 50% RB, 15 MHz, GPSK, 80 kHz)	50 NR FR1 TDD	8.49	±9.6
10:844	AAD	5G NR (CP-OFDM, 50% RB, 20 MHz, GPSK, 60 kHz)	56 NR FR1 TDD	8.34	±9.6
10.846	AAD	5G NR (CP-OFDM, 50% RB, 30 MHz, QPSK, 60 kHz)	5G NR FR1 TD0	8.41	±9.6
10.854	AAD	56 NR (CP-OFDM, 100% RB, 10 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.34	±9.6
0.855	AAD.	5G NR (CP-OFDM, 100% RB, 15 MHz, QPSK, 60 kHz)	50 NR FR1 TDD	8.98	±9.0
0.856	AAD	5G NR (CP-OFDM, 100% RB, 20 MHz, QPSK, 60 kHz)	56 NR FR1 TDD	8.37	±9.6
10:657	AAD	5G NR (CP-OFDM, 100% RB, 25 MHz, QPSK, 60 kHz)	5G NR FR1 TDD	8.35	19.6
10:858	AAD.	5G NR (CP-OFDM, 100% RB, 30 MHz, QPSK, 60 kHz)	16 NR FR1 TDD	8.36	8,8±
0.859	AAD	5G NR (CP-OFDM, 100% RB, 40 MHz, OP5K, 60 kHz)	5G NR FRI TDD	8.34	±0,6
10.860	AAD	5G NR (CP-OFDM, 100% RB, 50 MHz, GPSK, 60 kHz)	SG NR FR1 TDD	8,41	±9,6
10.861	AAD	5G NR (CP-OFDM, 100% RB, 60 MHz, QPSK, 60 kHz)	SG NR FR1 TDD	8,40	±9.6
10,863	AAD	5G NR (CP-OFDM, 100% RB, 80 MHz, QPSK, 80 kHz)	BG NR FR1 TDO	8.41	±9.8
10.854	AAD	5G NR (CP-OFDM, 100% RB, 90 MHz, QP5K, 60 kHz)	5G NR FR1 TDO	8.37	±9.6
10.865	AAD	5G NR (CP-OFOM, 100% RB, 100 MHz, GPSK, 60 kHz)	50 NR FR1 TDD	8.41	±9.0
10-866	AAD	50 NR (DFT-±-OFDM, 1 RB, 100 MHz, QPSK, 30 kHz)	56 NR FR1 TDD	5.68	±9.6
10-858	AAD	53 NR (DFT+-OFDM, 100% R8, 100MHz, QPSK, 30kHz)	5G NR FR1 TDO	5.89	太 9.在
10.969	AAE	5G NR (DFT s OFDM, 1 RB, 100 MHz, QPSK, 120 kHz)	5G NR FR2 TDD	6.75	±8.8
10870	AAE	5G NR (DFT-s-OFDM, 100% RB, 100MHz, GPSK, 120kHz)	5G NR FR2 TDD	5,86	±8,5
10.871	AAE	50 NR (DFT-s-OFDM, 1 RB, 100 MHz, 16QAM, 120 KHz)	SG NR FR2 TDD	5.75	±9,6
10.872	AAE	5G NR (DFT-e-OFDM, 100% RB, 100 MHz, 18QAM, 120 kHz)	5G NR FR2 TDD	6.52	±9.8
10.873	AAE	6G NR (DFT-n-OFDM, 1 RB, 100 MHz, 640 AM, 120 kHz)	5G NR FR2 TDD	6,61	B.9.8
0.874	and the second second	SG NR (DFT-e-OFDM, 100% RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.65	±9.6
10875	AAE	SG NR (CP-OFDM, 1 RB, 100 MHz, CPSK, 120 kHz)	5G NR FR2 TDD	7,78	±9.6
10877	AAE	SG NR (OP-OFDM, 100% RB, 100MHz, OPSK, 120kHz)	5G NR FR2 TDD	B.39	±9.6
		SG NR (CP-OFDM, 1 RB, 100 MHz, 16QAM, 120 kHz)	50 NR FR2 TDD	7,95	±9.6
0878	AAE	SG NR (CP-OFDM, 100% RB, 100 MHz, 160 AM, 120 kHz)	50 NR FR2 TDD	0.41	±9.6
0880	AAE	SG NR (CP-OFDM, 1 RB, 100 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	8.12	±9.6
0881	AAE	5G NR (CP-OFDM, 100% R8, 100MHz, 64QAM, 120xHz)	SG NR FR2 TDD	8.38	\$9.6
0882	AAE	5G NR (DFT-e-OFOM, 1 RB, 50 MHz, OPSK, 120kHz)	5G NR FR2 TDD	5.75	±9.6
10883	AAE	5G NR (0FT-e-0F0M, 100% RB, 50 MHz, QPSK, 120 KHz) SG NR (0FT-e-0F0M, 1 RB, 50 MHz, 180AM, 120 KHz)	5G NR FR2 TDD	5.96	±9,6
10884	AAE	SG NH (UF19-0FDM, 1HB, S0 MH2, 15QAM, 120 KH2) SG NH (DFT-s-OFDM, 100% RB, S0 MH2, 15QAM, 120 KH2)	SG NR FR2 TDD	8.57	5, 但土
0885	AAE	SG NR (DFT-I-OFDM, 100% HB, 50 MHz, 150AM, 120 Htz)	5G NR FR2 TDD	8.53	土朱市
10885	AAE	SG NR (DFT-6-OFDM, 100% RB, 50 MHz, 64QAM, 120 kHz)	5G NR FR2 TDD	6.61	主体。但
10687	AAE	5G NR (CP-OFDM, 1 RB, 50 MHz, CPSK, 120 kHz)	5G NR FR2 TDD	6.65	±8.6
10888	AAE	SG NR (CP-OFDM, 100% RE, 50 MHz, CPSK, 120 MHz)	5G NR FR2 TDD	7.78	±9.8
0889	AAE	5G NR (CP-OFDM, 100% HB, 50 MHz, 16QAM, 120 HHz)	5G NR FR2 TOO	8.35	±9.6
0880	AAE	3G NR (CP-CFDM, 1195, 50 MHz, 16CAM, 120 H/s)	5G NR FR2 TDD	8.02	+9.6
0891	AAF	5G NR (CP-OFDM, 100% PB, 50 MHz, 15GAM, 120 KHz) 5G NR (CP-OFDM, 1 RB, 50 MHz, 64QAM, 120 KHz)	SG NR FRI TDD	8.40	±0.6
0885	AAE	5G NR (CP-OFDM, 1 HE, 50 MHz, 64QAM, 120 KHz) 5G NR (CP-OFDM, 100% R8, 50 MHz, 64QAM, 120 KHz)	SG NR FR2 TOD	8.13	+9.6
0882	AAG	SG-NR (DFT-6-OFDM, 1 R8, 5MHz, OPSK, 304Hz)	5G NR FR2 TDD	8.41	±9.6
0898	AAB	5G NR (DFTs-OFDM, 1 RB, 10 MHz, OPSK, 30 Hz)	5G NR FR1 TDD	5,66	±9.8
0899	AAB	5G NR (DFT-E-OFDM, 1 RB, 15 MHz, OPSK, 30 kHz)	5G NR FR1 TDD 5G NR FR1 TDD	5.67	±9.6
0900	AAB	SG NR (DFT+DOFDM, 1 RB, 20 MHz, GPSK, 30 KHz) SG NR (DFT+DOFDM, 1 RB, 20 MHz, GPSK, 30 KHz)		5.67	±9.6
9901	AAB	53 NR (DFT=OFDM, 1 RB, 25 MHz, OPSK, 30 KHz)	5G NR FR1 TDD	5.68	±0:0
0902	AAB	5G NR (DFT+D-OFDM, 1 RB, 30 MHz, OFSK, 30 KHz)	50 NR FR1 TDD	5.68	±9.6
0.003	AAB	5G NR (DFT-6-OFDM, 1 RB, 40 MHz, OPSK, 30 KHz)	SG NR FR† TDD	5.68	±9.6
0903	AAB	SG NR (DFT-6-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz) SG NR (DFT-6-OFDM, 1 RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.68	±9.6
0.905	AAB		5G NR FR1 TDD	5.68	0.0±
	AAB	5G MR (DFTs-OFDM, 1 RB, 60 MHz, QPSK, 30 MHz) 5G MR (DFTs-OFDM, 1 RB, 80 MHz, QPSK, 30 MHz)	5G NR FR1 TDD	5,68	±9.6
0906	AAG		5G NR FR1 TDD	5,68	#9.6
and particular designs	AAC AAB	50 NR (DFT-9-QFDM, 50% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.78	±9.6
8080	_	5G NR (DFT-6-OFOM, 50% RB, 10 MHz, OPSK, 30 sHz)	5G NR FR1 TDD	5.93	±9.8
0909	AAB	5G NR (DFT=: OFDM, 50% RB, 15 MHz, OPSK, 90 kHz)	50 NR FR1 TDD	5.96	±9.8
	AAB	5G NR (DFT+-OFDM, 50% RB, 20 MHz, QP5K, 30 kHz)	5G NR FR1 TDD	5.82	+9.6

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10911	AAB.	5G NR (DFT4-OFDM, 50% RB, 25 MHz, QPSK, 30 kHz)	SG NR FR1 TOD	5.93	.s.9.6
10912	AAB	5G NR (DFT-e-OFDM, 50% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±8.6
10.913	AAB	5G NR (DFT-e-OFDM, 50% RB, 40 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	0.84	±9.6
10914	AAB	50 NR (DFT-s-OFDM, 50% RB, 50 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.85	+9.6
10915	AAB	5G NR (DFT-8-OFDM, 50% RB, 60 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5,83	±9.6
10916	AAB	5G NR (DFT-6-OFDM, 50% RB, 80 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	5.87	::0.6
10917	AAB	5G NR (DFTs-OFDM, 50% RB, 100 MHz, QPSK, 30 kHz)	50 NR FR1 TDD	5.84	3.9.8
10918	AAC	5G NR (DFT-s-OFDM, 100% RB, 5 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.86	:19.6
10919	AAB	5G NR (DFT-I-OFDM, 100% RB, 10 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.95	±9.6
19920	AAB	5G NR (DFT-6-OFDM, 100% RB, 15MHz, QPSK, 30kHz)	5G NR FR1 TDD	5.87	±9.6
10921	AAB	5G NR (DFTs-OFOM, 100% RB, 20 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
19822	AAB	5G NR (DFTs-OFDM, 100% RB, 25 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.82	±9.8
10923	AAB	5G NFI (DFTs-OFDM, 100% RB, 30 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.84	±9.6
10924	AAB	50 NR (DFT+-OFDM, 100% RB, 40 MHz, QPSK, 30 kHz)	SG NR FR1 TDD	5.84	+9.6
10925	BAA	5G NR (DFTs-OFOM, 100% RB, 50 MHz, OPSK, 30 kHz)	5G NR FR1 TDD	5.95	+8.0
0926	AAB	SG NR (DFTs-OFDM, 100% RB, 60 MHz, QPSK, 30kHz)	5G NR FR1 TDD	5.84	±0.0
10927	AAB	5G NR (DFTs-OFDM, 100% RB, 80 MHz, QPSK, 30 kHz)	5G NR FR1 TDD	5.94	+9.6
10928	AAC	SG NR IDET-e-OEDM, 1 R8, 5MHz, QPSK, 154Hz)	5G NR FR1 FDD	5.52	
0929	AAC	SG NR (DFT=OFDM, 1 RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD		1.9.8
				5.52	±8.6
10930	AAC	SG NR (DET=OFDM, 1 RB, 15MHz, QPSK, 15NHz)	5G NR FR1 FDD	5.52	±8.0
10932	AAC	5G NR (DFT+c-OFOM, 1 RB, 20 MHz, QPSK, 15kHz)	5G NR FR1 FDD	5.51	±9.8
	and the second se	SG NR (DFT+-OFDM, 1 R8, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	19.6
10933	AAC	5G.NR (DFTe-OFDM, 1 RB, 30 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.51	1.9.5
10934	AAC	IG NR (DFTs-OFDM, 1 RB, 40 MHz, OPSK, 15kHz)	5G NR FR1 FDD	6.51	±8.6
10935	AAO	50 NR (DFT:s-OFDM, 1 RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5,61	±8,0
10996	AAC	SG NR (DFT+-OFDM, 50% RB, 5MHz, QPSK, 153Hz)	5G NR FR1 FDD	5.90	±9.0
10837	AAC	5G NR (DFTs/OFDM, 50% RB, 10 MHz, QPSK, 15kHz)	5G NR FR1 FDD	5.77	1.9.日
10936	AAC	5G NR (DFTs-OFOM, 50% RB, 15 MHz, OPSK, 15 kHz)	5G NR FR1 FDD	5.90	±0.£
10939	AAC	50 NR (OFT-e-OFDM, 50% RB, 20 MHz, OPSK, 15 kHz)	5G NR FR1 FDD	5.82	±8.6
10940	AAC	SG NR (DFT:s-OFDM, 50% RB, 25 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.89	±9.8
10941	AAC	5G NR (DFTs-OFDM, 50% RB, 30 MHz, QPSK, 15kHz)	SG NR FR1 FDD	5.83	29.6
10942	AAC	5G NR (DFT-s-OFDM, 50% RB, 40 MHz, QPSK, 15kHz)	5G NR FR1 FDD	5.85	±9.ff
10943	AAD	5G NR (DFT-IL-OFDM, 50% RB, 50 MHz, GPSK, 15 kHz)	SG NR FR1 FDD	5.95	±9,6
10944	AAC	5G NR (DFT= OFDM, 100% RB, 5MHz, QPSK, 15kHz)	SG NR FR1 FD0	5.81	±0.0
10945	AAC	5G NR (DFT= OFDM, 100% RB, 10 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.85	±9.8
10948	AAC	5G NR (DFT-6-OFDM, 100% RB, 15 MHz, QPSK; 15 kHz)	5G NR FR1 FDD	5.83	主要:但
10947	AAC	5G NR (DFT-e-OFDM, 100% RB, 20 MHz, QPSK, 15 kHz)	56 NR FR1 FDD	5.87	±9.6
10948	AAC	5G NR (DFT=: OFDM, 100% RB, 25 MHz, QPSK, 15 kHz)	5G-NR-FR1 FDO	5.04	±8.6
10:949	AAC	53 NR (DFT-#-OFDM, 100% RB, 33 MHz, QPSK, 15 kHz)	5G NR FRH FDD	5.87	±9.0
0950	AAC	5G NR (DFT+-OFDM, 100% R8, 40 MHz, QPGK, 15 kHz)	5G NR FR1 FDD	5.84	±9.6
10.951	AAD	5G NR (DFTs-OFDM, 100% RB, 50 MHz, QPSK, 15 kHz)	5G NR FR1 FDD	5.92	+9.6
10.952	AAA	5G NR DL (CP-OFDM, TM 3.1, 5MHz, 64-DAM, 15kHz)	5G NR FR1 FDD	8.25	±9.6
0.953	AAA	50 NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.15	±9.6
10964	AAA	5G NR DL (CP-OFDM, TM 3.1, 15MHz, 64-QAM, 15kHz)	5G NR FR1 FDD	8.23	19.6
10965	AAA	5G NR DL ICP-OFDM, TM 3.1, 20 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.42	+9.6
10956	AAA	5G NR DL (CP-OFDM, TM 3.1, 5 MHz, 54-QAM, 30 kHz)	5G NR FR1 FDD	8.14	+8.6
10507	AAA	5G NR DL (CP-OFDM, TM 3.1, 10 MHz, 64-QAM, 30 kHz)	SG NR FR1 FDD	8.31	+0.0
10958	AAA	SG NR DL (CP-OFDM, TM 3.1, 15 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.61	±0:0 ±9:6
10959	AAA	50 NR DL (CP-OFDM, TM 3.1, 20MHz, 64-QAM, 30kHz)	5G NR FR1 FD0	8.61	±9.6
0960	AAC	SG NFI DL (CP-OFDM, TM 3.1, 5 MHz, 54-QAM, 15 HHz)	SG NR FR1 TDD	0.32	
10961	AAB	SG NR DL (CP-OFDM, TM 3.1, 10MHz, 64-QAM, 15kHz)	5G NR FR1 TDD		+0.6
0962	AAB	5G NR DL (CP-OFDM, TM 3.1, 15MHz, 64-QAM, 15kHz)	5G NR FR1 TDD	9.36	+9.6
10963	AAB	5G NR DL (CP-OFDM, TM 3.1, 20MHz, 64-QAM, 15kHz)	- 7. TO 2. State 1. 1. 1. 1. 7. 4. 4.	25315	±9.6
0964	AAC	SG NFI DL (CP-OFDM, TM 3.1, 5MHz, 64-QAM, 15KHz)	50 NR FR1 TD0	9,55	+9.8
0965	AAB	5G NR DL (CP-OFDM, 1M 3.1, 5MHz, 64-QAM, 30KHz) 5G NR DL (CP-OFDM, TM 3.1, 10MHz, 64-QAM, 30KHz)	SG NR FR1 TDD	9.29	±9.6
0966	AAB	5G NR DL (CP-OFDM, TM 3.1, 15MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.37	±9.6
0967	AAB	5G NR DL (CP-OFDM, TM 3.1, 15MHz, 64-QAM, 304042)	50 NR FR1 TD0	8,55	10.6
0967	AAB		5G NR FR1 TD0	8.42	±9.6
0972	AAB	SG NR DL (CP.OFDM, TM 3.1, 100 MHz, 64-GAM, 30 kHz)	5G NR FR TDD	9.49	世(日) (日) (日)
a subscription of the second	10000	5G NR (CP-OFOM, 1 RB, 20 MHz, QPSK, 15 kHz)	5G NR FR1 TDD	11.55	± 9.6
0973	AAB	5G NR (DFT-s-OFDM, 1 RB, 100MHz, QPSK, 30 kHz)	5G NR FR1 TDD	8,05	±9.6
0974	AAB	5G NR (CP-OFDM, 100% RB, 100 MHz, 256-QAM, 30 kHz)	SG NR FR1 TDD	10.28	±9.6
0.978	AAA	ULLA BOR	ULLA	1.16	±9.6
0.979	AAA	ULLA HDR4	ULLA	8.58	±9.6
0980	AAA	ULLA HDRB	ULLA	10.32	±9.6
1980	AAA	ULLA HORp4	BLEA	3.19	+9.6
0.982	AAA	ULLA HORDE	ULLA	3.43	+6.6

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UID	Filley	Communication System Name	Group	PAR (dB)	Unc ^E k = 1
10983	AAA	5G NR DL (CP-DFDM, TM 3.1, 40 MHz, 64-QAM, 15kHz)	5G NR FR1 TDD	0.31	19.6
10964	AAA	5G-NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15kHz)	50 NR FR1 TDD	8.42	69.6
10985	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	8.54	±9.6
10986	AAA .	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.50	+9.6
10987	AAA	5G NR DL (CP-OFDM, TM 3.1, 60 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.53	19.6
10988	AAA	5G NR DL (CP-OFDM, TM 3.1, 70 MHz, 64-QAM, 30 kHz)	53 NB FR1 TDD	9.58	±0.0
10989	AAA	5G NR DL (CP-DFDM, TM 3.1, 80 MHz, 64-QAM, 30 kHz)	5G NR FR1 TDD	9.33	19.6
10990	AAA	5G NR DL (CP-OFDM, TM 3.1, 90 MHz, 64-QAM, 30 RHz)	53 NR FR1 TDD	9.52	+9.6
11003	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15kHz)	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	+9.0
11005	AAA	5G NR DL (CP-OFDM, TM 3.1, 25MHz, 64-QAM, 15kHz)	5G NR FR1 FDD	8,70	19.6
11006	AAA	5G NR DL (CP-OFDM, TM 3.1, 30 MHz, 64-QAM, 15kHz)	5G NR FR1 FDD	8.55	19.6
11007	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 15kHz)	5G NR FR1 FDD	8.48	+9.長
11008	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 15 kHz)	5G NR FR1 FDD	8.51	±9.6
11000	AAA	53 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	8.96	±8.6
11011	AAA	5G NR DL (CP-OFDM, TM 3.1, 40 MHz, 64-QAM, 30 kHz)	SG NR FR1 FDD	8.96	±9.0
11012	AAA	5G NR DL (CP-OFDM, TM 3.1, 50 MHz, 64-QAM, 30 kHz)	5G NR FR1 FDD	8.68	±9.8
11013	AAA	IEEE 802.11be (320 MHz, MCS1, 99pc duty cycle)	WLAN	.8.47	±0.6
11014	AAA	IEEE 802.11be (320 MHz, MCS2, 99pc duty cycle)	WLAN	8.45	+8.6
11015	AAA	IEEE 802.11be (320 MHz, MCS3, 99pc duty cycle)	WLAN	8.44	±0.6
11016	AAA .	IEEE 802.11be (320 MHz, MCS4, 99pc duty cycle)	WLAN	8.44	±9.6
11.017	AAA	IEEE 802 11be (320 MHz, MCS5, 99pc duty cycin)	WLAN	8.41	±9.6
11018	AAA	IEEE 802.11be (320 MHz, MCS8, 99pc duty cycle)	WLAN	8.40	19.8
11019	AAA.	IEEE 802.11be (320 MHz, MCS7, 99pc duty cycle)	WLAN	8.29	+9.6
11020	AAA	IEEE 802 11be (320 MHz, MCS8, 99pc duty cycla)	WLAN	8.27	±8.0
11021	AAA,	IEEE 802.11be (320 MHz, MCS9, 99pc duty cycle)	WLAN	8.46	19.6
11022	AAA	IEEE 802.11be (320 MHz, MCS10, 99pc duty cycle)	WLAN	8.36	+11.6
11023	AAA.	1EEE 802.11be (320 MHz, MCS11, 99pc duty cycle)	WLAN	8.09	+8.6
11024	AAA,	IEEE 802.11be (320 MHz, MCS12, 98pc duty cycle)	WLAN	8.42	±8.6
11025	AAA,	IEEE 802.11be (320 MHz, MCS13, 99pc duty cycle)	WLAN	8.37	+9.6
11026	AAA	IEEE 802.11be (320 MHz, MCS0, 99pc duty cycle)	WLAN	8.39	±9.6
11027	AAA .	Pulse Waveform (Square, 20 ms, 10 ms)	MBI	3,01	39.6
11028	AAA	Pulse Wevelorm (Square, 50 ms, 40 ms)	MBL	0.97	+9.6

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

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Appendix G. – Dipole Calibration Data



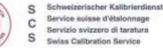
luitilateral Agreement for the rec	is one of the signatorie cognition of calibration		
lient HCT		Certificate No.	CLA13-1016_Sep23
Gyeonggi-do, Republic		E	
Zbject	CLA13 - SN: 101	6	
Calibration procedure(s)	QA CAL-15.v10 Calibration Proce	dure for SAR Validation Sources	below 700 MHz
Calibration date:	September 21, 20	023	
		onal standards, which realize the physical unit robability are given on the following pages and	
		y facility: environment temperature (22 ± 3)°C	and humidity < 70%,
Calibration Equipment used (M&TE	E critical for calibration)	y facility: environment temperature (22 \pm 3)*C	
Calibration Equipment used (M&TE Inimary Standards	E critical for calibration)	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.)	Scheduled Calibration
Calibration Equipment used (M&TE Primary Standarda Power meter NRP2	E critical for calibration)	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805)	Scheduled Calibration Mar-24
Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-ZB1	Critical for calibration)	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804)	Scheduled Calibration Mar-24 Mar-24
Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291	Critical for calibration)	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03804)	Scheduled Calibration Mar-24 Mar-24 Mar-24
Calibration Equipment used (M&TE Primary Standards *ower meter NRP2 *ower sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator	Critical for calibration)	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804)	Scheduled Calibration Mar-24 Mar-24
Calibration Equipment used (M&TE Primary Standards Power meter NRIP-2 Power sensor NRIP-291 Power sensor NRIP-291 Reference 20 dB Attenuator Type-N mismatch combination	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: CC2552 (20k)	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03809)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24
Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-281 Power sensor NRP-291 telefarence 20 dB Attanuator Type-N mismatch combination Reference Probe EX2DV4	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: CC2552 (20x) SN: 310982 / 06327	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03806) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Mar-24
Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-ZB1 Power sensor NRP-ZB1 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 (AE4	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 0C2552 (20x) SN: 310982 / 06327 SN: 3877	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 06-Jan-23 (No. 217-03810)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24
Calibration Equipment used (M&TE Primary Standards Power sensor NRP-Z91 Power sensor NRP-Z91 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	Ecritical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 02252 (20k) SN: 210982 / 06327 SN: 3877 SN: 654	y facility: environment temperature (22 ± 3)*C Gal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 05-Jan-23 (No. 217-03810) 05-Jan-23 (No. DAE4-854_Jan23)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Jan-24
Calibration Equipment used (M&TE Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX30V4 DAE4 Secondary Standards Power meter NRP2 Power sensor NRP-291	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: CC2552 (20x) SN: 310982 / 06327 SN: 3877 SN: 654 ID # SN: 107183 SN: 100922	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 06-Jan-23 (No. 217-03810) 06-Nov-21 (No. DAE4-854_Jan23) 08-Nov-21 (In house) 08-Nov-21 (In house check Dec-22) 15-Dec-08 (In house check Dec-22)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Jan-24 Jan-24 Scheduled Check In house check: Dec-24 In house check: Dec-24
Calibration Equipment used (M&TE Primary Standards Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attanuator Pype-N mismatch combination Reference Probe EX3DV4 JAE4 Secondary Standards Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: CC2552 (20k) SN: 210982 / 06327 SN: 3877 SN: 654 ID # SN: 107193 SN: 100822 SN: 100418	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 06-Jan-23 (No. 217-03810) 06-Jan-23 (No. 217-03810) 06-Jan-23 (No. DAE4-854_Jan23) 27-Jan-23 (No. DAE4-854_Jan23) Check Date (In house) 08-Nov-21 (in house check Dec-22) 15-Dec-08 (in house check Dec-22) 01-Jan-04 (in house check Dec-22)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Jan-24 Scheduled Check In house check: Dec-24 In house check: Dec-24 In house check: Dec-24
Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291 Teleforence 20 dB Attanuator Pype-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291 Reference Probe E480	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: CC2552 (20x) SN: 310982 / 06327 SN: 3877 SN: 654 ID # SN: 107183 SN: 100922	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 06-Jan-23 (No. 217-03810) 06-Nov-21 (No. DAE4-854_Jan23) 08-Nov-21 (In house) 08-Nov-21 (In house check Dec-22) 15-Dec-08 (In house check Dec-22)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Jan-24 Jan-24 Scheduled Check In house check: Dec-24 In house check: Dec-24
Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291 Teleforence 20 dB Attanuator Pype-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291 Reference Probe E480	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 022552 (20k) SN: 370982 / 06327 SN: 3877 SN: 654 ID # SN: 107183 SN: 107183 SN: 100822 SN: 100418 SN: 103642001700 SN: US3642001700 SN: US3614080477	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03806) 30-Mar-23 (No. 217-03806) 30-Mar-23 (No. 217-03807) 06-Jan-23 (No. 217-03810) 06-Jan-23 (No. DAE4-854_Jan23) 27-Jan-23 (No. DAE4-854_Jan23) Check Date (in house check Dec-22) 08-Nov-21 (in house check Dec-22) 01-Jan-04 (in house check Dec-22) 01-Jan-04 (in house check Dec-22) 31-Mar-14 (in house check Oct-22)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Jan-24 Jan-24 Scheduled Check In house check: Dec-24 In house check: Dec-24 In house check: Jun-24 In house check: Jun-24 In house check: Jun-24 In house check: Jun-24
Calibration Equipment used (M&TE Primary Standards Power sensor NRP-291 Power sensor NRP-291 Telerence 20 dB Attenuator Type-N mismatch combination Type-N mismatch combination Type-N mismatch combination Probe EX3DV4 Attenuator Probe EX3DV4 Attenuator Probe EX3DV4 Prover sensor NRP-291 Power sensor NRP-291 TF generator HP 8648C Network Analyzer Agilent E8358A	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 103245 SN: 22552 (208) SN: 310982 / 06327 SN: 3877 SN: 654 ID # SN: 107193 SN: 107193 SN: 100822 SN: 100418 SN: 103642001700	y facility: environment temperature (22 ± 3)*C Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03809) 31-Mar-14 (in house check Dci-22) Function	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Jan-24 Jan-24 Jan-24 Scheduled Check In house check: Dec-24 In house check: Dec-24
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F-TP22-03 (Rev. 05)



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





Service suisse d'étalonnage Servizio svizzero di taratura **Swiss Calibration Service**

Accreditation No.: SCS 0108

Accredited by the Swiss Accreditation Service (SAS)

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) 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%.

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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
Nominai Head TSL parameters	22.0 "C	55.0	0.75 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	53.1 ± 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 ³ (1 g) of Head TSL	Condition	
SAR measured	1 W input power	0.539 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	0.553 W/kg ± 18.4 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
SAR averaged over 10 cm ² (10 g) of Head TSL SAR measured	condition 1 W input power	0.335 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.3 Ω + 0.0]Ω	
Return Loss	- 37.8 dB	

Additional EUT Data

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DASY5 Validation Report for Head TSL

Date: 21.09.2023

Test Laboratory: SPEAG, Zurich, Switzerland

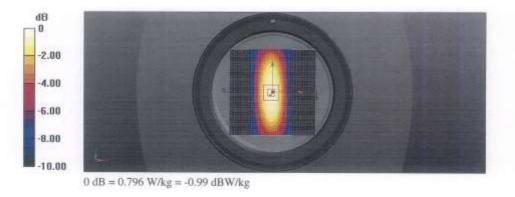
DUT: CLA13; Type: CLA13; Serial: CLA13 - SN: 1016

Communication System: UID 0 - CW; Frequency: 13 MHz Medium parameters used: f = 13 MHz; $\sigma = 0.72$ S/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 SN3877; ConvF(15.33, 15.33, 15.33) @ 13 MHz; Calibrated: 06.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 27.01.2023
- Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2034
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

CLA Calibration for HSL-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 = 30.91 V/m; Power Drift = 0.05 dB Peak SAR (extrapolated) = 1.09 W/kg SAR(1 g) = 0.539 W/kg; SAR(10 g) = 0.335 W/kg Smallest distance from peaks to all points 3 dB below = 17.6 mm Ratio of SAR at M2 to SAR at M1 = 78.6% Maximum value of SAR (measured) = 0.796 W/kg



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Impedance Measurement Plot for Head TSL

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				12					
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Certificate No: CLA13-1016_Sep23

Page 6 of 6

The report shall not be (partly) reproduced except in full without approval of the laboratory.



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lient HCT		Certificate No.	D750V3-1014_May23
Gyeonggi-do, Republi			
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toejdC	D750V3 - SN:10	14	
Calibration procedure(s)	QA CAL-05.v12 Calibration Proce	edure for SAR Validation Sources	between 0.7-3 GHz
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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

Swiss Calibration Service

Accreditation No.: SCS 0108

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

Glossary:

1

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end ٠ 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 ٠ 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%.

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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	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.7 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		1

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.18 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	8.59 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.42 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.7 Ω + 3.7 jΩ	
Return Loss	- 24.8 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.038 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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Certificate No: D750V3-1014_May23

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DASY5 Validation Report for Head TSL

Date: 23.05.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1014

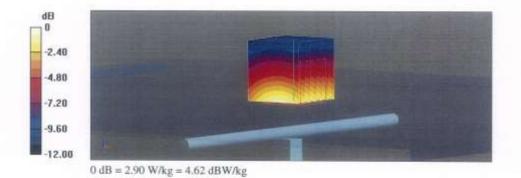
Communication System: UID 0 - CW; Frequency: 750 MHz Medium parameters used: f = 750 MHz; σ = 0.9 S/m; ϵ_r = 40.7; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(10.11, 10.11, 10.11) @ 750 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- · Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 61.58 V/m; Power Drift = -0.07 dB Peak SAR (extrapolated) = 3.34 W/kg SAR(1 g) = 2.18 W/kg; SAR(10 g) = 1.42 W/kg Smallest distance from peaks to all points 3 dB below = 17.1 mm Ratio of SAR at M2 to SAR at M1 = 64.9% Maximum value of SAR (measured) = 2.90 W/kg



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Impedance Measurement Plot for Head TSL

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



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

S Swiss Calibration Service Accreditation No.: SCS 0108

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) 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%.

Certificate No: D835V2-4d165_May23

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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	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.5 ± 6 %	0.93 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	1 <u>1111</u>	

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.51 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	9.74 W/kg ± 17.0 % (k=2)
SAB averaged over 10 cm ³ (10 a) of Head TSI	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 250 mW input power	1.62 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.2 Ω - 3.2 jΩ	
Return Loss	- 29.5 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.389 ns
have a second a second s	

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: 23.05.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d165

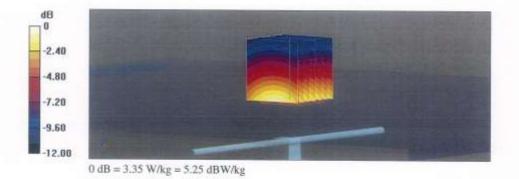
Communication System: UID 0 – CW; Frequency: 835 MHz Medium parameters used: f = 835 MHz; σ = 0.93 S/m; ϵ_{t} = 40.5; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(9.69, 9.69, 9.69) @ 835 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 64.33 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 3.79 W/kg SAR(1 g) = 2.51 W/kg; SAR(10 g) = 1.62 W/kg Smallest distance from peaks to all points 3 dB below = 16 mm Ratio of SAR at M2 to SAR at M1 = 65.9% Maximum value of SAR (measured) = 3.35 W/kg



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Impedance Measurement Plot for Head TSL

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Certificate No: D835V2-4d165_May23

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Calibration procedure(s)	QA CAL-05.v12 Calibration Proce	dure for SAR Validation Sources	s between 0.7-3 GHz
Calibration date:	May 17, 2023		
The measurements and the uncert	ainties with confidence p ad in the closed laborator	onal standards, which realize the physical un robability are given on the following pages ar y facility: environment temperature (22 ± 3) ²	d are part of the certificate.
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Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Abenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 7349 SN: 501	30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810) 10-Jan-23 (No. 217-03810)	Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Jan-24
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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

Accreditation No.: SCS 0108

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) 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%.

Certificate No: D1800V2-2d015_May23

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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	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1800 MHz ± 1 MHz	

Head TSL parameters

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 ± 0.2) °C	38.5 ± 6 %	1.37 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.42 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	37.8 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ¹ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ¹ (10 g) of Head TSL SAR measured	condition 250 mW input power	4.92 W/kg

Certificate No: D1800V2-2d015_May23

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.9 Ω ~ 4.0 jΩ	
Return Loss	- 27.6 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.214 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

Certificate No: D1800V2-2d015_May23

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DASY5 Validation Report for Head TSL

Date: 17.05.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1800 MHz; Type: D1800V2; Serial: D1800V2 - SN:2d015

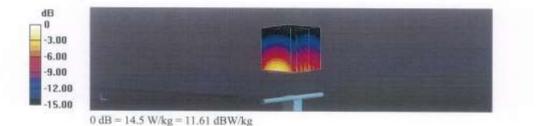
Communication System: UID 0 - CW; Frequency: 1800 MHz Medium parameters used: f = 1800 MHz; σ = 1.37 S/m; ϵ_r = 38.5; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.63, 8.63, 8.63) @ 1800 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- 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=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 109.2 V/m; Power Drift = -0.00 dB Peak SAR (extrapolated) = 17.3 W/kg SAR(1 g) = 9.42 W/kg; SAR(10 g) = 4.92 W/kg Smallest distance from peaks to all points 3 dB below = 10 mm Ratio of SAR at M2 to SAR at M1 = 54.8% Maximum value of SAR (measured) = 14.5 W/kg



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Impedance Measurement Plot for Head TSL

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Certificate No: D1800V2-2d015_May23

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The report shall not be (partly) reproduced except in full without approval of the laboratory.

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ultilateral Agreement for the re-	cognition of calibration	s to the EA certificates	
lient HCT Gyeonggi-do, Republ	ic of Korea	Certifica	tte No. D1900V2-5d032_Jan24
CALIBRATION C	ERTIFICATE		
bject	D1900V2 - SN:50	1032	
alibration procedure(s)	QA CAL-05.v12 Calibration Proce	dure for SAR Validation So	urces between 0.7-3 GHz
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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S Swiss Calibration Service

Accreditation No.: SCS 0108

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) 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%.

Page 2 of 6



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	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

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 ± 0.2) °C	41.3 ± 6 %	1.40 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	250 mW input power	9.97 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	40.2 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 p) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 250 mW input power	5.22 W/kg

Certificate No: D1900V2-5d032_Jan24

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.2 Ω + 6.8 jΩ	
Return Loss	- 23.4 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1,182 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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DASY5 Validation Report for Head TSL

Date: 18.01.2024

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d032

Communication System: UID 0 - CW; Frequency: 1900 MHz Medium parameters used: f = 1900 MHz; $\sigma = 1.4 \text{ S/m}$; $\varepsilon_t = 41.3$; $\rho = 1000 \text{ kg/m}^3$ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(8.43, 8.43, 8.43) @ 1900 MHz; Calibrated: 03.11.2023
- 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=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 109.9 V/m; Power Drift = 0.03 dB Peak SAR (extrapolated) = 18.3 W/kg SAR(1 g) = 9.97 W/kg; SAR(10 g) = 5.22 W/kg Smallest distance from peaks to all points 3 dB below = 9.8 mm Ratio of SAR at M2 to SAR at M1 = 54.9% Maximum value of SAR (measured) = 15.5 W/kg



0 dB = 15.5 W/kg = 11.90 dBW/kg

Certificate No: D1900V2-5d032_Jan24

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Impedance Measurement Plot for Head TSL

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Certificate No: D1900V2-5d032_Jan24

Page 6 of 6

The report shall not be (partly) reproduced except in full without approval of the laboratory.



The Swiss Accreditation Service is one of the signatorias to the EA Multilateral Agreement for the recognition of calibration certificates Line HCT Gyeonggi-do, Republic of Kores CALIBRATION CERTIFICATE Digor D2450V2 - SN: 1049 Calibration procedure(s) CA CAL-05,v12 Calibration Procedure for SAR Validation Sources between 0,7-3 Calibration procedure(s) CA CAL-05,v12 Calibration Procedure for SAR Validation Sources between 0,7-3 This calibration certificate documents the traceability to national standards, which realize the physical urits of measurements (f) the measurements and the uncertainties with cordidence probability are given on the following pages and are part of the certificate A calibration Equipment used (M&TE critical for calibration) Thinay Standards D3 A CAL-05, v12 Calibration Equipment used (M&TE critical for calibration) Thinay Standards D4 A Calibration (217, 231 SN: 104778 SN: 10244 SN: 104778 SN: 10244 SN: 104778 SN: 104778 SN: 10244 SN: 103244 SN: 2044723 (No: 217, 03804) Mar-24 War-24 War-24 Mar-24 SN: 103244 SN: 204Mar-23 (No: 217, 03804) Mar-24 SN: 2019 SN: 103245 SN: 103245 SN: 103245 SN: 104274 SN: 10424 SN: 2019 SN: 104778 SN: 103245 SN: 10427 SN: 10424 SN: 104778 SN: 10424 SN: 104778 SN: 10424 SN: 217, 03804 Mar-24 Mar-24 MAr-24 SN: 104778 SN: 10477 SN: 10477 SN: 104778 SN: 104778 SN: 104778 SN: 10477 SN: 1047	Engineering AG ughausstrasse 43, 8004 Zurich,		Hac-MRA		Service suisse d'etalonnage Servizio svizzero di taratura Swiss Calibration Service
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



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Accreditation No.: SCS 0108

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

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:

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

Additional Documentation:

c) 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%.

Certificate No: D2450V2-1049_Apr23

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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	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

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 ± 0.2) °C	37.7±6%	1.86 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		1

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.7 W/kg ± 17.0 % (k=2)
SAR averaged over 10 cm ² (10 o) of Head TSI	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 250 mW input power	6.23 W/kg

Certificate No: D2450V2-1049_Apr23

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.1 Ω + 8.8 jΩ
Return Loss	- 21.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.160 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

Certificate No: D2450V2-1049_Apr23

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DASY5 Validation Report for Head TSL

Date: 25.04.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 1049

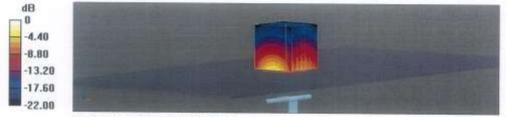
Communication System: UID 0 - CW; Frequency: 2450 MHz Medium parameters used: f = 2450 MHz; $\sigma = 1.86$ S/m; $\epsilon_r = 37.7$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.88, 7.88, 7.88) @ 2450 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- 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=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 117.0 V/m; Power Drift = 0.01 dB Peak SAR (extrapolated) = 26.9 W/kg SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.23 W/kg Smallest distance from peaks to all points 3 dB below = 9 mm Ratio of SAR at M2 to SAR at M1 = 50.1% Maximum value of SAR (measured) = 22.4 W/kg



0 dB = 22.4 W/kg = 13.50 dBW/kg

Certificate No: D2450V2-1049_Apr23

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Impedance Measurement Plot for Head TSL

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Certificate No: D2450V2-1049_Apr23

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Appendix: Transfer Calibration at Four Validation Locations on SAM Head¹

Evaluation Condition

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L
---------	------------------	-----------------------------

SAR result with SAM Head (Top ≅ C0)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	56.2 W/kg ± 17.5 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	

SAR result with SAM Head (Mouth ≅ F90)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	57.3 W/kg ± 17.5 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	

SAR result with SAM Head (Neck ≅ H0)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	54.0 W/kg ± 17.5 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	

SAR result with SAM Head (Ear ≅ D90)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	34.6 W/kg ± 17.5 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	

¹ Additional assessments outside the current scope of SCS 0108

Certificate No: D2450V2-1049_Apr23

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ccredited by the Swiss Accreditation The Swiss Accreditation Service fulfilateral Agreement for the rec	is one of the signatorie		Accreditation No.: SCS 0108
lient HCT		Certif	icate No. D2600V2-1106_May23
Gyeonggi-do, Republi			
CALIBRATION C			
Doject	D2600V2 - SN:1	106	
Calibration procedure(s)	QA CAL-05.v12 Calibration Proce	odure for SAR Validation S	ources between 0.7-3 GHz
Calibration date:	May 24, 2023		
	ed in the closed laborator	ry facility: environment temperature	pages and ani part of the certificate. (22 \pm 3)°C and humidity < 70%.
nimary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
ower meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/0380	the second se
ower sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
ower sensor NRP-Z91	SN: 103245	30-Mar-23 (No. 217-03805)	Mar-24
oference 20 dB Attenuator	SN: BH9394 (20k)	30-Mar-23 (No. 217-03809)	Mar-24
ype-N mismatch combination	SN: 310982 / 06327	30-Mar-23 (No. 217-03810)	Mar-24
ielerence Probe EX3DV4	SN: 7349	10-Jan-23 (No. EX3-7549 Jan23	
IAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec2	
econdary Standards	ID #	Check Date (in house)	Scheduled Check
Yower meter E44198	SN: GB39512475	30-Oct-14 (in house check Oct-2	 In house check: Oct-24
ower sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-2	
ower sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-2	
F generator R&S SMT-06 letwork Analyzer Agilent E8358A	5N: 100972 SN: US41080477	15-Jun-15 (in house check Oct-2 31-Mar-14 (in house check Oct-2	
	Name	Function	Signature
alibrated by:	Paulo Pina	Laboratory Technicia	
opproved by:	Sven Kilhn	Technical Manager	<i>c i</i>
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Accreditation No.: SCS 0108

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) 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%.

Certificate No: D2600V2-1106_May23

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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	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2600 MHz ± 1 MHz	

Head TSL parameters

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 ± 0.2) "C	37.1 ± 6 %	2.00 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		-212

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	14.2 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	55.6 W/kg ± 17.0 % (k=2)
CAD mercane over 10 and (10 a) at Mark Tot		
	condition	
SAR averaged over 10 cm ² (10 g) of Head TSL SAR measured	condition 250 mW input power	6.37 W/kg

Certificate No: D2600V2-1106_May23

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	48.9 Ω - 6.8 jΩ	
Return Loss	- 23.1 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.149 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

Certificate No: D2600V2-1106_May23

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DASY5 Validation Report for Head TSL

Date: 24.05.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1106

Communication System: UID 0 - CW; Frequency: 2600 MHz Medium parameters used: f = 2600 MHz; σ = 2 S/m; ϵ_r = 37.1; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN7349; ConvF(7.68, 7.68, 7.68) @ 2600 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- 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=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 117.6 V/m; Power Drift = 0.06 dB Peak SAR (extrapolated) = 27.7 W/kg SAR(1 g) = 14.2 W/kg; SAR(10 g) = 6.37 W/kg Smallest distance from peaks to all points 3 dB below = 8.9 mm Ratio of SAR at M2 to SAR at M1 = 51.4% Maximum value of SAR (measured) = 23.0 W/kg



0 dB = 23.0 W/kg = 13.62 dBW/kg

Certificate No: D2600V2-1106_May23

Page 5 of 6



Impedance Measurement Plot for Head TSL

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Certificate No: D2600V2-1106_May23

Page 6 of 6



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ccredited by the Swiss Accreditation he Swiss Accreditation Service in sulfilateral Agreement for the rec	s one of the signatorie:			Accreditation N	lo.; SCS 0108
Hent HCT (Dymstec)	ERTIFICATE		Certificate	No: D3500V	2-1040_Jan23
Dbject	D3500V2 - SN:10				
Calibration procedure(s)	QA CAL-22.v7 Calibration Procedure for SAR Validation Sources between 3-10 GHz				
Calibration date:	January 22, 2023		810 R.S.		en Andrea M
This calibration certificate documen The measurements and the uncerta All calibrations have been conducte Calibration Equipment used (M&TE	ainties with confidence pr ad in the closed laborator	robability are given on the fol	lowing pages	and are part of t	he certificate.
Primary Standards	ID#	Cal Date (Certificate No.)		Schar	uled Calibration
Power meter NRP Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4	SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310982 / 06327 SN: 3503 SN: 601	04-Apr-22 (No. 217-0352) 04-Apr-22 (No. 217-0352) 04-Apr-22 (No. 217-0352) 04-Apr-22 (No. 217-0352) 04-Apr-22 (No. 217-0352) 04-Apr-22 (No. 217-0352) 08-Mar-22 (No. EX3-3503) 19-Dec-22 (No. DAE4-60)	5/03524) \$) 5) 7) 8) :_Mar22)	Apr-2: Apr-2: Apr-2: Apr-2: Apr-2: Apr-2: Mar-2 Dec-2	3 1 1 1 3 3
	Warnessen.		980.007784.		
Secondary Standards Power meter E4198 Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A	ID # SN: GB39612475 SN: US37282783 SN: MY41093315 SN: 100972 SN: US41080477	Check Date (in house) 30-Oct-14 (in house check 07-Oct-15 (in house check 07-Oct-15 (in house check 15-Jun-15 (in house check 31-Mar-14 (in house check	k Oct-22) k Oct-22) k Oct-22)	In hou In hou In hou In hou	uled Check se check: Oct-24 se check: Oct-24 se check: Oct-24 se check: Oct-24 se check: Oct-24
Calibrated by:	Name Paulo Pina	Function Signature Laboratory Technician		the tag	
Approved by:	Sven Kühn	Technical Ma	nagor	5.0	· ·
This calibration certificate shall not	be reproduced except in	full without written approval	of the laborate		January 23, 2023
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Swiss Calibration Service

Accreditation No.: SCS 0108

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N/A	not applicable or not measured

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

Additional Documentation:

c) DASY System Handbook

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- 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%.

Certificate No: D3500V2-1040_Jan23

Page 2 of 6



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	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3500 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 *C	37.9	2.91 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) *C	38.1 ± 6 %	2.93 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.66 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	66.5 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ¹ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.48 W/kg

Certificate No: D3500V2-1040_Jan23

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.7 Ω - 3.1 jΩ	
Return Loss	- 27.9 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.140 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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Certificate No: D3500V2-1040_Jan23

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DASY5 Validation Report for Head TSL

Date: 22.01.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 3500 MHz; Type: D3500V2; Serial: D3500V2 - SN:1040

Communication System: UID 0 - CW; Frequency: 3500 MHz Medium parameters used: f = 3500 MHz; $\sigma = 2.93$ S/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(7.91, 7.91, 7.91) @ 3500 MHz; Calibrated: 08.03.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- 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=3500MHz/Zoom Scan, dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 70.71 V/m; Power Drift = -0.05 dB Peak SAR (extrapolated) = 17.6 W/kg SAR(1 g) = 6.66 W/kg; SAR(10 g) = 2.48 W/kg Smallest distance from peaks to all points 3 dB below = 8 mm Ratio of SAR at M2 to SAR at M1 = 76% Maximum value of SAR (measured) = 12.6 W/kg



0 dB = 12.6 W/kg = 11.01 dBW/kg

Certificate No: D3500V2-1040 Jan23

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Impedance Measurement Plot for Head TSL

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Certificate No: D3500V2-1040_Jan23

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Object D3700V2 - SN:1105	
CALIBRATION CERTIFICATE Object D3700V2 - SN:1105 Calibration procedure(s) QA CAL-22.v7	s between 3-10 GHz
Calibration procedure(s) QA CAL-22.v7	s between 3-10 GHz
Calibration procedure(s) QA CAL-22.v7	s between 3-10 GHz
	s between 3-10 GHz
Calibration Procedure for SAR Validation Source	s between 3-10 GHz
Calibration date: November 20, 2023	
This calibration certificate documents the traceability to national standards, which realize the physical un The measurements and the uncertainties with corridence probability are given on the following pages ar	nits of measurements (SI).
All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{2}$	
Calibration Equipment used (M&TE critical for calibration)	c and numbery < 70%.
Primary Standards ID # Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2 SN: 104778 30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91 SN: 103244 30-Mar-23 (No. 217-03804)	Mar-24
Power sensor NRP-Z91 SN: 103245 30-Mar-23 (No. 217-03805)	Mar-24
Reference 20 dB Attenuator SN: BH9394 (20k) 30-Mar-23 (No. 217-03809)	Mar-24
Type-N mismatch combination SN: 310982 / 06327 30-Mar-23 (No. 217-03810)	Mar-24
Reference Probe EX3DV4 SN: 3503 07-Mar-23 (No. EX3-3503_Mar23)	Mar-24
DAE4 SN: 601 03-Oct-23 (No. DAE4-601_Oct23)	Oct-24
Secondary Standards ID # Check Date (in house)	Scheduled Check
Power meter E44198 SN: GB39512475 30-Oct-14 (in house check Oct-22)	In house check: Oct-24
and an	In house check: Oct-24
Powar sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22)	the feature of the second second
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) Power sensor HP 8481A SN: MY41093315 07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) Power sensor HP 8481A SN: MY41093315 07-Oct-15 (in house check Oct-22) RF generator R&S SMT-06 SN: 100972 15-Jun-15 (in house check Oct-22)	In house check: Oct-24 In house check: Oct-24
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) Power sensor HP 8481A SN: MY41093315 07-Oct-15 (in house check Oct-22) RF generator R&S SMT-06 SN: 100972 15-Jun-15 (in house check Oct-22)	
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) Power sensor HP 8481A SN: MY41093315 07-Oct-15 (in house check Oct-22) RF generator R&S SMT-06 SN: 100972 15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) Power sensor HP 8481A SN: MY41093315 07-Oct-15 (in house check Oct-22) RF generator R&S SMT-05 SN: 100972 15-Jun-15 (in house check Oct-22) Network Analyzer Agilent E8358A SN: US41080477 31-Mar-14 (in house check Oct-22) Name Function	In house check: Oct-24
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) RF generator R&S SMT-05 SN: 100972 15-Jun-15 (in house check Oct-22) SN: US41080477 31-Mar-14 (in house check Oct-22) SN: US41080477 31-Mar-14 (in house check Oct-22) Name Function Calibrated by: Paulo Pina Laboratory Technician	In house check: Oct-24
Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) Power sensor HP 8481A SN: US37292783 07-Oct-15 (in house check Oct-22) RF generator R&S SMT-05 SN: 100972 15-Jun-15 (in house check Oct-22) Network Analyzer Agilent E8358A SN: US41080477 31-Mar-14 (in house check Oct-22) Name Function	In house check: Oct-24



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



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S Schweizerischer Kalibrierdienst

- C Service suisse d'etalonnage Servizio svizzero di taratura
- S Swiss Calibration Service

Accreditation No.: SCS 0108

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) 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%.

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Measurement Conditions

DASY system	configuration,	as far as no	t given on page	11.
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DASY Version	DASY52	V52,10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	120
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx; dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	3700 MHz ± 1 MHz	

Head TSL parameters 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 ± 0.2) °C	38.1 ± 6 %	3.06 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	1111	

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	6.66 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	67.1 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.43 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	45.8 Ω - 0.6 jΩ
Return Loss	- 27,0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1,139 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
The brack of by	Grend

Certificate No: D3700V2-1105_Nov23

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DASY5 Validation Report for Head TSL

Date: 20.11.2023

Test Laboratory: SPEAG, Zurich, Switzerland

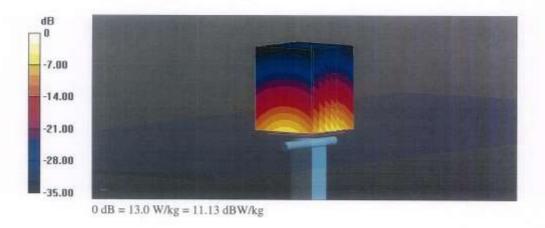
DUT: Dipole 3700 MHz; Type: D3700V2; Serial: D3700V2 - SN:1105

Communication System: UID 0 - CW; Frequency: 3700 MHz Medium parameters used: f = 3700 MHz; $\sigma = 3.06$ S/m; $\varepsilon_e = 38.1$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(7.73, 7.73, 7.73) @ 3700 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=100 mW, d=10mm, f=3700MHz/Zoom Scan, dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 68.83 V/m; Power Drift = 0.08 dB Peak SAR (extrapolated) = 18.2 W/kg SAR(1 g) = 6.66 W/kg; SAR(10 g) = 2.43 W/kg Smallest distance from peaks to all points 3 dB below = 8 mm Ratio of SAR at M2 to SAR at M1 = 74.7% Maximum value of SAR (measured) = 13.0 W/kg



Certificate No: D3700V2-1105_Nov23

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Impedance Measurement Plot for Head TSL

		Calibration		K	2	Ê	Å	3.700	1000 G	pF	-586	5.760 C 1.16 mC 672 ml
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Certificate No: D3700V2-1105_Nov23

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ccredited by the Swiss Accreditation The Swiss Accreditation Service Aultilateral Agreement for the rec	is one of the signatorie		Accreditation No.: SCS 0108
lient HCT		Certificate No.	D3900V2-1019 May23
Gyeonggi-do, Republi	ic of Korea		0330072-1013_may23
CALIBRATION C	ERTIFICATI	E	
Object	D3900V2 - SN:10	019	
Calibration procedure(s)	QA CAL-22.v7 Calibration Proce	edure for SAR Validation Sources	s between 3-10 GHz
Calibration date:	May 19, 2023		
This calibration certificate documer	nts the traceability to nati	onal standards, which realize the physical un	its of measurements (SI).
The measurements and the uncert	ainties with confidence p	robability are given on the following pages an	are part of the cartificata.
	ed in the closed laborator	ry facility: environment temperature (22 \pm 3)%	C and humidity < 70%.
		ry facility: environment temperature (22 \pm 3)%	C and humidity < 70%.
All calibrations have been conducts		ry facility: environment temperature (22 ± 3) ^o Cal Date (Certificate No.)	C and humidity < 70%. Scheduled Calibration
All calibrations have been conduct Calibration Equipment used (M&TE Primary Standards Power meter NRP2	E critical for calibration)	Cal Date (Certificate No.) 90-Mar-23 (No. 217-03804/03805)	Scheduled Calibration Mar-24
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All calibrations have been conducts Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-291 Power sensor NRP-291 Reference 20 dB Attenuator	E ortical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k)	Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03809)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Mar-24
All calibrations have been conducts Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power senaor NRP-291 Power senaor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination	E critical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: BH9394 (20k) SN: 310962 / 06327	Cal Date (Certificate No.) 30-Mar-23 (No. 217-03904/03805) 30-Mar-23 (No. 217-03904) 30-Mar-23 (No. 217-03905) 30-Mar-23 (No. 217-03909) 90-Mar-23 (No. 217-03810)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Mar-24
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All calibrations have been conducts Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-291 Reference 29 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards	E ortical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 8H9394 (20k) SN: 310962 / 06327 SN: 3503 SN: 601 ID #	Cal Date (Certificate No.) 30-Mar-23 (No. 217-03904/03805) 30-Mar-23 (No. 217-03904) 30-Mar-23 (No. 217-03905) 30-Mar-23 (No. 217-03910) 90-Mar-23 (No. 217-03810) 07-Mar-23 (No. 217-03810) 07-Mar-24 (No. 217-03810) 07-Mar-25 (No.	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Dec-23 Scheduled Check
All calibrations have been conducts Calibration Equipment used (M&TE Primary Standards Power meter NRP2 Power sensor NRP-291 Reference 20 dB Attenuator Type-N mismatch combination Reference Probe EX3DV4 DAE4 Secondary Standards Power meter E4419B	E ortical for calibration) ID # SN: 104778 SN: 103244 SN: 103245 SN: 310982 / 06327 SN: 3503 SN: 3503 SN: 601 ID # SN: (B39512475	Cal Date (Certificate No.) 30-Mar-23 (No. 217-03804/03805) 30-Mar-23 (No. 217-03804) 30-Mar-23 (No. 217-03805) 30-Mar-23 (No. 217-03810) 07-Mar-23 (No. 217-03810) 07-Mar-23 (No. EX3-3503_Mar23) 19-Dec-22 (No. DAE4-601_Dec22) Check Date (in house) 30-0d1-14 (in house check Oct-22)	Scheduled Calibration Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Mar-24 Dec-23 Scheduled Check In house check: Oct-24
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Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland





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

Accreditation No.: SCS 0108

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

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:

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

Additional Documentation:

c) 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%.

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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 ± 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 ± 0.2) "C	36.7 ± 6 %	3.23 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		24227

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	6.97 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	69.7 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ² (10 cl of Head TS)	nandition	
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition 100 mW input power	2.42 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 3900 MHz

Impedance, transformed to feed point	48.0 Ω - 7.8 jΩ	
Return Loss	- 21.7 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1.100 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

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SPEAG	
and solution.	
	SPEAG

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DASY5 Validation Report for Head TSL

Date: 19.05.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 3900 MHz; Type: D3900V2; Serial: D3900V2 - SN:1019

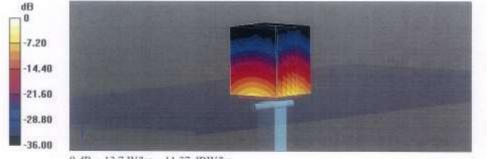
Communication System: UID 0 - CW; Frequency: 3900 MHz Medium parameters used: f = 3900 MHz; σ = 3.23 S/m; ϵ_c = 36.7; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 SN3503; ConvF(7.39, 7.39, 7.39) @ 3900 MHz; Calibrated: 07.03.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- 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 = 71.29 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 19.8 W/kg SAR(1 g) = 6.97 W/kg; SAR(10 g) = 2.42 W/kg Smallest distance from peaks to all points 3 dB below = 8 mm Ratio of SAR at M2 to SAR at M1 = 73.5% Maximum value of SAR (measured) = 13.7 W/kg



0 dB = 13.7 W/kg = 11.37 dBW/kg

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Impedance Measurement Plot for Head TSL

				4	A	K		3 900000 G 5.2301 3 900000 G	ρF	48.002 Ω -7.8028 Ω 81.830 mU -99.814 *
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10.00 5.00		GHz -				3		3.900000 C		-21.731 dB

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chmid & Partner Engineering AG rughausstrasse 43, 8004 Zurich, 1	of		Schweizerischer Kalibrierdienst Service suisse d'étalonnage Servizio svizzero di taratura Swiss Calibration Service
ccredited by the Swiss Accreditation he Swiss Accreditation Service in Iultilateral Agreement for the reco	s one of the signatorie		Accreditation No.: SCS 0108
lient HCT		Certificate No.	D5GHzV2-1317_May23
Gyeonggi-do, Republic			
Dbject	D5GHzV2 - SN:1	317	sting the same
Calibration procedure(s)	QA CAL-22.v7 Calibration Proce	dure for SAR Validation Sources	between 3-10 GHz
Calibration date:	May 17, 2023		
The measurements and the uncerta All calibrations have been conducte	inties with confidence p d in the closed laborator	onal standards, which realize the physical uni robability are given on the following pages an y facility: environment temperature (22 ± 3)%	d are part of the certificate.
Calibration Equipment used (M&TE	1960		
Primary Standards	ID#	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24 Mar-24
Power sensor NRP-Z91 Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24 Mar-24
Reference 20 dB Attenuator	SN: 103245	30-Mar-23 (No. 217-03805)	Mar-24
Type-N mismatch combination	SN: BH9394 (20k) SN: 310982 / 06327	30-Mar-23 (No. 217-03809) 30-Mar-23 (No. 217-03810)	Mar-24 Mar-24
Reference Probe EX3DV4	SN: 3503	07-Mar-23 (No. EX3-3503 Mar23)	Mar-24
DAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec22)	Dec-23
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E44198	SN: GB39512475	30-Oct-14 (in house check Oct-22)	
	SN: US37292783	그는 방법에 가지 않는 것을 가지 않는 것이 아름지 않네. 같은 것이 같이 많아야 한다.	In house check: Oct-24
Power sensor HP 8481A		07-Oct-15 (In house check Oct-22)	In house check: Oct-24 In house check: Oct-24
	SN: MY41093315	07-Oct-15 (in house check Oct-22) 07-Oct-15 (in house check Oct-22)	In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Power sensor HP 8481A	SN: MY41093315 SN: 100972		In house check: Oct-24
Power sensor HP 8481A RF generator R&S SMT-06		07-Oct-15 (in house check Oct-22)	In house check: Oct-24 In house check: Oct-24
Power sensor HP 8481A RF generator R&S SMT-06	SN: 100972	07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22)	In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Power sensor HP 8481A Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent EB358A Calibrated by:	SN: 100972 SN: US41080477	07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22)	In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A Calibrated by:	SN: 100972 SN: US41080477 Name	07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22) Function	In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 In house check: Oct-24
Power sensor HP 8481A RF generator R&S SMT-06 Network Analyzer Agilent E8358A Calibrated by: Approved by:	SN: 100972 SN: US41060477 Narne Michael Weber Sven Köhn	07-Oct-15 (in house check Oct-22) 15-Jun-15 (in house check Oct-22) 31-Mar-14 (in house check Oct-22) Function Laboratory Technician	In house check: Oct-24 In house check: Oct-24 In house check: Oct-24 Signature Milder S. Co- Issued: May 25, 2023



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





S Schweizerischer Kalibrierdienst Service suisse d'étalonnage

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

Accreditation No.: SCS 0108

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

c) 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%.

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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	5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz 5800 MHz ± 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 ± 0.2) °C	34.8 ± 6 %	4.60 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm ² (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.94 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	78.8 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ⁹ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.28 W/kg

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Head TSL parameters at 5600 MHz

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) *C	34.6±6%	4.97 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	8200	

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	8.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.2 W/kg ± 19.9 % (k=2)
	A	
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.32 W/kg

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) "C	34.4 ± 6 %	5.08 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	(1997) (1997)	<u>2227</u>

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.79 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	77.4 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SWH averaged over 10 cm. (10 g) of head 13L	Gargeron	
SAR averaged over 10 cm (10 g) of need 13L	100 mW input power	2.23 W/kg

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Head TSL parameters at 5800 MHz

	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	34.3 ± 6 %	5.11 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	

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	7.75 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	76.9 W/kg ± 19.9 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured	condition 100 mW input power	2.20 W/kg

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	44.6 Ω - 2.0 jΩ	
Return Loss	- 24.3 dB	

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	48.0 Ω - 0.3 jΩ	
Return Loss	- 33.6 dB	

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	47.2 Ω + 1.2 jΩ
Return Loss	- 30.0 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	46.0 Ω + 0.8 jΩ	
Return Loss	- 27,4 dB	

General Antenna Parameters and Design

Electrical Delay (one direction)	1,191 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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DASY5 Validation Report for Head TSL

Date: 17.05.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1317

Communication System: UID 0 - CW; Frequency: 5250 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz, Frequency: 5800 MHz Medium parameters used: f = 5250 MHz; σ = 4.6 S/m; ϵ_f = 34.8; ρ = 1000 kg/m³ Medium parameters used: f = 5600 MHz; σ = 4.97 S/m; ϵ_f = 34.6; ρ = 1000 kg/m³ Medium parameters used: f = 5750 MHz; σ = 5.08 S/m; ϵ_f = 34.4; ρ = 1000 kg/m³ Medium parameters used: f = 5800 MHz; σ = 5.11 S/m; ϵ_f = 34.3; ρ = 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(5.08, 5.08, 5.08) @ 5750 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: 19.12.2022
- 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=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 = 75.29 V/m; Power Drift = -0.00 dB Peak SAR (extrapolated) = 26.9 W/kg SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.28 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 71.8% Maximum value of SAR (measured) = 17.6 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 = 74.66 V/m; Power Drift = -0.03 dB Peak SAR (extrapolated) = 30.1 W/kg SAR(1 g) = 8.17 W/kg; SAR(10 g) = 2.32 W/kg Smallest distance from peaks to all points 3 dB below = 6.8 mm Ratio of SAR at M2 to SAR at M1 = 68.8% Maximum value of SAR (measured) = 18.8 W/kg

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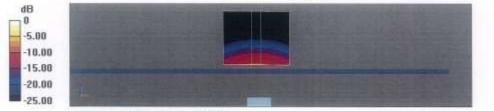
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Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm Reference Value = 72.14 V/m; Power Drift = -0.04 dB Peak SAR (extrapolated) = 29.8 W/kg SAR(1 g) = 7.79 W/kg; SAR(10 g) = 2.23 W/kg Smallest distance from peaks to all points 3 dB below = 7.4 mm Ratio of SAR at M2 to SAR at M1 = 66.1% Maximum value of SAR (measured) = 18.2 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 = 71.84 V/m; Power Drift = 0.00 dB Peak SAR (extrapolated) = 30.2 W/kg SAR(1 g) = 7.75 W/kg; SAR(10 g) = 2.2 W/kg Smallest distance from peaks to all points 3 dB below = 7.2 mm Ratio of SAR at M2 to SAR at M1 = 65.5% Maximum value of SAR (measured) = 18.3 W/kg



0 dB = 18.8 W/kg = 12.74 dBW/kg

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Impedance Measurement Plot for Head TSL

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10.00 5.00 0.00 5.00	Start 5.00000								2	5.5000 GHz 5.0000 GHz 5.0000 GHz	-24.292 dB 33.635 dB -00.040 dB
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10.00 5.00 0.00 -5.00 -70.00	Start 5.00000								2	5.5000 GHz 5.0000 GHz 5.0000 GHz	-24.292 dB 33.635 dB -00.040 dB
10.00 5.00 5.00 5.00 5.00 15.00 -15.00 20.00	Start 5.00000		-						2	5.5000 GHz 5.0000 GHz 5.0000 GHz	-24.292 dB 33.635 dB -00.040 dB
10.00 5.00 6.00 5.00 -10.00 -15.00	Start 5.00000		-						2	5 35000 GHz 0 0000 GHz 5 35000 GHz 1 00000 GHz	-24.292 dB 33.635 dB -00.040 dB
10.00 5.00 0.00 5.00 -10.00 -15.00 -15.00 -25.00	Start 5.00000	QHz	-						2	5.5000 GHz 5.0000 GHz 5.0000 GHz	-24.292 dB 33.635 dB -00.040 dB

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Appendix: Transfer Calibration at Four Validation Locations on SAM Head¹

Evaluation Conditions (f=5250 MHz)

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L

SAR result with SAM Head (Top)

SAR averaged over 1 cm ² (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	84.3 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	83.5 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	

SAR result with SAM Head (Neck)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	81.7 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	

SAR result with SAM Head (Ear)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	52.8 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	

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¹ Additional assessments outside the current scope of SCS 0108



Appendix: Transfer Calibration at Four Validation Locations on SAM Head²

Evaluation Conditions (f=5800 MHz)

Phantom	SAM Head Phantom	For usage with cSAR3DV2-R/L
2 - II II (1992)		

SAR result with SAM Head (Top)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	79.9 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	

SAR result with SAM Head (Mouth)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	86.4 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	

SAR result with SAM Head (Neck)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	77.1 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ² (10 g) of Head TSL	condition	

SAR result with SAM Head (Ear)

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR for nominal Head TSL parameters	normalized to 1W	54.9 W/kg ± 20.3 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	

² Additional assessments outside the current scope of SCS 0108

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