

Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	199991.64	-0.32	-0.00
Channel X + Input	20002.84	1.10	0.01
Channel X - Input	-20001.18	0.25	-0.00
Channel Y + Input	199992.25	0.36	0.00
Channel Y + Input	19999.51	-1.97	-0.01
Channel Y - Input	-20003.41	-1.82	0.01
Channel Z + Input	199993.13	0.96	0.00
Channel Z + Input	20000.60	-0.92	-0.00
Channel Z - Input	-20003.21	-1.57	0.01

Low Range	Reading (μV)	Difference (μV)	Error (%)
Channel X + Input	2001.46	0.54	0.03
Channel X + Input	201.63	0.29	0.14
Channel X - Input	-198.25	0.29	-0.15
Channel Y + Input	2001.07	0.18	0.01
Channel Y + Input	200.68	-0.49	-0.24
Channel Y - Input	-199.20	-0.52	0.26
Channel Z + Input	2000.41	-0.51	-0.03
Channel Z + Input	199.93	-1.28	-0.64
Channel Z - Input	-199.77	-1.08	0.54

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	7.08	5.84
	- 200	-6.14	-7.41
Channel Y	200	-21.12	-21.17
	- 200	20.10	20.00
Channel Z	200	-3.05	-2.98
	- 200	0.35	0.59

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	3.84	-3.07
Channel Y	200	8.29	-	4.87
Channel Z	200	8.97	6.36	-

4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16191	14008
Channel Y	16286	16249
Channel Z	16106	15261

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	0.57	-0.12	1.34	0.31
Channel Y	-0.39	-0.99	0.23	0.27
Channel Z	-0.35	-1.05	0.40	0.28

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **Sporton**

Certificate No: **EX3-3843_Sep20**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3843**

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

Calibration date: **September 23, 2020**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: CC2552 (20x)	31-Mar-20 (No. 217-03106)	Apr-21
DAE4	SN: 660	27-Dec-19 (No. DAE4-660_Dec19)	Dec-20
Reference Probe ES3DV2	SN: 3013	31-Dec-19 (No. ES3-3013_Dec19)	Dec-20
Secondary Standards	ID	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB41293874	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: MY41498087	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
Power sensor E4412A	SN: 000110210	06-Apr-16 (in house check Jun-20)	In house check: Jun-22
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-20)	In house check: Jun-22
Network Analyzer E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

Calibrated by:	Name Michael Weber	Function Laboratory Technician	Signature
Approved by:	Name Katja Pokovic	Function Technical Manager	Signature
			Issued: September 30, 2020
This calibration certificate shall not be reproduced except in full without written approval of the laboratory.			



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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- **NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not affect the E²-field uncertainty inside TSL (see below ConvF).
- **NORM(f)_{x,y,z}** = NORM_{x,y,z} * frequency_response (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of ConvF.
- **DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- **PAR**: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- **A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; D_{x,y,z}; VR_{x,y,z}**: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- **ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- **Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- **Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- **Connector Angle**: The angle is assessed using the information gained by determining the NORM_x (no uncertainty required).

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3843

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.34	0.36	0.26	
DCP (mV) ^B	110.3	104.4	106.5	± 10.1 %

Calibration Results for Modulation Response

UID	Communication System Name		A dB	B dB $\sqrt{\mu\text{V}}$	C	D dB	VR mV	Max dev.	Unc ^E (k=2)
0	CW	X	0.0	0.0	1.0	0.00	187.4	± 2.2 %	± 4.7 %
		Y	0.0	0.0	1.0		173.2		
		Z	0.0	0.0	1.0		179.7		

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

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

^B Numerical linearization parameter: uncertainty not required.

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3843

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	146.7
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 Scan* job.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3843

Calibration Parameter Determined in Head Tissue Simulating Media

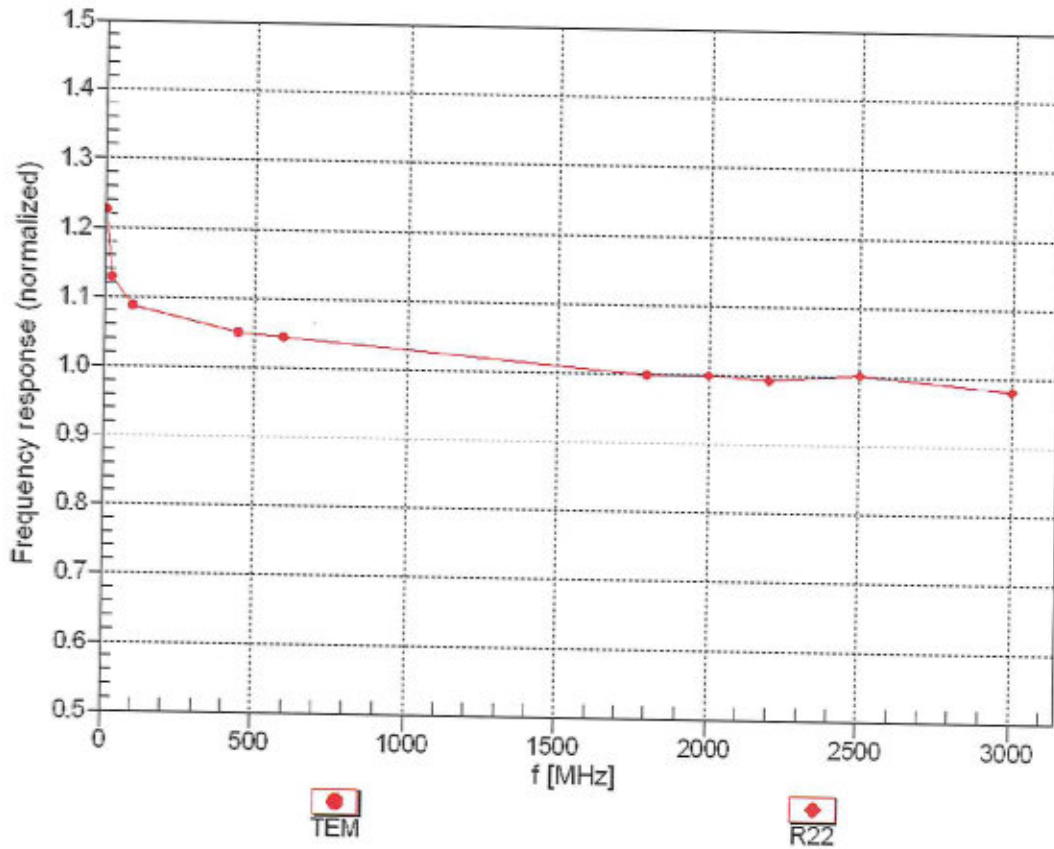
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha ^G	Depth ^G (mm)	Unc (k=2)
750	41.9	0.89	9.06	9.06	9.06	0.36	1.11	± 12.0 %
835	41.5	0.90	8.69	8.69	8.69	0.35	1.01	± 12.0 %
900	41.5	0.97	8.62	8.62	8.62	0.41	0.96	± 12.0 %
1450	40.5	1.20	7.82	7.82	7.82	0.47	0.80	± 12.0 %
1750	40.1	1.37	7.72	7.72	7.72	0.30	0.88	± 12.0 %
1900	40.0	1.40	7.41	7.41	7.41	0.27	0.88	± 12.0 %
2000	40.0	1.40	7.39	7.39	7.39	0.32	0.88	± 12.0 %
2300	39.5	1.67	7.06	7.06	7.06	0.28	0.90	± 12.0 %
2450	39.2	1.80	6.85	6.85	6.85	0.21	0.90	± 12.0 %
2600	39.0	1.96	6.76	6.76	6.76	0.41	0.90	± 12.0 %
5250	35.9	4.71	4.66	4.66	4.66	0.40	1.80	± 13.1 %
5600	35.5	5.07	4.30	4.30	4.30	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.35	4.35	4.35	0.40	1.80	± 13.1 %

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

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

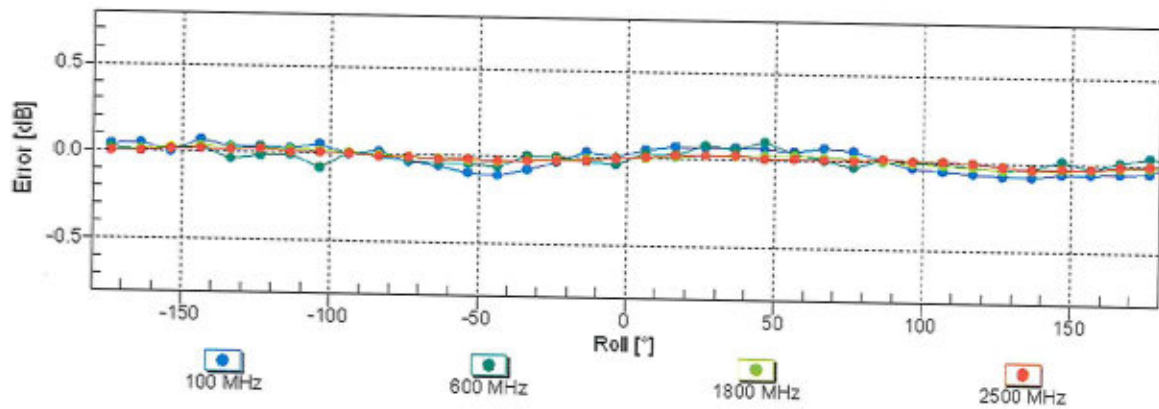
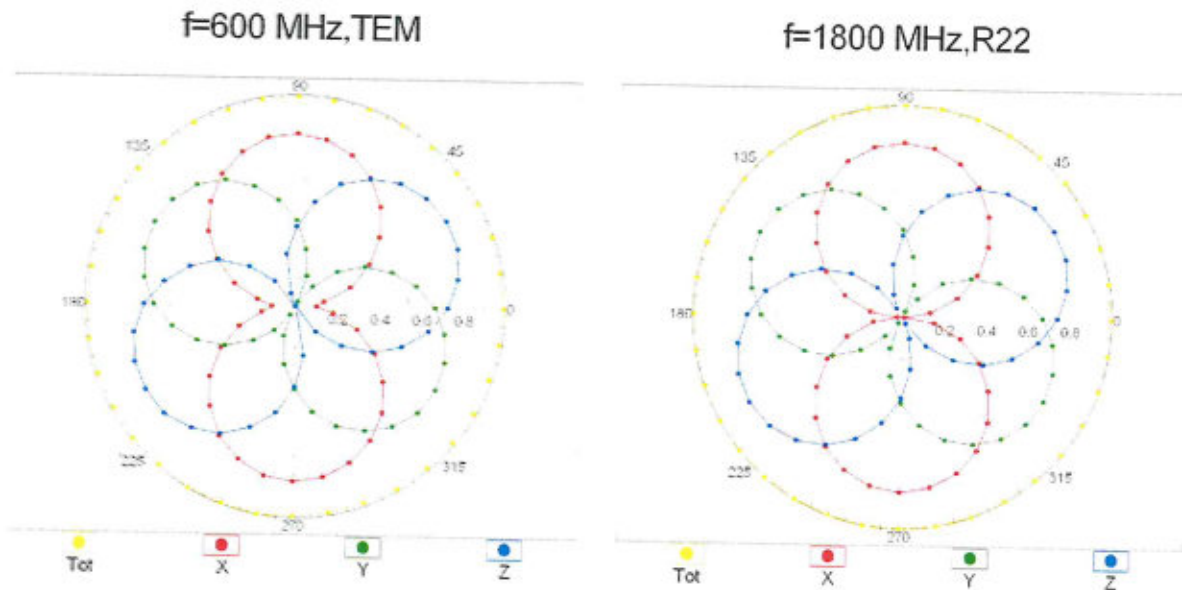
^G Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from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

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



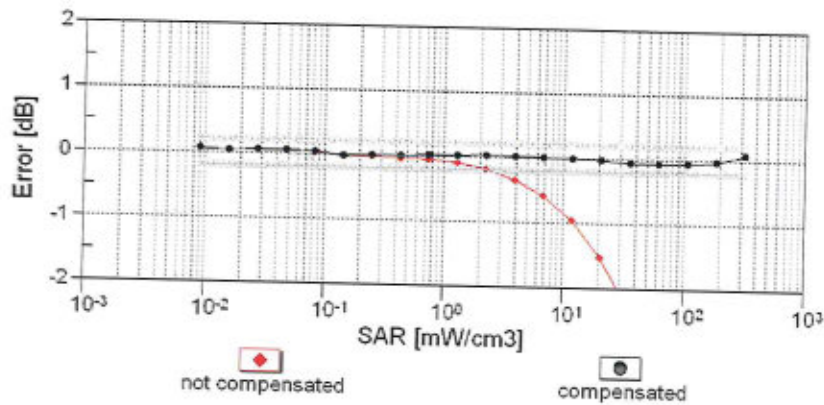
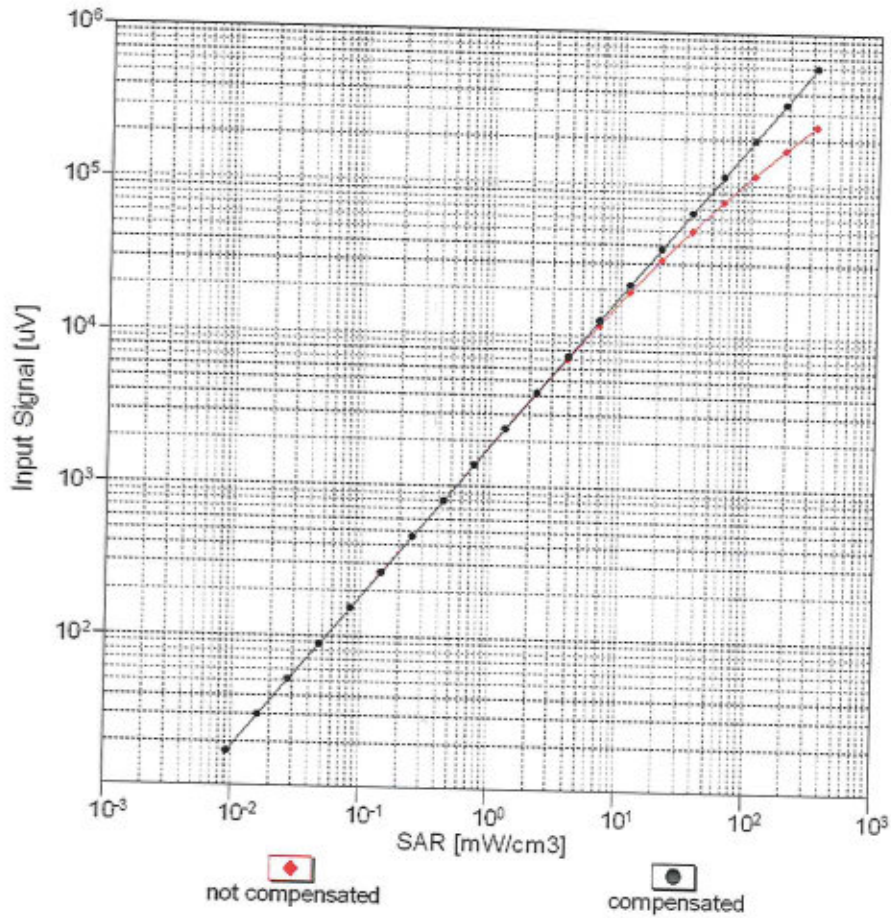
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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



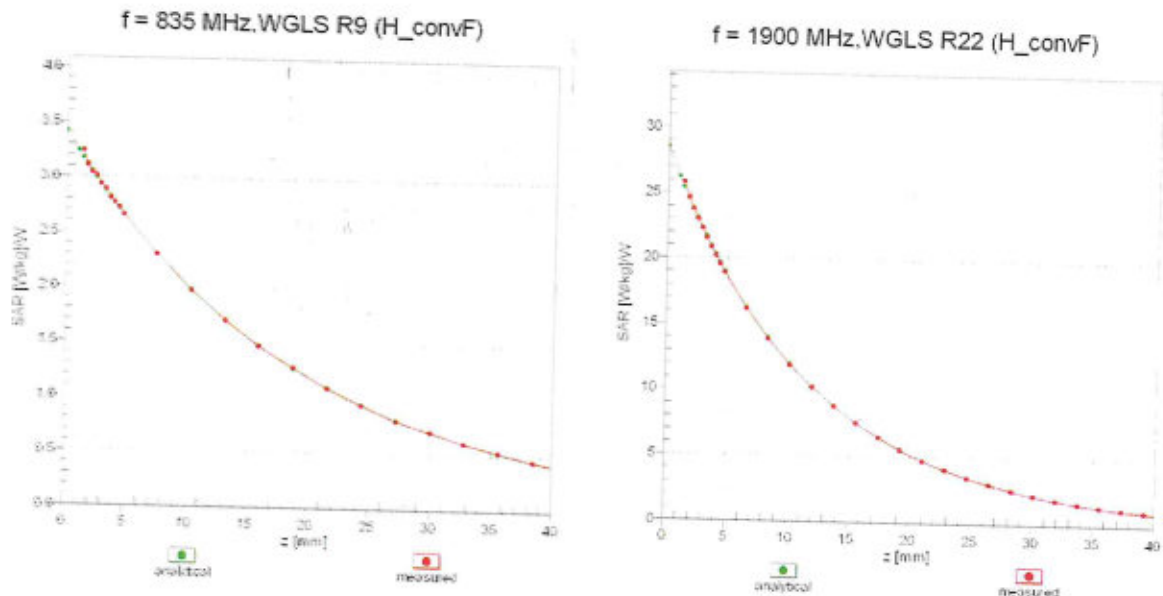
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ (k=2)

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

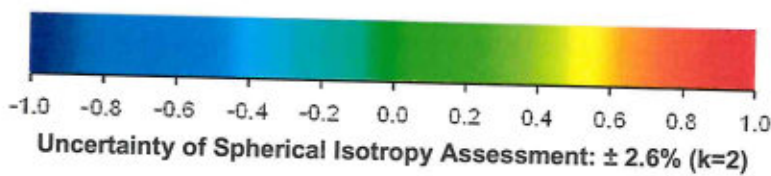
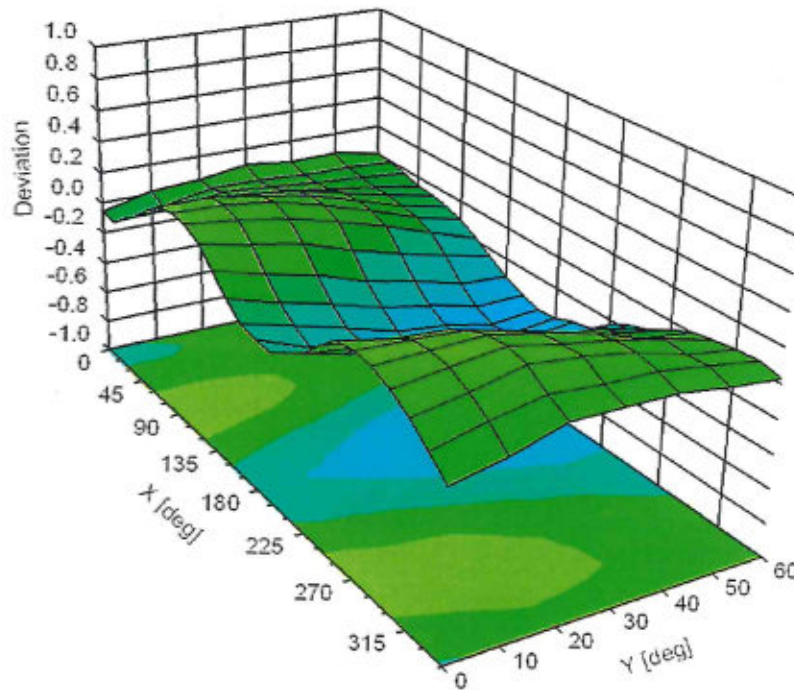


Uncertainty of Linearity Assessment: $\pm 0.6\%$ (k=2)

Conversion Factor Assessment



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





Appendix E. Conducted RF Output Power Table

The detailed power table are shown as follows.



Receiver On/Hotspot On/Receiver Off / Extremity

GSM850	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	128	189	251		128	189	251	
TX Channel	824.2	836.4	848.8		824.2	836.4	848.8	
Frequency (MHz)	824.2	836.4	848.8	33.50	23.83	23.82	23.76	24.50
GSM 1 Tx slot	32.83	32.82	32.76	33.50	23.83	23.82	23.76	24.50
GPRS 1 Tx slot	32.81	32.85	32.77	33.50	23.81	23.85	23.77	24.50
GPRS 2 Tx slots	32.02	32.05	31.97	32.50	26.02	26.05	25.97	26.50
GPRS 3 Tx slots	30.27	30.32	30.21	31.00	26.01	26.06	25.95	26.74
GPRS 4 Tx slots	29.35	29.36	29.26	30.00	26.35	26.36	26.26	27.00
EDGE 1 Tx slot	26.91	27.04	26.93	27.50	17.91	18.04	17.93	18.50
EDGE 2 Tx slots	25.51	25.68	25.49	26.50	19.51	19.68	19.49	20.50
EDGE 3 Tx slots	23.11	23.25	23.13	24.00	18.85	18.99	18.87	19.74
EDGE 4 Tx slots	22.05	22.09	22.01	22.50	19.05	19.09	19.01	19.50

Receiver On

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1650.2	1680	1699.8		1650.2	1680	1699.8	
Frequency (MHz)	1650.2	1680	1699.8	30.50	21.07	21.09	21.09	21.50
GSM 1 Tx slot	30.07	30.09	30.06	30.50	21.07	21.09	21.09	21.50
GPRS 1 Tx slot	30.06	30.04	30.08	30.50	21.06	21.04	21.08	21.50
GPRS 2 Tx slots	29.26	29.23	29.32	29.50	23.26	23.23	23.32	23.50
GPRS 3 Tx slots	27.45	27.45	27.54	28.50	23.19	23.19	23.28	24.24
GPRS 4 Tx slots	26.29	26.43	26.42	27.50	23.29	23.43	23.42	24.50
EDGE 1 Tx slot	26.39	26.26	26.01	27.00	17.39	17.26	17.01	18.00
EDGE 2 Tx slots	25.44	25.28	25.04	26.00	19.44	19.28	19.04	20.00
EDGE 3 Tx slots	23.42	23.26	23.03	24.00	19.16	19.00	18.77	19.74
EDGE 4 Tx slots	22.37	22.22	21.95	23.00	19.37	19.22	18.95	20.00

Receiver On

Receiver On/Hotspot On/Receiver Off / Extremity

Band	WCDMA II			Tune-up Limit (dBm)	WCDMA V			Tune-up Limit (dBm)
	9262	9400	9538		4132	4182	4233	
TX Channel	9262	9400	9538		4132	4182	4233	
Rx Channel	9662	9800	9938		4367	4407	4458	
Frequency (MHz)	1852.4	1880	1907.6		826.4	836.4	846.6	
3GPP Rel 99 AMR 12.2Kbps	23.83	23.80	23.77	24.50	23.27	23.26	23.25	24.50
3GPP Rel 99 AMR 12.2Kbps	23.84	23.85	23.76	24.50	23.29	23.30	23.27	24.50
3GPP Rel 6 HSDPA Subtest-1	22.72	22.72	22.58	23.50	22.46	22.36	22.37	23.50
3GPP Rel 6 HSDPA Subtest-2	22.71	22.58	22.45	23.50	22.43	22.30	22.24	23.50
3GPP Rel 6 HSDPA Subtest-3	22.22	22.07	21.95	23.00	21.91	21.82	21.77	23.00
3GPP Rel 6 HSDPA Subtest-4	22.13	22.07	21.97	23.00	21.89	21.77	21.72	23.00
3GPP Rel 8 DC-HSDPA Subtest-1	22.69	22.70	22.53	23.50	22.41	22.33	22.35	23.50
3GPP Rel 8 DC-HSDPA Subtest-2	22.68	22.56	22.40	23.50	22.38	22.27	22.22	23.50
3GPP Rel 8 DC-HSDPA Subtest-3	22.19	22.05	21.90	23.00	21.86	21.79	21.75	23.00
3GPP Rel 8 DC-HSDPA Subtest-4	22.10	22.05	21.92	23.00	21.84	21.74	21.70	23.00
3GPP Rel 6 HSUPA Subtest-1	22.71	22.68	22.53	23.50	22.44	22.43	22.40	23.50
3GPP Rel 6 HSUPA Subtest-2	20.67	20.64	20.59	21.50	20.48	20.38	20.37	21.50
3GPP Rel 6 HSUPA Subtest-3	21.72	21.63	21.57	22.50	21.47	21.49	21.44	22.50
3GPP Rel 6 HSUPA Subtest-4	20.17	20.10	20.08	21.50	19.99	19.96	19.96	21.50
3GPP Rel 6 HSUPA Subtest-5	22.58	22.62	22.48	23.50	22.48	22.37	22.28	23.50
3GPP Rel 7 HSPA+ (16QAM) Subtest-1	20.61	20.45	20.33	21.00	20.12	20.33	20.40	21.00



Hotspot On

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1359.2	1330	1309.8	1359.2	1330	1309.8	1359.2	1330
Frequency (MHz)	26.11	26.00	26.03	26.50	17.11	17.00	17.03	17.50
GSM 1 Tx slot	26.12	26.08	26.06	26.50	17.12	17.08	17.06	17.50
GPRS 1 Tx slot	24.85	24.83	24.80	25.50	18.85	18.83	18.80	19.50
GPRS 2 Tx slots	23.17	23.07	23.12	24.50	18.91	18.81	18.86	20.24
GPRS 3 Tx slots	22.41	22.45	22.36	23.50	19.41	19.45	19.36	20.50
GPRS 4 Tx slots	22.16	22.03	21.78	23.00	13.16	13.03	12.78	14.00
EDGE 1 Tx slot	21.21	21.13	20.81	22.00	15.21	15.13	14.81	16.00
EDGE 2 Tx slots	19.19	19.03	19.01	20.00	14.93	14.77	14.75	15.74
EDGE 3 Tx slots	18.14	18.11	17.72	19.00	15.14	15.11	14.72	16.00
EDGE 4 Tx slots								

Hotspot On

Band	WCDMA II			Tune-up Limit (dBm)	
TX Channel	9262	9400	9538		
Rx Channel	9662	9800	9938		
Frequency (MHz)	1852.4	1880	1907.6		
3GPP Rel 99	AMR 12.2Kbps	18.22	18.31	18.30	19.50
3GPP Rel 99	RMC 12.2Kbps	18.29	18.35	18.32	19.50
3GPP Rel 6	HSDPA Subtest-1	17.90	17.88	17.89	18.50
3GPP Rel 6	HSDPA Subtest-2	17.87	17.87	17.77	18.50
3GPP Rel 6	HSDPA Subtest-3	17.28	17.29	17.29	18.00
3GPP Rel 6	HSDPA Subtest-4	17.41	17.25	17.24	18.00
3GPP Rel 8	DC-HSDPA Subtest-1	17.87	17.82	17.84	18.50
3GPP Rel 8	DC-HSDPA Subtest-2	17.82	17.84	17.73	18.50
3GPP Rel 8	DC-HSDPA Subtest-3	17.22	17.29	17.22	18.00
3GPP Rel 8	DC-HSDPA Subtest-4	17.37	17.20	17.20	18.00
3GPP Rel 6	HSUPA Subtest-1	17.43	17.47	17.49	18.50
3GPP Rel 6	HSUPA Subtest-2	15.92	15.93	15.95	16.50
3GPP Rel 6	HSUPA Subtest-3	16.90	16.93	16.94	17.50
3GPP Rel 6	HSUPA Subtest-4	15.44	15.42	15.44	16.50
3GPP Rel 6	HSUPA Subtest-5	17.84	17.90	17.80	18.50
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	15.10	15.12	15.20	16.00



Receiver Off/Extrinity

GSM1900	Burst Average Power (dBm)			Tune-up Limit (dBm)	Frame-Average Power (dBm)			Tune-up Limit (dBm)
	512	661	810		512	661	810	
TX Channel	1859.2	1830	1809.8	1859.2	1830	1809.8	20.00	
Frequency (MHz)	28.33	28.32	28.45	29.00	19.33	19.32	19.45	20.00
GSM 1 Tx slot	28.66	28.40	28.59	29.00	19.66	19.40	19.59	20.00
GPRS 1 Tx slot	27.11	27.10	27.03	28.00	21.11	21.10	21.03	22.00
GPRS 2 Tx slots	25.62	25.52	25.57	27.00	21.36	21.26	21.31	22.74
GPRS 3 Tx slots	24.82	24.84	24.79	26.00	21.82	21.84	21.79	23.00
GPRS 4 Tx slots	24.44	24.48	24.23	25.50	15.44	15.48	15.23	16.50
EDGE 1 Tx slot	23.41	23.50	23.26	24.50	17.41	17.50	17.26	18.50
EDGE 2 Tx slots	21.50	21.48	21.25	22.50	17.24	17.22	16.99	18.24
EDGE 3 Tx slots	20.50	20.44	20.17	21.50	17.50	17.44	17.17	18.50
EDGE 4 Tx slots								

Receiver Off/Extrinity

Band	WCDMA II			Tune-up Limit (dBm)	
TX Channel	9262	8400	9538		
Rx Channel	9662	8800	9938		
Frequency (MHz)	1852.4	1880	1907.6		
3GPP Rel 99	AMR 12.2Kbps	20.40	20.43	20.33	21.50
3GPP Rel 99	RMC 12.2Kbps	20.41	20.53	20.44	21.50
3GPP Rel 6	HSDPA Subtest-1	19.86	19.91	19.88	20.50
3GPP Rel 6	HSDPA Subtest-2	19.85	19.79	19.77	20.50
3GPP Rel 6	HSDPA Subtest-3	19.37	19.40	19.36	20.00
3GPP Rel 6	HSDPA Subtest-4	19.42	19.34	19.31	20.00
3GPP Rel 8	DC-HSDPA Subtest-1	19.80	19.84	19.84	20.50
3GPP Rel 8	DC-HSDPA Subtest-2	19.81	19.75	19.74	20.50
3GPP Rel 8	DC-HSDPA Subtest-3	19.32	19.35	19.32	20.00
3GPP Rel 8	DC-HSDPA Subtest-4	19.40	19.31	19.28	20.00
3GPP Rel 6	HSUPA Subtest-1	19.94	19.85	19.92	20.50
3GPP Rel 6	HSUPA Subtest-2	17.88	17.90	17.81	18.50
3GPP Rel 6	HSUPA Subtest-3	18.92	18.88	18.88	19.50
3GPP Rel 6	HSUPA Subtest-4	17.40	17.38	17.36	18.50
3GPP Rel 6	HSUPA Subtest-5	19.74	19.80	19.81	20.50
3GPP Rel 7	HSPA+ (16QAM) Subtest-1	17.10	17.12	16.90	18.00



2.4GHz WLAN		Ant 1				
2.4GHz WLAN	Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	Duty Cycle %
	802.11b 1Mbps	1	2412	17.12	18	100.00
		6	2437	17.58	18	
		11	2462	17.25	18	
	802.11g 6Mbps	1	2412	14.52	16	100.00
		6	2437	14.85	16	
		11	2462	13.65	15	
	802.11n-HT20 MCS0	1	2412	14.04	16	100.00
		6	2437	14.79	16	
		11	2462	14.24	16	

BT BR/EDR

Mode	Channel	Frequency (MHz)	Average power (dBm)		
			1Mbps	2Mbps	3Mbps
BR / EDR	CH 00	2402	7.05	5.75	5.57
	CH 39	2441	8.09	6.16	6.19
	CH 78	2480	8.02	6.19	5.47
Tune-up Limit			8.5	6.5	6.5

BT LE

Mode	Channel	Frequency (MHz)	Average power (dBm)
			GFSK
LE	CH 00	2402	-5.10
	CH 19	2440	-3.73
	CH 39	2480	-4.78
Tune-up Limit			-3.5