Galibration Laboratory of
Schmid & Partner

Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

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Glossary:
TSL
NORMx,y,z
ConvF
DCP
CF

A,B,C,D
Polarization <p

Polarization I

Connector Angle

Schweizerischer Kalibrierdienst
Service suisse d'6talonnage
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Swiss Calibration Service

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tissue simulating liquid
sensitivity in free space
sensitivity in TSL i NORMx,y,z
diode compression point
crest factor (1/duty-cycle) of the RF signal
modulation dependent linearization parameters
g rotation around probe axis
$ rotation around an axis that is in the plane normal to probe axis (at measurement center),
i.e., $ = 0 is normal to probe axis
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, "1EEE 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, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close
proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and lnterpretation of Parameters:
. NORMx.y,z: Assessed for E-field polarization I = 0 (f s 900 MHz in TEM-cell; f > 1800 MHz R22 waveguide).
NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E'-field
uncertainty inside TSL (see below ConvF).
. NORM(lx,y,z = NORMx,y,z * frequency_response (see Frequency Response Chart). This linearization is
implemented in DASY4 software versions later than 4.2.Ihe 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 (no uncertainty required). DCP does not depend on frequency nor media.
t PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal
characteristics

t Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z: A, B, C, D are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor
media. VR is the maximum calibration range expressed in RMS voltage across the diode.

o 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 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 lo NORMx,y,z * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from t 50 MHz to i,100
MHz.

o Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom
exposed by a patch antenna.
. Sensor Offsef: 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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