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

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

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Accreditation No.: SCS 108

Client **Nokia SD**

Certificate No: D750V3-1010_Mar13

CALIBRATION CERTIFICATE

Object	D750V3 - SN: 1010
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	March 18, 2013

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 EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	28-Dec-12 (No. ES3-3205_Dec12)	Dec-13
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: March 18, 2013

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Accreditation No.: SCS 108

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) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.5
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	41.1 ± 6 %	0.92 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	2.19 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.50 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.42 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.55 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.2 ± 6 %	1.00 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**8.68 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.48 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**5.75 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.9 Ω + 1.7 jΩ
Return Loss	- 26.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.7 Ω - 1.5 jΩ
Return Loss	- 36.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.035 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
Manufactured on	September 29, 2009

DASY5 Validation Report for Head TSL

Date: 18.03.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1010

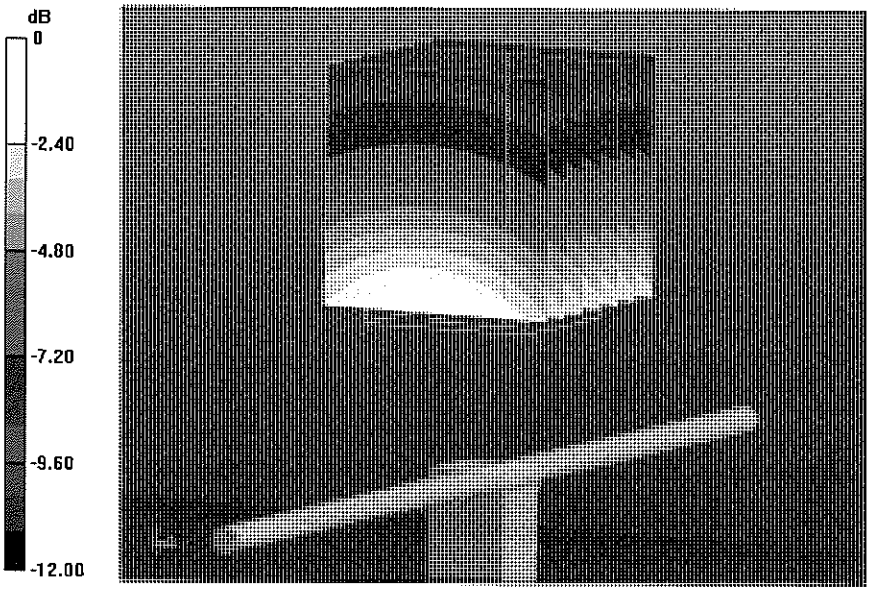
Communication System: CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.92 S/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.28, 6.28, 6.28); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

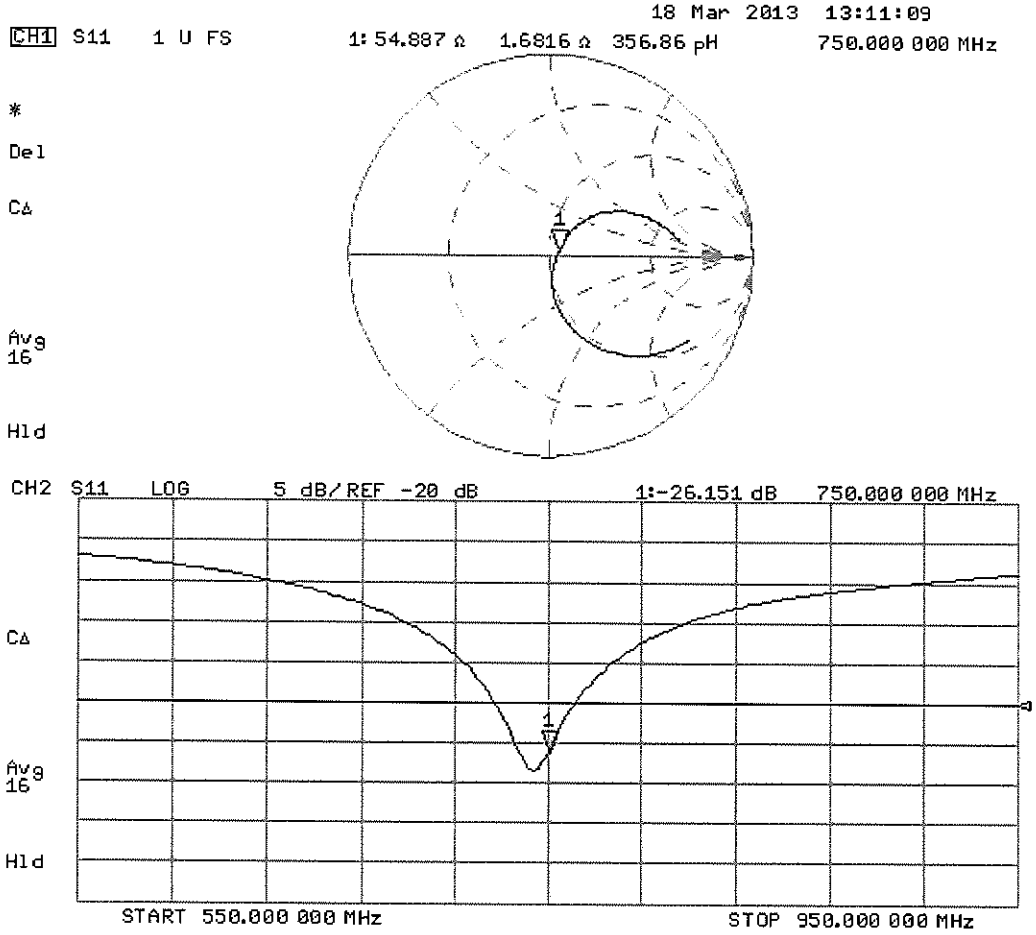
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.641 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.34 W/kg
SAR(1 g) = 2.19 W/kg; SAR(10 g) = 1.42 W/kg
Maximum value of SAR (measured) = 2.54 W/kg



0 dB = 2.54 W/kg = 4.05 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 18.03.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1010

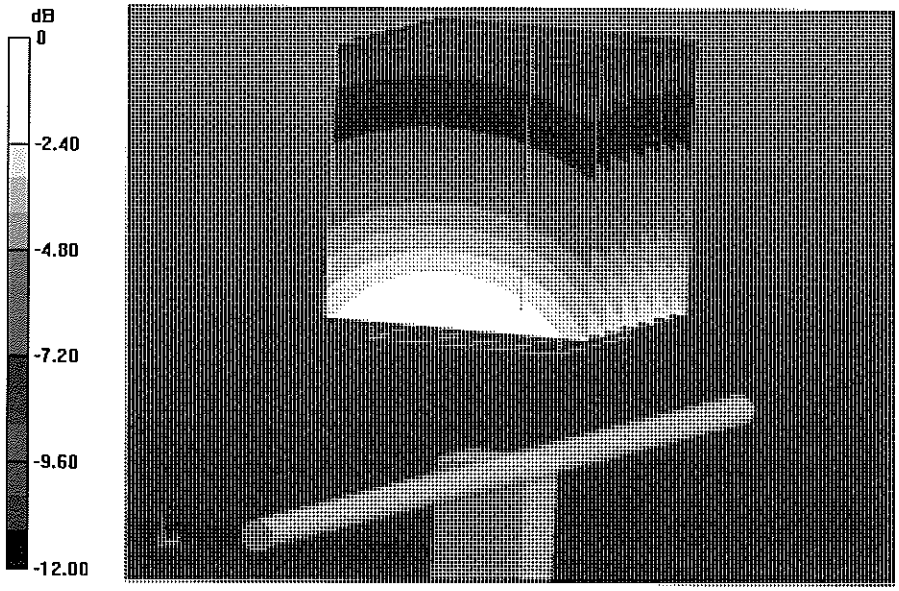
Communication System: CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 1 S/m; ε_r = 54.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.11, 6.11, 6.11); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

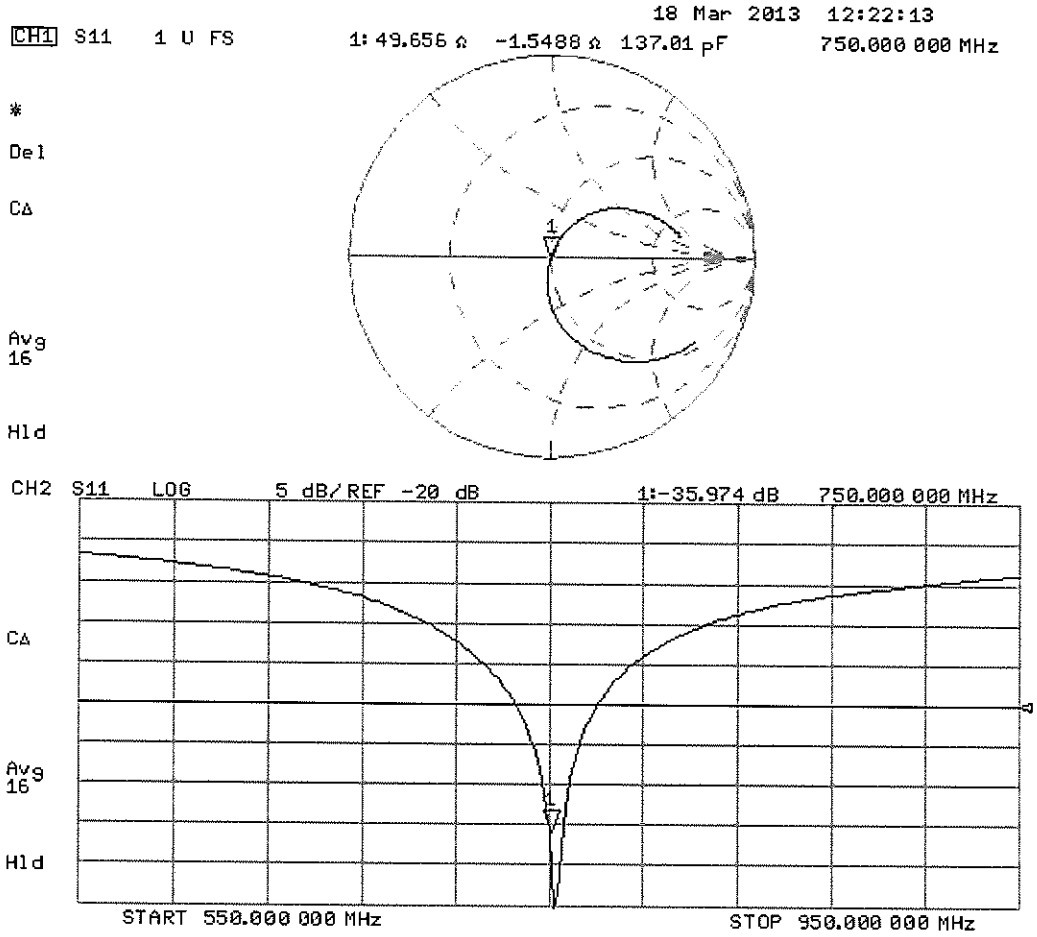
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.641 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.32 W/kg
SAR(1 g) = 2.25 W/kg; SAR(10 g) = 1.48 W/kg
Maximum value of SAR (measured) = 2.61 W/kg



0 dB = 2.61 W/kg = 4.17 dBW/kg

Impedance Measurement Plot for Body TSL



Dipole D750V3 – SN: 1010 Antenna Parameters measured: 2014-03-20.

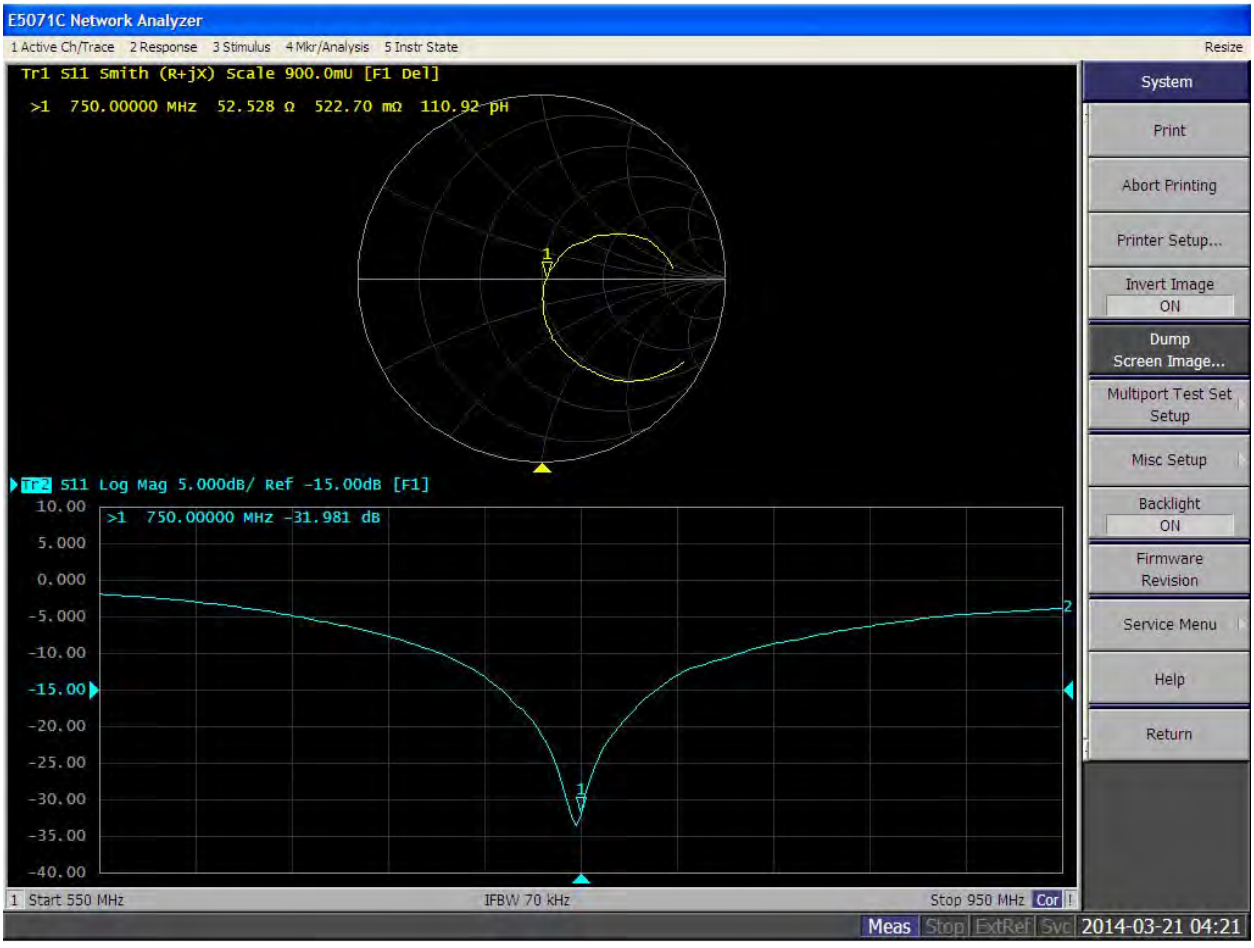
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	54.9 Ω + 1.7 jΩ	52.5 Ω + 0.5 jΩ
Return loss	-26.2 dB	-32.0 dB

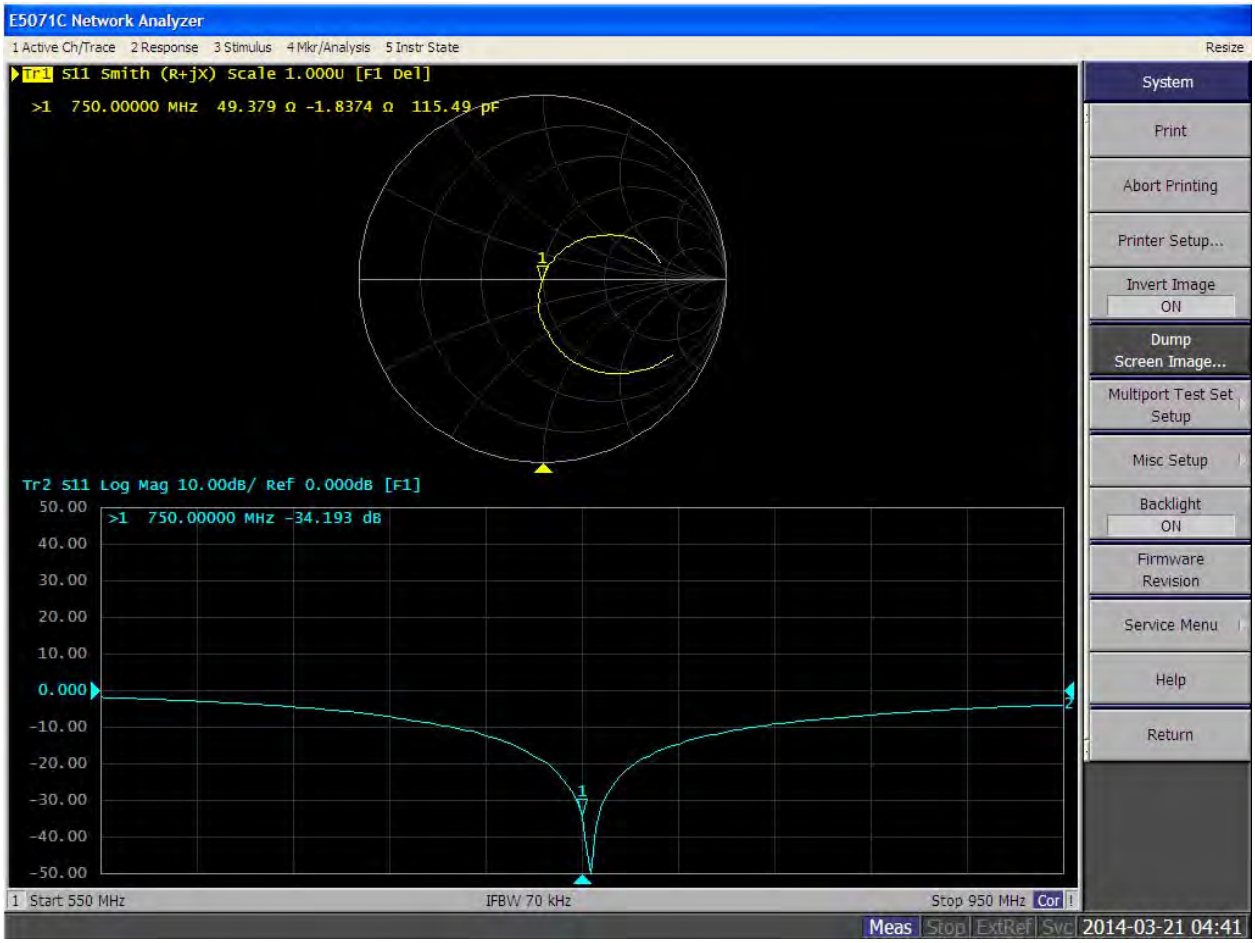
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	49.7 Ω - 1.5 jΩ	49.3 Ω - 1.8 jΩ
Return loss	-36.0 dB	-34.2 dB

Head TSL



Body TSL


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 Smith (R+jX) Scale 1.000U [F1 Del]
>1 750.00000 MHz 49.379 Ω -1.8374 Ω 115.49 pF
Tr2 S11 Log Mag 10.00dB/ Ref 0.000dB [F1]
>1 750.00000 MHz -34.193 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 550 MHz
IFBW 70 kHz
Stop 950 MHz
Cor
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision
Service Menu
Help
Return
Meas
Stop
ExtRef
Svc
2014-03-21 04:41

7022

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Accreditation No.: SCS 108

Client **Nokia SD**

Certificate No: D835V2-4d040_Sep12

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d040
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 12, 2012

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 EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 12, 2012

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

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) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.2
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	41.0 ± 6 %	0.90 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	2.38 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**9.49 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.56 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**6.23 mW /g ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.3 ± 6 %	1.00 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.45 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**9.50 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.61 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**6.29 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.7 Ω - 3.8 jΩ
Return Loss	- 28.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.1 Ω - 5.0 jΩ
Return Loss	- 24.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.393 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
Manufactured on	September 20, 2005

DASY5 Validation Report for Head TSL

Date: 12.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d040

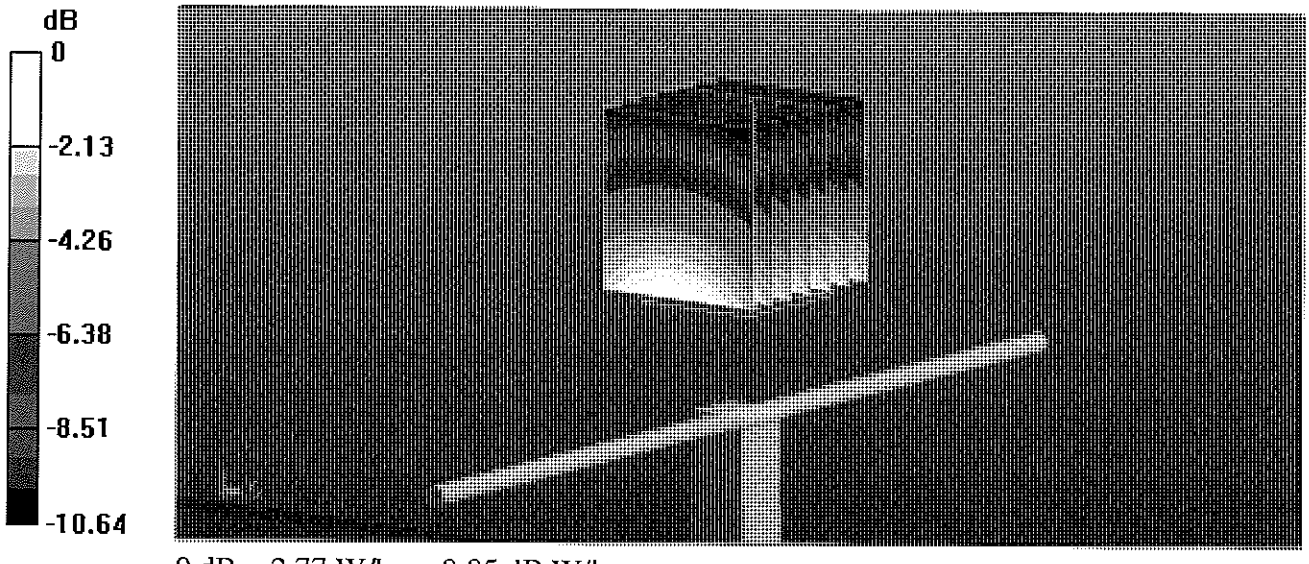
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.9 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

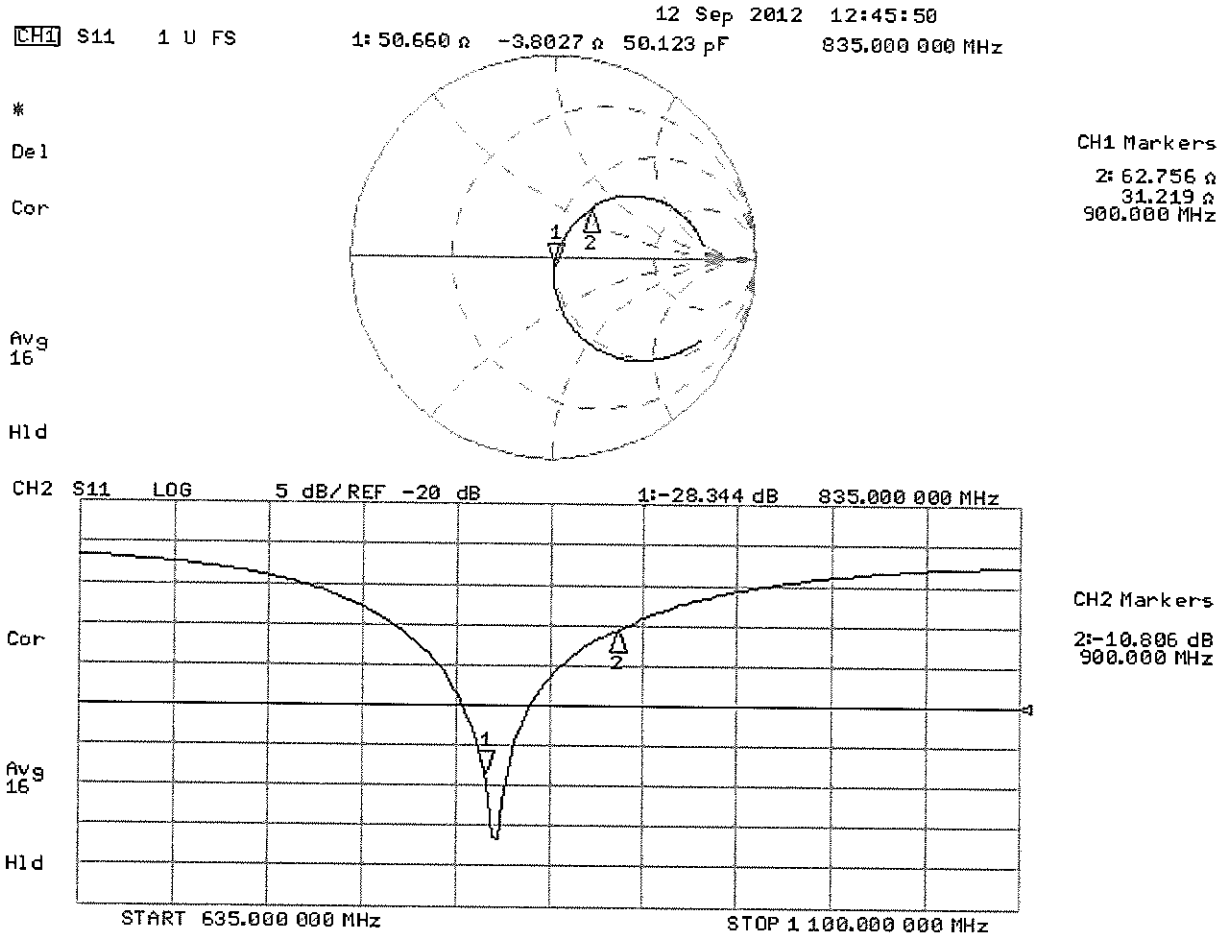
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm 2/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 57.255 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.512 mW/g
SAR(1 g) = 2.38 mW/g; SAR(10 g) = 1.56 mW/g
Maximum value of SAR (measured) = 2.77 W/kg



0 dB = 2.77 W/kg = 8.85 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 12.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d040

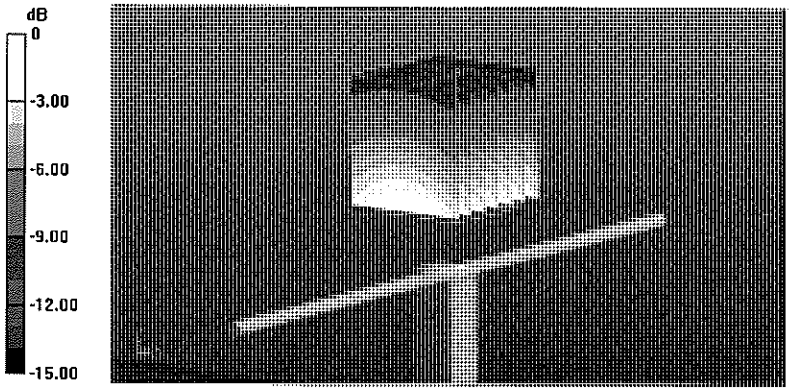
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

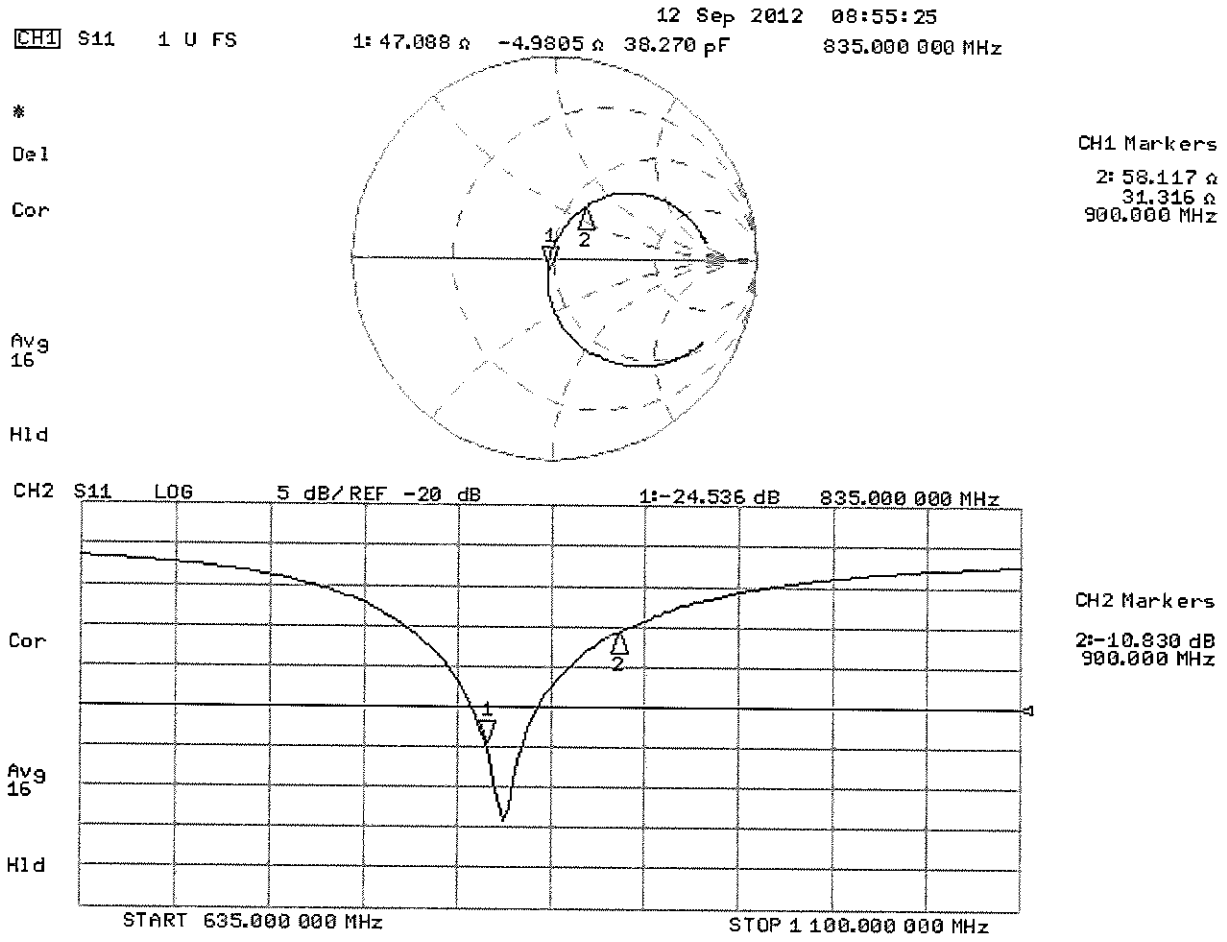
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.248 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 3.563 mW/g
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.85 W/kg



0 dB = 2.85 W/kg = 9.10 dB W/kg

Impedance Measurement Plot for Body TSL



Dipole D835V2 – SN: 4d040 Antenna Parameters measured: 2014-02-21.

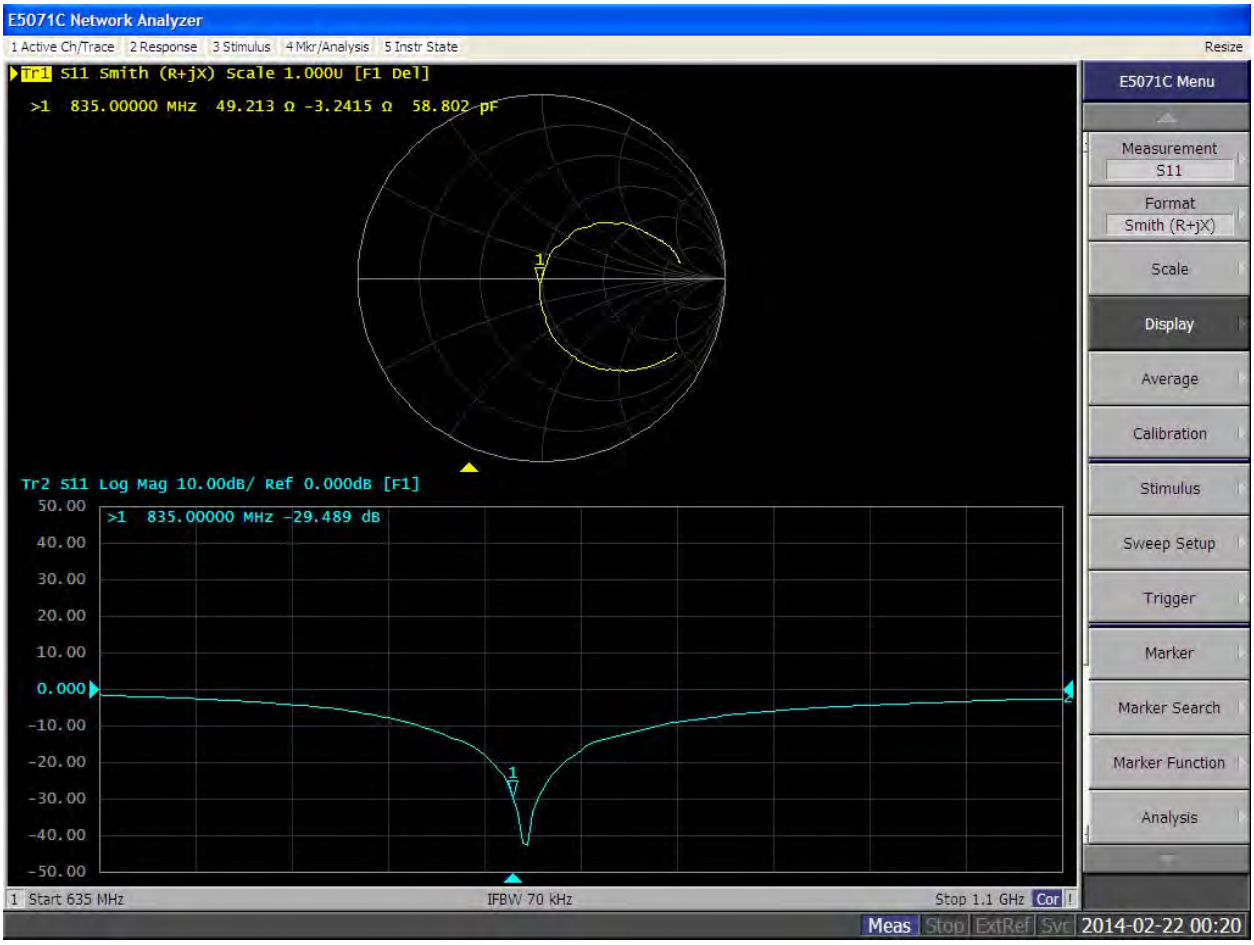
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	50.7 Ω - 3.8 jΩ	49.2 Ω - 3.2 jΩ
Return loss	-28.3 dB	-29.5 dB

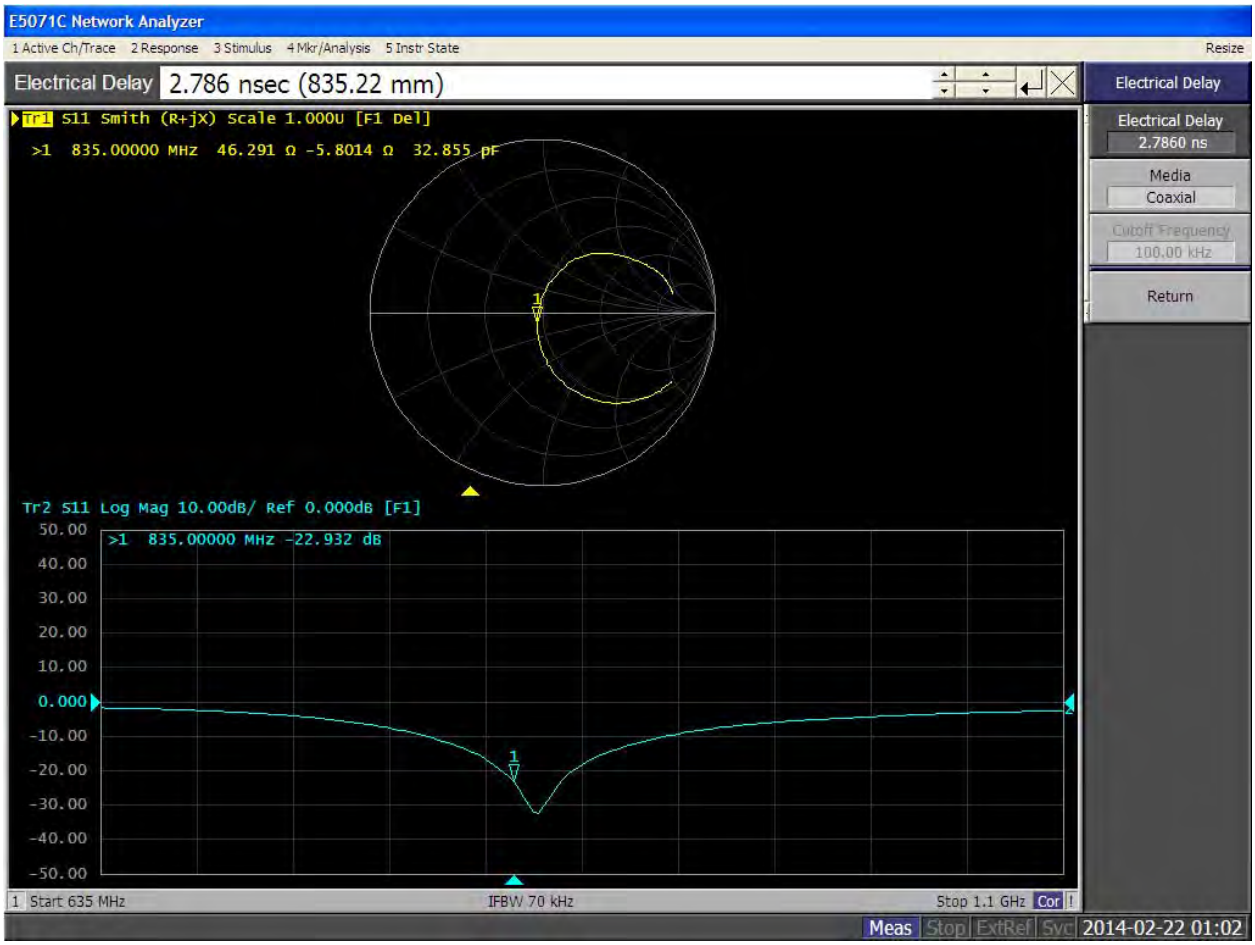
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	47.1 Ω - 5.0 jΩ	46.3 Ω -5.8 jΩ
Return loss	-24.5 dB	-22.9 dB

Head TSL



Body TSL


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Electrical Delay 2.786 nsec (835.22 mm)
Tr1 S11 Smith (R+jX) Scale 1.000U [F1 Del]
>1 835.00000 MHz 46.291 Ω -5.8014 Ω 32.855 pF
Tr2 S11 Log Mag 10.00dB/ Ref 0.000dB [F1]
>1 835.00000 MHz -22.932 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 635 MHz
IFBW 70 kHz
Stop 1.1 GHz
Cor
Meas
Stop
ExtRef
Svc
2014-02-22 01:02
Electrical Delay
Electrical Delay
2.7860 ns
Media
Coaxial
Cutoff Frequency
100.00 kHz
Return

Property Of
Nokia Mobile Phones
008228

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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
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S Swiss Calibration Service

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

Accreditation No.: SCS 108

Client **Nokia SD**

Certificate No: D1750V2-1081_Dec12

CALIBRATION CERTIFICATE

Object	D1750V2 - SN: 1081
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	December 05, 2012

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 EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: December 5, 2012

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

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) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.3
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.3 ± 6 %	1.34 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	9.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.5 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.82 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.4 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.4	1.49 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.8 ± 6 %	1.47 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.31 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**37.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.00 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.0 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.4 Ω - 0.2 jΩ
Return Loss	- 44.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.6 Ω + 0.2 jΩ
Return Loss	- 26.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.218 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
Manufactured on	January 19, 2011

DASY5 Validation Report for Head TSL

Date: 05.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1081

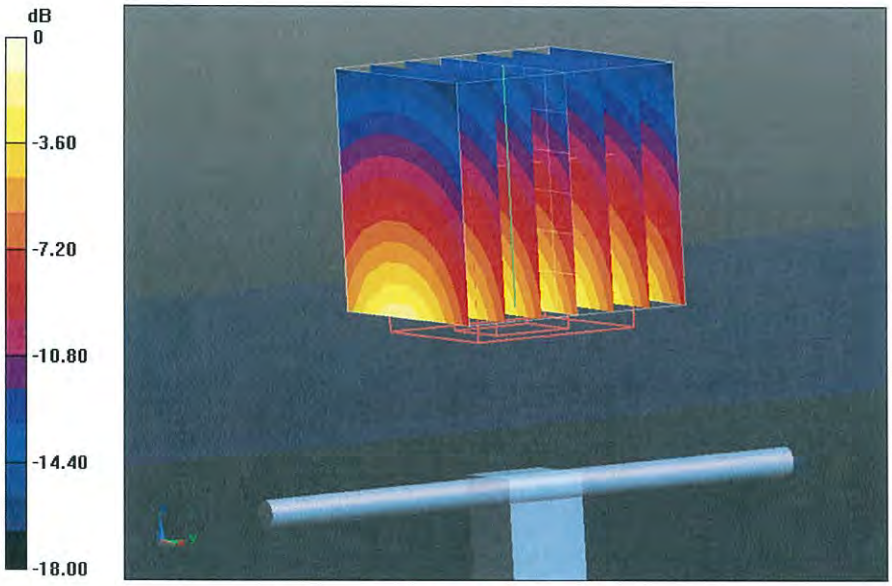
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.34 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.22, 5.22, 5.22); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

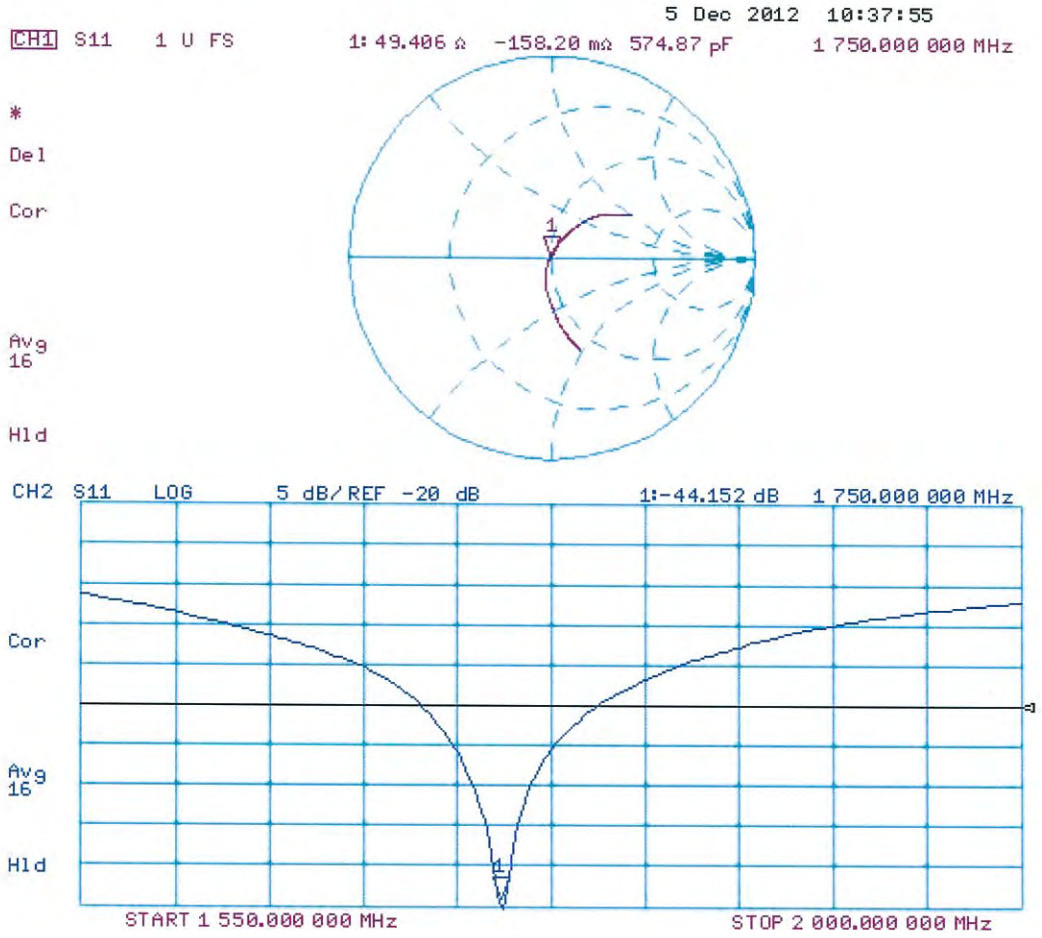
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.123 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 16.1 W/kg
SAR(1 g) = 9.04 W/kg; SAR(10 g) = 4.82 W/kg
Maximum value of SAR (measured) = 11.1 W/kg



0 dB = 11.1 W/kg = 10.45 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 05.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1081

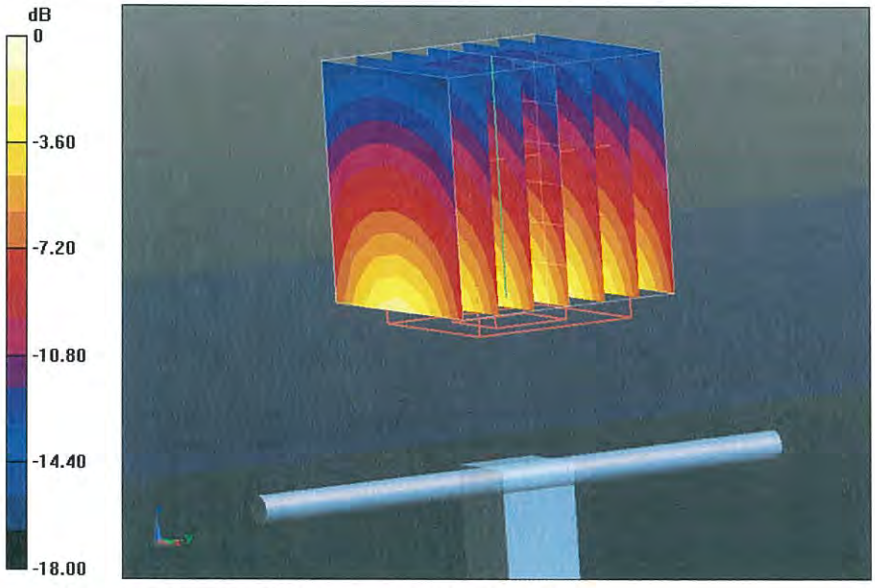
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.47 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.85, 4.85, 4.85); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.3(988); SEMCAD X 14.6.7(6848)

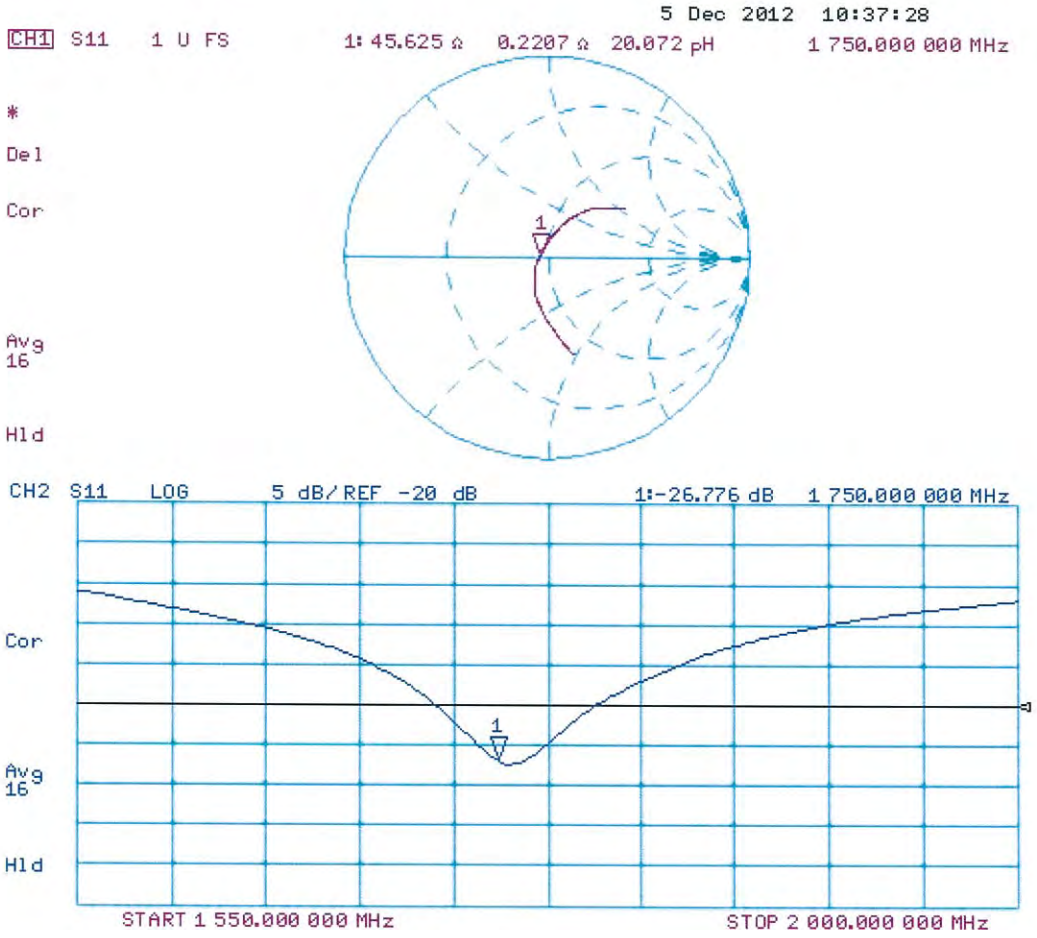
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.123 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 16.1 W/kg
SAR(1 g) = 9.31 W/kg; SAR(10 g) = 5 W/kg
Maximum value of SAR (measured) = 11.7 W/kg



0 dB = 11.7 W/kg = 10.68 dBW/kg

Impedance Measurement Plot for Body TSL



Dipole D1750V2 – SN: 1081 Antenna Parameters measured: 2014-02-21.

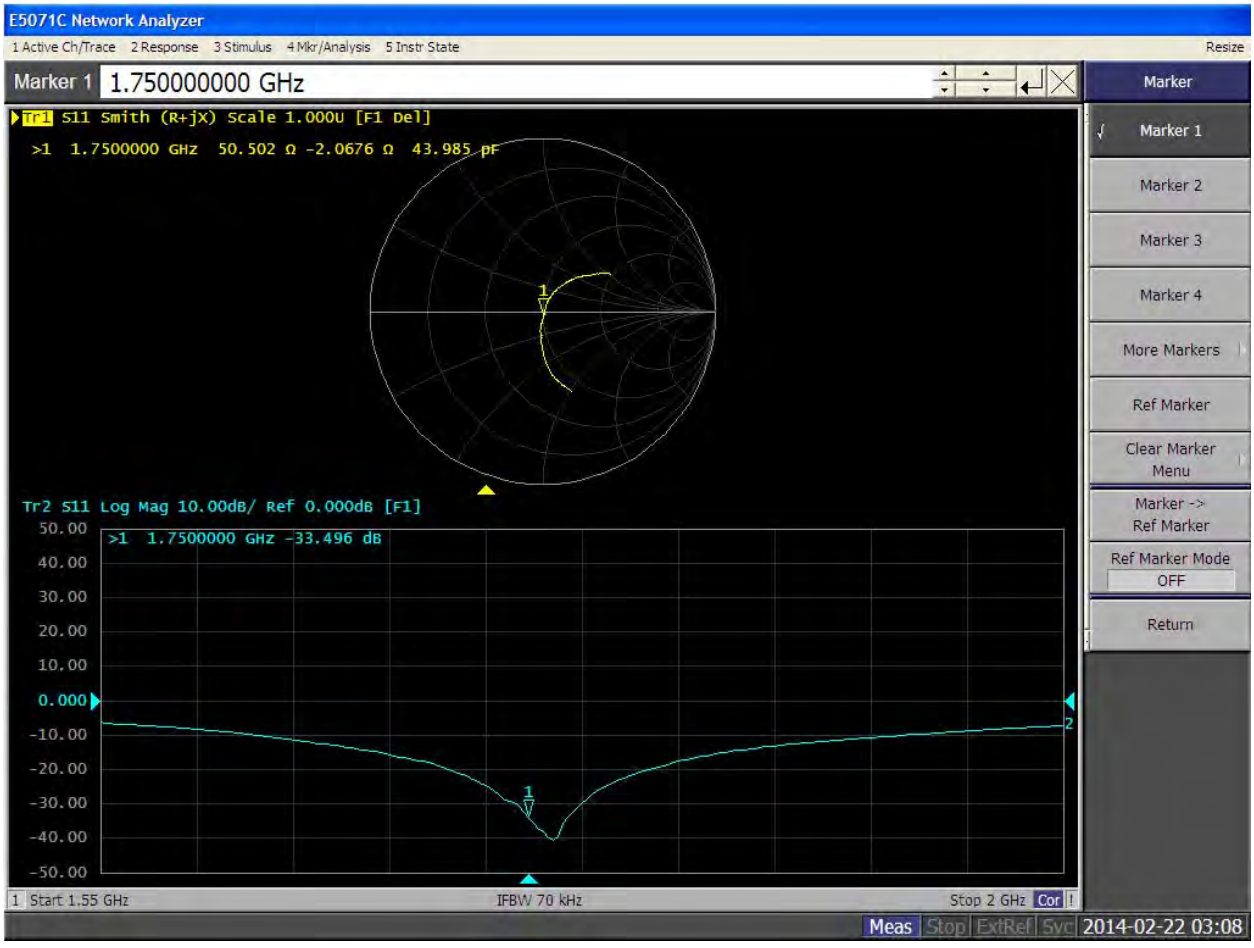
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	49.4 Ω - 0.2 jΩ	50.5 Ω +2.1 jΩ
Return loss	-44.2 dB	-33.5 dB

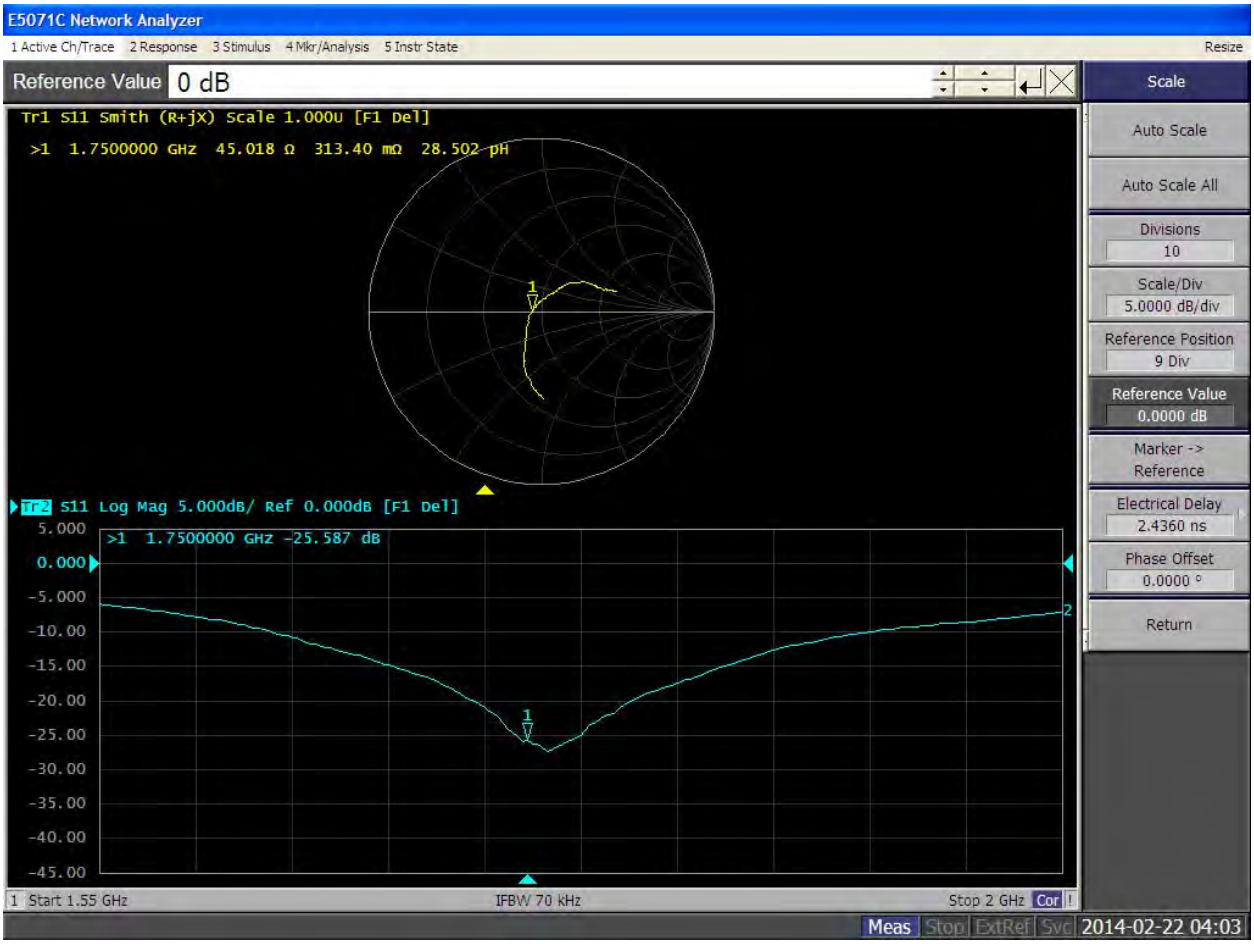
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	45.6 Ω + 0.2 jΩ	45.0 Ω + 0.3 jΩ
Return loss	-26.8 dB	-25.6 dB

Head TSL



Body TSL


E5071C Network Analyzer
1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Resize
Reference Value 0 dB
Tr1 S11 Smith (R+jX) Scale 1.000U [F1 Del]
>1 1.7500000 GHz 45.018 Ω 313.40 mΩ 28.502 pH
Tr2 S11 Log Mag 5.000dB/ Ref 0.000dB [F1 Del]
>1 1.7500000 GHz -25.587 dB
5.000
0.000
-5.000
-10.00
-15.00
-20.00
-25.00
-30.00
-35.00
-40.00
-45.00
1 Start 1.55 GHz
IFBW 70 kHz
Stop 2 GHz
Cor
Scale
Auto Scale
Auto Scale All
Divisions
10
Scale/Div
5.0000 dB/div
Reference Position
9 Div
Reference Value
0.0000 dB
Marker -> Reference
Electrical Delay
2.4360 ns
Phase Offset
0.0000 °
Return
Meas
Stop
ExtRef
Svc
2014-02-22 04:03

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Accreditation No.: SCS 108

Client Nokia SD

Certificate No: D1900V2-5d099_Jan13

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d099
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	January 14, 2013

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 EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.3 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	28-Dec-12 (No. ES3-3205_Dec12)	Dec-13
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 14, 2013

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

Accreditation No.: SCS 108

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) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.5
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	39.4 ± 6 %	1.38 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	10.1 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**40.6 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.3 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.2 ± 6 %	1.52 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.3 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**41.0 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.42 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.6 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.8 Ω + 5.6 jΩ
Return Loss	- 25.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	45.9 Ω + 5.6 jΩ
Return Loss	- 22.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.204 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	September 26, 2007

DASY5 Validation Report for Head TSL

Date: 14.01.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d099

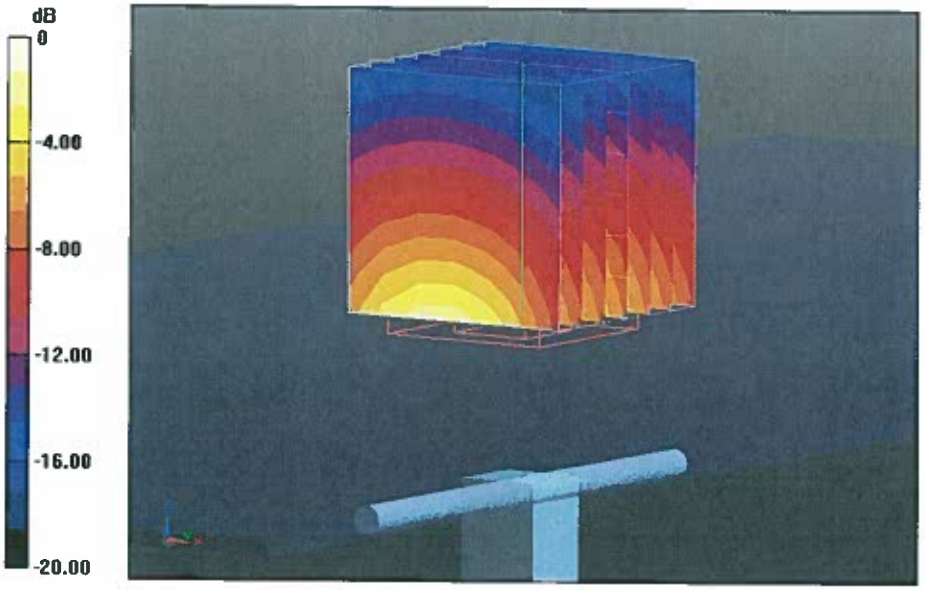
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.38 S/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.98, 4.98, 4.98); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

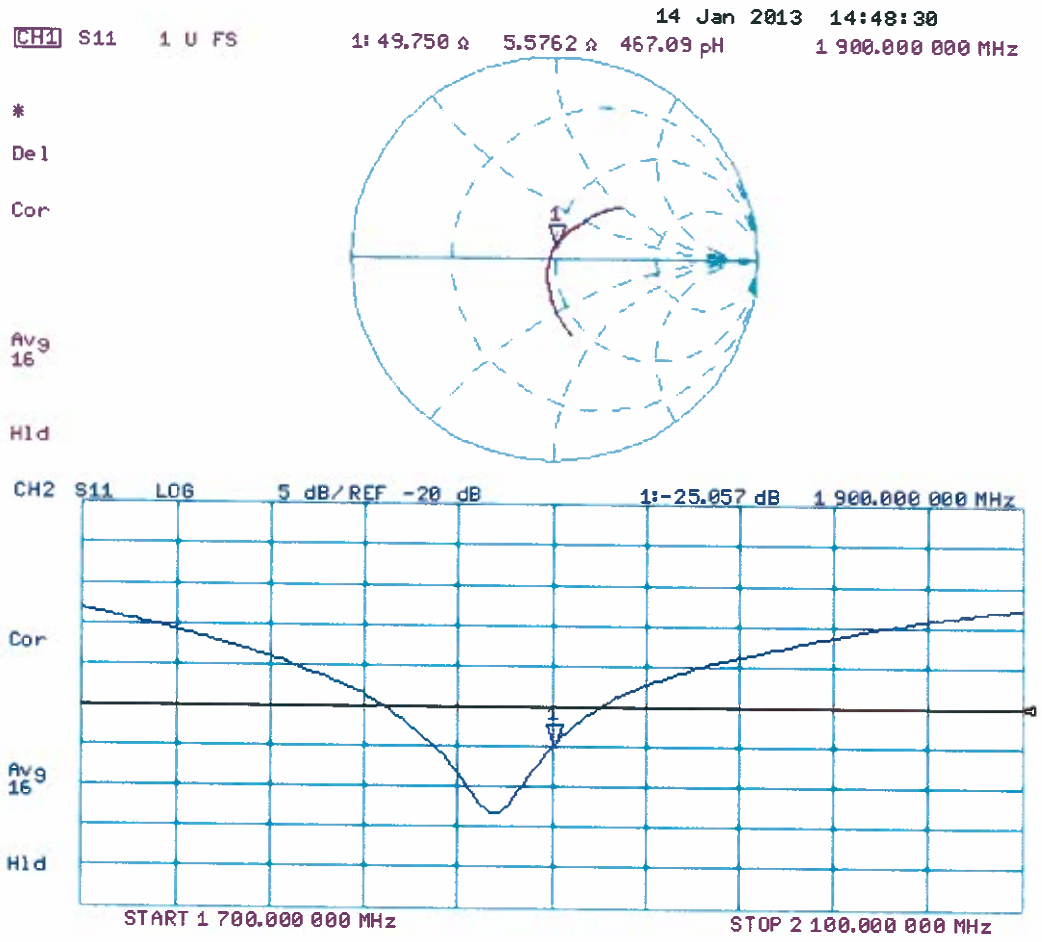
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.160 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 18.3 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.31 W/kg
Maximum value of SAR (measured) = 12.5 W/kg



0 dB = 12.5 W/kg = 10.97 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 14.01.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d099

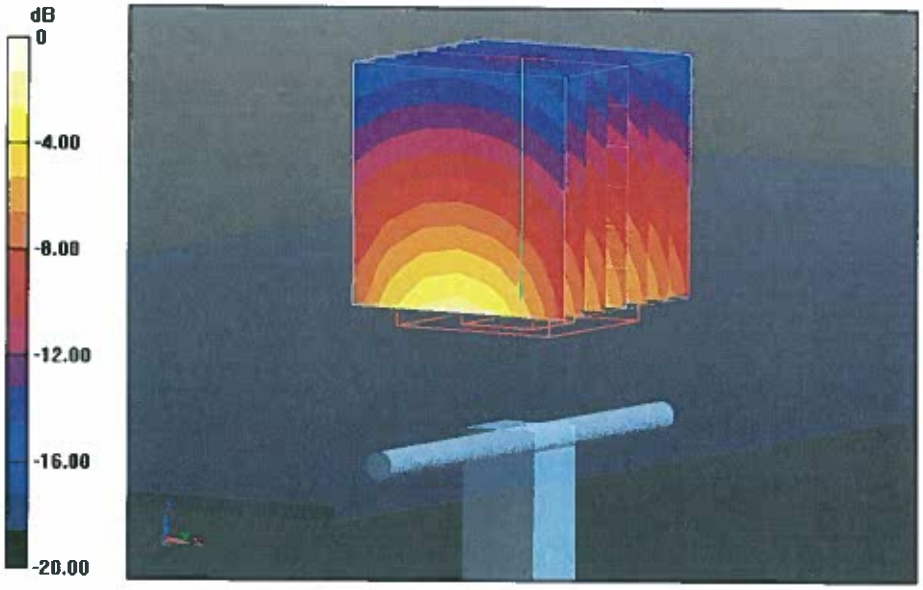
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.52 S/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.6, 4.6, 4.6); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.5(1059); SEMCAD X 14.6.8(7028)

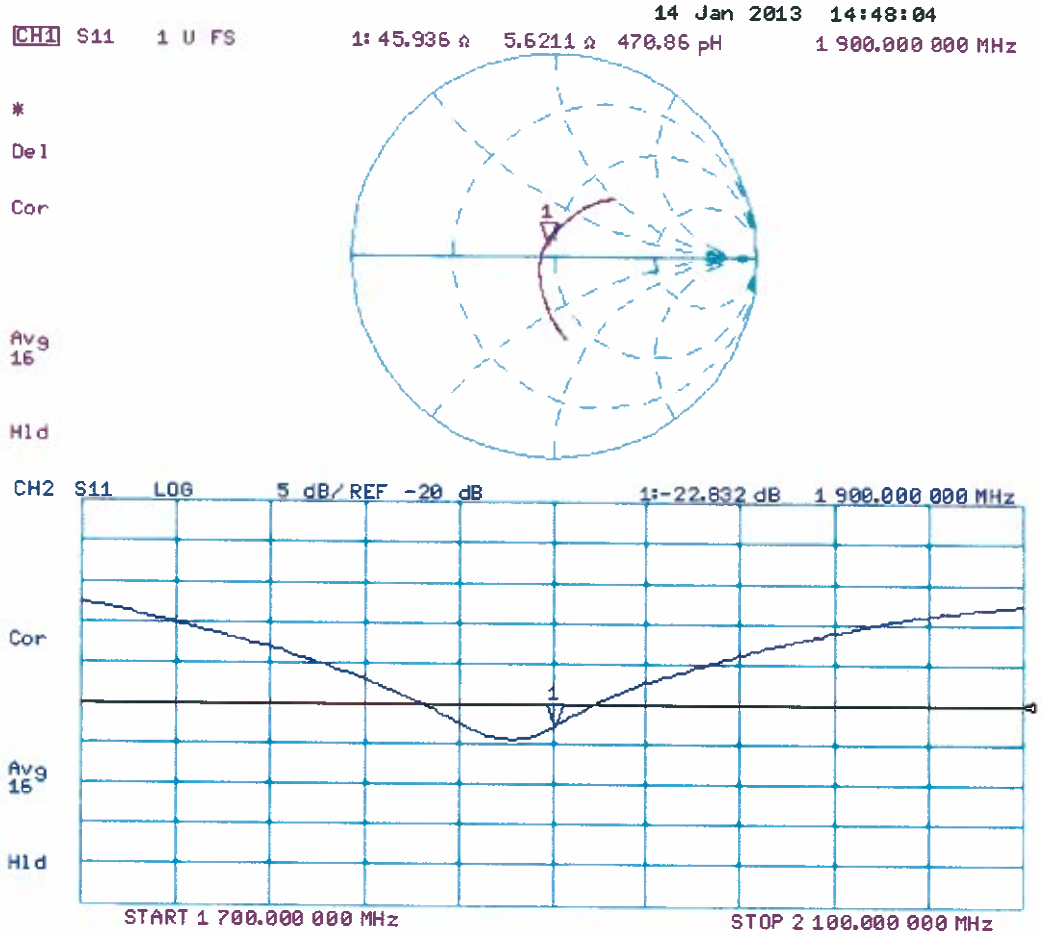
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.160 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.8 W/kg
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.42 W/kg
Maximum value of SAR (measured) = 12.9 W/kg



0 dB = 12.9 W/kg = 11.11 dBW/kg

Impedance Measurement Plot for Body TSL



Dipole D1900V2 – SN: 5d099 Antenna Parameters measured: 2014-02-14.

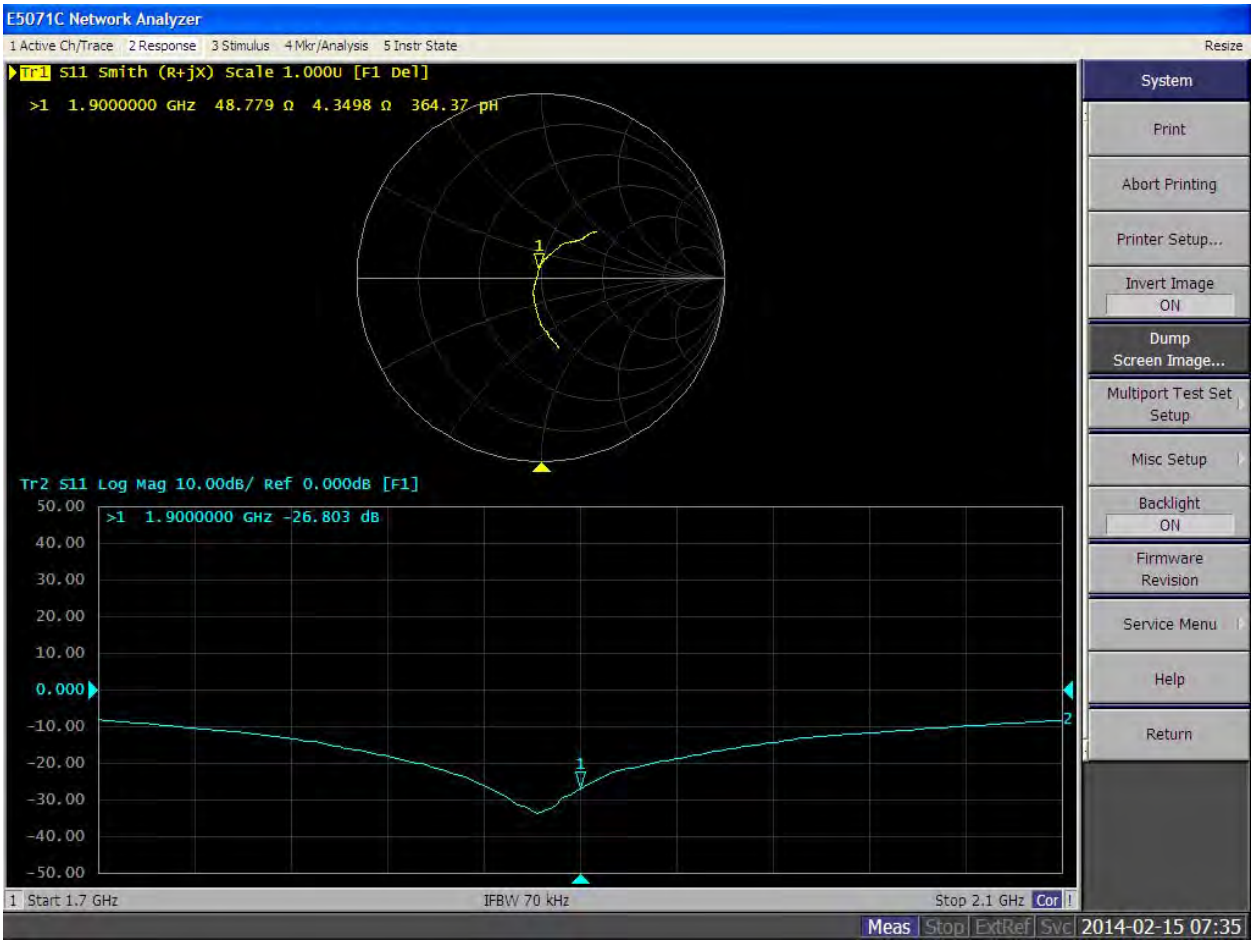
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	50.9 Ω + 6.4 jΩ	48.8 Ω +4.3 jΩ
Return loss	-23.9 dB	-26.8 dB

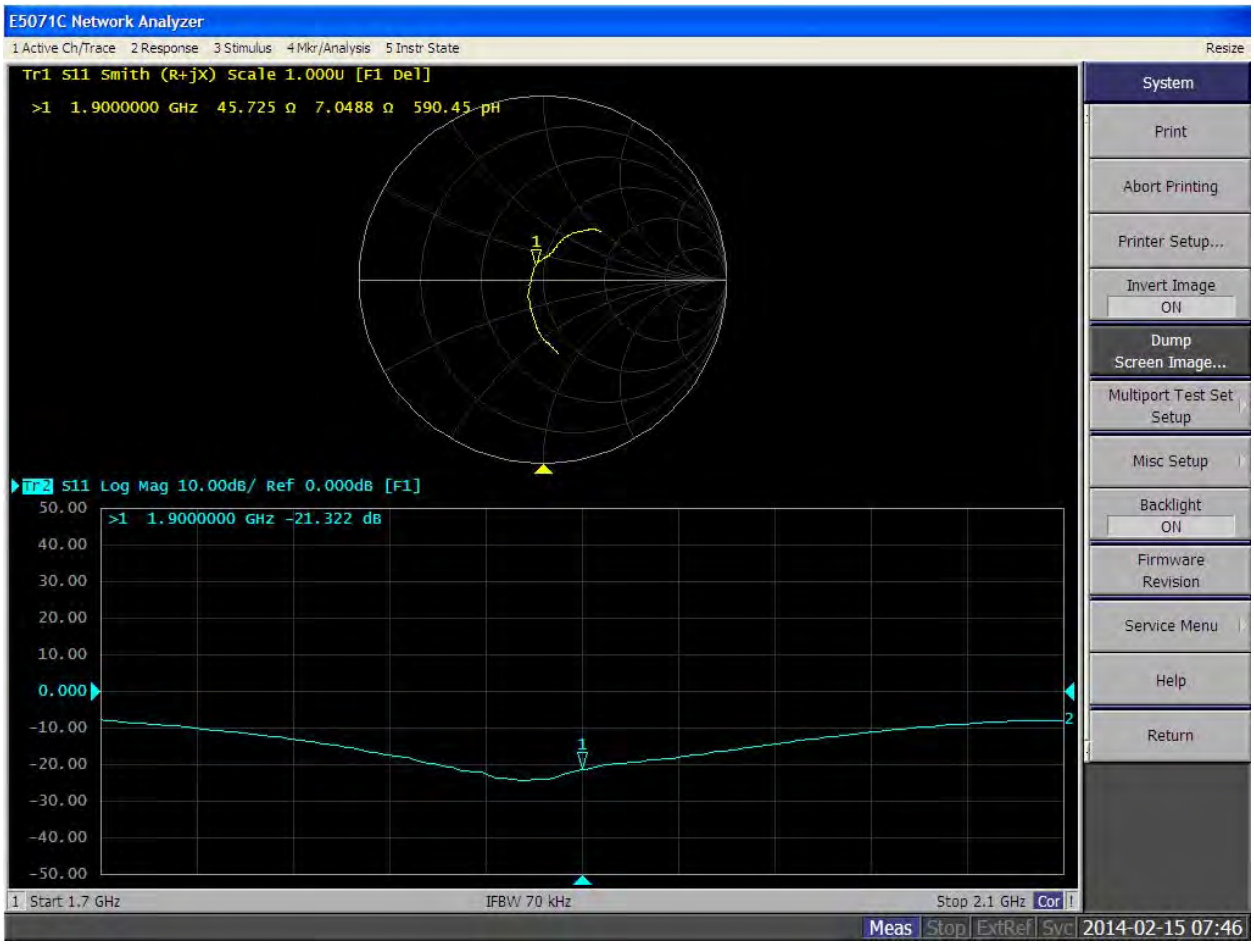
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	46.3 Ω + 6.8 jΩ	45.7 Ω + 7.0 jΩ
Return loss	-22.0 dB	-21.3 dB

Head TSL



Body TSL


E5071C Network Analyzer
1 Active Ch/Trace 2 Response 3 Stimulus 4 Mkr/Analysis 5 Instr State
Resize
Tr1 S11 Smith (R+jX) Scale 1.000U [F1 Del]
>1 1.9000000 GHz 45.725 Ω 7.0488 Ω 590.45 pH
Tr2 S11 Log Mag 10.00dB/ Ref 0.000dB [F1]
>1 1.9000000 GHz -21.322 dB
50.00
40.00
30.00
20.00
10.00
0.000
-10.00
-20.00
-30.00
-40.00
-50.00
1 Start 1.7 GHz
IFBW 70 kHz
Stop 2.1 GHz
Cor
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
Firmware
Revision
Service Menu
Help
Return
Meas
Stop
ExtRef
Svc
2014-02-15 07:46

7161

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

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S Swiss Calibration Service

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

Accreditation No.: SCS 108

Client **Nokia SD**

Certificate No: D2450V2-800_Sep12

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 800
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 13, 2012

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 EPM-442A	GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
Power sensor HP 8481A	US37292783	05-Oct-11 (No. 217-01451)	Oct-12
Reference 20 dB Attenuator	SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
Type-N mismatch combination	SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	27-Jun-12 (No. DAE4-601_Jun12)	Jun-13

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 13, 2012

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

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) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.2
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	39.9 ± 6 %	1.84 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	13.4 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**53.2 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.24 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**24.9 mW /g ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	51.0 ± 6 %	2.01 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.0 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**50.9 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.05 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**23.9 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	54.9 Ω + 2.2 jΩ
Return Loss	- 25.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	51.4 Ω + 3.7 jΩ
Return Loss	- 28.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.159 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
Manufactured on	November 02, 2006

DASY5 Validation Report for Head TSL

Date: 13.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 800

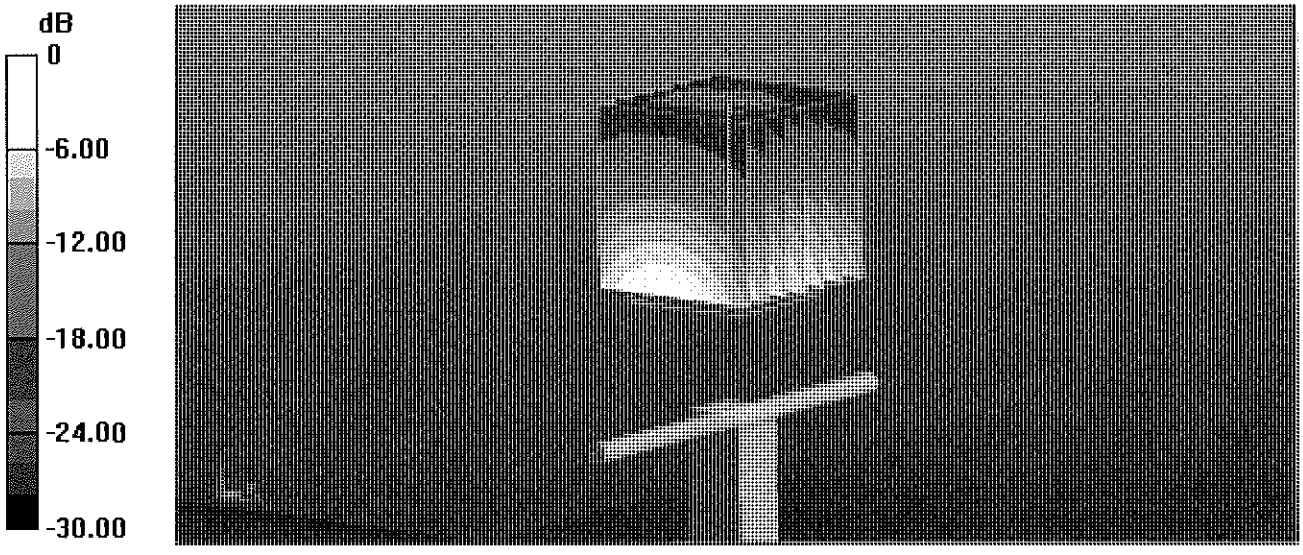
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.84 mho/m; ε_r = 39.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

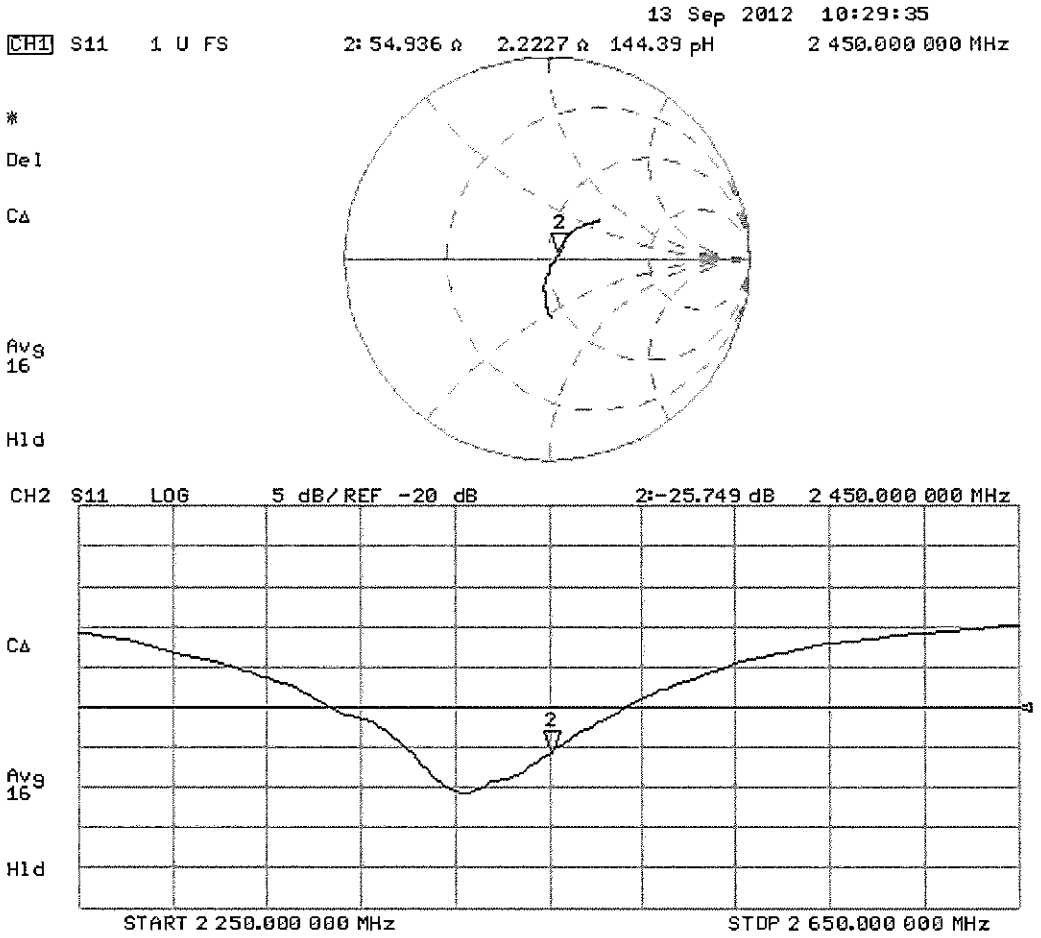
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 100.1 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 27.710 mW/g
SAR(1 g) = 13.4 mW/g; SAR(10 g) = 6.24 mW/g
Maximum value of SAR (measured) = 17.2 W/kg



0 dB = 17.2 W/kg = 24.71 dB W/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 13.09.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 800

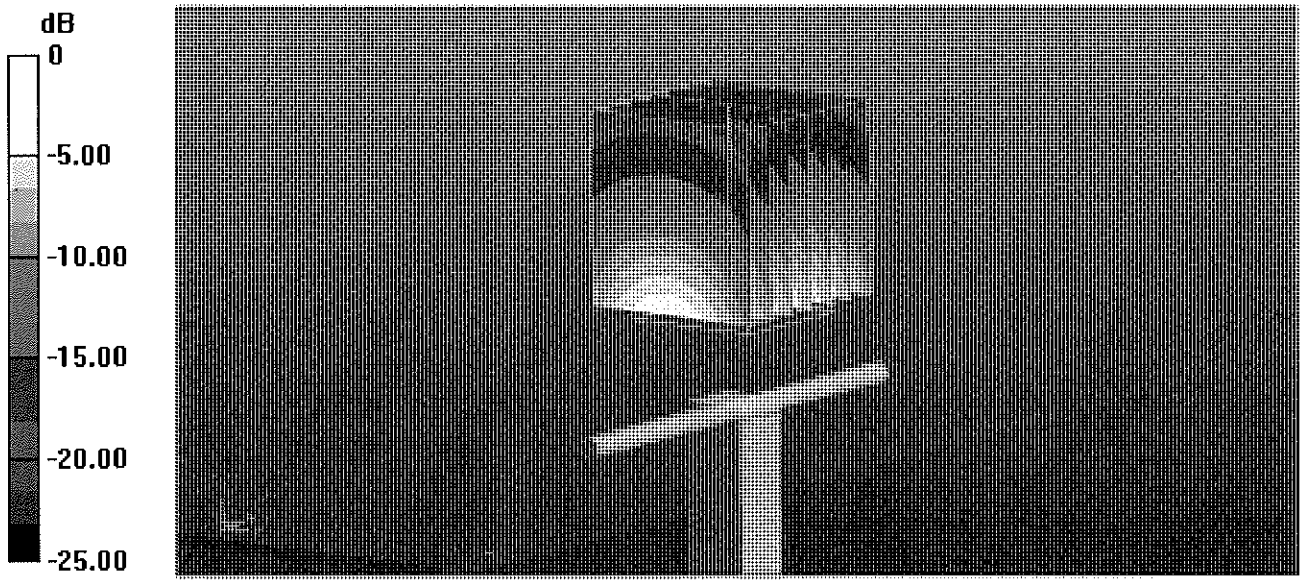
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.06.2012
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.2(969); SEMCAD X 14.6.6(6824)

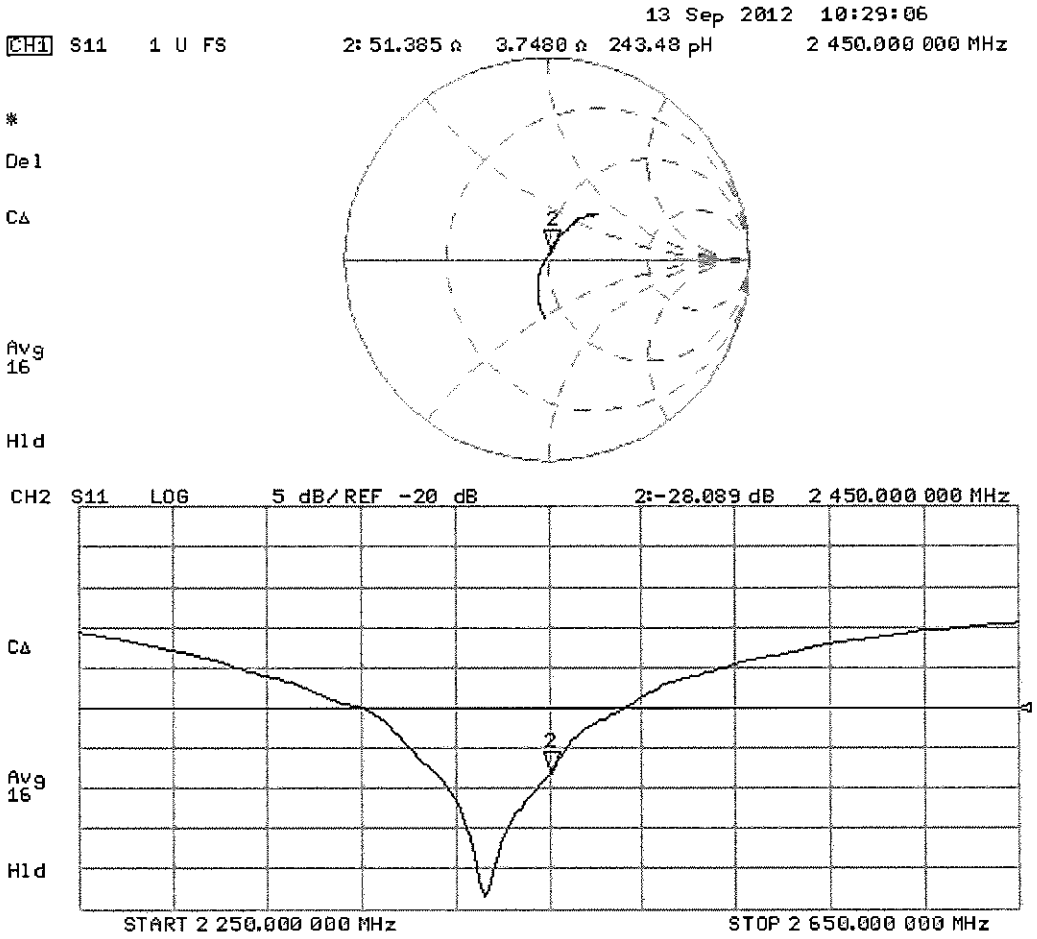
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 95.223 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 26.601 mW/g
SAR(1 g) = 13 mW/g; SAR(10 g) = 6.05 mW/g
Maximum value of SAR (measured) = 16.9 W/kg



0 dB = 16.9 W/kg = 24.56 dB W/kg

Impedance Measurement Plot for Body TSL



Dipole D2450V2 – SN: 800 Antenna Parameters measured: 2013-10-10.

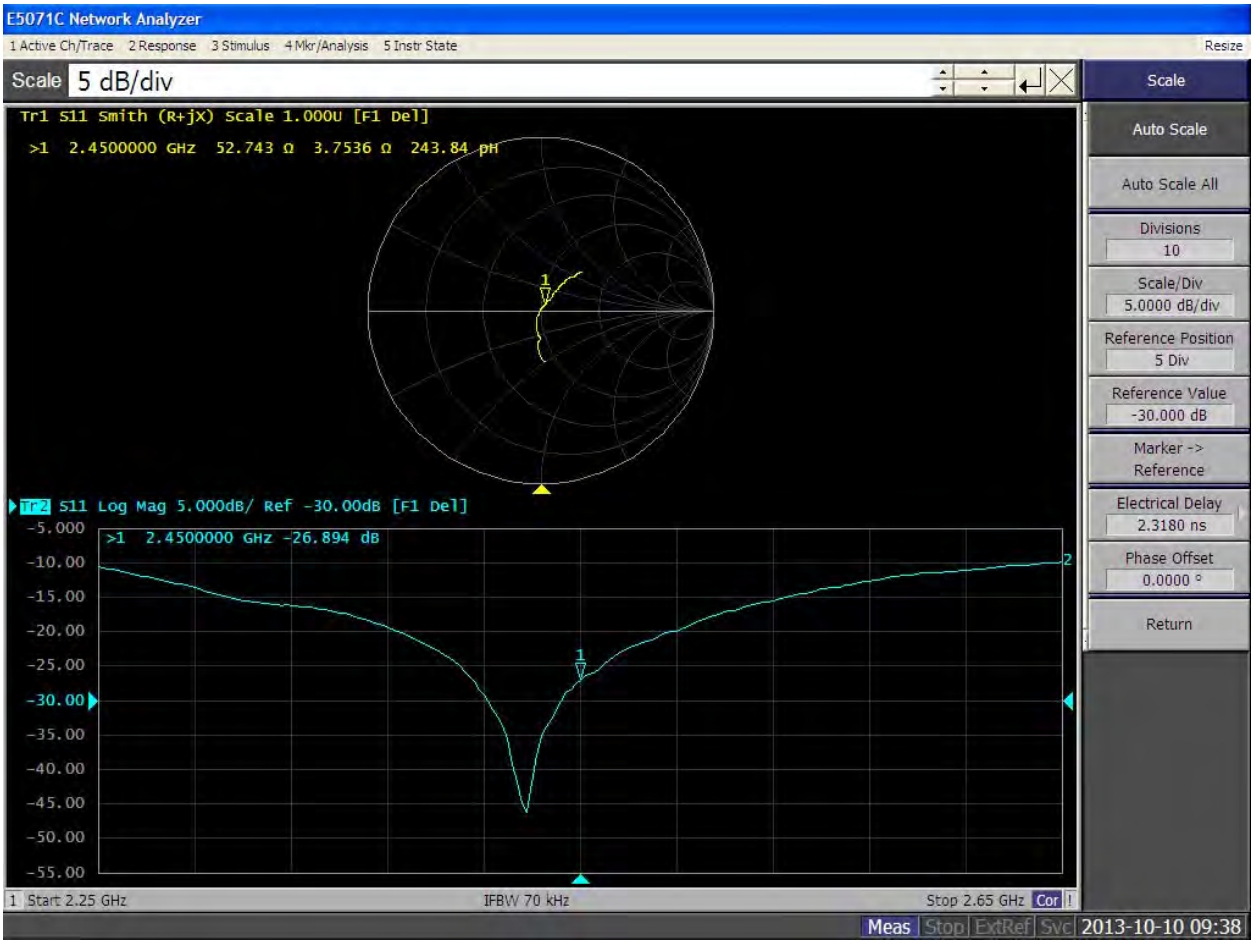
Antenna Parameters with Head TSL

	Calibration certificate	2-year measurement
Impedance, transformed to feed point	54.9Ω + 2.2 jΩ	52.7 Ω + 3.8 jΩ
Return loss	-25.7 dB	-26.9 dB

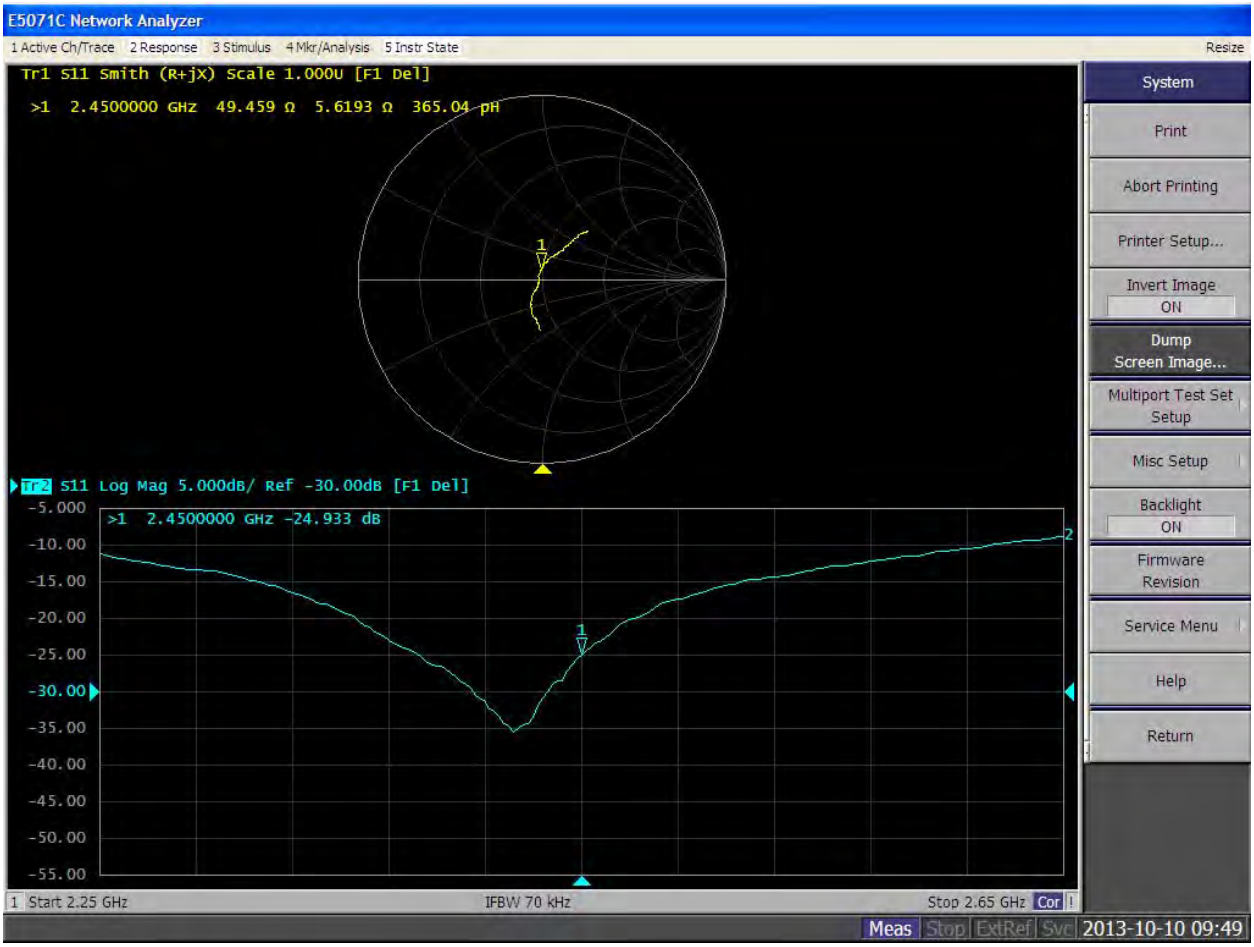
Antenna Parameters with Body TSL

	Calibration certificate	2-year measurement
Impedance, transformed to feed point	51.4 Ω + 3.7 jΩ	49.5 Ω + 5.6 jΩ
Return loss	-28.1 dB	-24.9 dB

Head TSL



Body TSL


E5071C Network Analyzer
1 Active Ch/Trace
2 Response
3 Stimulus
4 Mkr/Analysis
5 Instr State
Resize
Tr1 S11 Smith (R+jX) Scale 1.000U [F1 Del]
>1 2.4500000 GHz 49.459 Ω 5.6193 Ω 365.04 pH
Tr2 S11 Log Mag 5.000dB/ Ref -30.00dB [F1 Del]
>1 2.4500000 GHz -24.933 dB
-5.000
-10.00
-15.00
-20.00
-25.00
-30.00
-35.00
-40.00
-45.00
-50.00
-55.00
1 Start 2.25 GHz
IFBW 70 kHz
Stop 2.65 GHz
Cor
System
Print
Abort Printing
Printer Setup...
Invert Image
ON
Dump
Screen Image...
Multiport Test Set
Setup
Misc Setup
Backlight
ON
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Revision
Service Menu
Help
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C Service suisse d'étalonnage
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Accreditation No.: SCS 108

Client Nokia SD

Certificate No: D2600V2-1064_Jul13

CALIBRATION CERTIFICATE

Object	D2600V2 - SN: 1064
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	July 05, 2013

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 EPM-442A	GB37480704	01-Nov-12 (No. 217-01640)	Oct-13
Power sensor HP 8481A	US37292783	01-Nov-12 (No. 217-01640)	Oct-13
Reference 20 dB Attenuator	SN: 5058 (20k)	04-Apr-13 (No. 217-01736)	Apr-14
Type-N mismatch combination	SN: 5047.3 / 06327	04-Apr-13 (No. 217-01739)	Apr-14
Reference Probe ES3DV3	SN: 3205	28-Dec-12 (No. ES3-3205_Dec12)	Dec-13
DAE4	SN: 601	25-Apr-13 (No. DAE4-601_Apr13)	Apr-14

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-12)	In house check: Oct-13

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 7, 2013

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S Swiss Calibration Service

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

Accreditation No.: SCS 108

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) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
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
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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

Measurement Conditions

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

DASY Version	DASY5	V52.8.7
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	37.2 ± 6 %	1.97 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	14.8 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**58.4 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.57 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**26.0 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	52.5	2.16 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	50.1 ± 6 %	2.20 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	14.4 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**56.5 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.32 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**25.0 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.7 Ω - 5.7 jΩ
Return Loss	- 25.0 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.2 Ω - 4.5 jΩ
Return Loss	- 25.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.151 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
Manufactured on	August 14, 2012

DASY5 Validation Report for Head TSL

Date: 05.07.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1064

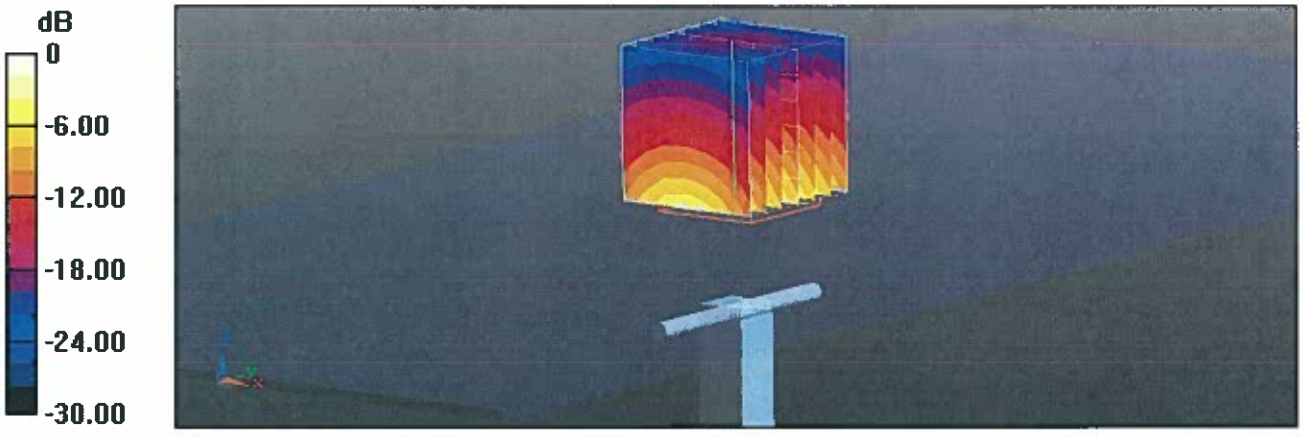
Communication System: UID 0 - CW ; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 1.97 S/m; ε_r = 37.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 25.04.2013
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

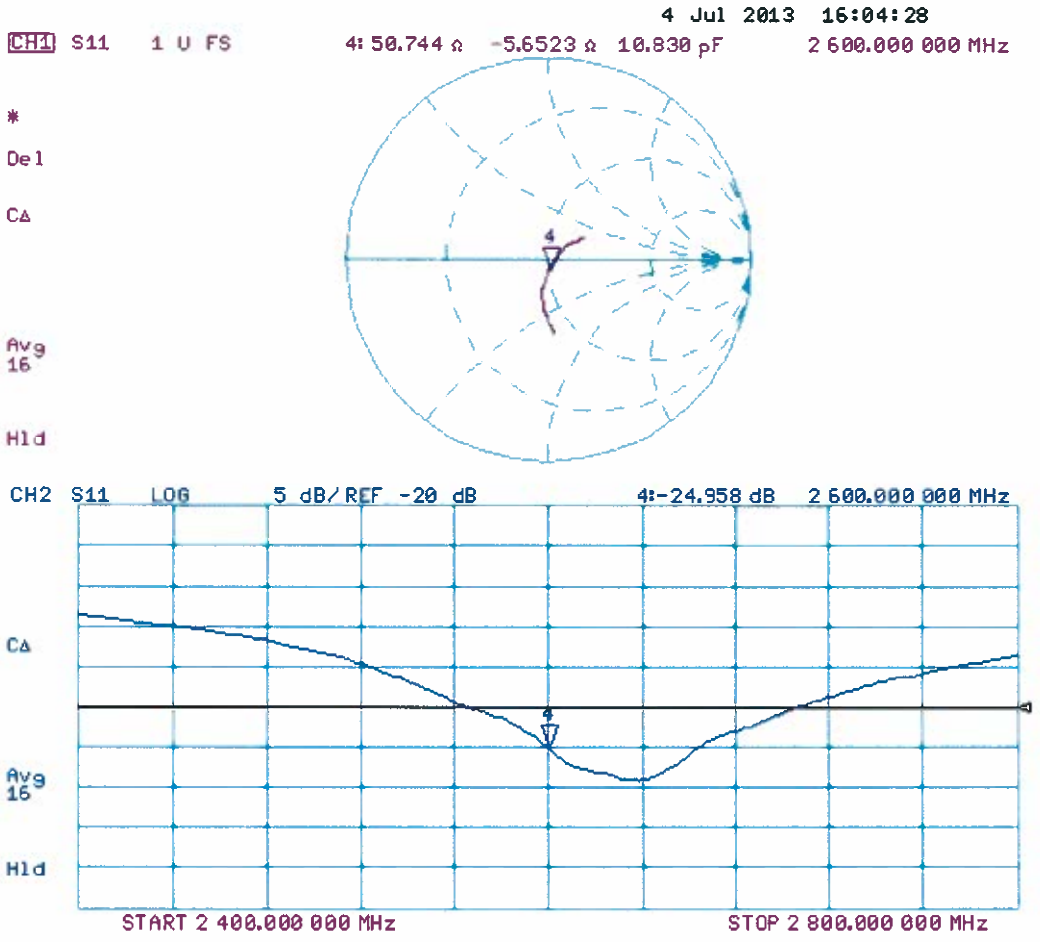
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.4 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 32.1 W/kg
SAR(1 g) = 14.8 W/kg; SAR(10 g) = 6.57 W/kg
Maximum value of SAR (measured) = 19.6 W/kg



0 dB = 19.6 W/kg = 12.92 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 05.07.2013

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN: 1064

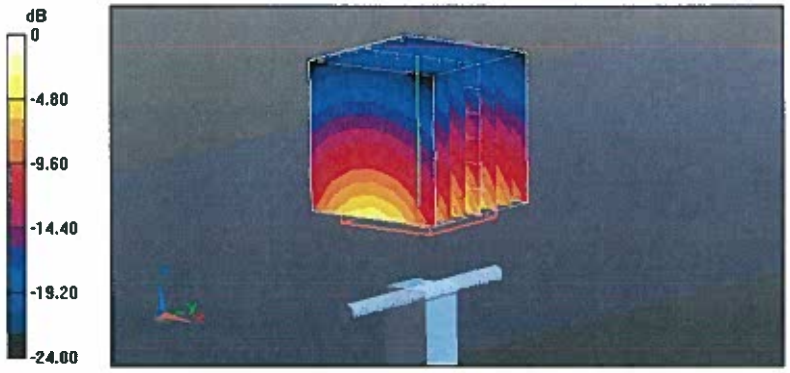
Communication System: UID 0 - CW ; Frequency: 2600 MHz
Medium parameters used: f = 2600 MHz; σ = 2.2 S/m; ε_r = 50.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.32, 4.32, 4.32); Calibrated: 28.12.2012;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 25.04.2013
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

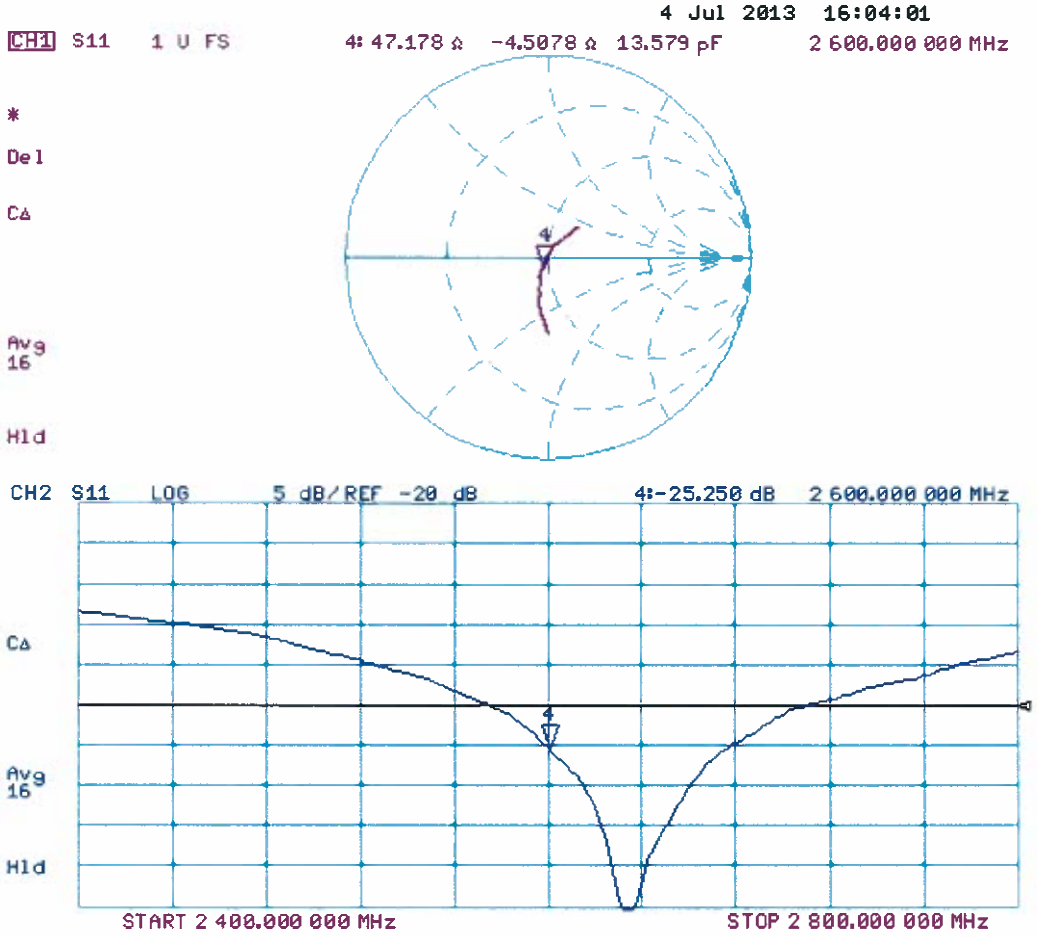
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.397 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 31.6 W/kg
SAR(1 g) = 14.4 W/kg; SAR(10 g) = 6.32 W/kg
Maximum value of SAR (measured) = 19.3 W/kg



0 dB = 19.3 W/kg = 12.86 dBW/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client Nokia SD

Certificate No: ES3-3275_Jan14

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3275

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

Calibration date: January 22, 2014

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 E4419B	GB41293874	04-Apr-13 (No. 217-01733)	Apr-14
Power sensor E4412A	MY41498087	04-Apr-13 (No. 217-01733)	Apr-14
Reference 3 dB Attenuator	SN: S5054 (3c)	04-Apr-13 (No. 217-01737)	Apr-14
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-13 (No. 217-01735)	Apr-14
Reference 30 dB Attenuator	SN: S5129 (30b)	04-Apr-13 (No. 217-01738)	Apr-14
Reference Probe ES3DV2	SN: 3013	30-Dec-13 (No. ES3-3013_Dec13)	Dec-14
DAE4	SN: 660	13-Dec-13 (No. DAE4-660_Dec13)	Dec-14
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-13)	In house check: Oct-14

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 22, 2014

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

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Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., 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) 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, "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 Interpretation of Parameters:

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

Probe ES3DV3

SN:3275

Manufactured: February 25, 2010
Calibrated: January 22, 2014

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3275

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.34	1.16	1.24	± 10.1 %
DCP (mV)[B]	103.3	101.8	102.9	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	155.8	±3.0 %
		Y	0.0	0.0	1.0		155.9	
		Z	0.0	0.0	1.0		155.8	

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 NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[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: ES3DV3 - SN:3275

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)	Unct. (k=2)
750	41.9	0.89	6.32	6.32	6.32	0.22	2.29	± 12.0 %
835	41.5	0.90	6.12	6.12	6.12	0.26	1.95	± 12.0 %
1750	40.1	1.37	5.11	5.11	5.11	0.46	1.52	± 12.0 %
1900	40.0	1.40	4.96	4.96	4.96	0.80	1.15	± 12.0 %
2100	39.8	1.49	5.02	5.02	5.02	0.80	1.15	± 12.0 %
2450	39.2	1.80	4.44	4.44	4.44	0.70	1.37	± 12.0 %
2600	39.0	1.96	4.25	4.25	4.25	0.79	1.33	± 12.0 %

[C] Frequency validity 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.
[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.

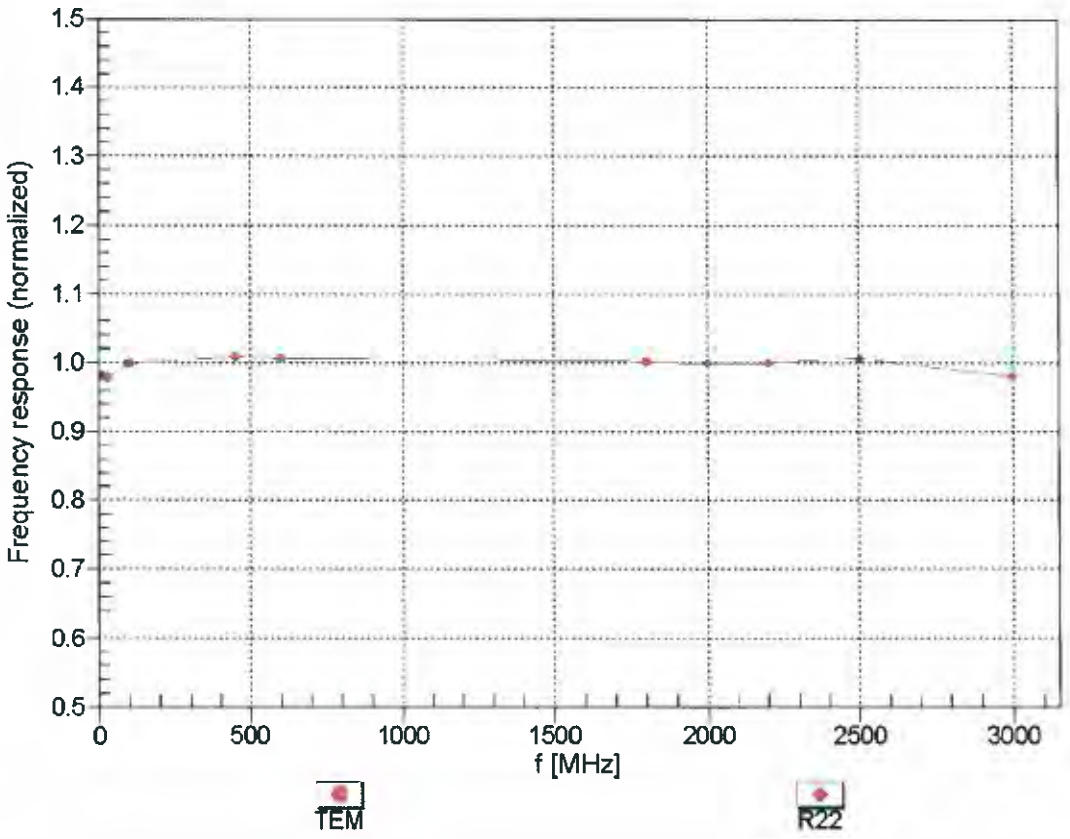
DASY/EASY - Parameters of Probe: ES3DV3 - SN:3275

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unct. (k=2)
750	55.5	0.96	6.03	6.03	6.03	0.60	1.31	± 12.0 %
835	55.2	0.97	6.01	6.01	6.01	0.77	1.21	± 12.0 %
1750	53.4	1.49	4.90	4.90	4.90	0.50	1.60	± 12.0 %
1900	53.3	1.52	4.59	4.59	4.59	0.70	1.41	± 12.0 %
2100	53.2	1.62	4.72	4.72	4.72	0.65	1.45	± 12.0 %
2450	52.7	1.95	4.14	4.14	4.14	0.68	1.19	± 12.0 %
2600	52.5	2.16	3.98	3.98	3.98	0.69	0.98	± 12.0 %

[C] Frequency validity 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.
[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.

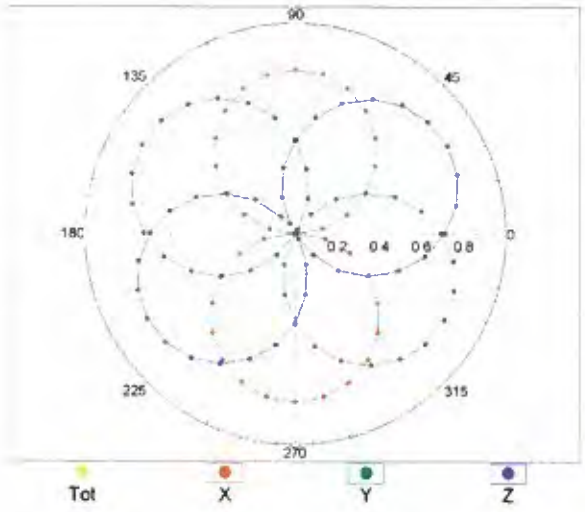
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



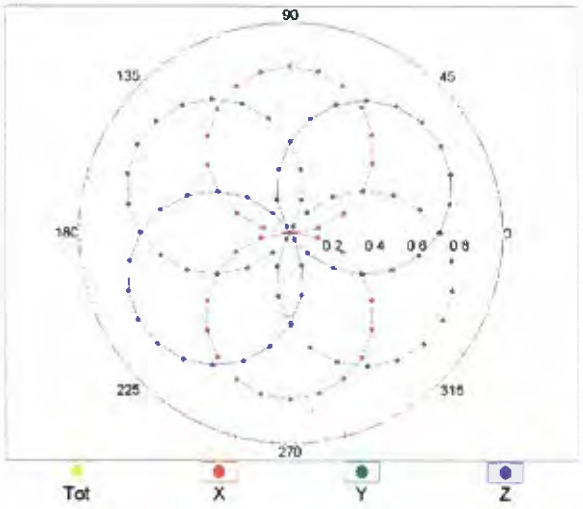
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

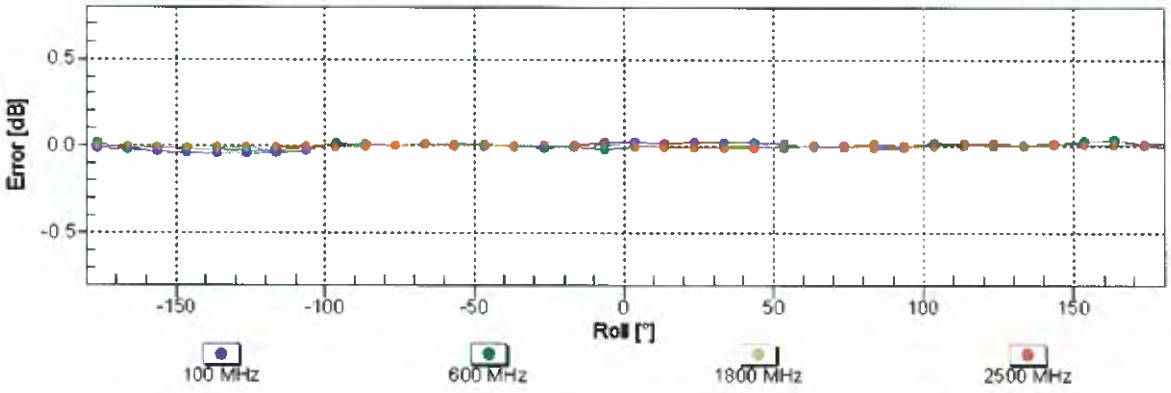
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



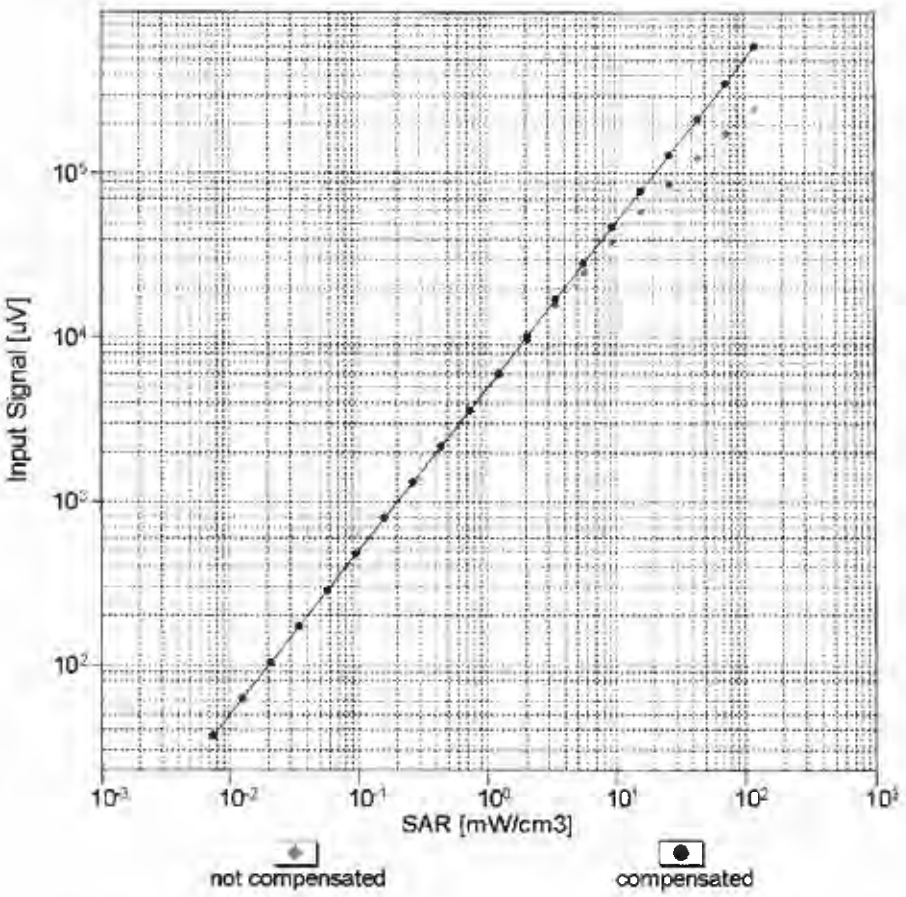
f=1800 MHz,R22

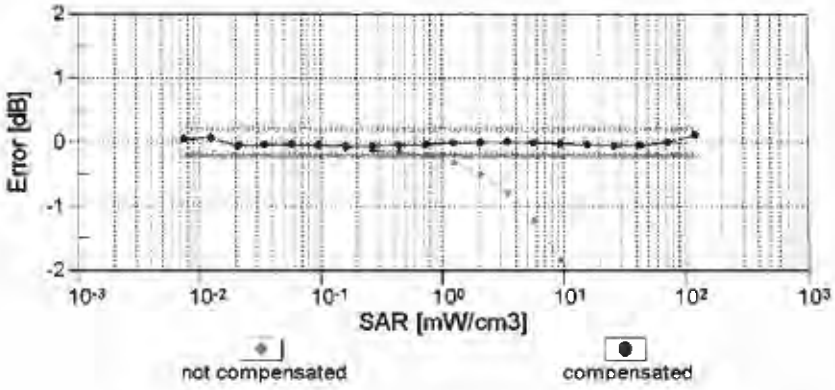




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

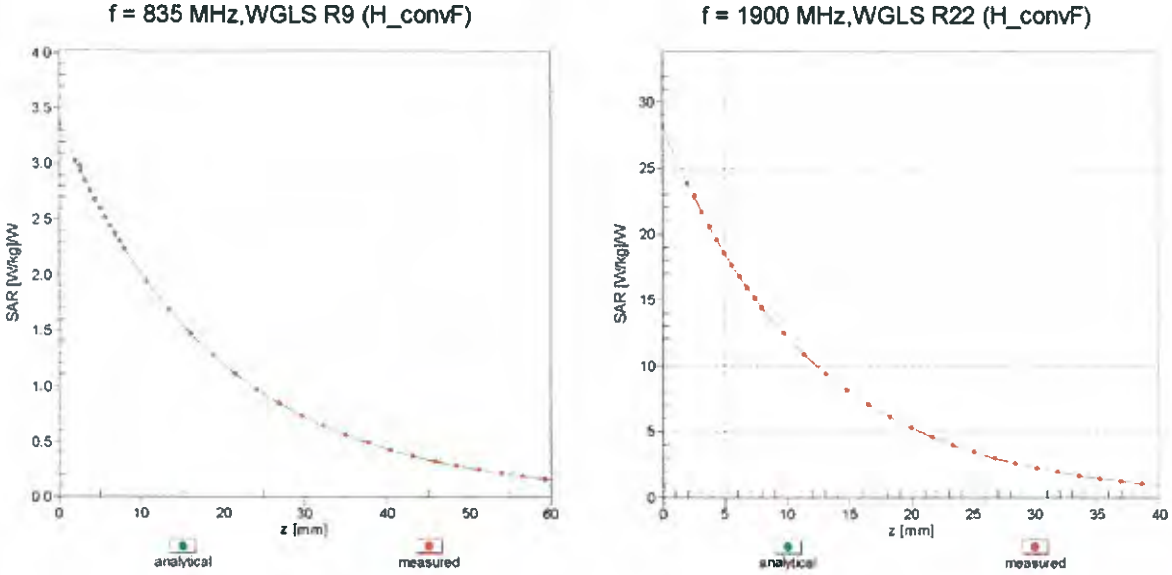
Dynamic Range f(SAR_{head})
(TEM cell , f = 900 MHz)





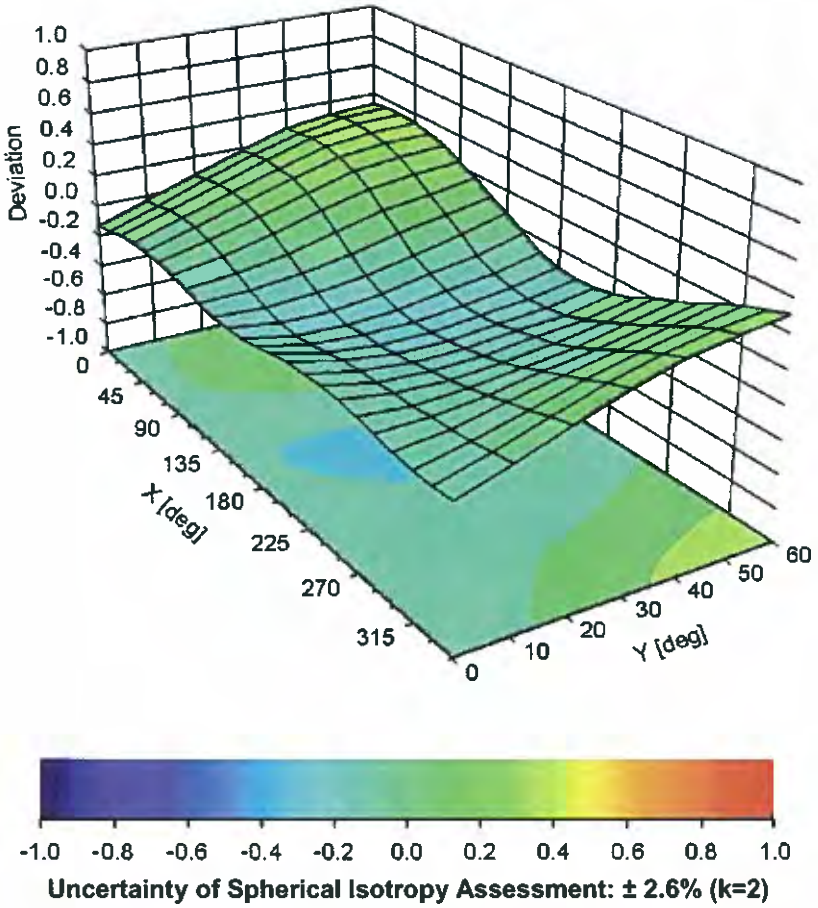
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3275

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-6.4
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

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Accreditation No.: SCS 108

Client Nokia SD

Certificate No: EX3-3817_Jan14

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3817

Calibration procedure(s): QA CAL-01.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: January 17, 2014

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 E4419B	GB41293874	04-Apr-13 (No. 217-01733)	Apr-14
Power sensor E4412A	MY41498087	04-Apr-13 (No. 217-01733)	Apr-14
Reference 3 dB Attenuator	SN: S5054 (3c)	04-Apr-13 (No. 217-01737)	Apr-14
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-13 (No. 217-01735)	Apr-14
Reference 30 dB Attenuator	SN: S5129 (30b)	04-Apr-13 (No. 217-01738)	Apr-14
Reference Probe ES3DV2	SN: 3013	30-Dec-13 (No. ES3-3013_Dec13)	Dec-14
DAE4	SN: 660	13-Dec-13 (No. DAE4-660_Dec13)	Dec-14
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-13)	In house check: Oct-14

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 20, 2014

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

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., 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) 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, "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 Interpretation of Parameters:

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

Probe EX3DV4

SN:3817

Manufactured: September 2, 2011
Calibrated: January 17, 2014

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3817

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.46	0.41	0.50	± 10.1 %
DCP (mV)[B]	103.1	102.0	98.7	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	156.1	±3.0 %
		Y	0.0	0.0	1.0		145.0	
		Z	0.0	0.0	1.0		156.3	

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 NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[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:3817

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)	Unct. (k=2)
2450	39.2	1.80	7.20	7.20	7.20	0.40	0.77	± 12.0 %
5200	36.0	4.66	5.36	5.36	5.36	0.30	1.80	± 13.1 %
5300	35.9	4.76	5.18	5.18	5.18	0.30	1.80	± 13.1 %
5500	35.6	4.96	5.05	5.05	5.05	0.30	1.80	± 13.1 %
5600	35.5	5.07	4.92	4.92	4.92	0.30	1.80	± 13.1 %
5800	35.3	5.27	4.78	4.78	4.78	0.35	1.80	± 13.1 %

[C] Frequency validity 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.
[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.

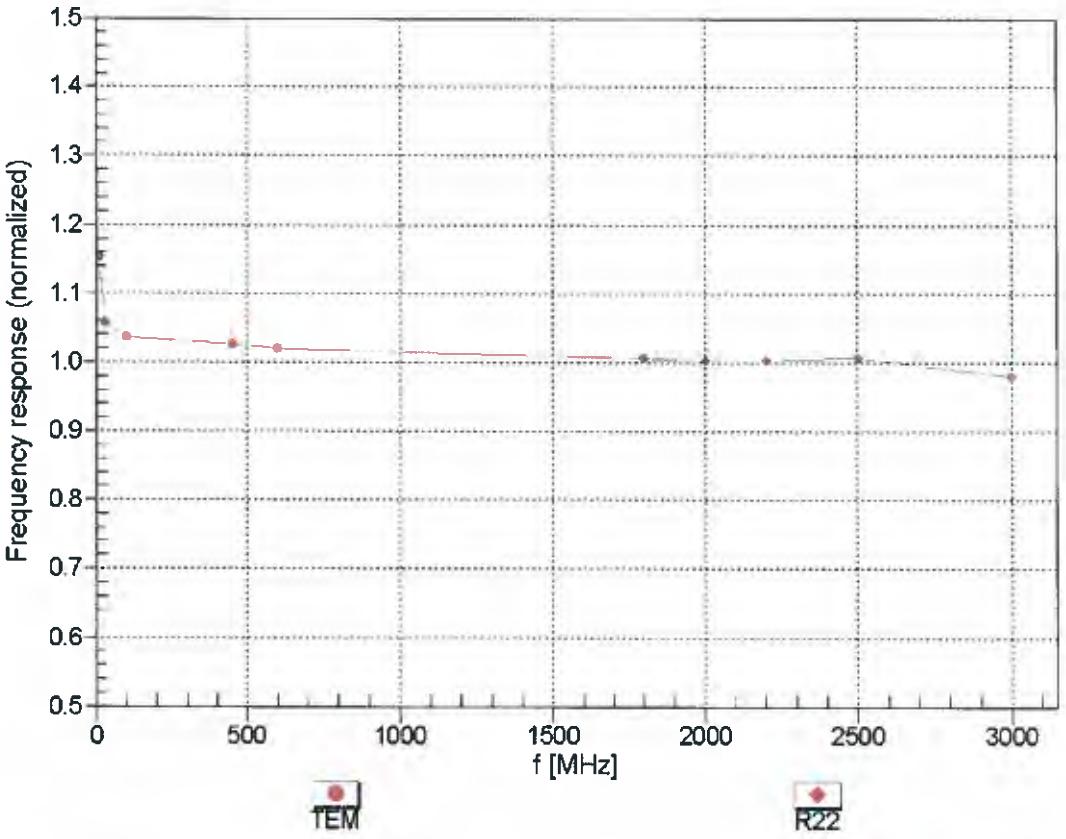
DASY/EASY - Parameters of Probe: EX3DV4 - SN:3817

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unct. (k=2)
2450	52.7	1.95	7.20	7.20	7.20	0.76	0.55	± 12.0 %
5200	49.0	5.30	4.73	4.73	4.73	0.45	1.90	± 13.1 %
5300	48.9	5.42	4.53	4.53	4.53	0.45	1.90	± 13.1 %
5500	48.6	5.65	4.15	4.15	4.15	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.98	3.98	3.98	0.50	1.90	± 13.1 %
5800	48.2	6.00	4.28	4.28	4.28	0.55	1.90	± 13.1 %

[C] Frequency validity 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.
[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.

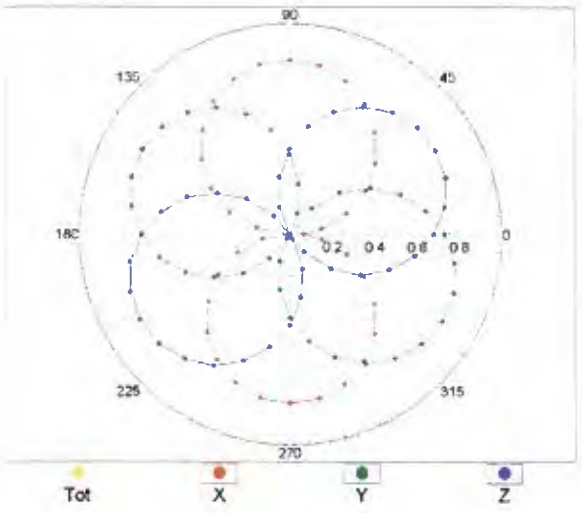
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



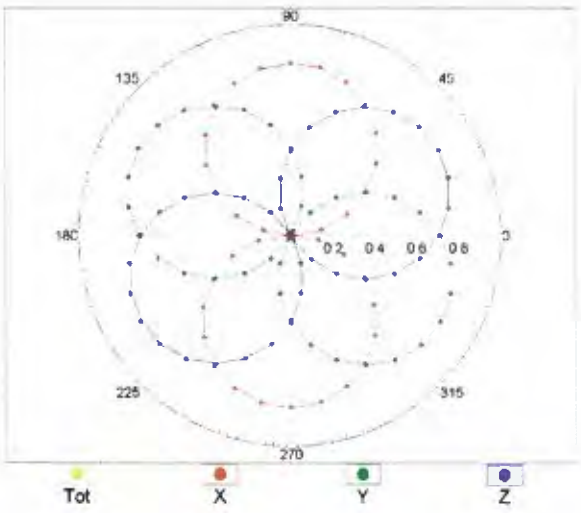
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

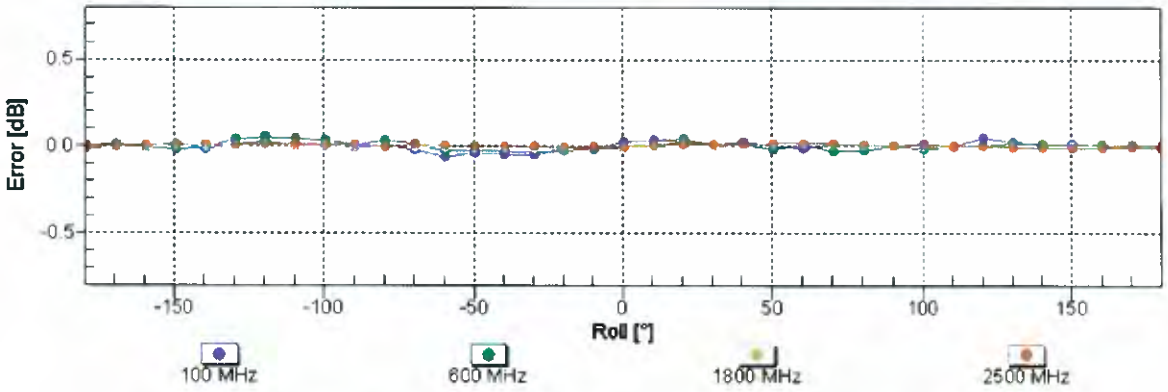
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



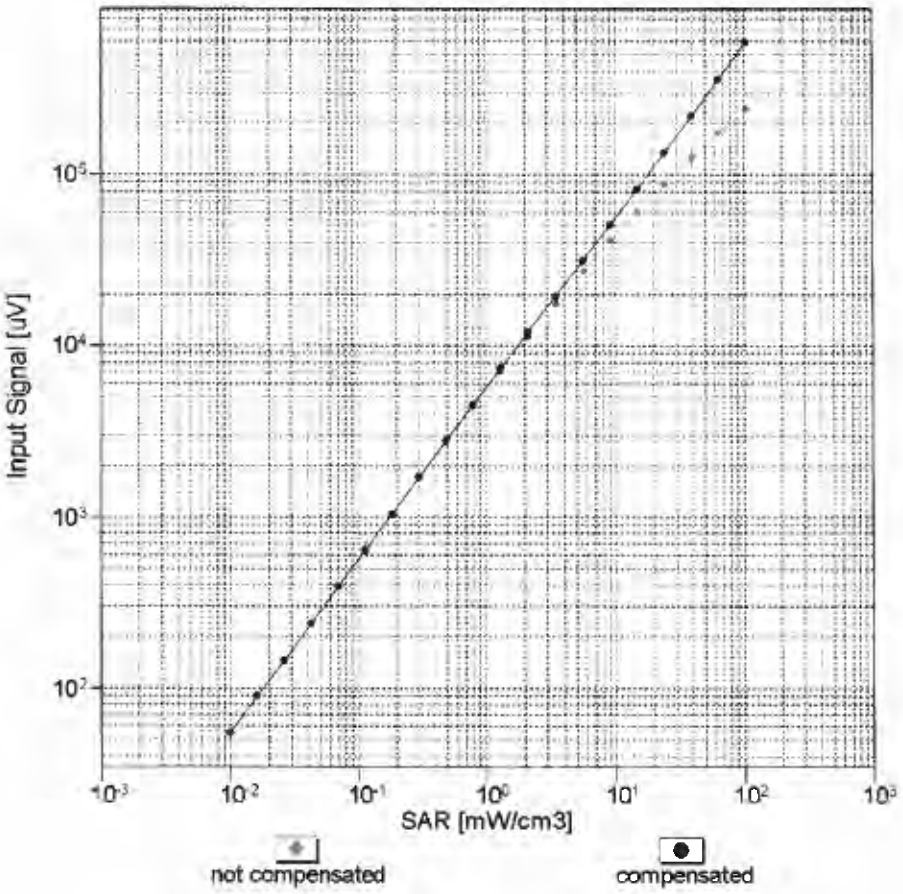
f=1800 MHz,R22

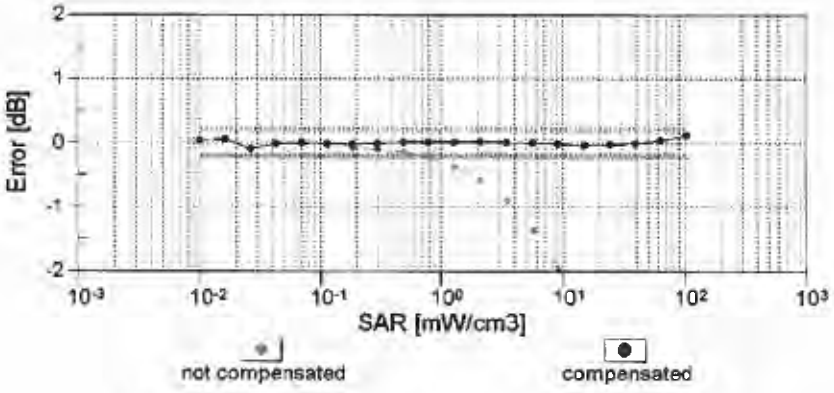




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR$_{head}$)
(TEM cell , f = 900 MHz)

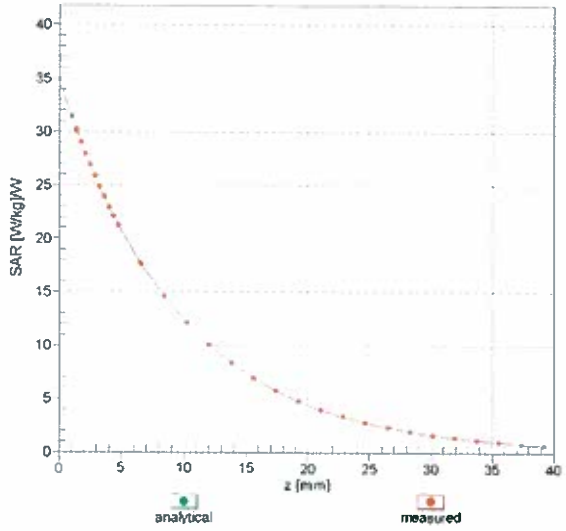




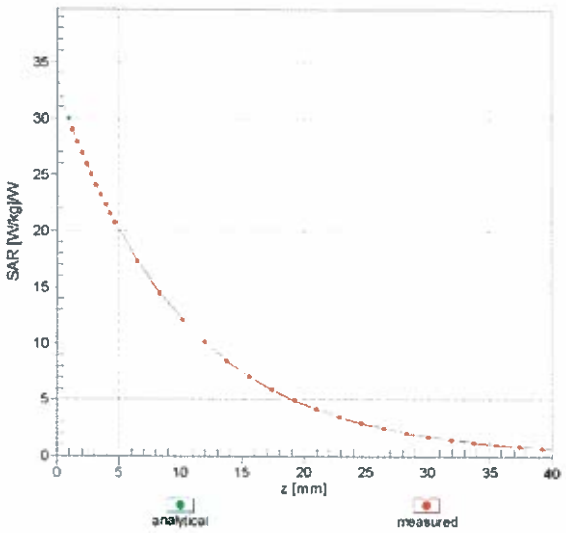
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 2450 MHz,WGLS R22 (H_convF)

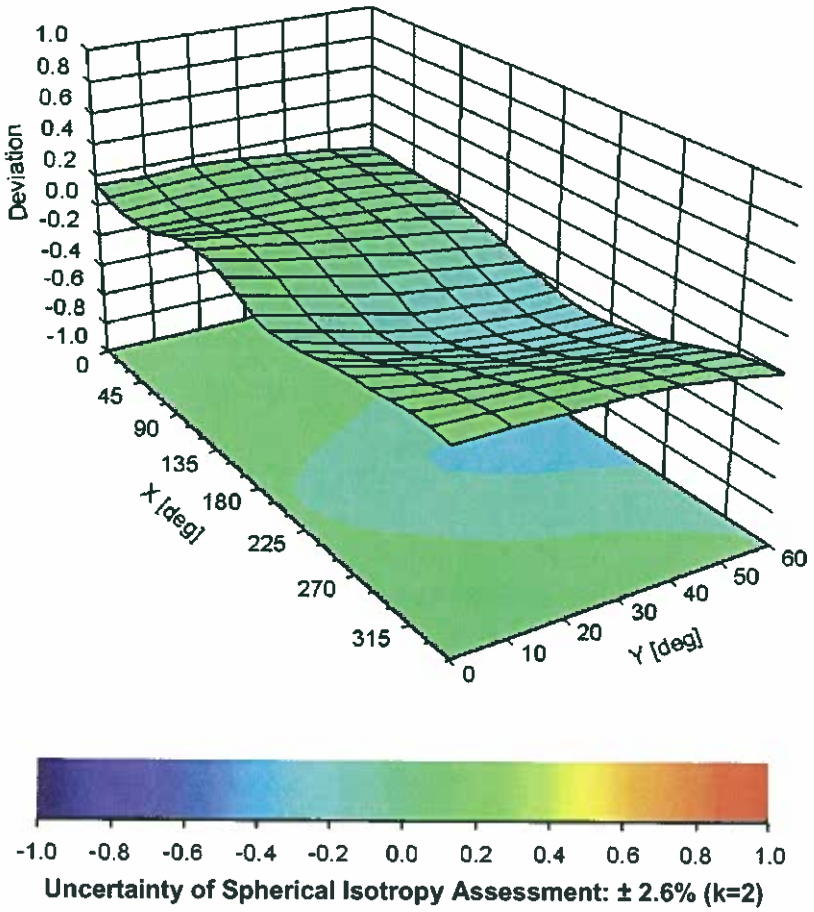


f = 2450 MHz,WGLS R22 (M_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3817

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-99.5
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	2 mm

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

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

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

Accreditation No.: SCS 108

Client Nokia SD

Certificate No: ES3-3112_Jan14

CALIBRATION CERTIFICATE

Object: ES3DV3 - SN:3112

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

Calibration date: January 22, 2014

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 E4419B	GB41293874	04-Apr-13 (No. 217-01733)	Apr-14
Power sensor E4412A	MY41498087	04-Apr-13 (No. 217-01733)	Apr-14
Reference 3 dB Attenuator	SN: S5054 (3c)	04-Apr-13 (No. 217-01737)	Apr-14
Reference 20 dB Attenuator	SN: S5277 (20x)	04-Apr-13 (No. 217-01735)	Apr-14
Reference 30 dB Attenuator	SN: S5129 (30b)	04-Apr-13 (No. 217-01738)	Apr-14
Reference Probe ES3DV2	SN: 3013	30-Dec-13 (No. ES3-3013_Dec13)	Dec-14
DAE4	SN: 660	13-Dec-13 (No. DAE4-660_Dec13)	Dec-14
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-13)	In house check: Oct-14

	Name	Function	Signature
Calibrated by:	Israe El-Naouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: January 22, 2014

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

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

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

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

Accreditation No.: SCS 108

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., 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) 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, "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 Interpretation of Parameters:

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

Probe ES3DV3

SN:3112

Manufactured: March 9, 2006
Calibrated: January 22, 2014

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3112

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.29	1.32	1.32	± 10.1 %
DCP (mV)[B]	100.8	99.9	99.0	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	158.8	±3.0 %
		Y	0.0	0.0	1.0		163.6	
		Z	0.0	0.0	1.0		157.6	

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 NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[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: ES3DV3 - SN:3112

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)	Unct. (k=2)
750	41.9	0.89	6.42	6.42	6.42	0.80	1.13	± 12.0 %
835	41.5	0.90	6.16	6.16	6.16	0.23	2.21	± 12.0 %
1750	40.1	1.37	5.25	5.25	5.25	0.51	1.40	± 12.0 %
1900	40.0	1.40	5.11	5.11	5.11	0.42	1.64	± 12.0 %
2100	39.8	1.49	5.17	5.17	5.17	0.49	1.49	± 12.0 %
2450	39.2	1.80	4.49	4.49	4.49	0.62	1.41	± 12.0 %
2600	39.0	1.96	4.33	4.33	4.33	0.77	1.34	± 12.0 %

[C] Frequency validity 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.
[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.

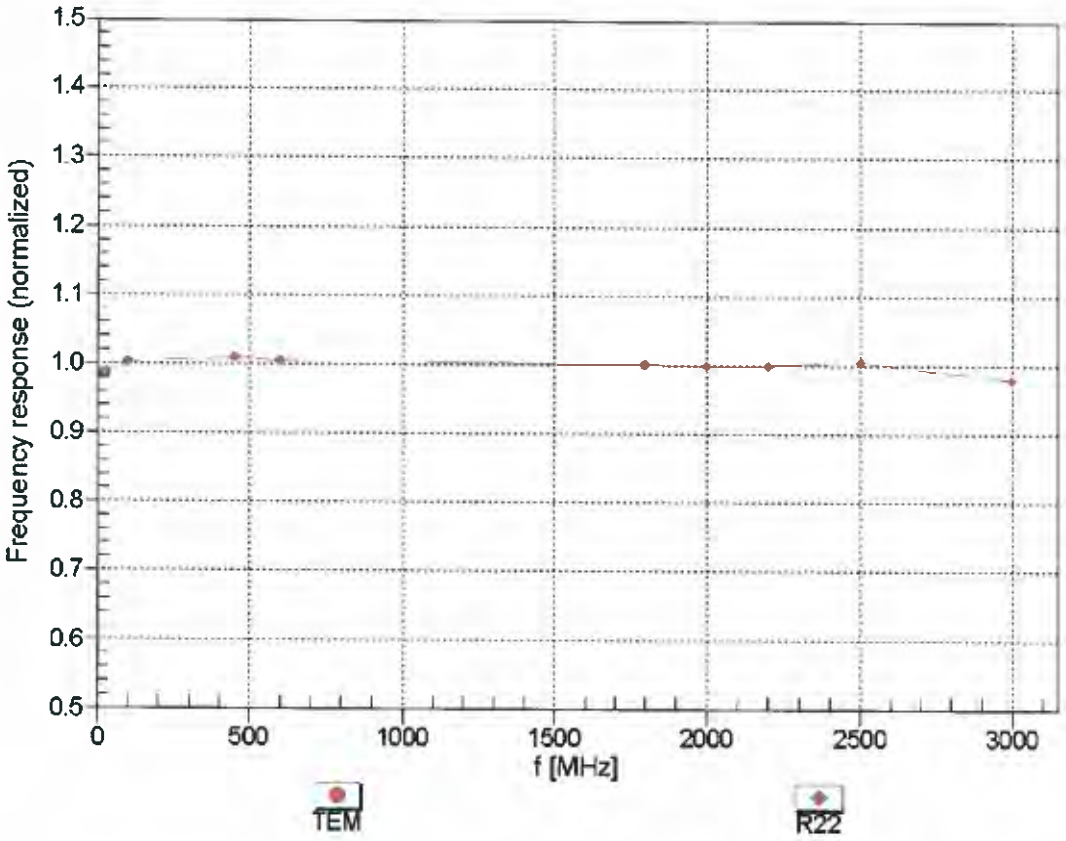
DASY/EASY - Parameters of Probe: ES3DV3 - SN:3112

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unct. (k=2)
750	55.5	0.96	6.32	6.32	6.32	0.79	1.18	± 12.0 %
835	55.2	0.97	6.26	6.26	6.26	0.30	2.01	± 12.0 %
1750	53.4	1.49	4.90	4.90	4.90	0.35	2.00	± 12.0 %
1900	53.3	1.52	4.73	4.73	4.73	0.54	1.55	± 12.0 %
2100	53.2	1.62	4.86	4.86	4.86	0.50	1.66	± 12.0 %
2450	52.7	1.95	4.26	4.26	4.26	0.80	1.03	± 12.0 %
2600	52.5	2.16	4.05	4.05	4.05	0.59	0.83	± 12.0 %

[C] Frequency validity 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.
[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.

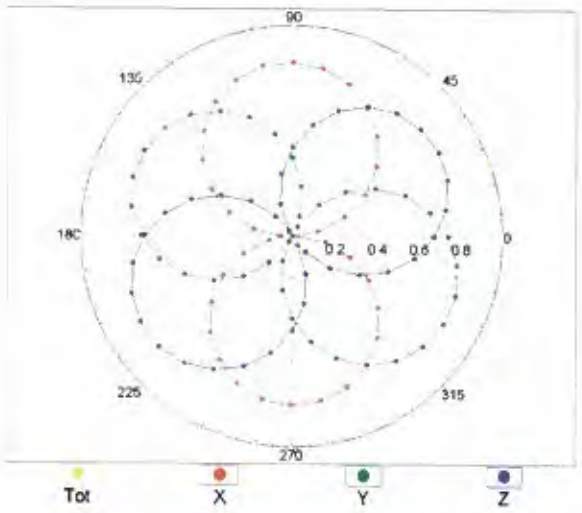
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



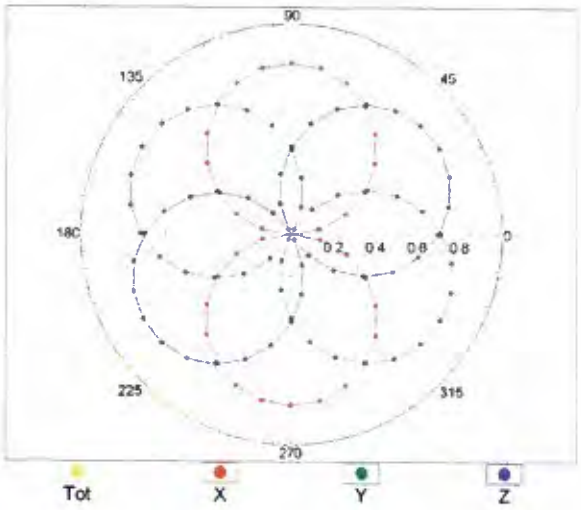
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

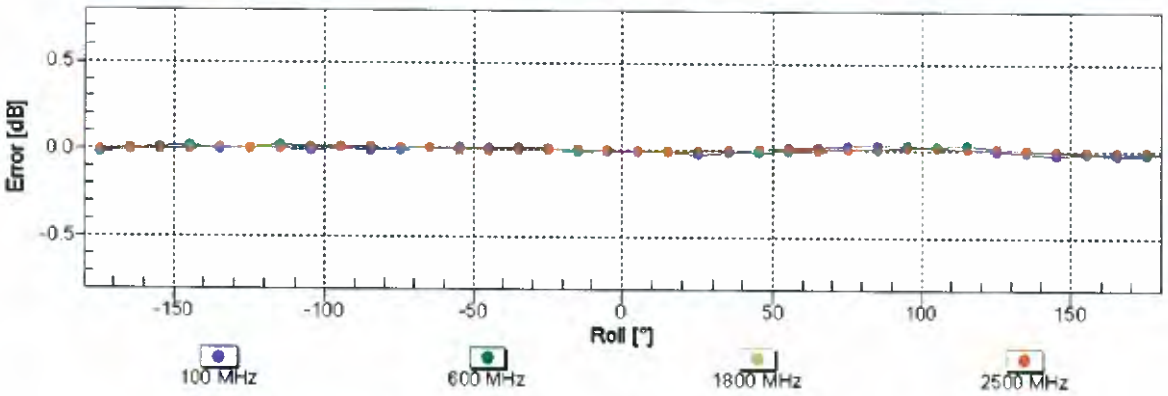
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



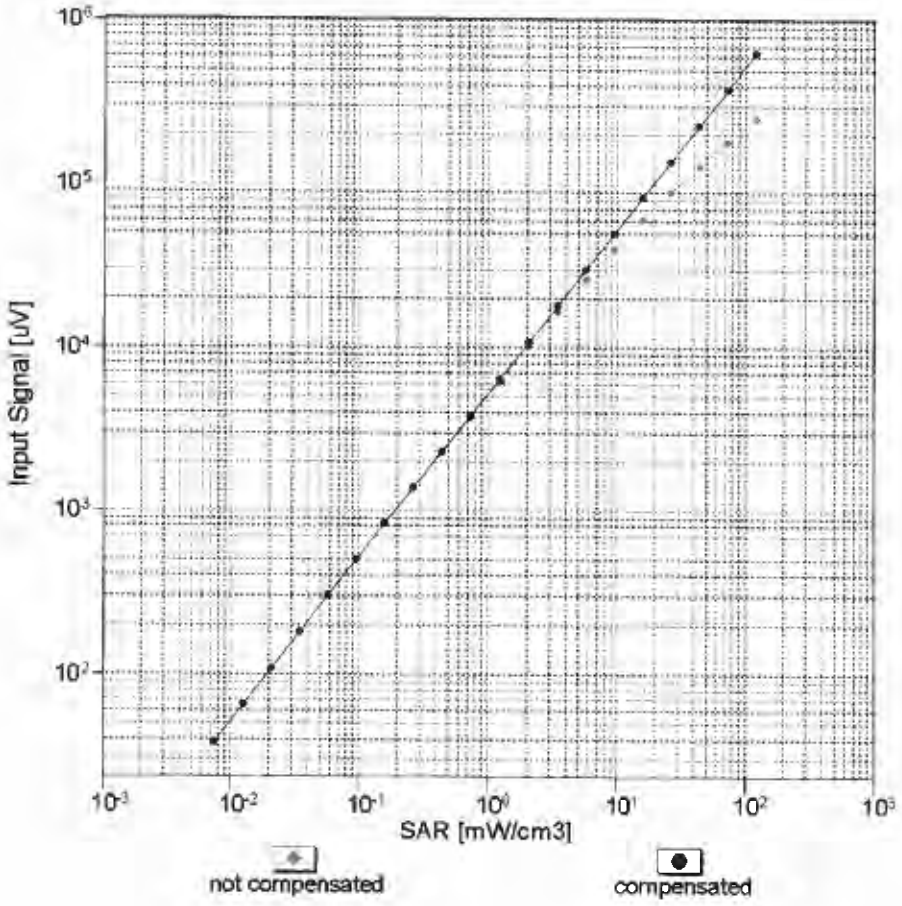
f=1800 MHz,R22

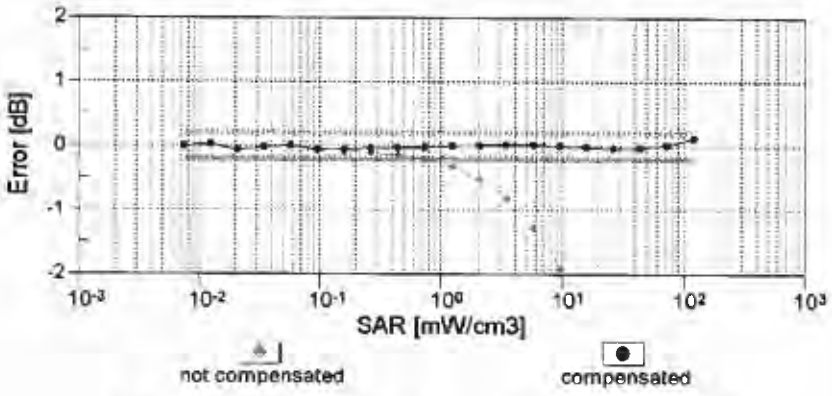




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})
(TEM cell , f = 900 MHz)

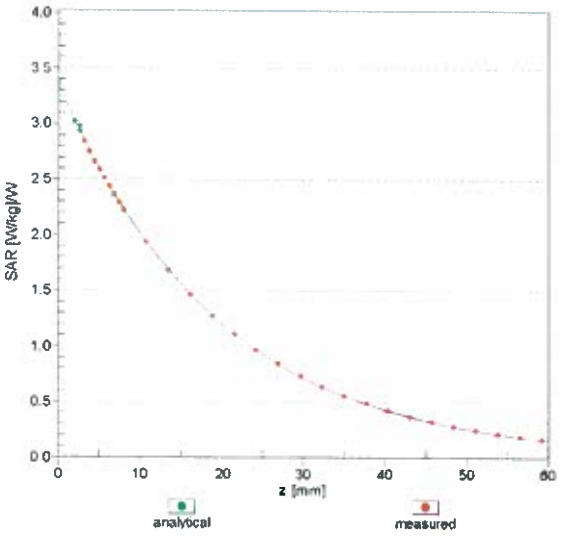




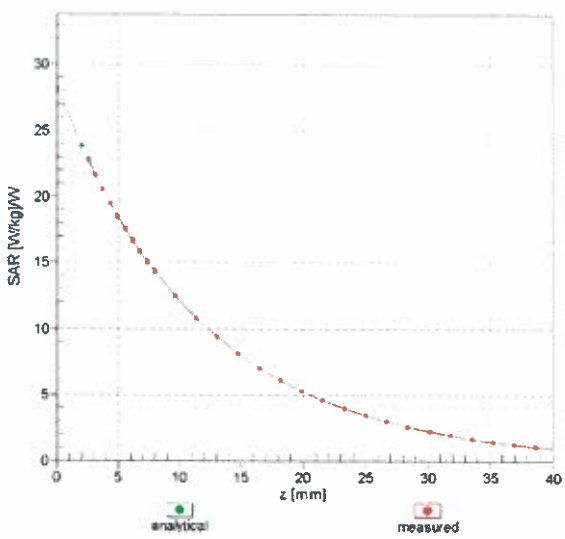
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 835 MHz,WGLS R9 (H_convF)

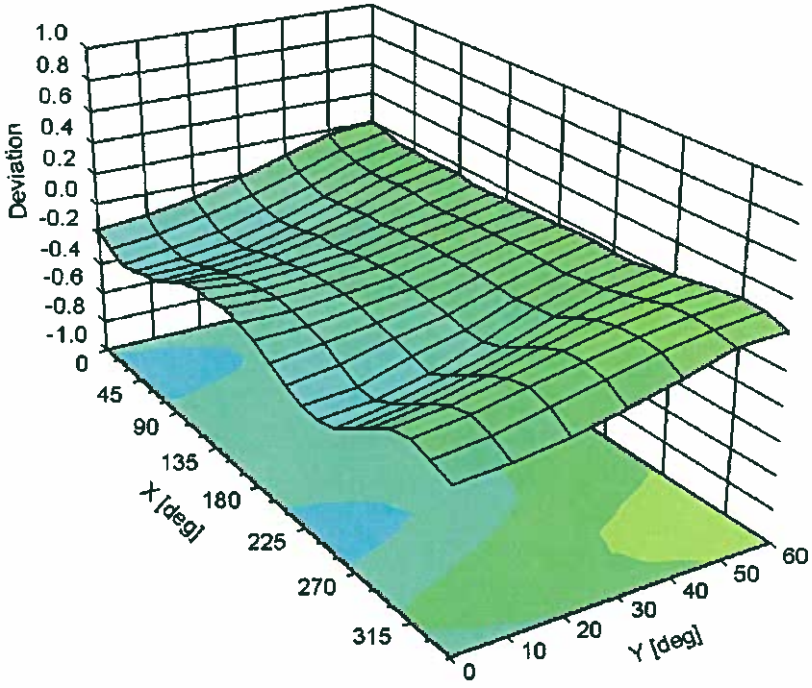


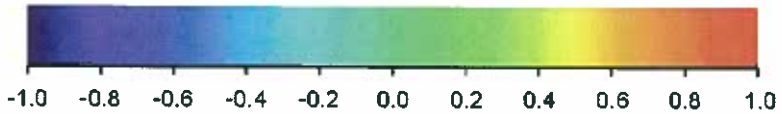
f = 1900 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

DASY/EASY - Parameters of Probe: ES3DV3 - SN:3112

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-134.7
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

APPENDIX G: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED LTE TRANSMISSION MODES

G.1 Power Tuning Targets

Band	Modulation	Target Tuning Power in Head and Body-worn measurements					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE700 (Band 17)	QPSK	N/A	N/A	23.0	23.0	N/A	N/A
	16QAM	N/A	N/A	22.0	22.0	N/A	N/A
LTE850 (Band 5)	QPSK	23.0	23.0	23.0	23.0	N/A	N/A
	16QAM	22.0	22.0	22.0	22.0	N/A	N/A
LTE1700/2100 (Band 4)	QPSK	23.0	23.0	23.0	23.0	23.0	23.0
	16QAM	22.0	22.0	22.0	22.0	22.0	22.0
LTE1900 (Band 2)	QPSK	22.5	22.5	22.5	22.5	22.5	22.5
	16QAM	21.5	21.5	21.5	21.5	21.5	21.5
LTE2500(Band 7)	QPSK	N/A	N/A	22.0	22.0	22.0	22.0
	16QAM	N/A	N/A	21.0	21.0	21.0	21.0

Band	Modulation	Target Tuning Power in Wireless Router measurements					
		1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE1700/2100 (Band 4)	QPSK	21.5	21.5	21.5	21.5	21.5	21.5
	16QAM	20.5	20.5	20.5	20.5	20.5	20.5
LTE1900 (Band 2)	QPSK	21.0	21.0	21.0	21.0	21.0	21.0
	16QAM	20.0	20.0	20.0	20.0	20.0	20.0
LTE2500(Band 7)	QPSK	N/A	N/A	20.5	20.5	20.5	20.5
	16QAM	N/A	N/A	19.5	19.5	19.5	19.5

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G.2 Conducted Power from the Samples used in the Testing

Type: RM-975; Serial number: 004402/47/804000/3, HW: 2020, SW: 01061.00014.14112 used for LTE700 (Band17) for Head, Body-worn and Wireless Router SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE700 (Band 17) in this specification (Table 6.2.4-1).

Antenna 1							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
706.5	23755	5	1	0	QPSK	22.9	-
706.5	23755	5	1	12	QPSK	22.9	-
706.5	23755	5	1	24	QPSK	22.9	-
706.5	23755	5	12	0	QPSK	21.9	-
706.5	23755	5	12	6	QPSK	21.9	-
706.5	23755	5	12	13	QPSK	22.0	-
706.5	23755	5	25	0	QPSK	22.0	-
706.5	23755	5	1	0	16QAM	22.0	-
706.5	23755	5	1	12	16QAM	22.0	-
706.5	23755	5	1	24	16QAM	22.1	-
706.5	23755	5	12	0	16QAM	21.0	-
706.5	23755	5	12	6	16QAM	21.0	-
706.5	23755	5	12	13	16QAM	21.0	-
706.5	23755	5	25	0	16QAM	20.9	-
710.0	23790	5	1	0	QPSK	22.9	-
710.0	23790	5	1	12	QPSK	22.9	-
710.0	23790	5	1	24	QPSK	22.9	-
710.0	23790	5	12	0	QPSK	21.9	-
710.0	23790	5	12	6	QPSK	21.9	-
710.0	23790	5	12	13	QPSK	21.9	-
710.0	23790	5	25	0	QPSK	21.9	-
710.0	23790	5	1	0	16QAM	22.0	-
710.0	23790	5	1	12	16QAM	22.0	-
710.0	23790	5	1	24	16QAM	21.9	-
710.0	23790	5	12	0	16QAM	21.0	-
710.0	23790	5	12	6	16QAM	21.0	-
710.0	23790	5	12	13	16QAM	21.0	-
710.0	23790	5	25	0	16QAM	21.0	-

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(Table continues)

713.5	23825	5	1	0	QPSK	22.8	-
713.5	23825	5	1	12	QPSK	22.8	-
713.5	23825	5	1	24	QPSK	22.9	-
713.5	23825	5	12	0	QPSK	21.9	-
713.5	23825	5	12	6	QPSK	21.8	-
713.5	23825	5	12	13	QPSK	21.9	-
713.5	23825	5	25	0	QPSK	21.8	-
713.5	23825	5	1	0	16QAM	21.7	-
713.5	23825	5	1	12	16QAM	21.6	-
713.5	23825	5	1	24	16QAM	21.7	-
713.5	23825	5	12	0	16QAM	20.9	-
713.5	23825	5	12	6	16QAM	20.9	-
713.5	23825	5	12	13	16QAM	21.0	-
713.5	23825	5	25	0	16QAM	20.9	-
709.0	23780	10	1	0	QPSK	22.8	-
709.0	23780	10	1	24	QPSK	22.9	-
709.0	23780	10	1	49	QPSK	22.9	-
709.0	23780	10	25	0	QPSK	21.9	-
709.0	23780	10	25	12	QPSK	22.0	-
709.0	23780	10	25	25	QPSK	22.0	-
709.0	23780	10	50	0	QPSK	22.0	-
709.0	23780	10	1	0	16QAM	21.7	-
709.0	23780	10	1	24	16QAM	21.7	-
709.0	23780	10	1	49	16QAM	21.8	-
709.0	23780	10	25	0	16QAM	20.9	-
709.0	23780	10	25	12	16QAM	20.9	-
709.0	23780	10	25	25	16QAM	20.9	-
709.0	23780	10	50	0	16QAM	20.9	-
710.0	23790	10	1	0	QPSK	22.8	-
710.0	23790	10	1	24	QPSK	22.9	-
710.0	23790	10	1	49	QPSK	23.0	-
710.0	23790	10	25	0	QPSK	21.9	-
710.0	23790	10	25	12	QPSK	21.9	-
710.0	23790	10	25	25	QPSK	21.9	-
710.0	23790	10	50	0	QPSK	21.9	-
710.0	23790	10	1	0	16QAM	21.7	-
710.0	23790	10	1	24	16QAM	21.8	-
710.0	23790	10	1	49	16QAM	21.9	-

(Table continues)

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(Table continues)

710.0	23790	10	25	0	16QAM	20.9	-
710.0	23790	10	25	12	16QAM	20.9	-
710.0	23790	10	25	25	16QAM	20.9	-
710.0	23790	10	50	0	16QAM	20.9	-
711.0	23800	10	1	0	QPSK	22.8	-
711.0	23800	10	1	24	QPSK	22.8	-
711.0	23800	10	1	49	QPSK	22.9	-
711.0	23800	10	25	0	QPSK	21.9	-
711.0	23800	10	25	12	QPSK	21.9	-
711.0	23800	10	25	25	QPSK	21.9	-
711.0	23800	10	50	0	QPSK	21.9	-
711.0	23800	10	1	0	16QAM	21.9	-
711.0	23800	10	1	24	16QAM	22.0	-
711.0	23800	10	1	49	16QAM	22.0	-
711.0	23800	10	25	0	16QAM	20.9	-
711.0	23800	10	25	12	16QAM	20.9	-
711.0	23800	10	25	25	16QAM	20.9	-
711.0	23800	10	50	0	16QAM	20.9	-

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Antenna 2							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
706.5	23755	5	1	0	QPSK	22.7	-
706.5	23755	5	1	12	QPSK	22.7	-
706.5	23755	5	1	24	QPSK	22.7	-
706.5	23755	5	12	0	QPSK	21.7	-
706.5	23755	5	12	6	QPSK	21.7	-
706.5	23755	5	12	13	QPSK	21.8	-
706.5	23755	5	25	0	QPSK	21.8	-
706.5	23755	5	1	0	16QAM	21.8	-
706.5	23755	5	1	12	16QAM	21.8	-
706.5	23755	5	1	24	16QAM	21.9	-
706.5	23755	5	12	0	16QAM	20.8	-
706.5	23755	5	12	6	16QAM	20.8	-
706.5	23755	5	12	13	16QAM	20.8	-
706.5	23755	5	25	0	16QAM	20.7	-
710.0	23790	5	1	0	QPSK	22.7	-
710.0	23790	5	1	12	QPSK	22.7	-
710.0	23790	5	1	24	QPSK	22.7	-
710.0	23790	5	12	0	QPSK	21.7	-
710.0	23790	5	12	6	QPSK	21.7	-
710.0	23790	5	12	13	QPSK	21.7	-
710.0	23790	5	25	0	QPSK	21.7	-
710.0	23790	5	1	0	16QAM	21.8	-
710.0	23790	5	1	12	16QAM	21.8	-
710.0	23790	5	1	24	16QAM	21.7	-
710.0	23790	5	12	0	16QAM	20.8	-
710.0	23790	5	12	6	16QAM	20.8	-
710.0	23790	5	12	13	16QAM	20.8	-
710.0	23790	5	25	0	16QAM	20.8	-
713.5	23825	5	1	0	QPSK	22.6	-
713.5	23825	5	1	12	QPSK	22.6	-
713.5	23825	5	1	24	QPSK	22.7	-
713.5	23825	5	12	0	QPSK	21.7	-
713.5	23825	5	12	6	QPSK	21.6	-
713.5	23825	5	12	13	QPSK	21.7	-
713.5	23825	5	25	0	QPSK	21.6	-

(Table continues)

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(Table continues)

713.5	23825	5	1	0	16QAM	21.5	-
713.5	23825	5	1	12	16QAM	21.4	-
713.5	23825	5	1	24	16QAM	21.5	-
713.5	23825	5	12	0	16QAM	20.7	-
713.5	23825	5	12	6	16QAM	20.7	-
713.5	23825	5	12	13	16QAM	20.8	-
713.5	23825	5	25	0	16QAM	20.7	-
709.0	23780	10	1	0	QPSK	22.6	-
709.0	23780	10	1	24	QPSK	22.7	-
709.0	23780	10	1	49	QPSK	22.7	-
709.0	23780	10	25	0	QPSK	21.7	-
709.0	23780	10	25	12	QPSK	21.8	-
709.0	23780	10	25	25	QPSK	21.8	-
709.0	23780	10	50	0	QPSK	21.8	-
709.0	23780	10	1	0	16QAM	21.5	-
709.0	23780	10	1	24	16QAM	21.5	-
709.0	23780	10	1	49	16QAM	21.6	-
709.0	23780	10	25	0	16QAM	20.7	-
709.0	23780	10	25	12	16QAM	20.7	-
709.0	23780	10	25	25	16QAM	20.7	-
709.0	23780	10	50	0	16QAM	20.7	-
710.0	23790	10	1	0	QPSK	22.6	-
710.0	23790	10	1	24	QPSK	22.7	-
710.0	23790	10	1	49	QPSK	22.8	-
710.0	23790	10	25	0	QPSK	21.7	-
710.0	23790	10	25	12	QPSK	21.7	-
710.0	23790	10	25	25	QPSK	21.7	-
710.0	23790	10	50	0	QPSK	21.7	-
710.0	23790	10	1	0	16QAM	21.5	-
710.0	23790	10	1	24	16QAM	21.6	-
710.0	23790	10	1	49	16QAM	21.7	-
710.0	23790	10	25	0	16QAM	20.7	-
710.0	23790	10	25	12	16QAM	20.7	-
710.0	23790	10	25	25	16QAM	20.7	-
710.0	23790	10	50	0	16QAM	20.7	-
711.0	23800	10	1	0	QPSK	22.6	-
711.0	23800	10	1	24	QPSK	22.6	-

(Table continues)

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(Table continues)

711.0	23800	10	1	49	QPSK	22.7	-
711.0	23800	10	25	0	QPSK	21.7	-
711.0	23800	10	25	12	QPSK	21.7	-
711.0	23800	10	25	25	QPSK	21.7	-
711.0	23800	10	50	0	QPSK	21.7	-
711.0	23800	10	1	0	16QAM	21.7	-
711.0	23800	10	1	24	16QAM	21.8	-
711.0	23800	10	1	49	16QAM	21.8	-
711.0	23800	10	25	0	16QAM	20.7	-
711.0	23800	10	25	12	16QAM	20.7	-
711.0	23800	10	25	25	16QAM	20.7	-
711.0	23800	10	50	0	16QAM	20.7	-

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Type: RM-975; Serial number: 004402/47/804000/3, HW: 2020, SW: 01061.00014.14112 used for LTE850 (Band5) for Head, Body-worn and Wireless Router SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE850 (Band 5) in this specification (Table 6.2.4-1).

Antenna 1							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
824.7	20407	1.4	1	0	QPSK	22.9	-
824.7	20407	1.4	1	2	QPSK	22.9	-
824.7	20407	1.4	1	5	QPSK	22.9	-
824.7	20407	1.4	3	0	QPSK	23.0	-
824.7	20407	1.4	3	2	QPSK	22.9	-
824.7	20407	1.4	3	3	QPSK	22.9	-
824.7	20407	1.4	6	0	QPSK	22.0	-
824.7	20407	1.4	1	0	16QAM	21.8	-
824.7	20407	1.4	1	2	16QAM	21.8	-
824.7	20407	1.4	1	5	16QAM	21.8	-
824.7	20407	1.4	3	0	16QAM	22.0	-
824.7	20407	1.4	3	2	16QAM	22.0	-
824.7	20407	1.4	3	3	16QAM	22.0	-
824.7	20407	1.4	6	0	16QAM	20.9	-
836.5	20525	1.4	1	0	QPSK	22.9	-
836.5	20525	1.4	1	2	QPSK	22.8	-
836.5	20525	1.4	1	5	QPSK	22.8	-
836.5	20525	1.4	3	0	QPSK	22.9	-
836.5	20525	1.4	3	2	QPSK	22.9	-
836.5	20525	1.4	3	3	QPSK	22.9	-
836.5	20525	1.4	6	0	QPSK	21.9	-
836.5	20525	1.4	1	0	16QAM	21.8	-
836.5	20525	1.4	1	2	16QAM	21.8	-
836.5	20525	1.4	1	5	16QAM	21.7	-
836.5	20525	1.4	3	0	16QAM	21.9	-
836.5	20525	1.4	3	2	16QAM	21.9	-
836.5	20525	1.4	3	3	16QAM	22.0	-
836.5	20525	1.4	6	0	16QAM	20.9	-

(Table continues)

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(Table continues)

848.3	20643	1.4	1	0	QPSK	22.9	-
848.3	20643	1.4	1	2	QPSK	22.8	-
848.3	20643	1.4	1	5	QPSK	22.9	-
848.3	20643	1.4	3	0	QPSK	22.9	-
848.3	20643	1.4	3	2	QPSK	22.9	-
848.3	20643	1.4	3	3	QPSK	22.9	-
848.3	20643	1.4	6	0	QPSK	21.9	-
848.3	20643	1.4	1	0	16QAM	21.9	-
848.3	20643	1.4	1	2	16QAM	21.9	-
848.3	20643	1.4	1	5	16QAM	21.9	-
848.3	20643	1.4	3	0	16QAM	21.9	-
848.3	20643	1.4	3	2	16QAM	21.9	-
848.3	20643	1.4	3	3	16QAM	21.9	-
848.3	20643	1.4	6	0	16QAM	20.9	-
825.5	20415	3	1	0	QPSK	22.9	-
825.5	20415	3	1	7	QPSK	22.9	-
825.5	20415	3	1	14	QPSK	22.9	-
825.5	20415	3	8	0	QPSK	22.0	-
825.5	20415	3	8	3	QPSK	22.0	-
825.5	20415	3	8	7	QPSK	22.0	-
825.5	20415	3	15	0	QPSK	22.0	-
825.5	20415	3	1	0	16QAM	21.8	-
825.5	20415	3	1	7	16QAM	21.8	-
825.5	20415	3	1	14	16QAM	21.9	-
825.5	20415	3	8	0	16QAM	20.9	-
825.5	20415	3	8	3	16QAM	20.9	-
825.5	20415	3	8	7	16QAM	20.9	-
825.5	20415	3	15	0	16QAM	20.9	-
836.5	20525	3	1	0	QPSK	22.9	-
836.5	20525	3	1	7	QPSK	22.9	-
836.5	20525	3	1	14	QPSK	22.9	-
836.5	20525	3	8	0	QPSK	21.9	-
836.5	20525	3	8	3	QPSK	21.9	-
836.5	20525	3	8	7	QPSK	21.9	-
836.5	20525	3	15	0	QPSK	22.0	-
836.5	20525	3	1	0	16QAM	21.8	-
836.5	20525	3	1	7	16QAM	21.8	-
836.5	20525	3	1	14	16QAM	21.9	-

(Table continues)

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(Table continues)

836.5	20525	3	8	0	16QAM	20.9	-
836.5	20525	3	8	3	16QAM	20.8	-
836.5	20525	3	8	7	16QAM	20.8	-
836.5	20525	3	15	0	16QAM	20.9	-
847.5	20635	3	1	0	QPSK	22.9	-
847.5	20635	3	1	7	QPSK	22.9	-
847.5	20635	3	1	14	QPSK	22.9	-
847.5	20635	3	8	0	QPSK	21.9	-
847.5	20635	3	8	3	QPSK	21.9	-
847.5	20635	3	8	7	QPSK	21.9	-
847.5	20635	3	15	0	QPSK	22.0	-
847.5	20635	3	1	0	16QAM	21.9	-
847.5	20635	3	1	7	16QAM	21.8	-
847.5	20635	3	1	14	16QAM	21.9	-
847.5	20635	3	8	0	16QAM	20.8	-
847.5	20635	3	8	3	16QAM	20.8	-
847.5	20635	3	8	7	16QAM	20.9	-
847.5	20635	3	15	0	16QAM	20.9	-
826.5	20425	5	1	0	QPSK	22.9	-
826.5	20425	5	1	12	QPSK	22.9	-
826.5	20425	5	1	24	QPSK	22.9	-
826.5	20425	5	12	0	QPSK	21.9	-
826.5	20425	5	12	6	QPSK	21.9	-
826.5	20425	5	12	13	QPSK	21.9	-
826.5	20425	5	25	0	QPSK	22.0	-
826.5	20425	5	1	0	16QAM	21.5	-
826.5	20425	5	1	12	16QAM	21.5	-
826.5	20425	5	1	24	16QAM	21.5	-
826.5	20425	5	12	0	16QAM	21.0	-
826.5	20425	5	12	6	16QAM	21.0	-
826.5	20425	5	12	13	16QAM	21.0	-
826.5	20425	5	25	0	16QAM	20.9	-
836.5	20525	5	1	0	QPSK	22.8	-
836.5	20525	5	1	12	QPSK	22.8	-
836.5	20525	5	1	24	QPSK	22.8	-
836.5	20525	5	12	0	QPSK	21.9	-
836.5	20525	5	12	6	QPSK	21.9	-

(Table continues)

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(Table continues)

836.5	20525	5	12	13	QPSK	21.9	-
836.5	20525	5	25	0	QPSK	21.9	-
836.5	20525	5	1	0	16QAM	21.5	-
836.5	20525	5	1	12	16QAM	21.5	-
836.5	20525	5	1	24	16QAM	21.5	-
836.5	20525	5	12	0	16QAM	21.0	-
836.5	20525	5	12	6	16QAM	21.0	-
836.5	20525	5	12	13	16QAM	21.0	-
836.5	20525	5	25	0	16QAM	20.9	-
846.5	20625	5	1	0	QPSK	22.9	-
846.5	20625	5	1	12	QPSK	22.8	-
846.5	20625	5	1	24	QPSK	22.8	-
846.5	20625	5	12	0	QPSK	21.9	-
846.5	20625	5	12	6	QPSK	21.9	-
846.5	20625	5	12	13	QPSK	21.9	-
846.5	20625	5	25	0	QPSK	21.9	-
846.5	20625	5	1	0	16QAM	21.6	-
846.5	20625	5	1	12	16QAM	21.6	-
846.5	20625	5	1	24	16QAM	21.6	-
846.5	20625	5	12	0	16QAM	20.9	-
846.5	20625	5	12	6	16QAM	20.9	-
846.5	20625	5	12	13	16QAM	20.9	-
846.5	20625	5	25	0	16QAM	20.9	-
829.0	20450	10	1	0	QPSK	22.9	-
829.0	20450	10	1	24	QPSK	22.9	-
829.0	20450	10	1	49	QPSK	22.9	-
829.0	20450	10	25	0	QPSK	22.0	-
829.0	20450	10	25	12	QPSK	22.0	-
829.0	20450	10	25	25	QPSK	22.0	-
829.0	20450	10	50	0	QPSK	22.0	-
829.0	20450	10	1	0	16QAM	22.1	-
829.0	20450	10	1	24	16QAM	22.1	-
829.0	20450	10	1	49	16QAM	22.1	-
829.0	20450	10	25	0	16QAM	21.0	-
829.0	20450	10	25	12	16QAM	21.0	-
829.0	20450	10	25	25	16QAM	21.0	-
829.0	20450	10	50	0	16QAM	21.0	-

(Table continues)

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(Table continues)

836.5	20525	10	1	0	QPSK	22.9	-
836.5	20525	10	1	24	QPSK	22.9	-
836.5	20525	10	1	49	QPSK	22.9	-
836.5	20525	10	25	0	QPSK	21.9	-
836.5	20525	10	25	12	QPSK	21.9	-
836.5	20525	10	25	25	QPSK	21.9	-
836.5	20525	10	50	0	QPSK	22.0	-
836.5	20525	10	1	0	16QAM	22.0	-
836.5	20525	10	1	24	16QAM	22.0	-
836.5	20525	10	1	49	16QAM	22.0	-
836.5	20525	10	25	0	16QAM	21.0	-
836.5	20525	10	25	12	16QAM	21.0	-
836.5	20525	10	25	25	16QAM	21.0	-
836.5	20525	10	50	0	16QAM	20.9	-
844.0	20600	10	1	0	QPSK	22.9	-
844.0	20600	10	1	24	QPSK	22.9	-
844.0	20600	10	1	49	QPSK	22.8	-
844.0	20600	10	25	0	QPSK	21.9	-
844.0	20600	10	25	12	QPSK	21.9	-
844.0	20600	10	25	25	QPSK	21.9	-
844.0	20600	10	50	0	QPSK	22.0	-
844.0	20600	10	1	0	16QAM	21.8	-
844.0	20600	10	1	24	16QAM	21.7	-
844.0	20600	10	1	49	16QAM	21.8	-
844.0	20600	10	25	0	16QAM	21.0	-
844.0	20600	10	25	12	16QAM	21.0	-
844.0	20600	10	25	25	16QAM	21.0	-
844.0	20600	10	50	0	16QAM	20.9	-

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Antenna 2							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
824.7	20407	1.4	1	0	QPSK	22.7	-
824.7	20407	1.4	1	2	QPSK	22.7	-
824.7	20407	1.4	1	5	QPSK	22.7	-
824.7	20407	1.4	3	0	QPSK	22.8	-
824.7	20407	1.4	3	2	QPSK	22.7	-
824.7	20407	1.4	3	3	QPSK	22.7	-
824.7	20407	1.4	6	0	QPSK	21.8	-
824.7	20407	1.4	1	0	16QAM	21.6	-
824.7	20407	1.4	1	2	16QAM	21.6	-
824.7	20407	1.4	1	5	16QAM	21.6	-
824.7	20407	1.4	3	0	16QAM	21.8	-
824.7	20407	1.4	3	2	16QAM	21.8	-
824.7	20407	1.4	3	3	16QAM	21.8	-
824.7	20407	1.4	6	0	16QAM	20.7	-
836.5	20525	1.4	1	0	QPSK	22.7	-
836.5	20525	1.4	1	2	QPSK	22.6	-
836.5	20525	1.4	1	5	QPSK	22.6	-
836.5	20525	1.4	3	0	QPSK	22.7	-
836.5	20525	1.4	3	2	QPSK	22.7	-
836.5	20525	1.4	3	3	QPSK	22.7	-
836.5	20525	1.4	6	0	QPSK	21.7	-
836.5	20525	1.4	1	0	16QAM	21.6	-
836.5	20525	1.4	1	2	16QAM	21.6	-
836.5	20525	1.4	1	5	16QAM	21.5	-
836.5	20525	1.4	3	0	16QAM	21.7	-
836.5	20525	1.4	3	2	16QAM	21.7	-
836.5	20525	1.4	3	3	16QAM	21.8	-
836.5	20525	1.4	6	0	16QAM	20.7	-
848.3	20643	1.4	1	0	QPSK	22.7	-
848.3	20643	1.4	1	2	QPSK	22.6	-
848.3	20643	1.4	1	5	QPSK	22.7	-
848.3	20643	1.4	3	0	QPSK	22.7	-
848.3	20643	1.4	3	2	QPSK	22.7	-
848.3	20643	1.4	3	3	QPSK	22.7	-
848.3	20643	1.4	6	0	QPSK	21.7	-

(Table continues)

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(Table continues)

848.3	20643	1.4	1	0	16QAM	21.7	-
848.3	20643	1.4	1	2	16QAM	21.7	-
848.3	20643	1.4	1	5	16QAM	21.7	-
848.3	20643	1.4	3	0	16QAM	21.7	-
848.3	20643	1.4	3	2	16QAM	21.7	-
848.3	20643	1.4	3	3	16QAM	21.7	-
848.3	20643	1.4	6	0	16QAM	20.7	-
825.5	20415	3	1	0	QPSK	22.7	-
825.5	20415	3	1	7	QPSK	22.7	-
825.5	20415	3	1	14	QPSK	22.7	-
825.5	20415	3	8	0	QPSK	21.8	-
825.5	20415	3	8	3	QPSK	21.8	-
825.5	20415	3	8	7	QPSK	21.8	-
825.5	20415	3	15	0	QPSK	21.8	-
825.5	20415	3	1	0	16QAM	21.6	-
825.5	20415	3	1	7	16QAM	21.6	-
825.5	20415	3	1	14	16QAM	21.7	-
825.5	20415	3	8	0	16QAM	20.7	-
825.5	20415	3	8	3	16QAM	20.7	-
825.5	20415	3	8	7	16QAM	20.7	-
825.5	20415	3	15	0	16QAM	20.7	-
836.5	20525	3	1	0	QPSK	22.7	-
836.5	20525	3	1	7	QPSK	22.7	-
836.5	20525	3	1	14	QPSK	22.7	-
836.5	20525	3	8	0	QPSK	21.7	-
836.5	20525	3	8	3	QPSK	21.7	-
836.5	20525	3	8	7	QPSK	21.7	-
836.5	20525	3	15	0	QPSK	21.8	-
836.5	20525	3	1	0	16QAM	21.6	-
836.5	20525	3	1	7	16QAM	21.6	-
836.5	20525	3	1	14	16QAM	21.7	-
836.5	20525	3	8	0	16QAM	20.7	-
836.5	20525	3	8	3	16QAM	20.6	-
836.5	20525	3	8	7	16QAM	20.6	-
836.5	20525	3	15	0	16QAM	20.7	-
847.5	20635	3	1	0	QPSK	22.7	-
847.5	20635	3	1	7	QPSK	22.7	-

(Table continues)

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847.5	20635	3	1	14	QPSK	22.7	-
847.5	20635	3	8	0	QPSK	21.7	-
847.5	20635	3	8	3	QPSK	21.7	-
847.5	20635	3	8	7	QPSK	21.7	-
847.5	20635	3	15	0	QPSK	21.8	-
847.5	20635	3	1	0	16QAM	21.7	-
847.5	20635	3	1	7	16QAM	21.6	-
847.5	20635	3	1	14	16QAM	21.7	-
847.5	20635	3	8	0	16QAM	20.6	-
847.5	20635	3	8	3	16QAM	20.6	-
847.5	20635	3	8	7	16QAM	20.7	-
847.5	20635	3	15	0	16QAM	20.7	-
826.5	20425	5	1	0	QPSK	22.7	-
826.5	20425	5	1	12	QPSK	22.7	-
826.5	20425	5	1	24	QPSK	22.7	-
826.5	20425	5	12	0	QPSK	21.7	-
826.5	20425	5	12	6	QPSK	21.7	-
826.5	20425	5	12	13	QPSK	21.7	-
826.5	20425	5	25	0	QPSK	21.8	-
826.5	20425	5	1	0	16QAM	21.3	-
826.5	20425	5	1	12	16QAM	21.3	-
826.5	20425	5	1	24	16QAM	21.3	-
826.5	20425	5	12	0	16QAM	20.8	-
826.5	20425	5	12	6	16QAM	20.8	-
826.5	20425	5	12	13	16QAM	20.8	-
826.5	20425	5	25	0	16QAM	20.7	-
836.5	20525	5	1	0	QPSK	22.6	-
836.5	20525	5	1	12	QPSK	22.6	-
836.5	20525	5	1	24	QPSK	22.6	-
836.5	20525	5	12	0	QPSK	21.7	-
836.5	20525	5	12	6	QPSK	21.7	-
836.5	20525	5	12	13	QPSK	21.7	-
836.5	20525	5	25	0	QPSK	21.7	-
836.5	20525	5	1	0	16QAM	21.3	-
836.5	20525	5	1	12	16QAM	21.3	-
836.5	20525	5	1	24	16QAM	21.3	-
836.5	20525	5	12	0	16QAM	20.8	-
836.5	20525	5	12	6	16QAM	20.8	-

(Table continues)

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(Table continues)

836.5	20525	5	12	13	16QAM	20.8	-
836.5	20525	5	25	0	16QAM	20.7	-
846.5	20625	5	1	0	QPSK	22.7	-
846.5	20625	5	1	12	QPSK	22.6	-
846.5	20625	5	1	24	QPSK	22.6	-
846.5	20625	5	12	0	QPSK	21.7	-
846.5	20625	5	12	6	QPSK	21.7	-
846.5	20625	5	12	13	QPSK	21.7	-
846.5	20625	5	25	0	QPSK	21.7	-
846.5	20625	5	1	0	16QAM	21.4	-
846.5	20625	5	1	12	16QAM	21.4	-
846.5	20625	5	1	24	16QAM	21.4	-
846.5	20625	5	12	0	16QAM	20.7	-
846.5	20625	5	12	6	16QAM	20.7	-
846.5	20625	5	12	13	16QAM	20.7	-
846.5	20625	5	25	0	16QAM	20.7	-
829.0	20450	10	1	0	QPSK	22.7	-
829.0	20450	10	1	24	QPSK	22.7	-
829.0	20450	10	1	49	QPSK	22.7	-
829.0	20450	10	25	0	QPSK	21.8	-
829.0	20450	10	25	12	QPSK	21.8	-
829.0	20450	10	25	25	QPSK	21.8	-
829.0	20450	10	50	0	QPSK	21.8	-
829.0	20450	10	1	0	16QAM	21.9	-
829.0	20450	10	1	24	16QAM	21.9	-
829.0	20450	10	1	49	16QAM	21.9	-
829.0	20450	10	25	0	16QAM	20.8	-
829.0	20450	10	25	12	16QAM	20.8	-
829.0	20450	10	25	25	16QAM	20.8	-
829.0	20450	10	50	0	16QAM	20.8	-
836.5	20525	10	1	0	QPSK	22.7	-
836.5	20525	10	1	24	QPSK	22.7	-
836.5	20525	10	1	49	QPSK	22.7	-
836.5	20525	10	25	0	QPSK	21.7	-
836.5	20525	10	25	12	QPSK	21.7	-
836.5	20525	10	25	25	QPSK	21.7	-
836.5	20525	10	50	0	QPSK	21.8	-

(Table continues)

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(Table continues)

836.5	20525	10	1	0	16QAM	21.8	-
836.5	20525	10	1	24	16QAM	21.8	-
836.5	20525	10	1	49	16QAM	21.8	-
836.5	20525	10	25	0	16QAM	20.8	-
836.5	20525	10	25	12	16QAM	20.8	-
836.5	20525	10	25	25	16QAM	20.8	-
836.5	20525	10	50	0	16QAM	20.7	-
844.0	20600	10	1	0	QPSK	22.7	-
844.0	20600	10	1	24	QPSK	22.7	-
844.0	20600	10	1	49	QPSK	22.6	-
844.0	20600	10	25	0	QPSK	21.7	-
844.0	20600	10	25	12	QPSK	21.7	-
844.0	20600	10	25	25	QPSK	21.7	-
844.0	20600	10	50	0	QPSK	21.8	-
844.0	20600	10	1	0	16QAM	21.6	-
844.0	20600	10	1	24	16QAM	21.5	-
844.0	20600	10	1	49	16QAM	21.6	-
844.0	20600	10	25	0	16QAM	20.8	-
844.0	20600	10	25	12	16QAM	20.8	-
844.0	20600	10	25	25	16QAM	20.8	-
844.0	20600	10	50	0	16QAM	20.7	-

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Type: RM-975; Serial number: 004402/47/804009/4, HW: 2020, SW: 01061.00014.14112 used for LTE1700/2100 (Band4) for Head and Body-worn SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE1700/2100 (Band 4) in 1.4MHz Channel BW in this specification (Table 6.2.4-1).

Antenna 1							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1710.7	19957	1.4	1	0	QPSK	23.1	-
1710.7	19957	1.4	1	2	QPSK	23.1	-
1710.7	19957	1.4	1	5	QPSK	23.1	-
1710.7	19957	1.4	3	0	QPSK	23.1	-
1710.7	19957	1.4	3	2	QPSK	23.0	-
1710.7	19957	1.4	3	3	QPSK	23.1	-
1710.7	19957	1.4	6	0	QPSK	22.1	-
1710.7	19957	1.4	1	0	16QAM	22.2	-
1710.7	19957	1.4	1	2	16QAM	22.2	-
1710.7	19957	1.4	1	5	16QAM	22.2	-
1710.7	19957	1.4	3	0	16QAM	22.1	-
1710.7	19957	1.4	3	2	16QAM	22.0	-
1710.7	19957	1.4	3	3	16QAM	22.0	-
1710.7	19957	1.4	6	0	16QAM	21.1	-
1732.5	20175	1.4	1	0	QPSK	23.1	-
1732.5	20175	1.4	1	2	QPSK	23.2	-
1732.5	20175	1.4	1	5	QPSK	23.1	-
1732.5	20175	1.4	3	0	QPSK	23.2	-
1732.5	20175	1.4	3	2	QPSK	23.1	-
1732.5	20175	1.4	3	3	QPSK	23.1	-
1732.5	20175	1.4	6	0	QPSK	22.2	-
1732.5	20175	1.4	1	0	16QAM	22.3	-
1732.5	20175	1.4	1	2	16QAM	22.3	-
1732.5	20175	1.4	1	5	16QAM	22.3	-
1732.5	20175	1.4	3	0	16QAM	22.1	-
1732.5	20175	1.4	3	2	16QAM	22.1	-
1732.5	20175	1.4	3	3	16QAM	22.1	-
1732.5	20175	1.4	6	0	16QAM	21.2	-

(Table continues)

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(Table continues)

1754.3	20393	1.4	1	0	QPSK	23.1	-
1754.3	20393	1.4	1	2	QPSK	23.2	-
1754.3	20393	1.4	1	5	QPSK	23.1	-
1754.3	20393	1.4	3	0	QPSK	23.2	-
1754.3	20393	1.4	3	2	QPSK	23.1	-
1754.3	20393	1.4	3	3	QPSK	23.1	-
1754.3	20393	1.4	6	0	QPSK	22.2	-
1754.3	20393	1.4	1	0	16QAM	22.3	-
1754.3	20393	1.4	1	2	16QAM	22.3	-
1754.3	20393	1.4	1	5	16QAM	22.3	-
1754.3	20393	1.4	3	0	16QAM	22.1	-
1754.3	20393	1.4	3	2	16QAM	22.1	-
1754.3	20393	1.4	3	3	16QAM	22.1	-
1754.3	20393	1.4	6	0	16QAM	21.2	-
1711.5	19965	3	1	0	QPSK	23.1	23.1
1711.5	19965	3	1	7	QPSK	23.0	23.0
1711.5	19965	3	1	14	QPSK	23.1	23.1
1711.5	19965	3	8	0	QPSK	22.1	21.1
1711.5	19965	3	8	3	QPSK	22.1	21.1
1711.5	19965	3	8	7	QPSK	22.2	21.1
1711.5	19965	3	15	0	QPSK	22.1	21.1
1711.5	19965	3	1	0	16QAM	21.8	22.0
1711.5	19965	3	1	7	16QAM	21.8	22.0
1711.5	19965	3	1	14	16QAM	21.8	22.0
1732.5	20175	3	8	0	16QAM	21.1	20.2
1732.5	20175	3	8	3	16QAM	21.1	20.1
1732.5	20175	3	8	7	16QAM	21.1	20.2
1732.5	20175	3	15	0	16QAM	21.1	20.1
1732.5	20175	3	1	0	QPSK	23.1	23.1
1732.5	20175	3	1	7	QPSK	23.1	23.1
1732.5	20175	3	1	14	QPSK	23.1	23.1
1732.5	20175	3	8	0	QPSK	22.2	21.2
1732.5	20175	3	8	3	QPSK	22.2	21.2
1732.5	20175	3	8	7	QPSK	22.2	21.2
1732.5	20175	3	15	0	QPSK	22.2	21.2
1732.5	20175	3	1	0	16QAM	21.9	22.3
1732.5	20175	3	1	7	16QAM	21.9	22.3
1732.5	20175	3	1	14	16QAM	21.9	22.3

(Table continues)

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1732.5	20175	3	8	0	16QAM	21.2	20.2
1732.5	20175	3	8	3	16QAM	21.2	20.2
1732.5	20175	3	8	7	16QAM	21.2	20.2
1732.5	20175	3	15	0	16QAM	21.1	20.2
1753.5	20385	3	1	0	QPSK	23.1	23.1
1753.5	20385	3	1	7	QPSK	23.1	23.1
1753.5	20385	3	1	14	QPSK	23.1	23.1
1753.5	20385	3	8	0	QPSK	22.2	21.2
1753.5	20385	3	8	3	QPSK	22.2	21.2
1753.5	20385	3	8	7	QPSK	22.2	21.2
1753.5	20385	3	15	0	QPSK	22.2	21.2
1753.5	20385	3	1	0	16QAM	21.9	22.3
1753.5	20385	3	1	7	16QAM	21.9	22.3
1753.5	20385	3	1	14	16QAM	21.9	22.3
1753.5	20385	3	8	0	16QAM	21.2	20.2
1753.5	20385	3	8	3	16QAM	21.2	20.2
1753.5	20385	3	8	7	16QAM	21.2	20.2
1753.5	20385	3	15	0	16QAM	21.2	20.2
1712.5	19975	5	1	0	QPSK	23.0	23.10
1712.5	19975	5	1	12	QPSK	23.0	23.10
1712.5	19975	5	1	24	QPSK	22.9	23.00
1712.5	19975	5	12	0	QPSK	22.1	21.10
1712.5	19975	5	12	6	QPSK	22.1	21.10
1712.5	19975	5	12	13	QPSK	22.1	21.10
1712.5	19975	5	25	0	QPSK	22.1	21.10
1712.5	19975	5	1	0	16QAM	21.9	22.10
1712.5	19975	5	1	12	16QAM	21.9	22.10
1712.5	19975	5	1	24	16QAM	21.8	22.00
1712.5	19975	5	12	0	16QAM	21.2	20.10
1712.5	19975	5	12	6	16QAM	21.2	20.10
1712.5	19975	5	12	13	16QAM	21.2	20.10
1712.5	19975	5	25	0	16QAM	21.2	20.10
1732.5	20175	5	1	0	QPSK	23.1	23.1
1732.5	20175	5	1	12	QPSK	23.1	23.1
1732.5	20175	5	1	24	QPSK	23.1	23.1
1732.5	20175	5	12	0	QPSK	22.2	22.2
1732.5	20175	5	12	6	QPSK	22.2	22.2

(Table continues)

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(Table continues)

1732.5	20175	5	12	13	QPSK	22.1	22.1
1732.5	20175	5	25	0	QPSK	22.2	22.2
1732.5	20175	5	1	0	16QAM	22.0	22.0
1732.5	20175	5	1	12	16QAM	22.0	22.0
1732.5	20175	5	1	24	16QAM	22.0	22.0
1732.5	20175	5	12	0	16QAM	21.2	21.2
1732.5	20175	5	12	6	16QAM	21.2	21.2
1732.5	20175	5	12	13	16QAM	21.2	21.2
1732.5	20175	5	25	0	16QAM	21.2	21.2
1752.5	20375	5	1	0	QPSK	23.1	23.1
1752.5	20375	5	1	12	QPSK	23.1	23.1
1752.5	20375	5	1	24	QPSK	23.1	23.1
1752.5	20375	5	12	0	QPSK	22.2	21.2
1752.5	20375	5	12	6	QPSK	22.2	21.2
1752.5	20375	5	12	13	QPSK	22.2	21.2
1752.5	20375	5	25	0	QPSK	22.2	21.2
1752.5	20375	5	1	0	16QAM	22.1	22.2
1752.5	20375	5	1	12	16QAM	22.0	22.2
1752.5	20375	5	1	24	16QAM	22.0	22.2
1752.5	20375	5	12	0	16QAM	21.2	20.2
1752.5	20375	5	12	6	16QAM	21.2	20.1
1752.5	20375	5	12	13	16QAM	21.2	20.2
1752.5	20375	5	25	0	16QAM	21.2	20.1
1715.0	20000	10	1	0	QPSK	23.0	23.1
1715.0	20000	10	1	24	QPSK	22.9	22.9
1715.0	20000	10	1	49	QPSK	22.9	23.0
1715.0	20000	10	25	0	QPSK	22.1	21.1
1715.0	20000	10	25	12	QPSK	22.1	21.1
1715.0	20000	10	25	25	QPSK	22.0	21.0
1715.0	20000	10	50	0	QPSK	22.1	21.1
1715.0	20000	10	1	0	16QAM	21.7	21.9
1715.0	20000	10	1	24	16QAM	21.6	21.7
1715.0	20000	10	1	49	16QAM	21.6	21.7
1715.0	20000	10	25	0	16QAM	21.2	20.2
1715.0	20000	10	25	12	16QAM	21.2	20.2
1715.0	20000	10	25	25	16QAM	21.1	20.0
1715.0	20000	10	50	0	16QAM	21.2	20.1

(Table continues)

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(Table continues)

1732.5	20175	10	1	0	QPSK	23.0	23.1
1732.5	20175	10	1	24	QPSK	23.0	23.1
1732.5	20175	10	1	49	QPSK	23.1	23.1
1732.5	20175	10	25	0	QPSK	22.2	21.1
1732.5	20175	10	25	12	QPSK	22.1	21.1
1732.5	20175	10	25	25	QPSK	22.1	21.1
1732.5	20175	10	50	0	QPSK	22.2	21.2
1732.5	20175	10	1	0	16QAM	21.8	21.9
1732.5	20175	10	1	24	16QAM	21.7	21.9
1732.5	20175	10	1	49	16QAM	21.7	21.8
1732.5	20175	10	25	0	16QAM	21.2	20.2
1732.5	20175	10	25	12	16QAM	21.2	20.2
1732.5	20175	10	25	25	16QAM	21.2	20.2
1732.5	20175	10	50	0	16QAM	21.2	20.1
1750.0	20350	10	1	0	QPSK	23.0	23.1
1750.0	20350	10	1	24	QPSK	23.0	23.1
1750.0	20350	10	1	49	QPSK	23.1	23.1
1750.0	20350	10	25	0	QPSK	22.2	21.1
1750.0	20350	10	25	12	QPSK	22.1	21.1
1750.0	20350	10	25	25	QPSK	22.1	21.2
1750.0	20350	10	50	0	QPSK	22.1	21.2
1750.0	20350	10	1	0	16QAM	21.7	21.9
1750.0	20350	10	1	24	16QAM	21.7	21.9
1750.0	20350	10	1	49	16QAM	21.7	21.9
1750.0	20350	10	25	0	16QAM	21.2	20.2
1750.0	20350	10	25	12	16QAM	21.2	20.2
1750.0	20350	10	25	25	16QAM	21.2	20.2
1750.0	20350	10	50	0	16QAM	21.2	20.1
1717.5	20025	15	1	0	QPSK	23.1	23.1
1717.5	20025	15	1	36	QPSK	23.0	23.0
1717.5	20025	15	1	74	QPSK	23.0	23.0
1717.5	20025	15	37	0	QPSK	22.1	21.1
1717.5	20025	15	37	18	QPSK	22.0	21.0
1717.5	20025	15	37	38	QPSK	22.0	21.0
1717.5	20025	15	75	0	QPSK	22.2	21.2
1717.5	20025	15	1	0	16QAM	22.3	22.0
1717.5	20025	15	1	36	16QAM	22.2	21.9
1717.5	20025	15	1	74	16QAM	22.2	21.9

(Table continues)

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1717.5	20025	15	37	0	16QAM	21.2	20.1
1717.5	20025	15	37	18	16QAM	21.0	19.9
1717.5	20025	15	37	38	16QAM	21.0	19.9
1717.5	20025	15	75	0	16QAM	21.2	20.2
1732.5	20175	15	1	0	QPSK	23.1	23.1
1732.5	20175	15	1	36	QPSK	23.1	23.1
1732.5	20175	15	1	74	QPSK	23.1	23.1
1732.5	20175	15	37	0	QPSK	22.2	22.2
1732.5	20175	15	37	18	QPSK	22.2	22.2
1732.5	20175	15	37	38	QPSK	22.1	22.1
1732.5	20175	15	75	0	QPSK	22.2	22.2
1732.5	20175	15	1	0	16QAM	22.4	22.4
1732.5	20175	15	1	36	16QAM	22.3	22.3
1732.5	20175	15	1	74	16QAM	22.3	22.3
1732.5	20175	15	37	0	16QAM	21.2	21.2
1732.5	20175	15	37	18	16QAM	21.2	21.2
1732.5	20175	15	37	38	16QAM	21.2	21.2
1732.5	20175	15	75	0	16QAM	21.3	21.3
1747.5	20325	15	1	0	QPSK	23.2	23.2
1747.5	20325	15	1	36	QPSK	23.1	23.1
1747.5	20325	15	1	74	QPSK	23.1	23.1
1747.5	20325	15	37	0	QPSK	22.2	21.2
1747.5	20325	15	37	18	QPSK	22.1	21.1
1747.5	20325	15	37	38	QPSK	22.1	21.1
1747.5	20325	15	75	0	QPSK	22.2	21.1
1747.5	20325	15	1	0	16QAM	22.4	22.1
1747.5	20325	15	1	36	16QAM	22.3	22.0
1747.5	20325	15	1	74	16QAM	22.3	22.0
1747.5	20325	15	37	0	16QAM	21.2	20.1
1747.5	20325	15	37	18	16QAM	21.2	20.0
1747.5	20325	15	37	38	16QAM	21.2	20.1
1747.5	20325	15	75	0	16QAM	21.2	20.2
1720.0	20050	20	1	0	QPSK	23.1	23.1
1720.0	20050	20	1	49	QPSK	23.0	23.0
1720.0	20050	20	1	99	QPSK	23.1	23.0
1720.0	20050	20	50	0	QPSK	22.2	21.2
1720.0	20050	20	50	24	QPSK	22.1	21.1

(Table continues)

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1720.0	20050	20	50	50	QPSK	22.2	21.1
1720.0	20050	20	100	0	QPSK	22.2	21.2
1720.0	20050	20	1	0	16QAM	22.3	21.9
1720.0	20050	20	1	49	16QAM	22.1	21.8
1720.0	20050	20	1	99	16QAM	22.2	21.8
1720.0	20050	20	50	0	16QAM	21.2	20.1
1720.0	20050	20	50	24	16QAM	21.1	20.1
1720.0	20050	20	50	50	16QAM	21.2	20.1
1720.0	20050	20	100	0	16QAM	21.2	20.2
1732.5	20175	20	1	0	QPSK	23.0	23.0
1732.5	20175	20	1	49	QPSK	23.1	23.1
1732.5	20175	20	1	99	QPSK	23.1	23.0
1732.5	20175	20	50	0	QPSK	22.2	21.2
1732.5	20175	20	50	24	QPSK	22.2	21.2
1732.5	20175	20	50	50	QPSK	22.2	21.1
1732.5	20175	20	100	0	QPSK	22.2	21.2
1732.5	20175	20	1	0	16QAM	22.0	21.7
1732.5	20175	20	1	49	16QAM	22.0	21.7
1732.5	20175	20	1	99	16QAM	22.0	21.7
1732.5	20175	20	50	0	16QAM	21.2	20.2
1732.5	20175	20	50	24	16QAM	21.2	20.2
1732.5	20175	20	50	50	16QAM	21.2	20.2
1732.5	20175	20	100	0	16QAM	21.2	20.2
1745.0	20300	20	1	0	QPSK	23.1	23.1
1745.0	20300	20	1	49	QPSK	23.0	23.0
1745.0	20300	20	1	99	QPSK	23.1	23.0
1745.0	20300	20	50	0	QPSK	22.3	21.3
1745.0	20300	20	50	24	QPSK	22.1	21.2
1745.0	20300	20	50	50	QPSK	22.2	21.1
1745.0	20300	20	100	0	QPSK	22.2	21.3
1745.0	20300	20	1	0	16QAM	22.0	21.8
1745.0	20300	20	1	49	16QAM	21.9	21.7
1745.0	20300	20	1	99	16QAM	21.9	21.7
1745.0	20300	20	50	0	16QAM	21.2	20.2
1745.0	20300	20	50	24	16QAM	21.1	20.1
1745.0	20300	20	50	50	16QAM	21.2	20.1
1745.0	20300	20	100	0	16QAM	21.3	20.2

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Antenna 2							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1710.7	19957	1.4	1	0	QPSK	22.6	-
1710.7	19957	1.4	1	2	QPSK	22.6	-
1710.7	19957	1.4	1	5	QPSK	22.6	-
1710.7	19957	1.4	3	0	QPSK	22.6	-
1710.7	19957	1.4	3	2	QPSK	22.5	-
1710.7	19957	1.4	3	3	QPSK	22.6	-
1710.7	19957	1.4	6	0	QPSK	21.6	-
1710.7	19957	1.4	1	0	16QAM	21.7	-
1710.7	19957	1.4	1	2	16QAM	21.7	-
1710.7	19957	1.4	1	5	16QAM	21.7	-
1710.7	19957	1.4	3	0	16QAM	21.6	-
1710.7	19957	1.4	3	2	16QAM	21.5	-
1710.7	19957	1.4	3	3	16QAM	21.5	-
1710.7	19957	1.4	6	0	16QAM	20.6	-
1732.5	20175	1.4	1	0	QPSK	22.6	-
1732.5	20175	1.4	1	2	QPSK	22.7	-
1732.5	20175	1.4	1	5	QPSK	22.6	-
1732.5	20175	1.4	3	0	QPSK	22.7	-
1732.5	20175	1.4	3	2	QPSK	22.6	-
1732.5	20175	1.4	3	3	QPSK	22.6	-
1732.5	20175	1.4	6	0	QPSK	21.7	-
1732.5	20175	1.4	1	0	16QAM	21.8	-
1732.5	20175	1.4	1	2	16QAM	21.8	-
1732.5	20175	1.4	1	5	16QAM	21.8	-
1732.5	20175	1.4	3	0	16QAM	21.6	-
1732.5	20175	1.4	3	2	16QAM	21.6	-
1732.5	20175	1.4	3	3	16QAM	21.6	-
1732.5	20175	1.4	6	0	16QAM	20.7	-
1754.3	20393	1.4	1	0	QPSK	22.7	-
1754.3	20393	1.4	1	2	QPSK	22.7	-
1754.3	20393	1.4	1	5	QPSK	22.7	-
1754.3	20393	1.4	3	0	QPSK	22.7	-
1754.3	20393	1.4	3	2	QPSK	22.7	-
1754.3	20393	1.4	3	3	QPSK	22.7	-
1754.3	20393	1.4	6	0	QPSK	21.7	-

(Table continues)

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1754.3	20393	1.4	1	0	16QAM	21.7	-
1754.3	20393	1.4	1	2	16QAM	21.8	-
1754.3	20393	1.4	1	5	16QAM	21.7	-
1754.3	20393	1.4	3	0	16QAM	21.6	-
1754.3	20393	1.4	3	2	16QAM	21.6	-
1754.3	20393	1.4	3	3	16QAM	21.6	-
1754.3	20393	1.4	6	0	16QAM	20.7	-
1711.5	19965	3	1	0	QPSK	22.6	22.6
1711.5	19965	3	1	7	QPSK	22.5	22.5
1711.5	19965	3	1	14	QPSK	22.6	22.6
1711.5	19965	3	8	0	QPSK	21.6	20.6
1711.5	19965	3	8	3	QPSK	21.6	20.6
1711.5	19965	3	8	7	QPSK	21.7	20.6
1711.5	19965	3	15	0	QPSK	21.6	20.6
1711.5	19965	3	1	0	16QAM	21.3	21.5
1711.5	19965	3	1	7	16QAM	21.3	21.5
1711.5	19965	3	1	14	16QAM	21.3	21.5
1711.5	19965	3	8	0	16QAM	20.6	19.7
1711.5	19965	3	8	3	16QAM	20.6	19.6
1711.5	19965	3	8	7	16QAM	20.6	19.7
1711.5	19965	3	15	0	16QAM	20.6	19.6
1732.5	20175	3	1	0	QPSK	22.6	22.6
1732.5	20175	3	1	7	QPSK	22.6	22.6
1732.5	20175	3	1	14	QPSK	22.6	22.6
1732.5	20175	3	8	0	QPSK	21.7	20.7
1732.5	20175	3	8	3	QPSK	21.7	20.7
1732.5	20175	3	8	7	QPSK	21.7	20.7
1732.5	20175	3	15	0	QPSK	21.7	20.7
1732.5	20175	3	1	0	16QAM	21.4	21.8
1732.5	20175	3	1	7	16QAM	21.4	21.8
1732.5	20175	3	1	14	16QAM	21.4	21.8
1732.5	20175	3	8	0	16QAM	20.7	19.7
1732.5	20175	3	8	3	16QAM	20.7	19.7
1732.5	20175	3	8	7	16QAM	20.7	19.7
1732.5	20175	3	15	0	16QAM	20.6	19.7
1753.5	20385	3	1	0	QPSK	22.6	22.6
1753.5	20385	3	1	7	QPSK	22.6	22.6

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1753.5	20385	3	1	14	QPSK	22.6	22.6
1753.5	20385	3	8	0	QPSK	21.7	20.7
1753.5	20385	3	8	3	QPSK	21.7	20.7
1753.5	20385	3	8	7	QPSK	21.7	20.7
1753.5	20385	3	15	0	QPSK	21.7	20.7
1753.5	20385	3	1	0	16QAM	21.4	21.7
1753.5	20385	3	1	7	16QAM	21.4	21.8
1753.5	20385	3	1	14	16QAM	21.4	21.8
1753.5	20385	3	8	0	16QAM	20.7	19.7
1753.5	20385	3	8	3	16QAM	20.7	19.7
1753.5	20385	3	8	7	16QAM	20.7	19.7
1753.5	20385	3	15	0	16QAM	20.7	19.7
1712.5	19975	5	1	0	QPSK	22.5	22.6
1712.5	19975	5	1	12	QPSK	22.5	22.6
1712.5	19975	5	1	24	QPSK	22.4	22.5
1712.5	19975	5	12	0	QPSK	21.6	20.6
1712.5	19975	5	12	6	QPSK	21.6	20.6
1712.5	19975	5	12	13	QPSK	21.6	20.6
1712.5	19975	5	25	0	QPSK	21.6	20.6
1712.5	19975	5	1	0	16QAM	21.4	21.6
1712.5	19975	5	1	12	16QAM	21.4	21.6
1712.5	19975	5	1	24	16QAM	21.3	21.5
1712.5	19975	5	12	0	16QAM	20.7	19.6
1712.5	19975	5	12	6	16QAM	20.7	19.6
1712.5	19975	5	12	13	16QAM	20.7	19.6
1712.5	19975	5	25	0	16QAM	20.7	19.6
1732.5	20175	5	1	0	QPSK	22.6	22.7
1732.5	20175	5	1	12	QPSK	22.6	22.7
1732.5	20175	5	1	24	QPSK	22.6	22.6
1732.5	20175	5	12	0	QPSK	21.7	20.7
1732.5	20175	5	12	6	QPSK	21.7	20.7
1732.5	20175	5	12	13	QPSK	21.6	20.7
1732.5	20175	5	25	0	QPSK	21.7	20.7
1732.5	20175	5	1	0	16QAM	21.5	21.7
1732.5	20175	5	1	12	16QAM	21.5	21.8
1732.5	20175	5	1	24	16QAM	21.5	21.7
1732.5	20175	5	12	0	16QAM	20.7	19.7
1732.5	20175	5	12	6	16QAM	20.7	19.7

(Table continues)

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1732.5	20175	5	12	13	16QAM	20.7	19.7
1732.5	20175	5	25	0	16QAM	20.7	19.6
1752.5	20375	5	1	0	QPSK	22.6	22.6
1752.5	20375	5	1	12	QPSK	22.6	22.6
1752.5	20375	5	1	24	QPSK	22.6	22.6
1752.5	20375	5	12	0	QPSK	21.7	20.7
1752.5	20375	5	12	6	QPSK	21.7	20.7
1752.5	20375	5	12	13	QPSK	21.7	20.7
1752.5	20375	5	25	0	QPSK	21.7	20.7
1752.5	20375	5	1	0	16QAM	21.6	21.7
1752.5	20375	5	1	12	16QAM	21.5	21.7
1752.5	20375	5	1	24	16QAM	21.5	21.7
1752.5	20375	5	12	0	16QAM	20.7	19.7
1752.5	20375	5	12	6	16QAM	20.7	19.6
1752.5	20375	5	12	13	16QAM	20.7	19.7
1752.5	20375	5	25	0	16QAM	20.7	19.6
1715.0	20000	10	1	0	QPSK	22.5	22.5
1715.0	20000	10	1	24	QPSK	22.4	22.4
1715.0	20000	10	1	49	QPSK	22.4	22.4
1715.0	20000	10	25	0	QPSK	21.6	21.6
1715.0	20000	10	25	12	QPSK	21.6	21.6
1715.0	20000	10	25	25	QPSK	21.5	21.5
1715.0	20000	10	50	0	QPSK	21.6	21.6
1715.0	20000	10	1	0	16QAM	21.2	21.2
1715.0	20000	10	1	24	16QAM	21.1	21.1
1715.0	20000	10	1	49	16QAM	21.1	21.1
1715.0	20000	10	25	0	16QAM	20.7	20.7
1715.0	20000	10	25	12	16QAM	20.7	20.7
1715.0	20000	10	25	25	16QAM	20.6	20.6
1715.0	20000	10	50	0	16QAM	20.7	20.7
1732.5	20175	10	1	0	QPSK	22.5	22.6
1732.5	20175	10	1	24	QPSK	22.4	22.6
1732.5	20175	10	1	49	QPSK	22.4	22.6
1732.5	20175	10	25	0	QPSK	21.6	20.6
1732.5	20175	10	25	12	QPSK	21.6	20.6
1732.5	20175	10	25	25	QPSK	21.5	20.6
1732.5	20175	10	50	0	QPSK	21.6	20.7

(Table continues)

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(Table continues)

1732.5	20175	10	1	0	16QAM	21.2	21.4
1732.5	20175	10	1	24	16QAM	21.1	21.4
1732.5	20175	10	1	49	16QAM	21.1	21.3
1732.5	20175	10	25	0	16QAM	20.7	19.7
1732.5	20175	10	25	12	16QAM	20.7	19.7
1732.5	20175	10	25	25	16QAM	20.6	19.7
1732.5	20175	10	50	0	16QAM	20.7	19.6
1750.0	20350	10	1	0	QPSK	22.5	22.6
1750.0	20350	10	1	24	QPSK	22.5	22.6
1750.0	20350	10	1	49	QPSK	22.6	22.6
1750.0	20350	10	25	0	QPSK	21.7	20.6
1750.0	20350	10	25	12	QPSK	21.6	20.6
1750.0	20350	10	25	25	QPSK	21.6	20.6
1750.0	20350	10	50	0	QPSK	21.6	20.7
1750.0	20350	10	1	0	16QAM	21.2	21.4
1750.0	20350	10	1	24	16QAM	21.2	21.4
1750.0	20350	10	1	49	16QAM	21.2	21.3
1750.0	20350	10	25	0	16QAM	20.7	19.7
1750.0	20350	10	25	12	16QAM	20.7	19.7
1750.0	20350	10	25	25	16QAM	20.7	19.7
1750.0	20350	10	50	0	16QAM	20.7	19.6
1717.5	20025	15	1	0	QPSK	22.6	22.6
1717.5	20025	15	1	36	QPSK	22.5	22.5
1717.5	20025	15	1	74	QPSK	22.5	22.5
1717.5	20025	15	37	0	QPSK	21.6	20.6
1717.5	20025	15	37	18	QPSK	21.5	20.5
1717.5	20025	15	37	38	QPSK	21.5	20.5
1717.5	20025	15	75	0	QPSK	21.7	20.7
1717.5	20025	15	1	0	16QAM	21.8	21.5
1717.5	20025	15	1	36	16QAM	21.7	21.4
1717.5	20025	15	1	74	16QAM	21.7	21.4
1717.5	20025	15	37	0	16QAM	20.7	19.6
1717.5	20025	15	37	18	16QAM	20.5	19.4
1717.5	20025	15	37	38	16QAM	20.5	19.4
1717.5	20025	15	75	0	16QAM	20.7	19.7
1732.5	20175	15	1	0	QPSK	22.6	22.6
1732.5	20175	15	1	36	QPSK	22.6	22.6

(Table continues)

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(Table continues)

1732.5	20175	15	1	74	QPSK	22.6	22.6
1732.5	20175	15	37	0	QPSK	21.7	20.7
1732.5	20175	15	37	18	QPSK	21.7	20.6
1732.5	20175	15	37	38	QPSK	21.6	20.6
1732.5	20175	15	75	0	QPSK	21.7	20.7
1732.5	20175	15	1	0	16QAM	21.9	21.5
1732.5	20175	15	1	36	16QAM	21.8	21.5
1732.5	20175	15	1	74	16QAM	21.8	21.5
1732.5	20175	15	37	0	16QAM	20.7	19.6
1732.5	20175	15	37	18	16QAM	20.7	19.6
1732.5	20175	15	37	38	16QAM	20.7	19.6
1732.5	20175	15	75	0	16QAM	20.8	19.7
1747.5	20325	15	1	0	QPSK	22.7	22.7
1747.5	20325	15	1	36	QPSK	22.6	22.6
1747.5	20325	15	1	74	QPSK	22.6	22.6
1747.5	20325	15	37	0	QPSK	21.7	20.7
1747.5	20325	15	37	18	QPSK	21.6	20.6
1747.5	20325	15	37	38	QPSK	21.6	20.6
1747.5	20325	15	75	0	QPSK	21.7	20.6
1747.5	20325	15	1	0	16QAM	21.9	21.6
1747.5	20325	15	1	36	16QAM	21.8	21.5
1747.5	20325	15	1	74	16QAM	21.8	21.5
1747.5	20325	15	37	0	16QAM	20.7	19.6
1747.5	20325	15	37	18	16QAM	20.7	19.5
1747.5	20325	15	37	38	16QAM	20.7	19.6
1747.5	20325	15	75	0	16QAM	20.7	19.7
1720.0	20050	20	1	0	QPSK	22.6	22.6
1720.0	20050	20	1	49	QPSK	22.5	22.5
1720.0	20050	20	1	99	QPSK	22.6	22.5
1720.0	20050	20	50	0	QPSK	21.7	20.7
1720.0	20050	20	50	24	QPSK	21.6	20.6
1720.0	20050	20	50	50	QPSK	21.7	20.6
1720.0	20050	20	100	0	QPSK	21.7	20.7
1720.0	20050	20	1	0	16QAM	21.8	21.4
1720.0	20050	20	1	49	16QAM	21.6	21.3
1720.0	20050	20	1	99	16QAM	21.7	21.3
1720.0	20050	20	50	0	16QAM	20.7	19.6
1720.0	20050	20	50	24	16QAM	20.6	19.6

(Table continues)

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(Table continues)

1720.0	20050	20	50	50	16QAM	20.7	19.6
1720.0	20050	20	100	0	16QAM	20.7	19.7
1732.5	20175	20	1	0	QPSK	22.5	22.5
1732.5	20175	20	1	49	QPSK	22.6	22.6
1732.5	20175	20	1	99	QPSK	22.6	22.5
1732.5	20175	20	50	0	QPSK	21.7	20.7
1732.5	20175	20	50	24	QPSK	21.7	20.7
1732.5	20175	20	50	50	QPSK	21.7	20.6
1732.5	20175	20	100	0	QPSK	21.7	20.7
1732.5	20175	20	1	0	16QAM	21.5	21.2
1732.5	20175	20	1	49	16QAM	21.5	21.2
1732.5	20175	20	1	99	16QAM	21.5	21.2
1732.5	20175	20	50	0	16QAM	20.7	19.7
1732.5	20175	20	50	24	16QAM	20.7	19.7
1732.5	20175	20	50	50	16QAM	20.7	19.7
1732.5	20175	20	100	0	16QAM	20.7	19.7
1745.0	20300	20	1	0	QPSK	22.6	22.6
1745.0	20300	20	1	49	QPSK	22.5	22.5
1745.0	20300	20	1	99	QPSK	22.6	22.5
1745.0	20300	20	50	0	QPSK	21.8	20.8
1745.0	20300	20	50	24	QPSK	21.6	20.7
1745.0	20300	20	50	50	QPSK	21.7	20.6
1745.0	20300	20	100	0	QPSK	21.7	20.8
1745.0	20300	20	1	0	16QAM	21.5	21.3
1745.0	20300	20	1	49	16QAM	21.4	21.2
1745.0	20300	20	1	99	16QAM	21.4	21.2
1745.0	20300	20	50	0	16QAM	20.7	19.7
1745.0	20300	20	50	24	16QAM	20.6	19.6
1745.0	20300	20	50	50	16QAM	20.7	19.6
1745.0	20300	20	100	0	16QAM	20.8	19.7

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Type: RM-975; Serial number: 004402/47/804007/8, HW: 2020, SW: 01061.00014.14112 used for LTE1700/2100 (Band4) for Wireless Router SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE1700/2100 (Band 4) in 1.4MHz Channel BW in this specification (Table 6.2.4-1).

Antenna 1							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1710.7	19957	1.4	1	0	QPSK	21.4	-
1710.7	19957	1.4	1	2	QPSK	21.3	-
1710.7	19957	1.4	1	5	QPSK	21.4	-
1710.7	19957	1.4	3	0	QPSK	21.4	-
1710.7	19957	1.4	3	2	QPSK	21.3	-
1710.7	19957	1.4	3	3	QPSK	21.4	-
1710.7	19957	1.4	6	0	QPSK	20.4	-
1710.7	19957	1.4	1	0	16QAM	20.4	-
1710.7	19957	1.4	1	2	16QAM	20.3	-
1710.7	19957	1.4	1	5	16QAM	20.3	-
1710.7	19957	1.4	3	0	16QAM	20.4	-
1710.7	19957	1.4	3	2	16QAM	20.4	-
1710.7	19957	1.4	3	3	16QAM	20.4	-
1710.7	19957	1.4	6	0	16QAM	19.4	-
1732.5	20175	1.4	1	0	QPSK	21.5	-
1732.5	20175	1.4	1	2	QPSK	21.4	-
1732.5	20175	1.4	1	5	QPSK	21.5	-
1732.5	20175	1.4	3	0	QPSK	21.4	-
1732.5	20175	1.4	3	2	QPSK	21.4	-
1732.5	20175	1.4	3	3	QPSK	21.4	-
1732.5	20175	1.4	6	0	QPSK	20.5	-
1732.5	20175	1.4	1	0	16QAM	20.5	-
1732.5	20175	1.4	1	2	16QAM	20.4	-
1732.5	20175	1.4	1	5	16QAM	20.5	-
1732.5	20175	1.4	3	0	16QAM	20.4	-
1732.5	20175	1.4	3	2	16QAM	20.4	-
1732.5	20175	1.4	3	3	16QAM	20.4	-
1732.5	20175	1.4	6	0	16QAM	19.5	-

(Table continues)

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(Table continues)

1754.3	20393	1.4	1	0	QPSK	21.6	-
1754.3	20393	1.4	1	2	QPSK	21.6	-
1754.3	20393	1.4	1	5	QPSK	21.6	-
1754.3	20393	1.4	3	0	QPSK	21.6	-
1754.3	20393	1.4	3	2	QPSK	21.5	-
1754.3	20393	1.4	3	3	QPSK	21.5	-
1754.3	20393	1.4	6	0	QPSK	20.6	-
1754.3	20393	1.4	1	0	16QAM	20.7	-
1754.3	20393	1.4	1	2	16QAM	20.7	-
1754.3	20393	1.4	1	5	16QAM	20.7	-
1754.3	20393	1.4	3	0	16QAM	20.5	-
1754.3	20393	1.4	3	2	16QAM	20.5	-
1754.3	20393	1.4	3	3	16QAM	20.5	-
1754.3	20393	1.4	6	0	16QAM	19.6	-
1711.5	19965	3	1	0	QPSK	21.3	21.3
1711.5	19965	3	1	7	QPSK	21.3	21.3
1711.5	19965	3	1	14	QPSK	21.4	21.3
1711.5	19965	3	8	0	QPSK	20.4	19.3
1711.5	19965	3	8	3	QPSK	20.4	19.3
1711.5	19965	3	8	7	QPSK	20.4	19.3
1711.5	19965	3	15	0	QPSK	20.4	19.4
1711.5	19965	3	1	0	16QAM	20.0	20.2
1711.5	19965	3	1	7	16QAM	20.0	20.2
1711.5	19965	3	1	14	16QAM	20.0	20.2
1732.5	20175	3	8	0	16QAM	19.5	18.4
1732.5	20175	3	8	3	16QAM	19.5	18.4
1732.5	20175	3	8	7	16QAM	19.5	18.4
1732.5	20175	3	15	0	16QAM	19.5	18.3
1732.5	20175	3	1	0	QPSK	21.4	21.4
1732.5	20175	3	1	7	QPSK	21.4	21.3
1732.5	20175	3	1	14	QPSK	21.5	21.4
1732.5	20175	3	8	0	QPSK	20.5	19.4
1732.5	20175	3	8	3	QPSK	20.5	19.4
1732.5	20175	3	8	7	QPSK	20.4	19.5
1732.5	20175	3	15	0	QPSK	20.5	19.5
1732.5	20175	3	1	0	16QAM	20.1	20.2
1732.5	20175	3	1	7	16QAM	20.1	20.2

(Table continues)

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1732.5	20175	3	1	14	16QAM	20.1	20.3
1732.5	20175	3	8	0	16QAM	19.4	18.6
1732.5	20175	3	8	3	16QAM	19.5	18.5
1732.5	20175	3	8	7	16QAM	19.5	18.5
1732.5	20175	3	15	0	16QAM	19.4	18.4
1753.5	20385	3	1	0	QPSK	21.6	21.5
1753.5	20385	3	1	7	QPSK	21.6	21.4
1753.5	20385	3	1	14	QPSK	21.6	21.5
1753.5	20385	3	8	0	QPSK	20.6	19.5
1753.5	20385	3	8	3	QPSK	20.6	19.5
1753.5	20385	3	8	7	QPSK	20.6	19.6
1753.5	20385	3	15	0	QPSK	20.6	19.6
1753.5	20385	3	1	0	16QAM	20.2	20.4
1753.5	20385	3	1	7	16QAM	20.2	20.4
1753.5	20385	3	1	14	16QAM	20.3	20.4
1753.5	20385	3	8	0	16QAM	19.5	18.6
1753.5	20385	3	8	3	16QAM	19.6	18.6
1753.5	20385	3	8	7	16QAM	19.5	18.6
1753.5	20385	3	15	0	16QAM	19.5	18.5
1712.5	19975	5	1	0	QPSK	21.4	21.4
1712.5	19975	5	1	12	QPSK	21.3	21.3
1712.5	19975	5	1	24	QPSK	21.3	21.3
1712.5	19975	5	12	0	QPSK	20.4	19.4
1712.5	19975	5	12	6	QPSK	20.4	19.4
1712.5	19975	5	12	13	QPSK	20.4	19.4
1712.5	19975	5	25	0	QPSK	20.3	19.4
1712.5	19975	5	1	0	16QAM	20.3	20.3
1712.5	19975	5	1	12	16QAM	20.3	20.3
1712.5	19975	5	1	24	16QAM	20.2	20.2
1712.5	19975	5	12	0	16QAM	19.4	18.3
1712.5	19975	5	12	6	16QAM	19.4	18.3
1712.5	19975	5	12	13	16QAM	19.4	18.4
1712.5	19975	5	25	0	16QAM	19.4	18.4
1732.5	20175	5	1	0	QPSK	21.5	21.4
1732.5	20175	5	1	12	QPSK	21.5	21.4
1732.5	20175	5	1	24	QPSK	21.4	21.4
1732.5	20175	5	12	0	QPSK	20.4	19.5

(Table continues)

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1732.5	20175	5	12	6	QPSK	20.5	19.4
1732.5	20175	5	12	13	QPSK	20.4	19.5
1732.5	20175	5	25	0	QPSK	20.4	19.5
1732.5	20175	5	1	0	16QAM	20.3	20.4
1732.5	20175	5	1	12	16QAM	20.3	20.3
1732.5	20175	5	1	24	16QAM	20.3	20.3
1732.5	20175	5	12	0	16QAM	19.5	18.4
1732.5	20175	5	12	6	16QAM	19.5	18.4
1732.5	20175	5	12	13	16QAM	19.5	18.4
1732.5	20175	5	25	0	16QAM	19.6	18.5
1752.5	20375	5	1	0	QPSK	21.6	21.5
1752.5	20375	5	1	12	QPSK	21.5	21.5
1752.5	20375	5	1	24	QPSK	21.5	21.6
1752.5	20375	5	12	0	QPSK	20.6	19.6
1752.5	20375	5	12	6	QPSK	20.5	19.6
1752.5	20375	5	12	13	QPSK	20.6	19.6
1752.5	20375	5	25	0	QPSK	20.5	19.5
1752.5	20375	5	1	0	16QAM	20.4	20.5
1752.5	20375	5	1	12	16QAM	20.4	20.4
1752.5	20375	5	1	24	16QAM	20.4	20.4
1752.5	20375	5	12	0	16QAM	19.6	18.5
1752.5	20375	5	12	6	16QAM	19.6	18.6
1752.5	20375	5	12	13	16QAM	19.6	18.5
1752.5	20375	5	25	0	16QAM	19.6	18.6
1715.0	20000	10	1	0	QPSK	21.3	21.3
1715.0	20000	10	1	24	QPSK	21.2	21.2
1715.0	20000	10	1	49	QPSK	21.2	21.2
1715.0	20000	10	25	0	QPSK	20.4	19.4
1715.0	20000	10	25	12	QPSK	20.3	19.4
1715.0	20000	10	25	25	QPSK	20.2	19.3
1715.0	20000	10	50	0	QPSK	20.4	19.4
1715.0	20000	10	1	0	16QAM	20.2	20.0
1715.0	20000	10	1	24	16QAM	20.1	19.9
1715.0	20000	10	1	49	16QAM	20.1	19.9
1715.0	20000	10	25	0	16QAM	19.5	18.4
1715.0	20000	10	25	12	16QAM	19.5	18.4
1715.0	20000	10	25	25	16QAM	19.4	18.3
1715.0	20000	10	50	0	16QAM	19.4	18.4

(Table continues)

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1732.5	20175	10	1	0	QPSK	21.4	21.4
1732.5	20175	10	1	24	QPSK	21.3	21.4
1732.5	20175	10	1	49	QPSK	21.3	21.4
1732.5	20175	10	25	0	QPSK	20.4	19.4
1732.5	20175	10	25	12	QPSK	20.4	19.5
1732.5	20175	10	25	25	QPSK	20.4	19.5
1732.5	20175	10	50	0	QPSK	20.5	19.5
1732.5	20175	10	1	0	16QAM	20.2	20.0
1732.5	20175	10	1	24	16QAM	20.2	20.0
1732.5	20175	10	1	49	16QAM	20.2	20.0
1732.5	20175	10	25	0	16QAM	19.5	18.5
1732.5	20175	10	25	12	16QAM	19.5	18.5
1732.5	20175	10	25	25	16QAM	19.5	18.4
1732.5	20175	10	50	0	16QAM	19.5	18.5
1750.0	20350	10	1	0	QPSK	21.4	21.4
1750.0	20350	10	1	24	QPSK	21.3	21.4
1750.0	20350	10	1	49	QPSK	21.5	21.5
1750.0	20350	10	25	0	QPSK	20.4	19.5
1750.0	20350	10	25	12	QPSK	20.5	19.6
1750.0	20350	10	25	25	QPSK	20.5	19.5
1750.0	20350	10	50	0	QPSK	20.6	19.6
1750.0	20350	10	1	0	16QAM	20.2	20.1
1750.0	20350	10	1	24	16QAM	20.2	20.0
1750.0	20350	10	1	49	16QAM	20.3	20.1
1750.0	20350	10	25	0	16QAM	19.5	18.5
1750.0	20350	10	25	12	16QAM	19.6	18.6
1750.0	20350	10	25	25	16QAM	19.6	18.6
1750.0	20350	10	50	0	16QAM	19.5	18.5
1717.5	20025	15	1	0	QPSK	21.4	21.4
1717.5	20025	15	1	36	QPSK	21.3	21.3
1717.5	20025	15	1	74	QPSK	21.3	21.3
1717.5	20025	15	37	0	QPSK	20.4	19.4
1717.5	20025	15	37	18	QPSK	20.3	19.3
1717.5	20025	15	37	38	QPSK	20.3	19.3
1717.5	20025	15	75	0	QPSK	20.4	19.4
1717.5	20025	15	1	0	16QAM	20.6	20.6
1717.5	20025	15	1	36	16QAM	20.5	20.5
1717.5	20025	15	1	74	16QAM	20.5	20.5

(Table continues)

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(Table continues)

1717.5	20025	15	37	0	16QAM	19.4	18.4
1717.5	20025	15	37	18	16QAM	19.3	18.3
1717.5	20025	15	37	38	16QAM	19.3	18.3
1717.5	20025	15	75	0	16QAM	19.5	18.4
1732.5	20175	15	1	0	QPSK	21.4	21.4
1732.5	20175	15	1	36	QPSK	21.4	21.4
1732.5	20175	15	1	74	QPSK	21.4	21.4
1732.5	20175	15	37	0	QPSK	20.4	19.4
1732.5	20175	15	37	18	QPSK	20.4	19.5
1732.5	20175	15	37	38	QPSK	20.4	19.5
1732.5	20175	15	75	0	QPSK	20.5	19.5
1732.5	20175	15	1	0	16QAM	20.7	20.5
1732.5	20175	15	1	36	16QAM	20.7	20.6
1732.5	20175	15	1	74	16QAM	20.6	20.5
1732.5	20175	15	37	0	16QAM	19.5	18.4
1732.5	20175	15	37	18	16QAM	19.4	18.5
1732.5	20175	15	37	38	16QAM	19.5	18.5
1732.5	20175	15	75	0	16QAM	19.5	18.4
1747.5	20325	15	1	0	QPSK	21.5	21.5
1747.5	20325	15	1	36	QPSK	21.4	21.4
1747.5	20325	15	1	74	QPSK	21.5	21.5
1747.5	20325	15	37	0	QPSK	20.4	19.4
1747.5	20325	15	37	18	QPSK	20.4	19.4
1747.5	20325	15	37	38	QPSK	20.6	19.5
1747.5	20325	15	75	0	QPSK	20.6	19.6
1747.5	20325	15	1	0	16QAM	20.7	20.4
1747.5	20325	15	1	36	16QAM	20.6	20.3
1747.5	20325	15	1	74	16QAM	20.7	20.4
1747.5	20325	15	37	0	16QAM	19.4	18.4
1747.5	20325	15	37	18	16QAM	19.4	18.4
1747.5	20325	15	37	38	16QAM	19.5	18.4
1747.5	20325	15	75	0	16QAM	19.5	18.6
1720.0	20050	20	1	0	QPSK	21.4	21.4
1720.0	20050	20	1	49	QPSK	21.3	21.2
1720.0	20050	20	1	99	QPSK	21.4	21.3
1720.0	20050	20	50	0	QPSK	20.4	19.4
1720.0	20050	20	50	24	QPSK	20.3	19.3

(Table continues)

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(Table continues)

1720.0	20050	20	50	50	QPSK	20.4	19.4
1720.0	20050	20	100	0	QPSK	20.4	19.4
1720.0	20050	20	1	0	16QAM	20.6	20.2
1720.0	20050	20	1	49	16QAM	20.5	20.1
1720.0	20050	20	1	99	16QAM	20.5	20.2
1720.0	20050	20	50	0	16QAM	19.4	18.4
1720.0	20050	20	50	24	16QAM	19.3	18.3
1720.0	20050	20	50	50	16QAM	19.4	18.3
1720.0	20050	20	100	0	16QAM	19.5	18.4
1732.5	20175	20	1	0	QPSK	21.4	21.3
1732.5	20175	20	1	49	QPSK	21.5	21.4
1732.5	20175	20	1	99	QPSK	21.4	21.3
1732.5	20175	20	50	0	QPSK	20.4	19.5
1732.5	20175	20	50	24	QPSK	20.5	19.5
1732.5	20175	20	50	50	QPSK	20.4	19.5
1732.5	20175	20	100	0	QPSK	20.5	19.5
1732.5	20175	20	1	0	16QAM	20.5	20.2
1732.5	20175	20	1	49	16QAM	20.6	20.2
1732.5	20175	20	1	99	16QAM	20.6	20.2
1732.5	20175	20	50	0	16QAM	19.5	18.4
1732.5	20175	20	50	24	16QAM	19.5	18.4
1732.5	20175	20	50	50	16QAM	19.5	18.4
1732.5	20175	20	100	0	16QAM	19.5	18.4
1745.0	20300	20	1	0	QPSK	21.5	21.4
1745.0	20300	20	1	49	QPSK	21.4	21.3
1745.0	20300	20	1	99	QPSK	21.5	21.4
1745.0	20300	20	50	0	QPSK	20.6	19.5
1745.0	20300	20	50	24	QPSK	20.5	19.4
1745.0	20300	20	50	50	QPSK	20.5	19.5
1745.0	20300	20	100	0	QPSK	20.6	19.5
1745.0	20300	20	1	0	16QAM	20.7	20.3
1745.0	20300	20	1	49	16QAM	20.5	20.2
1745.0	20300	20	1	99	16QAM	20.6	20.3
1745.0	20300	20	50	0	16QAM	19.6	18.5
1745.0	20300	20	50	24	16QAM	19.5	18.4
1745.0	20300	20	50	50	16QAM	19.5	18.5
1745.0	20300	20	100	0	16QAM	19.6	18.5

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Antenna 2							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1710.7	19957	1.4	1	0	QPSK	20.9	-
1710.7	19957	1.4	1	2	QPSK	20.8	-
1710.7	19957	1.4	1	5	QPSK	20.9	-
1710.7	19957	1.4	3	0	QPSK	20.9	-
1710.7	19957	1.4	3	2	QPSK	20.8	-
1710.7	19957	1.4	3	3	QPSK	20.9	-
1710.7	19957	1.4	6	0	QPSK	19.9	-
1710.7	19957	1.4	1	0	16QAM	19.9	-
1710.7	19957	1.4	1	2	16QAM	19.8	-
1710.7	19957	1.4	1	5	16QAM	19.8	-
1710.7	19957	1.4	3	0	16QAM	19.9	-
1710.7	19957	1.4	3	2	16QAM	19.9	-
1710.7	19957	1.4	3	3	16QAM	19.9	-
1710.7	19957	1.4	6	0	16QAM	18.9	-
1732.5	20175	1.4	1	0	QPSK	21.0	-
1732.5	20175	1.4	1	2	QPSK	20.9	-
1732.5	20175	1.4	1	5	QPSK	21.0	-
1732.5	20175	1.4	3	0	QPSK	20.9	-
1732.5	20175	1.4	3	2	QPSK	20.9	-
1732.5	20175	1.4	3	3	QPSK	20.9	-
1732.5	20175	1.4	6	0	QPSK	20.0	-
1732.5	20175	1.4	1	0	16QAM	20.0	-
1732.5	20175	1.4	1	2	16QAM	19.9	-
1732.5	20175	1.4	1	5	16QAM	20.0	-
1732.5	20175	1.4	3	0	16QAM	19.9	-
1732.5	20175	1.4	3	2	16QAM	19.9	-
1732.5	20175	1.4	3	3	16QAM	19.9	-
1732.5	20175	1.4	6	0	16QAM	19.0	-
1754.3	20393	1.4	1	0	QPSK	21.1	-
1754.3	20393	1.4	1	2	QPSK	21.1	-
1754.3	20393	1.4	1	5	QPSK	21.1	-
1754.3	20393	1.4	3	0	QPSK	21.1	-
1754.3	20393	1.4	3	2	QPSK	21.0	-
1754.3	20393	1.4	3	3	QPSK	21.0	-
1754.3	20393	1.4	6	0	QPSK	20.1	-

(Table continues)

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(Table continues)

1754.3	20393	1.4	1	0	16QAM	20.2	-
1754.3	20393	1.4	1	2	16QAM	20.2	-
1754.3	20393	1.4	1	5	16QAM	20.2	-
1754.3	20393	1.4	3	0	16QAM	20.0	-
1754.3	20393	1.4	3	2	16QAM	20.0	-
1754.3	20393	1.4	3	3	16QAM	20.0	-
1754.3	20393	1.4	6	0	16QAM	19.1	-
1711.5	19965	3	1	0	QPSK	20.8	20.8
1711.5	19965	3	1	7	QPSK	20.8	20.8
1711.5	19965	3	1	14	QPSK	20.9	20.8
1711.5	19965	3	8	0	QPSK	19.9	18.8
1711.5	19965	3	8	3	QPSK	19.9	18.8
1711.5	19965	3	8	7	QPSK	19.9	18.8
1711.5	19965	3	15	0	QPSK	19.9	18.9
1711.5	19965	3	1	0	16QAM	19.5	19.7
1711.5	19965	3	1	7	16QAM	19.5	19.7
1711.5	19965	3	1	14	16QAM	19.5	19.7
1711.5	19965	3	8	0	16QAM	19.0	17.9
1711.5	19965	3	8	3	16QAM	19.0	17.9
1711.5	19965	3	8	7	16QAM	19.0	17.9
1711.5	19965	3	15	0	16QAM	19.0	17.8
1732.5	20175	3	1	0	QPSK	20.9	20.9
1732.5	20175	3	1	7	QPSK	20.9	20.8
1732.5	20175	3	1	14	QPSK	21.0	20.9
1732.5	20175	3	8	0	QPSK	20.0	18.9
1732.5	20175	3	8	3	QPSK	20.0	18.9
1732.5	20175	3	8	7	QPSK	19.9	19.0
1732.5	20175	3	15	0	QPSK	20.0	19.0
1732.5	20175	3	1	0	16QAM	19.6	19.7
1732.5	20175	3	1	7	16QAM	19.6	19.7
1732.5	20175	3	1	14	16QAM	19.6	19.8
1732.5	20175	3	8	0	16QAM	18.9	18.1
1732.5	20175	3	8	3	16QAM	19.0	18.0
1732.5	20175	3	8	7	16QAM	19.0	18.0
1732.5	20175	3	15	0	16QAM	18.9	17.9
1753.5	20385	3	1	0	QPSK	21.1	21.0
1753.5	20385	3	1	7	QPSK	21.1	20.9

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1753.5	20385	3	1	14	QPSK	21.1	21.0
1753.5	20385	3	8	0	QPSK	20.1	19.0
1753.5	20385	3	8	3	QPSK	20.1	19.0
1753.5	20385	3	8	7	QPSK	20.1	19.1
1753.5	20385	3	15	0	QPSK	20.1	19.1
1753.5	20385	3	1	0	16QAM	19.7	19.9
1753.5	20385	3	1	7	16QAM	19.7	19.9
1753.5	20385	3	1	14	16QAM	19.8	19.9
1753.5	20385	3	8	0	16QAM	19.0	18.1
1753.5	20385	3	8	3	16QAM	19.1	18.1
1753.5	20385	3	8	7	16QAM	19.0	18.1
1753.5	20385	3	15	0	16QAM	19.0	18.0
1712.5	19975	5	1	0	QPSK	20.9	20.9
1712.5	19975	5	1	12	QPSK	20.8	20.8
1712.5	19975	5	1	24	QPSK	20.8	20.8
1712.5	19975	5	12	0	QPSK	19.9	18.9
1712.5	19975	5	12	6	QPSK	19.9	18.9
1712.5	19975	5	12	13	QPSK	19.9	18.9
1712.5	19975	5	25	0	QPSK	19.8	18.9
1712.5	19975	5	1	0	16QAM	19.8	19.8
1712.5	19975	5	1	12	16QAM	19.8	19.8
1712.5	19975	5	1	24	16QAM	19.7	19.7
1712.5	19975	5	12	0	16QAM	18.9	17.8
1712.5	19975	5	12	6	16QAM	18.9	17.8
1712.5	19975	5	12	13	16QAM	18.9	17.9
1712.5	19975	5	25	0	16QAM	18.9	17.9
1732.5	20175	5	1	0	QPSK	21.0	20.9
1732.5	20175	5	1	12	QPSK	21.0	20.9
1732.5	20175	5	1	24	QPSK	20.9	20.9
1732.5	20175	5	12	0	QPSK	19.9	19.0
1732.5	20175	5	12	6	QPSK	20.0	18.9
1732.5	20175	5	12	13	QPSK	19.9	19.0
1732.5	20175	5	25	0	QPSK	19.9	19.0
1732.5	20175	5	1	0	16QAM	19.8	19.9
1732.5	20175	5	1	12	16QAM	19.8	19.8
1732.5	20175	5	1	24	16QAM	19.8	19.8
1732.5	20175	5	12	0	16QAM	19.0	17.9
1732.5	20175	5	12	6	16QAM	19.0	17.9

(Table continues)

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1732.5	20175	5	12	13	16QAM	19.0	17.9
1732.5	20175	5	25	0	16QAM	19.1	18.0
1752.5	20375	5	1	0	QPSK	21.1	21.0
1752.5	20375	5	1	12	QPSK	21.0	21.0
1752.5	20375	5	1	24	QPSK	21.0	21.1
1752.5	20375	5	12	0	QPSK	20.1	19.1
1752.5	20375	5	12	6	QPSK	20.0	19.1
1752.5	20375	5	12	13	QPSK	20.1	19.1
1752.5	20375	5	25	0	QPSK	20.0	19.0
1752.5	20375	5	1	0	16QAM	19.9	20.0
1752.5	20375	5	1	12	16QAM	19.9	19.9
1752.5	20375	5	1	24	16QAM	19.9	19.9
1752.5	20375	5	12	0	16QAM	19.1	18.0
1752.5	20375	5	12	6	16QAM	19.1	18.1
1752.5	20375	5	12	13	16QAM	19.1	18.0
1752.5	20375	5	25	0	16QAM	19.1	18.1
1715.0	20000	10	1	0	QPSK	20.8	20.8
1715.0	20000	10	1	24	QPSK	20.7	20.7
1715.0	20000	10	1	49	QPSK	20.7	20.7
1715.0	20000	10	25	0	QPSK	19.9	18.9
1715.0	20000	10	25	12	QPSK	19.8	18.9
1715.0	20000	10	25	25	QPSK	19.7	18.8
1715.0	20000	10	50	0	QPSK	19.9	18.9
1715.0	20000	10	1	0	16QAM	19.7	19.5
1715.0	20000	10	1	24	16QAM	19.6	19.4
1715.0	20000	10	1	49	16QAM	19.6	19.4
1715.0	20000	10	25	0	16QAM	19.0	17.9
1715.0	20000	10	25	12	16QAM	19.0	17.9
1715.0	20000	10	25	25	16QAM	18.9	17.8
1715.0	20000	10	50	0	16QAM	18.9	17.9
1732.5	20175	10	1	0	QPSK	20.9	20.9
1732.5	20175	10	1	24	QPSK	20.8	20.9
1732.5	20175	10	1	49	QPSK	20.8	20.9
1732.5	20175	10	25	0	QPSK	19.9	18.9
1732.5	20175	10	25	12	QPSK	19.9	19.0
1732.5	20175	10	25	25	QPSK	19.9	19.0
1732.5	20175	10	50	0	QPSK	20.0	19.0

(Table continues)

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1732.5	20175	10	1	0	16QAM	19.7	19.5
1732.5	20175	10	1	24	16QAM	19.7	19.5
1732.5	20175	10	1	49	16QAM	19.7	19.5
1732.5	20175	10	25	0	16QAM	19.0	18.0
1732.5	20175	10	25	12	16QAM	19.0	18.0
1732.5	20175	10	25	25	16QAM	19.0	17.9
1732.5	20175	10	50	0	16QAM	19.0	18.0
1750.0	20350	10	1	0	QPSK	20.9	20.9
1750.0	20350	10	1	24	QPSK	20.8	20.9
1750.0	20350	10	1	49	QPSK	21.0	21.0
1750.0	20350	10	25	0	QPSK	19.9	19.0
1750.0	20350	10	25	12	QPSK	20.0	19.1
1750.0	20350	10	25	25	QPSK	20.0	19.0
1750.0	20350	10	50	0	QPSK	20.1	19.1
1750.0	20350	10	1	0	16QAM	19.7	19.6
1750.0	20350	10	1	24	16QAM	19.7	19.5
1750.0	20350	10	1	49	16QAM	19.8	19.6
1750.0	20350	10	25	0	16QAM	19.0	18.0
1750.0	20350	10	25	12	16QAM	19.1	18.1
1750.0	20350	10	25	25	16QAM	19.1	18.1
1750.0	20350	10	50	0	16QAM	19.0	18.0
1717.5	20025	15	1	0	QPSK	20.9	20.9
1717.5	20025	15	1	36	QPSK	20.8	20.8
1717.5	20025	15	1	74	QPSK	20.8	20.8
1717.5	20025	15	37	0	QPSK	19.9	18.9
1717.5	20025	15	37	18	QPSK	19.8	18.8
1717.5	20025	15	37	38	QPSK	19.8	18.8
1717.5	20025	15	75	0	QPSK	19.9	18.9
1717.5	20025	15	1	0	16QAM	20.1	20.1
1717.5	20025	15	1	36	16QAM	20.0	20.0
1717.5	20025	15	1	74	16QAM	20.0	20.0
1717.5	20025	15	37	0	16QAM	18.9	17.9
1717.5	20025	15	37	18	16QAM	18.8	17.8
1717.5	20025	15	37	38	16QAM	18.8	17.8
1717.5	20025	15	75	0	16QAM	19.0	17.9
1732.5	20175	15	1	0	QPSK	20.9	20.9
1732.5	20175	15	1	36	QPSK	20.9	20.9

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1732.5	20175	15	1	74	QPSK	20.9	20.9
1732.5	20175	15	37	0	QPSK	19.9	18.9
1732.5	20175	15	37	18	QPSK	19.9	19.0
1732.5	20175	15	37	38	QPSK	19.9	19.0
1732.5	20175	15	75	0	QPSK	20.0	19.0
1732.5	20175	15	1	0	16QAM	20.2	20.0
1732.5	20175	15	1	36	16QAM	20.2	20.1
1732.5	20175	15	1	74	16QAM	20.1	20.0
1732.5	20175	15	37	0	16QAM	19.0	17.9
1732.5	20175	15	37	18	16QAM	18.9	18.0
1732.5	20175	15	37	38	16QAM	19.0	18.0
1732.5	20175	15	75	0	16QAM	19.0	17.9
1747.5	20325	15	1	0	QPSK	21.0	21.0
1747.5	20325	15	1	36	QPSK	20.9	20.9
1747.5	20325	15	1	74	QPSK	21.0	21.0
1747.5	20325	15	37	0	QPSK	19.9	18.9
1747.5	20325	15	37	18	QPSK	19.9	18.9
1747.5	20325	15	37	38	QPSK	20.1	19.0
1747.5	20325	15	75	0	QPSK	20.1	19.1
1747.5	20325	15	1	0	16QAM	20.2	19.9
1747.5	20325	15	1	36	16QAM	20.1	19.8
1747.5	20325	15	1	74	16QAM	20.2	19.9
1747.5	20325	15	37	0	16QAM	18.9	17.9
1747.5	20325	15	37	18	16QAM	18.9	17.9
1747.5	20325	15	37	38	16QAM	19.0	17.9
1747.5	20325	15	75	0	16QAM	19.0	18.1
1720.0	20050	20	1	0	QPSK	20.9	20.9
1720.0	20050	20	1	49	QPSK	20.8	20.7
1720.0	20050	20	1	99	QPSK	20.9	20.8
1720.0	20050	20	50	0	QPSK	19.9	18.9
1720.0	20050	20	50	24	QPSK	19.8	18.8
1720.0	20050	20	50	50	QPSK	19.9	18.9
1720.0	20050	20	100	0	QPSK	19.9	18.9
1720.0	20050	20	1	0	16QAM	20.1	19.7
1720.0	20050	20	1	49	16QAM	20.0	19.6
1720.0	20050	20	1	99	16QAM	20.0	19.7
1720.0	20050	20	50	0	16QAM	18.9	17.9
1720.0	20050	20	50	24	16QAM	18.8	17.8

(Table continues)

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(Table continues)

1720.0	20050	20	50	50	16QAM	18.9	17.8
1720.0	20050	20	100	0	16QAM	19.0	17.9
1732.5	20175	20	1	0	QPSK	20.9	20.8
1732.5	20175	20	1	49	QPSK	21.0	20.9
1732.5	20175	20	1	99	QPSK	20.9	20.8
1732.5	20175	20	50	0	QPSK	19.9	19.0
1732.5	20175	20	50	24	QPSK	20.0	19.0
1732.5	20175	20	50	50	QPSK	19.9	19.0
1732.5	20175	20	100	0	QPSK	20.0	19.0
1732.5	20175	20	1	0	16QAM	20.0	19.7
1732.5	20175	20	1	49	16QAM	20.1	19.7
1732.5	20175	20	1	99	16QAM	20.1	19.7
1732.5	20175	20	50	0	16QAM	19.0	17.9
1732.5	20175	20	50	24	16QAM	19.0	17.9
1732.5	20175	20	50	50	16QAM	19.0	17.9
1732.5	20175	20	100	0	16QAM	19.0	17.9
1745.0	20300	20	1	0	QPSK	21.0	20.9
1745.0	20300	20	1	49	QPSK	20.9	20.8
1745.0	20300	20	1	99	QPSK	21.0	20.9
1745.0	20300	20	50	0	QPSK	20.1	19.0
1745.0	20300	20	50	24	QPSK	20.0	18.9
1745.0	20300	20	50	50	QPSK	20.0	19.0
1745.0	20300	20	100	0	QPSK	20.1	19.0
1745.0	20300	20	1	0	16QAM	20.2	19.8
1745.0	20300	20	1	49	16QAM	20.0	19.7
1745.0	20300	20	1	99	16QAM	20.1	19.8
1745.0	20300	20	50	0	16QAM	19.1	18.0
1745.0	20300	20	50	24	16QAM	19.0	17.9
1745.0	20300	20	50	50	16QAM	19.0	18.0
1745.0	20300	20	100	0	16QAM	19.1	18.0

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Type: RM-975; Serial number: 004402/47/804009/4, HW: 2020, SW: 01061.00014.14112 used for LTE1900 (Band2) for Head and Body-worn SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE1900 (Band 2) in 1.4MHz Channel BW in this specification (Table 6.2.4-1).

Antenna 1							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1850.7	18607	1.4	1	0	QPSK	22.5	-
1850.7	18607	1.4	1	2	QPSK	22.4	-
1850.7	18607	1.4	1	5	QPSK	22.4	-
1850.7	18607	1.4	3	0	QPSK	22.5	-
1850.7	18607	1.4	3	2	QPSK	22.4	-
1850.7	18607	1.4	3	3	QPSK	22.5	-
1850.7	18607	1.4	6	0	QPSK	21.5	-
1850.7	18607	1.4	1	0	16QAM	21.1	-
1850.7	18607	1.4	1	2	16QAM	21.1	-
1850.7	18607	1.4	1	5	16QAM	21.1	-
1850.7	18607	1.4	3	0	16QAM	21.4	-
1850.7	18607	1.4	3	2	16QAM	21.4	-
1850.7	18607	1.4	3	3	16QAM	21.4	-
1850.7	18607	1.4	6	0	16QAM	20.3	-
1880.0	18900	1.4	1	0	QPSK	22.6	-
1880.0	18900	1.4	1	2	QPSK	22.6	-
1880.0	18900	1.4	1	5	QPSK	22.6	-
1880.0	18900	1.4	3	0	QPSK	22.6	-
1880.0	18900	1.4	3	2	QPSK	22.6	-
1880.0	18900	1.4	3	3	QPSK	22.6	-
1880.0	18900	1.4	6	0	QPSK	21.6	-
1880.0	18900	1.4	1	0	16QAM	21.3	-
1880.0	18900	1.4	1	2	16QAM	21.3	-
1880.0	18900	1.4	1	5	16QAM	21.3	-
1880.0	18900	1.4	3	0	16QAM	21.4	-
1880.0	18900	1.4	3	2	16QAM	21.4	-
1880.0	18900	1.4	3	3	16QAM	21.4	-
1880.0	18900	1.4	6	0	16QAM	20.5	-
1909.3	19193	1.4	1	0	QPSK	22.4	-

(Table continues)

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(Table continues)

1909.3	19193	1.4	1	2	QPSK	22.4	-
1909.3	19193	1.4	1	5	QPSK	22.4	-
1909.3	19193	1.4	3	0	QPSK	22.5	-
1909.3	19193	1.4	3	2	QPSK	22.4	-
1909.3	19193	1.4	3	3	QPSK	22.4	-
1909.3	19193	1.4	6	0	QPSK	21.5	-
1909.3	19193	1.4	1	0	16QAM	21.2	-
1909.3	19193	1.4	1	2	16QAM	21.2	-
1909.3	19193	1.4	1	5	16QAM	21.2	-
1909.3	19193	1.4	3	0	16QAM	21.2	-
1909.3	19193	1.4	3	2	16QAM	21.2	-
1909.3	19193	1.4	3	3	16QAM	21.2	-
1909.3	19193	1.4	6	0	16QAM	20.3	-
1851.5	18615	3	1	0	QPSK	22.5	22.5
1851.5	18615	3	1	7	QPSK	22.4	22.4
1851.5	18615	3	1	14	QPSK	22.5	22.5
1851.5	18615	3	8	0	QPSK	21.4	20.5
1851.5	18615	3	8	3	QPSK	21.4	20.5
1851.5	18615	3	8	7	QPSK	21.4	20.5
1851.5	18615	3	15	0	QPSK	21.4	20.5
1851.5	18615	3	1	0	16QAM	21.5	21.4
1851.5	18615	3	1	7	16QAM	21.5	21.3
1851.5	18615	3	1	14	16QAM	21.4	21.4
1851.5	18615	3	8	0	16QAM	20.5	19.4
1851.5	18615	3	8	3	16QAM	20.5	19.4
1851.5	18615	3	8	7	16QAM	20.5	19.4
1851.5	18615	3	15	0	16QAM	20.5	19.5
1880.0	18900	3	1	0	QPSK	22.6	22.6
1880.0	18900	3	1	7	QPSK	22.6	22.6
1880.0	18900	3	1	14	QPSK	22.6	22.6
1880.0	18900	3	8	0	QPSK	21.5	20.6
1880.0	18900	3	8	3	QPSK	21.4	20.6
1880.0	18900	3	8	7	QPSK	21.5	20.6
1880.0	18900	3	15	0	QPSK	21.5	20.6
1880.0	18900	3	1	0	16QAM	21.4	21.5
1880.0	18900	3	1	7	16QAM	21.4	21.5
1880.0	18900	3	1	14	16QAM	21.4	21.5
1880.0	18900	3	8	0	16QAM	20.7	19.5

(Table continues)

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1880.0	18900	3	8	3	16QAM	20.6	19.5
1880.0	18900	3	8	7	16QAM	20.6	19.5
1880.0	18900	3	15	0	16QAM	20.6	19.6
1908.5	19185	3	1	0	QPSK	22.4	22.5
1908.5	19185	3	1	7	QPSK	22.4	22.4
1908.5	19185	3	1	14	QPSK	22.4	22.4
1908.5	19185	3	8	0	QPSK	21.4	20.5
1908.5	19185	3	8	3	QPSK	21.4	20.4
1908.5	19185	3	8	7	QPSK	21.4	20.5
1908.5	19185	3	15	0	QPSK	21.4	20.5
1908.5	19185	3	1	0	16QAM	21.3	21.4
1908.5	19185	3	1	7	16QAM	21.3	21.3
1908.5	19185	3	1	14	16QAM	21.3	21.3
1908.5	19185	3	8	0	16QAM	20.5	19.5
1908.5	19185	3	8	3	16QAM	20.5	19.4
1908.5	19185	3	8	7	16QAM	20.5	19.5
1908.5	19185	3	15	0	16QAM	20.5	19.5
1852.5	18625	5	1	0	QPSK	22.4	22.4
1852.5	18625	5	1	12	QPSK	22.4	22.4
1852.5	18625	5	1	24	QPSK	22.4	22.4
1852.5	18625	5	12	0	QPSK	21.4	20.5
1852.5	18625	5	12	6	QPSK	21.4	20.5
1852.5	18625	5	12	13	QPSK	21.4	20.4
1852.5	18625	5	25	0	QPSK	21.4	20.5
1852.5	18625	5	1	0	16QAM	21.2	21.0
1852.5	18625	5	1	12	16QAM	21.2	21.0
1852.5	18625	5	1	24	16QAM	21.2	21.0
1852.5	18625	5	12	0	16QAM	20.6	19.6
1852.5	18625	5	12	6	16QAM	20.6	19.5
1852.5	18625	5	12	13	16QAM	20.6	19.5
1852.5	18625	5	25	0	16QAM	20.5	19.5
1880.0	18900	5	1	0	QPSK	22.5	22.5
1880.0	18900	5	1	12	QPSK	22.5	22.5
1880.0	18900	5	1	24	QPSK	22.5	22.5
1880.0	18900	5	12	0	QPSK	21.4	20.6
1880.0	18900	5	12	6	QPSK	21.5	20.5
1880.0	18900	5	12	13	QPSK	21.5	20.6

(Table continues)

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(Table continues)

1880.0	18900	5	25	0	QPSK	21.4	20.5
1880.0	18900	5	1	0	16QAM	21.3	21.1
1880.0	18900	5	1	12	16QAM	21.3	21.1
1880.0	18900	5	1	24	16QAM	21.3	21.1
1880.0	18900	5	12	0	16QAM	20.7	19.7
1880.0	18900	5	12	6	16QAM	20.7	19.7
1880.0	18900	5	12	13	16QAM	20.7	19.7
1880.0	18900	5	25	0	16QAM	20.7	19.6
1907.5	19175	5	1	0	QPSK	22.3	22.3
1907.5	19175	5	1	12	QPSK	22.4	22.4
1907.5	19175	5	1	24	QPSK	22.4	22.3
1907.5	19175	5	12	0	QPSK	21.3	20.4
1907.5	19175	5	12	6	QPSK	21.4	20.4
1907.5	19175	5	12	13	QPSK	21.4	20.5
1907.5	19175	5	25	0	QPSK	21.3	20.4
1907.5	19175	5	1	0	16QAM	21.2	20.9
1907.5	19175	5	1	12	16QAM	21.2	21.0
1907.5	19175	5	1	24	16QAM	21.2	21.0
1907.5	19175	5	12	0	16QAM	20.5	19.5
1907.5	19175	5	12	6	16QAM	20.6	19.6
1907.5	19175	5	12	13	16QAM	20.6	19.6
1907.5	19175	5	25	0	16QAM	20.5	19.5
1855.0	18650	10	1	0	QPSK	22.5	22.5
1855.0	18650	10	1	24	QPSK	22.5	22.5
1855.0	18650	10	1	49	QPSK	22.5	22.5
1855.0	18650	10	25	0	QPSK	21.4	20.5
1855.0	18650	10	25	12	QPSK	21.5	20.5
1855.0	18650	10	25	25	QPSK	21.5	20.5
1855.0	18650	10	50	0	QPSK	21.5	20.5
1855.0	18650	10	1	0	16QAM	21.6	21.6
1855.0	18650	10	1	24	16QAM	21.7	21.7
1855.0	18650	10	1	49	16QAM	21.7	21.7
1855.0	18650	10	25	0	16QAM	20.5	19.5
1855.0	18650	10	25	12	16QAM	20.6	19.6
1855.0	18650	10	25	25	16QAM	20.5	19.6
1855.0	18650	10	50	0	16QAM	20.5	19.5
1880.0	18900	10	1	0	QPSK	22.5	22.6

(Table continues)

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(Table continues)

1880.0	18900	10	1	24	QPSK	22.6	22.6
1880.0	18900	10	1	49	QPSK	22.6	22.6
1880.0	18900	10	25	0	QPSK	21.5	20.5
1880.0	18900	10	25	12	QPSK	21.5	20.5
1880.0	18900	10	25	25	QPSK	21.5	20.6
1880.0	18900	10	50	0	QPSK	21.4	20.6
1880.0	18900	10	1	0	16QAM	21.7	21.8
1880.0	18900	10	1	24	16QAM	21.7	21.7
1880.0	18900	10	1	49	16QAM	21.8	21.8
1880.0	18900	10	25	0	16QAM	20.6	19.7
1880.0	18900	10	25	12	16QAM	20.6	19.7
1880.0	18900	10	25	25	16QAM	20.6	19.7
1880.0	18900	10	50	0	16QAM	20.5	19.6
1905.0	19150	10	1	0	QPSK	22.5	22.5
1905.0	19150	10	1	24	QPSK	22.4	22.4
1905.0	19150	10	1	49	QPSK	22.4	22.4
1905.0	19150	10	25	0	QPSK	21.4	20.4
1905.0	19150	10	25	12	QPSK	21.3	20.4
1905.0	19150	10	25	25	QPSK	21.3	20.4
1905.0	19150	10	50	0	QPSK	21.4	20.4
1905.0	19150	10	1	0	16QAM	21.7	21.7
1905.0	19150	10	1	24	16QAM	21.5	21.5
1905.0	19150	10	1	49	16QAM	21.5	21.6
1905.0	19150	10	25	0	16QAM	20.4	19.5
1905.0	19150	10	25	12	16QAM	20.4	19.5
1905.0	19150	10	25	25	16QAM	20.4	19.5
1905.0	19150	10	50	0	16QAM	20.4	19.5
1857.5	18675	15	1	0	QPSK	22.5	22.5
1857.5	18675	15	1	36	QPSK	22.6	22.5
1857.5	18675	15	1	74	QPSK	22.5	22.5
1857.5	18675	15	37	0	QPSK	21.4	20.4
1857.5	18675	15	37	18	QPSK	21.4	20.5
1857.5	18675	15	37	38	QPSK	21.5	20.4
1857.5	18675	15	75	0	QPSK	21.5	20.5
1857.5	18675	15	1	0	16QAM	21.6	21.5
1857.5	18675	15	1	36	16QAM	21.6	21.6
1857.5	18675	15	1	74	16QAM	21.6	21.5
1857.5	18675	15	37	0	16QAM	20.5	19.4

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1857.5	18675	15	37	18	16QAM	20.5	19.4
1857.5	18675	15	37	38	16QAM	20.5	19.5
1857.5	18675	15	75	0	16QAM	20.6	19.5
1880.0	18900	15	1	0	QPSK	22.7	22.6
1880.0	18900	15	1	36	QPSK	22.6	22.5
1880.0	18900	15	1	74	QPSK	22.6	22.5
1880.0	18900	15	37	0	QPSK	21.4	20.5
1880.0	18900	15	37	18	QPSK	21.5	20.5
1880.0	18900	15	37	38	QPSK	21.5	20.6
1880.0	18900	15	75	0	QPSK	21.5	20.6
1880.0	18900	15	1	0	16QAM	21.8	21.5
1880.0	18900	15	1	36	16QAM	21.7	21.4
1880.0	18900	15	1	74	16QAM	21.7	21.3
1880.0	18900	15	37	0	16QAM	20.6	19.5
1880.0	18900	15	37	18	16QAM	20.6	19.5
1880.0	18900	15	37	38	16QAM	20.6	19.6
1880.0	18900	15	75	0	16QAM	20.6	19.5
1902.5	19125	15	1	0	QPSK	22.6	22.5
1902.5	19125	15	1	36	QPSK	22.4	22.4
1902.5	19125	15	1	74	QPSK	22.4	22.4
1902.5	19125	15	37	0	QPSK	21.4	20.5
1902.5	19125	15	37	18	QPSK	21.4	20.4
1902.5	19125	15	37	38	QPSK	21.3	20.4
1902.5	19125	15	75	0	QPSK	21.4	20.4
1902.5	19125	15	1	0	16QAM	21.7	21.4
1902.5	19125	15	1	36	16QAM	21.6	21.2
1902.5	19125	15	1	74	16QAM	21.6	21.2
1902.5	19125	15	37	0	16QAM	20.5	19.5
1902.5	19125	15	37	18	16QAM	20.3	19.4
1902.5	19125	15	37	38	16QAM	20.3	19.4
1902.5	19125	15	75	0	16QAM	20.4	19.4
1860.0	18700	20	1	0	QPSK	22.5	22.5
1860.0	18700	20	1	49	QPSK	22.5	22.5
1860.0	18700	20	1	99	QPSK	22.4	22.4
1860.0	18700	20	50	0	QPSK	21.5	20.6
1860.0	18700	20	50	24	QPSK	21.5	20.5
1860.0	18700	20	50	50	QPSK	21.5	20.5

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1860.0	18700	20	100	0	QPSK	21.5	20.5
1860.0	18700	20	1	0	16QAM	21.3	21.7
1860.0	18700	20	1	49	16QAM	21.3	21.7
1860.0	18700	20	1	99	16QAM	21.2	21.6
1860.0	18700	20	50	0	16QAM	20.6	19.5
1860.0	18700	20	50	24	16QAM	20.5	19.5
1860.0	18700	20	50	50	16QAM	20.5	19.5
1860.0	18700	20	100	0	16QAM	20.5	19.5
1880.0	18900	20	1	0	QPSK	22.6	22.6
1880.0	18900	20	1	49	QPSK	22.5	22.6
1880.0	18900	20	1	99	QPSK	22.5	22.5
1880.0	18900	20	50	0	QPSK	21.5	20.5
1880.0	18900	20	50	24	QPSK	21.5	20.5
1880.0	18900	20	50	50	QPSK	21.5	20.6
1880.0	18900	20	100	0	QPSK	21.5	20.6
1880.0	18900	20	1	0	16QAM	21.5	21.8
1880.0	18900	20	1	49	16QAM	21.4	21.7
1880.0	18900	20	1	99	16QAM	21.4	21.7
1880.0	18900	20	50	0	16QAM	20.5	19.5
1880.0	18900	20	50	24	16QAM	20.6	19.5
1880.0	18900	20	50	50	16QAM	20.6	19.6
1880.0	18900	20	100	0	16QAM	20.6	19.6
1900.0	19100	20	1	0	QPSK	22.6	22.7
1900.0	19100	20	1	49	QPSK	22.5	22.5
1900.0	19100	20	1	99	QPSK	22.4	22.4
1900.0	19100	20	50	0	QPSK	21.5	20.5
1900.0	19100	20	50	24	QPSK	21.5	20.5
1900.0	19100	20	50	50	QPSK	21.3	20.3
1900.0	19100	20	100	0	QPSK	21.4	20.4
1900.0	19100	20	1	0	16QAM	21.4	21.8
1900.0	19100	20	1	49	16QAM	21.3	21.7
1900.0	19100	20	1	99	16QAM	21.2	21.5
1900.0	19100	20	50	0	16QAM	20.5	19.5
1900.0	19100	20	50	24	16QAM	20.5	19.5
1900.0	19100	20	50	50	16QAM	20.4	19.4
1900.0	19100	20	100	0	16QAM	20.4	19.4

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Antenna 2							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1850.7	18607	1.4	1	0	QPSK	22.0	-
1850.7	18607	1.4	1	2	QPSK	21.9	-
1850.7	18607	1.4	1	5	QPSK	21.9	-
1850.7	18607	1.4	3	0	QPSK	22.0	-
1850.7	18607	1.4	3	2	QPSK	21.9	-
1850.7	18607	1.4	3	3	QPSK	22.0	-
1850.7	18607	1.4	6	0	QPSK	21.0	-
1850.7	18607	1.4	1	0	16QAM	20.6	-
1850.7	18607	1.4	1	2	16QAM	20.6	-
1850.7	18607	1.4	1	5	16QAM	20.6	-
1850.7	18607	1.4	3	0	16QAM	20.9	-
1850.7	18607	1.4	3	2	16QAM	20.9	-
1850.7	18607	1.4	3	3	16QAM	20.9	-
1850.7	18607	1.4	6	0	16QAM	19.8	-
1880.0	18900	1.4	1	0	QPSK	22.1	-
1880.0	18900	1.4	1	2	QPSK	22.1	-
1880.0	18900	1.4	1	5	QPSK	22.1	-
1880.0	18900	1.4	3	0	QPSK	22.1	-
1880.0	18900	1.4	3	2	QPSK	22.1	-
1880.0	18900	1.4	3	3	QPSK	22.1	-
1880.0	18900	1.4	6	0	QPSK	21.1	-
1880.0	18900	1.4	1	0	16QAM	20.8	-
1880.0	18900	1.4	1	2	16QAM	20.8	-
1880.0	18900	1.4	1	5	16QAM	20.8	-
1880.0	18900	1.4	3	0	16QAM	20.9	-
1880.0	18900	1.4	3	2	16QAM	20.9	-
1880.0	18900	1.4	3	3	16QAM	20.9	-
1880.0	18900	1.4	6	0	16QAM	20.0	-
1909.3	19193	1.4	1	0	QPSK	21.9	-
1909.3	19193	1.4	1	2	QPSK	21.9	-
1909.3	19193	1.4	1	5	QPSK	21.9	-
1909.3	19193	1.4	3	0	QPSK	22.0	-
1909.3	19193	1.4	3	2	QPSK	21.9	-
1909.3	19193	1.4	3	3	QPSK	21.9	-
1909.3	19193	1.4	6	0	QPSK	21.0	-

(Table continues)

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(Table continues)

1909.3	19193	1.4	1	0	16QAM	20.7	-
1909.3	19193	1.4	1	2	16QAM	20.7	-
1909.3	19193	1.4	1	5	16QAM	20.7	-
1909.3	19193	1.4	3	0	16QAM	20.7	-
1909.3	19193	1.4	3	2	16QAM	20.7	-
1909.3	19193	1.4	3	3	16QAM	20.7	-
1909.3	19193	1.4	6	0	16QAM	19.8	-
1851.5	18615	3	1	0	QPSK	22.0	22.0
1851.5	18615	3	1	7	QPSK	21.9	21.9
1851.5	18615	3	1	14	QPSK	22.0	22.0
1851.5	18615	3	8	0	QPSK	20.9	20.0
1851.5	18615	3	8	3	QPSK	20.9	20.0
1851.5	18615	3	8	7	QPSK	20.9	20.0
1851.5	18615	3	15	0	QPSK	20.9	20.0
1851.5	18615	3	1	0	16QAM	21.0	20.9
1851.5	18615	3	1	7	16QAM	21.0	20.8
1851.5	18615	3	1	14	16QAM	20.9	20.9
1851.5	18615	3	8	0	16QAM	20.0	18.9
1851.5	18615	3	8	3	16QAM	20.0	18.9
1851.5	18615	3	8	7	16QAM	20.0	18.9
1851.5	18615	3	15	0	16QAM	20.0	19.0
1880.0	18900	3	1	0	QPSK	22.1	22.1
1880.0	18900	3	1	7	QPSK	22.1	22.1
1880.0	18900	3	1	14	QPSK	22.1	22.1
1880.0	18900	3	8	0	QPSK	21.0	20.1
1880.0	18900	3	8	3	QPSK	20.9	20.1
1880.0	18900	3	8	7	QPSK	21.0	20.1
1880.0	18900	3	15	0	QPSK	21.0	20.1
1880.0	18900	3	1	0	16QAM	20.9	21.0
1880.0	18900	3	1	7	16QAM	20.9	21.0
1880.0	18900	3	1	14	16QAM	20.9	21.0
1880.0	18900	3	8	0	16QAM	20.2	19.0
1880.0	18900	3	8	3	16QAM	20.1	19.0
1880.0	18900	3	8	7	16QAM	20.1	19.0
1880.0	18900	3	15	0	16QAM	20.1	19.1
1908.5	19185	3	1	0	QPSK	21.9	22.0
1908.5	19185	3	1	7	QPSK	21.9	21.9

(Table continues)

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(Table continues)

1908.5	19185	3	1	14	QPSK	21.9	21.9
1908.5	19185	3	8	0	QPSK	20.9	20.0
1908.5	19185	3	8	3	QPSK	20.9	19.9
1908.5	19185	3	8	7	QPSK	20.9	20.0
1908.5	19185	3	15	0	QPSK	20.9	20.0
1908.5	19185	3	1	0	16QAM	20.8	20.9
1908.5	19185	3	1	7	16QAM	20.8	20.8
1908.5	19185	3	1	14	16QAM	20.8	20.8
1908.5	19185	3	8	0	16QAM	20.0	19.0
1908.5	19185	3	8	3	16QAM	20.0	18.9
1908.5	19185	3	8	7	16QAM	20.0	19.0
1908.5	19185	3	15	0	16QAM	20.0	19.0
1852.5	18625	5	1	0	QPSK	21.9	21.9
1852.5	18625	5	1	12	QPSK	21.9	21.9
1852.5	18625	5	1	24	QPSK	21.9	21.9
1852.5	18625	5	12	0	QPSK	20.9	20.0
1852.5	18625	5	12	6	QPSK	20.9	20.0
1852.5	18625	5	12	13	QPSK	20.9	19.9
1852.5	18625	5	25	0	QPSK	20.9	20.0
1852.5	18625	5	1	0	16QAM	20.7	20.5
1852.5	18625	5	1	12	16QAM	20.7	20.5
1852.5	18625	5	1	24	16QAM	20.7	20.5
1852.5	18625	5	12	0	16QAM	20.1	19.1
1852.5	18625	5	12	6	16QAM	20.1	19.0
1852.5	18625	5	12	13	16QAM	20.1	19.0
1852.5	18625	5	25	0	16QAM	20.0	19.0
1880.0	18900	5	1	0	QPSK	22.0	22.0
1880.0	18900	5	1	12	QPSK	22.0	22.0
1880.0	18900	5	1	24	QPSK	22.0	22.0
1880.0	18900	5	12	0	QPSK	20.9	20.1
1880.0	18900	5	12	6	QPSK	21.0	20.0
1880.0	18900	5	12	13	QPSK	21.0	20.1
1880.0	18900	5	25	0	QPSK	20.9	20.0
1880.0	18900	5	1	0	16QAM	20.8	20.6
1880.0	18900	5	1	12	16QAM	20.8	20.6
1880.0	18900	5	1	24	16QAM	20.8	20.6
1880.0	18900	5	12	0	16QAM	20.2	19.2
1880.0	18900	5	12	6	16QAM	20.2	19.2

(Table continues)

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(Table continues)

1880.0	18900	5	12	13	16QAM	20.2	19.2
1880.0	18900	5	25	0	16QAM	20.2	19.1
1907.5	19175	5	1	0	QPSK	21.8	21.8
1907.5	19175	5	1	12	QPSK	21.9	21.9
1907.5	19175	5	1	24	QPSK	21.9	21.8
1907.5	19175	5	12	0	QPSK	20.8	19.9
1907.5	19175	5	12	6	QPSK	20.9	19.9
1907.5	19175	5	12	13	QPSK	20.9	20.0
1907.5	19175	5	25	0	QPSK	20.8	19.9
1907.5	19175	5	1	0	16QAM	20.7	20.4
1907.5	19175	5	1	12	16QAM	20.7	20.5
1907.5	19175	5	1	24	16QAM	20.7	20.5
1907.5	19175	5	12	0	16QAM	20.0	19.0
1907.5	19175	5	12	6	16QAM	20.1	19.1
1907.5	19175	5	12	13	16QAM	20.1	19.1
1907.5	19175	5	25	0	16QAM	20.0	19.0
1855.0	18650	10	1	0	QPSK	22.0	22.0
1855.0	18650	10	1	24	QPSK	22.0	22.0
1855.0	18650	10	1	49	QPSK	22.0	22.0
1855.0	18650	10	25	0	QPSK	20.9	20.0
1855.0	18650	10	25	12	QPSK	21.0	20.0
1855.0	18650	10	25	25	QPSK	21.0	20.0
1855.0	18650	10	50	0	QPSK	21.0	20.0
1855.0	18650	10	1	0	16QAM	21.1	21.1
1855.0	18650	10	1	24	16QAM	21.2	21.2
1855.0	18650	10	1	49	16QAM	21.2	21.2
1855.0	18650	10	25	0	16QAM	20.0	19.0
1855.0	18650	10	25	12	16QAM	20.1	19.1
1855.0	18650	10	25	25	16QAM	20.0	19.1
1855.0	18650	10	50	0	16QAM	20.0	19.0
1880.0	18900	10	1	0	QPSK	22.0	22.1
1880.0	18900	10	1	24	QPSK	22.1	22.1
1880.0	18900	10	1	49	QPSK	22.1	22.1
1880.0	18900	10	25	0	QPSK	21.0	20.0
1880.0	18900	10	25	12	QPSK	21.0	20.0
1880.0	18900	10	25	25	QPSK	21.0	20.1
1880.0	18900	10	50	0	QPSK	20.9	20.1

(Table continues)

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(Table continues)

1880.0	18900	10	1	0	16QAM	21.2	21.3
1880.0	18900	10	1	24	16QAM	21.2	21.2
1880.0	18900	10	1	49	16QAM	21.3	21.3
1880.0	18900	10	25	0	16QAM	20.1	19.2
1880.0	18900	10	25	12	16QAM	20.1	19.2
1880.0	18900	10	25	25	16QAM	20.1	19.2
1880.0	18900	10	50	0	16QAM	20.0	19.1
1905.0	19150	10	1	0	QPSK	22.0	22.0
1905.0	19150	10	1	24	QPSK	21.9	21.9
1905.0	19150	10	1	49	QPSK	21.9	21.9
1905.0	19150	10	25	0	QPSK	20.9	19.9
1905.0	19150	10	25	12	QPSK	20.8	19.9
1905.0	19150	10	25	25	QPSK	20.8	19.9
1905.0	19150	10	50	0	QPSK	20.9	19.9
1905.0	19150	10	1	0	16QAM	21.2	21.2
1905.0	19150	10	1	24	16QAM	21.0	21.0
1905.0	19150	10	1	49	16QAM	21.0	21.1
1905.0	19150	10	25	0	16QAM	19.9	19.0
1905.0	19150	10	25	12	16QAM	19.9	19.0
1905.0	19150	10	25	25	16QAM	19.9	19.0
1905.0	19150	10	50	0	16QAM	19.9	19.0
1857.5	18675	15	1	0	QPSK	22.0	22.0
1857.5	18675	15	1	36	QPSK	22.1	22.0
1857.5	18675	15	1	74	QPSK	22.0	22.0
1857.5	18675	15	37	0	QPSK	20.9	19.9
1857.5	18675	15	37	18	QPSK	20.9	20.0
1857.5	18675	15	37	38	QPSK	21.0	19.9
1857.5	18675	15	75	0	QPSK	21.0	20.0
1857.5	18675	15	1	0	16QAM	21.1	21.0
1857.5	18675	15	1	36	16QAM	21.1	21.1
1857.5	18675	15	1	74	16QAM	21.1	21.0
1857.5	18675	15	37	0	16QAM	20.0	18.9
1857.5	18675	15	37	18	16QAM	20.0	18.9
1857.5	18675	15	37	38	16QAM	20.0	19.0
1857.5	18675	15	75	0	16QAM	20.1	19.0
1880.0	18900	15	1	0	QPSK	22.2	22.1
1880.0	18900	15	1	36	QPSK	22.1	22.0

(Table continues)

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(Table continues)

1880.0	18900	15	1	74	QPSK	22.1	22.0
1880.0	18900	15	37	0	QPSK	20.9	20.0
1880.0	18900	15	37	18	QPSK	21.0	20.0
1880.0	18900	15	37	38	QPSK	21.0	20.1
1880.0	18900	15	75	0	QPSK	21.0	20.1
1880.0	18900	15	1	0	16QAM	21.3	21.0
1880.0	18900	15	1	36	16QAM	21.2	20.9
1880.0	18900	15	1	74	16QAM	21.2	20.8
1880.0	18900	15	37	0	16QAM	20.1	19.0
1880.0	18900	15	37	18	16QAM	20.1	19.0
1880.0	18900	15	37	38	16QAM	20.1	19.1
1880.0	18900	15	75	0	16QAM	20.1	19.0
1902.5	19125	15	1	0	QPSK	22.1	22.0
1902.5	19125	15	1	36	QPSK	21.9	21.9
1902.5	19125	15	1	74	QPSK	21.9	21.9
1902.5	19125	15	37	0	QPSK	20.9	20.0
1902.5	19125	15	37	18	QPSK	20.9	19.9
1902.5	19125	15	37	38	QPSK	20.8	19.9
1902.5	19125	15	75	0	QPSK	20.9	19.9
1902.5	19125	15	1	0	16QAM	21.2	20.9
1902.5	19125	15	1	36	16QAM	21.1	20.7
1902.5	19125	15	1	74	16QAM	21.1	20.7
1902.5	19125	15	37	0	16QAM	20.0	19.0
1902.5	19125	15	37	18	16QAM	19.8	18.9
1902.5	19125	15	37	38	16QAM	19.8	18.9
1902.5	19125	15	75	0	16QAM	19.9	18.9
1860.0	18700	20	1	0	QPSK	22.0	22.0
1860.0	18700	20	1	49	QPSK	22.0	22.0
1860.0	18700	20	1	99	QPSK	21.9	21.9
1860.0	18700	20	50	0	QPSK	21.0	20.1
1860.0	18700	20	50	24	QPSK	21.0	20.0
1860.0	18700	20	50	50	QPSK	21.0	20.0
1860.0	18700	20	100	0	QPSK	21.0	20.0
1860.0	18700	20	1	0	16QAM	20.8	21.2
1860.0	18700	20	1	49	16QAM	20.8	21.2
1860.0	18700	20	1	99	16QAM	20.7	21.1
1860.0	18700	20	50	0	16QAM	20.1	19.0
1860.0	18700	20	50	24	16QAM	20.0	19.0

(Table continues)

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(Table continues)

1860.0	18700	20	50	50	16QAM	20.0	19.0
1860.0	18700	20	100	0	16QAM	20.0	19.0
1880.0	18900	20	1	0	QPSK	22.1	22.1
1880.0	18900	20	1	49	QPSK	22.0	22.1
1880.0	18900	20	1	99	QPSK	22.0	22.0
1880.0	18900	20	50	0	QPSK	21.0	20.0
1880.0	18900	20	50	24	QPSK	21.0	20.0
1880.0	18900	20	50	50	QPSK	21.0	20.1
1880.0	18900	20	100	0	QPSK	21.0	20.1
1880.0	18900	20	1	0	16QAM	21.0	21.3
1880.0	18900	20	1	49	16QAM	20.9	21.2
1880.0	18900	20	1	99	16QAM	20.9	21.2
1880.0	18900	20	50	0	16QAM	20.0	19.0
1880.0	18900	20	50	24	16QAM	20.1	19.0
1880.0	18900	20	50	50	16QAM	20.1	19.1
1880.0	18900	20	100	0	16QAM	20.1	19.1
1900.0	19100	20	1	0	QPSK	22.1	22.2
1900.0	19100	20	1	49	QPSK	22.0	22.0
1900.0	19100	20	1	99	QPSK	21.9	21.9
1900.0	19100	20	50	0	QPSK	21.0	20.0
1900.0	19100	20	50	24	QPSK	21.0	20.0
1900.0	19100	20	50	50	QPSK	20.8	19.8
1900.0	19100	20	100	0	QPSK	20.9	19.9
1900.0	19100	20	1	0	16QAM	20.9	21.3
1900.0	19100	20	1	49	16QAM	20.8	21.2
1900.0	19100	20	1	99	16QAM	20.7	21.0
1900.0	19100	20	50	0	16QAM	20.0	19.0
1900.0	19100	20	50	24	16QAM	20.0	19.0
1900.0	19100	20	50	50	16QAM	19.9	18.9
1900.0	19100	20	100	0	16QAM	19.9	18.9

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Type: RM-975; Serial number: 004402/47/804007/8, HW: 2020, SW: 01061.00014.14112 used for LTE1900 (Band2) for Wireless Router SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE1900 (Band 2) in 1.4MHz Channel BW in this specification (Table 6.2.4-1).

Antenna 1							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1850.7	18607	1.4	1	0	QPSK	21.0	-
1850.7	18607	1.4	1	2	QPSK	20.9	-
1850.7	18607	1.4	1	5	QPSK	20.9	-
1850.7	18607	1.4	3	0	QPSK	20.9	-
1850.7	18607	1.4	3	2	QPSK	20.9	-
1850.7	18607	1.4	3	3	QPSK	20.9	-
1850.7	18607	1.4	6	0	QPSK	20.0	-
1850.7	18607	1.4	1	0	16QAM	19.6	-
1850.7	18607	1.4	1	2	16QAM	19.6	-
1850.7	18607	1.4	1	5	16QAM	19.6	-
1850.7	18607	1.4	3	0	16QAM	20.0	-
1850.7	18607	1.4	3	2	16QAM	20.0	-
1850.7	18607	1.4	3	3	16QAM	20.0	-
1850.7	18607	1.4	6	0	16QAM	18.8	-
1880.0	18900	1.4	1	0	QPSK	21.0	-
1880.0	18900	1.4	1	2	QPSK	21.0	-
1880.0	18900	1.4	1	5	QPSK	21.0	-
1880.0	18900	1.4	3	0	QPSK	21.0	-
1880.0	18900	1.4	3	2	QPSK	21.0	-
1880.0	18900	1.4	3	3	QPSK	21.0	-
1880.0	18900	1.4	6	0	QPSK	20.0	-
1880.0	18900	1.4	1	0	16QAM	19.6	-
1880.0	18900	1.4	1	2	16QAM	19.6	-
1880.0	18900	1.4	1	5	16QAM	19.6	-
1880.0	18900	1.4	3	0	16QAM	20.0	-
1880.0	18900	1.4	3	2	16QAM	20.0	-
1880.0	18900	1.4	3	3	16QAM	20.0	-
1880.0	18900	1.4	6	0	16QAM	18.8	-
1909.3	19193	1.4	1	0	QPSK	21.0	-

(Table continues)

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(Table continues)

1909.3	19193	1.4	1	2	QPSK	20.9	-
1909.3	19193	1.4	1	5	QPSK	20.9	-
1909.3	19193	1.4	3	0	QPSK	21.0	-
1909.3	19193	1.4	3	2	QPSK	21.0	-
1909.3	19193	1.4	3	3	QPSK	21.0	-
1909.3	19193	1.4	6	0	QPSK	20.0	-
1909.3	19193	1.4	1	0	16QAM	19.6	-
1909.3	19193	1.4	1	2	16QAM	19.6	-
1909.3	19193	1.4	1	5	16QAM	19.6	-
1909.3	19193	1.4	3	0	16QAM	19.9	-
1909.3	19193	1.4	3	2	16QAM	19.9	-
1909.3	19193	1.4	3	3	16QAM	20.0	-
1909.3	19193	1.4	6	0	16QAM	18.8	-
1851.5	18615	3	1	0	QPSK	21.0	21.0
1851.5	18615	3	1	7	QPSK	20.9	21.0
1851.5	18615	3	1	14	QPSK	21.0	21.0
1851.5	18615	3	8	0	QPSK	19.9	19.0
1851.5	18615	3	8	3	QPSK	19.9	18.9
1851.5	18615	3	8	7	QPSK	19.9	19.0
1851.5	18615	3	15	0	QPSK	19.9	19.0
1851.5	18615	3	1	0	16QAM	20.2	19.8
1851.5	18615	3	1	7	16QAM	20.1	19.8
1851.5	18615	3	1	14	16QAM	20.1	19.8
1851.5	18615	3	8	0	16QAM	19.1	18.0
1851.5	18615	3	8	3	16QAM	19.0	18.0
1851.5	18615	3	8	7	16QAM	19.0	18.0
1851.5	18615	3	15	0	16QAM	19.0	17.9
1880.0	18900	3	1	0	QPSK	21.0	21.0
1880.0	18900	3	1	7	QPSK	21.0	21.0
1880.0	18900	3	1	14	QPSK	21.0	21.0
1880.0	18900	3	8	0	QPSK	20.0	19.0
1880.0	18900	3	8	3	QPSK	20.0	19.0
1880.0	18900	3	8	7	QPSK	20.0	19.0
1880.0	18900	3	15	0	QPSK	19.9	19.0
1880.0	18900	3	1	0	16QAM	20.2	19.8
1880.0	18900	3	1	7	16QAM	20.1	19.8
1880.0	18900	3	1	14	16QAM	20.2	19.8
1880.0	18900	3	8	0	16QAM	19.0	18.0

(Table continues)

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1880.0	18900	3	8	3	16QAM	19.0	18.0
1880.0	18900	3	8	7	16QAM	19.0	18.0
1880.0	18900	3	15	0	16QAM	19.1	17.9
1908.5	19185	3	1	0	QPSK	21.0	21.0
1908.5	19185	3	1	7	QPSK	21.0	21.0
1908.5	19185	3	1	14	QPSK	21.0	20.9
1908.5	19185	3	8	0	QPSK	20.0	19.0
1908.5	19185	3	8	3	QPSK	20.0	19.0
1908.5	19185	3	8	7	QPSK	19.9	19.0
1908.5	19185	3	15	0	QPSK	20.0	19.0
1908.5	19185	3	1	0	16QAM	20.2	19.9
1908.5	19185	3	1	7	16QAM	20.1	19.8
1908.5	19185	3	1	14	16QAM	20.2	19.8
1908.5	19185	3	8	0	16QAM	19.1	18.1
1908.5	19185	3	8	3	16QAM	19.0	18.1
1908.5	19185	3	8	7	16QAM	19.0	18.0
1908.5	19185	3	15	0	16QAM	19.0	18.0
1852.5	18625	5	1	0	QPSK	21.0	20.9
1852.5	18625	5	1	12	QPSK	20.9	20.9
1852.5	18625	5	1	24	QPSK	20.9	20.9
1852.5	18625	5	12	0	QPSK	19.9	19.0
1852.5	18625	5	12	6	QPSK	19.9	18.9
1852.5	18625	5	12	13	QPSK	19.9	18.9
1852.5	18625	5	25	0	QPSK	19.9	18.9
1852.5	18625	5	1	0	16QAM	20.1	19.7
1852.5	18625	5	1	12	16QAM	20.0	19.7
1852.5	18625	5	1	24	16QAM	20.0	19.7
1852.5	18625	5	12	0	16QAM	19.1	18.0
1852.5	18625	5	12	6	16QAM	19.0	18.0
1852.5	18625	5	12	13	16QAM	19.0	18.0
1852.5	18625	5	25	0	16QAM	19.0	18.0
1880.0	18900	5	1	0	QPSK	21.0	20.9
1880.0	18900	5	1	12	QPSK	21.0	20.9
1880.0	18900	5	1	24	QPSK	21.0	21.0
1880.0	18900	5	12	0	QPSK	19.9	19.0
1880.0	18900	5	12	6	QPSK	19.9	19.0
1880.0	18900	5	12	13	QPSK	19.9	19.0

(Table continues)

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1880.0	18900	5	25	0	QPSK	19.9	19.0
1880.0	18900	5	1	0	16QAM	20.1	19.7
1880.0	18900	5	1	12	16QAM	20.1	19.7
1880.0	18900	5	1	24	16QAM	20.1	19.7
1880.0	18900	5	12	0	16QAM	19.1	18.1
1880.0	18900	5	12	6	16QAM	19.0	18.1
1880.0	18900	5	12	13	16QAM	19.1	18.1
1880.0	18900	5	25	0	16QAM	19.0	18.1
1907.5	19175	5	1	0	QPSK	20.9	20.9
1907.5	19175	5	1	12	QPSK	21.0	20.9
1907.5	19175	5	1	24	QPSK	20.9	20.9
1907.5	19175	5	12	0	QPSK	19.9	19.0
1907.5	19175	5	12	6	QPSK	20.0	19.0
1907.5	19175	5	12	13	QPSK	20.0	19.0
1907.5	19175	5	25	0	QPSK	19.8	18.9
1907.5	19175	5	1	0	16QAM	20.0	19.7
1907.5	19175	5	1	12	16QAM	20.1	19.8
1907.5	19175	5	1	24	16QAM	20.1	19.7
1907.5	19175	5	12	0	16QAM	19.0	18.1
1907.5	19175	5	12	6	16QAM	19.1	18.1
1907.5	19175	5	12	13	16QAM	19.1	18.1
1907.5	19175	5	25	0	16QAM	18.9	18.1
1855.0	18650	10	1	0	QPSK	20.9	21.0
1855.0	18650	10	1	24	QPSK	20.9	21.0
1855.0	18650	10	1	49	QPSK	20.9	21.0
1855.0	18650	10	25	0	QPSK	20.0	19.0
1855.0	18650	10	25	12	QPSK	20.0	19.0
1855.0	18650	10	25	25	QPSK	20.0	19.0
1855.0	18650	10	50	0	QPSK	20.0	19.0
1855.0	18650	10	1	0	16QAM	19.8	20.2
1855.0	18650	10	1	24	16QAM	19.8	20.2
1855.0	18650	10	1	49	16QAM	19.8	20.2
1855.0	18650	10	25	0	16QAM	19.0	18.0
1855.0	18650	10	25	12	16QAM	19.0	18.0
1855.0	18650	10	25	25	16QAM	19.0	18.0
1855.0	18650	10	50	0	16QAM	19.1	18.0
1880.0	18900	10	1	0	QPSK	21.0	21.1

(Table continues)

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1880.0	18900	10	1	24	QPSK	20.9	21.0
1880.0	18900	10	1	49	QPSK	20.9	20.9
1880.0	18900	10	25	0	QPSK	20.0	19.0
1880.0	18900	10	25	12	QPSK	20.0	19.0
1880.0	18900	10	25	25	QPSK	20.0	19.0
1880.0	18900	10	50	0	QPSK	19.9	19.0
1880.0	18900	10	1	0	16QAM	20.0	20.3
1880.0	18900	10	1	24	16QAM	19.8	20.2
1880.0	18900	10	1	49	16QAM	19.9	20.1
1880.0	18900	10	25	0	16QAM	19.0	18.0
1880.0	18900	10	25	12	16QAM	19.0	18.0
1880.0	18900	10	25	25	16QAM	19.0	18.0
1880.0	18900	10	50	0	16QAM	19.0	18.0
1905.0	19150	10	1	0	QPSK	20.9	21.0
1905.0	19150	10	1	24	QPSK	20.9	20.9
1905.0	19150	10	1	49	QPSK	20.9	20.9
1905.0	19150	10	25	0	QPSK	19.9	19.0
1905.0	19150	10	25	12	QPSK	20.0	19.0
1905.0	19150	10	25	25	QPSK	19.9	18.9
1905.0	19150	10	50	0	QPSK	19.9	18.9
1905.0	19150	10	1	0	16QAM	20.2	20.1
1905.0	19150	10	1	24	16QAM	20.1	20.1
1905.0	19150	10	1	49	16QAM	20.1	20.1
1905.0	19150	10	25	0	16QAM	19.0	18.1
1905.0	19150	10	25	12	16QAM	18.9	18.0
1905.0	19150	10	25	25	16QAM	18.9	18.0
1905.0	19150	10	50	0	16QAM	18.9	17.9
1857.5	18675	15	1	0	QPSK	21.0	21.0
1857.5	18675	15	1	36	QPSK	21.0	21.0
1857.5	18675	15	1	74	QPSK	21.0	20.9
1857.5	18675	15	37	0	QPSK	19.9	18.9
1857.5	18675	15	37	18	QPSK	19.9	19.0
1857.5	18675	15	37	38	QPSK	20.0	18.9
1857.5	18675	15	75	0	QPSK	20.0	19.0
1857.5	18675	15	1	0	16QAM	20.2	20.2
1857.5	18675	15	1	36	16QAM	20.2	20.2
1857.5	18675	15	1	74	16QAM	20.1	20.1
1857.5	18675	15	37	0	16QAM	19.0	17.9

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1857.5	18675	15	37	18	16QAM	19.1	17.9
1857.5	18675	15	37	38	16QAM	19.0	17.9
1857.5	18675	15	75	0	16QAM	19.1	18.0
1880.0	18900	15	1	0	QPSK	21.1	21.0
1880.0	18900	15	1	36	QPSK	21.1	21.0
1880.0	18900	15	1	74	QPSK	21.0	21.0
1880.0	18900	15	37	0	QPSK	20.0	19.0
1880.0	18900	15	37	18	QPSK	19.9	18.9
1880.0	18900	15	37	38	QPSK	19.9	18.9
1880.0	18900	15	75	0	QPSK	20.0	19.0
1880.0	18900	15	1	0	16QAM	20.2	20.2
1880.0	18900	15	1	36	16QAM	20.2	20.1
1880.0	18900	15	1	74	16QAM	20.1	20.1
1880.0	18900	15	37	0	16QAM	19.1	18.0
1880.0	18900	15	37	18	16QAM	19.0	17.9
1880.0	18900	15	37	38	16QAM	18.9	17.9
1880.0	18900	15	75	0	16QAM	19.1	18.0
1902.5	19125	15	1	0	QPSK	21.1	21.0
1902.5	19125	15	1	36	QPSK	21.0	21.0
1902.5	19125	15	1	74	QPSK	21.0	20.9
1902.5	19125	15	37	0	QPSK	20.0	19.1
1902.5	19125	15	37	18	QPSK	19.9	18.9
1902.5	19125	15	37	38	QPSK	19.9	18.9
1902.5	19125	15	75	0	QPSK	20.0	18.9
1902.5	19125	15	1	0	16QAM	20.2	20.2
1902.5	19125	15	1	36	16QAM	20.1	20.1
1902.5	19125	15	1	74	16QAM	20.0	20.1
1902.5	19125	15	37	0	16QAM	19.1	18.1
1902.5	19125	15	37	18	16QAM	19.0	18.0
1902.5	19125	15	37	38	16QAM	18.9	17.9
1902.5	19125	15	75	0	16QAM	19.0	18.0
1860.0	18700	20	1	0	QPSK	21.0	20.9
1860.0	18700	20	1	49	QPSK	21.0	20.9
1860.0	18700	20	1	99	QPSK	21.0	20.9
1860.0	18700	20	50	0	QPSK	20.0	19.0
1860.0	18700	20	50	24	QPSK	20.0	19.0
1860.0	18700	20	50	50	QPSK	19.9	19.0

(Table continues)

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1860.0	18700	20	100	0	QPSK	20.0	19.0
1860.0	18700	20	1	0	16QAM	19.7	19.8
1860.0	18700	20	1	49	16QAM	19.7	19.8
1860.0	18700	20	1	99	16QAM	19.7	19.8
1860.0	18700	20	50	0	16QAM	19.1	18.0
1860.0	18700	20	50	24	16QAM	19.0	17.9
1860.0	18700	20	50	50	16QAM	19.0	17.9
1860.0	18700	20	100	0	16QAM	19.1	18.0
1880.0	18900	20	1	0	QPSK	21.1	21.1
1880.0	18900	20	1	49	QPSK	21.0	20.9
1880.0	18900	20	1	99	QPSK	20.9	20.8
1880.0	18900	20	50	0	QPSK	20.0	19.1
1880.0	18900	20	50	24	QPSK	20.0	19.0
1880.0	18900	20	50	50	QPSK	20.0	19.1
1880.0	18900	20	100	0	QPSK	20.0	19.0
1880.0	18900	20	1	0	16QAM	19.8	20.1
1880.0	18900	20	1	49	16QAM	19.7	19.9
1880.0	18900	20	1	99	16QAM	19.6	19.9
1880.0	18900	20	50	0	16QAM	19.1	18.0
1880.0	18900	20	50	24	16QAM	19.0	18.0
1880.0	18900	20	50	50	16QAM	19.1	18.0
1880.0	18900	20	100	0	16QAM	19.1	18.0
1900.0	19100	20	1	0	QPSK	21.1	21.1
1900.0	19100	20	1	49	QPSK	21.1	21.0
1900.0	19100	20	1	99	QPSK	21.0	20.9
1900.0	19100	20	50	0	QPSK	20.0	19.1
1900.0	19100	20	50	24	QPSK	19.9	18.9
1900.0	19100	20	50	50	QPSK	19.9	19.0
1900.0	19100	20	100	0	QPSK	19.9	18.9
1900.0	19100	20	1	0	16QAM	19.8	20.3
1900.0	19100	20	1	49	16QAM	19.7	20.2
1900.0	19100	20	1	99	16QAM	19.7	20.1
1900.0	19100	20	50	0	16QAM	19.0	18.0
1900.0	19100	20	50	24	16QAM	18.9	18.0
1900.0	19100	20	50	50	16QAM	18.9	17.9
1900.0	19100	20	100	0	16QAM	19.0	17.9

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Antenna 2							
Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1850.7	18607	1.4	1	0	QPSK	20.5	-
1850.7	18607	1.4	1	2	QPSK	20.4	-
1850.7	18607	1.4	1	5	QPSK	20.4	-
1850.7	18607	1.4	3	0	QPSK	20.4	-
1850.7	18607	1.4	3	2	QPSK	20.4	-
1850.7	18607	1.4	3	3	QPSK	20.4	-
1850.7	18607	1.4	6	0	QPSK	19.5	-
1850.7	18607	1.4	1	0	16QAM	19.1	-
1850.7	18607	1.4	1	2	16QAM	19.1	-
1850.7	18607	1.4	1	5	16QAM	19.1	-
1850.7	18607	1.4	3	0	16QAM	19.5	-
1850.7	18607	1.4	3	2	16QAM	19.5	-
1850.7	18607	1.4	3	3	16QAM	19.5	-
1850.7	18607	1.4	6	0	16QAM	18.3	-
1880.0	18900	1.4	1	0	QPSK	20.5	-
1880.0	18900	1.4	1	2	QPSK	20.5	-
1880.0	18900	1.4	1	5	QPSK	20.5	-
1880.0	18900	1.4	3	0	QPSK	20.5	-
1880.0	18900	1.4	3	2	QPSK	20.5	-
1880.0	18900	1.4	3	3	QPSK	20.5	-
1880.0	18900	1.4	6	0	QPSK	19.5	-
1880.0	18900	1.4	1	0	16QAM	19.1	-
1880.0	18900	1.4	1	2	16QAM	19.1	-
1880.0	18900	1.4	1	5	16QAM	19.1	-
1880.0	18900	1.4	3	0	16QAM	19.5	-
1880.0	18900	1.4	3	2	16QAM	19.5	-
1880.0	18900	1.4	3	3	16QAM	19.5	-
1880.0	18900	1.4	6	0	16QAM	18.3	-
1909.3	19193	1.4	1	0	QPSK	20.5	-
1909.3	19193	1.4	1	2	QPSK	20.4	-
1909.3	19193	1.4	1	5	QPSK	20.4	-
1909.3	19193	1.4	3	0	QPSK	20.5	-
1909.3	19193	1.4	3	2	QPSK	20.5	-
1909.3	19193	1.4	3	3	QPSK	20.5	-
1909.3	19193	1.4	6	0	QPSK	19.5	-

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1909.3	19193	1.4	1	0	16QAM	19.1	-
1909.3	19193	1.4	1	2	16QAM	19.1	-
1909.3	19193	1.4	1	5	16QAM	19.1	-
1909.3	19193	1.4	3	0	16QAM	19.4	-
1909.3	19193	1.4	3	2	16QAM	19.4	-
1909.3	19193	1.4	3	3	16QAM	19.5	-
1909.3	19193	1.4	6	0	16QAM	18.3	-
1851.5	18615	3	1	0	QPSK	20.5	20.5
1851.5	18615	3	1	7	QPSK	20.4	20.5
1851.5	18615	3	1	14	QPSK	20.5	20.5
1851.5	18615	3	8	0	QPSK	19.4	18.5
1851.5	18615	3	8	3	QPSK	19.4	18.4
1851.5	18615	3	8	7	QPSK	19.4	18.5
1851.5	18615	3	15	0	QPSK	19.4	18.5
1851.5	18615	3	1	0	16QAM	19.7	19.3
1851.5	18615	3	1	7	16QAM	19.6	19.3
1851.5	18615	3	1	14	16QAM	19.6	19.3
1851.5	18615	3	8	0	16QAM	18.6	17.5
1851.5	18615	3	8	3	16QAM	18.5	17.5
1851.5	18615	3	8	7	16QAM	18.5	17.5
1851.5	18615	3	15	0	16QAM	18.5	17.4
1880.0	18900	3	1	0	QPSK	20.5	20.5
1880.0	18900	3	1	7	QPSK	20.5	20.5
1880.0	18900	3	1	14	QPSK	20.5	20.5
1880.0	18900	3	8	0	QPSK	19.5	18.5
1880.0	18900	3	8	3	QPSK	19.5	18.5
1880.0	18900	3	8	7	QPSK	19.5	18.5
1880.0	18900	3	15	0	QPSK	19.4	18.5
1880.0	18900	3	1	0	16QAM	19.7	19.3
1880.0	18900	3	1	7	16QAM	19.6	19.3
1880.0	18900	3	1	14	16QAM	19.7	19.3
1880.0	18900	3	8	0	16QAM	18.5	17.5
1880.0	18900	3	8	3	16QAM	18.5	17.5
1880.0	18900	3	8	7	16QAM	18.5	17.5
1880.0	18900	3	15	0	16QAM	18.6	17.4
1908.5	19185	3	1	0	QPSK	20.5	20.5
1908.5	19185	3	1	7	QPSK	20.5	20.5

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1908.5	19185	3	1	14	QPSK	20.5	20.4
1908.5	19185	3	8	0	QPSK	19.5	18.5
1908.5	19185	3	8	3	QPSK	19.5	18.5
1908.5	19185	3	8	7	QPSK	19.4	18.5
1908.5	19185	3	15	0	QPSK	19.5	18.5
1908.5	19185	3	1	0	16QAM	19.7	19.4
1908.5	19185	3	1	7	16QAM	19.6	19.3
1908.5	19185	3	1	14	16QAM	19.7	19.3
1908.5	19185	3	8	0	16QAM	18.6	17.6
1908.5	19185	3	8	3	16QAM	18.5	17.6
1908.5	19185	3	8	7	16QAM	18.5	17.5
1908.5	19185	3	15	0	16QAM	18.5	17.5
1852.5	18625	5	1	0	QPSK	20.5	20.4
1852.5	18625	5	1	12	QPSK	20.4	20.4
1852.5	18625	5	1	24	QPSK	20.4	20.4
1852.5	18625	5	12	0	QPSK	19.4	18.5
1852.5	18625	5	12	6	QPSK	19.4	18.4
1852.5	18625	5	12	13	QPSK	19.4	18.4
1852.5	18625	5	25	0	QPSK	19.4	18.4
1852.5	18625	5	1	0	16QAM	19.6	19.2
1852.5	18625	5	1	12	16QAM	19.5	19.2
1852.5	18625	5	1	24	16QAM	19.5	19.2
1852.5	18625	5	12	0	16QAM	18.6	17.5
1852.5	18625	5	12	6	16QAM	18.5	17.5
1852.5	18625	5	12	13	16QAM	18.5	17.5
1852.5	18625	5	25	0	16QAM	18.5	17.5
1880.0	18900	5	1	0	QPSK	20.5	20.4
1880.0	18900	5	1	12	QPSK	20.5	20.4
1880.0	18900	5	1	24	QPSK	20.5	20.5
1880.0	18900	5	12	0	QPSK	19.4	18.5
1880.0	18900	5	12	6	QPSK	19.4	18.5
1880.0	18900	5	12	13	QPSK	19.4	18.5
1880.0	18900	5	25	0	QPSK	19.4	18.5
1880.0	18900	5	1	0	16QAM	19.6	19.2
1880.0	18900	5	1	12	16QAM	19.6	19.2
1880.0	18900	5	1	24	16QAM	19.6	19.2
1880.0	18900	5	12	0	16QAM	18.6	17.6
1880.0	18900	5	12	6	16QAM	18.5	17.6

(Table continues)

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(Table continues)

1880.0	18900	5	12	13	16QAM	18.6	17.6
1880.0	18900	5	25	0	16QAM	18.5	17.6
1907.5	19175	5	1	0	QPSK	20.4	20.4
1907.5	19175	5	1	12	QPSK	20.5	20.4
1907.5	19175	5	1	24	QPSK	20.4	20.4
1907.5	19175	5	12	0	QPSK	19.4	18.5
1907.5	19175	5	12	6	QPSK	19.5	18.5
1907.5	19175	5	12	13	QPSK	19.5	18.5
1907.5	19175	5	25	0	QPSK	19.3	18.4
1907.5	19175	5	1	0	16QAM	19.5	19.2
1907.5	19175	5	1	12	16QAM	19.6	19.3
1907.5	19175	5	1	24	16QAM	19.6	19.2
1907.5	19175	5	12	0	16QAM	18.5	17.6
1907.5	19175	5	12	6	16QAM	18.6	17.6
1907.5	19175	5	12	13	16QAM	18.6	17.6
1907.5	19175	5	25	0	16QAM	18.4	17.6
1855.0	18650	10	1	0	QPSK	20.4	20.5
1855.0	18650	10	1	24	QPSK	20.4	20.5
1855.0	18650	10	1	49	QPSK	20.4	20.5
1855.0	18650	10	25	0	QPSK	19.5	18.5
1855.0	18650	10	25	12	QPSK	19.5	18.5
1855.0	18650	10	25	25	QPSK	19.5	18.5
1855.0	18650	10	50	0	QPSK	19.5	18.5
1855.0	18650	10	1	0	16QAM	19.3	19.7
1855.0	18650	10	1	24	16QAM	19.3	19.7
1855.0	18650	10	1	49	16QAM	19.3	19.7
1855.0	18650	10	25	0	16QAM	18.5	17.5
1855.0	18650	10	25	12	16QAM	18.5	17.5
1855.0	18650	10	25	25	16QAM	18.5	17.5
1855.0	18650	10	50	0	16QAM	18.6	17.5
1880.0	18900	10	1	0	QPSK	20.5	20.6
1880.0	18900	10	1	24	QPSK	20.4	20.5
1880.0	18900	10	1	49	QPSK	20.4	20.4
1880.0	18900	10	25	0	QPSK	19.5	18.5
1880.0	18900	10	25	12	QPSK	19.5	18.5
1880.0	18900	10	25	25	QPSK	19.5	18.5
1880.0	18900	10	50	0	QPSK	19.4	18.5

(Table continues)

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(Table continues)

1880.0	18900	10	1	0	16QAM	19.5	19.8
1880.0	18900	10	1	24	16QAM	19.3	19.7
1880.0	18900	10	1	49	16QAM	19.4	19.6
1880.0	18900	10	25	0	16QAM	18.5	17.5
1880.0	18900	10	25	12	16QAM	18.5	17.5
1880.0	18900	10	25	25	16QAM	18.5	17.5
1880.0	18900	10	50	0	16QAM	18.5	17.5
1905.0	19150	10	1	0	QPSK	20.4	20.5
1905.0	19150	10	1	24	QPSK	20.4	20.4
1905.0	19150	10	1	49	QPSK	20.4	20.4
1905.0	19150	10	25	0	QPSK	19.4	18.5
1905.0	19150	10	25	12	QPSK	19.5	18.5
1905.0	19150	10	25	25	QPSK	19.4	18.4
1905.0	19150	10	50	0	QPSK	19.4	18.4
1905.0	19150	10	1	0	16QAM	19.7	19.6
1905.0	19150	10	1	24	16QAM	19.6	19.6
1905.0	19150	10	1	49	16QAM	19.6	19.6
1905.0	19150	10	25	0	16QAM	18.5	17.6
1905.0	19150	10	25	12	16QAM	18.4	17.5
1905.0	19150	10	25	25	16QAM	18.4	17.5
1905.0	19150	10	50	0	16QAM	18.4	17.4
1857.5	18675	15	1	0	QPSK	20.5	20.5
1857.5	18675	15	1	36	QPSK	20.5	20.5
1857.5	18675	15	1	74	QPSK	20.5	20.4
1857.5	18675	15	37	0	QPSK	19.4	18.4
1857.5	18675	15	37	18	QPSK	19.4	18.5
1857.5	18675	15	37	38	QPSK	19.5	18.4
1857.5	18675	15	75	0	QPSK	19.5	18.5
1857.5	18675	15	1	0	16QAM	19.7	19.7
1857.5	18675	15	1	36	16QAM	19.7	19.7
1857.5	18675	15	1	74	16QAM	19.6	19.6
1857.5	18675	15	37	0	16QAM	18.5	17.4
1857.5	18675	15	37	18	16QAM	18.6	17.4
1857.5	18675	15	37	38	16QAM	18.5	17.4
1857.5	18675	15	75	0	16QAM	18.6	17.5
1880.0	18900	15	1	0	QPSK	20.6	20.5
1880.0	18900	15	1	36	QPSK	20.6	20.5

(Table continues)

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1880.0	18900	15	1	74	QPSK	20.5	20.5
1880.0	18900	15	37	0	QPSK	19.5	18.5
1880.0	18900	15	37	18	QPSK	19.4	18.4
1880.0	18900	15	37	38	QPSK	19.4	18.4
1880.0	18900	15	75	0	QPSK	19.5	18.5
1880.0	18900	15	1	0	16QAM	19.7	19.7
1880.0	18900	15	1	36	16QAM	19.7	19.6
1880.0	18900	15	1	74	16QAM	19.6	19.6
1880.0	18900	15	37	0	16QAM	18.6	17.5
1880.0	18900	15	37	18	16QAM	18.5	17.4
1880.0	18900	15	37	38	16QAM	18.4	17.4
1880.0	18900	15	75	0	16QAM	18.6	17.5
1902.5	19125	15	1	0	QPSK	20.6	20.5
1902.5	19125	15	1	36	QPSK	20.5	20.5
1902.5	19125	15	1	74	QPSK	20.5	20.4
1902.5	19125	15	37	0	QPSK	19.5	18.6
1902.5	19125	15	37	18	QPSK	19.4	18.4
1902.5	19125	15	37	38	QPSK	19.4	18.4
1902.5	19125	15	75	0	QPSK	19.5	18.4
1902.5	19125	15	1	0	16QAM	19.7	19.7
1902.5	19125	15	1	36	16QAM	19.6	19.6
1902.5	19125	15	1	74	16QAM	19.5	19.6
1902.5	19125	15	37	0	16QAM	18.6	17.6
1902.5	19125	15	37	18	16QAM	18.5	17.5
1902.5	19125	15	37	38	16QAM	18.4	17.4
1902.5	19125	15	75	0	16QAM	18.5	17.5
1860.0	18700	20	1	0	QPSK	20.5	20.4
1860.0	18700	20	1	49	QPSK	20.5	20.4
1860.0	18700	20	1	99	QPSK	20.5	20.4
1860.0	18700	20	50	0	QPSK	19.5	18.5
1860.0	18700	20	50	24	QPSK	19.5	18.5
1860.0	18700	20	50	50	QPSK	19.4	18.5
1860.0	18700	20	100	0	QPSK	19.5	18.5
1860.0	18700	20	1	0	16QAM	19.2	19.3
1860.0	18700	20	1	49	16QAM	19.2	19.3
1860.0	18700	20	1	99	16QAM	19.2	19.3
1860.0	18700	20	50	0	16QAM	18.6	17.5
1860.0	18700	20	50	24	16QAM	18.5	17.4

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1860.0	18700	20	50	50	16QAM	18.5	17.4
1860.0	18700	20	100	0	16QAM	18.6	17.5
1880.0	18900	20	1	0	QPSK	20.6	20.6
1880.0	18900	20	1	49	QPSK	20.5	20.4
1880.0	18900	20	1	99	QPSK	20.4	20.3
1880.0	18900	20	50	0	QPSK	19.5	18.6
1880.0	18900	20	50	24	QPSK	19.5	18.5
1880.0	18900	20	50	50	QPSK	19.5	18.6
1880.0	18900	20	100	0	QPSK	19.5	18.5
1880.0	18900	20	1	0	16QAM	19.3	19.6
1880.0	18900	20	1	49	16QAM	19.2	19.4
1880.0	18900	20	1	99	16QAM	19.1	19.4
1880.0	18900	20	50	0	16QAM	18.6	17.5
1880.0	18900	20	50	24	16QAM	18.5	17.5
1880.0	18900	20	50	50	16QAM	18.6	17.5
1880.0	18900	20	100	0	16QAM	18.6	17.5
1900.0	19100	20	1	0	QPSK	20.6	20.6
1900.0	19100	20	1	49	QPSK	20.6	20.5
1900.0	19100	20	1	99	QPSK	20.5	20.4
1900.0	19100	20	50	0	QPSK	19.5	18.6
1900.0	19100	20	50	24	QPSK	19.4	18.4
1900.0	19100	20	50	50	QPSK	19.4	18.5
1900.0	19100	20	100	0	QPSK	19.4	18.4
1900.0	19100	20	1	0	16QAM	19.3	19.8
1900.0	19100	20	1	49	16QAM	19.2	19.7
1900.0	19100	20	1	99	16QAM	19.2	19.6
1900.0	19100	20	50	0	16QAM	18.5	17.5
1900.0	19100	20	50	24	16QAM	18.4	17.5
1900.0	19100	20	50	50	16QAM	18.4	17.4
1900.0	19100	20	100	0	16QAM	18.5	17.4

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Type: RM-975; Serial number: 004402/47/804005/2, HW: 2020, SW: 01061.00014.14112 used for LTE2500 (Band7) for Head and Body-worn SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE2500 (Band 7) in this specification (Table 6.2.4-1).

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
2502.5	20775	5	1	0	QPSK	21.7	-
2502.5	20775	5	1	12	QPSK	21.7	-
2502.5	20775	5	1	24	QPSK	21.8	-
2502.5	20775	5	12	0	QPSK	20.7	-
2502.5	20775	5	12	6	QPSK	20.7	-
2502.5	20775	5	12	13	QPSK	20.7	-
2502.5	20775	5	25	0	QPSK	20.8	-
2502.5	20775	5	1	0	16QAM	20.6	-
2502.5	20775	5	1	12	16QAM	20.6	-
2502.5	20775	5	1	24	16QAM	20.6	-
2502.5	20775	5	12	0	16QAM	19.7	-
2502.5	20775	5	12	6	16QAM	19.7	-
2502.5	20775	5	12	13	16QAM	19.7	-
2502.5	20775	5	25	0	16QAM	19.7	-
2535.0	21100	5	1	0	QPSK	22.1	-
2535.0	21100	5	1	12	QPSK	22.1	-
2535.0	21100	5	1	24	QPSK	22.1	-
2535.0	21100	5	12	0	QPSK	21.1	-
2535.0	21100	5	12	6	QPSK	21.0	-
2535.0	21100	5	12	13	QPSK	21.1	-
2535.0	21100	5	25	0	QPSK	21.1	-
2535.0	21100	5	1	0	16QAM	21.0	-
2535.0	21100	5	1	12	16QAM	20.9	-
2535.0	21100	5	1	24	16QAM	21.0	-
2535.0	21100	5	12	0	16QAM	20.0	-
2535.0	21100	5	12	6	16QAM	20.1	-
2535.0	21100	5	12	13	16QAM	20.1	-
2535.0	21100	5	25	0	16QAM	20.1	-
2567.5	21425	5	1	0	QPSK	22.1	-
2567.5	21425	5	1	12	QPSK	22.0	-

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2567.5	21425	5	1	24	QPSK	22.0	-
2567.5	21425	5	12	0	QPSK	21.1	-
2567.5	21425	5	12	6	QPSK	21.1	-
2567.5	21425	5	12	13	QPSK	21.0	-
2567.5	21425	5	25	0	QPSK	21.1	-
2567.5	21425	5	1	0	16QAM	21.0	-
2567.5	21425	5	1	12	16QAM	20.9	-
2567.5	21425	5	1	24	16QAM	20.9	-
2567.5	21425	5	12	0	16QAM	20.0	-
2567.5	21425	5	12	6	16QAM	20.0	-
2567.5	21425	5	12	13	16QAM	20.0	-
2567.5	21425	5	25	0	16QAM	20.1	-
2505.0	20800	10	1	0	QPSK	21.7	-
2505.0	20800	10	1	24	QPSK	21.7	-
2505.0	20800	10	1	49	QPSK	21.8	-
2505.0	20800	10	25	0	QPSK	20.7	-
2505.0	20800	10	25	12	QPSK	20.7	-
2505.0	20800	10	25	25	QPSK	20.7	-
2505.0	20800	10	50	0	QPSK	20.8	-
2505.0	20800	10	1	0	16QAM	20.8	-
2505.0	20800	10	1	24	16QAM	20.8	-
2505.0	20800	10	1	49	16QAM	20.9	-
2505.0	20800	10	25	0	16QAM	19.8	-
2505.0	20800	10	25	12	16QAM	19.8	-
2505.0	20800	10	25	25	16QAM	19.8	-
2505.0	20800	10	50	0	16QAM	19.8	-
2535.0	21100	10	1	0	QPSK	22.0	-
2535.0	21100	10	1	24	QPSK	22.1	-
2535.0	21100	10	1	49	QPSK	22.1	-
2535.0	21100	10	25	0	QPSK	21.1	-
2535.0	21100	10	25	12	QPSK	21.1	-
2535.0	21100	10	25	25	QPSK	21.1	-
2535.0	21100	10	50	0	QPSK	21.1	-
2535.0	21100	10	1	0	16QAM	20.6	-
2535.0	21100	10	1	24	16QAM	20.6	-
2535.0	21100	10	1	49	16QAM	20.7	-
2535.0	21100	10	25	0	16QAM	20.2	-
2535.0	21100	10	25	12	16QAM	20.2	-

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2535.0	21100	10	25	25	16QAM	20.2	-
2535.0	21100	10	50	0	16QAM	20.2	-
2565.0	21400	10	1	0	QPSK	21.9	-
2565.0	21400	10	1	24	QPSK	22.0	-
2565.0	21400	10	1	49	QPSK	22.0	-
2565.0	21400	10	25	0	QPSK	21.0	-
2565.0	21400	10	25	12	QPSK	21.2	-
2565.0	21400	10	25	25	QPSK	21.1	-
2565.0	21400	10	50	0	QPSK	21.1	-
2565.0	21400	10	1	0	16QAM	20.5	-
2565.0	21400	10	1	24	16QAM	20.7	-
2565.0	21400	10	1	49	16QAM	20.6	-
2565.0	21400	10	25	0	16QAM	20.1	-
2565.0	21400	10	25	12	16QAM	20.2	-
2565.0	21400	10	25	25	16QAM	20.1	-
2565.0	21400	10	50	0	16QAM	20.1	-
2507.5	20825	15	1	0	QPSK	21.9	-
2507.5	20825	15	1	36	QPSK	22.0	-
2507.5	20825	15	1	74	QPSK	22.0	-
2507.5	20825	15	37	0	QPSK	21.0	-
2507.5	20825	15	37	18	QPSK	21.2	-
2507.5	20825	15	37	38	QPSK	21.1	-
2507.5	20825	15	75	0	QPSK	21.1	-
2507.5	20825	15	1	0	16QAM	20.5	-
2507.5	20825	15	1	36	16QAM	20.7	-
2507.5	20825	15	1	74	16QAM	20.6	-
2507.5	20825	15	37	0	16QAM	20.1	-
2507.5	20825	15	37	18	16QAM	20.2	-
2507.5	20825	15	37	38	16QAM	20.1	-
2507.5	20825	15	75	0	16QAM	20.1	-
2535.0	21100	15	1	0	QPSK	22.1	-
2535.0	21100	15	1	36	QPSK	22.1	-
2535.0	21100	15	1	74	QPSK	22.2	-
2535.0	21100	15	37	0	QPSK	21.0	-
2535.0	21100	15	37	18	QPSK	21.1	-
2535.0	21100	15	37	38	QPSK	21.1	-
2535.0	21100	15	75	0	QPSK	21.1	-

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2535.0	21100	15	1	0	16QAM	21.3	-
2535.0	21100	15	1	36	16QAM	21.3	-
2535.0	21100	15	1	74	16QAM	21.3	-
2535.0	21100	15	37	0	16QAM	20.2	-
2535.0	21100	15	37	18	16QAM	20.2	-
2535.0	21100	15	37	38	16QAM	20.2	-
2535.0	21100	15	75	0	16QAM	20.2	-
2562.5	21375	15	1	0	QPSK	22.0	-
2562.5	21375	15	1	36	QPSK	22.0	-
2562.5	21375	15	1	74	QPSK	22.1	-
2562.5	21375	15	37	0	QPSK	21.1	-
2562.5	21375	15	37	18	QPSK	21.1	-
2562.5	21375	15	37	38	QPSK	21.2	-
2562.5	21375	15	75	0	QPSK	21.1	-
2562.5	21375	15	1	0	16QAM	21.2	-
2562.5	21375	15	1	36	16QAM	21.2	-
2562.5	21375	15	1	74	16QAM	21.3	-
2562.5	21375	15	37	0	16QAM	20.2	-
2562.5	21375	15	37	18	16QAM	20.1	-
2562.5	21375	15	37	38	16QAM	20.2	-
2562.5	21375	15	75	0	16QAM	20.1	-
2510.0	20850	20	1	0	QPSK	21.6	-
2510.0	20850	20	1	49	QPSK	21.8	-
2510.0	20850	20	1	99	QPSK	22.0	-
2510.0	20850	20	50	0	QPSK	20.7	-
2510.0	20850	20	50	24	QPSK	20.9	-
2510.0	20850	20	50	50	QPSK	21.0	-
2510.0	20850	20	100	0	QPSK	20.9	-
2510.0	20850	20	1	0	16QAM	21.0	-
2510.0	20850	20	1	49	16QAM	20.7	-
2510.0	20850	20	1	99	16QAM	20.6	-
2510.0	20850	20	50	0	16QAM	19.8	-
2510.0	20850	20	50	24	16QAM	19.9	-
2510.0	20850	20	50	50	16QAM	20.1	-
2510.0	20850	20	100	0	16QAM	19.9	-
2535.0	21100	20	1	0	QPSK	22.0	-
2535.0	21100	20	1	49	QPSK	22.1	-

(Table continues)

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(Table continues)

2535.0	21100	20	1	99	QPSK	22.1	-
2535.0	21100	20	50	0	QPSK	21.0	-
2535.0	21100	20	50	24	QPSK	21.1	-
2535.0	21100	20	50	50	QPSK	21.1	-
2535.0	21100	20	100	0	QPSK	21.0	-
2535.0	21100	20	1	0	16QAM	20.6	-
2535.0	21100	20	1	49	16QAM	20.7	-
2535.0	21100	20	1	99	16QAM	20.7	-
2535.0	21100	20	50	0	16QAM	20.1	-
2535.0	21100	20	50	24	16QAM	20.2	-
2535.0	21100	20	50	50	16QAM	20.2	-
2535.0	21100	20	100	0	16QAM	20.1	-
2560.0	21350	20	1	0	QPSK	22.0	-
2560.0	21350	20	1	49	QPSK	22.0	-
2560.0	21350	20	1	99	QPSK	21.7	-
2560.0	21350	20	50	0	QPSK	21.0	-
2560.0	21350	20	50	24	QPSK	21.2	-
2560.0	21350	20	50	50	QPSK	21.2	-
2560.0	21350	20	100	0	QPSK	21.1	-
2560.0	21350	20	1	0	16QAM	21.2	-
2560.0	21350	20	1	49	16QAM	20.9	-
2560.0	21350	20	1	99	16QAM	20.5	-
2560.0	21350	20	50	0	16QAM	20.1	-
2560.0	21350	20	50	24	16QAM	20.1	-
2560.0	21350	20	50	50	16QAM	20.1	-
2560.0	21350	20	100	0	16QAM	19.8	-

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Type: RM-975; Serial number: 004402/47/804007/8, HW: 2020, SW: 01061.00014.14112 used for LTE2500 (Band7) for Head and Body-worn SAR measurements.

"Max Average Power (dBm)" column lists measured powers with MPR active. The "Reduced Power (dBm)" column lists measured powers with MPR and A-MPR active (as defined by 3GPP TS 36.101). A-MPR is not specified for LTE2500 (Band 7) in this specification (Table 6.2.4-1).

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
2502.5	20775	5	1	0	QPSK	20.2	-
2502.5	20775	5	1	12	QPSK	20.2	-
2502.5	20775	5	1	24	QPSK	20.3	-
2502.5	20775	5	12	0	QPSK	19.1	-
2502.5	20775	5	12	6	QPSK	19.2	-
2502.5	20775	5	12	13	QPSK	19.2	-
2502.5	20775	5	25	0	QPSK	19.2	-
2502.5	20775	5	1	0	16QAM	19.0	-
2502.5	20775	5	1	12	16QAM	19.0	-
2502.5	20775	5	1	24	16QAM	19.1	-
2502.5	20775	5	12	0	16QAM	18.4	-
2502.5	20775	5	12	6	16QAM	18.4	-
2502.5	20775	5	12	13	16QAM	18.4	-
2502.5	20775	5	25	0	16QAM	18.4	-
2535.0	21100	5	1	0	QPSK	20.5	-
2535.0	21100	5	1	12	QPSK	20.4	-
2535.0	21100	5	1	24	QPSK	20.5	-
2535.0	21100	5	12	0	QPSK	19.4	-
2535.0	21100	5	12	6	QPSK	19.5	-
2535.0	21100	5	12	13	QPSK	19.5	-
2535.0	21100	5	25	0	QPSK	19.5	-
2535.0	21100	5	1	0	16QAM	19.3	-
2535.0	21100	5	1	12	16QAM	19.4	-
2535.0	21100	5	1	24	16QAM	19.3	-
2535.0	21100	5	12	0	16QAM	18.6	-
2535.0	21100	5	12	6	16QAM	18.7	-
2535.0	21100	5	12	13	16QAM	18.6	-
2535.0	21100	5	25	0	16QAM	18.6	-
2567.5	21425	5	1	0	QPSK	20.5	-
2567.5	21425	5	1	12	QPSK	20.5	-

(Table continues)

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(Table continues)

2567.5	21425	5	1	24	QPSK	20.5	-
2567.5	21425	5	12	0	QPSK	19.5	-
2567.5	21425	5	12	6	QPSK	19.6	-
2567.5	21425	5	12	13	QPSK	19.6	-
2567.5	21425	5	25	0	QPSK	19.5	-
2567.5	21425	5	1	0	16QAM	19.4	-
2567.5	21425	5	1	12	16QAM	19.3	-
2567.5	21425	5	1	24	16QAM	19.3	-
2567.5	21425	5	12	0	16QAM	18.7	-
2567.5	21425	5	12	6	16QAM	18.7	-
2567.5	21425	5	12	13	16QAM	18.6	-
2567.5	21425	5	25	0	16QAM	18.7	-
2505.0	20800	10	1	0	QPSK	20.2	-
2505.0	20800	10	1	24	QPSK	20.3	-
2505.0	20800	10	1	49	QPSK	20.3	-
2505.0	20800	10	25	0	QPSK	19.3	-
2505.0	20800	10	25	12	QPSK	19.3	-
2505.0	20800	10	25	25	QPSK	19.3	-
2505.0	20800	10	50	0	QPSK	19.2	-
2505.0	20800	10	1	0	16QAM	19.4	-
2505.0	20800	10	1	24	16QAM	19.5	-
2505.0	20800	10	1	49	16QAM	19.4	-
2505.0	20800	10	25	0	16QAM	18.4	-
2505.0	20800	10	25	12	16QAM	18.4	-
2505.0	20800	10	25	25	16QAM	18.4	-
2505.0	20800	10	50	0	16QAM	18.3	-
2535.0	21100	10	1	0	QPSK	20.5	-
2535.0	21100	10	1	24	QPSK	20.5	-
2535.0	21100	10	1	49	QPSK	20.6	-
2535.0	21100	10	25	0	QPSK	19.4	-
2535.0	21100	10	25	12	QPSK	19.5	-
2535.0	21100	10	25	25	QPSK	19.5	-
2535.0	21100	10	50	0	QPSK	19.5	-
2535.0	21100	10	1	0	16QAM	19.7	-
2535.0	21100	10	1	24	16QAM	19.7	-
2535.0	21100	10	1	49	16QAM	19.8	-
2535.0	21100	10	25	0	16QAM	18.7	-
2535.0	21100	10	25	12	16QAM	18.6	-

(Table continues)

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(Table continues)

2535.0	21100	10	25	25	16QAM	18.7	-
2535.0	21100	10	50	0	16QAM	18.5	-
2565.0	21400	10	1	0	QPSK	20.5	-
2565.0	21400	10	1	24	QPSK	20.6	-
2565.0	21400	10	1	49	QPSK	20.5	-
2565.0	21400	10	25	0	QPSK	19.6	-
2565.0	21400	10	25	12	QPSK	19.6	-
2565.0	21400	10	25	25	QPSK	19.6	-
2565.0	21400	10	50	0	QPSK	19.5	-
2565.0	21400	10	1	0	16QAM	19.8	-
2565.0	21400	10	1	24	16QAM	19.8	-
2565.0	21400	10	1	49	16QAM	19.8	-
2565.0	21400	10	25	0	16QAM	18.6	-
2565.0	21400	10	25	12	16QAM	18.7	-
2565.0	21400	10	25	25	16QAM	18.7	-
2565.0	21400	10	50	0	16QAM	18.6	-
2507.5	20825	15	1	0	QPSK	20.2	-
2507.5	20825	15	1	36	QPSK	20.2	-
2507.5	20825	15	1	74	QPSK	20.3	-
2507.5	20825	15	37	0	QPSK	19.2	-
2507.5	20825	15	37	18	QPSK	19.2	-
2507.5	20825	15	37	38	QPSK	19.2	-
2507.5	20825	15	75	0	QPSK	19.2	-
2507.5	20825	15	1	0	16QAM	19.7	-
2507.5	20825	15	1	36	16QAM	19.4	-
2507.5	20825	15	1	74	16QAM	19.4	-
2507.5	20825	15	37	0	16QAM	18.3	-
2507.5	20825	15	37	18	16QAM	18.3	-
2507.5	20825	15	37	38	16QAM	18.3	-
2507.5	20825	15	75	0	16QAM	18.4	-
2535.0	21100	15	1	0	QPSK	20.5	-
2535.0	21100	15	1	36	QPSK	20.5	-
2535.0	21100	15	1	74	QPSK	20.6	-
2535.0	21100	15	37	0	QPSK	19.4	-
2535.0	21100	15	37	18	QPSK	19.5	-
2535.0	21100	15	37	38	QPSK	19.5	-
2535.0	21100	15	75	0	QPSK	19.4	-

(Table continues)

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(Table continues)

2535.0	21100	15	1	0	16QAM	19.5	-
2535.0	21100	15	1	36	16QAM	19.5	-
2535.0	21100	15	1	74	16QAM	19.6	-
2535.0	21100	15	37	0	16QAM	18.5	-
2535.0	21100	15	37	18	16QAM	18.5	-
2535.0	21100	15	37	38	16QAM	18.6	-
2535.0	21100	15	75	0	16QAM	18.7	-
2562.5	21375	15	1	0	QPSK	20.5	-
2562.5	21375	15	1	36	QPSK	20.5	-
2562.5	21375	15	1	74	QPSK	20.5	-
2562.5	21375	15	37	0	QPSK	19.5	-
2562.5	21375	15	37	18	QPSK	19.7	-
2562.5	21375	15	37	38	QPSK	19.7	-
2562.5	21375	15	75	0	QPSK	19.6	-
2562.5	21375	15	1	0	16QAM	19.4	-
2562.5	21375	15	1	36	16QAM	19.3	-
2562.5	21375	15	1	74	16QAM	19.8	-
2562.5	21375	15	37	0	16QAM	18.6	-
2562.5	21375	15	37	18	16QAM	18.7	-
2562.5	21375	15	37	38	16QAM	18.7	-
2562.5	21375	15	75	0	16QAM	18.7	-
2510.0	20850	20	1	0	QPSK	20.1	-
2510.0	20850	20	1	49	QPSK	20.2	-
2510.0	20850	20	1	99	QPSK	20.6	-
2510.0	20850	20	50	0	QPSK	19.2	-
2510.0	20850	20	50	24	QPSK	19.1	-
2510.0	20850	20	50	50	QPSK	19.3	-
2510.0	20850	20	100	0	QPSK	19.3	-
2510.0	20850	20	1	0	16QAM	19.4	-
2510.0	20850	20	1	49	16QAM	19.4	-
2510.0	20850	20	1	99	16QAM	19.8	-
2510.0	20850	20	50	0	16QAM	18.3	-
2510.0	20850	20	50	24	16QAM	18.3	-
2510.0	20850	20	50	50	16QAM	18.5	-
2510.0	20850	20	100	0	16QAM	18.3	-
2535.0	21100	20	1	0	QPSK	20.5	-
2535.0	21100	20	1	49	QPSK	20.5	-

(Table continues)

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(Table continues)

2535.0	21100	20	1	99	QPSK	20.6	-
2535.0	21100	20	50	0	QPSK	19.4	-
2535.0	21100	20	50	24	QPSK	19.4	-
2535.0	21100	20	50	50	QPSK	19.5	-
2535.0	21100	20	100	0	QPSK	19.4	-
2535.0	21100	20	1	0	16QAM	19.7	-
2535.0	21100	20	1	49	16QAM	19.8	-
2535.0	21100	20	1	99	16QAM	19.8	-
2535.0	21100	20	50	0	16QAM	18.7	-
2535.0	21100	20	50	24	16QAM	18.6	-
2535.0	21100	20	50	50	16QAM	18.7	-
2535.0	21100	20	100	0	16QAM	18.6	-
2560.0	21350	20	1	0	QPSK	20.4	-
2560.0	21350	20	1	49	QPSK	20.6	-
2560.0	21350	20	1	99	QPSK	20.6	-
2560.0	21350	20	50	0	QPSK	19.6	-
2560.0	21350	20	50	24	QPSK	19.6	-
2560.0	21350	20	50	50	QPSK	19.6	-
2560.0	21350	20	100	0	QPSK	19.6	-
2560.0	21350	20	1	0	16QAM	19.8	-
2560.0	21350	20	1	49	16QAM	19.8	-
2560.0	21350	20	1	99	16QAM	19.8	-
2560.0	21350	20	50	0	16QAM	18.7	-
2560.0	21350	20	50	24	16QAM	18.6	-
2560.0	21350	20	50	50	16QAM	18.7	-
2560.0	21350	20	100	0	16QAM	18.6	-

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APPENDIX H: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED GSM/GPRS/EGPRS TRANSMISSION MODES

Type: RM-975, Serial number 004402/47/800000/3 HW:2020 SW: 01061.00014.14112.00000 used for GSM/GPRS/EGPRS850 SAR Head, Body-worn and Wireless Router measurements.

GSM/GPRS/EGPRS850 / Tuning target (dBm) Head, Body-worn and Wireless Router			
Slot configuration	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM 1-slot	32.2	32.2	32.2
GPRS 2-slot	29.3	29.3	29.3
GPRS 3-slot	27.5	27.5	27.5
GPRS 4-slot	26.3	26.3	26.3
EGRPS 1-slot	26.0	26.0	26.0
EGPRS 2-slot	24.5	24.5	24.5
EGPRS 3-slot	23.0	23.0	23.0
EGPRS 4-slot	21.5	21.5	21.5
GSM/GPRS/EGPRS850 / Conducted power (dBm) Head, Body-worn and Wireless Router			
Slot configuration	Ch 128 824.2 MHz	Ch 190 836.6 MHz	Ch 251 848.8 MHz
GSM 1-slot	31.7	31.9	31.9
GPRS 2-slot	29.2	29.4	29.4
GPRS 3-slot	27.1	27.4	27.4
GPRS 4-slot	25.8	26.0	25.9
EGRPS 1-slot	25.7	25.8	25.9
EGPRS 2-slot	24.6	24.7	24.7
EGPRS 3-slot	22.8	22.8	22.9
EGPRS 4-slot	21.3	21.6	21.5

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Type: RM-975, Serial number 004402/47/804009/4, HW:2020, SW: 01061.00014.14112.00000 used for GSM/GPRS/EGPRS1900 SAR Head, Body-worn and Wireless Router measurements.

GSM/GPRS/EGPRS1900 / Tuning target (dBm) Head, Body-worn and Wireless Router			
Slot configuration	CH 512 1850.2 MHz	CH 661 1880.0 MHz	CH 810 1909.8 MHz
GSM 1-slot	29.5	29.5	29.5
GPRS 2-slot	29.0	29.0	29.0
GPRS 3-slot	27.2	27.2	27.2
GPRS 4-slot	25.5	25.5	25.5
EGRPS 1-slot	26.0	26.0	26.0
EGPRS 2-slot	25.6	25.6	25.6
EGPRS 3-slot	24.2	24.2	24.2
EGPRS 4-slot	22.6	22.6	22.6
GSM/GPRS/EGPRS1900 / Conducted power (dBm) Head, Body-worn and Wireless Router			
Slot configuration	CH 512 1850.2 MHz	CH 661 1880.0 MHz	CH 810 1909.8 MHz
GSM 1-slot	29.6	29.6	29.4
GPRS 2-slot	29.2	29.1	28.8
GPRS 3-slot	27.3	27.2	27.0
GPRS 4-slot	25.9	25.9	25.7
EGRPS 1-slot	26.1	25.9	25.7
EGPRS 2-slot	26.0	25.8	25.7
EGPRS 3-slot	24.1	24.0	23.8
EGPRS 4-slot	23.0	22.9	22.8

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APPENDIX I: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED WCDMA TRANSMISSION MODES

Type: RM-975; SN: 004402/47/804496/3, HW:2020, SW: 01061.00014.14112.00000 used for WCDMA850 (Band 5) Head, Body-worn and Wireless router SAR measurements

Antenna 1			
WCDMA 850 (Band 5) / Tuning target (dBm) Head, Body-worn and Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	23.5	23.5	23.5
WCDMA 850 (Band 5) / Conducted power (dBm) Head, Body-worn and Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	23.3	23.3	23.4

Antenna 2			
WCDMA 850 (Band 5) / Tuning target (dBm) Head, Body-worn and Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	23.5	23.5	23.5
WCDMA 850 (Band 5) / Conducted power (dBm) Head, Body-worn and Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	23.1	23.1	23.2

WCDMA and HSUPA Subtest mode conducted powers, measured from a separate, fully representative sample are presented in Appendix D.

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Type: RM-975; SN: 004402/47/804009/4, HW:2020, SW: 01061.00014.14112.00000 used for WCDMA1700/2100 (Band 4) Head and Body-worn SAR measurements

Antenna 1			
WCDMA1700/2100 (Band 4) / Tuning target (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.5	23.5	23.5
WCDMA1700/2100 (Band 4) / Conducted power (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.4	23.6	23.6

Antenna 2			
WCDMA1700/2100 (Band 4) / Tuning target (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.5	23.5	23.5
WCDMA1700/2100 (Band 4) / Conducted power (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	22.9	23.1	23.1

WCDMA and HSUPA Subtest mode conducted powers, measured from a separate, fully representative sample are presented in Appendix D.

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Type: RM-975; SN: 004402/47/804009/4, HW:2020, SW: 01061.00014.14112.00000 used for WCDMA1900 (Band 2) Head and Body-worn SAR measurements

Antenna 1			
WCDMA 1900 (Band 2) / Tuning target (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.0	23.0	23.0
WCDMA 1900 (Band 2) / Conducted power (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.1	23.1	22.9

Antenna 2			
WCDMA 1900 (Band 2) / Tuning target (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.0	23.0	23.0
WCDMA 1900 (Band 2) / Conducted power (dBm) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	22.6	22.6	22.4

WCDMA and HSUPA Subtest mode conducted powers, measured from a separate, fully representative sample are presented in Appendix D.

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Type: RM-975; SN: 004402/47/804007/8, HW:2020, SW: 01061.00014.14112.00000 used for WCDMA1700/2100 (Band 4) Wireless router SAR measurements

Antenna 1			
WCDMA1700/2100 (Band 4) / Tuning target (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	22.0	22.0	22.0
WCDMA1700/2100 (Band 4) / Conducted power (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	21.7	21.9	22.0

Antenna 2			
WCDMA 1700 / 2100 (Band 4) / Tuning target (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	22.0	22.0	22.0
WCDMA1700/2100 (Band 4) / Conducted power (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	21.2	21.4	21.5

WCDMA and HSUPA Subtest mode conducted powers, measured from a separate, fully representative sample are presented in Appendix D.

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Type: RM-975; SN: 004402/47/804007/8, HW:2020, SW: 01061.00014.14112.00000 used for WCDMA1900 (Band 2) Wireless router SAR measurements

Antenna 1			
WCDMA 1900 (Band 2) / Tuning target (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	21.5	21.5	21.5
WCDMA 1900 (Band 2) / Conducted power (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	21.4	21.3	21.3

Antenna 2			
WCDMA 1900 (Band 2) / Tuning target (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	21.5	21.5	21.5
WCDMA 1900 (Band 2) / Conducted power (dBm) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	20.9	20.8	20.8

WCDMA and HSUPA Subtest mode conducted powers, measured from a separate, fully representative sample are presented in Appendix D.

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APPENDIX J: CONDUCTED POWER RESULTS FOR WLAN2450

J.1 Power Tuning Targets

WLAN 2.4 GHz: 20 MHz channel bandwidth								
Standard	Modulation	Data speed [MBPS]	CH 1	CH 2	CH 6	CH 7	CH 10	CH 11
802.11b	BPSK	1	16.0	16.0	16.0	16.0	16.0	16.0
802.11b	QPSK	2	16.0	16.0	16.0	16.0	16.0	16.0
802.11b	QPSK	5,5	16.0	16.0	16.0	16.0	16.0	16.0
802.11b	QPSK	11	16.0	16.0	16.0	16.0	16.0	16.0
802.11g	BPSK	6	13.0	16.0	16.0	16.0	16.0	11.0
802.11g	BPSK	9	13.0	16.0	16.0	16.0	16.0	11.0
802.11g	QPSK	12	13.0	16.0	16.0	16.0	16.0	11.0
802.11g	QPSK	18	13.0	16.0	16.0	16.0	16.0	11.0
802.11g	16QAM	24	13.0	16.0	16.0	16.0	16.0	11.0
802.11g	16QAM	36	13.0	15.0	15.0	15.0	15.0	11.0
802.11g	64QAM	48	13.0	14.0	14.0	14.0	14.0	11.0
802.11g	64QAM	54	13.0	13.0	13.0	13.0	13.0	11.0
802.11n	BPSK	6.5 / 7.25	13.0	16.0	16.0	16.0	16.0	11.0
802.11n	QPSK	13.0 / 14.4	13.0	16.0	16.0	16.0	16.0	11.0
802.11n	QPSK	19.5 / 21.7	13.0	16.0	16.0	16.0	16.0	11.0
802.11n	16QAM	26.0 / 28.9	13.0	16.0	16.0	16.0	16.0	11.0
802.11n	16QAM	39.0 / 43.3	13.0	14.0	14.0	14.0	14.0	11.0
802.11n	64QAM	52.0 / 57.8	13.0	13.0	13.0	13.0	13.0	11.0
802.11n	64QAM	58.5 / 65.0	13.0	13.0	13.0	13.0	13.0	11.0
802.11n	64QAM	65.0 / 72.2	11.0	11.0	11.0	11.0	11.0	11.0

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J.2 Conducted Power from the Samples used in the Testing

Type: RM-975; SN: 004402/47/804496/3; HW:2020; SW: 01061.00014.14112.00000 used for WLAN2450 for SAR Head, Body-worn and Wireless Router measurements.

WLAN 2.4 GHz: 20 MHz channel bandwidth								
Standard	Modulation	Data speed [MBPS]	CH 1	CH 2	CH 6	CH 7	CH 10	CH 11
802.11b	BPSK	1	16.2	16.2	16.4	16.5	16.6	16.5
802.11b	QPSK	2	16.4	16.2	16.4	16.5	16.6	16.6
802.11b	QPSK	5,5	16.3	16.4	16.5	16.7	16.8	16.6
802.11b	QPSK	11	16.3	16.4	16.6	16.7	16.8	16.6
802.11g	BPSK	6	13.4	16.3	16.4	16.2	16.5	11.6
802.11g	BPSK	9	13.4	16.4	16.5	16.4	16.5	11.6
802.11g	QPSK	12	13.5	16.5	16.5	16.4	16.5	11.7
802.11g	QPSK	18	13.5	16.5	16.6	16.5	16.5	11.5
802.11g	16QAM	24	13.4	16.6	16.6	16.5	16.6	11.6
802.11g	16QAM	36	13.5	15.4	15.5	15.3	15.3	11.8
802.11g	64QAM	48	13.3	14.5	14.5	14.4	14.4	11.5
802.11g	64QAM	54	13.3	13.4	13.6	13.3	13.4	11.8
802.11n	BPSK	6.5 / 7.25	13.4	16.5	16.5	16.5	16.7	11.6
802.11n	QPSK	13.0 / 14.4	13.5	16.5	16.6	16.5	16.5	11.7
802.11n	QPSK	19.5 / 21.7	13.5	16.6	16.6	16.6	16.5	11.7
802.11n	16QAM	26.0 / 28.9	13.5	16.6	16.7	16.5	16.6	11.7
802.11n	16QAM	39.0 / 43.3	13.6	14.4	14.6	14.5	14.3	11.5
802.11n	64QAM	52.0 / 57.8	13.6	13.7	13.4	13.4	13.3	11.8
802.11n	64QAM	58.5 / 65.0	13.6	13.6	13.5	13.3	13.3	11.5
802.11n	64QAM	65.0 / 72.2	11.4	11.2	11.2	11.3	11.5	11.5

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