APPENDIX F: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORTS

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

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

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

Accreditation No.: SCS 108

Client Nokia SD

Certificate No: D750V3-1057_May12

CALIBRATION CERTIFICATE

Object	D750V3 - SN: 1057
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	May 10, 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	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

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:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: May 10, 2012

Measurement Conditions

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

DASY Version	DASY5	V52.8.1
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	42.3 ± 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	2.16 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**8.44 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.41 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**5.53 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	55.5	0.96 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	55.6 ± 6 %	0.96 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	2.21 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**8.84 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.46 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**5.84 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.5 Ω - 1.8 jΩ
Return Loss	- 28.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.1 Ω - 3.4 jΩ
Return Loss	- 29.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.037 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 08, 2011

DASY5 Validation Report for Head TSL

Date: 10.05.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1057

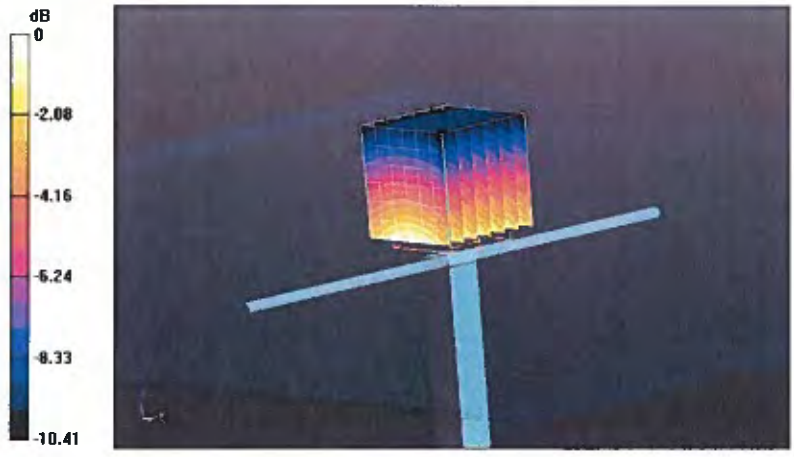
Communication System: CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.92 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.33, 6.33, 6.33); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

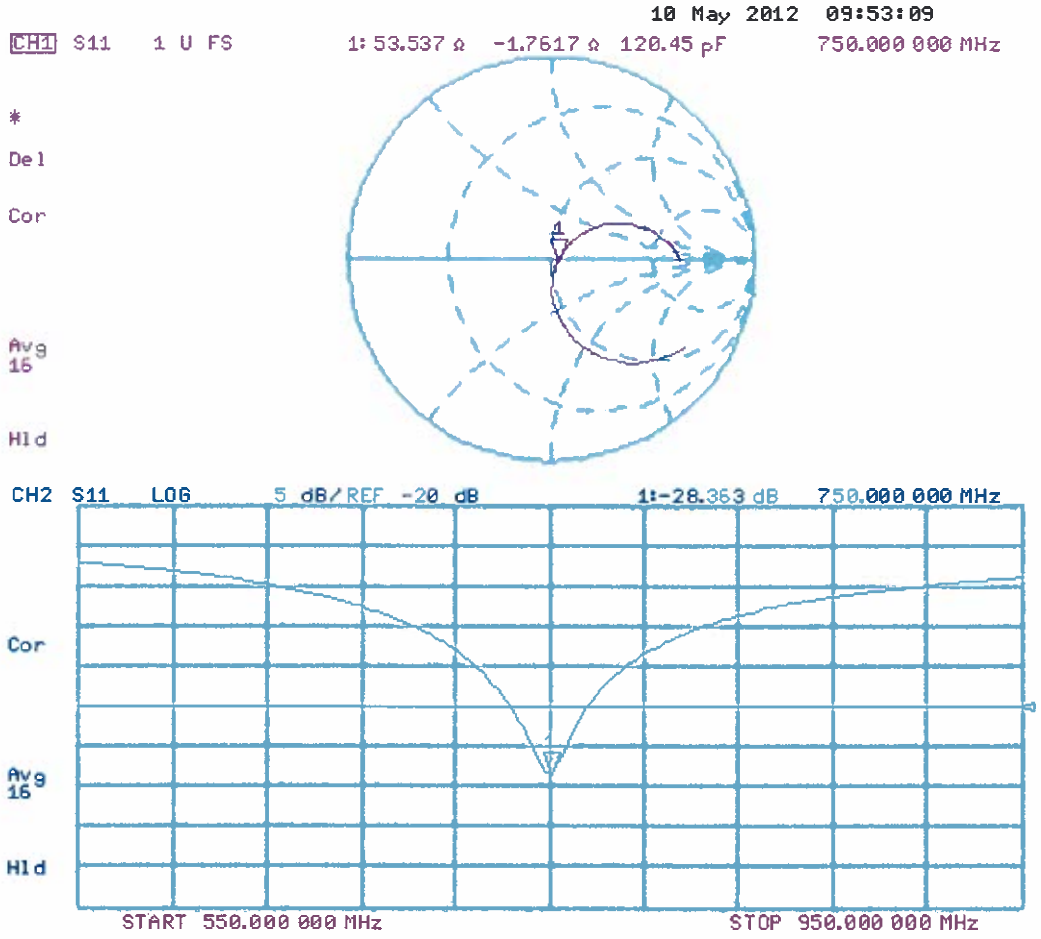
Dipole Calibration for Head Tissue/Pin=250mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 53.685 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 3.259 mW/g
SAR(1 g) = 2.16 mW/g; SAR(10 g) = 1.41 mW/g
Maximum value of SAR (measured) = 2.52 mW/g



0 dB = 2.52 mW/g = 8.03 dB mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 10.05.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN: 1057

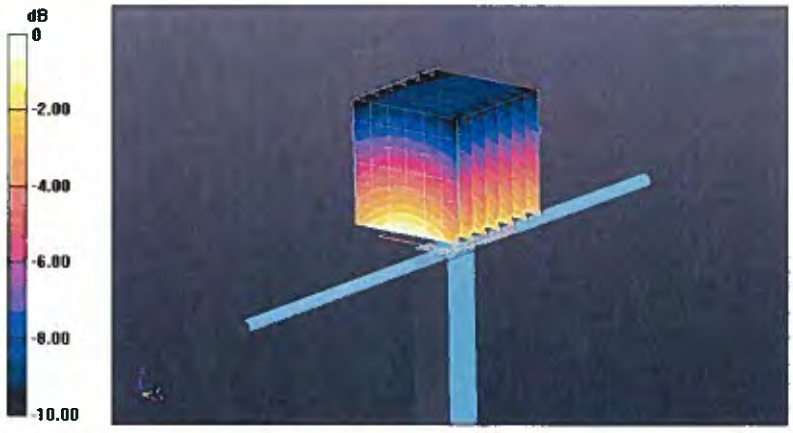
Communication System: CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.96 mho/m; ε_r = 55.6; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.12, 6.12, 6.12); Calibrated: 30.12.2011;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

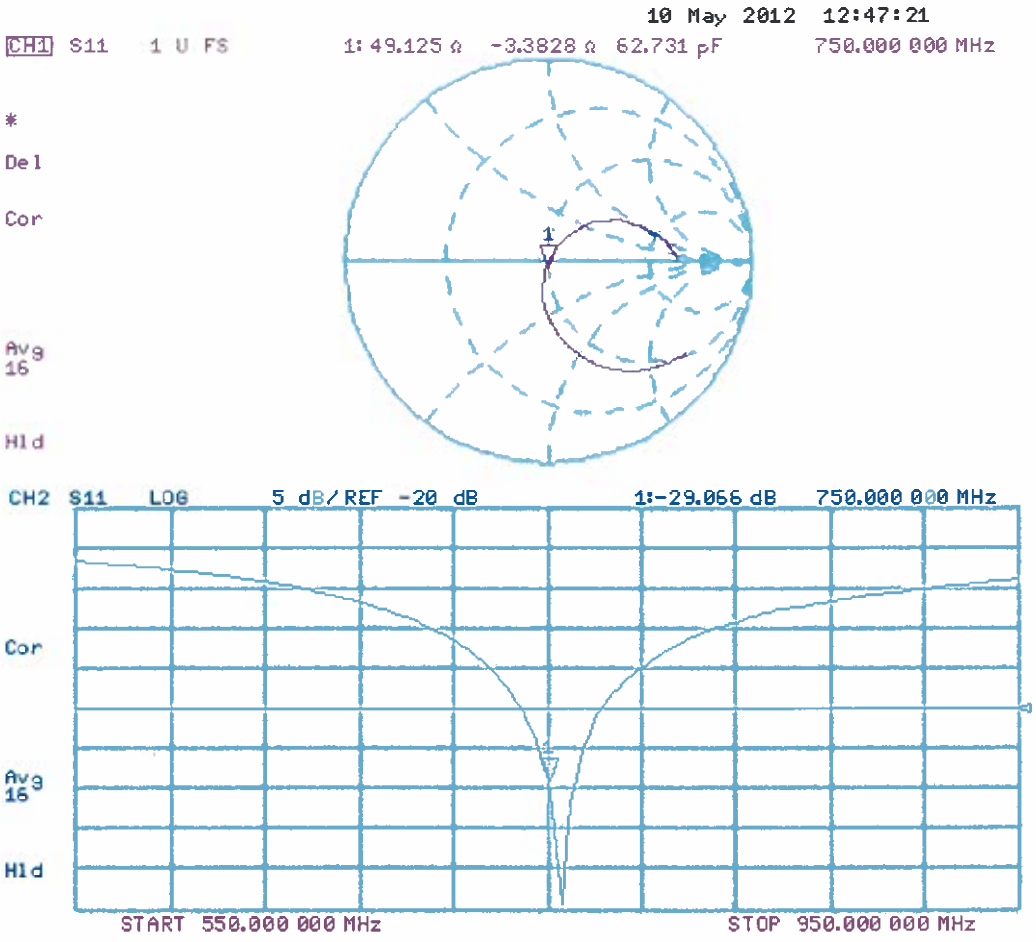
Dipole Calibration for Body Tissue/Pin=250mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 52.836 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 3.299 mW/g
SAR(1 g) = 2.21 mW/g; SAR(10 g) = 1.46 mW/g
Maximum value of SAR (measured) = 2.59 mW/g



0 dB = 2.59 mW/g = 8.27 dB mW/g

Impedance Measurement Plot for Body TSL



Dipole D750V3 – SN: 1057 Antenna Parameters measured: 2013-05-10.

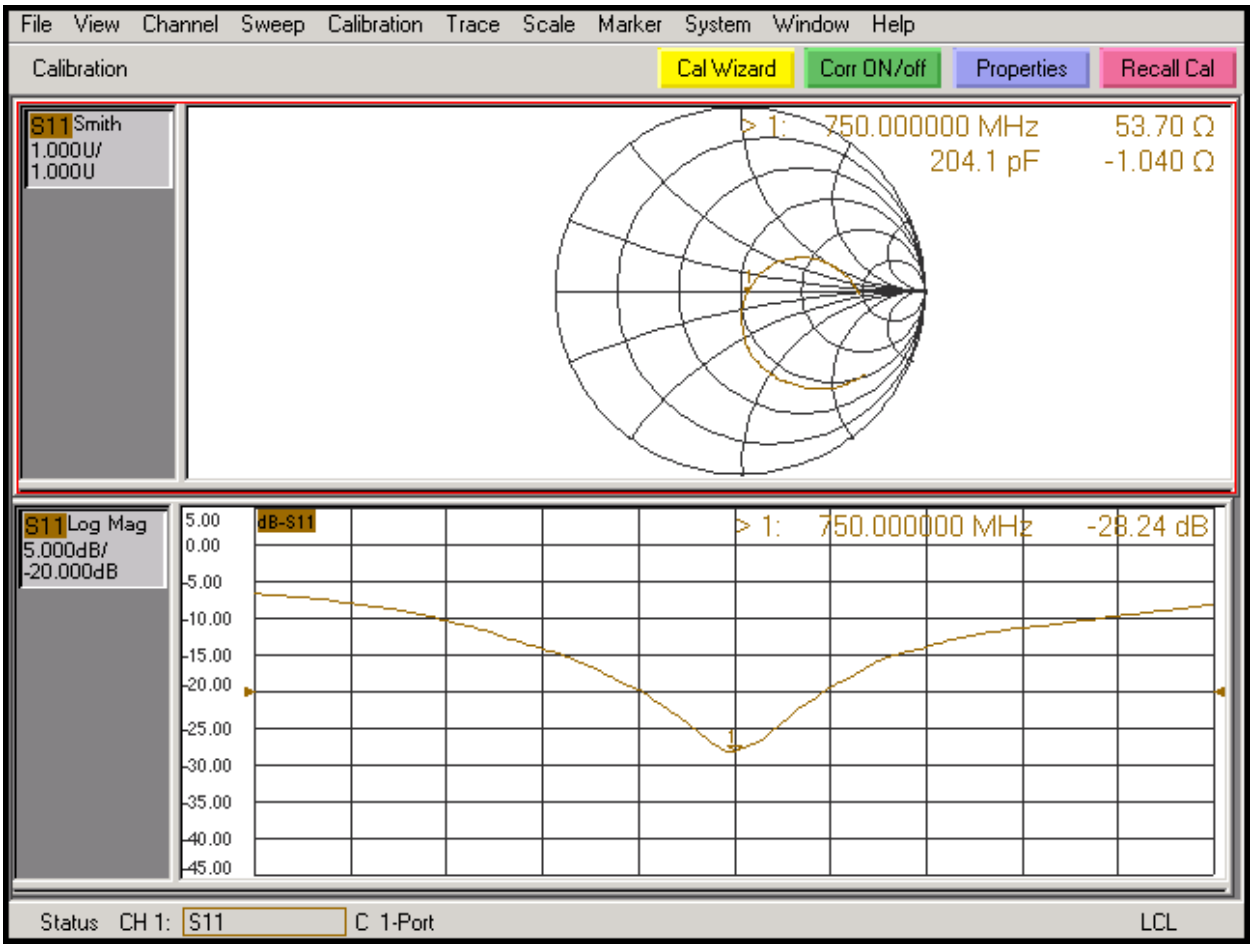
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	53.5 Ω - 1.8 jΩ	53.7 Ω - 1.04 jΩ
Return loss	-28.4 dB	-28.24 dB

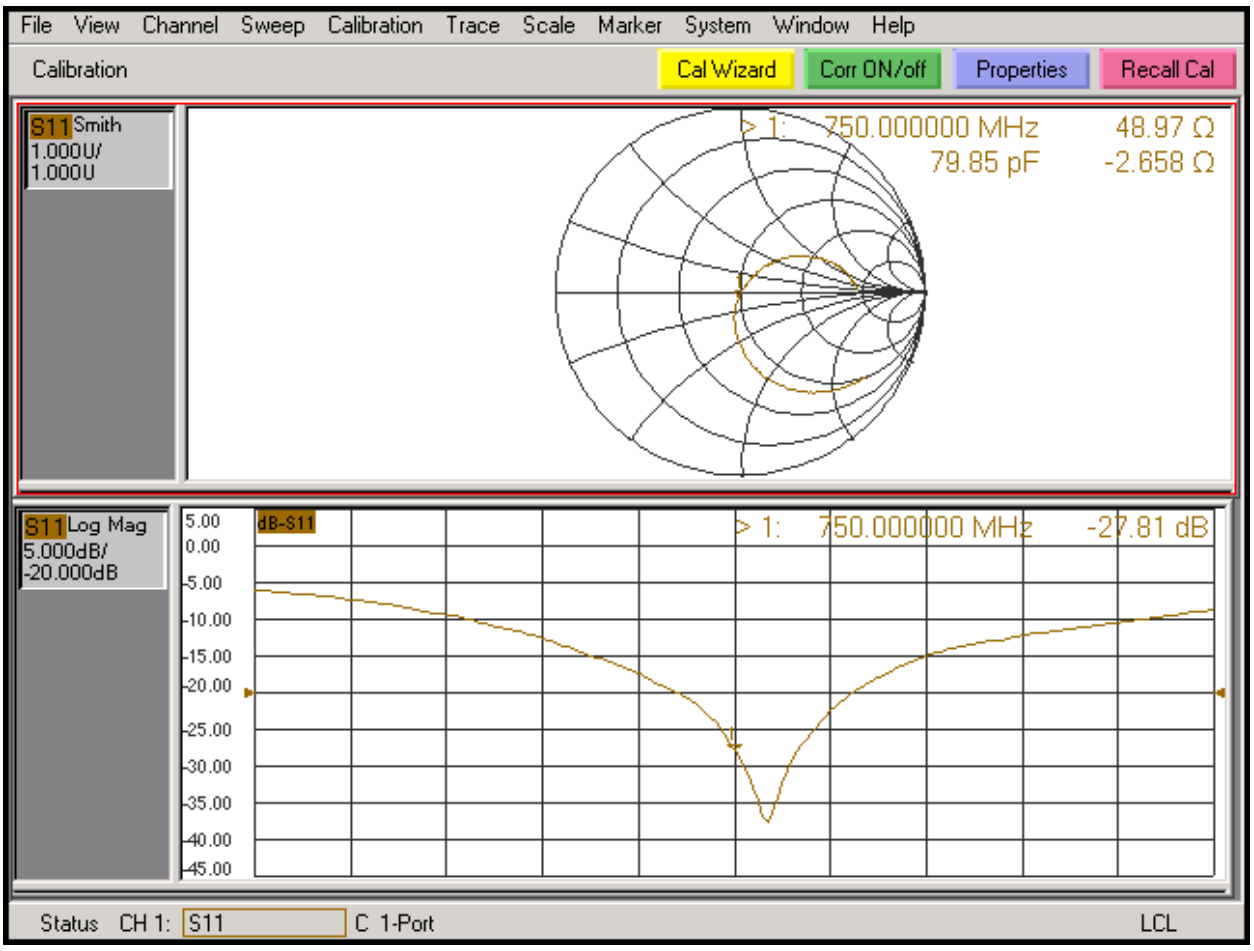
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	49.1 Ω - 3.4 jΩ	48.97 Ω - 2.66 jΩ
Return loss	-29.1 dB	-27.81 dB

Head TSL



Body TSL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79.85 pF -2.658 Ω
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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

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

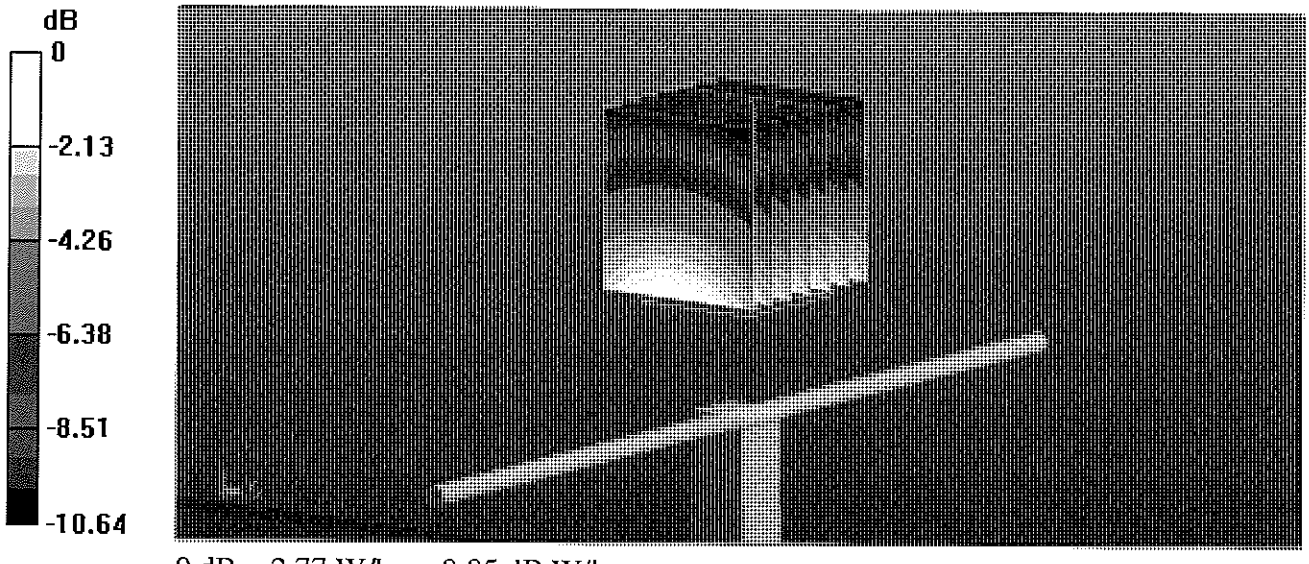
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.9 mho/m; ε_r = 41; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

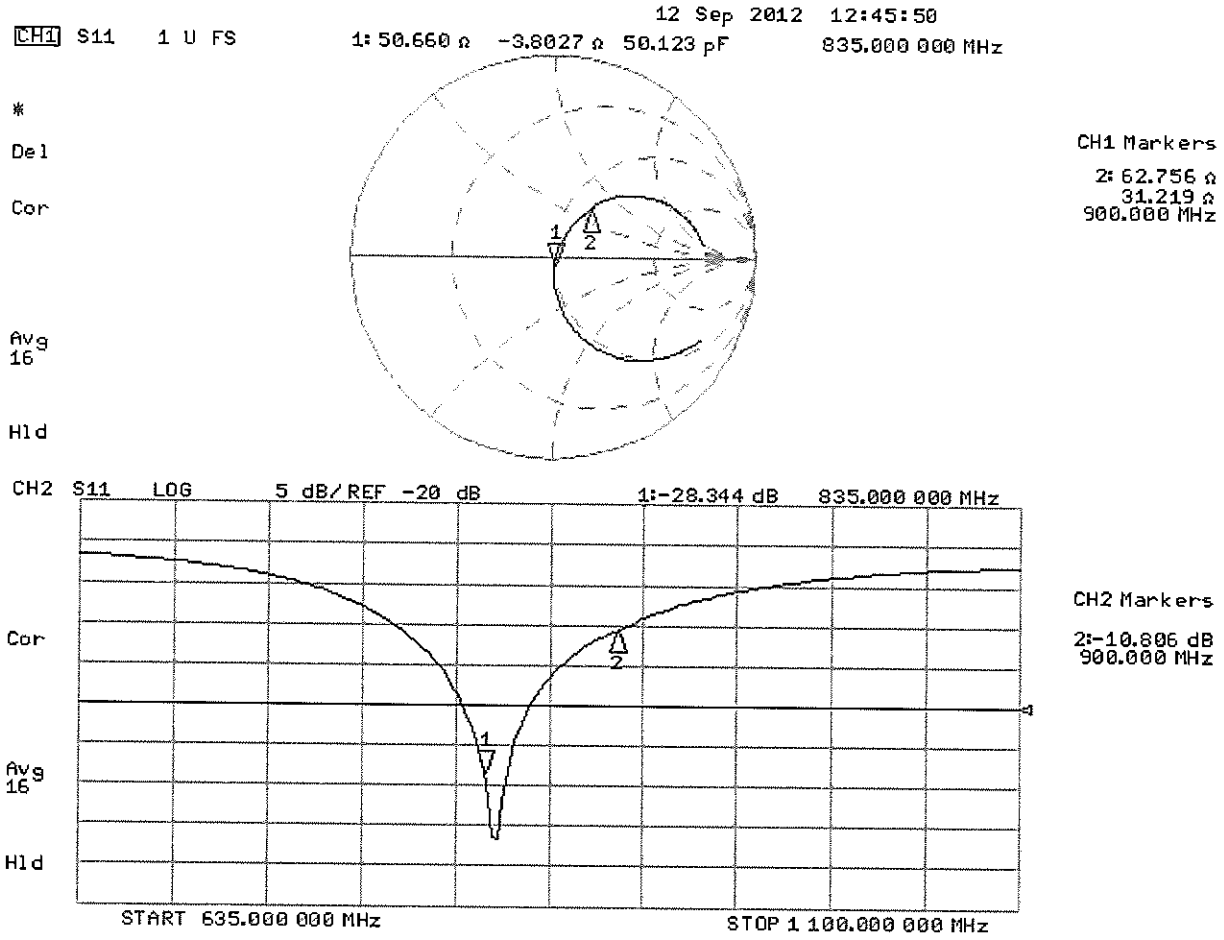
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm 2/Zoom Scan (7x7x7)/Cube 0:

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

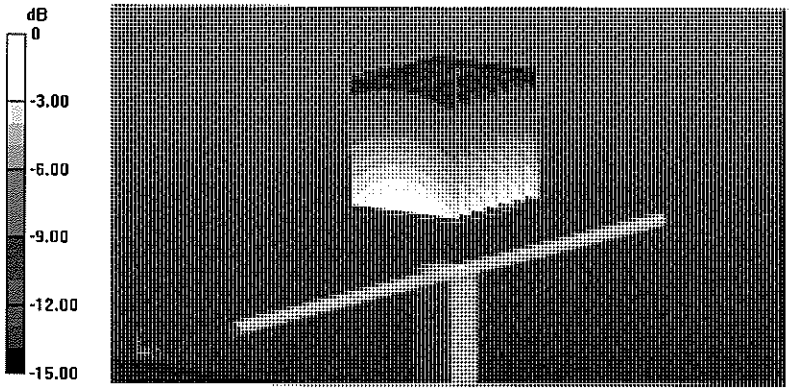
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 53.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

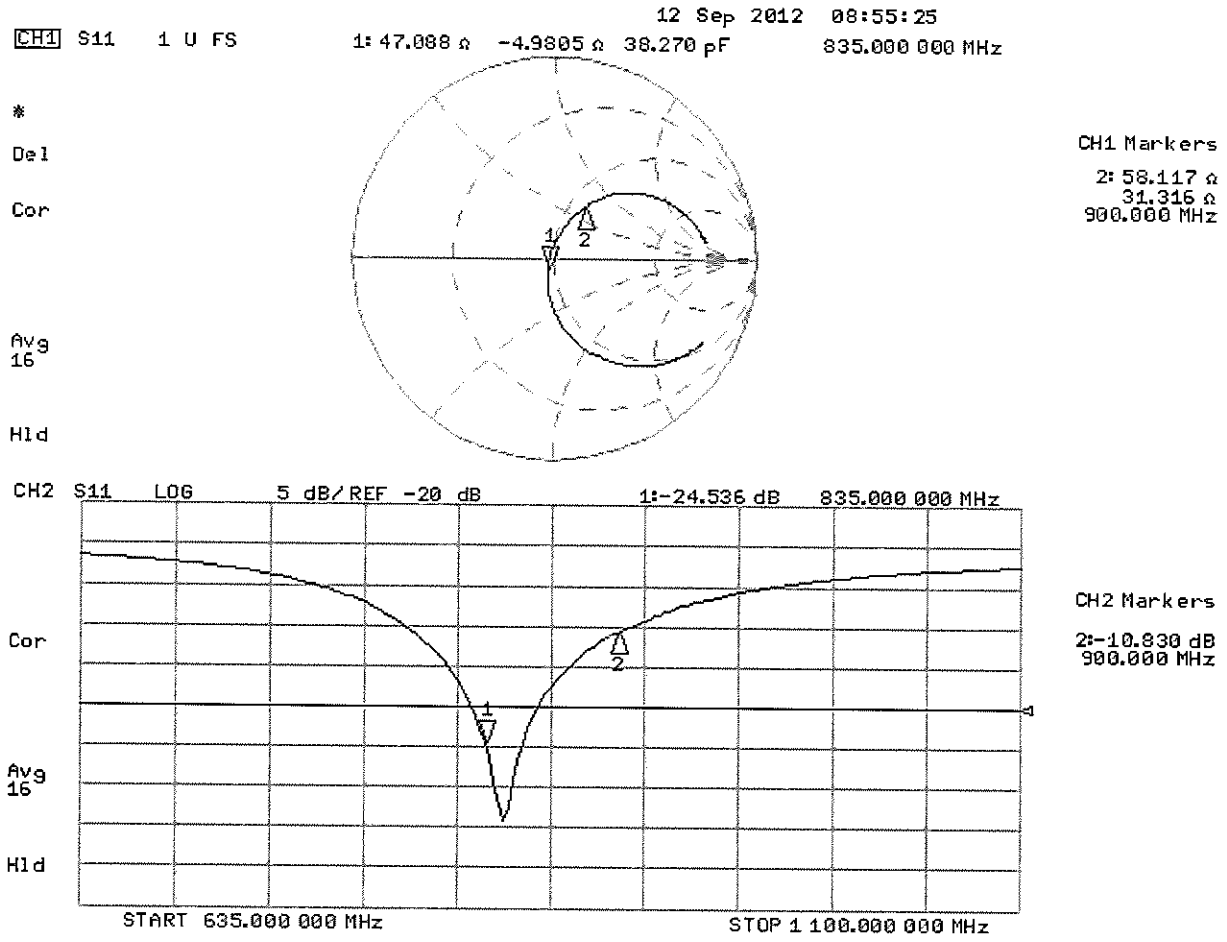
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

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



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Accredited by the Swiss Accreditation Service (SAS)
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Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: D835V2-480_Dec12

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 480
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	December 03, 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 3, 2012

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	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	41.4 ± 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	2.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.40 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.56 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.16 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	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.5 ± 6 %	0.99 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	2.42 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.51 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.59 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.27 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.8 Ω - 3.3 jΩ
Return Loss	- 29.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.7 Ω - 4.9 jΩ
Return Loss	- 24.3 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.391 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 28, 2003

DASY5 Validation Report for Head TSL

Date: 03.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 480

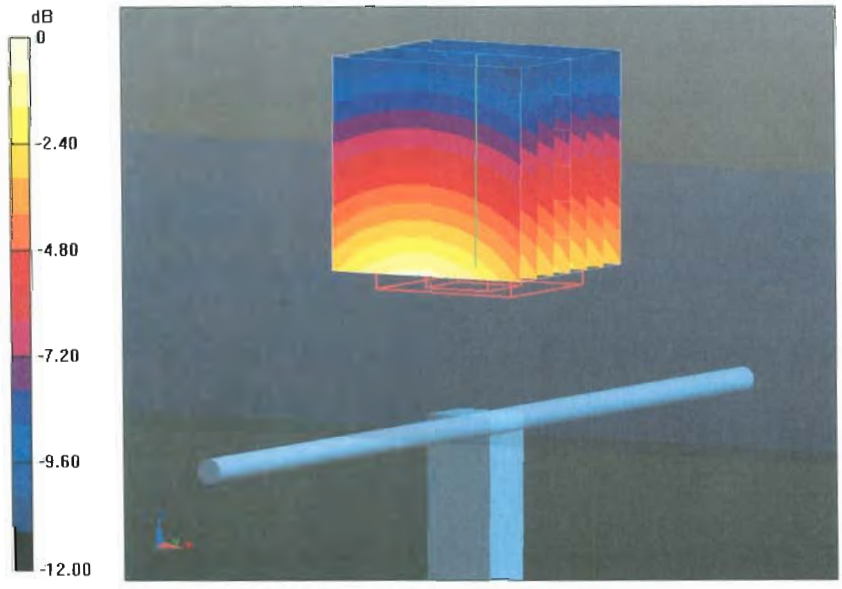
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.92 mho/m; ε_r = 41.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(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 52.8.3(988); SEMCAD X 14.6.7(6848)

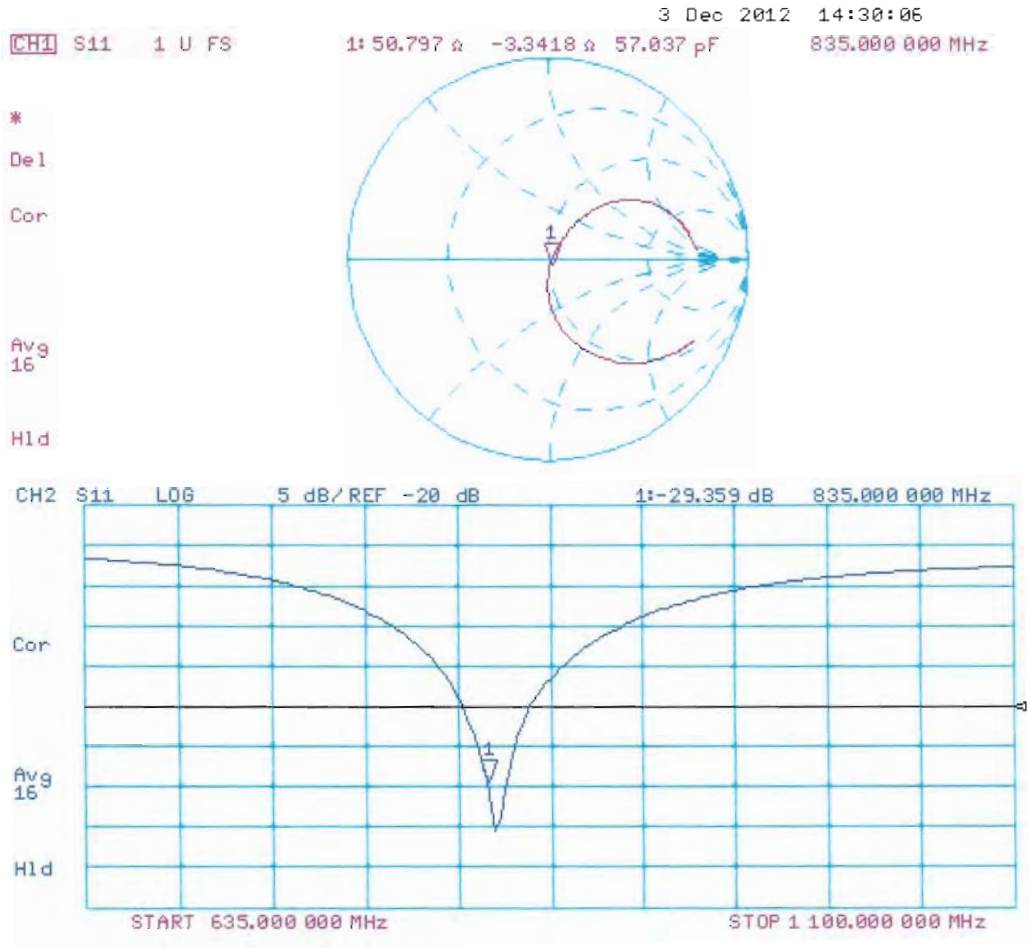
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.814 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 3.60 W/kg
SAR(1 g) = 2.39 W/kg; SAR(10 g) = 1.56 W/kg
Maximum value of SAR (measured) = 2.80 W/kg



0 dB = 2.80 W/kg = 4.47 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 03.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 480

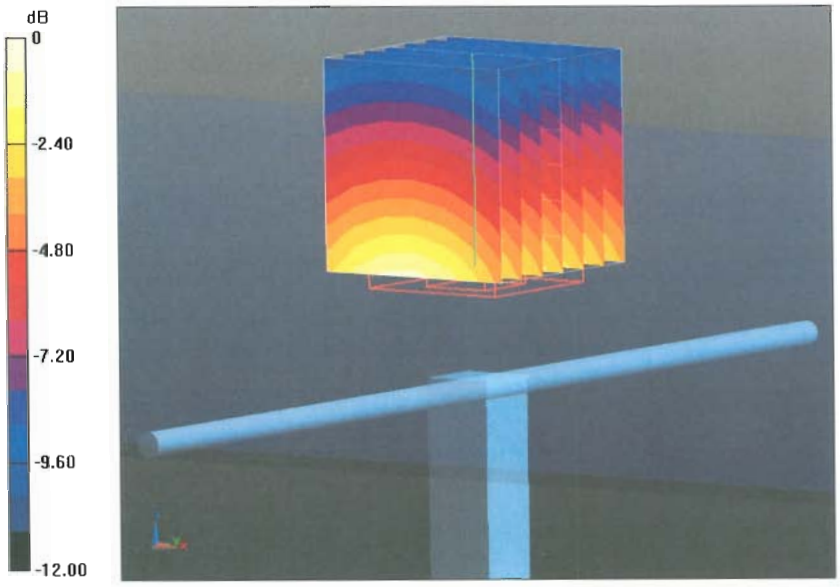
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.99 mho/m; ε_r = 54.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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 52.8.3(988); SEMCAD X 14.6.7(6848)

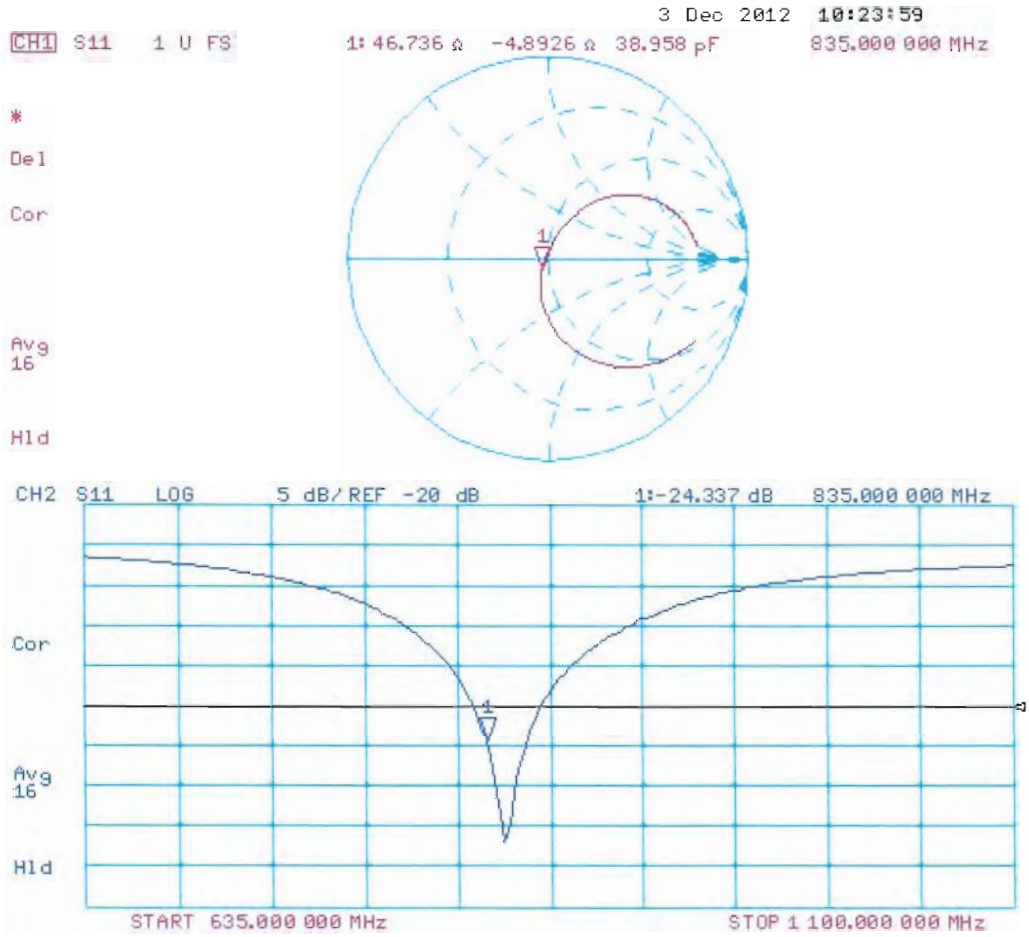
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.301 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 3.53 W/kg
SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.59 W/kg
Maximum value of SAR (measured) = 2.80 W/kg



0 dB = 2.80 W/kg = 4.47 dBW/kg

Impedance Measurement Plot for Body TSL



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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D835V2-462_Sep11

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 462
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 13, 2011

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	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 13, 2011

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.6 Ω - 1.8 jΩ
Return Loss	- 32.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.8 Ω - 3.7 jΩ
Return Loss	- 27.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.391 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.
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	March 27, 2002

Date: 13.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 462

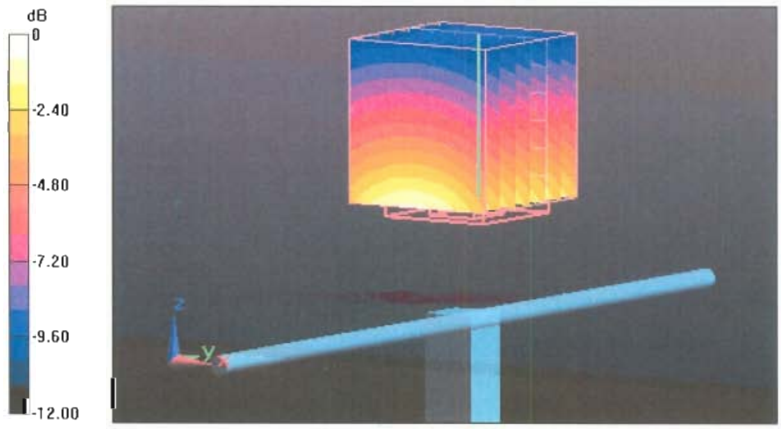
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.89 mho/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

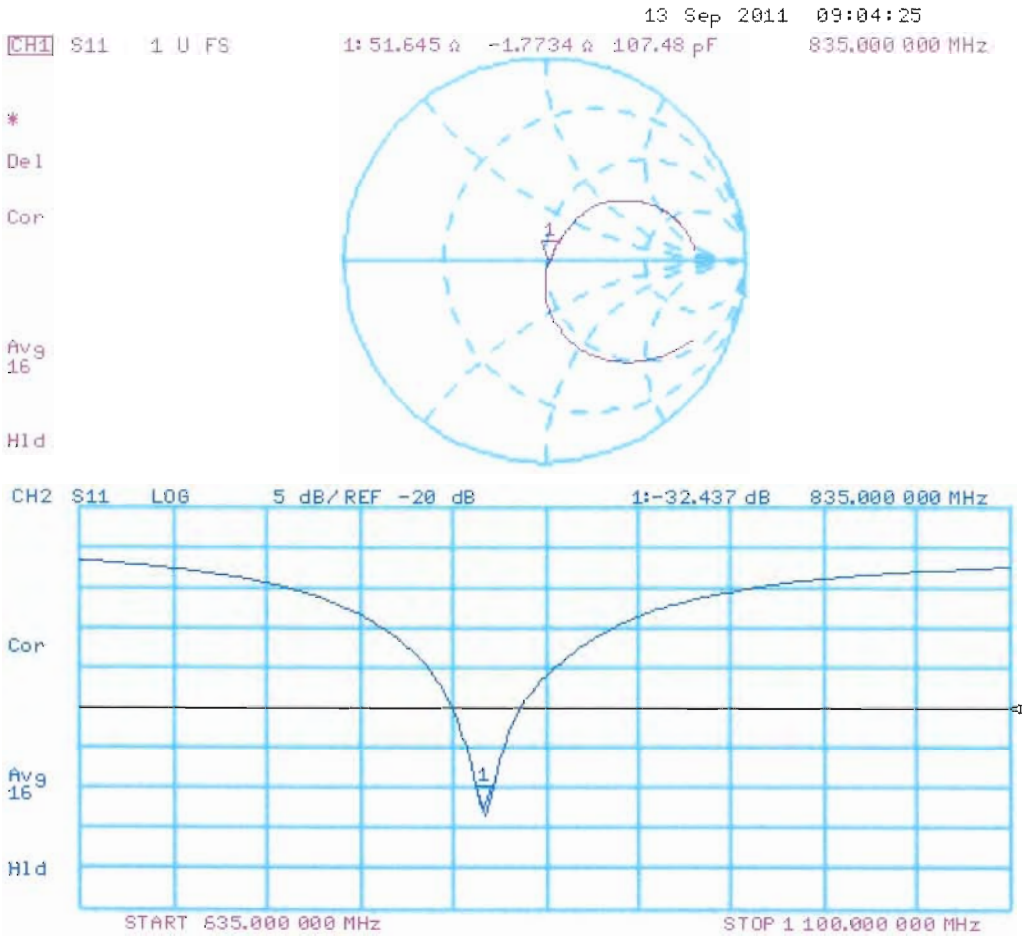
Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.987 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.423 W/kg
SAR(1 g) = 2.33 mW/g; SAR(10 g) = 1.52 mW/g
Maximum value of SAR (measured) = 2.708 mW/g



0 dB = 2.710mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 12.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 462

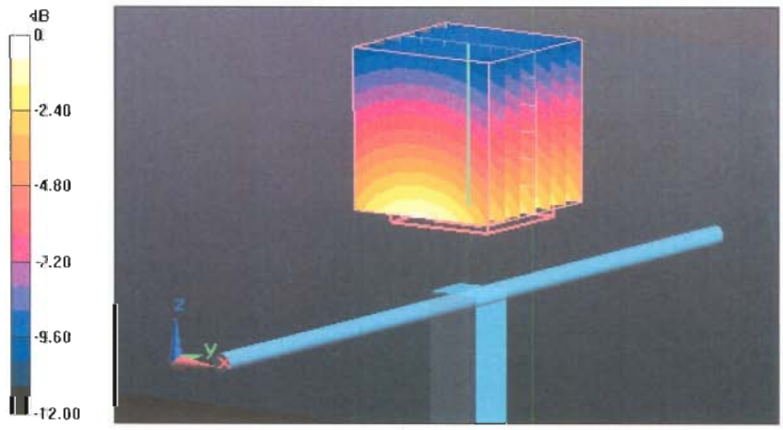
Communication System: CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

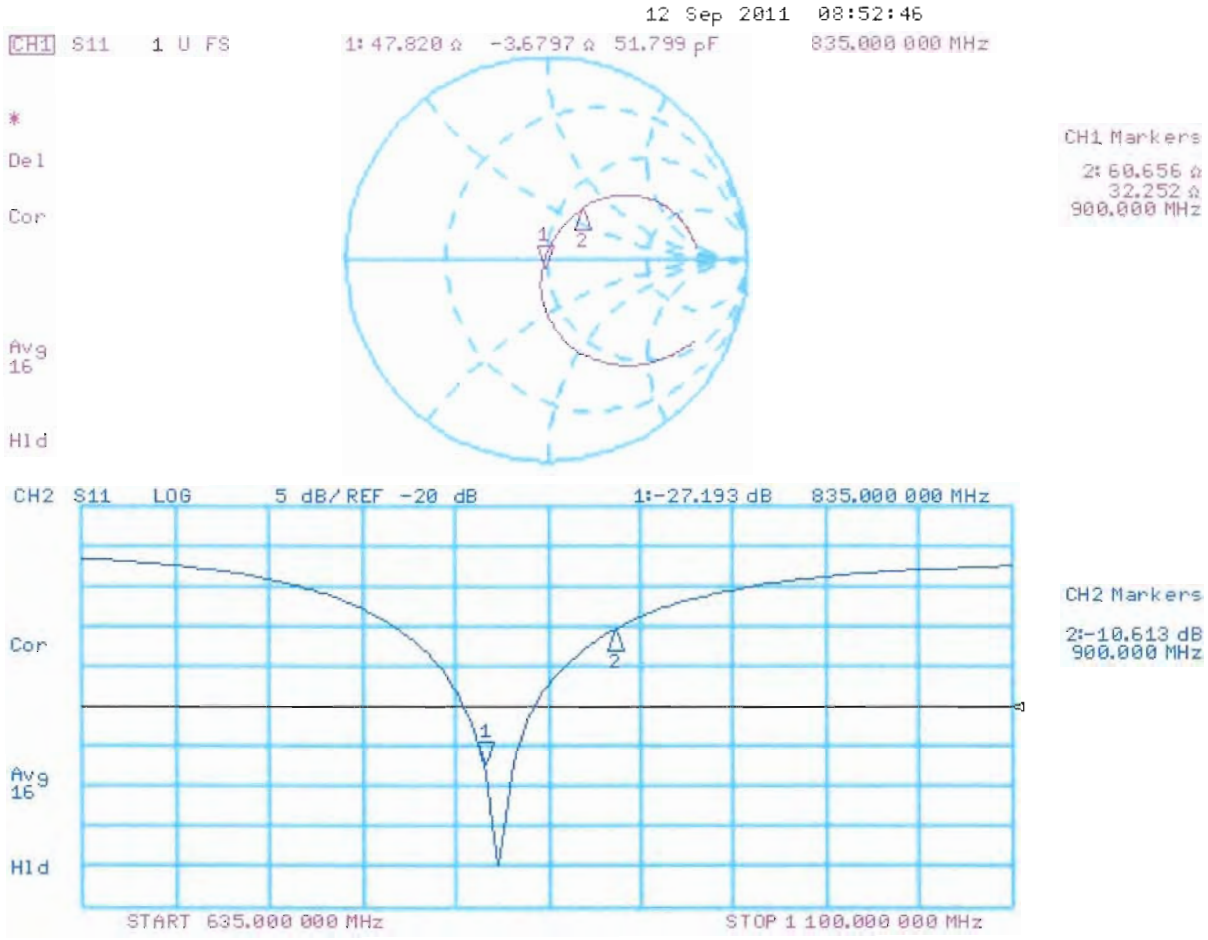
Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.464 V/m; Power Drift = 0.0033 dB
Peak SAR (extrapolated) = 3.540 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.851 mW/g



0 dB = 2.850mW/g

Impedance Measurement Plot for Body TSL



Dipole D835V2 – SN: 462 Antenna Parameters measured: 2013-04-16.

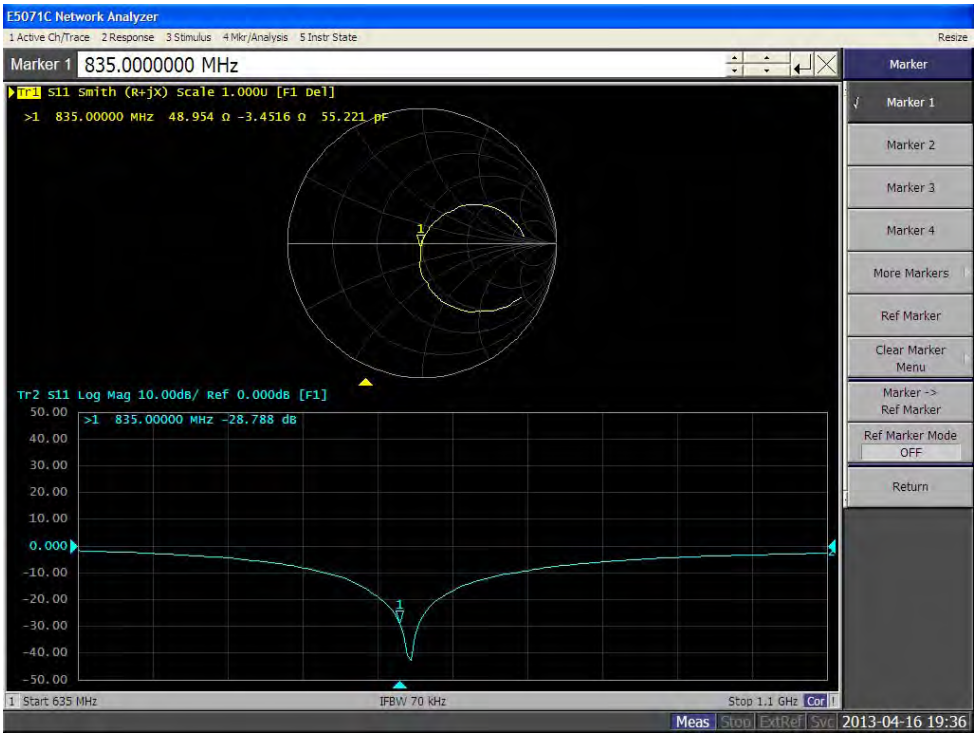
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	50.7 Ω - 2.8 jΩ	49.0 Ω -3.5 jΩ
Return loss	-30.7 dB	-28.8 dB

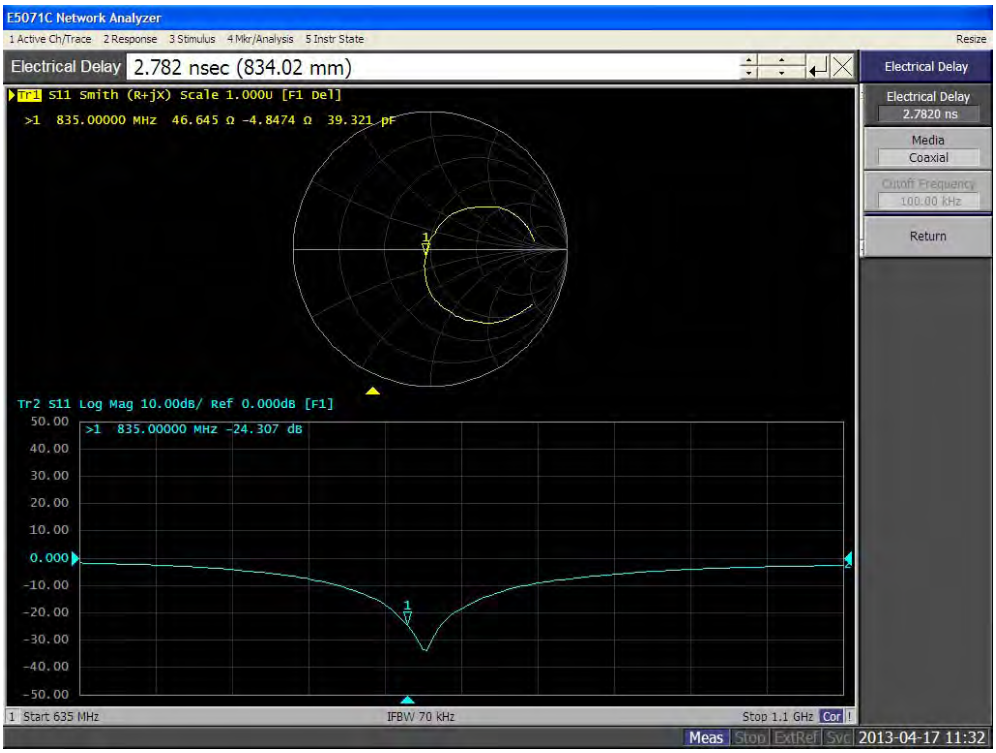
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	47.4 Ω - 3.8 jΩ	46.6 Ω -4.8 jΩ
Return loss	-26.5 dB	-24.3 dB

Impedance Measurement Plot for Head TSL 835



Impedance Measurement Plot for Body TSL 835



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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

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

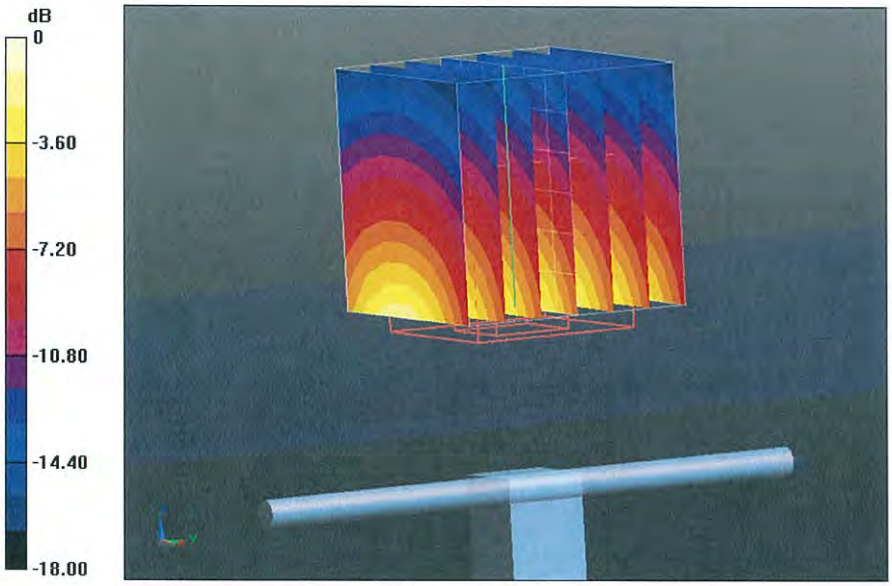
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.34 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

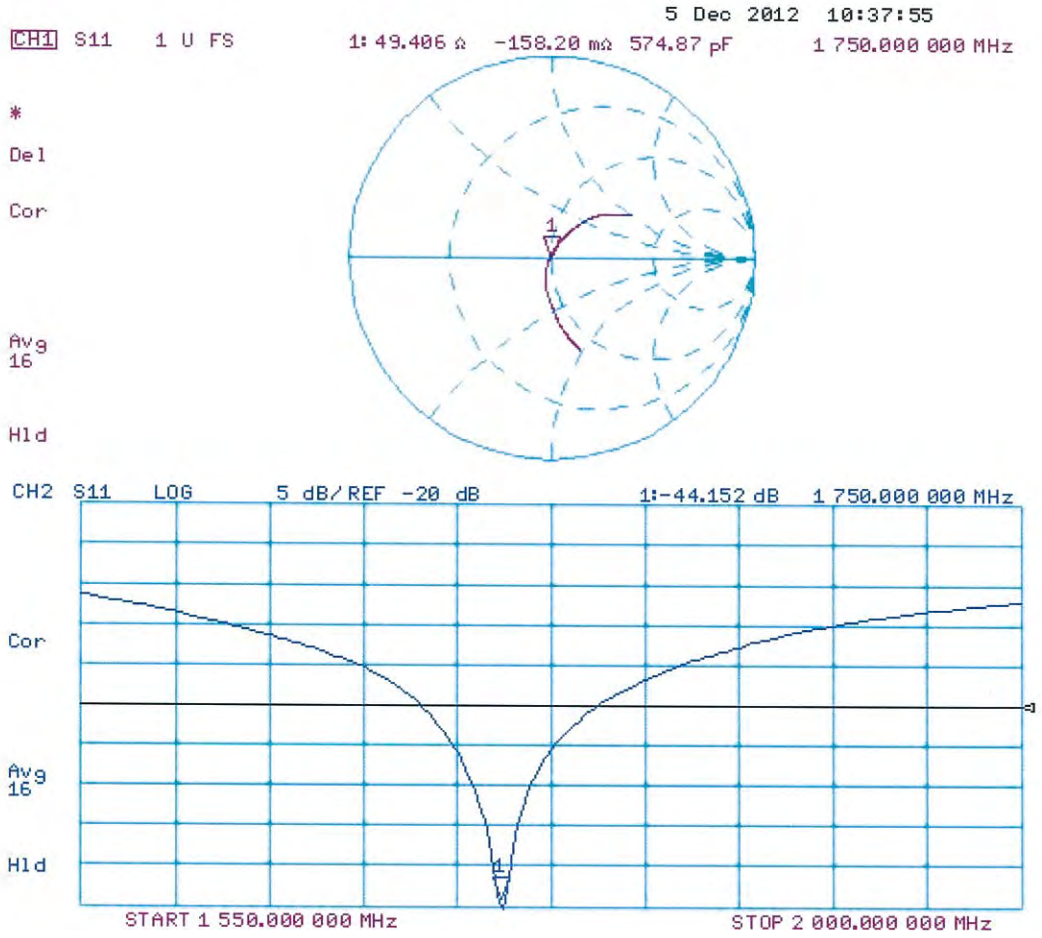
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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

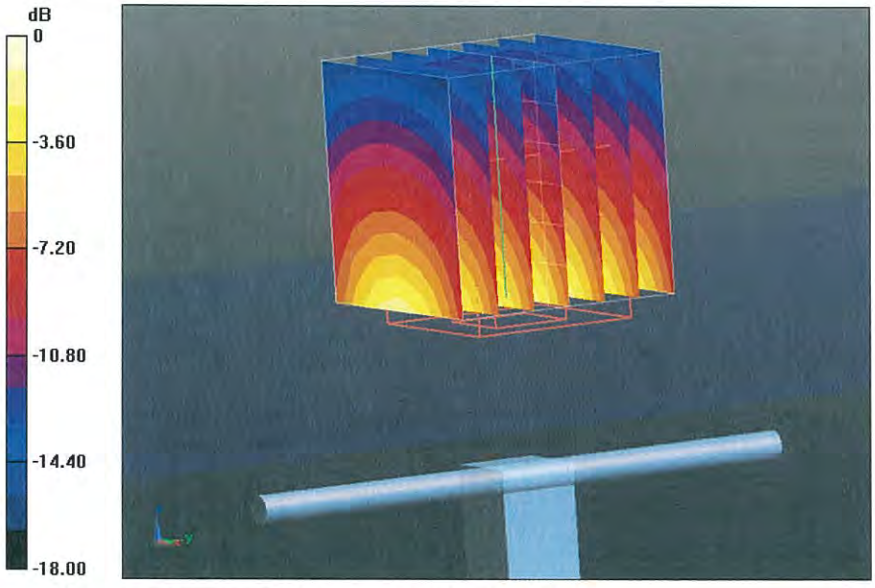
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.47 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

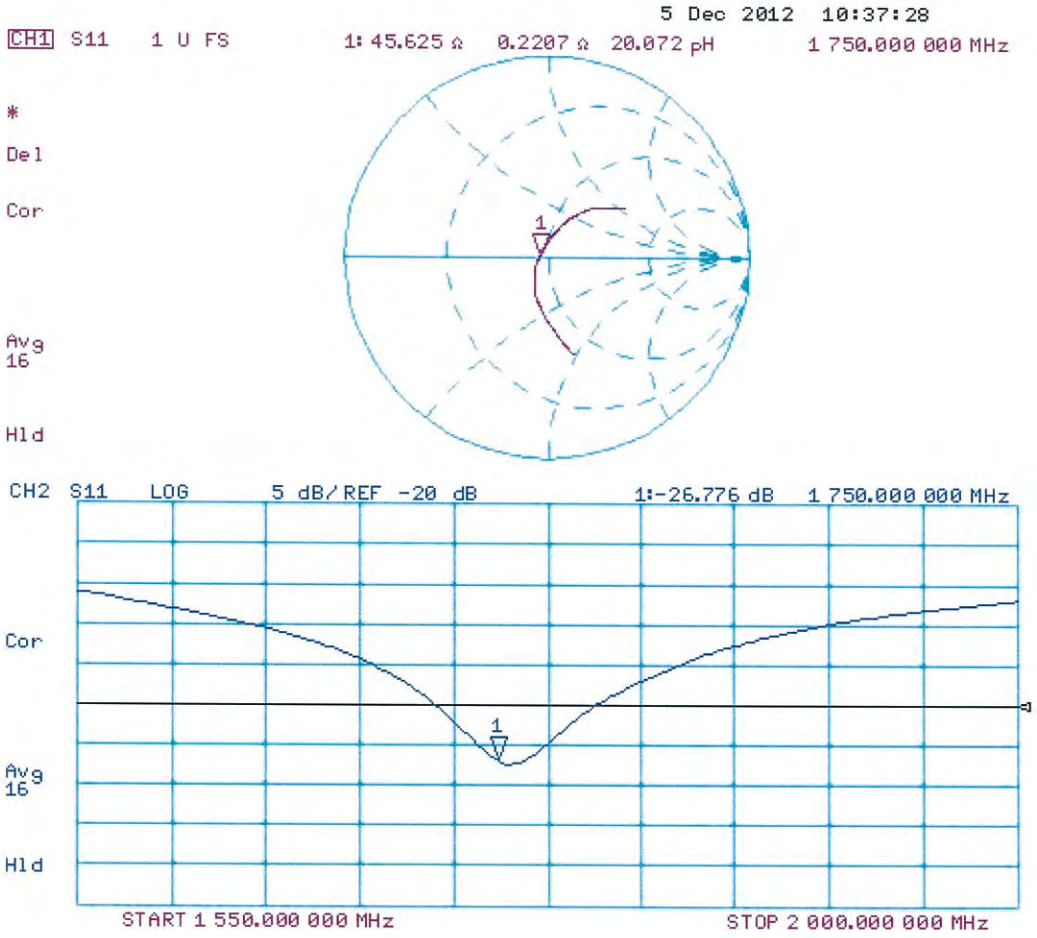
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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



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Accreditation No.: SCS 108

Client **Nokia Salo TCC**

Certificate No: D1750V2-1082_Dec12

CALIBRATION CERTIFICATE

Object	D1750V2 - SN: 1082
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

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	8.99 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.80 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.3 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	53.4	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	9.21 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**36.9 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	4.95 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**19.8 W/kg ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.8 Ω + 0.7 jΩ
Return Loss	- 43.1 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.2 Ω + 0.8 jΩ
Return Loss	- 27.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.219 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

Date: 05.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN: 1082

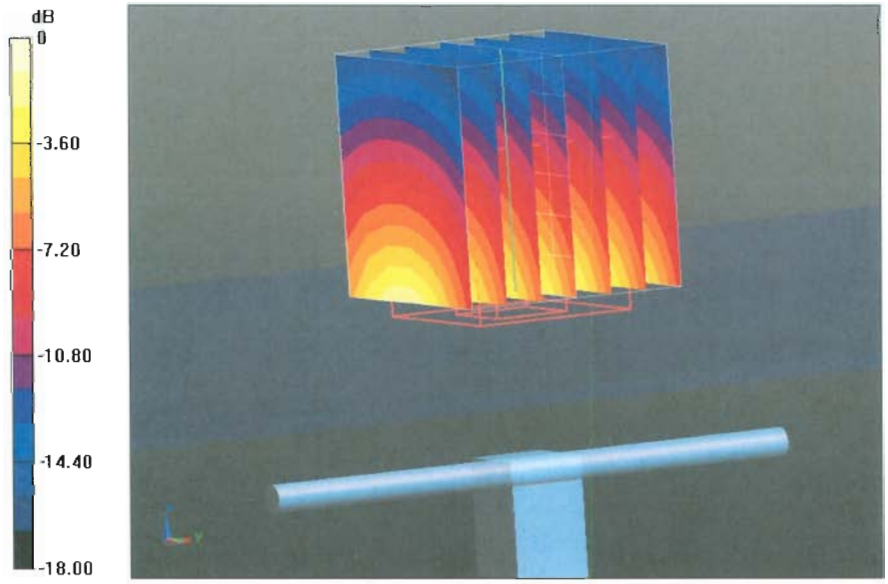
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.34 mho/m; ε_r = 39.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

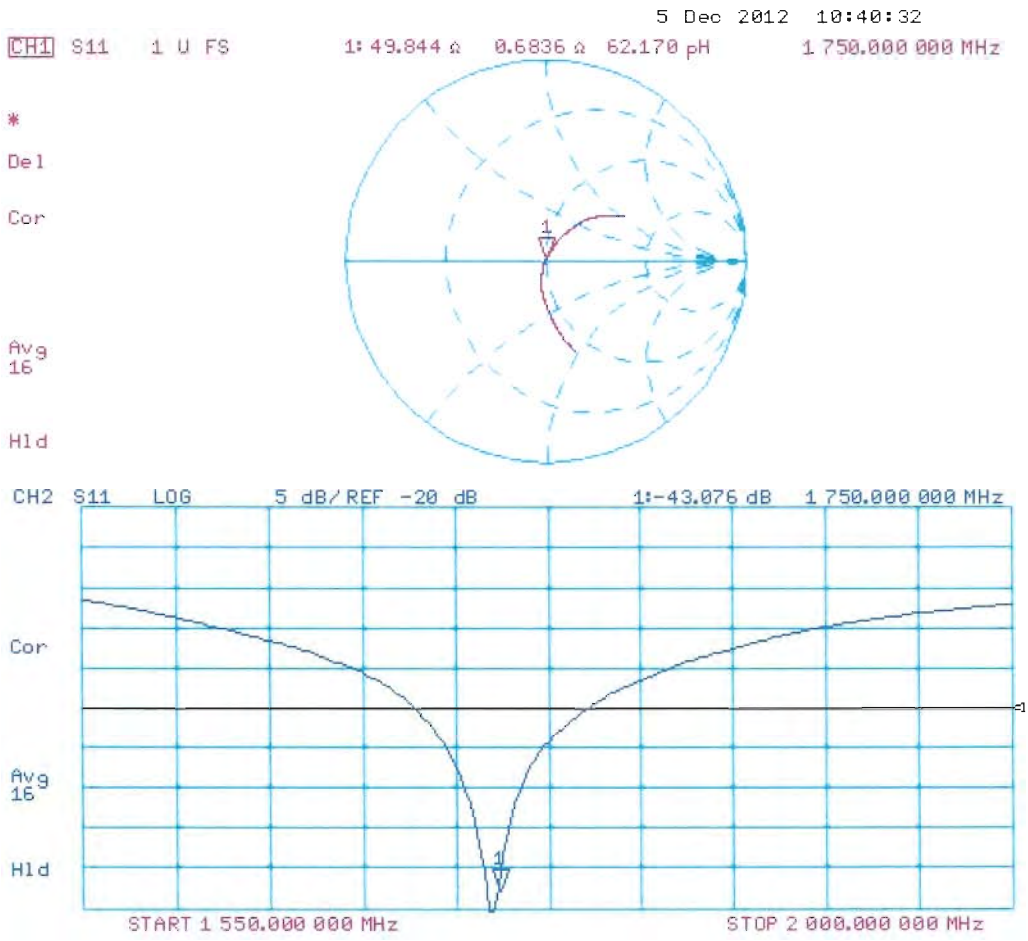
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.445 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 15.9 W/kg
SAR(1 g) = 8.99 W/kg; SAR(10 g) = 4.8 W/kg
Maximum value of SAR (measured) = 10.9 W/kg



0 dB = 10.9 W/kg = 10.37 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: 1082

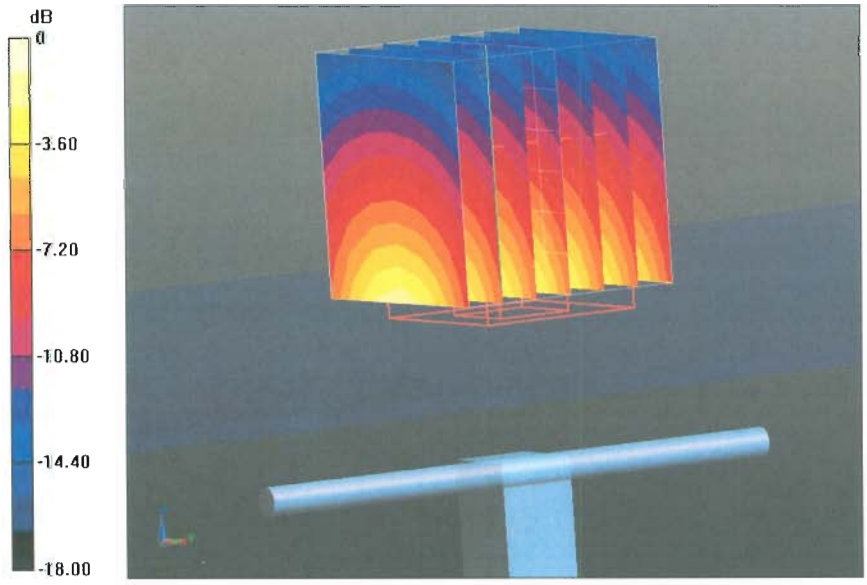
Communication System: CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.47 mho/m; ε_r = 51.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

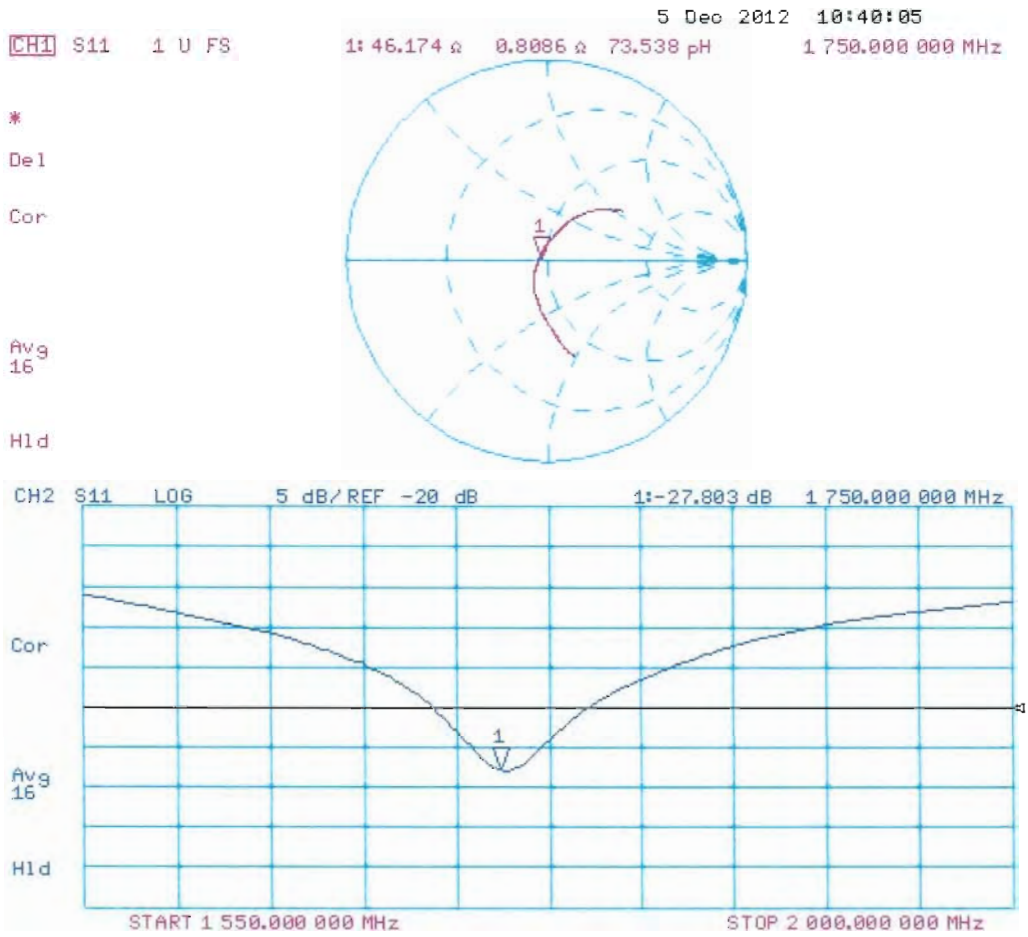
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.445 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 15.9 W/kg
SAR(1 g) = 9.21 W/kg; SAR(10 g) = 4.95 W/kg
Maximum value of SAR (measured) = 11.5 W/kg



0 dB = 11.5 W/kg = 10.61 dBW/kg

Impedance Measurement Plot for Body TSL



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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

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

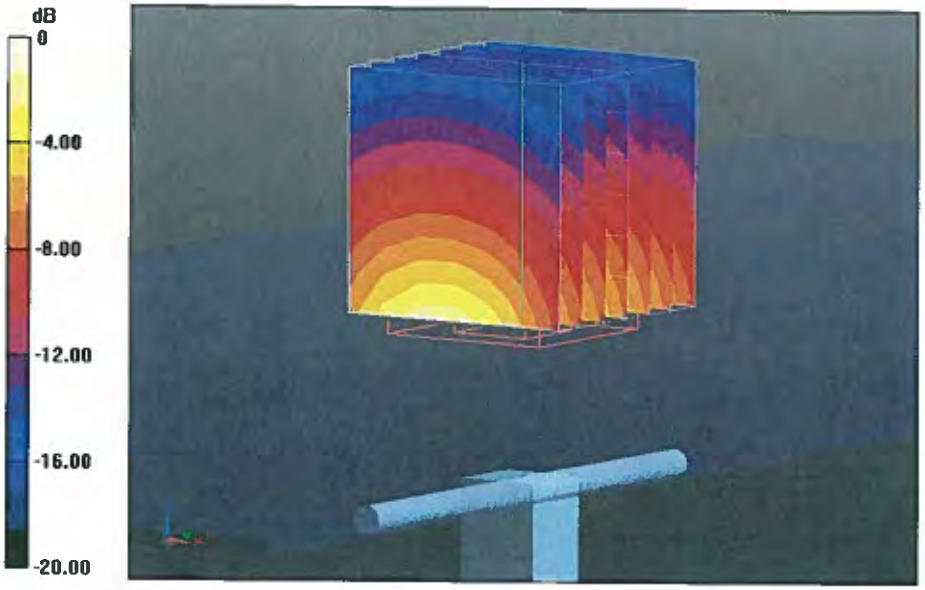
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.38 S/m; ε_r = 39.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

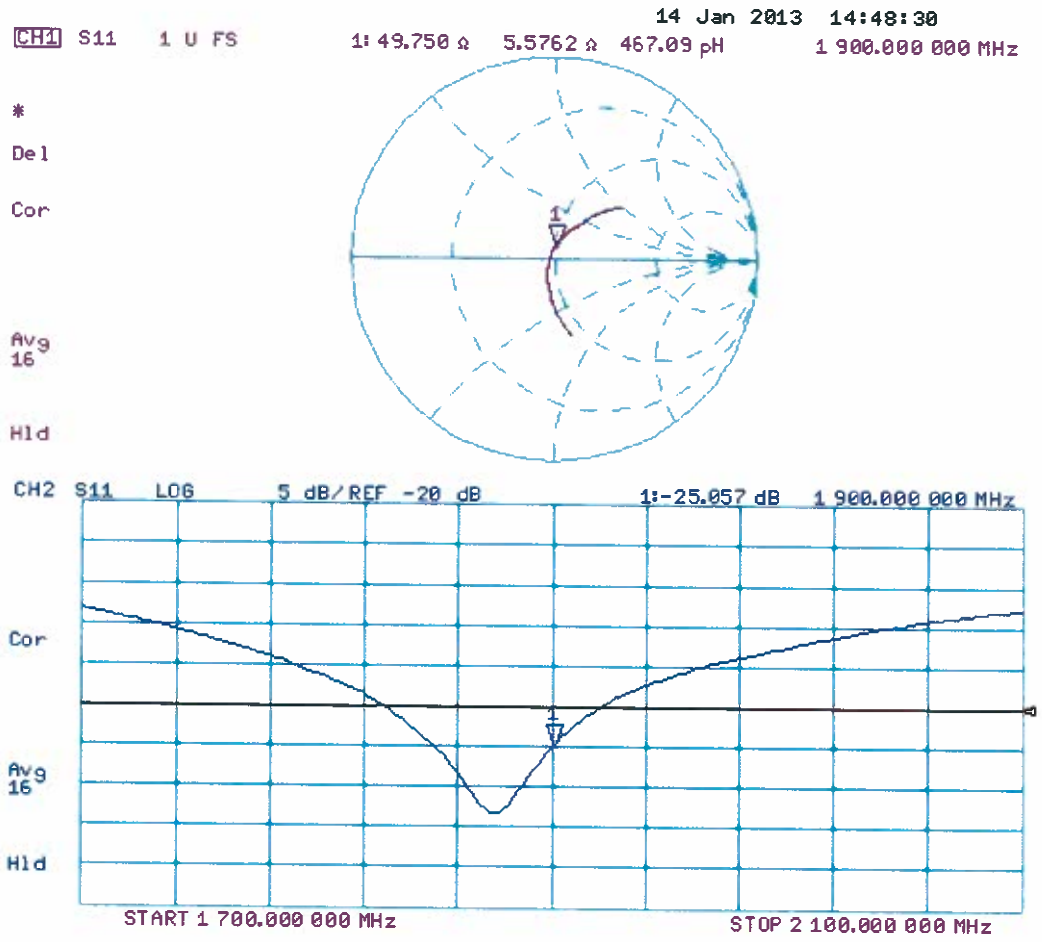
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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

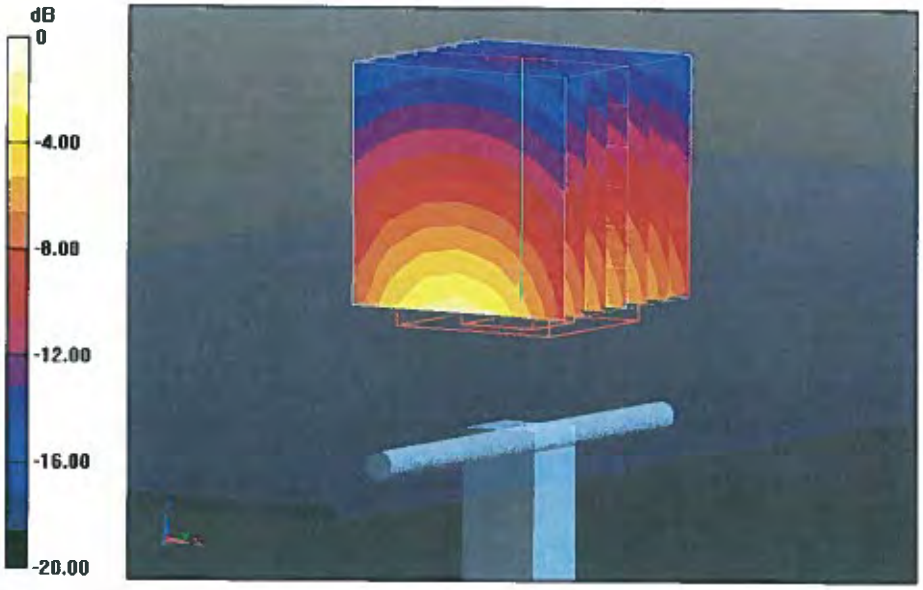
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.52 S/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

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)

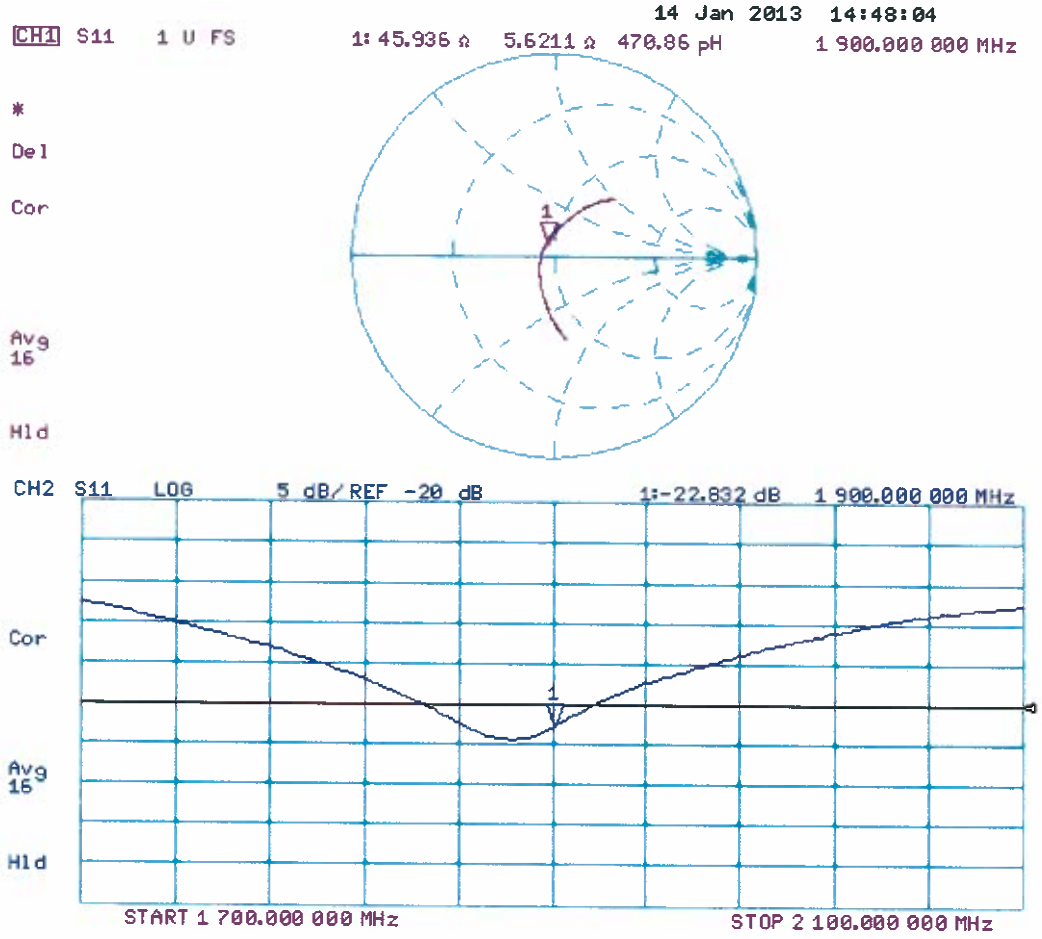
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

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



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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1900V2-5d030_Feb12

CALIBRATION CERTIFICATE

Object: D1900V2 - SN: 5d030

Calibration procedure(s): QA CAL-05.v8
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: February 22, 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: 5086 (20g)	29-Mar-11 (No. 217-01368)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

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:	Israe El-Naouq	Laboratory Technician	Israe El-Naouq
Approved by:	Katja Pokovic	Technical Manager	

Issued: February 22, 2012

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.0 Ω + 5.3 jΩ
Return Loss	- 25.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.6 Ω + 5.4 jΩ
Return Loss	- 24.4 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.192 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	December 17, 2002

DASY5 Validation Report for Head TSL

Date: 22.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d030

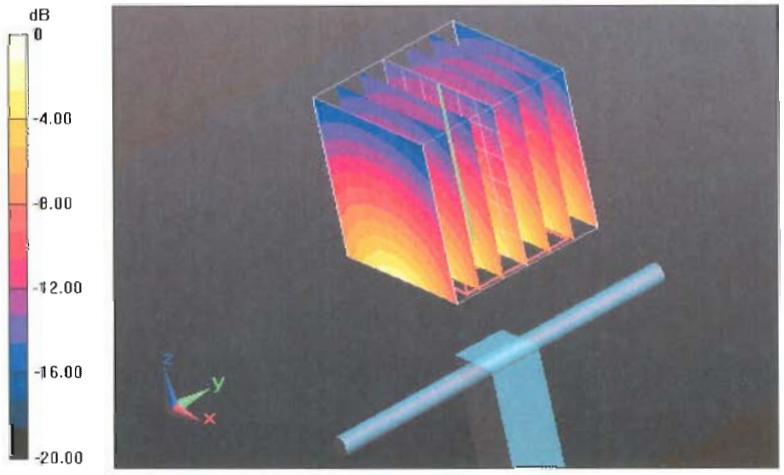
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.4 mho/m; ε_r = 40.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

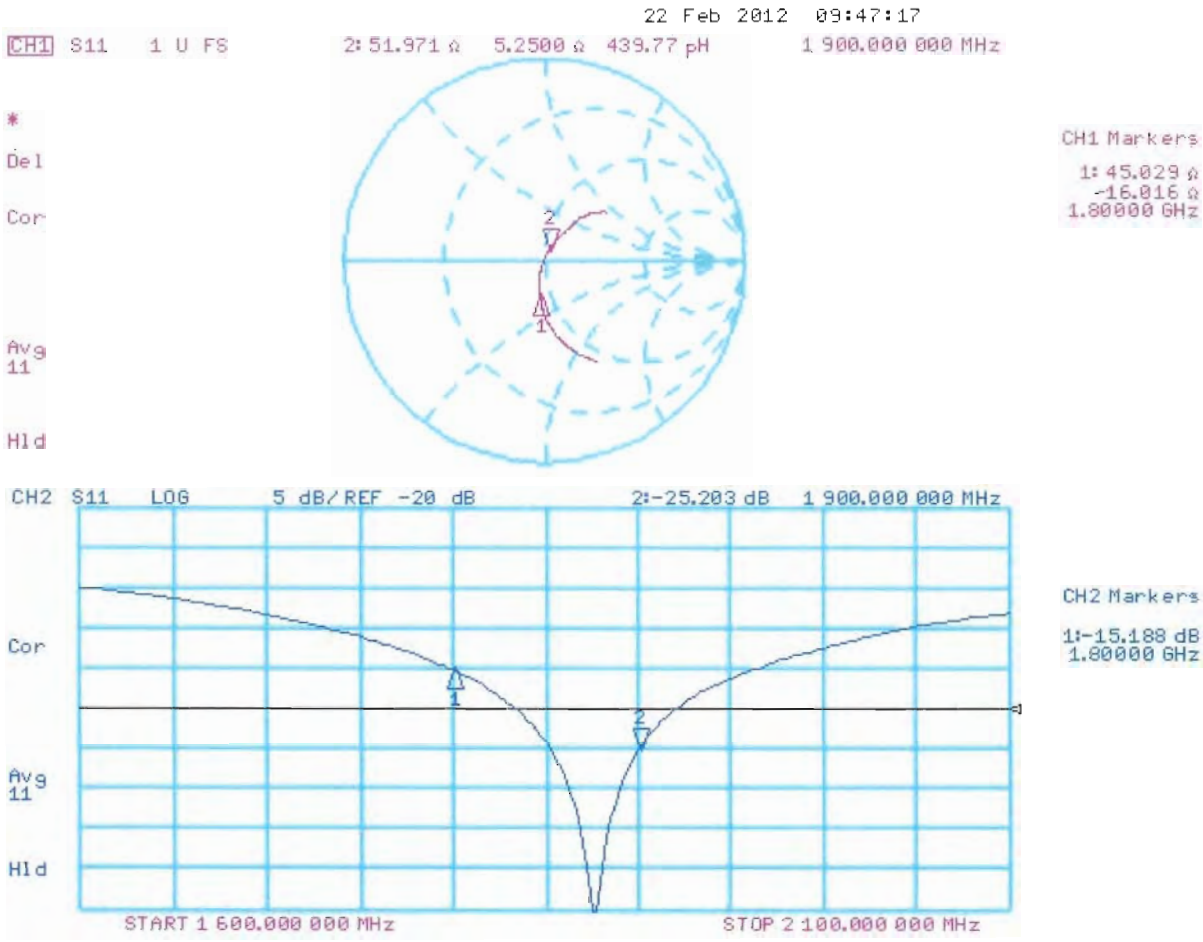
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.565 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 17.4270
SAR(1 g) = 9.79 mW/g; SAR(10 g) = 5.18 mW/g
Maximum value of SAR (measured) = 12.117 mW/g



0 dB = 12.120mW/g = 21.67 dB mW/g

Impedance Measurement Plot for Head TSL



Date: 22.02.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d030

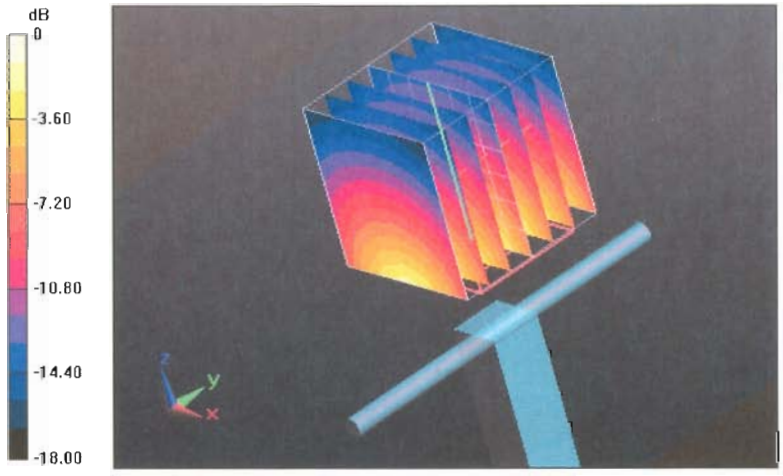
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.56 mho/m; ε_r = 53; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); Calibrated: 30.12.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.0(692); SEMCAD X 14.6.4(4989)

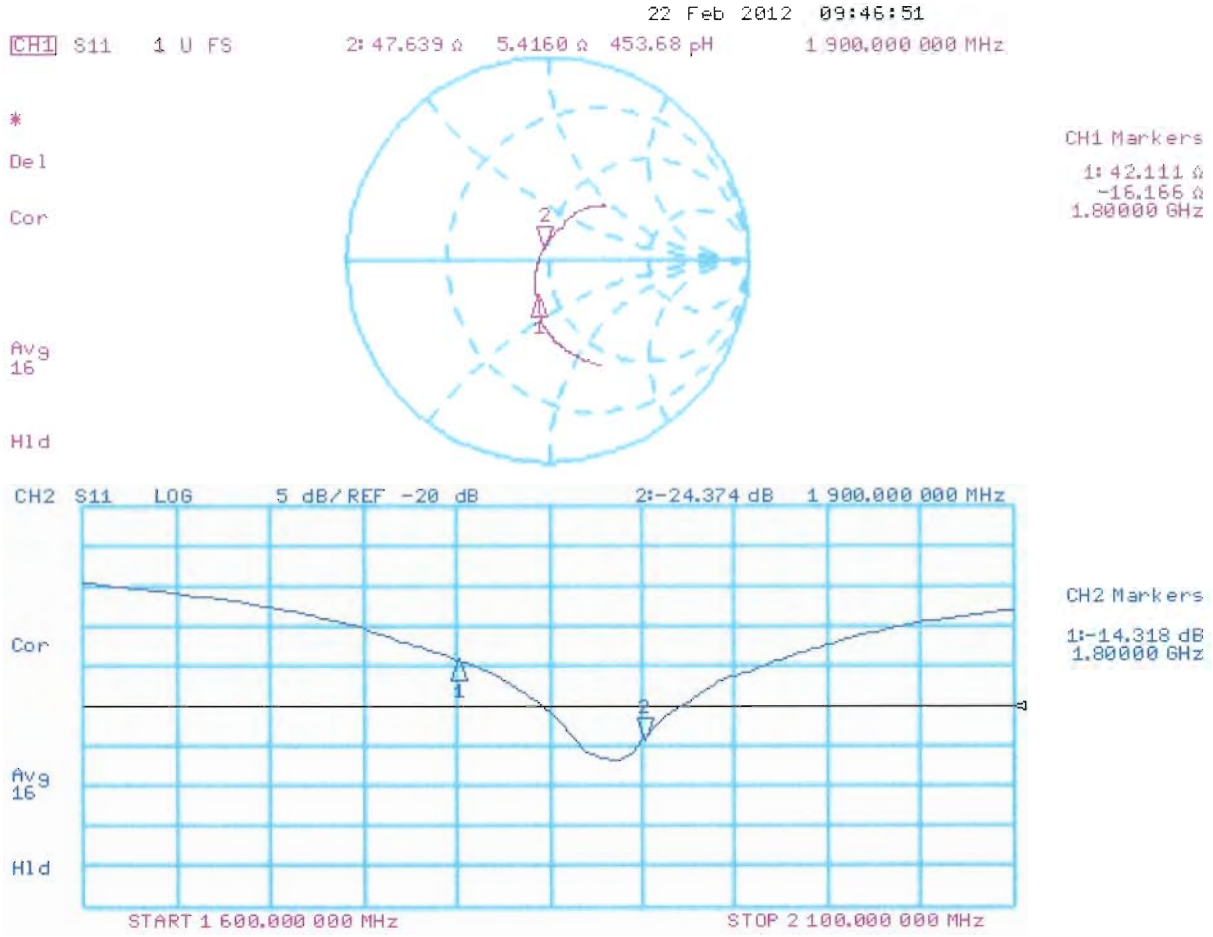
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 93.541 V/m; Power Drift = -0.0095 dB
Peak SAR (extrapolated) = 17.4260
SAR(1 g) = 9.87 mW/g; SAR(10 g) = 5.17 mW/g
Maximum value of SAR (measured) = 12.485 mW/g



0 dB = 12.480mW/g = 21.92 dB mW/g

Impedance Measurement Plot for Body TSL



Dipole D1900V2 - SN5d030 Antenna Parameters measured: 2013-04-12.

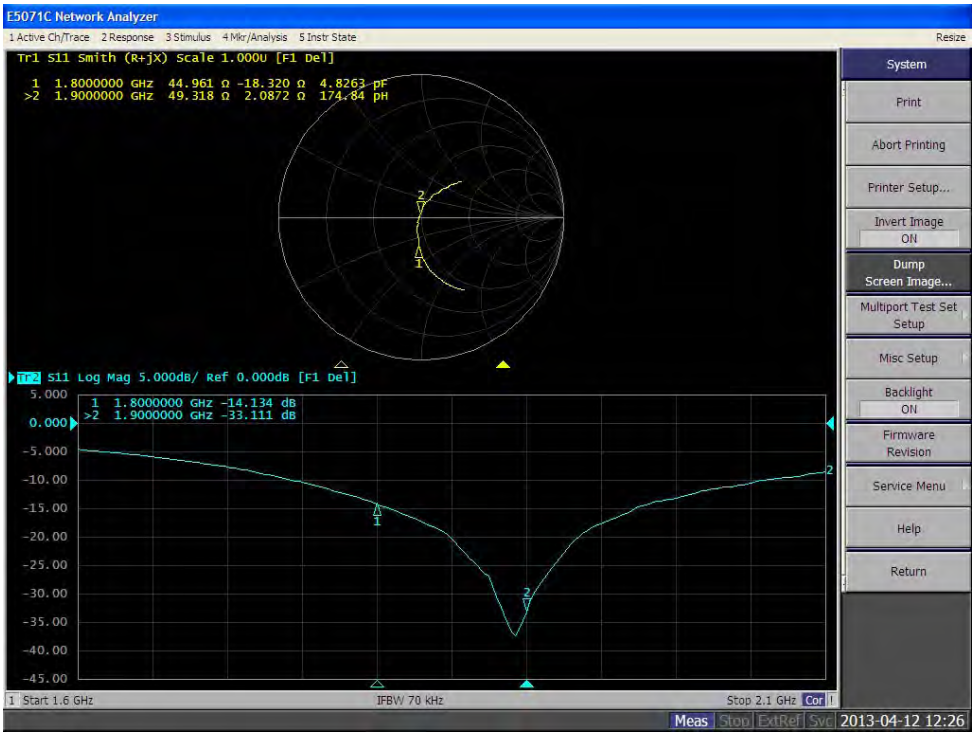
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	52.0 Ω 5.3 jΩ	49.3 Ω 2.1 jΩ
Return loss	-25.2 dB	-33.1 dB

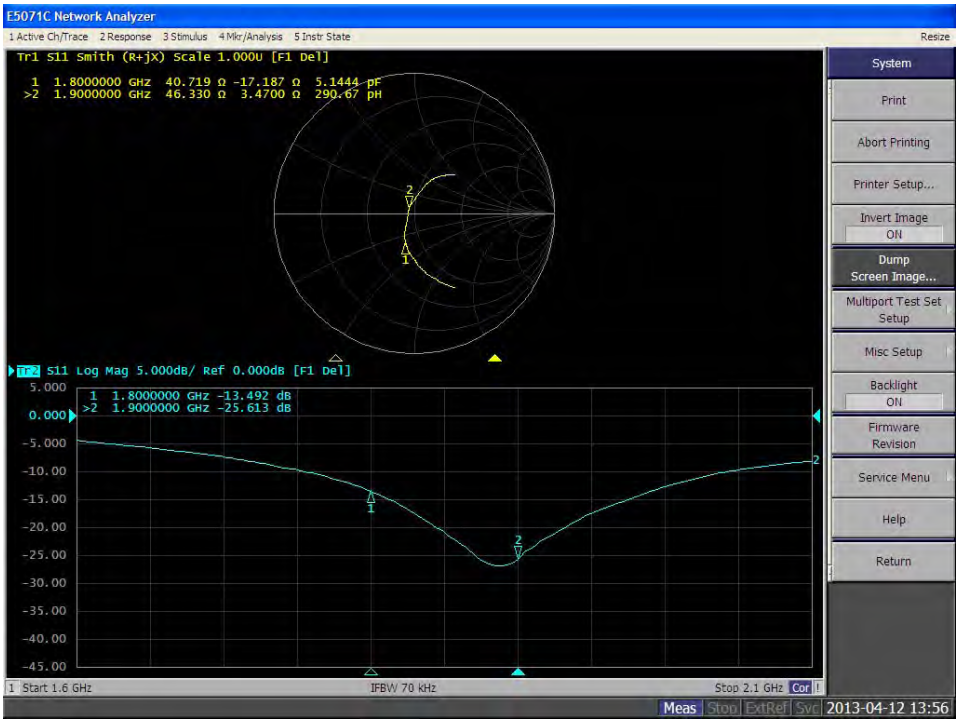
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	47.6 Ω 5.4 jΩ	46.3 Ω 3.5 jΩ
Return loss	-24.4 dB	-25.6 dB

Impedance Measurement Plot for Head TSL 1900



Impedance Measurement Plot for Body TSL 1900



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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D1900V2-5d013_Dec12

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d013
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	December 06, 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	Israe El-Naouq
Approved by:	Katja Pokovic	Technical Manager	

Issued: December 6, 2012

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	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	39.5 ± 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	5.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**21.2 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	5.41 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	52.3 Ω + 6.2 jΩ
Return Loss	- 23.8 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.4 Ω + 5.9 jΩ
Return Loss	- 24.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.194 ns

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

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

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	April 30, 2002

Date: 06.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d013

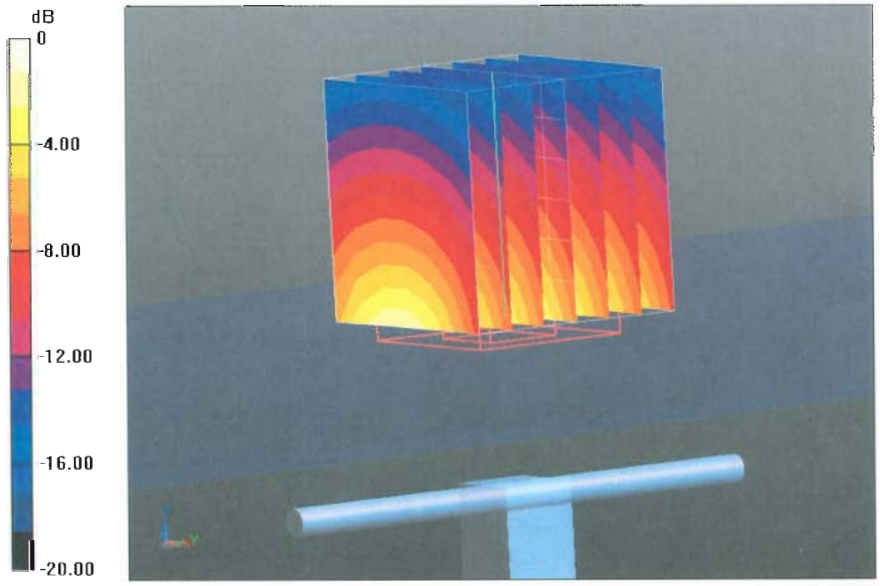
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.38 mho/m; ε_r = 39.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.01, 5.01, 5.01); 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)

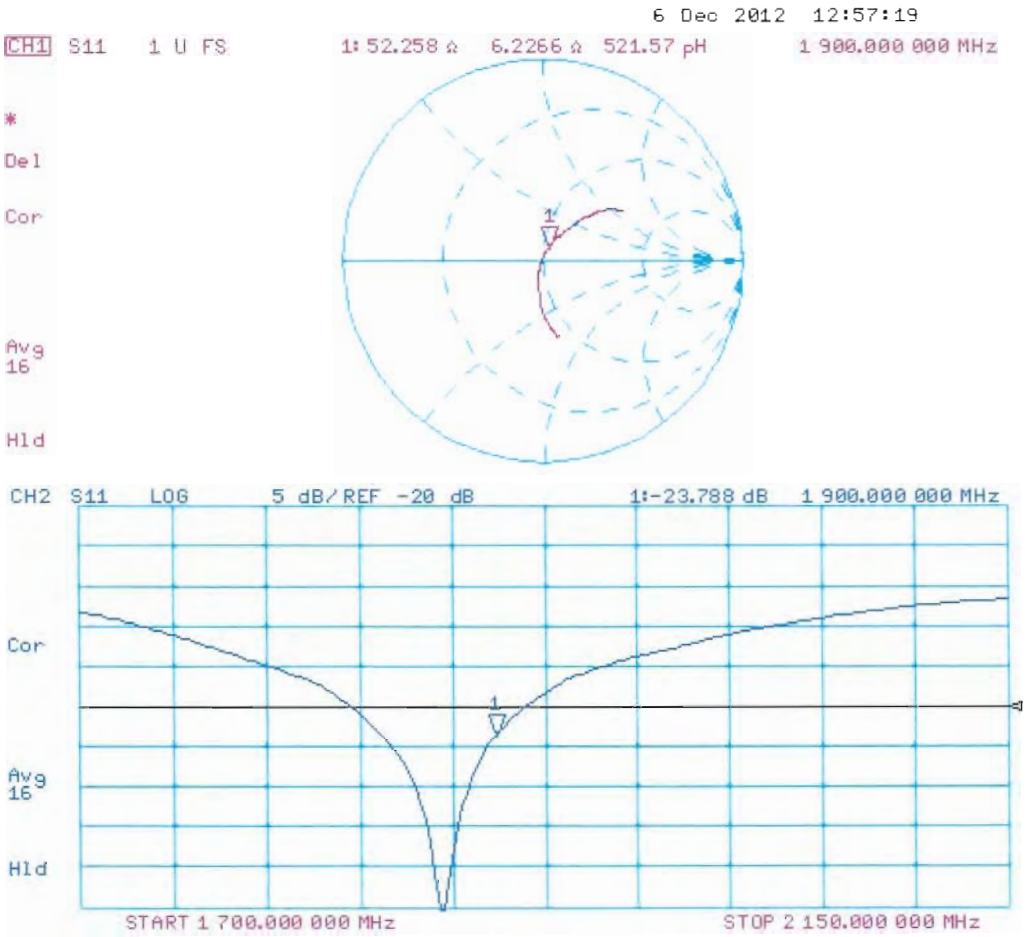
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 97.748 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 18.0 W/kg
SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.28 W/kg
Maximum value of SAR (measured) = 12.4 W/kg



0 dB = 12.4 W/kg = 10.93 dBW/kg

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 06.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d013

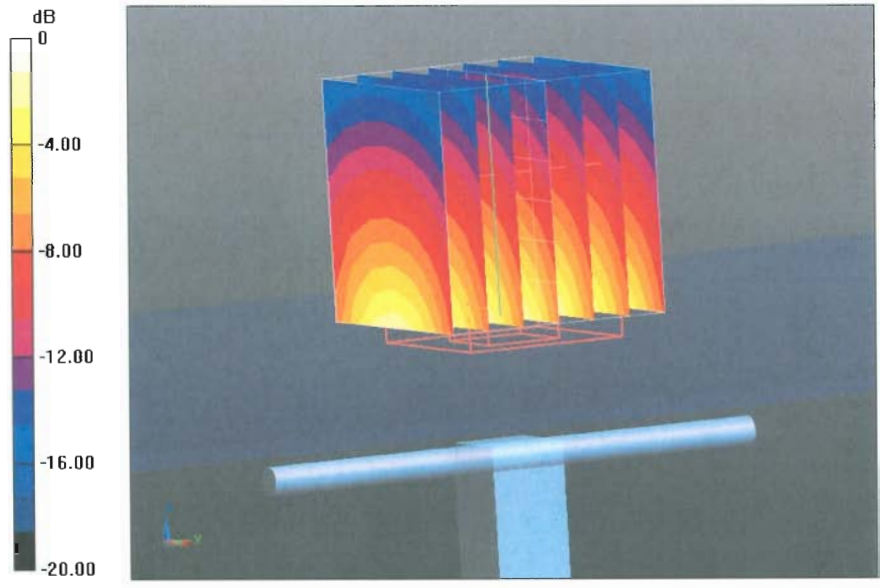
Communication System: CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.52 mho/m; ε_r = 52.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.62, 4.62, 4.62); 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)

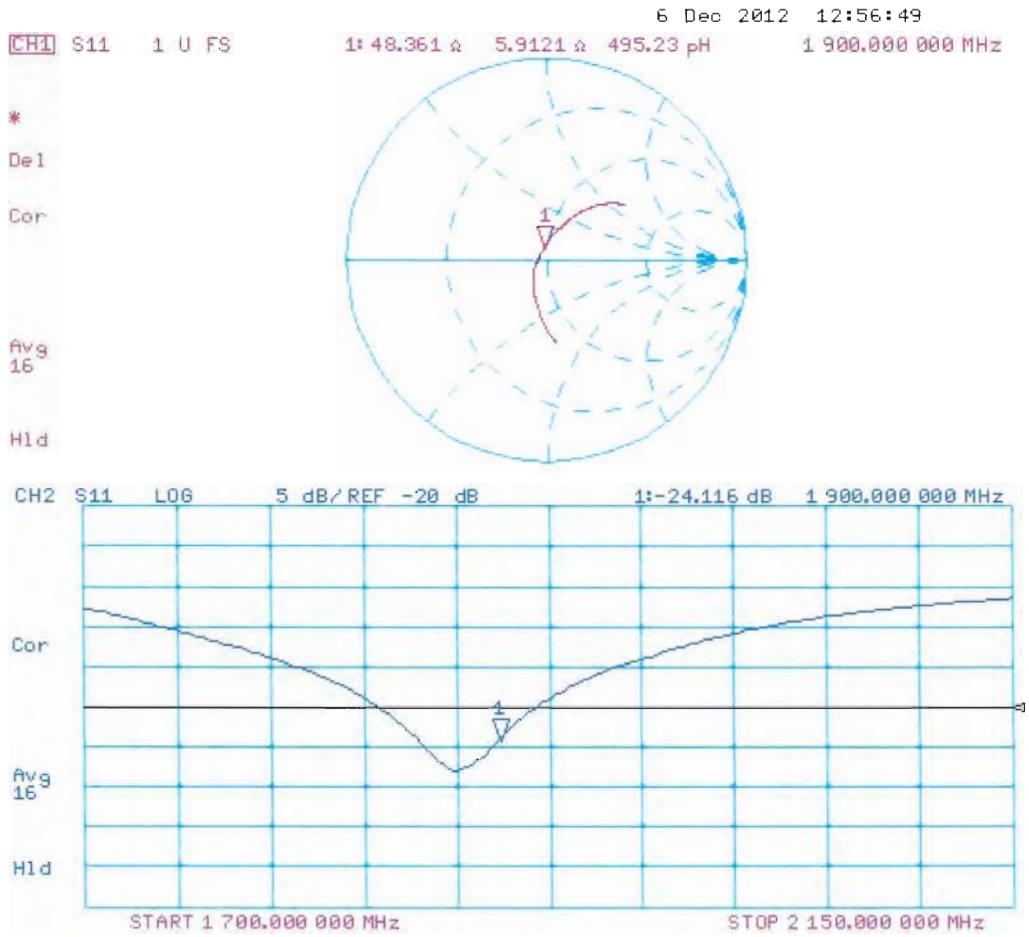
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.039 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 18.0 W/kg
SAR(1 g) = 10.3 W/kg; SAR(10 g) = 5.41 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



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Accreditation No.: SCS 108

Client Nokia Salo TCC

Certificate No: D2450V2-729_Sep11

CALIBRATION CERTIFICATE

Object	D2450V2 - SN: 729
Calibration procedure(s)	QA CAL-05.v8 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	September 13, 2011

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	06-Oct-10 (No. 217-01266)	Oct-11
Power sensor HP 8481A	US37292783	06-Oct-10 (No. 217-01266)	Oct-11
Reference 20 dB Attenuator	SN: S5086 (20b)	29-Mar-11 (No. 217-01367)	Apr-12
Type-N mismatch combination	SN: 5047.2 / 06327	29-Mar-11 (No. 217-01371)	Apr-12
Reference Probe ES3DV3	SN: 3205	29-Apr-11 (No. ES3-3205_Apr11)	Apr-12
DAE4	SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-09)	In house check: Oct-11
RF generator R&S SMT-06	100005	04-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-10)	In house check: Oct-11

	Name	Function	Signature
Calibrated by:	Dimce Iliev	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: September 13, 2011

Measurement Conditions

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

DASY Version	DASY5	V52.6.2
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	38.3 ± 6 %	1.85 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	13.9 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**54.6 mW /g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.45 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	**25.6 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	51.7 ± 6 %	2.04 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	13.3 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**51.8 mW / g ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.18 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	**24.4 mW / g ± 16.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.8 Ω - 0.6 jΩ
Return Loss	- 34.7 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.7 Ω + 1.1 jΩ
Return Loss	- 35.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.148 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.
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 09, 2003

Date: 13.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

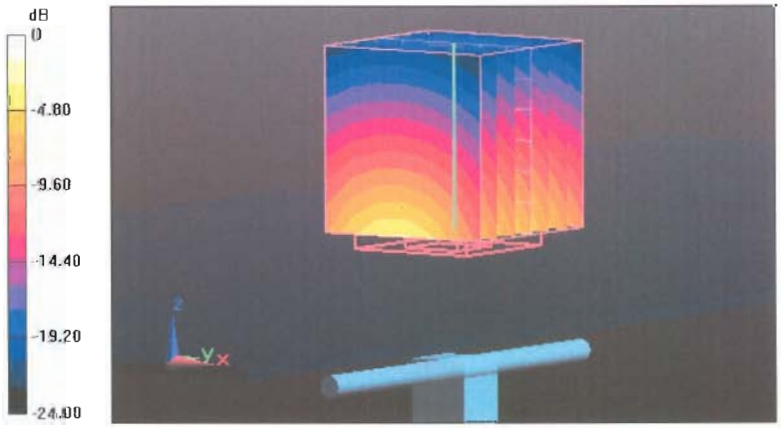
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.85 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.45, 4.45, 4.45); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

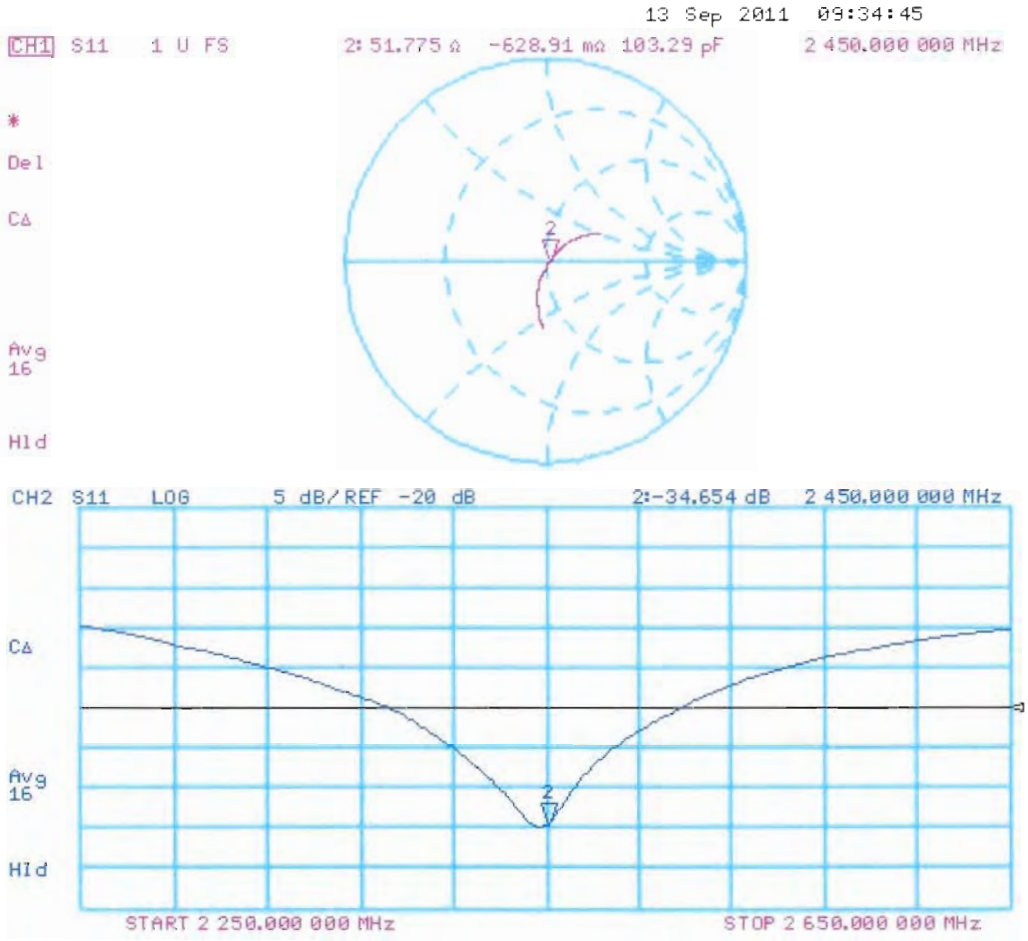
Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 102.5 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 28.852 W/kg
SAR(1 g) = 13.9 mW/g; SAR(10 g) = 6.45 mW/g
Maximum value of SAR (measured) = 18.134 mW/g



0 dB = 18.130mW/g

Impedance Measurement Plot for Head TSL



Date: 12.09.2011

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 729

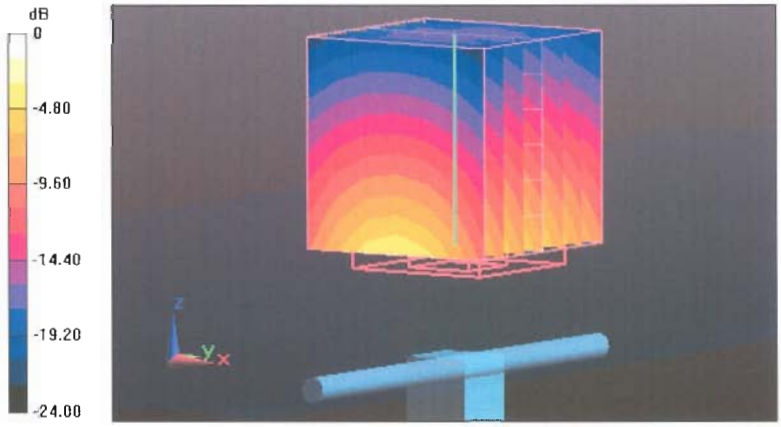
Communication System: CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 2.04 mho/m; ε_r = 51.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.26, 4.26, 4.26); Calibrated: 29.04.2011
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 04.07.2011
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

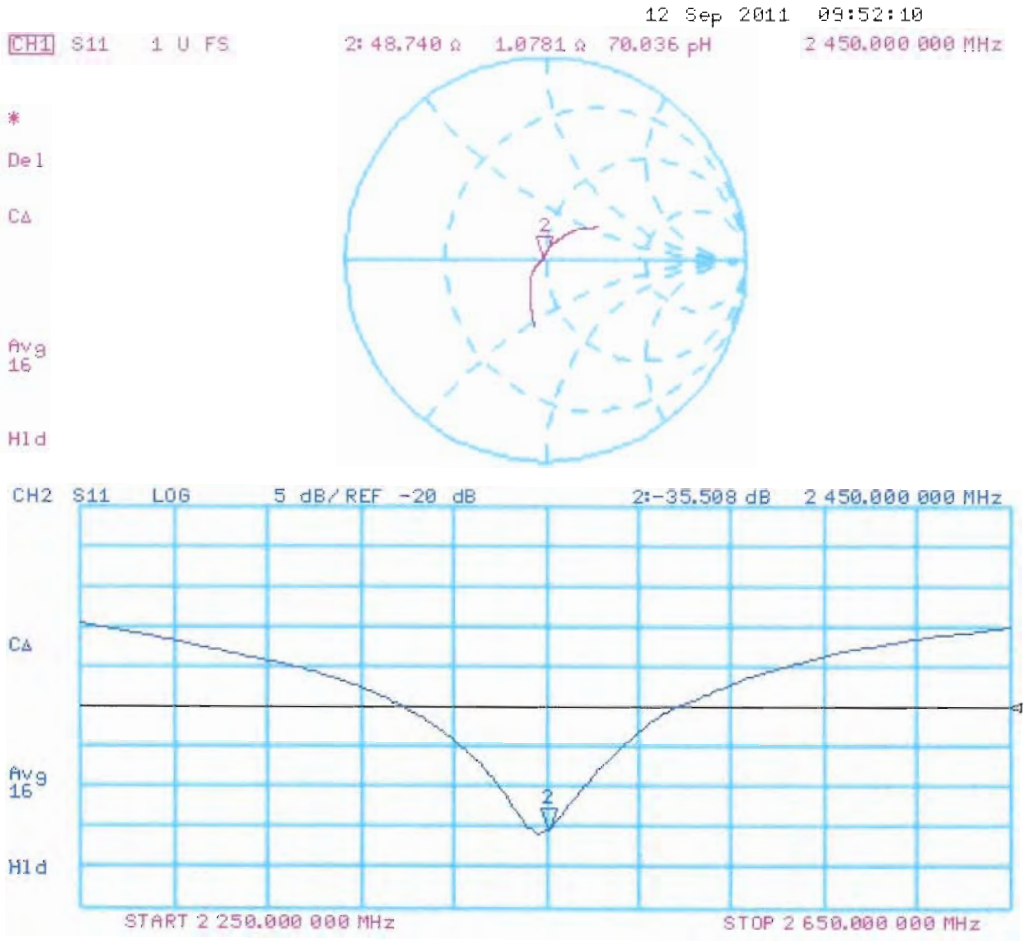
Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 96.035 V/m; Power Drift = -0.0016 dB
Peak SAR (extrapolated) = 27.393 W/kg
SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.18 mW/g
Maximum value of SAR (measured) = 17.569 mW/g



0 dB = 17.570mW/g

Impedance Measurement Plot for Body TSL



Dipole D2450V2 – SN:729 Antenna Parameters measured: 2013-04-16.

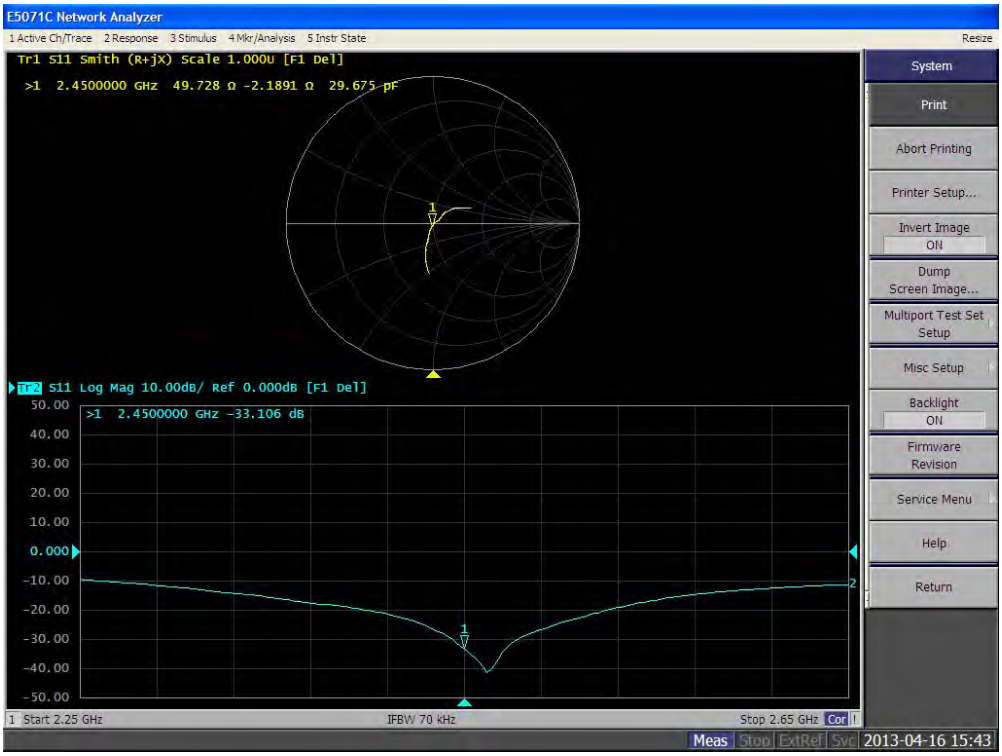
Antenna Parameters with Head TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	51.8 Ω - 0.6 jΩ	49.7 Ω - 2.2 jΩ
Return loss	-34.7 dB	-33.1 dB

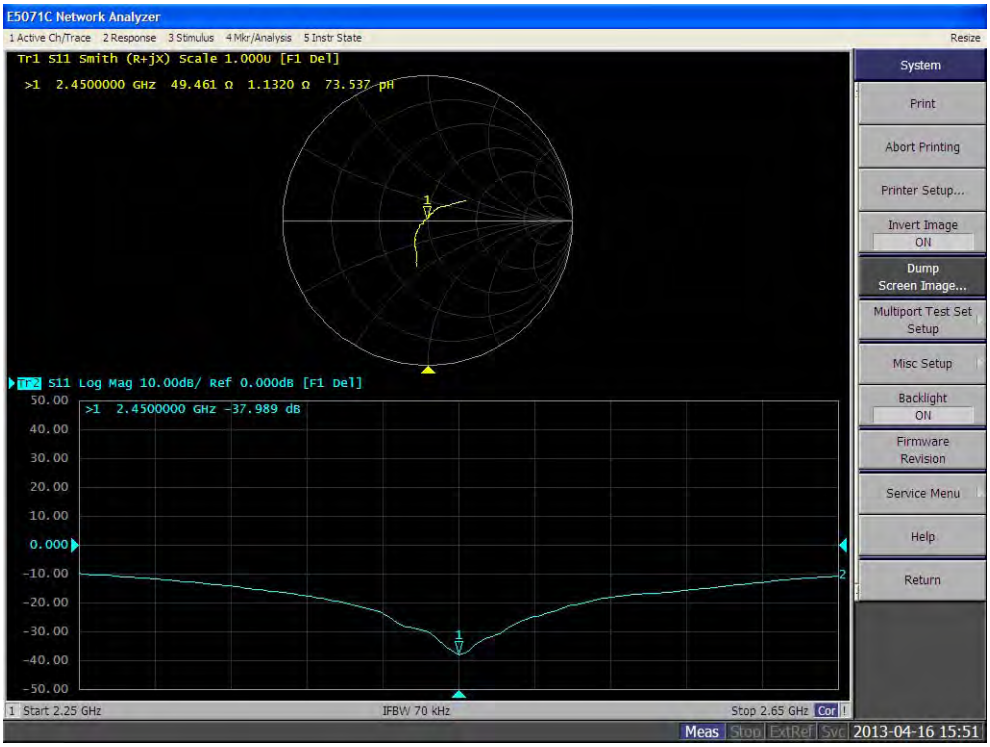
Antenna Parameters with Body TSL

	Calibration certificate	Annual measurement
Impedance, transformed to feed point	48.7 Ω - 1.1 jΩ	49.5 Ω 1.1 jΩ
Return loss	-35.5 dB	-38.0 dB

Impedance Measurement Plot for Head TSL 2450



Impedance Measurement Plot for Body TSL 2450



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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 Salo TCC

Certificate No: D5GHzV2-1048_Dec12

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN: 1048
Calibration procedure(s)	QA CAL-22.v1 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date:	December 11, 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 EX3DV4	SN: 3503	30-Dec-11 (No. EX3-3503_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 11, 2012

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 V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5300 MHz ± 1 MHz 5500 MHz ± 1 MHz 5600 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.6 ± 6 %	4.46 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.04 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**79.7 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.8 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.4 ± 6 %	4.55 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5300 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.6 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.6	4.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.2 ± 6 %	4.72 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5500 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.31 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.4 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.0 ± 6 %	4.81 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.41 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**83.1 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.40 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	33.8 ± 6 %	5.04 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.93 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**78.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.26 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**22.3 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.1 ± 6 %	5.40 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.20 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**71.4 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.02 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.0 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.51 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5300 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.45 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**73.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.7 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.6 ± 6 %	5.76 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5500 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.62 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**75.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.12 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.0 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.4 ± 6 %	5.88 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.73 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**76.7 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.2 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.1 ± 6 %	6.17 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.25 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**71.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.00 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**19.8 W/kg ± 19.5 % (k=2)**

Appendix

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	54.0 Ω - 7.1 jΩ
Return Loss	- 22.1 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	49.0 Ω - 4.5 jΩ
Return Loss	- 26.7 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	59.1 Ω - 8.8 jΩ
Return Loss	- 18.8 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	59.7 Ω - 1.7 jΩ
Return Loss	- 21.0 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	55.8 Ω - 8.9 jΩ
Return Loss	- 20.0 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	53.7 Ω - 6.3 jΩ
Return Loss	- 23.0 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	50.3 Ω - 4.2 jΩ
Return Loss	- 27.5 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	58.7 Ω - 6.9 jΩ
Return Loss	- 19.8 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	60.7 Ω - 0.7 jΩ
Return Loss	- 20.3 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	56.7 Ω - 7.2 jΩ
Return Loss	- 20.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.192 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	June 09, 2006

DASY5 Validation Report for Head TSL

Date: 11.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 4.46 mho/m; ε_r = 34.6; ρ = 1000 kg/m^3 , Medium parameters used: f = 5300 MHz; σ = 4.55 mho/m; ε_r = 34.4; ρ = 1000 kg/m^3 , Medium parameters used: f = 5500 MHz; σ = 4.72 mho/m; ε_r = 34.2; ρ = 1000 kg/m^3 , Medium parameters used: f = 5600 MHz; σ = 4.81 mho/m; ε_r = 34; ρ = 1000 kg/m^3 , Medium parameters used: f = 5800 MHz; σ = 5.04 mho/m; ε_r = 33.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.41, 5.41, 5.41); Calibrated: 30.12.2011, ConvF(5.1, 5.1, 5.1); Calibrated: 30.12.2011, ConvF(4.91, 4.91, 4.91); Calibrated: 30.12.2011, ConvF(4.76, 4.76, 4.76); Calibrated: 30.12.2011, ConvF(4.81, 4.81, 4.81); Calibrated: 30.12.2011;
- Sensor-Surface: 1.4mm (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)

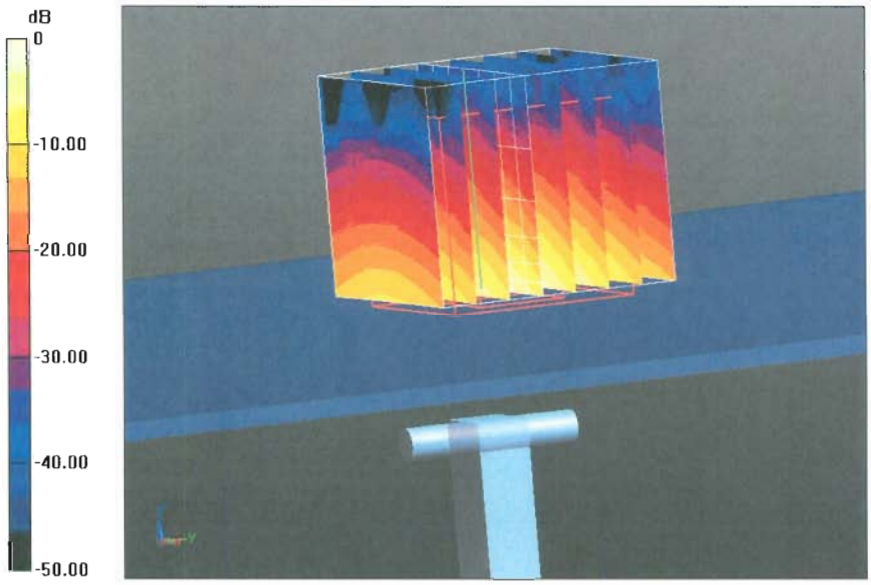
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.551 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 29.4 W/kg
SAR(1 g) = 8.04 W/kg; SAR(10 g) = 2.31 W/kg
Maximum value of SAR (measured) = 18.7 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 64.266 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 31.3 W/kg
SAR(1 g) = 8.34 W/kg; SAR(10 g) = 2.4 W/kg
Maximum value of SAR (measured) = 19.6 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.310 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 32.5 W/kg
SAR(1 g) = 8.31 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 19.8 W/kg

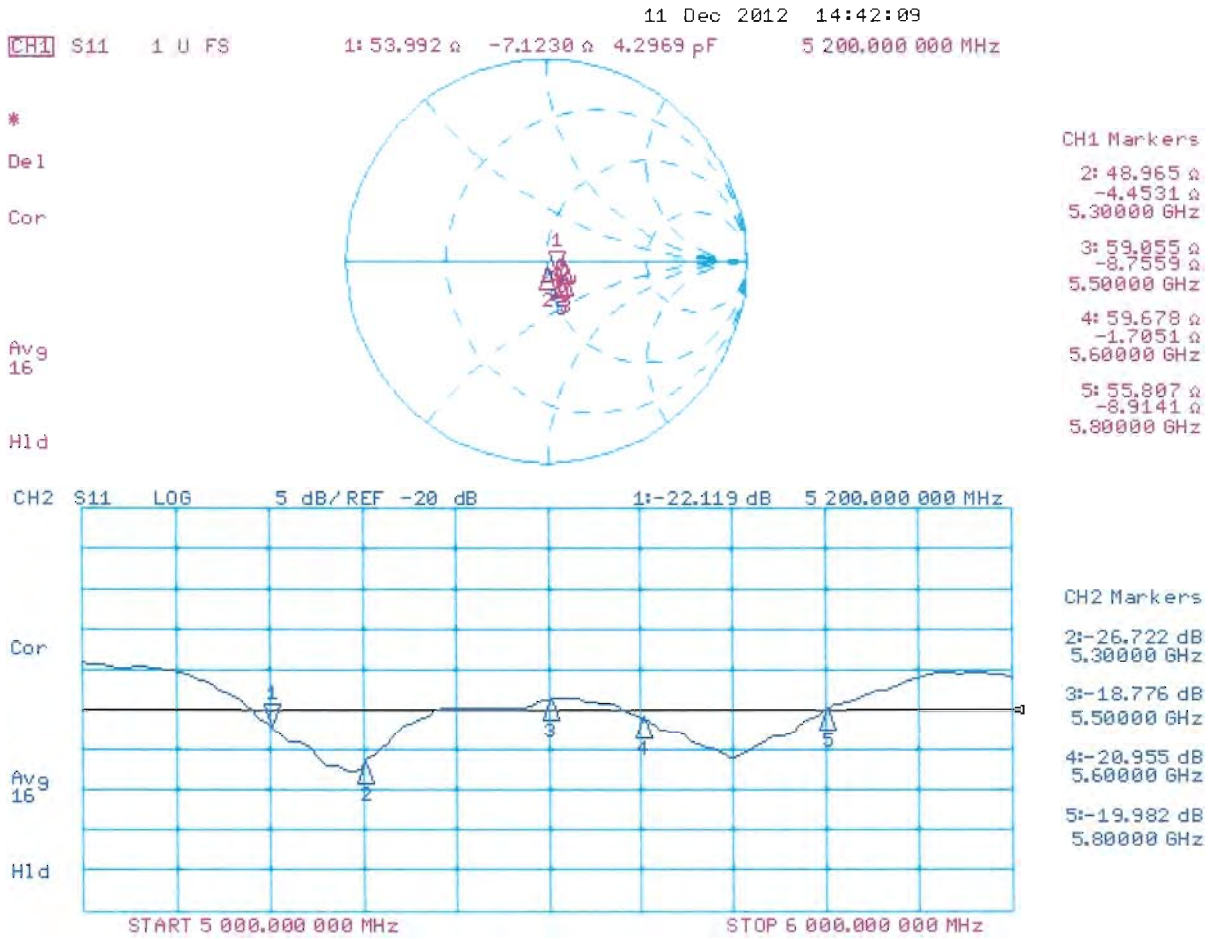
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.574 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 33.1 W/kg
SAR(1 g) = 8.41 W/kg; SAR(10 g) = 2.4 W/kg
Maximum value of SAR (measured) = 20.1 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 60.570 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 32.7 W/kg
SAR(1 g) = 7.93 W/kg; SAR(10 g) = 2.26 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 Head TSL



DASY5 Validation Report for Body TSL

Date: 10.12.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1048

Communication System: CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 5.4 mho/m; ε_r = 47.1; ρ = 1000 kg/m^3 , Medium parameters used: f = 5300 MHz; σ = 5.51 mho/m; ε_r = 46.9; ρ = 1000 kg/m^3 , Medium parameters used: f = 5500 MHz; σ = 5.76 mho/m; ε_r = 46.6; ρ = 1000 kg/m^3 , Medium parameters used: f = 5600 MHz; σ = 5.88 mho/m; ε_r = 46.4; ρ = 1000 kg/m^3 , Medium parameters used: f = 5800 MHz; σ = 6.17 mho/m; ε_r = 46.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.91, 4.91, 4.91); Calibrated: 30.12.2011, ConvF(4.67, 4.67, 4.67); Calibrated: 30.12.2011, ConvF(4.43, 4.43, 4.43); Calibrated: 30.12.2011, ConvF(4.22, 4.22, 4.22); Calibrated: 30.12.2011, ConvF(4.38, 4.38, 4.38); Calibrated: 30.12.2011;
- Sensor-Surface: 1.4mm (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)

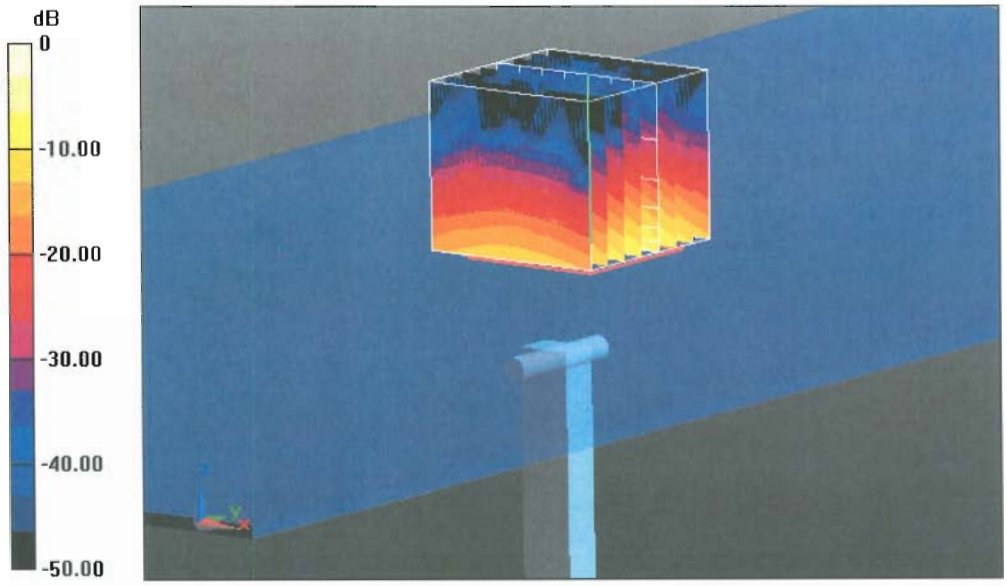
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 55.320 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 28.3 W/kg
SAR(1 g) = 7.2 W/kg; SAR(10 g) = 2.02 W/kg
Maximum value of SAR (measured) = 17.2 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 55.849 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 30.1 W/kg
SAR(1 g) = 7.45 W/kg; SAR(10 g) = 2.09 W/kg
Maximum value of SAR (measured) = 17.9 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 55.354 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 32.8 W/kg
SAR(1 g) = 7.62 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (measured) = 18.7 W/kg

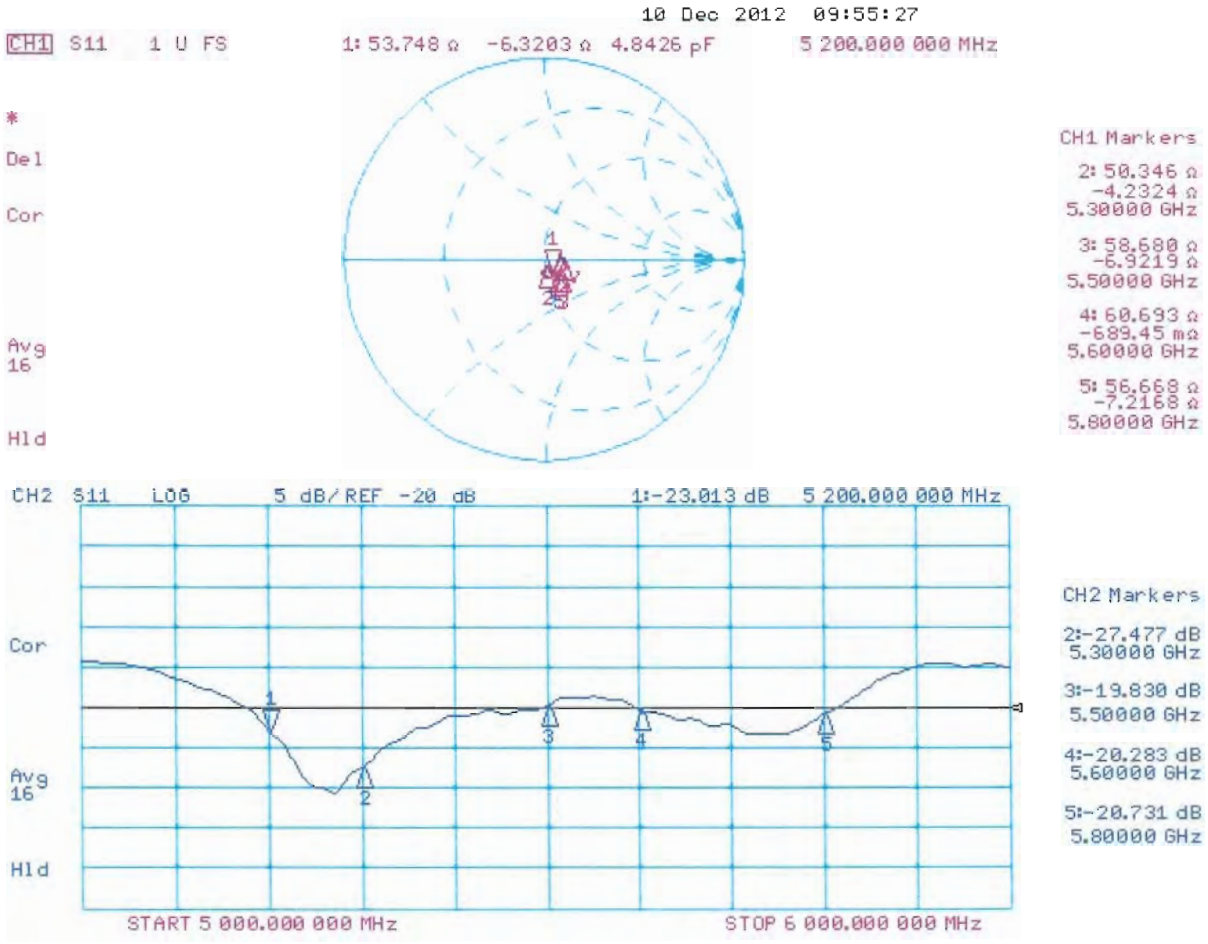
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 55.041 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 34.3 W/kg
SAR(1 g) = 7.73 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 19.2 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 52.474 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 33.8 W/kg
SAR(1 g) = 7.25 W/kg; SAR(10 g) = 2 W/kg
Maximum value of SAR (measured) = 18.2 W/kg



0 dB = 18.2 W/kg = 12.60 dBW/kg

Impedance Measurement Plot for Body TSL



APPENDIX G: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED LTE TRANSMISSION MODES

G.1 Power Tuning Targets

Band	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)	N/A	N/A	23.0	23.0	N/A	N/A
LTE850 (Band 5)	23.0	23.0	23.0	23.0	N/A	N/A
LTE1700/2100 (Band 4)	23.0	23.0	23.0	23.0	23.0	23.0
LTE1900 (Band 2)	23.0	23.0	23.0	23.0	23.0	23.0

Band	Target Tuning Power in WR mode					
	1.4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
LTE1700/2100 (Band 4)	19.7	19.7	19.7	19.7	19.7	19.7
LTE1900 (Band 2)	19.7	19.7	19.7	19.7	19.7	19.7

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

Type: RM-893; Serial number: 355519/05/000394/6 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).

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	23.46	-
706.5	23755	5	1	12	QPSK	23.59	-
706.5	23755	5	1	24	QPSK	23.79	-
706.5	23755	5	12	0	QPSK	22.49	-
706.5	23755	5	12	6	QPSK	22.50	-
706.5	23755	5	12	13	QPSK	22.54	-
706.5	23755	5	25	0	QPSK	22.44	-
706.5	23755	5	1	0	16QAM	22.42	-
706.5	23755	5	1	12	16QAM	22.40	-
706.5	23755	5	1	24	16QAM	22.71	-
706.5	23755	5	12	0	16QAM	21.56	-
706.5	23755	5	12	6	16QAM	21.47	-
706.5	23755	5	12	13	16QAM	21.58	-
706.5	23755	5	25	0	16QAM	21.44	-
710.0	23790	5	1	0	QPSK	23.49	-
710.0	23790	5	1	12	QPSK	24.08	-
710.0	23790	5	1	24	QPSK	23.58	-
710.0	23790	5	12	0	QPSK	22.68	-
710.0	23790	5	12	6	QPSK	23.03	-
710.0	23790	5	12	13	QPSK	22.74	-
710.0	23790	5	25	0	QPSK	22.64	-
710.0	23790	5	1	0	16QAM	22.47	-
710.0	23790	5	1	12	16QAM	23.12	-
710.0	23790	5	1	24	16QAM	22.47	-
710.0	23790	5	12	0	16QAM	21.68	-
710.0	23790	5	12	6	16QAM	22.04	-
710.0	23790	5	12	13	16QAM	21.81	-
710.0	23790	5	25	0	16QAM	21.71	-

(Table LTE700, 355519/05/000394/6 continues)

(Table LTE700, 355519/05/000394/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
713.5	23825	5	1	0	QPSK	23.51	-
713.5	23825	5	1	12	QPSK	23.53	-
713.5	23825	5	1	24	QPSK	23.62	-
713.5	23825	5	12	0	QPSK	22.46	-
713.5	23825	5	12	6	QPSK	22.51	-
713.5	23825	5	12	13	QPSK	22.56	-
713.5	23825	5	25	0	QPSK	22.41	-
713.5	23825	5	1	0	16QAM	22.38	-
713.5	23825	5	1	12	16QAM	22.62	-
713.5	23825	5	1	24	16QAM	22.51	-
713.5	23825	5	12	0	16QAM	21.40	-
713.5	23825	5	12	6	16QAM	21.43	-
713.5	23825	5	12	13	16QAM	21.52	-
713.5	23825	5	25	0	16QAM	21.46	-
709.0	23780	10	1	0	QPSK	23.58	-
709.0	23780	10	1	24	QPSK	23.88	-
709.0	23780	10	1	49	QPSK	23.56	-
709.0	23780	10	25	0	QPSK	22.43	-
709.0	23780	10	25	12	QPSK	22.70	-
709.0	23780	10	25	25	QPSK	22.66	-
709.0	23780	10	50	0	QPSK	22.41	-
709.0	23780	10	1	0	16QAM	22.62	-
709.0	23780	10	1	24	16QAM	22.81	-
709.0	23780	10	1	49	16QAM	22.65	-
709.0	23780	10	25	0	16QAM	21.29	-
709.0	23780	10	25	12	16QAM	21.62	-
709.0	23780	10	25	25	16QAM	21.57	-
709.0	23780	10	50	0	16QAM	21.48	-

(Table LTE700, 355519/05/000394/6 continues)

(Table LTE700, 355519/05/000394/6 continues)

710.0	23790	10	1	0	QPSK	23.53	-
710.0	23790	10	1	24	QPSK	24.22	-
710.0	23790	10	1	49	QPSK	23.58	-
710.0	23790	10	25	0	QPSK	22.49	-
710.0	23790	10	25	12	QPSK	22.69	-
710.0	23790	10	25	25	QPSK	22.57	-
710.0	23790	10	50	0	QPSK	22.33	-
710.0	23790	10	1	0	16QAM	22.66	-
710.0	23790	10	1	24	16QAM	23.33	-
710.0	23790	10	1	49	16QAM	22.68	-
710.0	23790	10	25	0	16QAM	21.43	-
710.0	23790	10	25	12	16QAM	21.60	-
710.0	23790	10	25	25	16QAM	21.48	-
710.0	23790	10	50	0	16QAM	21.36	-
711.0	23800	10	1	0	QPSK	23.47	-
711.0	23800	10	1	24	QPSK	23.62	-
711.0	23800	10	1	49	QPSK	23.56	-
711.0	23800	10	25	0	QPSK	22.66	-
711.0	23800	10	25	12	QPSK	22.70	-
711.0	23800	10	25	25	QPSK	22.43	-
711.0	23800	10	50	0	QPSK	22.46	-
711.0	23800	10	1	0	16QAM	22.68	-
711.0	23800	10	1	24	16QAM	22.82	-
711.0	23800	10	1	49	16QAM	22.73	-
711.0	23800	10	25	0	16QAM	21.63	-
711.0	23800	10	25	12	16QAM	21.64	-
711.0	23800	10	25	25	16QAM	21.38	-
711.0	23800	10	50	0	16QAM	21.53	-

Type: RM-893; Serial number: 355519/05/000407/6 used for LTE850 (Band 5) 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).

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	23.69	-
824.7	20407	1.4	1	2	QPSK	23.59	-
824.7	20407	1.4	1	5	QPSK	23.53	-
824.7	20407	1.4	3	0	QPSK	23.63	-
824.7	20407	1.4	3	2	QPSK	23.51	-
824.7	20407	1.4	3	3	QPSK	23.50	-
824.7	20407	1.4	6	0	QPSK	22.26	-
824.7	20407	1.4	1	0	16QAM	22.54	-
824.7	20407	1.4	1	2	16QAM	22.46	-
824.7	20407	1.4	1	5	16QAM	22.40	-
824.7	20407	1.4	3	0	16QAM	22.65	-
824.7	20407	1.4	3	2	16QAM	22.47	-
824.7	20407	1.4	3	3	16QAM	22.57	-
824.7	20407	1.4	6	0	16QAM	21.35	-
836.5	20525	1.4	1	0	QPSK	24.12	-
836.5	20525	1.4	1	2	QPSK	24.00	-
836.5	20525	1.4	1	5	QPSK	24.04	-
836.5	20525	1.4	3	0	QPSK	24.07	-
836.5	20525	1.4	3	2	QPSK	24.02	-
836.5	20525	1.4	3	3	QPSK	23.98	-
836.5	20525	1.4	6	0	QPSK	23.02	-
836.5	20525	1.4	1	0	16QAM	23.04	-
836.5	20525	1.4	1	2	16QAM	23.23	-
836.5	20525	1.4	1	5	16QAM	23.11	-
836.5	20525	1.4	3	0	16QAM	22.92	-
836.5	20525	1.4	3	2	16QAM	22.97	-
836.5	20525	1.4	3	3	16QAM	22.97	-
836.5	20525	1.4	6	0	16QAM	22.06	-

(Table LTE850, 355519/05/000407/6 continues)

(Table LTE850, 355519/05/000407/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
848.3	20643	1.4	1	0	QPSK	23.54	-
848.3	20643	1.4	1	2	QPSK	23.74	-
848.3	20643	1.4	1	5	QPSK	23.55	-
848.3	20643	1.4	3	0	QPSK	23.49	-
848.3	20643	1.4	3	2	QPSK	23.58	-
848.3	20643	1.4	3	3	QPSK	23.49	-
848.3	20643	1.4	6	0	QPSK	22.49	-
848.3	20643	1.4	1	0	16QAM	22.53	-
848.3	20643	1.4	1	2	16QAM	22.58	-
848.3	20643	1.4	1	5	16QAM	22.60	-
848.3	20643	1.4	3	0	16QAM	22.46	-
848.3	20643	1.4	3	2	16QAM	22.44	-
848.3	20643	1.4	3	3	16QAM	22.45	-
848.3	20643	1.4	6	0	16QAM	21.59	-
825.5	20415	3	1	0	QPSK	23.59	-
825.5	20415	3	1	7	QPSK	23.49	-
825.5	20415	3	1	14	QPSK	23.58	-
825.5	20415	3	8	0	QPSK	22.27	-
825.5	20415	3	8	3	QPSK	22.18	-
825.5	20415	3	8	7	QPSK	22.31	-
825.5	20415	3	15	0	QPSK	22.23	-
825.5	20415	3	1	0	16QAM	22.50	-
825.5	20415	3	1	7	16QAM	22.62	-
825.5	20415	3	1	14	16QAM	22.32	-
825.5	20415	3	8	0	16QAM	21.27	-
825.5	20415	3	8	3	16QAM	21.26	-
825.5	20415	3	8	7	16QAM	21.23	-
825.5	20415	3	15	0	16QAM	21.24	-

(Table LTE850, 355519/05/000407/6 continues)

(Table LTE850, 355519/05/000407/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
836.5	20525	3	1	0	QPSK	24.03	-
836.5	20525	3	1	7	QPSK	23.98	-
836.5	20525	3	1	14	QPSK	23.86	-
836.5	20525	3	8	0	QPSK	22.98	-
836.5	20525	3	8	3	QPSK	23.07	-
836.5	20525	3	8	7	QPSK	22.92	-
836.5	20525	3	15	0	QPSK	22.98	-
836.5	20525	3	1	0	16QAM	22.73	-
836.5	20525	3	1	7	16QAM	22.91	-
836.5	20525	3	1	14	16QAM	22.68	-
836.5	20525	3	8	0	16QAM	22.02	-
836.5	20525	3	8	3	16QAM	21.97	-
836.5	20525	3	8	7	16QAM	21.97	-
836.5	20525	3	15	0	16QAM	22.08	-
847.5	20635	3	1	0	QPSK	23.50	-
847.5	20635	3	1	7	QPSK	23.47	-
847.5	20635	3	1	14	QPSK	23.44	-
847.5	20635	3	8	0	QPSK	22.53	-
847.5	20635	3	8	3	QPSK	22.50	-
847.5	20635	3	8	7	QPSK	22.48	-
847.5	20635	3	15	0	QPSK	22.41	-
847.5	20635	3	1	0	16QAM	22.32	-
847.5	20635	3	1	7	16QAM	22.28	-
847.5	20635	3	1	14	16QAM	22.36	-
847.5	20635	3	8	0	16QAM	21.43	-
847.5	20635	3	8	3	16QAM	21.44	-
847.5	20635	3	8	7	16QAM	21.48	-
847.5	20635	3	15	0	16QAM	21.56	-

(Table LTE850, 355519/05/000407/6 continues)

(Table LTE850, 355519/05/000407/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
826.5	20425	5	1	0	QPSK	23.63	-
826.5	20425	5	1	12	QPSK	23.57	-
826.5	20425	5	1	24	QPSK	23.46	-
826.5	20425	5	12	0	QPSK	22.28	-
826.5	20425	5	12	6	QPSK	22.20	-
826.5	20425	5	12	13	QPSK	22.24	-
826.5	20425	5	25	0	QPSK	22.14	-
826.5	20425	5	1	0	16QAM	22.24	-
826.5	20425	5	1	12	16QAM	22.16	-
826.5	20425	5	1	24	16QAM	22.12	-
826.5	20425	5	12	0	16QAM	21.18	-
826.5	20425	5	12	6	16QAM	21.19	-
826.5	20425	5	12	13	16QAM	21.20	-
826.5	20425	5	25	0	16QAM	21.22	-
836.5	20525	5	1	0	QPSK	24.05	-
836.5	20525	5	1	12	QPSK	24.05	-
836.5	20525	5	1	24	QPSK	23.99	-
836.5	20525	5	12	0	QPSK	22.93	-
836.5	20525	5	12	6	QPSK	22.97	-
836.5	20525	5	12	13	QPSK	22.90	-
836.5	20525	5	25	0	QPSK	22.96	-
836.5	20525	5	1	0	16QAM	22.65	-
836.5	20525	5	1	12	16QAM	22.68	-
836.5	20525	5	1	24	16QAM	22.63	-
836.5	20525	5	12	0	16QAM	21.95	-
836.5	20525	5	12	6	16QAM	21.99	-
836.5	20525	5	12	13	16QAM	21.90	-
836.5	20525	5	25	0	16QAM	21.89	-

(Table LTE1700/2100, 355519/05/000407/6 continues)

(Table LTE850, 355519/05/000407/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
846.5	20625	5	1	0	QPSK	23.55	-
846.5	20625	5	1	12	QPSK	23.61	-
846.5	20625	5	1	24	QPSK	23.61	-
846.5	20625	5	12	0	QPSK	22.45	-
846.5	20625	5	12	6	QPSK	22.38	-
846.5	20625	5	12	13	QPSK	22.45	-
846.5	20625	5	25	0	QPSK	22.36	-
846.5	20625	5	1	0	16QAM	22.38	-
846.5	20625	5	1	12	16QAM	22.37	-
846.5	20625	5	1	24	16QAM	22.38	-
846.5	20625	5	12	0	16QAM	21.43	-
846.5	20625	5	12	6	16QAM	21.50	-
846.5	20625	5	12	13	16QAM	21.46	-
846.5	20625	5	25	0	16QAM	21.33	-
829.0	20450	10	1	0	QPSK	23.66	-
829.0	20450	10	1	24	QPSK	23.54	-
829.0	20450	10	1	49	QPSK	23.96	-
829.0	20450	10	25	0	QPSK	22.26	-
829.0	20450	10	25	12	QPSK	22.32	-
829.0	20450	10	25	25	QPSK	22.50	-
829.0	20450	10	50	0	QPSK	22.27	-
829.0	20450	10	1	0	16QAM	22.82	-
829.0	20450	10	1	24	16QAM	22.70	-
829.0	20450	10	1	49	16QAM	23.02	-
829.0	20450	10	25	0	16QAM	21.23	-
829.0	20450	10	25	12	16QAM	21.36	-
829.0	20450	10	25	25	16QAM	21.49	-
829.0	20450	10	50	0	16QAM	21.24	-

(Table LTE850, 355519/05/000407/6 continues)

(Table LTE850, 355519/05/000407/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
836.5	20525	10	1	0	QPSK	23.70	-
836.5	20525	10	1	24	QPSK	24.05	-
836.5	20525	10	1	49	QPSK	23.53	-
836.5	20525	10	25	0	QPSK	22.73	-
836.5	20525	10	25	12	QPSK	22.92	-
836.5	20525	10	25	25	QPSK	22.67	-
836.5	20525	10	50	0	QPSK	22.59	-
836.5	20525	10	1	0	16QAM	22.83	-
836.5	20525	10	1	24	16QAM	23.20	-
836.5	20525	10	1	49	16QAM	22.68	-
836.5	20525	10	25	0	16QAM	21.76	-
836.5	20525	10	25	12	16QAM	21.87	-
836.5	20525	10	25	25	16QAM	21.63	-
836.5	20525	10	50	0	16QAM	21.52	-
844.0	20600	10	1	0	QPSK	23.82	-
844.0	20600	10	1	24	QPSK	23.58	-
844.0	20600	10	1	49	QPSK	23.57	-
844.0	20600	10	25	0	QPSK	22.48	-
844.0	20600	10	25	12	QPSK	22.33	-
844.0	20600	10	25	25	QPSK	22.37	-
844.0	20600	10	50	0	QPSK	22.39	-
844.0	20600	10	1	0	16QAM	23.06	-
844.0	20600	10	1	24	16QAM	22.80	-
844.0	20600	10	1	49	16QAM	22.57	-
844.0	20600	10	25	0	16QAM	21.46	-
844.0	20600	10	25	12	16QAM	21.30	-
844.0	20600	10	25	25	16QAM	21.36	-
844.0	20600	10	50	0	16QAM	21.37	-

Type: RM-893; Serial number: 355519/05/000365/6 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).

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	23.52	-
1710.7	19957	1.4	1	2	QPSK	23.47	-
1710.7	19957	1.4	1	5	QPSK	23.50	-
1710.7	19957	1.4	3	0	QPSK	23.38	-
1710.7	19957	1.4	3	2	QPSK	23.36	-
1710.7	19957	1.4	3	3	QPSK	23.27	-
1710.7	19957	1.4	6	0	QPSK	22.47	-
1710.7	19957	1.4	1	0	16QAM	22.32	-
1710.7	19957	1.4	1	2	16QAM	22.50	-
1710.7	19957	1.4	1	5	16QAM	22.39	-
1710.7	19957	1.4	3	0	16QAM	22.64	-
1710.7	19957	1.4	3	2	16QAM	22.49	-
1710.7	19957	1.4	3	3	16QAM	22.48	-
1710.7	19957	1.4	6	0	16QAM	21.57	-
1732.5	20175	1.4	1	0	QPSK	23.99	-
1732.5	20175	1.4	1	2	QPSK	24.01	-
1732.5	20175	1.4	1	5	QPSK	23.95	-
1732.5	20175	1.4	3	0	QPSK	23.94	-
1732.5	20175	1.4	3	2	QPSK	23.99	-
1732.5	20175	1.4	3	3	QPSK	23.93	-
1732.5	20175	1.4	6	0	QPSK	23.07	-
1732.5	20175	1.4	1	0	16QAM	22.91	-
1732.5	20175	1.4	1	2	16QAM	22.86	-
1732.5	20175	1.4	1	5	16QAM	22.83	-
1732.5	20175	1.4	3	0	16QAM	23.01	-
1732.5	20175	1.4	3	2	16QAM	22.99	-
1732.5	20175	1.4	3	3	16QAM	23.05	-
1732.5	20175	1.4	6	0	16QAM	22.00	-

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1754.3	20393	1.4	1	0	QPSK	23.52	-
1754.3	20393	1.4	1	2	QPSK	23.55	-
1754.3	20393	1.4	1	5	QPSK	23.52	-
1754.3	20393	1.4	3	0	QPSK	23.56	-
1754.3	20393	1.4	3	2	QPSK	23.56	-
1754.3	20393	1.4	3	3	QPSK	23.43	-
1754.3	20393	1.4	6	0	QPSK	22.59	-
1754.3	20393	1.4	1	0	16QAM	22.60	-
1754.3	20393	1.4	1	2	16QAM	22.39	-
1754.3	20393	1.4	1	5	16QAM	22.45	-
1754.3	20393	1.4	3	0	16QAM	22.62	-
1754.3	20393	1.4	3	2	16QAM	22.63	-
1754.3	20393	1.4	3	3	16QAM	22.60	-
1754.3	20393	1.4	6	0	16QAM	21.60	-
1711.5	19965	3	1	0	QPSK	23.56	23.54
1711.5	19965	3	1	7	QPSK	23.55	23.57
1711.5	19965	3	1	14	QPSK	23.43	23.56
1711.5	19965	3	8	0	QPSK	22.58	21.60
1711.5	19965	3	8	3	QPSK	22.57	21.63
1711.5	19965	3	8	7	QPSK	22.56	21.62
1711.5	19965	3	15	0	QPSK	22.49	21.56
1711.5	19965	3	1	0	16QAM	22.70	22.43
1711.5	19965	3	1	7	16QAM	22.57	22.34
1711.5	19965	3	1	14	16QAM	22.59	22.24
1732.5	20175	3	8	0	16QAM	21.47	20.45
1732.5	20175	3	8	3	16QAM	21.43	20.46
1732.5	20175	3	8	7	16QAM	21.38	20.46
1732.5	20175	3	15	0	16QAM	21.43	20.49

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1732.5	20175	3	1	0	QPSK	23.90	23.95
1732.5	20175	3	1	7	QPSK	24.02	24.12
1732.5	20175	3	1	14	QPSK	23.95	24.02
1732.5	20175	3	8	0	QPSK	22.96	22.09
1732.5	20175	3	8	3	QPSK	23.03	22.12
1732.5	20175	3	8	7	QPSK	22.98	22.11
1732.5	20175	3	15	0	QPSK	22.96	22.00
1732.5	20175	3	1	0	16QAM	23.11	22.63
1732.5	20175	3	1	7	16QAM	23.23	22.82
1732.5	20175	3	1	14	16QAM	23.12	22.81
1732.5	20175	3	8	0	16QAM	21.93	20.92
1732.5	20175	3	8	3	16QAM	21.96	20.92
1732.5	20175	3	8	7	16QAM	21.97	20.92
1732.5	20175	3	15	0	16QAM	21.95	20.92
1753.5	20385	3	1	0	QPSK	23.58	23.63
1753.5	20385	3	1	7	QPSK	23.49	23.54
1753.5	20385	3	1	14	QPSK	23.49	23.52
1753.5	20385	3	8	0	QPSK	22.65	21.64
1753.5	20385	3	8	3	QPSK	22.63	21.70
1753.5	20385	3	8	7	QPSK	22.59	21.64
1753.5	20385	3	15	0	QPSK	22.48	21.57
1753.5	20385	3	1	0	16QAM	22.70	22.60
1753.5	20385	3	1	7	16QAM	22.80	22.54
1753.5	20385	3	1	14	16QAM	22.64	22.40
1753.5	20385	3	8	0	16QAM	21.53	20.63
1753.5	20385	3	8	3	16QAM	21.51	20.59
1753.5	20385	3	8	7	16QAM	21.49	20.60
1753.5	20385	3	15	0	16QAM	21.48	20.63

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1712.5	19975	5	1	0	QPSK	23.52	23.76
1712.5	19975	5	1	12	QPSK	23.42	23.68
1712.5	19975	5	1	24	QPSK	23.41	23.75
1712.5	19975	5	12	0	QPSK	22.52	21.75
1712.5	19975	5	12	6	QPSK	22.48	21.74
1712.5	19975	5	12	13	QPSK	22.47	21.61
1712.5	19975	5	25	0	QPSK	22.44	21.56
1712.5	19975	5	1	0	16QAM	22.18	22.45
1712.5	19975	5	1	12	16QAM	22.11	22.44
1712.5	19975	5	1	24	16QAM	22.14	22.56
1712.5	19975	5	12	0	16QAM	21.66	20.79
1712.5	19975	5	12	6	16QAM	21.61	20.76
1712.5	19975	5	12	13	16QAM	21.56	20.68
1712.5	19975	5	25	0	16QAM	21.38	20.59
1732.5	20175	5	1	0	QPSK	23.90	24.13
1732.5	20175	5	1	12	QPSK	23.95	24.16
1732.5	20175	5	1	24	QPSK	23.99	24.08
1732.5	20175	5	12	0	QPSK	22.86	22.08
1732.5	20175	5	12	6	QPSK	22.99	22.24
1732.5	20175	5	12	13	QPSK	22.96	22.28
1732.5	20175	5	25	0	QPSK	22.87	22.09
1732.5	20175	5	1	0	16QAM	22.56	23.03
1732.5	20175	5	1	12	16QAM	22.58	23.17
1732.5	20175	5	1	24	16QAM	22.56	22.94
1732.5	20175	5	12	0	16QAM	21.88	21.08
1732.5	20175	5	12	6	16QAM	21.98	21.29
1732.5	20175	5	12	13	16QAM	22.05	21.17
1732.5	20175	5	25	0	16QAM	21.87	21.01

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1752.5	20375	5	1	0	QPSK	23.68	23.86
1752.5	20375	5	1	12	QPSK	23.50	23.74
1752.5	20375	5	1	24	QPSK	23.49	23.67
1752.5	20375	5	12	0	QPSK	22.53	21.74
1752.5	20375	5	12	6	QPSK	22.56	21.86
1752.5	20375	5	12	13	QPSK	22.56	21.76
1752.5	20375	5	25	0	QPSK	22.50	21.69
1752.5	20375	5	1	0	16QAM	22.33	22.69
1752.5	20375	5	1	12	16QAM	22.39	22.64
1752.5	20375	5	1	24	16QAM	22.31	22.61
1752.5	20375	5	12	0	16QAM	21.63	20.89
1752.5	20375	5	12	6	16QAM	21.68	20.77
1752.5	20375	5	12	13	16QAM	21.51	20.78
1752.5	20375	5	25	0	16QAM	21.48	20.64
1715.0	20000	10	1	0	QPSK	23.48	23.81
1715.0	20000	10	1	24	QPSK	23.55	23.70
1715.0	20000	10	1	49	QPSK	23.42	23.72
1715.0	20000	10	25	0	QPSK	22.48	21.67
1715.0	20000	10	25	12	QPSK	22.41	21.68
1715.0	20000	10	25	25	QPSK	22.39	21.64
1715.0	20000	10	50	0	QPSK	22.32	21.54
1715.0	20000	10	1	0	16QAM	22.50	22.85
1715.0	20000	10	1	24	16QAM	22.34	22.73
1715.0	20000	10	1	49	16QAM	22.26	22.54
1715.0	20000	10	25	0	16QAM	21.31	20.65
1715.0	20000	10	25	12	16QAM	21.33	20.64
1715.0	20000	10	25	25	16QAM	21.29	20.57
1715.0	20000	10	50	0	16QAM	21.23	20.60

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1732.5	20175	10	1	0	QPSK	23.83	24.18
1732.5	20175	10	1	24	QPSK	24.04	24.27
1732.5	20175	10	1	49	QPSK	23.78	24.02
1732.5	20175	10	25	0	QPSK	22.88	22.15
1732.5	20175	10	25	12	QPSK	22.91	22.13
1732.5	20175	10	25	25	QPSK	22.78	22.11
1732.5	20175	10	50	0	QPSK	22.64	21.96
1732.5	20175	10	1	0	16QAM	22.62	22.90
1732.5	20175	10	1	24	16QAM	22.81	23.19
1732.5	20175	10	1	49	16QAM	22.64	23.06
1732.5	20175	10	25	0	16QAM	21.81	21.08
1732.5	20175	10	25	12	16QAM	21.84	21.14
1732.5	20175	10	25	25	16QAM	21.79	21.05
1732.5	20175	10	50	0	16QAM	21.63	21.00
1750.0	20350	10	1	0	QPSK	23.54	23.79
1750.0	20350	10	1	24	QPSK	23.46	23.74
1750.0	20350	10	1	49	QPSK	23.35	23.58
1750.0	20350	10	25	0	QPSK	22.41	21.62
1750.0	20350	10	25	12	QPSK	22.31	21.56
1750.0	20350	10	25	25	QPSK	22.31	21.63
1750.0	20350	10	50	0	QPSK	22.22	21.48
1750.0	20350	10	1	0	16QAM	22.73	22.85
1750.0	20350	10	1	24	16QAM	22.66	22.86
1750.0	20350	10	1	49	16QAM	22.49	22.74
1750.0	20350	10	25	0	16QAM	21.39	20.59
1750.0	20350	10	25	12	16QAM	21.28	20.55
1750.0	20350	10	25	25	16QAM	21.28	20.48
1750.0	20350	10	50	0	16QAM	21.24	20.61

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1717.5	20025	15	1	0	QPSK	23.83	23.70
1717.5	20025	15	1	36	QPSK	23.88	23.68
1717.5	20025	15	1	74	QPSK	23.88	23.70
1717.5	20025	15	37	0	QPSK	22.62	21.50
1717.5	20025	15	37	18	QPSK	22.53	21.39
1717.5	20025	15	37	38	QPSK	22.51	21.44
1717.5	20025	15	75	0	QPSK	22.57	21.45
1717.5	20025	15	1	0	16QAM	22.68	22.52
1717.5	20025	15	1	36	16QAM	22.80	22.57
1717.5	20025	15	1	74	16QAM	22.77	22.54
1717.5	20025	15	37	0	16QAM	21.57	20.60
1717.5	20025	15	37	18	16QAM	21.49	20.50
1717.5	20025	15	37	38	16QAM	21.50	20.47
1717.5	20025	15	75	0	16QAM	21.53	20.47
1732.5	20175	15	1	0	QPSK	24.03	23.84
1732.5	20175	15	1	36	QPSK	24.26	24.07
1732.5	20175	15	1	74	QPSK	23.98	23.72
1732.5	20175	15	37	0	QPSK	22.80	21.78
1732.5	20175	15	37	18	QPSK	23.01	21.92
1732.5	20175	15	37	38	QPSK	22.88	21.87
1732.5	20175	15	75	0	QPSK	22.83	21.68
1732.5	20175	15	1	0	16QAM	22.79	22.63
1732.5	20175	15	1	36	16QAM	23.23	22.85
1732.5	20175	15	1	74	16QAM	22.82	22.52
1732.5	20175	15	37	0	16QAM	21.80	20.74
1732.5	20175	15	37	18	16QAM	22.04	20.94
1732.5	20175	15	37	38	16QAM	21.90	20.75
1732.5	20175	15	75	0	16QAM	21.87	20.73

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1747.5	20325	15	1	0	QPSK	24.00	23.82
1747.5	20325	15	1	36	QPSK	23.60	23.42
1747.5	20325	15	1	74	QPSK	23.47	23.35
1747.5	20325	15	37	0	QPSK	22.61	21.49
1747.5	20325	15	37	18	QPSK	22.57	21.34
1747.5	20325	15	37	38	QPSK	22.51	21.31
1747.5	20325	15	75	0	QPSK	22.46	21.33
1747.5	20325	15	1	0	16QAM	22.90	22.44
1747.5	20325	15	1	36	16QAM	22.46	22.19
1747.5	20325	15	1	74	16QAM	22.44	22.06
1747.5	20325	15	37	0	16QAM	21.48	20.48
1747.5	20325	15	37	18	16QAM	21.50	20.40
1747.5	20325	15	37	38	16QAM	21.39	20.24
1747.5	20325	15	75	0	16QAM	21.49	20.35
1720.0	20050	20	1	0	QPSK	23.71	23.75
1720.0	20050	20	1	49	QPSK	23.65	23.56
1720.0	20050	20	1	99	QPSK	23.85	23.81
1720.0	20050	20	50	0	QPSK	22.36	21.36
1720.0	20050	20	50	24	QPSK	22.36	21.45
1720.0	20050	20	50	50	QPSK	22.52	21.52
1720.0	20050	20	100	0	QPSK	22.37	21.43
1720.0	20050	20	1	0	16QAM	22.62	22.93
1720.0	20050	20	1	49	16QAM	22.44	22.85
1720.0	20050	20	1	99	16QAM	22.77	23.11
1720.0	20050	20	50	0	16QAM	21.29	20.41
1720.0	20050	20	50	24	16QAM	21.41	20.44
1720.0	20050	20	50	50	16QAM	21.47	20.61
1720.0	20050	20	100	0	16QAM	21.47	20.53

(Table LTE1700/2100, 355519/05/000365/6 continues)

(Table for LTE1700/2100, 355519/05/000365/6 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1732.5	20175	20	1	0	QPSK	23.79	23.81
1732.5	20175	20	1	49	QPSK	24.07	24.14
1732.5	20175	20	1	99	QPSK	23.62	23.64
1732.5	20175	20	50	0	QPSK	22.68	21.73
1732.5	20175	20	50	24	QPSK	22.69	21.77
1732.5	20175	20	50	50	QPSK	22.53	21.66
1732.5	20175	20	100	0	QPSK	22.53	21.62
1732.5	20175	20	1	0	16QAM	22.30	22.98
1732.5	20175	20	1	49	16QAM	22.70	23.35
1732.5	20175	20	1	99	16QAM	22.23	22.82
1732.5	20175	20	50	0	16QAM	21.68	20.73
1732.5	20175	20	50	24	16QAM	21.75	20.83
1732.5	20175	20	50	50	16QAM	21.63	20.70
1732.5	20175	20	100	0	16QAM	21.61	20.68
1745.0	20300	20	1	0	QPSK	24.00	24.11
1745.0	20300	20	1	49	QPSK	23.41	23.59
1745.0	20300	20	1	99	QPSK	23.25	23.44
1745.0	20300	20	50	0	QPSK	22.44	21.48
1745.0	20300	20	50	24	QPSK	22.22	21.24
1745.0	20300	20	50	50	QPSK	22.19	21.33
1745.0	20300	20	100	0	QPSK	22.32	21.40
1745.0	20300	20	1	0	16QAM	22.80	23.12
1745.0	20300	20	1	49	16QAM	22.26	22.67
1745.0	20300	20	1	99	16QAM	22.01	22.50
1745.0	20300	20	50	0	16QAM	21.45	20.59
1745.0	20300	20	50	24	16QAM	21.31	20.31
1745.0	20300	20	50	50	16QAM	21.21	20.24
1745.0	20300	20	100	0	16QAM	21.31	20.46

Type: RM-893; Serial number: 355519/05/000415/9 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).

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	20.29	-
1710.7	19957	1.4	1	2	QPSK	20.33	-
1710.7	19957	1.4	1	5	QPSK	20.38	-
1710.7	19957	1.4	3	0	QPSK	20.37	-
1710.7	19957	1.4	3	2	QPSK	20.22	-
1710.7	19957	1.4	3	3	QPSK	20.31	-
1710.7	19957	1.4	6	0	QPSK	20.33	-
1710.7	19957	1.4	1	0	16QAM	20.45	-
1710.7	19957	1.4	1	2	16QAM	20.38	-
1710.7	19957	1.4	1	5	16QAM	20.30	-
1710.7	19957	1.4	3	0	16QAM	20.52	-
1710.7	19957	1.4	3	2	16QAM	20.46	-
1710.7	19957	1.4	3	3	16QAM	20.53	-
1710.7	19957	1.4	6	0	16QAM	20.38	-
1732.5	20175	1.4	1	0	QPSK	20.92	-
1732.5	20175	1.4	1	2	QPSK	20.95	-
1732.5	20175	1.4	1	5	QPSK	20.95	-
1732.5	20175	1.4	3	0	QPSK	20.93	-
1732.5	20175	1.4	3	2	QPSK	20.89	-
1732.5	20175	1.4	3	3	QPSK	20.86	-
1732.5	20175	1.4	6	0	QPSK	20.90	-
1732.5	20175	1.4	1	0	16QAM	20.87	-
1732.5	20175	1.4	1	2	16QAM	20.90	-
1732.5	20175	1.4	1	5	16QAM	20.88	-
1732.5	20175	1.4	3	0	16QAM	21.05	-
1732.5	20175	1.4	3	2	16QAM	20.97	-
1732.5	20175	1.4	3	3	16QAM	20.96	-
1732.5	20175	1.4	6	0	16QAM	20.98	-

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1754.3	20393	1.4	1	0	QPSK	20.27	-
1754.3	20393	1.4	1	2	QPSK	20.41	-
1754.3	20393	1.4	1	5	QPSK	20.22	-
1754.3	20393	1.4	3	0	QPSK	20.26	-
1754.3	20393	1.4	3	2	QPSK	20.29	-
1754.3	20393	1.4	3	3	QPSK	20.26	-
1754.3	20393	1.4	6	0	QPSK	20.28	-
1754.3	20393	1.4	1	0	16QAM	20.30	-
1754.3	20393	1.4	1	2	16QAM	20.47	-
1754.3	20393	1.4	1	5	16QAM	20.43	-
1754.3	20393	1.4	3	0	16QAM	20.24	-
1754.3	20393	1.4	3	2	16QAM	20.16	-
1754.3	20393	1.4	3	3	16QAM	20.26	-
1754.3	20393	1.4	6	0	16QAM	20.36	-
1711.5	19965	3	1	0	QPSK	20.41	20.37
1711.5	19965	3	1	7	QPSK	20.35	20.42
1711.5	19965	3	1	14	QPSK	20.34	20.29
1711.5	19965	3	8	0	QPSK	20.25	20.39
1711.5	19965	3	8	3	QPSK	20.28	20.35
1711.5	19965	3	8	7	QPSK	20.18	20.36
1711.5	19965	3	15	0	QPSK	20.21	20.38
1711.5	19965	3	1	0	16QAM	20.05	20.24
1711.5	19965	3	1	7	16QAM	19.98	20.16
1711.5	19965	3	1	14	16QAM	20.00	20.21
1732.5	20175	3	8	0	16QAM	20.27	20.32
1732.5	20175	3	8	3	16QAM	20.32	20.28
1732.5	20175	3	8	7	16QAM	20.33	20.24
1732.5	20175	3	15	0	16QAM	20.36	20.28

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1732.5	20175	3	1	0	QPSK	20.72	20.69
1732.5	20175	3	1	7	QPSK	20.89	20.91
1732.5	20175	3	1	14	QPSK	20.75	20.80
1732.5	20175	3	8	0	QPSK	20.85	20.79
1732.5	20175	3	8	3	QPSK	20.88	20.82
1732.5	20175	3	8	7	QPSK	20.85	20.80
1732.5	20175	3	15	0	QPSK	20.81	20.75
1732.5	20175	3	1	0	16QAM	20.45	20.53
1732.5	20175	3	1	7	16QAM	20.52	20.75
1732.5	20175	3	1	14	16QAM	20.52	20.71
1732.5	20175	3	8	0	16QAM	20.79	20.74
1732.5	20175	3	8	3	16QAM	20.83	20.75
1732.5	20175	3	8	7	16QAM	20.73	20.74
1732.5	20175	3	15	0	16QAM	20.85	20.84
1753.5	20385	3	1	0	QPSK	20.40	20.37
1753.5	20385	3	1	7	QPSK	20.31	20.26
1753.5	20385	3	1	14	QPSK	20.26	20.19
1753.5	20385	3	8	0	QPSK	20.39	20.29
1753.5	20385	3	8	3	QPSK	20.18	20.21
1753.5	20385	3	8	7	QPSK	20.16	20.17
1753.5	20385	3	15	0	QPSK	20.15	20.17
1753.5	20385	3	1	0	16QAM	20.05	20.58
1753.5	20385	3	1	7	16QAM	19.98	20.46
1753.5	20385	3	1	14	16QAM	19.85	20.41
1753.5	20385	3	8	0	16QAM	20.17	20.24
1753.5	20385	3	8	3	16QAM	20.06	20.12
1753.5	20385	3	8	7	16QAM	20.07	20.07
1753.5	20385	3	15	0	16QAM	20.09	20.15

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1712.5	19975	5	1	0	QPSK	20.35	20.47
1712.5	19975	5	1	12	QPSK	20.40	20.41
1712.5	19975	5	1	24	QPSK	20.40	20.42
1712.5	19975	5	12	0	QPSK	20.33	20.34
1712.5	19975	5	12	6	QPSK	20.31	20.31
1712.5	19975	5	12	13	QPSK	20.22	20.25
1712.5	19975	5	25	0	QPSK	20.27	20.14
1712.5	19975	5	1	0	16QAM	20.43	20.34
1712.5	19975	5	1	12	16QAM	20.35	20.20
1712.5	19975	5	1	24	16QAM	20.54	20.21
1712.5	19975	5	12	0	16QAM	20.37	20.38
1712.5	19975	5	12	6	16QAM	20.40	20.28
1712.5	19975	5	12	13	16QAM	20.28	20.32
1712.5	19975	5	25	0	16QAM	20.12	20.22
1732.5	20175	5	1	0	QPSK	20.79	20.83
1732.5	20175	5	1	12	QPSK	20.91	20.85
1732.5	20175	5	1	24	QPSK	20.83	20.75
1732.5	20175	5	12	0	QPSK	20.76	20.74
1732.5	20175	5	12	6	QPSK	20.77	20.85
1732.5	20175	5	12	13	QPSK	20.77	20.79
1732.5	20175	5	25	0	QPSK	20.73	20.72
1732.5	20175	5	1	0	16QAM	20.86	20.76
1732.5	20175	5	1	12	16QAM	21.05	20.84
1732.5	20175	5	1	24	16QAM	21.00	20.79
1732.5	20175	5	12	0	16QAM	20.75	20.65
1732.5	20175	5	12	6	16QAM	20.78	20.70
1732.5	20175	5	12	13	16QAM	20.94	20.79
1732.5	20175	5	25	0	16QAM	20.73	20.74

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1752.5	20375	5	1	0	QPSK	20.38	20.36
1752.5	20375	5	1	12	QPSK	20.35	20.33
1752.5	20375	5	1	24	QPSK	20.22	20.22
1752.5	20375	5	12	0	QPSK	20.32	20.34
1752.5	20375	5	12	6	QPSK	20.30	20.25
1752.5	20375	5	12	13	QPSK	20.17	20.16
1752.5	20375	5	25	0	QPSK	20.18	20.24
1752.5	20375	5	1	0	16QAM	20.44	20.31
1752.5	20375	5	1	12	16QAM	20.47	20.21
1752.5	20375	5	1	24	16QAM	20.34	20.08
1752.5	20375	5	12	0	16QAM	20.36	20.21
1752.5	20375	5	12	6	16QAM	20.36	20.18
1752.5	20375	5	12	13	16QAM	20.30	20.03
1752.5	20375	5	25	0	16QAM	20.19	20.14
1715.0	20000	10	1	0	QPSK	20.53	20.39
1715.0	20000	10	1	24	QPSK	20.44	20.50
1715.0	20000	10	1	49	QPSK	20.31	20.32
1715.0	20000	10	25	0	QPSK	20.18	20.24
1715.0	20000	10	25	12	QPSK	20.23	20.20
1715.0	20000	10	25	25	QPSK	20.19	20.16
1715.0	20000	10	50	0	QPSK	20.17	20.14
1715.0	20000	10	1	0	16QAM	20.24	20.52
1715.0	20000	10	1	24	16QAM	20.31	20.45
1715.0	20000	10	1	49	16QAM	20.18	20.50
1715.0	20000	10	25	0	16QAM	20.23	20.09
1715.0	20000	10	25	12	16QAM	20.22	20.11
1715.0	20000	10	25	25	16QAM	20.18	20.08
1715.0	20000	10	50	0	16QAM	20.05	20.08

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1732.5	20175	10	1	0	QPSK	20.75	20.66
1732.5	20175	10	1	24	QPSK	20.87	20.84
1732.5	20175	10	1	49	QPSK	20.71	20.69
1732.5	20175	10	25	0	QPSK	20.65	20.69
1732.5	20175	10	25	12	QPSK	20.72	20.71
1732.5	20175	10	25	25	QPSK	20.67	20.68
1732.5	20175	10	50	0	QPSK	20.55	20.50
1732.5	20175	10	1	0	16QAM	20.62	20.77
1732.5	20175	10	1	24	16QAM	20.67	20.92
1732.5	20175	10	1	49	16QAM	20.56	20.74
1732.5	20175	10	25	0	16QAM	20.64	20.62
1732.5	20175	10	25	12	16QAM	20.73	20.64
1732.5	20175	10	25	25	16QAM	20.62	20.52
1732.5	20175	10	50	0	16QAM	20.52	20.47
1750.0	20350	10	1	0	QPSK	20.25	20.31
1750.0	20350	10	1	24	QPSK	20.31	20.19
1750.0	20350	10	1	49	QPSK	20.00	20.01
1750.0	20350	10	25	0	QPSK	20.08	20.18
1750.0	20350	10	25	12	QPSK	20.03	20.08
1750.0	20350	10	25	25	QPSK	20.11	20.07
1750.0	20350	10	50	0	QPSK	19.96	19.97
1750.0	20350	10	1	0	16QAM	20.28	20.36
1750.0	20350	10	1	24	16QAM	20.08	20.25
1750.0	20350	10	1	49	16QAM	20.00	20.11
1750.0	20350	10	25	0	16QAM	20.02	20.08
1750.0	20350	10	25	12	16QAM	20.04	19.98
1750.0	20350	10	25	25	16QAM	20.03	19.96
1750.0	20350	10	50	0	16QAM	19.96	19.88

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1717.5	20025	15	1	0	QPSK	20.49	20.37
1717.5	20025	15	1	36	QPSK	20.38	20.41
1717.5	20025	15	1	74	QPSK	20.57	20.53
1717.5	20025	15	37	0	QPSK	20.28	20.30
1717.5	20025	15	37	18	QPSK	20.21	20.11
1717.5	20025	15	37	38	QPSK	20.23	20.19
1717.5	20025	15	75	0	QPSK	20.15	20.16
1717.5	20025	15	1	0	16QAM	20.55	20.13
1717.5	20025	15	1	36	16QAM	20.50	20.08
1717.5	20025	15	1	74	16QAM	20.71	20.16
1717.5	20025	15	37	0	16QAM	20.27	20.22
1717.5	20025	15	37	18	16QAM	20.17	20.12
1717.5	20025	15	37	38	16QAM	20.19	20.18
1717.5	20025	15	75	0	16QAM	20.12	20.11
1732.5	20175	15	1	0	QPSK	20.76	20.67
1732.5	20175	15	1	36	QPSK	20.93	20.81
1732.5	20175	15	1	74	QPSK	20.41	20.48
1732.5	20175	15	37	0	QPSK	20.51	20.45
1732.5	20175	15	37	18	QPSK	20.63	20.66
1732.5	20175	15	37	38	QPSK	20.56	20.54
1732.5	20175	15	75	0	QPSK	20.50	20.46
1732.5	20175	15	1	0	16QAM	20.89	20.28
1732.5	20175	15	1	36	16QAM	21.09	20.56
1732.5	20175	15	1	74	16QAM	20.57	20.13
1732.5	20175	15	37	0	16QAM	20.50	20.42
1732.5	20175	15	37	18	16QAM	20.62	20.62
1732.5	20175	15	37	38	16QAM	20.56	20.53
1732.5	20175	15	75	0	16QAM	20.39	20.45

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1747.5	20325	15	1	0	QPSK	20.58	20.54
1747.5	20325	15	1	36	QPSK	20.23	20.22
1747.5	20325	15	1	74	QPSK	20.06	20.13
1747.5	20325	15	37	0	QPSK	20.22	20.30
1747.5	20325	15	37	18	QPSK	20.02	20.05
1747.5	20325	15	37	38	QPSK	19.98	20.00
1747.5	20325	15	75	0	QPSK	20.13	20.03
1747.5	20325	15	1	0	16QAM	20.56	20.19
1747.5	20325	15	1	36	16QAM	20.35	20.05
1747.5	20325	15	1	74	16QAM	20.17	19.70
1747.5	20325	15	37	0	16QAM	20.23	20.22
1747.5	20325	15	37	18	16QAM	20.02	19.96
1747.5	20325	15	37	38	16QAM	20.00	19.95
1747.5	20325	15	75	0	16QAM	20.02	20.04
1720.0	20050	20	1	0	QPSK	20.28	20.28
1720.0	20050	20	1	49	QPSK	20.31	20.25
1720.0	20050	20	1	99	QPSK	20.47	20.49
1720.0	20050	20	50	0	QPSK	20.09	20.08
1720.0	20050	20	50	24	QPSK	20.10	20.13
1720.0	20050	20	50	50	QPSK	20.26	20.19
1720.0	20050	20	100	0	QPSK	20.16	20.21
1720.0	20050	20	1	0	16QAM	20.20	20.22
1720.0	20050	20	1	49	16QAM	20.10	20.13
1720.0	20050	20	1	99	16QAM	20.44	20.40
1720.0	20050	20	50	0	16QAM	19.96	19.95
1720.0	20050	20	50	24	16QAM	20.08	20.02
1720.0	20050	20	50	50	16QAM	20.16	20.11
1720.0	20050	20	100	0	16QAM	20.18	20.12

(Table LTE1700/2100, 355519/05/000415/9 continues)

(Table for LTE1700/2100, 355519/05/000415/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1732.5	20175	20	1	0	QPSK	20.53	20.44
1732.5	20175	20	1	49	QPSK	20.77	20.87
1732.5	20175	20	1	99	QPSK	20.30	20.40
1732.5	20175	20	50	0	QPSK	20.49	20.46
1732.5	20175	20	50	24	QPSK	20.57	20.57
1732.5	20175	20	50	50	QPSK	20.35	20.29
1732.5	20175	20	100	0	QPSK	20.43	20.44
1732.5	20175	20	1	0	16QAM	20.26	20.76
1732.5	20175	20	1	49	16QAM	20.59	21.12
1732.5	20175	20	1	99	16QAM	20.01	20.63
1732.5	20175	20	50	0	16QAM	20.45	20.39
1732.5	20175	20	50	24	16QAM	20.55	20.44
1732.5	20175	20	50	50	16QAM	20.33	20.29
1732.5	20175	20	100	0	16QAM	20.42	20.43
1745.0	20300	20	1	0	QPSK	20.78	20.81
1745.0	20300	20	1	49	QPSK	20.32	20.39
1745.0	20300	20	1	99	QPSK	20.01	20.07
1745.0	20300	20	50	0	QPSK	20.34	20.35
1745.0	20300	20	50	24	QPSK	20.09	20.08
1745.0	20300	20	50	50	QPSK	19.96	19.89
1745.0	20300	20	100	0	QPSK	20.25	20.16
1745.0	20300	20	1	0	16QAM	20.46	21.03
1745.0	20300	20	1	49	16QAM	20.11	20.55
1745.0	20300	20	1	99	16QAM	19.80	20.19
1745.0	20300	20	50	0	16QAM	20.30	20.24
1745.0	20300	20	50	24	16QAM	20.12	20.06
1745.0	20300	20	50	50	16QAM	19.90	19.90
1745.0	20300	20	100	0	16QAM	20.13	20.23

Type: RM-893; Serial number: 355519/05/000397/9 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).

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	23.70	-
1850.7	18607	1.4	1	2	QPSK	23.79	-
1850.7	18607	1.4	1	5	QPSK	23.68	-
1850.7	18607	1.4	3	0	QPSK	23.64	-
1850.7	18607	1.4	3	2	QPSK	23.64	-
1850.7	18607	1.4	3	3	QPSK	23.67	-
1850.7	18607	1.4	6	0	QPSK	22.57	-
1850.7	18607	1.4	1	0	16QAM	22.64	-
1850.7	18607	1.4	1	2	16QAM	22.68	-
1850.7	18607	1.4	1	5	16QAM	22.73	-
1850.7	18607	1.4	3	0	16QAM	22.57	-
1850.7	18607	1.4	3	2	16QAM	22.66	-
1850.7	18607	1.4	3	3	16QAM	22.63	-
1850.7	18607	1.4	6	0	16QAM	21.78	-
1880.0	18900	1.4	1	0	QPSK	24.07	-
1880.0	18900	1.4	1	2	QPSK	24.12	-
1880.0	18900	1.4	1	5	QPSK	24.07	-
1880.0	18900	1.4	3	0	QPSK	24.08	-
1880.0	18900	1.4	3	2	QPSK	23.95	-
1880.0	18900	1.4	3	3	QPSK	24.01	-
1880.0	18900	1.4	6	0	QPSK	23.06	-
1880.0	18900	1.4	1	0	16QAM	23.27	-
1880.0	18900	1.4	1	2	16QAM	23.16	-
1880.0	18900	1.4	1	5	16QAM	23.24	-
1880.0	18900	1.4	3	0	16QAM	23.14	-
1880.0	18900	1.4	3	2	16QAM	23.08	-
1880.0	18900	1.4	3	3	16QAM	23.04	-
1880.0	18900	1.4	6	0	16QAM	22.04	-

(Table LTE1900, 355519/05/000397/9 continues)

(Table LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1909.3	19193	1.4	1	0	QPSK	23.62	-
1909.3	19193	1.4	1	2	QPSK	23.57	-
1909.3	19193	1.4	1	5	QPSK	23.64	-
1909.3	19193	1.4	3	0	QPSK	23.54	-
1909.3	19193	1.4	3	2	QPSK	23.55	-
1909.3	19193	1.4	3	3	QPSK	23.49	-
1909.3	19193	1.4	6	0	QPSK	22.57	-
1909.3	19193	1.4	1	0	16QAM	22.81	-
1909.3	19193	1.4	1	2	16QAM	22.73	-
1909.3	19193	1.4	1	5	16QAM	22.73	-
1909.3	19193	1.4	3	0	16QAM	22.71	-
1909.3	19193	1.4	3	2	16QAM	22.68	-
1909.3	19193	1.4	3	3	16QAM	22.68	-
1909.3	19193	1.4	6	0	16QAM	21.57	-
1851.5	18615	3	1	0	QPSK	23.63	23.58
1851.5	18615	3	1	7	QPSK	23.66	23.57
1851.5	18615	3	1	14	QPSK	23.61	23.52
1851.5	18615	3	8	0	QPSK	22.58	21.47
1851.5	18615	3	8	3	QPSK	22.55	21.60
1851.5	18615	3	8	7	QPSK	22.56	21.55
1851.5	18615	3	15	0	QPSK	22.48	21.50
1851.5	18615	3	1	0	16QAM	22.49	22.76
1851.5	18615	3	1	7	16QAM	22.51	22.80
1851.5	18615	3	1	14	16QAM	22.46	22.59
1851.5	18615	3	8	0	16QAM	21.66	20.59
1851.5	18615	3	8	3	16QAM	21.65	20.56
1851.5	18615	3	8	7	16QAM	21.62	20.62
1851.5	18615	3	15	0	16QAM	21.69	20.50

(Table LTE1900, 355519/05/000397/9 continues)

(Table LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1880.0	18900	3	1	0	QPSK	23.98	23.96
1880.0	18900	3	1	7	QPSK	24.00	24.01
1880.0	18900	3	1	14	QPSK	23.84	23.89
1880.0	18900	3	8	0	QPSK	23.00	22.07
1880.0	18900	3	8	3	QPSK	23.00	21.98
1880.0	18900	3	8	7	QPSK	22.93	21.96
1880.0	18900	3	15	0	QPSK	22.94	21.97
1880.0	18900	3	1	0	16QAM	22.71	23.11
1880.0	18900	3	1	7	16QAM	22.50	22.97
1880.0	18900	3	1	14	16QAM	22.47	22.84
1880.0	18900	3	8	0	16QAM	21.96	20.88
1880.0	18900	3	8	3	16QAM	22.03	20.94
1880.0	18900	3	8	7	16QAM	21.97	20.88
1880.0	18900	3	15	0	16QAM	22.00	20.79
1908.5	19185	3	1	0	QPSK	23.52	23.55
1908.5	19185	3	1	7	QPSK	23.47	23.44
1908.5	19185	3	1	14	QPSK	23.49	23.51
1908.5	19185	3	8	0	QPSK	22.66	21.58
1908.5	19185	3	8	3	QPSK	22.53	21.56
1908.5	19185	3	8	7	QPSK	22.56	21.54
1908.5	19185	3	15	0	QPSK	22.49	21.51
1908.5	19185	3	1	0	16QAM	22.27	22.78
1908.5	19185	3	1	7	16QAM	22.12	22.63
1908.5	19185	3	1	14	16QAM	22.24	22.76
1908.5	19185	3	8	0	16QAM	21.53	20.57
1908.5	19185	3	8	3	16QAM	21.56	20.43
1908.5	19185	3	8	7	16QAM	21.57	20.51
1908.5	19185	3	15	0	16QAM	21.53	20.47

(Table LTE1900, 355519/05/000397/9 continues)

(Table LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1852.5	18625	5	1	0	QPSK	23.55	23.66
1852.5	18625	5	1	12	QPSK	23.58	23.55
1852.5	18625	5	1	24	QPSK	23.40	23.56
1852.5	18625	5	12	0	QPSK	22.49	21.60
1852.5	18625	5	12	6	QPSK	22.50	21.54
1852.5	18625	5	12	13	QPSK	22.46	21.55
1852.5	18625	5	25	0	QPSK	22.29	21.31
1852.5	18625	5	1	0	16QAM	22.40	22.41
1852.5	18625	5	1	12	16QAM	22.39	22.51
1852.5	18625	5	1	24	16QAM	22.25	22.26
1852.5	18625	5	12	0	16QAM	21.52	20.76
1852.5	18625	5	12	6	16QAM	21.54	20.69
1852.5	18625	5	12	13	16QAM	21.52	20.69
1852.5	18625	5	25	0	16QAM	21.33	20.54
1880.0	18900	5	1	0	QPSK	23.76	23.84
1880.0	18900	5	1	12	QPSK	23.84	23.99
1880.0	18900	5	1	24	QPSK	23.75	23.83
1880.0	18900	5	12	0	QPSK	22.88	22.03
1880.0	18900	5	12	6	QPSK	22.87	21.99
1880.0	18900	5	12	13	QPSK	22.89	21.96
1880.0	18900	5	25	0	QPSK	22.82	21.85
1880.0	18900	5	1	0	16QAM	22.65	22.73
1880.0	18900	5	1	12	16QAM	22.78	22.75
1880.0	18900	5	1	24	16QAM	22.45	22.74
1880.0	18900	5	12	0	16QAM	21.92	21.05
1880.0	18900	5	12	6	16QAM	22.01	21.00
1880.0	18900	5	12	13	16QAM	21.87	20.97
1880.0	18900	5	25	0	16QAM	21.77	20.93

(Table LTE1900, 355519/05/000397/9 continues)

(Table LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1907.5	19175	5	1	0	QPSK	23.37	23.43
1907.5	19175	5	1	12	QPSK	23.52	23.53
1907.5	19175	5	1	24	QPSK	23.46	23.49
1907.5	19175	5	12	0	QPSK	22.44	21.54
1907.5	19175	5	12	6	QPSK	22.47	21.55
1907.5	19175	5	12	13	QPSK	22.47	21.53
1907.5	19175	5	25	0	QPSK	22.34	21.41
1907.5	19175	5	1	0	16QAM	22.61	22.21
1907.5	19175	5	1	12	16QAM	22.73	22.28
1907.5	19175	5	1	24	16QAM	22.54	22.11
1907.5	19175	5	12	0	16QAM	21.53	20.51
1907.5	19175	5	12	6	16QAM	21.64	20.67
1907.5	19175	5	12	13	16QAM	21.53	20.63
1907.5	19175	5	25	0	16QAM	21.29	20.40
1855.0	18650	10	1	0	QPSK	23.59	23.67
1855.0	18650	10	1	24	QPSK	23.49	23.48
1855.0	18650	10	1	49	QPSK	23.42	23.58
1855.0	18650	10	25	0	QPSK	22.54	21.46
1855.0	18650	10	25	12	QPSK	22.37	21.49
1855.0	18650	10	25	25	QPSK	22.45	21.45
1855.0	18650	10	50	0	QPSK	22.23	21.27
1855.0	18650	10	1	0	16QAM	22.47	22.32
1855.0	18650	10	1	24	16QAM	22.36	22.20
1855.0	18650	10	1	49	16QAM	22.26	22.20
1855.0	18650	10	25	0	16QAM	21.48	20.47
1855.0	18650	10	25	12	16QAM	21.42	20.41
1855.0	18650	10	25	25	16QAM	21.42	20.37
1855.0	18650	10	50	0	16QAM	21.35	20.31

(Table LTE1900, 355519/05/000397/9 continues)

(Table LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1880.0	18900	10	1	0	QPSK	23.98	23.86
1880.0	18900	10	1	24	QPSK	23.98	24.03
1880.0	18900	10	1	49	QPSK	23.85	23.84
1880.0	18900	10	25	0	QPSK	22.93	21.86
1880.0	18900	10	25	12	QPSK	22.83	21.95
1880.0	18900	10	25	25	QPSK	22.95	21.90
1880.0	18900	10	50	0	QPSK	22.75	21.77
1880.0	18900	10	1	0	16QAM	22.75	22.83
1880.0	18900	10	1	24	16QAM	22.90	22.75
1880.0	18900	10	1	49	16QAM	22.58	22.61
1880.0	18900	10	25	0	16QAM	21.90	20.84
1880.0	18900	10	25	12	16QAM	21.90	20.84
1880.0	18900	10	25	25	16QAM	21.85	20.78
1880.0	18900	10	50	0	16QAM	21.79	20.76
1905.0	19150	10	1	0	QPSK	23.44	23.42
1905.0	19150	10	1	24	QPSK	23.61	23.49
1905.0	19150	10	1	49	QPSK	23.55	23.61
1905.0	19150	10	25	0	QPSK	22.44	21.44
1905.0	19150	10	25	12	QPSK	22.48	21.45
1905.0	19150	10	25	25	QPSK	22.48	21.49
1905.0	19150	10	50	0	QPSK	22.38	21.45
1905.0	19150	10	1	0	16QAM	22.45	22.44
1905.0	19150	10	1	24	16QAM	22.44	22.38
1905.0	19150	10	1	49	16QAM	22.37	22.28
1905.0	19150	10	25	0	16QAM	21.40	20.28
1905.0	19150	10	25	12	16QAM	21.44	20.43
1905.0	19150	10	25	25	16QAM	21.49	20.42
1905.0	19150	10	50	0	16QAM	21.37	20.39

(Table LTE1900, 355519/05/000397/9 continues)

(Table LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1857.5	18675	15	1	0	QPSK	23.73	23.63
1857.5	18675	15	1	36	QPSK	23.55	23.53
1857.5	18675	15	1	74	QPSK	23.48	23.53
1857.5	18675	15	37	0	QPSK	22.36	21.44
1857.5	18675	15	37	18	QPSK	22.33	21.38
1857.5	18675	15	37	38	QPSK	22.25	21.32
1857.5	18675	15	75	0	QPSK	22.27	21.28
1857.5	18675	15	1	0	16QAM	22.81	22.89
1857.5	18675	15	1	36	16QAM	22.65	22.60
1857.5	18675	15	1	74	16QAM	22.54	22.63
1857.5	18675	15	37	0	16QAM	21.36	20.52
1857.5	18675	15	37	18	16QAM	21.37	20.39
1857.5	18675	15	37	38	16QAM	21.36	20.24
1857.5	18675	15	75	0	16QAM	21.30	20.34
1880.0	18900	15	1	0	QPSK	23.95	23.90
1880.0	18900	15	1	36	QPSK	24.02	23.99
1880.0	18900	15	1	74	QPSK	23.74	23.75
1880.0	18900	15	37	0	QPSK	22.91	21.87
1880.0	18900	15	37	18	QPSK	22.78	21.85
1880.0	18900	15	37	38	QPSK	22.71	21.78
1880.0	18900	15	75	0	QPSK	22.64	21.70
1880.0	18900	15	1	0	16QAM	22.96	23.09
1880.0	18900	15	1	36	16QAM	23.13	23.07
1880.0	18900	15	1	74	16QAM	22.83	22.97
1880.0	18900	15	37	0	16QAM	21.91	20.93
1880.0	18900	15	37	18	16QAM	21.89	20.92
1880.0	18900	15	37	38	16QAM	21.68	20.78
1880.0	18900	15	75	0	16QAM	21.63	20.74

(Table LTE1900, 355519/05/000397/9 continues)

(Table LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1902.5	19125	15	1	0	QPSK	23.61	23.61
1902.5	19125	15	1	36	QPSK	23.51	23.55
1902.5	19125	15	1	74	QPSK	23.62	23.49
1902.5	19125	15	37	0	QPSK	22.38	21.36
1902.5	19125	15	37	18	QPSK	22.41	21.42
1902.5	19125	15	37	38	QPSK	22.43	21.44
1902.5	19125	15	75	0	QPSK	22.32	21.30
1902.5	19125	15	1	0	16QAM	22.76	22.85
1902.5	19125	15	1	36	16QAM	22.80	22.72
1902.5	19125	15	1	74	16QAM	22.66	22.86
1902.5	19125	15	37	0	16QAM	21.29	20.45
1902.5	19125	15	37	18	16QAM	21.41	20.47
1902.5	19125	15	37	38	16QAM	21.41	20.45
1902.5	19125	15	75	0	16QAM	21.27	20.40
1860.0	18700	20	1	0	QPSK	23.75	23.63
1860.0	18700	20	1	49	QPSK	23.43	23.47
1860.0	18700	20	1	99	QPSK	23.67	23.61
1860.0	18700	20	50	0	QPSK	22.37	21.36
1860.0	18700	20	50	24	QPSK	22.18	21.26
1860.0	18700	20	50	50	QPSK	22.34	21.34
1860.0	18700	20	100	0	QPSK	22.26	21.25
1860.0	18700	20	1	0	16QAM	22.37	22.63
1860.0	18700	20	1	49	16QAM	22.19	22.27
1860.0	18700	20	1	99	16QAM	22.21	22.50
1860.0	18700	20	50	0	16QAM	21.38	20.44
1860.0	18700	20	50	24	16QAM	21.31	20.36
1860.0	18700	20	50	50	16QAM	21.39	20.34
1860.0	18700	20	100	0	16QAM	21.27	20.31

(Table LTE1900, 355519/05/000397/9 continues)

(Table for LTE1900, 355519/05/000397/9 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1880.0	18900	20	1	0	QPSK	23.77	23.69
1880.0	18900	20	1	49	QPSK	23.95	23.89
1880.0	18900	20	1	99	QPSK	23.71	23.62
1880.0	18900	20	50	0	QPSK	22.71	21.78
1880.0	18900	20	50	24	QPSK	22.80	21.76
1880.0	18900	20	50	50	QPSK	22.64	21.70
1880.0	18900	20	100	0	QPSK	22.65	21.71
1880.0	18900	20	1	0	16QAM	22.57	22.82
1880.0	18900	20	1	49	16QAM	22.79	22.91
1880.0	18900	20	1	99	16QAM	22.26	22.56
1880.0	18900	20	50	0	16QAM	21.71	20.76
1880.0	18900	20	50	24	16QAM	21.73	20.81
1880.0	18900	20	50	50	16QAM	21.65	20.67
1880.0	18900	20	100	0	16QAM	21.74	20.71
1900.0	19100	20	1	0	QPSK	23.83	23.84
1900.0	19100	20	1	49	QPSK	23.49	23.47
1900.0	19100	20	1	99	QPSK	23.52	23.55
1900.0	19100	20	50	0	QPSK	22.39	21.35
1900.0	19100	20	50	24	QPSK	22.33	21.32
1900.0	19100	20	50	50	QPSK	22.41	21.39
1900.0	19100	20	100	0	QPSK	22.34	21.35
1900.0	19100	20	1	0	16QAM	22.47	22.78
1900.0	19100	20	1	49	16QAM	22.26	22.73
1900.0	19100	20	1	99	16QAM	22.27	22.64
1900.0	19100	20	50	0	16QAM	21.39	20.40
1900.0	19100	20	50	24	16QAM	21.31	20.32
1900.0	19100	20	50	50	16QAM	21.28	20.39
1900.0	19100	20	100	0	16QAM	21.38	20.45

Type: RM-893; Serial number: 355519/05/000377/1 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).

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	20.40	-
1850.7	18607	1.4	1	2	QPSK	20.30	-
1850.7	18607	1.4	1	5	QPSK	20.34	-
1850.7	18607	1.4	3	0	QPSK	20.32	-
1850.7	18607	1.4	3	2	QPSK	20.39	-
1850.7	18607	1.4	3	3	QPSK	20.32	-
1850.7	18607	1.4	6	0	QPSK	20.26	-
1850.7	18607	1.4	1	0	16QAM	20.18	-
1850.7	18607	1.4	1	2	16QAM	20.16	-
1850.7	18607	1.4	1	5	16QAM	20.20	-
1850.7	18607	1.4	3	0	16QAM	20.56	-
1850.7	18607	1.4	3	2	16QAM	20.38	-
1850.7	18607	1.4	3	3	16QAM	20.39	-
1850.7	18607	1.4	6	0	16QAM	20.42	-
1880.0	18900	1.4	1	0	QPSK	20.84	-
1880.0	18900	1.4	1	2	QPSK	20.79	-
1880.0	18900	1.4	1	5	QPSK	20.72	-
1880.0	18900	1.4	3	0	QPSK	20.76	-
1880.0	18900	1.4	3	2	QPSK	20.80	-
1880.0	18900	1.4	3	3	QPSK	20.78	-
1880.0	18900	1.4	6	0	QPSK	20.81	-
1880.0	18900	1.4	1	0	16QAM	20.50	-
1880.0	18900	1.4	1	2	16QAM	20.51	-
1880.0	18900	1.4	1	5	16QAM	20.41	-
1880.0	18900	1.4	3	0	16QAM	20.94	-
1880.0	18900	1.4	3	2	16QAM	20.88	-
1880.0	18900	1.4	3	3	16QAM	20.82	-
1880.0	18900	1.4	6	0	16QAM	20.70	-

(Table LTE1900, 355519/05/000377/1 continues)

(Table LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1909.3	19193	1.4	1	0	QPSK	20.31	-
1909.3	19193	1.4	1	2	QPSK	20.29	-
1909.3	19193	1.4	1	5	QPSK	20.34	-
1909.3	19193	1.4	3	0	QPSK	20.34	-
1909.3	19193	1.4	3	2	QPSK	20.31	-
1909.3	19193	1.4	3	3	QPSK	20.35	-
1909.3	19193	1.4	6	0	QPSK	20.27	-
1909.3	19193	1.4	1	0	16QAM	19.91	-
1909.3	19193	1.4	1	2	16QAM	19.84	-
1909.3	19193	1.4	1	5	16QAM	20.09	-
1909.3	19193	1.4	3	0	16QAM	20.38	-
1909.3	19193	1.4	3	2	16QAM	20.45	-
1909.3	19193	1.4	3	3	16QAM	20.43	-
1909.3	19193	1.4	6	0	16QAM	20.31	-
1851.5	18615	3	1	0	QPSK	20.48	20.39
1851.5	18615	3	1	7	QPSK	20.39	20.36
1851.5	18615	3	1	14	QPSK	20.28	20.40
1851.5	18615	3	8	0	QPSK	20.38	20.32
1851.5	18615	3	8	3	QPSK	20.30	20.33
1851.5	18615	3	8	7	QPSK	20.31	20.32
1851.5	18615	3	15	0	QPSK	20.32	20.26
1851.5	18615	3	1	0	16QAM	20.28	20.56
1851.5	18615	3	1	7	16QAM	20.29	20.53
1851.5	18615	3	1	14	16QAM	20.34	20.43
1851.5	18615	3	8	0	16QAM	20.30	20.18
1851.5	18615	3	8	3	16QAM	20.29	20.19
1851.5	18615	3	8	7	16QAM	20.27	20.24
1851.5	18615	3	15	0	16QAM	20.29	20.33

(Table LTE1900, 355519/05/000377/1 continues)

(Table LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1880.0	18900	3	1	0	QPSK	20.80	20.82
1880.0	18900	3	1	7	QPSK	20.75	20.83
1880.0	18900	3	1	14	QPSK	20.78	20.72
1880.0	18900	3	8	0	QPSK	20.81	20.70
1880.0	18900	3	8	3	QPSK	20.80	20.69
1880.0	18900	3	8	7	QPSK	20.77	20.75
1880.0	18900	3	15	0	QPSK	20.75	20.73
1880.0	18900	3	1	0	16QAM	20.70	20.91
1880.0	18900	3	1	7	16QAM	20.70	21.01
1880.0	18900	3	1	14	16QAM	20.73	20.90
1880.0	18900	3	8	0	16QAM	20.69	20.58
1880.0	18900	3	8	3	16QAM	20.68	20.61
1880.0	18900	3	8	7	16QAM	20.71	20.61
1880.0	18900	3	15	0	16QAM	20.68	20.71
1908.5	19185	3	1	0	QPSK	20.37	20.46
1908.5	19185	3	1	7	QPSK	20.24	20.29
1908.5	19185	3	1	14	QPSK	20.38	20.40
1908.5	19185	3	8	0	QPSK	20.36	20.31
1908.5	19185	3	8	3	QPSK	20.35	20.26
1908.5	19185	3	8	7	QPSK	20.33	20.21
1908.5	19185	3	15	0	QPSK	20.30	20.25
1908.5	19185	3	1	0	16QAM	20.57	20.54
1908.5	19185	3	1	7	16QAM	20.51	20.40
1908.5	19185	3	1	14	16QAM	20.53	20.58
1908.5	19185	3	8	0	16QAM	20.26	20.26
1908.5	19185	3	8	3	16QAM	20.22	20.13
1908.5	19185	3	8	7	16QAM	20.26	20.16
1908.5	19185	3	15	0	16QAM	20.34	20.28

(Table LTE1900, 355519/05/000377/1 continues)

(Table LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1852.5	18625	5	1	0	QPSK	20.33	20.40
1852.5	18625	5	1	12	QPSK	20.34	20.43
1852.5	18625	5	1	24	QPSK	20.30	20.41
1852.5	18625	5	12	0	QPSK	20.27	20.31
1852.5	18625	5	12	6	QPSK	20.31	20.26
1852.5	18625	5	12	13	QPSK	20.27	20.22
1852.5	18625	5	25	0	QPSK	20.21	20.21
1852.5	18625	5	1	0	16QAM	20.54	20.27
1852.5	18625	5	1	12	16QAM	20.68	20.18
1852.5	18625	5	1	24	16QAM	20.60	20.13
1852.5	18625	5	12	0	16QAM	20.38	20.37
1852.5	18625	5	12	6	16QAM	20.42	20.29
1852.5	18625	5	12	13	16QAM	20.30	20.32
1852.5	18625	5	25	0	16QAM	20.23	20.18
1880.0	18900	5	1	0	QPSK	20.75	20.65
1880.0	18900	5	1	12	QPSK	20.75	20.77
1880.0	18900	5	1	24	QPSK	20.71	20.78
1880.0	18900	5	12	0	QPSK	20.75	20.68
1880.0	18900	5	12	6	QPSK	20.70	20.66
1880.0	18900	5	12	13	QPSK	20.70	20.66
1880.0	18900	5	25	0	QPSK	20.67	20.64
1880.0	18900	5	1	0	16QAM	20.66	20.62
1880.0	18900	5	1	12	16QAM	20.93	20.78
1880.0	18900	5	1	24	16QAM	20.57	20.59
1880.0	18900	5	12	0	16QAM	20.77	20.67
1880.0	18900	5	12	6	16QAM	20.72	20.57
1880.0	18900	5	12	13	16QAM	20.76	20.60
1880.0	18900	5	25	0	16QAM	20.63	20.56

(Table LTE1900, 355519/05/000377/1 continues)

(Table LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1907.5	19175	5	1	0	QPSK	20.30	20.26
1907.5	19175	5	1	12	QPSK	20.49	20.33
1907.5	19175	5	1	24	QPSK	20.39	20.39
1907.5	19175	5	12	0	QPSK	20.26	20.25
1907.5	19175	5	12	6	QPSK	20.31	20.29
1907.5	19175	5	12	13	QPSK	20.28	20.21
1907.5	19175	5	25	0	QPSK	20.15	20.13
1907.5	19175	5	1	0	16QAM	20.15	20.18
1907.5	19175	5	1	12	16QAM	20.31	20.38
1907.5	19175	5	1	24	16QAM	20.29	20.22
1907.5	19175	5	12	0	16QAM	20.26	20.22
1907.5	19175	5	12	6	16QAM	20.39	20.23
1907.5	19175	5	12	13	16QAM	20.26	20.23
1907.5	19175	5	25	0	16QAM	20.21	20.13
1855.0	18650	10	1	0	QPSK	20.44	20.51
1855.0	18650	10	1	24	QPSK	20.33	20.34
1855.0	18650	10	1	49	QPSK	20.25	20.17
1855.0	18650	10	25	0	QPSK	20.28	20.24
1855.0	18650	10	25	12	QPSK	20.28	20.23
1855.0	18650	10	25	25	QPSK	20.10	20.06
1855.0	18650	10	50	0	QPSK	20.19	20.15
1855.0	18650	10	1	0	16QAM	20.38	20.47
1855.0	18650	10	1	24	16QAM	20.25	20.40
1855.0	18650	10	1	49	16QAM	20.18	20.35
1855.0	18650	10	25	0	16QAM	20.20	20.10
1855.0	18650	10	25	12	16QAM	20.20	20.16
1855.0	18650	10	25	25	16QAM	20.05	20.00
1855.0	18650	10	50	0	16QAM	20.14	20.14

(Table LTE1900, 355519/05/000377/1 continues)

(Table LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1880.0	18900	10	1	0	QPSK	20.83	20.81
1880.0	18900	10	1	24	QPSK	20.91	20.79
1880.0	18900	10	1	49	QPSK	20.73	20.63
1880.0	18900	10	25	0	QPSK	20.67	20.67
1880.0	18900	10	25	12	QPSK	20.66	20.62
1880.0	18900	10	25	25	QPSK	20.65	20.66
1880.0	18900	10	50	0	QPSK	20.57	20.57
1880.0	18900	10	1	0	16QAM	20.87	20.82
1880.0	18900	10	1	24	16QAM	20.85	20.99
1880.0	18900	10	1	49	16QAM	20.81	20.71
1880.0	18900	10	25	0	16QAM	20.56	20.60
1880.0	18900	10	25	12	16QAM	20.55	20.53
1880.0	18900	10	25	25	16QAM	20.53	20.52
1880.0	18900	10	50	0	16QAM	20.55	20.57
1905.0	19150	10	1	0	QPSK	20.54	20.36
1905.0	19150	10	1	24	QPSK	20.38	20.42
1905.0	19150	10	1	49	QPSK	20.48	20.38
1905.0	19150	10	25	0	QPSK	20.08	20.19
1905.0	19150	10	25	12	QPSK	20.31	20.29
1905.0	19150	10	25	25	QPSK	20.29	20.26
1905.0	19150	10	50	0	QPSK	20.20	20.20
1905.0	19150	10	1	0	16QAM	20.64	20.36
1905.0	19150	10	1	24	16QAM	20.60	20.35
1905.0	19150	10	1	49	16QAM	20.45	20.26
1905.0	19150	10	25	0	16QAM	20.09	20.19
1905.0	19150	10	25	12	16QAM	20.13	20.29
1905.0	19150	10	25	25	16QAM	20.16	20.34
1905.0	19150	10	50	0	16QAM	20.10	20.22

(Table LTE1900, 355519/05/000377/1 continues)

(Table LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1857.5	18675	15	1	0	QPSK	20.43	20.39
1857.5	18675	15	1	36	QPSK	20.35	20.29
1857.5	18675	15	1	74	QPSK	20.42	20.27
1857.5	18675	15	37	0	QPSK	20.19	20.18
1857.5	18675	15	37	18	QPSK	20.04	20.03
1857.5	18675	15	37	38	QPSK	20.04	19.95
1857.5	18675	15	75	0	QPSK	20.02	20.00
1857.5	18675	15	1	0	16QAM	20.27	20.06
1857.5	18675	15	1	36	16QAM	20.15	20.01
1857.5	18675	15	1	74	16QAM	20.05	19.97
1857.5	18675	15	37	0	16QAM	20.21	20.13
1857.5	18675	15	37	18	16QAM	20.10	20.02
1857.5	18675	15	37	38	16QAM	20.04	19.93
1857.5	18675	15	75	0	16QAM	19.98	19.93
1880.0	18900	15	1	0	QPSK	20.73	20.68
1880.0	18900	15	1	36	QPSK	20.82	20.70
1880.0	18900	15	1	74	QPSK	20.62	20.65
1880.0	18900	15	37	0	QPSK	20.68	20.59
1880.0	18900	15	37	18	QPSK	20.62	20.58
1880.0	18900	15	37	38	QPSK	20.58	20.55
1880.0	18900	15	75	0	QPSK	20.57	20.61
1880.0	18900	15	1	0	16QAM	20.55	20.52
1880.0	18900	15	1	36	16QAM	20.69	20.45
1880.0	18900	15	1	74	16QAM	20.37	20.29
1880.0	18900	15	37	0	16QAM	20.66	20.61
1880.0	18900	15	37	18	16QAM	20.62	20.55
1880.0	18900	15	37	38	16QAM	20.59	20.59
1880.0	18900	15	75	0	16QAM	20.52	20.58

(Table LTE1900, 355519/05/000377/1 continues)

(Table LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1902.5	19125	15	1	0	QPSK	20.56	20.62
1902.5	19125	15	1	36	QPSK	20.47	20.37
1902.5	19125	15	1	74	QPSK	20.32	20.37
1902.5	19125	15	37	0	QPSK	20.27	20.28
1902.5	19125	15	37	18	QPSK	20.29	20.25
1902.5	19125	15	37	38	QPSK	20.20	20.20
1902.5	19125	15	75	0	QPSK	20.23	20.24
1902.5	19125	15	1	0	16QAM	20.17	20.27
1902.5	19125	15	1	36	16QAM	20.28	20.03
1902.5	19125	15	1	74	16QAM	20.08	20.12
1902.5	19125	15	37	0	16QAM	20.22	20.24
1902.5	19125	15	37	18	16QAM	20.27	20.29
1902.5	19125	15	37	38	16QAM	20.22	20.20
1902.5	19125	15	75	0	16QAM	20.21	20.12
1860.0	18700	20	1	0	QPSK	20.54	20.45
1860.0	18700	20	1	49	QPSK	20.38	20.35
1860.0	18700	20	1	99	QPSK	20.52	20.51
1860.0	18700	20	50	0	QPSK	20.17	20.18
1860.0	18700	20	50	24	QPSK	20.05	20.13
1860.0	18700	20	50	50	QPSK	20.18	20.22
1860.0	18700	20	100	0	QPSK	20.23	20.22
1860.0	18700	20	1	0	16QAM	20.07	20.60
1860.0	18700	20	1	49	16QAM	19.92	20.61
1860.0	18700	20	1	99	16QAM	20.27	20.74
1860.0	18700	20	50	0	16QAM	20.05	20.05
1860.0	18700	20	50	24	16QAM	19.96	20.07
1860.0	18700	20	50	50	16QAM	20.04	20.16
1860.0	18700	20	100	0	16QAM	20.12	20.20

(Table LTE1900, 355519/05/000377/1 continues)

(Table for LTE1900, 355519/05/000377/1 continues)

Frequency (MHz)	Channel Number	Bandwidth (MHz)	RB Number	RB Offset	Modulation	Max Average Power (dBm)	Reduced Power(dBm)
1880.0	18900	20	1	0	QPSK	20.75	20.71
1880.0	18900	20	1	49	QPSK	20.78	20.82
1880.0	18900	20	1	99	QPSK	20.51	20.57
1880.0	18900	20	50	0	QPSK	20.53	20.53
1880.0	18900	20	50	24	QPSK	20.51	20.61
1880.0	18900	20	50	50	QPSK	20.36	20.50
1880.0	18900	20	100	0	QPSK	20.49	20.52
1880.0	18900	20	1	0	16QAM	20.25	20.83
1880.0	18900	20	1	49	16QAM	20.37	20.95
1880.0	18900	20	1	99	16QAM	20.18	20.80
1880.0	18900	20	50	0	16QAM	20.39	20.49
1880.0	18900	20	50	24	16QAM	20.42	20.53
1880.0	18900	20	50	50	16QAM	20.33	20.37
1880.0	18900	20	100	0	16QAM	20.44	20.49
1900.0	19100	20	1	0	QPSK	20.51	20.54
1900.0	19100	20	1	49	QPSK	20.18	20.30
1900.0	19100	20	1	99	QPSK	20.10	20.18
1900.0	19100	20	50	0	QPSK	20.22	20.21
1900.0	19100	20	50	24	QPSK	20.04	20.22
1900.0	19100	20	50	50	QPSK	20.10	20.12
1900.0	19100	20	100	0	QPSK	20.10	20.20
1900.0	19100	20	1	0	16QAM	20.28	20.82
1900.0	19100	20	1	49	16QAM	20.06	20.53
1900.0	19100	20	1	99	16QAM	20.00	20.56
1900.0	19100	20	50	0	16QAM	20.11	20.13
1900.0	19100	20	50	24	16QAM	20.02	20.13
1900.0	19100	20	50	50	16QAM	19.97	20.06
1900.0	19100	20	100	0	16QAM	20.10	20.16

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

H.1 Power Tuning Targets

GSM/GPRS/EGPRS 850 Head, Body-worn and Wireless Router			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	32.5	32.5	32.5
GPRS 2-slot	30.5	30.5	30.5
GPRS 3-slot	28.5	28.5	28.5
GPRS 4-slot	27.5	27.5	27.5
EGRPS 1-slot	26.5	26.5	26.5
EGPRS 2-slot	26.0	26.0	26.0
EGPRS 3-slot	25.0	25.0	25.0
EGPRS 4-slot	24.0	24.0	24.0

GSM/GPRS/EGPRS 1900 Head and Body-worn			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	30.0	30.0	30.0
GPRS 2-slot	27.5	27.5	27.5
GPRS 3-slot	25.5	25.5	25.5
GPRS 4-slot	24.5	24.5	24.5
EGRPS 1-slot	25.5	25.5	25.5
EGPRS 2-slot	25.0	25.0	25.0
EGPRS 3-slot	24.0	24.0	24.0
EGPRS 4-slot	23.0	23.0	23.0

GSM/GPRS/EGPRS 1900 Wireless Router			
Slot configuration	Low channel	Mid channel	High channel
GSM 1-slot	29.2	29.2	29.2
GPRS 2-slot	26.7	26.7	26.7
GPRS 3-slot	24.7	24.7	24.7
GPRS 4-slot	23.7	23.7	23.7
EGRPS 1-slot	25.5	25.5	25.5
EGPRS 2-slot	25.0	25.0	25.0
EGPRS 3-slot	24.0	24.0	24.0
EGPRS 4-slot	23.0	23.0	23.0

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

Type: RM-893; Serial number: 355519/05/000395/3 used for

- GSM/GPRS/EGPRS850 Head, Body-worn and Wireless Router SAR measurements

GSM/GPRS/EGPRS 850 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	33.31	33.63	33.36
GPRS 2-slot	31.78	32.02	31.60
GPRS 3-slot	29.90	30.00	29.50
GPRS 4-slot	28.80	28.80	28.68
EGRPS 1-slot	27.67	27.78	27.60
EGPRS 2-slot	27.40	27.44	27.27
EGPRS 3-slot	26.30	26.30	26.19
EGPRS 4-slot	25.43	25.45	25.23

Type: RM-893; Serial number: 355519/05/000282/3 used for

- GSM/GPRS/EGPRS1900 Head and Body-worn

GSM/GPRS/EGPRS 1900 Head, Body-worn			
Slot configuration	CH 512 1850.2 MHz	CH 661 1880.0 MHz	CH 810 1909.8 MHz
GSM 1-slot	30.83	30.81	31.09
GPRS 2-slot	28.54	28.49	28.75
GPRS 3-slot	26.47	26.46	26.73
GPRS 4-slot	25.16	25.20	25.39
EGRPS 1-slot	26.39	26.45	26.56
EGPRS 2-slot	26.14	26.13	26.29
EGPRS 3-slot	25.08	25.06	25.14
EGPRS 4-slot	24.22	24.21	24.26

Type: RM-893; Serial number: 355519/05/000290/6 used for

- GSM/GPRS/EGPRS1900 Wireless Router SAR measurements

GSM/GPRS/EGPRS 1900 Wireless Router			
Slot configuration	CH 512 1850.2 MHz	CH 661 1880.0 MHz	CH 810 1909.8 MHz
GSM 1-slot	29.71	29.76	30.17
GPRS 2-slot	27.28	27.46	27.54
GPRS 3-slot	25.32	25.46	25.62
GPRS 4-slot	24.20	24.28	24.47
EGRPS 1-slot	25.98	26.06	26.20
EGPRS 2-slot	25.65	25.80	25.95
EGPRS 3-slot	24.63	24.70	24.85
EGPRS 4-slot	23.52	23.59	23.73

APPENDIX I: CONDUCTED POWER MEASUREMENTS FOR SUPPORTED WCDMA TRANSMISSION MODES

I.1 Power Tuning Targets

WCDMA 850 (Band 5) Head, Body-worn and Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	23.5	23.5	23.5

WCDMA1700/2100 (Band 4) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.5	23.5	23.5
WCDMA1700/2100 (Band 4) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	19.2	19.2	19.2

WCDMA1900 (Band 2) Head and Body-worn			
Mode	Low channel	Mid channel	High channel
WCDMA	23.5	23.5	23.5
WCDMA1900 (Band 2) Wireless Router			
Mode	Low channel	Mid channel	High channel
WCDMA	20.2	20.2	20.2

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

Type: RM-893; Serial number: 355519/05/000395/3 used for WCDMA850 (Band 5) Head, Body-worn and Wireless router SAR measurements

WCDMA850 (Band 5)			
Mode	Low channel	Mid channel	High channel
WCDMA	24.36	24.49	24.38

Type: RM-893; Serial number: 355519/05/000282/3 used for WCDMA1700/2100 (Band 4) and WCDMA1900 (Band 2) Head and Body-worn SAR measurements

WCDMA1700/2100 (Band 4)			
Mode	Low channel	Mid channel	High channel
WCDMA	24.42	24.44	24.44
WCDMA1900 (Band 2)			
Mode	Low channel	Mid channel	High channel
WCDMA	24.21	24.35	24.49

Type: RM-893; Serial number: 355519/05/000290/6 used for WCDMA1700/2100 (Band 4) and WCDMA1900 (Band 2) Wireless router SAR measurements

WCDMA1700/2100 (Band 4)			
Mode	Low channel	Mid channel	High channel
WCDMA	20.08	19.95	20.01
WCDMA1900 (Band 2)			
Mode	Low channel	Mid channel	High channel
WCDMA	20.77	21.03	21.05

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

APPENDIX J: CONDUCTED POWER RESULTS FOR WLAN2450 AND WLAN5000

J.1 Power Tuning Targets

WLAN 2.4 GHz: 20 MHz channel bandwidth							
			Tuning target				
Standard	Modulation	Data speed [MBPS]	CH 1	CH 2	CH 6	CH 10	CH 11
802.11b	BPSK	1	16.0	16.0	16.0	16.0	16.0
802.11b	QPSK	2	15.5	15.5	15.5	15.5	15.5
802.11b	QPSK	5.5	15.5	15.5	15.5	15.5	15.5
802.11b	QPSK	11	15.5	15.5	15.5	15.5	15.5
802.11g	BPSK	6	16.0	16.0	16.0	16.0	16.0
802.11g	BPSK	9	15.5	15.5	15.5	15.5	15.5
802.11g	QPSK	12	15.5	15.5	15.5	15.5	15.5
802.11g	QPSK	18	15.5	15.5	15.5	15.5	15.5
802.11g	16QAM	24	15.0	15.0	15.0	15.0	15.0
802.11g	16QAM	36	15.0	15.0	15.0	15.0	15.0
802.11g	64QAM	48	14.0	14.0	14.0	14.0	14.0
802.11g	64QAM	54	13.0	13.0	13.0	13.0	13.0
802.11n	BPSK	6.5 / 7.25	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	13.0 / 14.4	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	19.5 / 21.7	15.0	15.0	15.0	15.0	15.0
802.11n	16QAM	26.0 / 28.9	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	39.0 / 43.3	14.0	14.0	14.0	14.0	14.0
802.11n	64QAM	52.0 / 57.8	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	58.5 / 65.0	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	65.0 / 72.2	12.0	12.0	12.0	12.0	12.0

RLAN 5 GHz / 20 MHz channel bandwidth: TUNING TARGETS									
Standard	Modulation	Data speed [MBPS]	Channel						
			36	40	44	48	52	56	60	64
802.11a	BPSK	6	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
802.11a	BPSK	9	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	QPSK	12	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	QPSK	18	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	16QAM	24	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11a	16QAM	36	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11a	64QAM	48	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11a	64QAM	54	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	BPSK	6.5 / 7.25	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	13.0 / 14.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	19.5 / 21.7	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	16QAM	26.0 / 28.9	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	39.0 / 43.3	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	64QAM	52.0 / 57.8	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	58.5 / 65.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	64QAM	65.0 / 72.2	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
802.11ac	256QAM	78.0 / 86.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Tuning targets for WLAN 5 GHz continues)

(Tuning targets for WLAN 5 GHz continues)

RLAN 5 GHz / 20 MHz channel bandwidth: TUNING TARGETS										
Standard	Modulation	Data speed [MBPS]	Channel							
			100	104	108	112	116	120	124	128
802.11a	BPSK	6	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
802.11a	BPSK	9	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	QPSK	12	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	QPSK	18	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	16QAM	24	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11a	16QAM	36	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11a	64QAM	48	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11a	64QAM	54	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	BPSK	6.5 / 7.25	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	13.0 / 14.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	19.5 / 21.7	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	16QAM	26.0 / 28.9	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	39.0 / 43.3	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	64QAM	52.0 / 57.8	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	58.5 / 65.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	64QAM	65.0 / 72.2	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
802.11ac	256QAM	78.0 / 86.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Tuning targets for WLAN 5 GHz continues)

(Tuning targets for WLAN 5 GHz continues)

RLAN 5 GHz / 20 MHz channel bandwidth: TUNING TARGETS										
Standard	Modulation	Data speed [MBPS]	Channel							
			132	136	140	149	153	157	161	165
802.11a	BPSK	6	15.5	15.5	15.5	15.5	15.5	15.5	15.5	15.5
802.11a	BPSK	9	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	QPSK	12	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	QPSK	18	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11a	16QAM	24	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11a	16QAM	36	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11a	64QAM	48	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11a	64QAM	54	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	BPSK	6.5 / 7.25	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	13.0 / 14.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	QPSK	19.5 / 21.7	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
802.11n	16QAM	26.0 / 28.9	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	39.0 / 43.3	14.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	64QAM	52.0 / 57.8	13.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	58.5 / 65.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	64QAM	65.0 / 72.2	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
802.11ac	256QAM	78.0 / 86.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Tuning targets for WLAN 5 GHz continues)

(Tuning targets for WLAN 5 GHz continues)

RLAN 5 GHz / 40 MHz channel bandwidth: TUNING TARGETS									
Standard	Modulation	Data speed [MBPS]	38 (36+40)	42 (40+44)	46 (44+48)	50 (48+52)	54 (52+56)	58 (56+60)	62 (60+64)
802.11n	BPSK	13.5 / 15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	QPSK	27.0 / 30.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	QPSK	40.5 / 45.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	54.0 / 60.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	81.0 / 90.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	64QAM	108.0 / 120.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	121.5 / 135.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	64QAM	135.0 / 150.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
802.11ac	256QAM	162 / 180	0.0	0.0	0.0	0.0	0.0	0.0	0.0
802.11ac	256QAM	180 / 200	0.0	0.0	0.0	0.0	0.0	0.0	0.0

RLAN 5 GHz / 40 MHz channel bandwidth: TUNING TARGETS									
Standard	Modulation	Data speed [MBPS]	102 (100+104)	106 (104+108)	110 (108+112)	114 (112+116)	118 (116+120)	122 (120+124)	126 (124+128)
802.11n	BPSK	13.5 / 15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	QPSK	27.0 / 30.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	QPSK	40.5 / 45.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	54.0 / 60.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	81.0 / 90.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	64QAM	108.0 / 120.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	121.5 / 135.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	64QAM	135.0 / 150.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
802.11ac	256QAM	162 / 180	0.0	0.0	0.0	0.0	0.0	0.0	0.0
802.11ac	256QAM	180 / 200	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(Tuning targets for WLAN 5 GHz continues)

(Tuning targets for WLAN 5 GHz continues)

RLAN 5 GHz / 40 MHz channel bandwidth: TUNING TARGETS									
Standard	Modulation	Data speed [MBPS]	130 (128+132)	134 (132+136)	138 (136+140)	151 (149+153)	155 (153+157)	159 (157+161)	163 (161+165)
802.11n	BPSK	13.5 / 15.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	QPSK	27.0 / 30.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	QPSK	40.5 / 45.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	54.0 / 60.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	16QAM	81.0 / 90.0	14.0	14.0	14.0	14.0	14.0	14.0	14.0
802.11n	64QAM	108.0 / 120.0	13.0	13.0	13.0	13.0	13.0	13.0	13.0
802.11n	64QAM	121.5 / 135.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
802.11n	64QAM	135.0 / 150.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0
802.11ac	256QAM	162 / 180	0.0	0.0	0.0	0.0	0.0	0.0	0.0
802.11ac	256QAM	180 / 200	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Type: RM-892; Serial number: 004402/47/223449/5 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 10	CH 11
802.11b	BPSK	1	16.17	16.44	16.35	16.40	16.58
802.11b	QPSK	2	15.79	15.79	15.71	16.09	15.89
802.11b	QPSK	5.5	15.64	15.98	15.76	16.21	16.03
802.11b	QPSK	11	15.89	15.78	16.24	15.90	15.91
802.11g	BPSK	6	16.00	16.01	16.22	15.89	16.12
802.11g	BPSK	9	15.30	15.55	15.73	15.78	15.59
802.11g	QPSK	12	15.24	15.48	15.61	15.84	15.77
802.11g	QPSK	18	15.69	15.70	15.34	15.44	15.46
802.11g	16QAM	24	15.35	15.42	15.48	15.29	15.09
802.11g	16QAM	36	14.88	14.97	15.40	15.17	15.39
802.11g	64QAM	48	14.06	13.80	13.99	14.47	14.34
802.11g	64QAM	54	13.38	13.24	13.49	13.11	13.63
802.11n	BPSK	6.5 / 7.25	15.02	15.42	14.97	15.01	15.08
802.11n	QPSK	13.0 / 14.4	15.33	15.05	15.15	15.38	15.19
802.11n	QPSK	19.5 / 21.7	15.44	14.78	15.48	14.97	15.36
802.11n	16QAM	26.0 / 28.9	14.24	14.27	13.95	14.57	14.04
802.11n	16QAM	39.0 / 43.3	14.11	14.09	14.38	14.26	13.94
802.11n	64QAM	52.0 / 57.8	13.38	13.01	13.13	13.10	13.17
802.11n	64QAM	58.5 / 65.0	13.32	13.09	13.31	13.12	13.16
802.11n	64QAM	65.0 / 72.2	12.44	12.29	12.14	12.31	12.04

Type: RM-892; Serial number: 004402/47/223426/3 used for WLAN5000 for SAR Head and Body-worn measurements.

RLAN 5 GHz / 20 MHz channel bandwidth:										
Standard	Modulation	Data speed [MBPS]	Channel							
			36	40	44	48	52	56	60	64
802.11a	BPSK	6	16.22	16.25	16.27	16.53	16.34	16.61	16.24	16.44
802.11a	BPSK	9	15.67	16.02	15.95	15.99	16.16	15.73	16.08	15.58
802.11a	QPSK	12	16.10	15.78	15.55	15.58	15.54	15.93	15.81	15.68
802.11a	QPSK	18	15.97	16.05	15.48	15.87	15.96	16.03	15.68	15.83
802.11a	16QAM	24	14.50	15.01	14.77	14.48	14.62	14.59	14.91	14.59
802.11a	16QAM	36	14.62	15.03	14.90	14.41	14.56	14.75	14.75	14.70
802.11a	64QAM	48	13.98	13.68	13.75	14.00	13.90	13.87	14.06	13.50
802.11a	64QAM	54	12.96	12.98	12.41	12.42	12.45	12.80	12.57	12.41
802.11n	BPSK	6.5 / 7.25	15.50	15.72	15.73	15.51	15.70	15.24	15.34	15.53
802.11n	QPSK	13.0 / 14.4	14.31	14.37	14.92	15.82	15.17	15.31	15.75	15.79
802.11n	QPSK	19.5 / 21.7	15.07	14.46	15.01	15.52	15.83	15.22	15.25	15.38
802.11n	16QAM	26.0 / 28.9	14.54	14.50	15.06	14.47	14.81	14.30	14.33	14.24
802.11n	16QAM	39.0 / 43.3	15.08	14.61	15.07	14.52	14.52	14.67	14.49	14.42
802.11n	64QAM	52.0 / 57.8	14.52	14.30	14.55	13.56	13.11	13.56	13.73	13.66
802.11n	64QAM	58.5 / 65.0	13.90	13.32	14.06	12.67	12.75	12.56	12.65	12.15
802.11n	64QAM	65.0 / 72.2	12.29	12.86	12.53	11.45	11.25	11.36	11.16	11.31
802.11ac	256QAM	78.0 / 86.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(Conducted powers for WLAN 5 GHz continues)

(Conducted powers for WLAN 5 GHz continues)

RLAN 5 GHz / 20 MHz channel bandwidth:									
Standard	Modulation	Data speed [MBPS]	Channel						
			100	104	108	112	116	120	124	128
802.11a	BPSK	6	16.11	16.14	16.28	16.49	16.61	16.73	16.17	16.58
802.11a	BPSK	9	15.88	16.06	15.86	15.62	16.12	15.79	15.85	16.15
802.11a	QPSK	12	15.86	15.89	15.71	15.76	15.99	16.17	15.61	16.05
802.11a	QPSK	18	15.73	16.00	15.82	16.22	15.57	15.78	15.63	15.82
802.11a	16QAM	24	14.58	14.61	14.52	14.76	14.73	14.78	14.58	15.08
802.11a	16QAM	36	14.99	15.07	15.09	14.71	14.71	15.11	14.61	15.01
802.11a	64QAM	48	13.80	13.89	13.60	13.56	14.07	14.03	13.98	13.71
802.11a	64QAM	54	12.66	12.46	12.71	13.05	12.65	12.62	12.90	12.47
802.11n	BPSK	6.5 / 7.25	15.66	15.70	15.25	15.81	15.74	15.77	15.89	15.74
802.11n	QPSK	13.0 / 14.4	15.68	15.22	15.81	15.88	15.46	15.84	15.27	15.91
802.11n	QPSK	19.5 / 21.7	15.64	15.64	15.43	15.25	15.77	15.67	15.68	15.33
802.11n	16QAM	26.0 / 28.9	14.88	14.36	14.29	14.69	14.45	14.27	14.80	14.45
802.11n	16QAM	39.0 / 43.3	14.61	14.35	14.55	14.64	14.47	14.74	14.41	14.62
802.11n	64QAM	52.0 / 57.8	13.21	13.82	13.74	13.19	13.40	13.48	13.28	13.86
802.11n	64QAM	58.5 / 65.0	12.67	12.82	12.78	12.80	12.54	12.30	12.92	12.55
802.11n	64QAM	65.0 / 72.2	11.35	11.90	11.46	11.30	11.36	11.94	11.25	11.72
802.11ac	256QAM	78.0 / 86.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(Conducted powers for WLAN 5 GHz continues)

(Conducted powers for WLAN 5 GHz continues)

RLAN 5 GHz / 20 MHz channel bandwidth:										
Standard	Modulation	Data speed [MBPS]	Channel							
			132	136	140	149	153	157	161	165
802.11a	BPSK	6	16.30	16.59	16.47	16.75	16.75	16.49	16.76	16.30
802.11a	BPSK	9	15.65	15.69	15.85	16.21	15.79	15.92	16.30	15.98
802.11a	QPSK	12	16.25	16.04	16.09	15.67	15.85	15.84	15.96	15.96
802.11a	QPSK	18	16.06	15.75	16.10	15.85	16.20	16.05	15.83	15.97
802.11a	16QAM	24	15.05	14.77	14.88	14.89	15.07	14.94	14.70	14.82
802.11a	16QAM	36	14.51	14.73	14.85	14.85	15.19	15.11	14.75	14.86
802.11a	64QAM	48	13.66	14.16	14.03	13.83	13.76	13.72	13.70	13.94
802.11a	64QAM	54	12.69	12.94	13.02	13.07	13.03	12.94	13.12	12.76
802.11n	BPSK	6.5 / 7.25	15.43	15.76	15.41	15.88	15.69	15.44	15.58	15.61
802.11n	QPSK	13.0 / 14.4	15.93	15.42	15.39	15.32	15.72	15.81	15.98	15.74
802.11n	QPSK	19.5 / 21.7	15.66	15.38	15.45	15.83	15.79	15.41	15.76	15.57
802.11n	16QAM	26.0 / 28.9	14.59	14.31	14.64	14.71	14.93	14.97	14.43	14.46
802.11n	16QAM	39.0 / 43.3	14.92	14.80	14.40	14.45	14.70	14.84	14.64	14.56
802.11n	64QAM	52.0 / 57.8	13.41	13.54	13.29	13.67	13.62	13.82	13.71	13.37
802.11n	64QAM	58.5 / 65.0	12.84	12.92	12.26	12.55	12.90	12.45	12.67	12.79
802.11n	64QAM	65.0 / 72.2	11.46	11.94	11.76	11.72	11.82	11.38	11.93	11.95
802.11ac	256QAM	78.0 / 86.7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(Conducted powers for WLAN 5 GHz continues)

(Conducted powers for WLAN 5 GHz continues)

RLAN 5 GHz / 40 MHz channel bandwidth:									
Standard	Modulation	Data speed [MBPS]	38 (36+40)	42 (40+44)	46 (44+48)	50 (48+52)	54 (52+56)	58 (56+60)	62 (60+64)
802.11n	BPSK	13.5 / 15.0	14.37	14.85	14.18	14.56	14.29	14.86	14.90
802.11n	QPSK	27.0 / 30.0	14.41	14.96	14.29	14.39	14.91	14.36	14.99
802.11n	QPSK	40.5 / 45.0	14.86	14.41	14.86	14.38	14.85	14.75	14.29
802.11n	16QAM	54.0 / 60.0	14.55	14.61	14.88	14.84	14.58	14.54	14.15
802.11n	16QAM	81.0 / 90.0	14.28	14.88	14.94	14.14	14.30	14.51	14.42
802.11n	64QAM	108.0 / 120.0	13.55	13.39	13.21	13.25	13.15	13.19	13.83
802.11n	64QAM	121.5 / 135.0	12.47	12.33	12.42	12.48	12.12	12.60	12.35
802.11n	64QAM	135.0 / 150.0	11.90	11.38	11.84	11.12	11.11	11.71	11.87
802.11ac	256QAM	162 / 180	0.00	0.00	0.00	0.00	0.00	0.00	0.00
802.11ac	256QAM	180 / 200	0.00	0.00	0.00	0.00	0.00	0.00	0.00

RLAN 5 GHz / 40 MHz channel bandwidth:									
Standard	Modulation	Data speed [MBPS]	102 (100+104)	106 (104+108)	110 (108+112)	114 (112+116)	118 (116+120)	122 (120+124)	126 (124+128)
802.11n	BPSK	13.5 / 15.0	14.17	14.96	14.72	14.54	14.91	14.31	14.91
802.11n	QPSK	27.0 / 30.0	14.50	14.97	15.01	14.23	14.59	14.17	14.72
802.11n	QPSK	40.5 / 45.0	14.55	14.29	14.34	14.20	14.85	14.52	14.59
802.11n	16QAM	54.0 / 60.0	14.83	14.18	14.67	14.37	14.22	14.98	14.34
802.11n	16QAM	81.0 / 90.0	14.67	14.26	14.36	14.26	14.92	14.71	14.88
802.11n	64QAM	108.0 / 120.0	13.78	13.70	13.13	13.18	13.51	13.46	13.36
802.11n	64QAM	121.5 / 135.0	12.73	12.54	12.76	12.55	12.32	12.75	12.16
802.11n	64QAM	135.0 / 150.0	11.50	11.98	11.86	11.94	11.63	11.95	11.67
802.11ac	256QAM	162 / 180	0.00	0.00	0.00	0.00	0.00	0.00	0.00
802.11ac	256QAM	180 / 200	0.00	0.00	0.00	0.00	0.00	0.00	0.00

(Conducted powers for WLAN 5 GHz continues)

(Conducted powers for WLAN 5 GHz continues)

RLAN 5 GHz / 40 MHz channel bandwidth:									
Standard	Modulation	Data speed [MBPS]	130 (128+132)	134 (132+136)	138 (136+140)	151 (149+153)	155 (153+157)	159 (157+161)	163 (161+165)
802.11n	BPSK	13.5 / 15.0	14.27	14.38	14.41	14.25	15.07	14.57	14.55
802.11n	QPSK	27.0 / 30.0	14.19	14.43	14.35	15.07	14.68	14.65	14.33
802.11n	QPSK	40.5 / 45.0	14.21	14.84	14.21	14.34	14.98	14.83	14.89
802.11n	16QAM	54.0 / 60.0	15.01	14.42	14.93	14.75	14.24	15.02	14.84
802.11n	16QAM	81.0 / 90.0	14.41	14.49	14.38	14.36	14.27	14.44	14.44
802.11n	64QAM	108.0 / 120.0	13.27	13.98	13.98	13.36	13.76	13.85	13.84
802.11n	64QAM	121.5 / 135.0	12.77	12.31	12.52	12.50	12.41	12.59	12.84
802.11n	64QAM	135.0 / 150.0	11.54	11.72	11.21	11.77	11.33	11.40	11.98
802.11ac	256QAM	162 / 180	0.00	0.00	0.00	0.00	0.00	0.00	0.00
802.11ac	256QAM	180 / 200	0.00	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX K: ANTENNA TUNER STATE VS. SAR COMPARATIVE MEASUREMENTS

Supported state = tuner states that are initially possible for the given frequency band and communications system.

Selected state = optimal tuner state that gets selected when device is positioned in the SAR test setup.

Results show that maximum, or equal to maximum, powers are always transmitted and conservative maximum SAR results are obtained.

Test cases in table below are the ones giving highest SAR results in this report.

= Supported states
= Selected state

GPRS850 2-slot Body back 15 w/o hs

Shunt mode	Series state	mW/g	% from ref
0	4	0.57	-6.56
0	5	0.61	0.00
0	6	0.53	-12.95
0	7	0.52	-15.41
0	8	0.41	-32.30
0	9	0.38	-37.21
0	10	0.26	-57.21

GPRS 1900 2-slot WR bottom 10mm

Shunt mode	Series state	mW/g	% from ref
0	9	1.33	-0.90
0	10	1.34	0.00
1	0	1.06	-20.60
1	1	1.16	-13.36
1	2	1.24	-7.31
1	3	1.27	-5.52
1	4	1.32	-1.87
1	5	1.33	-0.97
1	6	1.31	-2.39
1	7	1.33	-0.67
1	8	1.36	1.12
1	9	1.37	1.87
1	10	1.37	2.01

WCDMA850 WR back 10mm

Shunt mode	Series state	mW/g	% from ref
0	2	0.76	-12.41
0	3	0.81	-7.13
0	4	0.80	-8.16
0	5	0.88	0.92
0	6	0.87	0.00
0	7	0.87	-0.34
0	8	0.81	-6.67
0	9	0.80	-7.93
0	10	0.71	-18.28

WCDMA1700/2100 Body display 15 **with hs**

Shunt mode	Series state	mW/g	% from ref
0	2	0.99	11.46
0	3	0.99	10.90
0	4	0.96	8.31
0	5	0.98	9.78
0	6	0.95	6.85
0	7	0.95	6.29
0	8	0.91	2.58
0	9	0.91	2.58
0	10	0.89	0.00
1	6	0.77	-13.15
1	7	0.76	-14.72
1	8	0.72	-19.55
1	9	0.71	-20.22
1	10	0.67	-24.83

WCDMA1900 head left cheek

Shunt mode	Series state	mW/g	% from ref
1	2	0.94	-21.92
1	3	0.97	-19.08
1	4	1.06	-11.75
1	5	1.09	-9.42
1	6	1.06	-12.00
1	7	1.09	-9.25
1	8	1.15	-4.17
1	9	1.17	-2.75
1	10	1.20	0.00
3	0	0.46	-61.33
3	1	0.58	-52.08
3	2	0.70	-42.08
3	3	0.74	-38.50

LTE850 WR back 10mm, 10MHz Ch BW 1RB 50% offset

Shunt mode	Series state	mW/g	% from ref
0	2	0,70	-8,03
0	3	0,72	-5,26
0	4	0,77	0,79
0	5	0,77	1,05
0	6	0,76	0,00
0	7	0,75	-1,18
0	8	0,71	-6,45
0	9	0,70	-7,50
0	10	0,63	-16,71

LTE850 Body back with headset 15mm, 10MHz Ch BW 1RB 50% offset

Shunt mode	Series state	mW/g	% from ref
0	2	0,52	-7,32
0	3	0,54	-4,46
0	4	0,56	0,36
0	5	0,57	1,79
0	6	0,56	0,00
0	7	0,56	-0,18
0	8	0,52	-7,32
0	9	0,51	-8,57
0	10	0,46	-17,14

LTE850 Head right cheek @10MHz Ch BW 1RB 50% offset			
Shunt mode	Series state	mW/g	% from ref
0	2	0,58	-5,25
0	3	0,61	0,00
0	4	0,64	4,26
0	5	0,64	4,75
0	6	0,61	0,00
0	7	0,60	-1,15
0	8	0,54	-11,97
0	9	0,52	-14,26
0	10	0,45	-25,74

LTE1700/2100 WR bottom 10mm, 20MHz Ch BW 1RB 50% offset			
Shunt mode	Series state	mW/g	% from ref
0	2	1,40	6,87
0	3	1,39	6,11
0	4	1,38	5,11
0	5	1,35	3,36
0	6	1,34	2,37
0	7	1,34	2,52
0	8	1,33	1,15
0	9	1,32	0,92
0	10	1,31	0,00
1	6	1,11	-15,11
1	7	1,09	-17,18
1	8	1,00	-23,51
1	9	1,00	-23,51
1	10	0,93	-29,16

LTE1700/2100 Body back w/ hs 15mm, 20MHz Ch BW 1RB 50% offset

Shunt mode	Series state	mW/g	% from ref
0	2	0,82	11,92
0	3	0,82	12,05
0	4	0,81	11,10
0	5	0,81	11,10
0	6	0,79	7,67
0	7	0,79	7,53
0	8	0,76	3,84
0	9	0,76	3,84
0	10	0,73	0,00
1	6	0,64	-12,05
1	7	0,63	-13,42
1	8	0,60	-17,40
1	9	0,60	-18,36
1	10	0,56	-22,88

LTE1900 Head left cheek @20MHz Ch BW 1RB 100% offset

Shunt mode	Series state	mW/g	% from ref
1	2	0,77	-27,45
1	3	0,83	-21,89
1	4	0,91	-14,06
1	5	0,96	-9,53
1	6	0,97	-8,96
1	7	0,97	-8,58
1	8	1,01	-4,53
1	9	1,04	-1,60
1	10	1,06	0,00
3	0	0,30	-71,70
3	1	0,41	-61,23
3	2	0,55	-48,21
3	3	0,58	-45,00

APPENDIX L (INFORMATIVE): ADDRESSING CONCERNS ON PA LINEARITY ABOVE UPPER LIMIT OF TUNING TOLERANCE

The conducted powers of SAR samples tested in this report are above upper limit of tuning tolerance. While this power over-tuning gives conservative SAR results, it is not fully according to KDB requirements and has raised concerns on PA linearity above upper limit of tuning tolerance during KDB Inquiry process. To address these concerns, this appendix presents re-measurements of worst case SAR for each communication system and exposure configuration at power levels below upper limit of tuning tolerance. These re-measured values are scaled to same conducted powers as used in this reporting. Results show that scaled results are close to the original ones i.e. well within measurement uncertainty, confirming that PA operates linearly and that SAR results presented in this SAR report are conservative. SAR system check results and liquid parameters are also included to prove that repeated measurements are done in full compliance to the requirements.

L.1. System validation status

Probe Calibration Point f / MHz	Test System	DASY SW	Dipole Type / SN	Probe Type / SN	DAE unit Type / SN	Validation done	
						Head tissue simulant	Body tissue simulant
750	TCC Salo / SAR-4	V52.8	D750V2 / 1075	EX3DV4 / 3834	DAE4 / 555	2013-06	2013-06
835	TCC Salo / SAR-3	V52.8	D835V2 / 480	ES3DV4 / 3165	DAE4 / 1355	2013-05	2013-05
1750	TCC Salo / SAR-1	V52.8	D1750V2 / 1082	ES3DV3 / 3194	DAE4 / 538	2013-05	2013-05
1900	TCC Salo / SAR-1	V52.8	D1900V2 / 5d013	ES3DV3 / 3194	DAE4 / 538	2013-05	2013-05

L.2. System checking

System checking, head tissue simulant

f[MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp
			ε_r	σ [S/m]	dSAR [%]	$d\varepsilon_r$ [%]	$d\sigma$ [%]	[°C]
	Tolerances				±10 %	±5 %	±5 %	
	IEEE1528 / IEC62209		41.9	0.89				
	Reference result SN:1075	2.09	42.2	0.90	TCC Salo/SAR-4 EX3DV4 SN:3834 Head 750MHz			
750	2013-07-01	1.89	40.9	0.92	-9.57	-3.08	2.22	21.1
	IEEE1528 / IEC62209		41.5	0.90				
	Reference result SN:480	2.39	41.4	0.92	TCC Salo/SAR-3 ES3DV4 SN:3165 Head 835MHz			
835	2013-06-28	2.23	40.3	0.91	-6.69	-2.66	-1.09	22.3
	2013-07-02	2.25	40.4	0.91	-5.86	-2.42	-1.09	21.9
	IEEE1528 / IEC62209		40.1	1.36				
	Reference result SN:1082	8.99	39.3	1.34	TCC Salo/SAR-1 ES3DV3 SN:3194 Head 1750MHz			
1750	2013-07-01	9.43	39.7	1.35	4.89	1.02	0.75	22.0
	IEEE1528 / IEC62209		40.0	1.40				
	Reference result SN:5d013	10.1	39.5	1.38	TCC Salo/SAR-1 ES3DV3 SN:3194 Head 1900MHz			
1900	2013-06-28	10.7	39.3	1.37	5.94	-0.51	-0.72	20.8
	2013-07-02	10.4	38.8	1.37	2.97	-1.77	-0.72	22.2

System checking, body tissue simulant

f[MHz]	Description	SAR [W/kg], 1g	Dielectric Parameters		SAR 1g Deviation from target	Dielectric Parameters Deviation from target		Temp
			ε_r	σ [S/m]	dSAR [%]	$d\varepsilon_r$ [%]	$d\sigma$ [%]	[°C]
	Tolerances				±10 %	±5 %	±5 %	
	IEEE1528 / IEC62209		55.5	0.96				
	Reference result SN:1075	2.24	55.3	0.97	TCC Salo/SAR-4 EX3DV4 SN:3834 Body 750MHz			
750	2013-07-01	2.28	53.4	0.99	1.79	-3.44	2.06	20.8
	IEEE1528 / IEC62209		55.2	0.97				
	Reference result SN:480	2.42	54.5	0.99	TCC Salo/SAR-3 ES3DV4 SN:3165 Body 835MHz			
835	2013-06-28	2.29	53.7	0.98	-5.37	-1.47	-1.01	22.0
	2013-07-01	2.31	53.9	0.98	-4.55	-1.10	-1.01	21.6
	IEEE1528 / IEC62209		53.4	1.49				
	Reference result SN:1082	9.21	51.8	1.47	TCC Salo/SAR-1 ES3DV3 SN:3194 Body 1750MHz			
1750	2013-07-01	9.63	52.0	1.47	4.56	0.39	0.00	21.1
	IEEE1528 / IEC62209		53.3	1.52				
	Reference result SN:5d013	10.3	52.2	1.52	TCC Salo/SAR-1 ES3DV3 SN:3194 Body 1900MHz			
1900	2013-06-28	10.4	52.3	1.52	0.97	0.19	0.00	21.5
	2013-07-02	10.2	52.2	1.53	-0.97	0.00	0.66	21.6

L.3. Tissue Simulants

Head tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Dielectric Parameters Deviation from Standard target		Temp [°C]
		ε_r	σ [S/m]	$d\varepsilon_r$ [%]	$d\sigma$ [%]	
	Tolerances			±5 %	±5 %	
710	Recommended value	42.1	0.89			
	2013-07-01	41.1	0.90	-2.38	1.12	21.1
835	Recommended value	41.5	0.90			
	2013-06-28	40.3	0.91	-2.89	1.11	22.3
836	Recommended value	41.5	0.90			
	2013-06-28	40.3	0.91	-2.89	1.11	22.3
	2013-07-02	40.4	0.91	-2.65	1.11	21.9
1732	Recommended value	40.1	1.36			
	2013-07-01	39.7	1.33	-1.00	-2.21	22.0
1880	Recommended value	40.0	1.40			
	2013-06-28	39.3	1.35	-1.75	-3.57	20.8
	2013-07-02	38.8	1.35	-3.00	-3.57	22.2

Body tissue simulant measurements

f [MHz]	Description	Dielectric Parameters		Dielectric Parameters Deviation from Standard target		Temp [°C]
		ε_r	σ [S/m]	$d\varepsilon_r$ [%]	$d\sigma$ [%]	
	Tolerances			±5 %	±5 %	
710	Recommended value	55.7	0.96			
	2013-07-01	53.6	0.97	-3.77	1.04	20.8
835	Recommended value	55.2	0.97			
	2013-06-28	53.7	0.98	-2.72	1.03	22.0
836	Recommended value	55.2	0.97			
	2013-06-28	53.7	0.98	-2.72	1.03	22.0
	2013-07-01	53.9	0.98	-2.36	1.03	21.6
1732	Recommended value	53.5	1.48			
	2013-07-01	52.1	1.46	-2.62	-1.35	21.1
1880	Recommended value	53.3	1.52			
	2013-06-28	52.4	1.50	-1.69	-1.32	21.5
	2013-07-02	38.8	1.35	-3.00	-3.57	22.2

L.4. Results

Mode	Device orientation	Ch / f (MHz)	Window between {tuning target} and {tuning target} + 0.35dB	Conducted power - original [dBm]	Measured 1g SAR - original [W/kg]	Conducted power - reduced [dBm]	Measured 1g SAR - reduced [W/kg]	dCond. powers [dB]	Scaling factor [Lin]	Scaled SAR [W/kg]	dSAR [%]
LTE700	Left, Cheek	23790 / 710.0	23.0 - 23.35	24.22	**0.450**	23.22	0.373	1.00	1.26	**0.470**	**-4.35**
2-slot GPRS850	Right, Cheek	190 / 836.6	30.5 - 30.85	32.02	**0.638**	30.82	0.440	1.20	1.32	**0.580**	**9.09**
WCDMA850	Right, Cheek	4175 / 835.0	23.5 - 23.85	24.49	**0.729**	23.79	0.558	0.70	1.17	**0.656**	**10.07**
LTE850	Right, Cheek	20525 / 836.5	23.0 - 23.35	24.05	**0.612**	23.15	0.494	0.90	1.23	**0.608**	**0.69**
WDCMA1700 /2100	Left, Cheek	1513 / 1752.6	23.5 - 23.85	24.44	**1.09**	23.74	0.947	0.70	1.17	**1.11**	**-2.08**
LTE1700/2100	Left, Cheek	20175 / 1732.5	23.0 - 23.35	24.07	**0.878**	23.17	0.826	0.90	1.23	**1.02**	**-15.74**
2-slot GPRS1900	Left, Cheek	661 / 1880.0	27.5 - 27.85	28.49	**0.673**	27.59	0.569	0.90	1.23	**0.700**	**-4.02**
WCDMA1900	Left, Cheek	9538 / 1907.6	23.5 - 23.85	24.49	**1.20**	23.79	1.06	0.70	1.17	**1.25**	**-3.78**
LTE1900	Left, Cheek	19100 / 1900.0	23.0 - 23.35	23.52	**1.06**	23.02	0.873	0.50	1.12	**0.980**	**7.59**
LTE700	Body 15.0 mm	23790 / 710.0	23.0 - 23.35	24.22	**0.557**	23.22	0.464	1.00	1.26	**0.584**	**-4.87**
2-slot GPRS850	Body 15.0 mm	190 / 836.6	30.5 - 30.85	32.02	**0.613**	30.82	0.410	1.20	1.32	**0.540**	**11.83**
WCDMA850	Body 15.0 mm	4233 / 846.6	23.5 - 23.85	24.38	**0.609**	23.68	0.537	0.70	1.17	**0.631**	**-3.60**
LTE850	Body 15.0 mm	20525 / 836.5	23.0 - 23.35	24.05	**0.559**	23.15	0.473	0.90	1.23	**0.582**	**-4.10**
WDCMA1700 /2100	Body 10.0 mm	1513 / 1752.6	23.5 - 23.85	24.44	**0.887**	23.74	0.718	0.70	1.17	**0.844**	**4.90**
LTE1700/2100	Body 15.0 mm	20175 / 1732.5	23.0 - 23.35	24.07	**0.732**	23.17	0.598	0.90	1.23	**0.736**	**-0.51**
2-slot GPRS1900	Body 15.0 mm	512 / 1850.2	27.5 - 27.85	28.54	**0.435**	27.64	0.350	0.90	1.23	**0.431**	**1.01**
WCDMA1900	Body 15.0 mm	9538 / 1907.6	23.5 - 23.85	24.49	**0.671**	23.79	0.571	0.70	1.17	**0.671**	**0.02**
LTE1900	Body 15.0 mm	18900 / 1880.0	23.0 - 23.35	23.95	**0.551**	23.34	0.516	0.61	1.15	**0.594**	**-7.77**
LTE700	Body 10.0 mm	23790 / 710.0	23.0 - 23.35	24.22	**0.711**	23.22	0.623	1.00	1.26	**0.784**	**-10.31**
2-slot GPRS850	Body 10.0 mm	128 / 824.2	30.5 - 30.85	31.78	**0.784**	30.58	0.646	1.20	1.32	**0.852**	**-8.62**
WCDMA850	Body 10.0 mm	4132 / 826.4	23.5 - 23.85	24.36	**0.866**	23.66	0.695	0.70	1.17	**0.817**	**5.71**

LTE850	Body 10.0 mm	20525 / 836.5	23.0 - 23.35	24.05	**0.757**	23.15	0.623	0.90	1.23	**0.766**	**-1.25**
WCDMA1700 /2100	Body 10.0 mm	1513 / 1752.6	19.2 - 19.55	20.01	**1.12**	19.41	0.988	0.60	1.15	**1.134**	**-1.28**
LTE1700/21 00	Body 10.0 mm	20175 / 1732.5	19.7 - 20.05	20.77	**1.31**	19.87	0.974	0.90	1.23	**1.198**	**8.53**
2-slot GPRS1900	Body 10.0 mm	512 / 1850.2	26.7 - 27.05	27.28	**1.34**	26.78	0.983	0.50	1.12	**1.10**	**17.69**
WCDMA1900	Body 10.0 mm	9538 / 1907.6	20.2 - 20.55	21.05	**1.14**	20.55	1.03	0.50	1.12	**1.16**	**-1.38**
LTE1900	Body 10.0 mm	18900 / 1880.0	19.7 - 20.05	20.78	**0.983**	19.88	0.663	0.90	1.23	**0.816**	**17.02**