



Add: No.52 HuaYuanBei Road, Haidian District, Beijing, 100191, China
Tel: +86-10-62304633-2079 Fax: +86-10-62304633-2504
E-mail: cttl@chinattl.com http://www.chinattl.cn

Glossary:

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

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

- e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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



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Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1950 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.9 ± 6 %	1.39 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (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	40.3 W/kg ± 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.08 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	20.3 W/kg ± 18.7 % (k=2)



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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$50.5\Omega + 2.19j\Omega$
Return Loss	- 33.0dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.102 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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DASY5 Validation Report for Head TSL

Date: 10.28.2021

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 1950 MHz; Type: D1950V3; Serial: D1950V3 - SN: 1229

Communication System: UID 0, CW; Frequency: 1950 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 1950$ MHz; $\sigma = 1.39$ S/m; $\epsilon_r = 38.86$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7517; ConvF(7.81, 7.81, 7.81) @ 1950 MHz; Calibrated: 2021-02-03
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2021-01-15
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

System Performance Check/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

$dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 103.9 V/m; Power Drift = 0.06 dB

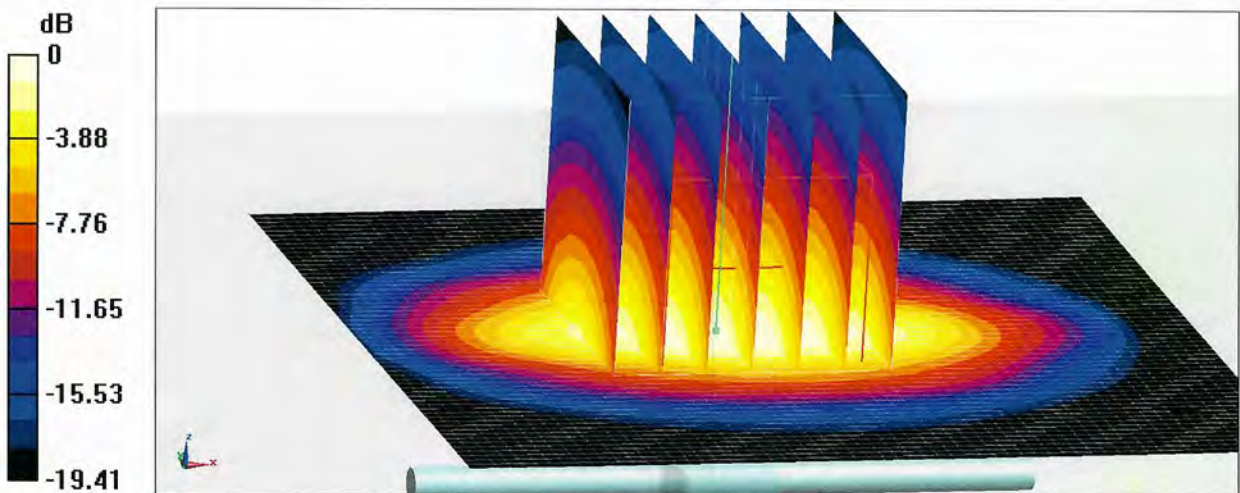
Peak SAR (extrapolated) = 20.0 W/kg

SAR(1 g) = 10.1 W/kg; SAR(10 g) = 5.08 W/kg

Smallest distance from peaks to all points 3 dB below = 10 mm

Ratio of SAR at M2 to SAR at M1 = 50.6%

Maximum value of SAR (measured) = 16.3 W/kg

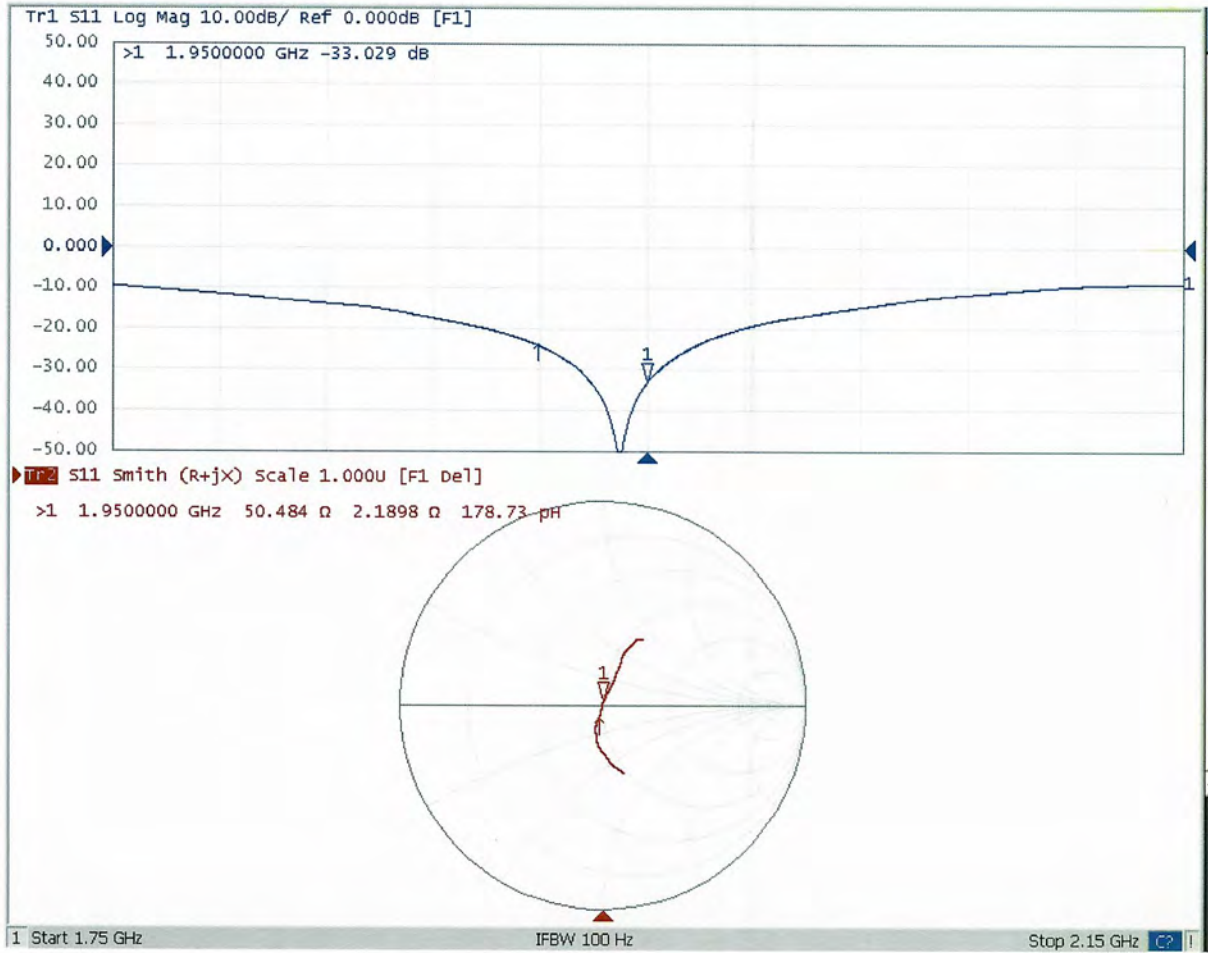


0 dB = 16.3 W/kg = 12.12 dBW/kg



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Impedance Measurement Plot for Head TSL



D1950V3 - SN: 1229 Extended Dipole Calibrations

Referring to KDB 865664 D01, if dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

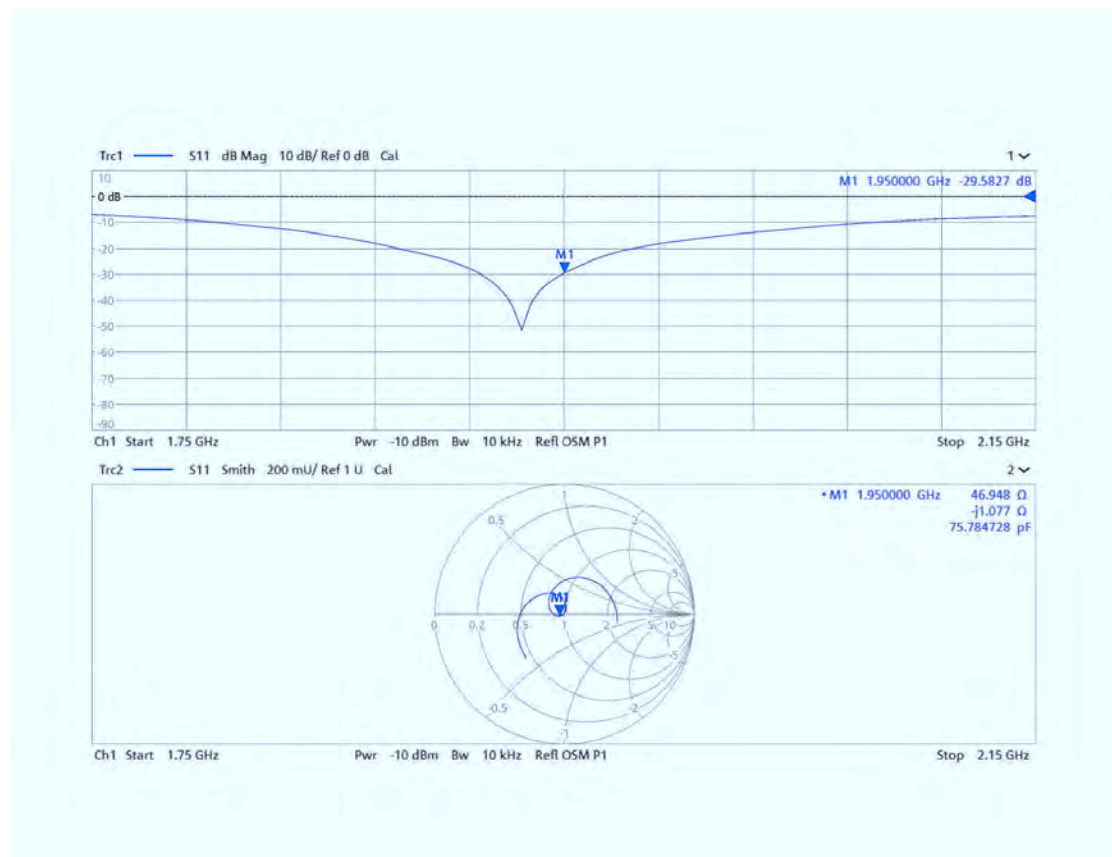
D1950V3 - SN: 1229						
1950MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.28.2021	-33		50.5		2.19	
10.27.2022	-29.58	-10.36	46.95	-3.55	-1.08	-3.27
10.26.2023	-28.50	-13.63	46.77	-3.73	3.33	1.14

<Justification of the extended calibration>

The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

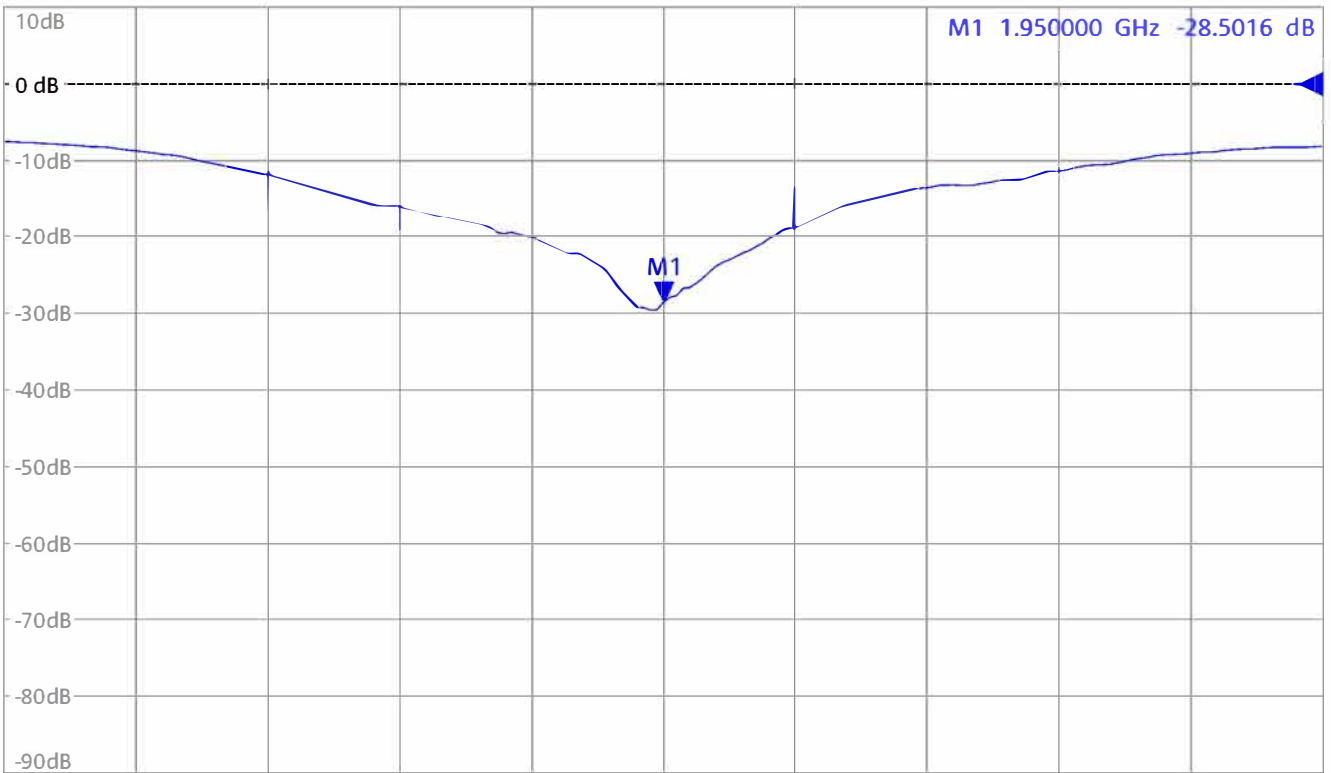
<Dipole Verification Data>

Head 1950MHz _2022.10.27



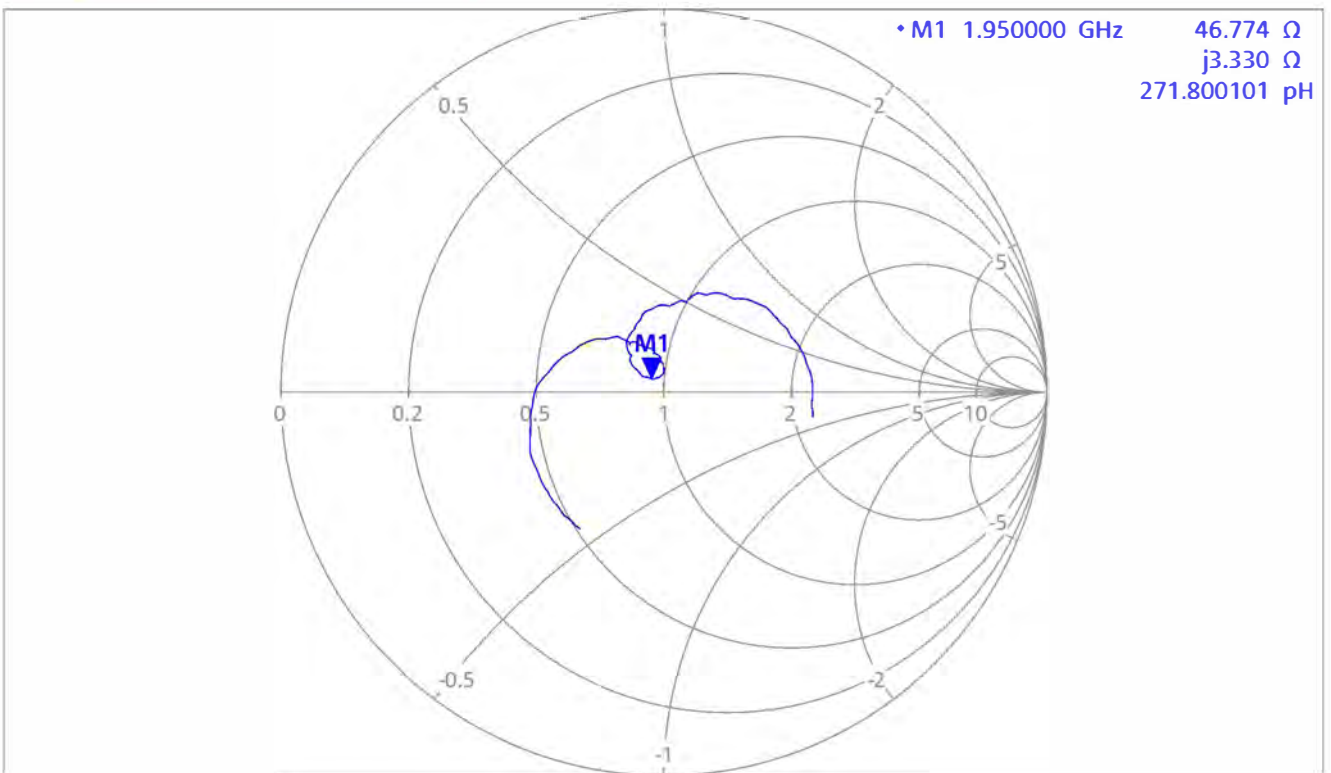
<Dipole Verification Data>
Head 1950MHz_2023.10.26

Trc1 — S11 dB Mag 10 dB/ Ref 0 dB Cal 1



Ch1 Start 1.75 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1 Stop 2.15 GHz

Trc2 — S11 Smith 200 mU/ Ref 1 U Cal 2



Ch1 Start 1.75 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1 Stop 2.15 GHz



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Client **7layers**

Certificate No: **Z21-60425**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 1048**

Calibration Procedure(s) **FF-Z11-003-01**
Calibration Procedures for dipole validation kits

Calibration date: **October 21, 2021**

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 (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Power sensor NRP8S	104291	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Reference Probe EX3DV4	SN 7517	03-Feb-21(CTTL-SPEAG,No.Z21-60001)	Feb-22
DAE4	SN 1556	15-Jan-21(SPEAG,No.DAE4-1556_Jan21)	Jan-22
Secondary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	01-Feb-21 (CTTL, No.J21X00593)	Jan-22
NetworkAnalyzer E5071C	MY46110673	14-Jan-21 (CTTL, No.J21X00232)	Jan-22

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: October 27, 2021

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



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CALIBRATION LABORATORY

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Glossary:

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

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

- DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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



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Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz \pm 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 \pm 0.2) °C	39.5 \pm 6 %	1.81 mho/m \pm 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.2 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	52.8 W/kg \pm 18.8 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	6.05 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.2 W/kg \pm 18.7 % (k=2)



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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.6Ω+ 8.39jΩ
Return Loss	- 21.6dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.057 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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

Additional EUT Data

Manufactured by	SPEAG
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DASY5 Validation Report for Head TSL

Date: 10.21.2021

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN: 1048

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.809$ S/m; $\epsilon_r = 39.51$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7517; ConvF(7.34, 7.34, 7.34) @ 2450 MHz; Calibrated: 2021-02-03
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2021-01-15
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Dipole Calibration/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 108.6 V/m; Power Drift = -0.02 dB

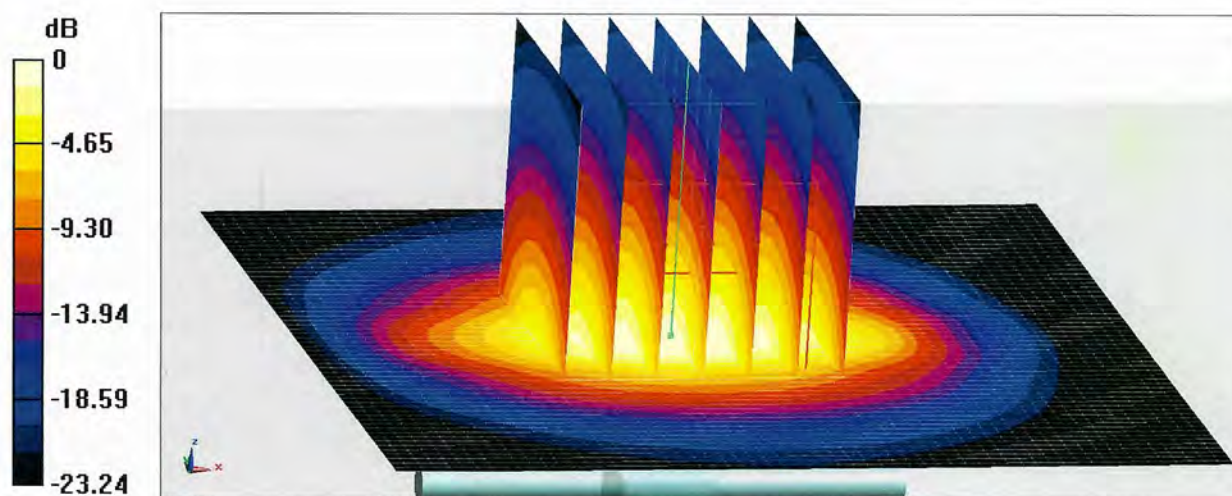
Peak SAR (extrapolated) = 28.0 W/kg

SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.05 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 47.1%

Maximum value of SAR (measured) = 22.5 W/kg

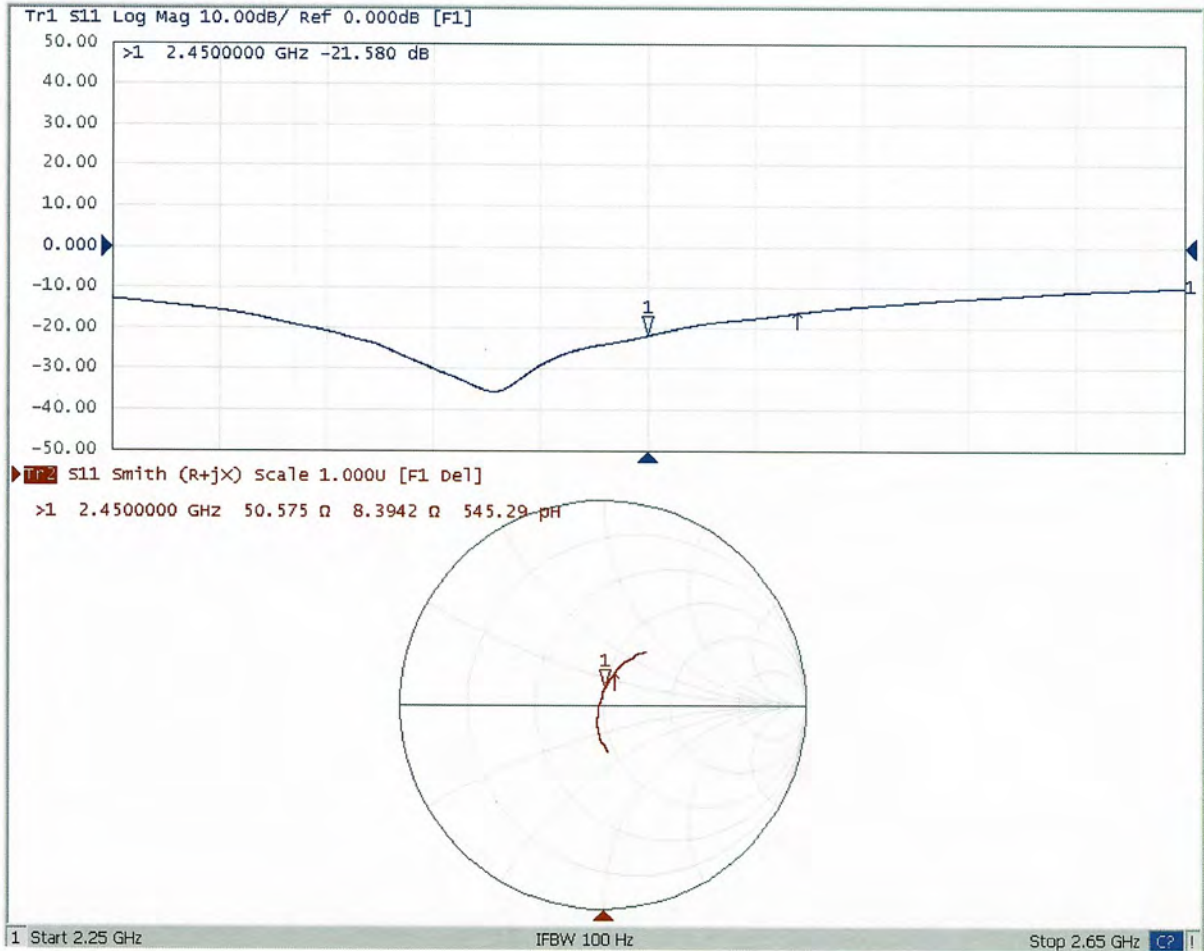


0 dB = 22.5 W/kg = 13.52 dBW/kg



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Impedance Measurement Plot for Head TSL



D2450V2 - SN: 1048 Extended Dipole Calibrations

Referring to KDB 865664 D01, if dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

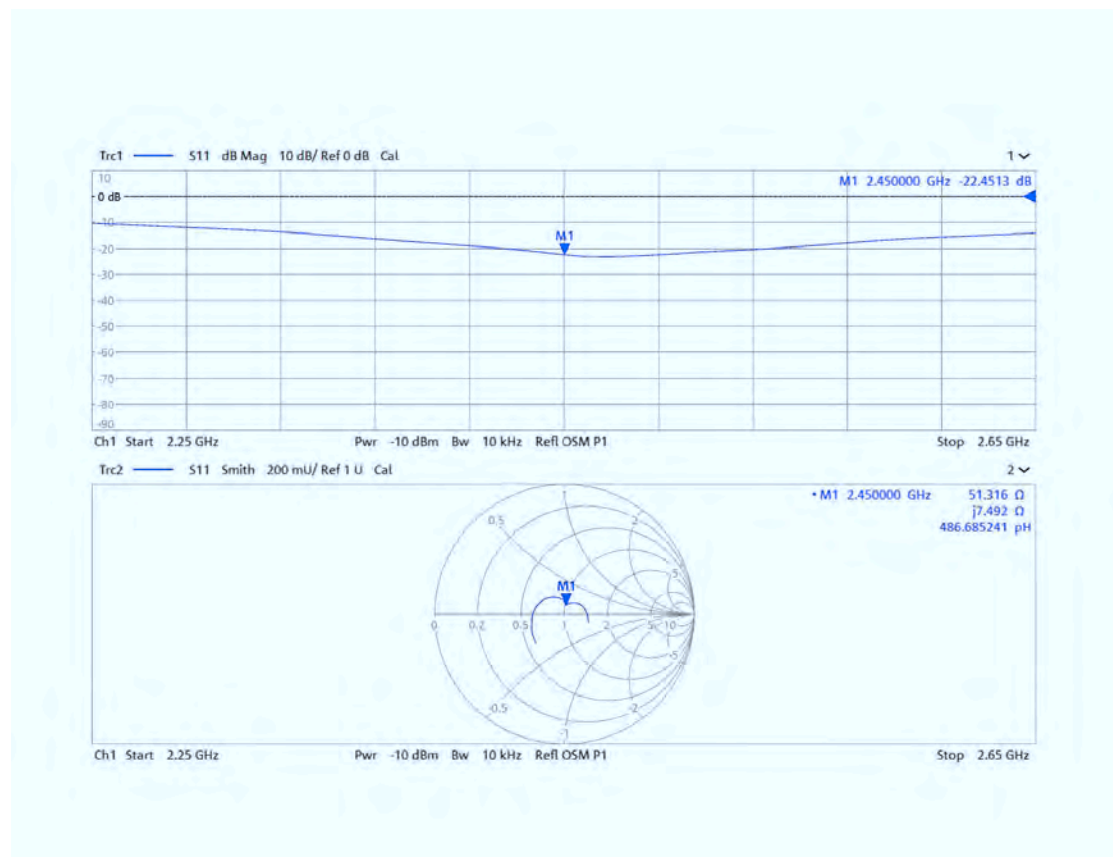
D2450V2 - SN: 1048						
2450MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.21.2021	-21.6		50.6		8.39	
10.20.2022	-22.45	3.94	51.32	0.72	7.49	-0.90
10.19.2023	-24.13	11.71	47.08	-3.52	5.46	-2.93

<Justification of the extended calibration>

The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data>

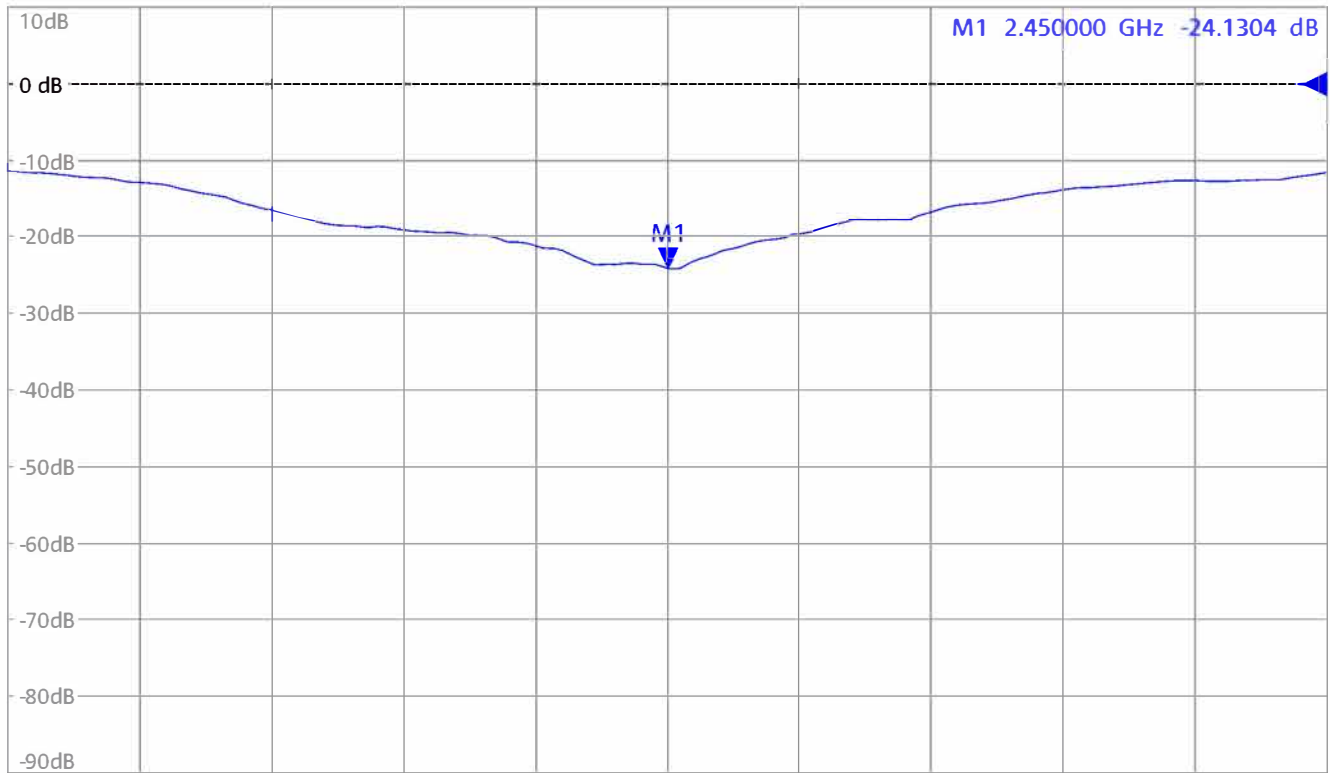
Head 2450MHz_2022.10.20



<Dipole Verification Data>
Head 2450MHz_2023.10.19

Trc1 — S11 dB Mag 10 dB/ Ref 0 dB Cal

1 ▾

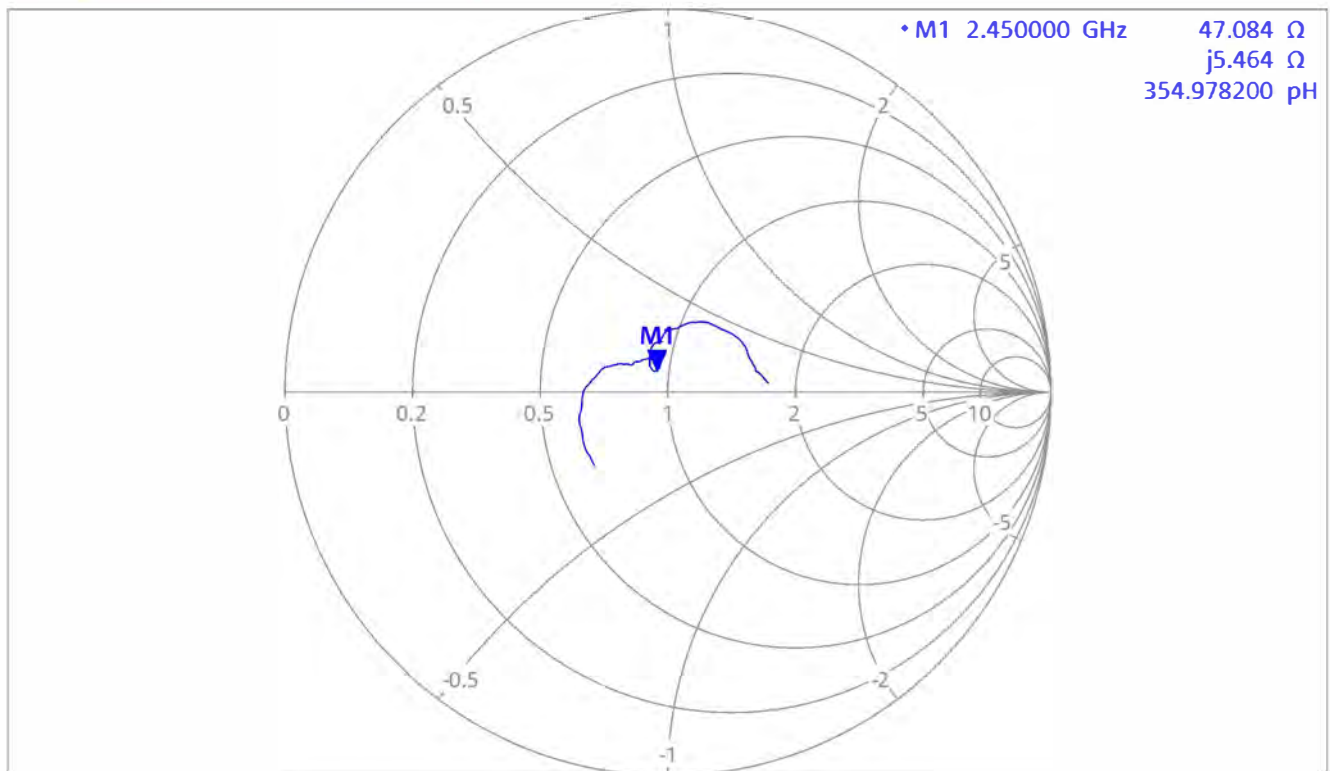


Ch1 Start 2.25 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1

Stop 2.65 GHz

Trc2 — S11 Smith 200 mU/ Ref 1 U Cal

2 ▾



Ch1 Start 2.25 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1

Stop 2.65 GHz



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 0108**

Client **7-Layers (Auden)**

Certificate No: **D2550V2-1022_Sep22**

CALIBRATION CERTIFICATE

Object: **D2550V2 - SN:1022**

Calibration procedure(s): **QA CAL-05.v11
Calibration Procedure for SAR Validation Sources between 0.7-3 GHz**

Calibration date: **September 22, 2022**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	31-Dec-21 (No. EX3-7349_Dec21)	Dec-22
DAE4	SN: 601	31-Aug-22 (No. DAE4-601_Aug22)	Aug-23
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-20)	In house check: Oct-22
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-20)	In house check: Oct-22
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-20)	In house check: Oct-22

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: September 23, 2022

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Accreditation No.: **SCS 0108**

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

- c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

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

Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2550 MHz \pm 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.1	1.91 mho/m
Measured Head TSL parameters	(22.0 \pm 0.2) °C	37.4 \pm 6 %	1.95 mho/m \pm 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	13.5 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	53.0 W/kg \pm 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	24.2 W/kg \pm 16.5 % (k=2)

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.0 Ω - 4.0 j Ω
Return Loss	- 27.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.157 ns
----------------------------------	----------

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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DASY5 Validation Report for Head TSL

Date: 22.09.2022

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2550 MHz; Type: D2550V2; Serial: D2550V2 - SN:1022

Communication System: UID 0 - CW; Frequency: 2550 MHz

Medium parameters used: $f = 2550$ MHz; $\sigma = 1.95$ S/m; $\epsilon_r = 37.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.85, 7.85, 7.85) @ 2550 MHz; Calibrated: 31.12.2021
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 31.08.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

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

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 113.1 V/m; Power Drift = 0.06 dB

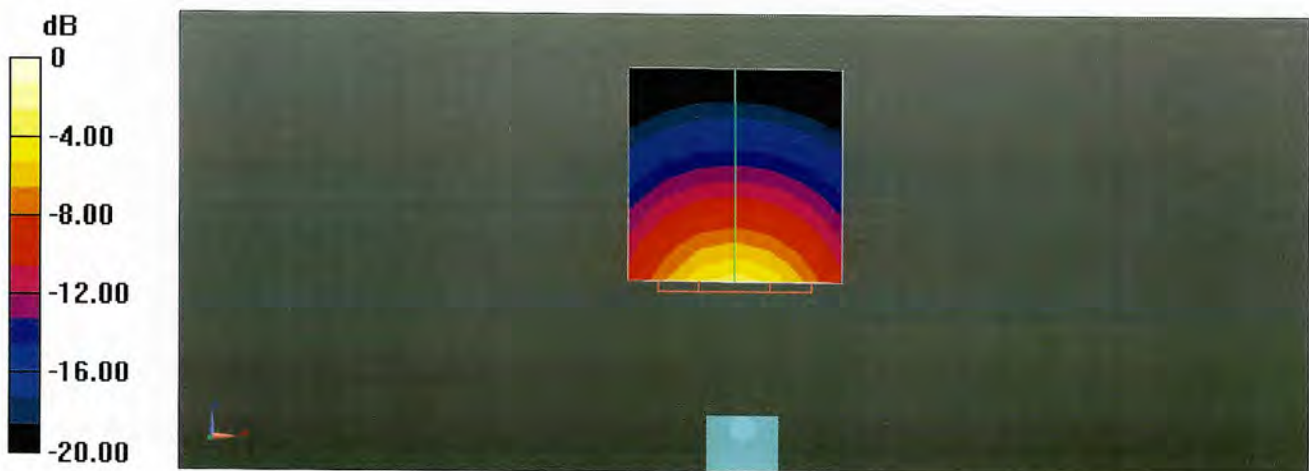
Peak SAR (extrapolated) = 27.5 W/kg

SAR(1 g) = 13.5 W/kg; SAR(10 g) = 6.13 W/kg

Smallest distance from peaks to all points 3 dB below = 9 mm

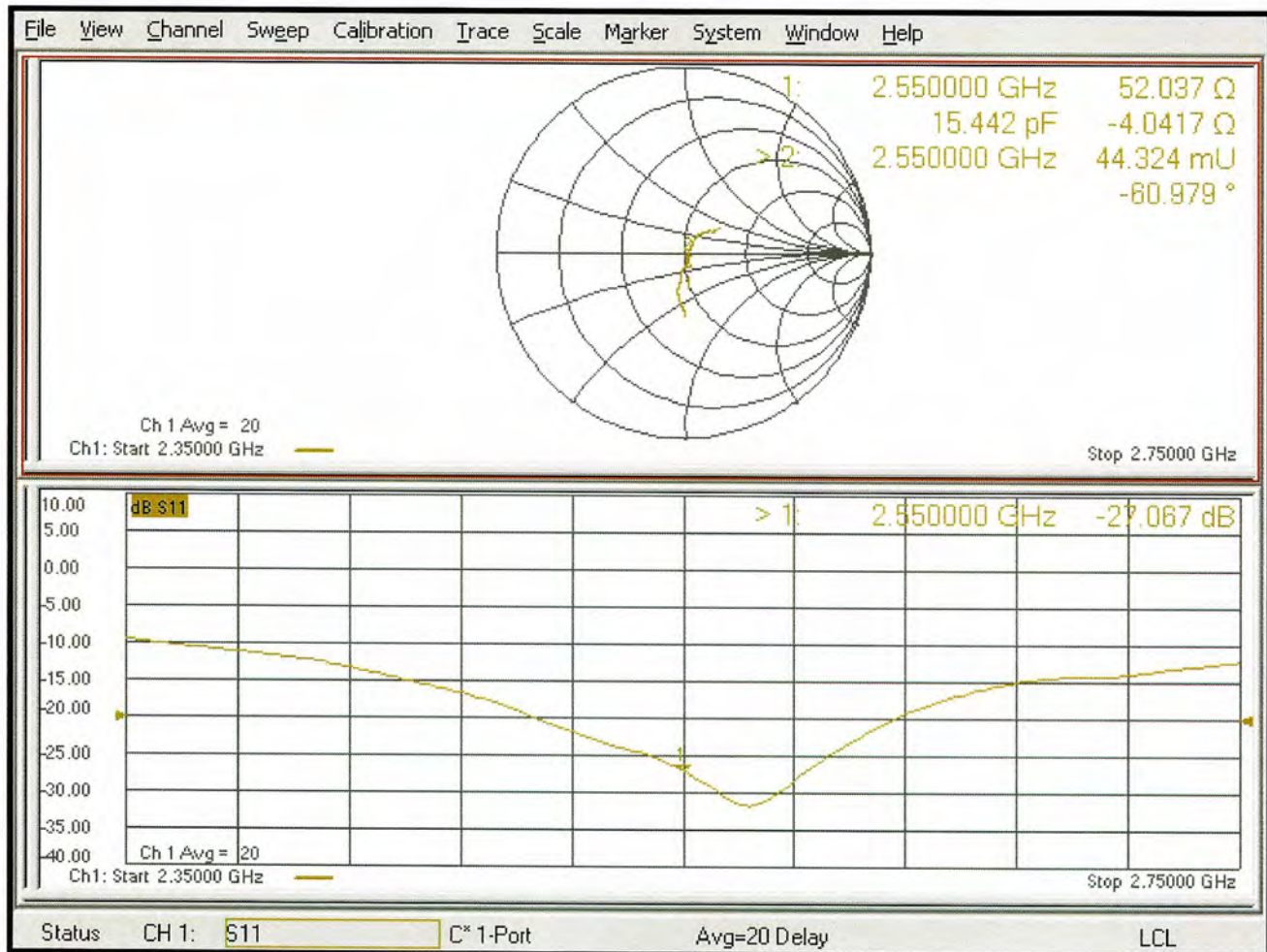
Ratio of SAR at M2 to SAR at M1 = 49%

Maximum value of SAR (measured) = 22.6 W/kg



0 dB = 22.6 W/kg = 13.54 dBW/kg

Impedance Measurement Plot for Head TSL



D2550V2 - SN: 1022 Extended Dipole Calibrations

Referring to KDB 865664 D01, if dipoles are verified in return loss ($<-20\text{dB}$, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

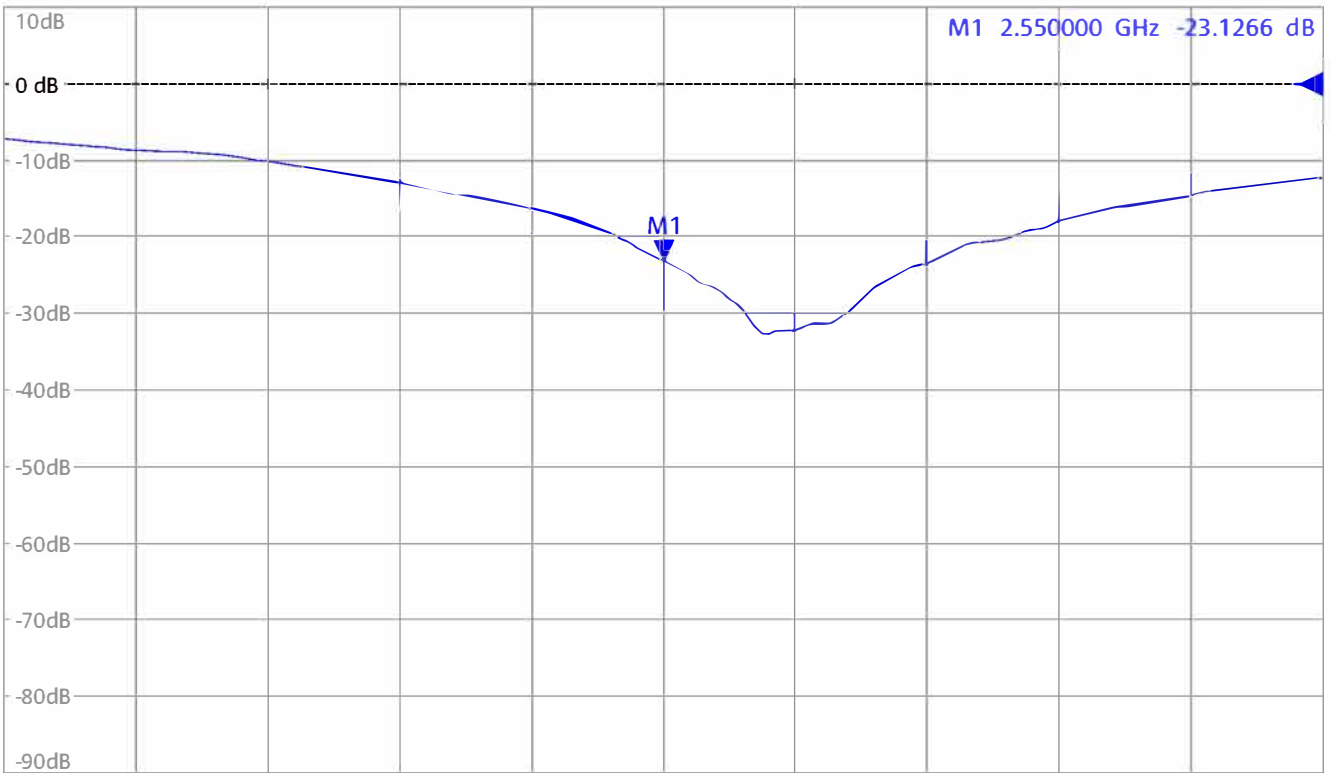
D2550V2 - SN: 1022						
2550MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
9.22.2022	-27.1		52		-4	
9.21.2023	-23.13	-14.66	54.77	2.77	-5.52	-1.52

<Justification of the extended calibration>

The return loss is $<-20\text{dB}$, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

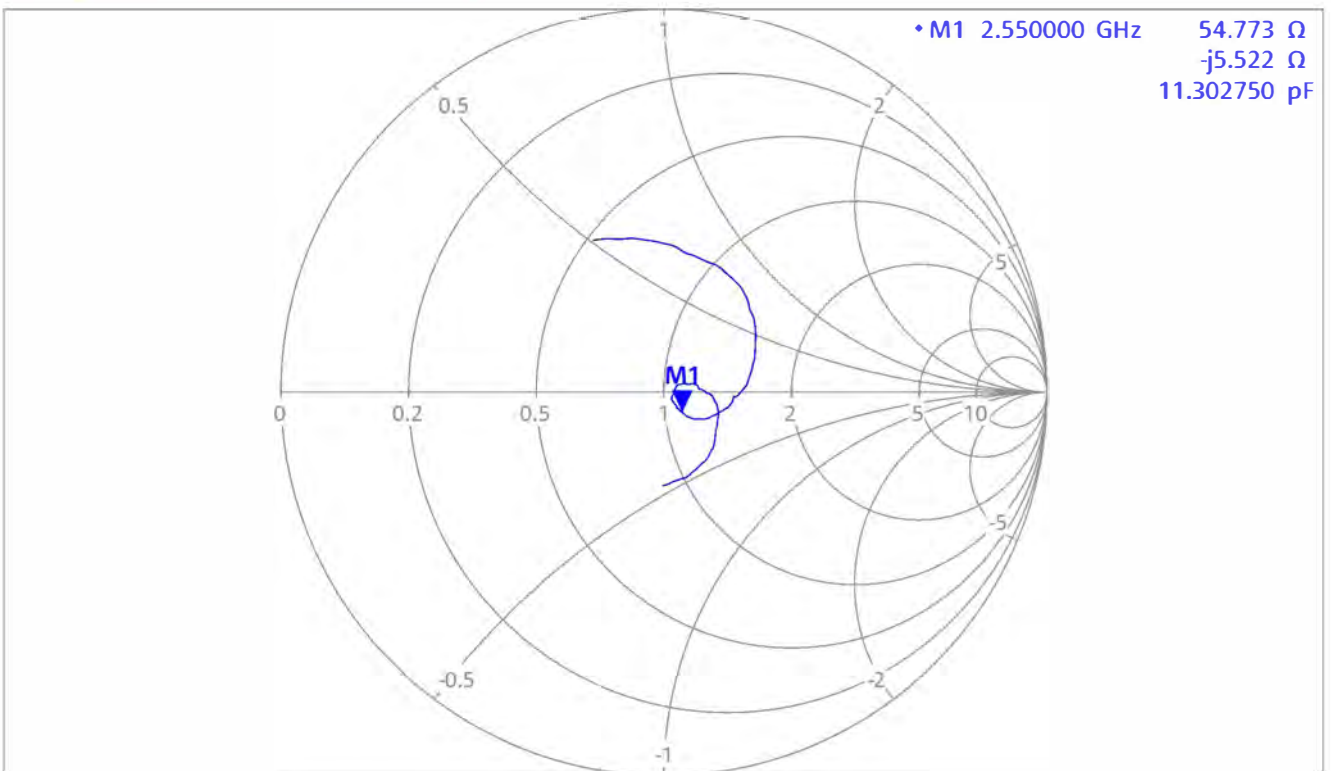
<Dipole Verification Data>
Head 2550MHz_2023.09.21

Trc1 — S11 dB Mag 10 dB/ Ref 0 dB Cal 1



Ch1 Start 2.35 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1 Stop 2.75 GHz

Trc2 — S11 Smith 200 mU/ Ref 1 U Cal 2



Ch1 Start 2.35 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1 Stop 2.75 GHz



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Client

7layers

Certificate No: Z21-60431

CALIBRATION CERTIFICATE

Object D5GHzV2 - SN: 1315

Calibration Procedure(s) FF-Z11-003-01
Calibration Procedures for dipole validation kits

Calibration date: October 22, 2021

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 (Calibrated by, Certificate No.)	Scheduled Calibration
Power Meter NRP2	106277	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
Power sensor NRP8S	104291	24-Sep-21 (CTTL, No.J21X08326)	Sep-22
ReferenceProbe EX3DV4	SN 7517	03-Feb-21(CTTL-SPEAG,No.Z21-60001)	Feb-22
DAE4	SN 1556	15-Jan-21(SPEAG,No.DAE4-1556_Jan21)	Jan-22
Secondary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Signal Generator E4438C	MY49071430	01-Feb-21 (CTTL, No.J21X00593)	Jan-22
NetworkAnalyzerE5071C	MY46110673	14-Jan-21 (CTTL, No.J21X00232)	Jan-22

	Name	Function	Signature
Calibrated by:	Zhao Jing	SAR Test Engineer	
Reviewed by:	Lin Hao	SAR Test Engineer	
Approved by:	Qi Dianyuan	SAR Project Leader	

Issued: October 27, 2021

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



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Glossary:

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

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
- b) IEC 62209-1, "Measurement procedure for assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices- Part 1: Device used next to the ear (Frequency range of 300MHz to 6GHz)", July 2016
- c) IEC 62209-2, "Procedure to measure the Specific Absorption Rate (SAR) For wireless communication devices used in close proximity to the human body (frequency range of 30MHz to 6GHz)", March 2010
- d) KDB865664, SAR Measurement Requirements for 100 MHz to 6 GHz

Additional Documentation:

- e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

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



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Measurement Conditions

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

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Triple Flat Phantom 5.1C	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5250 MHz ± 1 MHz 5600 MHz ± 1 MHz 5750 MHz ± 1 MHz	

Head TSL parameters at 5250 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.71 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	36.6 ± 6 %	4.70 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 5250 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.66 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	76.9 W/kg ± 24.4 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	100 mW input power	2.20 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	22.1 W/kg ± 24.2 % (k=2)



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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	36.0 ± 6 %	5.08 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °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	8.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	81.9 W/kg ± 24.4 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	23.5 W/kg ± 24.2 % (k=2)

Head TSL parameters at 5750 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	35.8 ± 6 %	5.25 mho/m ± 6 %
Head TSL temperature change during test	<1.0 °C	----	----

SAR result with Head TSL at 5750 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	7.59 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	76.1 W/kg ± 24.4 % (k=2)
SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	100 mW input power	2.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	21.7 W/kg ± 24.2 % (k=2)



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Appendix (Additional assessments outside the scope of CNAS L0570)

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	50.5Ω - 3.27jΩ
Return Loss	- 29.7dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.2Ω + 0.81jΩ
Return Loss	- 27.8dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	49.4Ω + 1.99jΩ
Return Loss	- 33.6dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.098 ns
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After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
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DASY5 Validation Report for Head TSL

Date: 10.22.2021

Test Laboratory: CTTL, Beijing, China

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1315

Communication System: CW; Frequency: 5250 MHz, Frequency: 5600 MHz,
Frequency: 5750 MHz,

Medium parameters used: $f = 5250$ MHz; $\sigma = 4.704$ S/m; $\epsilon_r = 36.62$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5600$ MHz; $\sigma = 5.084$ S/m; $\epsilon_r = 36$; $\rho = 1000$ kg/m³,
Medium parameters used: $f = 5750$ MHz; $\sigma = 5.248$ S/m; $\epsilon_r = 35.78$; $\rho = 1000$ kg/m³,

Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7517; ConvF(5.42, 5.42, 5.42) @ 5250 MHz; ConvF(4.75, 4.75, 4.75) @ 5600 MHz; ConvF(4.82, 4.82, 4.82) @ 5750 MHz; Calibrated: 2021-02-03
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1556; Calibrated: 2021-01-15
- Phantom: MFP_V5.1C (20deg probe tilt); Type: QD 000 P51 Cx; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

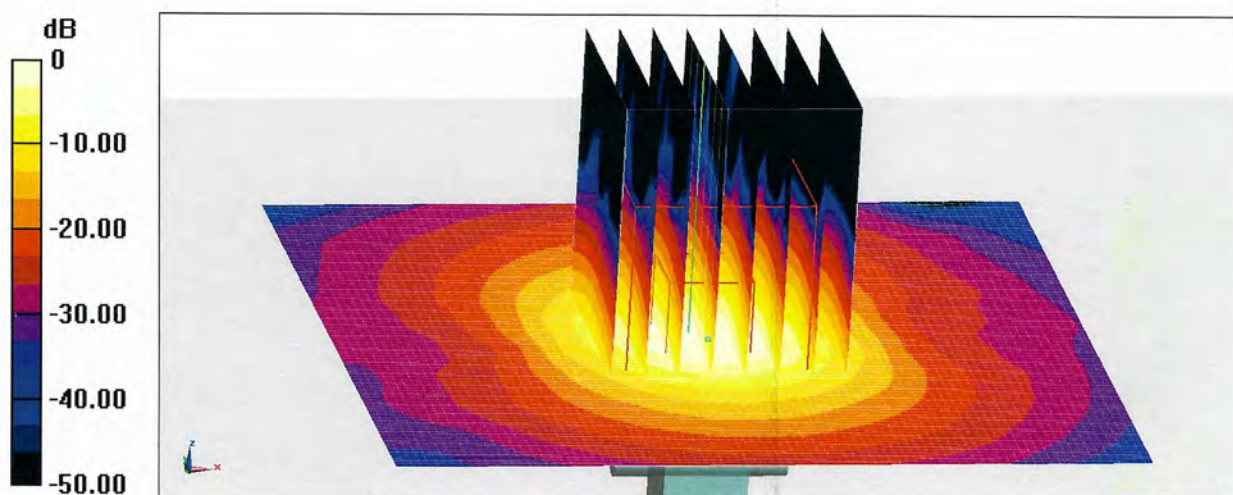
Dipole Calibration /Pin=100mW, d=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 70.32 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 31.0 W/kg
SAR(1 g) = 7.66 W/kg; SAR(10 g) = 2.2 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 65%
Maximum value of SAR (measured) = 18.2 W/kg

Dipole Calibration /Pin=100mW, d=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 71.09 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 34.9 W/kg
SAR(1 g) = 8.17 W/kg; SAR(10 g) = 2.34 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 63.3%
Maximum value of SAR (measured) = 19.9 W/kg



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Dipole Calibration /Pin=100mW, d=10mm, f=5750 MHz/Zoom Scan,
dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.72 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 33.5 W/kg
SAR(1 g) = 7.59 W/kg; SAR(10 g) = 2.16 W/kg
Smallest distance from peaks to all points 3 dB below = 7.2 mm
Ratio of SAR at M2 to SAR at M1 = 62.4%
Maximum value of SAR (measured) = 18.6 W/kg

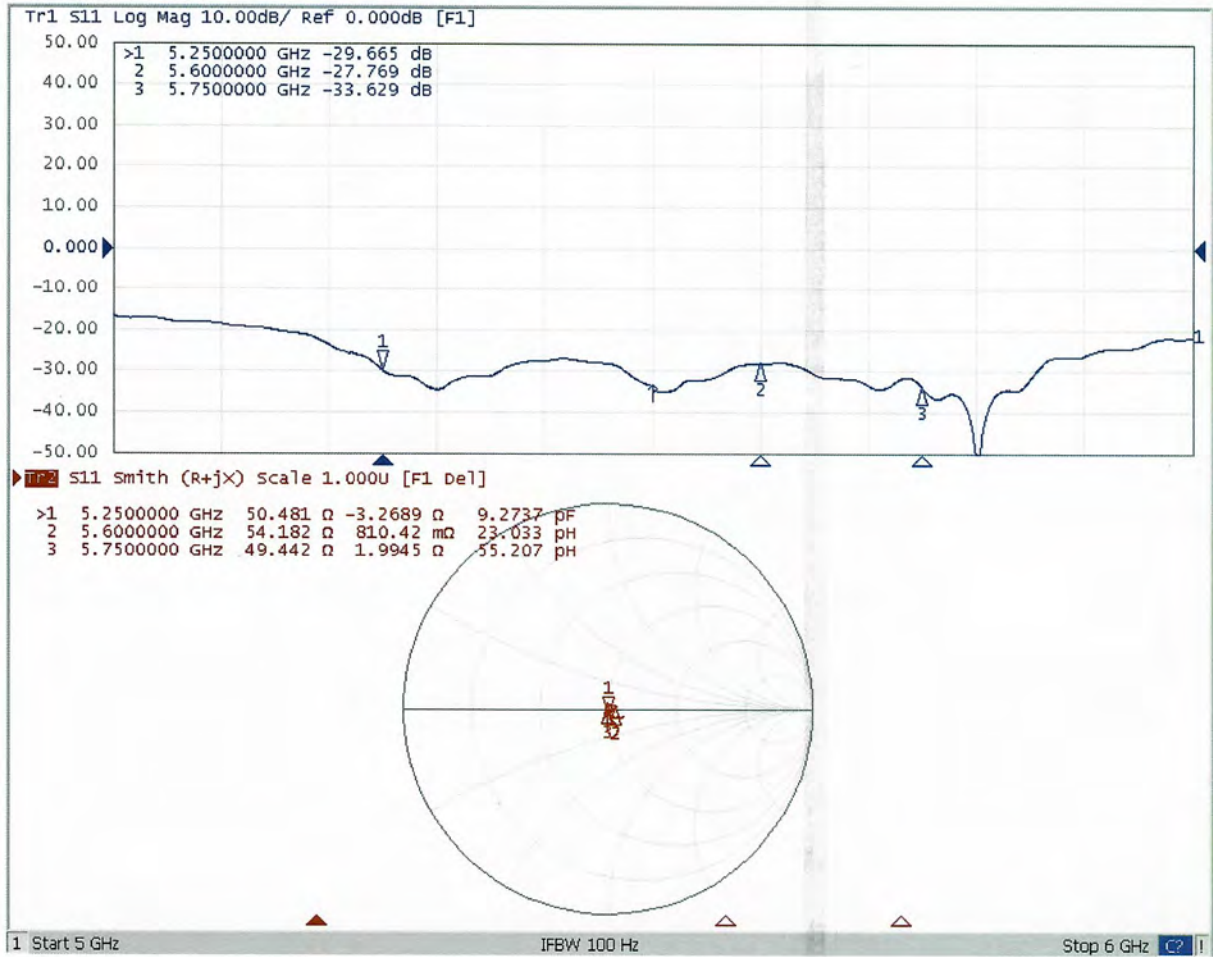


0 dB = 18.6 W/kg = 12.70 dBW/kg



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Impedance Measurement Plot for Head TSL



D5GHzV2 - SN: 1315 Extended Dipole Calibrations

Referring to KDB 865664 D01, if dipoles are verified in return loss (<-20dB, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

D5GHzV2 - SN: 1315						
5250MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.22.2021	-29.7		50.5		-3.27	
10.21.2022	-34.53	16.26	51.16	0.66	1.56	4.83
10.20.2023	-25.84	-12.98	54.50	4.00	-2.96	0.31

D5GHzV2 - SN: 1315						
5600MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.22.2021	-27.8		54.2		0.81	
10.21.2022	-31.03	11.63	49.59	-4.61	-2.79	-3.60
10.20.2023	-26.15	-5.95	54.92	0.71	-1.82	-2.63

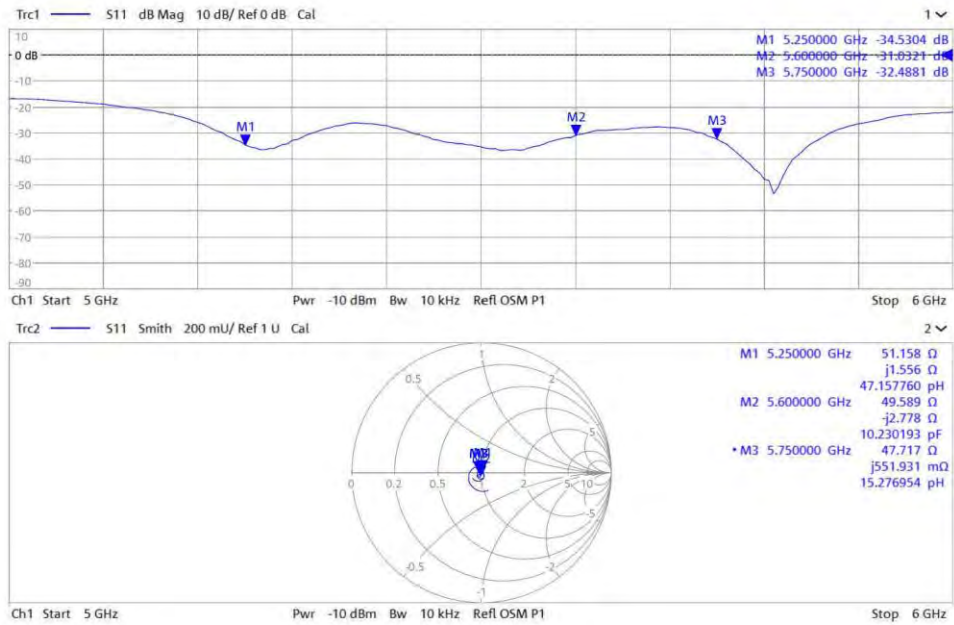
D5GHzV2 - SN: 1315						
5750MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
10.22.2021	-33.6		49.4		1.99	
10.21.2022	-32.49	-3.31	47.72	-1.68	0.55	-1.44
10.20.2023	-36.43	8.41	50.87	1.47	1.34	-0.65

<Justification of the extended calibration>

The return loss is < -20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Dipole Verification Data>

Head 5250-5750MHz_2022.10.21

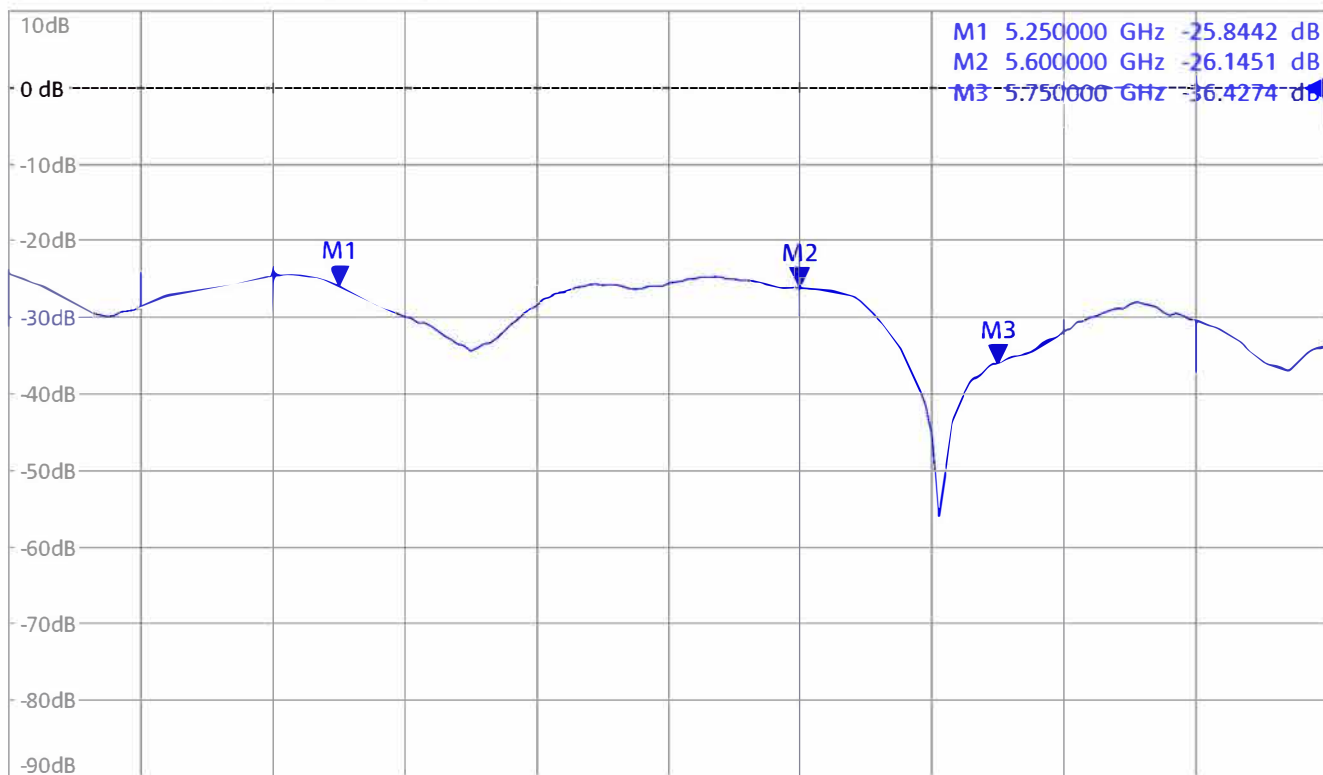


<Dipole Verification Data>

Head 5250-5750MHz_2023.10.20

Trc1 — S11 dB Mag 10 dB/ Ref 0 dB Cal

1

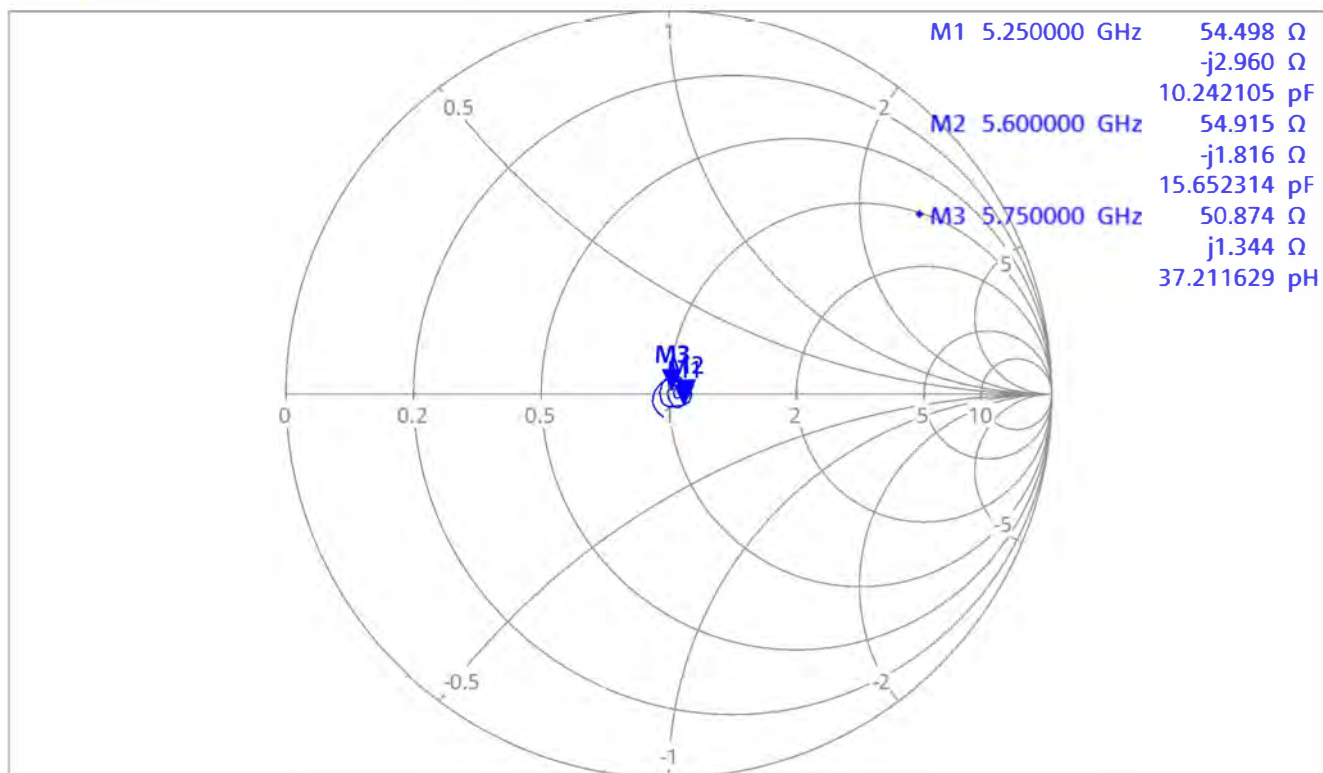


Ch1 Start 5 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1

Stop 6 GHz

Trc2 — S11 Smith 200 mU/ Ref 1 U Cal

2



Ch1 Start 5 GHz Pwr -10 dBm Bw 10 kHz Refl OSM P1

Stop 6 GHz



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Appendix D. Conducted RF Output Power Table

The detailed power table are shown as follows.

GSM&WCDMA Default
Ant1

Band	GSM850				GSM1900			
	Channel	128	189	251	Max. Tune-up Power (dBm)	512	661	810
Frequency (MHz)	824.2	836.4	848.8	1850.2		1880	1909.8	
GSM	32.33	32.37	32.43	33.50	29.31	29.32	29.24	30.50
GPRS 1Tx Slot	32.26	32.33	32.41	33.50	29.30	29.31	29.20	30.50
GPRS 2Tx Slot	28.90	28.97	29.09	30.00	25.63	25.80	25.85	26.50
GPRS 3Tx Slot	27.43	27.51	27.63	28.50	23.80	24.01	24.14	25.00
GPRS 4Tx Slot	26.38	26.45	26.59	27.50	22.81	23.04	23.23	24.00
EDGE 1Tx Slot	26.97	27.15	27.04	28.00	25.67	25.91	25.89	27.00
EDGE 2Tx Slot	23.67	23.82	23.75	25.00	22.60	22.92	22.85	24.00
EDGE 3Tx Slot	21.98	22.11	22.03	23.00	20.84	21.10	21.07	22.00
EDGE 4Tx Slot	21.28	21.33	21.34	22.00	19.77	19.96	20.01	21.00

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	Channel	128	189		251	512	661	
GSM	23.33	23.37	23.43	24.50	20.31	20.32	20.24	21.50
GPRS 1Tx Slot	23.26	23.33	23.41	24.50	20.30	20.31	20.20	21.50
GPRS 2Tx Slot	22.90	22.97	23.09	24.00	19.63	19.80	19.85	20.50
GPRS 3Tx Slot	23.17	23.25	23.37	24.24	19.54	19.75	19.88	20.74
GPRS 4Tx Slot	23.38	23.45	23.59	24.50	19.81	20.04	20.23	21.00
EDGE 1Tx Slot	17.97	18.15	18.04	19.00	16.67	16.91	16.89	18.00
EDGE 2Tx Slot	17.67	17.82	17.75	19.00	16.60	16.92	16.85	18.00
EDGE 3Tx Slot	17.72	17.85	17.77	18.74	16.58	16.84	16.81	17.74
EDGE 4Tx Slot	18.28	18.33	18.34	19.00	16.77	16.96	17.01	18.00

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
	Tx Channel	9262	9400		9538	1312	1413		1513	Max. Tune-up Power (dBm)	4132	
Rx Channel	9662	9800	9938	Max. Tune-up Power (dBm)	1537	1638	1738	Max. Tune-up Power (dBm)	4357	4407	4458	Max. Tune-up Power (dBm)
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
RMC 12.2K	24.31	24.36	24.46	25.50	24.31	24.34	24.30	25.50	24.23	24.28	24.29	25.50
HSDPA Subtest-1	23.48	23.56	23.59	24.00	23.41	23.47	23.47	24.00	23.37	23.40	23.39	24.00
HSDPA Subtest-2	23.47	23.50	23.66	24.00	23.50	23.44	23.39	24.00	23.35	23.39	23.40	24.00
HSDPA Subtest-3	22.98	22.98	23.10	24.00	22.94	22.94	22.96	24.00	22.89	22.93	22.99	24.00
HSDPA Subtest-4	23.00	22.98	23.10	24.00	22.98	22.97	22.90	24.00	22.93	22.91	22.88	24.00
DC-HSDPA Subtest-1	23.42	23.51	23.65	24.00	23.41	23.52	23.47	24.00	23.35	23.38	23.39	24.00
DC-HSDPA Subtest-2	23.47	23.50	23.57	24.00	23.47	23.44	23.43	24.00	23.38	23.43	23.43	24.00
DC-HSDPA Subtest-3	23.00	23.02	23.12	24.00	22.98	22.97	22.93	24.00	22.86	22.95	22.90	24.00
DC-HSDPA Subtest-4	22.95	23.03	23.08	24.00	22.96	22.94	22.98	24.00	22.86	22.88	22.95	24.00
HSUPA Subtest-1	21.61	21.73	21.79	23.00	21.67	21.64	21.65	23.00	21.57	21.58	21.60	23.00
HSUPA Subtest-2	21.39	21.35	21.48	23.00	21.39	21.41	21.35	23.00	21.33	21.37	21.30	23.00
HSUPA Subtest-3	22.24	22.30	22.42	23.00	22.27	22.31	22.19	23.00	22.16	22.18	22.19	23.00
HSUPA Subtest-4	21.15	21.05	21.07	23.00	21.05	21.17	21.03	23.00	21.20	21.18	21.19	23.00
HSUPA Subtest-5	22.22	22.32	22.42	23.00	22.21	22.27	22.25	23.00	22.20	22.21	22.25	23.00
HSPA+ Subtest-1	21.58	21.57	21.73	23.00	21.53	21.55	21.50	23.00	21.44	21.52	21.50	23.00

LTE Default Power
Ant1

		LTE Band 2							
BW	Modulation	RB Size	RB Offset	Low	Mid	High	SPP MPP (dB)	Max. Time-up (dBm)	
		Channel Frequency (MHz)	1880	1880	1910	1910			
20M	QPSK	1	0	23.71	23.70	23.71	0	25.5	
		1	50	24.11	24.10	24.04	0	25.5	
		1	99	24.56	24.56	24.76	0	25.5	
		50	0	23.04	23.02	23.02	1	24.5	
		50	25	23.05	23.03	23.04	1	24.5	
	16QAM	50	50	23.02	23.01	22.88	1	24.5	
		100	0	23.07	23.06	23.06	1	24.5	
		1	0	23.05	23.01	23.08	1	24.5	
		1	50	23.37	23.45	23.29	1	24.5	
		1	99	23.01	22.98	22.96	1	24.5	
60QAM	50	0	23.07	23.06	22.99	2	23.5		
	50	25	22.09	22.17	22.10	2	23.5		
	50	50	22.07	22.11	21.93	2	23.5		
	100	0	22.06	22.06	21.97	2	23.5		
	1	0	21.92	21.96	21.97	2	23.5		
	1	50	22.30	22.31	22.32	2	23.5		
	1	99	21.90	21.91	21.98	2	23.5		
	50	0	21.90	21.11	21.05	3	22.5		
	50	25	21.06	21.14	21.09	3	22.5		
	50	50	21.08	21.09	21.00	3	22.5		
BW	QPSK	Channel	1880	1880	1910	SPP MPP (dB)	Max. Time-up (dBm)		
		Frequency (MHz)	1885	1885	1915				
		1	0	23.88	23.85	23.84	0	25.5	
		1	37	24.17	24.17	24.83	0	25.5	
		1	74	23.80	23.73	23.80	0	25.5	
	16QAM	36	0	23.07	22.98	22.89	1	24.5	
		36	19	23.00	22.95	22.84	1	24.5	
		36	39	23.11	23.09	23.83	1	24.5	
		75	0	22.90	23.09	22.93	1	24.5	
		1	0	22.83	22.74	22.68	1	24.5	
15M	QPSK	1	0	23.71	23.70	23.71	0	25.5	
		1	37	24.17	24.17	24.76	0	25.5	
		1	74	23.80	23.76	23.82	0	25.5	
		36	0	23.07	22.98	22.89	1	24.5	
		36	19	23.00	22.95	22.84	1	24.5	
	16QAM	36	39	23.11	23.09	23.83	1	24.5	
		75	0	22.10	21.94	22.04	2	23.5	
		1	0	21.72	21.65	21.56	2	23.5	
		1	37	21.90	21.91	22.04	2	23.5	
		1	74	21.70	21.73	21.77	2	23.5	
60QAM	36	0	20.86	20.79	20.84	3	22.5		
	36	19	20.83	20.85	20.80	3	22.5		
	36	39	21.97	21.98	21.79	2	23.5		
	75	0	20.86	20.89	20.79	3	22.5		
	1	0	21.78	21.78	21.85	2	23.5		
	BW	QPSK	Channel	1880	1880	1910	SPP MPP (dB)	Max. Time-up (dBm)	
			Frequency (MHz)	1885	1885	1915			
			1	24	24.23	24.02	23.87	0	25.5
			1	49	23.91	23.71	23.81	0	25.5
			25	0	23.10	22.92	22.89	1	24.5
16QAM		25	12	23.08	22.98	22.81	1	24.5	
		25	25	23.12	22.98	22.97	1	24.5	
		50	0	22.89	23.01	22.97	1	24.5	
		1	0	22.86	22.98	22.98	1	24.5	
		1	24	23.00	22.82	22.79	1	24.5	
10M	QPSK	1	49	22.56	22.67	22.54	1	24.5	
		25	0	21.91	21.80	21.93	2	23.5	
		25	12	21.97	21.88	21.97	2	23.5	
		25	25	22.00	22.04	21.83	2	23.5	
		50	0	22.08	21.87	22.04	2	23.5	
	16QAM	50	0	21.78	21.85	21.85	2	23.5	
		1	24	22.09	21.88	22.13	2	23.5	
		1	49	21.70	21.70	21.63	2	23.5	
		25	0	20.91	20.79	20.76	3	22.5	
		25	12	20.92	20.80	20.89	3	22.5	
BW	QPSK	Channel	1880	1880	1910	SPP MPP (dB)	Max. Time-up (dBm)		
		Frequency (MHz)	1885	1885	1915				
		1	0	23.84	23.91	23.75	0	25.5	
		1	12	24.18	24.05	23.83	0	25.5	
		1	24	23.93	23.74	23.73	0	25.5	
	16QAM	12	0	23.08	22.95	22.91	1	24.5	
		12	6	22.99	22.89	22.89	1	24.5	
		12	13	23.06	22.99	22.91	1	24.5	
		26	0	22.86	22.97	22.98	1	24.5	
		1	0	22.77	22.77	22.57	1	24.5	
3M	QPSK	1	12	22.94	22.85	22.83	1	24.5	
		1	24	22.69	22.86	22.99	1	24.5	
		12	0	21.96	21.84	21.82	2	23.5	
		12	6	21.91	21.86	21.93	2	23.5	
		12	13	21.99	22.09	21.88	2	23.5	
	16QAM	26	0	22.81	22.94	22.98	1	24.5	
		1	0	21.85	21.76	21.53	2	23.5	
		1	12	22.00	21.90	22.11	2	23.5	
		1	24	21.89	21.86	21.64	2	23.5	
		12	0	22.87	22.88	22.78	2	23.5	
60QAM	12	6	20.82	20.80	20.85	3	22.5		
	12	13	20.92	20.84	20.93	3	22.5		
	25	0	20.82	20.90	20.81	3	22.5		
	1	0	21.85	21.85	21.85	2	23.5		
	1	12	21.99	21.99	22.02	2	23.5		
	BW	QPSK	Channel	1880	1880	1910	SPP MPP (dB)	Max. Time-up (dBm)	
			Frequency (MHz)	1885	1885	1915			
			1	0	23.88	23.89	23.83	0	25.5
			1	7	24.23	24.04	23.84	0	25.5
			1	14	23.81	23.71	23.74	0	25.5
16QAM		8	0	23.06	22.96	23.02	1	24.5	
		8	3	23.07	22.92	22.90	1	24.5	
		8	7	23.16	22.99	22.81	1	24.5	
		15	0	23.01	23.03	22.91	1	24.5	
		1	0	22.69	22.70	22.64	1	24.5	
3M	QPSK	1	7	23.01	22.82	22.72	1	24.5	
		1	14	22.97	22.68	22.93	1	24.5	
		8	0	22.00	21.94	21.91	2	23.5	
		8	3	21.95	21.86	21.97	2	23.5	
		8	7	21.97	22.10	21.87	2	23.5	
	16QAM	15	0	21.97	21.82	21.95	2	23.5	
		1	0	21.72	21.79	21.62	2	23.5	
		1	7	22.00	21.90	22.10	2	23.5	
		1	14	21.61	21.65	21.72	2	23.5	
		8	0	20.94	20.88	20.74	3	22.5	
60QAM	8	3	20.85	20.87	20.84	3	22.5		
	8	7	21.01	20.88	20.92	3	22.5		
	15	0	20.92	20.89	20.79	3	22.5		
	1	0	21.87	21.87	21.93	2	23.5		
	1	7	21.99	21.98	22.09	2	23.5		
	BW	QPSK	Channel	1880	1880	1910	SPP MPP (dB)	Max. Time-up (dBm)	
			Frequency (MHz)	1887	1887	1913			
			1	0	23.70	23.75	23.68	0	25.5
			1	2	24.05	23.97	24.01	0	25.5
			1	5	23.60	23.54	23.70	0	25.5
16QAM		3	0	23.75	23.73	23.76	0	25.5	
		3	3	23.79	23.76	23.72	0	25.5	
		3	3	23.69	23.76	23.67	0	25.5	
		6	0	22.97	22.96	22.94	1	24.5	
		1	0	23.04	23.00	22.98	1	24.5	
1.4M	QPSK	1	2	23.26	23.36	23.21	1	24.5	
		1	5	22.92	22.86	22.86	1	24.5	
		3	0	22.79	22.81	22.80	1	24.5	
		3	3	22.77	22.88	22.81	1	24.5	
		3	3	22.74	22.88	22.66	1	24.5	
	16QAM	6	0	22.02	22.01	21.90	2	23.5	
		1	0	21.79	21.82	21.90	2	23.5	
		1	2	22.27	22.10	22.19	2	23.5	
		1	5	21.86	21.80	21.84	2	23.5	
		3	0	21.72	21.84	21.83	2	23.5	
60QAM	3	3	21.88	21.96	21.88	2	23.5		
	3	3	21.82	21.84	21.80	2	23.5		
	6	0	20.97	21.06	20.93	3	22.5		
	1	0	21.88	21.88	21.93	2	23.5		
	1	2	22.29	22.22	22.29	2	23.5		
	BW	QPSK	Channel	1880	1880	1910	SPP MPP (dB)	Max. Time-up (dBm)	
			Frequency (MHz)	1915	1915	1945			
			1	0	23.88	23.79	23.82	0	25.5
			1	7	24.26	24.13	23.86	0	25.5
			1	14	23.90	23.84	23.72	0	25.5
16QAM		8	0	23.10	22.96	23.01	1	24.5	
		8	3	22.99	22.87	22.86	1	24.5	
		8	7	23.09	23.03	22.94	1	24.5	
		15	0	23.02	22.98	22.84	1	24.5	
		1	0	22.68	22.80	22.58	1	24.5	
3M	QPSK	1	7	22.94	22.82	22.71	1	24.5	
		1	14	22.90	22.87	22.83	1	24.5	
		8	0	22.00	21.87	21.84	2	23.5	
		8	3	21.86	21.83	21.93	2	23.5	
		8	7	22.00	22.10	21.85	2	23.5	
	16QAM	15	0	22.05	21.94	22.04	2	23.5	
		1	0	21.62	21.78	21.65	2	23.5	
		1	7	21.99	21.98	22.09	2	23.5	
		1	14	21.73	21.70	21.71	2	23.5	
		8	0	20.80	20.84	20.76	3	22.5	
60QAM	8	3	20.83	20.82	20.80	3	22.5		
	8	7	20.88	20.84	20.80	3	22.5		

GSM&WCDMA DSI-1

Ant1

Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	Channel	128	189		251	512	661	
Frequency (MHz)	824.2	836.4	848.8		1850.2	1880	1909.8	
GSM	32.33	32.37	32.43	33.50	29.31	29.32	29.24	30.50
GPRS 1Tx Slot	32.26	32.33	32.41	33.50	29.30	29.31	29.20	30.50
GPRS 2Tx Slot	28.90	28.97	29.09	30.00	25.63	25.80	25.85	26.50
GPRS 3Tx Slot	27.43	27.51	27.63	28.50	23.80	24.01	24.14	25.00
GPRS 4Tx Slot	26.38	26.45	26.59	27.50	22.81	23.04	23.23	24.00
EDGE 1Tx Slot	26.97	27.15	27.04	28.00	25.67	25.91	25.89	27.00
EDGE 2Tx Slot	23.67	23.82	23.75	25.00	22.60	22.92	22.85	24.00
EDGE 3Tx Slot	21.98	22.11	22.03	23.00	20.84	21.10	21.07	22.00
EDGE 4Tx Slot	21.28	21.33	21.34	22.00	19.77	19.96	20.01	21.00

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	Channel	128	189		251	512	661	
GSM	23.33	23.37	23.43	24.50	20.31	20.32	20.24	21.50
GPRS 1Tx Slot	23.26	23.33	23.41	24.50	20.30	20.31	20.20	21.50
GPRS 2Tx Slot	22.90	22.97	23.09	24.00	19.63	19.80	19.85	20.50
GPRS 3Tx Slot	23.17	23.25	23.37	24.24	19.54	19.75	19.88	20.74
GPRS 4Tx Slot	23.38	23.45	23.59	24.50	19.81	20.04	20.23	21.00
EDGE 1Tx Slot	17.97	18.15	18.04	19.00	16.67	16.91	16.89	18.00
EDGE 2Tx Slot	17.67	17.82	17.75	19.00	16.60	16.92	16.85	18.00
EDGE 3Tx Slot	17.72	17.85	17.77	18.74	16.58	16.84	16.81	17.74
EDGE 4Tx Slot	18.28	18.33	18.34	19.00	16.77	16.96	17.01	18.00

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
	TX Channel	9262	9400		9538	1312	1413		1513	Max. Tune-up Power (dBm)	4132	
Rx Channel	9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
RMC 12.2K	24.31	24.36	24.46	25.50	24.31	24.34	24.30	25.50	24.23	24.28	24.29	25.50
HSDPA Subtest-1	23.48	23.56	23.59	24.00	23.41	23.47	23.47	24.00	23.37	23.40	23.39	24.00
HSDPA Subtest-2	23.47	23.50	23.66	24.00	23.50	23.44	23.39	24.00	23.35	23.39	23.40	24.00
HSDPA Subtest-3	22.98	22.98	23.10	24.00	22.94	22.94	22.96	24.00	22.89	22.93	22.99	24.00
HSDPA Subtest-4	23.00	22.98	23.10	24.00	22.98	22.97	22.90	24.00	22.93	22.91	22.88	24.00
DC-HSDPA Subtest-1	23.42	23.51	23.65	24.00	23.41	23.52	23.47	24.00	23.35	23.38	23.39	24.00
DC-HSDPA Subtest-2	23.47	23.50	23.67	24.00	23.47	23.44	23.43	24.00	23.38	23.43	23.43	24.00
DC-HSDPA Subtest-3	23.00	23.02	23.12	24.00	22.98	22.97	22.93	24.00	22.86	22.95	22.90	24.00
DC-HSDPA Subtest-4	22.95	23.03	23.08	24.00	22.96	22.94	22.98	24.00	22.86	22.88	22.95	24.00
HSUPA Subtest-1	21.61	21.73	21.79	23.00	21.67	21.64	21.65	23.00	21.57	21.58	21.60	23.00
HSUPA Subtest-2	21.39	21.35	21.48	23.00	21.39	21.41	21.35	23.00	21.33	21.37	21.30	23.00
HSUPA Subtest-3	22.24	22.30	22.42	23.00	22.27	22.31	22.19	23.00	22.16	22.18	22.19	23.00
HSUPA Subtest-4	21.15	21.05	21.07	23.00	21.05	21.17	21.03	23.00	21.20	21.18	21.19	23.00
HSUPA Subtest-5	22.22	22.32	22.42	23.00	22.21	22.27	22.25	23.00	22.20	22.21	22.25	23.00
HSPA+ Subtest-1	21.58	21.57	21.73	23.00	21.53	21.55	21.50	23.00	21.44	21.52	21.50	23.00

GSM&WCDMA DSI-2

Ant1

Band	GSM850				GSM1900				
	Channel	128	189	251	Max. Tune-up Power (dBm)	512	661	810	Max. Tune-up Power (dBm)
Frequency (MHz)	824.2	836.4	848.8		1850.2	1880	1909.8		
GSM	32.33	32.37	32.43	33.50	29.31	29.32	29.24	30.50	
GPRS 1Tx Slot	32.26	32.33	32.41	33.50	29.30	29.31	29.20	30.50	
GPRS 2Tx Slot	28.90	28.97	29.09	30.00	25.63	25.80	25.85	26.50	
GPRS 3Tx Slot	27.43	27.51	27.63	28.50	23.80	24.01	24.14	25.00	
GPRS 4Tx Slot	26.38	26.45	26.59	27.50	22.81	23.04	23.23	24.00	
EDGE 1Tx Slot	26.97	27.15	27.04	28.00	25.67	25.91	25.89	27.00	
EDGE 2Tx Slot	23.67	23.82	23.75	25.00	22.60	22.92	22.85	24.00	
EDGE 3Tx Slot	21.98	22.11	22.03	23.00	20.84	21.10	21.07	22.00	
EDGE 4Tx Slot	21.28	21.33	21.34	22.00	19.77	19.96	20.01	21.00	

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	Channel	128	189		251	512	661	
GSM	23.33	23.37	23.43	24.50	20.31	20.32	20.24	21.50
GPRS 1Tx Slot	23.26	23.33	23.41	24.50	20.30	20.31	20.20	21.50
GPRS 2Tx Slot	22.90	22.97	23.09	24.00	19.63	19.80	19.85	20.50
GPRS 3Tx Slot	23.17	23.25	23.37	24.24	19.54	19.75	19.88	20.74
GPRS 4Tx Slot	23.38	23.45	23.59	24.50	19.81	20.04	20.23	21.00
EDGE 1Tx Slot	17.97	18.15	18.04	19.00	16.67	16.91	16.89	18.00
EDGE 2Tx Slot	17.67	17.82	17.75	19.00	16.60	16.92	16.85	18.00
EDGE 3Tx Slot	17.72	17.85	17.77	18.74	16.58	16.84	16.81	17.74
EDGE 4Tx Slot	18.28	18.33	18.34	19.00	16.77	16.96	17.01	18.00

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
	TX Channel	9262	9400		9538	Max. Tune-up Power (dBm)	1312		1413	1513	Max. Tune-up Power (dBm)	
Rx Channel	9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
RMC 12.2K	23.71	23.82	23.95	25.00	24.31	24.34	24.30	25.50	24.23	24.28	24.29	25.50
HSDPA Subtest-1	22.95	23.07	23.19	23.50	23.41	23.47	23.47	24.00	23.37	23.40	23.39	24.00
HSDPA Subtest-2	23.03	23.04	23.13	23.50	23.50	23.44	23.39	24.00	23.35	23.39	23.40	24.00
HSDPA Subtest-3	22.57	22.56	22.66	23.50	22.94	22.94	22.96	24.00	22.89	22.93	22.99	24.00
HSDPA Subtest-4	22.59	22.49	22.65	23.50	22.98	22.97	22.90	24.00	22.93	22.91	22.88	24.00
DC-HSDPA Subtest-1	23.04	22.97	23.14	23.50	23.41	23.52	23.47	24.00	23.35	23.38	23.39	24.00
DC-HSDPA Subtest-2	22.93	23.08	23.08	23.50	23.47	23.44	23.43	24.00	23.38	23.43	23.43	24.00
DC-HSDPA Subtest-3	22.58	22.47	22.60	23.50	22.98	22.97	22.93	24.00	22.86	22.95	22.90	24.00
DC-HSDPA Subtest-4	22.42	22.55	22.62	23.50	22.96	22.94	22.98	24.00	22.86	22.88	22.95	24.00
HSUPA Subtest-1	21.09	21.26	21.29	22.50	21.67	21.64	21.65	23.00	21.57	21.58	21.60	23.00
HSUPA Subtest-2	20.97	20.89	21.05	22.50	21.39	21.41	21.35	23.00	21.33	21.37	21.30	23.00
HSUPA Subtest-3	21.71	21.80	21.89	22.50	22.27	22.31	22.19	23.00	22.16	22.18	22.19	23.00
HSUPA Subtest-4	20.73	20.57	20.59	22.50	21.05	21.17	21.03	23.00	21.20	21.18	21.19	23.00
HSUPA Subtest-5	21.72	21.92	21.99	22.50	22.21	22.27	22.25	23.00	22.20	22.21	22.25	23.00
HSPA+ Subtest-1	21.15	21.09	21.33	22.50	21.53	21.55	21.50	23.00	21.44	21.52	21.50	23.00

GSM&WCDMA DSI-3&4

Ant1

Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	128	189	251		512	661	810	
Channel	824.2	836.4	848.8		1850.2	1880	1909.8	
Frequency (MHz)								
GSM	32.33	32.37	32.43	33.50	29.31	29.32	29.24	30.50
GPRS 1Tx Slot	32.26	32.33	32.41	33.50	29.30	29.31	29.20	30.50
GPRS 2Tx Slot	28.90	28.97	29.09	30.00	25.63	25.80	25.85	26.50
GPRS 3Tx Slot	27.43	27.51	27.63	28.50	23.80	24.01	24.14	25.00
GPRS 4Tx Slot	26.38	26.45	26.59	27.50	22.81	23.04	23.23	24.00
EDGE 1Tx Slot	26.97	27.15	27.04	28.00	25.67	25.91	25.89	27.00
EDGE 2Tx Slot	23.67	23.82	23.75	25.00	22.60	22.92	22.85	24.00
EDGE 3Tx Slot	21.98	22.11	22.03	23.00	20.84	21.10	21.07	22.00
EDGE 4Tx Slot	21.28	21.33	21.34	22.00	19.77	19.96	20.01	21.00

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	128	189	251		512	661	810	
Channel								
Frequency (MHz)								
GSM	23.33	23.37	23.43	24.50	20.31	20.32	20.24	21.50
GPRS 1Tx Slot	23.26	23.33	23.41	24.50	20.30	20.31	20.20	21.50
GPRS 2Tx Slot	22.90	22.97	23.09	24.00	19.63	19.80	19.85	20.50
GPRS 3Tx Slot	23.17	23.25	23.37	24.24	19.54	19.75	19.88	20.74
GPRS 4Tx Slot	23.38	23.45	23.59	24.50	19.81	20.04	20.23	21.00
EDGE 1Tx Slot	17.97	18.15	18.04	19.00	16.67	16.91	16.89	18.00
EDGE 2Tx Slot	17.67	17.82	17.75	19.00	16.60	16.92	16.85	18.00
EDGE 3Tx Slot	17.72	17.85	17.77	18.74	16.58	16.84	16.81	17.74
EDGE 4Tx Slot	18.28	18.33	18.34	19.00	16.77	16.96	17.01	18.00

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
	9262	9400	9538		1312	1413	1513		4132	4182	4233	
TX Channel	9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel	9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
RMC 12.2K	20.75	20.81	20.89	22.00	20.22	20.25	20.17	21.50	24.23	24.28	24.29	25.50
HSDPA Subtest-1	19.71	19.96	19.86	20.50	19.17	19.34	19.33	20.00	23.37	23.40	23.39	24.00
HSDPA Subtest-2	19.88	19.91	20.03	20.50	19.31	19.20	19.17	20.00	23.35	23.39	23.40	24.00
HSDPA Subtest-3	19.24	19.33	19.31	20.50	18.84	18.83	18.85	20.00	22.89	22.93	22.99	24.00
HSDPA Subtest-4	19.29	19.30	19.45	20.50	18.79	18.79	18.70	20.00	22.93	22.91	22.88	24.00
DC-HSDPA Subtest-1	19.75	19.90	20.03	20.50	19.23	19.29	19.38	20.00	23.35	23.38	23.39	24.00
DC-HSDPA Subtest-2	19.77	19.86	20.00	20.50	19.45	19.31	19.24	20.00	23.38	23.43	23.43	24.00
DC-HSDPA Subtest-3	19.32	19.38	19.58	20.50	18.73	18.72	18.78	20.00	22.86	22.95	22.90	24.00
DC-HSDPA Subtest-4	19.34	19.40	19.40	20.50	18.86	18.86	18.88	20.00	22.86	22.88	22.95	24.00
HSUPA Subtest-1	17.98	18.07	18.09	19.50	17.59	17.49	17.48	19.00	21.57	21.58	21.60	23.00
HSUPA Subtest-2	17.72	17.72	17.89	19.50	17.09	17.33	17.19	19.00	21.33	21.37	21.30	23.00
HSUPA Subtest-3	18.71	18.61	18.78	19.50	18.08	18.16	17.96	19.00	22.16	22.18	22.19	23.00
HSUPA Subtest-4	17.60	17.57	17.55	19.50	17.13	17.08	17.11	19.00	21.20	21.18	21.19	23.00
HSUPA Subtest-5	18.54	18.67	18.81	19.50	18.07	18.18	18.06	19.00	22.20	22.21	22.25	23.00
HSPA+ Subtest-1	17.95	17.91	18.02	19.50	17.38	17.38	17.32	19.00	21.44	21.52	21.50	23.00

LTE DSI-1
Ann1

BW	Modulation	LTE Band 2						
		RB Size Channel Frequency (MHz)	RB Offset		Low	Mid	High	Max Time-up (dBm)
			1870	1900				
20M	QPSK	1	0	23.71	23.76	23.71	25.5	
		1	1	24.19	24.14	24.04	25.5	
		1	99	23.68	23.66	23.76	25.5	
		50	0	23.04	23.02	23.02	24.5	
		50	25	23.05	23.03	23.04	24.5	
		50	50	23.02	23.01	22.88	24.5	
	16QAM	100	0	23.07	23.01	22.96	24.5	
		1	0	23.05	23.01	23.08	24.5	
		1	50	23.37	23.45	23.29	24.5	
		1	99	23.01	22.98	22.92	24.5	
		50	0	22.08	22.13	22.05	23.5	
		50	25	22.09	22.17	22.10	23.5	
64QAM	50	50	22.07	22.11	21.93	23.5		
	100	0	22.05	22.08	21.99	23.5		
	1	0	21.92	21.96	21.97	23.5		
	1	50	22.30	22.31	22.33	23.5		
	1	99	21.90	21.91	21.98	23.5		
	50	0	20.99	21.11	21.05	22.5		
20M	QPSK	1	0	23.88	23.86	23.84	25.5	
		1	37	24.17	24.12	24.03	25.5	
		1	74	23.80	23.73	23.67	25.5	
		36	0	23.07	22.98	22.89	24.5	
		36	19	23.00	22.95	22.84	24.5	
		36	39	23.11	22.97	22.83	24.5	
	16QAM	75	0	22.90	23.09	22.93	24.5	
		1	0	22.63	22.74	22.68	24.5	
		1	37	22.99	22.83	22.80	24.5	
		1	74	22.67	22.58	22.58	24.5	
		36	19	21.91	21.84	21.82	23.5	
		36	19	21.95	21.86	22.01	23.5	
64QAM	36	39	21.97	22.00	21.79	23.5		
	75	0	22.10	21.94	22.04	23.5		
	1	0	21.72	21.65	21.58	23.5		
	1	37	21.95	21.91	22.04	23.5		
	1	74	21.70	21.73	21.77	23.5		
	36	0	20.86	20.79	20.84	22.5		
20M	QPSK	1	0	23.88	23.86	23.84	25.5	
		1	37	24.17	24.12	24.03	25.5	
		1	74	23.80	23.73	23.67	25.5	
		36	0	23.07	22.98	22.89	24.5	
		36	19	23.00	22.95	22.84	24.5	
		36	39	23.11	22.97	22.83	24.5	
	16QAM	75	0	22.90	23.09	22.93	24.5	
		1	0	22.63	22.74	22.68	24.5	
		1	37	22.99	22.83	22.80	24.5	
		1	74	22.67	22.58	22.58	24.5	
		36	19	21.91	21.84	21.82	23.5	
		36	19	21.95	21.86	22.01	23.5	
64QAM	36	39	21.97	22.00	21.79	23.5		
	75	0	22.10	21.94	22.04	23.5		
	1	0	21.72	21.65	21.58	23.5		
	1	37	21.95	21.91	22.04	23.5		
	1	74	21.70	21.73	21.77	23.5		
	36	0	20.86	20.79	20.84	22.5		
20M	QPSK	1	0	23.88	23.86	23.84	25.5	
		1	37	24.17	24.12	24.03	25.5	
		1	74	23.80	23.73	23.67	25.5	
		36	0	23.07	22.98	22.89	24.5	
		36	19	23.00	22.95	22.84	24.5	
		36	39	23.11	22.97	22.83	24.5	
	16QAM	75	0	22.90	23.09	22.93	24.5	
		1	0	22.63	22.74	22.68	24.5	
		1	37	22.99	22.83	22.80	24.5	
		1	74	22.67	22.58	22.58	24.5	
		36	19	21.91	21.84	21.82	23.5	
		36	19	21.95	21.86	22.01	23.5	
64QAM	36	39	21.97	22.00	21.79	23.5		
	75	0	22.10	21.94	22.04	23.5		
	1	0	21.72	21.65	21.58	23.5		
	1	37	21.95	21.91	22.04	23.5		
	1	74	21.70	21.73	21.77	23.5		
	36	0	20.86	20.79	20.84	22.5		

BW	Modulation	LTE Band 4						
		RB Size Channel Frequency (MHz)	RB Offset		Low	Mid	High	Max Time-up (dBm)
			2020	2075				
20M	QPSK	1	0	23.78	23.68	23.79	25.5	
		1	1	24.11	24.15	24.29	25.5	
		1	99	23.60	23.60	23.78	25.5	
		50	0	23.23	23.18	23.21	24.5	
		50	25	23.27	23.26	23.29	24.5	
		50	50	23.26	23.23	23.20	24.5	
	16QAM	100	0	23.21	23.20	23.23	24.5	
		1	0	23.06	23.12	23.15	24.5	
		1	50	23.44	23.47	23.48	24.5	
		1	99	23.21	23.19	23.12	24.5	
		50	0	22.22	22.18	22.22	23.5	
		50	25	22.26	22.26	22.26	23.5	
64QAM	50	50	22.24	22.24	22.21	23.5		
	100	0	22.17	22.21	22.22	23.5		
	1	0	21.98	22.06	22.08	23.5		
	1	50	22.28	22.44	22.43	23.5		
	1	99	22.07	22.13	22.09	23.5		
	50	0	21.13	21.17	21.18	22.5		
20M	QPSK	1	0	23.88	23.86	23.71	25.5	
		1	37	24.20	24.12	23.93	25.5	
		1	74	23.90	23.82	23.68	25.5	
		36	0	22.98	22.90	22.89	24.5	
		36	19	23.04	22.97	22.82	24.5	
		36	39	23.18	23.03	22.91	24.5	
	16QAM	75	0	23.00	23.00	22.94	24.5	
		1	0	22.77	22.76	22.61	24.5	
		1	37	22.91	22.91	22.74	24.5	
		1	74	22.67	22.55	22.59	24.5	
		36	19	21.99	21.88	21.81	23.5	
		36	19	21.82	21.92	21.90	23.5	
64QAM	36	39	21.99	22.03	21.78	23.5		
	75	0	22.10	21.99	21.97	23.5		
	1	0	21.68	21.75	21.58	23.5		
	1	37	22.01	21.97	22.13	23.5		
	1	74	21.72	21.72	21.74	23.5		
	36	0	20.90	20.76	20.83	22.5		
20M	QPSK	1	0	23.88	23.86	23.84	25.5	
		1	37	24.17	24.12	24.03	25.5	
		1	74	23.80	23.73	23.67	25.5	
		36	0	23.07	22.98	22.89	24.5	
		36	19	23.00	22.95	22.84	24.5	
		36	39	23.11	22.97	22.83	24.5	
	16QAM	75	0	22.90	23.09	22.93	24.5	
		1	0	22.63	22.74	22.68	24.5	
		1	37	22.99	22.83	22.80	24.5	
		1	74	22.67	22.58	22.58	24.5	
		36	19	21.91	21.84	21.82	23.5	
		36	19	21.95	21.86	22.01	23.5	
64QAM	36	39	21.97	22.00	21.79	23.5		
	75	0	22.10	21.94	22.04	23.5		
	1	0	21.72	21.65	21.58	23.5		
	1	37	21.95	21.91	22.04	23.5		
	1	74	21.70	21.73	21.77	23.5		
	36	0	20.86	20.79	20.84	22.5		

BW	Modulation	LTE Band 5						
		RB Size Channel Frequency (MHz)	RB Offset		Low	Mid	High	Max Time-up (dBm)
			2040	2055				
20M	QPSK	1	0	24.23	24.25	24.32	25.5	
		1	24	24.39	24.43	24.44	25.5	
		1	49	24.25	24.27	24.34	25.5	
		25	0	23.30	23.40	23.38	24.5	
		25	12	23.32	23.41	23.43	24.5	
		25	25	23.27	23.39	23.40	24.5	
	16QAM	50	0	23.29	23.25	23.38	24.5	
		1	0	23.50	23.55	23.56	24.5	
		1	24	23.73	23.61	23.65	24.5	
		1	49	23.53	23.54	23.55	24.5	
		25	0	22.41	22.50	22.37	23.5	
		25	12	22.38	22.42	22.47	23.5	
64QAM	25	25	22.33	22.50	22.45	23.5		
	50	0	22.37	22.48	22.41	23.5		
	1	0	22.46	22.62	22.60	23.5		
	1	24	22.61	22.61	22.68	23.5		
	1	49	22.49	22.46	22.56	23.5		
	25	0	21.35	21.48	21.32	22.5		
20M	QPSK	1	0	24.09	24.23	24.24	25.5	
		1	12	24.38	24.40	24.33	25.5	
		1	24	24.15	24.19	24.22	25.5	
		12	0	23.15	23.38	23.21	24.5	
		12	6	23.22	23.33	23.32	24.5	
		12	13	23.25	23.36	23.29	24.5	
	16QAM	25	0	23.14	23.31	23.21	24.5	
		1	0	23.48	23.52	23.43	24.5	
		1	12	23.72	23.60	23.50	24.5	
		1	24	23.40	23.49	23.48	24.5	
		12	0	22.40	22.45	22.24	23.5	
		12	6	22.29	22.40	22.39	23.5	
64QAM	12	13	22.32	22.36	22.30	23.5		
	25	0	22.24	22.47	22.31	23.5		
	1	0	22.45	22.54	22.44	23.5		
	1	12	22.47	22.49	22.53	23.5		
	1	24	22.44	22.43	22.53	23.5		
	12	0	21.28	21.47	21.31	22.5		
20M	QPSK	1	0	24.23	24.25	24.32	25.5	
		1	7	24.38	24.41	24.30	25.5	
		1	14	24.20	24.17	24.28	25.5	
		8	0	23.25	23.29	23.23	24.5	
		8	3	23.29	23.39	23.37	24.5	
		8	7	23.19	23.36	23.37	24.5	
	16QAM	15	0	23.22	23.21	23.32	24.5	
		1	0	23.49	23.54	23.44	24.5	
		1	7	23.65	23.57	23.50	24.5	
		1	14	23.43	23.46	23.47	24.5	
		8						

LTE CSI-2
Ann1

		LTE Band 2					
BW	Modulation	RB Size	RB Offset	Low	Mid	High	Max. Tune-up (dBm)
		Channel	Channel	1870	1890	1910	
		Frequency (MHz)					
20M	QPSK	1	0	23.38	23.42	23.33	25
		1	50	23.50	23.43	23.45	25
		1	99	23.23	23.42	23.18	25
		50	0	22.79	22.81	22.83	24.5
		50	25	22.89	22.83	22.85	24.5
	16QAM	50	50	22.82	22.71	22.78	24.5
		100	0	22.91	22.90	22.87	24.5
		1	0	22.78	22.90	22.82	24.5
		1	50	23.16	23.34	23.12	24.5
		1	99	22.90	22.73	22.88	24.5
	64QAM	50	0	21.85	21.94	21.85	23.5
		50	25	21.83	22.04	21.90	23.5
		50	50	21.91	21.52	21.67	23.5
		100	0	21.90	21.86	21.84	23.5
		1	0	21.76	21.79	21.74	23.5
15M	QPSK	1	0	23.28	23.29	23.24	25
		1	37	23.45	23.39	23.33	25
		1	74	23.16	23.40	23.07	25
		36	0	22.70	22.78	22.84	24.5
		36	39	22.73	22.73	22.73	24.5
	16QAM	36	39	22.92	22.85	22.96	24.5
		75	0	22.88	22.73	22.82	24.5
		1	0	22.67	22.77	22.68	24.5
		1	37	23.05	23.25	23.06	24.5
		1	74	22.89	22.69	22.81	24.5
	64QAM	36	0	21.80	21.93	21.70	23.5
		36	19	21.80	21.98	21.79	23.5
		36	39	21.82	21.81	21.63	23.5
		75	0	21.84	21.72	21.78	23.5
		1	0	21.65	21.60	21.65	23.5
10M	QPSK	1	0	23.24	23.20	23.19	25
		1	24	23.36	23.33	23.29	25
		1	49	23.16	23.34	23.08	25
		25	0	22.67	22.69	22.90	24.5
		25	12	22.83	22.66	22.85	24.5
	16QAM	25	25	22.90	22.82	22.67	24.5
		50	0	22.84	22.72	22.81	24.5
		1	0	22.75	22.75	22.77	24.5
		1	24	23.15	23.20	22.98	24.5
		1	49	22.88	22.69	22.73	24.5
	64QAM	25	0	21.81	21.81	21.84	23.5
		25	12	21.82	21.86	21.84	23.5
		25	25	21.84	21.89	21.84	23.5
		50	0	21.78	21.78	21.71	23.5
		1	0	21.70	21.78	21.62	23.5
5M	QPSK	1	0	23.24	23.20	23.17	25
		1	12	23.39	23.37	23.38	25
		1	24	23.09	23.40	23.17	25
		12	0	22.66	22.77	22.82	24.5
		12	6	22.83	22.66	22.85	24.5
	16QAM	12	13	22.89	22.81	22.84	24.5
		25	0	22.79	22.76	22.79	24.5
		1	0	22.72	22.75	22.80	24.5
		1	12	23.01	23.26	23.00	24.5
		1	24	22.87	22.71	22.83	24.5
	64QAM	12	0	21.78	21.79	21.83	23.5
		12	6	21.82	21.95	21.83	23.5
		12	13	21.89	21.82	21.53	23.5
		25	0	21.78	21.83	21.73	23.5
		1	0	21.62	21.69	21.66	23.5
3M	QPSK	1	0	23.35	23.33	23.27	25
		1	7	23.37	23.38	23.42	25
		1	14	23.12	23.31	23.18	25
		8	0	22.74	22.74	22.82	24.5
		8	3	22.74	22.73	22.88	24.5
	16QAM	8	7	22.95	22.79	22.65	24.5
		15	0	22.85	22.67	22.80	24.5
		1	0	22.98	22.97	22.70	24.5
		1	7	23.05	23.25	23.11	24.5
		1	14	22.86	22.58	22.82	24.5
	64QAM	8	0	21.84	21.80	21.73	23.5
		8	3	21.73	21.93	21.88	23.5
		8	7	21.81	21.78	21.57	23.5
		15	0	21.83	21.82	21.79	23.5
		1	0	21.68	21.70	21.73	23.5
1.4M	QPSK	1	0	23.37	23.34	23.20	25
		1	2	23.40	23.43	23.42	25
		1	5	23.08	23.27	23.05	25
		3	0	23.13	23.11	23.23	25
		3	1	23.14	23.18	23.18	25
	16QAM	3	3	23.34	23.34	23.36	25
		6	0	22.87	22.86	22.79	24.5
		1	0	22.73	22.75	22.76	24.5
		1	2	23.13	23.32	23.08	24.5
		1	5	22.86	22.62	22.87	24.5
	64QAM	3	0	22.85	22.70	22.83	24.5
		3	3	22.69	22.85	22.84	24.5
		3	3	22.72	22.67	22.53	24.5
		6	0	21.76	21.77	21.80	23.5
		1	0	21.65	21.70	21.69	23.5

		LTE Band 4					
BW	Modulation	RB Size	RB Offset	Low	Mid	High	Max. Tune-up (dBm)
		Channel	Channel	2050	2075	2100	
		Frequency (MHz)					
20M	QPSK	1	0	23.78	23.68	23.79	25.5
		1	50	24.11	24.11	24.11	25.5
		1	99	23.90	23.80	23.78	25.5
		50	0	23.23	23.18	23.21	24.5
		50	25	23.27	23.26	23.29	24.5
	16QAM	50	50	23.26	23.23	23.20	24.5
		100	0	23.21	23.22	23.23	24.5
		1	0	23.06	23.12	23.15	24.5
		1	50	23.44	23.47	23.42	24.5
		1	99	23.21	23.19	23.12	24.5
	64QAM	50	0	22.22	22.18	22.22	23.5
		50	25	22.25	22.26	22.26	23.5
		50	50	22.24	22.24	22.21	23.5
		100	0	22.17	22.21	22.22	23.5
		1	0	21.88	22.08	22.08	23.5
15M	QPSK	1	0	23.88	23.82	23.71	25.5
		1	37	24.20	24.12	23.93	25.5
		1	74	23.90	23.62	23.68	25.5
		36	0	22.96	22.90	22.89	24.5
		36	19	22.94	22.94	22.82	24.5
	16QAM	36	39	23.18	23.03	22.91	24.5
		75	0	23.00	23.00	22.94	24.5
		1	0	22.77	22.76	22.81	24.5
		1	37	22.91	22.91	22.74	24.5
		1	74	22.87	22.83	22.89	24.5
	64QAM	36	0	21.99	21.88	21.81	23.5
		36	19	21.82	21.82	21.80	23.5
		36	39	21.99	21.92	21.78	23.5
		75	0	22.10	21.89	21.97	23.5
		1	0	21.66	21.65	21.65	23.5
10M	QPSK	1	0	23.82	23.80	23.83	25.5
		1	24	24.20	24.04	23.82	25.5
		1	49	23.89	23.75	23.78	25.5
		25	0	23.06	22.88	22.90	24.5
		25	12	23.03	22.85	22.88	24.5
	16QAM	25	25	23.18	23.02	22.93	24.5
		50	0	22.96	22.98	22.94	24.5
		1	0	22.87	22.79	22.79	24.5
		1	24	22.91	22.90	22.82	24.5
		1	49	22.61	22.64	22.62	24.5
	64QAM	25	0	21.98	21.90	21.85	23.5
		25	12	21.88	21.89	21.95	23.5
		25	25	21.95	21.97	21.98	23.5
		50	0	22.05	21.88	21.94	23.5
		1	0	21.73	21.81	21.82	23.5
5M	QPSK	1	0	23.86	23.80	23.82	25.5
		1	12	24.21	24.06	23.92	25.5
		1	24	23.93	23.76	23.79	25.5
		12	0	23.03	22.85	22.99	24.5
		12	6	23.09	22.95	22.98	24.5
	16QAM	12	13	23.09	23.00	22.84	24.5
		25	0	22.97	23.04	22.83	24.5
		1	0	22.74	22.70	22.70	24.5
		1	12	22.94	22.84	22.72	24.5
		1	24	22.88	22.69	22.58	24.5
	64QAM	12	0	21.93	21.89	21.84	23.5
		12	6	21.87	21.84	21.91	23.5
		12	13	21.90	21.98	21.82	23.5
		25	0	22.09	21.88	21.94	23.5
		1	0	21.85	21.70	21.55	23.5
3M	QPSK	1	0	23.95	23.92	23.95	25.5
		1	7	24.25	24.13	23.86	25.5
		1	14	23.90	23.84	23.82	25.5
		8	0	23.10	22.95	23.01	24.5
		8	3	22.99	22.87	22.88	24.5
	16QAM	8	7	23.09	23.03	22.94	24.5
		15	0	23.02	22.98	22.84	24.5
		1	0	22.98	22.89	22.88	24.5
		1	7	22.94	22.92	22.71	24.5
		1	14	22.58	22.67	22.49	24.5
	64QAM	8	0	22.00	21.87	21.84	23.5
		8	3	21.86	21.83	21.93	23.5
		8	7	22.00	22.10	21.85	23.5
		15	0	22.05	21.94	22.04	23.5
		1	0	21.62	21.78	21.65	23.5
1.4M	QPSK	1	0	23.97	23.95	23.93	25.5
		1	2	24.01	24.05	24.15	25.5
		1	5	23.81	23.65	23.77	25.5
		3	0	23.96	23.95	23.89	25.5
		3	1	24.07	24.05	24.01	25.5
	16QAM	3	3	24.06	24.04	24.01	25.5
		6	0	23.15	23.08	23.16	24.5
		1	0	23.05	23.04	23.10	24.5
		1	2	23.33	23.45	23.43	24.5
		1	5	23.08	23.17		

LTE Band 7										
BW	Modulation	RB Size		RB Offset	RB	RB Offset	RB	RB Offset	RB	RB Offset
		Channel	Channel							
OPSK	QPSK	1	0	22.04	22.04	22.04	24	24	24	24
		1	50	22.06	22.06	22.06	24	24	24	24
		50	0	22.08	22.08	22.08	24	24	24	24
		50	25	22.10	22.10	22.10	24	24	24	24
		50	50	22.12	22.12	22.12	24	24	24	24
		100	0	22.14	22.14	22.14	24	24	24	24
		1	50	22.16	22.16	22.16	24	24	24	24
		50	25	22.18	22.18	22.18	24	24	24	24
		50	50	22.20	22.20	22.20	24	24	24	24
		100	0	22.22	22.22	22.22	24	24	24	24
SC-FDMA	SC-FDMA	1	50	22.24	22.24	22.24	24	24	24	24
		50	25	22.26	22.26	22.26	24	24	24	24
		50	50	22.28	22.28	22.28	24	24	24	24
		100	0	22.30	22.30	22.30	24	24	24	24
		1	50	22.32	22.32	22.32	24	24	24	24
		50	25	22.34	22.34	22.34	24	24	24	24
		50	50	22.36	22.36	22.36	24	24	24	24
		100	0	22.38	22.38	22.38	24	24	24	24
		1	50	22.40	22.40	22.40	24	24	24	24
		100	0	22.42	22.42	22.42	24	24	24	24
SC-FDMA	SC-FDMA	1	50	22.44	22.44	22.44	24	24	24	24
		50	25	22.46	22.46	22.46	24	24	24	24
		50	50	22.48	22.48	22.48	24	24	24	24
		100	0	22.50	22.50	22.50	24	24	24	24
		1	50	22.52	22.52	22.52	24	24	24	24
		50	25	22.54	22.54	22.54	24	24	24	24
		50	50	22.56	22.56	22.56	24	24	24	24
		100	0	22.58	22.58	22.58	24	24	24	24
		1	50	22.60	22.60	22.60	24	24	24	24
		100	0	22.62	22.62	22.62	24	24	24	24

LTE Band 38										
BW	Modulation	RB Size		RB Offset	RB	RB Offset	RB	RB Offset	RB	RB Offset
		Channel	Channel							
OPSK	QPSK	1	0	21.92	21.92	21.92	24	24	24	24
		1	50	21.94	21.94	21.94	24	24	24	24
		50	0	21.96	21.96	21.96	24	24	24	24
		50	25	21.98	21.98	21.98	24	24	24	24
		50	50	22.00	22.00	22.00	24	24	24	24
		100	0	22.02	22.02	22.02	24	24	24	24
		1	50	22.04	22.04	22.04	24	24	24	24
		50	25	22.06	22.06	22.06	24	24	24	24
		50	50	22.08	22.08	22.08	24	24	24	24
		100	0	22.10	22.10	22.10	24	24	24	24
SC-FDMA	SC-FDMA	1	50	22.12	22.12	22.12	24	24	24	24
		50	25	22.14	22.14	22.14	24	24	24	24
		50	50	22.16	22.16	22.16	24	24	24	24
		100	0	22.18	22.18	22.18	24	24	24	24
		1	50	22.20	22.20	22.20	24	24	24	24
		50	25	22.22	22.22	22.22	24	24	24	24
		50	50	22.24	22.24	22.24	24	24	24	24
		100	0	22.26	22.26	22.26	24	24	24	24
		1	50	22.28	22.28	22.28	24	24	24	24
		100	0	22.30	22.30	22.30	24	24	24	24
SC-FDMA	SC-FDMA	1	50	22.32	22.32	22.32	24	24	24	24
		50	25	22.34	22.34	22.34	24	24	24	24
		50	50	22.36	22.36	22.36	24	24	24	24
		100	0	22.38	22.38	22.38	24	24	24	24
		1	50	22.40	22.40	22.40	24	24	24	24
		50	25	22.42	22.42	22.42	24	24	24	24
		50	50	22.44	22.44	22.44	24	24	24	24
		100	0	22.46	22.46	22.46	24	24	24	24
		1	50	22.48	22.48	22.48	24	24	24	24
		100	0	22.50	22.50	22.50	24	24	24	24

LTE Band 41 (2400 - 2600MHz)										
BW	Modulation	RB Size		RB Offset	RB	RB Offset	RB	RB Offset	RB	RB Offset
		Channel	Channel							
OPSK	QPSK	1	0	23.96	23.96	23.96	24	24	24	24
		1	50	23.98	23.98	23.98	24	24	24	24
		50	0	24.00	24.00	24.00	24	24	24	24
		50	25	24.02	24.02	24.02	24	24	24	24
		50	50	24.04	24.04	24.04	24	24	24	24
		100	0	24.06	24.06	24.06	24	24	24	24
		1	50	24.08	24.08	24.08	24	24	24	24
		50	25	24.10	24.10	24.10	24	24	24	24
		50	50	24.12	24.12	24.12	24	24	24	24
		100	0	24.14	24.14	24.14	24	24	24	24
SC-FDMA	SC-FDMA	1	50	24.16	24.16	24.16	24	24	24	24
		50	25	24.18	24.18	24.18	24	24	24	24
		50	50	24.20	24.20	24.20	24	24	24	24
		100	0	24.22	24.22	24.22	24	24	24	24
		1	50	24.24	24.24	24.24	24	24	24	24
		50	25	24.26	24.26	24.26	24	24	24	24
		50	50	24.28	24.28	24.28	24	24	24	24
		100	0	24.30	24.30	24.30	24	24	24	24
		1	50	24.32	24.32	24.32	24	24	24	24
		100	0	24.34	24.34	24.34	24	24	24	24
SC-FDMA	SC-FDMA	1	50	24.36	24.36	24.36	24	24	24	24
		50	25	24.38	24.38	24.38	24	24	24	24
		50	50	24.40	24.40	24.40	24	24	24	24
		100	0	24.42	24.42	24.42	24	24	24	24
		1	50	24.44	24.44	24.44	24	24	24	24
		50	25	24.46	24.46	24.46	24	24	24	24
		50	50	24.48	24.48	24.48	24	24	24	24
		100	0	24.50	24.50	24.50	24	24	24	24
		1	50	24.52	24.52	24.52	24	24	24	24
		100	0	24.54	24.54	24.54	24	24	24	24

LTE Band 66										
BW	Modulation	RB Size		RB Offset	RB	RB Offset	RB	RB Offset	RB	RB Offset
		Channel	Channel							
OPSK	QPSK	1	0	23.82	23.82	23.82	24	24	24	24
		1	50	23.84	23.84	23.84	24	24	24	24
		50	0	23.86	23.86	23.86	24	24	24	24
		50	25	23.88	23.88	23.88	24	24	24	24
		50	50	23.90	23.90	23.90	24	24	24	24
		100	0	23.92	23.92	23.92	24	24	24	24
		1	50	23.94	23.94	23.94	24	24	24	24
		50	25	23.96	23.96	23.96	24	24	24	24
		50	50	23.98	23.98	23.98	24	24	24	24
		100	0	24.00	24.00	24.00	24	24	24	24
SC-FDMA	SC-FDMA	1	50	24.02	24.02	24.02	24	24	24	24
		50	25	24.04	24.04	24.04	24	24	24	24
		50	50	24.06	24.06	24.06	24	24	24	24
		100	0	24.08	24.08	24.08	24	24	24	24
		1	50	24.10	24.10	24.10	24	24	24	24
		50	25	24.12	24.12	24.12	24	24	24	24
		50	50	24.14	24.14	24.14	24	24	24	24
		100	0	24.16	24.16	24.16	24	24	24	24
		1	50	24.18	24.18	24.18	24	24	24	24
		100	0	24.20	24.20	24.20	24	24	24	24
SC-FDMA	SC-FDMA	1	50	24.22	24.22	24.22	24	24	24	24
		50	25	24.24	24.24	24.24	24	24	24	24
		50	50	24.26	24.26	24.26	24	24	24	24
		100	0	24.28	24.28	24.28	24	24	24	24
		1	50	24.30	24.30	24.30	24	24	24	24
		50	25	24.32	24.32	24.32	24	24	24	24
		50	50	24.34	24.34	24.34	24	24	24	24
		100	0	24.36	24.36	24.36	24	24	24	24
		1	50	24.38	24.38	24.38	24	24	24	24
		100	0	24.40	24.40	24.40	24	24	24	24

LTE Band 66										
BW	Modulation	RB Size		RB Offset	RB	RB Offset	RB	RB Offset	RB	RB Offset
		Channel	Channel							
OPSK	QPSK	1	0	23.82	23.82	23.82	24	24	24	24
		1	50	23.84	23.84	23.84	24	24	24	24
		50	0	23.86	23.86	23.86	24	24	24	24
		50	25	23.88	23.88	23.88	24	24	24	24
		50	50	23.90	23.90	23.90	24	24	24	24
		100	0	23.92	23.92	23.9				

BW	Modulation	LTE Band 2					Max. Time-upt. (dBm)
		RB Size	RB Offset	Low	Mid	High	
		Channel Frequency (MHz)	1870	1890	1910	1930	
20M	QPSK	1	0	20.28	20.42	20.27	22
		1	50	20.08	20.36	20.49	22
		1	99	20.29	20.42	20.33	22
		50	0	20.24	20.19	20.31	22
		50	25	20.38	20.20	20.35	22
	16QAM	50	50	20.20	20.21	20.17	22
		100	0	20.43	20.28	20.22	22
		1	0	20.24	20.38	20.29	22
		1	50	20.54	20.40	20.39	22
		1	99	20.31	20.20	20.22	22
64QAM	16QAM	50	0	20.29	20.38	20.24	22
		50	25	20.31	20.43	20.35	22
		50	50	20.28	20.31	20.11	22
		100	0	20.22	20.25	20.24	22
		1	0	20.21	20.21	20.17	22
	64QAM	1	50	20.50	20.32	20.17	22
		1	99	20.20	20.19	20.16	22
		50	0	20.24	20.39	20.27	22
		50	50	20.37	20.35	20.29	22
		100	0	20.24	20.29	20.23	22
15M	QPSK	1	0	20.25	20.27	20.13	22
		1	37	20.47	20.48	20.49	22
		1	74	20.15	20.35	20.23	22
		36	0	20.09	20.07	20.28	22
		36	19	20.32	20.23	20.28	22
	16QAM	36	39	20.11	20.15	20.07	22
		75	0	20.29	20.23	20.17	22
		1	0	20.12	20.16	20.22	22
		1	37	20.48	20.34	20.36	22
		1	74	20.21	20.07	20.09	22
64QAM	16QAM	36	0	20.21	20.28	20.21	22
		36	19	20.17	20.35	20.31	22
		36	39	20.15	20.22	20.04	22
		75	0	20.11	20.15	20.16	22
		1	0	20.12	20.07	20.13	22
	64QAM	1	37	20.35	20.25	20.02	22
		1	74	20.08	20.08	20.05	22
		36	0	20.16	20.26	20.21	22
		36	19	20.19	20.29	20.31	22
		36	39	20.24	20.20	20.18	22
10M	QPSK	1	0	20.15	20.15	20.29	22
		1	37	20.35	20.25	20.02	22
		1	74	20.08	20.08	20.05	22
		25	0	20.19	20.04	20.22	22
		25	12	20.23	20.16	20.20	22
	16QAM	25	25	20.19	20.16	20.04	22
		50	0	20.37	20.13	20.15	22
		1	0	20.15	20.16	20.22	22
		1	24	20.53	20.36	20.28	22
		1	49	20.28	20.15	20.21	22
64QAM	16QAM	25	0	20.20	20.27	20.19	22
		25	12	20.21	20.33	20.32	22
		25	25	20.27	20.19	20.13	22
		50	0	20.12	20.13	20.12	22
		1	0	20.17	20.12	20.08	22
	64QAM	1	24	20.37	20.20	20.05	22
		1	49	20.15	20.10	20.13	22
		25	0	20.21	20.37	20.19	22
		25	12	20.21	20.29	20.29	22
		25	25	20.36	20.27	20.27	22
5M	QPSK	1	0	20.15	20.16	20.22	22
		1	12	20.40	20.29	20.28	22
		1	24	20.18	20.12	20.13	22
		12	0	20.27	20.31	20.15	22
		12	13	20.21	20.39	20.31	22
	16QAM	12	13	20.21	20.18	20.11	22
		25	0	20.13	20.17	20.10	22
		1	0	20.07	20.08	20.03	22
		1	12	20.43	20.17	20.03	22
		1	24	20.12	20.14	20.15	22
64QAM	16QAM	12	0	20.22	20.35	20.14	22
		12	6	20.16	20.40	20.25	22
		12	13	20.34	20.32	20.19	22
		25	0	20.15	20.22	20.28	22
		1	0	20.19	20.16	20.25	22
	64QAM	1	12	20.43	20.17	20.03	22
		1	24	20.12	20.14	20.15	22
		12	0	20.22	20.35	20.14	22
		12	6	20.16	20.40	20.25	22
		12	13	20.34	20.32	20.19	22
3M	QPSK	1	0	20.19	20.30	20.17	22
		1	7	20.66	20.41	20.44	22
		1	14	20.16	20.38	20.21	22
		8	0	20.14	20.07	20.22	22
		8	3	20.36	20.17	20.22	22
	16QAM	8	7	20.14	20.08	20.06	22
		15	0	20.34	20.14	20.08	22
		1	0	20.14	20.16	20.17	22
		1	7	20.47	20.25	20.28	22
		1	14	20.16	20.07	20.12	22
64QAM	16QAM	8	0	20.17	20.24	20.15	22
		8	3	20.20	20.36	20.23	22
		8	7	20.17	20.27	20.45	22
		15	0	20.21	20.16	20.21	22
		1	0	20.09	20.20	20.09	22
	64QAM	1	7	20.42	20.21	20.11	22
		1	14	20.07	20.11	20.14	22
		8	0	20.15	20.24	20.23	22
		8	3	20.23	20.28	20.28	22
		8	7	20.22	20.22	20.20	22
1.4M	QPSK	15	0	20.22	20.15	20.21	22
		1	0	20.19	20.32	20.21	22
		1	5	20.22	20.40	20.32	22
		3	0	20.20	20.10	20.30	22
		3	3	20.34	20.17	20.30	22
	16QAM	3	3	20.15	20.15	20.16	22
		6	0	20.42	20.27	20.14	22
		1	0	20.11	20.16	20.14	22
		1	2	20.42	20.35	20.31	22
		1	5	20.24	20.10	20.20	22
64QAM	16QAM	3	0	20.21	20.31	20.12	22
		3	1	20.17	20.33	20.29	22
		3	3	20.27	20.28	20.29	22
		6	0	20.17	20.14	20.16	22
		1	0	20.13	20.13	20.12	22
	64QAM	1	2	20.36	20.19	20.08	22
		1	5	20.16	20.18	20.06	22
		3	0	20.14	20.31	20.16	22
		3	1	20.19	20.32	20.36	22
		3	3	20.30	20.30	20.28	22
1.4M	QPSK	6	0	20.23	20.16	20.22	22
		1	0	20.19	20.32	20.21	22
		1	5	20.22	20.40	20.32	22
		3	0	20.20	20.10	20.30	22
		3	3	20.34	20.17	20.30	22
	16QAM	3	3	20.15	20.15	20.16	22
		6	0	20.42	20.27	20.14	22
		1	0	20.11	20.16	20.14	22
		1	2	20.42	20.35	20.31	22
		1	5	20.24	20.10	20.20	22
64QAM	16QAM	3	0	20.21	20.31	20.12	22
		3	1	20.17	20.33	20.29	22
		3	3	20.27	20.28	20.29	22
		6	0	20.17	20.14	20.16	22
		1	0	20.13	20.13	20.12	22
	64QAM	1	2	20.36	20.19	20.08	22
		1	5	20.16	20.18	20.06	22
		3	0	20.14	20.31	20.16	22
		3	1	20.19	20.32	20.36	22
		3	3	20.30	20.30	20.28	22

BW	Modulation	LTE Band 4					Max. Time-upt. (dBm)
		RB Size	RB Offset	Low	Mid	High	
		Channel Frequency (MHz)	2050	2075	2090	1745	
20M	QPSK	1	0	19.81	19.69	19.87	21.5
		1	50	20.08	20.07	20.18	21.5
		1	99	19.87	19.83	19.85	21.5
		50	0	19.92	19.91	19.88	21.5
		50	25	19.91	19.95	20.07	21.5
	16QAM	50	50	19.94	19.94	19.87	21.5
		100	0	19.99	19.97	20.01	21.5
		1	0	19.77	19.84	19.84	21.5
		1	50	19.89	19.87	19.88	21.5
		1	99	19.91	19.90	19.89	21.5
64QAM	16QAM	50	0	19.96	19.96	19.97	21.5
		50	25	19.94	19.99	19.96	21.5
		50	50	19.93	19.93	19.85	21.5
		100	0	19.81	19.89	19.97	21.5
		1	0	19.76	19.75	19.75	21.5
	64QAM	1	50	19.84	19.93	19.83	21.5
		1	99	19.76	19.90	19.82	21.5
		50	0	19.79	19.95	19.94	21.5
		50	50	19.84	19.91	19.97	21.5
		100	0	19.83	19.93	19.91	21.5
15M	QPSK	1	0	19.68	19.78	19.77	21.5
		1	37	20.08	20.08	20.10	21.5
		1	74	19.81	19.79	19.68	21.5
		36	0	19.91	19.87	19.81	21.5
		36	19	19.86	19.83	19.93	21.5
	16QAM	36	39	19.86	19.85	19.86	21.5
		75	0	19.96	19.93	19.86	21.5
		1	0	19.72	19.71	19.73	21.5
		1	37	19.74	19.76	19.76	21.5
		1	74	19.85	19.82	19.85	21.5
64QAM	16QAM	36	0	19.83	19.85	19.84	21.5
		36	19	19.84	19.98	19.82	21.5
		36	39	19.76	19.79	19.74	21.5
		75	0	19.73	19.73	19.81	21.5
		1	0	19.66	19.68	19.62	21.5
	64QAM	1	37	19.82	19.83	19.69	21.5
		1	74	19.73	19.77	19.70	21.5

GSM&WCDMA Default

Ant4

Band	GSM850				GSM1900			
	128	189	251	Max. Tune-up Power (dBm)	512	661	810	Max. Tune-up Power (dBm)
Channel	824.2	836.4	848.8		1850.2	1880	1909.8	
GSM	32.20	32.37	32.43	33.50	29.30	29.41	29.44	30.50
GPRS 1Tx Slot	32.19	32.31	32.36	33.50	29.23	29.40	29.41	30.50
GPRS 2Tx Slot	28.81	28.92	29.05	30.00	25.57	25.77	25.99	26.50
GPRS 3Tx Slot	27.32	27.45	27.62	28.50	23.73	23.96	24.26	25.00
GPRS 4Tx Slot	26.27	26.40	26.54	27.50	22.77	23.00	23.33	24.00
EDGE 1Tx Slot	26.88	26.94	26.77	28.00	25.94	26.10	26.05	27.00
EDGE 2Tx Slot	23.63	23.66	23.42	25.00	22.89	23.12	23.04	24.00
EDGE 3Tx Slot	21.86	21.88	21.68	23.00	21.10	21.46	21.32	22.00
EDGE 4Tx Slot	21.03	20.98	21.04	22.00	20.16	20.35	20.28	21.00

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	128	189	251		512	661	810	
GSM	23.20	23.37	23.43	24.50	20.30	20.41	20.44	21.50
GPRS 1Tx Slot	23.19	23.31	23.36	24.50	20.23	20.40	20.41	21.50
GPRS 2Tx Slot	22.81	22.92	23.05	24.00	19.57	19.77	19.99	20.50
GPRS 3Tx Slot	23.06	23.19	23.36	24.24	19.47	19.70	20.00	20.74
GPRS 4Tx Slot	23.27	23.40	23.54	24.50	19.77	20.00	20.33	21.00
EDGE 1Tx Slot	17.88	17.94	17.77	19.00	16.94	17.10	17.05	18.00
EDGE 2Tx Slot	17.63	17.66	17.42	19.00	16.89	17.12	17.04	18.00
EDGE 3Tx Slot	17.60	17.62	17.42	18.74	16.84	17.20	17.06	17.74
EDGE 4Tx Slot	18.03	17.98	18.04	19.00	17.16	17.35	17.28	18.00

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
	9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel	9662	9800	9938	Max. Tune-up Power (dBm)	1537	1638	1738	Max. Tune-up Power (dBm)	4357	4407	4458	Max. Tune-up Power (dBm)
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
RMC 12.2K	24.28	24.36	24.45	25.50	24.46	24.44	24.41	25.50	24.17	24.19	24.25	25.50
HSDPA Subtest-1	23.41	23.45	23.61	24.00	23.64	23.61	23.54	24.00	23.26	23.35	23.43	24.00
HSDPA Subtest-2	23.39	23.50	23.59	24.00	23.56	23.58	23.56	24.00	23.37	23.36	23.42	24.00
HSDPA Subtest-3	22.91	22.97	23.14	24.00	23.16	23.12	23.03	24.00	22.77	22.80	22.88	24.00
HSDPA Subtest-4	22.98	23.06	23.07	24.00	23.15	23.11	23.06	24.00	22.84	22.78	22.87	24.00
DC-HSDPA Subtest-1	23.48	23.47	23.59	24.00	23.59	23.56	23.58	24.00	23.33	23.35	23.35	24.00
DC-HSDPA Subtest-2	23.45	23.53	23.61	24.00	23.65	23.57	23.54	24.00	23.34	23.32	23.39	24.00
DC-HSDPA Subtest-3	22.88	23.02	23.12	24.00	23.13	23.12	23.08	24.00	22.87	22.89	22.93	24.00
DC-HSDPA Subtest-4	22.95	22.96	23.07	24.00	23.12	23.09	23.04	24.00	22.79	22.81	22.90	24.00
HSUPA Subtest-1	21.59	21.68	21.84	23.00	21.78	21.76	21.71	23.00	21.51	21.55	21.58	23.00
HSUPA Subtest-2	21.32	21.45	21.49	23.00	21.52	21.44	21.41	23.00	21.16	21.29	21.27	23.00
HSUPA Subtest-3	22.21	22.35	22.43	23.00	22.43	22.35	22.40	23.00	22.13	22.10	22.24	23.00
HSUPA Subtest-4	21.17	21.08	21.18	23.00	21.23	21.14	21.11	23.00	21.10	21.16	21.20	23.00
HSUPA Subtest-5	22.22	22.34	22.40	23.00	22.36	22.33	22.33	23.00	22.13	22.08	22.15	23.00
HSPA+ Subtest-1	21.54	21.62	21.74	23.00	21.65	21.67	21.71	23.00	21.38	21.41	21.55	23.00

LTE Default Area

		LTE Band 2						
BW	Modulation	RB Size	RB Offset	Low	Mid	High	3GPP	Max.
		Channel	Frequency (MHz)	1880	1880	1910	MPE (dB)	Time-up (dB)
20M	QPSK	1	0	23.70	23.77	0	23.5	23.5
		1	50	24.15	24.14	24.13	0	23.5
		1	99	23.72	23.73	23.81	0	23.5
		50	0	23.06	23.02	1	24.5	24.5
		50	25	23.10	23.09	23.05	1	24.5
	16QAM	1	0	23.07	23.08	23.04	1	24.5
		100	0	23.08	23.06	23.07	1	24.5
		1	0	22.90	22.90	23.10	1	24.5
		1	50	23.30	23.48	23.40	1	24.5
		1	99	23.04	22.99	23.09	2	23.5
40QAM	16QAM	50	0	22.98	22.91	23.04	3	23.5
		50	25	22.12	22.23	21.16	2	23.5
		50	50	22.13	22.14	21.92	2	23.5
		100	0	22.07	22.16	21.99	2	23.5
		1	0	21.87	22.03	21.98	2	23.5
	64QAM	1	0	22.30	22.39	22.30	2	23.5
		1	50	22.05	21.96	22.03	2	23.5
		50	0	20.98	21.98	21.04	3	22.5
		50	25	21.08	21.20	21.13	3	22.5
		50	50	21.15	21.14	20.91	3	22.5
BW	Modulation	Channel	1887.5	1890	1912.5	3GPP	Max.	
		Frequency (MHz)	1887.5	1888	1902.5	MPE (dB)	Time-up (dB)	
		1	0	23.61	23.61	23.71	0	23.5
		1	37	23.63	23.66	23.61	0	23.5
		1	74	23.60	23.60	23.69	0	23.5
	QPSK	36	0	22.90	23.05	23.00	1	24.5
		36	19	23.05	23.01	22.95	1	24.5
		36	38	23.00	23.00	23.07	1	24.5
		75	0	23.04	23.04	23.04	1	24.5
		1	0	22.75	22.85	22.97	1	24.5
10M	16QAM	1	0	21.37	21.36	21.37	1	24.5
		1	37	22.88	22.88	22.97	1	24.5
		36	0	21.88	22.15	21.95	2	23.5
		36	19	22.00	22.20	22.14	2	23.5
		36	38	22.00	22.00	21.80	2	23.5
	64QAM	75	0	21.97	22.08	21.95	2	23.5
		1	0	21.82	21.99	21.90	2	23.5
		1	37	22.90	22.98	22.24	2	23.5
		1	74	22.01	21.92	21.98	2	23.5
		36	0	20.84	21.09	20.93	3	22.5
BW	Modulation	Channel	1880	1890	1910	3GPP	Max.	
		Frequency (MHz)	1880	1885	1905	MPE (dB)	Time-up (dB)	
		1	24	24.11	23.99	23.91	0	23.5
		1	49	23.71	23.72	23.76	0	23.5
		24	0	23.78	23.06	23.08	1	24.5
	QPSK	25	0	23.08	23.02	23.02	1	24.5
		25	25	22.96	23.07	23.04	1	24.5
		50	0	23.00	22.91	22.87	1	24.5
		1	0	22.86	22.96	22.97	1	24.5
		1	24	23.27	23.40	23.37	1	24.5
10M	16QAM	1	49	22.95	22.90	23.02	1	24.5
		25	0	21.96	22.13	21.90	2	23.5
		25	12	22.05	22.11	22.06	2	23.5
		25	25	22.00	22.05	21.79	2	23.5
		50	0	21.97	22.14	21.98	2	23.5
	64QAM	1	0	21.81	21.99	21.97	2	23.5
		1	24	22.15	22.25	22.24	2	23.5
		1	49	21.96	21.85	21.92	2	23.5
		25	0	21.02	21.12	21.02	3	22.5
		25	12	20.95	21.11	21.02	3	22.5
BW	Modulation	Channel	1882.5	1885	1907.5	3GPP	Max.	
		Frequency (MHz)	1882.5	1885	1902.5	MPE (dB)	Time-up (dB)	
		1	0	23.62	23.64	23.70	0	23.5
		1	12	24.09	24.01	23.98	0	23.5
		1	24	23.68	23.66	23.67	0	23.5
	QPSK	12	0	22.85	23.00	23.00	1	24.5
		12	6	22.97	23.02	23.02	1	24.5
		12	13	23.03	22.98	22.99	1	24.5
		25	0	23.00	22.98	23.04	1	24.5
		1	0	22.87	22.90	23.04	1	24.5
5M	16QAM	1	12	23.25	23.46	23.25	1	24.5
		1	24	22.86	22.96	22.98	1	24.5
		12	0	21.98	22.19	21.91	2	23.5
		12	6	22.00	22.17	22.10	2	23.5
		12	13	22.00	22.12	21.83	2	23.5
	64QAM	25	0	22.03	22.03	21.91	2	23.5
		1	0	21.77	21.96	21.85	2	23.5
		1	12	22.24	22.34	22.35	2	23.5
		1	24	21.95	21.88	21.88	2	23.5
		12	0	20.97	21.13	20.93	3	22.5
BW	Modulation	Channel	1887.5	1890	1910	3GPP	Max.	
		Frequency (MHz)	1887.5	1890	1905	MPE (dB)	Time-up (dB)	
		1	0	23.57	23.70	23.70	0	23.5
		1	7	24.00	24.11	24.04	0	23.5
		1	14	23.60	23.66	23.67	0	23.5
	QPSK	8	0	22.87	23.02	22.90	1	24.5
		8	3	23.04	22.96	22.99	1	24.5
		8	7	23.03	23.02	23.00	1	24.5
		15	0	23.05	23.02	23.01	1	24.5
		1	0	22.86	22.81	23.07	1	24.5
3M	16QAM	1	7	23.31	23.44	23.28	1	24.5
		1	14	22.99	22.98	22.92	1	24.5
		8	0	21.90	22.10	22.01	2	23.5
		8	3	22.11	22.09	22.04	2	23.5
		8	7	22.12	22.06	21.77	2	23.5
	64QAM	15	0	22.04	22.13	21.92	2	23.5
		1	0	21.84	21.89	21.84	2	23.5
		1	1	22.96	22.98	22.36	2	23.5
		1	14	21.95	21.80	21.88	2	23.5
		8	0	20.92	21.08	21.00	3	22.5
BW	Modulation	Channel	1882.5	1885	1902.5	3GPP	Max.	
		Frequency (MHz)	1882.5	1885	1902.5	MPE (dB)	Time-up (dB)	
		1	0	23.68	23.70	23.69	0	23.5
		1	2	24.03	24.11	24.05	0	23.5
		1	5	23.71	23.72	23.69	0	23.5
	QPSK	3	0	23.63	23.60	23.60	0	23.5
		3	1	23.86	23.80	23.76	0	23.5
		3	3	23.74	23.79	23.70	0	23.5
		6	0	23.05	23.04	22.92	1	24.5
		1	0	22.78	22.92	23.02	1	24.5
1.4M	16QAM	1	2	23.05	23.25	23.25	1	24.5
		1	5	23.03	22.91	22.94	1	24.5
		3	0	22.71	22.89	22.74	1	24.5
		3	1	22.79	23.02	22.85	1	24.5
		3	3	22.84	22.86	22.62	1	24.5
	64QAM	6	0	22.00	22.14	21.99	2	23.5
		1	0	21.77	21.94	21.88	2	23.5
		1	2	22.26	22.27	22.31	2	23.5
		1	5	21.96	21.86	21.93	2	23.5
		3	0	21.71	21.69	21.81	2	23.5

		LTE Band 4						
BW	Modulation	RB Size	RB Offset	Low	Mid	High	3GPP	Max.
		Channel	Frequency (MHz)	2090	2075	2090	MPE (dB)	Time-up (dB)
20M	QPSK	1	0	23.70	23.80	23.84	0	23.5
		1	50	23.94	24.02	24.06	0	23.5
		1	99	23.71	23.70	23.78	0	23.5
		50	0	22.86	22.86	23.01	1	24.5
		50	25	23.05	23.05	23.07	1	24.5
	16QAM	50	50	23.01	23.03	23.04	1	24.5
		100	0	22.89	22.89	23.03	1	24.5
		1	0	22.88	22.86	22.83	1	24.5
		1	50	23.23	23.30	23.34	1	24.5
		1	99	22.93	22.97	22.94	1	24.5
40QAM	16QAM	50	0	21.87	21.89	21.89	2	23.5
		50	25	22.04	22.06	22.06	2	23.5
		50	50	22.01	22.05	22.02	2	23.5
		100	0	21.84	22.00	22.00	2	23.5
		1	0	21.73	21.81	21.85	2	23.5
	64QAM	1	50	22.25	22.25	22.27	2	23.5
		1	99	21.90	21.96	21.91	2	23.5
		50	0	20.92	20.99	20.94	3	22.5
		50	25	20.99	21.05	21.02	3	22.5
		50	50	20.97	21.03	20.97	3	22.5
BW	Modulation	Channel	2082.5	2075	2092.5	3GPP	Max.	
		Frequency (MHz)	2082.5	2075	2092.5	MPE (dB)	Time-up (dB)	
		1	0	23.72	23.74	23.83	0	23.5
		1	37	23.81	23.89	23.82	0	23.5
		1	74	23.70	23.66	23.63	0	23.5
	QPSK	36	0	22.96	22.99	22.96	1	24.5
		36	19	22.94	23.01	22.98	1	24.5
		36	39	22.87	22.89	22.92	1	24.5
		75	0	22.85	23.01	22.99	1	24.5
		1	0	22.74	22.77	22.76	1	24.5
15M	16QAM	1	37	23.11	23.20	23.24	1	24.5
		1	74	22.88	22.81	22.88	1	24.5
		36	0	21.84	21.89	21.95	2	23.5
		36	19	21.82	21.97	21.95	2	23.5
		36	39	21.87	21.89	21.80	2	23.5
	64QAM	75	0	21.82	22.01	21.97	2	23.5
		1	0	21.65	21.70	21.76	2	23.5
		1	37	22.21	22.18	22.26	2	23.5
		1	74					

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Ant4

Band	GSM850				GSM1900			
	128	189	251	Max. Tune-up Power (dBm)	512	661	810	Max. Tune-up Power (dBm)
Channel	824.2	836.4	848.8			1850.2	1880	
Frequency (MHz)								
GSM	31.25	31.32	31.42	32.50	23.44	23.58	23.59	24.50
GPRS 1Tx Slot	31.22	31.28	31.45	32.50	23.45	23.53	23.57	24.50
GPRS 2Tx Slot	27.93	28.00	28.20	29.00	19.26	19.63	20.08	20.50
GPRS 3Tx Slot	26.34	26.42	26.61	27.50	17.60	18.08	18.41	19.00
GPRS 4Tx Slot	25.28	25.39	25.56	26.50	16.51	17.07	17.22	18.00
EDGE 1Tx Slot	27.04	27.02	26.82	28.00	22.18	22.17	22.24	23.00
EDGE 2Tx Slot	23.61	23.77	23.52	25.00	18.88	18.86	18.96	20.00
EDGE 3Tx Slot	21.83	22.02	21.74	23.00	16.93	17.01	17.09	18.00
EDGE 4Tx Slot	21.14	21.17	21.04	22.00	16.00	15.99	15.96	17.00

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	128	189	251		512	661	810	
Channel								
GSM	22.25	22.32	22.42	23.50	14.44	14.58	14.59	15.50
GPRS 1Tx Slot	22.22	22.28	22.45	23.50	14.45	14.53	14.57	15.50
GPRS 2Tx Slot	21.93	22.00	22.20	23.00	13.26	13.63	14.08	14.50
GPRS 3Tx Slot	22.08	22.16	22.35	23.24	13.34	13.82	14.15	14.74
GPRS 4Tx Slot	22.28	22.39	22.56	23.50	13.51	14.07	14.22	15.00
EDGE 1Tx Slot	18.04	18.02	17.82	19.00	13.18	13.17	13.24	14.00
EDGE 2Tx Slot	17.61	17.77	17.52	19.00	12.88	12.86	12.96	14.00
EDGE 3Tx Slot	17.57	17.76	17.48	18.74	12.67	12.75	12.83	13.74
EDGE 4Tx Slot	18.14	18.17	18.04	19.00	13.00	12.99	12.96	14.00

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
	9262	9400	9538		1312	1413	1513		4132	4182	4233	
TX Channel	9662	9800	9938		1537	1638	1738		4357	4407.00	4458	
Rx Channel	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.40	846.6	
Frequency (MHz)												
RMC 12.2K	14.19	14.24	14.25	15.50	14.95	14.93	14.88	16.00	21.63	21.65	21.68	23.00
HSDPA Subtest-1	13.28	13.36	13.46	14.00	14.06	14.07	14.03	14.50	20.79	20.77	20.86	21.50
HSDPA Subtest-2	13.30	13.32	13.43	14.00	14.02	14.03	13.92	14.50	20.81	20.84	20.85	21.50
HSDPA Subtest-3	12.71	12.77	12.98	14.00	13.58	13.54	13.45	14.50	20.22	20.25	20.31	21.50
HSDPA Subtest-4	12.82	12.99	13.00	14.00	13.61	13.66	13.40	14.50	20.33	20.25	20.24	21.50
DC-HSDPA Subtest-1	13.38	13.34	13.50	14.00	14.04	14.09	14.11	14.50	20.76	20.70	20.78	21.50
DC-HSDPA Subtest-2	13.25	13.44	13.54	14.00	14.04	14.06	14.00	14.50	20.82	20.74	20.88	21.50
DC-HSDPA Subtest-3	12.71	12.90	12.94	14.00	13.59	13.54	13.52	14.50	20.23	20.28	20.50	21.50
DC-HSDPA Subtest-4	12.80	12.81	12.96	14.00	13.48	13.58	13.52	14.50	20.23	20.19	20.38	21.50
HSUPA Subtest-1	11.40	11.49	11.70	13.00	12.24	12.20	12.28	13.50	18.96	19.02	19.11	20.50
HSUPA Subtest-2	11.20	11.33	11.41	13.00	12.02	11.93	11.92	13.50	18.63	18.75	18.67	20.50
HSUPA Subtest-3	12.14	12.21	12.33	13.00	12.85	12.73	12.75	13.50	19.54	19.51	19.66	20.50
HSUPA Subtest-4	11.11	11.23	11.18	13.00	11.66	11.74	11.62	13.50	18.92	18.90	18.92	20.50
HSUPA Subtest-5	12.11	12.26	12.22	13.00	12.94	12.70	12.78	13.50	19.59	19.56	19.65	20.50
HSPA+ Subtest-1	11.37	11.43	11.63	13.00	12.20	12.18	12.06	13.50	18.74	18.73	19.07	20.50

GSM&WCDMA DSI-2

Ant4

Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
Channel	128	189	251		512	661	810	
Frequency (MHz)	824.2	836.4	848.8	1850.2	1880	1909.8		
GSM	32.20	32.37	32.43	33.50	29.30	29.41	29.44	30.50
GPRS 1Tx Slot	32.19	32.31	32.36	33.50	29.23	29.40	29.41	30.50
GPRS 2Tx Slot	28.81	28.92	29.05	30.00	25.57	25.77	25.99	26.50
GPRS 3Tx Slot	27.32	27.45	27.62	28.50	23.73	23.96	24.26	25.00
GPRS 4Tx Slot	26.27	26.40	26.54	27.50	22.77	23.00	23.33	24.00
EDGE 1Tx Slot	26.88	26.94	26.77	28.00	25.94	26.10	26.05	27.00
EDGE 2Tx Slot	23.63	23.66	23.42	25.00	22.89	23.12	23.04	24.00
EDGE 3Tx Slot	21.86	21.88	21.68	23.00	21.10	21.46	21.32	22.00
EDGE 4Tx Slot	21.03	20.98	21.04	22.00	20.16	20.35	20.28	21.00

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
Channel	128	189	251		512	661	810	
GSM	23.20	23.37	23.43	24.50	20.30	20.41	20.44	21.50
GPRS 1Tx Slot	23.19	23.31	23.36	24.50	20.23	20.40	20.41	21.50
GPRS 2Tx Slot	22.81	22.92	23.05	24.00	19.57	19.77	19.99	20.50
GPRS 3Tx Slot	23.06	23.19	23.36	24.24	19.47	19.70	20.00	20.74
GPRS 4Tx Slot	23.27	23.40	23.54	24.50	19.77	20.00	20.33	21.00
EDGE 1Tx Slot	17.88	17.94	17.77	19.00	16.94	17.10	17.05	18.00
EDGE 2Tx Slot	17.63	17.66	17.42	19.00	16.89	17.12	17.04	18.00
EDGE 3Tx Slot	17.60	17.62	17.42	18.74	16.84	17.20	17.06	17.74
EDGE 4Tx Slot	18.03	17.98	18.04	19.00	17.16	17.35	17.28	18.00

Band	WCDMA II			WCDMA II Max. Tune-up Power (dBm)	WCDMA IV			WCDMA IV Max. Tune-up Power (dBm)	WCDMA V			WCDMA V Max. Tune-up Power (dBm)
TX Channel	9262	9400	9538		1312	1413	1513		4132	4182	4233	
Rx Channel	9662	9800	9938	1537	1638	1738	4357	4407	4458			
Frequency (MHz)	1852.4	1880	1907.6	1712.4	1732.6	1752.6	826.4	836.4	846.6			
RMC 12.2K	21.03	21.15	21.29	22.50	21.40	21.34	21.24	22.50	24.17	24.19	24.25	25.50
HSDPA Subtest-1	20.15	20.17	20.54	21.00	20.50	20.46	20.41	21.00	23.26	23.35	23.43	24.00
HSDPA Subtest-2	20.24	20.31	20.50	21.00	20.43	20.40	20.44	21.00	23.37	23.36	23.42	24.00
HSDPA Subtest-3	19.78	19.76	19.95	21.00	20.02	20.03	19.87	21.00	22.77	22.80	22.88	24.00
HSDPA Subtest-4	19.75	19.84	19.97	21.00	20.09	19.88	19.96	21.00	22.84	22.78	22.87	24.00
DC-HSDPA Subtest-1	20.36	20.28	20.30	21.00	20.38	20.28	20.46	21.00	23.33	23.35	23.35	24.00
DC-HSDPA Subtest-2	20.21	20.34	20.51	21.00	20.50	20.53	20.38	21.00	23.34	23.32	23.39	24.00
DC-HSDPA Subtest-3	19.74	19.91	20.05	21.00	19.95	20.05	19.90	21.00	22.87	22.89	22.93	24.00
DC-HSDPA Subtest-4	19.75	19.84	19.99	21.00	19.97	20.04	19.97	21.00	22.79	22.81	22.90	24.00
HSUPA Subtest-1	18.47	18.56	18.75	20.00	18.68	18.48	18.55	20.00	21.51	21.55	21.58	23.00
HSUPA Subtest-2	18.11	18.31	18.29	20.00	18.28	18.29	18.15	20.00	21.16	21.29	21.27	23.00
HSUPA Subtest-3	19.04	19.32	19.24	20.00	19.29	19.05	19.20	20.00	22.13	22.10	22.24	23.00
HSUPA Subtest-4	18.12	18.23	18.17	20.00	18.26	18.17	18.19	20.00	21.10	21.16	21.20	23.00
HSUPA Subtest-5	18.99	19.15	19.26	20.00	19.15	19.15	19.23	20.00	22.13	22.08	22.15	23.00
HSPA+ Subtest-1	18.39	18.54	18.54	20.00	18.42	18.51	18.51	20.00	21.38	21.41	21.55	23.00

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Ant4

Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	Channel	128	189		251	512	661	
Frequency (MHz)	824.2	836.4	848.8		1850.2	1880	1909.8	
GSM	32.20	32.37	32.43	33.50	25.70	25.95	26.09	27.00
GPRS 1Tx Slot	32.19	32.31	32.36	33.50	25.67	25.88	26.05	27.00
GPRS 2Tx Slot	28.81	28.92	29.05	30.00	22.00	22.29	22.61	23.00
GPRS 3Tx Slot	27.32	27.45	27.62	28.50	20.17	20.54	20.95	21.50
GPRS 4Tx Slot	26.27	26.40	26.54	27.50	19.08	19.49	19.95	20.50
EDGE 1Tx Slot	26.88	26.94	26.77	28.00	24.55	24.71	24.58	25.50
EDGE 2Tx Slot	23.63	23.66	23.42	25.00	21.43	21.65	21.49	22.50
EDGE 3Tx Slot	21.86	21.88	21.68	23.00	19.68	19.85	19.66	20.50
EDGE 4Tx Slot	21.03	20.98	21.04	22.00	18.61	18.65	18.54	19.50

Source-Based Time-Averaged Power								
Band	GSM850			Max. Tune-up Power (dBm)	GSM1900			Max. Tune-up Power (dBm)
	Channel	128	189		251	512	661	
GSM	23.20	23.37	23.43	24.50	16.70	16.95	17.09	18.00
GPRS 1Tx Slot	23.19	23.31	23.36	24.50	16.67	16.88	17.05	18.00
GPRS 2Tx Slot	22.81	22.92	23.05	24.00	16.00	16.29	16.61	17.00
GPRS 3Tx Slot	23.06	23.19	23.36	24.24	15.91	16.28	16.69	17.24
GPRS 4Tx Slot	23.27	23.40	23.54	24.50	16.08	16.49	16.95	17.50
EDGE 1Tx Slot	17.88	17.94	17.77	19.00	15.55	15.71	15.58	16.50
EDGE 2Tx Slot	17.63	17.66	17.42	19.00	15.43	15.65	15.49	16.50
EDGE 3Tx Slot	17.60	17.62	17.42	18.74	15.42	15.59	15.40	16.24
EDGE 4Tx Slot	18.03	17.98	18.04	19.00	15.61	15.65	15.54	16.50

Band	WCDMA II			WCDMA II	WCDMA IV			WCDMA IV	WCDMA V			WCDMA V
	TX Channel	9262	9400		9538	1312	1413		1513	Max. Tune-up Power (dBm)	4132	
Rx Channel	9662	9800	9938		1537	1638	1738		4357	4407	4458	
Frequency (MHz)	1852.4	1880	1907.6		1712.4	1732.6	1752.6		826.4	836.4	846.6	
RMC 12.2K	17.41	17.45	17.51	18.50	17.92	17.87	17.83	19.00	24.17	24.19	24.25	25.50
HSDPA Subtest-1	16.55	16.50	16.36	17.00	17.11	17.09	17.03	17.50	23.26	23.35	23.43	24.00
HSDPA Subtest-2	16.45	16.63	16.53	17.00	16.98	17.04	17.10	17.50	23.37	23.36	23.42	24.00
HSDPA Subtest-3	16.05	16.09	16.24	17.00	16.62	16.56	16.51	17.50	22.77	22.80	22.88	24.00
HSDPA Subtest-4	16.05	16.20	16.17	17.00	16.63	16.60	16.49	17.50	22.84	22.78	22.87	24.00
DC-HSDPA Subtest-1	16.57	16.48	16.69	17.00	17.09	17.09	17.08	17.50	23.33	23.35	23.35	24.00
DC-HSDPA Subtest-2	16.52	16.60	16.75	17.00	17.07	17.10	17.04	17.50	23.34	23.32	23.39	24.00
DC-HSDPA Subtest-3	15.95	16.17	16.26	17.00	16.61	16.66	16.54	17.50	22.87	22.89	22.93	24.00
DC-HSDPA Subtest-4	16.09	16.08	16.09	17.00	16.58	16.51	16.54	17.50	22.79	22.81	22.90	24.00
HSUPA Subtest-1	14.73	14.82	14.94	16.00	15.31	15.17	15.14	16.50	21.51	21.55	21.58	23.00
HSUPA Subtest-2	14.36	14.56	14.50	16.00	15.02	14.84	14.81	16.50	21.16	21.29	21.27	23.00
HSUPA Subtest-3	15.24	15.43	15.55	16.00	15.90	15.87	15.90	16.50	22.13	22.10	22.24	23.00
HSUPA Subtest-4	14.19	14.11	14.31	16.00	14.74	14.65	14.65	16.50	21.10	21.16	21.20	23.00
HSUPA Subtest-5	15.24	15.49	15.43	16.00	15.78	15.85	15.75	16.50	22.13	22.08	22.15	23.00
HSPA+ Subtest-1	14.58	14.64	14.82	16.00	15.11	15.15	15.16	16.50	21.38	21.41	21.55	23.00

		LTE Band 2				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	18700	18900	19100
20M	QPSK	1	0	13.83	13.90	13.99
		1	50	14.30	14.23	14.23
		1	99	13.87	13.92	13.95
		50	0	13.66	13.85	13.72
		50	25	13.93	13.89	13.82
		50	50	13.83	13.83	13.79
		100	0	13.90	13.89	13.73
		1	0	13.82	13.70	13.88
		1	50	14.03	14.08	14.07
		1	99	13.78	13.70	13.82
	16QAM	50	0	13.81	13.96	13.76
		50	25	13.88	13.95	13.91
		50	50	13.96	13.96	13.88
		100	0	13.90	13.99	13.71
		1	0	13.97	13.76	13.70
		1	50	14.02	14.10	14.19
		1	99	13.75	13.69	13.81
		50	0	13.69	13.90	13.77
		50	25	13.89	13.97	13.87
		50	50	13.86	13.90	13.68
64QAM	100	0	13.79	14.05	13.80	

		LTE Band 4				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	20550	20715	20900
20M	QPSK	1	0	13.70	13.62	13.87
		1	50	14.07	14.11	14.04
		1	99	13.99	13.72	13.84
		50	0	13.71	13.67	13.66
		50	25	13.84	13.86	13.83
		50	50	13.71	13.69	13.76
		100	0	13.82	13.74	13.79
		1	0	13.88	13.75	13.77
		1	50	13.82	13.84	13.86
		1	99	13.94	13.71	13.59
	16QAM	50	0	13.70	13.69	13.71
		50	25	13.73	13.80	13.89
		50	50	13.89	13.84	13.69
		100	0	13.75	13.75	13.69
		1	0	13.70	13.74	13.85
		1	50	13.80	13.76	13.87
		1	99	13.79	13.83	13.84
		50	0	13.88	13.83	13.87
		50	25	13.89	14.05	13.86
		50	50	13.82	13.96	13.78
64QAM	100	0	13.81	13.70	13.86	

		LTE Band 5				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	20450	20525	20660
20M	QPSK	1	0	21.32	21.33	21.33
		1	24	21.49	21.56	21.87
		1	49	21.49	21.43	21.65
		25	0	21.23	21.33	21.21
		25	12	21.37	21.38	21.41
		25	25	21.32	21.18	21.28
		50	0	21.27	21.22	21.26
		1	0	21.48	21.50	21.38
		1	24	21.47	21.48	21.16
		1	49	21.47	21.44	21.56
	16QAM	25	0	21.24	21.33	21.17
		25	12	21.12	21.23	21.37
		25	25	21.06	20.98	21.07
		50	0	21.22	21.15	21.17
		1	0	21.37	21.23	21.35
		1	24	21.48	21.46	21.15
		1	49	21.30	21.27	21.42
		25	0	21.00	20.98	21.07
		25	12	21.08	20.98	21.12
		25	25	20.97	21.04	21.06
64QAM	50	0	21.03	21.03	20.88	

		LTE Band 6				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	18875	18900	19125
20M	QPSK	1	0	13.73	13.89	13.79
		1	37	14.19	14.08	14.10
		1	74	13.73	13.81	13.89
		36	0	13.63	13.79	13.63
		36	19	13.83	13.81	13.65
		36	39	13.76	13.70	13.72
		75	0	13.88	13.84	13.66
		1	0	13.51	13.60	13.71
		1	37	13.97	14.07	13.98
		1	74	13.75	13.58	13.76
	16QAM	36	0	13.74	13.90	13.62
		36	19	13.75	13.83	13.87
		36	39	13.85	13.87	13.67
		75	0	13.76	13.97	13.61
		1	0	13.90	13.82	13.80
		1	37	13.88	13.96	14.06
		1	74	13.73	13.67	13.74
		36	0	13.59	13.85	13.66
		36	19	13.76	13.87	13.87
		36	39	13.80	13.80	13.68
64QAM	75	0	13.67	13.95	13.66	

		LTE Band 7				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	1717.5	1732.5	1747.5
20M	QPSK	1	0	13.69	13.79	13.74
		1	37	14.08	14.09	14.05
		1	74	13.80	13.59	13.70
		36	0	13.65	13.61	13.63
		36	19	13.73	13.76	13.73
		36	39	13.69	13.60	13.66
		75	0	13.75	13.72	13.75
		1	0	13.81	13.70	13.71
		1	37	13.80	13.84	13.73
		1	74	13.91	13.66	13.54
	16QAM	36	0	13.62	13.60	13.60
		36	19	13.60	13.75	13.80
		36	39	13.84	13.89	13.65
		75	0	13.74	13.73	13.59
		1	0	13.60	13.64	13.79
		1	37	13.76	13.71	13.53
		1	74	13.69	13.71	13.75
		36	0	13.80	13.87	13.76
		36	19	13.89	13.84	13.85
		36	39	13.77	13.89	13.69
64QAM	75	0	13.74	13.69	13.84	

		LTE Band 8				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	1824.5	1836.5	1848.5
20M	QPSK	1	0	21.27	21.30	21.21
		1	12	21.48	21.58	21.54
		1	24	21.38	21.30	21.50
		12	0	21.14	21.28	21.13
		12	6	21.16	21.10	21.28
		12	13	21.22	21.17	21.21
		25	0	21.17	21.18	21.25
		1	0	21.42	21.39	21.24
		1	12	21.37	21.39	21.10
		1	24	21.32	21.41	21.42
	16QAM	12	0	21.12	21.24	21.62
		12	6	21.24	21.21	21.25
		12	13	21.13	21.13	21.24
		25	0	21.14	21.14	21.21
		1	0	21.22	21.19	21.30
		1	12	21.43	21.36	21.10
		1	24	21.24	21.18	21.34
		12	0	20.95	20.91	20.97
		12	6	21.01	20.98	21.03
		12	13	20.82	20.82	20.82
64QAM	25	0	21.01	20.96	20.85	

		LTE Band 9				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	1895.5	1890.0	19195.5
20M	QPSK	1	0	13.79	13.77	13.82
		1	24	14.27	14.16	14.10
		1	49	13.65	13.67	13.65
		25	0	13.62	13.74	13.71
		25	12	13.88	13.87	13.72
		25	25	13.78	13.78	13.80
		50	0	13.79	13.83	13.81
		1	0	13.60	13.60	13.74
		1	24	13.98	13.96	14.06
		1	49	13.72	13.67	13.76
	16QAM	25	0	13.67	13.81	13.64
		25	12	13.78	13.94	13.88
		25	25	13.82	13.83	13.84
		50	0	13.89	13.97	13.62
		1	0	13.83	13.68	13.58
		1	24	13.90	13.95	14.04
		1	49	13.60	13.64	13.70
		25	0	13.57	13.80	13.69
		25	12	13.76	13.86	13.86
		25	25	13.75	13.88	13.67
64QAM	50	0	13.67	13.99	13.72	

		LTE Band 10				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	1715.0	1725.0	1750.0
20M	QPSK	1	0	13.65	13.91	13.77
		1	12	13.86	13.83	14.05
		1	24	13.80	13.58	13.74
		12	0	13.64	13.59	13.52
		12	6	13.73	13.83	13.78
		12	13	13.59	13.55	13.67
		25	0	13.67	13.68	13.74
		1	0	13.71	13.67	13.70
		1	12	13.73	13.88	13.71
		1	24	13.70	13.61	13.53
	16QAM	12	0	13.60	13.62	13.65
		12	6	13.72	13.75	13.83
		12	13	13.68	13.80	13.64
		25	0	13.65	13.65	13.59
		1	0	13.56	13.73	13.77
		1	12	13.79	13.69	13.65
		1	24	13.75	13.71	13.77
		12	0	13.81	13.81	13.81
		12	6	13.83	14.03	13.81
		12	13	13.89	13.82	13.76
64QAM	25	0	13.69	13.62	13.85	

		LTE Band 11				
BW	Modulation	RB Size	RB Offset	Low	Mid	High
		Channel	Frequency (MHz)	1896.5	1897.5	19293.5
20M	QPSK	1	0	13.62	13.82	13.78
		1	7	14.09	14.09	14.04
		1	14	13.80	13.64	13.80
		8	0	13.61	13.55	13.56
		8	3	13.83	13.79	13.72
		8	7	13.69	13.54	13.74
		15	0	13.72	13.70	13.65
		1	0	13.72	13.70	13.64
		1	7	13.76	13.53	13.82
		1	14	13.80	13.59	13.58
	16QAM	8	0	13.57	13.55	13.66
		8	3	13.69	13.68	13.76
		8	7	13.84	13.80	13.64
		15	0	13.67	13.65	13.67

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		LTE Band 2						
BW	Modulation	RB Size	RB Offset	Low	Mid	High	Max.	
		Channel	Channel	1870	1880	1910	Tune-up	
		Frequency (MHz)	1860	1880	1900	1920	(dBm)	
20M	QPSK	1	0	20.95	20.88	20.90	22.5	
		1	50	21.07	21.11	21.00	22.5	
		1	99	21.04	21.05	20.97	22.5	
		50	0	20.72	20.88	20.76	22.5	
		50	25	20.97	20.89	20.85	22.5	
		50	50	20.73	20.84	20.81	22.5	
	16QAM	100	0	20.98	20.89	20.97	22.5	
		1	0	20.79	20.83	20.81	22.5	
		1	50	20.97	21.05	21.00	22.5	
		1	99	20.80	20.80	20.74	22.5	
		50	0	20.81	20.98	20.78	22.5	
		50	25	20.82	20.85	20.90	22.5	
64QAM	50	50	20.86	20.84	20.82	22.5		
	100	0	20.86	21.02	20.85	22.5		
	1	0	20.98	20.68	20.63	22.5		
	1	50	21.05	20.79	20.84	22.5		
	1	99	20.86	20.71	20.85	22.5		
	50	0	20.84	20.89	20.88	22.5		
15M	QPSK	36	0	20.89	20.78	20.99	22.5	
		36	19	20.91	20.81	20.97	22.5	
		36	39	20.58	20.69	20.66	22.5	
		75	0	20.89	20.80	20.58	22.5	
		1	0	20.70	20.68	20.68	22.5	
		1	37	20.85	20.92	20.90	22.5	
	16QAM	1	74	20.86	20.82	20.70	22.5	
		36	0	20.69	20.82	20.71	22.5	
		36	19	20.74	20.92	20.88	22.5	
		36	39	20.73	20.88	20.56	22.5	
		75	0	20.73	20.92	20.52	22.5	
		1	0	20.84	20.81	20.53	22.5	
64QAM	1	37	21.04	20.67	20.51	22.5		
	1	74	20.65	20.63	20.78	22.5		
	36	0	20.53	20.80	20.59	22.5		
	36	19	20.81	20.90	20.81	22.5		
	36	39	20.69	20.77	20.60	22.5		
	75	0	20.57	20.83	20.78	22.5		
10M	QPSK	25	0	20.88	20.73	20.80	22.5	
		1	24	21.05	20.98	20.99	22.5	
		1	49	20.96	20.99	20.90	22.5	
		25	0	20.68	20.84	20.70	22.5	
		25	12	20.67	20.78	20.71	22.5	
		25	25	20.69	20.81	20.67	22.5	
	16QAM	50	0	20.68	20.84	20.80	22.5	
		1	0	20.72	20.80	20.77	22.5	
		1	24	20.95	20.80	20.86	22.5	
		1	49	20.72	20.98	20.83	22.5	
		25	0	20.68	20.87	20.64	22.5	
		25	12	20.73	20.85	20.77	22.5	
64QAM	25	25	20.83	20.80	20.61	22.5		
	50	0	20.84	20.98	20.58	22.5		
	1	0	20.88	20.56	20.59	22.5		
	1	24	20.91	20.72	20.58	22.5		
	1	49	20.63	20.69	20.78	22.5		
	25	0	20.67	20.87	20.65	22.5		
5M	QPSK	12	0	20.85	20.83	20.85	22.5	
		1	12	21.03	20.97	20.99	22.5	
		1	24	20.99	20.98	20.95	22.5	
		12	0	20.67	20.79	20.82	22.5	
		12	6	20.68	20.76	20.80	22.5	
		12	13	20.72	20.74	20.74	22.5	
	16QAM	25	0	20.92	20.75	20.58	22.5	
		1	0	20.69	20.78	20.74	22.5	
		1	12	20.88	21.01	20.91	22.5	
		1	24	20.72	20.54	20.98	22.5	
		12	0	20.74	20.88	20.84	22.5	
		12	6	20.78	20.86	20.86	22.5	
64QAM	12	13	20.80	20.92	20.59	22.5		
	25	0	20.85	21.00	20.53	22.5		
	1	0	20.91	20.97	20.58	22.5		
	1	12	21.03	20.76	20.63	22.5		
	1	24	20.62	20.56	20.74	22.5		
	12	0	20.54	20.77	20.54	22.5		
3M	QPSK	12	6	20.81	20.92	20.87	22.5	
		12	13	20.80	20.80	20.85	22.5	
		25	0	20.56	20.69	20.69	22.5	
		1	0	20.92	20.62	20.57	22.5	
		1	7	21.01	20.70	20.58	22.5	
		1	14	20.55	20.57	20.83	22.5	
	16QAM	8	0	20.65	20.75	20.84	22.5	
		8	3	20.75	20.91	20.83	22.5	
		8	7	20.71	20.80	20.86	22.5	
		15	0	20.64	20.68	20.72	22.5	
		1	0	20.92	20.62	20.57	22.5	
		1	7	21.01	20.70	20.58	22.5	
1.4M	QPSK	3	0	20.85	20.75	20.77	22.5	
		1	2	21.07	21.06	20.96	22.5	
		1	5	20.94	21.03	20.85	22.5	
		3	0	20.65	20.74	20.70	22.5	
		3	1	20.90	20.87	20.82	22.5	
		3	3	20.83	20.82	20.72	22.5	
	16QAM	6	0	20.87	20.74	20.62	22.5	
		1	0	20.73	20.79	20.74	22.5	
		1	2	20.88	20.91	20.92	22.5	
		1	5	20.73	20.55	20.67	22.5	
		3	0	20.77	20.82	20.76	22.5	
		3	3	20.75	20.52	20.83	22.5	
64QAM	3	3	20.81	20.81	20.55	22.5		
	6	0	20.74	20.56	20.83	22.5		
	1	0	20.88	20.88	20.88	22.5		
	1	2	21.03	20.74	20.54	22.5		
	1	5	20.55	20.58	20.70	22.5		
	3	0	20.54	20.74	20.84	22.5		

		LTE Band 4						
BW	Modulation	RB Size	RB Offset	Low	Mid	High	Max.	
		Channel	Channel	2050	2075	2090	Tune-up	
		Frequency (MHz)	1720	1732.5	1745	1760	(dBm)	
20M	QPSK	1	0	20.97	21.08	20.91	22.5	
		1	50	21.00	21.12	21.00	22.5	
		1	99	21.01	20.84	20.71	22.5	
		50	0	20.70	20.81	20.71	22.5	
		50	25	20.95	20.93	20.97	22.5	
		50	50	20.69	20.75	20.79	22.5	
	16QAM	100	0	20.87	20.81	20.80	22.5	
		1	0	20.81	21.00	20.98	22.5	
		1	50	20.84	20.92	20.84	22.5	
		1	99	20.76	20.90	21.11	22.5	
		50	0	20.78	20.72	20.88	22.5	
		50	25	20.76	20.82	20.99	22.5	
64QAM	50	50	20.74	20.81	20.83	22.5		
	100	0	20.75	20.79	20.75	22.5		
	1	0	20.81	21.01	20.78	22.5		
	1	50	20.83	20.90	21.01	22.5		
	1	99	20.85	20.89	20.82	22.5		
	50	0	20.90	20.81	21.01	22.5		
15M	QPSK	36	0	20.88	20.72	20.84	22.5	
		36	19	20.86	20.87	20.87	22.5	
		36	39	20.59	20.68	20.74	22.5	
		75	0	20.75	20.81	20.77	22.5	
		1	0	20.66	20.68	20.94	22.5	
		1	37	20.72	20.80	20.82	22.5	
	16QAM	1	74	20.63	20.65	21.07	22.5	
		36	0	20.70	20.66	20.66	22.5	
		36	19	20.72	20.84	20.88	22.5	
		36	39	20.65	20.88	20.82	22.5	
		75	0	20.63	20.77	20.74	22.5	
		1	0	20.84	20.87	20.80	22.5	
64QAM	1	37	20.79	20.67	20.99	22.5		
	1	74	20.74	20.85	20.89	22.5		
	36	0	20.78	20.66	20.99	22.5		
	36	19	20.67	20.93	20.95	22.5		
	36	39	21.01	20.81	20.72	22.5		
	75	0	20.77	21.03	20.85	22.5		
10M	QPSK	25	0	20.94	20.96	20.83	22.5	
		1	24	21.11	21.07	21.17	22.5	
		1	49	20.93	20.75	20.63	22.5	
		25	0	20.66	20.75	20.70	22.5	
		25	12	20.80	20.85	20.92	22.5	
		25	25	20.55	20.60	20.66	22.5	
	16QAM	50	0	20.72	20.82	20.88	22.5	
		1	0	20.73	20.85	20.83	22.5	
		1	24	20.80	20.83	20.80	22.5	
		1	49	20.71	20.76	21.01	22.5	
		25	0	20.63	20.89	20.77	22.5	
		25	12	20.75	20.88	20.97	22.5	
64QAM	25	25	20.65	20.87	20.82	22.5		
	50	0	20.61	20.71	20.68	22.5		
	1	0	20.67	21.00	20.67	22.5		
	1	24	20.81	20.88	20.88	22.5		
	1	49	20.72	20.82	20.77	22.5		
	25	0	20.62	20.87	20.80	22.5		
5M	QPSK	12	0	20.86	20.87	20.70	22.5	
		12	6	20.80	20.85	20.86	22.5	
		25	0	20.80	20.76	20.77	22.5	
		1	0	20.70	20.87	20.96	22.5	
		1	12	20.83	20.89	20.86	22.5	
		1	24	20.67	20.83	20.97	22.5	
	16QAM	12	0	20.75	20.89	20.84	22.5	
		12	6	20.62	20.85	20.96	22.5	
		12	13	20.71	20.86	20.81	22.5	
		25	0	20.70	20.82	20.71	22.5	
		1	0	20.67	20.98	20.73	22.5	
		1	12	20.70	20.81	20.92	22.5	
64QAM	1	24	20.71	20.81	20.69	22.5		
	12	0	20.68	20.71	21.00	22.5		
	12	6	20.71	21.00	20.92	22.5		
	12	13	20.97	20.82	20.70	22.5		
	25	0	20.84	21.03	20.83	22.5		
	25	0	20.84	21.08	2			

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		LTE Band 2						
BW	Modulation	RB Size	RB Offset	Low	Mid	High	Max.	
		Channel	Channel	1870	1880	1910	Tune-up	
		Frequency (MHz)	1880	1890	1900	1900	(dBm)	
20M	QPSK	1	0	16.90	16.93	16.94	18.5	
		1	50	17.26	17.27	17.28	18.5	
		1	99	16.92	16.93	17.01	18.5	
		50	0	16.68	16.68	16.65	18.5	
		50	25	17.01	16.90	16.84	18.5	
		50	50	16.86	16.86	16.79	18.5	
	16QAM	100	0	16.96	16.94	16.74	18.5	
		1	50	17.02	17.14	17.09	18.5	
		1	99	16.85	16.71	16.81	18.5	
		50	0	16.90	16.96	16.76	18.5	
		50	25	16.97	16.85	16.80	18.5	
		50	50	16.98	17.00	16.82	18.5	
	64QAM	100	0	16.93	17.11	16.75	18.5	
		1	50	17.07	16.68	16.75	18.5	
		1	99	16.81	16.72	16.83	18.5	
		50	0	16.60	16.52	16.78	18.5	
		50	25	16.85	16.96	16.97	18.5	
		50	50	16.99	16.92	16.72	18.5	
		Channel	1887.5	1895	1902.5	Max. Tune-up (dBm)		
15M	QPSK	1	0	16.88	16.85	16.83	18.5	
		1	37	17.33	17.05	17.24	18.5	
		1	74	16.84	16.88	16.97	18.5	
		36	0	16.65	16.76	16.57	18.5	
		36	19	16.53	16.77	16.57	18.5	
		36	39	16.75	16.77	16.75	18.5	
	16QAM	75	0	16.88	16.79	16.72	18.5	
		1	37	16.87	16.61	16.85	18.5	
		1	74	16.88	17.01	16.94	18.5	
		36	0	16.84	16.95	16.74	18.5	
		36	19	16.93	16.84	16.76	18.5	
		36	39	16.88	16.85	16.61	18.5	
	64QAM	75	0	16.84	17.02	16.96	18.5	
		1	37	16.94	16.57	16.65	18.5	
		1	74	16.98	17.04	17.19	18.5	
		36	0	16.59	16.70	16.73	18.5	
		36	19	16.76	16.87	16.88	18.5	
		36	39	16.88	16.81	16.63	18.5	
		Channel	1887.5	1895	1902.5	Max. Tune-up (dBm)		
10M	QPSK	1	0	16.80	16.87	16.75	18.5	
		1	24	17.24	17.13	17.28	18.5	
		1	49	16.89	16.87	16.91	18.5	
		25	0	16.58	16.73	16.59	18.5	
		25	12	16.66	16.80	16.71	18.5	
		25	25	16.76	16.77	16.66	18.5	
	16QAM	50	0	16.89	16.89	16.73	18.5	
		25	25	16.88	16.98	16.78	18.5	
		1	0	16.53	16.51	16.53	18.5	
		1	24	16.93	17.08	16.98	18.5	
		1	49	16.71	16.58	16.90	18.5	
		25	0	16.84	16.83	16.83	18.5	
	64QAM	50	0	16.89	16.89	16.94	18.5	
		25	25	16.88	16.98	16.78	18.5	
		1	0	17.05	16.59	16.71	18.5	
		1	24	16.92	17.03	17.14	18.5	
		1	49	16.68	16.61	16.68	18.5	
		25	0	16.60	16.89	16.80	18.5	
		Channel	1885	1888	1895	Max. Tune-up (dBm)		
5M	QPSK	1	0	16.79	16.80	16.82	18.5	
		1	12	17.21	17.19	17.20	18.5	
		1	24	16.81	16.85	16.96	18.5	
		12	0	16.60	16.82	16.51	18.5	
		12	6	16.80	16.89	16.84	18.5	
		12	13	16.74	16.83	16.72	18.5	
	16QAM	25	0	16.89	16.84	16.65	18.5	
		1	0	16.55	16.53	16.78	18.5	
		1	12	16.89	17.00	16.95	18.5	
		1	24	16.84	16.82	16.98	18.5	
		12	0	16.79	16.82	16.73	18.5	
		12	6	16.96	16.93	16.88	18.5	
	64QAM	25	0	16.92	17.09	16.89	18.5	
		1	0	16.94	16.84	16.88	18.5	
		1	12	16.94	16.98	17.13	18.5	
		1	24	16.69	16.58	16.72	18.5	
		12	0	16.58	16.85	16.67	18.5	
		12	6	16.79	16.92	16.94	18.5	
		Channel	1882.5	1890	1897.5	Max. Tune-up (dBm)		
3M	QPSK	1	0	16.88	16.78	16.76	18.5	
		1	7	17.33	17.19	17.25	18.5	
		1	14	16.79	16.88	16.98	18.5	
		8	0	16.67	16.79	16.57	18.5	
		8	3	16.90	16.76	16.72	18.5	
		8	7	16.74	16.88	16.65	18.5	
	16QAM	15	0	16.80	16.91	16.59	18.5	
		1	0	16.52	16.54	16.85	18.5	
		1	7	16.97	17.10	17.05	18.5	
		1	14	16.75	16.57	16.82	18.5	
		8	0	16.80	16.91	16.75	18.5	
		8	3	16.94	16.82	16.77	18.5	
	64QAM	8	7	16.90	16.89	16.55	18.5	
		15	0	16.79	17.08	16.74	18.5	
		1	0	16.94	16.57	16.66	18.5	
		1	7	16.95	17.04	17.15	18.5	
		1	14	16.72	16.57	16.72	18.5	
		8	0	16.55	16.80	16.77	18.5	
		Channel	1887	1890	1893	Max. Tune-up (dBm)		
1.4M	QPSK	1	0	16.88	16.89	16.89	18.5	
		1	2	17.21	17.18	17.29	18.5	
		1	5	16.79	16.83	16.97	18.5	
		3	0	16.55	16.75	16.83	18.5	
		3	1	16.92	16.85	16.87	18.5	
		3	3	16.83	16.78	16.87	18.5	
	16QAM	6	0	16.83	16.90	16.61	18.5	
		1	0	16.55	16.61	16.77	18.5	
		1	2	16.87	17.09	17.05	18.5	
		1	5	16.78	16.63	16.81	18.5	
		3	0	16.88	16.92	16.73	18.5	
		3	3	16.83	16.90	16.78	18.5	
	64QAM	3	3	16.94	16.89	16.55	18.5	
		6	0	16.89	16.99	16.69	18.5	
		1	0	16.97	16.82	16.86	18.5	
		1	2	16.91	17.19	17.19	18.5	
		1	5	16.87	16.80	16.71	18.5	
		3	0	16.96	16.78	16.72	18.5	
		Channel	1887	1890	1893	Max. Tune-up (dBm)		

		LTE Band 4						
BW	Modulation	RB Size	RB Offset	Low	Mid	High	Max.	
		Channel	Channel	2050	2075	2090	Tune-up	
		Frequency (MHz)	1728	1732.5	1745	1745	(dBm)	
20M	QPSK	1	0	17.28	17.49	17.25	19	
		1	50	17.60	17.40	17.45	19	
		1	99	17.37	17.24	17.39	19	
		50	0	17.29	17.19	17.29	19	
		50	25	17.40	17.33	17.31	19	
		50	50	17.31	17.10	17.31	19	
	16QAM	100	0	17.30	17.19	17.41	19	
		1	0	17.50	17.23	17.31	19	
		1	50	17.34	17.40	17.41	19	
		1	99	17.34	17.21	17.10	19	
		50	0	17.28	17.15	17.19	19	
		50	25	17.37	17.39	17.16	19	
	64QAM	100	0	17.28	17.28	17.29	19	
		1	0	17.24	17.23	17.43	19	
		1	50	17.33	17.29	17.19	19	
		1	99	17.26	17.35	17.29	19	
		50	0	17.48	17.54	17.32	19	
		50	25	17.40	17.61	17.49	19	
		Channel	1717.5	1732.5	1747.5	Max. Tune-up (dBm)		
15M	QPSK	1	0	17.13	17.41	17.21	19	
		1	37	17.55	17.46	17.55	19	
		1	74	17.35	17.19	17.31	19	
		36	0	17.24	17.10	17.16	19	
		36	19	17.27	17.39	17.18	19	
		36	39	17.20	17.08	17.22	19	
	16QAM	75	0	17.22	17.10	17.35	19	
		1	0	17.37	17.15	17.19	19	
		1	37	17.25	17.27	17.32	19	
		1	74	17.24	17.17	17.26	19	
		36	0	17.25	17.14	17.17	19	
		36	19	17.29	17.27	17.36	19	
	64QAM	36	39	17.13	17.28	17.04	19	
		75	0	17.17	17.24	17.20	19	
		1	0	17.16	17.18	17.38	19	
		1	37	17.26	17.22	17.15	19	
		1	74	17.13	17.29	17.16	19	
		36	0	17.42	17.48	17.19	19	
		Channel	1717.5	1732.5	1747.5	Max. Tune-up (dBm)		
10M	QPSK	1	0	17.27	17.34	17.21	19	
		1	24	17.52	17.45	17.62	19	
		1	49	17.26	17.17	17.29	19	
		25	0	17.18	17.06	17.18	19	
		25	12	17.35	17.30	17.29	19	
		25	25	17.27	17.08	17.24	19	
	16QAM	50	0	17.26	17.08	17.39	19	
		25	25	17.19	17.19	17.27	19	
		1	24	17.31	17.38	17.33	19	
		1	49	17.27	17.08	17.01	19	
		25	0	17.18	17.22	17.17	19	
		25	12	17.46	17.27	17.36	19	
	64QAM	50	0	17.43	17.19	17.27	19	
		1	24	17.31	17.38	17.33	19	
		1	49	17.27	17.08	17.01	19	
		25	0	17.14	17.22	17.17	19	
		1	0	17.10	17.17	17.41	19	
		1	24	17.21	17.16	17.10	19	
		Channel	1715	1732.5	1750	Max. Tune-up (dBm)		
5M	QPSK	1	0	17.27	17.34	17.21	19	
		1	24	17.52	17.45	17.62	19	
		1	49	17.26	17.17	17.29	19	
		25	0	17.18	17.06	17.18	19	
		25	12	17.				

default Power					
2.4GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
2.4GHz WLAN	802.11b Mbps	1	2412	15.07	17.50
		6	2437	16.14	17.50
		11	2462	16.23	17.50
	802.11g Mbps	1	2412	14.91	16.50
		6	2437	15.07	16.50
	802.11n-HT20 MCS0	1	2412	15.21	15.50
6		2437	14.17	15.50	
	11	2462	14.04	15.50	
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.2GHz WLAN	802.11a Mbps	36	5180	12.83	14.50
		40	5200	12.93	14.50
		44	5220	12.86	14.50
	802.11n-HT20 MCS0	48	5240	12.96	14.50
		36	5180	13.23	14.50
		40	5200	13.33	14.50
802.11n-HT40 MCS0	44	5220	13.21	14.50	
	48	5240	13.25	14.50	
	36	5180	13.12	14.50	
802.11ac-VHT20 MCS0	40	5200	13.12	14.50	
	36	5180	13.06	14.50	
	44	5220	13.03	14.50	
802.11ac-VHT40 MCS0	48	5240	13.07	14.50	
	36	5180	13.06	14.50	
	46	5230	13.15	14.50	
802.11ac-VHT80 MCS0	42	5210	13.64	14.50	
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.8GHz WLAN	802.11a Mbps	52	5260	13.03	14.50
		56	5280	13.01	14.50
		60	5300	13.02	14.50
	802.11n-HT20 MCS0	64	5320	13.18	14.50
		52	5260	13.34	14.50
		56	5280	13.25	14.50
802.11n-HT40 MCS0	60	5300	13.21	14.50	
	64	5320	13.36	14.50	
	54	5270	13.09	14.50	
802.11ac-VHT20 MCS0	62	5310	13.06	14.50	
	52	5260	13.01	14.50	
	56	5280	13.03	14.50	
802.11ac-VHT40 MCS0	60	5300	13.04	14.50	
	64	5320	13.17	14.50	
	54	5270	13.13	14.50	
802.11ac-VHT80 MCS0	62	5310	13.11	14.50	
	58	5290	13.28	14.50	
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.8GHz WLAN	802.11a Mbps	100	5500	13.19	14.50
		116	5580	13.00	14.50
		124	5620	13.04	14.50
	802.11n-HT20 MCS0	132	5660	13.07	14.50
		140	5700	13.13	14.50
		144	5720	13.06	14.50
802.11n-HT40 MCS0	100	5500	13.45	14.50	
	116	5580	13.42	14.50	
	124	5620	13.38	14.50	
802.11ac-VHT20 MCS0	132	5660	13.33	14.50	
	140	5700	13.49	14.50	
	144	5720	13.36	14.50	
802.11ac-VHT40 MCS0	102	5510	13.19	14.50	
	110	5550	13.31	14.50	
	126	5630	13.17	14.50	
802.11ac-VHT80 MCS0	134	5670	13.26	14.50	
	142	5710	13.19	14.50	
	100	5500	13.27	14.50	
802.11a Mbps	116	5580	13.24	14.50	
	124	5620	13.22	14.50	
	132	5660	13.17	14.50	
802.11n-HT20 MCS0	140	5700	13.13	14.50	
	144	5720	13.16	14.50	
	102	5510	13.23	14.50	
802.11ac-VHT20 MCS0	110	5550	13.34	14.50	
	126	5630	13.27	14.50	
	134	5670	13.31	14.50	
802.11ac-VHT40 MCS0	142	5710	13.25	14.50	
	106	5530	13.13	14.50	
	122	5610	13.28	14.50	
802.11ac-VHT80 MCS0	138	5690	13.16	14.50	
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.8GHz WLAN	802.11a Mbps	149	5745	12.96	14.50
		157	5785	12.91	14.50
		165	5825	12.87	14.50
	802.11n-HT20 MCS0	149	5745	13.02	14.50
		157	5785	13.14	14.50
		165	5825	12.95	14.50
802.11n-HT40 MCS0	151	5795	13.22	14.50	
	159	5795	13.21	14.50	
	149	5745	12.84	14.50	
802.11ac-VHT20 MCS0	157	5785	12.96	14.50	
	165	5825	12.77	14.50	
	151	5795	13.18	14.50	
802.11ac-VHT40 MCS0	159	5795	13.24	14.50	
	155	5775	13.70	14.50	
	155	5775	13.70	14.50	
BT					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
BT	1M	0	2402	0.37	2.00
		19	2440	0.94	2.00
		39	2480	1.40	3.00
BLE	2M	1	2404	0.69	2.00
		19	2440	1.06	3.00
		39	2480	1.56	3.00
BLE	S2	0	2402	0.48	2.00
		19	2440	0.95	2.00
		39	2480	1.44	3.00
BLE	S8	0	2402	0.99	2.00
		19	2440	0.95	2.00
		39	2480	1.56	3.00
BLE	GFSK	0	2402	8.55	10.00
		39	2441	6.39	8.00
		78	2480	9.88	11.00
BREDR	DQPSK	0	2402	6.56	8.00
		39	2441	3.01	5.00
		78	2480	8.14	10.00
BREDR	BDPSK	0	2402	6.53	8.00
		39	2441	2.91	4.00
		78	2480	8.14	10.00

Receiver on (DSI-1)					
2.4GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
2.4GHz WLAN	802.11b Mbps	1	2412	12.86	14.50
		6	2437	13.27	14.50
		11	2462	13.34	14.50
	802.11g Mbps	1	2412	13.50	
		6	2437	13.50	
	802.11n-HT20 MCS0	1	2412	13.62	13.50
	6	2437	12.50		
	11	2462	12.50		
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.2GHz WLAN	802.11a Mbps	36	5180	9.50	
		40	5200	9.50	
		44	5220	9.50	
	802.11n-HT20 MCS0	48	5240	9.50	
		36	5180	9.50	
		40	5200	9.50	
802.11n-HT40 MCS0	44	5220	9.50		
	48	5240	9.50		
	38	5190	9.50		
802.11ac-VHT20 MCS0	40	5200	9.50		
	36	5180	9.50		
	44	5220	9.50		
802.11ac-VHT40 MCS0	48	5240	9.50		
	38	5190	9.50		
	46	5230	9.50		
802.11ac-VHT80 MCS0	42	5210	8.63	9.50	
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.8GHz WLAN	802.11a Mbps	52	5260	9.50	
		56	5280	9.50	
		60	5300	9.50	
	802.11n-HT20 MCS0	64	5320	9.50	
		52	5260	9.29	9.50
		56	5280	9.33	9.50
802.11n-HT40 MCS0	60	5300	9.27	9.50	
	64	5320	9.41	9.50	
	54	5270	9.50		
802.11ac-VHT20 MCS0	62	5310	9.50		
	52	5260	9.50		
	56	5280	9.50		
802.11ac-VHT40 MCS0	60	5300	9.50		
	64	5320	9.50		
	54	5270	9.50		
802.11ac-VHT80 MCS0	62	5310	9.50		
	58	5290	9.50		
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.8GHz WLAN	802.11a Mbps	100	5500	9.50	
		116	5580	9.50	
		124	5620	9.50	
	802.11n-HT20 MCS0	132	5660	9.50	
		140	5700	9.50	
		144	5720	9.50	
802.11n-HT40 MCS0	100	5500	9.41	9.50	
	116	5580	9.31	9.50	
	124	5620	9.44	9.50	
802.11ac-VHT20 MCS0	132	5660	9.29	9.50	
	140	5700	9.38	9.50	
	144	5720	9.27	9.50	
802.11ac-VHT40 MCS0	102	5510	9.50		
	110	5550	9.50		
	126	5630	9.50		
802.11ac-VHT80 MCS0	134	5670	9.50		
	142	5710	9.50		
	100	5500	9.50		
802.11a Mbps	116	5580	9.50		
	124	5620	9.50		
	132	5660	9.50		
802.11n-HT20 MCS0	140	5700	9.50		
	144	5720	9.50		
	102	5510	9.50		
802.11ac-VHT20 MCS0	110	5550	9.50		
	126	5630	9.50		
	134	5670	9.50		
802.11ac-VHT40 MCS0	142	5710	9.50		
	106	5530	9.50		
	122	5610	9.50		
802.11ac-VHT80 MCS0	138	5690	9.50		
5GHz WLAN					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
5.8GHz WLAN	802.11a Mbps	149	5745	9.50	
		157	5785	9.50	
		165	5825	9.50	
	802.11n-HT20 MCS0	149	5745	9.50	
		157	5785	9.50	
		165	5825	9.50	
802.11n-HT40 MCS0	151	5795	9.50		
	159	5795	9.50		
	149	5745	9.50		
802.11ac-VHT20 MCS0	157	5785	9.50		
	165	5825	9.50		
	151	5795	9.50		
802.11ac-VHT40 MCS0	159	5795	9.50		
	155	5775	8.66	9.50	
	155	5775	8.66	9.50	
BT					
Mode	Channel	Frequency (MHz)	Average power (dBm)	Tune-Up Limit	
BT	1M	0	2402	0.37	2.00
		19	2440	0.94	2.00
		39	2480	1.40	3.00
BLE	2M	1	2404	0.69	2.00
		19	2440	1.06	3.00
		39	2480	1.56	3.00
BLE	S2	0	2402	0.48	2.00
		19	2440	0.95	2.00
		39	2480	1.44	3.00
BLE	S8	0	2402	0.99	2.00
		19	2440	0.95	2.00
		39	2480	1.56	3.00
BLE	GFSK	0	2402	8.55	10.00
		39	2441	6.39	8.00
		78	2480	9.88	11.00
BREDR	DQPSK	0	2402	6.56	8.00
		39	2441	3.01	5.00
		78	2480	8.14	10.00
BREDR	BDPSK	0	2402	6.53	8.00
		39	2441	2.91	4.00
		78	2480	8.14	10.00